

SPECIFICATION

Part No.	:	GSA.8859.A.105111
Product Name	:	4dBi Adhesive Mini DSRC 5.9GHz Antenna 1M CFD200 with SMA(M) Connector
Feature	:	Omnidirectional For V2V and V2X Applications High Efficiency and High Peak Gain IP67 Rating Adhesive Mount on Plastic or Glass Low Loss 1M CFD200 Cable SMA(M) ST Connector Customizable Cable Type, Length, Connector Dims: 36*30*10mm RoHS compliant



1. Introduction

The GSA.8859 Mini DSRC antenna is an external adhesive mount antenna that operates from 5850-5925MHz for DSRC systems.

DSRC (Dedicated Short Range Communications) is the communications medium of choice for active safety V2V (Vehicle-to-Vehicle) and V2X (Vehicle-to-Other) systems, primarily allocated for vehicle safety applications. DSRC supports high speed, low latency, short-range V2V/V2X wireless communications. The GSA.8859 at only 10mm comes in a very compact size enabling flexibility of integration. It can be mounted on glass or plastic surfaces easily with the double-sided adhesive. The antenna features high peak gain at 4.14 dBi on glass and 3.24 dBi on 2mm thick plastic.

Contact your regional Taoglas office for support to integrate and test this antenna's performance in your device.

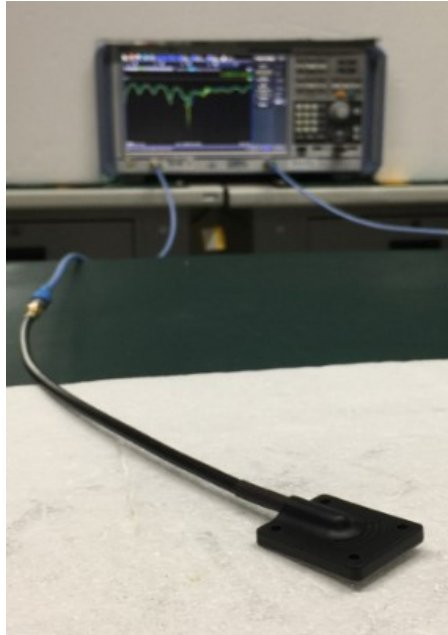
2. Specification

Wi-Fi		
Frequency		5850~5925MHz
Efficiency (%)		
In free space	0.3m	80.23
	1m	68.30
	2m	54.24
	3m	44.09
	5m	28.26
On glass	0.3m	72.05
	1m	61.33
	2m	48.71
	3m	39.59
	5m	25.38
On the 2mm ABS	0.3m	78.34
	1m	66.67
	2m	52.96
	3m	43.05
	5m	27.60
Average Gain (dBi)		
In free space	0.3m	-0.96
	1m	-1.66
	2m	-2.66
	3m	-3.56
	5m	-5.49
On glass	0.3m	-1.42
	1m	-2.12
	2m	-3.12
	3m	-4.02
	5m	-5.96
On the 2mm ABS	0.3m	-1.06
	1m	-1.76
	2m	-2.76
	3m	-3.66
	5m	-5.59

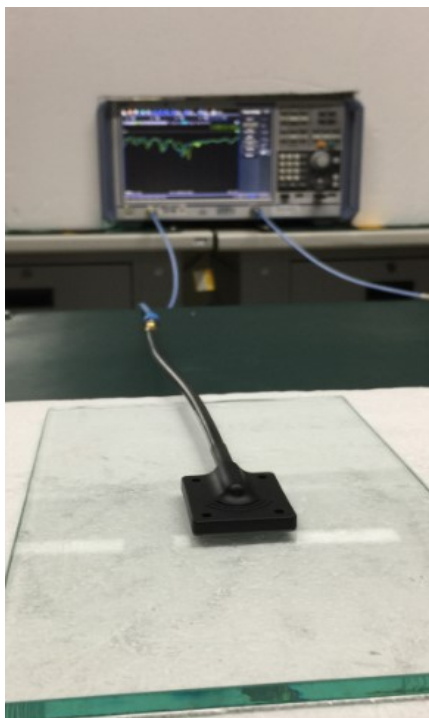
Peak Gain (dBi)		
In free space	0.3m	3.27
	1m	2.57
	2m	1.57
	3m	0.67
	5m	-1.30
On glass	0.3m	4.84
	1m	4.14
	2m	3.14
	3m	2.24
	5m	0.34
On the 2mm ABS	0.3m	3.94
	1m	3.24
	2m	2.24
	3m	1.34
	5m	-0.66
Return loss		<-10
VSWR		<2
Impedance		50
Polarization		Linear
Radiation Pattern		Omnidirectional
Input Power		5W
MECHANICAL		
Dimensions		36*30*10mm
Casing		PP
Connector		SMA(M) ST, fully customizable
Cable		1M CFD200, fully customizable
Waterproof		IP67
Weight		42g
ENVIRONMENTAL		
Temperature Range		-40°C to 85°C
Humidity		Non-condensino 65°C 95% RH

