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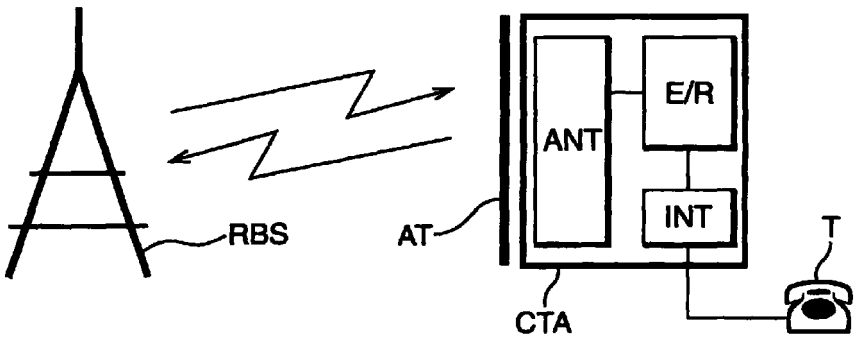
(54) Radio link attenuator for an integrated antenna adapter terminal

(57) The present invention concerns a radio link attenuator for an integrated antenna adapter terminal. According to the invention, the attenuator appears in the form of a panel (P) made of an absorbent material and disposed able to move outside the box of the adaptation terminal between the antenna and the radio base station (RBS).

Application for cordless communication networks functioning with, for example, the DECT standard.

FIG. 1



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Description

[0001] The present invention concerns a radio link attenuator for an integrated antenna adapter terminal and can be applied in particular in the field of cordless communication networks functioning with the DECT standard.

[0002] A cordless network generally comprises a plurality of adapter terminals commonly known in technical language as CTAs (Cordless Adapter Terminal) provided to firstly communicate via a radio link with a base station in relation with the traditional telephone network, and secondly with subscriber terminals (digital or analog telephones, modems, ISDN interface, DECT handsets) via a radio or wire link.

[0003] When putting into service a radio link between an adapter terminal and its base station, the installer needs to check, not only the proper functioning of the link, but also guarantee the customer with an operating margin of several decibels so as to be able to deal with any possible bad atmospheric conditions. This operating margin is typically 8 decibels. To control this margin, when checking the link, the installer generally introduces an attenuator between the antenna and the transmitter/receiver of the adapter terminal. This operation is simple when the antenna of the adapter terminal is offset outside the latter.

[0004] However, when the antenna is integrated in the adapter terminal, that is when it is placed inside the box of the adapter terminal or when it forms an integral part of this box, it may prove to be impossible to do this owing to lack of space. In fact, the adapter terminals are increasingly compact. In addition, the operation for mounting or disassembling the adapter terminal so as to place the attenuator inside the box of the terminal may prove to be a delicate one, as the adapter terminals are generally placed on pylon tops.

[0005] The aim of the invention is also to offer an attenuator having a simple design making it possible to verify the operating margin of a link using adapter terminals with an integrated antenna.

[0006] According to the invention, an attenuator is used placed outside the box of the adapter terminal between its antenna and the associated base station.

[0007] The invention also concerns an attenuation device to be used when putting into service a radio link between a base station and an integrated antenna adapter terminal so as to check the operating margin of said link, characterised in that it appears in the form of a panel made of an absorbent material to be disposed able to move outside the box of the adapter terminal between the antenna and the base station.

[0008] Said panel made of an absorbent material is composed of epoxy loaded with carbon or iron balls.

[0009] So as to hook said attenuator to the box of the adapter terminal, the panel made of an absorbent material is preferably housed in a frame fitted with hooking means.

[0010] Other characteristics and advantages of the invention shall appear more readily from a reading of the following detailed description with reference to the accompanying drawings on which :

- figure 1 diagrammatically shows a radio link between a base station and an adapter terminal fitted with the attenuation device of the invention,
- figure 2 shows a first embodiment of the attenuation device of the invention, and
- figure 3 shows a second embodiment of the attenuation device of the invention.

[0011] Figure 1 represents a radio link between a radio base station RBS and an adapter terminal CTA. The adapter terminal is mainly composed of an antenna ANT, a transmitter/receiver E/R and a subscriber interface INT, the entire unit being placed in a box. In the present case, the antenna is placed inside the box. The device of the invention is also particularly advantageous when the antenna forms an integral part of the box. Furthermore, the subscriber interface INT is connected to one or several subscriber terminals. In the example of figure 1, the subscriber interface is connected to a telephone station T.

[0012] When putting this link into service, the adapter terminal CTA is fitted with an attenuation device AT for attenuating the signals originating from or going to the base station so as to guarantee a functioning margin of the radio link. According to the invention, this attenuation device is placed outside the adapter terminal CTA between its antenna and the radio base station RBS.

[0013] This attenuation device is mainly composed of a panel P made of an absorbent material, namely epoxy powder loaded with carbon or iron balls. The panel P is preferably coated with a non-conducting plastic material so as to protect it from bad weather conditions.

[0014] With reference to figure 2, the attenuation device of the invention preferably comprises a frame C used as a support for the panel made of an absorbent material and fitted with hooking means to hook the attenuation device AT to the box of the adapter terminal CTA.

[0015] In the example of figure 2, the hooking means are composed of a latching block PE intended to be placed on the upper face of the box of the terminal CTA, one end being fixed to the frame C and the other having a curved section placed against the rear face of the box when the attenuator is in position.

