MEASUREMENTS OF SHURE MXW8X ANTENNAS FOR REGULATORY APPROVAL

1.9GHZ ANTENNA A

1.9GHZ ANTENNA B

2.4GHZ BLUETOOTH ANTENNA

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1.1 DUT Overview

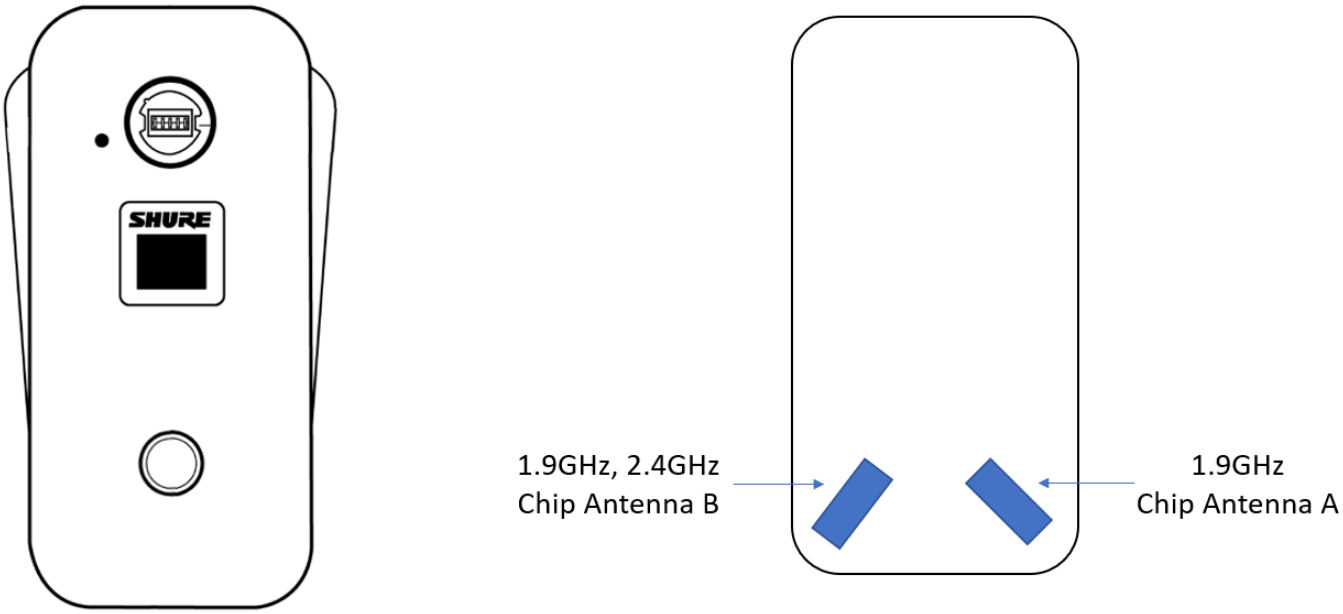

Figure 1-1. Shure MXW8X Internal Antennas Overview

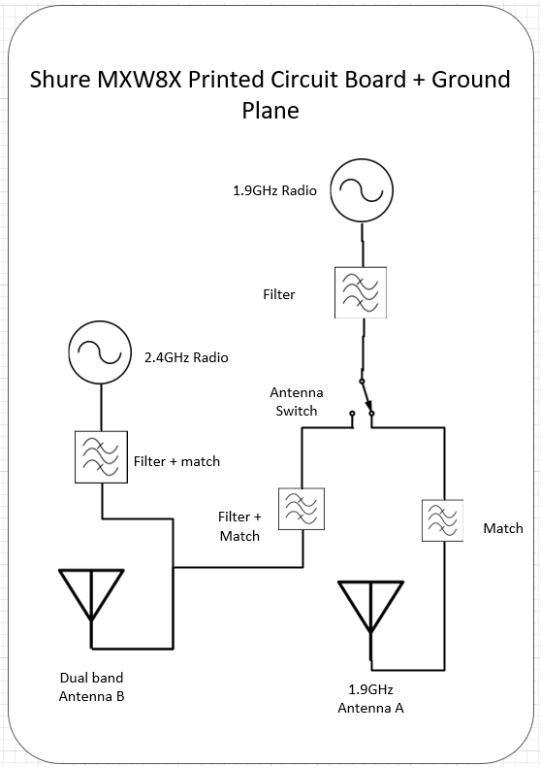

Figure 1-2. Shure MXW8X Antennas Block Diagram

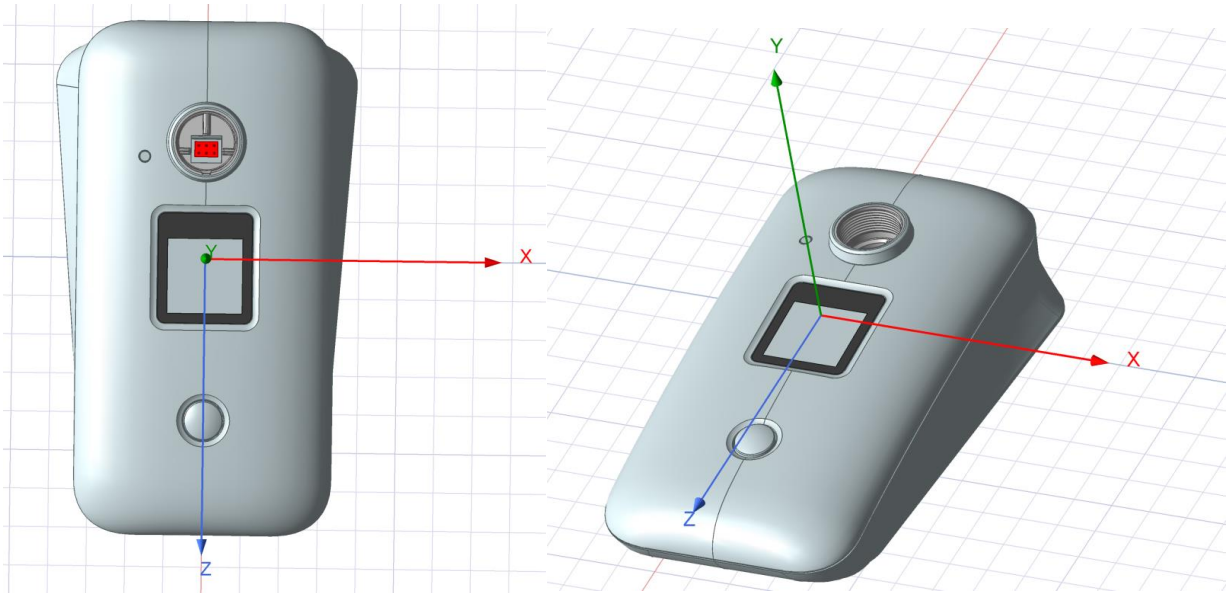

Figure 1-3. MXW8X Reference Angles

1.2 Test Setup Photo

