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SPECIFICATION

Part No.	:	**PA.25A**
Product Name	:	Anam Hexa-Band Cellular SMT Antenna GSM / CDMA / DCS / PCS / WCDMA / UMTS / HSDPA / GPRS / EDGE 800 MHz to 2200 MHz
Features	:	Compact High Efficiency Antenna Surface Mount Device Dims: 35*5*6mm RoHS Compliant

1. Introduction

This ceramic multiband cellular antenna uses high grade ceramics which have been developed in Taoglas through years of expertise in delivering the right materials for high performance antennas. Taoglas designers, through constant research and development have been able to “fit” 6 bands in a small area, while also achieving high efficiency. The PA.25 is a unique SMT solution which is delivered on tape and reel. For very detailed integration information additional to this specification please download our comprehensive PA.25 integration application note from our website.

2. Specification Table

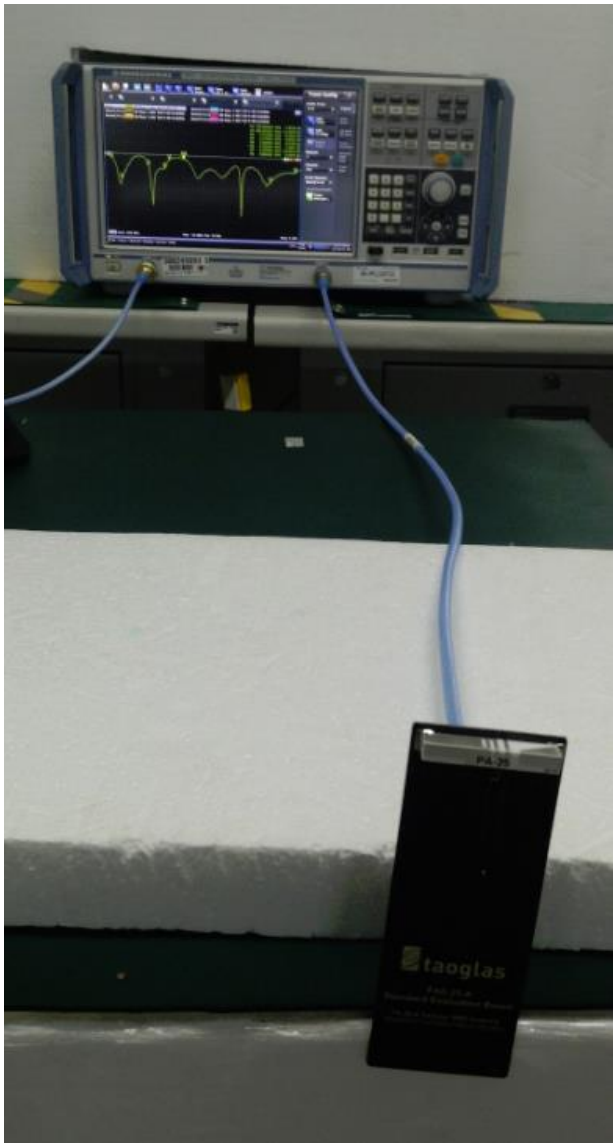
ELECTRICAL		
Standard	4G/3G/2G	
Operation Frequency (MHz)	824-960	1710-2170
Peak Gain (dBi)	2.00	3.51
Average Gain (dBi)	-1.55	-2.39
Efficiency (%)	70.43	58.16
VSWR	<3:1	
Impedance	50Ω	
Polarization	Linear	
Radiation Properties	Omnidirectional	
Max Input Power	5 W	

- The antenna was tested on a 110*40mm ground plane and covered by 2mm thick ABS plastic.
- Actual Antenna Electrical performance will depend on customer ground plane size.

MECHANICAL	
Dimensions	35*5*6mm
Material	Ceramic
Termination	Ag (environmental-friendly Pb free)
Weight	3g
EVB Connector	SMA(F)
ENVIRONMENTAL	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Relative Humidity	Non-condensing 65°C 95% RH
RoHs Compliant	Yes

