

RADIO PAGER



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BACKGROUND OF THE INVENTIONField of the Invention

The present invention relates to a radio pager called a
5 beeper. Particularly, this invention relates to a radio pager
wherein an antenna is mounted along the border of a pager case
taking the shape of a loop, for extending a receive band of a
pager and improving an its receive sensitivity.

10 Discussion of Related Art

Recently, regardless of sex or age, most people have
utilized a radio pager as a commercial or personal
communication means due to rapid development in information
communication technology. As a service area gets extended and
15 wider, this radio pager becomes to capable of covering the
whole nation. Moreover, the pager can receive a call signal
even in an underground space such as a subway or basement.

To receive the call signal at a high sensitivity, it is
important to implement an antenna which can maximize a
20 receiving area as possible under the condition of a limited
volume of the radio pager as a portable device.



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However, in the conventional radio pager, an antenna is disposed in a narrow inner space formed by upper and lower cases of the pager in such a manner that surrounds a layer of a circuit board with a portion thereof disposed between upper and lower circuit boards, forming a shape of "C", so that the pager covers a relatively narrower area and is not provided with the high sensitivity. Hence, the conventional pager has drawbacks that it performs bad reception, moreover, cannot receive signals in the underground space or wider service area.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a radio pager that substantially obviates one or more of the limitations and disadvantages of the related art.

15 An object of the present invention is to provide a radio pager for extending a receive signal band and improving a receive sensitivity.

20 Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure as illustrated in the written description and claims

hereof, as well as the appended drawings.

To achieve these and other advantages, and in accordance with the purpose of the present invention as embodied and broadly described, a radio pager having upper and lower cases, a liquid crystal display and printed circuit board therebetween, and an antenna coupled to the printed circuit board, includes a bracket formed in the shape of a square frame, mating with borders of the upper and lower cases and having a groove and coupling lugs, wherein the antenna made in the shape of a square is inserted into the groove in the bracket and then the upper and lower cases and the bracket are integrally coupled.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE ATTACHED DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

In the drawings:

FIG. 1 is an exploded, perspective view of an embodiment according to the present invention, which is aligned from a bottom portion downwardly to an upper portion;

FIG. 2 is a perspective view of an essential portion of an embodiment according to the present invention; and

FIG. 3 is a cross sectional view of an assembled radio pager taken along line A-A depicted in FIG. 1, wherein the present invention is applied.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

As shown in FIGS. 1 to 3, the radio pager of the present invention includes an upper case 1a and lower case 1b. At the center of the lower case is formed a display window 2, wherein a liquid crystal display 3 is attached thereto with a fixing member 4. Coupling lugs 5a and 5b are formed in a manner that is protruded from the upper edge of the lower case 1b. A printed circuit board 6 is mounted in the lower case 1b, and the upper case 1a is coupled to the lower case 1b covering the inner elements. Particularly, this invention includes a square frame shaped bracket 7 mating with the borders of the upper and lower cases 1a and 1b between the upper and lower cases 1a

and 1b. The bracket 7 has a groove 8 and coupling lugs 9a and 9b. An antenna 10 is formed in the shape of a square frame and inserted into the groove 8 of the bracket 7 and then both ends of the antenna 10 are connected to a circuit in the printed
5 circuit board 6. The upper and lower cases 1a and 1b and the bracket 7 are coupled each other through coupling lugs 5a, 5b, 9a, and 9b.

By using the antenna 10 having a square loop shape which is inserted into the groove 8 of the bracket mating with the
10 borders of the cases 1a and 1b, this invention extends the receiving range to the overall borders of the cases 1a and 1b in the pager, and thereby extends a receive band and improves a receive sensitivity.

According to the present invention widely expending the
15 receive band for call signals of an antenna in a radio pager, the receiving area becomes wider and the receive sensitivity increases, thereby receiving the call signals without failure in communication, regardless of location such as an underground or running car, over a wide area.

20 It will be apparent to those skilled in the art that various modifications and variations can be made in a radio pager of the present invention without deviating from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations

of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A radio pager having upper and lower cases, a liquid crystal display and printed circuit board therebetween, and an antenna coupled to the printed circuit board, the pager
5 comprising a bracket formed in the shape of a square frame, mating with borders of the upper and lower cases and having a groove and coupling lugs, wherein the antenna made in the shape of a square frame is inserted into the groove in the bracket, and then the upper and lower cases and the bracket
10 are integrally coupled.