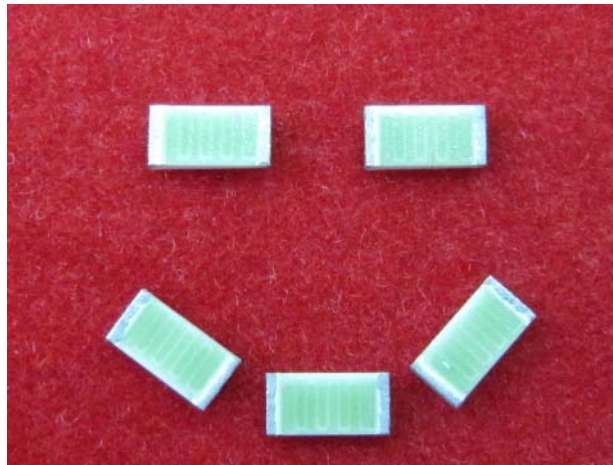


3.2 x 1.6 x 0.5 WiFi/HDMI Ceramic Chip Antenna (AA106)

1. Explanation of Product Number

H	2	U	3	4	W	1	H	1	Q	0	3	0	0
				(1)	(2)	(3)	(4)	(5)					



Product Code:

(1) Product Categories:

4: ceramic substrate chip antenna

(2) Dimensions:

W1: 3.2 x 1.6 x 0.5 (mm)

(3) Material:


H: AS 6

(4) Working Frequency:

1Q: 5150~5900MHz

(5) Antenna Series:

03: serial number

Tolerances (Unless otherwise specified) X : ± 1 X.X : ± 0.1 X.XX : ± 0.01 Angle : ± Hole Dia. : ±		 Unictron Technologies Corporation Website: www.unictron.com		
Scale :	Unit : mm	THIS SPECIFICATION IS THE PROPERTY OF UNICTRON TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION		
Prepared By : Meiping	Checked By : Chinling			
Designed By : Chinling	Approved By : Herbert			
TITLE : 3.2 x 1.6 x 0.5 WiFi/HDMI Ceramic Chip Antenna (AA106)		DOCUMENT NO.	H2U34W1H1Q0300	REV. A

2. Features

- *Stable and reliable in performances
- *Compact size
- *RoHS compliance
- *SMT processes compatible

3. Applications

- *IEEE802.11a (5150~5900 MHz).
- *HDMI PCMCIA cards or USB dongle

4. Description

Unictron's chip antenna series are specially designed for WiFi/HDMI application. Based on Unictron's proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications (40x40(mm) ground plane)

5-1.

Characteristics		Specifications	Unit
Outline Dimensions		3.2x1.6x0.5	mm
Ground Plane		40x40	mm
Center Frequency*		5500	MHz
Bandwidth(under -10dB return loss)		750 min.	MHz
VSWR		2 max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	3.4 (typical)	dBi
	Efficiency	79 (typical)	%
Temperature Coefficient of Frequency		0 \pm 20 max (@ -40 $^{\circ}$ C~85 $^{\circ}$ C)	ppm/ $^{\circ}$ C

*Center frequency will be offset to working frequency according to the conditions of user's ground plane and radome.

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Angle : \pm Hole Dia. : \pm

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Ceramic Chip Antenna (AA106)**

**DOCUMENT
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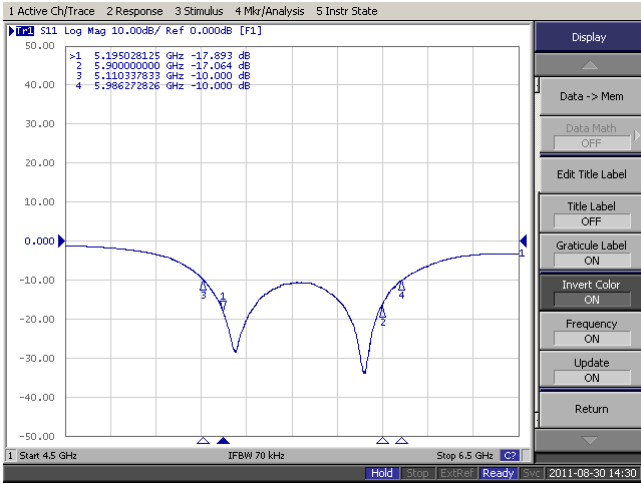
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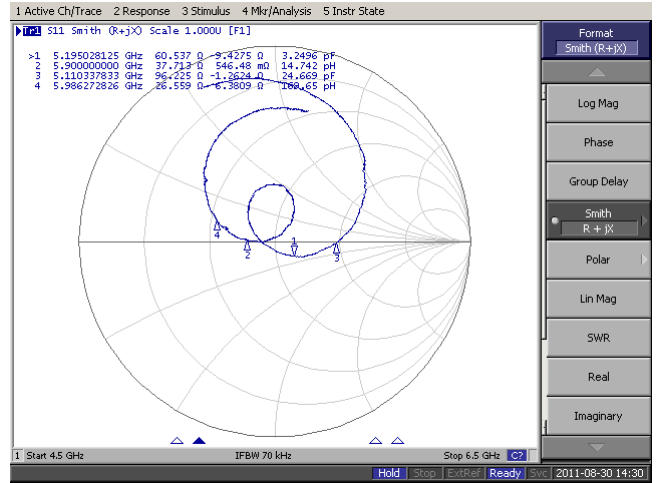
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5-2.

