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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
12/603,085	10/21/2009	Jo¿l Gaillard	72520-1	173809

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 09/12/2022 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Jacob M. Ward/
Name:	Jacob M. Ward
Registration Number:	56754

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490

CONFIRMATION NO. 5895

POWER OF ATTORNEY NOTICE

43935
Shumaker, Loop & Kendrick, LLP
1000 Jackson Street
Toledo, OH 43604-5573

OC00000135898726

Date Mailed: 08/18/2022

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/16/2022.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/nrhayden/

IPR2025-00173
Apple EX1007 Page 2

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P.O. Box 1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/603,085	10/21/2009	Jo¿l Gaillard	72520-1

CONFIRMATION NO. 5895

144899
Ward Law Office LLC
120 1/2 S. Washington Street, Suite 207
Tiffin, OH 44883

POA ACCEPTANCE LETTER

OC000000135898763

Date Mailed: 08/18/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/16/2022.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/nrhayden/

IPR2025-00173
Apple EX1007 Page 3

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014. OMB 0651-0051
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	12/603,085
Filing Date	October 21, 2009
First Named Inventor	Joel Gaillard
Title	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
Art Unit	2876
Examiner Name	Daniel A. Hess
Attorney Docket Number	72520-1

SIGNATURE of Applicant or Patent Practitioner

Signature	/Jacob M. Ward/	Date (Optional)	August 16, 2022
Name	Jacob M. Ward	Registration Number	56,754
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 144899

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City				Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

G. Holdings Ltd.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	21 / JUIN / 2022
Name	Joel GAILLARD		
Title	CEO , G. Holdings Ltd.		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Joel GAILLARD

Application No./Patent No.: 9,022,294 Filed/Issue Date: May 5, 2015

Titled: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

G. HOLDINGS LTD., a Assignee

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☑ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 024116, Frame 0882, or for which a copy thereof is attached.

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

   1. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

   2. From: _____ To: _____

      The document was recorded in the United States Patent and Trademark Office at

      Reel _____, Frame _____, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

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4. From: _____ To: _____

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5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Jacob M. Ward/	August 16, 2022
Signature	Date
Jacob M. Ward	56,754
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	46423326
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	Jacob Michael Ward./Jennifer Howard
Filer Authorized By:	Jacob Michael Ward.
Attorney Docket Number:	1-40490
Receipt Date:	16-AUG-2022
Filing Date:	21-OCT-2009
Time Stamp:	16:28:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	72520-1_POA_FILED_08-16-22.pdf	1265661 06dabb2e180340359b55dbf25bb9ebb50fa6df20	no	2

Warnings:

IPR2025-00173
Apple EX1007 Page 9

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	72520-1_373_Statement_FILED_08-16-22.pdf	124937 be588c21ec2ab0c6d412ecc3f49e8ab1ca055ba9	no	3
Warnings:					
Information:					
		Total Files Size (in bytes):	1390598		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490

CONFIRMATION NO. 5895

IMPROPER CPOA LETTER

43935
Shumaker, Loop & Kendrick, LLP
1000 Jackson Street
Toledo, OH 43604-5573

OC000000135693685

Date Mailed: 08/10/2022

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 08/02/2022. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney is from an assignee and the statement required by 37 CFR 3.73(c) has not been received.

/ltaba/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

144899
Ward Law Office LLC
120 1/2 S. Washington Street, Suite 207
Tiffin, OH 44883
UNITED STATES

IPR2025-00173
Apple EX1007 Page 11

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

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Application Number	12/603,085
Filing Date	October 21, 2009
First Named Inventor	Joel Gaillard
Title	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
Art Unit	2876
Examiner Name	Daniel A. Hess
Attorney Docket Number	72520-1

SIGNATURE of Applicant or Patent Practitioner

Signature	/Jacob M. Ward/	Date (Optional)	August 2, 2022
Name	Jacob M. Ward	Registration Number	56,754
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA.
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 144899

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City				Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

G. Holdings Ltd.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	21 / JUIN / 2022
Name	Joel GAILLARD		
Title	CEO , G. Holdings Ltd.		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

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If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	46325023
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	Jacob Michael Ward./Jennifer Howard
Filer Authorized By:	Jacob Michael Ward.
Attorney Docket Number:	1-40490
Receipt Date:	02-AUG-2022
Filing Date:	21-OCT-2009
Time Stamp:	15:50:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	72520-1_POA_FILED_08-02-22.pdf	1260892 27d1e46f81c3eb2ea2c1f3956dd6ea4252984eaa	no	2

Warnings:

Information:	
Total Files Size (in bytes):	1260892

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Marshall Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:20-cv-00342	10/29/2020	Eastern District of Texas - Marshall Division

PLAINTIFF	DEFENDANT
G. Holdings Ltd.	Samsung Electronics Co., Ltd and Samsung Electronics America Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,628,333	12/8/2009	G. Holdings Ltd.
2	9,022,294	5/5/2015	G. Holdings Ltd.
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
Having considered the Stipulation, the Court ACCEPTS AND ACKNOWLEDGES that all claims in the above-captioned case are DISMISSED WITH PREJUDICE

CLERK	(BY) DEPUTY CLERK	DATE
David A. O'Toole	nkl	8/19/21

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Print Save As... Reset

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas - Marshall Division on the following

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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	05/05/2015	9022294	1-40490	5895

43935 7590 04/15/2015

FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 768 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Jo¿l Gaillard, Nassau, BAHAMAS;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12603085
Filing Date	2009-10-21
First Named Inventor	Joel Gaillard
Art Unit	3711
Examiner Name	Daniel A. Hess
Attorney Docket Number	1-40490

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Change(s) applied to document

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
/S.J.W./ 3/11/2015 /D.H./	1	0945828	EP	A2	09/1999 ~~1999-19-29~~	Toshiba KK		☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

43935 7590 02/02/2015
FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Lynn Smith	(Depositor's name)
Lynn Smith	(Signature)
April 6, 2015	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Joel Gaillard	1-40490	5895

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	05/04/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
HESS, DANIEL A.	2876	235-492000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Fraser Clemens Martin
2 & Miller LLC
3 James D. Miller

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: G. Holdings Ltd.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Nassau NP, Bahamas

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 503156 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)
- ☐ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ☒ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☐ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date April 6, 2015

Typed or printed name James D. Miller Registration No. 46,932

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

IPR2025-00173
Apple EX1007 Page 20

Electronic Patent Application Fee Transmittal

Application Number:	12603085
Filing Date:	21-Oct-2009
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Filer:	James D. Miller/Lynn Smith
Attorney Docket Number:	1-40490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**480**

Electronic Acknowledgement Receipt

EFS ID:	21973185
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	James D. Miller/Lynn Smith
Filer Authorized By:	James D. Miller
Attorney Docket Number:	1-40490
Receipt Date:	06-APR-2015
Filing Date:	21-OCT-2009
Time Stamp:	10:00:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$480
RAM confirmation Number	6329
Deposit Account	503156
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	40490_Issue_Fee_Transmittal_Filed_04062015.pdf	96403 10d6ab1f5f4c8eeeb8f4f1c9d9b1f4392acabd04	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30805 c3704014592f48247d624006cb3788701dce2330	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	127208		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

43935 7590 02/02/2015

FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

EXAMINER	
HESS, DANIEL A	
ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 02/02/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	05/04/2015

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

43935 7590 02/02/2015
FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$960	$0	$0	$960	05/04/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
HESS, DANIEL A	2876	235-492000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

IPR2025-00173
Apple EX1007 Page 26

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

43935 7590 02/02/2015

FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

EXAMINER	
HESS, DANIEL A	

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 02/02/2015

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/603,085	Applicant(s) GAILLARD, JO¿L	
	Examiner DANIEL HESS	Art Unit 2876	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/8/2014 amendment by applicant*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-20*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/DANIEL HESS/
Primary Examiner, Art Unit 2876

DETAILED ACTION

This action is responsive to applicant's amendment of 12/8/2014, which has been entered into the electronic file of record.

The present application is being examined under the pre-AIA first to invent provisions.

Allowable Subject Matter

Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art fails to teach or fairly suggest a system or method as expressed in independent claims 1, 10, 11, 12 and 15, upon which all other claims depend. The applicant has amended the claims to reflect that the device that is the subject of the instant invention is a cell phone, among other amendments.

The examiner views the claims 'as a whole' and notes that there is not any single limitation that renders the claims allowable. The details of the communication structure and sequences render the claims allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL HESS whose telephone number is (571)272-2392. The examiner can normally be reached on 9:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DANIEL HESS/
Primary Examiner, Art Unit 2876

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	Art Unit
	DANIEL HESS	2876

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
235	492	1/5/2011	DH
	487		
Updated		4/23/2012	DH
455	550.1, 557	1/16/2015	DH

SEARCH NOTES		
Search Notes	Date	Examiner
East keyword search history attached	1/5/2012	DH
Updated	4/23/2012	DH
Updated	1/16/2015	DH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
455	550.1, 557	1/16/2015	DH
235	487, 492		

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO¿L
	Examiner	**Art Unit**
	DANIEL HESS	2876

CPC						
Symbol					**Type**	**Version**
G06K		19	/	07345	F	2013-01-01
G06K		17	/	0022	I	2013-01-01
G06K		19	/	0723	I	2013-01-01
G06K		19	/	07354	I	2013-01-01
G06K		19	/	07703	I	2013-01-01
G06K		19	/	07769	I	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/DANIEL HESS/ Primary Examiner.Art Unit 2876	01/16/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO¿L
	Examiner	**Art Unit**
	DANIEL HESS	2876

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
235	492	H	0	4	M	1 / 00 (2006.01.01)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
455	550.1				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/DANIEL HESS/ Primary Examiner.Art Unit 2876	01/16/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO¿L
	Examiner	**Art Unit**
	DANIEL HESS	2876

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	15	17												
2	2	16	18												
3	3	17	19												
4	4	18	20												
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12	12														
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14	14														
19	15														
20	16														

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/DANIEL HESS/ Primary Examiner.Art Unit 2876 (Primary Examiner)	01/16/2015 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4

CERTIFICATE OF ELECTRONIC TRANSMITTAL UNDER 37 CFR 1.8

I hereby certify that this correspondence is being electronically transmitted to the Commissioner For Patents on the date set forth below.

Gretha P. Esser
(signature)

Date of signature and transmittal - December 8, 2014

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: GAILLARD	)	Group Art Unit: 2876
Serial No.: 12/603,085	)	Examiner: D. Hess
Filed: October 21, 2009	)	Attorney Docket: 40490-1
For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	)	Confirmation No.: 5895

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Honorable Commissioner:

In response to the Office Action mailed June 6, 2014, for which the shortened statutory period for reply expired September 6, 2014, please reconsider the above-identified application in view of the amendments and remarks set forth on the following pages.

Applicant hereby petitions under the provisions of 37 C.F.R. § 1.136(a) for a three month extension of time in which to respond to the Office Action. The Commissioner is hereby authorized to charge a small-entity fee as set forth in 37 C.F.R. § 1.17(a), and any other fees deemed necessary, to Deposit Account No. 50-3156.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 13 of this paper.

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Apple EX1007 Page 36

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A ~~portable electronic device~~ cellular phone, comprising:

an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;

a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with said invariable activation command being issued when said control device is selectively triggered by the user;

a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device over a first communication link;

a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device over a second communication link that is distinct from said first communication link;

a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said ~~portable electronic device~~ cellular phone;

a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and

power means for providing power to said ~~portable electronic device~~ cellular phone;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

if said switching element is in said first state, a first data conveyance

operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device over said first communication link; and

if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device over said second communication link.

2. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, further comprising a display screen operatively linked to said electronic circuit.

3. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, wherein said first data transceiver includes said cue receiver.

4. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, wherein said control device is one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

5. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, wherein said electronic circuit includes said switching element.

6. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 5, wherein said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

7. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, wherein said switching element comprises a logical circuit.

8. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim 1, wherein said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a ~~nearby~~ first external data exchange device through a direct link representing said first communication link where the cellular phone is conveyed toward a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange.

9. (Currently Amended) A ~~portable electronic device~~ cellular phone as defined in claim [[1]] 8, wherein said second data transceiver comprises a communication network transceiver for wireless communication through a communication network that represents said second communication link, with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

10. (Currently Amended) A ~~portable electronic device~~ cellular phone comprising:

an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;

a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with said invariable activation command being issued when said control device is triggered by the user;

first and second data conveyance operations programmed in said electronic circuit;

a first ~~and second data transceivers~~ data transceiver operatively linked to said electronic circuit, said first data transceiver being operable for data exchange over a first communication link;

a second data transceiver operably linked to said electronic circuit, said second data transceiver being operable for data exchange over a second communication link that is distinct from said first communication link;

a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said ~~portable electronic device~~ cellular phone; and

power means, for providing power to said ~~portable electronic device~~ cellular phone;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

if an activation cue was received by said cue receiver, said electronic circuit will accomplish said first data conveyance operation to convey data from said electronic circuit to said first data transceiver for transmitting data through said first data transceiver; and

if no activation cue was received by said cue receiver, said

electronic circuit will accomplish said second data conveyance operation to convey data from said electronic circuit to said second data transceiver for transmitting data through said second data transceiver.

11. (Currently Amended) A data exchange system comprising:

a first data exchange device;

a second data exchange device; and

a ~~portable electronic device~~ cellular phone, ~~comprising~~ including:

an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;

a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with said invariable activation command being issued when said control device is selectively triggered by the user;

a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and said first data exchange device through a direct link;

a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and said second data exchange device through a communication network that is distinct from said direct link;

a cue receiver operatively linked to said electronic circuit for receiving an activation cue from said first data exchange device;

a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and

power means for providing power to said ~~portable electronic device~~ cellular phone;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for exchanging data between said electronic circuit and the first external data exchange device;

if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for exchanging data between said electronic circuit and the second external data exchange device.

12. (Currently Amended) A method for data conveyance with a ~~portable electronic device~~ cellular phone of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said ~~portable electronic device~~ cellular phone, said method comprising the steps of:

awaiting for an activation cue to be received at said cue receiver;

if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and

a user selectively triggering said control device to issue an invariable activation command whereby:

if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device over a first communication link; and

if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device that is distinct from said first communication link.

13. (Currently Amended) A method as defined in claim 12, further comprising the following step before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

forwarding third data to and displaying said third data on a display screen provided on said ~~portable electronic device~~ cellular phone, wherein said third data is representative of the content of said first data.

14. (Currently Amended) A method as defined in claim 13, wherein after the step of forwarding said third data to the display screen, the method comprises the following step:

awaiting for an authorization command to be inputted through a user confirmation input device provided on said ~~portable electronic device~~ cellular phone before forwarding said first data to said first data transceiver.

15. (Currently Amended) A method for data conveyance with a ~~portable electronic device~~ cellular phone of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said electronic circuit, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said ~~portable electronic device~~ cellular phone, said method comprising the steps of:

awaiting for an activation cue to be received at said cue receiver;

if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and

selectively triggering said control device to issue an invariable activation command whereby:

if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device over a first communication link; and

if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device over a second communication link that is distinct from said first communication link;

wherein said method further comprises the following steps before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

forwarding third data to and displaying said third data on a display screen provided on said ~~portable electronic device~~ cellular phone, wherein said third data is representative of the content of said first data; and

awaiting for an authorization command to be inputted through a user

confirmation input device provided on said ~~portable electronic device~~ cellular phone before forwarding said first data to said first data transceiver; and

wherein said method further comprises the following steps before the step of forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device:

forwarding fourth data to and displaying said fourth data on said display screen, wherein said fourth data is representative of the content of said second data; and

awaiting for an authorization command to be inputted through said user confirmation input device before forwarding said second data to said second data transceiver.

16. (previously presented) A method as defined in claim 15, wherein said control device includes said user confirmation input device.

17. (original) A method as defined in claim 12, wherein said first and second data are identical.

18. (Currently Amended) A method as defined in claim 12, wherein said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link representing said first communication link where the cellular phone is conveyed toward a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange.

19. (Currently Amended) A method as defined in claim 12, wherein said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network representing said second communication link, with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

20. (Previously Presented) A method as defined in claim 12, wherein the step of selectively triggering said control device to issue the invariable activation command comprises selectively triggering one of the manually activated button, the keypad for receiving a PIN code, the biometric parameter detector and a combination thereof.

REMARKS

As a preliminary matter, Applicant thanks Examiner Hess for the courtesy extended to Applicant's representative, Thomas J. Krul, Reg. No. 46,842, during the telephonic interviews of December 4, 2014 and December 5, 2014. During the interviews, the Examiner agreed that the proposed amendments to the independent claims will overcome the outstanding rejections. The proposed amendments expressly define the device as a cellular phone. The proposed amendments also expressly recite limitations of the first and second data transceivers. The proposed amendments to the claims have been presented in this response for the Examiner's formal reconsideration and action. The Examiner's careful consideration of the application is sincerely appreciated.

Applicant has fully considered the art cited by the Examiner in the outstanding Office Action, and the comments made relative thereto.

Claims 1-20 remain in the application.

Claims 1-15, 18, and 19 are amended.

Support for the amendments is found in the application as originally filed.

No new matter has been added.

REJECTIONS UNDER 35 U.S.C. §102 AND 35 U.S.C. §103

Claims 1-20 were rejected under pre-AIA 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) as obvious over conventional laptop computers providing both wired and wireless network connections. The rejections are respectfully traversed.

In the Office Action at page 2, the Examiner stated:

> "Convention[al] and ubiquitous laptop computers (at least hundreds of millions sold and running Microsoft Windows) usually provide both wired network connections and wireless network connections and this has been true since well before the instant invention. A laptop computer is a portable electronic device, and the two transceivers for the purposes of the claim are the wireless network card and the network card which handles wired connections."

Independent Claims 1, 10, 11, 12, and 15 have each been amended to replace the previously recited [portable electronic device] with "*cellular phone*" in at least one

location to distinguish the claimed invention from conventional laptop computers recited by the Examiner. Support for amended Claims 1, 10, 11, 12, and 15 is provided in line 28 of page 20, and line 12 of page 22 of the application as filed. Conventional laptop computers fail to disclose, teach, or fairly suggest the "*cellular phone*", as recited in amended independent Claims 1, 10, 11, 12, and 15.

During the above noted telephone interviews conducted with the Examiner, the Examiner agreed that the recitation of a "cellular phone" overcomes the presently outstanding rejections under pre-AIA 35 U.S.C. § 102(b) or, in the alternative, under pre-AIA 35 U.S.C. § 103(a). The Examiner is respectfully requested to withdraw the rejection under pre-AIA 35 U.S.C. § 102(b) or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) of Independent Claims 1, 10, 11, 12, and 15.

It is further noted that dependent Claims 2-9, 13, and 14 have each been amended herein to replace the previously recited [portable electronic device] with "*cellular phone*". The Examiner is respectfully requested to enter amended Claims 2-9, 13, and 14. Because each of Claims 2-9, 13-14, and 16-20 depend from one of the above amended independent Claims, the recited art of conventional laptop computers also fails to anticipate or render obvious any of Claims 2-9, 13-14, or 16-20 for at least the same reasons. The Examiner is respectfully requested to withdraw the rejection under pre-AIA 35 U.S.C. § 102(b) or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) of Claims 2-9, 13-14, and 16-20.

In the Office Action at pages 2-3, the Examiner further stated:

> "The Microsoft Windows operating system seeks to automatically establish a network connection to either a recognized wireless network or a physical wired network depending on what is available. This effort by Windows to establish and maintain the network connection(s) happens continuously in the background. For example, if the physical connection (either by wire or over the air) is briefly lost and then re-established, a user does not need to do anything, and indeed may not even notice if they do not make network requests at those moments"

Claim 1 has been further amended and recites in part:

"*a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device over a first communication link;*
a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device over a second communication link that is distinct from said first communication link;
if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device over said first communication link; and
if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device over said second communication link"

Support for amended Claim 1 is provided in lines 3-14 of page 24 of the application.

It is important to understand that the claimed cellular phone invention allows the user to trigger any of two data conveyance functions through a single user-triggered activation command, and that the cellular phone will utilize the first data transceiver for a first communication link to a first external data exchange device such as a limited range wireless communication direct link. The cellular phone will utilize the second data transceiver for a second communication link to a second external data exchange device different from the first external data exchange device and over a second wireless path using a communication network such as a remote portable electronic device, a remote server, or a remote terminal, <u>each different</u> from the first data exchange device and communication link.

The claimed invention allows <u>a user-controlled activation</u> of the two data conveyance operations (which as defined by the Examiner is not disclosed in the portable laptop computer) that is simplified by issuing a single activation command for both data conveyance operations by means of the user-triggered control device (e.g.

use of a button, a keypad, a tactile screen, and a biometric parameter detector) (which the cited art of conventional laptop computers also does not disclose), and which provides for operation of two different data transceivers which independently function after the selection by the operator depending on a state of a switching element to select between the two data transceivers.

Accordingly, and for each of the above reasons, the portable laptop computer broadly cited by the Examiner fails to anticipate or render obvious, respectively, amended independent Claims 1, 10-12, and 15 and the claims depending directly or indirectly therefrom.

It is further noted that Claim 8 has been amended to recite in part:

> "*said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a first external data exchange device through a direct link representing said first communication link where the cellular phone is conveyed toward a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange*"

Support for amended Claim 8 is found in lines 3-11 of page 20, lines 19-26 of page 22, and lines 3-9 of page 24 of the specification.

The Examiner is respectfully requested to enter amended Claim 8. The portable laptop computer cited by the Examiner does not disclose, teach, or suggest a direct link contact by a first transceiver for a first communication link where the cellular phone is *conveyed towards a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange.*

Claim 9 has been amended to depend from Claim 8 and further to recite in part:

> "*said second data transceiver comprises a communication network transceiver for wireless communication through a communication network that represents said second communication link, with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof*"

Support for amended Claim 9 is found in lines 10-14, page 24 of the specification.

The Examiner is respectfully requested to enter amended Claim 9. The portable laptop computer cited by the Examiner does not disclose, teach, or suggest the second communication link is via one of a remote portable electronic device, a remote server, a remote terminal, each different than the direct link utilized by the first communication link of the first data transceiver.

Claim 10 has been amended and recites in part:

> "*a first data transceiver operatively linked to said electronic circuit, said first data transceiver being operable for data exchange over a first communication link;*
> *a second data transceiver operably linked to said electronic circuit, said second data transceiver being operable for data exchange over a second communication link that is distinct from said first communication link*"

Support for amended Claim 10 is found in original Claim 1 and in lines 3-14 of page 24 of the application.

The Examiner is respectfully requested to enter amended Claim 10. Claim 10 defines over the art of conventional laptop computers cited by the Examiner for at least the same reasons noted above with respect to Claim 1.

Claim 11 has been amended and recites in part:

> "*a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and said second data exchange device through a communication network that is distinct from said direct link*"

Support for amended Claim 11 is found in original Claim 1 and in lines 3-14 of page 24 of the application.

The Examiner is respectfully requested to enter amended Claim 11. Amended Claim 11 distinguishes the second data exchange device communication network is distinct from the direct link of the first data exchange device, and thereby further defines

over the art of conventional laptop computers cited by the Examiner for at least the same reasons noted above with respect to Claim 1.

Claim 12 has been amended and recites in part:

> "*if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device over a first communication link; and*
> *if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device that is distinct from said first communication link*"

Support for amended Claim 12 is found in original Claim 1 and in lines 3-14 of page 24 of the application.

The Examiner is respectfully requested to enter amended Claim 12. Amended Claim 12 distinguishes the second external data exchange device communication operation is distinct from the link of the first external data exchange device, and thereby further defines over the art of conventional laptop computers cited by the Examiner for at least the same reasons noted above with respect to Claim 1.

Claim 15 has been amended and recites in part:

> "*if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device over a first communication link; and*
> *if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device over a second communication link that is distinct from said first communication link*"

Support for amended Claim 15 is found in original Claim 1 and in lines 3-14 of page 24 of the application.

The Examiner is respectfully requested to enter amended Claim 15. Amended Claim 15 distinguishes the second external data exchange device communication

operation is distinct from the link of the first external data exchange device, and thereby further defines over the art of conventional laptop computers cited by the Examiner for at least the same reasons noted above with respect to Claim 1.

Claim 18 has been amended to recite in part:

> "*said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link representing said first communication link where the cellular phone is conveyed toward a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange*"

Support for amended Claim 18 is found in lines 3-11 of page 20, lines 19-26 of page 22, and lines 3-9 of page 24 of the specification.

The Examiner is respectfully requested to enter amended Claim 18. The portable laptop computer cited by the Examiner does not disclose, teach, or suggest a direct link contact by a first transceiver for a first communication link where the cellular phone is *conveyed towards a close proximity of the first external data exchange device and within a range to receive the activation cue to initiate the wireless data exchange*.

Claim 19 has been amended to recite in part:

> "*said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network representing said second communication link, with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof*"

Support for amended Claim 19 is found in lines 10-14, page 24 of the specification.

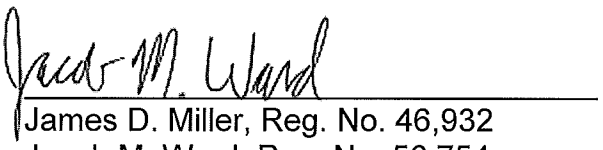
The Examiner is respectfully requested to enter amended Claim 19. The portable laptop computer cited by the Examiner does not disclose, teach, or suggest the second communication link is via one of a remote portable electronic device, a remote server, a

remote terminal, each different than the direct link utilized by the first communication link of the first data transceiver.

CONCLUSION

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, a Notice of Allowance is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (419) 874-1100.

Respectfully submitted,



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PTO/AIA/22 (03-13)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

Docket Number (Optional): 40490-1

Application Number: 12/603,085

Filed: October 21, 2009

For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

Art Unit: 2876

Examiner: D. Hess

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	Micro Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$200	$100	$50	$
☐ Two months (37 CFR 1.17(a)(2))	$600	$300	$150	$
☑ Three months (37 CFR 1.17(a)(3))	$1,400	$700	$350	$ 700.00
☐ Four months (37 CFR 1.17(a)(4))	$2,200	$1,100	$550	$
☐ Five months (37 CFR 1.17(a)(5))	$3,000	$1,500	$750	$

☑ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☑ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3156.

☑ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant.

☑ attorney or agent of record. Registration number 56,754.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Jacob M. Ward/ — Signature

December 8, 2014 — Date

Jacob M. Ward — Typed or printed name

419-874-1100 — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12603085
Filing Date:	21-Oct-2009
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Filer:	Jacob Michael Ward./Gretchen Esser
Attorney Docket Number:	1-40490

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 3 months with $0 paid	2253	1	700	700
Miscellaneous:				
			Total in USD ($)	**700**

Electronic Acknowledgement Receipt

EFS ID:	20893530
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	Jacob Michael Ward./Gretchen Esser
Filer Authorized By:	Jacob Michael Ward.
Attorney Docket Number:	1-40490
Receipt Date:	08-DEC-2014
Filing Date:	21-OCT-2009
Time Stamp:	15:02:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$700
RAM confirmation Number	1409
Deposit Account	503156
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	40490_Amendment_FILED_12-8-14.pdf	1849219 1d6432aec11e86f6b1682bdb1f1ab8753f6ce6c7	no	20
Warnings:					
Information:					
2	Extension of Time	40490_Ext_of_Time_FILED_12-8-14.pdf	163369 93ba1cc7fcc710f78e58440648aa57bbda8da3a0	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31137 67802082204561bdb4e3ea21445b5ae09519f6f2	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2043725		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/603,085	Filing Date 10/21/2009	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **12/08/2014**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/DESHONNE T. MARTINO/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

43935 7590 06/06/2014

FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
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EXAMINER	
HESS, DANIEL A	

ART UNIT	PAPER NUMBER
2876	

NOTIFICATION DATE	DELIVERY MODE
06/06/2014	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

clemens@fraser-ip.com
lopez@fraser-ip.com
howard@fraser-ip.com

Office Action Summary	Application No. 12/603,085	Applicant(s) GAILLARD, JO¿L	
	Examiner DANIEL HESS	Art Unit 2876	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/26/2012*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

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DETAILED ACTION

This action is responsive to applicant's filing of an amendment and RCE on 10/26/2012, which has been entered into the electronic file of record.

The present application is being examined under the pre-AIA first to invent provisions.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1-20 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by or, in the alternative, under pre-AIA 35 U.S.C. 103(a) as obvious over conventional laptop computers providing both wired and wireless network connections.

Re claims 1 and 10: Convention and ubiquitous laptop computers (at least hundreds of millions sold and running Microsoft Windows) usually provide both wired network connections and wireless network connections and this has been true since well before the instant invention. A laptop computer is a portable electronic device, and the two transceivers for the purposes of the claim are the wireless network card and the network card which handles wired connections.

The Microsoft Windows operating system seeks to automatically establish a network connection to either a recognized wireless network or a physical wired network depending on what is available. This effort by Windows to establish and maintain the network connection(s) happens continuously in the background. For example if the physical connection (either by wire

or over the air) is briefly lost and then re-established, a user does not need to do anything, and indeed may not even notice if they do not make network requests at those moments.

Thus, the 'activation cue' in the claims will be the detection or non-detection of wired and wireless connectivity. If the wired connectivity is detected only, that will be a 'cue' to use the wired network card; if a wireless network is detected only, that will be a 'cue' to use the wireless network card. If both kinds of network are detected, that will be a 'cue' to choose a default, which will be one or the other consistently.

As for an activation command that is user triggered (i.e. keypad, button, etc.), there are a number of user actions which could qualify. Turning the laptop computer on, logging on, checking email, and opening a Web browser are all actions that can trigger network action and requests and replies across the network. This can be triggered by a mouseclick or keypad entry for example. It is invariable in the sense that the applicant has defined it: the command will be the same no matter which communication channel (wired or wireless) is employed. The user trigger (network request by some means) will be executed on *some* network channel identically and which network channel (wired, wireless) depends on what channel Windows finds and establishes in the background, according to cues of what is available.

The examiner recognizes that a user must pre-define and pre-configure wired and wireless communication networks initially. But once defined, Windows will remember these connections and seek to establish them on startup and logon. A user may be notified if no network connection is available, but the operating system does not trouble the user regarding which network connection (wired, wireless) is found.

Re claims 2-20: These claims are taught or rendered obvious either directly according to the discussion re claim 1 above, or are among the conventional features of a laptop computer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL HESS whose telephone number is (571)272-2392. The examiner can normally be reached on 9:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DANIEL HESS/
Primary Examiner, Art Unit 2876

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	Art Unit
	DANIEL HESS	2876

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
235	492	1/5/2011	DH
	487		
Updated		4/23/2012	DH

SEARCH NOTES		
Search Notes	Date	Examiner
East keyword search history attached	1/5/2012	DH
Updated	4/23/2012	DH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	Art Unit
	DANIEL HESS	2876

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2012	04/23/2012	05/30/2014						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	O	=	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	✓	✓						
	20	✓	✓	✓						

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/603,085	Filing Date 10/21/2009	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **06/18/2013**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 7	Minus	** 20	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
/JAMES TUNSTALL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/30 (07-09)
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Request for Continued Examination (RCE) Transmittal

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number	12603085
Filing Date	October 21, 2009
First Named Inventor	Joel Gaillard
Art Unit	2876
Examiner Name	Daniel A. Hess
Attorney Docket Number	1-40490

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

   a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

      ii. ☐ Other _____

   b. ☑ Enclosed

      i. ☑ Amendment/Reply

      ii. ☐ Affidavit(s)/ Declaration(s)

      iii. ☐ Information Disclosure Statement (IDS)

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

   a. ☑ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. 50-3156.

      i. ☑ RCE fee required under 37 CFR 1.17(e)

      ii. ☑ Extension of time fee (37 CFR 1.136 and 1.17)

      iii. ☐ Other _____

   b. ☐ Check in the amount of $ _____ enclosed

   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature	Jacob M. Ward	Date	October 26, 2012
Name (Print/Type)	Jacob M. Ward	Registration No.	56,754

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Signature	Todd E. Jones		
Name (Print/Type)	Todd E. Jones	Date	October 26, 2012

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/22 (10-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)

Docket Number (Optional): 1-40490

Application Number: 12603085

Filed: October 21, 2009

For: PORTABLE ELECTRONIC DEVICE CAPABLE OF ALTERNATIVE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

Art Unit: 2876

Examiner: Daniel A. Hess

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above-identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	
☐ One month (37 CFR 1.17(a)(1))	$150	$75	$
☐ Two months (37 CFR 1.17(a)(2))	$570	$285	$
☒ Three months (37 CFR 1.17(a)(3))	$1,290	$645	$ 645.00
☐ Four months (37 CFR 1.17(a)(4))	$2,010	$1,005	$
☐ Five months (37 CFR 1.17(a)(5))	$2,730	$1,365	$

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-3156.

☒ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. 37 CFR 3.73(b) statement is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration number 56,754.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

Jacob M. Ward — Signature

October 26, 2012 — Date

Jacob M. Ward — Typed or printed name

419-874-1100 — Telephone Number

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ * Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Electronic Patent Application Fee Transmittal

Application Number:	12603085
Filing Date:	21-Oct-2009
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Filer:	Jacob Michael Ward./Todd Jones
Attorney Docket Number:	1-40490

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with $0 paid	2253	1	645	645

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Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	465	465
		Total in USD ($)		**1110**

Electronic Acknowledgement Receipt

EFS ID:	14086248
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	Jacob Michael Ward./Todd Jones
Filer Authorized By:	Jacob Michael Ward.
Attorney Docket Number:	1-40490
Receipt Date:	26-OCT-2012
Filing Date:	21-OCT-2009
Time Stamp:	14:48:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1110
RAM confirmation Number	1222
Deposit Account	503156
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment Submitted/Entered with Filing of CPA/RCE	40490_RCE_and_Amendment_Filed_102612.pdf	2154163 3e89b019a9de4d76d21f6d60471697591d72ffc5	no	16
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	40490_RCE_Form_Filed_102612.pdf	253539 b33daa29b42d12076bd08d73bacbc46bb381c8a3	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Extension of Time	40490_Petition_For_Extension_of_Time_Filed_102612.pdf	198793 d098aaacbfc738654520ff39957e6a94e5eacd72	no	1
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32600 33ce5f79763dc97890aadfa72e53699581717f8b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2639095		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

CERTIFICATE OF ELECTRONIC TRANSMITTAL UNDER 37 CFR 1.8

I hereby certify that this correspondence is being electronically transmitted to the Commissioner For Patents on the date set forth below.

Todd E. Johnson
(signature)

Date of signature and transmittal - October 26th, 2012

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: GAILLARD	)	Group Art Unit: 2876
Serial No.: 12/603,085	)	Examiner: D. Hess
Filed: October 21, 2009	)	Attorney Docket: 40490-1
For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	)	Confirmation No.: 5895

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CONTINUED EXAMINATION AND AMENDMENT

Honorable Sir:

In response to the final Office Action mailed April 30, 2012, for which the shortened statutory period for reply expired August 30, 2012, Applicant hereby submits a Request for Continued Examination accompanied by an Amendment. Please reconsider the above-identified application in view of the amendments and remarks set forth on the following pages.

Applicant hereby petitions under the provisions of 37 C.F.R. § 1.136(a) for a three month extension of time in which to respond to the final Office Action. The Commissioner is hereby authorized to charge a small-entity fee as set forth in 37 C.F.R. § 1.17(a), and any other fees deemed necessary, to Deposit Account No. 50-3156.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 13 of this paper.

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AMENDMENTS TO THE CLAIMS

1. (currently amended) A portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with [[an]] said invariable activation command being issued when said control device is selectively triggered by [[a]] the user;
- a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device;
- a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device; and
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device.

2. (original) A portable electronic device as defined in claim 1, further comprising a display screen operatively linked to said electronic circuit.

3. (original) A portable electronic device as defined in claim 1, wherein said first data transceiver includes said cue receiver.

4. (original) A portable electronic device as defined in claim 1, wherein said control device is one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

5. (original) A portable electronic device as defined in claim 1, wherein said electronic circuit includes said switching element.

6. (original) A portable electronic device as defined in claim 5, wherein said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

7. (original) A portable electronic device as defined in claim 1, wherein said switching element comprises a logical circuit.

8. (original) A portable electronic device as defined in claim 1, wherein said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a nearby first external data exchange device through a direct link.

9. (original) A portable electronic device as defined in claim 1, wherein said second data transceiver comprises a communication network transceiver for wireless communication through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

10. (currently amended) A portable electronic device comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with [[an]] said invariable activation command being issued when said control device is triggered by [[a]] the user;
- first and second data conveyance operations programmed in said electronic circuit;
- first and second data transceivers operatively linked to said electronic circuit;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device; and
- power means, for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if an activation cue was received by said cue receiver, said electronic circuit will accomplish said first data conveyance operation to convey data from said electronic circuit to said first data transceiver for transmitting data through said first data transceiver; and
- if no activation cue was received by said cue receiver, said electronic circuit will accomplish said second data conveyance operation to convey data from said electronic circuit to said second data transceiver for transmitting data through said second data transceiver.

11. (currently amended) A data exchange system comprising:

- a first data exchange device;
- a second data exchange device; and
- a portable electronic device, comprising:
  - an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
  - a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, with [[an]] said invariable activation command being issued when said control device is selectively triggered by [[a]] the user;
  - a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and said first data exchange device through a direct link;
  - a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and said second data exchange device through a communication network;
  - a cue receiver operatively linked to said electronic circuit for receiving an activation cue from said first data exchange device;
  - a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and
  - power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for exchanging data between said electronic circuit and the first external data exchange device;
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for exchanging data between said electronic circuit and the second external data exchange device.

12. (currently amended) A method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and
- a user selectively triggering said control device to issue an invariable activation command whereby:
    - if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
    - if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device.

13. (previously presented) A method as defined in claim 12, further comprising the following step before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data.

14. (original) A method as defined in claim 13, wherein after the step of forwarding said third data to the display screen, the method comprises the following step:

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver.

15. (previously presented) A method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said electronic circuit, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and
- selectively triggering said control device to issue an invariable activation command whereby:
    - if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
    - if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device;

wherein said method further comprises the following steps before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data; and

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver;

and wherein said method further comprises the following steps before the step of forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device:

- forwarding fourth data to and displaying said fourth data on said display screen, wherein said fourth data is representative of the content of said second data; and

- awaiting for an authorization command to be inputted through said user confirmation input device before forwarding said second data to said second data transceiver.

16. (previously presented) A method as defined in claim 15, wherein said control device includes said user confirmation input device.

17. (original) A method as defined in claim 12, wherein said first and second data are identical.

18. (original) A method as defined in claim 12, wherein said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link.

19. (original) A method as defined in claim 12, wherein said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

20. (currently amended) A method as defined in claim 12, wherein the step of selectively triggering said control device to issue [[an]] the invariable activation command comprises selectively triggering one of [[a]] the manually activated button, [[a]] the keypad for receiving a PIN code, [[a]] the biometric parameter detector and a combination thereof.

REMARKS

As a preliminary matter, Applicant thanks the Examiner for the courtesy extended to Applicant's representative, Jacob M. Ward, Reg. No. 56,754, at the telephonic interview on July 17, 2012. During the interview, the Examiner agreed that the proposed amendment to the independent claim will overcome the outstanding rejections. The proposed amendment expressly recites an order of operation, with the invariable activation command being issued only after operation of the user-triggered control device, and further defines acceptable structure for the user-triggered control device. The proposed amendments to the claims have been presented in this response for the Examiner's formal reconsideration and action. The Examiner's careful consideration of the application is sincerely appreciated.

Applicant has fully considered the art cited by the Examiner in the outstanding Office Action, and the comments made relative thereto.

Claims 1-20 remain in the application.

Claims 1, 10-12, and 20 are amended.

Support for the amendments is found in the application as originally filed, for example, at page 12, line 24 to page 13, line 19.

No new matter has been added.

In the final Office Action at page 10, the Examiner stated that Claim 15 is allowed. It is respectfully observed that Claim 16 depends from independent Claim 15, should likewise be allowed. Applicant thanks the Examiner for the careful consideration of the allowed claims.

Claims 1, 3 and 5-8 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Reiner et al. (U.S. Patent No. 5,999,713, hereinafter "Reiner"). Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiner in view of Pitroda (U.S. Patent No. 5,590,038). Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiner in view of Teicher et al. (U.S. Patent No. 6,257,486, hereinafter "Teicher"). Claims 9-12 and 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiner in view of Becker (U.S. Patent No. 6,726,099). Claims 13, 14 and 16 were rejected under 35

U.S.C. § 103(a) as being unpatentable over Reiner/Becker in view of Pitroda. Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Reiner/Becker in view of Teicher. The rejections are respectfully traversed.

Reiner fails to disclose, teach, or fairly suggest "a user-triggered control device operatively linked to said electronic circuit, said user-triggered control device configured to be operated by a user via one of a button, a keypad, a tactile screen, and a biometric parameter detector, and after being operated issue an invariable activation command", as recited in amended independent Claims 1 and 10-12.

In the final Office Action at pages 9-10, the Examiner responded to arguments presented in Applicant's earlier response, stating:

> The applicant has argued that there is no user-triggered control device in Reiner et al. which meets the limitations of the claims. The examiner disagrees and notes that there is at least one embodiment in Reiner et al. where there is such a user-triggered control device.
>
> Reiner et al. teaches (column 2, lines 30-40):
>
> **"In accordance with an added feature of the invention, in addition to the supply voltage and a clock signal, a data signal is also transmitted to the microprocessor, so that the microprocessor switches over the switch from the position of repose only whenever these three conditions are all met at once. For instance, the data signal may be a command that tells the microprocessor to switch over the switch. However, it may also be a personal identification number or so-called PIN, that is compared in the microprocessor with a number stored in memory there. A switchover of the switch is possible only when a positive comparison has taken place."**
>
> What is seen is that Reiner et al. has switching between two modes of operation, a contact-based mode and a contactless mode. An activation cue from external to the chip card in Reiner allows a first mode (specifically if a voltage is received on a contact-based channel, switching to contact model can occur) and without the cue a second mode will occur (specifically without the contact-voltage signal, the switch will revert to repose and allow the chip card to operate in contactless mode).
>
> The user-triggered control device seen above is the optional PIN system so that the switching to the contact-based mode can only occur with the cue (external contact-[voltage] signal), clock and successful PIN. A PIN is ordinarily [user]-triggered and user entered, because the specification of Reiner et al. discusses that the PIN is "compared in the microprocessor with a number stored in memory there." If a comparison is made with a number stored in memory, the PIN would be coming from outside the memory. While Reiner et al, does not strictly show user entry of the PIN, the very nature and purpose of PIN numbers is for persons to identify themselves, they are Personal Identification

> Numbers. One reading Reiner et al. would typically understand that the PIN should be entered somehow.
>
> (Emphasis by underline in original, and our emphasis added in **bold**).

In sum, the aforementioned citation to Reiner, shown in bold font, discloses that the portable device may use a PIN to control the switch, for the purpose of having the switch change from a repose position to an activated position. In the repose position, the portable device may receive contactless data. In the activated position, the device may receive contact-based data. The switch changes only when a proper PIN has been entered by the user.

The use of the PIN system disclosed by Reiner is substantially different from that of the "user-triggered control device" recited in amended independent Claims 1 and 10-12. Specifically, Reiner discloses that the PIN will be used in only one case, i.e., to control a change of position of the switch from a repose position to an activated position. In other words, it is a security option for only one of the data transmission operations.

In contrast, the invariable activation command generated by the user-triggered control device of the claimed invention will be used in all cases, i.e. in all transmissions, notwithstanding which of the two data conveyance operations (e.g. contact and contactless transmissions) are being made. In other words, the invariable activation command generated by the user-triggered control device of the claimed invention is not used to control which data conveyance function is ultimately accomplished. Instead, it is the subsequent presence or absence of the external activation cue that controls which data conveyance function is accomplished.

It is important to understand that the claimed portable electronic device allows the user to trigger any of two data conveyance functions through a single user-triggered activation command. The portable electronic device then decides which one of the data conveyance functions should be used. This decision depends on whether an external activation cue has subsequently been received. Advantageously, the claimed invention allows one to (a) simplify sending information per one of two data conveyance operations while (b) ensuring security of the operation by allowing a user-controlled

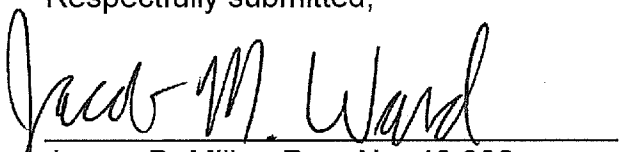
activation of the two data conveyance operations (which Reiner does not disclose) that will (c) be simplified by issuing a single activation command for both data conveyance operations by means of the user-triggered control device (e.g. use of a button, a keypad, a tactile screen, and a biometric parameter detector) (which Reiner also does not disclose).

Moreover, the term "invariable" highlights the fact that the recited "invariable activation command" that is generated by the "user-triggered control device" will be the same notwithstanding whether the first or second data conveyance operations are ultimately accomplished. The same is not true for the PIN system of Reiner, in which the microprocessor "switches over the switch" when all conditions including the positively-compared PIN are met, so that a specific one of the conveyance operations can be accomplished.

The secondary art of Pitroda, Teicher, and Becker has been fully considered, but does not cure the deficiencies identified hereinabove with respect to Reiner. Accordingly, and for each of the above reasons, Reiner alone or in combination with the secondary art fails to anticipate or render obvious, respectively, amended independent Claims 1 and 10-12, and claims depending directly or indirectly therefrom.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, a Notice of Allowance is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (419) 874-1100.

Respectfully submitted,



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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/603,085	10/21/2009	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
			TOTAL			TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

AMENDMENT	10/26/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $62=	0
	Independent (37 CFR 1.16(h))	* 5	Minus	***5	= 0	X $ =		OR	X $250=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/MELINDA L. OLIVER/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

43935 7590 04/30/2012
FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
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EXAMINER	
HESS, DANIEL A	

ART UNIT	PAPER NUMBER
2876	

NOTIFICATION DATE	DELIVERY MODE
04/30/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sloan@fraser-ip.com
clemens@fraser-ip.com
lopez@fraser-ip.com

Office Action Summary	Application No.	Applicant(s)	
	12/603,085	GAILLARD, JO L	
	Examiner	Art Unit	
	DANIEL HESS	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2012*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☒ Claim(s) *15* is/are allowed.

7)☒ Claim(s) *1-14 and 16-20* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *21 October 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/24/2012*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to applicant's communication of 3/27/2012, which has been entered into the electronic file of record.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 and 5-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reiner (US 5,999,713).

Re claim 1:

See the entire specification of Reiner. Reiner discloses two different conveyance functions, namely contact-based and contactless.

See column 3 of Reiner:

"Referring now in detail to the single FIGURE of the drawing, there is seen a basic circuit in which a memory 1 is connected to a coil 2. A high-frequency signal that is received is supplied from the coil 2 over a first line 6 to a processing circuit 7, which extracts the clock and the data from it and supplies them through a switch device 9 to the memory 1. The switch device

9 assumes a position of repose, in which a switch 91 of the switch device 9 connects the memory 1 constantly through the processing circuit 7 to the coil 2.

A supply voltage which is derived from the coil 2 through the use of a rectifier and smoothing circuit 3 and a control circuit 4, can be applied through a line 5 to both the processing circuit 7 and the memory 1.

A control portion 92 of the switch device 9 may be triggered by a logic circuit 8, which is advantageously constructed as a microprocessor, so that the switch 91 connects the memory 1 through the microprocessor 8 to contacts 20. However, this switchover can only occur when a supply voltage VDD is applied to a supply voltage contact 21 of the contacts 20 and supplies the microprocessor 8."

Reiner et al. further teaches (column 2, lines 30-40):

"In accordance with an added feature of the invention, in addition to the supply voltage and a clock signal, a data signal is also transmitted to the microprocessor, so that the microprocessor switches over the switch from the position of repose only whenever these three conditions are all met at once. For instance, the data signal may be a command that tells the microprocessor to switch over the switch. However, it may also be a personal identification number or so-called PIN, that is compared in the microprocessor with a number stored in memory there. A switchover of the switch is possible only when a positive comparison has taken place."

What is seen is that Reiner et al. has switching between two modes of operation, a contact-based mode and a contactless mode. An activation cue from external to the chip card in Reiner allows a first mode (specifically if a voltage is received on a contact-based channel, switching to contact model can occur) and without the cue a second mode will occur (specifically without the contact-voltage signal, the switch will revert to repose and allow the chip card to operate in contactless mode).

The user-triggered control device seen above is the optional PIN system so that the switching to the contact-based mode can only occur with the cue (external contact-volage signal), clock and successful PIN. A PIN is ordinarily useruser-triggered and user entered, because the specification of Reiner et al. discusses that the PIN is "compared in the microprocessor with a number stored in memory there." If a comparison is made with a number stored in memory, the PIN would be coming from outside the memory. While Reiner et al. does not strictly show user entry of the PIN, the very nature and purpose of PIN numbers is for persons to identify themselves, they are Personal Identification Numbers. One reading Reiner et al. would typically understand that the PIN should be entered somehow.

The reason this rejection is made under **either** 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reiner is that there is a conceivable argument (although not one that the examiner necessarily agrees with) that Reiner et al. merely renders obvious, and does not strictly require, user entry of the PIN. In that case, the examiner notes that it would have been obvious to one of ordinary in the art at the time the invention was

made for the PIN described in Reiner et al. to be entered manually, such as through the common arrangement of a keypad on the card (Teicher et al. US 6,257,486 is one of many examples of this) for the motivation of allowing a user to provide proof of their identity for greater security. Alternatively, a PIN is often entered at a device that is in communication with a card, such as at point-of-sale systems in stores. In this case, the PIN is still user-entered and the motivation for the PIN is similar.

Re claim 3: In Reiner, the cue receiver dictates whether the first or second mode is used, and it is part of the first data transceiver itself. Specifically, a contact-based voltage is the cue and it occurs on part of the contact-based transceiver.

Re claim 5-7: See discussion re claim 1 above and full specification of Reiner et al. In Reiner et al. there is a controlling voltage which interacts with programmed instructions. There is thus both physical switching and associated programmed logic.

Re claim 8: See discussion re claim 1 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Pitroda (US 5,590,038).

Reiner is silent on whether or not there is a display on the card, which as he makes clear in the background, may be a transaction card.

Pitroda teaches a transaction card with a variable display. In certain embodiments, transaction card information is displayed on the display. See for instance figure 14. The electronic display is connected to the internal electronic circuit.

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known display connected to internal circuitry as taught by Pitroda in the teachings of Reiner for the sake of allowing multiple transaction cards to be carried with a single device using switching and variable display as Pitroda teaches.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Teicher et al. (US 6,257,486).

Reiner has PIN-based activation but does not go into great detail on the mechanics of this.

Teicher et al. (see entire document) uses a pin pad for entry of a PIN number on a card.

In view of Teicher et al.'s teachings, t would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known pin pad directly on the card for entering the PIN that Reiner requires in an least one embodiment (see discussion re claim 1 above), so that the PIN can be entered without the need for supplemental hardware.

Claims 9-12 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Becker (US 6,726,099).

Reiner et al. has two modes in a card, one of them contact-based and one of them contactless.

Becker also, has two modes, but both of them are contactless. See figure 1, where it is seen that one mode is for shorter distance communication and the other is for longer distance communication.

In view of Becker's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known short and long distance wireless communication as two modes communication for the reason that the source being transacted-with may have varying distances.

Claims 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker as applied to claims 9-12 above, in view of Pitroda (US 5,590,038).

Pitroda teaches (figure 14) that transaction card identifying information can be displayed on the display of a card and that there can be prompting to provide a confirmation number in order to use the card (figure 11 of Pitroda).

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known display connected to internal circuitry as taught by Pitroda in the teachings of Reiner/Becker for the sake of allowing multiple transaction cards to be carried with a single device using switching and variable display as Pitroda teaches.

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known prompting to provide a confirmation number as taught by Pitroda for the sake of avoiding fraudulent use of the card.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker as applied to claims 9-12 above, in view of Teicher et al. (US 6,257,486).

Reiner has PIN-based activation but does not go into great detail on the mechanics of this.

Teicher et al. (see entire document) uses a pin pad for entry of a PIN number on a card.

In view of Teicher et al.'s teachings, t would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known pin pad directly on the card for entering the PIN that Reiner requires in an least one embodiment (see discussion re claim 1 above), so that the PIN can be entered without the need for supplemental hardware.

Response to Arguments

The applicant has argued that there is no user-triggered control device in Reiner et al. which meets the limitations of the claims. The examiner disagrees and notes that there is at least one embodiment in Reiner et al. where there is such a user-triggered control device.

Reiner et al. teaches (column 2, lines 30-40):
"In accordance with an added feature of the invention, in addition to the supply voltage and a clock signal, a data signal is also transmitted to the microprocessor, so that the microprocessor switches over the switch from the position of repose only whenever these three conditions are all met at once. For instance, the data signal may be a command that tells the microprocessor to switch over the switch. However, it may also be a personal identification number or so-called PIN, that is compared in the microprocessor with a number stored in memory there. A switchover of the switch is possible only when a positive comparison has taken place."

What is seen is that Reiner et al. has switching between two modes of operation, a contact-based mode and a contactless mode. An activation cue from external to the chip card in Reiner allows a first mode (specifically if a voltage is received on a contact-based channel, switching to contact model can occur) and without the cue a second mode will occur (specifically without the contact-voltage signal, the switch will revert to repose and allow the chip card to operate in contactless mode).

The user-triggered control device seen above is the optional PIN system so that the switching to the contact-based mode can only occur with the cue (external contact-volage signal), clock and successful PIN. A PIN is ordinarily useruser-triggered and user entered, because the specification of Reiner et al. discusses that the PIN is "compared in the microprocessor with a number stored in memory there." If a comparison is made with a number stored in memory, the PIN would be coming from outside the memory. While Reiner et al. does not strictly show user entry of the PIN, the very nature and purpose of PIN numbers is for persons to identify themselves, they are Personal Identification Numbers. One reading Reiner et al. would typically understand that the PIN should be entered somehow.

Allowable Subject Matter

Claim 15 is allowed.

There is no teaching or suggestion in the prior art of the type of dual verifications that are recited in the context of all other limitations present in the claims. The claim has now been restated in independent form to render it allowable.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL HESS whose telephone number is (571)272-2392. The examiner can normally be reached on 9:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel A Hess/

Primary Examiner, Art Unit 2876

Notice of References Cited	Application/Control No. 12/603,085	Applicant(s)/Patent Under Reexamination GAILLARD, JO L	
	Examiner DANIEL HESS	Art Unit 2876	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,257,486	07-2001	Teicher et al.	235/380
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12603085
Filing Date	2009-10-21
First Named Inventor	Joel Gaillard
Art Unit	3711
Examiner Name	Daniel A. Hess
Attorney Docket Number	1-40490

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
/D.H./	1	0945828	EP	A2	1999-19-29	Toshiba KK		☒

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

Receipt date: 01/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12603085 12603085 - GAU: 2876
Filing Date	2009-10-21
First Named Inventor	Joel Gaillard
Art Unit	3711
Examiner Name	Daniel A. Hess
Attorney Docket Number	1-40490

	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Daniel Hess/	Date Considered	04/23/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	**Art Unit**
	DANIEL HESS	2876

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2012	04/23/2012							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	O	=							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	63	pitroda.in.	US-PGPUB; USPAT	OR	ON	2012/04/23 15:44
L2	2	((smart adj card) near5 (pin adj pad)).ab.	US-PGPUB; USPAT	OR	ON	2012/04/23 15:45
L3	75	((smart adj card) near5 (pin adj pad))	US-PGPUB; USPAT	OR	ON	2012/04/23 15:45
L4	35147	card.ti.	US-PGPUB; USPAT	OR	ON	2012/04/23 15:45
L5	10	3 and 4	US-PGPUB; USPAT	OR	ON	2012/04/23 15:45
L6	14	((smart adj card) near5 (keypad)).ab.	US-PGPUB; USPAT	OR	ON	2012/04/23 15:46

4/ 23/ 2012 4:30:53 PM
C:\ Users\ dhess1\ Documents\ EAST\ Workspaces\ 000july06.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	Art Unit
	DANIEL HESS	2876

SEARCHED

Class	Subclass	Date	Examiner
235	492	1/5/2011	DH
	487		
Updated		4/23/2012	DH

SEARCH NOTES

Search Notes	Date	Examiner
East keyword search history attached	1/5/2012	DH
Updated	4/23/2012	DH

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

CERTIFICATE OF ELECTRONIC TRANSMITTAL UNDER 37 CFR 1.8

I hereby certify that this correspondence is being electronically transmitted to the Commissioner For Patents on the date set forth below.