Figure 1-4. Photo of MXW8X in antenna test chamber.

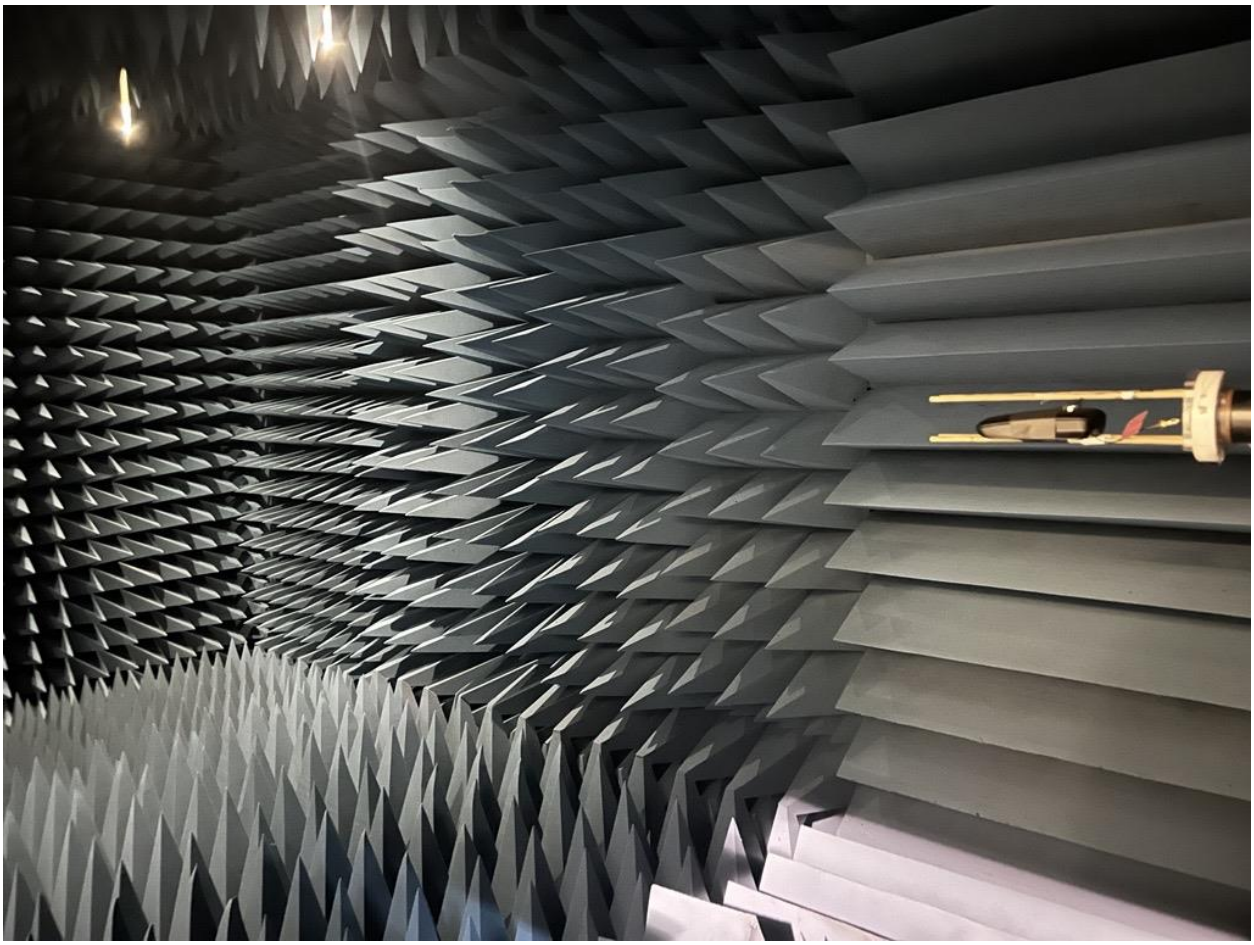

Figure 1-5. Photo of Shure's antenna test chamber with MXW8X ready for testing.

1.3 Supporting Test Equipment List

- E5071C ENA series Vector Network Analyzer 100kHz-8.5GHz
- ets model 2090 multi device controller
- ets lindgren model 3164-10 3164-10 Open Boundary Quad-Ridged Horn 400MHz-10GHz
- ets lindgren model no 3126-1920 precision sleeve dipole 1728-2112MHz
- EMQuest Data Acquisition and Analysis Software v1.12

