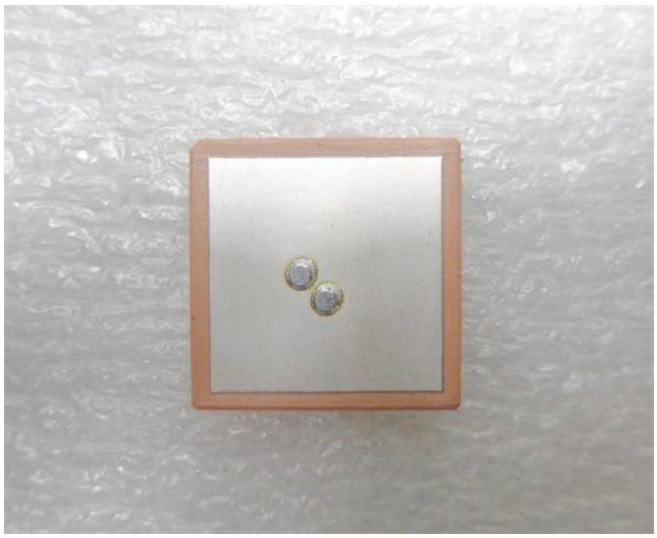
25.0 x 25.0 x 4.0 (mm) GPS & GLONASS & BDS Dual Pin Patch Antenna

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

Unictron Technologies Corp.
詠業科技股份有限公司
Unictron Technologies Corporation
Website:www.unictron.com

Prepared by : Xenia	Designed by : Chinling	Checked by : Chinling	Approved by : Herbert

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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 mm^2 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℃~85℃)	ppm/℃
Electrode Plating Adhesion		>4	kg

5-2. GLONASS Band

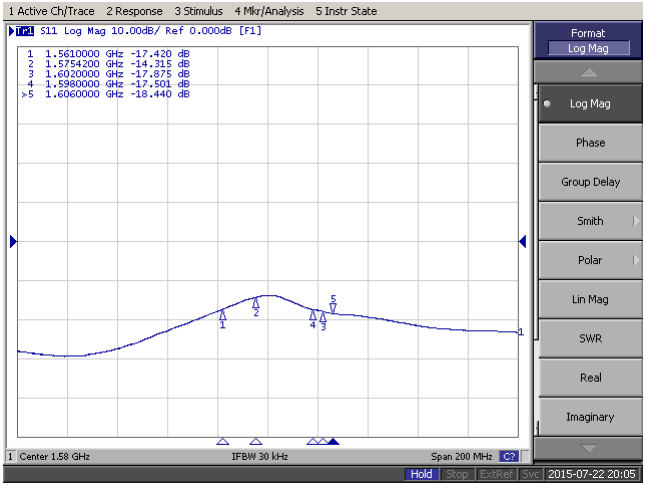
Characteristics		Specification	Unit
Working Frequency		1598~1606	MHz
VSWR		2 Max. (typical)	
Axial Ratio		2 Max. (typical)	dB
Impedance		50	Ω
Polarization		RHCP	
Gain @ 1602 MHz	@Zenith	1.6 (typical)	dBic
	@10° Elevation	-5.0 (typical)	

5-3. BDS Band

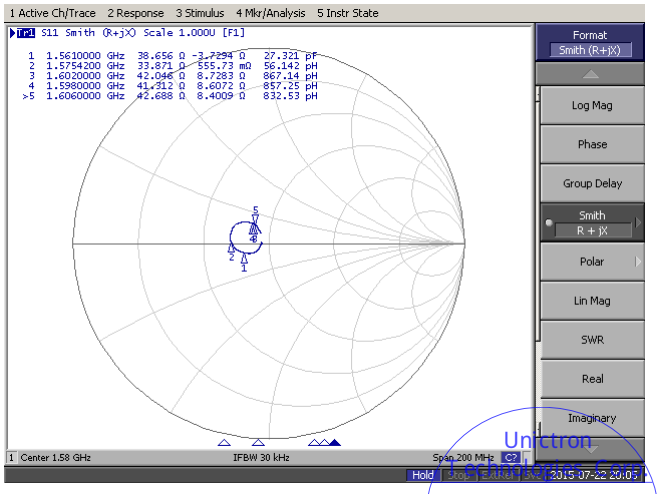
Characteristics		Specification	Unit
Working Frequency		1561	MHz
VSWR		2 Max. (typical)	
Axial Ratio		2 Max. (typical)	dB
Impedance		50	Ω
Polarization		RHCP	
Gain	@Zenith	1.9 (typical)	dBic
	@10° Elevation	-4.4 (typical)	

