US 20070085759A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2007/0085759 A1

(43) Pub. Date: Apr. 19, 2007

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(54) METHOD FOR DISPLAYING MULTIMEDIA CONTENTS AND MOBILE COMMUNICATIONS TERMINAL CAPABLE OF IMPLEMENTING THE SAME

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(21) Appl. No.: **11/546,410**

(22) Filed: **Oct. 12, 2006**

(30) **Foreign Application Priority Data**

Sep. 15, 2005 (KR) 97136/2005
Nov. 11, 2005 (KR) 108246/2005

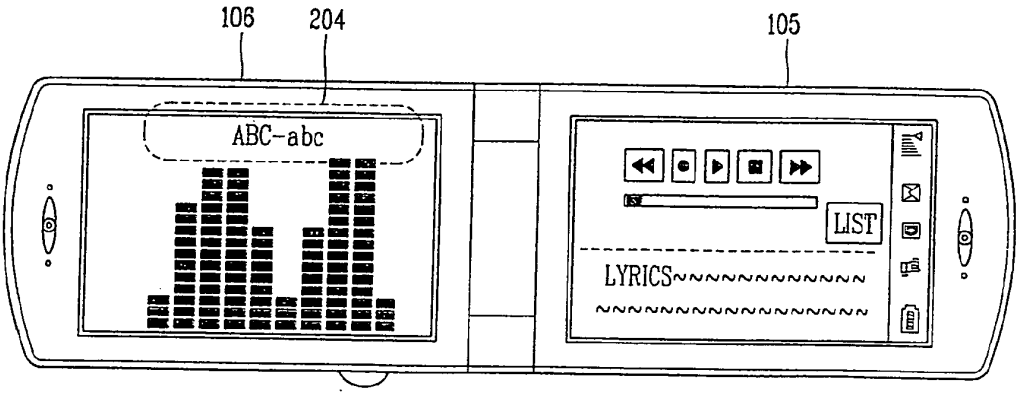
Publication Classification

(51) **Int. Cl.**
G09G 5/00 (2006.01)

(52) **U.S. Cl.** **345/1.1**; 345/2.3

(57) **ABSTRACT**

The invention is directed to a method of displaying multimedia data and providing multitasking features and a mobile communications terminal capable of implementing the same; and cradle for the mobile communications terminal. A mobile communications terminal includes a transceiver, a memory, a first display unit, a second display unit, a processor, a sensor to detect a rotational movement of a body, and a cradle for displaying multimedia contents is provided. The display unit can display the multimedia data in a fixed viewing angle regardless of which direction a user rotates the terminal. A method comprises the steps of displaying multimedia data playback on at least one of a first and a second display screens, displaying information related to the multimedia data, on at least a portion of the at least one of the display screens, providing multimedia control functions and/or indications to the user in a minimally intrusive manner, and displaying a multimedia playback control menu on the at least one of the two display screens.



GOOGLE EXHIBIT 1009

FIG. 1

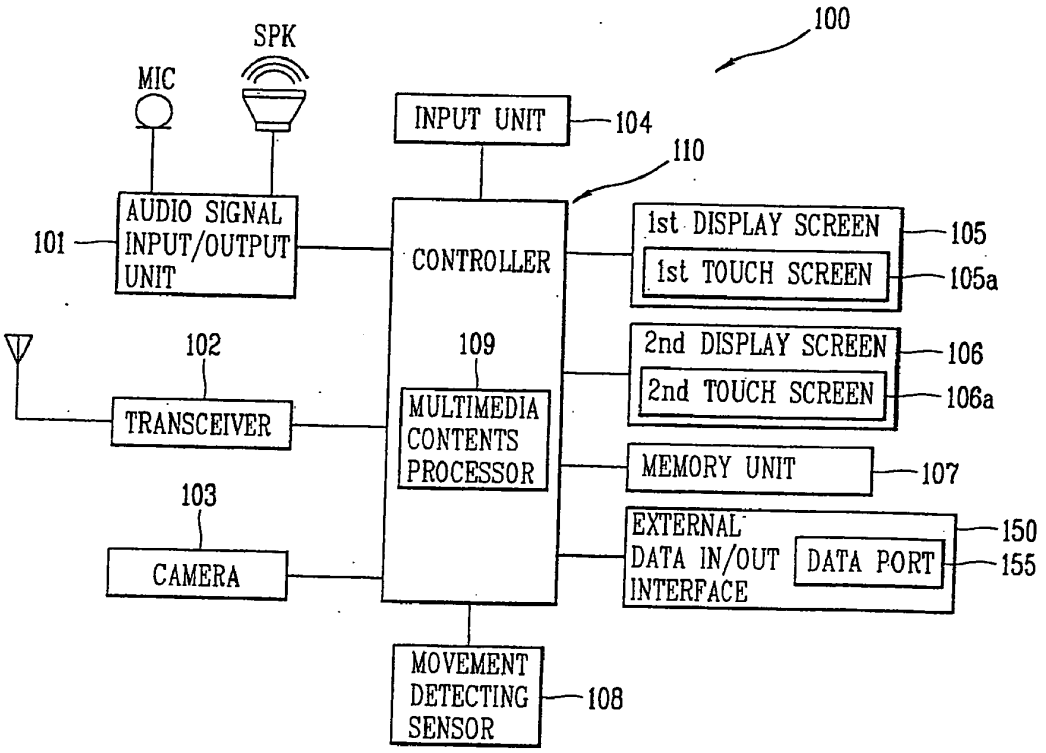

100
SPK
MIC
INPUT UNIT
104
110
AUDIO SIGNAL INPUT/OUTPUT UNIT
101
CONTROLLER
1st DISPLAY SCREEN
105
1st TOUCH SCREEN
105a
102
109
2nd DISPLAY SCREEN
106
2nd TOUCH SCREEN
106a
TRANSCEIVER
MULTIMEDIA CONTENTS PROCESSOR
MEMORY UNIT
107
103
EXTERNAL DATA IN/OUT INTERFACE
DATA PORT
150
155
CAMERA
MOVEMENT DETECTING SENSOR
108

