

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Oliff PLC
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Attorney Docket No.: H0022017

Customer Number: 113760

**CONTINUING APPLICATION TRANSMITTAL
RULE 1.53(b)**

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

Transmitted herewith for filing under 37 C.F.R. §1.53(b) is a

☒ Continuation ☐ Divisional ☐ Continuation-in-Part

application of prior pending U.S. Application No. 13/430,121 filed March 26, 2012, which is a division of U.S. Application No. 12/567,158 filed September 25, 2009,

For (Title): Encoded Information Reading Terminal with User-Configurable Multi-Protocol Wireless Communication Interface

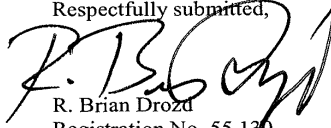
By (Inventors): Ynjiun P. WANG; Huyu QU; James T. SAUERWEIN

1. ☐ A Declaration of the inventor(s) is attached. The attached Declaration is:
 - ☐ a. A copy of the Declaration from the parent application. (Used with the same or fewer inventors and (a) a copy of the prior application or (b) a revised, reformatted or edited version of the prior application that does not contain new matter.)
 - ☐ b. A new Declaration. (Used with the same, fewer or additional inventors and (a) a copy of the prior application, (b) a revised, reformatted or edited version of the prior application that does not contain new matter, or (c) a new specification.)☐ The Declaration is a combined English-language/foreign-language Declaration. On information and belief, the English-language portions of the Declaration are accurate translations of the foreign-language portions.
2. ☒ A Power of Attorney from the applicant is attached. The attached Power of Attorney is:
 - ☐ a. A copy of the Power of Attorney from the parent application.
 - ☒ b. A new Power of Attorney.☒ The Power of Attorney is a General Power of Attorney.
☐ The Power of Attorney is a Specific Power of Attorney for this application.
☐ The Power of Attorney is in a combined Declaration/Power of Attorney.
 - ☐ a. The Power of Attorney identifies no more than ten attorneys.
 - ☐ b. The Power of Attorney identifies more than ten attorneys, and a separate Designation of Attorneys for Power of Attorney is filed herewith.
 - ☐ c. The Power of Attorney is to the attorneys associated with a Customer Number.
3. ☒ The fees due upon filing are being paid electronically with this filing. The Commissioner is hereby authorized to charge any additional fee (or credit any overpayment) associated for this filing to Deposit Account No. 15-0461.
4. ☒ Application Data Sheet is attached.
5. ☒ Formal drawings (Figs. 1-8d) are attached.

- ☐ Use Figure _____ for front page of Publication.
6. ☐ Priority of foreign application(s) No. _____ filed _____ in _____ is claimed under 35 U.S.C. §119 and/or §365(b).
- ☐ The certified copy was filed in prior Application No. _____ on _____.
- ☐ An electronic copy of the above foreign application(s) was received by the PTO in prior Application No. _____.
- ☐ A certified copy of the above foreign application(s) is filed herewith.
- ☐ A copy of the priority document was transmitted by the International Bureau in prior Application No. _____.
- ☐ An electronic copy of the above foreign application should be automatically retrieved by the PTO in accordance with the electronic priority document exchange service.
7. ☐ Priority of U.S. Provisional Application(s) No. _____ filed _____ is claimed under 35 U.S.C. §119. (A Preliminary Amendment is attached to reflect the claim of benefit in the specification if not already present.)
8. ☒ The prior application is assigned of record to HAND HELD PRODUCTS, INC., Fort Mill, South Carolina and recorded at Reel 023285, Frame 0492.
9. ☐ This application is filed by fewer than all the inventors named in the prior application (37 C.F.R §1.53(b)(1)). Delete the following inventor(s) named in the prior application:
- _____
- _____
10. ☐ A Preliminary Amendment is attached. The Preliminary Amendment amends the specification to reflect the continuation data. Claims added by this Amendment are properly numbered consecutively beginning with the number next following the highest numbered claim in the application and claims canceled are identified in the listing of claims.
11. ☐ An Information Disclosure Statement is attached.
12. ☐ Small entity status:
- ☐ a. Entitlement to small entity status is asserted.
- ☐ b. Small entity status is no longer claimed.
13. ☐ Other:
14. ☐ As also indicated in the attached Request, this application is NOT to be published under 35 U.S.C. 122(b). The undersigned attorney or agent hereby certifies that the invention disclosed in this 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 of applications 18 months after filing.

15. ☒ The claims in this continuing application differ from the claims in the parent application(s). As to each claim or claim term in this continuing application that is broader than any claim or claim term in any parent application, any previous disclaimer of claim scope made during prosecution of any parent application is rescinded. The Examiner is requested to consider such broader claims and/or claim terms in view of all of the prior art without any previous disclaimers.

Respectfully submitted,


R. Brian Drozd
Registration No. 55,130

RBD:chs

Date: March 6, 2014

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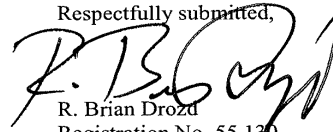
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ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE
MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U. S. Patent Application No. 13/430,121 filed March 26, 2012 which is a divisional application of U.S. Patent Application No. 12/567,158 filed September 25, 2009. The above applications are incorporated herein by reference in their entireties.

FIELD OF THE INVENTION

[0002] The invention is generally related to encoded information reading (EIR) terminals and is specifically related to an EIR terminal comprising a multi-protocol wireless communication interface.

BACKGROUND OF THE INVENTION

[0003] Encoded information reading (EIR) terminals equipped with wireless communication interfaces are widely used in retail stores, shipping facilities, etc. While wireless communication of EIR terminals offers many advantages as compared to wired communications, traditional wireless communication interfaces have noticeable shortcomings, *e.g.*, by failing to support more than one communication protocol and/or standard.

[0004] Accordingly, there is a need for further advances in EIR terminals and systems which would support multiple communication protocols and standards.

SUMMARY OF THE INVENTION

[0005] In one embodiment, there is provided an encoded information reading (EIR) terminal comprising a microprocessor electrically coupled to a system bus, a memory communicatively coupled to the microprocessor, an encoded information reading (EIR) device, and a wireless communication interface.

[0006] The EIR device can be selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device. The EIR device can be

configured to perform outputting raw message data containing an encoded message and/or outputting decoded message data corresponding to an encoded message.

[0007] The wireless communication interface can comprise a radio frequency front end configured to perform receiving a first radio signal and/or transmitting a second radio signal. The radio frequency front end can be electrically coupled to an analog-to-digital converter (ADC) which can be electrically coupled to the system bus and/or to a digital-to-analog converter (DAC) which can be electrically coupled to the system bus.

[0008] The microprocessor can be configured to execute a base-band encoder software program and/or a base-band decoder software program. The base-band encoder software program can be configured to produce a first encoded bit stream by performing at least one of the following functions: source encoding of a first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, and media access control. The DAC can be configured to output to the radio frequency front end an analog signal corresponding to the first encoded bit stream.

[0009] The ADC can be configured to output a second encoded bit stream corresponding to an analog signal produced by the radio frequency front end. The base-band decoder software program can be configured to produce a second bit stream corresponding to the second encoded bit stream by performing at least one of the following functions: media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, and source decoding.

[0010] In another embodiment, there is provided an encoded information reading terminal comprising a microprocessor electrically coupled to a system bus, a memory communicatively coupled to the microprocessor, an encoded information reading (EIR) device, and a wireless communication interface.

[0011] The EIR device can be selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device. The EIR device can be configured to perform outputting raw message data containing an encoded message and/or outputting decoded message data corresponding to an encoded message.

[0012] The wireless communication interface can comprise an RF front end configured to perform receiving a first radio signal and/or transmitting a second radio signal. The RF front

can be end electrically coupled to an analog-to-digital converter (ADC) which can be electrically coupled to the system bus and/or to a digital-to-analog converter (DAC) which can be electrically coupled to the system bus.

[0013] The EIR terminal can be configured to execute a wireless communication protocol selector software program, which can optimize a value of a user-defined criterion in order to dynamically select a wireless communication network, a wireless communication protocol, and/or a parameter of a wireless communication protocol.

[0014] In another embodiment, there is provided an encoded information reading terminal comprising a microprocessor electrically coupled to a system bus, a memory communicatively coupled to the microprocessor, an encoded information reading (EIR) device, and a wireless communication interface.

[0015] The EIR device can be selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device. The EIR device can be configured to perform outputting raw message data containing an encoded message and/or outputting decoded message data corresponding to an encoded message.

[0016] The wireless communication interface can comprise an RF front end configured to perform receiving a first radio signal and/or transmitting a second radio signal. The RF front can be end electrically coupled to an analog-to-digital converter (ADC) which can be electrically coupled to the system bus and/or to a digital-to-analog converter (DAC) which can be electrically coupled to the system bus.

[0017] The EIR terminal can be configured to dynamically select a wireless communication network, a wireless communication protocol, and/or a parameter of a wireless communication protocol responsive a user action and/or to scanning a pre-defined bar code.

[0018] In another embodiment, there is provided an encoded information reading terminal comprising a microprocessor electrically coupled to a system bus, a memory communicatively coupled to the microprocessor, an encoded information reading (EIR) device, and a wireless communication interface configured to support at least two wireless communication protocols.

[0019] The EIR device can be selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device. The EIR device can be configured to perform outputting raw message data containing an encoded message and/or outputting decoded message data corresponding to an encoded message.

[0020] The EIR terminal can be configured to execute a wireless communication protocol selector software program, which can optimize a value of a user-defined criterion in order to dynamically select a wireless communication network, a wireless communication protocol, and/or a parameter of a wireless communication protocol.

[0021] In a further embodiment, there is provided an encoded information reading terminal comprising a microprocessor electrically coupled to a system bus, a memory communicatively coupled to the microprocessor, an encoded information reading (EIR) device, and a wireless communication interface configured to support at least two wireless communication protocols.

[0022] The EIR device can be selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device. The EIR device can be configured to perform outputting raw message data containing an encoded message and/or outputting decoded message data corresponding to an encoded message.

[0023] The EIR terminal can be configured to dynamically select a wireless communication network, a wireless communication protocol, and/or a parameter of a wireless communication protocol responsive a user action and/or to scanning a pre-defined bar code.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] For the purpose of illustrating the invention, the drawings show aspects of one or more embodiments of the invention. However, it should be understood that the present invention is not limited to the precise arrangements and instrumentalities shown in the drawings, wherein:

[0025] Fig. 1 depicts a network level layout of a data collection system employing EIR terminal according to the invention;

[0026] Fig. 2 depicts a functional layout of a wireless communication interface;

[0027] Fig. 3 depicts a component level layout of an EIR terminal according to the invention;

[0028] Fig. 4 illustrates the functions of the base-band encoder software program according to the invention;

[0029] Fig. 5 illustrates the functions of the base-band encoder software program according to the invention;

[0030] Figs. 6a and 6b illustrate an exemplary hand held EIR terminal housing;

[0031] Figs. 7a-7c illustrate an exemplary portable and remountable EIR terminal housing;

[0032] Fig. 8a illustrates a first exemplary deployment of an EIR terminal according to the invention within a retail store;

[0033] Fig. 8b illustrates a second exemplary deployment of an EIR terminal according to the invention within a retail store;

[0034] Figs. 8c and 8d illustrate PIN and signature data entry operational modes of an EIR terminal according to the invention.

[0035] The drawings are not necessarily to scale, emphasis instead generally being placed upon illustrating the principles of the invention. In the drawings, like numerals are used to indicate like parts throughout the various views.

DETAILED DESCRIPTION OF THE INVENTION

[0036] There is provided an encoded information reading (EIR) terminal for incorporation in a data collection system. The data collection system, schematically shown in Fig. 1, can include a plurality of EIR terminals 100a-100z in communication with a plurality of interconnected networks 110a-110z. In one aspect, the plurality of networks 110a-110z can include at least one IEEE 802.11 conformant wireless network. In another aspect, an EIR terminal 100a can be in communication with at least one wireless device over Bluetooth™ wireless communication protocol. In a further aspect, the plurality of networks 110a-110z can include at least one GSM wireless network. In a further aspect, the plurality of networks 110a-110z can include at least one CDMA wireless network. Still further, the plurality of

networks 110a-110z can include at least one 3G wireless network, *e.g.*, UMTS, HSUPA/HSDPA, or CDMA2000EvDO. In another aspect, the plurality of networks 110a-110z can include at least one 4G wireless network, *e.g.*, LTE, UWB, or 802.16m (WiMax). A skilled artisan would appreciate the fact that wireless networks implementing other wireless communication protocols are within the spirit and the scope of the invention.

[0037] In one aspect, an EIR terminal can comprise a wireless communication interface. The EIR terminal 100c can establish a communication session with the host computer 171. In one embodiment, network frames can be exchanged by the EIR terminal 100c and the host computer 171 via one or more routers, base stations, and other infrastructure elements. In another embodiment, the host computer 171 can be reachable by the EIR terminal 100c via a local area network (LAN). In a yet another embodiment, the host computer 171 can be reachable by the EIR terminal 100c via a wide area network (WAN). A skilled artisan would appreciate the fact that other methods of providing interconnectivity between the EIR terminal 100c and the host computer 171 relying upon LANs, WANs, virtual private networks (VPNs), and/or other types of network are within the spirit and the scope of the invention.

[0038] In a further aspect, the wireless communication interface can be configured to support at least two wireless communication protocols. In one embodiment, the wireless communication interface can be configured to support HSPA/GSM/GPRS/EDGE protocol family and CDMA/EV-DO protocol family. A skilled artisan would appreciate the fact that wireless communication interfaces supporting other communication protocols are within the spirit and the scope of the invention.

