



Description: MiMo LTE, MiMo WiFi, GNSS

Vehicle Mount Antenna

PART NUMBER: GPSMB50xx



Features:

- Supports MIMO Cellular LTE 698-960/1695-2170/2300-2700/2900-3600MHz
- Supports MIMO WiFi and DSRC 2400-2500MHz/4900-5925MHz
- Supports Beidou, GPS, Galileo, GLONASS
- Direct Mount and optional Magnetic Mount features
- See GPSMBMM for magnetic mount details
- GPSMB501/GPSMB501C Black and GPSMB502 White

Applications:

- Telematics
- Location based services
- First Responders(Police, Ambulance, Fire)
- Government
- Energy(Utility Vehicles)
- Fleet Management

All dimensions are in mm / inches

Issue: 1711

In the effort to improve our products, we reserve the right to make changes judged to be necessary. CONFIDENTIAL AND PROPRIETARY INFORMATION

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Pulse Worldwide Headquarters 15255 Innovation Drive #100 San Diego, CA 92128 USA Tel:1-858-674-8100 Pulse/Larsen Antennas 18110 SE 34th St Bldg 2 Suite 250 Vancouver, WA 98683 USA Tel: 1-360-944-7551 Europe Headquarters Pulse GmbH & Do, KG Zeppelinstrasse 15 Herrenberg, Germany Tel: 49 7032 7806 0 Pulse (Suzhou) Wireless Products Co, Inc. 99 Huo Ju Road(#29 Bldg,4th Phase Suzhou New District Jiangsu Province, Suzhou 215009 PR China Tel: 86 512 6807 9998



TECHNICAL DATA SHEET

Description: MiMo LTE, MiMo WiFi, GNSS

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ELECTRICAL SPECIFICATIONS

698 - 960 / 1695 – 2170 /	MHz
•	
•	MHz
·	MHz
·	
1602.5625±4	
50	Ω
< 1.5	
< 1.4	
4	$dBi \pm 2.5 dB$
5	$dBi \pm 2 dB$
4.5	$dBi \pm 1.5 dB$
5	$dBi \pm 2 dB$
15 or better	dB
40 or better	dB
1	dBic ± 2 dB
30	$dB\pm 2\;dB$
2.5 (cascade)	dB
8	$mA \pm 2 mA$
3-5	V_{dc}
70	dB
65	dB
60	dB
65	dB
	2300 - 2700 / 2900 - 3600 2400 - 2500/ 4900 - 5925 1561.098±2.046/ 1575.42±1.023/ 1602.5625±4 50 < 1.5 < 1.4 4 5 4.5 5 15 or better 40 or better 1 30 2.5 (cascade) 8 3-5

^{*}Measured on 2ft GND plane and with 4 inch cables

^{**}In free space with 17ft cables









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ELECTRICAL SPECIFICATIONS			
Pulse P/N	GPSMB501	GPSMB502	GPSMB501C
Cable NO.	5	5	5
Operating Bands	2-LTE + 2-WiFi + 1-GPS/GNSS	2-LTE + 2-WiFi + 1-GPS/GNSS	2-LTE + 2-WiFi + 1-GPS/GNSS
Cable length	17FT	17FT	10FT
Connector	LTE: SMA(M), WiFi: RPSMA(M), GPS: SMA(M)	LTE: SMA(M), WiFi: RPSMA(M), GPS: SMA(M)	LTE: SMA(M), WiFi: RPSMA(M), GPS: SMA(M)
Cable Color	Black	White	Black
Assembly option	Assembly directly with nut Magnetic mount base P/N:GPSMBMM		



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Series: Panther

MECHANICAL SPECIFICATIONS

Plastic radome ABS/PC Material UV

Stabilized, UL-94HB

Color GPSMB501:Black

GPSMB501C: Black

GPSMB502: White

Ingress Protection IP67

Weight GPSMB501:~1340 g

GPSMB502: ~1340 g

FPSMB501C: ~ 1320 g

Roof mounting (Also Fixing system

> Magnet mounting accessory available,

GPSMBMM)

Recommended fastening torque 1518ft-lb (20-25Nm).

