# Regulatory WLAN Antenna Information

| Platform information | | | | | |
|---|---|---|---|---|---|
| **Brand** | **ODM** | **RMN** | **Intel platform** (ex: Yes, No or NA) | **Platform type** (ex: regular NB, convertible PC, AIO…etc) | ***SAR minimum separation (mm)** |
| HP Inc. | Quanta Corporation | TPN-217 | Yes | Notebook PC | 186.08 |

| Antenna information | | | |
|---|---|---|---|
| **Vendor** | **Type** | **Antenna Part number** (Main/Tx1) | **Antenna Part number** (Aux/Tx2) |
| 2 | PIFA | DQ6415GHB00 (81EAA415.GHB) | N/A |

| Peak gain w/ cable loss (dBi)* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2.4GHz** 2400-2483.5 MHz | **5.2GHz** 5150-5250MHz | **5.3GHz** 5250-5350MHz | **5.6GHz** 5470-5725MHz | **5.8GHz** 5725-5850MHz | **5.9GHz** 5850-5895MHz | **6.2GHz** 5925-6425MHz | **6.5GHz** 6425-6525MHz | **6.7GHz** 6525-6875MHz | **7.0 GHz** 6875-7125MHz |
| **Main** | 2.36 | 1.40 | 1.40 | 1.35 | 1.35 | 1.37 | N/A | N/A | N/A | N/A |
| **Aux** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Module Information | |
|---|---|
| **Model** | **Form factor and suffixes** |
| RTL8852BE (Choya) | Realtek Wi-Fi 6 RTL8852BE-VS+ BT5.3 (802.11ax 1x1) |
| | |

## 1. **Applicable test methods**

ETS-Lindgren AMS-8500 system is 3D fully anechoic chamber, it is applied to the "Conical Cut test method", the detail description is described as below.

The Conical Cut method requires the ability of the Measurement Antenna to be physically rotated in the theta plane (overhead) of the EUT for implementations using a single Measurement Antenna, Eleven conical cuts are required to capture data at every 15 degrees from the EUT, with the top (0 degrees) and bottom (180 degrees) cuts not being measured. Typically, the EUT will remain affixed to a
turntable during the entire measurement process. The Measurement Antenna will be positioned at a starting theta angle. The EUT will then be rotated around the full 360 degrees of phi rotation. The Measurement Antenna will then be positioned at the next theta angle, and the process repeated.

| | | θ-Axis | Φ-Axis |
|---|---|---|---|
| Passive | Step size | 15º~165º   step: 15º | 0º~345º   step: 15º |
| | N / M (Points) | 12 | 24 |

## 2. **Test & System Description**
   a. Test setup

Typical Setup for ETS-Lindgren AMS-8500:
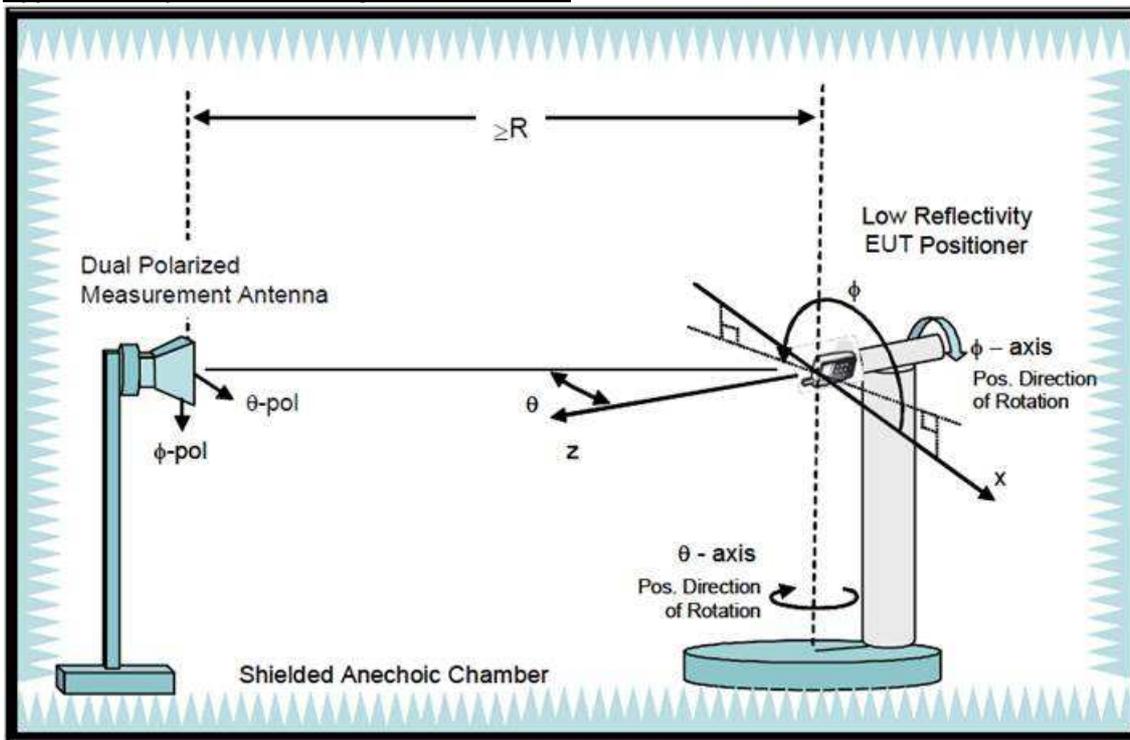
b. Equipment list