FIG. 2

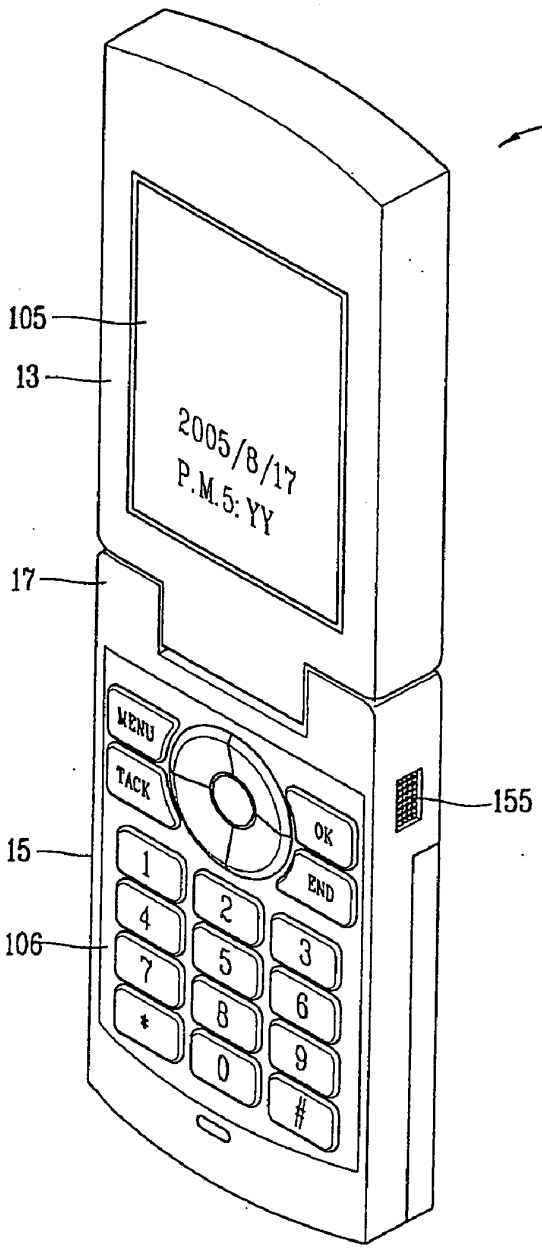

100
105
13
2005/8/17
P.M.5:YY
17
MENU
TACK
OK
END
155
15
106
1
2
3
4
5
6
7
8
9
*
0
#

FIG. 3A

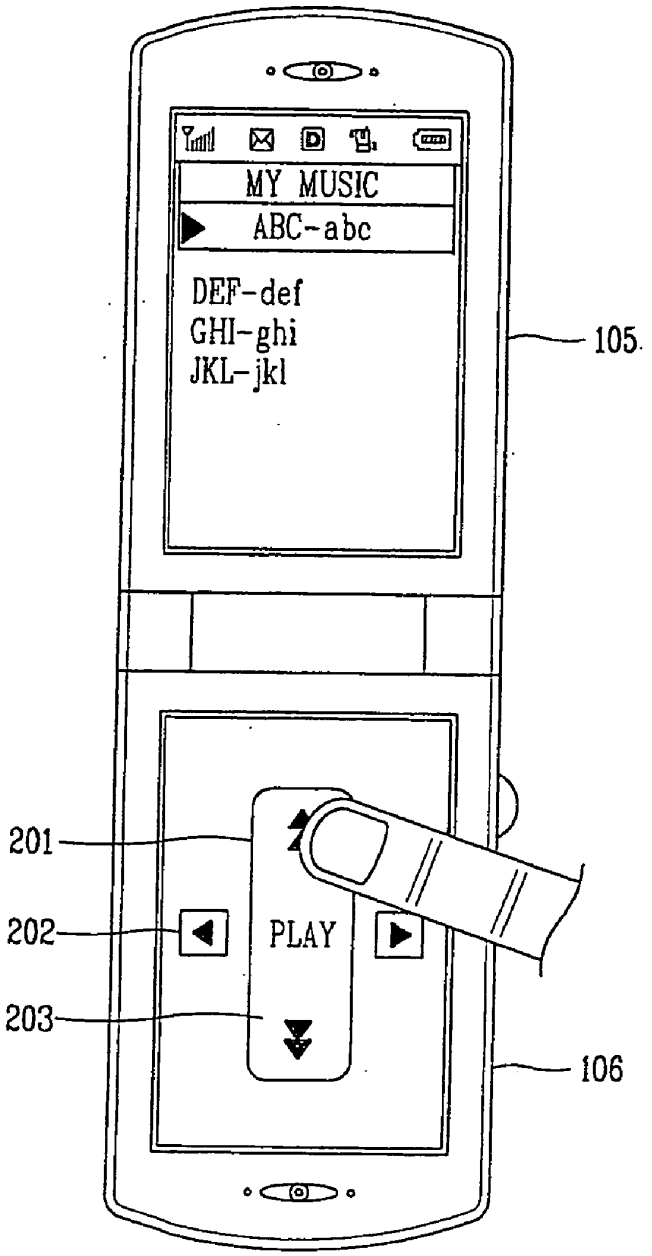

MY MUSIC
ABC-abc
DEF-def
GHI-ghi
JKL-jkl
105
201
202
PLAY
203
106

FIG. 3B

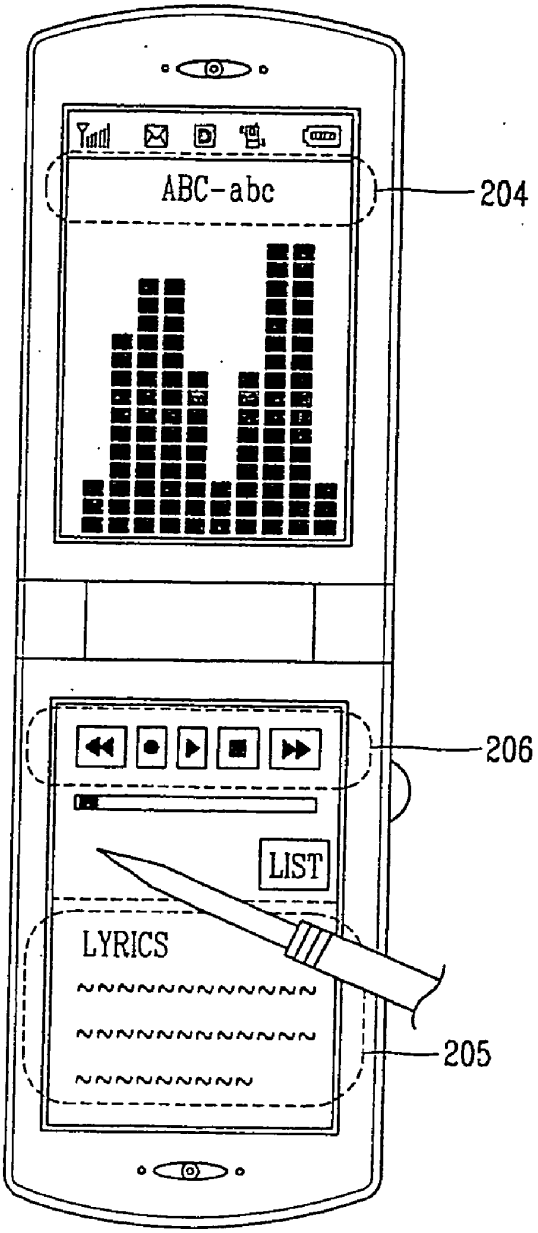


FIG. 4

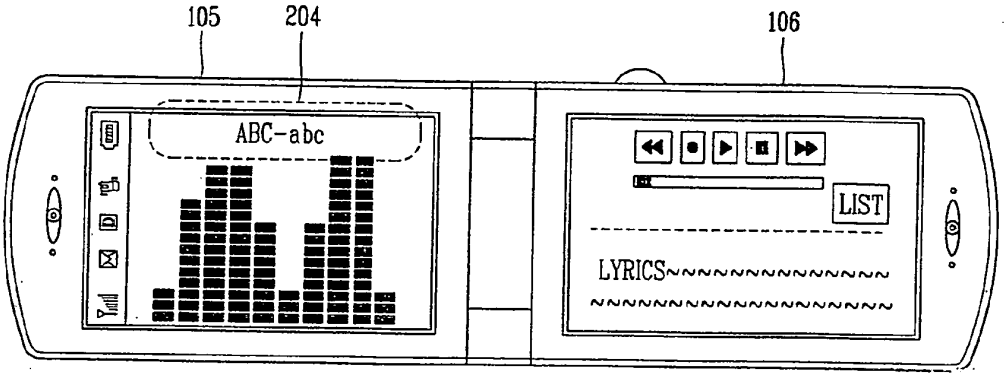

105
204
106
ABC-abc
LIST
LYRICS

FIG. 5

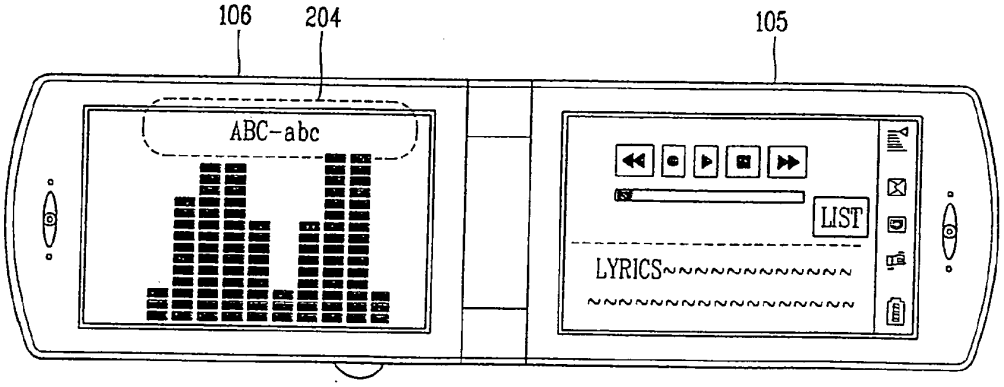

106
204
105
ABC-abc
LIST
LYRICS

FIG. 6

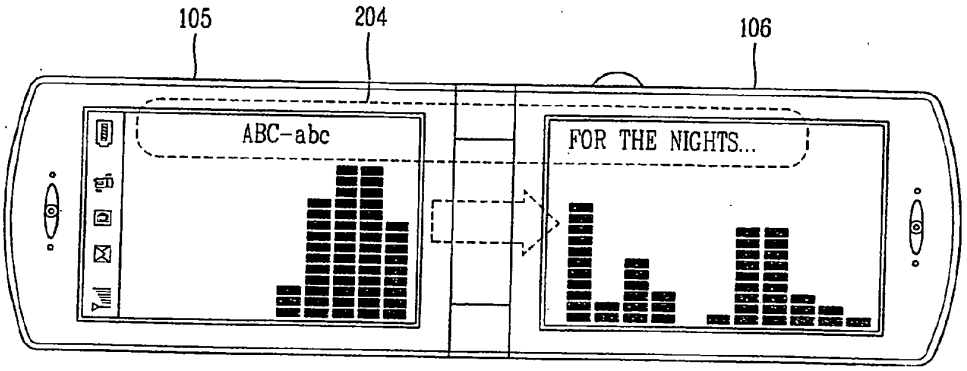

105
204
106
ABC-abc
FOR THE NIGHTS...

