



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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

Series: Panther

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

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Suzhou New District
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**Description: MiMo LTE, MiMo WiFi, GNSS
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ELECTRICAL SPECIFICATIONS

Frequency (LTE)	698 - 960 / 1695 – 2170 / 2300 - 2700 / 2900 – 3600	MHz
Frequency (WiFi&DSRC)	2400 – 2500/ 4900 – 5925	MHz
Frequency (Beidou, GPS, Galileo, Glonass)	1561.098±2.046/ 1575.42±1.023/ 1602.5625±4	MHz
Nominal Impedance	50	Ω
VSWR (LTE)	< 1.5	
VSWR (WiFi&DSRC)	< 1.4	
Gain* (LTE antenna, < 2170 MHz)	4	dBi ± 2.5 dB
Gain* (LTE antenna, > 2170 MHz)	5	dBi ± 2 dB
Gain* (WiFi antenna, < 2500 MHz)	4.5	dBi ± 1.5 dB
Gain* (WiFi antenna, > 4900 MHz)	5	dBi ± 2 dB
Isolation LTE to LTE **	15 or better	dB
Isolation WiFi to WiFi **	40 or better	dB
GNSS antenna RHCP gain	1	dBic ± 2 dB
LNA gain	30	dB ± 2 dB
Noise Figure	2.5 (cascade)	dB
Current	8	mA ± 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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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	1. Assembly directly with nut 2. Magnetic mount base P/N:GPSMBMM		

**Description: MiMo LTE, MiMo WiFi, GNSS
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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
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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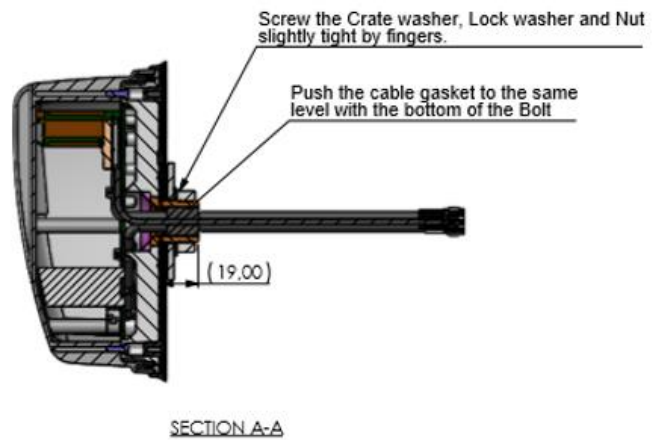
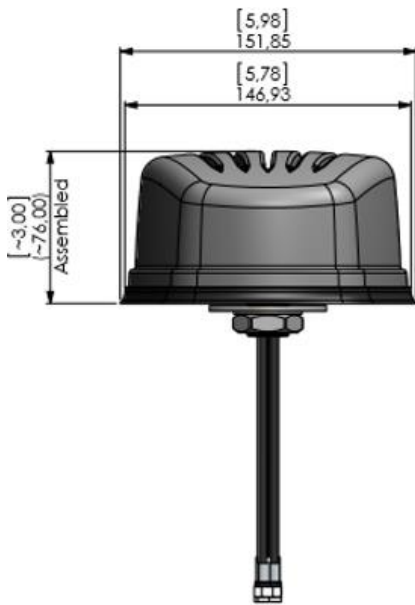


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MECHANICAL DRAWING



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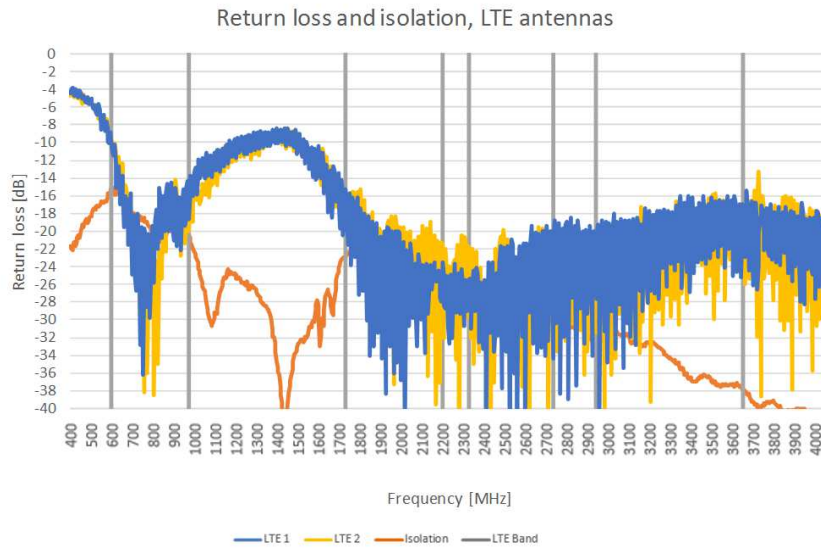
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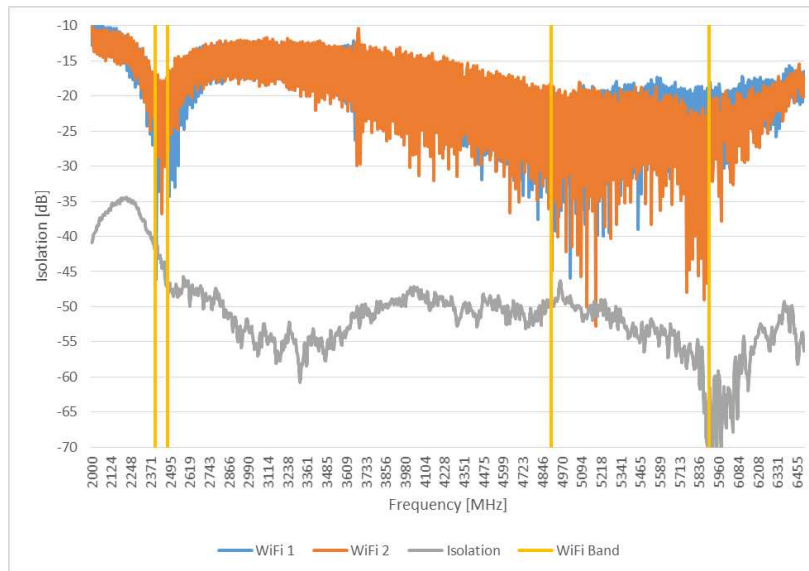
PART NUMBER: GPSMB50xx

