PulseLARSEN Antennas

TECHNICAL DATA SHEET

Description: 3G/GPRS/GSM + GNSS IP67

Series: Outdoor Multi Band

PART NUMBER: W4165XXX

Features:

- 3G antenna:
  - 824-960/1710-2170MHz
- Active GNSS antenna:
  - Beidou, GPS, Galileo, Glonass
  - LNA Gain 30dB
  - Pre and post LNA filtering
- RoHS Compliant
- Diameter 100mm
- IP67
- Cable and connector options shown on page 2.

Applications:

- Vehicular use
- Utility boxes
- Smart metering
- Navigation, Fleet Management, Tracking

All dimensions are in mm / inches

Issue: 1718

RoHS COMPLIANT

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This document covers all product variants of the following product family

Antennas	GSM Cable			GPS Cable		
	Cable Type	Cable Length	Connector	Cable Type	Cable Length	Connector
W4165	RG-174 Black	4000mm/157.5"/13.2'	SMA Male	RG-174 Black	4000mm/157.5"/13.2'	SMA Male
W4165AI		1524mm/60"/5'	TNC Male		1524mm/60"/5'	RP-TNC Male
W4165SMA5		1524mm/60"/5'	SMA Male		1524mm/60"/5'	SMA Male
W4165RPSMA10		3048mm/120"/10'	RP-SMA Male		3048mm/120"/10'	RP-SMA Male

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ELECTRICAL SPECIFICATIONS

Frequency (GSM)	824-960/1710-2170 MHz
Frequency (Beidou,GPS,Galileo,Glonass)	1561.098±2.046/ 1575.42±1.023/ 1602.5625±4MHz
Nominal Impedance	50 Ω
VSWR** (GSM)	< 2:1
Average Peak Gain* (GSM antenna, Low band, typical)	4 dB
Average Peak Gain* (GSM antenna, High band, typical)	4.5 dB
GNSS antenna RHCP gain	1 dBic ± 2 dB
LNA gain	30 dB ± 2 dB
Noise Figure	2.5 (cascade) dB
Current	9 mA ± 2 mA
Vdc	3-5Vdc
LNA and filter attenuation	
@ 824 MHz	70 dB
@960 MHz	65 dB
@1710 MHz	60 dB
@2170 MHz	65 dB

*Measured on diameter 500mm GND plane and with 5 inch cables

** Measured on diameter 500mm GND plane and with 10 feet cables

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Description: 3G/GPRS/GSM + GNSS IP67

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MECHANICAL SPECIFICATIONS

Antenna Color / Material	Black
Connector type	As requested
Cable type	RG-174, Black
Cable length	As requested
Fixing system	Direct Mount P.S. requires a 3/4” (19mm) hole in the mounting surface.
Connector retention	30 N
Strain relief	30 N, applied to cable along axis and perpendicular to cable entry

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 ~ 85° C
Storage Temperature	-40 ~ 85° C
Ingress Protection	IP67
Wind-loading	160 km/h
RoHS Compliant	Yes

