亚特联 YATELIAN

RoHS Compliant

Product Name: UWB Ceramic Chip Antenna – CR601

Part Number: YTCTX-L4F1T2W0100

Features:

- SMD Chip Antenna
- Frequency: 6000 ~ 8250 MHz
- Dimensions: 6.0 x 5.0 x 0.5mm
- RoHS 2.0 Compliant
- AEC-Q200 Compliant

Applications:

- Automotive sensors
- Ultra-wideband radios
- Precision surveying
- Remote controls
- Centimeter Level Positioning

UWB Ceramic Chip Antenna

MODEL: CR601

Version: C

All specifications subject to change without notice.

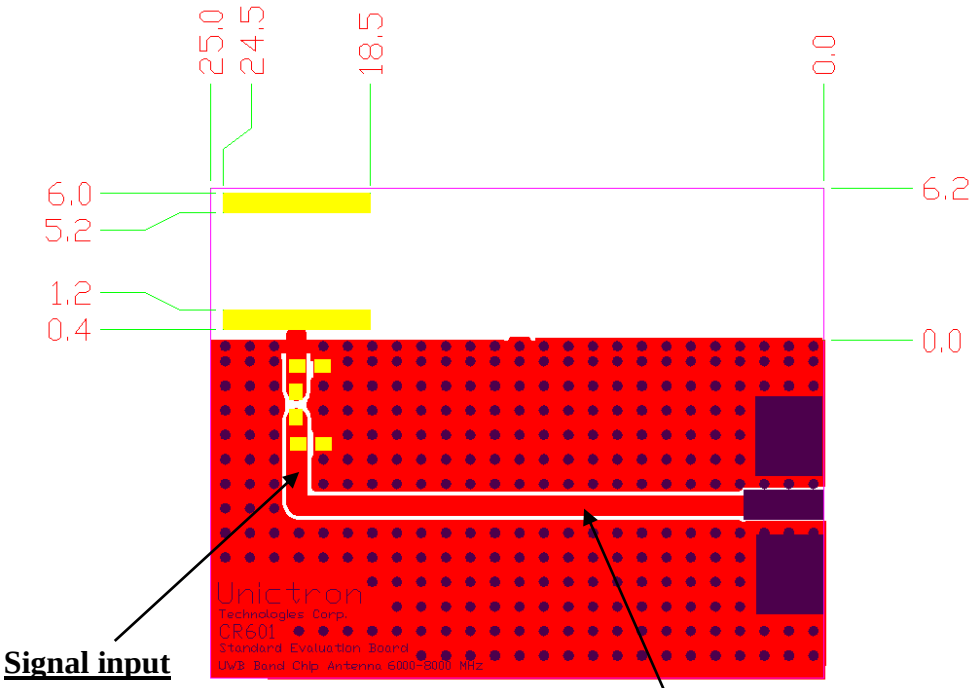
I. Specifications:

Items	Specifications	
Frequencies (MHz)	6000 ~ 8250	
VSWR	2.0 Max.	
Efficiency (%)	@7000MHz	72 Typ.
Average Gain (dB)		-1.5 Typ.
Peak Gain (dBi)		3.5 Typ.
Test Condition	25 x 20 mm² (Evaluation board)	
Impedance (Ω)	50	
Polarization	Linear Polarization	

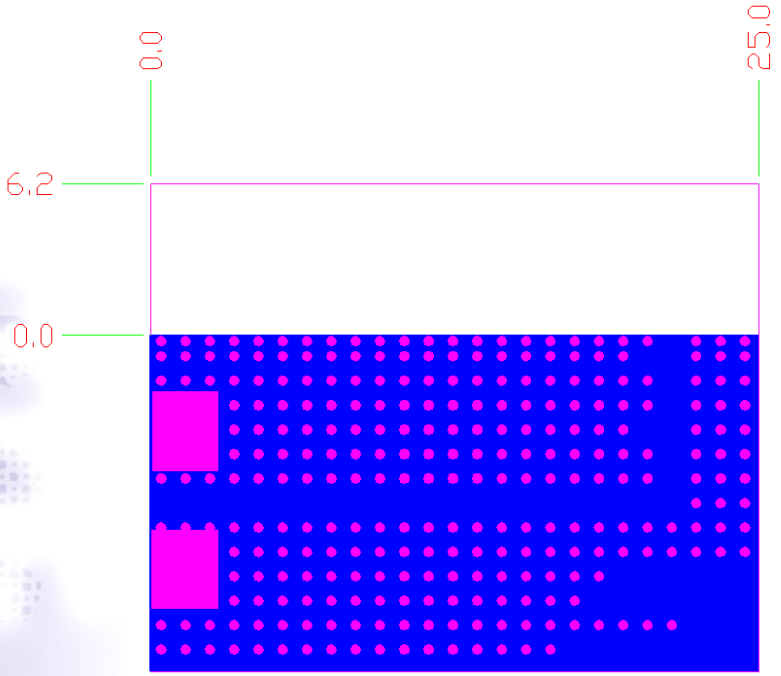
Mechanical Specifications	
Dimensions (mm)	6 (L) x 5 (W) x 0.5 (H)
Material	Ceramic
Environmental Conditions	
Operation & Storage Temperature (° C)	-40 ~ +125
Storage Temperature (° C) **(Antenna with packing sealed)**	-5 ~ +40
Relative Humidity	10 ~ 70 %

II. Layout Guide (Unit: mm):

The solder land pattern (gold marking areas) is shown below. Recommendation on matching circuit will be provided according to customer's installation conditions.



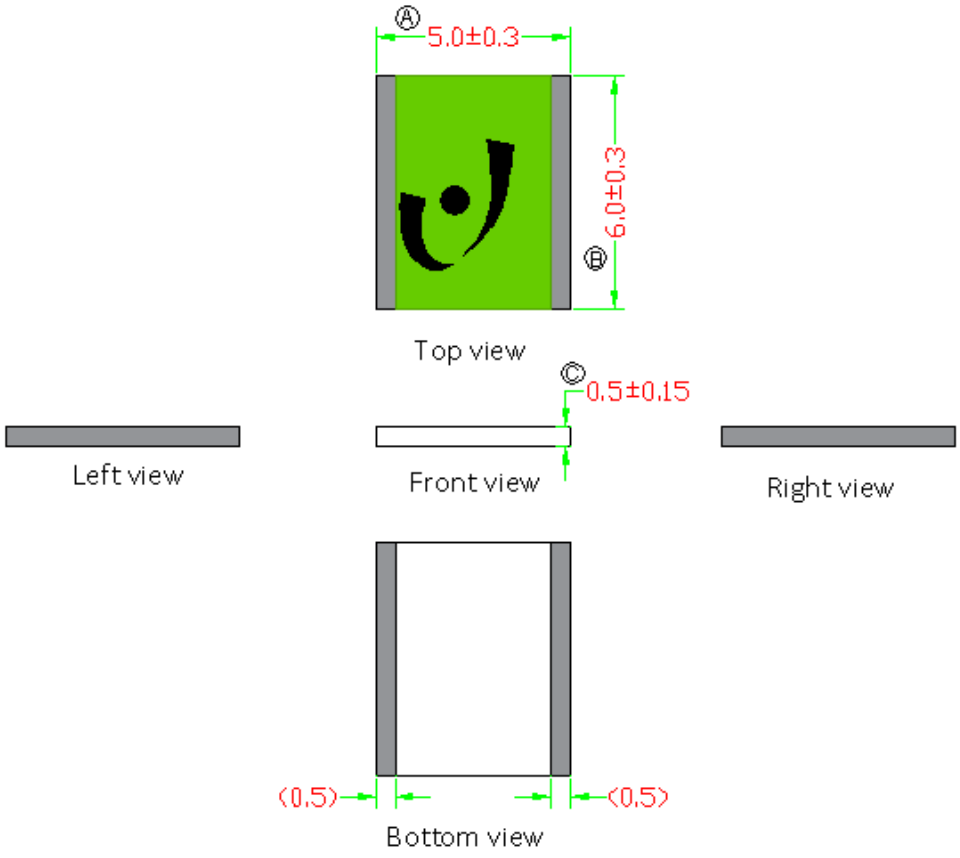
Top View



Bottom View

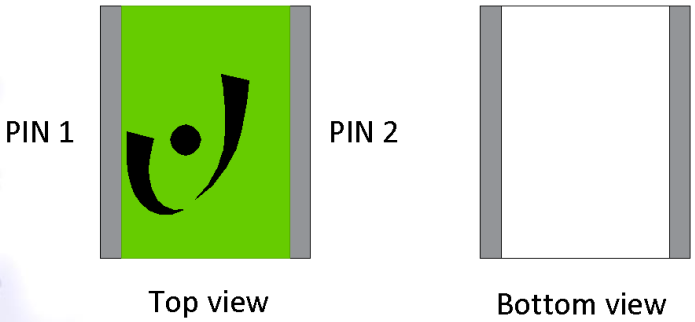
III. Mechanical Dimensions (Unit: mm):

