

# Regulatory WLAN Antenna Information (Template)

English Language Required for Intel Regulatory Review / Approval

(OEM/ODM or antenna vendor is required to complete this document with platform antenna information.

Remove Intel references and make this your own document)

| Platform information                                                                                                                                                           |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------|---------------------------------------|--------------------------------------------------------------|------------------------------|---------------------------|------------------------|------------------------|-------------------------|------------------------------------------------------------------------------------|
| Brand                                                                                                                                                                          | ODM                         | ****End product model name | Intel platform<br>(ex: Yes, No or NA) | Platform type<br>(ex: regular NB, convertible PC, AIO...etc) | *SAR minimum separation (mm) |                           |                        |                        |                         |                                                                                    |
| Lenovo                                                                                                                                                                         | Huaqin                      | Yoga 7 16IRL8              | YES                                   | Convertible PC                                               | NB:4.9、PAD:4.97              |                           |                        |                        |                         |                                                                                    |
| *****Please fill in exact product model name and make sure the model name is visible on product cover or any parts for end users recognize for authority inspection.           |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| Antenna information                                                                                                                                                            |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| Vendor                                                                                                                                                                         |                             | Type                       | Antenna Part number (Main)            |                                                              |                              | Antenna Part number (Aux) |                        |                        |                         |                                                                                    |
| Luxshae-ICT                                                                                                                                                                    |                             | PIFA                       | L01RF357-NB-H                         |                                                              |                              | L01RF356-NB-H             |                        |                        |                         |                                                                                    |
| Peak gain w/ cable loss (dBi)*                                                                                                                                                 |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
|                                                                                                                                                                                | 2.4GHz<br>2400-2483.5 MHz   | 5.2GHz<br>5150-5250MHz     | 5.3GHz<br>5250-5350MHz                | 5.6GHz<br>5470-5725MHz                                       | 5.8GHz<br>5725-5850MHz       | 6.2GHz<br>5925-6425MHz    | 6.5GHz<br>6425-6525MHz | 6.7GHz<br>6525-6875MHz | 7.0 GHz<br>6875-7125MHz |                                                                                    |
| Main                                                                                                                                                                           | -0.51                       | 2.09                       | 2.25                                  | 4.21                                                         | 4.21                         | 3.19                      | 4.01                   | 4.01                   | 3.04                    |                                                                                    |
| Aux                                                                                                                                                                            | 1.16                        | 2.67                       | 1.92                                  | 2.94                                                         | 3.71                         | 3.38                      | 2.51                   | 2.51                   | 2.9                     |                                                                                    |
| Intel Reference Gain/Type/ Separation distance                                                                                                                                 |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| Antenna Type                                                                                                                                                                   | Antenna Peak gain (In dBi)* |                            |                                       |                                                              |                              |                           |                        |                        |                         | Distance to the end user (mm)                                                      |
|                                                                                                                                                                                | 2.4GHz<br>2400-2483.5 MHz   | 5.2GHz<br>5150-5250MHz     | 5.3GHz<br>5250-5350MHz                | 5.6GHz<br>5470-5725MHz                                       | 5.8GHz<br>5725-5850MHz       | 6.2GHz<br>5925-6425MHz    | 6.5GHz<br>6425-6525MHz | 6.7GHz<br>6525-6875MHz | 7.0GHz<br>6875-7125MHz  |                                                                                    |
| Design                                                                                                                                                                         | 3.00                        | 5.00                       | 5.00                                  | 5.00                                                         | 5.00                         | 5.00                      | 5.00                   | 5.00                   | 5.00                    | Generic: refer to modular FCC SAR report<br>Mid-power: ≥ 8 mm<br>Low power: ≥ 5 mm |
| PIFA                                                                                                                                                                           | 3.24                        | 3.64                       | 3.73                                  | 4.77                                                         | 4.97                         | 4.83                      | 4.30                   | 5.37                   | 5.59                    |                                                                                    |
| Dipole                                                                                                                                                                         | 2.89                        | 2.92                       | 3.19                                  | 4.41                                                         | 4.22                         | 4.83                      | 4.30                   | 4.49                   | 5.34                    |                                                                                    |
| Notes (marked with *)                                                                                                                                                          |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| * SAR minimum separation (mm)                                                                                                                                                  |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| - Regular NB: Minimum antenna-to-body (from antenna bottom to the bottom of the device)                                                                                        |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| - Tablet / Convertible PC: Minimum antenna-to-edge (5 sides of the device)                                                                                                     |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| - Mini-tablet: Minimum antenna-to-edge (6 sides of the device)                                                                                                                 |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| * 3D Peak Antenna gain should be equal or greater than -2 dBi                                                                                                                  |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |
| - If a host integrator plans to use a lower gain antenna of the same type, additional CBP(FCC)/EDT(EU) testing need to be performed while the module is installed in the host. |                             |                            |                                       |                                                              |                              |                           |                        |                        |                         |                                                                                    |