FIG. 7

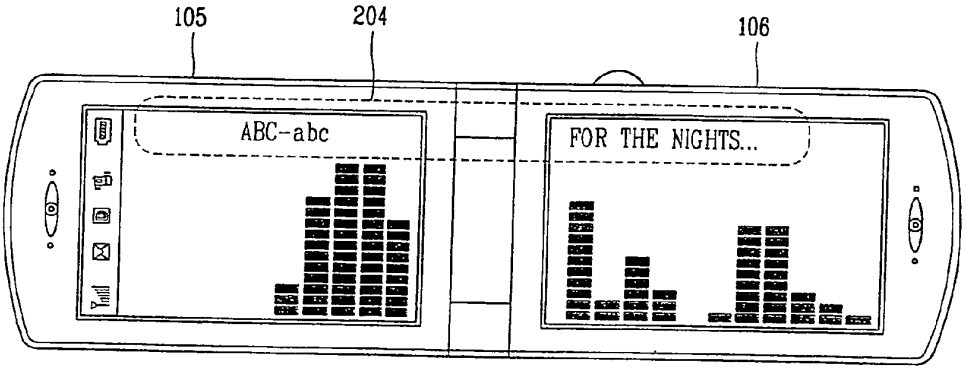

105
204
106
ABC-abc
FOR THE NIGHTS...

FIG. 8

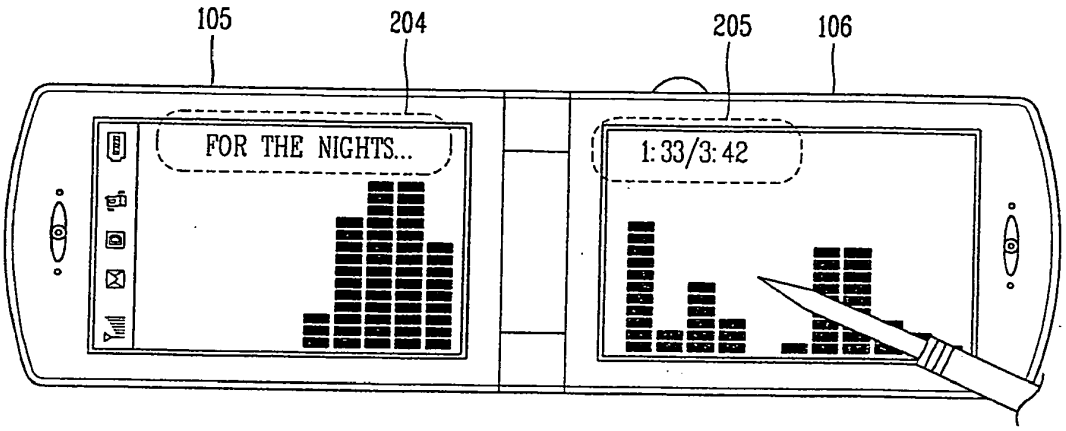


FIG. 9

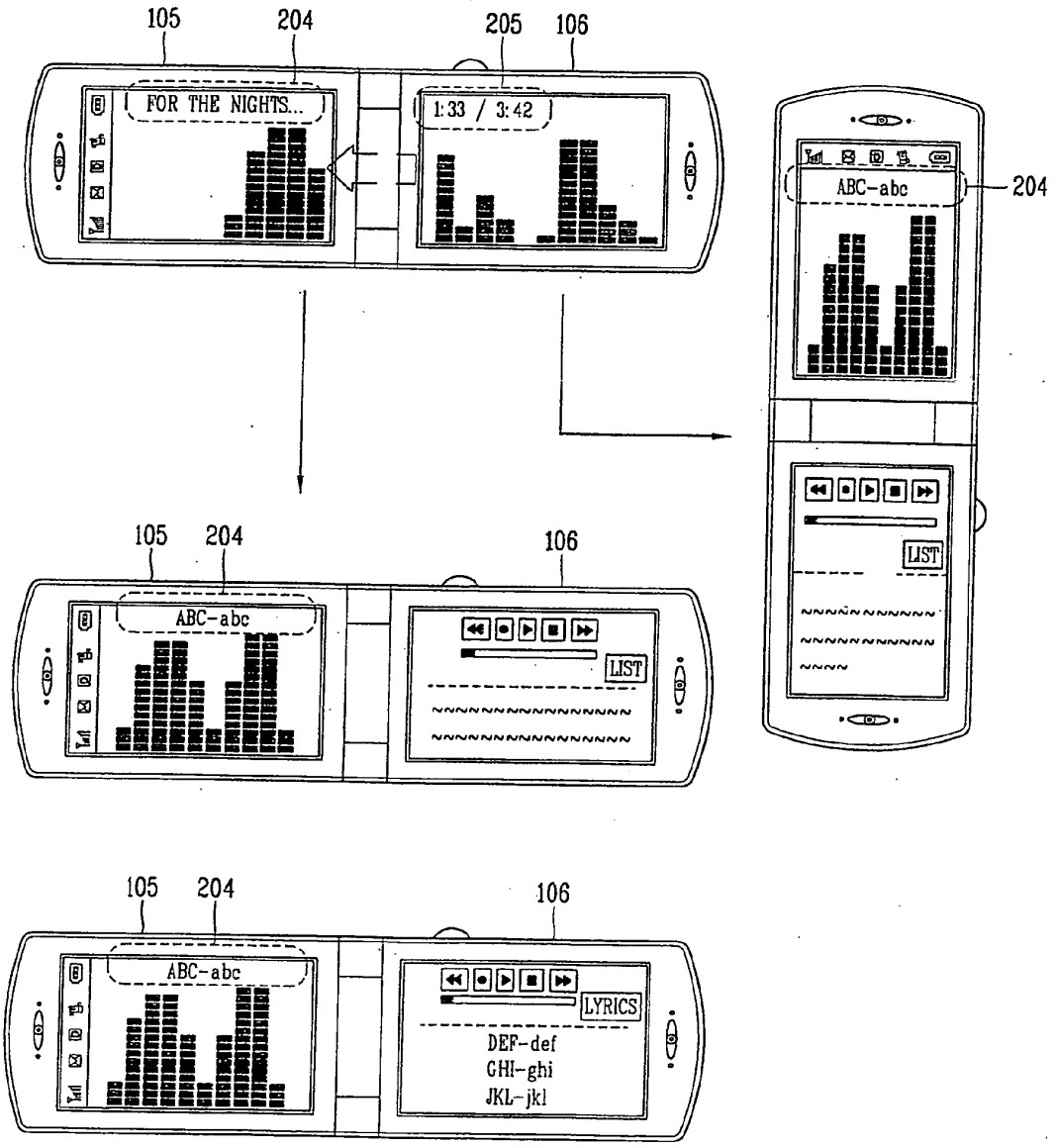

105
204
205
106
FOR THE NIGHTS...
1:33 / 3:42
ABC-abc
204
LIST
105
204
106
ABC-abc
LIST
105
204
106
ABC-abc
LYRICS
DEF-def
GHI-ghi
JKL-jkl

