

Logitech

Antenna Under Test (AUT)

Report

Model Name: Stradale TX

Equipment Type: Wireless Mic

Manufacturer: Logitech

Test Location: 4700 NW Camas Meadows Drive, Camas, WA, 98671,
USA

Tested by: Nikhil Nilakantan

Report Date: 02/09/2023

Report Release History

Report version	Description	Date Issued
Stradale TX AUT Report	Original release	2023/02/09

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1. EUT Antenna Information

- 1) Antenna Material : Stamped sheet metal
- 2) Antenna Type : IFA
- 3) Antenna Dimension: 15.87 x 5.65mm
- 4) Operating Frequency : 2.4 GHz - 2.4835 GHz
- 5) Input Impedance : 50 Ω
- 6) Standing-Wave Ratio : < 2

2. Measured Values and Calculation of Antenna Gains

Measure peak horizontal/vertical EIRP on each x-y, y-z, x-z plane. The highest measured values will be used to calculate the antenna peak gain.

$$\text{Antenna Peak Gain (dBi)} = \text{Max EIRP(dBm)} - \text{Conducted Power (dBm)}$$

Antenna 1:

Frequency	3D Max Peak EIRP (dBm)	Conducted Power (dBm)	Antenna Peak Gain (dBi)
2400	17.10	16.24	0.86
2440	17.27	16.24	1.03
2480	16.26	16.05	0.21

Antenna 2:

Frequency	3D Max Peak EIRP (dBm)	Conducted Power (dBm)	Antenna Peak Gain (dBi)
2400	14.5	17.08	-2.57
2440	14.46	17.11	-2.64
2480	13.76	16.78	-3.01

Test Date: 03/29/2022

3. Conducted Power Measurement

3.1 Test Setup



3.2 Test Instruments

Description	Model No.	Serial No.	Last Calibration
Spectrum Analyzer Keysight	E5071C	MY46102197	10-Nov-2021

Note: The calibration interval of the above test instruments is 12 months

3.3 Test Procedure

A spectrum analyzer was used to perform output power measurement, setting the detector to average and configuring EUT continuously transmitting power(100% duty cycle).

3.4 Test Result of RF conducted Power

Frequency	Conducted Power (dBm)
2402	16.24
2440	16.24
2480	16.05

Test Date: 03/29/2022

4. 3D Radiation Pattern Measurement

4.1 Test Location

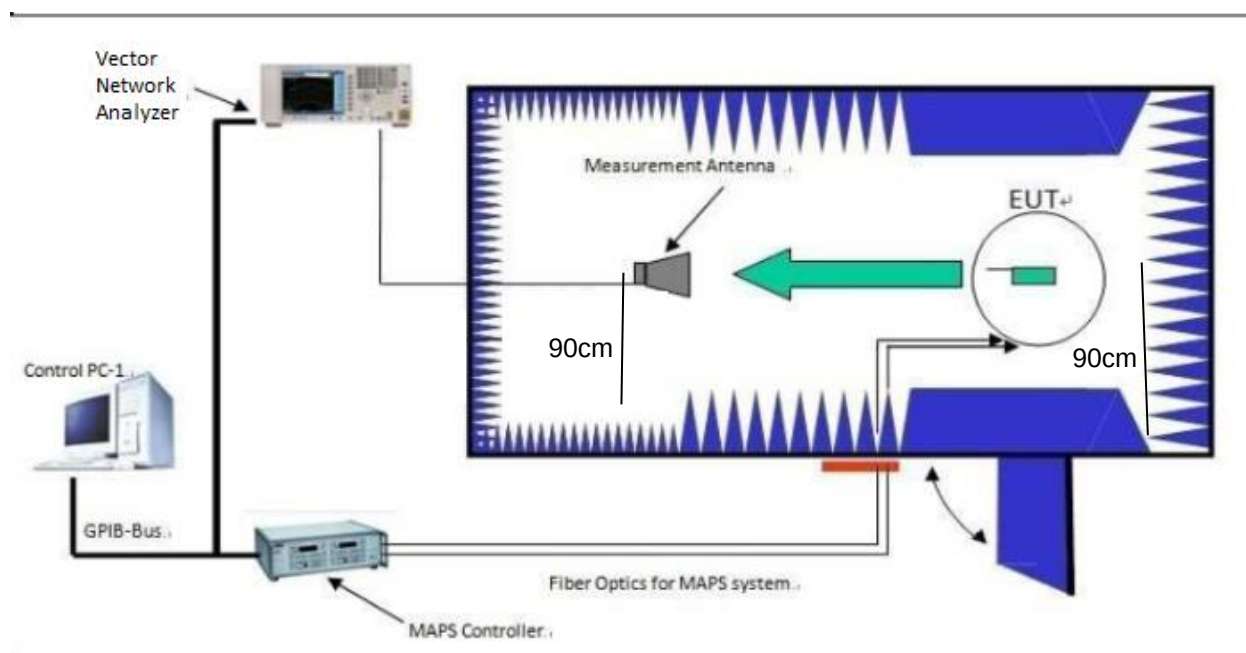
3D radiation pattern measurement in the anechoic chamber