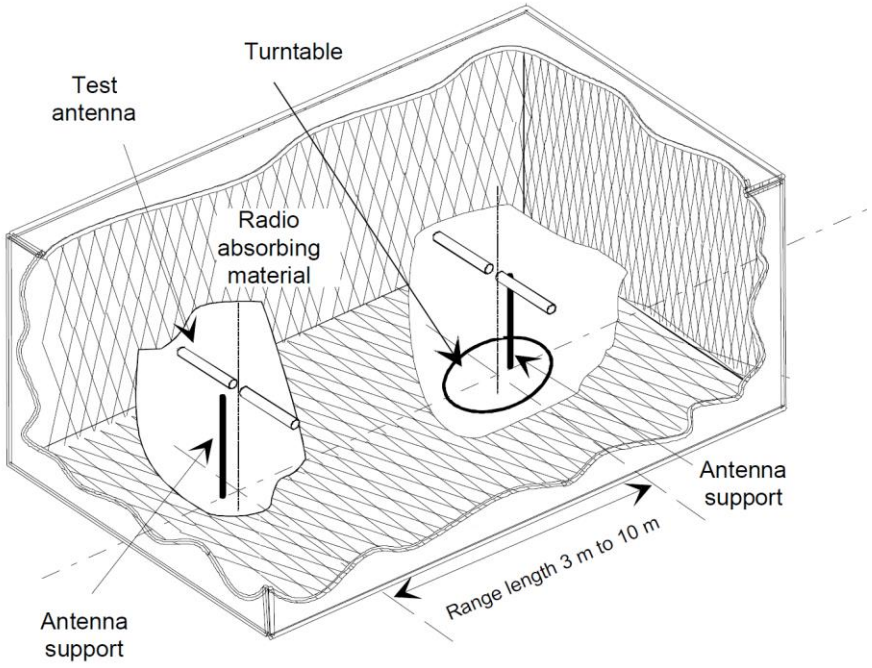

Figure 1-6. Diagram of Shure antenna chamber. Designed per ETSI EN 300 422-1, section D-1.

2. 1.9GHz Antenna A

Peak Gain					
Parameter	**Type**	**Pattern**	**1880 MHz**	**1905 MHz**	**1930 MHz**
Antenna A	Internal Chip Antenna	Omni	0.7 dBi	1.1 dBi	1.3 dBi

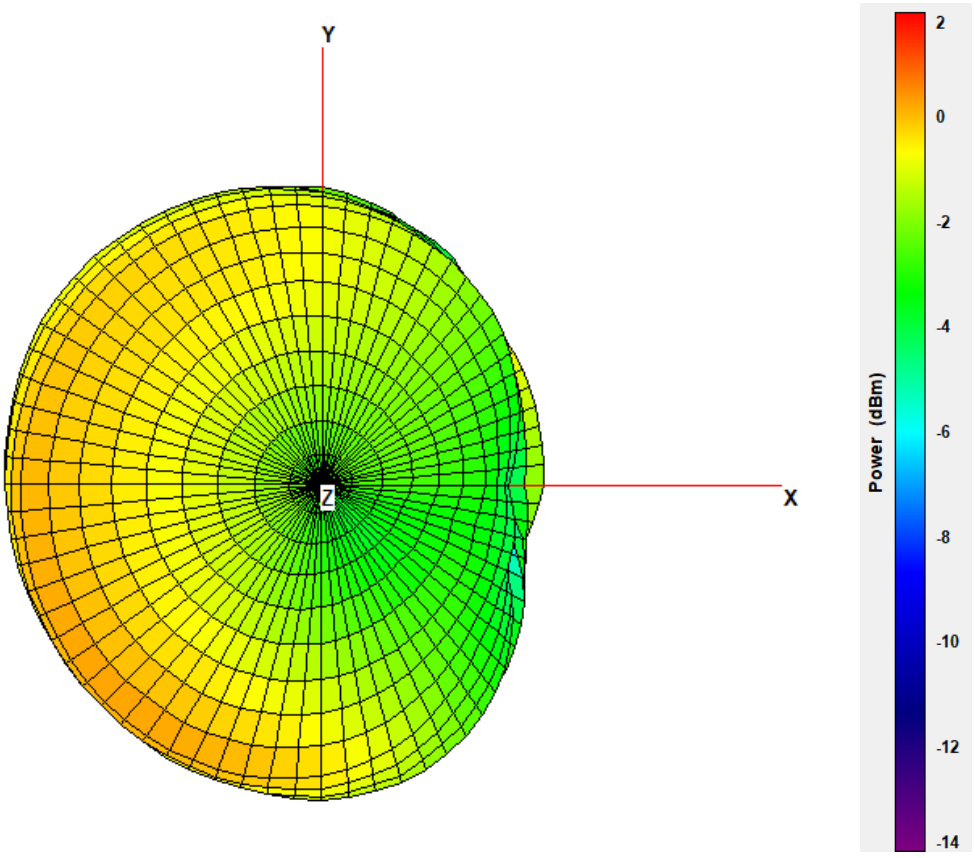

Figure 2-1. 1.9GHz Antenna A X-Y Plane.

