

# Specification

Part No.	:	<b>PA.26B</b>
Product Name	:	Anam LTE Ceramic SMT Antenna For 4G/3G/2G Applications 698MHz to 960MHz, 1710MHz to 2690MHz
Features	:	LTE / GSM / CDMA /DCS /PCS / WCDMA / UMTS / HSDPA / GPRS / EDGE /IMT, Compact High Efficiency Antenna Patent Pending Surface Mount Device Dims: 35*5*6mm RoHS Compliant



## 1. Introduction

The PA.26B is an SMT LTE 4G antenna designed for direct SMT mount on the device PCB. It provides highest efficiency in the smallest form SMT form factor, 35\*5\*6mm. Due to its rectangular shape and compact size the PA.26A is very easy to integrate and can be mounted directly on the edge of the PCB. Matching is accomplished using a pi network. Using SMT (On-Board) antennas saves on labor, cable, and connector costs. SMT antennas also lead to higher integration yield rates, higher transmit power and higher sensitivity.

The PA.26B operates at all common 4G/3G/2G LTE bands; 698MHz to 960MHz, 1710MHz to 2700MHz.

Typical applications:

- Telematics Control Unit (TCU)
- Intelligent Transport Systems
- Wireless LTE M2M Devices
- High Definition Video Broadcast Systems
- First Responder and Emergency Services
- HD Video over LTE
- Internet of Things (IoT)
- Medical Devices

Care should be taken to follow layout instructions and place antenna on the edge of board with adequate clearance to metal. Also minimum ground-plane requirements must be met to achieve targeted efficiencies. Taoglas provides optimization services for matching, and active TRP, TIS and RSE testing. Please contact your regional Taoglas sales office for support.

## 2. Specification Table

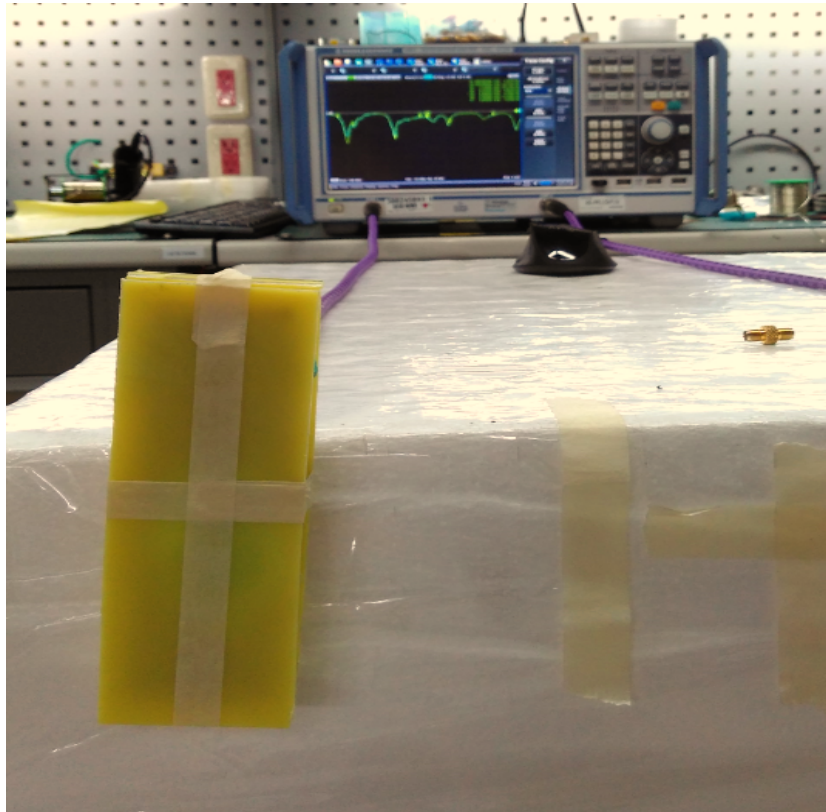
ELECTRICAL*				
STANDARD	4G/3G/2G			
VSWR	<3.5:1			
Operation Frequency (MHz)	698~960MHz	1710~2170MHz	2300~2400MHz	2500~2700MHz
Peak Gain(dBi)	1.71dBi	3.03dBi	1.53dBi	2.69dBi
Average Gain(dBi)	-3.26dB	-2.71dB	-3.27dB	-2.91dB
Efficiency	55%	57%	47%	51%
VSWR	<3.5:1			
Impedance	50Ω			
Polarization	Linear			
Radiation Properties	Omnidirectional			
Max Input Power	5 W			

\*Antenna tested in customer device

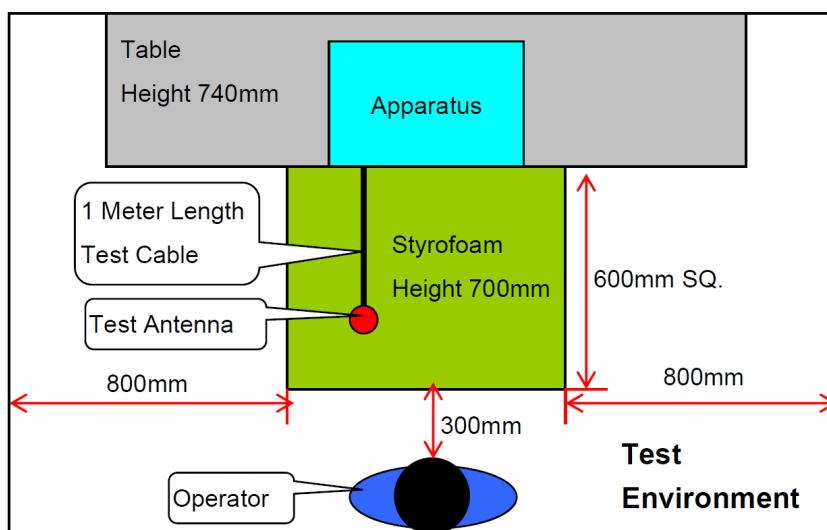
MECHANICAL	
Dimensions	35*5*6mm
Material	Ceramic
Termination	Ag (environmental-friendly Pb free)
Weight	3g
EVb Connector	SMA(F)
ENVIRONMENTAL	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Relative Humidity	Non-condensing 65°C 95% RH
RoHs Compliant	Yes

