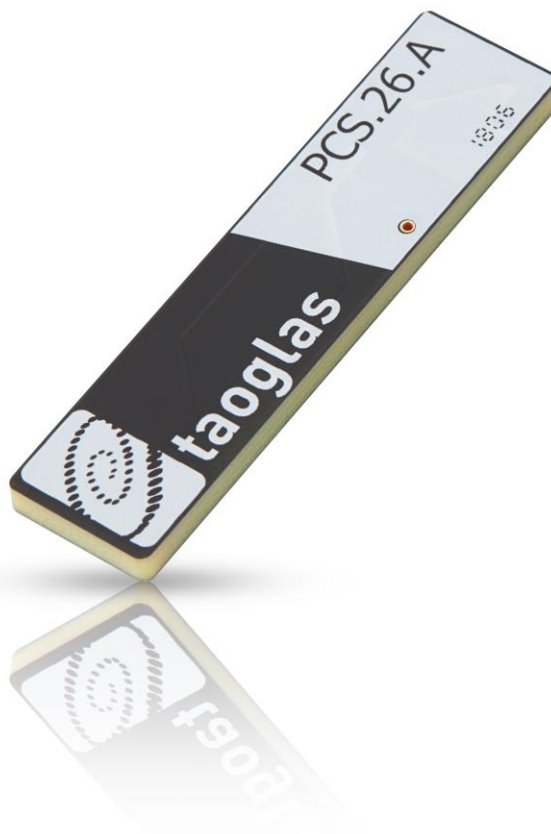


## Specification

Part No. : **PCS.26.A**

Product Name : Low Profile LTE/Cellular 2G/3G/4G  
SMD Dielectric Antenna  
GSM / CDMA / DCS / PCS / WCDMA /  
UMTS /HSDPA / GPRS / EDGE  
617~960MHz/1710~2690MHz

Features : High Efficiency Multi-Band SMD antenna  
Low profile: 54.6\*13\*3mm  
**RoHS Compliant**



## **1. Introduction**

The PCS.26.A is a low-profile SMD LTE/cellular 2G/3G/4G embedded antenna designed for direct SMD mount on a device PCB. It provides high efficiency in a very small form factor, at 54.6\*13\*3mm. Its rectangular shape and very small size make it very easy to integrate. Packaged in tape and reel, it can be mounted via pick and place to reflow solder directly on the edge of the PCB board. The antenna is a great match for lower cost LTE/cellular applications, particularly in the telematics and automotive sector.

This antenna is recommended for use with longer ground-plane lengths of 100mm or more for maximum efficiency. Some tuning can be performed on this antenna to help optimize to the device environment. Contact your regional Taoglas sales office for support.

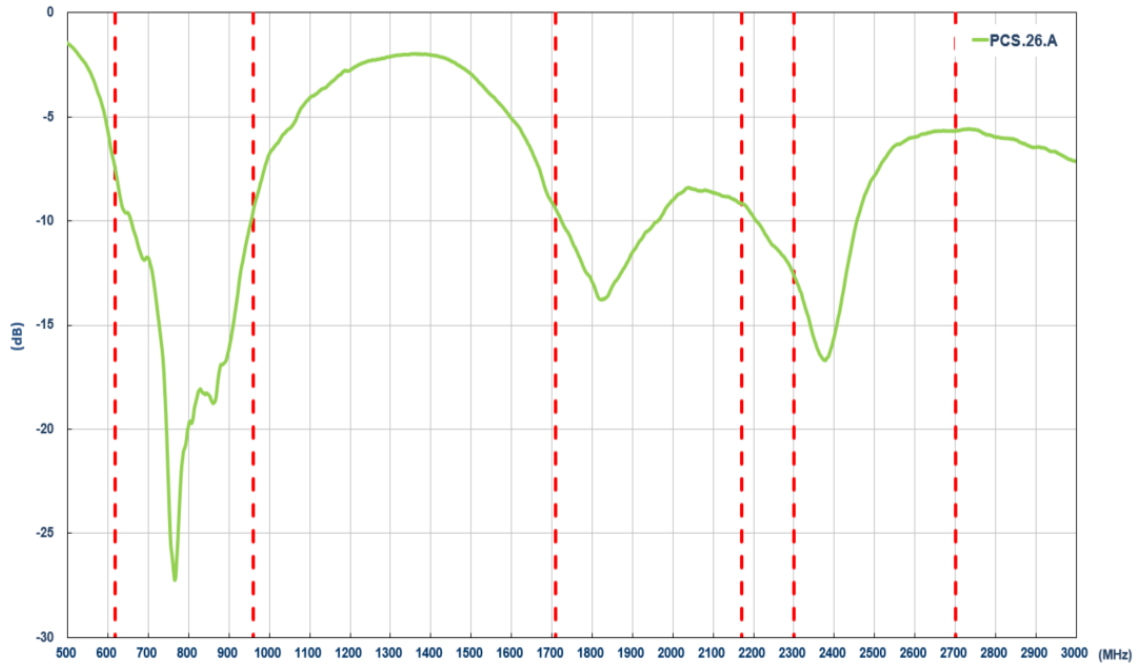
## 2. Specification Table

Electrical								
Frequency (MHz)	617~698	698~806	824~894	880~960	1710~1880	1850~1990	1920~2170	2300~2690
Peak Gain (dBi)*	3.67	2.54	3.53	3.75	4.58	3.99	4.26	3.86
Average Gain (dBi)*	-1.19	-1.31	-0.98	-0.70	-1.43	-2.36	-2.41	-2.62
Efficiency (%)*	75.99	73.95	79.82	85.16	71.96	58.03	57.36	54.72
Return Loss (dB)*	<-7			<-7				<-6
Polarization	Linear							
Impedance	50 Ω							
Maximum Input Power	5W							
MECHANICAL								
Antenna Dimensions	54.6mm x 13mm x 3mm							
Material	FR4							
Soldering Type	SMT through Reflow							
ENVIRONMENTAL								
Operation Temperature	-40°C ~ +85°C							
Storage Temperature	-40°C ~ +85°C							

