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(54) CELLULAR TELEPHONE PERSONAL DIGITAL ASSISTANT, AND PAGER UNIT WITH CAPABILITY OF SHORT RANGE RADIO FREQUENCY TRANSMISSIONS

(76) Inventor: **PETER V. BOESEN**, Des Moines, IA (US)

Correspondence Address:
MCKEE, VOORHEES & SEASE, P.L.C.
801 GRAND AVENUE
SUITE 3200
DES MOINES, IA 50309-2721 (US)

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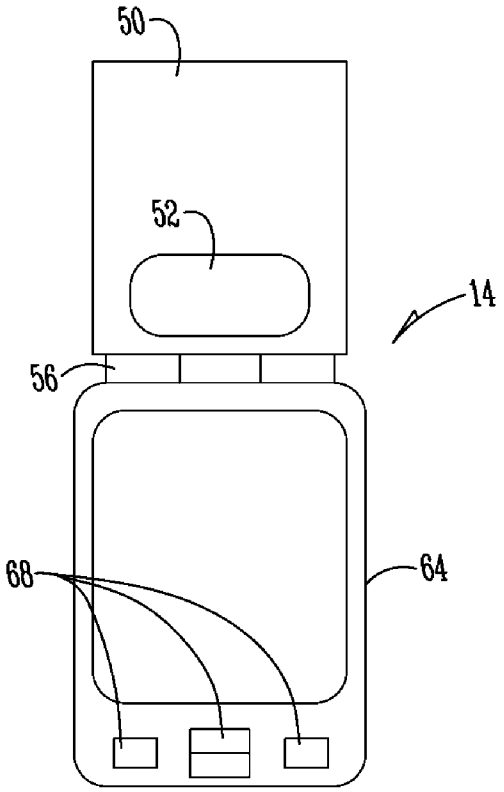
(57) **ABSTRACT**

A cellular telephone system, including a cellular telephone transceiver unit, an ear piece which receives the voice vibrations of a user, and a wireless linkage operatively connecting the ear piece to the cellular telephone transceiver unit, allows a user to be in a hands-free mode when using a cellular telephone. The cellular telephone transceiver unit includes a personal digital assistant and a pager with a vibration module. The ear piece generally uses a bone sensor along with an air sensor placed in the external auditory canal of the user to detect the voice vibrations of the user. Further, a speaker is included in the ear piece to allow the user to hear incoming data from the cellular telephone transceiver. The wireless linkage uses low power radio frequency waves to send and receive signals between the ear piece and the cellular telephone transceiver unit. Both the ear piece and the cellular telephone transceiver unit require power which is supplied by batteries. Both the ear piece and the cellular telephone transceiver may be recharged by simply placing them in a docking station.