[0039] In one embodiment, the communications between the EIR terminal 100c and the host computer 171 can comprise a series of HTTP requests and responses transmitted over one or more TCP connections, although a person skilled in the art would appreciate the fact that using other transport and application level protocols is within the scope and the spirit of the invention.

[0040] In one aspect, at least one of the messages transmitted by the EIR terminal can include decoded message data corresponding to, *e.g.*, a bar code label or an RFID label attached to a product or to a shipment item. For example, an EIR terminal can transmit a request to the host computer to retrieve product information corresponding to a product

identifier encoded by a bar code label attached to the product, or to transmit an item tracking record for an item identified by a bar code label attached to the product.

[0041] A wireless communication interface 210 best viewed in Fig. 2, can comprise a transmitter circuit 220 electrically coupled to a data source 221. The transmitter circuit 220 can be implemented by one or more specialized microchips, and can perform the following functions: source encoding 223, encryption 226, channel encoding 229, multiplexing 232, modulation 235, and frequency spreading 238.

[0042] The wireless communication interface 210 of Fig. 2 can further comprise a receiver circuit 250 electrically coupled to the data sink 271. The receiver circuit 250 can be implemented by one or more specialized microchips, and can perform the following functions: frequency de-spreading 253, demodulation 256, de-multiplexing 259, channel decoding 262, decryption 265, and source decoding 268.

[0043] Each of the transmitter circuit 220 and receiver circuit 250 can be electrically coupled to a radio frequency (RF) front end 299. The RF front end 299 can be used to convert high frequency RF signals to/from base-band or intermediate frequency signals. A skilled artisan would appreciate the fact that RF front ends of different data rates, sensitivities, output powers, operating frequencies, and measurement resolutions are within the scope and spirit of the invention.

[0044] On the receiving side, the RF front-end 299 can include all filters, low-noise amplifiers (LNAs), and down-conversion mixer(s) needed to process modulated RF signals received by the antenna into based-band signals. In one embodiment, the receiving part of the RF front end 299 can comprise one or more of the following components:

- a first matching circuit to transfer to the next stage the energy received by the antenna;
- a band-pass filter (BPF) to knock down out-of-band jammers;
- a second matching circuit at the input of a low-noise amplifier (LNA);
- the LNA, the primary responsibility of which is to set the sensitivity of the receiver, by providing a high gain;

- a third matching circuit between the LNA output and the receive (RX) mixer (down-converter);
- the down-conversion RX mixer.

[0045] On the transmitting side, the RF frond-end area can be described as a “mirrored” version of a receiver. The front end of a transmitter up converts an outgoing base-band signal and then feeds the signal to a high power amplifier. A skilled artisan would appreciate the fact that other ways of implementing the RF front end are within the spirit and the scope of the invention.

[0046] According to one embodiment of the invention, the wireless communication interface supporting at least two wireless communication protocols can be implemented using a single dual-protocol (or multi-protocol) chipset. The chipset can include integrated circuits (ICs), application specific integrated circuits (ASICs), and/or other components providing the necessary functionality.

[0047] In another embodiment, the wireless communication interface supporting at least two wireless communication protocols can be implemented using two or more chipsets. Each of the chipsets can include integrated circuits (ICs), application specific integrated circuits (ASICs), and/or other components providing the necessary functionality.

[0048] In a yet another embodiment, at least some of the functions of the transmitter circuit and the receiver circuit can be advantageously performed by one or more software programs executed by a microprocessor. In one embodiment the EIR terminal 100 can comprise at least one microprocessor 310 and a memory 320, both coupled to the system bus 370, as best viewed in Fig. 3.

[0049] The microprocessor 310 can be provided by a general purpose microprocessor or by a specialized microprocessor (*e.g.*, an ASIC). In one embodiment, the EIR terminal 100 can comprise a single microprocessor which can be referred to as a central processing unit (CPU) and which can perform at least some of the functions of the transmitter circuit and the receiver circuit. In another embodiment, the EIR terminal 100 can comprise two or more microprocessors; for example, a CPU providing some or most of the EIR functionality and a specialized microprocessor performing some of the functions of the transmitter circuit and the receiver circuit. A skilled artisan would appreciate the fact that different schemes of

processing tasks distribution among the two or more microprocessors are within the spirit and the scope of the invention.

[0050] The EIR terminal 100 can further comprise one or more encoded information reading (EIR) devices 330, including a bar code reading device, an RFID reading device, and a card reading device, also coupled to the system bus 370. In one embodiment, an EIR reading device can be capable of outputting decoded message data corresponding to an encoded message. In another embodiment, the EIR reading device can output raw message data containing an encoded message, *e.g.*, raw image data or raw RFID data.

[0051] Of course, devices that read bar codes, read RFID, or read cards bearing encoded information may read more than one of these categories while remaining within the scope of the invention. For example, a device that reads bar codes may include a card reader, and/or RFID reader; a device that reads RFID may also be able to read bar codes and/or cards; and a device that reads cards may be able to also read bar codes and/or RFID. For further clarity, it is not necessary that a device's primary function involve any of these functions in order to be considered such a device; for example, a cellular telephone, smartphone, or PDA that is capable of reading bar codes is a device that reads bar codes for purposes of the present invention

[0052] The EIR terminal 100 can further comprise a keyboard interface 354 and a display adapter 355, both also coupled to the system bus 370. The EIR terminal 100 can further comprise a battery 356.

[0053] In a further aspect, the EIR terminal 100 can further comprise an RF front end 340. In a further aspect, the EIR terminal 100 can further comprise an analog-to-digital (ADC) converter 350, the input of which can be electrically coupled to the RF front end 340. The choice of ADC can be determined by the receiver architecture, and can depend upon the selectivity of the filters, the dynamic range afforded by the front-end amplifiers, and the bandwidth and type of modulation to be processed. For example, the level or dynamic range of signals expected to be presented to the ADC will dictate the bit resolution needed for the converter. An ADC can also be specified in terms of its spurious-free dynamic range (SFDR). The ADC's sensitivity can be influenced by wideband noise, including spurious noise, and can be improved through the use of an anti-aliasing filter at the input of the ADC to eliminate sampling of noise and high-frequency spurious products. To avoid aliasing when

converting analog signals to the digital domain, the ADC sampling frequency must be at least twice the maximum frequency of the input analog signal. This minimum sampling condition derived from Nyquist's theorem, must be met in order to capture enough information about the input analog waveform to reconstruct it accurately. In addition to selecting an ADC for IF or baseband sampling, the choice of buffer amplifier to feed the input of the converter can affect the performance possible with a given sampling scheme. The buffer amplifier should provide the rise/fall time and transient response to preserve the modulation information of the IF or base-band signals, while also providing the good amplitude accuracy and flatness needed to provide signal amplitudes at an optimum input level to the ADC for sampling.

[0054] In another embodiment, the EIR terminal 100 can further comprise a digital-to-analog (DAC) converter 360, the output of which can be electrically coupled to the RF front end 340. In a further aspect, a DAC can be viewed as a component providing a function reversed to that of an ADC.

[0055] In a further aspect, the output of the ADC 350, and the input of the DAC 360 can be electrically coupled to a system bus 370. A skilled artisan would appreciate the fact that other microprocessors, memory, and/or peripheral devices can be electrically coupled to the system bus 370 without departing from the scope and the spirit of the invention.

[0056] In another aspect, the microprocessor 310 can execute a base-band encoder software program which can encode a bit stream which needs to be transmitted over a wireless medium. The encoded bit stream outputted by the base-band encoder software program can be fed to the input of the DAC 360. The analog signal representative of the encoded bit stream can be outputted by the DAC 360 to the RF front end 340 in order to be transmitted over a wireless medium.

[0057] In one embodiment, the base-band encoder software program 400 can perform at least one of the following functions schematically shown in Fig. 4: source encoding 410 of a bit stream 405, encryption 420, channel encoding 430, multiplexing 440, modulation 450, frequency spreading 460, and media access control 470. In one embodiment, the remaining functions (*i.e.*, those not implemented by the base-band encoder software program) can be implemented by one or more dedicated hardware components.

[0058] In one aspect, the source encoding function 410 can be provided by a process of encoding information using a different number of bits (or other information bearing units) than an un-encoded representation would use, through use of specific encoding schemes.

[0059] In another aspect, the encryption function 420 can be implemented by using an algorithm (cipher) suitable to transform an unencrypted (“plain text”) information stream to an encrypted information stream.

[0060] In a further aspect, the channel encoding function 430 can be provided by a process suitable to encode the transmitted information stream into a form, which would allow guaranteed reliable information transmission at a rate close to the maximum channel capacity. According to the Shannon theorem, for a given bandwidth and signal-to-noisy ratio, the theoretical maximum channel capacity (reliable information transfer rate) for a particular noise level is defined by the following equation:

$$C = B \log_2 \left(1 + \frac{S}{N} \right).$$

[0061] For any information transmission rate $R < C$, there exists an encoding scheme that would allow the probability of errors at the receiver to be made less than a pre-defined value ϵ . The channel encoding function 430 can select and/or implement an encoding scheme for a pre-defined value of ϵ .

[0062] In a further aspect, the multiplexing function 440 can be employed to combine multiple signals or data streams into one signal transmitted over a shared physical transmission medium (wireless channel). The multiplexing function 440 can implement one or more of the multiplexing technologies including TDMA (Time division multiple access), FDMA (Frequency division multiple access), CDMA (Code division multiple access), CSMA (Carrier sense multiple access), etc.

[0063] In a further aspect, the frequency spreading function 460 can implement one or more of the following technologies: DSSS (Direct Sequence Spread Spectrum), FHSS (Frequency Hopping Spread Spectrum), and OFDM (Orthogonal Frequency Division Multiplexing).

[0064] In a further aspect, the media access control function 470 can provide addressing and channel access control mechanisms.

[0065] In another aspect, the RF front end 340 can output to the ADC 350 an analog signal representative of a signal received over the wireless medium. The ADC 350 can output a digital signal representative of the analog signal outputted by the RF front end 340. The microprocessor 310 can execute a base-band decoder software program which can input the digital signal outputted by the ADC 350 and can decode the digital signal into a form suitable for further processing by other software programs.

[0066] In a further aspect, the base-band decoder software program 500 can perform at least at least one of the following functions schematically shown in Fig. 5: media access control 510, frequency de-spreading 520, de-modulation 530, de-multiplexing 540 the analog signal, channel decoding 560, decryption 570, and source decoding 580. In one embodiment, the remaining functions (*i.e.*, those not implemented by the base-band decoder software program) can be implemented by one or more dedicated hardware components.

[0067] In one aspect, each of the frequency de-spreading 520, de-modulation 530, de-multiplexing 540, channel decoding 560, decryption 570, and source decoding 580 functions can be implemented as a reverse function of the frequency spreading 460, modulation 450, multiplexing 440, channel encoding 430, encryption 420, source encoding 410 functions, respectively.

[0068] In another aspect, the base-band encoder software program can be implemented as two or more software programs. In another aspect, the base-band decoder software program can be implemented as two or more software programs. In a further aspect, the base-band encoder software program and the base-band decoder software program can be implemented as a single software program.

[0069] In another aspect, due to advantageously performing at least some of the source bit stream encoding functions by a software program, the EIR terminal 100 can be devoid of dedicated hardware components configured to implement at least one of the following functions: source encoding of said first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, and media access control.

[0070] In another aspect, due to advantageously performing at least some of the analog signal decoding functions by a software program, the EIR terminal 100 can be devoid of dedicated hardware components configured to implement at least one of the following

functions: media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, and source decoding.

[0071] In a further aspect, the EIR terminal 100 can be configured to dynamically select a wireless communication network, a wireless communication protocol, or one or more parameters of the wireless communication protocol (*e.g.*, frequency or transmission power) to be used by the RF front end 340.

[0072] Due to its ability to dynamically select a wireless communication network and a wireless communication protocol, the EIR terminal 100 according to the present invention can be advantageously used, *e.g.*, by a company operating in several geographies with different wireless communication standards. Using the EIR terminal 100 according to the present invention would allow such a company to deploy the same EIR terminal 100 model in all the geographies.

[0073] In one embodiment, selection of a wireless communication network, a wireless communication protocol, or one or more parameters of a wireless communication protocol can be performed manually by the user of the EIR terminal 100. In one embodiment, the selection can be performed by scanning a pre-defined bar code. In another embodiment, the selection can be performed by the user interacting with the user interface (*e.g.*, via a graphical user interface (GUI), or via a hardware-implemented control). A skilled artisan would appreciate the fact that other methods of manually selecting a wireless communication network, a wireless communication protocol, or one or more parameters of the wireless communication protocol are within the scope and the spirit of the invention.

[0074] In another embodiment, selection of a wireless communication network, a wireless communication protocol, or one or more parameters of the wireless communication protocol can be performed by a wireless communication protocol selector software program executed by the EIR terminal 100. The wireless communication protocol selector software program can optimize a value of a user-defined criterion.

[0075] In one embodiment, the value of the user-defined criterion can be calculated based on one or more of the following parameters: frequency range, network status, signal strength, service cost, communication channel throughput, and user preferences. The user preferences can be represented, *e.g.*, by network preference, service preference, protocol preference, or

frequency preference. A skilled artisan would appreciate the fact that other types of user preferences are within the spirit and the scope of the invention.

[0076] In one embodiment, the value of the user-defined criterion can be calculated as a weighted sum of components each of which is represented by either a parameter itself (*e.g.*, the signal strength) or a difference between the value of a parameter and the desired value of the parameter (*e.g.*, communication channel throughput). In another embodiment, the value of the user-defined criterion can be calculated as a square root of a weighted sum of squares of components each of which is represented by either a parameter itself (*e.g.*, the signal strength) or a difference between the value of a parameter and the desired value of the parameter (*e.g.*, communication channel throughput). A skilled artisan would appreciate the fact that other methods of calculating the user-defined criterion value are within the scope and spirit of the invention.

