# Regulatory WLAN Antenna Information (Template)

*English Language Required for Qualcomm Regulatory Review / Approval*

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

## Platform information

| Brand | ODM | ****End product model name | Qualcomm platform (ex: Yes, No or NA) | Platform type (ex: regular NB, convertible PC, AIO…etc) | *SAR minimum separation (mm) |
|---|---|---|---|---|---|
| ASUS | NO | UX3407Q<br>UX3407R | Yes | Regular NB | 8.38 |

*****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) |
|---|---|---|---|
| LUXSHARE-ICT | PIFA | 14008-06220000<br>LA9RF585-NB-H | 14008-06220100<br>LA9RF586-NB-H |

## Peak gain w/ cable loss (dBi)*

| | 2.4GHz 2400-2483.5 MHz | 5.2GHz 5150-5250MHz | 5.3GHz 5250-5350MHz | 5.5GHz 5470-5725MHz | 5.8GHz 5725-5850MHz | 5.9GHz 5850-5895MHz | 6.2GHz 5925-6425MHz | 6.5GHz 6425-6525MHz | 6.7GHz 6525-6875MHz | 6.9 GHz 6875-7125MHz |
|---|---|---|---|---|---|---|---|---|---|---|
| **Main** | 2.72 | 2.74 | 2.77 | 4.31 | 3.92 | 4.18 | 3.77 | 1.23 | 3.21 | 3.78 |
| **Aux** | 2.75 | 2.76 | 2.81 | 4.34 | 3.95 | 4.39 | 4.52 | 4.14 | 4.1 | 3.83 |

## Qualcomm Reference Gain/Type/ Separation distance

| Antenna Type | Antenna Peak gain (In dBi)* | | | | | | | | | | Distance to the end user (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.4GHz 2400-2483.5 MHz | 5.2GHz 5150-5250MHz | 5.3GHz 5250-5350MHz | 5.5GHz 5470-5725MHz | 5.8GHz 5725-5850MHz | 5.9GHz 5850-5895MHz | 6.2GHz 5925-6425MHz | 6.5GHz 6425-6525MHz | 6.7GHz 6525-6875MHz | 6.9GHz 6875-7125MHz | Generic: refer to modular FCC SAR report |
| **PIFA** | **3.53** | **3.06** | **3.07** | **4.81** | **4.2** | **5.09** | **5.14** | **5.09** | **5.16** | **5.12** | Mid-power: ≥ 8 mm |
| **Dipole** | **3.22** | **3.35** | **3.42** | **4.77** | **4.72** | **4.71** | **4.75** | **4.29** | **4.81** | **4.74** | Low power: ≥ 5 mm |

**Notes (marked with *)**

*** SAR minimum separation (mm)**

- Regular NB: Minimum antenna-to-body (from antenna bottom to the bottom of the device)

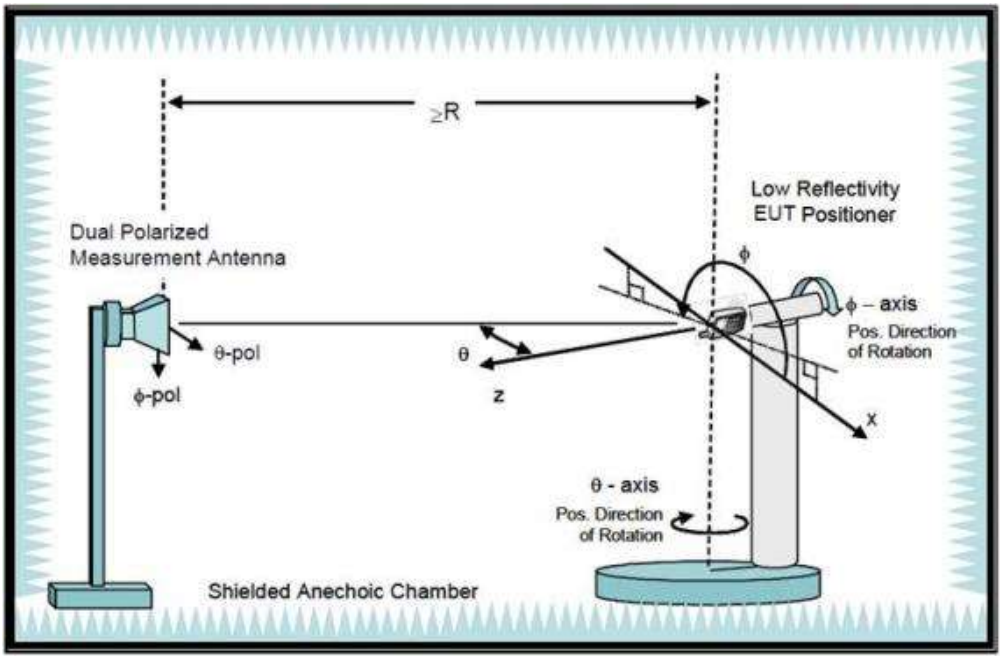
- Tablet / Convertible PC: Minimum antenna-to-edge (5 sides of the device)

- 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.

# Table of contents

1. **Applicable test methods**

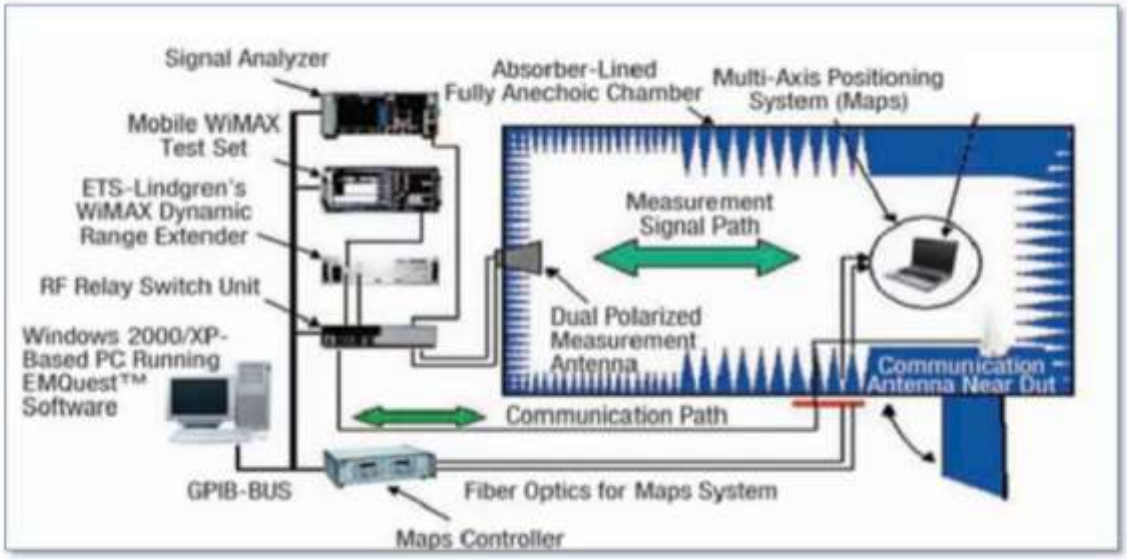



## 2. Test & System Description

a. Test setup

Typical Setup for Atenlab OTA-600:

