

# ANTENNA INFORMATION

|   |                  |
|---|------------------|
| OEM   |                  |
| ODM   | Getac            |
| Platform model name                                       | Butterfly (ZX80) |
| Intel platform (ex: Yes, No or NA)                        |                  |
| Platform type (ex: regular NB, convertible PC, AIO...etc) | Tablet           |
| SAR minimum separation (mm)                               |                  |

|                                       |  |                                     |
|---------------------------------------|--|-------------------------------------|
| Antenna manufacturer                  | Wistron Neweb Corporation                                |                                     |
| Address                               | 20 Park Ave.II , Hsinchu Science Park,Hsinchu 308,Taiwan |                                     |
| Antenna Part number                   | Main: 422GA7500017<br>(81EAB715.G01)                     | Aux: 422GA7500018<br>(81EAB715.G02) |
| Antenna type (ex: PIFA, Dipole...etc) | PIFA   |                                     |

| Antenna 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 | 5.9GHz<br>5850-5895MHz | 6.2GHz<br>5925-6425MHz | 6.5GHz<br>6425-6525MHz | 6.7GHz<br>6525-6875MHz | 7.0 GHz<br>6875-7125MHz |
| Main                                   | 2.82                      | 2.35                   | 2.35                   | 2.47                   | 2.57                   | 2.57                   | 2.84                   | 2.84                   | 2.71                   | 2.87                    |
| Aux                                    | 0.73                      | 2.55                   | 2.68                   | 2.63                   | 2.47                   | 2.29                   | 2.74                   | 1.69                   | 2.22                   | 2.98                    |

| Cable Assembly Part Number and Information |              |                  |                    |                |                |
|--|--------------|------------------|--------------------|----------------|----------------|
|  | Cable PN     | Cable length(cm) | Cable diameter(mm) | Impedance(ohm) | Connector type |
| Main                                       | 50.2EL8U.038 | 6.2              | 1.13               | 50             | I-pex MHF4L    |
| Aux  | 50.2EL8U.194 | 16               | 1.13               | 50             | I-pex MHF4L    |

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

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## 1. Intel Reference Gain and Type

| Antenna Peak gain w/ cable loss (dBi) |                         |                           |                        |                        |                        |                        |                        |                        |                        |                        |                         |
|---------------------------------------|-------------------------|---------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Band/Frequency                        |                         | 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 | 5.9GHz<br>5850-5895MHz | 6.2GHz<br>5925-6425MHz | 6.5GHz<br>6425-6525MHz | 6.7GHz<br>6525-6875MHz | 7.0 GHz<br>6875-7125MHz |
| Design                                | EU/UK                   | 3.00                      | 5.00                   | 5.00                   | 5.00                   | 5.00                   | 5.00                   | 5.00                   | 5.00                   | 5.00                   | 5.00                    |
| PIFA                                  | For WiFi 6E and earlier | 3.24                      | 3.64                   | 3.73                   | 4.77                   | 4.97                   | 4.72                   | 4.83                   | 4.30                   | 5.37                   | 5.59                    |
|                                       | From WiFi 7             | 2.95                      | 5.11                   | 4.55                   | 5.15                   | 5.13                   | 4.45                   | 5.02                   | 5.02                   | 4.96                   | 4.96                    |
| Dipole                                | For WiFi 6E and earlier | 2.89                      | 2.92                   | 3.19                   | 4.41                   | 4.22                   | 4.22                   | 4.83                   | 4.30                   | 4.49                   | 5.34                    |
|                                       | From WiFi 7             | 2.95                      | 4.03                   | 4.11                   | 5.15                   | 5.13                   | 4.45                   | 5.02                   | 4.71                   | 4.49                   | 4.96                    |

### 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.

## 2. Document Revision History

| Revision # | Revision Details | Issued Date |
|------------|------------------|-------------|
| Rev. 00    | First Issue      | 2023.06.20  |

