CW-ZH-0022

GNSS+4G Combined Antenna

Cowin Antenna

Key Features

Frequency: 698-960/1710-2700MHz & 1561±3/1575.42±3/1602±3MHz

SMA Male Connector

RG174 Cable

Dimensions: 86*35*15mm

1. Antenna Electrical Characteristics

1.1 4G Antenna

Band (MHz)	
Frequency (MHz)	698-960/1710-2700
VSWR	≤ 2.0/2.0
Efficiency (%)	91.57
Peak Gain (dBi)	5.43
Impedance (Ohm)	50
Polarisation	Vertical
Max. Input Power (W)	10

1.2 GNSS Ceramic Active Antenna

Band (MHz)	1561	1575	1602
Frequency (MHz)	1561.098	1575.42	1598-1606
VSWR	≤ 2.0	≤ 2.0	≤ 2.0
Efficiency (%)	72.2	79.7	81.6
Peak Gain (dBi)	4.2	4.5	5.0
Axis Ratio(dB)	< 3.0		
LNA Specification			
Gain(dbi)	28±3		
Noise Figure (dB)	≤ 1.5		
Impedance (Ohm)	50		
Polarisation	RHCP		
DC Voltage(V)	3-5		

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2. Material and environmental characteristics

External Structure	ABS
Inner Structure	Ceramic+PCB
Cable Type	RG174
Connector Type	SMA Male
Dimensions (mm)	86*35*15
Antenna Colour	Black
Operation Temperature	-40℃～+80℃
Storage Temperature	-40℃～+80℃
Antenna Storage life(year)	10
Substance Compliance	ROHS

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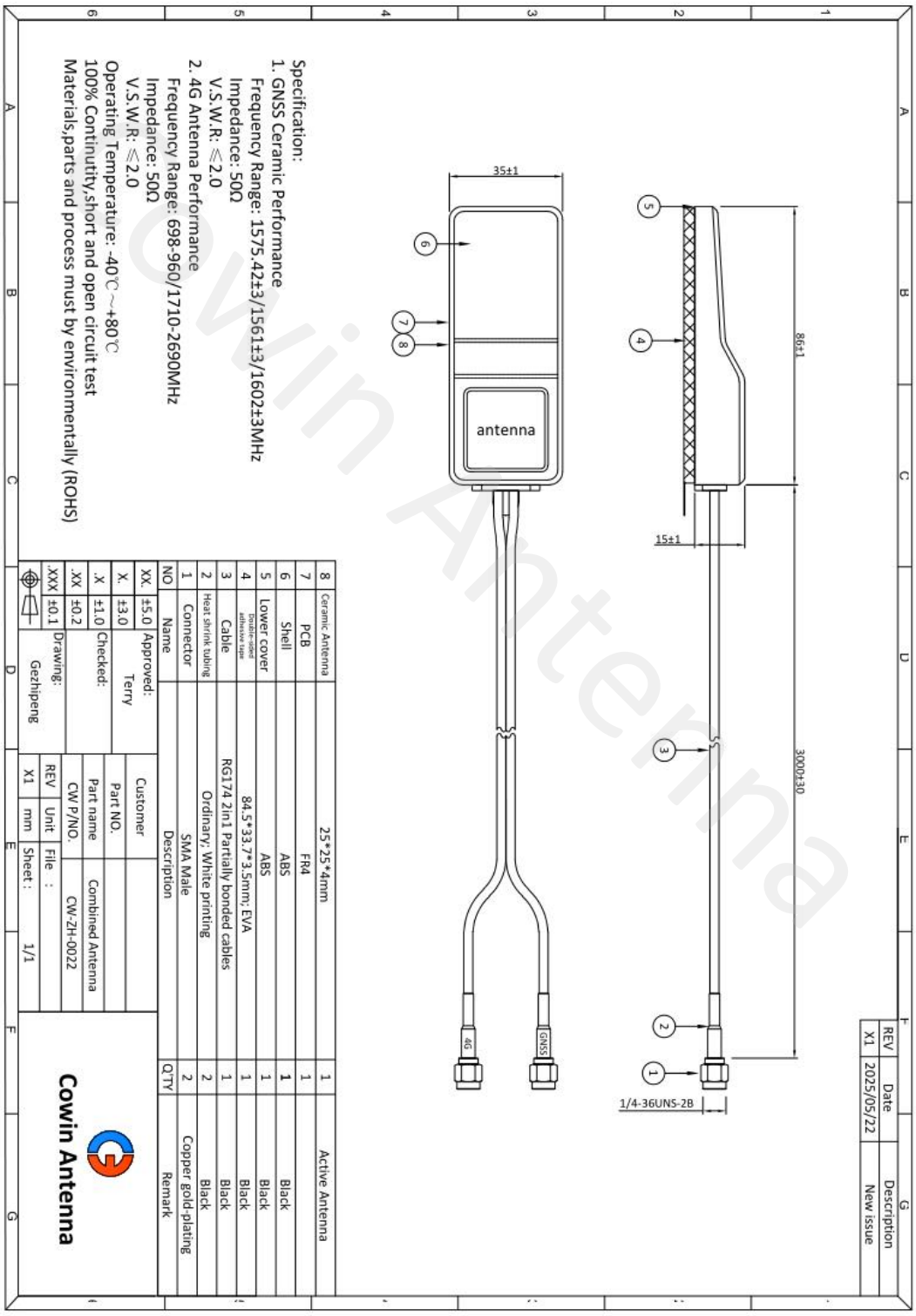
3. Antenna drawing