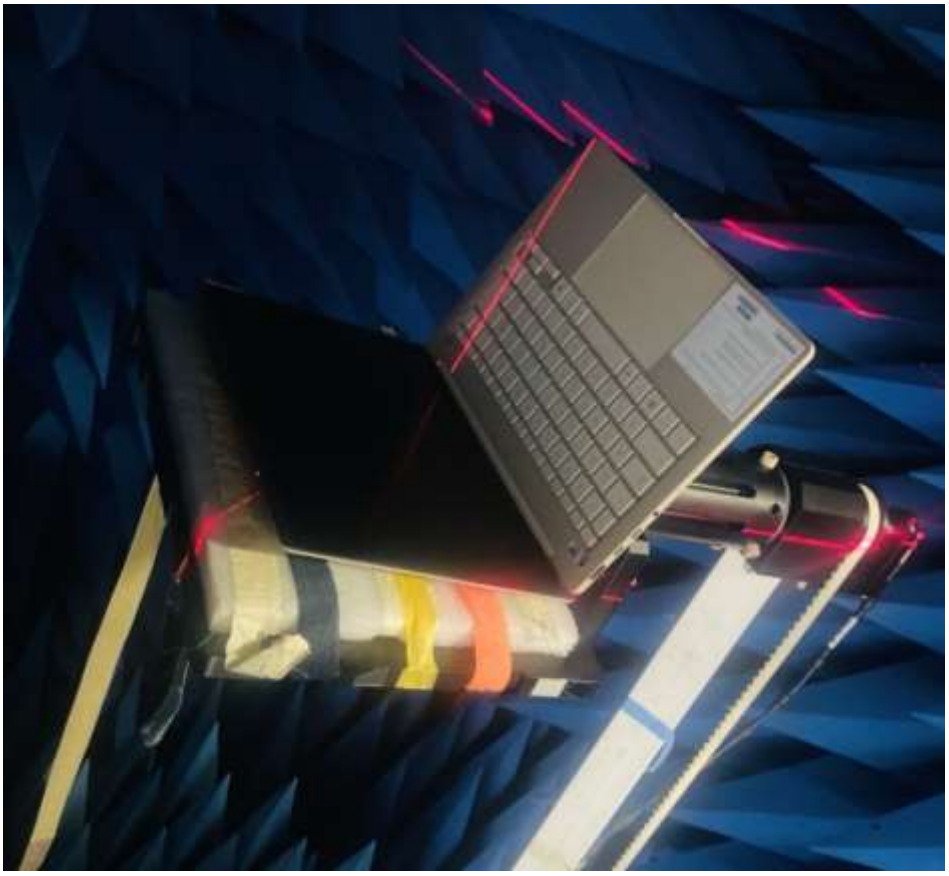
ETS 8500




b. Equipment list

| Device | Type/Model | Manufacturer | Serial# | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| Anechoic Chamber | OTA-600 | Atenlab | - | 2024/5/7 | 2026/5/7 |
| Turn Table | - | Atenlab | - | N/A | N/A |
| Switch and Positioning System | - | Atenlab | - | N/A | N/A |
| Measurement Software | - | Atenlab | - | N/A | N/A |
| Boresight Antenna Mast | - | Atenlab | - | N/A | N/A |
| Spectrum Analyzer | N9020A | Agilent Technologies | X16-96096 | 2023/7/25 | 2025/7/25 |
| Horn antenna | 3164-08 | ETS-Lindgren | 00143257 | 2024/4/3 | 2026/4/3 |
| Horn Antenna +Amplifier + HPF6.4 | 115195 | ETS-Lindgren | 00117614 | 2023/8/18 | 2025/8/18 |
| Cable 2.5m – 30MHz to 18GHz | 0500990992500KE | Radial | 19.23.395 | 2024/1/10 | 2026/1/10 |
| Cable 1.2m – 18 to 40GHz | UFA147A-0-0480-200200 | Micro-coax | MFR 64639223720-003 | 2024/1/10 | 2026/1/10 |
| Cable 1m - 1GHz to 18GHz | UFA147A | Utiliflex | - | 2024/1/10 | 2026/1/10 |
| Cable 2m – 26.5MHz to 18GHz | 794-9191-200A | Atem | E00327 | 2024/1/10 | 2026/1/10 |
| Cable 1m – 30MHz to 18GHz | UFB311A-0-0590-50U50U | Micro-coax | MFR 64639223230-001 | 2024/1/10 | 2026/1/10 |
| Cable 7m – DC - 18GHz | 0501051057000GX | Radial | 19.35.850 | 2024/1/10 | 2026/1/10 |
| Cable 7m – 18 to 40GHz | R286304009 | Radial | - | 2024/1/10 | 2026/1/10 |
| Cable 1.5m – DC – 18GHz | CBL-1.5M-SMSM+ | Mini-Circuits | 202879 | 2024/1/10 | 2026/1/10 |
| Temp and Humidity Logger | GM-108A | - | - | 2023/5/2 | 2025/5/2 |

## 3. Setup photo



# Antenna Information

## Section 1. Antenna Assembly Specifications

| 1A<br>Antenna Part Number | 1B<br>Manufacturer | 1C<br>Antenna Type | 1D<br>Cable Assembly Part Number and Information | Freq Range<br>MHz | 1E<br>* Peak Gain W/ Cable loss (dBi) | 1F<br>Peak Gain w/o Cable Loss (dBi) | 1G<br>Max VSWR | 1H<br>Cable Loss (dB) |
|---|---|---|---|---|---|---|---|---|
| 14008-06220000<br>LA9RF585-NB-H Main Antenna | LUXSHARE-ICT | PIFA | 50-ohm Coaxial length: 170.5mm diameter: 1.13mm Low loss | 2400-2483.5 | 2.72 | 3.19 | 2.00 | 0.47 |
| | | | | 5150-5250 | 2.74 | 3.44 | 3.00 | 0.70 |
| | | | | 5250-5350 | 2.77 | 3.47 | 3.00 | 0.70 |
| | | | | 5470-5725 | 4.31 | 5.04 | 3.00 | 0.73 |
| | | | | 5725-5850 | 3.92 | 4.66 | 3.00 | 0.74 |
| | | | | 5850-5895 | 4.18 | 4.92 | 3.00 | 0.74 |
| | | | | 5925-6425 | 3.77 | 4.54 | 3.00 | 0.77 |
| | | | | 6425-6525 | 1.23 | 2.02 | 3.00 | 0.79 |
| | | | | 6525-6875 | 3.21 | 4.02 | 3.00 | 0.81 |
| | | | | 6875-7125 | 3.78 | 4.61 | 3.00 | 0.83 |
| 14008-06220100<br>LA9RF586-NB-H Aux Antenna | LUXSHARE-ICT | PIFA | 50-ohm Coaxial length: 268mm diameter: 1.13mm Low loss | 2400-2483.5 | 2.75 | 3.49 | 3.00 | 0.74 |
| | | | | 5150-5250 | 2.76 | 3.86 | 3.00 | 1.10 |
| | | | | 5250-5350 | 2.81 | 3.92 | 3.00 | 1.11 |
| | | | | 5470-5725 | 4.34 | 5.48 | 3.00 | 1.14 |
| | | | | 5725-5850 | 3.95 | 5.11 | 3.00 | 1.16 |
| | | | | 5850-5895 | 4.39 | 5.56 | 3.00 | 1.17 |
| | | | | 5925-6425 | 4.52 | 5.72 | 3.00 | 1.20 |
| | | | | 6425-6525 | 4.14 | 5.38 | 3.00 | 1.24 |
| | | | | 6525-6875 | 4.10 | 5.37 | 3.00 | 1.27 |
| | | | | 6875-7125 | 3.83 | 5.14 | 3.00 | 1.31 |