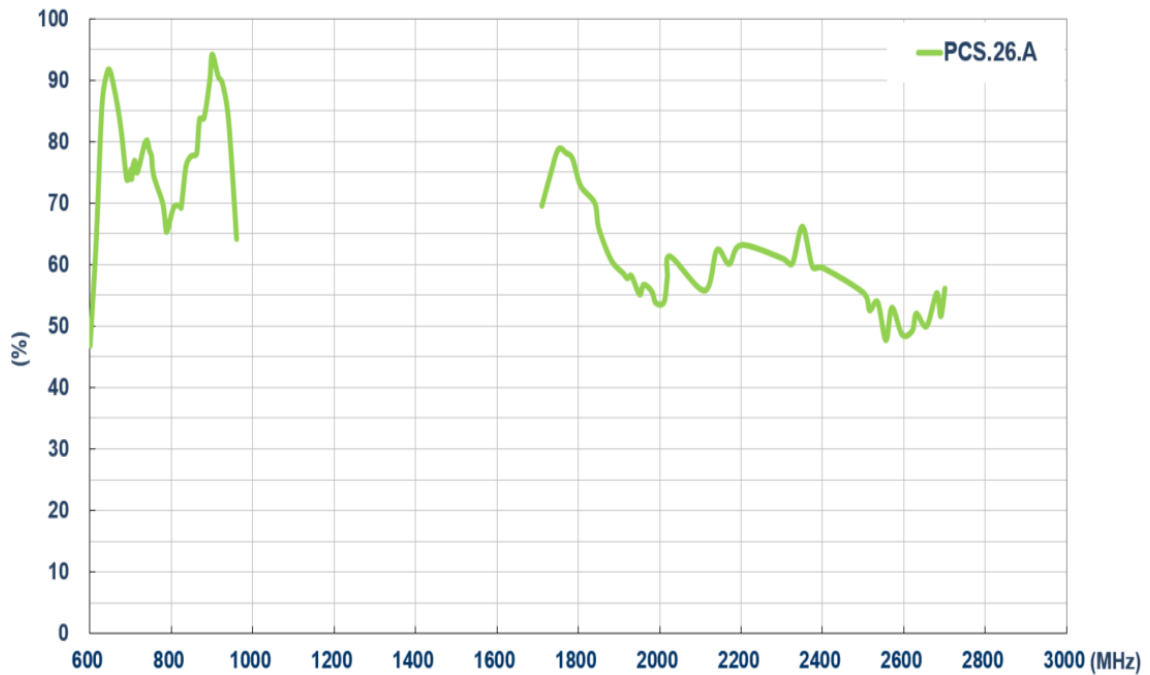
\* All measurements were SMT on 178\*55.6mm EVB board.

