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RELATED PCT APPLICATION NUMBER: PCT/US04/18397

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE**PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No.

EV069127235US

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☐ Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (500 characters max)					
Radio Frequency Identification Using Mobile Communication Device					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
☒ Customer Number		000025943		Place Customer Number Bar Code Label here	
OR		Type Customer Number here			
☐ Firm or Individual Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	
ENCLOSED APPLICATION PARTS (check all that apply)					
☒ Specification. Number of Pages		19		☐ CD(s), Number	
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☐ Application Data Sheet. See 37 CFR 1.76		Return receipt postcard			
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☐ Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$)	
☒ A check or money order is enclosed to cover the filing fees					
☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:		500393		\$160.00	
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
☒ No.					
☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

SIGNATURE

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Docket Number:

35,432

109909-133500

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. 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, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

PROVISIONAL APPLICATION FOR UNITED STATES PATENT

FOR

**RADIO FREQUENCY IDENTIFICATION
USING MOBILE COMMUNICATION DEVICE**

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Express Mail Label No. EV069127235US
Date of Deposit: June 13, 2003

FIELD OF THE INVENTION

The present invention relates to the fields of security, communication, and data processing. More specifically, the present invention is related to a radio
5 frequency data input method, emulated using a mobile communication device.

BACKGROUND OF THE INVENTION

It wasn't that long ago, even residents in medium size cities still feel secured enough to leave their homes unlocked and/or their garages open. In
10 general, one can access one's place of employment, including parking facilities as well as one's office without identification or access keys.

In the world of commerce, things were also simpler. One typically may shop and consume goods and services, at relatively low prices, without having to be affiliated with any programs or entities.

15 However, the world has become a lot more complex in recent years. Virtually, all properties of any value, premises, including one's home, have to be secured, even for relatively small towns and cities. One can hardly shop and consume any goods and services, without having signed up with some promotional frequent "usage" programs or becoming affiliated with the
20 commercial entities. The employment of affinity marketing has reached a point even neighboring grocery chains employ them, and not just airlines, hotels, or wholesale discount retailers.

As a result, it is not uncommon to find a person having to carry a number of physical keys and access/identification cards/tags to gain access to secured
25 premises, such as one's home, office, parking garage, and so forth. Additionally, the person is likely to carry a number of remote security control devices, such as

a key with remote control for gaining access to his/her vehicle, a garage door
opener for gaining access to the person's garage at home, and so forth. The
person is also likely to carry a number of affinity identification cards with member
identifiers identifying the person as being affiliated with certain co-op or frequent
5 patronage programs, such as wholesale discount retailers, airline or hotel
frequent traveler program, and so forth, that entitle the person to certain benefits,
such as discounts or rewards.

Accordingly, it will be desirable to reduce the number of access/affinity
keys/cards/tags one needs to carry.

10

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be described by way of exemplary
embodiments, but not limitations, illustrated in the accompanying drawings in
5 which like references denote similar elements, and in which:

Figure 1 illustrates an overview of the present invention, in accordance
with one embodiment;

Figure 2 illustrates a method view of the present invention, in accordance
with one embodiment;

10 **Figure 3** illustrates the relevant hardware elements of the device of **Fig. 1**
in further details, in accordance with one embodiment;

Figure 4 illustrates the transceiver of **Fig. 3** in further details, in
accordance with another embodiment;

15 **Figures 5a-5b** illustrate the exploded views of two embodiments of the
mobile communication device of **Fig. 1**;

Figures 5c-5d illustrate an exploded view of another embodiment of the
mobile communication device of **Fig. 1**;

20 **Figure 6a-6h** illustrate a number of example screens of an end user
interface, suitable for use to practice the present invention, in accordance with
one embodiment; and

Figure 7 illustrates the operational flow of the relevant aspects of the
software in support of the RFID feature of the present invention, in accordance
with one embodiment.

25

DETAILED DESCRIPTION OF THE INVENTION

The present invention includes a RFID method, more specifically, a RFID method, emulated using a mobile communication device, including the device
5 itself, and certain hardware and/or software embodied therein for the practice of emulating the RFID method.

In the following description, various aspects of the present invention will be described. However, it will be apparent to those skilled in the art that the present invention may be practiced with only some or all aspects of the present
10 invention. For purposes of explanation, specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the present invention. However, it will be apparent to one skilled in the art that the present invention may be practiced without the specific details. In other instances, well-known features are omitted or simplified in order not to obscure
15 the present invention.

Terminology

Parts of the description will be presented in data processing terms, such as data, selection, retrieval, generation, and so forth, consistent with the manner commonly employed by those skilled in the art to convey the substance of their
20 work to others skilled in the art. As well understood by those skilled in the art, these quantities take the form of electrical, magnetic, or optical signals capable of being stored, transferred, combined, and otherwise manipulated through electrical and/or optical components of a processor and its subsystems.

Part of the descriptions will employ various abbreviations, including but
25 are not limited to:

CDROM	Compact Disc Read Only Memory
DDRAM	Dynamic Direct Random Access Memory
DVD	Digital Versatile Disc
EEPROM	Electrically Erasable Programmable Read-Only-Memory
HTTP	HyperText Transmission Protocol
SDRAM	Static Direct Random Access Memory
SMS	Small Messaging Service

The term "number" as used in this application to describe a data, including both its usage in the specification and the claims, typically refers to numeric data, as the word "number" is conventionally used in mathematics. However, in certain contexts, the "number" may also include alphabet or special characters, as the term is conventionally understood by those skilled in the art in those contexts. For examples, a driver's license number, a passport number, an employee number, or a student ID number, as each of these terms is conventionally used, often includes one or more alphabets or special characters, even though they are referred to as "numbers". The term accordingly is to be given the meaning that is consistent with the context under which the term is used.

Section Headings, Order of Descriptions and Embodiments

Section headings are merely employed to improve readability, and they are not to be construed to restrict or narrow the present invention.

Various operations will be described as multiple discrete steps in turn, in a manner that is most helpful in understanding the present invention, however, the

order of description should not be construed as to imply that these operations are
45 necessarily order dependent. In particular, these operations need not be
performed in the order of presentation.