5-4. Return Loss & Smith Chart

Return Loss



Smith Chart



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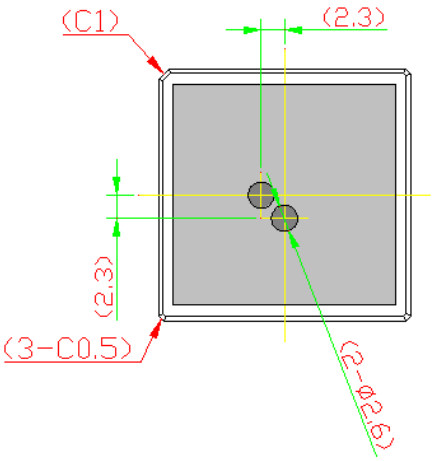
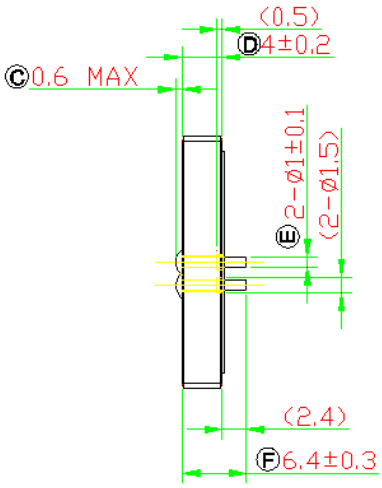
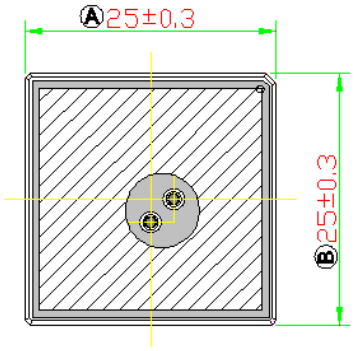
6. Antenna Dimensions (unit: mm)



Top View



Side View



Bottom View

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

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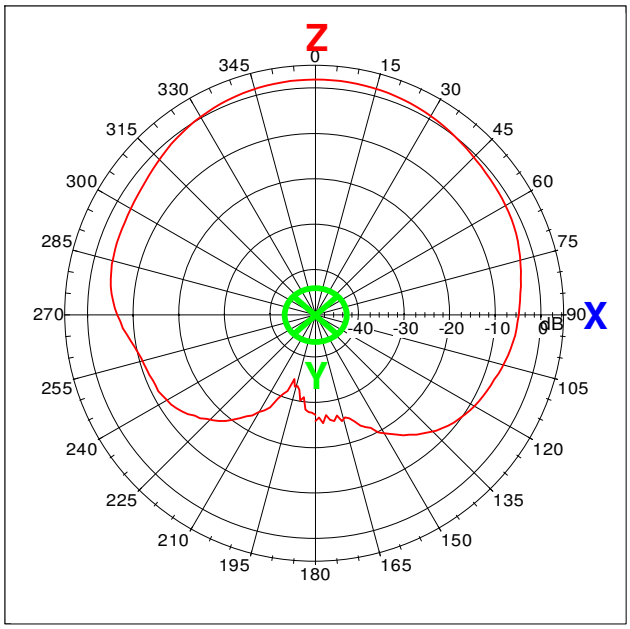
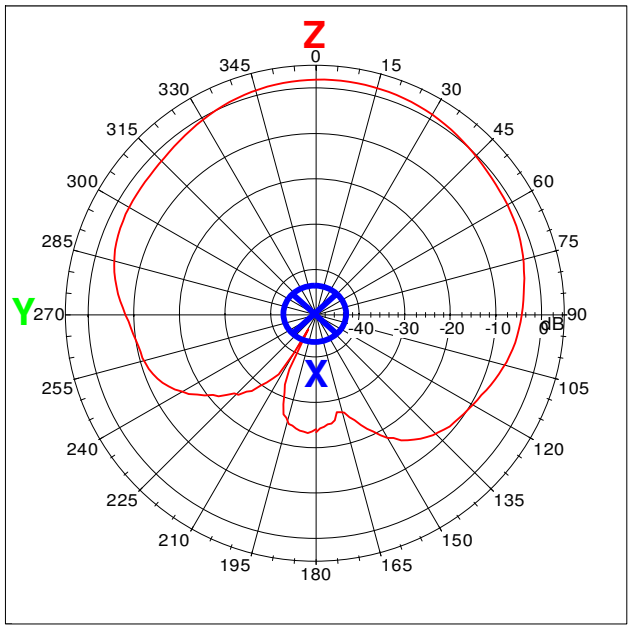
7. Radiation Pattern (@ 70 x 70 mm² ground plane)