4. Antenna test parameters

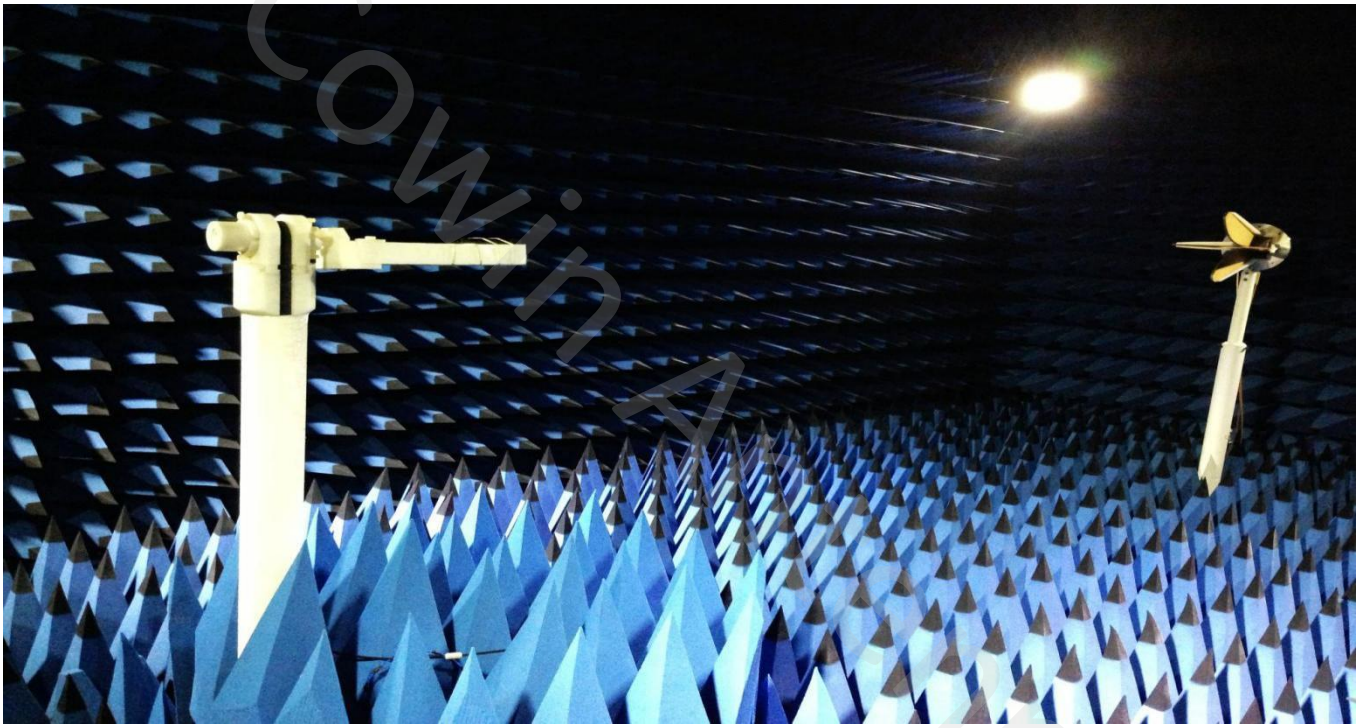
Antenna Measurement Conditions:

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



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5. 4G Antenna Parameters

5.1 VSWR



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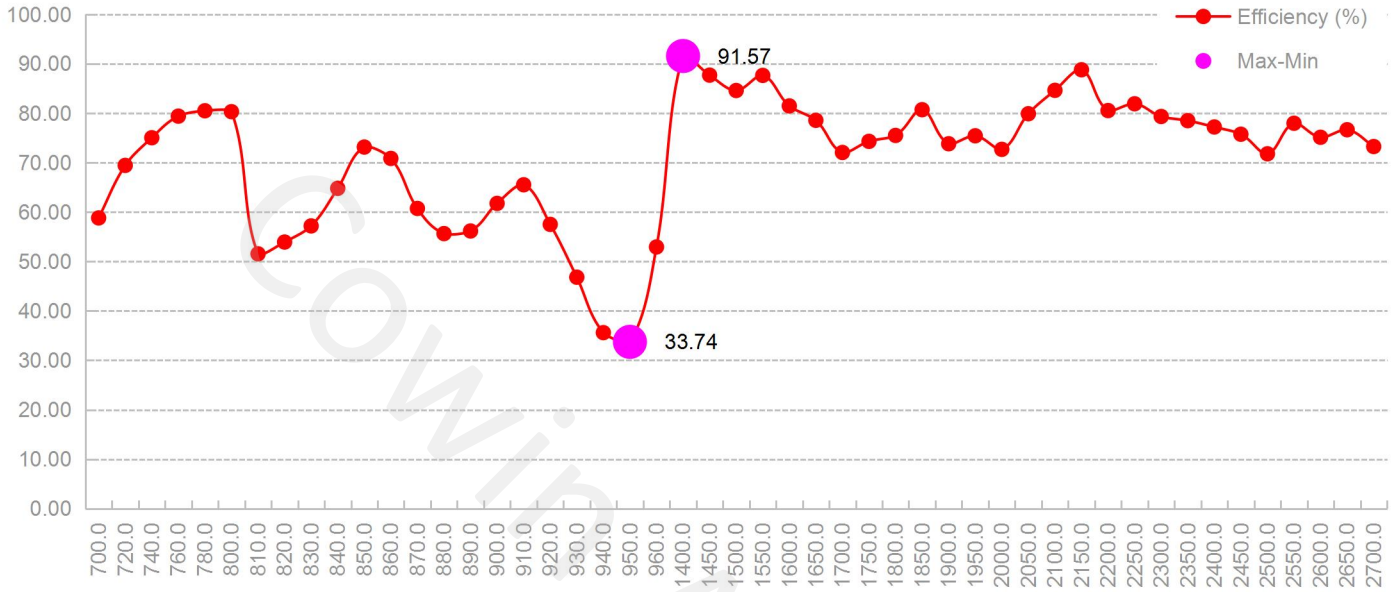
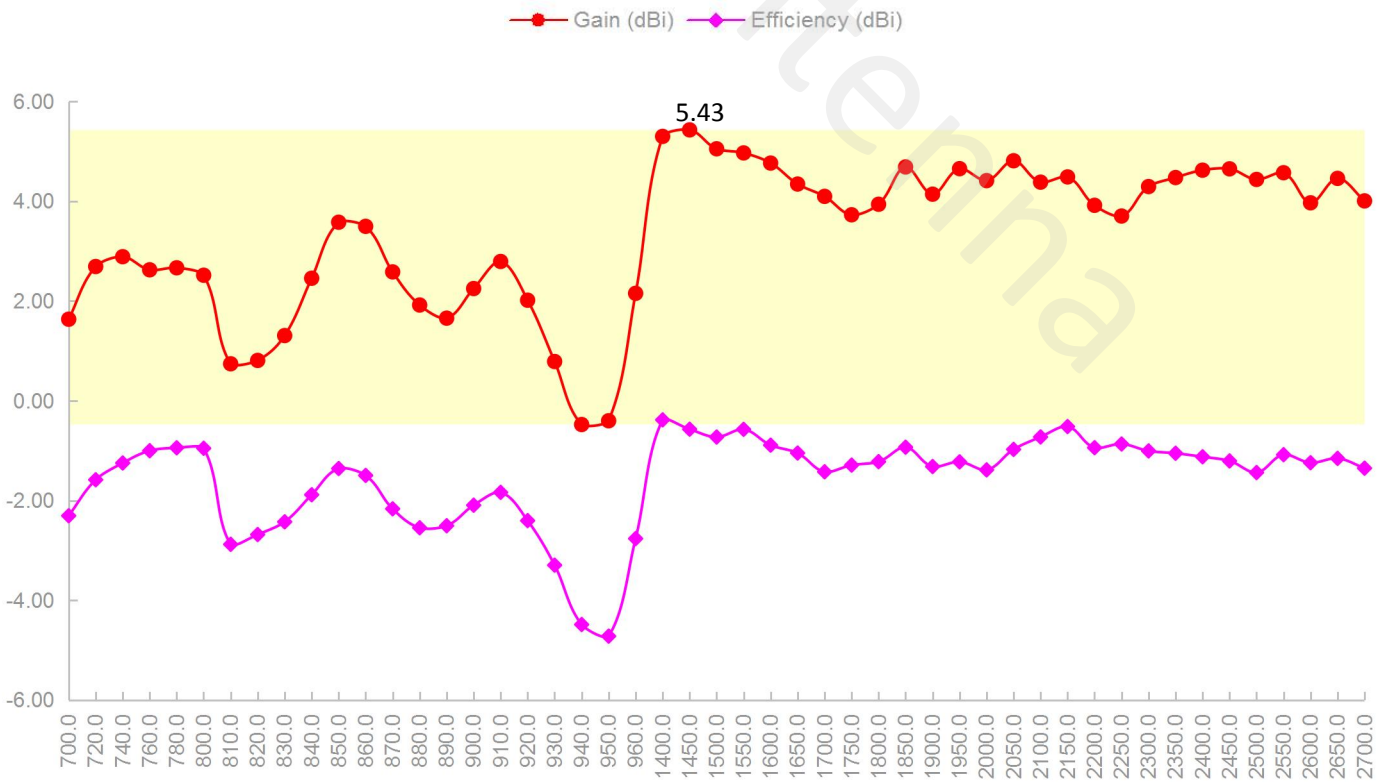
5.2 Efficiency