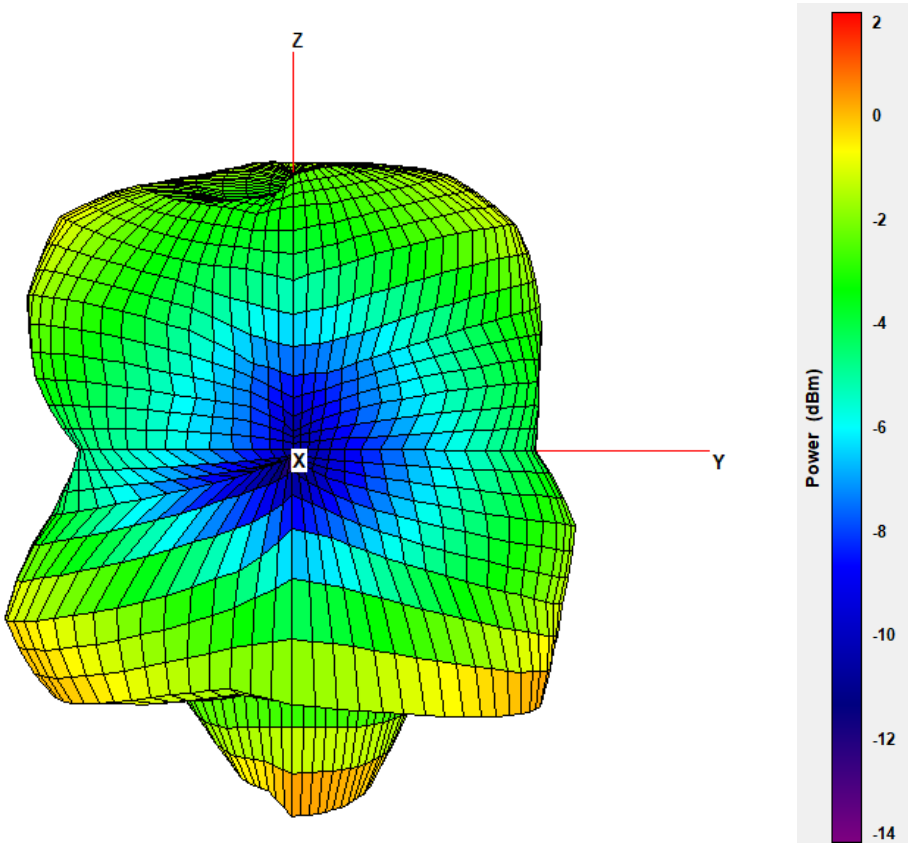

Figure 2-2. 1.9GHz Antenna A Y-Z Plane

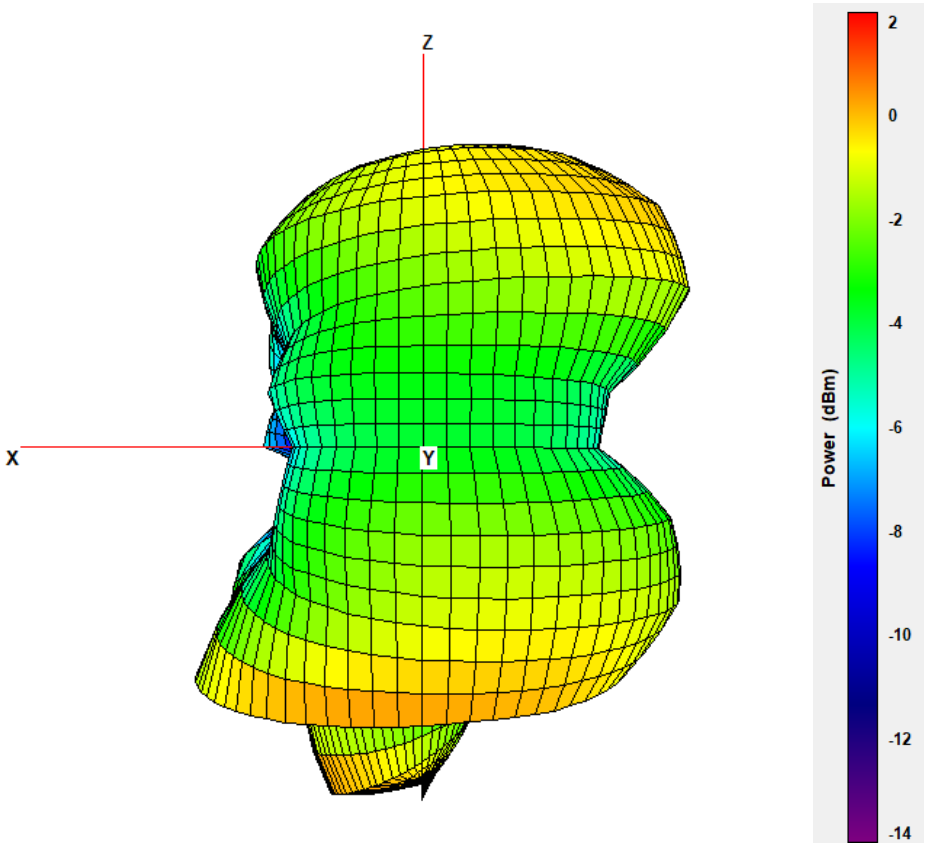

Figure 2-3. 1.9GHz Antenna A X-Z plane

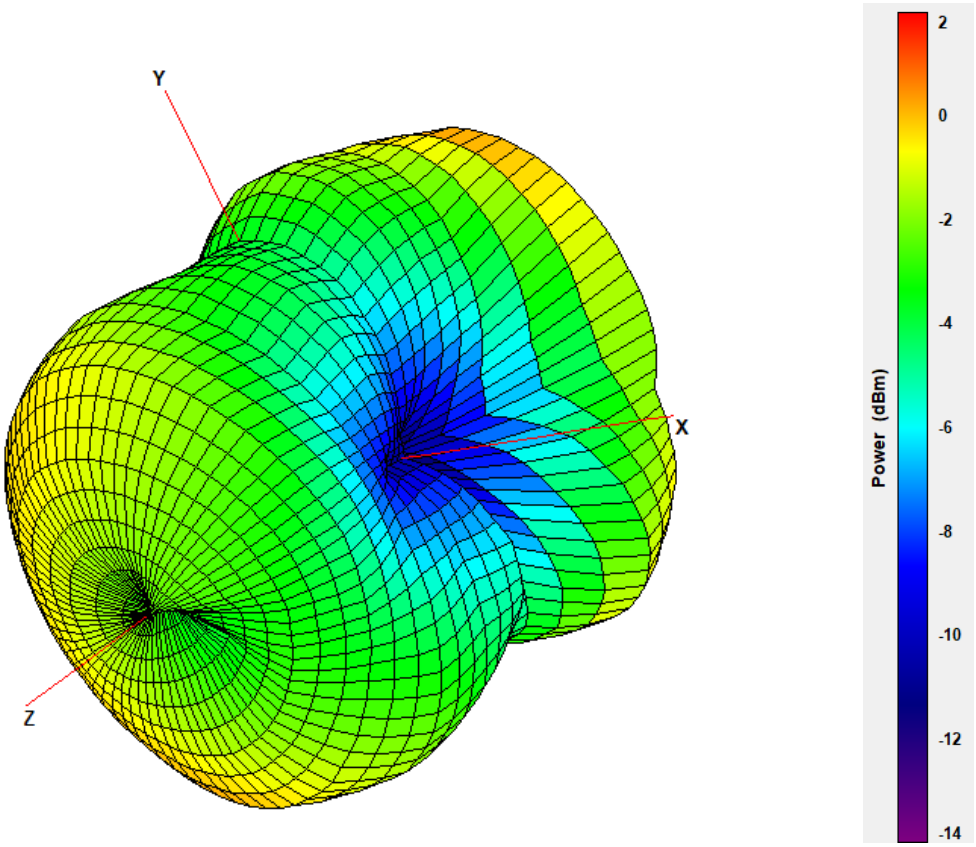

Figure 2-4. 1.9GHz Antenna A 3D

3. 1.9GHz Antenna B

Peak Gain					
Parameter	**Type**	**Pattern**	**1880 MHz**	**1905 MHz**	**1930 MHz**
Antenna B	Internal Chip Antenna	Omni	0.8 dBi	2.0 dBi	3.2 dbi

