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(54) **Title:** DOCKABLE AND CONFIGURABLE VEHICLE AUDIO SYSTEM

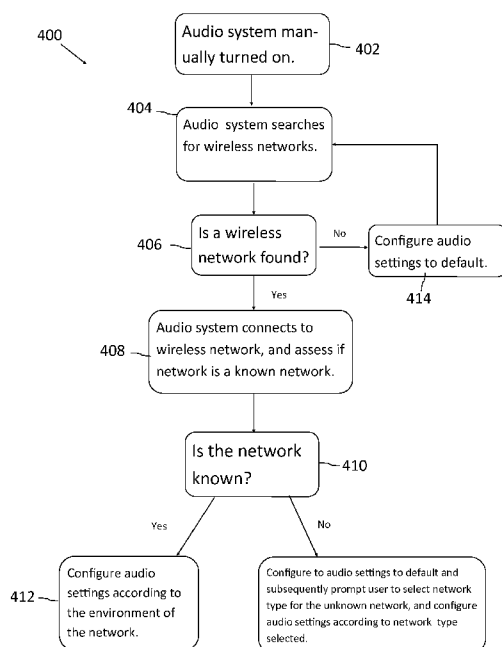


Figure 4

(57) **Abstract:** The present invention provides a system, method and apparatus for automatically adapting the audio settings of a portable audio system (100) according to a local environment of the portable audio system (100), the method comprising: searching for wireless networks in the local environment; and in the event that a wireless network is detected in the environment; detecting the wireless network identity; and configuring the portable audio system and audio settings according to the wireless network identity.



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DOCKABLE AND CONFIGURABLE AUDIO SYSTEM

TECHNICAL FIELD

5 The present disclosure relates to a dockable and configurable audio system and particularly, but not exclusively, to a portable audio system. Aspects of the invention relate to a portable audio system, to an audio processor module, to a vehicle and to a method of adapting audio settings of a portable audio system.

10

BACKGROUND

Portable audio systems are a popular choice due to their flexibility of use and often light, small designs. Typical portable audio systems contain rechargeable batteries, such that they do not
15 need to be constantly attached to a mains power supply when in use. This enables the possibility of using portable audio systems in many different environments and settings, such as in a bedroom, a vehicle or a garden.

However, due to the preferred small, light designs for portable audio systems, typical portable
20 audio systems only provide the user with limited audio settings, for example, volume controls. This is useful regarding the design of the systems, but presents the user with diminished audio quality. This is especially pronounced in environments for which the portable audio systems are not preferentially produced to be used in.

25 The present invention has been devised to mitigate or overcome the above-mentioned problem.

SUMMARY OF THE INVENTION

30 According to an aspect of the present invention there is provided a portable audio system which is arranged to automatically adapt its audio settings according to a local environment of the portable audio system, the portable audio system comprising; a wireless network receiver arranged to search for and detect wireless networks in the local environment; a wireless network module arranged to detect the wireless network identity; an audio settings module
35 arranged to determine the audio settings according to the detected wireless network identity; and an audio transmissions module arranged to output an audio transmission in dependence on the determined audio settings.

- The portable audio system provides the advantage that the audio settings are adjusted to predetermined optimised settings according to the local environment of the portable audio speaker, thus improving audio quality without the need for user interaction. This also enables enhanced audio quality on a portable audio speaker, where the user cannot typically input
- 5 audio settings such as equaliser settings. Consequently, it is an advantage in that the portable audio speaker does not require components for the user to input audio settings. This may reduce the size and weight of the portable audio speaker, which is a desirable feature for a device which must be capable of being transported or conveyed.
- 10 Optionally, the portable audio system comprises at least one of the following; a casing, a loudspeaker arranged to output the transmission according to the determined audio settings, a battery and electrical docking elements. Optionally, the portable audio system comprises an electrical coupling arranged to operatively couple the portable audio system to a user device.
- 15 Optionally, the casing is arranged to be weatherproof.
- Optionally, the casing comprises a stand for supporting the portable audio system in an upright position on a surface.
- 20 Optionally, the casing comprises a holder and a holder attachment, such that the portable audio system can be attached to a surface.
- Optionally, the adjustment of the audio settings is automatic once they have been determined by the audio settings module. Optionally, the adjustment of the audio settings occurs following
- 25 a user confirmation action (e.g. pressing a confirmation button on the speaker system to confirm the audio settings determined by the audio settings module). Optionally, the user may adjust the audio settings of the audio portable audio system, and this may be done through the portable audio speaker itself or through a user device connected to the portable audio speaker, via an electrical coupling or a wireless connection.
- 30 Optionally, the audio transmission may be received at the wireless network receiver via a wireless network, the audio transmission having been transmitted to the portable audio system from a user device.
- 35 Optionally, the audio transmission may be received from a user device at the electrical coupling.

According to a further aspect of the present invention there is provided a method for automatically adapting the audio settings of a portable audio system according to a local environment of the portable audio speaker, the method comprising; searching for wireless networks in the local environment; and in the event that a wireless network is detected in the environment; detecting the wireless network identity; and configuring the portable audio system audio settings according to the wireless network identity.

Optionally, the method comprises searching for wireless networks, detecting the network identity and configuring the audio settings, such that if the portable audio system is moved into a new environment, or a new wireless network is introduced to the current local environment, the portable audio system automatically updates the audio settings accordingly. This is advantageous as it reduces user interaction with the portable audio system, and the user can transport the portable audio system without being required to adjust the audio settings for optimisation.

Optionally, in the event that a wireless network is not detected in the local environment, the method comprises automatically configuring the audio settings to a predetermined default setting. This provides the characteristic that even if the portable audio system does not detect a wireless network an audio transmission can still be played by the portable audio system without the user needing to directly interact with the portable audio system.

Optionally, the audio transmission is played through a loudspeaker according to the automatically configured audio settings.

Optionally, in the event that two or more wireless networks are detected in the local environment, the method comprises automatically configuring the audio settings of the portable audio system according to the wireless network identity of the wireless network with the strongest signal.

Optionally, the method comprises storing the wireless network identity and associated wireless network type in a memory of the wireless network module.

The invention extends to a vehicle comprising the portable audio system, and additionally the portable audio system employing the method of the above further aspect of the present invention.

