

## 2J7085Md

3x 5GNR MIMO and 2.4/5.0/6.0 GHz ISM Magnetic Mount

### Key Features

#### Cable 1-3: 5GNR

- 617-960 MHz
- 1427-2690 MHz
- 3300-5000 MHz
- 5150-5925 Mhz

#### Cable 4: 2.4/5.0/6.0 GHz ISM

- 2410-2490 MHz
- 4920-5925 MHz
- 5915-7125 MHz

Magnetic Mount

Heavy Duty antenna

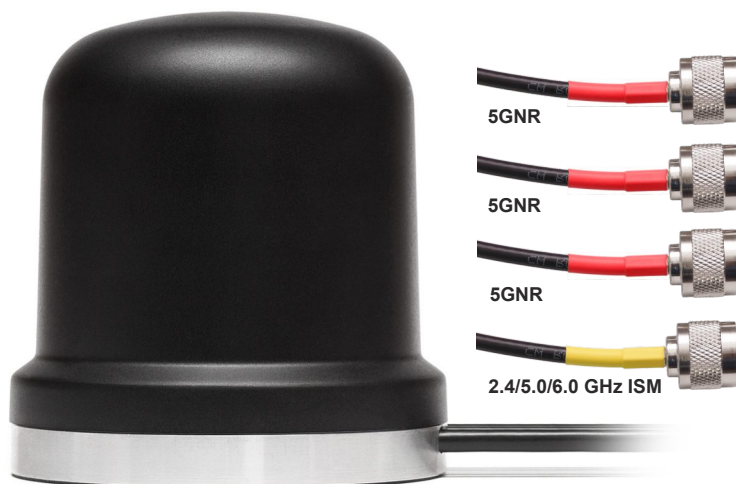
High Performance

Ground Plane Independent

Customizable Cable and Connector

Dimensions: Ø 96 × 102 mm

Certificates: IP67, IP69, IK09



## 1. Antenna and electrical specifications

Cable 1

| Parameters           | 5G NR Antenna                                                                                       |                                                                                                                                                                                 |                                 |                      |
|----------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------|
| Technologies         | 5G, 4G, 3G and 2G                                                                                   |                                                                                                                                                                                 |                                 |                      |
| Standards            | 5G NR/4G LTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G                                   |                                                                                                                                                                                 |                                 |                      |
| Frequency (MHz)      | 617-960                                                                                             | 1427-2690                                                                                                                                                                       | 3300-5000                       | 5150-5925            |
| Band (MHz)           | 600, 700, 850, 900                                                                                  | 1500, 1600, 1700, 1800,<br>1900, 2000, 2100, 2300,<br>2500, 2600                                                                                                                | 3300, 3500, 3600,<br>3700, 4500 | 5200, 5500, 5800     |
| 5G NR Bands          | n5, n8, 12, n20, n28, n71,<br>n81, n82, n83,                                                        | n1, n2, n3, n7, n25, n34,<br>n38, n39, n40, n41, n50,<br>n51, n66, n70, n74, n75,<br>n76, n80, n84, n86                                                                         | n77, n78, n79                   |                      |
| 4G LTE Bands         | B5, B6, B8, B12, B13, B14,<br>B17, B18, B19, B20, B26,<br>B27, B28, B29, B44, B67,<br>B68, B71, B85 | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B23, B24,<br>B25, B30, B32, B33, B34,<br>B35, B36, B37, B38, B39,<br>B40, B41, B45, B50, B51,<br>B65, B66, B69, B70, B74,<br>B75, B76 | B22, B42, B43, B48,<br>B49, B52 | B46, B47, B252, B255 |
| 3G CELL Bands        | B5, B6, B8, B12, B13, B14,<br>B19, B20, B26                                                         | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B25, B32,<br>B33, B34, B35, B36, B37,<br>B38, B39, B40                                                                                | B22                             |                      |
| 2G CELL Bands        | 710, 750, 810T, 850, 900P,<br>900E, 900R                                                            | 1800DCS, 1900PCS                                                                                                                                                                |                                 |                      |
| CDMA CELL Bands      | BC0, BC2, BC3, BC7, BC9,<br>BC10, BC12, BC18, BC19                                                  | BC1, BC4, BC6, BC8,<br>BC13, BC14, BC15, BC16,<br>BC20, BC21                                                                                                                    |                                 |                      |
| Return Loss (dB)     | ~4.7                                                                                                | ~9.3                                                                                                                                                                            | ~9.8                            | ~7.0                 |
| VSWR                 | ~4.5:1                                                                                              | ~2.4:1                                                                                                                                                                          | ~2.2:1                          | ~2.7:1               |
| Efficiency (%)       | ~30.0                                                                                               | ~41.2                                                                                                                                                                           | ~45.9                           | ~33.2                |
| Peak Gain (dBi)      | ~1.2                                                                                                | ~3.6                                                                                                                                                                            | ~5.0                            | ~4.0                 |
| Average Gain (dB)    | ~5.2                                                                                                | ~4.0                                                                                                                                                                            | ~3.4                            | ~4.8                 |
| Impedance (Ohm)      | 50                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Polarisation         | Linear                                                                                              |                                                                                                                                                                                 |                                 |                      |
| Radiation Pattern    | Omni-Directional                                                                                    |                                                                                                                                                                                 |                                 |                      |
| Max. Input Power (W) | 25                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Connector Type       | SMA-Male Standard (Other Connectors Available)                                                      |                                                                                                                                                                                 |                                 |                      |
| Cable Length         | 300 cm Standard (Any Cable Length Available)                                                        |                                                                                                                                                                                 |                                 |                      |
| Cable Type           | LL195 Standard (Other Cables Available)                                                             |                                                                                                                                                                                 |                                 |                      |

**Cable 2**

| Parameters           | 5G NR Antenna                                                                                       |                                                                                                                                                                                 |                                 |                      |
|----------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------|
| Technologies         | 5G, 4G, 3G and 2G                                                                                   |                                                                                                                                                                                 |                                 |                      |
| Standards            | 5G NR/4G LTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G                                   |                                                                                                                                                                                 |                                 |                      |
| Frequency (MHz)      | 617-960                                                                                             | 1427-2690                                                                                                                                                                       | 3300-5000                       | 5150-5925            |
| Band (MHz)           | 600, 700, 850, 900                                                                                  | 1500, 1600, 1700, 1800,<br>1900, 2000, 2100, 2300,<br>2500, 2600                                                                                                                | 3300, 3500, 3600,<br>3700, 4500 | 5200, 5500, 5800     |
| 5G NR Bands          | n5, n8 ,12, n20, n28, n71,<br>n81, n82, n83,                                                        | n1, n2, n3, n7, n25, n34,<br>n38, n39, n40, n41, n50,<br>n51, n66, n70, n74, n75,<br>n76, n80, n84, n86                                                                         | n77, n78, n79                   |                      |
| 4G LTE Bands         | B5, B6, B8, B12, B13, B14,<br>B17, B18, B19, B20, B26,<br>B27, B28, B29, B44, B67,<br>B68, B71, B85 | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B23, B24,<br>B25, B30, B32, B33, B34,<br>B35, B36, B37, B38, B39,<br>B40, B41, B45, B50, B51,<br>B65, B66, B69, B70, B74,<br>B75, B76 | B22, B42, B43, B48,<br>B49, B52 | B46, B47, B252, B255 |
| 3G CELL Bands        | B5, B6, B8, B12, B13, B14,<br>B19, B20, B26                                                         | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B25, B32,<br>B33, B34, B35, B36, B37,<br>B38, B39, B40                                                                                | B22                             |                      |
| 2G CELL Bands        | 710, 750, 810T, 850, 900P,<br>900E, 900R                                                            | 1800DCS, 1900PCS                                                                                                                                                                |                                 |                      |
| CDMA CELL Bands      | BC0, BC2, BC3, BC7, BC9,<br>BC10, BC12, BC18, BC19                                                  | BC1, BC4, BC6, BC8,<br>BC13, BC14, BC15, BC16,<br>BC20, BC21                                                                                                                    |                                 |                      |
| Return Loss (dB)     | ~-4.7                                                                                               | ~-9.3                                                                                                                                                                           | ~-10.5                          | ~-7.6                |
| VSWR                 | ~4.4:1                                                                                              | ~2.3:1                                                                                                                                                                          | ~2.0:1                          | ~2.6:1               |
| Efficiency (%)       | ~32.8                                                                                               | ~43.3                                                                                                                                                                           | ~43.0                           | ~34.5                |
| Peak Gain (dBi)      | ~-1.5                                                                                               | ~-3.6                                                                                                                                                                           | ~-4.5                           | ~-4.4                |
| Average Gain (dB)    | ~-4.9                                                                                               | ~-3.7                                                                                                                                                                           | ~-3.7                           | ~-4.7                |
| Impedance (Ohm)      | 50                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Polarisation         | Linear                                                                                              |                                                                                                                                                                                 |                                 |                      |
| Radiation Pattern    | Omni-Directional                                                                                    |                                                                                                                                                                                 |                                 |                      |
| Max. Input Power (W) | 25                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Connector Type       | SMA-Male Standard (Other Connectors Available)                                                      |                                                                                                                                                                                 |                                 |                      |
| Cable Length         | 300 cm Standard (Any Cable Length Available)                                                        |                                                                                                                                                                                 |                                 |                      |
| Cable Type           | LL195 Standard (Other Cables Available)                                                             |                                                                                                                                                                                 |                                 |                      |

**Cable 3**

| Parameters           | 5G NR Antenna                                                                                       |                                                                                                                                                                                 |                                 |                      |
|----------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------|
| Technologies         | 5G, 4G, 3G and 2G                                                                                   |                                                                                                                                                                                 |                                 |                      |
| Standards            | 5G NR/4G LTE/FirstNet/CBRS/LPWA/CAT-X/CAT-Mx/CAT-NBx/NB-IoT/3G/2G                                   |                                                                                                                                                                                 |                                 |                      |
| Frequency (MHz)      | 617-960                                                                                             | 1427-2690                                                                                                                                                                       | 3300-5000                       | 5150-5925            |
| Band (MHz)           | 600, 700, 850, 900                                                                                  | 1500, 1600, 1700, 1800,<br>1900, 2000, 2100, 2300,<br>2500, 2600                                                                                                                | 3300, 3500, 3600,<br>3700, 4500 | 5200, 5500, 5800     |
| 5G NR Bands          | n5, n8 ,12, n20, n28, n71,<br>n81, n82, n83,                                                        | n1, n2, n3, n7, n25, n34,<br>n38, n39, n40, n41, n50,<br>n51, n66, n70, n74, n75,<br>n76, n80, n84, n86                                                                         | n77, n78, n79                   |                      |
| 4G LTE Bands         | B5, B6, B8, B12, B13, B14,<br>B17, B18, B19, B20, B26,<br>B27, B28, B29, B44, B67,<br>B68, B71, B85 | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B23, B24,<br>B25, B30, B32, B33, B34,<br>B35, B36, B37, B38, B39,<br>B40, B41, B45, B50, B51,<br>B65, B66, B69, B70, B74,<br>B75, B76 | B22, B42, B43, B48,<br>B49, B52 | B46, B47, B252, B255 |
| 3G CELL Bands        | B5, B6, B8, B12, B13, B14,<br>B19, B20, B26                                                         | B1, B2, B3, B4, B7, B9,<br>B10, B11, B21, B25, B32,<br>B33, B34, B35, B36, B37,<br>B38, B39, B40                                                                                | B22                             |                      |
| 2G CELL Bands        | 710, 750, 810T, 850, 900P,<br>900E, 900R                                                            | 1800DCS, 1900PCS                                                                                                                                                                |                                 |                      |
| CDMA CELL Bands      | BC0, BC2, BC3, BC7, BC9,<br>BC10, BC12, BC18, BC19                                                  | BC1, BC4, BC6, BC8,<br>BC13, BC14, BC15, BC16,<br>BC20, BC21                                                                                                                    |                                 |                      |
| Return Loss (dB)     | ~-4.5                                                                                               | ~-9.2                                                                                                                                                                           | ~-10.2                          | ~-7.4                |
| VSWR                 | ~4.6:1                                                                                              | ~2.4:1                                                                                                                                                                          | ~2.1:1                          | ~2.6:1               |
| Efficiency (%)       | ~32.4                                                                                               | ~41.9                                                                                                                                                                           | ~44.9                           | ~33.6                |
| Peak Gain (dBi)      | ~-1.6                                                                                               | ~-3.7                                                                                                                                                                           | ~-5.1                           | ~-4.3                |
| Average Gain (dB)    | ~-4.9                                                                                               | ~-3.9                                                                                                                                                                           | ~-3.5                           | ~-4.8                |
| Impedance (Ohm)      | 50                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Polarisation         | Linear                                                                                              |                                                                                                                                                                                 |                                 |                      |
| Radiation Pattern    | Omni-Directional                                                                                    |                                                                                                                                                                                 |                                 |                      |
| Max. Input Power (W) | 25                                                                                                  |                                                                                                                                                                                 |                                 |                      |
| Connector Type       | SMA-Male Standard (Other Connectors Available)                                                      |                                                                                                                                                                                 |                                 |                      |
| Cable Length         | 300 cm Standard (Any Cable Length Available)                                                        |                                                                                                                                                                                 |                                 |                      |
| Cable Type           | LL195 Standard (Other Cables Available)                                                             |                                                                                                                                                                                 |                                 |                      |

