

CW-ZH-0003

4G/GNSS External Combo Antenna

Key Features

Frequency: 698-960MHz/1710-2700MHz&1561/1575/1602MHz

SMA Connector

Screw Mount

Dimensions 80*15mm



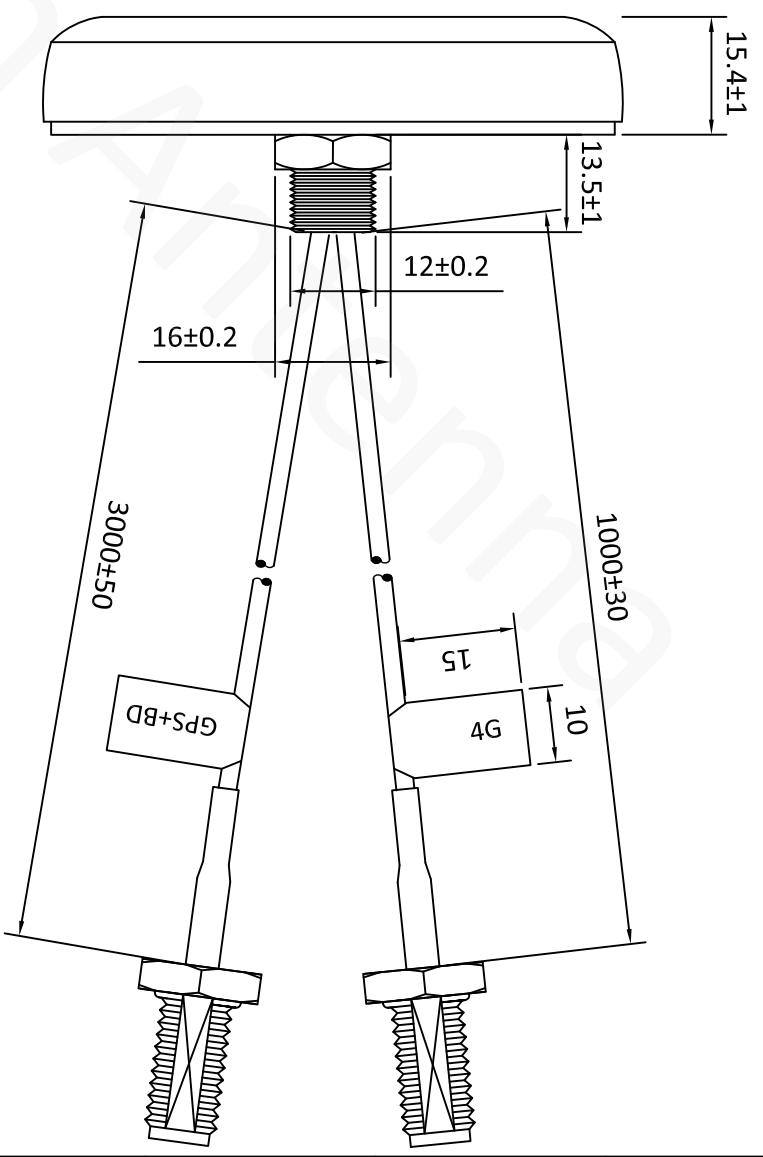
1. Antenna Electrical Characteristics

Band (MHz)			
Frequency (MHz)	698-960MHz	1710-2700MHz	1561/1575/1602/1606
VSWR	3.5:1	2.5:1	2:1
Efficiency (%)	64.66%	59.21%	
Peak Gain (dBi)	1.94	5.33	28
Impedance (Ohm)	50		
Polarisation	Vertical		RHCP
Max. Input Power (W)	10		2.5-5
Connector Type	SMA		

2. Material and environmental characteristics

inner structure	PCB/Ceramics
Material of Plastic	ABS
Cable Type	RG174
Connector Type	SMA
Dimensions (mm)	80*15MM
Antenna color	Black
Operation Temperature(°)	-40 to +80
Storage Temperature(°)	-40 to +80
Antenna Storage life(year)	10
Substance Compliance	ROHS

REV	Date	Description
X1	2021/11/02	New issue



Specification(Free Test):
 Frequency Range: 698-960MHZ/1710-2700MHZ
 Impedance: 50Ω
 V.S.W.R: ≤3.5/2.5

Specification(Free Test):
 Frequency Range: 1575.42/1561/1602MHZ
 Impedance: 50Ω
 V.S.W.R: ≤2

9	Label	36*10MM	2	
8	Foam rubber	79*1MM	1	
7	Stud	Nickel plated brass	1	
6	Lower cover	Black ABS	1	
5	Shell	Black ABS	1	
4	Cable	RG174	2	
3	Ceramics	25*25*4MM	1	
2	PCB	FR4	1	
1	Connector	SMA Female	2	
NO	Name	Description	QTY	Remark
XX	±5.0	Approved		
X	±3.0			
.X	±1.0	Checked		
.XX	±0.2			
.XXX	±0.1	Drawing		

Customer	
Part NO.	
Part name	Combined antenna
CW P/NO.	CW-ZH-0003
REV	X1
Unit	m/m
File	
Sheet	1/1



