# PW1516-100

## L-Band RHCP Wideband Omni Antenna

### Features

- ✓ Size < 1U
- ✓ Omni-directional pattern
- ✓ Wide operating temperature range
- ✓ Designed to NASA GEVS (GSFC-STD-7000)
- ✓ TRL 9

### Benefits

- ✓ Commercial off-the-shelf (COTS)
- ✓ Acceptance Tests available
- ✓ Compatible Test Hat available
- ✓ Qualified for space applications
- ✓ True circular polarization with extremely low Axial Ratio over the entire frequency band
- ✓ Consultation services available (link budget, architecture and system design)

### Product Overview

PW1516-100 is a high-performance wideband antenna designed for L-band communications in harsh space environments. It features excellent axial ratio over the entire frequency band, making it ideal for demanding and reliable space communication links.

This antenna is a perfect choice for a variety of space applications, including LEO, MEO, and GEO. Specifically, it is designed to overcome challenges present in the LEO environment over long mission lives, such as Corona, Multipaction, Atomic Oxygen, MMOD, etc. The L-band antenna is lightweight and easy to integrate. It is also available with Test Hats to facilitate testing and integration.

### Related Products

| Part Number | Description |
|---|---|
| PW1516-300 | L-Band RHCP Wideband Omni Test Hat |
| PW2022-111 | S-Band Dual-CP Wideband Omni Antenna |
| PW2022-102 | S-Band RHCP Dual-Port (TX+RX) Omni Antenna |
| PW2022-002 | Active S-Band RHCP Dual-Port (TX+RX) Omni Antenna |
| PW1115-002 | Active GNSS L1/E1/L2/L5/E5 Antenna |

## Electrical Specifications

| Parameter / Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Operating Frequency (RX) | 1513 | | 1565 | MHz |
| Operating Frequency (TX) | 1620 | | 1675 | MHz |
| Polarization | | RHCP | | |
| Axial Ratio (At Boresight) | | 2 | 3 | dB |
| Axial Ratio (At 90° Off Boresight) | | | 8 | dB |
| VSWR | | | 2:1 | |
| Gain | 4 | 5 | 6 | dBic |
| Pattern Coverage | | Omni | | |
| Power Handling (CW) | 10 | | | W |

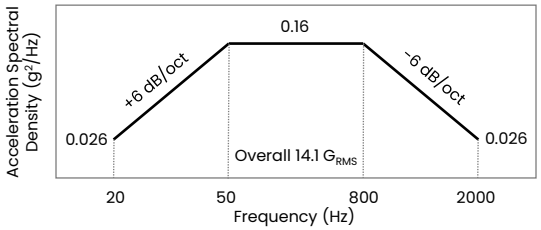
## Mechanical Specifications

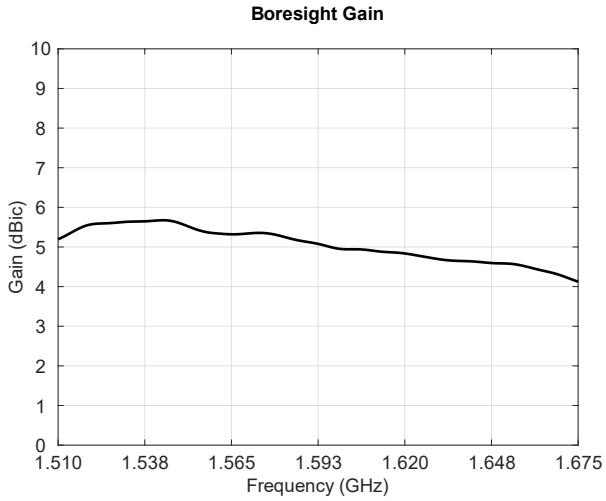
| Parameter / Condition | Value | Unit | Limits |
|---|---|---|---|
| Connector | SMA Female | | |
| Mass | 190 | g | Max |
| Compatible Test Hat | PW1516-300 | | |