The phrase "in one embodiment" is used repeatedly. The phrase
generally does not refer to the same embodiment, however, it may. The terms
"comprising", "having" and "including" are synonymous, unless the context
50 dictates otherwise.

Overview

Refer now to **Figure 1**, wherein a block diagram illustrating an overview of
the present invention **100**, in accordance with one embodiment, is shown. As
55 illustrated, mobile communication device **102** is equipped with hardware and/or
software elements **104** to perform its primary function, which is to facilitate a user
of device **102** to engage in communication with another user of another
communication device (not shown). Additionally, in accordance with the present
invention, mobile communication device **102** is advantageously equipped with
60 hardware and/or software elements **106** to facilitate provision or transfer of a
key/identifier in a form a radio frequency signal **110**, which may be read e.g. by a
radio frequency identifier (RFID) reader **120**. In turn, the provision of RFID **110**
may be responded to by a system (not shown) with which RFID reader **120** is a
part or coupled to.

65 As depicted in **Fig. 1**, blocks **104** and **106** "intersect" with one another.
The "intersection" represents the fact that in preferred embodiments of the
present invention, substantial portions of the hardware and/or software elements
employed to provide a RFID, are the same elements employed to facilitate the

primary function of device 102, i.e. to facilitate a user in communicating with
70 another user of another communication device.

In other words, the present invention advantageously leverages on
existing elements of mobile communication device 102, and supplements them,
to enable mobile communication device 102 to be able to provide a RFID,
emulating a RFID transponder, as well as facilitating user communication.

75 As will be described in more detail below, in preferred embodiments,
mobile communication device 102 is equipped to provide RFID, emulating an
active and/or a passive RFID transponder.

Further, RFID 110 may be any keys and/or identifiers, including but not
limited to security keys, such as garage door "keys", exterior or interior door
80 keys, or identifiers, such as, employee numbers, driver's license numbers, social
security numbers, credit card numbers (optionally, including expiration dates),
affinity program member identifiers, and so forth.

Continue to refer to Fig. 1, except for the present invention incorporated
therein, mobile communication device 102 represents a broad range of mobile
85 communication devices known in the art, including but are not limited to wireless
mobile phones and personal digital assistants equipped with communication
capability.

The term "wireless mobile phone" as used herein, including the
specification and the claims, refers to the class of telephony devices equipped to
90 facilitate a user in communicating with another user of another communication
device, notwithstanding the user's movement around different geographic areas,
so long the wireless mobile phone is in contact with a base/service station of a
wireless network service provider. The term includes the analog as well as the
digital subclasses. Communication may be voice and/or data. The other
95 user/communication device may be mobile or land line based.

RFID reader 120 represents a broad range of such devices known in the art or to be designed. Currently, most RFID readers 120 employ proprietary formats/protocols. That is, RFID readers 120 of different manufacturers tend to employ different frequencies, amplitudes, and/or keying schemes (which may be frequency shifting keying (FSK), amplitude shifting keying (ASK) or phase shifting keying (PSK)).

Methods of the present inventions, including elements 106, in particular, added elements, will be described in turn below.

105

Method

Figure 2 illustrates a method view of the present invention, in accordance with one embodiment. As illustrated, device 102 is first provided with the RFIDs, block 202. The RFIDs may be provided in any one of a number of known or to be designed manners, including but are not limited to

110

- manual entry, using a keypad of device 102,
- read into device 102, from an access/identification card, using a magnetic or optical card reader of device 102,
- downloaded into device 102, from a coupled computing device, through a serial/parallel port of device 102 or through a network interface of device 102 using SMS or HTTP messages.

115

Typically, provision of a RFID will include the manner the RFID is to be outputted, i.e. signaled. As alluded to earlier, the manner it is to be signaled is dependent on the format/protocol employed by the intended RFID reader 120. For examples, for a garage door key, the format/protocol employed by RFID reader 120 of the garage opener system, and for an affinity program member identifier, the format/protocol employed by RFID reader 120 of the point-of-sale system of the entity offering the affinity program.

120

Alternatively, a default signaling format/protocol, such as an industry standard, the most popular proprietary format/protocol, or a selected proprietary format/protocol may be assumed instead, when one is not provided.

During operation, in response to a user instruction, typically after the user has selected the RFID to be outputted from a number of RFIDs stored in device 102, block 203, device 102 outputs the selected RFID as instructed, emulating an active RFID transponder, block 204.

For the embodiment, one RFID, e.g. an access key/identifier (such as an employee number), may also be selected/designated as a default RFID, the output of which may be emulated in a passive manner. That is, the selected/designated default RFID will be outputted automatically, whenever device 102 is within the proximal presence, or more specifically, the operational space, of an intended RFID reader 120.

Accordingly, device 102 monitors for probing signals of an intended RFID reader 120 (or a type of RFID readers 120), to determine whether device 102 is within the operational space of such a RFID reader 120, block 205. On so determining, device 102 outputs the designated RFID automatically, emulating a passive RFID transponder, block 206.

A Hardware/Software Implementation

Figure 3 illustrates the relevant elements of device 102, in accordance with one embodiment. As illustrated, for the embodiment, device 102 includes processor 302, memory 304, persistent store 306, transceiver 308, and a number of other components 310, coupled to each other via bus 312.

Persistent store 306 and memory 304 are employed to store permanent and working copies of a software implementation of the operating logic 320 of device 102, including the supplemental RFID feature 322. In various

150 embodiments, persistent store 306 may be a EEPROM (or like kind variants,
such as a Flash Memory, a Memory Stick), a magnetic or optical disk drive, a
CDROM, a DVD drive and so forth. Memory 304 may be any SDRAM, DDRAM
or other high speed volatile as well as non-volatile storage devices known in the
art.

155 Processor 302 is employed to execute operating logic 320, including RFID
feature 322. As will be readily apparent from the description to follow, operating
logic 320 may be implemented in any one of a number of suitable system
programming languages, including but not limited to high level languages that
may be compiled into executable instructions supported by processor 302.