### 3. Test & System Description

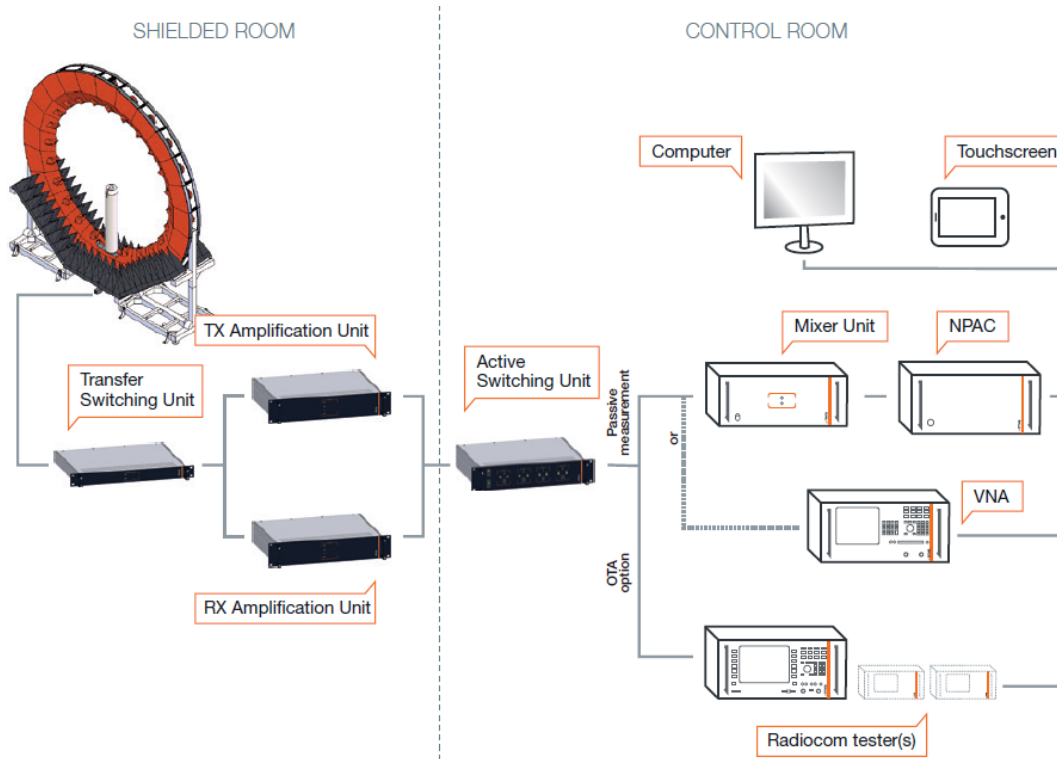
#### 3.1 Measurement Method and System

<insert test description here for test method>

This test report is prepared for host antenna testing under a Full Anechoic Chamber (WNC's Satimo SG24L).

#### 3.2 Test setup

<insert test diagram here for test site utilized>



### 3.3 Equipment list

<insert test diagram here for test site utilized>

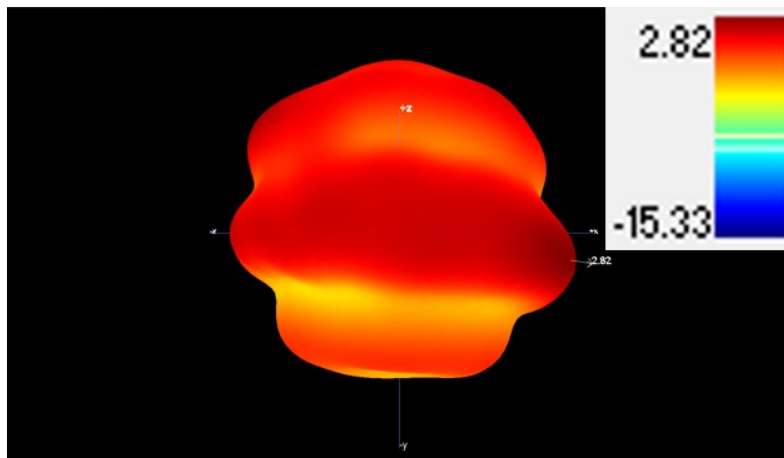
| Device                       | Type / Model            | Serial #   | Manufacture | Cal. Date  | Cal. Du Date |
|------------------------------|-------------------------|------------|-------------|------------|--------------|
| Anechoic Chamber             | 555-FAC                 |            | ChamPro     | 2023-07-10 | 2024-07      |
| Antenna Measurement System   | SG24-L                  |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Network Analyzer             | VNA / E5080B            | MY59203136 | Keysight    | 2023-01-08 | 2024-07      |
| Tx Amplifier Unit            | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Rx Amplifier Unit            | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Probe Select Unit            | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Motion Control Unit          | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Power and Control Unit       | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Array Control Unit           | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Turn Table                   | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Goniometer                   | SG24 Series Accessories |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |
| Control Software             | WaveStudio              |            | MVG-SATIMO  | N/A        | N/A          |
| Uninterruptible Power Supply | FT-130H-U               |            | FTUPS       | N/A        | N/A          |
| Wide Band Dipole             | WD6000                  |            | MVG-SATIMO  | 2023-07-10 | 2024-07      |