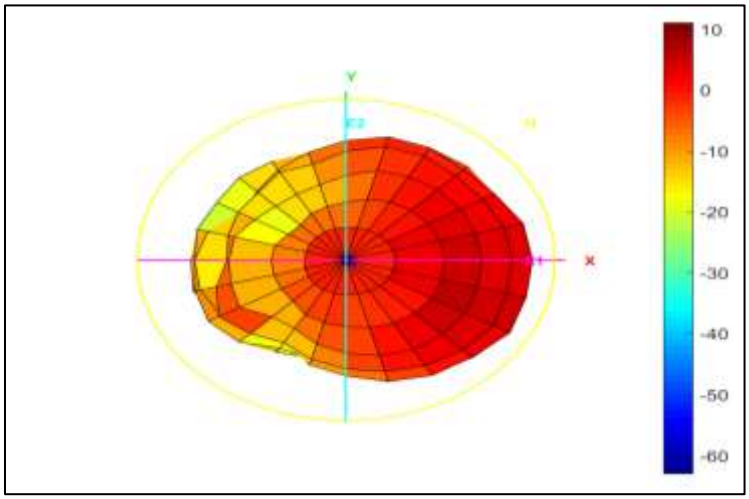
- **3D Antenna Peak Gain required being test in system basis.**

# Section 3. Radiation characteristics of antenna loaded in Host Platform

## Main Antenna

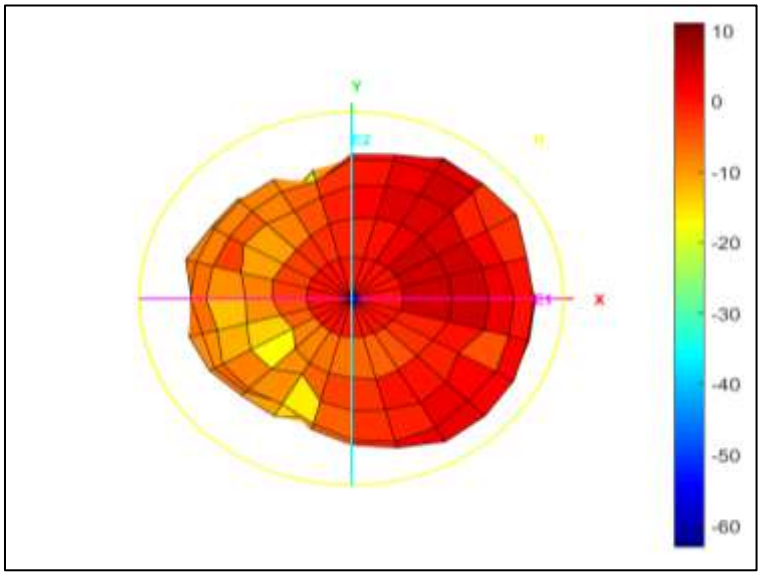
### Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 2400-2483.5 | 2.72 |



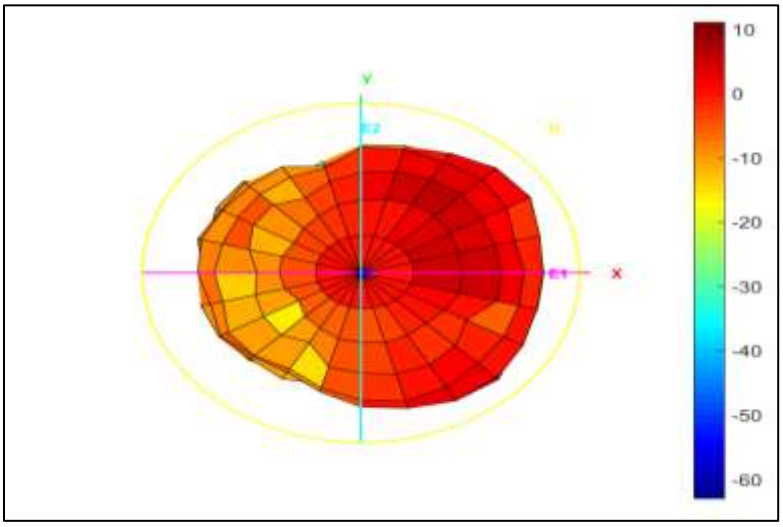

### Max Antenna 3D Radiation Pattern 5150-5250 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5150-5250 | 2.74 |



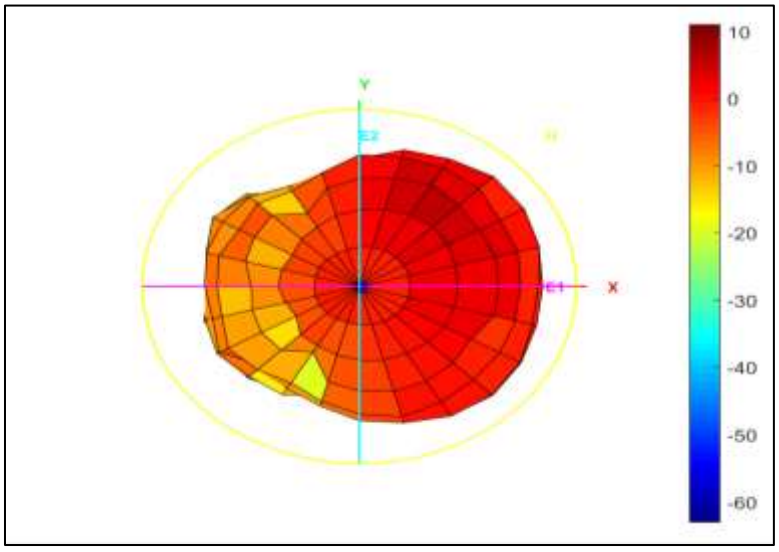
## Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5250-5350 | 2.77 |



