

Specification

Part No. : **GA.130.201111**

Product Name : Shanghai Magnetic Mount
698-2700MHz LTE Antenna

Feature : Dipole Terminal Antenna
4G/3G/2G LTE Antenna
698-2700MHz
Highest Efficiency
2M RG-174 Cable with SMA(M) Connector
Ingress Protection Rating IP65
Dimensions: Base: 72x53 * Height :143mm
RoHS Compliant



1. Introduction

The Shanghai GA.130 4G magnetic wideband cellular antenna delivers stable, omni-directional gain and highest efficiencies across all common 4G, 3G & 2G global cellular bands from 698 MHz to 2.7 GHz. This sculpted high performing antenna can be used for all cellular devices and will not require changing antennas when deploying from most major markets worldwide such as 4G to 3G. This antenna can either be mounted magnetically on a metal surface or via the 3M adhesive if non-metal surfaces.

A reliable return loss of <10dB, when mounted on a metal plate, ensures the antenna complies with the industry standards set by module makers and networks worldwide.

Taoglas recommends using the antenna with 2m cable length or less and can provide customized connectors and cable lengths upon customer request. The strong magnetic base is extremely stable and robust, using only high-quality neodymium magnets for a secure magnetic mount to ensure a high pull force to disengage.

An adhesive mount, GA.131.201111 and permanent mount option, GA.132.201111 are also available upon request. For further information, please contact your regional Taoglas sales office for support.

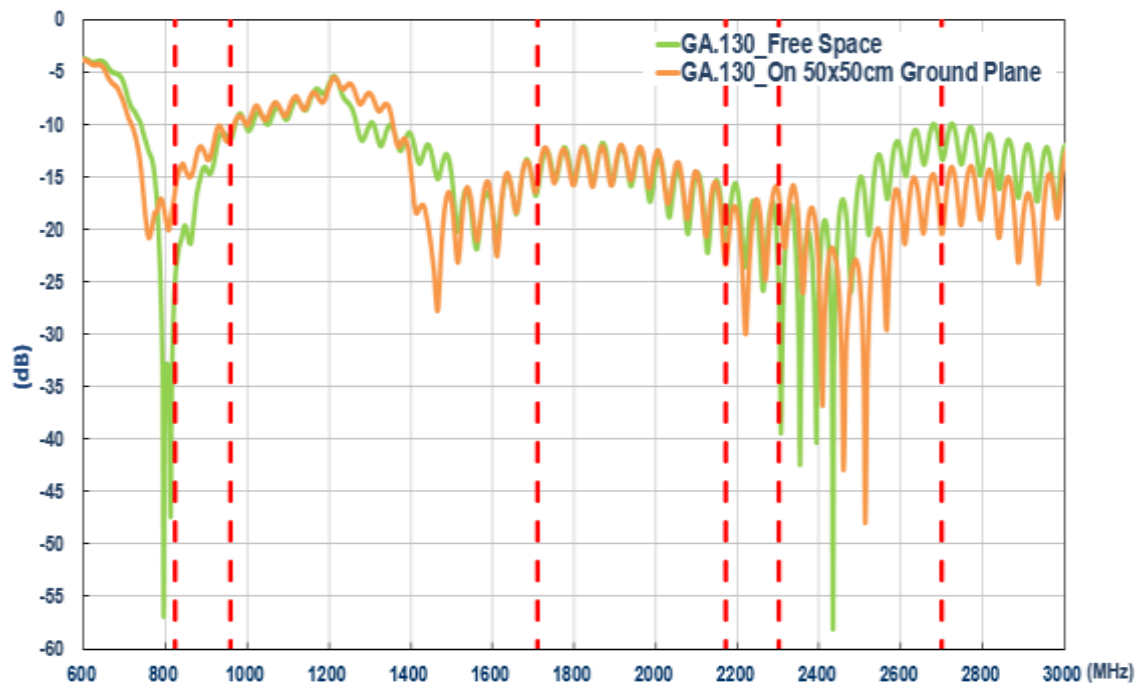
2. Specification

ELECTRICAL								
Frequency (MHz)		LTE700	GSM850	GSM900	DCS	PCS	UMTS1	LTE2600
		698~806	824~894	880~960	1710~1880	1850~1900	1920~2170	2300~2690
Efficiency (%)								
Free Space	0.3m	70.29	83.08	74.93	62.56	69.68	71.42	71.85
	1m	62.44	72.36	65.27	51.35	57.02	58.05	56.44
	2m	52.24	60.00	53.25	38.66	42.72	43.14	40.50
	3m	43.63	49.41	43.88	29.26	31.82	31.98	28.86
On 50x50cm Ground Plane	0.3m	80.74	77.24	63.63	59.49	63.39	64.84	67.79
	1m	71.74	67.27	55.39	48.87	51.91	52.71	53.25
	2m	60.07	55.79	45.19	36.78	38.88	39.15	38.16
	3m	50.18	45.95	37.22	27.83	28.97	29.02	27.20
Average Gain (dBi)								
Free Space	0.3m	-1.53	-0.81	-1.25	-2.04	-1.57	-1.46	-1.44
	1m	-2.05	-1.41	-1.85	-2.89	-2.44	-2.36	-2.48
	2m	-2.82	-2.22	-2.74	-4.13	-3.69	-3.65	-3.93
	3m	-3.60	-3.06	-3.58	-5.34	-4.97	-4.95	-5.40
On 50x50cm Ground Plane	0.3m	-0.93	-1.12	-1.96	-2.26	-1.98	-1.88	-1.69
	1m	-1.44	-1.72	-2.57	-3.11	-2.85	-2.78	-2.74
	2m	-2.21	-2.53	-3.45	-4.34	-4.1	-4.07	-4.18
	3m	-2.99	-3.38	-4.29	-5.55	-5.38	-5.37	-5.66
Peak Gain (dBi)								
Free Space	0.3m	2.43	2.20	2.19	2.47	3.25	3.62	5.57
	1m	1.93	1.60	1.59	1.67	2.35	2.72	4.47
	2m	1.13	0.80	0.69	0.37	1.15	1.32	3.07
	3m	0.43	0.00	-0.11	-0.83	-0.15	0.02	1.57
On 50x50cm Ground Plane	0.3m	3.40	3.15	3.10	3.58	3.38	3.38	4.26
	1m	2.90	2.55	2.50	2.68	2.58	2.48	3.25
	2m	2.10	1.75	1.60	1.48	1.28	1.18	1.85
	3m	1.30	0.95	0.70	0.28	0.08	-0.12	0.45
Impedance		50Ω						
Polarization		Linear						

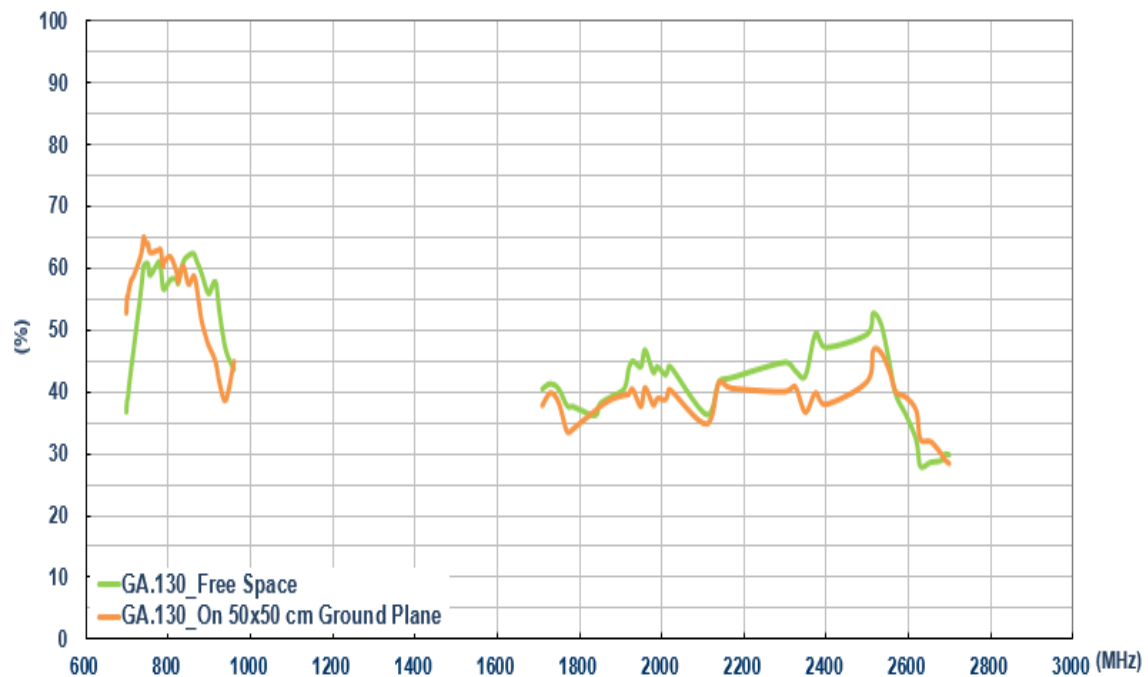
Radiation Pattern	Omni
Input Power	10 W
MECHANICAL	
Casing	UV Stabilized ASA
Connector	SMA (M) Straight
Cable	2M RG-174
Dimensions	Base: 72x53mm * Height: 143mm
IP Rating	IP65
Weight	145g
Magnetic Pull Force	14 Kg
Mounting Type	Adhesive Mount (3M 467) / Magnetic Mount
ENVIRONMENTAL	
Storage Temperature	-40°C to +85°C
Operating Temperature	-40°C to +85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