Martha A Sloan
(signature)

Date of signature and transmittal - March 27, 2012

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: GAILLARD	)	Group Art Unit: 2876
Serial No.: 12/603,085	)	Examiner: D. Hess
Filed: October 21, 2009	)	Attorney Docket: 40490-1
For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	)	Confirmation No.: 5895

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Honorable Sir:

In response to the Office Action, dated January 11, 2012, for which the shortened statutory period for reply is set to expire April 11, 2012, please amend the above-identified application as set forth on the following pages.

IPR2025-00173
Apple EX1007 Page 113

AMENDMENTS TO THE CLAIMS

1. (currently amended) A portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a user-triggered control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered by a user;
- a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device;
- a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device; and

- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device.

2. (original) A portable electronic device as defined in claim 1, further comprising a display screen operatively linked to said electronic circuit.

3. (original) A portable electronic device as defined in claim 1, wherein said first data transceiver includes said cue receiver.

4. (original) A portable electronic device as defined in claim 1, wherein said control device is one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

5. (original) A portable electronic device as defined in claim 1, wherein said electronic circuit includes said switching element.

6. (original) A portable electronic device as defined in claim 5, wherein said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

7. (original) A portable electronic device as defined in claim 1, wherein said switching element comprises a logical circuit.

8. (original) A portable electronic device as defined in claim 1, wherein said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a nearby first external data exchange device through a direct link.

9. (original) A portable electronic device as defined in claim 1, wherein said second data transceiver comprises a communication network transceiver for wireless communication through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

10. (currently amended) A portable electronic device comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a user-triggered control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered by a user;
- first and second data conveyance operations programmed in said electronic circuit;
- first and second data transceivers operatively linked to said electronic circuit;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device; and
- power means, for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if an activation cue was received by said cue receiver, said electronic circuit will accomplish said first data conveyance operation to convey data from said electronic circuit to said first data transceiver for transmitting data through said first data transceiver; and
- if no activation cue was received by said cue receiver, said electronic circuit will accomplish said second data conveyance operation to convey data from said electronic circuit to said second data transceiver for transmitting data through said second data transceiver.

11. (currently amended) A data exchange system comprising:

- a first data exchange device;
- a second data exchange device; and
- a portable electronic device, comprising:
  - an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
  - a user-triggered control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered by a user;
  - a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and said first data exchange device through a direct link;
  - a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and said second data exchange device through a communication network;
  - a cue receiver operatively linked to said electronic circuit for receiving an activation cue from said first data exchange device;
  - a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and
  - power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered by the user to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for exchanging data between said electronic circuit and the first external data exchange device;

- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for exchanging data between said electronic circuit and the second external data exchange device.

12. (currently amended) A method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a user-triggered control device operatively linked to said electronic circuit, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and
- a user selectively triggering said control device to issue an invariable activation command whereby:
    - if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
    - if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device.

13. (currently amended) A method as defined in claim 12, further comprising the following step before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data.

14. (original) A method as defined in claim 13, wherein after the step of forwarding said third data to the display screen, the method comprises the following step:

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver.

15. (currently amended) A method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said electronic circuit, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and
- selectively triggering said control device to issue an invariable activation command whereby:

- if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
- if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device;

wherein said method further comprises the following steps before the step of forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data; and

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver;

and wherein said method ~~as defined in claim 14,~~ further ~~comprising~~ comprises the following steps before the step of forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device:

- forwarding fourth data to and displaying said fourth data on said display screen, wherein said fourth data is representative of the content of said second data; and

- awaiting for an authorization command to be inputted through said user confirmation input device before forwarding said second data to said second data transceiver.

16. (currently amended) A method as defined in claim ~~14~~ 15, wherein said control device includes said user confirmation input device.

17. (original) A method as defined in claim 12, wherein said first and second data are identical.

18. (original) A method as defined in claim 12, wherein said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link.

19. (original) A method as defined in claim 12, wherein said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

20. (original) A method as defined in claim 12, wherein the step of selectively triggering said control device to issue an invariable activation command comprises selectively triggering one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

REMARKS

The status of the claims is:

Claims 1, 10-13, 15 and 16 are amended.

Claims 1-20, as amended, remain in the application.

No new matter is added by the amendments to the claims.

The Rejections:

In the Office Action dated January 11, 2012, the Examiner rejected Claims 1 and 5-8 under 35 U.S.C. 102(b) as being anticipated by Reiner (US 5,999,713).

The Examiner rejected Claim 3 under 35 U.S.C. 102(b) as being anticipated by Reiner.

The Examiner rejected Claim 2 under 35 U.S.C, 103(a) as being unpatentable over Reiner, in view of Pitroda (US 5,590,038).

The Examiner rejected Claim 4 under 35 U.S.C. 103(a) as being unpatentable over Reiner, in view of Selker (US 2003/0132301).

The Examiner rejected Claims 9-12 and 17-19 under 35 U.S.C. 103(a) as being unpatentable over Reiner, in view of Becker (US 6,726,099).

The Examiner rejected Claims 13, 14 and 16 under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker, in view of Pitroda.

The Examiner rejected Claim 20 under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker, in view of Selker.

The Examiner objected to Claim 15 as being dependent upon a rejected base claim, but stated that it would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The Response:

Regarding the objection to Claim 15, Applicant amended Claim 15 to incorporate the subject matter of prior Claims 12, 13 and 14. Since Claim 15 was deemed allowable by the Examiner if rewritten in independent form to include all of the

limitations of the base Claim 12 and intervening Claims 13 and 14, amended Claim 15 is understood to now be in allowable form.

Applicant amended Claim 16 to depend from Claim 15. Thus, Claim 16 should also be deemed allowable.

Applicant amended independent Claims 1, 10, 11 and 12 to clarify that the control device is user-triggered and that a user triggering of it will issue the invariable activation command. No new subject matter is incorporated as this amendment is supported by the specification as filed, inter alia on page 18, lines 10-12.

The Examiner rejected Claim 1 under 35 USC 102(b) based upon Reiner. Applicant respectfully disagrees with the Examiner and requests the Examiner to reconsider his rejection in view of the amendments to Claim 1 and the following arguments. It is Applicant's opinion that amended Claim 1 is not anticipated by Reiner and should be deemed patentable.

The Examiner stated that Reiner discloses "switching between the two modes, as well as a default mode. A cue is received externally, namely a triggering through the contacts, that causes switching into a contact-mode from the default of the contactless mode." However, this statement by the Examiner leaves out one important element which is recited in Claim 1: a control device on the portable electronic device, and the corresponding step of selectively triggering this control device to issue an invariable activation command. Nowhere in Reiner is such a device disclosed, illustrated or even suggested.

The Examiner briefly hints that Reiner discloses a control device. This control device is in fact identified in the Reiner patent with reference number **4** in the drawings, and discussed in the description in column 3, lines 14-16 (control circuit), again on lines 51-61 and finally in column 4 on lines 10-19 (control circuit). Although the name of the structure is similar to that of the control device recited in Applicant's Claim 1, the device is entirely different. The amendments to Claims 1, 10, 11 and 12 emphasize this difference. The Reiner "control device **4** is intended to prevent the supply voltage for the memory **1** and the processing circuit **7** from becoming too high, as can happen if the card comes too close to a transmitter coil" (Reiner column 3, lines 52-55).

It can consequently be seen that the Reiner control device acts as part of the electrical circuit to control the supply voltage therein to prevent it from reaching values that could prevent certain portions of the electrical circuit from operating properly, namely the memory and the processing circuit. It is not a user-triggered control device. Nor is it a control device that will emit an activation command. Nor is it mentioned anywhere in Reiner that a user-triggered invariable activation command would be issued by any of its components. In fact, it appears likes Reiner discloses no user-interface whatsoever on its portable device. Finally, the distinct data conveyance operations will not be triggered by an invariable activation command in Reiner, but rather by respective activation commands corresponding to the contact or contactless modes of the Reiner smart card. All these are major differences are recited in Applicant's Claim 1 and are absent from Reiner.

It is recalled that the gist of the present invention is to provide a device that may issue one of two data conveyance operations responsive to an invariable command issued by a user-triggered control device, depending on whether or not an external cue has been received. This provides the advantages of: (1) the user specifically controlling when the data conveyance operations will occur, since the user will trigger the control device himself; while (2) simultaneously avoiding the need for the user to decide which conveyance operation will occur, since the electronic circuit will decide this for the user. Although Reiner allows for one of two data conveyance operations to occur on his card, he does not disclose or suggest that the user control, through a user-triggered control device capable of issuing an invariable activation command, the data conveyance operations.

In summary, since this user control over the data conveyance operations is absent form Reiner, and consequently some of the claimed elements recited in Applicant's Claim 1 are not present in Reiner, Reiner cannot be said to anticipate independent Claim 1. Claim 1 should consequently be considered allowable.

Applicant's Claims 2-9 depend directly or indirectly from Claim 1 and should also be deemed allowable if Claim 1 is deemed allowable.

Independent Claims 10, 11 and 12 are rejected under 35 USC 103(a) based upon the combination of the Reiner and Becker. Applicant respectfully disagrees with this rejection and requests the Examiner to reconsider his rejection in view of the amendments to independent Claims 10-12 and the following arguments.

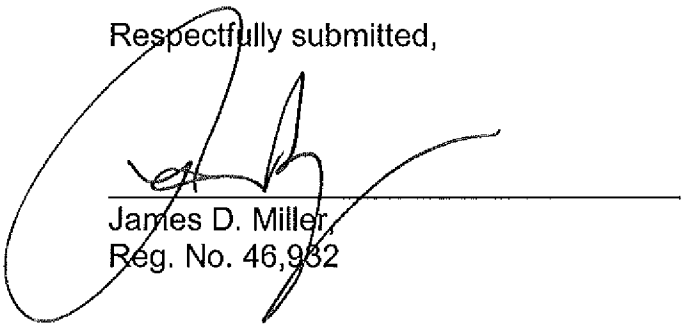
Applicant understands that the gist of the Examiner's obviousness rejection relies on Reiner, which is discussed above. The comments regarding Reiner and Applicant's Claim 1 are also applicable to Claims 10, 11 and 12 that also recite a user-triggered control device capable of issuing an invariable activation command that will result in one of two data conveyance operations depending on the receipt or absence of an external cue. This combination of features is absent from Reiner. The Examiner cites Becker for the dual short-distance/long-distance communication modes. Like Reiner, Becker does not disclose an invariable activation command issued by a user-triggered control device. With this combination of features absent from both prior art patents cited by the Examiner, amended independent Claims 10, 11 and 12 are not obvious in view of the combination of Reiner and Becker and should be deemed allowable.

Pitroda and Selker also do not disclose a user-triggered control device capable of issuing an invariable activation command that will result in one of two data conveyance operations depending on the receipt or absence of an external cue.

Applicant's Claims 13-14 and 17-20 depend directly or indirectly from Claim 12 and should also be deemed allowable.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

Respectfully submitted,



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Electronic Patent Application Fee Transmittal

Application Number:	12603085
Filing Date:	21-Oct-2009
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Filer:	James D. Miller/Martha Sloan
Attorney Docket Number:	1-40490

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Independent claims in excess of 3	2201	1	125	125
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**125**

Electronic Acknowledgement Receipt

EFS ID:	12404189
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	James D. Miller/Martha Sloan
Filer Authorized By:	James D. Miller
Attorney Docket Number:	1-40490
Receipt Date:	27-MAR-2012
Filing Date:	21-OCT-2009
Time Stamp:	16:00:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$125
RAM confirmation Number	3160
Deposit Account	503156
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		40490_Amendment_filed_3-27-12.pdf	698262 7492f71612b33c68fbf47ccab0b4eb3894d4ff5b	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	9
	Applicant Arguments/Remarks Made in an Amendment	10	14

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30374 2f31311946b255d5a3d92f3a1053e948e3cad698	no	2

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Total Files Size (in bytes):	728636

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/603,085	10/21/2009	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 03/27/2012	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $60=	0
Independent (37 CFR 1.16(h))	* 5	Minus	***4	= 1	X $ =		OR	X $250=	250
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	250

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/EVELYN NIMMONS/

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12603085
Filing Date	2009-10-21
First Named Inventor	Joel Gaillard
Art Unit	3711
Examiner Name	Daniel A. Hess
Attorney Docket Number	1-40490

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	0945828	EP	A2	1999-19-29	Toshiba KK		☒

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12603085
	Filing Date	2009-10-21
	First Named Inventor	Joel Gaillard
	Art Unit	3711
	Examiner Name	Daniel A. Hess
	Attorney Docket Number	1-40490

	1		☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12603085
	Filing Date	2009-10-21
	First Named Inventor	Joel Gaillard
	Art Unit	3711
	Examiner Name	Daniel A. Hess
	Attorney Docket Number	1-40490

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☒ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature		Date (YYYY-MM-DD)	2012-01-24
Name/Print	James D. Miller	Registration Number	46932

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Espacenet

Bibliographic data: EP0945828 (A2) — 1999-09-29

IC card with contacting and noncontacting interfaces

Inventor(s):	KOBAYASHI TSUMOTU [JP]; MUKUGE MASATSUGU [JP]; NAKANO HIROO [JP]; FUKUDA AKI [JP] ±
Applicant(s):	TOSHIBA KK [JP] ±
Classification: - international:	***G06K19/07; G06K19/077; G06K7/00;*** (IPC1-7): G06K19/07
Classification: - European:	G06K19/07; G06K19/077; G06K19/07T; G06K7/00E
Application number:	EP19990103878 19990301
Priority number (s):	JP19980075692 19980324; JP19980075691 19980324; JP19980075574 19980324
Also published as:	EP0945828 (A3) EP0945828 (B1) US6375082 (B1) TW569143 (B) EP2065833 (A1) more

Abstract of EP0945828 (A2)

A portable electronic device (310) has contacting and noncontacting interfaces (401, 400) and an inhibiting section (405). The contacting interface (401) including a plurality of contact terminals (C1 to C8) for exchanging driving power and data. The noncontacting interface (400) for generating driving power and demodulating received data from a signal received via an antenna (301a). The inhibiting section (405) for inhibiting an operation of the other one of the contacting and noncontacting interfaces (401, 400) while the portable electronic device (310) is driven via one of the contacting and noncontacting interfaces (401, 400).

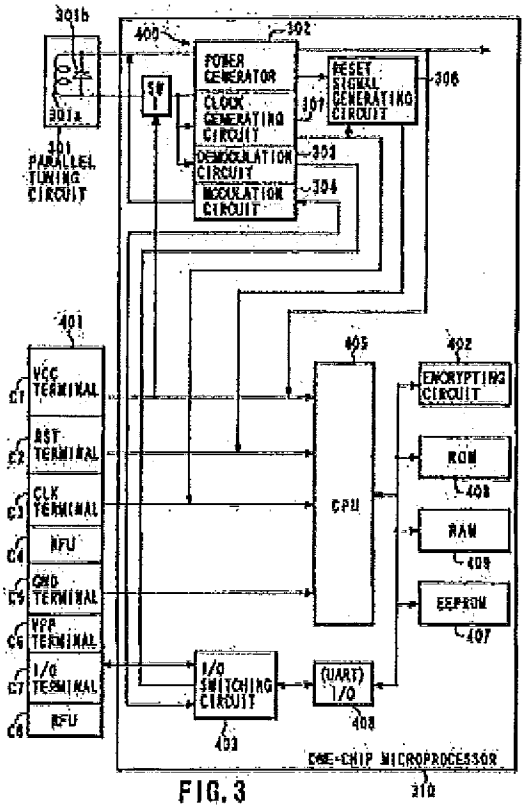


FIG. 3

Last updated: 5.12.2011 Worldwide Database 5.7.31; 93p

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 945 828 A2

(12) EUROPEAN PATENT APPLICATION

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(51) Int. Cl.[6]: **G06K 19/07**

(21) Application number: **99103878.7**

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AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
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(30) Priority: **24.03.1998 JP 7569298**
24.03.1998 JP 7569198
24.03.1998 JP 7557498

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(54) Portable electronic device with contacting and noncontacting interfaces

(57) A portable electronic device (310) has contacting and noncontacting interfaces (401, 400) and an inhibiting section (405). The contacting interface (401) including a plurality of contact terminals (C1 to C8) for exchanging driving power and data. The noncontacting interface (400) for generating driving power and demodulating received data from a signal received via an antenna (301a). The inhibiting section (405) for inhibiting an operation of the other one of the contacting and noncontacting interfaces (401, 400) while the portable electronic device (310) is driven via one of the contacting and noncontacting interfaces (401, 400).

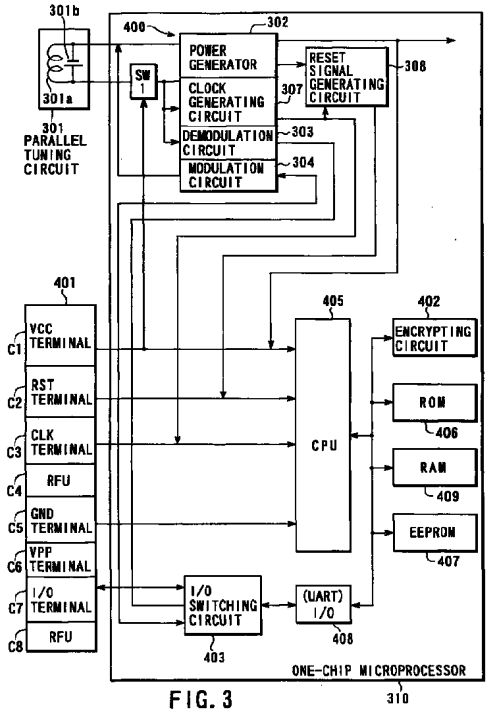


FIG. 3

EP 0 945 828 A2

IPR2025-00173
Apple EX1007 Page 136

Description

[0001] The present invention relates to a portable electronic device such as a composite IC card having contacting and noncontacting interfaces and, more particularly, to a portable electronic device including a composite IC card having contacting and noncontacting interfaces and capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface, and an IC module for the composite IC card.

[0002] One conventional composite IC card having contacting and noncontacting interfaces as a kind of portable electronic device is disclosed in Jpn. Pat. Appln. KOKOKU Publication No. 4-16831.

[0003] This composite IC card disclosed in Jpn. Pat. Appln. KOKOKU Publication No. 4-16831 includes a memory, a CPU, and an IC for generating a signal in response to an external input. The card also includes an electrical contact mechanism for responding to an external apparatus by contacting the apparatus and an antenna mechanism for responding to an external apparatus by noncontacting communication.

[0004] Data can be written in the memory of this composite IC card and the contents of the memory can be changed from an external apparatus connected to the electrical contact mechanism. To respond to an external apparatus by noncontacting communication, specific information in the memory is modulated and output from the antenna mechanism.

[0005] Jpn. Pat. Appln. KOKAI Publication No. 9-326021 has disclosed a composite IC card incorporating a battery which is charged by a voltage supplied from a terminal apparatus.

[0006] Unfortunately, the composite IC cards as described above have the following problems.

[0007] That is, either of the above composite IC cards has no countermeasure against operation errors occurring when the card is driven via the noncontacting antenna while the card is connected to and driven by an external apparatus via the electrical contact mechanism, or when the card is driven by an external apparatus via the electrical contact mechanism while the card is driven by an external apparatus via the noncontacting antenna. Consequently, the reliability as a composite IC card is unsatisfactory.

[0008] Additionally, either composite IC card uses a common IC such as a memory to respond to an external apparatus by contacting the apparatus and respond to an external apparatus by noncontacting communication. However, when the card responds to an external apparatus by noncontacting communication, only data is simply output to the apparatus, so the card is used only as a collating medium in this case. This limits the applications of the card.

[0009] Furthermore, when this composite IC card responds to an external apparatus by noncontacting communication, the internal CPU does not operate. Accordingly, no satisfactory security function can be achieved in this noncontacting response.

[0010] The present invention has been made in consideration of the above situation, and has as its object to provide a portable electronic device including a composite IC card having contacting and noncontacting interfaces and capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface, and an IC module for the composite IC card.

[0011] It is another object of the present invention to provide a portable electronic device including a composite IC card having contacting and noncontacting interfaces, capable of being used for various purposes by executing equivalent functions when driven in both contacting and noncontacting manners and achieving a satisfactory security function, and also capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface.

[0012] To achieve the above objects, according to an aspect of the present invention, there is provided a portable electronic device comprising:

a contacting interface including a plurality of contact terminals for exchanging driving power and data;
a noncontacting interface for generating driving power and demodulating received data from a signal received via an antenna; and
inhibiting means for inhibiting an operation of the other one of the contacting and noncontacting interfaces while the portable electronic device is driven via one of the contacting and noncontacting interfaces.

[0013] To achieve the above objects, according to another aspect of the present invention, there is provided a portable electronic device which has contacting and noncontacting interfaces and a control circuit connected to the contacting and noncontacting interfaces, and is driven by the contacting or noncontacting interface, comprising:

detecting means for detecting whether the portable electronic device is driven via the contacting or noncontacting interface; and
connecting means for selectively connecting one of the contacting and noncontacting interfaces to the control circuit and inhibiting a signal input and output via the other one of the contacting or noncontacting interface on the basis of the detection result from the detecting means.

[0014] To achieve the above objects, according to still another aspect of the present invention, there is provided a portable electronic device which has contacting and noncontacting interfaces and a control circuit connected to the contacting and noncontacting interfaces,

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and is driven by the contacting or noncontacting interface, comprising:

detecting means for detecting whether the portable electronic device is driven via the contacting or noncontacting interface; and

switching means for switching commands executable by the portable electronic device on the basis of the detection result from the detecting means.

[0015] This summary of the invention does not necessarily describe all necessary features so that the invention may also be a sub-combination of these described features.

[0016] The invention can be more fully understood from the following detailed description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a block diagram showing the arrangement of a radio card system using a radio combination card as a data storage medium applied as a composite IC card as a kind of portable electronic device according to the present invention;

FIG. 2 is a view showing a composite IC card IC module including eight electrical contacts C1 to C8 exposed to the outer surface as an electrical contact mechanism by which the radio combination card responds to an external apparatus by contacting the apparatus, and a one-chip microprocessor 310 embedded in the card;

FIG. 3 is a block diagram showing the arrangement of a one-chip microprocessor 310 embedded in a radio combination card 300 according to the first embodiment of the present invention;

FIG. 4 is a block diagram showing the arrangement of a one-chip microprocessor 310 embedded in a radio combination card 300 according to the second embodiment of the present invention;

FIG. 5 is a block diagram showing the arrangement of a one-chip microprocessor 310 embedded in a radio combination card 300 according to the third embodiment of the present invention;

FIGS. 6A and 6B are flow charts for explaining the operation of a radio card system using a radio combination card as a data storage medium applied as a composite IC card as a kind of portable electronic device according to the present invention;

FIG. 7 is a block diagram showing the arrangement of a one-chip microprocessor 310 embedded in a radio combination card 300 according to a modification of the third embodiment of the present invention;

FIG. 8 is a block diagram showing the arrangement of a one-chip microprocessor 310 embedded in a radio combination card 300 according to the fourth embodiment of the present invention;

FIG. 9 is a view showing a command list set for a contacting response in a radio combination card 300 according to the fifth embodiment of the present invention;

FIG. 10 is a view showing a command list set for a noncontacting response in the radio combination card 300 according to the fifth embodiment of the present invention;

FIG. 11 is a view showing a command list set for both contacting and noncontacting responses in the radio communication card 300 according to the fifth embodiment of the present invention; and

FIG. 12 is a flow chart for explaining the operation of a CPU.

[0017] Reference will now be made in detail to the presently preferred embodiments of the invention as illustrated in the accompanying drawings, in which like reference characters designate like or corresponding parts throughout the several drawings.

[0018] Embodiments of the present invention will be described in detail below with reference to the accompanying drawing.

(First Embodiment)

[0019] The first embodiment of the present invention will be described below with reference to FIGS. 1 to 3.

[0020] FIG. 1 shows the arrangement of a radio card system using a radio combination card as a data storage medium applied as a composite IC card as a kind of portable electronic device according to the present invention.

[0021] As shown in FIG. 1, this radio card system is roughly divided into a radio card reader • writer 200 as a data processor and a radio combination card 300 as a portable data storage medium having both a contacting communication function and a radio communication function.

[0022] The radio card reader • writer 200 transmits read and write (store) commands to the radio combination card 300, processes readout data from the card 300, and transmits write data to the card 300. As shown in FIG. 1, the radio card reader • writer 200 includes a controller 207, a modulation circuit 204, a driver 203 for transmission, a transmitting antenna 201, a receiving antenna 202, an amplifier 205 for reception, a demodulation circuit 206, an operation unit 209 such as a keyboard, a display unit 208, a power supply 210 mainly composed of a battery for supplying an operating voltage to each unit, and an interface 211 connected to an external apparatus (not shown).

[0023] The radio combination card 300 decodes commands and writes (stores) data from and transmits data to the radio card reader • writer 200. As shown in FIG. 1, a parallel tuning circuit (receiving means) 301 including a loop antenna coil (not shown) as a transmitting/receiving antenna and a tuning capacitor (not shown), a power generator (power generating means) 302, a demodulation circuit (demodulating means) 303,

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a control logic circuit (CPU) 305, a modulation circuit (modulating means) 304, a nonvolatile memory 306 as a storage means such as an EEPROM, and a clock generating circuit (clock generating means) 307.

[0024] Assume that this radio combination card 300 is used to execute a contacting communication function (to be described later) and, as shown in FIG. 2, includes eight electrical contacts C1 to C8 exposed to the outer surface as an electrical contact mechanism for responding to an external apparatus by contacting the apparatus.

[0025] The radio card reader • writer 200 and the radio combination card 300 will be described in more detail below.

[0026] First, a data read performed for the radio combination card 300 by the radio card reader • writer 200 will be described.

[0027] The controller 207 of the radio card reader • writer 200 generates and supplies a read command to the modulation circuit 204.

[0028] The modulation circuit 204 modulates the command by an arbitrary modulation scheme and inputs the modulated command to the driver 203 for transmission.

[0029] The driver 203 amplifies the modulated signal to an intensity enough to radiate the modulated signal and supplies the amplified signal to the transmitting antenna 201.

[0030] The signal supplied to the transmitting antenna 201 is radiated into air and received by the parallel tuning circuit 301 of the radio combination card 300.

[0031] The demodulation circuit 303 demodulates the received signal and supplies the demodulated signal to the control logic circuit 305 where command analysis is performed.

[0032] The control logic circuit 305 determines that the command indicates a data read, reads out predetermined data from the nonvolatile memory 306 storing card data, and inputs the readout data to the modulation circuit 304.

[0033] The modulation circuit 304 modulates the card data and supplies the modulated data to the parallel tuning circuit 301.

[0034] The signal supplied to the parallel tuning circuit 301 is radiated into air and received by the receiving antenna 202 of the radio card reader • writer 200.

[0035] The received signal is applied to the amplifier 205 for reception.

[0036] The amplifier 205 amplifies the received signal and inputs the amplified signal to the demodulation circuit 206 where the signal is demodulated.

[0037] The demodulated signal is supplied to the controller 207 where predetermined data processing is performed.

[0038] Note that the display unit 208 can display data and the operation unit 209 can input data where necessary.

[0039] Next, a data write performed for the radio combination card 300 by the radio card reader • writer 200 will be described.

[0040] The controller 207 of the radio card reader • writer 200 generates and supplies a write command and write data to the modulation circuit 204.

[0041] The modulation circuit 204 modulates the command and data by an arbitrary modulation scheme and inputs the modulated command and data to the driver 203 for transmission.

[0042] The driver 203 amplifies the modulated signal to an intensity enough to radiate the modulated signal and supplies the amplified signal to the transmitting antenna 201.

[0043] The signal supplied to the transmitting antenna 201 is radiated into air and received by the parallel tuning circuit 301 of the radio combination card 300.

[0044] The demodulation circuit 303 demodulates the received signal and supplies the demodulated signal to the control logic circuit 305 where command analysis is performed.

[0045] The control logic circuit 305 determines that the command indicates a data write, and writes the write data transmitted after the write command at a predetermined address of the nonvolatile memory 306.

[0046] The power generator 302 of the radio combination card 300 branches and rectifies a signal received by the parallel tuning circuit 301 to generate power to be consumed in the radio combination card 300.

[0047] Also, on the basis of a signal received by the parallel tuning circuit 301, the clock generating circuit 307 of the radio combination card 300 generates clocks necessary to operate each circuit.

[0048] The clock generating circuit 307 outputs the generated clocks to the demodulation circuit 303, the modulation circuit 304, and the control logic circuit 305.

[0049] As described above, the transmitting antenna 201 and the receiving antenna 202 of the radio card reader • writer 200 must be arranged close and opposite to the parallel tuning circuit 301 of the radio combination card 300.

[0050] The transmitting antenna 201 radiates a high-intensity signal to the radio combination card 300.

[0051] The receiving system has a high sensitivity to receive weak signals from the radio combination card 300.

[0052] The internal arrangement of the radio combination card 300 will be described in detail below with reference to FIGS. 2 and 3.

[0053] As shown in FIGS. 2 and 3, a contacting interface 401 for contacting a terminal apparatus is formed on the card surface of the radio combination card 300. This contacting interface 401 includes contact terminals C1 (VCC), C2 (RST), C3 (CLK), C4 (a space terminal for the future: RFU), C5 (GND), C6 (VPP: unused), C7 (I/O), and C8 (a space terminal for the future: RFU).

[0054] A one-chip microprocessor 310 as shown in FIGS. 2 and 3 is embedded in the radio combination card 300.

[0055] As shown in FIG. 3, this one-chip microproces-

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sor 310 includes a series of data processors such as a control CPU (Central Processing Unit) 405 corresponding to the control logic circuit 305, a ROM 406 storing control programs, a data memory 407 which is an EEPROM for recording a password (e.g., four digits) and data, an interface circuit 408 such as a UART, a RAM 409 for temporary storage, an encrypting circuit 402, and an I/O switching circuit 403.

[0056] When contacting data exchange is performed by using this radio combination card 300, a terminal apparatus into which the card 300 is inserted supplies a voltage from the contact terminal C1 to the VCC (normally 5V) terminal and applies a signal from the contact terminals C3, C2, and C5 to the CLK (clock), RST (reset), and GND (ground potential) terminals, respectively. Simultaneously, the contact terminal C7 is connected to the I/O port to exchange data.

[0057] The individual units are formed as an IC chip on a single board.

[0058] Also, these units are connected to the terminals through wires, and the terminals and the board mounting the IC chip are integrated and handled as an IC module. Accordingly, as shown in FIG. 2, these terminals are so embedded in the card as to be exposed to the card surface.

[0059] The card 300 also includes the parallel tuning circuit 301 for noncontacting data exchange.

[0060] That is, the parallel tuning circuit 301 receives a two-phase phase-modulated wave signal (first two-phase phase-modulated wave signal) from the transmitting antenna 201 of the radio card reader • writer 200 and transmits a two-phase phase-modulated wave signal (second two-phase phase-modulated wave signal) with a carrier frequency f0/2. This parallel tuning circuit 301 is composed of a loop antenna coil 301a and a tuning capacitor 301b.

[0061] The loop antenna coil 301a of this parallel tuning circuit 301 receives signals and at the same time transmits the carrier frequency f0/2. Since power for generating a power supply voltage must be efficiently extracted from a received radio wave, the loop antenna coil 301a is tuned to a carrier frequency f0 of the received two-phase phase-modulated wave signal.

[0062] This carrier frequency for transmission can also be a fraction of an integer multiple, instead of 1/2, of the carrier frequency of the received two-phase phase-modulated wave signal.

[0063] The loop antenna coil 301a simply transmits and receives signals, so a single coil can be used for both transmission and reception. However, separate coils can also be used for transmission and reception.

[0064] To perform noncontacting data exchange, the one-chip microprocessor 310 incorporates a noncontacting interface circuit 400 for exchanging data via the parallel tuning circuit 301.

[0065] This noncontacting interface circuit 400 includes the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and a reset signal generating circuit 308. The power generator 302 generates power to be supplied to the whole internal circuit of the radio combination card 300 by using the two-phase phase-modulated wave signal from the parallel tuning circuit 301. The clock generating circuit 307 generates operating clocks from an analog signal received via the parallel tuning circuit 301. The demodulation circuit 303 converts the analog signal received via the parallel tuning circuit 301 into a digital signal to be read out by the CPU 405 of the one-chip microprocessor 310. The modulation circuit 304 modulates an oscillation circuit output by using a signal from the CPU 405 and transmits the modulated output from the loop antenna (transmitting) coil 301a of the parallel tuning circuit 301. The reset signal generating circuit 308 generates a reset signal on the basis of the clocks generated by the clock generating circuit 307.

[0066] The radio combination card 300 incorporates a switch (SW) 309 for switching on and off the conduction between the noncontacting interface 400 and the antenna coil 301a (the parallel tuning circuit 301).

[0067] This switch (SW) 309 is normally ON (connected) and turned off when a Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 to the VCC (normally 5V) terminal.

[0068] The operation of the radio combination card according to the first embodiment of the present invention will be described below.

[0069] For example, the card 300 is inserted into a terminal apparatus, and the Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 of the card 300 to the VCC (normally 5V) terminal. Consequently, the switch (SW) 309 is turned off.

[0070] Subsequently, contacting data exchange is performed via the CLK terminal, RST terminal, and I/O port.

[0071] That is, while contacting data exchange is performed, the switch (SW) 309 is kept OFF, so the noncontacting interface 400 is held inoperative.

[0072] Accordingly, even if the receiving antenna (parallel tuning circuit 301) receives a certain radio wave while contacting data exchange or contacting driving is performed, none of the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308 operates. This allows the contacting driving or contacting data exchange to be kept performed.

(Second Embodiment)

[0073] The second embodiment of the present invention will be described below with reference to FIG. 4.

[0074] In this second embodiment, the arrangements shown in FIGS. 1 and 2 are similarly applied, and the

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internal arrangement of a radio combination card 300 partially differs from that shown in FIG. 3. So, a description of identical portions will be omitted.

[0075] The radio combination card 300 incorporates a switch (SW1) 309a for switching on and off the conduction between a noncontacting interface 400 and an antenna coil (parallel tuning circuit 301).

[0076] This switch (SW1) 309a is normally ON (connected) and turned off when a Vcc voltage is applied from a contact terminal C1 of a contacting interface 401 to a VCC (normally 5V) terminal.

[0077] In the second embodiment, in addition to this switch (SW1) 309a, switches (SW2, SW3, SW4, SW5, and SW6) 312, 313, 314, 315, and 316 are connected to a power generator 302, a clock generating circuit (clock generating means) 307, a demodulation circuit (demodulating means) 303, a modulation circuit (modulating means) 304, and a reset signal generating circuit 308, respectively, of the noncontacting interface 400.

[0078] These switches (SW2 to SW6) 312 to 316 are normally ON (connected) and turned off when the Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 to the VCC (normally 5V) terminal.

[0079] The switches (SW2 to SW6) 312 to 316 inhibit signal inputs and outputs via the noncontacting interface 400.

[0080] That is, while contacting data exchange or contacting driving is performed, the switches (SW2 to SW6) 312 to 316 completely inhibit signal inputs and outputs via the noncontacting interface 400 and prevent operation errors.

[0081] Additionally, in this second embodiment, switches (SW7, SW8, SW9, and SW10) 317, 318, 319, and 320 are connected to the contact terminal C1 (VCC) and other contact terminals C2 (RST), C3 (CLK), and C7 (I/O), respectively, of the contacting interface 401.

[0082] These switches (SW7 to SW10) 317 to 320 are normally ON (connected) and turned off when the Vcc voltage is applied from the power generator 302 of the noncontacting interface 400.

[0083] The switches (SW7 to SW10) 317 to 320 inhibit signal inputs and outputs via the contacting interface 401.

[0084] That is, while noncontacting data exchange or noncontacting driving is performed, the switches (SW7 to SW10) 317 to 320 completely inhibit signal inputs and outputs via the contacting interface 401 and prevent operation errors.

[0085] As described above, each of the first and second embodiments of the present invention includes an operation inhibiting means for inhibiting the operation of the noncontacting interface 400 while the card is driven via the contacting interface 401. Therefore, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0086] Also, each of the first and second embodiments of the present invention includes a means for cutting off the conduction between the noncontacting interface 400 and the antenna coil 301a (parallel tuning circuit 301) while the card is driven via the contacting interface 401. Accordingly, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0087] In the first and second embodiments of the present invention as described above, the noncontacting interface 400 of the microprocessor includes the power generator 302 which operates in accordance with an output from the parallel tuning circuit 301, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308. A switch for switching on and off the conduction between the noncontacting interface 400 and the parallel tuning circuit 301 is also included. This switch is turned off when the Vcc voltage is applied via the contacting interface 401. Therefore, even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401, the noncontacting interface 400 does not operate at all, so no operation error takes place.

[0088] The above first and second embodiments of the present invention can be summarized as follows.

1. A radio combination card having contacting and noncontacting interfaces and driven via the contacting or noncontacting interface is characterized by comprising an operation inhibiting means for inhibiting the operation of the noncontacting interface while the card is driven via the contacting interface.
2. A radio combination card described in item 1 above is characterized in that the operation inhibiting means for inhibiting the operation of the noncontacting interface while the card is driven via the contacting interface is a means for cutting off the conduction between the noncontacting interface and an antenna coil.
3. A radio combination card having contacting and noncontacting interfaces and driven via the contacting or noncontacting interface is characterized by comprising a switch for switching on and off the conduction between the noncontacting interface and an antenna coil, wherein the switch is turned off when the Vcc voltage is applied via the contacting interface.
4. A radio combination card having contacting and noncontacting interfaces and driven via the contacting or noncontacting interface is characterized by comprising an inhibiting means for inhibiting signal inputs and outputs via the contacting interface while the card is driven via the noncontacting interface.
5. A radio combination card described in item 4

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above is characterized in that the inhibiting means comprises a means for inhibiting signal inputs and outputs between the contacting interface and a control circuit.

6. A radio combination card described in item 4 above is characterized in that the inhibiting means comprises a means for turning off the switches SW7, SW8, SW9, and SW10 connected between the contacting terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively, of the contacting interface and the control circuit.

7. A radio combination card having contacting and noncontacting interfaces and driven via the contacting or noncontacting interface is characterized by comprising an inhibiting means for inhibiting signal inputs and outputs via the noncontacting interface while the card is driven via the contacting interface.

8. A radio combination card described in item 7 above is characterized in that the inhibiting means comprises a means for inhibiting signal inputs and outputs between the noncontacting interface and a control circuit.

9. A radio combination card described in item 7 above is characterized in that the inhibiting means comprises the switches SW2, SW3, SW4, SW5, and SW6 between the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308, respectively, of the noncontacting interface and the control circuit, and turns off the switches SW2 to SW6 when the Vcc voltage is applied from the contact terminal C1 of the contacting interface to the VCC (normally 5V) terminal.

10. A radio combination card having contacting and noncontacting interfaces and driven via the contacting or noncontacting interface is characterized by comprising a first inhibiting means for inhibiting signal inputs and outputs via the noncontacting interface while the card is driven via the contacting interface, and a second inhibiting means for inhibiting signal inputs and outputs via the contacting interface while the card is driven via the noncontacting interface.

[0089] The first and second embodiments of the present invention as described in detail above can provide a portable electronic device including a composite IC card having contacting and noncontacting interfaces and capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface, and an IC module for the composite IC card.

(Third Embodiment)

[0090] The third embodiment of the present invention will be described below with reference to FIG. 5.

[0091] The configuration of a radio card system shown in FIG. 1 and the arrangement of a radio combination card shown in FIG. 2 are similarly applied to this third embodiment.

[0092] The arrangement of a radio combination card 300 will be described in detail below with reference to FIGS. 2 and 5.

[0093] As shown in FIGS. 2 and 5, a contacting interface 401 for contacting a terminal apparatus is formed on the card surface of the radio combination card 300. This contacting interface 401 includes contact terminals C1 (VCC), C2 (RST), C3 (CLK), C4 (a space terminal for the future: RFU), C5 (GND), C6 (VPP: unused), C7 (I/O), and C8 (a space terminal for the future: RFU).

[0094] A one-chip microprocessor 310 as shown in FIGS. 2 and 5 is embedded in the radio combination card 300.

[0095] As shown in FIG. 5, this one-chip microprocessor 310 includes a series of data processors such as a control CPU (Central Processing Unit) 405 corresponding to a control logic circuit 305, a ROM 406 storing control programs, a data memory 407 which is an EEPROM for recording a password (e.g., four digits) and data, an interface circuit 408 such as a UART, a RAM 409 for temporary storage, and an encrypting circuit 402.

[0096] When contacting data exchange is performed by using this radio combination card 300, a terminal apparatus into which the card 300 is inserted supplies a voltage from the contact terminal C1 to a VCC (normally 5V) terminal and applies a signal from the contact terminals C3, C2, and C5 to CLK (clock), RST (reset), and GND (ground potential) terminals, respectively. Simultaneously, the contact terminal C7 is connected to an I/O port to exchange data.

[0097] The individual units are formed as an IC chip on a single board.

[0098] Also, these units are connected to the terminals through wires, and the terminals and the board mounting the IC chip are integrated and handled as an IC module. Accordingly, as shown in FIG. 2, these terminals are so embedded in the card as to be exposed to the card surface.

[0099] The card 300 also includes a parallel tuning circuit 301 for noncontacting data exchange.

[0100] That is, the parallel tuning circuit 301 receives a two-phase phase-modulated wave signal (first two-phase phase-modulated wave signal) from a transmitting antenna 201 of a radio card reader • writer 200 and transmits a two-phase phase-modulated wave signal (second two-phase phase-modulated wave signal) with a carrier frequency f0/2. This parallel tuning circuit 301 is composed of a loop antenna coil 301a and a tuning capacitor 301b.

[0101] The loop antenna coil 301a of this parallel tuning circuit 301 receives signals and at the same time transmits the carrier frequency f0/2. Since power for generating a power supply voltage must be efficiently

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extracted from a received radio wave, the loop antenna coil 301a is tuned to a carrier frequency f0 of the received two-phase phase-modulated wave signal.

[0102] This carrier frequency for transmission can also be a fraction of an integer multiple, instead of 1/2, of the carrier frequency of the received two-phase phase-modulated wave signal.

[0103] The loop antenna coil 301a simply transmits and receives signals, so a single coil can be used for both transmission and reception. However, separate coils can also be used for transmission and reception.

[0104] To perform noncontacting data exchange, the one-chip microprocessor 310 incorporates a noncontacting interface circuit 400 for exchanging data via the parallel tuning circuit 301.

[0105] This noncontacting interface circuit 400 includes a power generator 302, a clock generating circuit (clock generating means) 307, a demodulation circuit (demodulating means) 303, a modulation circuit (modulating means) 304, and a reset signal generating circuit 308. The power generator 302 generates power to be supplied to the whole internal circuit of the radio combination card 300 by using the two-phase phase-modulated wave signal from the parallel tuning circuit 301. The clock generating circuit 307 generates operating clocks from an analog signal received via the parallel tuning circuit 301. The demodulation circuit 303 converts the analog signal received via the parallel tuning circuit 301 into a digital signal to be read out by the CPU 405 of the one-chip microprocessor 310. The modulation circuit 304 modulates an oscillation circuit output by using a signal from the CPU 405 and transmits the modulated output from the loop antenna (transmitting) coil 301a of the parallel tuning circuit 301. The reset signal generating circuit 308 generates a reset signal on the basis of the clocks generated by the clock generating circuit 307.

[0106] The radio combination card 300 incorporates a switch (SW) 309 for switching on and off the conduction between the noncontacting interface 400 and the antenna coil 301a of the parallel tuning circuit 301.

[0107] This switch (SW) 309 is normally ON (connected) in the initial state and turned off by the CPU 405 when a Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 to the VCC (normally 5V) terminal.

[0108] In this third embodiment, in addition to the switch (SW1) 309 described above, switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 are connected to the control terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively.

[0109] One input terminal of each of these switches (SW2 to SW5) 312 to 315 is connected to a corresponding one of the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O).

[0110] The other input terminal of the switch (SW2) 312 is connected to the power generator 302 of the noncontacting interface 400 so as to receive the Vcc voltage generated by the power generator 302.

[0111] Note that one of the two input terminals of the switch (SW2) 312 is enabled by an output from a selector circuit (sel) 320 controlled by the CPU 405.

[0112] Note also that the other input terminal of the switch (SW2) 312 is initially so selected by the CPU 405 as to receive the Vcc voltage generated by the power generator 302.

[0113] The other input terminal of the switch (SW3) 313 is connected to the reset signal generating circuit 308 of the noncontacting interface 400 so as to receive the reset signal generated by the reset signal generating circuit 308.

[0114] Note that one input terminal of the switch (SW3) 313 is enabled by an output from the selector circuit (sel) 320 controlled by the CPU 405.

[0115] Note also that the other input terminal of the switch (SW3) 313 is initially so selected by the CPU 405 as to receive the reset signal generated by the reset signal generating circuit 308.

[0116] The other input terminal of the switch (SW4) 314 is connected to the clock generating circuit 307 of the noncontacting interface 400 so as to receive the clock signal generated by the clock generating circuit 307.

[0117] Note that one input terminal of the switch (SW4) 314 is enabled by an output from the selector circuit (sel) 320 controlled by the CPU 405.

[0118] Note also that the other input terminal of the switch (SW4) 314 is initially so selected by the CPU 405 as to receive the clock signal generated by the clock signal generating circuit 307.

[0119] The other input terminal of the switch (SW5) 315 is connected to the demodulation circuit (demodulating means) 303 of the noncontacting interface 400.

[0120] Also, one output terminal of this switch (SW5) 315 is connected to the modulation circuit (modulating means) 304 of the noncontacting interface 400.

[0121] Note that one input or output terminal of the switch (SW5) 315 is enabled by an output from the selector circuit (sel) 320 controlled by the CPU 405 so as to be selectively connected to the output terminal of the demodulation circuit (demodulating means) 303, the input terminal of the modulation circuit (modulating means) 304, or the contact terminal C7 (I/O).

[0122] Note also that the switch (SW5) 315 is initially connected to the output terminal of the demodulation circuit (demodulating means) 303 and the input terminal of the modulation circuit (modulating means) 304 by the CPU 405.

[0123] The contact terminal C1 of the contacting interface 401 and the output terminal of the power generator 302 are connected to terminals A and B, respectively, of the CPU 405. This allows the CPU 405 to check whether the radio combination card 300 is driven by the contacting interface 401 or the noncontacting interface 400 when the CPU 405 performs initialization upon activation of the radio combination card 300.

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[0124] The CPU 405 reads out a program for performing initialization stored in the RAM 406 and performs initialization.

[0125] The operation of the radio combination card with the above arrangement will be described below with reference to a flow chart shown in FIGS. 6A and 6B.

[0126] For example, when the card 300 is inserted into a terminal apparatus, the Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 of the card 300 to the VCC (normally 5V) terminal (ST1). Consequently, the switch (SW) 309 is turned off.

[0127] When the Vcc voltage is applied from the contact terminal C1 to the VCC (normally 5V) terminal, the selector circuit (sel) 320 of the card 300 outputs a selection signal "1" to the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 so as to selectively connect the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively (ST101).

[0128] After that, the CLK terminal C3 and the RST terminal C2 supply the clock signal and the reset signal, respectively (ST2 and ST3), and the CPU 405 starts initialization (ST102).

[0129] In this initialization, the CPU 405 detects the states of the input terminals A and B and checks whether the radio combination card 300 is activated by the contacting interface 401 or the noncontacting interface 400 (ST103).

[0130] If the input terminal A is "1" and the input terminal B is "0", the card 300 is activated by the noncontacting interface 400.

[0131] If the input terminal A is "0" and the input terminal B is "1", the card 300 is activated by the contacting interface 401.

[0132] If both of the input terminals A and B are "0" or "1", an operation error has occurred.

[0133] If this error is detected, the CPU 405 stops the operation.

[0134] Since the card 300 is driven by the contacting interface 401, the CPU 405 holds the states of the input terminals A and B in a predetermined area of the RAM 409 (ST104).

[0135] That is, the CPU 405 stores (1,0) in the predetermined area of the RAM 409 if the card 300 is activated by the noncontacting interface 400, and stores (0,1) in this area if the card 300 is activated by the contacting interface 400.

[0136] Next, on the basis of the information stored in the RAM 309, the CPU 405 checks whether the card 300 is activated by the contacting interface 401, i.e., whether the pattern stored in the RAM 409 is (0,1) (ST105).

[0137] If the card 300 is activated by the contacting interface 401 and the pattern in the predetermined area of the RAM 409 is (0,1), the CPU 405 outputs a selection signal for turning off the switch (SW1) 309 (ST106).

[0138] The switch (SW1) 309 is turned off by this selection signal.

[0139] This selection signal is also supplied to the selector circuit (sel) 320 and so controls the selector circuit (sel) 320 that the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 keep selecting the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively (ST106).

[0140] In this manner, the selector circuit (sel) 320 causes the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 to keep selecting the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively. After that, a command is received from the terminal apparatus via the I/O port, and contacting data exchange is performed via the I/O port in accordance with the command.

[0141] That is, while contacting data exchange is performed, the switch (SW1) 309 is kept OFF, and the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 keep selecting the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively. Accordingly, even if the receiving antenna coil 301a of the parallel tuning circuit 301 receives some radio waves while contacting data exchange or contacting driving is performed, the radio combination card 300 does not cause any operation error, so the contacting driving or contacting data exchange is kept performed.

[0142] On the other hand, if the card 300 is driven by the noncontacting interface 400, the switch (SW1) 309 is normally ON (connected). Therefore, the receiving antenna coil 301a of the parallel tuning circuit 301 receives radio waves (ST201), and the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308 operate (ST202).

[0143] When the power generator 302 applies a voltage, the selector circuit (sel) 320 outputs a selection signal "0" (ST202).

[0144] The switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 initially connect to the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308, respectively. The selection signal "0" does not change the states of these switches (SW2 to SW5) 312 to 315.

[0145] After that, the clock generating circuit (clock generating means) 307 and the reset signal generating circuit 308 supply the clock signal and the reset signal, respectively, and the CPU 405 starts initialization (ST102).

[0146] In this initialisation, the CPU 405 detects the states of the input terminals A and B and checks whether the radio combination card 300 is activated by the contacting interface 401 or the noncontacting interface 400 (ST103).

[0147] Since the card 300 is activated by the noncontacting interface 400, the CPU 405 stores the states of

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the input terminals A and B as (1,0) in the predetermined area of the RAM 409 (ST103).

[0148] Next, on the basis of the information stored in the RAM 309, the CPU 405 checks whether the card 300 is activated by the contacting interface 401 or the noncontacting interface 400 (ST105 and ST107).

[0149] If the card 300 is activated by the noncontacting interface 400 and the pattern in the predetermined area of the RAM 409 is (1,0) (ST106), the CPU 405 outputs a selection signal "0" to the selector circuit (sel) 320 and the switch (SW1) 309 (ST108).

[0150] This selection signal "0" holds the initial states of the individual switches.

[0151] After that, the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 selectively connect to the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308. That is, these switches (SW2 to SW5) 312 to 315 are connected to the noncontacting interface 400.

[0152] The CPU 405 completes the initialization in steps ST102 to ST108 described above.

[0153] In this initialization, the CPU 405 also checks the hardware such as the ROM 406, the RAM 409, and the EEPROM 407.

[0154] When the initialization is complete, the card 300 can exchange data with an external apparatus.

[0155] When the card 300 is driven by the contacting interface 401, the external apparatus (reader • writer) cancels the reset signal applied to the contact terminal C2 after 40,000 clocks are supplied to the contact terminal C3.

[0156] Analogously, the reset signal generating circuit 308 cancels the reset signal after a predetermined number of clocks are supplied by the clock generating circuit 307.

[0157] When the reset signal applied to the contact terminal C2 or the reset signal from the reset signal generating circuit 308 is canceled, the CPU 405 outputs an initial response signal (ATR) to the external apparatus (reader • writer) via the selected one of the contacting interface 401 and the noncontacting interface 400.

[0158] This initial response signal (ATR) from the card 300 enables the external apparatus (reader • writer) to exchange commands with the card 300, so the apparatus transmits a command to the card 300.

[0159] The card 300 receives this command via the currently selected one of the contacting interface 401 and the noncontacting interface 400 (ST110).

[0160] When the command is received, the CPU 405 compares the states of the input terminals A and B with the pattern (initial state) stored in the RAM 409 (ST111).

[0161] If the states of the input terminals A and B match the pattern (initial state) stored in the RAM 409 (ST112), the CPU 405 executes the received command and outputs the processing result to the external apparatus (ST113).

[0162] After that, the card and the external apparatus similarly exchange commands and data.

[0163] If there is neither invalid attempt nor operation error from the external apparatus, the states of the input terminals A and B and the pattern (initial state) stored in the RAM 409 must match. Therefore, if the states of the input terminals A and 8 are different from the pattern (initial state) stored in the RAM 409, the CPU 405 outputs an error signal and stops the operation (ST114).

[0164] A signal received by the receiving antenna coil 301a of the parallel tuning circuit 301 is converted into a digital signal by the demodulation circuit (demodulating means) 303 and supplied to the CPU 405 via the UART (I/O) 408. The CPU 405 appropriately processes the signal and stores the processed signal in the RAM 409 or the like where necessary.

[0165] Also, a signal to be transmitted to the terminal is output from the UART (I/O) 408 to the modulation circuit 304 and transmitted from the antenna coil of the parallel tuning circuit 301 by modulating the output from the clock generating circuit 307.

[0166] In this way, noncontacting data exchange is performed.

[0167] In this embodiment, when performing initialization, the CPU 405 detects the states of the input terminals A and B and checks whether the radio combination card 300 is activated by the contacting interface 401 or the noncontacting interface 400. The CPU 405 holds the result in the RAM 409.

[0168] While the card and a terminal apparatus are exchanging information, the CPU 405 compares the states of the input terminals A and B with the pattern held in the RAM 409 to check whether the states change.

[0169] If the states of the input terminals A and B match the pattern held in the RAM 409, the CPU 405 determines that the operation is normal. However, if the states of the input terminals A and B are different from the pattern held in the RAM 409, it is expected that some operation error has occurred. Therefore, the CPU 405 outputs an error response to the terminal apparatus and stops the operation.

[0170] Note that when the switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315 initially select the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O), respectively, a similar operation can be performed by using an inverted signal of an output signal from the selector circuit (sel) 320 as a selection signal as shown in FIG. 7.

[0171] As described above, the third embodiment includes an inhibiting means for inhibiting the operation of the noncontacting interface 400 while the card 300 is driven by the contacting interface 401. Hence, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0172] Also, the above third embodiment includes a

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means for cutting off the conduction between the noncontacting interface 400 and the antenna coil 301a of the parallel tuning circuit 301. Accordingly, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0173] Furthermore, in the above third embodiment, the noncontacting interface 400 of the microprocessor 310 includes the power generator 302 which operates in accordance with an output from the parallel tuning circuit 301, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308. The switch 309 for switching on and off the conduction between the noncontacting interface 400 and the parallel tuning circuit 301 is also included. This switch 309 is turned off when the Vcc voltage is applied via the contacting interface 401. Therefore, even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401, the noncontacting interface 400 does not operate at all, so no operation error takes place.