ENVIRONMENTAL SPECIFICATIONS

MIL-STD 810G -40/+85° C Operating temperature

95%RH @ +25°C for 12h and 55°C for 12h **Humidity**

Vibration MIL-STD 810G, section 514.6, 5-500 Hz, 60min/axis

Thermal Shocks MIL-STD 810G, section 503.5, -40 to +85°C, 3 cycles

Drop Test Minimum of one drop per axis – 4, 1 meter drops

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TECHNICAL DATA SHEET

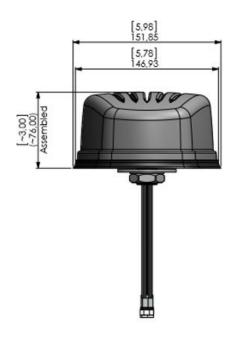
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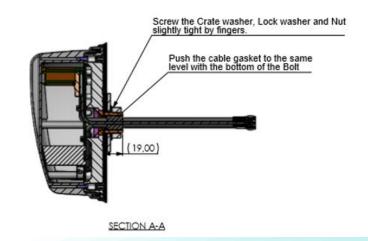
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MECHANICAL DRAWING









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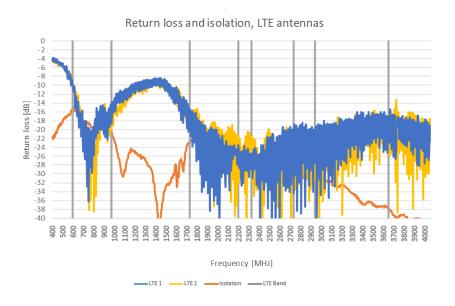
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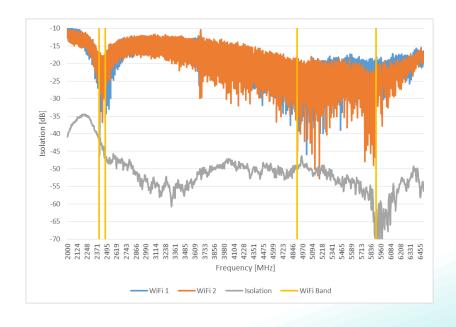
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CHARTS

Return Loss and isolation in free space, LTE antennas**



Return Loss and isolation in free space, WiFi antennas**









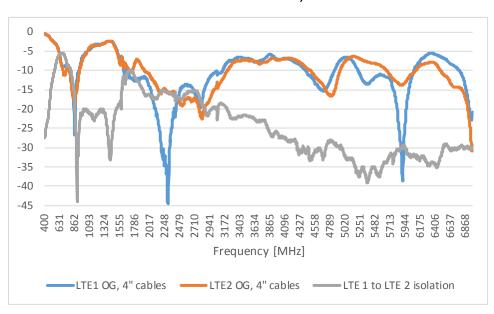
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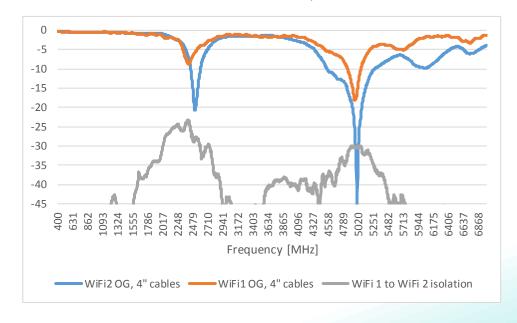
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CHARTS