4. Antenna test parameters

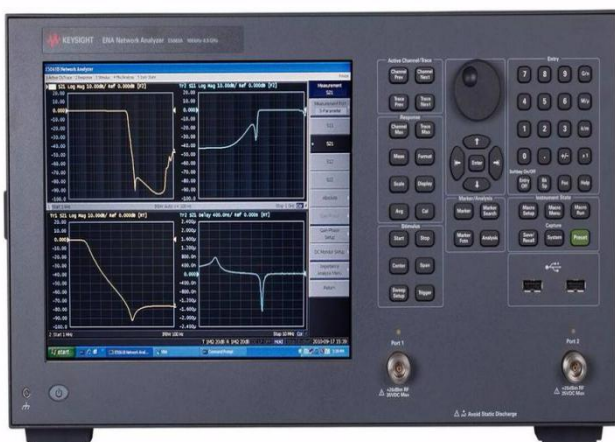
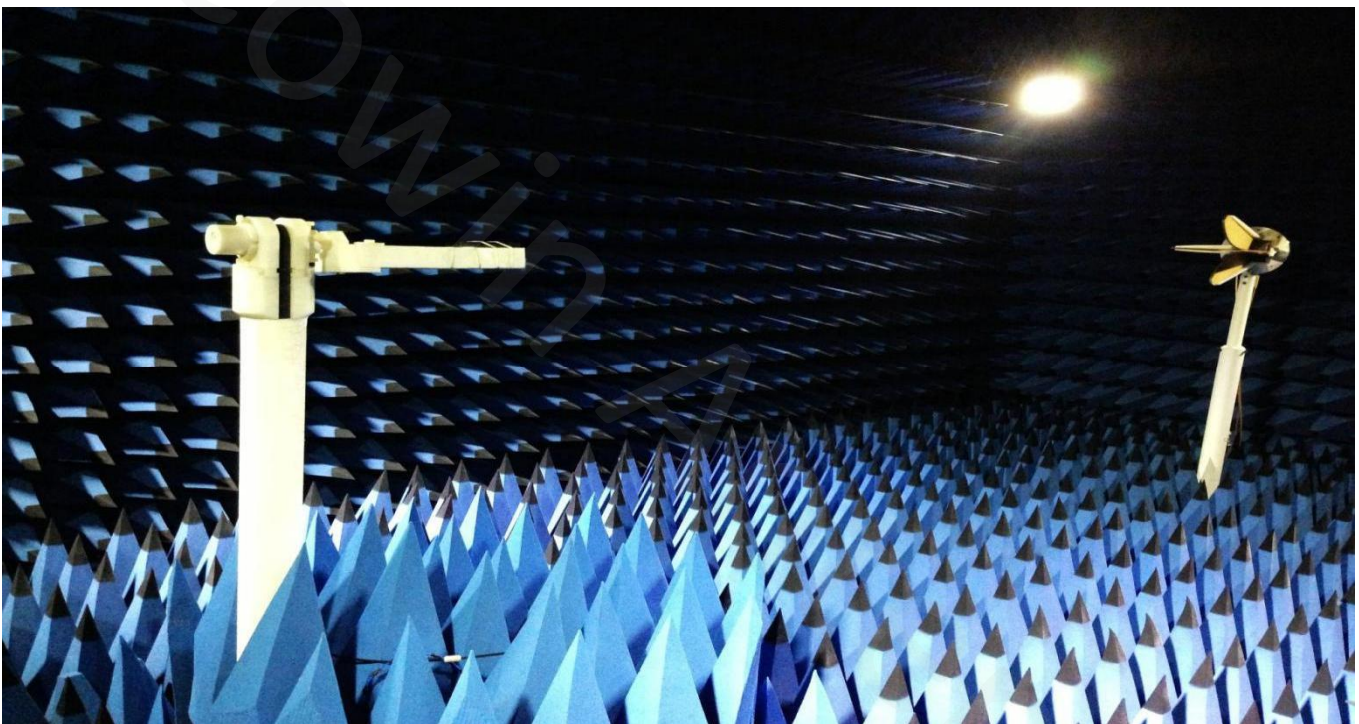
Antenna Measurement Conditions:

Mounted on Ground Plane of 280 x 80 mm

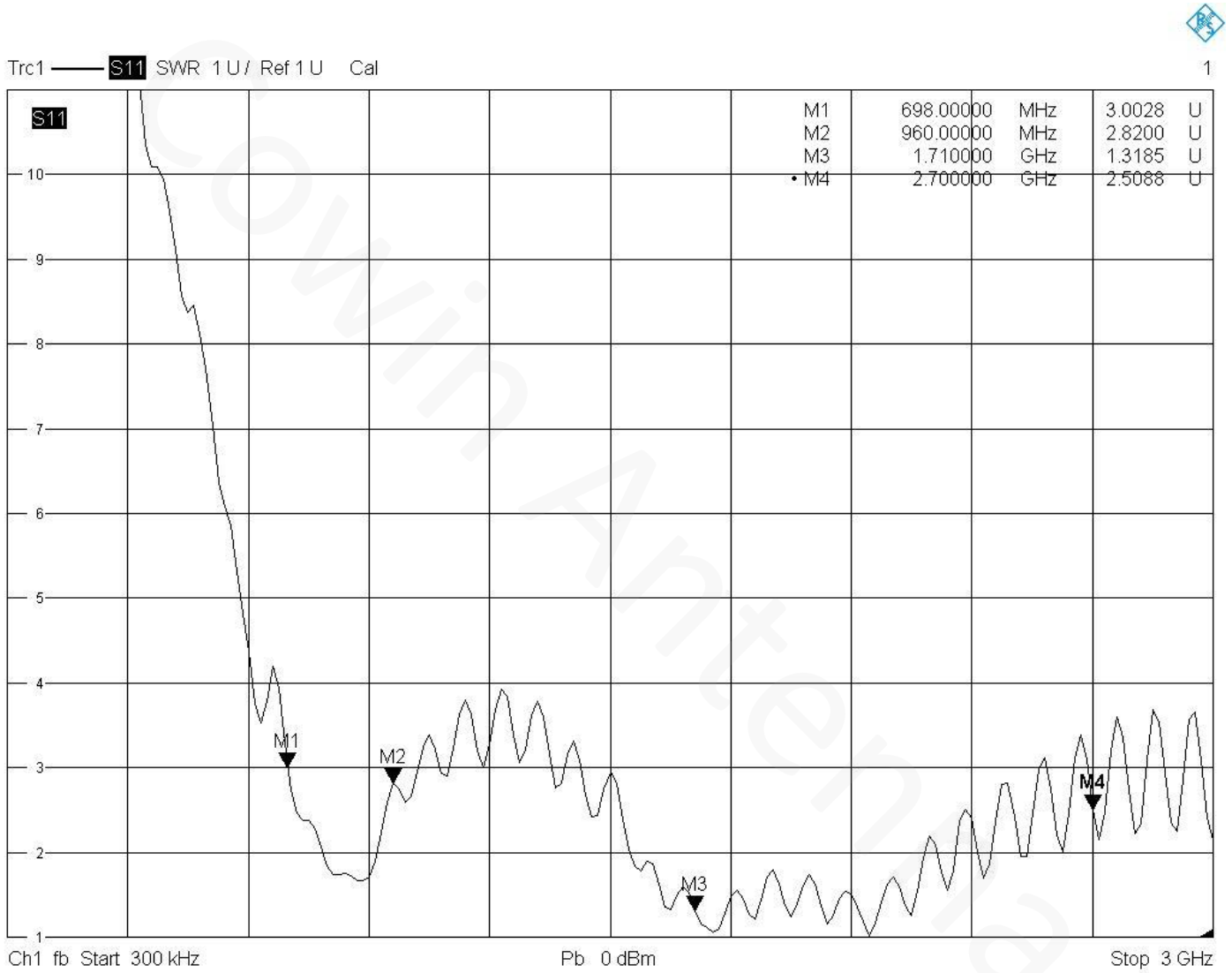
Measured in Certified 3D Anechoic Chamber