| Equipment Description | Manufacturer | Identification no. | Current calibration date | Next calibration date |
|---|---|---|---|---|
| Network analyzer | Agilent | E5071C | 2022/01/7 | 2023/01/6 |
| Measurement software | ETS-Lindgren | EMQuest | N/A | N/A |
| Multi axis positioning system(MAPSTM) | ETS-Lindgren | EMCO 2115 | N/A | N/A |
| Multi axis positioning system(MAPSTM) | ETS-Lindgren | EMCO 2110 | N/A | N/A |
| MAPSTM controller | ETS-Lindgren | EMCO 2090 | N/A | N/A |
| ETS OTA Chamber | ETS-Lindgren | AMS8500 | 2022/03/03 | 2023/03/02 |
| Horn antenna | ETS-Lindgren | 3164-10 | 2022/03/03 | 2023/03/02 |

Note: Chamber calibration included full set of implement.
Test personnel: Leo Lee
Test date: 2022/09/20

# Antenna Information

## Section 1. Antenna Assembly Specifications

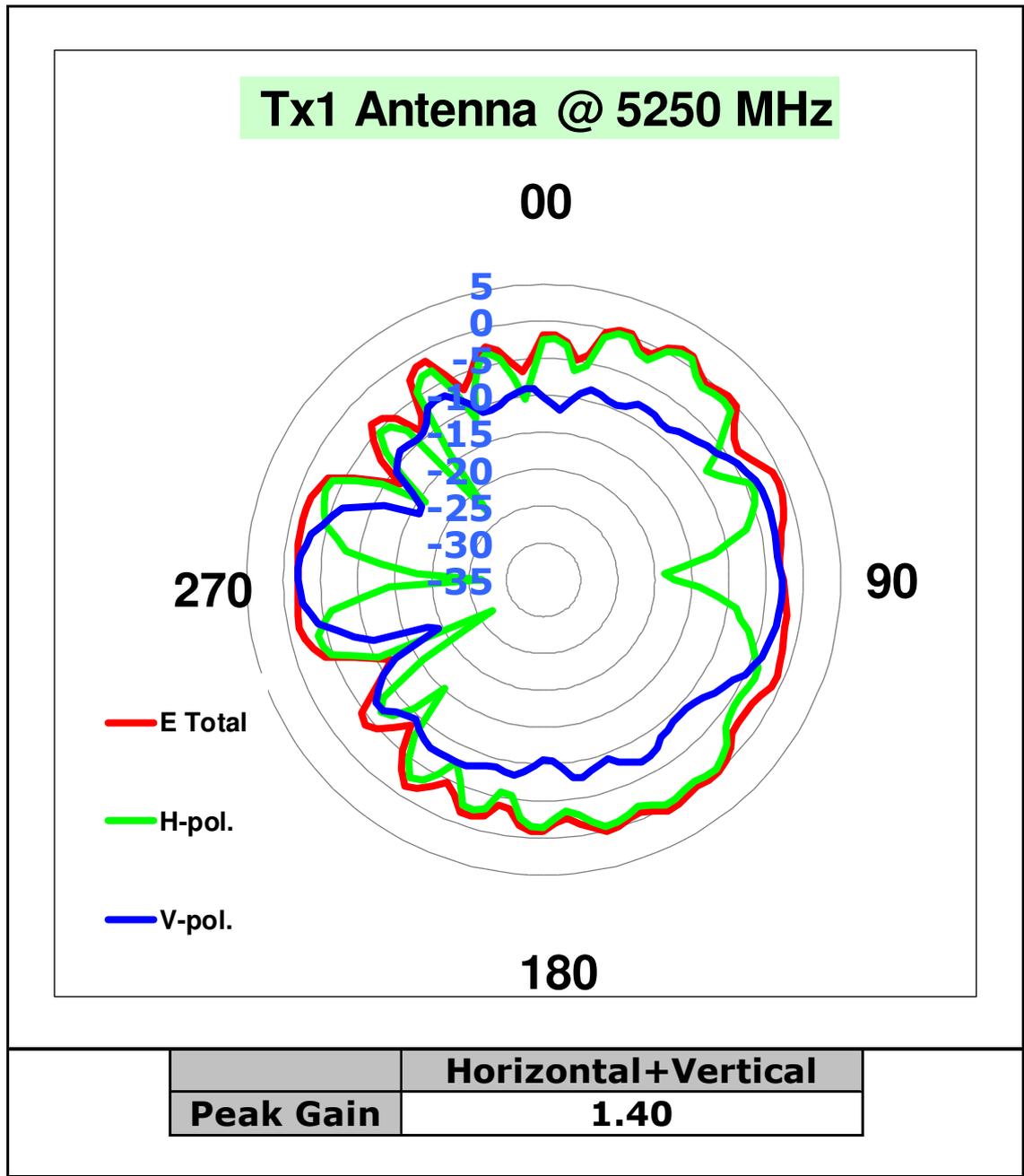| 1A<br><br>Antenna Part Number | 1B<br><br>Manufacturer | 1C<br><br>Antenna