(Fourth Embodiment)

[0174] The fourth embodiment of the present invention will be described below with reference to FIG. 8.

[0175] In this fourth embodiment, the arrangements shown in FIGS. 1 and 2 are similarly applied, and the internal arrangement of a radio combination card 300 partially differs from that shown in FIG. 5. So, a description of identical portions will be omitted.

[0176] That is, as shown in FIG. 8, a radio combination card 300 incorporates a switch (SW1) 309a for switching on and off the conduction between a noncontacting interface 400 and an antenna coil (parallel tuning circuit 301).

[0177] This switch (SW1) 309a is normally ON (connected) and turned off when a Vcc voltage is applied from a contact terminal C1 of a contacting interface 401 to a VCC (normally 5V) terminal.

[0178] In the fourth embodiment, in addition to this switch (SW1) 309a, switches (SW2, SW3, SW4, and SW5) 312a, 313a, 314a, and 315a are connected to a power generator 302, a clock generating circuit (clock generating means) 307, a demodulation circuit (demodulating means) 303, a modulation circuit (modulating means) 304, and a reset signal generating circuit 308, respectively, of the noncontacting interface 400.

[0179] These switches (SW2 to SW5) 312a to 315a are normally ON (connected) and turned off when the Vcc voltage is applied from the contact terminal C1 of the contacting interface 401 to the VCC (normally 5V) terminal.

[0180] The switches (SW2 to SW5) 312a to 315a inhibit signal inputs and outputs via the noncontacting interface 400.

[0181] That is, while contacting data exchange or contacting driving is performed, the switches (SW2 to SW5) 312a to 315a completely inhibit signal inputs and outputs via the noncontacting interface 400 and prevent operation errors.

[0182] Additionally, in this fourth embodiment, switches (SW6, SW7, SW8, SW9, and SW10) 316a, 317a, 318a, 319a, and 320a are connected to the contact terminal C1 (VCC) and other contact terminals C2 (RST), C3 (CLK), and C7 (I/O), respectively, of the contacting interface 401.

[0183] These switches (SW6 to SW10) 316a to 320a are normally ON (connected) and turned off when the Vcc voltage is applied from the power generator 302 of the noncontacting interface 400.

[0184] The switches (SW6 to SW10) 316a to 320a inhibit signal inputs and outputs via the contacting interface 401.

[0185] That is, while noncontacting data exchange or noncontacting driving is performed, the switches (SW6 to SW10) 316a to 320a completely inhibit signal inputs and outputs via the contacting interface 401 and prevent operation errors.

[0186] As described above, the fourth embodiment of the present invention includes operation inhibiting means for inhibiting the operation of the noncontacting interface 400 while the card is driven via the contacting interface 401. Therefore, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0187] Also, the fourth embodiment of the present invention includes a means for cutting off the conduction between the noncontacting interface 400 and the antenna coil (parallel tuning circuit) while the card is driven via the contacting interface 401. Accordingly, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0188] Furthermore, in the above fourth embodiment, the noncontacting interface 400 of the microprocessor includes the power generator 302 which operates in accordance with an output from the parallel tuning circuit 301, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308. A switch for switching on and off the conduction between the noncontacting interface 400 and the parallel tuning circuit 301 is also included. This switch is turned off when the Vcc voltage is applied via the contacting interface 401. Therefore, even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401, the noncontacting interface 400 does not operate at all, so no operation error takes place.

[0189] The third and fourth embodiments as described above can be summarized as follows.

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(1) A radio combination card having contacting and noncontacting interfaces and driven by the contacting or noncontacting interface comprises a selective connecting means for selectively connecting one of the contacting and noncontacting interfaces to a control circuit, a determining means for determining whether the card in driven by the contacting or noncontacting interface, and a holding means for causing the selective connecting means to keep connecting one of the contacting and noncontacting interfaces in accordance with a determination result from the determining means, and inhibiting signal inputs and outputs via the other interface.

(2) The selective connecting means initially selectively connects one of the contacting and noncontacting interfaces to the control circuit and switches to the other interface when the card is driven by the other interface, and the holding means maintains the connection to the other interface on the basis of the determination result from the determining means.

(3) There is provided a radio combination card wherein the contact terminals C1 (VCC), C2 (RST), C3 (CLK), and C7 (I/O) of a contacting interface are connected to a control circuit by the connecting switches (SW2, SW3, SW4, and SW5) 312, 313, 314, and 315, respectively, which are connected to the power generator 302, the clock generating circuit (clock generating means) 307, the demodulation circuit (demodulating means) 303, the modulation circuit (modulating means) 304, and the reset signal generating circuit 308, respectively, of a noncontacting interface, one interface is initially selectively connected to the control circuit, initialization is performed by connecting the switches SW7 to SW10 to the contacting interface when the Vcc voltage is applied from the contact terminal C1 to the VCC (normally 5V) terminal and connecting the switches (SW2 to SW5) 312 to 315 to the noncontacting interface when the power generator 302 applies a voltage, and, in this initialization, whether the card is driven by the contacting or noncontacting interface is checked, and the switches (SW2 to SW5) 312 to 315 are kept connected until deactivation.

[0190] As described above, the third and fourth embodiments of the present invention can provide a portable electronic device including a composite IC card having contacting and noncontacting interfaces and capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface, and an IC module for the composite IC card.

(Fifth Embodiment)

[0191] The fifth embodiment of the present invention will be described below with reference to FIGS. 9 to 12.

[0192] Note that in this fifth embodiment, the arrangements shown in FIGS. 1 and 2 are similarly applied.

[0193] Note also that in this fifth embodiment, the arrangements shown in FIGS. 5 and 7 and the flow chart shown in FIGS. 6A and 6B are also similarly applied.

[0194] In this embodiment, a common IC such as a memory is used and a CPU 405 is operated in both contacting and noncontacting responses to an external apparatus.

[0195] In this embodiment, therefore, switching is performed between commands executable in contacting and noncontacting responses to an external apparatus, thereby holding the independence of contacting and noncontacting responses while the common memory is used.

[0196] That is, a ROM 406 stores subroutine programs for processing various applications and commands. In accordance with a command received from an external apparatus, the CPU 405 reads out a subroutine program from the ROM 406 and executes the program.

[0197] A system area of an EEPROM 407 stores command tables (lists) showing the correspondence between commands received from an external apparatus and the subroutine programs in the ROM 406 as various kinds of definition information. Different command tables (lists) are used for contacting and noncontacting responses.

[0198] Also, a user area of the EEPROM 407 stores various kinds of transaction information such as outstanding balance data and transaction records.

[0199] That is, a command list for a contacting response is set as shown in FIG. 9, and a command list for a noncontacting response is set as shown in FIG. 10.

[0200] These settings are made by writing the command tables (lists) by the manufacturer or issuer when the card is issued.

[0201] The CPU 405 performs processing based on a flow chart as shown in FIG. 12.

[0202] That is, when the card is activated by a contacting interface 401 and a pattern in a predetermined area of a RAM 409 is (0,1), the CPU 405 looks up the command table (list) shown in FIG. 9 (steps S1 and S3).

[0203] When the card is activated by a noncontacting interface 400 and the pattern in the predetermined area of the RAM 409 is (1,0), the CPU 405 looks up the command table (list) shown in FIG. 10 (steps S2 and S4).

[0204] If either command table (list) contains data corresponding to the received command, the CPU 405 executes a subroutine program in the ROM 406 (steps S5 and S6).

[0205] More specifically, when the card is activated by the contacting interface 401, commands AAA (additional write), BBB (read), CCC (rewrite), DDD (erase), and EEE (addition and change of system data) can be executed. When the card is activated by the noncontact-

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ing interface 400, only the commands AAA (additional write) and BBB (read) are executable. If this is the case, the external apparatus can execute only additional write and read to the user area of the EEPROM 407.

[0206] Accordingly, when this radio combination card 300 is inserted into a terminal apparatus and activated by the contacting interface 401, it is possible to update (add) data such as prepaid balance and erase unnecessary data.

[0207] On the other hand, when the card 300 is activated by the noncontacting interface 400, i.e., when the card 300 is used in a radio automatic ticket gate, bus fare adjusting machine, or automatic vending machine, it is possible to read out the balance or additionally write the used amount of money as history data, but any other command is inexecutable.

[0208] As described above, switching is performed between commands executable in contacting and noncontacting responses to an external apparatus. When used in a noncontacting response, the card is usable in various applications, e.g., not only as a collating medium for simply outputting data but also as a prepaid card.

[0209] In the above explanation, different command lists are set for contacting and noncontacting responses. However, a single command table (list) as shown in FIG. 11 can also be used for both contacting and noncontacting responses.

[0210] That is, as shown in FIG. 11, the feasibility of each command in a contacting response and the feasibility of each command in a noncontacting response are held as pieces of flag information in the table. When the card is activated by the contacting interface 401 and the pattern in the predetermined area of the RAM 409 is (0,1), the CPU 405 looks up the feasibility flag of the command in a contacting response.

[0211] When the card is activated by the noncontacting interface 400 and the pattern in the predetermined area of the RAM 409 is (1,0), the CPU 405 looks up the feasibility flag of the command in a noncontacting response and checks the feasibility of the command.

[0212] That is, the command is executable when the feasibility flag is "1" and inexecutable when the flag is "0".

[0213] In the fifth embodiment of the present invention as described above, switching is performed between commands executable in contacting and noncontacting responses to an external apparatus. When used in a noncontacting response, therefore, the card is usable in various applications, e.g., not only as a collating medium for simply outputting data but also as a prepaid card.

[0214] Additionally, the fifth embodiment of the present invention described above includes an inhibiting means for inhibiting the operation of the noncontacting interface 400 while the card is driven via the contacting interface 401. Hence, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0215] Also, the above fifth embodiment includes a means for cutting off the conduction between the noncontacting interface 400 and an antenna coil (parallel tuning circuit) 301. Accordingly, no operation error occurs even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401.

[0216] Furthermore, in the above fifth embodiment, the noncontacting interface 400 of a microprocessor 310 includes a power generator 302 which operates in accordance with an output from the parallel tuning circuit 301, a clock generating circuit (clock generating means) 307, a demodulation circuit (demodulating means) 303, a modulation circuit (modulating means) 304, and a reset signal generating circuit 308. A switch 309 for switching on and off the conduction between the noncontacting interface 400 and the parallel tuning circuit 301 is also included. This switch 309 is turned off when a Vcc voltage is applied via the contacting interface 401. Therefore, even if electric waves are radiated in the environment while information is exchanged via the contacting interface 401, the noncontacting interface 400 does not operate at all, so no operation error takes place.

[0217] The fifth embodiment of the present invention as described above can be summarized as follows.

(1) A radio combination card having contacting and noncontacting interfaces and driven by the contacting or noncontacting interface comprises a determining means for determining whether the radio combination card is activated by the contacting or noncontacting interface, and a switching means for performing switching between commands executable in contacting and noncontacting responses to an external apparatus.

(2) A CPU monitors the states of input terminals A and B and checks whether the radio combination card 300 is activated by the contacting or noncontacting interface.

[0218] If the card 300 is activated by the contacting interface, the CPU looks up a command table (list) for a contacting response. If the card 300 is activated by the noncontacting interface, the CPU looks up a command table (list) for a noncontacting response. If either command table (list) contains data corresponding to the received command, the CPU executes a subroutine program in a ROM. If not, the CPU determines that the command is inexecutable.

[0219] The fifth embodiment of the present invention as has been described in detail above can provide a portable electronic device including a composite IC card having contacting and noncontacting interfaces, capable of being used for various purposes by executing equivalent functions when driven in both contacting and

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noncontacting manners and achieving a satisfactory security function, and also capable of well maintaining the reliability as a composite IC card by preventing operation errors when driven from either interface.

Claims

1. A portable electronic device comprising:

   a contacting interface (401) including a plurality of contact terminals (C1 to C8) for exchanging driving power and data, and
   a noncontacting interface (400) for generating driving power and demodulating received data from a signal received via an antenna (301a),
   characterized in the said device further comprises
   inhibiting means (405) for inhibiting an operation of the other one of said contacting and noncontacting interfaces (401, 400) while said portable electronic device is driven via one of said contacting and noncontacting interfaces (401, 400).

2. A device according to claim 1, characterized in that said inhibiting means (405) comprises first inhibiting means (SW1) for inhibiting an operation of said noncontacting interface while said portable electronic device is driven via said contacting interface (401).

3. A device according to claim 2, characterized in that said first inhibiting means (SW1) inhibits an operation of said noncontacting interface by cutting off conduction between an antenna coil (301a) and said noncontacting interface (400) while said portable electronic device is driven via said contacting interface (401).

4. A device according to claim 3, characterized in that

   said first inhibiting means (SW1) comprises a switch (SW1) for turning on and off the conduction between said antenna (301a) coil and said noncontacting interface (401), and
   turns off said switch (SW1) while a driving voltage is applied to said portable electronic device via said contacting interface (401).

5. A device according to claim 2, characterized by further comprising a control circuit (405) for processing data received via said contacting or noncontacting interface (401, 400),
   wherein said first inhibiting means (SW1) comprises a switch (312 to 315) for turning on and off conduction between said control circuit (405) and said noncontacting interface (400), and
   turns off said switch (312 to 315) while a driving voltage is applied to said portable electronic device via said contacting interface (401).

6. A device according to claim 2, characterized in that said inhibiting means (405) comprises second inhibiting means (317 to 320) for inhibiting a signal input and output via said contacting interface (401) while said portable electronic device is driven via said noncontacting interface (400).

7. A device according to claim 5, characterized by further comprising a control circuit (405) for processing data received via said contacting or noncontacting interface (401, 400),
   wherein said second inhibiting means (317 to 320) cuts off conduction between said contacting interface (401) and said control circuit (405) while said portable electronic device is driven via said noncontacting interface (400).

8. A device according to claim 7, characterized in that

   said second inhibiting means (317 to 320) comprises a switch (317 to 320) for turning on and off conduction between said control circuit (405) and said contacting interface (401), and
   turns off said switch (317 to 320) while a driving voltage is applied to said portable electronic device via said noncontacting interface (400).

9. A portable electronic device comprising contacting and noncontacting interfaces (401, 400) and a control circuit (405) connected to said contacting and noncontacting interfaces (401, 400), and is driven by said contacting or noncontacting interface (401, 400),
   characterized in that said device further comprising:

   detecting means (405) for detecting whether said portable electronic device is driven via said contacting or noncontacting interface (401, 400); and
   connecting means (312 to 316, 317 to 320) for selectively connecting one of said contacting and noncontacting interfaces (401, 400) to said control circuit (405) and inhibiting a signal input and output via the other one of said contacting or noncontacting interface (401, 400) on the basis of the detection result from said detecting means (405).

10. A device according to claim 9, said connecting means (312 to 316, 317 to 320) comprising:

    a first switch (312 to 315) for turning on and off connections between said contacting interface

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(401) and said control circuit (405); and

a second switch (317 to 320) for turning on and off the connections between said noncontacting interface (400) and said control circuit (405),

characterized in that said control circuit (405) inhibits, on the basis of the detection result from said detecting means (405), the exchange of driving power and data via said contacting interface (401) by turning off said second switch (317 to 320) while said portable electronic device is driven via said noncontacting interface (400), and

said control circuit (405) inhibits the exchange of driving power and data via said noncontacting interface (400) by turning off said first switch (312 to 316) while said portable electronic device is driven via said contacting interface (401).

11. A device according to claim 10, characterized by further comprising inhibiting means (405) for inhibiting, on the basis of the detection result from said detecting means (405), said noncontacting interface (400) while said portable electronic device is driven via said contacting interface (401).

12. A device according to claim 11, characterized in that

said inhibiting means (405) includes a third switch (SW1) for turning on and off conduction between an antenna (301a) and said noncontacting interface (400),

wherein said inhibiting means (405) inhibits, on the basis of the detection result from said detecting means (405), the exchange of driving power and data via said noncontacting interface (400) by turning off said third switch (SW1) while said portable electronic device is driven via said contacting interface (401).

13. A device according to claim 9, characterized in that said connecting (312 to 316, 317 to 320) means initially selectively connects one of said contacting and noncontacting interfaces (401, 400) to said control circuit (405), and selectively connects the other one of said contacting and noncontacting interfaces (401, 400) to said control circuit (405) when said portable electronic device is driven via the other interface.

14. A device according to claim 13, characterized by further comprising:

determining means (405) for determining whether said portable electronic device is driven by said contacting or noncontacting interface (401, 400); and

holding means (405) for maintaining the connection between the other interface and said control circuit (405) on the basis of the determination result from said determining means (405).

15. A device according to claim 14, characterized in that

said connecting means (312 to 316, 317 to 320) selectively connects to said control circuit (405) one of said contacting and noncontacting interfaces (401, 400) by which said portable electronic device is activated, and

said determining means (405) and said holding means (405) operate when a prestored initialization program is executed upon activation of said portable electronic device.

16. A device according to claim 15, characterized by further comprising:

storage means (409) for storing the determination result from said determining means (405); and

control means (405) for monitoring state signals from said contacting and noncontacting interfaces (401, 400) while said portable electronic device is communicating with a terminal apparatus via said contacting or noncontacting interface (401, 400), checking whether a monitoring result changes from the state signals stored in said storage means (409), and stops the communication with said terminal apparatus if the monitoring result changes.

17. A device according to claim 9, said connecting means (312 to 316, 317 to 320) comprising:

a switch (312 to 316) arranged between contact terminals of said contacting interface (401) and said control circuit (405) to connect one of said contact and noncontacting interfaces (401, 400) to said control circuit (405).

18. A portable electronic device comprising contacting and noncontacting interfaces (401, 400) and a control circuit (405) connected to said contacting and noncontacting interfaces (401, 400), and is driven by said contacting or noncontacting interface (401, 400),

characterized in that said device further comprising:

detecting means (405) for detecting whether said portable electronic device is driven via said contacting or noncontacting interface

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(401, 400); and

switching means (315a) for switching commands executable by said portable electronic device on the basis of the detection result from said detecting means (405).

19. A device according to claim 18, characterized in that said switching means (315a) permits execution of data rewrite and erase commands if said detecting means (405) detects that said portable electronic device is activated by said contacting interface (401), and inhibits execution of the data rewrite and erase commands if said detecting means (405) detects that said portable electronic device is activated by said noncontacting interface (400).

20. A device according to claim 18, characterized by further comprising:

a table (407) storing lists of commands executable when said detecting means detects that said portable electronic device is driven by said contacting interface and commands executable when said detecting means (405) detects that said portable electronic device is driven by said noncontacting interface (400),

wherein said switching means (315a) determines on the basis of the detection result from said detecting means (405) whether a command received from an external apparatus can be executed by looking up said table (407).

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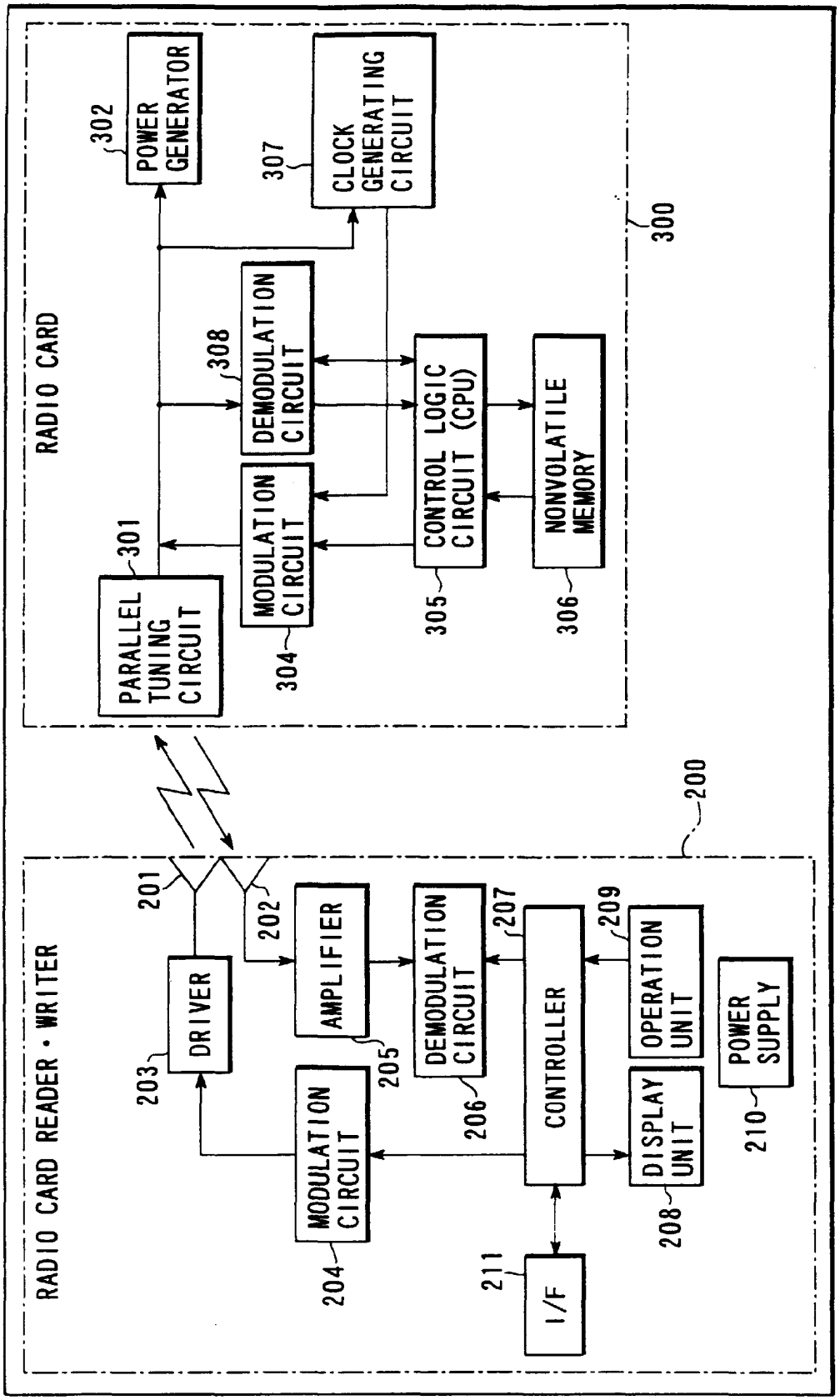


FIG. 1

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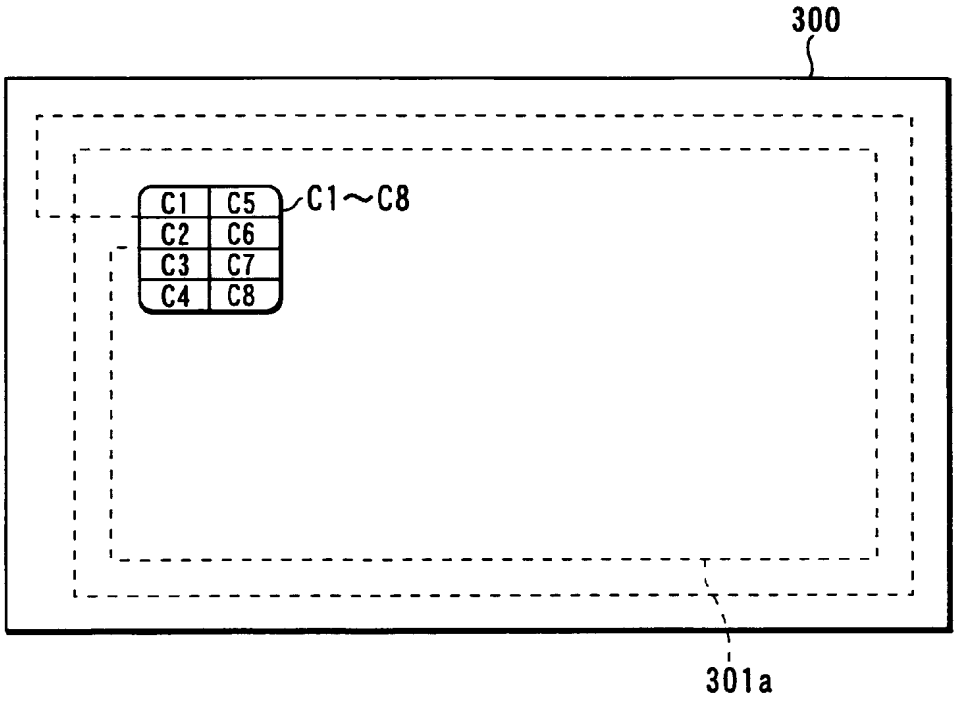


FIG. 2

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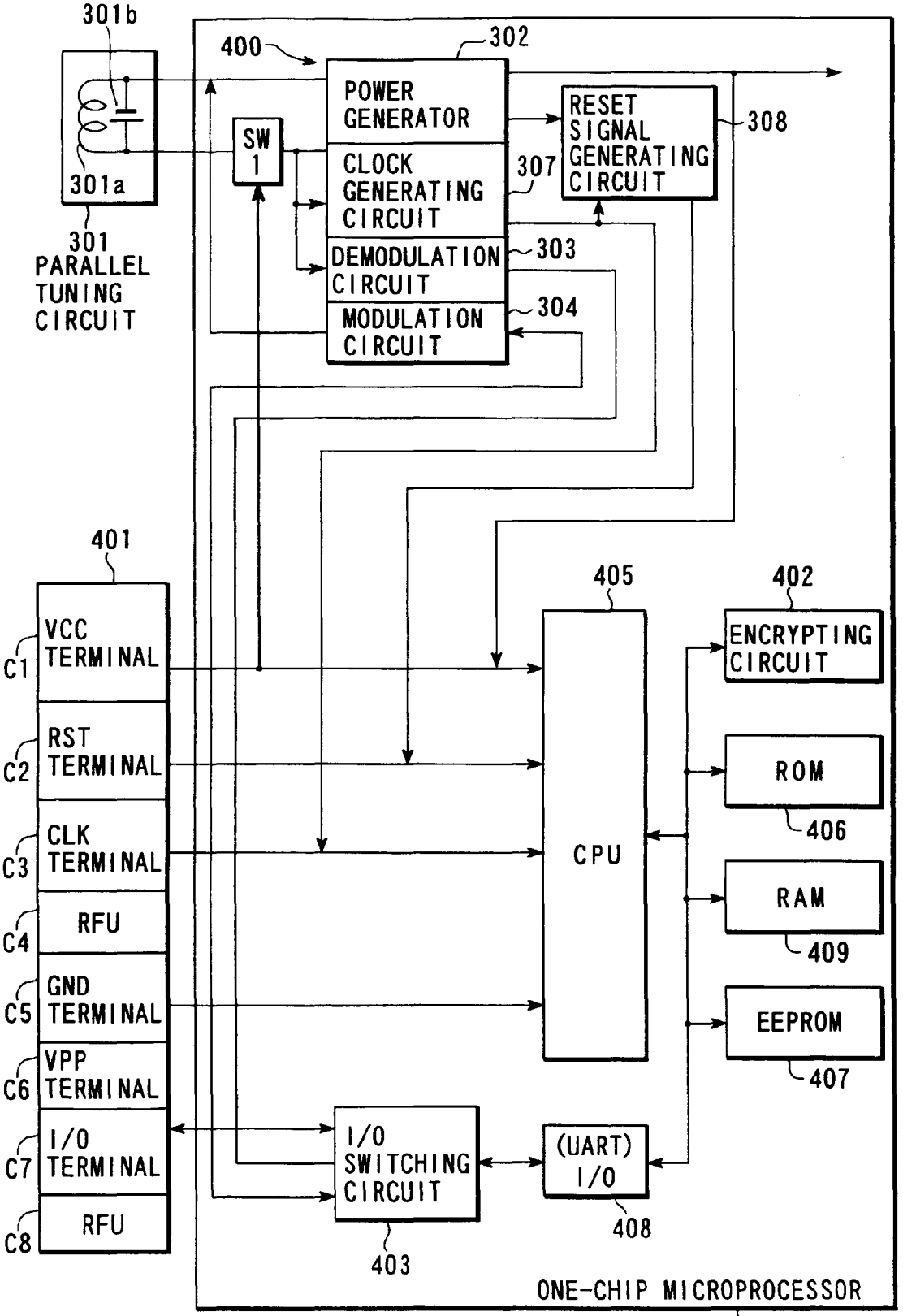


FIG. 3

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Apple EX1007 Page 154

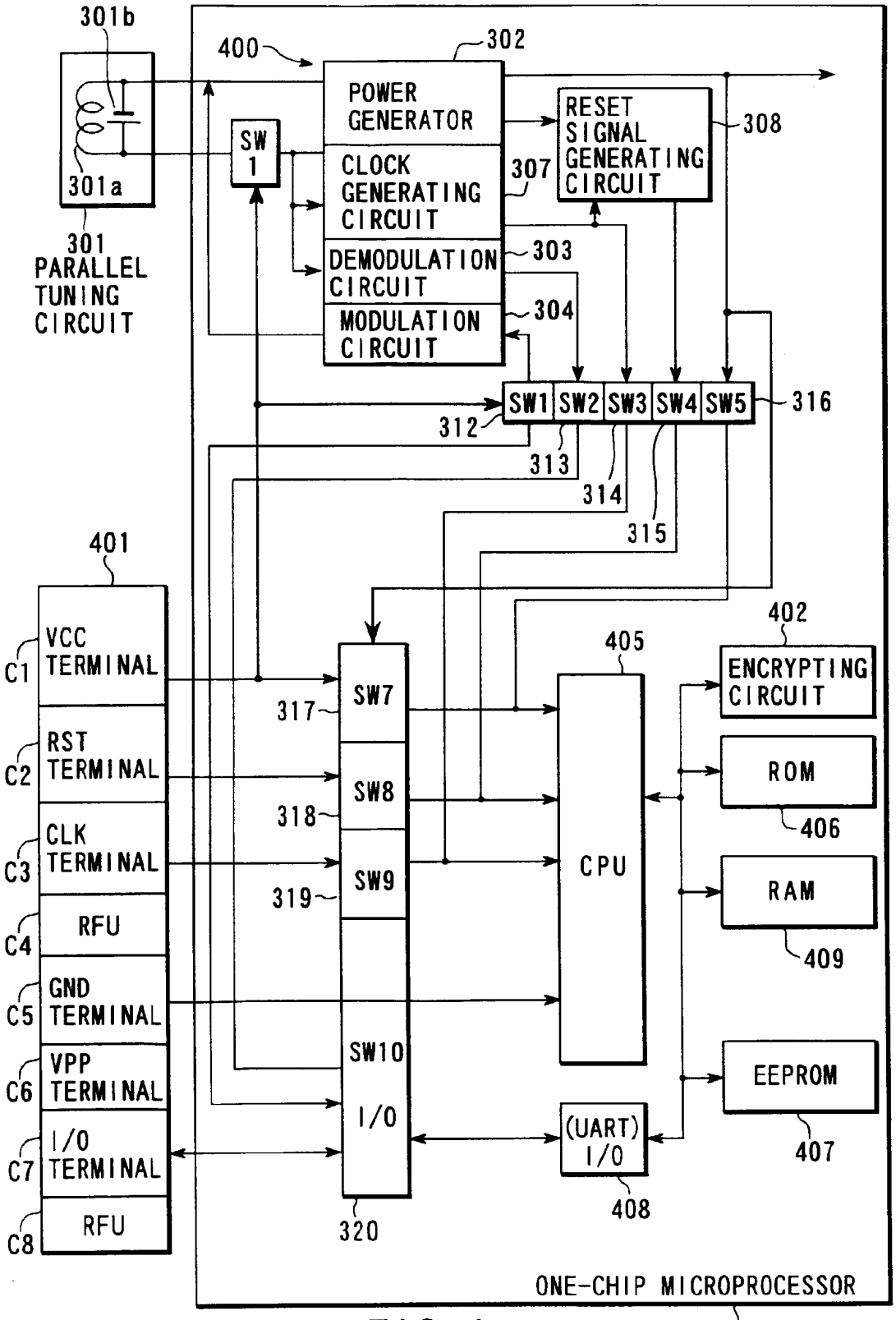


FIG. 4

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Apple EX1007 Page 155

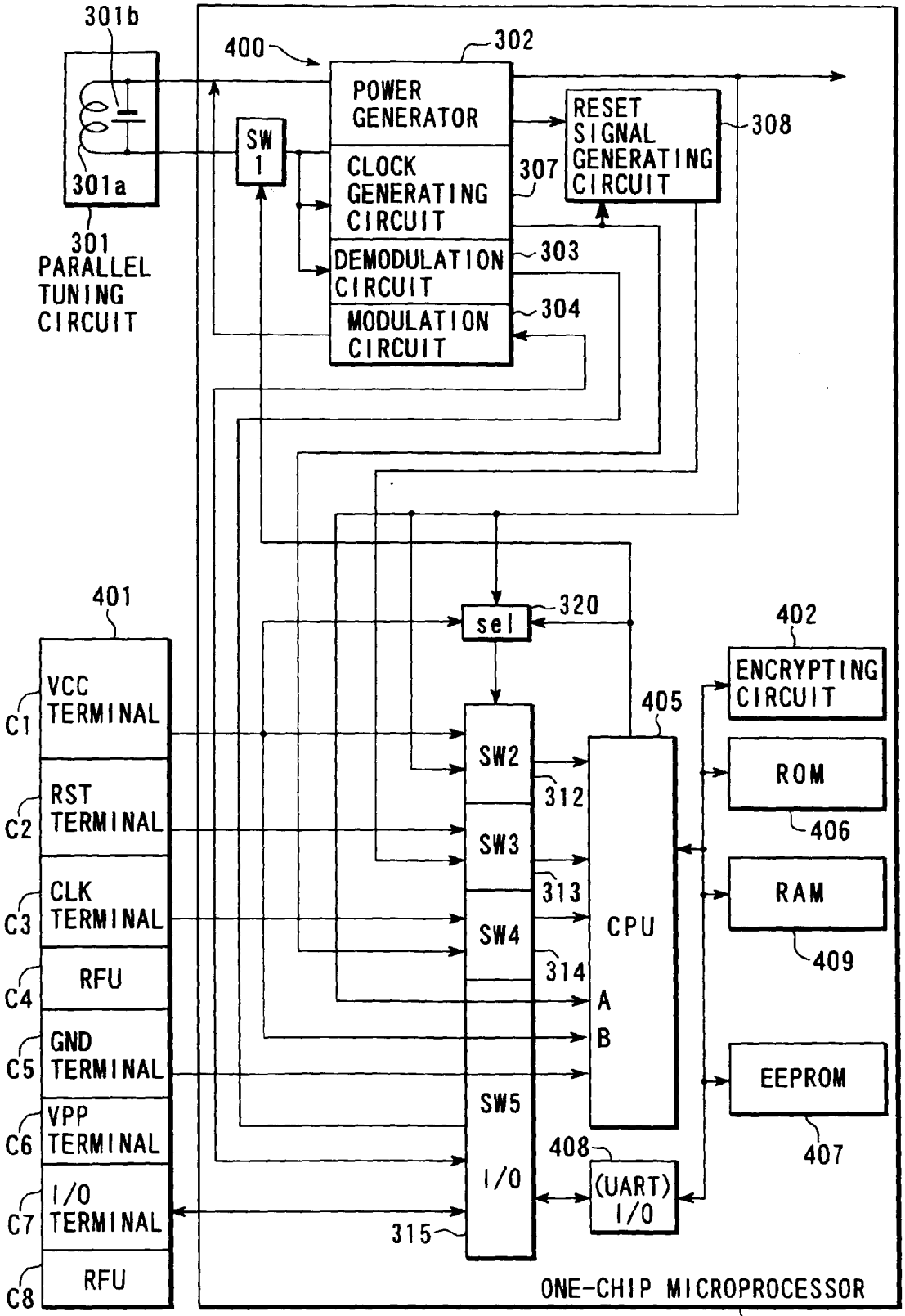


FIG. 5

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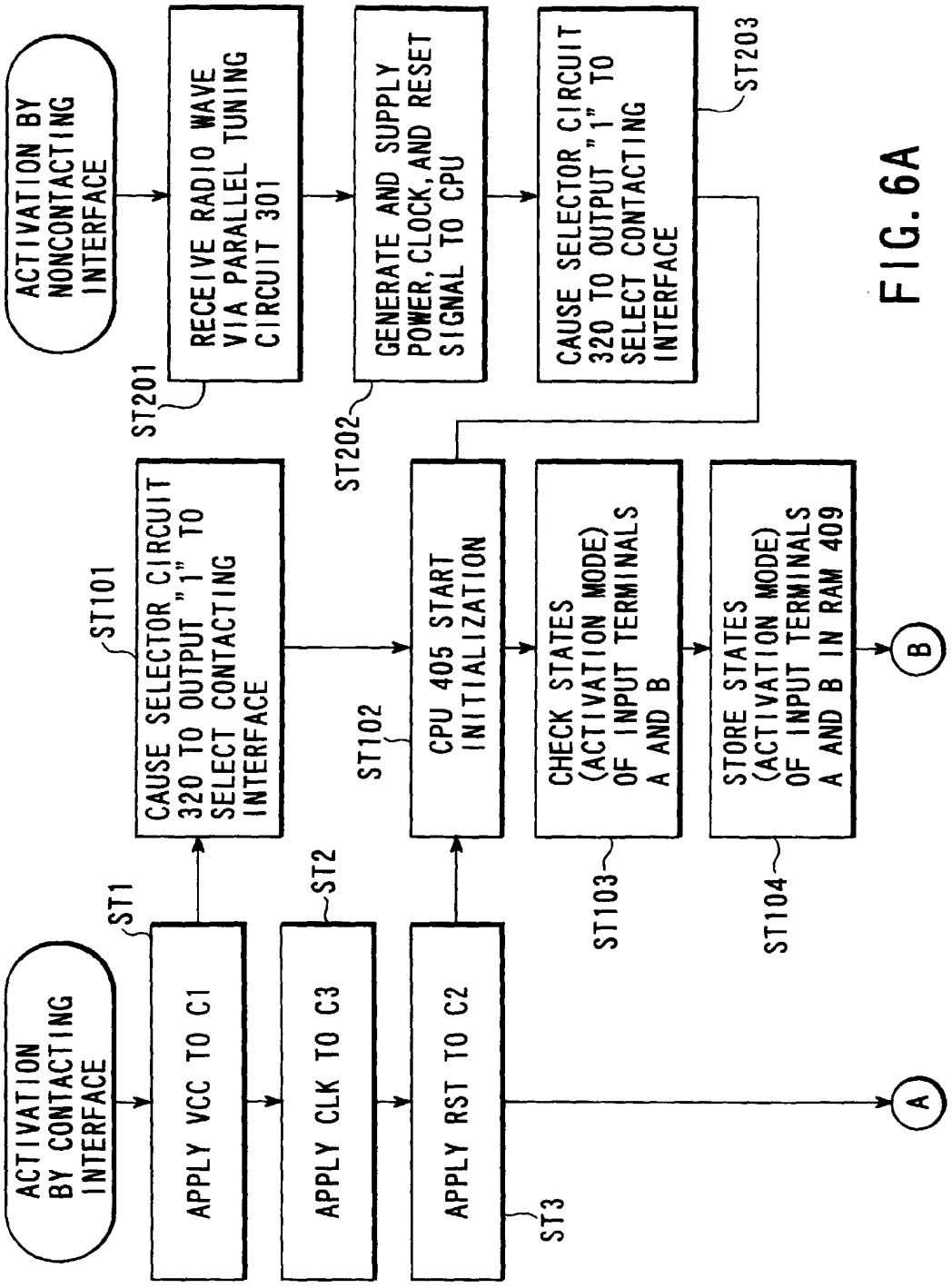


FIG. 6A

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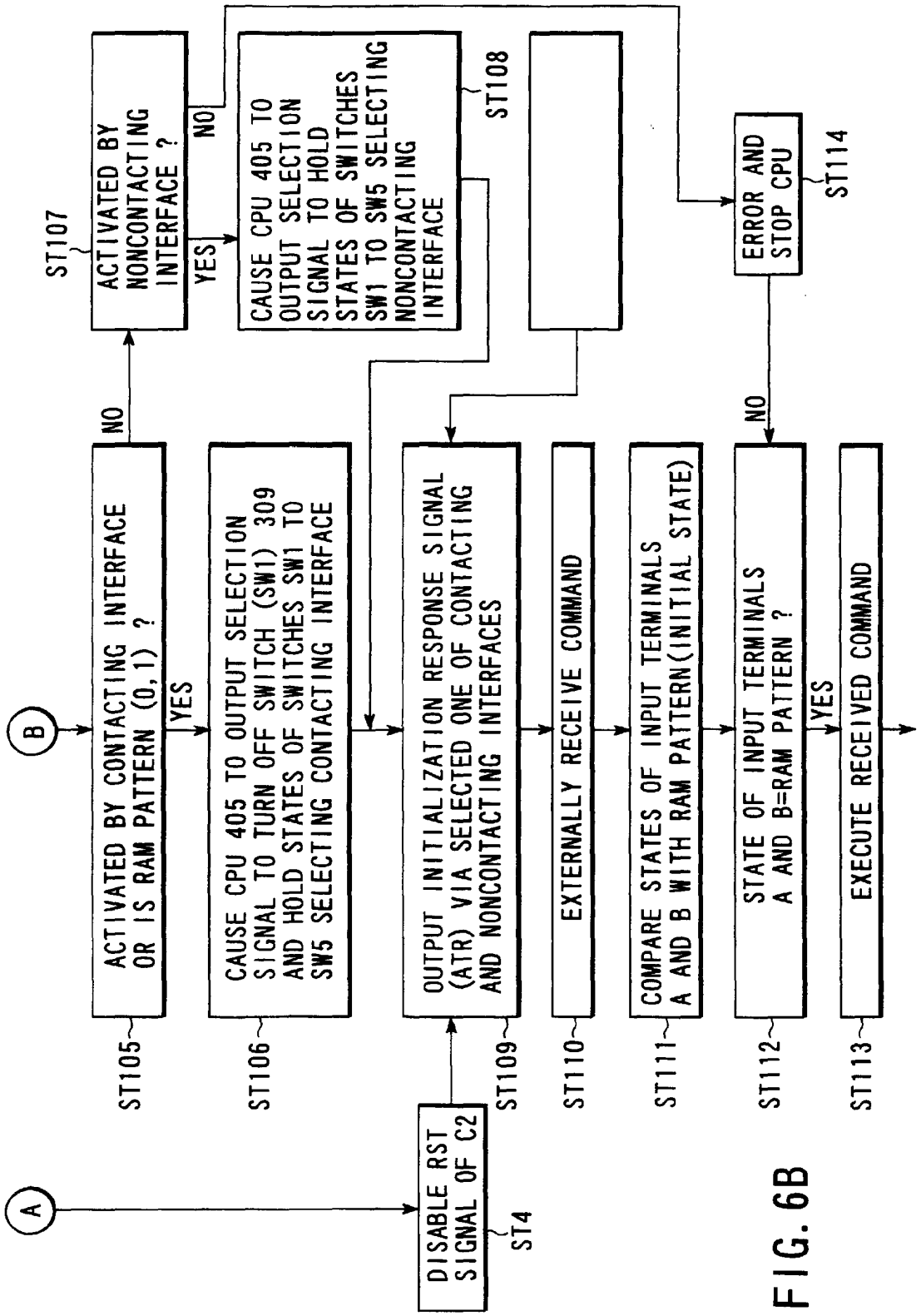


FIG. 6B

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Apple EX1007 Page 158

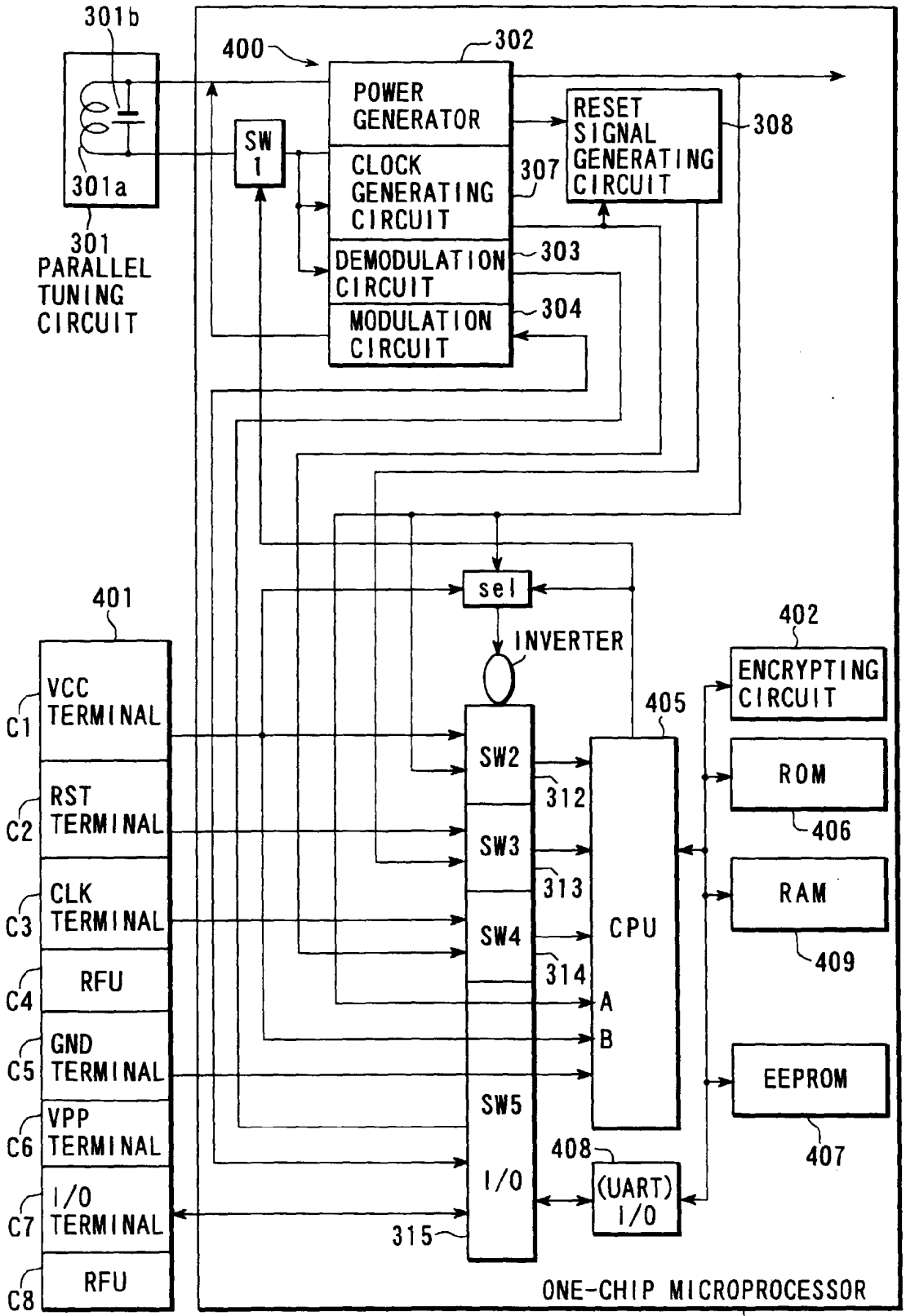


FIG. 7

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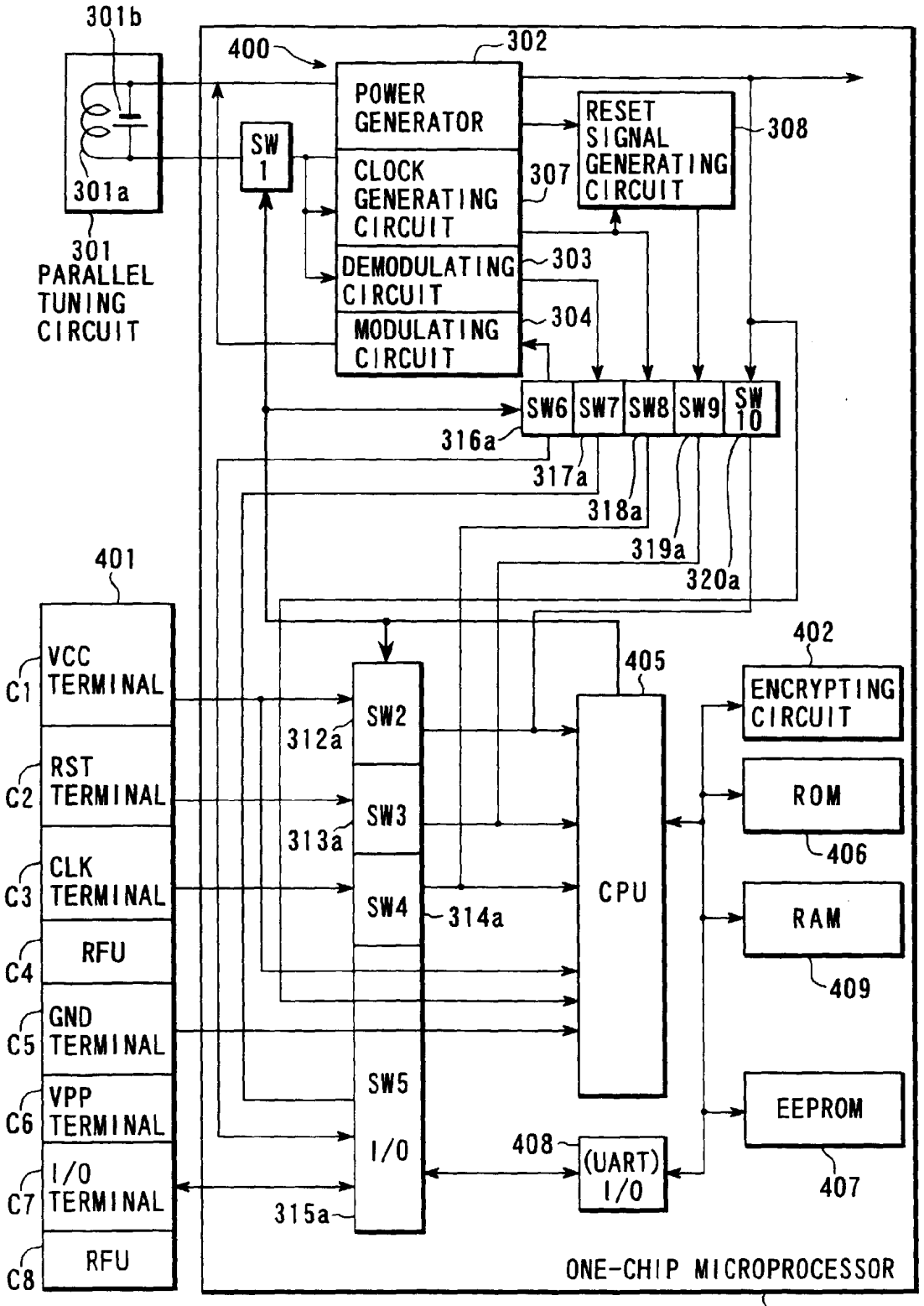


FIG. 8

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(COMMAND LIST FOR CONTACTING RESPONSE)

COMMAND TYPE	ROM ADDRESS
AAA(ADDITIONAL WRITE)	aaa
BBB(READ)	bbb
CCC(REWRITE)	ccc
DDD(ERASE)	ddd
EEE(ISSUE)	eee

FIG. 9

(COMMAND LIST FOR NONCONTACTING RESPONSE)

COMMAND TYPE	ROM ADDRESS
AAA(ADDITIONAL WRITE)	aaa
BBB(READ)	bbb

FIG. 10

(COMMON COMMAND LIST)

COMMAND TYPE	FEASIBILITY IN CONTACTING RESPONSE	FEASIBILITY IN NONCONTACTING RESPONSE	ROM ADDRESS
AAA(ADDITIONAL WRITE)	1(OK)	1(OK)	aaa
BBB(READ)	1(OK)	1(OK)	bbb
CCC(REWRITE)	1(OK)	0(NO)	ccc
DDD(ERASE)	1(OK)	0(NO)	ddd
EEE(ISSUE)	1(OK)	0(NO)	eee
FFF	1(OK)	1(OK)	fff
GGG	1(OK)	1(OK)	ggg
HHH	1(OK)	0(NO)	hhh
III	1(OK)	0(NO)	iii
JJJ	1(OK)	0(NO)	jjj

FIG. 11

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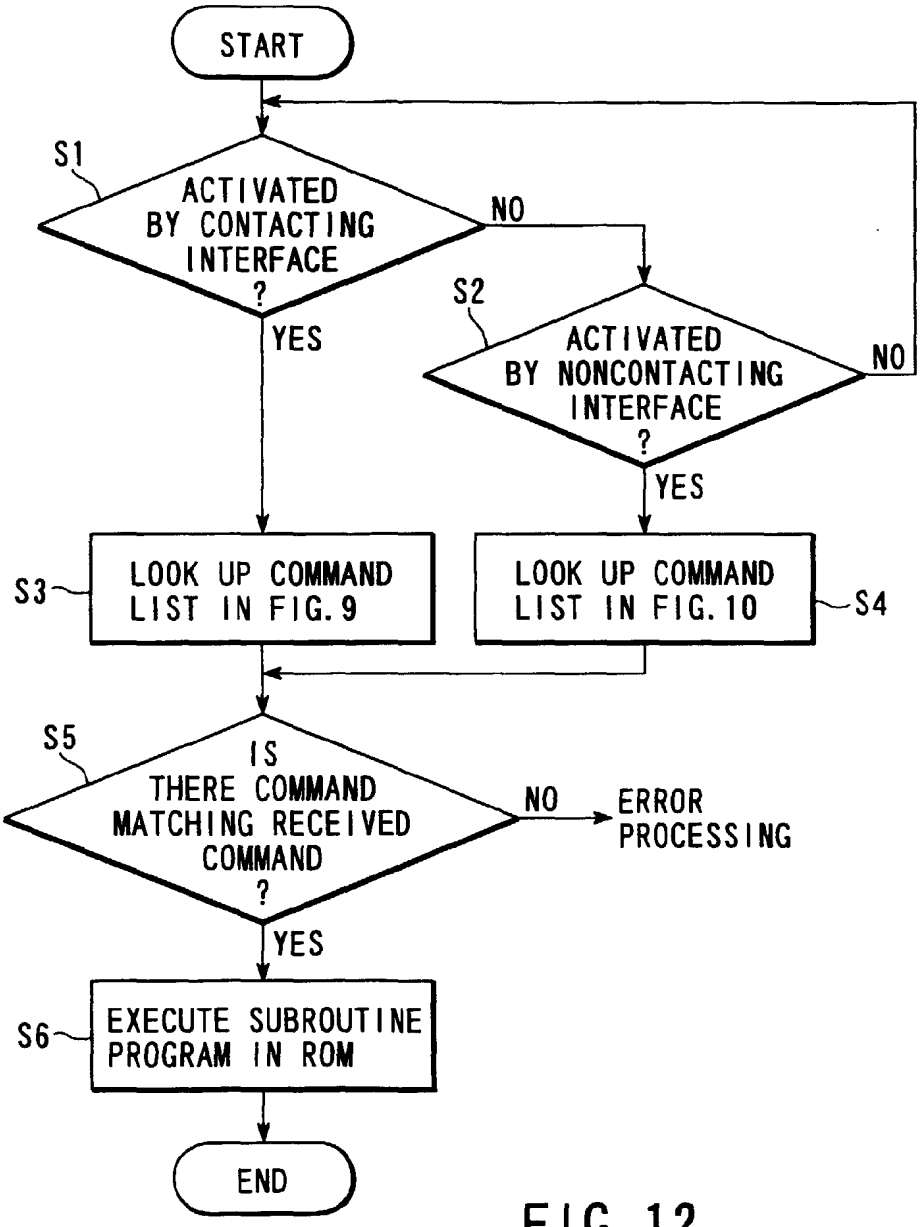


FIG. 12

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Electronic Patent Application Fee Transmittal

Application Number:	12603085
Filing Date:	21-Oct-2009
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Filer:	James D. Miller/robin radde
Attorney Docket Number:	1-40490

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt

EFS ID:	11904651
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Jo¿l Gaillard
Customer Number:	43935
Filer:	James D. Miller/robin radde
Filer Authorized By:	James D. Miller
Attorney Docket Number:	1-40490
Receipt Date:	24-JAN-2012
Filing Date:	21-OCT-2009
Time Stamp:	11:57:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$180
RAM confirmation Number	11562
Deposit Account	503156
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	40490_SUPP_IDS_Filed_012412.pdf	170525 b34ba73ede9968bcb778af75be28d26a8c1269c1	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
2	Foreign Reference	40490_EngAbstract_Filed_012412.pdf	58828 817153a98733b467f231576e20c34af8a57b3a52	no	1
Warnings:					
Information:					
3	Foreign Reference	EP0945828A2_ForeignRef_Filed_012412.pdf	1596761 035937fd68973dee61cf1d1c17f3640bf39e9648	no	27
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30449 36303e1e12d52bbfd51abbbd5694c9b42661bae4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1856563		

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/603,085	10/21/2009	Jo¿l Gaillard	1-40490	5895

43935 7590 01/11/2012

FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

EXAMINER	
HESS, DANIEL A	

ART UNIT	PAPER NUMBER
2876	

NOTIFICATION DATE	DELIVERY MODE
01/11/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sloan@fraser-ip.com
clemens@fraser-ip.com
lopez@fraser-ip.com

Office Action Summary	Application No.	Applicant(s)	
	12/603,085	GAILLARD, JO L	
	Examiner	Art Unit	
	DANIEL HESS	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-14 and 16-20* is/are rejected.

