TALLYSMAN®

When **precision** matters.®

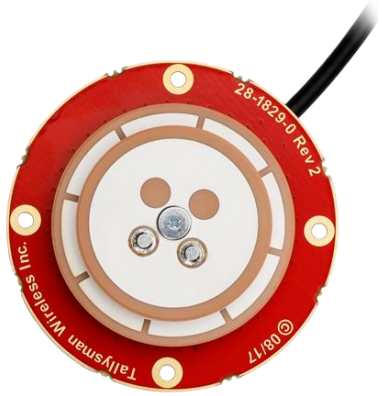
GNSS Technology & Product Line

Tallysman’s Antenna Technology and Antenna Line

TALLYSMAN®

The **best** GNSS antenna is the **right** GNSS antenna for **your** application

When **customization** matters



When **lightweight** matters

When **accuracy** matters

Why Tallysman?

- Quality (ISO 9001:2015 Certified)
- Engineering Support & Custom Tuning
- Customer Focus, Agile and Responsive
- Quick Fulfillment
- Competitive Pricing
- Broadest Antenna Technology Portfolio
- Guidance and Education
- Corporate Credentials

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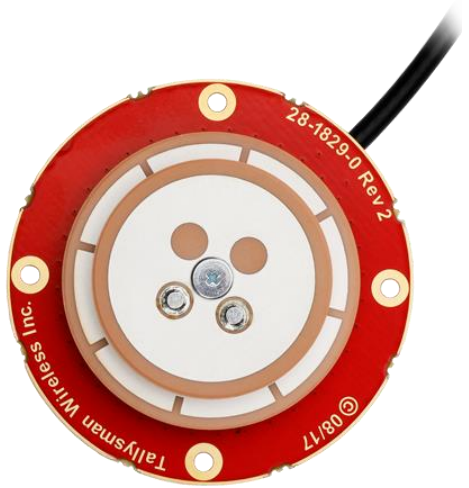
Antenna Technology

Accutenna® Technology



- Tallysman's unique dual feed ceramic patch technology
- Provides truly circular response over the entire antenna bandwidth
- Provides superior rejection of multi-path and cross polarized signals
- Offers pre-filtering option to provide additional protection from near band signals
- Is available for GPS L1 coverage or multi-constellational coverage (GPS, GLONASS, BeiDou, and Galileo)

TALLYSMAN®

VeraPhase® Technology

Tallysman patented technology which produces the highest performing GNSS antennas in the World.

The VeraPhase® technology provides:

- The lowest axial ratios from horizon to horizon across all GNSS frequencies
- The most stable and tightest Phase Centre Variations across all frequencies (+/- 1mm)
- The highest gain across all GNSS frequencies (1164 – 1300MHz + 1559 – 1610MHz)

TALLYSMAN®

VeroStar™ Technology

A unique (patent-pending) full GNSS bandwidth crossed-dipole antenna element with:

- Excellent radiating pattern with low roll off for exceptional low elevation GNSS and L-Band tracking
- High radiating efficiency for optimized signal-to-noise ratio
- Super stable phase centre variation (+/- 2mm)
- Excellent axial ratio for improved multi-path rejection

Helical Technology

- Tallysman's Helical antennas are designed for applications that require high performance and versatility, with an absolute minimum of weight, such as Unmanned Aerial Vehicles (UAV's).
- Extreme lightweight, ranging from 5 g to 37 g
- A novel helical antenna element delivering excellent axial ratio and multi-path rejection
- Broad GNSS frequency coverage, including single, dual and triple GNSS bands, including L-band
- An extremely low noise amplifier combined with a pre-filter