3. Antenna Characteristics

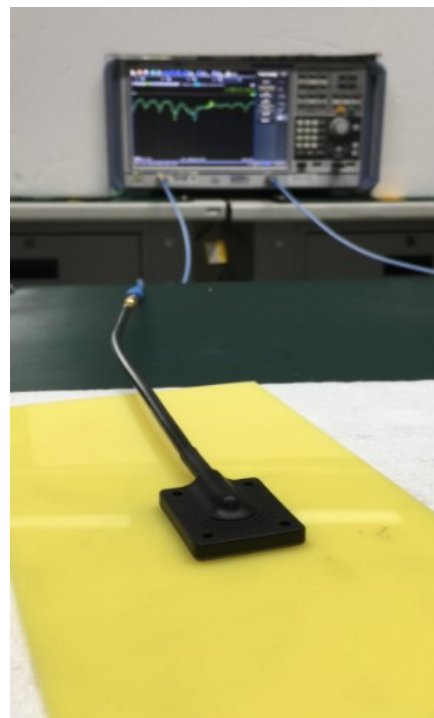
3.1 Antenna Test Setup



Free Space

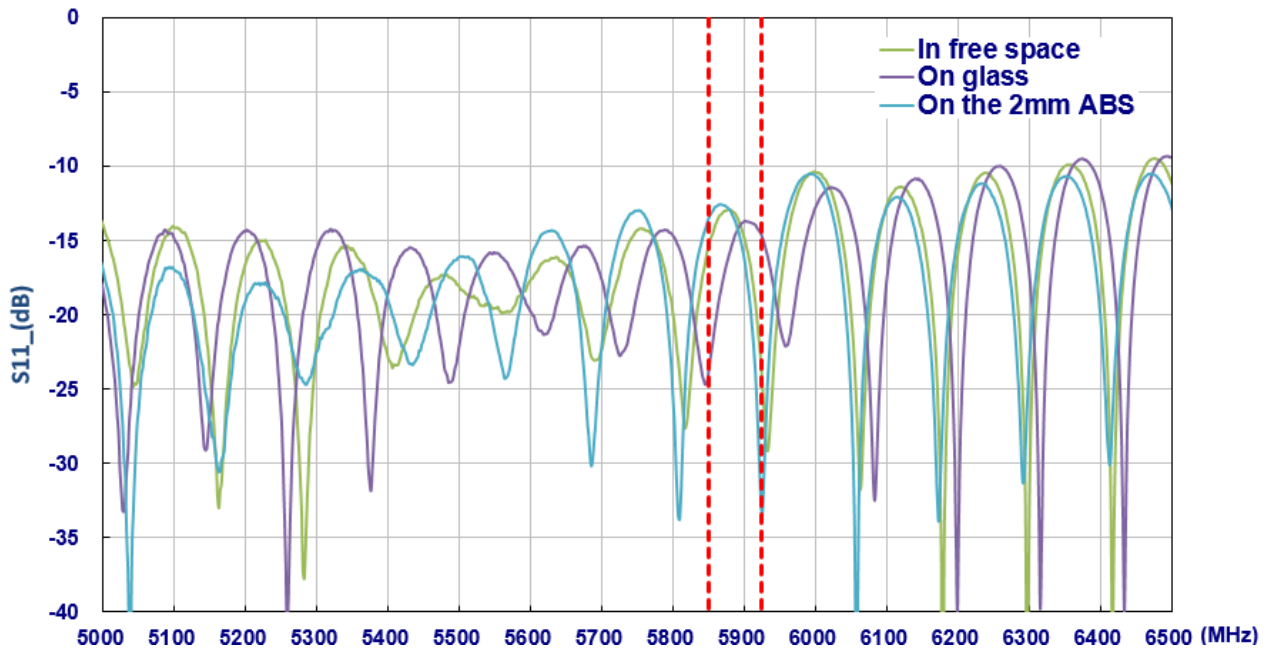


On Glass

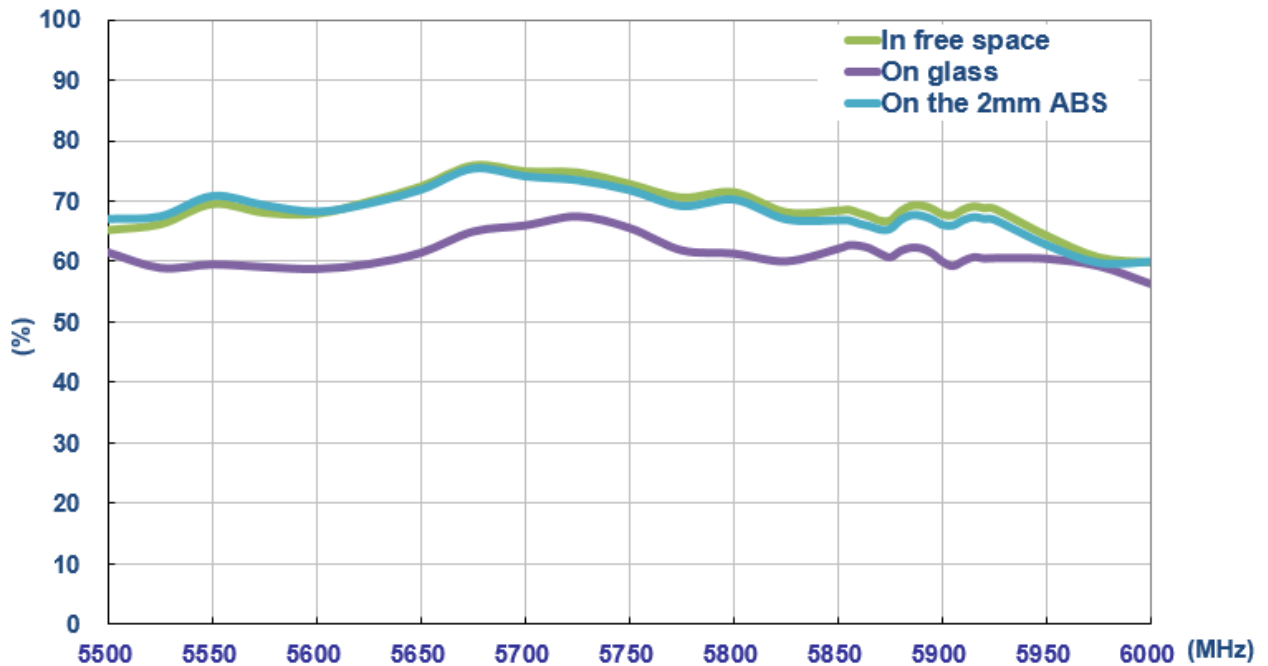


On 2mm ABS

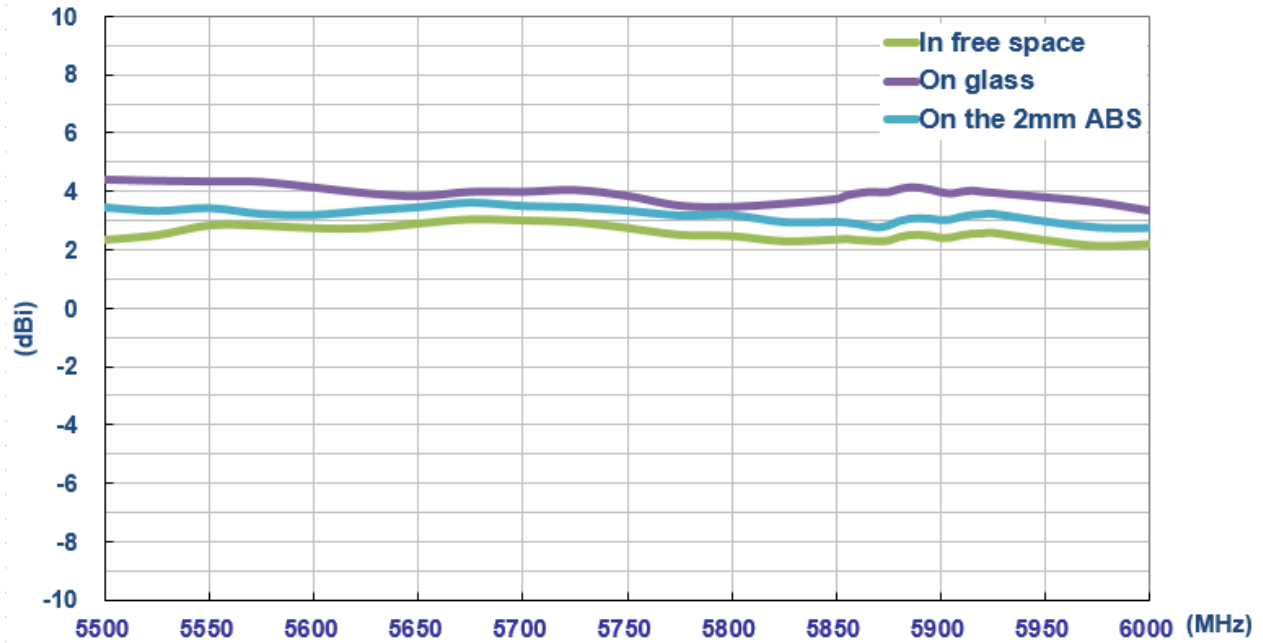
3.2 Return Loss



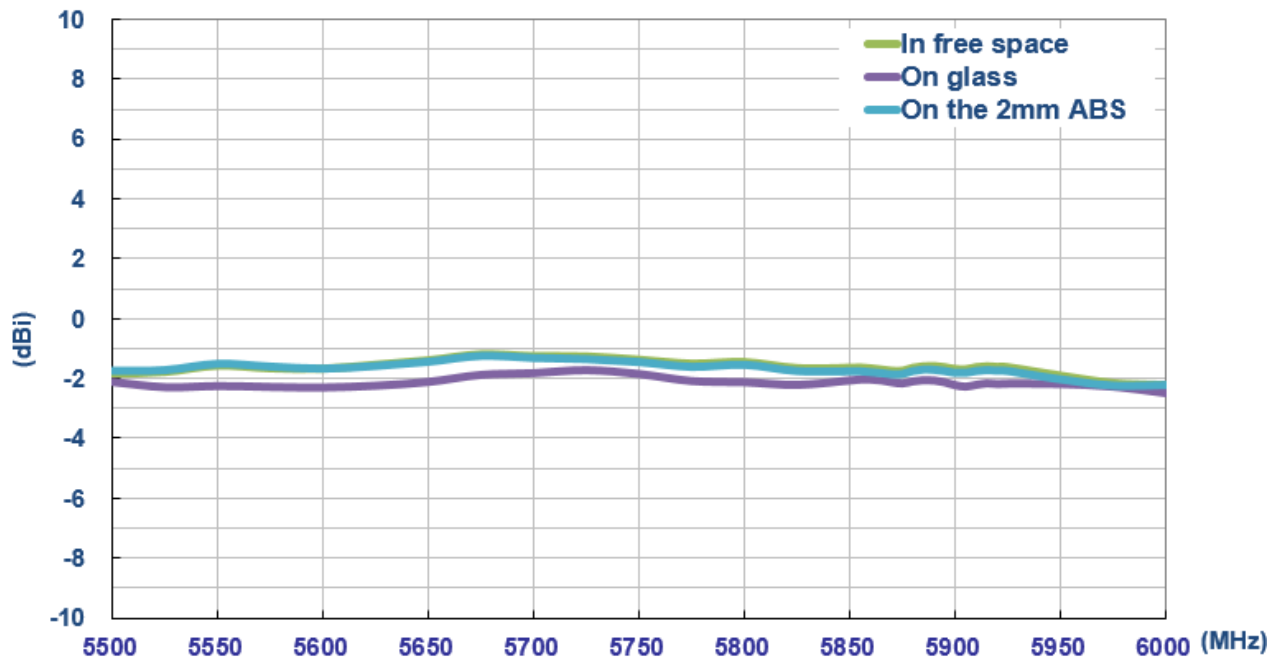
3.3 Efficiency



3.4 Peak Gain

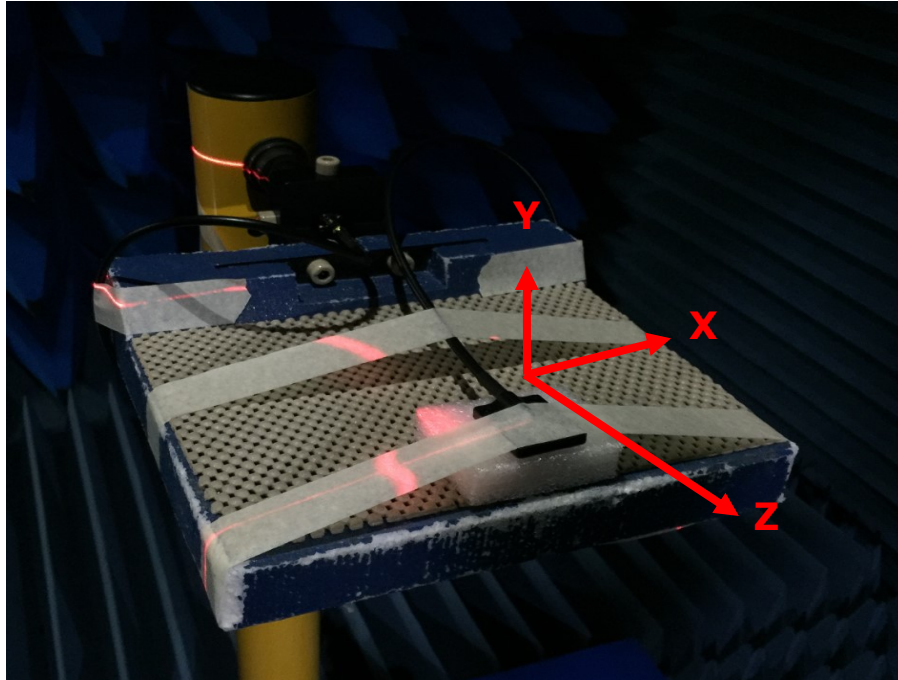


3.5 Average Gain

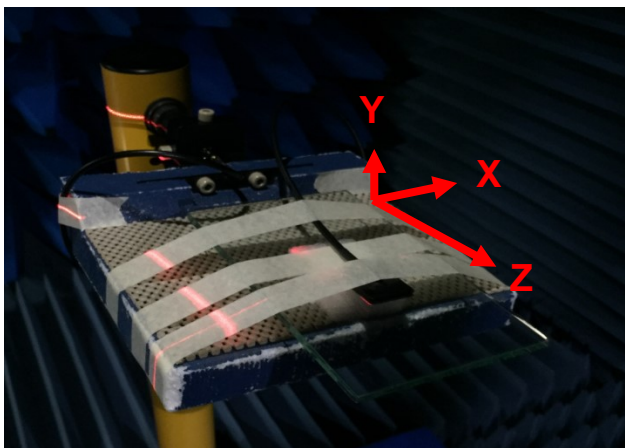


4. Antenna Radiation Patterns

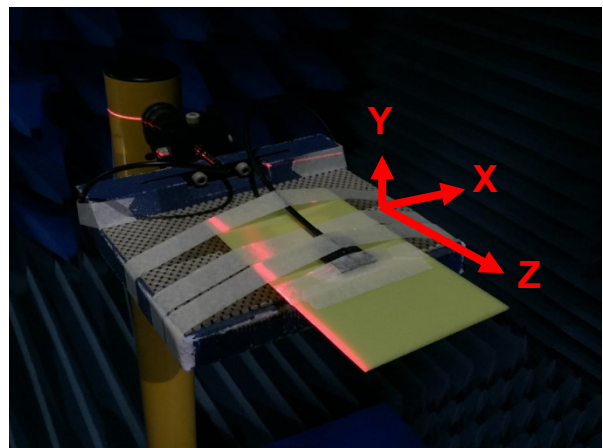
4.1 Antenna setup (Free space with 1m cable)