Return Loss(S₁₁)

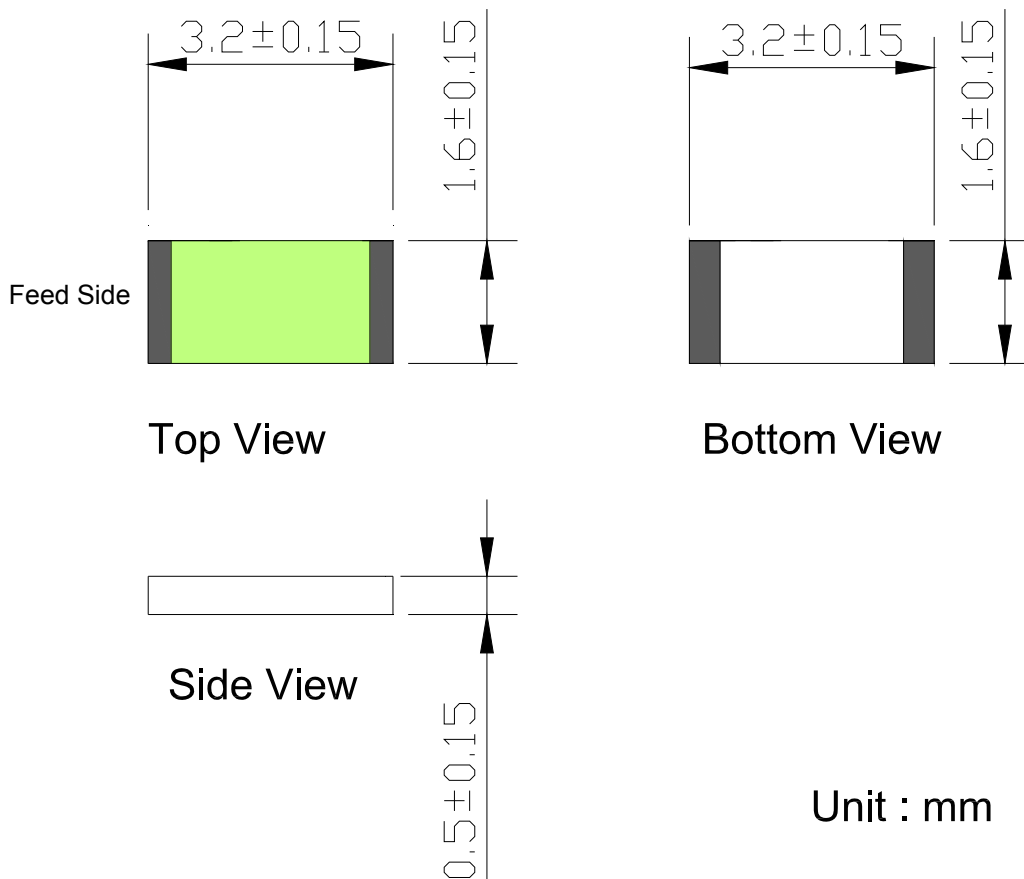


Smith Chart(S₁₁)



6. Antenna Dimensions & Test Board(unit: mm)

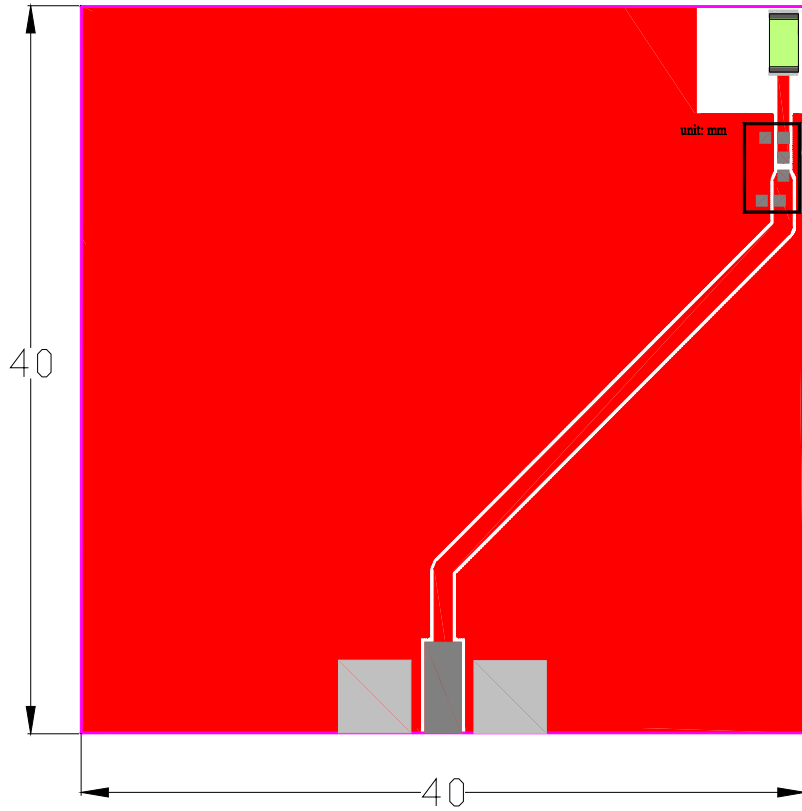
a. Antenna Dimensions



Tolerances (Unless otherwise specified)	
X : ± 1	X.X : ± 0.1 X.XX : ± 0.01
Angle : ±	Hole Dia. : ±
Scale :	Unit : mm
Prepared By : Meiping	Checked By : Chinling
Designed By : Chinling	Approved By : Herbert
TITLE : 3.2 x 1.6 x 0.5 WiFi/HDMI Ceramic Chip Antenna (AA106)	