8)☒ Claim(s) *15* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *21 October 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10552912.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/12/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to applicant's filing of 10/21/2009, which has been entered into the electronic file of record.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Reiner (US 5,999,713).

Re claim 1:

See the entire specification of Reiner. Reiner discloses two different conveyance functions, namely contact-based and contactless.

See column 3 of Reiner:

"Referring now in detail to the single FIGURE of the drawing, there is seen a basic circuit in which a memory 1 is connected to a coil 2. A high-frequency signal that is received is supplied from the coil 2 over a first line 6 to a processing circuit 7, which extracts the clock and the data from it and supplies them through a switch device 9 to the memory 1. The switch device 9 assumes a position of repose, in which a switch 91 of the switch device 9 connects the memory 1 constantly through the processing circuit 7 to the coil 2.

A supply voltage which is derived from the coil 2 through the use of a rectifier and smoothing circuit 3 and a control circuit 4, can be applied through a line 5 to both the processing circuit 7 and the memory 1.

A control portion 92 of the switch device 9 may be triggered by a logic circuit 8, which is advantageously constructed as a microprocessor, so that the switch 91 connects the memory 1 through the microprocessor 8 to contacts 20. However, this switchover can only occur when a supply voltage VDD is applied to a supply voltage contact 21 of the contacts 20 and supplies the microprocessor 8."

There is switching between the two modes, as well as a default mode. A cue is received externally, namely a triggering through the contacts, that causes switching into a contact-mode from the default of the contactless mode.

Re claim 5-7: See discussion re claim 1 above and full specification of Reiner et al. In Reiner et al. there is a controlling voltage which interacts with programmed instructions. There is thus both physical switching and associated programmed logic.

Re claim 8: See discussion re claim 1 above.

Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Reiner (US 5,999,713) based on a particular prior art embodiment outlined in Reiner's discussion of pertinent prior art. Reiner et al. teaches (column 1, lines 15+):

"One such chip card is already known from Published European Patent Application 0 424 726 A1. In that device, the logic circuit is constructed as a comparator having one input which is connected to the supply voltage contact. The other input of the comparator is connected, through a rectifier and smoothing network, to coils for contactless energy and data transmission. An output of the comparator operates as a function of voltages applied to its two inputs to trigger a multiplexer which operates as a function of the status of the output signal of the comparator to switch either the supply voltage and the signals of the contacts, or the supply voltage and the signals that have been derived from the signal received by the coils, to a microprocessor that is also connected to the multiplexer and has an associated memory.

Accordingly, in the known chip card, an automatic switchover to either the contacts or the coils is possible, depending on where the chip card has received its supply voltage from."

In the above instance, the 'cue' which dictates which mode to use is the transceiver itself.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Pitroda (US 5,590,038). Pitroda is of record in the IDS of 1/12/2010.

Reiner is silent on whether or not there is a display on the card, which as he makes clear in the background, may be a transaction card.

Pitroda teaches a transaction card with a variable display. In certain embodiments, transaction card information is displayed on the display. See for instance figure 14. The electronic display is connected to the internal electronic circuit.

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known display connected to internal circuitry as taught by Pitroda in the teachings of Reiner for the sake of allowing multiple transaction cards to be carried with a single device using switching and variable display as Pitroda teaches.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Selker (US 2003/0132301).

Reiner is silent on use of an activation to switch modes. He uses an electrical signal.

Selker (see entire document) uses a button to turn a contactless communication system on and off on a similar card.

In view of Selker's teachings, t would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known button for switching communication systems in a card so that a user can control which mode is used. For instance, when security is an issue, a user may wish to use a contact mode while contactless may be more convenient at other times.

Claims 9-12 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner as applied to claim 1 above, in view of Becker (US 6,726,099).

Reiner et al. has two modes in a card, one of them contact-based and one of them contactless.

Becker also, has two modes, but both of them are contactless. See figure 1, where it is seen that one mode is for shorter distance communication and the other is for longer distance communication.

In view of Becker's teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known short and long distance wireless communication as two modes communication for the reason that the source being transacted-with may have varying distances.

Claims 13, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker as applied to claims 9-12 above, in view of Pitroda (US 5,590,038).

Pitroda teaches (figure 14) that transaction card identifying information can be displayed on the display of a card and that there can be prompting to provide a confirmation number in order to use the card (figure 11 of Pitroda).

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known display connected to internal circuitry as taught by Pitroda in the teachings of Reiner/Becker for the sake of allowing multiple transaction cards to be carried with a single device using switching and variable display as Pitroda teaches.

In view of Pitroda's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known prompting to provide a confirmation number as taught by Pitroda for the sake of avoiding fraudulent use of the card.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner/Becker as applied to claims 9-12 above, in view of Reiner is silent on use of an activation to switch modes. He uses an electrical signal.

Selker (see entire document) uses a button to turn a contactless communication system on and off on a similar card.

In view of Selker's teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the old and well-known button for switching

communication systems in a card so that a user can control which mode is used. Although Selker teaches a button for switching communication on and off, rather than for switching *between* modes, when applied to switching that takes place in Reiner/Becker switching between modes would be the result.

Allowable Subject Matter

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion in the prior art of the type of dual verifications that are recited in the context of all other limitations present in the claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL HESS whose telephone number is (571)272-2392. The examiner can normally be reached on 9:00 AM - 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel A Hess/
Primary Examiner, Art Unit 2876

Notice of References Cited	Application/Control No. 12/603,085	Applicant(s)/Patent Under Reexamination GAILLARD, JO L	
	Examiner DANIEL HESS	Art Unit 2876	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2003/0132301	07-2003	Selker, Edwin Joseph	235/487
*	B	US-6,726,099	04-2004	Becker et al.	235/380
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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JAN 12 2010

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/603,085
Filing Date	Oct. 21, 2009
First Named Inventor	Joel Gaillard
Art Unit	3711 2876
Examiner Name	Daniel Hess
Attorney Docket Number	1-40490

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number-Kind Code [2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-5,590,038	12-31-1996	Pitroda	
		US-5,917,754	06-29-1999	Pathak et al.	
		US-6,044,470	03-28-2000	Kuriyama	
		US-6,112,987	09-05-2000	Lambert et al.	
		US-6,254,001	07-03-2001	Chan	
		US-6,454,172	09-24-2002	Maeda et al.	
		US-6,454,173	09-24-2002	Graves	
		US-2003/019942	01-30-2003	Blossom	
		US-6,390,373	05-21-2002	Beyer et al.	
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		US-6,360,954	03-26-2002	Barnardo	
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		US-5,999,713	12-07-1999	Reiner et al.	
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code [3] Number[4] Kind Code [5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
		DE 101 46 804	04-10-2003	Philips Corp.		
		DE 4205556	08-26-1993	Angewandte Digital		
		DE 4203748	08-05-1993	Provera Ges Fuer		
		WO 03/027949 A1	04-03-2003	Riemschneider et al.		

Examiner Signature	/Daniel Hess/	Date Considered	01/05/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.H./

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	Art Unit
	DANIEL HESS	2876

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	01/05/2012								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	O								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12603085	GAILLARD, JO L
	Examiner	**Art Unit**
	DANIEL HESS	2876

SEARCHED			
Class	**Subclass**	**Date**	**Examiner**
235	492	1/5/2011	DH
	487		

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
East keyword search history attached	1/5/2012	DH

INTERFERENCE SEARCH			
Class	**Subclass**	**Date**	**Examiner**

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	16	("20030019942" | "4746787" | "4800255" | "5590038" | "5734154" | "5917754" | "5999713" | "6044470" | "6112987" | "6254001" | "6360954" | "6390373" | "6402039" | "6454172" | "6454173" | "7024385").PN.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 17:43
S3	0	rfid.ab. and (first adj transcerver) and (second adj transceiver)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/04 18:16
S4	34	rfid.ab. and (first adj transceiver) and (second adj transceiver)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/04 18:16
S5	21	rfid.ab. and (first adj transceiver) with (second adj transceiver)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/04 18:16
S6	22	pitroda.in. and contact and contactless	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 13:45
S7	22	pitroda.in. and contactless	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 13:46
S8	1	pitroda.in. and (display adj screen)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 13:51
S9	43	pitroda.in. and display	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 13:52
S10	9	pitroda.in. and display and card.ab.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 14:08
S11	6	S10 and (display$4 with number)	US-PGPUB; USPAT; EPO;	OR	ON	2012/01/05 14:53

			JPO			
S12	14	button with contact with contactless with switch$4	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:17
S13	31	button with contact with contactless	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:18
S14	17	S13 not S12	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:18
S15	23	button same (contact with contactless with switch$4)	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:19
S16	9	S15 not S12	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:19
S17	362	switch with contact with contactless	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:19
S18	89	S17 and button	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:19
S19	46	S18 not ("2007" or "2008" or "2009" or "2010" or "2011").py.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:20
S20	22	kozlay.in.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:21
S21	10	kozlay.in. and contactless	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:21
S22	1	"20030132301".did.	US-PGPUB; USPAT; EPO; JPO	OR	ON	2012/01/05 16:31

1/5/2012 5:44:53 PM

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BIB DATA SHEET

CONFIRMATION NO. 5895

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/603,085	10/21/2009 RULE	235	2876	1-40490

APPLICANTS

Jo¿l Gaillard, Nassau, BAHAMAS;

**** CONTINUING DATA ***************************

This application is a CIP of 10/552,912 02/27/2006 PAT 7,628,333
which is a 371 of PCT/IB03/01523 04/14/2003

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

11/03/2009

Foreign Priority claimed	35 USC 119(a-d) conditions met	Verified and Acknowledged	Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
☑ Yes ☐ No	☑ Yes ☐ No	/DANIEL A HESS/ Examiner's Signature	☐ Initials	BAHAMAS	4	20	4

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28366 KENSINGTON LANE
PERRYSBURG, OH 43551
UNITED STATES

TITLE

PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

FILING FEE RECEIVED		
682	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/603,085	10/21/2009	Joël Gaillard	1-40490

CONFIRMATION NO. 5895

43935
FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

PUBLICATION NOTICE

OC000000040146507

Title:PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

Publication No.US-2010-0038436-A1
Publication Date:02/18/2010

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

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Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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PTO/SB/08a (12-08)
Approved for use through 01/31/2009. OMB 0651-0031
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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/603,085
Filing Date	Oct. 21, 2009
First Named Inventor	Joel Gaillard
Art Unit	3711
Examiner Name	
Attorney Docket Number	1-40490

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		US-6,254,001	07-03-2001	Chan	
		US-6,454,172	09-24-2002	Maeda et al.	
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		US-2003/019942	01-30-2003	Blossom	
		US-6,390,373	05-21-2002	Beyer et al.	
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		US-5,734,154	03-31-1998	Jachimowicz et al.	
		US-4,746,787	05-24-1988	Suto et al.	
		US-6,402,039	06-11-2002	Freeman et al.	
		US-7,024,385	04-04-2006	Adcock et al.	
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		US-			
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Examiner Initials*	Cite No.[1]	Foreign Patent Document: Country Code [3] Number[4] Kind Code [5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]
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		DE 4205556	08-26-1993	Angewandte Digital		
		DE 4203748	08-05-1993	Provera Ges Fuer		
		WO 03/027949 A1	04-03-2003	Riemschneider et al.		

Examiner Signature		Date Considered	

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Smart electronic card with external switch control

Publication number: DE4205556 (A1)
Publication date: 1993-08-26
Inventor(s): KREFT HANS-DIEDRICH [DE]
Applicant(s): ANGEWANDTE DIGITAL ELEKTRONIK [DE]
Classification:
- international: ***G06K19/07; G06K19/073; G06K19/077; G07F7/10;*** **G06K19/07; G06K19/073; G06K19/077; G07F7/10;** (IPC1-7): G06K19/07
- European: G06K19/07; G06K19/073A4; G06K19/077T; G07F7/10D10
Application number: DE19924205556 19920224
Priority number(s): DE19924205556 19920224; DE19934305571 19930224

Also published as:
DE4205556 (C2)

Cited documents:
DE3711601 (C2)
DE4120265 (A1)

Abstract of **DE 4205556 (A1)**

A plastic 'smart' card of the type used for credit, banking or access control purposes has a built in circuit with memory and processing capability. The embedded integrated circuitry also an associated power supply in the form of a battery cell that is actuated when a built in switch is turned on. The switch is included within the body of the card in such a way that it can be activated by pressure applied either directly or by bending of the card. Several switches may also be included and operation can be made to activate a signal generator as a warning. The operation may also be associated with an identification process.

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) **Offenlegungsschrift**

(10) **DE 42 05 556 A 1**

(51) Int. Cl.[5]:
G 06 K 19/07
// H01H 13/50,13/70

(21) Aktenzeichen: P 42 05 556.3
(22) Anmeldetag: 24. 2. 92
(43) Offenlegungstag: 26. 8. 93

DE 42 05 556 A 1

(71) Anmelder:
Angewandte Digital Elektronik GmbH, 2051 Brunstorf, DE

(72) Erfinder:
Kreft, Hans-Diedrich, 2055 Dassendorf, DE

Prüfungsantrag gem. § 44 PatG ist gestellt

(54) Chipkarte mit externem Sicherheitsschalter

(57) Es wird beschrieben, wie durch Unterbringung eines manuell bedienbaren Schalters auf einer Chipkarte die elektronischen Komponenten auf der Karte für unterschiedliche Zwecke aktiviert und deaktiviert werden können.

DE 42 05 556 A 1

IPR2025-00173
Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen
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Beschreibung

Problemstellung:

Im Einsatz befindliche Plastikkarten, welche elektronisch ablesbar sind, arbeiten vorzugsweise nach zwei Verfahren. Am weitesten verbreitet sind Karten mit Magnetstreifen, welche keinen Chip zur Speicherung und Bearbeitung von Information enthalten. Zunehmend werden Karten eingesetzt, welche einen Chip enthalten, in dem Informationen sicher gespeichert und elektronisch verändert werden können. Diese Karten werden Chipkarten oder smart cards genannt.

Die Versorgung der auf der Karte erforderlichen Chips mit Strom und Spannung geschieht über Kontakte oder kontaktfrei nach einem Verfahren, wie es in der Patentschrift DE 34 47 560 C2 dargelegt ist. Unter Verwendung von Patentschrift DE 34 47 560 C2 arbeiten Chipkartensysteme kontaktfrei, indem Energie- und Datenübertragung induktiv erfolgen. Es sind auch Chipkarten im Einsatz, welche eine interne Stromquelle zur Aufrechterhaltung ihrer Funktion nutzen. Insbesondere wird per interner Stromquelle die Übertragung von Daten zu entfernten Empfängern ermöglicht. Das wahlweise Einschalten einer Stromquelle auf der Chipkarte ist wünschenswert, um einerseits die Stromquelle zu schonen, andererseits um Daten und Kennungen der Chipkarte nur nach Wahl des Nutzers der Chipkarte auszugeben.

Es ist Aufgabe der dargestellten Erfindung, eine Chipkarte zu beschreiben, welche durch eine geeignete elektronische Ausgestaltung das Ein- oder Ausschalten von elektronischen Funktionen auf der Karte gestattet.

Beschreibung der patentgemäßen Lösung

Zu Anspruch 1

In Plastikkarten, wie sie am Markt im Einsatz sind, werden Chips eingebaut. Diese Chips erfüllen bei herkömmlichen Karten ihre Funktion unabhängig vom Nutzer. Wird eine solche Karte in ein übliches Bediengerät gesteckt, wird der Chip in der Karte aktiviert. Damit nimmt der Chip unabhängig vom Nutzer seine Funktion auf. Dies ist in den meisten Fällen gewünscht. Unerwünscht ist die Funktion der Karte beispielsweise, wenn eine Stromquelle auf der Karte sich durch andauernde Aktivität vorzeitig entlädt. Unerwünscht ist es auch, wenn die Karte von außen ohne Beteiligung des Kartenträgers identifiziert werden kann. Dieser Fall tritt bei andauernder elektromagnetischer Abstrahlung von Signalen auf, wobei als Energiequelle die auf der Karte befindliche Stromquelle infrage kommt. Es ist aber auch möglich, Karten in einem elektromagnetischen Feld unbemerkt zu aktivieren und aufgrund der charakteristischen Eigenfrequenz zu identifizieren. Insbesondere die Eigenresonanz der Kartenelektronik kontaktfreier Karten mit ihren Induktivitäten und Kapazitäten läßt sich abfragen. Beim Durchschreiten eines Türrahmens einer Eingangstür könnte eine Abfrage unbemerkt geschehen, indem im Türrahmen eine entsprechende Sende- und Empfangseinrichtung eingebaut ist.

Erfindungsgemäß ist in die Plastikkarte mindestens ein Schalter eingebaut, der von außen bedienbar ist und es derart dem Nutzer der Karte gestattet, in die Funktion der Elektronik einzugreifen. Mit diesem Schalter kann die auf der Karte befindliche Stromquelle (Akku oder Batterie, aber auch Kondensator) ein- und ausgeschaltet werden. Derart bestimmt der Nutzer wahlfrei, wann die Karte ihre Signale abgibt. Nicht nur die definitive Sperrung ist derart von außen möglich, auch die Aktivierung in Notsituationen ist möglich.

So kann es wünschenswert sein, die Karte dauernd Signale aussenden zu lassen, um eine Notsituation des Kartenträgers zu melden. Die Signale wären je nach Frequenz in einem großen Gebiet aufnehmbar, der Träger wäre mit seinem Ort aber auch mit seiner Kennung identifizierbar.

Unabhängig von einer Aktivierung der Stromquelle und damit der Chipkarte kann auch eine Funktionssperrung oder Aktivierung von Teilen der Elektronik oder von Programmen in Abhängigkeit von der Schalterstellung für den Fall in Betracht kommen, da die Chipkarte in einen üblichen Schreib/Leseschlitz gesteckt wird. Per Schalter kann der Kartennutzer bestimmen, ob Funktionen gesperrt oder geöffnet bleiben.

Zu Anspruch 2

Die Schalter können, eingebettet in das Kartenmaterial, als Kippschalter ausgeführt sein, indem zwei erkennbare Ausprägungen an der Oberfläche der Karte die Schaltstellung offenbaren. Vorzugsweise kann die Wölbung den Aktivzustand initieren und die Einbuchtung den inaktiven Zustand, da eine Einbuchtung bei entsprechender Ausführung seltener eine unbeabsichtigte Aktivierung hervorrufen dürfte. Durch die erkennbare Wölbung oder Einbuchtung ist die Stelle des Schalters für den Nutzer klar erkennbar. Die Stellung kann auch durch optische Anzeigen, Färbungen des Kartenmaterials oder weitere Merkmale erkennbar gemacht werden.

Zu Anspruch 3

Aus Sicherheitsgründen kann es sinnvoll sein, den Schaltzustand erst durch ein wiederholtes Bedienen zu aktivieren. Die Sequenz der Be- und Entlastung des Schalters kann in der Form einer Codierung ähnlich wie beim Morsen gegeben werden.

Zu Anspruch 4

Um die unbemerkte Identifizierung von Karten per spezifischer, elektromagnetischer Rückwirkung (Spektrum der Rückkoppelfrequenzen der Oberwellen) der elektronischen Komponenten einer Karte in einem Wechselfeld zu erschweren, kann der Schalter zur Veränderung der elektronischen Eigenfrequenzen der Elektronikkomponenten verwendet werden. Der Schalter kann beispielsweise bei nicht aktivierter Elektronik Kapazitäten parallel zu den elektronischen Komponenten (insbesondere Spulen) auf der Karte schalten und derart das Frequenzbild der Karte in einem Hochfrequenzfeld entscheidend verändern. Wenn die zugeschalteten Komponenten in ihren Eigenschaften stark zeitlich variieren, ist die eindeutige Identifizierung der Karte und damit des Trägers der Karte nicht mehr möglich.

Patentansprüche

1. Die Erfindung beschreibt eine besondere Ausgestaltung von Chipkarten, welche elektronische Elemente zur kontaktfreien Übertragung von Daten aufweisen, welche **dadurch gekennzeichnet** ist,

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daß in die Chipkarte zusätzlich ein oder mehrere bedienbare Schalter eingebaut sind, welche es gestatten, die Elektronik oder Teile der Elektronik per manueller Bedienung ein- oder auszuschalten.

2. Gemäß Anspruch 1 dadurch gekennzeichnet, daß der einzelne Schalter unterhalb des von außen sichtbaren Materials der Karte sitzt und die Schaltstellung durch Wölbung oder Einbuchtung bei Bedienung abtastbar oder auf andere Weise von außen erkennbar ist und den Zustand des Schalters offenbart.

3. Gemäß Anspruch 1, 2, dadurch gekennzeichnet, daß der Schalter zu seiner Funktion eine Druckbe- und Entlastungssequenz erfordert.

4. Gemäß Anspruch 1, 2, 3, dadurch gekennzeichnet, daß die Elektronik mit ihrer elektromagnetischen Rückwirkung in einem elektromagnetischen Wechselfeld in ihrer Charakteristik durch die Stellung des oder der Schalter bestimmt wird.

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Multi-function smart card e.g credit card,cashpoint card - has account details updated after each transaction with data held in on chip memory

Publication number: DE4203748 (A1)
Publication date: 1993-08-05

Inventor(s): HOLZER WALTER [DE]
Applicant(s): PROVERA GES FUER PROJEKTIERUNG [DE]

Classification:
- international: ***G06K19/07; G07F7/08;*** **G06K19/07; G07F7/08;** (IPC1-7): G07G1/00; G07G5/00
- European: G06K19/07; G07F7/08C
Application number: DE19924203748 19920210
Priority number(s): DE19924203748 19920210; DE19924203141 19920204

Cited documents:
DE3806771 (A1)
EP0253240 (A1)

Abstract of **DE 4203748 (A1)**

A multi-function plastic 'smart' card (1) has a built in LCD display (2) that receives information from the embedded microprocessor chip that is powered by a solar cell (3). Printed information is provided on both sides (4,5). The card memory allows an account balance to be stored and details of all transactions. The 6 columns of the account statement identify the number of transactions, the date, the cost centre code, the type of transaction, the value and the balance. Details are displayed on the card. ADVANTAGE - Storage and display of account data.

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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

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(51) Int. Cl.[5]:
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G 07 G 5/00

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DE 42 03 748 A1

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(56) Für die Beurteilung der Patentfähigkeit in Betracht zu ziehende Druckschriften:

DE 38 06 771 A1
EP 02 53 240 A1

(54) Verfahren und Einrichtung zur Mehrfachnutzung und Auswertung von wiederaufladbaren Chip-Karten

(57) Die Anmeldung betrifft Verfahren und Einrichtungen zur Mehrfachnutzung und Auswertung von wiederaufladbaren Chip-Karten, bei denen jederzeit auf einem LC-Display der Betrag der letzten Buchung und das danach bestehende Restguthaben angezeigt wird.
Die Karte ist so ausgelegt, daß sie von allen bisher in Massen eingesetzten Lesegeräten magnetisch oder über Kontakte oder kontaktlos gelesen werden kann.

DE 42 03 748 A1

Beschreibung

Der Trend zur bargeldlosen Zahlung mit "Plastikgeld" ist nicht mehr aufzuhalten. Aber die bisherigen Lösungen befriedigen nicht. Die Ursachen sind bekannt:

- Kontaktschwierigkeiten
- mangelnde Speicherqualität (besonders bei Magnetkarten)
- Entsorgung abgebuchter Karten
- keine oder mangelhafte Anzeige des Restguthabens der Karte
- beschränkte Einsatzmöglichkeiten.

In der Patentanmeldung P 41 38 131.9 wurde eine neue umfassende Lösung für eine kontaktlose, wiederaufladbare Multifunktions-Karte mit digitaler Anzeige angemeldet.

Die neue Multifunktions-Karte besitzt im Vergleich zum Stand der Technik wichtige Vorteile:

- kontaktlos, daher keine Kontaktstörungen
- zuverlässige, elektronische Speicher
- wiederaufladbare Dauerkarte
- Digitaldisplay
- beliebige Anzahl von Kostenstellen
- strahlungslose optoelektronische Leistungsübertragung
- keine Identifizierung der Karteninhaber wie bei Kreditkarten (Datenschutz)
- Abmessungen kompatibel mit Kreditkarten
- kompatibel mit normgerechten Chip-Karten.

Darüber hinaus ist es möglich, diese Dauerkarten auch international für verschiedene Währungen auszubilden, indem bei jeder Belastung von dem belastenden Lesegerät der aktuelle Kurs einer Bezugswährung (z. B. ECU) mit eingegeben wird.

Da es in letzter Zeit gelungen ist, die Speicherkapazität von Chip-Karten wesentlich zu erhöhen, hat die vorliegende Patentanmeldung die Aufgabe, ein Verfahren und Einrichtungen zur optimalen Auswertung von wiederaufladbaren Chip-Karten aller Art zu beschreiben.

Die Möglichkeit, solche Karten immer wieder weiterzuverwenden, indem man Beträge einzahlt und das jeweilige Guthaben am Anzeigedisplay jederzeit ablesen kann, erweitert die Einsatzmöglichkeit beträchtlich. Aber es ist auch notwendig, Verfahren und Einrichtungen zu beschreiben, welche die neuen Möglichkeiten nutzen.

Da eine fast beliebig große Zahl von Kostenstellen mit diesen neuen Chip-Karten angesprochen und Dienstleistungen in Anspruch genommen werden können, wird vorgeschlagen, zunächst die jeweiligen Abbuchungen in der Karte in einem nichtflüchtigen Speicher (z. B. EEPROM) zu speichern, so daß zur Kontrolle die abgebuchten Beträge editiert werden können und erst später, z. B. bei jedem Aufladen die vorausgegangenen Zahlungsbuchungen zu löschen, um anschließend den noch verfügbaren Guthabensrest mit dem einbezahlten Betrag zu saldieren und neu zu speichern.

Um eine optimale Auswertung zu erreichen, wird ferner empfohlen, daß vor dem Löschen der bisherigen Buchungen und Daten und vor dem Einbuchen der Einzahlung ein Ausdrucken der gespeicherten Zahlungsbuchungen in Form einer Quittung erfolgt, welche den Vorschriften der Finanzämter oder sonstiger Stellen genügt.

Dabei kann nach einer Rückfrage des Einzahlungsautomaten "Wünschen Sie einen Beleg?" z. B. durch Betätigung einer Taste entschieden werden, ob ein solcher Ausdruck gewünscht wird oder nicht.

Dadurch kann selbst bei einer Vielzahl von Buchungen die Anerkennung solcher Zahlungen z. B. als abzugsfähige Ausgaben beim Finanzamt geltend gemacht werden. Dazu gehört naturgemäß neben dem Betrag das Datum und der Empfänger solcher Beträge und evtl. weitere Angaben, wie z. B. der Umsatzsteuersatz, die ebenfalls zu speichern sind.

Die kontaktlosen Karten erfordern neue periphere Lese- und Eingabe-Geräte.

Um eine möglichst reibungslose Einführung des neuen Verfahrens zu ermöglichen, wird vorgeschlagen, zunächst, d. h. für eine Übergangszeit, die kontaktlosen Karten zusätzlich mit Kontakten derart zu bestücken, daß auch die bisherigen Lesegeräte kompatibel die Karten lesen und beschreiben können. Das ist zwar ein zusätzlicher Aufwand, der später entfallen kann, aber die Einführung und die Vorteile einer solchen erfindungsgemäßen Karte viel schneller nutzbar macht.

Die bisher beschriebenen Anwendungsbeispiele bezogen sich immer auf die Abbuchung von vorher bar, also "cash" einbezahlten Geldbeträgen.

Die neue intelligente Chipkarte ist selbstverständlich auch in der Lage, alle Probleme und Aufgaben einer Karte mit Magnetstreifenspeicher, wie sie z. B. bisher bei den meisten "Kreditkarten" üblich waren, zu lösen. Da eine einzige Karte in Zukunft als Ideallösung alle Funktionen erfüllen soll, wird ferner erfindungsgemäß, zumindest für eine Übergangszeit, ein Magnetstreifen für die bisherige Methode der Speicherung zusätzlich vorgesehen, dessen Informationen aber auch in die Chip-Speicher eingelesen werden. Die gleiche Methode gilt ebenso für Zugangs- oder Identitäts-Karten und ähnliches.

Auch hier gilt das vorher gesagte, daß nach Umstellung der "alten" Lesegeräte die zusätzlichen Magnetstreifen entfallen können.

Mit dieser zusätzlichen Ausstattung ist jedoch die lange gewünschte Umstellung der Kreditkarten auf die viel sicheren Chip-Karten leicht möglich. Fälschungen und Funktionsfehler, die jährlich Schäden in Höhe von vielen Millionen verursachen, können mit Chip-Karten vermieden werden.

Der Benutzer profitiert von seiner "Multifunktions-Karte", die er als "Credit Card" für größere Beträge (mit Rückfrage bei der Kreditkartengesellschaft) und für kleinere Beträge als "Cash Card" ohne zeitraubende und Kosten verursachende Rückfrage wie Bargeld benützen kann. Das vorher bar oder über die "Credit Card" eingezahlte Guthaben der "Cash Card" wird ohne Formalitäten "ausbezahlt". Für diese Zahlungen ist keine Offenlegung der Identität des Karteninhabers notwendig.

Da viele der gespeicherten Angaben zum Teil unter den Datenschutz fallen können, wird erfindungsgemäß weiter empfohlen, das Auslesen oder Ausdrucken der gespeicherten Daten durch einen "persönlichen Code" zu sperren. Das kann ein einfacher Zahlen-Code sein, welcher beim Kauf oder bei der ersten Einbuchung eines Betrages vom Inhaber der Karte in einen Speicher eingegeben wird und der nicht abfragbar ist. Diese Zahl ist nur ihm bekannt und muß bei jeder Einzahlung oder vor dem Ausdrucken oder der Ausgabe der Daten eingegeben werden, um Zugriff auf die Speicher zu erhalten.

Dazu genügt u. U. bereits eine zwei- oder dreistellige

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Zahl, da man erfindungsgemäß durch eine Programmierung des Chips in einfacher Weise erreichen kann, daß bei wiederholter Eingabe einer falschen Code-Zahl entweder der Speicherinhalt und/oder die Funktion der Karte gelöscht oder endgültig vernichtet wird. Aber auch alle sonstigen Methoden zum Schutz der Daten sind anwendbar.

Solche Maßnahmen verhindern vor allem bei Karten, die gestohlen oder in Verlust geraten sind, daß Unbefugte die Daten erfahren können.

Fig. 1 zeigt schematisch ein Ausführungsbeispiel einer kontaktlosen Karte für Vielfachanwendungen. Auf der aus plastischem Material bestehenden Karte (1) ist ein Display (2), vorzugsweise ein LC-Display vorgesehen, welches ebenso wie der nicht dargestellte Mikroprozessor-Chip von einer Solarzellenanordnung (3) mit Strom versorgt wird. In den Bereichen (4) und (5), welche durch die ISO-Norm 7810 festgelegt sind, können ebenso wie auf der Rückseite der Karte Werbetexte und andere Beschriftungen untergebracht werden.

In **Fig.** 2 wird das Beispiel eines Ausdruckes bei einer erfindungsgemäßen Auswertung der Buchungen gezeigt. Der untere Streifen (6) zeigt 11 Buchungen, welche in Spalte 1 laufend von 01 bis 11 numeriert sind. Die Buchung 01 weist eine Einzahlung von DM 100,– in der 5. Spalte aus. In der 6. Spalte wird diese Einzahlung mit den zu diesem Zeitpunkt bestehenden Guthaben von DM 5,80 saldiert und weist daher einen Betrag von DM 105,80 in diesem Beispiel aus. In Spalte 2 ist zunächst das Datum ausgedruckt (in diesem Beispiel der 18. August 1991), an dem die Buchung als Belastung in die Karte eingetragen wurde. In der 3. Spalte ist die Kennziffer der Kostenstelle eingetragen, welcher der abgebuchte Betrag gutgebracht werden muß.

Zweckmäßigerweise wird auch eine allgemein verständliche Beschreibung der Kostenstelle, welche in der 4. Spalte aufgeführt ist, abgespeichert, um die Art der Ausgabe klar erkennen zu können. Die in der Zeile 01 gebuchte Einzahlung weist in diesem Fall als Einzahlungsort eine Einzahlungsstelle Nr. 8421 bei der Post aus. Hier könnte selbstverständlich genauso eine Einzahlungsstelle von Banken oder sonstigen Organisationen aufgeführt sein.

In Zeile 06 und 10 ist als Beispiel die Belastung für ein Ticket der S-Bahn (SB) ausgewiesen, wobei 24 den Tag, 15 die Stunde und 47 einen bestimmten Streckenabschnitt des S-Bahn-Netzes bedeuten könnte. Auf die Datumsangabe könnte man sogar zugunsten von anderen Angaben verzichten, da das Datum der Zahlung ohne weiteres auf dem Display, wie in **Fig.** 1 gezeigt, aufscheinen könnte.

Die **Fig.** 1 zeigt im übrigen, wie die Buchung 10 des Ausdruckes (6) erscheinen könnte. Dabei bedeutet links oben 910824 den 24. August 1991, die Bezeichnung SB241547, daß es sich um eine Belastung für ein S-Bahn-Ticket handelt für einen bestimmten Streckenabschnitt und für eine bestimmte Uhrzeit und der Betrag von DM 1,00 ist mit –001,00 ausgewiesen. Der auf dem Ausdruck ausgewiesene Saldo ist ebenfalls auf der Karte mit 028.90 DM. Eine solche Darstellung gestattet jederzeit eine Kontrolle, ob der Fahrpreis ordnungsgemäß entrichtet wurde.

Fig. 3 zeigt eine "Cash + Credit Card", die zusätzlich mit den Chip-Kontakten (9) ausgestattet ist. Auf der Rückseite der Karte (1) ist im Bereich (7) ein Magnetstreifen aufgebracht, so daß die Informationen auf der Karte (1) von allen herkömmlichen Lesegeräten, welche den ISO-Normen entsprechen, gelesen werden können. Normgemäß ist auch ein Bereich (8) für eine geprägte Beschriftung vorgesehen.

Dieser zusätzliche Aufwand dient lediglich einer schnelleren Einführung der neuen "Cash + Credit Card" und kann später entfallen.

Die schematisch beschriebenen Beispiele sind sowohl in Bezug auf die gespeicherten Daten als auch auf die Auswertung in keiner Art als beschränkend aufzufassen. So wäre es z. B. empfehlenswert, alle Karten mit einer Kennzahl zu versehen, die einer zentralen Abrechnungsstelle gestatten könnte festzustellen, ob mißbräuchliche Beträge eingegeben wurden, falls die Zahlungen die Einzahlungen übersteigen. Falls erforderlich, könnte auch für jede Buchung der Umsatzsteuersatz angegeben werden und ähnliches.

Patentansprüche

1. Verfahren und Einrichtungen zur Mehrfachnutzung und Auswertung von wiederaufladbaren Chip-Karten in einem Einzahlungsautomaten oder einer Leseeinrichtung, **dadurch gekennzeichnet,** daß alle Zahlungen mittels der Chip-Karte in einem nichtflüchtigen Speicher der Karte festgehalten werden und bei jedem Aufladen (Einzahlen) die vorausgegangenen Zahlungsbuchungen gelöscht und der noch verfügbare Guthabenswert mit dem eingezahlten Betrag saldiert und gespeichert wird.
2. Verfahren und Einrichtungen nach Anspruch 1, dadurch gekennzeichnet, daß in den Einzahlungsautomaten oder in der Leseeinrichtung eine Druckvorrichtung vorhanden ist und vor dem Löschen der Daten und dem Einbuchen der Einzahlung mit oder ohne vorherige Abfrage ein Ausdrucken der gespeicherten Zahlungsbuchungen in Form einer Quittung erfolgt, welche den Vorschriften der Finanzämter oder sonstiger Stellen genügen.
3. Verfahren und Einrichtung nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß der zuletzt eingegebene und/oder abgebuchte Wert auf einem Display, z. B. auf einem LC-Display, auf der Karte ablesbar ist.
4. Verfahren und Einrichtungen nach Anspruch 3, dadurch gekennzeichnet, daß auf der Karte eine optoelektronische Stromversorgung vorhanden ist, z. B. Solarzellen, welche das Display und den Chip mit Strom versorgen.
5. Verfahren und Einrichtungen nach einem oder mehreren der vorstehenden Ansprüche, dadurch gekennzeichnet, daß alle Datenein- und -ausgaben kontaktlos, d. h. induktiv, kapazitiv oder optoelektronisch erfolgen.
6. Verfahren und Einrichtungen nach einem oder mehreren der vorstehenden Ansprüche, dadurch gekennzeichnet, daß neben der kontaktlosen Datenein- und -ausgabe Kontaktierungen vorhanden sind, welche den Datentransfer und/oder die Leistungsversorgung über kontaktierte Lesegeräte alternativ gestatten.
7. Verfahren und Einrichtungen nach einem oder mehreren der vorstehenden Ansprüche, dadurch gekennzeichnet, daß ein Magnetstreifensystem vorhanden ist, welches unabhängig vom Chip Informationen trägt, welche von einem Lesegerät in bekannter Art abgefragt und/oder beschrieben werden können, und in den Chip-Speichern gleichartige Informationen vorhanden sind, welche in neueren Lesegeräten das Magnetstreifensystem ent-

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behrlich machen, aber zumindest die Aufgaben des Magnetstreifensystems erfüllen.

8. Verfahren und Einrichtungen nach einem oder mehreren der vorstehenden Ansprüche, dadurch gekennzeichnet, daß beim Kauf der Karte oder vor der ersten Einzahlung ein "persönlicher Code" z. B. in Form einer mehrstelligen Zahl in einen Speicher der Karte eingegeben wird, welcher weder gelöscht noch gelesen werden kann und der eine Ausgabe der gespeicherten Daten ohne vorherige Eingabe der Code-Zahl sperrt.

9. Verfahren und Einrichtungen nach einem oder mehreren der vorstehenden Ansprüche, dadurch gekennzeichnet, daß eine Programmierung des Chips bei wiederholter Eingabe einer falschen Code-Zahl den Speicherinhalt und/oder die Funktion der Karte löscht oder endgültig sperrt.

Hierzu 1 Seite(n) Zeichnungen

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Nummer: DE 42 03 748 A1
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Offenlegungstag: 5. August 1993

Fig.1

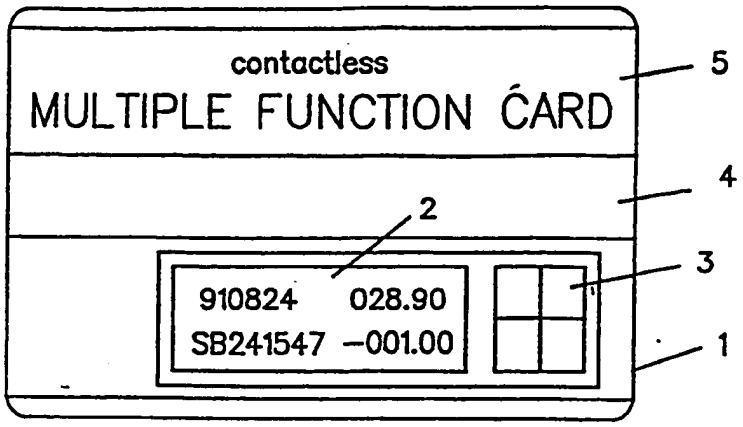


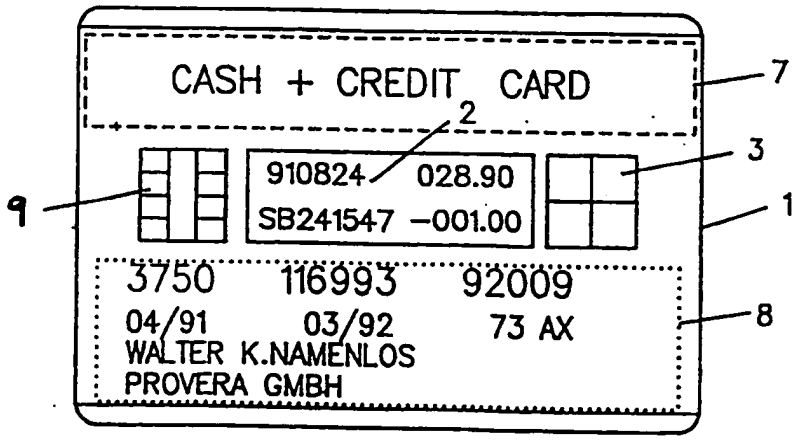
Fig.2

01	910825	0108421	POST8421	+050.00	077.70
11	910824	00010101	TELEFON	−001.20	027.70
10	910824	00010142	SB241547	−001.00	028.90
09	910822	00010101	TELEFON	−000.30	029.90
08	910821	00010126	PARKHAUS	−006.60	030.20
07	910821	00010230	BLUMEN	−020.60	036.80
06	910821	00010142	SB211447	−001.00	057.40
05	910820	00010101	TELEFON	−006.10	058.40
04	910820	00010170	GETRÄNKE	−034.00	064.50
03	910819	00010101	TELEFON	−000.30	098.50
02	910819	00010126	PARKHAUS	−007.00	098.80
01	910818	0108421	POST8421	+100.00	105.80

7

6

Fig.3



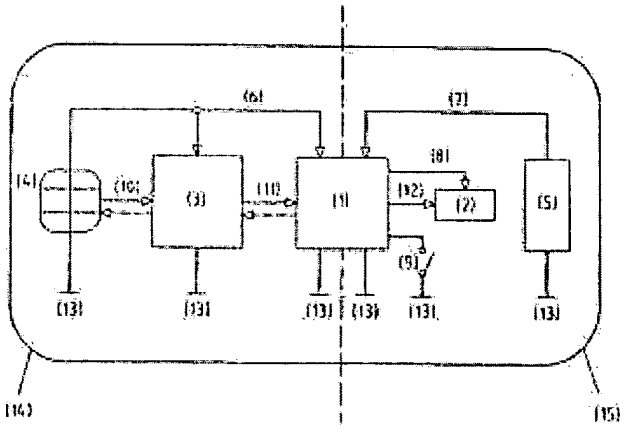
METHOD AND CIRCUIT ARRANGEMENT FOR DRIVING A DISPLAY AS WELL AS CHIP CARD WITH DISPLAY

Publication number: DE10146804 (A1)
Publication date: 2003-04-10
Inventor(s): RIEMSCHNEIDER KARL-RAGMAR [DE]; SCHWARZ ALEXANDER [DE]
Applicant(s): PHILIPS CORP INTELLECTUAL PTY [DE]
Classification:
- international: ***G06K19/07; G06K19/077;*** **G06K19/07; G06K19/077;** (IPC1-7): G06K19/07
- European: G06K19/077
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Priority number(s): DE20011046804 20010922

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US2006232572 (A1)
JP2005504381 (T)
EP1430441 (A1)
CN100414563 (C)

Abstract of **DE 10146804 (A1)**

To provide a method and circuit arrangement for driving a display, in particular the display on a chip card, by means of which information optionally comprising a plurality of display images may be displayed simply and efficiently, provision is made that (a) in write mode, information to be displayed on the display which comprises at least one item of information content (display image) to be presented on the display is stored in a drive circuit associated solely with the display; (b) the ordering relationships also selectable in write mode are stored which are assigned explicitly to each of the items of information content and which determine the sequence of information contents in the event of display; (c) in read mode, the information to be displayed and comprising at least one item of information content is called up from the drive circuit and displayed on the display, wherein (d) the stored and explicitly assigned ordering relationships are taken into account with regard to the call and thus the display sequence.



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(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENT- UND MARKENAMT

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(22) Anmeldetag: 22. 9. 2001
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DE 101 46 804 A 1

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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Verfahren und Schaltungsanordnung zum Ansteuern eines Displays sowie Chipkarte mit Display

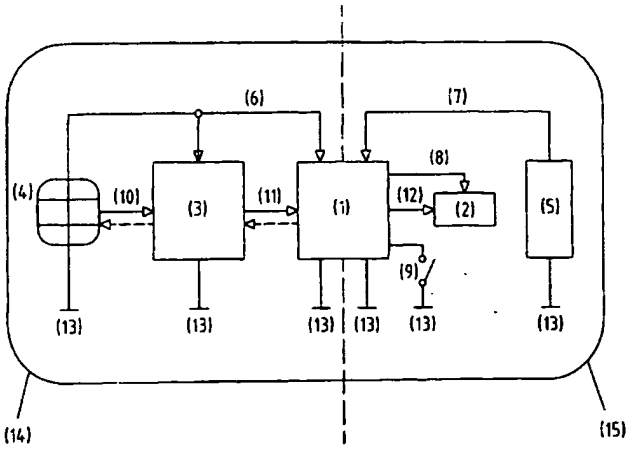
(57) Um ein Verfahren und eine Schaltungsanordnung zum Ansteuern eines Displays, insbesondere eines Displays einer Chipkarte, bereitzustellen, mittels denen in einfacher und effizienter Weise gegebenenfalls mehrere Displaybilder aufweisende Informationen darstellbar sind, ist vorgesehen, daß

(a) in einem Schreibmodus die auf dem Display anzuzeigende Information, die wenigstens einen auf dem Display darzustellenden Informationsinhalt (Displaybild) umfaßt, in einer nur dem Display zugeordneten Ansteuerschaltung gespeichert wird;

(b) die ebenfalls im Schreibmodus wählbaren Ordnungsrelationen gespeichert werden, die explizit für jeden der Informationsinhalte zugeordnet sind und die Abfolge der Informationsinhalte bei der Anzeige bestimmen;

(c) in einem Lesemodus aus der Ansteuerschaltung die den wenigstens einen Informationsinhalt aufweisende anzuzeigende Information aufgerufen und auf dem Display zur Anzeige gebracht wird, wobei

(d) die gespeicherten und explizit zugeordneten Ordnungsrelationen für die Abfolge der Aufrufe und damit der Anzeige berücksichtigt werden.



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Beschreibung

[0001] Die Erfindung betrifft ein Verfahren und eine Schaltungsanordnung zum Ansteuern eines Displays, insbesondere eines Displays einer Chipkarte, sowie eine Chipkarte mit Display.

[0002] Der Einsatz eines Displays ist bei vielen technischen Anwendungen bekannt. Im Zusammenhang mit der Erfindung wird unter Display eine Anzeigeeinrichtung verstanden, die dazu geeignet ist, eine Information darzustellen. Die Information selber besteht hierbei aus wenigstens einem auf dem Display dargestellten Informationsinhalt (Displaybild). Derartige, Informationen darstellende Displays sind bekanntermaßen mit einer eine Ansteuerschaltung für das Display aufweisenden Haupteinheit (Controller, Prozessor) verbunden. Die Haupteinheit liefert hierbei die auf dem Display darzustellenden Informationen. Entsprechend dem Aufbau des Displays werden von der Haupteinheit Ansteuersignale für das Display bereitgestellt. So werden z. B. Spannungen und Ströme zur Verfügung gestellt, die geeignet sind, einzelne Segmente des Displays derart anzusteuern, daß Symbole, Zeichen oder dergleichen auf dem Display darstellbar sind.

[0003] Reicht für eine spezielle Anwendung die Darstellung eines Displaybildes nicht aus, ist eine Aufteilung der Informationsinhalte auf mehrere Displaybilder erforderlich, die aufeinanderfolgend auf dem Display dargestellt werden. Für die Verwaltung derartiger Informationsinhalte mit mehreren Displaybildern ist bekannt, die Haupteinheit, die die Ansteuerung des Displays übernimmt, mit einer entsprechenden Software zu versehen. Hierbei ist nachteilig, daß insbesondere bei autark arbeitenden technischen Vorrichtungen, z. B. Chipkarten, für die Bearbeitung von darzustellenden Informationsinhalten und die Ansteuerung eines die Informationen darstellenden Displays eine Spannungsversorgung für die Haupteinheit zur Verfügung gestellt werden muß. Da die Haupteinheit einen relativ großen Energiebedarf besitzt, ist eine entsprechend groß dimensionierte Spannungsquelle erforderlich.

[0004] Aus der DE 196 31 557 A1 ist eine mit einem Anzeigedisplay versehene Chipkarte bekannt. Dem Display ist hierbei eine vom Chipkartenprozessor logisch und funktionell getrennte Ansteuerschaltung zugeordnet. Dem Display und der Ansteuerschaltung des Displays ist eine eigene als Solarzelle ausgebildete Spannungsversorgung zugeordnet.

[0005] Aus der FR 2 680 260 A1 ist eine Chipkarte mit einem Display bekannt, bei der Informationsinhalte in einem Stapelspeicher abgelegt sind. Somit ist eine Reihenfolge des Auslesens durch die Reihenfolge des Einschreibens, das heißt implizit, bestimmt.

[0006] Der Erfindung liegt die Aufgabe zugrunde, ein Verfahren und eine Schaltungsanordnung zum Ansteuern eines Displays, insbesondere eines Displays einer Chipkarte, bereitzustellen, mittels derer in einfacher und effizienter Weise gegebenenfalls mehrere Displaybilder aufweisende Informationen darstellbar sind.

[0007] Erfindungsgemäß wird diese Aufgabe durch ein Verfahren mit den im Anspruch 1 genannten Merkmalen gelöst. Dadurch, daß

(a) in einem Schreibmodus die auf dem Display anzuzeigende Information, die wenigstens einen auf dem Display darzustellenden Informationsinhalt (Displaybild) umfaßt, in einer nur dem Display zugeordneten Ansteuerschaltung gespeichert wird;

(b) ebenfalls im Schreibmodus wählbare Ordnungsrelationen gespeichert werden, die explizit für jeden der Informationsinhalte zugeordnet sind und die die Abfolge der Informationsinhalte bei der Anzeige bestimmen;

(c) in einem Lesemodus aus der Ansteuerschaltung die den wenigstens einen Informationsinhalt aufweisende anzuzeigende Information aufgerufen und auf dem Display zur Anzeige gebracht wird, wobei

(d) die gespeicherten und explizit zugeordneten Ordnungsrelationen für die Abfolge der Aufrufe und damit der Anzeige berücksichtigt werden,

ist vorteilhaft möglich, die anzuzeigenden Informationen derart im Schreibmodus abzuspeichern, daß jeder Informationsinhalt zumindest einen, im einfachsten Fall genau einen, Nachfolge-Informationsinhalt vorgegeben bekommt. Dieser Nachfolge-Informationsinhalt wird durch die zugeordneten, mit abgespeicherten expliziten Ordnungsrelationen als zugeordnete Referenz abgelegt. Hierdurch lassen sich einfach verkettete Listen aufbauen, bei denen die Reihenfolge des Aufrufens im Lesemodus unabhängig von der physischen Reihenfolge im Speicher ist. Es wird somit jedem Informationsinhalt (Displaybild) eine Referenz (Ordnungsrelation) zugeordnet, die auf den nächsten anzuzeigenden Informationsinhalt verweist und sich hierdurch erst die Anzeigereihenfolge auf dem Display ergibt.

[0008] Erfindungsgemäß wird die Aufgabe ferner durch eine Schaltungsanordnung mit den im Anspruch 13 genannten Merkmalen gelöst. Dadurch, daß eine nur dem Display zugeordnete Ansteuerschaltung vorgesehen ist, die in einen Schreibmodus und einen Lesemodus umschaltbar ist, wobei die Ansteuerschaltung unabhängig von einer den Schreibmodus aktivierenden und darzustellende Informationsinhalte bereitstellenden Steuerschaltung für den Lesemodus aktivierbar ist, die Ansteuerschaltung einen nichtflüchtigen Speicher umfaßt, wobei eine erste Schaltungseinheit vorgesehen ist, die der getrennten Eintragung von anzuzeigenden Informationen, die wenigstens einen auf dem Display darzustellenden Informationsinhalt umfassen, dient, indem der anzuzeigenden Information entsprechende Informationsinhalte und diesen zugeordnete explizite Organisationsrelationen getrennt abspeicherbar sind, und eine zweite Schaltungseinheit vorgesehen ist, die dem Auslesen der anzuzeigenden Informationen und der zugeordneten Organisationsrelationen dient, wobei die zweite Schaltungseinheit über ein Schaltmittel aktivierbar ist, läßt sich vorteilhaft eine Schaltungsanordnung bereitstellen, die in einfacher Weise flexibel an unterschiedliche darzustellende Informationen anpaßbar ist, wobei insbesondere durch die einfache Struktur der Schaltung ein notwendiger Energiebedarf gering gehalten werden kann.

[0009] Bevorzugte Ausgestaltungen der Erfindung ergeben sich aus den in den Unteransprüchen genannten Merkmalen.

[0010] Insgesamt lassen sich durch die erfindungsgemäßen Ausgestaltungen des Verfahrens und/oder der Schaltungsanordnung zum Ansteuern eines Displays Anzeigefunktionen ohne aktiv werdende Haupteinheit (Controller, Prozessor) selbständig durchführen. Durch die Strukturierung mittels der expliziten Ordnungsrelationen genügen wenige interne Schaltoperationen in der dem Display zugeordneten Ansteuerschaltung, so daß trotz der Möglichkeit, mehrere Informationsinhalte (Displaybilder) anzeigen zu können, deren Abfolge anwendungsgerecht organisiert werden kann, wobei hier lediglich der den Lesemodus organisierende Schaltungsbestandteil der Ansteuerschaltung aktiv ist, so daß ein Energiebedarf äußerst gering ist.

[0011] Schließlich lassen sich mit dem Verfahren und der Schaltungsanordnung flexibel unterschiedliche Applikationen unterstützen, d. h. z. B. in Umfang und Organisation der

Abfolge der anzuzeigenden Informationen variabel zu sein, Informationsinhalte der anzuzeigenden Informationen schnell hinzufügen, auswechseln, ändern oder entfernen zu können.