a) Antenna Dimensions



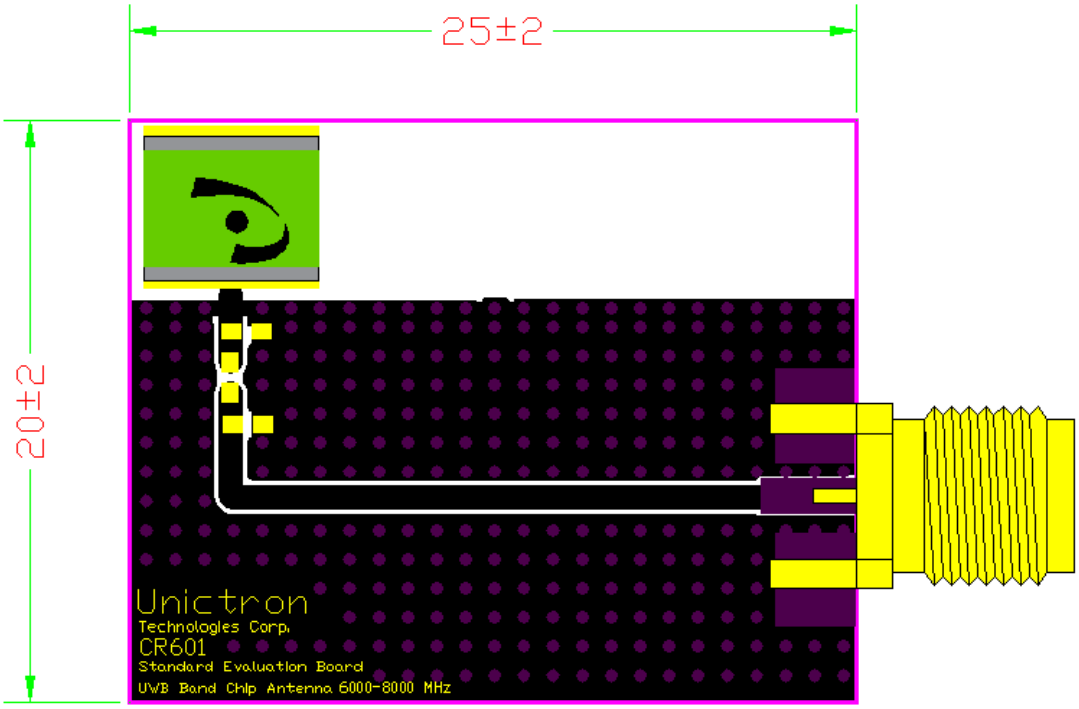
NOTE:
1.All materials are RoHS 2.0 compliant.
2."Ⓐ~Ⓒ" Critical Dimensions.
3."( )" Reference Dimensions.

