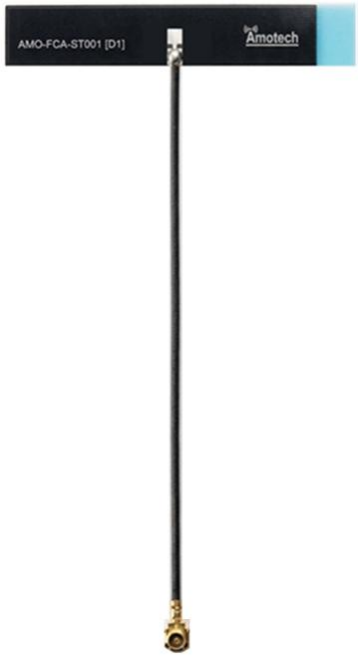
Document	Datasheet
Type	FPCB & Cable Assembly Type
Application	LTE & Cellular
Part No.	AMO-FCA-ST100
Revision	1

DATASHEET



Application

Cellular & LTE

Features

FPCB & Cable Assembly Type
110*20*0.18mm^3 , Slim & Small
Size Φ 1.13 mm and 200mm RF
cable with U.FL Compatible
connector RoHS Compliant

AMOTECH

Notes

The contents of this datasheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Revision History

Rev. No.	Date	Title	Contents	Remark
0	2024. 07. 29		New published	
1	2026. 07. 23		Added Application L-band for NTN	

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1. Specifications

1.1 Electrical Specifications

No	Item	Specification		Remark
1	Frequency Range [MHz]	699-960 / 1525~2170 / 2500~2690		
2	Efficiency [%]	Low	68	
		Mid	66	
		High	60	
3	Average gain [dBi]	Low	-1.65	
		Mid	-1.76	
		High	-2.26	
4	Peak gain [dBi]	Low	1.27	
		Mid	1.81	
		High	1.86	
5	VSWR	Max 3:1		
6	Polarization	Linear		
7	Impedance	Nominal 50 Ω		