[0012] Eine Verbindung der Ansteuerschaltung des Displays zur Haupteinheit (Controller, Prozessor), insbesondere zum Empfang der darzustellenden Informationen im Schreibmodus, läßt sich in einfacher Weise realisieren.

[0013] In besonders bevorzugter Ausgestaltung der Erfindung ist vorgesehen, daß das Verfahren und die Schaltungsanordnung zum Ansteuern eines Displays bei einer ein Display aufweisenden Chipkarte (Geldkarte) realisiert werden. Durch die einfache Struktur der Schaltungsanordnung und die einfache Handhabung des Verfahrens können die Anforderungen, welchen eine Chipkarte mit Display in einem Karten-Terminal, in einem neutralen Ruhezustand und bei einer Nutzeraktion unabhängig vom Karten-Terminal gerecht werden muß, optimal realisiert werden.

[0014] Im Karten-Terminal führt die Haupteinheit (Controller, Prozessor) der Chipkarte in der Regel umfangreiche und komplizierte Operationen durch, z. B. um Kommunikationsprotokolle abzuwickeln oder um Verschlüsselungsalgorithmen zu berechnen. In diesem Zustand werden die Grundlagen der Informationen erzeugt oder maßgeblich verändert, die der Nutzer auf dem Display zur Kenntnis nehmen will. Insbesondere betreffen diese Informationen Zahlenwerte von Auf- oder Abbuchungen oder Zeitangaben bei elektronischen Zeitstempelvorgängen im Karten-Terminal.

[0015] Im neutralen Ruhezustand, der den größten Teil der Lebensdauer einer Chipkarte umfaßt, liegen keine Aktivitäten vor. Die Chipkarte wird in diesem Zustand vom Nutzer nur für eine spätere Benutzung mitgeführt, zu der sie aus dem Ruhezustand in einen der aktiven Zustände aufgeweckt wird. Andererseits begibt sich die Chipkarte nach einem zu definierenden Abschluß der Aktivität – in der Regel nach einer bestimmten Zeitspanne oder nach Entfernen aus dem Karten-Terminal – selbständig in den neutralen Ruhezustand.

[0016] Bei einer Nutzeraktion ohne Karten-Terminal, welche durch das Display der Chipkarte erfolgt, tritt der Nutzer unmittelbar mit der Chipkarte in Kommunikationsbeziehung. Die erfindungsgemäße Schaltungsanordnung und das erfindungsgemäße Verfahren zum Ansteuern eines Displays gestatten es, diesen Anforderungen gerecht zu werden, indem die Ansteuerschaltung für das Display so ausgelegt ist, daß diese unabhängig voneinander arbeitende Schaltungseinheiten aufweist, die unabhängig voneinander den Schreibmodus und den Lesemodus organisieren können. Der Schreibmodus und der Lesemodus arbeiten zu verschiedenen Zeiten mit den jeweils zugeordneten Schaltungseinheiten und kommunizieren hierbei mit einem gemeinsamen Speicherbereich der Ansteuerschaltung.

[0017] Im erfindungsgemäß vorgesehenen Schreibmodus, welcher insbesondere im Chipkarten-Terminal im Zusammenhang mit einer Transaktion, Authentisierung oder dergleichen eingenommen wird, werden die expliziten Ordnungsrelationen und die Informationsinhalte mehrerer Displaybilder eingespeichert. Je nach Ausstattung der Chipkarte kann dieses Einspeichern kontaktgebunden oder kontaktlos erfolgen. Die eingeschriebenen Informationsinhalte und Ordnungsrelationen werden in einem Speicher der Ansteuerschaltung des Displays nichtflüchtig, das heißt unabhängig vom Betrieb im Chipkarten-Terminal, abgelegt. Bei dem Speicher handelt es sich vorzugsweise um einen EEPROM-Speicher oder nach einer bevorzugten anderen Ausgestaltung der Erfindung um einen RAM-Speicher. Insbesondere ist der RAM-Speicher in CMOS-Technik ausgeführt, da dieser so mit einer extrem niedrigen Stromaufnahme realisiert werden kann. Die benötigte Betriebsspannung kann durch eine einfach zu strukturierende interne Energiequelle geliefert werden. Derartige nichtflüchtige Speicher sind in der Lage, die Informationsinhalte der Displaybilder und die Ordnungsrelationen zumindest in einem der normalen Lebensdauer der Chipkarten entsprechenden Zeitraum zu speichern.

[0018] In bevorzugter Ausgestaltung der Erfindung ist vorgesehen, daß der Speicher logisch in Form von zwei Tabellen organisiert ist, wobei eine erste Tabelle für Informationsinhalte der Displaybilder verwendet wird. Die Daten jedes Informationsinhaltes jedes Displaybildes werden als Eintrag der ersten Tabelle (nachfolgend Record-Tabelle genannt) gespeichert. In einer zweiten Tabelle wird die Abfolge der Anzeige der Informationsinhalte organisiert und die zugehörigen expliziten Ordnungsrelationen gespeichert. Dies geschieht im einfachsten Falle dadurch, daß in der zweiten Tabelle (nachfolgend Referenztabelle genannt) zu jedem Eintrag der Tabellenindex des nächsten anzuzeigenden Informationsinhaltes (Displaybild) eingetragen wird. Der Eintrag dieser Referenztabelle bildet eine Referenz auf mindestens einen Nachfolger.

[0019] Auf die Einträge der Record-Tabelle und der Referenztabelle wird stets mit einem und demselben Index zugegriffen. Die Einträge der beiden Tabellen selbst können jedoch verschieden umfangreich in ihrer Größe sein. Die Größe der Einträge der Record-Tabelle hängt vom Umfang eines Displaybildes ab, während die Größe der Einträge der Referenztabelle von der für die Größe der Tabellen notwendigen Indexlänge abhängt. Bei mehr als einem Nachfolgeindex pro Eintrag in der Referenztabelle, von denen stets einer durch bestimmte Signale oder Zustände ausgewählt wird, erhöht sich der Speicherplatz eines Eintrages entsprechend.

[0020] Im erfindungsgemäßen Lesemodus, der unabhängig vom Chipkarten-Terminal eingenommen werden kann, wird der Speicher ausgelesen. Hierbei werden durch Betätigen des Schaltmittels die Informationsinhalte der Displaybilder in der durch die Ordnungsrelationen vorgegebenen eingespeicherten Reihenfolge nacheinander angezeigt. Hierbei wird der Tabellenindex in einem Adressierungsregister, beginnend mit einem Anfangswert, an beiden Tabellen als Speicheradresse angelegt. Aus der Referenztabelle wird der dadurch aktuell adressierte Eintrag ausgelesen und den Ansteueranschlüssen des Displays zugeführt. Es ist klar, daß die hierdurch generierten Signale dem tatsächlich vorhandenen Display (Matrix, 7-Segment-Ziffern, alphanumerische Anzeigen oder dgl.) angepaßt sind.

[0021] Soll das nächste Displaybild zur Anzeige kommen, wird in das Adressierungsregister der Inhalt des aktuell adressierten Eintrages der Referenztabelle übernommen. Bei mehreren eingespeicherten Nachfolgeindizes wird nach weiterer bevorzugter Ausgestaltung der Erfindung der dabei ausgewählte Index im Eintrag selektiert. Der Vorgang der Übernahme in das Adressierungsregister erfolgt entweder auf ein externes Signal hin, z. B. durch Betätigen des Schaltmittels, oder selbständig nach Ablauf einer vorgebbaren Zeitspanne.

[0022] Es wird deutlich, daß somit auch bei relativ kleinen Displays, z. B. bei Chipkarten, relativ umfangreiche Informationsinhalte durch eine Folge von Displaybildern dargestellt werden können. Besonders vorteilhaft ist die Einschränkung der Schaltungsaktivität im Lesemodus auf wenige aktive Teile der Ansteuerschaltung des Displays. Die Abläufe für das Fortschalten der Abfolge der Informationsinhalte (Displaybilder) beschränken sich auf das Auslesen von einzelnen Tabelleneinträgen aus dem Speicher, auf in größeren Zeitabständen erfolgende Übernahmen aus der Referenztabelle in das Adressierungsregister sowie die Adres-

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sierung des Speichers, ausgehend vom aktuellen Inhalt des Adressierungsregisters.

[0023] Somit lassen sich einfache Schaltungen mit klarer Struktur und niedrigem Energiebedarf realisieren. Eine Anbindung der Ansteuerschaltung des Displays an eine Haupteinheit (Controller, Prozessor) der Chipkarte kann durch serielle Verbindung oder einen seriellen Datenbus erfolgen. In bevorzugter Ausgestaltung der Erfindung ist vorgesehen, daß ein Busprotokoll nach dem I^2C-Standard mit Zweidrahtverbindung zwischen Haupteinheit und Ansteuerschaltung des Displays vorgesehen ist.

[0024] Durch die Auftrennung der Schaltungsbestandteile der Schaltungsanordnung für den Schreibmodus und den Lesemodus läßt sich insbesondere die interne Energiequelle auf den Energiebedarf im Lesemodus begrenzen, da während des Schreibmodus eine Ankopplung der Chipkarte an das Chipkarten-Terminal erfolgt und über dieses mit der notwendigen Energie versorgt werden kann. Somit lassen sich durch das hier größere Energieangebot im Schreibmodus der Ansteuerschaltung auch umfangreichere, komplexere Operationen der Ansteuerschaltung des Displays auslösen. So läßt sich z. B. die modulare Gestaltung des Protokolls der Schnittstelle zwischen Haupteinheit und Ansteuerschaltung des Displays auf einer höheren, logischen Ebene unterstützen. Die Haupteinheit kann durch eine geeignete Auslegung der Software auch von der Struktur her kompliziertere Ordnungsrelationen für die Informationsinhalte als eine einfache fortlaufende Reihenfolge organisieren. Diese Ordnungsrelationen können insbesondere applikationsbezogen erzeugt, verändert und dann in die Referenztabelle initialisierend eingetragen werden.

[0025] Durch die erfindungsgemäß vorgesehene explizite Speicherung der Ordnungsrelationen in der Referenztabelle wird eine schnelle Operation für die Informationsinhalte der einzelnen Displaybilder unterstützt. Hierdurch ist ein zusätzlicher Zeitbedarf im Schreibmodus, als dieser eigentlich während einer Kommunikation der Chipkarte mit dem Chipkarten-Terminal zur Verfügung steht, nicht notwendig. Bei den expliziten festgelegten Ordnungsrelationen ist ein beliebiges Entfernen nur mit dem Aufwand der Veränderung der Nachfolgereferenz des bzw. der Vorgänger verbunden. Es werden dort die Nachfolger des zu entfernenden Eintrages der Record-Tabelle eingetragen. Auch ein Umordnen der Informationsinhalte der Displaybilder, die in der Record-Tabelle abgelegt sind, betrifft nur die Referenztabelle. Da diese typischerweise wesentlich kleiner im Datenumfang ist als die Record-Tabelle, ist eine einfachere und schnellere Handhabung gegeben.

[0026] Das Einfügen der Informationsinhalte von Displaybildern kann ebenfalls sehr vorteilhaft an beliebiger Stelle der Record-Tabelle, ohne Verschieben des nachfolgenden Teils der Record-Tabelle, erfolgen. Dies bedeutet, ein vollständiges Auslesen und Wiedereinspeichern des Dateninhaltes der gesamten Record-Tabelle entfällt somit. Hierzu wird der einzufügende Informationsinhalt (Displaybild) an einen freien oder frei werdenden Eintrag der Record-Tabelle geschrieben. Das eigentliche Einfügen erfolgt durch wenige Einträge in der die Ordnungsrelationen speichernden Referenztabelle. Auch eine zyklische Verkettung der Informationsinhalte ist dadurch möglich, daß ein Eintrag als sein eigener direkter oder indirekter Nachfolger referenziert wird. Dies kann direkt über das Einschreiben des aktuellen Index in den aktuellen Referenzeintrag geschehen. Indirekt entsteht eine zyklische Verkettung dadurch, daß ein späterer Referenzeintrag in der Kette der Nachfolger wiederum auf den aktuellen Eintrag referenziert.

[0027] Nutzt man die Record-Tabelle und Referenztabelle als Basis für den Aufbau einer dynamischen Datenstruktur, lassen sich bevorzugt einfach oder doppelt verkettete Listen, Bäume, zyklische Erweiterungen davon und andere Organisationsformen gestalten. Die gewählte Struktur mit Record-Tabelle und Referenztabelle gestattet jedoch auch eine einfache Datenorganisation. Hierzu kann vorzugsweise mit einer Initialisierungsroutine einmalig eine feste Reihenfolge in der Referenztabelle hergestellt werden. Vorzugsweise kann anfänglich als jeweiliger Nachfolger der nächste Eintrag fest eingetragen werden. Diese Datenorganisation wird von der Haupteinheit (Controller, Prozessor) vorgenommen und ist entsprechend der gewünschten Applikation mit großem Freiheitsgrad wählbar.

[0028] In weiterer bevorzugter Ausgestaltung der Erfindung ist eine Fehlerbehandlung vorgesehen. Hierdurch können unterbrochene und unvollständige Datentransaktionen mit dem Chipkarten-Terminal entweder angezeigt und/oder für eine nachträgliche Korrektur gekennzeichnet werden. Hierbei läßt sich ein willkürlich zufälliger Abbruch von Transaktionen, insbesondere durch vorzeitige Entnahme der Chipkarte aus dem Chipkarten-Terminal, berücksichtigen. Hierdurch können Operationen im erfindungsgemäßen Schreibmodus in den Speicher der Ansteuerschaltung möglicherweise nicht abgeschlossen sein. Ein Validierungssemaphore (valid flag), welches vor dem Beginn des Schreibens zurückgesetzt wird und nach Abschluß und gegebenenfalls nach Prüfung durch Lesen und Vergleich des Schreibens wieder gültig gesetzt wird, kann nicht bemerkte Fehler dieser Entstehungsart verhindern.

[0029] Ferner ist in bevorzugter Ausgestaltung der Erfindung vorgesehen, daß für die Kommunikation der Ansteuerschaltung mit der Haupteinheit (Controller, Prozessor) ein generelles Fehlerschutz- oder Fehlerbehandlungsverfahren für die Kommunikation zwischen Ansteuerschaltung und Haupteinheit vorgesehen ist, das sich vorzugsweise durch einen geringen Aufwand auszeichnet. Dieses kann sich z. B. auf das Erkennen von Prozeß-Synchronisationsproblemen durch äußere Ereignisse mittels an sich bekannter Semaphoren-Mechanismen beziehen.

[0030] Ferner ist bevorzugt durch zusätzliche Sperrzeiten bis zur beidseitigen Gültigsetzung nach der letzten Übertragung zwischen Haupteinheit (Controller, Prozessor) und Ansteuerschaltung des Displays bzw. Chipkarten-Terminal der vollständige Abschluß von Operationen sichergestellt. Hierdurch wird vorteilhaft erreicht, daß die Gültigkeit von Übertragungsoperationen durch Semaphoren-Zustände signalisiert werden kann. Vor Beginn einer neuen Transaktion ist der gültige Abschluß der letzten Transaktion geprüft und im Fall der Ungültigkeit geeignet reagiert worden, z. B. durch wenigstens einen Wiederholungsversuch. Auch die bevorzugt vorgesehene Fehlerbehandlung wird von der konkreten Anwendung bestimmt, insbesondere ob und in welchem Umfang sie erfolgen soll.

[0031] So kann in weiterer bevorzugter Ausgestaltung der Erfindung vorgesehen sein, daß auf die Fehlerbehandlung durch initialisierende Einträge in einer anfänglichen Schreiboperation auch dann verzichtet werden kann, wenn diese im Lesemodus durch die Schaltungsanordnung fest vorgesehen sind. Insbesondere kann vorgesehen sein, daß duplizierte Tabelleneinträge für den Fehlerfall, aber auch für die Normalfunktion, die Fehlerbehandlung umgehen können.

[0032] In weiterer bevorzugter Ausgestaltung der Erfindung ist vorgesehen, daß für die Durchführung des Lesemodus wenigstens eine sich verbrauchende und/oder kontinuierlich regenerierbare interne Energiequelle vorgesehen ist. Eine sich verbrauchende Energiequelle kann z. B. von einer Primärbatterie gebildet sein. Eine regenerierbare Energiequelle kann z. B. eine Solarzelle oder ein Piezokristall sein.

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Insbesondere ein Piezokristall bietet die Möglichkeit, daß durch Betätigung eines Schaltmittels, z. B. des Schaltmittels zum Aktivieren des Lesemodus, die Erzeugung der benötigten elektrischen Energie ausgelöst werden kann. Hierdurch ergibt sich ein sehr kompakter, robuster Aufbau der Schaltungsanordnung. Insbesondere beim Einsatz in Chipkarten ergeben sich hierdurch sehr vorteilhafte Anwendungsmöglichkeiten. Nach weiteren bevorzugten Ausgestaltungen kann als regenerierbare Energiequelle auch ein Akkumulator eingesetzt sein, der z. B. während eines Chipkarten-Terminalbetriebes schnell aufladbar ist. Schließlich ist in einer bevorzugte Ausführungsvariante die regenerierbare Energiequelle durch einen Kondensator gebildet, der in der Lage ist, über eine hinreichend lange Zeit Energieladungen zu speichern. Selbstverständlich kann nach weiteren bevorzugten Ausgestaltungen der Erfindung wenigstens eine der sich verbrauchenden und/oder wenigstens eine der regenerierbaren Energiequellen kombiniert sein.

[0033] Weitere bevorzugte Ausgestaltungen der Erfindung ergeben sich dadurch, daß zumindest Teile der Schaltungsanordnung zum Ansteuern des Displays in einer oder mehreren Schichten des Displays oder in einem in das Display integrierten Schaltkreis strukturiert sind. Hierfür können bevorzugt die an sich bekannten "Chip-on-glas"- oder "Chip-on-plastics"-Herstellungsverfahren Anwendung finden. Ferner sind bevorzugt in Flächen neben und/oder zwischen den Anzeigeelementen des Displays die Ansteuerschaltung oder zumindest Teile der Ansteuerschaltung integriert. Ferner ist denkbar, die Schaltungsanordnung aufzuteilen, d. h. zumindest eine Schaltungseinheit, insbesondere die die Record-Tabelle und/oder Referenztabelle bildenden Schaltungsbestandteile, in der Nähe des Displays zu integrieren.

[0034] In weiterer bevorzugter Ausgestaltung der Erfindung ist vorgesehen, daß die Schaltungsanordnung zum Ansteuern des Displays im Schreibmodus eine Taktversorgung aus dem Chipkarten-Terminal erhält und im Lesemodus eine interne Taktversorgung, insbesondere durch einen Oszillator, erzeugt wird. Auf den internen Oszillator zur Taktversorgung kann insbesondere dann verzichtet werden, wenn der Lesemodus ohne eigenen Taktoszillator realisiert ist, indem externe Signale, insbesondere die Betätigung des Schaltmittels, jeweils einen den nächsten Zustand definierenden Impuls liefern. Hierdurch läßt sich die Schaltungsanordnung besonders einfach realisieren.

[0035] Die erfindungsgemäßen Chipkarten mit Display können z. B. als elektronische Geldbörse (Geldkarte), Scheck- und/oder Kreditkarte, Kundenkarte, Rabattkarte, Loyalitätskarte, Telefonkarte, Krankenversicherungskarte, Tankkarte, Identifikationskarte, Guthabenkarte für mobiles Telefonieren oder dergleichen eingesetzt werden. Den Karteninhabern wird über das Display eine Zusatzinformation zur Verfügung gestellt, die z. B. die mit der Karte erfolgten Transaktionsvorgänge unmittelbar transparent macht. Weitere bevorzugte Anwendungen bestehen z. B. darin, daß die Gültigkeit von Eintrittskarten, Fahrkarten, Tages-, Wochen- oder Monatskarten oder dergleichen von entsprechenden Automaten auf eine erfindungsgemäße Chipkarte mit Display übertragen werden und für den Nutzer nachvollziehbar ist. Eine derartige Gültigkeit bzw. Herstellung einer derartigen Gültigkeit kann vorzugsweise mit einer automatisierten Zahlungsfunktion, z. B. durch Abbuchung eines entsprechenden Wertes in einem Chipkarten-Terminal, verbunden sein. Neben dem Erkennen einer Gültigkeit kann auch vorgesehen sein, eine Entwertung bzw. Teilentwertung der vorhandenen Gültigkeiten zu dokumentieren und einem Nutzer oder einer befugten Kontrollperson der Karte mit Display auf dessen Anforderung hin sichtbar zu machen. Ferner ist bevorzugt möglich, die erfindungsgemäßen Chipkarten mit Zusatzinformationen zu versehen, z. B. Platzreservierungen, Zeitangaben, Anschlußfahrten bei Verkehrsmitteln, Verkehrshinweise, Wetterhinweise, Werbungshinweise oder dergleichen zu integrieren. Auf dem Display anzeigbare Informationen können z. B. zusätzlich durch eine Zugangssicherung, die vorzugsweise mit der Chipkarte kombiniert ist, gesichert werden. Diese kann z. B. durch Vorsehen einer bestimmten Eingabe-Kombination oder Eingabe-Sequenz oder ein biometrisches Merkmal realisiert werden. Bei biometrischen Merkmalen lassen sich die erfindungsgemäßen Chipkarten auch z. B. als Legitimationskarten (Ausweis, Paß oder dergleichen) nutzen.

[0036] Schließlich ist in weiterer bevorzugter Ausgestaltung der Erfindung vorgesehen, das erfindungsgemäße Verfahren der erfindungsgemäßen Schaltungsanordnung zum Ansteuern eines Displays bei Ansteuerschaltungen für Displays in bzw. an mobilen Geräten oder Anlagen anzuwenden. Eine derartige Anwendung ist z. B. bei Mobiltelefonen oder drahtlosen Festnetztelefonen gegeben, bei denen neben deren eigentlichen Funktionen Zusatzfunktionen realisiert werden können, die im Lesemodus des Verfahrens mit geringem Energiebedarf auskommen. Dies können z. B. Telefonbuchanzeigen, unabhängige Anzeigen von SMS-Nachrichten oder dergleichen sein. Somit könnten derartige Informationen auf dem Display auch noch dann angezeigt werden, wenn durch entladenen Hauptakkumulator die eigentlichen Funktionen derartiger Geräte nicht mehr nutzbar sind.

[0037] Ferner ist vorteilhaft möglich, die im Lesemodus abrufbaren Zusatzinformationen in den Zeiträumen bereitzustellen, in denen die mobilen Geräte sich in einem Ruhezustand (Stand-by-Zustand) befinden. Somit wäre zum Anzeigen der Zusatzinformationen eine Aktivierung der Hauptenergieversorgung der mobilen Geräte nicht erforderlich.

[0038] Weitere bevorzugte Anwendungsmöglichkeiten der Erfindung ergeben sich beim Einsatz von Fernbedienungen für elektronische Geräte, z. B. der Heimelektronik, insbesondere zum Anzeigen von Bedienfunktionen oder Quittiersignalen der fernbedienbaren Geräte. Weitere bevorzugte Anwendungen ergeben sich bei sog. Pagern, Telefonen, elektronischen Autoschlüsseln, Warenerfassungsgeräten, elektronischen Spielzeugen oder dergleichen. Darüber hinaus ist eine bevorzugte Anwendung bei Meßgeräten gegeben. Hier könnten auf dem Display eine durch das Meßgerät aufgenommene Messung, Meßreihe oder dergleichen auch ohne Vollfunktion des Meßgerätes ausgelesen werden. Beispielhaft seien hier Energiezähler, Alarmanlagen, Bordrechner, Zahlungs-Terminals, Beschleunigungs- und Strahlungs-Protokollgeräte, Dosimeter, chemische Instrumente, medizinische Instrumente oder dergleichen genannt.

[0039] Zusammenfassend läßt sich feststellen, daß das erfindungsgemäße Verfahren und die erfindungsgemäße Schaltungsanordnung bei Geräten Einsatz finden können, bei denen Informationen oder Zusatzinformationen zur Anzeige gebracht werden sollen, ohne die eigentliche Gerätefunktion bzw. dessen Netzversorgung zu aktivieren, oder wenn diese unterbrochen ist. Nach allem wird klar, daß das erfindungsgemäße Verfahren bzw. die erfindungsgemäße Schaltungsanordnung eine separate Display-Ansteuerung gestattet, welche im Schreibmodus Informationsinhalte für eine oder mehrere Displaybilder übernimmt und im Lesemodus die Informationsinhalte für einen oder mehrere Displaybilder ausgibt. Für die Abfolge der Displaybilder wird eine explizite Speicherung der Ordnungsrelationen der Displaybilder in der Referenztabelle des Speichers realisiert. Die Fortschaltung in der Abfolge selbst kann durch Nutzer-

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interaktion oder zeitgesteuert selbständig erfolgen. Die Steuerung der Fortschaltung benutzt die eingetragenen Ordnungsrelationen in der Referenztabelle, um das jeweils nächste Displaybild zu ermitteln. Die für den Lesemodus benötigte Schaltung verwendet die Einträge in der Referenztabelle des Speichers hierbei unmittelbar. Sie ist daher einfach strukturiert und energiesparend aufgebaut. Durch eine geeignete Organisationsform der explizit festzulegenden Ordnungsrelationen können kurze Daten-Transferzeiten im Schreibmodus realisiert werden.

[0040] Weitere bevorzugte Ausgestaltungen der Erfindung ergeben sich aus den übrigen, in den Unteransprüchen genannten Merkmalen.

[0041] Die Erfindung wird nachfolgend in Ausführungsbeispielen anhand der zugehörigen Zeichnungen näher erläutert. Es zeigen:

[0042] **Fig.** 1 ein Übersichtsschaltbild einer typischen kontaktbehafteten Chipkarte mit Display;

[0043] **Fig.** 2 ein Blockschaltbild der Display-Ansteuerschaltung im Schreibmodus;

[0044] **Fig.** 3 ein Blockschaltbild der Display-Ansteuerschaltung im Lesemodus;

[0045] **Fig.** 4 eine schematische Darstellung der Abläufe in den Betriebsarten und der Speicherorganisation;

[0046] **Fig.** 5 den Ablauf des Löschens eines Displaybildes aus einer Abfolge;

[0047] **Fig.** 6 den Ablauf des Einfügens von Displaybildern in einer einfachen Referenzliste;

[0048] **Fig.** 7 ein Beispiel einer Datenstruktur bei einer Geldbörsen-Chipkarte mit Display;

[0049] **Fig.** 8 eine Anwendung der Ansteuerung in einer kontaktlosen Chipkarte und

[0050] **Fig.** 9 eine Anwendung der Ansteuerung in einer kontaktlosen Chipkarte und die Aufladung der internen Energiequelle.

[0051] **Fig.** 1 stellt das Übersichtsschaltbild einer typischen kontaktbehafteten Chipkarte mit Display dar. Dabei ist zentral eine Display-Ansteuerschaltung **1** gezeigt. Rechts daneben dargestellt ist ein Display **2**, links davon ein Chipkarten-Controller **3** und ein Kontaktfeld **4**. Am rechten Rand ist eine interne Energiequelle **5** symbolisiert, die z. B. eine Batterie, ein Akkumulator oder eine Solarzelle ist. Vom Kontaktfeld **4** verlaufen Leitungen **6** für die Betriebsspannungs- und Taktversorgung zum Chipkarten-Controller **3** und zur Display-Ansteuerschaltung **1**.

[0052] Die interne Betriebsspannung wird über eine Verbindung **7** von der Energiequelle **5** zur Ansteuerschaltung **1** geführt und gegebenenfalls von dort unter Anpassung an die Display-Technologie über eine Leitung **8** dem Display **2** zugeleitet.

[0053] An der Ansteuerschaltung **1** ist ein Taster **9** (Schaltmittel – z. B. eine Schnappscheibe oder ein Flächentaster –) angeschlossen.

[0054] Die Informationen aus dem Chipkarten-Terminal werden vom Kontaktfeld **4** zum Controller **3** über Datenleitungen **10** übertragen; typisch werden serielle Übertragungsformate genutzt. Ebenso erfolgt darüber in zahlreichen Applikationen ein Datenfluß in entgegengesetzter Richtung. Informationen vom Chipkarten-Controller **3** zur Ansteuerschaltung **1** werden nur im Schreibmodus eingetragen, dies geschieht über eine Datenverbindung **11**, die z. B. für eine serielle Übertragung oder mit einem Busprotokoll benutzt wird. Nur das Lesen von Statusinformationen oder Ausleseoperationen (z. B. für Kontrollzwecke) haben eher als Ausnahme die entgegengesetzte Datenrichtung. Von der Display-Ansteuerschaltung **1** werden über Steueranschlüsse **12** die Segmente des Displays bedient. Alle Baugruppen besitzen eine gemeinsame Masseverbindung **13**.

[0055] Der gemäß Darstellung linke Schaltungsteil **14** bis zur Mitte ist in der Betriebsart Schreibmodus aktiv, der rechte Schaltungsteil **15** ist in der Betriebsart Lesemodus aktiv. Nur die Ansteuerschaltung **1** hat eine Funktion in beiden Betriebsarten. Dieses wird in den nachfolgenden Zeichnungen detaillierter dargestellt.

[0056] **Fig.** 2 und 3 stellen das Blockschaltbild der Display-Ansteuerschaltung **1** dar. Die Lage auf der Zeichnung symbolisiert eine Aufteilung in Komponenten nur für den Schreibmodus (links) und nur für den Lesemodus (rechts). In der Mitte sind Komponenten dargestellt, die in beiden Modi gebraucht werden.

[0057] Die Betriebsspannungen werden durch Aufbereitungsschaltungen **17** oder **18** zugeführt, jeweils eine für die Terminal-Versorgungsspannung **22** oder eine interne Quelle **23**.

[0058] Die Terminal-Versorgungsspannung **22** wird im Schreibmodus genutzt und versorgt dann einen nichtflüchtigen EEPROM-Speicher **16** und eine Steuerschaltung **19** des Schreibmodus. Diese übernimmt Daten vom Controller und führt diese über eine Umschaltlogik **26** – hier schematisch als Schalter dargestellt – dem EEPROM **16** zu. Sie läßt aber auch einzelne Leseoperationen zu, etwa zu Kontrollzwekken oder um eingetragene Fehlerzustände zur Fehlerbehandlung zu übernehmen. Die Umschaltlogik wird von der Terminal-Versorgungsspannung **22** über ein Steuersignal **25** betätigt, so daß der Schreibmodus bei anliegender Terminal-Versorgungsspannung **22** stets aktiv ist. Der Lesemodus kann nur dann eingenommen werden, wenn keine Terminal-Versorgungsspannung **22** anliegt.

[0059] Auf der rechten Seite sind eine Steuerschaltung **20** für den Lesemodus und eine Treiberschaltung **21** für die Display-Leitungen dargestellt, welche die Display-Segmente ansteuern. Diese werden von der internen Energiequelle **23** über die Aufbereitungsschaltung **18** im Lesemodus versorgt.

[0060] Dieser Schaltungsblock kann außerdem die Steuerung des Einnehmens des Schlafzustandes mit minimalem Energieverbrauch und das Aufwecken daraus übernehmen. Im Schlafzustand werden auch die bisher im Lesemodus versorgten Schaltungsblöcke abgeschaltet.

[0061] Um aus dem Schlafmodus in den Lesemodus aufgeweckt zu werden, ist die Schaltung mit einem Schaltmittel (Taster) **24** verbunden. Wird der Taster **24** eine vorgebbare Zeit im Lesemodus nicht betätigt, wird wieder in den Schlafmodus übergegangen.

[0062] **Fig.** 3 stellt schematisch die Umschaltung der Umschaltlogik **26** in den Lesemodus dar. Hier ist der EEPROM-Speicher **16** von der Steuerschaltung des Schreibmodus **19** an die Steuerschaltung des Lesemodus **20** umgeschaltet. Die Schaltungsblöcke entsprechen ansonsten denen der **Fig.** 2.

[0063] **Fig.** 4 zeigt eine schematische Darstellung der Abläufe in den Betriebsarten und der Speicherorganisation. Es wird gezeigt, daß die Ordnungsrelation und die Inhalte im Schreibmodus eingetragen werden. Der EEPROM-Speicher **16** der Display-Ansteuerschaltung **1** ist in eine Tabelle der Referenzen (links – nachfolgend auch Referenztabelle genannt –) und eine Tabelle für die Displaybilder (rechts – nachfolgend auch Record-Tabelle genannt –) gegliedert. Im Lesemodus werden Referenzen ausgelesen, als neuer Index nach einem Tastendruck verwendet und außerdem das aktuell indizierte Displaybild zum Display hin weitergeleitet. In **Fig.** 4 werden folgende Angaben verwendet: S = Schreibmodus, L = Lesemodus, OB = Ordnung der Bilder, IB = Informationen der Bilder, AB = Aktuelles Bild, I = Index und NJ = Nächster Index.

[0064] **Fig.** 5 stellt den Ablauf des Löschens eines der Displaybilder, die bezüglich ihrer Abfolge in einer einfa-

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chen Referenzliste auf das jeweils nächstfolgende organisiert sind, dar. Dabei verdeutlicht sich der geringe Aufwand, es findet nur eine Schreiboperation in der Referenzliste statt. Es entsteht keine Lücke in der Referenzliste, sie kann weiterhin ohne Sonderbehandlung von gelöschten Einträgen entlang der Ordnungsrelationen (Referenz zum nächsten Element) durch die Schaltung des Lesemodus ausgelesen werden.

[0065] Im oberen Teil der **Fig.** 5 ist der Zustand vor dem Löschen und unten der Zustand nach dem Löschen für einen Ausschnitt der Record-Tabelle gezeigt. Dabei werden zunächst drei Displaybilder **27, 28** und **29** mit den zugehörigen Referenzen **30, 31** und **32** gezeigt. Sie sind so verkettet, daß dem **Bild** 27 das **Bild** 28 folgt und dieses in der Abfolge vom **Bild** 29 abgelöst wird. Die Pfeile symbolisieren die Verkettung.

[0066] Soll nun exemplarisch das mittlere Displaybild **28** der drei Bilder entfernt werden, wird die Referenz **30** so überschrieben, daß dort der Index der Referenz **32**, welcher gleich dem Displaybild **29** ist, eingetragen wird.

[0067] Im Ergebnis wird das zu löschende Displaybild **28** nicht mehr in der Abfolge erreicht.

[0068] Deutlich wird der Aufwandsvorteil im Zeitbedarf durch die explizite Speicherung der Ordnungsrelationen, er wird durch den Speicherplatz für die Referenzen erkauft.

[0069] Die Vorteile der erfindungsgemäß expliziten Ordnung kann man an diesem Beispiel gegenüber einer herkömmlich naheliegenden impliziten Ordnung gut klarstellen.

[0070] Bei einer impliziten Ordnung, also bei fortlaufender Speicherung ohne Referenzen, wäre jetzt eine Verschiebung aller Bilder nach dem zu löschenden notwendig. Dann wären für die gezeichnete Beispielaufgabe mindestens das Lesen und das Schreiben des **Bildes** 29 und aller fiktiv folgenden notwendig, wobei typisch bereits jedes Bild erheblich mehr Daten aufweist als eine Referenz. Also würden in der Zeit des Einsatzes der Chipkarte im bzw. am Terminal wesentlich mehr Daten zwischen Chipkarten-Controller und Ansteuerung zu bewegen sein, was eine besonders unerwünschte Verlängerung der Transaktionen zur Folge hätte.

[0071] **Fig.** 6 stellt den Ablauf des Einfügens eines Displaybildes dar, wobei die Abfolge in einer einfachen Referenzliste organisiert ist.

[0072] Im oberen Teil der Zeichnung ist ein Ausschnitt der Record-Tabellen mit Einträgen dreier Displaybilder **33, 34** und **35** zu sehen. Außerdem sind die Referenzen **37, 38** und **39** so verkettet, daß auf das Displaybild **33** das **Bild** 34 folgt und darauf wiederum das **Bild** 35. Die Pfeile symbolisieren die Verkettung.

[0073] Zu sehen ist außerdem ein freier Eintrag **36** und **40** jeweils in einer der Tabellen. Somit ist der Zustand vor dem Einfügen dargestellt.

[0074] Eingefügt werden soll ein neues Bild nach dem Displaybild **33**. In den Eintrag **36** der Record-Tabelle wird dazu der einzufügende Inhalt des Displaybildes eingetragen. Dann wird die Referenz **37** auf den Index des Eintrages **40** bzw. **36** geändert. Außerdem wird in der Referenz **40** der entsprechende Index des Nachfolgers **38** bzw. **34** eingeschrieben.

[0075] Im unteren Teil der Zeichnung ist nun der Zustand nach dem Einfügen dargestellt.

[0076] Insgesamt wird klar, daß kein aufwendiges Umspeichern bei der Organisation der expliziten Ordnungsrelation in Form einer verketteten Referenzliste notwendig ist.

[0077] Ein gedanklicher Vergleich zu einer herkömmlich naheliegenden impliziten Ordnung zeigt – ebenso wie im Beispiel der **Fig.** 5 – den massiven Vorteil auf. Letztlich wird auch bei dieser Einfügeoperation keine wesentliche Verlängerung der Chipkarten-Transaktion im bzw. am Terminal notwendig.

[0078] **Fig.** 7 zeigt eine beispielhafte Datenstruktur für eine elektronische Geldbörse oder einen Zahlschein auf einer Chipkarte. Die rechts gezeigten Displaybilder enthalten als ersten Eintrag den Saldo des aufgebuchten Betrages (hier 104.80 Werteinheiten). Danach folgen die letzten Buchungen (zuletzt –4.30 Werteinheiten, davor –5.20 Werteinheiten, dann fortlaufend davor –1.66, –2.05, +100.00, –0.66, –0.12, –1.11 und +20.00 Werteinheiten). Die Einträge 0.00 und –0.44 Werteinheiten werden nicht erreicht, sie könnten z. B. vorher gelöscht worden sein. Die Indizes beginnen mit dem Index 0. Jeder Eintrag der Tabelle hat genau einen Index. Hier sollen von unten nach oben die Einträge der Indizes 0, 1, 2, 3 . . . usw. dargestellt sein.

[0079] Der Index 0 wird auch beim Einschalten des Lesemodus im Indexregister erzeugt. Unter diesem Index 0 soll auch der Initialeintrag in der Referenztabelle stehen, welcher auch nach dem Aufwecken aus einem Schlafmodus als Referenz benutzt wird.

[0080] Die Referenztabelle enthält eine einfache Liste (Indizes **1, 2, 3, 6, 5, 8, 10, 11, 12, 13,** 0) der Reihenfolge. Der Eintrag am Index **14** verweist auf den Index 0, damit schließt sich der Zyklus. Dieses Beispiel zeigt, daß die implizite Reihenfolge der Indizes bei der Referenzierung durch entsprechende explizite Einträge eingehalten werden kann (z. B. . . . 1, 2, 3, . . . oder . . . 11, 12, 13, . . .), jedoch in anderen Fällen nicht auch beachtet werden muß (z. B. . . . 6, 5, 8, 10, 12, . . . oder . . . 13, 0, . . .). Es besteht durch geeignete Einträge in der Referenztabelle der Ordnungsrelationen eine flexible, wahlfreie Organisationsmöglichkeit. Der untere Teil zeigt das gemeinsame Indexregister beider Tabellen, die Fortschaltung wird durch ein getastetes Taktsignal symbolisch dargestellt.

[0081] **Fig.** 8 stellt eine Anwendung der erfindungsgemäßen Ansteuerung in einer kontaktlosen Chipkarte dar. Anstelle des Kontaktfeldes tritt nun die Antenne **41** mit Empfangsschaltung. Sie liefert Energie, Takt und Informationen. Für niedrige und mittlere Frequenzen ist die Antenne oftmals als Spule ausgeführt. Bei höheren Frequenzen kommen andere Bauformen zum Einsatz, z. B. Dipol- oder Flächenantennen. Die kontaktlose Ankopplung an ein Terminal kann auch auf kapazitivem Wege erfolgen. Die weiteren in der Abbildung gezeichneten Baugruppen und Verbindungen entsprechen denen in **Fig.** 1.

[0082] **Fig.** 9 stellt eine Anwendung der Ansteuerung in einer kontaktlosen Chipkarte und die Aufladung der internen Energiequelle dar.

[0083] Wie in **Fig.** 8 stellt eine Antenne **41** die Verbindung zum Terminal her. Die Spannung für den Schreibmodus, welche aus der Antenne gewonnen wurde, lädt gleichzeitig eine regenerierbare interne Energiequelle **44** auf. Dazu wird die Verbindungsleitung **42** zwischen der Ansteuerschaltung **1** und der Energiequelle **44** für den Ladestrom und für den Entladestrom im Lese-/Anzeigebetrieb genutzt.

[0084] Die Ansteuerschaltung **1** ist um einen Umschalter **43** erweitert worden. Exemplarisch ist als regenerierbare Quelle **44** ein Kondensator gezeichnet, es kommen aber auch Akkumulatoren in Betracht. Die weiteren in **Fig.** 9 gezeichneten und indizierten Baugruppen und Verbindungen entsprechen denen in **Fig.** 1.

BEZUGSZEICHENLISTE

1 Ansteuerschaltung
2 Display
3 Chipkarten-Controller
4 Kontaktfeld

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5 Energiequelle
6 Leitung
7 Verbindung
8 Leitung
9 Taster
10 Datenleitung
11 Datenverbindung
12 Steueranschlüsse
13 Masseverbindung
14 Schaltungsteil
15 Schaltungsteil
16 EEPROM-Speicher
1% Aufbereitungsschaltung
18 Aufbereitungsschaltung
19 Steuerschaltung des Schreibmodus
20 Steuerschaltung für den Lesemodus
21 Treiberschaltung
22 Chipkarten-Terminal-Versorgungsspannung
23 interne Energiequelle
24 Schaltmittel (Taster)
25 Steuersignal
26 Umschaltlogik
27 Displaybild
28 Displaybild
29 Displaybild
30 Referenz
31 Referenz
32 Referenz
33 Displaybild
34 Displaybild
35 Displaybild
36 Tabelle
37 Referenz
38 Referenz
39 Referenz
40 Tabelle
41 Antenne
42 Verbindungsleitung
43 Umschalter
44 Energiequelle
S Schreibmodus
L Lesemodus
OB Ordnung der Bilder
IB Informationen der Bilder
AB Aktuelles Bild
I Index
NJ Nächster Index

Patentansprüche

1. Verfahren zum Ansteuern eines Displays, insbesondere eines Displays einer Chipkarte, mit den Schritten:
   (a) in einem Schreibmodus wird die auf dem Display anzuzeigende Information, die wenigstens einen auf dem Display darzustellenden Informationsinhalt (Displaybild) umfaßt, in einer nur dem Display zugeordneten Ansteuerschaltung gespeichert;
   (b) ebenfalls im Schreibmodus werden wählbare Ordnungsrelationen gespeichert, die explizit für jeden der Informationsinhalte zugeordnet sind und die Abfolge der Informationsinhalte bei der Anzeige bestimmen;
   (c) in einem Lesemodus wird aus der Ansteuerschaltung die den wenigstens einen Informationsinhalt aufweisende anzuzeigende Information aufgerufen und auf dem Display zur Anzeige gebracht, wobei
   (d) die gespeicherten und explizit zugeordneten Ordnungsrelationen für die Abfolge der Aufrufe und damit der Anzeige berücksichtigt werden.
2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß
   (a) die Betriebsart Lesemodus durch ein externes Aufwecksignal aus einem Ruhezustand (Schlafmodus), ohne Aktivität außer dem Erhalt der Reaktionsfähigkeit auf Aufwecksignale, heraus eingenommen wird;
   (b) anschließend als erstes der Displaybilder ein durch die vorgebbare Ordnungsrelation bestimmtes Displaybild angezeigt wird, wobei diese Ordnungsrelation an einem festgelegten Initialeintrag abgespeichert wurde, der infolge des Aufwecksignals ausgewertet wird.
3. Verfahren nach Anspruch 2, dadurch gekennzeichnet, daß der Lesemodus sich nach Ablauf einer vorgebbaren Zeit selbst beendet, um erneut in den Ruhezustand (Schlafmodus) überzugehen.
4. Verfahren nach Anspruch 2, dadurch gekennzeichnet, daß das externe Aufwecksignal durch manuelle Betätigung eines Tasters erzeugt wird.
5. Verfahren nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß
   (a) die Daten der Displaybilder in einer Record-Tabelle gespeichert werden, in der jeder Eintrag einem Bild entspricht;
   (b) die Daten der Ordnungsrelationen der Anzeige der Displaybilder in einer Referenztabelle gespeichert werden, wobei jeder Eintrag den Tabellenindex des nächsten anzuzeigenden Displaybildes und des nächsten/der nächsten Einträge dieser Tabelle der Ordnungsrelationen entspricht.
6. Verfahren nach Anspruch 5, dadurch gekennzeichnet, daß
   (a) das nächste der Displaybilder nach manueller Betätigung eines Tasters angezeigt wird,
   (b) wobei der Index des nächstfolgend anzuzeigenden Tabelleneintrages der Displaybilder aus dem aktuellen Eintrag der Referenztabelle der Ordnungsrelationen ausgelesen wird und
   (c) dieser Index zugleich auf den nächstfolgenden Eintrag der Referenztabelle der Ordnungsrelationen weist.
7. Verfahren nach Anspruch 6, dadurch gekennzeichnet, daß
   (a) jeder Eintrag der Referenztabelle der Ordnungsrelationen in mehrere Teile gegliedert ist, welche jeder einen Nachfolge-Index enthalten;
   (b) jeder dieser Teile der Tabelleneinträge wahlweise einzeln ausgelesen wird, wenn ein zugeordneter Taster betätigt worden ist;
   (c) ein als nächstes ausgewähltes Displaybild nach Betätigung eines von mehreren Tastern angezeigt wird,
   (d) wobei der Index des nächstfolgend anzuzeigenden Tabelleneintrages der Displaybilder aus einem – dem betätigten Taster zugeordneten – Teil des aktuellen Eintrages der Referenztabelle der Ordnungsrelation ausgelesen wird und
   (e) dieser Index zugleich auf den nächstfolgenden Eintrag der Referenztabelle der Ordnungsrelationen weist.
8. Verfahren nach einem der Ansprüche 5 bis 7, dadurch gekennzeichnet, daß an die Stelle der Betätigung des Tasters/der Taster ein Signal tritt, welches nach einer vorgebbaren Zeit selbständig erzeugt wird.

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9. Verfahren nach einem der Ansprüche 5 bis 8, dadurch gekennzeichnet, daß die Referenzierung über die Indizes, welche in der Referenztabelle der Ordnungsrelationen gespeichert sind, eine Verkettung aller gültigen Displaybilder herstellt, wobei jede Referenz auf mindestens einen der Nachfolger verweist, so daß sich eine zumindest einfach verkettete Liste bildet.

10. Verfahren nach Anspruch 9, dadurch gekennzeichnet, daß die Verkettung mindestens eine zyklische Sequenz der angezeigten Displaybilder herstellt.

11. Verfahren nach einem der Ansprüche 7 bis 10, dadurch gekennzeichnet, daß das Einnehmen eines Fehlerzustandes durch die Anzeige eines besonderen Displaybildes aus einem reservierten Tabelleneintrag dargestellt wird, wobei der Index zum Erreichen dieses Tabelleneintrages durch den Vorgang der Fehlerfeststellung durch die Steuerschaltung des Schreibmodus erzeugt wird.

12. Verfahren nach einem der Ansprüche 7 bis 10, dadurch gekennzeichnet, daß

(a) das Fortbestehen eines Fehlerzustandes nach erneutem Bestimmen der Anzeigeabfolge durch die Anzeige eines besonderen Displaybildes aus einem reservierten Tabelleneintrag dargestellt wird, wobei der Index zum Erreichen dieses Tabelleneintrages durch den Vorgang der Fehlerfeststellung durch die Steuerschaltung des Lesemodus erzeugt wird, und

(b) als Anfangsindex in die Tabelle der Ordnungsrelationen eingetragen wird.

13. Schaltungsanordnung zum Ansteuern eines Displays, insbesondere eines Displays einer Chipkarte, gekennzeichnet durch eine nur dem Display (2) zugeordnete Ansteuerschaltung (1), die in einem Schreibmodus und einem Lesemodus umschaltbar ist, wobei die Ansteuerschaltung (1) unabhängig von einer den Schreibmodus aktivierenden und darzustellende Informationsinhalte bereitstellenden Steuerschaltung für den Lesemodus aktivierbar ist, die Ansteuerschaltung (1) einen nichtflüchtigen Speicher (16) umfaßt, wobei eine erste Schaltungseinheit (17) vorgesehen ist, die der getrennten Eintragung von anzuzeigenden Informationen, die wenigstens einen auf dem Display (2) darzustellenden Informationsinhalt (Displaybild) umfassen, dient, indem den anzuzeigenden Informationen entsprechende Informationsinhalte und diesen zugeordnete Organisationsrelationen getrennt abspeicherbar sind, und eine zweite Schaltungseinheit (20) vorgesehen ist, die dem Auslesen der anzuzeigenden Informationen und der zugeordneten Organisationsrelationen dient, wobei die zweite Schaltungseinheit (20) über ein Schaltmittel (24) aktivierbar ist.

14. Schaltungsanordnung nach Anspruch 13, dadurch gekennzeichnet, daß die Ansteuerschaltung (1) räumlich separat von der die anzuzeigenden Informationen liefernden Hauptschaltung (3) angeordnet ist.

15. Schaltungsanordnung nach einem der Ansprüche 13 und 14, dadurch gekennzeichnet, daß die Ansteuerschaltung (1) räumlich innerhalb der Displaybaugruppe angeordnet ist.

16. Schaltungsanordnung nach Anspruch 15, dadurch gekennzeichnet, daß die Ansteuerschaltung (1) als erstes einer Reihe von hintereinander geschalteten Schaltungskomponenten der Displaybaugruppe nach der Schnittstelle zum Chipkarten-Controller angeordnet ist.

17. Schaltungsanordnung nach Anspruch 13 bis 16, dadurch gekennzeichnet, daß die Ansteuerschaltung (1) in jeder Betriebsart (Schreibmodus, Lesemodus) aus einer eigenen, getrennten Energiequelle versorgt wird.

18. Schaltungsanordnung nach Anspruch 17, dadurch gekennzeichnet, daß die Energiequelle für die Betriebsart Lesemodus eine elektrochemische Energiequelle (Primärbatterie/Akkumulator) und/oder ein langzeitspeichernder Kondensator und/oder eine Solarzelle/Solarfläche und/oder ein Piezo-Kristall-Element, welches durch manuelle Druckausübung elektrische Energie liefert, und/oder eine thermoelektrische Zelle (Peltier-Element) ist, welche infolge von Temperaturdifferenzen aufgrund der Hand-Berührung elektrische Energie liefert.

19. Schaltungsanordnung nach Anspruch 18, dadurch gekennzeichnet, daß

(a) nach gebrauchsbedingter Unterbrechung der Energiequelle (Lichtabschattung/Einstellen der Druckausübung oder Wärmezufuhr) in der Betriebsart Lesemodus der Ruhezustand eingenommen wird und dann selbständig der Lesemodus wieder anläuft, wenn diese Unterbrechung wegfällt;

(b) beim Wiederanlaufen die Abfolge der Displaybilder ausgehend von einem festen Initialeintrag oder dem nichtflüchtig zwischengespeicherten Zustand unmittelbar vor der gebrauchsbedingten Unterbrechung erneut begonnen wird;

(c) wobei die explizit gespeicherten Ordnungsrelationen dieses Initialeintrages oder dieses Zustandes für die Ermittlung des ersten nach dem Wiederanlaufen anzuzeigenden Displaybildes ausgelesen werden.

20. Schaltungsanordnung nach Anspruch 17, dadurch gekennzeichnet, daß die Energiequelle für die Betriebsart Schreibmodus durch ein Chipkarten-Terminal geliefert wird, welches über Kontakte die Betriebsspannung einspeist.

21. Schaltungsanordnung nach Anspruch 17, dadurch gekennzeichnet, daß die Energiequelle für die Betriebsart Schreibmodus durch ein Chipkarten-Terminal geliefert wird, welches kontaktlos über elektromagnetische Wechselfelder elektrische Energie in die Schaltung einkoppelt.

22. Schaltungsanordnung nach einem der Ansprüche 13 bis 21, dadurch gekennzeichnet, daß das Arbeitstaktsignal der Steuerschaltung für die Betriebsart Schreibmodus durch ein Chipkarten-Terminal geliefert wird.

23. Schaltungsanordnung nach einem der Ansprüche 13 bis 22, dadurch gekennzeichnet, daß das Arbeitstaktsignal der Steuerschaltung für die Betriebsart Lesemodus in der Chipkarte mobilen Gerät autark erzeugt wird.

24. Schaltungsanordnung nach einem der Ansprüche 13 bis 22, dadurch gekennzeichnet, daß das Fortschaltsignal für den Wechsel des anzuzeigenden Displaybildes aus einer bezüglich der Ansteuerschaltung externen Quelle zugeführt wird.

25. Schaltungsanordnung nach Anspruch 24, dadurch gekennzeichnet, daß das Fortschaltsignal durch Tasterbetätigung erzeugt wird.

26. Schaltungsanordnung nach Anspruch 24, dadurch gekennzeichnet, daß das Fortschaltsignal durch einen zeitbestimmten Schaltungsteil nach einer vorgebbaren Zeit selbständig erzeugt wird.

27. Schaltungsanordnung nach einem der Ansprüche 13 bis 24, dadurch gekennzeichnet, daß

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(a) eine Datenverbindung (**11**) zur Display-Ansteuerschaltung (**1**) von der Hauptschaltung (**3**) besteht, welche die anzuzeigenden Informationen liefert, und

(b) diese Datenverbindung zur seriellen Übertragung der einzuspeichernden Informationen im Schreibmodus dient.

28. Schaltungsanordnung nach einem der Ansprüche 13 bis 24, dadurch gekennzeichnet, daß

(a) eine Datenverbindung (**11**) zur Display-Ansteuerschaltung (**1**) von der Hauptschaltung (**3**) besteht, welche die anzuzeigenden Informationen liefert, und

(b) diese Datenverbindung ein Busprotokoll zur Übertragung der einzuspeichernden Informationen im Schreibmodus besitzt.

29. Schaltungsanordnung nach einem der Ansprüche 13 bis 28, dadurch gekennzeichnet, daß elektrisch löschbare und programmierbare Nur-lese-Speicherzellen (EEPROM) (**16**) die Daten der Displaybilder und der Ordnungsrelationen der Bilder nichtflüchtig auch dann speichern, wenn die Ansteuerschaltung (**1**) sich weder in der Betriebsart Schreibmodus noch in der Betriebsart Lesemodus befindet.

30. Schaltungsanordnung nach Anspruch 28, dadurch gekennzeichnet, daß an die Stelle der nichtflüchtigen Speicherzellen des genannten Anspruchs flüchtige Speicherzellen mit geringem Energieverbrauch treten und diese kontinuierlich von der Energiequelle des Lesemodus versorgt werden.