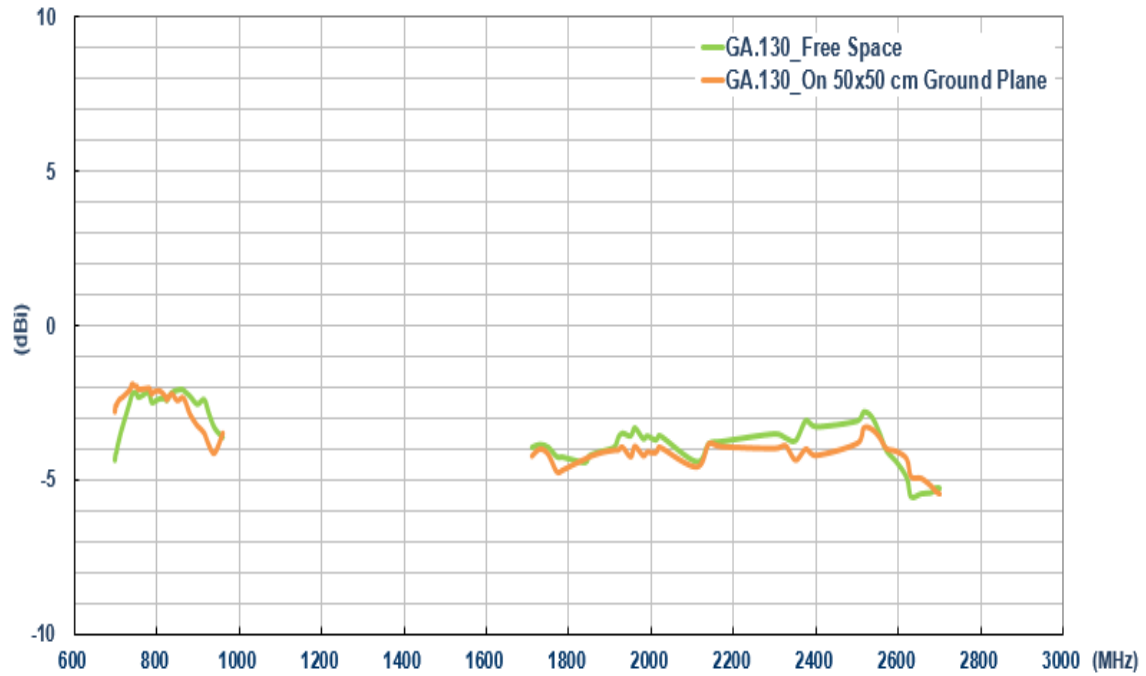
3.1 Return Loss



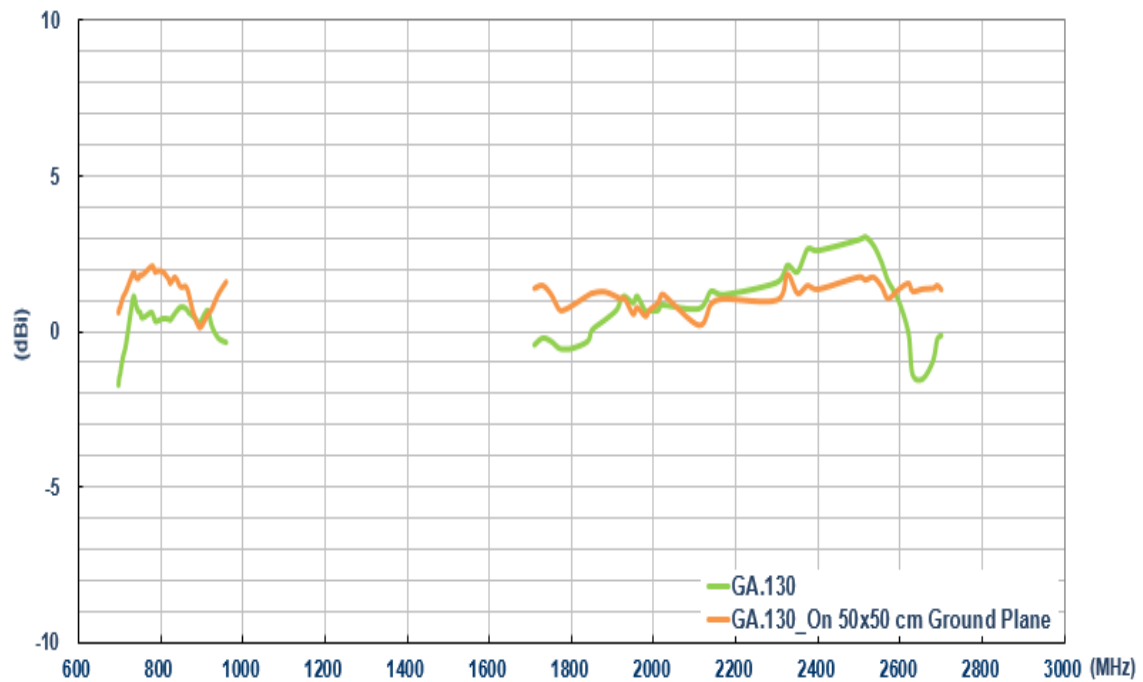
3.2 Efficiency



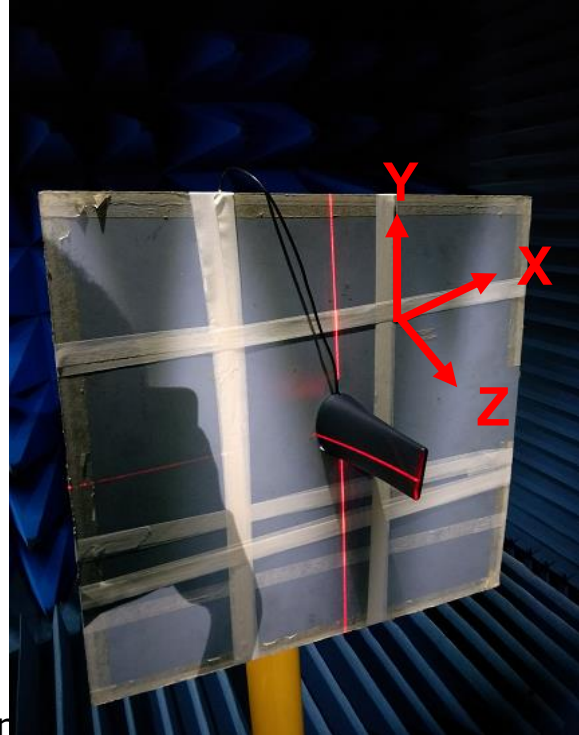
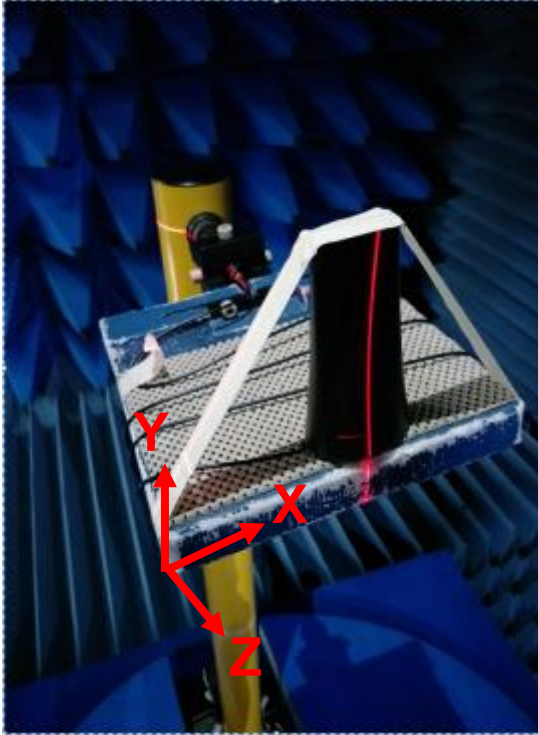
3.3 Average Gain