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b. Test Board with Antenna



Unit : mm

Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : ± Hole Dia. : ±



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Scale : Unit : mm

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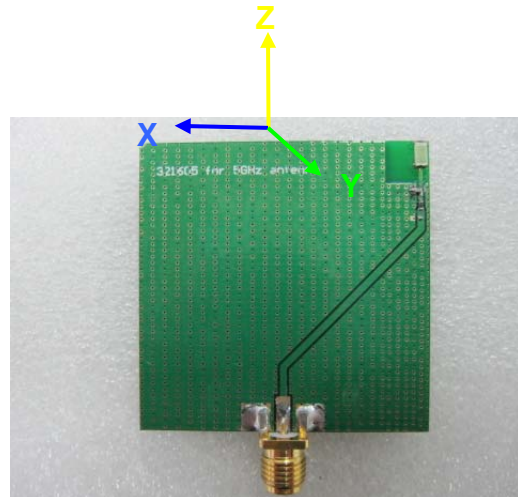
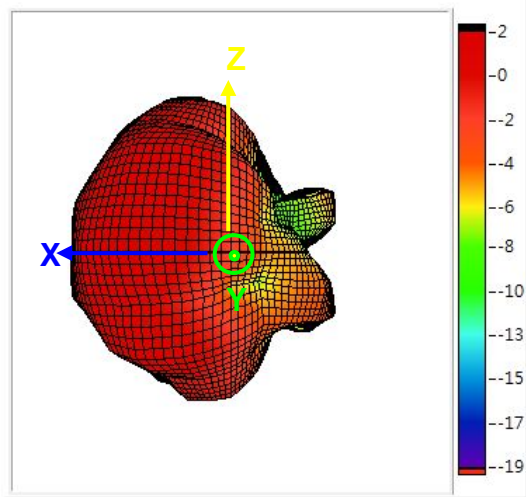
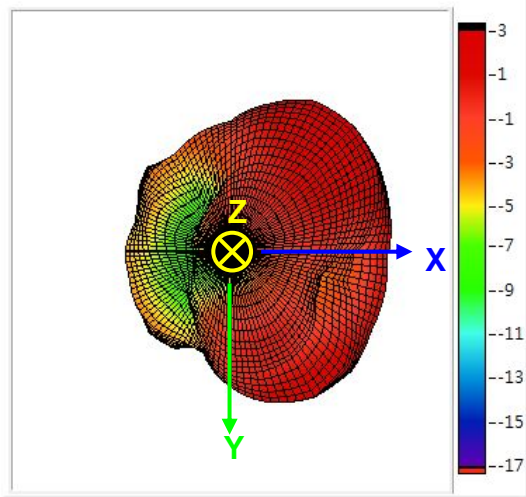
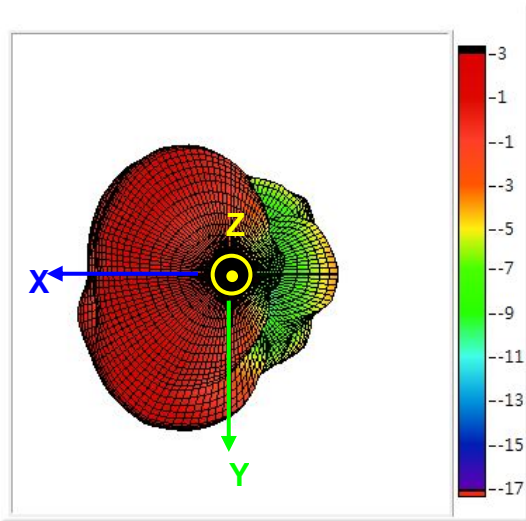
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7. Radiation Pattern (40x40(mm) ground plane)

7-1. 3D Gain Pattern at 5150 MHz



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : \pm Hole Dia. : \pm

Scale : Unit : mm

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Ceramic Chip Antenna (AA106)**

