

## Antenna model: AT6000

### Isotropic Antenna for EMF Measurement

#### INTRODUCTION

The AT6000 device, designed and built in Calzavara - Clampco Sistemi NIRLab laboratory, contains three passive, independent, orthogonal antennas. If used with the supplied ferrite bead coaxial cable it allows reliable measurements of radio-frequency electric fields which have an environmental impact in the vast majority of practical cases. The three orthogonal antennas are framed in the blue spherical polystyrene radome.

The axis selection is accomplished by an internal electronic switch that is remotely controlled (via the coaxial cable) by the ATSA04 axis controller.



#### SPECIFICATIONS

**Frequency range:** from 400 MHz to 6000 MHz

**Transducer type:** isotropic transducer with three orthogonal antennas, with RF absorbing antenna boom

**Polarization:** linear, triaxial polarization selection by means of an internal electronic solid state RF switch

**Axis selection:** by PC via USB with the ATSA04 interface

**Antenna factors:** individual calibration data. Manufacturer calibration report enclosed

Frequency (MHz)	Antenna factor * (dB $\mu$ V/m) typical	Frequency (MHz)	Antenna factor * (dB $\mu$ V/m) typical
400	53	3 000	44
500	49	3 250	45
600	50	3 500	50
700	48	3 750	50
800	47	4 000	51
900	47	4 250	51
1 000	46	4 500	51
1 250	45	4 750	51
1 500	44	5 000	53
1 750	43	5 250	55
2 000	42	5 500	55
2 250	44	5 750	55
2 500	44	6 000	57
2 750	45		

\* at the ATSA04 RF output connector (averaged on the three axes)

**Max applicable field strength:** 300 V/m (1 dB compression point)

#### Isotropic measurement uncertainty

+ 1.5 / -1.5 dB from 400 MHz to 1500 MHz

+ 1.8 / -2.0 dB from 1500 MHz to 2000 MHz

+ 2.2 / -2.5 dB from 2000 MHz to 3500 MHz

+ 2.8 / -3.5 dB from 3500 MHz to 6000 MHz

Note: antenna in vertical position with at least 1.5 meter ferritized cable for any field incidence direction

#### Dimensions:

antenna radome:  $\varnothing$  200mm

total length: 540 mm

**Antenna weight:** 0.76 kg

**RF connector:** N-female, 50  $\Omega$

#### AMBIENT CONDITIONS

**Protection class:** IP 42

**Temperature range:** -20°C to +55°C

**Humidity:** max 95% at 40°C without condensation

**Shock resistance:** 1 meter drop without degradation of the electrical characteristics

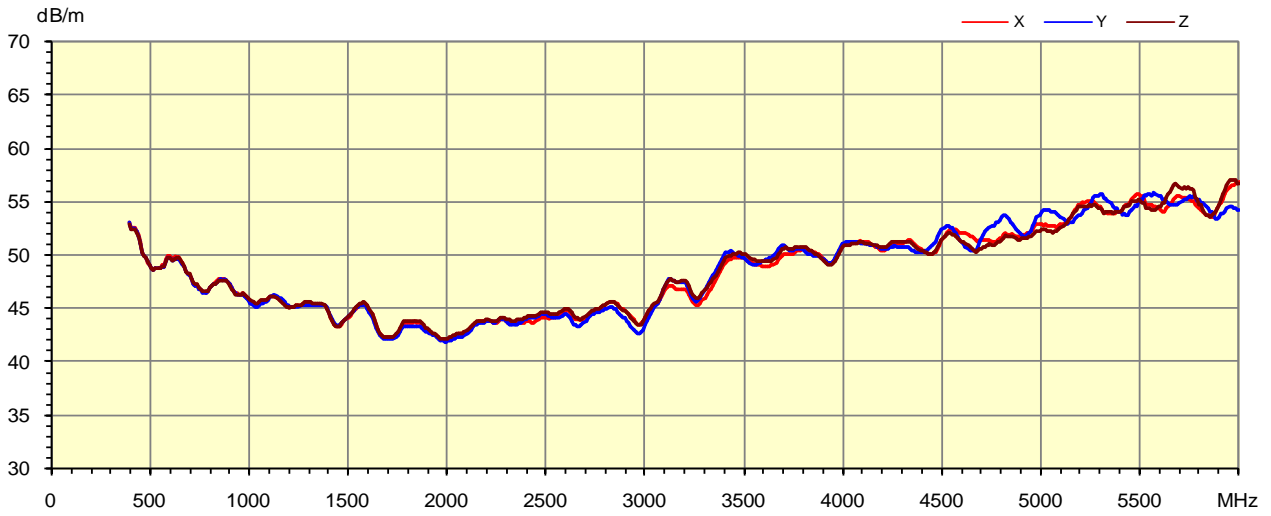
#### AT6000 KIT

- Vertical support for fixing to 1/4" thread
- 2 m ferritized coaxial cable, with manufacturer calibration report of attenuation and return loss (typical attenuation: 2.0 dB @ 3 GHz, 4.0 dB @ 6 GHz)
- Manufacturer calibration report with antenna factor and return loss of the three antennas