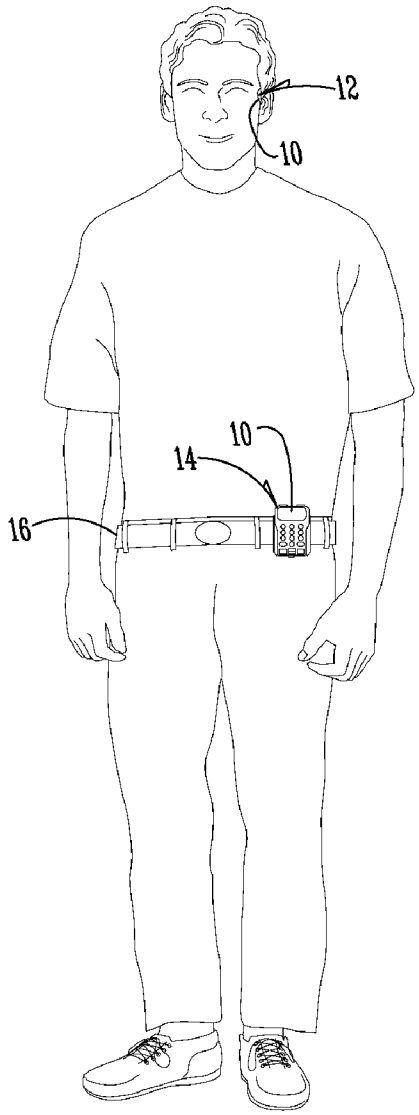


Fig. 1

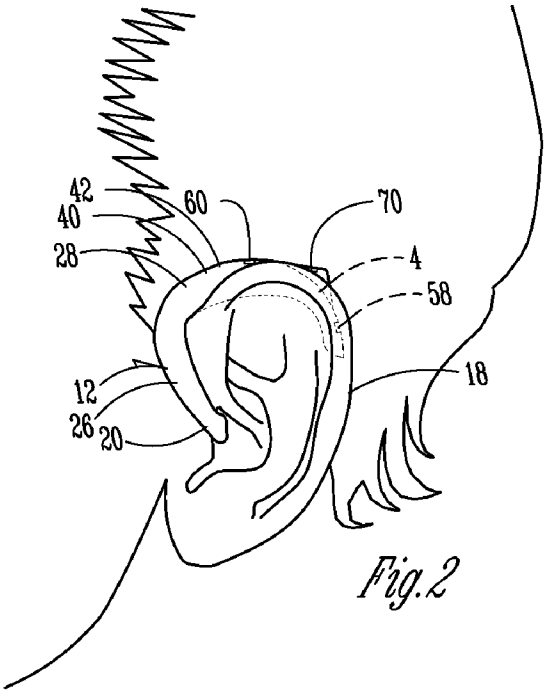


Fig. 2

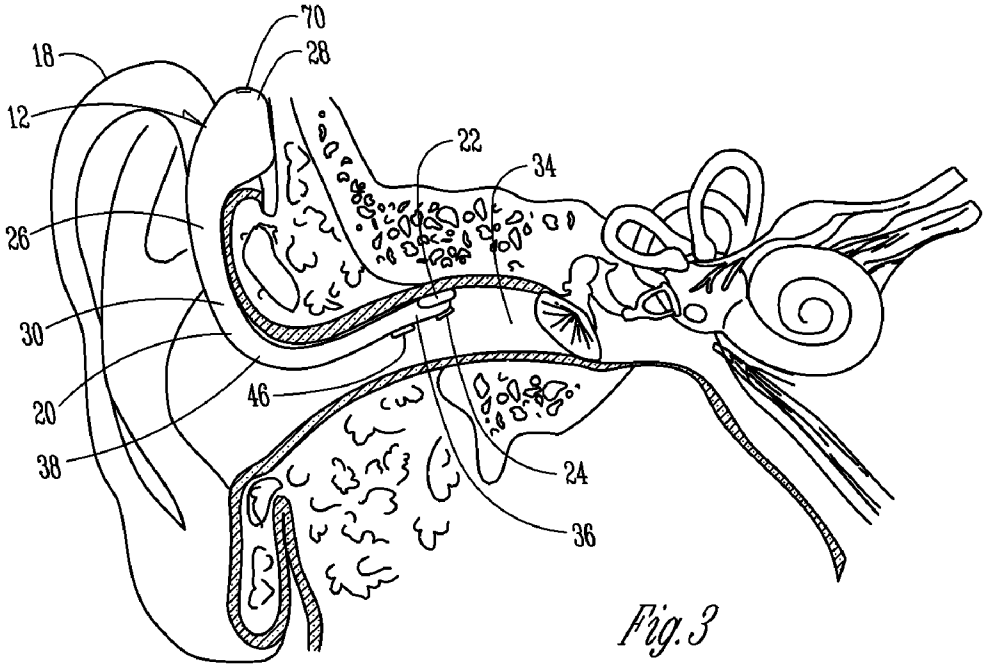


Fig. 3

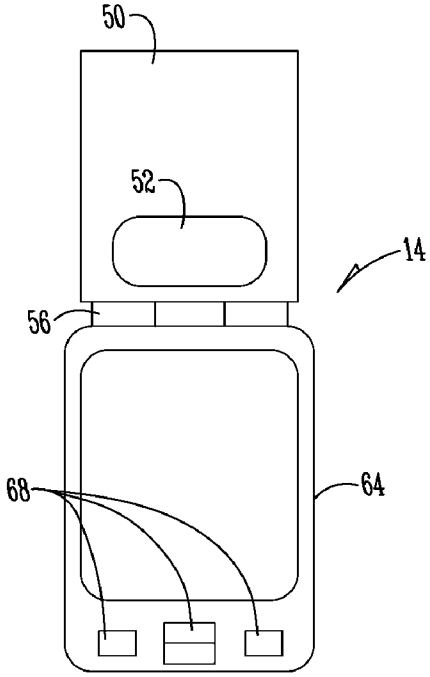


Fig. 6

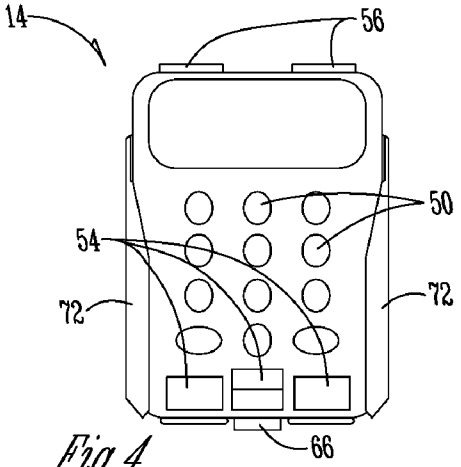


Fig. 4

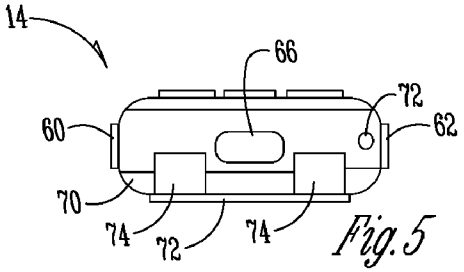


Fig. 5

CELLULAR TELEPHONE PERSONAL DIGITAL ASSISTANT, AND PAGER UNIT WITH CAPABILITY OF SHORT RANGE RADIO FREQUENCY TRANSMISSIONS

BACKGROUND OF THE INVENTION

[0001] 1. Field Of The Invention

[0002] The present invention relates generally to the cellular telephone industry, and more particularly to a hands-free cellular telephone system, including a personal digital assistant with pager capabilities.

[0003] 2. Problems In The Art

[0004] Conventional cellular telephones, which have become extremely popular, use high frequency radio waves to transmit and receive data. They also generate extensive electromagnetic fields. Such high frequency waves and electromagnetic fields have been linked to cancer and other serious health problems. There is therefore a need to protect cellular telephone users from such potentially harmful effects.

[0005] Additionally, conventional cellular telephones require a user to hold the telephone and thereby cause the user to lose the use of that hand for driving or other purposes. Users have attempted to solve this problem by holding the cellular telephone in a manner which frees up both of the user's hands. However, this may cause other problems, such as limiting the user's field of view, range of motion, or causing discomfort. This presents potentially hazardous conditions for the user and others. There exists a need to free up both hands of a user for driving and other purposes.

[0006] Further, current systems and methods of operating a cellular telephone in a hands-free fashion have resulted in unsightly attachments which must be worn by the user. Microphones that are worn by a user tend to protrude into the facial area of the user and interfere with the user during times when it is desirable not to use the cellular telephone such as eating, drinking, and other day to day activities. Though such microphones may be adjusted and placed away from the user's facial area or removed during times when the cellular telephone is not in use, such adjustments are unnecessarily burdensome. It is therefore desirable to have a hands-free system capable of being worn by the user at all times without interfering in the day to day activities of the user.

