

Series: RAZORBACK

PART NUMBER: RAZ32011MM, RAZ32012MM, RAZ42111MM,
RAZ42112MM, RAZ52211MM, RAZ52212MM, RAZ62311MM, RAZ62312MM



RAZ62311MM (Black)



RAZ62312MM (White)

Features:

- 2x LTE 644-2700MHz (MiMo)
- 0, 1x, 2x or 3x WiFi 2.4/5GHz
- DSRC
- GNSS Active:
 - Beidou, GPS, Glonass
 - RHCP polarization
 - Amplifier Gain 30dBi
- Size: 89.2 x 195.1 x 94.7mm
3.51 x 7.68 x 3.73 in
- Power withstanding 45W
- Available Models
 - RAZ32011MM = 3 Cable, Black
 - RAZ32012MM = 3 Cable, White
 - RAZ42111MM = 4 Cable, Black
 - RAZ42112MM = 4 Cable, White
 - RAZ52211MM = 5 Cable, Black
 - RAZ52212MM = 5 Cable, White
 - RAZ62311MM = 6 Cable, Black
 - RAZ62312MM = 6 Cable, White

Applications:

- Vehicular use Telematics
- Fleet management
- Trucking
- Navigation, GIS and survey
- Public safety
- Search and Rescue
- Metering, Utility boxes

Issue: 1742

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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
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



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ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| Antenna Type | Monopole, measured on Ø1.02m (40") ground plane |
| Frequency (2x LTE) | 644-960/1710-2700 MHz |
| Frequency (1x, 2x or 3x WiFi) | 2400-2500/4900-5925 MHz |
| Nominal Impedance | 50 Ω |
| VSWR | 2:1 |
| Radiation Pattern | Omni |
| HPBW / Vertical Plane (LTE, 644-960) | 42° |
| HPBW / Vertical Plane (LTE, 1710-2700) | 31° |
| HPBW / Vertical Plane (WIFI, 2400-2500) | 25° |
| HPBW / Vertical Plane (WIFI, 4900-5925) | 20° |
| Polarization | Vertical |
| Average Peak Gain (LTE, 644-960) (LTE, 1710-2700) | 4.6/4.9 dBi |
| Average Peak Gain (WIFI, 2400-2500) (WIFI, 4900-5925) | 6/6.6 dBi |
| Isolation (LTE1 to LTE2) | <-13 |
| Isolation (WiFi1/2, WiF2/3 & WiFi1/3) | <-13 |
| Average Efficiency (LTE) | 67 % |
| Average Efficiency (WiFi) | 57 % |
| Power Withstanding | 45 W |
| | |
| GNSS Beidou-GPS-Glonass | |
| Frequency | 1561.098±2.046,1575.42±1.023,1602.5625±4 MHz |
| VSWR | 2:1 |
| Nominal Impedance | 50 Ω |
| Gain (Radiating element) | 1 dBic +/- 1dB |
| Gain (LNA gain) | 30 dB +/- 2 dB |
| Polarization | RHCP |

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ELECTRICAL SPECIFICATIONS

| | |
|-----------------------|--|
| Out of Band Rejection | 960MHz >65 dB, 1710MHz >60 dB, 2170MHz >65 dB, 2400MHz >65 dB |
| Noise Figure | < 2.4dB |
| Operating Voltage | 3.3 - 5 Vdc ± 0.5 V |
| Current Consumption | < 11 mA |

MECHANICAL SPECIFICATIONS

| | |
|--------------------------|--|
| Length/Height/Width | 195.1mm (7.68")/94.7 (3.73")/89.2mm (3.51") |
| Weight | 856 g (1.9 lbs) |
| Antenna Color / Material | Black or White / PC/ABS, UV protected |
| Cable / Connector | 2x LTE, 5.2m (17') LMR-195/SMA-Male 1x, 2x or 3x WiFi, 5.2m (17') LMR-195/RP-SMA-Male GNSS, 5.2m (17') RG-174/SMA-Male |
| Mounting Configuration | Magnetic Mount |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------|------------|
| Operating Temperature | -40/+85° C |
| Ingress Protection | IP67 |
| RoHS Compliant | Yes |

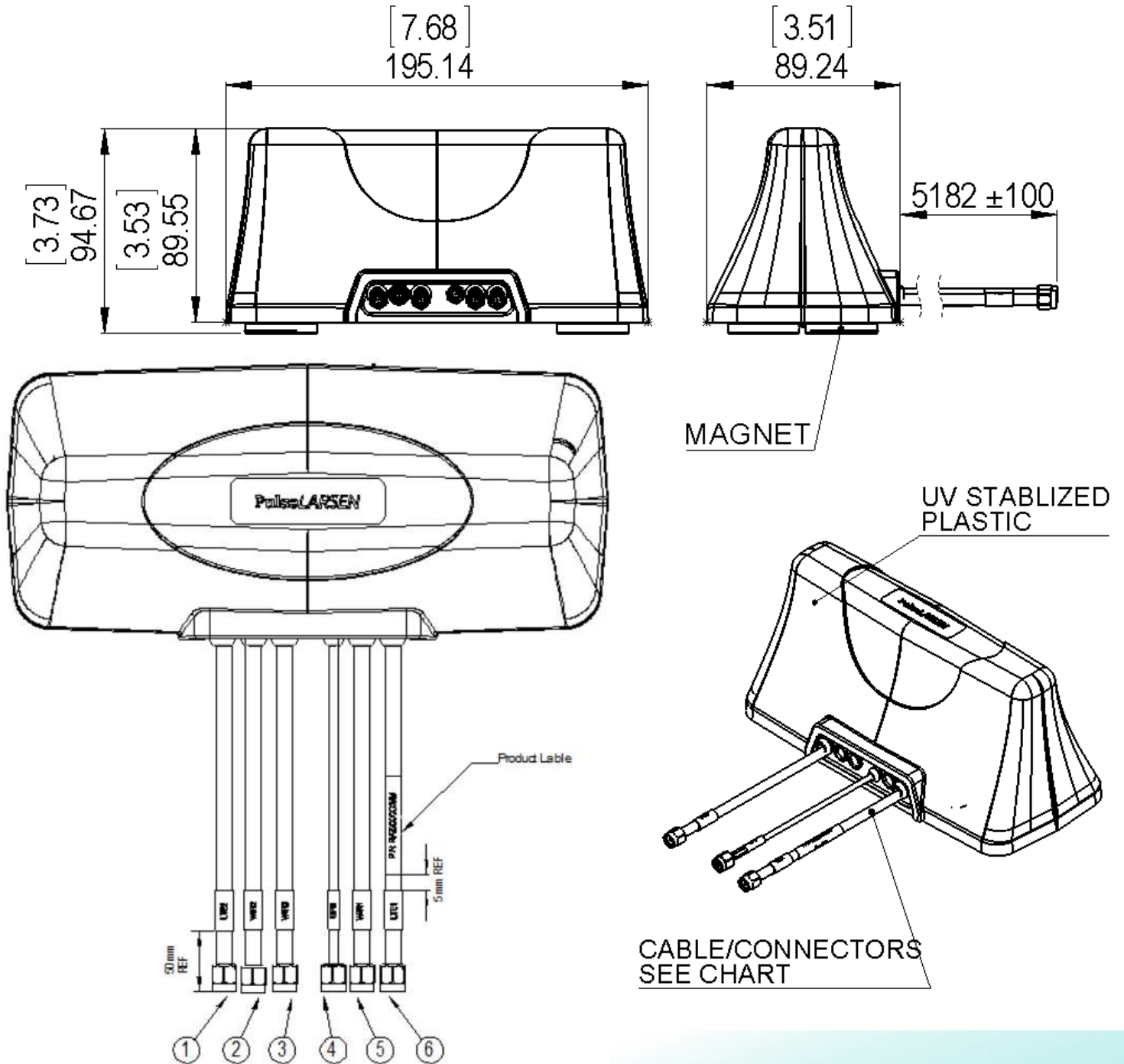
OTHER SPECIFICATIONS

| | |
|--|--------|
| Total cable assembly loss for 5.2m (17') LMR-195 @ 850MHz | 2.1 dB |
| Total cable assembly loss for 5.2m (17') RG-174 @ 1575MHz | 6.0 dB |
| Total cable assembly loss for 5.2m (17') LMR-195 @ 1930MHz | 3.2 dB |
| Total cable assembly loss for 5.2m (17') LMR-195 @ 2500MHz | 3.7 dB |
| Total cable assembly loss for 5.2m (17') LMR-195 @ 2450MHz | 3.6 dB |
| Total cable assembly loss for 5.2m (17') LMR-195 @ 5350MHz | 5.5 dB |