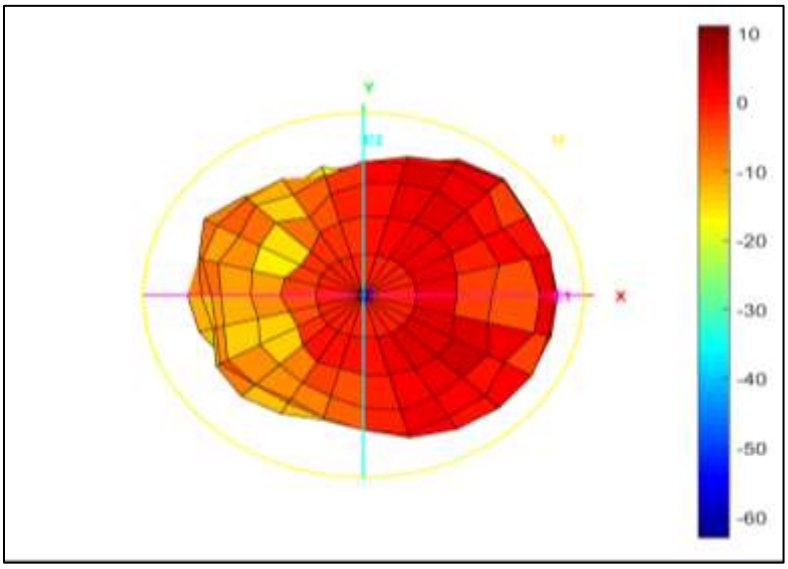

## Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5470-5725 | 4.31 |



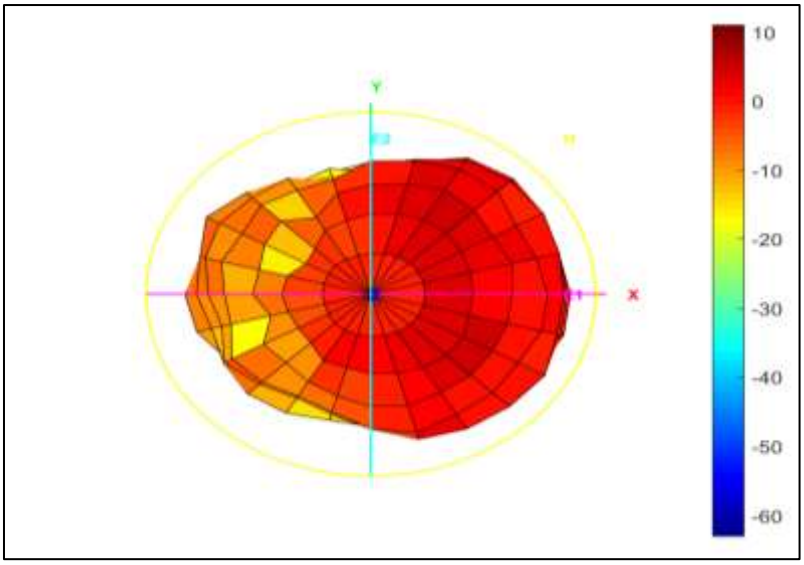
## Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5725-5850 | 3.92 |



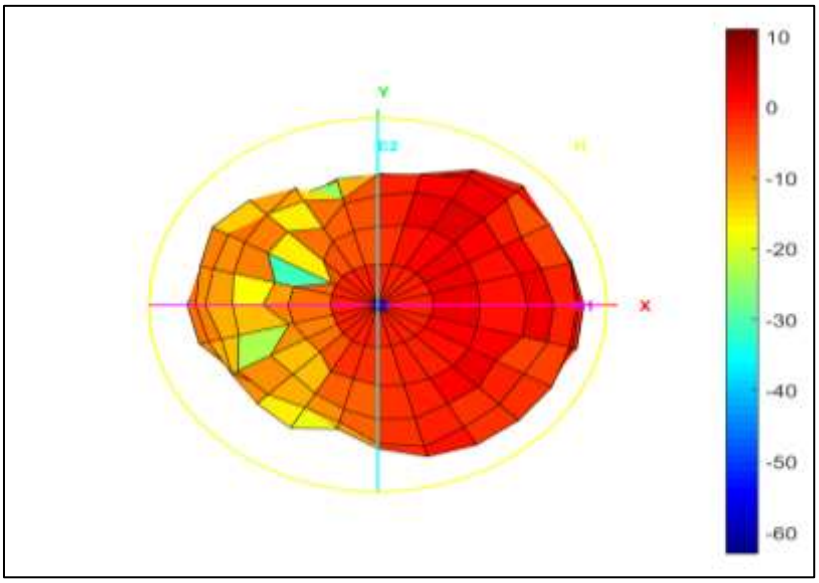

## Max Antenna 3D Radiation Pattern 5850-5895 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5850-5895 | 4.18 |



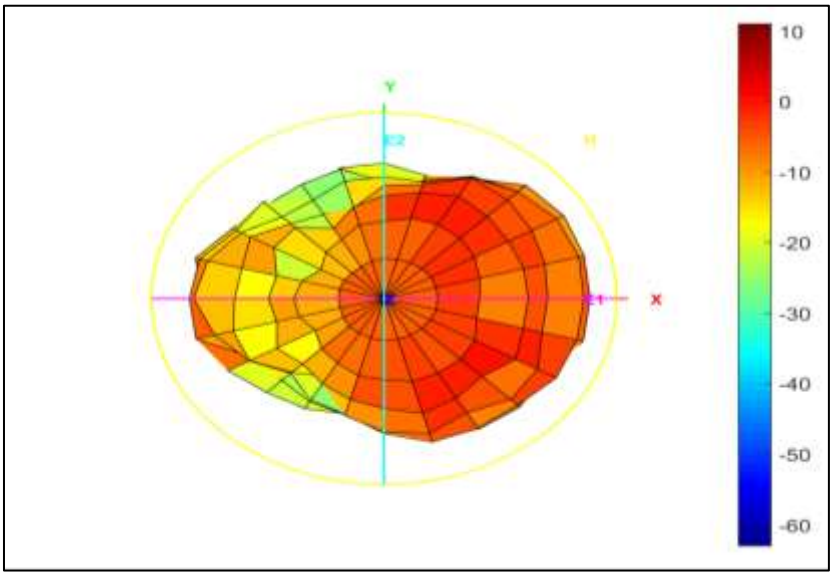
## Max Antenna 3D Radiation Pattern 5925-6425 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5925-6425 | 3.77 |



