



MEASUREMENTS OF SHURE MXW8X ANTENNAS FOR REGULATORY APPROVAL

1.9GHZ ANTENNA A

1.9GHZ ANTENNA B

2.4GHZ BLUETOOTH ANTENNA



Contents

Measurements of Shure MXW8X Antennas for Regulatory Approval	1
1.9GHz Antenna A	1
1.9GHz Antenna B	1
2.4GHz Bluetooth Antenna.....	1
1. Overview and Reference Angles.....	3
1.1 DUT Overview.....	3
1.2 Test Setup Photo	5
1.3 Supporting Test Equipment List.....	6
2. 1.9GHz Antenna A.....	8
3. 1.9GHz Antenna B.....	12
4. 2.4GHz Bluetooth Antenna	16

Table of Figures

Figure 1-1. Shure MXW8X Internal Antennas Overview	3
Figure 1-2. Shure MXW8X Antennas Block Diagram	4
Figure 1-3. MXW8X Reference Angles.....	4
Figure 1-4. Photo of MXW8X in antenna test chamber.	5
Figure 1-5. Photo of Shure's antenna test chamber with MXW8X ready for testing.	6
Figure 1-6. Diagram of Shure antenna chamber. Designed per ETSI EN 300 422-1, section D-1.	7
Figure 2-1. 1.9GHz Antenna A X-Y Plane.	8
Figure 2-2. 1.9GHz Antenna A Y-Z Plane.....	9
Figure 2-3. 1.9GHz Antenna A X-Z plane	10
Figure 2-4. 1.9GHz Antenna A 3D	11
Figure 3-1. 1.9GHz Antenna B X-Y Plane.	12
Figure 3-2. 1.9GHz Antenna B Y-Z Plane.....	13
Figure 3-3. 1.9GHz Antenna B X-Z Plane.....	14
Figure 3-4. 1.9GHz Antenna B 3D	15
Figure 4-1. 2.4GHz Antenna X-Y plane. 2442MHz.....	16
Figure 4-2. 2.4GHz Antenna Y-Z plane. 2442MHz	17
Figure 4-3. 2.4GHz Antenna X-Z plane. 2442MHz	18
Figure 4-4. 2.4GHz Antenna 3D. 2442MHz	19