[0007] Other forms of hands-free operation of a cellular telephone have placed the microphone away from the user's facial area. Such placement results in a loss of clarity of the user's voice and tends to interject other surrounding sounds, such as wind, traffic, radio, and other voices into the transmission of the user's voice.

[0008] Currently, cellular phones are beginning to merge with personal digital assistants for convenience purposes. A user can use the personal digital assistant and then use the cellular phone at a separate time. However, the combination typically prevents simultaneous use because the cellular telephone must be held close to the user's head, making the personal digital assistant inaccessible It is therefore desirable to be able to access the personal digital assistant while using the cellular telephone.

[0009] There is therefore a need for a hands-free cellular telephone system which avoids these and other problems.

FEATURES OF THE INVENTION

[0010] A general feature of the present invention is the provision of an improved cellular telephone system which overcomes the problems found in the prior art.

[0011] A further feature of the present invention is the provision of a cellular telephone system which prevents the user's head from exposure to the potentially harmful emissions of current cellular telephones.

[0012] A further feature of the present invention is the provision of a cellular telephone system capable of hands-free operation.

[0013] Another feature of the present invention is the provision of a cellular telephone system capable of being worn by a user without interfering in a user's day to day activities.

[0014] A still further feature of the present invention is the provision of a cellular telephone capable of transmitting a user's voice while avoiding the transmission of surrounding sounds.

[0015] Another feature of the present invention is the provision of a cellular telephone system capable of providing hands-free use of a cellular telephone while maintaining access to a built-in personal digital assistant.

[0016] A still further feature of the present invention is the provision of one device which can function as a cellular telephone, a personal digital assistant, or a pager.

[0017] These, as well as other features and advantages of the present invention, will become apparent from the following specification and claims.