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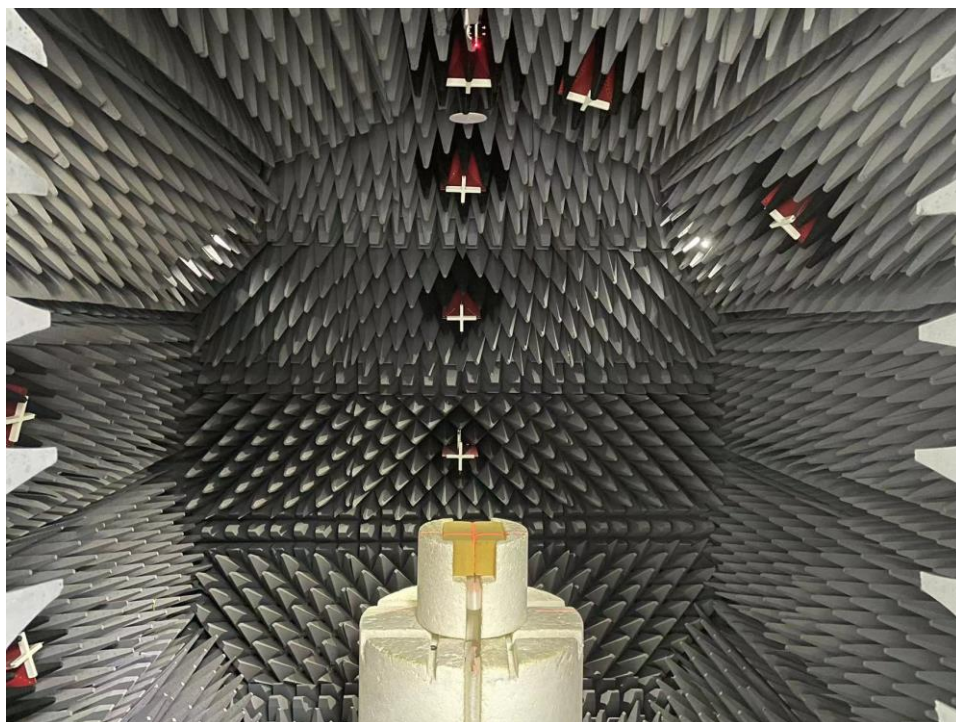
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## 1. Applicable test methods

This test report is prepared by testing in a dark room that is completely silenced and shielded from external signals .

