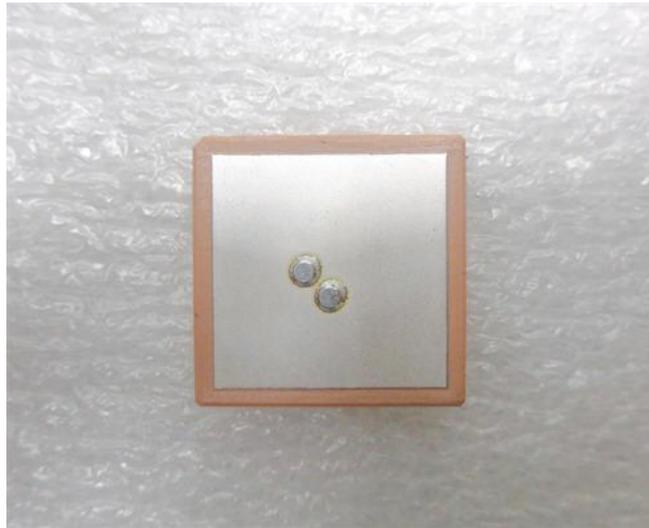


25.0 x 25.0 x 4.0 (mm) GPS & GLONASS & BDS Dual Pin Patch Antenna

Engineering Specification (AA650)

1. Explanation of Product Number

H	2	P	1	3	A	P	A	X	B	0	1	0	0
				(1)	(2)	(3)	(4)	(5)	(6)				



Product Code

(1) Product Categories:

3: ceramic patch antenna

(2) Dimensions and Polarization:

AP: DP 25.0 x 25.0 x 4.0 (mm) / right hand circular polarization

(3) Material:

A: MA-PC

(4) Working Frequency:

X: 1561 & 1575.42 & 1598 ~ 1606 MHz

(5) Ground Plane Dimensions:

B: 70 x 70 (mm)

(6) Antenna Series:

01: serial number

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Designed by : Chinling

Checked by : Chinling

Approved by : Herbert

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Pin Patch Antenna (AA650) Engineering
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2. Features

- *Stable and reliable in performances
- *Low temperature coefficient of frequency
- *RoHS compliance

3. Applications

- *Navigation systems or position tracking systems

4. Description

Unictron's patch antenna series are ceramic antennas specially designed for all of GPS、GLONASS and BDS applications. This ceramic dual pin patch antenna has excellent stability and sensitivity through the use of high performance proprietary ceramic materials and processes.

5. Electrical Specifications (@ 70 x 70 mm² ground plane)

5-1. GPS Band

Characteristics		Specification	Unit
Outline Dimensions		25.0 × 25.0 × 4.0	mm
Ground Plane		70 × 70	mm
Working Frequency		1575.42	MHz
VSWR		2 Max. (typical)	
Axial Ratio		2 Max. (typical)	dB
Impedance		50	Ω
Polarization		RHCP	
Gain	@Zenith	4.2 (typical)	dBic
	@10° Elevation	-2.3 (typical)	
Temperature Coefficient of Frequency		0±20 Max. (@-40°C~85°C)	ppm/°C
Electrode Plating Adhesion		>4	kg



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5-2. GLONASS Band

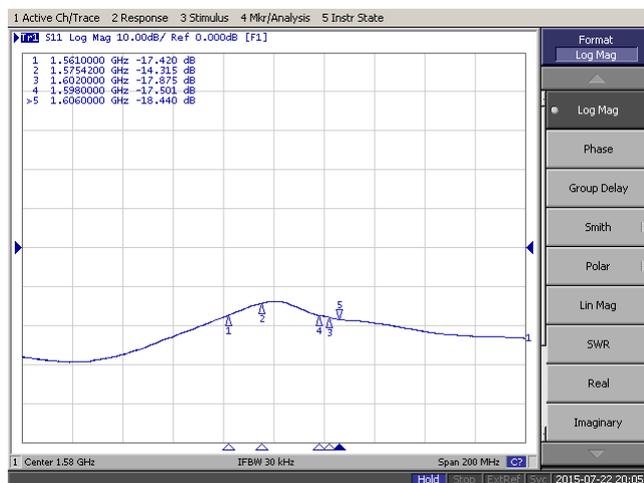
Characteristics		Specification	Unit
Working Frequency		1598~1606	MHz
VSWR		2 Max. (typical)	
Axial Ratio		2 Max. (typical)	dB
Impedance		50	Ω
Polarization		RHCP	
Gain @ 1602 MHz	@Zenith	1.6 (typical)	dBic
	@10°Elevation	-5.0 (typical)	

