



Product Name: UWB Ceramic Chip Antenna – CR801

Part Number: H2UL6G1T2W0100

Features:

- SMD Chip Antenna
- Frequency: 3500 ~ 8500 MHz
- Dimensions: 8.0 x 6.0 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: CR801

Version: D

I. Specifications:

Items	Specifications	
Frequencies (MHz)	3500 ~ 8500	
VSWR	3.0 Max.	
Efficiency (%)	@6000MHz	66 Typ.
Average Gain (dB)		-1.8 Typ.
Peak Gain (dBi)		4.3 Typ.
Test Condition	64x 28 mm ² (Evaluation board)	
Impedance (Ω)	50	
Polarization	Linear Polarization	

Mechanical Specifications	
Dimensions (mm)	8 (L) x 6 (W) x 0.5 (H)
Material	Ceramic
Environmental Conditions	
Operation Temperature (°C)	-40 ~ +125
Storage Temperature (°C)	-40 ~ +85
Storage Temperature (°C) (Antenna with packing sealed)	-5 ~ +40
Relative Humidity	10 ~ 70 %

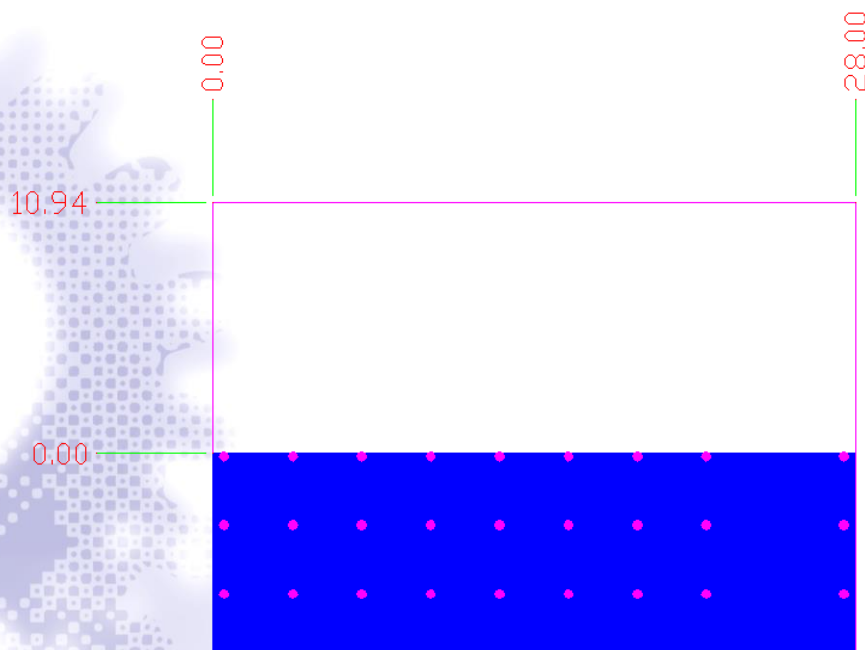
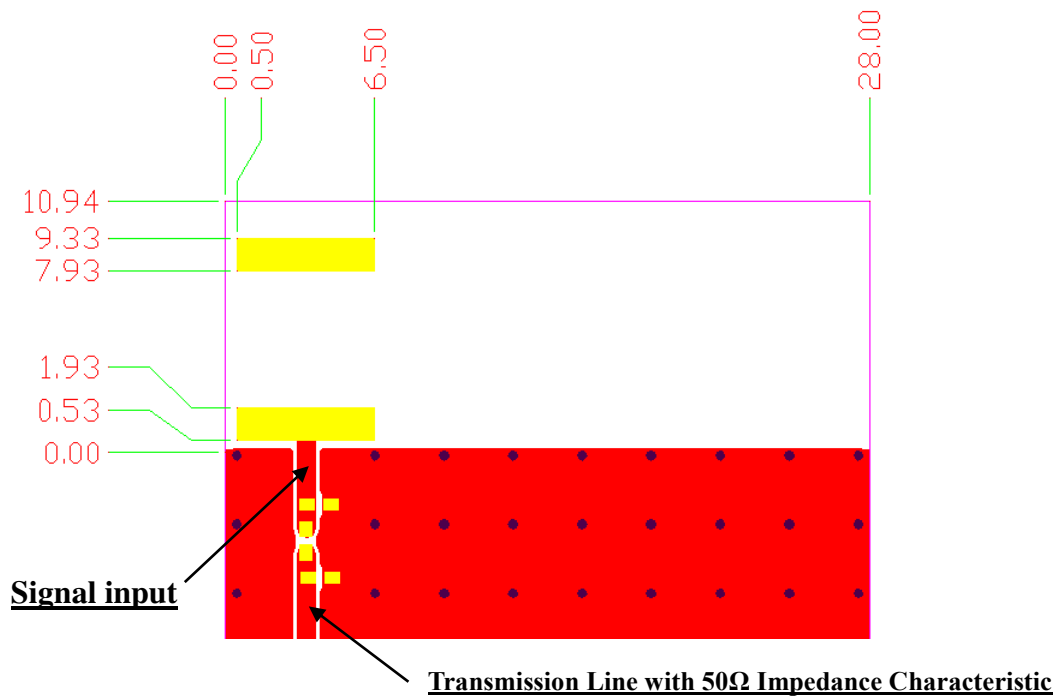
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II. Layout Guide (Unit: mm):