## 2. Test & System Description

### a. Test setup





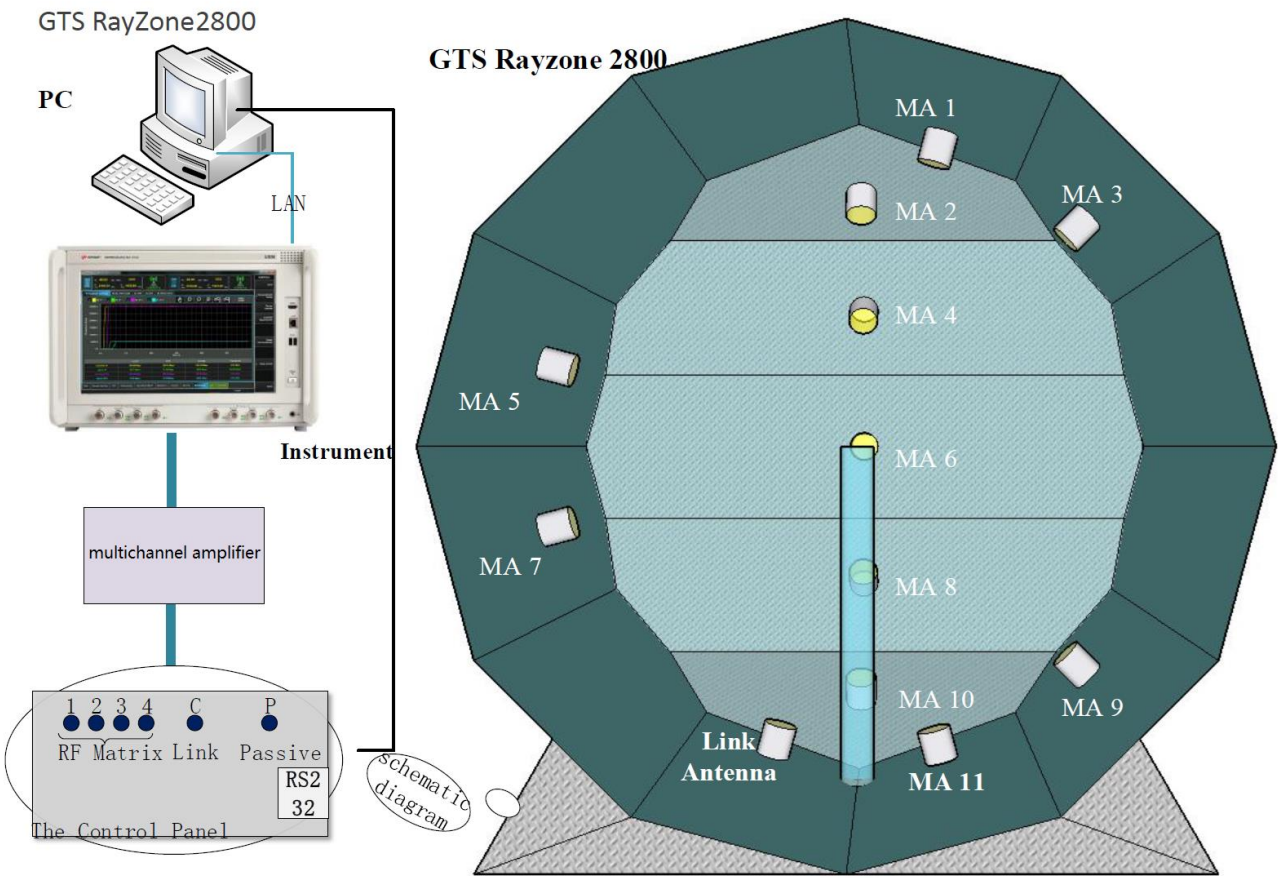
## b. Equipment list

| Number | Device                        | Manufacturer | Cal. Date | Cal. Due Date |
|--------|-------------------------------|--------------|-----------|---------------|
| 1      | RayZone-2800 Chamber          | GTS          | 2022/5/06 | 2023/10/31    |
| 2      | GNSS simulator                | GTS          | 2022/5/06 | 2023/10/31    |
| 3      | GTS MaxSign 100 test software | GTS          | 2022/5/06 | 2023/10/31    |
| 4      | Test system computer          | GTS          | 2022/5/06 | 2023/10/31    |
| 5      | 23 Probe Antenna              | GTS          | 2022/5/06 | 2023/10/31    |
| 6      | 2 Communication Antenna       | GTS          | 2022/5/06 | 2023/10/31    |
| 7      | Wi-Fi Dynamic amplifier       | GTS          | 2022/5/06 | 2023/10/31    |
| 8      | Coupling box                  | GTS          | N/A       | N/A           |
| 9      | Cable 0.6m – 50MHz -18GHz     | GTS          | 2022/5/06 | 2022/12/31    |
| 10     | Cable 0.8m – 50MHz -18GHz     | GTS          | 2022/5/06 | 2022/12/31    |
| 11     | Network analyzer E5071C       | KeySight     | 2022/5/06 | 2023/10/31    |
| 12     | Oscilloscope EXA N9020A       | KeySight     | 2022/5/06 | 2023/10/31    |
| 13     | CMW500                        | RS           | 2022/5/06 | 2023/10/31    |

