



### Features:

- 3G, GPRS, GSM
  - 824-960, 1710-2170MHz
- GNSS
  - GPS, Galileo Glonass, Beidou
  - 1560-1608MHz
  - 30dB LNA
- Magnetic mount onto metal surfaces
- IP67

### Applications:

- Vehicular use
- Fleet management
- Tracking, navigation
- For easy installation and removal, no need to drill any holes

All dimensions are in mm / inches

Issue: 1719

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

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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 34<sup>th</sup> St Bldg 2 Suite 250  
Vancouver, WA 98683  
USA  
Tel: 1-360-944-7551

Europe Headquarters  
Pulse GmbH & Co, KG  
Zeppelinstrasse 15  
Herrenberg, Germany  
Tel: 49 7032 7806 0

Pulse (Suzhou) Wireless Products Co, Inc.  
99 Huo Ju Road(#29 Bldg, 4<sup>th</sup> Phase  
Suzhou New District  
Jiangsu Province, Suzhou 215009 PR China  
Tel: 86 512 6807 9998



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   |
| W4165MM        | RG-174<br>Black | 4000mm/157.5"/13.2' | SMA Male    | RG-174<br>Black | 4000mm/157.5"/13.2' | SMA Male    |
| W4165MMAI      |                 | 1524mm/60"/5'       | TNC Male    |                 | 1524mm/60"/5'       | RP-TNC Male |
| W4165MMSMA5    |                 | 1524mm/60"/5'       | SMA Male    |                 | 1524mm/60"/5'       | SMA Male    |
| W4165MMRPSMA10 |                 | 3048mm/120"/10'     | RP-SMA Male |                 | 3048mm/120"/10'     | RP-SMA Male |

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**Description:** 3G/GPRS/GSM + GNSS IP67 with  
Magnetic Mount

**PART NUMBER:** W4165MMXX

**Series: Outdoor Multi Band**

## ELECTRICAL SPECIFICATIONS

|  |   |
|--|---|
| Frequency (GSM)                                      | 824-960/1710-2170 MHz                               |
| Frequency (Beidou,GPS,Galileo,Glonass)               | 1561.098±2.046/<br>1575.42±1.023/<br>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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## MECHANICAL SPECIFICATIONS

|                                    |   |
|------------------------------------|---|
| Antenna Color / Material           | Black   |
| Connector type                     | As requested  |
| Cable type                         | RG-174, Black   |
| Cable length                       | As requested  |
| Fixing system                      | Magnetic mount  |
| Pull Force (in Z direction)        | min. 100N (22.5 lbf)  |
| Side Push Forth (in X/Y direction) | min. 140N (30 lbf)  |
| Connector retention                | 30 N  |
| Strain relief                      | 30 N, applied to cable along axis<br>and perpendicular to cable entry |

