PERSONAL WIRELESS MEDIA STATION

BACKGROUND

[0001] Today, wireless communication devices are very widely used. Mobile devices including smart phones, tablet computers, or the like are often used in conjunction with other wireless devices that can be paired with the mobile devices to provide better access to the inputs and outputs (e.g., display, speaker, microphone, etc.) of the mobile devices. For example, a user may want to keep his smart phone in his pocket while he is having a phone call or listening to music. In such a case, the user can establish a pairing between his smart phone and a wireless headset, so that the wireless headset can relay information to and from his smart phone, thereby eliminating the need to have an unobstructed access to the inputs and outputs provided on the smart phone.

SUMMARY

[0002] In some aspects, a personal wireless media station is in communication with a paired mobile computing device of a user for playing sound and displaying information based on communication with the paired mobile computing device. The personal wireless media station includes a main body, a wireless earbud, a first wireless module, and a second wireless module. The main body includes an information display, a speaker, the fire and second wireless modules, and a main body connector. The wireless earbud includes an earbud connector that is mateable with the main body connector. The wireless earbud and the main body form a single integrated body when the earbud connector and the main body connector are connected with each other. The first wireless module wirelessly communicates with a mobile computing device that has been paired with the personal wireless media station. The second wireless module wirelessly communicates with the wireless earbud.

[0003] In some aspects, the personal wireless media station plays sound through the speaker or causes the wireless earbud to play sound when the personal wireless media station receives audio data from the paired mobile computing device via the first wireless module. The personal wireless media station is programmed to detect when the earbud connector connects to the main body connector, play sound through the speaker of the main body while the earbud connector is connected to the main body connector, detect when the earbud connector

disconnects from the main body connector, stop playing sound through the speaker when it is detected that the earbud connector is disconnected from the main body connector, and wirelessly send audio data to the earbud and cause to play sound through the earbud while the earbud connector is not connected to the main body connector.

[0004] In some aspects, the personal wireless media station is further programmed to stop wireless sending of audio data to the earbud when it is detected that the earbud connector has got connected to the main body connector, and start wireless sending of audio data to the earbud when it is detected that the earbud connector has got disconnected from the main body connector.

[0005] In some aspects, the first wireless module performs two-way wireless data communication with the paired mobile computing device, the second wireless module performs one-way wireless data communication to send data to the wireless earbud, and the wireless earbud is not capable of wirelessly sending data to the personal wireless media station.

[0006] In some aspects, the wireless earbud is not capable of wirelessly sending data to the personal wireless media station, and the wireless earbud is capable of performing two-way wired data communication with the personal wireless media station when the earbud connector is connected to the main body connector.

[0007] In some aspects, the personal wireless media station plays sound only as it receives from the paired mobile computing device audio data for the sound to play.

[0008] In some aspects, the personal wireless media station does not include a digital storage device for storing a library of audio contents that are not being played through either the speaker or the earbud.

[0009] In some aspects, the personal wireless media station further includes a mechanical clip attached to the main body for clipping the wireless media station to a person's clothing or accessory.

[0010] In some aspects, both the earbud connector and the main body connector are audio connectors, wherein one of the audio connectors is a female audio connector and the other is a male audio connector.

[0011] In some aspects, the personal wireless media station further includes a camera module integrated with the main body.

[0012] In some aspects, the personal wireless media station further includes a microphone integrated with the main body, wherein the personal wireless media station plays sound of telephonic conversation from the paired mobile computing device. When the earbud connector is connected to the main body connector, the sound of telephonic conversation plays through the earbud while the user's voice is inputted through the microphone of the main body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The foregoing and other features, aspects and advantages of the present invention are described in detail below with reference to the drawings of various embodiments, which are intended to illustrate and not to limit the invention. The drawings comprise the following figures in which:

[0014] **FIG. 1** illustrates a perspective view of a personal wireless media station in accordance with an embodiment;

[0015] **FIG. 2** illustrates an example use of a personal wireless media station in accordance with an embodiment;

[0016] **FIG. 3** illustrates a block diagram of a personal wireless media station in accordance with an embodiment;

[0017] **FIG. 4** illustrates a flowchart depicting an example method of redirecting sound playback in accordance with an embodiment;

DETAILED DESCRIPTION OF EMBODIMENTS

[0018] Embodiments of the invention will now be described with reference to the accompanying figures. The terminology used in the description presented herein is not intended to be interpreted in any limited or restrictive manner, simply because it is being utilized in conjunction with a detailed description of certain specific embodiments of the invention. Furthermore, embodiments of the invention may comprise several novel features, no single one of which is solely responsible for its desirable attributes or which is essential to practicing the inventions herein described.

Perspective View of Personal Wireless Media Station

[0019] **FIG. 1** illustrates a perspective view of the personal wireless media station 100 in accordance with an example embodiment. The personal wireless media station 100 includes a main body 102 and a wireless earbud 104.

Main Body

[0020] The main body 102 includes a clip 106, a speaker 108, a light-emitting diode (LED) light indicator 110, a microphone 112, a liquid crystal display (LCD) screen 114, and a main body connector 116. The clip 106 clips the personal wireless media station 100 to the user's clothing (e.g., shirt, tie, pocket, etc.). Instead of the clip 106, the main body 102 may include any other attachment mechanism such as a band or other fasteners for attaching the main body 102 to the user's body. The speaker 108 plays back sound from another user device (not shown) paired with the personal wireless media station 100. The LED light indicator 110 indicates information to the user by blinking or flashing light therefrom. The microphone 112 captures sound information and provides the captured sound information to the user device paired with the personal wireless media station 100. The LCD screen displays information to the user. The displayed information may include, but is not limited to, call information, song information, text message information, email information, and the like.

