PulseLARSEN Antennas

TECHNICAL DATA SHEET

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

**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

RoHS COMPLIANT

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Suzhou New District
Jiangsu Province, Suzhou 215009 PR China
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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<br>1x, 2x or 3x WiFi, 5.2m (17') LMR-195/RP-SMA-Male<br>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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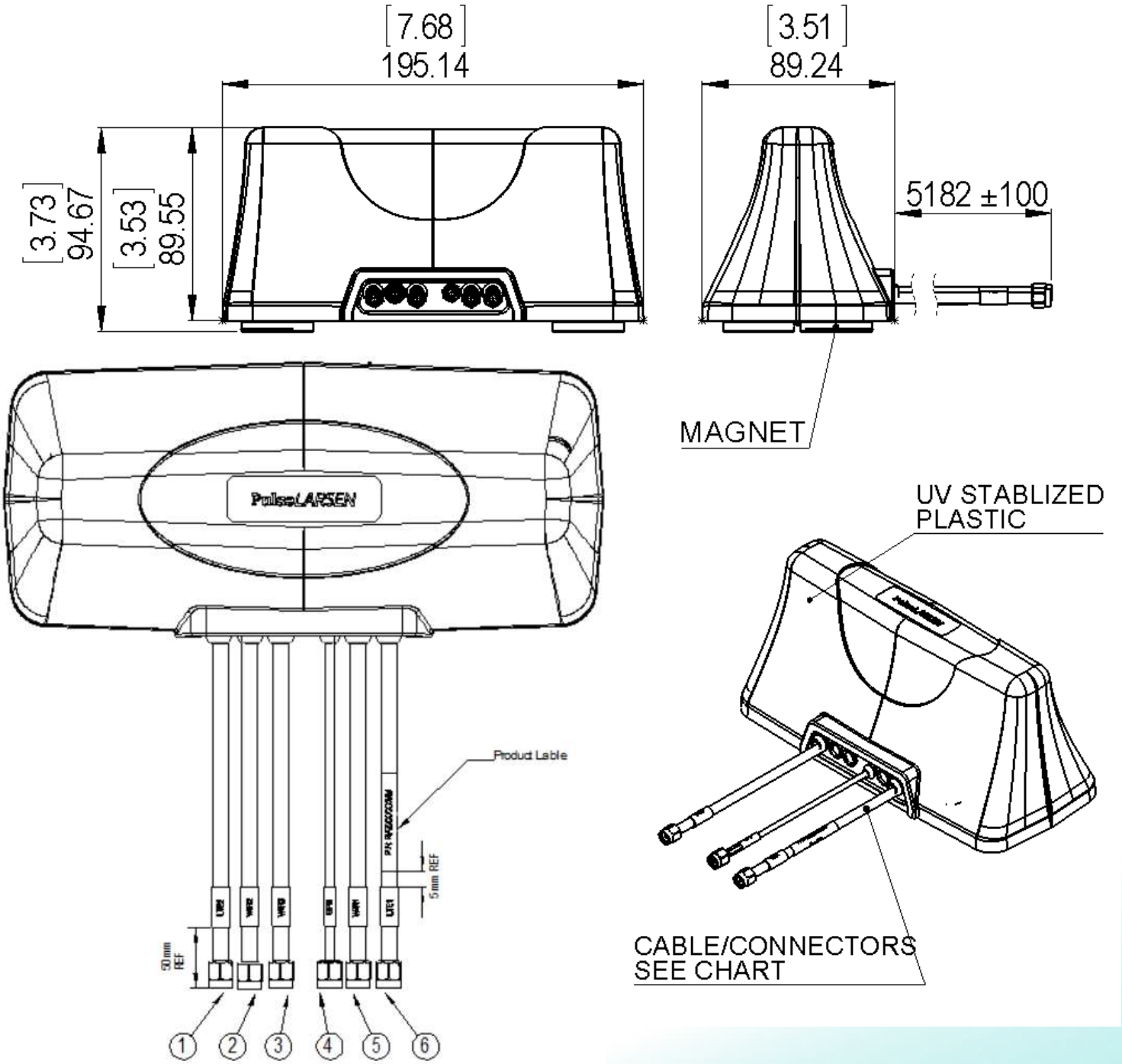
## MECHANICAL DRAWING




All dimensions are in mm / inches

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## MECHANICAL DRAWING

### Vehicular Multiband Antenna with Magnet Mount

(Part Number)

| RAZ | X | X | X | X | X | MM |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | |
|---|---|
| 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<br>1=Black; 2=White |
| 7 | Mounting:Magnet Mount |

| RAZXXXXXMM | | 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 | | | |
| 4 | GPS Cable Assy | RG-174 | | SMA Male |
| 5 | WiFi-1Cable Assy | LMR195 | | RP-SMA Male |
| 6 | LTE1 Cable Assy | | | SMA Male |

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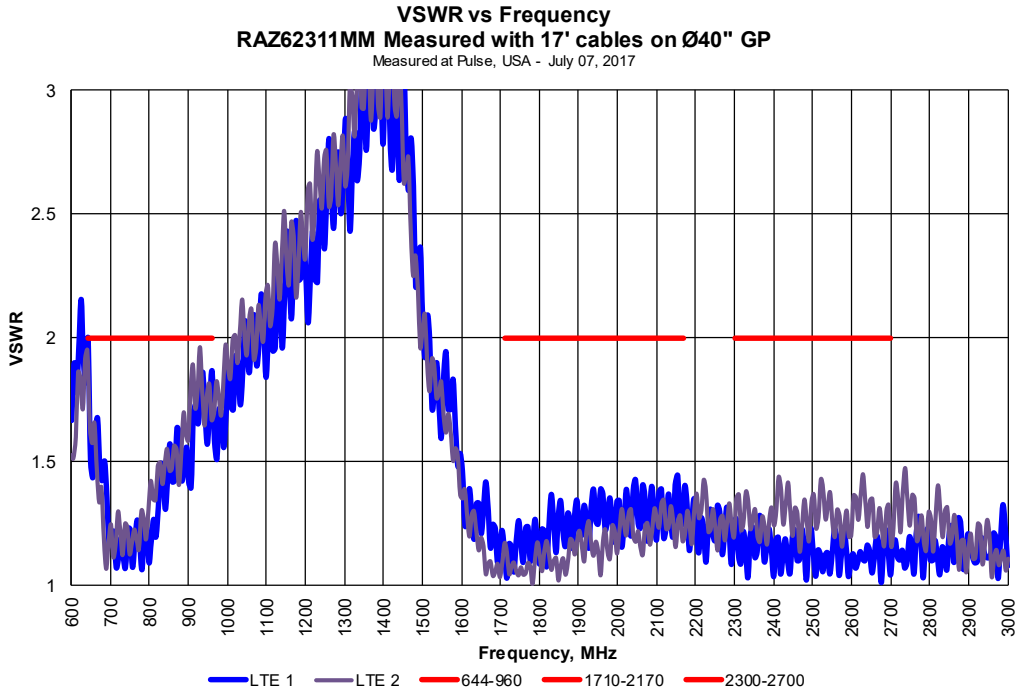
## CHARTS

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

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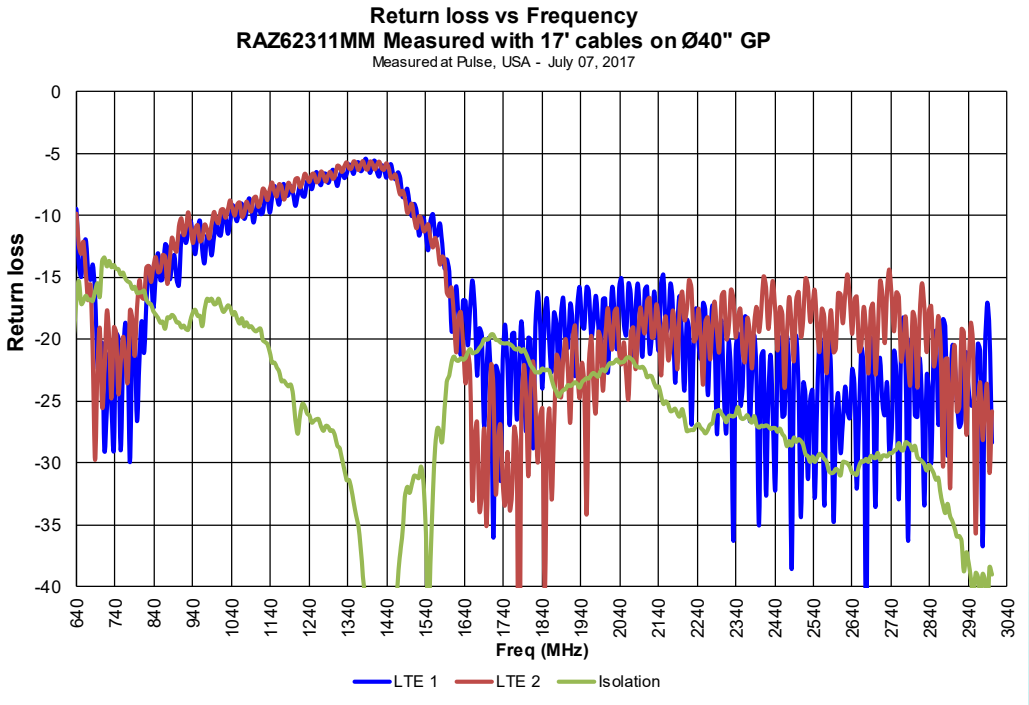