1. Overview and Reference Angles

1.1 DUT Overview

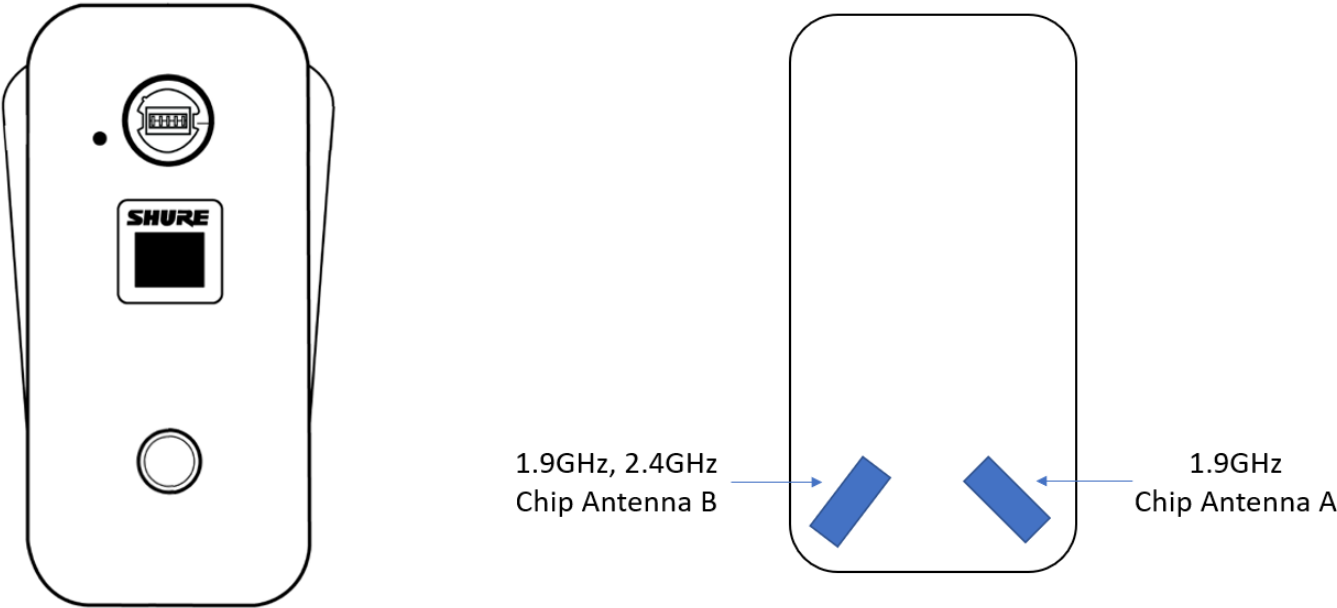


Figure 1-1. Shure MXW8X Internal Antennas Overview

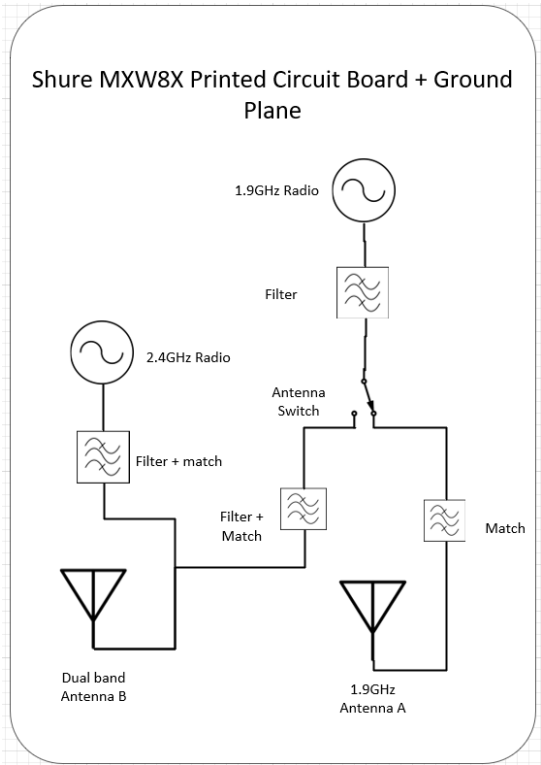


Figure 1-2. Shure MXW8X Antennas Block Diagram

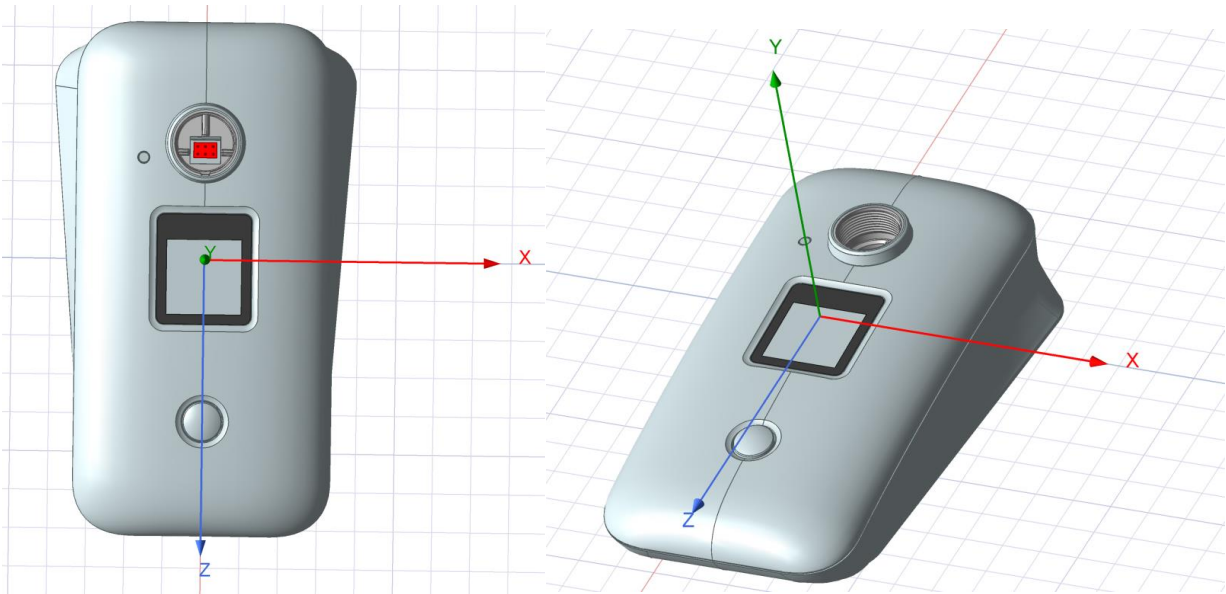


Figure 1-3. MXW8X Reference Angles



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

Project: Oreo

Revision: 1.1

Date: Jan 5, 2024

Authors: Eric Johnson

Page: 6 of 19

Shure Incorporated © 2024
Proprietary and Confidential

It is the responsibility of any Associate using printed copies of this document to ensure that these copies are current.

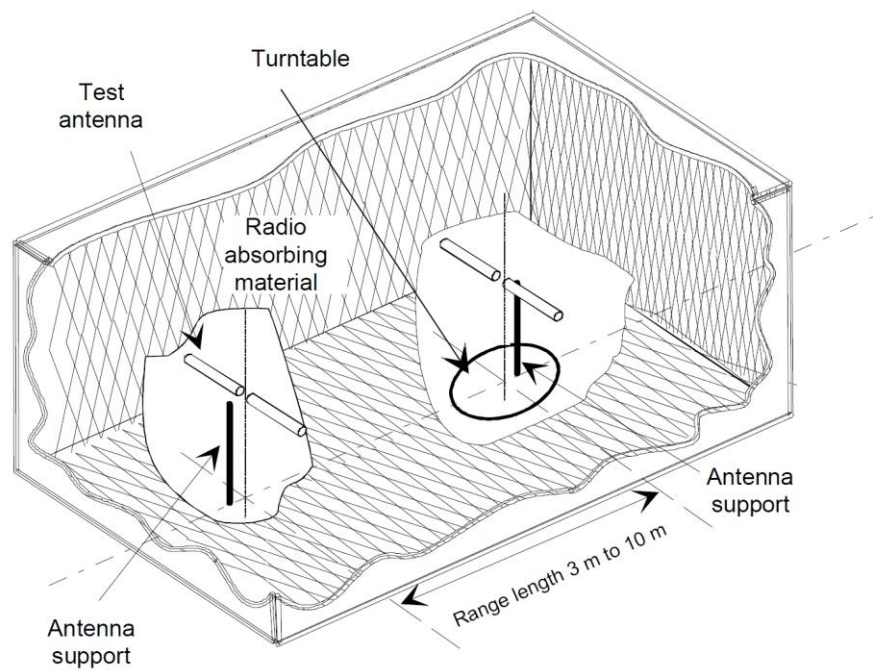


Figure 1-6. Diagram of Shure antenna chamber. Designed per ETSI EN 300 422-1, section D-1.