Return Loss and isolation, LTE antennas*



Return Loss and isolation, WiFi antennas*







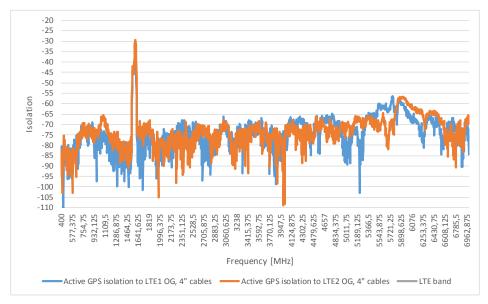
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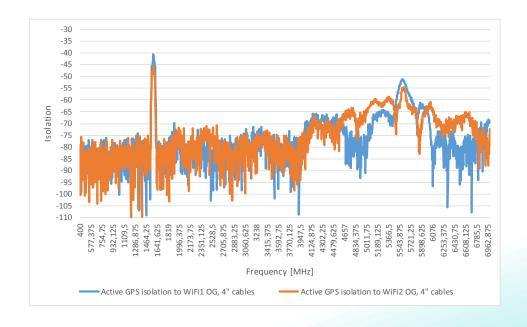
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CHARTS

GPS isolation to LTE 1 and LTE 2 antenna*



GPS isolation to WiFi 1 and WiFi 2 antenna*









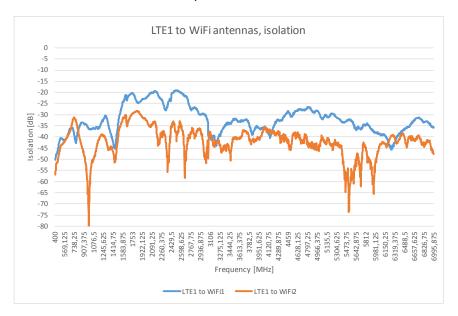
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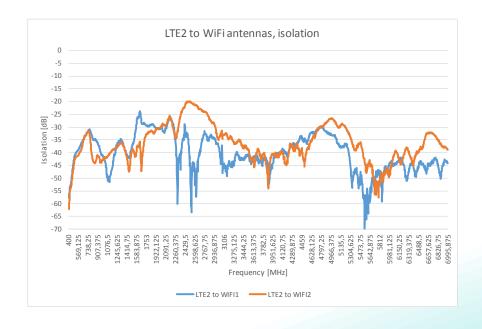
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CHARTS

Isolation characteristics, LTE 1 to WiFi 1 and WiFi 2*



Isolation characteristics, LTE 2 to WiFi 1 and WiFi 2*









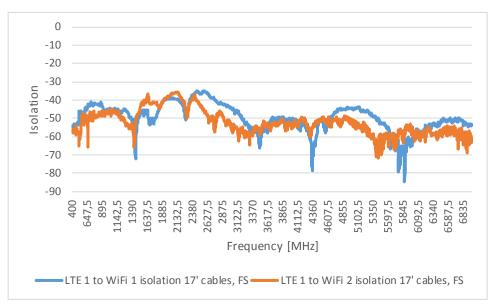
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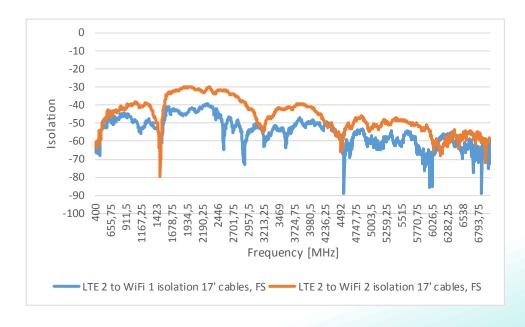
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CHARTS

Isolation characteristics, LTE 1 to WiFi 1 and WiFi 2**



Isolation characteristics, LTE 2 to WiFi 1 and WiFi 2**







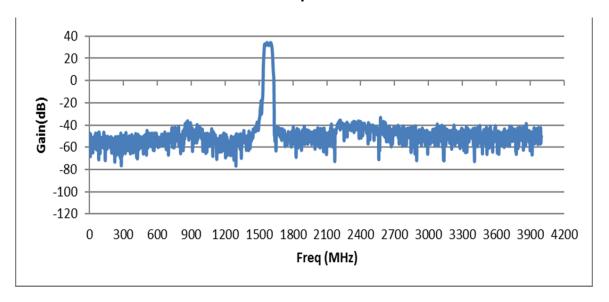
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CHARTS

