

CERTIFICATE OF TRANSLATION ACCURACY

I am a professional reviewer and coordinator specializing in translating Japanese, Korean, and Chinese to English and vice versa.

I served as Chief Examiner of the certified court interpreter test for the State of California and as a contract translator and interpreter for various federal agencies through the U.S. Department of State for more than a decade. I served as an instructor at the University of California at Berkeley and the Middlebury Institute of International Studies at Monterey (MIIS) Graduate Program in Translation.

I have more than 30 years of experience reviewing thousands of technical, legal, and business documents from Japanese to English submitted to, among others, Japanese judicial authorities, U.S. federal courts, the U.S. International Trade Commission (ITC), and the USPTO Patent Trial and Appeal Board (PTAB).

I certify that the following document translated from Japanese to English is a true, correct, and complete translation of the corresponding source text to the best of my knowledge and ability.

I certify under penalty of perjury that the foregoing is true and correct.

Executed this 25th day of July 2024 in Contra Costa County of the State of California.

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(54) TITLE OF THE INVENTION

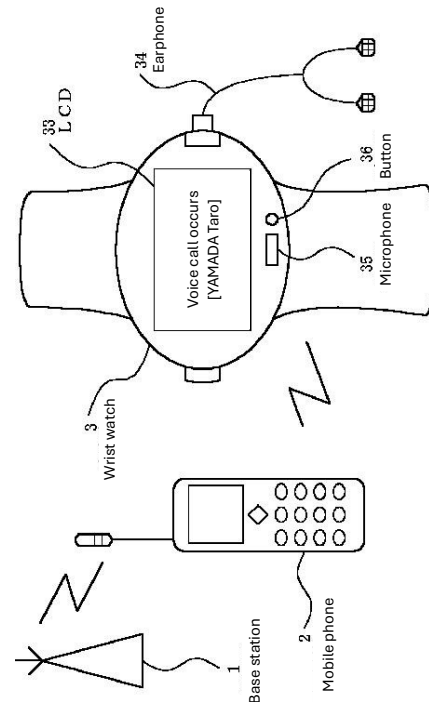
MOBILE COMMUNICATION TERMINAL, WRIST WATCH, INCOMING CALL FORMAT, AND INCOMING CALL METHOD

(57) ABSTRACT
PROBLEM

To enable a user to talk during an incoming call by using an earphone without removing a wrist watch from a wrist, and to selectively enable or disable data display on the wrist watch.

RESOLUTION MEANS

When a mobile phone 2 receives an incoming voice call or data via a base station 1, the mobile phone 2 provides notification of the incoming voice call or data reception to the wrist watch 3 which also has built-in short-range wireless communicating means via a wireless device of the built-in short-range wireless communicating means. The wrist watch 3 determines whether or not voice or data needs to be transferred to the wrist watch, and transmits the result to the mobile phone 2. If transfer is required, voice communication or data display is performed using the microphone 35 and earphone 34 or the LCD 33 on the wrist watch 3, respectively.



What is claimed is:

[Claim 1] An incoming call system, wherein when a portable communication terminal receives an incoming voice call or data reception via a base station, the portable communication terminal notifies a wrist watch having built-in short-range wireless communicating means of the incoming voice call or data reception using the built-in short-range wireless communicating means; the wrist watch determines whether or not the voice or data should be transferred to the wrist watch and transmits the result to the portable communication terminal, and if transfer is to be performed, the wrist watch performs the voice call or displays the data using the call transmitting means and call receiving means or the displaying means, respectively, of the wrist watch.

[Claim 2] The incoming call system according to claim 1, wherein the call receiving means is an earphone or a headphone.

[Claim 3] A portable communication terminal, comprising: a communication unit that transmits and receives voice signals or data via a base station; a first wireless unit that performs short-range wireless communication with a wrist watch; an incoming call identification unit that identifies incoming calls from a base station and determines whether the incoming call is voice or data; a notification determination unit that determines whether or not to notify the wrist watch of the content identified by the incoming call identification unit; a notification output unit that outputs a notification signal when the notification determination unit makes a determination to provide notification to the wrist watch; and a first communication control unit that controls the transfer of the notification signal and signals received via the base station to the wrist watch via the first wireless unit and controls the response to the caller side.