Free Space



On Glass



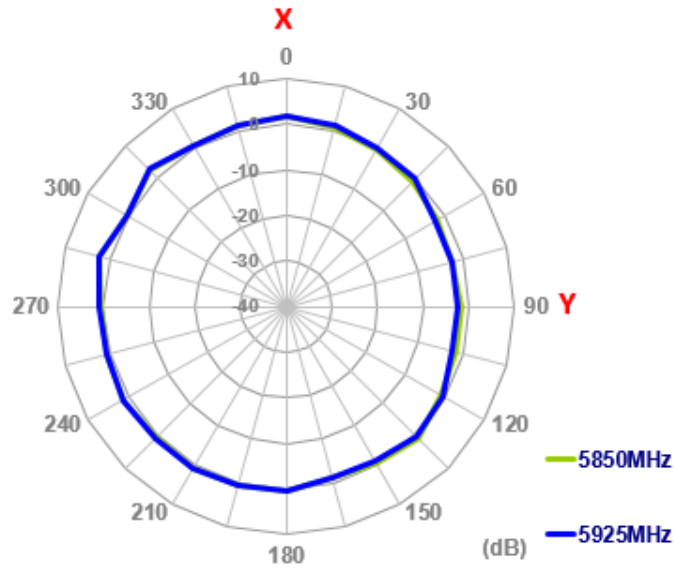
On 2mm ABS

Antenna testing Setup in ETS Anechoic Chamber

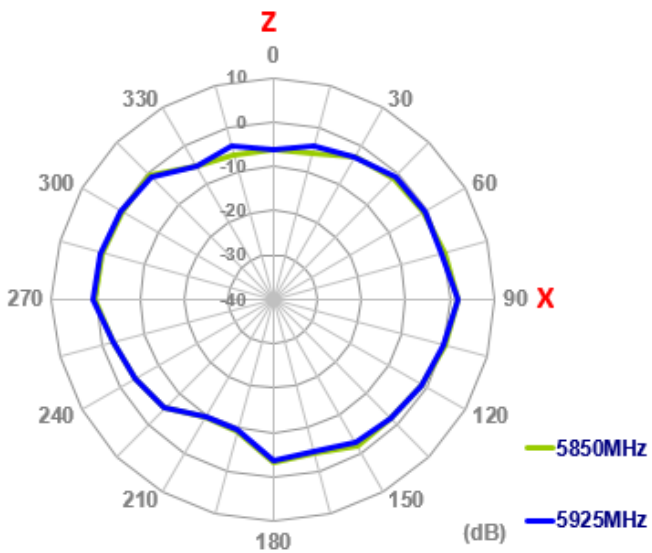
4.2 2D Radiation Patterns

4.2.1 In Free Space

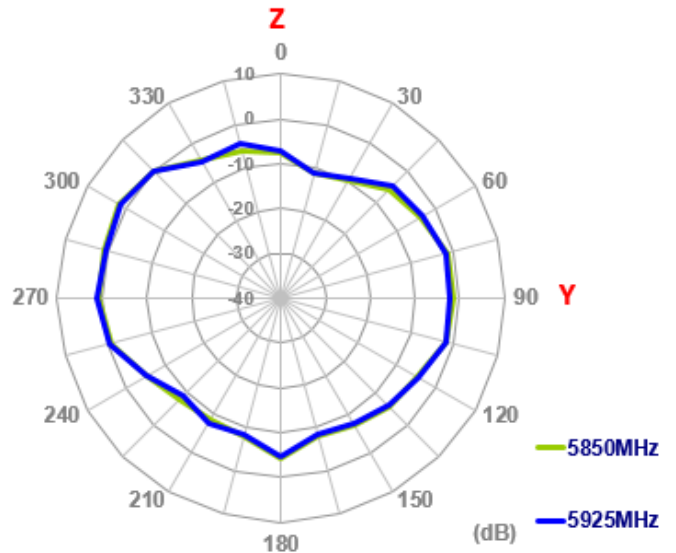
XY Plane



XZ Plane

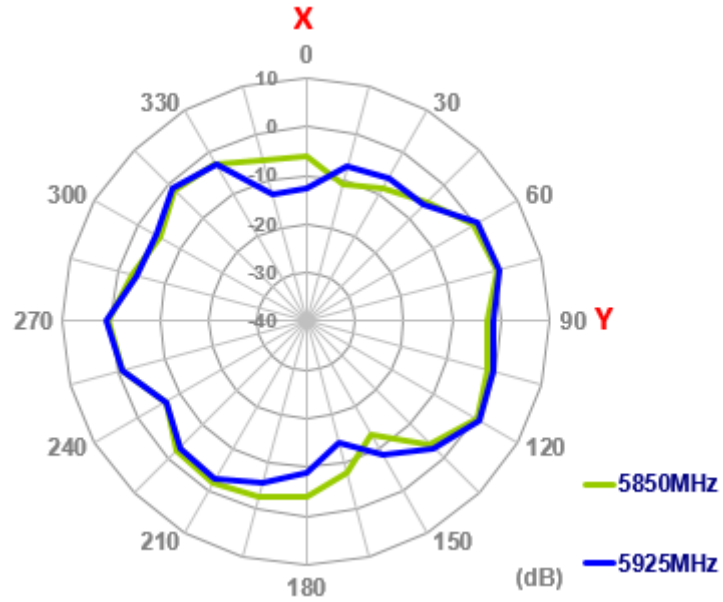


YZ Plane

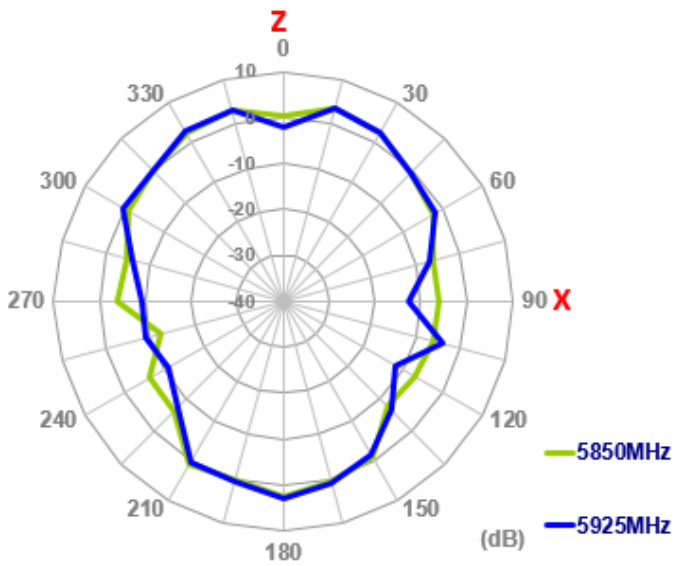


4.2.2 On Glass

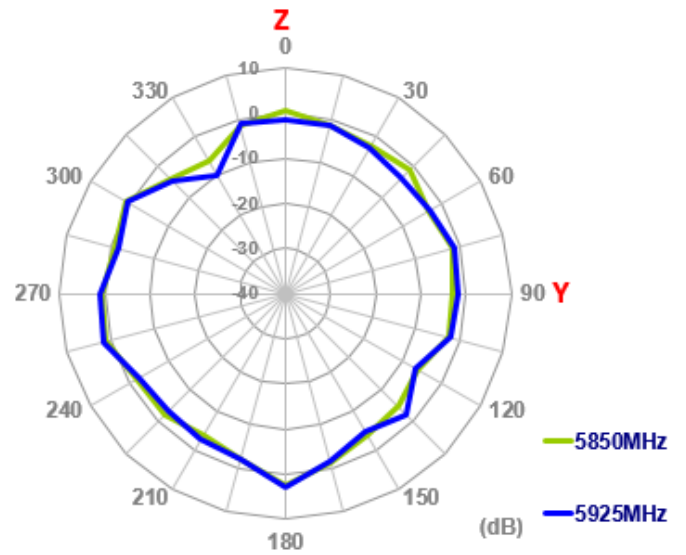
XY Plane



XZ Plane

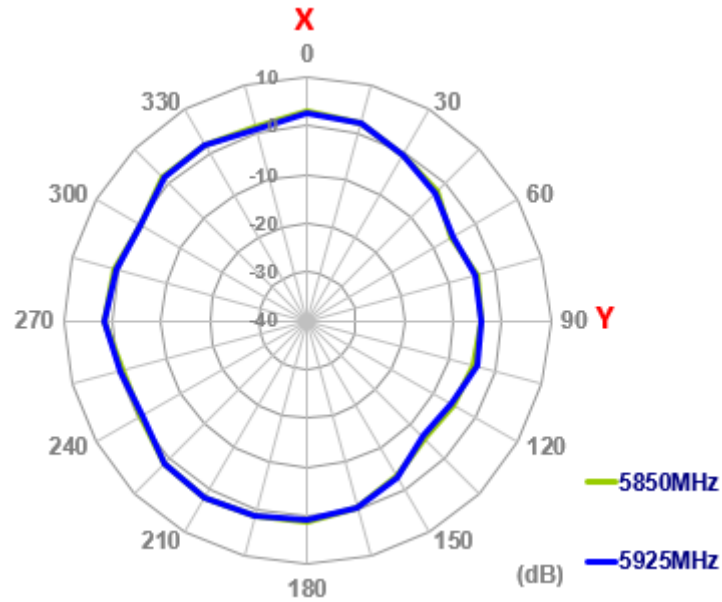


YZ Plane

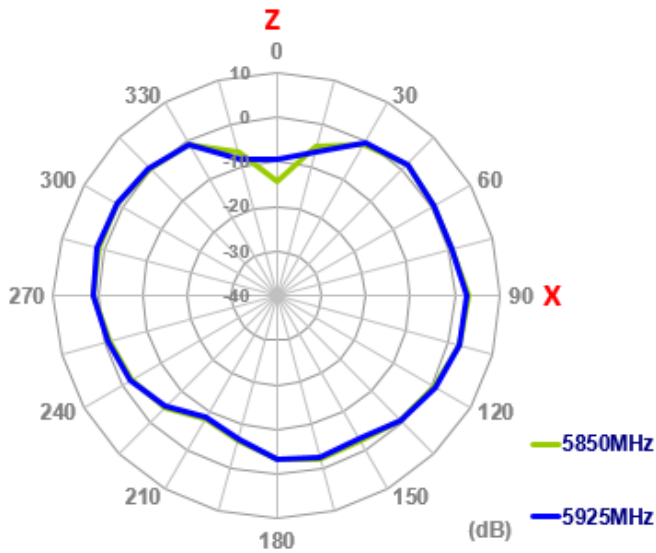


4.2.3 On 2mm ABS

