

Delta 60

Stubby Terminal Mount Active GPS L1 Helical Antenna



Key Features

- Supports GPS L1, Galileo E1, BeiDou B1C and QZSS L1 for reliable global coverage
- Stubby terminal mount design with SMA male connector for easy installation
- Top hemisphere RHCP Gain of 7 -12 dBi (typical) for strong GNSS signal reception
- Wide voltage range 1.4 to 3.6 V DC with very low power consumption for extended device life
- Compact 12.4 × 50.4 mm form factor ideal for handheld and mobile applications
- Lightweight 8 g construction reducing strain on portable and embedded devices

General Description

The Delta 60 is a compact, stubby terminal-mount GNSS antenna designed for direct connection via its SMA male connector. The antenna integrates a 4-axis ceramic helix with an active low noise design, providing reliable right-hand circularly polarised gain across the top hemisphere for strong satellite reception and reduced fix times.

Encapsulated in a rugged TPU housing, the Delta 60 is well suited to demanding outdoor and mobile environments. Its lightweight, space-efficient design makes it an ideal choice for vehicles, handheld receivers, IoT trackers and portable navigation devices.

Supplied as standard with an SMA male connector. Alternative connector types can be specified for high-volume projects.

Typical Applications

- Vehicle and fleet tracking units
- Handheld GNSS receivers
- Portable navigation systems
- IoT tracking and telemetry devices
- Rugged outdoor GNSS modules





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Electrical Specifications

Impedance:	50 Ω
Polarisation:	RHCP
Frequency:	1575.42 MHz (GPS L1, Galileo E1, BeiDou B1C, QZSS L1)
VSWR:	<1.5
Ground Plane Independent:	Yes
RHCP Gain (Top Hemisphere):	4.3 dBiC average, 12.1 dBiC peak
Supply Voltage:	1.4 – 3.6 V DC
Current Consumption:	~4 mA

Environmental Specifications

Operational Temperature Range:	-40 °C to +85 °C
Storage Temperature Range:	-40 °C to +85 °C
Relative Humidity:	5 % non-condensing

Mechanical Specifications

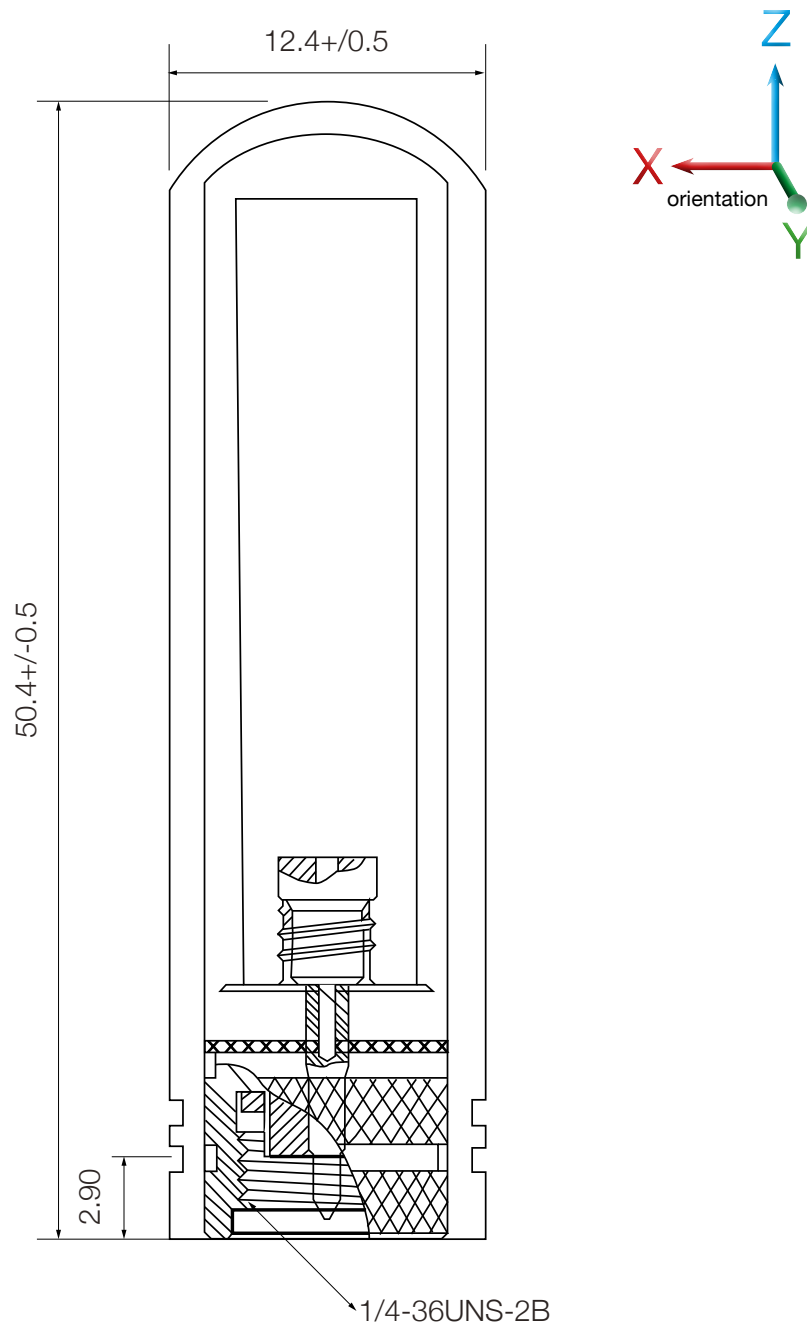
Dimension:	Ø12.4 × 50.4 mm
Weight:	8 g
Connector:	TPU rubber
Cable:	SMA male straight
Mounting Methods:	Terminal mount