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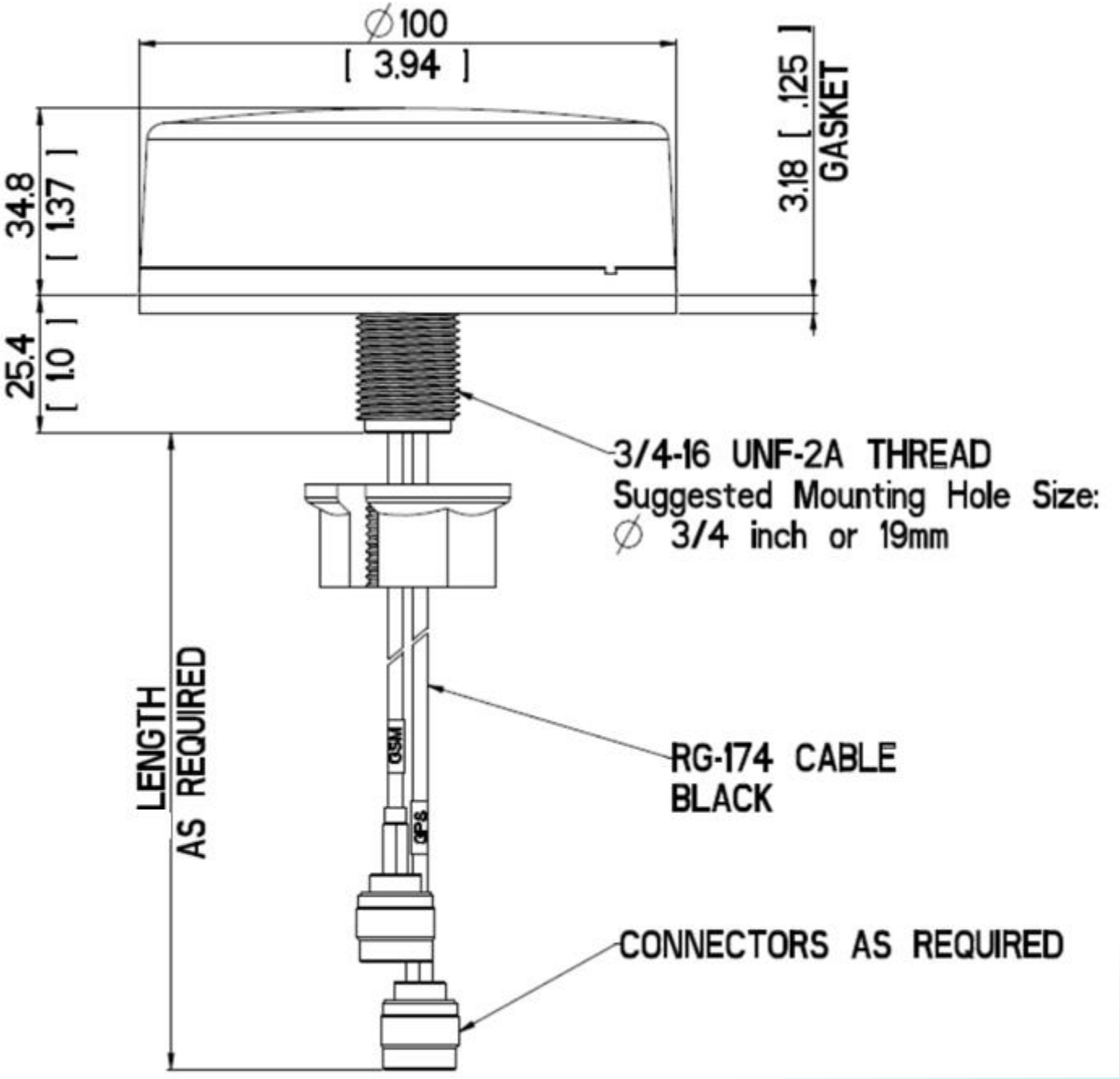
MECHANICAL DRAWING



