



US 20060226242A2

(19) **United States**

(10) **Pub. No.: US 2006/0226242 A2**

(12) **Patent Application Publication**
Kim

(43) **Pub. Date: Oct. 12, 2006**
REPUBLICATION

(54) **MOBILE ENTERTAINMENT AND COMMUNICATION DEVICE**

(30) **Foreign Application Priority Data**

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Dec. 17, 1999 (KR)..... 20-199-0028580
Oct. 15, 1999 (KR)..... 20-199-0022160

Publication Classification

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(51) **Int. Cl.**
G06K 19/06 (2006.01)
(52) **U.S. Cl.** **235/492**

(57) **ABSTRACT**

(21) Appl. No.: **11/184,299**
(22) Filed: **Jul. 18, 2005**

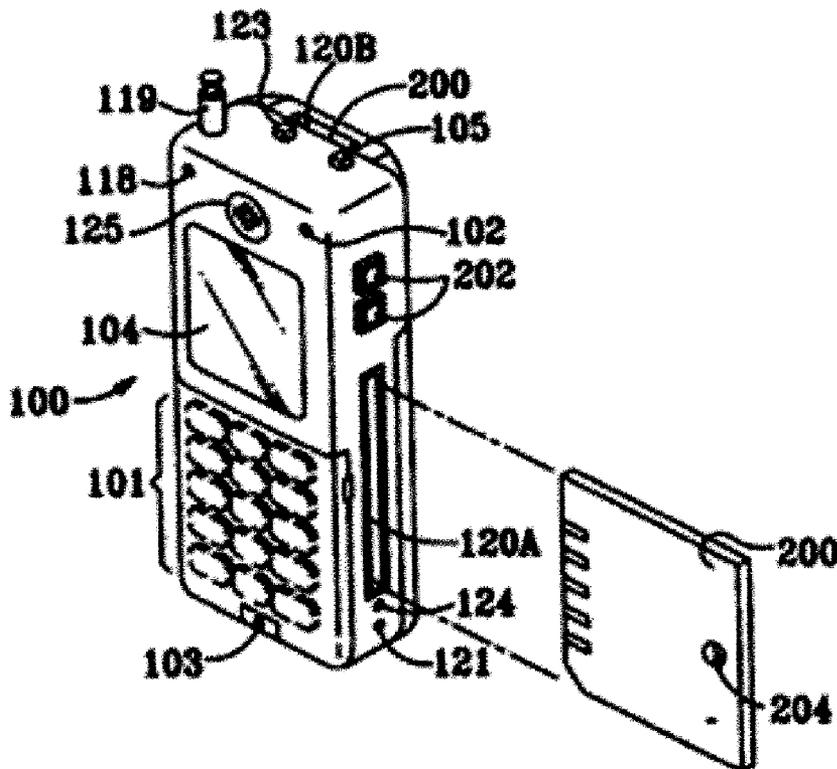
Abstract of the Disclosure
A mobile entertainment and communication device in a palm-held size housing has a cellular or satellite telephone capable of wireless communication with the Internet and one or more replaceable memory card sockets for receiving a blank memory card for recording data directly from the Internet and, in particular, musical performances that then can be selectively reproduced by the device for the enjoyment of the user, including both audio and visual recordings and reproductions. The device also includes a camera and microphone for recording images and sound within the range of the device that can be wirelessly transmitted, either selectively or automatically to a remote telephone. Further, the device includes sensors for sensing unusual conditions that may also be transmitted to a remote telephone, together with the location of the device as determined by a GPS section of the device.

Prior Publication Data

(65) US 2005/0252980 A1 Nov. 17, 2005

Related U.S. Application Data

(60) Division of application No. 10/719,363, filed on Nov. 20, 2003, which is a continuation of application No. 09/531,356, filed on Mar. 20, 2000, now Pat. No. 6,681,120, Jan. 20, 2004, which is a continuation-in-part of application No. 08/846,108, filed on Apr. 25, 1997, now Pat. No. 6,278,884, Aug. 21, 2001.