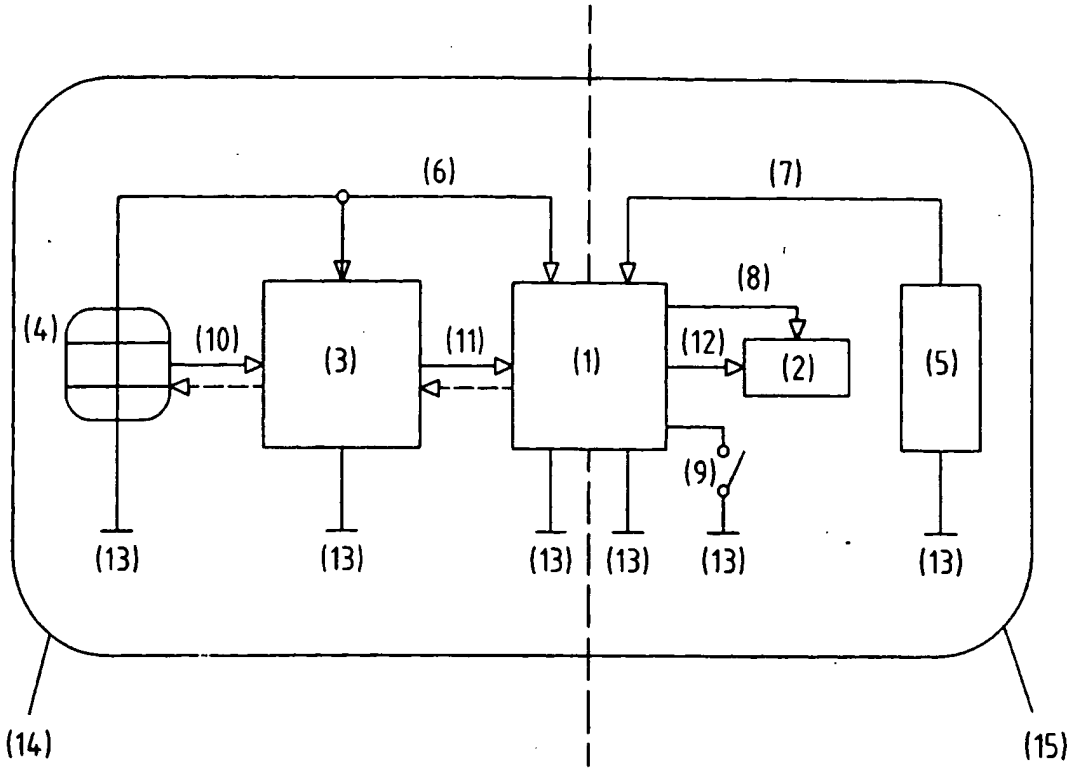
31. Chipkarte, gekennzeichnet durch eine Schaltungsanordnung nach wenigstens einem der Ansprüche 13 bis 30.

Hierzu 6 Seite(n) Zeichnungen

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Fig.1



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Fig.2

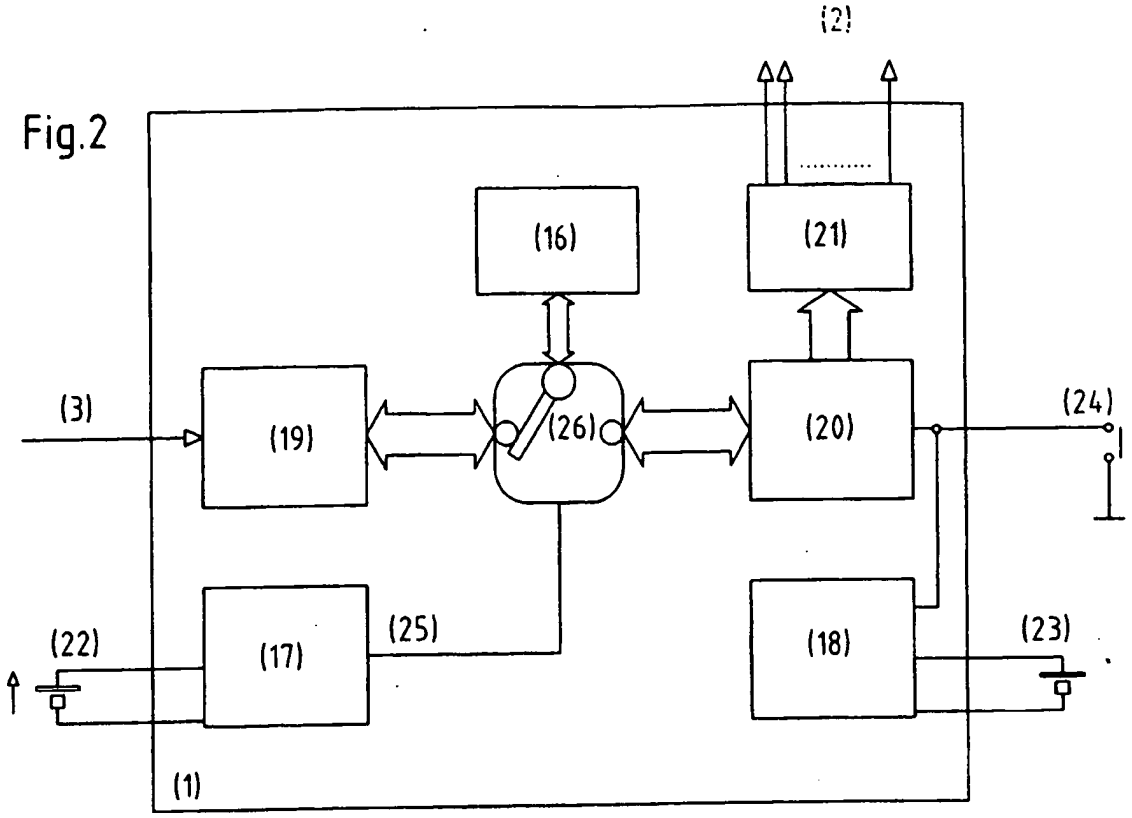
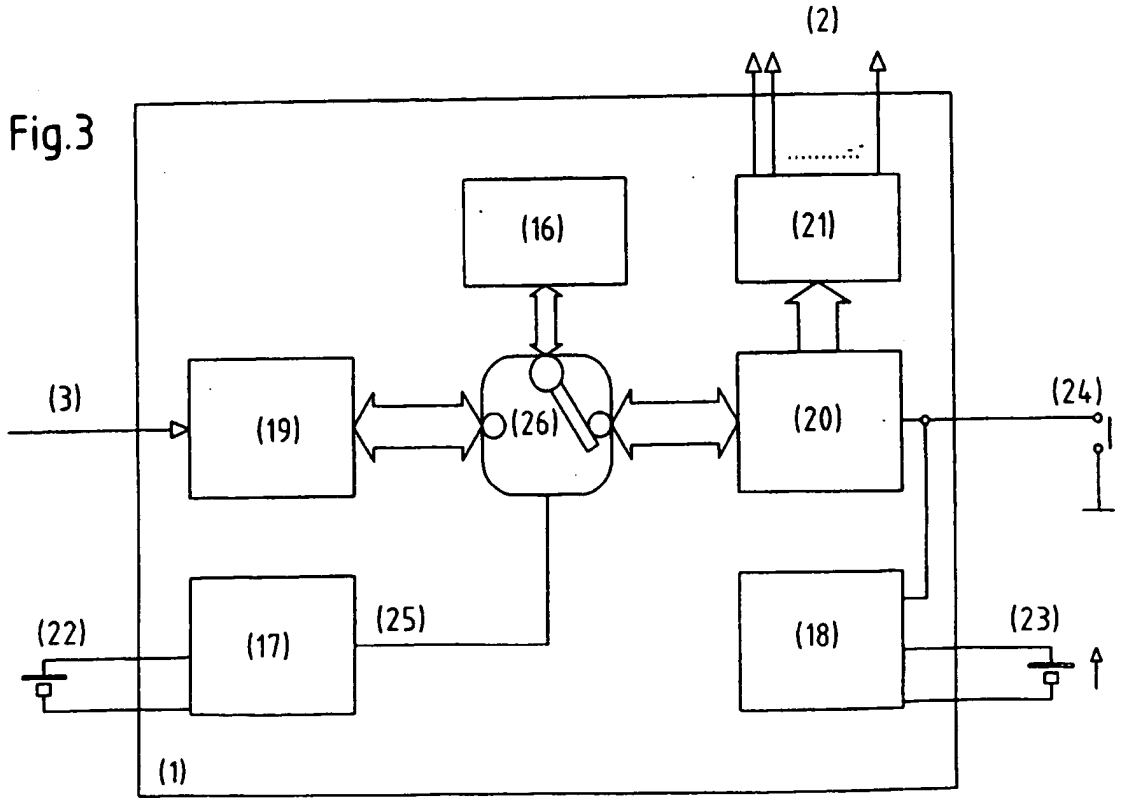


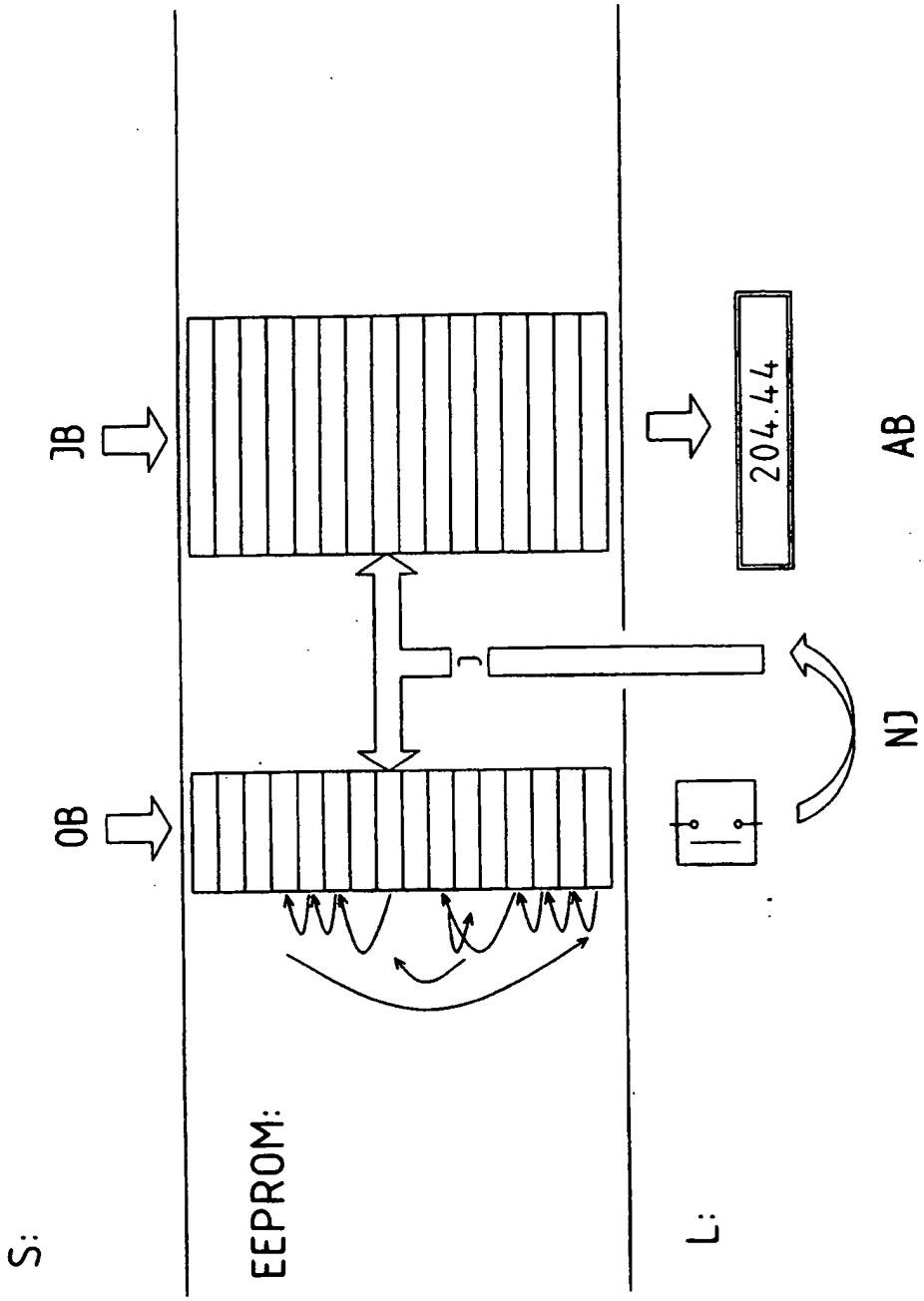
Fig.3



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Fig.4



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Fig.5

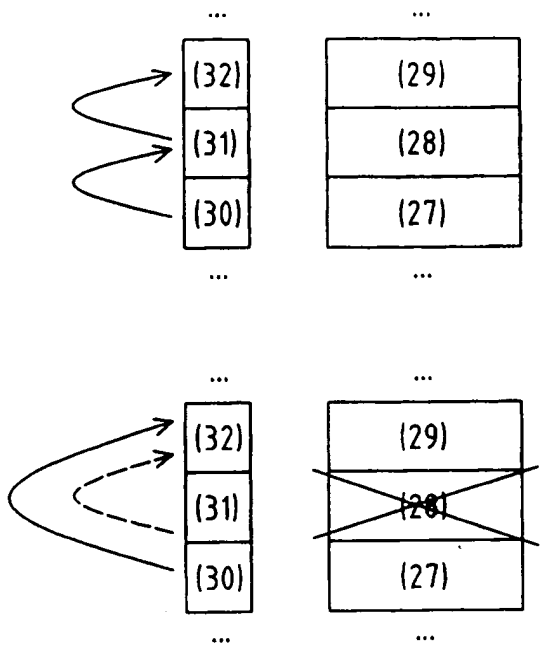
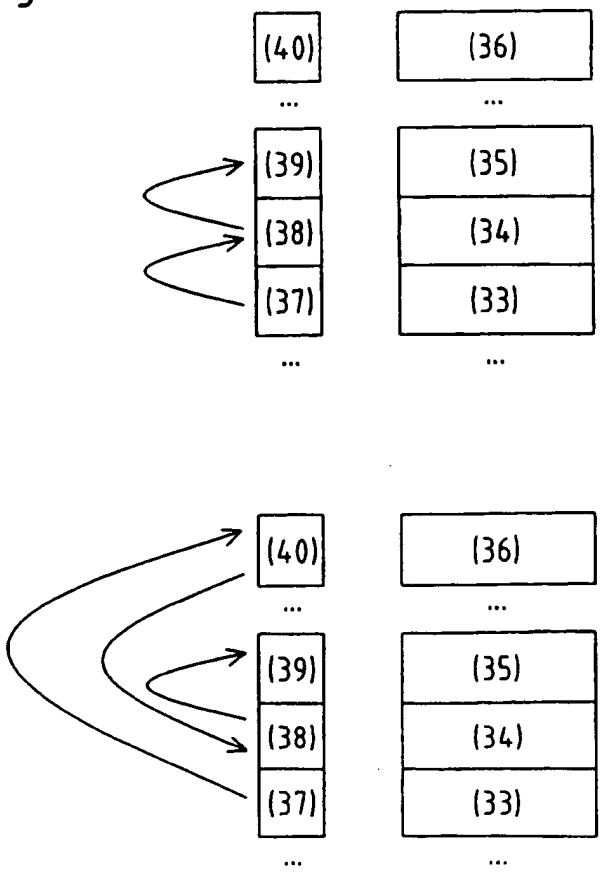
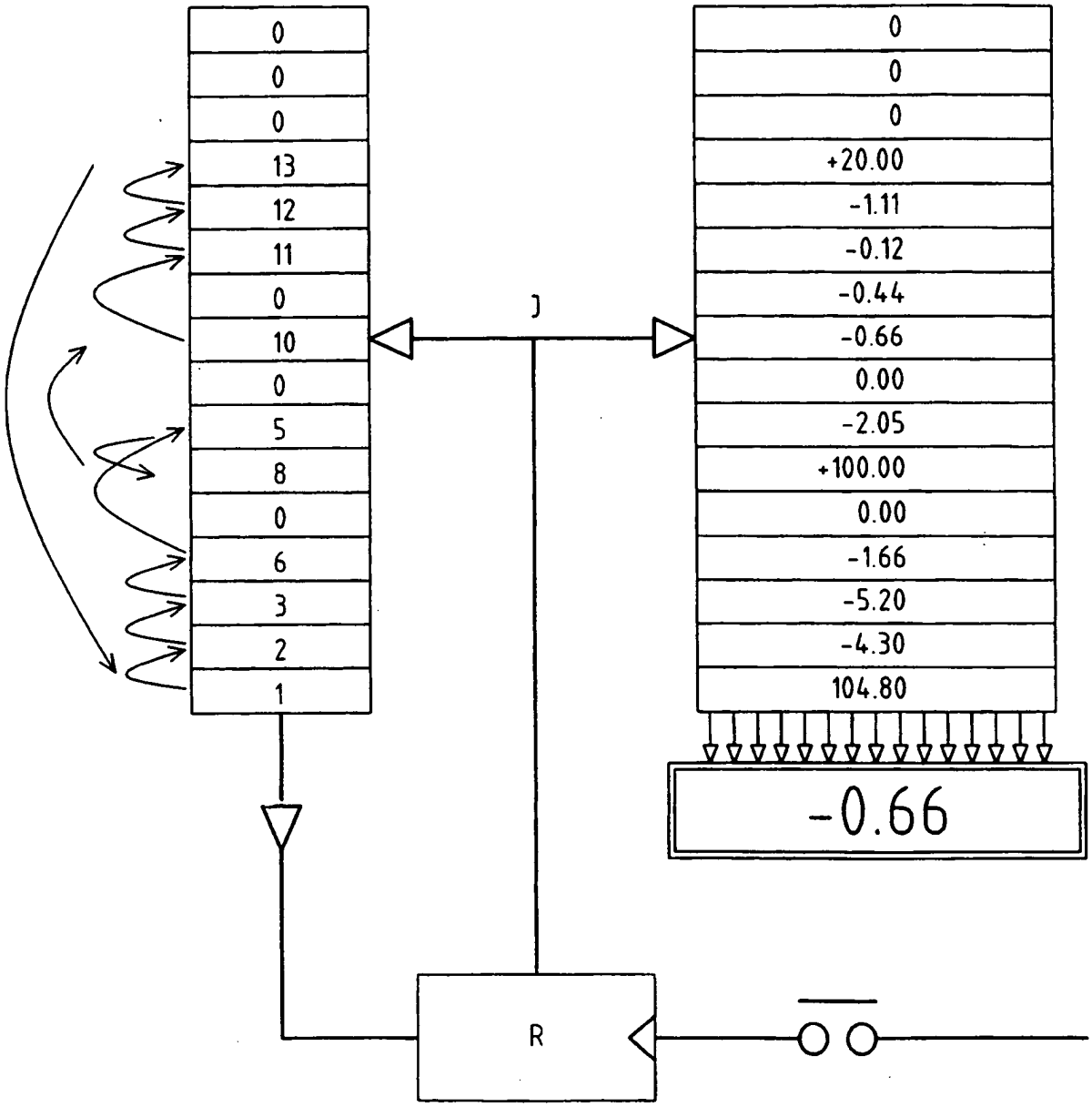


Fig.6



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Fig.7



Nummer: DE 101 46 804 A1
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Fig.8

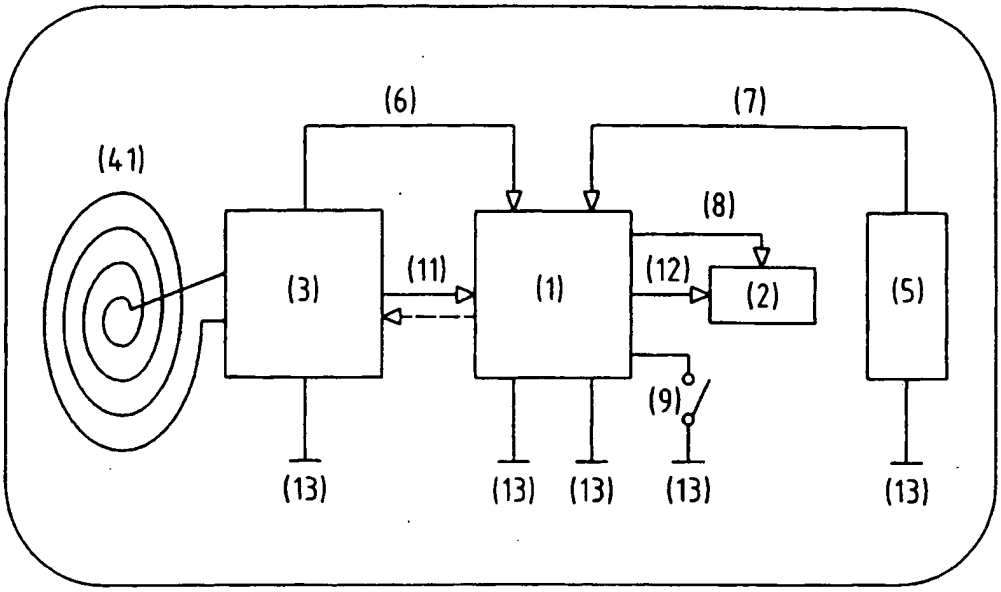
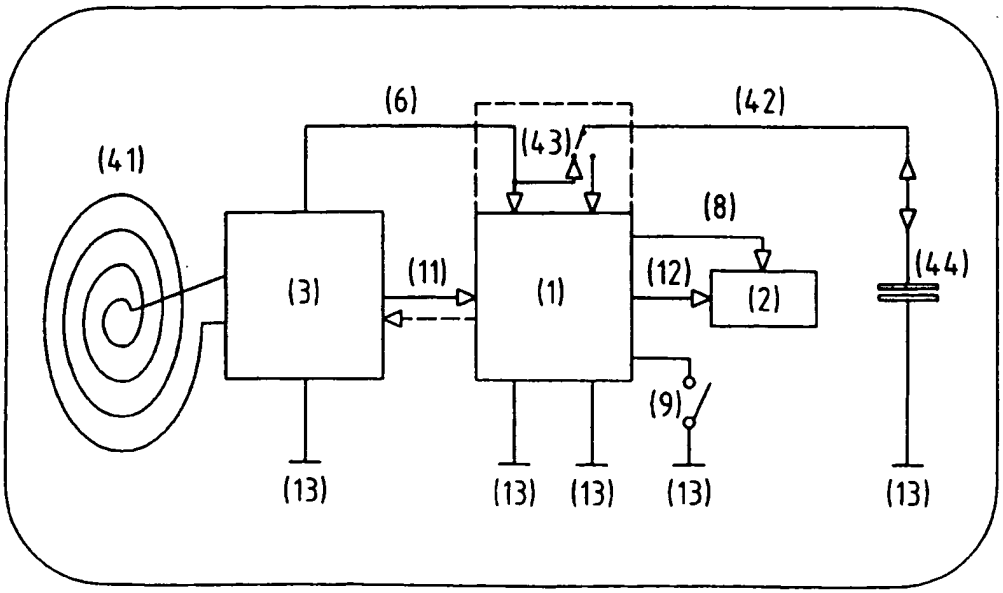


Fig.9



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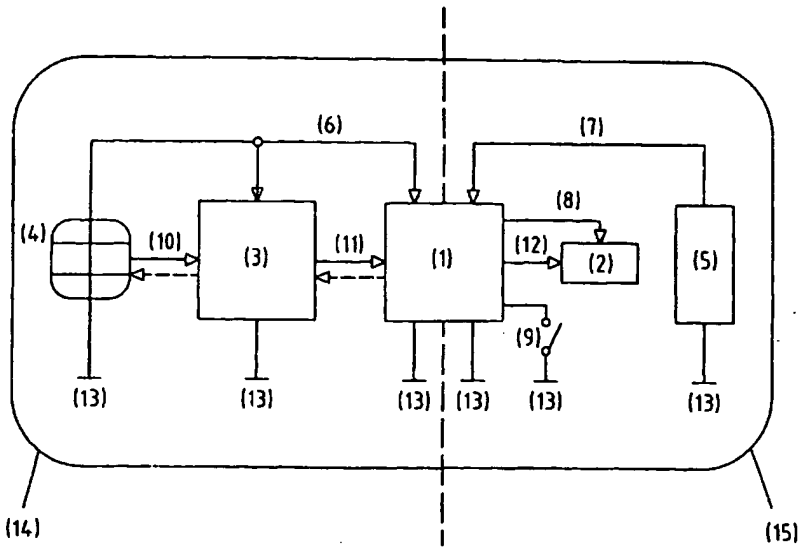
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND CIRCUIT ARRANGEMENT FOR DRIVING A DISPLAY AS WELL AS CHIP CARD WITH DISPLAY



(57) Abstract: To provide a method and circuit arrangement for driving a display, in particular the display on a chip card, by means of which information optionally comprising a plurality of display images may be displayed simply and efficiently, provision is made that (a) in write mode, information to be displayed on the display which comprises at least one item of information content (display image) to be presented on the display is stored in a drive circuit associated solely with the display; (b) the ordering relationships also selectable in write mode are stored which are assigned explicitly to each of the items of information content and which determine the sequence of information contents in the event of display; (c) in read mode, the information to be displayed and comprising at least one item of information content is called up from the drive circuit and displayed on the display, wherein (d) the stored and explicitly assigned ordering relationships are taken into account with regard to the call and thus the display sequence.

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Method and circuit arrangement for driving a display as well as chip card with display

The invention relates to a method and circuit arrangement for driving a display, in particular a display on a chip card, as well as to a chip card with display.

The use of a display in many technical applications is known. In the context of the invention, display is understood to mean a display device which is suitable for presenting information. The information itself consists of at least one item of information content (display image) presented on the display. Such information-presenting displays are known to be connected with a master unit (controller, processor) comprising a drive circuit for the display. The master unit supplies the information to be presented on the display. Depending on the structure of the display, drive signals for the display are provided by the master unit. Thus, for example, voltages and currents are made available which are suited to driving individual segments of the display in such a way that symbols, characters or the like may be presented on the display.

If the presentation of a display image is insufficient for a particular application, subdivision of the information contents into a plurality of display images is necessary, which are presented in succession on the display. To manage such information contents requiring a plurality of display images, it is known to provide the master unit, which assumes responsibility for driving the display, with appropriate software. A disadvantage thereof is that, in particular in the case of autonomously operating technical devices, e.g. chip cards, a voltage supply must be made available to the master unit for processing information contents to be presented and driving a display presenting the information. Since the master unit has a relatively large power demand, a voltage source of appropriate size is necessary.

A chip card provided with a display is known from DE 196 31 557 A1. A drive circuit separated logically and functionally from the chip card processor is in this case associated with the display. The display and drive circuit of the display have their own voltage supply in the form of a solar cell.

A chip card with display is known from FR 2 680 260 A1 in which information contents are stored in a stack memory. The sequence in which information is read out is thus determined by the sequence in which it is written, i.e. implicitly.

It is an object of the invention to provide a method and circuit arrangement for driving a display, in particular the display on a chip card, by means of which information optionally comprising a plurality of display images may be displayed simply and efficiently.

This object is achieved according to the invention by a method having the features mentioned in claim 1. Because

(a) in write mode, information to be displayed on the display which comprises at least one item of information content (display image) to be presented on the display is stored in a drive circuit associated solely with the display;

(b) also in write mode, selectable ordering relationships are stored which are assigned explicitly to each of the items of information content and which determine the sequence of information contents in the event of display;

(c) in read mode, the information to be displayed and comprising at least one item of information content is called up from the drive circuit and displayed on the display, wherein

(d) the stored and explicitly assigned ordering relationships are taken into account with regard to the call and thus the display sequence,

it is advantageously possible to store the information to be displayed in such a way in write mode that at least one, in the simplest case precisely one, item of successor information content is predetermined for each item of information content. This successor information content is stored as an assigned reference by the assigned, co-stored explicit ordering relationships. In this way, singly concatenated lists may be built up, in which the call sequence in read mode is independent of the physical sequence in the memory. Thus, a reference (ordering relationship) is assigned to each item of information content (display image), which reference refers to the next item of information content to be displayed, this alone resulting in the display sequence on the display.

The object is further achieved according to the invention by a circuit arrangement having the features mentioned in claim 13. Because a drive circuit associated solely with the display is provided, which may be switched into write mode and read mode, wherein the drive circuit may be activated for read mode independently of a control circuit activating write mode and providing information contents to be displayed, the drive circuit comprises a non-volatile memory, wherein a first circuit unit is provided which serves in separate entry of information to be displayed, which information comprises at least one item of information content to be presented on the display, in that information contents corresponding to the information to be displayed and explicit organization relationships

assigned thereto may be stored separately, and a second circuit unit is provided which serves in reading out the information to be displayed and the assigned organization relationships, wherein the second circuit unit may be activated via a switching means, a circuit arrangement may advantageously be provided, which may be conformed simply and flexibly to various items of information to be displayed, wherein the power demand may be kept low in particular due to the simple structure of the circuit.

Preferred developments of the invention are revealed by the features mentioned in the subclaims.

Altogether, display functions may be independently performed without an active master unit (controller, processor) due to the configurations according to the invention of the method and/or the circuit arrangement for driving a display. By using structuring by means of the explicit ordering relationships, a small number of internal switching operations are sufficient in the drive circuit assigned to the display, such that, despite the possibility of being able to display a plurality of items of information content (display images), the sequence of which may be organized to suit the application, wherein only the circuit component of the drive circuit which organizes the read mode is active, the power demand is extremely small.

Finally, the method and circuit arrangement may assist flexibly in various applications, i.e. for example by being capable of varying the scope and organization of the sequence of information to be displayed or adding information contents quickly to the information to be displayed or quickly replacing, changing or removing said information.

Connection of the drive circuit of the display to the master unit (controller, processor), in particular for reception of the information to be displayed in write mode, may be simply achieved.

In a particularly preferred development of the invention, provision is made for the method and the circuit arrangement for driving a display to be implemented on a chip card comprising a display (cash card). Due to the simple structure of the circuit arrangement and the simple implementation of the method, the requirements which have to be met by a chip card with display in a card terminal, in a neutral rest state and in a user action independent of the card terminal may be fulfilled to the best possible degree.

In a card terminal, the master unit (controller, processor) of the chip card generally performs extensive, complicated operations, e.g. in order to run communications protocols or to calculate encryption algorithms. In this state, the fundamentals of the information of which the user wishes to take note on the display are generated or changed

considerably. In particular, this information may relate to numerical values of credits or debits or time details in the case of electronic time stamping processes in the card terminal.

In the neutral rest state, which constitutes the majority of the life of a chip card, no activities take place. In this state, the chip card is merely carried around by the user for later use, upon which it is woken out of its rest state into one of the active states. On the other hand, after termination, to be defined, of an activity (as a rule after a particular interval or after removal from the card terminal), the chip card may automatically itself adopt the neutral rest state.

In the event of a user action without a card terminal, which is effected by means of the chip card display, the user enters directly into communication with the chip card. The circuit arrangement according to the invention and the method according to the invention for driving a display allow these requirements to be fulfilled, in that the drive circuit for the display is so designed that it comprises mutually independently operating circuit units which may mutually independently organize write mode and read mode. Write mode and read mode operate at different times with the respectively associated circuit units and communicate with a common memory area of the drive circuit.

In the write mode provided according to the invention, which is assumed in the chip card terminal in particular in conjunction with a transaction, authentication or the like, the explicit ordering relationships and the information contents of a plurality of display images are stored. Depending on the design and layout of the chip card, this storage may be effected in contacting or contactless manner. The written information contents and ordering relationships are saved in non-volatile manner in a memory of the display drive circuit, i.e. independently of operation in the chip card terminal. The memory is preferably an EEPROM memory or, according to another preferred development of the invention, a RAM memory. In particular, the RAM memory uses CMOS technology, since this requires extremely low current input. The required operating voltage may be supplied by an internal, simply structured power source. Such non-volatile memories are in a position to store the information contents of the display images and the ordering relationships at least for a period corresponding to the normal service life of the chip cards.

In a preferred development of the invention, provision is made for the memory to be organized logically in the form of two tables, wherein a first table is used for information contents of the display images. The data of each item of information content of each display image are stored as entries in the first table (hereinafter designated record table). In a second table, the information content display sequence is organized and the assigned

explicit ordering relationships are stored. In the simplest case, this is effected in that, in the second table (hereinafter designated reference table), the table index of the next item of information content (display image) to be displayed is entered for each entry. The entry in this reference table forms a reference to at least one successor.

Access to the entries in the record table and the reference table is always made with one and the same index. The entries in the two tables may themselves vary substantially in size, however. The size of the entries in the record table depends on the scope of a display image, while the size of the entries in the reference table depends on the index length necessary for the size of the tables. Where there is more than one successor index per entry in the reference table, from which one is always selected by particular signals or states, the memory space of an entry increases accordingly.

In the read mode according to the invention, which may be adopted independently of the chip card terminal, the memory is read out. By actuating the switching means, the information contents of the display images are displayed in succession in the stored sequence predetermined by the ordering relationships. The table index is applied to both tables in an address register, beginning with a start value, as a memory address. The currently addressed entry is thereby read out from the reference table and fed to the drive connections of the display. It is clear that the signals generated thereby are conformed to the display actually present (matrix, 7 segment digits, alphanumeric displays or the like).

If the next display image is to be displayed, the content of the currently addressed entry of the reference table is accepted into the address register. According to a further preferred development of the invention, in the case of a plurality of stored successor indices, the chosen index is selected in the entry. The process of acceptance into the address register proceeds either on an external signal, e.g. by actuating the switching means, or independently after a predeterminable period of time.

It is clear that even with relatively small displays, e.g. chip cards, relatively extensive information contents may thus be displayed in a sequence of display images. Of particular advantage is the restriction of switching activity in read mode to a few active parts of the display drive circuit. The procedures for progressing the sequence of information contents (display images) are limited to reading out individual table entries from the memory, transfers from the reference table into the address register occurring at relatively large intervals and addressing of the memory, on the basis of the current content of the address register.

Thus, simple circuits with a clear structure and low power demand may be produced. Link-up of the drive circuit of the display to a master unit (controller, processor) of the chip card may proceed by serial connection or a serial data bus. In a preferred development of the invention, provision is made for a bus protocol to I^2C standard to be provided, with a two-wire connection between master unit and display drive circuit.

By separating the circuit components of the circuit arrangement for write mode and read mode, the internal power source may in particular be limited to the power demand in read mode, since, during write mode, the chip card is coupled to the chip card terminal and may be supplied with the necessary power thereby. Thus, more extensive, complex operations of the display drive circuit may also be triggered by the greater quantity of power supplied in this case when the drive circuit is in write mode. Thus, for example, the modular design of the protocol of the interface between master unit and display drive circuit may be supported at a higher logic level. By suitable software design, the master unit may also organize ordering relationships for the information contents which are more complicated, from the point of view of structure, than a simple continuous sequence. These ordering relationships may be generated and modified in particular in relation to the application and then entered in initializing manner into the reference table.

By the explicit storage of the ordering relationships in the reference table, provided according to the invention, support is provided for rapid operation for the information contents of the individual display images. In this way, an additional time requirement in write mode, as is actually available during communication of the chip card with the chip card terminal, is not necessary. In the case of the explicit fixed ordering relationships, any removal is associated merely with the effort involved in changing the successor reference of the predecessor(s). The successors of the entry in the record table to be removed are entered therein. Reordering of the information contents of the display images which are stored in the record table also relates only to the reference table. Since this is typically substantially smaller in data scope than the record table, simpler and quicker handling is provided.

Insertion of the information contents of display images may likewise proceed very advantageously at any point in the record table, without displacement of the subsequent part of the record table. This means that full reading out and re-storing of the data content of the entire record table is thus dispensed with. To this end, the information content (display image) to be inserted is written to an entry in the record table which is free or is coming free. Actual insertion is effected by a small number of entries in the reference table storing the

ordering relationships. Cyclical concatenation of the information contents is also possible in that an entry is referenced as its own direct or indirect successor. This may occur directly by means of writing-in of the current index into the current reference entry. Cyclical concatenation arises indirectly in that a later reference entry in the successor chain is back-referenced to the current entry.

If the record table and reference table are used as a basis for the construction of a dynamic data structure, singly or doubly concatenated lists, trees, cyclical extensions thereof and other organizational forms may preferably be produced. The selected structure with record table and reference table also allows simple data organization, however. To this end, a fixed sequence may preferably be produced in the reference table in a single operation with an initialization routine. Initially, the next entry may preferably be entered in fixed manner as the respective successor. This data organization is performed by the master unit (controller, processor) and may be selected with a wide degree of freedom in accordance with the desired application.

In a further preferred development of the invention, error handling is provided. In this way, interrupted and incomplete data transactions using the chip card terminal may either be displayed and/or labeled for subsequent correction. Arbitrary, accidental interruption of transactions, in particular by premature removal of the chip card from the chip card terminal, may then be taken into account. In this way, it is possible for operations being written in write mode according to the invention into the memory of the drive circuit not to be concluded. A valid flag, which is reset before writing is begun and is set to valid again after conclusion thereof and optionally after testing by reading and comparison of the writing, may prevent unnoticed errors which arise in this way.

In addition, provision is made in a preferred development of the invention for a general error protection or error handling process to be provided for communication between drive circuit and master unit (controller, processor), which is preferably distinguished by low effort. This may relate, for example, to the detection of process synchronization problems caused by external events by means of flagging mechanisms known per se.

The complete conclusion of operations is preferably also ensured by additional blocking times until both sides are reset to valid after the last transmission between master unit (controller, processor) and display drive circuit or chip card terminal. In this way, it is advantageously achieved that the validity of transmission operations may be signaled by flag states. Before a new transaction is begun, the valid conclusion of the last transaction is tested,

with a suitable response in the event of invalidity, e.g. at least one attempt at repetition. The error handling which is preferably provided is also determined by the specific application, in particular by whether and to what extent it is to occur.

Thus, in a further preferred development of the invention, provision may be made for error handling by initializing entries in an initial write operation to be dispensed with even when the latter are provided in fixed manner in read mode by the circuit arrangement. Provision may in particular be made for duplicated table entries to be able to by-pass error handling in the event of errors and also for normal functioning.

In a further preferred development of the invention, provision is made for at least one self-exhausting and/or continuously regenerable internal power source to perform read mode. A self-exhausting power source may take the form of a primary battery, for example. A regenerable power source may for example be a solar cell or a piezoelectric crystal. A piezoelectric crystal offers the possibility, in particular, that, by actuating a switching means, e.g. the switching means for activating read mode, generation of the required electrical power may be triggered. A very compact, robust construction of the circuit arrangement is produced thereby. When using chip cards in particular, very advantageous application possibilities are thereby obtained. According to further preferred developments, an accumulator may also be used as regenerable power source, which accumulator may be rapidly charged for example during chip card terminal operation. Finally, in a preferred variant of embodiment, the regenerable power source takes the form of a capacitor, which is in a position to store power charges for an adequate length of time. It goes without saying that, according to further preferred developments of the invention, at least one of the self-exhausting and/or at least one of the regenerable power sources may be combined.

Further preferred developments of the invention are obtained in that at least parts of the circuit arrangement for driving the display are structured in one or more layers of the display or in a switching circuit integrated into the display. The "chip-on-glass" or "chip-on-plastics" production processes known per se may preferably be used therefor. In addition, the drive circuit or at least parts of the drive circuit are preferably integrated into surfaces next to and/or between the display elements. It is additionally feasible to subdivide the circuit arrangement, i.e. to incorporate at least one circuit unit, in particular the circuit components forming the record table and/or reference table, in the vicinity of the display.

In a further preferred development of the invention, provision is made for the circuit arrangement for driving the display to receive a clock supply from the chip card terminal in write mode and for an internal clock supply to be generated in read mode, in

particular by an oscillator. It is especially possible to dispense with the internal oscillator for clock supply when read mode is achieved without an inherent clock oscillator, in that external signals, in particular actuation of the switching means, in each case supply a pulse defining the next state. In this way, the circuit arrangement may be produced particularly simply.

The chip cards with display according to the invention may be used for example as electronic purses (cash cards), check and/or credit cards, store cards, discount cards, loyalty cards, telephone cards, health insurance cards, fuel cards, identity cards, top-up cards for mobile telephones or the like. Additional information is made available to the card holders via the display, which, for example, makes the transaction processes performed with the card immediately transparent. Further preferred applications consist for example in transmitting validation of entry cards, travel cards, daily, weekly or monthly season tickets or the like from appropriate automatic machines to a chip card with display according to the invention in a manner comprehensible to the user. Such validation or the implementation of such validation may preferably be associated with an automated payment function, e.g. by debiting a corresponding value in a chip card terminal. In addition to recognition of validation, it may also be made possible to document cancellation or partial cancellation of implemented validation and to make this requirement visible to a user or an authorized inspector of the card with display. In addition, it is preferably possible to provide the chip cards according to the invention with additional information, e.g. seat reservations, time information, public transport connections, transport information, weather information, advertisements or the like. Information displayable on the display may for example be additionally secured by an access security means, which is preferably combined with the chip card. This may be implemented for example by providing a particular input combination or input sequence or a biometric feature. In the case of biometric features, the chip cards according to the invention may also be used for example as legitimation cards (identity card, passport or the like).

Finally, in a further preferred development of the invention, provision is made for the method according to the invention and the circuit arrangement according to the invention for driving a display to be applied in drive circuits for displays in or on mobile devices or systems. Such an application is provided for example in the case of cell phones or wireless landline telephones, in which, in addition to the actual functions thereof, additional functions may be obtained which manage with a low power demand when in read mode. These may comprise telephone book displays, independent displays of SMS messages or the

like, for example. Thus, such information could be displayed on the display even when the actual functions of such devices are no longer usable due to a discharged main accumulator.

It is additionally advantageously possible to provide the additional information retrievable in read mode in the periods in which the mobile devices are in a rest state (stand-by state). Thus, activation of the main power supply of the mobile devices would not be necessary for the display of additional information.

Further preferred options for application of the invention include remote operation of electronic devices, e.g. home electronics, especially for displaying operating functions or acknowledgement signals from remote-controllable devices. Further preferred applications include for example pagers, telephones, electronic car keys, goods recording devices, electronic toys or the like. Moreover, one preferred application is in measuring instruments. In these, a measurement, measurement series or the like recorded by the measuring instrument could be read out on the display, even without full functioning of the measuring instrument. Examples of such devices are energy meters, alarm systems, on-board computers, payment terminals, acceleration and radiation protocol devices, dosimeters, chemical instruments, medical instruments or the like.

In conclusion, it should be noted that the method according to the invention and circuit arrangement according to the invention may be used in devices in which information or additional information is to be displayed without activating the actual device function or the main supply thereof, or if the latter is interrupted. From all the above, it is clear that the method according to the invention and the circuit arrangement according to the invention allows a separate display drive, which accepts information contents for one or more display images in write mode and outputs the information contents for one or more display images in read mode. Explicit storage of the ordering relationships of the display images in the reference table of the memory is implemented for the sequence of the display images. Progression of the sequence itself may be achieved by user interaction or independently under time-control. Control of said progression uses the entered ordering relationships in the reference table, to determine the respective next display image. The circuit required for read mode makes direct use of the entries in the reference table of the memory. It is therefore simply structured and constructed in power-saving manner. Short data transfer times may be achieved in write mode by a suitable organizational form for the ordering relationships to be explicitly fixed.

Further preferred developments of the invention are revealed by the remaining features mentioned in the subclaims.

The invention will be further described with reference to examples of embodiments shown in the drawings, to which, however, the invention is not restricted:

Fig. 1 is a survey diagram of a typical chip card with display and contacts;

Fig. 2 is a block diagram of the display drive circuit in write mode;

Fig. 3 is a block diagram of the display drive circuit in read mode;

Fig. 4 is a schematic representation of the operating mode procedures and memory organization;

Fig. 5 shows the procedure for deleting a display image from a sequence;

Fig. 6 shows the procedure for inserting display images into a simple reference list;

Fig. 7 shows an example of the data structure in the case of a purse chip card with display;

Fig. 8 shows a drive application in a contact-less chip card and

Fig. 9 shows a drive application in a contact-less chip card and charging of the internal power source.

Fig. 1 shows the survey diagram of a typical chip card with display and contacts. A display drive circuit 1 is shown in central position. To the right thereof is a display 2 and to the left a chip card controller 3 and a contact field 4. At the right-hand edge an internal power source 5 is shown symbolically, this taking the form, for example, of a battery, an accumulator or a solar cell. From the contact field 4 there extend lines 6 for the operating voltage and clock supply to the chip card controller 3 and the display drive circuit 1.

The internal operating voltage is conveyed via a connection 7 from the power source 5 to the drive circuit 1 and optionally thence via a line 8 to the display 2, while being adapted to the display technology.

A momentary contact switch 9 (switching means, e.g. a snap-action disk or flat switch) is connected to the drive circuit 1.

The information from the chip card terminal is transmitted from the contact field 4 to the controller 3 via data lines 10; serial transmission formats are typically used. Likewise, in numerous applications, data flows thereover in the opposite direction.

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Information from the chip card controller 3 to the drive circuit 1 is entered only in write mode, this being effected via a data connection 11 which is used, for example, for serial transmission or with a bus protocol. Only reading of status information or read-out operations (e.g. for control purposes) proceed exceptionally in the opposite data direction. The segments of the display are operated from the display drive circuit 1 via control terminals 12. All the components exhibit a common ground connection 13.

The circuit part 14 extending in the drawing from the left to the middle is active in write mode, while the right-hand circuit part 15 is active in read mode. Only the drive circuit 1 operates in both modes. This is shown in more detail in the subsequent drawings.

Figs. 2 and 3 show the block diagram of the display drive circuit 1. The situation in the drawings symbolizes subdivision into components only for write mode (left) and only for read mode (right). In the middle, components are illustrated which are used in both modes.

The operating voltages are supplied by conditioning circuits 17 or 18, of which there is one each for the terminal supply voltage 22 or an internal source 23.

The terminal supply voltage 22 is used in write mode and then supplies a non-volatile EEPROM memory 16 and a write mode control circuit 19. This accepts data from the controller and forwards it via switching logic 26 (here illustrated schematically as a switch) to the EEPROM 16. However, it also allows individual read operations, for instance for monitoring purposes or in order to accept entered error states for error handling. The switching logic is actuated by the terminal supply voltage 22 via a control signal 25, such that write mode is constantly active when the terminal supply voltage 22 is applied. Read mode can only be adopted when no terminal supply voltage 22 is applied.

On the right-hand side, a control circuit 20 for read mode and a driver circuit 21 for the display lines are shown, which drive the display segments. These are supplied in read mode by the internal power source 23 via the conditioning circuit 18.

This circuit block may additionally assume control of the adoption of sleep mode with minimal power consumption and of waking therefrom. In sleep mode, the circuit blocks hitherto supplied in read mode are switched off.

To be woken from sleep mode into read mode, the circuit is connected with a switching means (momentary contact switch) 24. If the momentary contact switch 24 is not actuated for a predeterminable time in read mode, sleep mode is resumed.

Fig. 3 is a schematic representation of switchover of the switching logic 26 into read mode. Here, the EEPROM memory 16 is switched over from the write mode control circuit 19 to the read mode control circuit 20. The circuit blocks otherwise correspond to those of Fig. 2.

Fig. 4 is a schematic representation of the operating mode procedures and memory organization. It is shown therein that the ordering relationships and the contents are entered in write mode. The EEPROM memory 16 of the display drive circuit 1 is divided into a table of references (left, hereinafter also designated reference table) and a table for the display images (right, hereinafter also designated record table). In read mode, references are read out and used as a new index after a key stroke and additionally the currently indexed display image is forwarded to the display. In Fig. 4, the following abbreviations are used: S = write mode. L = read mode, OB = image ordering, IB = image information, AB = current image, I = index and NJ = next index.

Fig. 5 shows the procedure for deleting one of the display images, which are organized in each case with regard to the immediate successor in relation to their sequence in a simple reference list. Clear therefrom is the small amount of effort involved, merely one write operation being required in the reference list. No gap arises in the reference list - it may continue to be read out along the ordering relationships (reference to the next element) by the read mode circuit without special treatment of deleted entries.

The upper part of Fig. 5 shows the state prior to deletion and the lower part shows the state after deletion for a portion of the record table. First of all, three display images 27, 28 and 29 are shown with the associated references 30, 31 and 32. They are concatenated in such a way that the image 27 is followed by the image 28 and the latter in sequence by the image 29. The arrows symbolize the concatenation.

If, by way of example, it is then desired to remove the middle display image 28 from the three images, the reference 30 is overwritten in such a way that the index of the reference 32, which matches the display image 29, is entered at that point.

Consequently, the display image 28 to be deleted no longer appears in the sequence.

Clearly, the advantage from the point of view of time saving is obtained by the explicit storage of the ordering relationships, said advantage being obtained by the storage space for the references.

This example easily clarifies the advantages of the explicit ordering according to the invention over conventionally obvious implicit ordering.

In the case of implicit ordering, i.e. in the case of consecutive storage without references, all the images after the one to be deleted would have to be displaced. For the task given in the example, it would then be necessary to read and write at least the image 29 and any that may follow, wherein each image typically comprises considerably more data than a reference. Thus, during the period in which the chip card is in use in or at the terminal, substantially more data would have to be moved between chip card controller and drive circuit, which would have the consequence in particular of prolonging the transactions to an undesirable degree.

Fig. 6 shows the procedure for inserting a display image, the sequence being organized in a simple reference list.

The upper part of the drawing shows a portion of the record tables with entries for three display images 33, 34 and 35. Furthermore, the references 37, 38 and 39 are so concatenated that image 34 follows display image 33, and is in turn followed by image 35. The arrows symbolize the concatenation.

A free entry 36/40 is also shown in one of the tables. The state prior to insertion is thus illustrated.

A new image is to be inserted after display image 33. To this end, the content of the display image to be inserted is entered in the entry 36 in the record table. The reference 37 is then changed to the index of the entry 40/36. Moreover, the corresponding index for the successor 38/34 is written in the reference 40.

The lower part of the drawing then shows the state after insertion.

Altogether, it is clear that no complex re-storing is necessary when the explicit ordering relationships are organized in the form of a concatenated reference list.

As with the example in Fig. 5, a comparison with conventionally obvious implicit ordering shows the massive advantage. Finally, with this insertion operation too, the chip card transaction in or at the terminal does not have to be prolonged substantially.

Fig. 7 shows an example of a data structure for an electronic purse or a payment receipt on a chip card. The display images shown to the right contain as first entry the debited amount (here 104.80 value units). There then follow the last transactions (most recent -4.30 value units, preceded by -5.20 value units, then in order by -1.66, -2.05, +100.00, -0.66, -0.12, -1.11 and +20.00 value units). The entries 0.00 and -0.44 value units are not accessed, they may have been deleted earlier, for example. The indices begin with the index 0. Each entry in the table has precisely one index. In this case, the index entries 0, 1, 2, 3 ... etc are designed to run from bottom to top.

The index 0 is also generated in the index register when read mode is switched on. This index 0 is also intended to relate to the initial entry in the reference table, which is also used as a reference after wake-up from sleep mode.

The reference table contains a simple sequence list (indices 1, 2, 3, 6, 5, 8, 10, 11, 12, 13, 0). The entry at index 14 refers to the index 0, thereby closing the cycle. This example shows that the implicit index sequence may be complied with in referencing by corresponding explicit entries (e.g. ...1, 2, 3, ... or ...11, 12, 13, ...), but in other cases does not have to be taken into account (e.g. ...6, 5, 8, 10, 12, ... or ...13, 0, ...). A flexible, optional organization option is provided by suitable entries in the ordering relationship reference table. The bottom part shows the common index register for both tables, progression being shown symbolically by a pulsed clock signal.

Fig. 8 shows application of the drive circuit according to the invention in a contact-less chip card. The contact field is replaced here by the antenna 41 with receive circuit. It supplies power, clock and information. For low and moderate frequencies, the antenna often takes the form of a coil. For higher frequencies, other structural forms are used, e.g. dipole or planar array antennas. Contact-less coupling to a terminal may also be achieved capacitively. The other components and connections shown in the Figure correspond to those of Fig. 1.

Fig. 9 shows a drive application in a contact-less chip card and charging of the internal power source.

As in Fig. 8, an antenna 41 produces the connection to the terminal. The voltage for write mode, which was obtained from the antenna, simultaneously charges a regenerable internal power source 44. To this end, the connecting line 42 between the drive circuit 1 and the power source 44 is used for the charging current and for the discharging current in read/display mode.

The drive circuit 1 has been extended by a changeover switch 43. By way of example, a capacitor is shown as a regenerable source 44, but accumulators are also possible. The other components and connections shown and indexed in Fig. 9 correspond to those in Fig. 1.

LIST OF REFERENCE NUMERALS

1	Drive circuit
2	Display
3	Chip card controller
4	Contact field
5	Power source
6	Line
7	Connection
8	Line
9	Momentary contact switch
10	Data line
11	Data connection
12	Control terminals
13	Ground connection
14	Circuit part
15	Circuit part
16	EEPROM memory
17	Conditioning circuit
18	Conditioning circuit
19	Write mode control circuit
20	Read mode control circuit
21	Driver circuit
22	Chip card terminal supply voltage
23	Internal power source
24	Switching means (momentary contact switch)
25	Control signal
26	Switching logic
27	Display image
28	Display image
29	Display image
30	Reference
31	Reference

32	Reference
33	Display image
34	Display image
35	Display image
36	Table
37	Reference
38	Reference
39	Reference
40	Table
41	Antenna
42	Connecting line
43	Changeover switch
44	Power source
S	Write mode
L	Read mode
OB	Image ordering
IB	Image information
AB	Current image
I	Index
NJ	Next index

CLAIMS

1. A method of driving a display, in particular a display on a chip card, having the steps:

(a) in write mode, information to be displayed on the display which comprises at least one item of information content (display image) to be presented on the display is stored in a drive circuit associated solely with the display;

(b) also in write mode, selectable ordering relationships are stored which are assigned explicitly to each of the items of information content and which determine the sequence of information contents in the event of display;

(c) in read mode, the information to be displayed and comprising at least one item of information content is called up from the drive circuit and displayed on the display, wherein

(d) the stored and explicitly assigned ordering relationships are taken into account with regard to the call and thus the display sequence.

2. A method as claimed in claim 1, characterized in that

(a) the read mode is adopted by means of an external wake-up signal from a rest state (sleep mode), without activity apart from retaining the ability to respond to wake-up signals;

(b) then, as the first of the display images, a display image determined by the predeterminable ordering relationship is displayed, wherein this ordering relationship was stored at a fixed initial entry, which is evaluated as a result of the wake-up signal.

3. A method as claimed in claim 2, characterized in that read mode is terminated after the expiry of a predeterminable period, for transfer back into the rest state (sleep mode).

4. A method as claimed in claim 2, characterized in that the external wake-up signal is generated by manual actuation of a momentary contact switch.

5. A method as claimed in one of the preceding claims, characterized in that

(a) the data of the display images are stored in a record table, in which each entry corresponds to an image;

(b) the data of the ordering relationships for displaying the display images are stored in a reference table, wherein each entry corresponds to the table index of the next display image to be displayed and of the next entry/ies in this ordering relationship table.

6. A method as claimed in claim 5, characterized in that

(a) the next one of the display images is displayed after manual actuation of a momentary contact switch,

(b) wherein the index of the next table entry to be displayed of the display images is read out from the current entry in the ordering relationship reference table and

(c) this index points at the same time to the next entry in the ordering relationship reference table.

7. A method as claimed in claim 6, characterized in that

(a) each entry in the ordering relationship reference table is divided into a plurality of portions, each of which contains a successor index;

(b) each of these portions of the table entries is read out individually as desired, if an associated momentary contact switch has been actuated;

(c) a display image selected as the next is displayed after actuation of one of a plurality of momentary contact switches,

(d) wherein the index of the next table entry to be displayed of the display images is read out from a portion (associated with the actuated momentary contact switch) of the current entry in the ordering relationship reference table and

(e) this index points at the same time to the next entry in the ordering relationship reference table.

8. A method as claimed in one of claims 5 to 7, characterized in that a signal replaces actuation of the momentary contact switch(es), which signal is generated automatically after a predeterminable period.

9. A method as claimed in one of claims 5 to 8, characterized in that referencing via the indices, which are stored in the ordering relationship reference table, produces

concatenation of all valid display images, wherein each reference refers to at least one of the successors, such that an at least singly concatenated list is formed.