[0077] For example, if a user is more concerned about the cost than about other communication parameters, the user would want the user-defined criterion to yield the cheapest covered service provider (while the bandwidth, frequency range, and/or network protocol can possibly be secondary factors affecting the service provider and/or network selection). In another example, if a user is more concerned about the signal quality than about other communication parameters, the user would want the user-defined criterion to yield the network with best quality (while the cost can be a secondary factor affecting the service provider and/or network selection). In a yet another example, if a user is more concerned about maintaining uninterrupted communication session than about other communication parameters, the user would want the user-defined criterion to yield the network with best connection reliability (while the bandwidth, frequency range, and/or network protocol can possibly be secondary factors affecting the service provider and/or network selection). A skilled artisan would appreciate the fact that other methods of defining the user-defined criterion are within the scope and the spirit of the invention.

[0078] In one embodiment, the EIR terminal 100 can be configured to search beacon signals over a pre-defined frequency range (*e.g.*, between 800MHz and 5GHz), and then select a wireless communication network and/or frequency channel which would produce the optimal value of the user-defined criterion.

[0079] In one embodiment, the value of the user-defined criterion can be calculated immediately before the EIR terminal 100 attempts to initiate a communication session, so that a wireless communication network and/or a wireless communication protocol can be chosen which would optimize the user-defined criterion.

[0080] In another embodiment, the value of the user-defined criterion can be calculated periodically at established time intervals so that the EIR terminal 100 can change the wireless communication network and/or the wireless communication protocol between communication sessions or during a communication session if a wireless communication network and/or a wireless communication protocol is detected yielding a value of the user-defined criterion which is closer to the optimum than that of the current network or protocol. In yet another embodiment, the value of a user-defined criterion can be calculated responsive to a pre-defined event (*e.g.*, the signal quality falling below a pre-defined level, or the signal quality exceeding a pre-defined threshold), so that the EIR terminal 100 can automatically (*i.e.*, without user intervention) change the wireless communication network and/or the wireless communication protocol between communication sessions or during a communication session. Thus, the EIR terminal 100 can always maintain a network connection irrespectively of changing external conditions (*e.g.*, when the terminal is physically moved).

[0081] Form factors and housings for the EIR terminal 100 according to the invention are now being described. The components of EIR terminal 100 can be incorporated into a variety of different housings. As indicated by the embodiment of Figs. 6a and 6b, the components of Fig. 5 can be incorporated into a hand held housing 101. EIR terminal 100 of Figs. 6a and 6b is in the form factor of a hand held portable data terminal. EIR terminal 100 as shown in Figs. 6a and 6b includes a keyboard 1090, a display 504 having an associated touch screen overlay, a card reader 1348, and an imaging module 360 which includes the components of imaging assembly as described herein; namely, image sensor array incorporated on an image sensor IC chip. Imaging module 360 has an associated imaging axis, a_i . As indicated by the side view of Fig. 6b, the components of the block diagram of Fig. 5 may be supported within housing 101 on a plurality of circuit boards 1077. Imaging module 360 may include an image sensor array having color sensitive pixels as described in U. S. Provisional Patent Application Nos. 60/687,606, filed June 3, 2005, 60/690,268, filed June 14, 2005, 60/692,890, filed June 22, 2005, and 60/694,371, filed June 27, 2005, all of which are entitled

Digital Picture Taking Optical Reader Having Hybrid Monochrome And Color Image Sensor, and all of which are incorporated herein by reference.

[0082] In the embodiment of Figs. 7a-7c, the EIR terminal 100 is in the form of a transaction terminal which may be configured as a retail purchase transaction terminal or as a price verifier. Housing 102 of the transaction terminal shown in Figs. 7a-7c is configured to be portable so that it can be moved from location to location and is further configured to be replaceably mounted on a fixed structure such as a fixed structure of a cashier station or a fixed structure of the retail store floor (*e.g.*, a shelf, a column 264 best viewed in Fig. 8b). Referring to bottom view of Fig. 7c, the housing 102 of the EIR terminal 100 has formations 268 facilitating the replaceable mounting of EIR terminal 100 on a fixed structure. Referring now to Fig. 7b, EIR terminal 100 includes a display 504 having an associated touch screen 504T, a card reader 1348, an imaging module 360, and a luminous shroud 362. When light from the illumination block (not shown in Fig. 8) strikes luminous shroud 362, the shroud glows to attract attention to the location of imaging assembly. In certain operating modes as indicated in Fig. 8c, the EIR terminal 100 in accordance with any of Figs. 7a-7c, displays on display 504 a PIN entry screen prompting a customer to enter PIN information into touch screen 504T. In other operating modes, as indicated in Fig. 8d, the EIR terminal 100 displays on display 504 a signature prompt screen prompting a customer to enter signature information into the device with use of a stylus 505.

[0083] Referring to Figs. 8a and 8b, various installation configurations for the EIR terminal of Figs. 7a-7c are shown. In the view of Fig. 8a, the EIR terminal 100 is installed as a retail purchase transaction terminal at a point of sale cashier station. In the setup of Fig. 8a, the EIR terminal 100 is configured as a retail purchase transaction terminal and is utilized to aid and facilitate retail transactions at a point of sale. A customer may enter a credit card or a debit card into card reader 1348 and retail purchase transaction terminal may transmit the credit card information to credit/debit authorization network.

[0084] In the view of Fig. 8b, the EIR terminal 100 is configured as a price verifier to aid customers in checking prices of products located on a store floor. EIR terminal 100 may be mounted on a shelf (not shown in Fig. 8b) or on a column 254 or other fixed structure of the retail store. EIR terminal 100 may decode bar code data from bar codes on store products and transmit decoded out bar code messages to a store server for lookup of price information which is sent back from the store server to terminal 100 for display on display 504.

[0085] While the present invention has been particularly shown and described with reference to certain exemplary embodiments, it will be understood by one skilled in the art that various changes in detail may be affected therein without departing from the spirit and scope of the invention as defined by claims that can be supported by the written description and drawings. Further, where exemplary embodiments are described with reference to a certain number of elements it will be understood that the exemplary embodiments can be practiced utilizing less than the certain number of elements.

[0086] A small sample of systems methods and apparatus that are described herein is as follows:

- A1. An encoded information reading (EIR) terminal comprising:
- a microprocessor electrically coupled to a system bus;
 - a memory communicatively coupled to said microprocessor;
 - an encoded information reading (EIR) device selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device, said EIR device configured to perform at least one of outputting raw message data containing an encoded message and outputting decoded message data corresponding to an encoded message; and
 - a wireless communication interface comprising a radio frequency front end configured to perform at least one of receiving a first radio signal and transmitting a second radio signal, said radio frequency front end electrically coupled to at least one of an analog-to-digital converter (ADC) electrically coupled to said system bus and a digital-to-analog converter (DAC) electrically coupled to said system bus;
- wherein said microprocessor is configured to execute at least one of a base-band encoder software program and a base-band decoder software program;
- wherein said base-band encoder software program is configured to produce a first encoded bit stream by performing at least one of the following functions: source encoding of a first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, and media access control;
- wherein said DAC is configured to output to said radio frequency front end an analog signal corresponding to said first encoded bit stream;
- wherein said ADC is configured to output a second encoded bit stream corresponding to an analog signal produced by said radio frequency front end; and

wherein said base-band decoder software program is configured to produce a second bit stream corresponding to said second encoded bit stream by performing at least one of the following functions: media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, and source decoding.

A2. The EIR terminal of claim A1, wherein said EIR terminal is devoid of dedicated hardware components configured to implement at least one of the following functions: source encoding of said first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, and source decoding.

A3. The EIR terminal of claim A1, wherein said base-band encoder software program and said base-band decoder software program are implemented as a single software program.

A4. The EIR terminal of claim A1, wherein said base-band encoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

A5. The EIR terminal of claim A1, wherein said base-band decoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

A6. The EIR terminal of claim A1 further comprising a central processing unit (CPU); wherein said base-band encoder software program is performed by at least one of said CPU, a specialized microprocessor.

A7. The EIR terminal of claim A1 further comprising a central processing unit (CPU); wherein said base-band decoder software program is performed by at least one of said CPU, a specialized microprocessor.

A8. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol.

A9. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said value of said user-defined criterion is calculated based on at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

A10. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by at least one of a network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

A11. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of a network status, communication quality, signal strength, service cost, bandwidth, and communication channel throughput.

A12. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by at least one of a network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

A13. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

A14. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said EIR terminal is configured to search beacon signals over a pre-defined frequency range, and then select at least one of a wireless communication network and frequency channel which optimizes said user-defined criterion.

A15. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said EIR terminal is configured to evaluate said user-defined criterion before attempting to initiate a communication session.

A16. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said EIR terminal is configured to switch at least one of said wireless communication network and said wireless communication protocol responsive to evaluating said user-defined criterion.

A17. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said EIR terminal is configured to evaluate said user-defined criterion responsive to a pre-defined event.

A18. The EIR terminal of claim A1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol;

wherein said EIR terminal is configured to periodically evaluate said user-defined criterion.

A19. The EIR terminal of claim A1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to a user action.

A20. The EIR terminal of claim A1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to scanning a pre-defined bar code.

B1. An encoded information reading terminal comprising:

a microprocessor electrically coupled to a system bus;
a memory communicatively coupled to said microprocessor;
an encoded information reading (EIR) device selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device, said EIR device configured to perform at least one of outputting raw message data containing an encoded message and outputting decoded message data corresponding to an encoded message; and
a wireless communication interface comprising an RF front end configured to perform at least one of receiving a first radio signal and transmitting a second radio signal, said RF front end electrically coupled to at least one of an analog-to-digital converter (ADC) electrically coupled to said system bus and a digital-to-analog converter (DAC) electrically coupled to said system bus;
wherein said microprocessor is configured to execute at least one of a base-band encoder software program and a base-band decoder software program;
wherein said EIR terminal is configured to execute a wireless communication protocol selector software program, said wireless communication protocol selector software program configured optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol.

B2. The EIR terminal of claim B1, wherein said base-band encoder software program and said base-band decoder software program are implemented as a single software program.

B3. The EIR terminal of claim B1, wherein said base-band encoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

B4. The EIR terminal of claim B1, wherein said base-band decoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

B5. The EIR terminal of claim B1 further comprising a central processing unit (CPU);
wherein said base-band encoder software program is performed by at least one of said CPU, a specialized microprocessor.

B6. The EIR terminal of claim B1 further comprising a central processing unit (CPU);

wherein said base-band decoder software program is performed by at least one of said CPU, a specialized microprocessor.

B7. The EIR terminal of claim B1, wherein said value of said user-defined criterion is calculated based on at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

B8. The EIR terminal of claim B1, wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

B9. The EIR terminal of claim B1, wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, and communication channel throughput.

B10. The EIR terminal of claim B1, wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

B11. The EIR terminal of claim B1, wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

B12. The EIR terminal of claim B1, wherein said EIR terminal is configured to search beacon signals over a pre-defined frequency range, and then select at least one of a wireless communication network and frequency channel which optimizes said user-defined criterion.

- B13. The EIR terminal of claim B1, wherein said EIR terminal is configured to evaluate said user-defined criterion before attempting to initiate a communication session.
- B14. The EIR terminal of claim B1, wherein said EIR terminal is configured to switch at least one of said wireless communication network and said wireless communication protocol responsive to evaluating said user-defined criterion.
- B15. The EIR terminal of claim B1, wherein said EIR terminal is configured to evaluate said user-defined criterion responsive to a pre-defined event.
- B16. The EIR terminal of claim B1 further configured to periodically evaluate said user-defined criterion.
- B17. The EIR terminal of claim B1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to a user action.
- B18. The EIR terminal of claim B1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to scanning a pre-defined bar code.
- C1. An encoded information reading terminal comprising:
a microprocessor electrically coupled to a system bus;
a memory communicatively coupled to said microprocessor;
an encoded information reading (EIR) device selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device, said EIR device configured to perform at least one of outputting raw message data containing an encoded message and outputting decoded message data corresponding to an encoded message; and
a wireless communication interface comprising an RF front end configured to perform at least one of receiving a first radio signal and transmitting a second radio signal, said RF front end electrically coupled to at least one of an analog-to-digital converter (ADC) electrically coupled to said system bus and a digital-to-analog converter (DAC) electrically coupled to said system bus;

wherein said microprocessor is configured to execute at least one of a base-band encoder software program and a base-band decoder software program;

wherein said EIR terminal is configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to at least one of a user action, scanning a pre-defined bar code.

C2. The EIR terminal of claim C1, wherein said base-band encoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

C3. The EIR terminal of claim C1, wherein said base-band decoder software program is performed by at least one of a general purpose microprocessor, a specialized microprocessor.

C4. The EIR terminal of claim C1 further comprising a central processing unit (CPU);
wherein said base-band encoder software program is performed by at least one of said CPU, a specialized microprocessor.

C5. The EIR terminal of claim C1 further comprising a central processing unit (CPU);
wherein said base-band decoder software program is performed by at least one of said CPU, a specialized microprocessor.

D1. An encoded information reading terminal comprising:
a microprocessor electrically coupled to a system bus;
a memory communicatively coupled to said microprocessor;
an encoded information reading (EIR) device selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device, said EIR device configured to perform at least one of outputting raw message data containing an encoded message and outputting decoded message data corresponding to an encoded message; and
a wireless communication interface configured to support at least two wireless communication protocols;
wherein said EIR terminal is configured to execute a wireless communication protocol selector software program, said wireless communication protocol selector software program configured optimize a value of a user-defined criterion in order to dynamically

select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol.