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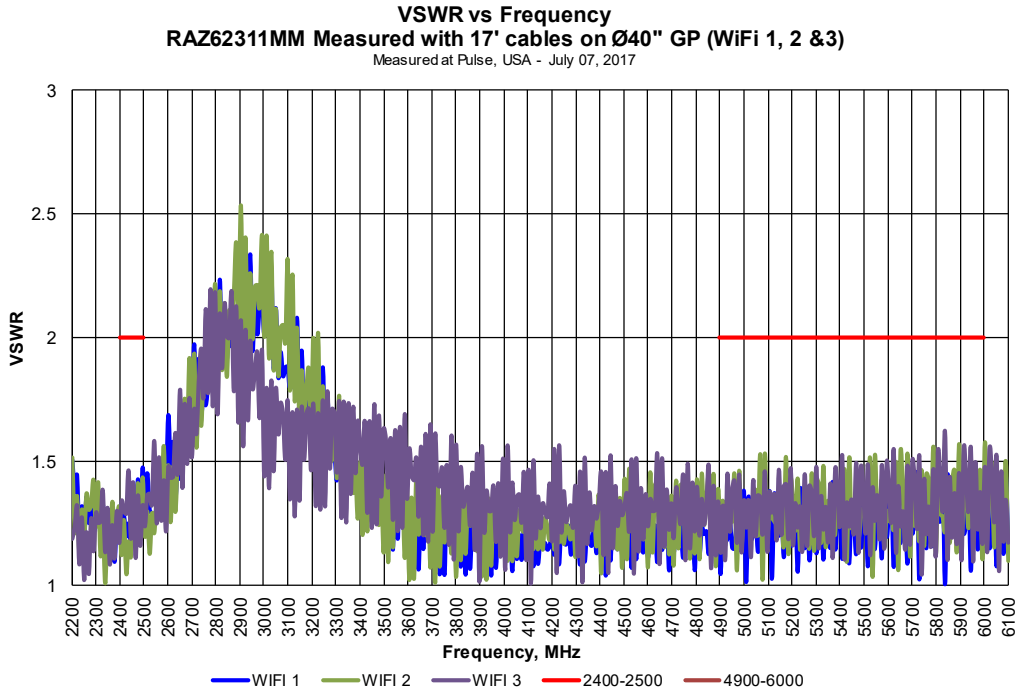
## CHARTS

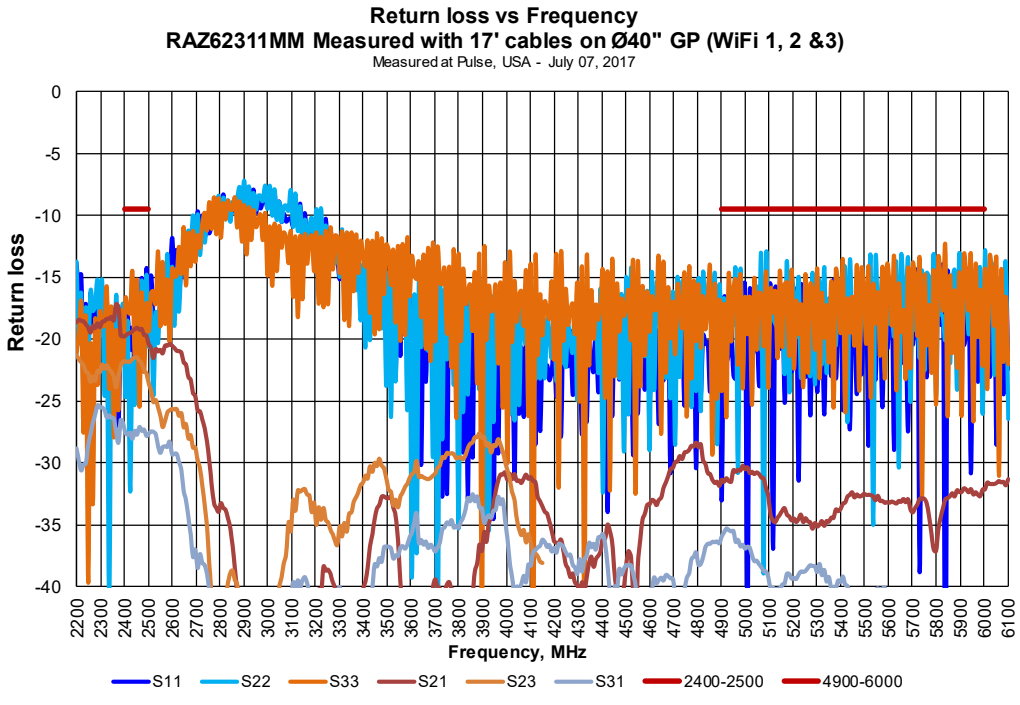
### WiFi 1, 2 & 3

Measured with 5.2m (17') cable




### WiFi 1, 2 & 3

Measured with 5.2m (17') cable

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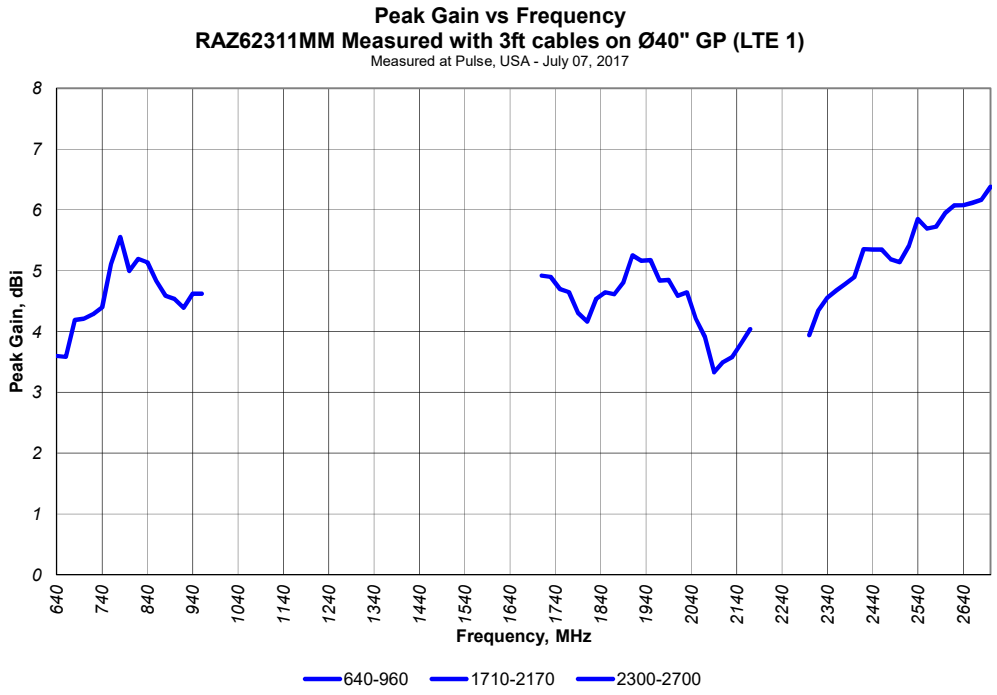
## CHARTS