#### 4. Radiation characteristics of antenna loaded in Host Platform

##### Main Antenna

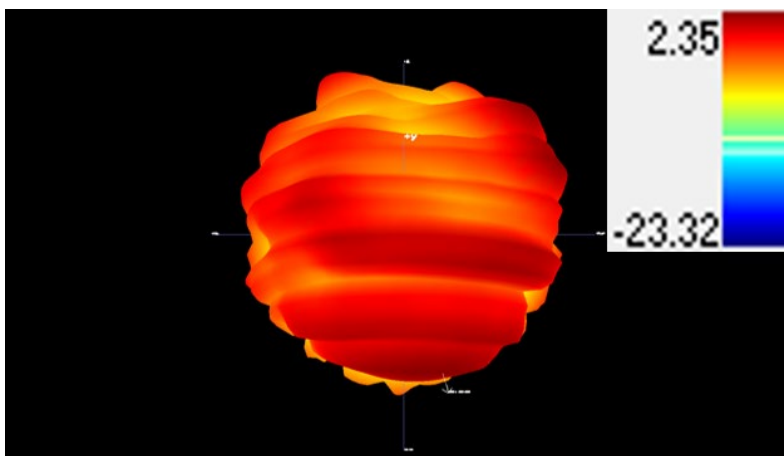
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 2400-2483.5     | 2.82                          |



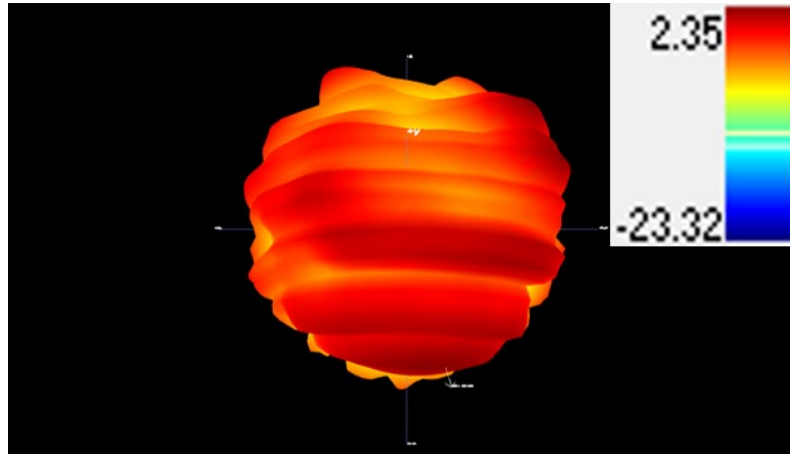
Max Antenna 3D Radiation Pattern 5150-5250 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5150-5250       | 2.35                          |



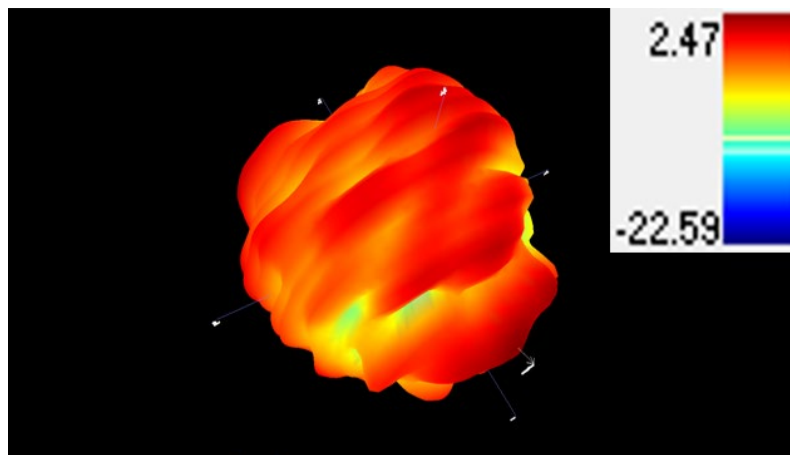
## Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5250-5350       | 2.35                          |