Wireless Earbud

[0021] The wireless earbud 104 includes an earbud connector 118. As illustrated in **FIG. 1**, the earbud connector 118 of the wireless earbud 104 is mateable with the main body connector 116 of the main body 102. The wireless earbud 104 plays back sound information received from the main body 102 of the personal wireless media station 100. In some embodiments, the wireless earbud 104 plays back sound received from the main body 102 when the earbud connector 118 is not connected to the main body connector 116. When the earbud connector 118 is connected to the main body connector 116, the wireless earbud 104 and the main body 102 for a single integrated body.

Other Components of Main Body

[0022] Although not shown in **FIG. 1**, the personal wireless media station 100 may include one or more buttons or sensors for receiving the user's input. Such buttons or sensors may include a power button, volume control button(s), touch sensitive button(s), function button(s), or the like. The personal wireless media station 100 may include a charging slot (not shown) into which a charging cable (not shown) for charging the personal wireless media station 100 may be inserted. The personal wireless media station 100 may also include one or more other components (e.g., a camera) that are not illustrated in **FIG. 1**. Further, the personal wireless media station 100 may include one or more additional wireless earbuds 104, clips 106, speakers 108, LED indicators 110, microphones 112, LCD screens 114, and/or main body connectors 116. In some embodiments, one or more of the components shown in **FIG. 1** may be omitted.

Example Use of Personal Wireless Media Station

[0023] **FIG. 2** illustrates an example use of a personal wireless media station 200. As illustrated in **FIG. 2**, the personal wireless media station 200 includes a main body 202 and a wireless earbud 204. The personal wireless media station 200 is further paired with a user device 206. In mode 1, the wireless earbud 204 is connected to the main body 202. When the wireless earbud 204 is connected to the main body 202, the sound information transmitted from the user device 206 to the personal wireless media station 200 is played back through the speaker of the main body 202. In mode 2, the wireless earbud 204 has been detached from the main body 202, and the user has the wireless earbud 204 plugged into his ear. When the wireless earbud 204 is not connected to the main body 202, the sound information transmitted from the user device 206 to the personal wireless media station 200 is played back through the wireless earbud 204. In mode 2, all other components of the main body 202 (e.g., other than the speaker) may still be active and may output and/or collect information to and from the user.

Detecting Connection and Disconnection

[0024] The main body connector 116 may include a switch that is used for plug detection (e.g., such a switch may be switched on upon insertion of a connector). Alternatively or additionally, the main body connector 116 may include circuitry that measures the impedance

and/or other characteristics of the connector (e.g., the earbud connector 118) that plugs into the main body connector 116. The main body connector 116 may provide any measured information to the processor included in the personal wireless media station 100.

Connectors

[0025] In some embodiments, the main body connector 116 is a female 3.5mm earphone socket, and the earbud connector 118 is a male 3.5mm earphone plug. The main body connector 116 is configured to receive the earbud connector 118.

Playing Sound Between Main Body and Wireless Earbud

[0026] Upon insertion of the earbud connector 118 into the main body connector 116, the sound information received from the user device (not shown) stops to be played back via the speaker 108 and begins to be played back via the wireless earbud 104. The techniques for redirecting the playback of the sound information are described in greater detail below with reference to **FIG. 4**.

Example Flowchart for Redirecting Sound Playback

[0027] **FIG. 4** is a flowchart illustrating a method 400 for redirecting sound playback, according to an embodiment of the present disclosure. The steps illustrated in **FIG. 4** may be performed by the personal wireless media station 200 of **FIG. 3**, or any components therein, or any other personal wireless media stations discussed herein or other devices (presently known or developed in the future) within the scope of the present disclosure. For convenience, method 400 is described as performed by the personal wireless media station 200.

[0028] The method 400 begins at block 401. At block 402, the personal wireless media station 200 detects that the earbud connector of the wireless earbud 204 is connected to the main body connector of the main body 202.

[0029] At block 404, the personal wireless media station 200 plays sound through the speaker of the main body 202 while the earbud connector is connected to the main body connector.

[0030] At block 406, the personal wireless media station 200 detects that the earbud connector has disconnected from the main body connector.

[0031] At block 408, the personal wireless media station 200 ceases to play sound through the speaker of the main body 202 in response to detecting that the earbud connector has disconnected from the main body connector.

[0032] At block 410, the personal wireless media station 200 wirelessly sends audio data to the wireless earbud 204 and causes sound to be played through the wireless earbud 204 while the earbud connector is not connected to the main body connector.

[0033] As discussed above, there may be situations when the user may want to have a call or listen to the music privately using the wireless earbud 204. In such situations, the user can simply unplug the wireless earbud 204 from the main body 202 of the personal wireless media station 200, and the sound information received from the user device 206 automatically begins to be played back via the wireless earbud 204 without the user having to activate the wireless earbud 204 or press any button(s).

Incoming Text and Email Messages

[0034] The personal wireless media station 100 may allow the user to read text messages and emails via the LCD screen 114, without having to maneuver the user device 206. In some embodiments, when a new text message or email arrives, information regarding the text message or email is transmitted to the personal wireless media station 100 by the user device 206. Based on the information received from the user device 206, the personal wireless media station 100 may cause at least a portion of the content of the text message or email on the LCD screen 114. For example, the LCD screen 114 may initially display a notification that a new text message or email has arrived, and upon detecting a user input indicating that the user wishes to view the content of the text message or email, display the beginning portion of the text message or email.

Scrolling

[0035] Once the beginning portion of the text message or email is displayed on the LCD screen 114, the personal wireless media station 100 may continue to display the remaining portion of the text message or email by scrolling the content across the LCD screen 114 (e.g., move the text displayed on the LCD screen 114 to the left at a specified speed, with the displayed text disappearing to the left end of the LCD screen 114 and new text appearing from the right end of the LCD screen 114).

Jumping to Next Text Message or Email

[0036] The personal wireless media station 100 may cause the next text message or email to be displayed if additional unopened text messages or emails exist. For example, while a text message or email is being displayed on the LCD screen 114, if the user provides a user input indicating that the user wishes to view the next text message or email, the personal wireless media station 100 causes the beginning portion of the next text message or email to be displayed on the LCD screen 114.