Cable 4

| Parameters           | 2.4/5.0/6.0 GHz ISM Antenna                       |           |           |
|----------------------|---------------------------------------------------|-----------|-----------|
| Standards            | WiFi, BT, ZigBee, ISM                             |           |           |
| Band (MHz)           | 2.4 GHz                                           | 5.0 GHz   | 6.0 GHz   |
| Frequency (MHz)      | 2410-2490                                         | 4920-5925 | 5925-7125 |
| Return Loss (dB)     | ~-11.4                                            | ~-12.7    | ~-7.0     |
| VSWR                 | ~1.9:1                                            | ~1.7:1    | ~2.7:1    |
| Efficiency (%)       | ~47.3                                             | ~48.4     | ~30.2     |
| Peak Gain (dBi)      | ~4.6                                              | ~5.0      | ~2.3      |
| Average Gain (dB)    | ~-3.3                                             | ~-3.2     | ~-5.4     |
| Impedance (Ohm)      | 50                                                |           |           |
| Polarisation         | Linear                                            |           |           |
| Radiation Pattern    | Omni-Directional                                  |           |           |
| Max. Input Power (W) | 25                                                |           |           |
| Connector Type       | SMA-Male-RP Standard (Other Connectors Available) |           |           |
| Cable Length         | 300 cm Standard (Any Cable Length Available)      |           |           |
| Cable Type           | LL195 Standard (Other Cables Available)           |           |           |

#### Antenna Measurement Conditions:

Mounted on Metal Plate of 30 x 30 cm

100 cm of LL195 Cable

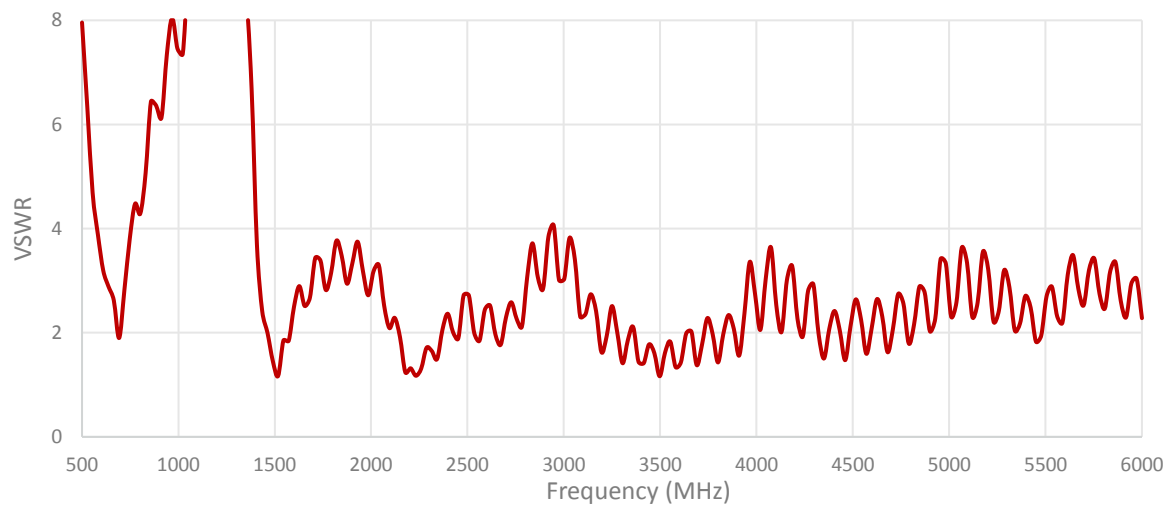
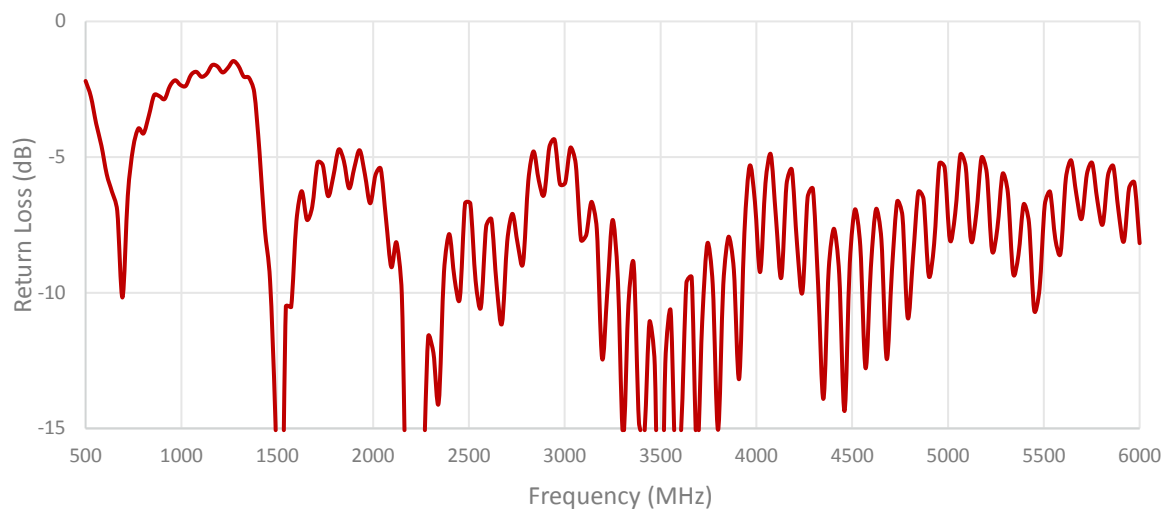
Measured in Certified CTIA 3D Anechoic Chamber

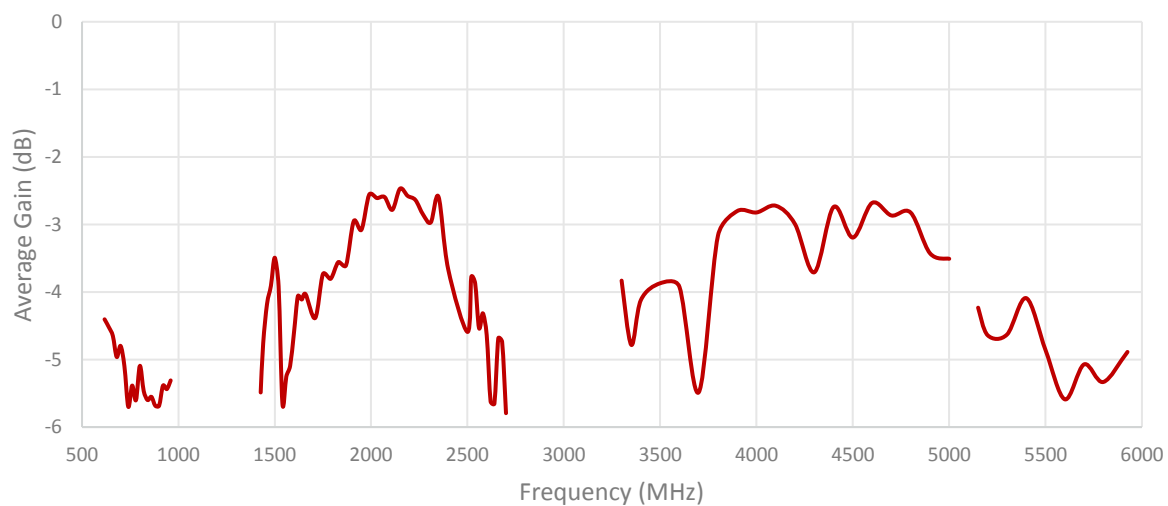
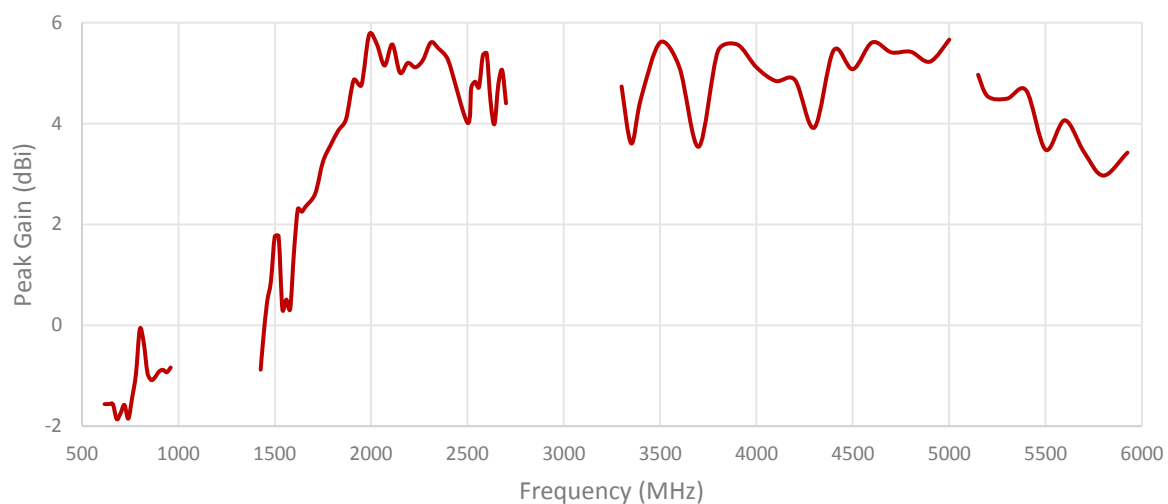
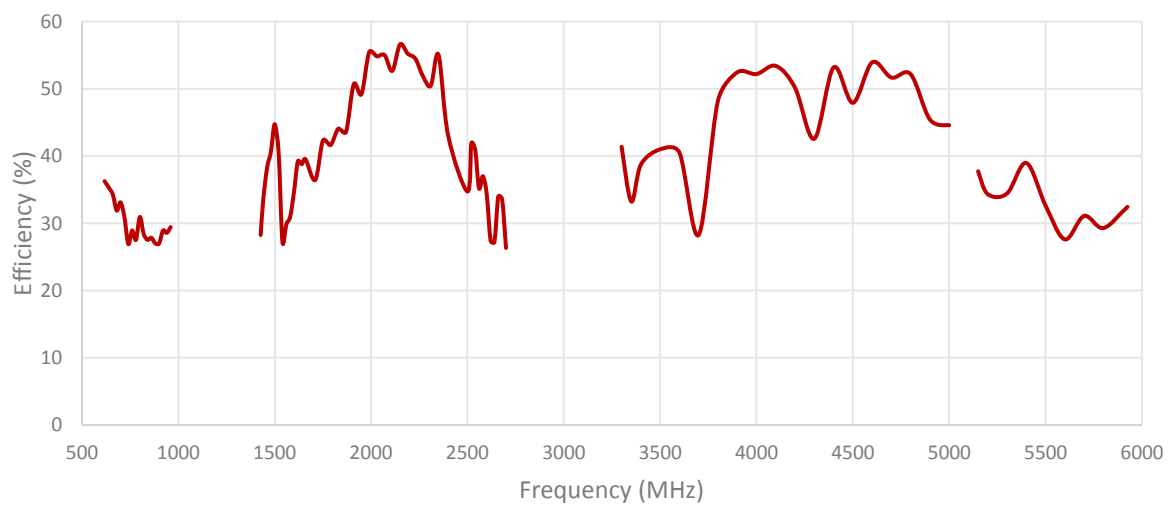
## 2. Mechanical and environmental specifications