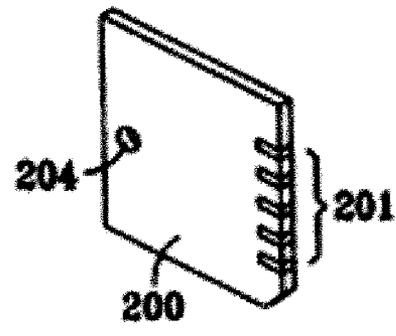
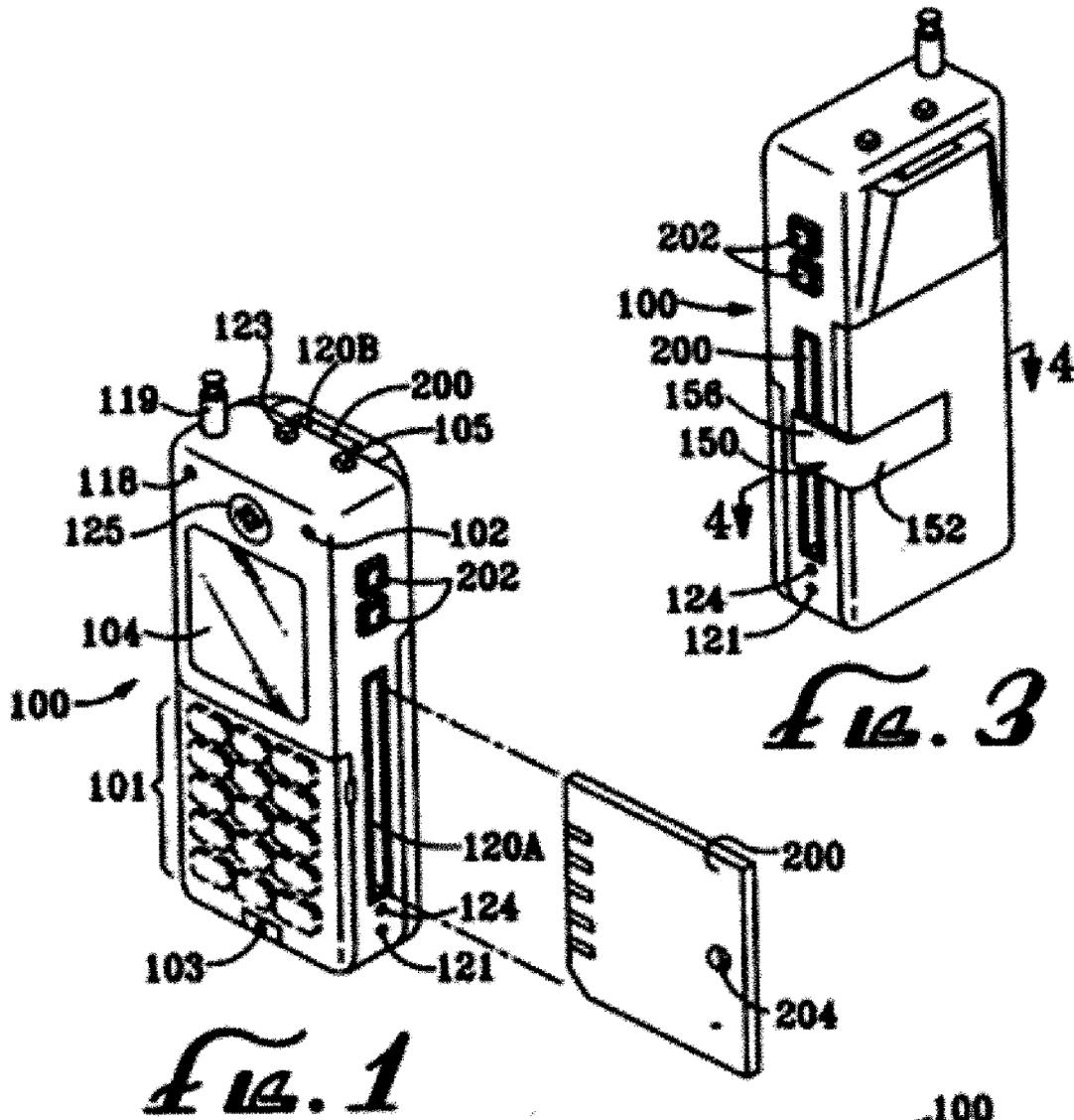