According to a further aspect of the present invention there is provided an audio processor module comprising; a wireless network receiver arranged to search for and detect wireless networks in the local environment; a wireless network module arranged to detect the wireless network identity; an audio settings module arranged to determine the audio settings according to the detected wireless network identity; and an audio transmissions module arranged to output an audio transmission in dependence on the determined audio settings.

Within the scope of this application it is expressly intended that the various aspects, embodiments, examples and alternatives set out in the preceding paragraphs, in the claims and/or in the following description and drawings, and in particular the individual features thereof, may be taken independently or in any combination. That is, all embodiments and/or features of any embodiment can be combined in any way and/or combination, unless such features are incompatible. The applicant reserves the right to change any originally filed claim or file any new claim accordingly, including the right to amend any originally filed claim to depend from and/or incorporate any feature of any other claim although not originally claimed in that manner.

BRIEF DESCRIPTION OF THE DRAWINGS

One or more embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a Portable Audio System according to an embodiment of the present invention.

Figure 2 is a schematic diagram of the Portable Audio System of Figure 1.

Figure 3 is a flow diagram showing a process of the Audio Settings Controller in accordance with an embodiment of the present invention.

Figure 4 is a flow diagram showing the operation of a Portable Audio System in accordance with an embodiment of the present invention.

Figure 5 is a schematic view of the inside of the front portion of a vehicle, with the Portable Audio System attached to a vehicle dashboard.

Figure 6a is a schematic side view of the Portable Audio System of Figure 1 attached to a vehicle dashboard.

Figure 6b is a schematic side view of the Portable Audio System of Figure 1, where the casing comprises a stand.

Figure 7a is a schematic top view of the Portable Audio System of Figure 1 in use in a house,
5 being wirelessly connected to an audio streaming system of a user device.

Figure 7b is a schematic side view of the Portable Audio System of Figure 1 in use during a BBQ, being wirelessly connected to an audio streaming system of a user device.

10 DETAILED DESCRIPTION

Figure 1 shows a portable audio system 100 according to an embodiment of the present invention. The portable audio system 100 comprises a casing 102, which acts to encase electrical equipment. The electrical equipment is comprised of an audio processor module 106,
15 a signal amplifier 108 and a battery 110. The portable audio system 100 comprises also at least one loudspeaker 112 and control buttons 114, such as, but not limited to, an on/off control 116 and a volume control 118. Additionally, the portable audio system 100 comprises different socket or docking elements 120, such as, but not limited to, a headphone jack 122, a USB port 124 and a charging dock 126 which is connected to the battery 110.

20 The battery is operatively connected to the audio processor module 106, signal amplifier 108 and loudspeaker 112. Furthermore, the signal amplifier 108 is operatively connected to the loudspeaker 112 and to the audio processor module 106.

25 In an embodiment of the invention, the casing 102 is weatherproof. In another embodiment, the casing 102 is made from a lightweight material, such as, but not limited to, plastic. In another embodiment of the invention, the casing comprises a holder, such that the portable audio system 100 can be attached to external surfaces. In yet another embodiment, the casing comprises a stand, such that the portable audio system 100 can be placed in an upright
30 position on a flat, horizontal surface.

In all of the above described embodiments, the portable audio system 100 is arranged such that it is both easily portable by a user and further dockable to at least one user device.

35 The portable audio system 100 is arranged such that it can automatically adapt its audio settings according to the environment, where the environment is detected and analysed through the wireless networks present in the environment.

Figure 2 illustrates the audio processor module 106 according to an embodiment of the invention, as shown in Figure 1. The audio processor module 106 comprises a wireless network receiver 202, a wireless network module 204, an audio settings module 208 and an audio transmissions module 206.

The wireless network receiver 202 is arranged to receive and connect to wireless network signals, such as, but not limited to, wireless PAN (Personal Area Networks, which connect devices in a small area, generally within a typical persons reach), wireless LAN (Local Area Networks), and wireless WAN (Wide Area Networks). The wireless network receiver 202 is arranged to convert wireless signals into electrical signals. Furthermore, the wireless network receiver 202 is arranged to communicate with the wireless network module 204, and further to communicate with the audio transmissions module 206. The wireless network receiver 202 is arranged to send the electrical audio transmission to the audio transmissions module 206.

The wireless network module 204 is arranged to detect the identity of the wireless network. Furthermore, the wireless network module 204 is arranged to determine whether the received wireless network signal is a known network signal. The wireless network module 204 is additionally arranged to determine the wireless network type according to the wireless network identity. The wireless network type corresponds to what predetermined audio settings are required. For example, the wireless network identity may be the name of the wireless network, 'My_Home', in which case the wireless network type would be 'home', such that the predetermined audio settings for a home environment are associated with the wireless network identity 'My_Home'. Other network types may be "car", "office", "friend name 1", "friend name 2" etc. Each of these network types may be associated with a different wireless network identity.

If a wireless network has not been previously detected, no wireless network type will be initially associated with the wireless network. Therefore, in an embodiment of the invention, the portable audio system 100 is arranged such that when the portable audio system 100 first encounters a wireless network, the user is prompted to select which network type is to be associated with the wireless network. For example, if the portable audio system 100 was to detect a wireless network, with a wireless network identity of the name 'My_Home', the user may be shown the wireless network name, and may be prompted by the portable audio system 100 to associate a wireless network type with the wireless network (effectively to associate appropriate predetermined audio settings with the wireless network). In another embodiment, the wireless network identity may not be shown to the user, but the user may still be prompted by the portable audio system 100 to associate the wireless network detected in the

surroundings with a wireless network type. In an embodiment of the invention, selecting the network type to be associated with a wireless network can be performed through the portable audio system 100 itself. In another embodiment, wireless networks can be associated with a network identity through a user device, which may be connected to the portable audio system 100 wirelessly, or through an electrical coupling. In yet another embodiment of the invention, the portable audio system 100 will store the wireless network details, such that the user can associate the wireless networks with wireless network types at any time after the wireless network has been detected. In yet another embodiment, it is possible to associate more than one wireless network with each wireless network type.

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In an embodiment of the invention, each wireless network identity that has a network type associated with it is stored in the memory of the wireless network module 204, such that once a wireless network has been associated with a network type, it becomes a known network.

15 Additionally, the wireless network module 204 is arranged to output the type of the wireless network signal received. For example, if 'My_Home' wireless network signal is received, the wireless network module would be arranged to output a 'home' instruction to the audio settings module 208.