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Dimensional Drawing

Unit: mm



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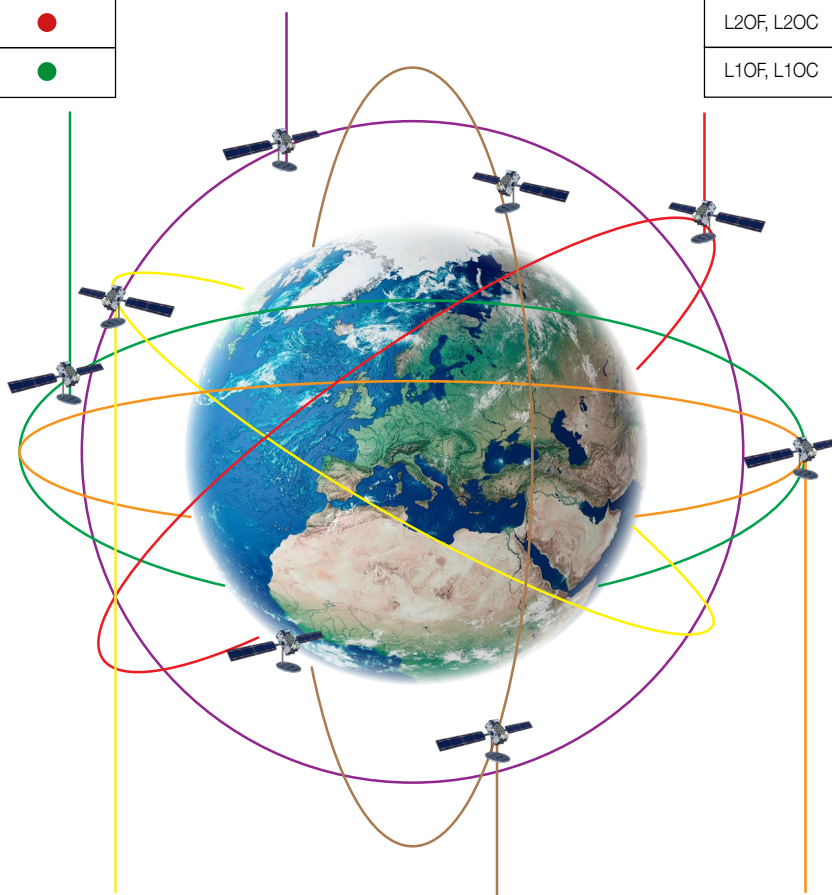
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Spectrum Coverage