160 Processor 302 may be any one of a number of processors designed or to be
designed for mobile devices.

Except for transceivers 308, RFID feature 322 and the manner the various
elements of Fig. 3 are used to practice the present invention, the other illustrated
elements are known in the art, and accordingly will not be further described. One
165 embodiment of transceiver 308 will be described referencing Fig. 4, and one
embodiment of RFID feature 322 will be described, referencing Fig. 6-7.

As described earlier, processor 302, memory 304, persistent store 306
and bus 312 may be shared elements of device 102, also employed to implement
the primary communication function of device 102. However, in alternate
170 embodiments, dedicated elements may be employed for some or all of these
elements instead.

In one embodiment, device 102 is a wireless mobile telephone, an
exploded view of which is illustrated in Fig. 5a. Wireless mobile phone 500, in
addition to the earlier described elements, also includes display 506, control
175 buttons 504, keypad 502, antenna 508, body 512 and cover 514. Body 512 is
substantially rectangular in shape. Further, body 512 is palm-sized or smaller.

For the embodiment, cover 514 includes embedded electronic components having instructions, data, and/or locations to obtain such instructions and/or data to personalize, customize and/or enhance phone 500. Phone 500 includes complementary electronic component interface 516 in support of such personalization, customization and/or enhancement.

Cover 514 may form a part of housing 512, i.e. a required element to complete phone 500, or it may be an accessory to be adorned by phone 500, i.e. not a required element to complete phone 500.

In another embodiment, device 102 is a PDA, an exploded view of which, is illustrated in Fig. 5b. PDA 502, in addition to the earlier described elements, also includes display 524, control buttons 522, antenna 526, body 532, and cover 534. Body 530 is also substantially rectangular in shape, as well as palm-sized or smaller.

Similarly, for the embodiment, cover 534 includes embedded electronic components having instructions, data, and/or locations to obtain such instructions and/or data to personalize, customize and/or enhance PDA 520. PDA 520 includes complementary electronic component interface 536 in support of such personalization, customization and/or enhancement.

Cover 534 may form a part of housing 532, i.e. a required element to complete PDA 520, or it may be an accessory to be adorned by PDA 520, i.e. not a required element to complete PDA 520.

Figure 5c-5d illustrate yet another embodiment of device 102, another wireless mobile telephone, an exploded view of which is illustrated. Wireless mobile phone 540 is similarly constituted as the earlier described embodiments, including body 542 and cover 544. However, body 542 has a substantially boomerang or banana shape. Body 542 is also typically palm-sized or smaller.

For the embodiment, cover 544 also includes embedded electronic components having instructions, data, and/or locations to obtain such instructions and/or data to personalize, customize and/or enhance phone 540. Phone 540 includes complementary electronic component interface (not shown) in support of such personalization, customization and/or enhancement.

Cover 544 may form a part of housing 542, i.e. a required element to complete phone 540, or it may be an accessory to be adorned by phone 540, i.e. not a required element to complete phone 540.

In all or selected one(s) of these embodiments, some or all elements 106 in support of the RFID feature of the present invention may be provided through embedded electronic components of the housing/accessory covers.

Smart covers are the subject matters of subject matter of co-pending U.S. Application, number 10/087,098, filed March 1, 2002, entitled "Personalizing Electronic Devices and Smart Covering", and U.S. Application, number <insert>, filed May 2, 2003, entitled "Personalization of Mobile Electronic Devices and Smart Accessory Cover", which specifications are hereby fully incorporated by reference.

While all three embodiments of Fig. 5a-5d have been illustrated with smart covers and external antennas. In alternate embodiments, the present invention may be practiced without smart covers and/or external antennas. The present invention may be practiced with conventional covers, without embedded intelligence and/or internal antennas.

225

Transceiver

Figure 4 illustrates transceiver 308 of Fig. 3 in further details, in accordance with one embodiment. As illustrated, for the embodiment, transceiver 308 includes a joint radio frequency (RF) transmit/receive (TX/RX)

230 section 402, separate signal processing sections 408 and 410 for a range of
higher frequencies and a range of low frequencies, switch 404 and splitter 406.
The elements are coupled to each other as shown.

For the embodiment, joint RF TX/RX 402 includes in particular, switch
420, filters 412 and 422, low noise amplifier 424 and power amplifier 414,
235 coupled to one another as shown. Switch 420 is employed to switch between
transmitting and receiving RF signals. Filters 412 and 422, low noise amplifier
424 and power amplifier 414 are employed to perform their conventional filtering
and amplification functions on the transmit and receive signals.

For transmission, switch 404 switches between the output of high
240 frequency signal processing 410 and the output of low frequency signal
processing 408 to the transmit path of Joint RF TX/RX 402.

For reception, splitter 406 splits the output of the receive path of Joint RF
TX/RX 402 and provides the receive signal to high frequency signal processing
410 as well as low frequency signal processing 408.

245 For the embodiment, high frequency signal processing 410 performs up
and down conversions of the transmit and receive signals of the primary
communication function of mobile communication device 102, e.g. the transmit
and receive signals of a voice call. In one embodiment, the transmit and receive
signals are transmitted and received in the GHz ranges.

250 Low frequency signal processing 408, on the other hand, performs up and
down-conversions of the transmit and receive signals of the RFID feature, e.g.
the output signal of a RFID to emulate either an active or a passive transponder,
and the received probing signal of a RFID reader. In one embodiment, the
transmit and receive signals are transmitted and received in the MHz ranges.

255 Up and down conversions, filtering, amplifications, and so forth, in and of
themselves, except for the manner they are being used to provide RFIDs using a

mobile communication device, are known in the art, accordingly, will not be further described.

260

RFID Feature

Figures 6-7 illustrate selected portions of an example end user interface, and the operational flow of the relevant aspects of RFID feature **322** respectively, in accordance with one embodiment. **Figure 6** comprises **Fig. 6a-6h**.

As illustrated in **Fig. 6a**, for the embodiment, the user interface includes
265 screen **602** having selectable text display "RFID" **604**, with which a user may interact to launch the RFID function (by selecting text display **604**, using e.g. control keys **504**).