D2. The EIR terminal of claim D1, wherein said wireless communication interface is implemented using a single multi-protocol chipset.

D3. The EIR terminal of claim D1, wherein said wireless communication interface is implemented using two or more chipsets.

D4. The EIR terminal of claim D1, wherein said value of said user-defined criterion is calculated based on at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

D5. The EIR terminal of claim D1, wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

D6. The EIR terminal of claim D1, wherein said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, and communication channel throughput.

D7. The EIR terminal of claim D1, wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

D8. The EIR terminal of claim D1, wherein said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

D9. The EIR terminal of claim D1, wherein said EIR terminal is configured to search beacon signals over a pre-defined frequency range, and then select at least one of a wireless communication network and frequency channel which optimizes said user-defined criterion.

D10. The EIR terminal of claim D1, wherein said EIR terminal is configured to evaluate said user-defined criterion before attempting to initiate a communication session.

D11. The EIR terminal of claim D1, wherein said EIR terminal is configured to switch at least one of said wireless communication network and said wireless communication protocol responsive to evaluating said user-defined criterion.

D12. The EIR terminal of claim D1, wherein said EIR terminal is configured to evaluate said user-defined criterion responsive to a pre-defined event.

D13. The EIR terminal of claim D1 further configured to periodically evaluate said user-defined criterion.

D14. The EIR terminal of claim D1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to a user action.

D15. The EIR terminal of claim D1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to scanning a pre-defined bar code.

E1. An encoded information reading terminal comprising:
a microprocessor electrically coupled to a system bus;
a memory communicatively coupled to said microprocessor;
an encoded information reading (EIR) device selected from the group consisting of a bar code reading device, an RFID reading device, and a card reading device, said EIR device configured to perform at least one of outputting raw message data containing an encoded message and outputting decoded message data corresponding to an encoded message; and
a wireless communication interface configured to support at least two wireless communication protocols;

wherein said EIR terminal is configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to at least one of a user action, scanning a pre-defined bar code.

E2. The EIR terminal of claim E1, wherein said wireless communication interface is implemented using a single multi-protocol chipset.

E3. The EIR terminal of claim E1, wherein said wireless communication interface is implemented using two or more chipsets.

WE CLAIM

1. An apparatus comprising:
 - a microprocessor; and
 - a wireless communication interface configured to perform at least one of receiving a first radio signal or transmitting a second radio signal, said wireless communication interface electrically coupled to at least one of an analog-to-digital converter (ADC) or a digital-to-analog converter (DAC);
 - wherein said microprocessor is configured to execute at least one of a base-band encoder software program or a base-band decoder software program;
 - wherein said base-band encoder software program is configured to produce a first encoded bit stream by performing at least one of the following functions: source encoding of a first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, and media access control;
 - wherein said DAC is configured to output an analog signal corresponding to said first encoded bit stream;
 - wherein said ADC is configured to output a second encoded bit stream corresponding to an analog signal produced by said wireless communication interface; and
 - wherein said base-band decoder software program is configured to produce a second bit stream corresponding to said second encoded bit stream by performing at least one of the following functions: media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, or source decoding.
2. The apparatus of claim 1, wherein said apparatus is devoid of dedicated hardware components configured to implement at least one of the following functions: source encoding of said first bit stream, encryption, channel encoding, multiplexing, modulation, frequency spreading, media access control, frequency de-spreading, de-modulation, de-multiplexing, channel decoding, decryption, or source decoding.
3. The apparatus of claim 1, wherein said base-band encoder software program and said base-band decoder software program are implemented as a single software program.
4. The apparatus of claim 1 further comprising a wireless communication protocol selector software program, said wireless communication protocol software program

configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, or a parameter of a wireless communication protocol.

5. The apparatus of claim 4, wherein said value of said user-defined criterion is calculated based on at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, or communication channel throughput.

6. The apparatus of claim 4, wherein said value of said user-defined criterion is calculated as a weighted sum of components or as a square root of a weighted sum of squares of components as one of:

a weighted sum of components, at least one of said components represented by at least one of a network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput,

as a weighted sum of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of a network status, communication quality, signal strength, service cost, bandwidth, and communication channel throughput.

as a square root of a weighted sum of squares of components, at least one of said components represented by at least one of a network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput,

or

as a square root of a weighted sum of squares of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

7. The apparatus of claim 4, wherein said apparatus is configured to search beacon signals over a pre-defined frequency range, and then select at least one of a wireless communication network and frequency channel which optimizes said user-defined criterion.

8. The apparatus of claim 4, wherein said apparatus is configured to evaluate said user-defined criterion before attempting to initiate a communication session.

9. The apparatus of claim 4, wherein said apparatus is configured to switch at least one of said wireless communication network and said wireless communication protocol responsive to evaluating said user-defined criterion.

10. The apparatus of claim 4, wherein said apparatus is configured to evaluate said user-defined criterion responsive to a pre-defined event.

11. The apparatus of claim 4, wherein said apparatus is configured to periodically evaluate said user-defined criterion.

12. The apparatus of claim 1 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, or a parameter of a wireless communication protocol responsive to a user action.

13. An apparatus comprising:
a microprocessor; and
a wireless communication interface configured to perform at least one of receiving a first radio signal or transmitting a second radio signal;
wherein said microprocessor is configured to execute at least one of a base-band encoder software program or a base-band decoder software program; and
wherein said apparatus is configured to execute a wireless communication protocol selector software program, said wireless communication protocol selector software program configured optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol.

14. The apparatus of claim 13, wherein said base-band encoder software program and said base-band decoder software program are implemented as a single software program.

15. The apparatus of claim 13, wherein one of
said value of said user-defined criterion is calculated based on at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, or communication channel throughput,
said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by at least one of network status,

communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput,

said value of said user-defined criterion is calculated as a weighted sum of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, and communication channel throughput,

value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput,

said value of said user-defined criterion is calculated as a square root of a weighted sum of squares of components, at least one of said components represented by a difference between an actual value and a desired value of at least one of network status, communication quality, signal strength, service cost, bandwidth, a user preference, and communication channel throughput.

16. The apparatus of claim 13, wherein said apparatus is configured to search beacon signals over a pre-defined frequency range, and then select at least one of a wireless communication network and frequency channel which optimizes said user-defined criterion.

17. The apparatus of claim 13, wherein said apparatus is configured to evaluate said user-defined criterion before attempting to initiate a communication session.

18. The apparatus of claim 13, wherein said apparatus is configured to switch at least one of said wireless communication network or said wireless communication protocol responsive to evaluating said user-defined criterion.

19. The apparatus of claim 13, wherein said apparatus is configured to periodically evaluate said user-defined criterion or evaluate said user-defined criterion responsive to a pre-defined event.

20. The apparatus of claim 13 further configured to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol responsive to scanning a pre-defined bar code.

ABSTRACT

An apparatus may include a microprocessor and a wireless communication interface configured to perform at least one of receiving a first radio signal or transmitting a second radio signal. The microprocessor may be configured to execute at least one of a base-band encoder software program or a base-band decoder software program. The apparatus may be further configured to execute a wireless communication protocol selector software program that may be configured to optimize a value of a user-defined criterion in order to dynamically select at least one of a wireless communication network, a wireless communication protocol, and a parameter of a wireless communication protocol.