GPS		
Band	Frequency	Use Indicator
L5	1176.45	●
L2	1227.6	●
L1	1575.42	●

NavIC		
Band	Frequency	Use Indicator
L5	1176.45	●

GLONASS		
Band	Frequency	Use Indicator
L3OC	1202.025	●
L2OF, L2OC	1246	●
L1OF, L1OC	1602	●



Galileo		
Band	Frequency	Use Indicator
E5a	1176.45	●
E5b	1207.14	●
E6-I, E6-Q	1278.75	●
E1-I, E1-Q	1575.42	●

BeiDou		
Band	Frequency	Use Indicator
B2a	1176.45	●
B2I, B2b	1207.14	●
B3I	1268.52	●
B1I	1561.098	●
B1C	1575.42	●

QZSS		
Band	Frequency	Use Indicator
L5	1176.45	●
L2	1227.6	●
L6	1278.75	●
L1	1575.42	●

● Suitable band

● Adequate band in good signal conditions

● Likely to be unsuitable



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GNSS Standards Band Support

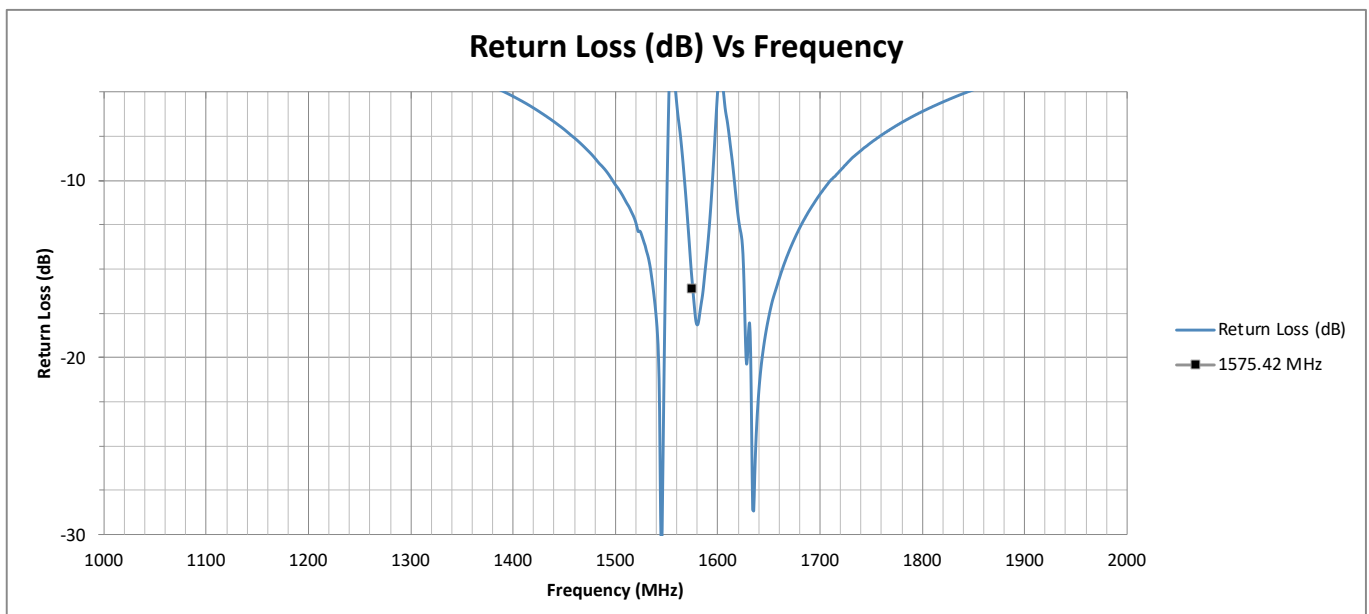
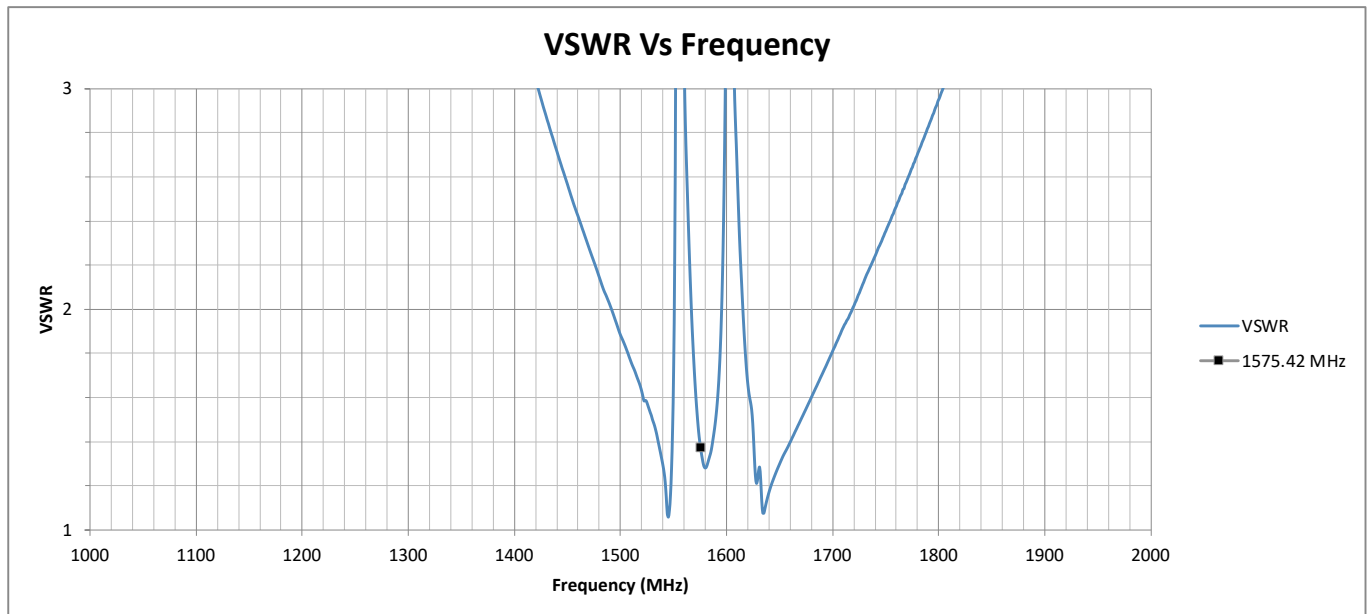
	Electrical Interface		Spherical RF Measurements			
Centre Frequency (MHz)	VSWR	Return Loss (dB)	Average RHCP Gain (dBiC)	Peak RHCP Gain (dBiC)	Median Axial Ratio (dB)	Minimum Axial Ratio (dB)
1575.42	1.3710	-16.1195	6.17	17.81	15.17	1.09