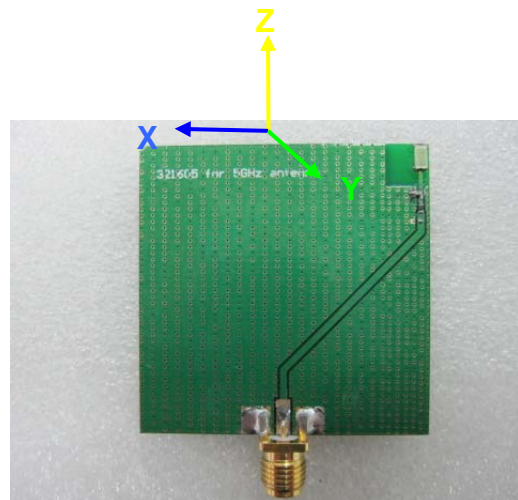
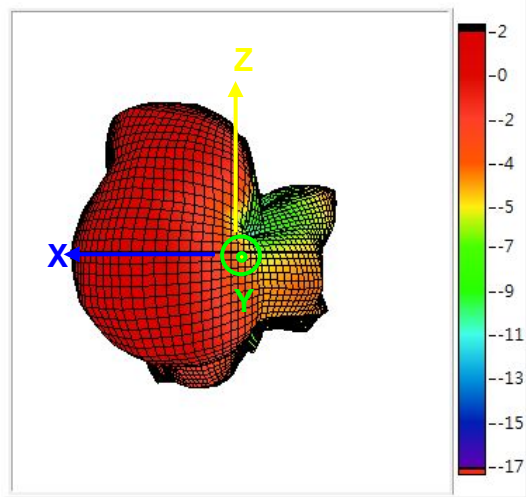
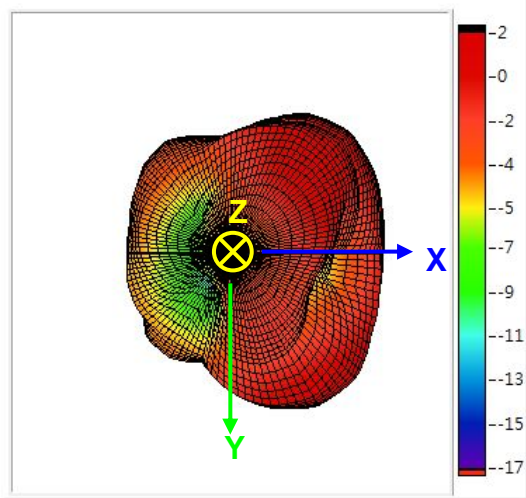
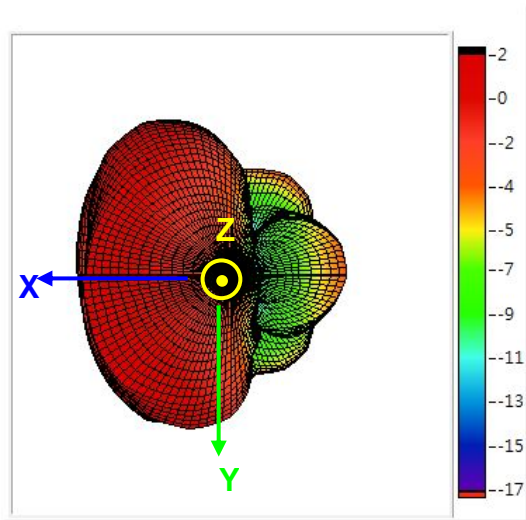
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7-2. 3D Gain Pattern at 5350 MHz



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : \pm Hole Dia. : \pm

Scale : Unit : mm

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**TITLE : 3.2 x 1.6 x 0.5 WiFi/HDMI
Ceramic Chip Antenna (AA106)**

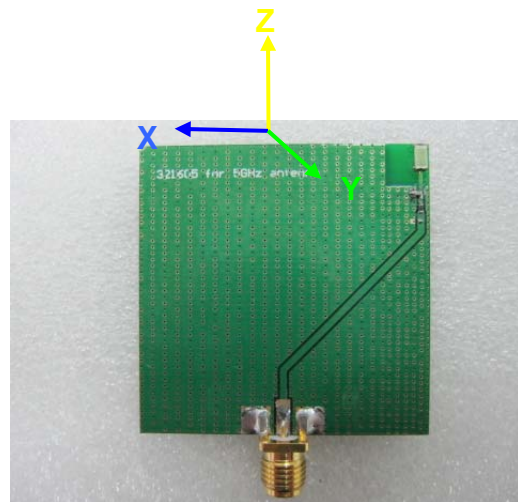
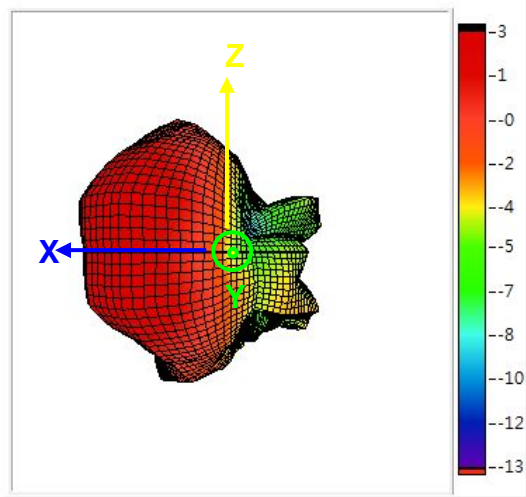
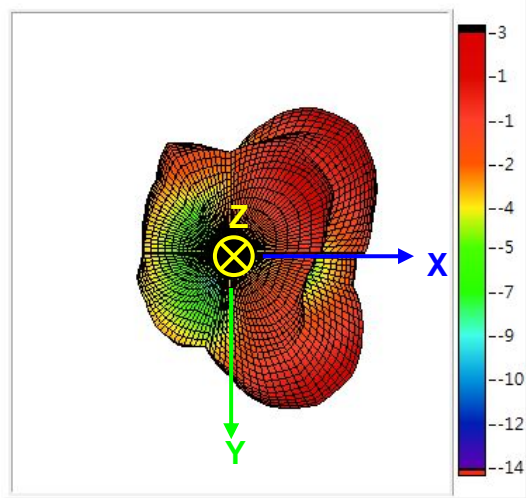
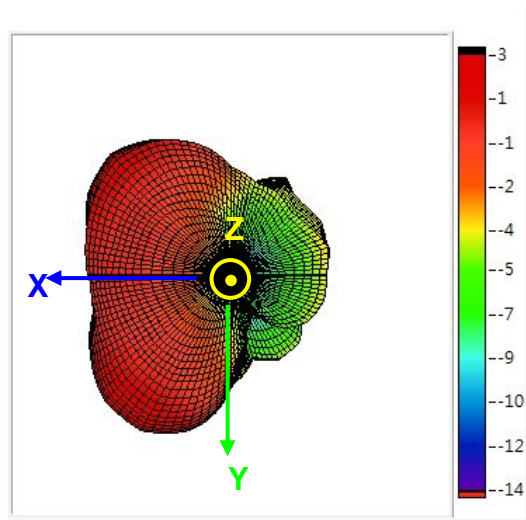
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7-3. 3D Gain Pattern at 5700 MHz