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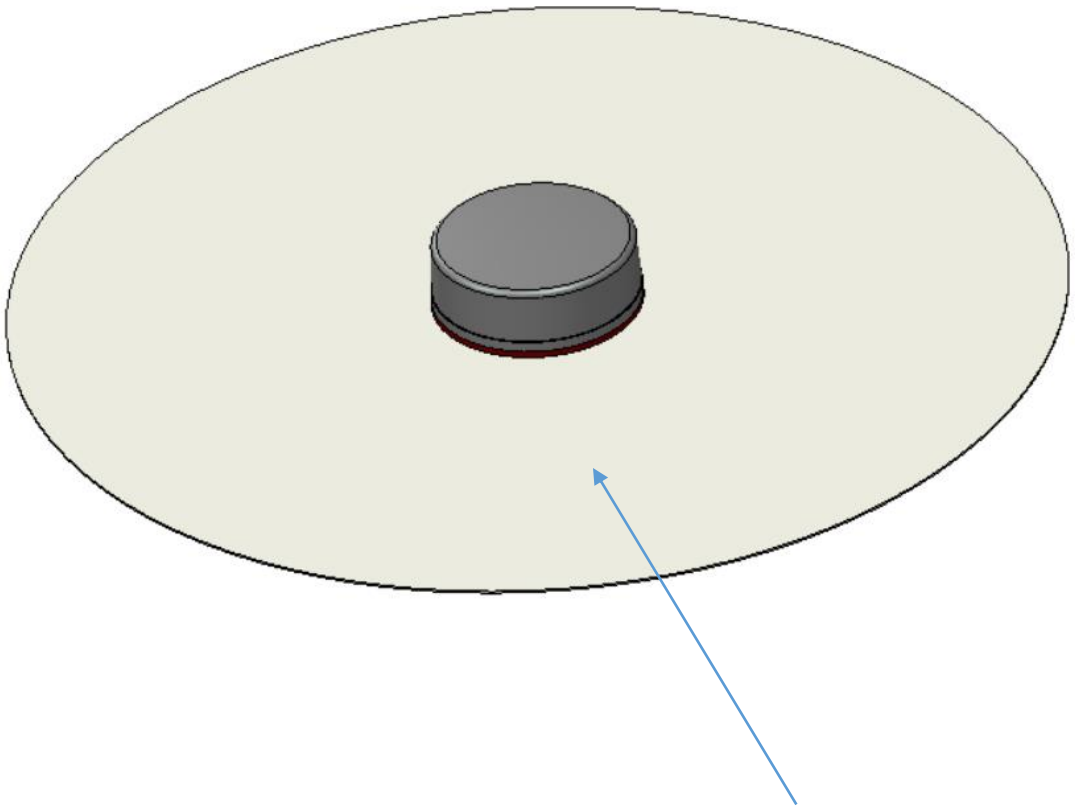
TEST SETUP