The network analyzer is Agilent 5071c

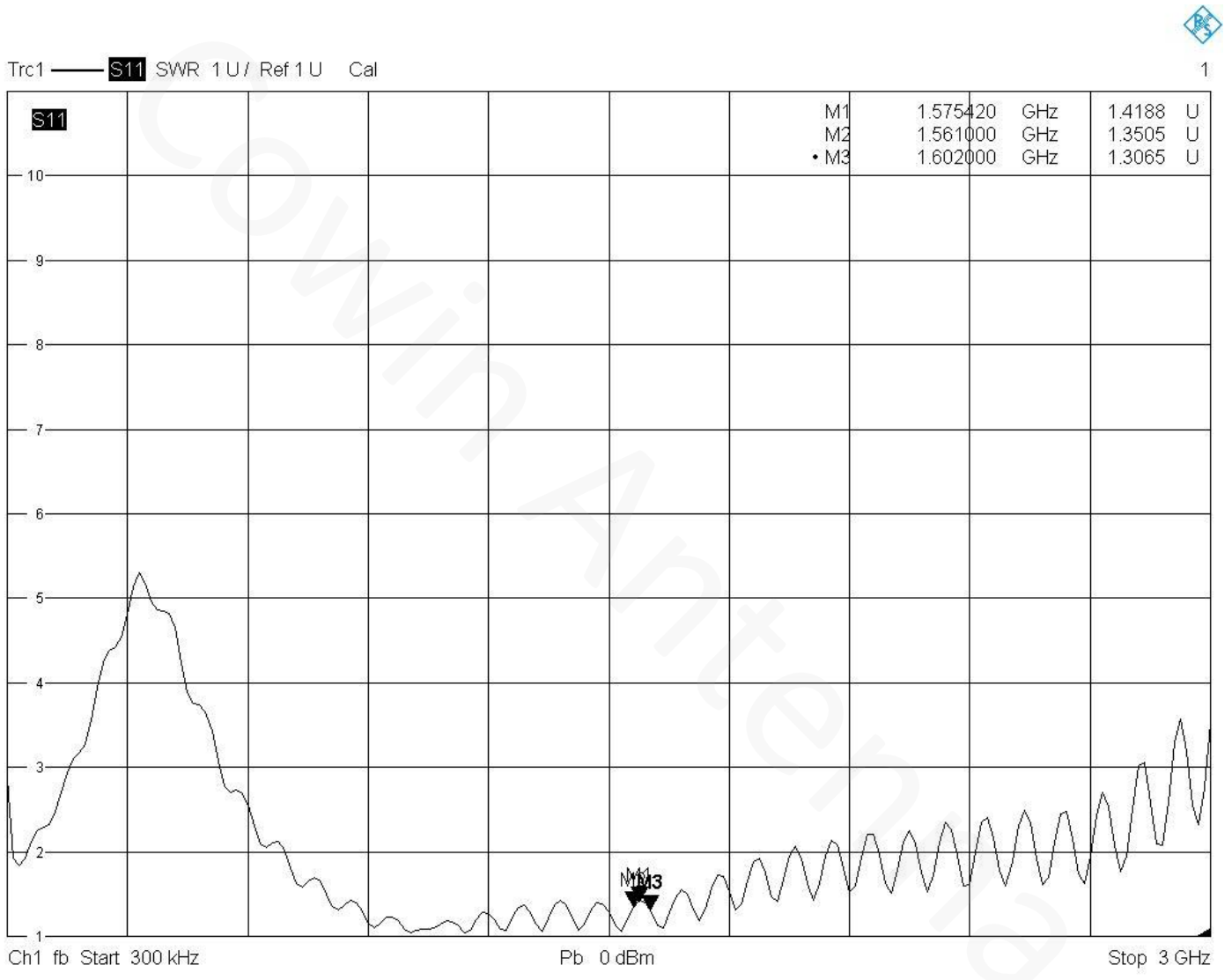
The comprehensive tester is Agilent cmv500