## 3. Antenna Characteristics

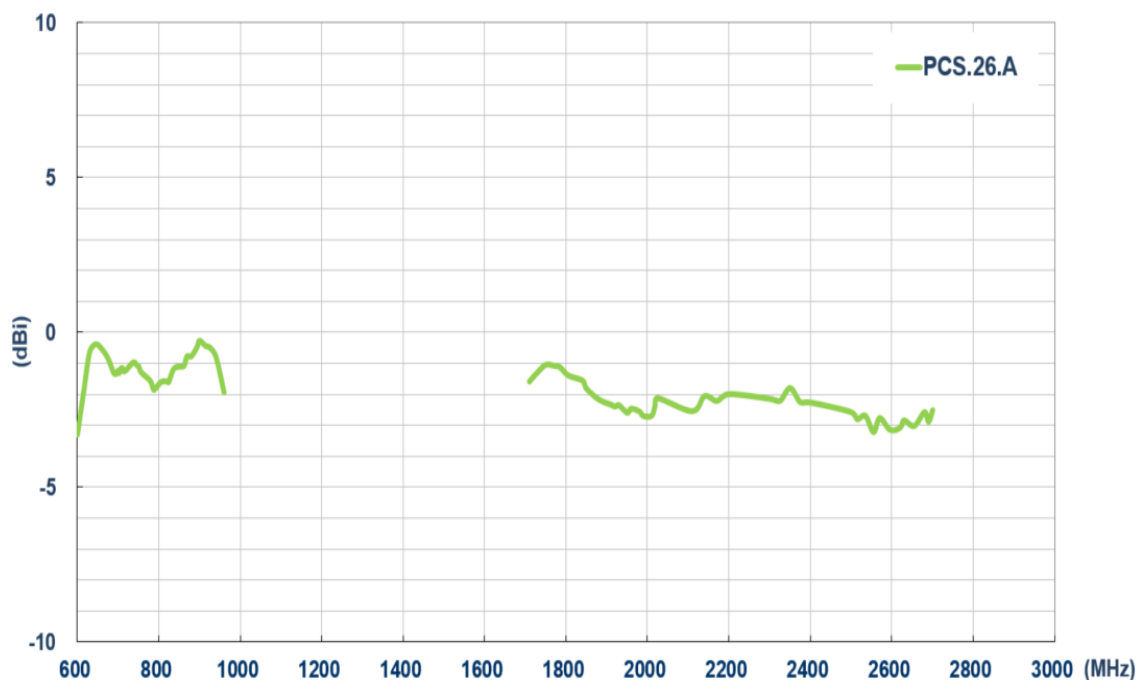
### 3.1. Return Loss



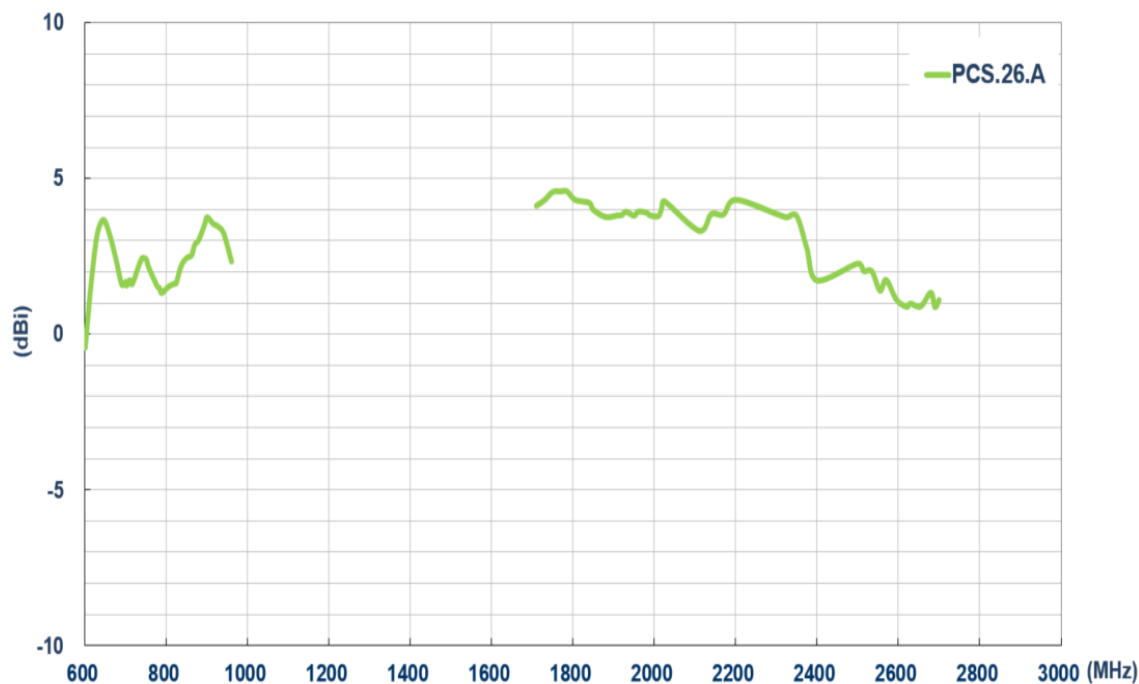
### 3.2. Efficiency



### 3.3. Average Gain

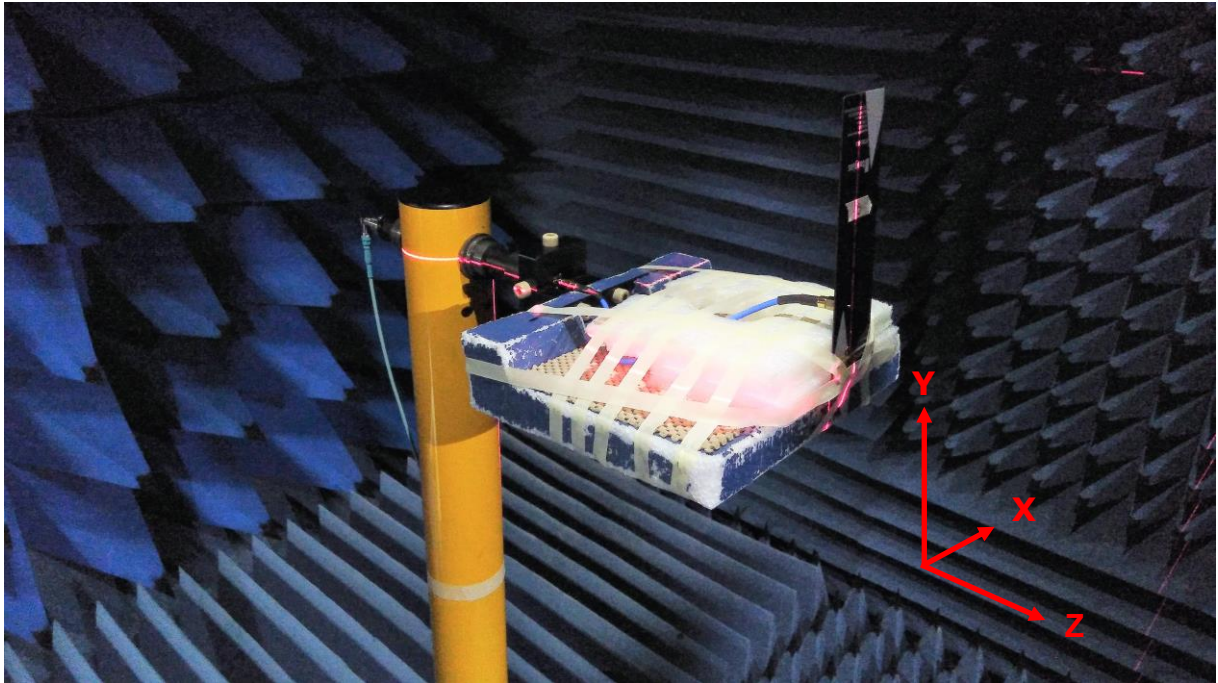


### 3.4. Peak Gain

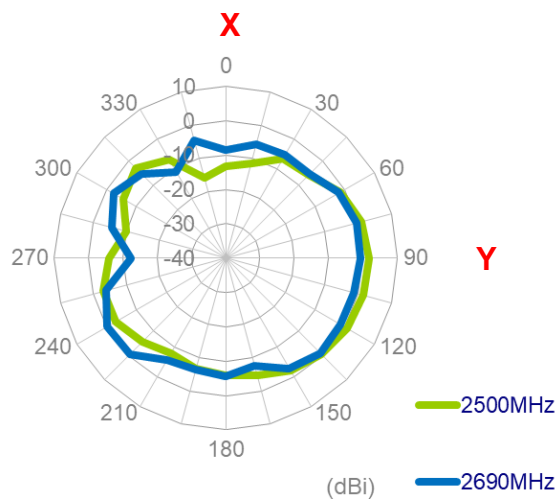
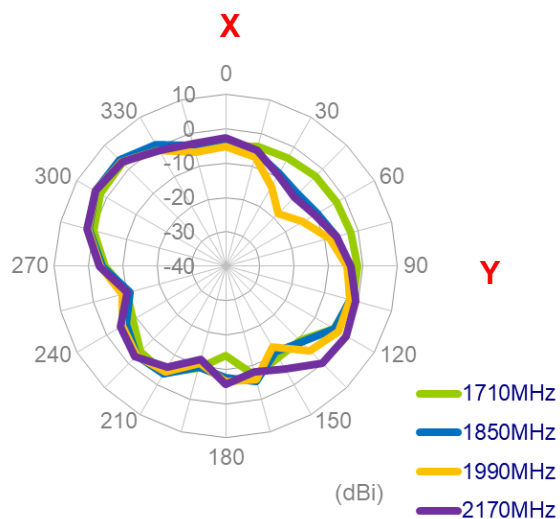
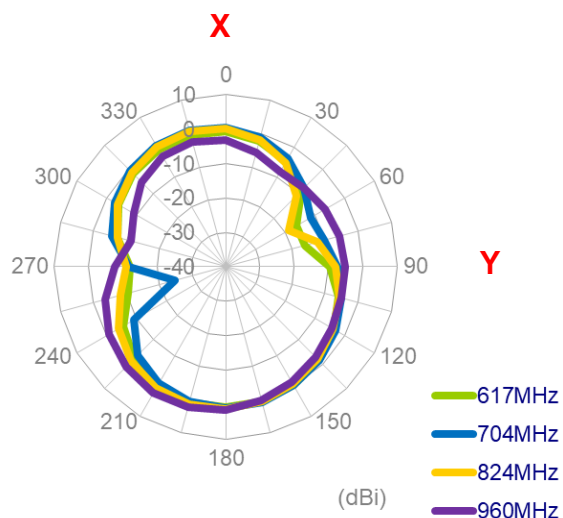


## 4. Radiation Patterns

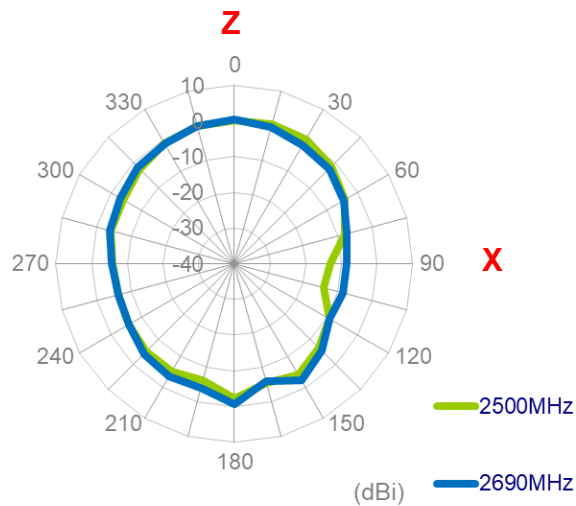
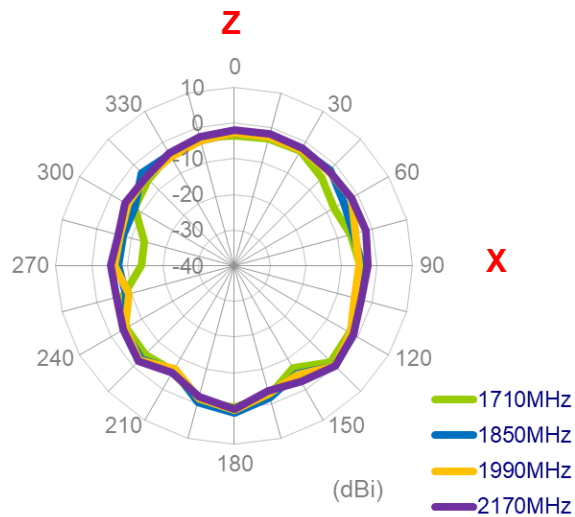
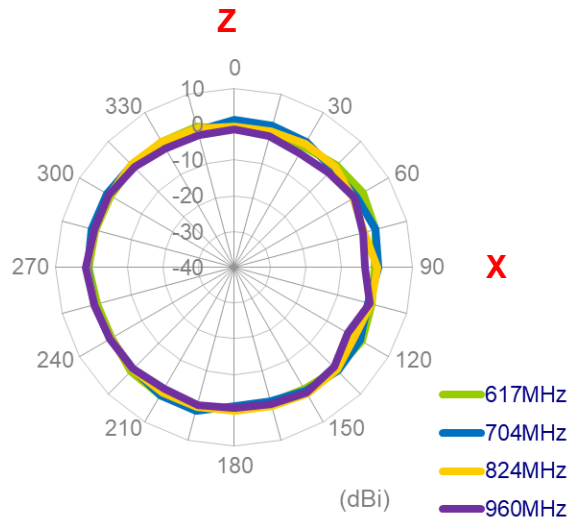
### 4.1. Test Set up