SUMMARY OF THE INVENTION

[0018] The present invention generally comprises a cellular telephone transceiver, an ear piece which receives the voice vibrations of a user, and a wireless linkage operatively connected between the two. When worn by a user, the ear piece receives the bone and air conductive voice vibrations transmitted through the user's external auditory canal and converts them into electrical signals. These electrical signals are then converted to short range low frequency radio waves and sent to the cellular transceiver. The cellular transceiver unit then acts like a cellular telephone, a personal digital assistant and a pager.

[0019] In a preferred embodiment, the present invention includes a cellular transceiver unit which includes a standard telephone keypad and a display. The display is preferably part of the personal digital assistant and can tell the user when an incoming telephone call, e-mail message, or page arrives. The keypad can be flipped up to reveal the touch screen of the personal digital assistant to allow the user to keep track of appointments, phone numbers, and other personal and business information. The personal digital assistant can also use the cellular connection to access the internet and other sources of information. This allows the user to respond to e-mail messages, check stock prices, book hotels and perform a variety of other tasks.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. **1** is a pictorial view showing a user wearing the cellular telephone system of the present invention.

[0021] FIG. **2** is a perspective view of the ear piece unit of the cellular telephone system of the present invention.

[0022] FIG. **3** is a cross-sectional view of the ear piece unit of FIG. **2** taken through the external auditory canal of the user.

[0023] FIG. **4** is a perspective view of the transceiver unit of the cellular telephone system of the present invention.

[0024] FIG. **5** is a bottom view of the transceiver unit of FIG. **4**.

[0025] FIG. **6** is a perspective view of the transceiver unit with the cellular telephone interface flipped up to reveal the personal digital assistant of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

[0026] The present invention will be described as it applies to its preferred embodiment. It is not intended that the present invention be limited to the described embodiment. It is intended that the invention cover all modifications and alternatives which may be included within the spirit and scope of the invention.

[0027] Now, referring to the drawings, FIG. **1** illustrates the cellular telephone system **10** as worn by a user. The user wears the ear piece **12** and the cellular transceiver unit **14**. The cellular transceiver unit **14** may be worn on the user's belt **16**, though it is also possible to store the cellular transceiver unit **14** in a number of other areas which may be convenient for the user, such as a shirt pocket, coat pocket, or vest pocket.

[0028] As seen in FIG. **2**, the ear piece **12** includes an external ear canal portion **20** having a bone conduction sensor **22** in contact with the external auditory canal epithelium of the user, an air conduction sensor or microphone **46**, and a speaker **24**. A casing **26** is also provided, having an ear attachment portion **28** and a fitting portion **30** that connects the ear attachment portion **28** with the bone conduction sensor **22**, the air conduction sensor **46**, and speaker **24**. The ear attachment portion **28** is contoured to comfortably fit into the angle between the ear auricle and the temporal bone of the skull of the user and is preferably made of a lightweight aluminum or plastic material. It can be appreciated that the primary purpose of the ear attachment portion **28** is to secure the ear piece **12** in proper position. The fitting portion **30** is integral with the ear attachment portion **28** and is reinforced with a flexible wire so that the ear piece **12** may be adapted to fit the user and maintain the bone conduction sensor **22** and the air conduction sensor **46** in their proper positions with the external auditory canal **34** of the user.

[0029] As is best shown in FIG. **3**, the ear piece **12** should be fit so that the bone conduction sensor **22** is in contact with a portion of the external auditory canal **34** near the bony-cartilaginous junction. It is preferred that the bone conduction sensor **22** rest against the posterior superior wall of the external auditory canal **34**, with the flexible wire of the fitting portion **30** shaped to bias the bone conduction sensor **22** into position. Fitting the device and calibrations may be performed by the user or with the assistance of a physician or an audiologist/audiology technician.

[0030] The bone conduction sensor **22** is a piezoelectric accelerometer of standard construction and may be obtained from Endevco Industries, among others. Other pick-ups that can be used with the present invention include, but are not limited to, those of the magnetic type, electric condenser type, IC type, and semiconductor type. All are well-known in the art.

[0031] The external ear canal portion **20** is formed so that the bone conduction sensor **22** may be inserted into the external auditory canal **34** of the user and nonocclusively contact against the posterior superior wall of the bony canal. The bone conduction sensor **22** is intended to pick up, as the voice signals, the vibrations of the upper wall of the external auditory canal **34** at the time of uttering the voice sounds. When the user utters voice sounds, these sounds reach the mastoid bones. These sound vibrations in the external auditory canal portion in contact with the bone sensor **22** are then processed.