10. A method as claimed in claim 9, characterized in that concatenation produces at least a cyclical sequence of the displayed display images.

11. A method as claimed in one of claims 7 to 10, characterized in that the adoption of an error state is represented by the display of a particular display image from a reserved table entry, wherein the index for accessing this table entry by the process of error detection is generated by the write mode control circuit.

12. A method as claimed in one of claims 7 to 10, characterized in that

(a) the continued existence of an error state after renewed determination of the display sequence is represented by the display of a special display image from a reserved table entry, wherein the index for accessing this table entry by the process of error detection is generated by the read mode control circuit, and

(b) is entered in the ordering relationship table as an initial index.

13. A circuit arrangement for driving a display, in particular a display on a chip card, characterized by a drive circuit (1) associated solely with the display (2), which may be switched into write mode and read mode, wherein the drive circuit (1) may be activated for read mode independently of a control circuit activating write mode and providing information contents to be displayed, the drive circuit (1) comprises a non-volatile memory (16), wherein a first circuit unit (17) is provided which serves in separate entry of information to be displayed, which information comprises at least one item of information content (display image) to be presented on the display (2), in that information contents corresponding to the information to be displayed and organization relationships assigned thereto may be stored separately, and a second circuit unit (20) is provided which serves in reading out the information to be displayed and the assigned organization relationships, wherein the second circuit unit (20) may be activated via a switching means (24).

14. A circuit arrangement as claimed in claim 13, characterized in that the drive circuit is arranged spatially separately from the master circuit (3) supplying the information to the displayed.

15. A circuit arrangement as claimed in one of claims 13 and 14, characterized in that the drive circuit (1) is arranged spatially within the display component.

16. A circuit arrangement as claimed in claim 15, characterized in that the drive circuit (1) is arranged as the first in a series of series-connected circuit components of the display component downstream of the interface with the chip card controller.

17. A circuit arrangement as claimed in claims 13 to 16, characterized in that the drive circuit (1) is supplied in each operating mode (write mode, read mode) from its own, separate power source.

18. A circuit arrangement as claimed in claim 17, characterized in that the power source for read mode is an electrochemical power source (primary battery/accumulator) and/or a long-life capacitor and/or a solar cell/solar panel and/or a piezoelectric crystal element, which supplies electrical power as a result of manual exertion of pressure, and/or a thermoelectric cell (peltier element), which supplies electrical power as a result of temperature differences due to hand contact.

19. A circuit arrangement as claimed in claim 18, characterized in that

(a) after a use-determined interruption of the power source (blocking of light/termination of pressure or heat supply) in read mode, the rest state is adopted and then read mode automatically resumes when this interruption stops;

(b) upon resumption, the sequence of display images starts again, starting from a fixed initial entry or the non-volatilely buffered state directly before the use-determined interruption;

(c) wherein the explicitly stored ordering relationships of this initial entry or this state are read out to determine the first display image to be displayed after resumption.

20. A circuit arrangement as claimed in claim 17, characterized in that the power source for write mode is provided by a chip card terminal, which supplies the operating voltage via contacts.

21. A circuit arrangement as claimed in claim 17, characterized in that the power source for write mode is provided by a chip card terminal, which introduces electrical power into the circuit in contactless manner via electromagnetic AC fields.

22. A circuit arrangement as claimed in one of claims 13 to 21, characterized in that the control circuit clock pulse signal for write mode is provided by a chip card terminal.

23. A circuit arrangement as claimed in one of claims 13 to 22, characterized in that the control circuit clock pulse signal for read mode is generated autonomously in the mobile chip card apparatus.

24. A circuit arrangement as claimed in one of claims 13 to 22, characterized in that the progression signal for changing the display image to be displayed is supplied from a source which is external relative to the drive circuit.

25. A circuit arrangement as claimed in claim 24, characterized in that the progression signal is generated by momentary contact switch actuation.

26. A circuit arrangement as claimed in claim 24, characterized in that the progression signal is generated automatically by a time-determined circuit part after a predeterminable time.

27. A circuit arrangement as claimed in one of claims 13 to 24, characterized in that

(a) there exists a data connection (11) to the display drive circuit (1) from the master circuit (3), which supplies the information to be displayed, and

(b) this data connection serves in serial transmission in write mode of the information to be stored.

28. A circuit arrangement as claimed in one of claims 13 to 24, characterized in that

(a) there exists a data connection (11) to the display drive circuit (1) from the master circuit (3), which supplies the information to be displayed, and

(b) this data connection has a bus protocol for transmission in write mode of the information to be stored.

29. A circuit arrangement as claimed in one of claims 13 to 28, characterized in that electrically erasable programmable read-only memory cells (EEPROM) (16) also store the data of the display images and the image ordering relationships in non-volatile manner when the drive circuit (1) is in neither write mode nor read mode.

30. A circuit arrangement as claimed in claim 28, characterized in that low power consumption volatile memory cells replace the non-volatile memory cells of the stated claim and these are supplied continuously by the read mode power source.

31. A chip card, characterized by a circuit arrangement as claimed in at least one of claims 13 to 30.

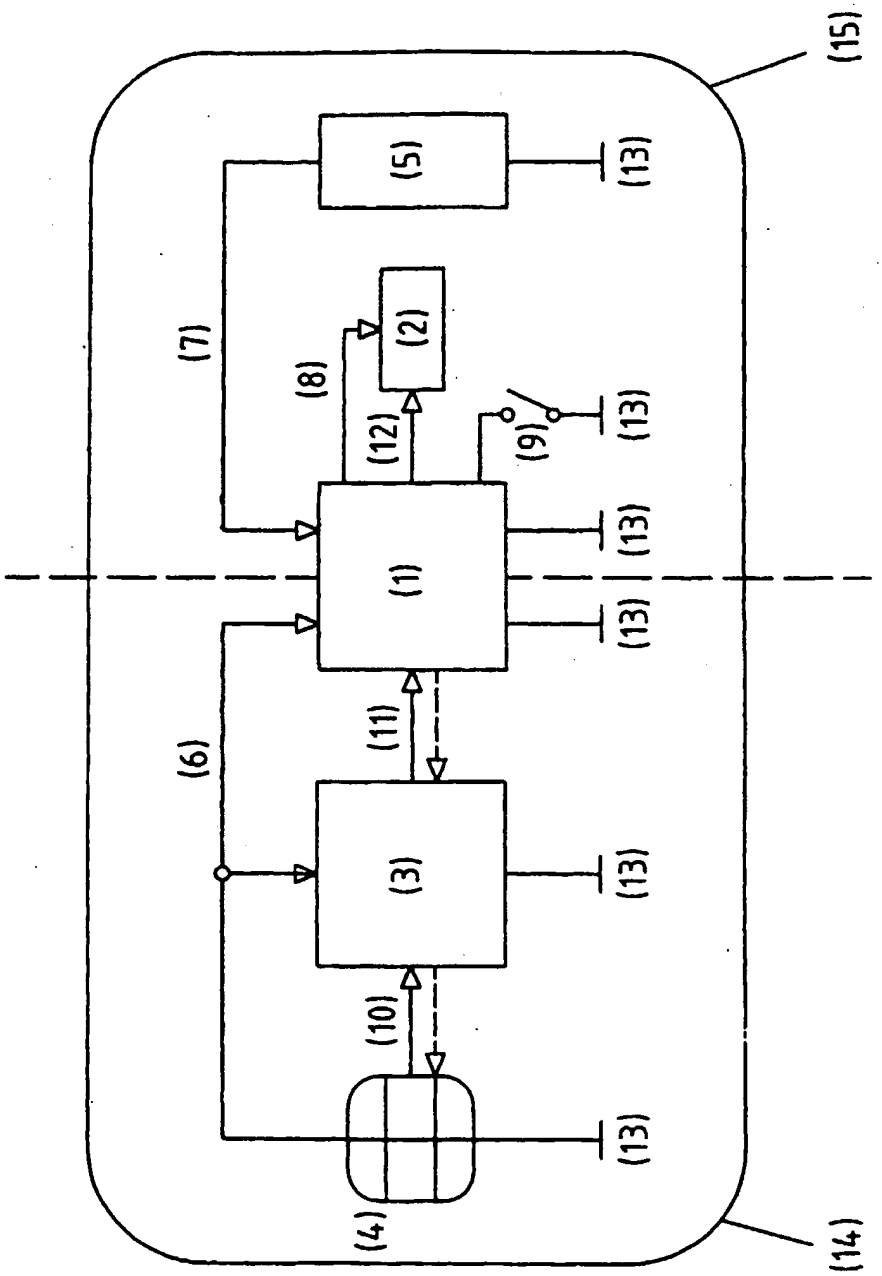


FIG.1

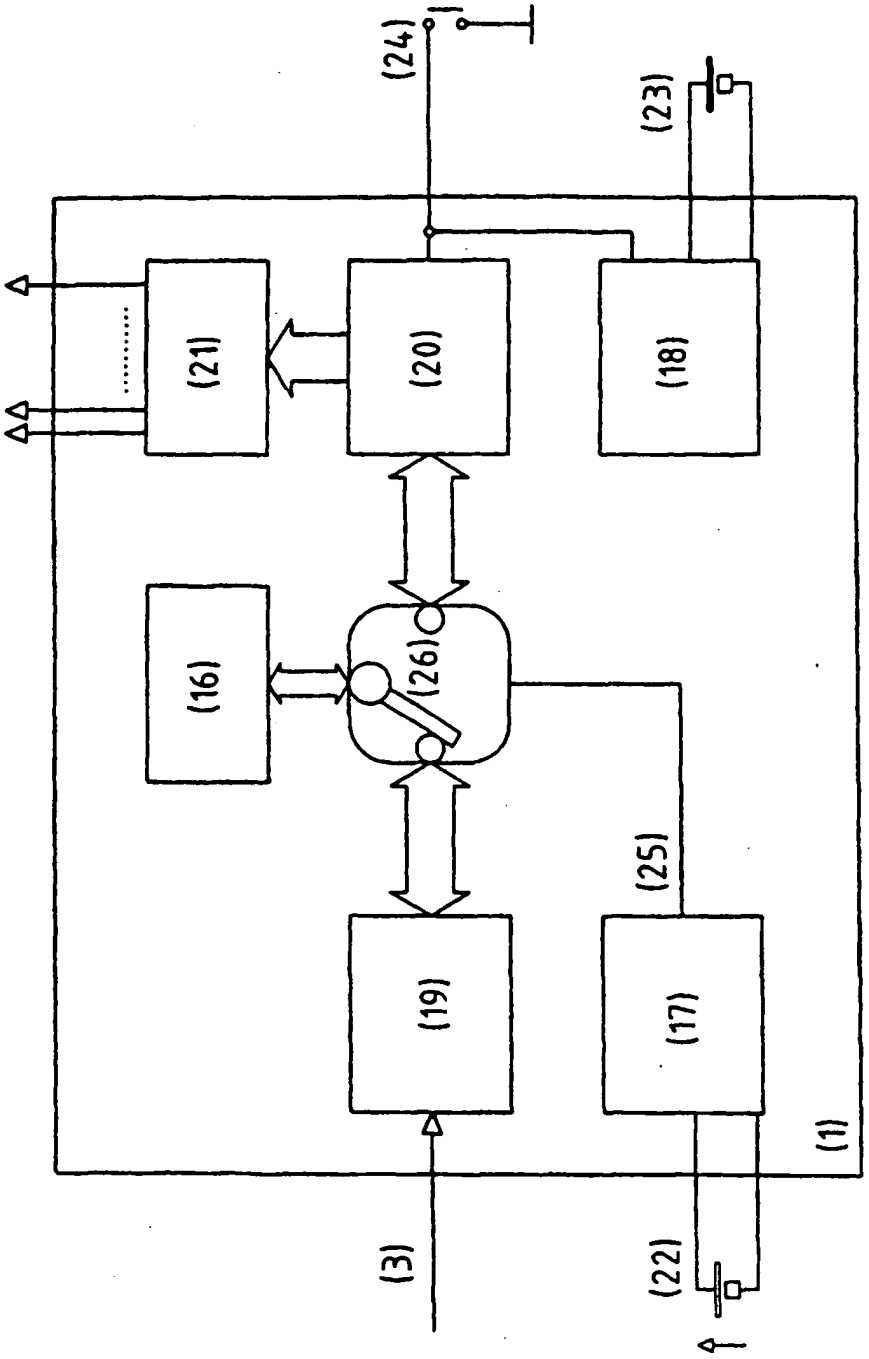


FIG.2

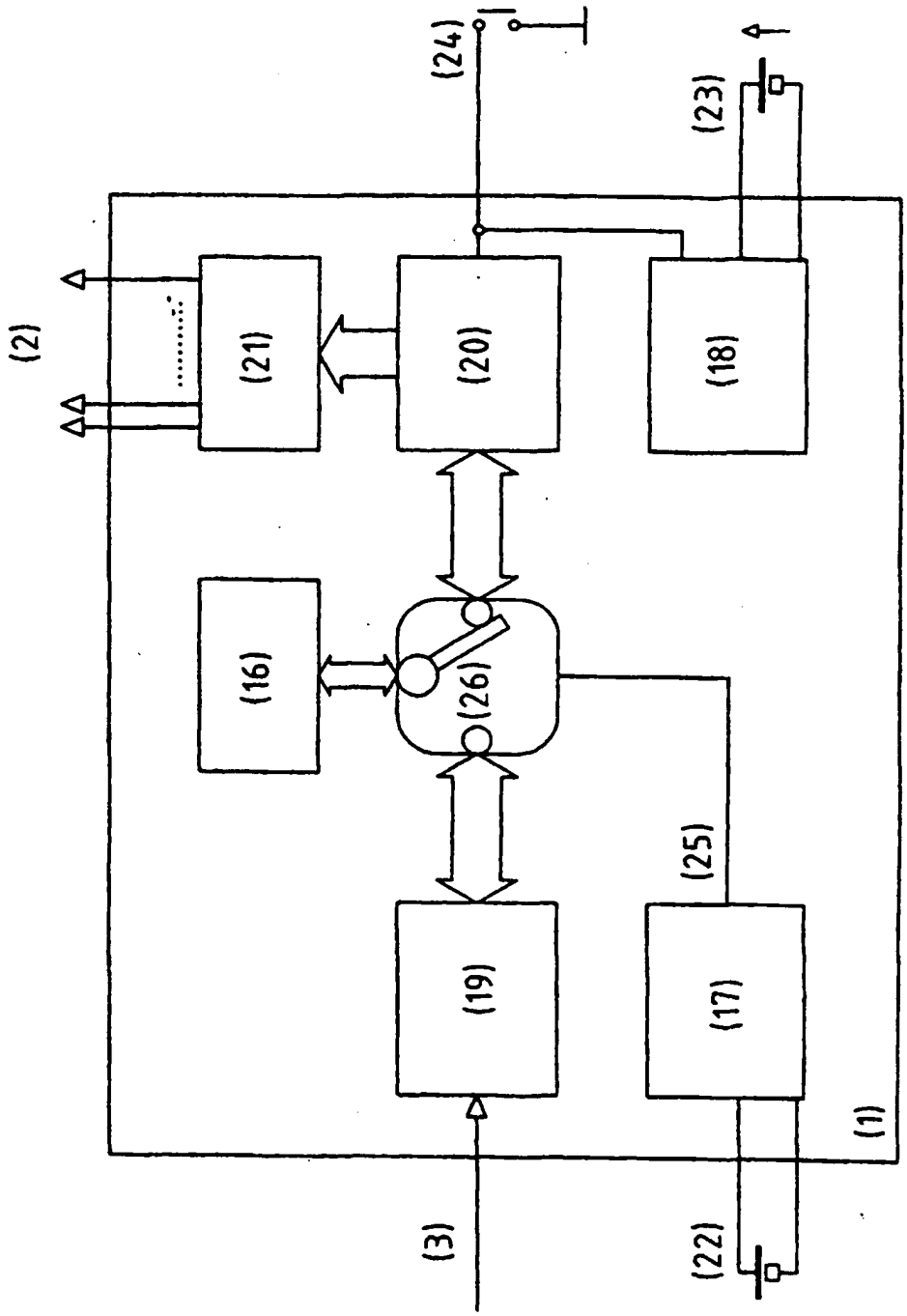


FIG.3

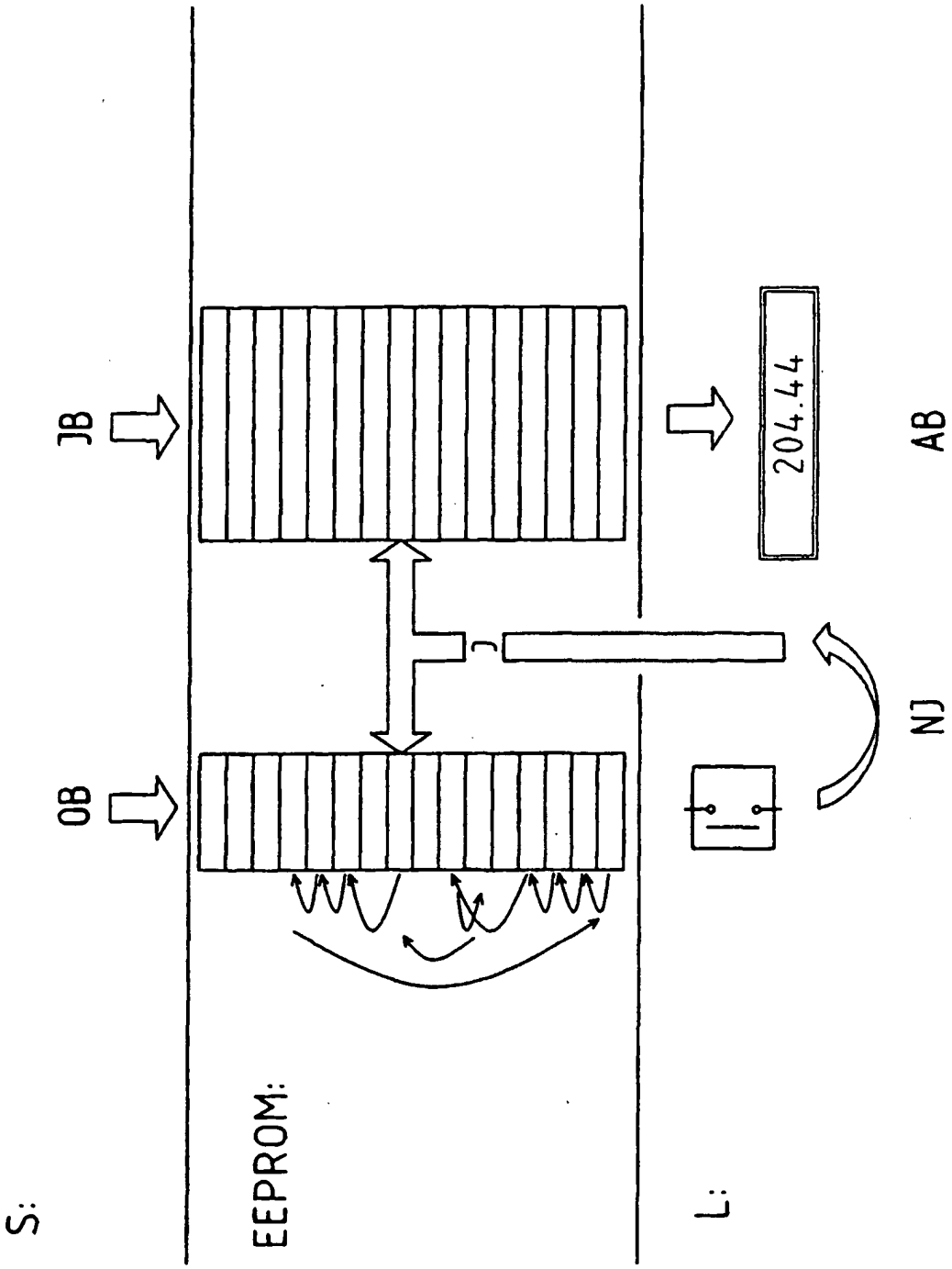


FIG.4

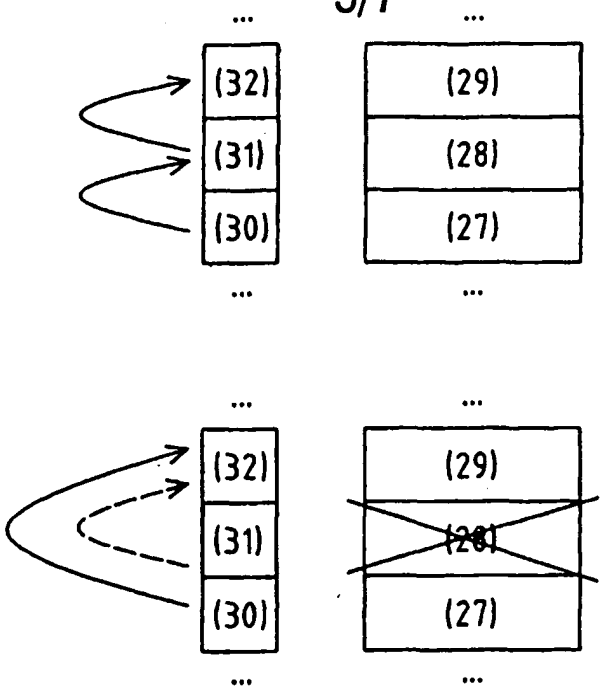

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FIG.5

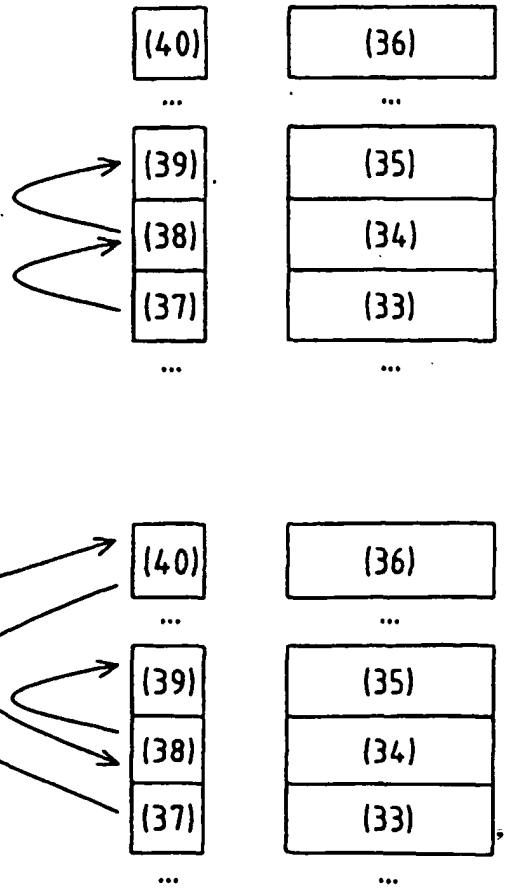

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FIG.6

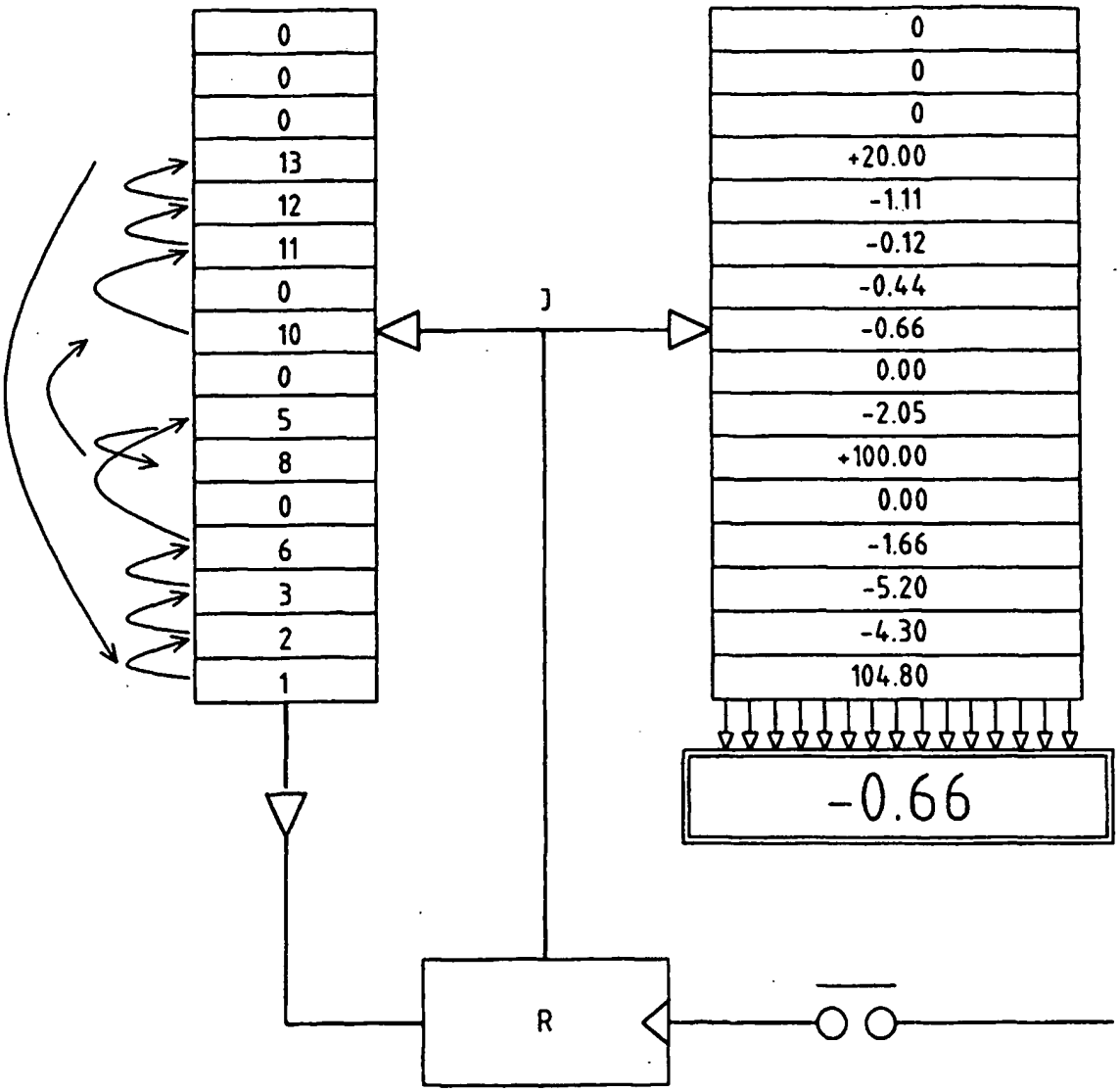

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FIG.7

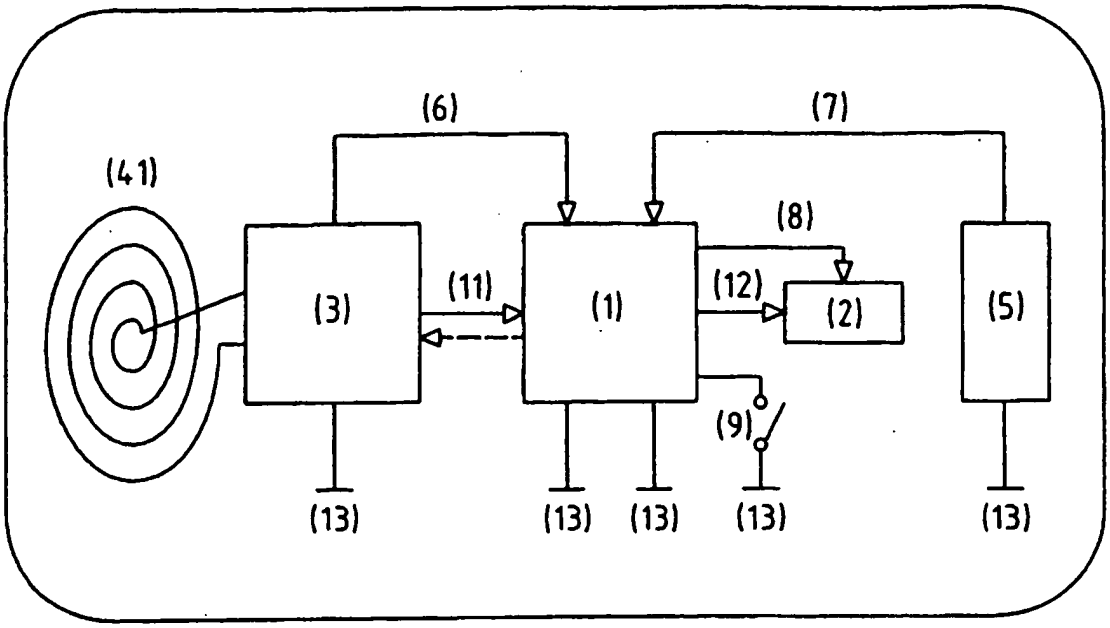

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FIG.8

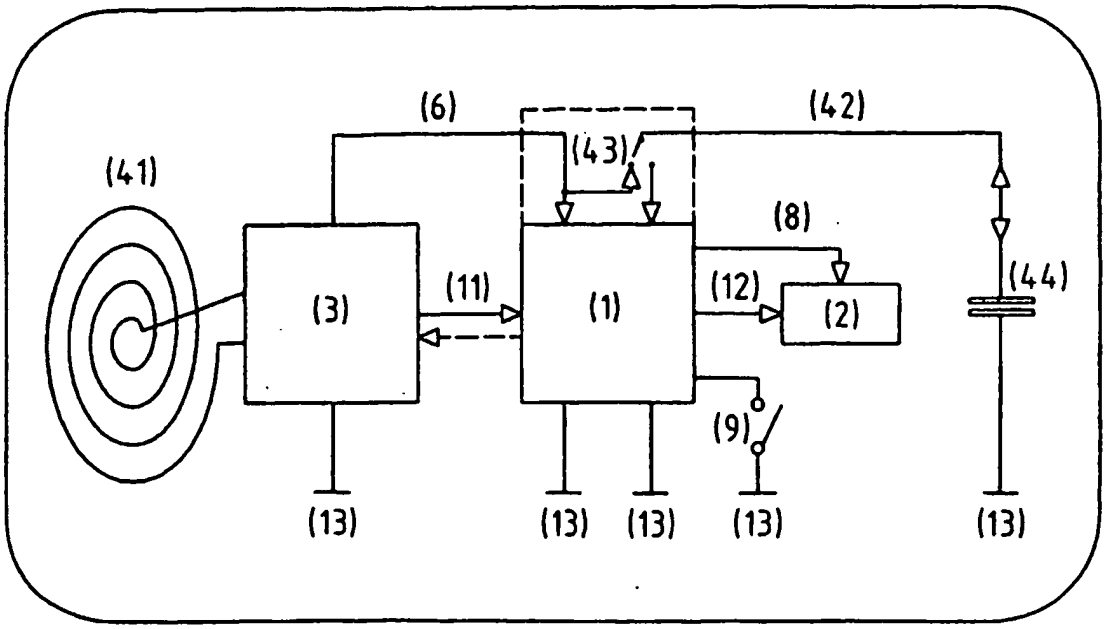

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FIG.9

INTERNATIONAL SEARCH REPORT

Intern[redacted] Application No
PCT/IB 02/03867

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06K19/077

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06K H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 18747 A (COOREMAN PASCAL ;GEMPLUS CARD INT (FR)) 15 March 2001 (2001-03-15) page 6, line 20 -page 7, line 25 figure 1 ---	1,13
A	US 5 278 673 A (BRANCHEAU JAMES E ET AL) 11 January 1994 (1994-01-11) the whole document ---	1,13
A	US 5 627 355 A (BROWN JOHN ET AL) 6 May 1997 (1997-05-06) the whole document -----	1,13

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
9 December 2002	16/12/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	de Ronde, J.

Form PCT/ISA/210 (second sheet) (July 1992)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern[redacted] Application No
PCT/IB 02/03867

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0118747 A	15-03-2001	FR 2798212 A1	09-03-2001
		AU 7297300 A	10-04-2001
		CN 1382287 T	27-11-2002
		EP 1214686 A1	19-06-2002
		WO 0118747 A1	15-03-2001
US 5278673 A	11-01-1994	NONE	
US 5627355 A	06-05-1997	US 5478994 A	26-12-1995

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Cornell University Law School

LII / Legal Information Institute

U.S. Code collection

Updates to the sections of the United States Code contained in

Title 35 > Part II > Chapter 18

CHAPTER 18—PATENT RIGHTS IN INVENTIONS MADE WITH FEDERAL ASSISTANCE

Title 35 of the US Code as currently published by the US Government reflects the laws passed by Congress as of **Jan. 8, 2008**, and **it is this version that is published here.**

However, the long codification process by The office of the Law Revision Counsel (LRC) starts very quickly after any new legislation with "classification" to corresponding US Code sections. They put these in "Classification Tables" and make them available to us all at http://uscode.house.gov/classification/tables.shtml

The table below lists the classification updates for the sections contained in CHAPTER 18—PATENT RIGHTS IN INVENTIONS MADE WITH FEDERAL ASSISTANCE, since Jan. 8, 2008.

US Code Section	Description of Change	Session Year	Public Law		Statutes at Large Volume	STAT. Page(s)
35 USC 202		2009	111-8	1301(h)	123	STAT. 829

How to use this table

An empty table indicates that we see no relevant changes listed in the classification tables since Jan. 8, 2008. If you suspect that our system may be missing something, please double-check at http://uscode.house.gov/classification/tables.shtml

Multiple entries for a section are listed most recent first, within the section.

If there are multiple sections, they are presented in section number order (original document order).

The Session Year indicates which session of Congress was responsible for the changes classified. The Congress number forms the first part of the Public Law number; each Congress has two sessions.

Abbreviations used in the Description of Change column:

- An empty field implies a standard amendment.
- "new" means a new section or new note, or all new text of an existing section or note.
- "nt" means note.
- "nt [tbl]" means note [table].
- "prec" means preceding.
- "fr" means a transfer from another section.
- "to" means a transfer to another section.
- "omitted" means the section is omitted.
- "repealed" means the section is repealed.
- "nt ed change" and "ed change" -- See the Editorial Classification Change Table (http://uscode.house.gov/classification/edct.pdf).

The Public Law field is linked to the development of the law in the Thomas system at the Library of Congress.

The Statutes at Large field is linked to the text of the law, in the context of its volume of the Statutes at Large, at the Government Printing Office. Please note that it takes a while for these pages to get posted, so for very recent legislation, you need to look at the "enrolled" version at the Thomas site (PubL link)

The Statutes at Large references have been rendered in the format used as page numbers in the Public Law web pages to which we link, to facilitate copy-paste into browser "find on this (web) page" tools. We are still working on a more direct link facility.

For serious comparison work, we suggest copying all or a portion of the Public Law text into your favorite text editor, for convenient content traversal and window control.

Sections with change type "new" are a special case, still under development. All are now listed, at the title level only.

You will find that occassionally a specific update you notice in a Public Law listed in a classification table will already have made it into the Code. We assume this is an artifact of the LRC edit process. The LII does not edit the LRC content.

The most recent Classification Table update that we have noticed was **Wednesday, December 23, 2009**

General References

See http://uscode.house.gov/ for explanations about the US Code from the folks who put it all together at the LRC. Look for

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information about what it is and is not, which titles are "positive law", the schedule of Supplements, etc. Under "download" you can find the source data we use here (GPO locator files) as well as PDF files that look just like the paper books (watch out for file sizes).

See http://thomas.loc.gov/ to look for changes that have not yet made it into the classification tables.

LII has no control over and does not endorse any external Internet site that contains links to or references LII.

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CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8) Applicant(s): Joel Gaillard			Docket No. 1-40490	
Application No. 12/603,085	Filing Date Oct. 21, 2009	Examiner	Customer No. 43935	Group Art Unit 3711

Invention: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

JAN 12 2010
PATENT & TRADEMARK OFFICE

I hereby certify that this **Information Disclosure Statement, PTO form 1449 and foreign references**

(Identify type of correspondence)

is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

January 6, 2010

(Date)

Bev Ellerbrock

(Typed or Printed Name of Person Mailing Correspondence)

Bev Ellerbrock

(Signature of Person Mailing Correspondence)

Note: Each paper must have its own certificate of mailing.

OIPE
JAN 12 2010
PATENT & TRADEMARK OFFICE

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joel Gaillard	)	Group Art Unit: 3711
Serial No. 12/603,085	)	Examiner:
Filed: Oct. 21, /2009	)	Attorney Docket: 1-40490
For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	)	

January 6, 2010

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

INFORMATION DISCLOSURE STATEMENT
IN ACCORDANCE WITH 37 C.F.R. 1.97(b)

Honorable Sir:

Pursuant to 37 C.F.R. 1.97(b), record is hereby made of information which the Patent Office may wish to consider in connection with its examination of the above-identified application. A completed PTO-1449 form, and a copy of any foreign references listed, are enclosed.

Respectfully submitted,

Donald R. Fraser, Reg. No. 17,919

Law Offices of Fraser Clemens Martin & Miller LLC
28366 Kensington Lane
Perrysburg OH 43551-4163
(419) 874-1100
(419) 874-1130 (fax)

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FRASER CLEMENS MARTIN & MILLER LLC
Intellectual Property and Technology Law

Donald R. Fraser
William J. Clemens [1]
Richard G. Martin
J. Douglas Miller

28366 Kensington Lane
Perrysburg, Ohio 43551-4163

e-mail: firm@fraser-ip.com
Telephone: (419) 874-1100
Facsimile: (419) 874-1130

Stefan V. Chmielewski [2]
Michael E. Dockins [2]
Jacob M. Ward [3]
William C. Dusseau
Brenda J. Kruse
Carrie A. Johnson [4]
Michael J. Riesen

[1] Admitted in Ohio and Michigan
[2] Admitted in Ohio and Indiana
[3] Admitted in Michigan only
[4] Admitted in Georgia only

FAX TRANSMISSION

Date: December 31, 2009

To: USPTO – Attention: Refund Department

Fax: 571-273-6500

From: Donald R. Fraser

Re: Serial Number 12/603,085
Attorney Docket No. 1-40490

We are transmitting a total of __9__ pages (including cover sheet).
If transmission is not complete, please call 419.874.1100.

COMMENTS:

As instructed by the Refund Department, attached is a Request for Refund in the above-entitled matter. The request indicates that the application was incorrectly filed as large entity. The firm deposit account was over-charged for the total amount of $655.00. After contacting the USPTO, they instructed the attached request for refund be filed.

Please process this refund request at your first opportunity. Thank you.

CONFIDENTIALITY NOTICE
The documents accompanying this transmission contain confidential information intended for a specific individual and purpose. The information is private, and is protected by law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this telecopied information is strictly prohibited. If you have received this communication in error, please notify us at 419/874-1100 (collect) so that we can arrange for the retrieval of the original document at no cost to you. Thank you.

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CERTIFICATE OF FACSIMILE TRANSMISSION UNDER 37 CFR 1.8
I hereby certify that this correspondence is being facsimile transmitted to the Commissioner for Patents on:

(Signature)
Date of signature and transmission 12-31-09

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joel Gaillard	
Serial No.: 12/603,085	
Filed: October 21, 2009	Attorney Docket: 1-40490
For: PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE...	Customer No. 43935

December 31, 2009

Commissioner for Patents
Attention: Refund Department
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR REFUND

Honorable Sir:

Attached is a copy of the Application Data Sheet 37 CFR 1.76 form which was filed with the above-referenced application on October 21, 2009, which is a continuation in part of U.S. Utility Patent Application Serial No. 10/552,912 filed on October 13, 2005.

The fees for a large entity were charged to Deposit Account No. 50-3156 in the amount of $1090.00. The submission of the application under large entity was in error. The Application Data Sheet should have indicated a small entity status. Attached is the Statement Claiming Small Entity Status filed within the prior application. We hereby request a refund to Deposit Account

PAGE 2/9 * RCVD AT 12/31/2009 2:05:07 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/1 * DNIS:2736500 * CSID: * DURATION (mm-ss):01-42

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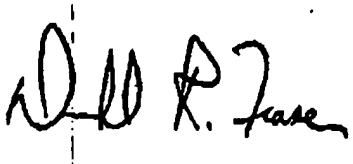
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No. 50-3156, under the name of Fraser Clemens Martin & Miller LLC, in the amount of $545.00 under 37 CFR 1.28.

In addition, upon receipt of the firm Deposit Account No. 50-3156 statement, a copy of which is attached, there was an additional fee charged on November 3, 2009, the fee for a large entity of $220.00 for one (1) additional independent claim. We are also hereby requesting a refund in the amount of $110.00.

After discussion with the Refund Department of the United States Patent and Trademark Office Deposit Account Division, we were advised to document this matter and request a refund. Therefore, please file and issue a refund accordingly for the total amount of $655.00 to Deposit Account No. 50-3156.

Respectfully submitted,



Donald R. Fraser, Reg. No. 17,919

Fraser Clemens Martin & Miller LLC
28366 Kensington Lane
Perrysburg, Ohio 43551
419-874-1100
419-874-1130 (FAX)

PAGE 3/9 * RCVD AT 12/31/2009 2:05:07 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/1 * DNIS:2736500 * CSID: * DURATION (mm-ss):01-42

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PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40490
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

This application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joel		Gaillard	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Nassau	Country Of Residence	BS

Citizenship under 37 CFR 1.41(b): BS

Mailing Address of Applicant:

Address 1	P.O. Box 10013		
Address 2	1A Star Plaza, Mackey St.		
City	Nassau	State/Province	BS
Postal Code		Country	

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ An Address is being provided for the correspondence Information of this application.

Customer Number	43935		
Email Address	firm@fraser-ip.com	Add Email	Remove Email

Application Information:

Title of the Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND		
Attorney Docket Number	1-40490	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	4

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40490
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	43935		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	10552912	2008-02-27

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			○ Yes ◉ No

Additional Foreign Priority Data may be generated within this form by selecting the Add button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

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Approved for use through 03/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40480
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

If the Assignee is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information:

Address 1			
Address 2			
City		State/Province	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the Add button.

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	Donald R. Fraser			Date (YYYY-MM-DD)	2009-10-21
First Name	Donald R.	Last Name	Fraser	Registration Number	17919

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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(D)

COPY

LESPÉRANCE & MARTINEAU
AGENTS DE BREVETS ET DE MARQUES DE COMMERCE
PATENT AND TRADEMARK AGENTS

François Martineau, patent agent
Louis Martineau, patent and trademark agent

O/file: 2795-15-2

STATEMENT CLAIMING SMALL ENTITY STATUS

Independent Inventor

I, Joël GAILLARD, whose full post office address is *IA Star Plaza, Mackey Street Nassau NP Bahamas PO Box 19013*, have devised an invention entitled:

PORTABLE ELECTRONIC DEVICE CAPABLE OF ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

As the above named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent Office for the invention described in:

- ☒ the specification joined herein with title as listed above.
- ☐ the patent application No. with title as listed above.
- ☐ the patent No. issued on with title as listed above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a non-profit organisation under 37 CFR 1.9(e).

Each person, concern or organisation to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant convey, or license, any rights in the invention is listed below:

- ☐ No such person, concern, or organisation exists.
- ☒ Each such person, concern, or organisation is listed below:
  G. HOLDINGS LTD.

Separate statements are required from each named person, concern or organisation having rights to the invention stating their status as small entities.

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after that date on which status as a small entity in no longer appropriate. (37 CFR 1.28(b))

Joël GAILLARD, inventor	, inventor	, inventor
X Signature	Signature	Signature
X 30 Sept 2005 Date	Date	Date

1440, Saint-Catherine Street West, Suite 700, Montreal (Quebec) Canada H3G 1R8
Tel.: (514) 861-4831 martineau@l-m.ca Fax: (514) 392-9112

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Deposit Account Statement

Requested Statement Month:	November 2009
Deposit Account Number:	503156
Name:	FRASER MARTIN & MILLER LLC.
Attention:	MS. MARTHA SLOAN
Street Address 1:	28366 KENSINGTON LANE
Street Address 2:	
City:	PERRYSBURG
State:	OH
Zip:	43551
Country:	UNITED STATES

DATE	SEQ	POSTING REF TXT	ATTORNEY DOCKET NBR	FEE CODE	AMT	BAL
11/02	3648	77861637	1-40513	7007	$275.00	$8,736.00
11/03	4724	E-REPLENISHMENT		9203	-$3,000.00	$11,736.00
11/03	1	12603085	1-40490	1201	$220.00	$11,516.00
11/03	12445	61257518	1-40512	2005	$110.00	$11,406.00
11/04	178	29304397	1-39398	2502	$430.00	$10,976.00
11/04	179	12133453	1-39541	2501	$755.00	$10,221.00
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11/04	181	29317841	1-39498	2502	$430.00	$9,491.00
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11/05	1267	12598820	1-17581	1615	$520.00	$12,431.00
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11/10	1	11876341	1-38436	2251	$65.00	$17,295.00
11/12	1	11914971	1-39165	2632	-$255.00	$17,550.00
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10/22	133	10552912	1-37992	2501	$755.00	$5,776.00
10/23	55	11848420	1-17392	1801	$810.00	$4,966.00
10/26	535	0226580877	15-40120	8014	$25.00	$4,941.00

1090

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Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Joel Gaillard
Filer:	Donald R. Fraser/Sarah Tecco
Attorney Docket Number:	1-40490

Adjustment date: 01/07/2010 SDIRETA1
10/22/2009 INTEFSW 00001850 503156 12603085
01 FC:1011 330.00 CR
02 FC:1111 540.00 CR
03 FC:1311 220.00 CR

01/07/2010 SDIRETA1 00000007 503156 12603085

01 FC:4011 82.00 DA
02 FC:4111 270.00 DA
03 FC:4311 110.00 DA

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/603,085	10/21/2009	3711	1310	1-40490	20	4

CONFIRMATION NO. 5895

43935
FRASER CLEMENS MARTIN & MILLER LLC
28366 KENSINGTON LANE
PERRYSBURG, OH 43551

FILING RECEIPT

OC000000038594552

Date Mailed: 11/12/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Joël Gaillard, Nassau, BAHAMAS;

Power of Attorney: The patent practitioners associated with Customer Number 43935

Domestic Priority data as claimed by applicant

This application is a CIP of 10/552,912 02/27/2006
which is a 371 of PCT/IB03/01523 04/14/2003

Foreign Applications

If Required, Foreign Filing License Granted: 11/03/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/603,085**

Projected Publication Date: 02/18/2010

Non-Publication Request: No

Early Publication Request: No

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Title

PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

Preliminary Class

473

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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Apple EX1007 Page 263

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Electronic Acknowledgement Receipt

EFS ID:	6303510
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Joel Gaillard
Customer Number:	43935
Filer:	Donald R. Fraser/Sarah Tecco
Filer Authorized By:	Donald R. Fraser
Attorney Docket Number:	1-40490
Receipt Date:	21-OCT-2009
Filing Date:	
Time Stamp:	15:33:24
Application Type:	Utility under 35 USC 111(a)

11/03/2009 MNGUYEN 00000001 503156 12603085

01 FC:1201 220.00 DA

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1090
RAM confirmation Number	1850
Deposit Account	503156
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40490
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joel		Gaillard	

Residence Information (Select One) ○ US Residency ◉ Non US Residency ○ Active US Military Service

City	Nassau	Country Of Residence	BS
Citizenship under 37 CFR 1.41(b)	BS		

Mailing Address of Applicant:

Address 1	P.O. Box 19013		
Address 2	1A Star Plaza, Mackey St.		
City	Nassau	State/Province	BS
Postal Code		Country	

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	43935		
Email Address	firm@fraser-ip.com	Add Email	Remove Email

Application Information:

Title of the Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND		
Attorney Docket Number	1-40490	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	4

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40490
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	43935		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	10552912	2006-02-27

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			○ Yes ◉ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1-40490
	Application Number	
Title of Invention	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND	

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button.

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature				Date (YYYY-MM-DD)	2009-10-21
First Name	Donald R.	Last Name	Fraser	Registration Number	17919

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION
DECLARATION POUR DEMANDES DE BREVETS AVEC POUVOIRS

FRENCH LANGUAGE DECLARATION
form PTO/SB/105 (2-98)

En tant qu'inventeur nommé ci-après, je déclare par les présentes que mon nom, mon domicile, mon adresse postale et ma nationalité sont ceux qui figurent ci-après. Je déclare que je crois être l'inventeur original, premier et unique (si un seul nom figure sur le présent acte) ou un des co-inventeurs, originaux et premiers (si plusieurs noms figurent sur le présent acte) du sujet revendiqué et pour lequel un brevet est demandé sur la base de l'invention intitulée :

As a below-named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled :

PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

et dont la description est fournie ci-joint à moins que la case suivante n'ait été cochée:

the specification of which is attached hereto unless the following box is checked:

☐ a été déposée :
- Demande de brevet No. :
- Date de dépôt :

☐ was filed:
- Patent application No.:
- Filing date:

Je déclare par les présentes avoir examiné et compris le contenu de la description identifiée ci-dessus, revendications y compris, et le cas échéant telle que modifiée par un amendement.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

Je reconnais le devoir de divulguer toute information qui soit en rapport avec l'examen de cette demande selon le titre 37 de la Codification des Règlements Fédéraux § 1.56(a).

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des États-unis, sur **toute demande étrangère de brevet ou certificat d'inventeur** ou, en vertu du Titre 35, § 365(a) du même Code, sur **toute demande internationale PCT désignant au moins un pays autre que les États-unis** et figurant ci-dessous :

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365 (b) of **any foreign application(s) for patent or inventor's certificate**, or § 365(a) of **any PCT International application which designated at least one country other than the United States**, listed below:

+Demande(s) de brevet antérieure(s) :
Prior application(s):

- No. de la demande/*Application number* :
- Pays/*Country* :
- Date de dépôt/*Filing date* : (AAAA-MM-JJ) / *(YYYY-MM-DD)*

- No. de la demande/*Application number* :
- Pays/*Country* :
- Date de dépôt/*Filing date* : (AAAA-MM-JJ) / *(YYYY-MM-DD)*

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Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des États-unis, de **toute demande de brevet provisoire effectuée aux États-unis** et figurant ci-dessous.

I hereby claim the benefit under Title 35, United States Code, §119(e) of **any United States provisional application(s)** listed below.

- Demande No./*Application No.* :
- Date de depot/*Filing date* : (AAAA-MM-JJ) / *(YYYY-MM-DD)*

- Demande No./*Application No.* :
- Date de depot/*Filing date* : (AAAA-MM-JJ) / *(YYYY-MM-DD)*

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des États-unis, de **toute demande de brevet effectuée aux États-Unis**, ou en vertu du Titre 35, § 365(c) du même Code, de **toute demande internationale PCT désignant les États-unis** et figurant ci-dessous et, **dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT**, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des États-unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande :

I hereby claim the benefit under Title 35, United States Code, § 120 of **any United States application(s)**, or § 365(c) of **any PCT International application designating the United States**, listed below and, **insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application** in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

- No. de la demande/*Application number* :
- Date de dépôt/*Filing date* : (AAAA-MM-JJ) / *(YYYY-MM-DD)*

État de la demande/*Application status* :

This patent application is a continuation in part of United States Patent application No. 10/552,912 filed on February 27, 2006, which is an entry into national phase of International PCT application No. PCT/IB2003/001523 filed on April 14, 2003.

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des États-unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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POUVOIR

En tant qu'inventeur, je désigne les agents de brevets suivants pour poursuivre la procédure de cette demande et traiter toute affaire la concernant par devant le bureau des brevets et marques:

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Je nomme également comme représentant pour signification aux fins de recevoir tout avis affectant le brevet ou les droits en découlant :

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Nom complet du **seul** ou **premier** inventeur:

Signature de l'inventeur :

Date : _____

Domicile :
Citoyenneté :
Adresse postale :

POWER OF ATTORNEY

As a named inventor, I hereby appoint the following patent agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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I further appoint as domestic representative to whom may be served process or notice of proceedings affecting the patent or rights thereunder:

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Full name of the **sole** or **first** inventor:

Joël GAILLARD

Inventor's signature:

X _____

X Date: 20 oct. 2009

Residence: Nassau Bahamas
Citizenship: French
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TITLE OF THE INVENTION : PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND

CROSS REFERENCE DATA

This patent application is a continuation in part of United States Patent application No. 10/552,912 filed on February 27, 2006, which is an entry into national phase of International PCT application No. PCT/IB2003/001523 filed on April 14, 2003.

FIELD OF THE INVENTION

This invention relates to a portable electronic device capable of alternate data conveyance operations responsive to an invariable activation command.

BACKGROUND OF THE INVENTION

Conventional portable electronic or magnetic devices are used for many different applications. Such portable devices can be for example access devices such as keycards, identification devices, or credit or debit devices such as the so-called smart cards.

Electronic identification devices are widely used by banks, credit companies, stores, to allow automated monetary transactions without the assistance of a bank teller.

For conventional credit cards, a magnetic strip is encoded with a small amount of coded information identifying the cardholder, such as an identification code and a personal identification number (PIN). To access the information held by such cards after or during a transaction, a suitable transaction interface machine comprising an appropriate magnetic card reader is required. Transaction or other account-related information can be outputted on a display screen located on the transaction machine.

Some prior art identification or transaction cards incorporate greater storage capacity and data processing means in the form of a microchip carried by the plastic main body of a smart card. These smart cards can store more data than standard

magnetic cards. These cards, however, still require the use of a card reader interface machine to access the information comprised thereon, and a supplementary screen on the interface machine is required to view their content.

Some prior art identification cards have been provided with an in-built display screen and an information decoder cooperating with each other to access, decode and visualize coded information comprised in a memory unit located on the card. These prior art devices, however, necessitate multiple controls thereon to accomplish different functions of the card.

SUMMARY OF THE INVENTION

The present invention relates to a portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered;
- a user interface device operatively linked to said electronic circuit;
- a data transceiver operatively linked to said electronic circuit;
- a cue receiver for receiving a selectively emitted activation cue from a source external to said portable electronic device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being in an activated state upon an activation cue having been received by said cue receiver, and being in an inactive state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in said activated state, a data exchange will be initiated through the instrumentality of said data transceiver for exchanging data between said electronic circuit and an external data exchange device;

- if said switching element is in said inactive state, data will be conveyed from said electronic circuit to said user interface device for communicating information to the portable electronic device holder.

In one embodiment, said user interface device is a display screen.

In one embodiment, wherein said data transceiver comprises a data transmitter and a data receiver distinct from said data transmitter.

In one embodiment, said cue receiver is said data receiver.

In one embodiment, said control device is a biometric parameter detector, such as a fingerprint scanner capable of obtaining a fingerprint scan, whereby said control device is triggered when the fingerprint scan matches a fingerprint image pre-saved in said electronic circuit.

In one embodiment, said control device is a button, and said control device is triggered when the button is pressed.

In one embodiment, said electronic circuit comprises said switching element.

In one embodiment, said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

In one embodiment, said switching element comprises a decisional logical circuit.

The invention also relates to a data exchange system comprising :

- a data exchange device comprising a first electronic circuit, a first data transceiver and a cue emitter; and
- a portable electronic device, comprising:
    - a second electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
    - a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered;
    - a user interface device operatively linked to said electronic circuit;
    - a second data transceiver operatively linked to said electronic circuit;
    - a data conveyance switching element operatively linked to said electronic circuit, said switching element being in an activated state upon an activation

cue having been received by said cue receiver, and being in an inactive state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in its activated state, a data exchange will occur between said first data transceiver and said second data transceiver, thereby exchanging data between said data exchange device and said portable electronic device;
- if said switching element is in its inactive state, data is forwarded to said user interface device for communicating information to the portable electronic device holder.

The invention further relates to a portable electronic device comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered;
- first and second data conveyance functions programmed in said electronic circuit;
- a cue receiver for receiving a selectively emitted activation cue from a source external to said portable electronic device; and
- power means, for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command, said electronic circuit will accomplish said first data conveyance function if an activation cue was received by said cue receiver and said second data conveyance function if no cue was received by said cue receiver.