Type | 1D<br><br>Cable Assembly Part Number and Information | Freq Range<br><br>MHz | 1E<br><br>* Peak Gain W/ Cable loss (dBi) | 1F<br><br>Peak Gain w/o Cable Loss (dBi) | 1G<br><br>Max VSWR | 1H<br><br>Cable Loss (dB) |
|---|---|---|---|---|---|---|---|---|
| P/N: DQ6415GHB00 (81EAA415.GHB)<br><br>Main<br>Tx1/ Rx1 Antenna Ant 1 | 2 | PIFA | 50 ohm Coaxial length: 295mm diameter: 1.13mm Connector Type: I-PEX P/N: 20565-001R-13 | 2400-2495 | 2.36 | 3.52 | 3.0 | 1.16 |
| | | | | 5150-5250 | 1.40 | 3.03 | 3.0 | 1.63 |
| | | | | 5250-5350 | 1.40 | 3.05 | 3.0 | 1.65 |
| | | | | 5470-5725 | 1.35 | 3.05 | 3.0 | 1.70 |
| | | | | 5725-5850 | 1.35 | 3.08 | 3.0 | 1.73 |
| | | | | 5850-5895 | 1.37 | 3.10 | 3.0 | 1.73 |
| | | | | 5925-6425 | N/A | N/A | N/A | N/A |
| | | | | 6425-6525 | N/A | N/A | N/A | N/A |
| | | | | 6525-6875 | N/A | N/A | N/A | N/A |
| | | | | 6875-7125 | N/A | N/A | N/A | N/A |

