



Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB50XX

All dimensions are in mm / inches

Issue: 1942

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For more information:

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

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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



- 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/GPSMB501D
 Black and GPSMB502 White

Applications:

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







Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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ELECTRICAL SPECIFICATIONS

Frequency (LTE)	698 - 960 / 1695 – 2170 / 2300 - 2700 / 2900 – 3600	MHz
	2400 - 2500/	
Frequency (WiFi&DSRC)	4900 – 5925	MHz
	1561.098±2.046/	MHz
Frequency (Beidou, GPS, Galileo, Glonass)	1575.42±1.023/	
	1602.5625±4	
Nominal Impedance	50	Ω
VSWR (LTE)	< 1.5	
VSWR (WiFi&DSRC)	< 1.4	
Gain* (LTE antenna, < 2170 MHz)	4	$\rm dBi \pm 2.5 \ \rm dB$
Gain* (LTE antenna, > 2170 MHz)	5	$dBi\pm 2\;dB$
Gain* (WiFi antenna, < 2500 MHz)	4.5	$\rm dBi \pm 1.5 \; \rm dB$
Gain* (WiFi antenna, > 4900 MHz)	5	$dBi\pm 2\;dB$
Isolation LTE to LTE **	15 or better	dB
Isolation WiFi to WiFi **	40 or better	dB
GNSS antenna RHCP gain	1	dBic \pm 2 dB
LNA gain		$dB \pm 2 dB$
Noise Figure	2.5 (cascade)	
-		
Current		$mA \pm 2 mA$
V _{dc}	3-5	V _{dc}
LNA and filter attenuation		
@ 824 MHz	70	dB
@ 960 MHz	65	dB
@ 1710 MHz	60	dB
@ 2170 MHz	65	dB

*Measured on 2ft GND plane and with 4 inch cables **In free space with 17ft cables

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TECHNICAL DATA SHEET

Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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ELECTRICAL SPECIFICATIONS

Pulse P/N	GPSMB501	GPSMB502	GPSMB501C	GPSMB501D
Cable NO.	5	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	2-LTE + 2-WiFi + 1-GPS/GNSS
Cable length	17FT	17FT	10FT	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)	LTE: SMB(M), WiFi: SMB(M), GPS: SMB(M)
Cable Color	Black	White	Black	Black
Assembly 1. Assembly directly with nut option 2. Magnetic mount base P/N:GPSMBMM				

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Series: Panther

Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB50XX

MECHANICAL SPECIFICATIONS

Plastic radome	ABS/PC Material UV Stabilized, UL-94HB
Color	GPSMB501:Black GPSMB501C: Black GPSMB501D: Black GPSMB502: White
Ingress Protection	IP67
Weight	GPSMB501:~1340 g GPSMB502: ~1340 g GPSMB501C: ~1320 g GPSMB501D: ~1320 g
Fixing system	Roof mounting (Also Magnet mounting accessory available, GPSMBMM) Recommended fastening torque 1518ft-lb (20-25Nm).

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	MIL-STD 810G -40/+85° C
Humidity	95%RH @ +25°C for 12h and 55°C for 12h
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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Series: Panther

PART NUMBER: GPSMB50XX

MECHANICAL DRAWING



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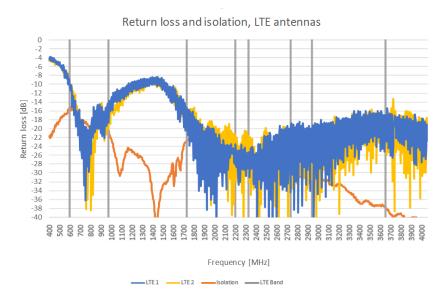




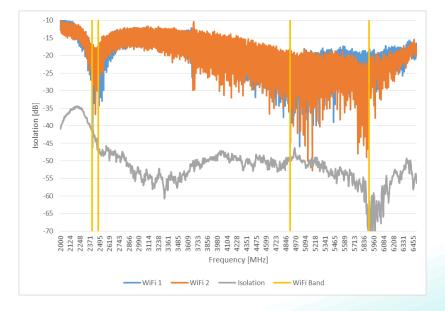
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CHARTS