5.3 Peak gain



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5.4 Data summary

Frequency (MHz)	Gain (dBi)	Efficiency (%)
700.0	1.64	58.81
720.0	2.69	69.44
740.0	2.89	75.04
760.0	2.63	79.40
780.0	2.67	80.50
800.0	2.52	80.31
810.0	0.74	51.54
820.0	0.81	53.93
830.0	1.31	57.20
840.0	2.46	64.80
850.0	3.58	73.15
860.0	3.50	70.85
870.0	2.58	60.73
880.0	1.92	55.64
890.0	1.66	56.17
900.0	2.25	61.75
910.0	2.79	65.52
920.0	2.02	57.51
930.0	0.79	46.82
940.0	-0.48	35.60
950.0	-0.40	33.74
960.0	2.15	52.93
1400.0	5.30	91.57
1450.0	5.43	87.70

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1500.0	5.05	84.59
1550.0	4.97	87.65
1600.0	4.77	81.48
1650.0	4.35	78.56
1700.0	4.10	72.06
1750.0	3.73	74.30
1800.0	3.94	75.50
1850.0	4.69	80.71
1900.0	4.14	73.82
1950.0	4.65	75.43
2000.0	4.41	72.68
2050.0	4.81	79.90
2100.0	4.38	84.63
2150.0	4.49	88.79
2200.0	3.92	80.54
2250.0	3.70	81.91
2300.0	4.29	79.34
2350.0	4.48	78.49
2400.0	4.62	77.22
2450.0	4.65	75.74
2500.0	4.44	71.79
2550.0	4.57	77.97
2600.0	3.97	75.13
2650.0	4.46	76.65
2700.0	4.01	73.26

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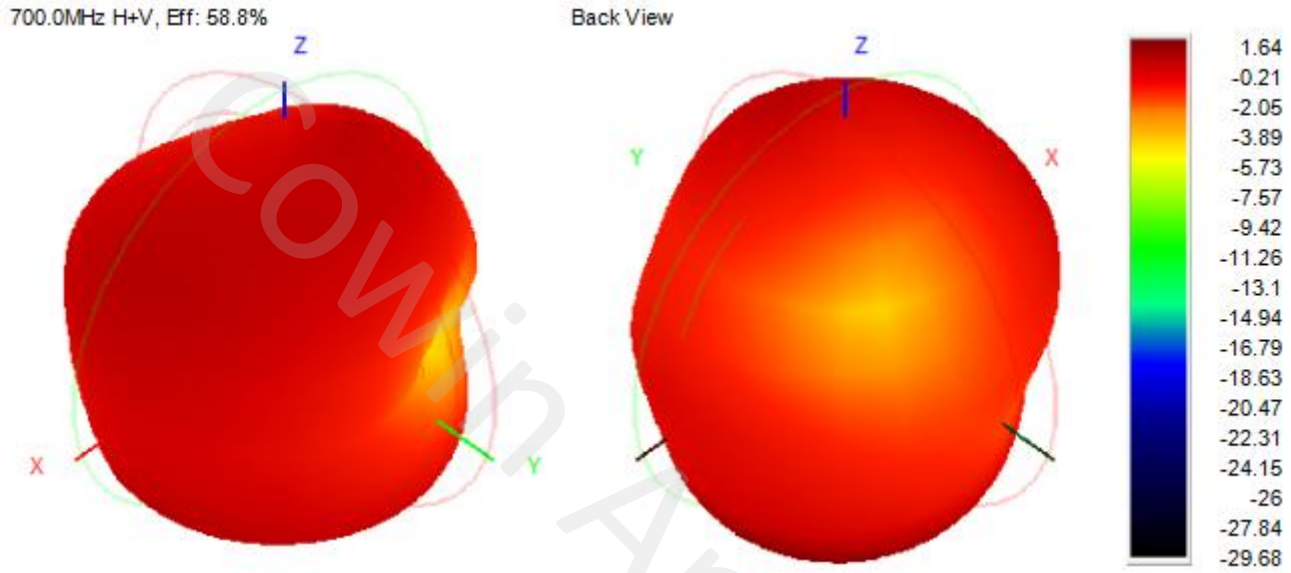
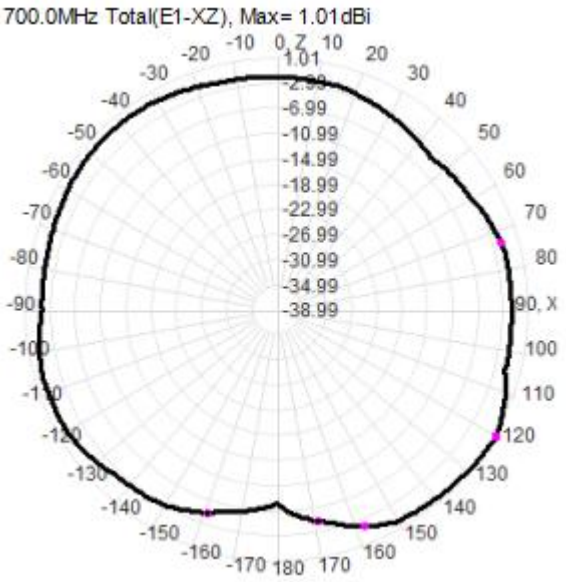
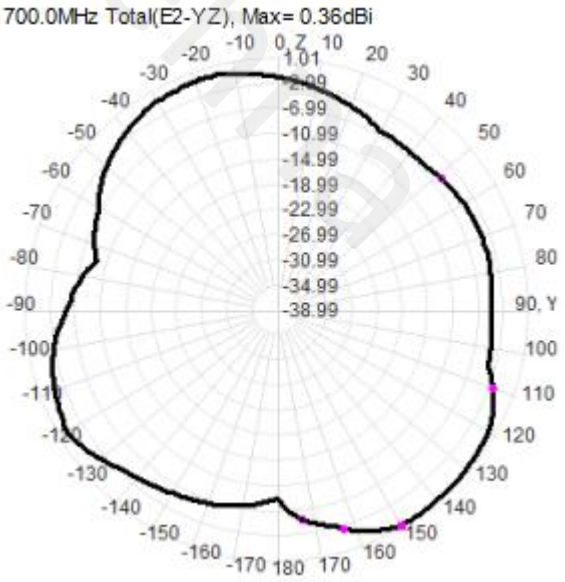
5.5 3D&2D Radiation Patterns