[0016] A further embodiment of the hooking means is shown on figure 3. They appear in the form of elements forming slides G on the sides of the frame C of the attenuator. Additional means F (apertures fitted in the lateral faces of the box of the terminal) are provided on the adapter terminal CTA.

[0017] According to the invention, the attenuation

device may further comprise a coupling element (not shown on the figures) for placing said device on the box of the CTA with the aid of a pole when said box is positioned on the top of a pylon.

Claims

1. Attenuation device (ATT) intended to be used when putting into service a radio link between a radio base station (RBS) and an adapter terminal (CTA) with an integrated antenna (ANT) for checking the operating margin of said link characterised in that it appears in the form of a panel (P) made of an absorbent material to be disposed able to move outside the box of the adapter terminal (CTA) between the antenna (ANT) and the radio base station (RBS).

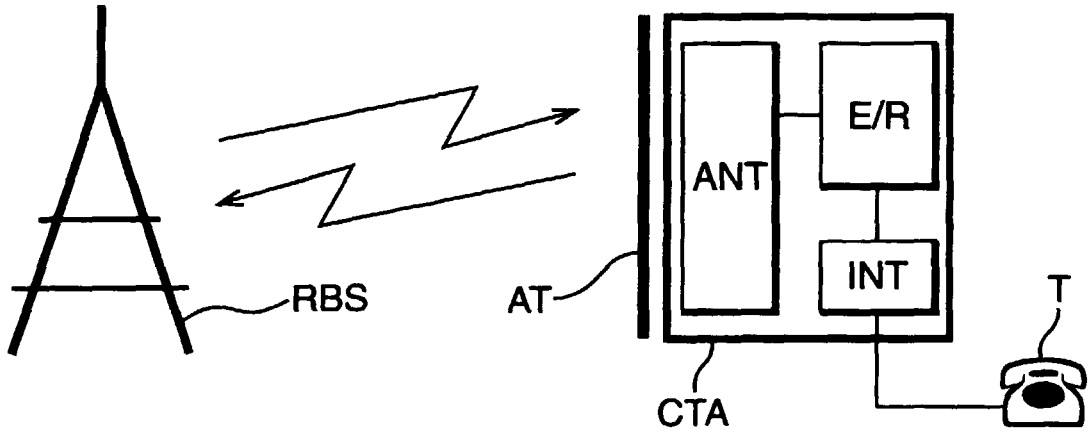
2. Attenuation device (ATT) according to claim 1, characterised in that the panel (P) made of an absorbent material is housed in a frame (C) fitted with hooking means (PE, F, G) for hooking said attenuation device to the box.

3. Attenuation device according to claim 1 or 2, characterised in that said panel (P) made of an absorbent material is coated with a non-conducting plastic material so as to protect it from bad weather conditions.

4. Attenuation device according to one of the preceding claims, characterised in that said panel (P) made of an absorbent material is composed of epoxy and carbon.

5. Attenuation device according to one of the preceding claims, characterised in that said panel (P) made of absorbent material is composed of epoxy and iron.

FIG. 1



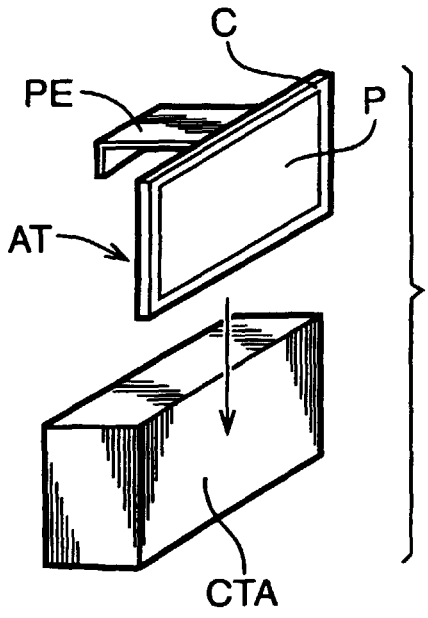


FIG. 2

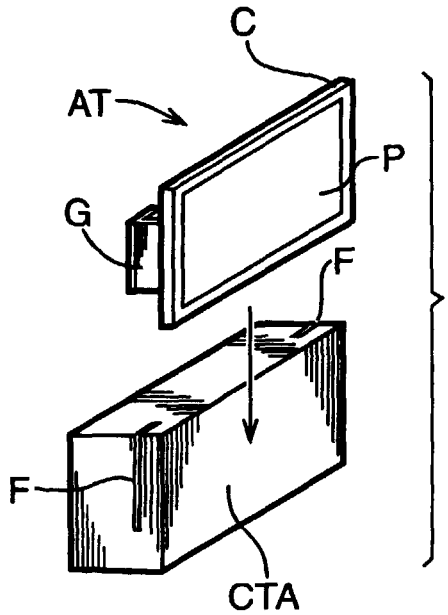


FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 8180

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 89 10569 A (HOME BOX OFFICE) 2 November 1989 (1989-11-02) * page 8 - page 9; figures 1-3 *	1-3	H01Q17/00 G01R29/08 G01R29/10
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A	EP 0 449 107 A (FERGUSON) 2 October 1991 (1991-10-02) * abstract; claims 1-9; figure *	1	
A	WO 94 18817 A (INCREA OY) 18 August 1994 (1994-08-18) * claims 1,5-10; figures 3A-10 *	2,3	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

H01Q
G01R
H04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	2 February 2000	Angrabeit, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 30 8180

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82