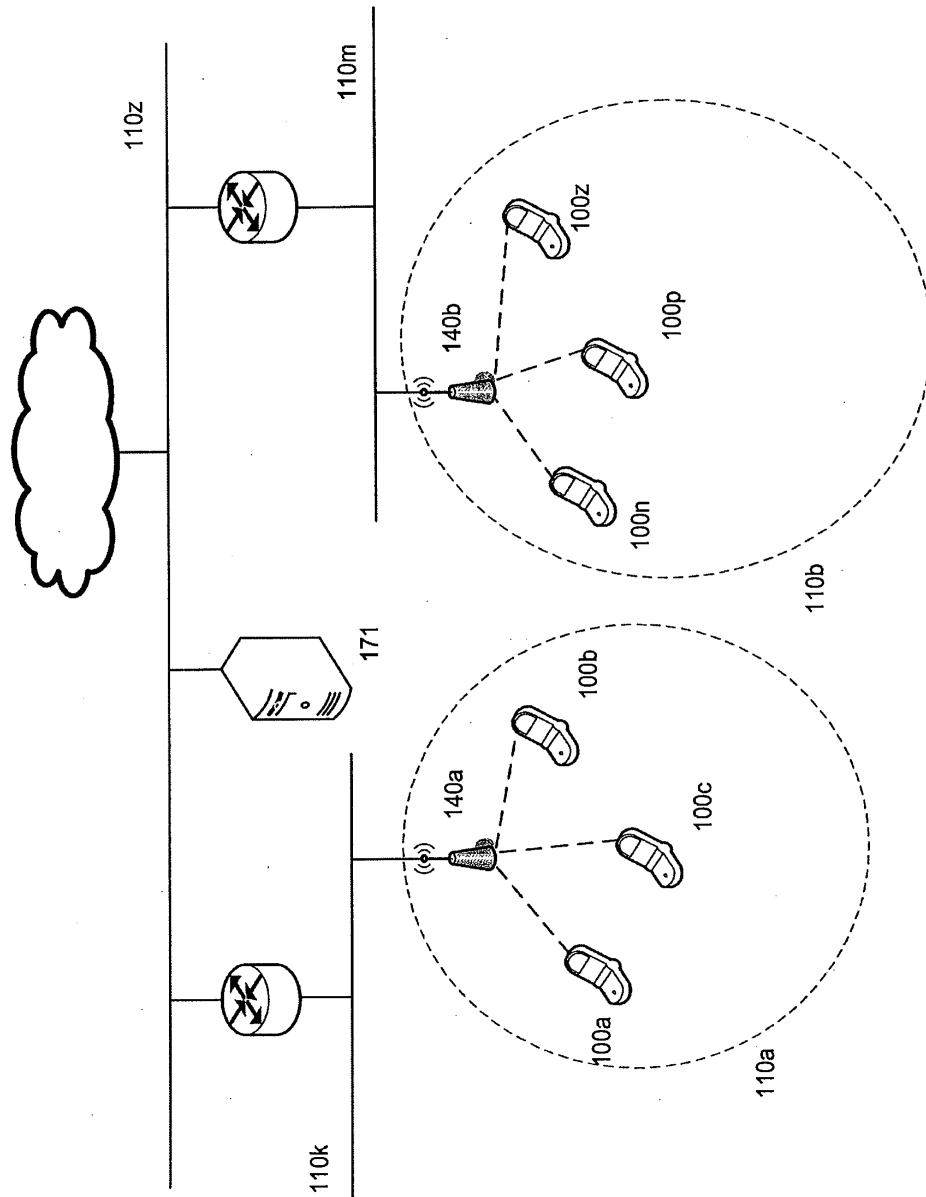


Fig. 1

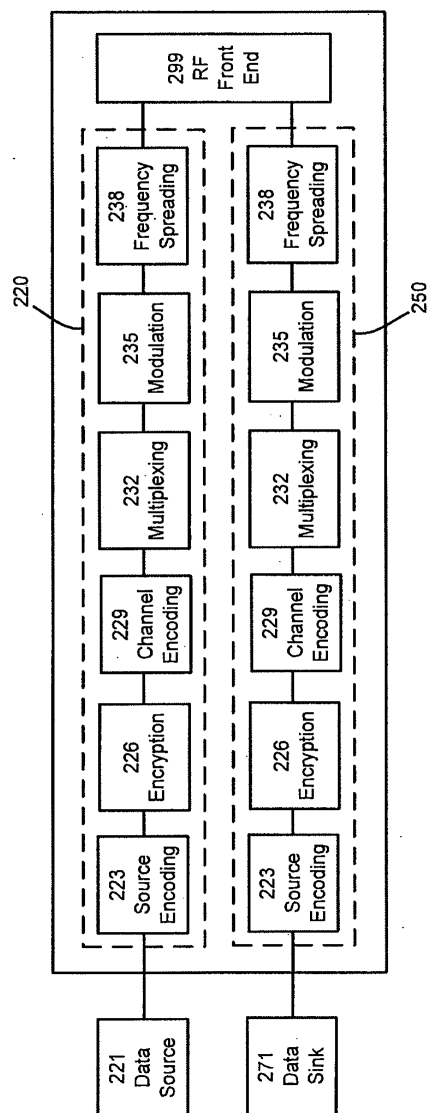


Fig. 2

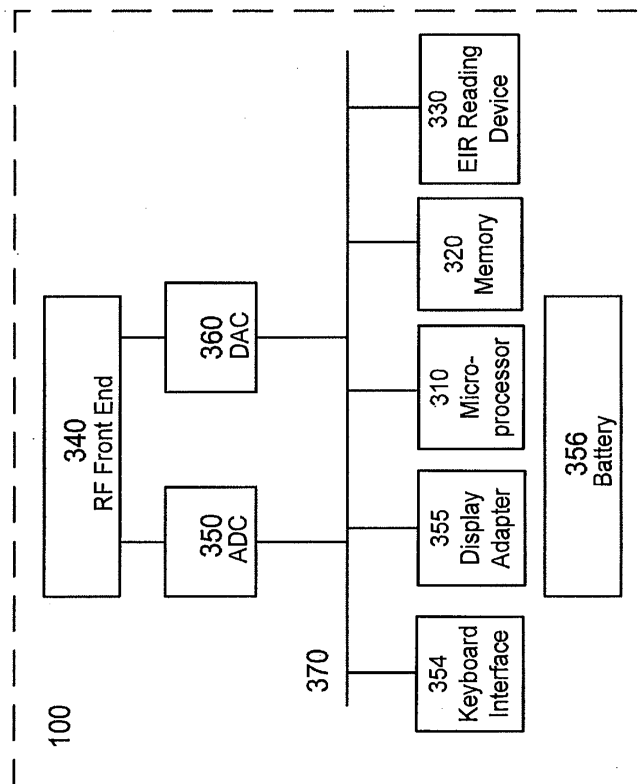


Fig. 3

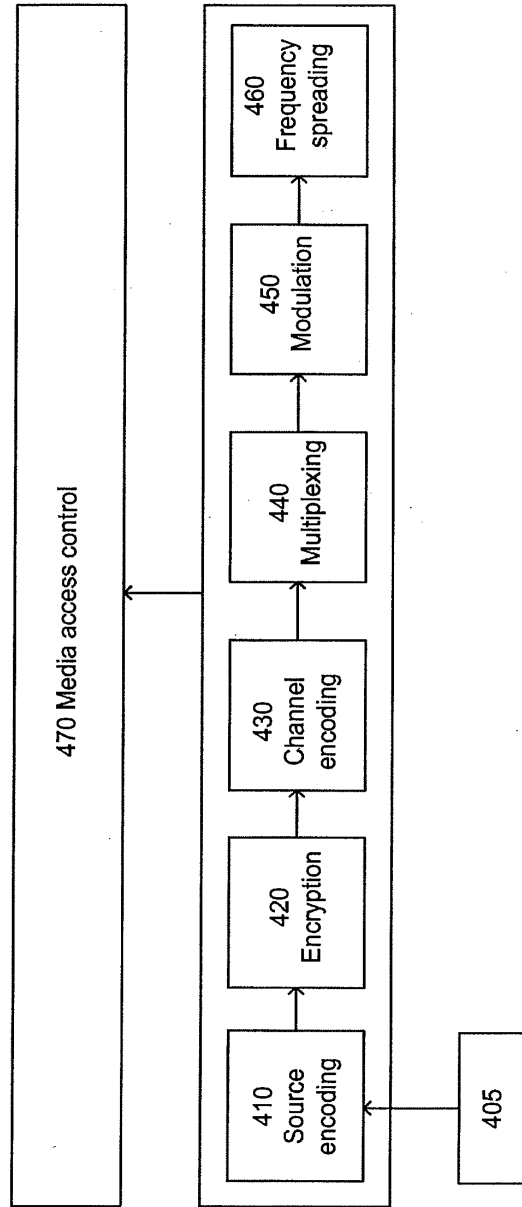


Fig. 4

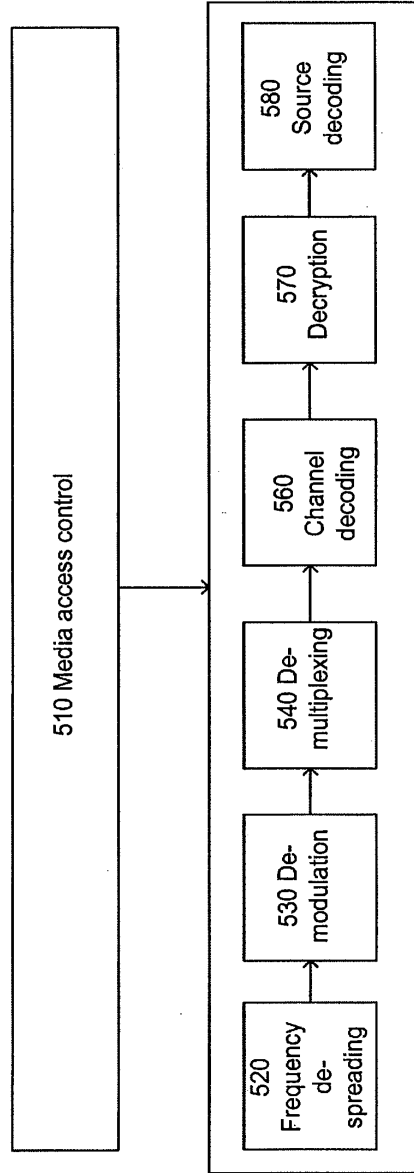


Fig. 5

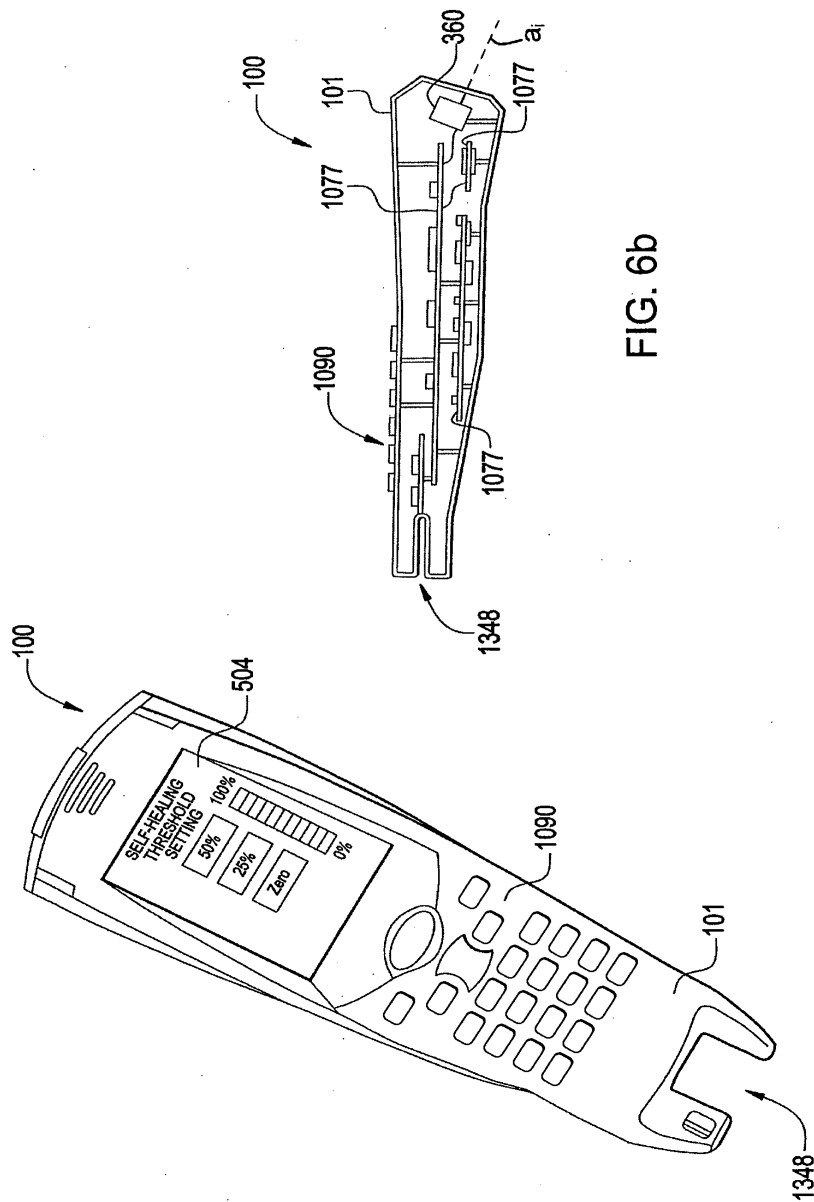


FIG. 6b

FIG. 6a

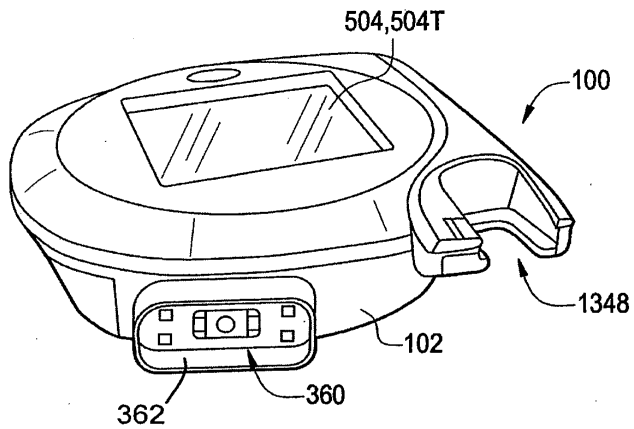


FIG. 7b

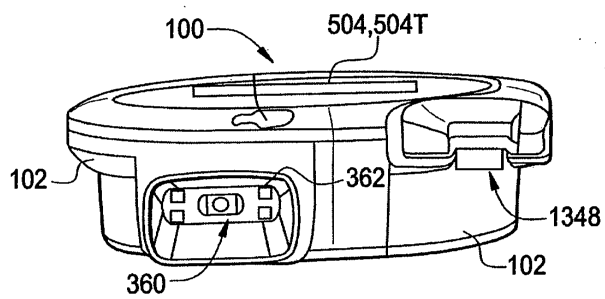


FIG. 7a

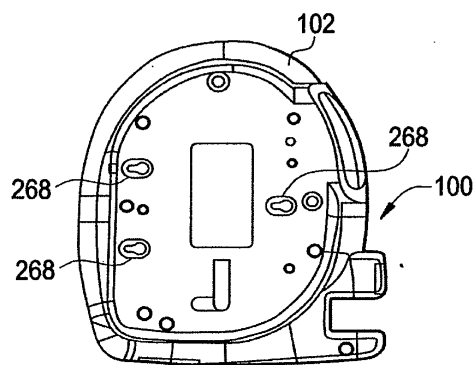


FIG. 7c

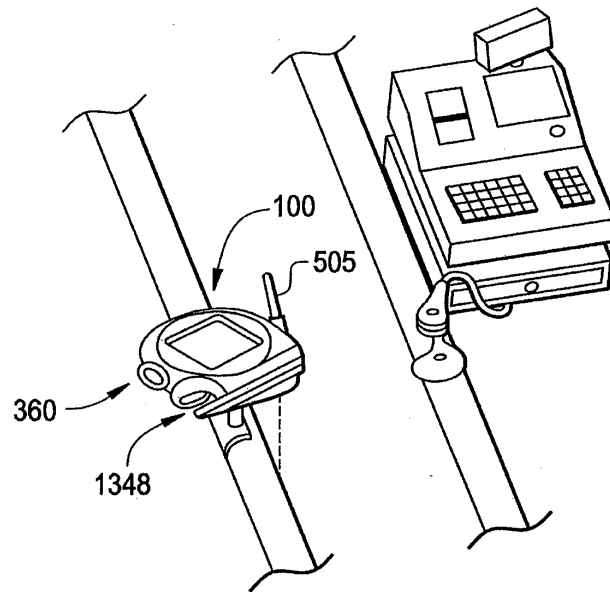


FIG. 8a

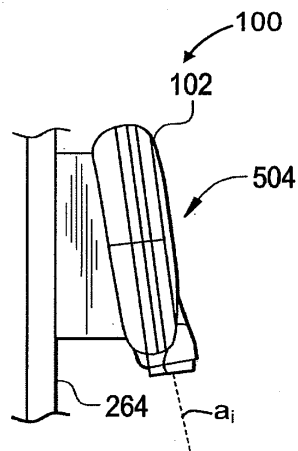
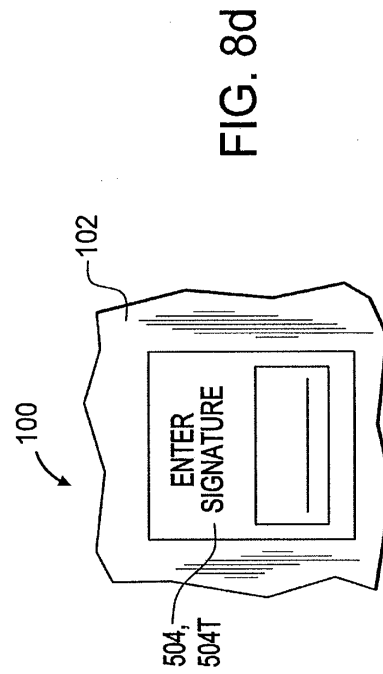
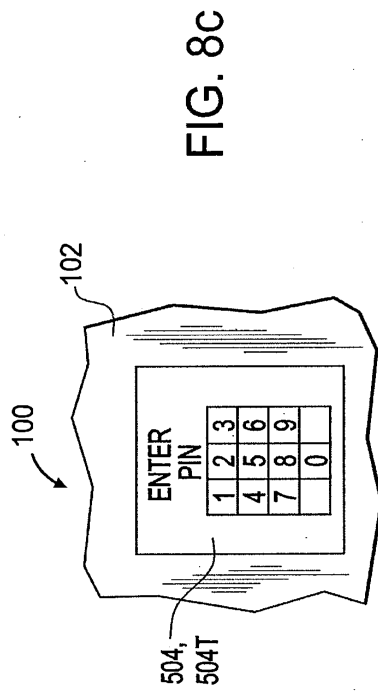


FIG. 8b



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Application No.: New U.S. Patent Application

Filed: March 6, 2014

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE
MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

TRANSMITTAL OF POWER OF ATTORNEY

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

Sir:

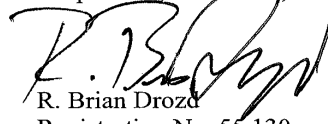
Submitted herewith is a Power of Attorney from the original applicant.

The undersigned is authorized to act on behalf of the applicant.

In accordance with 37 CFR §1.36(a), submission of this Power of Attorney revokes any
powers of attorney previously given.

