

SPECIFICATION

- Part No. : **GSA.8822.B.301111**
- Product Name : T-Bar 4G/3G/2G antenna with 3M adhesive
LTE700 / GSM850 / GSM900 / DCS1800 /
PCS1900 / UMTS 2100 / LTE2600
- Feature : Covers all 4G/3G/2G bands
Low profile antenna, 106 x 13 x 6.7 mm
3M adhesive for easy installation
IP67 Waterproof
3 meter RG174 cable
SMA(M) connector
Cable and Connector Fully Customizable
RoHS Compliant



1. Introduction

The GSA.8822.B.301111 T-Bar antenna is an external adhesive mount solution for covert and convenient installation in the automotive and telematics industry, making it ideal for tracking systems and cellular car kits. It covers 700MHz/850MHz/900MHz/1800MHz/1900MHz/2100MHz/2600MHz and design to mount on glass or plastic, also it has exceptional industry performance characteristics considering its low profile at 6.7mm and has a compact size of 106*13mm.

Typical applications

- Vehicle tracking and telematics
- Metering
- Internet of Things

GSA8822.B T bar is a fully over molding with strain relief for IP67 waterproof external antenna, Strain relief provides the greatest amount of bend relief , protecting the electrical terminations to connect with cable coaxial. It comes with strong 3M double-sided adhesive for a permanent and secure fix to your vehicle interior the cable lengths and connectors can be customized upon requested subject to MOQ. Contact your regional Taoglas sales office for support.

2. Specification

ELECTRICAL*							
Standard	LTE	CELL	GSM	DCS	PCS	UMTS	LTE
Band	700	850	900	1800	1900	2100	2600
Frequency (MHz)	698 ~803	824 ~894	880 ~960	1710 ~1880	1850 ~1990	1920 ~2170	2490 ~2690
Peak Gain (dBi)	1.27	2.53	2.70	-1.34	-0.86	-0.73	1.43
Average Gain (dBi)	-5.68	-4.02	-3.50	-6.25	-6.40	-6.72	-7.12
Efficiency (%)	27.84	39.67	44.80	23.85	22.91	21.39	19.45
Return Loss (dB)	< -10						
Polarization	Linear						
Impedance	50 ohms						
Input Power	5 watts						
VSWR	<2.0:1						
MECHANICAL							
Dimensions	106 mm x 13 mm x 6.7 mm						
Weight	40g						
Cable	3 meters RG174 standard, fully customizable						
Connector	SMA(M) standard, fully customizable						
Housing	PVC						
ENVIRONMENTAL							
Waterproof	IP67						
Temperature Range	-40°C to +85°C						

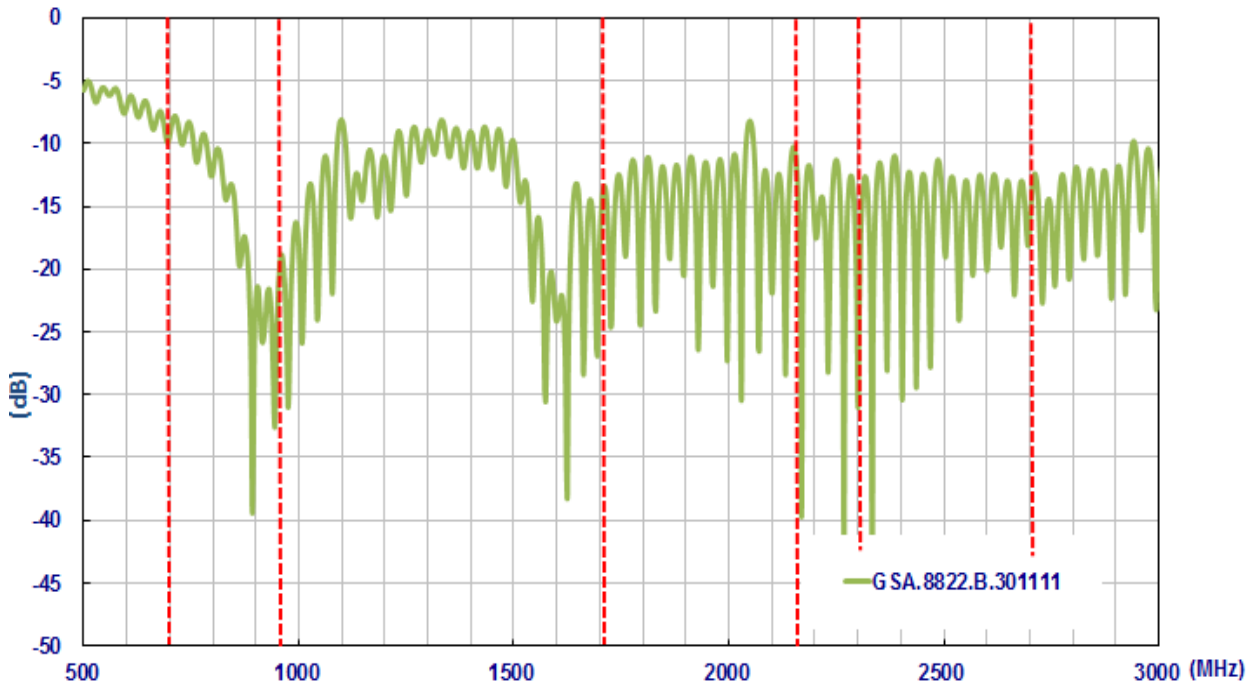
*Measured with standard 3 meter cable and mounted on glass. See Application Note at the end of this document for performance vs. different cable length

LTE BANDS			
Band Number	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 (LTE only)	✗
18	UL: 815 to 830	DL: 860 to 875 (LTE only)	✓
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 (LTE only)	✗
24	UL: 1625.5 to 1660.5	DL: 1525 to 1559 (LTE only)	✗
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 (LTE only)	✓
28	UL: 703 to 748	DL: 758 to 803 (LTE only)	✗
29	UL: -	DL: 717 to 728 (LTE only)	✓
30	UL: 2305 to 2315	DL: 2350 to 2360 (LTE only)	✗
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5 (LTE only)	✗
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	✗

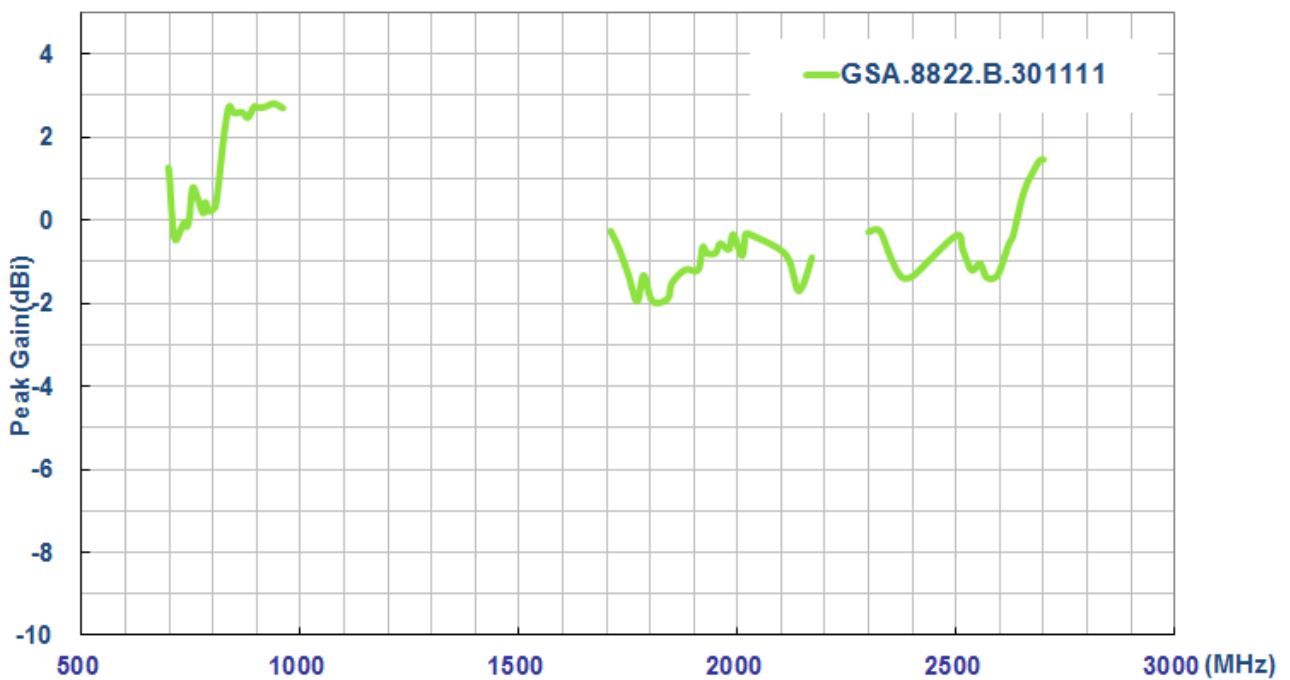
*Covered bands represent an efficiency greater than 20%