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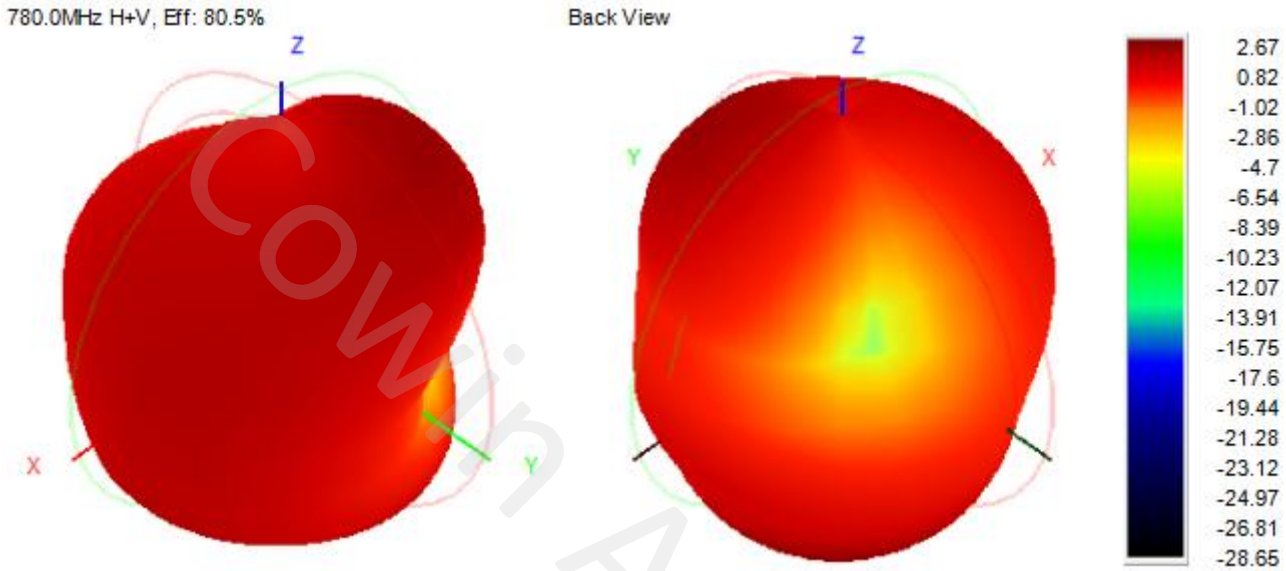

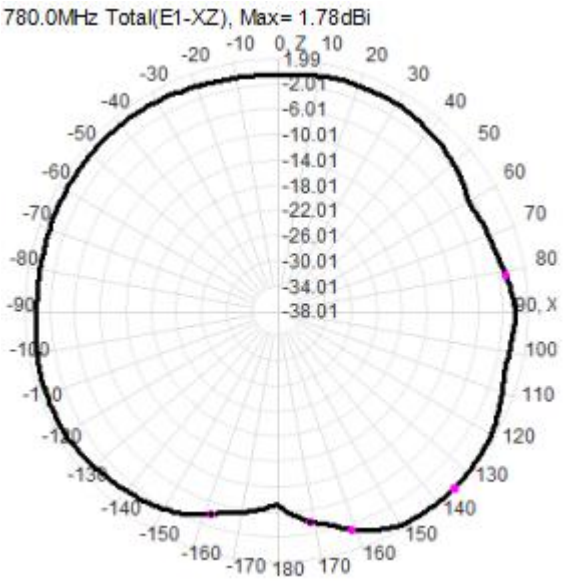

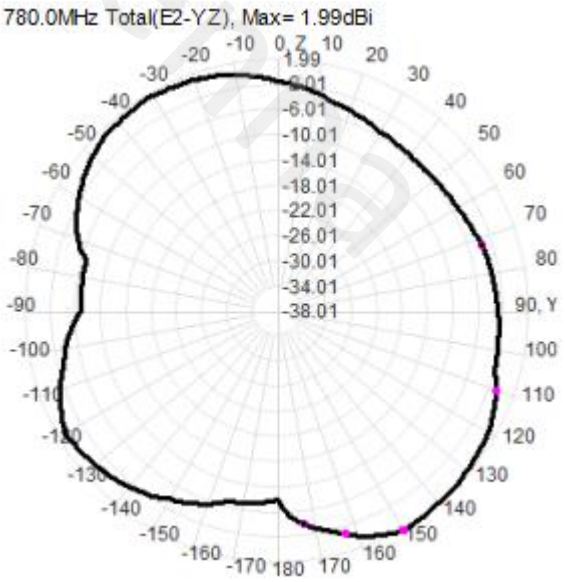

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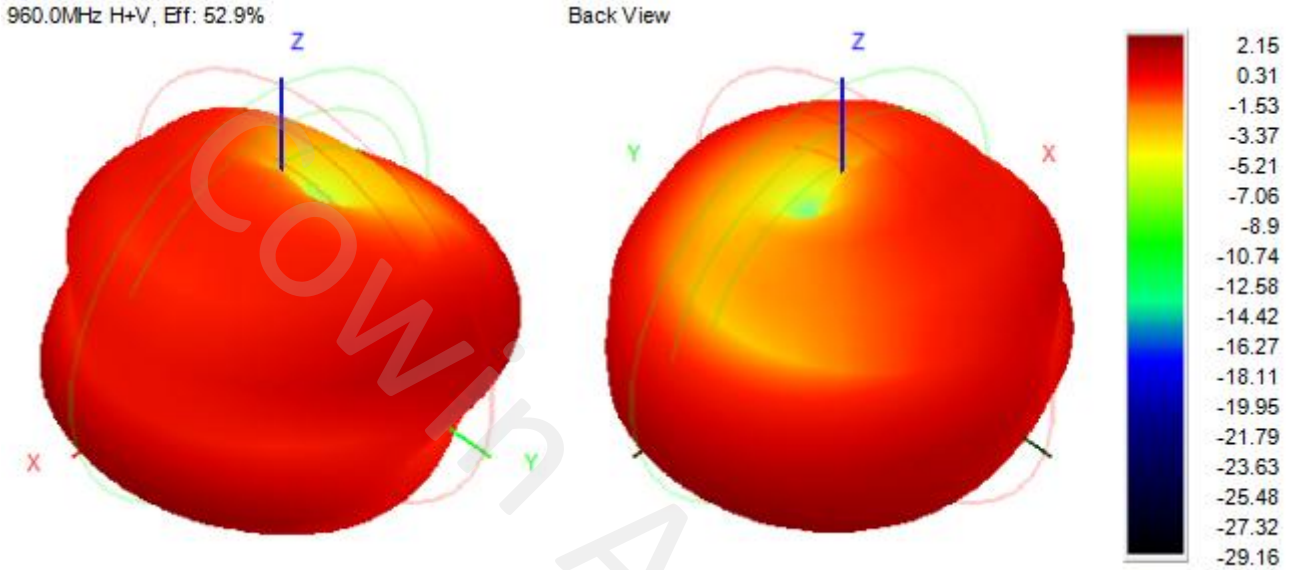