Diameter: 500 mm ground pane

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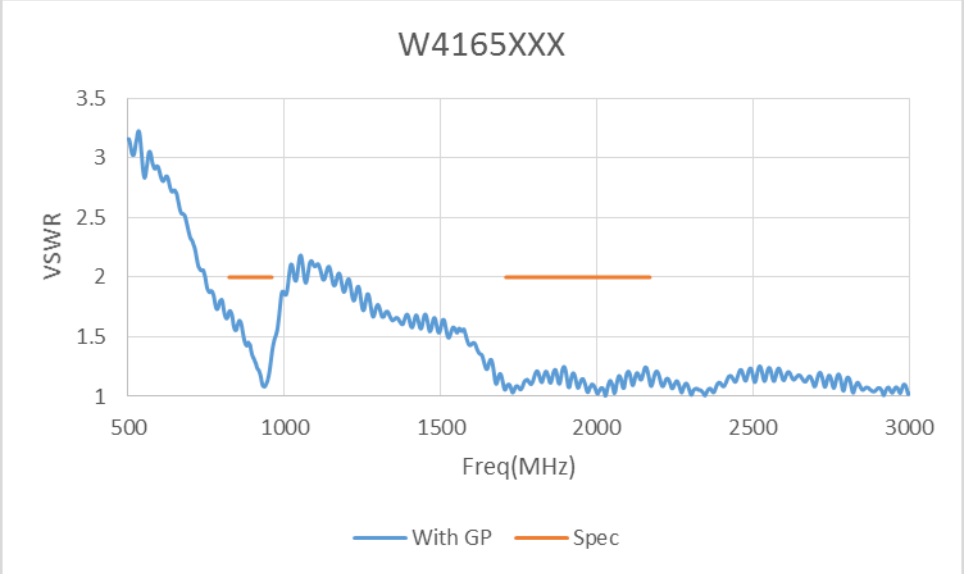
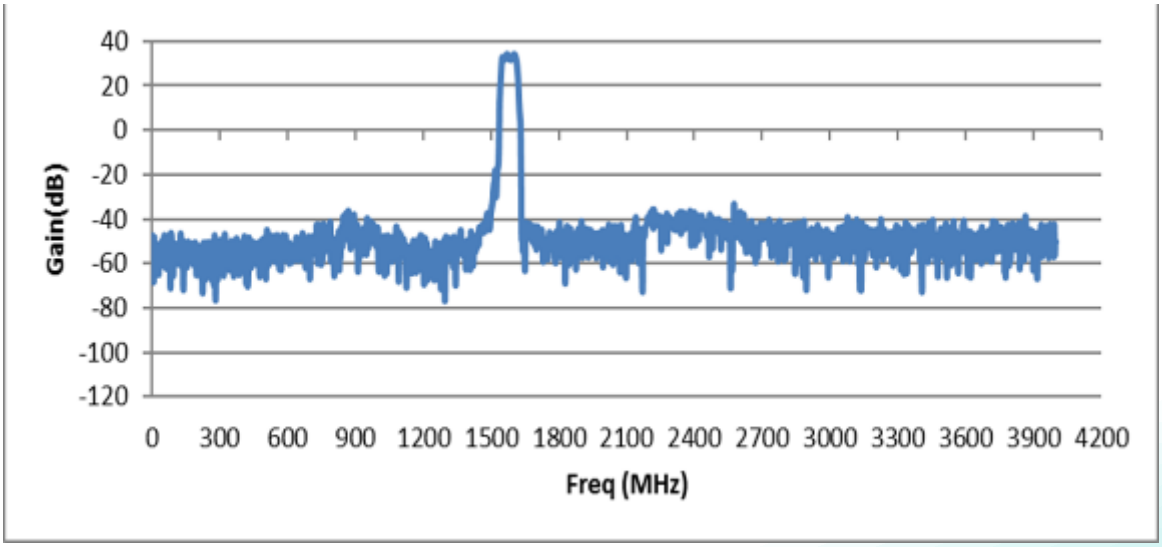
RoHS COMPLIANT

CHARTS

VSWR*



GNSS LNA performance



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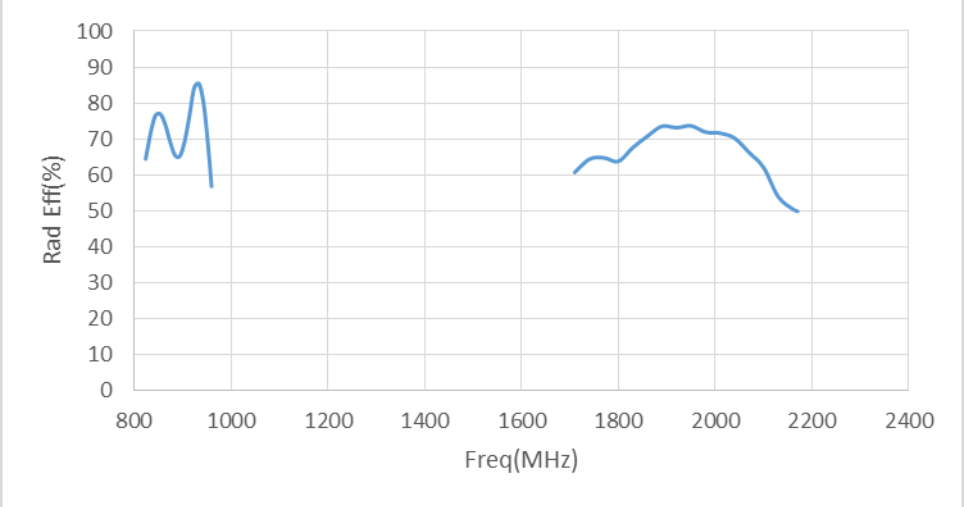
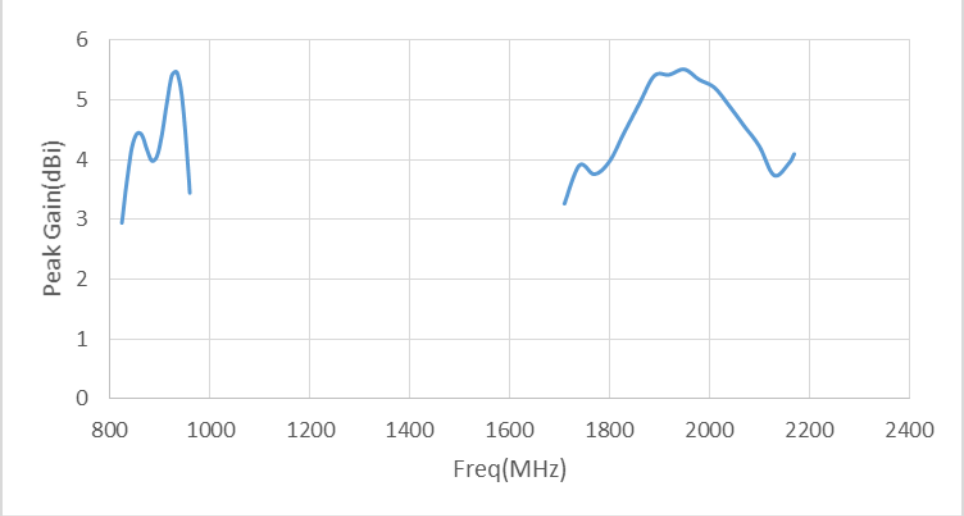
CHARTS