Display Scrolling Speed

[0037] The user may control the speed at which the text is scrolled across the LCD screen 114, for example, by using the volume up and volume down buttons. Other buttons may be used to control the scrolling speed. For example, if the user slides his finger across the touch-sensitive button in one direction, the personal wireless media station 100 increases the scrolling speed, and if the user slides his finger across the touch-sensitive button in the other direction, the personal wireless media station 100 decreases the scrolling speed.

Page Turning

[0038] In some embodiments, the personal wireless media station 100, after causing the beginning portion of the text message or email on the LCD screen 114, awaits a user input indicating that the user wishes to view the next portion of the text message or email. When the user provides such an input (e.g., by activating a button on the personal wireless media station 100), the personal wireless media station 100 causes the next portion of the text message or email to be displayed on the LCD screen 114.

Display Text Size

[0039] The user may control the size of the text displayed on the LCD screen 114, for example, by using the volume up and volume down buttons. Other buttons or combinations of buttons may be used to control the text size (e.g., function button + volume up increases the text size and function button + volume down decreases the text size).

Incoming Telephone Call

[0040] In some embodiments, when a call is received on the user device 206, the information regarding the call (e.g., information indicating who the caller is) is transmitted to the personal wireless media station 100, and based on the received information, the personal wireless media station 100 causes caller information to be displayed on the LCD screen 114. Additionally, the personal wireless media station 100 may provide an indication that a call is incoming via the speaker 108 by playing a sound, via the LED indicator 110 by providing a blinking signal, or by vibrating the main body 102.

Taking an Incoming Telephone Call

[0041] While a call is incoming, the user may provide a user input to the personal wireless media station 100 to take the call. For example, the user may press the function button to indicate that he wishes to take the call, and in response, the personal wireless media station 100 may transmit the indication to the mobile device 206 and cause the mobile device 206 to take the call. During the call, the sound information is transmitted from the mobile device 206 to the personal wireless media station 100 and the voice information captured by the microphone 112 is transmitted from the personal wireless media station 100 to the mobile device 206. If the wireless earbud 104 is not connected to the main body 102, the personal wireless media station 100 may further relay the sound information to the wireless earbud 104 to be played via the wireless earbud 104.

Black Box Feature

[0042] The personal wireless media station 100 may include a black box feature. For example, the personal wireless media station 100 may capture audio data or image data upon user activation of the black box feature. In some embodiments, the personal wireless media station 100 records audio data captured by the microphone 112 in the background and/or records image or video data captured by a camera module (not shown) in the background. The recorded data may be transmitted to the user device 206, and may be discarded after a specified period of time or after a specified amount of new data has been collected.

Charging

[0043] The personal wireless media station 100 may charge the wireless earbud 104 while the wireless earbud 104 is plugged into the main body 102. The main body 102 may be charged via a charge port (not shown in **FIG. 1**) using an external charging cable. When the wireless earbud 104 is plugged into the main body 102 for charging, the wireless communication between the main body 102 of the personal wireless media station 100 and the wireless earbud 104 may be turned off.

No Storage

[0044] The personal wireless media station 100 may not have any storage (e.g., nonvolatile memory), and any data output by the personal wireless media station 100 may be stored on volatile memory. For example, the personal wireless media station 100 may only stream sound without permanently storing any audio data on the personal wireless media station 100. The audio data transmitted from the user device 206 to the main body 202 may further be transmitted and played via the wireless earbud 104.

Mechanical Clip or Necklace

[0045] As shown in **FIG. 1**, the personal wireless media station 100 includes a clip 106 that may be used to attach the personal wireless media station 100 to the user's clothing (e.g., shirt) or accessory (e.g., hat). The clip 106 may be integrated with the body and may include a spring plate that faces the rear surface of the body of the personal wireless media station 100. In some embodiments, instead of or in addition to the clip 106, the personal wireless media station 100 includes a necklace that may be used to hang the personal wireless media station 100 from the user's neck.

Watch

[0046] The personal wireless media station 100 may include a watch feature. For example, the LCD screen 114 may display the current time when the LCD screen 114 is idle, when the LCD screen 114 is not displaying information received from the user device 206, or when the user presses one of the buttons of the personal wireless media station 100. The personal wireless media station 100 may further include an alarm function that plays an alarm

indication at a specified time via the speaker 108, the LED indicator 110, and/or the LCD screen 114. In some embodiments, the user device 106 may transmit such an alarm indication to the personal wireless media station 100 at the specified time. In response to receiving the alarm indication, the personal wireless media station 100 causes the alarm indication to be output to the user via the speaker 108, the LED indicator 110, and/or the LCD screen 114.

Camera

[0047] The personal wireless media station 100 may include a camera feature. The personal wireless media station 100 may capture images via a camera module, and the personal wireless media station 100 may transmit the captured images to the user device 206 and cause the captured images to be stored in the user device 206.

Mobile Phone Application

[0048] The user device 206 may have a mobile application installed thereon for configuring the personal wireless media station 100. For example, the mobile application may be configured to set and monitor the Bluetooth pairing with the personal wireless media station. The mobile application may include a feature for finding a personal wireless media station within the communication range. The mobile application may be used to monitor and control the various features of the personal wireless media station 100. The mobile application may be configured to display (or cause the personal wireless media station 100 to display) a low battery warning based on the battery status of the personal wireless media station 100. The mobile phone may be configured to automatically transmit any audiovisual information that may otherwise be displayed on the mobile phone itself to the personal wireless media station 100 when the mobile device 206 is paired with the personal wireless media station 100. The mobile application may also receive audio data and image data captured by the personal wireless media station 100 and store the data in a memory of the mobile device 206.