Solder Land Pattern:

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

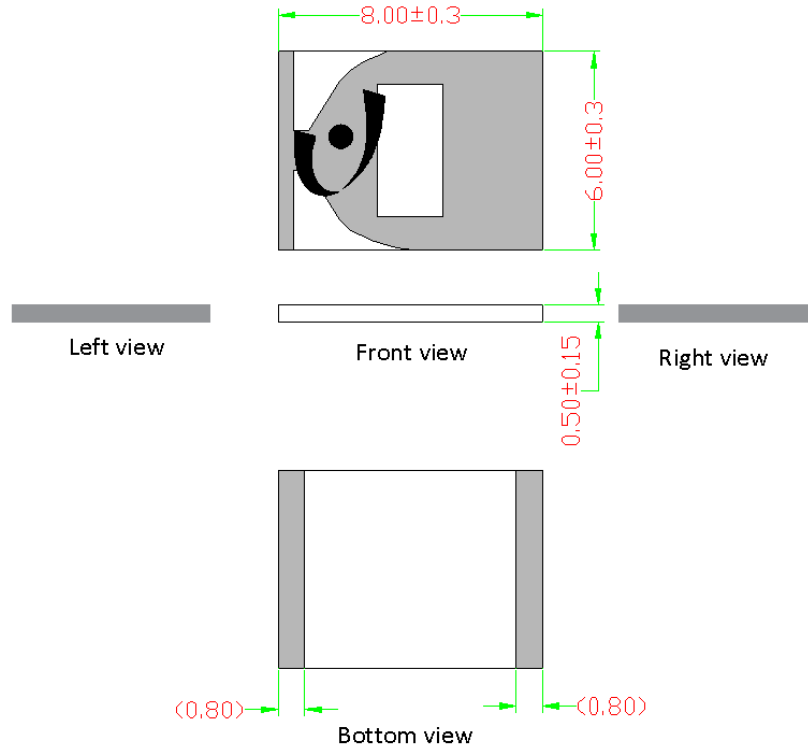
Top View



Bottom View

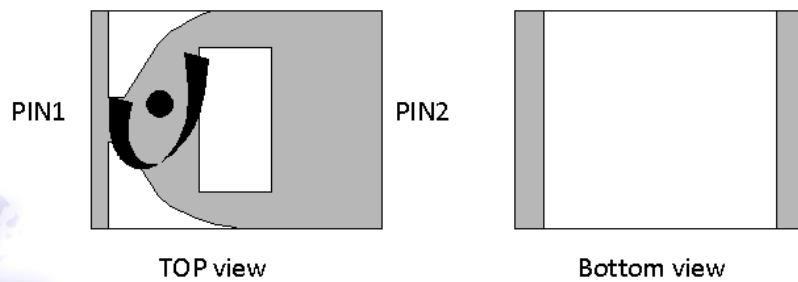
III. Mechanical Dimensions (Unit: mm):

a) Antenna Dimensions



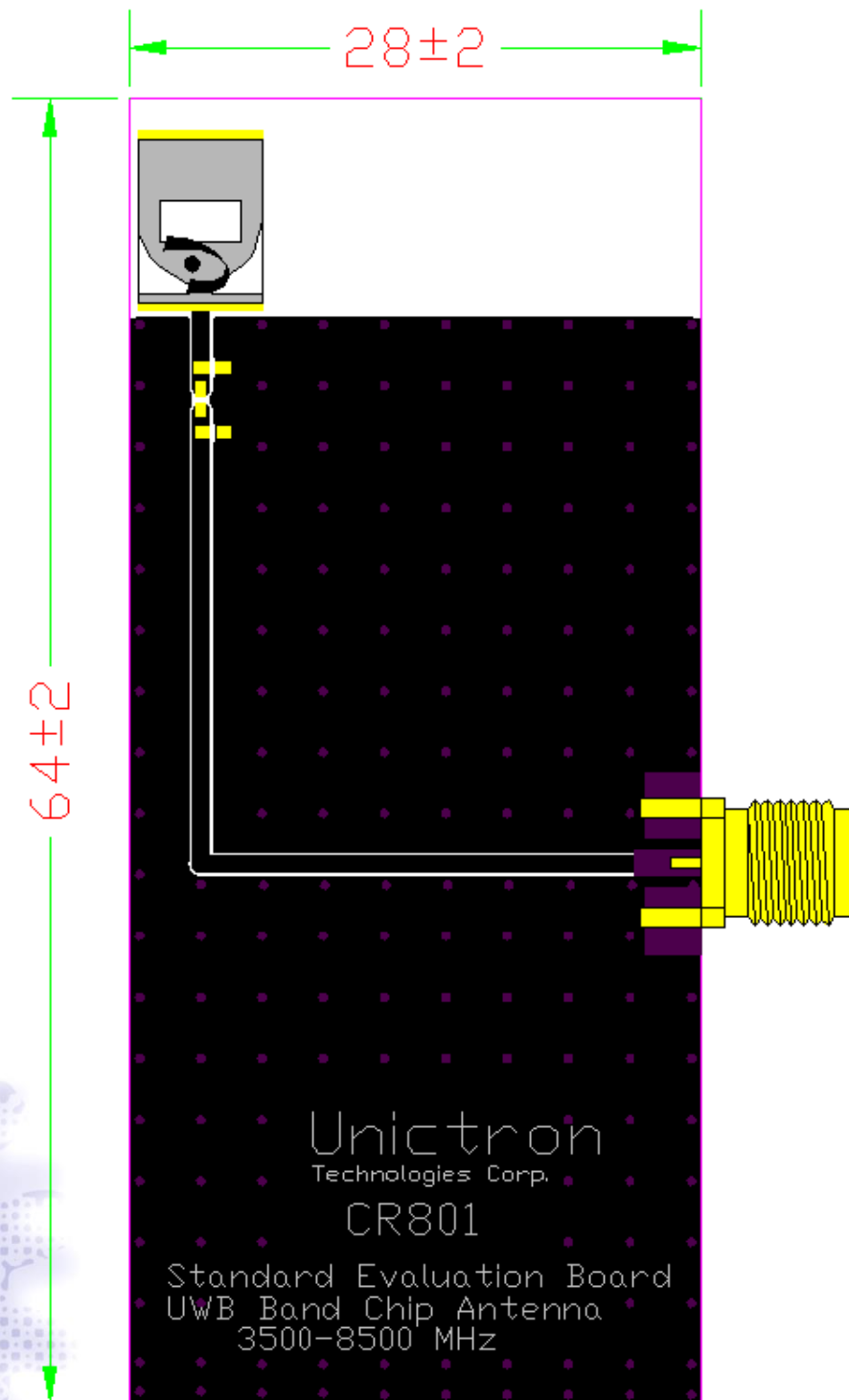
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b) PIN Definition



