TAOGLAS

Datasheet

Cyclone

Part No:
FXUB64.18.0150A

Description:

LTE Wide Band Flex Antenna 600MHz–3000MHz

Features:

600-3000 MHz Wide Band Antenna
LTE Band 71 Support
>45% Efficiency on All bands & 6 dBi Peak Gain
Flexible “Peel and Stick” PCB Antenna
130*30*0.2 mm size
Connector: Hirose (U. FL Compatible)
Cable: 150mm 1.13mm coax
RoHS & Reach Compliant

1. Introduction

The Taoglas patent pending FXUB64.18.0150A flexible wideband antenna has been designed to cover all working frequencies in the 600-3000 MHz spectrum, covering all Cellular, 2.4GHz Wi-Fi, ISM, NB-IoT, CAT-M1 and AGPS, including LTE band 71. The antenna is delivered with a flexible body with excellent efficiencies on all bands, ground independent, with cable and connector for easy installation.

Typical Applications Include:

- Remote Monitoring
- POS (Point of Sales) Systems
- In-Building Communications Continuity

The FXUB64 flexible polymer antenna, at 130*30*0.2mm, is ultra-thin and truly wideband with high efficiencies across the bands. It is assembled by a simple “peel and stick” process, attaching securely to non-metal surfaces via 3M adhesive. It enables designers to use only one antenna that covers all common LTE frequencies.

The FXUB64 antenna is a durable flexible polymer antenna that has a peak gain of 6 dBi, an efficiency of more than 50% across the bands and is designed to be mounted directly onto a plastic or glass cover. It is an ideal choice for any device maker that needs to keep manufacturing costs down over the lifetime of a product. It is ground plane independent and delivered with a cable and connector for easy connecting to the wireless module or customer PCB.

Cables and Connectors are customizable. Like all such antennas, care should be taken to mount the antenna at least 10mm from metal components or surfaces, and ideally 20mm for best radiation efficiency.

For more information or support with integrating this antenna into your device. please contact your regional Taoglas customer support team.

2. Specifications

Electrical						
Frequency (MHz)	**617-960**	**1575.42**	**1710-1990**	**1755-2170**	**2400-2500**	**2500-2690**
Return Loss (dB)						
1.5mm ABS	< -4	< -7	< -10	< -10	< -5	< -4
Peak Gain (dBi)						
1.5mm ABS	3.5	4.5	6.0	6.0	3.7	2.3
Average Gain (dB)						
1.5mm ABS	-3.0	-2.3	-1.5	-1.7	-2.5	-3.3
Efficiency (%)						
1.5mm ABS	50	59	70	68	57	47
Impedance	50Ω					
Polarization	Linear					
Radiation Pattern	Omni					
Input Power	50 W					
Mechanical						
Dimensions (mm)	130*30*0.2 mm					
Material	Flexible Polymer					
Weight	2.4 g					
Connector	Hirose U.FL					
Cable	1.13 mm mini coax					
Cable Length	150 mm					
Environmental						
Operation Temperature	-40°C to 85°C					
Storage Temperature	-40°C to 85°C					
Relative Humidity	40% to 95%					
RoHs Compliant	Yes					
REACH Compliant	Yes					

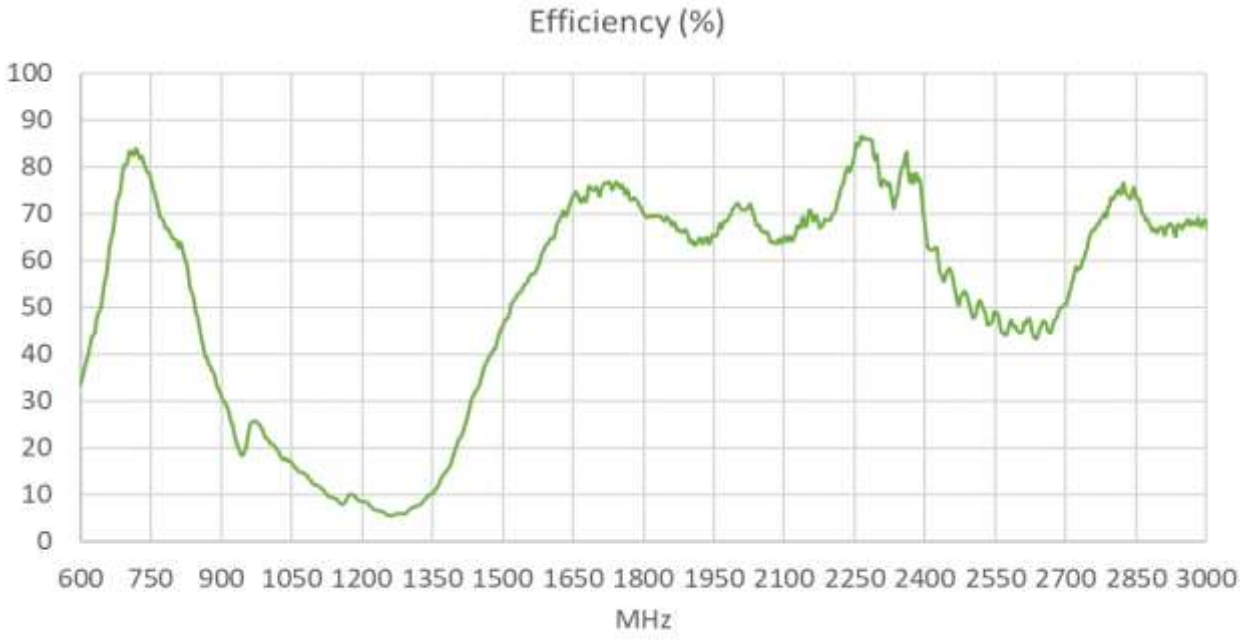
5G/4G Bands			
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA		
	Uplink	**Downlink**	**Covered**
1	UL: 1920 to 1980	DL: 2110 to 2170	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓
5	UL: 824 to 849	DL: 869 to 894	✓
7	UL: 2500 to 2570	DL:2620 to 2690	✓
8	UL: 880 to 915	DL: 925 to 960	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓
12	UL: 699 to 716	DL: 729 to 746	✓
13	UL: 777 to 787	DL: 746 to 756	✓
14	UL: 788 to 798	DL: 758 to 768	✓
17	UL: 704 to 716	DL: 734 to 746	✓
18	UL: 815 to 830	DL: 860 to 875	✓
19	UL: 830 to 845	DL: 875 to 890	✓
20	UL: 832 to 862	DL: 791 to 821	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✗
23	UL:2000 to 2020	DL: 2180 to 2200	✓
24	UL:1625.5 to 1660.5	DL: 1525 to 1559	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓
26	UL: 814 to 849	DL: 859 to 894	✓
27	UL: 807 to 824	DL: 852 to 869	✓
28	UL: 703 to 748	DL: 758 to 803	✓
29	UL: -	DL: 717 to 728	✓
30	UL: 2305 to 2315	DL: 2350 to 2360	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5	✗
32	UL: -	DL: 1452 - 1496	✓
35	1850 to 1910		✓
38	2570 to 2620		✓
39	1880 to 1920		✓
40	2300 to 2400		✓
41	2496 to 2690		✓
42	3400 to 3600		✗
43	3600 to 3800		✗
48	3550 to 3700		✗
66	UL: 1710-1780	DL: 2110-2200	✓
71	617 to 698		✓
74/75/76	1427 to 1518		✓
78	3300 to 3800		✗
79	4400 to 5000		✗
85	698-716	728-746	✓