FIG. 10A

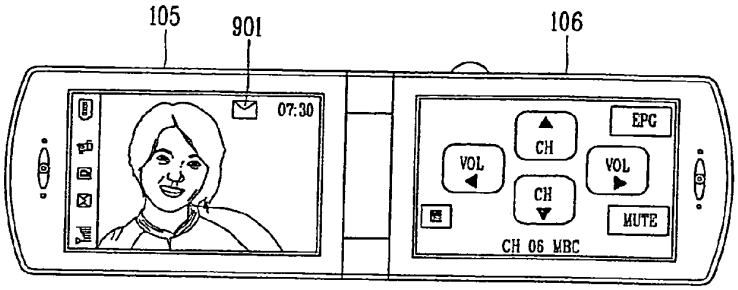


FIG. 10B

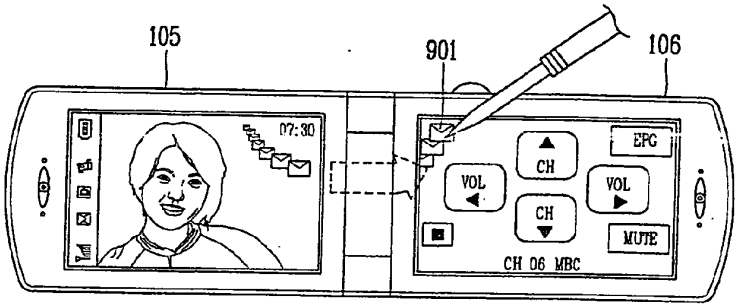


FIG. 10C

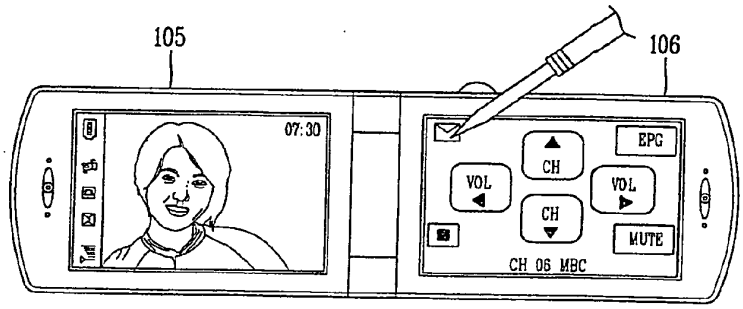


FIG. 10D

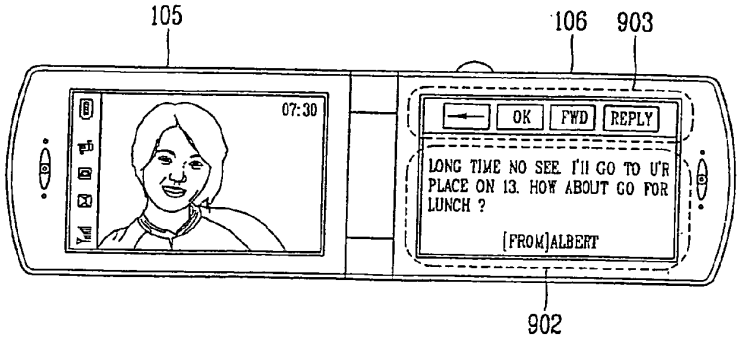


FIG. 11A

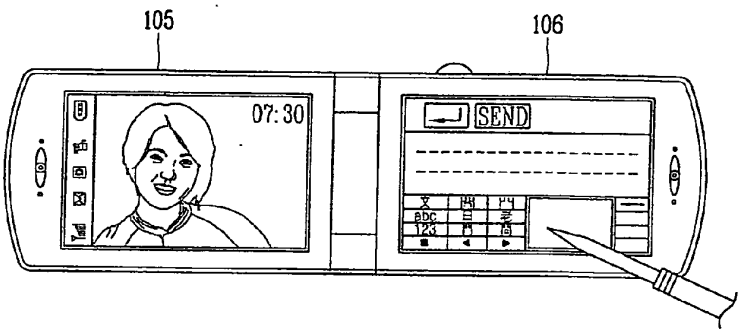


FIG. 11B

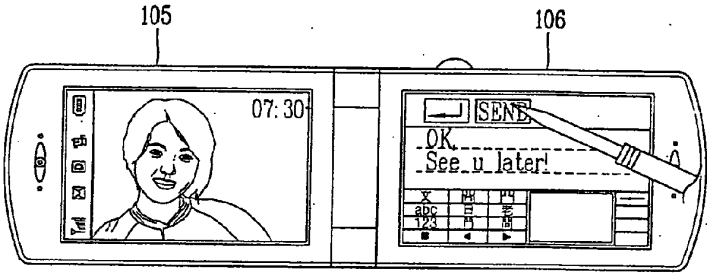


FIG. 11C

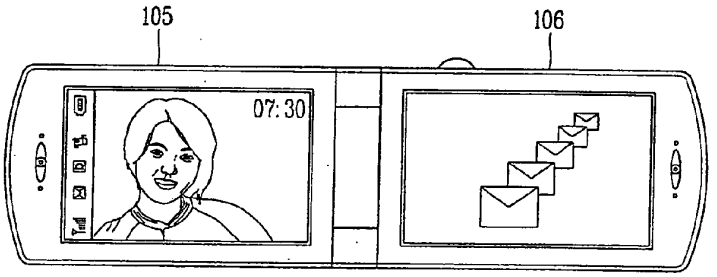


FIG. 11D

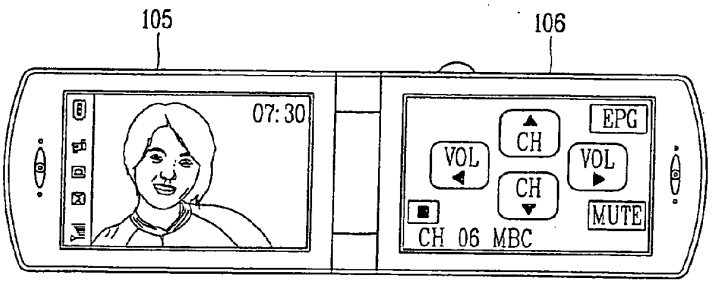


FIG. 12

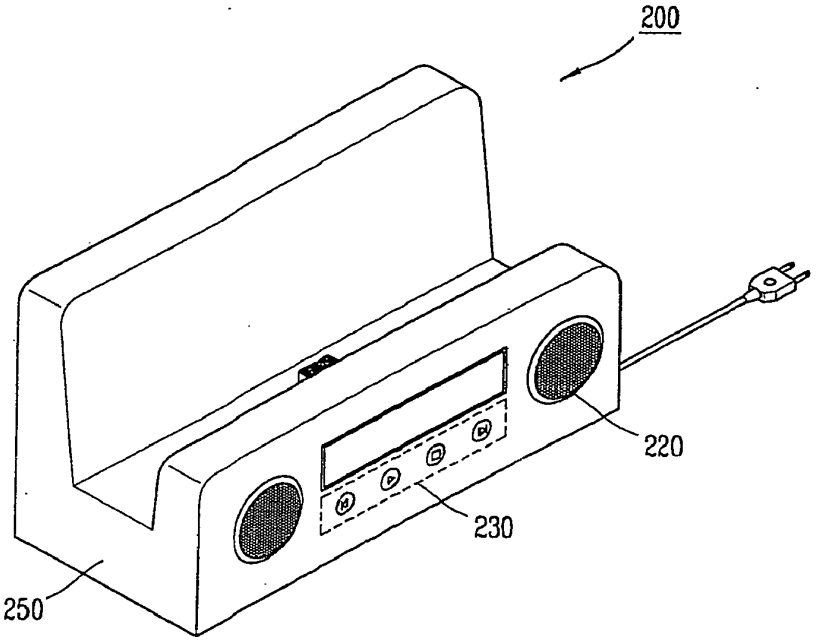


FIG. 13

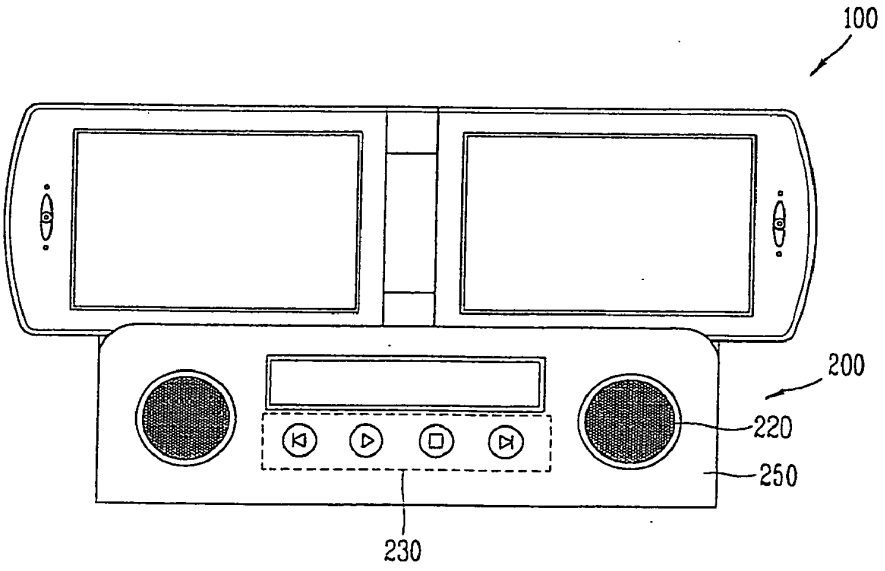
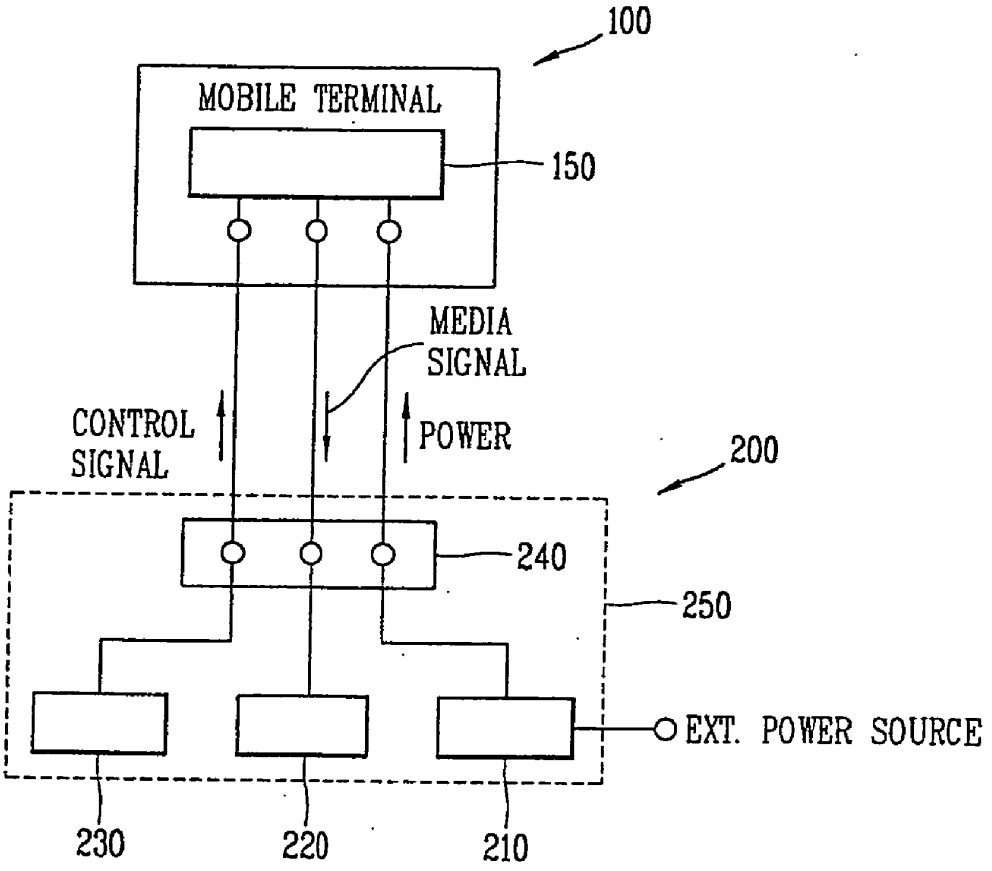