PIN	1	2
Soldering PAD	Signal	N/A

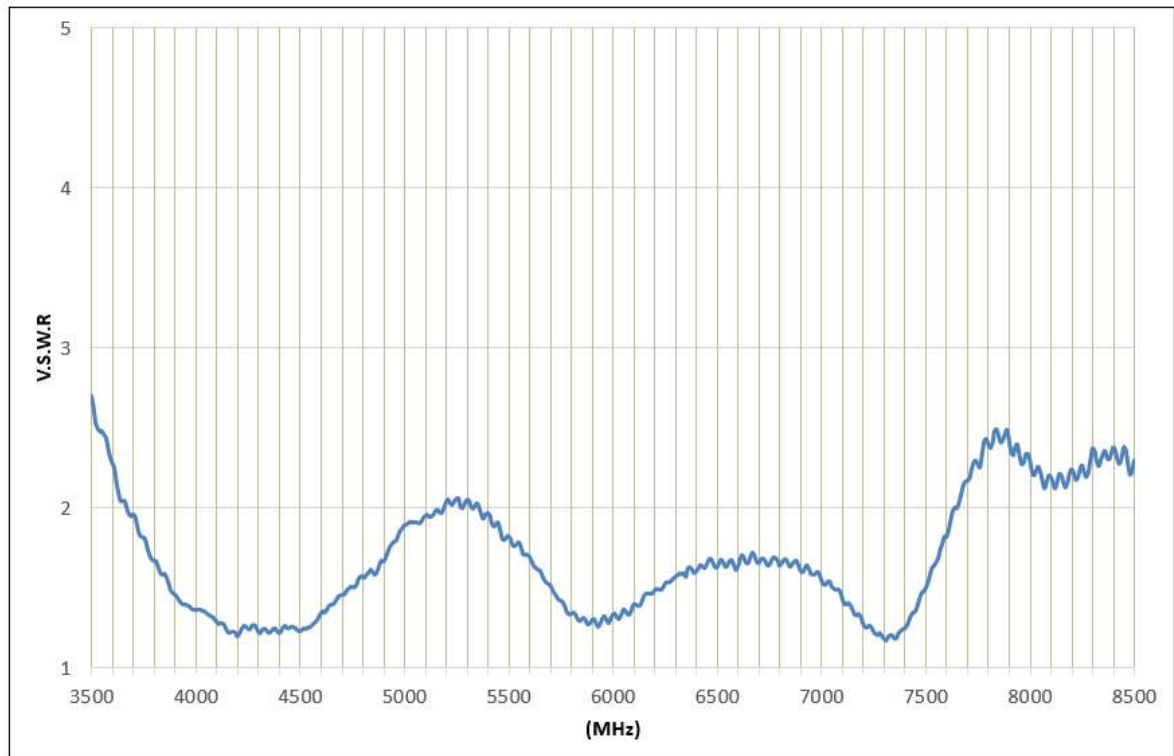
c) Test Board with Antenna



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