[0032] In addition to the bone conduction sensor **22**, the external ear canal portion **20** also includes an air conduction sensor or microphone **46**. Like the bone conduction sensor **22**, the air conduction sensor **46** is of standard construction and may be obtained from various hearing aid manufacturers, such as ReSound, Siemens AG, and Oticon with numerous small air microphones available which would process sound from air transmission.

[0033] A resilient member **36** is preferably positioned between the air conduction sensor **46** and the bone conduction sensor **22** in such a manner that the external sound collected by the air conduction sensor **46** will not be transmitted to the bone conduction sensor **22**.

[0034] Additionally, the ear portion **20** also includes a speaker **24**. The speaker **24** is of a type well known in the art and common in the hearing aid industry. The speaker **24** is positioned directly in line with the tympanic membrane to facilitate clear transmissions while maintaining a low power output.

[0035] A circuit portion **38** transmits the electrical signals from both the bone conduction sensor **22** and the air conduction sensor **46** to a speech processor **40**. The bone conduction sensor **22** and the air conduction sensor **46** are both tuned to receive frequencies within the range of audible human speech, approximately 50 to 8000 Hertz.

[0036] The speech processor **40** is of a conventional construction used in many hearing aids and employs a digital processing scheme to package the voice signal for transmission across a wireless linkage. The speech processor **40** will be programmed to extract similarities from air and bone transmission, comparing the similarities in signal and then transmitting via a wireless linkage to a cellular telephone transceiver or other receiving device. The speech processor **40** also filters out through band pass filters **42** sounds outside the frequency of normal human speech.

[0037] The speech processor **40** samples a portion of the electrical signals of voice sound information from the air conduction sensor **46** and a portion of the electrical signals of voice sound information from the bone conduction sensor **22**.

[0038] The speech processor **40** then transmits the selected voice signal to an ear piece transceiver **4**. The ear piece transceiver **4** is preferably a wireless radio frequency transceiver well known in the art which includes a multi directional antenna **70**.

[0039] The ear piece transceiver **4** sends the voice signal to the cellular transceiver unit **14**. The ear piece transceiver **4** also receives incoming signals from the cellular transceiver unit **14** and sends them to the speaker As shown in FIG. **4**, the cellular transceiver unit **14** appears like the front of a normal cellular telephone and is worn by the user via a clip **72** which is secured to the user's belt. The cellular transceiver unit **14** uses a conventional cellular transceiver to provide cellular communications. The cellular transceiver unit **14** includes a standard twelve key keypad **50**, other function buttons **54**, and a display **52**. The cellular telephone display **52** is preferably an LCD display incorporated as part of a personal digital assistant such as the current Palm Pilot® series of devices using the Palm OS®, Windows CE®, or other operating system, though separate displays may be used for the personal digital assistant and the cellular telephone display **52**.

[0040] Further, the cellular transceiver unit **14** includes componentry which is common in the art. As shown in FIG. **5**, the cellular transceiver unit **14** receives the relatively low powered radio frequency (RF) signals from the ear piece transceiver **4** via an RF local area network antenna **60**, processes the signal and transmits an amplified RF signal through the conventional cellular transceiver. Further, the cellular transceiver unit **14** receives incoming data through a cellular linkage antenna **62** and transmits this to the ear piece transceiver **4** using the low powered RF signals. The cellular transceiver unit **14** may transmit or receive using analog or digital technology.

[0041] The cellular transceiver unit **14** is also equipped with a personal digital assistant portion **64**. To access the personal digital assistant portion **64**, a user presses an access button **66** to flip up the keypad **50** or the entire cellular telephone interface. The personal digital assistant portion may also appear on the opposite side of the cellular transceiver unit **14**. The keypad SO flips up via two hinges **56** on top of the cellular transceiver unit **14**. With the personal digital assistant portion **64** exposed, a user can enter commands using a traditional stylus or the user's finger. Personal digital assistant buttons **68**, which are common in the art, allow the user to access various functions of the personal digital assistant. The personal digital assistant is operatively linked to the cellular transceiver to provide a linkage with which the personal digital assistant may access the internet or other services. The personal digital assistant allows the user to keep track of appointments, phone numbers and other personal and business information. The personal digital assistant also allows the user to receive and send e-mail messages, browse the internet for stock prices, hotel reservations, and a perform a variety of other tasks. Additionally, an access port, **72** is included on the bottom of the cellular transceiver unit **14** to allow the user to connect a keyboard, another cellular phone, another personal digital assistant, or other peripherals.