Example Configuration of Personal Wireless Media Station

[0049] **FIG. 3** illustrates a block diagram of a personal wireless media station 300, according to an example embodiment. As shown in **FIG. 3**, the personal wireless media station 300 includes communications modules 302 and 304, a processor 306, a memory 308,

input(s) 310, and output(s) 312. The processor 306 may include one or more processors. The input(s) 310 may include one or more microphones, mechanical buttons, touch-sensitive buttons, switches, etc. The memory 308 may be a volatile memory, a non-volatile memory, or a combination thereof. The output(s) 312 may include one or more speakers, LCD screens, LED indicators, etc.

Communication between Components

[0050] Although communication between the components is not illustrated in **FIG. 3**, each component may communication with one or more other components. For example, the communications modules 302 and 304 may communicate with the user device 206 and the wireless earbud 204 of **FIG. 2**, respectively. The processor 306 may communicate with each of the other components illustrated in **FIG. 3**.

Two-Way Wireless Module

[0051] In some embodiments, the communications module 302 is a two-way wireless module. In such embodiments, the communications module 302 receives information from the user device 206 as well as transmits information to the user device 206. The communications module 302 may use Bluetooth technology. However, the communications module 302 is not limited as such and may be implemented using any wireless communications standards currently available or developed in the future. For example, the information received from the user device 206 may include call information, caller information, sound information, text, voice, or video message information, and any other information that the user can directly (e.g., without the help of the personal wireless media station 100) access from the user device 206. The information transmitted to the user device 206 may include user input information, recorded sound information, captured image information, and any other information that the user can directly (e.g., without the help of the personal wireless media station 100) provide to the user device 206.

One-Way Wireless Module

[0052] In some embodiments, the communications module 304 is a one-way wireless module. In such embodiments, the communications module 304 transmits information to the

wireless earbud 104 but does not receive any information from the wireless earbud 104. The communications module 304 may use Bluetooth technology. However, the communications module 304 is not limited as such and may be implemented using any wireless communications standards currently available or developed in the future. For example, the information transmitted to the wireless earbud 104 may include sound information or any other information that the user can directly (e.g., without the help of the wireless earbud 104) access from the main body 102 of the personal wireless media station 100. In some embodiments, the communications module 304 is a two-way wireless module. In other embodiments, the personal wireless media station 300 does not have the communications module 304, and instead, the communications module 302 is used to communicate with both the user device 206 and the wireless earbud 204.

Processor

[0053] The processor 306 may receive information and instructions from other computing systems via the communications module 302. Further, the processor 306 may store information in the memory 308 or retrieve information from the memory 308. The processor 306 may process input information received by the input(s) 310, and provide output information to the output(s) 312. Further, the processor 306 may perform one or more techniques described herein regarding the process of redirecting sound playback. For example, the processor 306 may, via one or more sensors or detectors, detect whether the earbud connector of the wireless earbud 204 is connected to the main body connector of the main body 202. Based on whether the earbud connector of the wireless earbud 204 is connected to the main body connector of the main body 202, the processor 306 may cause different output(s) to play back the sound based on the audio data received from the user device 206.

Memory

[0054] The memory 308 may store audio data transmitted from the user device 206. In some embodiments, the memory 308 is a volatile memory and only stores what is currently being transmitted and played back by the personal wireless media station 300. For example, all the data stored in the memory 308 may be lost shortly after use or upon power down of the personal wireless media station 300. In other embodiments, the memory 308 is a nonvolatile memory or a combination of volatile and nonvolatile memory. The memory 308 may include RAM, ROM

and/or other persistent, auxiliary or non-transitory computer-readable media. The memory 308 may store computer program instructions to be executed by the processor 306 in the general administration and operation of the personal wireless media station 300. The memory 308 may further include computer program instructions and other information for implementing aspects of the present disclosure.

Input(s)

[0055] The personal wireless media station 300 may include one or more inputs (e.g., physical or digital buttons) that allow the user of the personal wireless media station 300 to enter various user commands. In some embodiments, the personal wireless media station 300 includes a function button. The function button may be used to power on or off the personal wireless media station 300 (e.g., by the user pressing and holding the function button for a prolonged amount of time). Further, the function button may be used to answer or end calls, or open or close incoming text messages or emails. In one embodiment, if the user presses the function button twice in a specified period of time, the processor 306 initiates a Bluetooth pairing between the personal wireless media station 300 and the user device 206. The personal wireless media station 300 may include one or more volume control buttons. In some embodiments, the volume control buttons may be used to control the text scroll speed, turn pages of text messages or emails, enable or disable the black box feature described herein (e.g., the volume control buttons may be used to start and end recording audio data or image data).

Output(s)

[0056] The output(s) may include one or more speakers, displays, LED indicators, and the like. The speaker may be configured to play sound received from the user device 206. The sound played via the speaker may be a telephone conversation, a song, a voice recording, an alarm, etc. The display may include one or more display screens that display, e.g., under the control of the processor 306, the information processed by the processor 306. The information may include text, images, or other visual content. For example, the display may be provided on a side surface of the personal wireless media station 100 as shown in **FIG. 1**. The one or more display screens can be any of various conventional displays such as a liquid crystal display (LCD), a light-emitting diode (LED) display, etc., or any other display means to be developed in

the future. In certain embodiments, the display is a color display. In other embodiments, the display is not a color display but is grayscale.

Other Components of Personal Wireless Media Station

[0057] The personal wireless media station 300 is not limited to the configuration illustrated in **FIG. 3**, and may include one or more other components. For example, the personal wireless media station 300 may include a camera module configured to capture image data. Such a camera module may communicate with the processor 306 to cause the captured image data to the user device 206 (e.g., via the communications module 302).

Activating and Deactivating Voice Command Feature

[0058] The personal wireless media station 300 may be configured to activate or deactivate the voice command feature of the user device 206 based on a user input to the personal wireless media station 300. For example, the user may press a button provided on the personal wireless media station 300, and the button may be configured to generate a command to the user device 206 wirelessly connected to the personal wireless media station 300 to turn on or turn off the voice command feature of the user device 206. Other user inputs to the personal wireless media station 300 may be configured to activate or deactivate other features of the user device 206.