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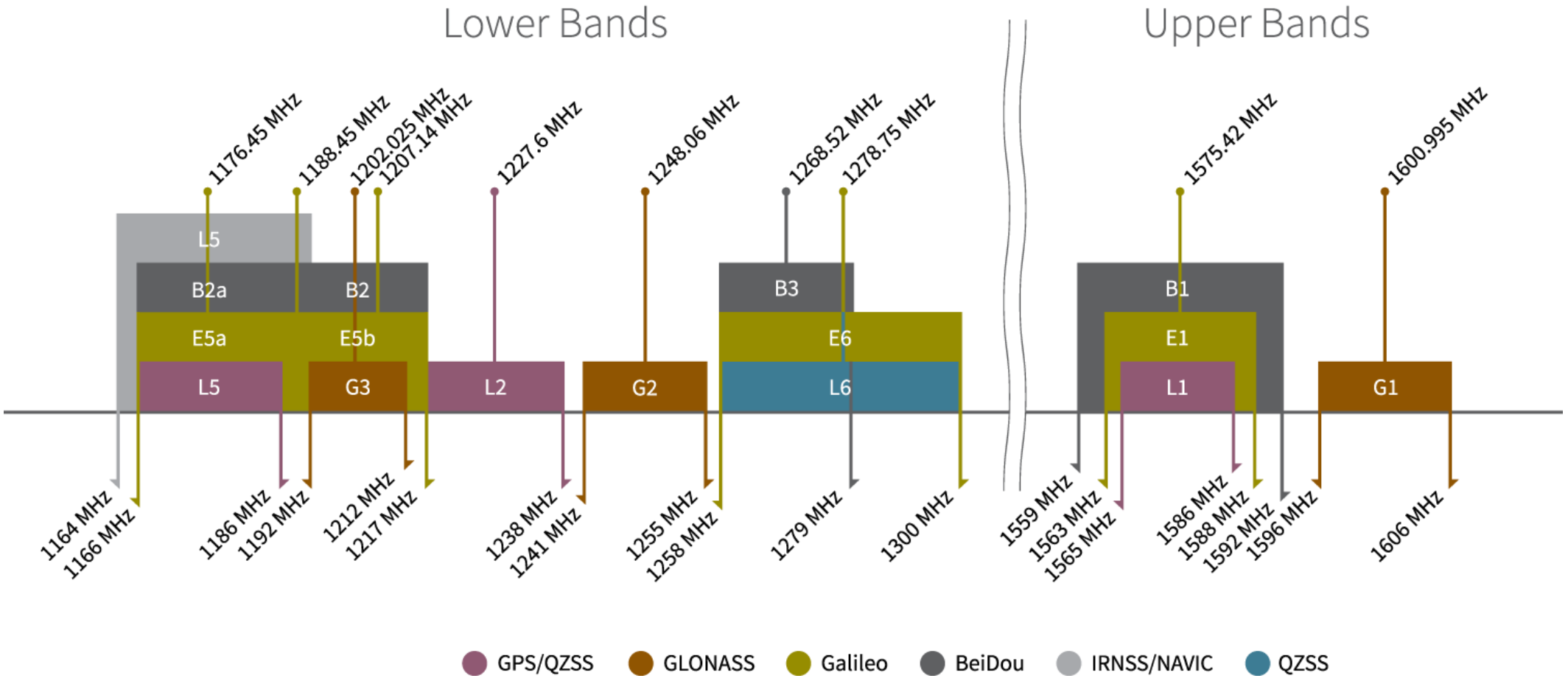
Antenna Line

GNSS Frequency Plan



OEM Antennas

- Single feed and dual feed (***Accutenna®***) antennas
- Single, dual, or triple band capabilities
- Custom tuning available
- RoHS and REACH compliant

TW2000 Family

- Iridium, single and dual band capabilities
- Available with a cable or with a watertight SMA connector on the bulkhead
- IP67 enclosure
- RoHS, RED and REACH compliant
- Magnetic mount with 4 pre-tapped screw holes
  - *Can be ordered without the magnet*
- 56mm x 9.8mm

TW3000 Family

- Single, Dual, and Triple band capabilities
- Available with bulkhead TNC, N-Type, or NMO Connector or with a cable and your choice of connector
- Conical or Flat Radomes / Availability in white or grey
- Ground Plane and Mounting Accessories available
- **IP69k enclosure**, RoHS, RED and REACH compliant
- Conforms to Salt Spray MIL-STD-801F Section 509.4
- Through hole mount
- 66.5mm diameter

NMO Mount

- Available with TW3972
  - *Contact Tallysman for additional information*
- Sample Applications:
  - Railroad
  - Utility vehicles
  - Emergency vehicles

TW4000 Family

- Magnetic mount – can be ordered without the magnet (and with adhesive tape)
- IP67 enclosure
- RoHS, RED and REACH compliant
- 38mm x 38mm x 14.3mm

TW400 Family

TALLYMATICS®

- Fleet and Asset tracking
- Data logging – No loss of data
- Driver Behaviour Monitoring
- Global Connectivity SIM Card
- Multi-constellation GNSS
- Integrated Cellular and GPS antennas
- Certified by AT&T