Fig. 2

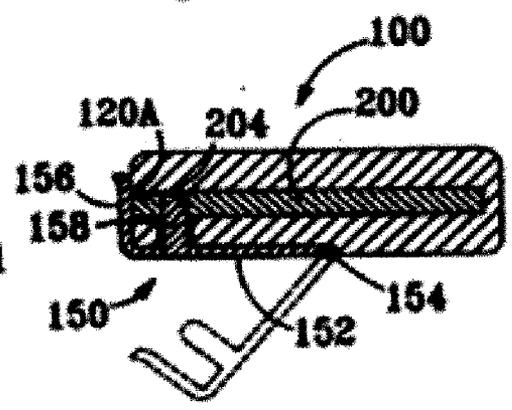


Fig. 4

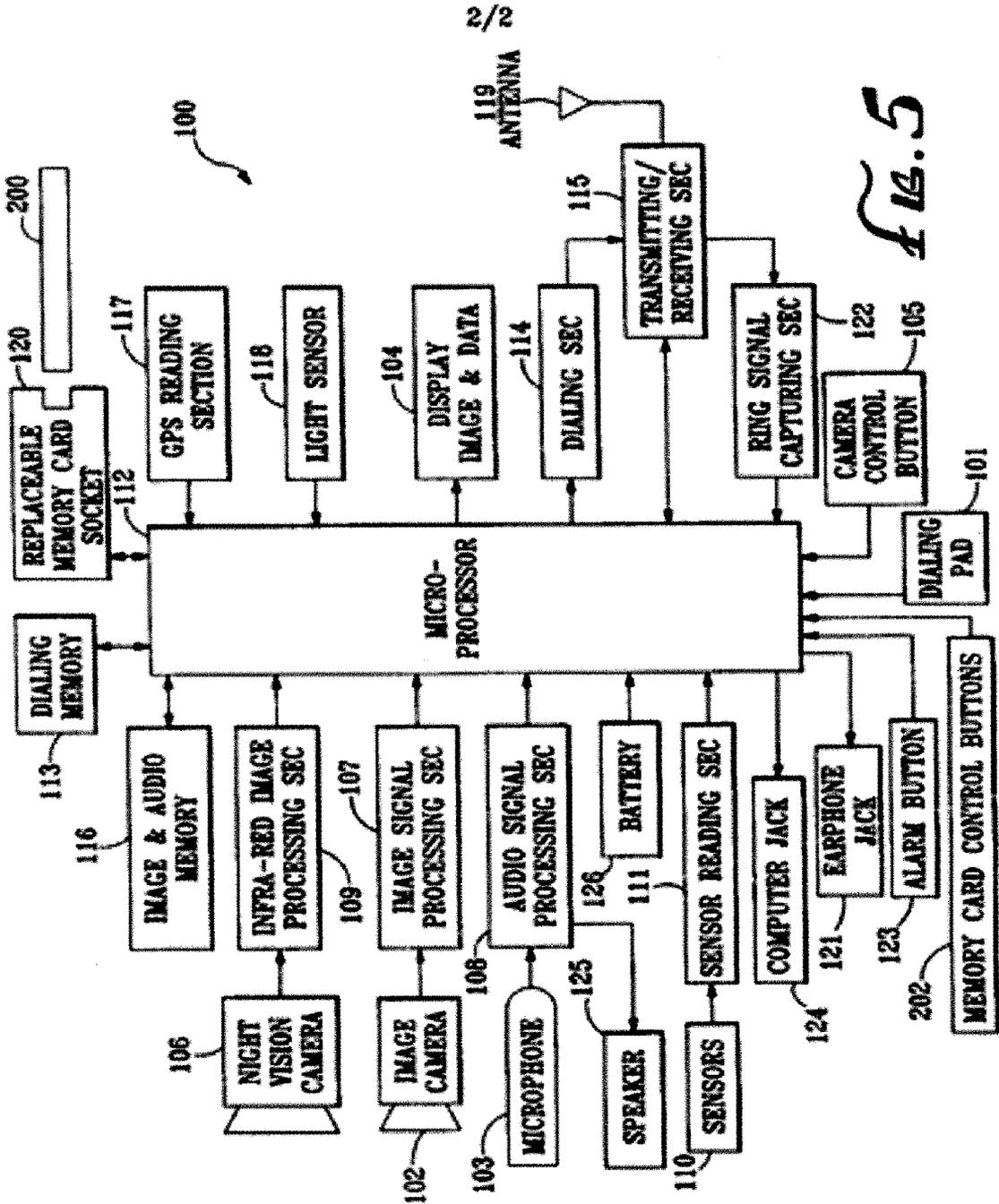


FIG. 5

MOBILE ENTERTAINMENT AND COMMUNICATION DEVICE

Detailed Description of the Invention

[0001] This is a Division of Application Serial No. 10/719,363, filed November 20, 2003, which is a Continuation of Application Serial No. 09/531,356, filed March 20, 2000, now U.S. Patent No. 6,681,120, which is a Continuation-In-Part of application Serial No. 08/846,108, filed April 25, 1997, now U.S. Patent No. 6,278,884, which are incorporated in this application in full by this reference.

