When precision matters.

# *VeraPhase*<sup>®</sup> 6000Antenna High Precision Full GNSS Spectrum Antenna

The patented *VeraPhase*<sup>®</sup> 6000 antenna is a full GNSS spectrum antenna plus L-band correction services. It has consistent performance (gain, axial ratio, PCV, and PCO) across the full bandwidth of the antenna. It provides the lowest axial ratios (horizon to horizon, over all azimuths) across all GNSS frequencies (<0.5dB at zenith, <2 dB typ. at horizon). It has an exceptional front to back ratios, high efficiency (>70%), a tight PCV, and near constant PCO for all azimuth and elevation angles, over all in-band frequencies. The performance of the VeraPhase<sup>®</sup> rivals any geodetic / reference antennas including choke ring antennas but is lighter, smaller, more economical, and requires less power. The antenna has been calibrated by GEO++ and the type mean calibration files are available in the IGS and NGS databases.

The VP6000 provides high receive gain over the full GNSS spectrum: Low GNSS band (1164MHz to 1300MHz) L-band correction services (1525MHz to 1559MHz) and High GNSS band (1559MHz to 1610 MHz). It has a robust pre-filtered LNA, with high IP3 to minimize de-sensing from high-level out-of-band signals, including 700MHz LTE, while still providing a noise figure of less than 2.0dB.

An uncommitted PCB is available within the base of the antenna for integration of a custom system board such as a PPP or RTK GNSS receiver or other applications.

### **Applications**

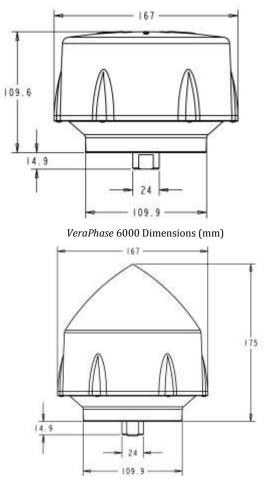
• Survey

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- High Precision GNSS systems
- Custom OEM Products

### Features

- Low axial ratios from horizon to horizon
- Very Tight Phase Center Variation (<1mm)
- Low current (35mA)
- Invariant performance from: +2.7 to 24 VDC
- Space in housing for integrated PPP, RTK



- RTK / PPP systems
- Reference Networks
- Monitoring Stations

#### **Benefits**

- Consistent performance across all frequencies
- Broadest tracking elevation (0° 180°)
- Extreme precision
- Excellent multipath rejection
- IP67, REACH, and RoHS compliant
- Reduced time to market

## VeraPhase® 6000 – High Precision Full GNSS Constellation Antenna

**Specifications** (Measured @ Vcc = 3V, and Temperature=25°C)

#### Antenna

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Antenna Gain Efficiency Axial Ratio, over full bandwidth Phase Centre Variation Phase Centre Offset (RMS) IGS model available NGS model available

#### Electrical

Available LNA Configurations Gain Variation with Temperature. LNA Gain Flatness P1dB Output Bandwidth LNA Noise Figure VSWR (at LNA output) Supply Voltage Range Supply Current Out of Band Rejection

## Group Delay variation

### **Mechanicals & Environmental**

Mechanical Size Antenna Reference Plane (ARP) North Orientation Indicator Operating Temperature Range Weight Mounting Thread Environmental Shock Vibration 5 dBic to 7 dBic (all Frequency Bands) >70% < 0.5 dB at zenith, (refer to table below for other elevations) ± 1 mm across all frequencies (see graphs on following pages) ± 0.2 mm across all frequencies Yes Yes

35 dB, 50 dB or 15dB OEM 3dB max over operational temperature range 1.5 dB over frequency range +12 dBm 1164 - 1300 MHz plus 1559 - 1610 MHz plus 1525 - 1559 MHz, 2.0dB typ. at 25°C <1.5:1 max. +2.7 to 24VDC nominal <35mA (35dB gain) <45 mA (50dB gain) <800MHz >60dB <900MHz 45dB <1000MHz 15dB (min) 1430MHz 25dB >1690MHz 25dB (min) >60dB >1710MHz <5 ns

See drawing on page 1 Bottom of 5/8" thread Mark on radome above connector -40°C to +85°C <800g (flat radome), 820g (conical radome) 5/8"x 11 TPI female IP67, RoHS and REACH compliant Vertical axis: 50 G, other axes: 30 G MIL STD 810D,

### **Ordering Information:**

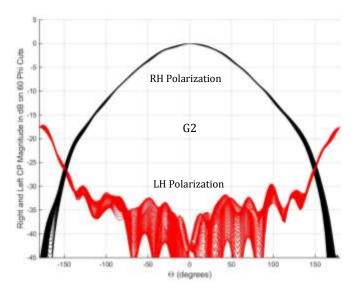
VeraPhase 6000 with 35 dB LNA, flat white radome VeraPhase 6000 with 50 dB LNA, flat white radome VeraPhase 6000 with 35dB LNA, conical white radome VeraPhase 6000 with 50dB LNA, conical white radome Where xx = 01 for TNC or 14 for N-Type 33-603500-xx-00-11 33-605000-xx-00-11 33-603500-xx-00-01 33-605000-xx-00-01

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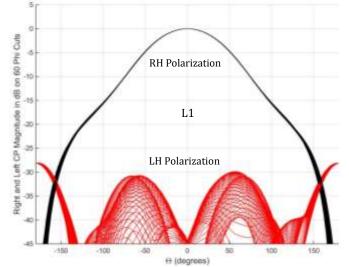
# VeraPhase® 6000 – High Precision Full GNSS Spectrum Antenna

## Antenna radiating performances

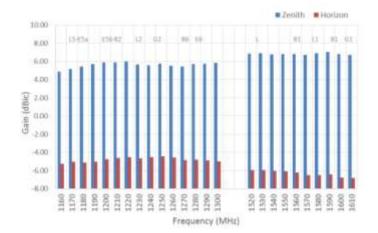
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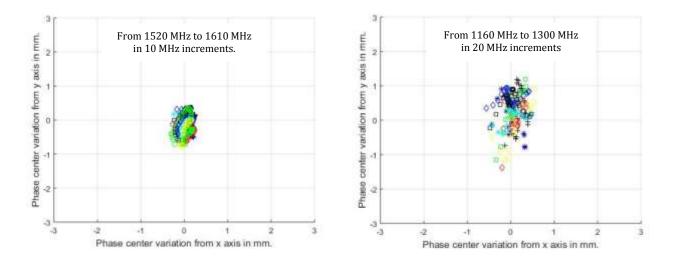
#### Normalized radiation patterns



Gain



# VeraPhase<sup>®</sup> 6000 – High Precision Full GNSS Spectrum Antenna



Axial ratio (dB) (typical) - Flat Radome							
Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	B3	E6	L1 - E1 - B1	G1
90°	0.5	0.3	0.2	0.3	0.3	0.3	0.4
30°	1.5	1.5	1.3	1	1.5	1.2	1.2
10°	2	1.8	1.4	1.8	2.2	2	2.2
Axial ratio (dB) (typical) - Conical Radome							
Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	B3	E6	L1 - E1 - B1	G1
90°	0.5	0.4	0.2	0.3	0.3	0.3	0.4
30°	1.8	1.7	1.3	1.2	1.5	1.5	1.5
10°	2.2	1.8	1.5	2	2.5	2.5	2.8

## **Tallysman Wireless Inc**

Tallysman

36 Steacie DriveOttawa ON K2K 2A9 CanadaTel +1 613 591 3131Fax 613 591 3121sales@tallysman.com

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#### **Phase center variation**