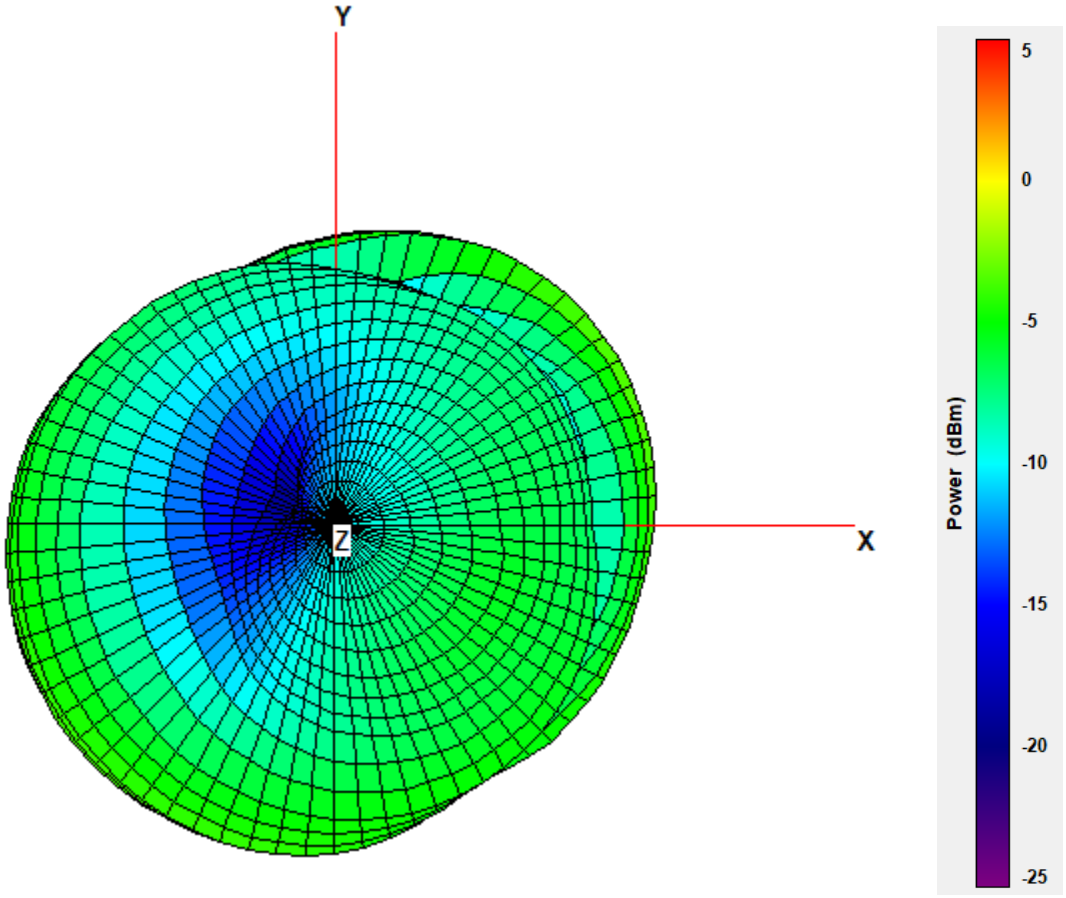

Figure 3-1. 1.9GHz Antenna B X-Y Plane.

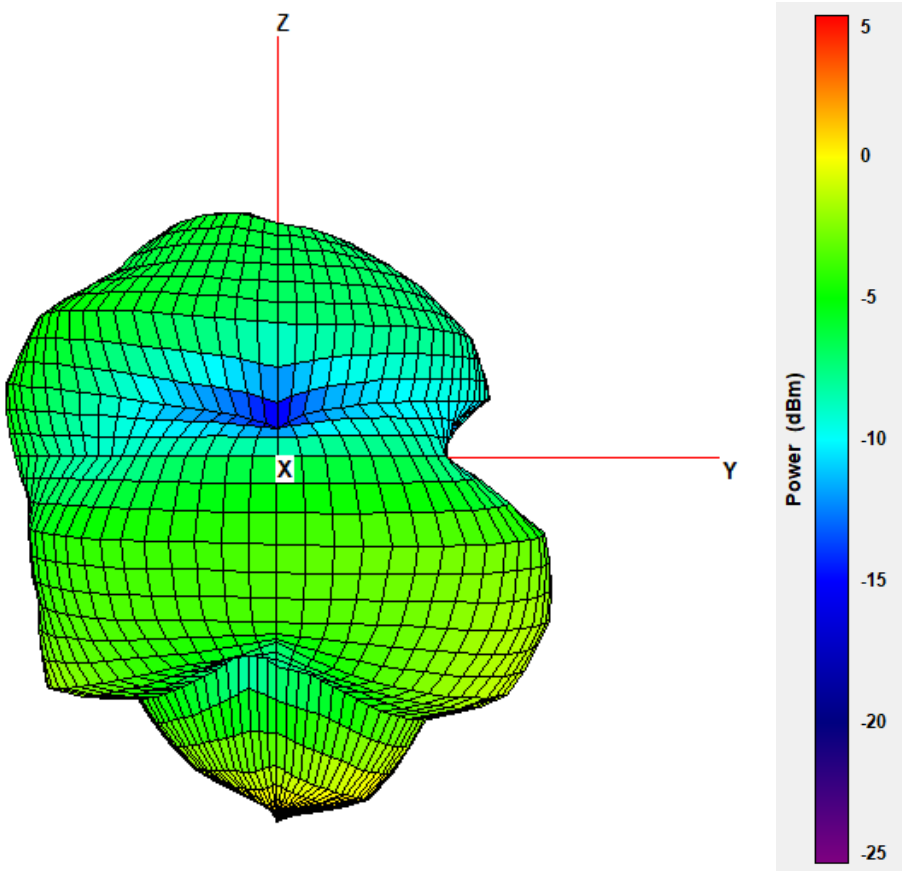

Figure 3-2. 1.9GHz Antenna B Y-Z Plane.