As illustrated in **Fig. 6b**, for the embodiment, the user interface further includes screen **612** enumerating a list of RFIDs **614** stored in device **102**. List
270 **614** may be displayed for example, among other situations, in response to a user's selection of text display **604** of screen **602**. A user may select one of the RFIDs, and instruct device **102** to output the selected RFID in a form of an appropriate radio frequency signal, emulating provision of the RFID by an active RFID transponder, using e.g. a "send/call" key of device **102**.

275 Screen **612** also includes selectable "option" button **616**, with which a user may interact to display a list of RFID management options, using e.g. control keys **504**.

As illustrated in **Fig. 6c**, for the embodiment, the user interface further includes screen **622** enumerating a list of RFID management options **624**, such
280 as "add", "edit" or "delete" RFIDs. List **624** may be displayed for example, among other situations, in response to a user's selection of "option" **616** of screen **612**.

As illustrated in **Fig. 6d**, for the embodiment, the user interface further includes screen **632** displaying field **634**, through which a user may enter/edit a

RFID name. Field 634 may be displayed for example, among other situations, in
285 response to a user's selection of "add" or "edit" of screen 622.

As illustrated in Fig. 6e, for the embodiment, the user interface further
includes screen 642 displaying field 644, through which a user may enter/edit a
RFID. Field 644 may be displayed for example, among other situations, in
response to a user indicating completion of entry of a RFID name using screen
290 632.

As illustrated in Fig. 6f, for the embodiment, the user interface further
includes screen 652 displaying a list of RFID types 654, with which a user may
select and associate with a RFID. List 654 may be displayed for example,
among other situations, in response to a user indicating completion of entry of a
295 RFID, using screen 642, thereby allowing the user to associate a RFID reader
type with the entered RFID.

Each RFID reader type is assumed to have a deterministic RFID signaling
format/protocol. Accordingly, by selecting the RFID reader type, the user is
effectively selecting or specifying the RFID signaling format/protocol. In alternate
300 embodiment, a user may be requested to select the RFID signaling
format/protocol explicitly, as opposed to implicitly, in the illustrated embodiment.

As illustrated in Fig. 6g, for the embodiment, the user interface further
includes screen 662 displaying a request 664 to confirm whether a RFID is to be
selected or designated as the default RFID to be used for emulation of passive
305 transponders. Request 664 may be displayed for example, among other
situations, in response to a user selecting a RFID reader type, using screen 652,
thereby allowing the user to (implicitly) associate a RFID format/protocol with the
entered RFID.

As illustrated in Fig. 6f, for the embodiment, the user interface further
310 includes screen 672 displaying a RFID and its details, including but not limited

the intended RFID reader type, whether to be designated as the default RFID for use in emulating passive RFID. Request 674 may be displayed for example, among other situations, in response to a user selecting the "edit" option, using screen 622, or on completion of designating a RFID as the default RFID for
315 emulating passive transponders, using screen 662

Operationally, as illustrated in Fig. 7, upon receipt of a request to launch the RFID function, support logic of the RFID feature 322 is loaded and given execution control, block 702. Thereafter, support logic 322 waits for user inputs, block 704.

320 On receipt of a user input/request, support logic 322 determines the nature of the input/request, block 706, taking into the context, i.e. the portion of the user interface being displayed, and with which the user just interacted in submitting the input/request.

As illustrated, on determining that the user has requested a current display list to be scrolled (e.g. RFID list 614 of screen 612), support logic 322 causes the
325 list to be scrolled as requested. Thereafter, support logic 322 returns to block 708 and waits for further input.

Similarly, on determining that the user has requested a selected RFID to be sent (emulating output of the RFID by an active RFID transponder), support
330 logic 322 causes the RFID to be outputted in a form of an appropriate RF signal (in accordance with the associated intended RFID reader type). Thereafter, support logic 322 again returns to block 710 and waits for further input.

On determining that the user has requested a list of options to be displayed (e.g. selection of "option" 616 of screen 612), support logic 322 causes
335 the list of options to be displayed as requested. Thereafter, support logic 322 returns to block 712 and waits for further input.

On determining that the user has requested to add a RFID (e.g. selection of "Add" of screen 622), support logic 322 facilitates addition of a RFID (e.g. successively guiding user entry of a RFID using screens 632-662. Thereafter, support logic 322 returns to block 714 and waits for further input.

These are a few examples of user inputs/requests support logic 322 may support. The present invention contemplates other user inputs/requests may also be supported, and handled accordingly, block 716.

345 Conclusion and Epilogue

Thus, it can be seen from the above descriptions, a novel RFID input method, emulated using a mobile communication device, has been described. The present invention advantageously improved the ease of use for a user to provide data captured in a device to another system, especially for data captured in e.g. a mobile device.

While the present invention has been described in terms of the earlier described embodiments, those skilled in the art will recognize that the invention is not limited to the embodiments described. The present invention can be practiced with modification and alteration within the spirit and scope of the appended claims. Thus, the description is to be regarded as illustrative instead of restrictive on the present invention.

ABSTRACT

360 A mobile communication device is equipped with hardware and/or
software components to enable the device to output a data in a form of a radio
frequency signal, emulating outputting of the data by either an active or a passive
RFID transponder. The data may be a security key or an identifier. Emulation of
an active RFID transponder includes facilitating selection of the data and
365 instruction to output by a user. Emulation of a passive RFID transponder
includes detecting for proximal presence of a RFID reader. Either case,
provision of the data to the mobile communication device may include provision
of associated signal attribute(s).