## ENVIRONMENTAL SPECIFICATIONS

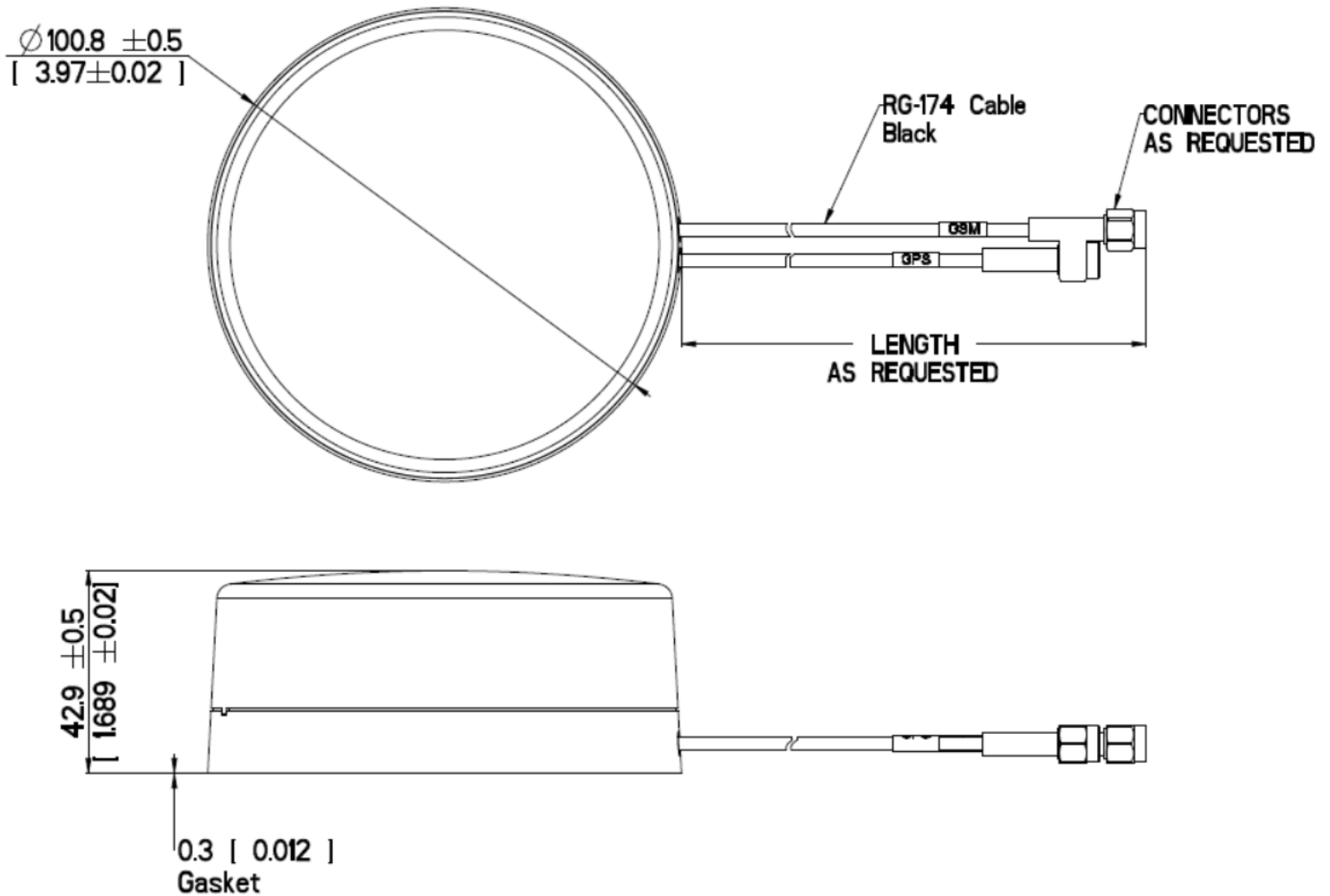
|                       |             |
|-----------------------|-------------|
| Operating Temperature | -40 ~ 85° C |
| Storage Temperature   | -40 ~ 85° C |
| Ingress Protection    | IP67        |
| Wind-loading          | 160 km/h    |
| RoHS Compliant        | Yes         |

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## MECHANICAL DRAWING



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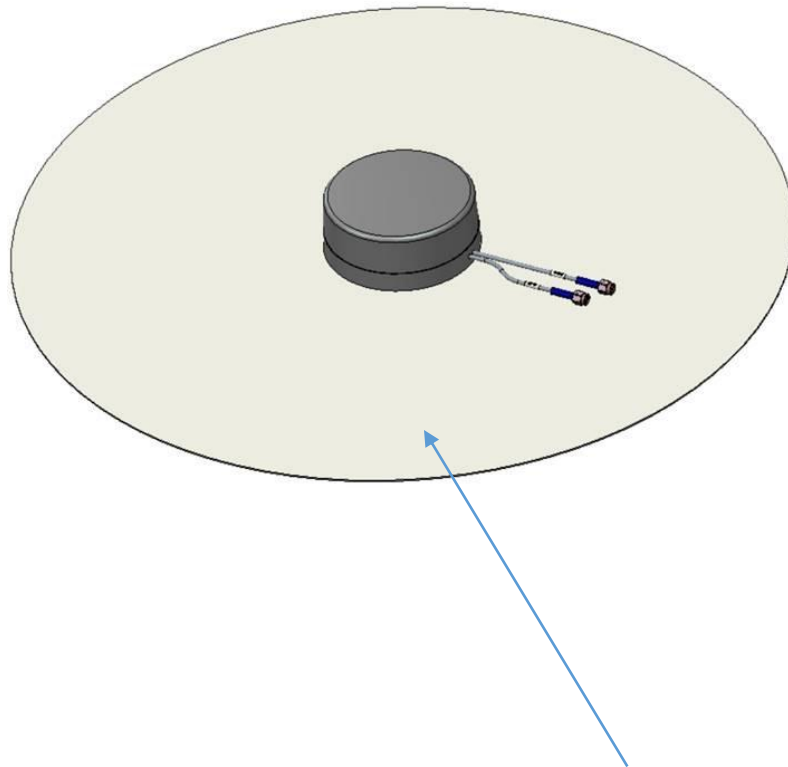
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## TEST SETUP