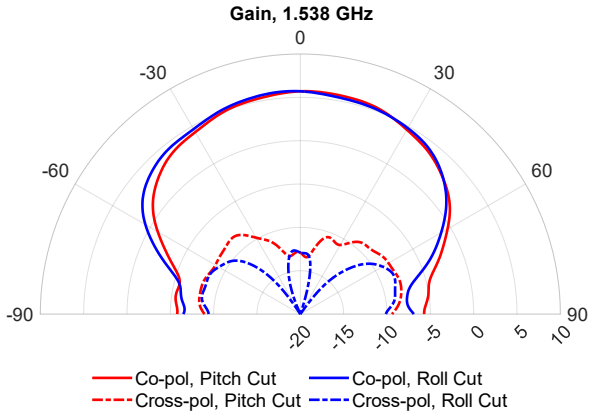
## Environmental Specifications

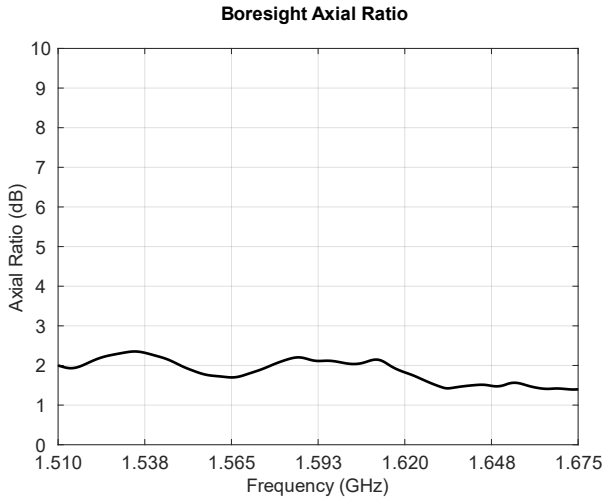
| Parameter / Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Operating Temperature | -70 | | 100 | °C |
| Humidity (MIL-STD-810 Method 507.6) | 65% | | | |
| Storage Temperature | -70 | | 100 | °C |
| Vibration | 14.1 | | | $G_{RMS}$ |

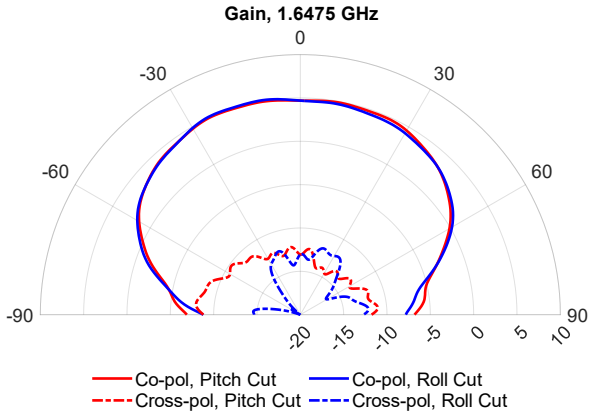
Random Vibration Test Levels
(GSFC-STD-7000)

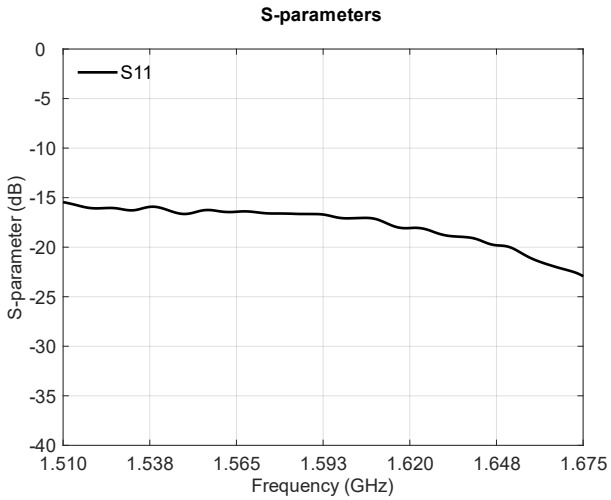



Boresight Gain
Gain (dBic)
Frequency (GHz)
1.510
1.538
1.565
1.593
1.620
1.648
1.675