[Claim 4] A wrist watch having a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch comprising: a second wireless unit for short-range wireless communication for transmitting and receiving voice or data with the portable communication terminal; a memory for storing received data; an earphone and microphone for making voice calls; an instruction unit for causing the wrist watch to make calls or display data; and a central control unit for controlling each of the aforementioned units; wherein the central control unit further includes: a notification recognition unit for recognizing a notification signal from the portable communication terminal; a notification means selecting unit for selecting notification means for notifying a wearer of the wrist watch of an incoming call; a request determination unit for determining whether or not voice or data needs to be transferred to the wrist watch; a request output unit for outputting a signal on the basis of the determination result of the request determination unit; and a second communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of voice or data transferred from the portable communication terminal.

[Claim 5] A wrist watch having a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch comprising: a third wireless unit for short-range wireless communication for transmitting and receiving data with the portable communication terminal; a memory for storing received data; an instruction unit for causing the wrist watch to display data; and a central control unit for controlling each of the aforementioned units; wherein the central control unit further includes: a notification recognition unit for recognizing a notification

signal from the portable communication terminal; a notification means selecting unit for selecting notification means for notifying a wearer of the wrist watch of an incoming call; a request determination unit for determining whether or not data needs to be transferred to the wrist watch; a request output unit for outputting a signal on the basis of the determination result of the request determination unit; and a third communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of data transferred from the portable communication terminal.

[Claim 6] A call receiving system, comprising: the portable communication terminal according to claim 3; and a wrist watch according to claim 4.

[Claim 7] A call receiving system, comprising: the portable communication terminal according to claim 3; and a wrist watch according to claim 5.

[Claim 8] A method of receiving incoming calls, comprising: detecting an incoming call via a base station by a portable communication terminal and determining whether a notification is required to be transmitted to a wrist watch; if notification is required, transmitting incoming call information indicating whether the incoming call is voice or data to the wrist watch via a short-range wireless communication method; receiving the incoming call information and displaying the type of call by the wrist watch; determining whether to make a call or receive data on the basis of instructions from the wrist watch; if the wrist watch side is to make a call or receive data, outputting a transfer request to the portable communication terminal; transmitting a response signal from the portable communication terminal to the caller side; and making the call using an earphone and microphone provided for the wrist watch, or displaying the data on displaying means.

DETAILED DESCRIPTION OF THE INVENTION

[0001]

TECHNICAL FIELD OF THE PRESENT INVENTION

The present invention relates to a portable communication terminal for providing notification of an incoming call using the portable communication terminal and a wrist watch, a wrist watch, an incoming call system, and an incoming call method.

[0002]

CONVENTIONAL TECHNOLOGY

Conventionally, for example, Japanese Unexamined Patent Application Publication H11-177663 discloses a wrist band-type telephone communication device that allows a user to remove the wrist band part of the watch from the wrist, listen to the voice of other person through a speaker provided on the wrist watch, and place a microphone next to the of the user to input voice and make a call. Furthermore, Japanese Unexamined Patent Application Publication H11-234750 discloses a mobile communication device in which incoming call notifying means that is used separately from the communication device main body is built into a wrist watch, notification of an incoming call to the communication device main body is provided by operating the notifying means, and messages sent from another party that are received by the communication device main body are displayed on a display unit provided on the wrist watch.

[0003]

PROBLEMS TO BE SOLVED BY THE INVENTION

With the first of the aforementioned conventional technologies, the wrist band must be removed every time a call is received in order to listen to the voice of the other party through the speaker, which is troublesome and inconvenient. With the second technology, while it is possible to be notified of an incoming call and have a message from the other party displayed on the display unit of the wrist watch, the message may be displayed even in cases where it is not desired to be displayed on the wrist watch, which may cause inconvenience in actual use. Furthermore, calls must be made using the mobile phone itself, which is inconvenient.

[0004] An object of the present invention is to provide a highly convenient portable communication terminal, wrist watch, incoming call system, and incoming call method, that allows a user to use an earphone during a call without removing the wrist watch from the wrist when receiving a call, and that allows selectively enabling or disabling display of data on the wrist watch.