LTE 1
Measured with
914mm (36") cable

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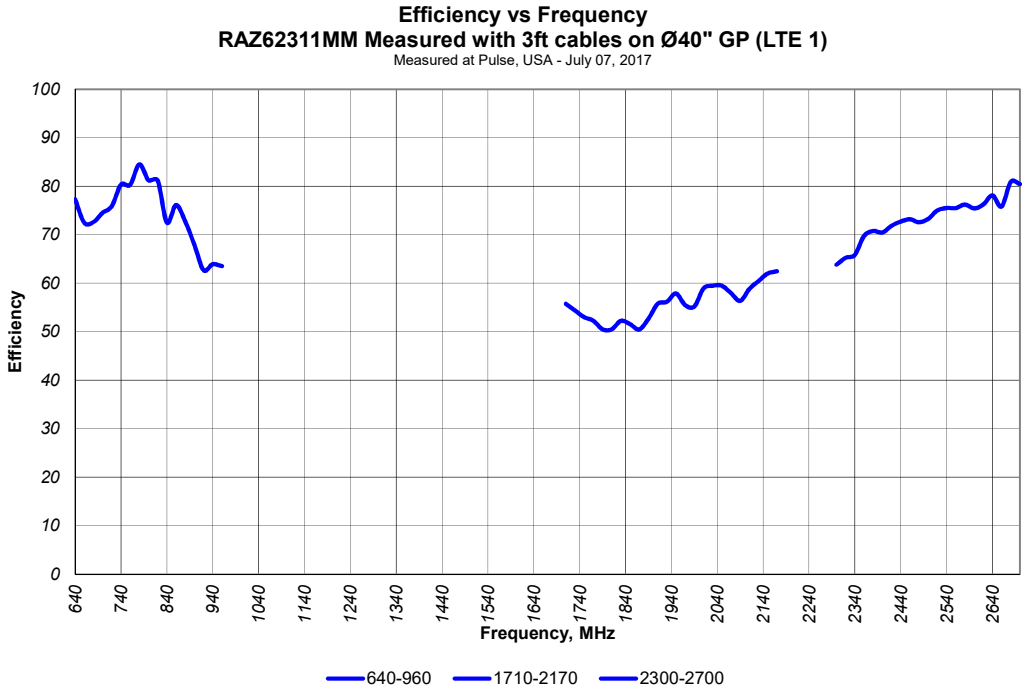




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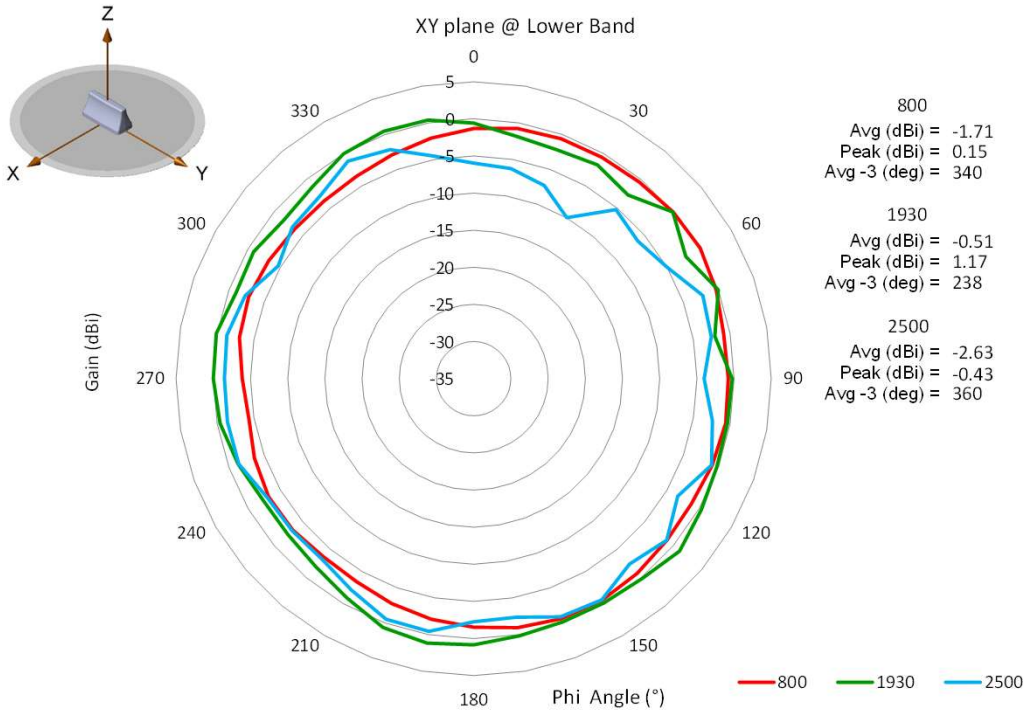


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Measured with
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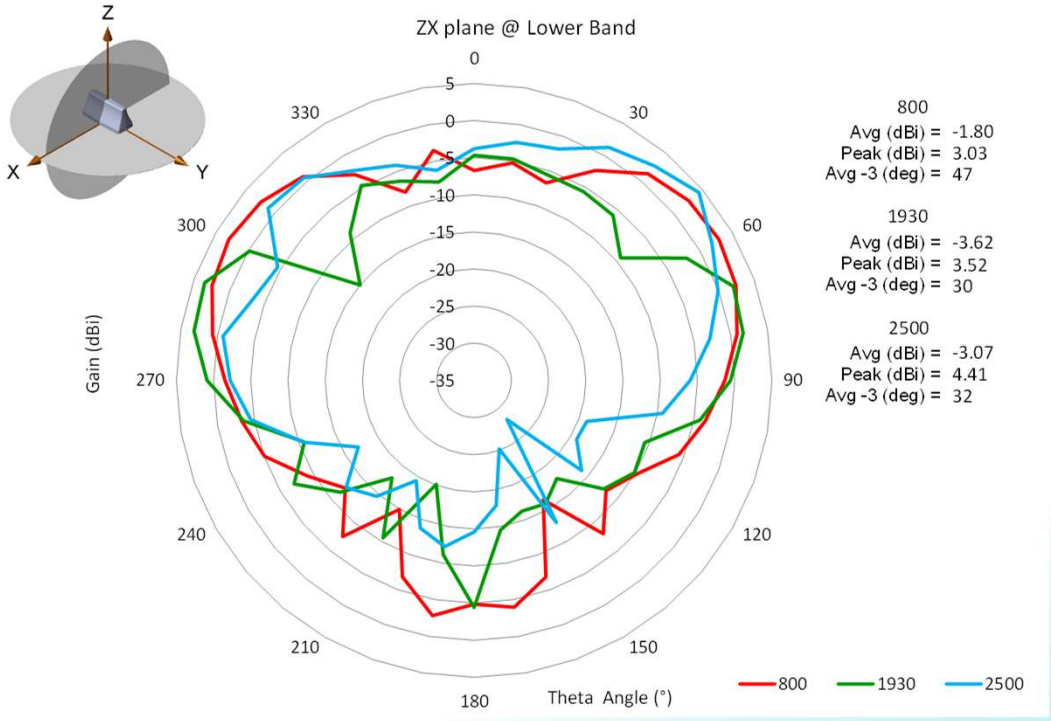