b) PIN Definition



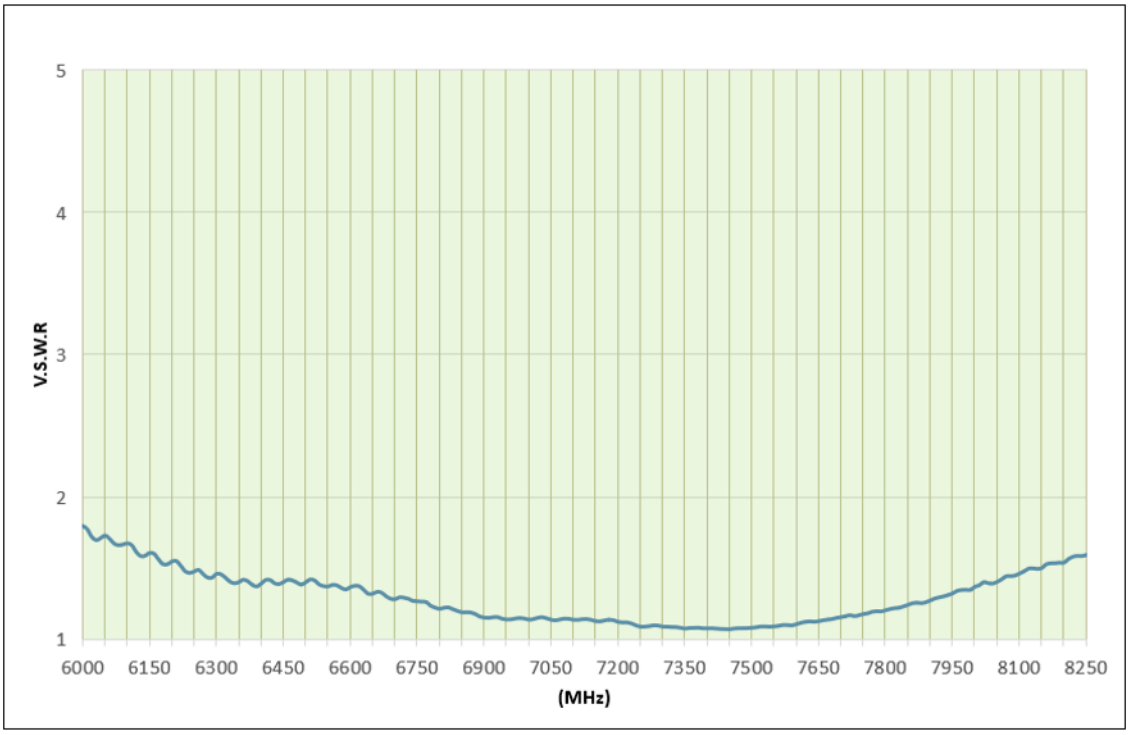
PIN	1	2
Soldering PAD	Signal	N/A

c) Test Board with Antenna

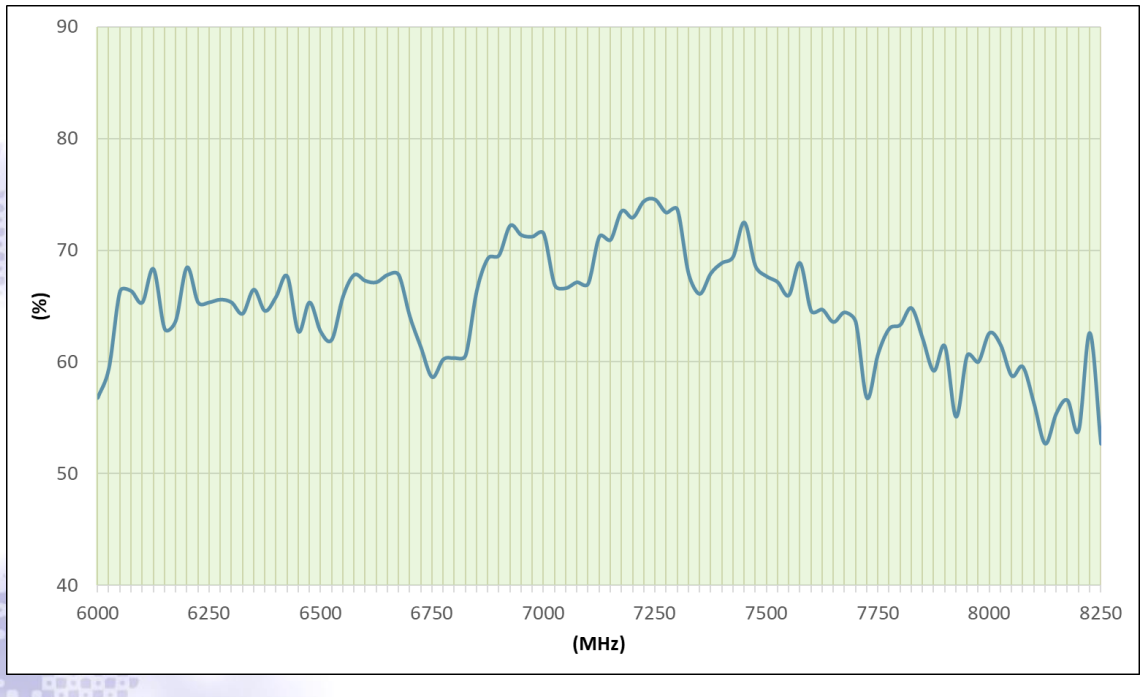


IV. Properties:

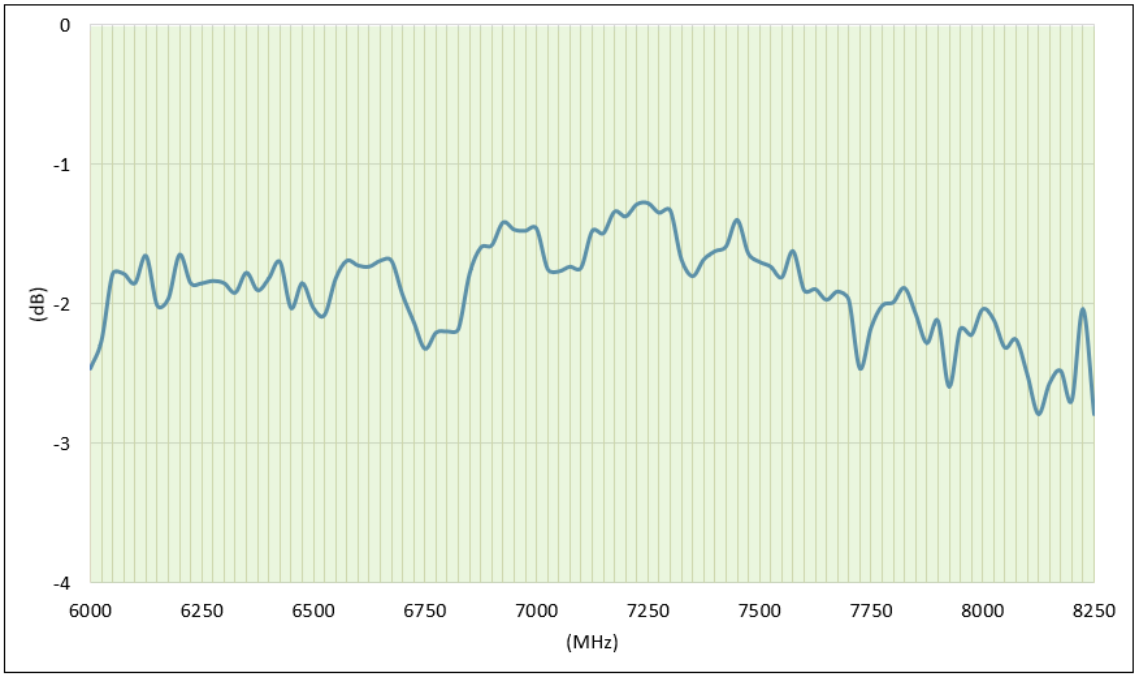
a) VSWR



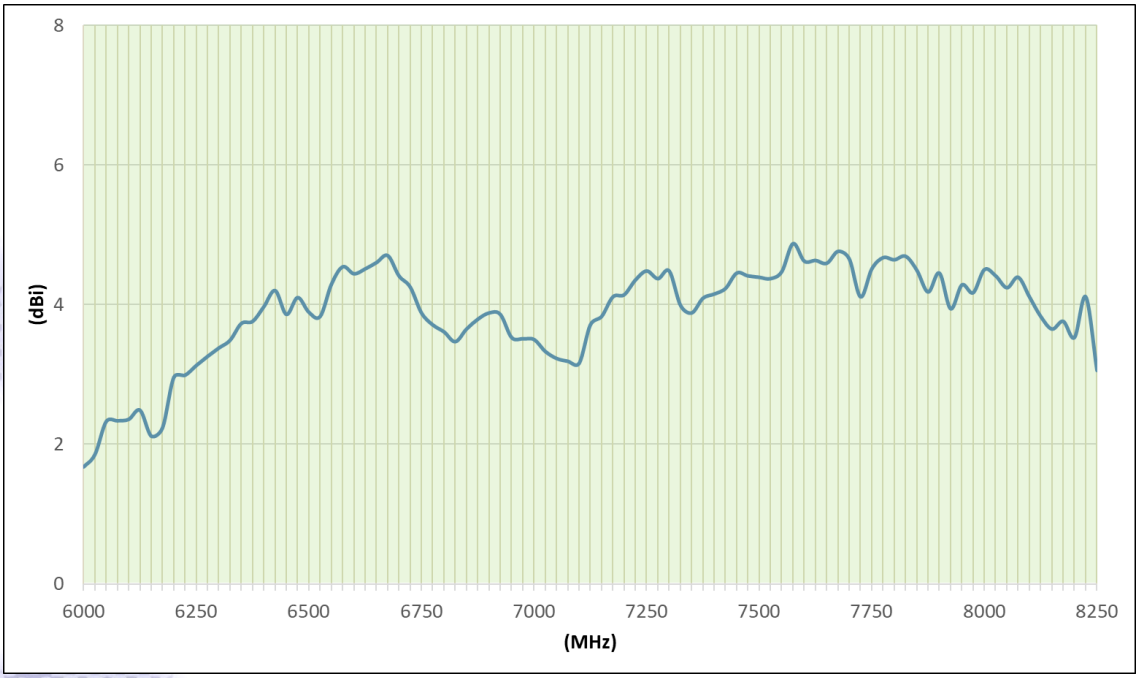
b) Efficiency (%)



c) Average Gain (dB)

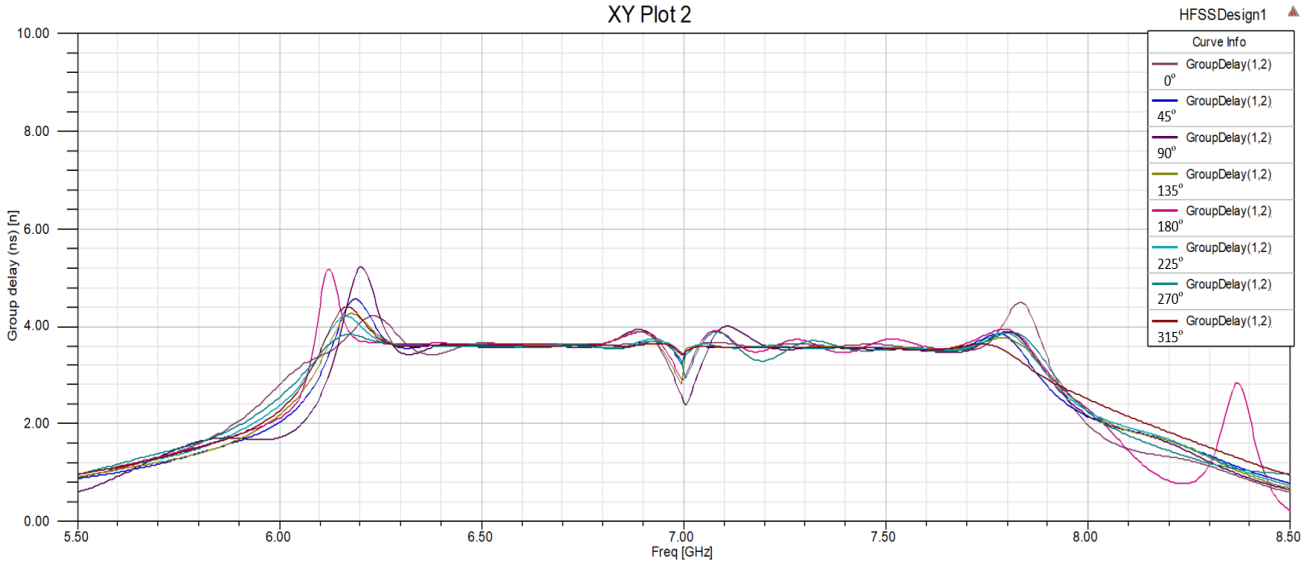


d) Peak Gain (dBi)