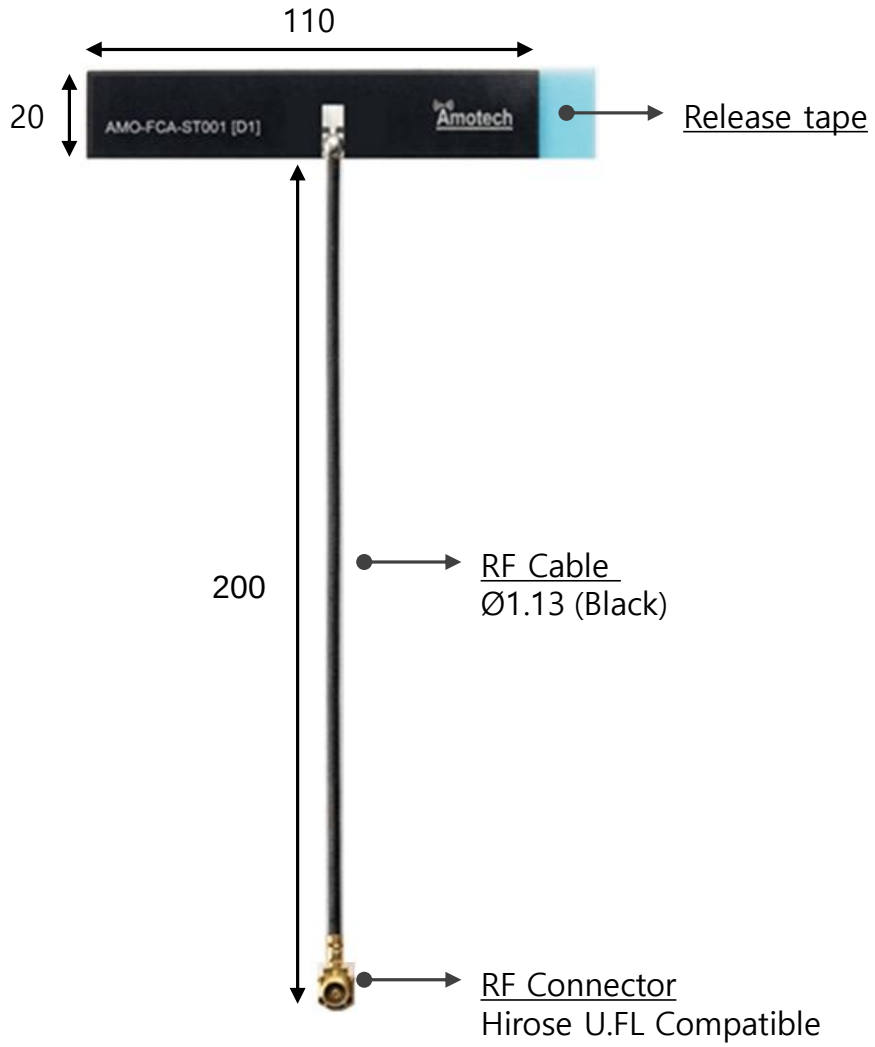
1.2 Antenna Frequency Coverage

Band	B1	B2	B3	B4	B5	B7	B8	B12	B13	B19	B20	B28	B255
	√	√	√	√	√	√	√	√	√	√	√	√	√

1.3 Mechanical Specifications

No	Item	Materials	Remark
1	FPCB	Polyimide 1/2mil, Cu 1/2oz, Single-side (ED)	
2	Adhesive tape	100 um tape with PET release tape	3M9293
3	RF cable	D1.13 mm RF cable / Total length 200 mm	
4	RF connector	IPEX MHF I connector	