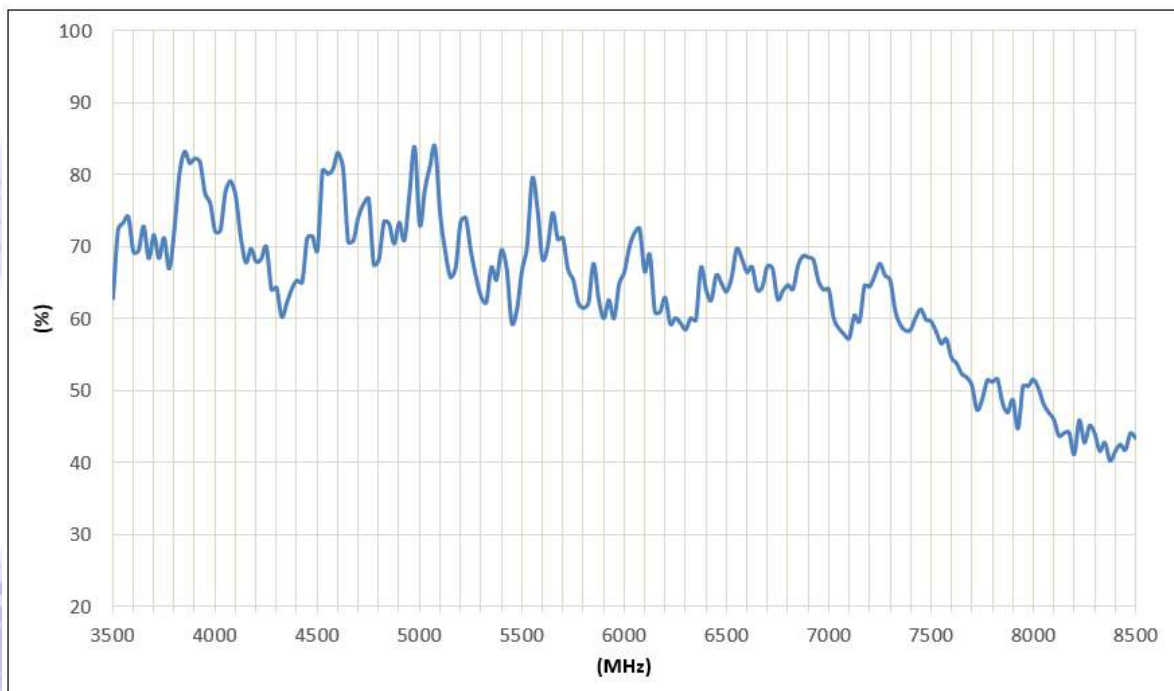
IV. Properties:

a) VSWR

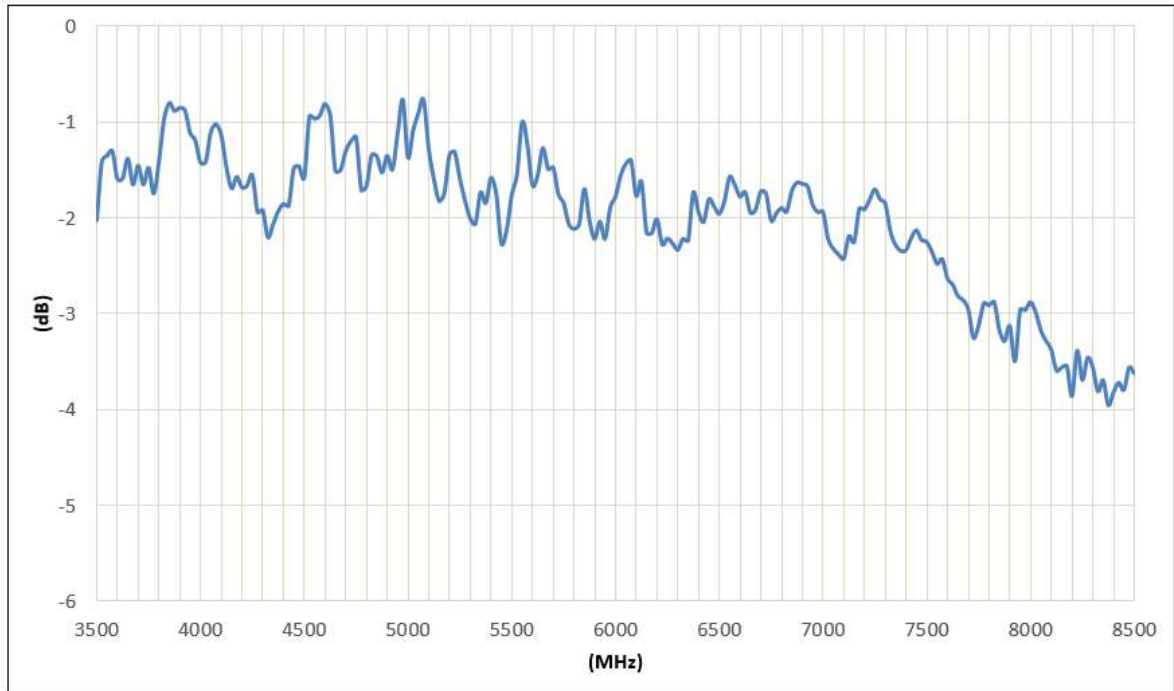


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b) Efficiency (%)

