



**ANYWAVES**

CONTROL MATERIAL TO MASTER WAVES

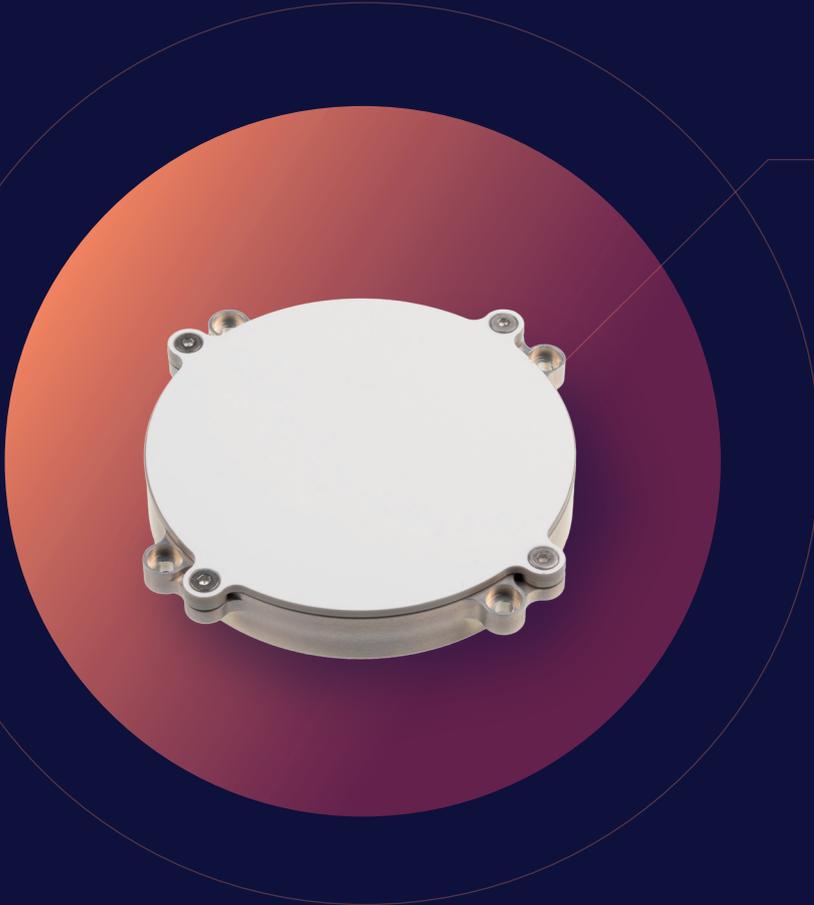
# GNSS All-Bands Antenna

Rx

Hemispherical coverage

Very high accuracy

Size < 1U



## Benefits

- All GNSS bands : GPS, Galileo, Glonass, Beidou, IRNSS L5, QZSS L6, INMARSAT in L-band for precise point positioning (PPP).
- Radome protection against harsh environment: temperatures & ESD
- **Acceptance Tests** (RF, Mechanical, Thermal) included :
  - Return loss
  - Z-axis random vibration
  - Thermal cycling
- ITAR Free
- **Unique GNSS All-Bands antenna on the market**

ANYWAVES, a French space equipment manufacturer based in Toulouse, provides high-performance and high-quality antennas for satellite constellations.

Perfectly suited to satellite missions, ANYWAVES GNSS All-Bands antenna is optimized to cover worldwide navigation systems including INMARSAT in L-band.

Its design has a very stable phase centre providing a very high accuracy.

Material and processes used for assembly have space heritage.