5-3. BDS Band

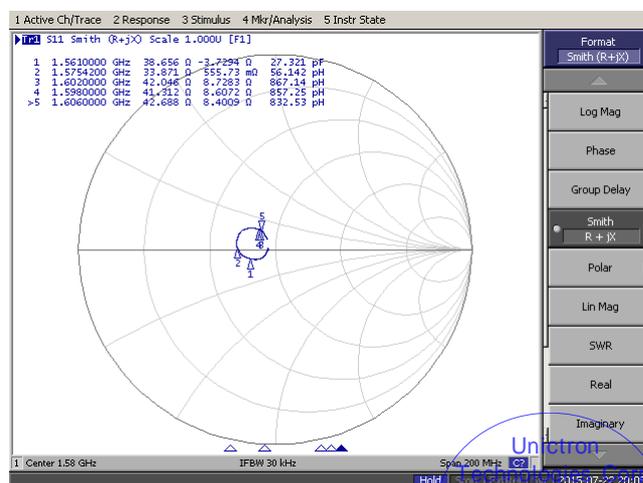
Characteristics		Specification	Unit
Working Frequency		1561	MHz
VSWR		2 Max. (typical)	
Axial Ratio		2 Max. (typical)	dB
Impedance		50	Ω
Polarization		RHCP	
Gain	@Zenith	1.9 (typical)	dBic
	@10°Elevation	-4.4 (typical)	

5-4. Return Loss & Smith Chart

Return Loss



Smith Chart



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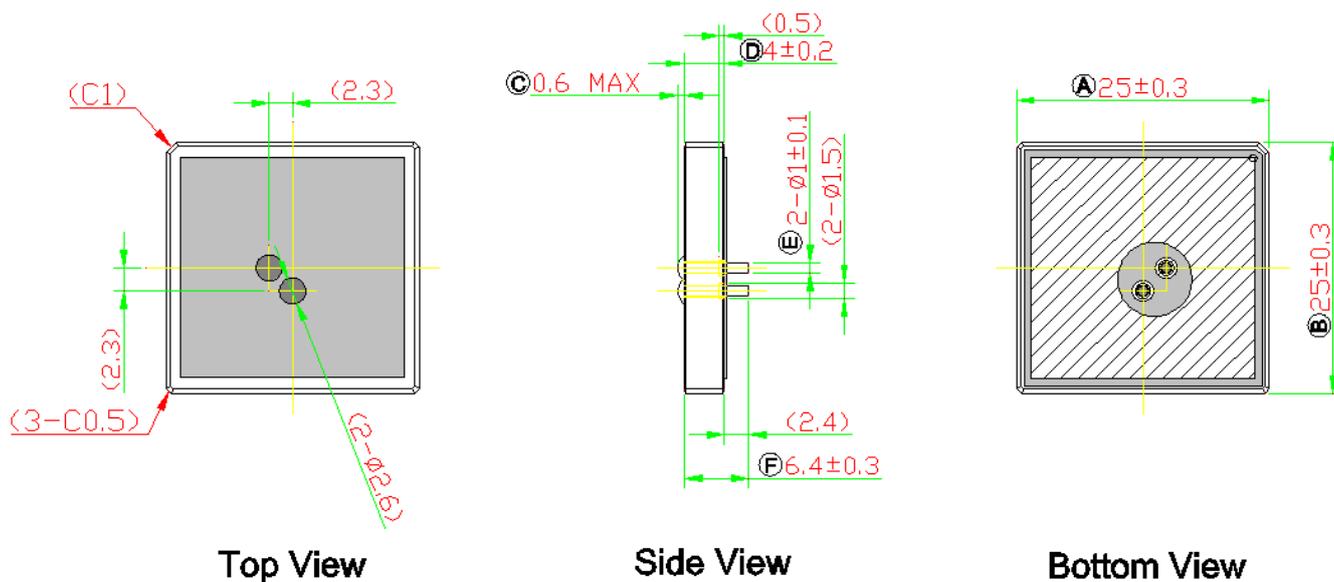
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6. Antenna Dimensions (unit: mm)