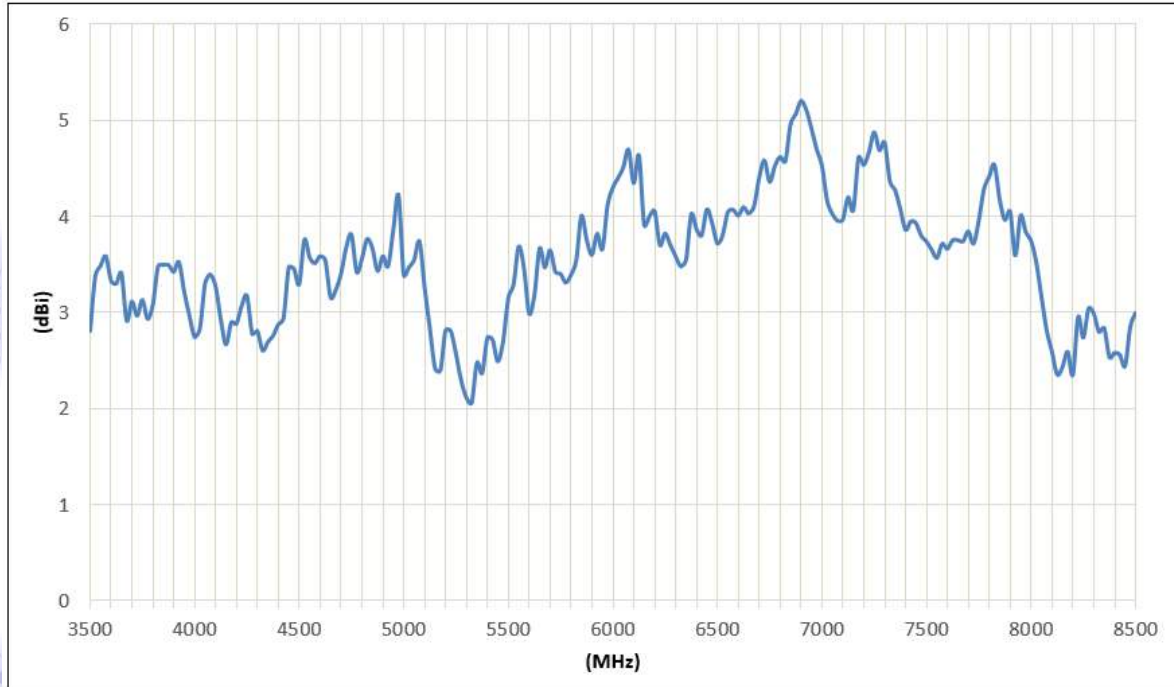


c) Average Gain (dB)



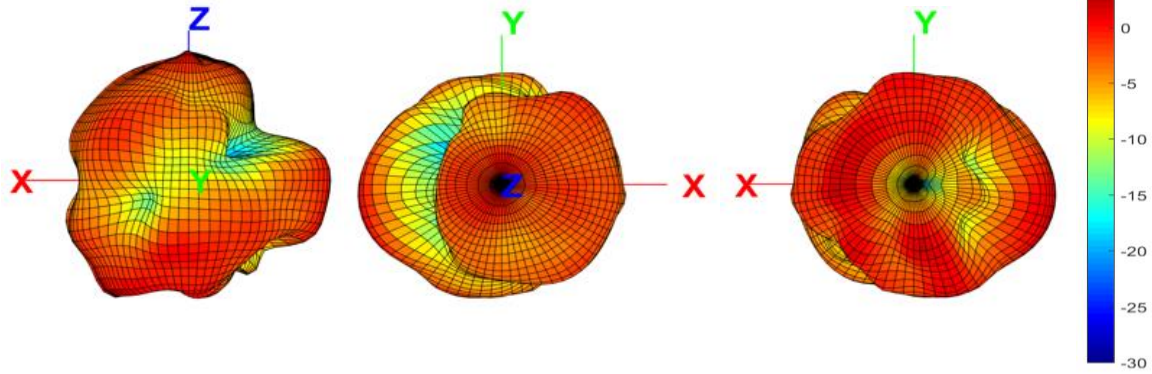
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d) Peak Gain (dBi)