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MECHANICAL DRAWING



All dimensions are in mm / inches

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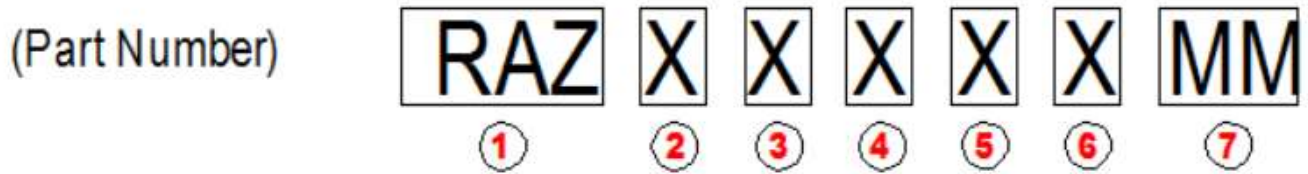
Description: GNSS / 2x LTE / 0, 1x, 2x or 3x WiFi
Magnetic Mount

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MECHANICAL DRAWING

Vehicular Multiband Antenna with Magnet Mount



| | |
|---|--|
| 1 | Product ID: RAZORBACK |
| 2 | Total Number of Cable leads |
| 3 | Total Number of LTE Cable Leads |
| 4 | Total Number of WiFi Cable Leads |
| 5 | Total Number of GPS Cable Leads |
| 6 | The Color of the Plastic Housing 1=Black; 2=White |
| 7 | Mounting: Magnet Mount |

| RAZXXXXMM | | CABLE | CABLE LENGTH | CONNECTOR |
|-----------|-------------------|--------|------------------------------|-------------|
| 1 | LTE-2 Cable Assy | LMR195 | 5181 mm / 204" / 17 FT | SMA Male |
| 2 | WiFi-2 Cable Assy | | | RP-SMA Male |
| 3 | WiFi-3 Cable Assy | | | SMA Male |
| 4 | GPS Cable Assy | RG-174 | | RP-SMA Male |
| 5 | WiFi-1 Cable Assy | LMR195 | | SMA Male |
| 6 | LTE1 Cable Assy | | | SMA Male |

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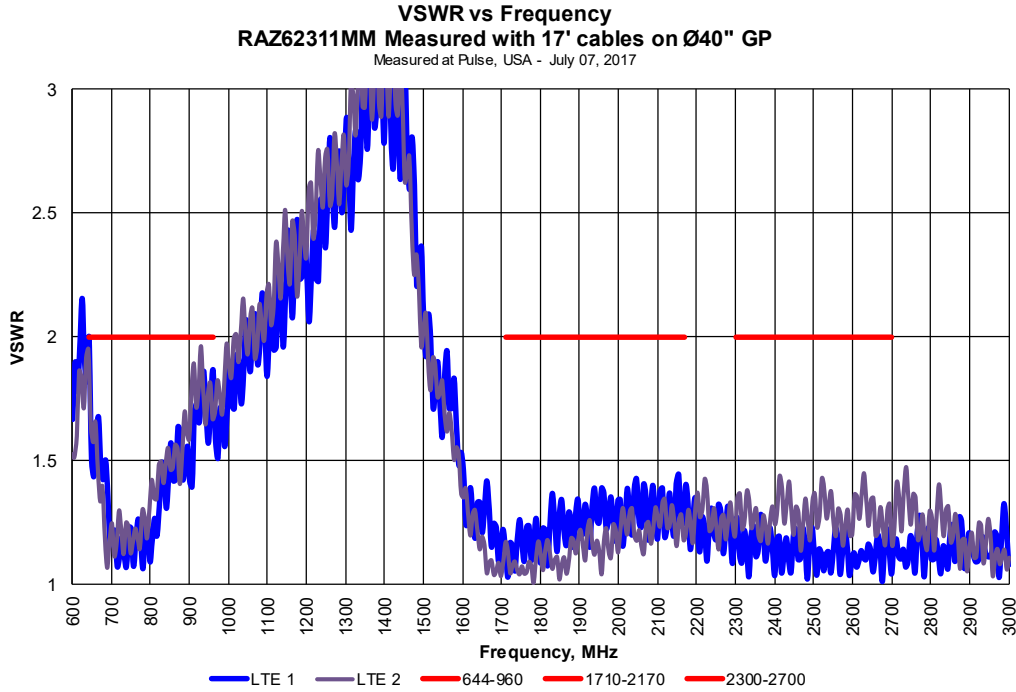
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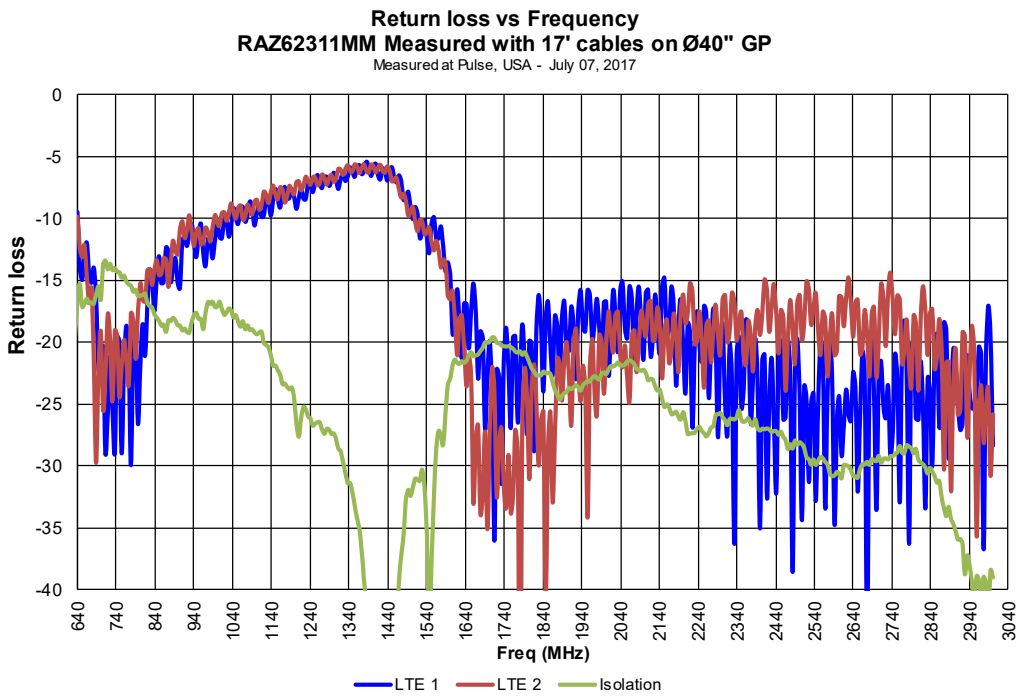
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CHARTS

LTE 1 & 2
Measured with 5.2m
(17') cable



LTE 1 & 2
Measured with 5.2m
(17') cable



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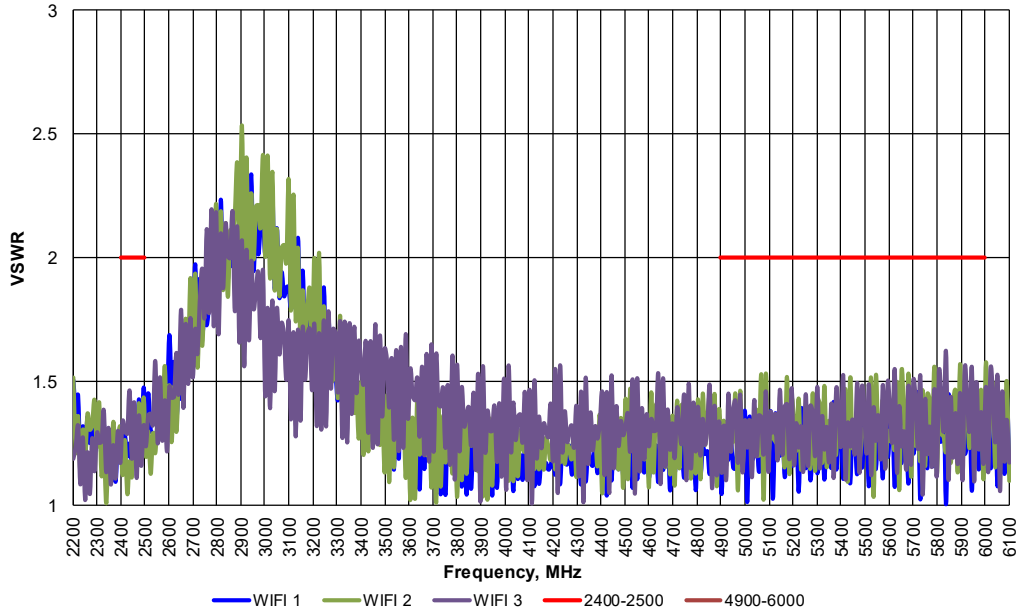
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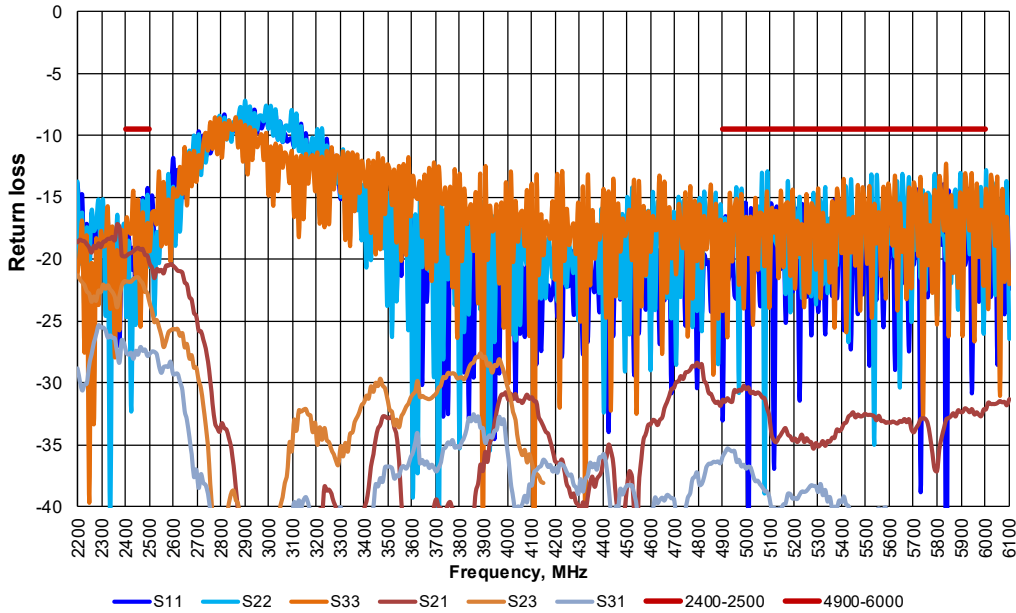
CHARTS