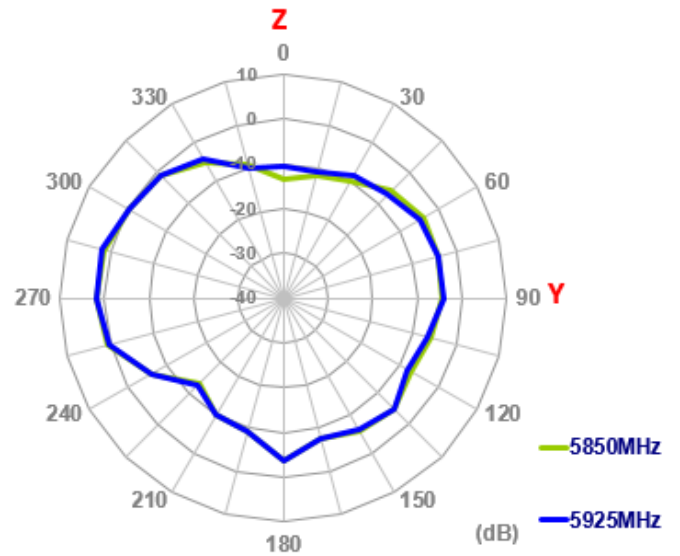
XY Plane



XZ Plane

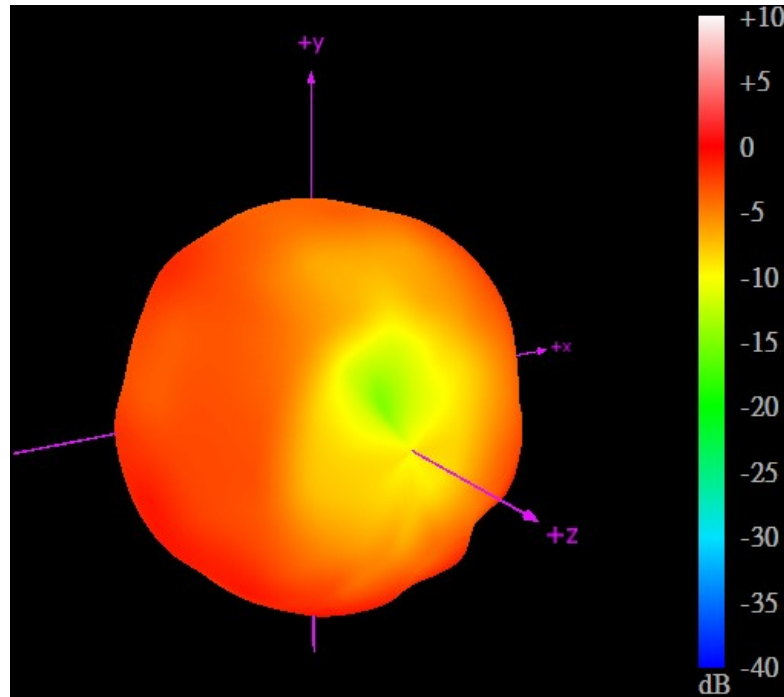


YZ Plane

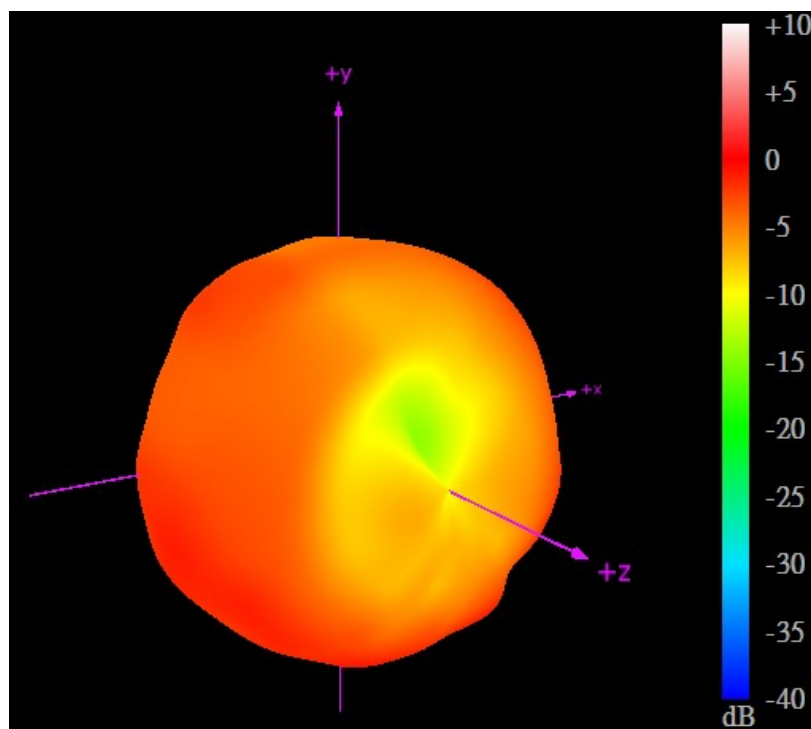


4.3 Antenna 3D Radiation Pattern

4.3.1 In Free Space

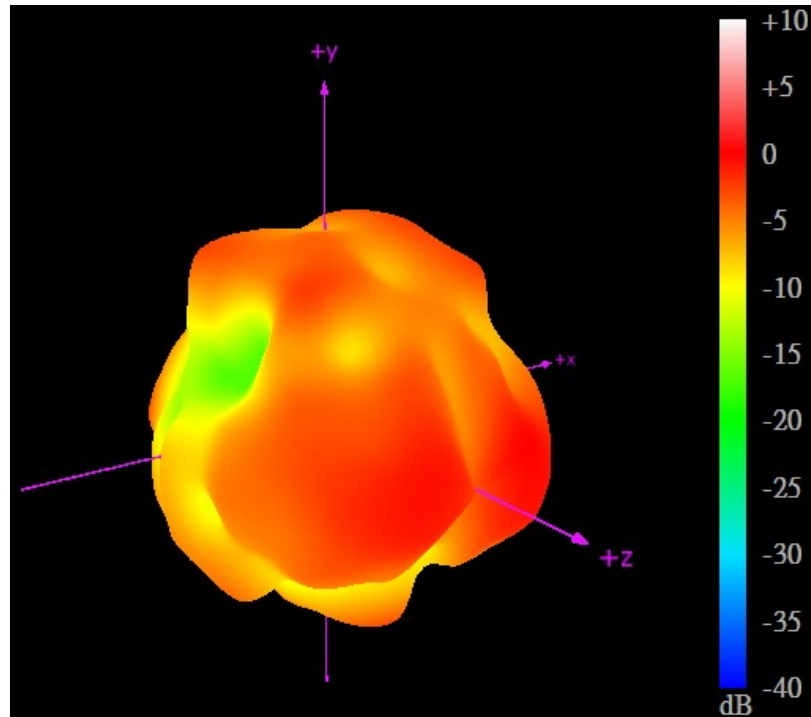


5850MHz

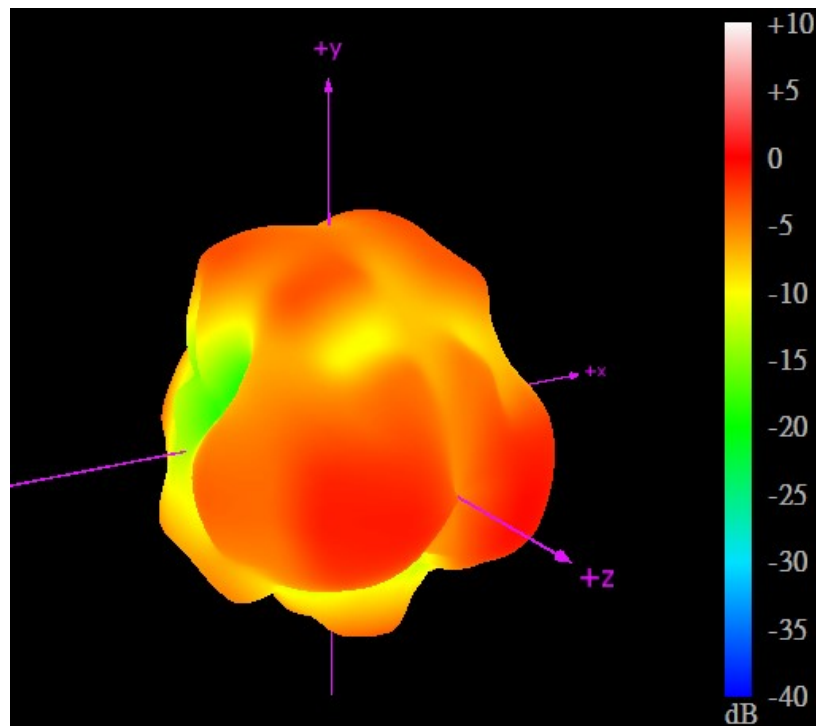


5925MHz

4.3.2 On Glass

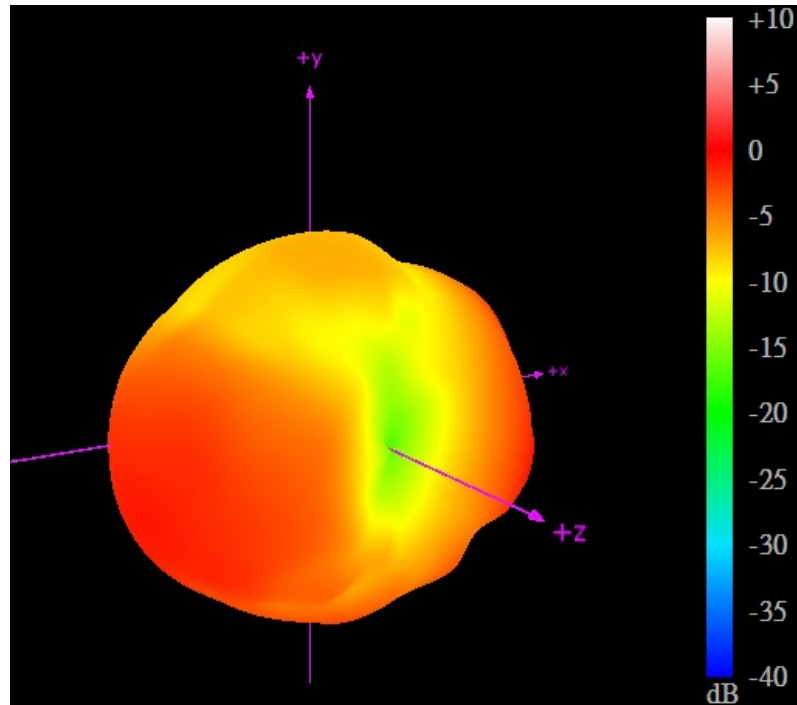


5850MHz

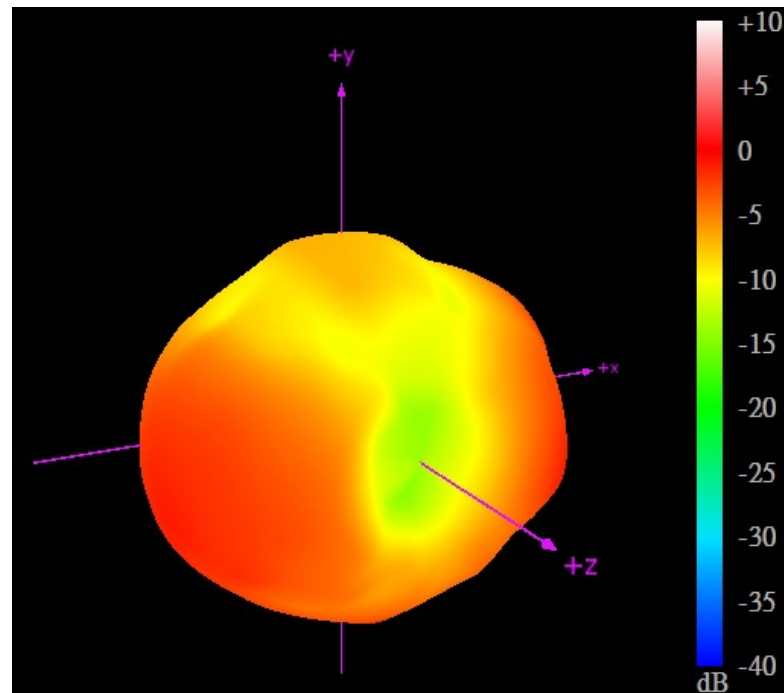


5925MHz

4.3.3 On 2mm ABS

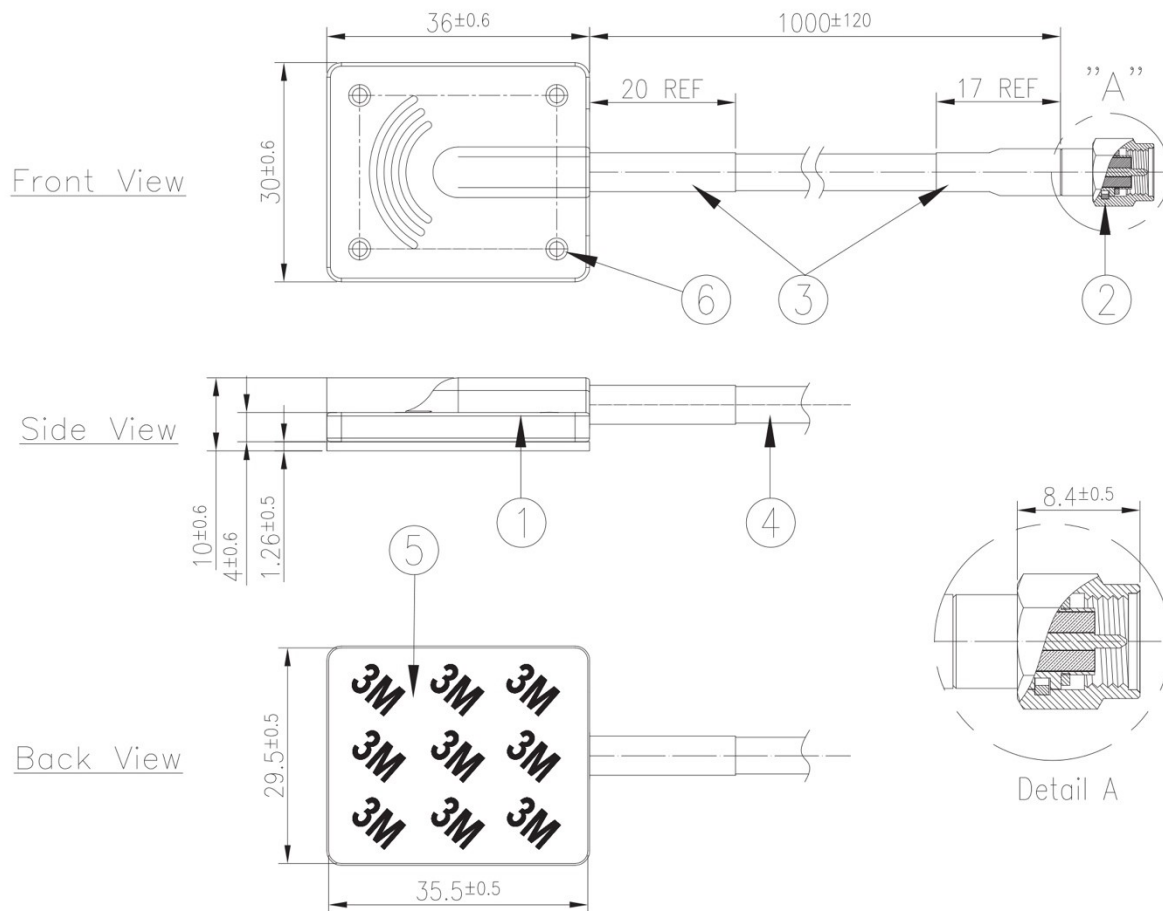


5850MHz



5925MHz

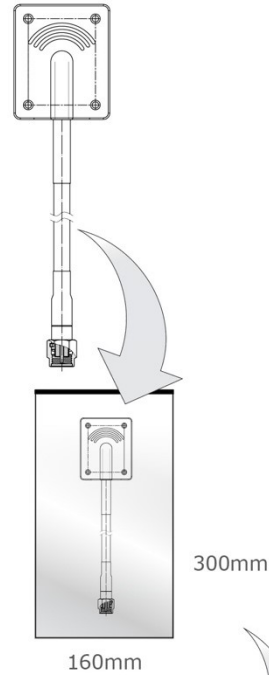
5. Drawing (Unit: mm)



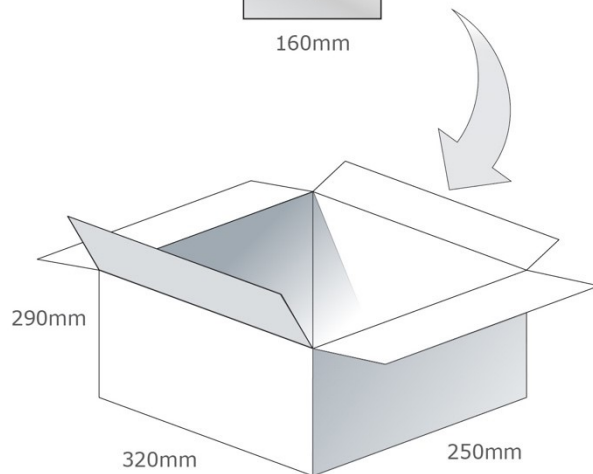