CHARTS

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



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



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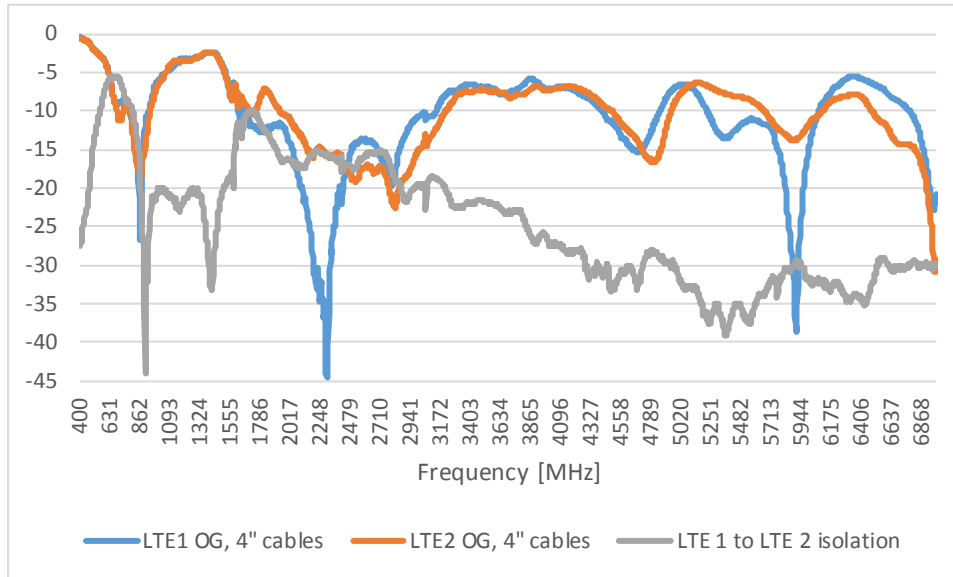
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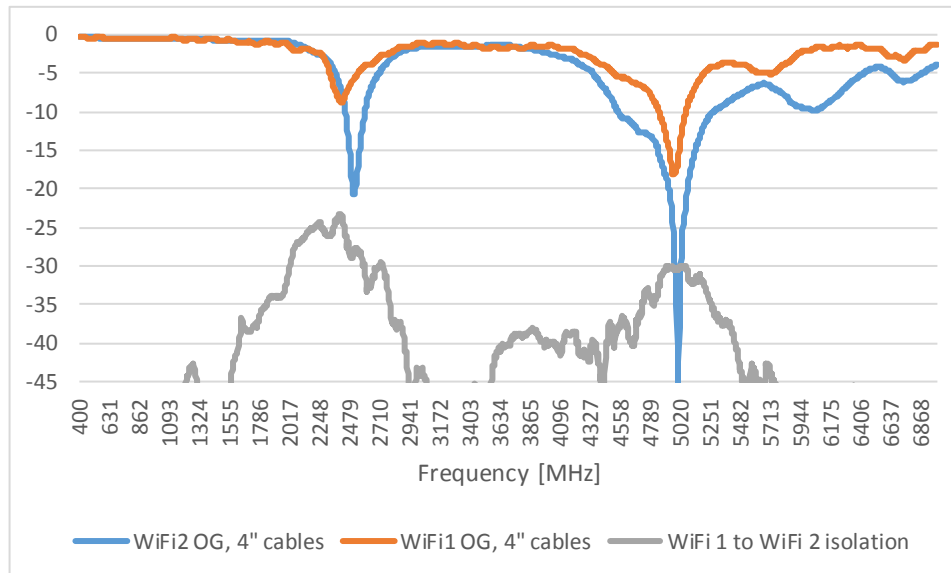
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CHARTS

Return Loss and isolation, LTE antennas*



Return Loss and isolation, WiFi antennas*



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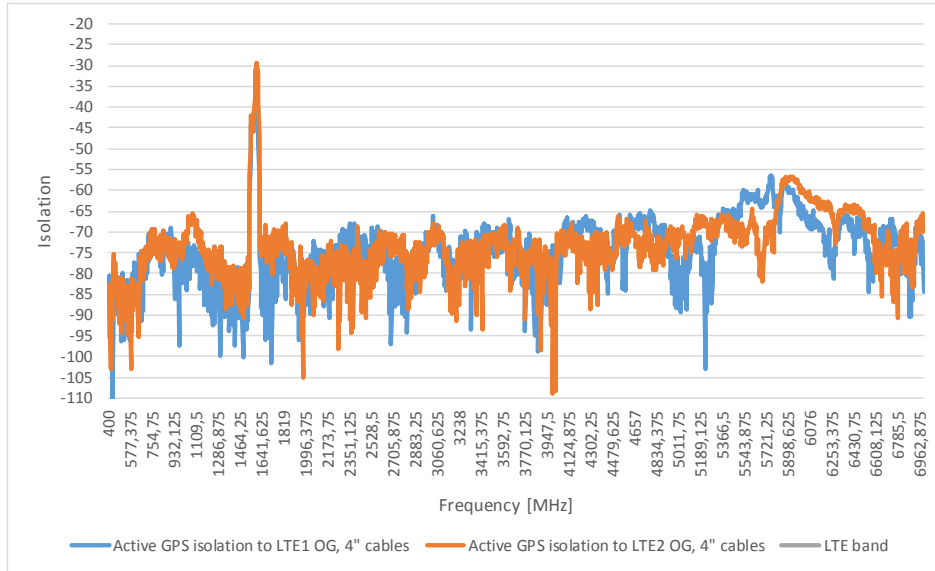
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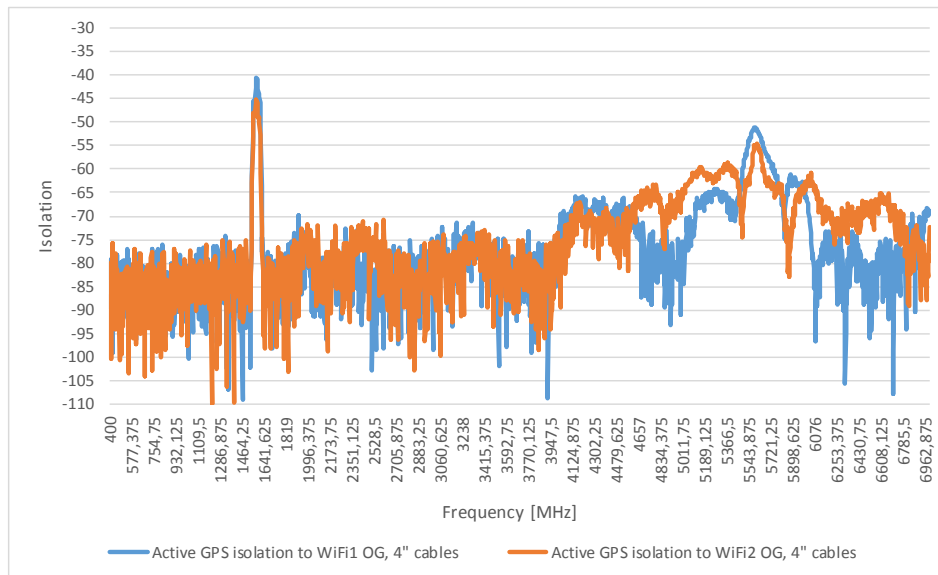
PART NUMBER: GPSMB50xx