VSWR vs Frequency
RAZ62311MM Measured with 17' cables on Ø40" GP (WiFi 1, 2 & 3)
Measured at Pulse, USA - July 07, 2017



WiFi 1, 2 & 3
Measured with 5.2m
(17') cable

Return loss vs Frequency
RAZ62311MM Measured with 17' cables on Ø40" GP (WiFi 1, 2 & 3)
Measured at Pulse, USA - July 07, 2017



WiFi 1, 2 & 3
Measured with 5.2m
(17') cable

Issue: 1742

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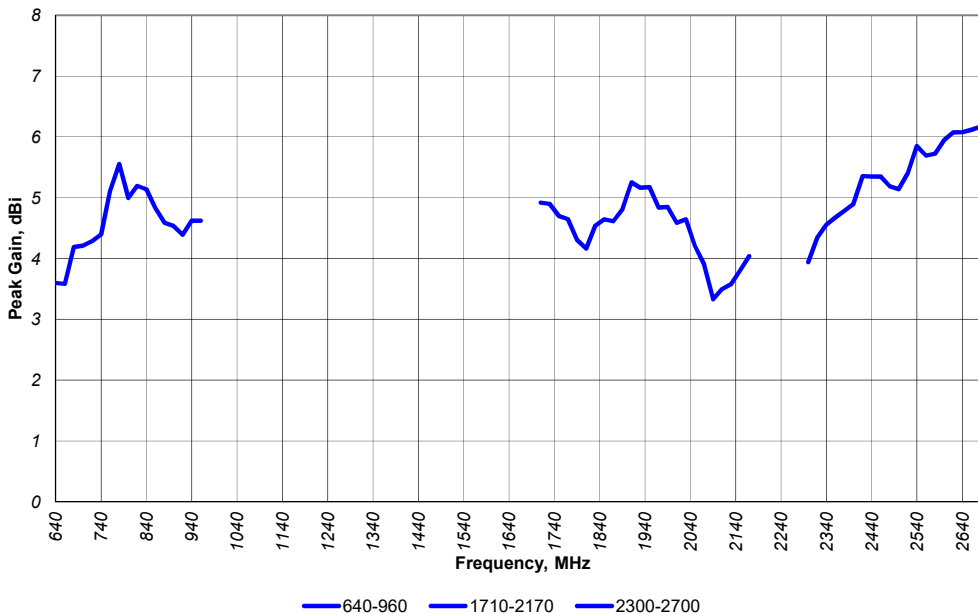
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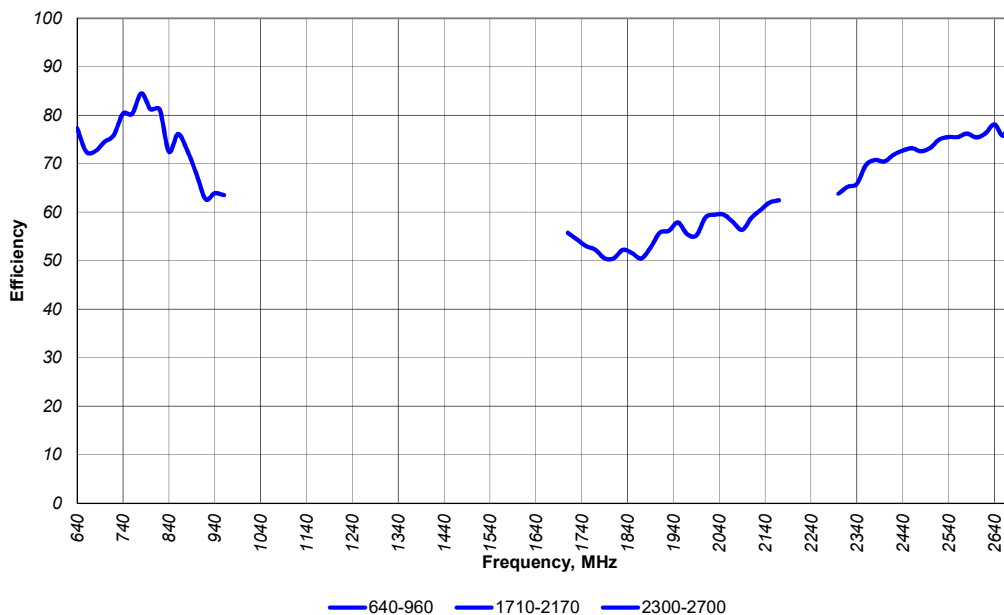
CHARTS

Peak Gain vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (LTE 1)
Measured at Pulse, USA - July 07, 2017



LTE 1
Measured with
914mm (36") cable

Efficiency vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (LTE 1)
Measured at Pulse, USA - July 07, 2017