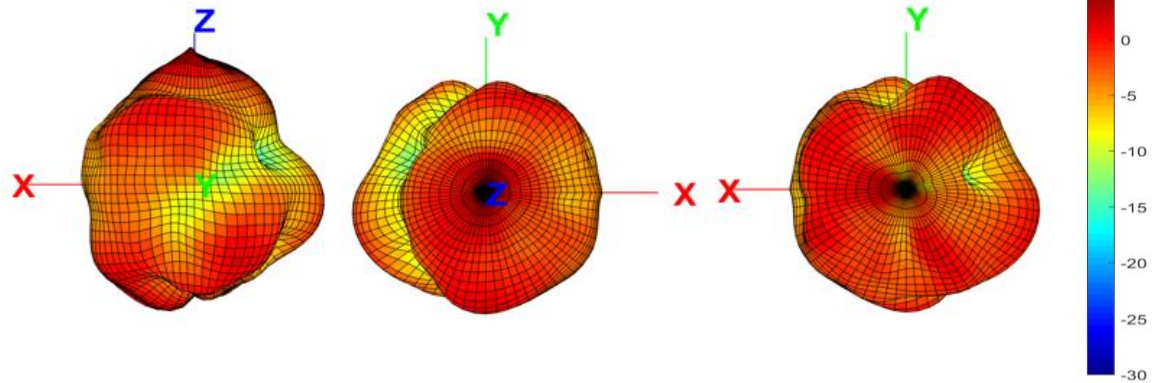


3D Radiation Gain Pattern

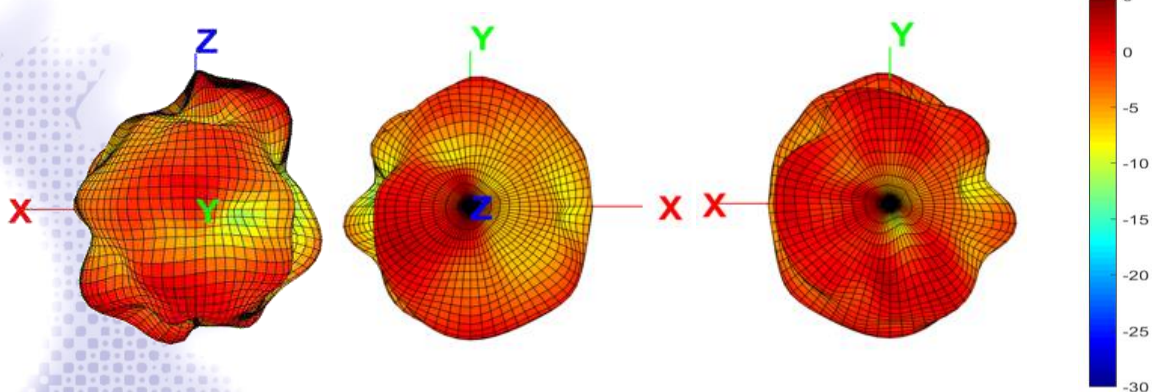
a) 3500 MHz



b) 4500 MHz

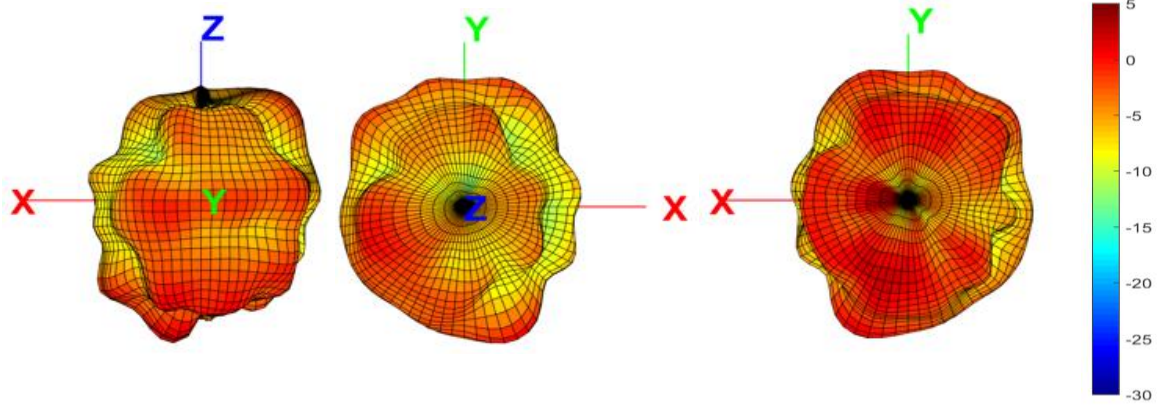


c) 5500 MHz



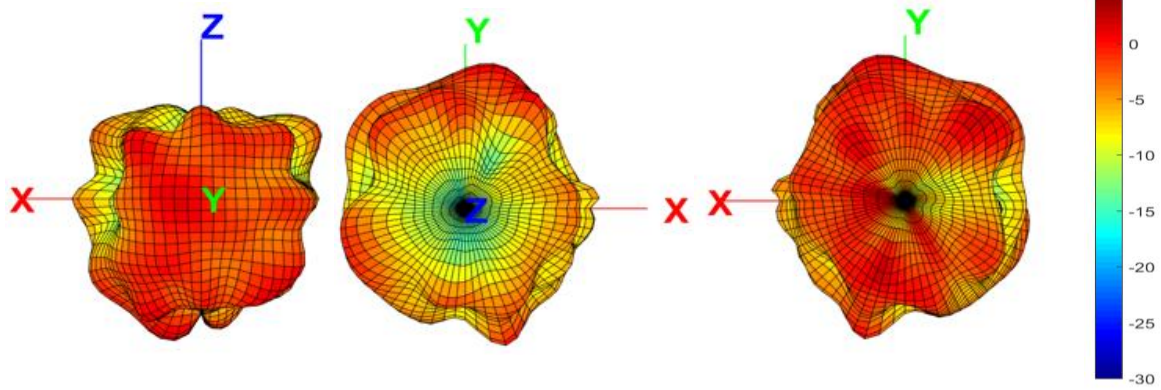
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d) 6500 MHz