Diameter: 500mm ground pane

\*Measured on diameter 500mm GND plane and with 5 inch cables for radiation performance

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

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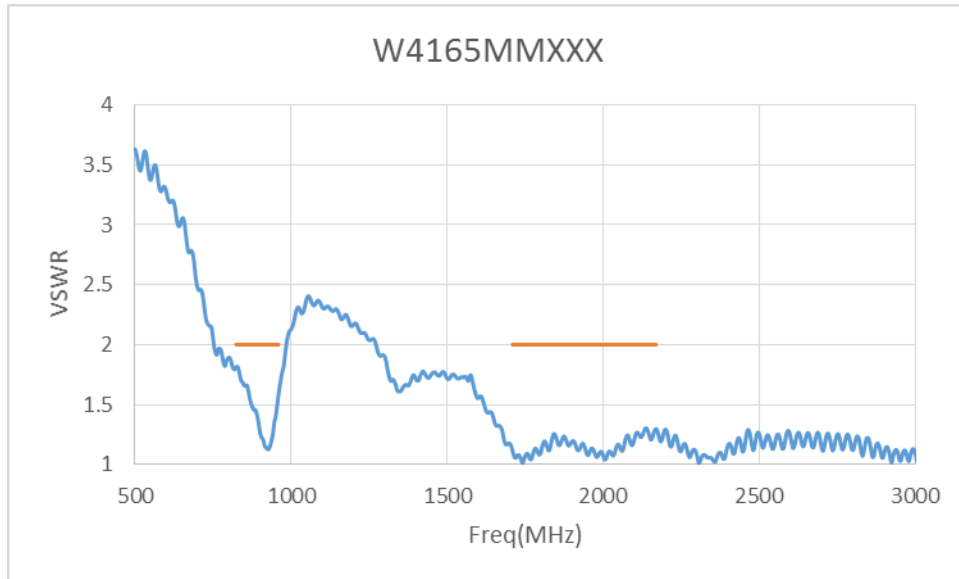
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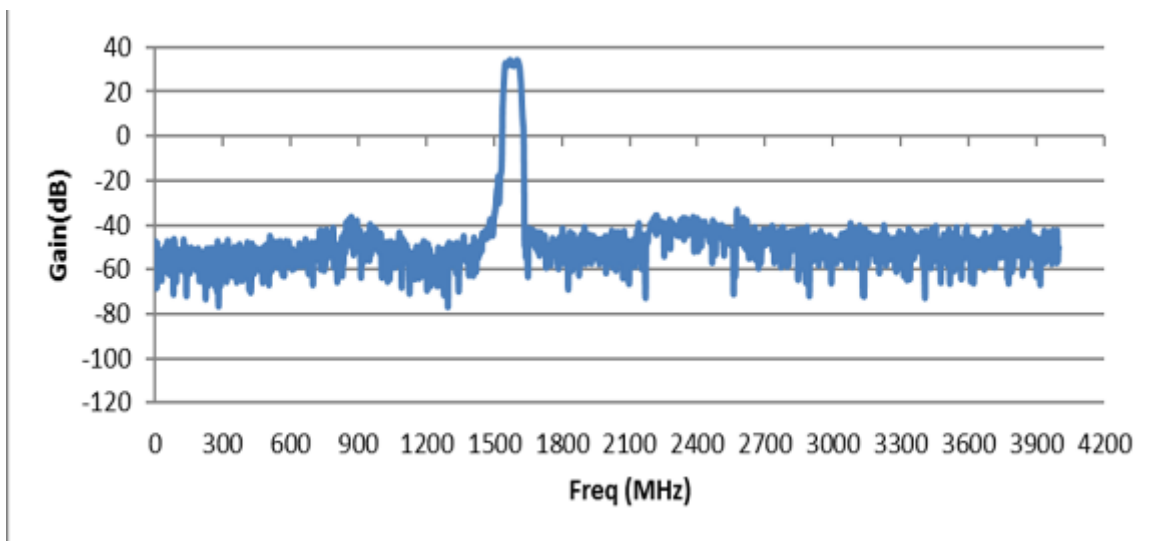
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## CHARTS