	Top hemisphere RF Measurements			
Centre Frequency (MHz)	Average RHCP Gain (dBiC)	Peak RHCP Gain (dBiC)	Median Axial Ratio (dB)	Minimum Axial Ratio (dB)
1575.42	4.34	12.11	15.20	5.52

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Electrical

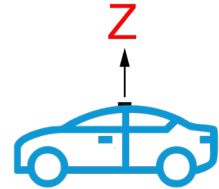


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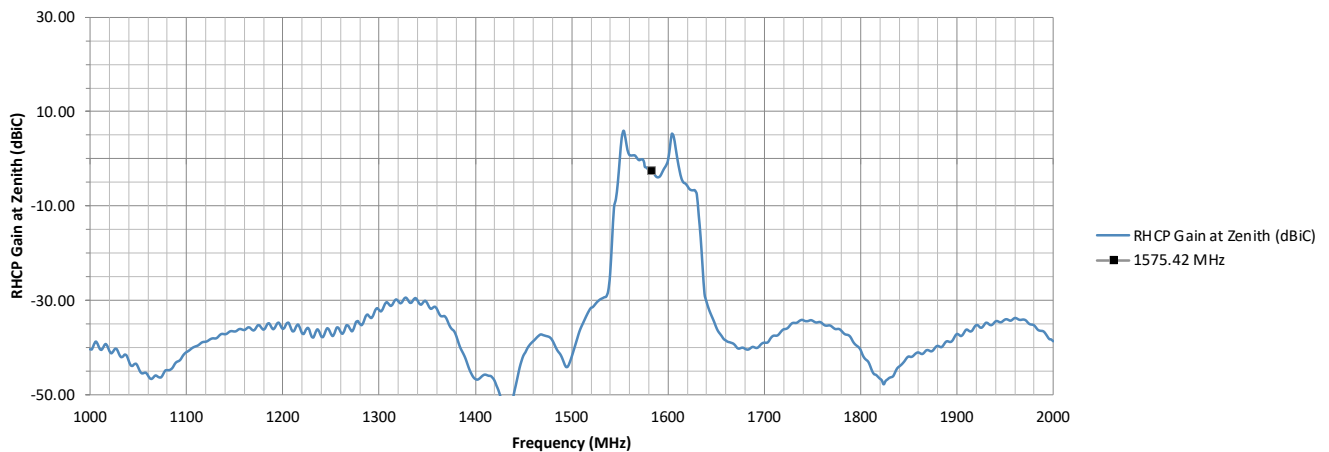
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RF Zenith