## 3. Test Configuration

### 3.1 Test Setup

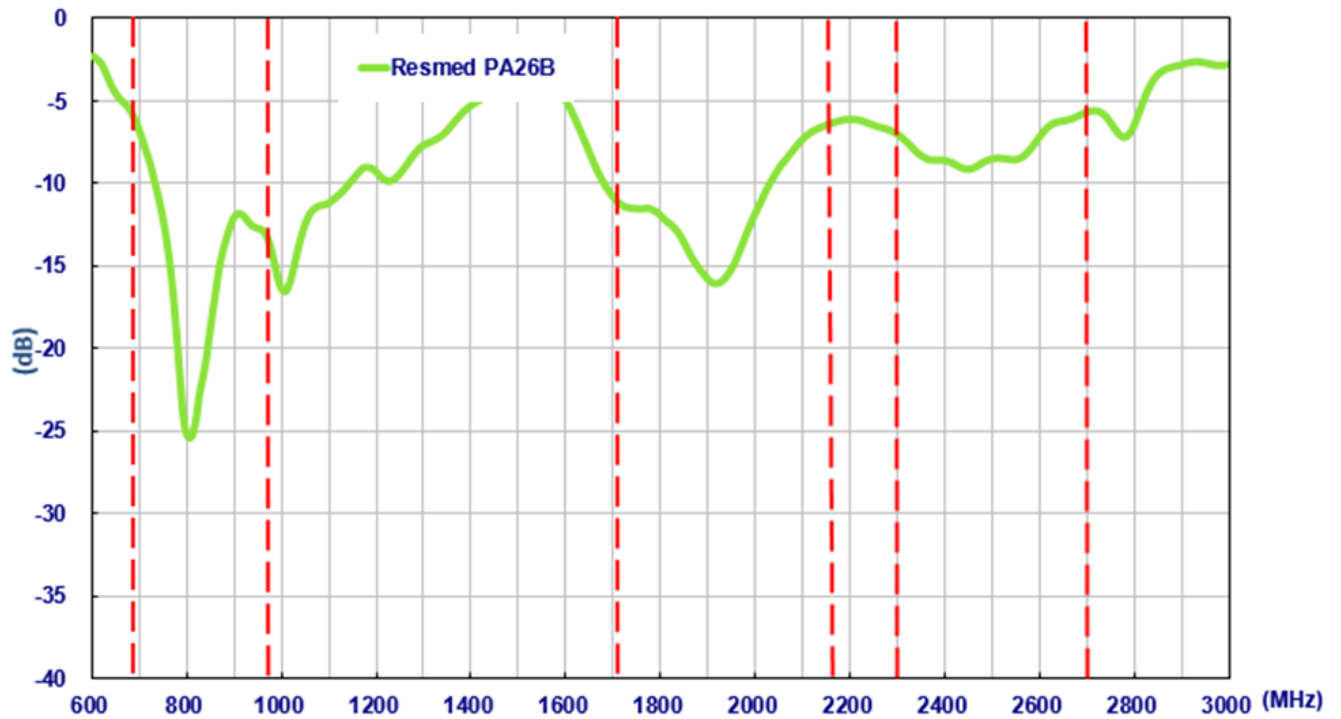


In free space

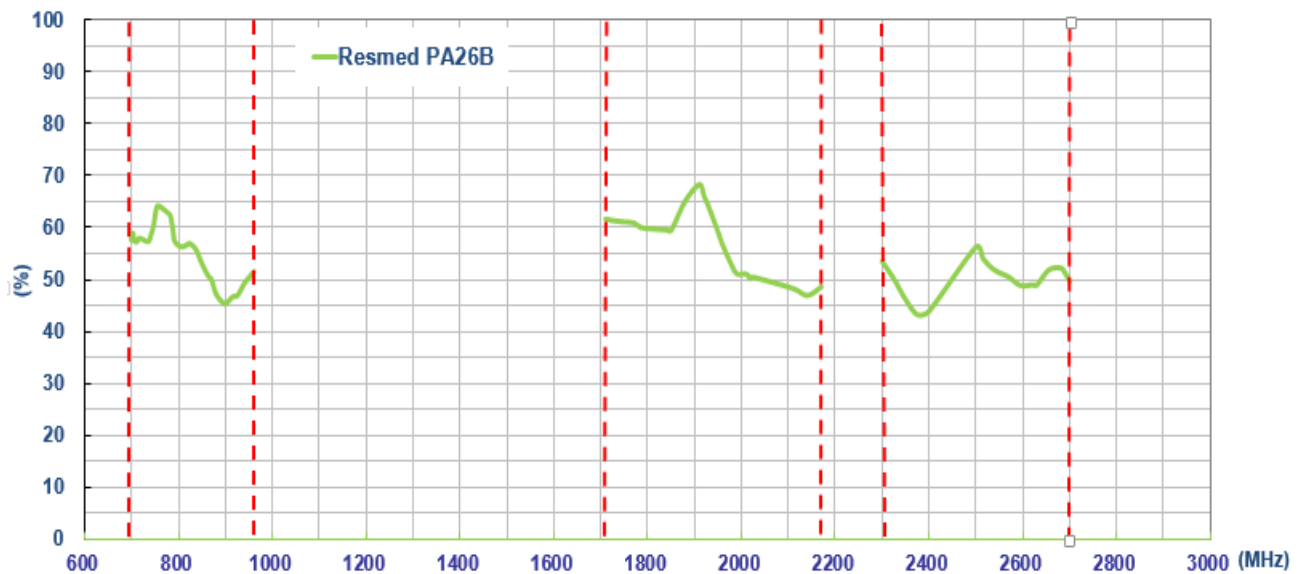


Return Loss Test Setup

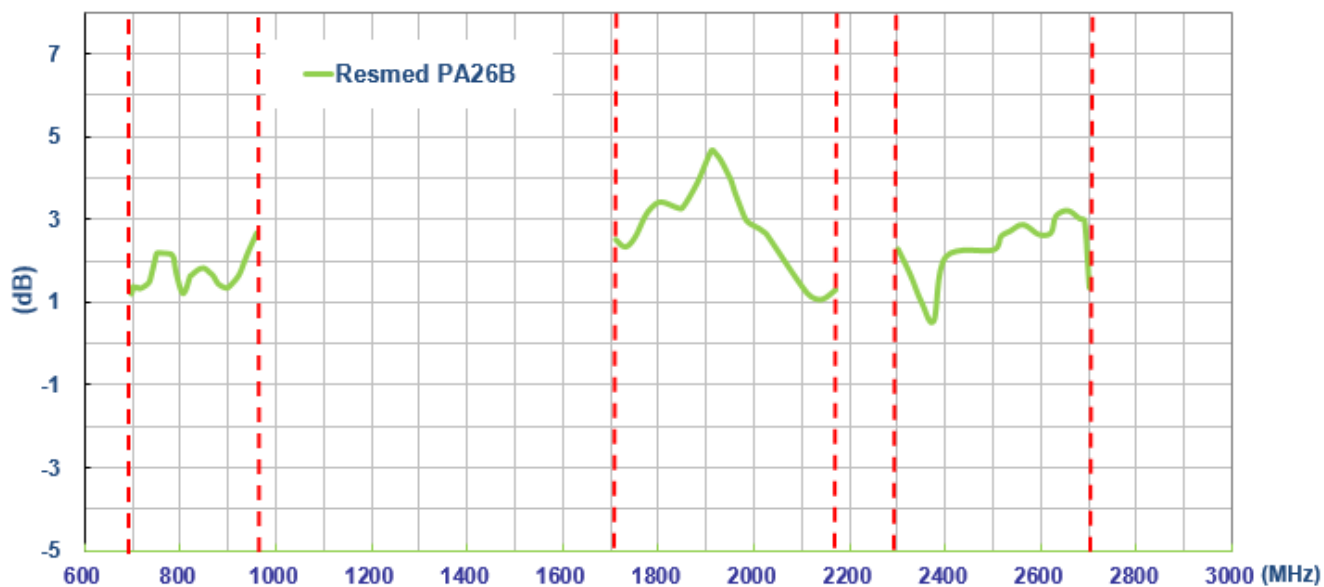
### 3.1.1 Return Loss



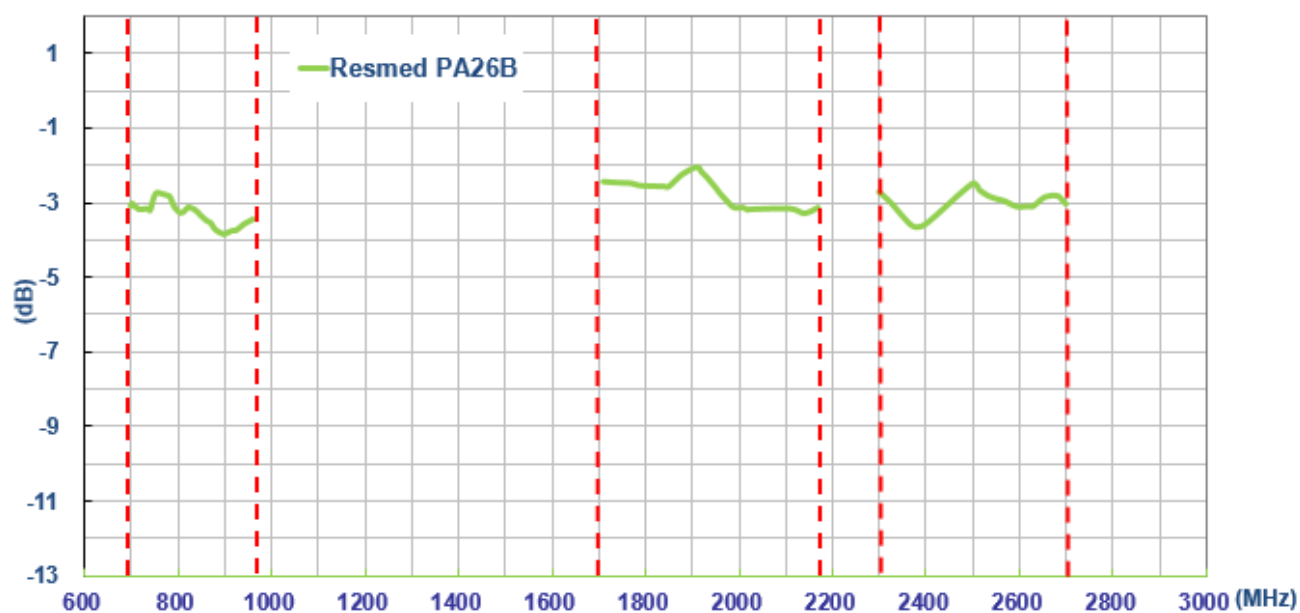