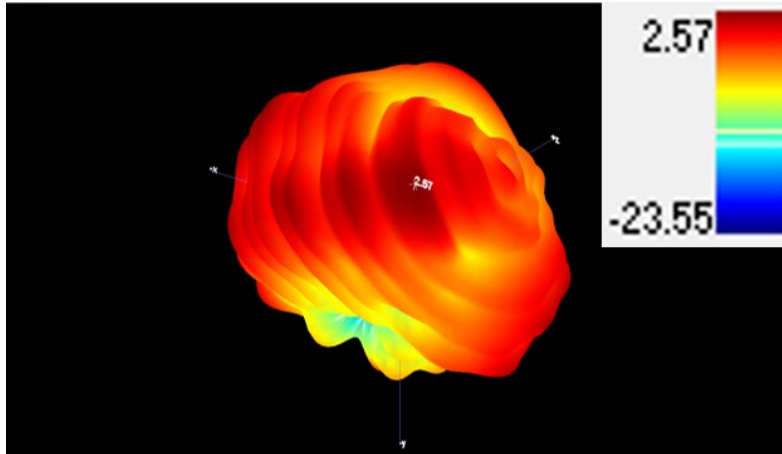
## Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5470-5725       | 2.47                          |



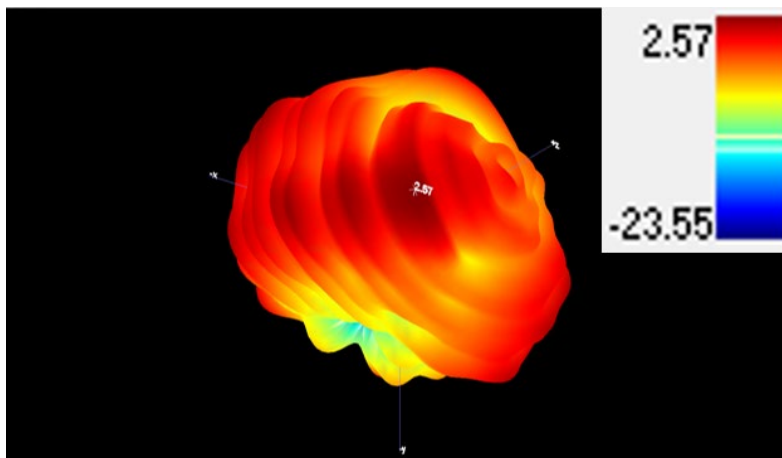
## Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5725-5850       | 2.57                          |



## Max Antenna 3D Radiation Pattern 5850-5895 MHz

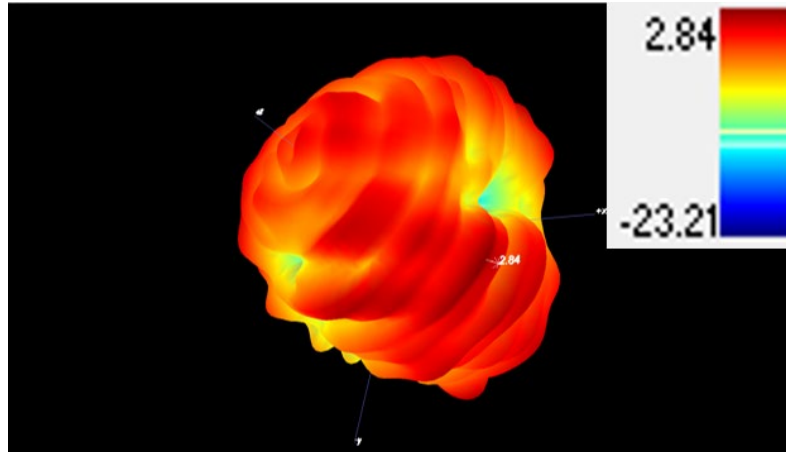
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5850-5895       | 2.57                          |





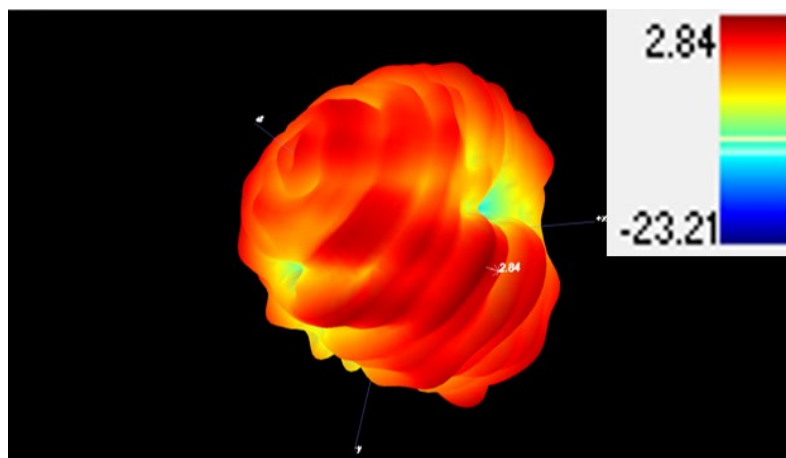
## Max Antenna 3D Radiation Pattern 5925-6425 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5925-6425       | 2.84                          |