GSM antenna total efficiency*



Maximum 3D gain, GSM antenna*



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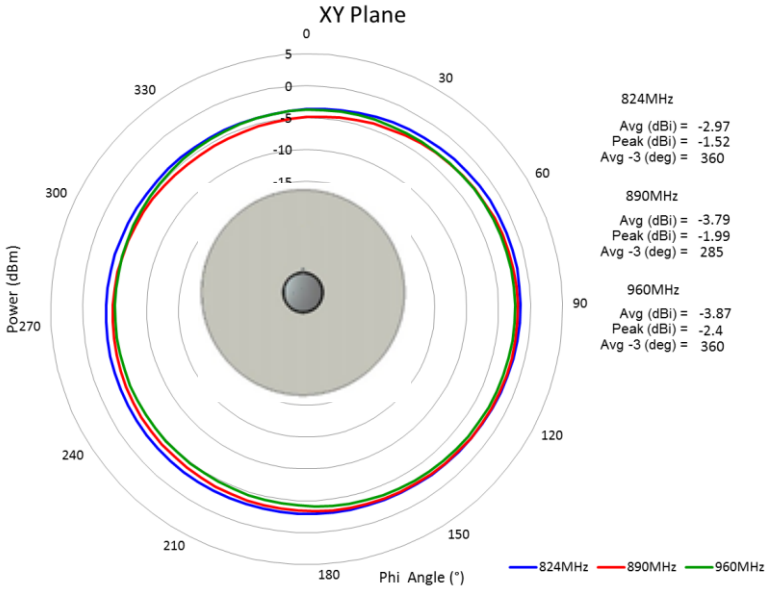
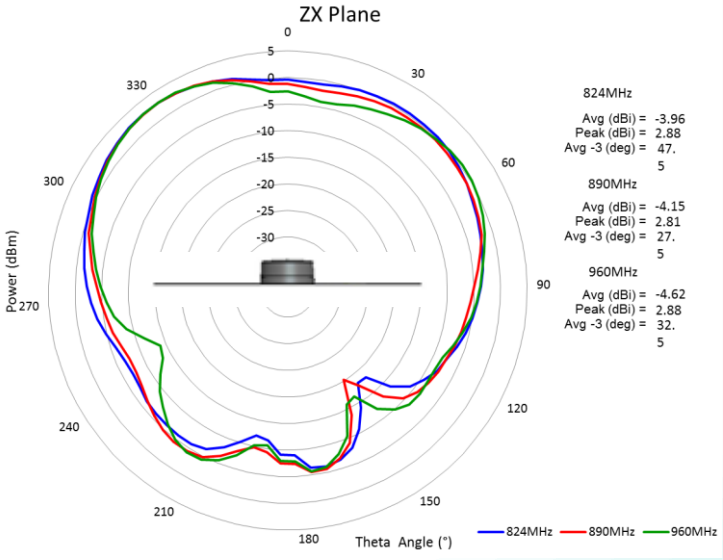
CHARTS