CHARTS

GPS isolation to LTE 1 and LTE 2 antenna*



GPS isolation to WiFi 1 and WiFi 2 antenna*



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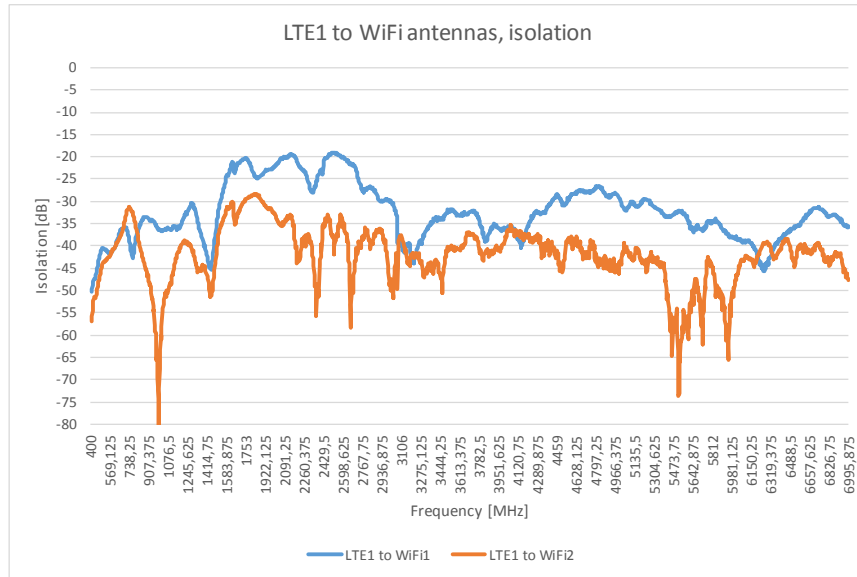
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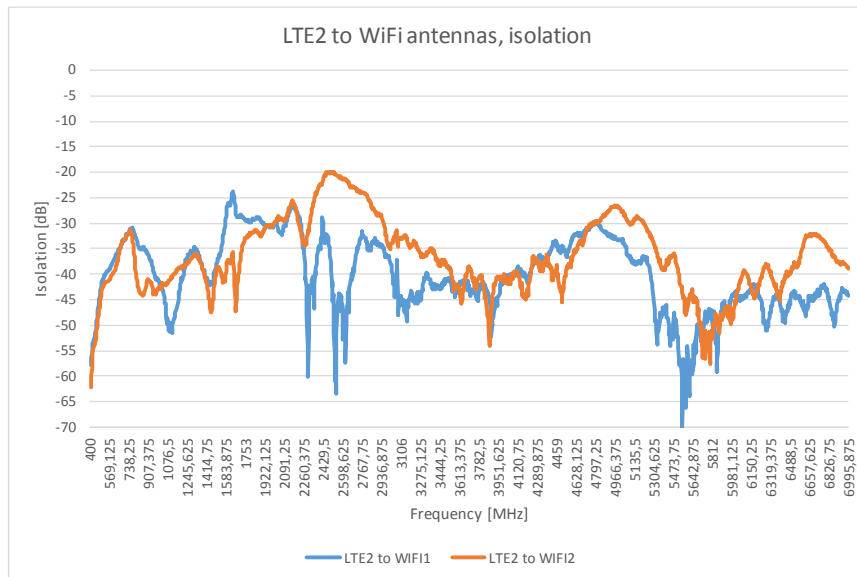
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CHARTS

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



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



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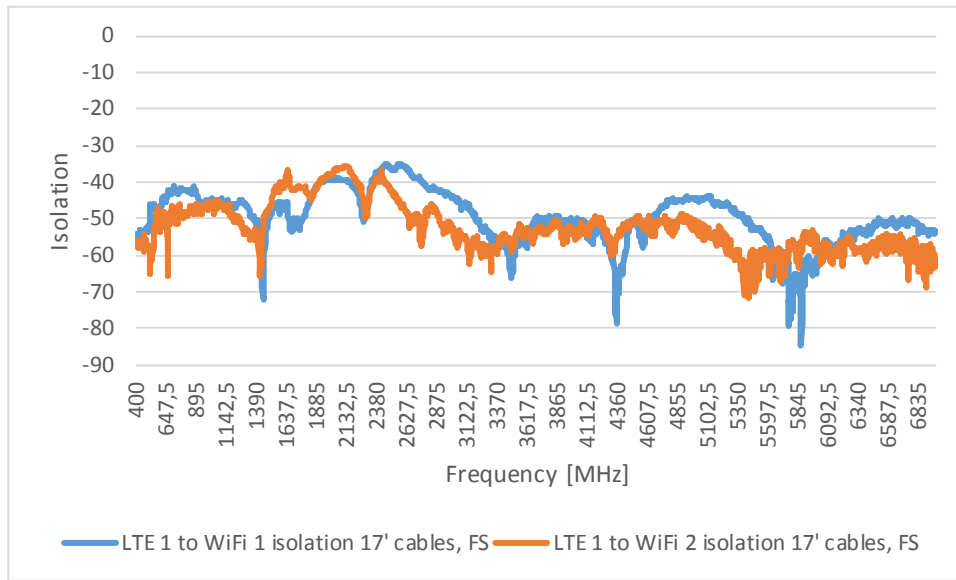
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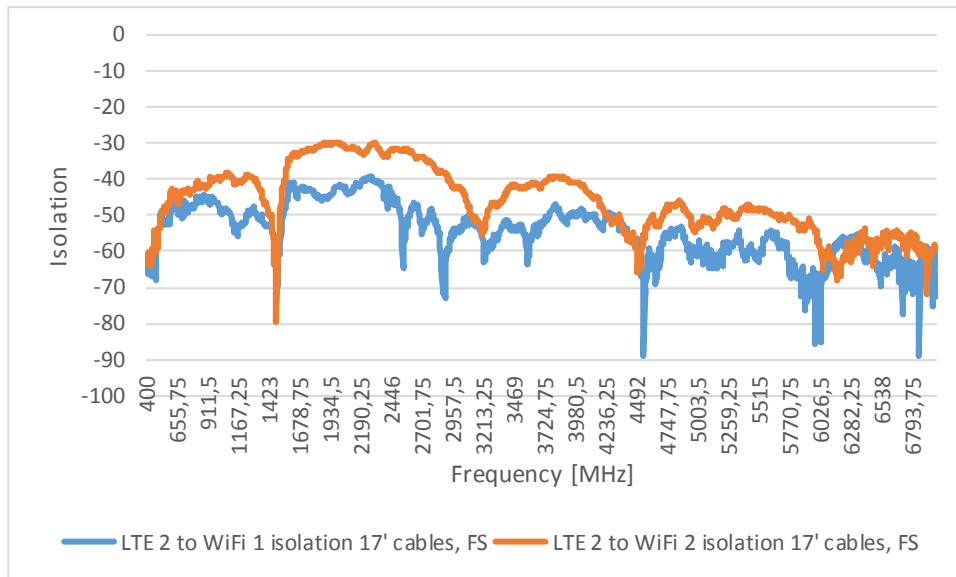
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CHARTS