[0002] This invention relates to a memory card having either prerecorded data or no data for replaceably installing in a cellphone. The card has a flat, rectangular shape with at least one corner having an irregular shape that is different than the other corners for causing proper orientation of said memory card in the cellphone. There is at least one engagement for use in securing the memory card in the cellphone. The at least one engagement may be a hole and may extend through the card. Also, the prerecorded data may be audio, moving images, audio with text or audio with moving images.

[0003] Other and more detailed objects and advantages of the present invention will readily appear to those skilled in the art from the detailed description and accompanying drawings of the preferred embodiments, wherein:

[0004] **Fig. 1** is a perspective view of the front of the entertainment and communication device of the present invention;

[0005] **Fig. 2** is a perspective view of a replaceable memory card for use with the device illustrated in Fig. 1;

[0006] **Fig. 3** is a perspective view of the back of the entertainment and communication device of the present invention showing an optional card latching device;

[0007] **Fig. 4** is a sectional view of the device taken on the line 4-4 in Fig. 3; and

[0008] **Fig. 5** is a schematic drawing of the components of the entertainment and communication device shown in Figs. 1 and 2.

[0009] Referring more particularly to the figures, the entertainment and communication device, generally designated 100, includes a cellular telephone or satellite accessible telephone or the like, hereinafter referred to collectively as a "cellphone", having a dialing pad 101 with push buttons for operating the cell phone in a substantially conventional manner and also for controlling the operation of other components of the device 100. The cellphone includes a microphone 103 and a speaker 125 for using the cellphone as a telephone for verbal communications. A display panel 104 is provided on the front of the device 100 for displaying images and data, including but not limited to the conventional data displayed for the use of the cellphone. The cellphone also includes a dialing memory 113, a dialing section 114, a transmitting/receiving section 115, an antenna 119 and a ring signal capturing section 122. The microphone 103 and speaker 125 are connected through an audio signal processing section 108 to the microprocessor 112 of the device 100. The dialing memory 113, dialing section 114, transmitting/receiving section 115, ring signal capturing section 122 and dialing pad 101 are also connected to the

microprocessor 112 for operating the cellphone in a conventional manner, through the microprocessor 112.

[0010] The cellphone of the entertainment and communication device 100 is of the type that is capable of making a wireless connection to the Internet for receiving data therefrom and transmitting data thereto, such as the Samsung® Model No. 3500, Qualcomm® No. 1960, Sprint® PCS, or the like, without a hardwire connection through a personal computer or telephone line.

[0011] The entertainment and communication device 100 of the present invention is provided with a socket 120 for receiving a replaceable memory card 200. The opening for the socket 120 may be provided on the side of the device 100, as shown at 120A, or at one end of the device 100, as shown at 120B, or both. The memory card 200 is provided with electrical contacts 201 (see **Fig. 2**) which are adapted to engage corresponding electrical contacts (not shown) in the socket 120, which contacts in turn are connected to the microprocessor 112 for communication between the replaceable memory card 200 and the microprocessor 112. The memory card 200 may be a prerecorded card or a flash (blank) card suitable for recording data from the microprocessor 112. By appropriately operating the cellphone to connect to or access the Internet and then operating the memory card control buttons 202, data from the Internet may be recorded on the replaceable memory card 200, such as musical performances, images (still or moving), written text or the like (hereinafter referred to as "data"). In addition to the audio data, the musical performance data from the Internet may include images of the performers or the like, and/or the words of the musical performance. Other audio and visual data also may be downloaded from the Internet to memory card 200. Subsequent to the recordation of the musical performance or other data on the replaceable memory card 200 or upon the positioning of a prerecorded memory card 200 in a socket 120, the memory card control buttons 202 may be manipulated to reproduce the musical performance or other data with the sound being broadcast by the speaker 125 or to earphones (not shown) connected to the earphone jack 121 or transmitted to wireless earphones (not shown). The device 100 also includes controls, such as on dialing pad 101 or separately, for controlling the music volume, balance, selection (skip), equalization and the like. The images and/or words included in the recording on a memory card 200 will be displayed on the display panel 104.