3. Antenna Characteristics

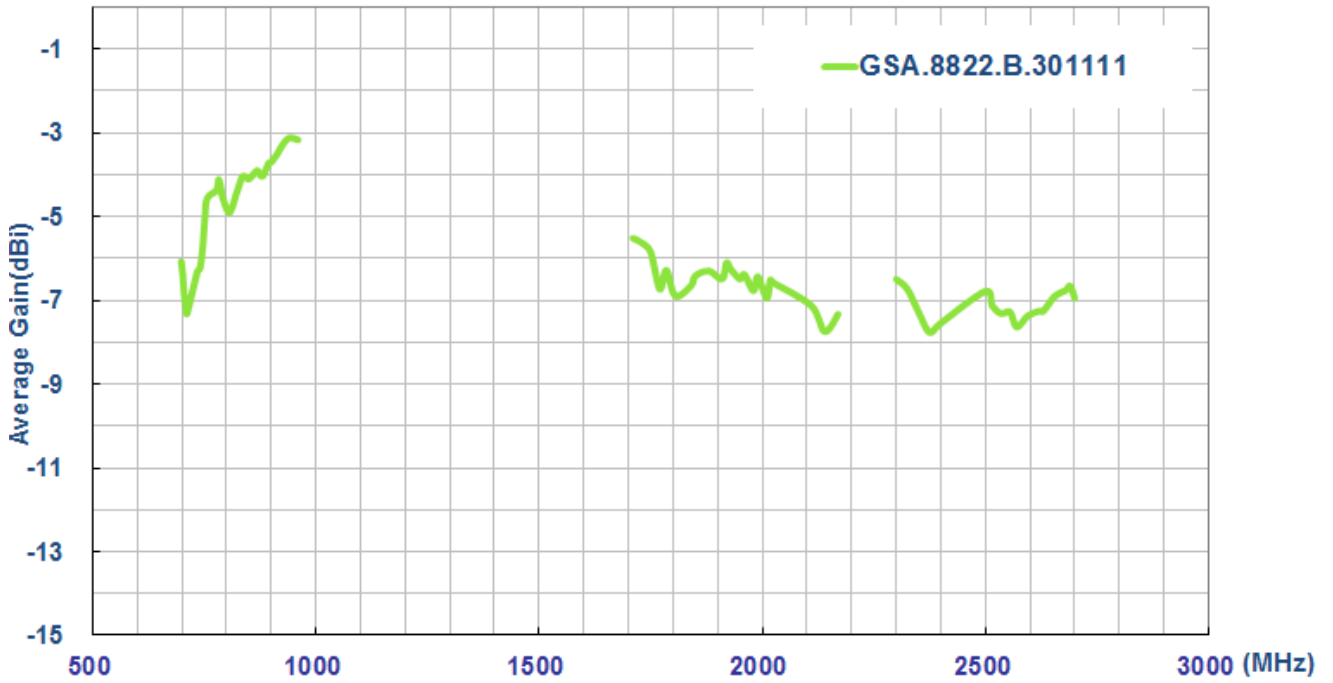
3.1. Return Loss



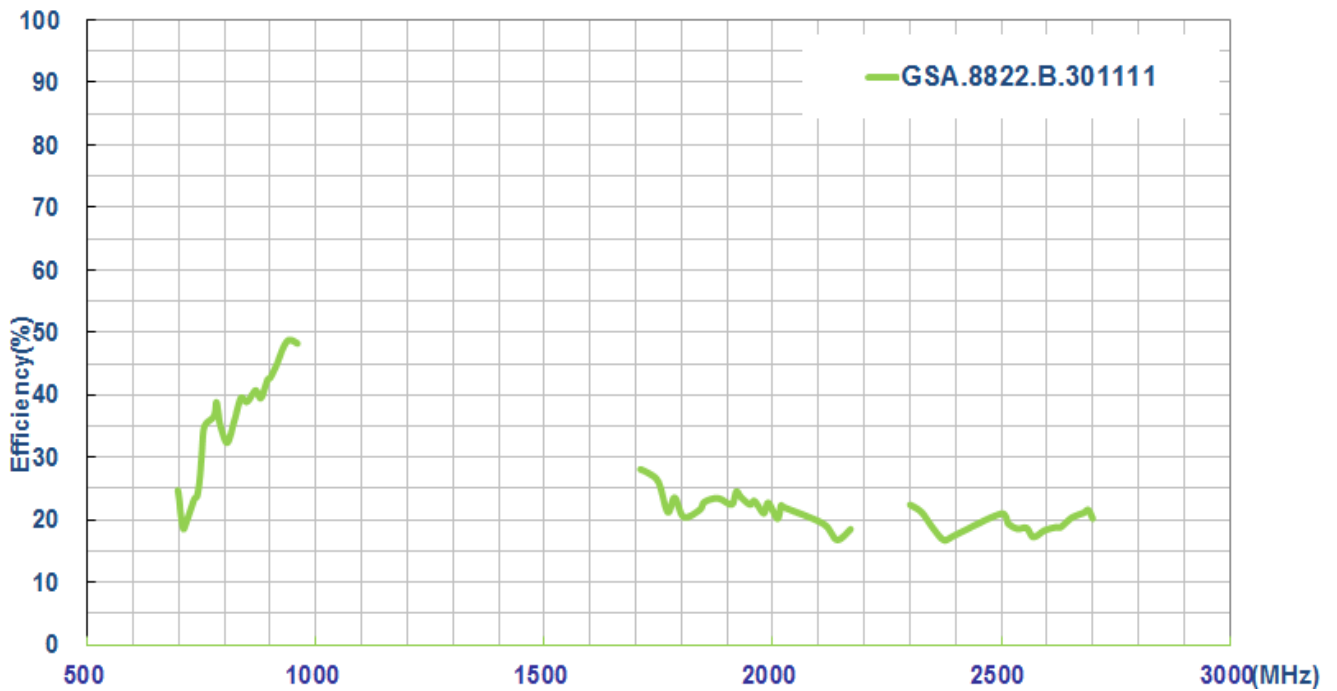
3.2. Peak Gain



3.3. Average Gain

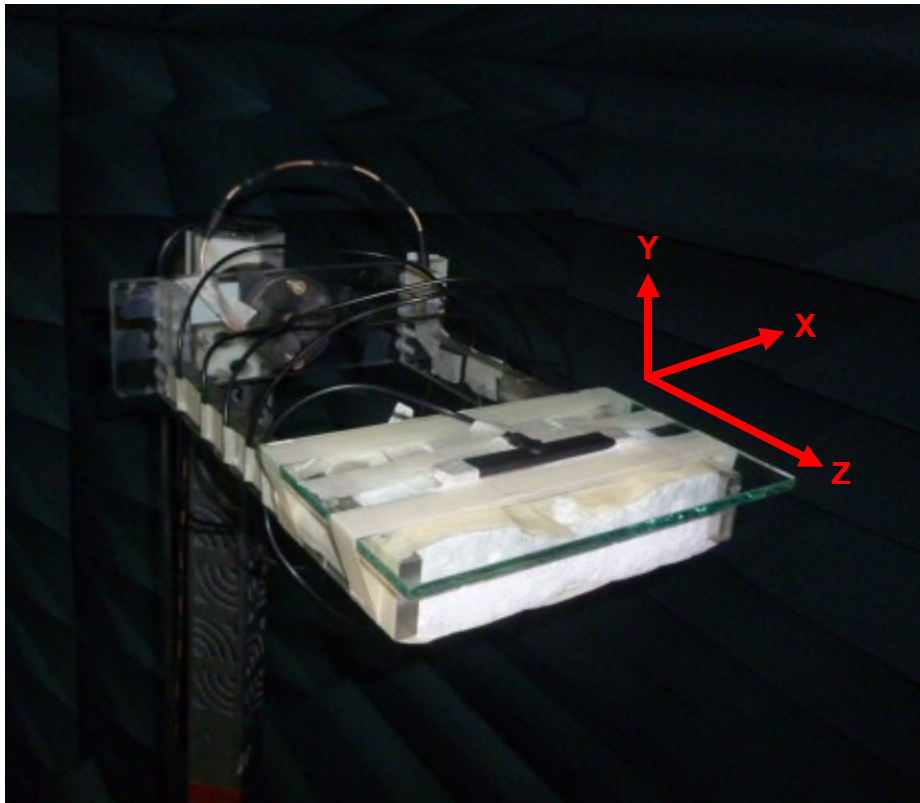


3.4. Efficiency



4. Radiation Properties

The antenna radiation pattern was measured in an ETS Anechoic Chamber. The test setup is shown below.