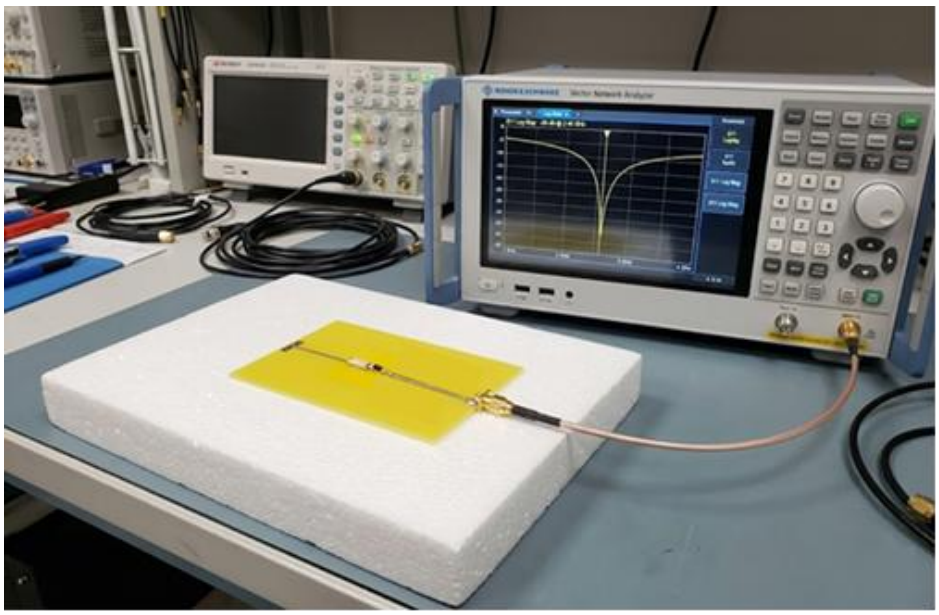
※ Antenna figure and detail dimensions



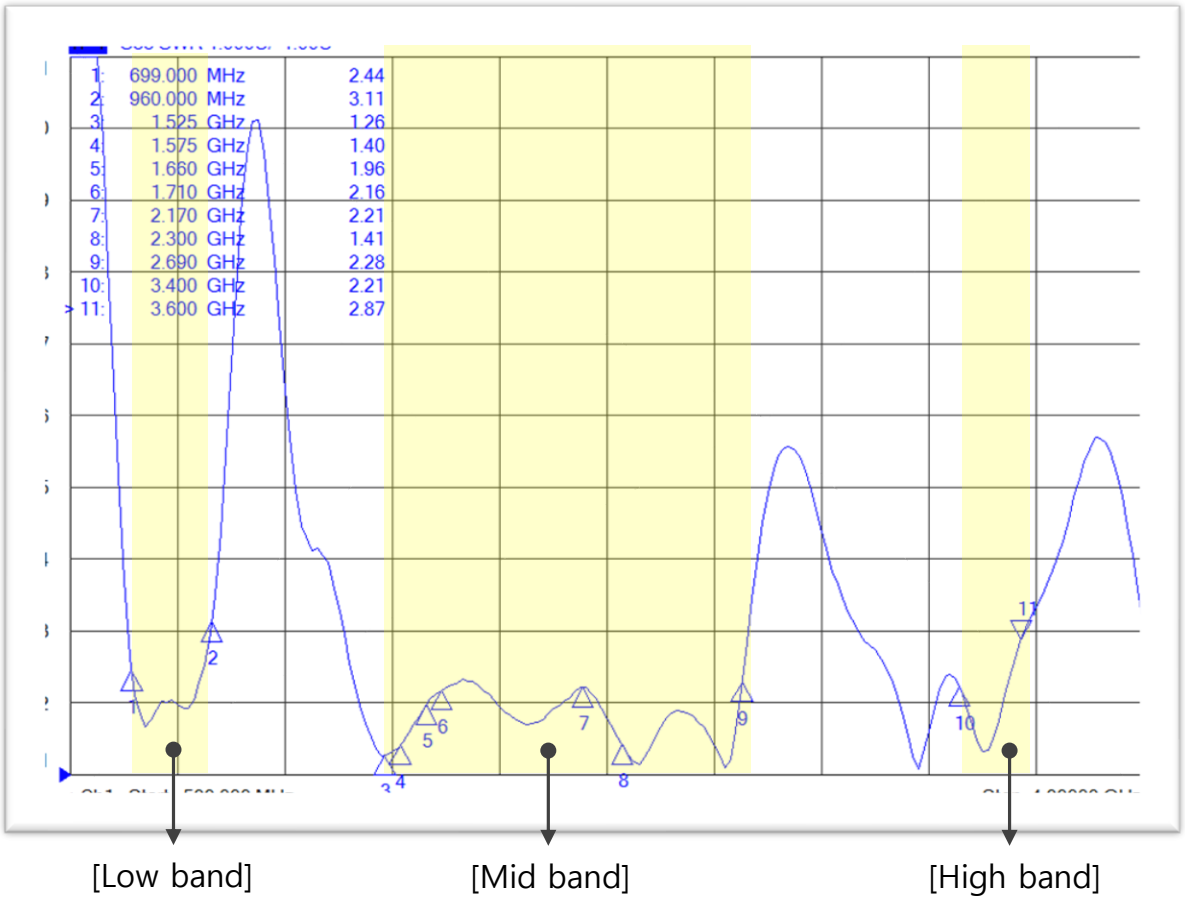
[unit : mm]

2. Measurements

2.1 VSWR and Return-loss Measurement

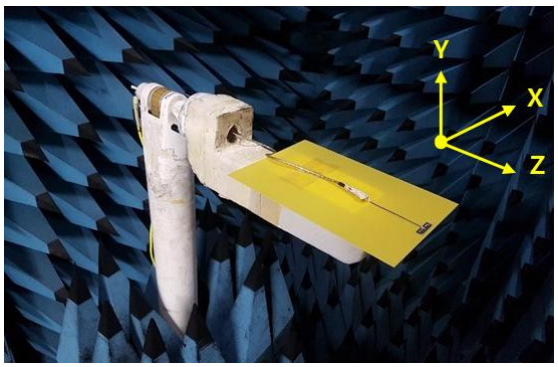


- Antenna VSWR has measured to connect to the VNA directly.
- Antenna is attached to a material with a dielectric constant.