**ALL CORRESPONDENCE IN CONNECTION WITH THIS APPLICATION SHOULD
BE SENT TO OLIFF PLC, CUSTOMER NO. 113760, TELEPHONE (703) 836-6400.**

Respectfully submitted,


R. Brian Drozd
Registration No. 55,130

RBD:chs

Date: March 6, 2014

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I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

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113760

OR

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Name	Registration Number

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The address associated with Customer Number:

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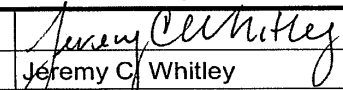
☐	Firm or Individual Name			
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Assignee Name and Address: Hand Held Products, Inc.
9680 Old Bailes Road
Fort Mill, SC 29707

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SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	March 25, 2013
Name	Jeremy C. Whitley	Telephone	(803) 835-8193
Title	Assistant Secretary - IP		

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Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
First Named Inventor/Applicant Name:		Ynjiun P. WANG		
Filer:		Robert Brian Drozd/Carrie Smith		
Attorney Docket Number:		H0022017		
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	280	280
Utility Search Fee	1111	1	600	600
Utility Examination Fee	1311	1	720	720
Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	1051	1	140	140
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1740

Electronic Acknowledgement Receipt	
EFS ID:	18390444
Application Number:	14199120
International Application Number:	
Confirmation Number:	6820
Title of Invention:	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE
First Named Inventor/Applicant Name:	Ynjiun P. WANG
Customer Number:	113760
Filer:	Robert Brian Drozd/Carrie Smith
Filer Authorized By:	Robert Brian Drozd
Attorney Docket Number:	H0022017
Receipt Date:	06-MAR-2014
Filing Date:	
Time Stamp:	14:53:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1740
RAM confirmation Number	1271
Deposit Account	150461
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	H0022017_ADS.PDF	1508338	no	7
			b0c1ba239b734f53005e465c88f25d28967ec8c1		
Warnings:					
Information:					
2	Transmittal of New Application	H0022017_53bTransmittal.pdf	127512	no	3
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Warnings:					
Information:					
3		H0022017_Application.pdf	1951954	yes	42
			9a190dca729983d8c8c73c89f51c2294399a1c9e		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	28	
	Claims		29	32	
	Abstract		33	33	
	Drawings-only black and white line drawings		34	42	
Warnings:					
Information:					
4	Miscellaneous Incoming Letter	H0022017_POATransmittal.pdf	34849	no	1
			e69021414f70087fd10b2de47d6921f700b93d1c		
Warnings:					
Information:					
5	Power of Attorney	H0022017_POA.pdf	76561	no	1
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Warnings:					
Information:					
6	Fee Worksheet (SB06)	fee-info.pdf	36950	no	2
			25b9f05467bfe5026fa6f6916e887fc9574003e6		
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Total Files Size (in bytes):	3736164
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	H0022017
		Application Number	
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
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.			

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☐ 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.)
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Inventor Information:

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Prefix	Given Name	Middle Name	Family Name	Suffix	
	Ynjiun	P.	WANG		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Cupertino	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		Honeywell Intl. Inc., Patent Services M/S AB/2B			
Address 2		101 Columbia Road, P.O. Box 2245			
City	Morristown	State/Province	NJ		
Postal Code	07962-2245	Country i	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Huyu		QU		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	San Jose	State/Province	CA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		Honeywell Intl. Inc., Patent Services M/S AB/2B			
Address 2		101 Columbia Road, P.O. Box 2245			
City	Morristown	State/Province	NJ		
Postal Code	07962-2245	Country i	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	James	T.	SAUERWEIN		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	H0022017		
		Application Number			
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE				
City	Charlotte	State/Province	NC	Country of Residence ⁱ	US
Mailing Address of Inventor:					
Address 1	Honeywell Intl. Inc., Patent Services M/S AB/2B				
Address 2	101 Columbia Road, P.O. Box 2245				
City	Morristown	State/Province	NJ		
Postal Code	07962-2245	Country ⁱ	US		
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Correspondence Information:

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Email Address	Patentservices-US@Honeywell.com	Add Email	Remove Email

Application Information:

Title of the Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
Attorney Docket Number	H0022017	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	9	Suggested Figure for Publication (if any)	

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☐ 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.

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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). Either enter 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)

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	H0022017
		Application Number	
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
Customer Number	113760		

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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.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13/430121	2012-03-26
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13/430121	Division of	12/567,158	2009-09-25
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Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐	This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
--------------------------	--

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	H0022017
	Application Number	
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE	

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If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

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Organization Name	HAND HELD PRODUCTS, INC.	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	H0022017
		Application Number	
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
Mailing Address Information:			
Address 1	9680 Old Bailes Road		
Address 2			
City	Fort Mill	State/Province	SC
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Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.				
Assignee 1				
Complete this section only if non-applicant assignee information is desired to be included on the patent application publication in accordance with 37 CFR 1.215(b). Do not include in this section an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest), as the patent application publication will include the name of the applicant(s).				
Remove				
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 i		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button. Add				

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	H0022017
	Application Number	
Title of Invention	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE	

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/R. Brian Drozd/			Date (YYYY-MM-DD)	2014-03-06
First Name	Robert	Last Name	Drozd	Registration Number	55130
Additional Signature may be generated within this form by selecting the Add button.					Add

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.**

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 the Freedom of Information Act requires disclosure of these records.
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 inspections 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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/199,120		
APPLICATION AS FILED - PART I								
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)	
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	600	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720	
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 =	*			OR	x 80 =	0.00	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 420 =	0.00	
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).						0.00	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00	
			TOTAL			TOTAL	1600	
* If the difference in column 1 is less than zero, enter "0" in column 2.								
APPLICATION AS AMENDED - PART II								
AMENDMENT A	(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	OR OTHER THAN SMALL ENTITY
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	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))						OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B	(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	OR OTHER THAN SMALL ENTITY
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	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))						OR	
	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 found in the appropriate box in column 1.								



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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
14/199,120	03/06/2014	2642	1740	H0022017	20	2

CONFIRMATION NO. 6820

FILING RECEIPT



113760
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

Date Mailed: 03/26/2014

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**

Inventor(s)

Ynjiun P. WANG, Cupertino, CA;
Huyu QU, San Jose, CA;
James T. SAUERWEIN, Charlotte, NC;

Applicant(s)

HAND HELD PRODUCTS, INC., Fort Mill, SC

Assignment For Published Patent Application

HAND HELD PRODUCTS, INC., Fort Mill, SC

Power of Attorney: The patent practitioners associated with Customer Number 113760

Domestic Priority data as claimed by applicant

This application is a CON of 13/430,121 03/26/2012
which is a DIV of 12/567,158 09/25/2009 PAT 8141784

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 03/24/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/199,120**

Projected Publication Date: 07/03/2014

Non-Publication Request: No

Early Publication Request: No
Title

ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE
MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

Preliminary Class

455

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

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 (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/199,120	03/06/2014	Ynjiun P. WANG	H0022017

CONFIRMATION NO. 6820

113760
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

NOTICE



Date Mailed: 03/26/2014

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
Ynjiun P. WANG
Huyu QU
James T. SAUERWEIN



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/199,120	03/06/2014	Ynjiun P. WANG	H0022017	6820
113760 7590 04/24/2014 HONEYWELL/OLIFF PLC 101 Columbia Road P.O. Box 2245 Morristown, NJ 07962-2245			EXAMINER FRECH, KARL D	
			ART UNIT 2887	PAPER NUMBER
			NOTIFICATION DATE 04/24/2014	DELIVERY MODE 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):

patentservices-us@honeywell.com
OfficeAction113760@oliff.com

Office Action Summary	Application No. 14/199,120	Applicant(s) WANG ET AL.	
	Examiner KARL D. FRECH	Art Unit 2887	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 _____.
☐ 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 3/6/14 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: _____.

1. The present application is being examined under the pre-AIA first to invent provisions.
2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of

activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

4. Claims 1-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 8,141,784. Although the claims at issue are not identical, they are not patentably distinct from each other because, although alternately worded, the elements of the current claims are found recited within the '784 claims. Specifically, for example, the '784 patent claims recite: a microprocessor coupled to a bus, an encoded information reading device, a wireless communication interface with a RF front end for receiving a first radio signal and transmitting a second radio signal, an ADC and a DAC coupled to the bus, the microprocessor executes at least one base-band encoder software program and base-band decoder software program., the DAC configured to output to the RF front end an analog signal, the ADC is configured to output a second encoded bit stream corresponding to an analog signal produced by the RF front end by performing a function (cl 1); the apparatus is devoid of dedicated hardware configured to implement

at least one specific function (cl 2); a value of said user-defined criterion is calculated based upon network status, communication signal quality/strength, service cost, bandwidth, user preference and channel throughput (cl 4); the device is configured to search beacon strength over a pre-defined frequency range (cl 5).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARL D. FRECH whose telephone number is (571)272-2390. The examiner can normally be reached on maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Paik can be reached on (571) 272-2404. 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.

/KARL D FRECH/
Primary Examiner, Art Unit 2887

Notice of References Cited	Application/Control No. 14/199,120		Applicant(s)/Patent Under Reexamination WANG ET AL.	
	Examiner KARL D. FRECH		Art Unit 2887	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-8,141,784	03-2012	Wang et al.	235/462.25
	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.

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	8	((("8708236") or ("8141784")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/04/20 06:53
L7	39159	ADC and DAC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09
L8	440824	frequency near3 range	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09
L9	91034	beacon	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09
L10	350	7 and 8 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09
L11	97940	235/ ??? .ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09
L12	2	10 and 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/20 08:09

4/ 20/ 2014 8:10:09 AM**C:\ Users\ kfrech\ Documents\ EAST\ Workspaces\ ijkl.wsp**



UNITED STATES PATENT AND TRADEMARK OFFICE

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BIB DATA SHEET

CONFIRMATION NO. 6820

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
14/199,120	03/06/2014	235	2887	H0022017		
RULE						
APPLICANTS HAND HELD PRODUCTS, INC., Fort Mill, SC, Assignee (with 37 CFR 1.172 Interest); INVENTORS Ynjiun P. WANG, Cupertino, CA; Huyu QU, San Jose, CA; James T. SAUERWEIN, Charlotte, NC; ** CONTINUING DATA ***** This application is a CON of 13/430,121 03/26/2012 PAT 8708236 which is a DIV of 12/567,158 09/25/2009 PAT 8141784 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 03/24/2014						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /KARL D FRECH/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 9	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 2
ADDRESS HONEYWELL/OLIFF PLC 101 Columbia Road P.O. Box 2245 Morristown, NJ 07962-2245 UNITED STATES						
TITLE ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE						
FILING FEE RECEIVED 1740	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		

Index of Claims 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	14/199,120		WANG ET AL.	
	Examiner		Art Unit	
	KARL D. FRECH		2887	

✓	Rejected
=	Allowed

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A	Appeal
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Claim		Date									
Final	Original	4/20/14									
	1	✓									
	2	✓									
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Search Notes 	Application/Control No. 14/199,120	Applicant(s)/Patent under Reexamination WANG ET AL.	
	Examiner KARL D. FRECH	Art Unit 2887	

SEARCHED			
Class	Subclass	Date	Examiner
235	462.44 462.45 462.46 462.25	4/20/2014	KDF
235	472.01	4/20/2014	KDF
235	472.02	4/20/2014	KDF
235	472.03	4/20/2014	KDF

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
brs search history attached	4/20/2014	KDF

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Group Art Unit: 2887

Application No.: 14/199,120

Examiner: K. FRECH

Filed: March 6, 2014

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE

INFORMATION DISCLOSURE STATEMENT

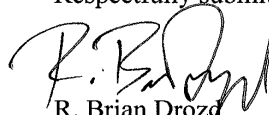
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- ☒ 1. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, Notice of Allowance or other action that closes prosecution (e.g., Quayle Action).
- ☒ a. The fees associated with this filing under 37 C.F.R. §1.17(p) are being paid electronically with this filing. The Commissioner is hereby authorized to charge any additional fee (or credit any overpayment) associated for this filing to Deposit Account No. 15-0461.

- ☒ 2. One or more reference cited herein was cited by or submitted to the Office in parent Application No. 13/430,121, filed March 26, 2012, which is relied upon for an earlier filing date under 35 U.S.C. §120. Thus, no copy of any such reference is attached. 37 CFR §1.98(d). See References 1-212. It is also understood that the Examiner will consider in this application all of the information that has been considered by the Office in the parent application(s), including the Office Actions and other papers issued in such application(s). See MPEP §609.02.

Respectfully submitted,



R. Brian Drozd

Registration No. 55,130

RBD:chs

Date: June 24, 2014

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Alexandria, Virginia 22320-4850
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DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry of this filing; Charge any fee due to our Deposit Account No. 15-0461

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

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Examiner Initials	Cite No.	Document Number	Date	Name
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EXAMINER	DATE CONSIDERED
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

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U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
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U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
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U.S. PATENT DOCUMENTS				
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	153	2009/0295473 A1	12/03/2009	DUPUY et al.
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	167	2010/0109972 A1	05/06/2010	XU et al.
	168	2010/0110943 A1	05/06/2010	GUMMALLA et al.

EXAMINER	DATE CONSIDERED
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	169	2010/0117908 A1	05/13/2010	LEE et al.
	170	2010/0123635 A1	05/20/2010	LOPEZ et al.
	171	2010/0127085 A1	05/27/2010	YAMAGAJI et al.
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	175	2010/0207703 A1	08/19/2010	DUPUY et al.
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EXAMINER	DATE CONSIDERED
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
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	201	2013/0043981 A1	02/21/2013	WANG et al.
	202	8,596,533 B2	12/03/2013	QU et al.