7-1. Gain Pattern @ 1561 MHz

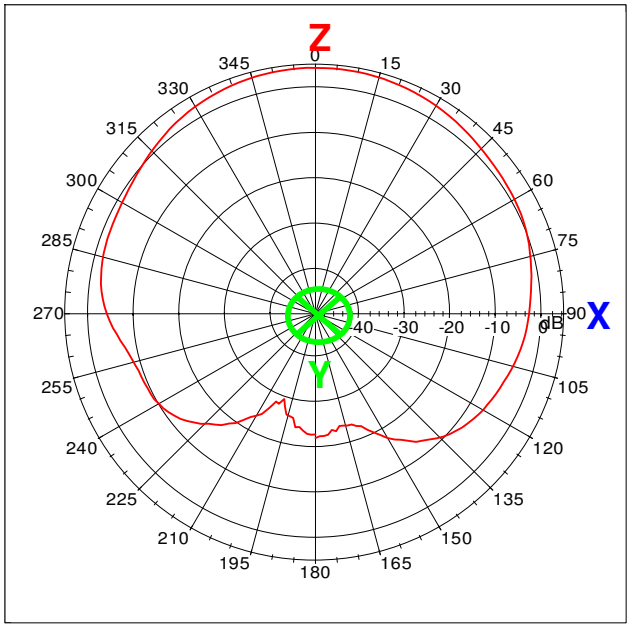


XZ-Plane

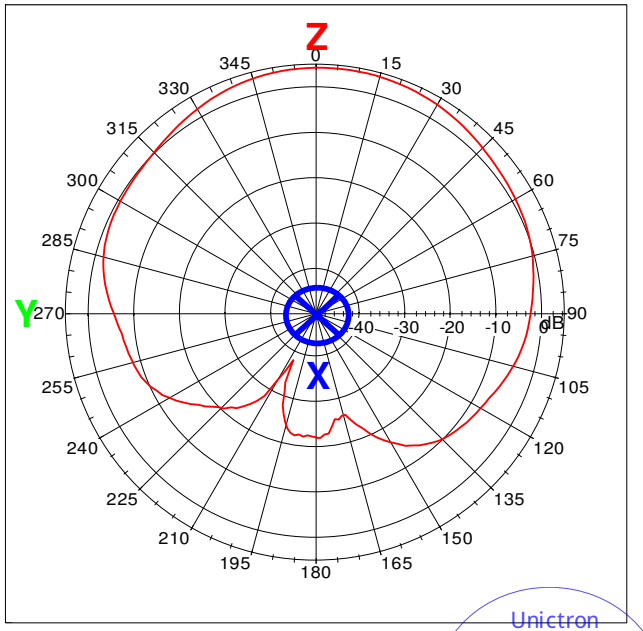


YZ-Plane

7-2. Gain Pattern @ 1575.42 MHz



XZ-Plane