4.1 VSWR

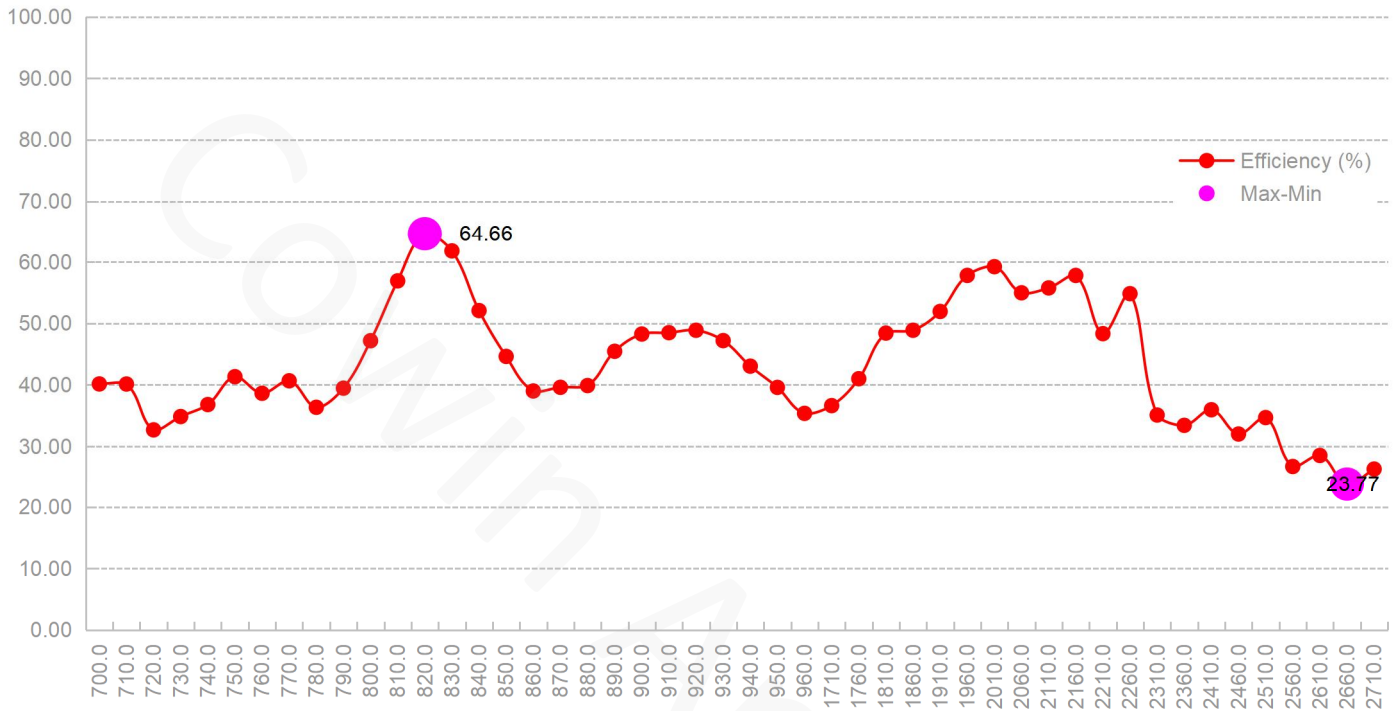


11/1/2021, 10:43 PM

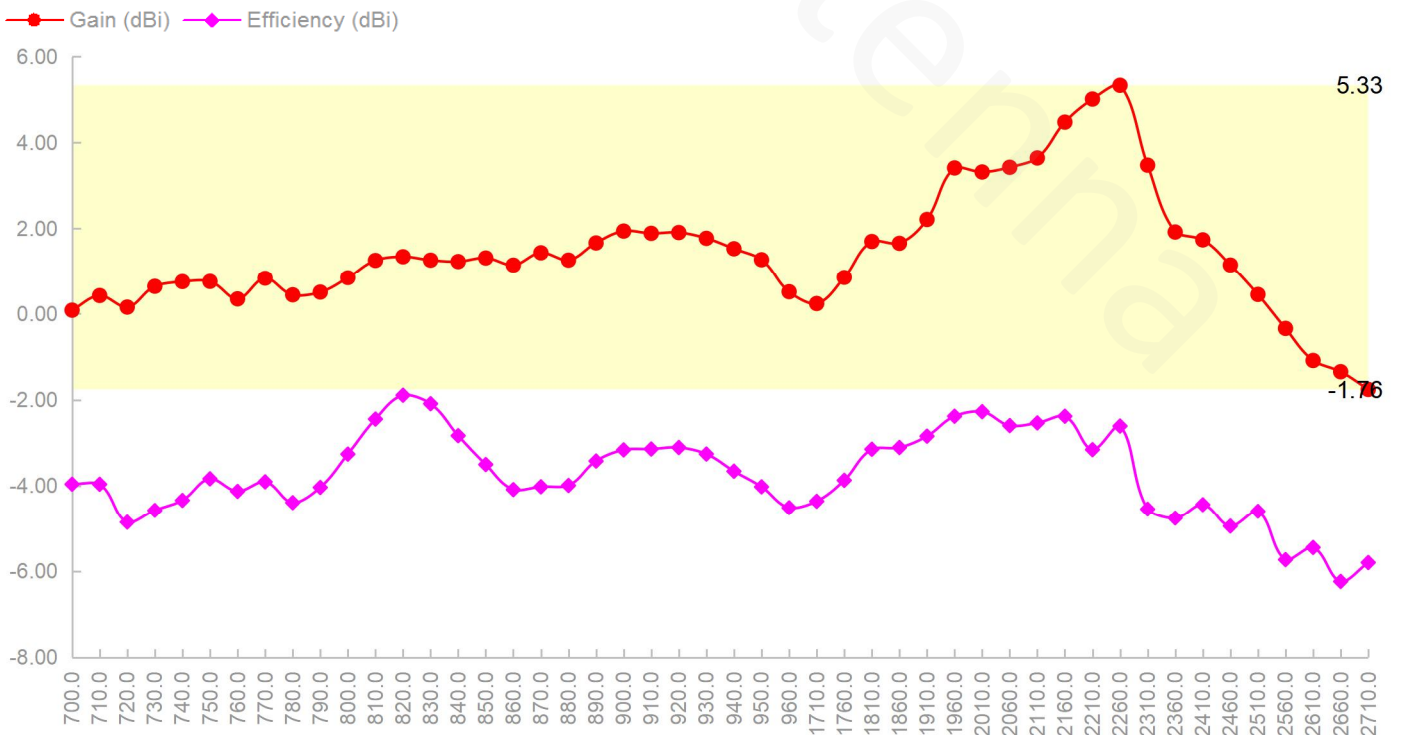


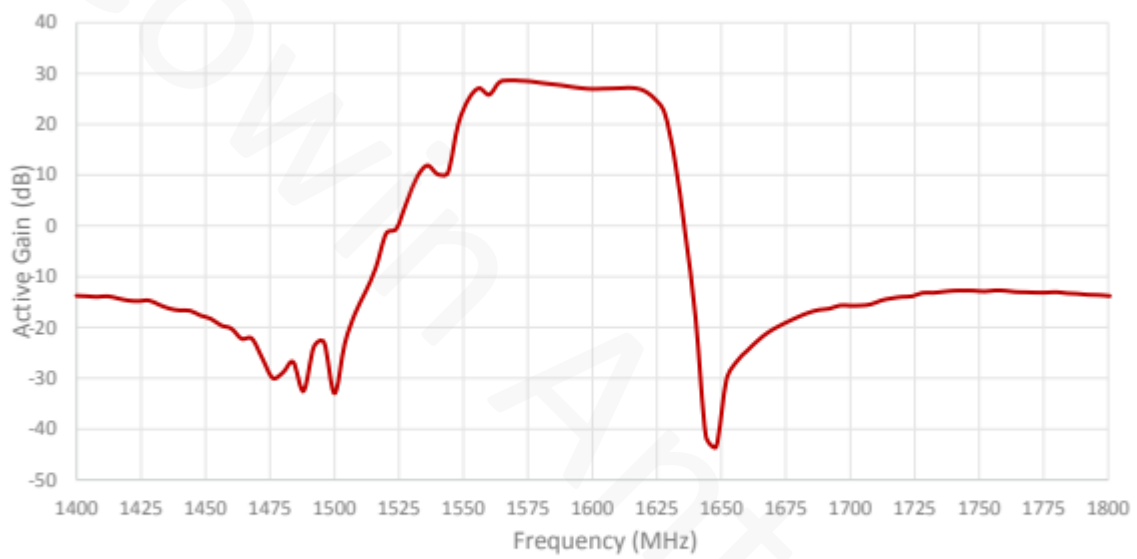
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4.2 Efficiency



4.3 Peak gain

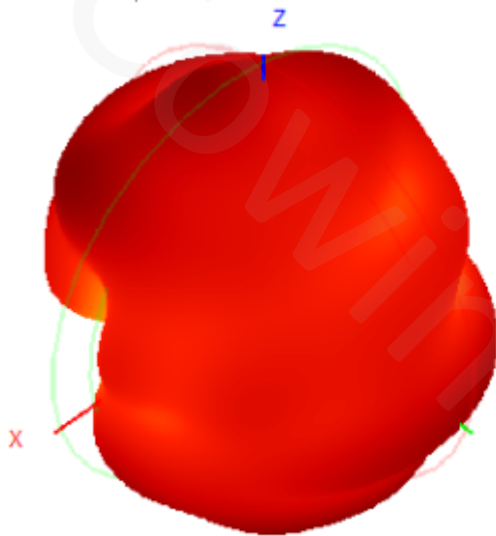




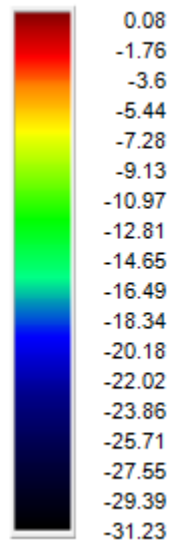
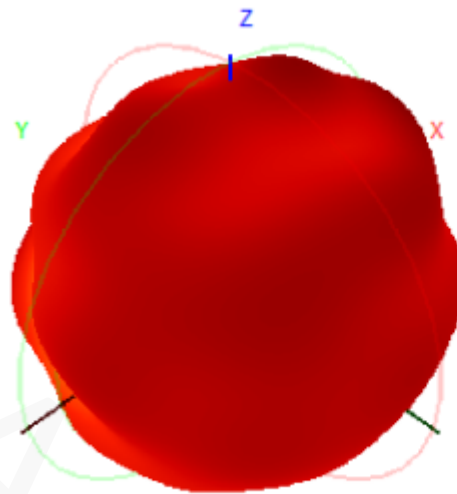
* Measured at 3 V