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



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



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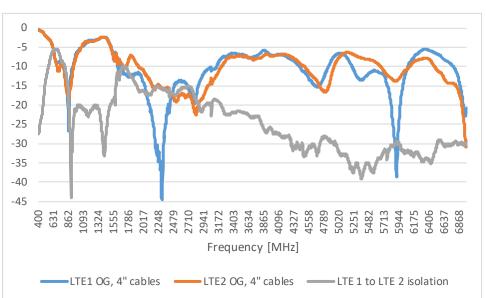




Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

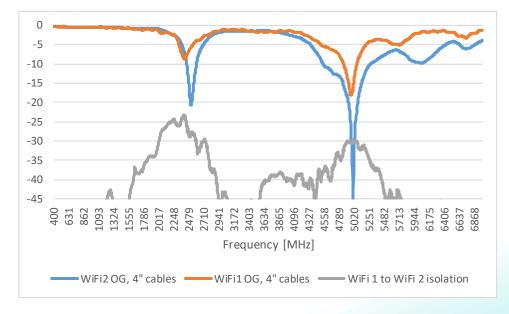
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CHARTS



Return Loss and isolation, LTE antennas*

Return Loss and isolation, WiFi antennas*



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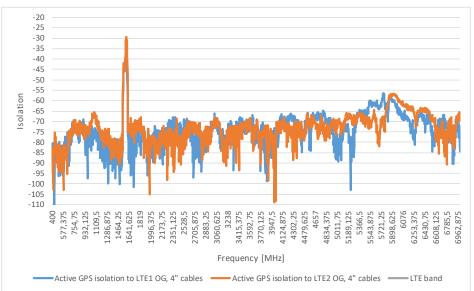






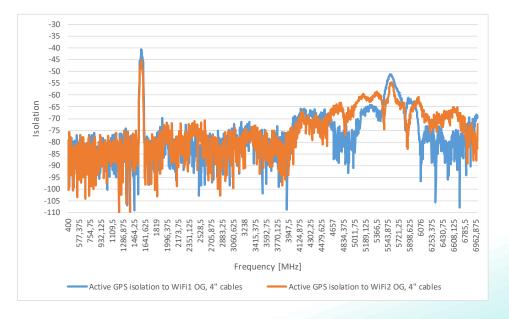
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CHARTS



GPS isolation to LTE 1 and LTE 2 antenna*

GPS isolation to WiFi 1 and WiFi 2 antenna*



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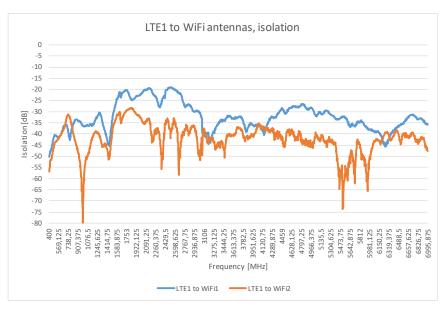




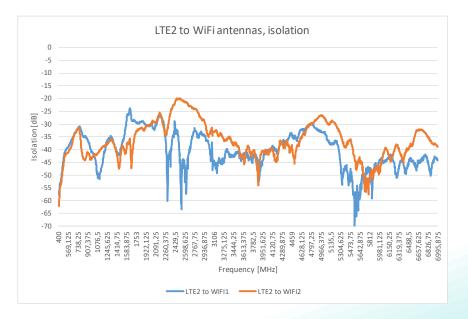
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CHARTS

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



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



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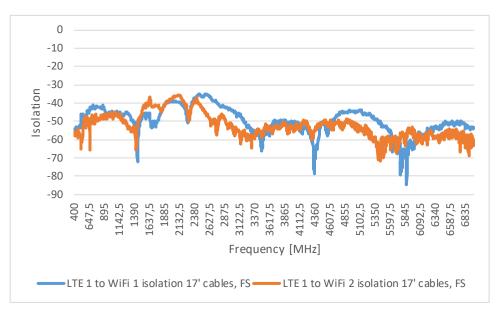