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



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



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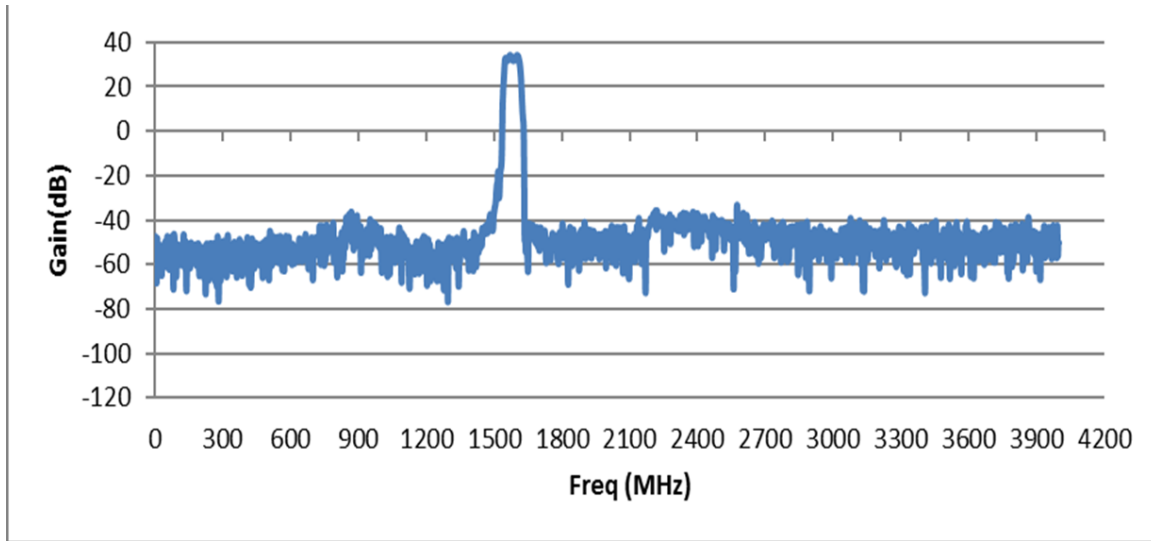
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CHARTS

GNSS LNA performance



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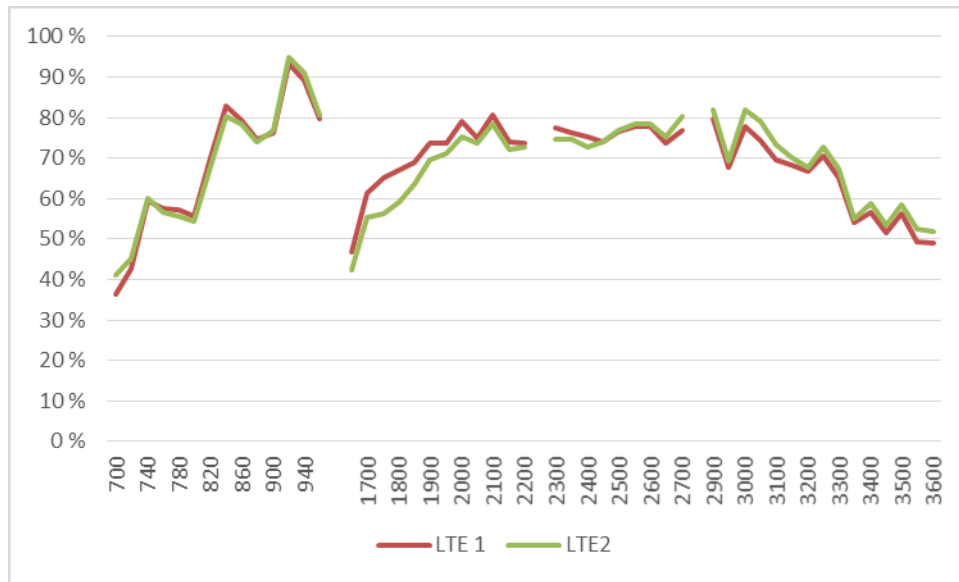
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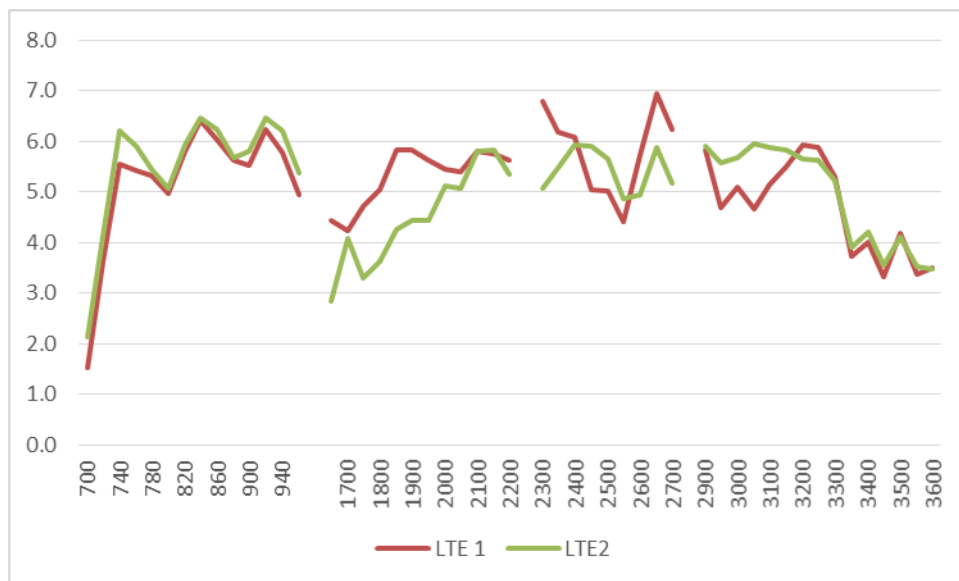
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CHARTS