## 4.2. XY Plane

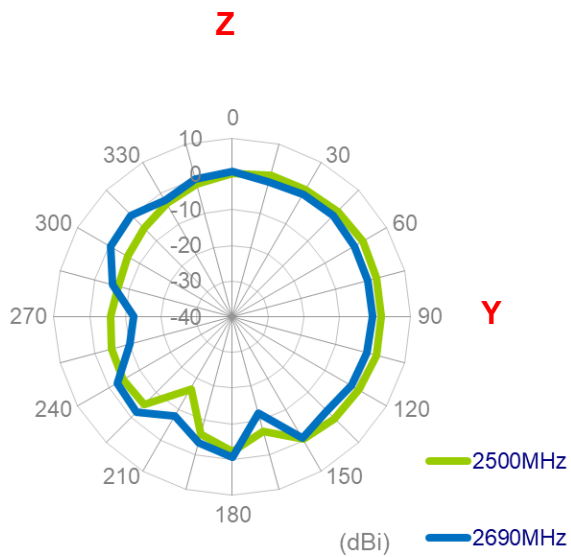
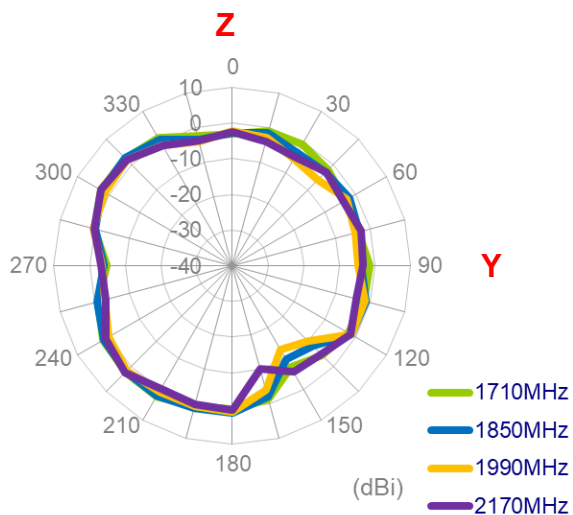
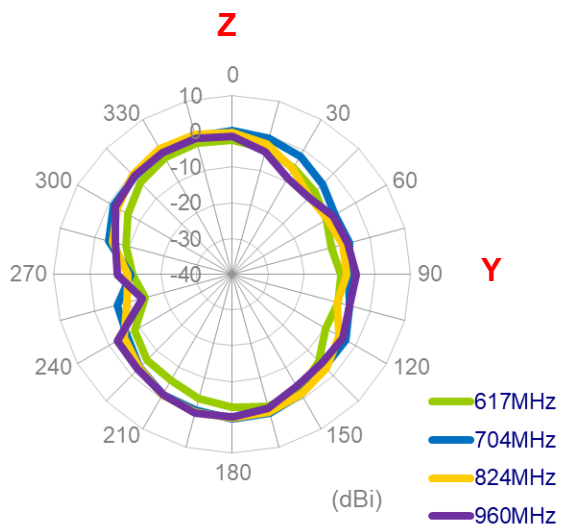