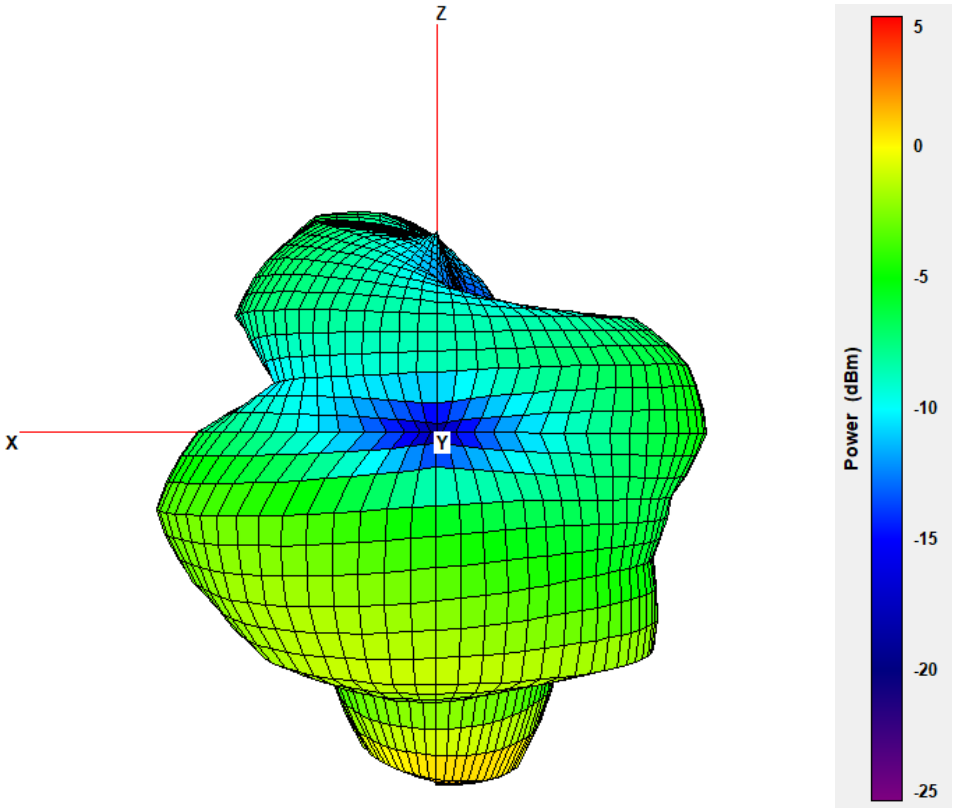

Figure 3-3. 1.9GHz Antenna B X-Z Plane.

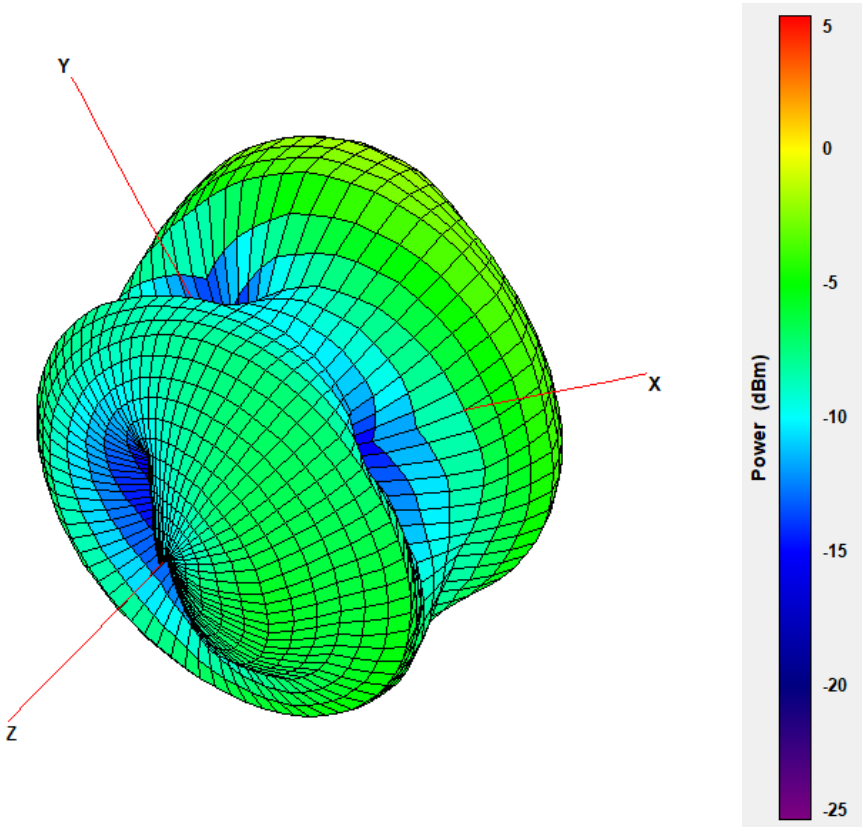

Figure 3-4. 1.9GHz Antenna B 3D

4. 2.4GHz Bluetooth Antenna

Peak Gain					
Parameter	**Type**	**Pattern**	**2412 MHz**	**2442 MHz**	**2482 MHz**
2.4GHz Antenna	Internal Chip	Omni	0.2 dBi	0.5 dBi	0.1 dBi