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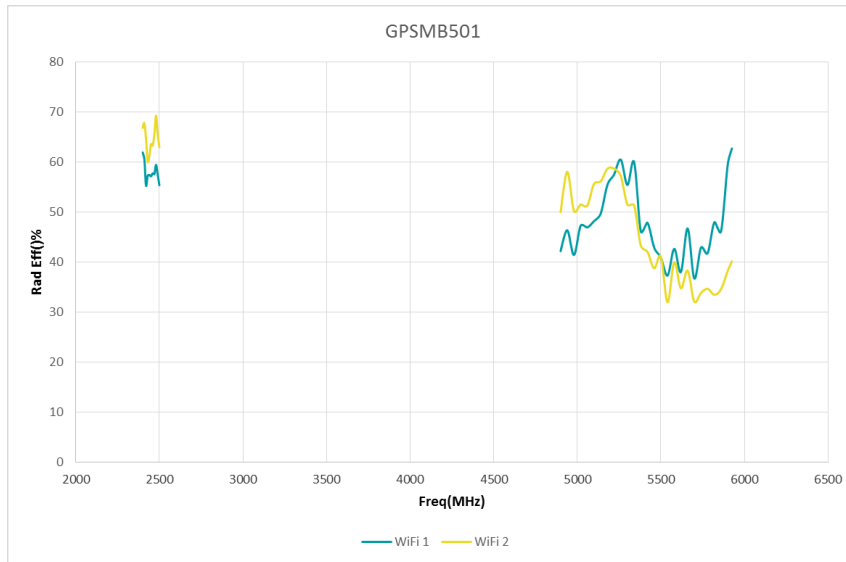
Description: MiMo LTE, MiMo WiFi, GNSS Vehicle Mount Antenna

Series: Panther

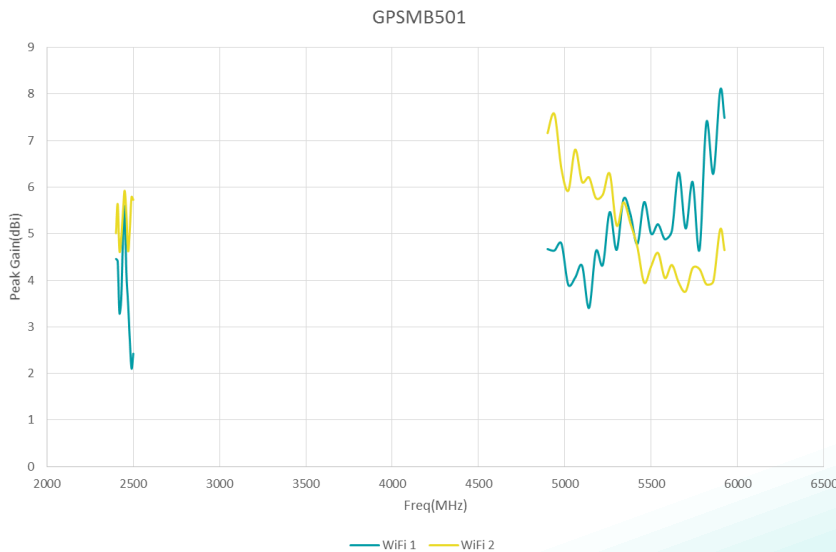
PART NUMBER: GPSMB50xx

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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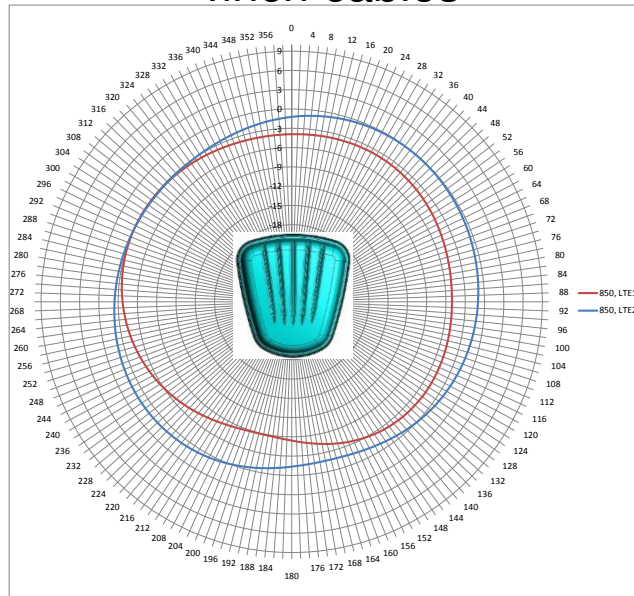
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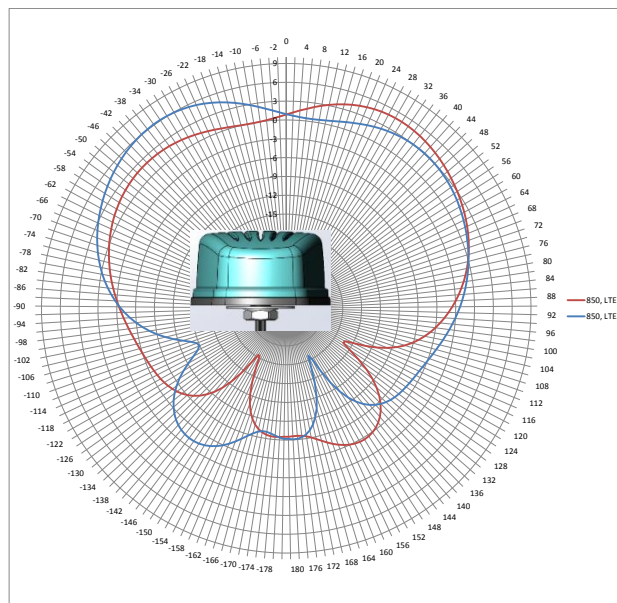
PART NUMBER: GPSMB50xx

CHARTS

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



Horizontal plot



Vertical plot front view

Issue: 1711

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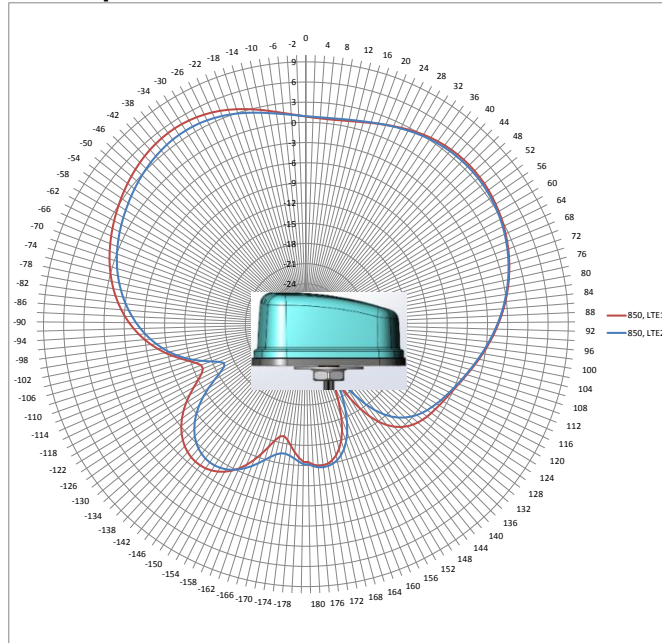
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna

Series: Panther

PART NUMBER: GPSMB50xx

CHARTS

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



Vertical plot side view

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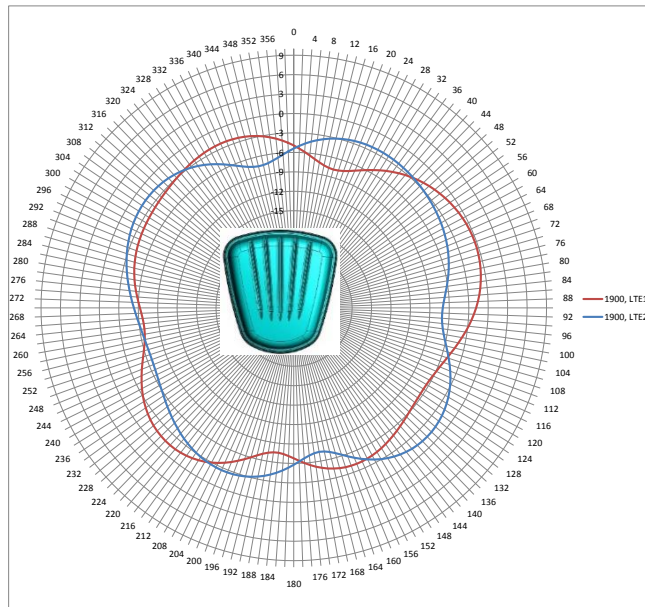
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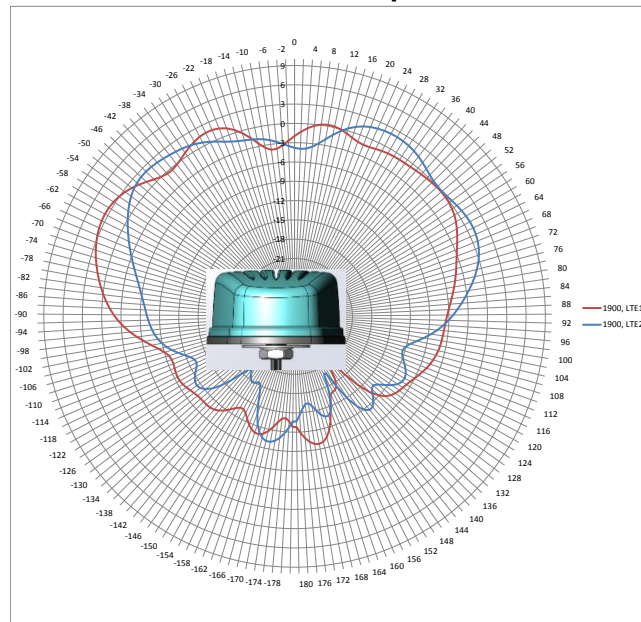
PART NUMBER: GPSMB50xx

CHARTS

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



Horizontal plot



Vertical plot front view

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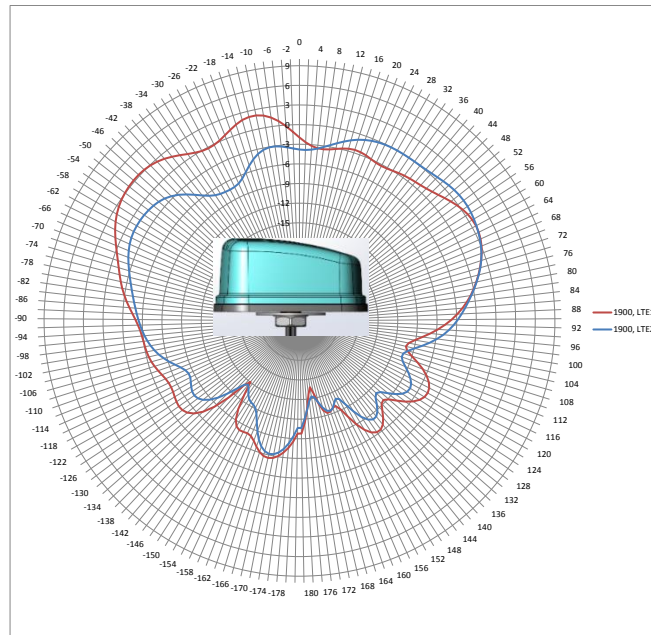
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna

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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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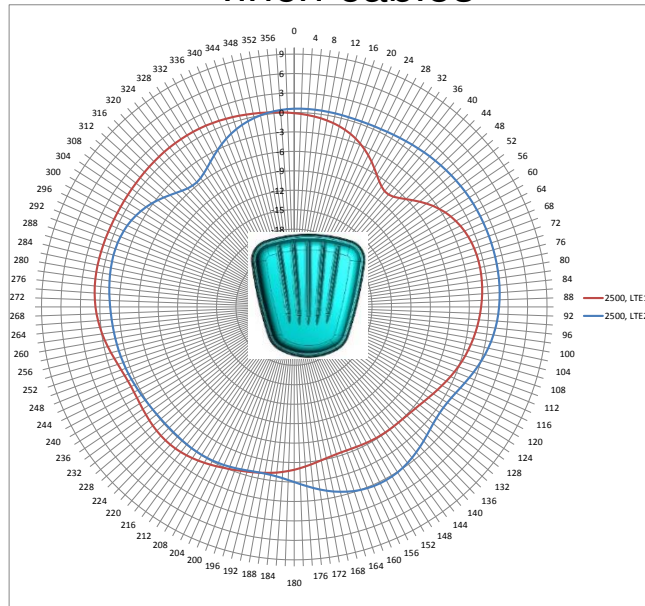
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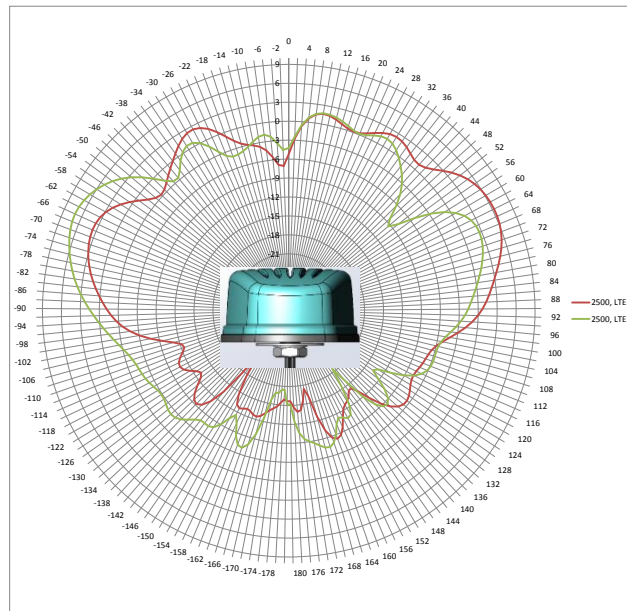
PART NUMBER: GPSMB50xx