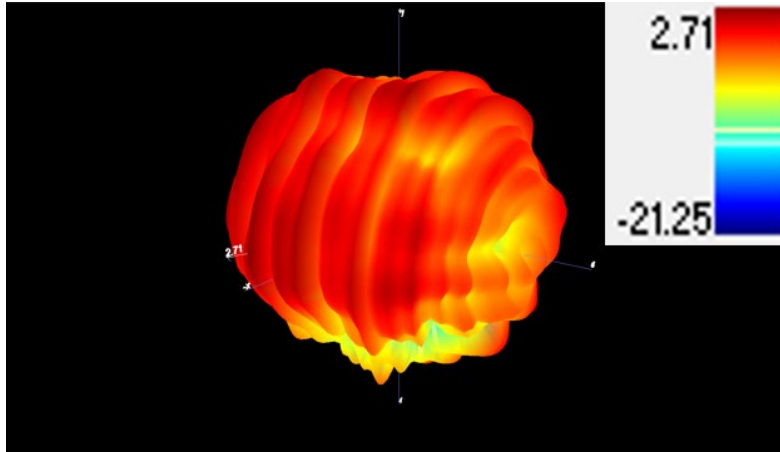
## Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6425-6525       | 2.84                          |



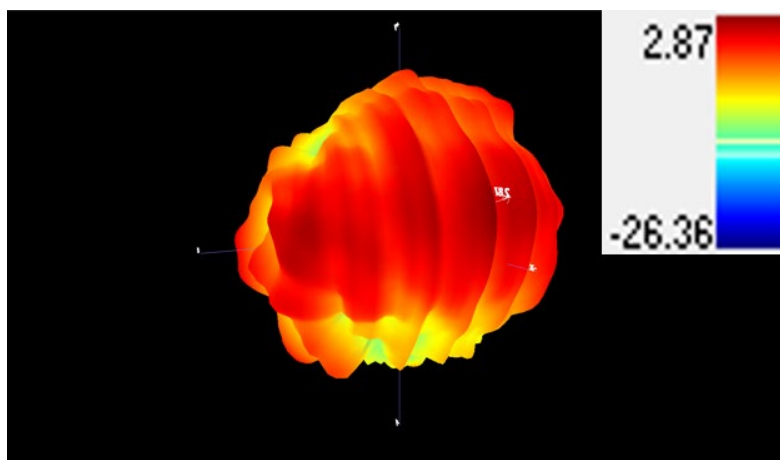
Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6525-6875       | 2.71                          |



Max Antenna 3D Radiation Pattern 6875-7125 MHz

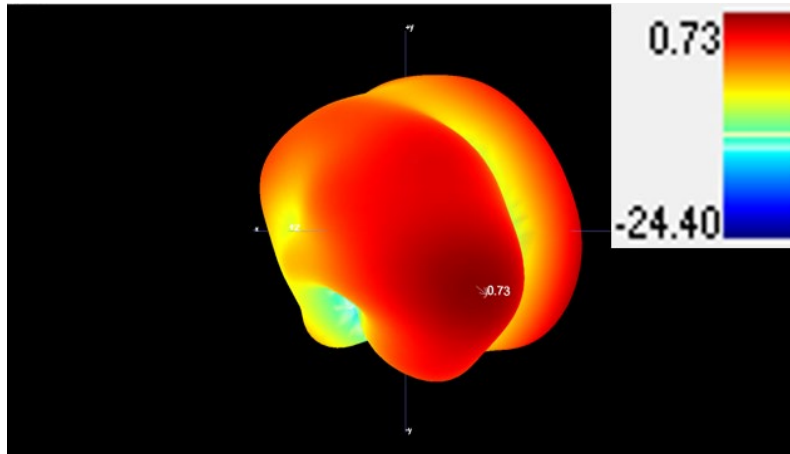
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6875-7125       | 2.87                          |