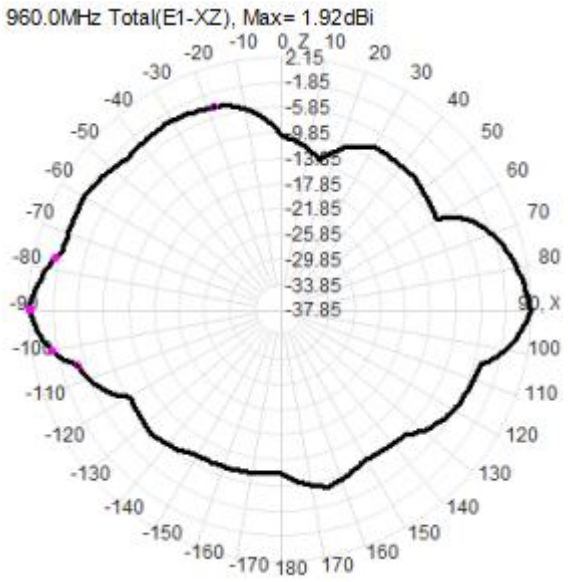

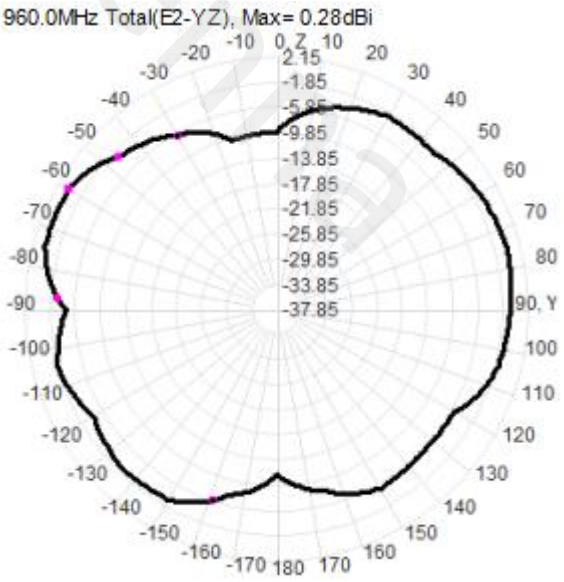

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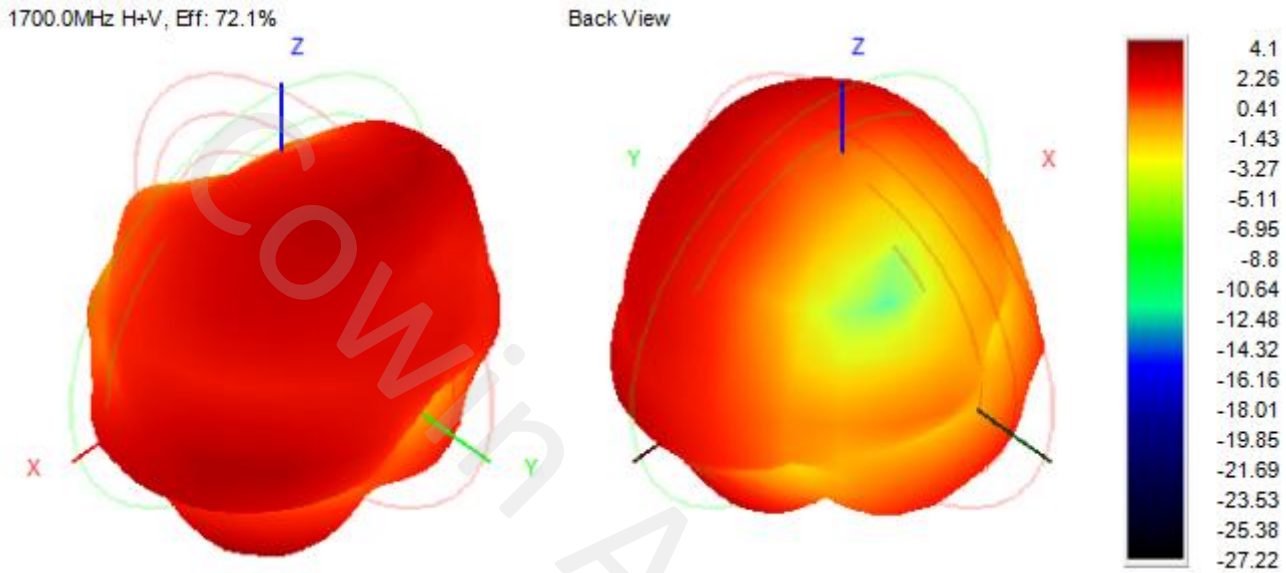