CHARTS

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



Horizontal plot



Vertical plot front view

Issue: 1711

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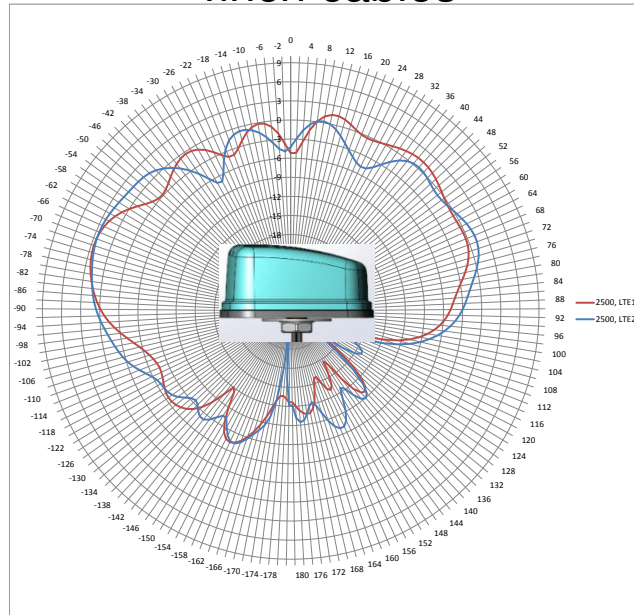
**Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna**

Series: Panther

PART NUMBER: GPSMB50xx

CHARTS

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



Vertical plot side view

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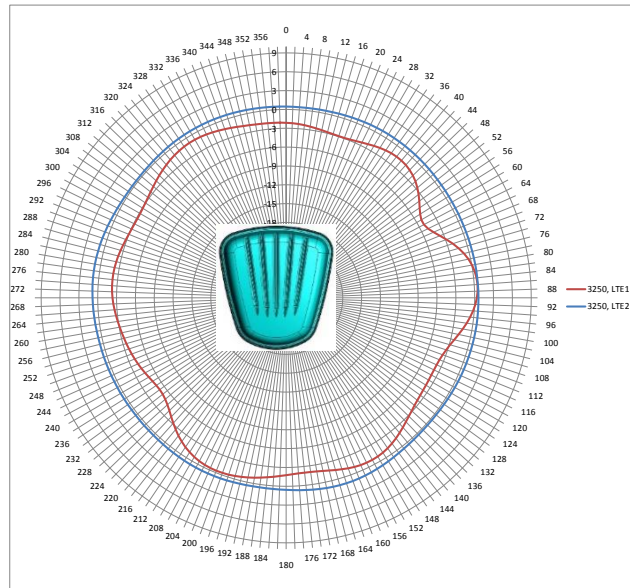
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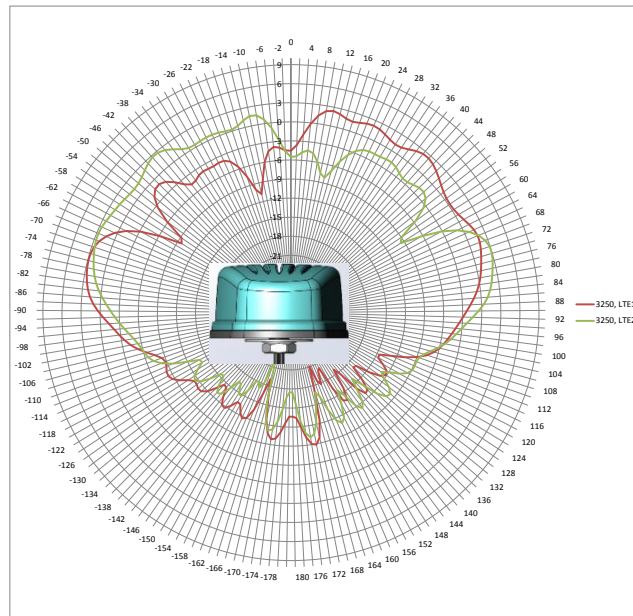
PART NUMBER: GPSMB50xx

CHARTS

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



Horizontal plot



Vertical plot front view

Issue: 1711

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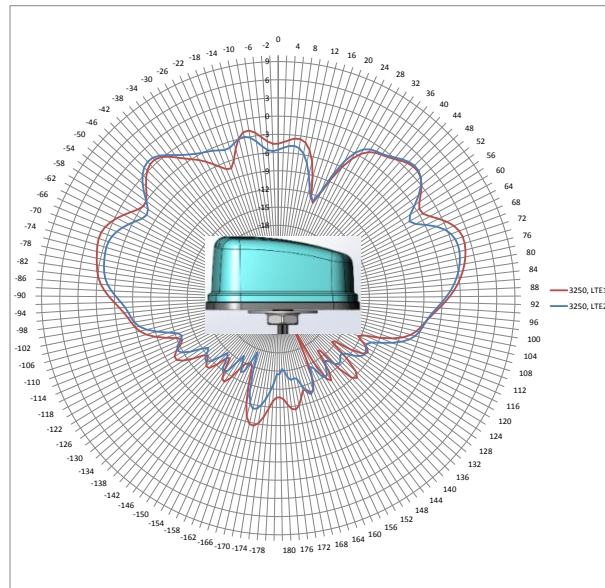
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Vehicle Mount Antenna

Series: Panther

PART NUMBER: GPSMB50xx

CHARTS

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



Vertical plot side view

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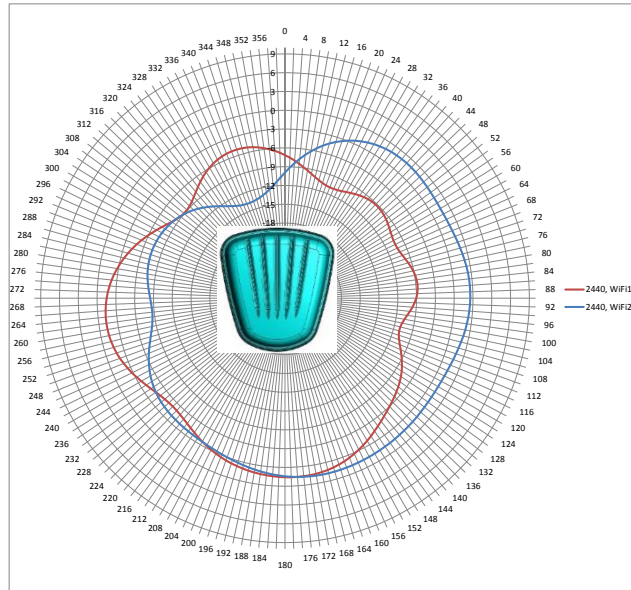
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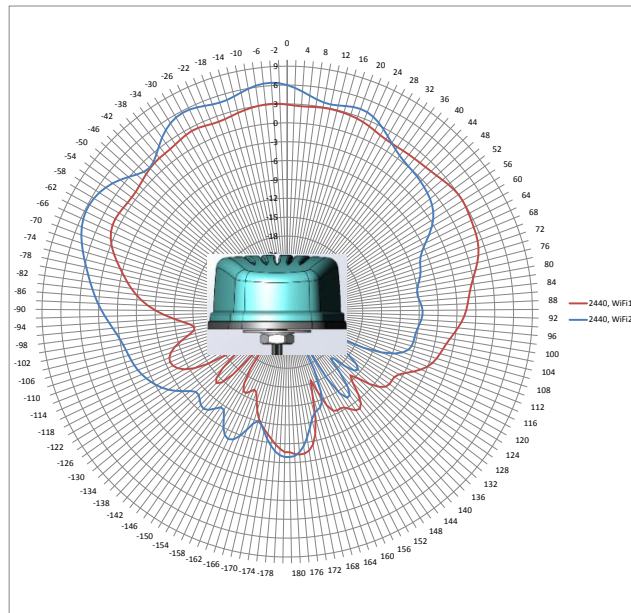
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CHARTS