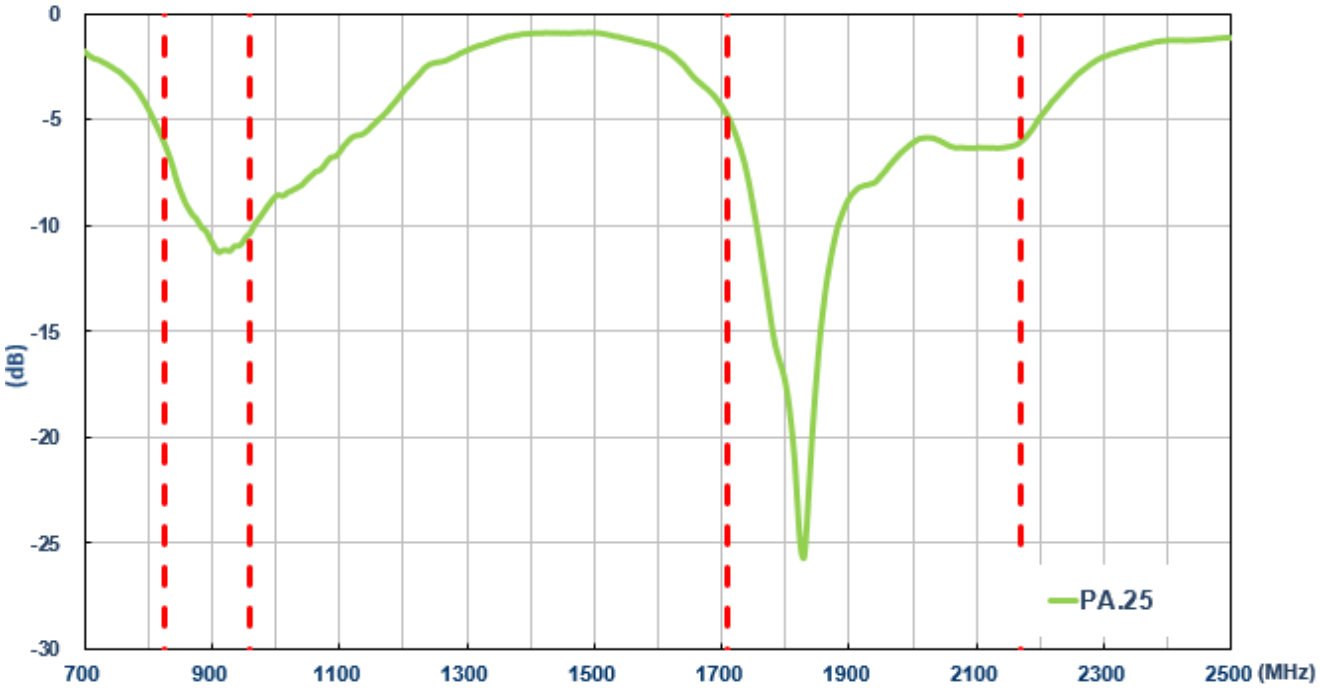
3. Test Configuration

3.1. Test Setup

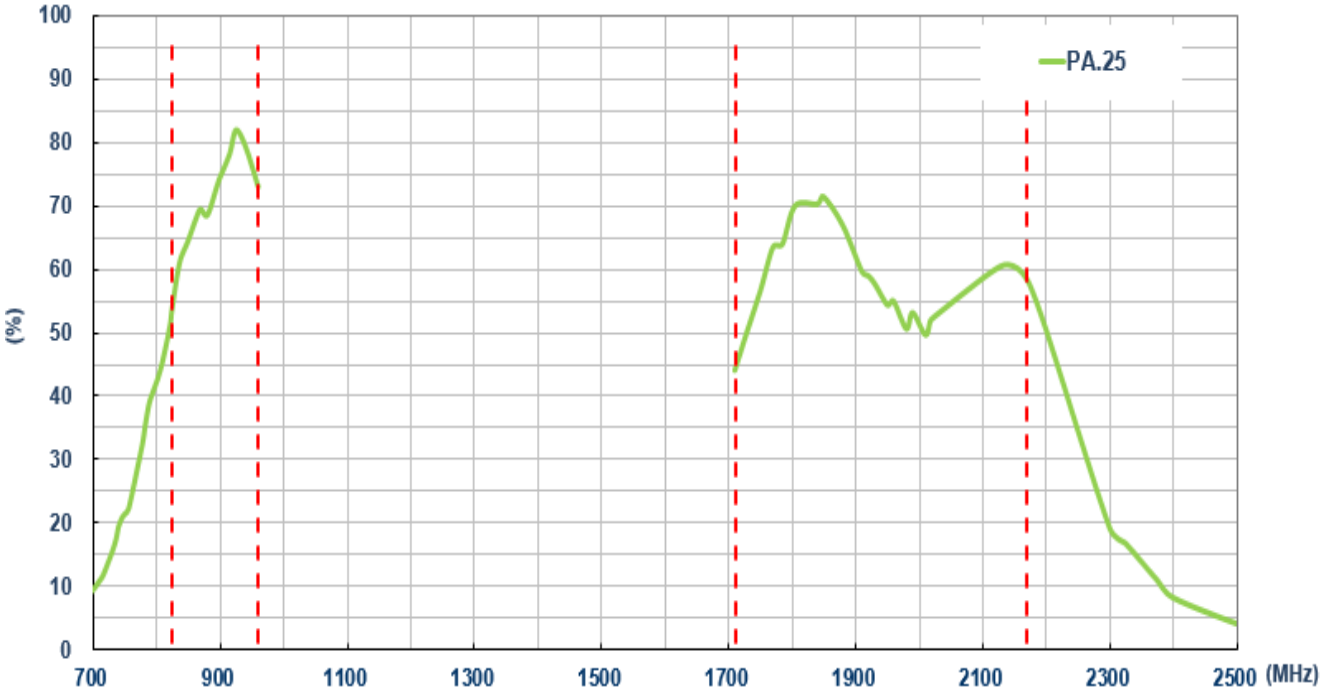


In free space

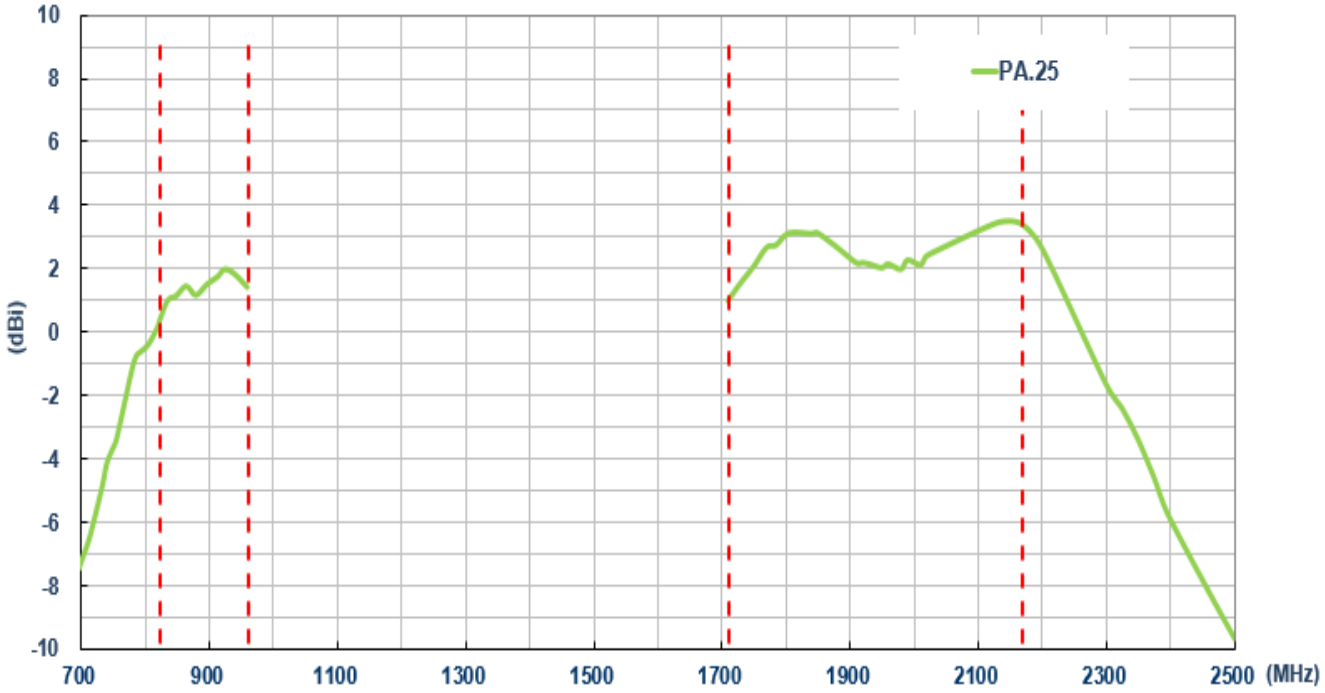
3.2. Return Loss



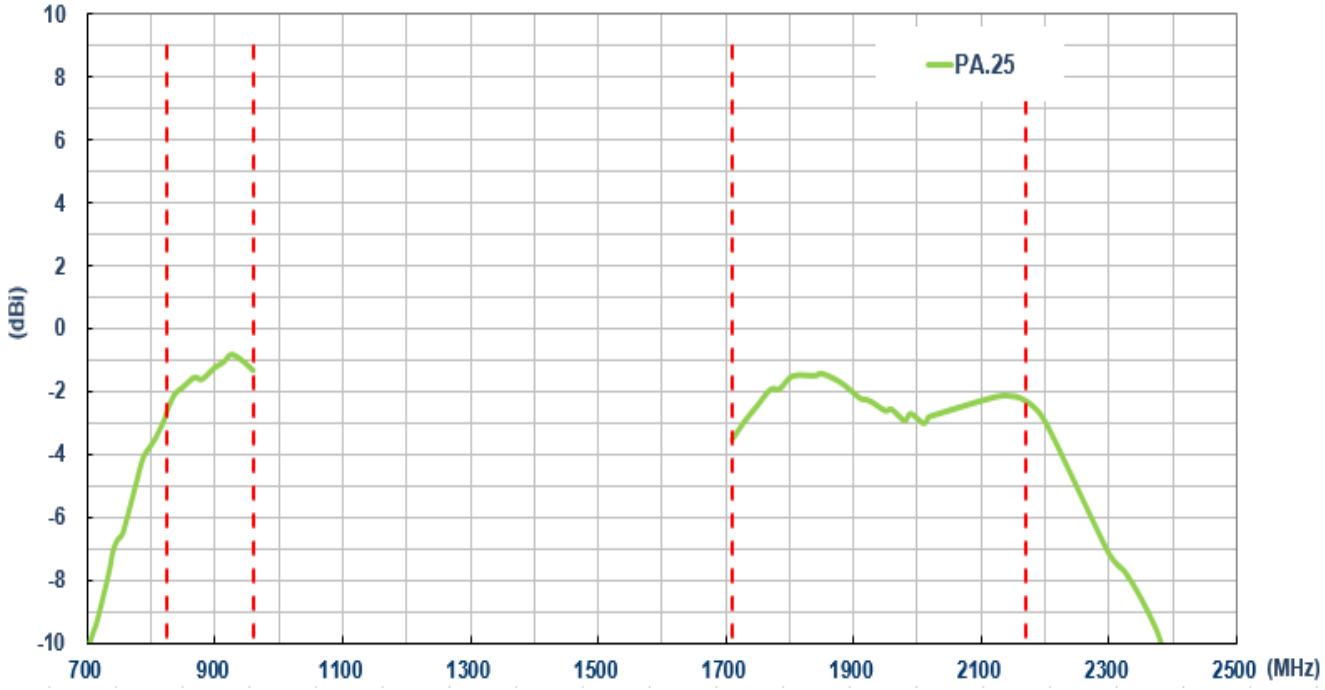
3.3. Efficiency



3.4. Peak Gain

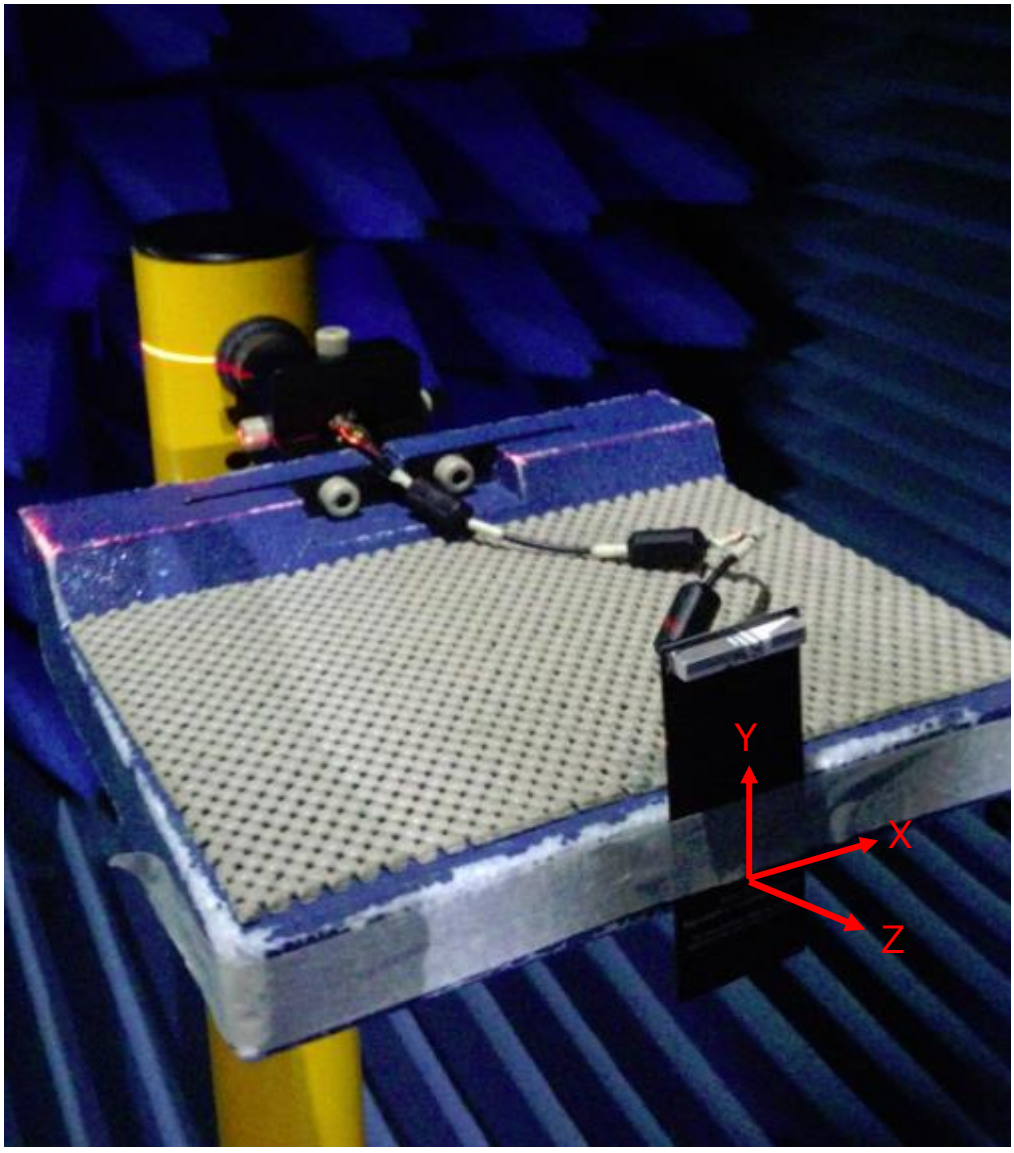


3.5. Average Gain