GNSS LNA performance







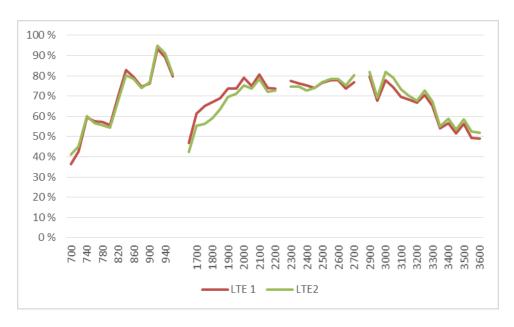
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CHARTS

LTE antenna total efficiency with 2ft metal plate and 4inch cables



Maximum 3D gain, LTE antenna with 2ft metal plate and 4inch cables



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CHARTS

WiFi antenna total efficiency with 2ft metal plate and 4inch cables



Maximum 3D gain, WiFi antenna with 2ft metal plate and 4inch cables







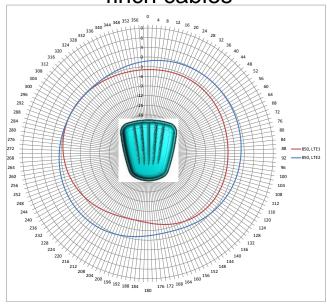
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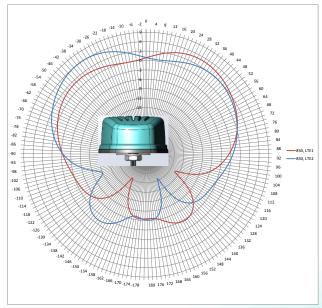
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CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view





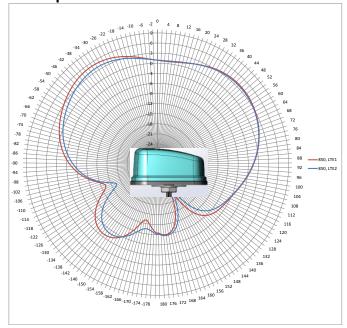
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CHARTS

LTE antenna radiation pattern at 850MHz with 2ft metal plate and



Vertical plot side view





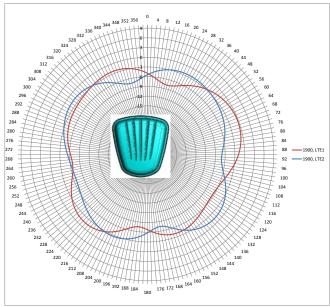
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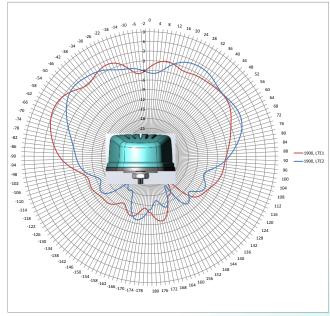
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CHARTS

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view





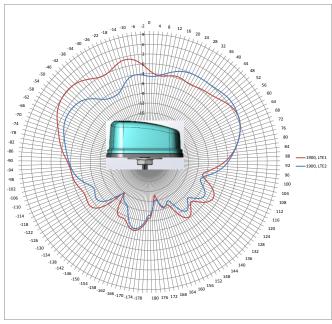
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CHARTS

LTE antenna radiation pattern at 1900MHz with 2ft metal plate and 4inch cables



Vertical plot side view





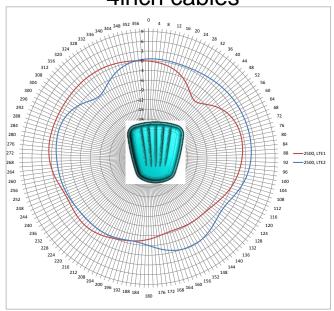
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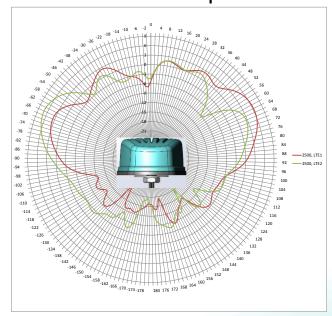
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CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view