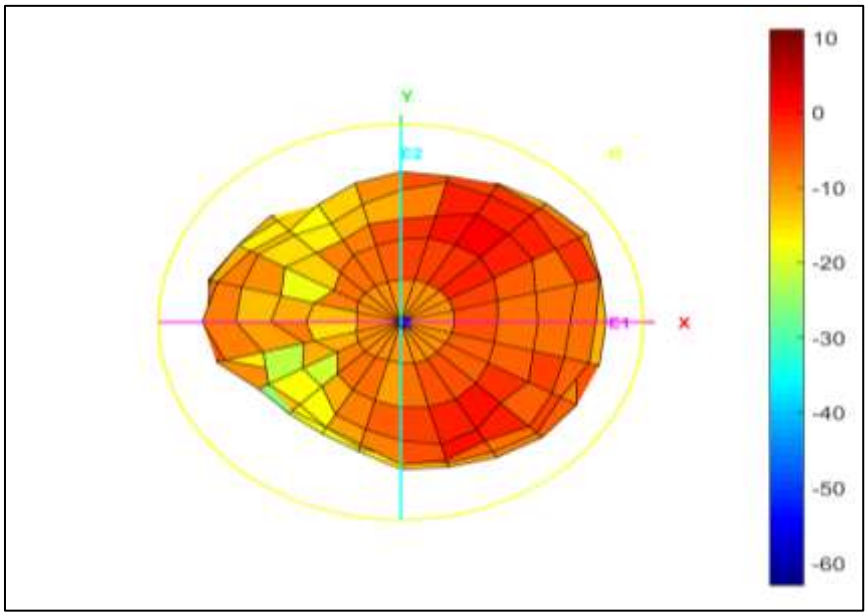

## Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6425-6525 | 1.23 |



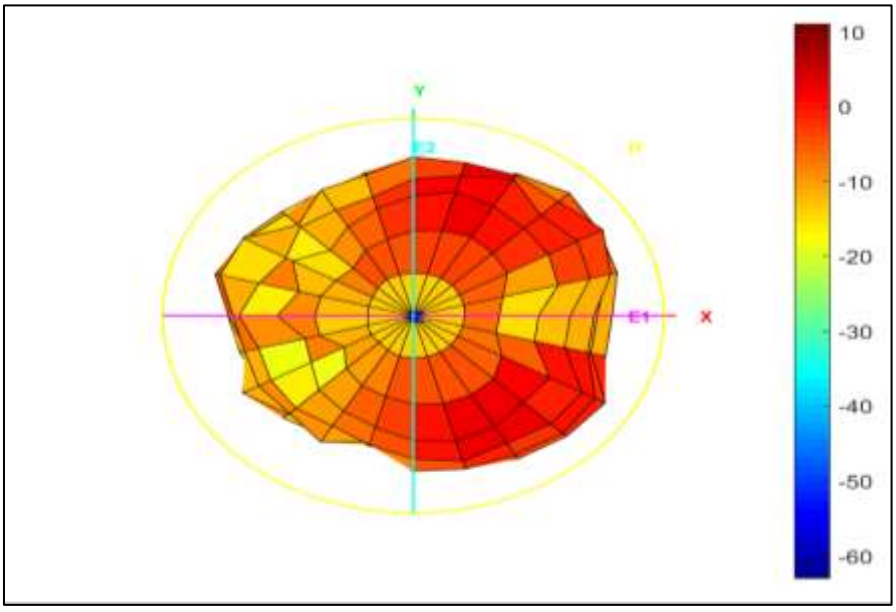
## Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6525-6875 | 3.21 |




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

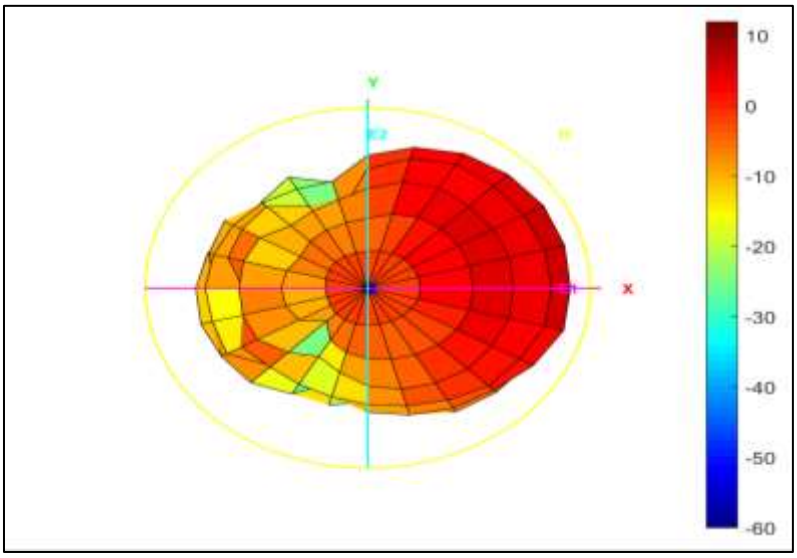
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6875-7125 | 3.78 |




## Auxiliary Antenna

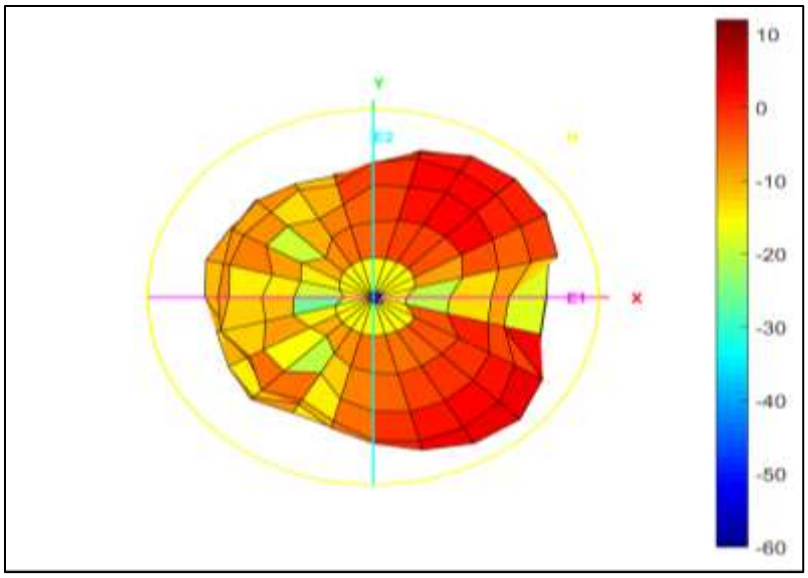
## Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 2400-2483.5 | 2.75 |