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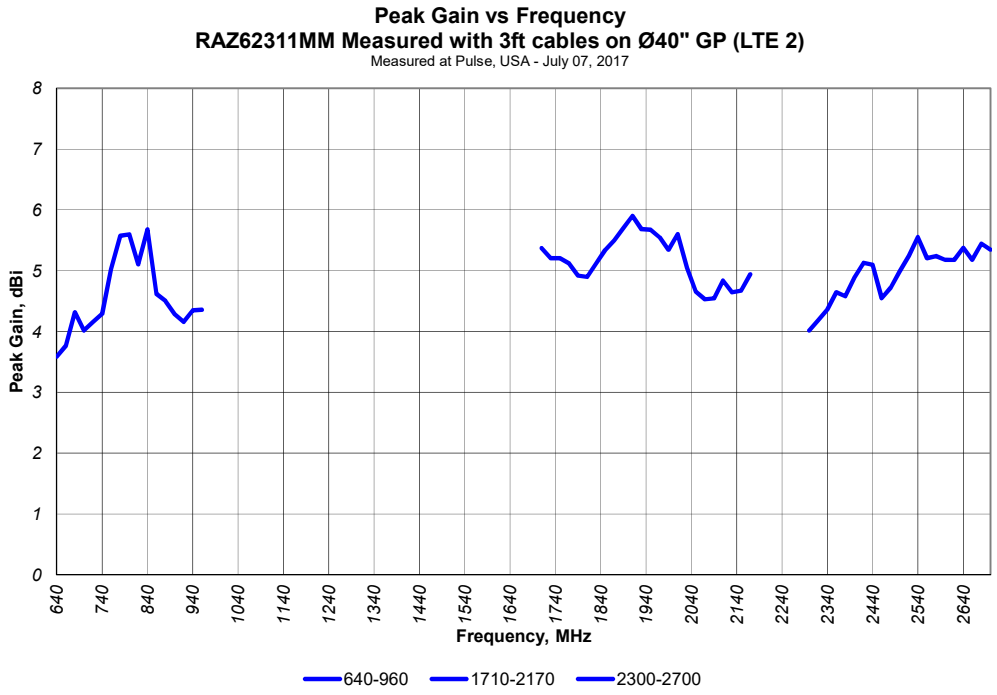
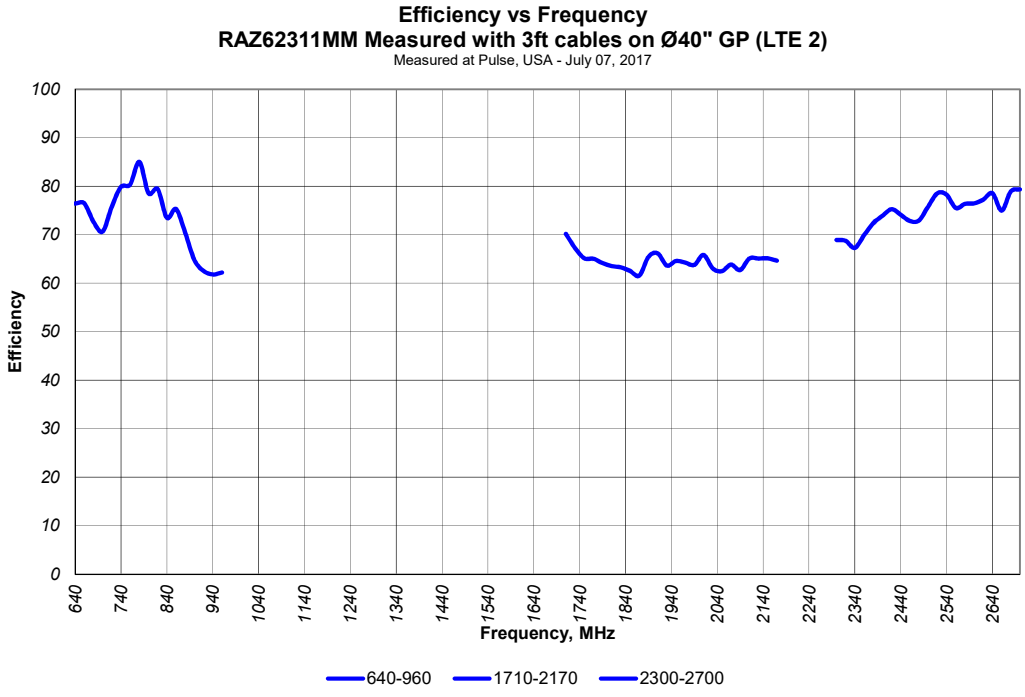
## CHARTS

LTE 2
Measured with
914mm (36") cable




LTE 2
Measured with
914mm (36") cable



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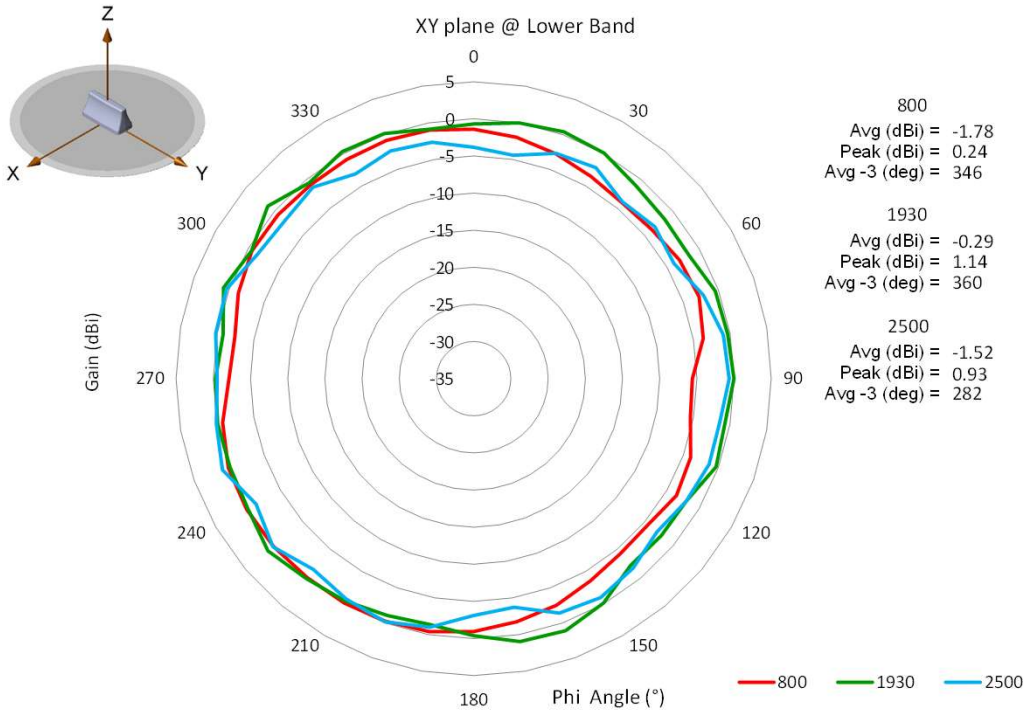


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Measured with
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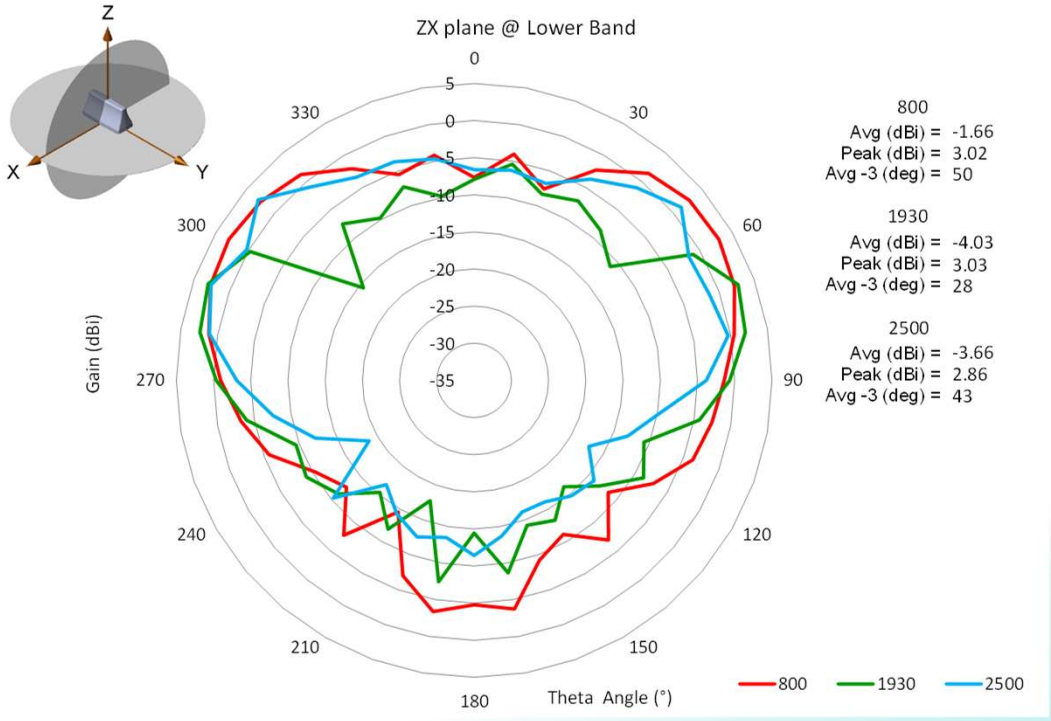