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Document Number	Date	Country	With English Abstract	With English Translation
	203	WO 98/14023 A1	04/02/1998	WIPO		
	204	EP 2061285 A2	05/20/2009	EUROPE		

OTHER DOCUMENTS		
Examiner Initials	Cite No.	Including 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, page(s), volume-issue number(s), publisher, city and/or country where published.
	205	B.P. OTIS, Y.H. CHEE, R. LU, N.M. PLETCHER, J.M. RABAEY, "An Ultra-Low Power MEMS-Based Two-Channel Transceiver for Wireless Sensor Networks."
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EXAMINER	DATE CONSIDERED
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

OTHER DOCUMENTS		
Examiner Initials	Cite No.	Including 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, page(s), volume-issue number(s), publisher, city and/or country where published.
	208	February 1, 2011 Partial European Search Report in European Patent Application No. 10176444.7.
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	210	S. LEE and C.T. -C. NGUYEN, "Influence of Automatic Level Control on Micromechanical Resonator Oscillator Phase Noise," Proceedings, 2003 IEEE Int. Frequency Control Symposium, Tampa Florida, May 5-8, 2003, pages 341-349.
	211	December 7, 2010 Notice of Amendment in Chinese Application No. 201010544113.X.
	212	WWW.NANO.GATECH.EDU/NEWS/RELEASE.PHP , Georgia Institute of Technology: Nanoscience and Nanotechnology," Researchers Win \$3.5 Million to Improve Wireless," Website, August 5, 2010.

EXAMINER	DATE CONSIDERED
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

Electronic Patent Application Fee Transmittal				
Application Number:		14199120		
Filing Date:		06-Mar-2014		
Title of Invention:		ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
First Named Inventor/Applicant Name:		Ynjiun P. WANG		
Filer:		Robert Brian Drozd/Carrie Smith		
Attorney Docket Number:		H0022017		
Filed as Large 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:	19394034
Application Number:	14199120
International Application Number:	
Confirmation Number:	6820
Title of Invention:	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE
First Named Inventor/Applicant Name:	Ynjiun P. WANG
Customer Number:	113760
Filer:	Robert Brian Drozd/Carrie Smith
Filer Authorized By:	Robert Brian Drozd
Attorney Docket Number:	H0022017
Receipt Date:	24-JUN-2014
Filing Date:	06-MAR-2014
Time Stamp:	14:31:19
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	805
Deposit Account	150461
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 1.17 (Patent application and reexamination processing 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	Information Disclosure Statement (IDS) Form (SB08)	H0022017_IDS.pdf	673998 84e5ffab698606fdb70450ece4424ab0d2194	no	12
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
2	Fee Worksheet (SB06)	fee-info.pdf	30553 4d8f96fa1b578616dd11d8c108a98b8a284fd40d	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			704551		
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.					



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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/199,120	03/06/2014	Ynjiun P. WANG	H0022017

CONFIRMATION NO. 6820

PUBLICATION NOTICE



OC00000069402093

113760
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

Title: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

Publication No. US-2014-0187181-A1

Publication Date: 07/03/2014

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 publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Group Art Unit: 2887

Application No.: 13/430,121

Examiner: K. FRECH

Filed: March 26, 2012

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE
MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

REQUEST FOR RECONSIDERATION

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

In reply to the April 24, 2014 Office Action, reconsideration of the rejection is
respectfully requested in light of the following remarks.

REMARKS

Claims 1-20 are pending in this application. By this Amendment, no claims are amended.

I. Double Patenting Rejection

The Office Action asserts that claims 1-20 are rejected on the grounds of non-statutory double patenting as unpatentable over claims 1-23 of U.S. Patent No. 8,141,784 ("the '784 Patent"). While Applicants do not acquiesce with such rejection, Applicants are filing a Terminal Disclaimer over the '784 Patent, thereby overcoming the double-patenting rejection.

II. Claims 1-20 Are Allowable

Since no other rejections were presented against claims 1-20, Applicants presume all claims are in condition for allowance.

III. Conclusion

Thus, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

It is believed that all of the pending claims have been addressed. However, failure to address a specific rejection, issue or comment in the present file history does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made in the present file history are not intended to be exhaustive, there may be reasons for patentability of any of all pending claims (or other claims) that have not been expressed. Finally, nothing in the present file history should be construed as an intent to concede any issue with regard to any claim, except as specifically stated, and the amendment of any claim and/or the submission of a terminal disclaimer, does not necessarily signify concession of unpatentability of the claim prior to its amendment or this submission.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



R. Brian Drozd
Registration No. 55,130

Date: July 24, 2014

OLIFF PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry of this filing; Charge any fee due to our Deposit Account No. 15-0461

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Group Art Unit: 2887

Application No.: 14/199,120

Examiner: K. FRECH

Filed: March 6, 2014

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE
MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

TERMINAL DISCLAIMER

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

Your Petitioner, Hand Held Products, Inc., represents that it is the owner of a 100% interest in the above-identified patent application by virtue of an Assignment filed 09/25/2009 and recorded at Reel 023285, Frame 0492. The undersigned also certifies that he is empowered to execute this Terminal Disclaimer on behalf of the assignee.

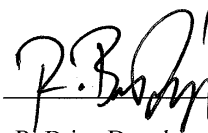
Your Petitioner hereby disclaims the terminal part of the statutory term of any patent granted on the above-identified application, which would extend beyond the expiration of the full statutory term as presently shortened by any Terminal Disclaimer, of U.S. Patent No. 8,141,784 issued March 27, 2012 and hereby agrees that any patent so granted on the above-identified application shall be enforceable only for and during such period that any patent issuing from the above-identified application is commonly owned with said U.S. Patent, this agreement to run with any patent granted on the above-identified application and to be binding upon the grantee, its successors or assigns.

Petitioner does not disclaim any terminal part of any patent granted on the above-identified application prior to the expiration of the full statutory term as presently shortened by any Terminal Disclaimer of said U.S. Patent in the event that said U.S. Patent later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is otherwise terminated prior to the expiration of said U.S. Patent's full statutory term as presently shortened by any Terminal Disclaimer.

The fees associated with this filing under 35 U.S.C. §41(a)(5) are being paid electronically with this filing. The Commissioner is hereby authorized to charge any additional fee (or credit any overpayment) for this filing to Deposit Account No. 15-0461.

DATE: 7/24/14

SIGNED:



TYPED NAME:

R. Brian Drozd

TITLE OR REGISTRATION NO.
OF ATTORNEY OF RECORD:

55,130

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Application No.: 14/199,120

Examiner: K. FRECH

Filed: March 6, 2014

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE

SUBMISSION OF DECLARATION

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

Submitted herewith is a fully executed Declaration of each Inventor.

Examination and allowance of this application in due course are respectfully solicited.

The declaration surcharge of \$140 was submitted to the USPTO on
March 6, 2014. It is believed that no further fees are due at this time. However, the
Commissioner is hereby authorized to charge any additional fee associated with this filing to
deposit account number 15-0461.

Respectfully submitted,



R. Brian Drozd
Registration No. 55,130

RBD:cml

Date: July 24, 2014

OLIFF PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76)
(Based on PTO/AIA/01)**

**Title of Invention: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE**

As the below named inventor, I hereby declare that:

This declaration is directed to United States patent application number 14/199,120 filed on March 6, 2014 (the "Application").

The Application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the Application.

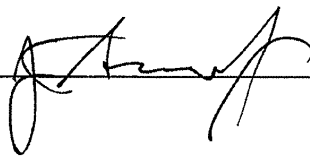
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

I have reviewed and understand the contents of the Application, including the claims, and am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

LEGAL NAME OF INVENTOR

Inventor: James T. SAUERWEIN Date: 06/24/2014

Signature: _____



**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76)
(Based on PTO/AIA/01)**

**Title of Invention: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE**

As the below named inventor, I hereby declare that:

This declaration is directed to United States patent application number 14/199,120 filed on March 6, 2014 (the "Application").

The Application was made or authorized to be made by me.

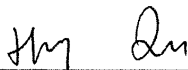
I believe that I am the original inventor or an original joint inventor of a claimed invention in the Application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

I have reviewed and understand the contents of the Application, including the claims, and am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

LEGAL NAME OF INVENTOR

Inventor: Huyu QU Date: 06/24/2014

Signature: 

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION
USING AN APPLICATION DATA SHEET (37 CFR 1.76)
(Based on PTO/AIA/01)**

**Title of Invention: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE**

As the below named inventor, I hereby declare that:

This declaration is directed to United States patent application number 14/199,120 filed on March 6, 2014 (the "Application").

The Application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the Application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

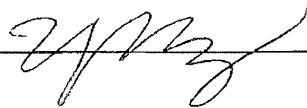
I have reviewed and understand the contents of the Application, including the claims, and am aware of the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. § 1.56.

LEGAL NAME OF INVENTOR

Inventor: Ynjiun P. WANG

Date: 6/25/2014

Signature: _____



Electronic Patent Application Fee Transmittal				
Application Number:		14199120		
Filing Date:		06-Mar-2014		
Title of Invention:		ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
First Named Inventor/Applicant Name:		Ynjiun P. WANG		
Filer:		Robert Brian Drozd/Chandel Lawrence		
Attorney Docket Number:		H0022017		
Filed as Large 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:				
Statutory or Terminal Disclaimer	1814	1	160	160
Total in USD (\$)				160

Electronic Acknowledgement Receipt	
EFS ID:	19672084
Application Number:	14199120
International Application Number:	
Confirmation Number:	6820
Title of Invention:	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE
First Named Inventor/Applicant Name:	Ynjiun P. WANG
Customer Number:	113760
Filer:	Robert Brian Drozd/Chandel Lawrence
Filer Authorized By:	Robert Brian Drozd
Attorney Docket Number:	H0022017
Receipt Date:	24-JUL-2014
Filing Date:	06-MAR-2014
Time Stamp:	13:51:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 160
RAM confirmation Number	89
Deposit Account	150461
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 1.17 (Patent application and reexamination processing 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		H0022017_RequestReconsideration_072414.pdf	81341	yes	3
			acab887c53259f1fab6c60a5231d17faca5ed05a		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Applicant Arguments/Remarks Made in an Amendment		2	3	
Warnings:					
Information:					
2	Terminal Disclaimer Filed	H0022017_TerminalDisclaimer_072414.pdf	63187	no	1
			987714c94b509c5aa15d4bd590065e3c8c821169		
Warnings:					
Information:					
3	Transmittal Letter	H0022017_SubmissionDeclaration.pdf	34055	no	1
			1a674a6eb7bab1a3b66b00eed5af78cc5316d888		
Warnings:					
Information:					
4	Oath or Declaration filed	H0022017_Declaration.pdf	115270	no	3
			6a18f48d8a42d0c8be322fba458e9555ccbfafe		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30561	no	2
			de46ff5b8b75968975fb5a63303517f2280d52fd		
Warnings:					
Information:					
Total Files Size (in bytes):			324414		

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.

Application Number 	Application/Control No. 14/199,120	Applicant(s)/Patent under Reexamination WANG ET AL.
Document Code - DISQ		Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 7/24/14	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
jean proctor

U.S. Patent and Trademark Office



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

113760 7590 08/25/2014
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

EXAMINER

FRECH, KARL D

ART UNIT

PAPER NUMBER

2887

DATE MAILED: 08/25/2014

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/199,120	03/06/2014	Ynjun P. WANG	H0022017	6820

TITLE OF INVENTION: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

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	11/25/2014

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)

113760 7590 08/25/2014
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

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.
14/199,120	03/06/2014	Ynjun P. WANG	H0022017	6820

TITLE OF INVENTION: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

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	11/25/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
FRECH, KARL D	2887	235-462450

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, 1 _____
- (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. 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
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

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.

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.

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. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/199,120	03/06/2014	Ynjun P. WANG	H0022017	6820
113760 7590 08/25/2014 HONEYWELL/OLIFF PLC 101 Columbia Road P.O. Box 2245 Morristown, NJ 07962-2245			EXAMINER FRECH, KARL D	
			ART UNIT 2887	PAPER NUMBER
DATE MAILED: 08/25/2014				

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. 14/199,120	Applicant(s) WANG ET AL.	
	Examiner KARL D. FRECH	Art Unit 2887	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 7/24/14.
☐ 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 <u>6/24/14</u> 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 _____.
---	--

1. The present application is being examined under the pre-AIA first to invent provisions.
2. Claims 1-20 are allowed.
3. The following is an examiner's statement of reasons for allowance: the terminal disclaimer filed 7/24/14 is entered and approved.

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."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARL D. FRECH whose telephone number is (571)272-2390. The examiner can normally be reached on maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Paik can be reached on (571) 272-2404. 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.

/KARL D FRECH/
Primary Examiner, Art Unit 2887

4.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Ynjiun P. WANG et al.

Group Art Unit: 2887

Application No.: 14/199,120

Examiner: K. FRECH

Filed: March 6, 2014

Docket No.: H0022017

For: ENCODED INFORMATION READING TERMINAL WITH USER-
CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION
INTERFACE

INFORMATION DISCLOSURE STATEMENT

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

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

- ☒ 1. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, Notice of Allowance or other action that closes prosecution (e.g., Quayle Action).
- ☒ a. The fees associated with this filing under 37 C.F.R. §1.17(p) are being paid electronically with this filing. The Commissioner is hereby authorized to charge any additional fee (or credit any overpayment) associated for this filing to Deposit Account No. 15-0461.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./

Receipt date: 06/24/2014

14199120 - GAU: 2887
Application No. 14/199,120

- ☒ 2. One or more reference cited herein was cited by or submitted to the Office in parent Application No. 13/430,121, filed March 26, 2012, which is relied upon for an earlier filing date under 35 U.S.C. §120. Thus, no copy of any such reference is attached. 37 CFR §1.98(d). See References 1-212. It is also understood that the Examiner will consider in this application all of the information that has been considered by the Office in the parent application(s), including the Office Actions and other papers issued in such application(s). See MPEP §609.02.