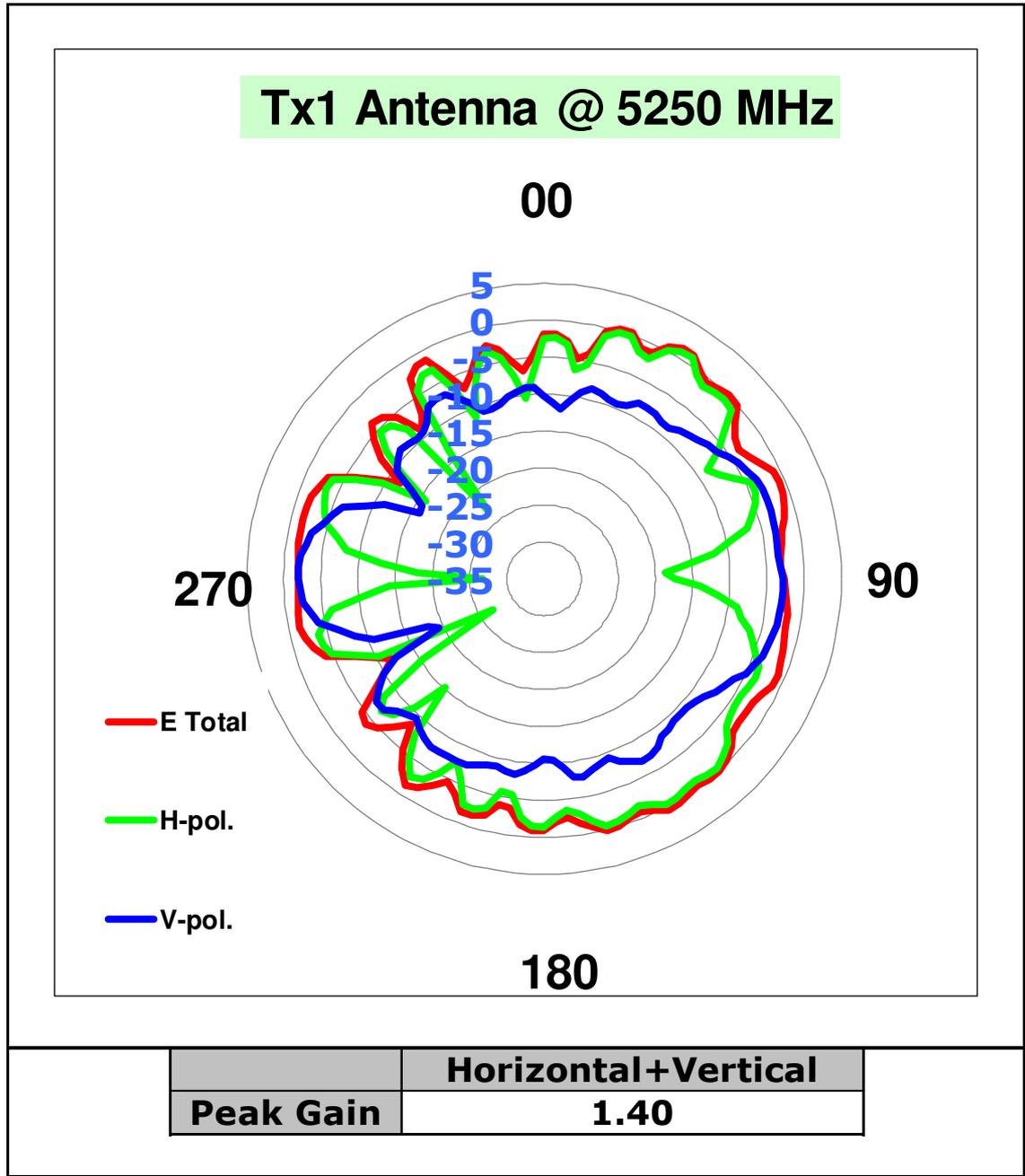# Section 2. Radiation characteristics of antenna loaded in Host Platform