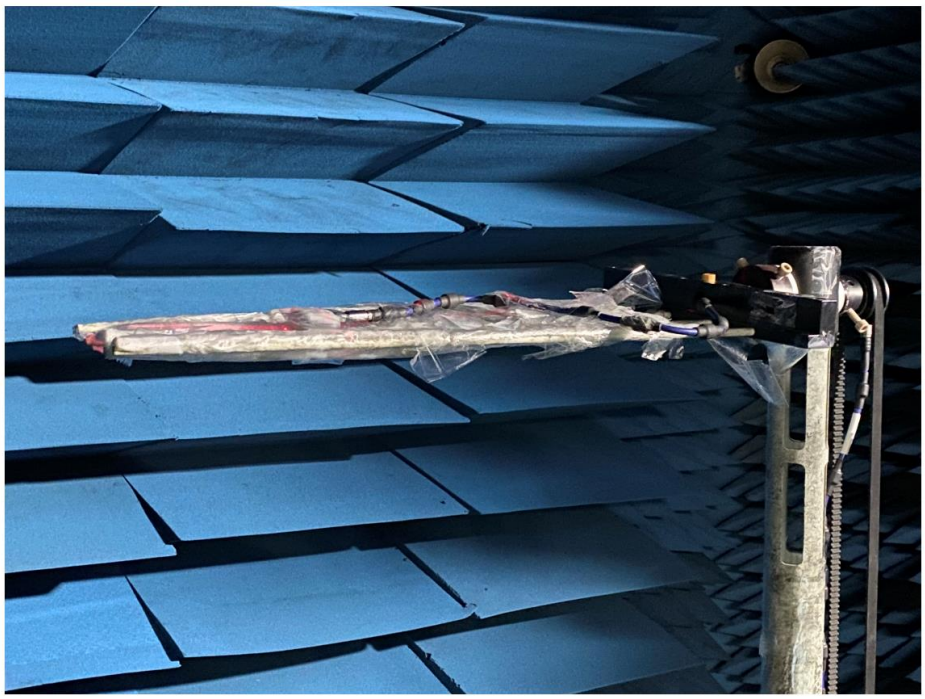
e) Group Delay vs. Frequency

The group delay was simulated for two CR601 antennas placed at 1m distance. One of the antennas was kept stationary, while the other was rotated along XZ-cut in 45° intervals

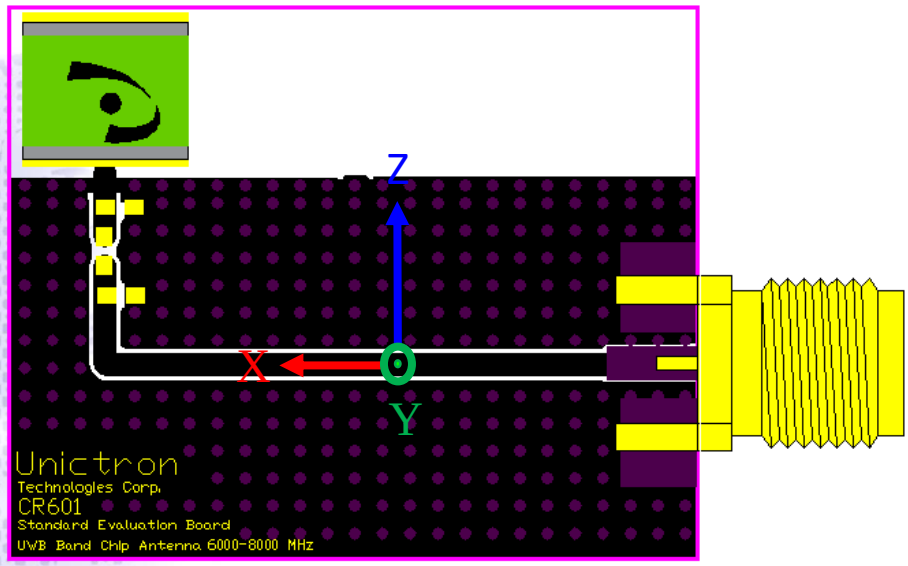


V. Antenna Radiation Pattern Measurement:

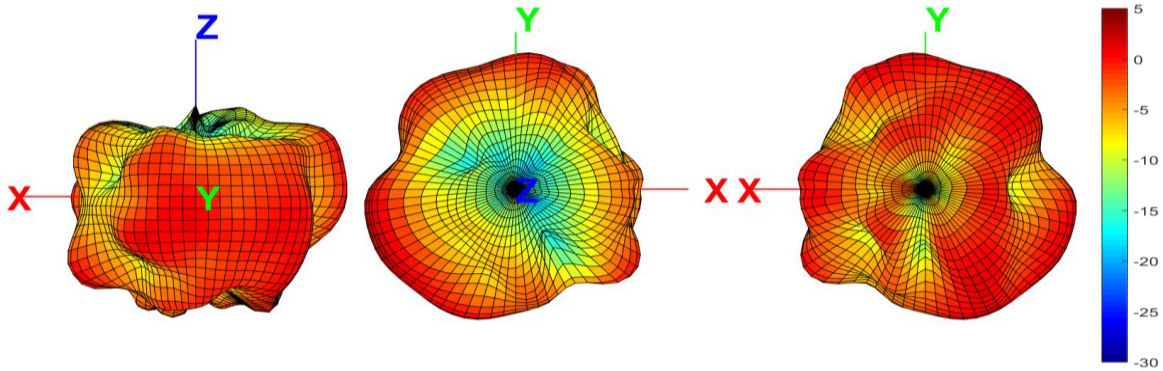
The antenna radiation patterns are measured in 3D Anechoic Chamber. The measurement setup is as show below.



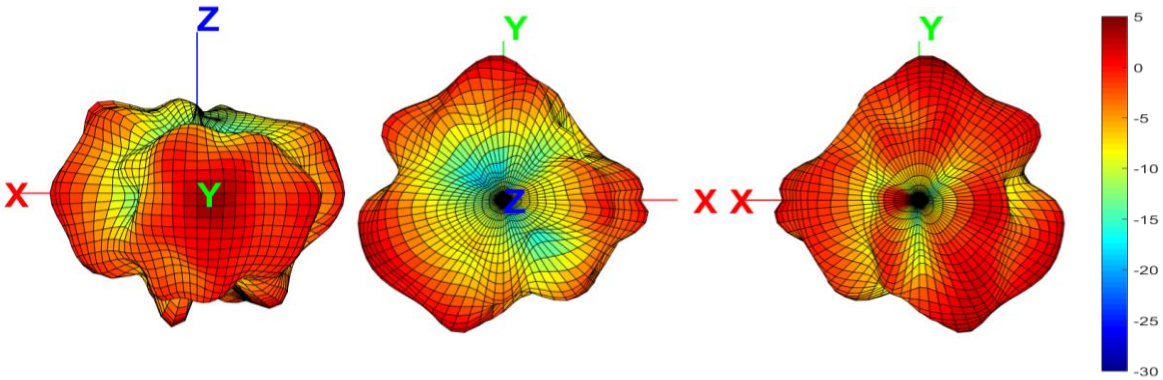
3D Radiation Gain Pattern



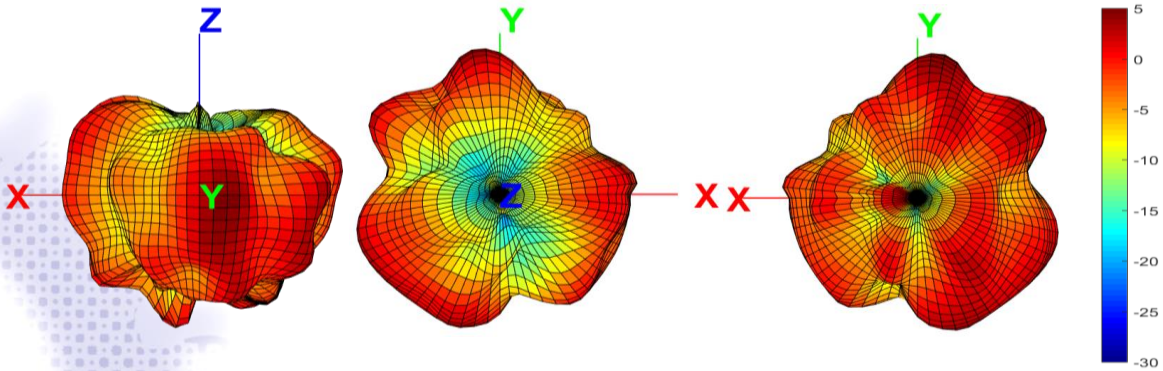
a) @ 6000 MHz (unit: dBi)



b) @ 6500 MHz (unit: dBi)