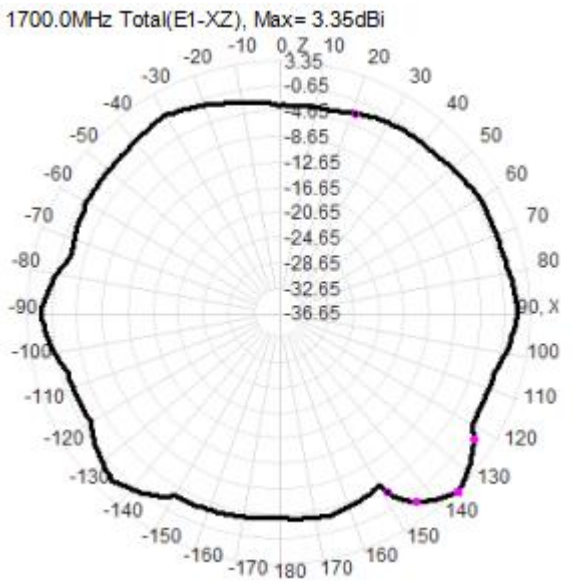

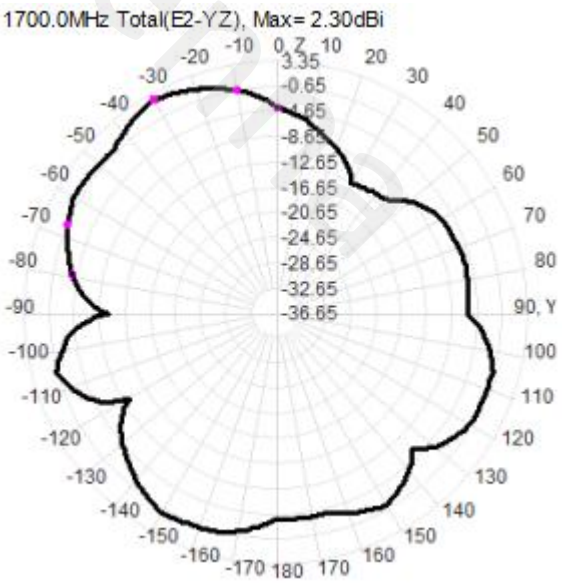

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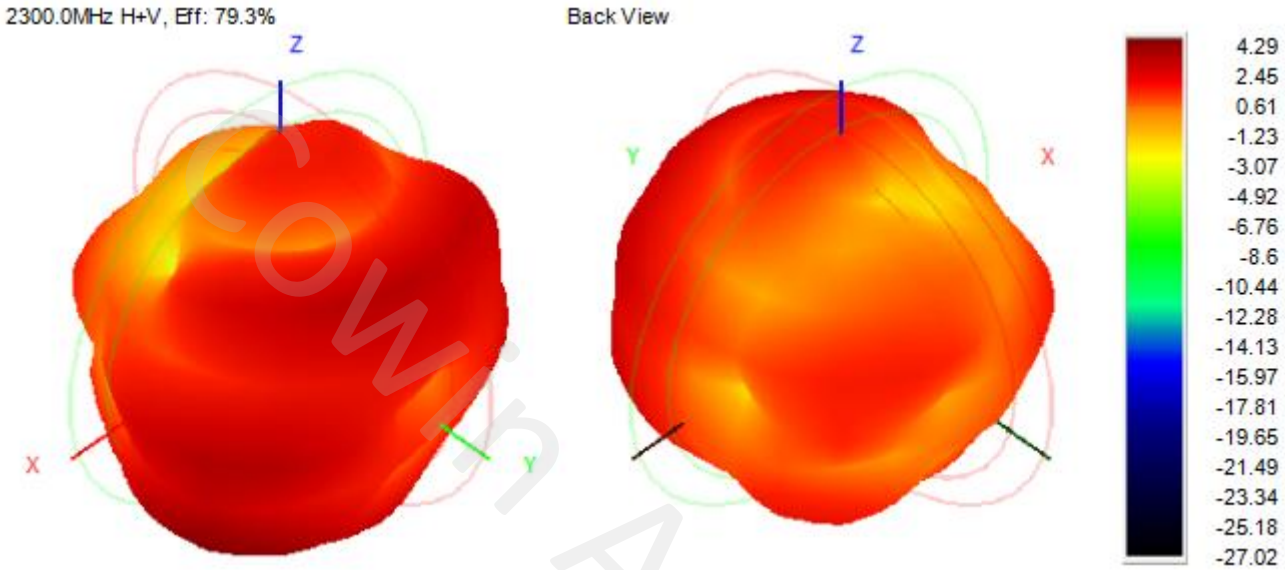

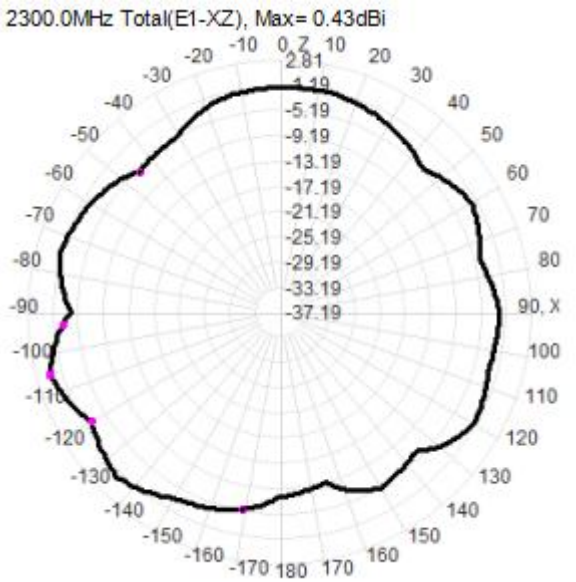

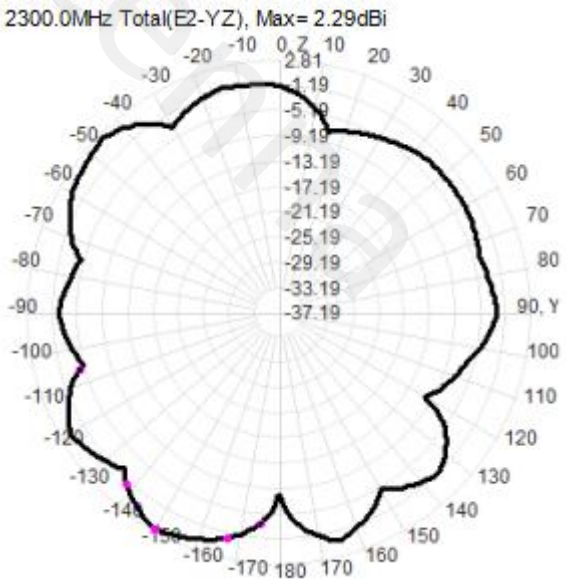

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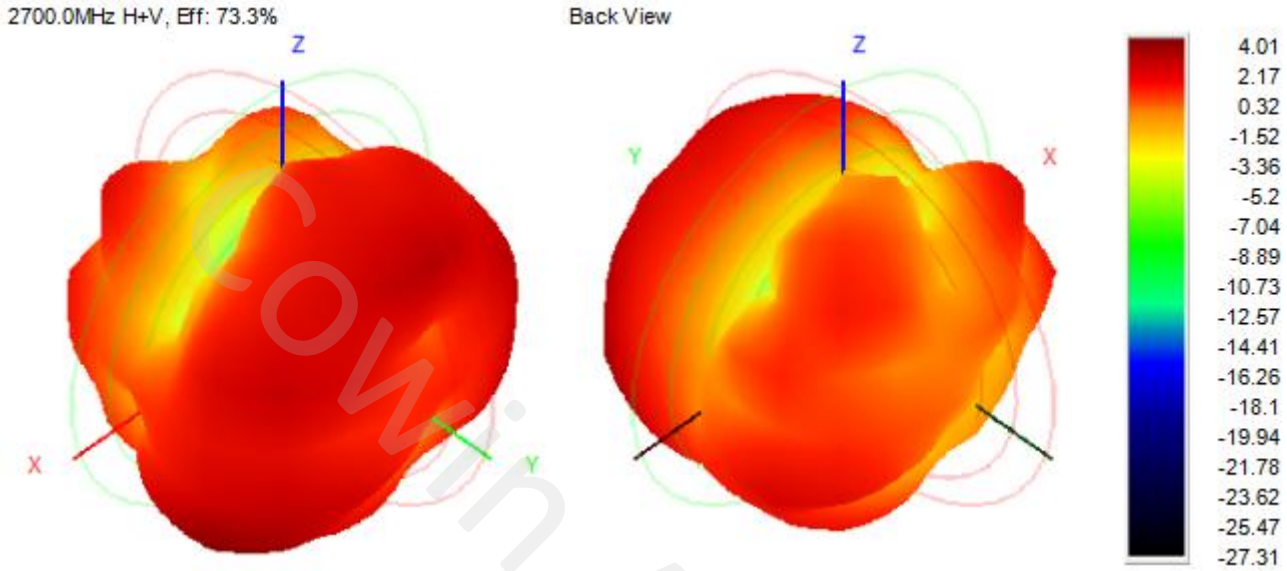