### VSWR\*



### GNSS LNA performance



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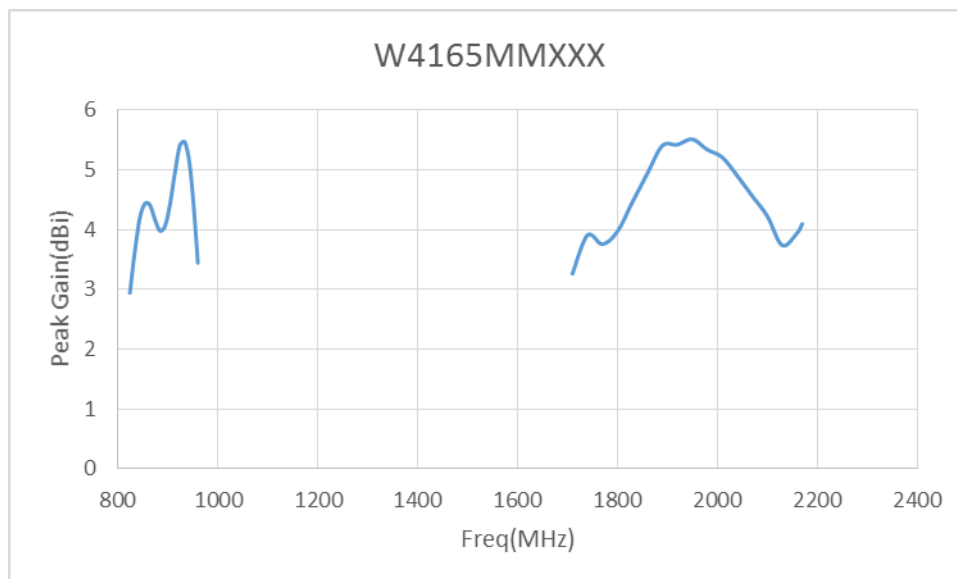
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## CHARTS