[0012] The memory card 200 is preferably of a high memory capacity and a size to fit substantially inside the housing of the device 100 so as not to protrude therefrom and yet be of substantially the full width of the device 100 to maximize the memory capacity of the card 200 substantially beyond the memory capacity of conventional prerecorded memory cards, such as for MP3 players. Of course, the width of the device 100 is limited from a practical standpoint to a width that is comfortable in the palm of an adult person's hand for use as a telephone. Thus, as a practical matter, the width of the memory card is limited to about 1 1/2" to 2". Similarly, the overall size of the device 100 must be sufficiently small to be comfortably carried in a pocket or purse to be most practical. Further, while the thickness of the card 200 may be increased somewhat for increasing the memory capacity there is also a practical limit to that increased thickness so that the thickness of the device 100 does not become excessive, but it is contemplated that

memory cards 200 of about twice the thickness may be provided and interchangeably installed in the socket 120 for at least doubling the memory capacity or separate sockets, such as sockets 120A and 120B, may be provided for accommodating memory cards 200 of different thicknesses. Still further, the length of the device 100 is limited to a practical length and, therefore, the vertical length of the card is similarly limited. The card 200 and socket 120 may be provided with matching non-symmetrical shapes, grooves, ridges or the like for requiring the card 200 to be inserted into the socket in the correct orientation, such as the cutoff corner of card 200 shown in **Fig. 1** (lower left) and **Fig. 2** (lower right). The device 100 may also be provided with an integral image and audio storage memory 116 connected to the microprocessor for temporary or permanent storage of data, in addition to data storage on cards 200, and the data stored on memory 116 may be reproduced in the same manner as from replaceable memory cards 200.

[0013] Referring more particularly to **Figs. 3 and 4**, a latching device, generally designated 150, is shown for retaining the replaceable memory card 200 in the socket 120A and for facilitating the removal of the memory card 200 from the socket 120A. The latching device 150 includes a lever 152 pivotally connected at 154 to the back of the housing of the device 100, with a tab 156 extending along the side of the device and over a portion of the socket 120A in the closed position. A pin 158 extends inwardly from the lever 152 and engages a hole 204 in the memory card 200. When the latching device 150 is pivoted to the open position shown in dashed lines in Fig 4, the memory card 200 may be readily removed from socket 120A by placing a finger on the portion of the card 200 exposed by opening the latching device 150 or by engaging the hole 204 with a finger nail or a pointed implement, such as a pencil or pen. Further, the pin 158 and hole can be sized and relatively positioned such that the pin 158 urges the card 200 outwardly upon opening the latching device. Still further, the socket 120A may be provided with a spring for urging the card 200 outwardly as soon as the card is unlatched. Of course either the tab 156 or pin 158 may be omitted since the other (pin or tab, respectively) will retain the card 200 in the socket 120A. The latching device 150 may be of a width to only cover a portion of the socket 120A, as shown, or of a width to cover the entire socket (not shown).

[0014] Since the device 100 can be wirelessly connected to the internet, it is also possible to use the device 100 for any other Internet functions, such as sending and receiving e-mail, conducting e-business, etc. Further, in view of the recording capability of the device 100, the telephone conversations on the cellphone may be selectively recorded (one or both sides) and the device can be used for any sound recording, such as for dictation or face-to-face conversations or conferences. Still further, the microprocessor 112 includes means for automatically interrupting the playing of any musical performance being reproduced on the device 100 when a telephone call is placed or received on the cellphone until the call is completed.

[0015] All of the aforescribed functions and those described hereinafter are powered by a battery means (not shown) in the device 100 which preferably is a single rechargeable battery.

[0016] The entertainment and communication device 100 is also provided with a computer jack 124 connected to the

microprocessor for selectively connecting the device 100 directly to a computer, radio, television or CD, DVD, VCR, tape or phonograph record player (not shown) by a hard wire (not shown) for downloading and uploading (where appropriate) to and from the replaceable memory card 200 or fixed memory 116 in the device 100.

[0017] The entertainment and communication device 100 is also provided with various other features for the personal entertainment, communication, security, safety and the like of the person at all times that the person has the device 100 with him or her. A video camera 102 is connected through an image signal processing section 107 to the microprocessor 112 and the camera operation is controlled by button 105, whereby images may be displayed on the panel 104, recorded on either the integral memory 116 or the replaceable memory card 200, or transmitted by the cellphone to a remote telephone which may be located at a police station, security office, one's own personal computer or the like. The video camera 102 is preferably a digital camera for electronically capturing images, either still or moving, for minimizing the size and battery power requirements, but also may be an analog type camera. Similarly, an infrared night vision camera 106 may be provided and connected to the microprocessor 112 through an infrared image processing section 109 to record or transmit images in the same manner as video camera 102, and a light sensor 118 is connected to the microprocessor 112 for automatically selecting the operation of the night vision 106 when the ambient light is at a very low level. Cameras 102 and 106 will be referred to generically as a "camera". The microphone 103 may also be activated manually or automatically by the microprocessor 112 when either of the cameras 102 or 106 are activated for recording and/or transmitting sounds within the range of the device 100 synchronously with the recording or transmission of images by one of the cameras.