3.4 Peak Gain

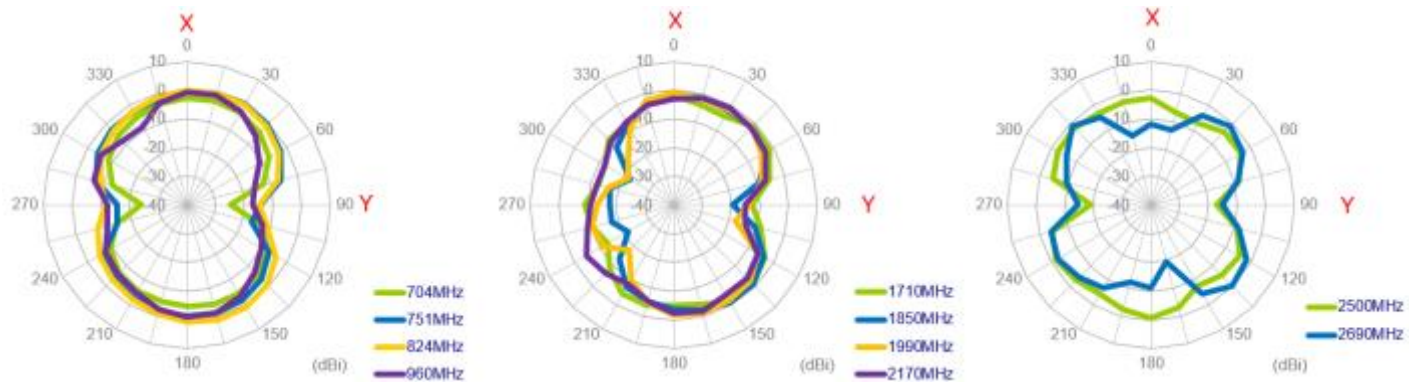


3.5 Test Setup For Antenna Radiation Pattern

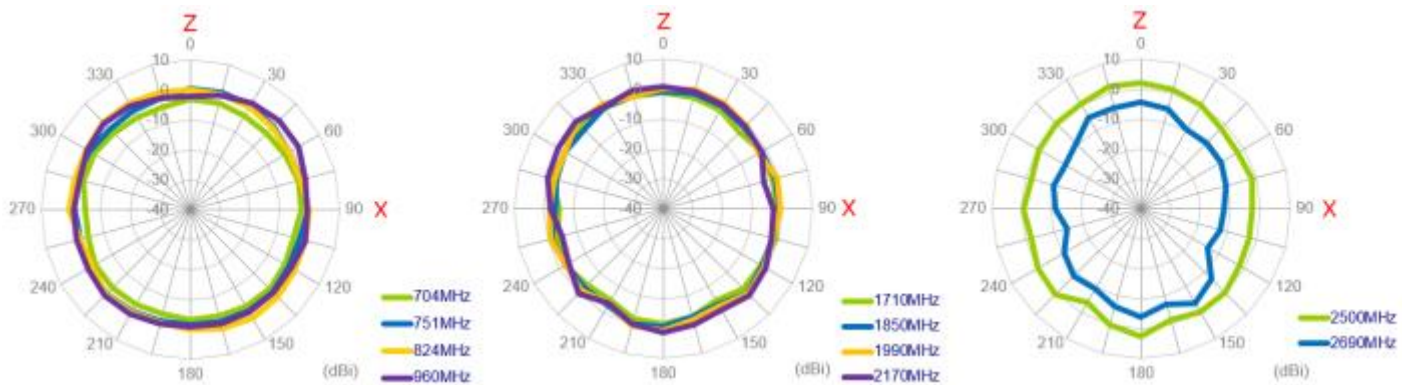


3.5.1 2D Radiation Pattern (Free Space)