NOTE:

1. All materials are RoHS compliant.
2. "A~F" Critical Dimensions.
3. "()" Reference Dimensions.



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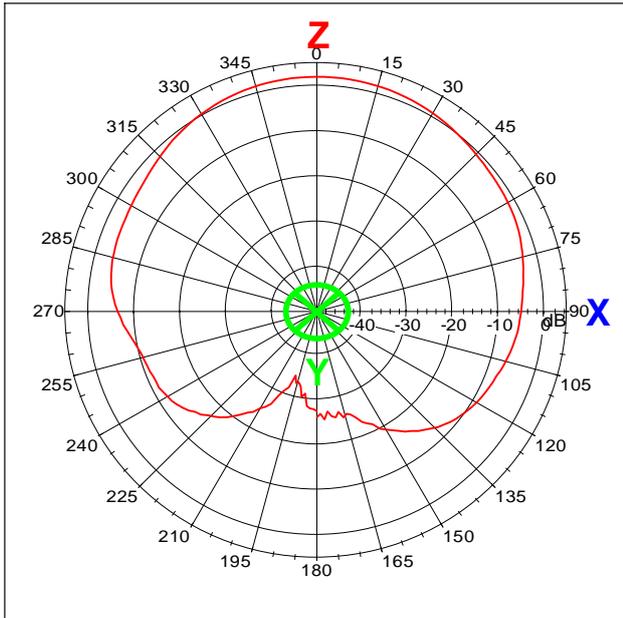
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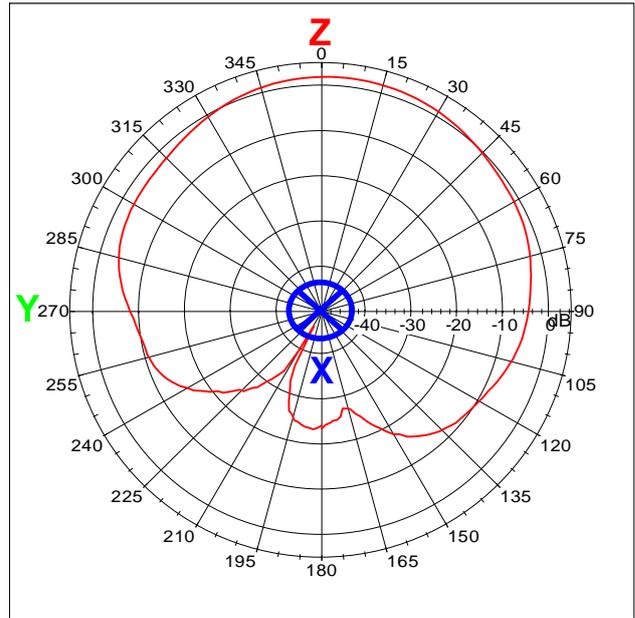
B