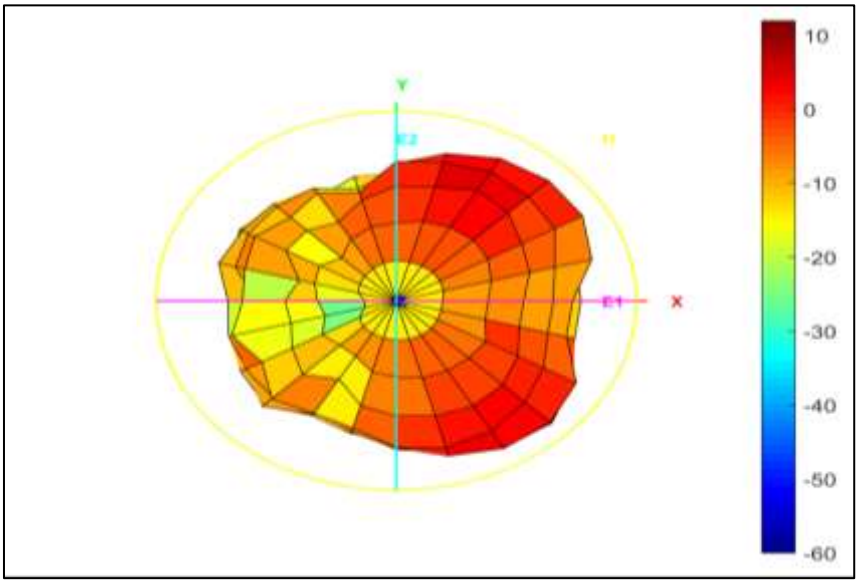

## Max Antenna 3D Radiation Pattern 5150-5250 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5150-5250 | 2.76 |



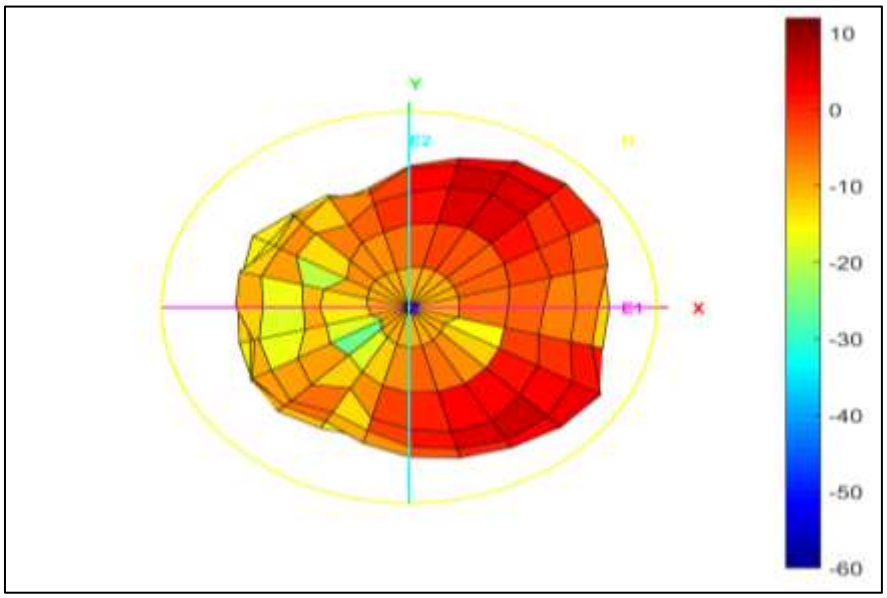
## Max Antenna 3D Radiation Pattern 5250-5350 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5250-5350 | 2.81 |



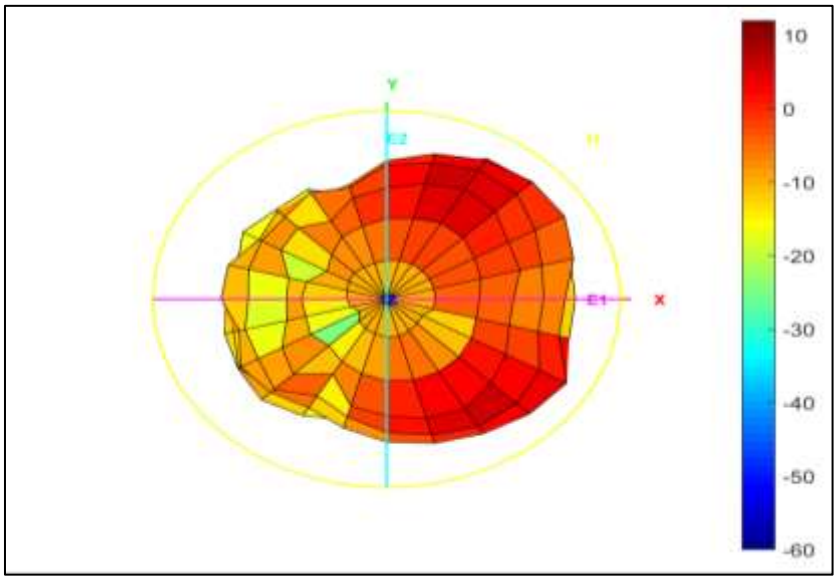

## Max Antenna 3D Radiation Pattern 5470-5725 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5470-5725 | 4.34 |



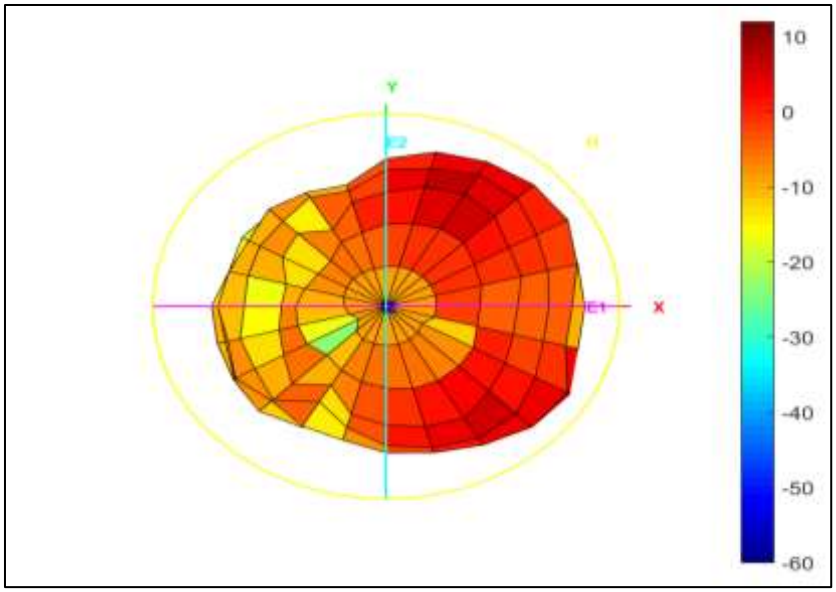
## Max Antenna 3D Radiation Pattern 5725-5850 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5725-5850 | 3.95 |