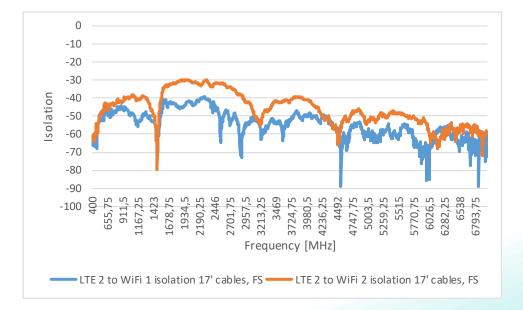
PART NUMBER: GPSMB50XX

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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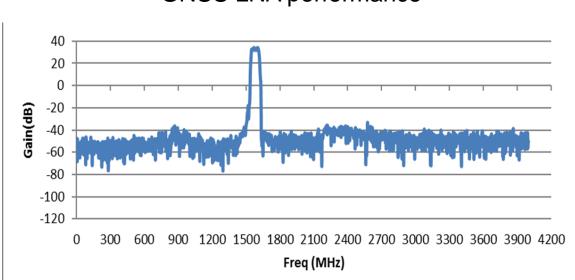


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Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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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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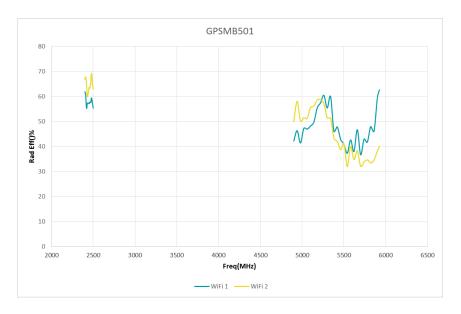




PART NUMBER: GPSMB50XX

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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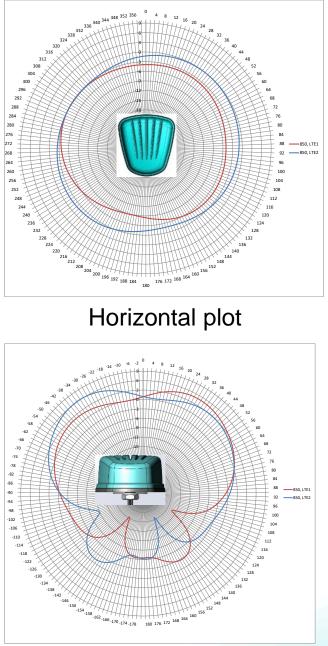
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

Series: Panther

PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot front view



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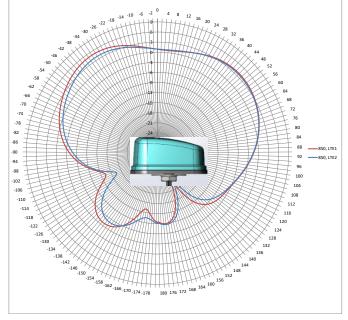
TECHNICAL DATA SHEET

Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot side view

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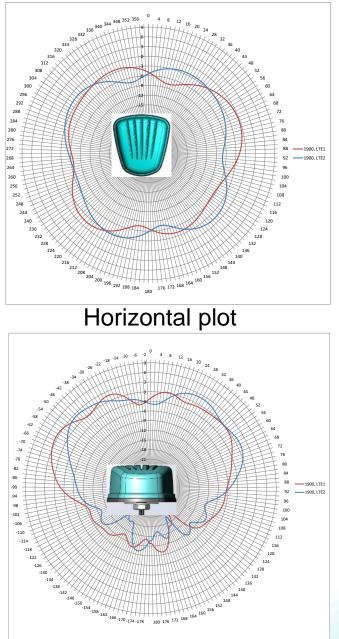




PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot front view

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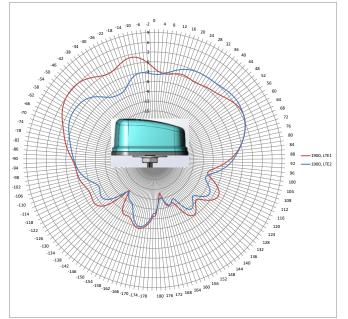
Description: MiMo LTE, MiMo WiFi, GNSS