| Specifications            | 2J7085Md          |
|---------------------------|-------------------|
| Mounting Type             | Magnetic Mount    |
| Dimensions (mm)           | Ø 96 × 102        |
| Radome                    | ASA               |
| Radome color              | White, Black      |
| Antenna Base              | Aluminium alloy   |
| Operating Temperature (C) | -40 to +85        |
| Storage Temperature (C)   | -40 to +85        |
| Substance Compliance      | RoHS              |
| Certificates              | IP67, IP69, Ikk09 |

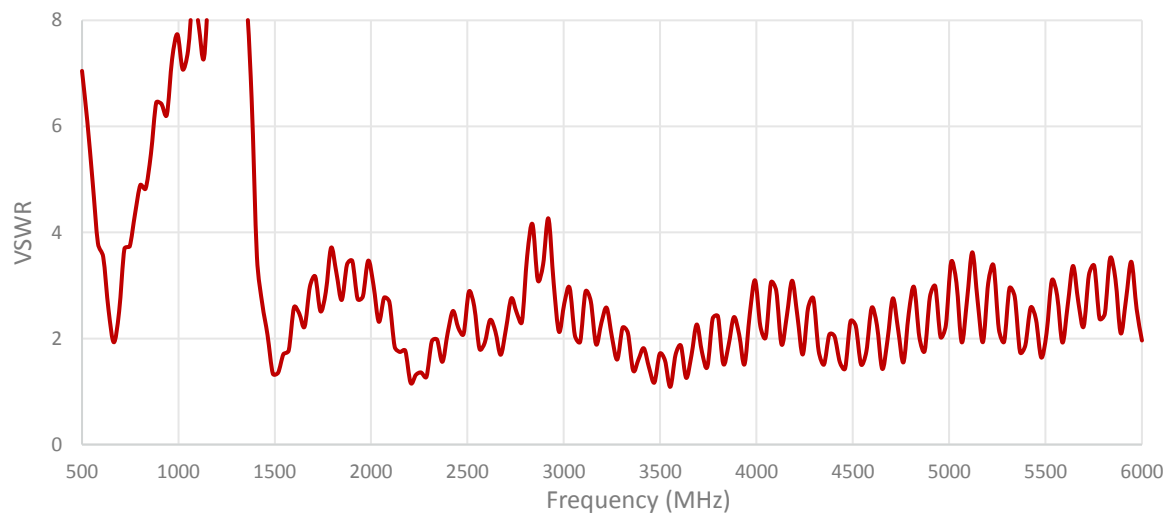
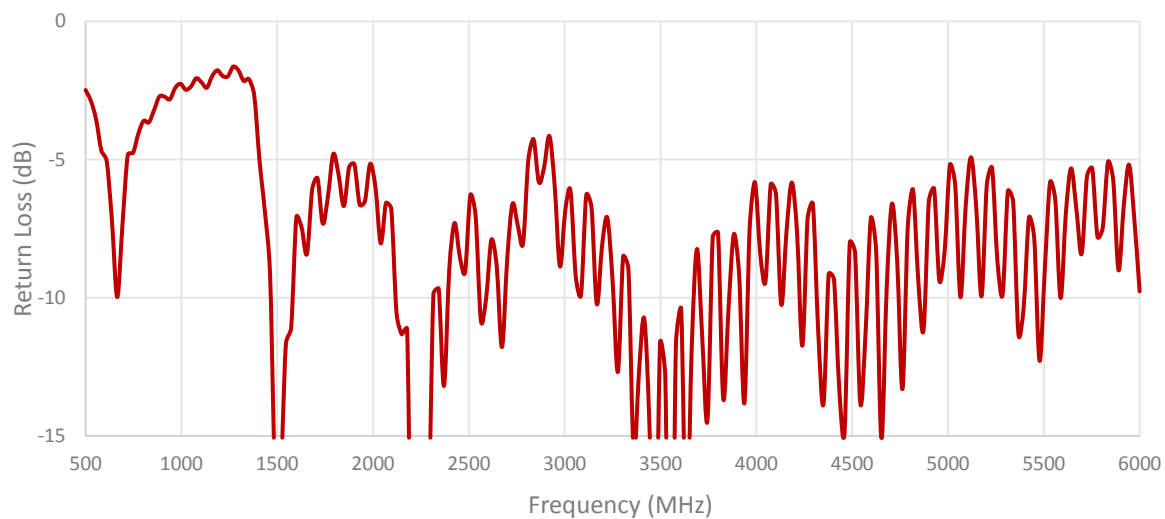
### 3. Antenna parameters

**Cable 1: 5GNR**

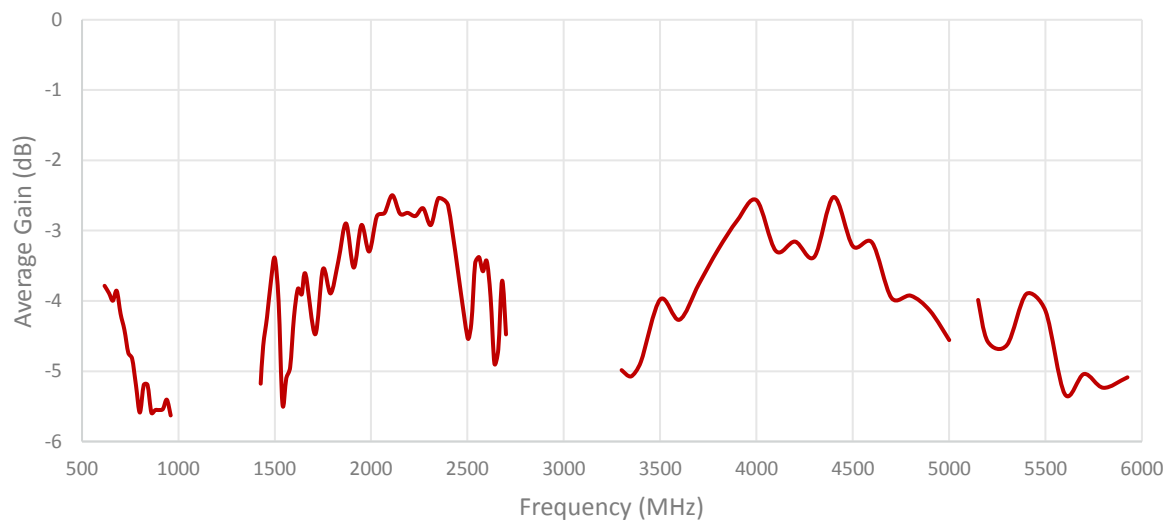
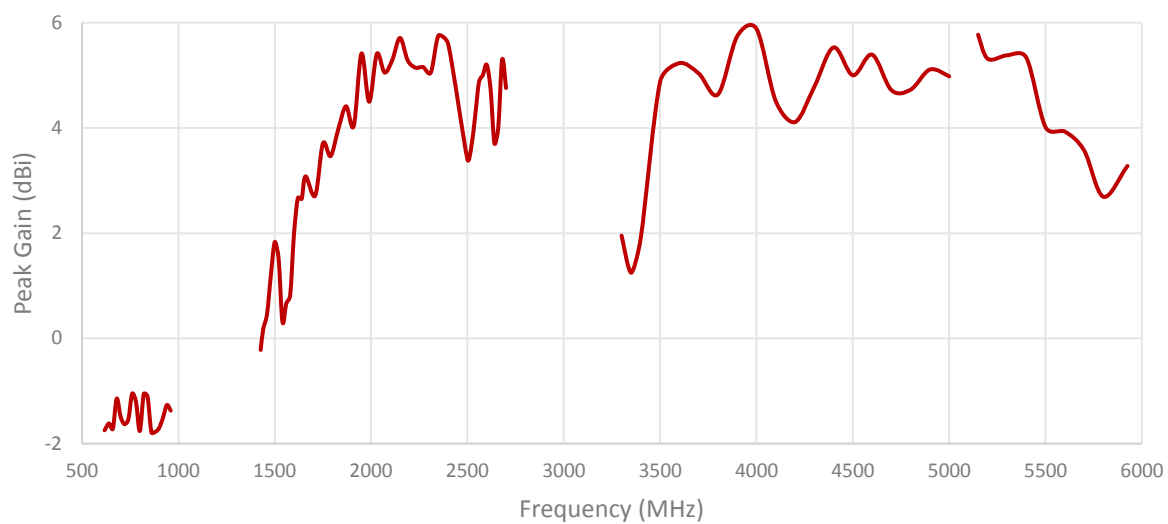
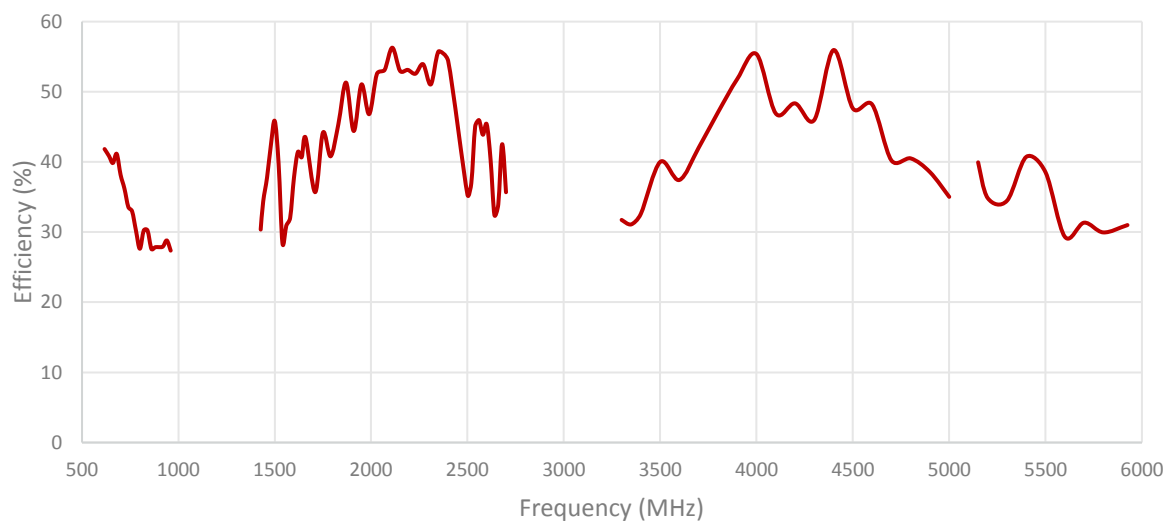




