

Safety instructions

Thunderstorms and overloads

The inputs of the MegActiv MA305FT are triple-protected against static charge. For coarse protection a fast 60 Gas Arrestor (max. 1kA 8/20 μ s) is used, followed by an 8KV ESD protector according to IEC 61000-4-2 Level 2 / max. 30ns and another 4KV fine protection.

Disclaimer - please note

The integrated over-voltage protection circuit will not protect your equipment from a lightning strike in the event of a direct hit to the house or the local vicinity. Irrespective of the loop size, high voltages can be induced which can permanently damage the antenna electronics and/or connected devices. For this reason, liability for these devices is excluded. Other types of damage caused by overloads or by direct HF-exposure (transmitting antennas) are also excluded from the warranty. In case of absence from home, the potential danger and subsequent damage of transmitting (ham radio stations), and thunderstorms etc., can be avoided by disconnecting the antenna cable.

In the vicinity of strong FM transmitters, please note the following:

An integrated FM band-stop filter with extra low-pass is present at the input of the MA305FT. Thus strong interference can be effectively suppressed by up to 20dB. In the immediate vicinity of very strong transmitters (circa a distance of a couple of hundred meters) the antenna electronics and/or connected receivers can occasionally be overloaded. This is possible whenever the output level is stronger than -20dBm. Weaker signals may be suppressed or phantom signals may be produced. As the antenna receives up to 300 MHz, signals outside the shortwave range can also potentially effect the antenna electronics in a similar way.

TECHNISCHE DATEN

Antenna:

Power supply: 5 - 15V DC (max. 40mA; typ. 10mA)
Connector: BNC / 50 Ohms
Radiator Connector: M6-screws (stainless steel)
Frequency response (-3dB) and nominal gain:

FM-Trap off

9kHz - 300MHz & nom. 3dB Gain

FM-Trap on

9kHz - 52MHz & nom. 3dB Gain
88 - 108MHz typ. -20dB attenuation

IP3: > typ. +30dBm (@7.00 & 7.20MHz)

IP2: > typ. +50dBm (@7.00 & 7.20MHz)

Size / weight: 98 x 90 x 38mm / 0.12kg

Power inserter CPI1500UNI:

Power supply: max 15VDC/max. 400mA current-limited and protected against polarity reversal
Connectors: 2.1mm DC-power socket (positive inner);
Alternatively via optional USB > DC power plug PartNo: 00163-1
HF: BNC
Size/ eight: 86 x 70 x 29 mm / 0.09 kg

Scope of delivery:

MegActiv 305FT
Power inserter CPI1500UNI
200mm flexible radiator

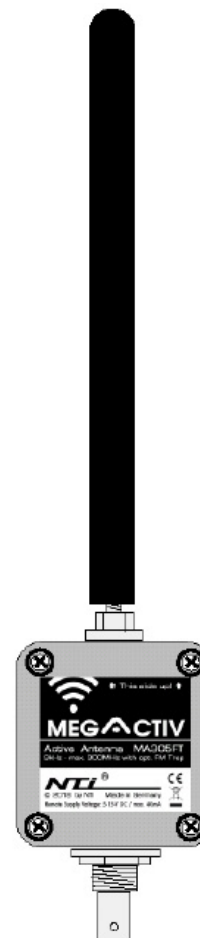
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Issue 8/2020

MegActiv MA305FT

Active Antenna
9kHz - max. 300MHz
& FM-Trap

Operating Manual
Version V2.1



ATTENTION:
This is a receiving antenna!
Never connect it to a transmitter!
This will destroy the antenna electronics and
void the warranty.
Do not operate next to a transmitting antenna!

NTI®

Manufacture: Rudolf Ille Nachrichtentechnik • www.nti-online.de

Distributor:

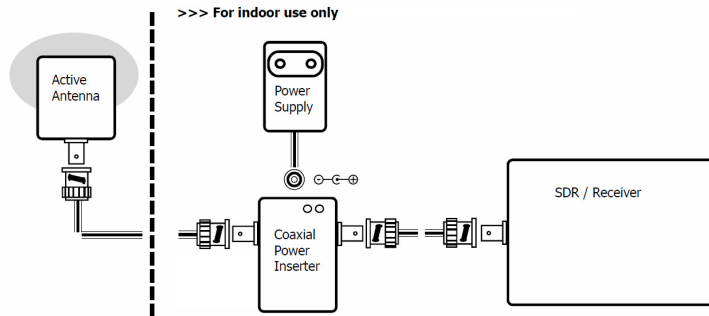
Bonito - Dennis Walter • Gerichtsweg 3 • D-29320 Hermansburg • www.bonito.net

Seal the BNC socket!