4.4 3D&2D Radiation Patterns

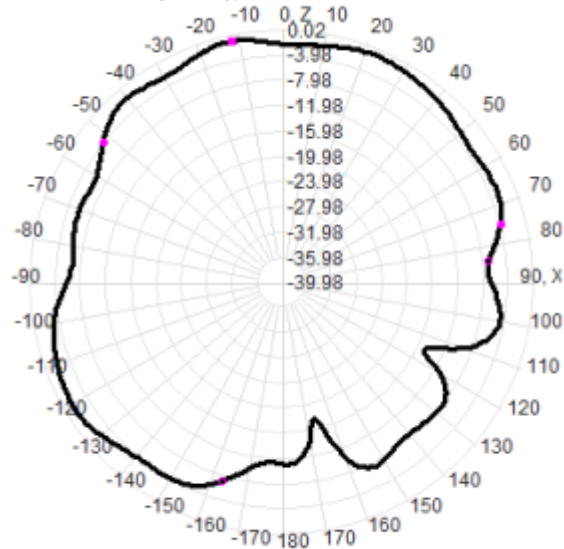
700.0MHz H+V, Eff: 40.1%



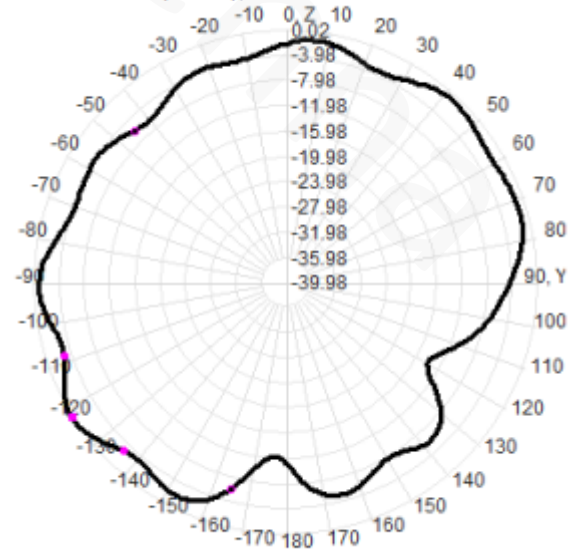
Back View



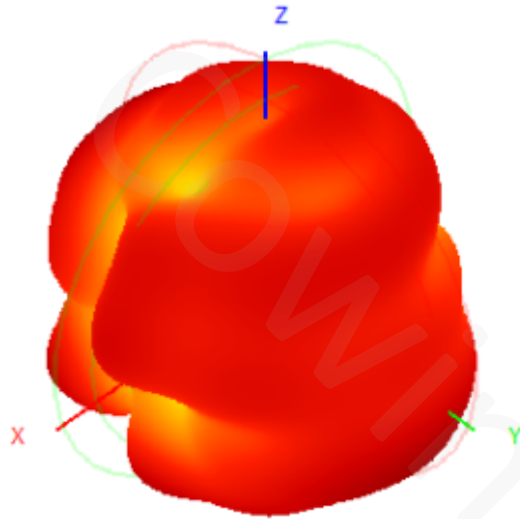
700.0MHz Total(E1-XZ), Max= -0.96dBi



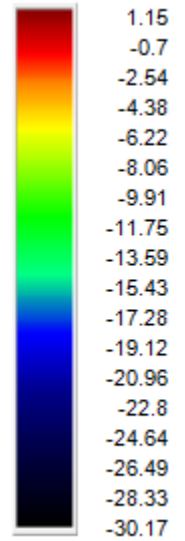
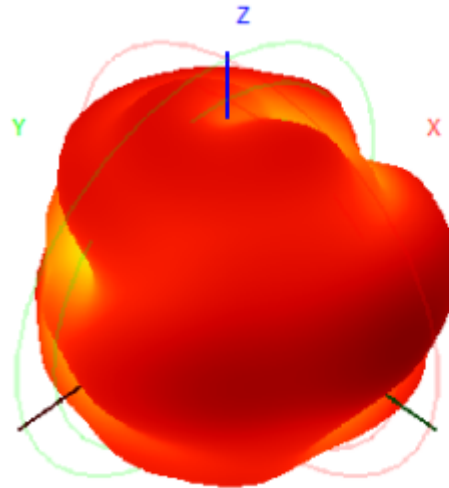
700.0MHz Total(E2-YZ), Max= 0.02dBi