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

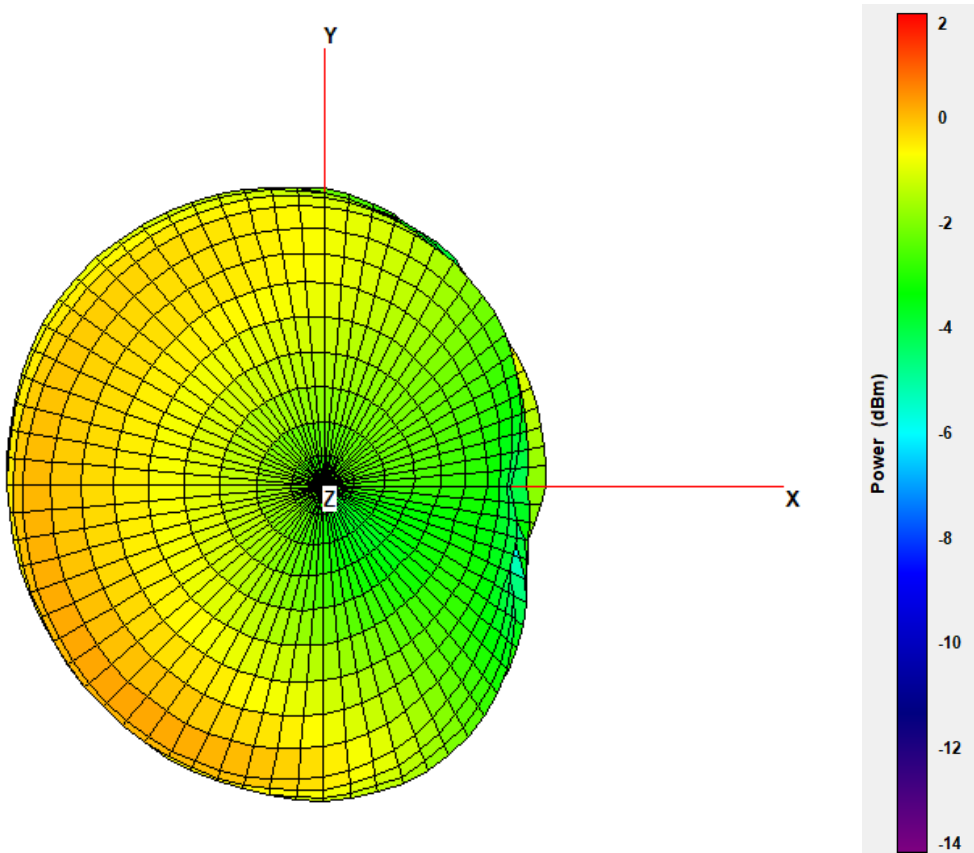


Figure 2-1. 1.9GHz Antenna A X-Y Plane.