* Covered Bands represent at least 20% efficiency

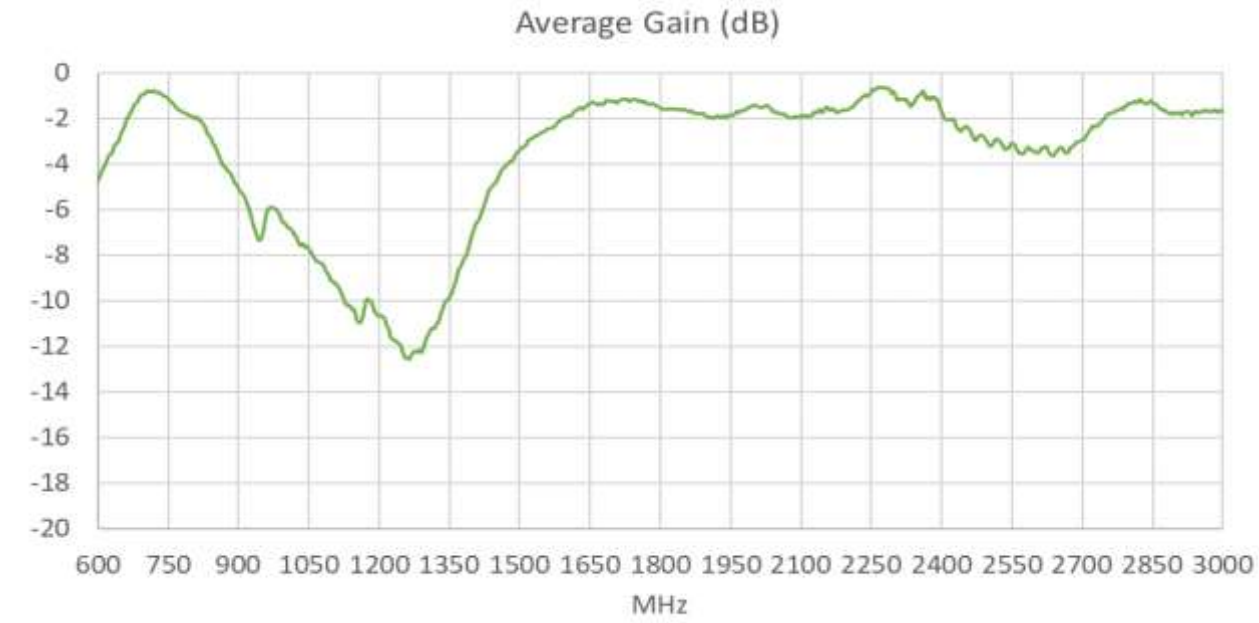
3. Antenna Characteristics

3.1 Return Loss

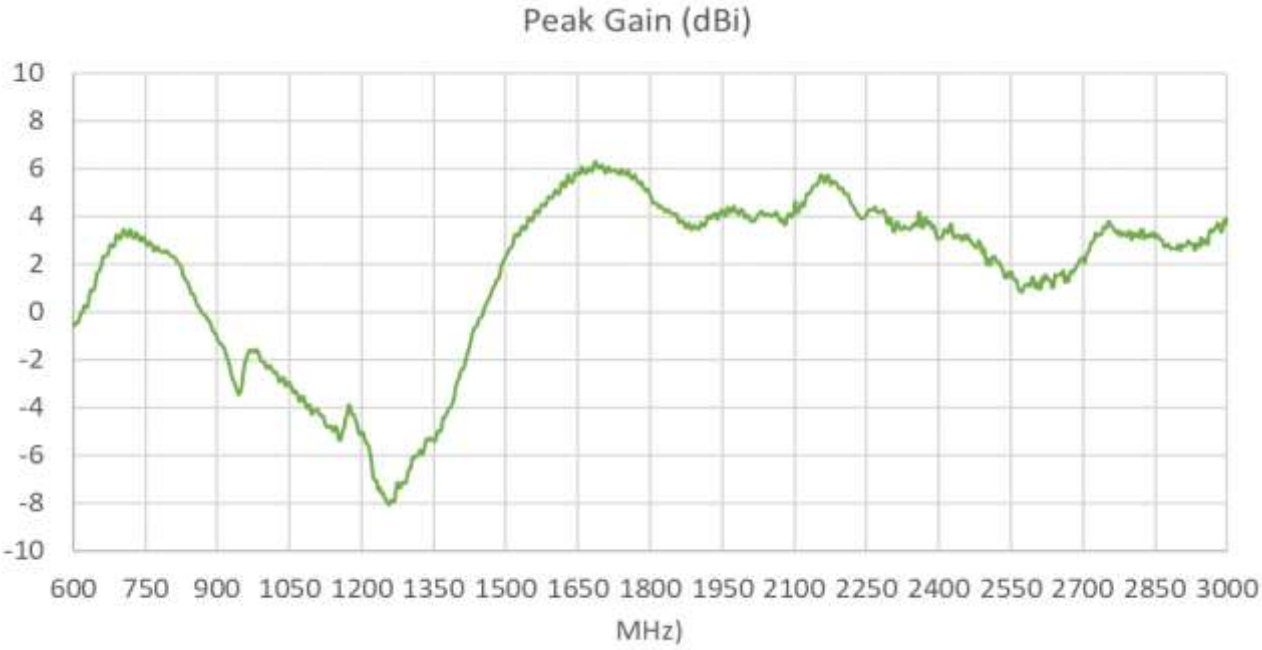
3.2 Efficiency



3.3 Average Gain

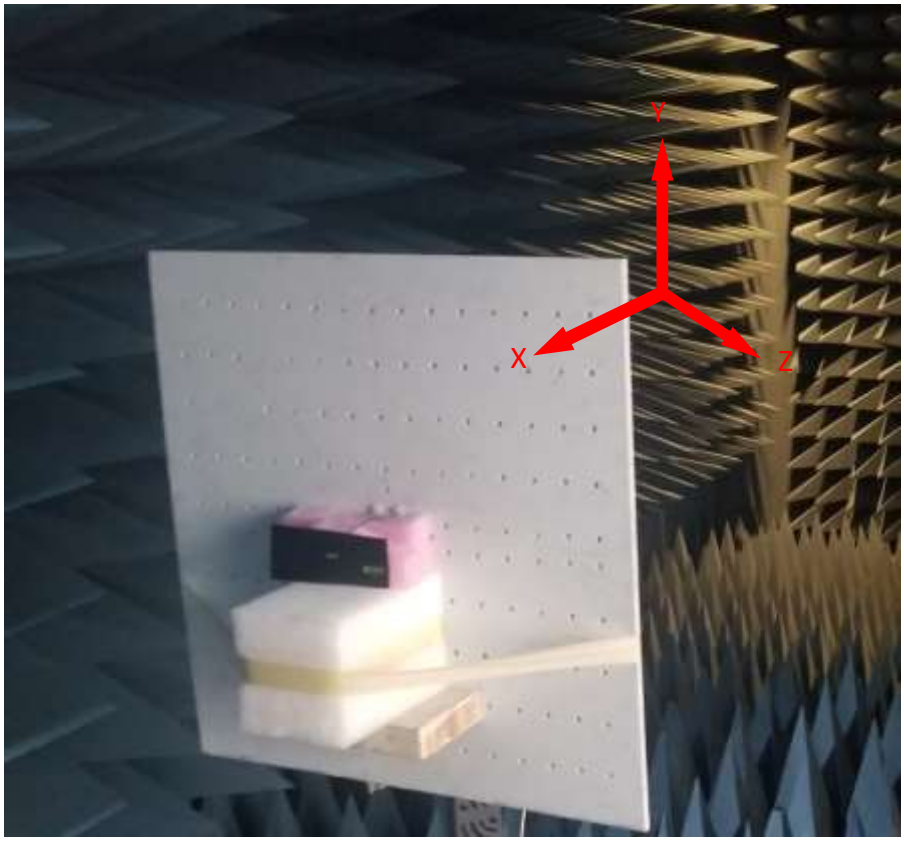


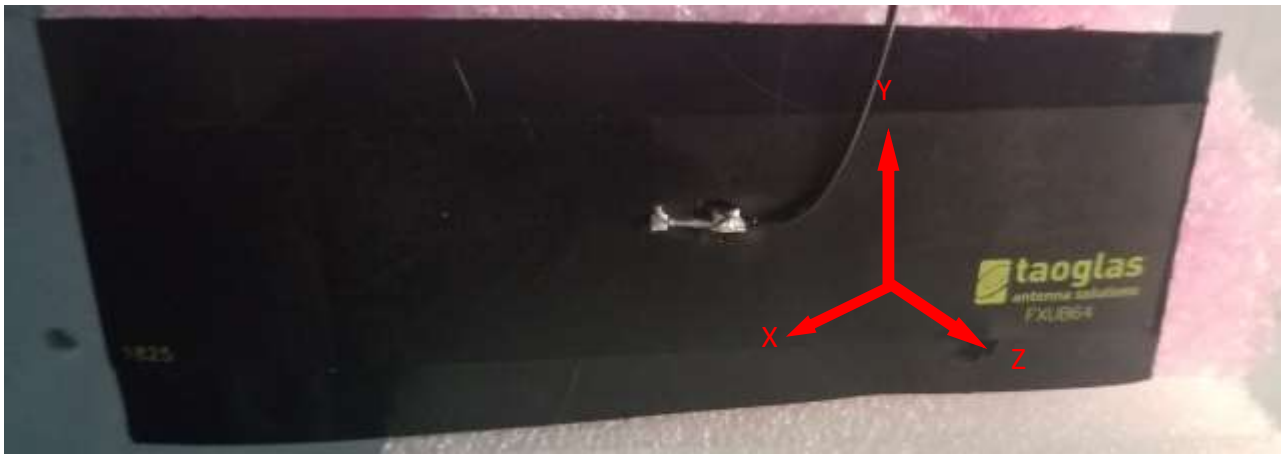
3.4 Peak Gain



4. 2D Radiation Patterns

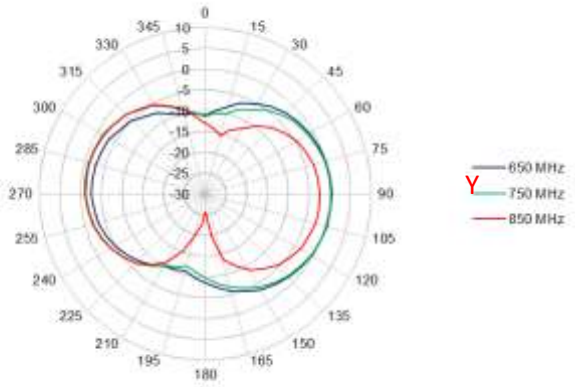