4. Radiation Pattern

4.1. Test Setup

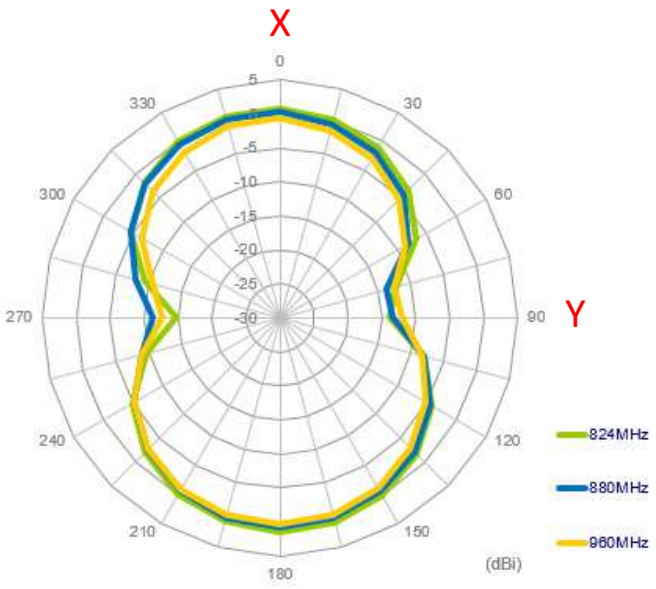


In free space

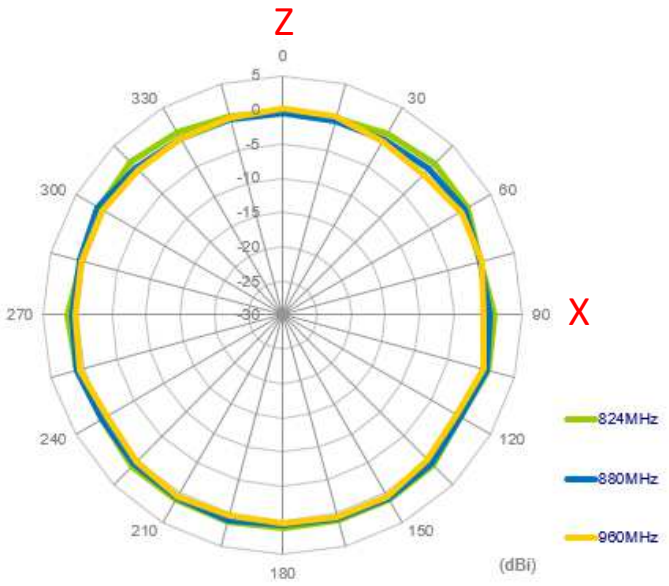
4.2. 2D Radiation Patterns

4.2.1. 824MHz – 960MHz

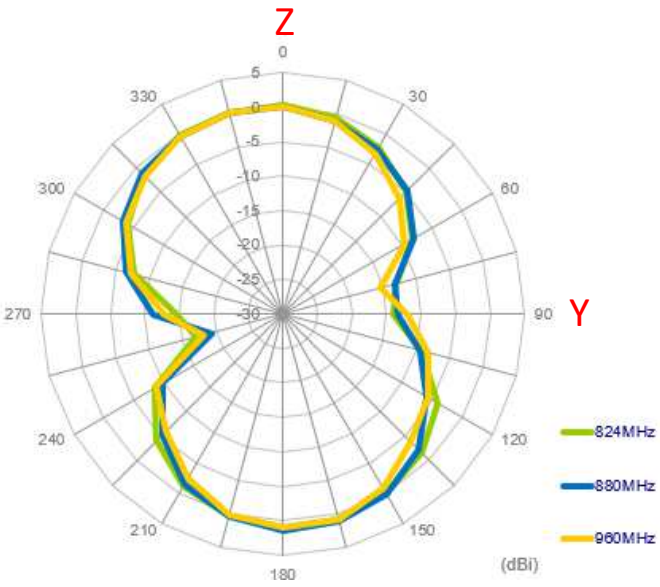
XY Plane



XZ Plane

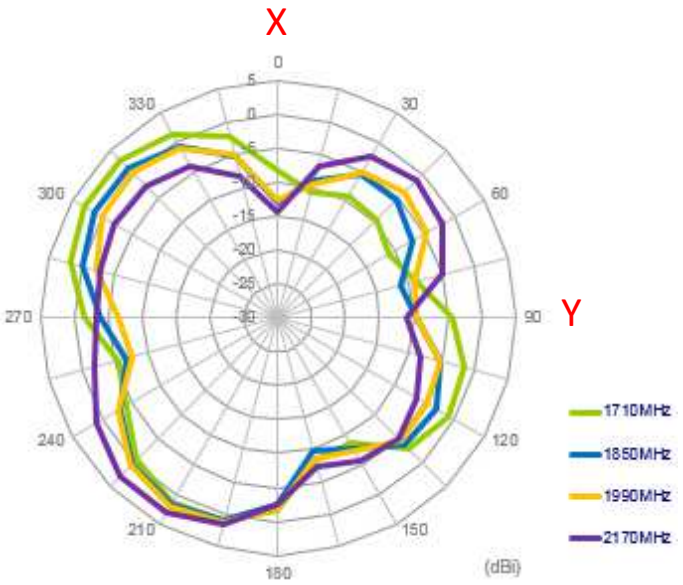


YZ Plane

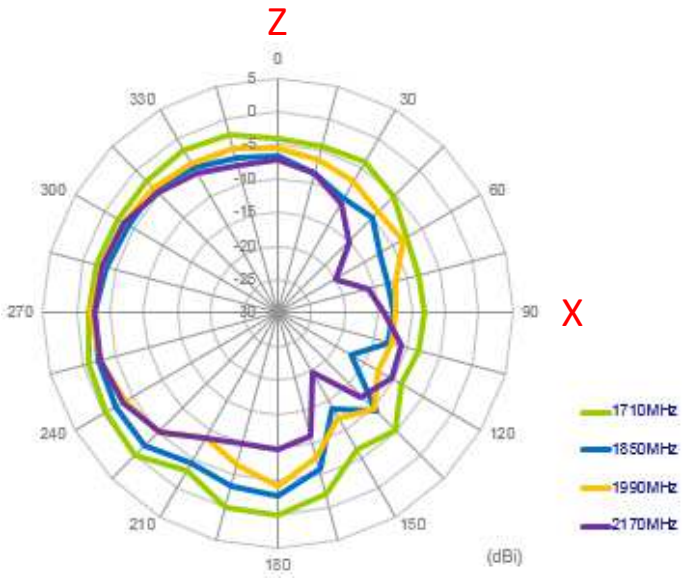