**ANYWAVES**

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# GNSS All-Bands Antenna

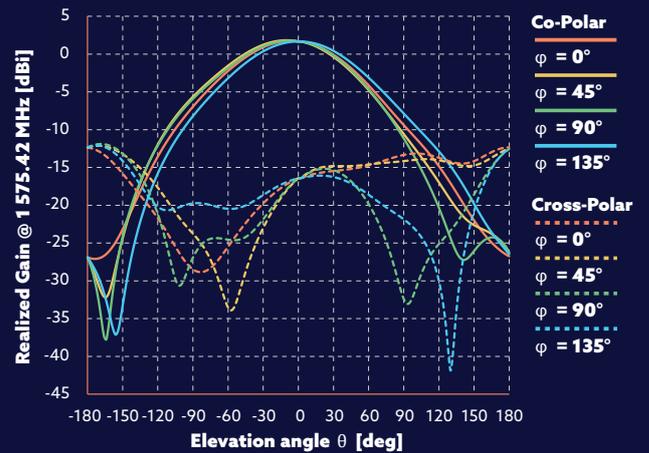
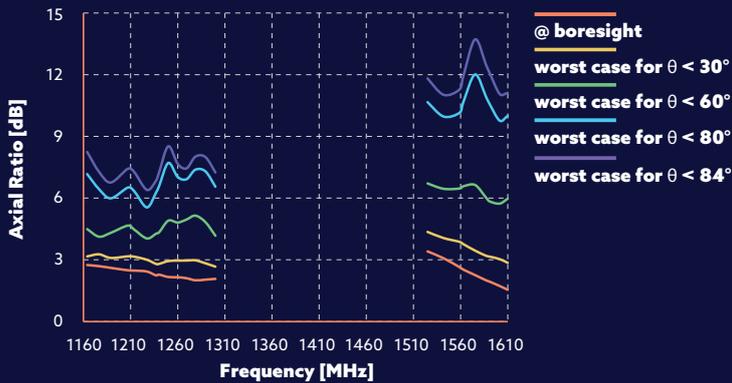
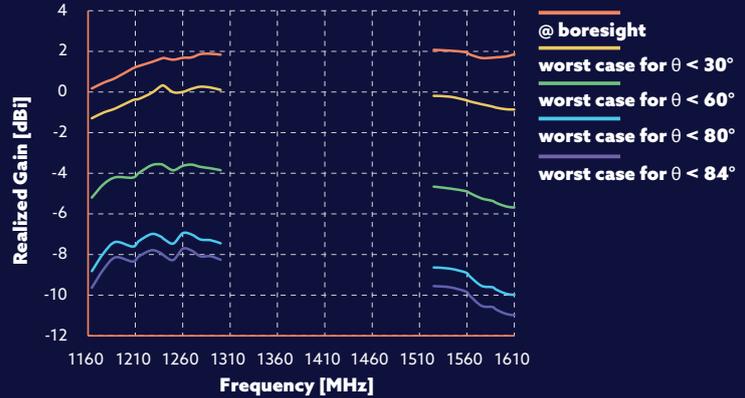
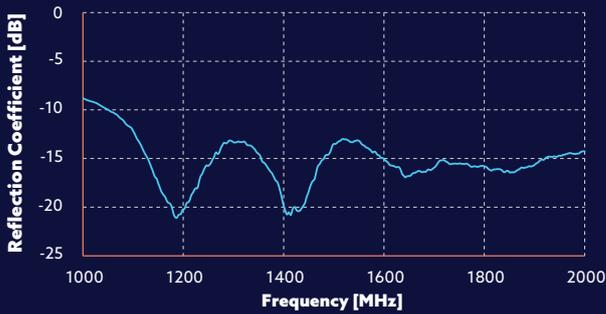
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## Measured performance



## Typical performance

<b>Frequency band</b>	<b>1 160 to 1 610 MHz:</b> GPS L1/L2/L5, Galileo E1/E5a/E5b/E6 Glonass G1/G2/G3, Beidou B1/B2a/B2/B3 <b>Inmarsat L-band:</b> 1 525 - 1 559 MHz
<b>Polarization</b>	Right Hand Circular Polarization
<b>Reflection coefficient</b>	$\leq -12$ dB
<b>Realized gain</b>	@ boresight $> 0.15$ dBi
<b>Gain variation</b>	In all individual sub-bands: $< 0.6$ dBi
<b>Axial ratio</b>	@ boresight $< 3$ dB
<b>Phase center position (<math>\pm 30^\circ</math> FoV)</b> Maximum variation vs frequency	Variation within a sphere of radius $< 4.7$ mm for all bands Variation within a sphere of radius $< 1.8$ mm for individual sub-bands
<b>Phase center position (<math>\pm 30^\circ</math> FoV)</b> Maximum variation vs elevation	Variation $< 0.4$ mm within $\pm 30^\circ$ Variation $< 2.6$ mm within $\pm 60^\circ$
<b>Group delay variation</b>	$< 1.2$ ns

## Physical characteristics

<b>Diameter</b>	90 mm
<b>Height</b>	<b>Without connector:</b> Total height: 15 mm - Protruding height: 8.5 mm - Internal height: 6.5 mm <b>With connector:</b> Total height: 24.4 mm
<b>Mass with connector</b>	$123 \pm 4$ g
<b>Connector</b>	SMA female 50 $\Omega$
<b>Mechanical interface</b>	4 x M3 (unthreaded hole)
<b>Operational Temperature</b>	$-120^\circ\text{C} / +120^\circ\text{C}$
<b>Protective Radome</b>	TECAPEEK GF30 coated with SG121FD white paint (on Flight Models only) resistant to thermal and radiation environment and preventing from electrostatic discharges.
<b>Acceptance Tests</b>	Performed on Flight Models only

Waiver : Fact and figures herein are for information only and do not represent any warranty of any kind

Designed by AGENCE PURE - 2020