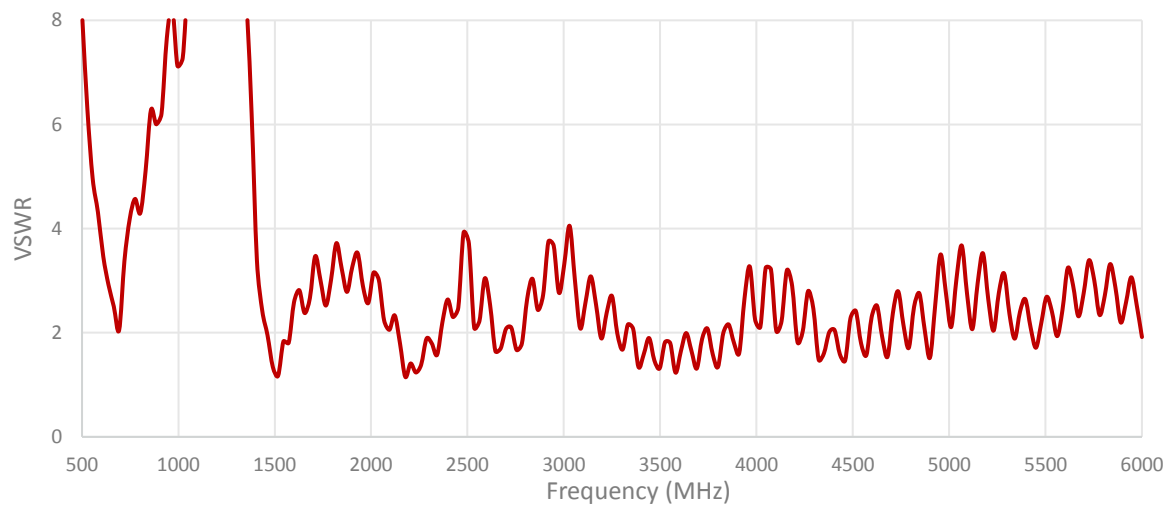
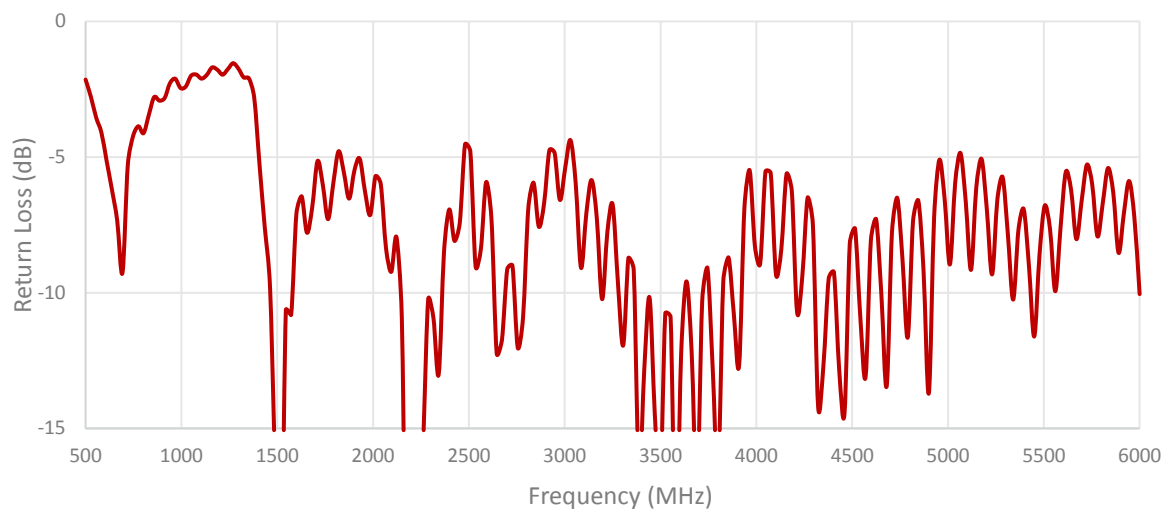
**Cable 2: 5GNR**

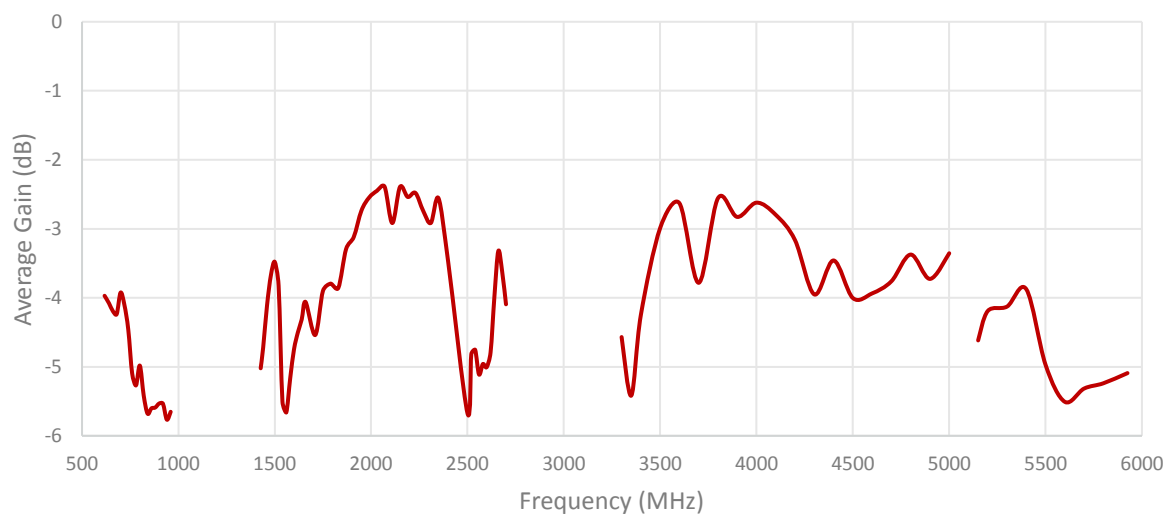
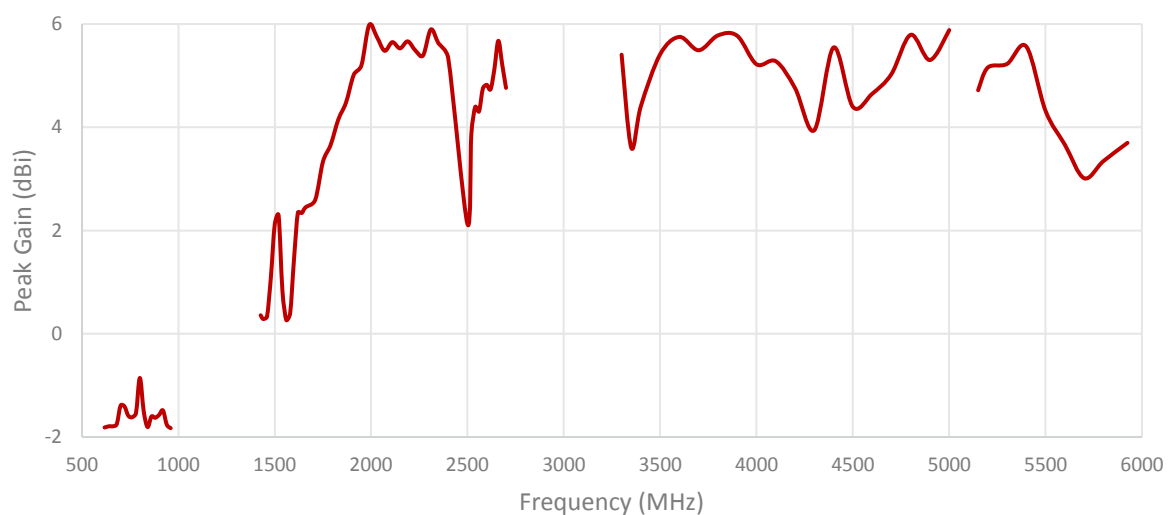
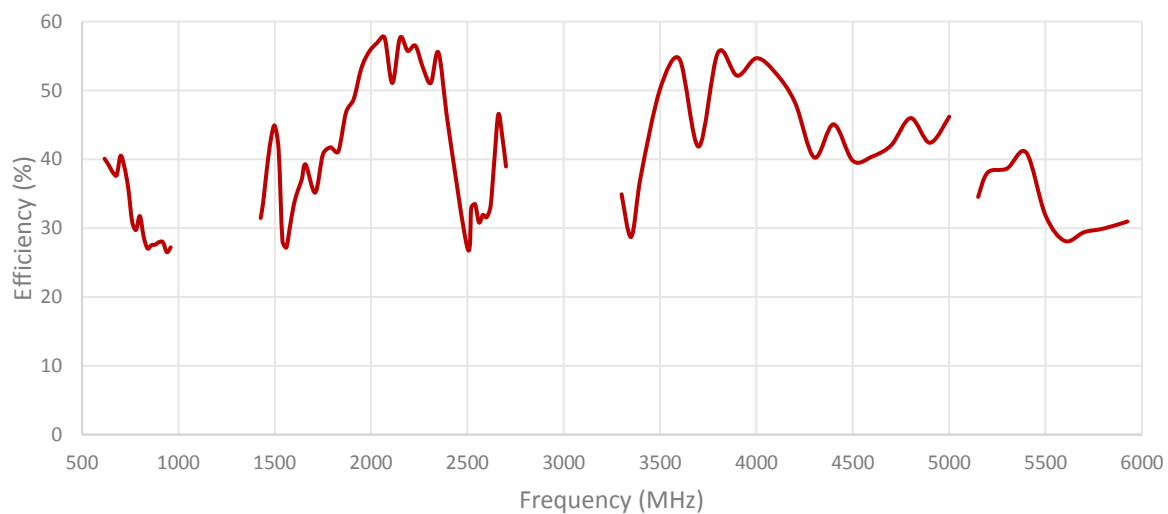