LTE 1
Measured with
914mm (36") cable

Issue: 1742

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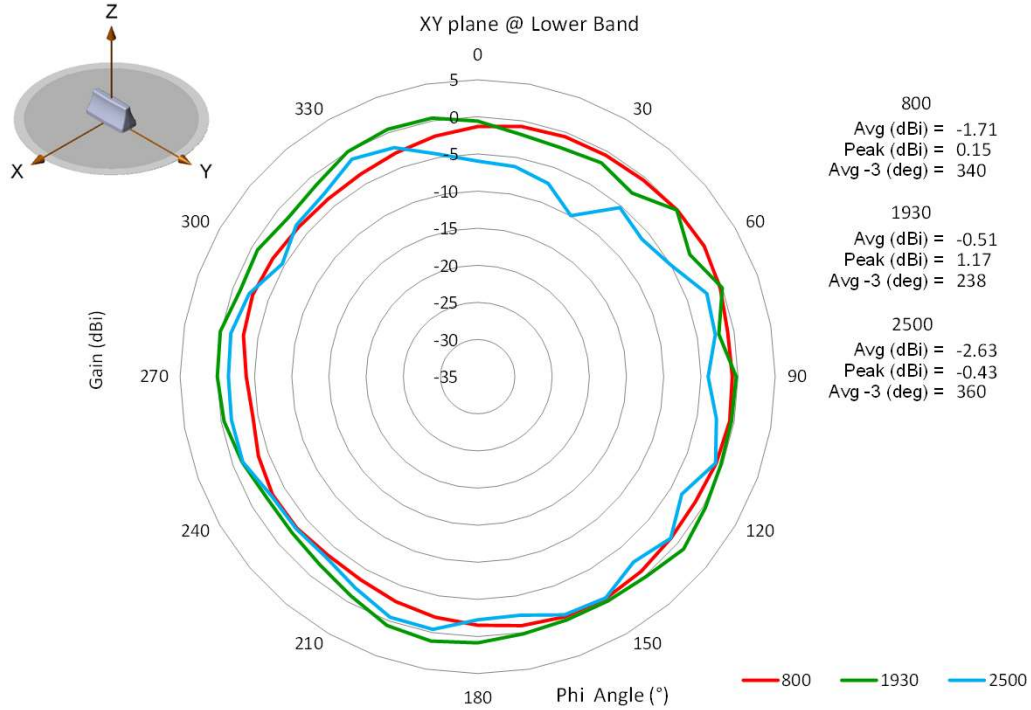
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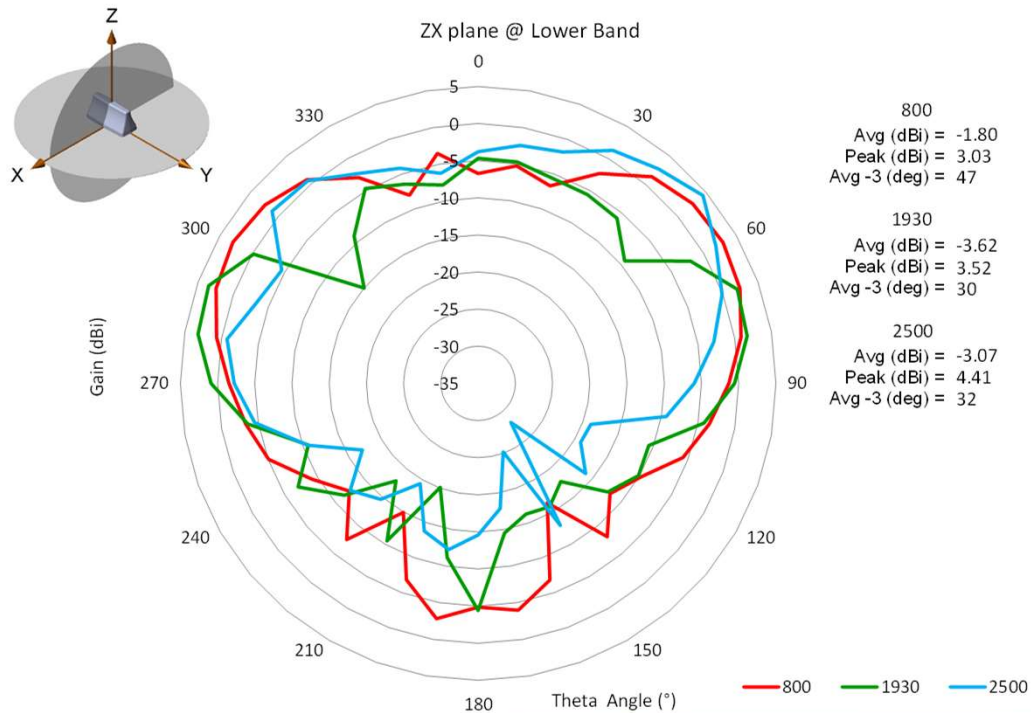
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CHARTS

LTE 1
Measured with
914mm (36") cable



LTE 1
Measured with
914mm (36") cable



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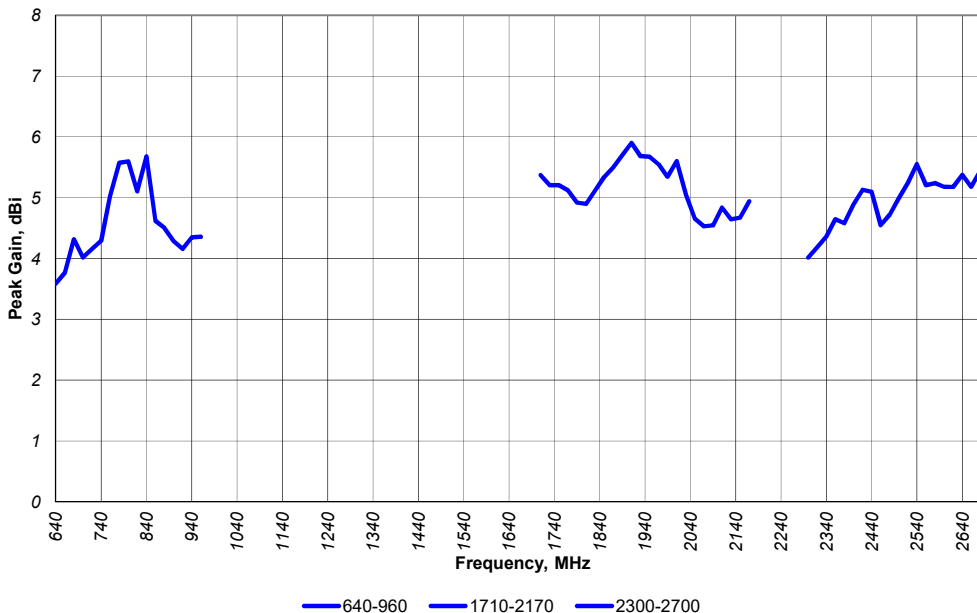
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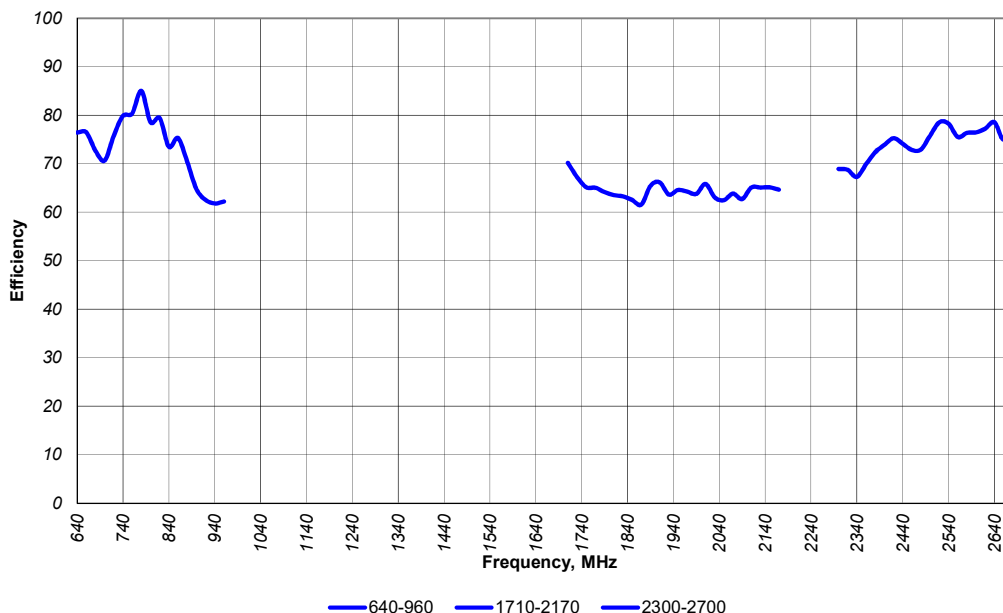
CHARTS

Peak Gain vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (LTE 2)
Measured at Pulse, USA - July 07, 2017



LTE 2
Measured with
914mm (36") cable

Efficiency vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (LTE 2)
Measured at Pulse, USA - July 07, 2017