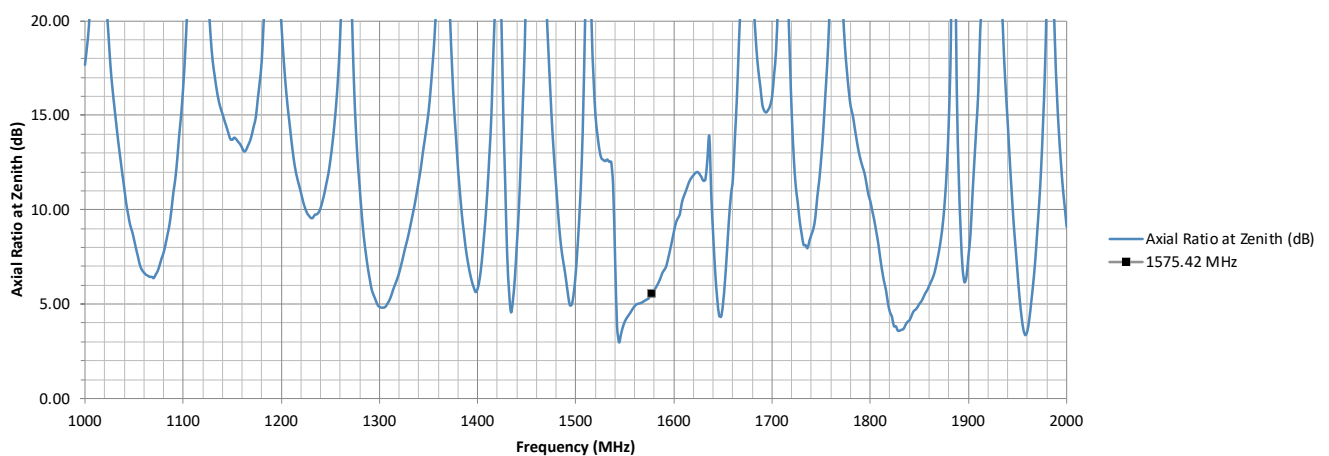
This page presents the RHCP Gain at Zenith and the Axial Ratio at Zenith as a function of frequency. These measurements indicate how well the antenna performs when receiving signals directly from satellites overhead (zenith direction). A higher RHCP gain ensures strong signal reception, while a lower axial ratio signifies better polarization purity for optimal GNSS performance.