Vehicle Mount Antenna

PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot side view

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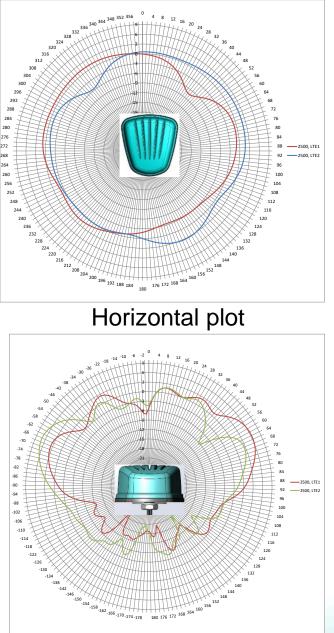


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PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot front view



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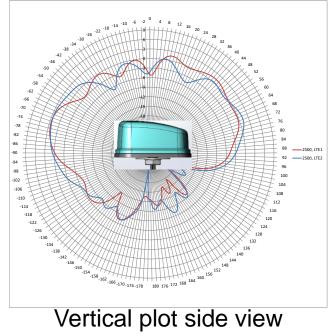


Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

PART NUMBER: GPSMB50XX

CHARTS

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



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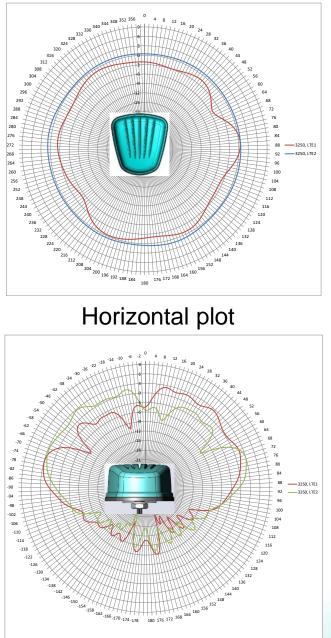




PART NUMBER: GPSMB50XX

CHARTS

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



Vertical plot front view

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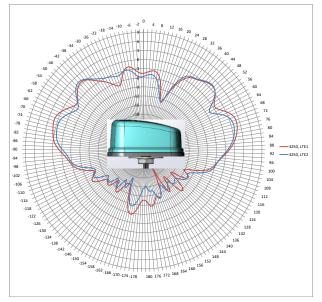


Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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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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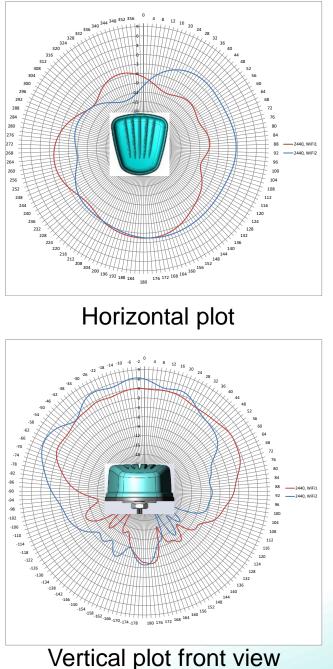
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

Series: Panther

PART NUMBER: GPSMB50XX

CHARTS

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



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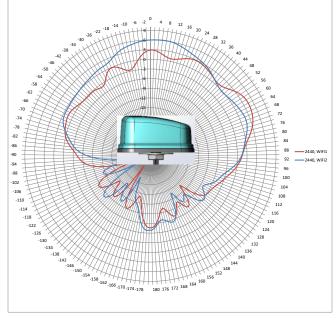
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CHARTS

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



Vertical plot side view

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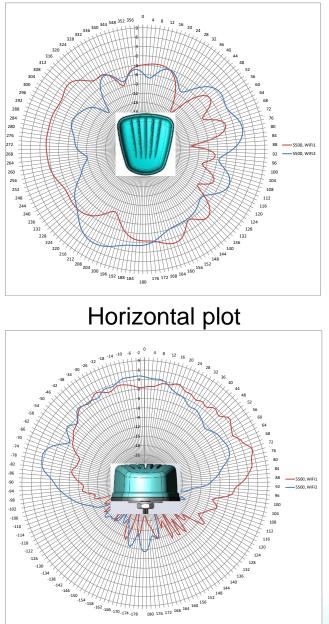
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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CHARTS