### 4.3. XZ Plane



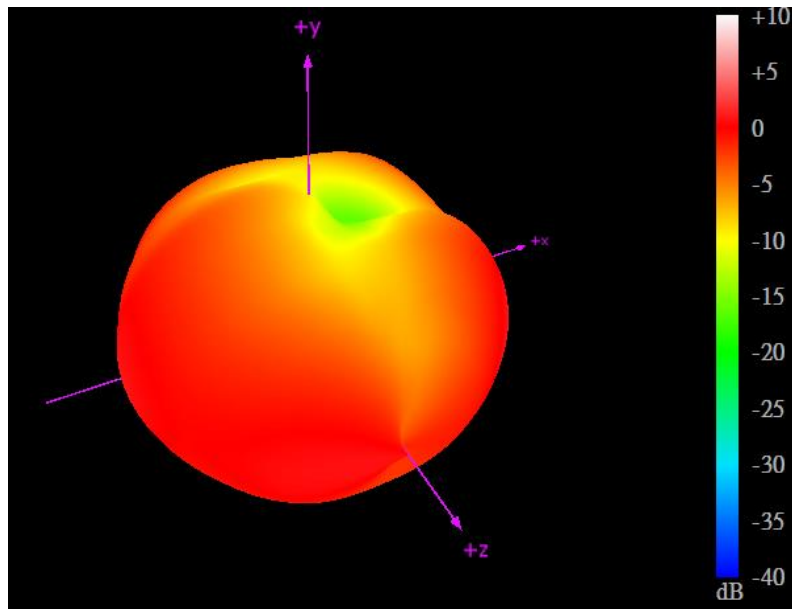


### 4.4. YZ Plane

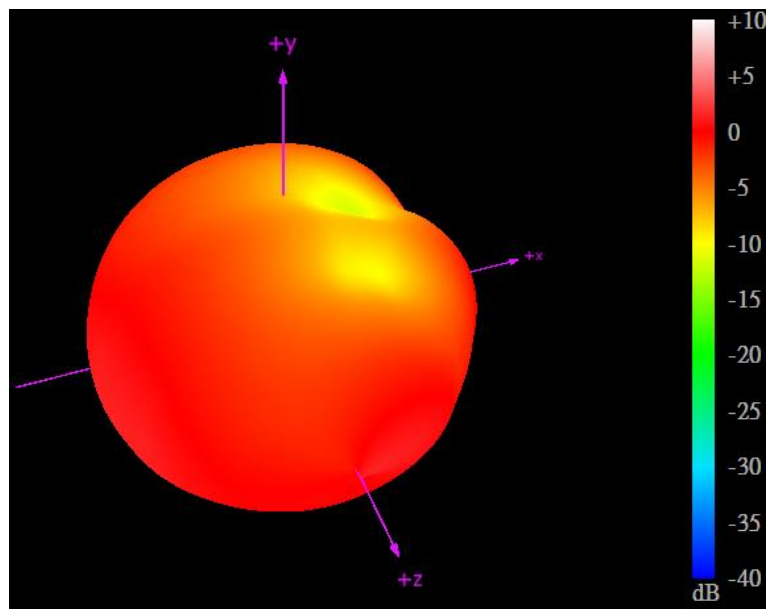


## 4.5. 3D Radiation Pattern

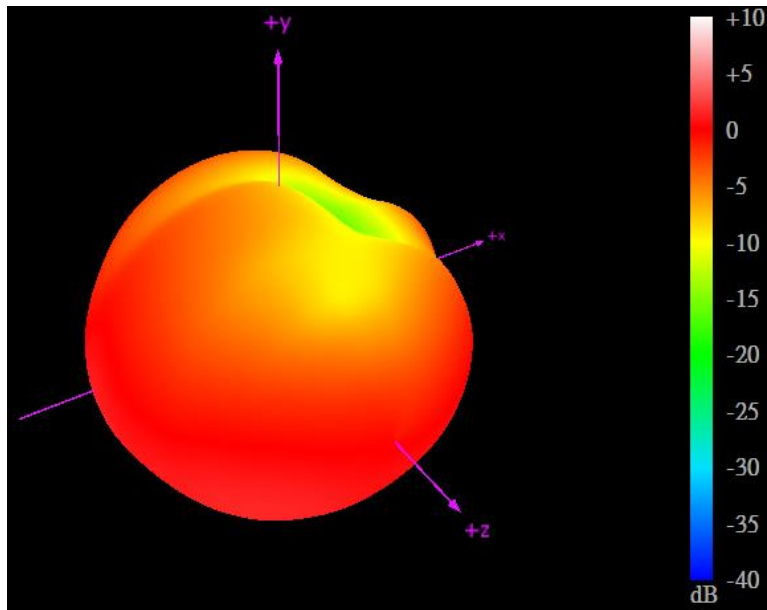
617 MHz



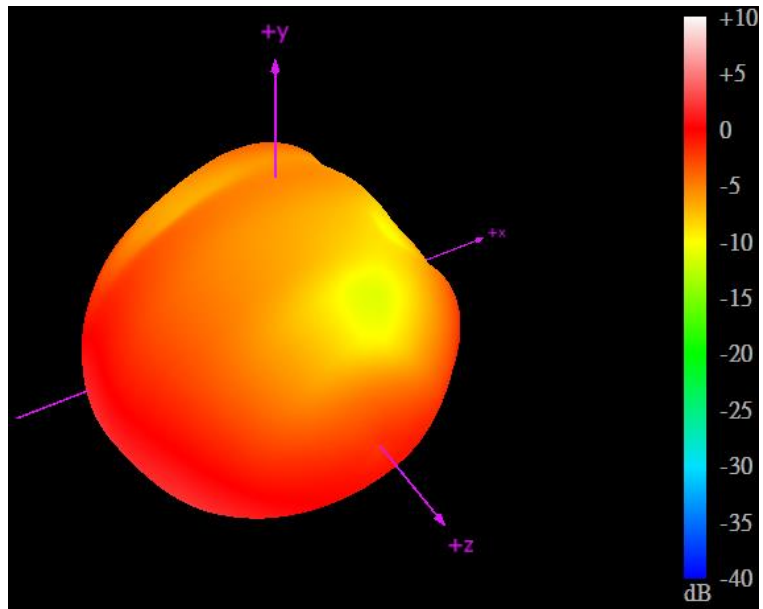
704 MHz



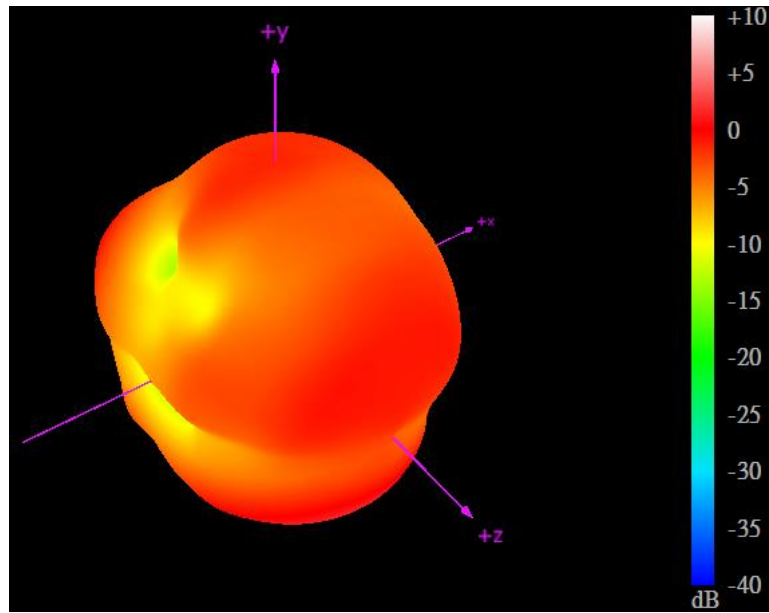
### 824 MHz



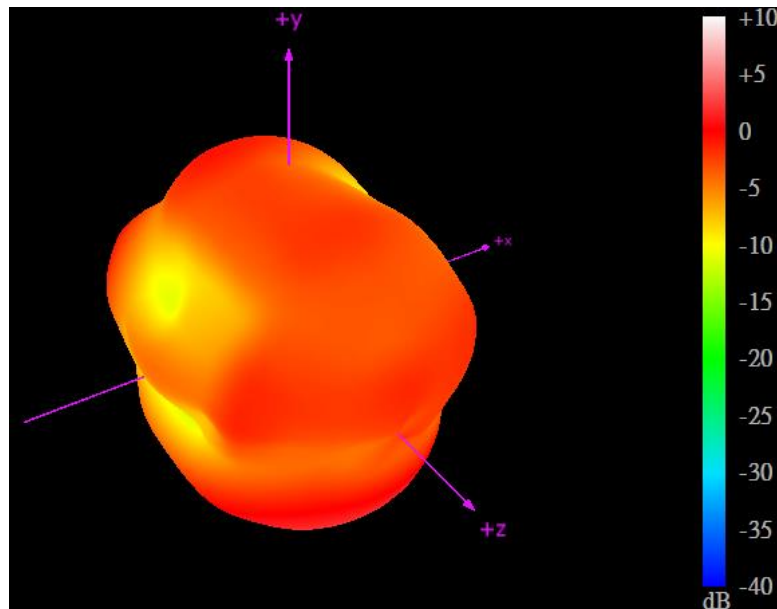
