

Active antenna



funkwerk 

dabendorf

Ein Unternehmen der Funkwerk AG.

155 8000 0.03

Introduction

Thank you very much for opting in favour of the ACTIVE ANTENNA of Funkwerk Dabendorf GmbH!

The ACTIVE ANTENNA takes care of the very best transmission and reception power and thus ensures improved operation of your UMTS terminal device.

First of all, and based on the data concerning the scope of supplies please check whether all parts are available.

Declaration of Conformity

We, Funkwerk Dabendorf GmbH, declare that we bear the entire responsibility for the product ACTIVE ANTENNA fully complying with the provisions of the European Council Directive 1999/5/EC.

CE 0681

The Declaration of Conformity is open to inspection under www.fwd-online.de/conformity.

Safety Instructions



The antenna is only to be used for the purpose indicated by the manufacturer.



Caution when unpacking:
Danger of suffocation for infants when small pieces are swallowed!!



Do not dispose of in a fire!



Persons must observe a distance of at least 20cm to the antenna! Special caution is required for persons wearing a pacemaker!



The device may only be opened and serviced by specialist personnel!



Only use approved accessories!



Before using the antenna in/on buildings, please make sure you are informed of the minimum distances required to sensitive devices (e.g. in hospitals, at gas stations, at places labelled as especially endangered, including explosive materials, combustible fluids and gases etc.)



Do not rely on this device for emergency communication!



Use exclusively the components included in the scope of delivery. The fixed-connected coaxial cable must not be subjected to tension in the laid status. Route the cable so that it cannot rub against other objects or be crushed. The bending radius of 20 mm must not be fallen below!



The coaxial line may not be extended or shortened! Product Approval expires!



If the device is not used for a longer period of time (e.g. vacation), the wall power supply ④ should be pulled out of the power socket!



A specialist with know-how about the applicable professional standards should be commissioned with mounting the antenna outdoors!



With the installation on a house or on an antenna mast, suitable measures are to be taken for lightning protection on the house!



Instructions for Disposal

Do not dispose of the device in domestic waste!

Electronic devices are to be disposed of in compliance with the directive governing old electric and electronic devices via the local collection sites for electronic waste!

WEEE-Reg.-No. DE 81447333

Function Description

The Active Antenna ① is suitable for the frequency band range GSM 900, GSM 1800 and UMTS Band I. It supports the transmission process GPRS, HSCSD, EDGE, UMTS, HSDPA and HSUPA. The connection to the terminal devices is effected using the mounting ③ UMTS data stick included in the supplies.

The set of an active antenna consists of a basic device [antenna with integrated amplifier], a 15 m long coaxial line, a wall power supply unit ④ and a mounting ③ with integrated connecting antenna for UMTS data sticks.

The following connections are found on the mounting:

- Plug connector for the connection of the coaxial line to the active antenna
- 2,1 mm barrel connector for supply voltage

The supply voltage required is provided by the enclosed external power supply unit ④ (8 V, 0,9A).

The active antenna amplifies the UMTS mobile radio signal between the terminal device and the outdoor antenna in transmission and receiving direction. Furthermore, an additional yield of approx. 7dB is achieved through the directive array. In the GSM frequency bands the antenna is passive, no boosting is effected.



Note transmission direction!

Scope of Supply



- ① - active antenna with 15 m coaxial line and protection hood
- ② - coupler casing (FAKRA) for coaxial line
- ③ - mounting for UMTS data stick
- ④ - power supply unit
- ⑤ - mounting bracket
- ⑥ - screw to mount the antenna (3,5mm x 12mm)
- ⑦ - loop clamps
- ⑧ - screws [5x50 STH] and dowels [MU 8x50] for wall mounting
- ⑨ - Operating Manual

Mounting and getting started



Before installation

Please check the supplies for completeness.

Test whether your UMTS data stick fits into the mounting ③.

The coupler casing ② included in the supplies is for the safe connection between coaxial line and the mounting ③ of the UMTS data stick.

ATTENTION! Do not stick the coupler casing ② onto the coaxial line before laying work is completed! The coupler casing cannot be removed after connection!

If the penetration through the wall is planned with, or must have, a small diameter, please read and observe the mounting steps described in the following!

Finding out preconditions

To ensure you to get a sound UMTS signal please ask your mobile radio provider where the nearest transmitter mast is located in the surroundings of your home. Now lay down the position of the antenna in the outdoor or indoor area.

You have three different installation variants for your active antenna:

Antenna within the house

The active antenna ① is positioned within the house at a place at which a sound UMTS signal is available.

Antenna outside on the house

The active antenna ① is mounted to the house wall with the enclosed mounting bracket ⑤.

Antenna on an antenna mast


The active antenna ① is mounted to the antenna mast with the enclosed mounting bracket ⑤ and the loop clamps ⑦.



Function Test

1. Find out where the transmitter mast is located in relation to the antenna.
2. Align the antenna approximately; the logo should point to the location of the transmitter mast. An angular deviation of 30° is possible [when mounting to a mounting bracket].
3. Now use the software of the mobile phone provider to start up PC or notebook.
4. Connect data stick via USB cable [not included in supplies] with PC or notebook.
5. Connect mounting ③ for UMTS data stick with the power supply unit ④ and start up.


6. Draw the protection cap carefully from the coaxial line.




-  Note! The protection cap is needed for the wall duct.


7. Connect the HF contact that is now exposed carefully with the middle connector of the data stick mounting  The antenna is in operation when the green LED of the data stick mounting  lights up.




-  Attention! This connection is not permanent! [only for testing]

8. Now insert the data stick into the mounting , clamp between the mounting brackets respectively.



9. Check transmitter performance with the provider software. Change the position of the antenna if necessary.
10. Establish and fix the position of the antenna.
11. Draw the HF contact off the coaxial line carefully from mounting  subtract.