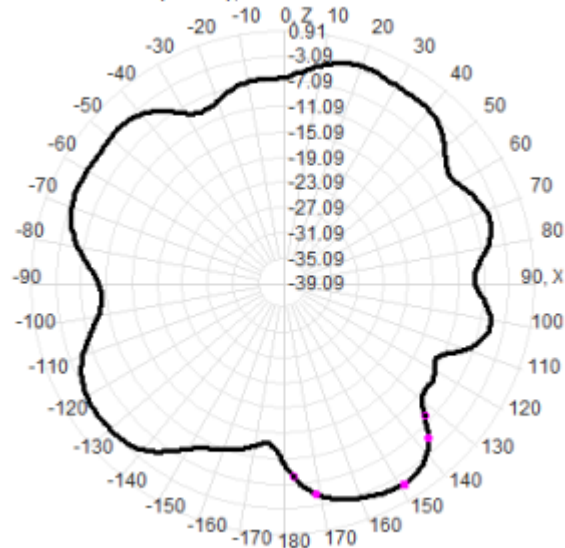
860.0MHz H+V, Eff: 39.0%



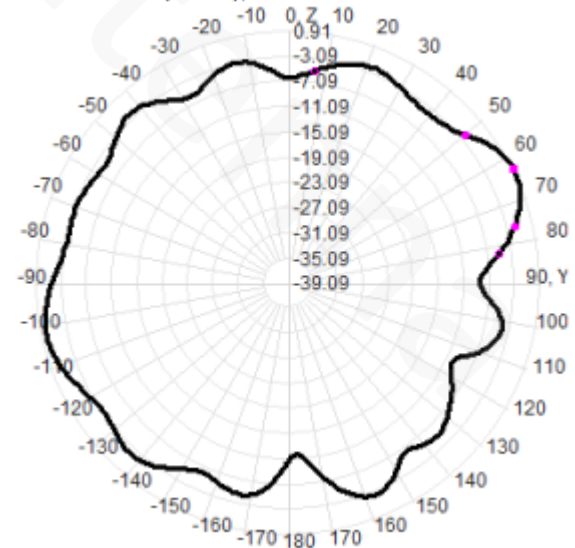
Back View



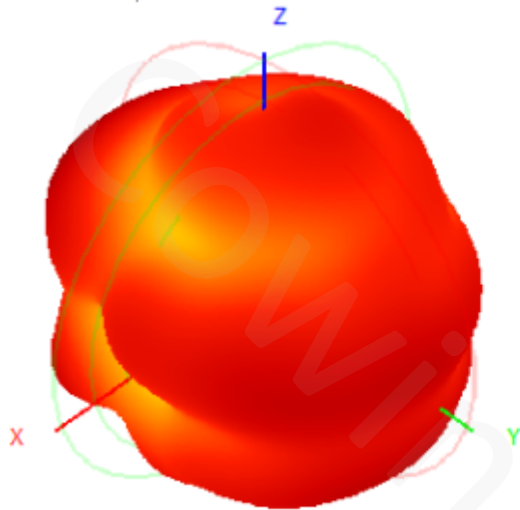
860.0MHz Total(E1-XZ), Max= -1.96dBi



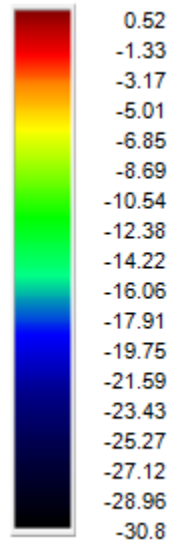
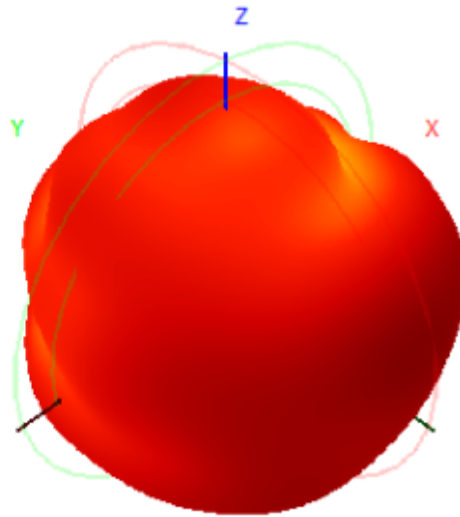
860.0MHz Total(E2-YZ), Max= 0.91dBi



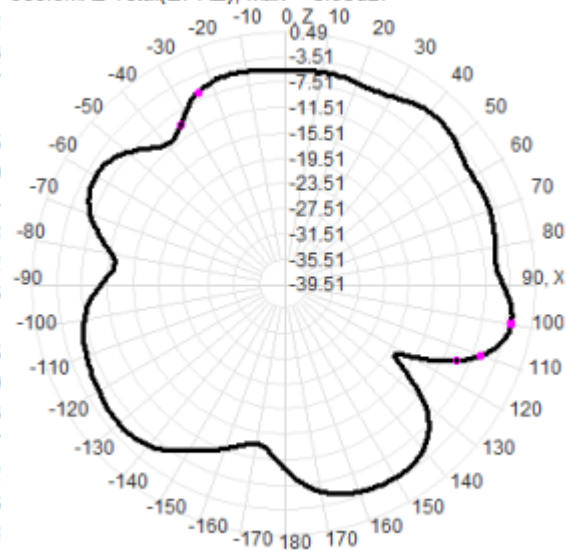
960.0MHz H+V, Eff: 35.4%



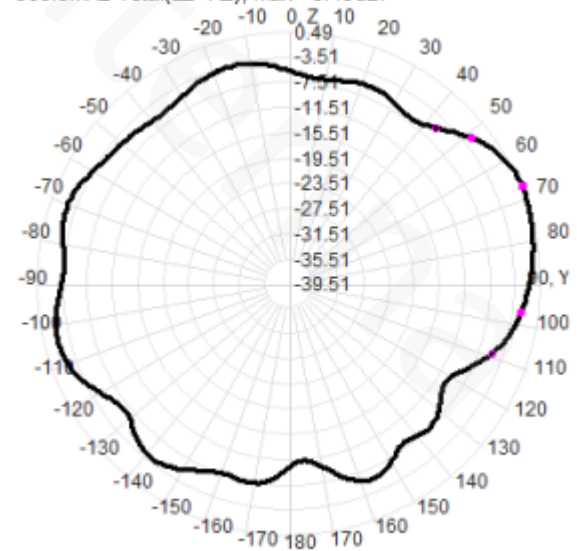
Back View



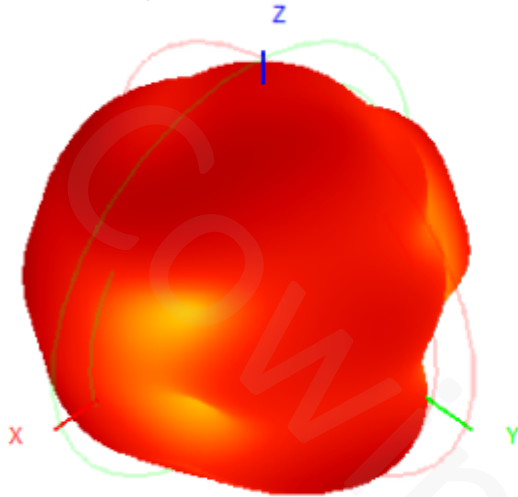
960.0MHz Total(E1-XZ), Max= -3.05dBi



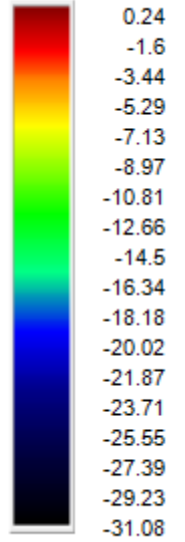
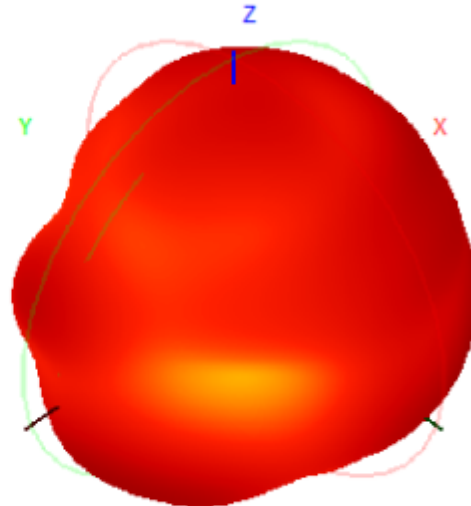
960.0MHz Total(E2-YZ), Max= 0.49dBi