7. Radiation Pattern (@ 70 x 70 mm² ground plane)

7-1. Gain Pattern @ 1561 MHz

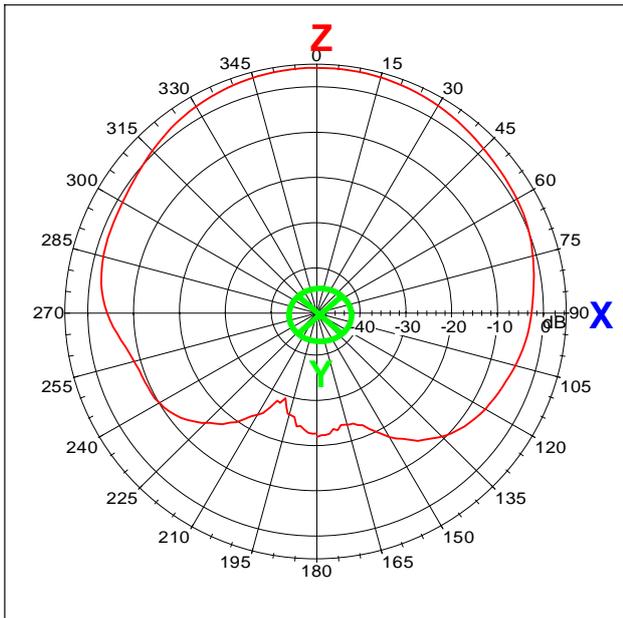


XZ-Plane

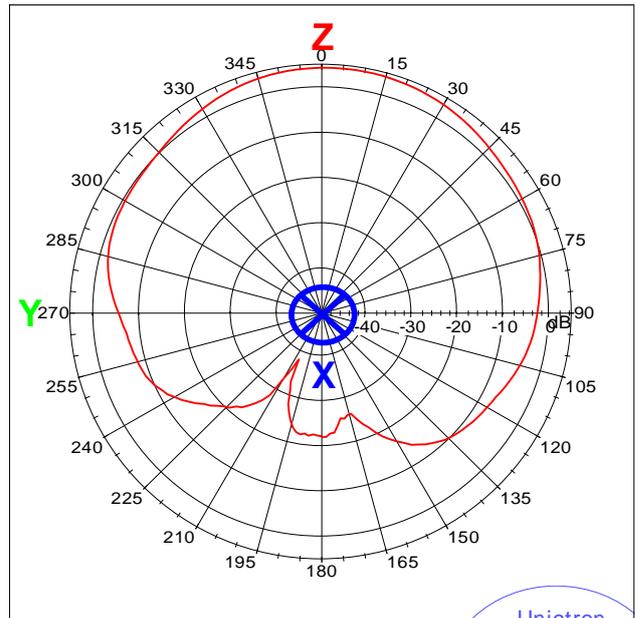


YZ-Plane

7-2. Gain Pattern @ 1575.42 MHz



XZ-Plane



YZ-Plane

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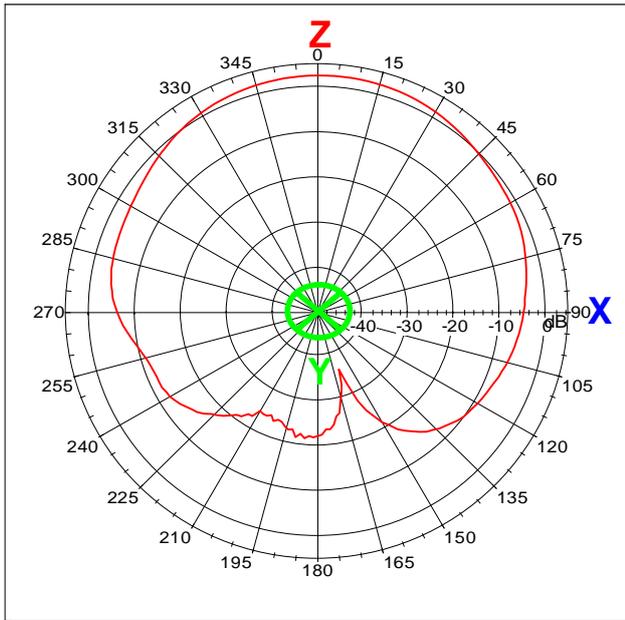
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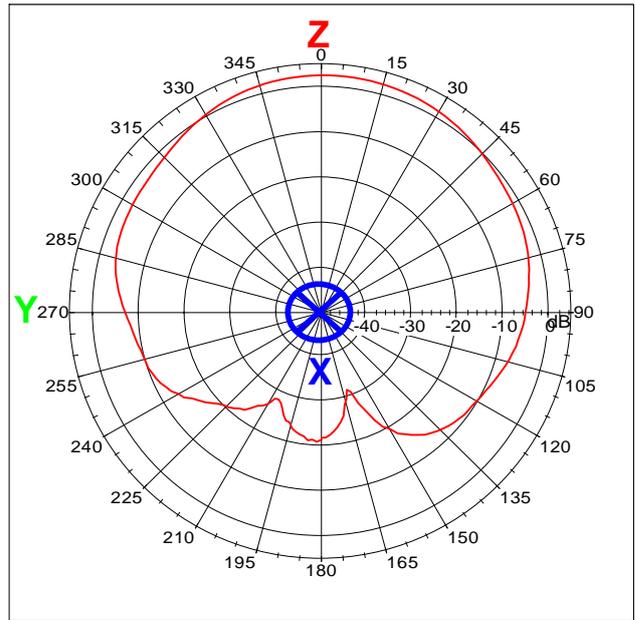
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7-3. Gain Pattern @ 1598 MHz