370

60478245-061303

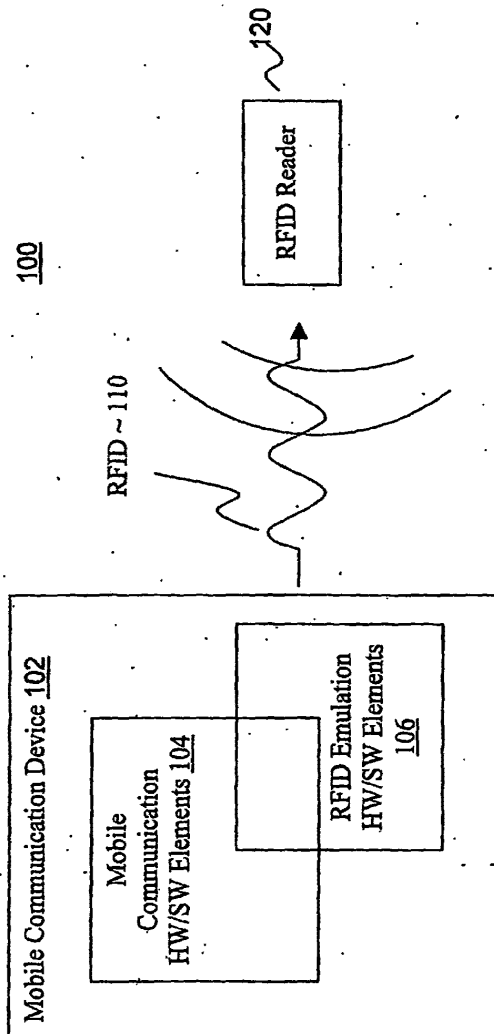


Figure 1

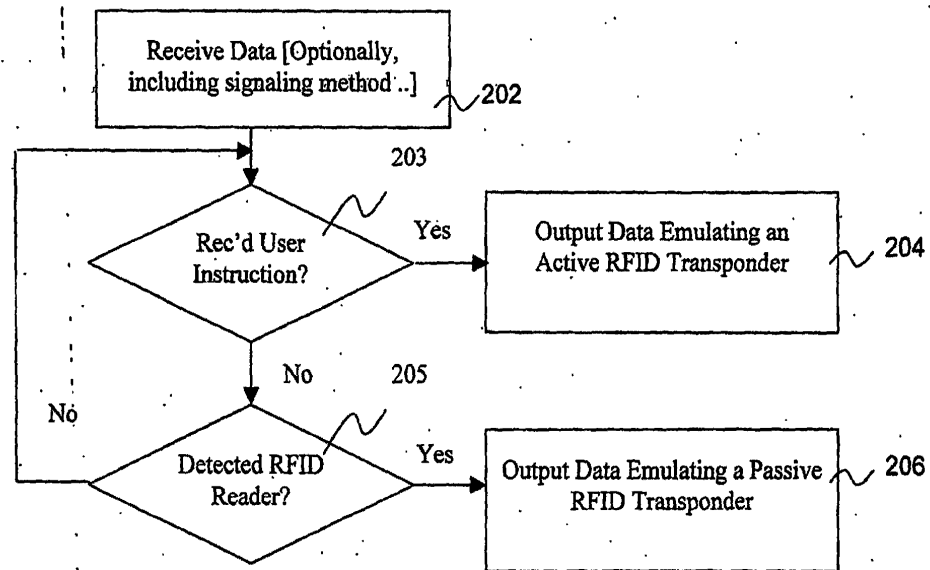


Figure 2

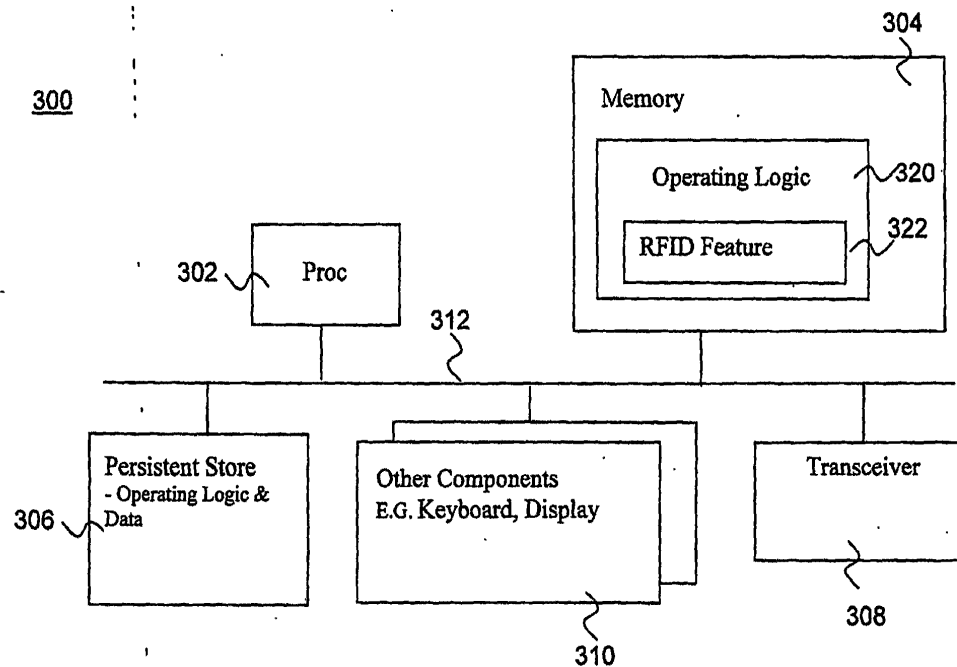


Figure 3

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 Inventor(s): Zafrouk et al.
 For: Radio Frequency Identification Using Mobile Communication Device
 Filing Date: June 13, 2005