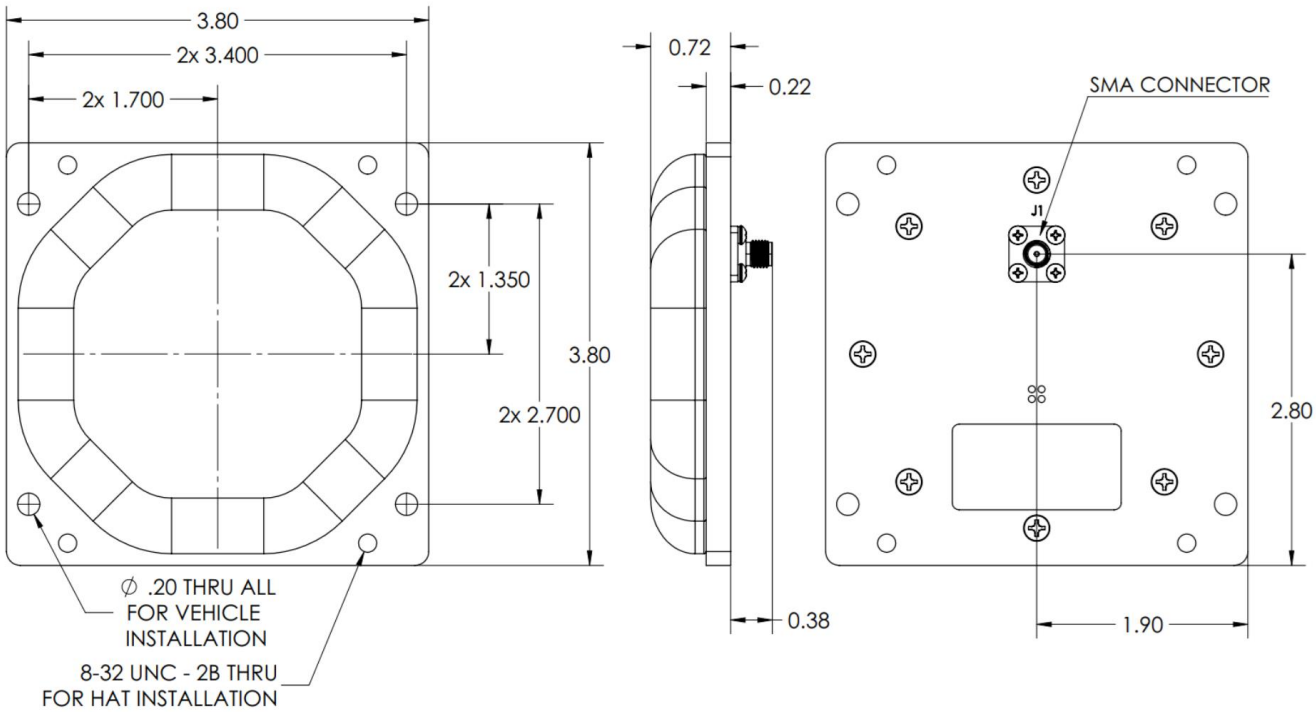

Gain, 1.538 GHz
Co-pol, Pitch Cut
Co-pol, Roll Cut
Cross-pol, Pitch Cut
Cross-pol, Roll Cut


Boresight Axial Ratio
Axial Ratio (dB)
Frequency (GHz)
1.510
1.538
1.565
1.593
1.620
1.648
1.675


Gain, 1.6475 GHz
Co-pol, Pitch Cut
Co-pol, Roll Cut
Cross-pol, Pitch Cut
Cross-pol, Roll Cut


S-parameters
S11
S-parameter (dB)
Frequency (GHz)
1.510
1.538
1.565
1.593
1.620
1.648
1.675

## Mechanical Outline




**Dimensions shown in inches.**
Tolerances - Two Place Decimal: ±0.010, Three Place Decimal: ±0.005

## Contact PlaneWave, Inc.

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