Two-Way Communication with Wireless Earbud

[0059] The wireless earbud 204 may be paired with the main body 202 of the personal wireless media station 300 using a two-way wired or wireless communication.

Recording Telephone Calls

[0060] In some embodiments, the personal wireless media station 300 may be configured to record telephone calls. The recording may be initiated on the personal wireless media station 300 or the mobile application running on the user device 206. The recording may be stored in cloud storage assigned to the registered user of the user device 206 or the personal wireless media station 300. For example, the user may register his or her personal wireless media station 300 online (e.g., on the provider associated with the personal wireless media station 300 or any

other provider of cloud storage services), and cloud storage may be provided to the user for use. The recording may have a file name including the name or the telephone number of the calling party initiating the telephone call.

Additional Features

- Hands free phone call and text display - Pinn device control:
    - +/- key: Earbud volume and text scrolling speed adjustment
    - Function key
        - Siri activation (Press and hold the function key for 3 sec.)
        - Text display on/off (Single press) – On when there is unread text / Off after read
        - Phone call receive/end (Sing press) – Receive when ringing
- Power on/off – Desirably, sleep/wake → Off all functions but the Pinn Finder™ is able to find the Pinn (Minimizing battery life is KEY)
- Pinn Finder™ (via using Pinn App) – Pinn beeps and blinks when the mobile App is searching Pinn
- Sound recording (via using Pinn App)
    - Sound recording using Pinn microphone when not calling
    - Phone conversation recording when calling (Only available using the App)
- LCD display indicates current date/time and battery life status – Display on when single press the function key (When there is no unread text either while no phone call/incoming phone ringing)
    - Low battery alert (Optional) – LED light indicator blinks in red
- Automatic Bluetooth on/off – Off when charging
- Automatic speaker/earbud mode change:
    - Speaker mode (Earbud off) – When earbud connected to the base station (Earbud charging)
    - Earbud mode (Speaker off) – When earbud disconnected from the base station
- Silent mode on/off – LED light indicator only/both LED and speaker

Additional Features

- Siri activation - Press and hold the function key
- Earbud volume control - By pressing +/- key while phone call (Volume level 1-7)
- Text scroll speed control - By pressing +/- key while displaying text
- Speaker output volume control - By pressing +/- key while phone call when earbud connected
- Silent mode on/off – Press and hold (-) key for silent mode/press and hold (+) key for normal
- Next & previous message display – Double press +/- button
- Call waiting – Press and hold function key

Additional Features

- Voice recording start/stop and playback control
- Hands free mode on/off (mobile phone default App)
- Pinn finder
- Device setting
    - Factory default setting
    - Earbud volume
    - Microphone input volume control
    - Text scrolling speed and type (page turning type or scrolling)
    - Text inversion (upside down)
    - LCD brightness control
    - Siri activation on/off
        - When on – Press and hold the function button for 3 sec. to activate Siri
        - When off – Press and hold the function button for 3 sec. to call back to the most recent call
    - Automatic Bluetooth on/off (Optional) – Automatically off when charging. But could be default function and not able to turn off this function.

Additional Features

- Battery charge for both base station and earbud when mini USB cable connected to the base station
- New earbud pairing in case of earbud lost (Earbud can be sold separately) – By using App (i.e. input earbud serial # for pairing)
- Bluetooth priority to the Pinn device (Optional)
- Water resistant – IPX 4

Additional Features: Pinn Models

- Design – Unique, sleek, fashionable, fancy & compact (Tie clip look)
- 2 or 3 color options – Platinum, Titanium and/or Gold

Additional Features: Accessories

- Earbud
- Charging cable or charging station
- Car charger
- Necklace strings

Additional Features

- Camera integration
  - By App setting - Take a photo every 1 minute when on and when not charging
- New casing (design)
  - Smaller & Thinner
  - Necklace type
    - Various color/material necklace string can be sold – i.e. black, pink, gold & etc.
    - Easy string replacement but special connecting mechanism required only for Pinn certified strings – This can be applicable for the 1st generation tie pin type Pinn product (TBD)
  - Belt clip type
    - Belt clip holster with Pinn headset
  - Etc.

Additional Features: Mobile App

- Pinn device setting
- Pinn software control
- Battery life indication and low battery alert

- Sound recording and storage (Storage page is separated like music library)
- Siri linking capability
- Pinn device finder – Beeps and LED blinks when search

Additional Features: Mobile App

- Device setting
    - Default setting - TBD
    - Earbud volume
    - Text scrolling speed
    - Text auto display on/off
    - LCD brightness
    - Microphone input volume
    - Speaker output volume
    - Siri function on/off
    - LED light indicator on/off
    - Automatic Bluetooth on/off (Optional) - Automatically off when charging
- Function control (including while using the Pinn device)
    - Earbud volume control (i.e. 1-10)
    - Text scroll speed control
    - LCD brightness control
    - Microphone input volume control
    - Speaker output volume control
    - Voice recording start and stop button while phone call – Automatic file name generation
        - Date, time and caller ID
        - Display recorded duration
        - Storage page
            - Display like music library
            - Select file then show playback control and detail information such as date, time, caller ID and etc.
    - Hands free mode on/off (mobile phone default and in the app as well)

Additional Features: Mobile App Buttons

- Device setting page
- Device function control
- Device finder
- And record library

Additional Features: Mobile App Buttons

- Pinn device user can download "Standard App" for free that has all capability listed above.
- Pinn user also can select "Monthly Subscription Base App"
    - Store recorded data in the "Pinn Cloud" server for users
    - Monthly fee base
        - i.e. $1.99/mo for 2GB
        - Auto naming for the recorded data – Name includes caller ID
    - Also provide photo storage for the 2nd generation Pinn product that includes camera

Other Considerations

[0061] Although the embodiments of the inventions have been disclosed in the context of a certain preferred embodiments and examples, it will be understood by those skilled in the art that the present inventions extend beyond the specifically disclosed embodiments to other alternative embodiments and/or uses of the inventions and obvious modifications and equivalents thereof. In addition, while a number of variations of the inventions have been shown and described in detail, other modifications, which are within the scope of the inventions, will be readily apparent to those of skill in the art based upon this disclosure. It is also contemplated that various combinations or subcombinations of the specific features and aspects of the embodiments may be made and still fall within one or more of the inventions. Accordingly, it should be understood that various features and aspects of the disclosed embodiments can be combined with or substituted for one another in order to form varying modes of the disclosed inventions. Thus, it is intended that the scope of the present inventions herein disclosed should not be limited by the particular disclosed embodiments described above, and that various changes in form and details may be made without departing from the spirit and scope of the present disclosure as set forth in the following claims.