GSM antenna Low band Radiation Pattern X-Y Plane*



GSM antenna Low band Radiation Pattern Z-X Plane*



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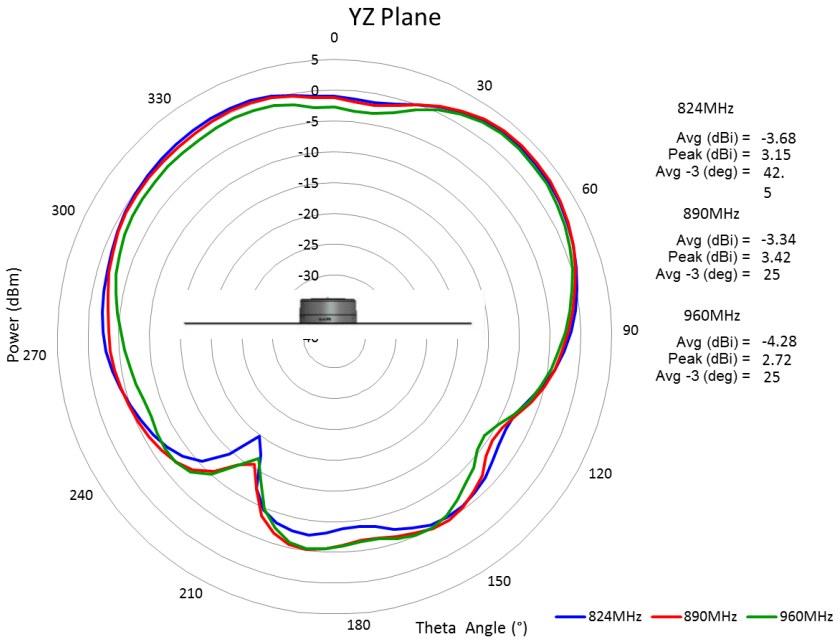
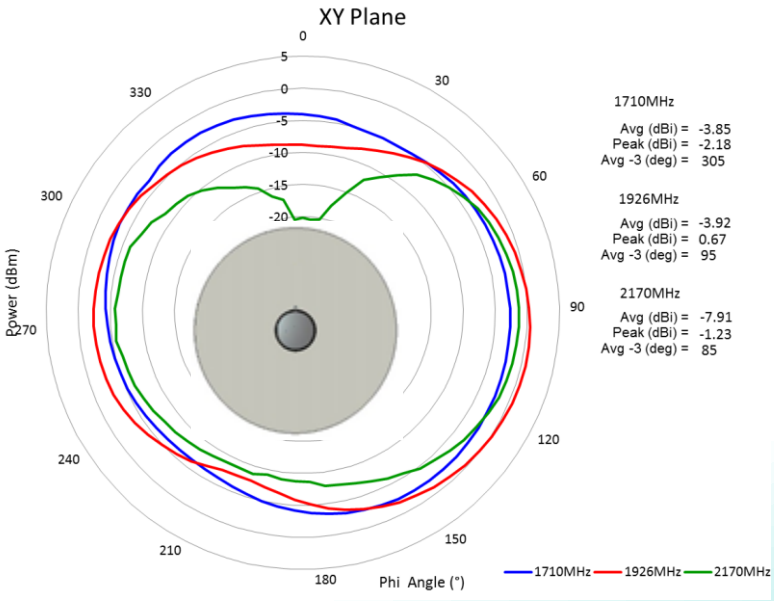
RoHS COMPLIANT