### 3.1.2 Efficiency



### 3.1.3 Peak Gain

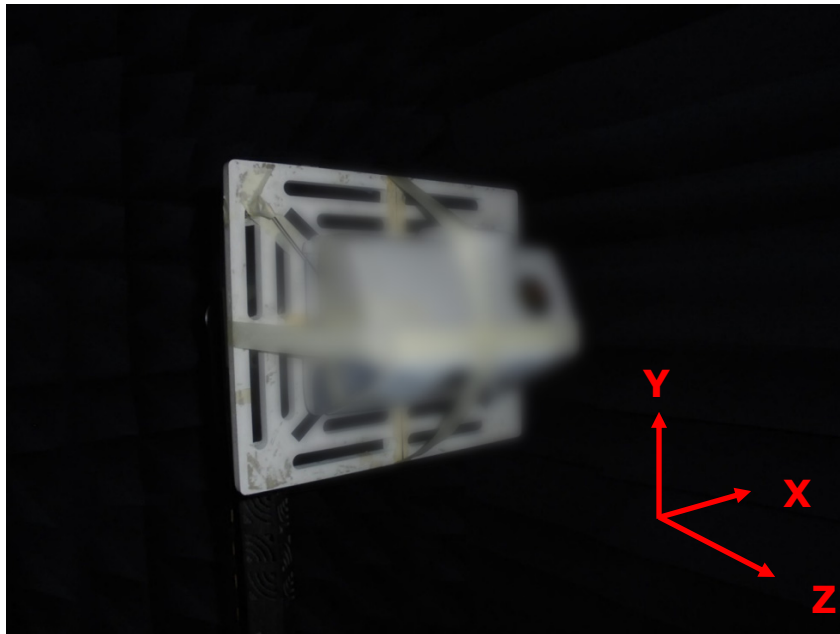


### 3.1.4 Average Gain



## 3.2 Radiation Pattern

### 3.2.1 Test Setup

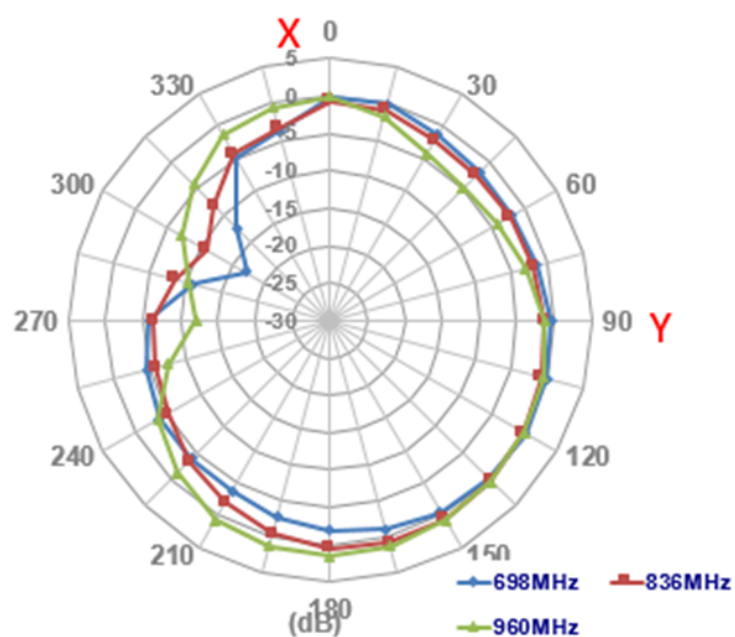


Testing in Free Space (Device blurred for confidentiality)