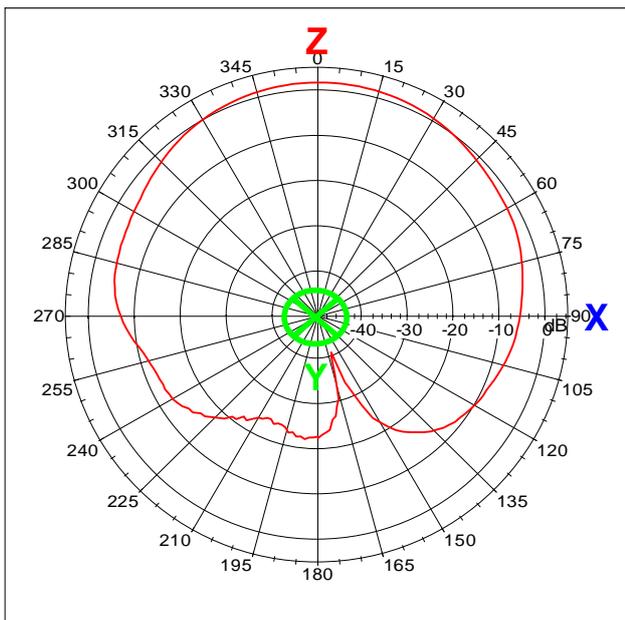


XZ-Plane

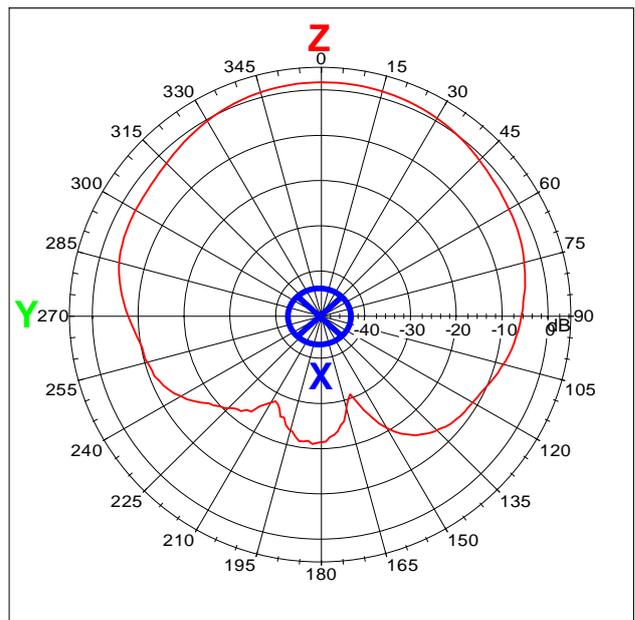


YZ-Plane

7-4. Gain Pattern @ 1602 MHz



XZ-Plane



YZ-Plane

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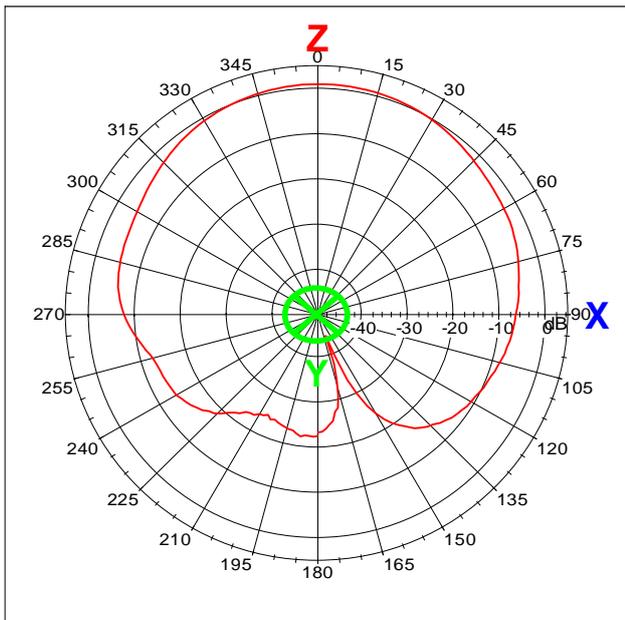
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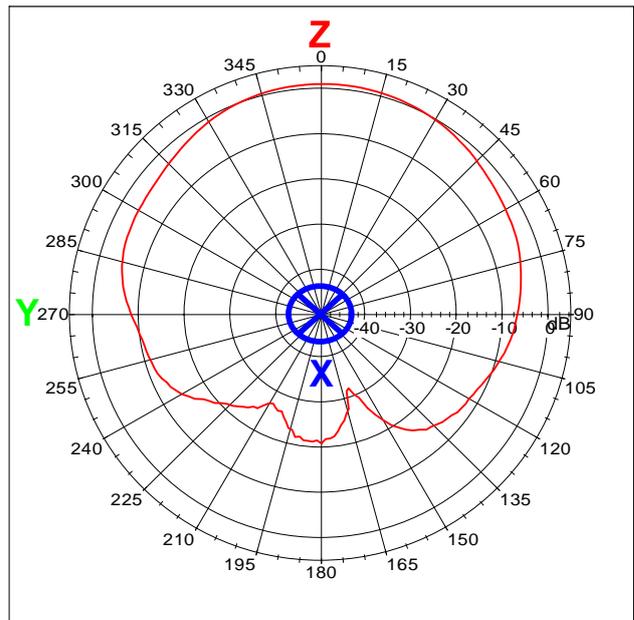
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7-5. Gain Pattern @ 1606 MHz