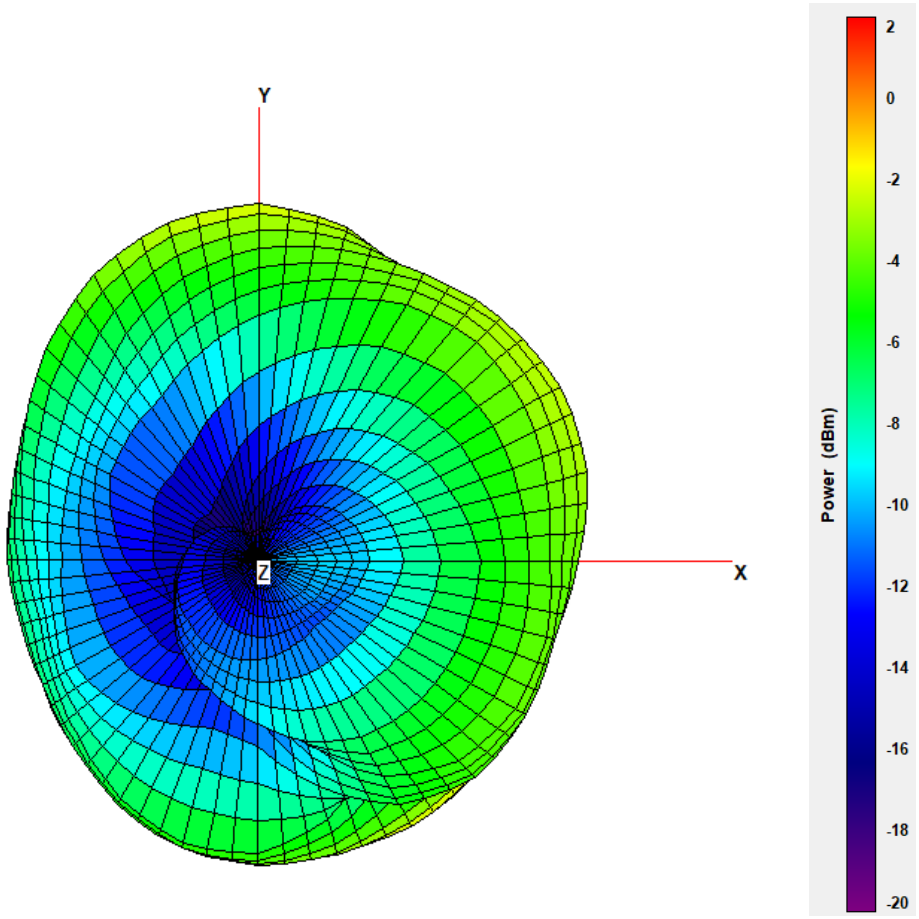

Figure 4-1. 2.4GHz Antenna X-Y plane. 2442MHz.