Although BNC connectors are protected against splashing water, they must be sealed outdoors with a self-vulcanizing sealing tape for permanent use! (e.g. Nittotape part number: 00198). Otherwise, capillary action can result in water ingress into the housing and damage the electronics. Such damage is therefore excluded from the warranty! The antenna housing must always be mounted with the BNC socket facing down!



Active Antenna Connection Scheme



Important Information:

- **Inappropriate/incorrect use, modifications, damaged or removed seals**
Modifications to the device, damaging any product warranty seals, barcodes, warnings or other stickers will void the warranty and the right to return the product to the manufacturer.
- **Power Supplies**
Ensure that the voltage and polarity of the power supply are correct. For interference-free operation, do not use a switch-mode power supply.
CAUTION: in extreme cases, simple unregulated transformer power supplies can deliver up to 1.4 times that of the stated output voltage. Therefore, wherever possible, use regulated analogue power supplies.

Operating principle

The MegActiv MA305FT is an active antenna with a maximum limit frequency of 300MHz, which responds to the electrical component (E-field) of the electromagnetic field.

It has a very consistent, broadband frequency response in combination with vertically polarized all-round reception characteristics and achieves good intermodulation values with low power consumption.

The power supply can be via an AC adapter or alternatively via optional USB > DC power adapter PartNo: 00163-1 via USB (eg USB Power Bank). This makes it ideal for portable use.

Switchable FM-Bandstop-Filter



Jumper FM trap (on /off).
For attenuation of nearby strong FM transmitters.

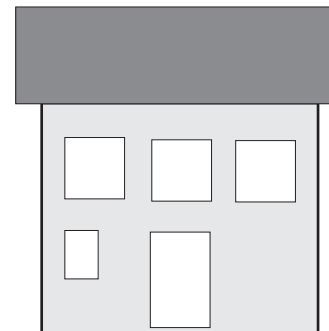
Default: Off

Inside the antenna housing there is a jumper for switching on an FM band-stop, if the MA305FT is to be operated in the vicinity of an FM transmitter.

The FM band-stop attenuates the FM range (88-108MHz) by typically 20dB and thus prevents clipping or overload effects and interference.

Example for the outdoor installation

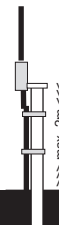
The installation of the antenna should ideally take place outdoors, away from domestic electromagnetic noise. Therefore, the antenna should be sited typically 5 to 10 meters distant from any building.



Contrary to widely held opinion, the highest possible installation location is not always the best. Better near the ground, mount on a mast that is 2m high. This means that the antenna is less exposed to the risk of lightning and at the same time cable resonance effects are avoided.

The coax cable used should have the highest possible attenuation. We recommend the coax cable types Hyperflex 5 (Messi&Paoloni) or H155 (Belden). When using a metallic antenna mast, the coaxial shielding should also be grounded near the antenna.

Inconspicuous installation for vertically polarized omni-directional reception.



Coaxial power inserter

The antenna electronics are powered via the connected coaxial cable of the power inserter. Power is supplied by the power inserter (CPI1500UNI) which can be fed by an external power supply. Whenever possible, do not use a switch mode power supply; it is always preferable to use a transformer.

Power can also be supplied via USB with the optional USB > DC power plug PartNo: 00163-1. Do not use different power supplies simultaneously! A self-resetting fuse will limit the power input to 400mA in case of a short circuit.

The power inserter has two LED-status indicators:
Green (PWR): Operating voltage display
Red (!): Short-circuit or overload indicator

Attention:

If the red LED illuminates, disconnect the antenna and power cables from the power inserter and investigate the cause of the short circuit or overload!!