FIG. 14


100
MOBILE TERMINAL
150
MEDIA
SIGNAL
CONTROL
SIGNAL
POWER
200
240
250
EXT. POWER SOURCE
230
220
210

METHOD FOR DISPLAYING MULTIMEDIA CONTENTS AND MOBILE COMMUNICATIONS TERMINAL CAPABLE OF IMPLEMENTING THE SAME

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention is directed to a method for displaying multimedia contents, a mobile communications terminal capable of implementing the method, and cradle for the mobile terminal. Specifically, the invention relates to a method of changing an image view between a portrait view and a landscape view and displaying multitasking related information, and the mobile communications terminal capable of implementing the same.

[0003] 2. Background of the Related Art

[0004] A mobile communications terminal has been proliferated and become one of the must have gadgets in a modern society as a numerous information and telecommunications industries are facing abrupt changes. Caused by increasing demands from users of the mobile terminals, the mobile communications terminal has been developed to provide various functions in addition to a conventional voice communications.

[0005] Recently, a mobile terminal capable of displaying multimedia contents (e.g., MP3 files, various still or video image files) has been developed and contemporary users of the mobile terminals has been accustomed to enjoy the multimedia contents regardless of locations. In accordance with the modern trend, the latest mobile terminal may provide not only a simple voice telephone function, but also a range of extra functions such as a game, a video-on-demand (VOD), Television broadcasting, electronic dictionary, and MP3 player.

[0006] Also, the modern users start demanding a multitasking function for all the available functions provided by their mobile terminals. Especially, it is highly solicited that more convenient user interface should be available to the users to easily enjoy the multimedia contents.

[0007] However, traditional mobile communications terminals providing the multimedia playback may only provide a display screen showing an image view orientation fixed with respect to the display screen in such a way that the screen image can't change from the portrait view to the landscape view when the user of the terminal rotates the body of the terminal from a portrait viewing angle to a landscape view angle, or vice versa. Namely, the traditional mobile communications terminals can simply display the screen image fixed with respect to the body of the terminals. The lack of providing a plurality of viewing ratios or aspects may not sufficiently satisfy needs of the users who wish to enjoy their visual entertainment in a various viewing ratios or aspects.

[0008] In addition, the current mobile terminals may not amply provide a user-friendly graphic interface to support a multitasking function for users. For example, when a user receives a Short Message Service (SMS) or Multimedia Messaging Service (MMS) message when playing a multimedia file in a folder-type or slider type mobile communications terminal, a screen displaying the multimedia playback may automatically be switched to display the SMS or MMS message after temporarily stopping the multimedia playback.

[0009] Furthermore, the mobile terminal user desires to enjoy the multimedia contents without worrying about a quick battery drain due to the fact that the multimedia playback in the mobile terminal tends to consume massive battery power.

SUMMARY OF THE INVENTION

[0010] The present invention provides a mobile terminal having at least two display screens and providing multimedia control functions and/or indications to the user in a minimally intrusive manner such that it can provide various viewing aspect ratios or viewing modes for displaying the multimedia contents in the mobile terminal, and the method thereof. In addition, the present invention provides an external control unit including an additional power supplying unit, an input unit to allow a user to enter at least one command to display the multimedia data, and a connector to be connected to a data port of the wireless communication apparatus to further control the multimedia such that the terminal can further provide media control functions and/or indications to the user in a minimally intrusive manner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The present invention will be described by the accompanying drawings that illustrate various exemplary embodiments. The illustrated embodiments are simply examples of the present invention and do not limit the scope thereof.

[0012] FIG. **1** shows an explanatory diagram of a mobile terminal in accordance with an embodiment of the present invention;

[0013] FIG. **2** is an exemplary perspective view of the mobile terminal in accordance with an embodiment of the present invention;

[0014] FIGS. **3** A and B show exemplary views of the mobile terminal displaying multimedia contents on dual display screens in accordance with one embodiment of the present invention;

[0015] FIG. **4** is an exemplary view of the mobile terminal displaying multimedia contents in another display view in accordance with an embodiment of the present invention;

[0016] FIG. **5** shows the mobile terminal displaying the multimedia contents in the same manner when the mobile terminal switches its orientation 180° from that of the FIG. **4**;

[0017] FIG. **6** is an exemplary view of the mobile terminal displaying that an main image of the first display screen expands to the second display screen in accordance with an embodiment of the present invention;

[0018] FIG. **7** is an exemplary view of the mobile terminal displaying that supplementary information regarding the multimedia contents of the first display screen expands to the second display screen in accordance with an embodiment of the present invention;

[0019] FIG. **8** shows an exemplary view of the first and second display screens respectively displaying different supplementary information regarding the multimedia contents;

[0020] FIG. **9** shows exemplary views of the mobile terminal displaying the expanded screen information of the second display screen returning to the first displaying screen of FIGS. **6-8** in accordance with one embodiment of the invention;

[0021] FIGS. **10** A through D depict exemplary views showing a process of handling an event message during displaying the multimedia contents according to an embodiment of the present invention;

[0022] FIGS. **11** A through D show an exemplary process of sending the message of FIG. **10** during the multimedia display;

[0023] FIG. **12** is an exemplary perspective view of a cradle for the mobile terminal in accordance with an embodiment of the present invention;

[0024] FIG. **13** is an explanatory view of the cradle of FIG. **12**; and

[0025] FIG. **14** is an exemplary diagram of the mobile terminal and the cradle according to one embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0026] One aspect of the present invention relates to the recognition by the present inventors about the problems of the related art as described above, and further explained hereafter.

[0027] FIG. **1** shows an explanatory diagram of a mobile terminal in accordance with an embodiment of the present invention. The mobile terminal **100** can comprise a controller or processor **110**, an input unit (e.g., key pads, key buttons, touch pads, and others) **104**, a transceiver **102**, an audio signal input/output unit (e.g., mike, speaker and so forth) **101**, and an image capturing unit (i.e. camera) **103** as shown FIG. **1**. A detailed exemplary perspective view of the mobile terminal in accordance with an embodiment of the present invention can be further illustrated in FIG. **2**. Here, the mobile terminal is a mobile phone, but the scope of the invention may be related to any mobile terminal or device, including a PDA, a notebook computer, Ultra Mobile PC (UMPC), and so forth. The mobile terminal may be operable in a plurality of wireless networks including WI-FI, WLAN, WIBRO, WIMAX, BREW, 3G networks and the like because certain concepts and features thereof are common to those of the present invention, and thus allow implementation in various types of communications schemes.

[0028] FIG. **2** shows the mobile terminal **100** comprising a first body **13** that includes a first display screen **105**, and a second body **15** including a second display screen **106** and a data port (i.e., terminal or connector) **155**. Here, the mobile terminal is a folder type comprising the first body **13**, the second body **15** and a hinge or connector portion **17**, wherein the first and second bodies are movable relative to each other and are configured to have a same display orientation. However, the scope of the present invention is not intended to be limited to any particular embodiment such as the folder type phone as described above. Moreover, the scope of the present invention may not be limited to any specific kind of the mobile terminal, and other various body types (e.g., bar type, slider, swivel, and others) can be considered to include the essential features of the present invention described in this. The data port **155** can be arranged at not only the second body **15**, but also the first body **13** or the hinge portion **17**.

[0029] The mobile terminal **100** can further comprise a position or movement (i.e., rotation or motion) detecting sensor **108**, an external data in/out interface unit **150**, memory or storage unit **107** and a controller **110** as shown in FIG. **1** in accordance with one embodiment of the present invention. The mobile terminal **100** may not be limited to comprise the elements described above, but also include many other limitations known in the art which are not shown or described in this. The input unit **104**, the position or movement (i.e. rotation, motion) detecting sensor **108**, the external data in/out interface unit **150**, the memory or storage unit **107**, or the controller **110** can be implemented either in the first body **13** or the second body **15**. Also, the connector portion **17** can be configured to be arranged between the first body **13** and the second body **15** such that the first body **13** is flush with the second body **15** when the mobile terminal is fully opened (180 degree) as shown in FIG. **2**. This continuous and flush open configuration of the mobile terminal can allow a user to enjoy multimedia contents in a flat TV like impression.