[0005]

MEANS FOR SOLVING THE PROBLEM

With the incoming call system of the present invention, when a portable communication terminal receives an incoming voice call or data reception via a base station, the portable communication terminal notifies a wrist watch having built-in short-range wireless communicating means of the incoming voice call or data reception using the built-in short-range wireless communicating means; the wrist watch determines whether or not the voice or data should be transferred to the wrist watch and transmits the result to the portable communication terminal, and if transfer is to be performed, the wrist watch performs the voice call or displays the data using the call transmitting means and call receiving means or the displaying means, respectively, of the wrist watch. The call receiving means is an earphone or a headphone.

[0006] The portable communication terminal of the present invention contains: a communication unit that transmits and receives voice signals or data via a base station; a first wireless unit that performs short-range wireless communication with a wrist watch; an incoming call identification unit that identifies incoming calls from a base station and determines whether the incoming call is voice or data; a notification determination unit that determines whether or not to notify the wrist watch of the content identified by the incoming call identification unit; a notification output unit that outputs a notification signal when the notification determination unit makes a determination to provide notification to the wrist watch; and a first communication control unit that controls the transfer of the notification signal and signals received via the base station to the wrist watch via the first wireless unit and controls the response to the caller side.

[0007] A wrist watch of the present invention has a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch containing: a second wireless unit for short-range wireless communication for transmitting and receiving voice or data with the portable communication terminal; a memory for storing received data; an earphone and microphone for making voice calls; an instruction unit for causing the wrist watch to make calls or display data; and a central control unit for controlling each of the aforementioned units; wherein the central control unit further includes: a notification recognition unit for recognizing a notification signal from the portable communication terminal; a notification means selecting unit for selecting notification means for notifying a wearer of the wrist watch of an incoming call; a request determination unit for determining whether or not voice or data needs to be transferred to the wrist watch; a request output unit for outputting a signal on the basis of the determination result of the request determination unit; and a second communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of voice or data transferred from the portable communication terminal.

[0008] Furthermore, the wrist watch of the present invention has a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch containing: a third wireless unit for short-range wireless communication for transmitting and receiving data with the portable communication terminal; a memory for storing received data; an instruction unit for causing the wrist watch to display data; and a central control unit for controlling each of the aforementioned units; wherein the central control unit further includes: a notification recognition unit for recognizing a notification signal from the portable communication terminal; a notification means selecting unit for selecting notification means for notifying a wearer of the

wrist watch of an incoming call; a request determination unit for determining whether or not data needs to be transferred to the wrist watch; a request output unit for outputting a signal on the basis of the determination result of the request determination unit; and a third communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of data transferred from the portable communication terminal.

[0009] The communication system of the present invention provides:

a portable communication terminal containing a communication unit that transmits and receives voice signals or data via a base station, a first wireless unit that performs short-range wireless communication with a wrist watch, an incoming call identification unit that identifies incoming calls from a base station and determines whether the incoming call is voice or data, a notification determination unit that determines whether or not to notify the wrist watch of the content identified by the incoming call identification unit, a notification output unit that outputs a notification signal when the notification determination unit makes a determination to provide notification to the wrist watch, and a first communication control unit that controls the transfer of the notification signal and signals received via the base station to the wrist watch via the first wireless unit and controls the response to the caller side; and a wrist watch having a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch containing a second wireless unit for short-range wireless communication for transmitting and receiving voice or data with the portable communication terminal, a memory for storing received data, an earphone and microphone for making voice calls, an instruction unit for causing the wrist watch to make calls or display data, and a central control unit for controlling each of the aforementioned units, wherein the central control unit further includes a notification recognition unit for recognizing a notification signal from the portable communication terminal, a notification means selecting unit for selecting notification means for notifying a wearer of the wrist watch of an incoming call, a request determination unit for determining whether or not voice or data needs to be transferred to the wrist watch, a request output unit for outputting a signal on the basis of the determination result of the request determination unit, and a second communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of voice or data transferred from the portable communication terminal.