4.1 Test Setup



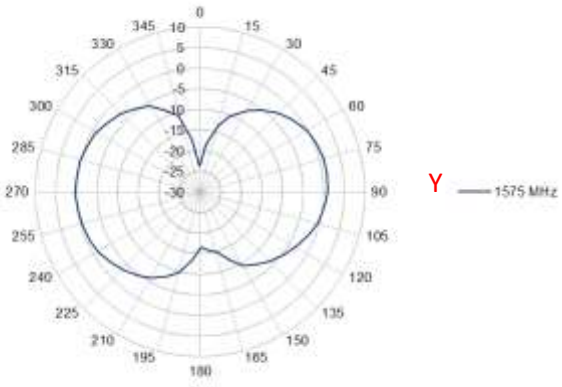


XY Plane

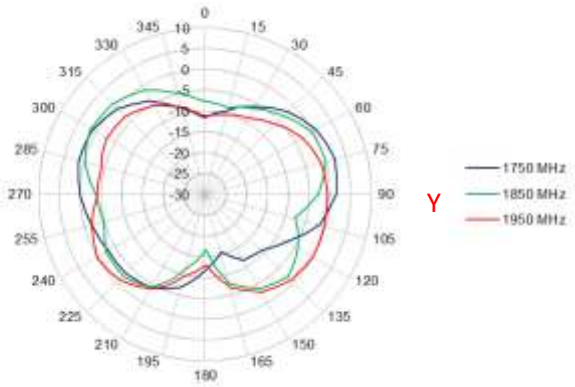
X



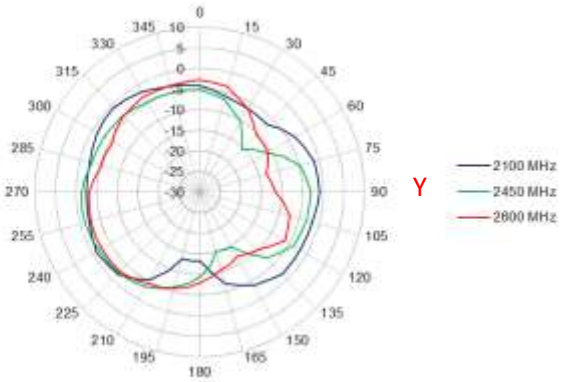
X



X

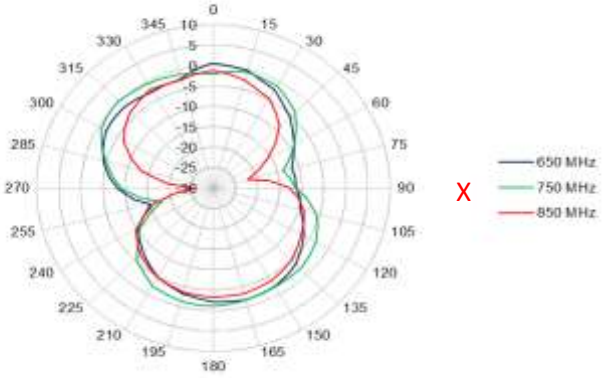


X

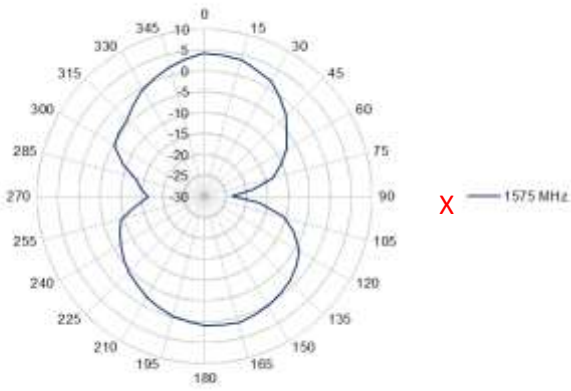


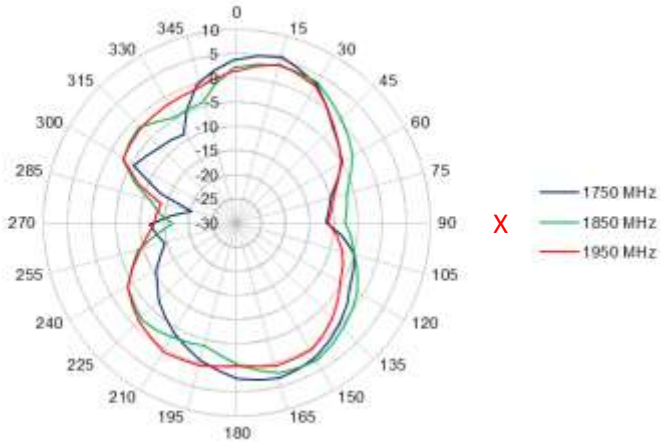
XZ Plane

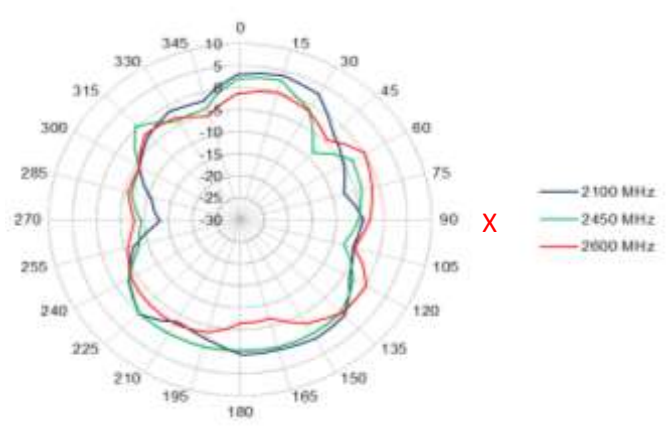
Z



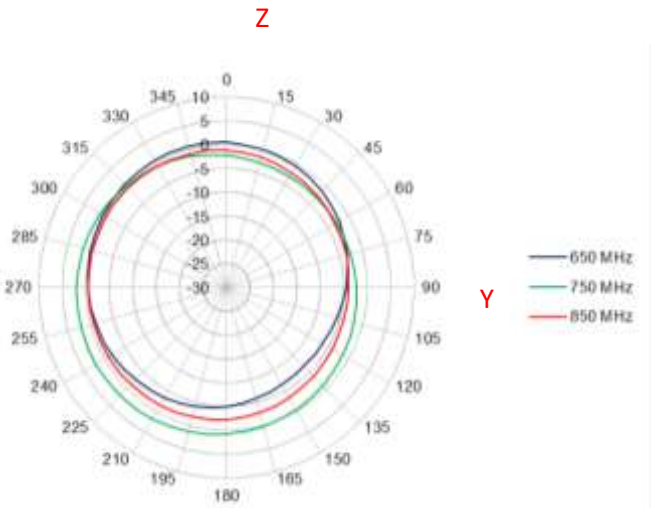