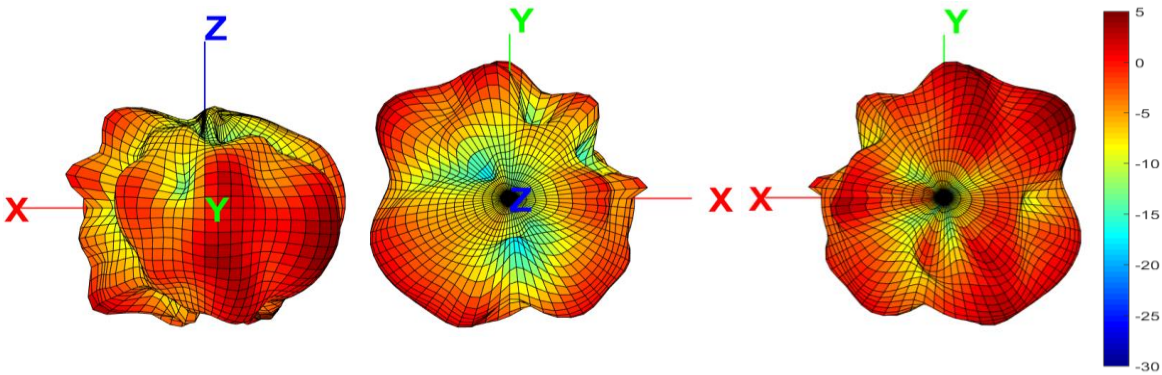


c) @ 7000 MHz (unit: dBi)

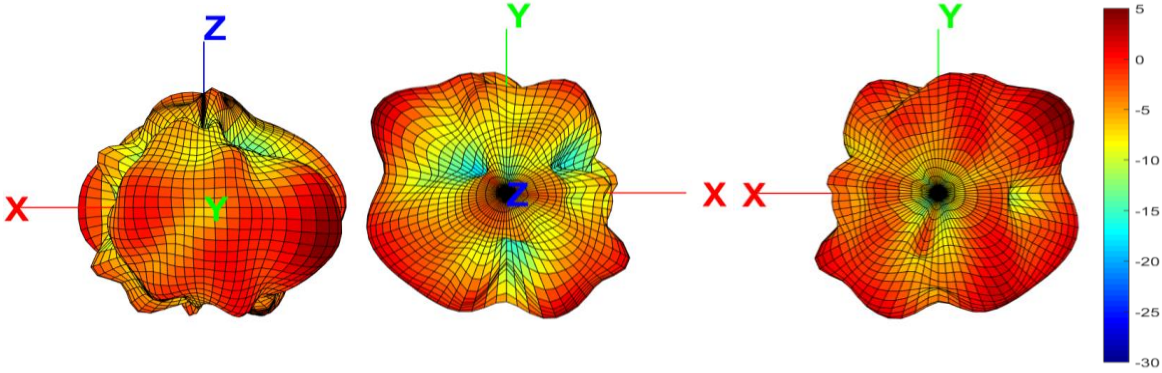


All specifications subject to change without notice.

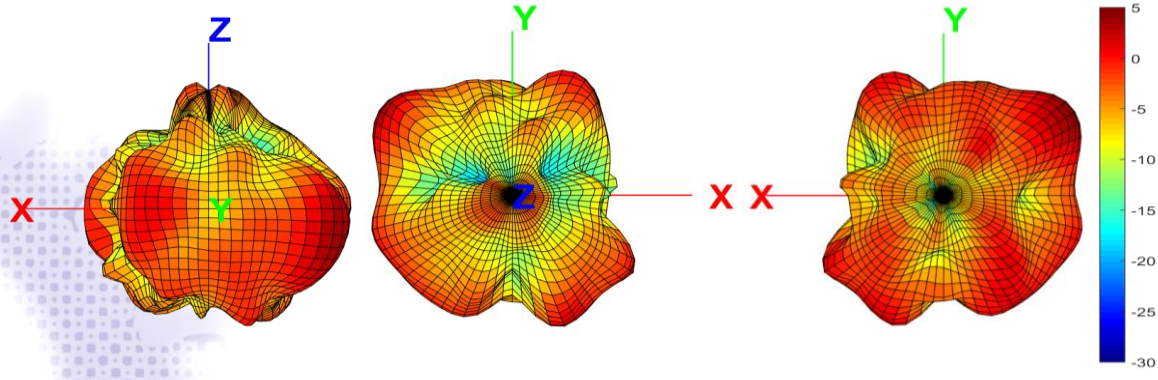
d) @ 7500 MHz (unit: dBi)



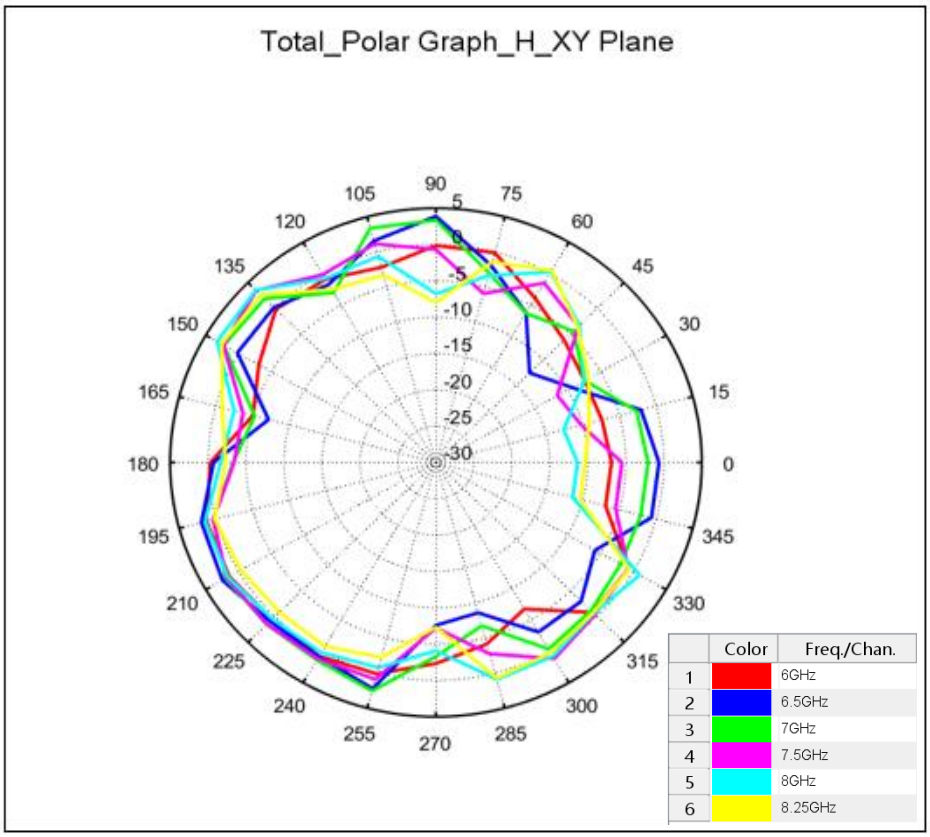
e) @ 8000 MHz (unit: dBi)