## Auxiliary Antenna

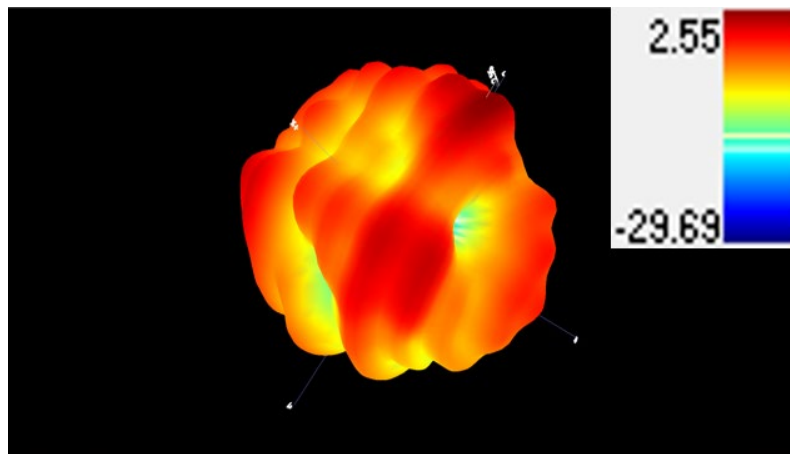
### Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 2400-2483.5     | 0.73                          |



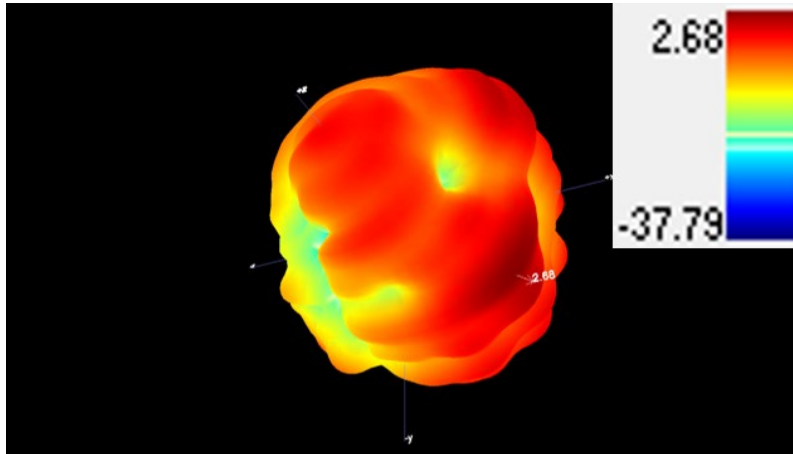
### Max Antenna 3D Radiation Pattern 5150-5250 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5150-5250       | 2.55                          |



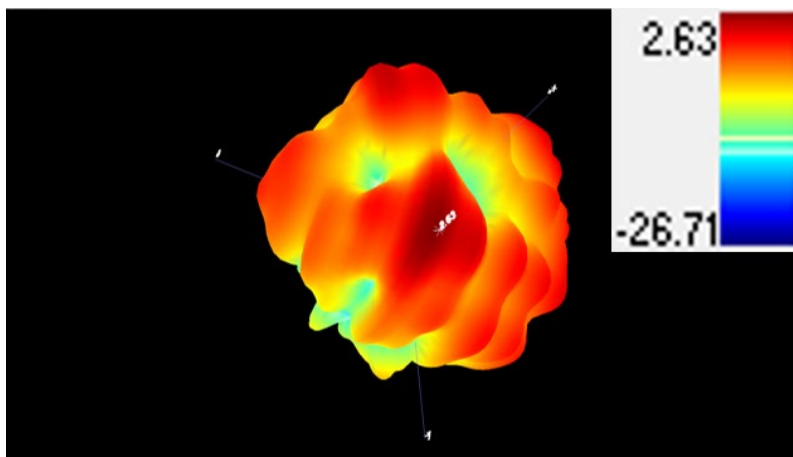
### Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5250-5350       | 2.68                          |



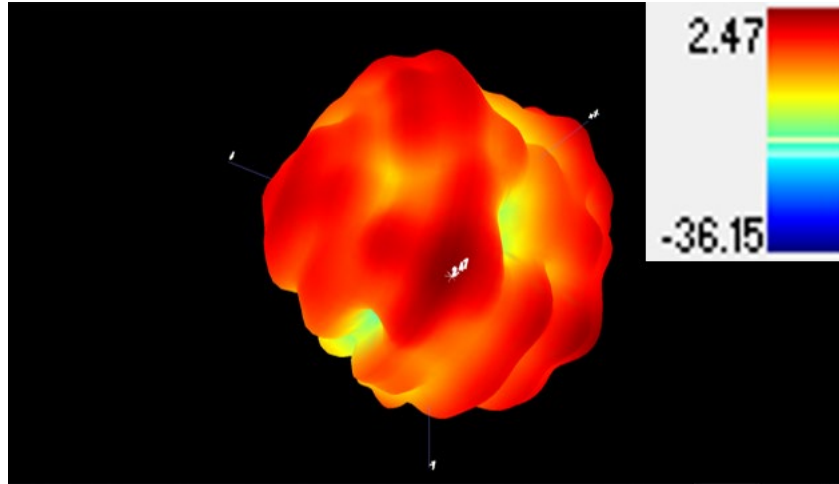
### Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5470-5725       | 2.63                          |