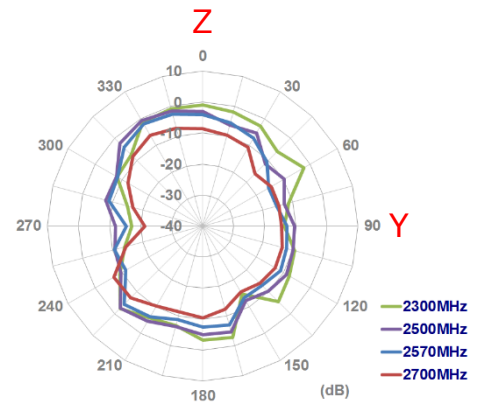
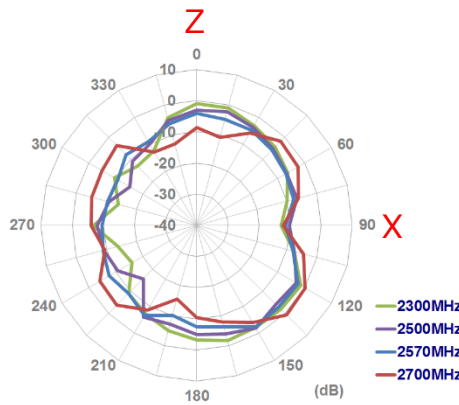
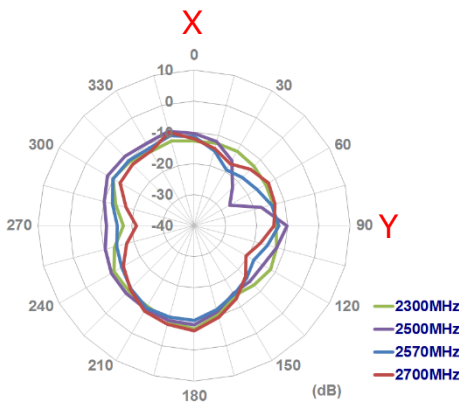
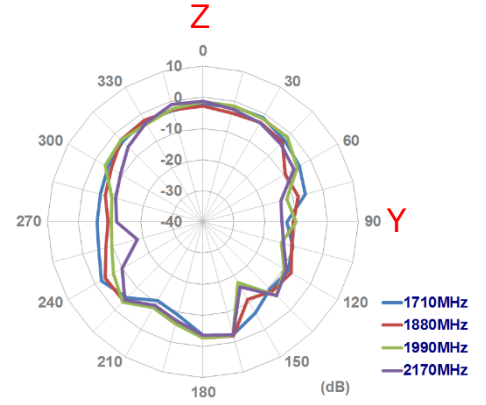
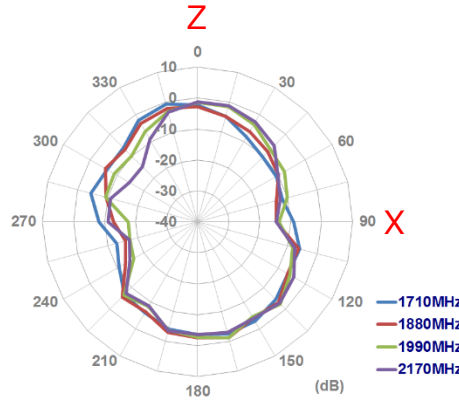
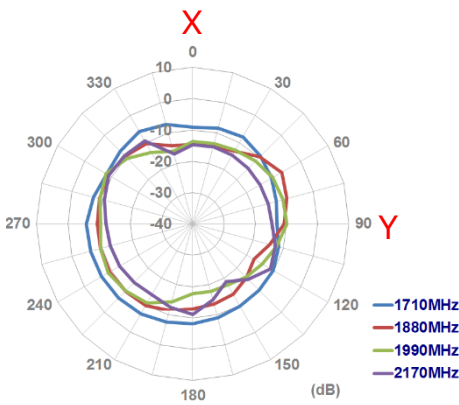
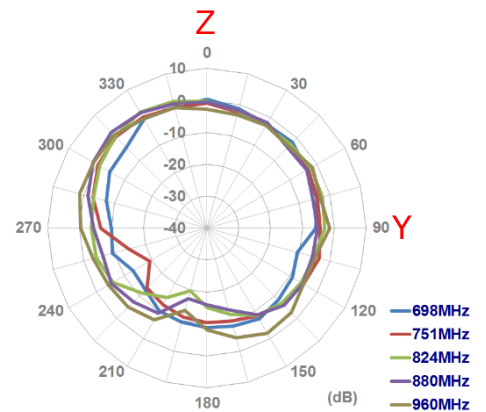
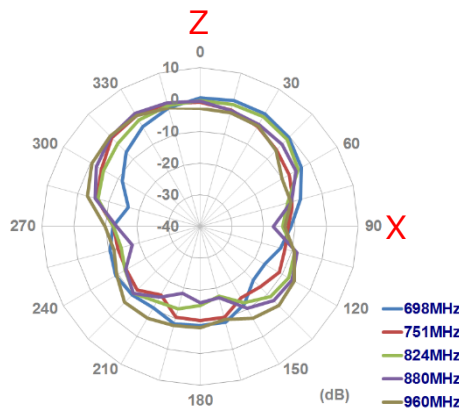
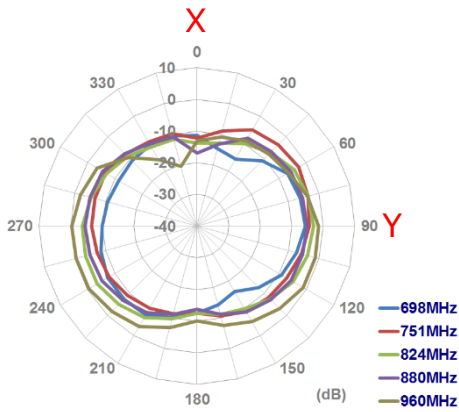