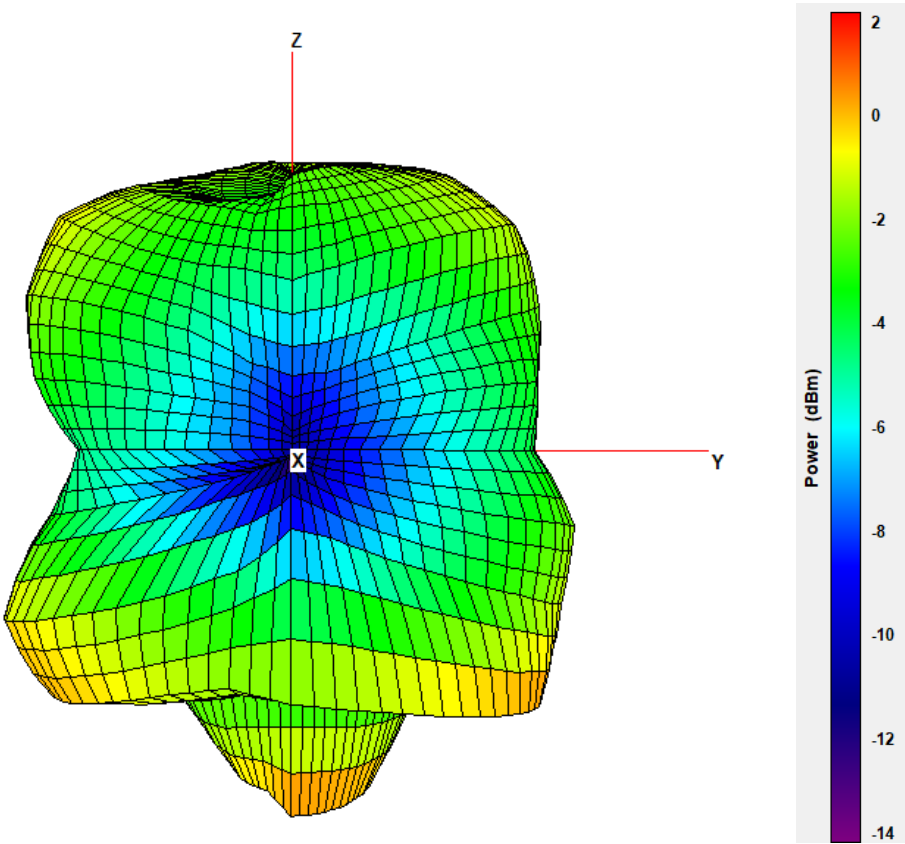


Figure 2-2. 1.9GHz Antenna A Y-Z Plane

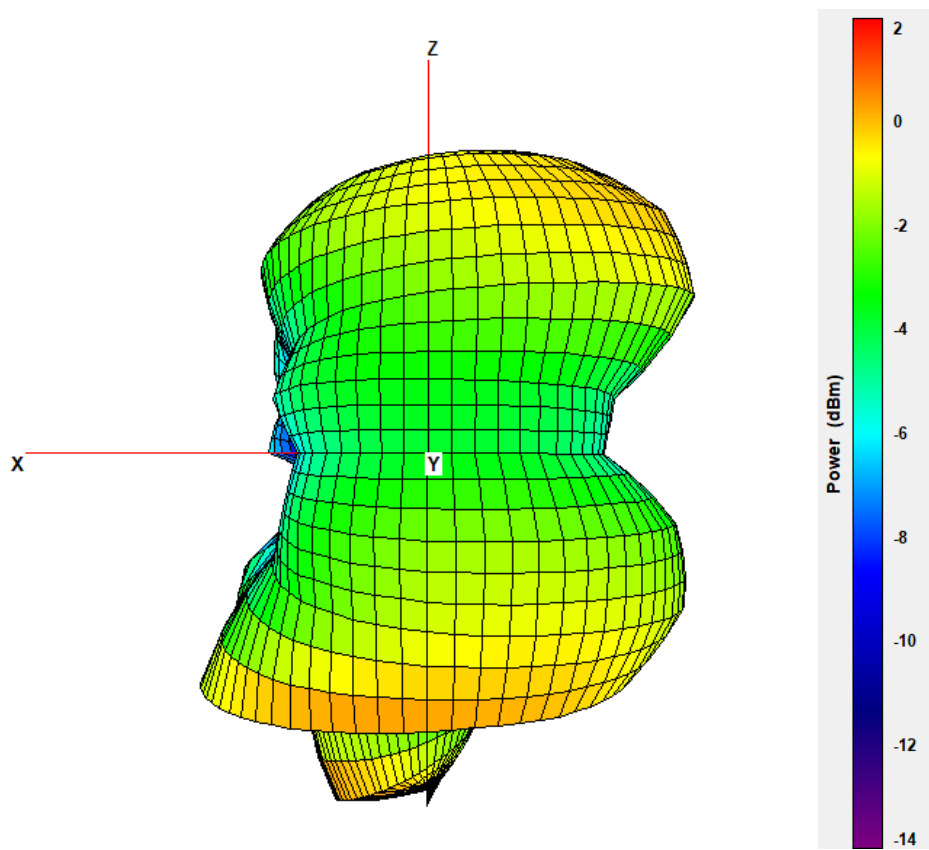


Figure 2-3. 1.9GHz Antenna A X-Z plane

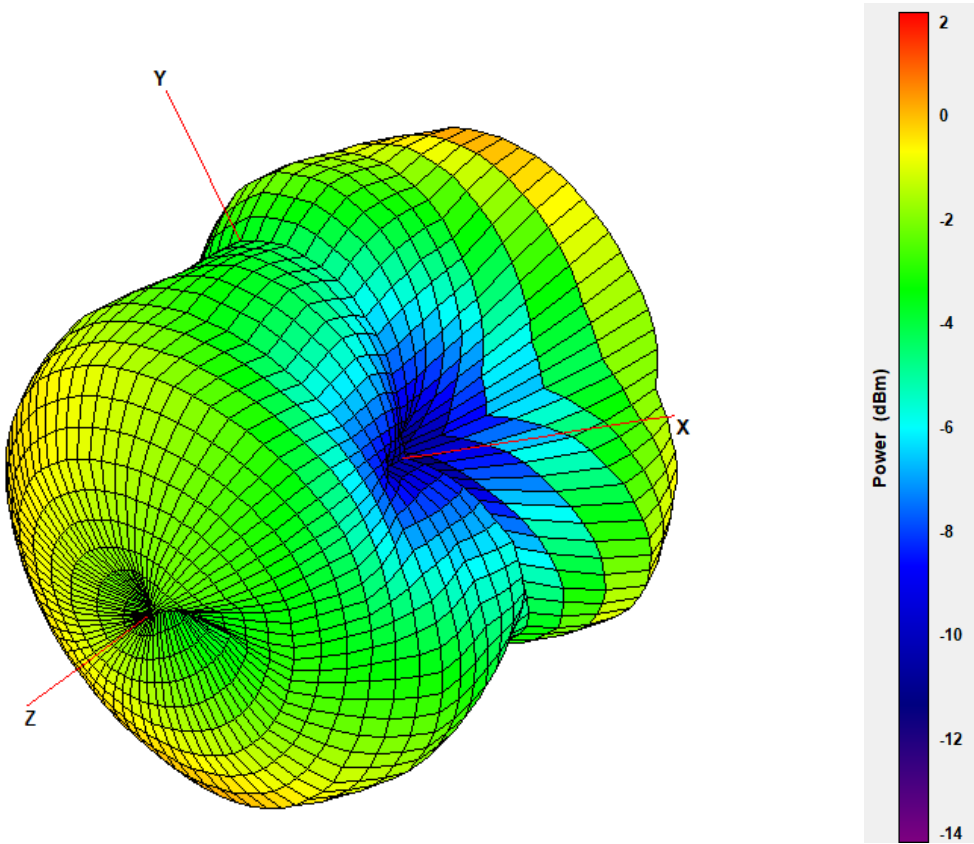


Figure 2-4. 1.9GHz Antenna A 3D