LTE 2
Measured with
914mm (36") cable

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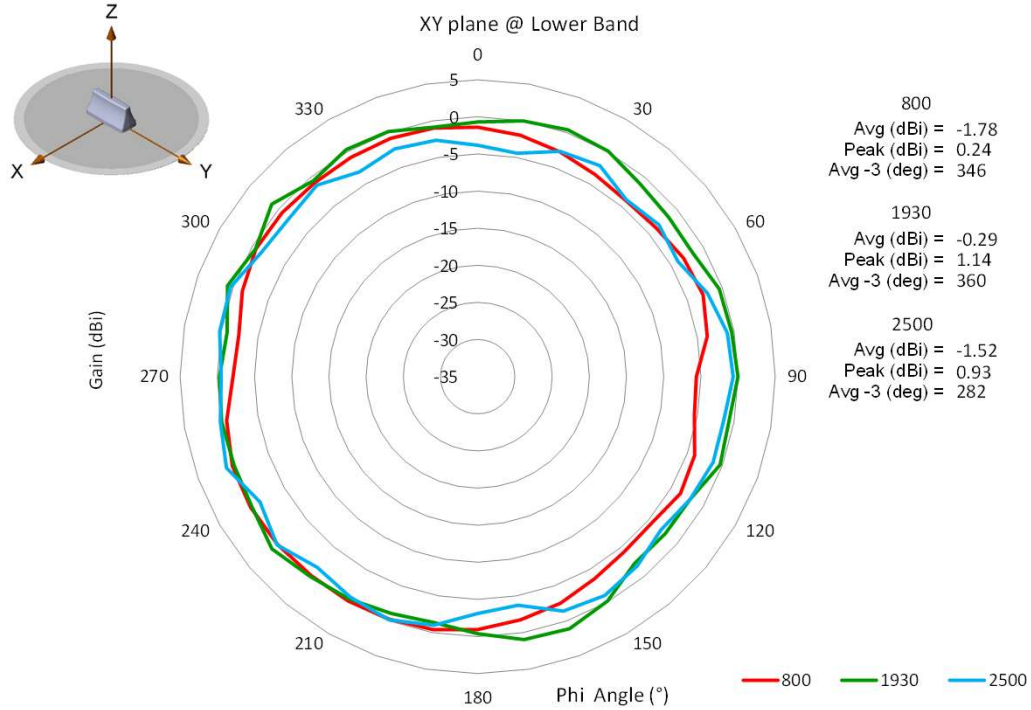
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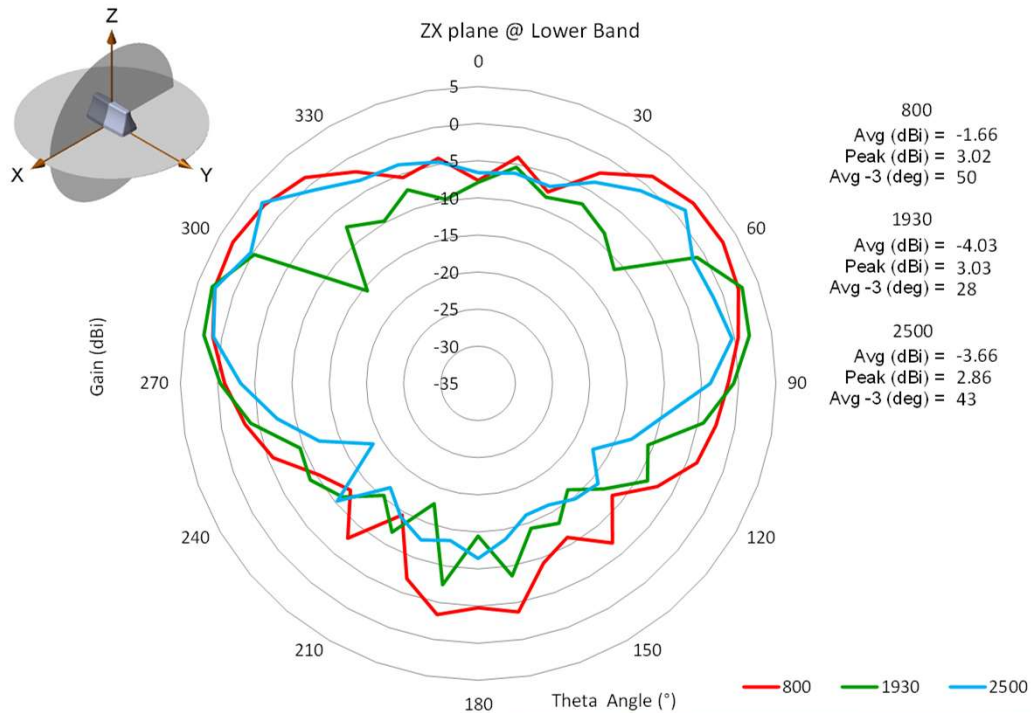
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CHARTS

LTE 2
Measured with
914mm (36") cable



LTE 2
Measured with
914mm (36") cable



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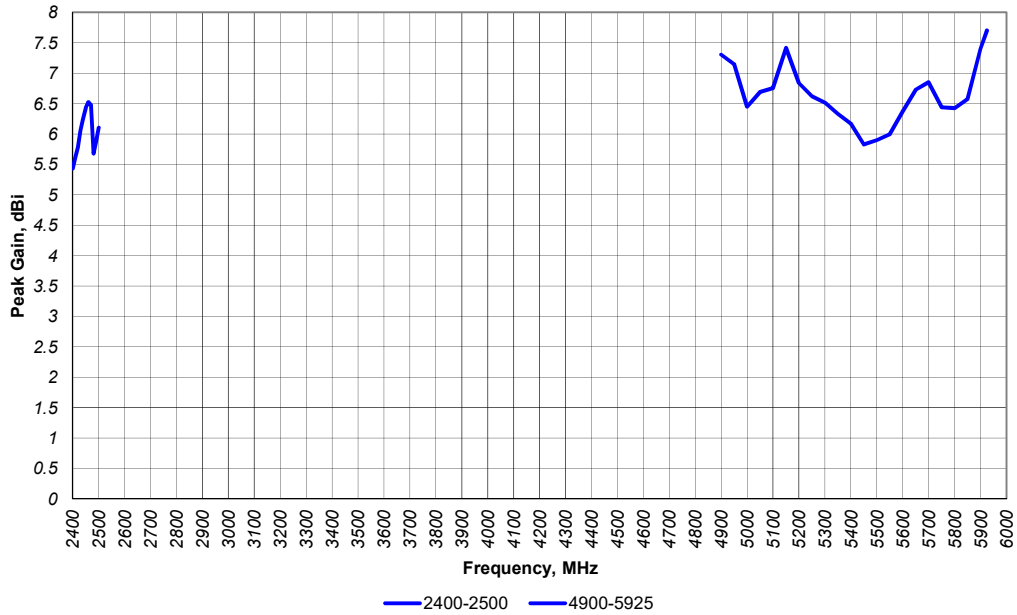
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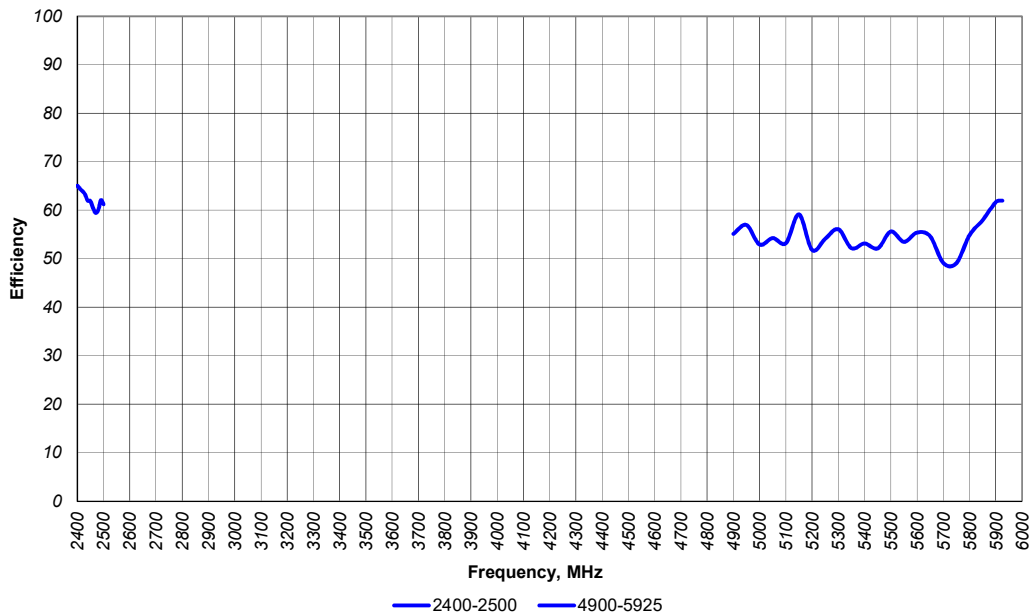
CHARTS

Peak Gain vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 1)
Measured at Pulse, USA - July 07, 2017



WiFi 1
Measured with
914mm (36") cable

Efficiency vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 1)
Measured at Pulse, USA - July 07, 2017



WiFi 1
Measured with
914mm (36") cable

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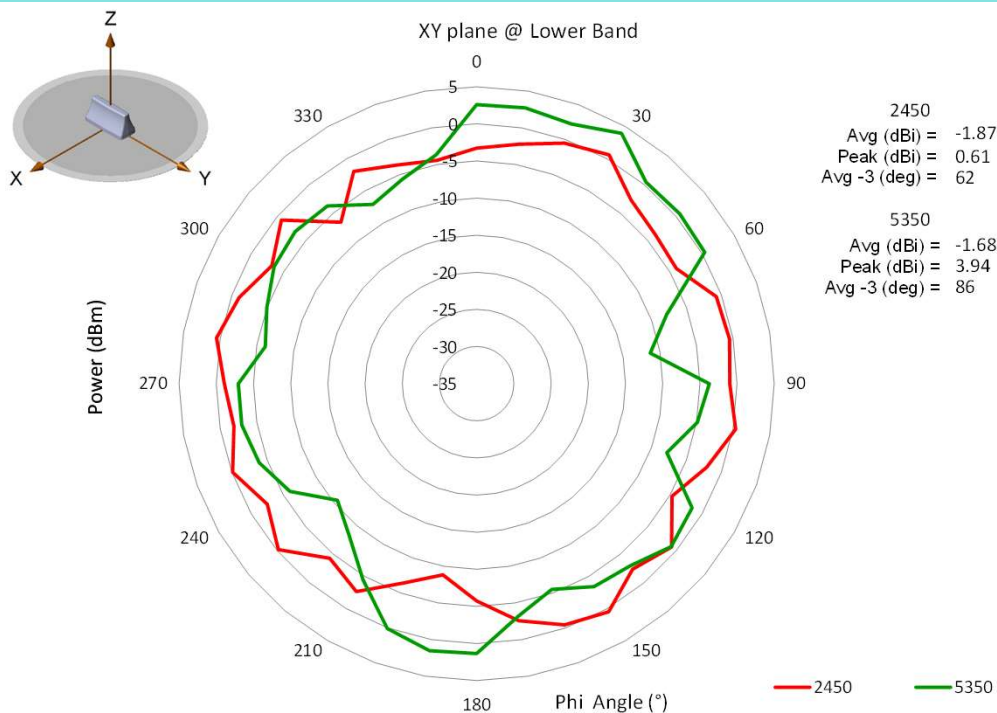
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CHARTS