20 Figure 3 shows a process 300 according to an embodiment of the present invention. According to this use of an embodiment of the invention, in a first step 302 the wireless network receiver 202 detects a previously undetected wireless network. The wireless network receiver 202 communicates this wireless network to the wireless network module 204 in step 304. In the subsequent step, 306, the wireless network module 204 detects the network identity and prompts the user to associate a network type with the network identity. Next, in step 308, the user associates a network type with the network identity, and this is stored on the memory of the wireless network module 204. Finally, in step 310, the wireless network module 204 outputs the network type to the audio settings module 208.

30 The audio settings module 208 is arranged to receive a network type, and further to configure audio settings instructions according to the received network type. The configured audio settings instructions are communicated to the audio transmissions module 206. The audio settings according to the received network type will be preconfigured to the Audio Settings Controller 106.

35

The audio transmissions module 206 is arranged to receive the electrical audio transmission from the wireless network receiver 202, and further to receive the configured audio settings

instructions from the audio settings module 208. The audio transmissions module 206 is arranged to communicate this information to the signal amplifier 108.

Figure 4 shows a process 400 according to an embodiment of the present invention. According to this use of an embodiment of the invention, the portable audio system 100 is not electrically connected to a user device and consequently the power source of the portable audio system is the battery 110. The portable audio system 100 is manually turned on by the user using an on/off control 116, in step 402. Following on from this, the audio processor module 106 searches for wireless networks, as shown by step 404. If a network is found, the audio processor module 106 connects to the wireless network and assesses if the network is known, as shown in steps 406 and 408. In an embodiment of the invention, if two or more known networks are found, the portable audio systems arranged to select the known network with the strongest wireless network signal.

If a network is not found the audio processor module 106 will continue to search for wireless networks, shown in the process 400 returning to step 404. Additionally, shown in Figure 4, in an embodiment of the invention, if an audio transmission is received at the portable audio system without the presence of a wireless network, for example through an electrical coupling to a user device, the portable audio system will play the audio transmission using default audio settings. This can be seen following the 'no' option from step 406, in which the process goes to step 414. Step 414 describes the audio settings being configured to the default settings, and which subsequently goes back to step 404 where the audio processor module 106 searches for wireless networks. In another embodiment the audio settings will be configured to default if a wireless network is detected but cannot be connected to.

In the case that a network has been found, and the network is known, the audio processor module 106 will automatically configure the audio settings according to the environment of the network. The environment of the network is defined by the type of the network, which is associated with the detected network identity. For example, if 'My_Car' Bluetooth™ network is detected, then the audio settings will be configured to the preconfigured settings for a car environment, which is given by steps 410 and 412.

In embodiments of the invention, the preconfigured settings are set such that they are optimised to the generalised environments they are devised to be used in.

If the network is an unknown network, such that the network identity, and consequently the environment, cannot be assessed by the audio processor module 106, the audio processor

module 106 will configure the audio settings to a default setting until the network identity is associated with a network type, as shown by steps 410 and 416.

5 In both cases of the process 400 described above by steps 412 and 414, the wireless signal also communicates the audio transmission to be played by the portable audio system 100. The wireless signal is converted from a wireless signal to an electrical signal by the wireless network receiver 202, which is later converted to an audio signal by the loudspeaker 112.

10 In an embodiment of the invention, the process 400 is repeated periodically, such that if the portable audio system changes environment, the audio settings can be updated to the new environment accordingly.

15 In another embodiment the audio transmission may be received from a user device through an electrical coupling between the portable audio system 100 and the user device.

In another embodiment of the invention, the user can change the audio settings of the portable audio system 100. In yet another embodiment, the user can change the audio settings by selecting their preferred audio settings on another user device, and transmitting the preferred audio settings to the portable audio system 100. The transmitting may occur through, but is not limited to, a wireless network signal or the portable audio system 100 being electrically coupled to the user device.

25 Figure 5 illustrates the portable audio system 100 in use in a vehicle 500. The portable audio system/dockable audio speaker is attached to the dashboard 502. In the embodiment as illustrated by Figure 5, the portable audio system 100 will connect to the wireless network associated with the vehicle 500 and will automatically configure the audio settings to the preconfigured audio settings associated with a vehicle environment.

30 In an embodiment of the invention, the audio transmission is communicated to the portable audio system 100 through the wireless network. In another embodiment of the invention, the portable audio system 100 is electrically coupled to the vehicle 500, such that the audio transmission is communicated to the portable audio system 100 through the electronic coupling.

35 Figure 6a illustrates a side-view of the portable audio system 100 attached to a surface 600 (such as a vehicle dashboard) by way of a holder 602 and holder attachment 604, where the portable audio system casing 102 comprises the holder 602 and the holder attachment 604,

where the holder 602 is taken to be part of the casing 102 but may not be fixedly attached to the casing 102. In this embodiment the portable audio system 100 is of a size, shape and weight such that it can be supported by a holder to a surface. Additionally, in an embodiment of the invention, the portable audio system/dockable audio speaker has a charging dock 126,
5 which is attached to a power supply 606 on the surface 600.

Figure 6b illustrates a side-view of the portable audio system 100, where the casing 102 comprises a stand 608, such that the stand 608 supports the portable audio system 100 in an upright position when it is placed on a horizontal surface 610. In this embodiment the portable
10 audio system 100 is of a shape where a stand is necessary for the portable audio system 100 to remain in an upright position when placed on a horizontal, or near horizontal, surface 610.

Figure 7a illustrates the portable audio system 100 in use in a closed, inside environment 700, such as a home. In this embodiment, the portable audio system 100, detects the home's
15 wireless signal 702 and automatically connects and adapts the audio settings accordingly. Furthermore, in this embodiment, the audio transmission is received at the portable audio system 100 from another device 704, through the home's wireless signal 702.

Figure 7b illustrates the portable audio system 100 in use in an open, outside environment 706, such as at a BBQ. In this embodiment, the portable audio system 100, detects a wireless signal
20 708 associated with a user device, such as a mobile phone 710, and automatically connects and adapts the audio settings accordingly. Furthermore, in this embodiment, the audio transmission is received at the portable audio system 100 from the mobile phone 710, via the wireless signal 708 sent from the phone 710.

25

Many modifications may be made to the above examples without departing from the scope of the present invention as defined in the accompanying claims.