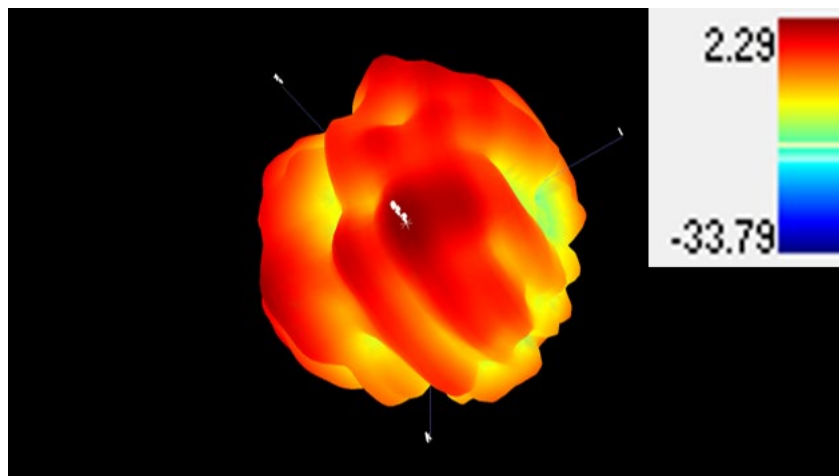
### Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5725-5850       | 2.47                          |



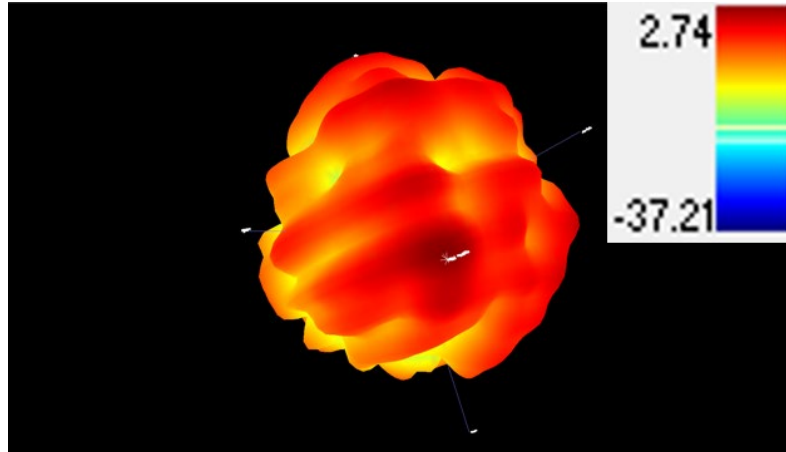
### Max Antenna 3D Radiation Pattern 5850-5895 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5850-5895       | 2.29                          |



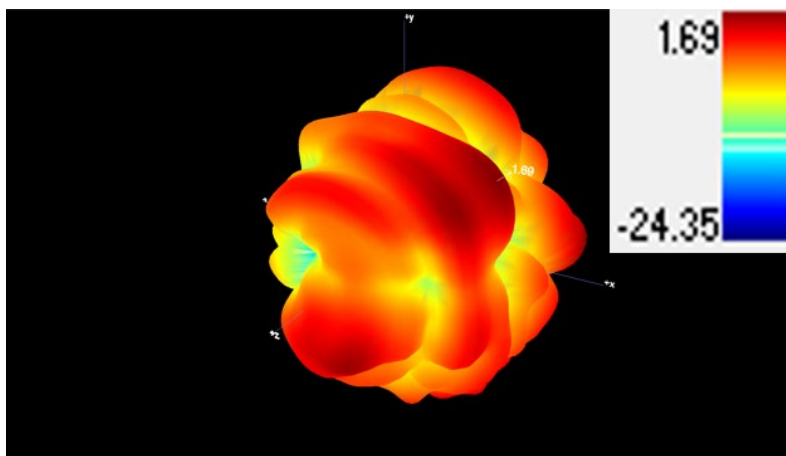
## Max Antenna 3D Radiation Pattern 5925-6425 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 5925-6425       | 2.74                          |