[0010] Furthermore, the communication system of the present invention provides:

a portable communication terminal containing a communication unit that transmits and receives voice signals or data via a base station, a first wireless unit that performs short-range wireless communication with a wrist watch, an incoming call identification unit that identifies incoming calls from a base station and determines whether the incoming call is voice or data, a notification determination unit that determines whether or not to notify the wrist watch of the content identified by the incoming call identification unit, a notification output unit that outputs a notification signal when the notification determination unit makes a determination to provide notification to the wrist watch, and a first communication control unit that controls the transfer of the notification signal and signals received via the base station to the wrist watch via the first wireless unit and controls the response to the caller side; and a wrist watch having a display unit for providing notification of incoming calls and displaying data from a portable communication terminal, the wrist watch containing a third wireless unit for short-range wireless communication for transmitting and receiving data with the portable communication terminal, a memory for storing received data, an instruction unit for causing the wrist watch to display data, and a central control unit for controlling each of the

forementioned units, wherein the central control unit further includes a notification recognition unit for recognizing a notification signal from the portable communication terminal, a notification means selecting unit for selecting notification means for notifying a wearer of the wrist watch of an incoming call, a request determination unit for determining whether or not data needs to be transferred to the wrist watch, a request output unit for outputting a signal on the basis of the determination result of the request determination unit, and a third communication control unit for transmitting the signal output by the request output unit to the portable communication terminal via the second wireless unit and controlling the reception of data transferred from the portable communication terminal.

[0011] The method of receiving incoming calls of the present invention, including: detecting an incoming call via a base station by a portable communication terminal and determining whether a notification is required to be transmitted to a wrist watch; if notification is required, transmitting incoming call information indicating whether the incoming call is voice or data to the wrist watch via a short-range wireless communication method; receiving the incoming call information and displaying the type of call by the wrist watch; determining whether to make a call or receive data on the basis of instructions from the wrist watch; if the wrist watch side is to make a call or receive data, outputting a transfer request to the portable communication terminal; transmitting a response signal from the portable communication terminal to the caller side; and making the call using an earphone and microphone provided for the wrist watch, or displaying the data on displaying means.

[0012] With the present invention, when an incoming voice call or data reception is received by a mobile communication terminal, a notification is sent to the wrist watch by the mobile communication terminal having a notification function, and the received data such as the voice call or e-mail can be displayed directly by an operation determining whether or not to transfer the data to the wrist watch based on the wishes of the wrist watch user.

[0013]

EMBODIMENTS OF THE INVENTION

Next, an embodiment of the present invention will be described with reference to the drawings.

[0014] FIG. 1 depicts a system for receiving a voice call according to a first embodiment of the present invention, including a base station 1 having a communication unit 11 which communicates with a mobile phone 2 and a control unit 12 which controls the communication unit, a mobile phone 2 which is connected to the base station 1 via a wireless circuit, and a wrist watch 3 which is connected to the mobile phone 2 via a short-range wireless system. Usually, the mobile phone 2 is stored in a bag or the like. For example, the mobile phone 2 may be a mobile phone terminal such as a PHS/PDC, or the like, which includes a small short-distance wireless communication device such as Bluetooth or the like for incoming call notification, voice data transfer, and e-mail transfer. In addition, the wrist watch 3 is a normal digital wrist watch to which an earphone for audio output (external accessory), a microphone for audio input, and an LCD for displaying incoming voice calls have been added, and similar to mobile phone 2, a built-in small short-range wireless communication device such as Bluetooth is built-in for

incoming call notifications, voice data transfer, and e-mail transfer.

[0015] In FIG. 1, when the mobile phone 2 receives a voice call from a base station 1, the mobile phone notifies the wrist watch 3 that the voice call has occurred. The wrist watch 3 notifies the user of the incoming voice call by displaying the information on the LCD 33 or lighting an LED (not depicted), and provides a voice call service using an attached earphone 34 and microphone 35 upon request by the user.