[0042] Both the cellular transceiver unit **14** and the ear piece **12** require power. This power is supplied by one or more conventional rechargeable batteries **58** which may include a vibration system to alert the user to an incoming call, page or e-mail. A separate vibration module **72** may be included which would operatively connect to the cellular transceiver unit **14**. Further, both the ear piece **12** and the cellular transceiver unit **14** include contacts **74** which allow the user to simply place them in a docking station so as to be electrically connected to the docking station. The docking stations are conventional and are such that they remain connected to a power source such as a typical wall outlet. The docking station may be able to power both the ear piece **12** and the cellular transceiver unit **14** at the same time.

[0043] In an alternative embodiment of the present invention, a conventional cellular transceiver may be adapted to operatively connect the ear piece **12** to an existing cellular telephone.

[0044] A general description of the present invention as well as a preferred embodiment of the present invention has been set forth above. Those skilled in the art to which the present invention pertains will recognize and be able to practice additional variations in the methods and systems described which fall within the teachings of this invention. Accordingly, all such modifications and additions are deemed to be within the scope of the invention which is to be limited only by the claims appended hereto.

What is claimed is:

1. A hand-held personal communications device, comprising:

a two-piece housing;

a voice transceiver disposed within the housing for use in cellular communications;

a hinge operatively connecting each piece of the two-piece housing such that a portion of the housing moves in an arcuate path when the device transitions from a closed position to an open position;

an external display to allow a user of the device to view information without opening the device;

an external display image associated with the external display, the external display image having a top portion and a bottom portion and being orientated such that the top portion of the external display image is nearer the hinge than the bottom portion of the external display image when the device is in the closed position;

an internal display to allow the user to view information when the device is in the open position; and

an internal display image associated with the internal display, the internal display image having a top portion and a bottom portion and being orientated such that the bottom portion of the internal display image is nearer the hinge than the top portion of the internal display image when the device is in the open position.

2. The hand-held personal communications device of claim 1 further comprising touch-operable inputs usable when the device is in an open position, the touch-operable inputs being used for controlling the device.

3. The hand-held personal communications device of claim 1 further comprising touch-operable inputs usable when the device is in the closed position, the touch-operable inputs being used for controlling the device.

4. The hand-held personal communications device of claim 1 wherein the external display image indicates presence of an incoming call.

5. The hand-held personal communications device of claim 1 wherein the internal display allows for internet browsing.

6. The hand-held personal communications device of claim 1 wherein the internal display allows for access to email.

7. The hand-held personal communications device of claim 1 wherein the internal display allows for access to calendar information.

8. The hand-held personal communications device of claim 1 wherein the internal display allows for internet browsing, access to email, and access to calendar information.

9. The hand-held personal communications device of claim 1 further comprising a short range transceiver disposed within the housing.

10. The hand-held personal communications device of claim 9 wherein the short range transceiver is an RF transceiver.

11. The hand-held personal communications device of claim 9 wherein said device is capable of hands-free operation with a remote earpiece.

12. The hand-held personal communications device of claim 11 wherein the earpiece contains a remote short-range transceiver.

13. The hand-held personal communications device of claim 1 wherein the earpiece is shaped so as not to occlude the external auditory canal of the user.

14. The hand-held personal communications of device claim 13 wherein the remote short-range transceiver of the earpiece and the short-range transceiver of the device are operably linked.

15. A hand-held personal communications device, comprising:

a two-piece housing;

a voice transceiver disposed within the housing for use in cellular communications;

a hinge operatively connecting each piece of the two-piece housing such that a portion of the housing moves in an arcuate path when the device transitions from a closed position to an open position;

an external display associated with the device when the device is in the closed position to permit a user of the device to view information on the external display without opening the device;

an external display image associated with the external display, the external display image having a top portion and a bottom portion and being orientated such that the top portion of the external display image is nearer the hinge than the bottom portion of the external display image;

an internal display associated with the device when the device is placed in an open position to allow the user to view information when the device is in the open position;

an internal display image associated with the internal display, the internal display image having a top portion and a bottom portion and being orientated such that the bottom portion of the internal display image is nearer the hinge than the top portion of the internal display image when the device is in the open position;

touch-operable inputs usable when the device is in the open position, the touch-operable inputs used for controlling the device; and

wherein the external display image is used to indicate presence of an incoming call.