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WiFi 1
Measured with
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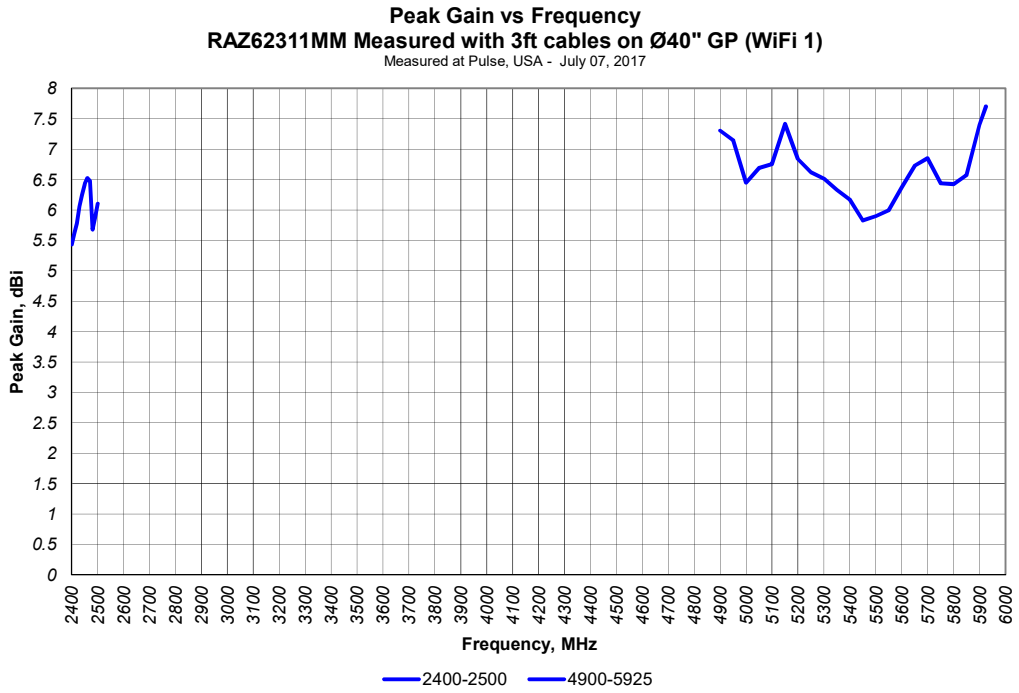


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Measured with
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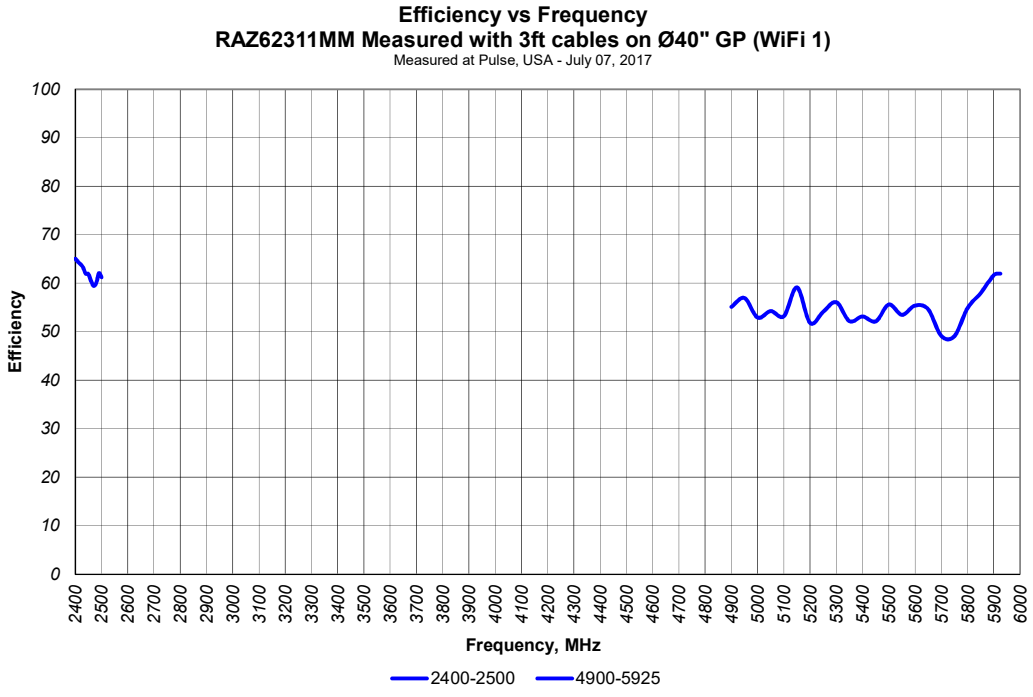




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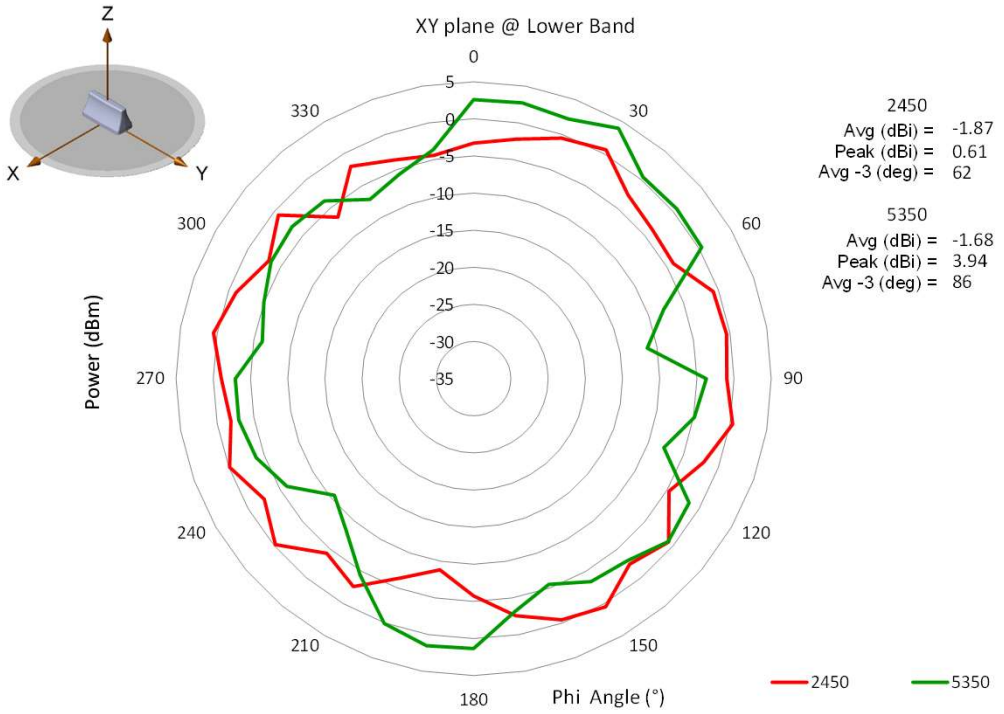


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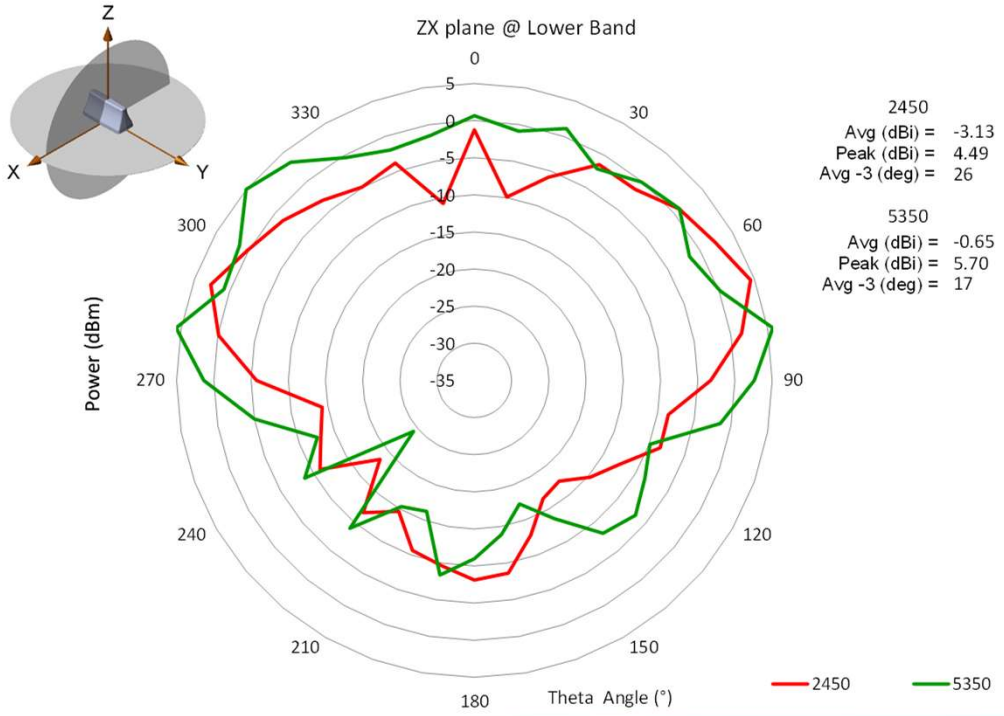