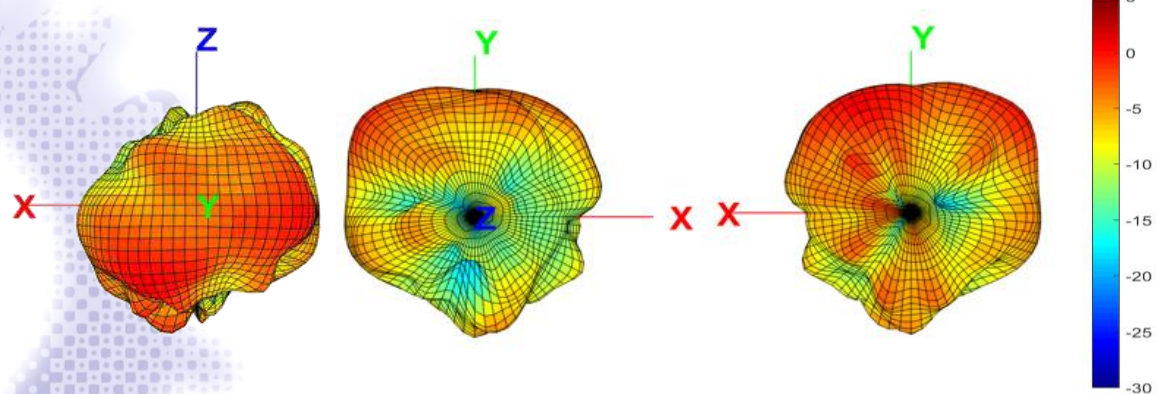


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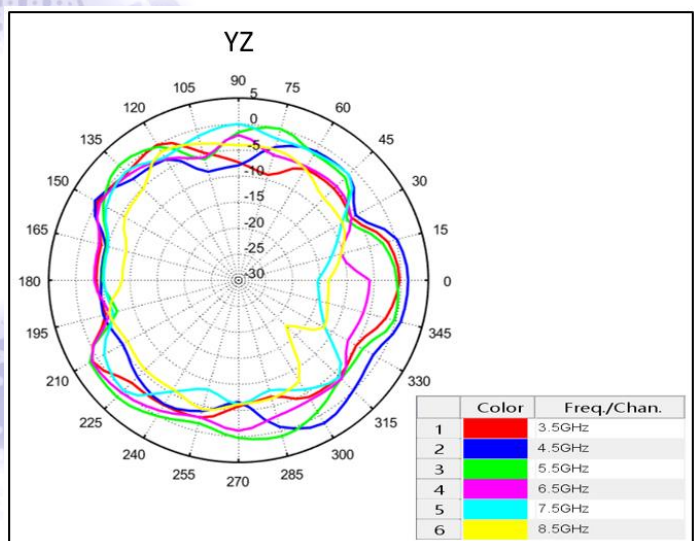
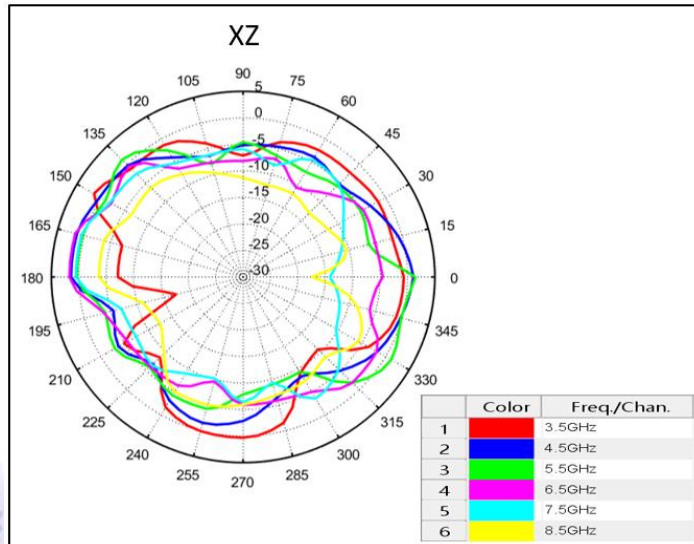
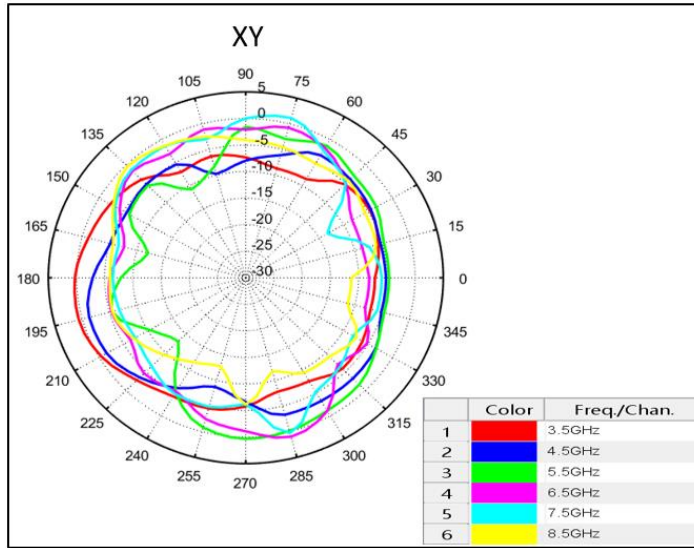
e) 7500 MHz