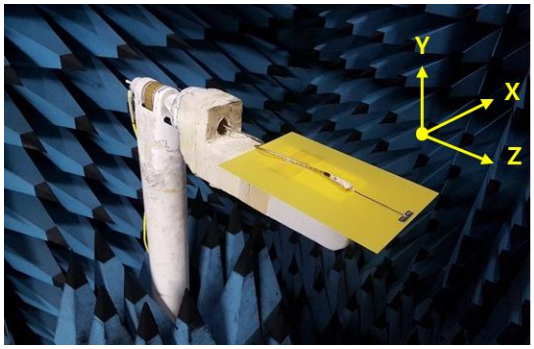
2.2 Antenna Gain Measurement

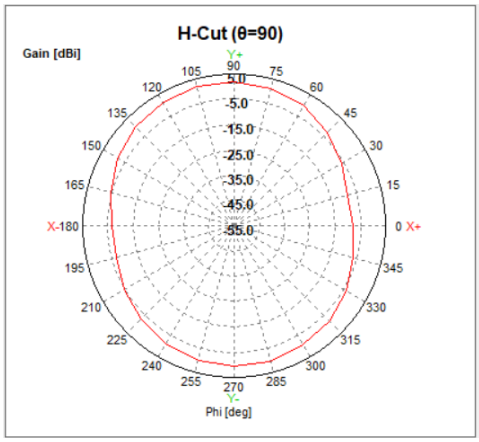
Frequency [MHz]	Efficiency [%]	Avg. Gain [dBi]	Peak Gain [dBi]
699	54.01	-2.68	-0.04
724	73.77	-1.32	1.85
791	68.11	-1.67	1.44
824	50.40	-2.98	1.73
894	78.11	-1.07	1.61
925	83.10	-0.80	2.27
960	76.98	-1.14	2.21
1525	78.92	-1.03	2.34
1559	78.68	-1.04	2.89
1626	69.48	-4.58	2.57
1660	68.84	-1.62	2.49
1710	58.92	-2.30	1.95
1805	59.07	-2.29	2.44
1920	72.26	-1.41	2.27
1990	71.95	-1.43	2.52
2200	72.58	-1.39	2.81
2300	63.44	-1.98	1.18
2350	69.50	-1.58	1.02
2442	70.69	-1.51	1.43
2500	65.16	-1.86	1.86
2690	50.47	-2.97	1.40



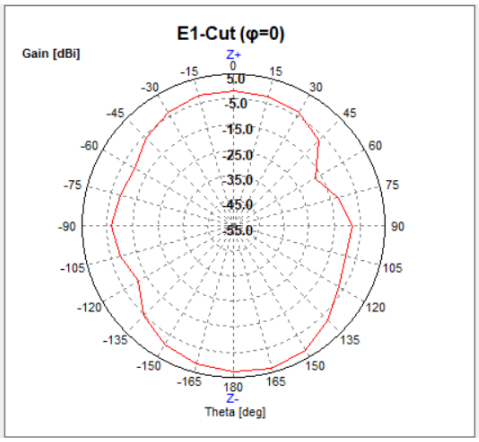
Antenna placement in 3D anechoic chamber

2.3 2D Radiation Patterns Measurement

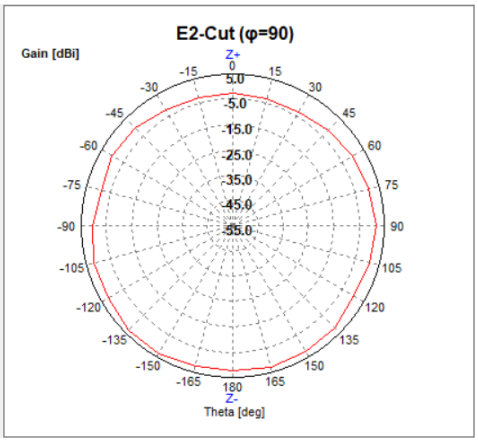




Low Band H-cut



Low band E1-cut



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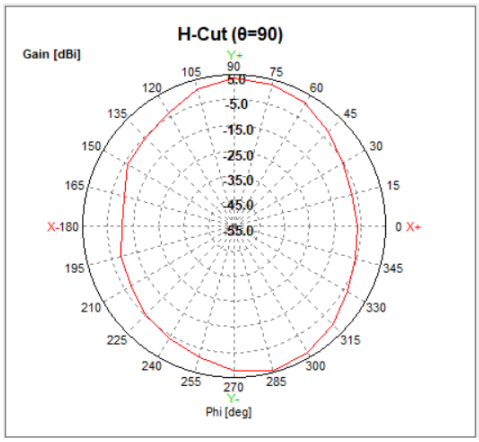
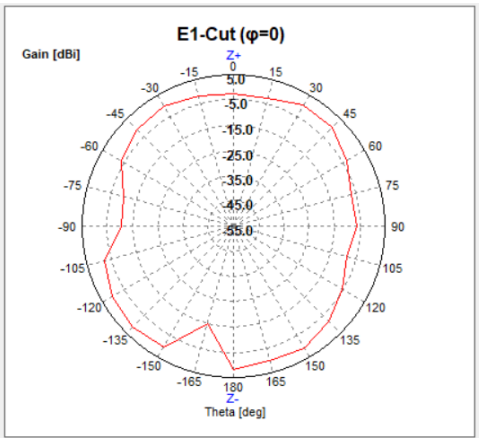