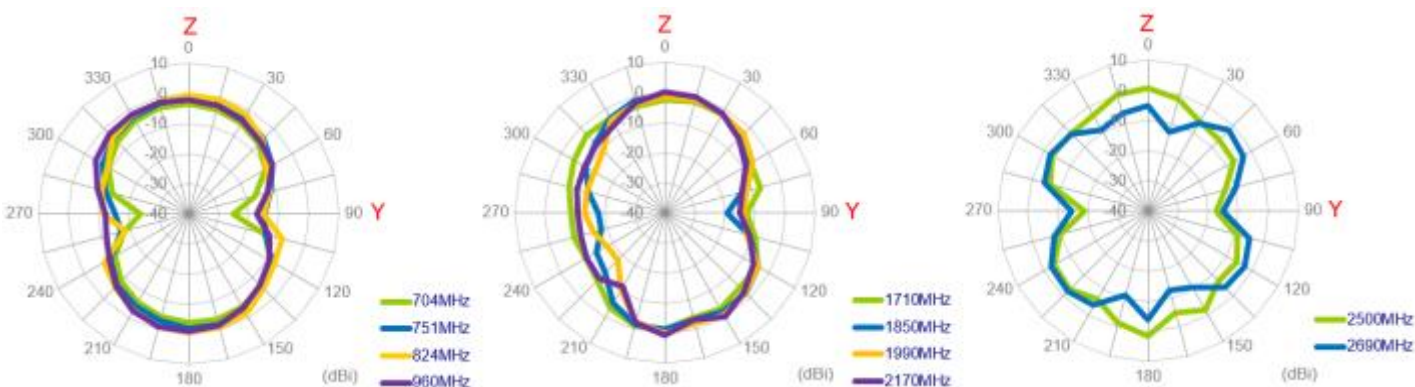
XY Plane



XZ Plane

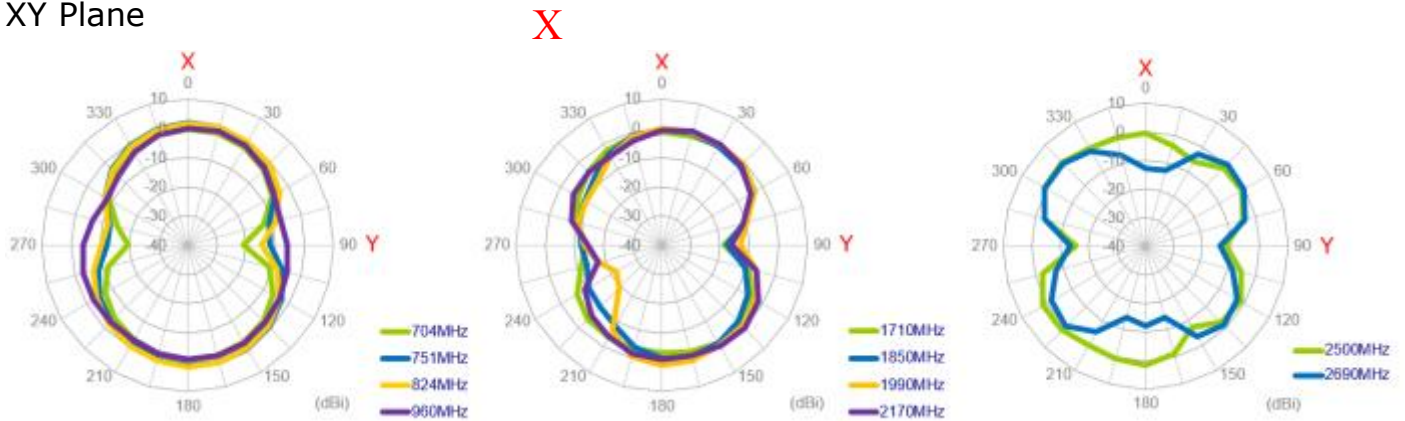


YZ Plane

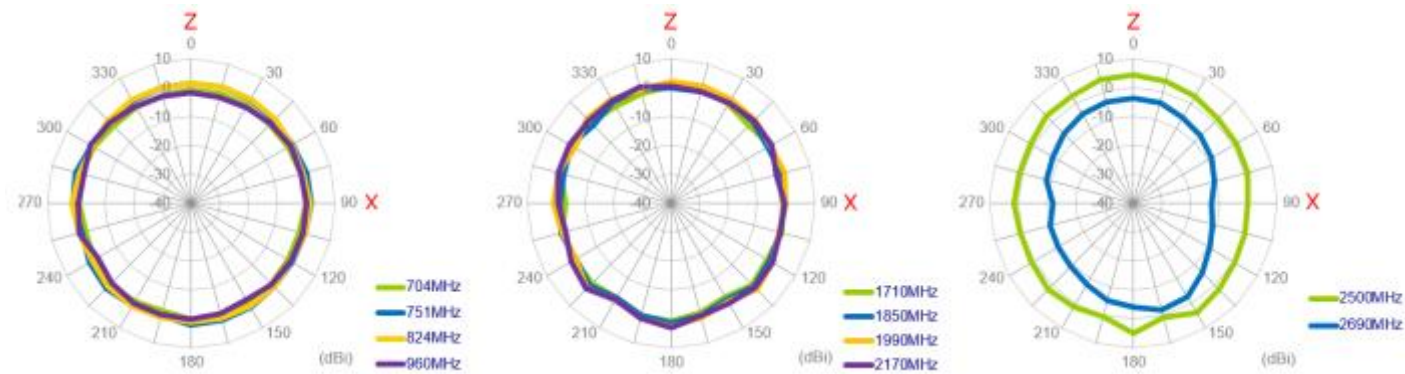


3.5.2 2D Radiation Pattern (On 50x50cm Ground Plane)

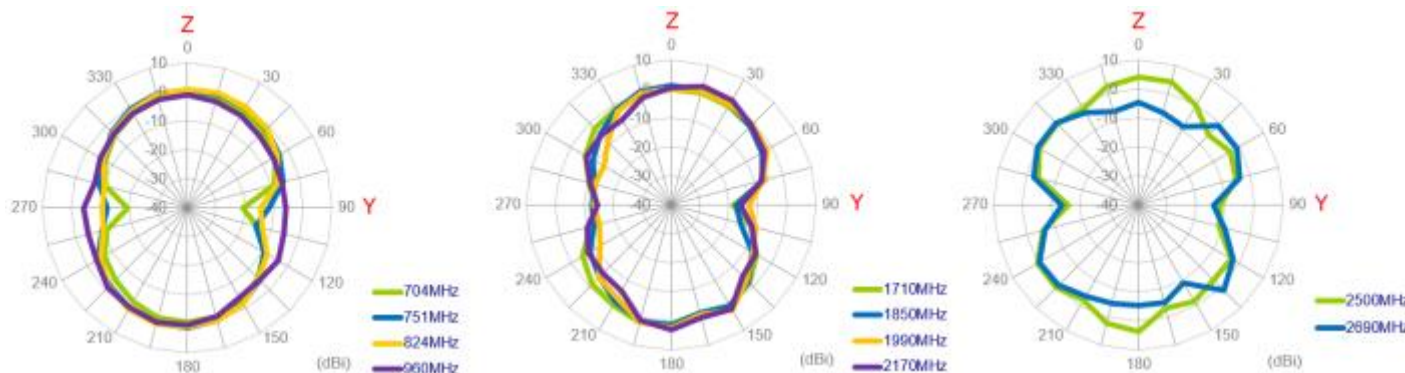
XY Plane



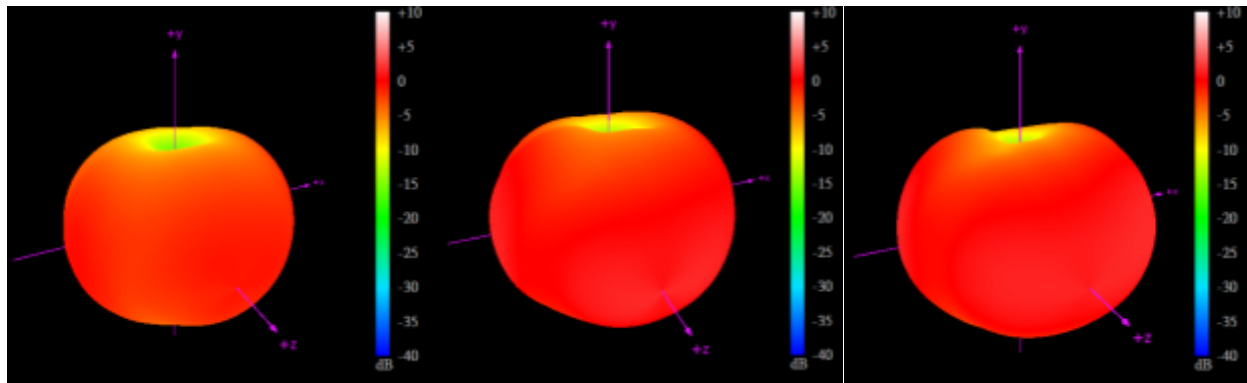
XZ Plane



YZ Plane



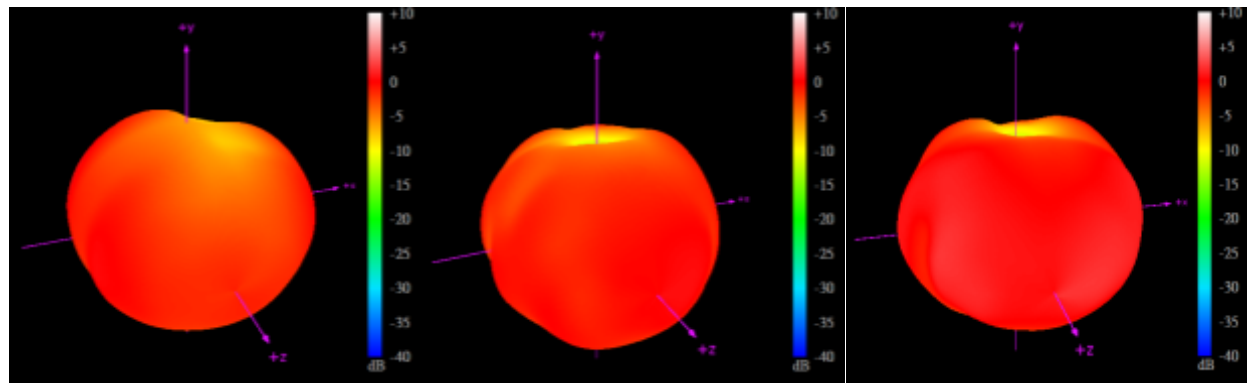
3.5.3 3D Radiation Pattern (Free Space)