Z

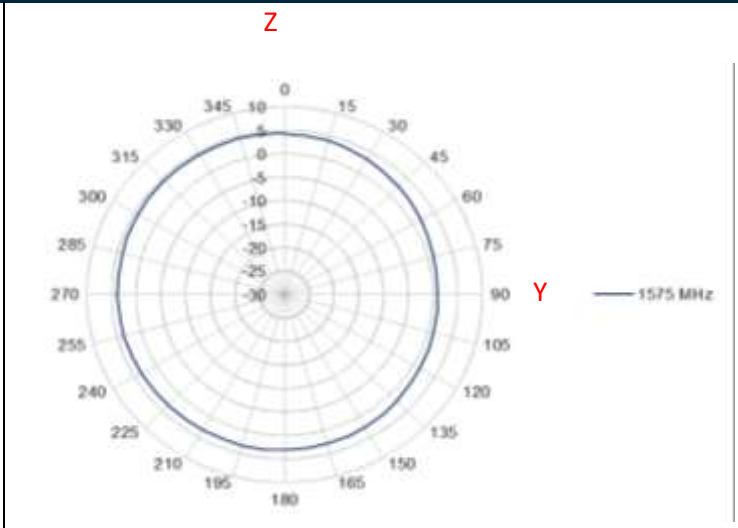


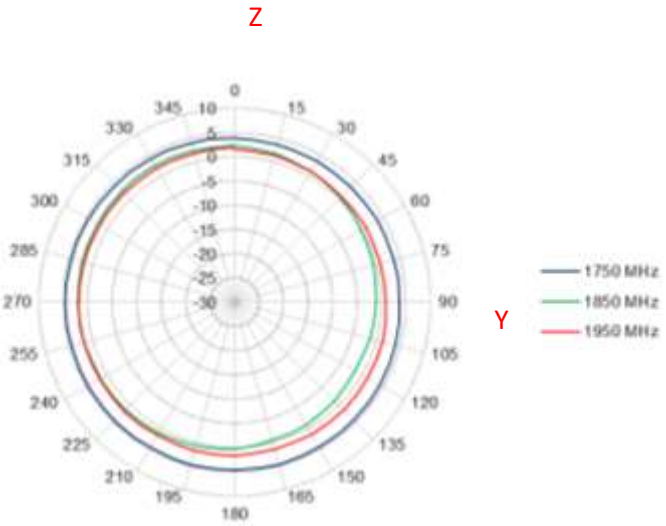

Z
X
1750 MHz
1850 MHz
1950 MHz

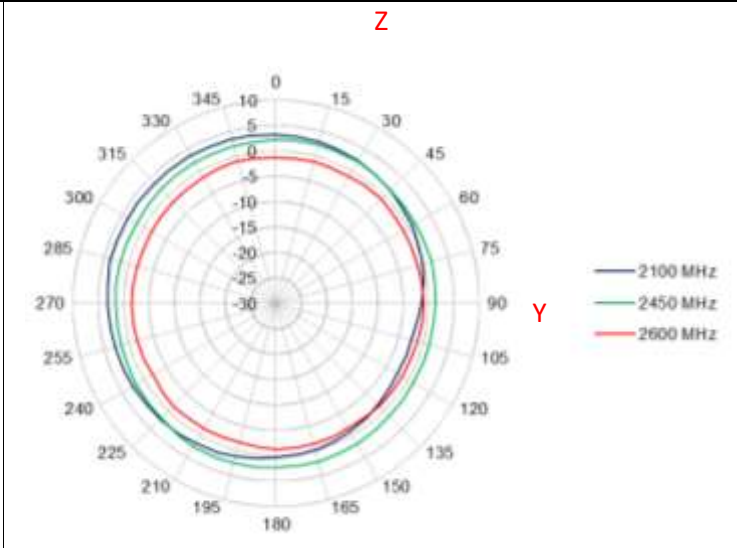

Z
X
2100 MHz
2450 MHz
2600 MHz

YZ Plane


Z
Y
650 MHz
750 MHz
850 MHz

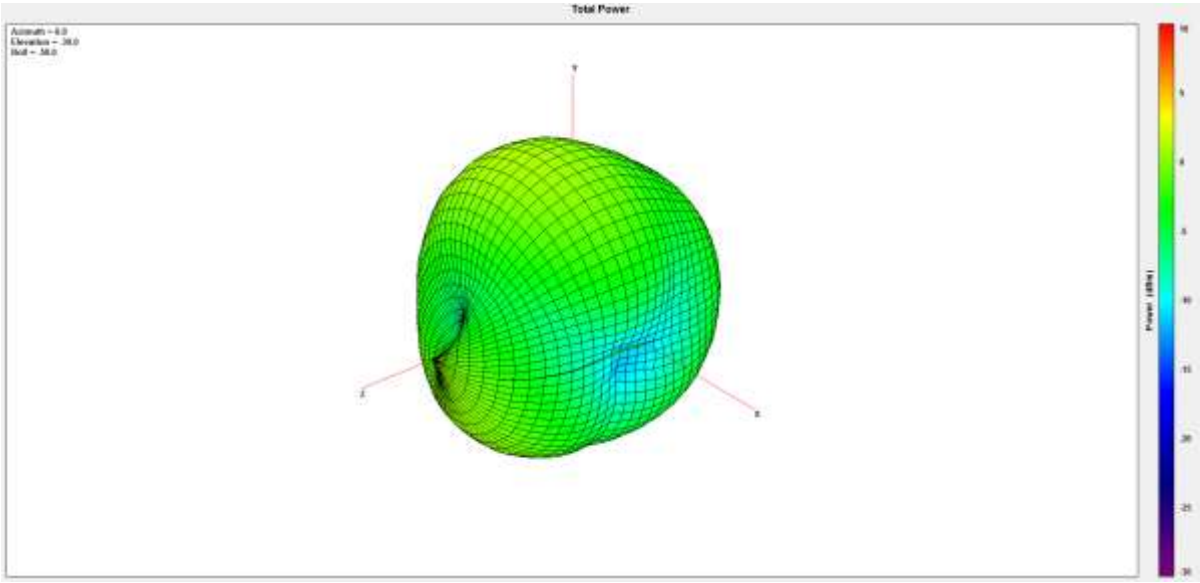

Z
Y
1575 MHz


Z
Y
1750 MHz
1850 MHz
1950 MHz

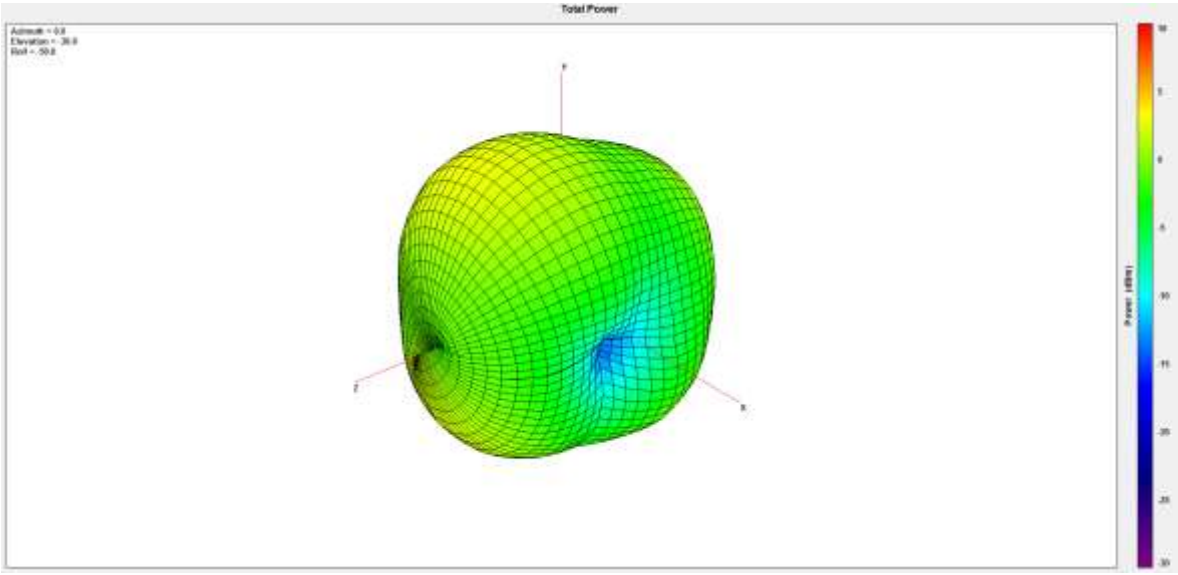

Z
Y
2100 MHz