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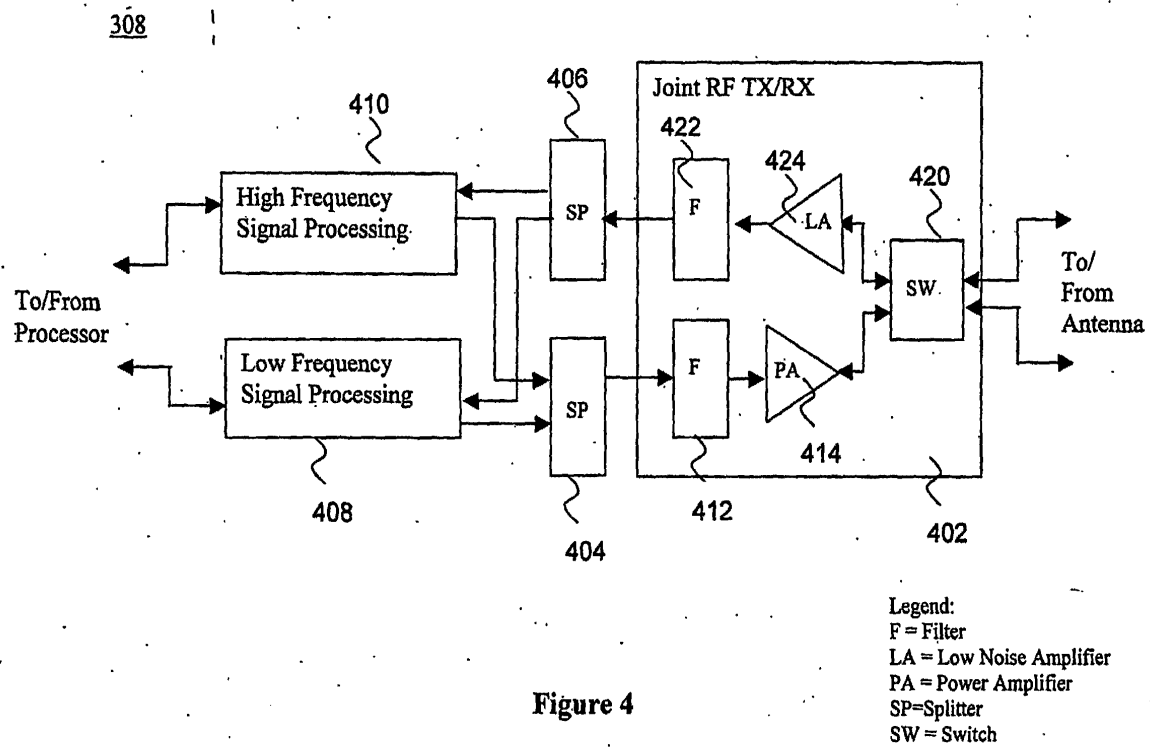


Figure 4

Attorney's Docket No.: 109909-133500 (IFG, P0642)
 Inventor(s): Zaidonkai et al.
 For: Radio Frequency Identification Using Mobile Communication Device
 Filing Date: June 15, 2003

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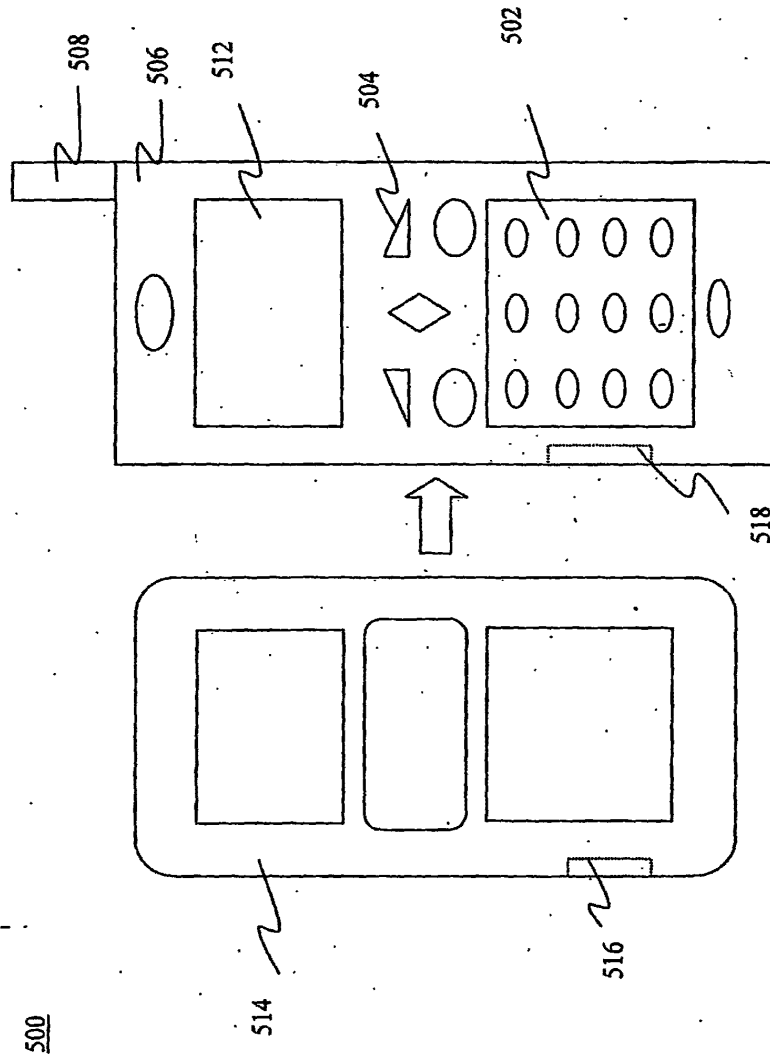