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



Horizontal plot



Vertical plot front view

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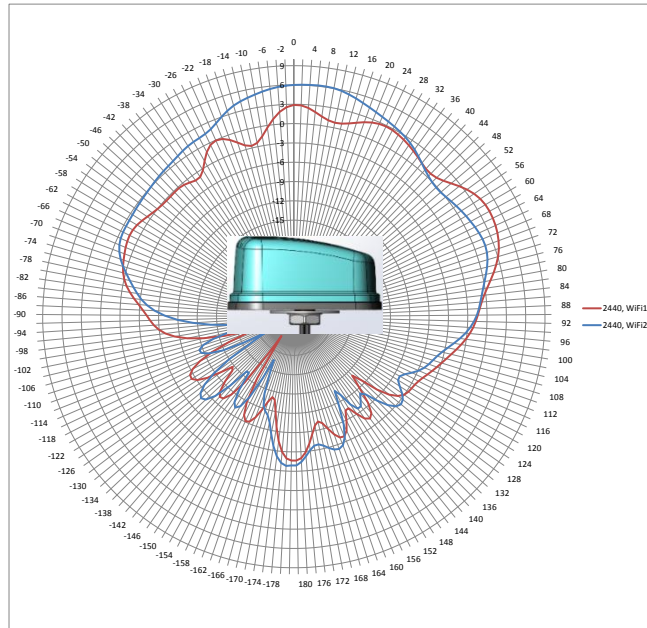
Description: MiMo LTE, MiMo WiFi, GNSS
Vehicle Mount Antenna

Series: Panther

PART NUMBER: GPSMB50xx

CHARTS

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



Vertical plot side view

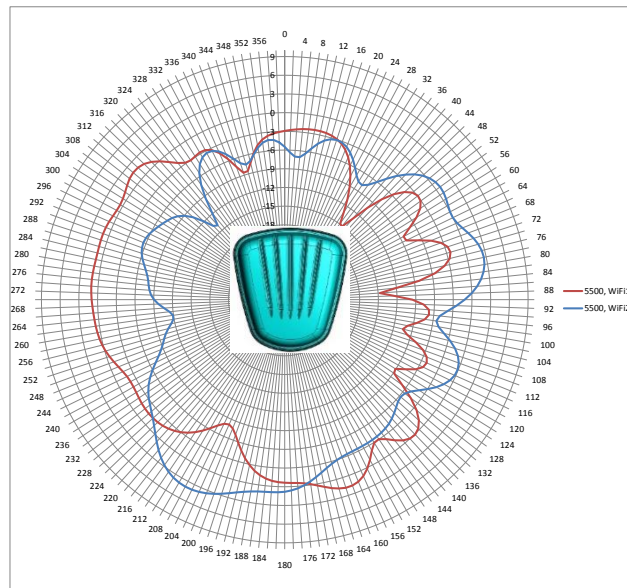
**Description: MiMo LTE, MiMo WiFi, GNSS
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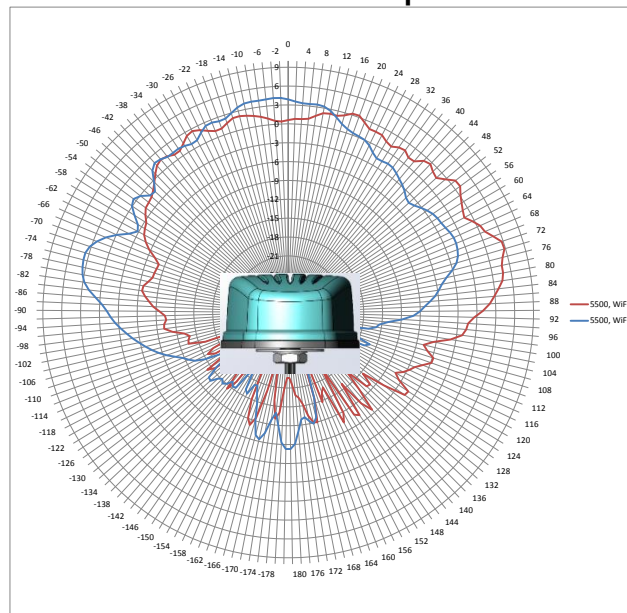
PART NUMBER: GPSMB50xx

CHARTS

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



Horizontal plot



Vertical plot front view

Issue: 1711

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

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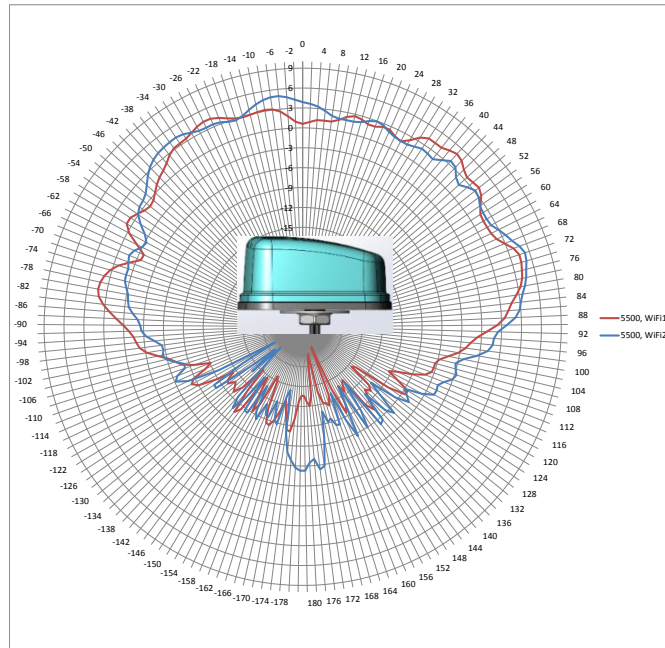
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Vertical plot side view

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