4.2.2. 1710MHz – 2170MHz

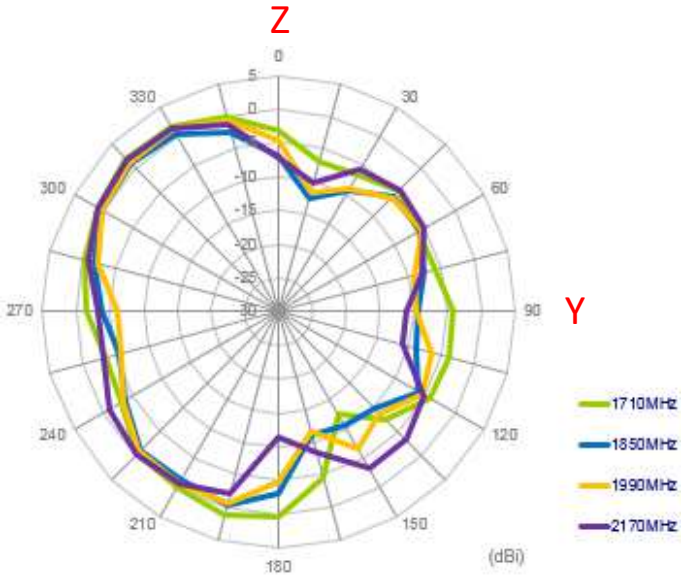
XY Plane



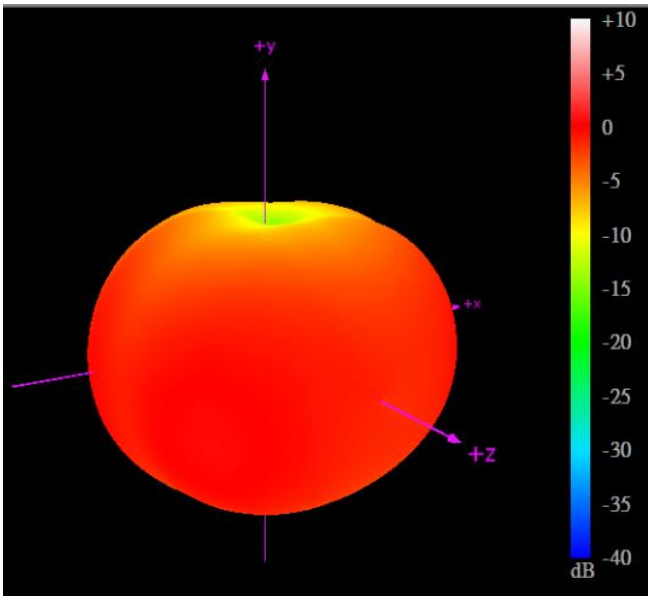
XZ Plane



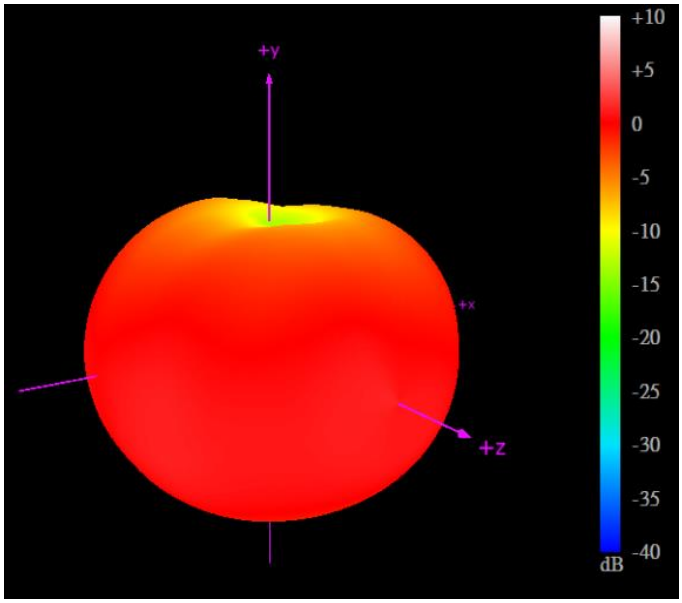
YZ Plane



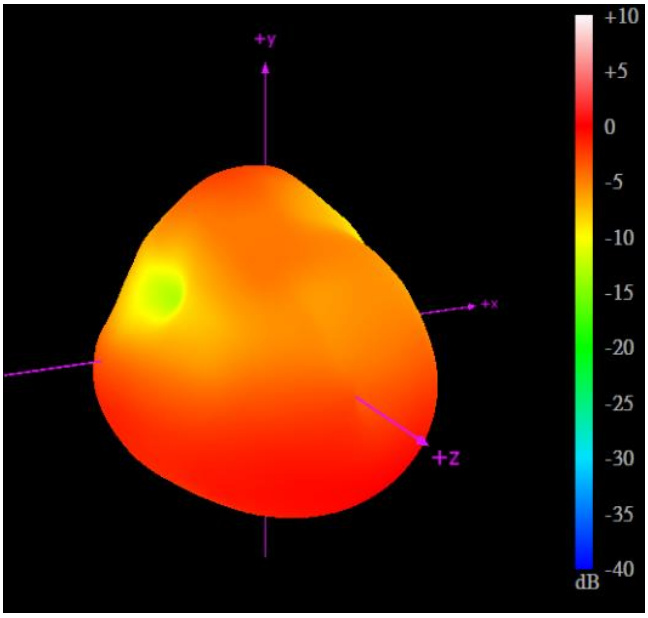
4.2.3. 3D Radiation Patterns



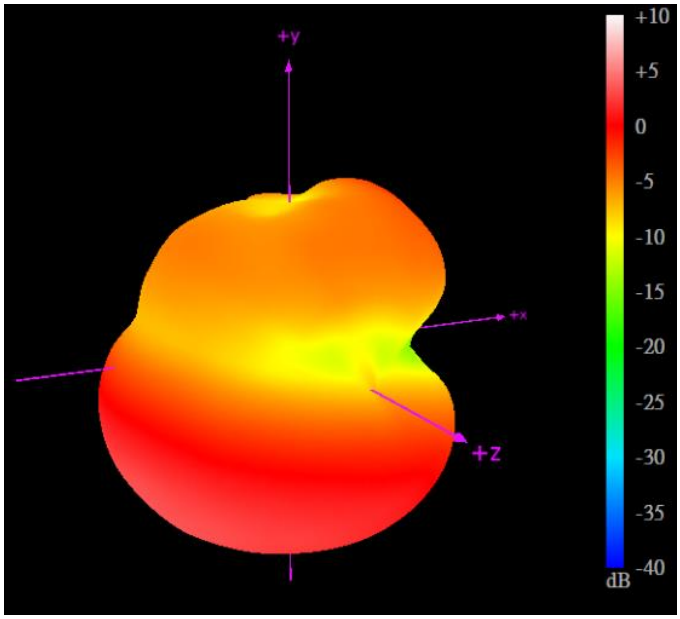
824MHz



960MHz