Figure 5a

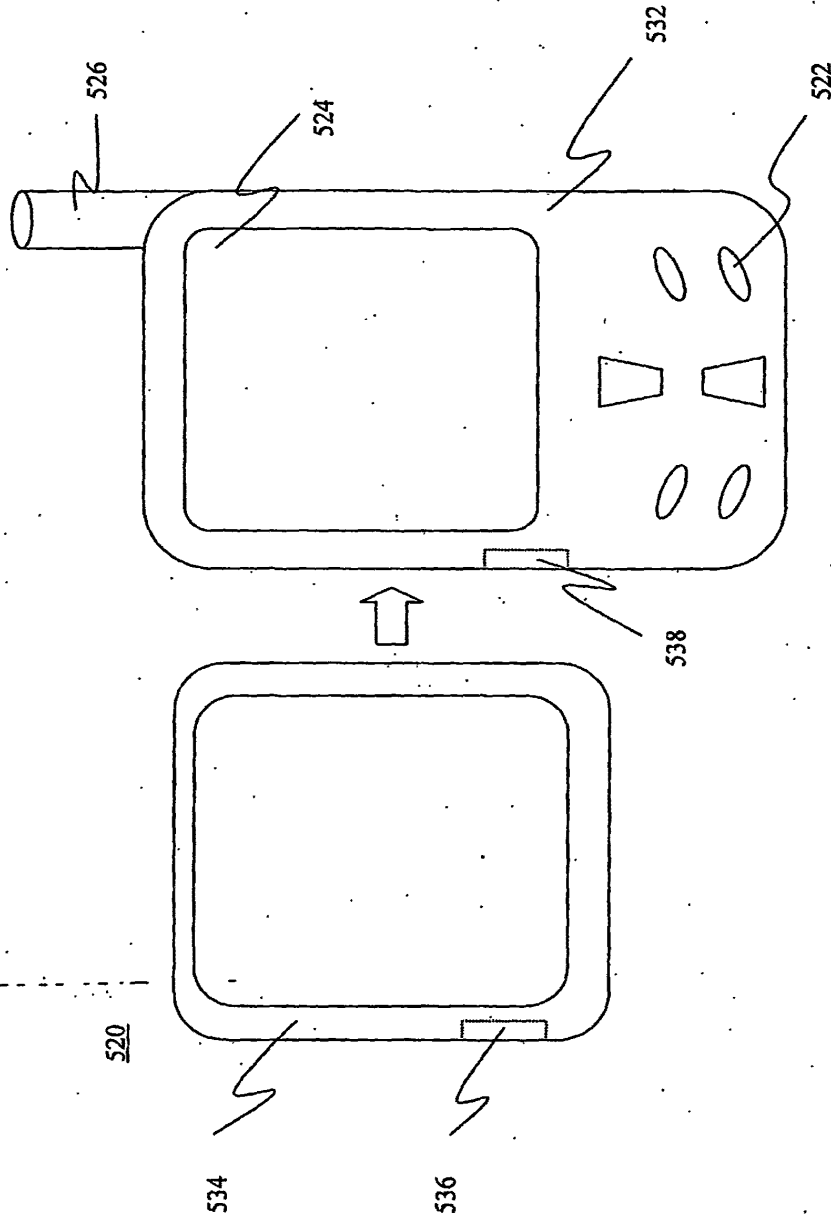


Figure 5b

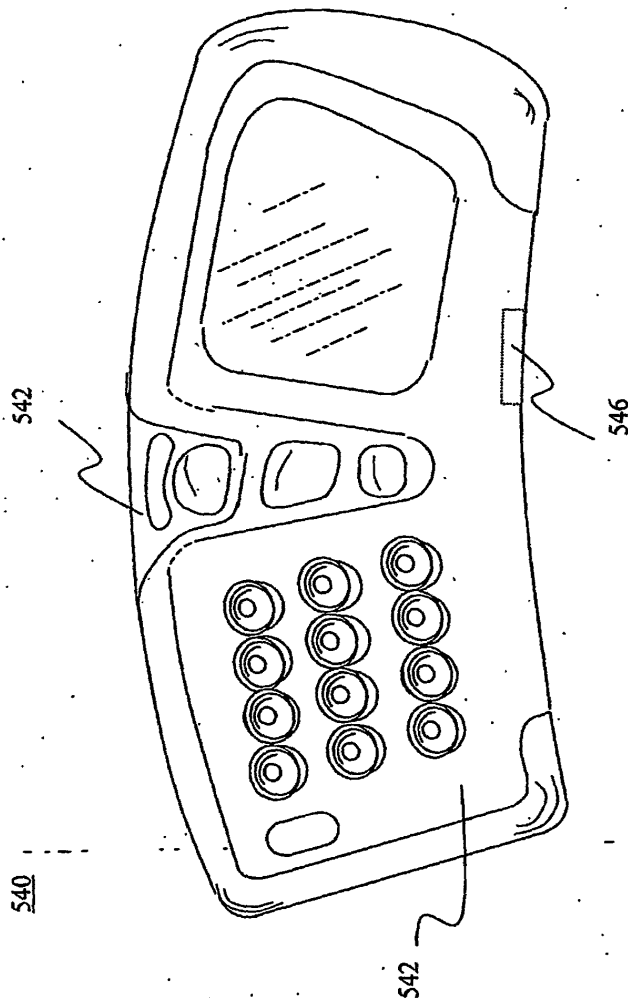


Figure 5c

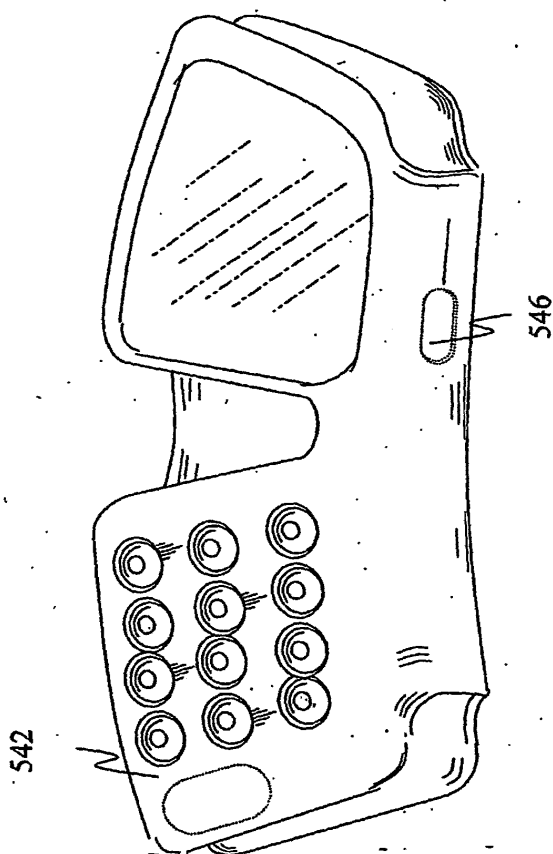


Figure 5d

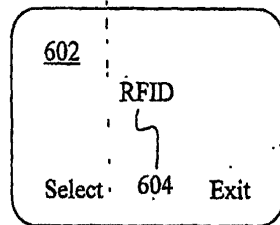


Figure 6a

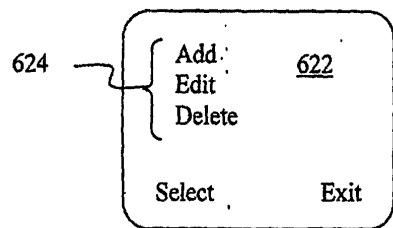


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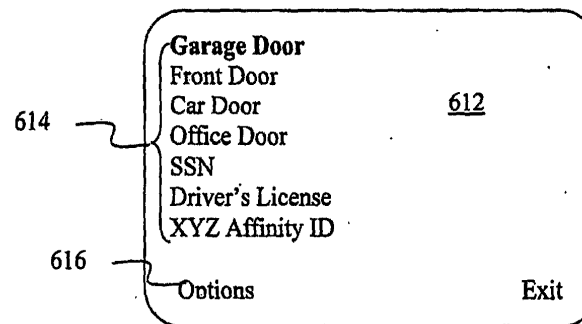