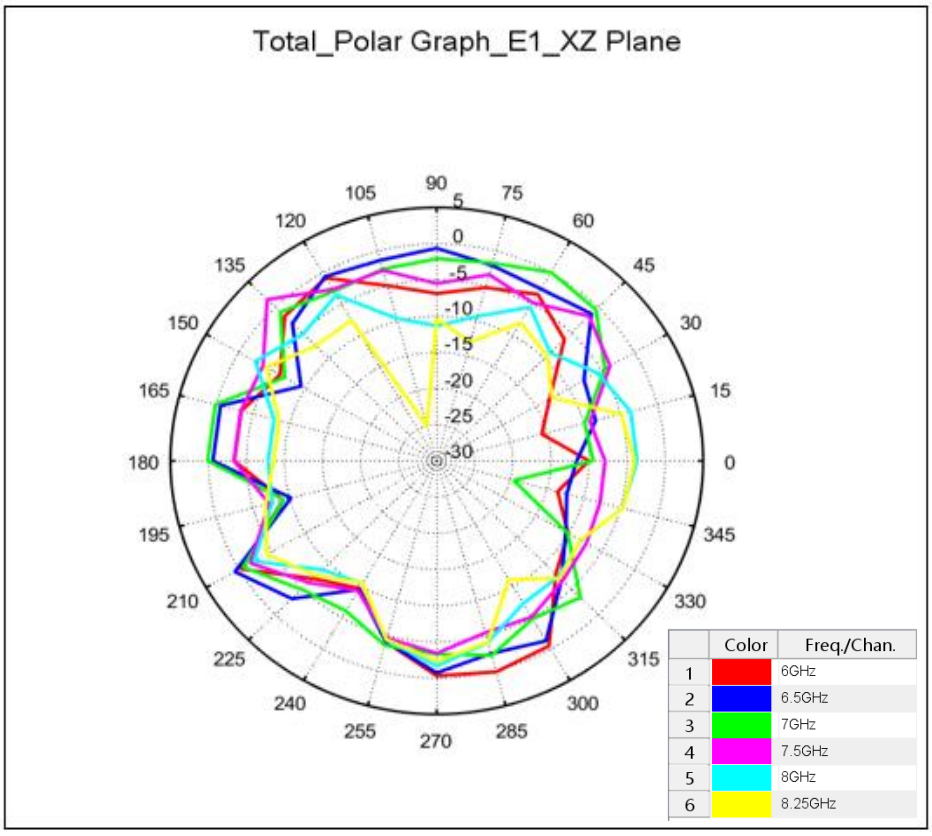


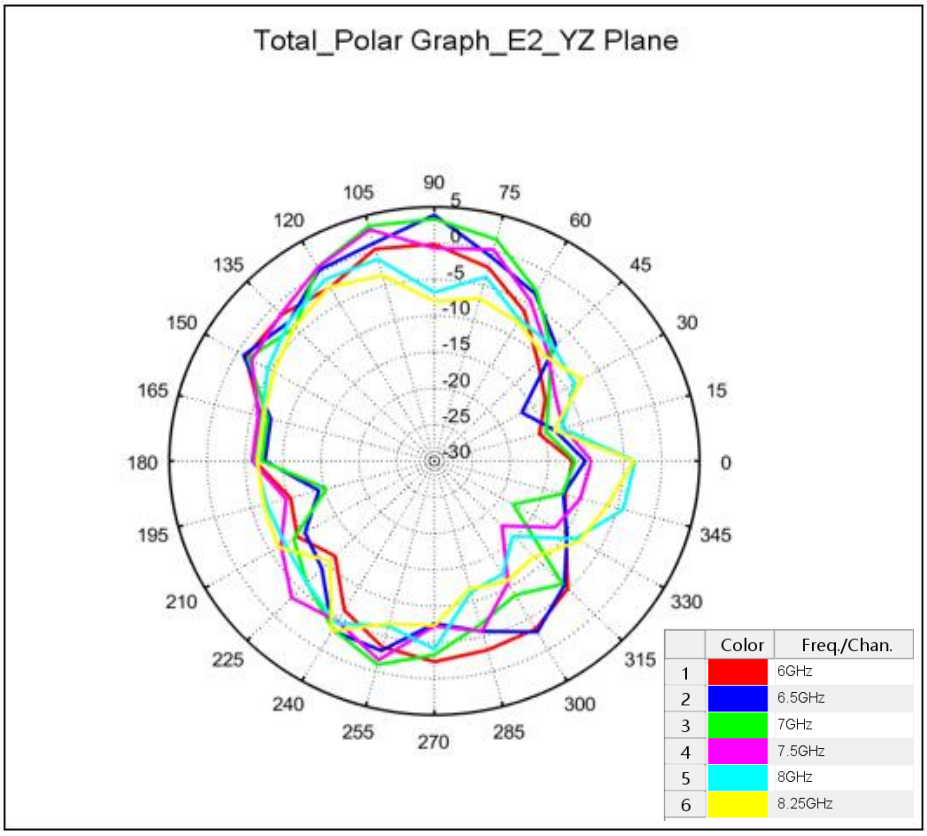
f) @ 8250 MHz (unit: dBi)