f) 8500 MHz

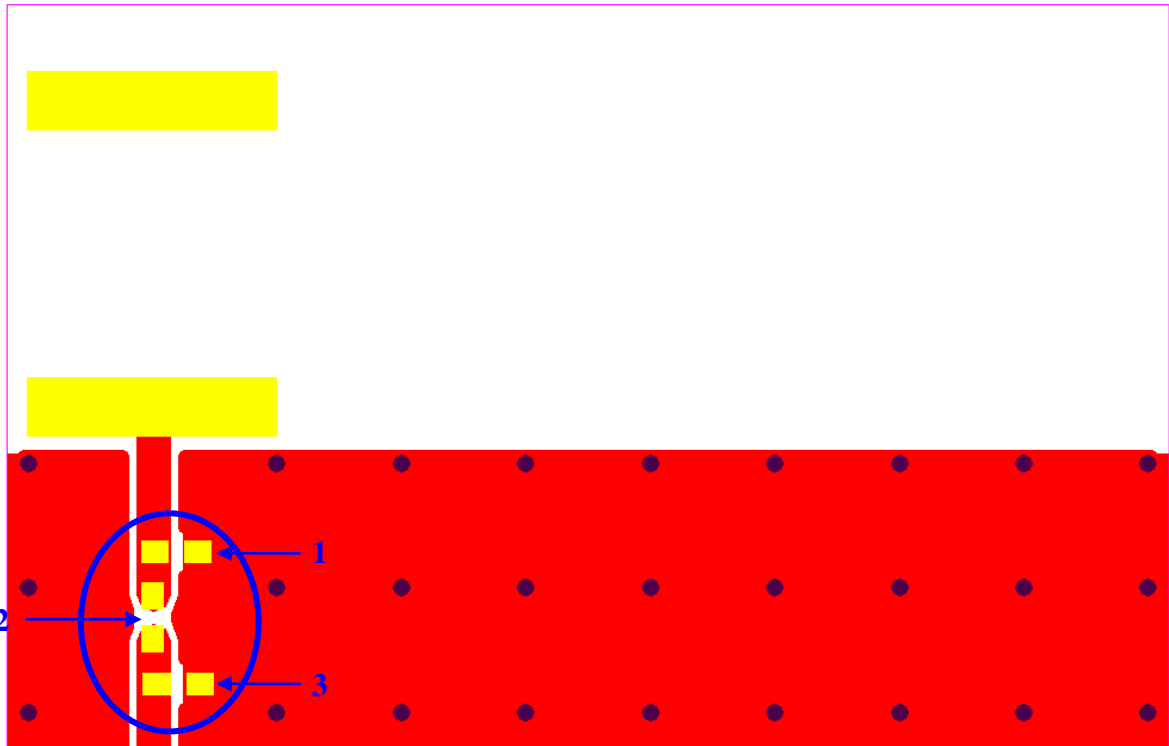


2D Radiation Gain Pattern

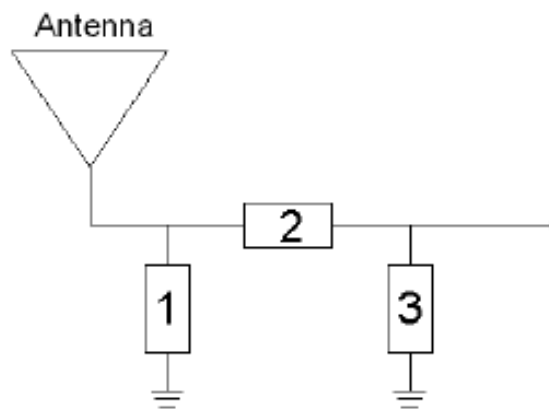


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VI. Frequency tuning:



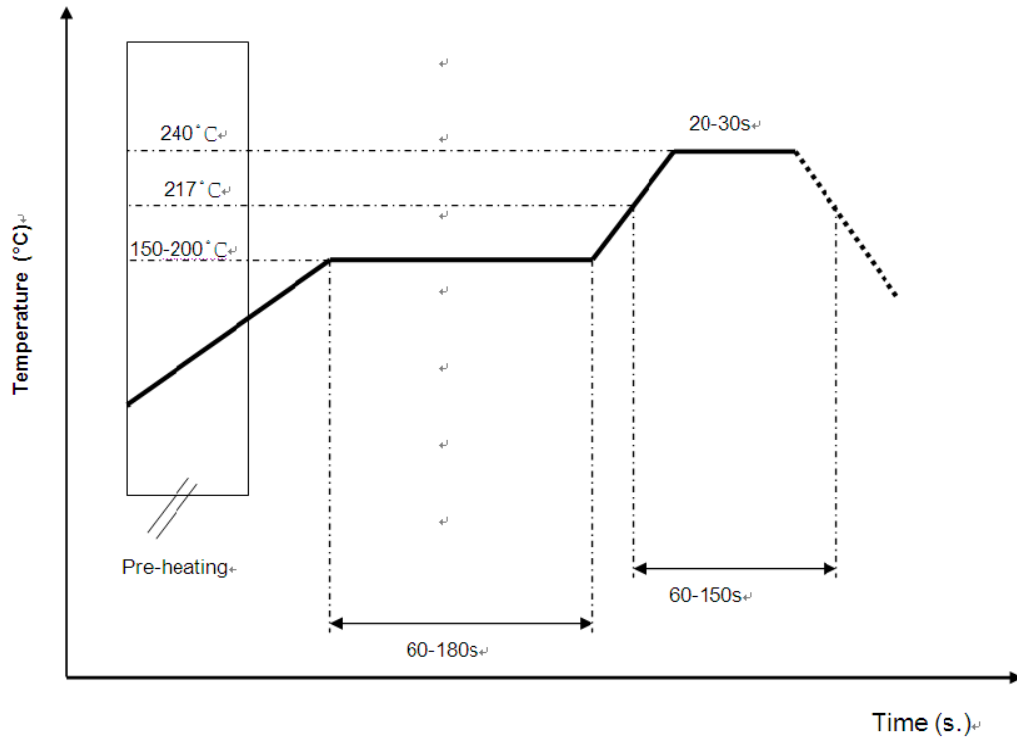
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System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	N/C	-	-
2	0Ω(0402)	MURATA	±5%
3	0.2pF (0402)	MURATA	±0.1 pF

VII. Soldering conditions:

Typical Soldering Profile for Lead-free Process



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

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VIII. Reminders for use of Unictron's 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°C to 125°C
- (3) Relative Humidity: 10% to 70%

b) Storage (sealed)

- (1) Storage Temperature: -5°C to 40°C
- (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°C to 85°C
- (2) Relative Humidity: 10% to 70%

X. Notice

(1) Installation Guide:

Please refer to Unictron's application note "General guidelines for the installation of Unictron's chip antennas" for further information.

(2) All specifications are subject to change without notice.