[0030] The external data in/out interface unit **150** may allow the mobile terminal **100** to be connected to an external device (not shown) via the data port **155**. In particular, the external data in/out interface unit **150** can allow the mobile terminal **100** to be connected to a cradle **200** which can be described fully later in accordance with another embodiment of the present invention. In addition, the external data in/out interface unit **150** may allow the user to connect the mobile terminal **100** with an external audio output device (e.g., headphone, earphone, speaker and others) to output sound signals. The audio output device can be external to the mobile terminal or integrally implemented within the mobile terminal.

[0031] The memory unit **107** can store a plurality of operational programs and data, and particularly multimedia contents or data. The memory unit **107** can be an internal memory type or external memory type. The scope of the present invention is not intended to be limited to above two types of memory unit to store data described herein. The controller **110** can monitor and control overall operations of the mobile terminal **110** and in particularly, can control a playback of the multimedia contents on the display screens **105**, **106** in accordance with one embodiment of the present invention. Furthermore, the controller **110** can control the display of the multimedia contents stored in the memory unit **107** or the contents received via the transceiver **102**. In addition, the controller **100** can include a multimedia content processor **109** that can be either integrally arranged (i.e., implemented in a same hardware configuration) in the processor **110** or separate entity from the controller.

[0032] The mobile terminal of the present invention provides the above-described features and advantages, and is capable of displaying or playing the multimedia contents or any necessary information to operate the mobile terminal on the first display screen **105** or the second display screen **106**. The scope of the present invention can include the mobile terminal comprising the above-described features or advantages, but also other features (e.g., Digital Multimedia

Broadcasting (DMB) or Digital Video Broadcasting-Handheld (DVB-H) broadcast receiver modules). Other communications or multimedia features can be also implemented and are within the scope of the present invention.

[0033] In accordance with some embodiments of the invention, the mobile terminal can include a sensor **108** to detect a motion (i.e., rotational movement) of a body of the mobile terminal, the sensor in cooperation with the controller **110** to detect the body orientation of the mobile terminal and change a display orientation of the two display screens **105**, **106** as the user rotates the entire body of the terminal from vertical to horizontal direction or vice versa. The sensor **108** can comprise a position detecting sensor, geomagnetic sensor, and others and detect whether the mobile terminal rotates from the horizontal orientation to the vertical one or vice versa to change the display orientation on at least one of the dual display screens **105**, **106** accordingly.

[0034] Also, the mobile terminal **100** can comprise the first display screen **105** to display general mobile terminal operations, multimedia contents, and information regarding those operations and the contents, and the second display screen **106** to perform input unit function (i.e., touch sensitive screen) and display various information and data. The first display screen **105** and the second display screen **106** can exchange each other's role (i.e., the first display screen **105** including the input unit function) and other various configurations of the display screens can be implemented and are within the scope of the present invention.

[0035] The above-described first display screen **105** and second screen **106** can be implemented in a same hardware configuration (i.e., one big display screen being partitioned to have separate display region) or be implemented as the separate independent units respectively. In accordance with some embodiments of the present invention, at least one display screen can be allocated to perform the input unit function by incorporating the touch sensitive screen. The input unit can be conventional key input units as understood by one skilled in the art and separately arranged from the display screens.

[0036] The above-described controller **110** controls the overall internal operation of the mobile terminal and can further control the display operation of the display screens **105** or **106**.

[0037] In accordance with one embodiment of the present invention, the mobile terminal **100** can include the input unit **104** being an independent feature arranged on the body of the terminal or being implemented in the same hardware configuration of the touch sensitive screen of at least one of the display screens **105**, **106**. When the input unit **104** is implemented as a touch sensitive input unit (i.e., part of the touch sensitive screen), the controller **110** can receive signals inputted by the touch sensitive input unit **104** and expand the screen information displayed on the first display screen **105** to the second display screen **106** (i.e., the second display screen **106** displaying the same screen information of the first display screen **105** simultaneously), or return to the default display by displaying the screen information on only one display screen if the both display screens have been displaying the same. The order of expansion or returning to the default display is not limited to the above-described manner, but any displaying order or process can be within the scope of the present invention.

[0038] According to some embodiments of the present invention, the input unit **104** can comprise one of the group including a touch wheel, a touch pad, a jog dial, a jog shuttle, a key pad and so forth. As described earlier, the input unit **104** can be independently arranged on the body of the terminal or be implemented together with the above-described touch sensitive screen of the display screen. The other different configurations of the input unit layout can be within the scope of the present invention.

[0039] In accordance with one embodiment of the present invention, the input unit **104** can be implemented as the touch sensitive input unit on at least one of the dual display screens **105**, **106**, and details can be described below.

[0040] FIGS. **3**A, B are exemplary views of the mobile terminal displaying multimedia contents on dual display screens **105**, **106** in accordance with one embodiment of the present invention. The example of the embodiment of the present invention is directed to a music playback method, but an animation, a movie, photographic information and other media contents can be still within the scope of the present invention.

[0041] As shown in FIG. **3**A or B, in accordance with an embodiment of the present invention, the first display screen **105** can display information regarding the multimedia playback function (e.g., various icons representing "Play", "Stop", "Record", "Erase", "Previous Song", "Next Song", and so forth) and information with respect to the multimedia contents (e.g., an artist name, a song title and a lyrics for each MP3 file; and a movie title, a subtitle and other text information for each movie file) (as used below, the information regarding the multimedia playback function and the information about the multimedia contents can be referred to as the information regarding the multimedia).

[0042] First, FIG. **3**A is an exemplary view showing the process of selecting a music file, FIG. **3**B is an exemplary view showing the process of performing the playback or play function for the selected file as described above, each figure showing the mobile terminal displaying the information regarding the multimedia in a conventional manner, a vertical display orientation. As shown in FIG. **3**A, the first display screen **105** can display a list of music files and the second display screen **106** can display the menu screen for controlling the playback of the music files. In a general call mode, the second display screen **106** displays images of conventional keys or buttons for a voice call (e.g., "Talk", "End", "Menu" and numeric key pads) as shown in FIG. **2**. However, in the multimedia play mode, the second display screen **106** can display images of keys or buttons (e.g., Up/Down Scroll Bar, Forward, Reverse or rewind, Play and so forth) for controlling the playback of the multimedia contents instead of the images in the general call mode. In addition, the control menu images on the second display screen **106** can provide a visual, audible or tactile feedback to echo each touch input of the user (i.e., highlighting each key or button image whenever the user touches it).

[0043] A Up/down scroll bar **201** allows the user to select a desired song from a music file list displayed on the first display screen **105** by moving a cursor up or down, and the user can use a Left/Right buttons **202** to move between different groups or folders to find a desired folder or to perform a fast/forward or rewind (reverse) forward of the selected music file. The user can touch or push a Play button

203 to run or play the selected music file. When the user actuates the Pay button **203**, the mobile terminal **100** displays the screen information as shown in FIG. **3**B.

[**0044**] As illustrated in FIG. **3**B, auxiliary information (e.g., title, artist name, writer, and others) **204** regarding the selected music file along with images (or animation) of a music equalizer can be displayed on the first display screen **105**, and the second display screen **106** can show more detailed information (e.g., lyrics) **205** regarding the selected music file, a play time (i.e., a present play time), and control menu key or button images (e.g., Play, Stop, Previous, and so forth) **206**.

[**0045**] When the mobile terminal is playing a movie file or broadcasting file (e.g., DMB), the first display screen **105** can show the movie or broadcast program and the second display screen **106** can show the control button or key images (e.g., Channel selection, Volume, etc.) analogous to the music file control menu keys or buttons as described above.

[**0046**] While displaying the screen information as shown in FIG. **3**B, the mobile terminal **100** can change a portrait view or a default display (or viewing) orientation (i.e., vertical) to a landscape view or a horizontal one to display the screen information in a wide screen aspect ratio when the movement detecting sensor **108** detects the rotational movement of the entire body of the mobile terminal as shown in FIG. **4**. Here, the screen information displayed in the default viewing orientation on the first display screen **105** and the second display screen **106** can be simultaneously rotated in a same direction (e.g., clockwise or counterclockwise) to have the horizontal display direction. The viewing angle orientation change of the display screen can be executed when not only the detecting sensor **108** detects the movement, but also the user actuates a designated input unit for the display orientation change. In particular, the display orientation change can be subject to the number of actuating (or touching, pressing) the designated input unit or how long the user actuates or holds the designated input unit and the positioning sensor or geomagnetic sensor can be used to detect the rotational direction and position as described earlier. The specific input unit for changing the display (viewing angle) orientation can be arranged at not only on the touch sensitive screen of the display screens, but also on any outer surface of the first and second bodies (**13**, **14**). Furthermore, the mobile terminal **100** can rotate the screen information on the display screens **105**, **106** from the default display orientation to 90° or −90° (i.e., clockwise or counterclockwise) and each screen information displayed on respective display screen can be swapped as the mobile terminal **100** rotates accordingly. Thus, whichever direction the user rotates the mobile terminal, when the user views the contents, the left side display screen or unit always displays the processed information (equalizer, video or audio information, or streaming video or audio data (e.g. DMB or DVB-H, satellite audio, etc.)), and the right side display unit shows the control menu (e.g., play, record, pause, etc.) or detailed information related to the information displayed on the left side display unit. This feature can accommodate either a left handed or right handed person by selecting the corresponding user preference from the menu.