LISTING OF ADDITIONAL FEATURES:

1. A personal wireless media station in communication with a paired mobile computing device of a user for playing sound and displaying information based on communication with the paired mobile computing device, the personal wireless media station comprising:

a main body comprising an information display, a speaker, a first wireless module, a second wireless module and a main body connector;

a wireless earbud comprising a earbud connector that is mateable with the main body connector, wherein the wireless earbud and the main body form a single integrated body when the earbud connector and the main body connector are connected with each other;

the first wireless module configured to wirelessly communicate with a mobile computing device that has been paired with the personal wireless media station;

the second wireless module configured to wirelessly communicate with the wireless earbud;

wherein the personal wireless media station is configured to play sound through the speaker or cause the wireless earbud to play sound when the personal wireless media station receives audio data from the paired mobile computing device via the first wireless module;

wherein the personal wireless media station is programmed:

to detect when the earbud connector connects to the main body connector,

to play sound through the speaker of the main body while the earbud connector is connected to the main body connector,

to detect when the earbud connector disconnects from the main body connector,

to stop playing sound through the speaker when it is detected that the earbud connector is disconnected from the main body connector, and

to wirelessly send audio data to the earbud and cause to play sound through the earbud while the earbud connector is not connected to the main body connector.

2. The personal wireless media station of Claim 1, wherein the personal wireless media station is programmed:

to stop wireless sending of audio data to the earbud when it is detected that the earbud connector has got connected to the main body connector; and

to start wireless sending of audio data to the earbud when it is detected that the earbud connector has got disconnected from the main body connector.

3. The personal wireless media station of Claim 1, wherein the first wireless module is configured to perform two-way wireless data communication with the paired mobile computing device, wherein the second wireless module is configured to perform one-way wireless data communication to send data to the wireless earbud, wherein the wireless earbud is not capable of wirelessly sending data to the personal wireless media station.

4. The personal wireless media station of Claim 1, wherein the wireless earbud is not capable of wirelessly sending data to the personal wireless media station, wherein the wireless earbud is capable of performing two-way wired data communication with the personal wireless media station when the earbud connector is connected to the main body connector.

5. The personal wireless media station of Claim 1, wherein the personal wireless media station is configured to play sound only as it receives from the paired mobile computing device audio data for the sound to play.

6. The personal wireless media station of Claim 5, wherein the personal wireless media station does not comprise a digital storage device for storing a library of audio contents that are not being played through either the speaker or the earbud.

7. The personal wireless media station of Claim 1, further comprising:

a mechanical clip attached to the main body for clipping the wireless media station to a person's clothing or accessory.

8. The personal wireless media station of Claim 1, wherein both the earbud connector and the main body connector are audio connectors, wherein one of the audio connectors is a female audio connector and the other is a male audio connector.

9. The personal wireless media station of Claim 1, further comprising a camera module integrated with the main body.

10. The personal wireless media station of Claim 1, further comprising a microphone integrated with the main body, wherein the personal wireless media station is configured to play

sound of telephonic conversation from the paired mobile computing device, wherein when the earbud connector is connected to the main body connector, the sound of telephonic conversation plays through the earbud while the user's voice is inputted through the microphone of the main body.

11. A method for redirecting sound playback, the method comprising:

detecting that an earbud connector of a wireless earbud is connected to a main body connector of a main body, wherein the earbud connector is mateable with the main body connector such that the wireless earbud and the main body form a single integrated body when the earbud connector and the main body connector are connected with each other;

playing sound through a speaker of the main body while the earbud connector is connected to the main body connector;

detecting that the earbud connector has disconnected from the main body connector;

ceasing to play sound through the speaker of the main body in response to detecting that the earbud connector has disconnected from the main body connector; and

wirelessly sending audio data to the wireless earbud and causing sound to be played through the wireless earbud while the earbud connector is not connected to the main body connector.

12. The method of Claim 11, further comprising:

detecting that the earbud connector has re-connected to the main body connector; and

ceasing to wirelessly send the audio data to the earbud in response to detecting that the earbud connector has re-connected to the main body connector.

13. The method of Claim 11, further comprising:

performing a two-way wireless data communication with a paired mobile computing device; and

performing a one-way wireless data communication with the wireless earbud.

14. The method of Claim 11, wherein the wireless earbud is not capable of wirelessly sending data to another device.

15. The method of Claim 11, wherein the played sound is limited to sound received from a paired mobile computing device.

16. The method of Claim 15, further comprising playing the sound without permanently storing audio data associated with the sound.

17. The method of Claim 11, further comprising attaching to a user's clothing or accessory via a mechanical clip attached to the main body.

18. The method of Claim 11, wherein both the earbud connector and the main body connector are audio connectors, wherein one of the audio connectors is a female audio connector and the other is a male audio connector.

19. The method of Claim 11, further comprising capturing images via a camera module integrated with the main body.

20. The method of Claim 11, further comprising:

playing sound of telephonic conversation from a paired mobile computing device; and

transmitting sound inputted via a microphone integrated with the main body to the paired mobile computing device.