	Name	Material	Finish	QTY
1	GSA.8859 Housing	PP	Black	1
2	SMA(M)ST	Brass	Au Plated	1
3	Heat Shrink Tube	PE	Black	2
4	CFD200 Coaxial Cable	PE	Black	1
5	Double-Side Adhesive With Gray Foam	VHB 4941 1.26t	White Liner	1
6	GSA.8859 PCB	FR4 1.0t	Black	1

6. Packaging

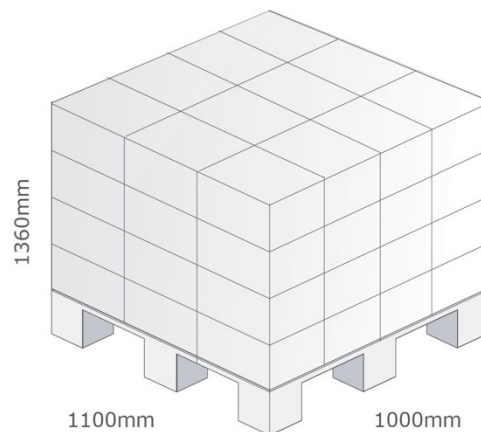
1pc GSA.8859.A.105111 per Small PE Bag
Bag Dimensions - 160*300 mm
Weight - 50g



50pcs GSA.8859.A.105111 per Carton
Carton Dimensions - 320*250*290mm
Weight - 2.6Kg



Pallet Dimensions:
1100mm*1000mm*1360mm
48 Cartons per Pallet
12 Cartons per Layer, 4 Layers