Figure 6b

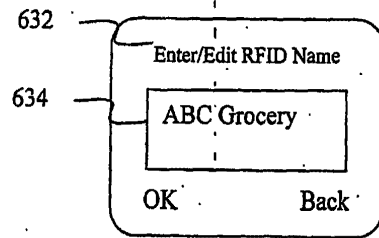


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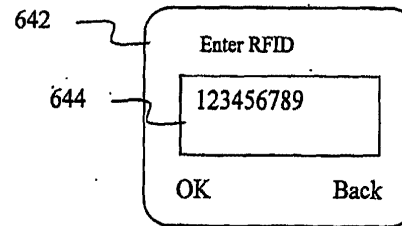


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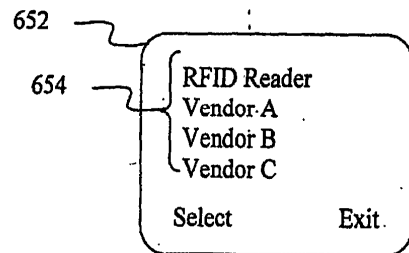


Figure 6f

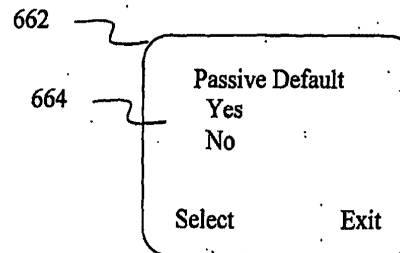


Figure 6g

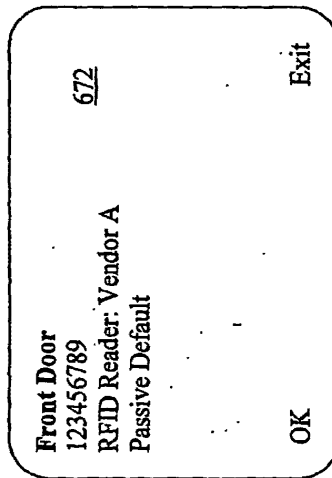


Figure 6h

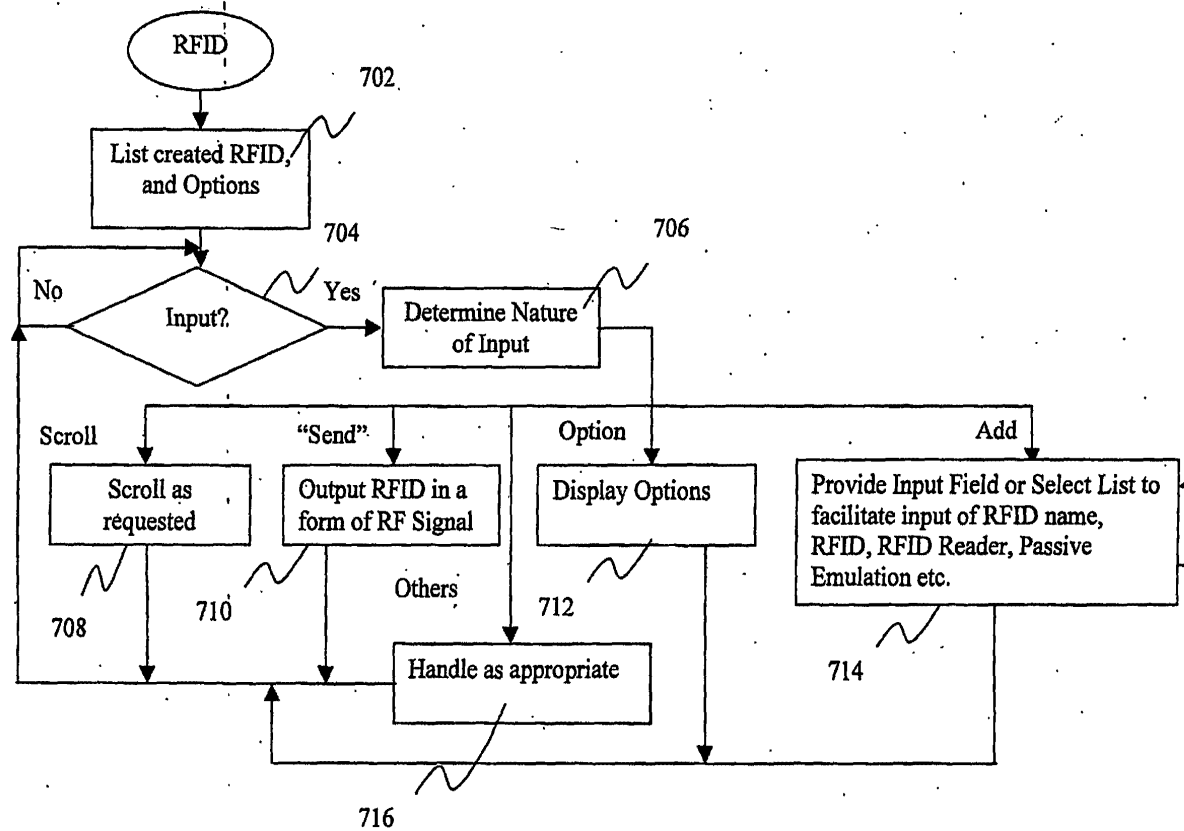


Figure 7