RHCP Gain at Zenith Vs Frequency



Axial Ratio at Zenith Vs Frequency

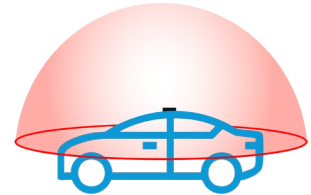


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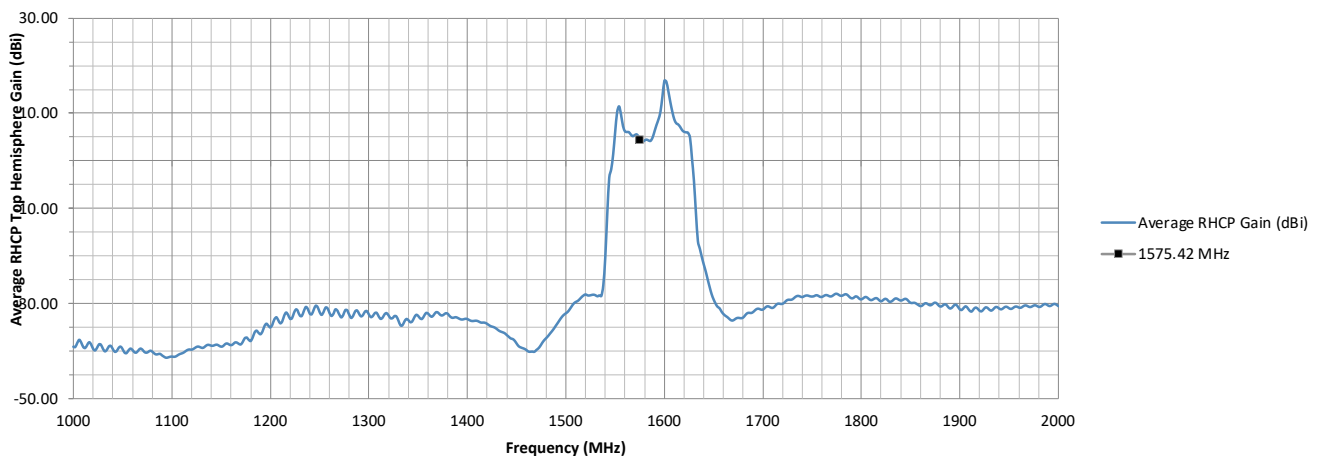
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RF Top Hemisphere

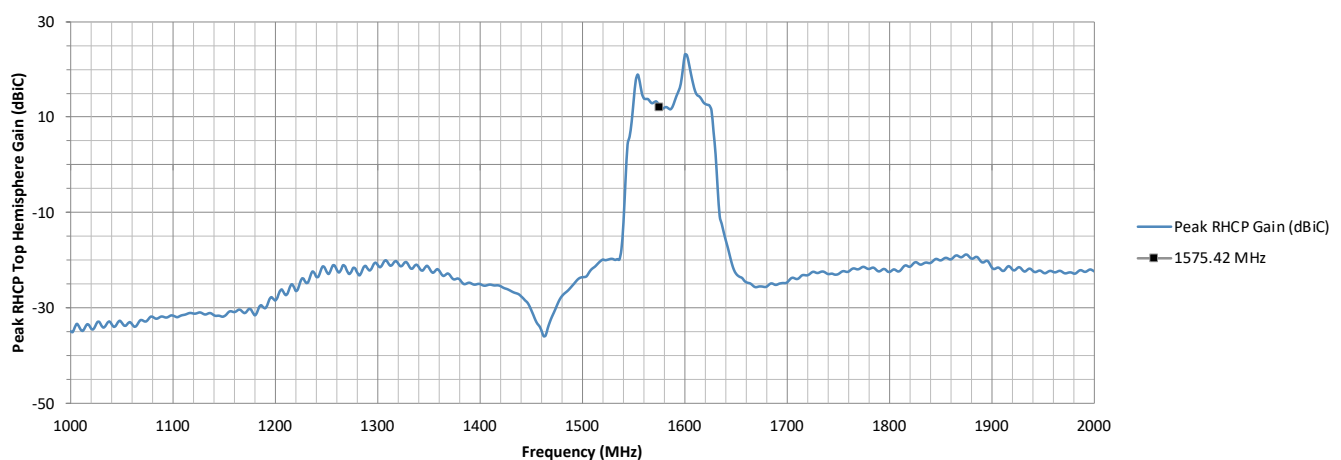
The graphs on this page showcase the Average and Peak RHCP Gain in the Top Hemisphere. These measurements assess how effectively the antenna receives signals from satellites positioned in the upper half of the sky. Strong RHCP gain in this region is critical for reliable GNSS reception, especially in environments where satellites may not always be directly overhead.