CHARTS

GSM antenna Low band Radiation Pattern Y-Z Plane*



GSM antenna High band Radiation Pattern X-Y Plane*



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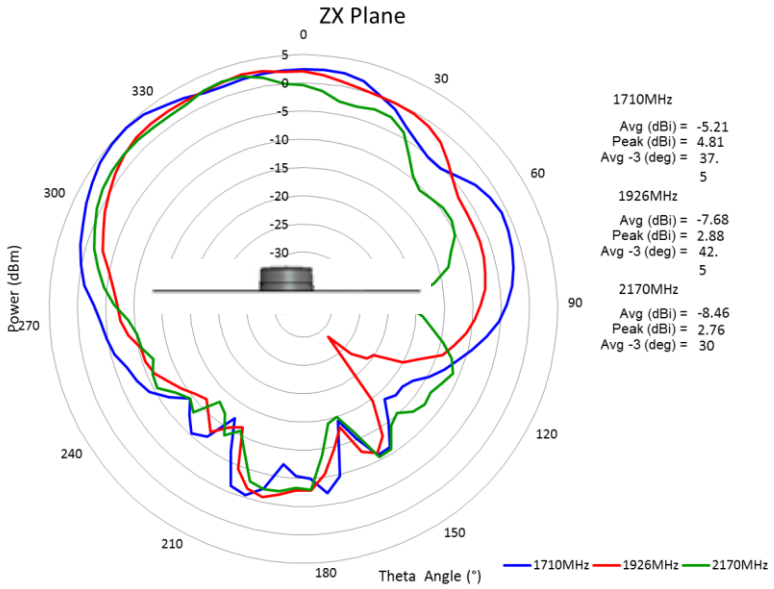
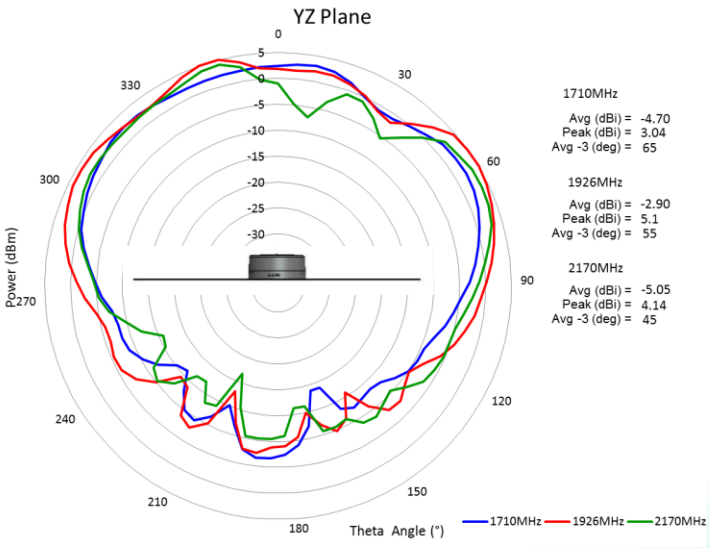
CHARTS