ABSTRACT

The disclosure herein provides a personal wireless media station including a main body and a wireless earbud. The personal wireless media station may detect that an earbud connector of the wireless earbud is connected to a main body connector of the main body, play sound through a speaker of the main body while the earbud connector is connected to the main body connector, detect that the earbud connector has disconnected from the main body connector, cease to play sound through the speaker of the main body in response to detecting that the earbud connector has disconnected from the main body connector, and wireless send audio data to the wireless earbud and cause sound to be played through the wireless earbud while the earbud connector is not connected to the main body connector.

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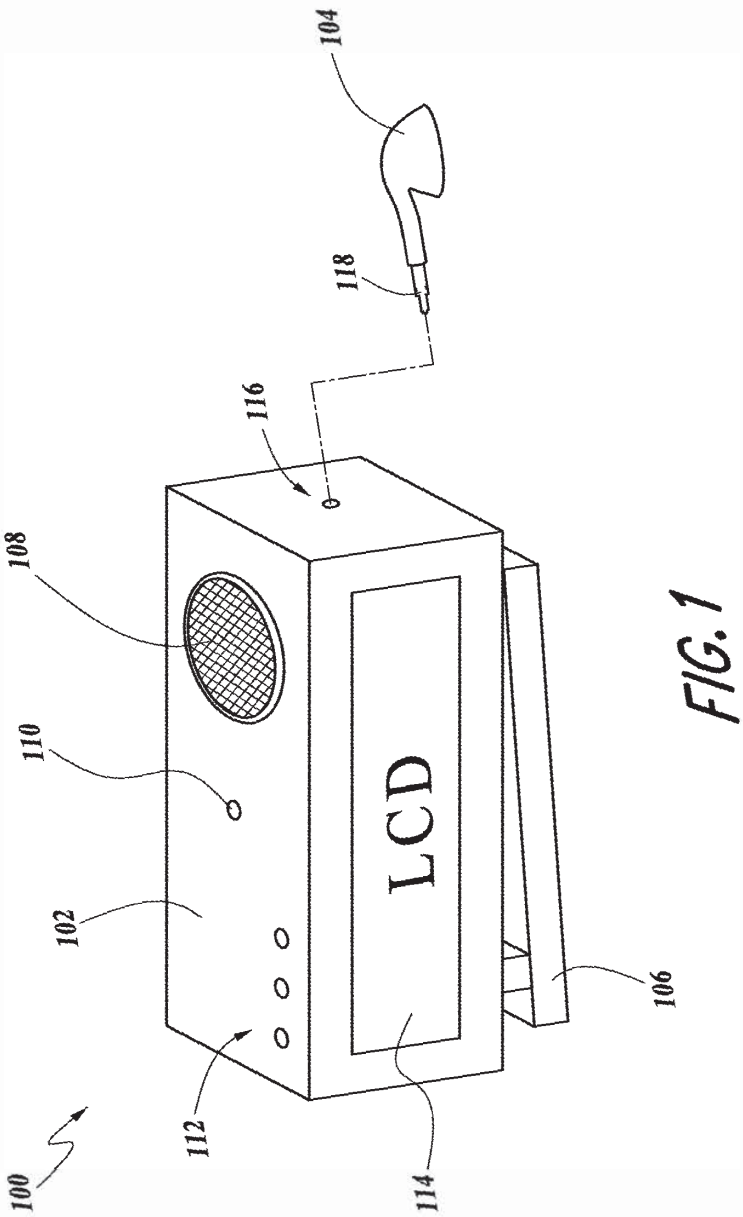
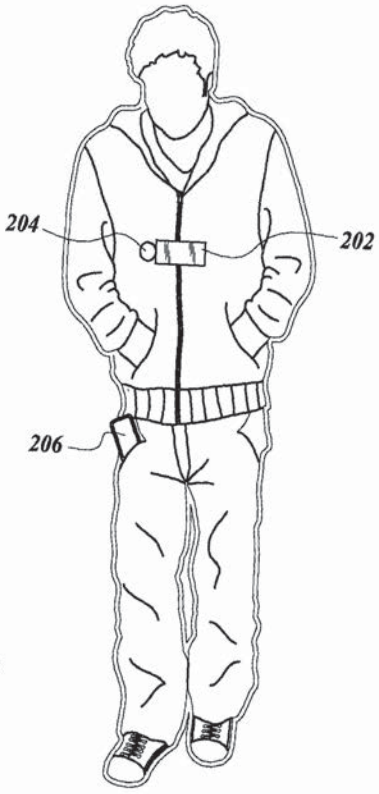
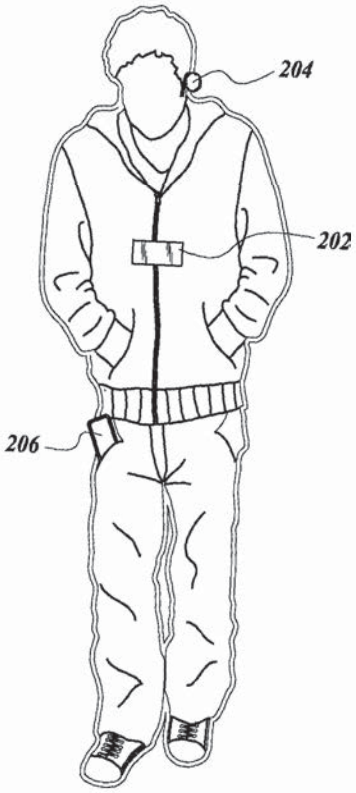