4.1. Antenna Radiation Patterns

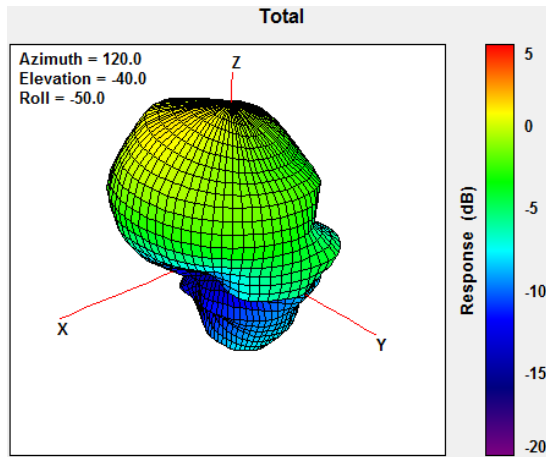
XY Plane

XZ Plane

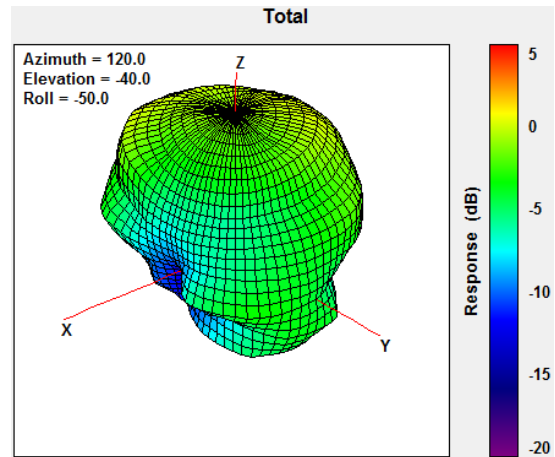
YZ Plane



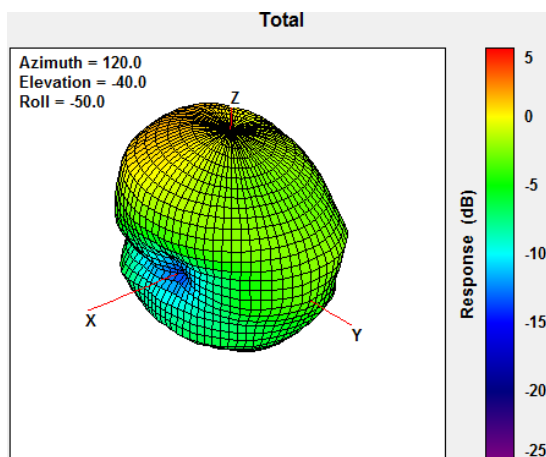
5. 3D Radiation Patterns



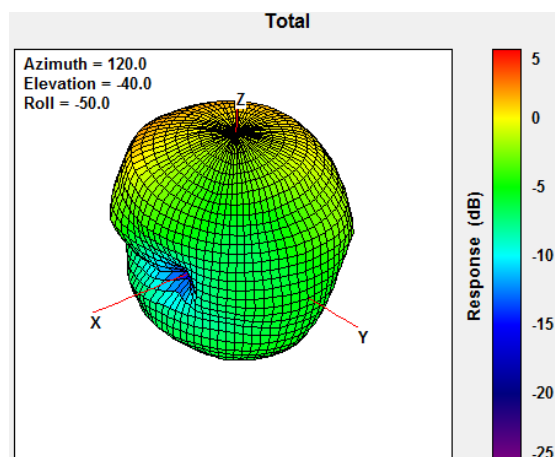
@698 MHz



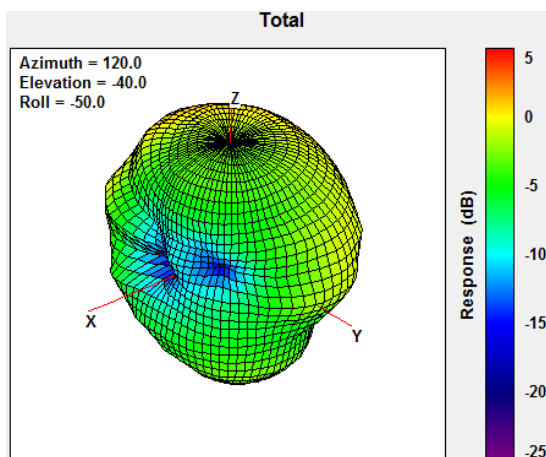
@751 MHz



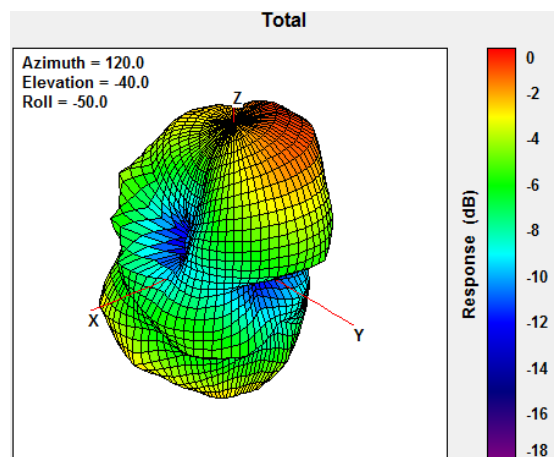
@824 MHz



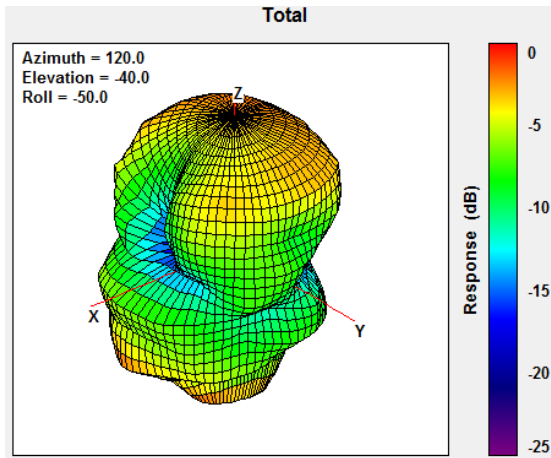
@880 MHz



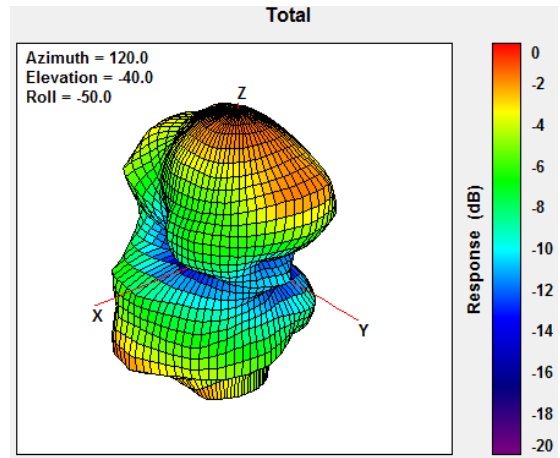
@960 MHz



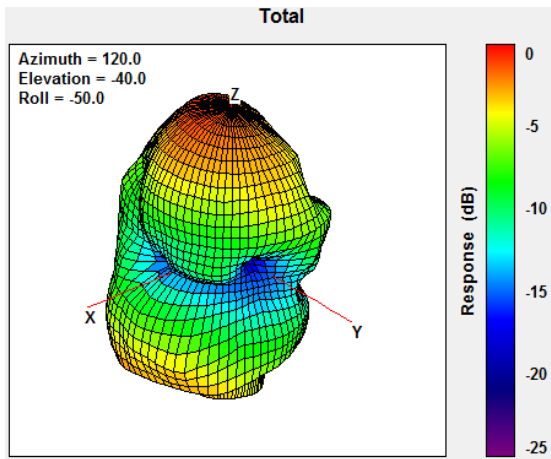
@1710 MHz



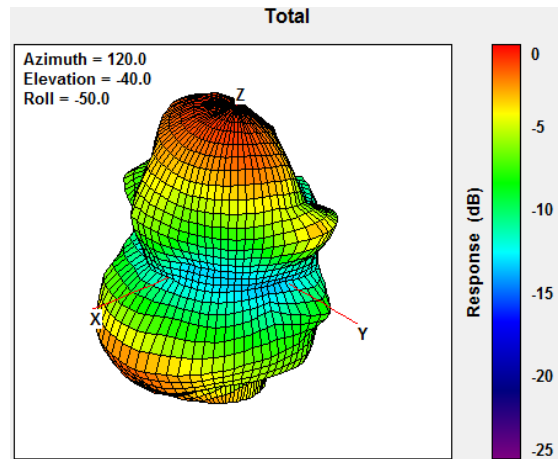
@1880 MHz



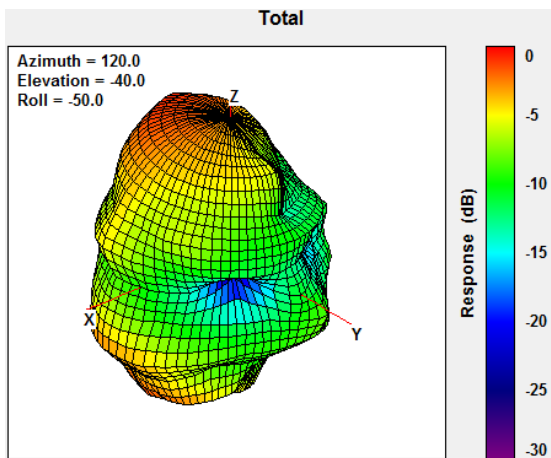
@1990 MHz



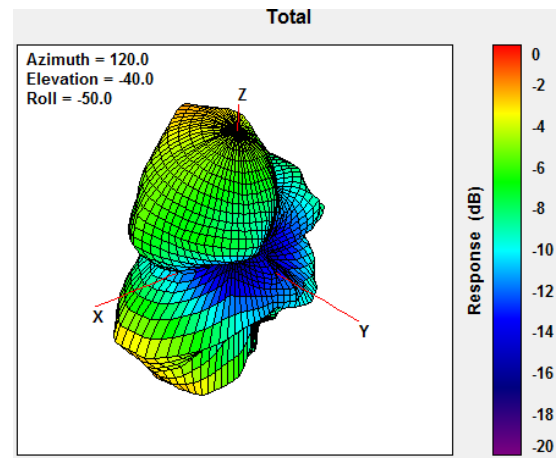
@2170MHz



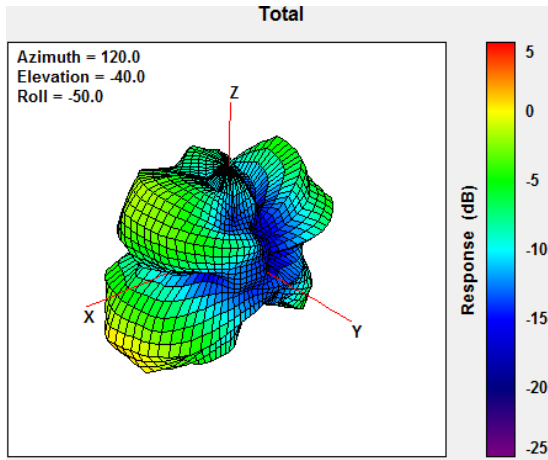
@2300MHz



@2500MHz



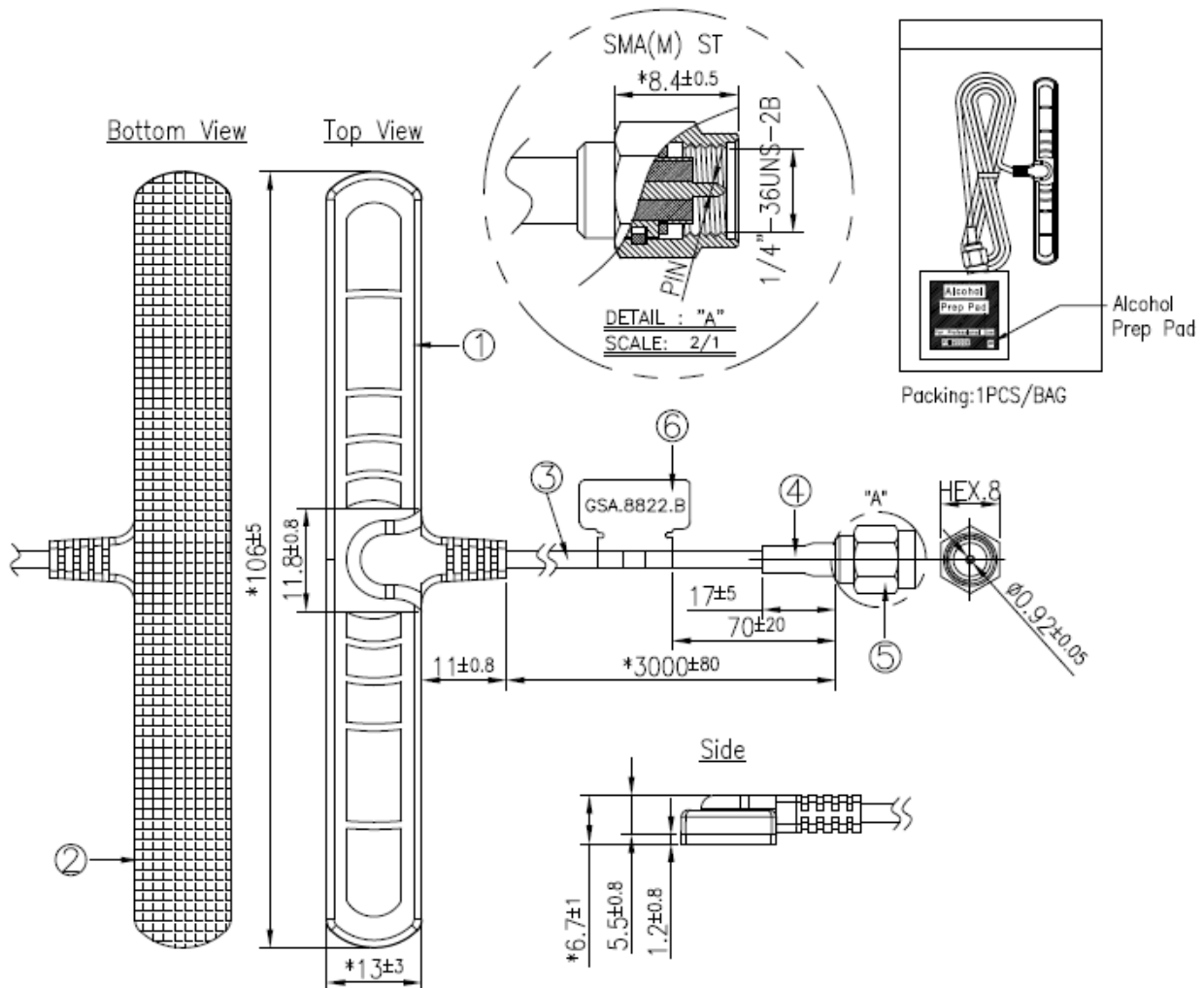
@2570MHz



@2700MHz



6. Mechanical Drawing (Unit: mm)



Note
1. Adhesive Area
2. "*"Critical Dimensions.