TW400 In-vehicle Fleet Tracker

TW5000 Family

TALLYMATICS®

- Integrated Telematic / GNSS Receiver
- Simultaneous GPS/GLONASS reception and position accuracy
- Event Driven Telematics reports
- Excellent multi-path signal rejection
- High rate logging
- RoHS, REACH, RED compliant. CE marking

TW7000 Family

- Dual and triple band capabilities
- Available with a cable or with a watertight SMA connector on the bulkhead
- IP67 enclosure
- RoHS, RED and REACH compliant
- Magnetic mount with 4 pre-tapped screw holes (can be ordered without the magnet)
- 69mm x 22mm

TW8000 Family

- Dual band (L1/L2, L1/L5, GLONASS G1/G2, Galileo E1, and BeiDou B1)
- Magnetic mount
- Adhesive tape option
- 48mm (dia) x 18mm (height)
- Small and light weight: 52g

Helix Antennas

Iridium / Single-Band GNSS

GPS L1, GLONASS G1, Galileo E1, BeiDou B1

Dual-Band GNSS

GPS L1/L2, GLONASS G1/G2, Galileo E1, BeiDou B1

Triple-Band GNSS + L-Band

GPS L1/L2/L5, GLONASS G1/G3, Galileo E1/E5, BeiDou B1/B2

Helix Antennas

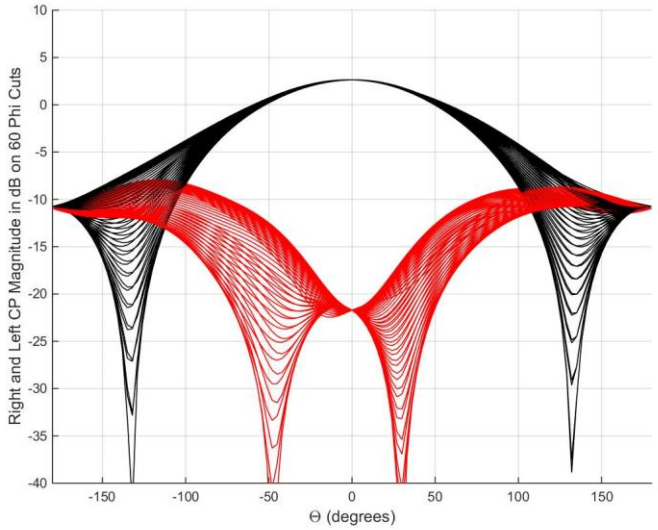
Features

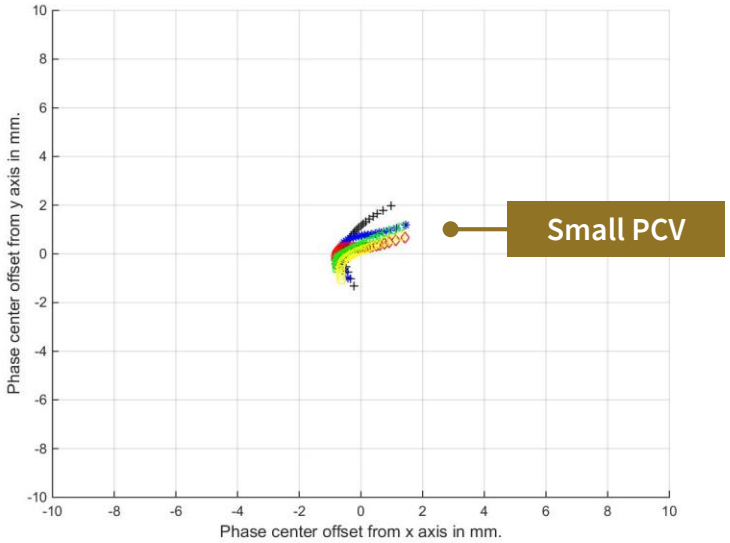
- Lightweight
- Excellent performance without a ground plane
- Pre-filtered for interference mitigation
- Low noise amplifier (gain options 28 or 35 dB)
- Low noise figure (typ. 1.7 dB)
- Integrated SMA connector & threaded holes for secure attachment
- IP67 compliant
- Available as housed and embedded