N/A: Not Applicable

Note: **Chamber calibration included full set of implement**

3. Setup photo



# Antenna Information

## Section 1. Antenna Assembly Specifications

| 1A                                | 1B           | 1C           | 1D                                                                                                     |                | 1E                              | 1F                             | 1G       | 1H              |
|-----------------------------------|--------------|--------------|--------------------------------------------------------------------------------------------------------|----------------|---------------------------------|--------------------------------|----------|-----------------|
| Antenna Part Number               | Manufacturer | Antenna Type | Cable Assembly Part Number and Information                                                             | Freq Range MHz | * Peak Gain W/ Cable loss (dBi) | Peak Gain w/o Cable Loss (dBi) | Max VSWR | Cable Loss (dB) |
| (P/N: L01RF357-NB-H) Main Antenna | Luxshare-ICT | PIFA         | P/N: I-PEX(20565-001R-13)<br>50 ohm Coaxial length:305mm<br>diameter: 1.13mm<br>Connector type: IPEX4  | 2400-2483.5    | -0.51                           | 0.24                           | 3.0      | 0.75            |
|                                   |              |              |                                                                                                        | 5150-5250      | 2.09                            | 3.21                           | 3.0      | 1.12            |
|                                   |              |              |                                                                                                        | 5250-5350      | 2.25                            | 3.38                           | 3.0      | 1.13            |
|                                   |              |              |                                                                                                        | 5470-5725      | 4.21                            | 5.37                           | 3.0      | 1.16            |
|                                   |              |              |                                                                                                        | 5725-5850      | 4.21                            | 5.38                           | 3.0      | 1.17            |
|                                   |              |              |                                                                                                        | 5925-6425      | 3.19                            | 4.4                            | 3.0      | 1.21            |
|                                   |              |              |                                                                                                        | 6425-6525      | 4.01                            | 5.22                           | 3.0      | 1.21            |
|                                   |              |              |                                                                                                        | 6525-6875      | 4.01                            | 5.23                           | 3.0      | 1.22            |
|                                   |              |              |                                                                                                        | 6875-7125      | 3.04                            | 4.26                           | 3.0      | 1.22            |
| (P/N: L01RF356-NB-H) AUX Antenna  | Luxshare-ICT | PIFA         | P/N: I-PEX(20565-001R-13)<br>50 ohm Coaxial length: 240mm<br>diameter: 1.13mm<br>Connector type: IPEX4 | 2400-2483.5    | 1.16                            | 1.75                           | 3.0      | 0.59            |
|                                   |              |              |                                                                                                        | 5150-5250      | 2.67                            | 3.55                           | 3.0      | 0.88            |
|                                   |              |              |                                                                                                        | 5250-5350      | 1.92                            | 2.81                           | 3.0      | 0.89            |
|                                   |              |              |                                                                                                        | 5470-5725      | 2.94                            | 3.86                           | 3.0      | 0.92            |
|                                   |              |              |                                                                                                        | 5725-5850      | 3.71                            | 4.63                           | 3.0      | 0.92            |
|                                   |              |              |                                                                                                        | 5925-6425      | 3.38                            | 4.33                           | 3.0      | 0.95            |
|                                   |              |              |                                                                                                        | 6425-6525      | 2.51                            | 3.46                           | 3.0      | 0.95            |
|                                   |              |              |                                                                                                        | 6525-6875      | 2.51                            | 3.47                           | 3.0      | 0.96            |
|                                   |              |              |                                                                                                        | 6875-7125      | 2.9                             | 3.86                           | 3.0      | 0.96            |

- 3D Antenna Peak Gain required being test in system basis.