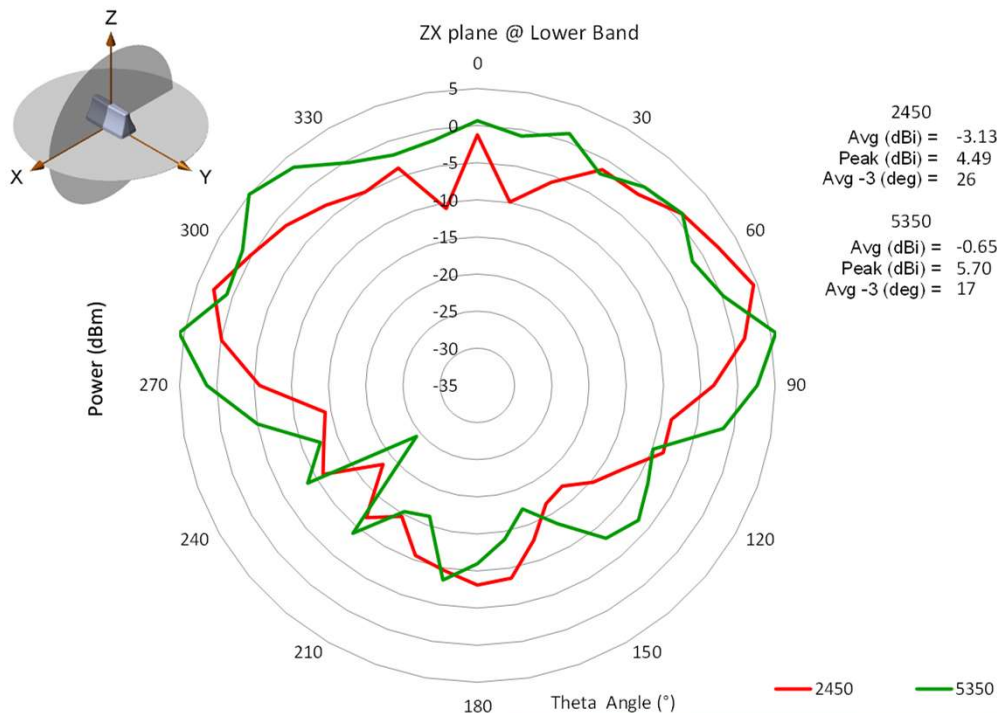
WiFi 1

Measured with
914mm (36") cable



WiFi 1

Measured with
914mm (36") cable



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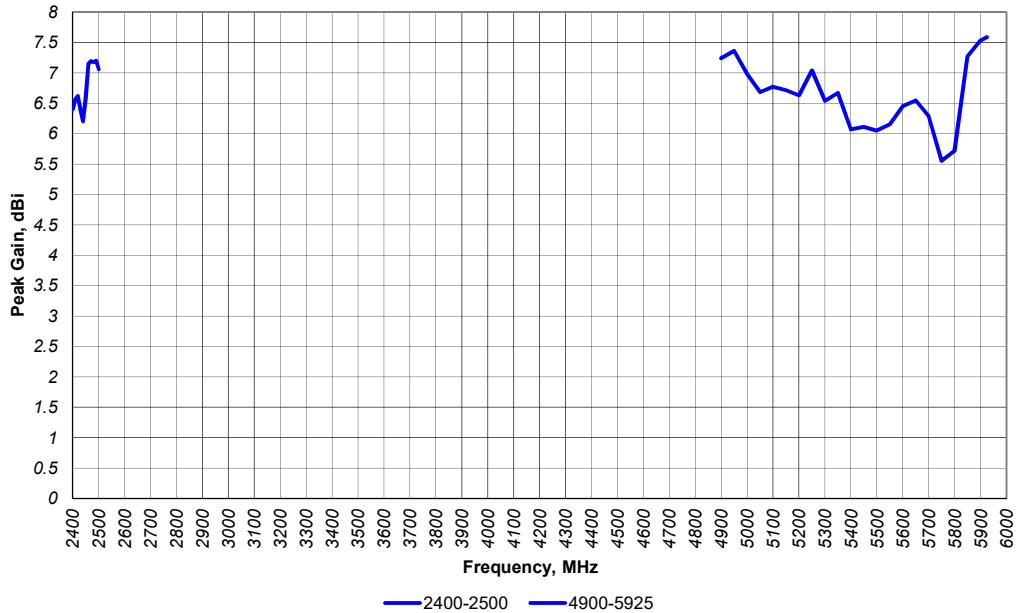
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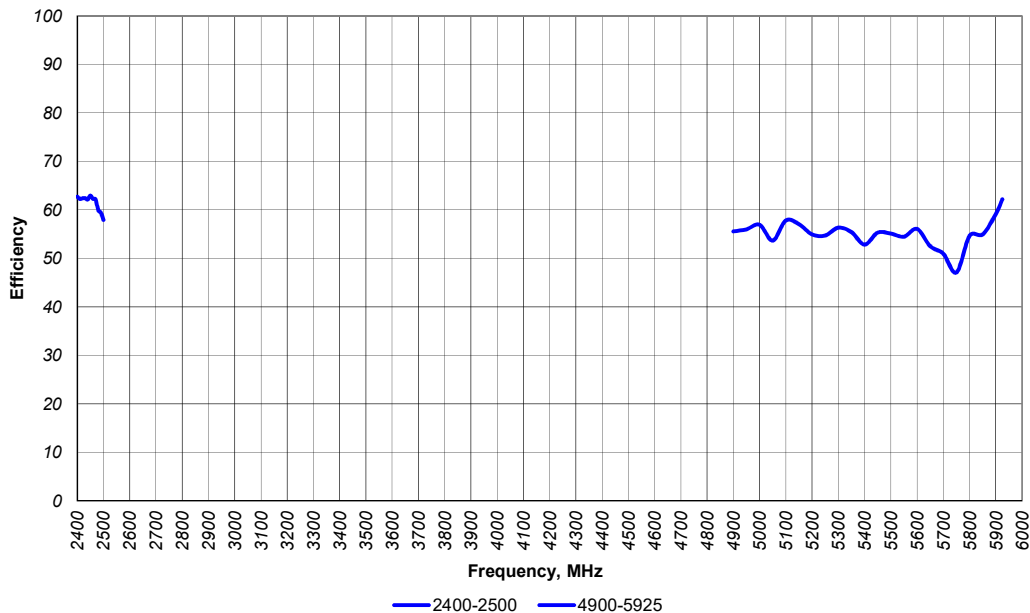
CHARTS

Peak Gain vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 2)
Measured at Pulse, USA - July 07, 2017



WiFi 2
Measured with
914mm (36") cable

Efficiency vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 2)
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WiFi 2
Measured with
914mm (36") cable