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : \pm Hole Dia. : \pm

Scale : Unit : mm

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**TITLE : 3.2 x 1.6 x 0.5 WiFi/HDMI
Ceramic Chip Antenna (AA106)**

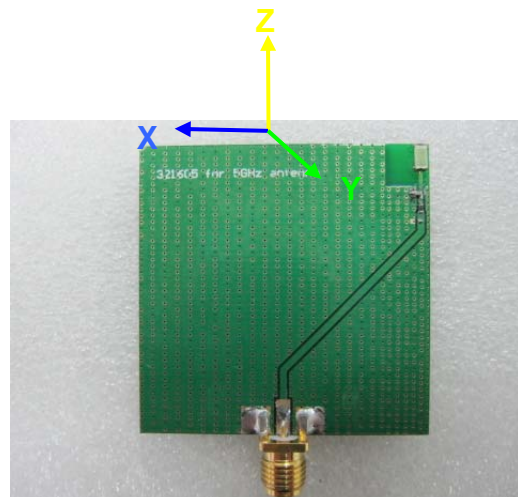
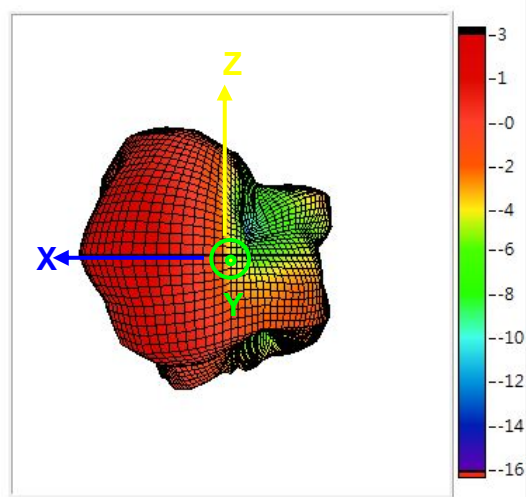
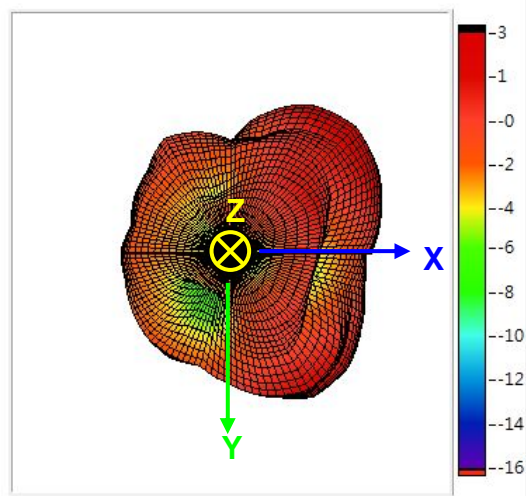
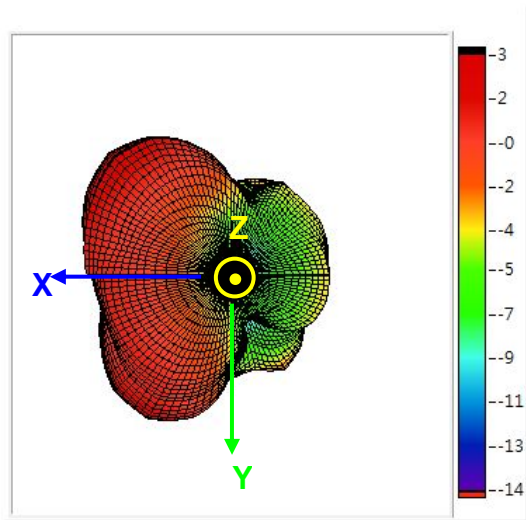
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7-4. 3D Gain Pattern at 5850 MHz