Respectfully submitted,



R. Brian Drozd
Registration No. 55,130

RBD:chs

Date: June 24, 2014

OLIFF PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry of this filing; Charge any fee due to our Deposit Account No. 15-0461

-2-

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./

Receipt date: 06/24/2014

14199120 - GAU:2887

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	1	7,907,597 B2	03/15/2011	LEE et al.
	2	7,917,129 B2	03/29/2011	SOUISSE et al.
	3	8,165,070 B2	04/24/2012	SALMINEN
	4	8,185,152 B2	05/22/2012	GOLDNER
	5	8,190,156 B2	05/29/2012	RANTANEN et al.
	6	8,214,536 B2	07/03/2012	ZHAO
	7	8,223,717 B2	07/17/2012	DILLON et al.
	8	8,238,905 B2	08/07/2012	JIANG
	9	8,250,207 B2	08/21/2012	RALEIGH
	10	8,254,337 B2	08/28/2012	ZHONG et al.
	11	2010/0291924 A1	11/18/2010	ANTRIM et al.
	12	2011/0047603 A1	02/24/2011	GORDON et al.
	13	2011/0176528 A1	07/21/2011	LU et al.
	14	2011/0191484 A1	08/04/2011	BABBAR et al.
	15	2011/0206002 A1	08/25/2011	JEON et al.
	16	2011/0306386 A1	12/15/2011	CENTOZA et al.
	17	2011/0319072 A1	12/29/2011	EKICI et al.
	18	2012/0003976 A1	01/05/2012	BHAT et al.
	19	2012/0047269 A1	02/23/2012	LEONOV et al.
	20	2012/0058752 A1	03/08/2012	SOUISSI et al.
	21	2012/0089845 A1	04/12/2012	RALEIGH
	22	2012/0100823 A1	04/26/2012	CHEN et al.
	23	2012/0134291 A1	05/31/2012	RALEIGH
	24	2012/0165056 A1	06/28/2012	KIM et al.

EXAMINER	/Karl Frech/	DATE CONSIDERED	08/10/2014
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

Date: June 24, 2014

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./

Receipt date: 06/24/2014

14199120 - GAU;2887

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	25	2012/0196579 A1	08/02/2012	SOUISSI et al.
	26	2012/0196644 A1	08/02/2012	SCHERSER et al.
	27	2012/0197792 A1	08/02/2012	RALEIGH
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	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
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	208	February 1, 2011 Partial European Search Report in European Patent Application No. 10176444.7.
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Search Notes 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	14/199,120		WANG ET AL.	
	Examiner		Art Unit	
	KARL D. FRECH		2887	

SEARCHED			
Class	Subclass	Date	Examiner
235	462.44 462.45 462.46 462.25	8/9/2014	KDF
235	472.01	8/9/2014	KDF
235	472.02	8/9/2014	KDF
235	472.03	8/9/2014	KDF

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
same as	above	8/9/2014	KDF

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
updated	8/9/2014	KDF

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	Examiner		Art Unit	
	KARL D. FRECH		2887	

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date						
Final	Original	8/9/14						
1	1	=						
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Issue Classification 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	14/199,120	WANG ET AL.	
	Examiner	Art Unit	
	KARL D. FRECH	2887	

ISSUE CLASSIFICATION									
ORIGINAL					CROSS REFERENCE(S)				
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)			
235		462.45			235	472.01	462.44		
INTERNATIONAL CLASSIFICATION									
G	0	6	K	7/10					
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				/					
----- (Assistant Examiner) (Date)					/Karl D Frech/ 8/9/14 (Primary Examiner) (Date)				
(Legal Instruments Examiner) (Date)									
					Total Claims Allowed: 20				
					O.G. Print Claim(s) 1				
					O.G. Print Fig. 2				

☒ 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		31		61		91		121		151		181		211
2	2		32		62		92		122		152		182		212
3	3		33		63		93		123		153		183		213
4	4		34		64		94		124		154		184		214
5	5		35		65		95		125		155		185		215
6	6		36		66		96		126		156		186		216
7	7		37		67		97		127		157		187		217
8	8		38		68		98		128		158		188		218
9	9		39		69		99		129		159		189		219
10	10		40		70		100		130		160		190		220
11	11		41		71		101		131		161		191		221
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13	13		43		73		103		133		163		193		223
14	14		44		74		104		134		164		194		224
15	15		45		75		105		135		165		195		225
16	16		46		76		106		136		166		196		226
17	17		47		77		107		137		167		197		227
18	18		48		78		108		138		168		198		228
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20	20		50		80		110		140		170		200		230
	21		51		81		111		141		171		201		231
	22		52		82		112		142		172		202		232
	23		53		83		113		143		173		203		233
	24		54		84		114		144		174		204		234
	25		55		85		115		145		175		205		235
	26		56		86		116		146		176		206		236
	27		57		87		117		147		177		207		237
	28		58		88		118		148		178		208		238
	29		59		89		119		149		179		209		239
	30		60		90		120		150		180		210		240

U.S. Patent and Trademark Office

Part of Paper No. 20140810

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)

113760 7590 08/25/2014
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

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.
14/199,120	03/06/2014	Ynjun P. WANG	H0022017	6820

TITLE OF INVENTION: ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE

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	11/25/2014

EXAMINER	ART UNIT	CLASS-SUBCLASS
FRECH, KARL D	2887	235-462450

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 Oliff PLC
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

HAND HELD PRODUCTS, INC.

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

FORT MILL, SOUTH CAROLINA

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 15-0461 (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

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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.

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.

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 /R. Brian Drozd/

Date November 25, 2014

Typed or printed name R. Brian Drozd

Registration No. 55,130

Electronic Patent Application Fee Transmittal				
Application Number:		14199120		
Filing Date:		06-Mar-2014		
Title of Invention:		ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE		
First Named Inventor/Applicant Name:		Ynjiun P. WANG		
Filer:		Robert Brian Drozd/Chandel Lawrence		
Attorney Docket Number:		H0022017		
Filed as Large 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:				
Utility Appl Issue Fee	1501	1	960	960
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt	
EFS ID:	20795157
Application Number:	14199120
International Application Number:	
Confirmation Number:	6820
Title of Invention:	ENCODED INFORMATION READING TERMINAL WITH USER-CONFIGURABLE MULTI-PROTOCOL WIRELESS COMMUNICATION INTERFACE
First Named Inventor/Applicant Name:	Ynjiun P. WANG
Customer Number:	113760
Filer:	Robert Brian Drozd/Chandel Lawrence
Filer Authorized By:	Robert Brian Drozd
Attorney Docket Number:	H0022017
Receipt Date:	25-NOV-2014
Filing Date:	06-MAR-2014
Time Stamp:	13:41:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 960
RAM confirmation Number	17756
Deposit Account	150461
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 1.20 (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	Issue Fee Payment (PTO-85B)	H0022017_IssueFeeTrans_112514.pdf	273552 f97aa0c5bdbc98a7a4c7bda993f82716b10c7c96b	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30631 34c25e6a993a9d6cc3431bce5bb178aff9e3d9ae	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			304183		
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.					

Receipt date: 06/24/2014

14199120 - GAU; 2887

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	193	2011/0109402 A1	05/12/2011	DUPUY et al.
	194	2011/0136457 A1	06/09/2011	YU
	195	2011/0148586 A1	06/23/2011	ANDERSON et al.
	196	2011/0153349 A1	06/23/2011	ANDERSON et al.
	197	2011/0174877 A1	07/21/2011	FLECK et al.
Change(s) applied to document, /S.D./ 10/3/2014	198	~~2011/0152058~~ A1	07/05/2007	YEAKEY et al. 20070152058
	199	2011/0116424 A1	05/19/2011	SAUERWEIN, Jr. et al.
	200	2013/0043980 A1	02/21/2013	HAVENS et al.
	201	2013/0043981 A1	02/21/2013	WANG et al.
	202	8,596,533 B2	12/03/2013	QU et al.

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Document Number	Date	Country	With English Abstract	With English Translation
	203	WO 98/14023 A1	04/02/1998	WIPO		
	204	EP 2061285 A2	05/20/2009	EUROPE		

OTHER DOCUMENTS		
Examiner Initials	Cite No.	Including 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, page(s), volume-issue number(s), publisher, city and/or country where published.
	205	B.P. OTIS, Y.H. CHEE, R. LU, N.M. PLETCHER, J.M. RABAEY, "An Ultra-Low Power MEMS-Based Two-Channel Transceiver for Wireless Sensor Networks." NO DATE
	206	C.T.-C. NGUYEN, "Vibrating RF MEMS for Low Power Communications (invited)," Proceedings, 2002 MRS Fall Meeting, Boston, Massachusetts, December 2-6, 2002, pages J12.1.1-J2-1.12.
	207	February 21, 2011 Communication Extended Search Report in European Patent Application No. 10191449.1.

EXAMINER /Karl Frech/	DATE CONSIDERED 08/10/2014
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./

Receipt date: 06/24/2014

14199120 - GAU₁₀2887

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	169	2010/0117908 A1	05/13/2010	LEE et al.
	170	2010/0123635 A1	05/20/2010	LOPEZ et al.
	171	2010/0127085 A1	05/27/2010	YAMAGAJO et al.
	172	2010/0157858 A1	06/24/2010	LEE et al.
	173	2010/0171563 A1	07/08/2010	DUPUY et al.
	174	2010/0176880 A1	07/15/2010	DUPUY et al.
	175	2010/0207703 A1	08/19/2010	DUPUY et al.
	176	2010/0225554 A1	09/09/2010	HUANG et al.
	177	2010/0231464 A1	09/16/2010	HUANG et al.
	178	2010/0231470 A1	09/16/2010	LEE et al.
	179	2010/0232474 A1	09/16/2010	ROFOUGARAN et al.
	180	2010/0238075 A1	09/23/2010	POURSEYED
	181	2010/0238081 A1	09/23/2010	ACHOUR et al.
	182	2010/0276498 A1	11/04/2010	ROFOUGARAN
	183	2010/0283692 A1	11/11/2010	ACHOUR et al.
	184	2010/0283705 A1	11/11/2010	ACHOUR et al.
	185	2010/0285634 A1	11/11/2010	ROFOUGARAN
	186	2011/0026624 A1	02/03/2011	GUMMALLA et al.
	187	2011/0039501 A1	02/17/2011	ACHOUR et al.
	188	2011/0050364 A1	03/03/2011	ACHOUR
	189	2011/0066774 A1	03/03/2011	~~ACHOUR~~ Rofougaran
	190	2011/0068873 A1	03/03/2011	~~ACHOUR~~ Alidio et al.
	191	2011/0095950 A1	04/28/2011	YU
	192	2011/0095964 A1	04/28/2011	PATHAK et al.

Change(s) applied
to document,
/S.D./
10/3/2014

EXAMINER /Karl Frech/	DATE CONSIDERED 08/10/2014
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Date: June 24, 2014

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./

Receipt date: 06/24/2014

14199120 - GAU₁₀2887

Modified Form PTO-1449 (REV. 07/09) PATENT & TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	ATTY DOCKET NO. H0022017	APPLICATION NO. 14/199,120
	FIRST NAMED INVENTOR Ynjiun P. WANG et al.	
	FILING DATE March 6, 2014	GROUP 2887

U.S. PATENT DOCUMENTS				
Examiner Initials	Cite No.	Document Number	Date	Name
	49	6,345,764 B2	02/12/2002	KNOWLES
	50	6,384,744 B2	05/07/2002	PHILYAW et al.
Change(s) applied to document, /S.D./ 10/3/2014	51	~~5,751,470 B2~~	06/15/2004	ELLA et al. 6,751,470
	52	6,823,388 B2	11/23/2004	PHILYAW et al.
	53	6,908,034 B2	06/21/2005	ALLESHOUSE
	54	6,911,945 B2	06/28/2005	KORVA
	55	6,937,196 B2	08/30/2005	KORVA
	56	6,961,544 B2	11/01/2005	HAGSTROM
	57	7,072,690 B2	07/04/2006	SHIN et al.
	58	7,159,214 B2	01/02/2007	RAJARAM et al.
	59	7,161,357 B2	01/09/2007	LEE et al.
	60	7,190,728 B2	03/13/2007	KAWADA et al.
	61	7,202,776 B2	04/10/2007	BREED
	62	7,202,819 B2	04/10/2007	HATCH
	63	7,218,678 B2	05/15/2007	KATTA et al.
	64	7,251,499 B2	07/31/2007	ELLA et al.
	65	7,265,731 B2	09/04/2007	VANCE et al.
	66	7,283,094 B2	10/16/2007	LEE
	67	7,307,331 B2	12/11/2007	KIPNIS et al.
	68	7,333,067 B2	02/19/2008	HUNG et al.
	69	7,367,514 B2	05/06/2008	SOULE III et al.
	70	7,368,311 B2	05/06/2008	TILMANS et al.
	71	7,423,599 B2	09/09/2008	LI et al.
	72	7,446,717 B2	11/04/2008	HUNG et al.

EXAMINER	/Karl Frech/	DATE CONSIDERED	08/10/2014
Examiner: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

Date: June 24, 2014

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.F./



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.
14/199,120	12/30/2014	8919654	H0022017	6820

113760 7590 12/10/2014
HONEYWELL/OLIFF PLC
101 Columbia Road
P.O. Box 2245
Morristown, NJ 07962-2245

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 0 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):

HAND HELD PRODUCTS, INC., Fort Mill, SC, Assignee (with 37 CFR 1.172 Interest);
Ynjiun P. WANG, Cupertino, CA;
Huyu QU, San Jose, CA;
James T. SAUERWEIN, Charlotte, NC;

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.

IR103 (Rev. 10/09)