704MHz

751MHz

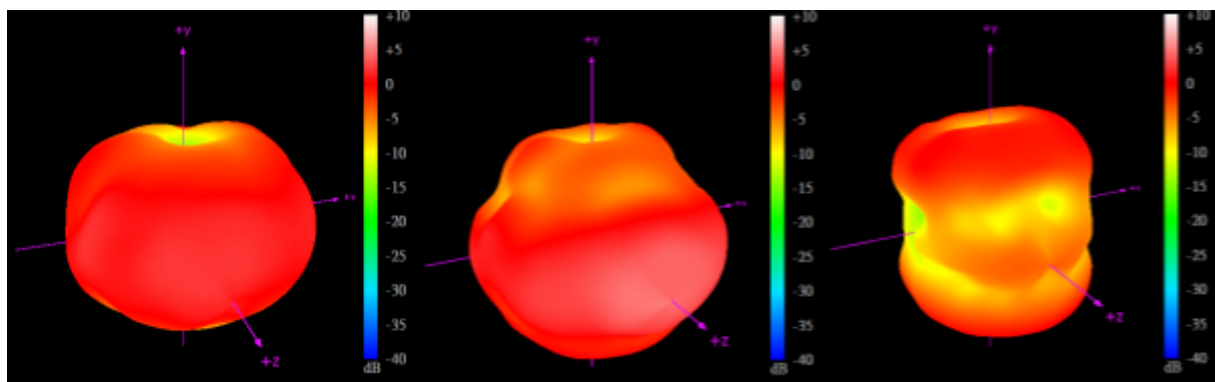
824MHz



960MHz

1710MHz

1990MHz

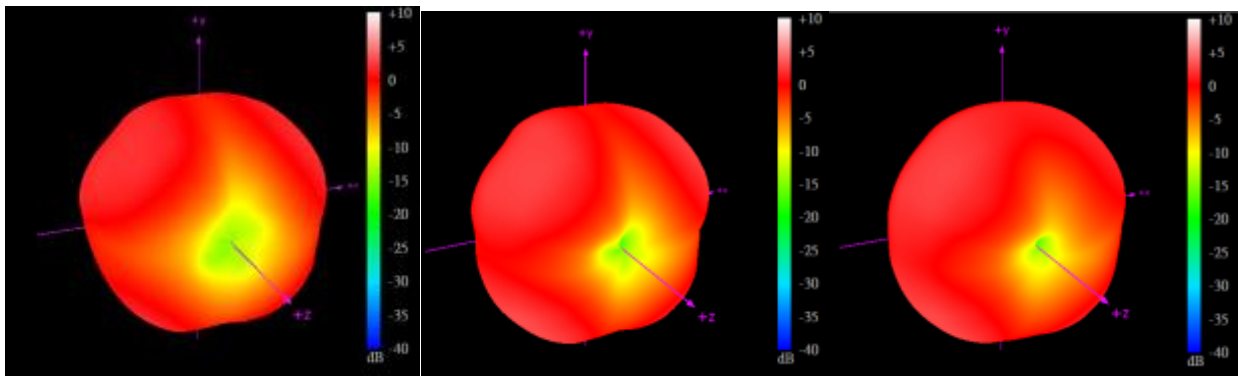


2170MHz

2500MHz

2690MHz

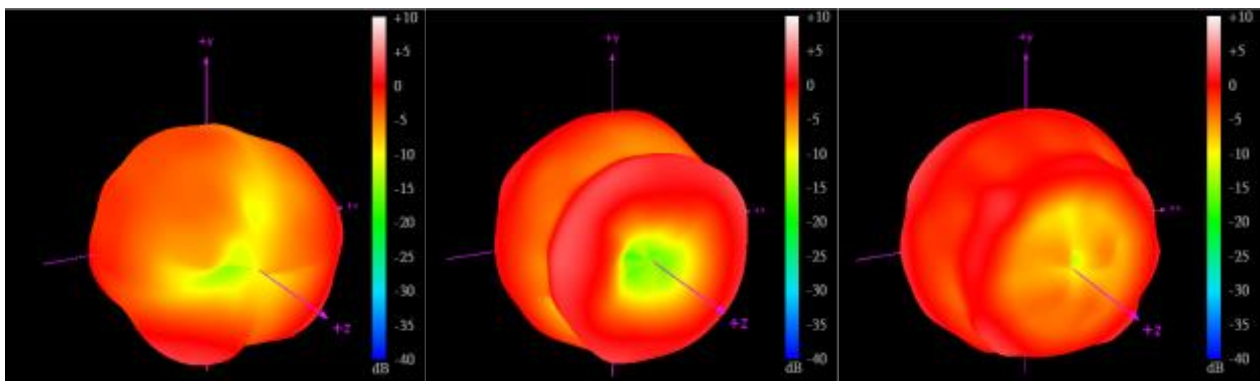
3.5.4 3D Radiation Pattern (On 50x50cm Ground Plane)



