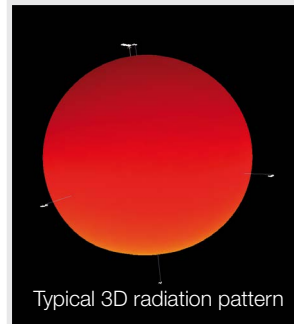
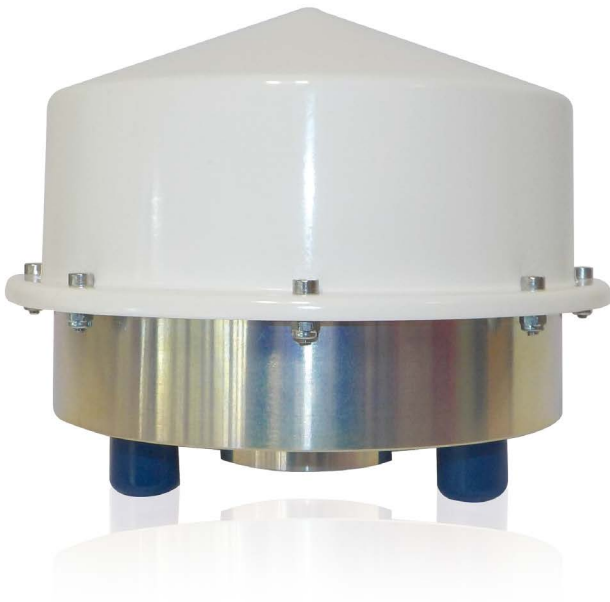


# Professional GALILEO/GPS Terminal Antenna



This portable Galileo antenna has been designed under the GARDA contract with the Galileo Joint Undertaking (GJU).

## SOLUTION FOR

- Ground segment portable antenna for professional applications covering GALILEO E5, E6, L1 bands and GPS L5, L2, L1 bands

## Main features

### Technical performance

- Excellent phase center and group delay stability
- Optimized multi-path immunity
- Stable radiation pattern
- Reduced ohmic losses (< 1.2 dB)
- Tri-frequency version available (separated Galileo E5/GPS L5 band, Galileo E6 band and Galileo L1/GPS L1 sub-bands)

### Design

- Reduced accommodation - easy to install at the top of a mast
- Lightweight (980 g) - easy to transport
- Sealed radome and environmentally robust design - resists temperature, shocks and vibrations
- Dedicated filters for out-of-band rejection and dedicated LNA for pre-amplification

### Delivered documents

- Measured return loss
- Measured radiation pattern
- Phase center calibration report

### Related standards

- IEC 60068-2/14; -2/6; -2/64; -2/32
- EN 55022
- IEC 60529

## Product configuration

### Equipment

- Specific radome
- Dedicated filters for custom GALILEO and/or GPS sub-bands

### Related services

- Maintenance
- Mechanical support



## ENVIRONMENTAL TESTING

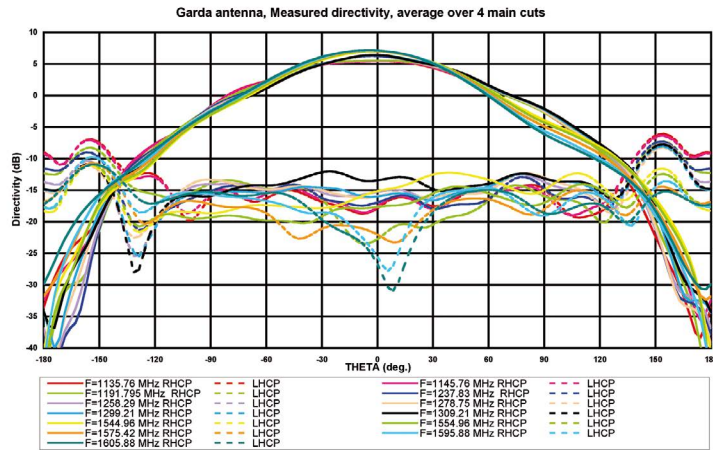
- Thermal cycling test performed according to the norm IEC 60068-2-14.
- Sine vibration test performed according to the norm IEC 60068-2-6.
- Random vibration test performed according to the norm IEC 60068-2-64.
- Free fall test performed according to the norm IEC 60068-2-32.