[**0047**] After the multimedia contents start being displayed, the screen information of the playback control menu displayed on the second display screen **106** is no longer necessary. Accordingly, when a certain time lapses without receiving any input from the user after the user operates the control menu screen, the control menu can be adapted to disappear and the multimedia contents (or data) displayed on the first display screen **105** expand to the second display screen **106** to enable both the first and second display screens **105**, **106** either to show the same multimedia contents or two or more different multimedia data simultaneously.

[**0048**] FIGS. **6** through **8** show exemplary views of the mobile terminal displaying that a main image of the first display screen expands to the second display screen in accordance with an embodiment of the present invention. The main image of the first display screen **105** expanding to the second display screen **106** can comprise a zoom-in (or zoom-out) image of the original main image of the first display screen **105** to display any detail missing from the original main image as shown in FIG. **6** because the first display screen **105** may only display a portion of the original image. In addition, the auxiliary or related information **204** displayed on the first display screen **105** can be displayed on the second screen **106** in a bigger font size and the second screen **106** can display more detailed information than the initial auxiliary information **204** or different information. For example, the second screen **106** can display different information (e.g., play time) regarding the music file when the first screen **105** displays the same information (e.g., artist name and song title).

[**0049**] As shown in FIG. **9**, the mobile terminal or communicator **100** can return to display an original screen aspect ratio/size in a case that the entire body of the mobile communicator rotates with respect to its center, or a certain dedicated button or the selected area of the touch screen is actuated while the media file is expanded to be displayed on both display units. As described below, as shown in FIG. **9**, the screen information display on the second display screen **106** disappears, and the first screen **105** continues to show the same main image or multimedia contents and the second display screen **106** shows the control menu screen. When the user rotates the mobile terminal **100** either clockwise or counterclockwise to have a vertical display orientation, each display screen displays screen information accordingly as shown in FIG. **9**. The scope of the present invention is not limited to the feature as described above and other different display configurations can be within the scope of the present invention.

[**0050**] In accordance with some embodiments of the present invention, the mobile terminal can perform multitask functions while playing the multimedia contents as shown in FIGS. **10**A-D. FIGS. **10** A through D show exemplary views showing a process of an event message during displaying the multimedia contents (e.g., a movie file or broadcast program). The controller **110** can control overall operations of the first and second display screens **105**, **106** according to various operation modes and in particular, display an event indicator on a portion of the at least one display screen when an event occurs while processing a current operation.

[**0051**] As shown in FIG. **10**A, the first display **105** can display an event indicator **901** when the event occurs while the first display screen **105** is showing the multimedia content and the second display screen **106** is displaying the

playback control menu for the multimedia content. The indicator **901** can provide a tactile, audible or visual (e.g., highlight, blinking) output or a combination thereof to the user when the event occurs. The indicator can be a text file, icon, image file, avatar or a photograph and the event can comprise an incoming call, an e-mail or text message, a multimedia messaging service (MMS) and a push-to-talk (PTT) message. However, the scope of the present invention is not intended to be limited to any particular embodiment such as the features as described above. Moreover, the scope of the present invention may not be limited to any specific kind of the event or indicator, and other multitask functions can be considered to include the essential features of the present invention described in this.

[**0052**] The indicator **901** is temporarily displayed on a portion of one of the first and second display screens **105**, **106** and can be moved to the other area of the same display screen or the other display screen. According to one embodiment of the present invention, the indicator can be moved from the first display screen **105** to the second display screen **106**, and the size or shape of the indicator can be changed during the move as shown in FIG. **10**B. After the indicator moves to the second screen **106**, it is displayed on a portion of the second screen.

[**0053**] When the indicator comprises an icon for an incoming text message or e-mail, for example, and the user touches or clicks the indicator icon displayed on the second screen **106** as shown in FIG. **10**C, the first display screen **105** resume to show the multimedia content and the second display screen **106** displays the a content **902** of the text message and a control menu image for handling the text message or e-mail as shown in FIG. **10**D.

[**0054**] FIGS. **11**A-D show exemplary views of process of sending the message of FIGS. **10**A-D during the multimedia display (i.e., multitasking). The process of creating or sending a message in one embodiment of the present invention is not indifferent from the conventional message handling method. That is, when the second display screen **106** shows a screen for inputting texts to create the message in FIG. **11**A, the user can send the message by actuating the SEND icon in FIG. **11**B to complete the message transmission as shown in FIG. **11**C. After reading the message or sending the reply to the received mail as shown in FIGS. **11**A-C, the second display screen **106** can return to display the default screen information (e.g., the multimedia playback control menu screen as described above) as shown in FIG. **11**D.

[**0055**] In accordance with yet another aspect of the invention, the mobile terminal **100** can include a cradle **200** as shown in FIGS. **12-14** and a cradle **200** for the mobile terminal **100** can comprise a power source supply unit **210**, speaker unit **220**, control input units **230** for controlling functions of the mobile terminal **100**, a connector **240**, and a housing **250**.

[**0056**] The power source supply unit **210** can provide external power source to the mobile terminal **100** mounted or connected to the cradle **200**. The speaker unit **220** can output sounds upon receiving audio signals via the connector **240** from the mobile terminal **100** connected to the cradle **200**. The control input units **230** allows the user to control a certain functions or operations of the mobile terminal **100** at the cradle **200**. In particular, the user can actuate the control input units **230** to execute a certain multimedia playback control functions (i.e., "Play", "Stop", "Pause", and others). Accordingly, the user can control the playback or display of the multimedia contents or other mobile terminal programs of the mobile terminal **100** at the cradle **200** (i.e., the user doesn't have to interrupt the movie or music program displayed on both display screens in the landscape view, thus the cradle provides a minimally intrusive means to control the multimedia playback) while seamlessly providing electrical power to the mobile terminal **100**.

[**0057**] The connector **240** can be connected to the data port **155** of the mobile terminal **100** to receive and send a certain signals (e.g., power, audio, video, control signal, and so forth) with respect to the mobile terminal **100** when the mobile terminal **100** is connected to the cradle **200**. The housing **250** can provide a structural support to the cradle **200** such that the mobile terminal can be safely received or mounted by the cradle **200**. In addition, the housing **250** can be configured to form such that the connector **240** is arranged at the suitable location at the cradle **200** to mate with the data port **155** of the mobile terminal **100** when connected to the cradle **200**. As shown in FIG. **13**, the housing **250** can be configured to form in such a way that the cradle **200** can connected to the mobile terminal or a wireless communication device that is opened flat to about 180 degrees in accordance with one embodiment of the present invention. However, the scope of the present invention is not intended to be limited to any particular cradle embodiment as described above. Moreover, the scope of the present invention may not be limited to any specific kind of the shape or configuration of the cradle and the mobile terminal, and other various body types can be considered to include the essential features of the present invention described in this.

[**0058**] In accordance with another aspect of the invention, the housing **250** can be installed at a car or other audio component systems. In addition, the cradle **200** can comprise a video/camera module to enable a video call or a large capacity internal battery for portability.

[**0059**] According to another aspect of the present invention, the mobile terminal can include more than two display screens. Further, the mobile terminal can comprise one lengthy flexible type display screen in such that the user can enjoy the multimedia contents in a landscape view without seam or break line in the middle of the screen when the terminal is opened flat to about 180 degrees.

[**0060**] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the metes and bounds of the claims, or equivalents of such metes and bounds are therefore intended to be embraced by the appended claims.

What is claimed is:

1. A wireless communication apparatus comprising:

a memory device to store the multimedia data;

a first display screen and a second display screen; and

a processor in cooperation with the first and second display screens and the memory device to perform,

displaying the multimedia data on the first display screen;

displaying information related to the multimedia data on the second display screen; and

displaying a multimedia control menu on at least one of the first and second display screens,

wherein the first and second display screens are movable relative to each other and are configured to have a same display orientation.

2. The apparatus of claim 1, further comprising a controller for displaying at least one of the multimedia data stored in the memory device, received via a transceiver and provided from an external source.

3. The apparatus of claim 2, wherein the controller and the processor are configured to be implemented in a same hardware configuration.

4. The apparatus of claim 2, wherein when a certain time lapses without receiving any input from a user after the user operates the control menu, the control menu is adapted to disappear and the multimedia data displayed on the first display screen expands to the second display screen to enable both the first and second display screens to show the multimedia data.

5. The apparatus of claim 2, wherein the controller comprises at least one of the group comprising:

an internal control unit and an external control unit, wherein the external control unit allows the user to control the playback of the multimedia data when the wireless communication apparatus is engaged with the external control unit.

6. The apparatus of claim 5, wherein the external control unit provides media control functions and/or indications to the user in a minimally intrusive manner.