[0018] The entertainment and communication device also includes various emergency features for use by the person carrying the device. An alarm button 123 is provided and may be activated to produce an audible alarm from the speaker 125 for dissuading an attacker or intruder or activating a silent alarm whereby the cellphone is automatically operated to communicate the emergency condition to a remote telephone, such as by dialing "911" or a private security telephone number or the like. Similarly, one or more sensors 110, such as motion, infrared, ultrasonic, acceleration, sound, light, heat, smoke, carbon monoxide, poisonous gas or the like sensors, are provided with the device 100 and selectively activated for providing either an audible or silent alarm, similar to the functions of the panic alarm button 123 but without requiring operator activation, and the sensors 110 are connected through the sensor reading section 111 to the microprocessor 112 for using any of the functions of the device 100. For example, with the acceleration sensor of sensors 110 activated while a person has the device 100 in an automobile, the sudden deceleration of the automobile in an accident condition would be sensed by the acceleration sensor to cause the microprocessor 112 to dial an appropriate telephone number stored in the dialing memory 113, such as a "911" or a vehicle rescue number, and transmit the emergency as well as the location of the device 100 as determined by a global positioning satellite (GPS) reading section 117 provided with the device, which GPS reading section 117 may also be activated by the panic alarm 123. Further, if the motion sensor or similar sensors 110 are

activated and the device 100 is appropriately positioned, for example in a hotel room, the motion and/or presence of an intruder will be sensed and communicated through the sensor reading section 111 to the microprocessor 112 to activate any desired function, such as an audible alarm from the speaker 125, an automatic dialing of a "911" number, operation of electronic camera 102 or infrared camera 106, operation of the microphone 103, operation of the GPS reading section 117 or the like. Similar functions can be performed by the device 100 when any of the other sensors are activated to sense a particular condition, such as heat, smoke, carbon monoxide, poisonous gas or the like.

[0019] Thus, by this invention a palm-sized device provides wireless communication with the Internet for downloading musical and visual entertainment onto a high capacity memory card that is replaceable with other prerecorded or downloaded memory cards, and numerous other communication, security, safety and similar functions are selectively available to the user.

What is Claimed is:

1. A memory card for replaceably installing in a cellphone, comprising a flat, rectangular shape with at least one corner having an irregular shape that is different than the other corners for causing proper orientation of said memory card in the cellphone, said memory card having at least one engagement for use in securing the memory card in the cellphone and for removing the memory card therefrom, said memory card for reproducing and storing data and having either prerecorded data or no data, said prerecorded data including sounds and at least one of moving images, combined and simultaneous sounds and moving images, combined and simultaneous sounds and text, GPS location information, or music with or without images, and wherein the memory card is capable of having different memory capacities without changing card size and card shape, and capable of inserting directly into a card socket of the cellphone without a change of socket dimensions.

2. The memory card of claim 1, the at least one engagement being a hole.

3. The memory card of claim 2, the hole extending fully through the card.

4. The memory card of claim 1, the prerecorded data being selected from the group consisting of audio, moving images, audio with fixed images and audio with moving images.

5. A memory card replaceable in an Internet-connectable hand-held portable cellphone, the card having a flat, rectangular shape exhibiting asymmetry for causing proper orientation in association with the Internet-connectable cellphone, and at least one engagement feature for use in securing the card in the Internet-connectable cellphone, the engagement feature comprising at least one of (1) one or more indentations, or (2) a hole, the card being capable of downloading data to and/or uploading data from the Internet-connectable cellphone, the card for reproducing and storing data and having either prerecorded data or no/blank data, the prerecorded data including sounds and at least one of moving images, combined and simultaneous sounds and moving images, combined and simultaneous sounds and text, GPS location information, or music with or without images, and wherein the card is capable of having different memory capacities without changing card size and card

shape, and capable of inserting directly into a card socket of the Internet-connectable cellphone without a change of socket dimensions.