## Electrical characteristics

Part number	ANTE005-A
Operational frequency bands	B1 Galileo/GPS: 1575.42 ± 20.46 MHz (GPS L1 C/A, GPS L1 P(Y), GAL L1F, SBAS L1) B2 Galileo/GPS/GLONASS: 1227.60 ± 61.38 MHz (GPS L5, GPS L2C, GPS L2 P(Y), GAL E5a, GAL E5b, SBAS L5, GLO L2 C/A, GLO L2 P, GAL E6C) Option: reduced B1 and/or B2 bands
Polarization*	Right hand circularly polarized
Coverage*	Maximized within a conical coverage up to 85° from zenith
Gain antenna (without LNA)*	> +5 dBi at zenith > 0 dBi from 25 to 90° elevation > -6 dBi from 5 to 25° elevation < -6 dBi below 5° elevation
Gain*	LNA gain > 25 dB Gain antenna with LNA > 30 dB
Axial ratio*	< 7 dB between 5 and 10° elevation < 5 dB between 10 and 30° elevation < 3 dB between 30 and 60° elevation < 2 dB above 60° elevation
Phase center knowledge accuracy*	Within 5 mm radius
Phase center stability	< 0.5 mm radius for E5 and E6 Galileo, L5 and L2 GPS < 1.0 mm radius for L1 Galileo, L1 GPS
Group delay variation	< 6 ns for E5 and E6 Galileo, L5 and L2 GPS at fixed temperature < 14 ns for L1 Galileo, L1 GPS at fixed temperature
Group delay stability*	< ± 300 ps at a given frequency point over temperature
Signal to noise density ratio*	C/No ≥ 35 dBHz at E5, E6 or L1 Galileo and L5, L2, L1 GPS reference conditions
LNA 1 dB compression point*	≥ 18 dBm
LNA output 3 <sup>rd</sup> order intercept*	≥ 20 dBm
LNA burn-out protection (CW)*	Antenna system able to withstand, with no damage, an in-band +20 dBm CW signal
LNA burn-out protection (In-band pulse)*	Antenna system able to withstand, with no damage, an in-band pulsed interference with the following characteristics: <ul style="list-style-type: none"><li>• Pulse peak power: +30 dBm</li><li>• Pulse max width: 1ms (max duty cycle of 10%)</li></ul>

(\*) Applicable to both Galileo and GPS frequency bands (Galileo E5, Galileo E6, Galileo L1, GPS L5, GPS L2 and GPS L1)