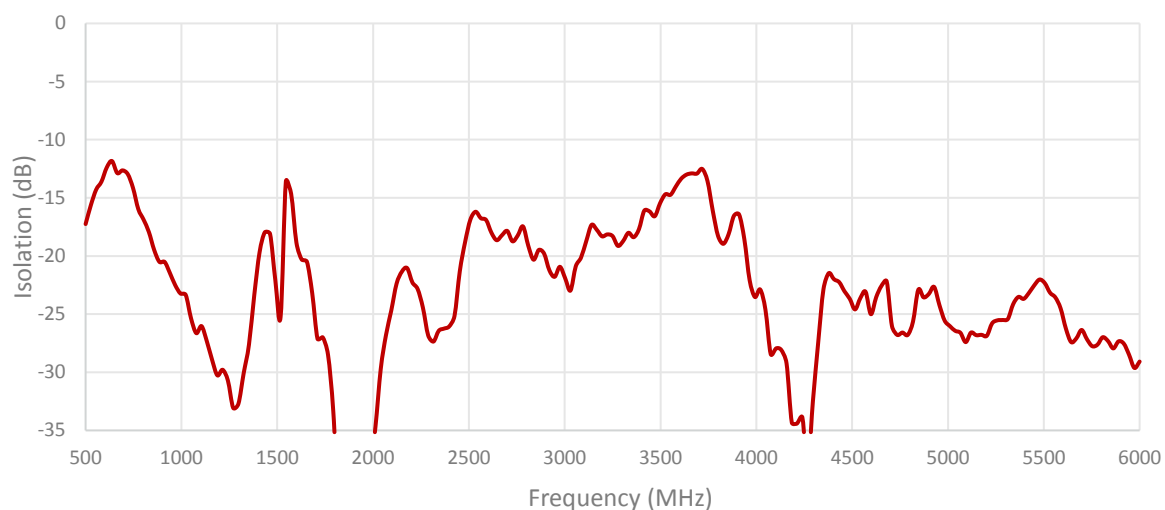


**Cable 3: 5GNR**

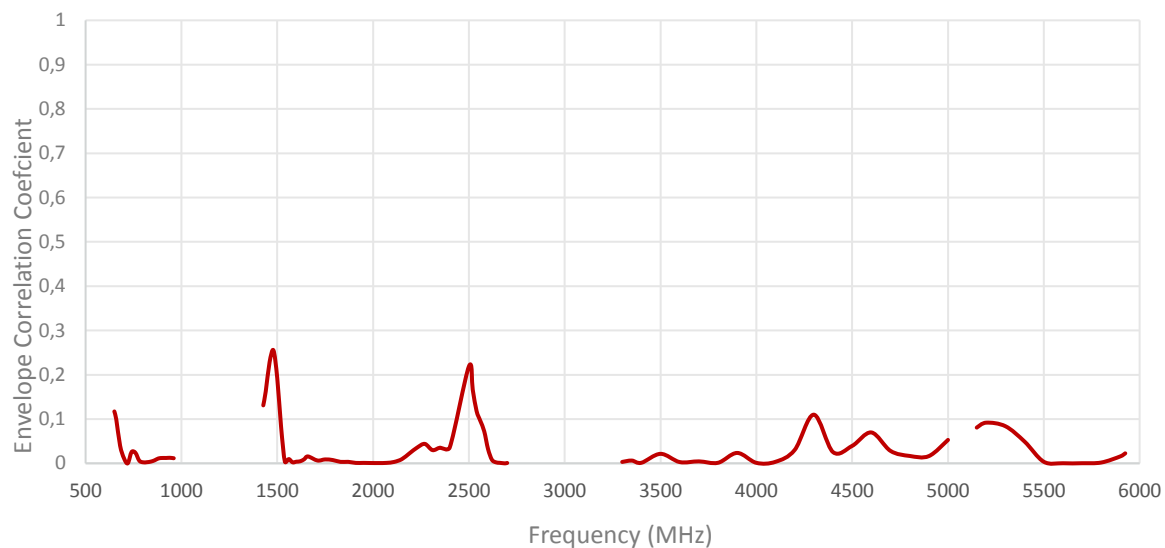




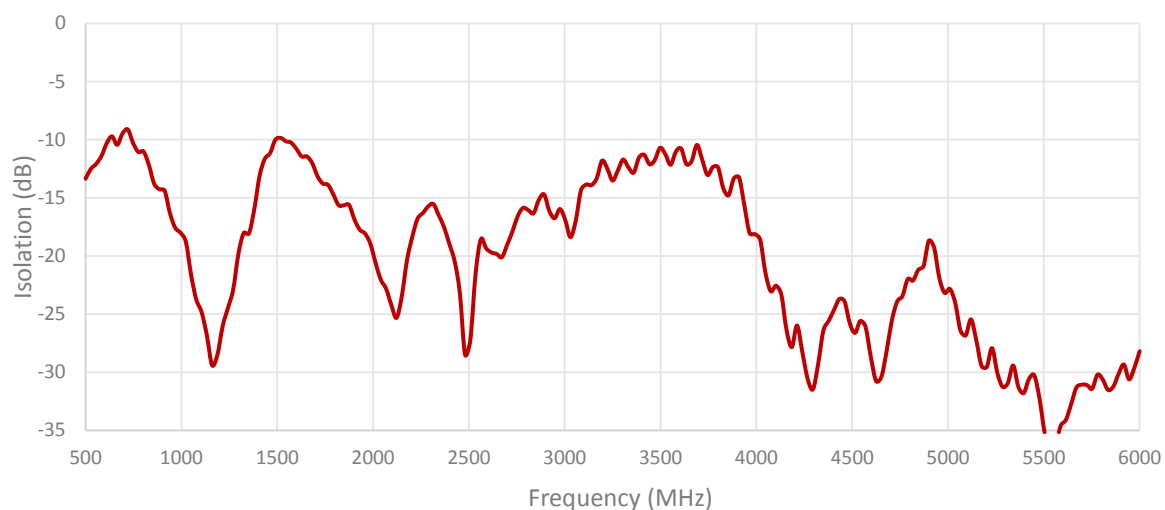
#### ISOLATION FOR CABLES 1 AND 2



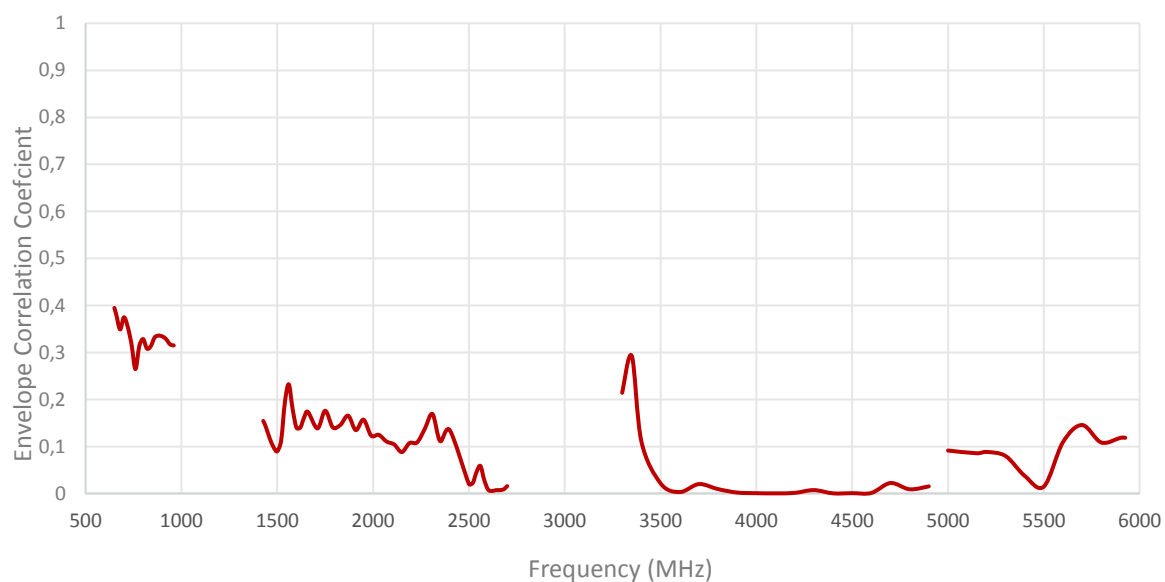
#### ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 2