[0016] The mobile phone 2 contains a communication unit 21 that transmits and receives voice signals and data via the base station 1, a wireless unit 22 which performs short-range wireless communication with the wrist watch 3, and a central control unit 23 which controls these units. The central control unit 23 provides an incoming call identification unit 231 that identifies incoming calls from a base station 1 and determines whether the incoming call is voice or data; a notification determination unit 232 that determines whether or not to notify the wrist watch 3 of the content identified by the incoming call identification unit 231; a notification output unit 233 that outputs a notification signal when the notification determination unit 232 makes a determination to provide notification to the wrist watch 3; and a communication control unit 234 that controls the transfer of the notification signal and signals received via the base station 1 to the wrist watch 3 via the wireless unit 22 and controls the response to the caller side.

[0017] The wrist watch 3 has a wireless unit 31 for short-range wireless communication for sending and receiving voice signals and data with the mobile phone 2, flash memory 32 for storing received data, an LCD 33 for notifying of incoming calls and displaying data from the mobile phone 2, an earphone 34 and a microphone 35 for making voice calls, a button 36 for making calls or displaying data on the wrist watch, and a central control unit 37 for controlling all of these units.

[0018] The central control unit 37 contains a notification recognition unit 371 which recognizes a notification signal from the mobile phone 2, a notifying means selection unit 372 which selects the notifying means for notifying the wearer of the wrist watch of an incoming call, a request determination unit 373 which determines whether or not voice or data needs to be transferred to the wrist watch, a request output unit 374 which outputs a signal based on the determination result of the request determination unit 373, and a communication control unit 375 which transmits the signal output by the request output unit 374 to the mobile phone 2 via the wireless unit 31 and controls reception of the voice or data transferred from the mobile phone 2.

[0019] The operation of the first embodiment will be described below with reference to FIG. 1 to FIG. 3

[0020] When the portable terminal 2 receives an incoming voice call from the base station 1, the incoming call identification unit 231 detects the incoming call (step 1: abbreviated as S1), and the notification determination unit 232 determines whether or not notification needs to be sent to the wrist watch 3 (S2). The requirement setting may be determined in advance in accordance with time information, for example. If notification to the wrist watch 3 is not required, normal operation is performed, and if notification is required, the notification output unit 233 outputs notification information (a signal) to the wrist watch 3 (S3), and the communication control unit 234 outputs this notification information to the wireless unit 22.

[0021] The notification information output by the wireless unit 22 is received by wireless unit 31 of the wrist watch 3 (S5), and the notification recognition unit 371 recognizes the type of incoming call (S6). Furthermore, in the wrist watch 3, a predetermined notifying means is selected by the notifying means selection unit 372, and the user is notified of the incoming voice call by, for example, ㉑ playing a ringtone, ㉒ lighting an LED (not depicted), or ㉓ displaying a message on the LCD 33 (in accordance with the settings by the user) (S7). [0022] Thereafter, when the user recognizes that there is an incoming voice call, the user operates a button 36, which causes the request determination unit 373 to determine whether there is a request to transfer the voice signal from the wrist watch 3 to the mobile phone 22 (S8). If a transfer request is recognized, the request output unit 374 outputs a transfer request signal (S9). The transfer request from the wrist watch 3 is received and confirmed by the communication control unit 234 (S10), the mobile phone 2 transmits a response signal to the calling side (S11), and the wrist watch 3 starts a voice call using the earphone 5 and the microphone 6 (S12). When the call is ended, the wrist watch 3 notifies the mobile phone 2 of the end of the call, and the mobile phone 2 detects the end of the call (S13) and disconnects the communication between the mobile phone 2 and the wrist watch 3, as well as the communication channel between the mobile phone 2 and the base station 1 (S14).

[0023] Next, the second embodiment of the present invention will be described with reference to the drawings.

[0024] FIG. 4 depicts a system for receiving incoming data according to a second embodiment of the present invention, which includes a base station 1, a mobile phone 2, and a wrist watch 3a. The base station 1 and the mobile phone 2 are the same as in FIG. 1. The wrist watch 3a is a wrist watch which basically has the same functions as those in FIG. 1, but also uses the LCD 33 for displaying data such as e-mail or the like. [0025] The internal configuration of the wrist watch 3a is the same as depicted in FIG. 2(a), except that the earphone 34 and microphone 35 are eliminated, so a description thereof will be omitted. The operation of the second embodiment will be described below.