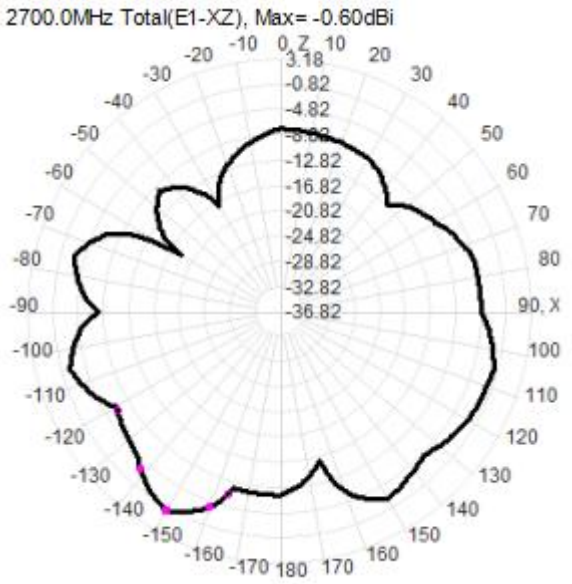

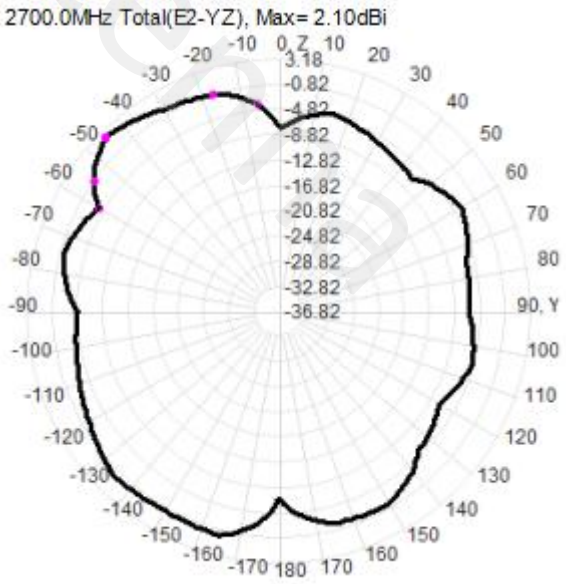

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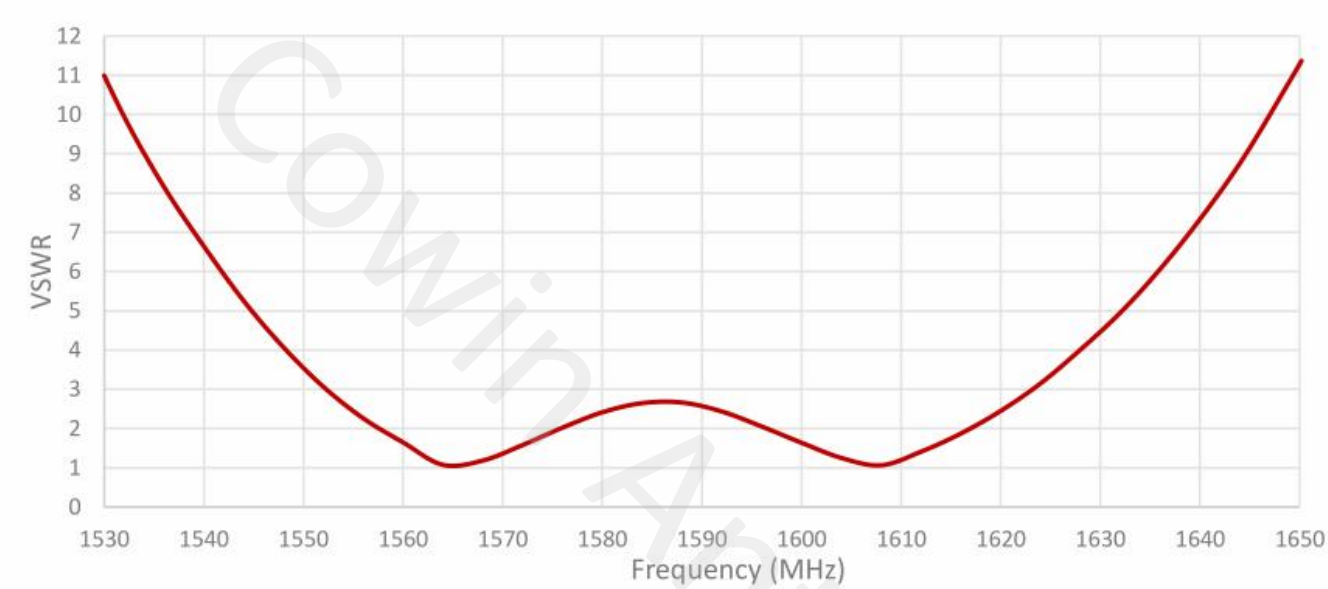
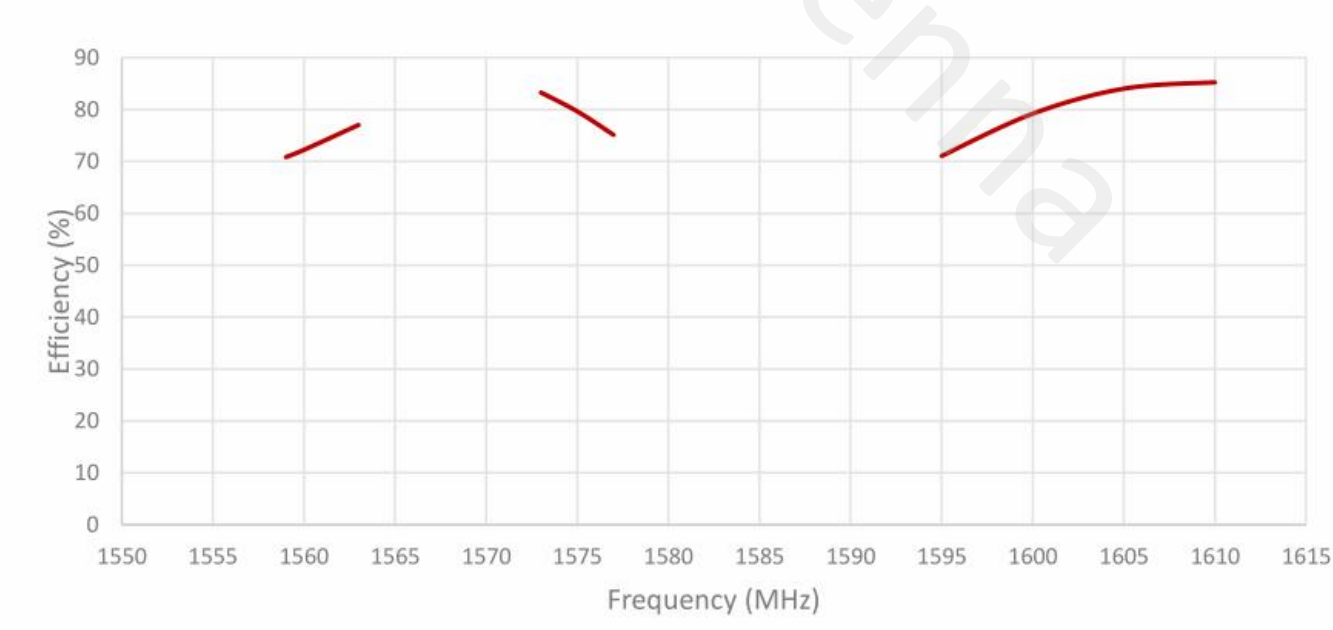
6. GNSS Antenna Parameters