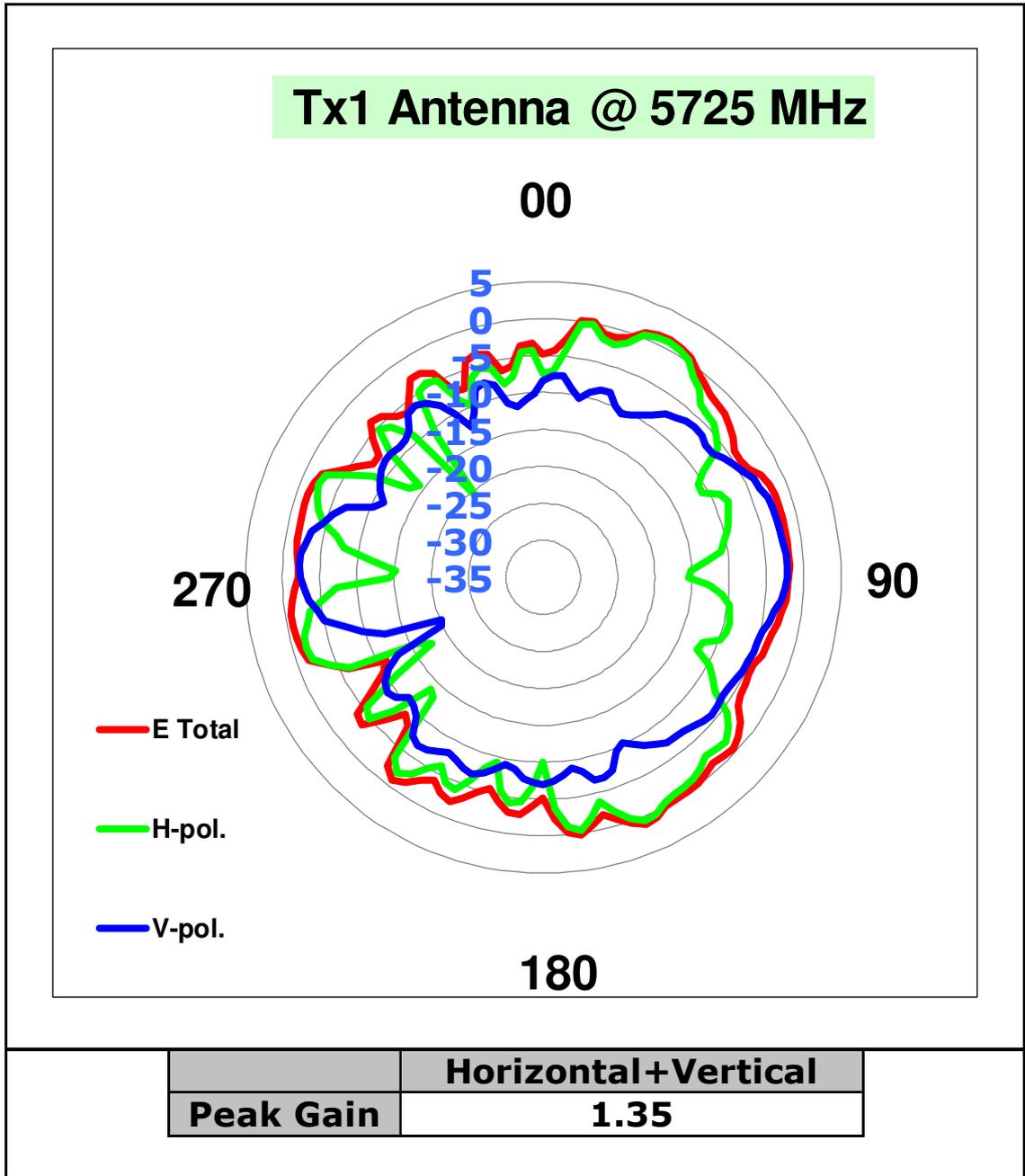## Main Antenna

Max Antenna 2D Radiation Pattern 2400 – 2495 MHz



**Tx1 Antenna @ 2450 MHz**

| | Horizontal+Vertical |