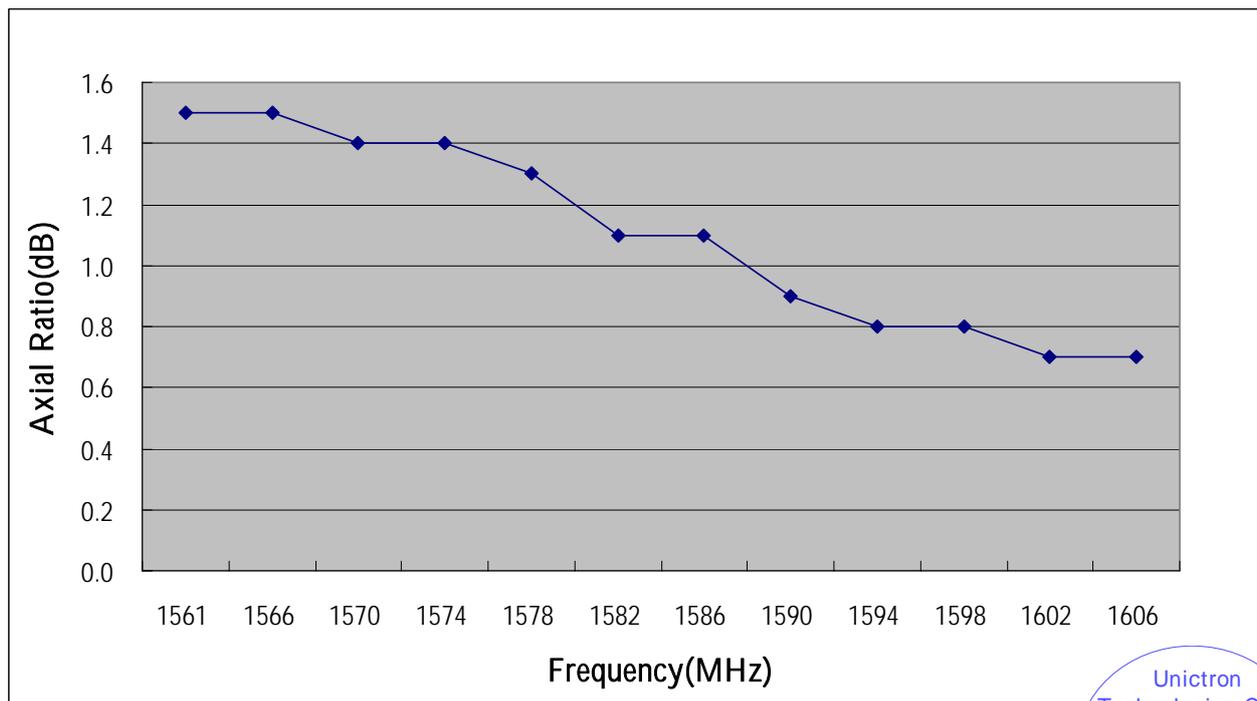


XZ-Plane



YZ-Plane

8. Axial Ratio



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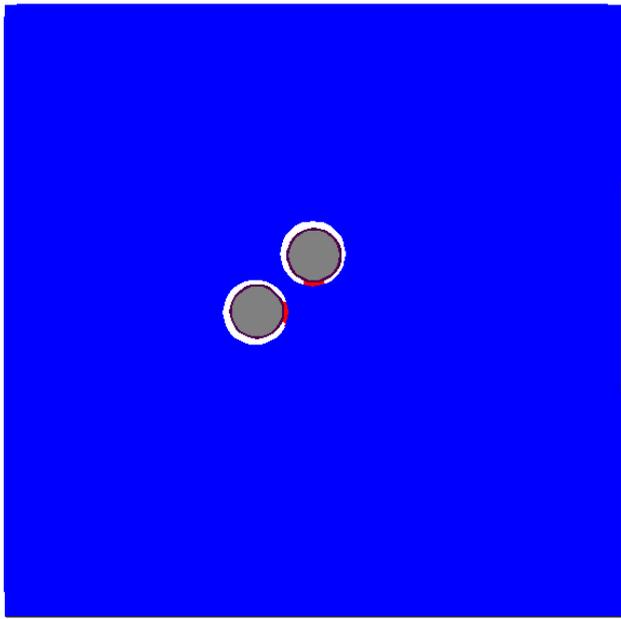