YZ-Plane

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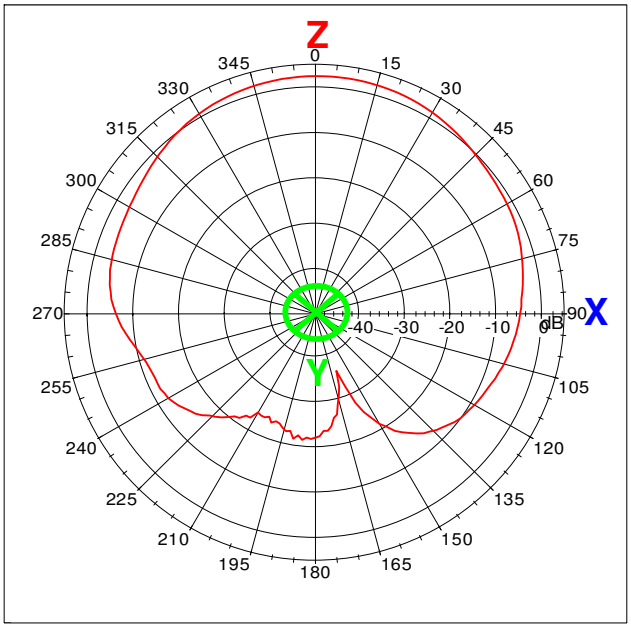
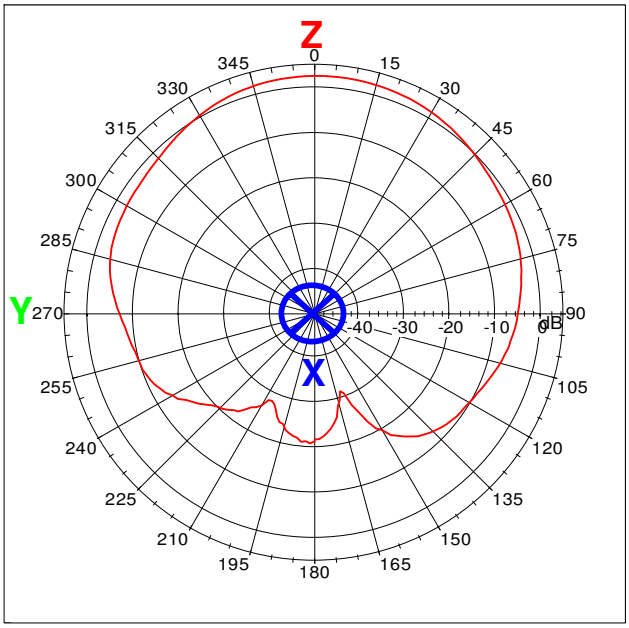
7-3. Gain Pattern @ 1598 MHz