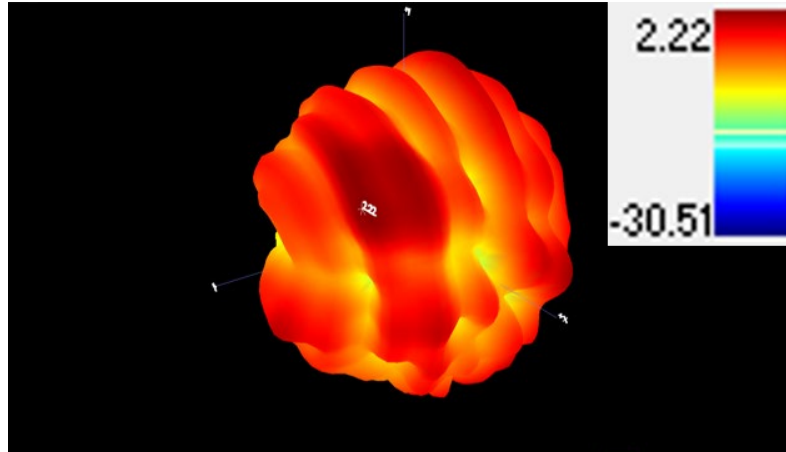
## Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6425-6525       | 1.69                          |



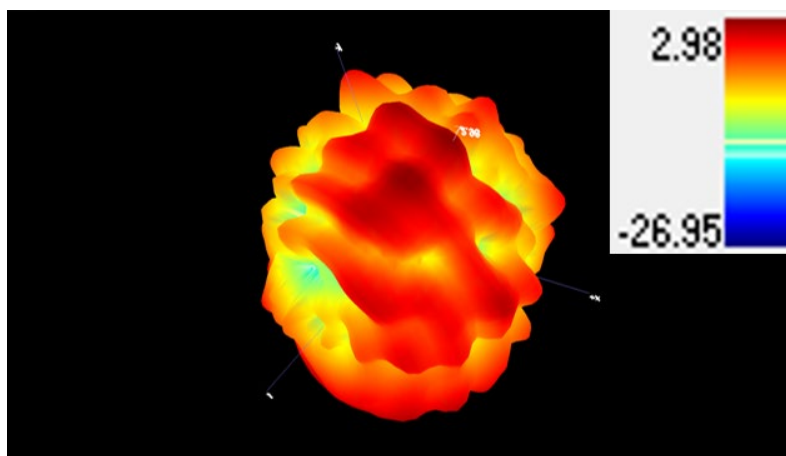
## Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6525-6875       | 2.22                          |



## Max Antenna 3D Radiation Pattern 6875-7125 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|-----------------|-------------------------------|
| 6875-7125       | 2.98                          |

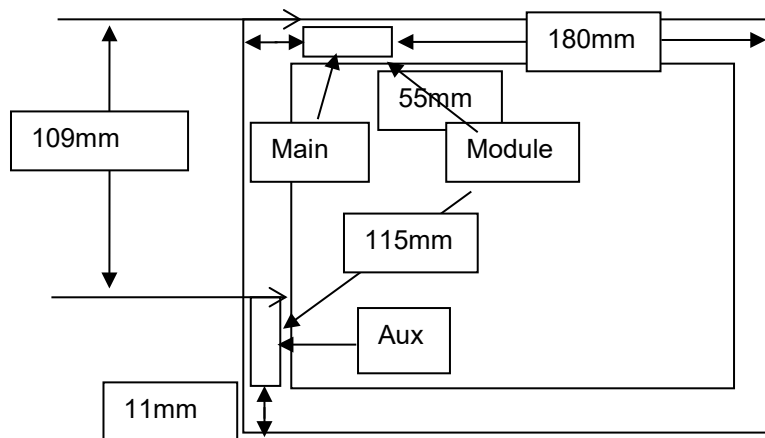


# Annex B. Antenna Location

## B.1 Antenna Host Platform Location Information

Include a dimensioned photo(s) or dimensioned drawing(s) of Main and Aux antenna placements (measurements are not required for receive-only antenna).

Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.





## B.2 Antenna dimensional information for SAR evaluation

Include a dimensioned photo(s) or dimensioned drawing(s) showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary landscape positions. Include a description of any proximity sensors or power throttling implementations that limit or exclude use of any host orientation.