16. The hand-held personal communications device of claim 15 wherein the internal display allows for internet browsing.

17. The hand-held personal communications device of claim 15 wherein the internal display allows for access to email.

18. The hand-held personal communications device of claim 15 wherein the internal display allows for access to calendar information.

19. The hand-held personal communications device of claim 15 wherein the internal display allows for internet browsing, access to email, and access to calendar information.

20. The hand-held personal communications device of claim 15 further comprising a short range transceiver disposed within the housing.

21. The hand-held personal communications device of claim 20 wherein the short range transceiver is an RF transceiver.

22. The hand-held personal communications device of claim 21 wherein said device is capable of hands-free operation with a remote earpiece.

23. The hand-held personal communications device of claim 22 wherein the earpiece contains a remote short-range transceiver.

24. The hand-held personal communications device of claim 23 wherein the earpiece is shaped so as not to occlude an external auditory canal of the user.

25. The hand-held personal communications of device claim 22 wherein the remote short-range transceiver of the earpiece and the short-range transceiver of the device are operably linked.

26. A hand-held personal communications device, comprising:

a two-piece housing;

a voice transceiver disposed within the housing for use in cellular communications;

a hinge operatively connecting each piece of the two-piece housing;

a portion of the housing movable in an arcuate path to allow the device to transition from a closed position to an open position;

an external display to permit a user of the device to view information on the external display without opening the device;

an external display image associated with the external display, the external display image having a top portion and a bottom portion and being orientated such that the top portion of the external display image is nearer the hinge than the bottom portion of the external display image;

wherein the external display image is used to indicate presence of an incoming call;

an internal display to permit the user to view information when the device is in the open position;

an internal display image associated with the internal display, the internal display image having a top portion and a bottom portion and being orientated such that the bottom portion of the internal display image is nearer the hinge than the top portion of the internal display image when the device is in the open position;

touch-operable inputs usable when the device is in an open position, the touch-operable inputs used for controlling the device;

a short range RF transceiver disposed within the housing.

27. The personal communication device of claim 26 further comprising a button adapted for opening the personal communication device upon pressing the button.

28. The personal communication device of claim 26 further comprising an access port in the housing.

29. The personal communication device of claim 26 in combination with an earpiece having a short range RF transceiver in operative communication with the short range RF transceiver of the personal communication device to provide for handsfree communication.

30. The personal communication device of claim 29 wherein the earpiece further comprises a speaker and at least one input sensor.

31. The personal communication device of claim 30 wherein the at least one input sensor includes an air conduction sensor.

32. The personal communication device of claim 30 wherein the at least one input sensor includes a bone conduction sensor.

33. The personal communication device of claim 30 wherein the at least one input sensor includes both an air conduction sensor and a bone conduction sensor.

34. A personal communication system, comprising:

(1) a cell phone, comprising:

(a) a two-piece housing;

(b) a voice transceiver disposed within the housing for use in cellular communications;

(c) a hinge operatively connecting each piece of the two-piece housing such that a portion of the housing moves in an arcuate path when the device transitions from a closed position to an open position;

(d) an external display to allow a user of the device to view information without opening the device;

(e) an external display image associated with the external display, the external display image having a top portion and a bottom portion and being orientated such that the top portion of the external display image is nearer the hinge than the bottom portion of the external display image when the device is in the closed position;

(f) an internal display to allow the user to view information when the device is in the open position;

(g) an internal display image associated with the internal display, the internal display image having a top portion and a bottom portion and being orientated such that the bottom portion of the internal display image is nearer the hinge than the top portion of the internal display image when the device is in the open position; and

(h) a short range transceiver disposed within the housing; and

(2) an earpiece adapted for operative communication with the cell phone, the earpiece comprising a remote short range transceiver in operative communication with the short range transceiver of the cell phone.

35. The personal communication system of claim 34 wherein the earpiece further comprises a microphone in which the microphone is sufficiently sensitive to capture voice sound output of the user.

36. The personal communication system of claim 35 wherein the earpiece is shaped so as not to occlude an external auditory canal of an ear of the user.

37. The personal communication system of claim 35 wherein the earpiece further comprises an arcuate support structure to permit the earpiece to be securely held in a position adjacent the ear.

38. The personal communication system of claim 37 wherein the earpiece is shaped so as not to occlude the external auditory canal of an ear of the user upon which the earpiece is worn.

39. The personal communication system of claim 37 wherein the arcuate support structure is flexible.

40. The personal communication system of claim 39 wherein the arcuate support structure is adapted to be located medial to the helix of the ear of the user.