	Name	P/N	Material	Finish	QTY
1	Housing	000111K000070A	PVC	Black	1
2	Double Sided Adhesive	001011K020070A	3M 5666	Red Liner	1
3	RG174	303013A000070A	PVC	Black	1
4	Heat Shrink Tube	301313F000070A	PE	Black	1
5	SMA(M) ST	200213F000070A	Brass	Ni Plated	1
6	Label GSA.8822.B	001013G000069A	Coated Paper	White	1

7. Packaging

GSA.8822.B.101111

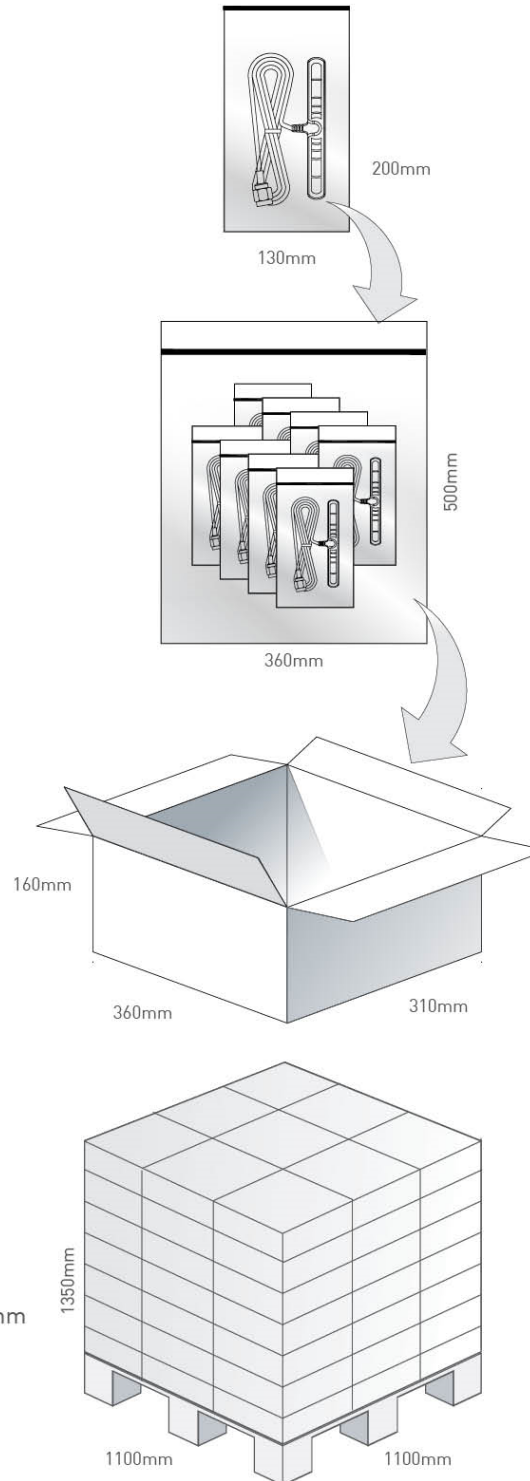
Packaging Specifications

1pc GSA.8822.B.301111 per small PE bag
 Bag Dimensions - 130*200 mm
 Weight - 26.5g

50pcs GSA.8822.B.301111 per large PE bag
 Bag Dimensions - 360*500 mm
 Weight - 2.3Kg

100pcs GSA.8822.B.301111 per carton
 Carton Dimensions - 360*310*160mm
 Weight - 3.2Kg

Pallet Dimensions 1200mm*1000mm*1430mm
 63 Cartons per Pallet
 9 Cartons per layer
 7 Layers

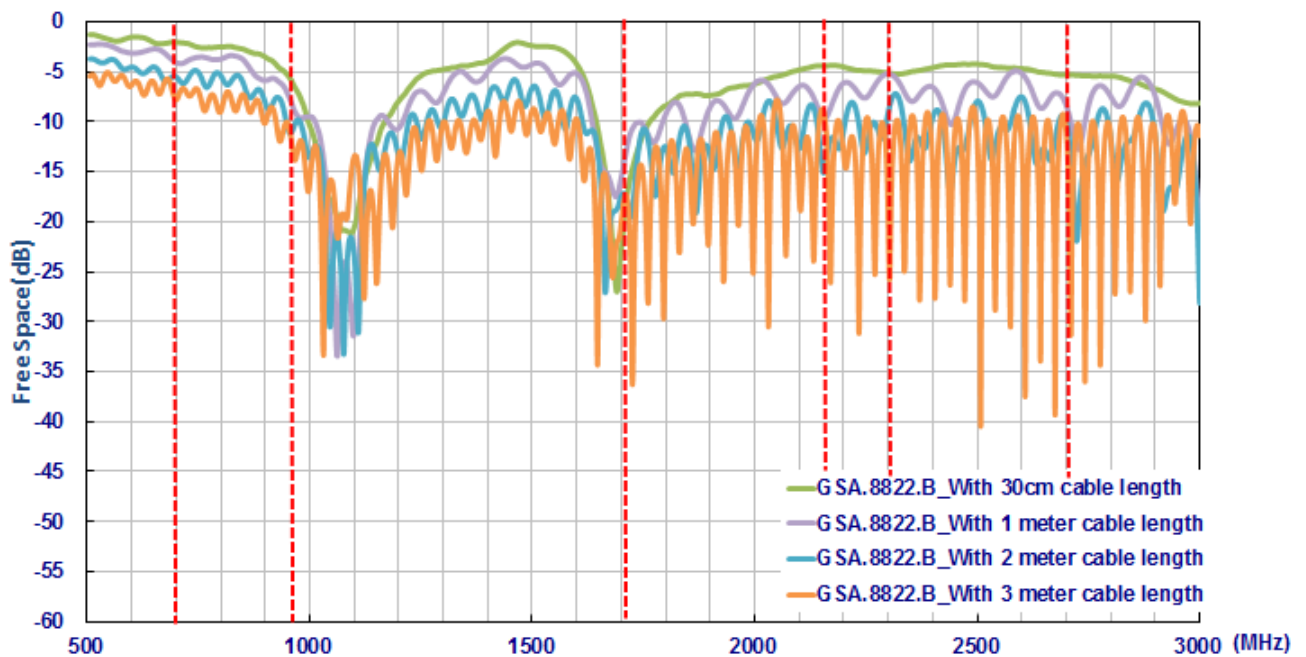


8. Application Note

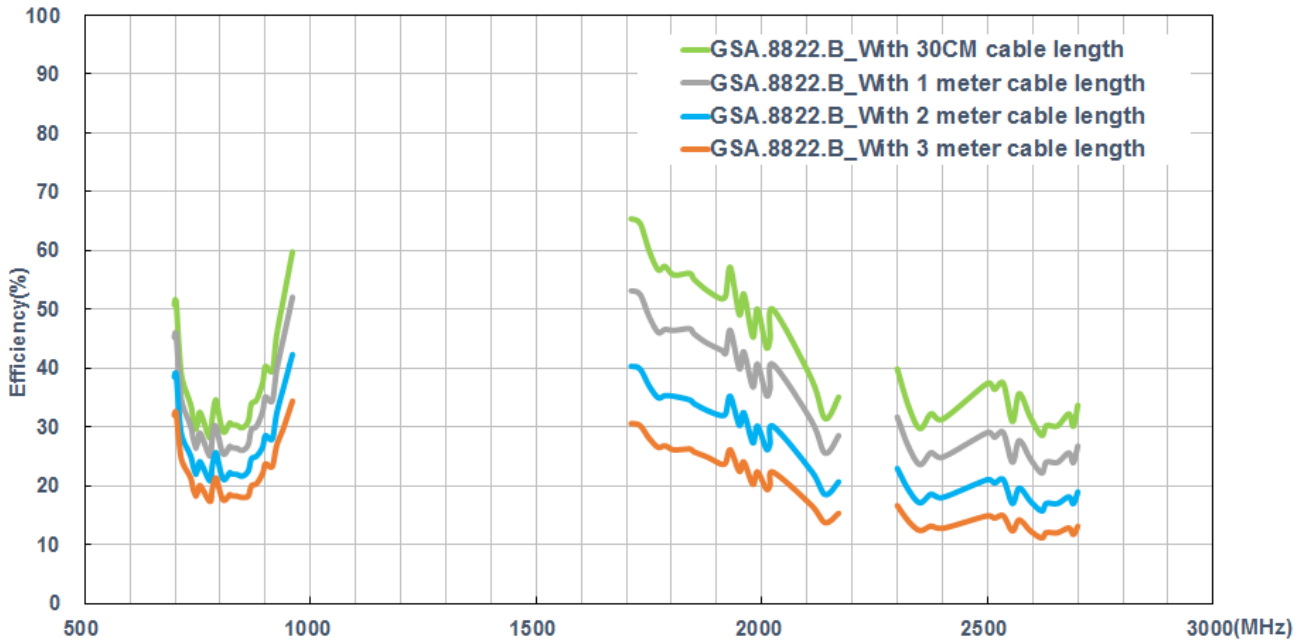
The GSA.8822.B antenna performance with different cable lengths and mounting environments is shown below.