2450 MHz
2600 MHz

5. 3D Radiation Patterns

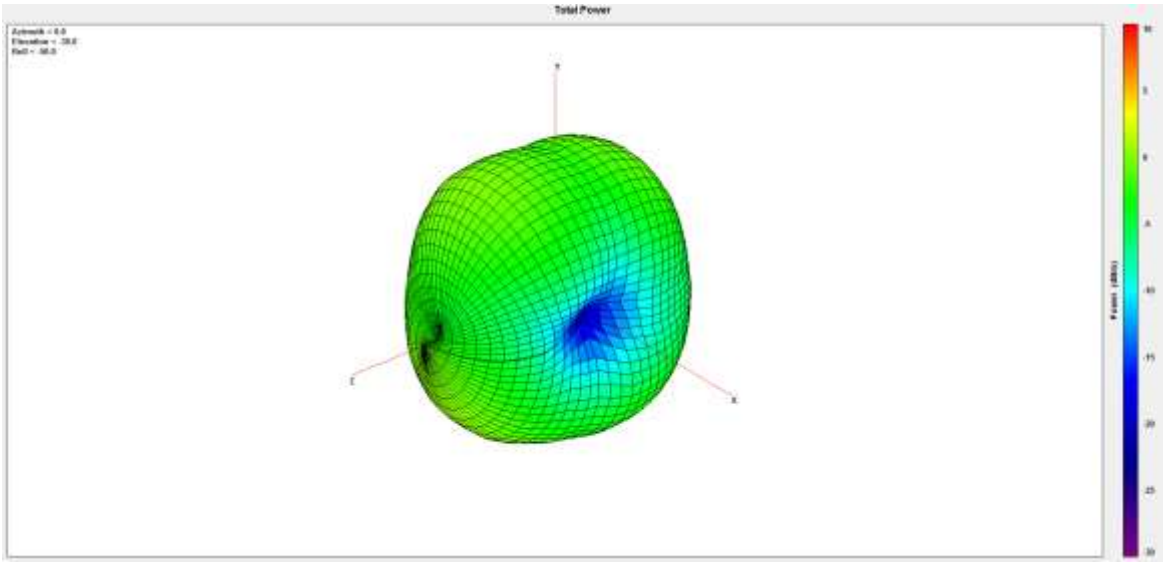
5.1 Free Space



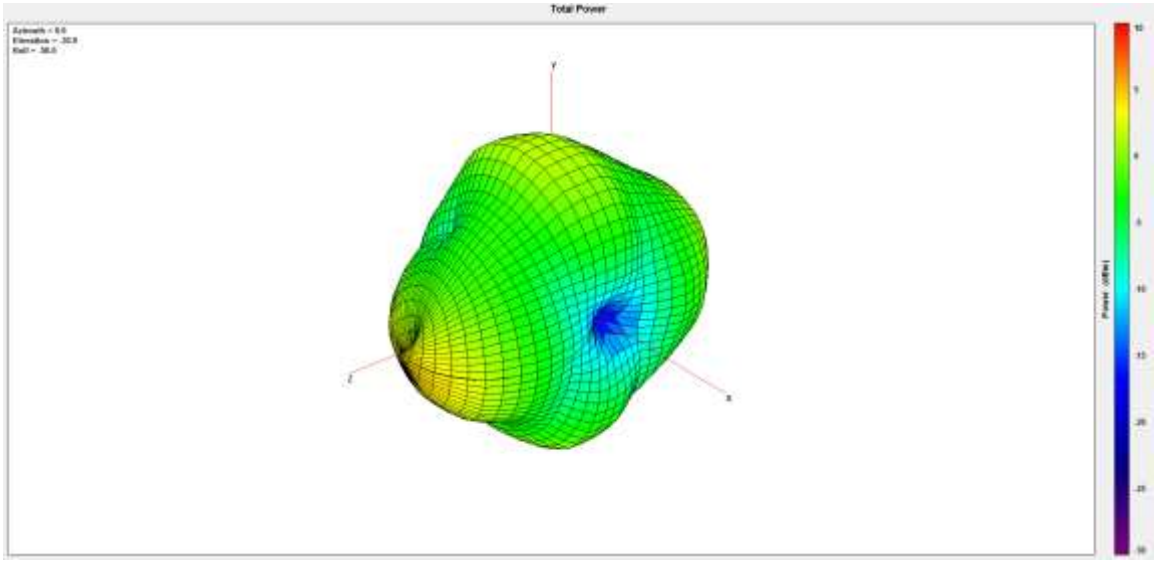
650MHz



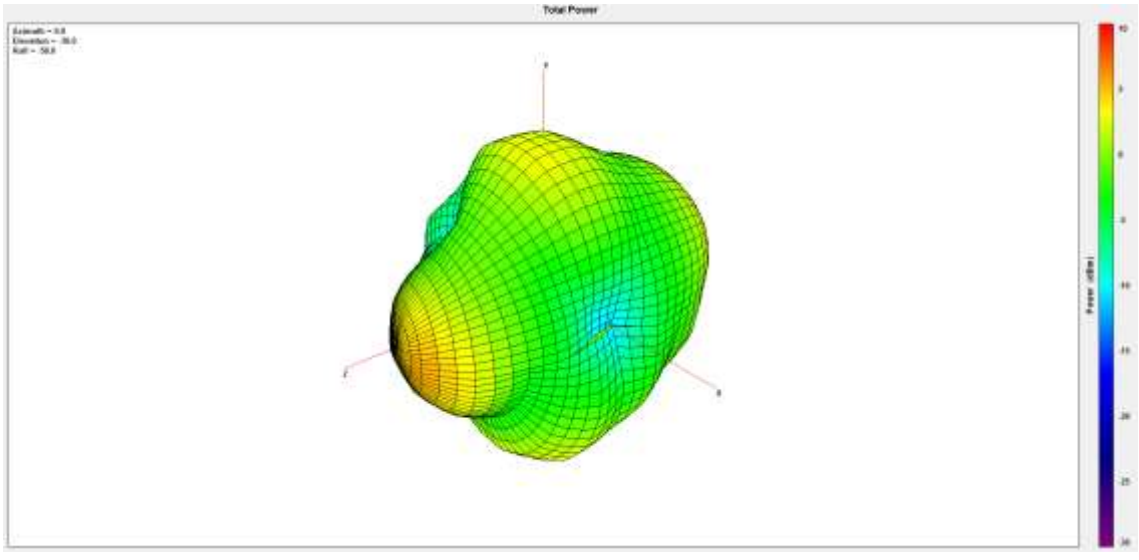
750MHz



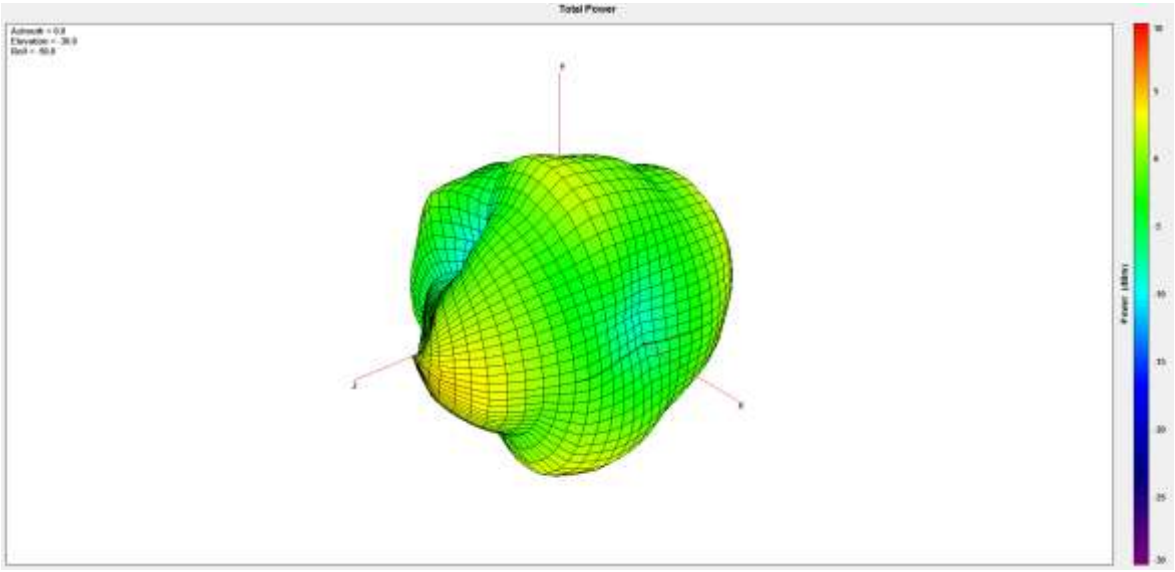
850MHz



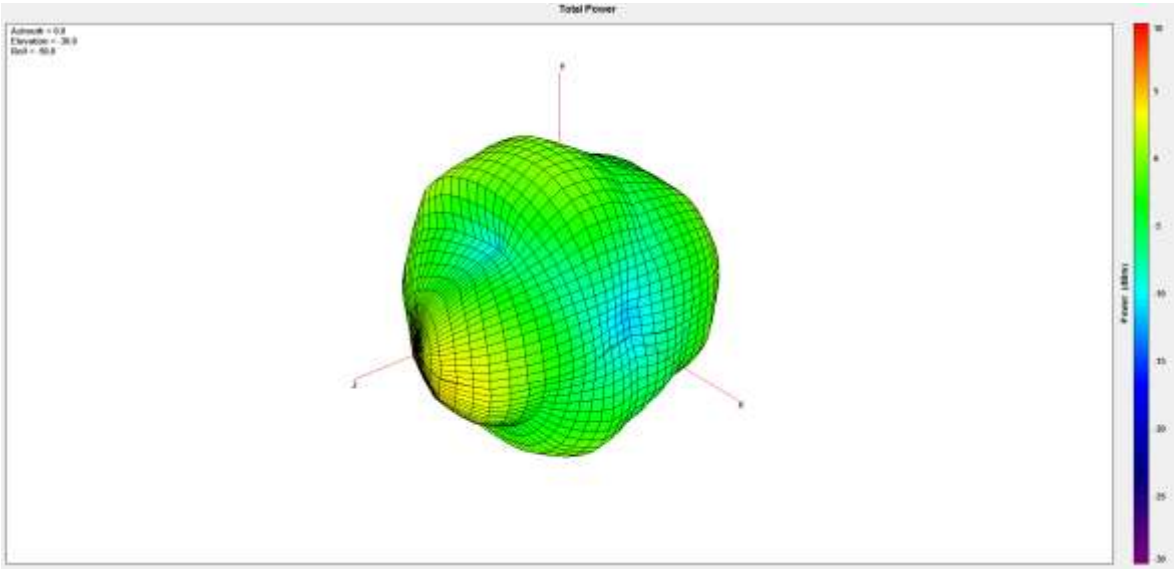
1575MHz



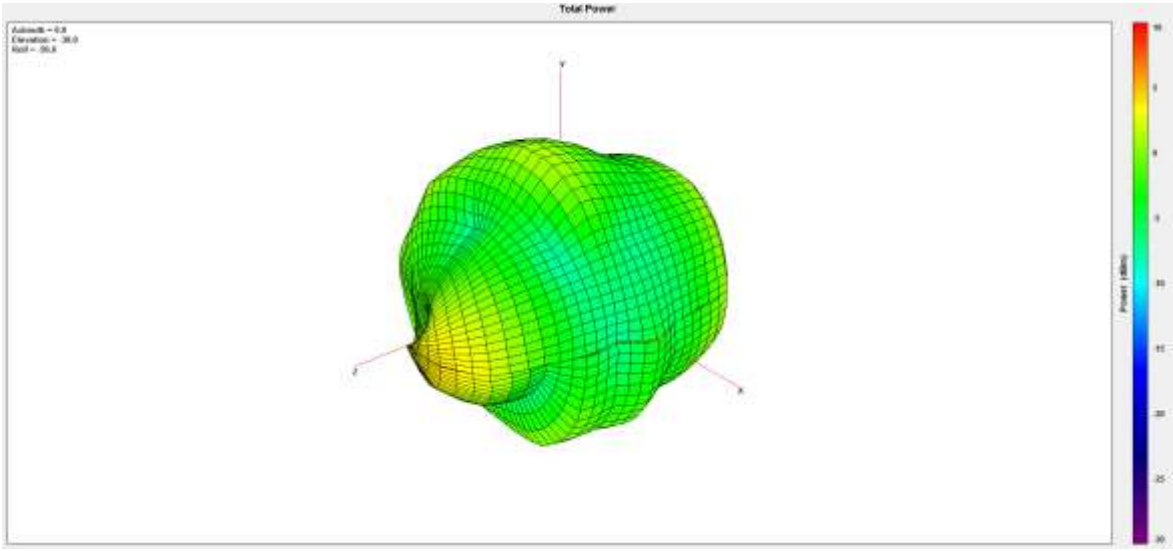
1750MHz