704MHz

751MHz

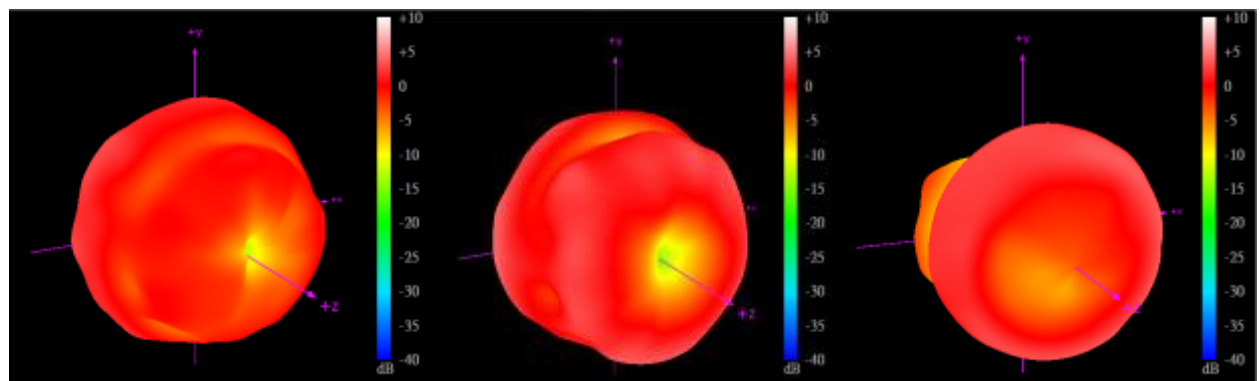
824MHz



960MHz

1710MHz

1990MHz

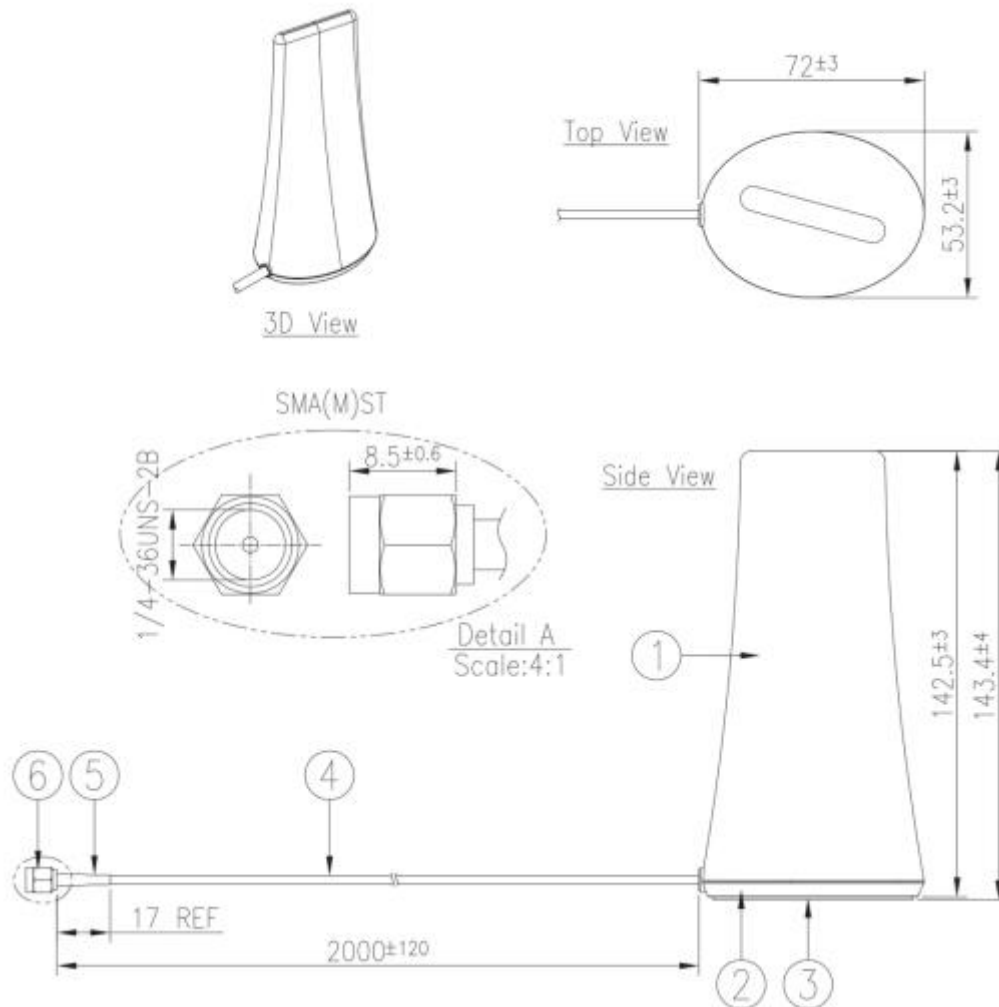


2170MHz

2500MHz

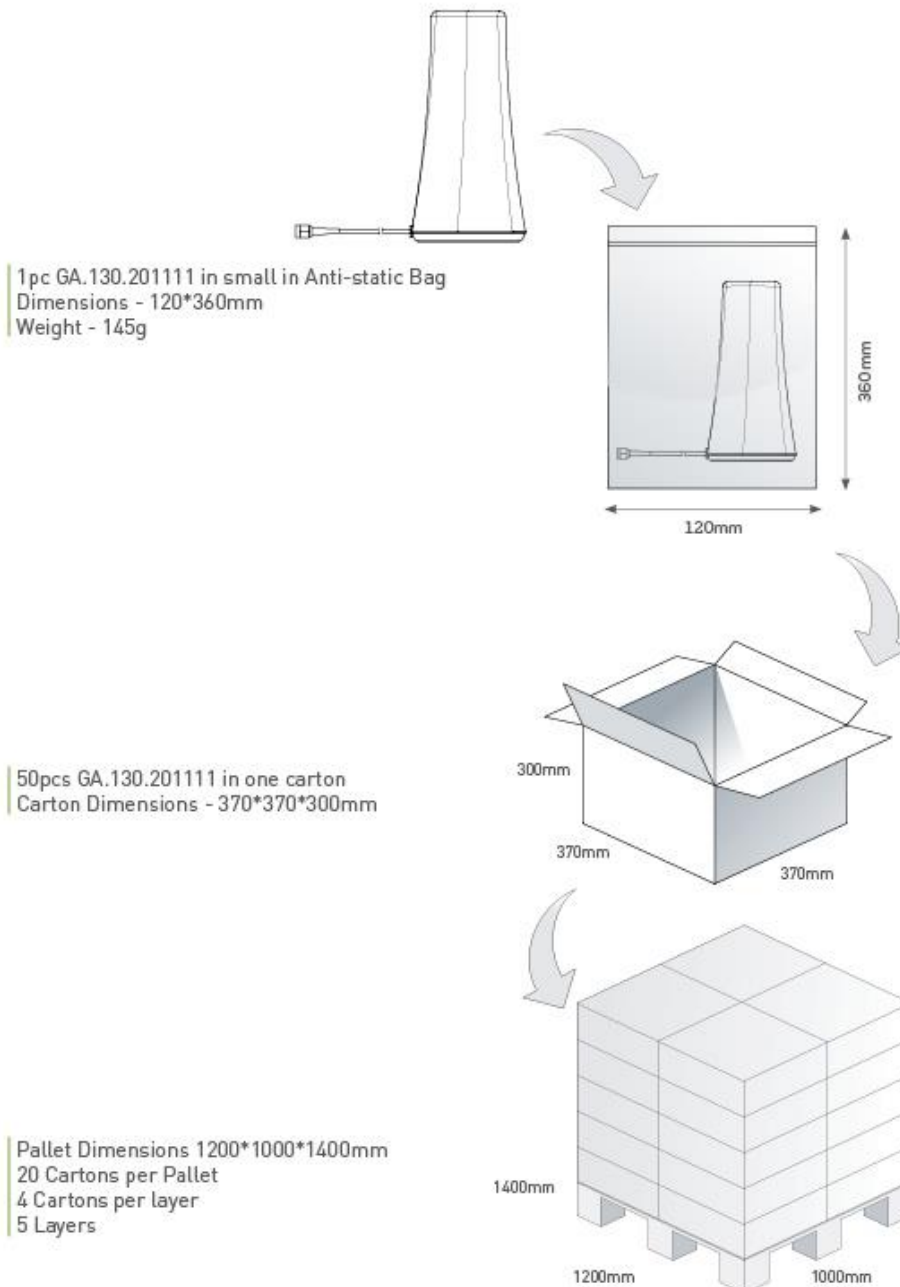
2690MHz

4. Mechanical Drawing (Unit:mm)



	Name	Material	Finish	QTY
1	Housing_Top	ASA	Black	1
2	Housing_Bottom	ASA	Black	1
3	3M Double Sided Adhesive(Black Foam)	3M467+CR4305	Brown Liner	1
4	RG174 Coaxial Cable	PVC	Black	1
5	Heat Shrink Tube	PE	Black	1
6	SMA(M)ST	Brass	Au Plated	1

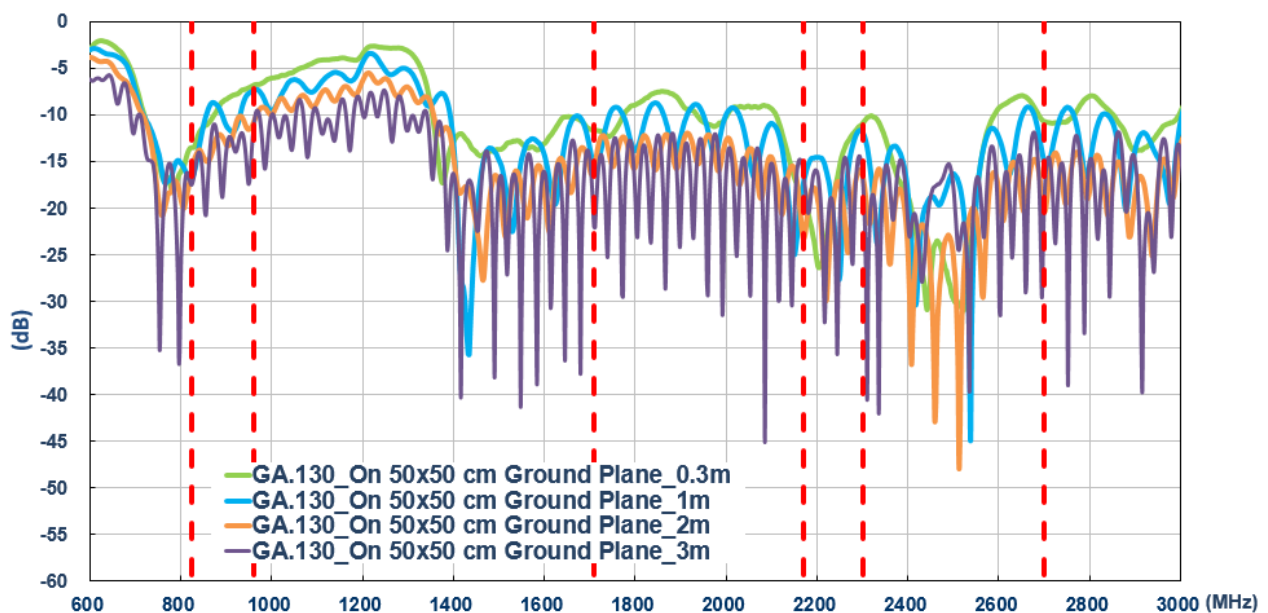
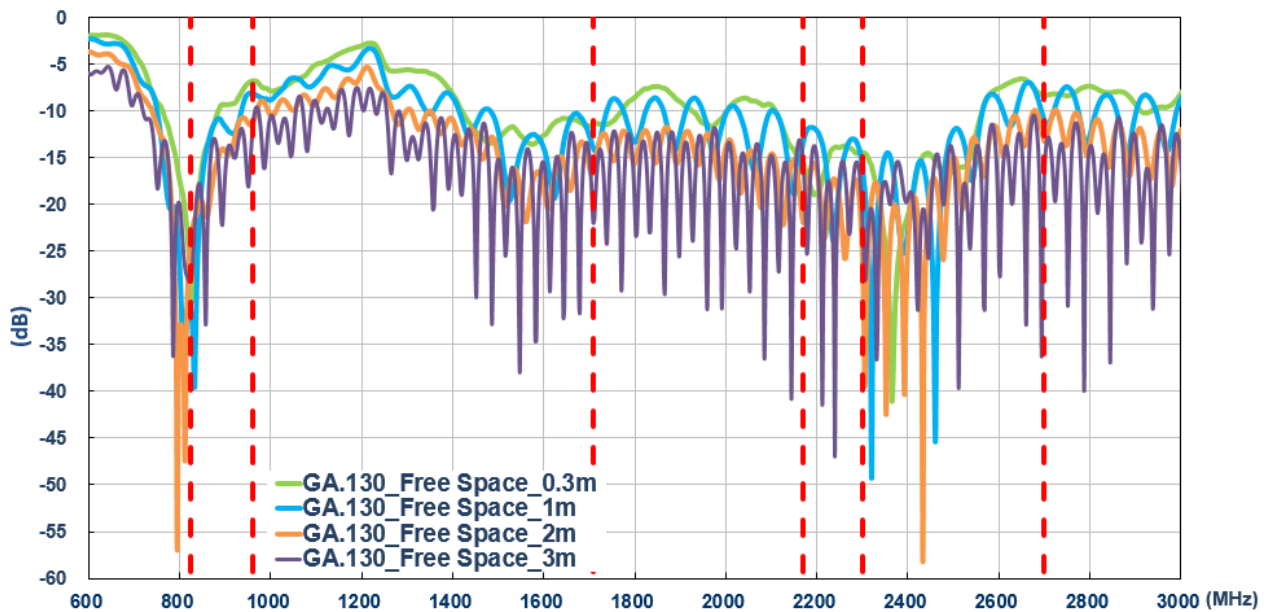
5. Packaging