### 960 MHz



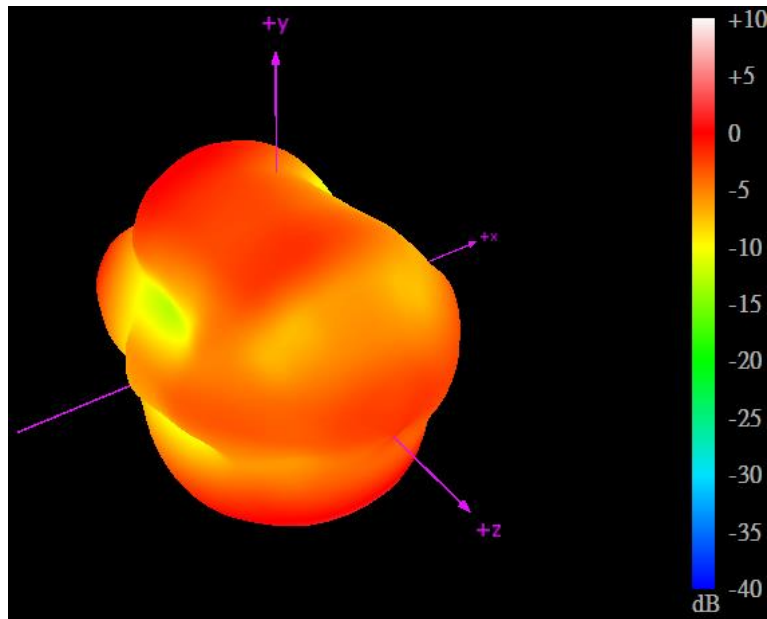
**1710 MHz**



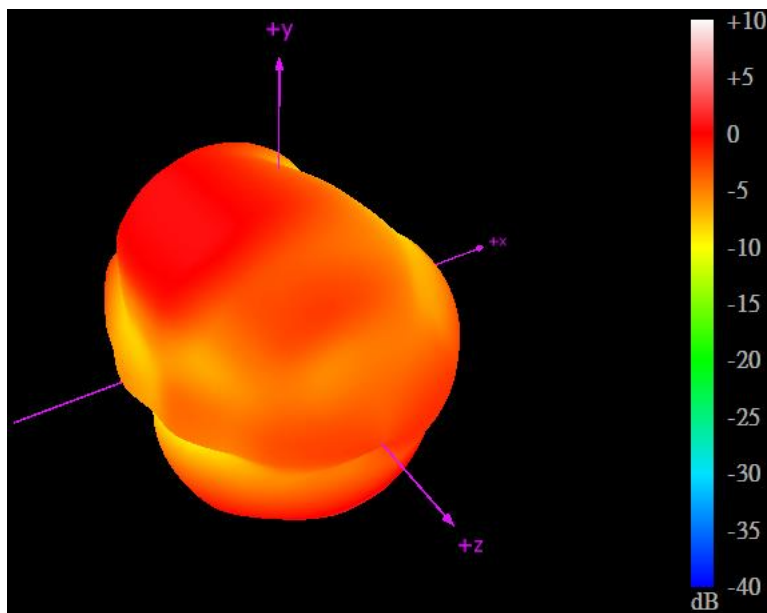
**1850 MHz**



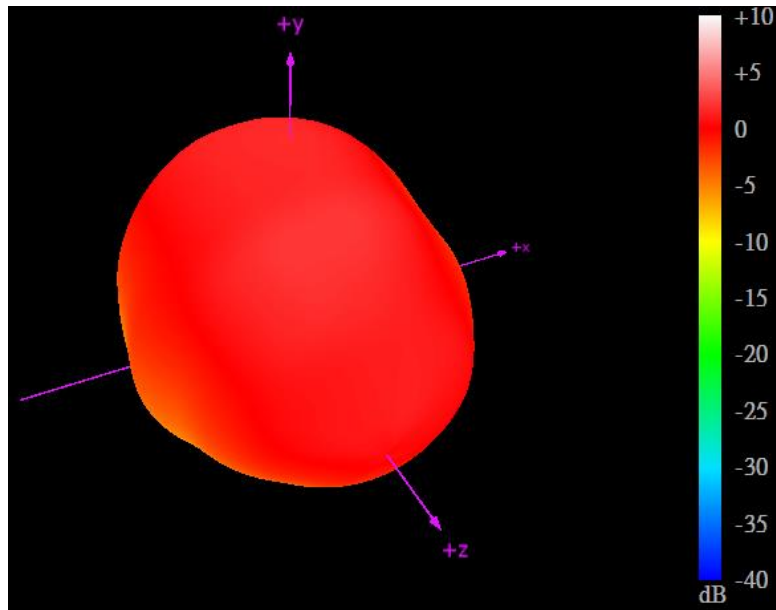
**1990 MHz**



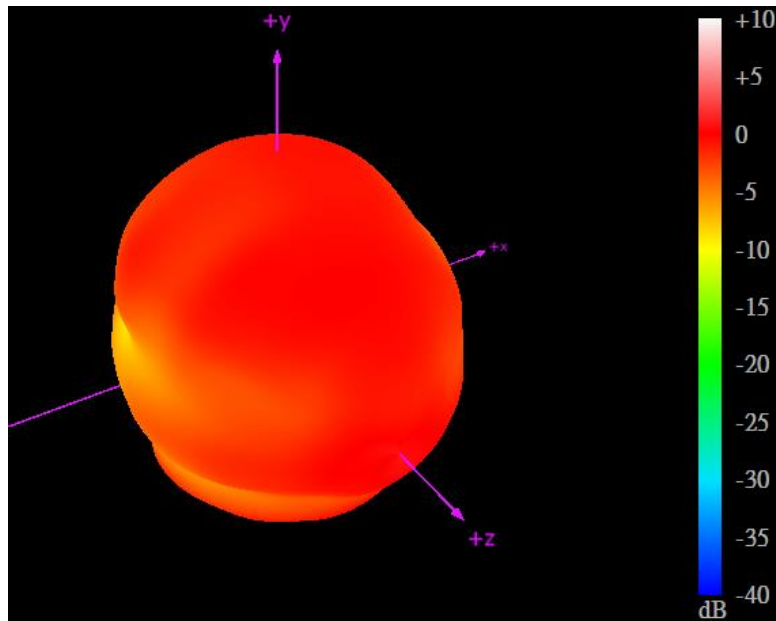
**2170 MHz**



**2550 MHz**

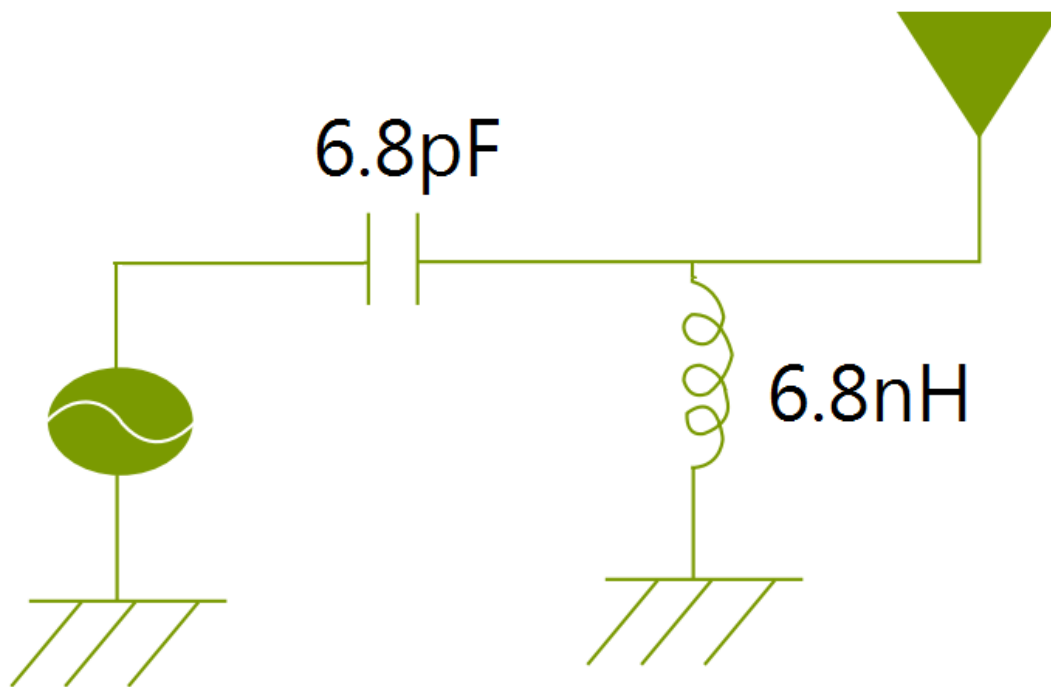