FIG. 1



MODE 1



MODE 2

FIG. 2

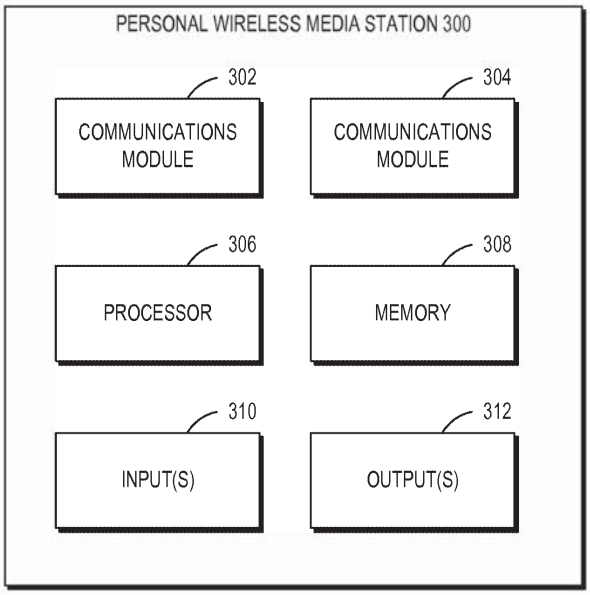

PERSONAL WIRELESS MEDIA STATION 300
302
COMMUNICATIONS MODULE
304
COMMUNICATIONS MODULE
306
PROCESSOR
308
MEMORY
310
INPUT(S)
312
OUTPUT(S)

FIG. 3

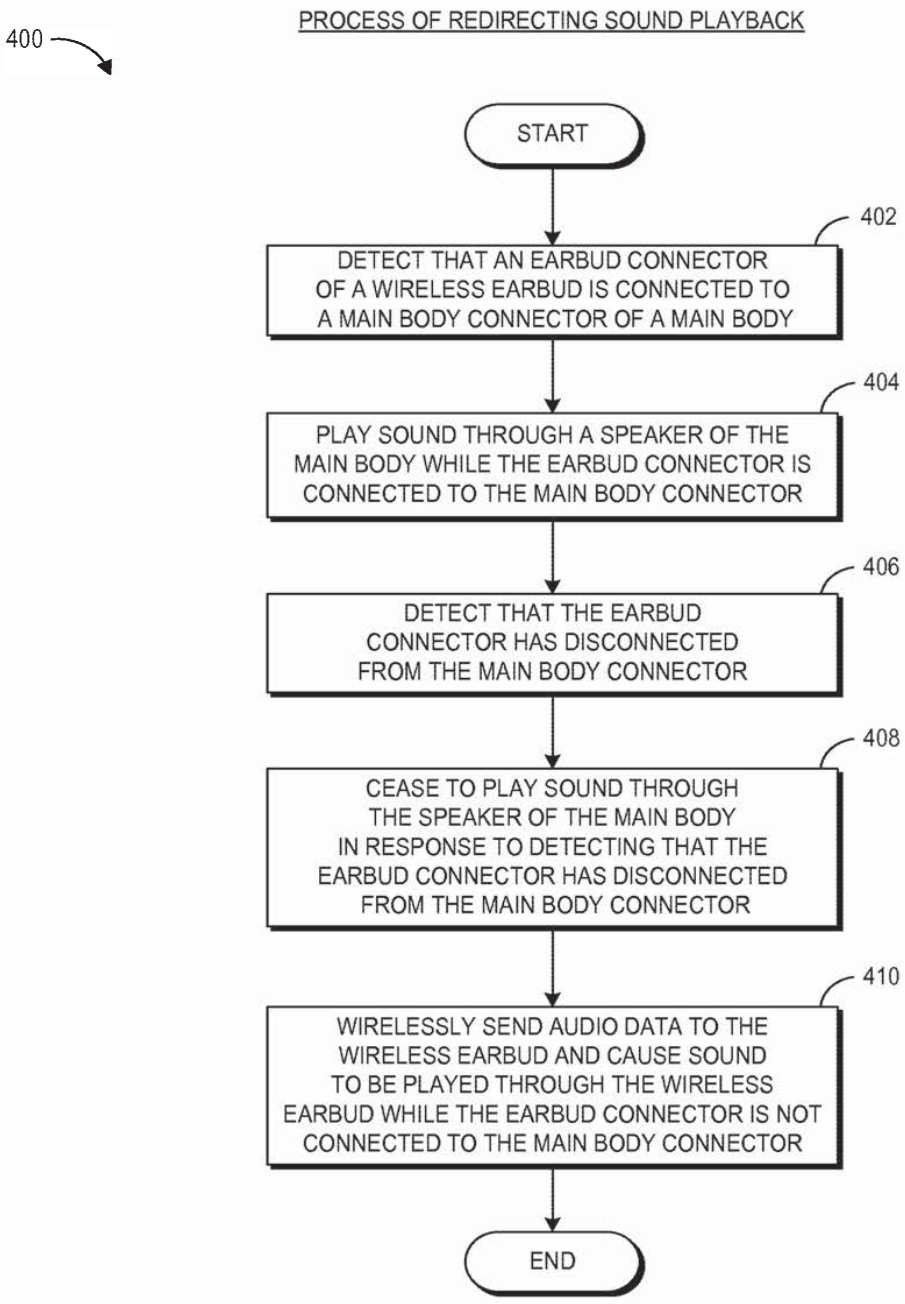

400
PROCESS OF REDIRECTING SOUND PLAYBACK
START
402
DETECT THAT AN EARBUD CONNECTOR OF A WIRELESS EARBUD IS CONNECTED TO A MAIN BODY CONNECTOR OF A MAIN BODY
404
PLAY SOUND THROUGH A SPEAKER OF THE MAIN BODY WHILE THE EARBUD CONNECTOR IS CONNECTED TO THE MAIN BODY CONNECTOR
406
DETECT THAT THE EARBUD CONNECTOR HAS DISCONNECTED FROM THE MAIN BODY CONNECTOR
408
CEASE TO PLAY SOUND THROUGH THE SPEAKER OF THE MAIN BODY IN RESPONSE TO DETECTING THAT THE EARBUD CONNECTOR HAS DISCONNECTED FROM THE MAIN BODY CONNECTOR
410
WIRELESSLY SEND AUDIO DATA TO THE WIRELESS EARBUD AND CAUSE SOUND TO BE PLAYED THROUGH THE WIRELESS EARBUD WHILE THE EARBUD CONNECTOR IS NOT CONNECTED TO THE MAIN BODY CONNECTOR
END

FIG. 4