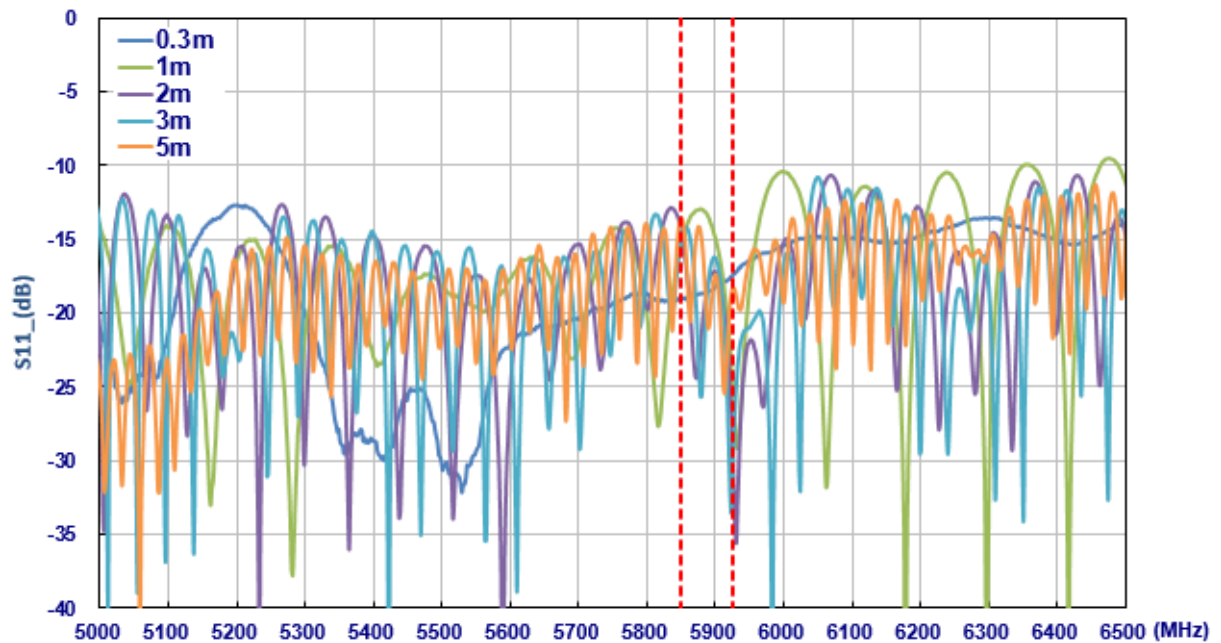


7. Application Note

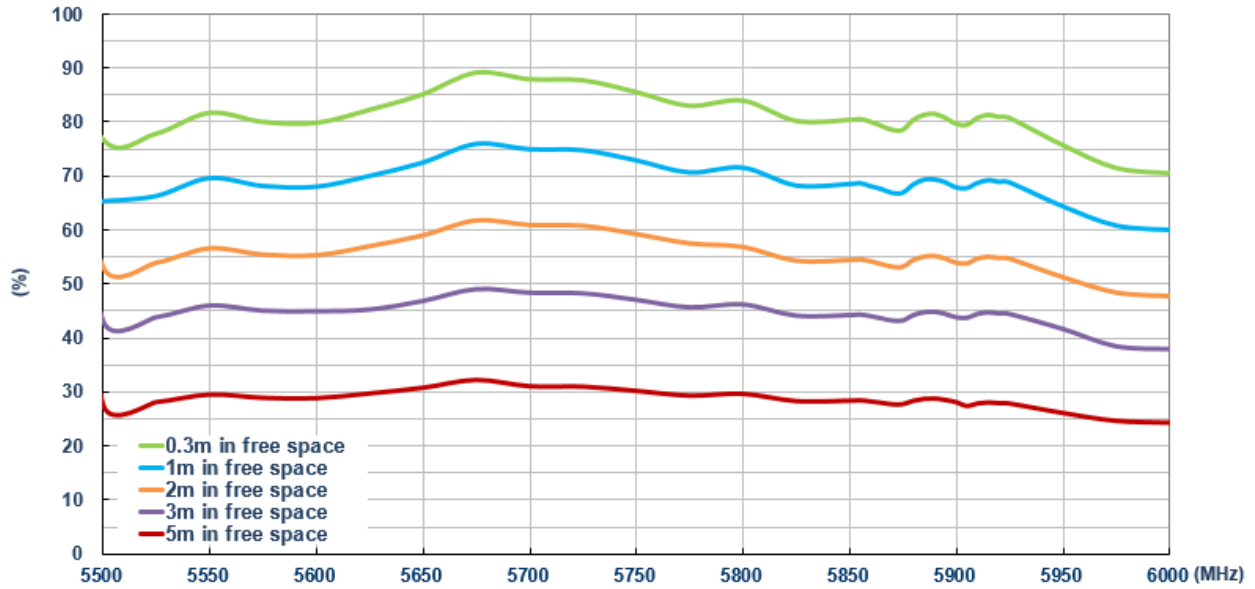
The WSA.2458 antenna performance with different cable lengths is shown below.