[0026] In FIG. 4, when a mobile phone 2 receives data from a base station 1, the mobile phone notifies the wrist watch 3a of the receipt of data by wireless communication. The wrist watch 3a receives the notification that data has been received and notifies the user in the same manner as for a voice call, by either ㉑ playing a ringtone, ㉒ lighting an LED, or ㉓ displaying a message on the LCD unit 4 (according to the settings by the user). Thereafter, upon recognizing that data has been received, the user operates the wrist watch 3a to request the mobile phone 2 to transfer the received data. Upon receiving the request from the wrist watch 3a, the mobile phone 2 transfers the received data using wireless communication. The wrist watch 3a displays the transferred data on the LCD 33. A certain number of transferred data items can be stored in the built-in flash memory, and the data can also be deleted upon request.

[0027] In both the first and second embodiments described above, the user of the watch issues a transfer instruction to the watch by pressing the button 36, which serves as an instruction unit for inputting whether or not a transfer is required. However, the watch may be configured so that the transfer instruction is executed automatically without providing the button 36, for example during specific time periods.

[0028] As described above, in the present invention, incoming voice/data calls to a mobile terminal are notified to the user via a wrist watch and then provided as a service, thereby making the services currently provided on mobile communication terminals more convenient.

[0029]

EFFECT OF THE INVENTION

As described above, with the present invention, the first effect is that when a voice call is received, the user can directly make a voice call using an earphone or the like, thereby enabling the user to respond more quickly without removing the mobile communication terminal from a bag or the like, and without having to place the speaker close to the ear. The second effect is that when data (email, or the like) is received, not only is a notification displayed on the wrist watch, but the specific content can also be selectively displayed on the LCD at the discretion of the user, making it more convenient for the user to use.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram depicting a first embodiment of an incoming call system according to the present invention;

FIG. 2(a) is a block diagram depicting the configurations of the base station, mobile phone, and wrist watch in FIG. 1;

FIG. 2(b) is a block diagram depicting the configuration of the central control unit of the mobile phone and wrist watch in FIG. 2(a);

FIG. 3 is a diagram for describing the operation of the first embodiment of the present invention; and

FIG. 4 is a diagram depicting a second embodiment of the incoming call system of the present invention.

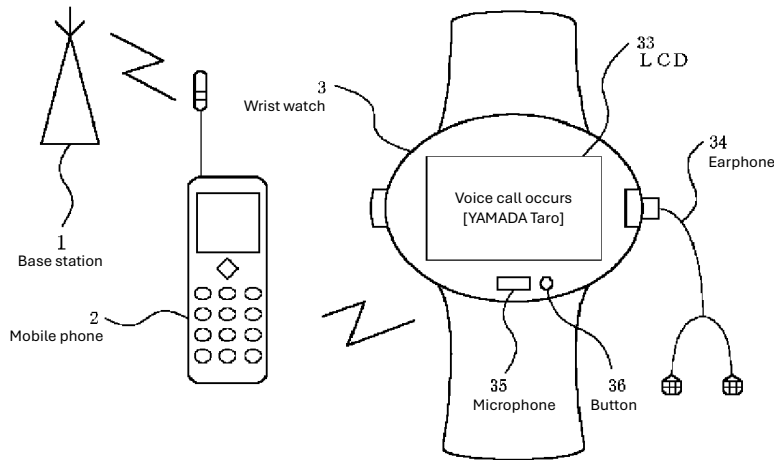
DESCRIPTION OF REFERENTIAL NUMERALS

1. Base station
2. Mobile phone
- 3, 3a. Wrist watch
- 11, 21. Communication unit
12. Control unit
- 22, 31. Wireless unit
- 23, 37. Central control unit
32. Flash memory
33. LCD
34. Earphone
35. Microphone
36. Button
231. Call identification unit
232. Notification determination unit
233. Notification output unit
- 234, 375. Communication control unit
371. Notification recognition unit
372. Notification means selection unit