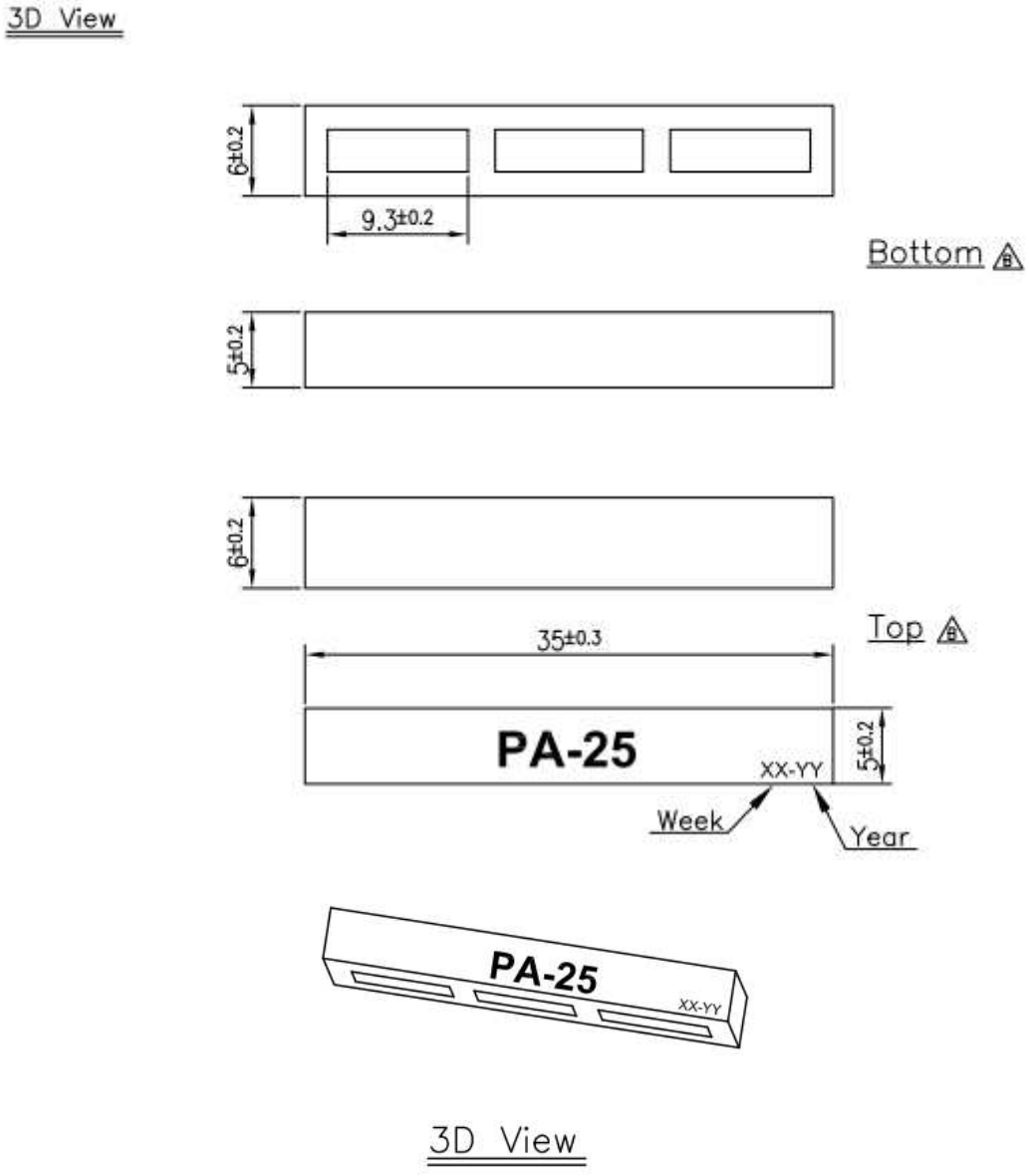
1710MHz



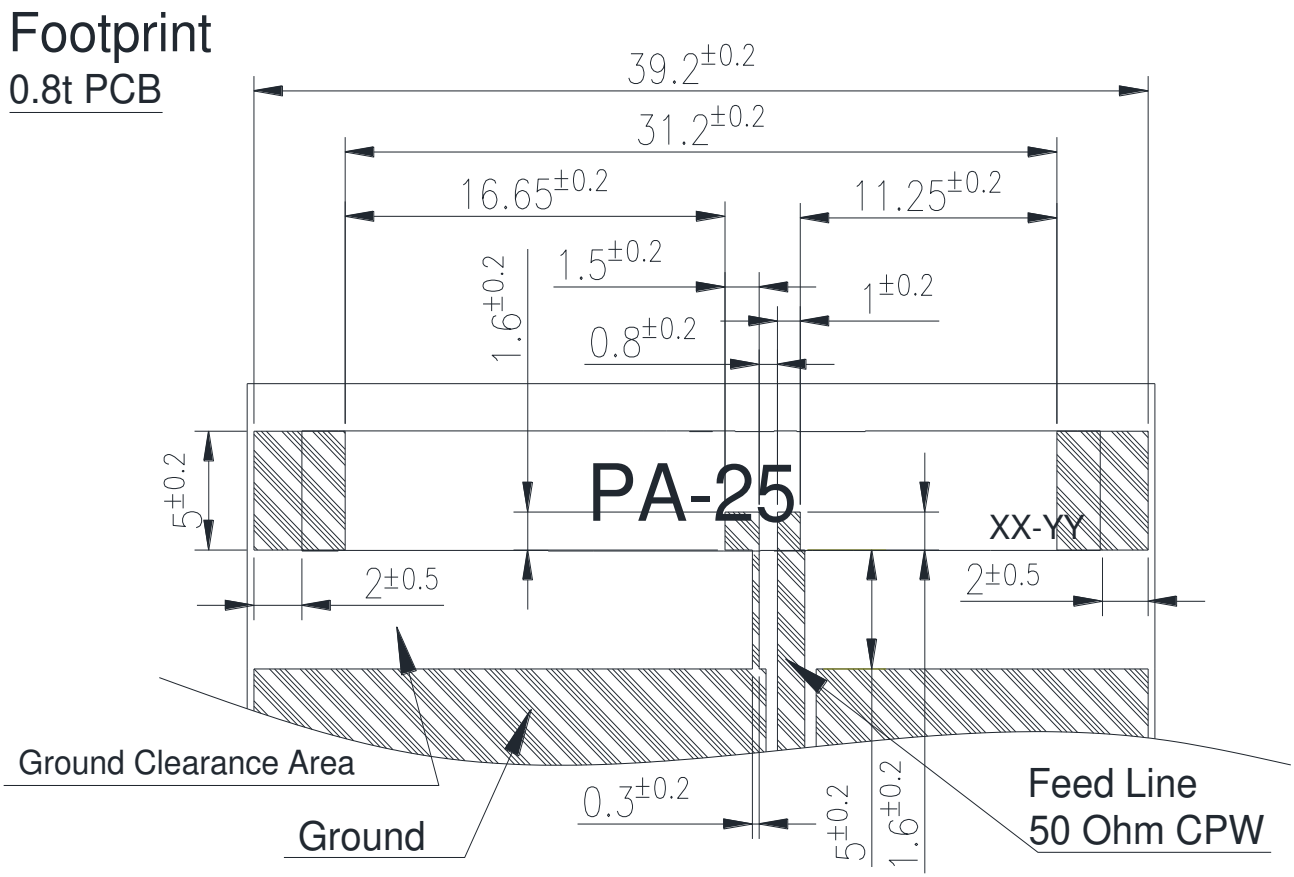
1850MHz

5. Mechanical Drawings (Unit: mm)

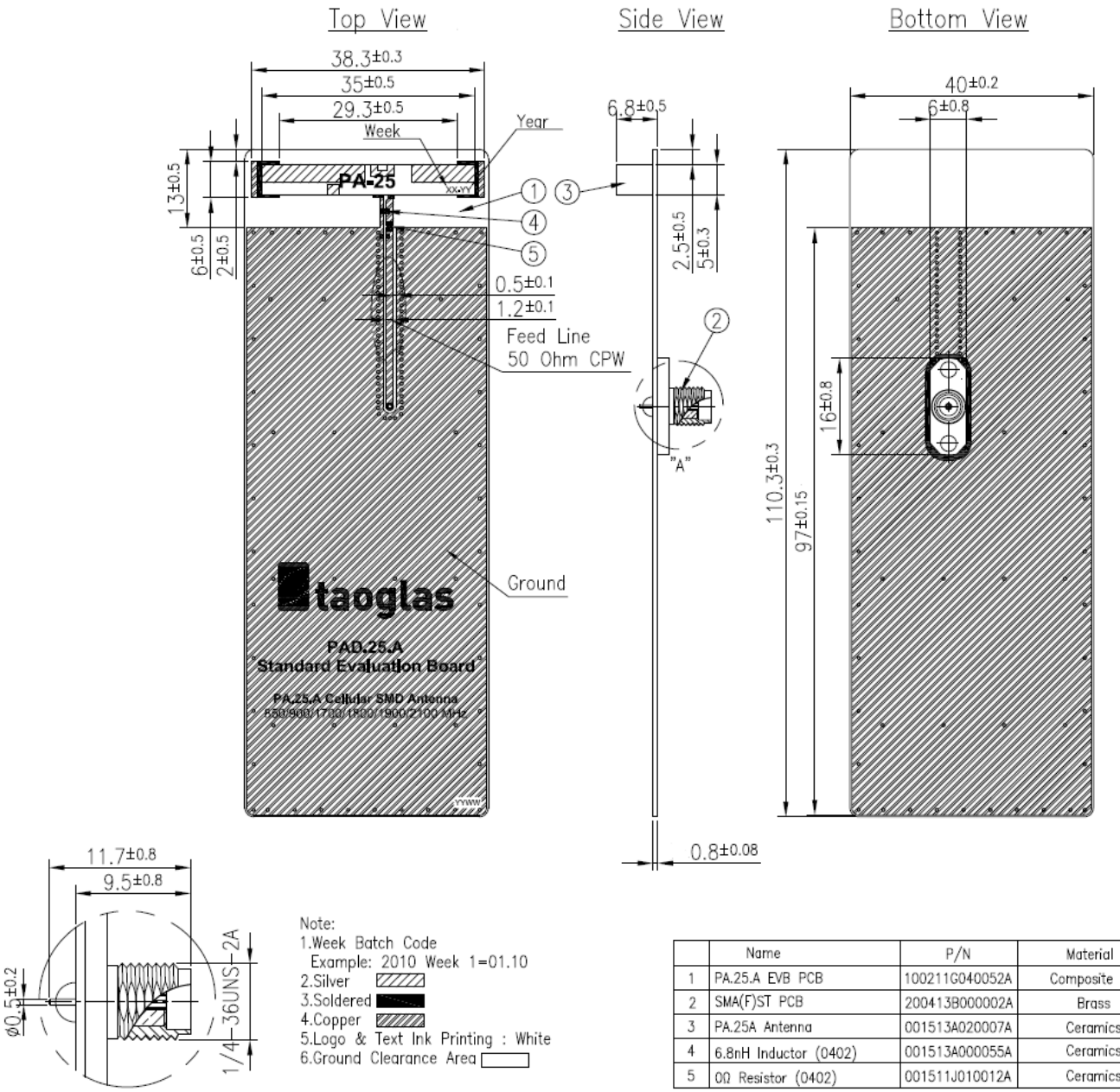
5.1. Antenna Dimensions



5.2. Antenna Footprint



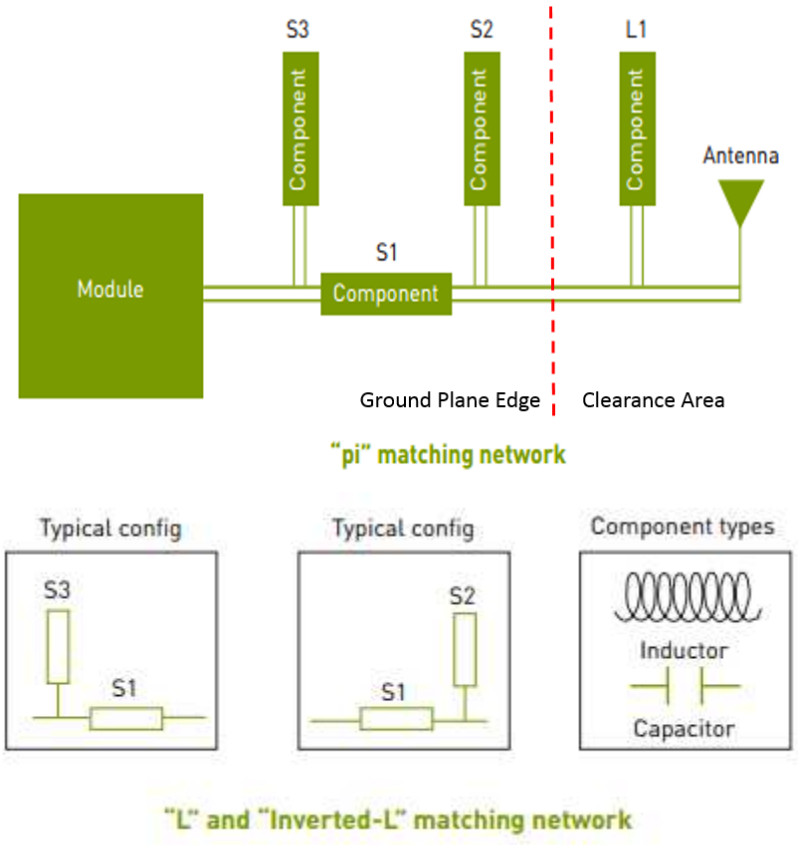
6. EVB Drawing (Unit: mm)



Note:
1.Week Batch Code
Example: 2010 Week 1=01.10
2.Silver
3.Soldered
4.Copper
5.Logo & Text Ink Printing : White
6.Ground Clearance Area

	Name	P/N	Material	Finish	QTY
1	PA.25.A EVB PCB	100211G040052A	Composite 0.8t	Black	1
2	SMA(F)ST PCB	200413B000002A	Brass	Au Plated	1
3	PA.25A Antenna	001513A020007A	Ceramics	White	1
4	6.8nH Inductor (0402)	001513A000055A	Ceramics	N/A	1
5	0Ω Resistor (0402)	001511J010012A	Ceramics	N/A	1

7. Transmission Line and Matching Component



A matching component (L1 in the above drawing) in parallel with the PA.26A is required for the antenna to have optimal performance on the evaluation board, located outside of the ground plane in the space specified in the above drawings.