**2690 MHz**

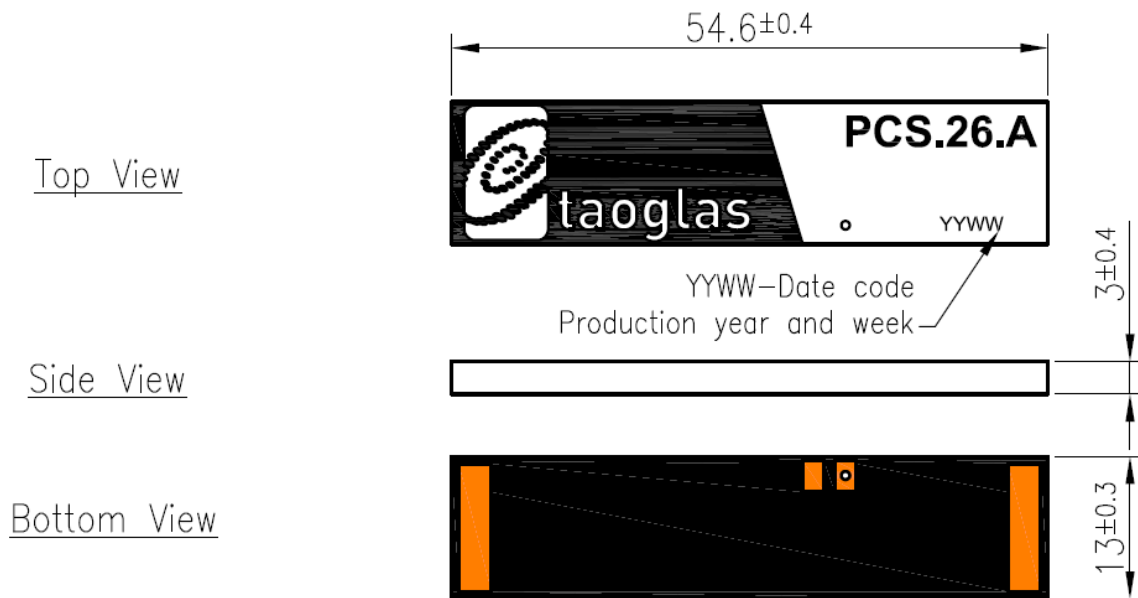


## 5. Matching Circuits

For Standard Evaluation Board: 178mm\*55.6mm, includes 100mm ground plane.

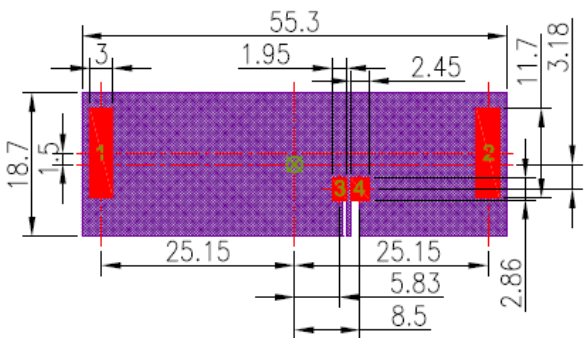
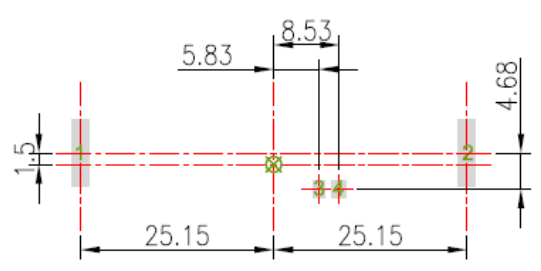
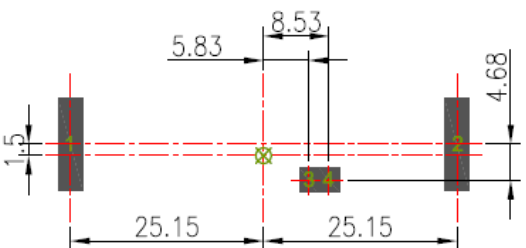
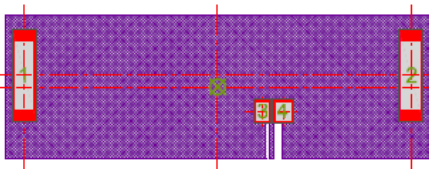

