Mid Band H-cut



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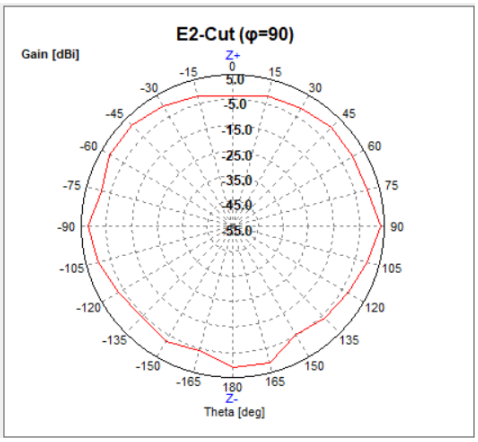
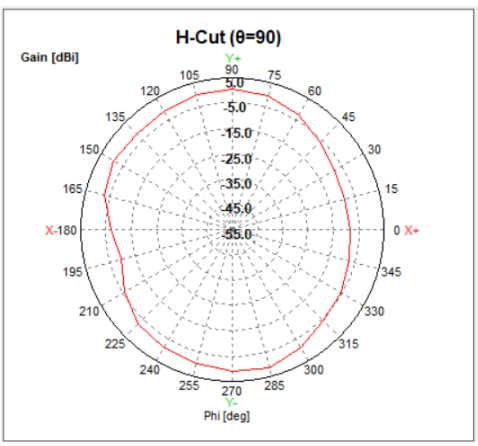
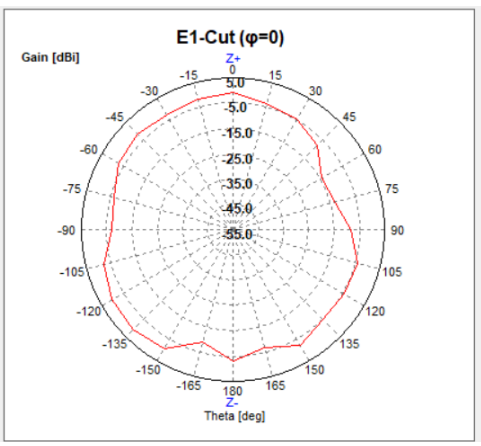