The invention also relates to a method for data exchange with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said circuit, a user interface device operatively linked to said circuit, communication ports operatively linked to said circuit, a switching element operatively linked to said electronic circuit and being in a default inactive state, and

power means for providing power to said portable electronic device, said method comprising the steps of :

- awaiting for an activation cue to be received at a predetermined one of said communication ports;
- if an activation cue is received at one of said communication ports, changing the state of said switching element from its default inactive state to an activated state; and
- selectively triggering said control device to issue an invariable activation command, whereby said method will further comprise one of the two following steps:
    - if said switching element is in its activated state, initiating a data exchange with an external data exchange device through at least one of said communication ports; and
    - if said switching element is in its inactive state, conveying data from said electronic circuit to said user interface device for communicating information to the portable electronic device holder.

In one embodiment, said activation cue is received at one of said communication ports distinct from another one of said communication ports used for data exchange with the external data exchange device.

In one embodiment, the additional following step occurs after selectively triggering said control device if said switching element is in said activated state:

- conveying data from said electronic circuit to said user interface device for communicating information to the portable electronic device holder.

The present invention also relates to a portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered;
- a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device;

- a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device; and
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device.

In one embodiment, the portable electronic device further comprises a display screen operatively linked to said electronic circuit.

In one embodiment, said first data transceiver includes said cue receiver.

In one embodiment, said control device is one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

In one embodiment, said electronic circuit includes said switching element.

In one embodiment, said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

In one embodiment, said switching element comprises a logical circuit.

In one embodiment, said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a nearby first external data exchange device through a direct link.

In one embodiment, said second data transceiver comprises a communication network transceiver for wireless communication through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

The invention also relates to a portable electronic device comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered;
- first and second data conveyance operations programmed in said electronic circuit;
- first and second data transceivers operatively linked to said electronic circuit;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device; and
- power means, for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if an activation cue was received by said cue receiver, said electronic circuit will accomplish said first data conveyance operation to convey data from said electronic circuit to said first data transceiver for transmitting data through said first data transceiver; and
- if no activation cue was received by said cue receiver, said electronic circuit will accomplish said second data conveyance operation to convey data from said electronic circuit to said second data transceiver for transmitting data through said second data transceiver.

The present invention further relates to a data exchange system comprising :

- a first data exchange device;
- a second data exchange device; and
- a portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered;
- a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and said first data exchange device through a direct link;
- a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and said second data exchange device through a communication network;
- a cue receiver for receiving an activation cue from said first data exchange device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and
- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for exchanging data between said electronic circuit and the first external data exchange device;
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for exchanging data between said electronic circuit and the second external data exchange device.

The invention also relates to a method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said electronic circuit, first and second data transceivers

operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and
- selectively triggering said control device to issue an invariable activation command whereby:
  - if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
  - if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device.

In one embodiment, the method further comprises the following step before the step forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data.

In one embodiment, after the step of forwarding said third data to the display screen, the method comprises the following step:

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver.

In one embodiment, the method further comprises the following steps before the step forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device:

- forwarding fourth data to and displaying said fourth data on said display screen, wherein said fourth data is representative of the content of said second data; and

- awaiting for an authorization command to be inputted through said user confirmation input device before forwarding said second data to said second data transceiver.

In one embodiment, said control device includes said user confirmation input device.

In one embodiment, said first and second data are identical.

In one embodiment, said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link.

In one embodiment, said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

In one embodiment, the step of selectively triggering said control device to issue an invariable activation command comprises selectively triggering one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

DESCRIPTION OF THE DRAWINGS

In the annexed drawings :

Figure 1 is a schematic view of a data exchange system, showing a portable electronic device according to one embodiment of the present invention and a data exchange device, and further suggesting in dotted lines a communication link being established between the portable electronic device and the data exchange device;

Figure 2 is an enlarged schematic view of the portable electronic device of figure 1, showing the electronic circuit thereof in greater detail;

Figure 3 is a view similar to figure 1, but showing a portable electronic device according to an alternate embodiment of the present invention cooperating with an alternate corresponding data exchange device; and

Figure 4 is a schematic view of a data exchange system according to another embodiment of the present invention, showing a resident portable electronic device, a data exchange device, a network, a server, a terminal and a remote portable electronic device, further suggesting with arrows the communication links being established between these different elements of the data exchange system.

DETAILED DESCRIPTION OF THE EMBODIMENTS

Figure 1 shows a data exchange system 8 comprising a portable electronic device 10 according to the present invention and a data exchange device 9. Portable electronic device 10 can be used for example for monetary transactions or identification purposes.

Device 10 comprises a rigid or semi-rigid main body 11 on which are operatively mounted: a control device 12, an electronic circuit 14, a display screen 16, a transceiver 18 and power means 20. Main body 11 can be made from a plastic material for example.

As illustrated in figure 2, electronic circuit 14 comprises a central unit 40 cooperating with a memory unit 42 and an Input/Output (I/O) controller 44. I/O controller 44 comprises I/O ports 44a and a data forwarding switching element 44b. I/O ports 44a handle the inputting and outputting of the data, and switching element 44b directs the data flow towards an appropriate destination, as detailed hereinafter.

Central unit 40 is operatively linked to I/O controller 44. Central unit 40 is able to process data electronically stored in memory unit 42, and is further capable of storing data thereon. Central unit 40 collaborates with I/O controller 44, and is capable of processing data incoming therefrom and of sending data thereto in order for this data to be appropriately outputted to components operatively connected to I/O controller 44.

Memory unit 42 of circuit 14 can comprise pre-stored data thereon. For example, this pre-stored data may comprise data related to the cardholder, such as the

cardholder's name, address, his bank balance, his date of birth, or any other desired information. In one embodiment, the pre-stored data can further comprise validation data about the cardholder that will be used to authenticate the user, for example a personal identification number (PIN) or a fingerprint image. In another embodiment, the pre-stored data comprises electronic money usable to purchase goods and services according to known electronic wallet transaction methods.

Electronic circuit 14 comprises three essential functions: processing data, storing data, and inputting and outputting data to other components. The diagram of figure 2 shows a specific layout of operational blocks comprised within electronic circuit 14 and cooperating with each other to provide these three functions thereto. It is understood that alternate schematic circuit layouts could illustrate these three functions without departing from the scope of the present invention.

Electronic circuit 14 is operatively connected through the instrumentality of its I/O controller 44 to control device 12, screen 16 and transceiver 18.

In one embodiment, electronic circuit 14 is a programmable microchip, as found on smart cards.

Screen 16 is capable of displaying information transferred thereto from electronic circuit 14 through the instrumentality of I/O controller 44. Display screen 16 can be a LCD (liquid crystal display) screen embedded into main body 11 of the device. In one embodiment of the present invention, screen 16 is replaced with another user interface device, for example a speaker with voice emission software which would transform information forwarded thereto to speech understandable by the portable electronic device holder.

Control device 12 can be any suitable device allowing the portable electronic device holder to selectively trigger a data conveyance operation as detailed hereinafter. Control device 12 can be for example a single manually activated button provided on the portable electronic device main body 11 (as schematically illustrated in figures 1-3) which, when pressed, issues an activation command that triggers a particular data conveyance as described hereinbelow. Alternatively, control device 12 can include validation means such as a biometric parameter detector, for example a fingerprint scanner capable of obtaining a fingerprint image, which can be compared by central unit 40 to a fingerprint image pre-saved in memory unit 42. A fingerprint image match

would validate that the user of portable electronic device 10 is authorized to use the latter, and then trigger the data conveyance operation. In another alternate embodiment, control device 12 could include validation means in the form of a keypad allowing the portable electronic device holder to type in a personal identification number (PIN) which will be compared by central unit 40 to a PIN pre-saved in memory unit 42, with a PIN match validating the portable electronic device user and triggering the data conveyance operation. In yet another embodiment, control device 12 is a validation button required to be pressed and on which a fingerprint scanner is provided: the card holder may thus concurrently apply his fingerprint on the scanner and press on the button to respectively validate and trigger the data conveyance operation. Any other suitable control device may be used.

Generally, control device 12 is considered to be triggered when the portable electronic device holder has successfully accomplished the necessary steps for control device 12 to issue an activation command, for example when the PIN or fingerprint scan was authenticated, or when the validation button was pressed, or when the button was pressed while the fingerprint scan was authenticated.

In an alternate embodiment of the present invention, control device 12 and LCD screen 16 can be replaced with a single touch-screen display, whereby information can be outputted, and whereby validation information can be captured.

As illustrated in figure 1, a communication link can be established between the electronic device transceiver 18 and the transceiver 9a of data exchange device 9.

Data exchange device 9 can be any sort of data exchange device comprising an electronic circuit (not shown) therein and a data transceiver 9a therein able to cooperate with transceiver 18 of device 10. In one embodiment, data exchange device 9 is another portable electronic device 10. Data exchange device 10 can alternately be a computer, an interface machine such as an automatic teller machine, or any other suitable data exchange device.

The communication link can be a contact or contactless link, for example an infrared or radio wave communication link. Thus, the electronic device transceiver 18 can be any suitable emitting and receiving device capable of communication with the data exchange device transceiver 9a. In an embodiment wherein circuit 14 is a microchip similar to the ones found on smart cards, transceiver 18 could include a

series of electrical contacts located on the surface of the microchip destined to cooperate with a corresponding type of electronic device reader, as known in the art.

Transceiver 18 is also a cue receiver, whereby an activation cue can be received by electronic device 10 from data exchange device transceiver 9a. This activation cue is in the form of a data communication of a specific type which will be recognized by electronic device 10 as an activation cue, for example a predetermined bit sequence.

Switching element 44b can be any type of device allowing data to be conveyed according to alternate data conveyance operations in response to an activation cue being received by transceiver 18 or not, as described hereinafter. According to the embodiment shown in figures 1 and 2, electronic circuit 14 comprises switching element 44b. In an embodiment wherein electronic circuit 14 comprises a microchip, switching element 44b can be a series of instructions programmed onto the microchip whereby the data conveyance operation will be automatically executed according to whether or not an activation cue was received by transceiver 18. Alternately, switching element 44b can comprise a decisional logical circuit. Generally, switching element 44b can be a physical structure, a virtual program, or both.

According to the invention, at any given time, switching element 44b will consequently be in either one of the two following states:

a) an activated state wherein an activation cue was received by transceiver 18; or

b) an inactive state wherein no activation cue was received by transceiver 18.

By default, switching element 44b is in its inactive state.

Power means 20 can be any type of power source suitable for providing power to the portable electronic device components that require power, or for receiving power from an external source to re-distribute it to the portable electronic device components that require power. For example, power means 20 can be a battery, or a connector destined to be engaged by a corresponding external connector linked to a power source.

In the embodiment of figures 1-2, power means 20 is illustrated as being connected to all the portable electronic device components; it will be obvious for those skilled in the art that power means 20 could be connected only to one or a few components that require a power source to operate, depending on the exact nature of portable electronic device 10 and of each of its components.

In use, upon control device 12 being selectively triggered by the portable electronic device holder, an activation command will be issued by control device 12 to electronic circuit 14, in reaction to which data will be conveyed within portable electronic device 10, and possibly additionally conveyed to and from portable electronic device 10, according to a pre-determined data conveyance operation. The exact nature of this data conveyance operation will depend on the state of switching element 44b.

More particularly, if no activation cue is received by portable electronic device 10, then switching element remains in its inactive state. Upon control device 12 being selectively triggered by the portable electronic device holder, data will be forwarded from electronic circuit 14 to user interface device 16, for communicating information to the portable electronic device holder.

However, upon an activation cue being received by portable electronic device 10, switching element 44b switches to its activated state. If control device 12 is selectively triggered by the portable electronic device holder while switching element 44b is in this activated state, a data exchange will be initiated between portable electronic device 10 and the external data exchange device 9. This data exchange may be in the form of a data download from electronic device 10 to data exchange device 9, of a data upload to electronic device 10 from data exchange device 9, or of a data download and a data upload - with this last alternative being the most likely in many applications.

Thus, upon control device 12 being selectively triggered to issue an activation command by the portable electronic device holder, one of two alternate data conveyance operations will be initiated within portable electronic device 10. In the case where no activation cue was received by portable electronic device 10, data will be communicated to the portable electronic device holder by means of user interface device 16. However, if an activation cue was previously received by portable electronic device 10, a data exchange will be initiated between portable electronic device 10 and data exchange device 9.

It is noted that, according to the present invention, the activation command issued when control device 12 is triggered, is an invariable activation command. That is to say that the portable electronic device holder will not be able to select to issue

different activation commands by means of control device 12 depending on whether the user considers that a data exchange operation should be accomplished with an external data exchange device 9, or whether the user wishes to display information on screen 16 on the basis of data stored in memory 42. The same invariable activation command will thus be issued upon control device 12 being triggered, and it is the state of switching element 44b, resulting from the receipt or non-receipt of an activation cue by portable electronic device 10, that will be decisive as to the type of data conveyance that will occur.

It is further noted that the above-mentioned triggering of control device 12 may comprise a single step, such as pressing a single button, or more than one step, such as pressing a button and concurrently applying one's fingerprint on a fingerprint scanner provided over the button, or typing in a PIN on a keypad provided on the portable electronic device. However, this control device triggering operation is accomplished in a same manner notwithstanding whether a data exchange between portable electronic device 10 and an external data exchange device 9 is to be accomplished, or whether a data conveyance occurs exclusively within portable electronic device 10, between electronic circuit 14 and screen 16. Consequently, it can be said that control device 12 will issue an invariable activation command when it is triggered, even if control device 12 may include more than one button, biometric parameter detector, etc... that need to be concurrently or sequentially activated for control device 12 to issue a single, invariable activation command. Of course, this single invariable activation command will trigger alternate data conveyance operations responsively to the reception or non-reception of an activation cue, so ulterior alternate commands within electronic circuit 14 will occur depending on the data conveyance operation type, but the initial activation command will not depend on the reception or non-reception of an activation cue.

One example of a particular application of the present invention is the use of a portable electronic device 10 as a quick payment means, such as for paying public transportation fares. In such a case, data exchange device 9 would represent the payment debit machine, and portable electronic device 10 would be a payment card with pre-stored electronic money thereon. When the cardholder would want to use the public transportation services, he would approach the area of access to public

transportation where a debit machine 9 would be provided. Debit machine 9 would continuously, or at regular time intervals, or when prompted to do so, emit an activation cue in the form of a predetermined contactless data transmission. Upon the cardholder approaching his payment card within a range allowing it to receive the activation cue from the debit machine, he could then trigger his control device 12 whereby a data exchange in the form of an electronic money transaction would occur between the payment card 10 and the debit machine 9. This data exchange could include any type of information required for electronic money transactions, as known in the art. For example, the following data exchange could occur, in addition to the reception of the activation cue:

- a message is sent from portable electronic device 10 to debit machine 9 to inquire as to the fare for passage;
- the fare for passage is transferred from debit machine 9 to payment card 10;
- after verification by the card electronic circuit 14 that the card memory 42 still stores a sufficient amount of electronic money, payment card 10 then sends a right-of-passage message to data exchange device 9; and
- debit machine 9 sends a confirmation of right-of-passage to payment card 10, the latter then debiting the passage fare from the total electronic money amount stored in the card memory 42. Debit machine 9 also sends the required information to an exterior passage control device to allow passage of the cardholder to the public transportation services.

If, on the other hand, control device 12 is triggered at any time when switching element 44b is in its inactive state, i.e. not within the activation cue emission range of a public transportation service debit machine 9, then data from electronic circuit 14 will be sent to display screen 16 to display the total amount of electronic money remaining in card memory 42. No data exchange with an external debit machine would then be attempted by card 10.

Thus, in the above example, upon triggering control device 12, an invariable activation command would be issued that would result in two different possible data conveyance operations: if an activation cue has been previously received from a nearby debit machine 9, payment for right-of-passage would be made to allow the cardholder to use the public transportation services; on the other hand, if no activation cue has

been previously received from a debit machine 9, then verification of the electronic money amount stored on the card memory 42 would be made.

Portable electronic device 10 could also have a plethora of other alternate purposes. For example, portable identification device 10 could be used as an electronic passport. This passport, when its control device is triggered, could be used to transmit identification data of the electronic passport owner to a data exchange device 9 if an activation cue has been received by the electronic passport, or to simply display this information on the display screen of the electronic passport if no activation cue has been received by the electronic passport.

The present invention is thus particularly advantageous, in that the portable electronic device holder needs only trigger control device 12 to issue an invariable activation command, for either the data exchange or the data display to occur. By means of the switching element 44b and transceiver 18 acting as a cue receiver, both located on portable electronic device 10, the proper data conveyance within portable transaction device will occur automatically upon this invariable activation command being issued. Thus, no alternate controls need to be provided on the portable electronic device 10. However, in one embodiment, other controls could be provided on portable electronic device 10 for accomplishing additional actions with portable electronic device 10.

It is noted that the data downloaded to an external data exchange device 9 during a data exchange therewith, and the data conveyed internally from electronic circuit 14 to display screen 16, may be the same data (as is the case in the above example of the electronic passport) or different data (as is the case in the above example of the payment card), depending on the purpose of portable electronic device 10.

The state of switching element 44b may be reset to its default inactive state upon one or more pre-determined conditions being met. In the embodiment where electronic circuit 14 is a microchip, these conditions may be programmed therein. For example, electronic circuit 14 may send a reset command to switching element 44b at regular time intervals, or a certain amount of time after switching element 44b has switched to its activated state.

According to one embodiment, when switching element 44b is in its activated state, upon selective triggering of control device 12, in addition to a data exchange occurring with an external data exchange device, an internal data conveyance from electronic circuit 14 to display screen 16 would also occur. Thus, according to this embodiment, an internal data conveyance would not be exclusive to the inactive state of switching element 44b, while a data exchange with an external data exchange device would be exclusive to the activated state of switching element 44b. In the above example of the payment card, this alternative of the invention would have the remaining amount of electronic money in the payment card displayed concurrently when a passage fare is paid with the card.

Figure 3 shows an alternate data exchange system 8' comprising an alternate embodiment of a portable electronic device 10' and an alternate data exchange device 9', wherein elements that are similar to those of the first embodiment have primed reference numerals. Portable electronic device 10' includes a transceiver that comprises multiple communication ports, namely a data transmitter 18a, a data receiver 18b, and a cue receiver 19.

Data transmitter 18a and data receiver 18b could use distinct communication modes. For example, transmitter 18a could be a radio wave transmitter, and receiver 18b could be an infrared wave receiver.

Cue receiver 19, which is distinct from data receiver 18b in the embodiment of figure 3, can be of any type suitable for receiving an activation cue from data exchange device 9'. Data exchange device 9' is equipped with a corresponding cue emitter 9b. For example, cue emitter 9b can be a data transmission device emitting data by means of a different medium than that used by data receiver 18b - for example cue emitter 9b can emit radio waves while data transceiver 9a could be capable of emitting and receiving infrared waves. Cue receiver 19 could alternately comprise electrical contacts that would cooperate with corresponding electrical contacts 9b. In one embodiment, cue receiver 19 could be a button to be engaged by an automated finger device (the cue emitter 9b) in a slot of the data exchange device in which portable electronic device 10 is to be inserted. In any event, cue receiver 19 represents any suitable structure capable of receiving an activation cue from data exchange device 9',

for indicating a data exchange opportunity between portable electronic device 10' and data exchange device 9'.

According to another embodiment, the data exchange system of the invention may be used to control data conveyance within a resident portable electronic device in a transaction wherein data will either be conveyed towards a first portable device transceiver to be communicated to an external data exchange device for example through a direct link, or towards a second portable device transceiver for downloading information towards a second external data exchange device such as a server or a remote portable electronic device. Herein, the expressions "resident" and "remote" are used to differentiate two portable electronic devices wherein one is remote relative to the so-called resident portable electronic device.

Figure 4 shows one way to carry out this embodiment of the invention. In figure 4, a data exchange system 100 comprises a user-owned resident portable electronic device 102 that may communicate either with a first data exchange device 104 or with a second data exchange device 108, 109 or 110. The second data exchange device may be server 108, a terminal 109, a remote portable electronic device 110 or any other suitable remote electronic communication apparatus.

In one embodiment, portable electronic device 102 will communicate with data exchange device 104 through a direct link, for example in a proximity transaction wherein devices 102 and 104 are physically close to one another; while portable electronic device 102 will communicate with second data exchange device 108, 109 or 110 through a communication network 106 wherein devices 102 and 108, 109 or 110 may be physically distant from one another.

Resident portable electronic device 102 is similar to portable electronic device 10 in many aspects, and comprises a main body 112 on which are operatively mounted a control device 114, an electronic circuit 116, a display screen 118, a first transceiver 120, a second transceiver 122 and power means 124. Portable electronic device 102 may be for example a cellular phone, a personal digital assistant (PDA), or any other suitable portable electronic device.

The electronic circuit 116 is similar to that of portable electronic device 10, including a central unit cooperating with a memory unit and an I/O controller having I/O ports; and a data forwarding switching element capable of alternate data

conveyance operations responsive to reception or absence of an activation cue. The switching element may indeed be in either one of a first state when portable electronic device 102 has received the activation cue, or a second state in the absence of the activation cue. The first state may also be called the activated state and the second state may also be called the inactive state.

Control device 114 is similar to that of portable electronic device 10 and may include one or more control elements that, when sequentially activated, will issue an invariable command. For example, control device may include a single button, a keypad wherein a personal identification number (PIN) code may be entered, a combination thereof or any other suitable control device.

Display screen 118 is similar to that of portable electronic device 10 and may include a touch screen for allowing user input through display screen 118.

First transceiver 120 is similar to transceiver 18 described in the portable electronic device 10 of the afore-mentioned embodiment and includes a cue receiver and a data transceiver. According to the present invention, the data transceiver and cue receiver could alternately be formed as two distinct data communication devices as shown in the embodiment of figure 3.

Power means 124 is similar to that of portable electronic device 10 and is connected to control device 114, electronic circuit 116, display screen 118 and first and second transceivers 120, 122. Generally, power means 124 provides power to portable electronic device 102 and all of its components that require power.

The second transceiver 122 of portable electronic device 102 is connected to electronic circuit 116 and more particular to the I/O controller so as to allow the data forwarding switching element to selectively control data conveyance towards second transceiver 122 as described in further detail hereinafter. Second transceiver 122 can be any suitable emitting and receiving device capable of communication with network 106, such as transceivers found on cellular phones known in the art.

Network 106 may be for example the Internet or any other suitable data exchange communication network that may include operative communication protocols. The electronic circuit 116 of portable electronic device 102 may be equipped with suitable resident network interface applications such as WEB or WAP (Wireless Application Protocol) applications, including WEB browsers or the like, in order to

communicate through transceiver 122 and network 106 with a remote server 108 and/or a remote terminal 109 and/or a remote portable device 110 and/or any other suitable remote electronic apparatus.

Server 108 includes a computer and may be a financial institution server wherein financial transactions including financial data such as amounts of money and amounts of promotional points (Air Miles ® or the like), and user data such as account numbers and other user identification data, together with any other suitable information, may be processed.

Terminal 109 includes a computer and may be a wireless or wired terminal. Terminal 109 may be owned by an individual or a company.

Remote portable electronic device 110 may be similar or different than resident portable electronic device 102. It may be for example a cellular phone, a PDA or any other suitable portable electronic device capable of wireless connection to network 106.

In use, portable electronic device 102 can be used to accomplish data conveyance operations within data exchange system 100. In this method for data exchange, data will be conveyed to either one of the first and second data transceivers 120, 122 depending on the whether the switching element comprised within electronic circuit 116 is in a first state or a second state, respectively.

More particularly, the method for data exchange with portable electronic device 102 comprises the step of awaiting for an activation cue to be received at the cue receiver included in data transceiver 120 (although as noted above the cue receiver could also be distinct). The first data exchange device 104 is capable of sending an activation cue, either a continuously emitted activation cue which is readable within a determined physical distance from data exchange device 104, a pulse cue which is emitted at determined time intervals or a punctual cue which is selectively emitted one or more times under certain circumstances.

If an activation cue is received by the portable electronic device 102 cue receiver, the switching element within electronic circuit 116 will be assigned its first state. This means that if it is already in its first state, it will remain as such; while if it is in another state, it will be switched to its first state. If no activation cue is received by the portable electronic device 102 cue receiver, the switching element within electronic circuit 116 will be assigned its second state. This means that if it is already in its second

state, it will remain as such; while if it is in another state, it will be switched to its second state.

The method also comprises selectively triggering control device 114 to issue an invariable activation command. As noted above, this may be accomplished by entering a PIN code, pressing an authorization button, entering a PIN code AND pressing on an authorization button, or the like.

Upon control device 114 having been triggered, if the switching element is in its first state, the method then comprises forwarding first data to first transceiver 120 for initiating a data exchange operation with first external data exchange device 104.

However, if the switching element is in its second state, which is the case if no activation cue has been received, the method then instead comprises forwarding second data to second transceiver 122 for initiating a data exchange operation with a second external data exchange device.

In one embodiment of the invention, the method further comprises the following step before the step of forwarding first data to first transceiver 120 if the switching element is in its first state: forwarding third data to display screen 118, the third data being representative of the content of the first data. The third data being representative of the first data means that the third data may indicate the type, nature or content of data included in the first data, may include a portion of the data included in the first data, or may literally be identical to the first data. Alternately or additionally, fourth data may be forwarded to display screen 118 before the second data is forwarded to second transceiver 122. This fourth data is representative of the content of the second data.

It is further envisioned that, after the step of forwarding third data to the display screen 118, the step of forwarding the first data to first transceiver 120 will only occur if an authorization command is inputted through a user confirmation input device. This input device may be control device 114, or it may be another input device entirely such as for example a command on a touch screen (display screen 118) or any other suitable input device.

Likewise, it is also envisioned that, after the step of forwarding fourth data to the display screen 118, the step of forwarding the second data to second transceiver 122

will only occur if an authorization command is inputted through a user confirmation input device.

In one embodiment, first data transceiver 120 is a proximity transceiver that allows data transmission within a limited range, such as within several meters for example. The step of forwarding first data to first transceiver 120 is then for initiating a wireless data exchange operation with a proximate first external data exchange device 104 through a direct link. In such a case, first data exchange device 104 may also be a proximity device allowing data exchange within a limited range through a corresponding direct link.

In one embodiment, second data transceiver 122 is a communication network transceiver and the step of forwarding second data to second transceiver 122 is for initiating a wireless data exchange operation through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

According to one embodiment of the invention, the first and second data are identical. Yet in another embodiment of the invention, the first, second, third and fourth data are identical.

One way to carry out the present invention is within a financial transaction. More particularly, portable electronic device 102 may be used to accomplish a financial transaction through one of different means as described hereinafter.

If portable electronic device 102 is close to a merchant data exchange device 104 and initiates a transaction through the communication thus established with data exchange device 104, initial transaction data is first communicated between portable electronic device 102 and data exchange device 104. This initial transaction data may include an offer for wares and services, the choice by the user of the portable electronic device 102 of a particular ware or service to buy, and the price of the ware or service being communicated to the user of portable electronic device 102. This initial transaction data may be communicated through portable electronic device 102, or not, both for the information provided to the user of portable electronic device 102 and to the merchant.

At one point, the user of portable electronic device 102 will be asked to pay an amount for his ware or service. This amount may be displayed on display screen 118.

The user must authorize the transaction by using control device 114, which may include entering a PIN code. Once the control device 114 is triggered, it will issue an invariable activation command. If the merchant data exchange device 104 has sent an activation cue to portable electronic device 102, the electronic circuit switching element will react to this activation cue by being assigned its first state whereby the triggering of control device 114 will yield a first data conveyance operation in the form of user data being transferred from electronic circuit 116 to first transceiver 120 and then to data exchange device 104. The user data may include for example a credit card number, a debit card number, a promotional point account number, a bank account number, user name and address, account or card expiration dates, electronic money; or any other user data including user identification data and/or user financial data. The merchant data exchange device 104, with this user data, may then complete the transaction, including sending an optional confirmation back to portable electronic device 102, according to user and transaction data management methods known in the art.

Alternately, if portable electronic device 102 is not close to a merchant data exchange device 104, its user may still initiate a transaction through a communication established with a remote data exchange device such as remote portable electronic device 110, remote server 108 or remote terminal 109. This communication with a remote data exchange device 108, 109, 110 may be accomplished through a communication network 106 such as the Internet and may require that electronic circuit 116 be properly equipped with user interface software such as web browsers and the like and security software, as known in the art.

In any event, initial transaction data is first communicated between portable electronic device 102 and the remote data exchange device 108, 109, 110. This initial transaction data may include an offer for wares and services, the choice by the user of the portable electronic device of a particular ware or service to buy, and the price of the ware or service being communicated to the user of portable electronic device 102 through portable electronic device 102.

At one point, the user of portable electronic device 102 will be asked to pay an amount for his ware or service. This amount will be displayed on display screen 118. The user must authorize the transaction by using control device 114, which may include entering a PIN code. Once the control device 114 is triggered, it will issue the above-

mentioned invariable activation command. Since no activation cue is detected by portable electronic device 102 in the absence of a proximate data exchange device 104 emitting such an activation cue, the electronic circuit switching element will react to this absence of an activation cue by being assigned its second state whereby the triggering of control device 114 will yield a second data conveyance operation in the form of user data being transferred from electronic circuit 116 to second transceiver 122 and then to remote data exchange device 108, 109, 110. The merchant remote data exchange device 108, 109, 110, with this user data, may then complete the transaction, including sending an optional confirmation back to portable electronic device 102.

In any of the two case scenarios mentioned in the above-mentioned financial transaction example, the user data is conveyed from electronic circuit 116 to the first or the second data transceiver 120, 122 depending on the state of the switch element which is itself controlled by the electronic circuit responsively to the reception or absence of an activation cue. In both cases however, the user data conveyance is responsive to the same, invariable activation command being issued once the control device 114 has been triggered.

This is particularly advantageous since the user need not vary his actions depending on what type of transaction he is accomplishing: be it a transaction with a proximity data exchange device 104 or a transaction over the Internet, he still authorizes the transaction the same way and the appropriate data conveyance operation then occurs.

For example, the data conveyance can be the transmittal of a credit card number. In such a case, the user of portable electronic device 102 could avoid having to type in his credit card number when a transaction occurs, if this number is stored in the memory of electronic circuit 116. When a transaction occurs, notwithstanding if the transaction occurs through an Internet access or with a proximate data exchange device 104, triggering control device 114 would still issue the same, invariable activation command to transfer the credit card number, with the destination of the credit card number depending on whether or not an activation cue has been received. If an activation cue was received, then the credit card number would be forwarded to the first data transceiver to be downloaded through a direct link to data exchange device 104; however if no activation cue has been received, then the credit card number would be

forwarded to the second data transceiver 122 to be downloaded through the Internet access to the remote data exchange device 108, 109, 110 that portable electronic device 102 is communicating with.

It should be noted that portable electronic device 102 could hold more than one user accounts and payment methods, including several credit card numbers, promotional point accounts, bank accounts, electronic money, and the like. Before the authorization of a particular transaction occurs by triggering the control device 114, the user could choose the appropriate account or payment method with the data being conveyed then depending on the account or payment method being chosen. Alternately, portable electronic device 102 could include a system for automatically selecting a proper account or payment method including any suitable set of predetermined criteria such as user payment preferences, merchant payment acceptances and preferences, transaction type, merchant identification, and the like. The selection of user data could also vary depending on whether the transaction is going to be accomplished through a direct link with first data exchange device 104 or through the Internet with a second data exchange device 108, 109, 110. The system for automatically selecting a proper account or payment method could further include having information being provided by the merchant to the portable electronic device to either force or restrict the selection.

In any event, one ore more additional authorizations could be required between the triggering of the control device 114 and the forwarding of the user data towards first or second transceiver 120, 122. More particularly, it is envisioned that upon the control device 114 being triggered to issue its invariable activation command, confirmation data would be forwarded from electronic circuit 116 to display screen 118 to be displayed thereon. This confirmation data could be identical to the user data, or not. For example, the confirmation data could include the credit card number that the portable electronic device 102 automatically selected as a payment mode for a particular transaction, so that the user may confirm that this is indeed the payment method that he wants to use before sending this information to the first or second transceiver 120, 122. Alternately, the confirmation data could include only part of the credit card number: the credit card number appearing on display screen 118 could be partly concealed with stars or other concealing characters while only part of the credit card number such as the last four numbers are actually displayed. Or, the credit card number could be

entirely concealed, the display screen then displaying for example a number of stars equal to the number of characters in the credit card number: in such a case, the information displayed on the display screen 118 remains relevant since the user of portable electronic device 120 is informed that a credit card number is going to be transferred, even if that number is unreadable. An authorization command would then be awaited, the authorization command to be inputted through a user confirmation input device before forwarding the user data to the first or second data transceiver 120, 122. This user confirmation input device could be control device 114 which would be triggered yet again, or alternately another input device such as a touch screen (display screen 118) which could issue an authorization command when triggered.

In the case where the transaction occurs with a proximity data exchange device 104 the user confirmation input device could include a proximity trigger device that establishes wireless contact to download information when portable electronic device 102 is brought within a determined maximum distance from data exchange device 104. In other words, instead of being accomplished with a confirmation button or the like element on portable electronic device 102, the authorization command would occur automatically when portable electronic device 102 is brought by its user within a certain determined maximum distance from data exchange device 104, the proximity trigger device then allowing the downloading of the first data to occur from portable electronic device 102 to data exchange device 104. The user of course being aware of this feature on his portable electronic device 102, the action of moving portable electronic device 102 would be made voluntarily to complete the data conveyance operation from first transceiver 120 to data exchange device 104.

Any further modification, which does not deviate from the scope of the present invention, is considered to be included therein.

CLAIMS

1. A portable electronic device, comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered;
- a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and a first external data exchange device;
- a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic circuit and a second external data exchange device;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver;

and

- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for sending data from said electronic circuit to the first external data exchange device; and
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for sending data from said electronic circuit to the second external data exchange device.

2. A portable electronic device as defined in claim 1, further comprising a display screen operatively linked to said electronic circuit.

3. A portable electronic device as defined in claim 1, wherein said first data transceiver includes said cue receiver.

4. A portable electronic device as defined in claim 1, wherein said control device is one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

5. A portable electronic device as defined in claim 1, wherein said electronic circuit includes said switching element.

6. A portable electronic device as defined in claim 5, wherein said electronic circuit comprises a microchip, and wherein said switching element is a series of instructions programmed onto said microchip.

7. A portable electronic device as defined in claim 1, wherein said switching element comprises a logical circuit.

8. A portable electronic device as defined in claim 1, wherein said first data transceiver comprises a proximity transceiver for accomplishing a wireless data exchange with a nearby first external data exchange device through a direct link.

9. A portable electronic device as defined in claim 1, wherein said second data transceiver comprises a communication network transceiver for wireless communication through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

10. A portable electronic device comprising:

- an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;

- a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is triggered;
- first and second data conveyance operations programmed in said electronic circuit;
- first and second data transceivers operatively linked to said electronic circuit;
- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from a source external to said portable electronic device; and
- power means, for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if an activation cue was received by said cue receiver, said electronic circuit will accomplish said first data conveyance operation to convey data from said electronic circuit to said first data transceiver for transmitting data through said first data transceiver; and
- if no activation cue was received by said cue receiver, said electronic circuit will accomplish said second data conveyance operation to convey data from said electronic circuit to said second data transceiver for transmitting data through said second data transceiver.

11. A data exchange system comprising :

- a first data exchange device;
- a second data exchange device; and
- a portable electronic device, comprising:
  - an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output;
  - a control device operatively linked to said electronic circuit, with an invariable activation command being issued when said control device is selectively triggered;
  - a first data transceiver operatively linked to said electronic circuit, said first data transceiver being for exchanging data between said electronic circuit and said first data exchange device through a direct link;
  - a second data transceiver operatively linked to said electronic circuit, said second data transceiver being for exchanging data between said electronic

circuit and said second data exchange device through a communication network;

- a cue receiver operatively linked to said electronic circuit for receiving an activation cue from said first data exchange device;
- a data conveyance switching element operatively linked to said electronic circuit, said switching element being assigned a first state upon an activation cue having been received by said cue receiver, and being assigned a second state when no activation cue was received by said cue receiver; and
- power means for providing power to said portable electronic device;

wherein upon said control device being selectively triggered to issue said invariable activation command:

- if said switching element is in said first state, a first data conveyance operation will be initiated through the instrumentality of said first data transceiver for exchanging data between said electronic circuit and the first external data exchange device;
- if said switching element is in said second state, a second data conveyance operation will be initiated through the instrumentality of said second data transceiver for exchanging data between said electronic circuit and the second external data exchange device.

12. A method for data conveyance with a portable electronic device of the type comprising: an electronic circuit capable of storing data therein, capable of processing data, and capable of data input and output, a control device operatively linked to said electronic circuit, first and second data transceivers operatively linked to said electronic circuit, a cue receiver operatively linked to said electronic circuit, a data conveyance switching element operatively linked to said electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to said portable electronic device, said method comprising the steps of:

- awaiting for an activation cue to be received at said cue receiver;
- if an activation cue is received at said cue receiver, assigning said first state to said switching element, while if no activation cue is received at said cue receiver, assigning said second state to said switching element; and

- selectively triggering said control device to issue an invariable activation command whereby:
  - if said switching element is in said first state, forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device; and
  - if said switching element is in said second state, forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device.

13. A method as defined in claim 12, further comprising the following step before the step forwarding first data to said first data transceiver for initiating a data exchange operation with a first external data exchange device:

- forwarding third data to and displaying said third data on a display screen provided on said portable electronic device, wherein said third data is representative of the content of said first data.

14. A method as defined in claim 13, wherein after the step of forwarding said third data to the display screen, the method comprises the following step:

- awaiting for an authorization command to be inputted through a user confirmation input device provided on said portable electronic device before forwarding said first data to said first data transceiver.

15. A method as defined in claim 14, further comprising the following steps before the step forwarding second data to said second data transceiver for initiating a data exchange operation with a second external data exchange device:

- forwarding fourth data to and displaying said fourth data on said display screen, wherein said fourth data is representative of the content of said second data; and

- awaiting for an authorization command to be inputted through said user confirmation input device before forwarding said second data to said second data transceiver.

16. A method as defined in claim 14, wherein said control device includes said user confirmation input device.

17. A method as defined in claim 12, wherein said first and second data are identical.

18. A method as defined in claim 12, wherein said first data transceiver is a proximity transceiver and the step of forwarding said first data to said first transceiver is for initiating a wireless data exchange operation with a proximate first external data exchange device through a direct link.

19. A method as defined in claim 12, wherein said second data transceiver is a communication network transceiver and the step of forwarding said second data to said second data transceiver is for initiating a wireless data conveyance operation through a communication network with one of a remote portable electronic device, a remote server, a remote terminal and a combination thereof.

20. A method as defined in claim 12, wherein the step of selectively triggering said control device to issue an invariable activation command comprises selectively triggering one of a manually activated button, a keypad for receiving a PIN code, a biometric parameter detector and a combination thereof.

ABSTRACT

The portable electronic device includes an electronic circuit, a control device operatively linked to the electronic circuit, first and second data transceivers operatively linked to the electronic circuit, a cue receiver operatively linked to the electronic circuit, a data conveyance switching element operatively linked to the electronic circuit and capable of being in either one of a first and a second state, and power means for providing power to the portable electronic device. The method of data conveyance includes awaiting for an activation cue to be received at the cue receiver; if an activation cue is received at the cue receiver, assigning its first state to the switching element, while if no activation cue is received at the cue receiver, assigning its second state to the switching element; and selectively triggering the control device to issue an invariable activation command. Upon the control device being triggered, if the switching element is in its first state, first data will be forwarded to the first data transceiver for initiating a data exchange operation with a first external data exchange device; while if the switching element is in its second state, second data will be forwarded to the second data transceiver for initiating a data exchange operation with a second external data exchange device.

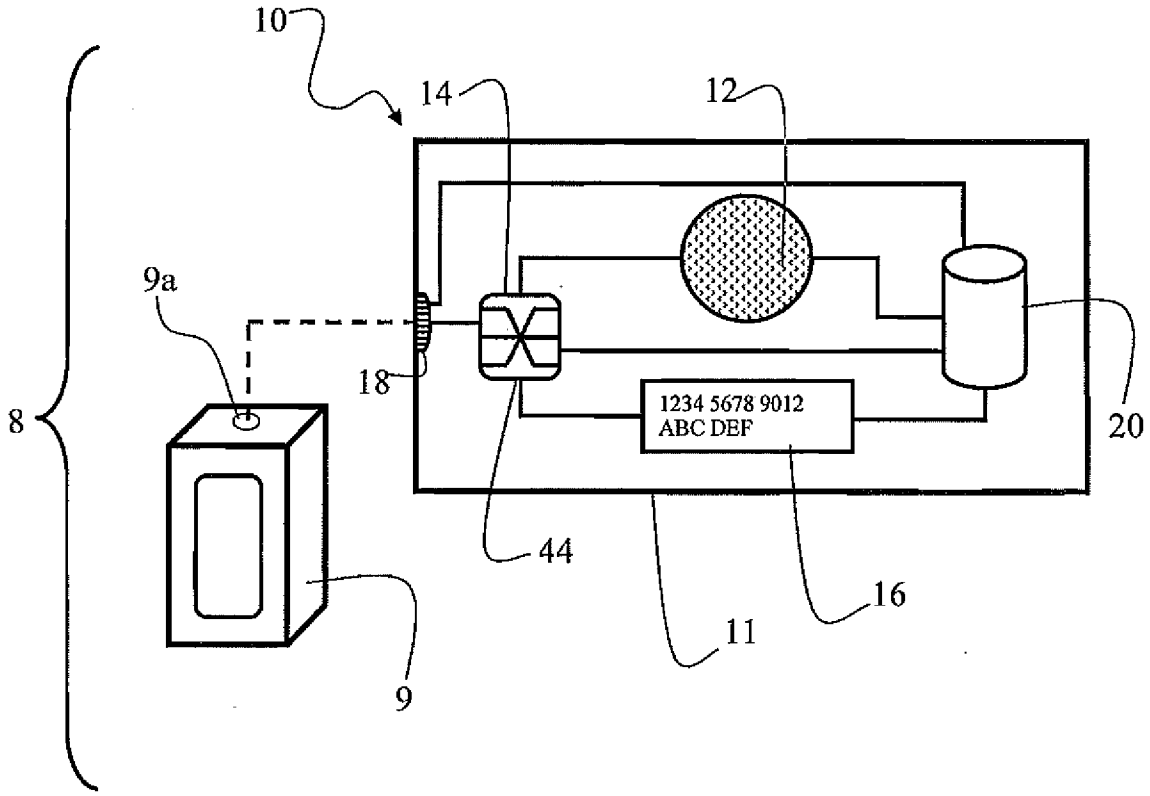


Fig. 1

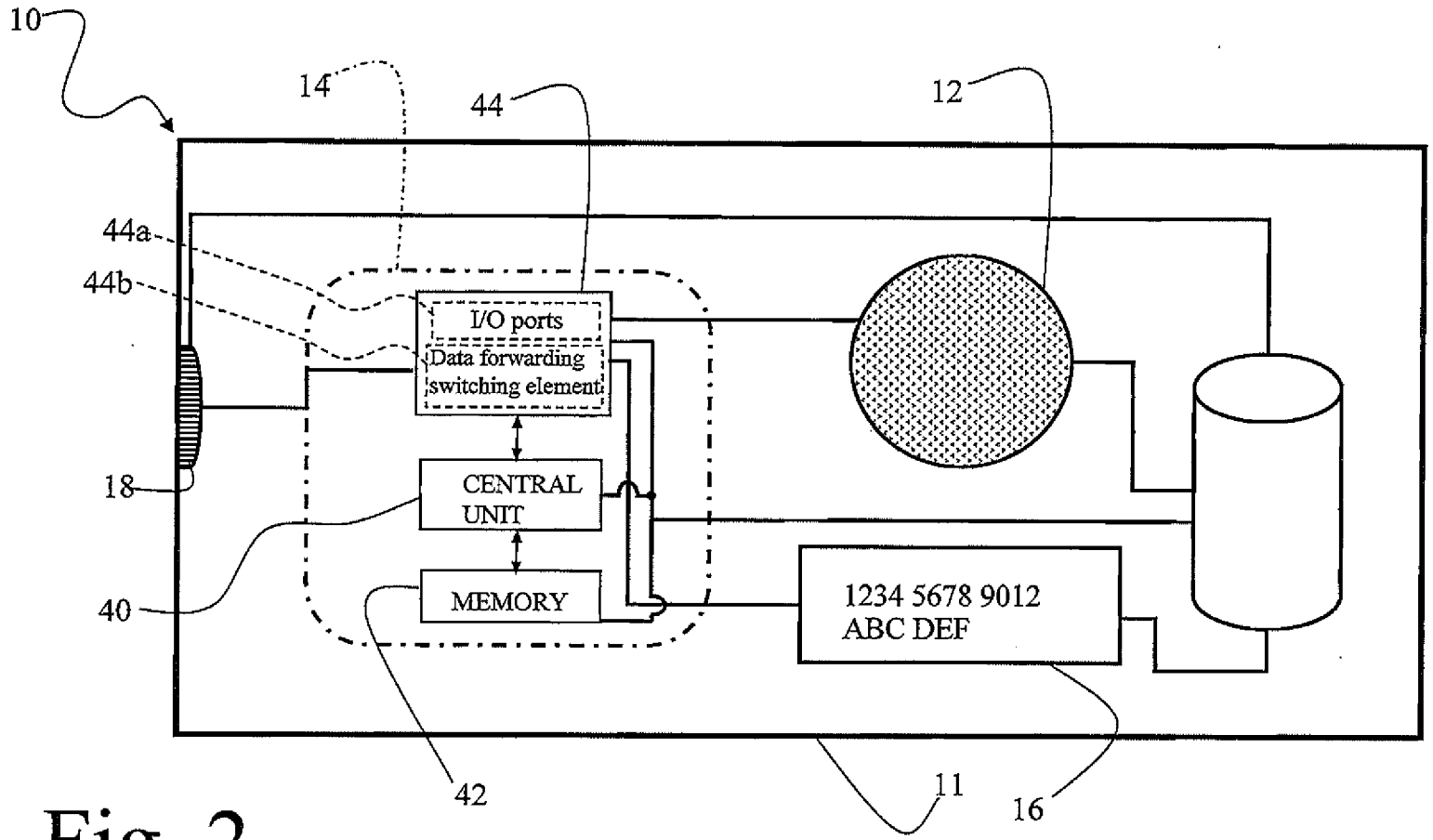


Fig. 2

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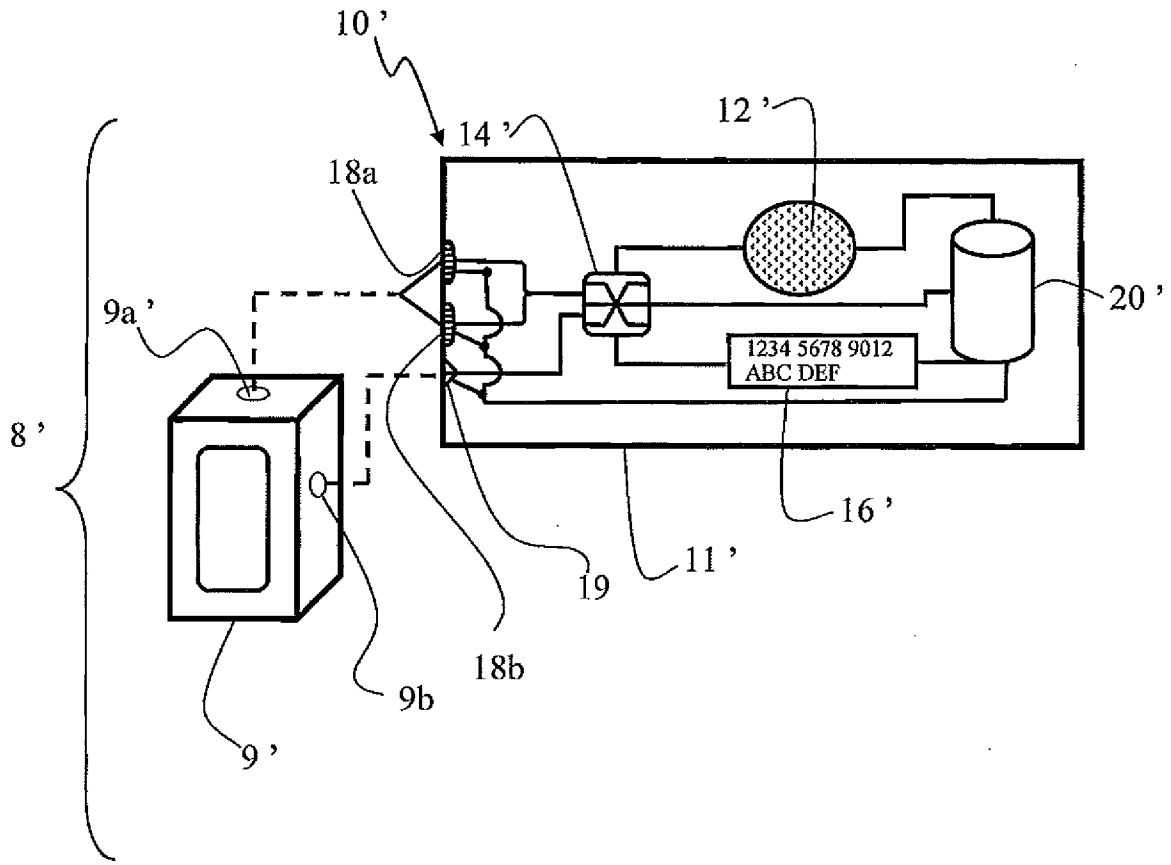


Fig. 3

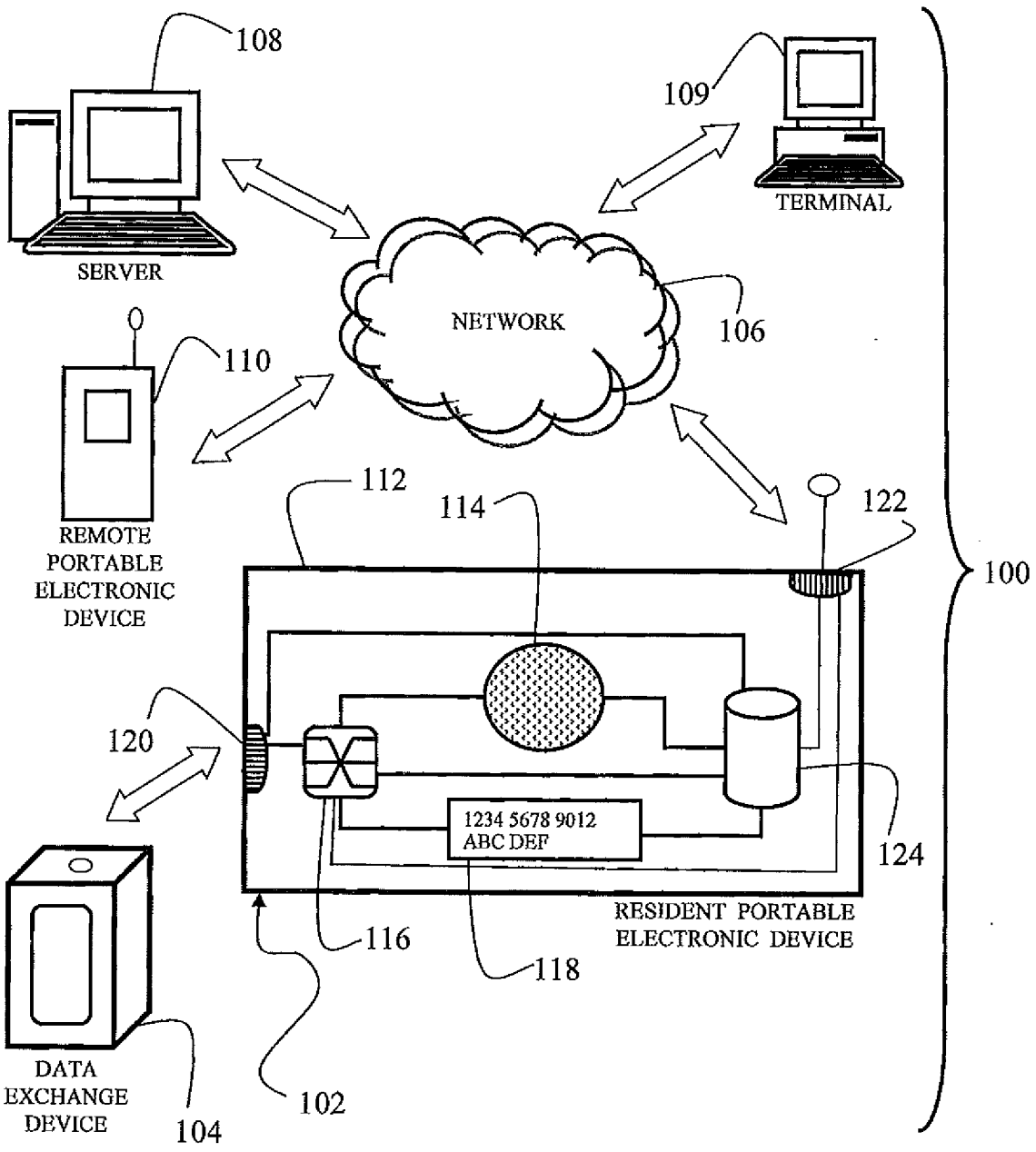

108
109
TERMINAL
SERVER
NETWORK
106
110
REMOTE
PORTABLE
ELECTRONIC
DEVICE
112
114
122
100
120
1234 5678 9012
ABC DEF
124
RESIDENT PORTABLE
ELECTRONIC DEVICE
116
118
DATA
EXCHANGE
DEVICE
104
102

Fig. 4

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Joel Gaillard
Filer:	Donald R. Fraser/Sarah Tecco
Attorney Docket Number:	1-40490

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1090**

Electronic Acknowledgement Receipt

EFS ID:	6303510
Application Number:	12603085
International Application Number:	
Confirmation Number:	5895
Title of Invention:	PORTABLE ELECTRONIC DEVICE AND METHOD FOR ALTERNATE DATA CONVEYANCE OPERATIONS RESPONSIVE TO AN INVARIABLE ACTIVATION COMMAND
First Named Inventor/Applicant Name:	Joel Gaillard
Customer Number:	43935
Filer:	Donald R. Fraser/Sarah Tecco
Filer Authorized By:	Donald R. Fraser
Attorney Docket Number:	1-40490
Receipt Date:	21-OCT-2009
Filing Date:	
Time Stamp:	15:33:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1090
RAM confirmation Number	1850
Deposit Account	503156
Authorized User	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	40490_ADS_FILED_10-21-09.pdf	218352 c88ac0e51b58aac379e2b0aa47969c9fdcd2cb64	no	3
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
2	Application Data Sheet	40490_POAandDEC_FILED_10-21-09.pdf	194870 094ca62e87b299fe486024cf544bd7bb04823af8	no	3
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3		40490_utilityapp_FILED_10-21-09.pdf	2082635 c88ac76d05dc5bea88cc7cb1b771d5974ffabdc1	yes	39

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Specification	1	28
Claims	29	34
Abstract	35	35
Drawings-only black and white line drawings	36	39

Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	33020 365140f0af161395c3483cf5df53854f5008d211	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2528877		

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/06 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Filing Date: 10/21/09

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/603,085

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	330
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	540
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	220
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =		x$26		OR	x$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x$110			x$220	220
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
			TOTAL			TOTAL	1310

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

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