## 6. Mechanical Drawing (Unit:mm)

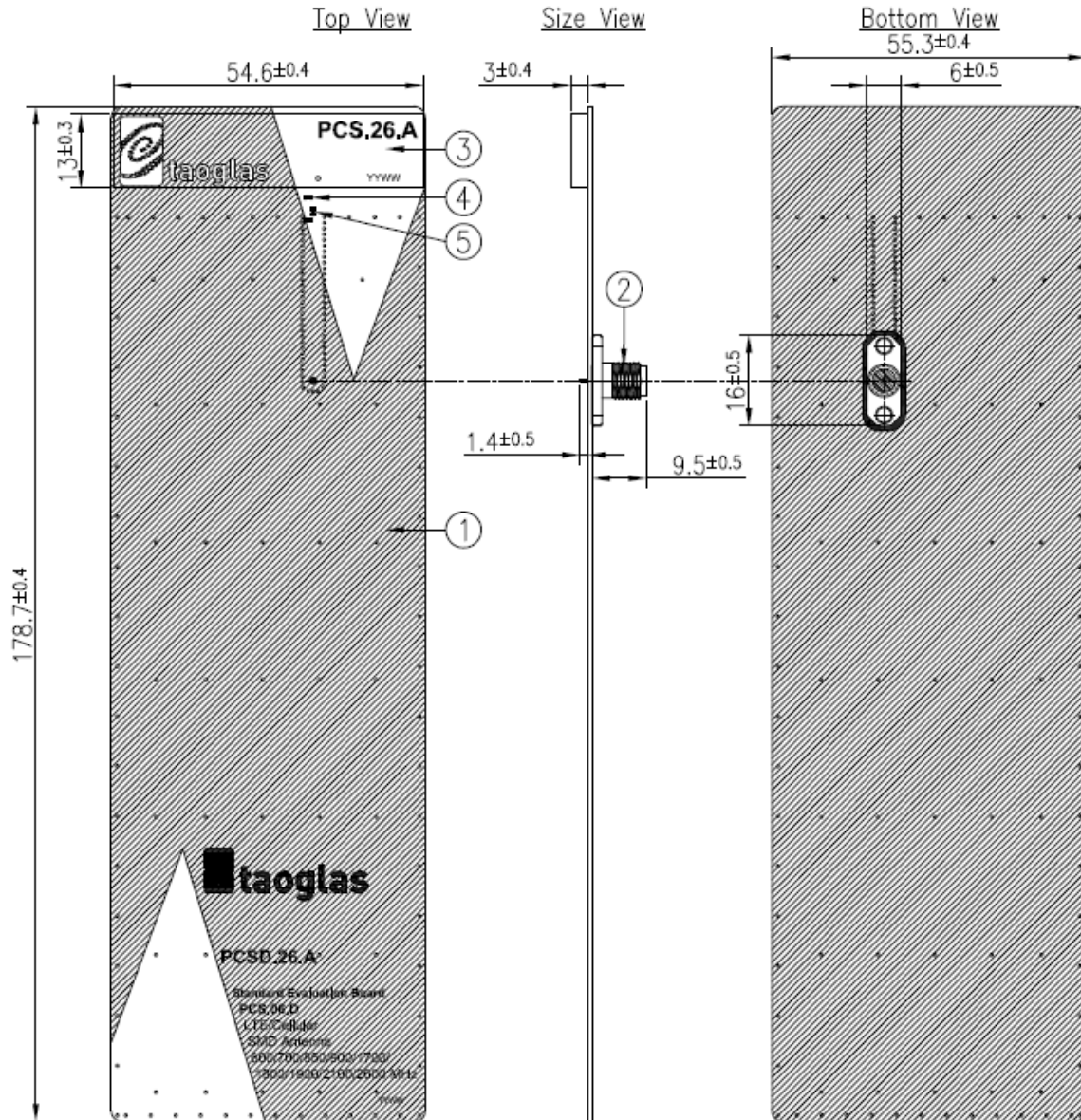




## 7. Antenna Footprint

FootPrint																
Top Copper	Top Solder Paste															
<p>Pads 1 and 2 are the same size, Pad 4 should be connected to a 50 ohm transmission line.</p> 	<p>Pads 1 and 2 are the same size.</p> 															
Top Solder Mask	Composite Diagram															
<p>This drawing is a negative of solder mask. Black regions are anti-mask.</p> 																
<p>NOTE:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">1. Tin Plated area</td> <td style="width: 10%;"></td> <td style="width: 60%;">6. Ground keepout should extend through any inner PCB layers and any side around the antenna to minimize coupling from RF feed to ground, except the side facing system ground.</td> </tr> <tr> <td>2. Solder Mask area</td> <td></td> <td>7. Any vias in pads should be either filled or tented to prevent solder from wicking away from the pad during reflow.</td> </tr> <tr> <td>3. Copper area</td> <td></td> <td>8. The dimension tolerances should follow standard PCB manufacturing guidelines</td> </tr> <tr> <td>4. Paste area</td> <td></td> <td></td> </tr> <tr> <td>5. Keepout Region</td> <td></td> <td></td> </tr> </table>		1. Tin Plated area		6. Ground keepout should extend through any inner PCB layers and any side around the antenna to minimize coupling from RF feed to ground, except the side facing system ground.	2. Solder Mask area		7. Any vias in pads should be either filled or tented to prevent solder from wicking away from the pad during reflow.	3. Copper area		8. The dimension tolerances should follow standard PCB manufacturing guidelines	4. Paste area			5. Keepout Region		
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3. Copper area		8. The dimension tolerances should follow standard PCB manufacturing guidelines														
4. Paste area																
5. Keepout Region																

## 8. PCS.26.A on Evaluation Board



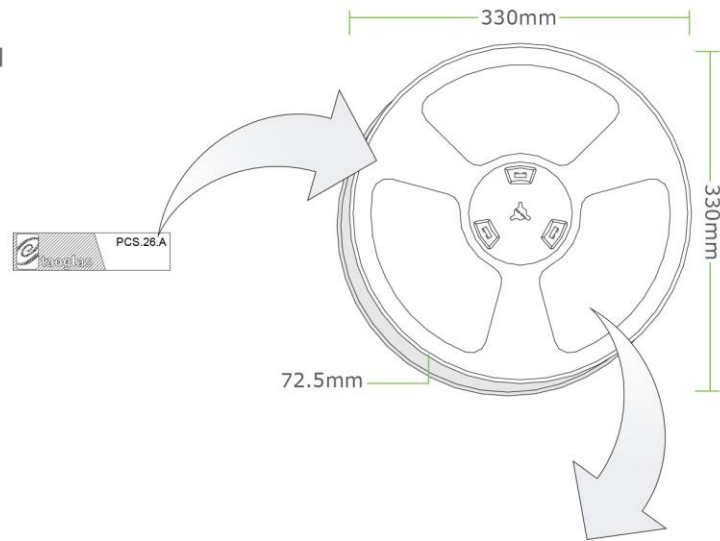
**Note:**

1. Week Batch Code  
Example: 2013 Week 10=1310
2. Soldered area 
3. Soldermask area(Black) 
4. Logo & Text Ink Printing : White

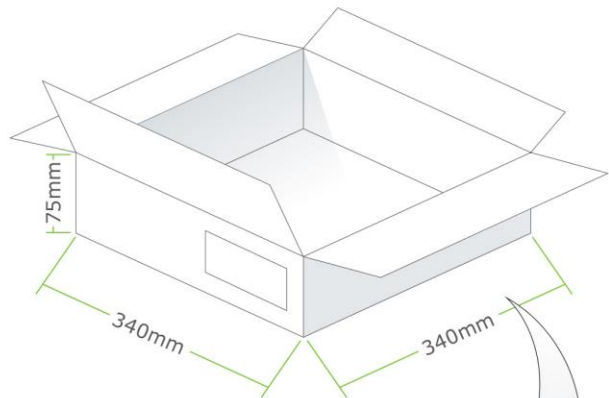
	Name	P/N	Material	Finish	QTY
1	PCSD.26.A EVB PCB	100217F070000A	Composite 0.8t	Black	1
2	SMA(F) ST PCB	200413B000002A	Brass	Au Plated	1
3	PCS.26.A PCB Antenna	100217F060000A	Composite 3t	Black	1
4	6.8nH Inductor (0402)	001517H160000A	Ceramic	N/A	1
5	8.2pF Capacitor (0402)	001517H170000A	Ceramic	N/A	1

## 9. Packaging

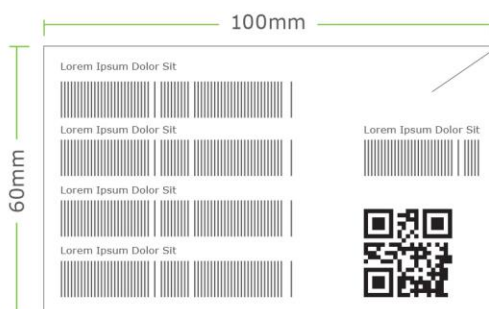
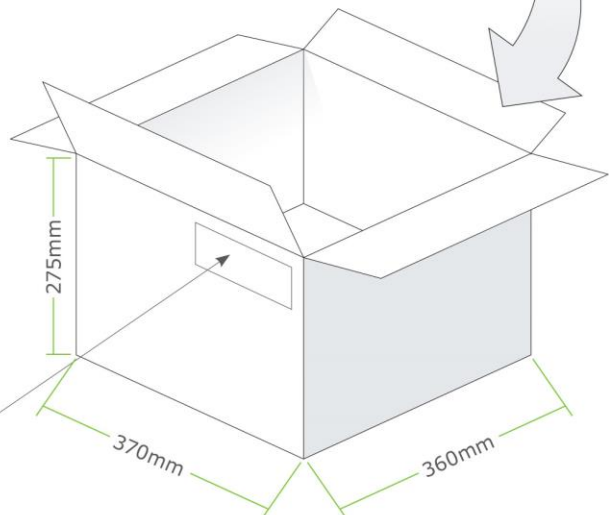
800pcs PCS.26.A per Tape & Reel  
 Dimensions - 330\*72.5\*330mm  
 Weight - 3.6Kg



1 Tape & Reel per small box  
 Dimensions - 340\*340\*75mm  
 Weight - 3.6Kg



2400 Tape & Reel PCS.26.A per carton  
 Dimensions - 370\*360\*275mm  
 Weight - 10.8Kg



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