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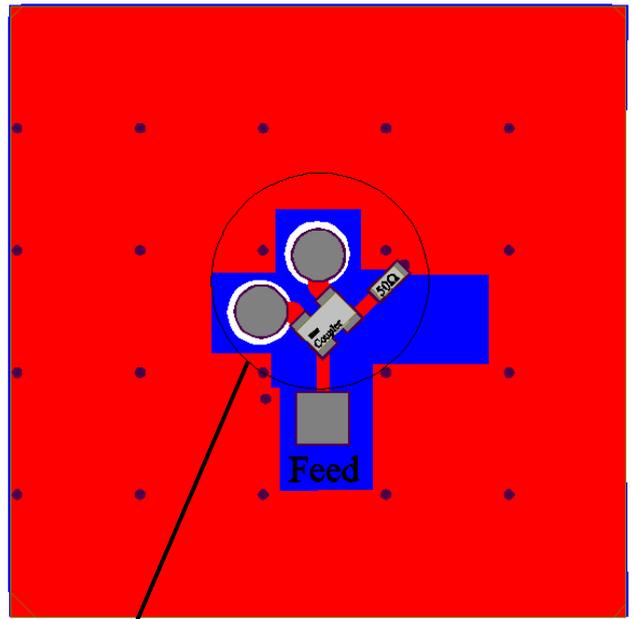
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9. Recommendation PCB Layout