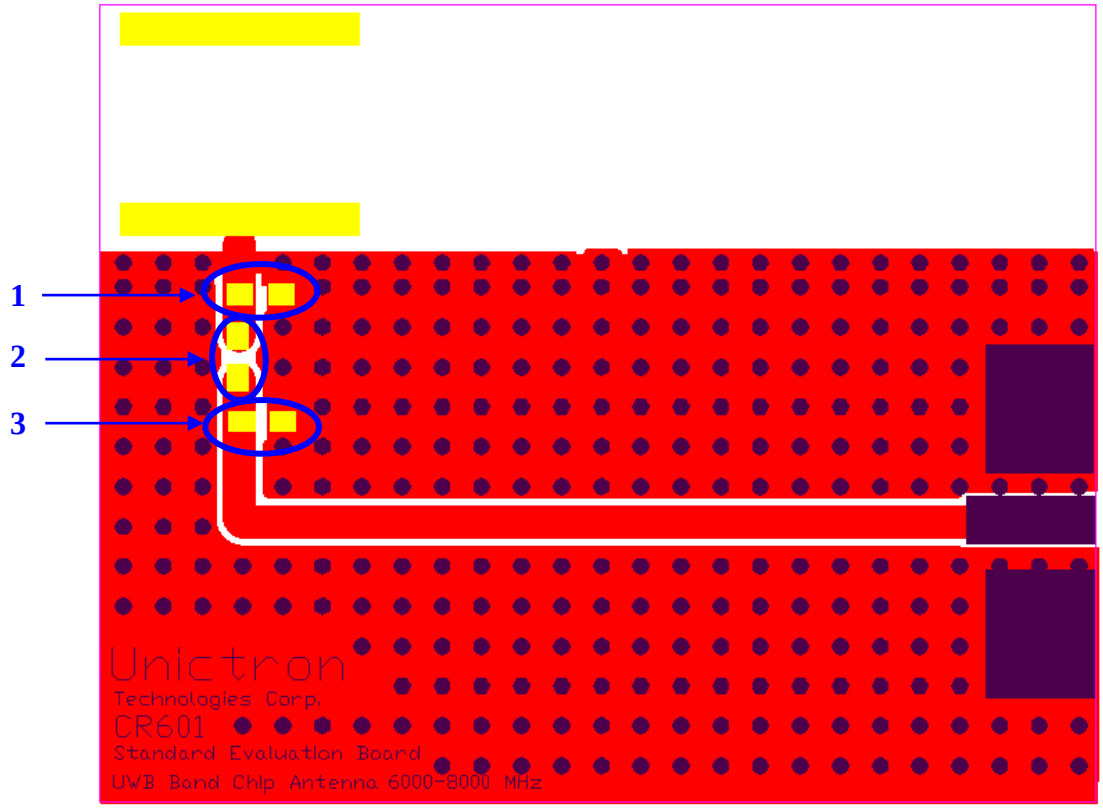
2D Radiation Gain Patterns

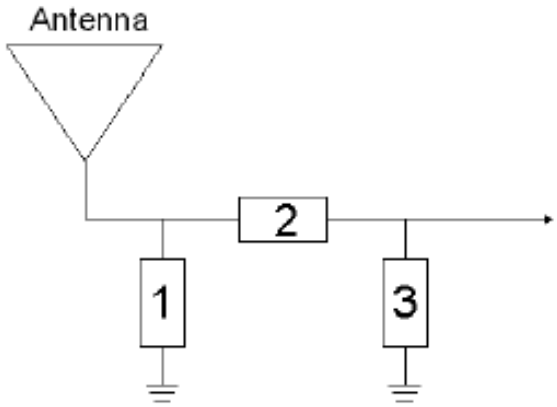






VI. Frequency tuning:

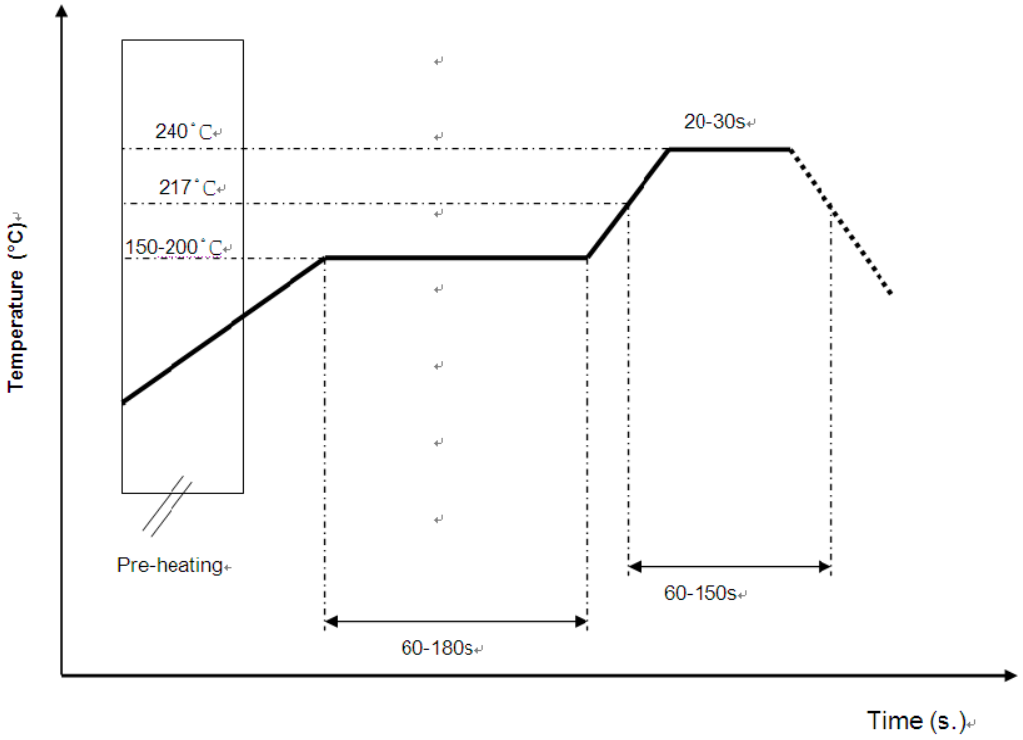




System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/C	-	-
2	0Ω(0402)	MURATA	±5%
3	0.3pF (0402)	MURATA	±0.1 pF

VII. Soldering conditions:

Typical Soldering Profile for Lead-free Process



*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

VIII. Reminders for use of ceramic chip antennas:

a) This chip antenna is made of ceramic materials which is relatively more rigid and brittle compared to circuit board materials. Furthermore, the length of this antenna is quite long. Bending of circuit board at the locations where chip antenna is mounted may cause the cracking of solder joints or antenna itself.

b) Punching/cutting of the break-off tab of PCB panel may cause severe bending of the circuit board which may result in cracking of solder joints or chip antenna itself. Therefore break-off tab shall be located away from the installation site of chip antenna.

c) Be cautious when ultrasonic welding process needs to be used near the locations where chip antennas are installed. Strong ultrasonic vibration may cause the cracking of chip antenna solder joints.

IX. Operating & Storage conditions:

a) Operating

(1) Maximum Input Power**:** 2 W

(2) Operating Temperature**:** -40℃ to 125℃

(3) Relative Humidity**:** 10% to 70%

b) Storage (sealed)

(1) Storage Temperature**:** -5℃ to 40℃

(2) Relative Humidity**:** 20% to 70%

(3) Shelf Life**:** 1 year

c) Storage (After mounted on customer's PCB with SMT process)

(1) Storage Temperature**:** -40℃ to 85℃

(2) Relative Humidity**:** 10% to 70%

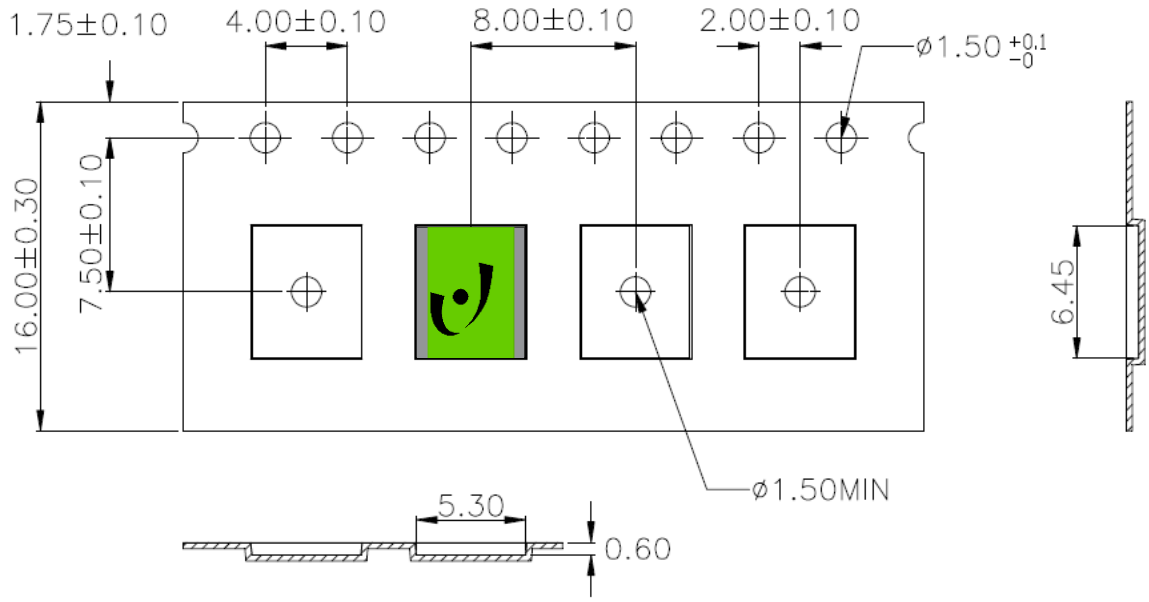
XI. Packing

（1）Unit Weight: 0.05±0.005(g) /pcs

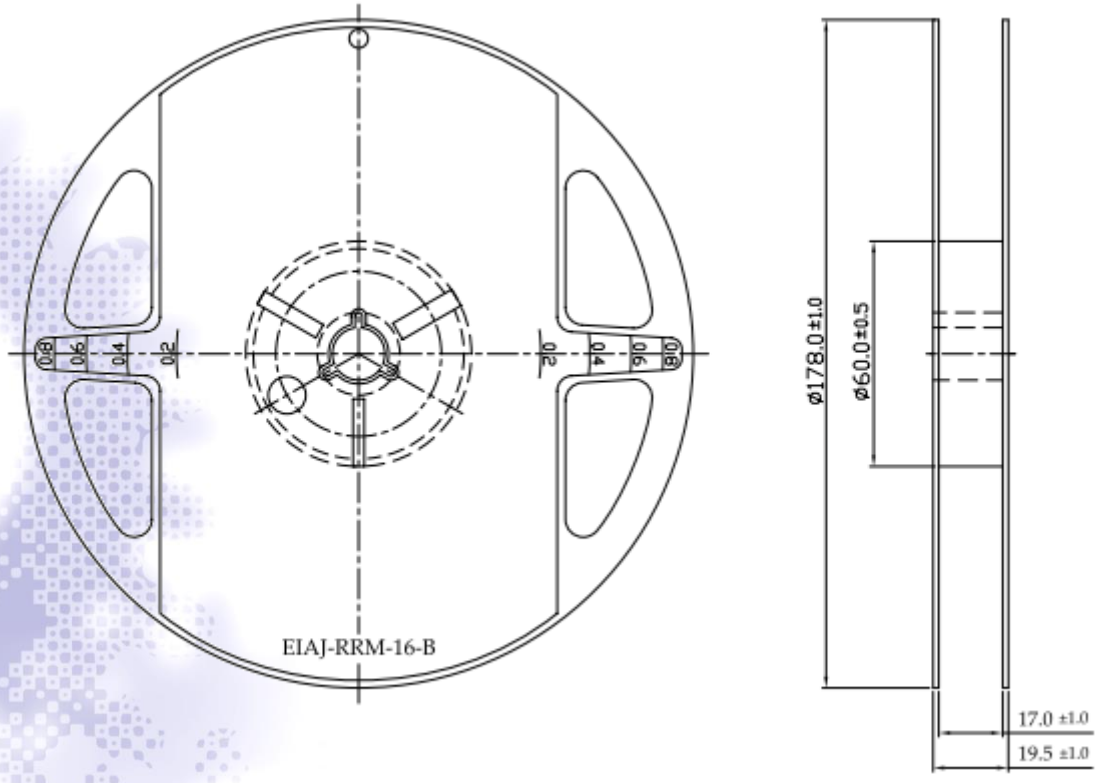
（2）Quantity/Reel: 3000 pcs/Reel

（3）Plastic tape: Black Conductive Polystyrene.