GSM antenna High band Radiation Pattern Z-X Plane*



GSM antenna High band Radiation Pattern Y-Z Plane*



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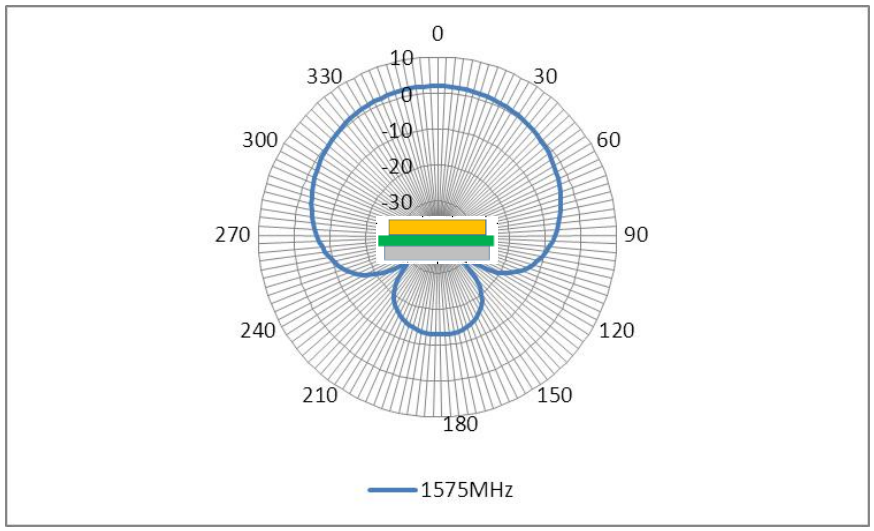
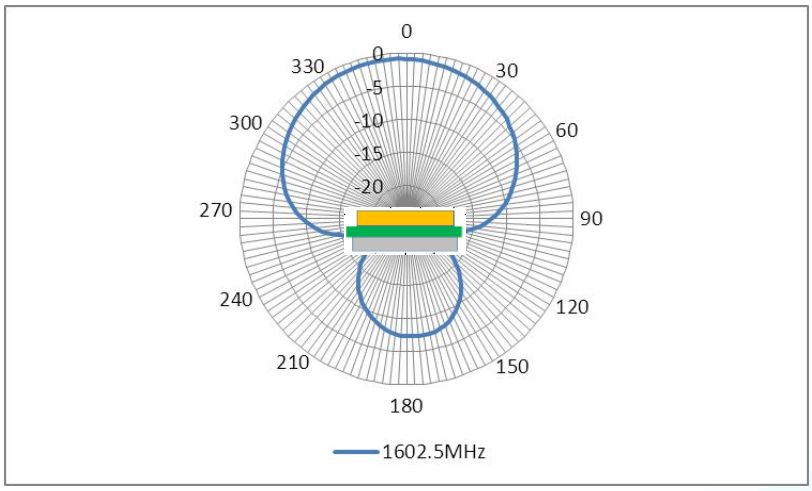
CHARTS

RHCP Radiation Pattern (70mm x 70mm ground plane) GPS & Galileo



RHCP Radiation Pattern (70mm x 70mm ground plane) GLONASS



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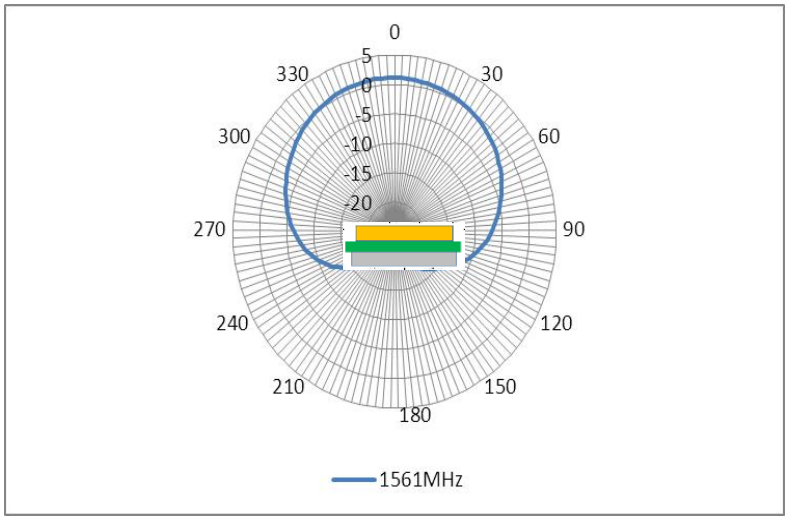
CHARTS

RHCP Radiation Pattern (70mm x 70mm ground plane) BD2



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PACKAGING

1 antenna packed in a plastic bag

12 plastic bags of antennas packed in a carton

1 label on each carton with part number, description, date code.

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