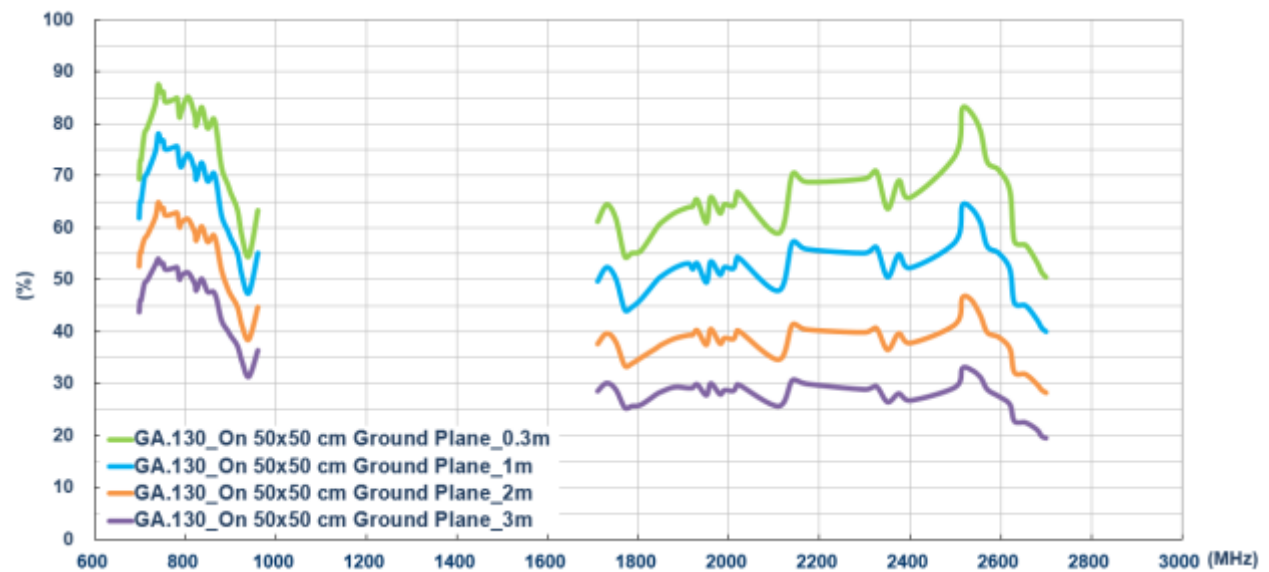
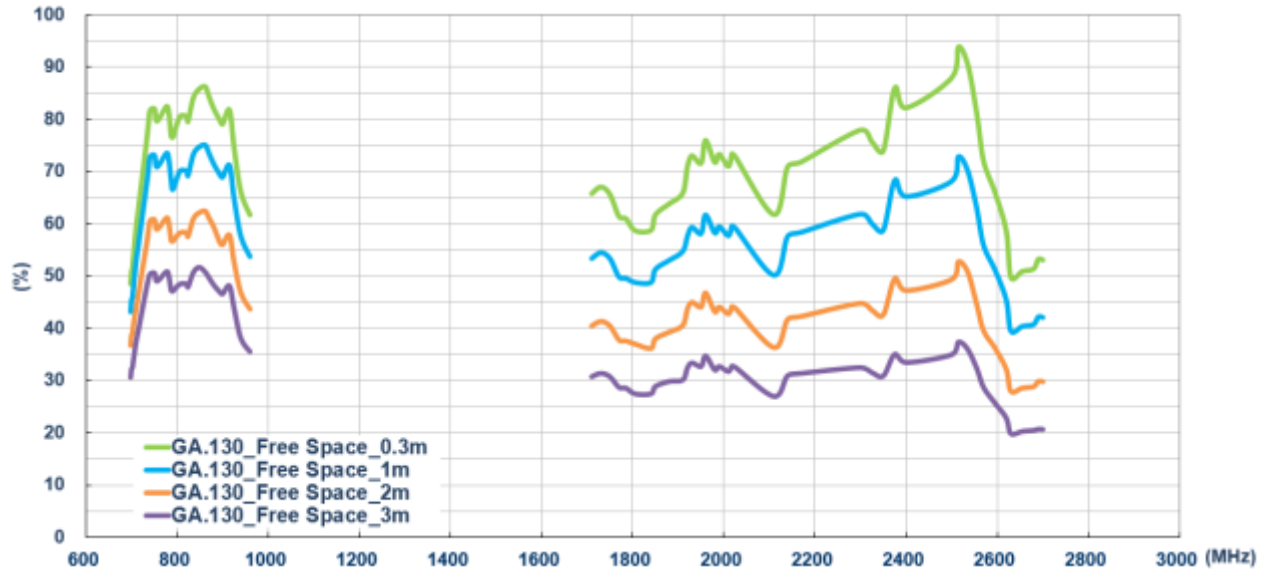
6. Application Note

Antenna performance with different cable lengths and mounting environments is shown below.