7.1 In free Space

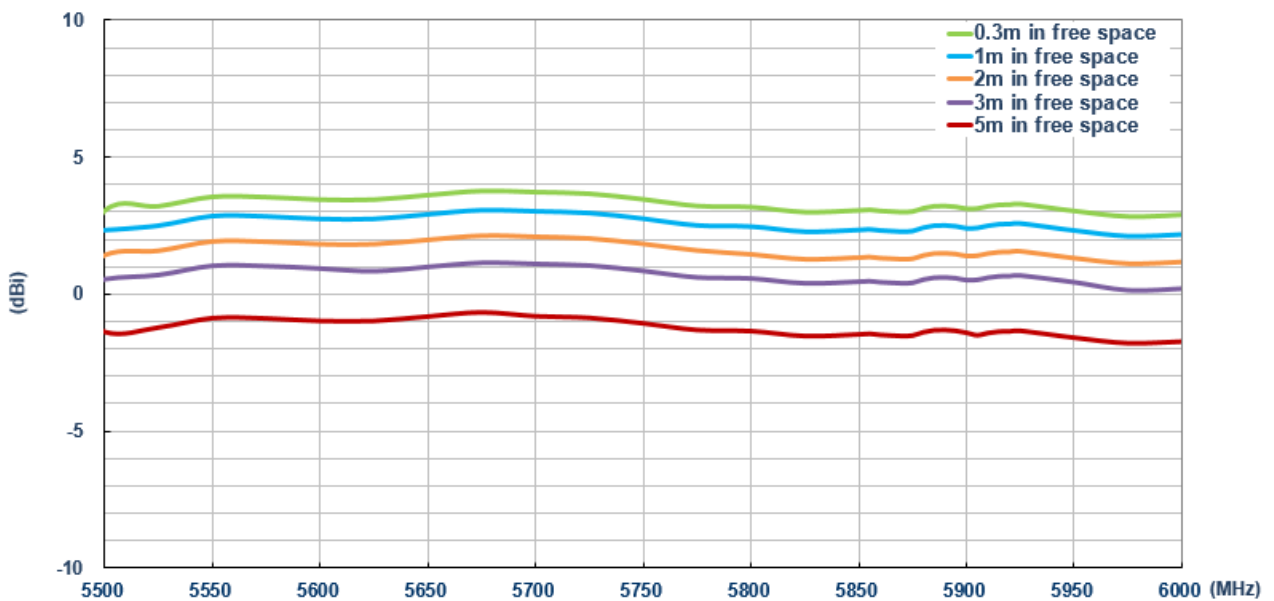
7.1.1 Return Loss



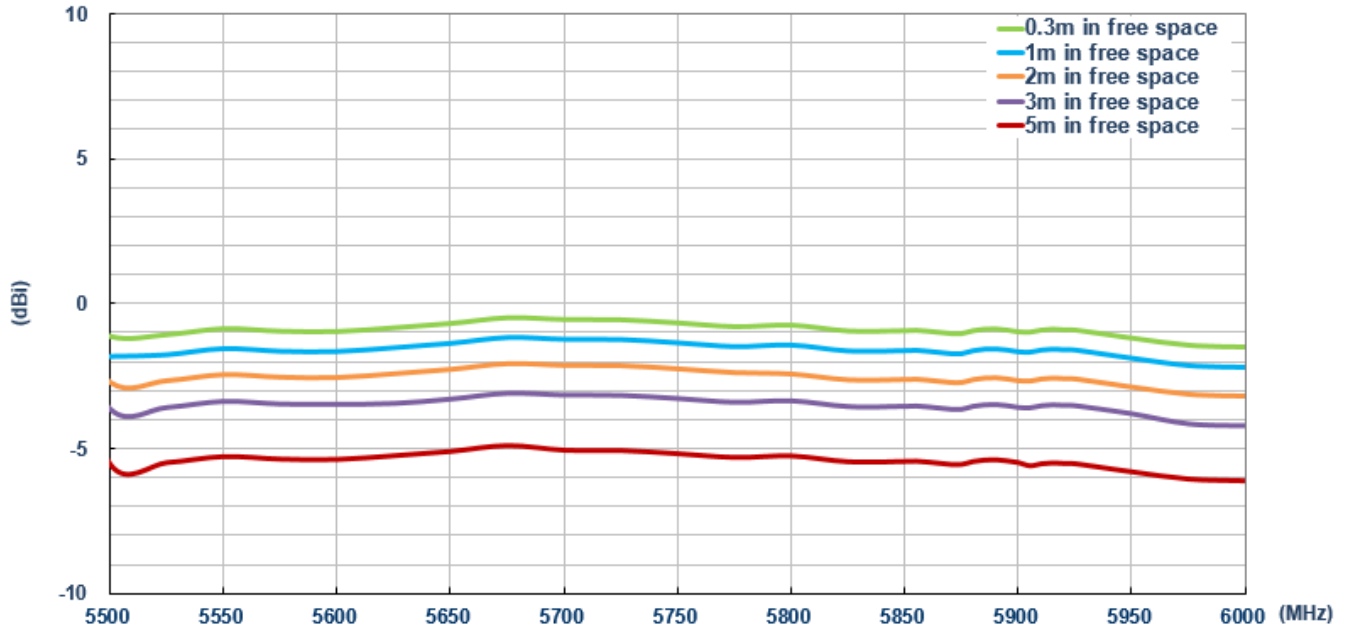
7.1.2 Efficiency



7.1.3 Peak Gain

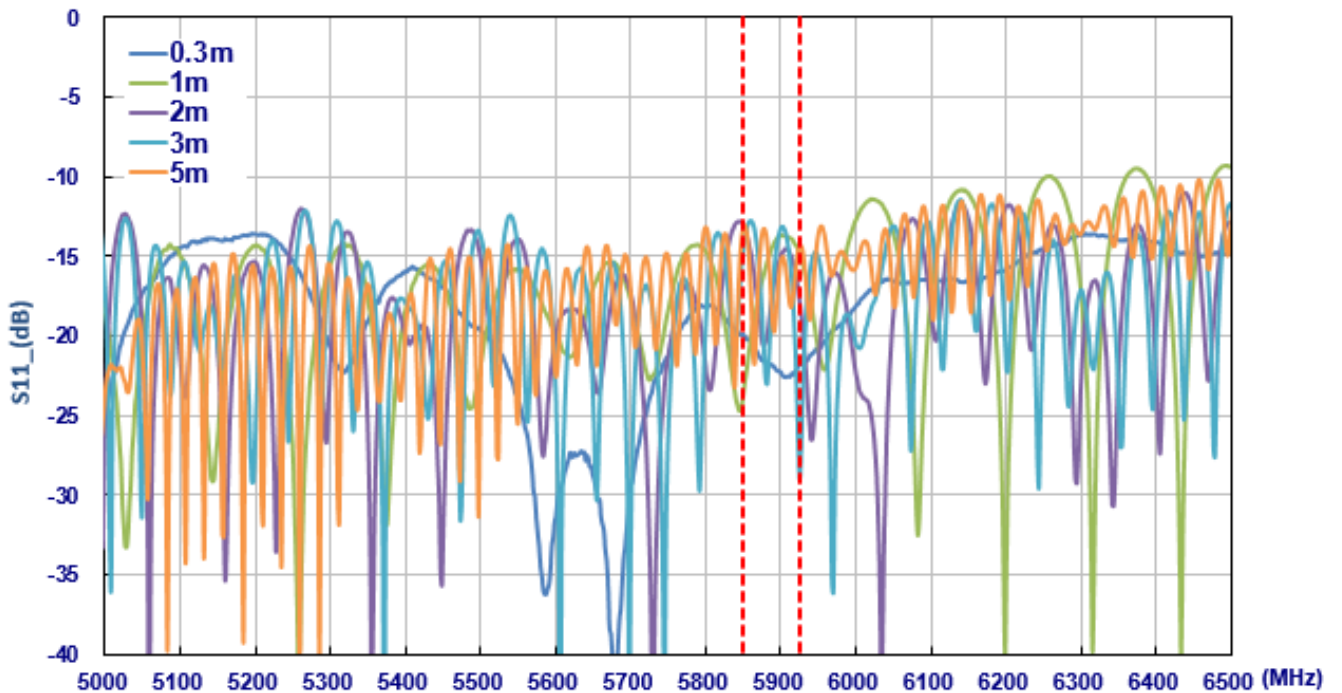


7.1.4 Average Gain

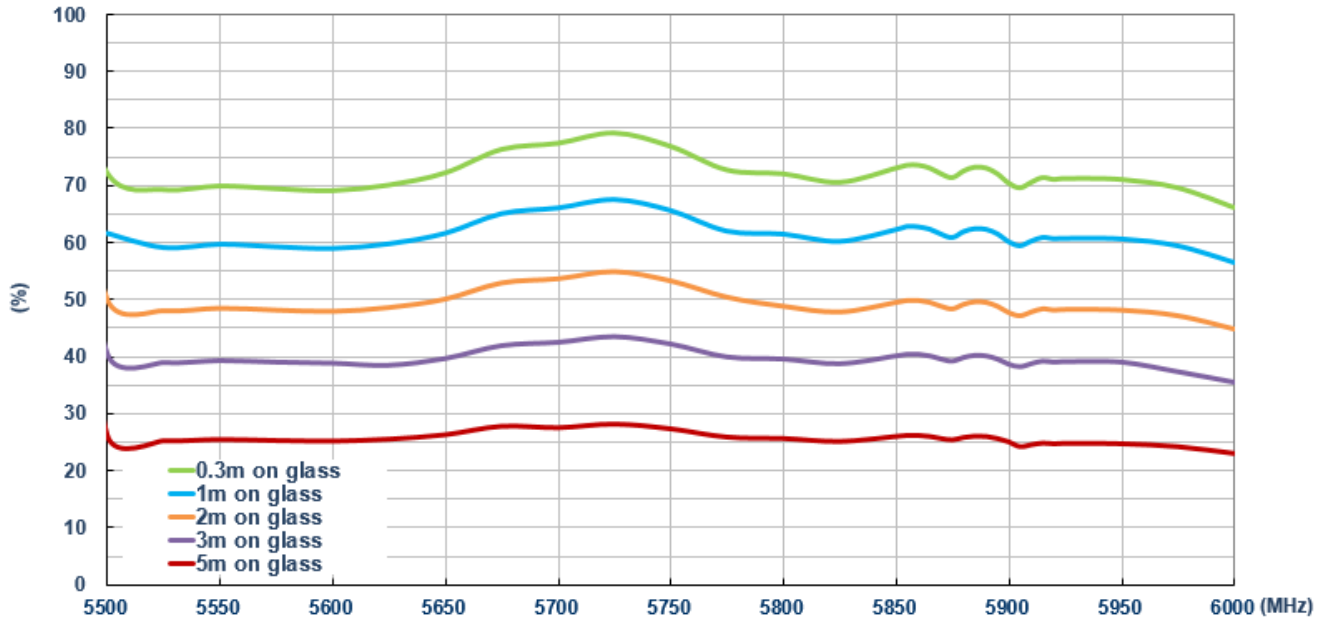


7.2 On Glass

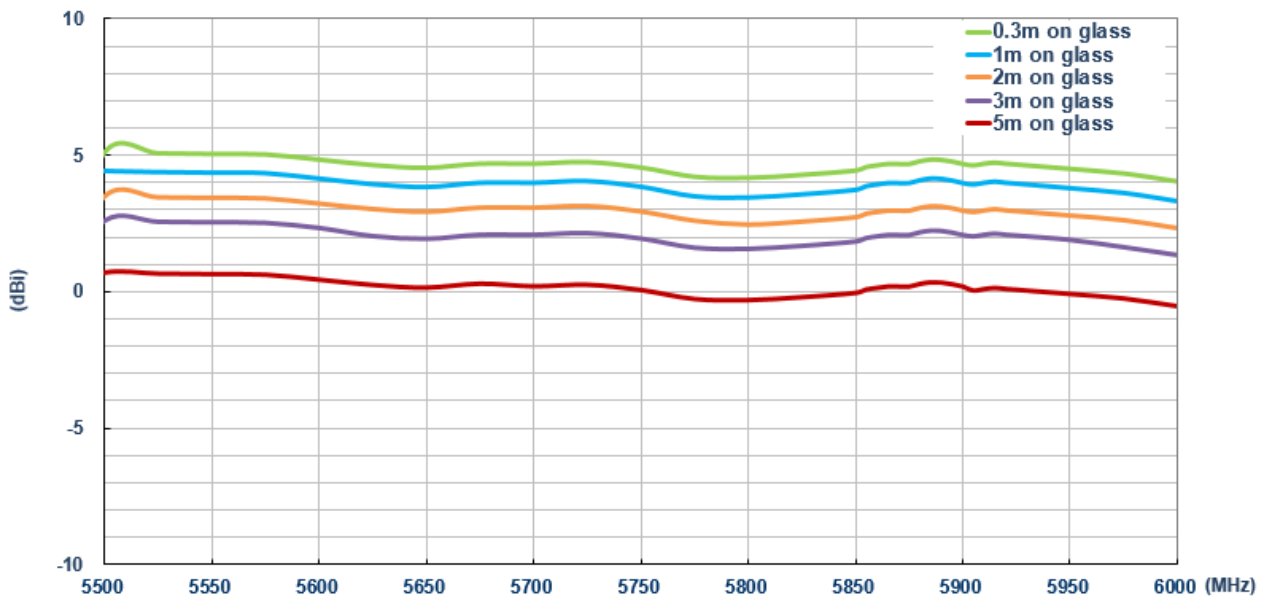
7.2.1 Return Loss



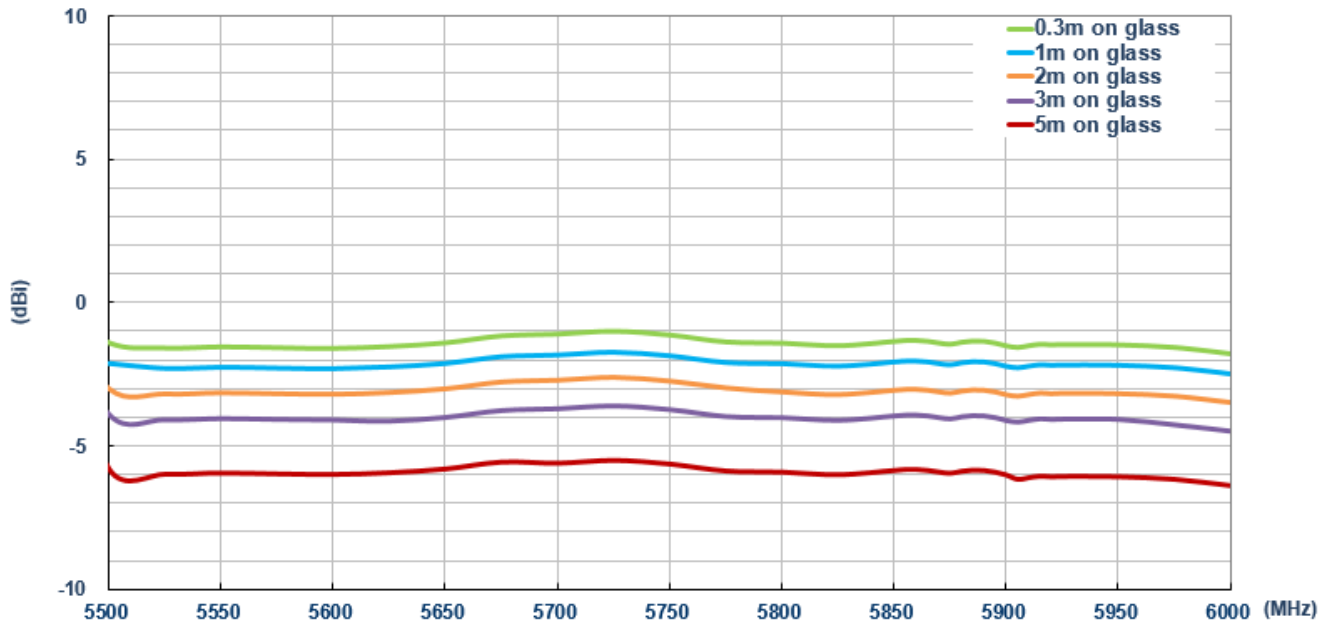