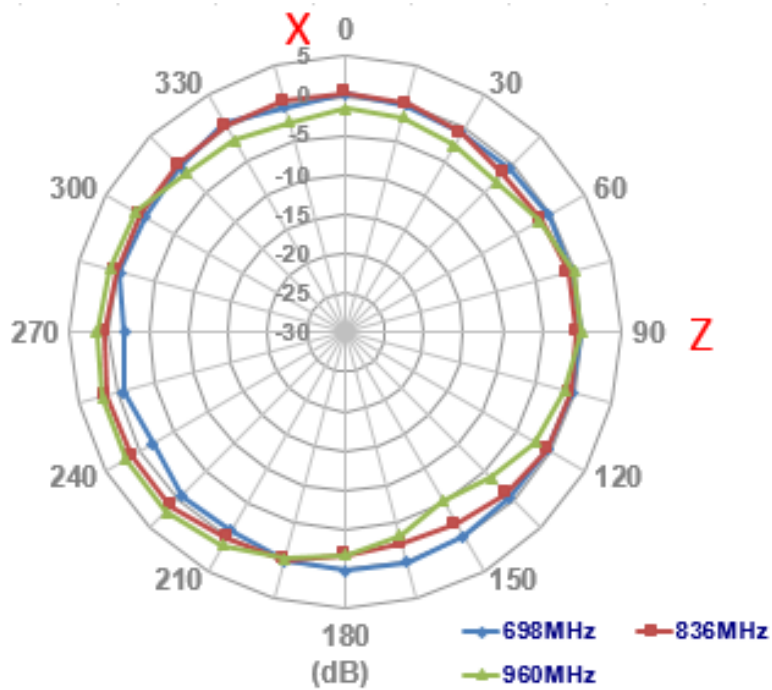
### 3.2.2 2D Radiation Pattern for

#### 3.2.2.1 698-960MHz

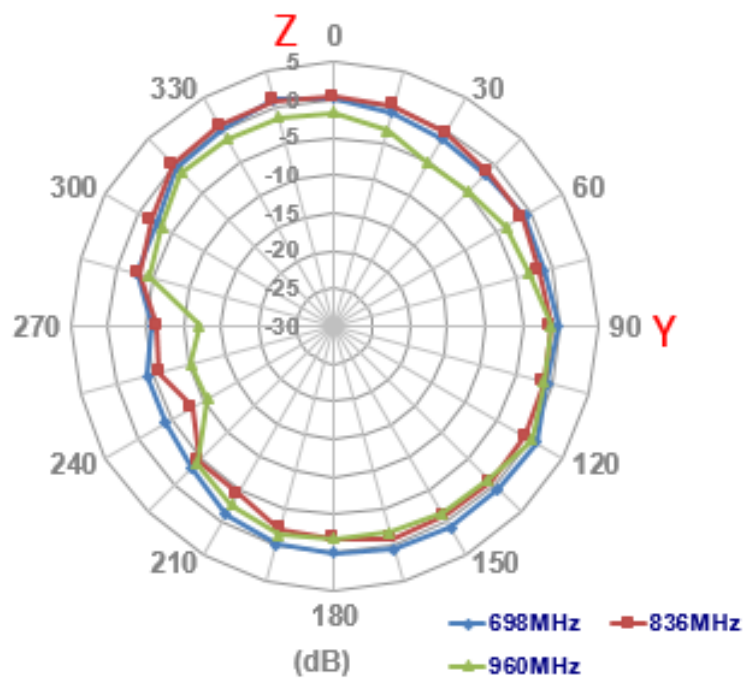
XY Plane



## XZ Plane



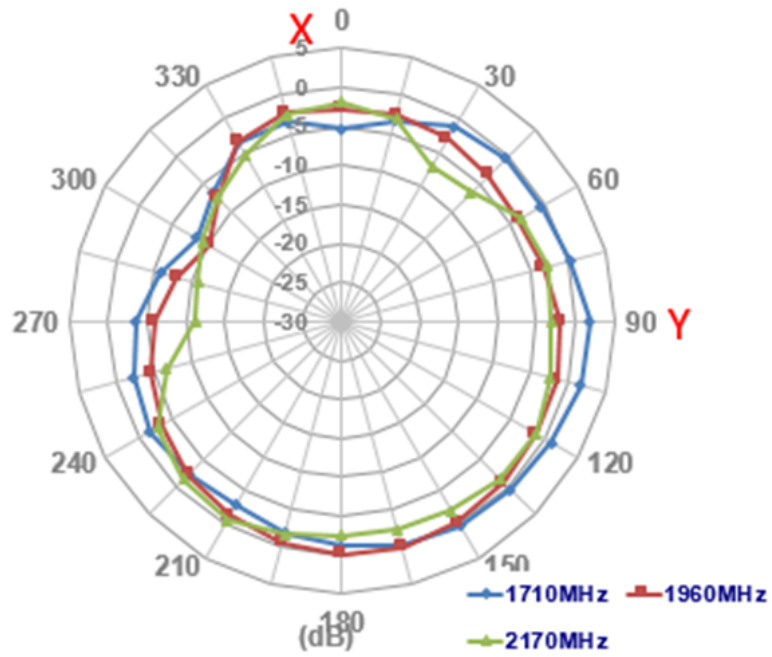
## YZ Plane



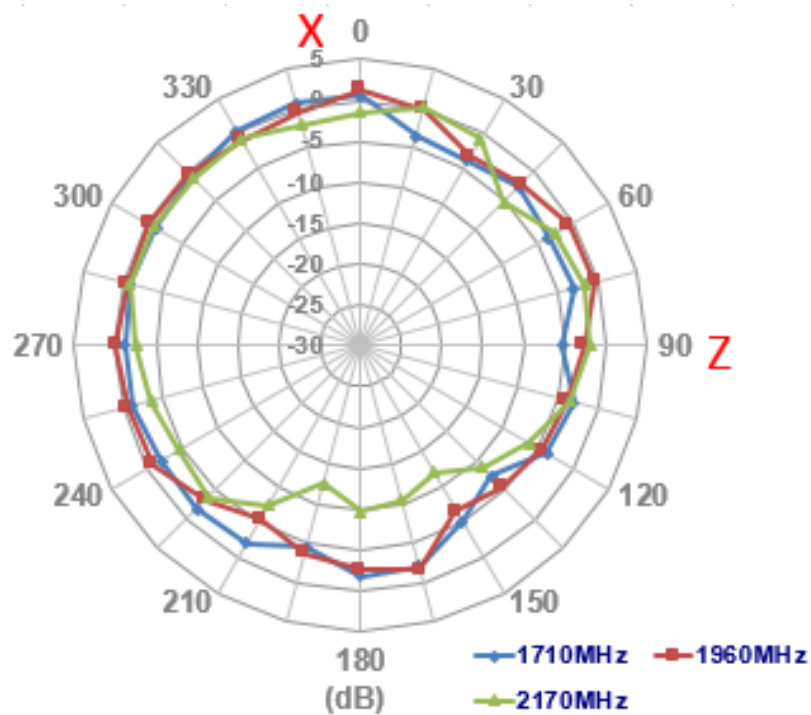


### 3.2.2.2 1710-2170MHz

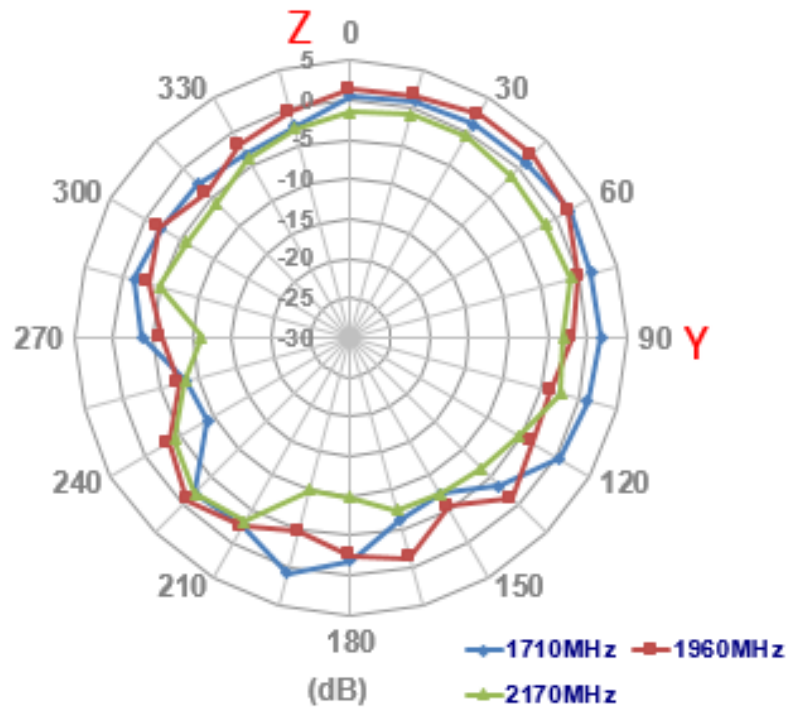
XY Plane



XZ Plane