30

CLAIMS

1. A portable audio system arranged to automatically adapt its audio settings according to a local environment of the portable audio system, the portable audio system comprising;
- 5 a wireless network receiver arranged to search for and detect wireless networks in the local environment;
- a wireless network module arranged to detect the wireless network identity;
- an audio settings module arranged to determine the audio settings according to the detected wireless network identity; and
- 10 an audio transmissions module arranged to output an audio transmission in dependence on the determined audio settings.
2. The portable audio system of claim 1, comprising;
- a casing;
- 15 a loudspeaker arranged to output the audio transmission according to the determined audio settings;
- a battery; and
- electrical docking elements.
- 20 3. The portable audio system according to any preceding claim, wherein the audio transmission may be received at the wireless network receiver via a wireless network, the audio transmission having been transmitted to the portable audio system from a user device.
4. The portable audio system according to any preceding claim, comprising an electrical
- 25 coupling arranged to operatively couple the portable audio system to a user device wherein the audio transmission may be received at the electrical coupling.
5. The portable audio system according to any of the preceding claims, comprising control buttons.
- 30 6. The portable audio system according to any of the preceding claims, wherein the casing is arranged to be weatherproof.
7. The portable audio system according to any of the preceding claims, wherein the casing
- 35 comprises a stand for supporting the portable audio system in an upright position on a surface.

8. The portable audio system according to any of the preceding claims, wherein the casing comprises a holder and a holder attachment, such that the portable audio system can be attached to a surface.

5 9. A method of automatically adapting audio settings of a portable audio system according to a local environment of the portable audio system, the method comprising;
searching for wireless networks in the local environment; and
in the event that a wireless network is detected in the environment;
detecting the wireless network identity;
10 configuring the portable audio system audio settings according to the wireless network identity.

10. The method according to claim 9, wherein in the event that a wireless network is not recognised in the environment, the method comprises automatically configuring the audio
15 settings to a predetermined default setting.

11. The method according to any of claims 9 and 10, wherein an audio transmission is played through a loudspeaker according to the automatically configured audio settings.

20 12. The method according to any of claims 9 to 11, comprising periodically searching for wireless networks, detecting the network identity and configuring the audio settings.

13. The method according to any of claims 9 to 12, wherein in the event that two or more wireless networks are detected in the local environment, the method comprises automatically
25 configuring the audio settings of the portable audio system according to the wireless network identity of the wireless network with the strongest signal.

14. The method according to any of claims 9 to 13, wherein the method comprises storing the wireless network identity and associated wireless network type in a memory of the wireless
30 network module.

15. A vehicle comprising a portable audio system as claimed in any one of Claims 1 to 8.

16. An audio processor module comprising:
35 a wireless network receiver arranged to search for and detect wireless networks in the local environment;
a wireless network module arranged to detect the wireless network identity;

an audio settings module arranged to determine the audio settings according to the detected wireless network identity; and
an audio transmissions module arranged to output an audio transmission in dependence on the determined audio settings.

5

17. A portable audio system, substantially as described herein, with reference to the accompanying Figures.

18. A non-transitory computer readable storage medium comprising computer readable
10 instructions for an audio processor module to carry out the method of any one of claims 9 to 12.