Helix Antennas

Features

- Broad radiation beamwidth (~6 dB roll-off)
- Low PCV (+/- 2 mm)
- Low axial ratio (< 1 dB at zenith across bandwidth)
- High signal-to-noise ratio (pre-filter included





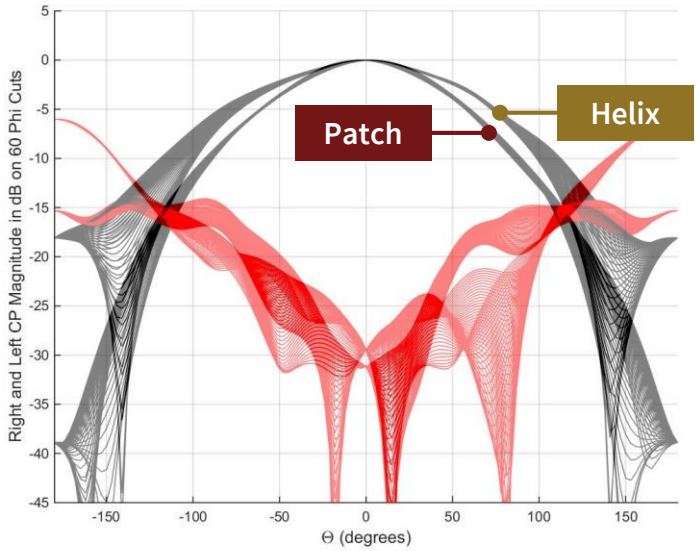
Helix Antennas

	Iridium	Single-Band GNSS	Dual-Band GNSS			Triple-Band GNSS
Model	**HC600**	**HC771**	**HC871**	**HC872**	**HC882**	**HC975**
Frequency	1616 – 1626 MHz	1559 – 1606 MHz	1215 – 1254 MHz 1559 – 1606 MHz	1215 – 1254 MHz 1525 – 1606 MHz	1189 – 1254 MHz 1525 – 1606 MHz	1165 – 1240 MHz 1525 – 1606 MHz
LNA Gain (dB)	-	28	28	28 or 35	28 or 35	28 or 35
Noise Figure (dB)	-	1.7	1.7	1.7	1.7	1.7
L-Band				Yes	Yes	Yes

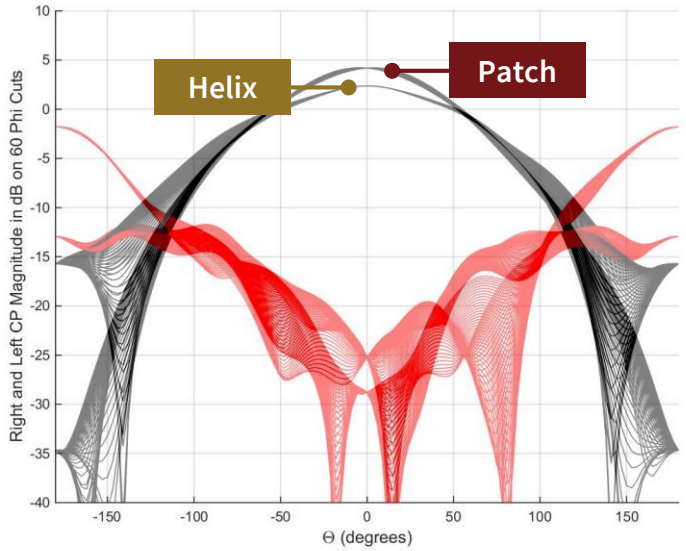
Helix vs Patch Antennas

- Lightweight
- No need for an additional ground plane
- Broader radiation beam width but lower gain