8.1. In Free Space

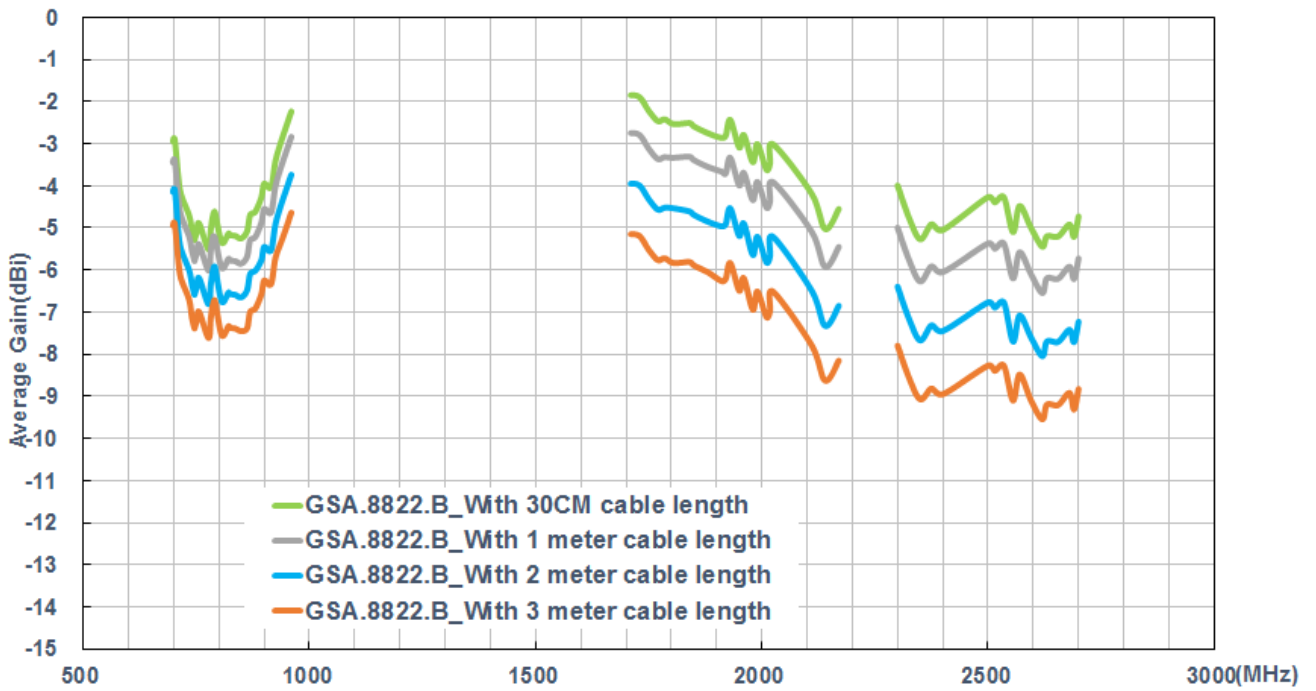
8.1.1. Return loss



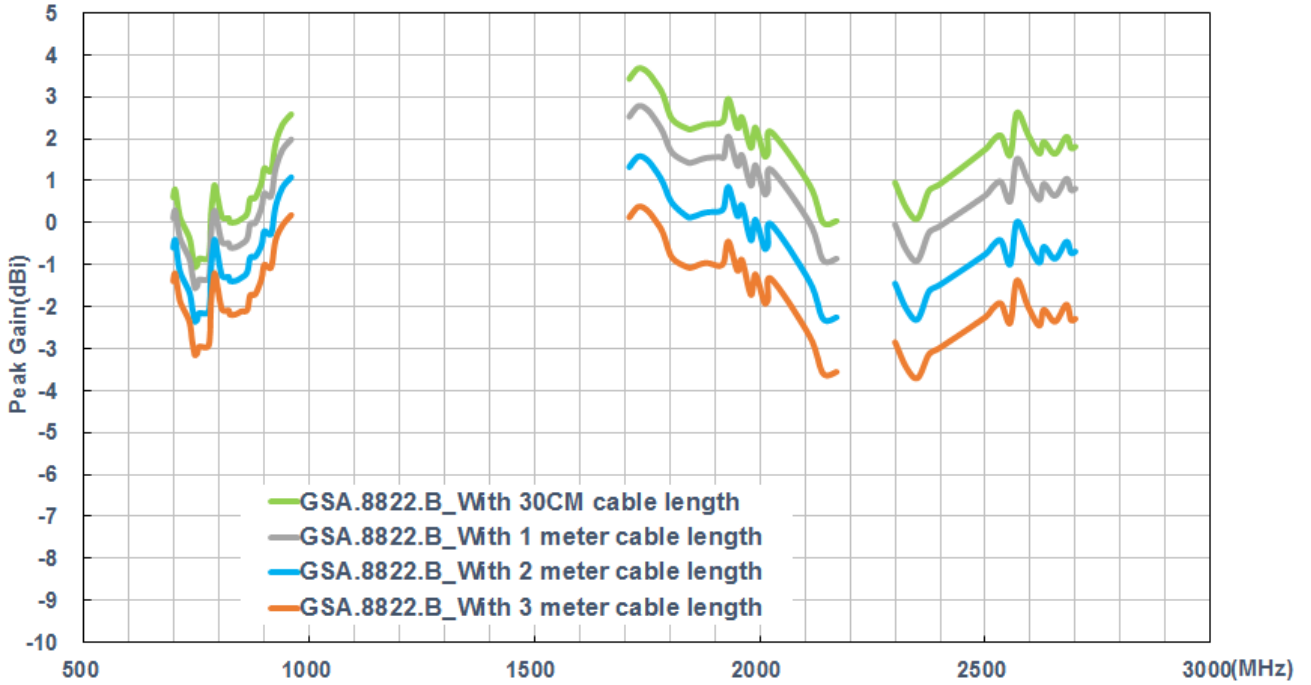
8.1.2. Efficiency



8.1.3. Average Gain

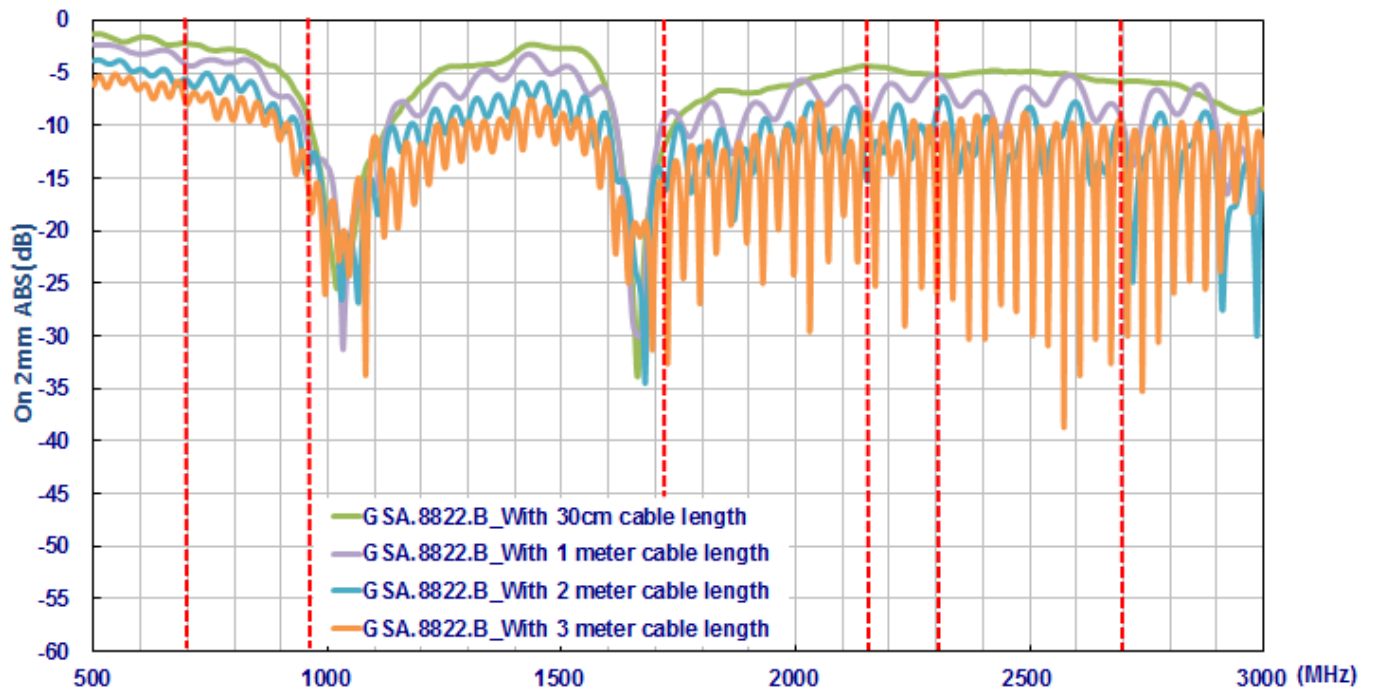


8.1.4. Peak Gain

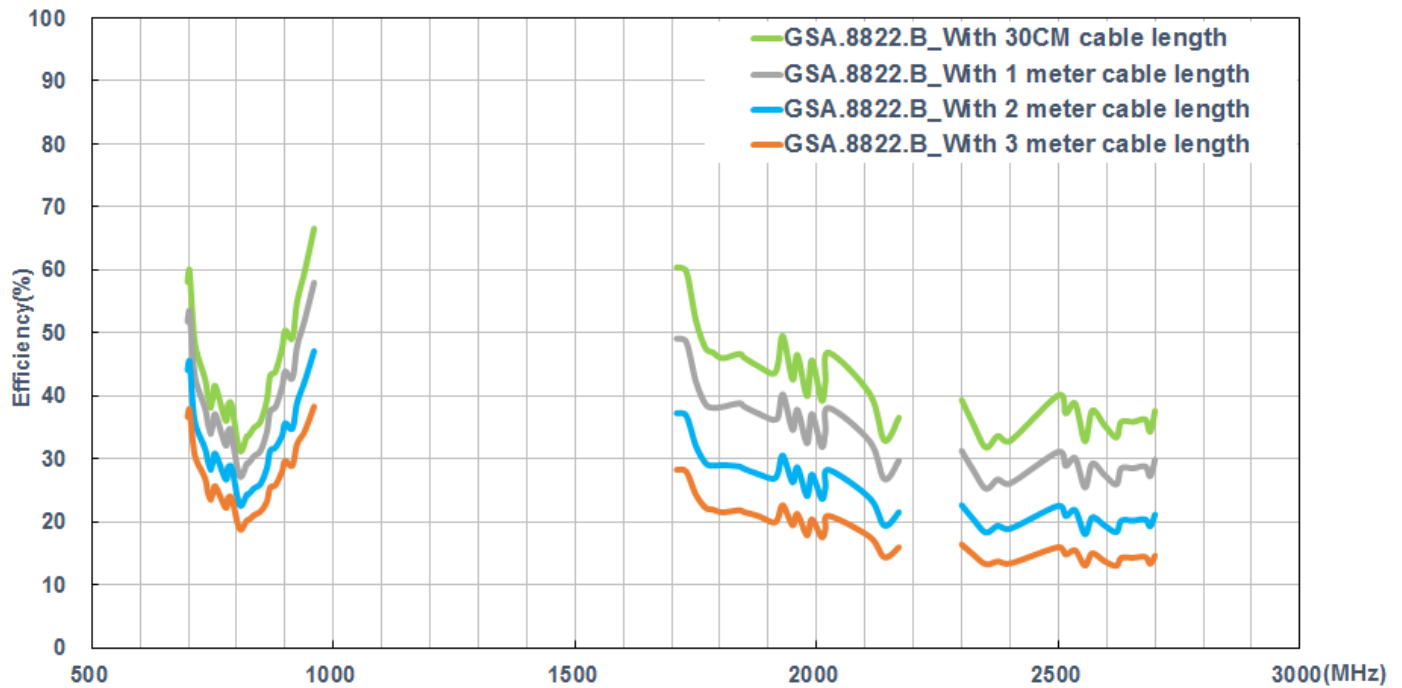