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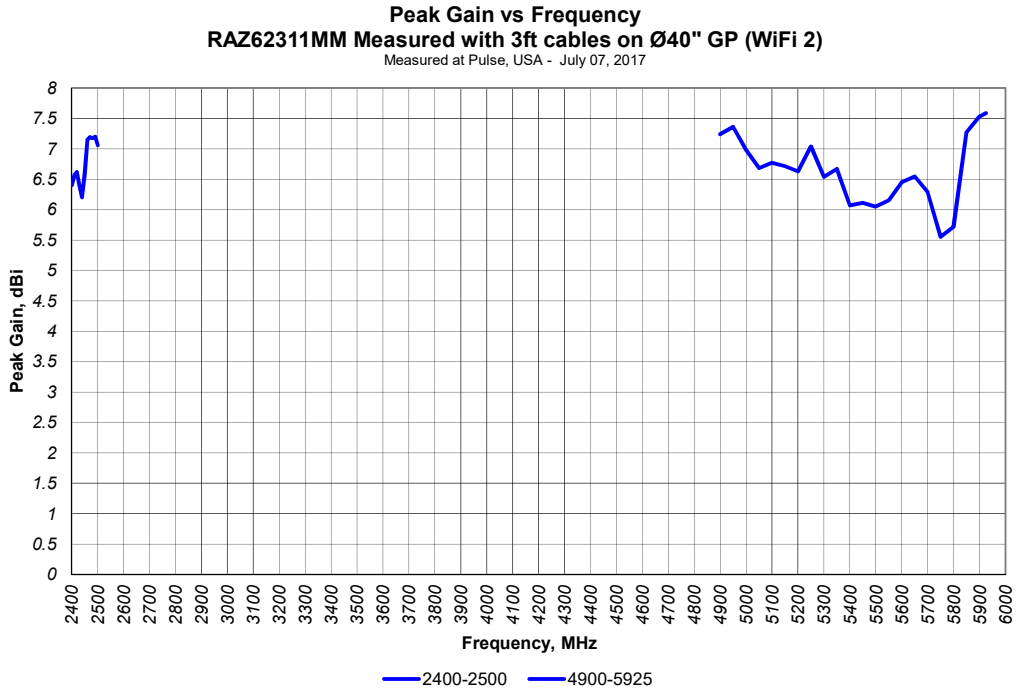
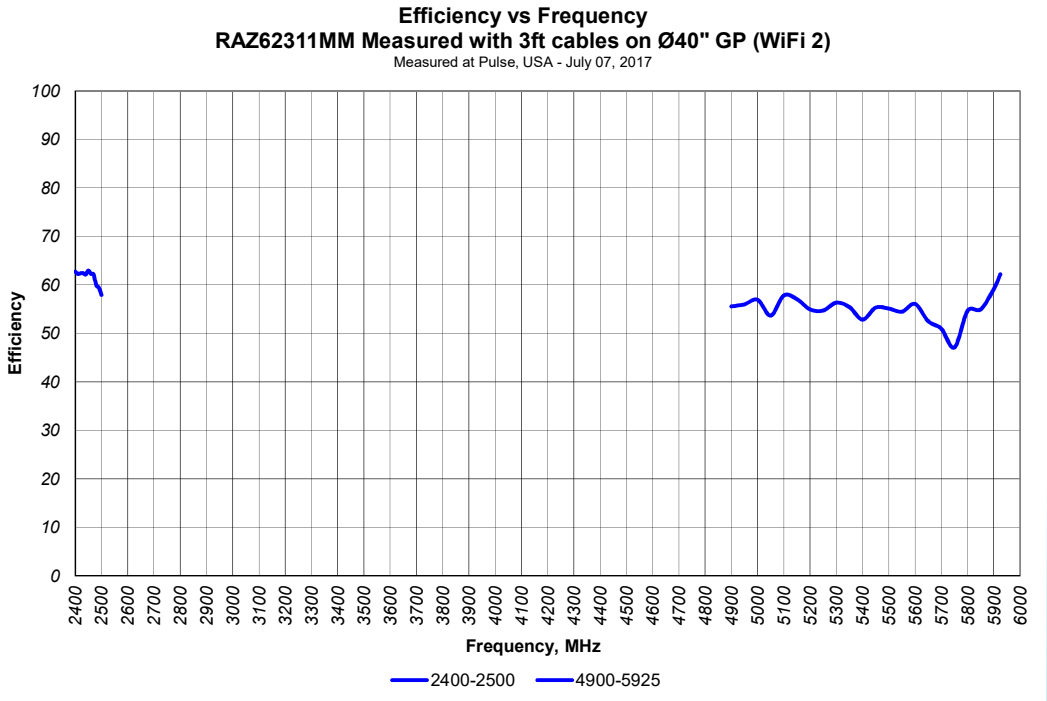
## CHARTS

WiFi 2
Measured with
914mm (36") cable




WiFi 2
Measured with
914mm (36") cable



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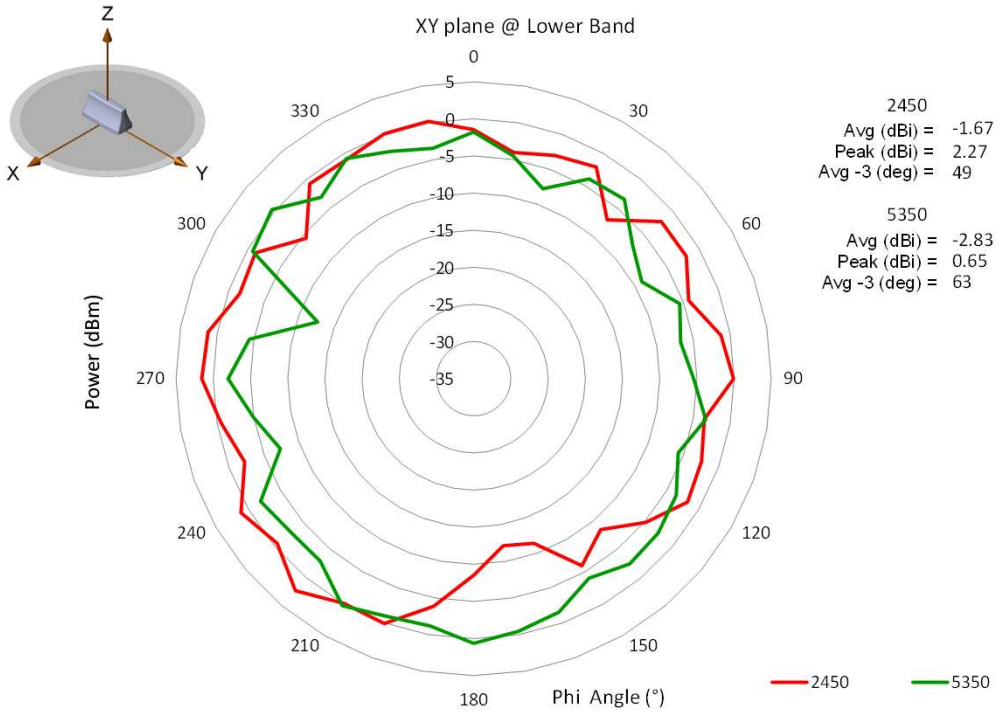
## CHARTS