Issue: 1711

ROHS





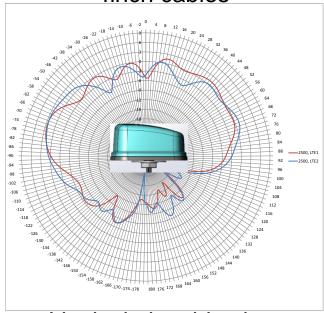
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Vehicle Mount Antenna

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CHARTS

LTE antenna radiation pattern at 2500MHz with 2ft metal plate and 4inch cables



Vertical plot side view





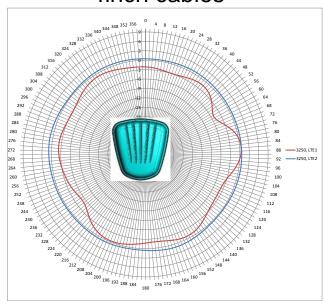
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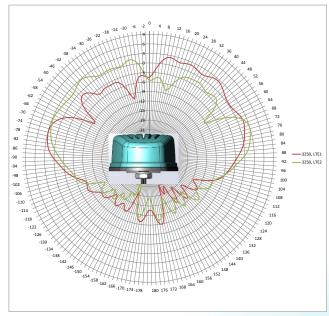
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CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view

Issue: 1711

ROHS





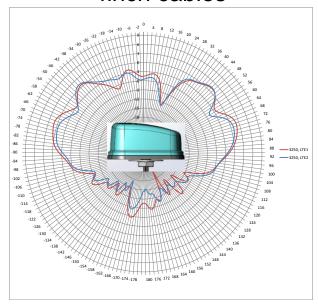
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CHARTS

LTE antenna radiation pattern at 3250MHz with 2ft metal plate and 4inch cables



Vertical plot side view





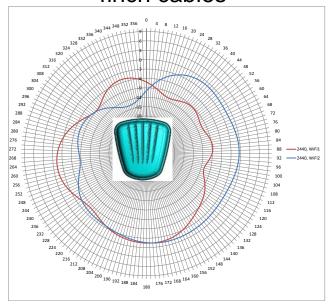
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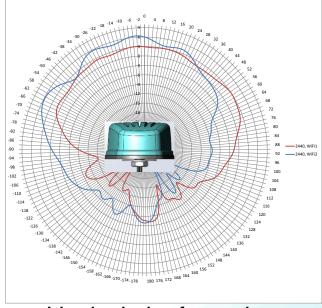
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CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view





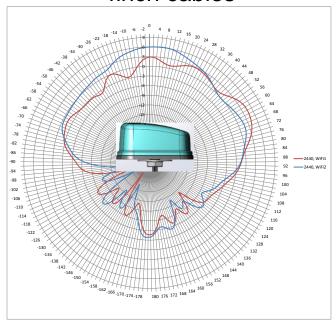
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CHARTS

WiFi antenna radiation pattern at 2440MHz with 2ft metal plate and 4inch cables



Vertical plot side view





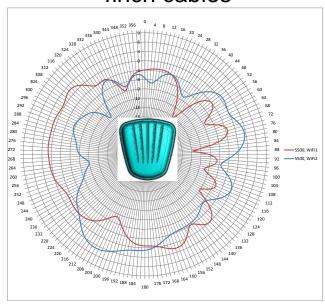
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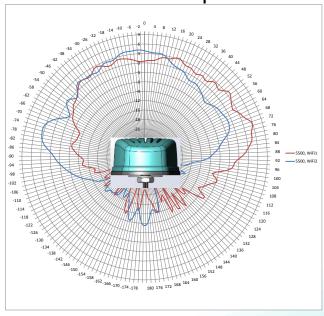
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CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables