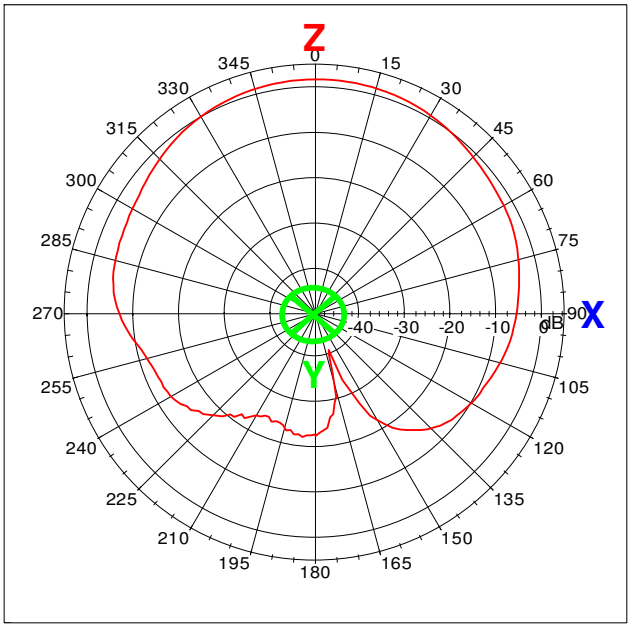


XZ-Plane

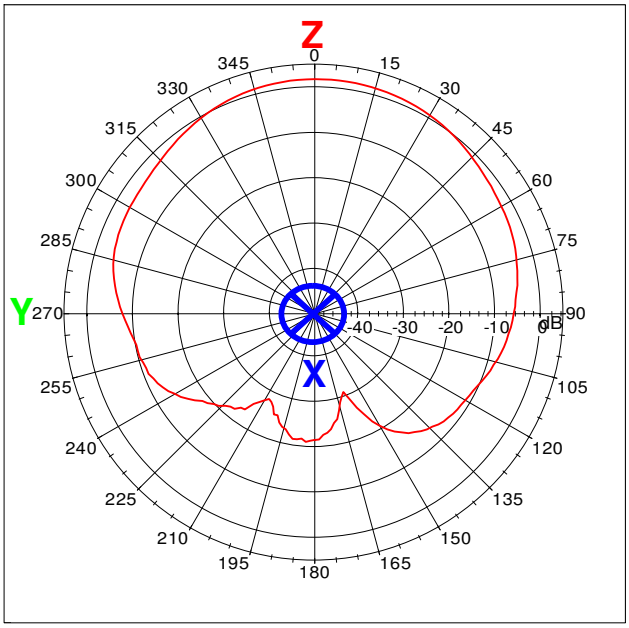


YZ-Plane

7-4. Gain Pattern @ 1602 MHz



XZ-Plane



YZ-Plane

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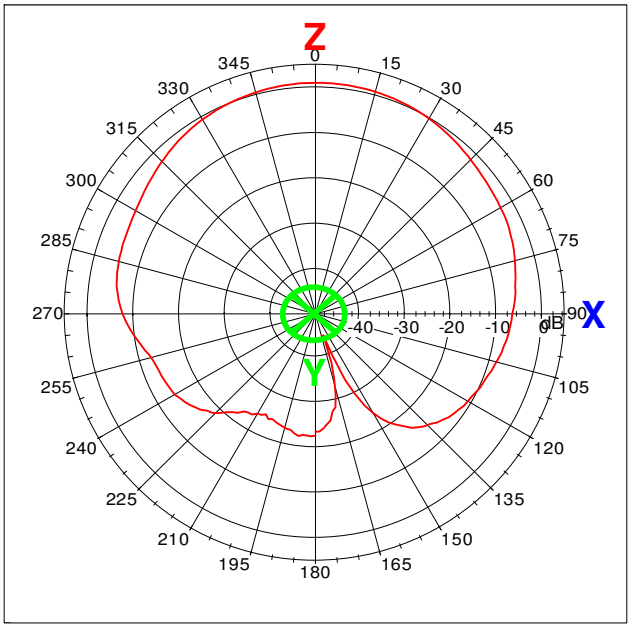
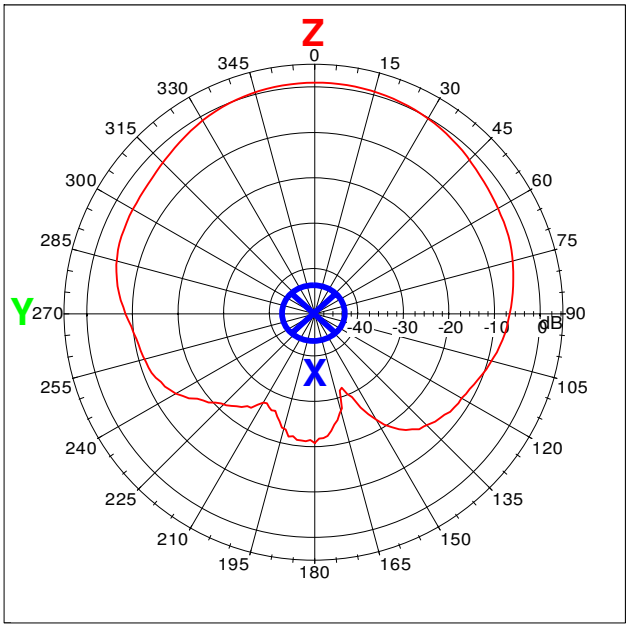
7-5. Gain Pattern @ 1606 MHz