|---|---|
| **Peak Gain** | **2.36** |
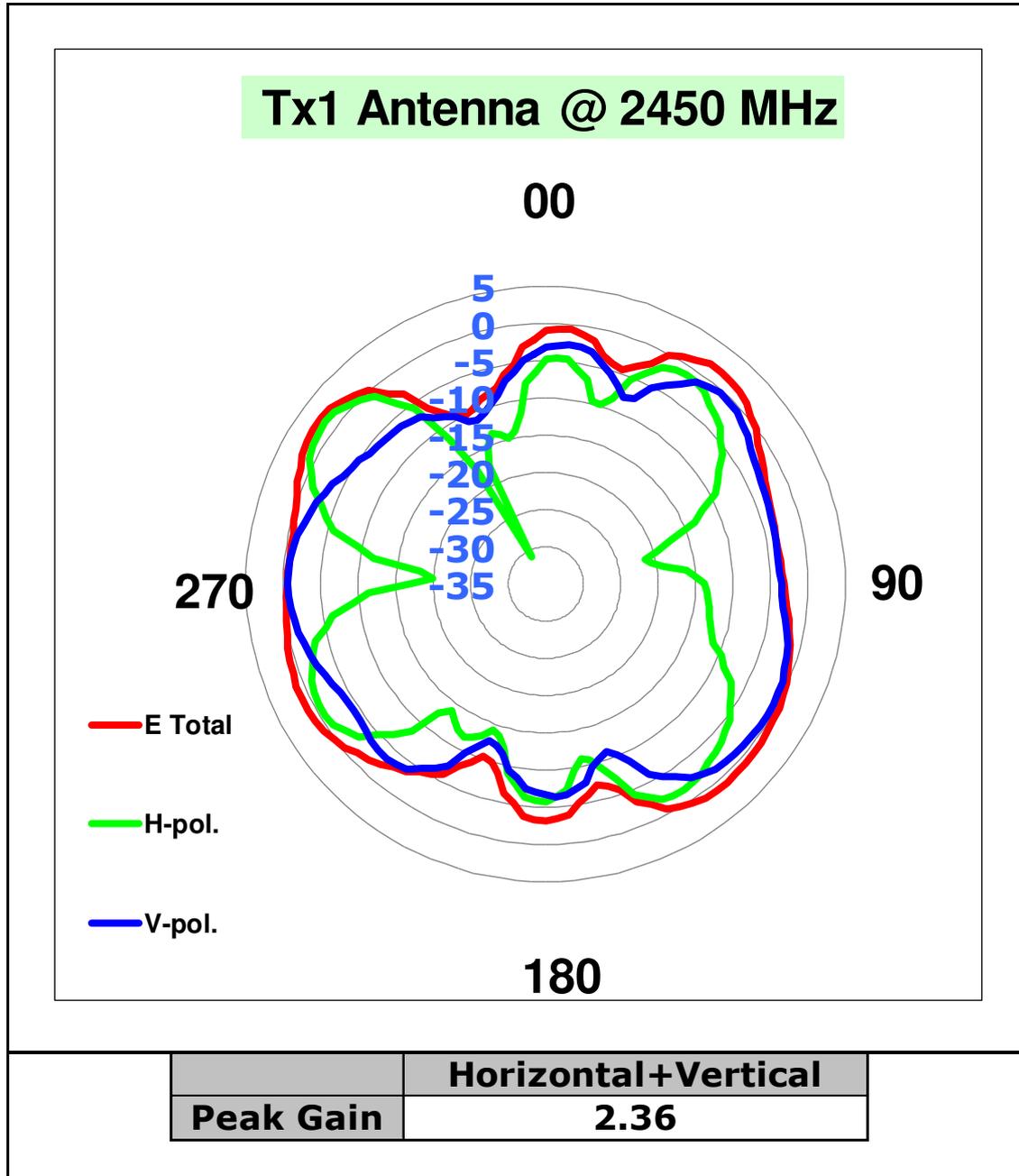
# Max Antenna 2D Radiation Pattern 5150-5250 MHz