7.2.2 Efficiency



7.2.3 Peak Gain

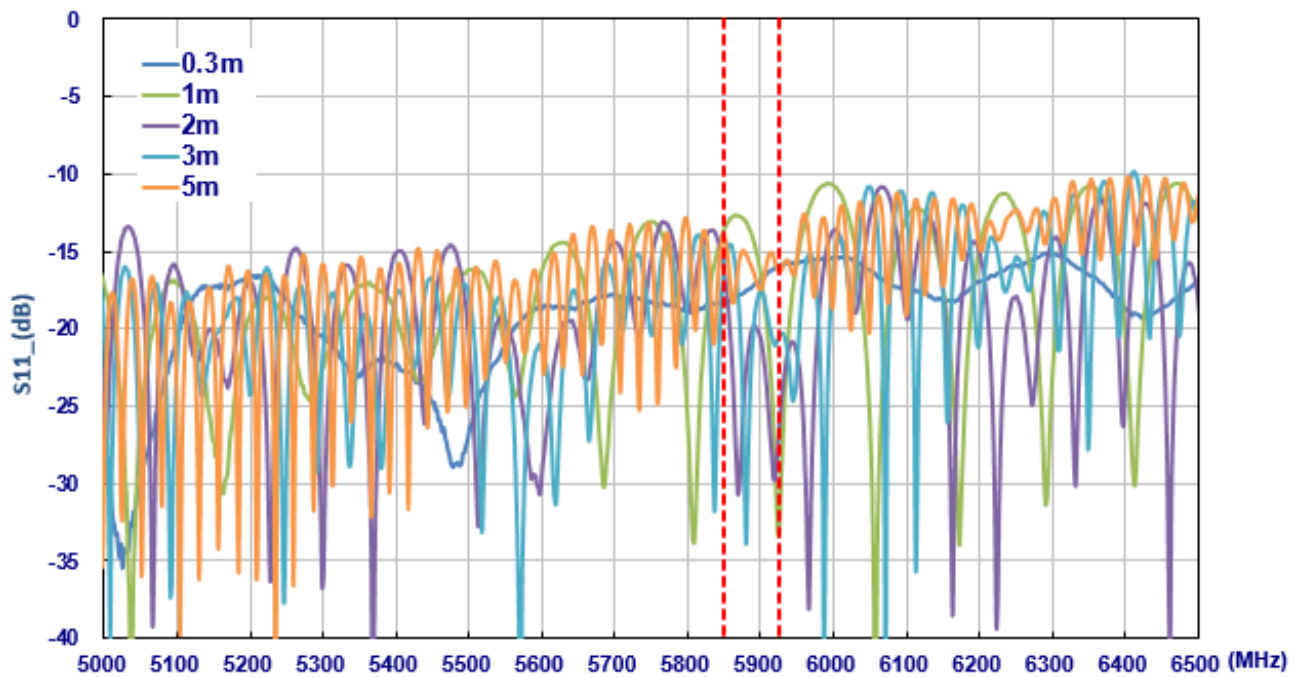


7.2.4 Average Gain

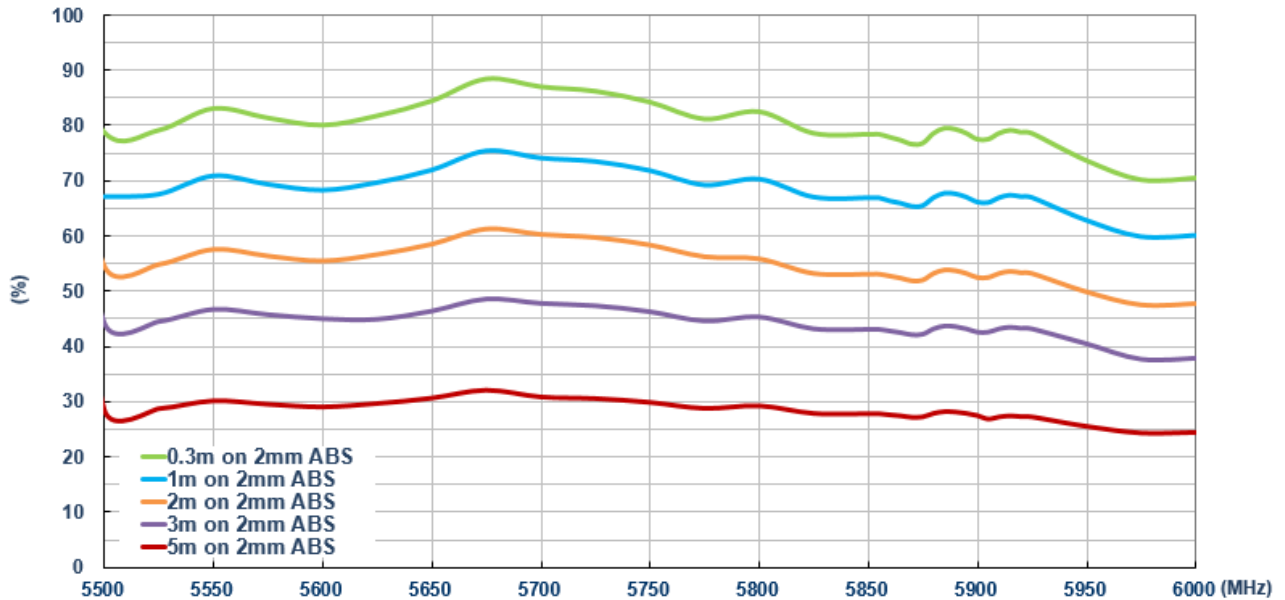


7.3 On 2mm ABS

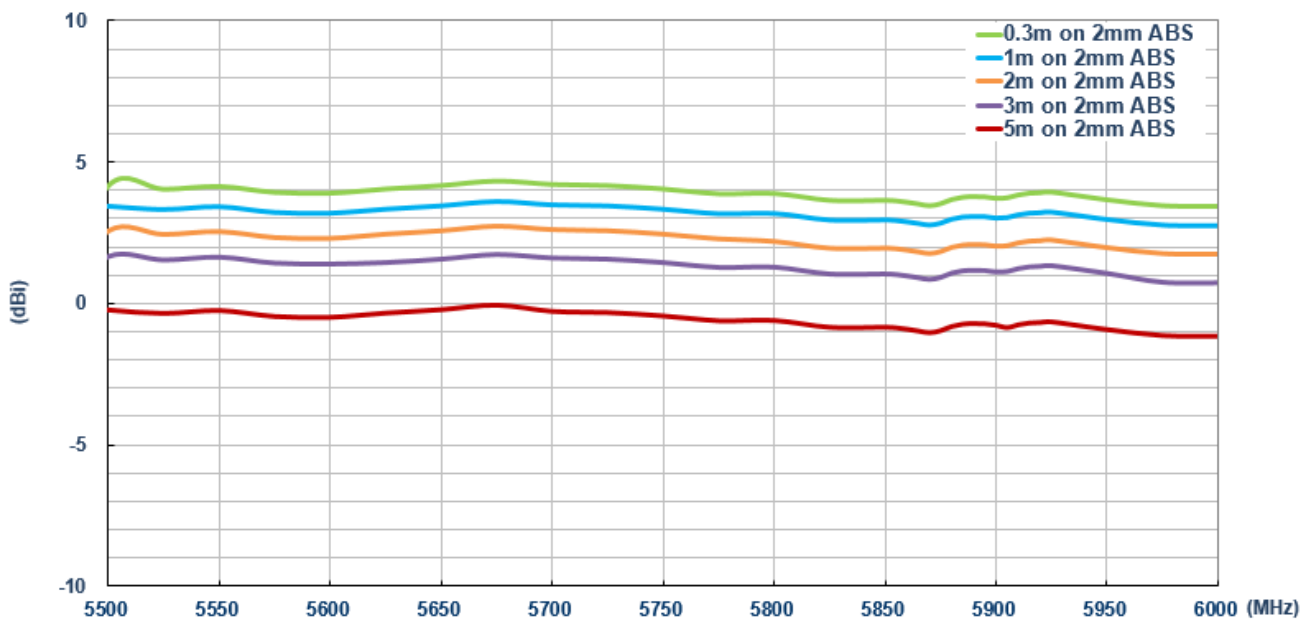
7.3.1 Return Loss



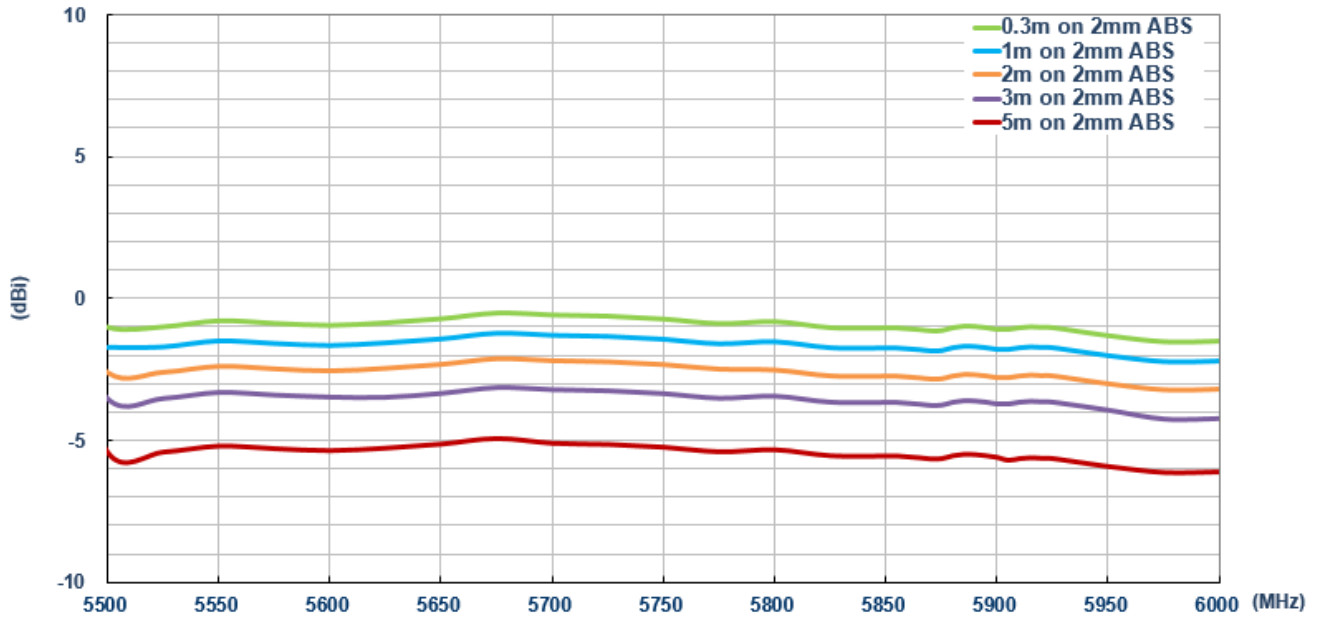
7.3.2 Efficiency



7.3.3 Peak Gain



7.3.4 Average Gain



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