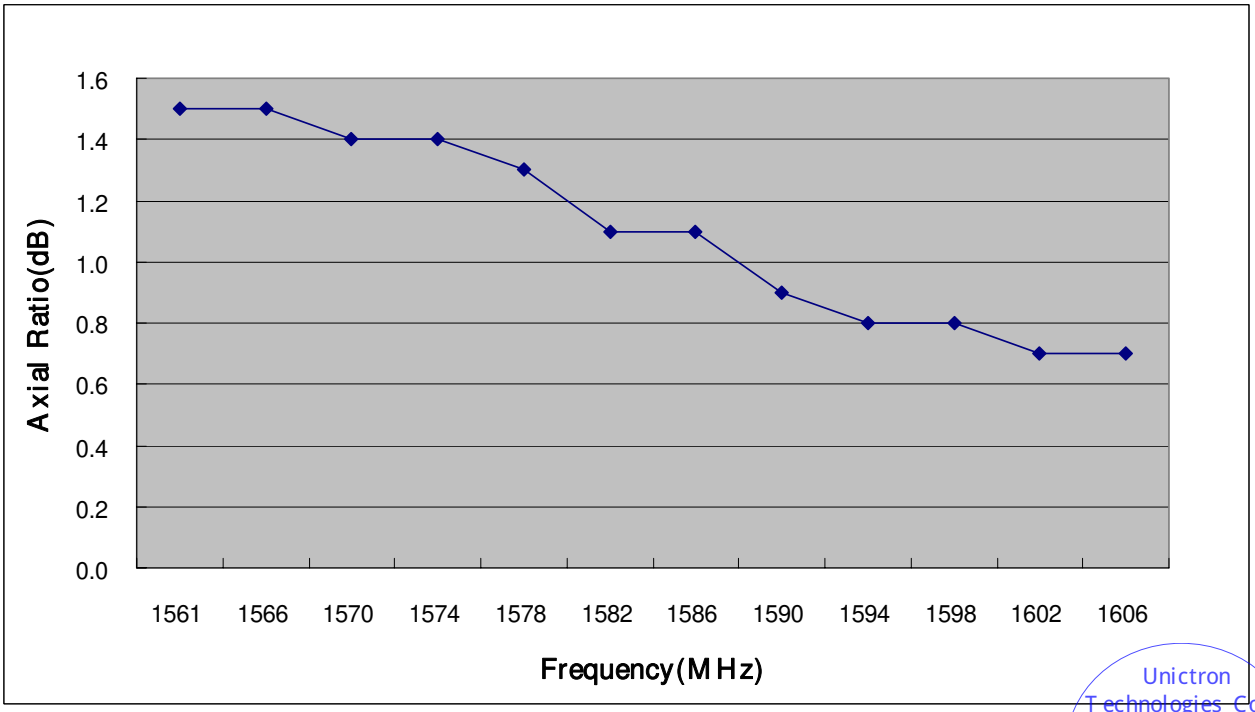


XZ-Plane



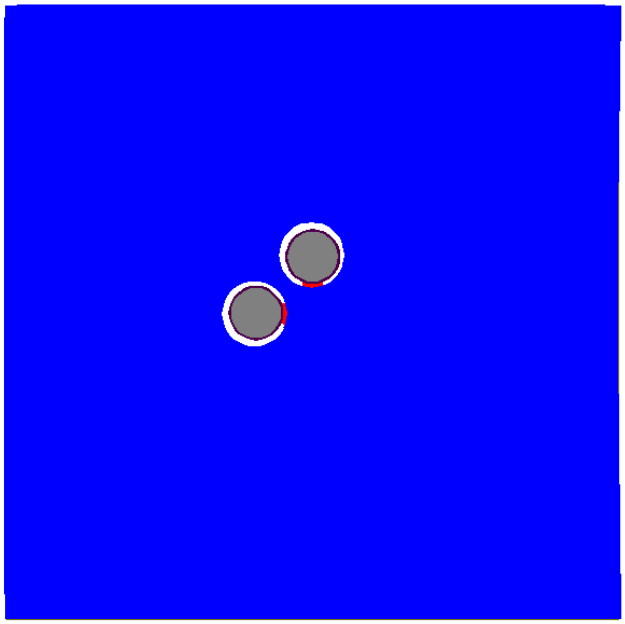
YZ-Plane

8. Axial Ratio

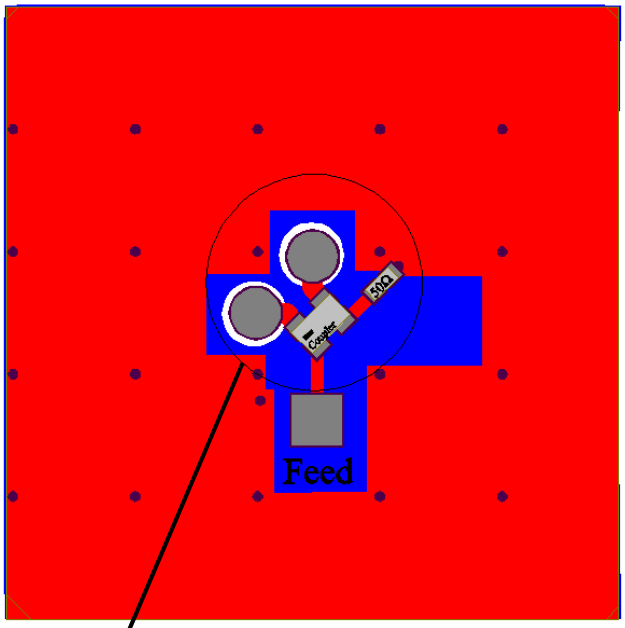