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

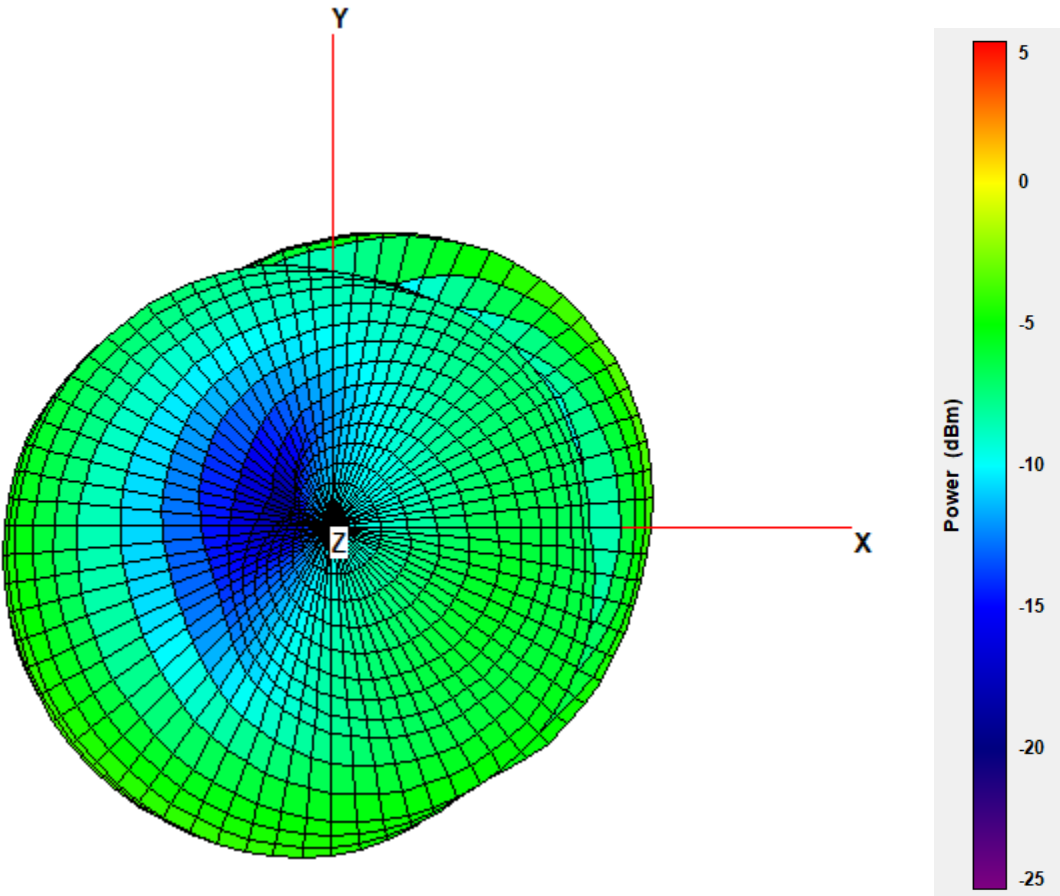


Figure 3-1. 1.9GHz Antenna B X-Y Plane.

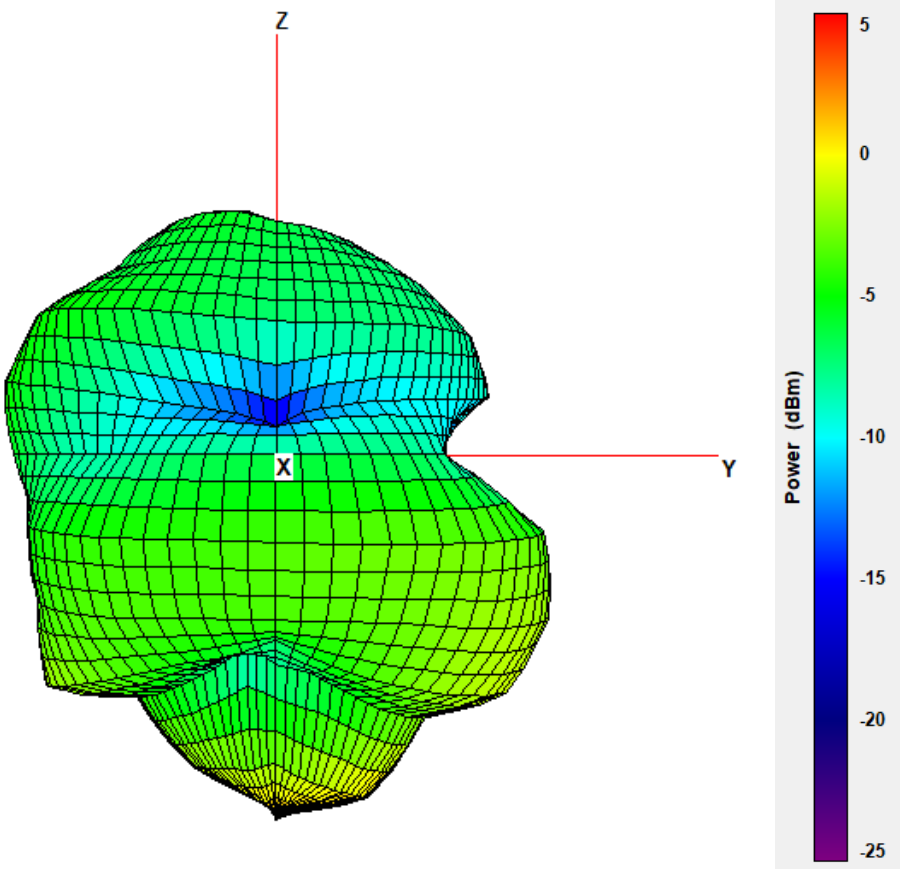


Figure 3-2. 1.9GHz Antenna B Y-Z Plane.