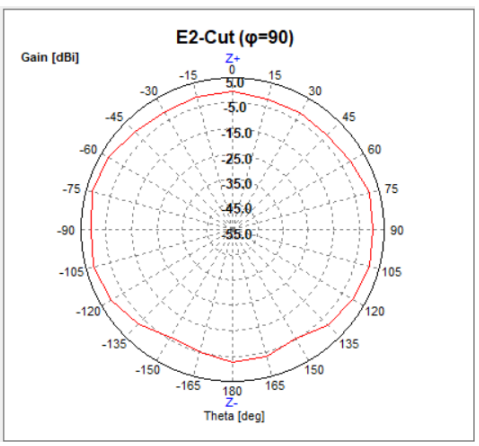
Mid band E2-cut



High Band H-cut

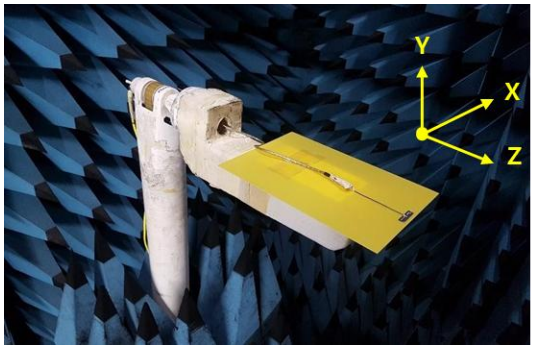


High band E1-cut

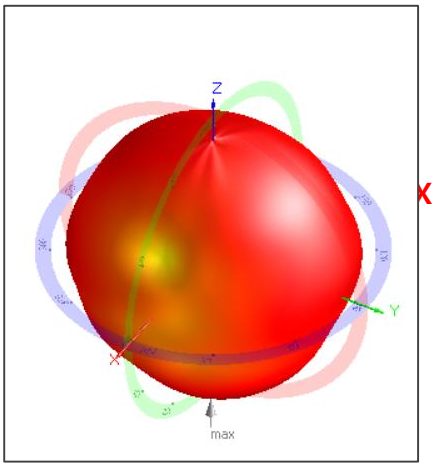


High band E2-cut

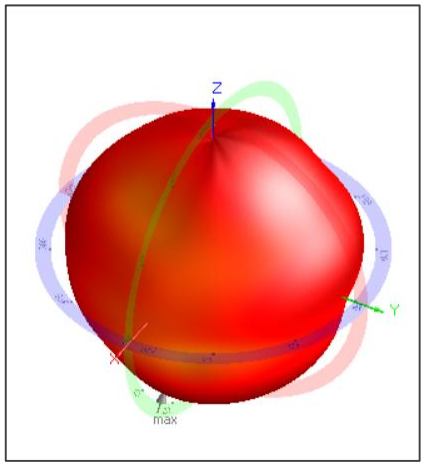
2.4 3D Radiation Patterns Measurement



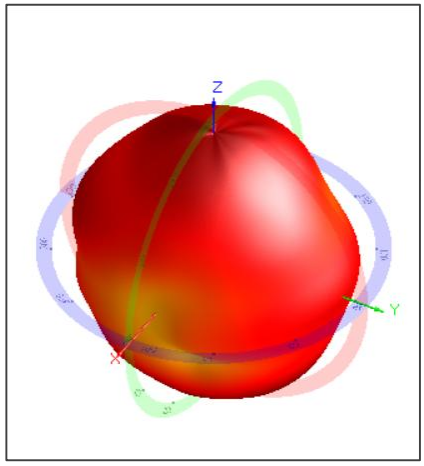
X



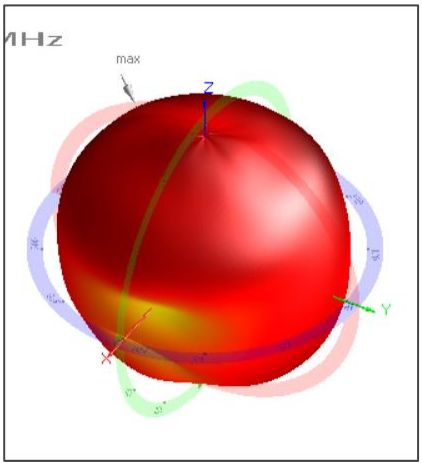
699 MHz



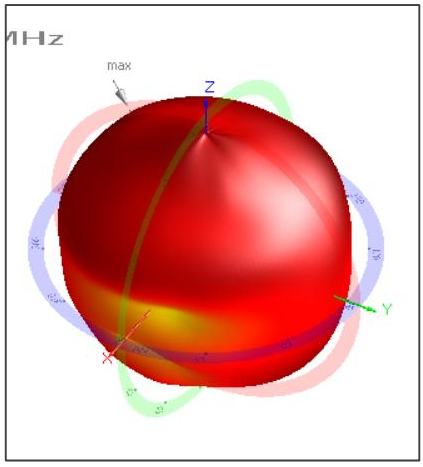
824 MHz



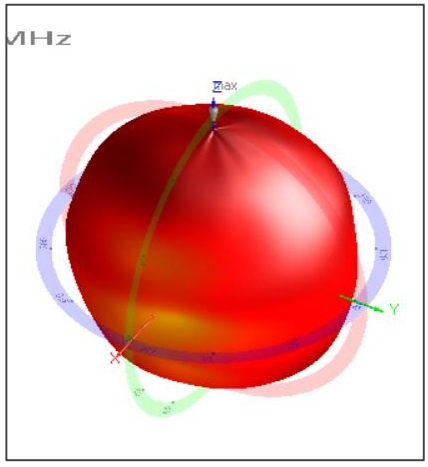
960 MHz



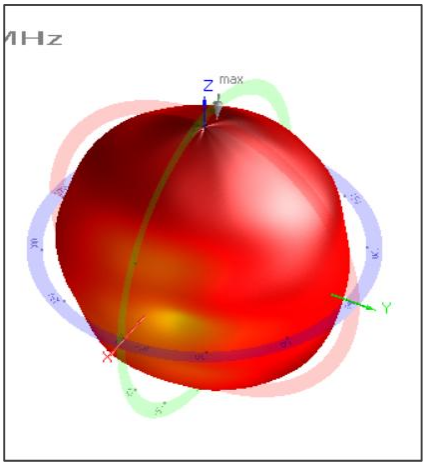
1525 MHz



1559 MHz

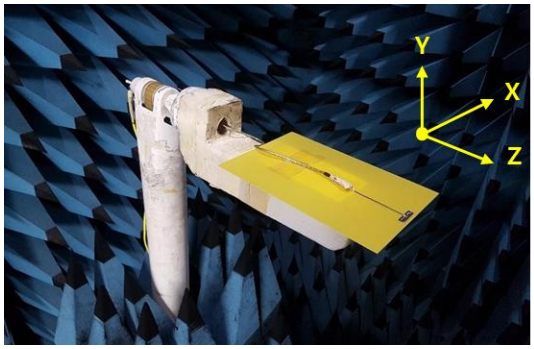


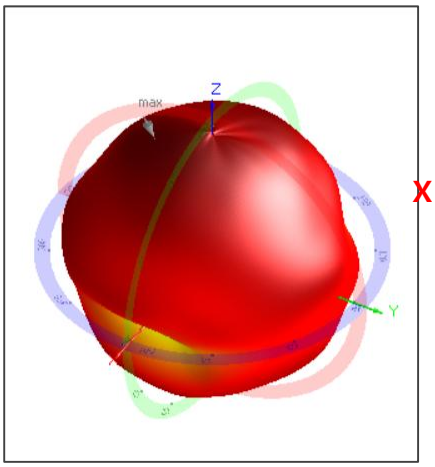
1626 MHz



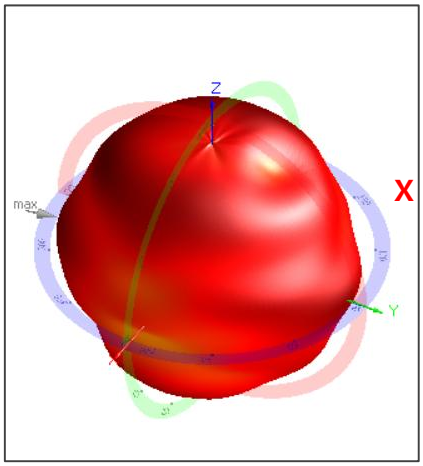
1660 MHz

2.4 3D Radiation Patterns Measurement

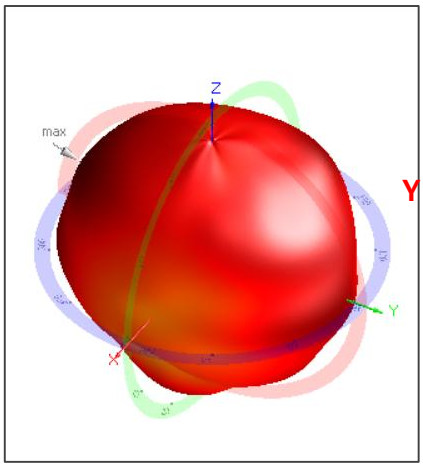