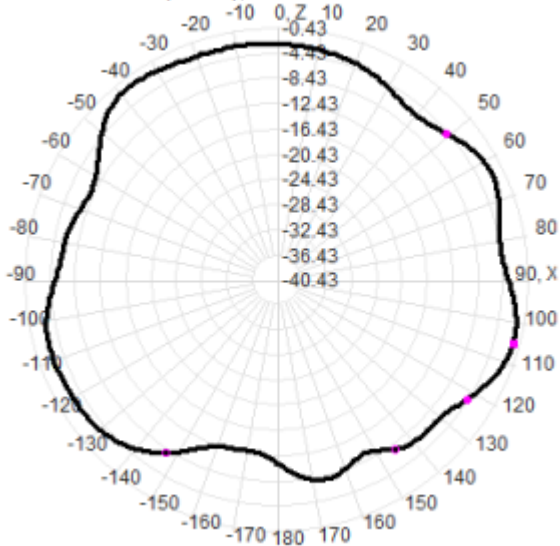
1710.0MHz H+V, Eff: 36.6%



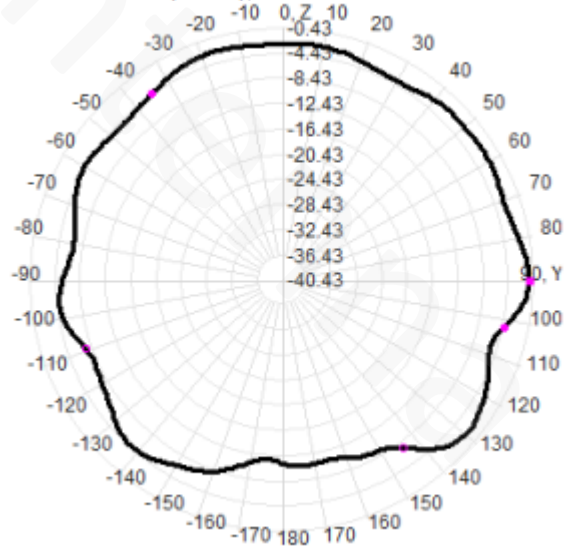
Back View



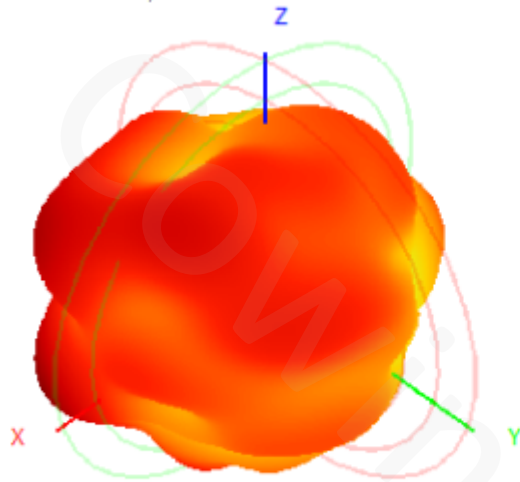
1710.0MHz Total(E1-XZ), Max= -1.77dBi



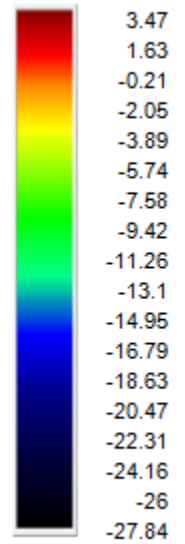
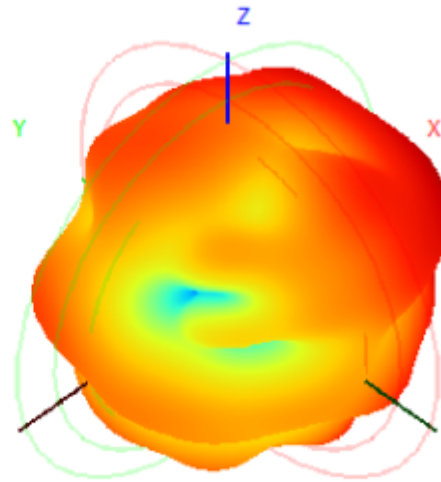
1710.0MHz Total(E2-YZ), Max= -1.37dBi



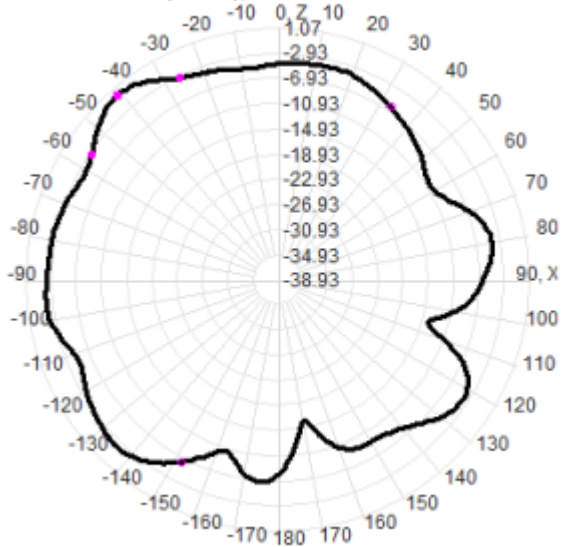
2310.0MHz H+V, Eff: 35.1%



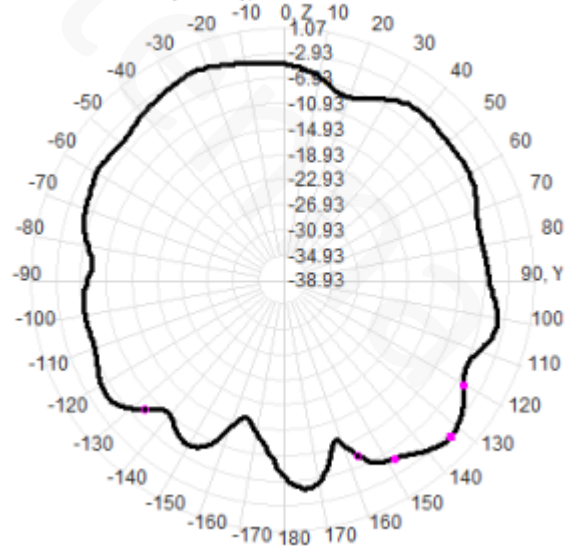
Back View



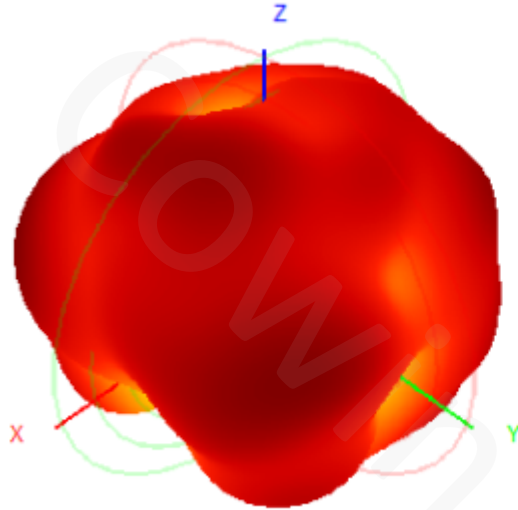
2310.0MHz Total(E1-XZ), Max= -0.17dBi



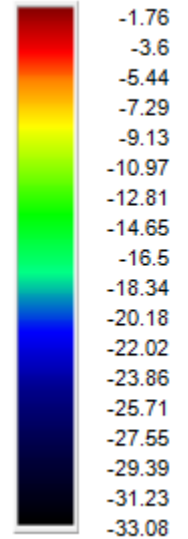
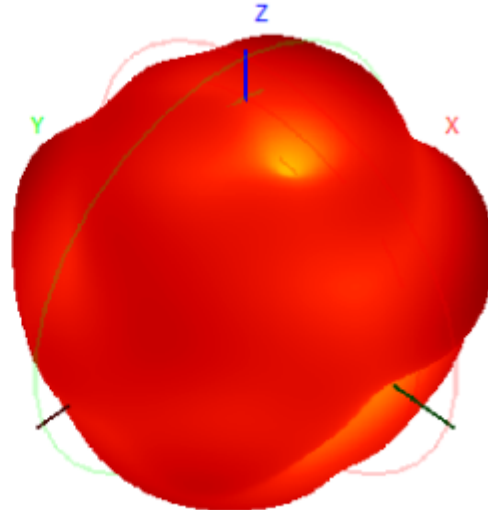
2310.0MHz Total(E2-YZ), Max= -2.65dBi