Average RHCP Top Hemisphere Gain Vs Frequency



Peak RHCP Top Hemisphere Gain Vs Frequency

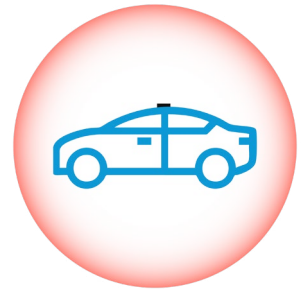


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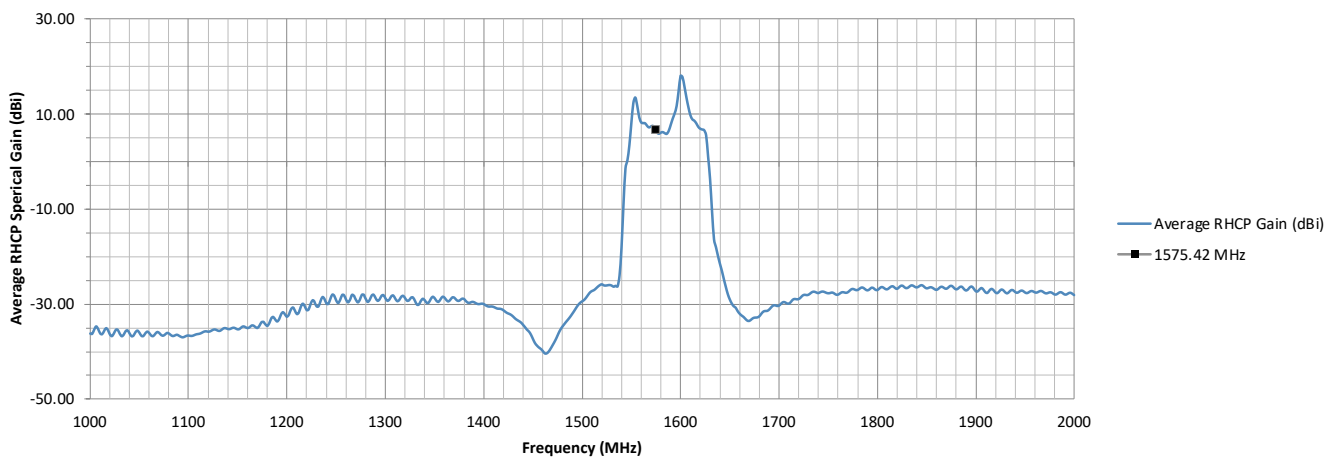
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RF Spherical

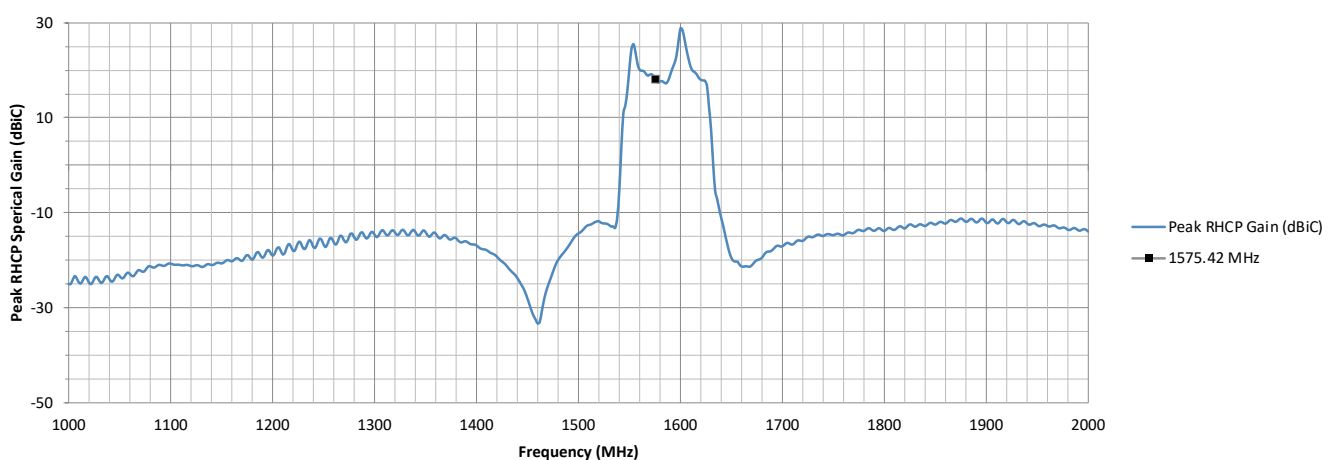
This page displays the Average and Peak RHCP Gain across the entire spherical coverage of the antenna. These metrics provide a comprehensive view of the antenna's ability to receive signals from satellites at all elevations and directions. Consistently high gain across the sphere ensures strong and stable GNSS reception in a variety of operating conditions.