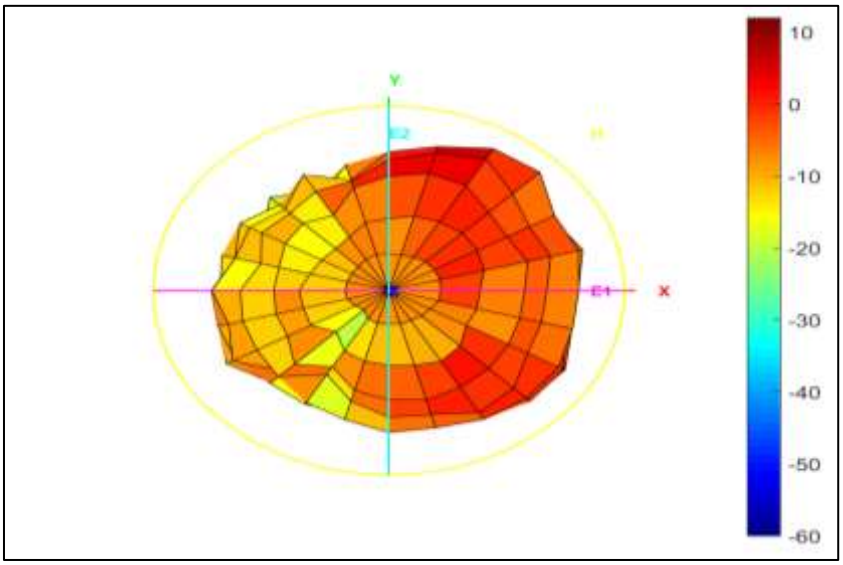

## Max Antenna 3D Radiation Pattern 5850-5895 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5850-5895 | 4.39 |



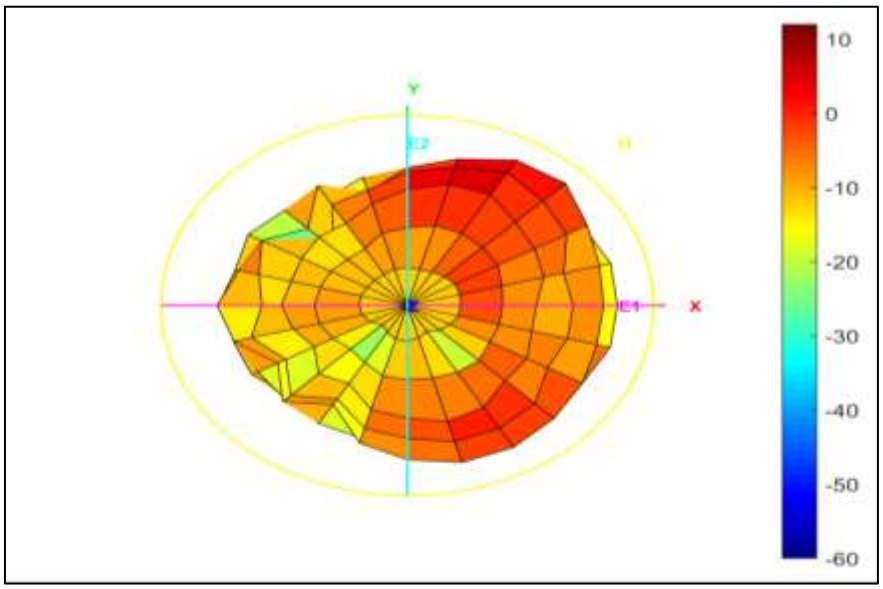
## Max Antenna 3D Radiation Pattern 5925-6425 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 5925-6425 | 4.52 |



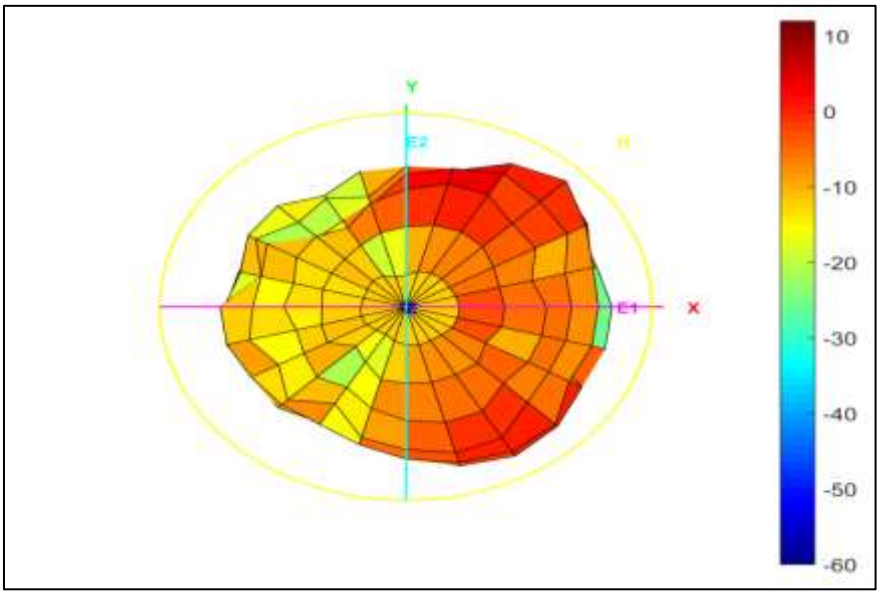

## Max Antenna 3D Radiation Pattern 6425-6525 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6425-6525 | 4.14 |



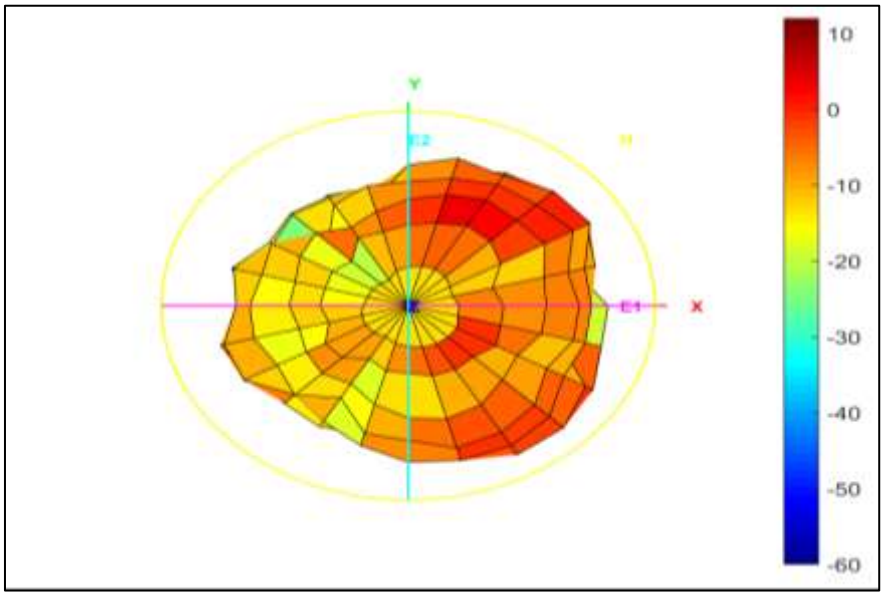
## Max Antenna 3D Radiation Pattern 6525-6875 MHz

| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6525-6875 | 4.10 |




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

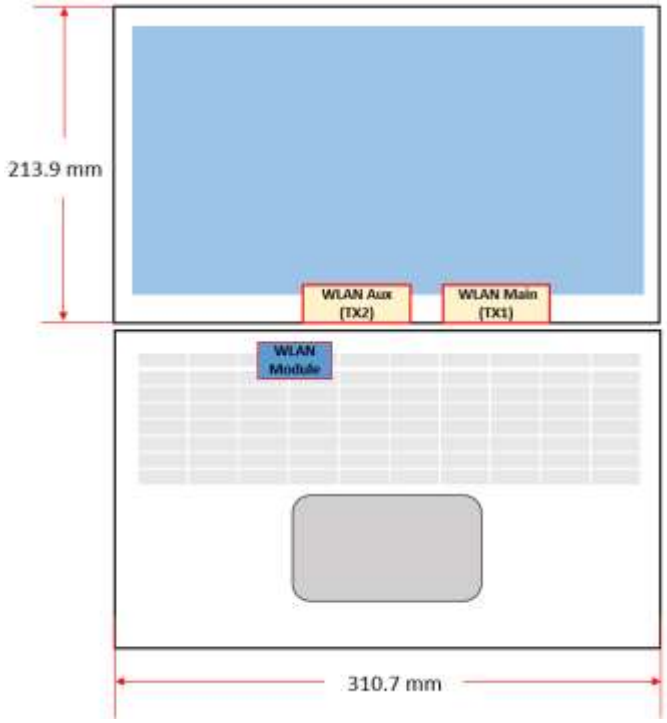
| Frequency (MHz) | Peak Gain w/ Cable Loss (dBi) |
|---|---|
| 6875-7125 | 3.83 |



# Section 4. 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).

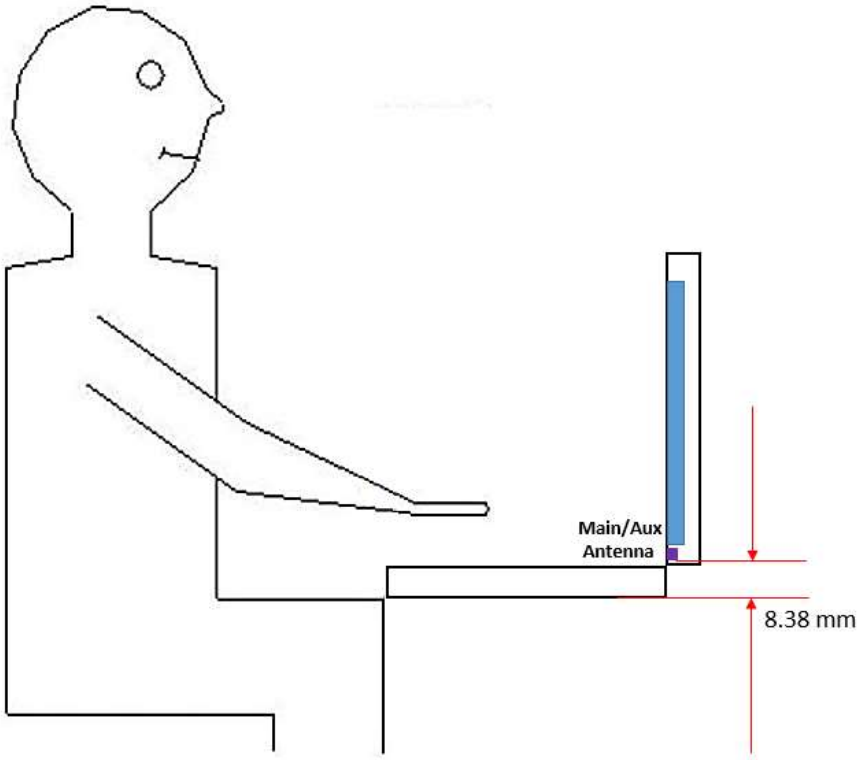
Any antenna that transmits must show dimensions to bottom of laptop. Provide a description of the materials that are used for supporting or surrounding transmit antennas; for example, non-conductive plastics vs. conductive coated plastic or metallic materials.




| Antenna | NB mode dimension to bottom (mm) | Material |
|---|---|---|
| WLAN Main (Tx1) | 8.38 | PCB |
| WLAN Aux (Tx2) | 8.38 | PCB |

# Section 5. Antenna dimensional information for SAR evaluation

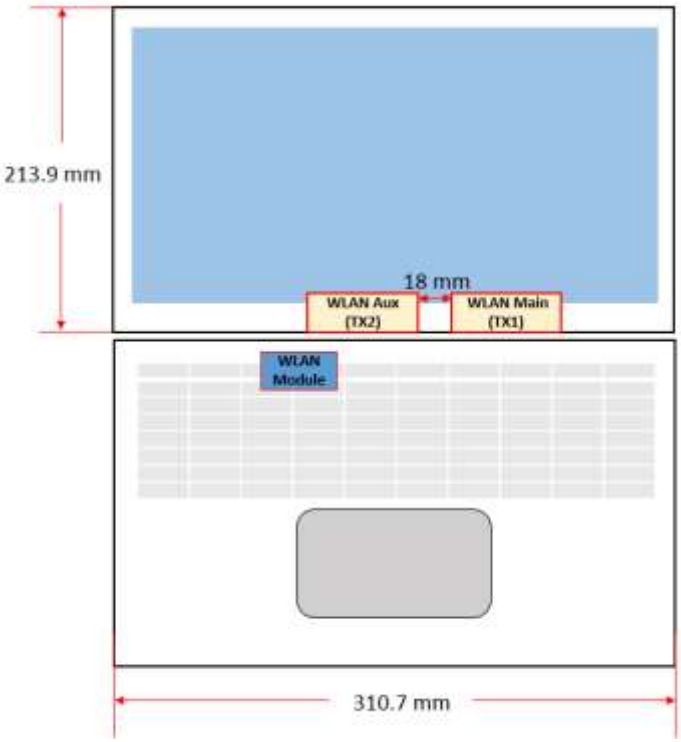
Include a **dimensioned photo(s) or dimensioned drawing(s)** showing the distance (mm) between the transmit antennas and the user. For notebook/laptop hosts show lapheld position (example below). For tablet hosts show all orientations including lapheld, primary & secondary portrait, primary & secondary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



# Section 6. Diagram Example of Co-Location Antenna Separation

Include a **dimensioned photo or dimensioned drawing** showing the distance (mm) between **all WLAN transmit antennas** and other co-located radiator transmit antenna such as Bluetooth, WWAN,..

**(Note: Due to the evolving rules regarding co-location, each platform will need to be reviewed on a case by case basis)**




| Antenna | WLAN Main (Tx1) | WLAN Aux (Tx2) |
|---|---|---|
| WLAN Main (Tx1) | NA | 18.0 mm |
| WLAN Aux (Tx2) | 18.0 mm | NA |