Normalized Gain



Absolute Gain



VeroStar

A **New Family** of Antennas

VeroStar Pole Mount: VSP

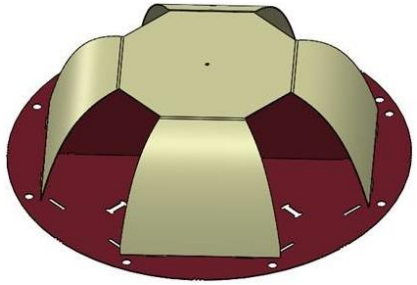
Marine

Survey

VeroStar Surface Mount: VSS

Agriculture

Machine Control



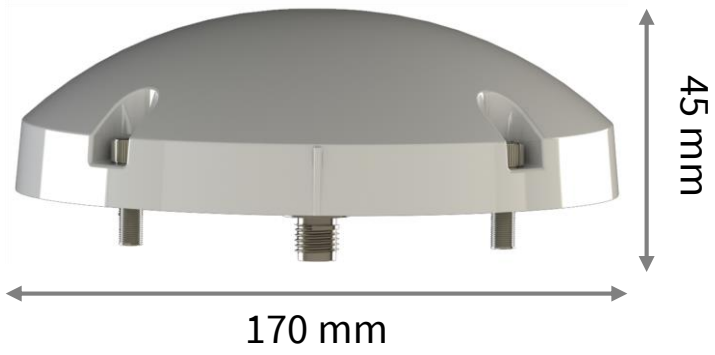
VeroStar OEM: VSE

Integration

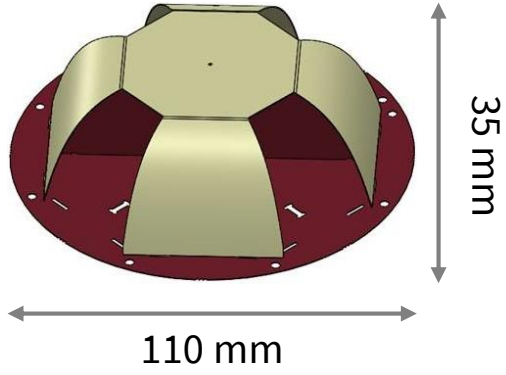
VeroStar

A **New Family** of Antennas

Weight	500g
Connector	TNC
Mounting	1″ or 5/8″ Mount



Weight	300g
Connector	TNC
Mounting	4 x M6 Screws



Weight	70g
Connector	Flying Lead

VeroStar

Features

- Full GNSS Spectrum Supported
- Optimisation of the radiation patterns for low elevation tracking:
  - L-Band correction
  - More satellites
- Crossed Dipoles technology
- High efficiency (≥70%) for better carrier to noise ratio
- Low axial ratio (4 dB max at horizon) for high multipath rejection
- Tight Phase Center Variation (± 2mm) for precise positioning
- LNA: Advanced Filtering and low, low Noise Figure
- Light weight and compact

VeroStar

Features

- Optimisation of the radiation patterns:
  - Higher gain at zenith is not necessary
  - Lower gain roll-off allows to
    - Track more satellites
    - Optimize the link budget of the L-Band Correction Services

- Type L1 gain values (dBic):

	Horizon	Zenith
Patch Antenna	-6.0	4.5
Helical Antenna	-5.0	2.5
VeraPhase Antenna	-7.0	7.0
VeroStar Antenna	-3.0	4.0

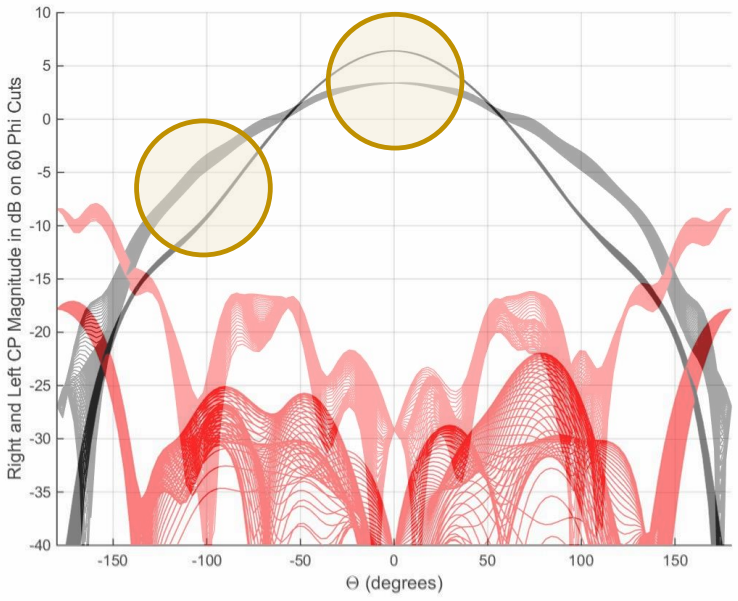
VeroStar

Model	VSP6037	VSP6337	VSP6237	VSP6537	VSP6137
Signals	Full Band	Triple Band	Dual Band 1-2	Dual Band 1-5	Single Band
L-Band	Optional	Optional	Optional	Optional	Optional
Gain (dB)	37	37	37	37	37
Noise Figure (dB)	1.6	2	2	2	2