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : ± Hole Dia. : ±

Scale : Unit : mm

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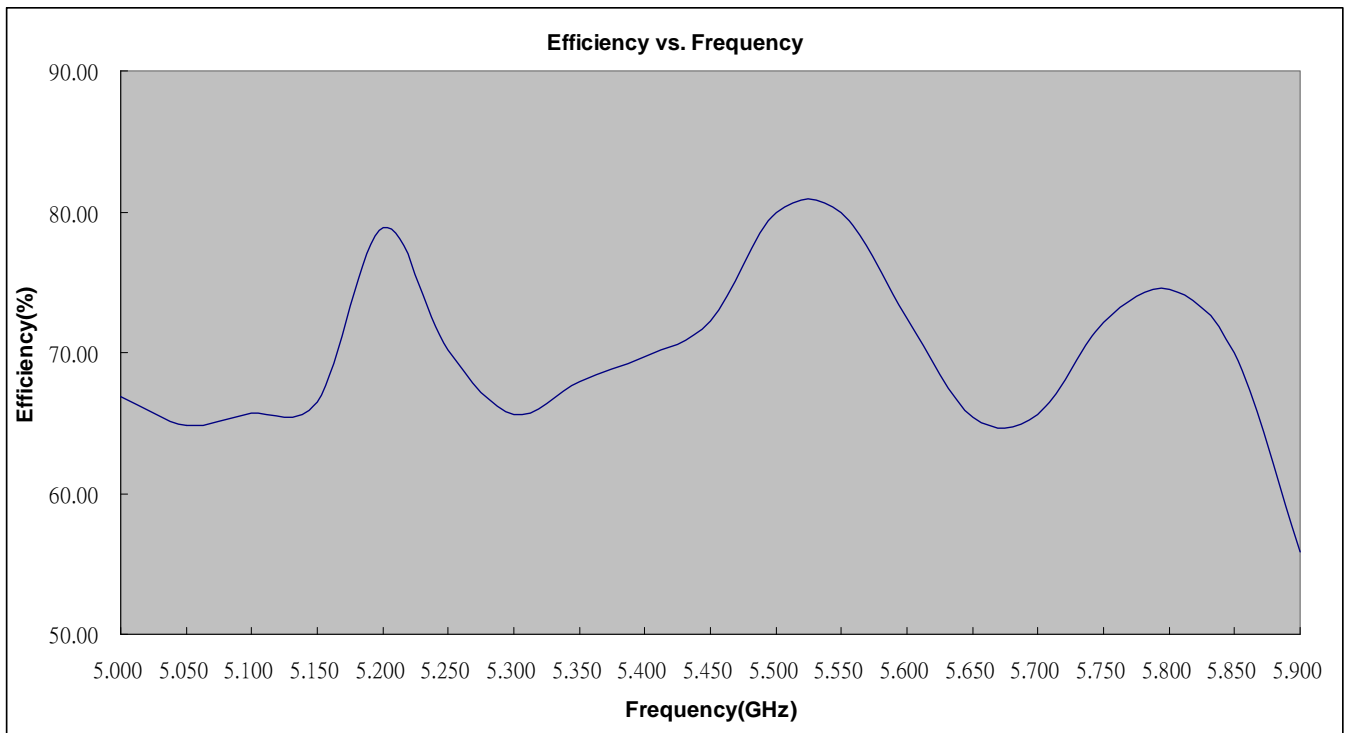
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7-5. Efficiency Table

Frequency(GHz)	5.000	5.050	5.100	5.150	5.200	5.250	5.300	5.350	5.400	5.450
Efficiency(dB)	-1.75	-1.88	-1.82	-1.77	-1.03	-1.54	-1.83	-1.68	-1.57	-1.41
Efficiency(%)	66.83	64.86	65.75	66.53	78.89	70.15	65.61	67.92	69.66	72.28
Gain(dBi)	2.66	2.22	2.00	2.76	3.22	2.56	2.25	2.53	2.77	3.45

Frequency(GHz)	5.500	5.550	5.600	5.650	5.700	5.750	5.800	5.850	5.900
Efficiency(dB)	-0.97	-0.97	-1.40	-1.84	-1.83	-1.42	-1.28	-1.55	-2.53
Efficiency(%)	79.98	79.98	72.44	65.46	65.61	72.11	74.47	69.98	55.85
Gain(dBi)	3.42	3.35	3.14	2.80	2.86	3.28	3.59	3.40	2.56