Permanent Mounting

 Slip the protection cap over the HF contact of the connector as protection against soilage for possible wall ducts and when laying the cable!



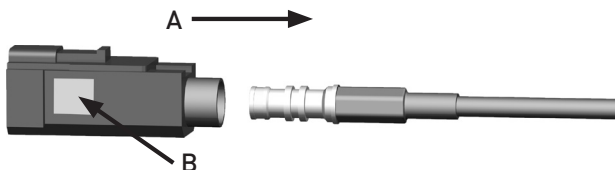
Now plan the laying of the coaxial cable.

Within the house (example without wall duct)

Lay the cable to the place where you want to set up the mounting ③ for the UMTS data stick. Note that a bend radius of 20 mm may not be undercut.

Strip the protection cap carefully from the coaxial line.

Push the coupler casing ② over the HF contact [A] at the end of the coaxial line and press the magenta catch element tight [B].



Connect the coaxial line with the connection provided for the UMTS stick on the mounting ③. The connector of the coaxial line catches audibly.



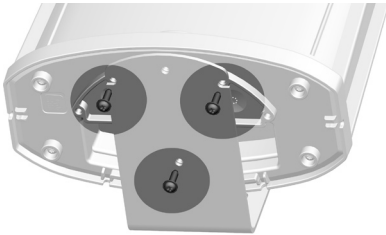
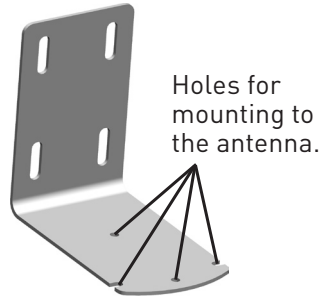
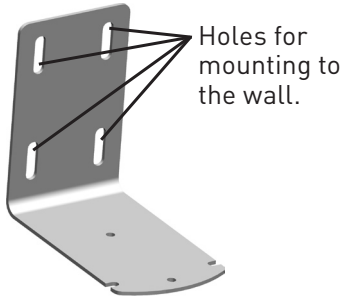
Connect the power supply unit ④ with the mounting ③ again.

The LED on the mounting ③ of the UMTS stick lights up when power is supplied to the antenna and shows you that the device is ready for operation.

You can now insert the UMTS stick of your mobile radio provider into the mounting ③ and operate it via a USB extension cable [not included in the supplies] to your terminal device [PC, notebook].

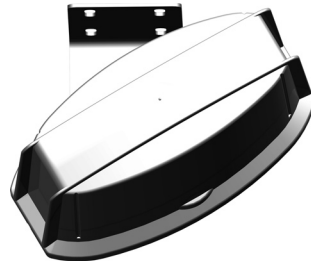
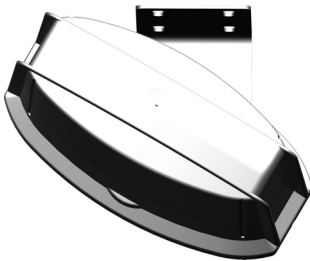
Mounting to the Wall

Drill a sufficiently large hole through the house wall. Now mount the mounting bracket ⑤ near the wall duct with the mounting material found in the supplies.



Then mount the antenna to the mounting bracket.

When mounting to the wall it is possible to adjust the antenna by 30 degrees each to the left or to the right. Avail yourself of this adjustment possibility to align your antenna optimally to the transmitter mast.



Now continue as described in the section „Within the house [p. 10].

Mounting to the Antenna Mast

Install the mounting brackets ⑤ supplied to the bottom of the antenna with the screws supplied.

Now insert the loop clamps ⑦ through the lateral holes of the mounting bracket. Tighten the mounting bracket ⑤ [incl. antenna] with the loop clamps ⑦ to the mast and align it to the transmitter mast.



Note transmission direction!

Now continue as described in the Section „Within the House“ [p. 10].

Trouble Shooting

Problem	Possible cause	Remedy
Poor reception despite UMTS connection being available	The device is not switched ON [status LED OFF]	Check all connectors / push plugs into the power socket
	The coupling of the antenna between the UMTS data stick and the mounting ③ is insufficient	Turn the UMTS data stick by 180 degrees around its lateral axis.

Technical Specifications

Suitable for	: UMTS and GSM900/GSM1800
Supported transmission process	: UMTS, HSDPA, HSUPA, GPRS, EDGE, HSCSD
Operating voltage	: 230 V from power supply unit
Maximum transmission power ERP*)	: UMTS band 1 approx. 30 dBm [1W] in main radiation direction : GSM 900/1800 passive [without amplification] omni-directional
Amplification for UMTS band 1	: the amplification is set to precisely balance the coupling losses of the UMTS data stick mounting and the losses of the fix-connected cable
System amplification	: in the main radiation direction approx. 7dB in the UMTS band 1 Opening angel of the antenna: 60°
Power supply	: via wall power supply unit to 230 V~ max. power input: approx. 6W in standby: approx. 2W idle: max 0,3W
Wall power supply unit	: 8 V / 0,9 A
Operating temperature	: -20°C ... 70°C
HF Connector	: FAKRA
Connector power supply to the mounting of the UMTS data stick	: Hollow plug 2,1
Cable length, type	: 15 m, Leoni Dacar 031
Casing	: Plastic ASA

*) ERP = effective radiated power

Transmission speed

Maximum transmission rates used in practice:

GPRS:	56 kbit/s
EDGE:	220 kbit/s
UMTS:	384 kbit/s
HSUPA:	up to 2,000 kbit/s [typical: 1,450 kbit/s]
HSDPA:	up to 28,000 kbit/s [typical: 3,600, or 7,200 kbit/s]

English

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