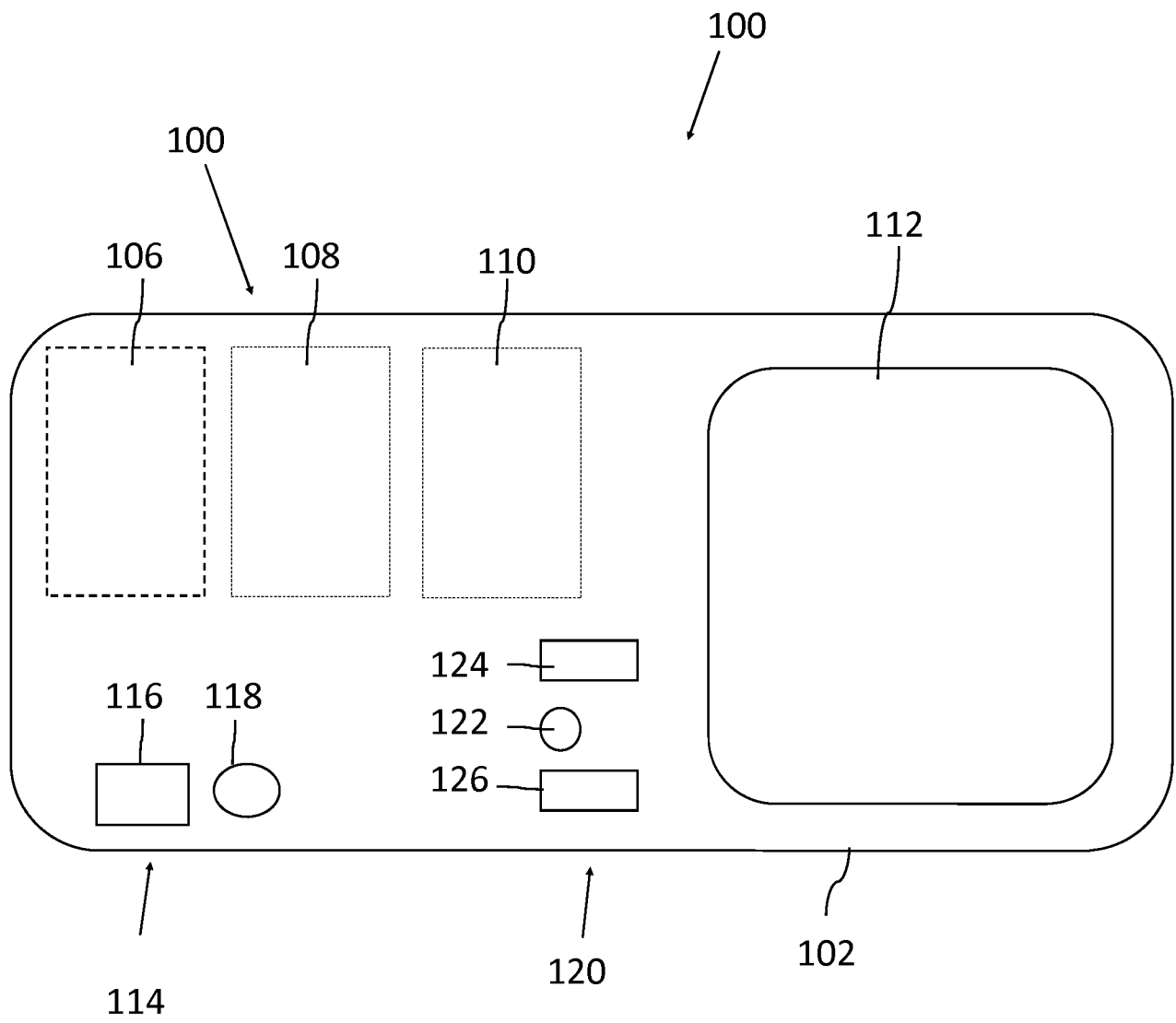


Figure 1

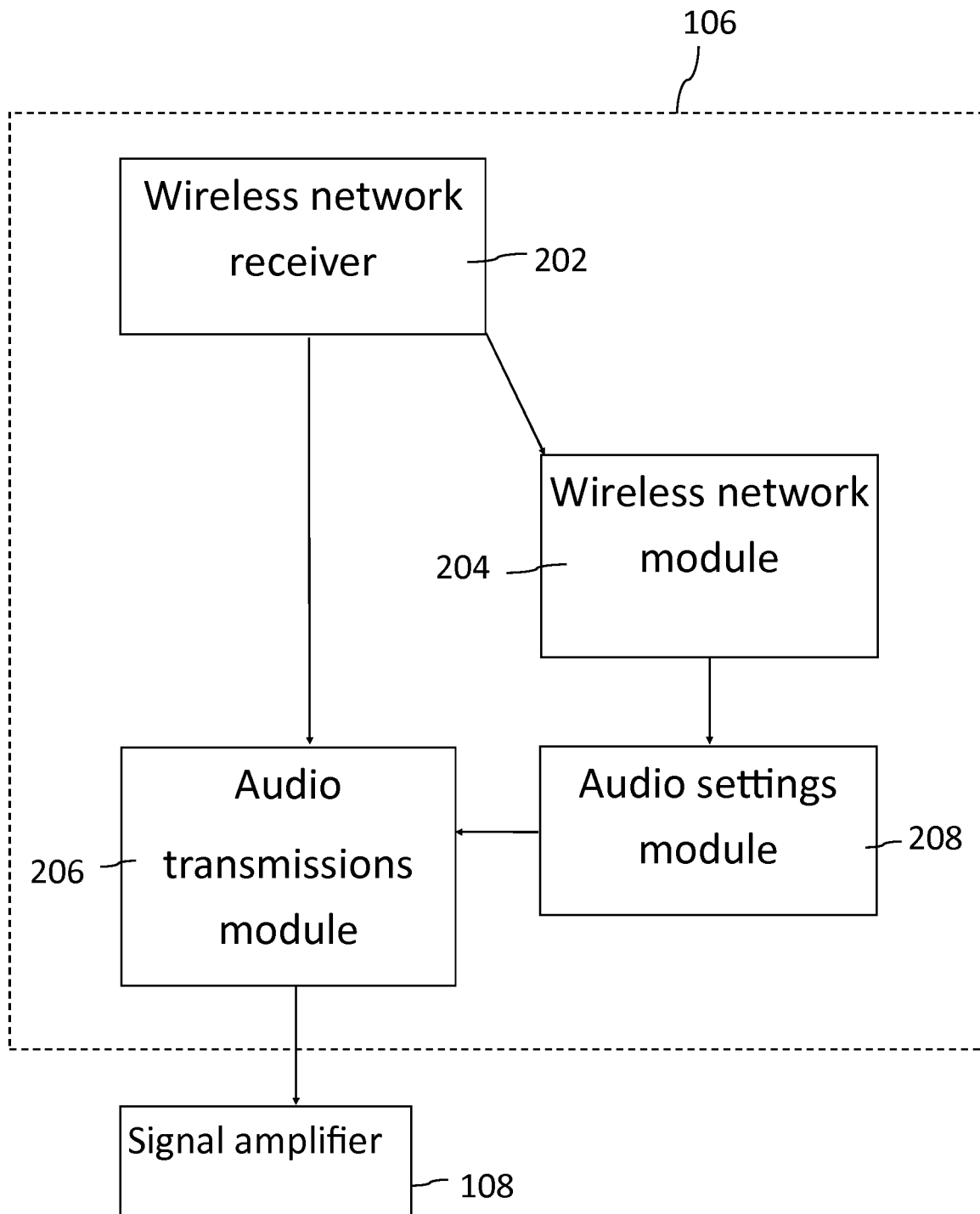


Figure 2

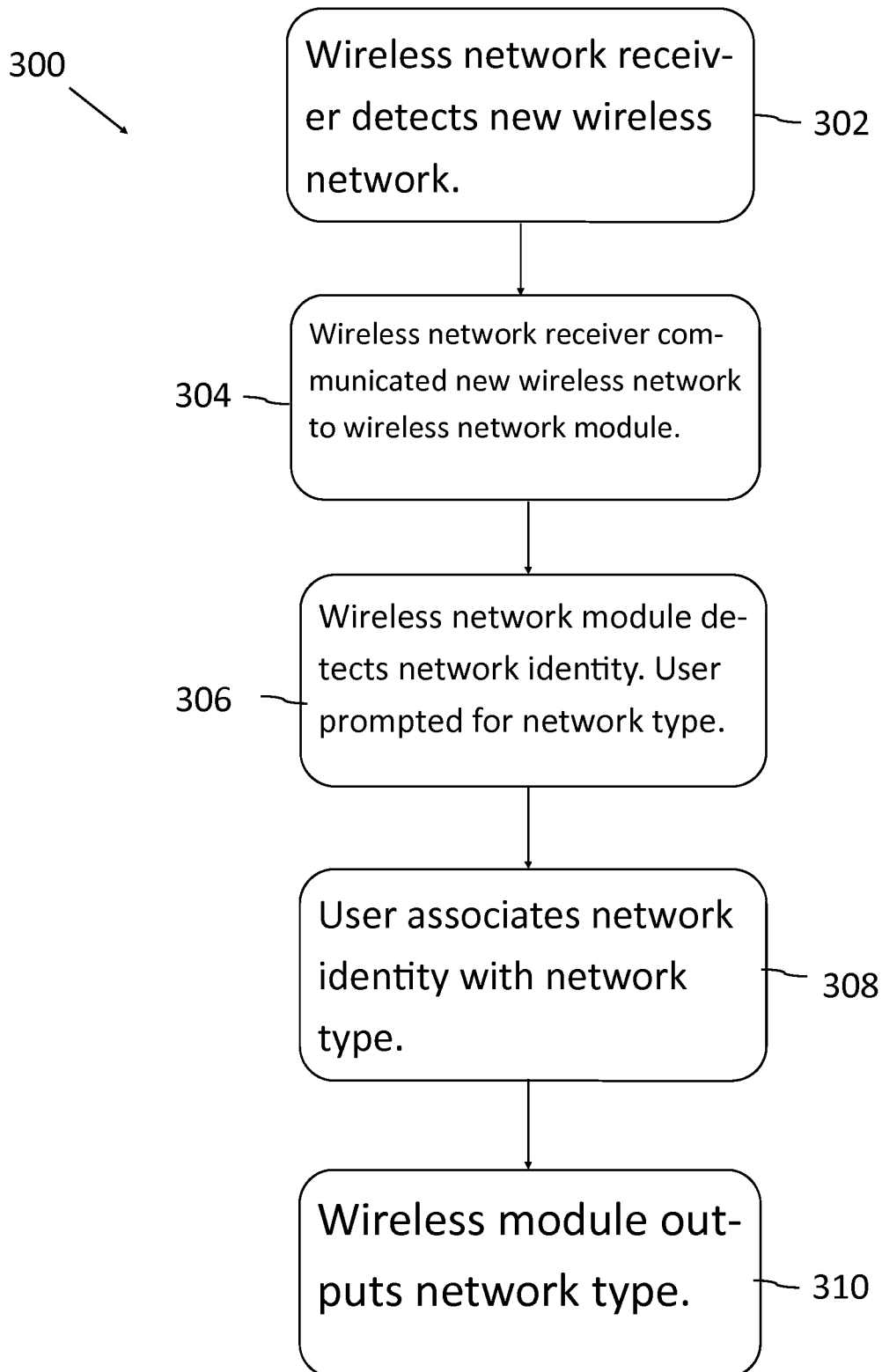


Figure 3

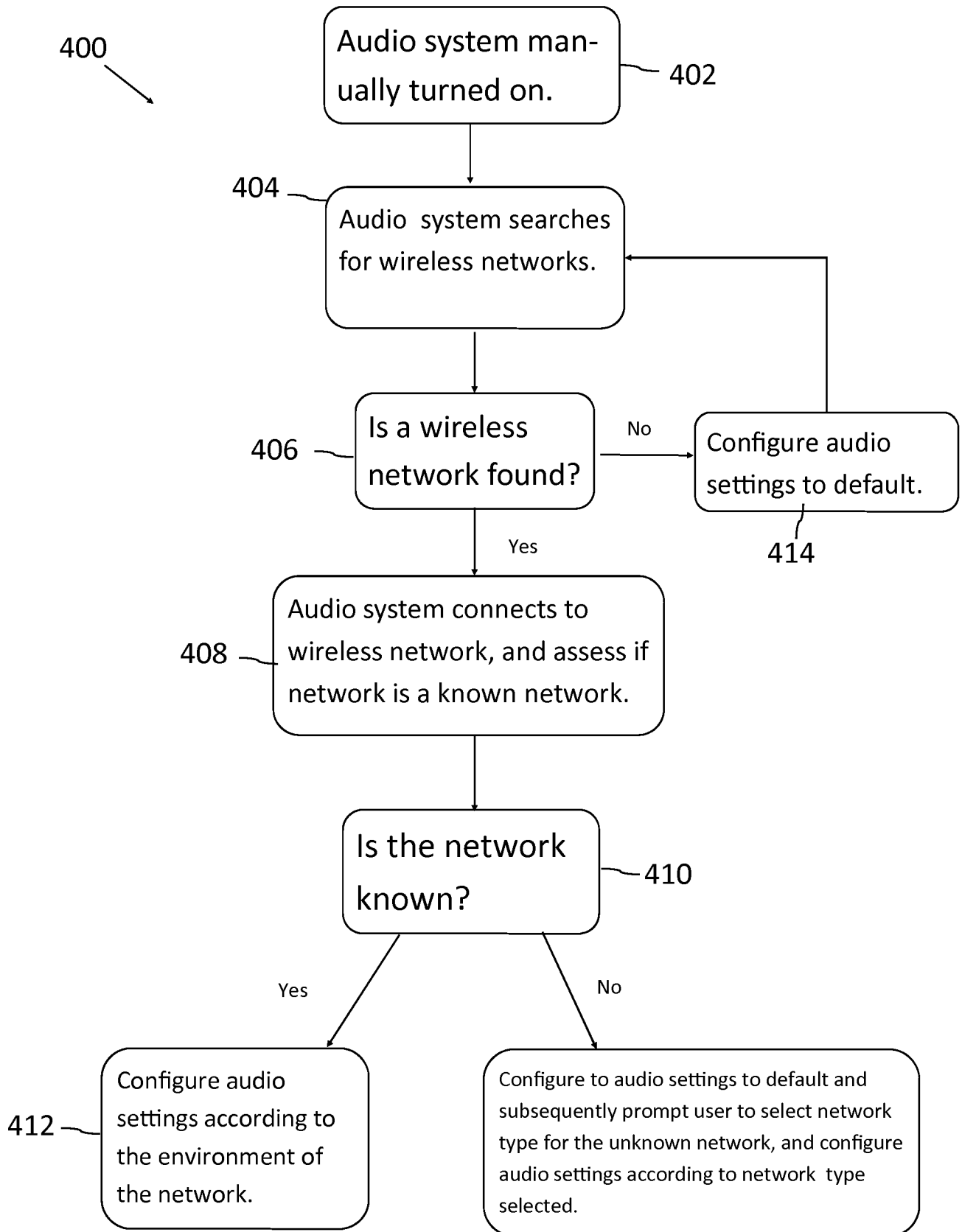


Figure 4

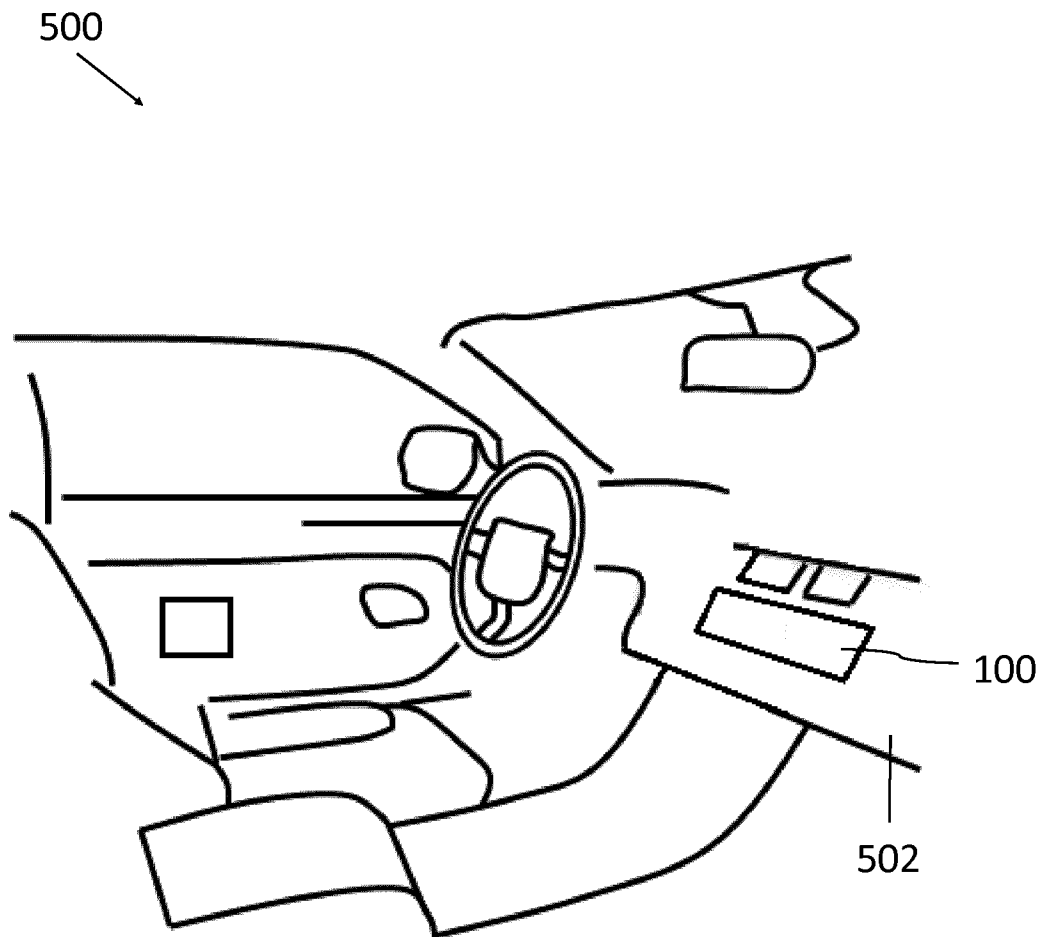


Figure 5

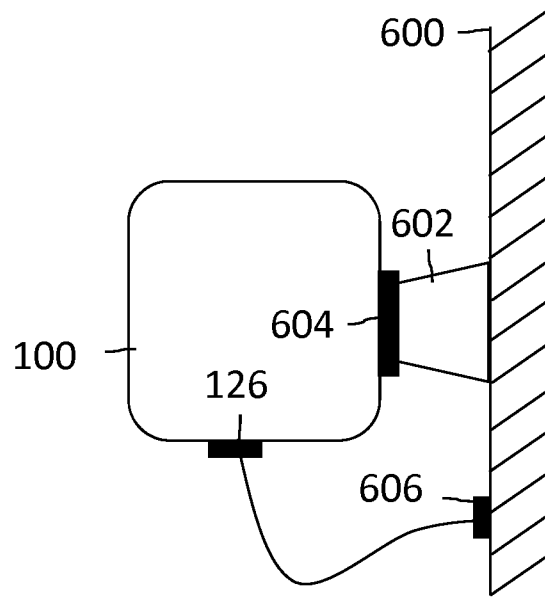


Figure 6a

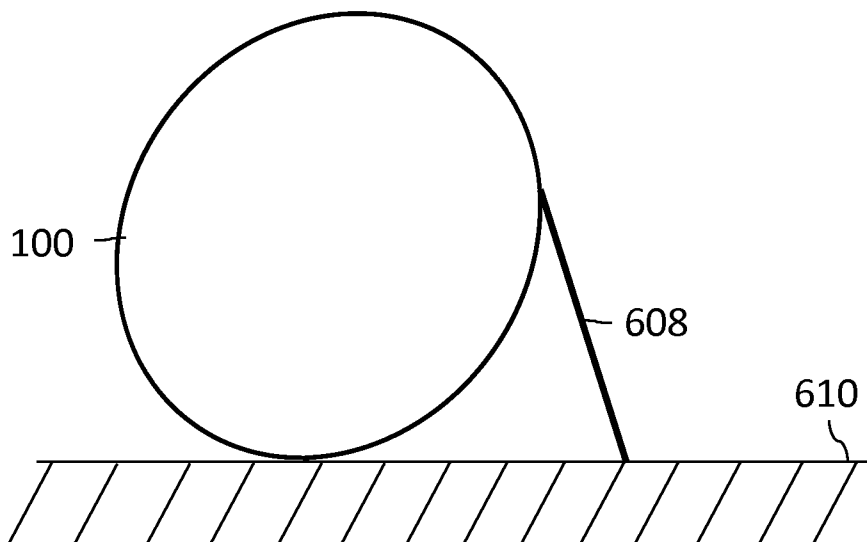


Figure 6b

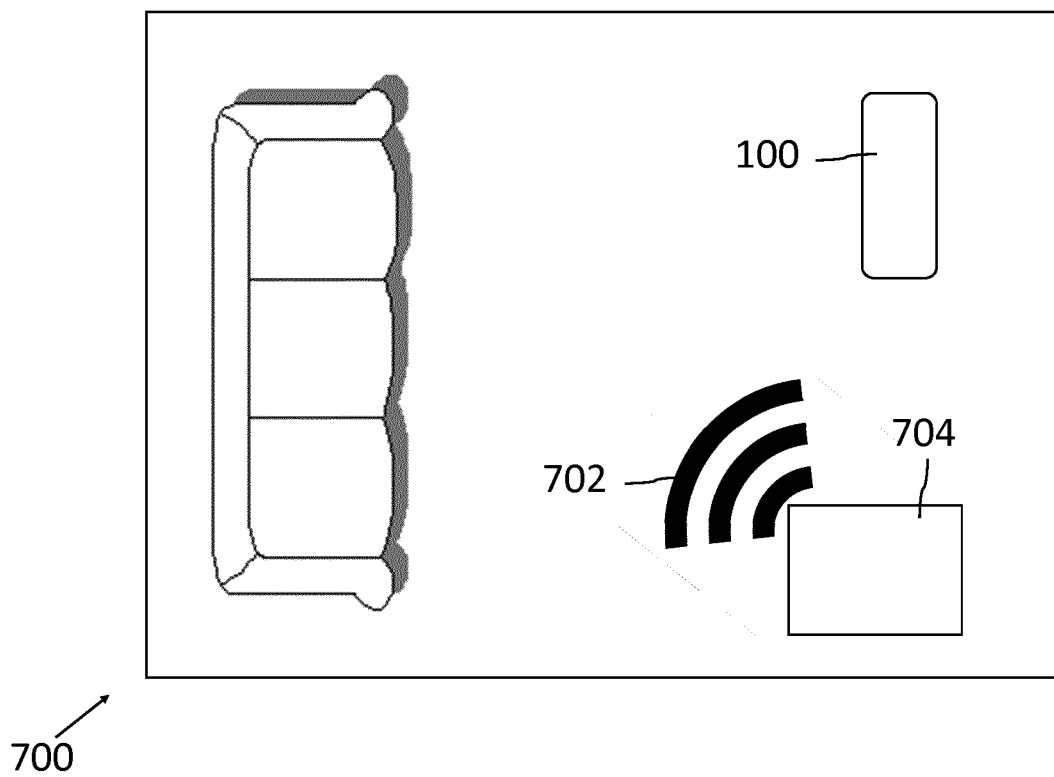


Figure 7a

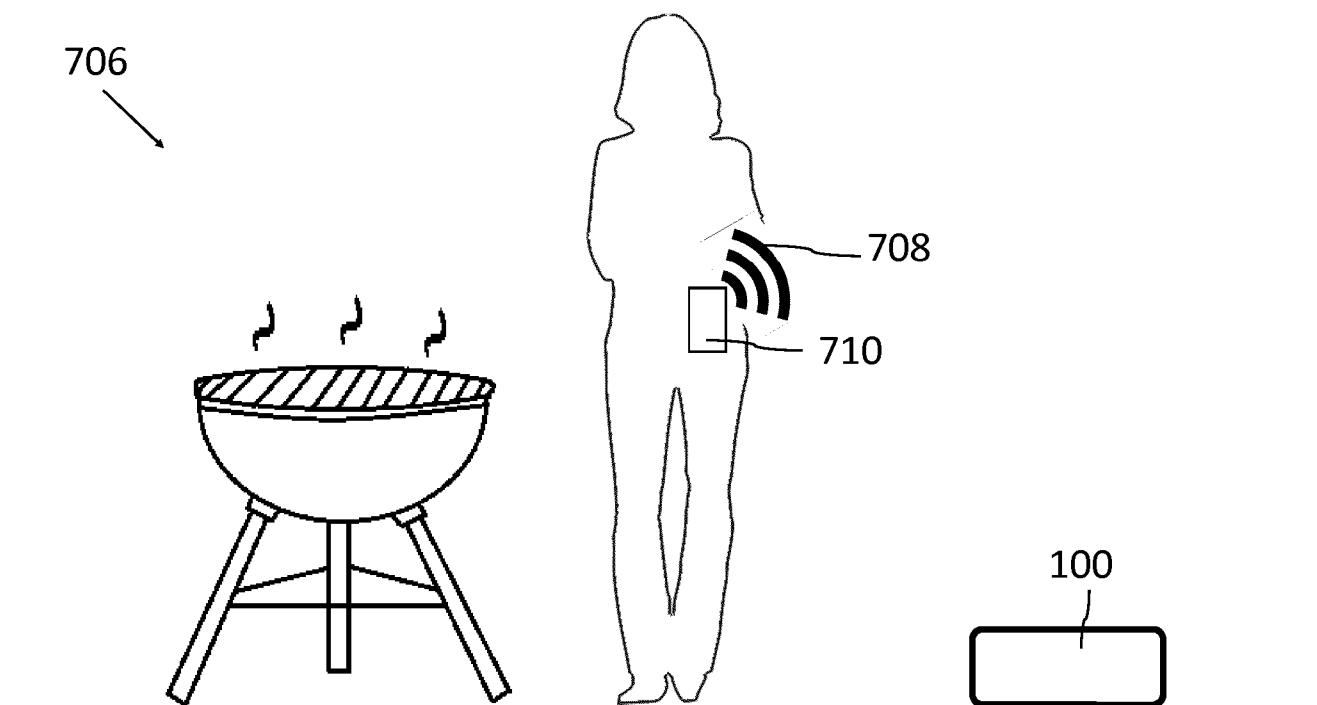


Figure 7b

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/054606

A. CLASSIFICATION OF SUBJECT MATTER
INV. H03G3/30 H04M1/60
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H03G H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/056124 A1 (KEATING VIRGINIA WALKER [US] ET AL) 4 March 2010 (2010-03-04) figures 1-3,5-7 paragraphs [0002], [0030] - [0034], [0043] - [0045], [0047], [0053], [0060], [0061], [9364] -----	1-16,18
X	JP 2010 148106 A (NTT DOCOMO INC) 1 July 2010 (2010-07-01)	1-16,18
Y	abstract paragraphs [0004], [0062], [0081], [0082] -----	1-16,18
X	KR 2006 0012799 A (LG ELECTRONICS INC [KR]) 9 February 2006 (2006-02-09) the whole document ----- -/-	1-16,18



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Date of the actual completion of the international search

2 May 2017

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2017/054606

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 049 700 A (HARDOUIN LARRY J [US]) 11 April 2000 (2000-04-11) abstract; figures 1-7 column 1, lines 15-64 column 3, line 46 - column 4, line 38 -----	1-16,18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2017/054606

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 17
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 17

The subject-matter of claim 17 is not defined; in particular claim 17 does not define a scope of invention.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2017/054606

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