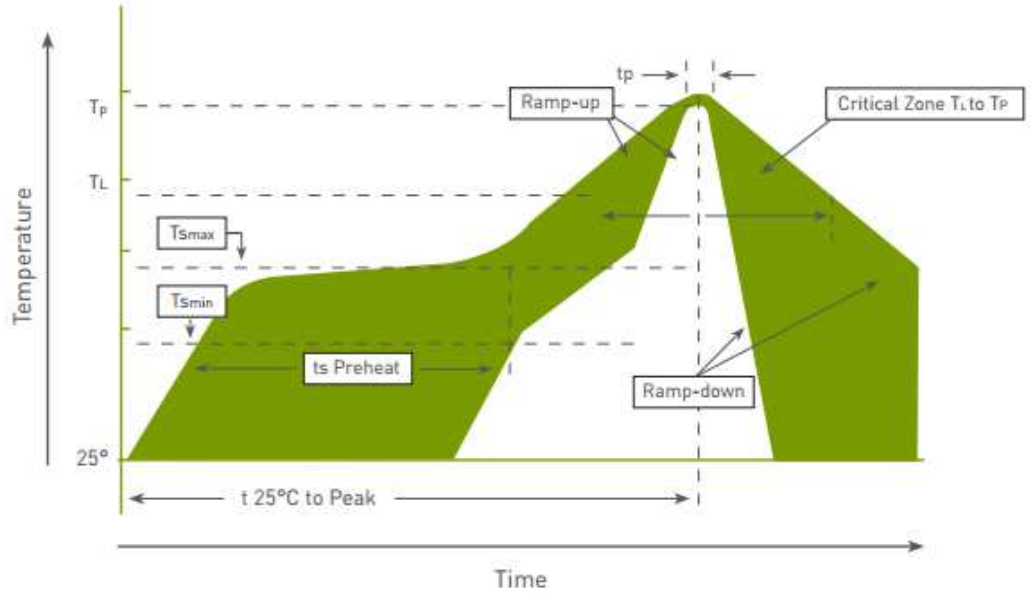
Additional matching components may be necessary for your device, so we recommend incorporating extra component footprints, forming a "pi" network, between the cellular module and the edge of the ground plane.

8. Recommended Reflow Temperature Profile

The PA.25 can be assembled following either Sn-Pb or Pb-Free assembly processes.

The recommended soldering temperatures are as follows:

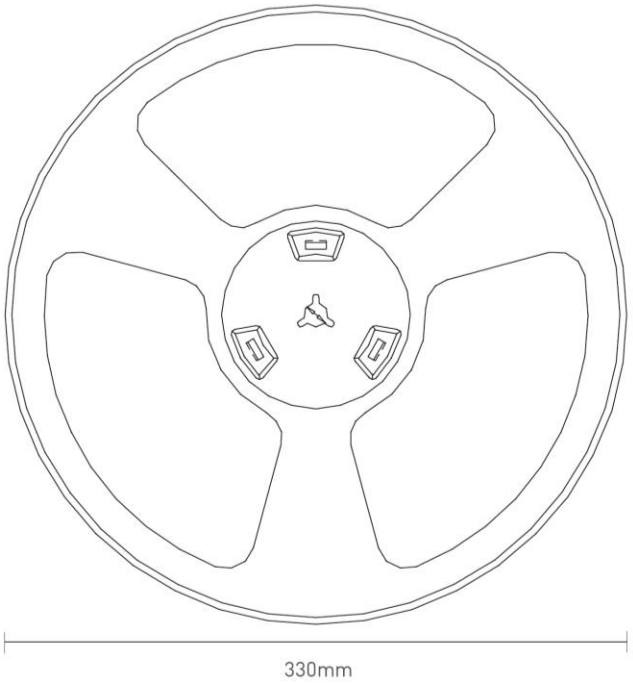
Phase	Profile Features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
Ramp-Up	Avg Ramp-Up Rate (Tsmax to Tp)	3°C/second (max)	3°C/second (max)
Preheat	Temperature Min (Tsmin) Temperature Max (Tsmax) Time (tsmin to tsmax)	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Reflow	Temperature (T_L) Total Time Above T_L b[t_L]	183°C 60-150 seconds	217°C 60-150 seconds
Peak	Temperature (Tp) Time (tp)	235°C 10-30 seconds	260°C 20-40 seconds
Ramp-Down	Rate	6°C/second (max)	6°C/second (max)
Time from 25°C to peak Temperature		6 minutes max	8 minutes max



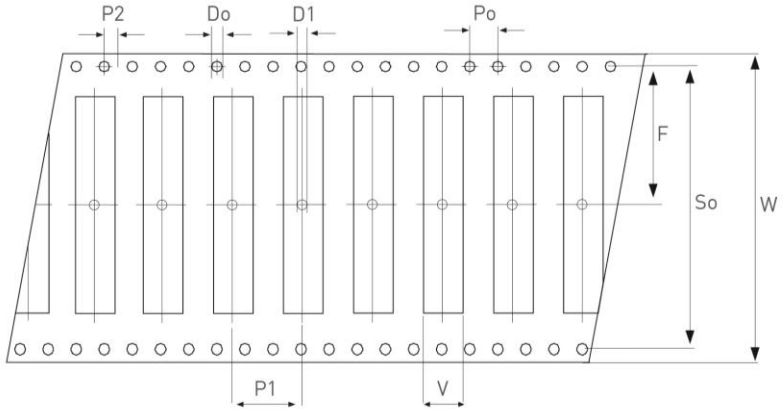
Temperature profile – (green area) for the assembly process in reflow ovens

9. Packaging (Units: mm)

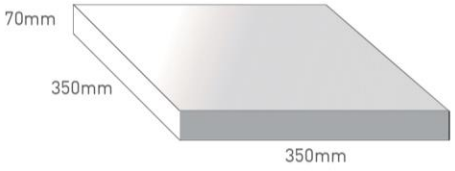
450 pc PA.25.A
1 reel per small inner box
Dimensions - 330*55mm
Weight - 2000g



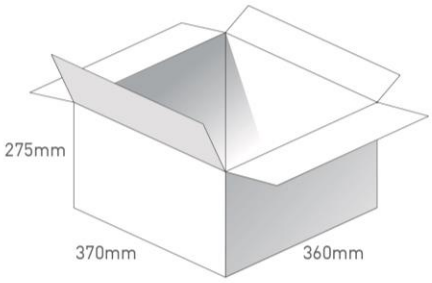
Symbol	Spec
Po	4.0 ± 0.10
P1	12.0 ± 0.10
P2	2.0 ± 0.15
Do	1.5
D1	0.7
F	26.2 ± 0.10
So	52.4 ± 0.10
W	56.0 ± 0.30
V	5.5 ± 0.10



450 pc PA.25.A
1 reel in small inner box
Dimensions - 350*350*70
Weight - 2.2Kg



3 boxes / 1350 pcs in one carton
Carton Dimensions - 370*360*275mm
Weight -7.3Kg



Pallet Dimensions 1200*100*1320mm
24 Cartons per Pallet
6 Cartons per layer
4 Layers