373. Request determination unit

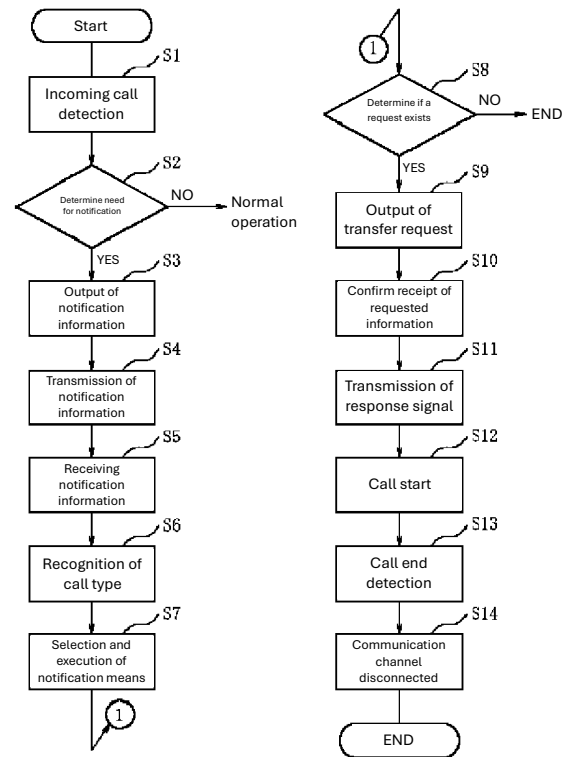
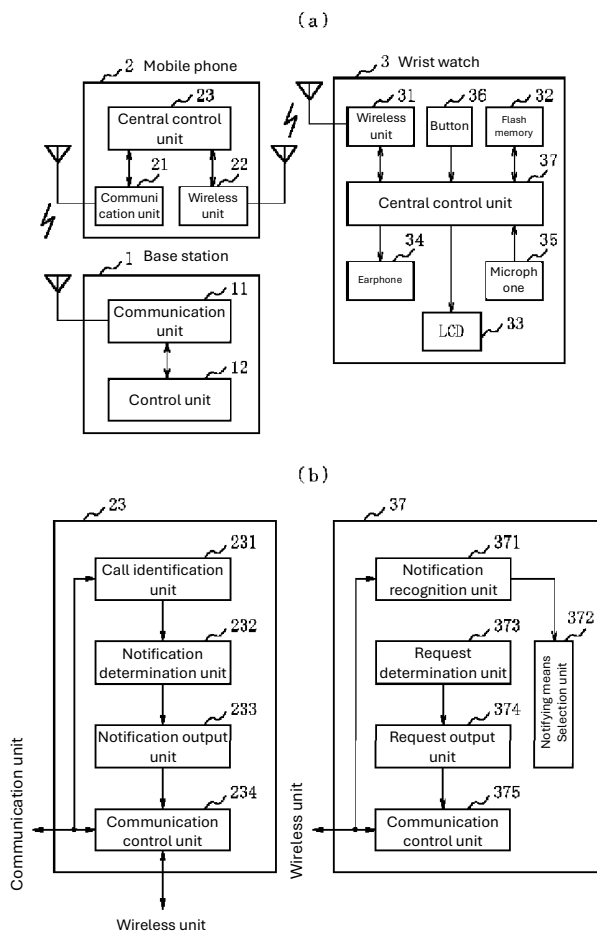
374. Request output unit

[FIG. 1]

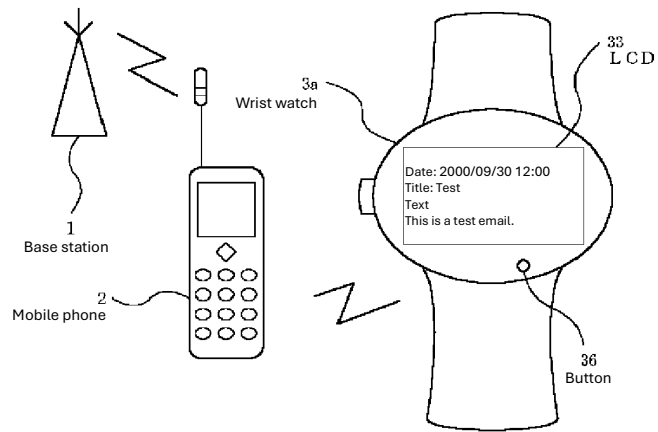


[FIG. 2]

[FIG. 3]



[FIG. 4]



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