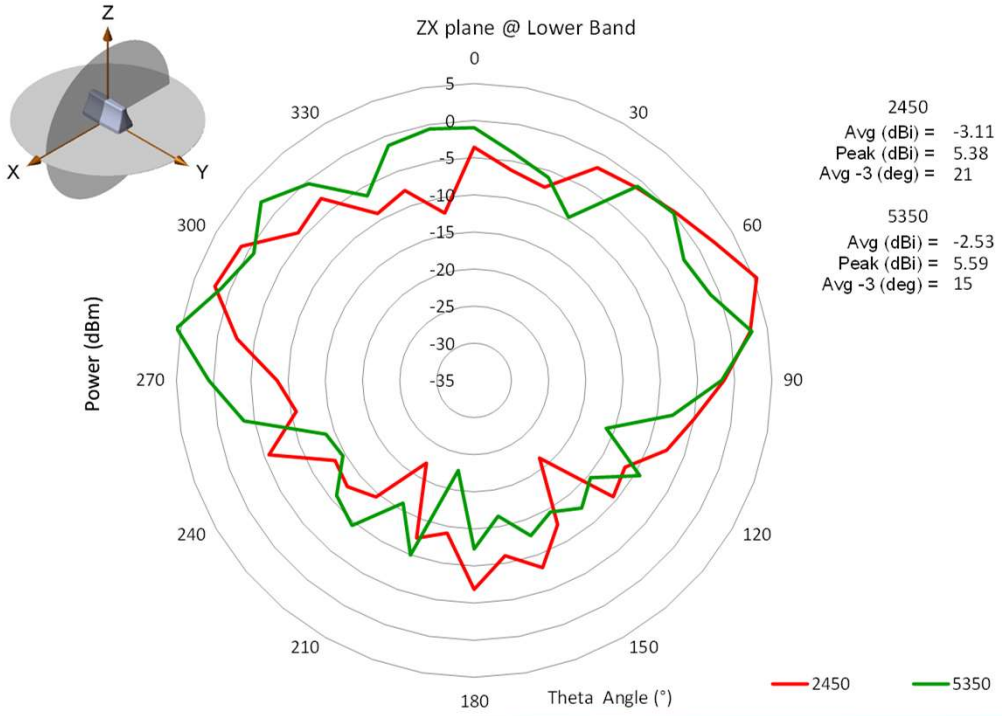
### WiFi 2

Measured with 914mm (36") cable




### WiFi 2

Measured with 914mm (36") cable



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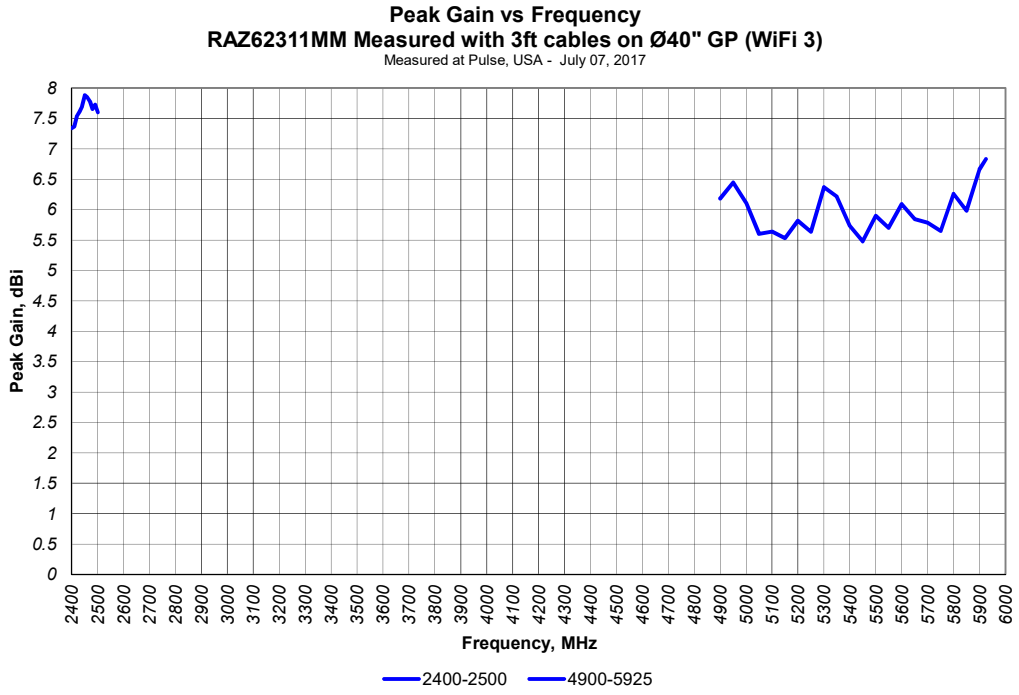
**Description**: GNSS / 2x LTE / 0, 1x, 2x or 3x WiFi Magnetic Mount

**Series: RAZORBACK**

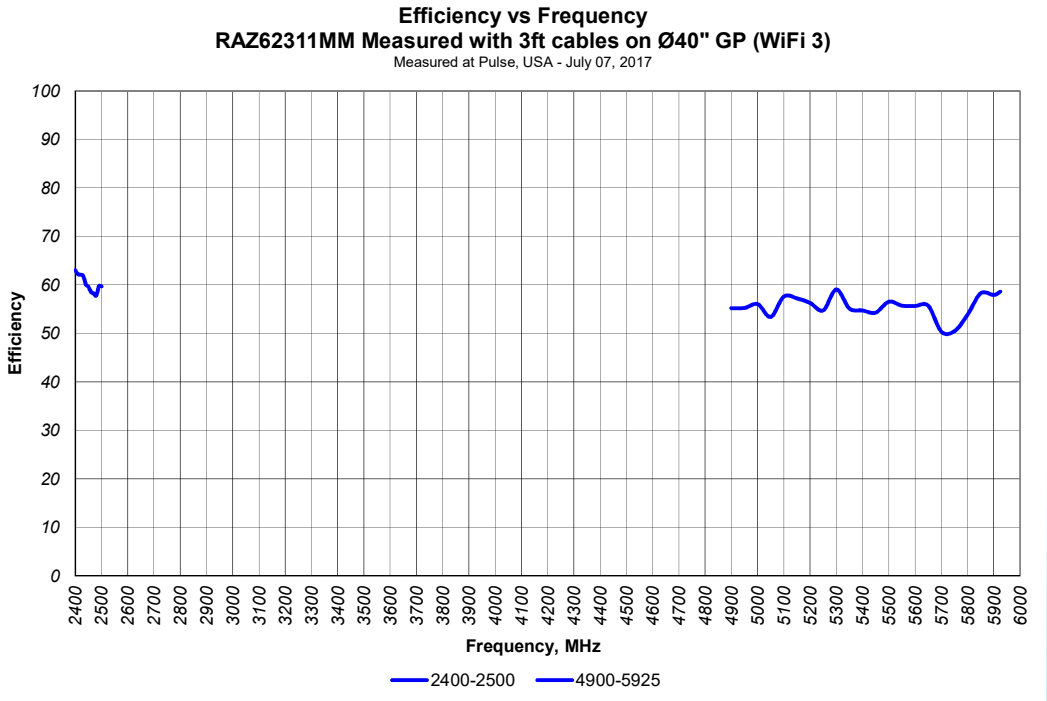
**PART NUMBER: RAZ32011MM, RAZ32012MM, RAZ42111MM, RAZ42112MM, RAZ52211MM, RAZ52212MM, RAZ62311MM, RAZ62312MM**

## CHARTS

WiFi 3
Measured with
914mm (36") cable




WiFi 3
Measured with
914mm (36") cable



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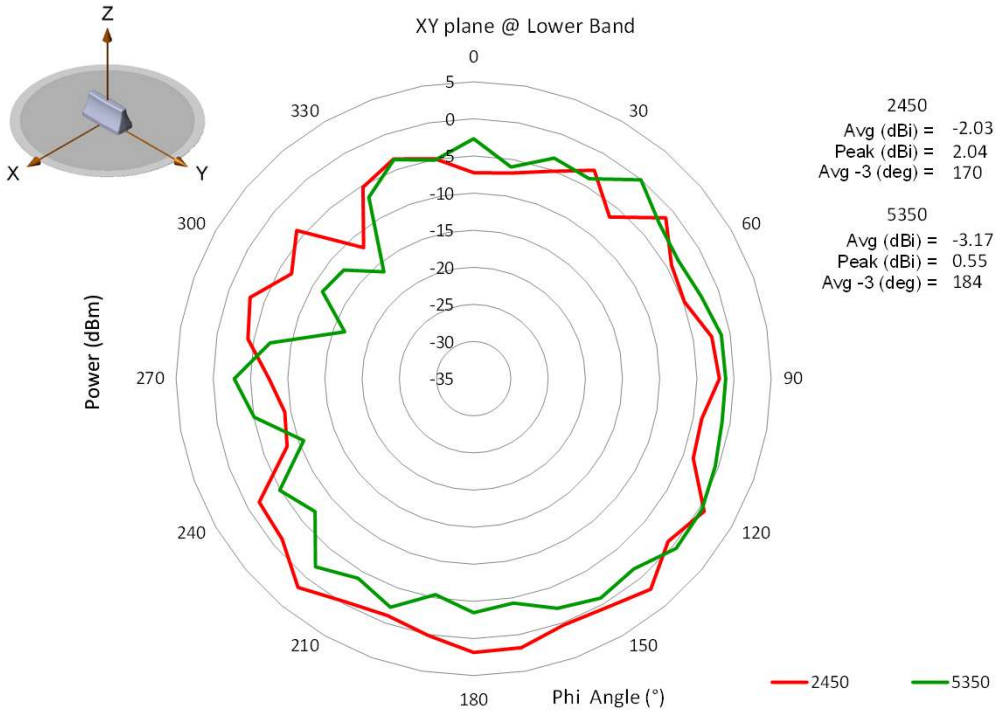
## CHARTS