### GSM antenna total efficiency\*



### Maximum 3D gain, GSM antenna\*



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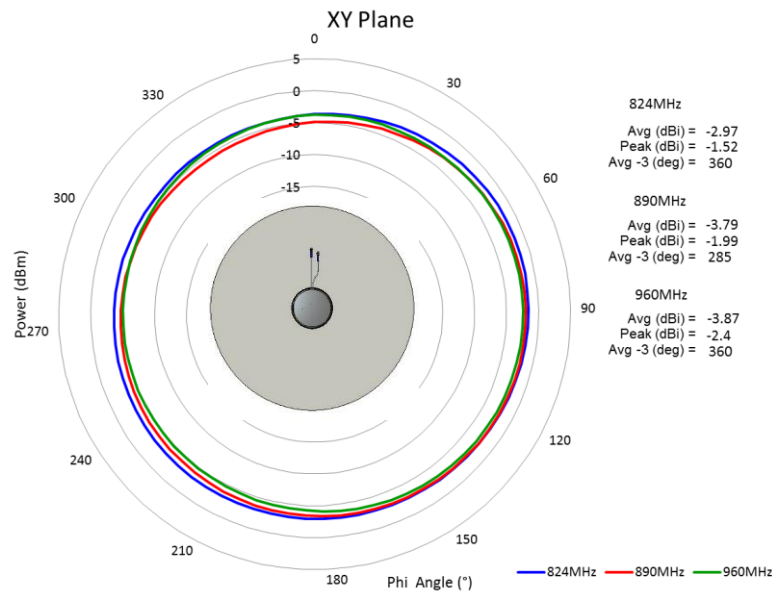
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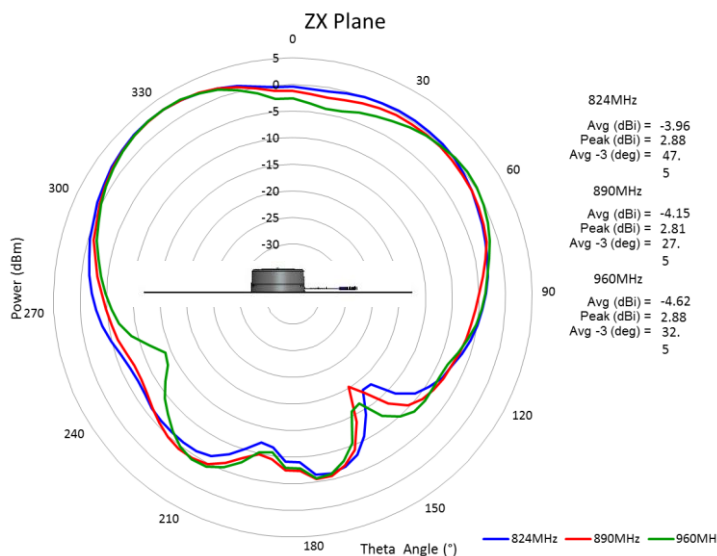
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## CHARTS

### GSM antenna Low band Radiation Pattern X-Y Plane\*



### GSM antenna Low band Radiation Pattern Z-X Plane\*



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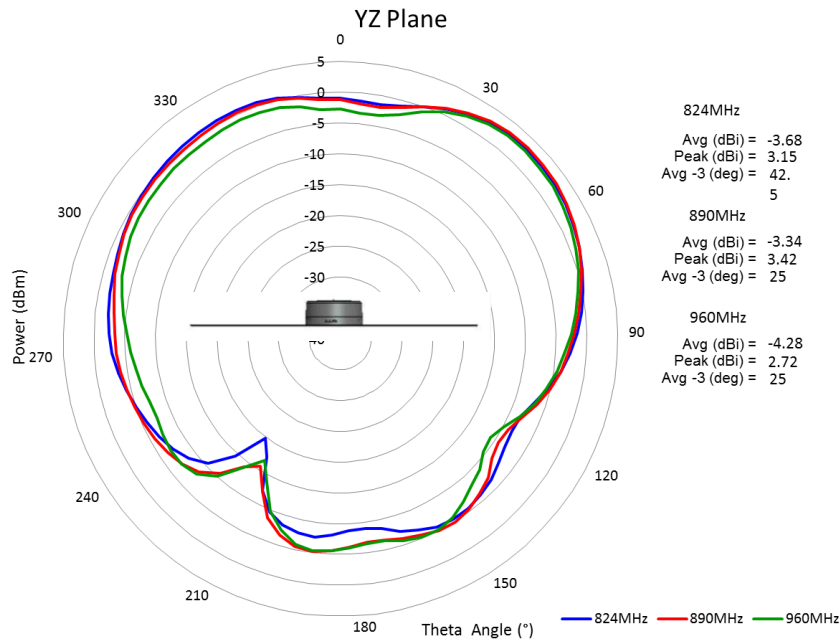
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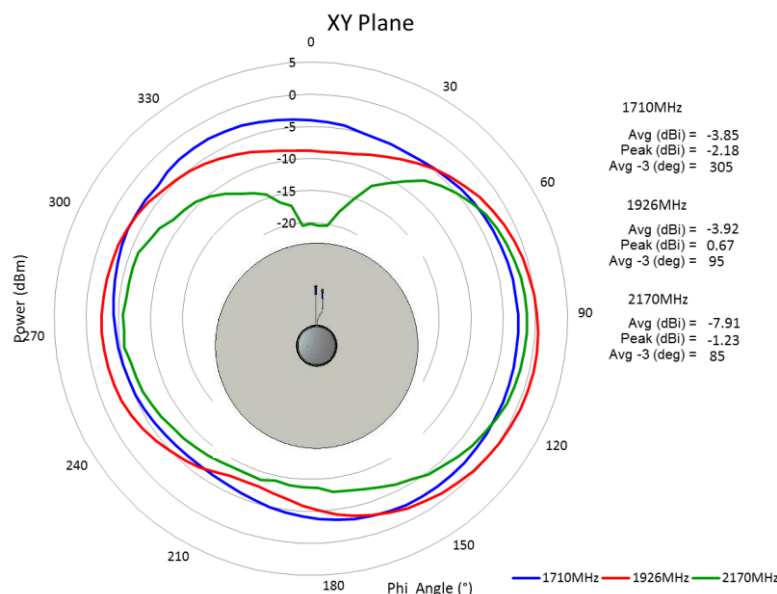
**Series:** Outdoor Multi Band