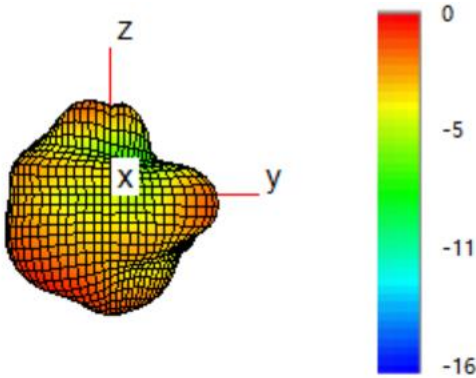


Section 3. Radiation characteristics of antenna loaded in Host Platform

Main Antenna

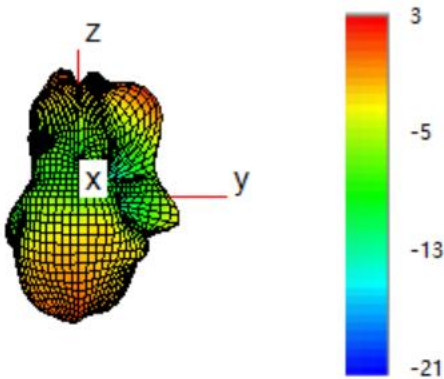
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 2400-2483.5     | -0.51                         |



Max Antenna 3D Radiation Pattern 5150-5250 MHz

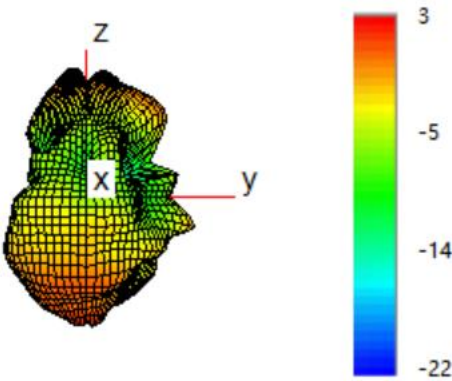
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5150-5250       | 2.09                          |





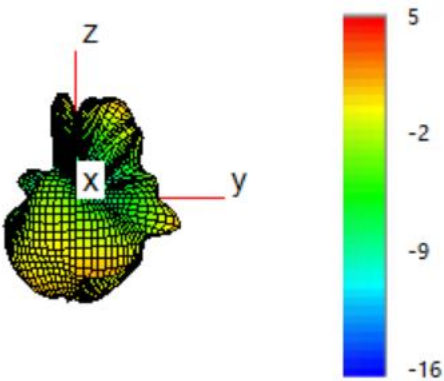
Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5250-5350       | 2.25                          |



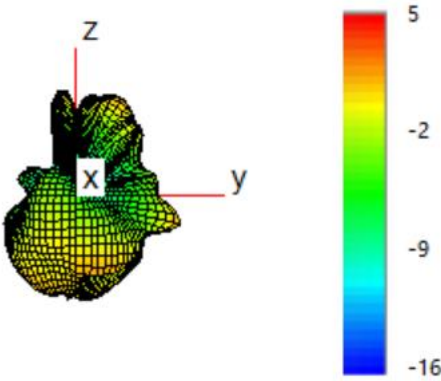
Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5470-5725       | 4.21                          |



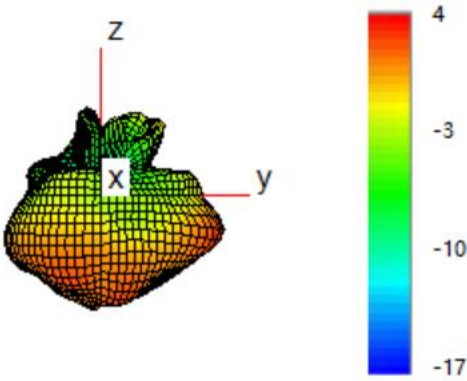
Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 5725-5850          | 4.21                             |