Horizontal plot



Vertical plot front view

Issue: 1711

ROHS





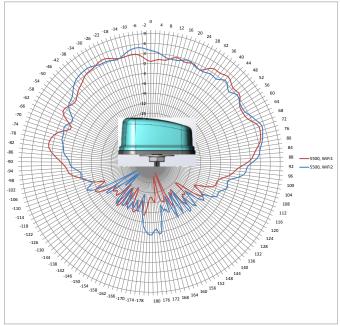
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CHARTS

WiFi antenna radiation pattern at 5500MHz with 2ft metal plate and 4inch cables



Vertical plot side view





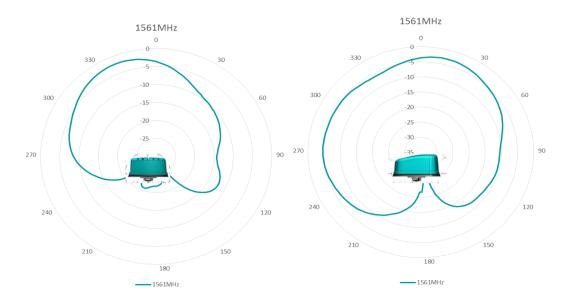
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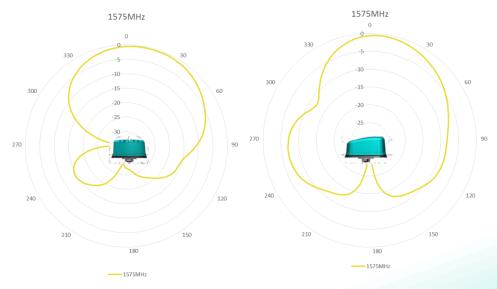
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CHARTS

BD2 RHCP patterns, measured with 4inch cables in free space



GPS & Galileo RHCP patterns, measured with 4inch cables in free space







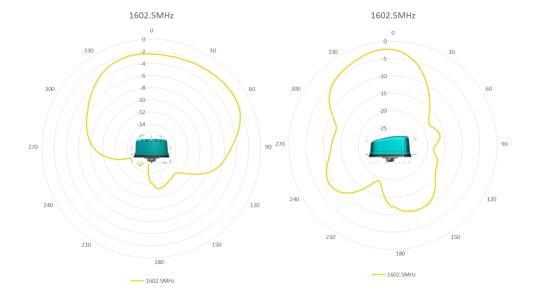
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CHARTS

GLONASS RHCP patterns, measured with 4inch cables in free space







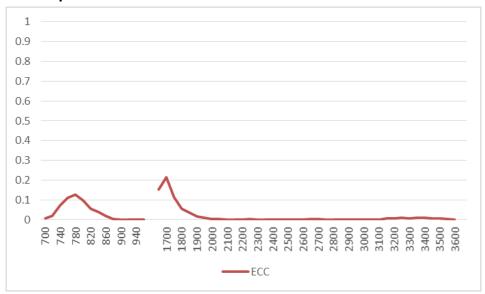
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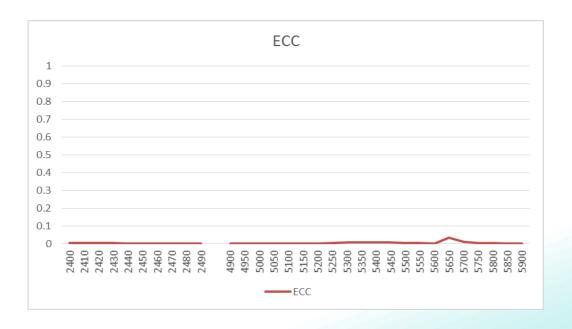
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CHARTS

Envelope correlation coefficient – LTE 1 to LTE 2



Envelope correlation coefficient – WiFi 1 to WiFi 2





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PACKAGING

One antenna pack in one PE bag, 6 antennae in one box