6.1 VSWR



6.2 Efficiency



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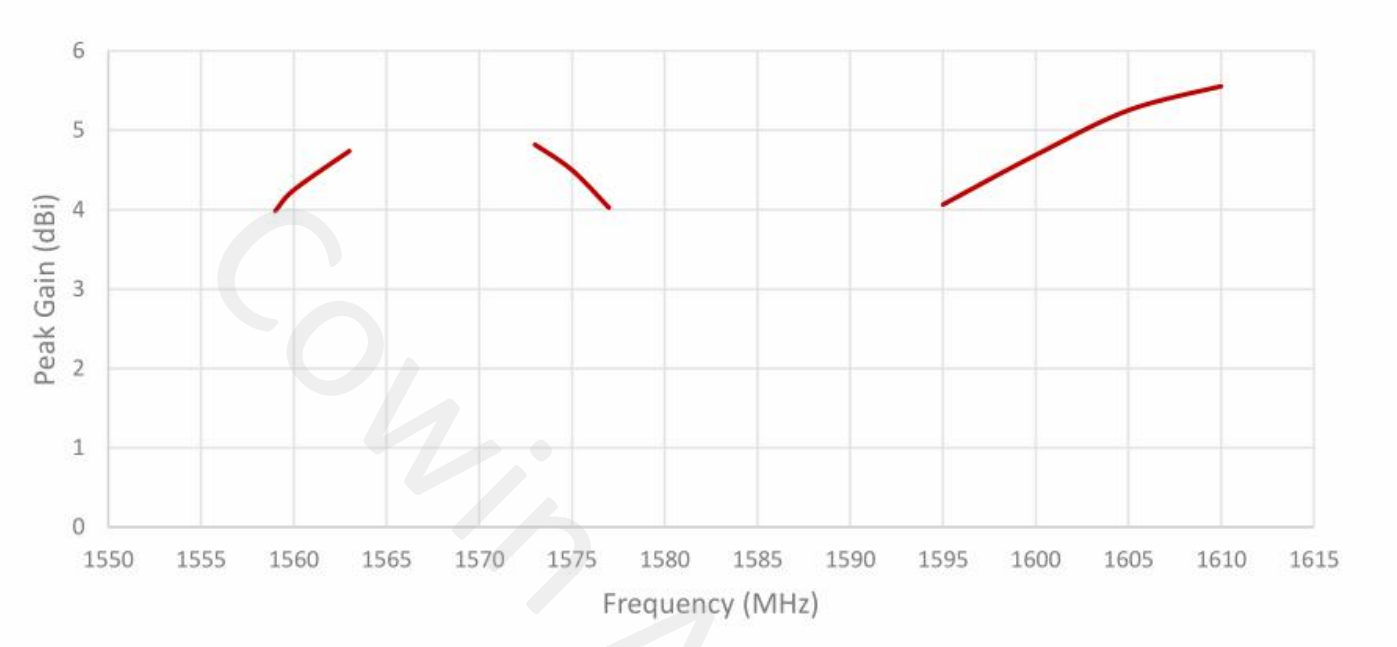
6.3 Peak gain



6.4 Active Gain



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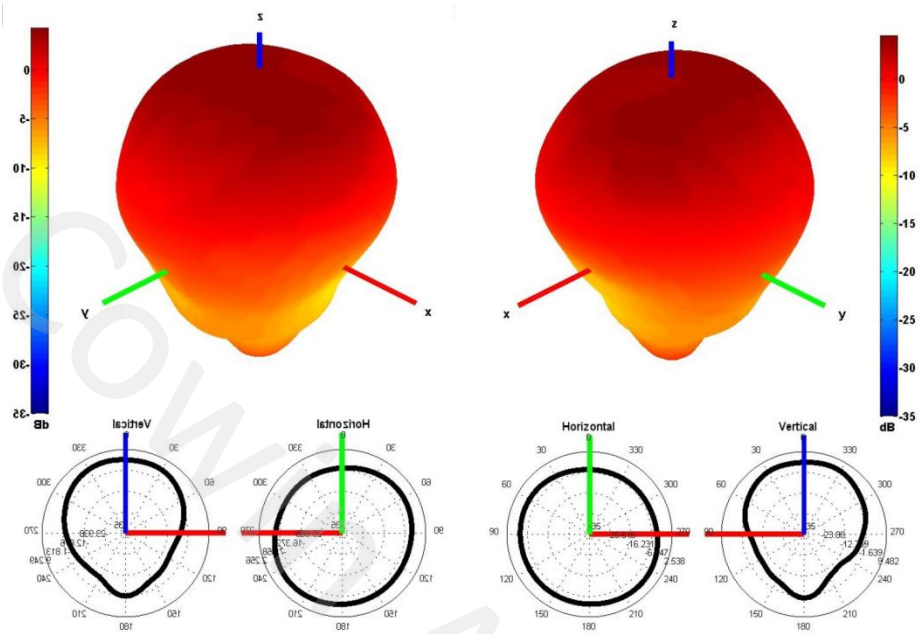
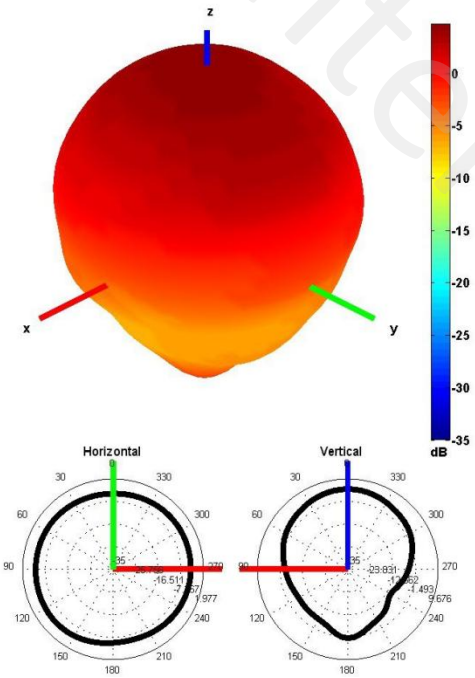
6.5 3D&2D Radiation Patterns



1561 and 1575 MHz Radiation pattern



1602 MHz Radiation pattern