9. Recommendation PCB Layout

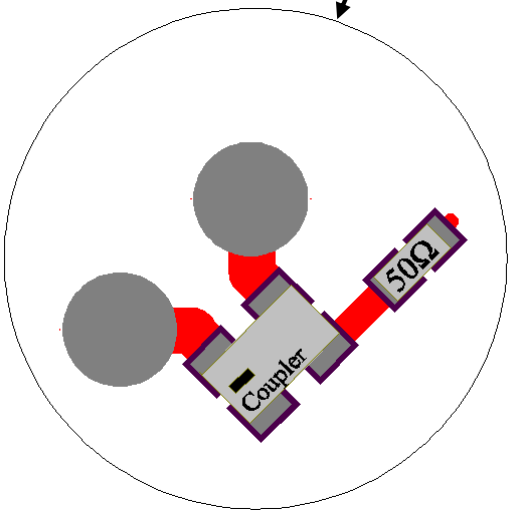
9-1. Top Layer & Bottom Layer



Top Layer



Bottom Layer

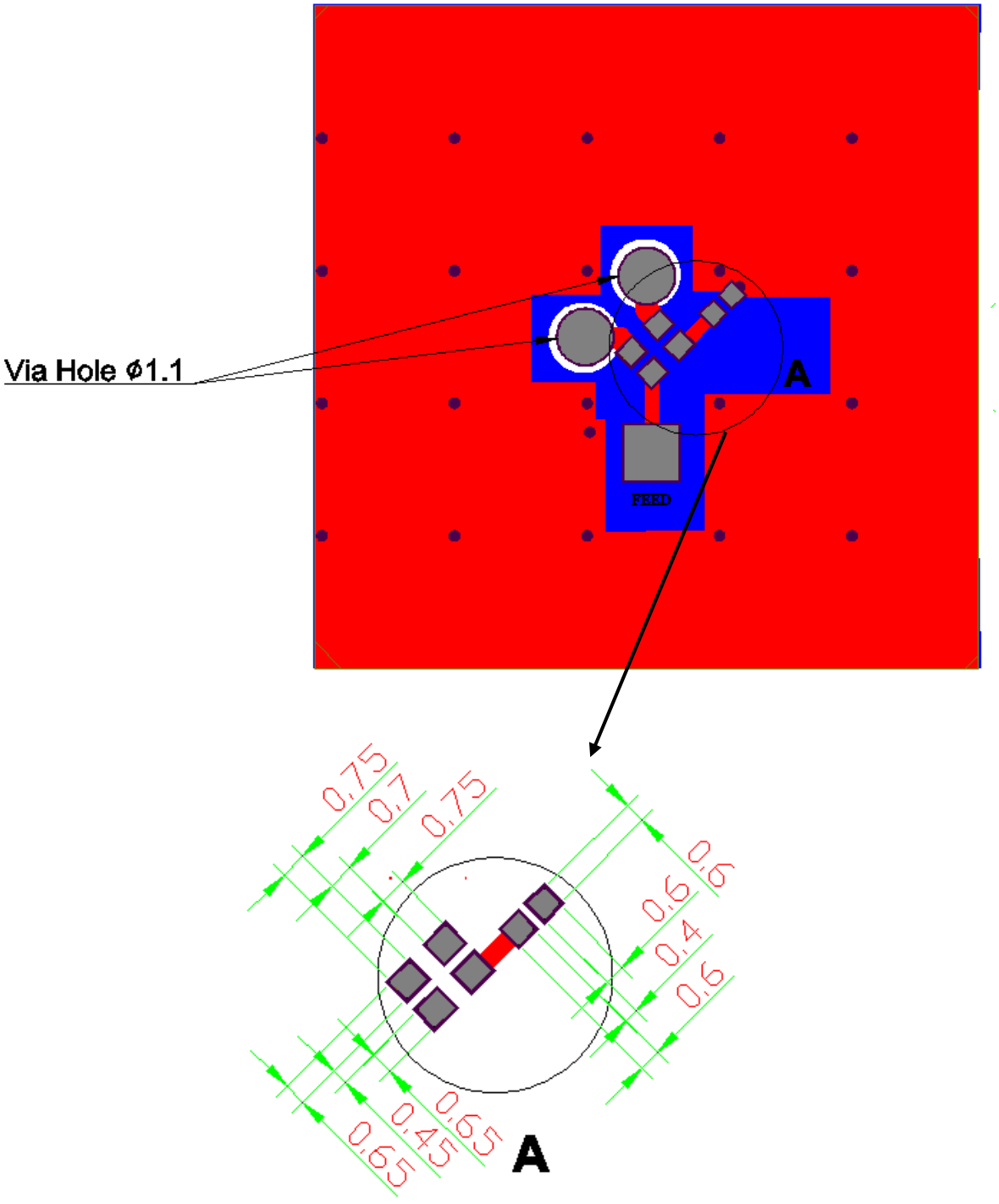


: Copper Ground & Transmission Line

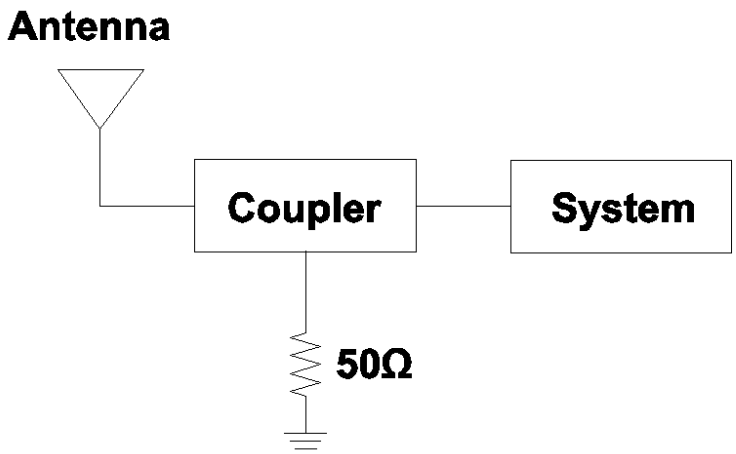
: Copper Ground

: Solder Pad

9-2. Footprint



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.