4.2 Description of the anechoic chamber

Length: 2.52 m

Width: 1.42 m

Height: 1.88 m



4.3 Test Instruments

Description	Model No.	Serial No.	Last Calibration
Vector Network Analyzer Keysight	E5071C	MY46102197	11-10-2021
Horn Antenna ETS-Lindgren	3164-04	00060394	11-15-2021
Software	EMQ-100	1091	N/A

ETS-Lindgren			
Antenna Tower ETS-Lindgren	Included in AMS-8050	N/A	11-15-2021
Turntable ETS-Lindgren	Included in AMS-8050	N/A	11-15-2021
Controller ETS-Lindgren	2090	N/A	11-15-2021
Chamber ETS-Lindgren	AMS-8050	00043943	11-15-2021

Note: The calibration interval of the above test instruments is 12 months

4.4 Test Procedure

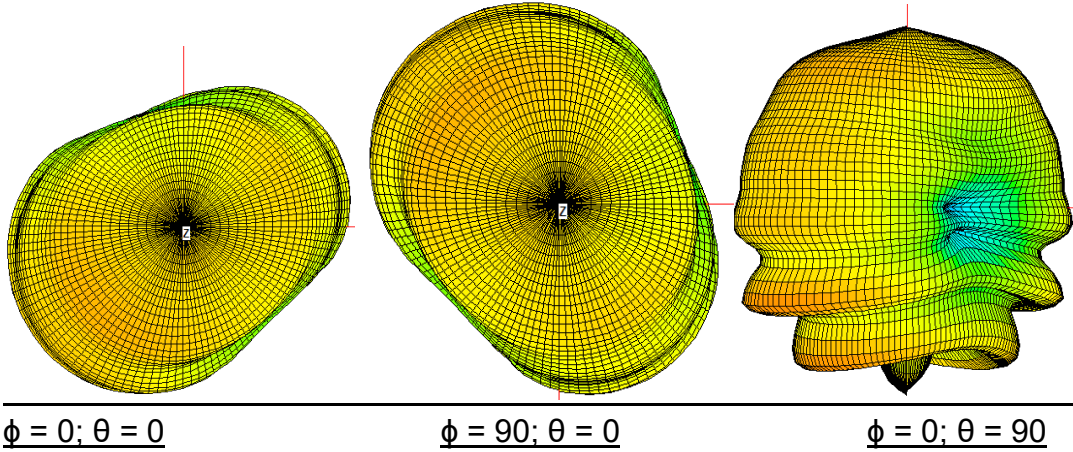
- i. Connect the EUT to Spectrum Analyzer and record the power setting of EUT and the measured conducted power.
- ii. Mount the DUT on the mast of the chamber, record the coordinates and take pictures.
- iii. Configure the EUT continuously transmitting power(unmodulated CW mode).
- iv. Make sure the transmit signal is stable and at the maximum RF power level.
- v. Read the channel power level on the Network analyzer and record in the following positions.
 1. The mast is then stepped between 0 to 360 degrees along the horizontal plane in 15-degree increments.
 2. Data is recorded using the spectrum analyzer for both theta and phi polarizations at each position.
- vi. $\text{Antenna Peak Gain (dBi)} = \text{Max EIRP(dBm)} - \text{Conducted Power (dBm)}$