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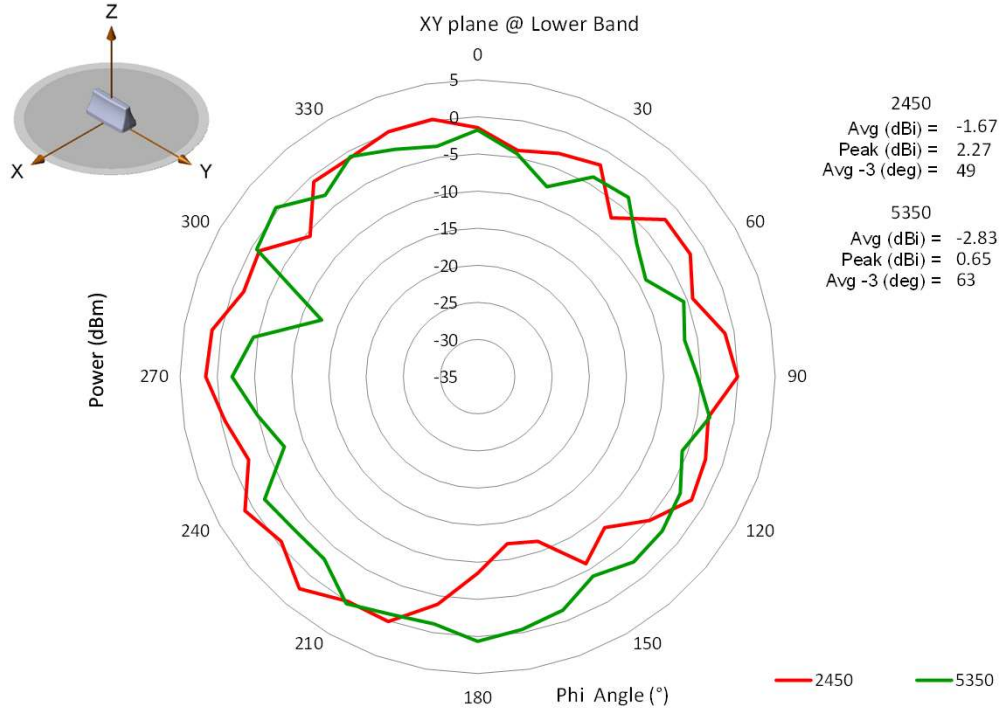
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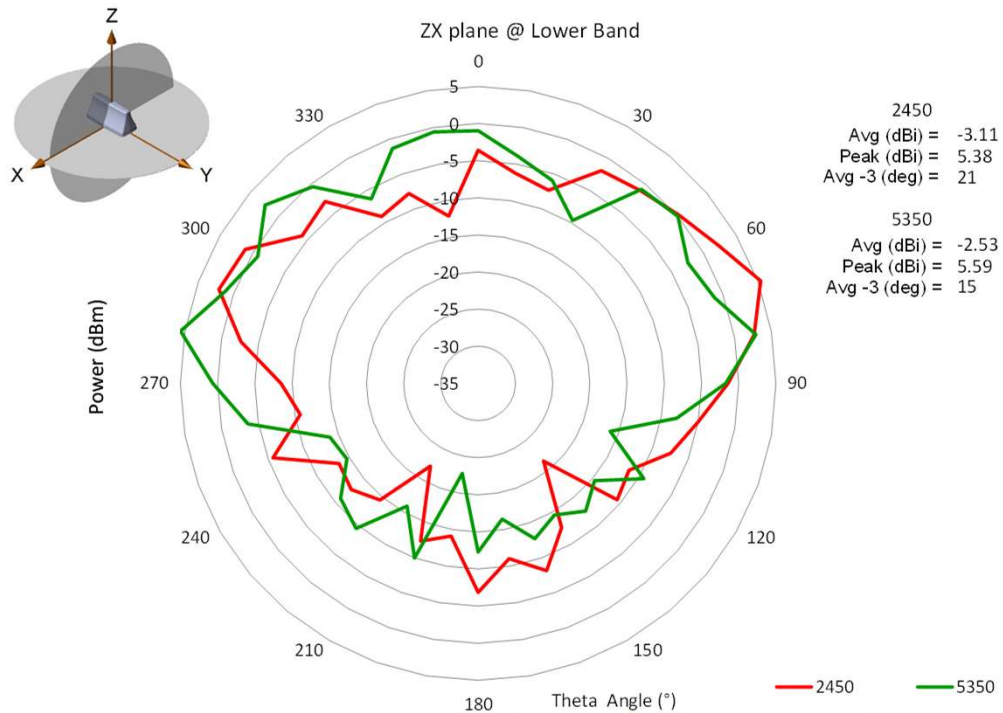
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CHARTS

WiFi 2
Measured with
914mm (36") cable



WiFi 2
Measured with
914mm (36") cable



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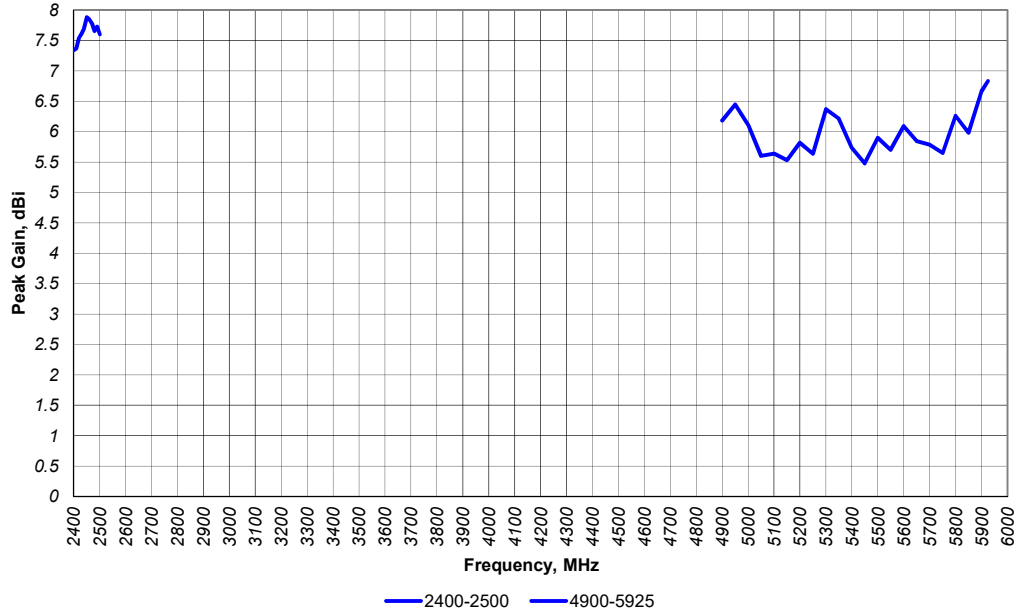
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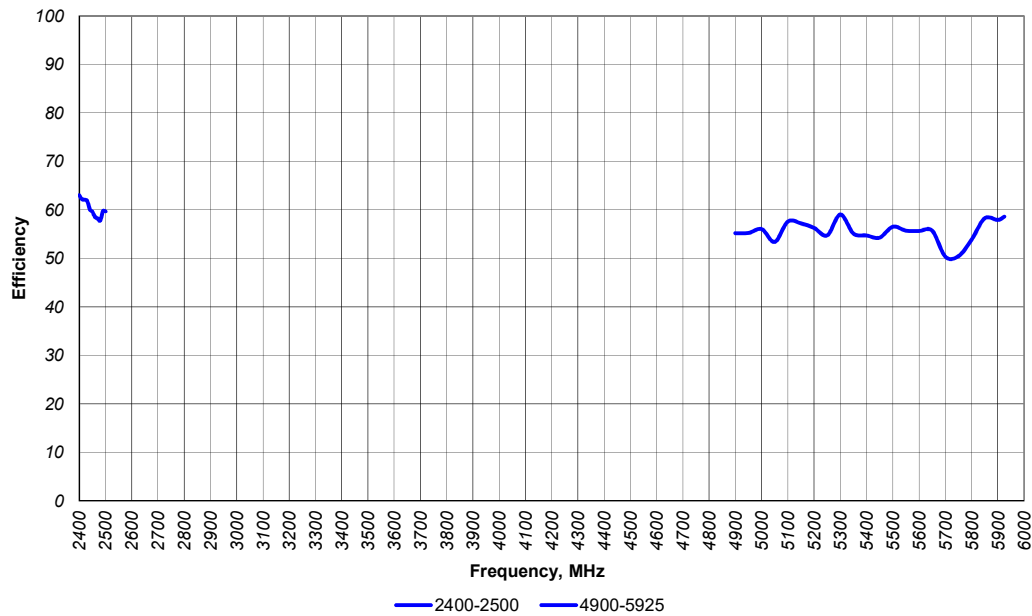
CHARTS

Peak Gain vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 3)
Measured at Pulse, USA - July 07, 2017



WiFi 3
Measured with
914mm (36") cable

Efficiency vs Frequency
RAZ62311MM Measured with 3ft cables on Ø40" GP (WiFi 3)
Measured at Pulse, USA - July 07, 2017