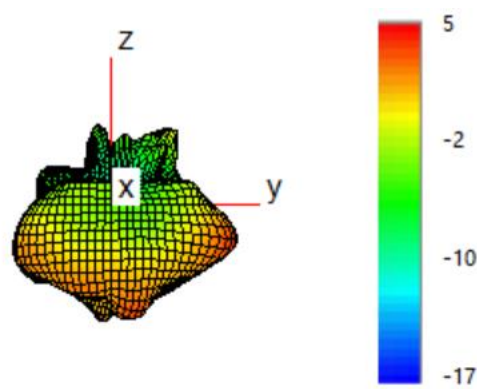
Max Antenna 3D Radiation Pattern 5925-6425 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 5925-6425          | 3.19                             |



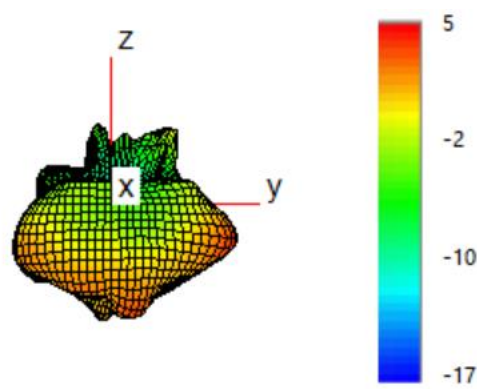
Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 6425-6525          | 4.01                             |



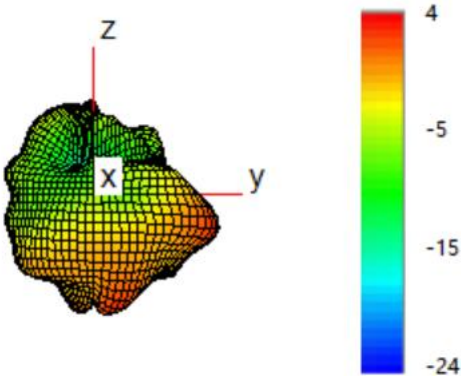
Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 6525-6875          | 4.01                             |



Max Antenna 3D Radiation Pattern 6875-7125 MHz

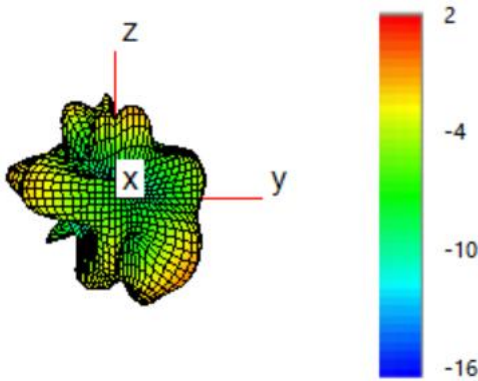
| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 6875-7125          | 3.04                             |



Auxiliary Antenna

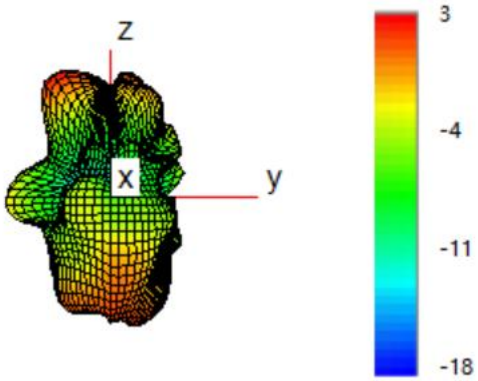
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 2400-2483.5        | 1.16                             |



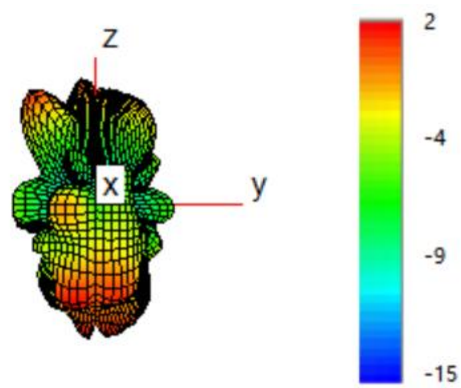
Max Antenna 3D Radiation Pattern 5150-5250 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 5150-5250          | 2.67                             |