7-6. Efficiency vs. Frequency



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : ± Hole Dia. : ±



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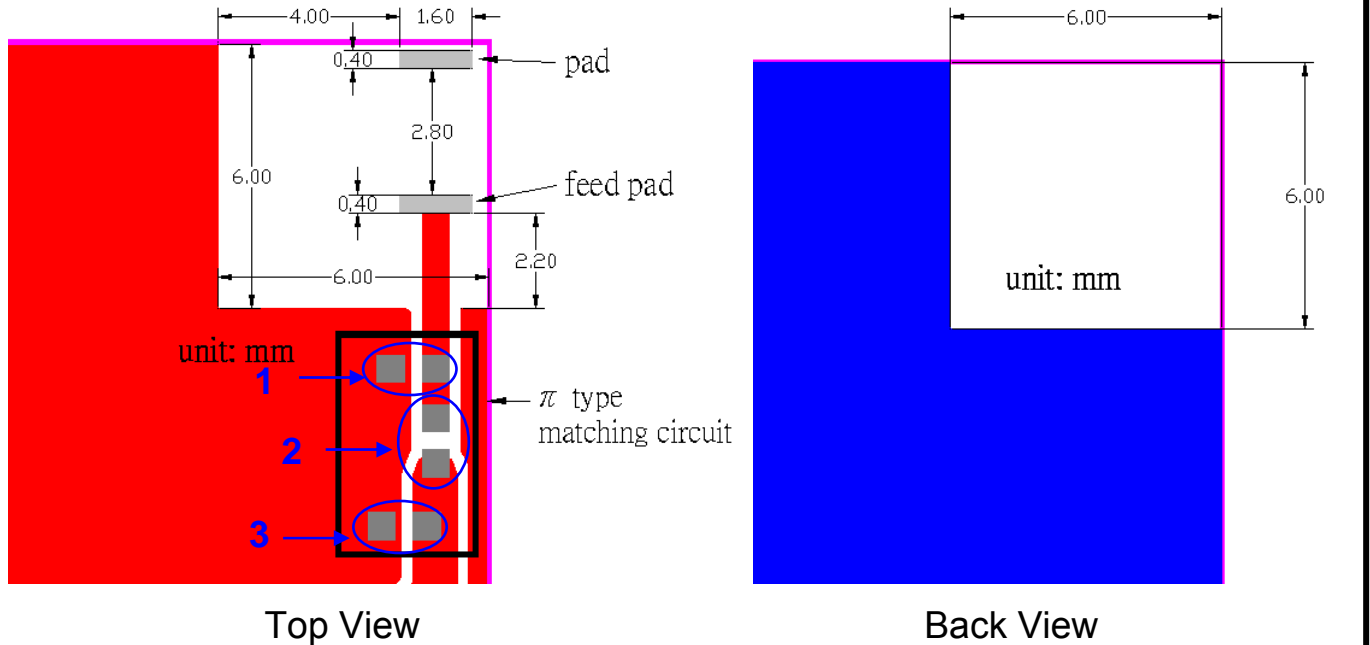
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8. Layout Guide:

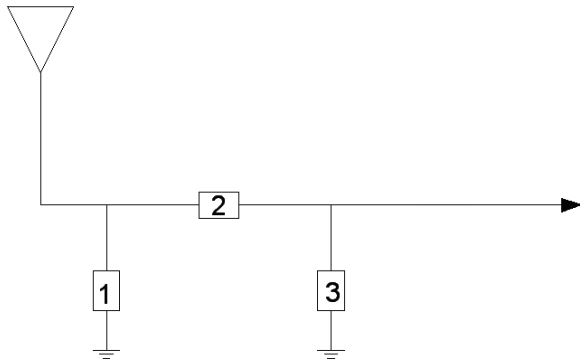
a. Solder Land Pattern:

Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended .



b. Matching circuit : (Center frequency is about 5500MHz at 40x40(mm) ground plane)

Antenna



System Matching Circuit Component		
Location	Description	Vendor
1	0.3pF	DARFNO(0402)
2	4.7pF	DARFNO(0402)
3	0.47pF	DARFNO(0402)

Tolerances (Unless otherwise specified)
 X : ± 1 X.X : ± 0.1 X.XX : ± 0.01
 Angle : ± Hole Dia. : ±



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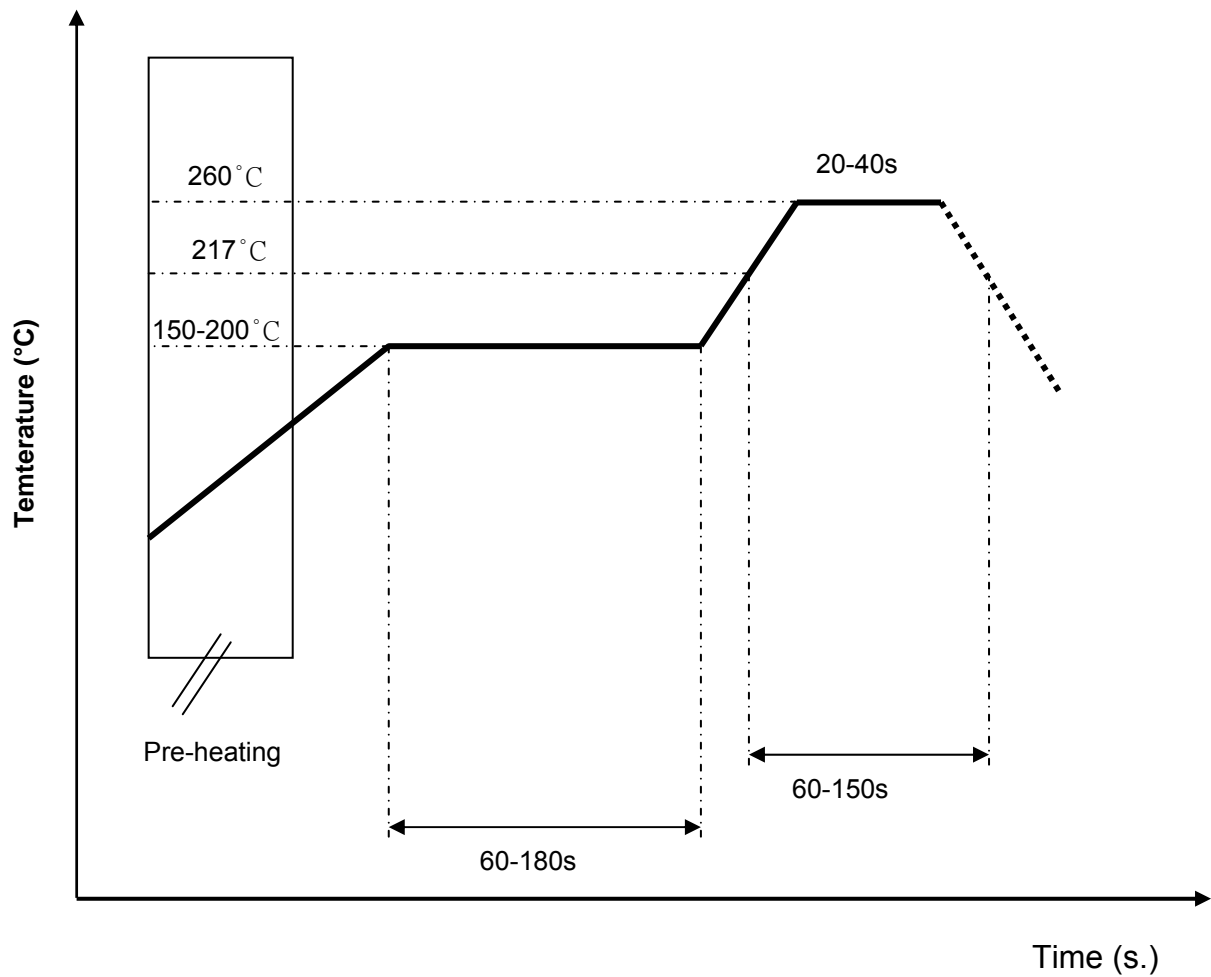
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9. Soldering Conditions:

a. Typical Soldering Profile for Lead-free Process



Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : ± Hole Dia. : ±



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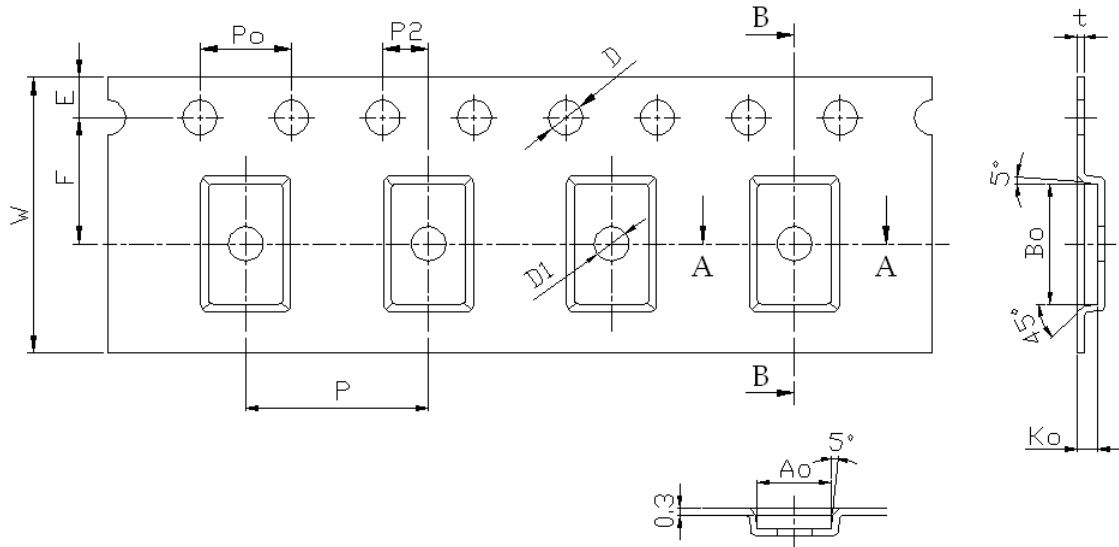
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10. Packing:

- (1) Quantity/Reel: 6000pcs/Reel
- (2) Plastic tape:



1. Cumulative tolerance of 10 sprocket hole pitch: $\pm 0.20\text{mm}$
2. Carrier camber not to exceed 1mm in 250mm
3. A_0 and B_0 measured on a plane above the inside bottom of the pocket.
4. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
5. All dimensions meet EIA-481-B requirements.
6. Material: Clear Non Anti-Static Polystyrene.
 Black Conductive Polystyrene.

2.1 Tape Dimensions(unit: mm)

Feature	Specifications	Tolerances
W	12.00	± 0.30
P	8.00	± 0.10
E	1.75	± 0.10
F	5.50	± 0.10
P2	2.00	± 0.10
D	1.50	+0.10 -0.00
D1	---	± 0.10
Po	4.00	± 0.10
10Po	40.00	± 0.20

2.2 Pocket Dimensions(unit: mm)

Feature	Specifications	Tolerances
A_0	1.90	+0.20
B_0	3.50	-0.10
K_0	0.60	± 0.05
t	0.30	± 0.05

11. Storage Conditions:

- (1) Temperature: -25°C to 85°C
- (2) Relative Humidity: 20% to 70%

Tolerances (Unless otherwise specified)

X : ± 1 X.X : ± 0.1 X.XX : ± 0.01

Angle : \pm Hole Dia. : \pm

Scale : Unit : mm

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