7. The apparatus of claim 6, wherein the external control unit further includes:

an additional power supplying unit;

an input unit to allow a user to enter at least one command to display the multimedia data; and

a connector to be connected to a data port of the wireless communication apparatus to further control the multimedia.

8. The apparatus of claim 6, wherein the minimally intrusive manner provides that the control menu disappears and the multimedia data displayed on the at least one display screen expands to the other display screen in such a way that both display screens can show the multimedia data when a certain time lapses without receiving any input from the user after the user operates the control menu.

9. The apparatus of claim 5, wherein the internal control unit comprises:

a graphical user interface (GUI) to allow the user to control the playback of the multimedia data, wherein the at least one display screen displaying the GUI resumes displaying the multimedia data or the information related to the multimedia data automatically if the GUI remains idle for a certain time.

10. The apparatus of claim 5, wherein the internal control unit comprises at least one of the group comprising: a touch wheel, a touch pad, a touch screen, a jog dial, and a keypad.

11. The apparatus of claim 1, further comprising: a sensor to detect a rotational movement of a body of the apparatus, the sensor in cooperation with the processor to change a display orientation of the two display screens as the user rotates the entire body of the apparatus.

12. The apparatus of claim 1, further comprising:

an actuating button located on the apparatus to be pressed by the user or a portion of a touch screen on the at least one display screen to be operated by the user so as to rotate an image orientation of the two display screens.

13. The apparatus of claim 7, wherein the display orientation of the first and second display screens are rotated clockwise or counterclockwise when the connector of the external control unit receives the data port of the wireless communication apparatus.

14. A wireless communication apparatus, comprising:

a body with a first portion and a second portion that are movable relative to each other, each portion having an inner display screen, whereby the body can be opened such that both inner display screens are visible, and closed such that only one or no inner display screen is visible;

a memory device to store multimedia data received by a transceiver or transferred from an external source; and

a processor cooperating with the display screens and the memory device to perform the steps of,

providing the multimedia data playback via one or both display screens and other output means,

displaying information related to the multimedia data, on at least a portion of one display screen, and

providing media control functions and/or indications to the user in a minimally intrusive manner.

15. The apparatus of claim 14, wherein the media control functions are temporarily displayed on at least a portion of one display screen or are provided on an external attachment device without being displayed

16. The apparatus of claim 15, wherein the external attachment device is a cradle capable of being connected to the wireless communication apparatus that is opened flat to about 180 degrees.

17. The apparatus of claim 15, further comprising a sensor to detect the rotation movement of the body when the body is changed to either a vertical viewing orientation or a horizontal viewing orientation.

18. The apparatus of claim 15, further comprising:

an actuating button located on the apparatus to be pressed by the user or a portion of a touch screen on the at least one display screen to be operated by the user.

19. The apparatus of claim 17, wherein the processor changes an image if the sensor detects the rotational movement of the body or the actuating button or the portion of the touch screen on the at least one display screen is operated by the user.

20. The apparatus of claim 15, wherein the indication is temporarily displayed on one display screen for only a limited time duration or until user selection thereof.

21. The apparatus of claim 20, wherein the indication and/or functions thereof subsequently displayed on a different display screen after lapse of the limited time duration or after user selection.

22. The apparatus of claim 20, wherein at least one display screen allows touch sensitive inputting.

23. The apparatus of claim 16, wherein the cradle further includes:

an additional power supplying unit;

an input unit to allow a user to enter at least one command to display the multimedia data; and

a connector to be connected to a data port of the wireless communication apparatus to further control the multimedia.

24. The apparatus of claim 16, wherein the minimally intrusive manner provides that the control menu is displayed temporarily and the multimedia data being displayed on the first display screen expands to the second display screen in such a way that both display screens can show the multimedia data when a certain time lapses without receiving any input from the cradle by the user.

25. A method of displaying multimedia data for a wireless communication apparatus, comprising:

displaying multimedia data playback on at least one of a first and a second display screens;

displaying information related to the multimedia data, on at least a portion of the at least one of the display screens;

providing multimedia control functions and/or indications to the user in a minimally intrusive manner;

displaying a multimedia playback control menu on the at least one of the two display screens; and

providing a plurality of display options to control the multimedia data being displayed.

26. The method of claim 25, wherein the providing the plurality of display options further comprises:

displaying the multimedia data playback on the first display screen and the information related to the multimedia data on the second display screen;

displaying the multimedia data playback or the information related to the multimedia data on both display screens respectively;

displaying the multimedia data on the first and second display screens so as to provide the multimedia playback in a widescreen aspect ratio; and

displaying an event indicator on a portion of the at least one display screen when an event occurs.

27. The method of claim 26, further comprising: temporarily displaying the multimedia control menu on the at least one display screen after displaying the multimedia data.

28. The method of claim 26, wherein when a certain time lapses without receiving any input from the user after the user operates the control menu, the control menu disappears and the multimedia data displayed on the first display screen expands to the second display screen in such a way that both display screens show the multimedia data.

29. The method of claim 26, further comprising:

allowing the user to operate a graphical user interface (GUI) to control the multimedia data in such as way that the at least one display screen displaying the GUI resumes displaying the multimedia data or the information related to the multimedia data automatically if the GUI remains idle for a certain time; and

allowing an external control unit to be connected to the wireless communication apparatus to supply an additional power source and to further control the multimedia data.

30. The method of claim 29, wherein the external control unit provides media control functions and/or indications to the user in the minimally intrusive manner.

31. The method of claim 25, further comprising:

detecting a rotational movement of a body of the apparatus; and

changing a display orientation of the first and second display screens according to the detecting result.

32. The method of claim 31, further comprising:

allowing the user to press an actuating button located on the apparatus or touch the corresponding icon on a touch screen on the at least one display screen to rotate the display orientation of the two display units.

33. The method of claim 31, wherein the display orientation of the first and second display screens is changed when a connector of the external control unit is connected to a data port of the wireless communication apparatus.

34. The method of claim 25, further comprising:

temporarily displaying an event indicator on a portion of the first display screen when the event occurs; and

moving the indicator to the second display screen.

35. The method of claim 34, wherein the event comprises: an incoming call, an e-mail or a text message, a multimedia messaging service (MMS), and a push-to-talk (PTT) message.

36. The method of claim 34, further comprising:

providing a tactile, audible or visual output or a combination thereof to the user when the event occurs.

37. The method of claim 26, further comprising:

allowing the user to touch a display screen portion displaying the event indicator to operate the event, wherein the event and a control menu of the event are displayed on the at least one display screen.

38. The method of claim 37, wherein the control menu disappears and the multimedia data displayed on the at least one display screen expands to the other display screen in such a way that both display screens can show the multimedia data when a certain time lapses without receiving any input from the user after the user operates the control menu.

39. The method of claim 26, wherein the information related to the multimedia data comprises: a playback time, a time stamp of the multimedia data, and a name of the place showing where the multimedia data is made.

40. A wireless communication device comprising:

a transceiver to receive and transmit multimedia data;

a memory device to store the multimedia data;

a first display unit and a second display unit, wherein the first display unit is movable relative to the second

display unit and the first and the second display units are configured to have a same display orientation; and

a processor in cooperation with the transceiver, the first and second display units, and the memory device to perform,

displaying the multimedia data or the information related to the multimedia data on the first and second display units simultaneously;

displaying the multimedia data on the first and second display screens so as to provide the multimedia playback in a widescreen aspect ratio; and

displaying an event indicator on a portion of the at least one display screen when an event occurs during the playback of the multimedia data.

41. A mobile communications terminal comprising:

a memory device to store multimedia data received by a transceiver or provided from an external source;

a first display unit and a second display unit, wherein the first and second display units are movable relative to each other and are configured to have a same display orientation; and

a processor in cooperation with the transceiver, the first and second display units, and the memory device to perform,

displaying the multimedia data on both the first and second display units respectively; and

displaying an event indicator on a portion of at least one of the first and second display units when an event occurs during displaying the multimedia data.

42. The terminal of claim 41, wherein the multimedia data is adapted to be displayed on both the first and second display units in one of various image orientations comprising a portrait view and landscape view.

43. The terminal of claim 41, wherein the event indicator is displayed on a portion of the first display unit and then the event indicator is configured to move from the first display unit to the second display unit when the event is occurred during displaying the multimedia data.

44. The apparatus of claim 43, wherein the event comprises: an incoming call, an e-mail or a text message, a multimedia messaging service (MMS), and a push-to-talk (PTT) message.

45. The apparatus of claim 44, wherein the event indicator provides a tactile, audible or visual output or a combination thereof to the user.

46. The apparatus of claim 44, wherein the at least one display screen further comprises a touch-sensitive portion to enable the user to touch a display screen portion displaying the event indicator to operate the event and wherein the event and a control menu of the event are displayed on the at least one display screen.

47. The apparatus of claim 46, wherein the control menu disappears and the multimedia data playback displayed on the at least one display screen expands to the other display screen in such a way that both display screens can show the multimedia data when a certain time lapses without receiving any input from the user after the user operates the control menu.

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