Average RHCP Spherical Gain Vs Frequency



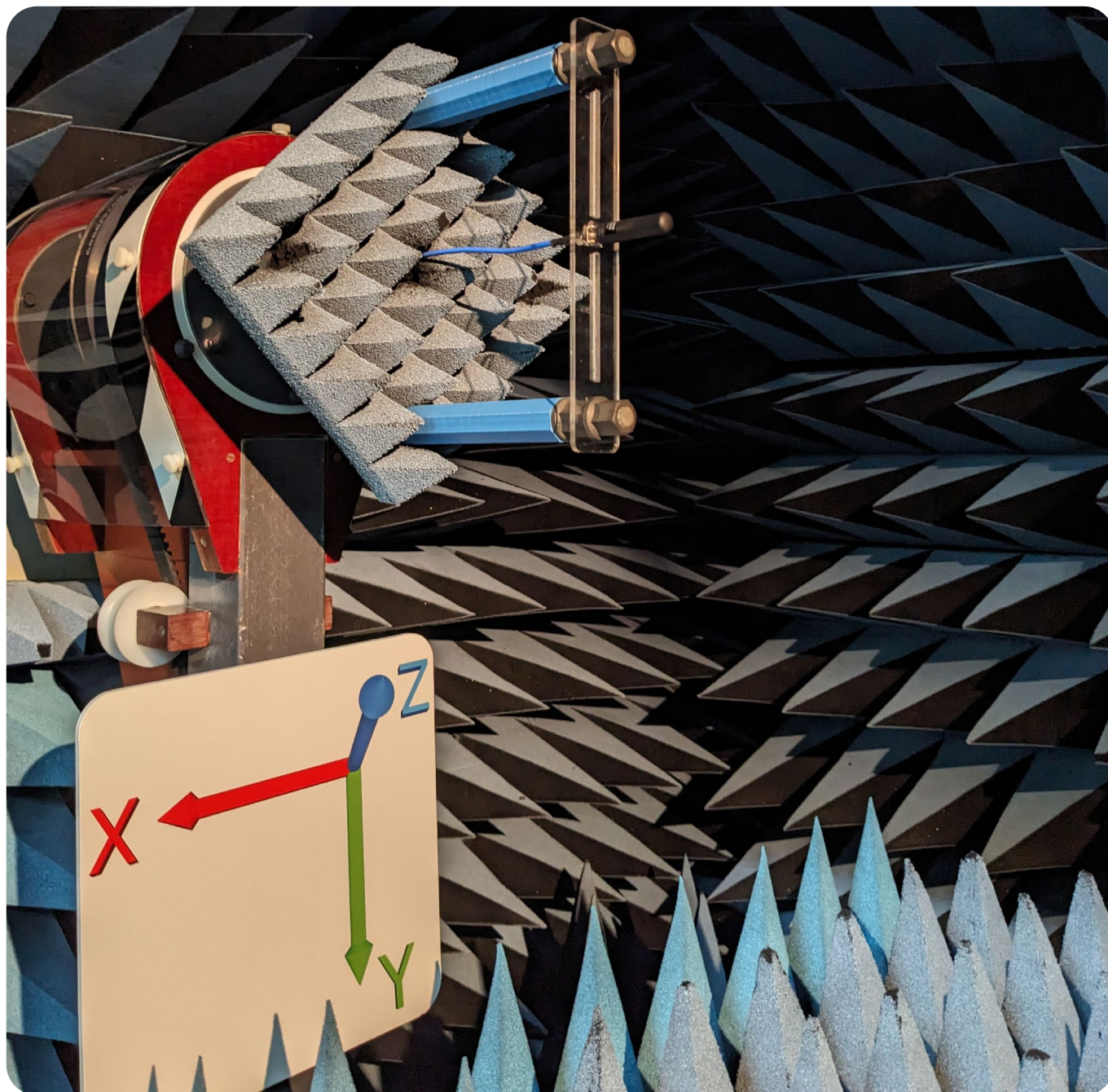
Peak RHCP Spherical Gain Vs Frequency



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Test Setup (in freespace)



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