41. The personal communication device of claim 35 wherein the earpiece further comprises a flexible arcuate ear attachment portion to permit the earpiece to be securely held in a position adjacent the ear so as not to occlude the external auditory canal of the user.

42. The personal communication device of claim 35 wherein the earpiece further comprises a rechargeable battery to power the remote short range transceiver.

43. The personal communication device of claim 42 wherein the earpiece further comprises a speaker adapted to reproduce sound received from the short range transceiver of the phone.

44. The personal communication device of claim 43 further comprising a processor located in the earpiece.

45. The personal communication device of claim 42 wherein the earpiece further comprises a speaker adapted to reproduce sound received from the short range transceiver of the phone, the earpiece positioning the speaker sufficiently close to the ear canal such that sound can be transmitted into the external auditory canal of the user.

46. The personal communication device of claim 34 wherein the earpiece comprises a housing containing a transceiver, a speaker, an input sensor, and an internal antenna.

47. The personal communication device of claim 46 wherein the speaker is located proximate to an opening of the external auditory canal of the user such that the speaker is substantially directed toward a tympanic membrane of the user.

48. The personal communication device of claim 46 wherein the speaker is substantially aligned with the opening of the external auditory canal of the user.

49. A personal communication system comprising:

(1) a phone, comprising:

(a) a two-piece housing;

(b) a voice transceiver disposed within the housing for use in cellular communications;

(c) a hinge operatively connecting each piece of the two-piece housing such that a portion of the housing moves in an arcuate path when the device transitions from a closed position to an open position;

(d) an external display to allow a user of the device to view information without opening the device;

(e) an external display image associated with the external display, the external display image having a top portion and a bottom portion and being orientated such that the top portion of the external display image is nearer the hinge than the bottom portion of the external display image when the device is in the closed position;

(f) an internal display to allow the user to view information when the device is in the open position;

(g) an internal display image associated with the internal display, the internal display image having a top portion and a bottom portion and being orientated such that the bottom portion of the internal display image is nearer the hinge than the top portion of the internal display image when the device is in the open position;

(h) touch-operable inputs usable when the device is in the open position; and

(i) a first short range RF transceiver disposed within the housing;

(2) an earpiece adapted for operative communication with the phone, the earpiece comprising:

(a) a second short range RF transceiver for communication with the first short range RF transceiver of the phone;

(b) a speaker operatively connected to the second short range RF transceiver; and

(c) at least one input sensor operatively connected to the second short range RF.

50. The personal communication system of claim 49 wherein the ear piece further comprises a processor operatively connected to the second short range transceiver, the speaker, and the at least one input sensor.

51. The personal communication system of claim 49 wherein the at least one sensor includes an air conduction sensor.

52. The personal communication system of claim 49 wherein the at least one sensor includes a bone conduction sensor.

53. The personal communication system of claim 49 wherein the at least one sensor includes an air conduction sensor and a bone conduction sensor.

54. A hand-held personal communication device, comprising:

a housing;

a voice transceiver disposed within the housing for use in cellular communications;

at least one hinge adapted for operatively connecting a first portion of the housing to a second portion of the housing such that the first portion of the housing flips relative to the second portion of the housing in transitioning from the closed position to the open position;

the first portion of the housing having an internal side and an opposite external side, the internal side accessible in the open position and the external side accessible in the closed position;

an internal display disposed on the internal side of the first body;

an external display disposed on the external side of the first body and associated with the device when the device is in the closed position to permit the user to view information without opening the device;

the external display having an associated external display image having a top and a bottom, with the associated display image being orientated such that the top of the display image is nearer the at least one hinge than the bottom when the device is in the closed position; and

a plurality of touch-operable inputs usable when the device is in the open position, the touch-operable inputs being used for controlling the device.

55. The handheld personal communication device of claim 54 further comprising a short range RF transceiver disposed within the housing.

56. The hand-held personal communications device of claim 54 wherein the external display image indicates presence of an incoming call.

57. The hand-held personal communications device of claim 54 wherein the internal display allows for internet browsing, access to email, and access to calendar information.

58. The hand-held personal communications device of claim 54 wherein said device is capable of hands-free operation in association with a remote earpiece.

59. The hand-held personal communications device of claim 58 wherein the earpiece contains a remote short-range transceiver and the earpiece is shaped so as not to block an external auditory canal of the user.

60. The hand-held personal communications of device claim 58 wherein the remote short-range transceiver of the earpiece and the short-range transceiver of the device are operably linked.

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