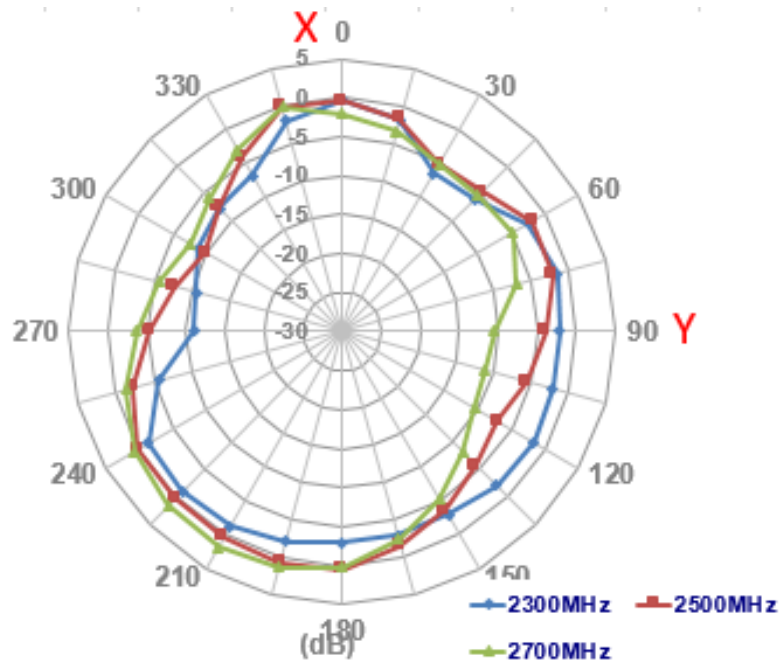


YZ Plane

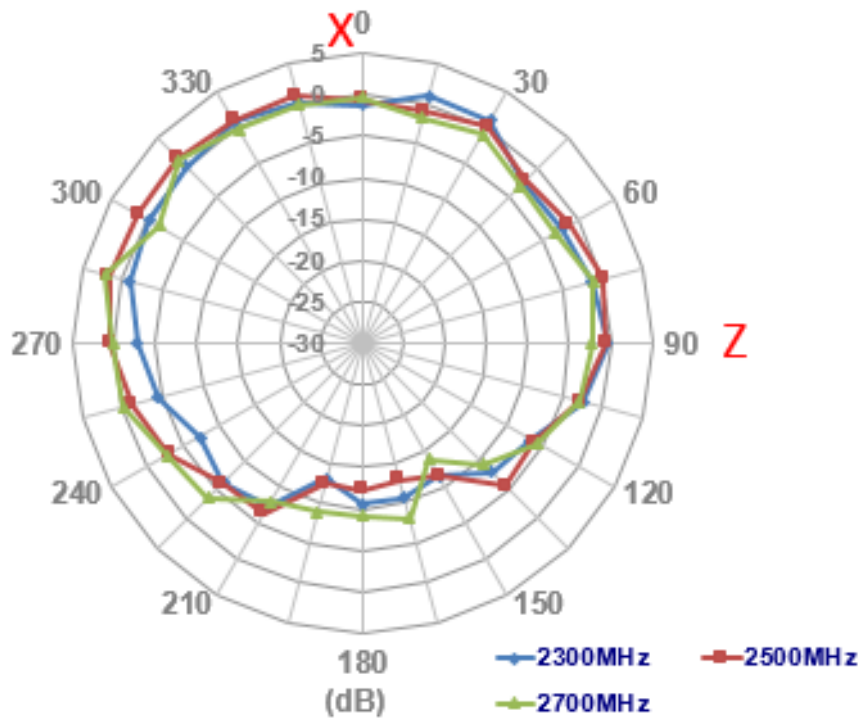


### 3.2.2.3 2300-2700MHz

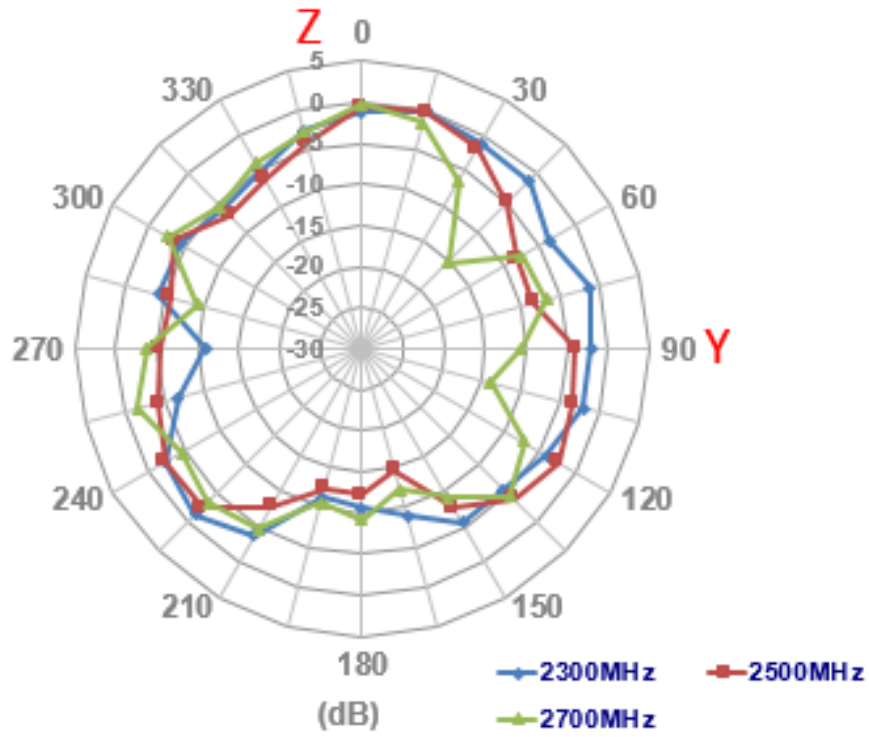
XY Plane



XZ Plane

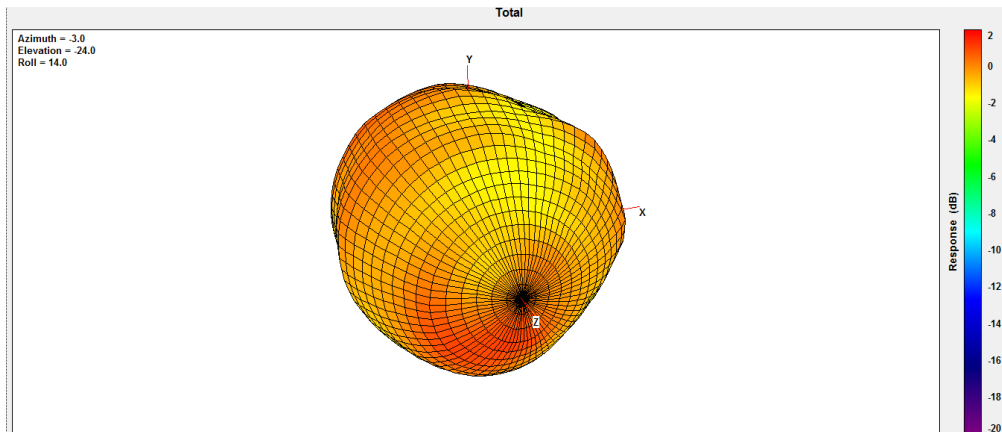


YZ Plane

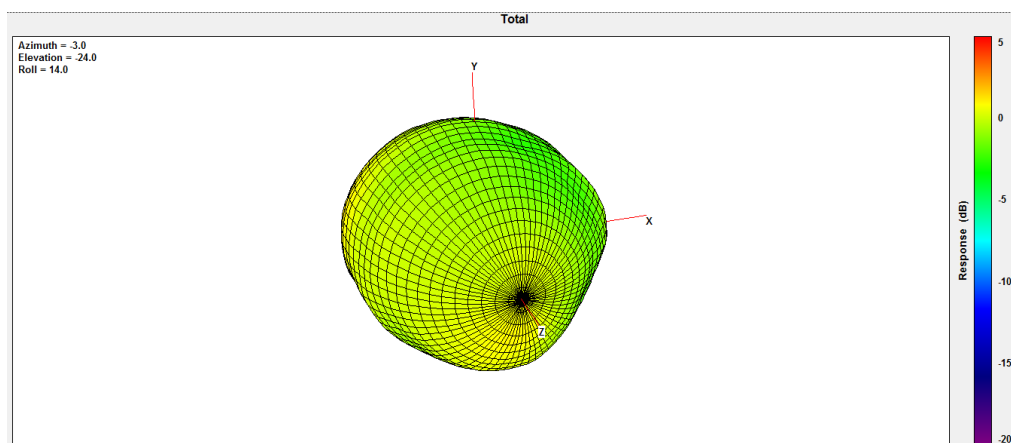


### 3.2.3 3D Radiation Pattern

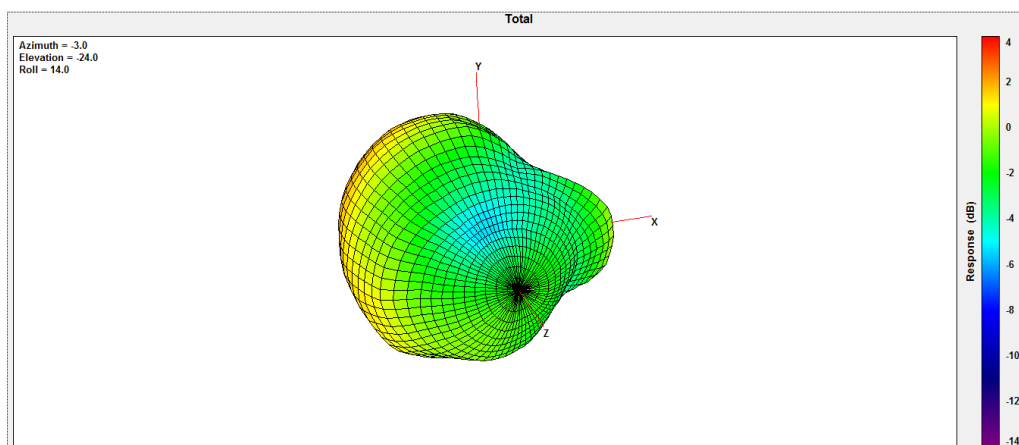