6. A memory card replaceable directly in an electronic device, the card having a flat, rectangular shape exhibiting asymmetry for causing proper orientation in association with the electronic device, and at least one engagement feature for use in securing the card in the device, the engagement feature comprising at least one of (1) one or more indentations, or (2) a hole, the card for reproducing and storing data and having either prerecorded data or no/blank data, said prerecorded data including real time sounds and at least one of (1) real time moving images, (2) simultaneously combined sounds and moving images, (3) simultaneously combined sounds and text, (4) GPS location information, or (5) music with or without images, and wherein the card is capable of having different memory capacities without changing card size and card shape, and capable of inserting directly into a card socket of the electronic device without a change of socket dimensions.

7. The memory card of claims 5 or 6, wherein the asymmetry includes at least one card corner having an irregular shape that is different from other card corners, wherein the memory card is received in the card socket of the Internet-connectable cellphone or electronic device.

8. A memory card replaceable directly in an Internet-connectable hand held portable cellphone or other electronic device, the device or cellphone including a housing having at least one engagement element, the replaceable memory card having a flat, rectangular shape exhibiting asymmetry for causing proper orientation of the card in the housing, and having at least one engagement feature for receiving the engagement element, the engagement feature both for securing the card in a card socket of the electronic device or the cellphone, and for removing the card therefrom, the memory card for reproducing and storing data and having either prerecorded data or no/blank data, the prerecorded data comprised of at least one of moving images, music with or without images, GPS location information, or combined sounds and moving images, and wherein the memory card is capable of having different memory capacities without changing card size and shape, or card socket dimensions of the electronic device or the cellphone.

9. The memory card of claim 8, wherein the engagement feature comprises at least one of (1) one or more indentations, or (2) a hole.

10. The memory card of claims 1, 5, 6 or 8, wherein the card has at least one card corner having an irregular shape that is different from other card corners, the irregularly shaped corner matching the shape of the card socket when the entire card is positioned therein.

11. The memory card of claim 1, wherein the cellphone comprises a memory card engagement device, and further comprises a spring for directly contacting the memory card and for urging the memory card out of the card socket upon release of the memory card engagement device.

12. The memory card of claim 5, wherein the Internet-connectable cellphone comprises a card engagement device, and further comprises a spring for directly contacting the card and for urging the card out of the card socket upon release of the card engagement device.

13. The memory card of claim 6, wherein the electronic device comprises a card engagement device, and further

comprises a spring for directly contacting the card and for urging the card out of the card socket upon release of the card engagement device.

14. The memory card of claim 8, wherein the electronic device or cellphone comprises a spring for directly contacting the memory card and for urging the memory card out of the card socket upon release of the memory card engagement element.

15. A memory card replaceable directly in an Internet-connectable hand-held portable cellphone or other electronic device, said card having a flat, rectangular shape exhibiting asymmetry for causing proper orientation in association with the cellphone or electronic device, and at least one engagement feature for use in securing the card in the cellphone or electronic device, the engagement feature comprising at least one of (1) one or more indentations, or (2) a full or partial hole extending fully through the card, the card for reproducing and storing data and having either prerecorded data or no/blank data, said prerecorded data including real time sounds and at least one of (1) real time moving images, (2) simultaneously combined sounds and moving images, (3) simultaneously combined sounds and text, (4) GPS location information, or (5) music with or without images, and wherein the electronic device comprises a card socket and a card engagement device, and further comprises a spring for directly contacting the card and for urging the card out of the card socket upon release of the card engagement device.

16. A memory card replaceable directly in an electronic device, the electronic device including a housing having an engagement element, wherein the memory card has a flat, rectangular shape exhibiting asymmetry for causing proper orientation of the card in the housing, and having at least one engagement feature for receiving the engagement element, the engagement feature both for securing the card in a card socket of the electronic device, and for removing the card therefrom, the memory card for reproducing and storing data and having either prerecorded data or no/blank data, the prerecorded data comprised of at least one of moving images, music with or without images, GPS location information, or combined sounds and moving images, and wherein the memory card is capable of having different memory capacities without changing card size and shape, or card socket dimensions of the electronic device or the cellphone, and wherein the electronic device comprises a spring for directly contacting the memory card and for urging the memory card out of the card socket upon release of the memory card engagement element.