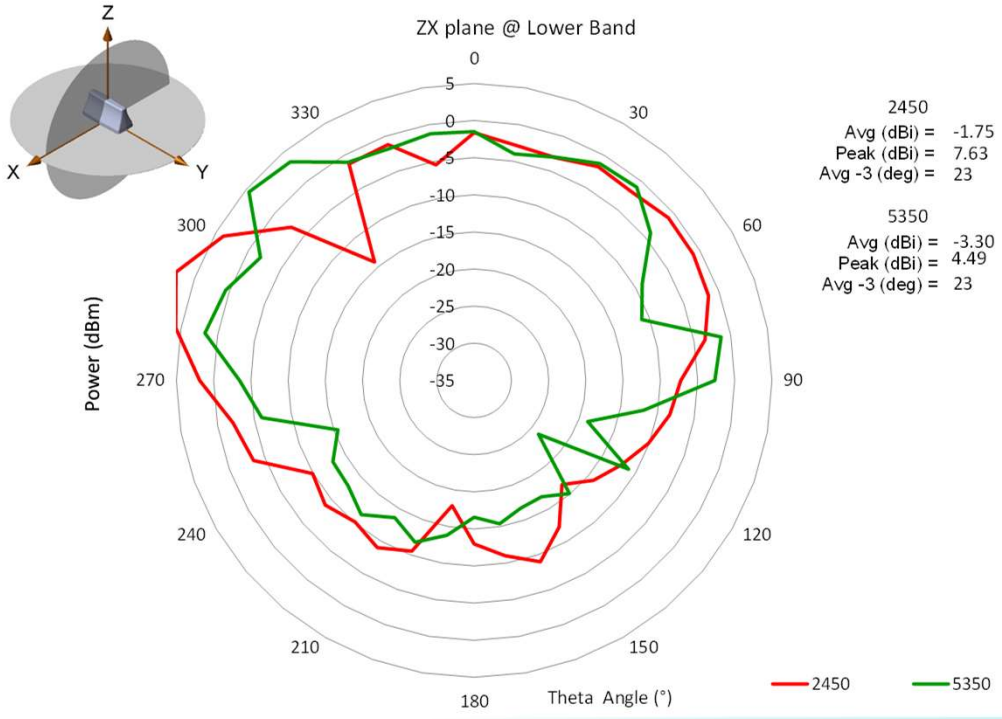
### WiFi 3

Measured with 914mm (36") cable




### WiFi 3

Measured with 914mm (36") cable



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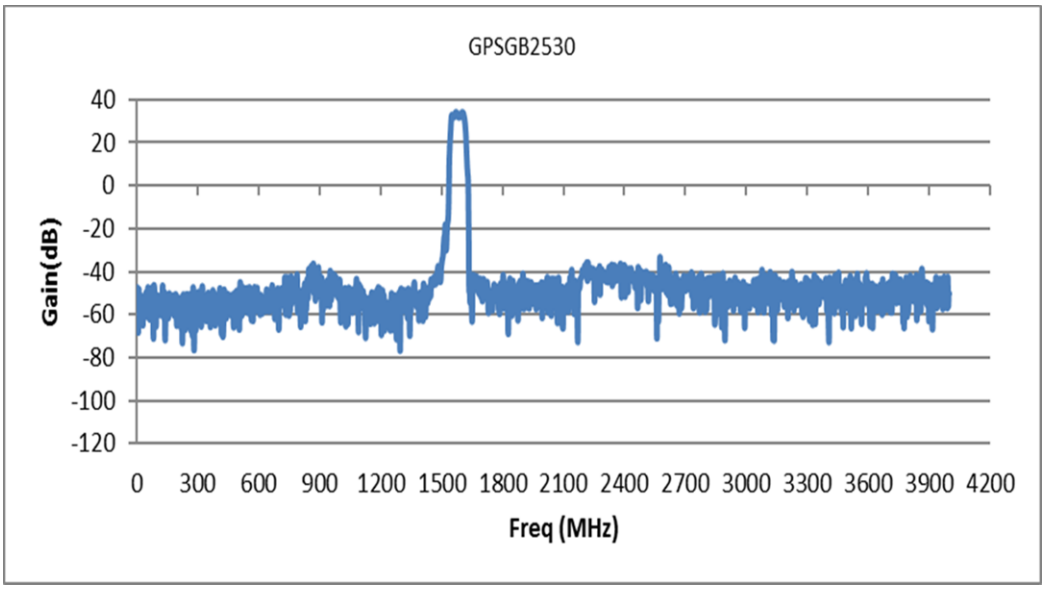
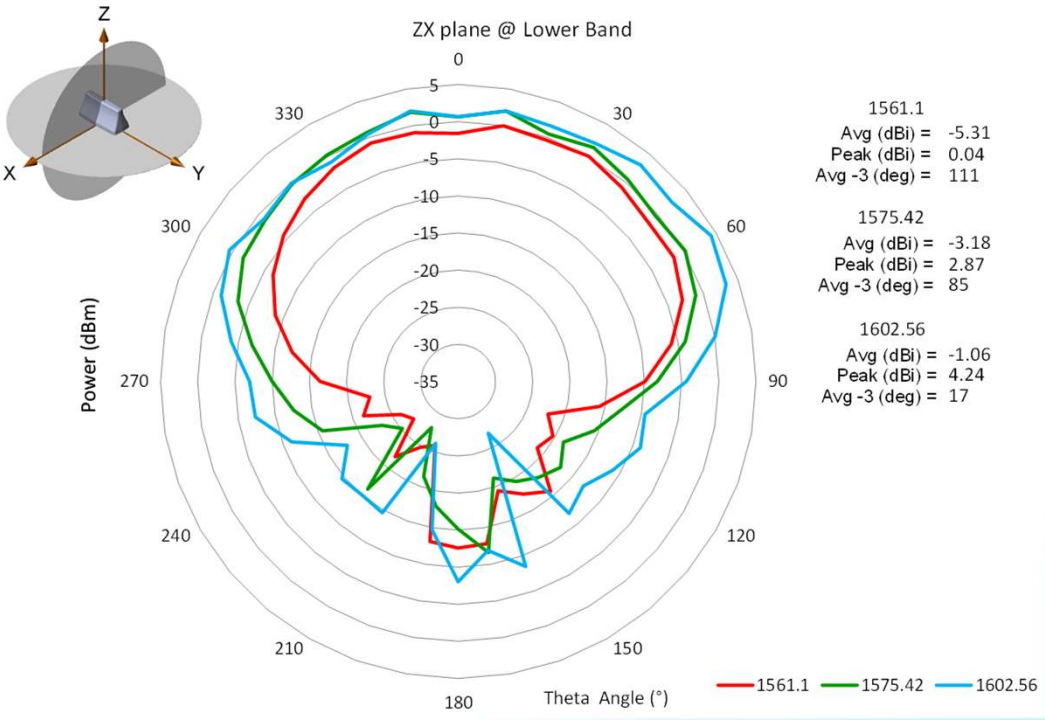
## CHARTS

### GNSS LNA Gain and out-of-band rejection




### GNSS

Passive Measurement
Measured with 152mm (6") cable



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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



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## Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

AVIC JONHON

**«JONHON»** (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

**«FORSTAR»** (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

FORSTAR®

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