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



Vertical plot front view



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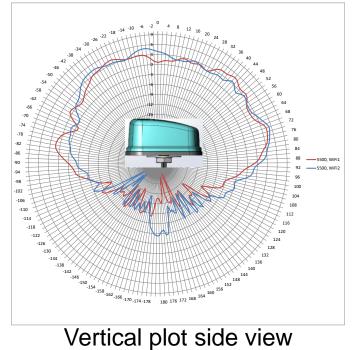
TECHNICAL DATA SHEET

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CHARTS

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



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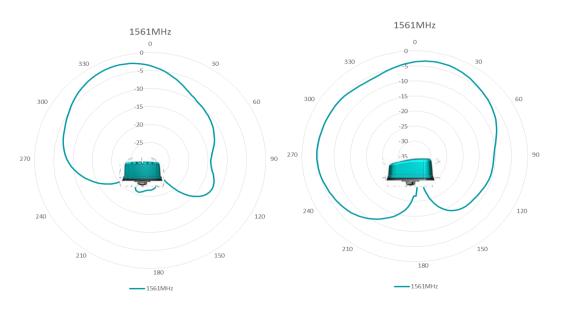


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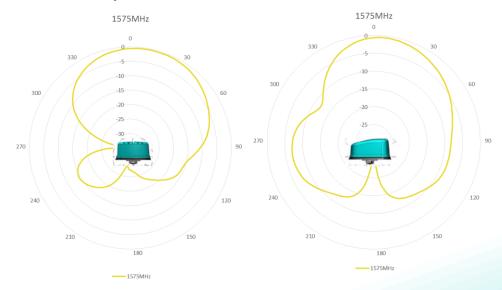
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CHARTS

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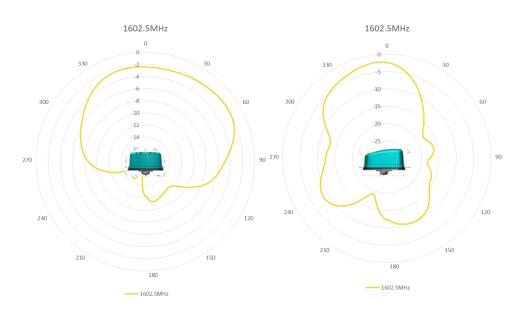
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GLONASS RHCP patterns, measured with 4inch cables in free space



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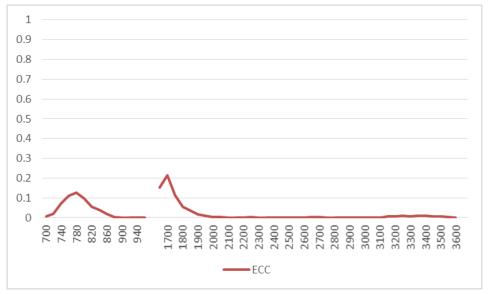




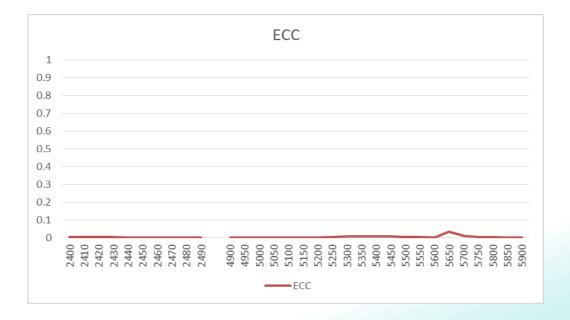
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CHARTS

Envelope correlation coefficient - LTE 1 to LTE 2



Envelope correlation coefficient – WiFi 1 to WiFi 2



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Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

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PACKAGING

One antenna packed in one PE bag, 6 antennas packed in one box.

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