## CHARTS

### GSM antenna Low band Radiation Pattern Y-Z Plane\*



### GSM antenna High band Radiation Pattern X-Y Plane\*



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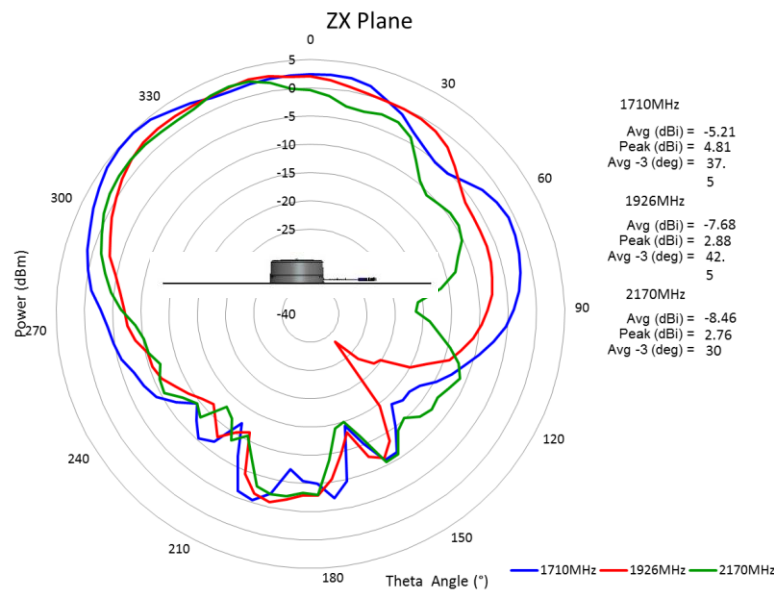
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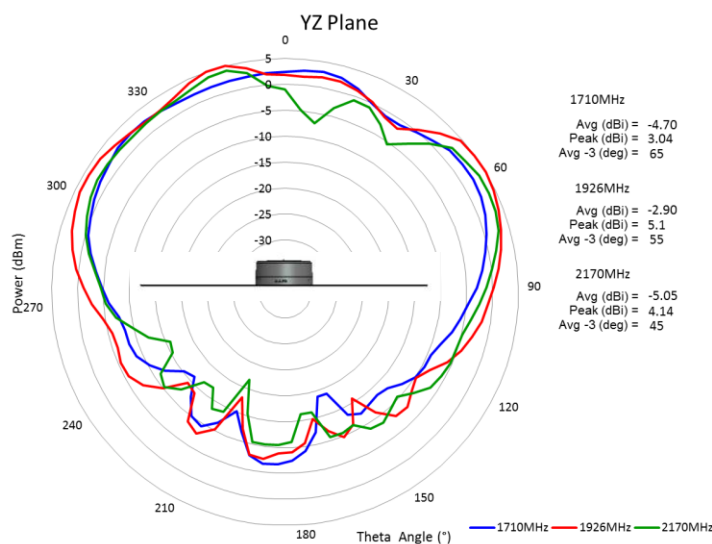
**Series:** Outdoor Multi Band