4.5 Test Setup photos

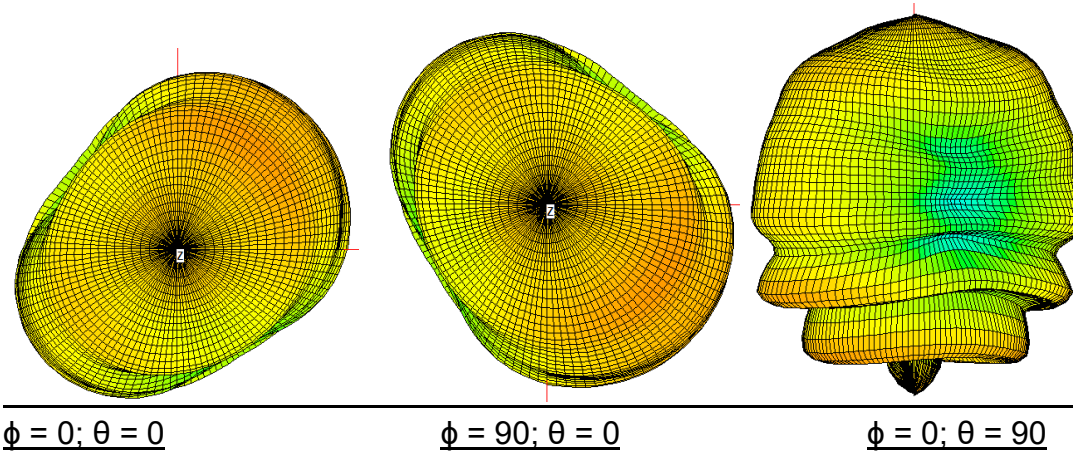
4.6 3D Pattern Test Plot

ANTENNA 1:

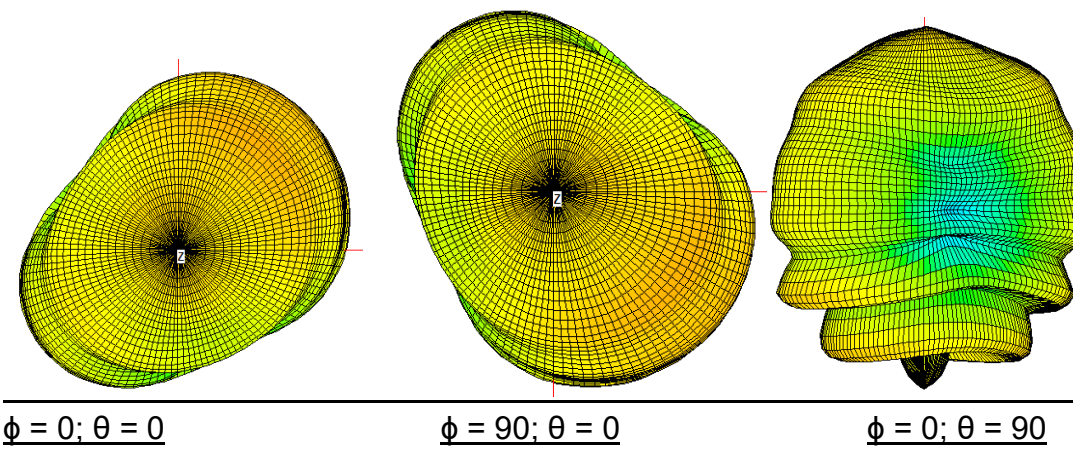
2400MHz:



2440MHz:

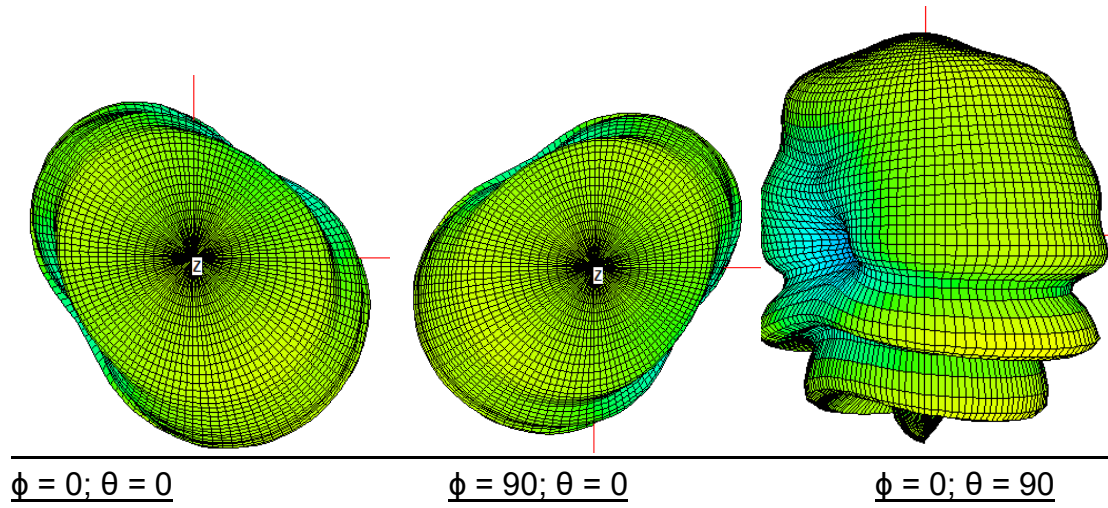


2480MHz:

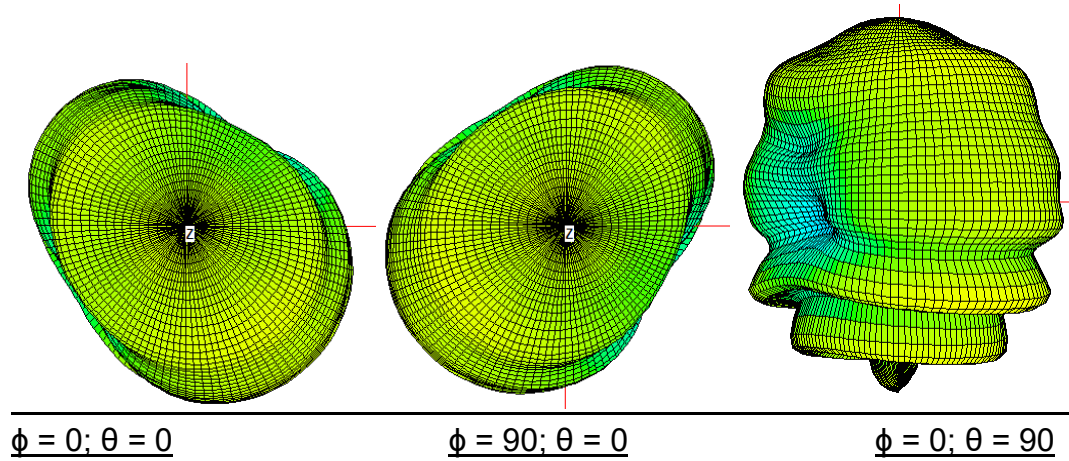


ANTENNA 2:

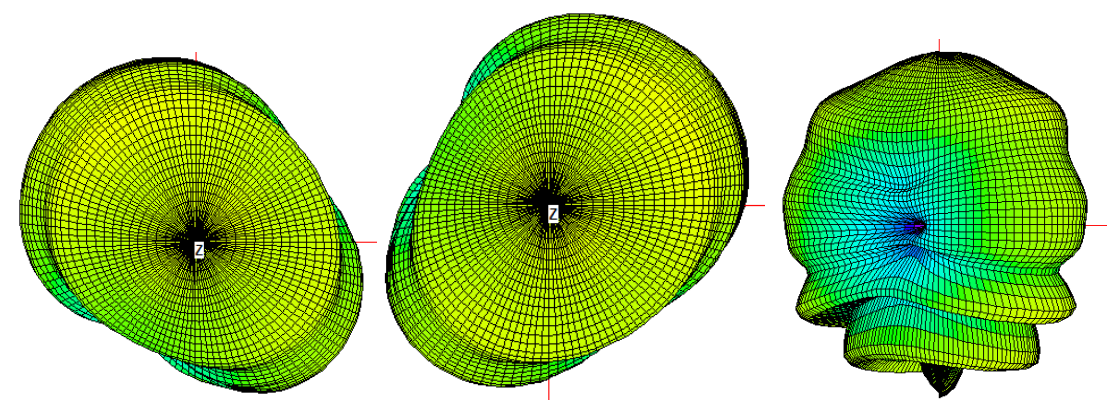
2400MHz:



2440MHz:



2480MHz:



$\phi = 0; \theta = 0$

$\phi = 90; \theta = 0$

$\phi = 0; \theta = 90$