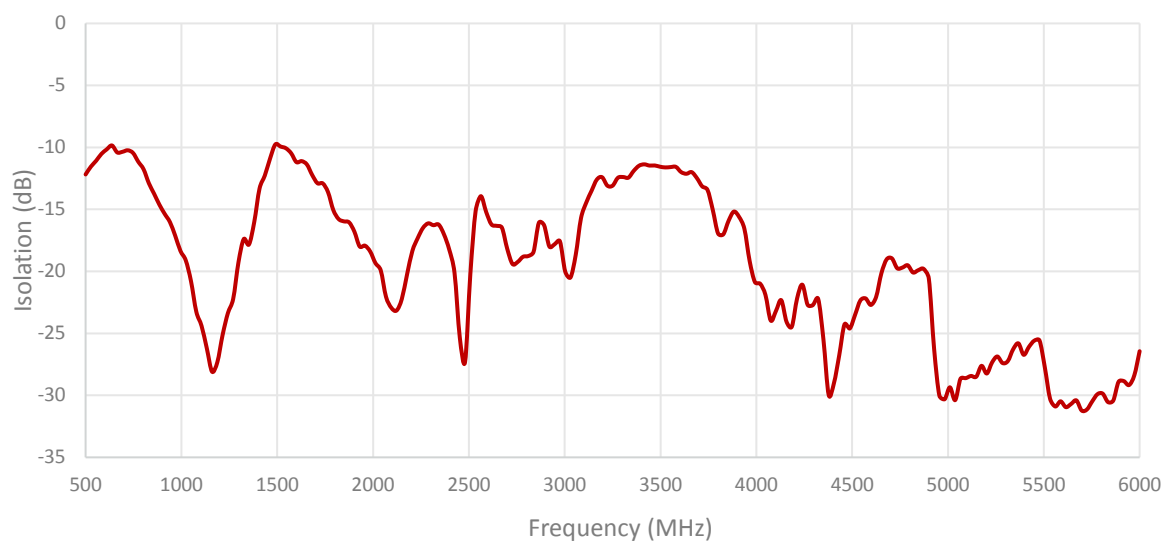
### ISOLATION FOR CABLES 1 AND 3



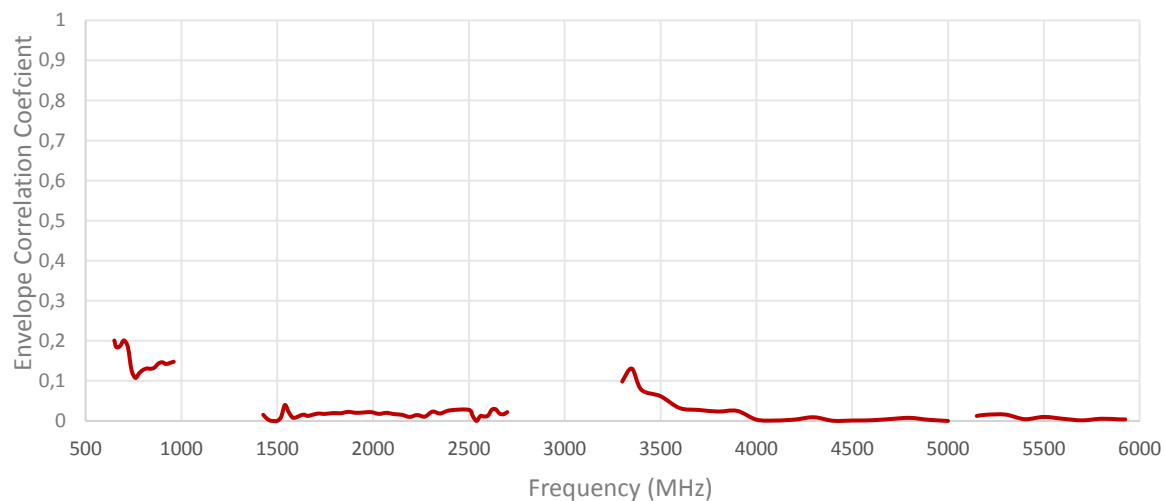
### ENVELOPE CORRELATION COEFFICIENT FOR CABLES 1 AND 3



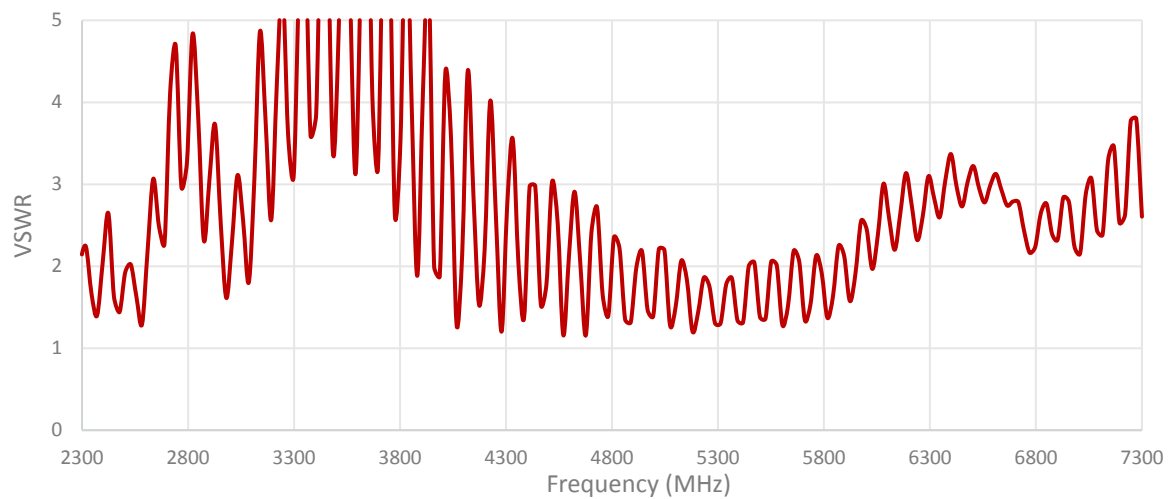
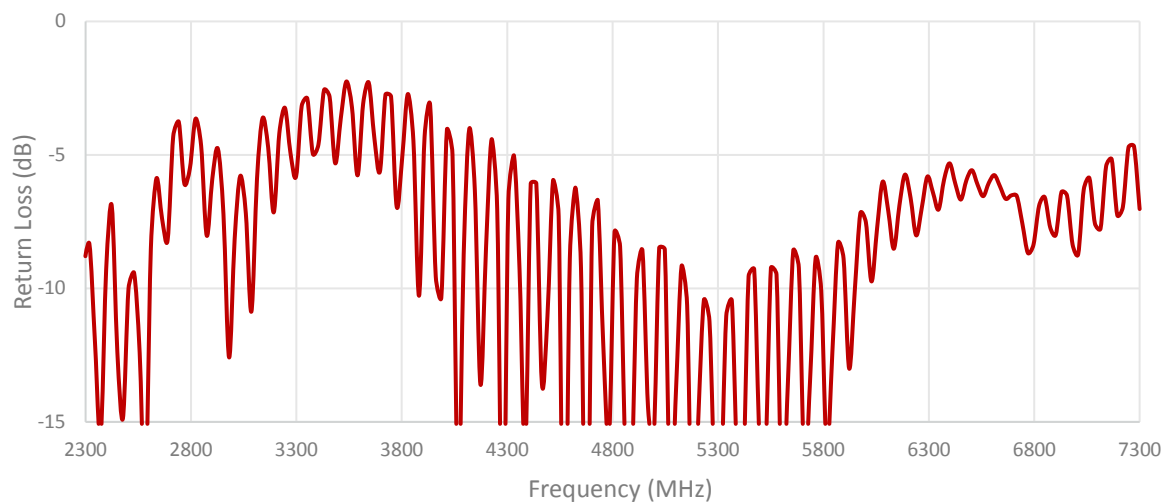
### ISOLATION FOR CABLES 2 AND 3

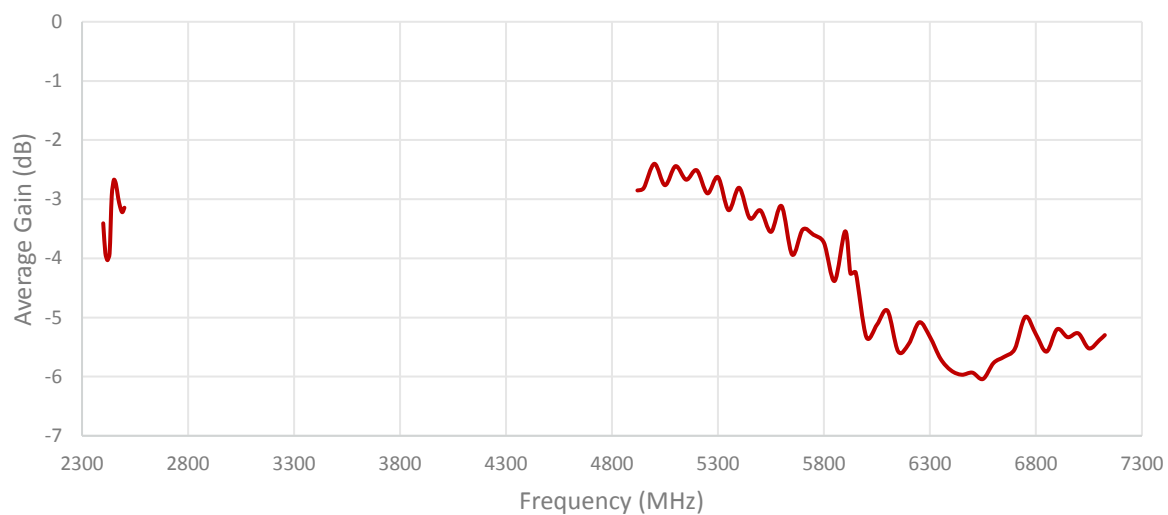
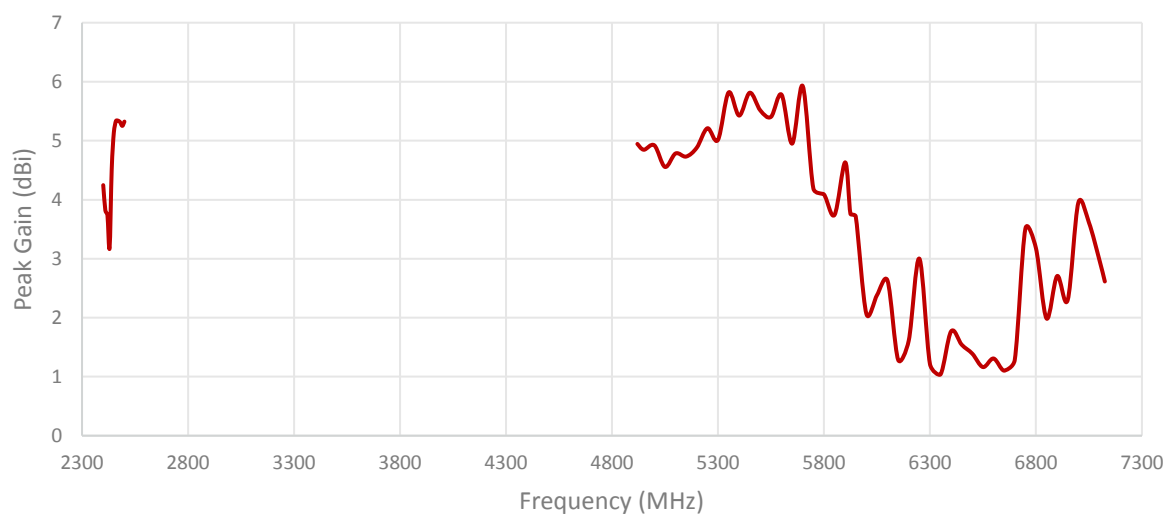
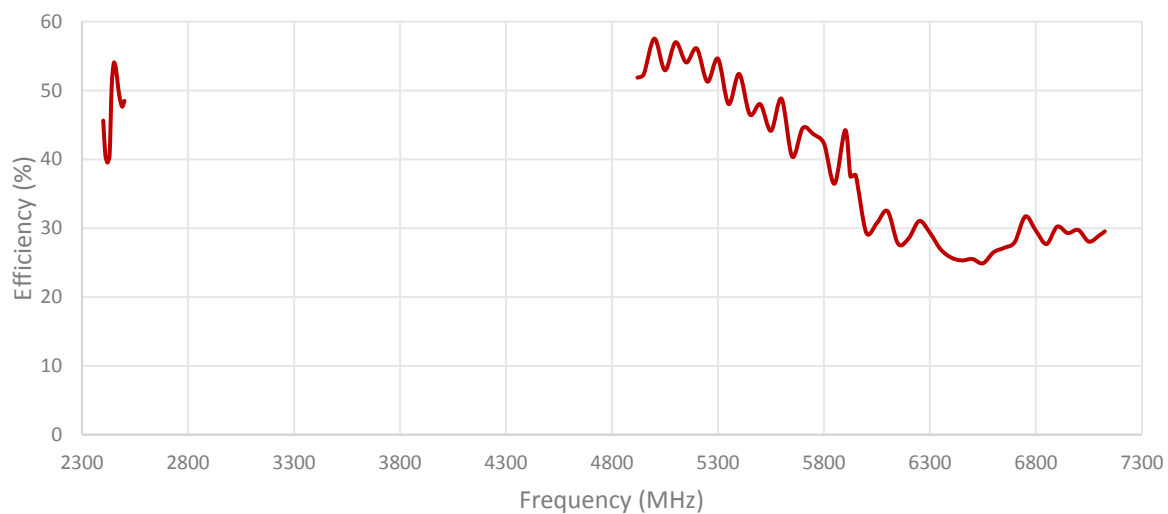