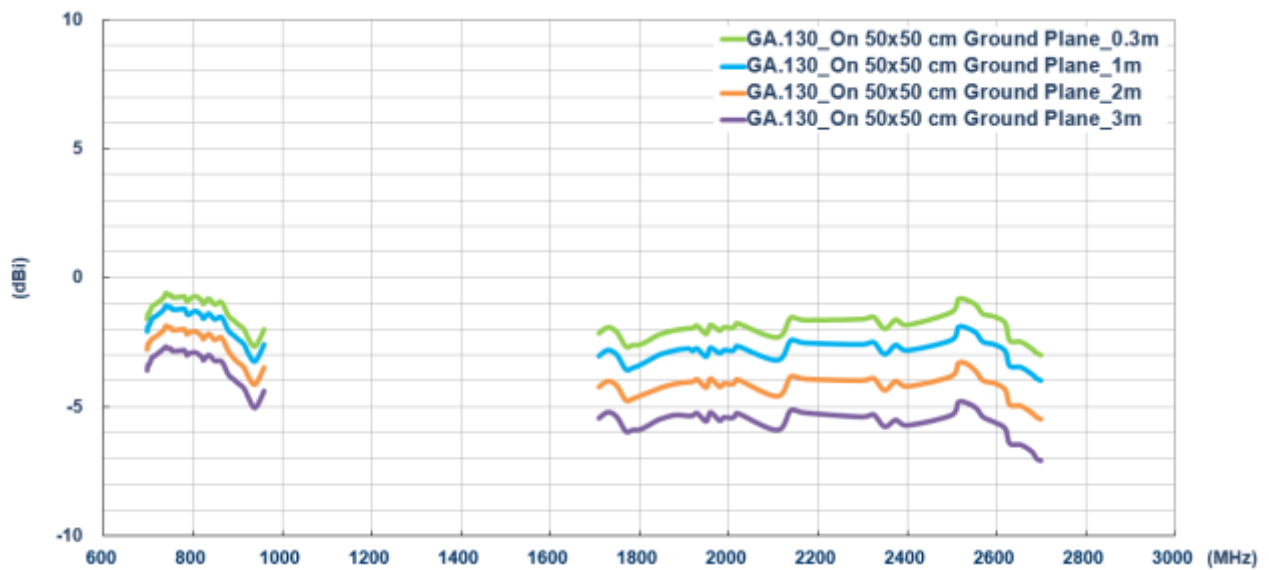
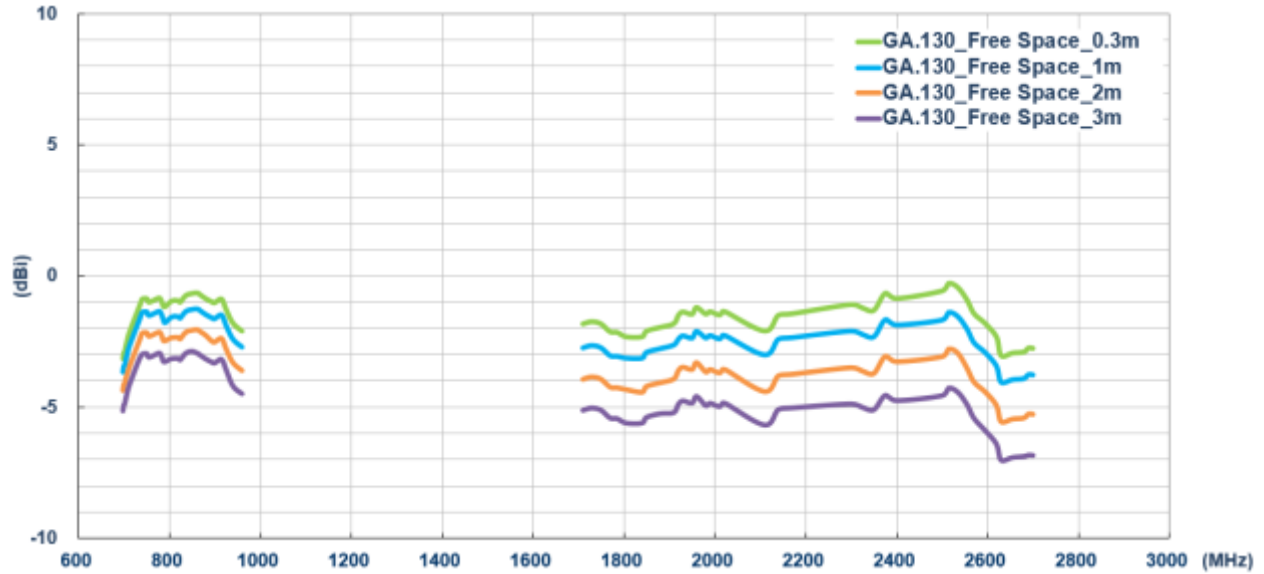
6.1 Return Loss



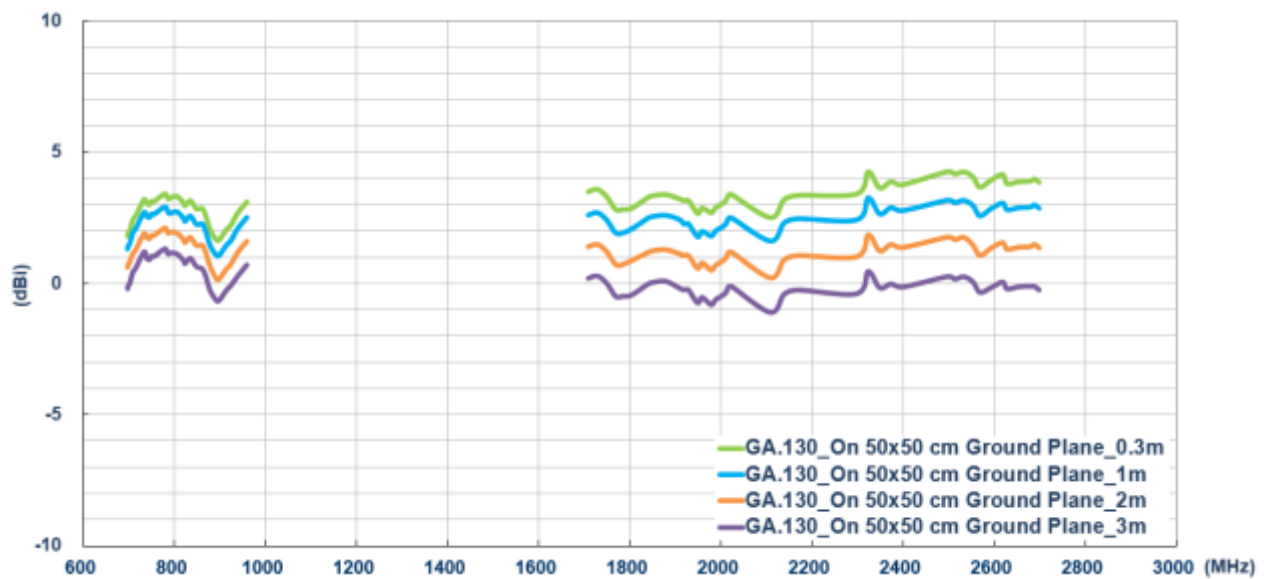
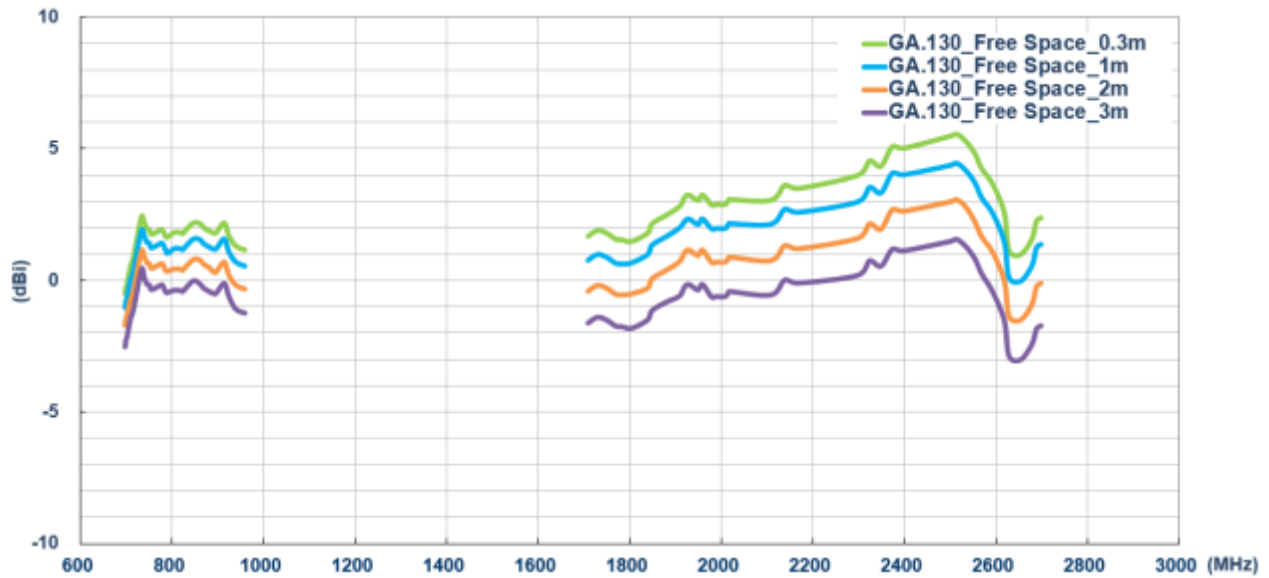
6.2 Efficiency



6.3 Average Gain



6.4 Peak Gain



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