8.2. On the 2mm ABS Base

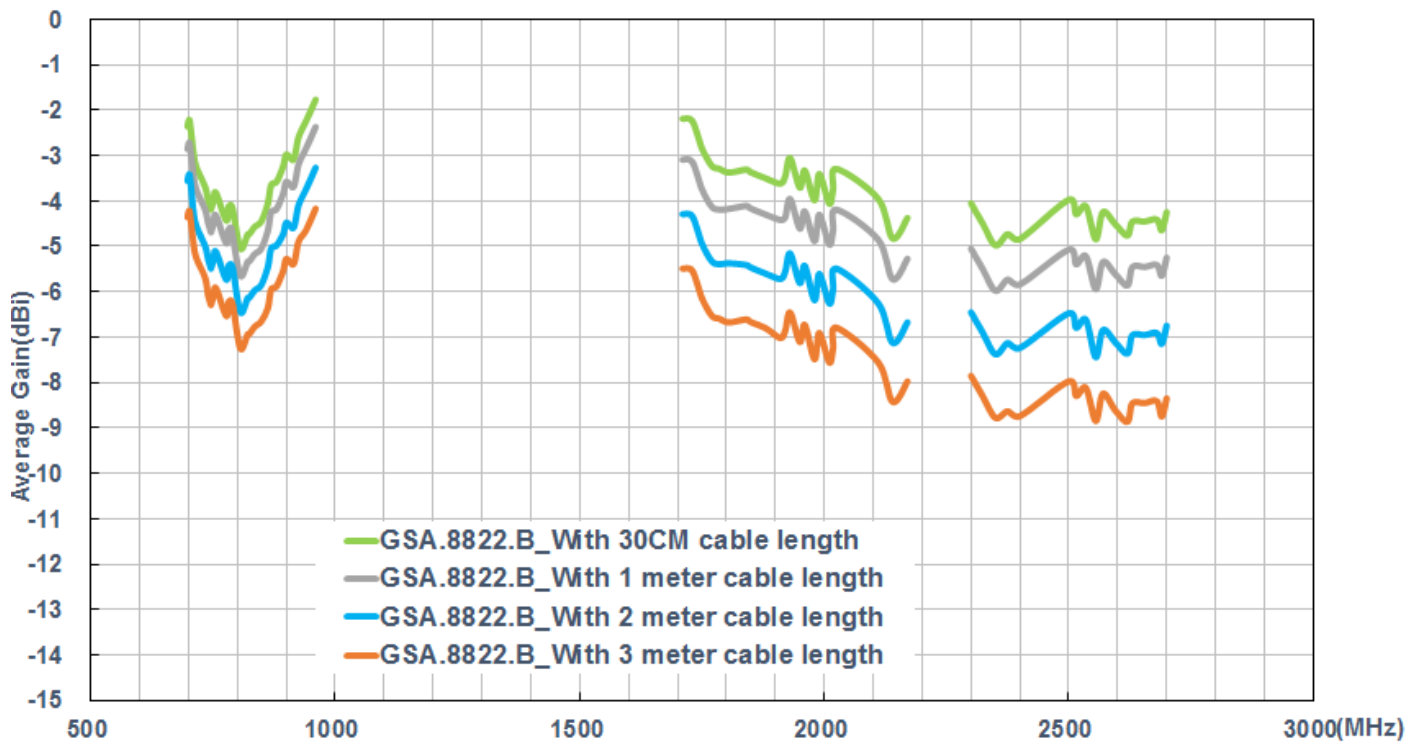
8.2.1. Return loss



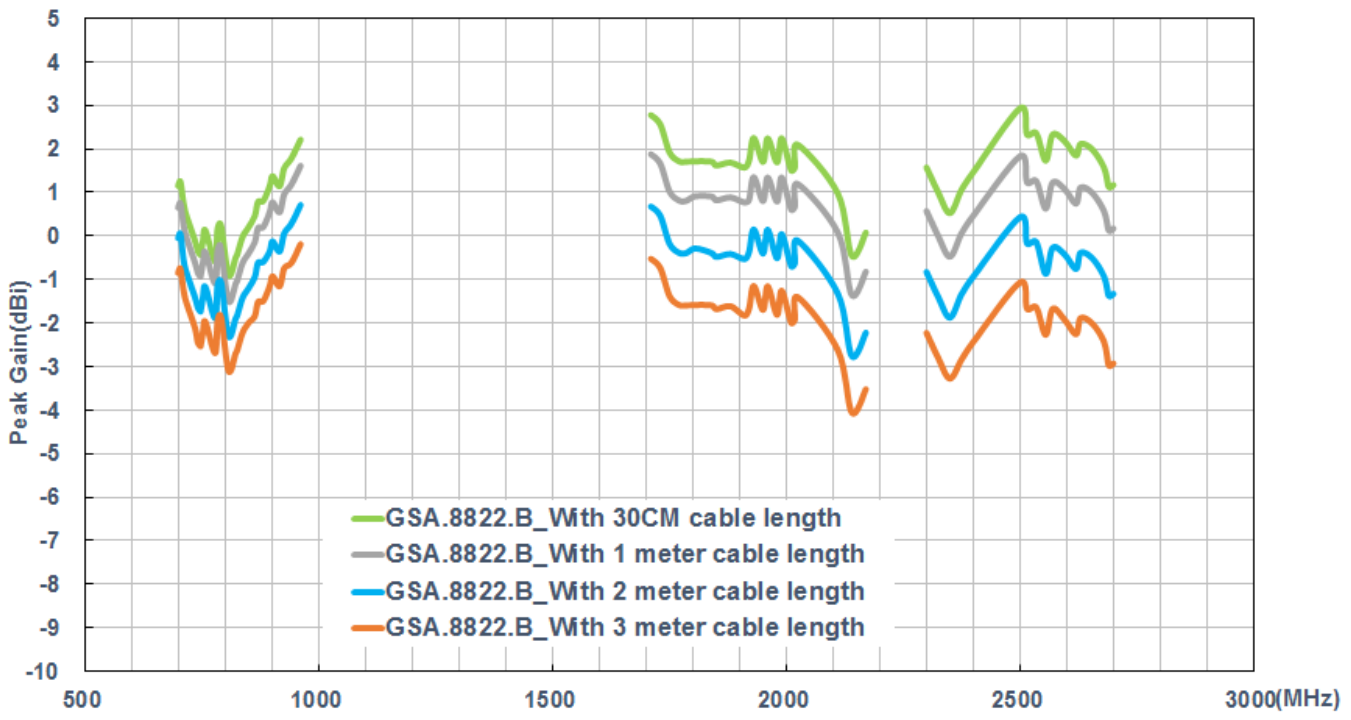
8.2.2. Efficiency



8.2.3. Average Gain

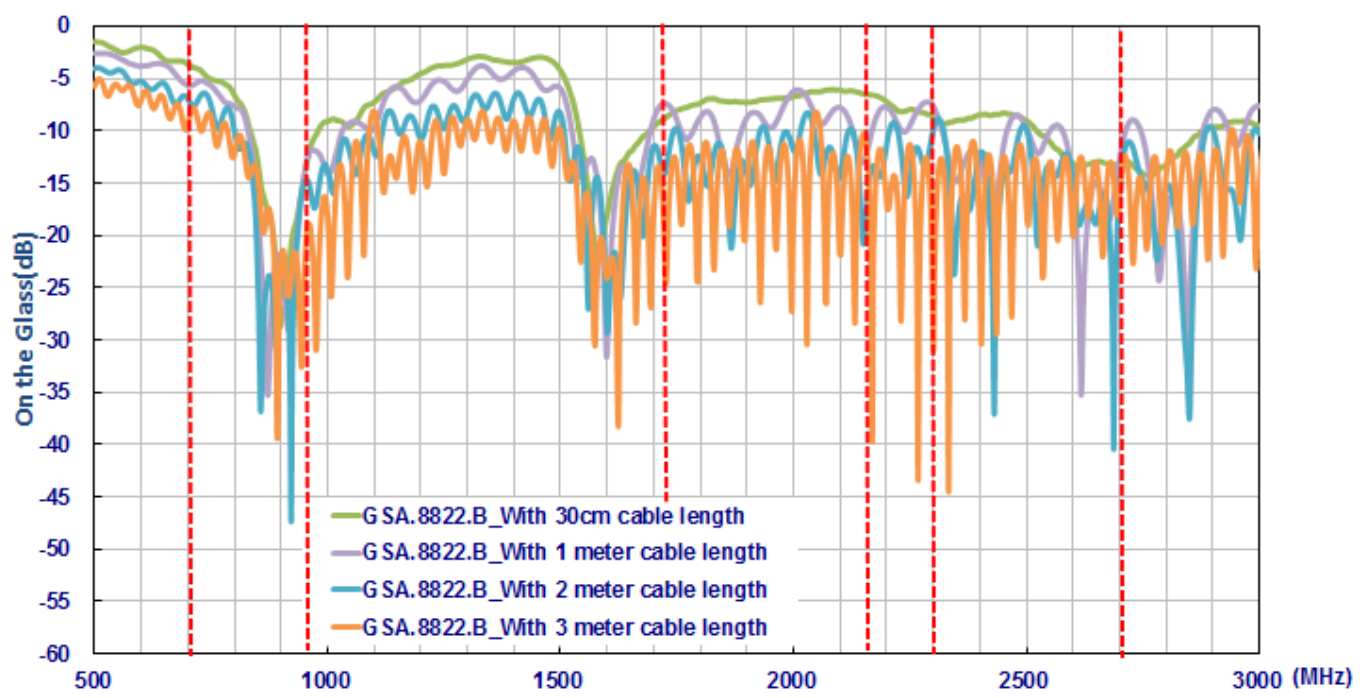


8.2.4. Peak Gain

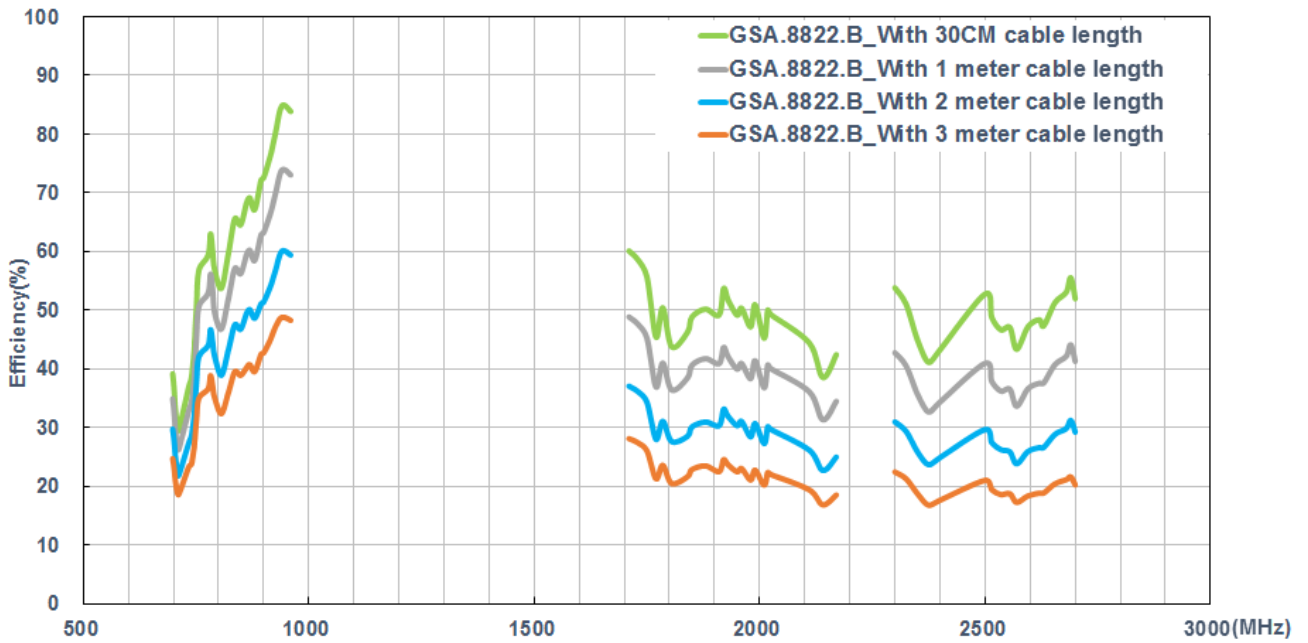