### ENVELOPE CORRELATION COEFFICIENT FOR CABLES 2 AND 3

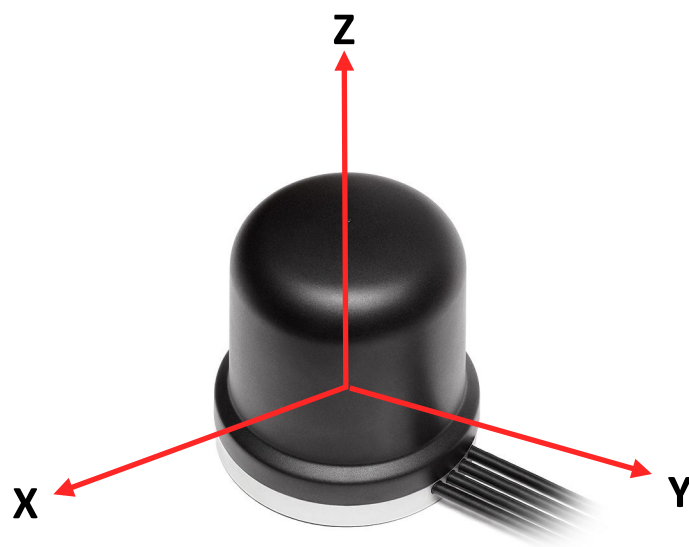


**Cable 4: 2.4/5.0/6.0 GHz ISM**



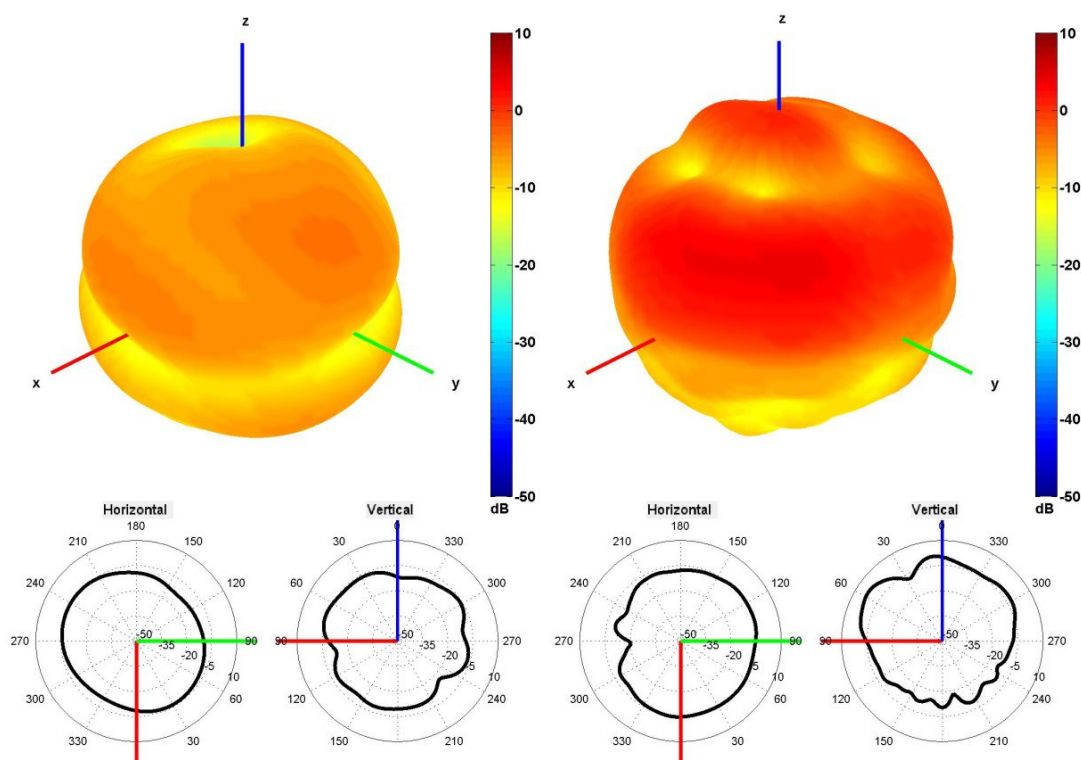




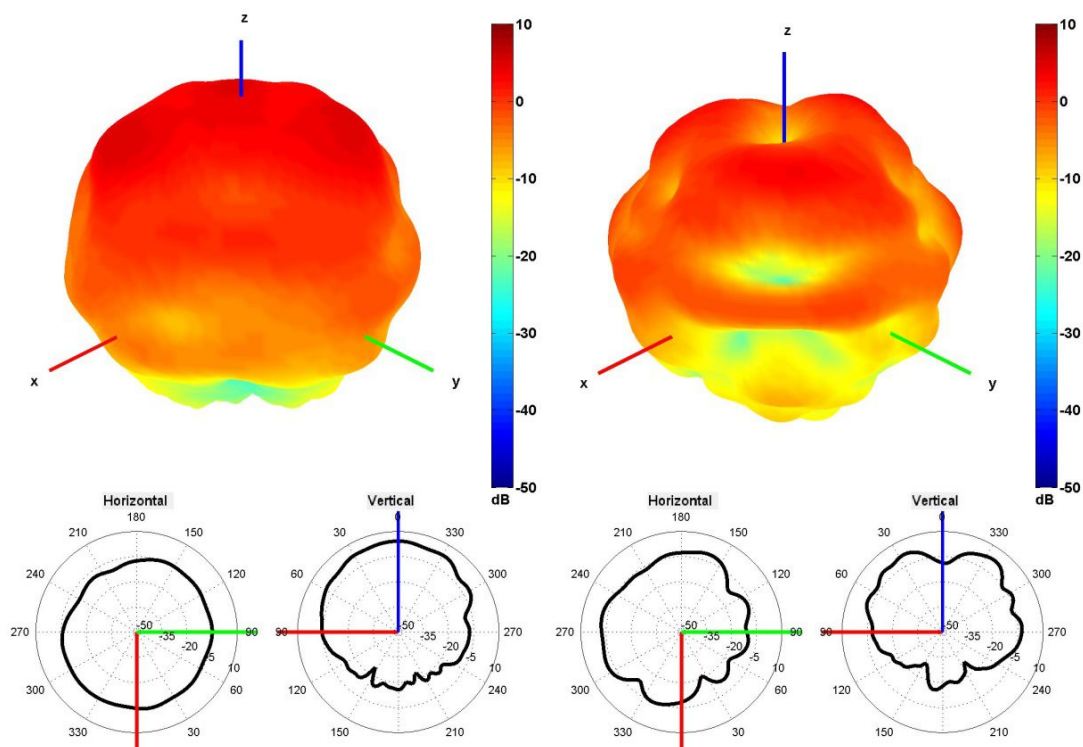


Radiation pattern reference

Cable 1: 5GNR

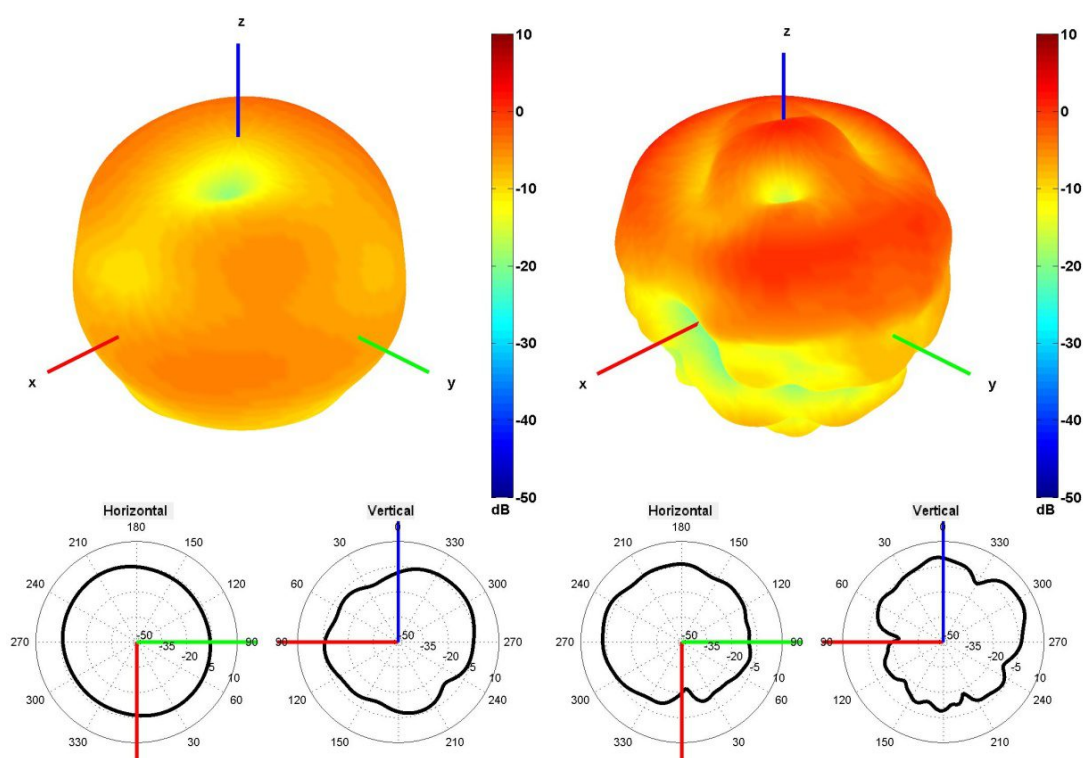


750 and 2500 MHz Radiation pattern

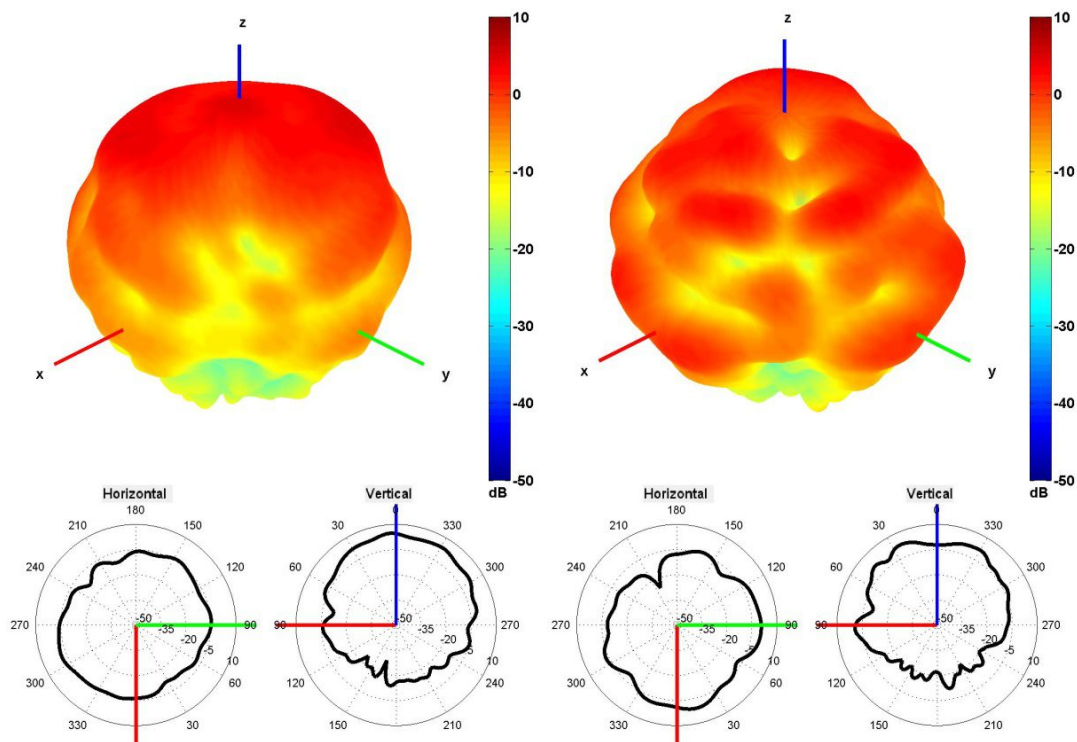


Cable 2: 5GNR

4500 and 5500 MHz Radiation pattern

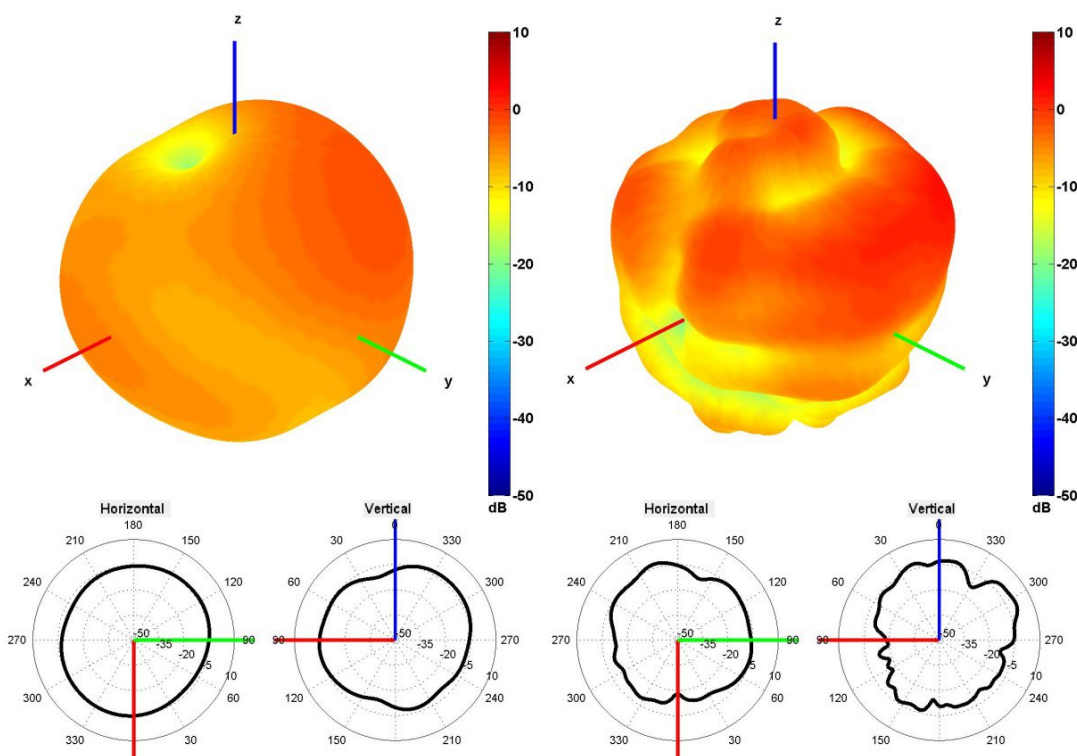


