Claims

1. A telephone~~, adapted for communicating with a hearing aid, said telephone comprising~~ having a ~~telephone~~ loudspeaker, a microphone~~,~~ and an electronic processing circuit ~~(13) for handling phone processing, and for exciting~~ connected to the loudspeaker via an electrical signal line, ~~and~~

wherein the telephone is modified for accommodating an interface circuit, said interface circuit is connected to said electrical signal line for picking up an analog loudspeaker signal, and includes ~~having~~ :

an analogue-to-digital converter converting the analog signal to a digital signal~~, and~~ ;

a processor preparing the digital signal for transmission; and

a radio transceiver and antenna circuitry ~~for~~establishing a wireless link between the telephone and one or more ~~said~~ hearing aids, said radio transceiver and antenna circuitry transmitting the prepared signal over said wireless link to said one or more hearing aids.~~characterized in that~~

~~said interface circuit is connected to said electrical signal line for exciting the telephone loudspeaker, and in that said interface circuit is adapted for obtaining an electrical signal from said electrical signal line and converting said electrical signal into a digital signal by the analog to digital converter and for transmitting said digital signal to the hearing aid, using said radio transceiver.~~

2. The telephone according to claim 1, wherein the radio transceiver is adapted for transmitting using a hearing aid radio protocol.

3. The telephone according to any of the preceding claims, wherein the interface circuit is further connected to the telephone microphone.
4. The telephone according to any of the preceding claims, wherein the activation of the telephone when placing or receiving a call enables the radio transceiver for communication with a hearing aid.
5. The telephone according to any of the preceding claims, wherein a bias voltage for the telephone microphone enables the radio transceiver.
6. The telephone according to any of the preceding claims, wherein the telephone is adapted for adjusting one or more parameters of the hearing aid via said radio transceiver.
7. The telephone according to any of the preceding claims wherein the telephone does not stream sound to the hearing aid, while the hearing aid is adjusting one or more parameters.
8. The telephone according to any of the preceding claims, wherein the interface circuit is adapted to receive and process data from a hearing aid.
9. The telephone according to claim 9, wherein the interface circuit is adapted to convert data from the hearing aid into an analogue signal and superimpose the analogue signal onto the microphone signal of the telephone.
10. The telephone according to any of the preceding claims, wherein the telephone is adapted to initiate a test of the acoustic parameters of the contralateral hearing aid.
11. The telephone according to claim 10, wherein the telephone is adapted to communicate with the ipselateral hearing aid, acting as a relay device.

~~12. A hearing aid comprising a radio circuit, adapted for communication with a telephone according to any of the claims 1 to 11, characterized in that the parameters of the hearing aid can be adjustable by tones sent over a telephone network and received at the hearing aid radio circuit from said telephone.~~

~~13. The hearing aid according to claim 12, adapted for sending an acknowledge signal to the telephone via the radio circuit.~~

~~14. The hearing aid according to claims 12 or 13, adapted for communicating with a telephone via DTMF tones sent over the radio circuit.~~

~~15. The hearing aid according to one of claims 12 to 14, adapted for tuning the electrical components of the hearing aid upon detection of a certain tone signal.~~

~~16. The hearing aid according to claim 15, adapted for tuning an antenna of the radio circuit.~~

~~17. The hearing aid according to one of claims 12 to 16, adapted for enabling a feature of the hearing aid upon detection of a certain tone signal.~~

~~18. The hearing aid according to one of the claims 12 to 16, adapted for initiating a test of the acoustic properties upon detection of a certain tone signal.~~

~~19. The hearing aid according to claim 18 adapted for relaying a control signal to the contralateral hearing aid, when detecting a request to measure the acoustic properties.~~

~~20. The hearing aid according to any of the claims 12 to 19, wherein the radio circuit is disabled while adjusting parameters of the hearing aid.~~

~~21. A method for adjusting parameters of a hearing aid by application of a first telephone according to claims 1 to 11, characterized in that said parameters are adjusted by sending a~~

~~tone sequence from the first telephone to the hearing aid, and in that said tone sequence is recognized according to a reception protocol determining whether the tones contain an adjustment code for adjusting said parameters of the hearing aid.~~

~~22. The method according to claim 21, wherein the tones are generated at a computer, or a second telephone and transmitted to said first telephone via a telecommunications network.~~

~~23. The method according to one of the claims 21 to 22, wherein the tone sequence is decoded to generate a bit sequence and said decoding is performed in the first telephone.~~

~~24. The method according to one of the claims 21 to 23, wherein the tone sequence may be decoded to generate a bit sequence said decoding is performed in the hearing aid.~~

~~25. The method according to one of the claims 21 to 24, wherein the tones are DTMF tones.~~

~~26. The method according to one of the claims 21 to 25, wherein the ipselateral hearing aid relays the wireless signal from the telephone to the contralateral hearing aid.~~

~~27.~~12. ~~A method for communicating between a telephone and a hearing aid, the telephone having a telephone loudspeaker, and an electronic circuit for handling phone processing, and for exciting the loudspeaker via an electrical signal line characterized in that~~

~~providing in the telephone an interface circuit, said interface circuit having an analogue-to-digital converter, and a radio transceiver,~~

~~connecting the interface circuit to the electrical signal line for obtaining an electrical signal from the electrical signal line,~~

~~converting by the analogue to digital converter the signal~~

~~obtained into a digital signal, and~~

~~transmitting by the radio transceiver the digital signal to the hearing aid~~

A method for transferring a speaker signal from a telephone to a hearing aid, said telephone having a loudspeaker, a microphone, and an electronic processing circuit connected to the loudspeaker via an electrical signal line, comprising the steps of:

modifying the telephone by mounting an interface circuit for accommodation in the phone;

connecting said interface circuit to said electrical signal line for picking up an analog loudspeaker signal during a call;

establishing a wireless link between the telephone and one or more hearing aids by means of a radio transceiver and antenna circuitry in the interface circuit; and during a call:

converting the analog signal to a digital signal in an analogue-to-digital converter in the interface circuit;

preparing the digital signal for transmission in a processor in the interface circuit; and

transmitting the prepared signal over said wireless link.

~~28.~~13. The method according to claim ~~27~~12, wherein the interface circuit is able to receive data from a hearing aid via the radio link.

~~29.~~14. The method according to claim ~~28~~13, wherein the data received from the hearing aid contains a signal which is superimposed onto the telephone microphone signal.

15. An interface circuit to be accommodated inside a modified telephone having a loudspeaker, a microphone, and an electronic processing circuit connected to the loudspeaker via an electrical signal line, wherein the interface circuit is connected to said

electrical signal line for picking up an analog loudspeaker signal, and includes:

an analogue-to-digital converter converting the analog signal to a digital signal; a processor preparing the digital signal for transmission; and

a radio transceiver and antenna circuitry establishing a wireless link between the telephone and one or more hearing aids, said radio transceiver and antenna circuitry transmitting the prepared signal over said wireless link to said one or more hearing aids.