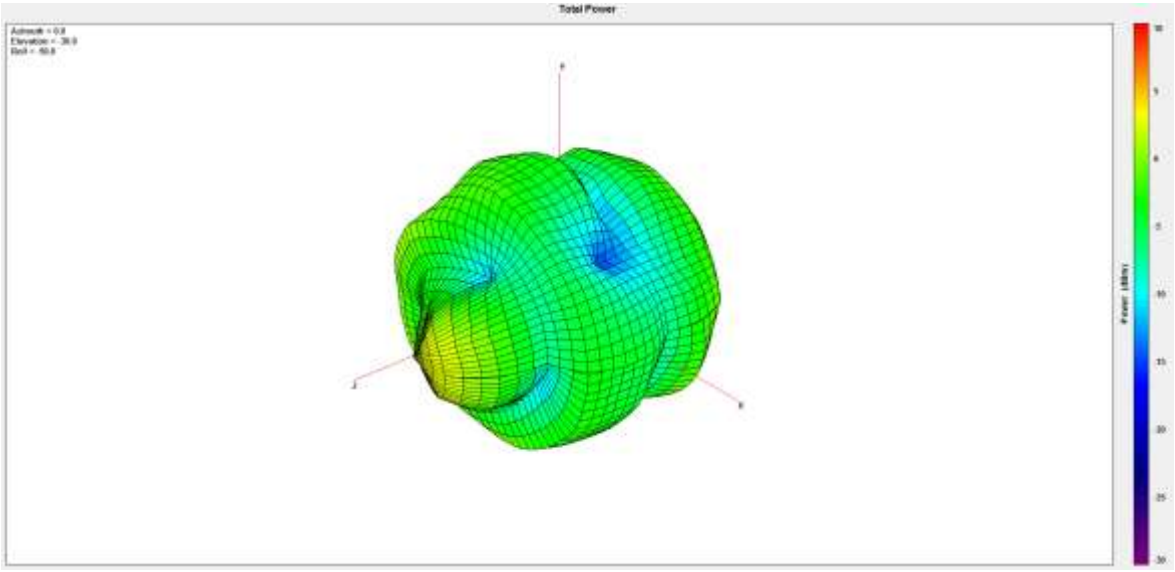
1850MHz



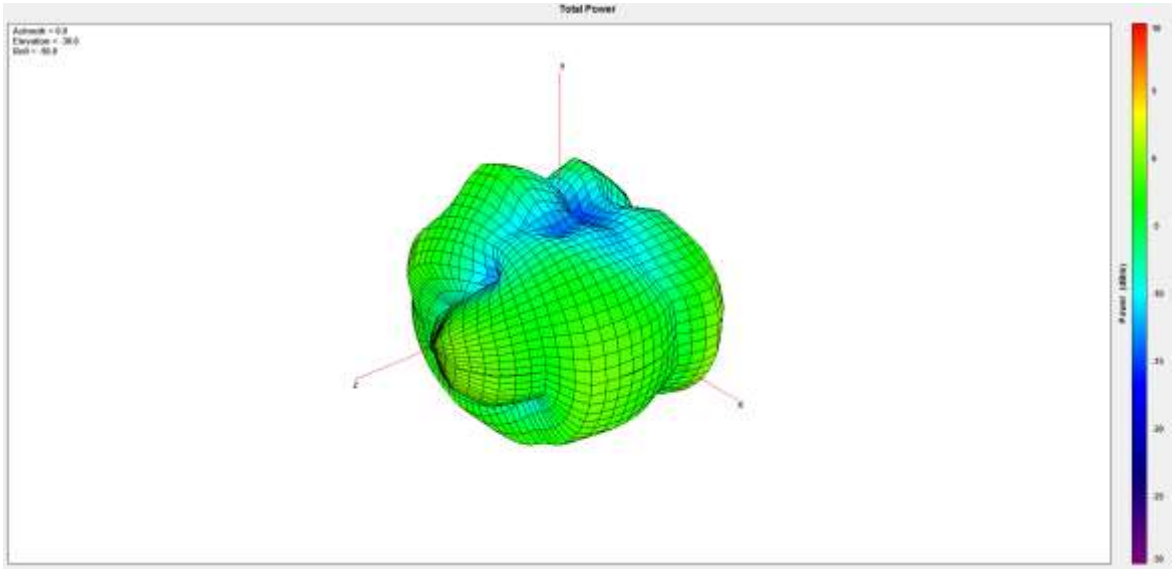
1950MHz



2100MHz

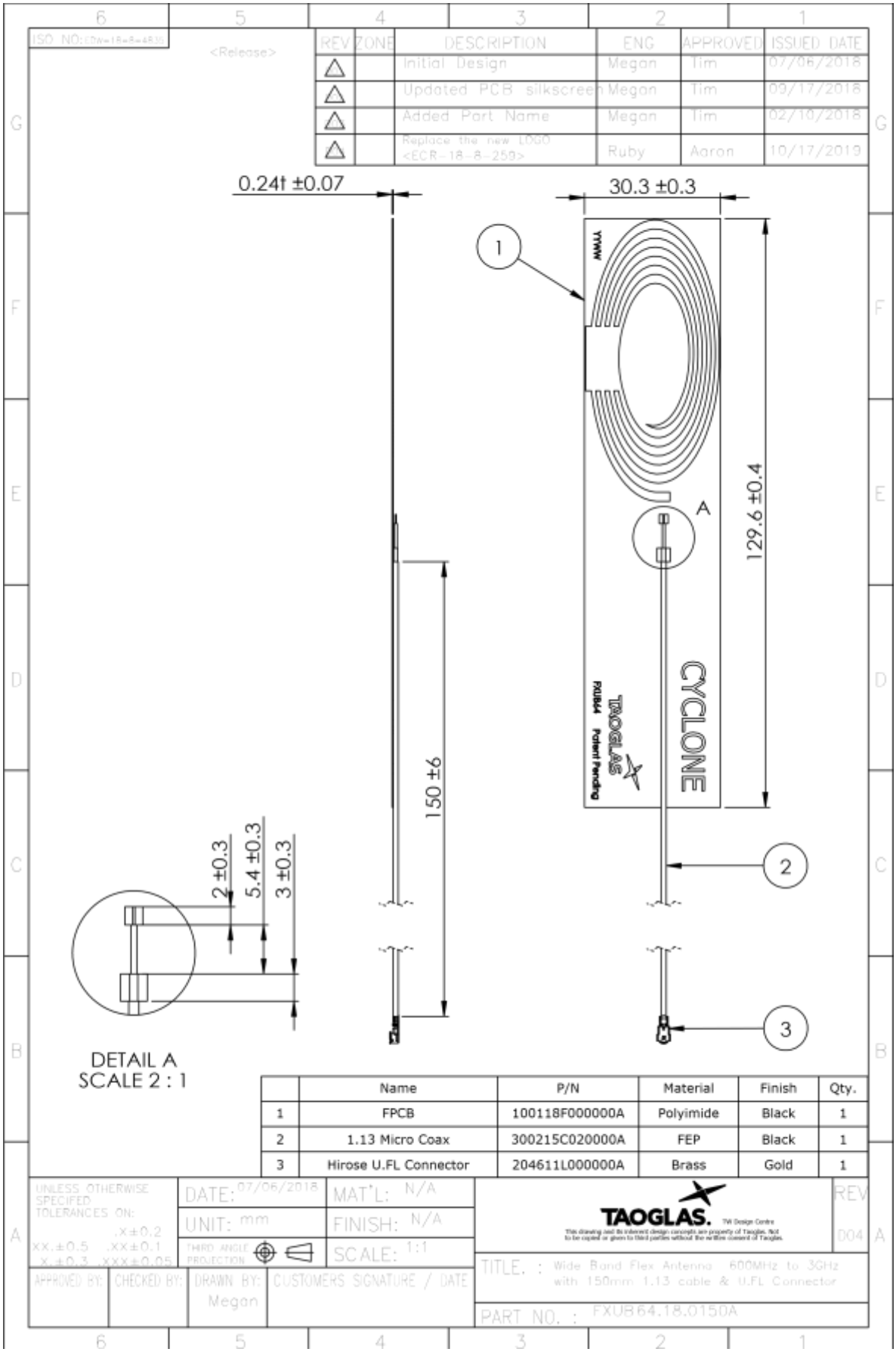


2450MHz



2600MHz

6. Mechanical Drawing (Units: mm)



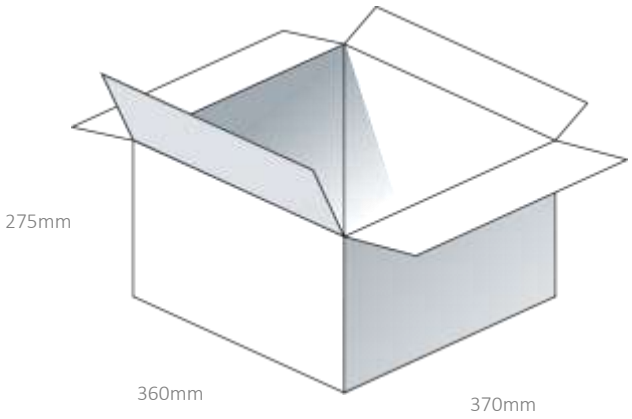
7. Application Note

Like all electrically small antennas, the cable on the FXUB64 provides a substantial portion of the low frequency radiation. Because of this, there are some cable routing configurations that provide higher performance than others. The cable routing configurations are listed from highest to least performance below:

8. Packaging

10pcs FXUB64.18.0150A per PE Bag
Dimensions – 304*127mm
Weight - 100g

1000pcs FXUB64.18.0150A per carton
Dimensions - 405*385*295mm
Weight – 10.2Kg



Changelog for the datasheet

SPE-18-8-103 – FXUB64.18.0150A

Revision: C (Current Version)	
Date:	2019-04-25
Changes:	Updated
Changes Made by:	Jack Conroy

Previous Revisions

Revision: B	
Date:	2019-04-25
Changes:	Packaging Details Updated
Changes Made by:	Jack Conroy

Revision: A (Original First Release)	
Date:	2018-09-11
Notes:	
Author:	Jack Conroy

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