698MHz



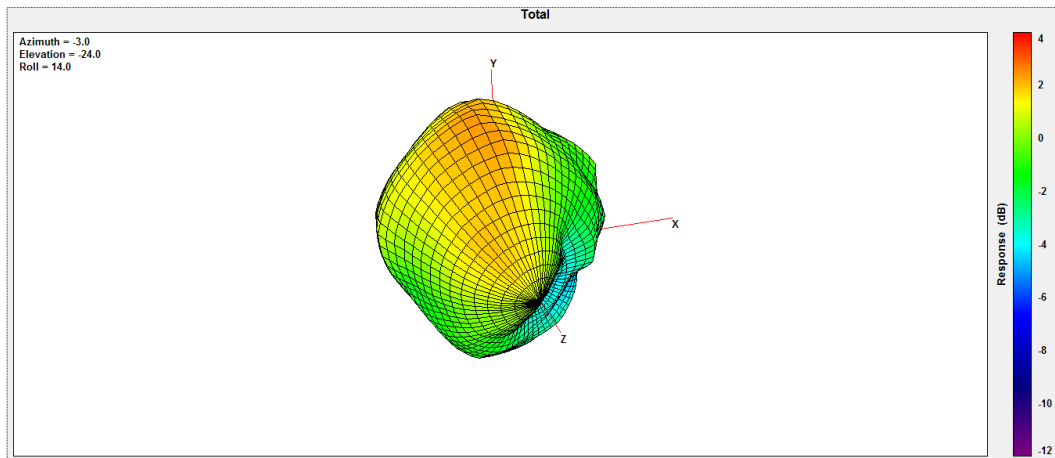
836MHz



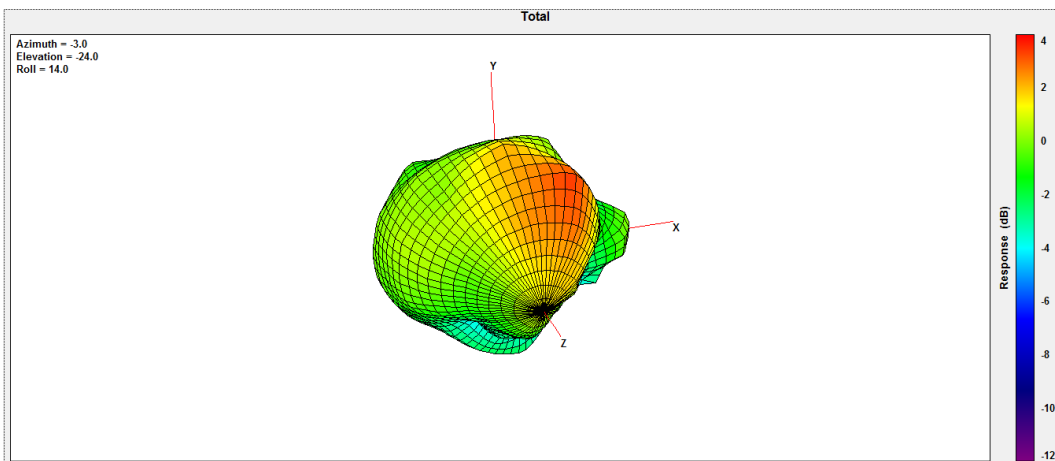
960MHz



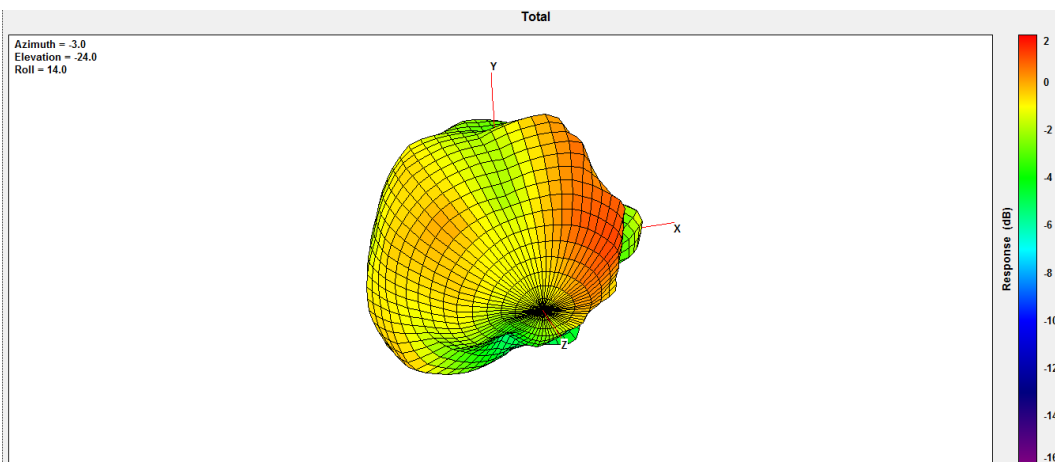
1710MHz



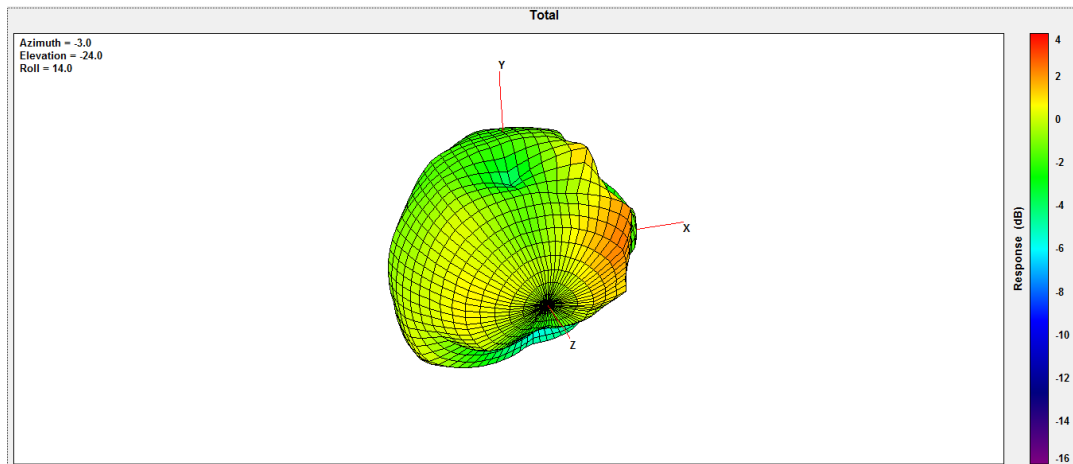
1960MHz



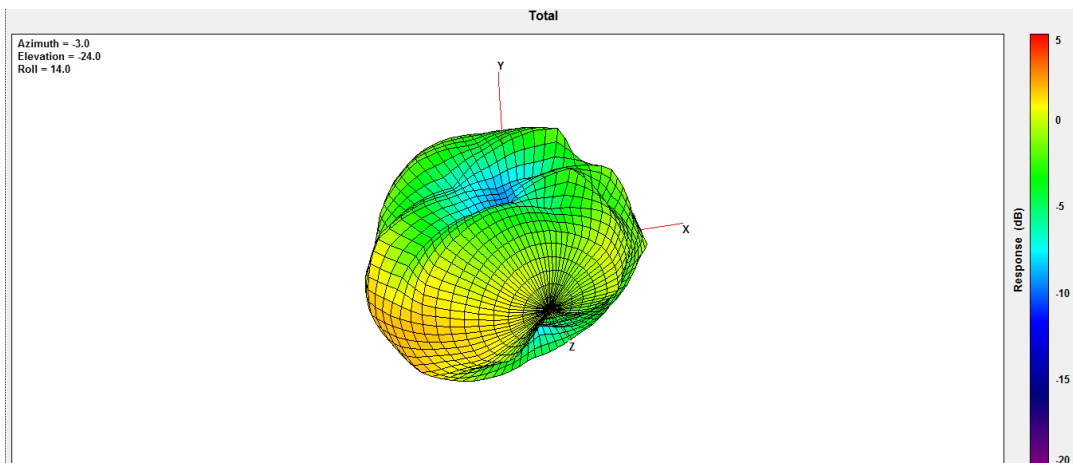
2170MHz



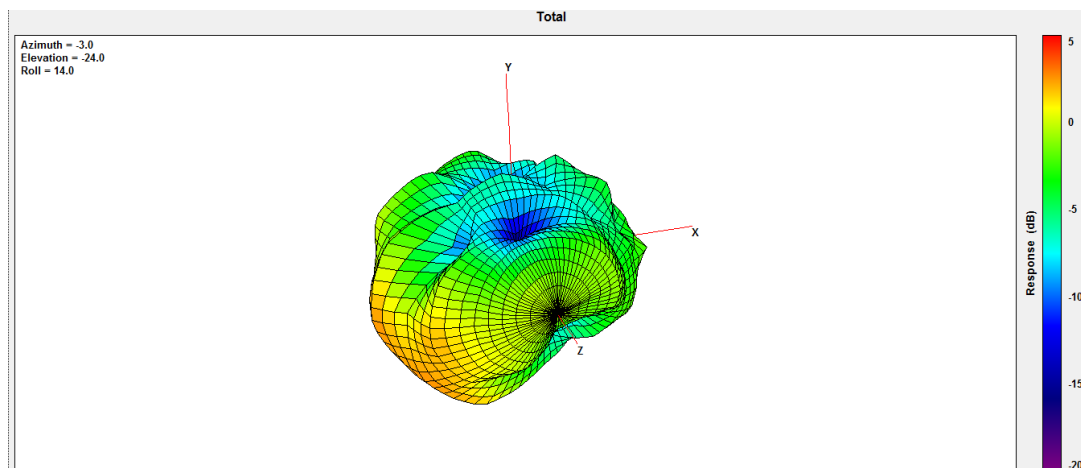
## 2300MHz



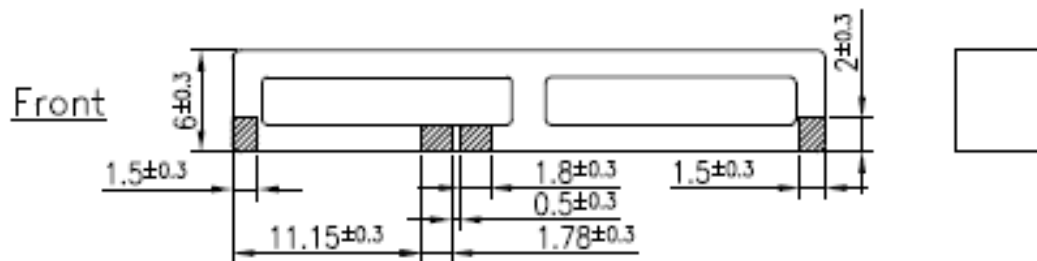