## Tx1 Antenna @ 5250 MHz



| | Horizontal+Vertical |
|---|---|
| Peak Gain | 1.40 |

## Max Antenna 2D Radiation Pattern 5250-5350 MHz



**Tx1 Antenna @ 5250 MHz**

| | Horizontal+Vertical |
|---|---|
| **Peak Gain** | **1.40** |

## Max Antenna 2D Radiation Pattern 5470-5725 MHz



**Tx1 Antenna @ 5725 MHz**

| | Horizontal+Vertical |
|---|---|
| **Peak Gain** | **1.35** |

# Max Antenna 2D Radiation Pattern 5725-5850 MHz



| | Horizontal+Vertical |
|---|---|
| **Peak Gain** | 1.35 |
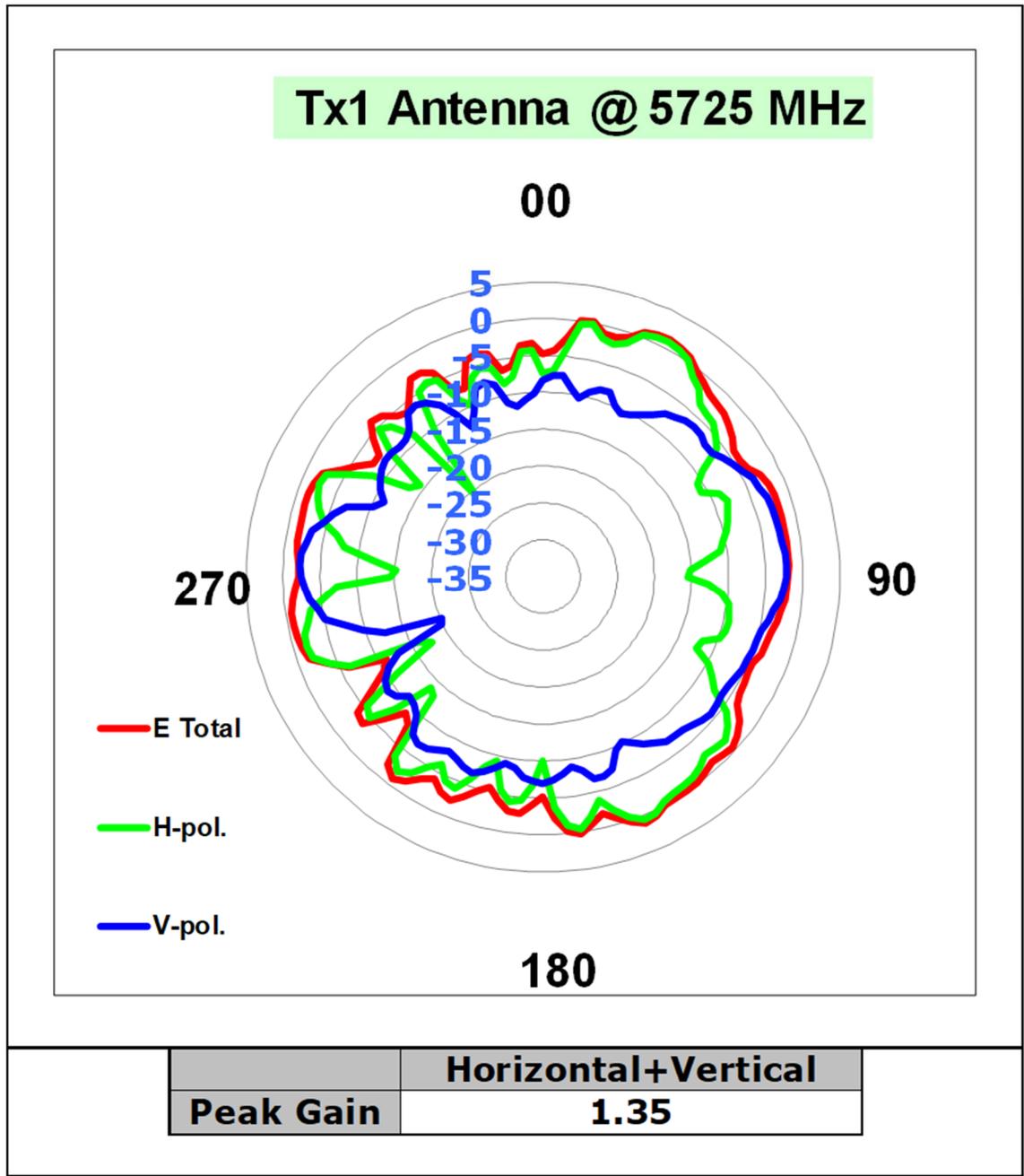
# Max Antenna 2D Radiation Pattern 5850-5895 MHz

## Tx1 Antenna @ 5885 MHz



**00**

5
0
-5
-10
-15
-20
-25
-30
-35

**270**

**90**

**180**

— E Total

— H-pol.

— V-pol.

| | Horizontal+Vertical |
|---|---|
| Peak Gain | 1.37 |