## CHARTS

### GSM antenna High band Radiation Pattern Z-X Plane\*



### GSM antenna High band Radiation Pattern Y-Z Plane\*



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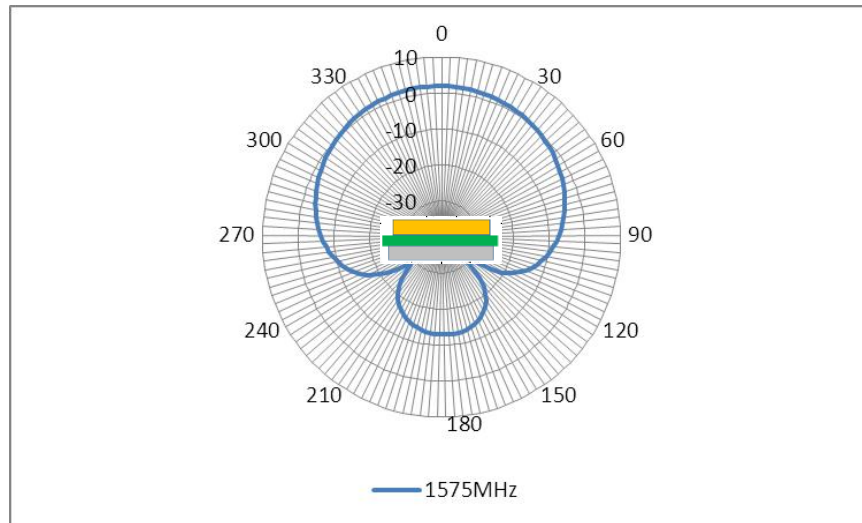
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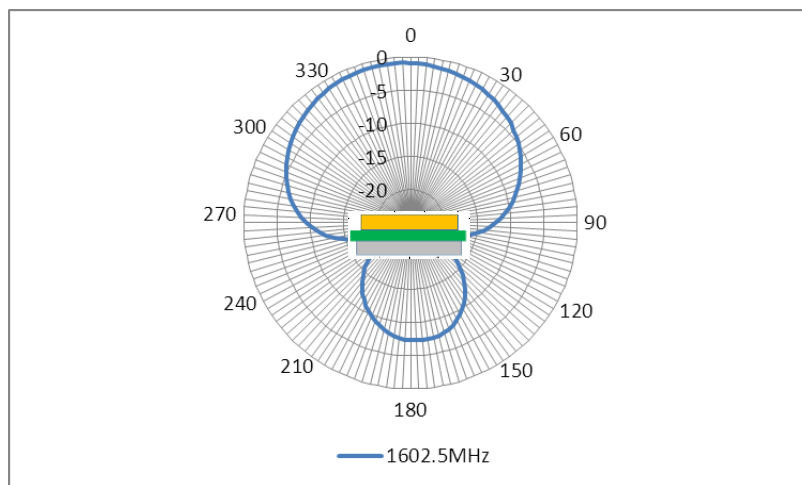
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## CHARTS

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



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



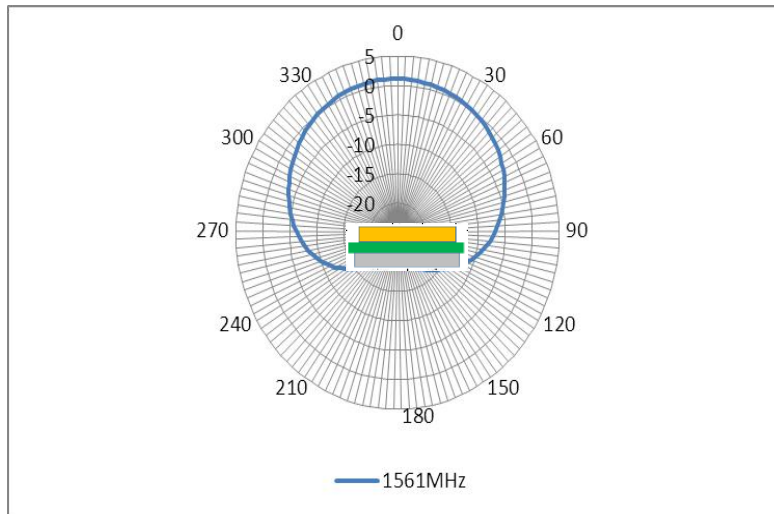
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## CHARTS

### 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.



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)