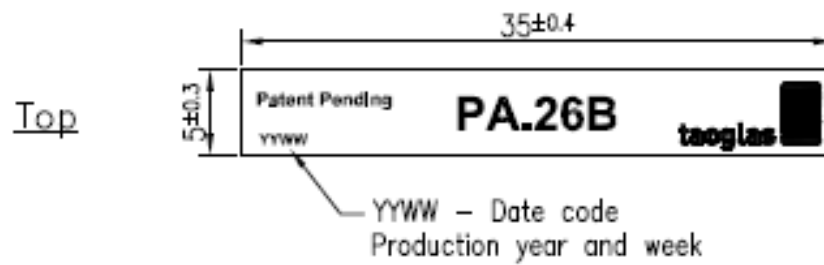
## 2500MHz



## 2700MHz



## 4. Drawings (Units: mm)



Bottom



Back

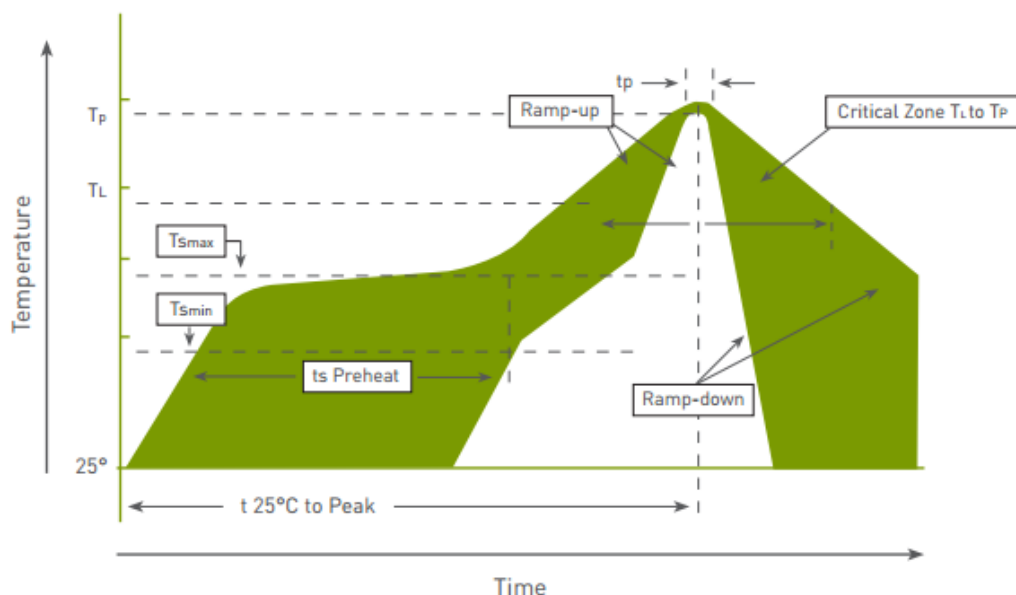




## 5. Recommended Reflow Temperature Profile

The PA.26 can be assembled following either Sn-Pb or Pb-Free assembly processes. The recommended soldering temperatures are as follows:

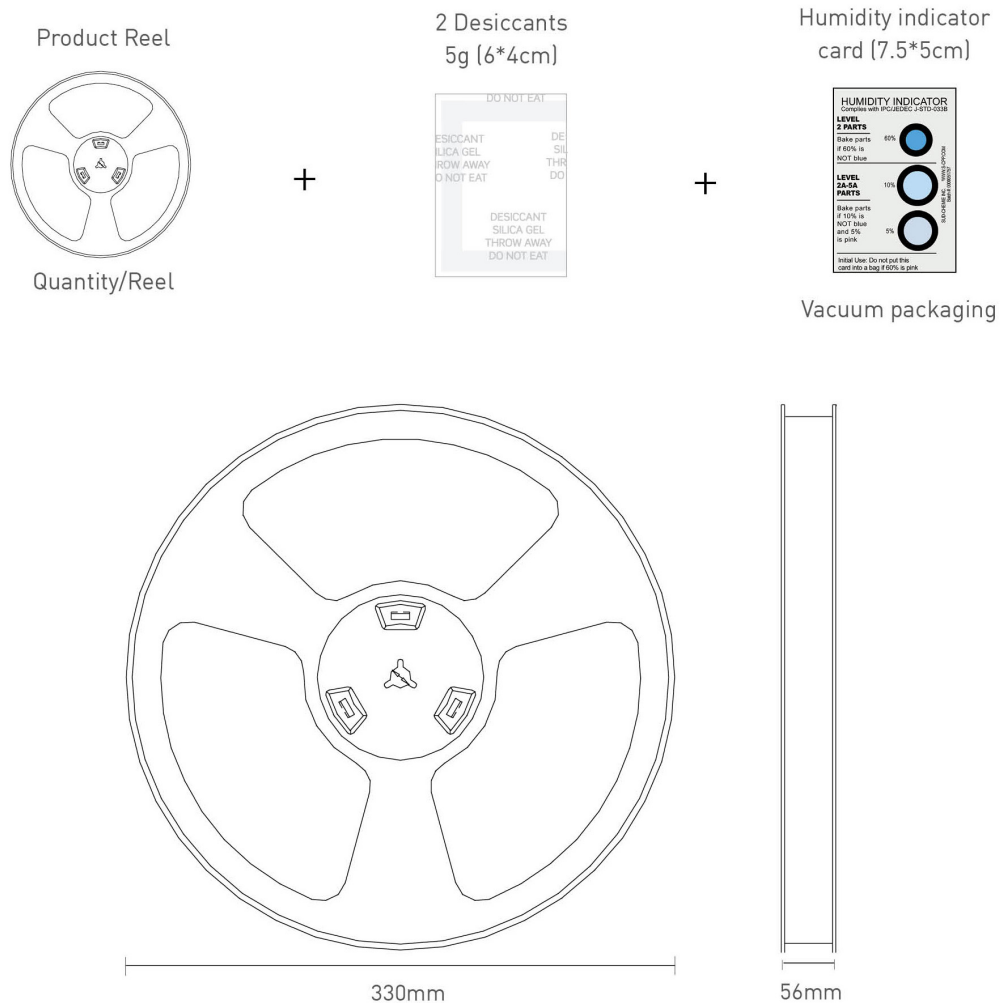
Phase	Profile Features	Sn-Pb Assembly	Pb-Free Assembly (SnAgCu)
Ramp-Up	Avg Ramp-Up Rate (T <sub>smax</sub> to T <sub>p</sub> )	3°C/second (max)	3°C/second (max)
Preheat	Temperature Min (T <sub>smin</sub> ) Temperature Max (T <sub>smax</sub> ) Time (t <sub>smin</sub> to t <sub>smax</sub> )	100°C 150°C 60-120 seconds	150°C 200°C 60-120 seconds
Reflow	Temperature (T <sub>L</sub> ) Total Time Above T <sub>L</sub> b(t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak	Temperature (T <sub>p</sub> ) Time (t <sub>p</sub> )	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



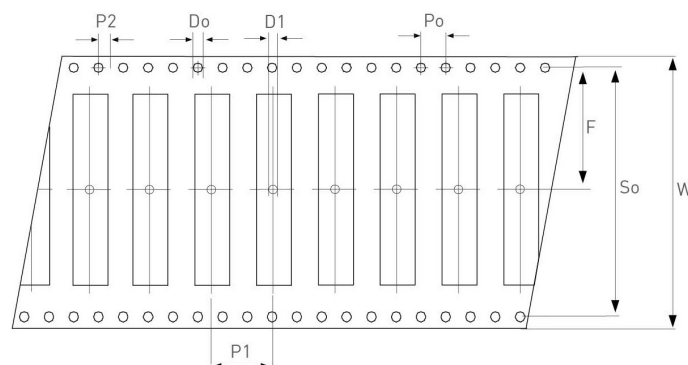
Temperature profile – (green area) for the assembly process in reflow ovens

## 6. Packaging Specifications (Units: mm)

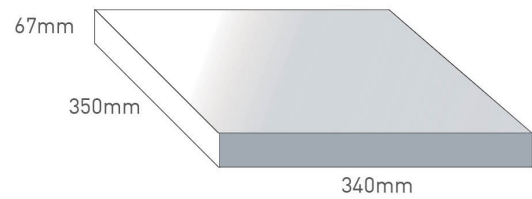
450 pc PA.26B  
1 reel per small inner box  
Dimensions - 330\*56mm  
Weight - 1.7kg



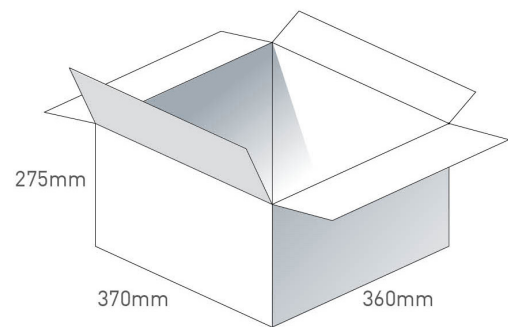
Symbol	Spec
Po	4.0 ± 0.10
P1	12.0 ± 0.10
P2	2.0 ± 0.15
Do	1.5
D1	2.0 (Min)
F	20.2 ± 0.10
So	40.4 ± 0.10
W	44.0 ± 0.30



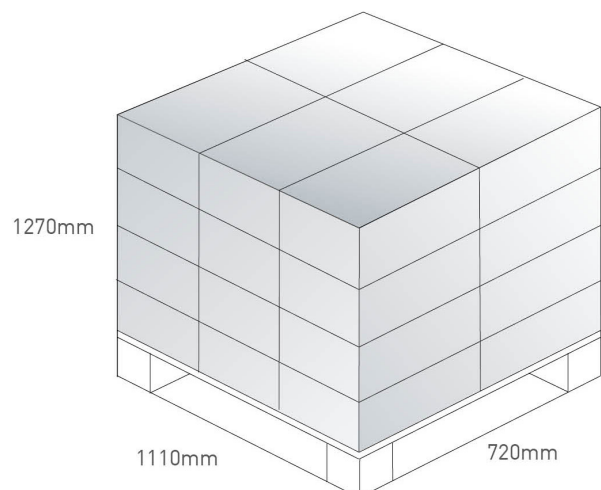
450 pc PA.26B  
1 reel in small inner box  
Dimensions - 350\*340\*67  
Weight - 1.9Kg



3 boxes / 1350 pcs in one carton  
Carton Dimensions - 370\*360\*275mm  
Weight - 6.8Kg



Pallet Dimensions 1110\*720\*1270mm  
24 Cartons per Pallet  
6 Cartons per layer  
4 Layers



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*Title:* AIR 10 CELLULAR ANTENNA  
SPECIFICATIONS

*Project/Product* AIR 10

### 1. Purpose

This document contains the cellular antenna specs for Air 10 devices, and is applicable to the following device models:

Model Name / Product Code	Marketing Name
37158	AirSense 10 CPAP
37159	AirSense 10 Elite
37160	AirSense 10 AutoSet
37161	AirSense 10 AutoSet FH
37162	AirCurve 10 ASV
37163	AirCurve 10 S
37164	AirCurve 10 VAuto
37165	AirCurve 10 ST

### 2. References

#### 2.1 PA.26B Ultra WideBand LTE Ceramic Antenna Specification

### 3. Antenna Description

The PA.26B is an SMT LTE 4G antenna designed for direct SMT mount on the device PCB. It provides high efficiency. The PA.26B operates at all common 4G/3G/2G LTE bands; 698MHz to 960MHz, 1710MHz to 2700MHz.

#### 3.1 Specifications

The following information is provided by the antenna manufacturer in Reference 2.1:

Frequency (MHz)	Efficiency (%)	Average Gain (dBi)	Peak Gain (dBi)
698~960MHz	55%	-3.26dB	1.71dBi
1710~2170MHz	57%	-2.71dB	3.03dBi
2300~2400MHz	47%	-3.27dB	1.53dBi
2500~2700MHz	51%	-2.91dB	2.69dBi

Mechanical	
Dimensions	35*5*6mm
Weight	3g
Material	Ceramic
Termination	Ag (environmental-friendly Pb free)
EVB Connector	SMA(F)

Environmental	
Storage Temperature *	-40°C to 105°C
Usage Temperature	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH
RoHs Compliant	Yes