VeroStar

Elevation	Antenna	L1	L2C	L2P
2	VS	41.5	35.5	22.7
	VP	-	30.7	-
4	VS	43	36.5	25
	VP	-	-	-
15	VS	43	32	24
	VP	40	38	25
18	VS	45	44	34
	VP	40	42	28
85	VS	50	48	45
	VP	53	49	48
87	VS	50	48	45
	VP	52	49	49

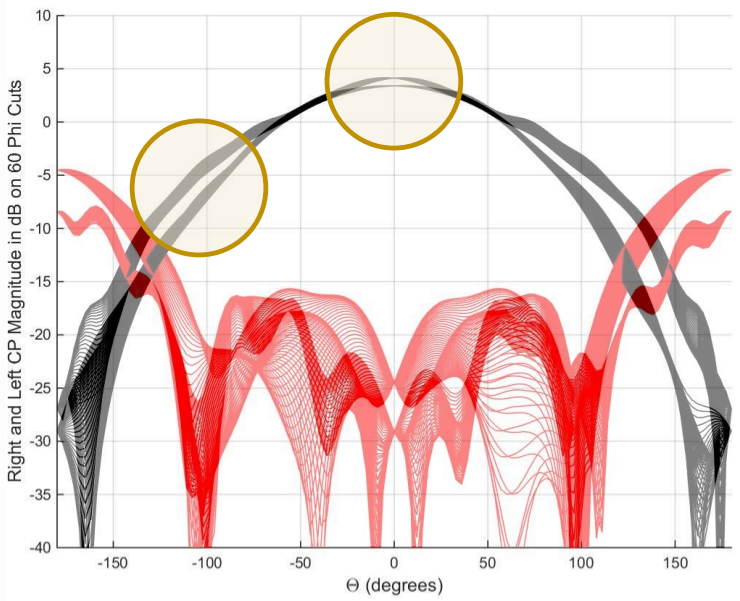
VeroStar



VeroStar

vs

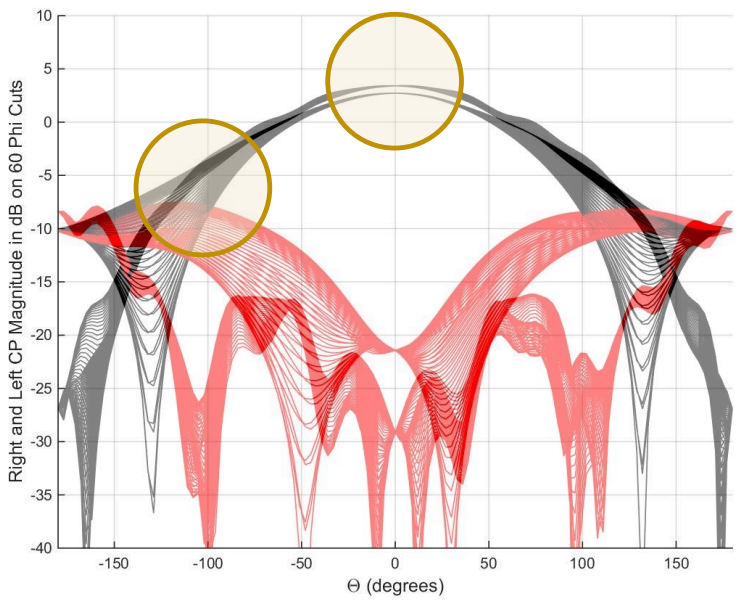
VP6000



VeroStar

vs

TW3972



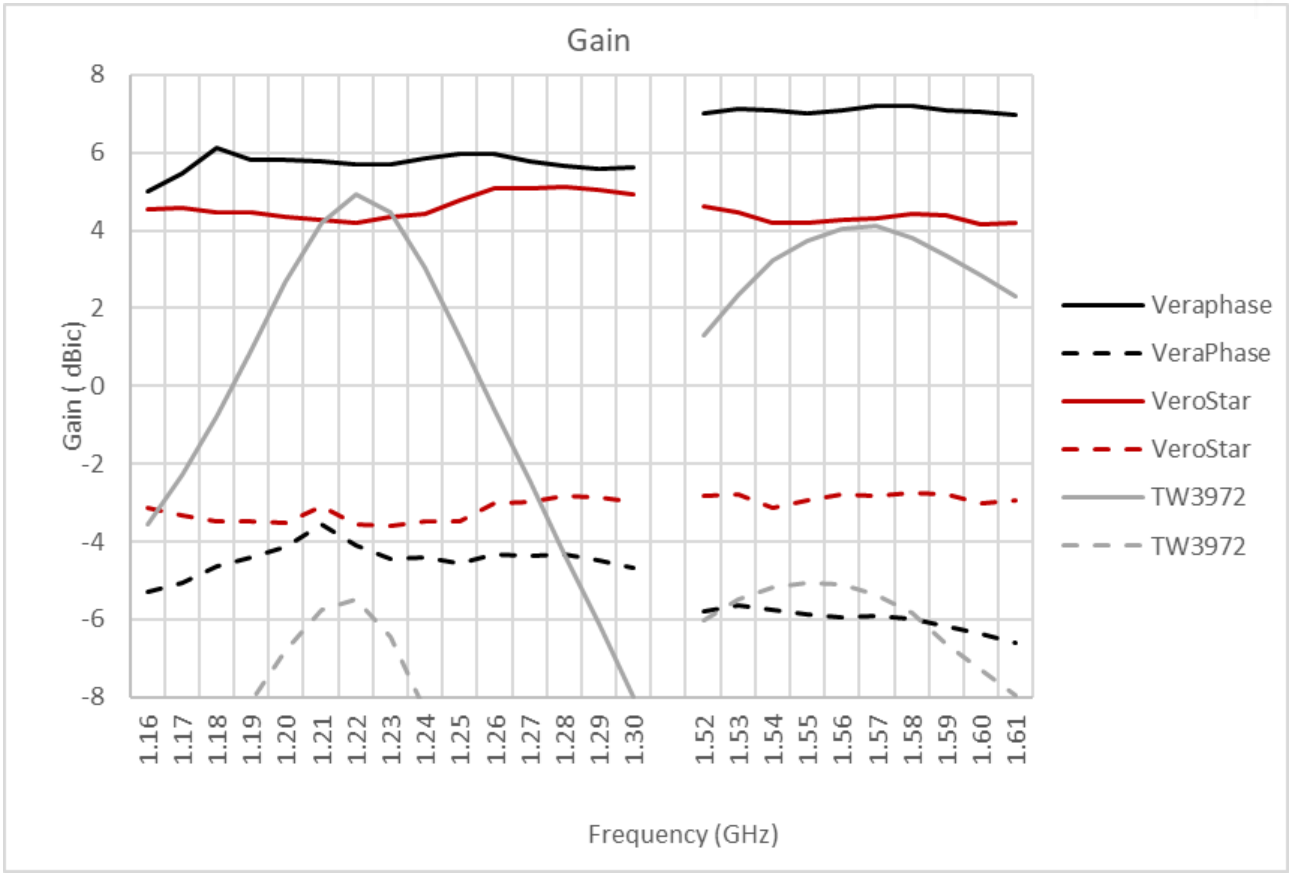
VeroStar

vs

HC975

TALLYSMAN®

VeroStar

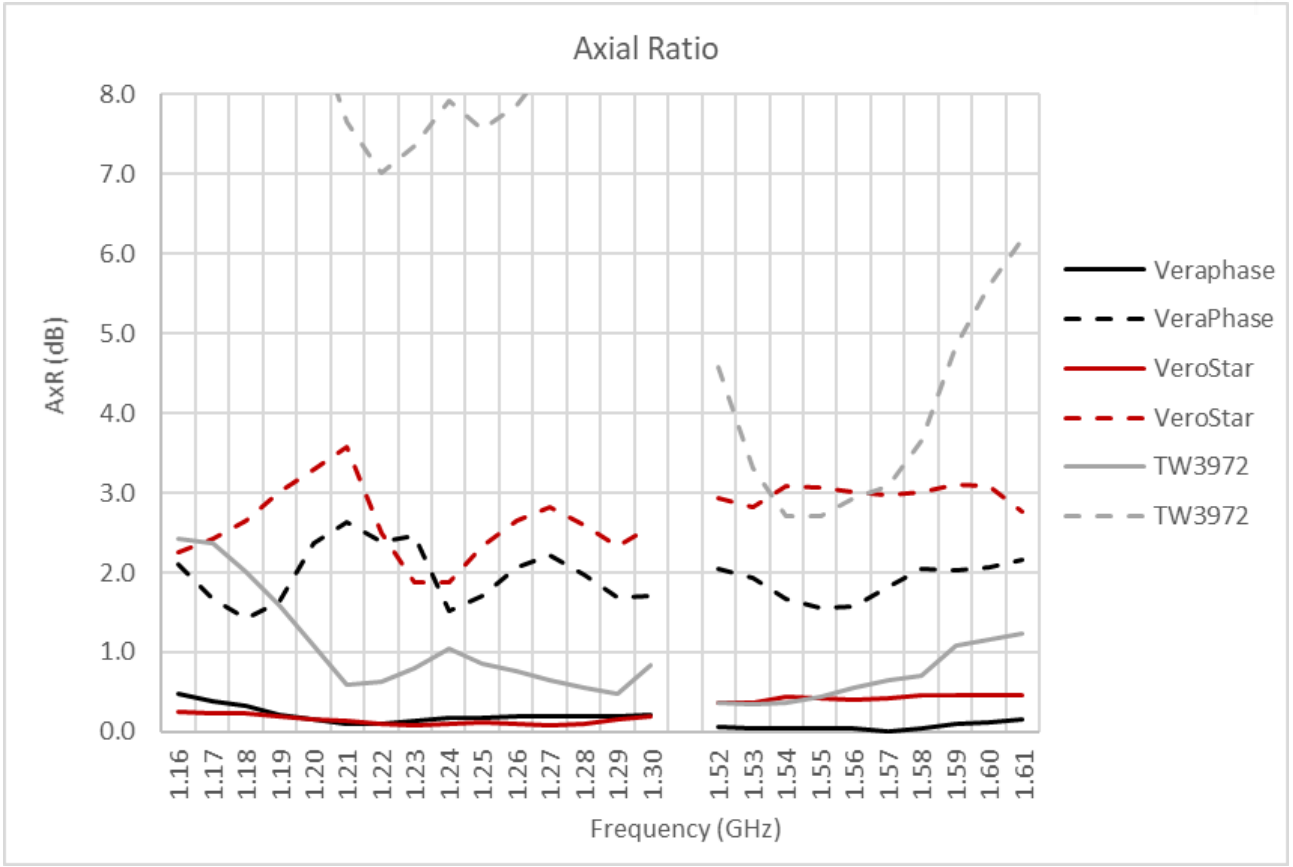


VeroStar

vs

VP6000 and TW3972

VeroStar



VeroStar

vs

VP6000 and TW3972

VeraPhase® Antennas

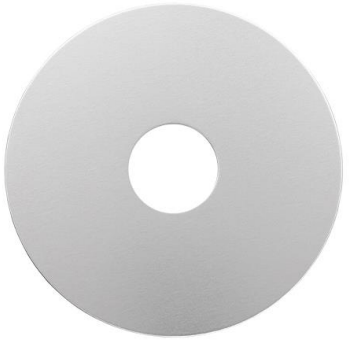