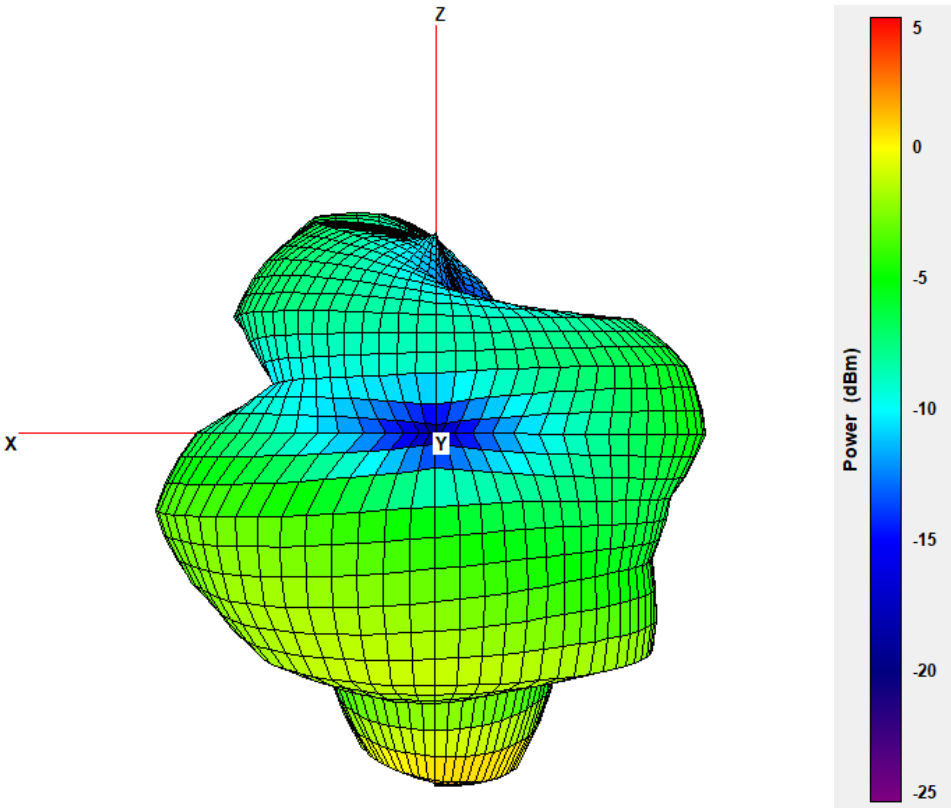


Figure 3-3. 1.9GHz Antenna B X-Z Plane.