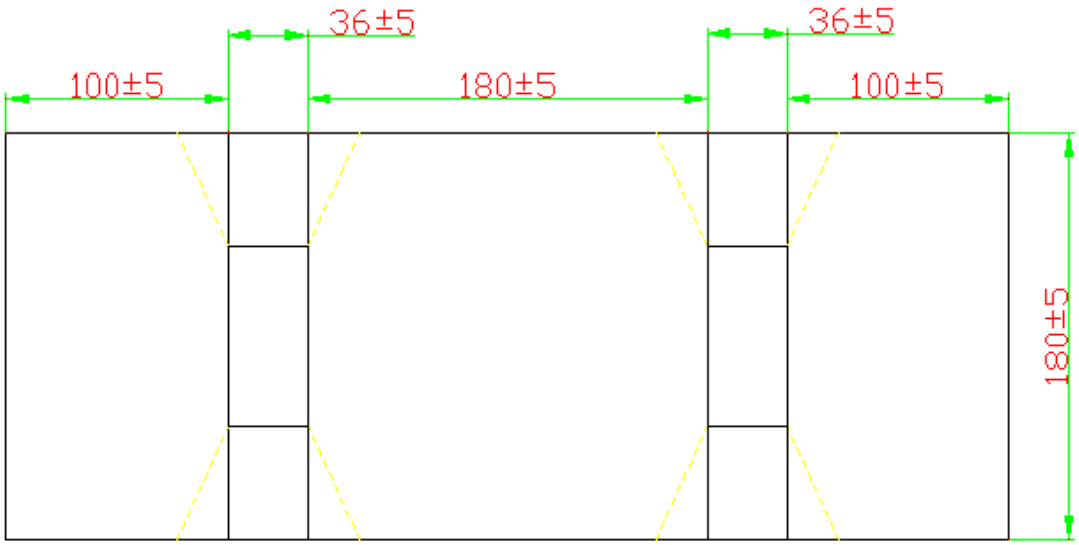
a. Tape Drawing (unit: mm)



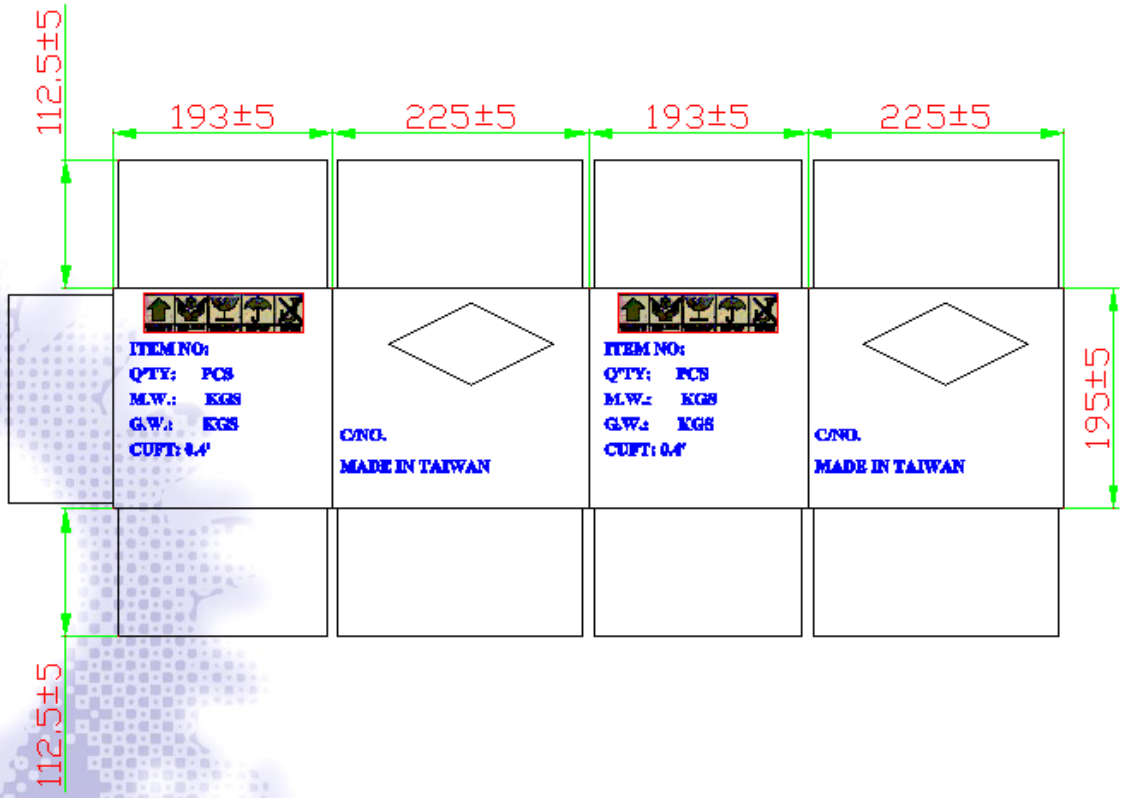
b. Reel Drawing (unit: mm)



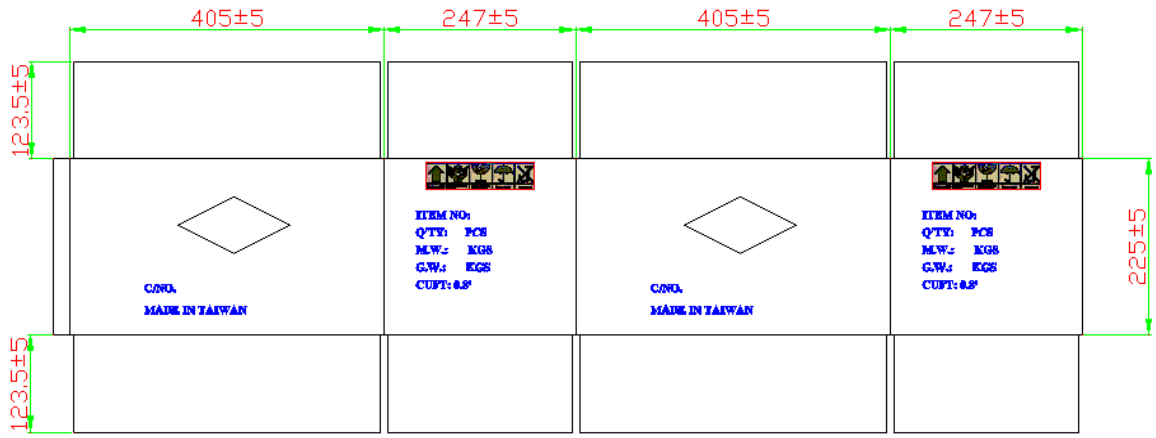
c. Drawing of small size carton in developed view



d. Drawing of middle size carton in developed view



e. Drawing of large size carton in developed view



f. Process of packing

1 reel includes **3,000** pcs(max.) chip antennas

1 small size carton includes 1pcs(max.) reels

1 middle size carton includes 5pcs(max.) small catons

1 large size carton includes 2pcs(max.) middle cartons