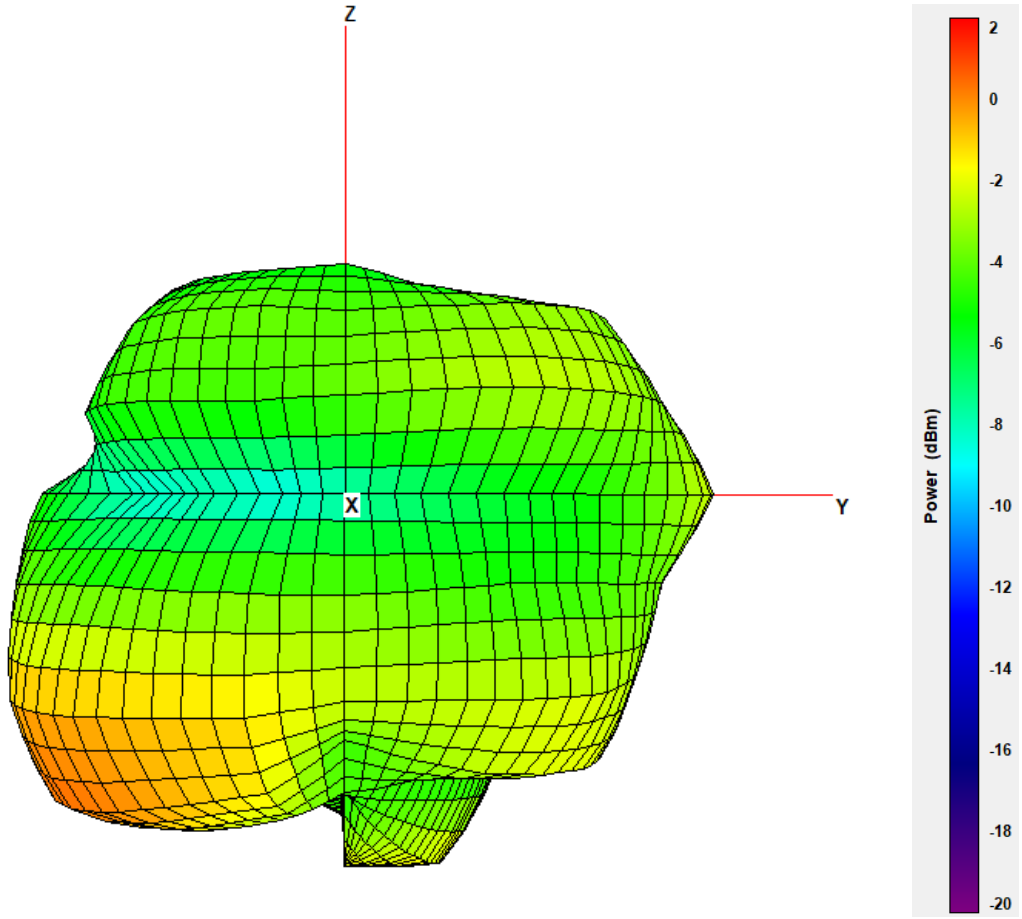

Figure 4-2. 2.4GHz Antenna Y-Z plane. 2442MHz

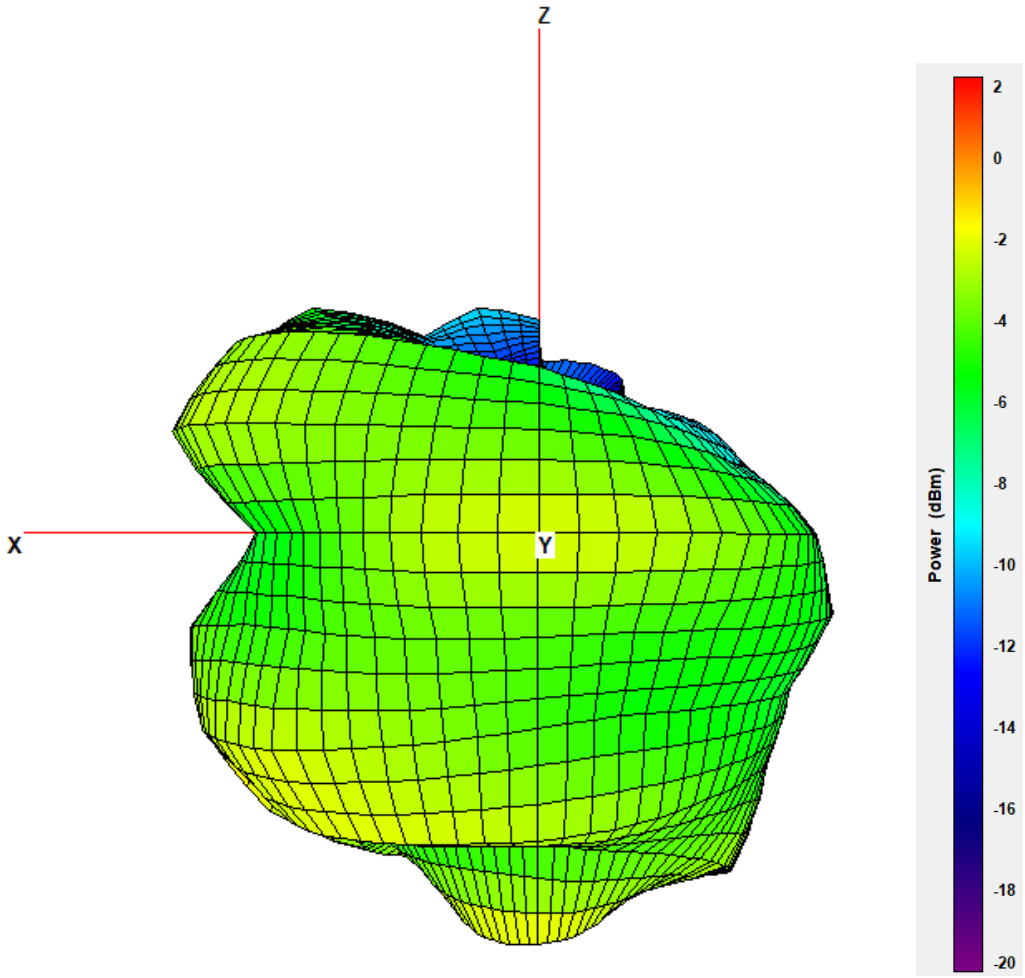

Figure 4-3. 2.4GHz Antenna X-Z plane. 2442MHz

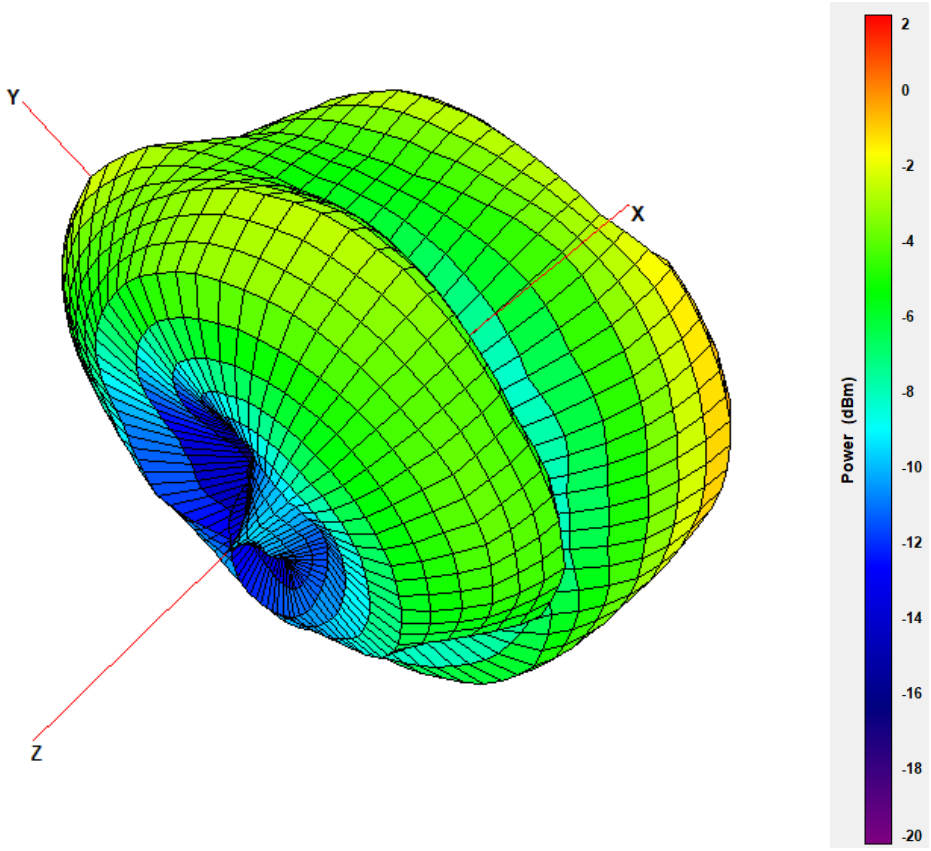

Figure 4-4. 2.4GHz Antenna 3D. 2442MHz