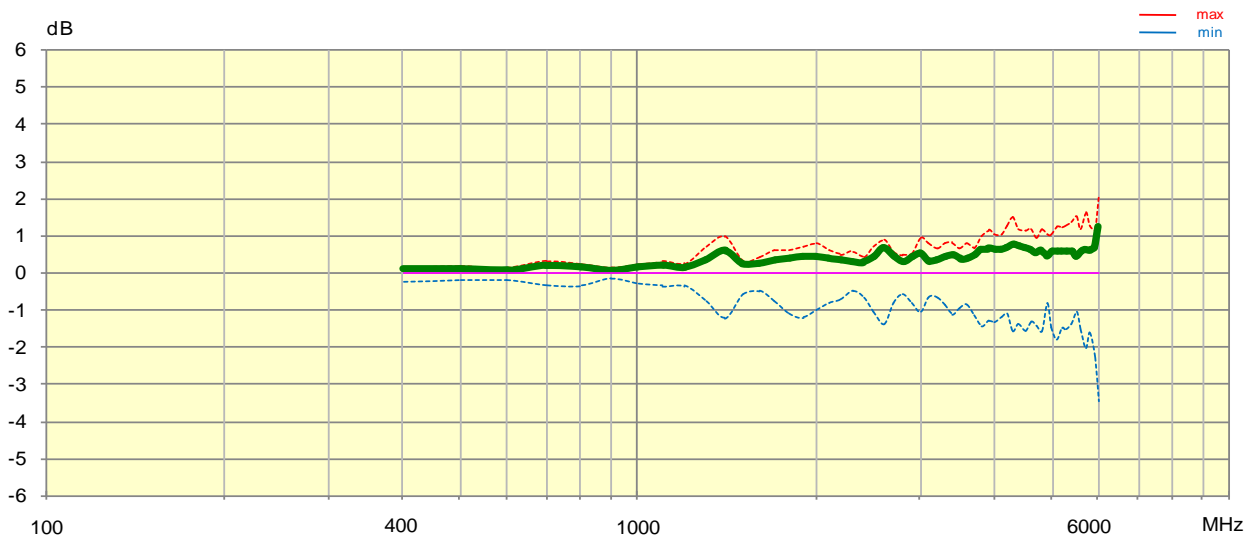
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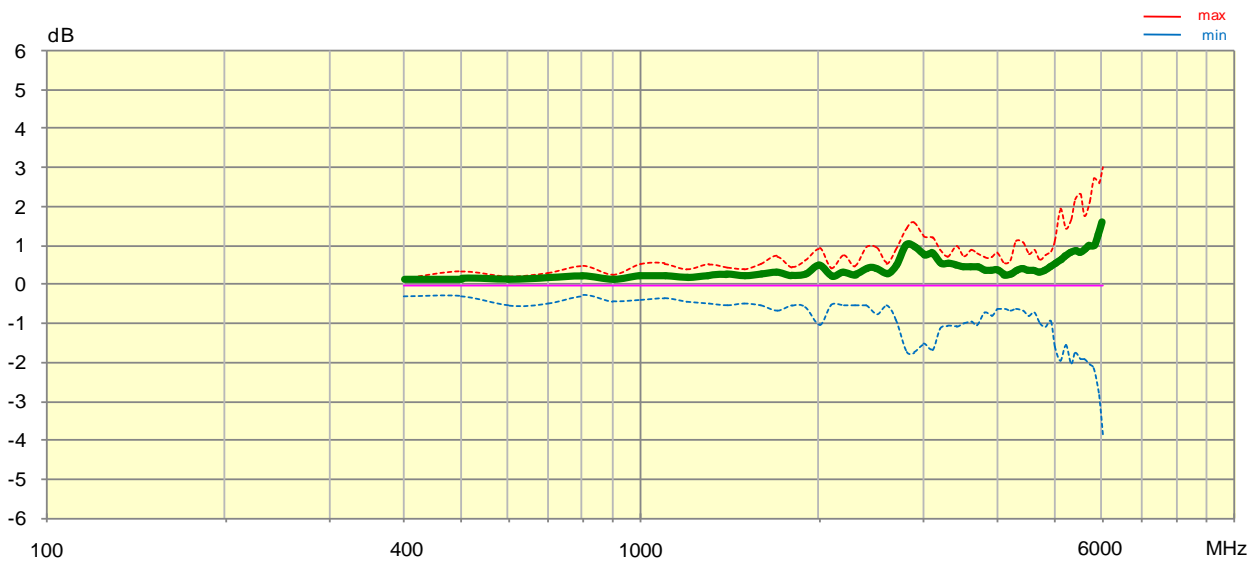
**TYPICAL ANTENNA FACTOR**



**ISOTROPIC ERROR (VERTICAL POLARIZATION INCIDENT)**



**ISOTROPIC ERROR (HORIZONTAL POLARIZATION INCIDENT)**



**Antenna model: AT6000****Isotropic Antenna for EMF Measurement****ACCESSORIES**

- ATSA04, USB remote axis selector (105x120x50mm)
- Carry case
- Wooden tripod
- EA accredited calibration certificate
- Ferritized coaxial cable with different lengths (3 m, 5 m, 10 m)