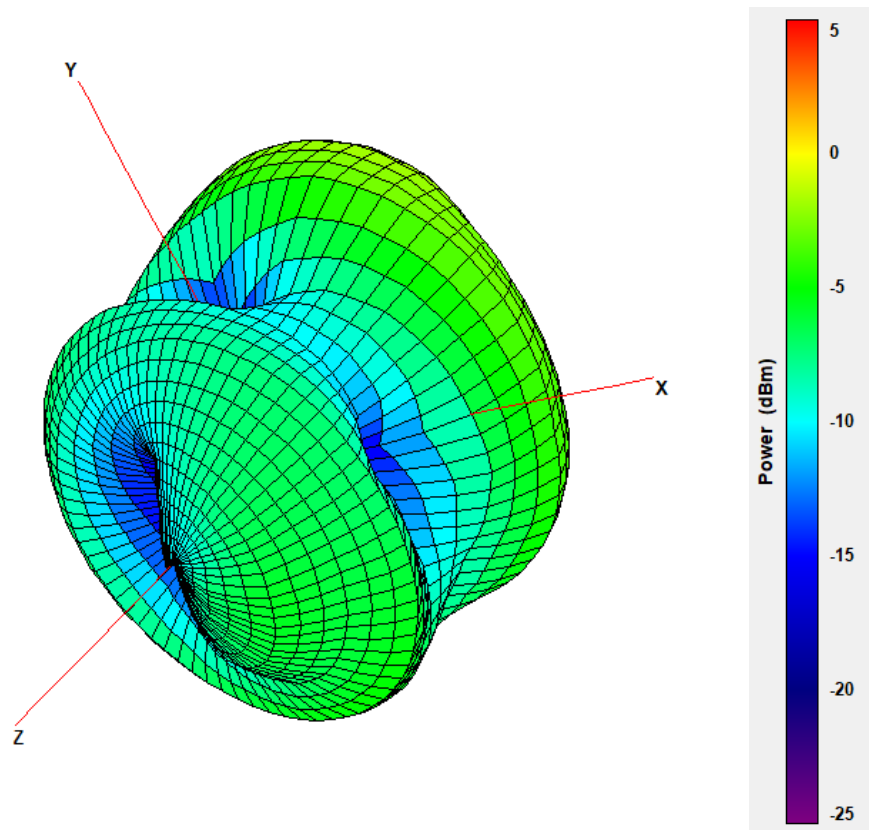


Figure 3-4. 1.9GHz Antenna B 3D



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

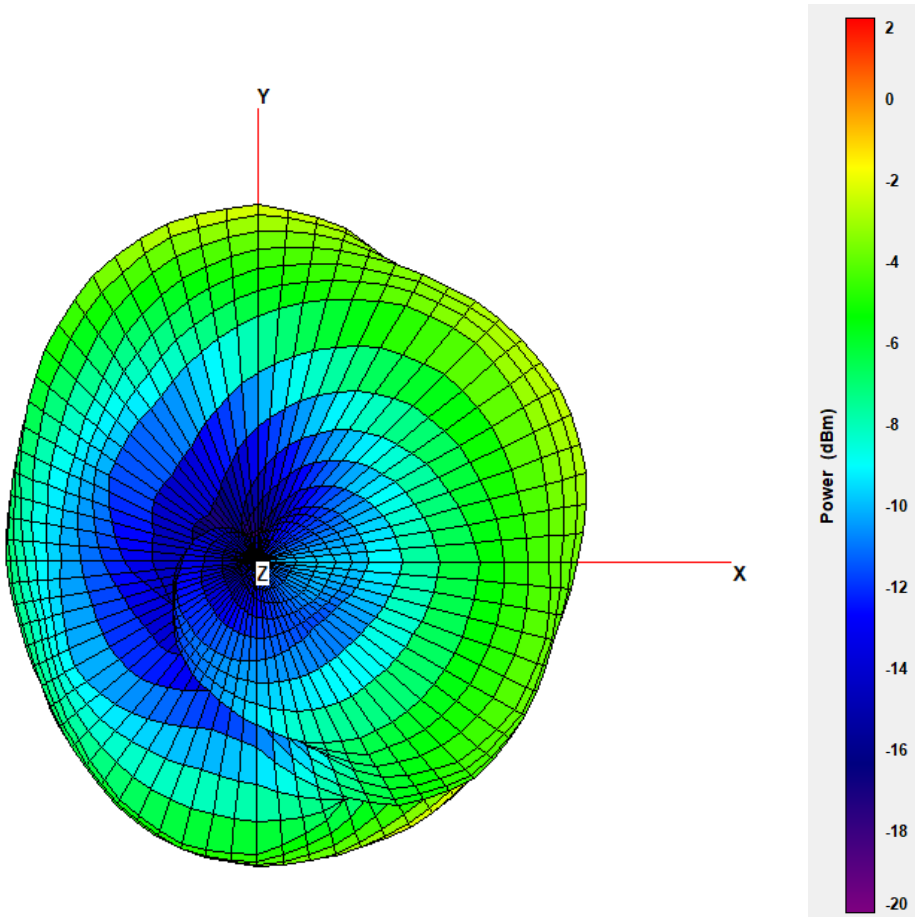


Figure 4-1. 2.4GHz Antenna X-Y plane. 2442MHz.