750 and 2500 MHz Radiation pattern

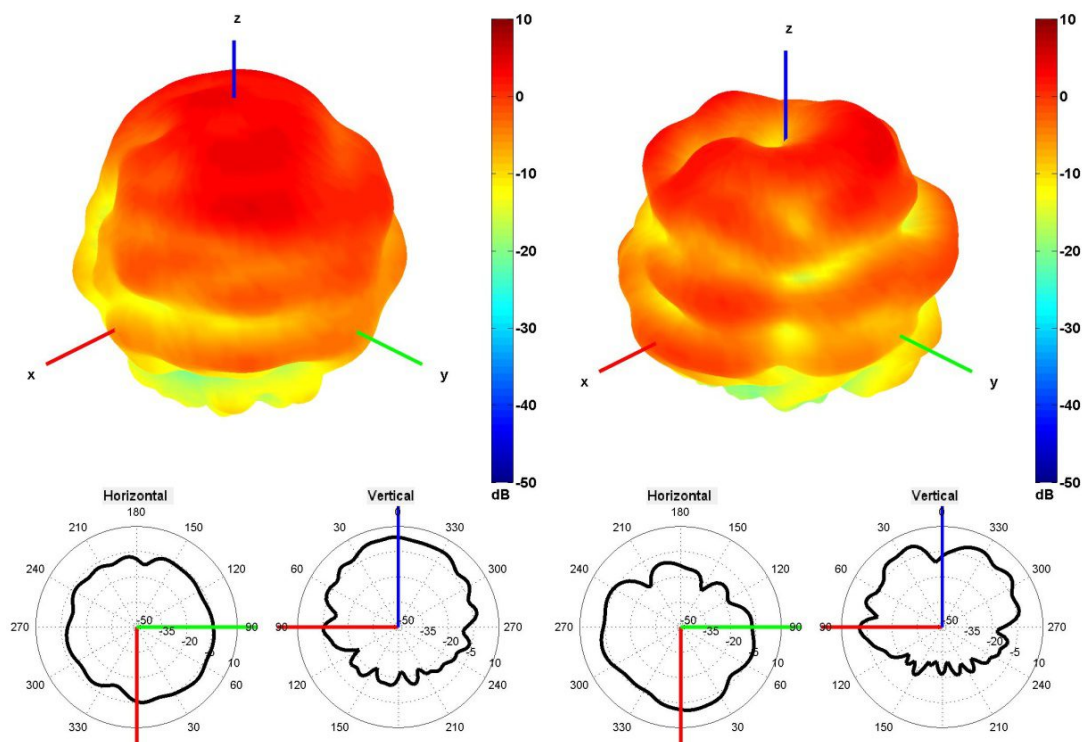


Cable 3: 5GNR

4500 and 5500 MHz Radiation pattern

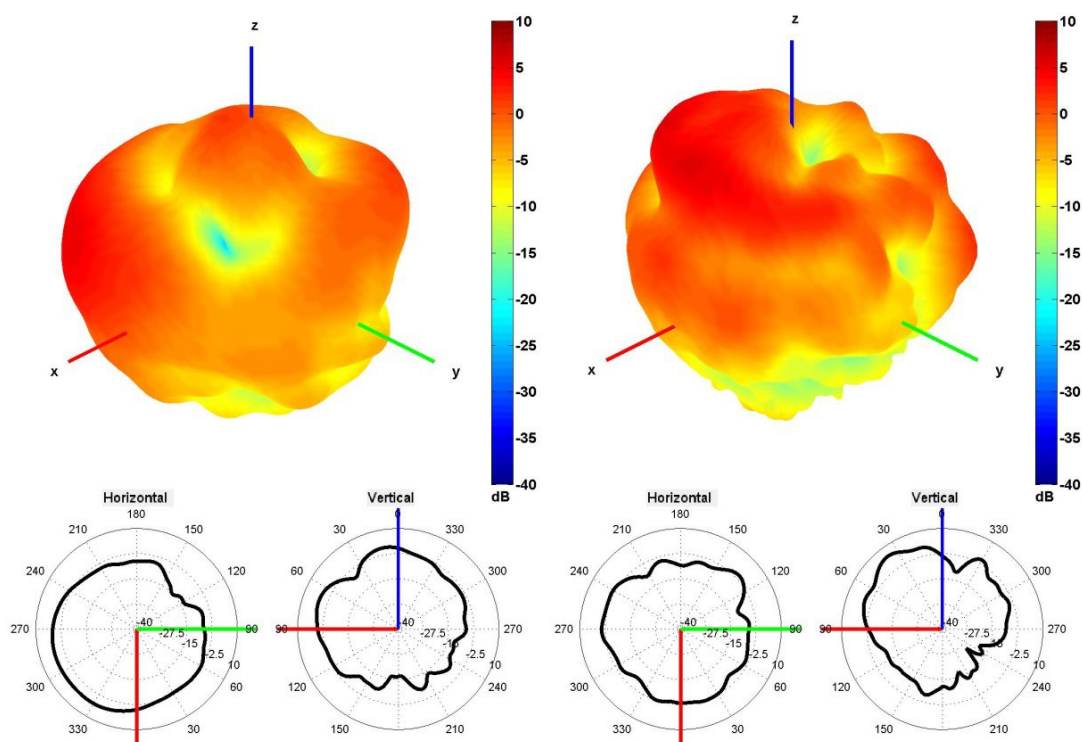


750 and 2500 MHz Radiation pattern

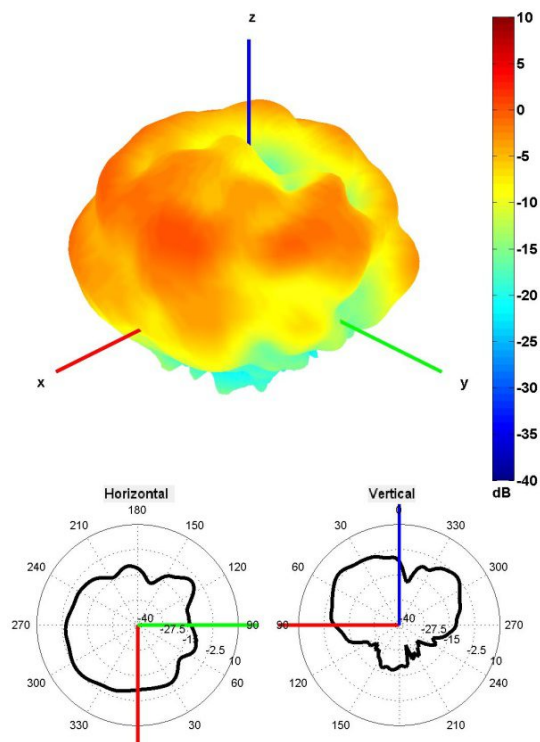


Cable 4: 2.4/5.0/6.0

4500 and 5500 MHz Radiation pattern

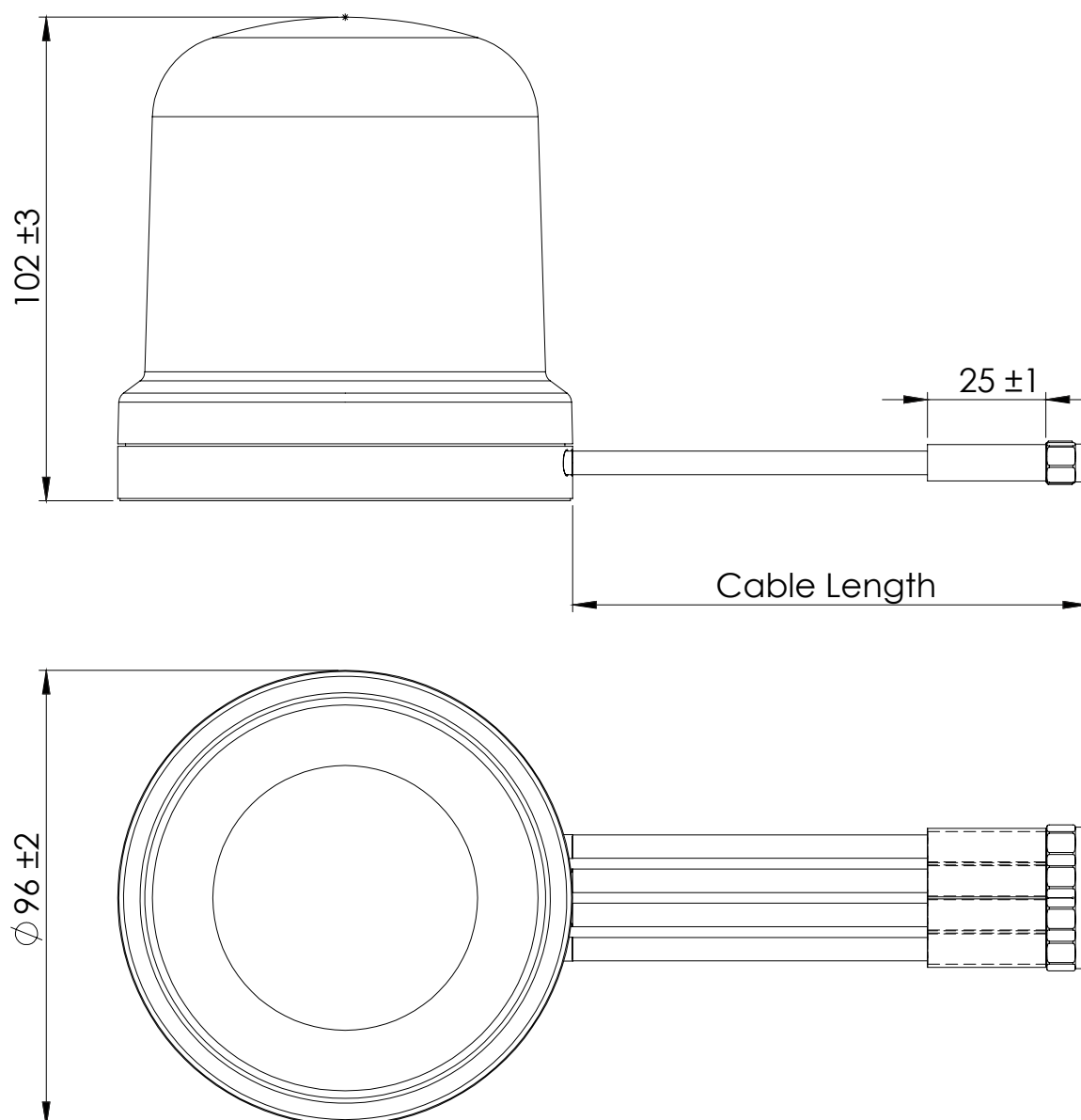


2450 and 5500 MHz Radiation pattern



6500 MHz Radiation pattern

## 4. Antenna drawings



**Note: Dimensions are in millimeters**



## 5. Antenna Images