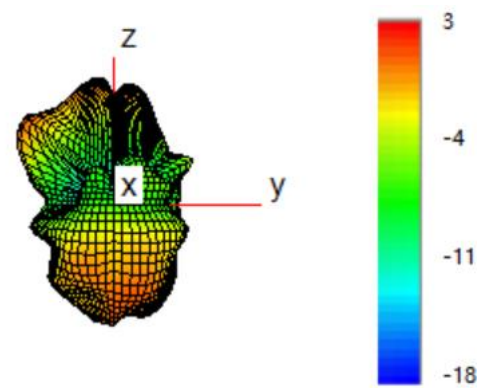
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5250-5350       | 1.92                          |



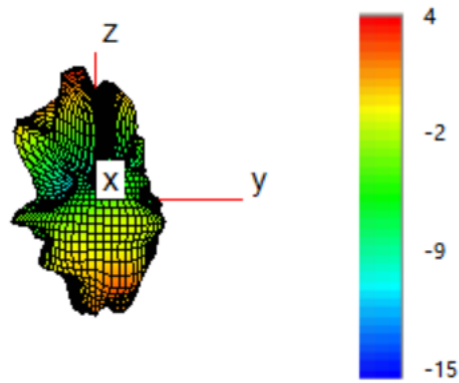
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5470-5725       | 2.94                          |



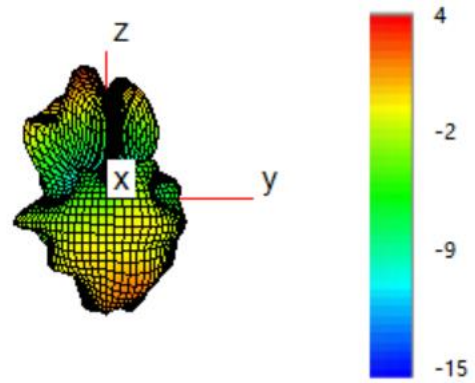
Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5725-5850       | 3.71                          |



Max Antenna 3D Radiation Pattern 5925-6425 MHz

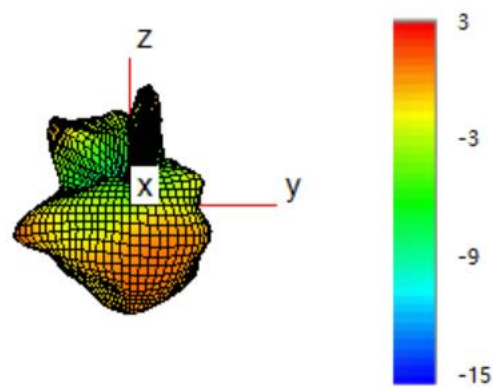
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5925-6425       | 3.38                          |





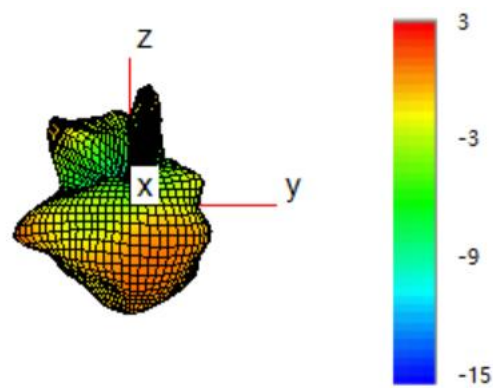
Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6425-6525       | 2.51                          |



Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6525-6875       | 2.51                          |



Max Antenna 3D Radiation Pattern 6875-7125 MHz

| Frequency<br>(MHz) | Peak Gain w/ Cable Loss<br>(dBi) |
|--------------------|----------------------------------|
| 6875-7125          | 2.9                              |