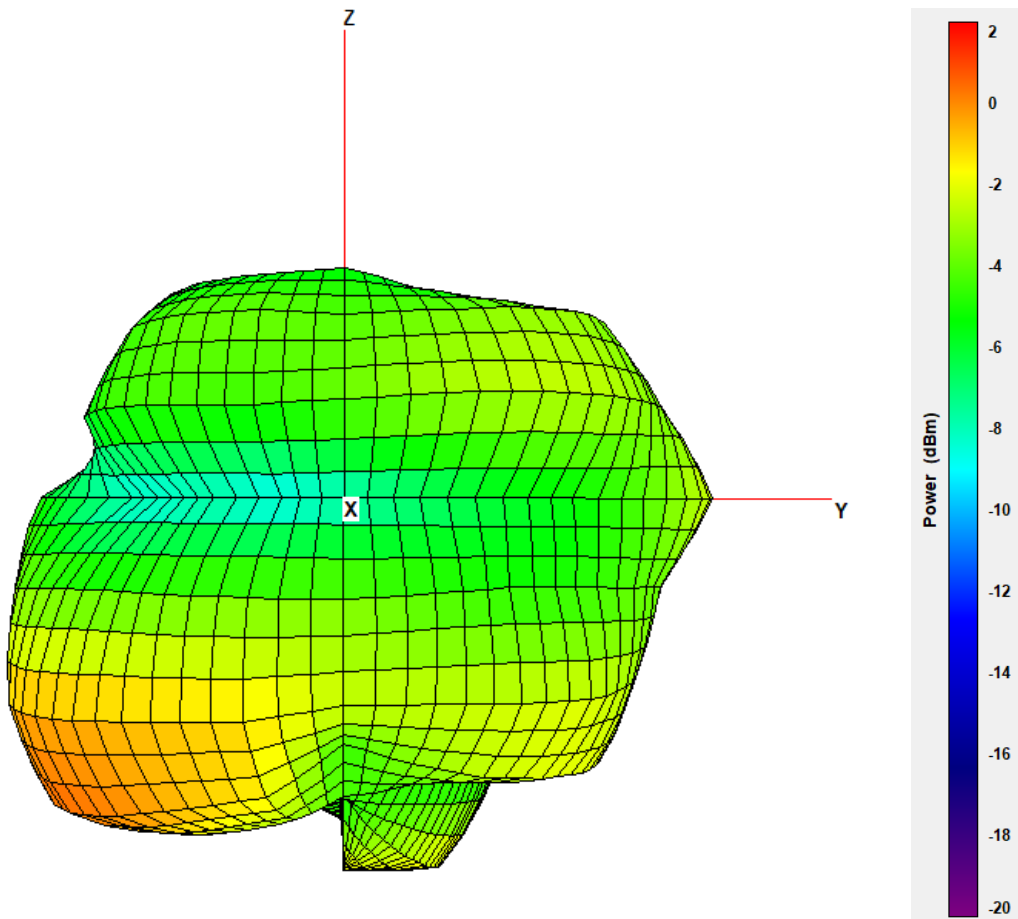


Figure 4-2. 2.4GHz Antenna Y-Z plane. 2442MHz

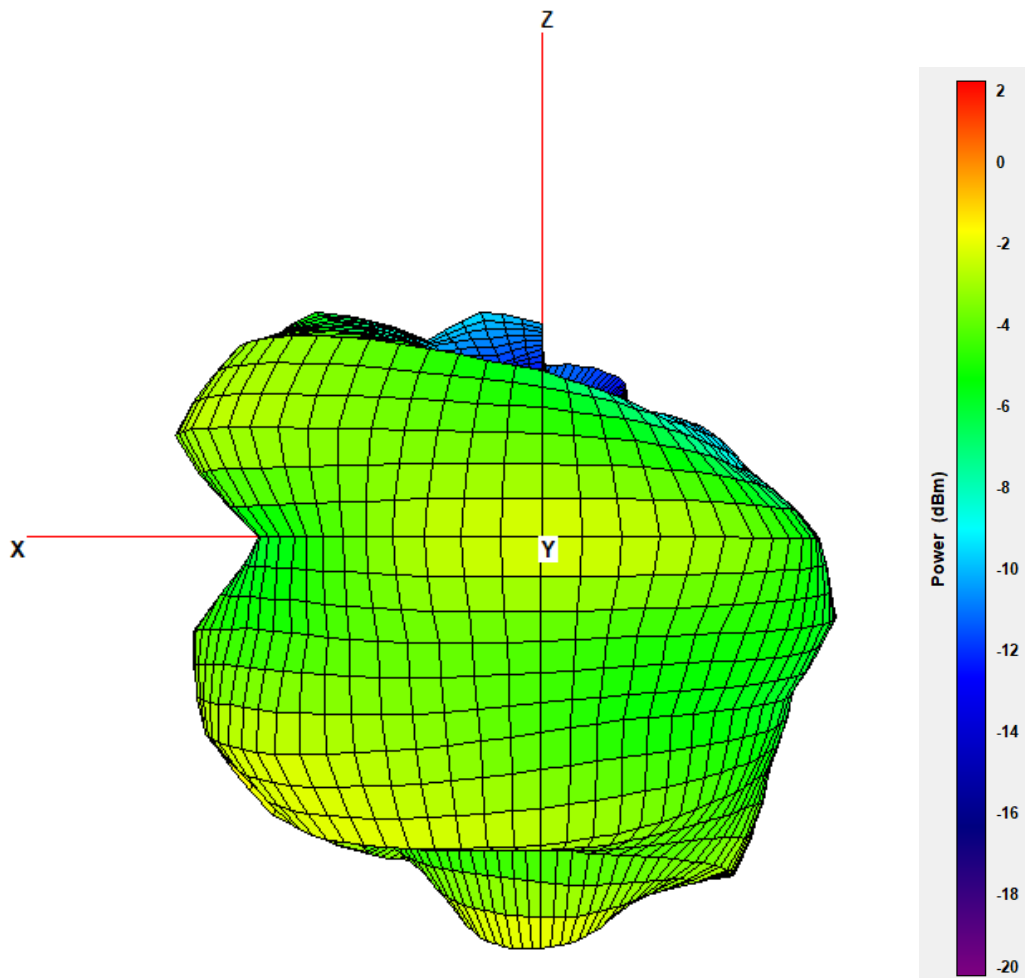


Figure 4-3. 2.4GHz Antenna X-Z plane. 2442MHz

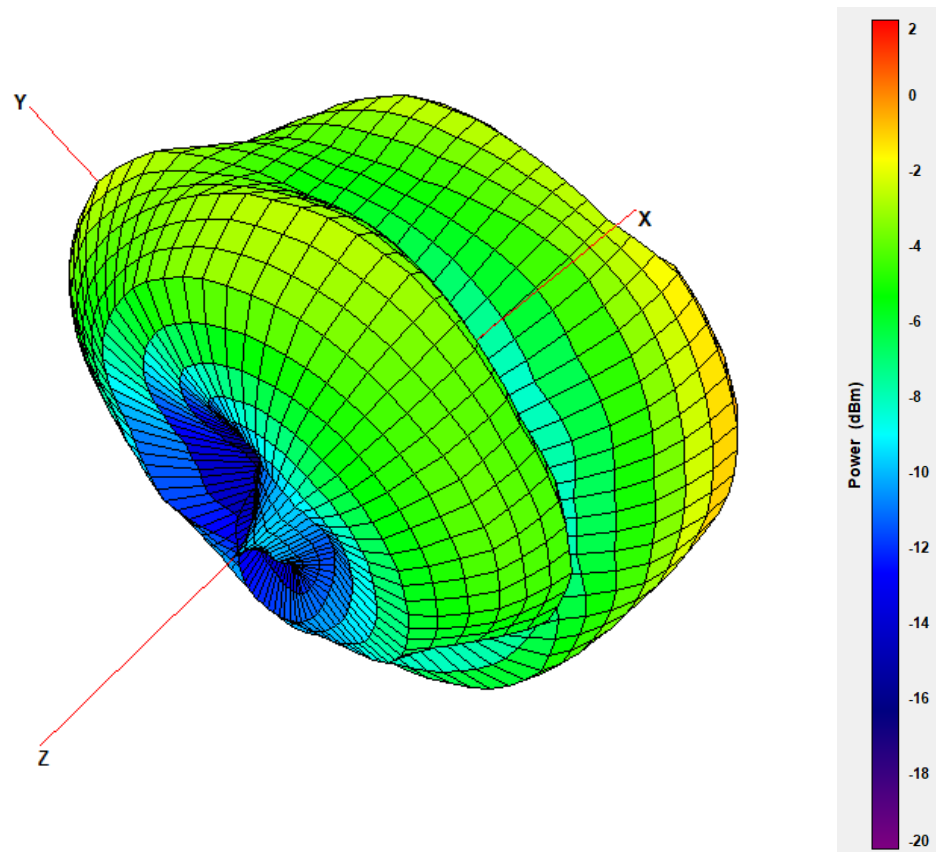


Figure 4-4. 2.4GHz Antenna 3D. 2442MHz