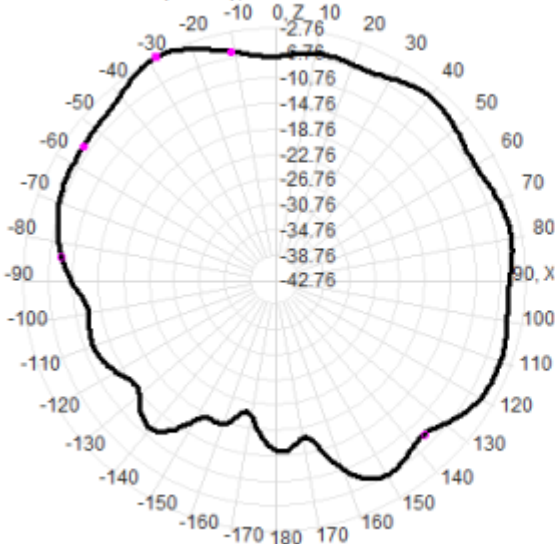
2710.0MHz H+V, Eff: 26.3%



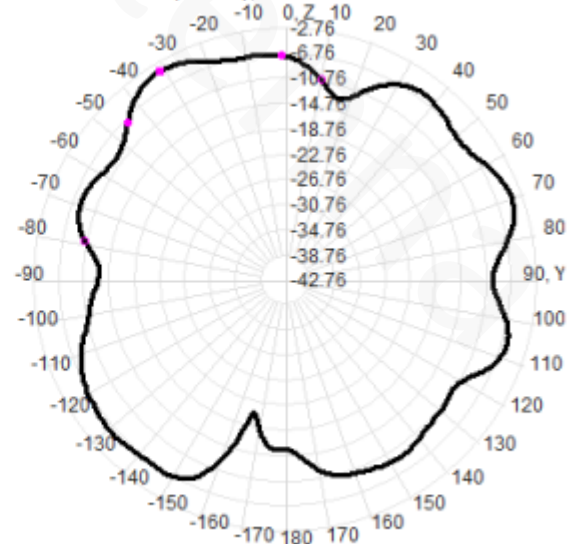
Back View

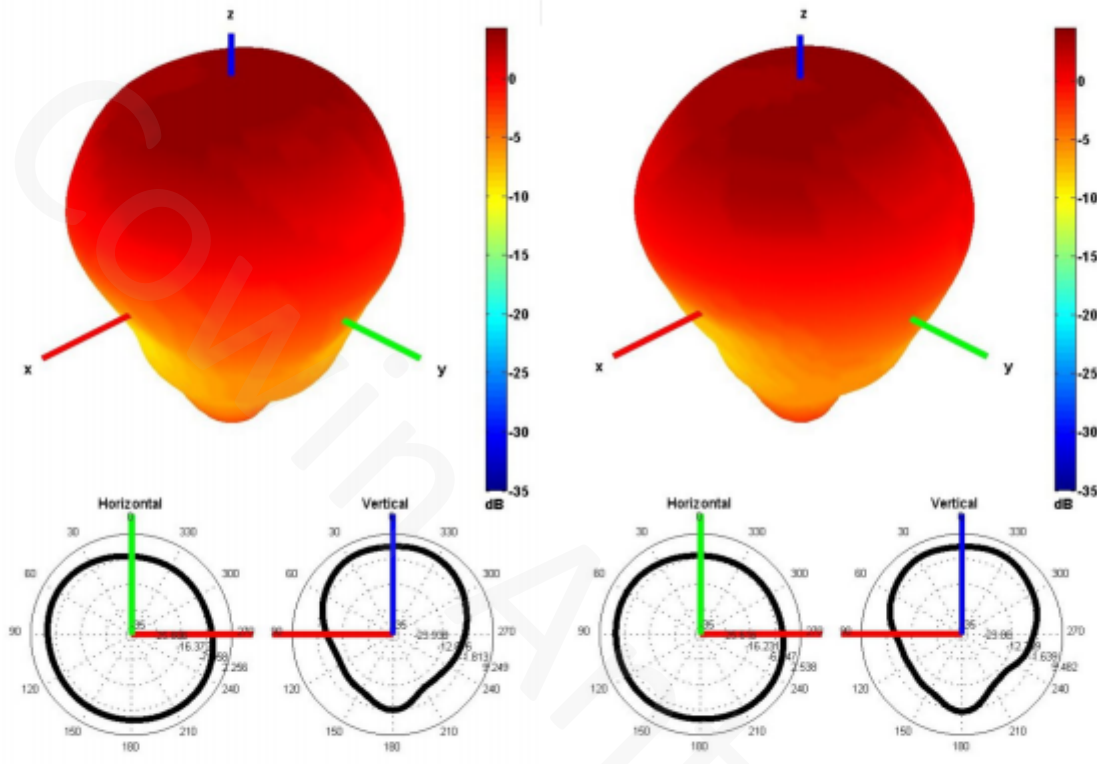


2710.0MHz Total(E1-XZ), Max=-2.76dBi

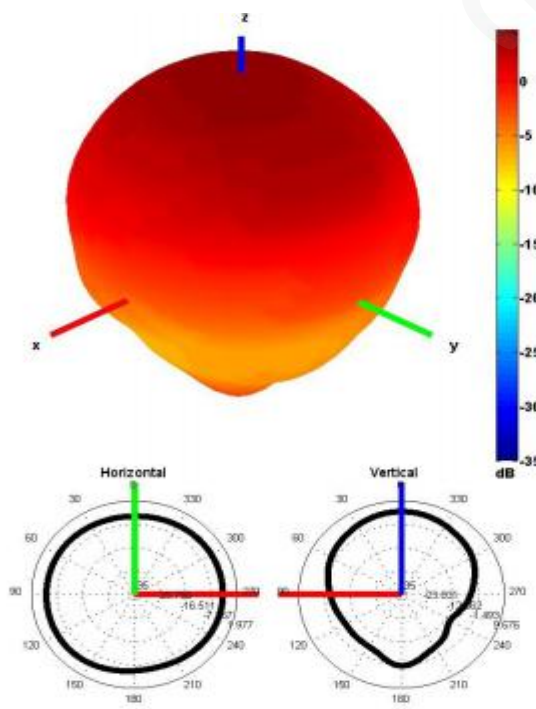


2710.0MHz Total(E2-YZ), Max=-4.13dBi





1561 and 1575 MHz Radiation pattern



1602 MHz Radiation pattern