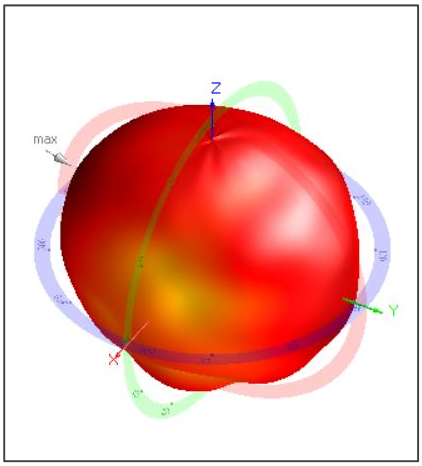
1710 MHz



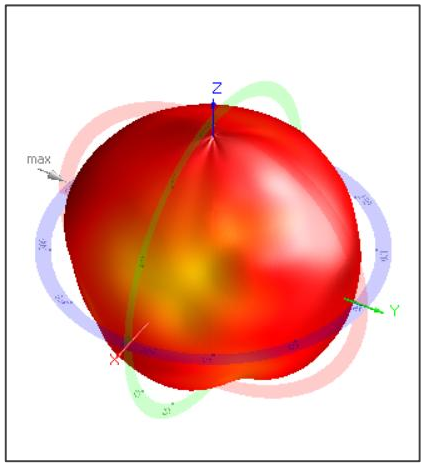
1920 MHz



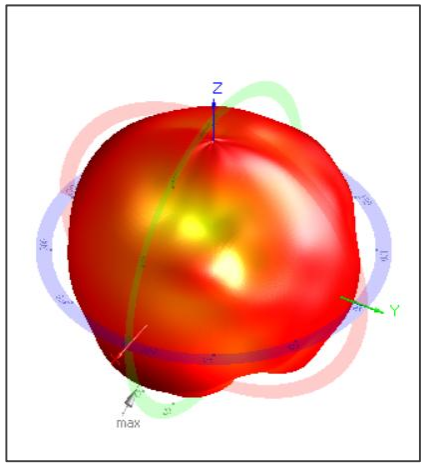
2200 MHz



2300 MHz



2500 MHz

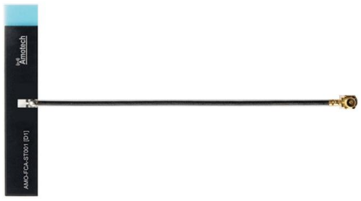
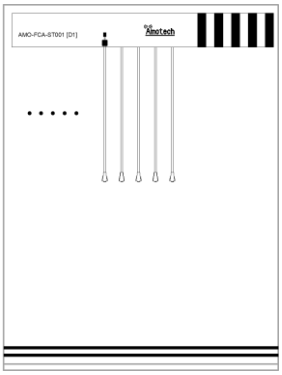
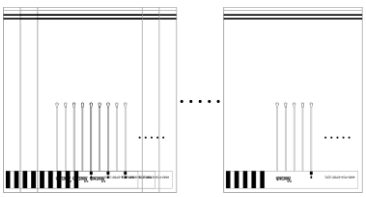
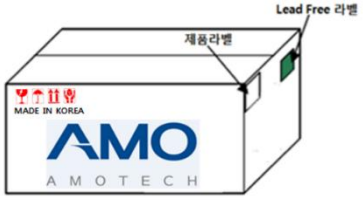


2690 MHz

3. Reliability Condition

No	Item	Test Condition	Test Requirement
1	Thermal Shock	1. 1 cycle process Step 1 : -40 ± 3℃, 60 min Step 2 : +85 ± 3℃, 30 min 2. Number of cycle : 60	1. No visual damage 2. Within electric specification (VSWR)
		Measurement will be after left for 48 hrs min. at room temperature	
2	High Temperature Resistance	1. Temperature : +85 ± 3℃ 2. Time : 96 hrs.	1. No visual damage 2. Within electric specification (VSWR)
		Measurement will be after left for 48 hrs min. at room temperature	
3	Low Temperature Resistance	1. Temperature : -40 ± 5℃ 2. Time : 96 hrs.	1. No visual damage 2. Within electric specification (VSWR)
		Measurement will be after left for 48 hrs min. at room temperature	
4	Humidity	1. Humidity : 85 % RH 2. Temperature : +85 ± 3℃ 3. Time : 48 hrs.	1. No visual damage 2. Within electric specification (VSWR)
		Measurement will be after left for 48 hrs min. at room temperature	

4. Packing

	Image	Material	Packing Size	Packing quantity
Product		-	-	-
PE bag		PE	150 x 200 [mm]	10 [PCS]
Tray		PE	185 x 355 x 32 [mm]	150 / Tray [PCS]
Carton box		Paper	390 x 375 x 205 [mm]	1,800 / Box [PCS]