17. A memory card replaceable directly in an electronic device or cellphone having a housing that includes at least one engagement element, the memory card having a flat rectangular shape exhibiting asymmetry for causing proper orientation of the memory card in the housing, and having at least one engagement feature for receiving the engagement element, the engagement feature both for securing the memory card in a card socket of the electronic device or cellphone, and for removing the memory card therefrom, wherein the housing comprises a spring in the socket for directly contacting the memory card and for urging the memory card out of the socket upon release of the memory card engagement element; said memory card operatively connectable to at least one of a microprocessor, a microphone, a speaker, a display, or a wired or wireless earphone, for reproducing prerecorded data from the memory card or

storing data to the memory card, at least one of start playing data, balancing sounds, equalizing sounds or skipping data being controllable when reproducing prerecorded data; said memory card for at least one of (1) transmitting and/or downloading prerecorded data to at least one separate remote device, (2) reproducing prerecorded data, or (3) recording data, and having either prerecorded data or no/blank data, said memory card prerecorded data including at least one of real time sounds, still or moving images, music with or without moving images, combined sounds and moving images, combined sounds and text, GPS location information, or other data; and wherein said memory card is capable of storing at least one of real time sounds, still or moving images, music with or without moving images, combined sounds and moving images, combined sounds and text, GPS location information, or other data, is capable of having different memory capacities without changing card size and shape, and is capable of being directly and entirely inserted and positioned in the card socket of the cellphone or other electronic devices.

18. A memory card replaceable directly in an electronic device having a socket for receiving the memory card, the memory card having a flat, rectangular shape exhibiting asymmetry for causing proper orientation in association with the electronic device and having at least one card corner having an irregular shape that is different from other card corners, the irregular shaped corner matching the shape of the card socket when the entire card is positioned therein; said memory card having at least one engagement feature for at least one of securing the card in the socket or for removing the card from the socket; said memory card for at least one of (1) down loading pre-recorded data to at least one separate device, (2) reproducing pre-recorded data, or (3) storing data to the card, and having either prerecorded data or no/blank data, said memory card prerecorded data including real time sounds and at least one of real time moving images, simultaneously combined sounds and moving images, simultaneously combined sounds and texts, music with or without images, GPS location information, or other data; wherein said memory card is capable of storing at least one of real time sounds, still or moving images, music with or without moving images, combined sounds and moving images, combined sounds and text, GPS location information, or other data, is capable of having different memory capacities without changing card size and card shape, and is capable of inserting directly into the card socket of the electronic device without a change of socket dimensions.

19. The memory card of claim 15, 16 or 17, wherein the memory card has at least one card corner having an irregular shape that is different from other corners, the irregular shaped corner matching the shape of the card socket when the entire card is positioned therein.

20. The replaceable memory card of claims 1, 6, 8, 15, or 16, wherein the memory card is operatively connectable to at least one of a microprocessor, a speaker, a display or a microphone in the cellphone or the electronic device, and is controllable by said microprocessor to at least one of reproduce prerecorded data, upload or download data between the memory card and the Internet, or download or transmit stored data from the memory card to at least one separate electronic device when the memory card is positioned in the card socket.

21. The replaceable memory card of claim 17, wherein the memory card is operatively connectable to at least one of the

microprocessor, the speaker, the display or the microphone in the cellphone or the electronic device, and is controllable by said microprocessor to at least one of reproduce prerecorded data, upload or download data between the memory card and the Internet, or download or transmit stored data from the memory card to the at least one separate remote device when the memory card is positioned in the card socket.

22. The replaceable memory card of claim 18, wherein the memory card is operatively connectable to at least one of a microprocessor, a speaker, a display or a microphone in the electronic device, and is controllable by said microprocessor to at least one of reproduce prerecorded data, upload or download data between the memory card and the Internet, or download or transmit stored data from the memory card to the at least one separate remote device when the memory card is positioned in the card socket.

23. The replaceable memory card of claims 1, 5, 6, 8, 15, or 16, wherein the memory card is operatively connectable to a microprocessor and at least one of a wired or wireless earphone for reproducing music and sounds from the pre-

recorded data and for hand free operation of the cellphone or electronic device.

24. The replaceable memory card of claim 17, wherein the memory card is operatively connectable to the microprocessor and at least one of the wired or wireless earphone for reproducing music and sounds from the prerecorded data and for hand free operation of the cellphone or electronic device.

25. The replaceable memory card of claim 18, wherein the memory card is operatively connectable to a microprocessor and at least one of a wired or wireless earphone for reproducing music and sounds from the prerecorded data and for hand free operation of the electronic device.

26. The replaceable memory card of claims 1, 5, 6, 8, 15, 16, 17 or 18, wherein the data being stored to the memory card includes at least one of real time sounds, still or moving images, combined sounds and moving images, combined sounds and texts, music with or without images, GPS location information, or combined text and moving images.

* * * * *