8.3. On the Glass Base

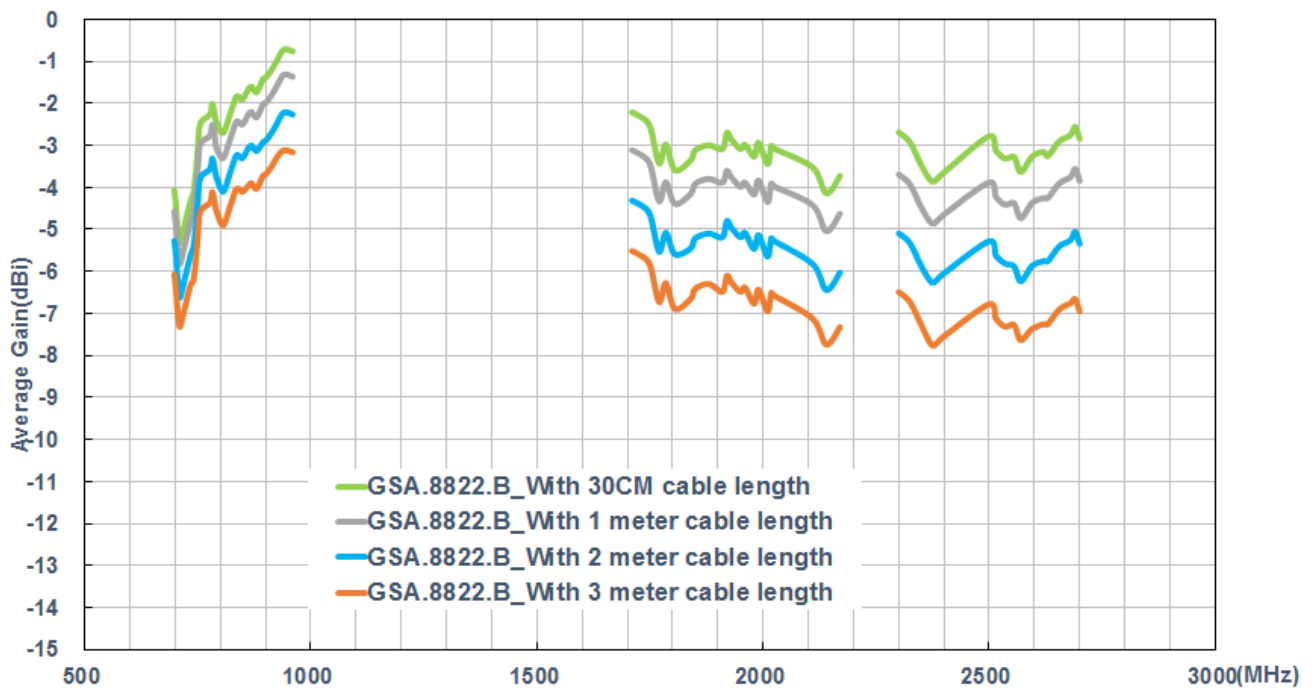
8.3.1. Return loss



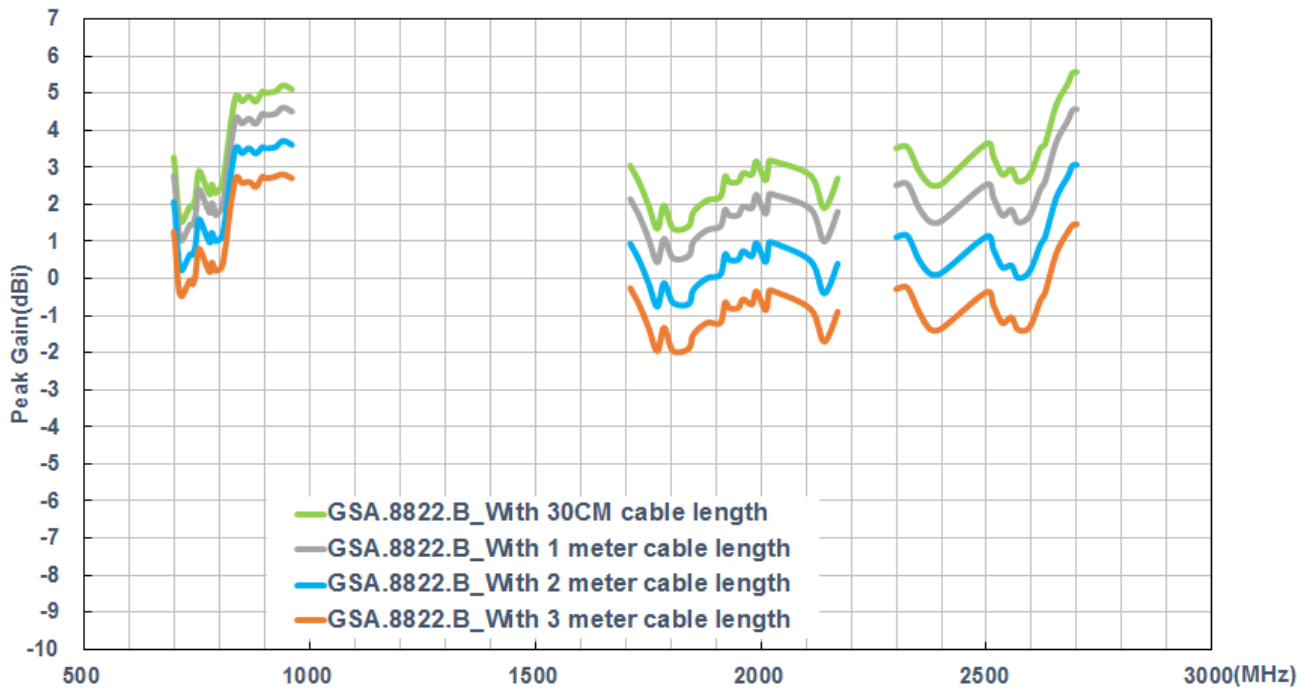
8.3.2. Efficiency



8.3.3. Average Gain



8.3.4. Peak Gain



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