

The invention is based on a rod antenna according to the precharacterising clause of Claim 1.

Prior Art

A rod antenna is known (EP-A-0,048,788) which is intended in particular for VHF broadcast radio reception. In the case of this antenna, two windings are wound in the opposite winding sense on an antenna rod. A rod antenna is furthermore known (GB-A-2,030,778) which is suitable for a plurality of frequency bands, such as the AM and FM broadcast radio bands as well as citizen-band radio. The antenna rod of this antenna supports three different impedance elements which are connected to one another. The rod antennas for reception of VHF and UHF television transmitters have until now been known only as telescopic antennas, the telescope length being changed to a greater or lesser extent depending on the reception band.

Object of the invention

The invention is based on the object of developing a rod antenna according to the precharacterising clause of Claim 1 in such a manner that the rod antenna is suitable for both VHF and UHF television reception without a variable length telescope.

Achievement of the object

This object is achieved in the case of a rod antenna according to the precharacterising clause of Claim 1 by means of the features specified in the characterising part of this claim. The advantages which can be achieved by means of the invention are, in particular, that signals of two different television frequency bands, that is to say preferably the VHF band and the UHF band, can be received using the rod antenna.

Description of an exemplary embodiment of the invention

An exemplary embodiment of the invention is shown in the drawing on the basis of one figure and is explained in more detail in the following text. The figure shows a rod antenna in section.

In the figure, 10 designates a rod antenna consisting of a conically tapered insulating material rod 11 having two windings 12 and 13 which are connected to one another and of which the first winding 12 ends in front of the free end 14 of the insulating material rod 11. While the turns of the first winding 12 are wound with a relatively coarse pitch, the turns of the second winding 13 are wound, for example, without any pitch. The second winding 13 is split into two sections 14 and 18. A first turn 17 of the second section 18 is contained between the penultimate turn 15 and the final turn 16 of the first section 14, the other end 19 of which second section 18 is connected to a conductor 20 in the form of a strip. The conductor in the form of a strip is surrounded by a metallic sleeve 23, in the same manner as the lower end 22 of the insulating material rod 11, which sleeve 23 at the same time encloses a first threaded bolt 24 at one end. The other end of the threaded bolt supports a threaded pin 25, which is screwed into a helical spring 26. A threaded pin 27 of a second threaded bolt 28 is screwed into the other end of the helical spring 26, which threaded pin 27 supports, at its free end, a further threaded pin 29 for the attachment of the rod antenna. The threaded bolt 28 forms the base point of the rod antenna. An electrically conductive strip 30 bridges over the helical spring and is clamped in by means of its end between the threaded pins 25 and 27 and the associated ends of the helical spring 26. The windings 12 and 13 consist of an insulated wire, preferably of varnished copper wire. The entire rod antenna is surrounded by an elastic plastic sleeve 31, with the exception of the further threaded pin 29.

The method of operation of the rod antenna 10 described above is as follows.

5 The mutually overlapping turns 15, 16, 17 of the sections 14 and 18 of the second winding 13 form a capacitor which capacitively couples the windings 12 and 13 to the remaining part of the rod antenna, that is to say to the sleeve 23, to the first threaded bolt 24, to the helical spring 26 and to the second threaded bolt 28.

10 If the length l_1 between the base point of the antenna 10 and the coupling means 15, 16, 17 and the second winding 13 is, for example, $\lambda_U/4$, l_U being the mean operating wavelength of the UHF band, and the length l_2 between the base point and the free end of the first winding 12 is, for example, $\lambda_V/4$, λ_V being the mean
15 operating wavelength of the VHF band, then the length l_1 of the rod antenna 10 acts as a UHF antenna and the length L_2 acts as a VHF antenna.

20 The rod antenna can be screwed by means of its threaded pin 29 into a pivoting holder which is mounted, for example, on the roof of a vehicle. In consequence, the antenna can optionally be aligned at 90° or at 0° with respect to the horizontal, and can hence receive vertically or horizontally polarised waves.



Claims

1. Rod antenna for television reception having an elastic insulating material rod (11) which supports two windings (12, 13) which are connected to one another and
5 which rod (11) supports at one end a helical spring (26) whose free end forms the base point of the antenna and whose other end is coupled to the second winding (13), characterised in that capacitive coupling means (15, 16, 17) are provided between the second winding (13) and the
10 end of the spring (26) facing away from the base point of the rod antenna, and in that the length (l_1) between the base point and the capacitive coupling means is approximately $\lambda_U/4$ and the length (l_2) of the entire rod antenna (10) is approximately $\lambda_V/4$, λ_U being the mean operating
15 wavelength of the UHF band and λ_V being the mean operating wavelength of the VHF band.
2. Rod antenna according to Claim 1, characterised in that the capacitive coupling means (15, 16, 17) consist of a first turn (17) of a second section (18) of
20 the second winding, which first turn (17) is located between the two last turns (15, 16) of a first section (14) of the second winding (13), and in that the wire for the two sections (14, 18) is an insulated wire.
3. Rod antenna according to Claim 1, characterised
25 in that the first winding (12) has a considerably greater pitch than the second winding (13).
4. Rod antenna according to Claim 1, characterised in that the rod antenna (10) is surrounded by an elastic plastic sleeve (31) over its entire length.
- 30 5. Rod antenna according to Claim 1, 3 or 4, characterised in that there is a region without a winding in front of the free end (14) of the insulating material rod (11).
6. Rod antenna according to one of Claims 1 to 5,
35 characterised in that the helical spring (26) can be bridged electrically by means of a conductor (30) in the form of a strip.