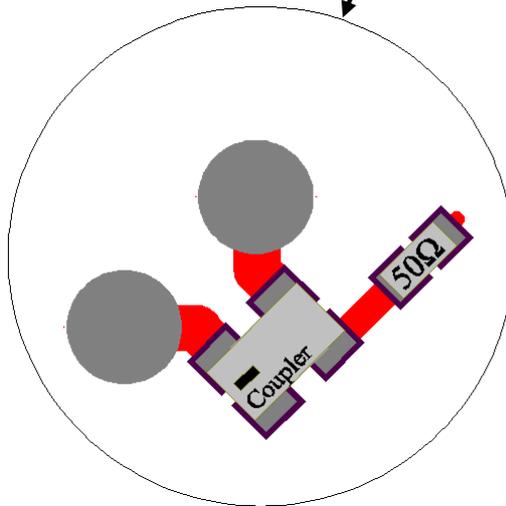
9-1. Top Layer & Bottom Layer



Top Layer



Bottom Layer



- : Copper Ground & Transmission Line
- : Copper Ground
- : Solder Pad

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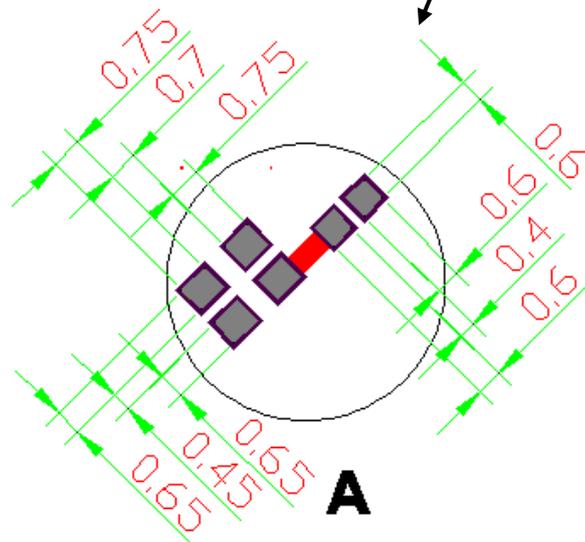
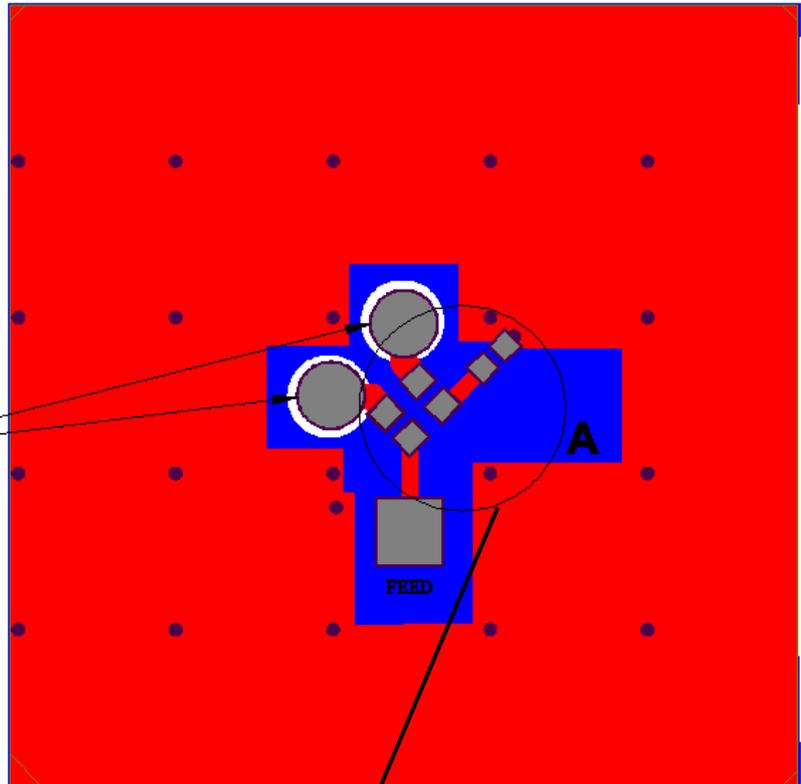
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9-2. Footprint

Via Hole $\phi 1.1$



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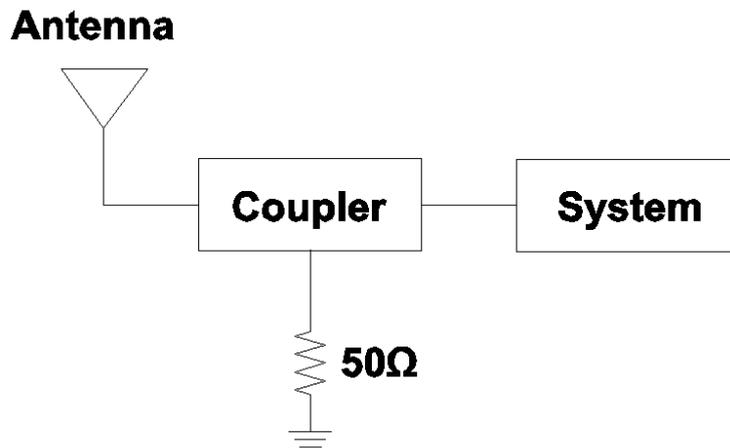
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9-3. Block Diagram



10. Coupler Specification

Coupling (dB)	Amplitude Balance (dB)	Phase Deviation (degree)	Isolation (dB)
3	1.0 Max.	90.0 ± 3.0	16.0 min.



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