WiFi 3
Measured with
914mm (36") cable

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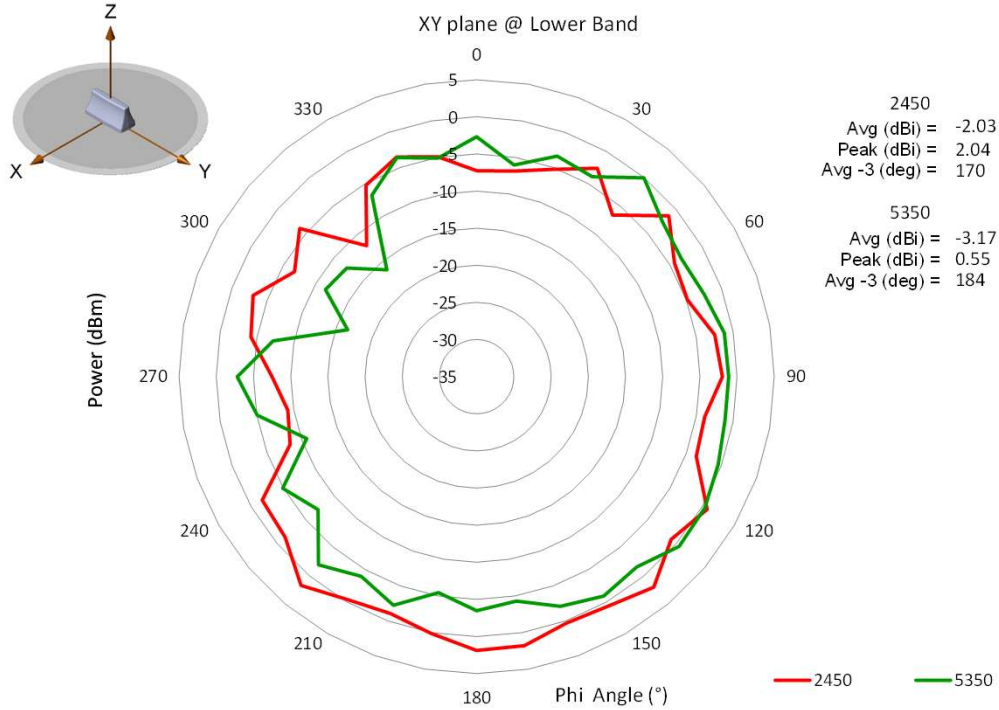
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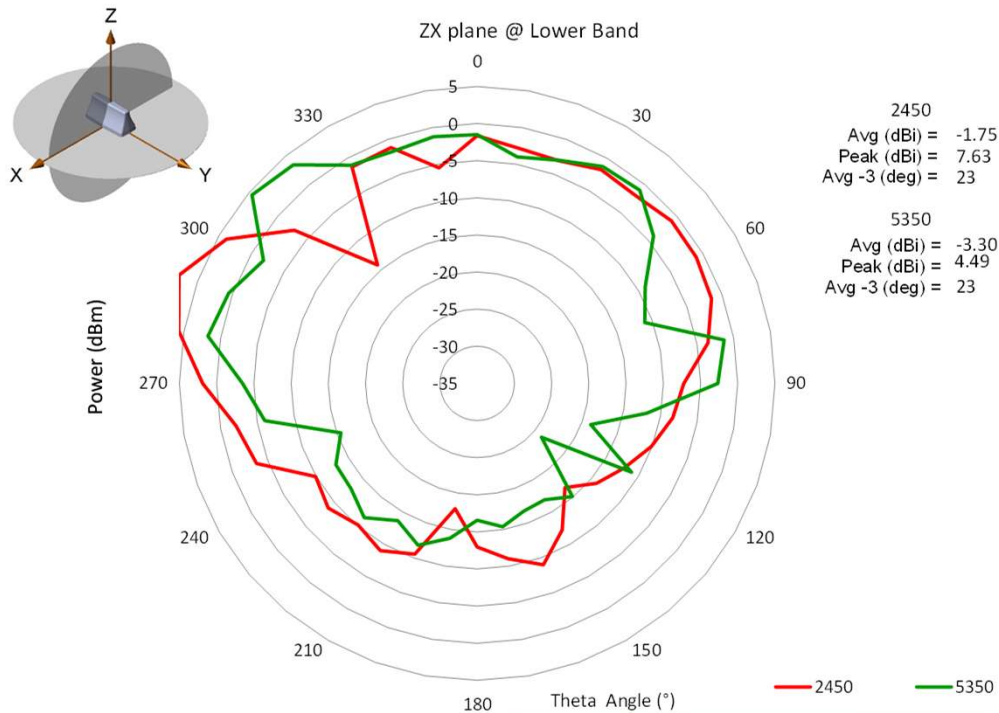
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CHARTS

WiFi 3
Measured with
914mm (36") cable



WiFi 3
Measured with
914mm (36") cable



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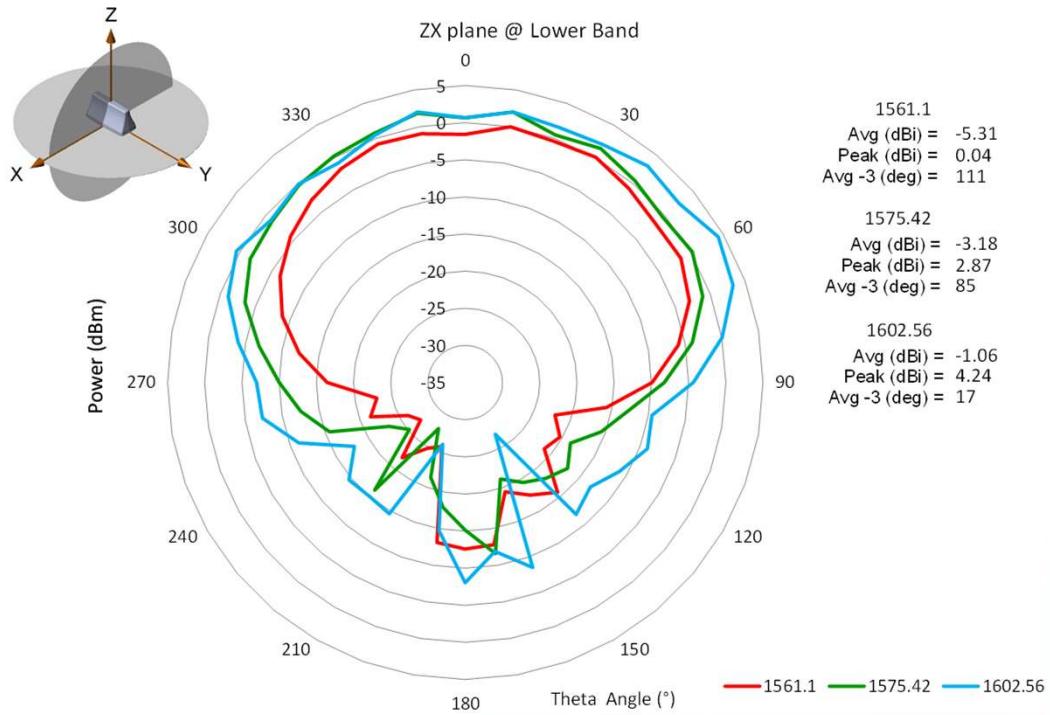
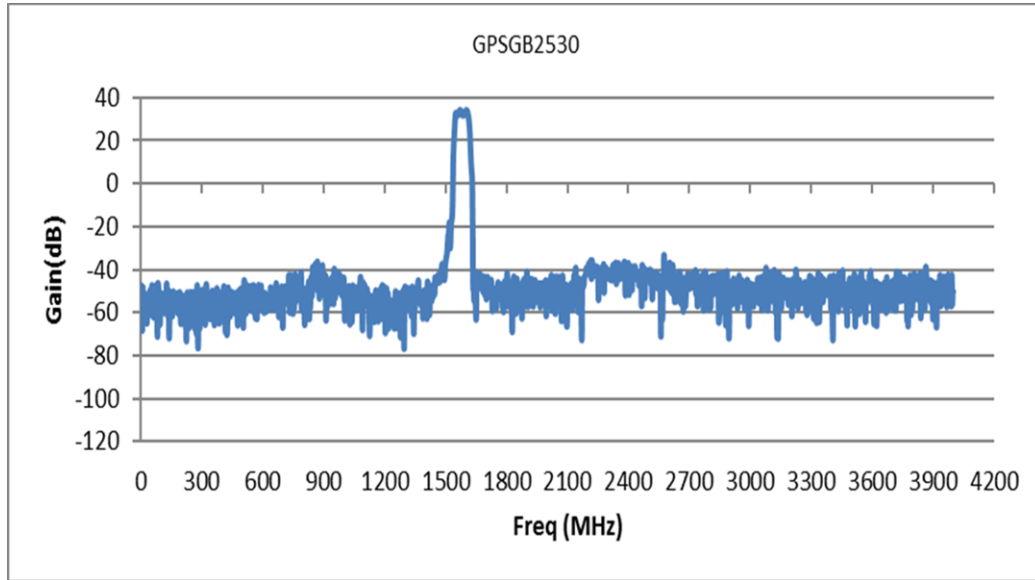
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Series: RAZORBACK

PART NUMBER: RAZ32011MM, RAZ32012MM, RAZ42111MM,
RAZ42112MM, RAZ52211MM, RAZ52212MM, RAZ62311MM, RAZ62312MM

CHARTS

GNSS LNA Gain and out-of-band rejection



GNSS

Passive
Measurement
Measured with
152mm (6") cable

Issue: 1742

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

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Description: GNSS / 2x LTE / 0, 1x, 2x or 3x WiFi
Magnetic Mount

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PACKAGING

1pcs antennas per foam bag

6pcs antennas per package box

Total 6pcs antenna per package box

Package box: 558mm*386mm*210mm