Typical measured directivity

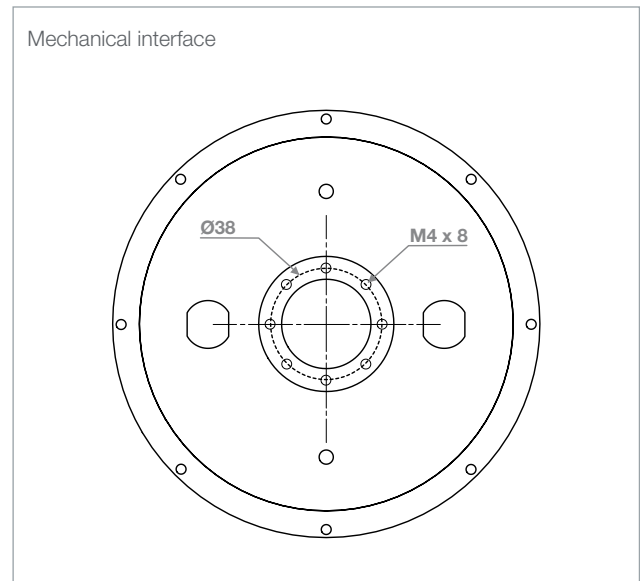
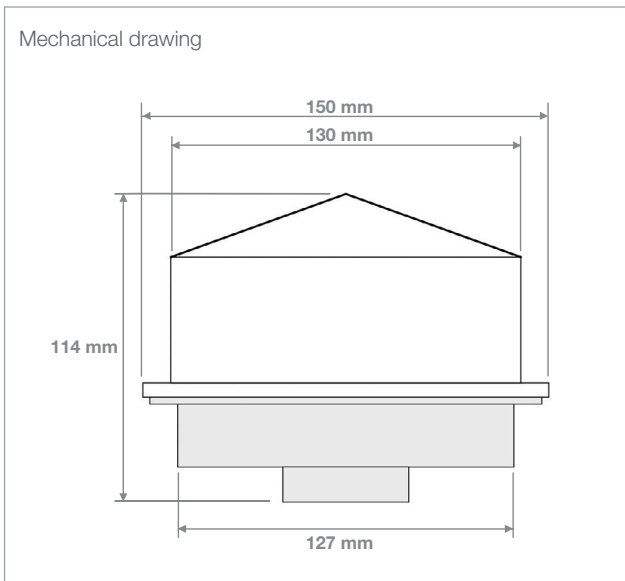


## Functional & environmental characteristics

<b>Part number</b>	<b>ANTE005-A</b>
<b>Antenna input impedance</b>	50 Ohms
<b>Supply voltage</b>	5 V (supplied through the RF cables)
<b>Power consumption</b>	≤ 1.0 Watt (total power consumption)
<b>Output VSWR</b>	< 1.7
<b>Emitted radiation</b>	The antenna system radiated emission is compatible with [EN-55022] recommendations
<b>Conducted EMC</b>	The antenna system conducted emission is compatible with [EN-55022] recommendations
<b>Temperature range</b>	Tested to IEC 60068-2-14 edition 1986 test Nb for thermal cycling Operation range: -40° C to +60° C Storage range: -55° C to +85° C
<b>Wind/other</b>	Able to withstand wind and blast conditions < 200 km/h
<b>Humidity</b>	Able to operate between 0% and 100% humidity Immune to rain under storm conditions Waterproof, compliant to IEC60529 Classification IP66
<b>Pressure</b>	The antenna system works properly with an equivalent air pressure condition of 3000 m altitude
<b>Radiation</b>	Able to withstand UV and other radiation
<b>Radome protection</b>	Radome composed of epoxy resin (60%) and glass fibers (40%) with a polyurethane coating
<b>Shock and vibration</b>	Tested to IEC 60086-2-6 (Sinusoidal vibration) Tested to IEC 60086-2-64 edition 1993 (random vibrations) Tested to IEC 60086-2-32 edition 1975 (free fall)
<b>Lightning protection</b>	The antenna is protected from static electricity and lightning induced current surges of up to 6000 A

## Mechanical characteristics

<b>Part number</b>	<b>ANTE005-A</b>	
<b>Dimensions (diameter x height)</b>	150 mm x 110 mm	
<b>Weight (approx)</b>	1 Kg	
<b>Connector</b>	2 x N Female (B2 and B1 ports)	Option: 1 x N Female (B2 + B1 port)
<b>Radome coating</b>	Polyurethane	
<b>Color</b>	White	
<b>Ingress protection</b>	Alodine 1200 according to MIL-C 5541 E class 3 for coating treatment	
<b>Operating temperature</b>	-40° C to +60° C	



Contact your local sales representative for more information  
[www.mvg-world.com/antennas](http://www.mvg-world.com/antennas)  
[salesteam@mvg-world.com](mailto:salesteam@mvg-world.com)