- Dual (VP6200), triple (VP6300) and full GNSS (VP6000) versions
- Patented technology (Crossed Dipoles with Fence)
- Lowest axial ratios from horizon to horizon through all frequencies
- ±1mm in PCV through all frequencies
- PCO virtually identical for all frequencies
- Low current consumption
- RoHS and REACH compliant

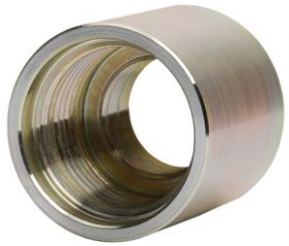
VeraChoke® Antennas

- The VeraChoke antenna offers a choice in form-factor for reference and monitoring applications, while also delivering the best performance of any choke ring antenna available on the market.
- Low axial ratios from horizon to horizon
- Very Tight Phase Center Variation (<1mm)
- Consistent performance across all frequencies
- Extreme precision
- Excellent multipath rejection
- IP67, REACH, and RoHS compliant

Antenna Accessories

- Inline amplifiers
- Signal splitters
- Patch ground planes
- Mounting accessories





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Thank you!

For more information about our products, visit
https://www.tallysman.com/product

NEED A GUIDE?
Our Antenna Selection Guide can help narrow down your options.

CAN'T FIND WHAT YOU'RE LOOKING FOR?
We also build custom antennas!

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