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Datasheet

Passive L1/L2 GNSS Antenna

Part No:
HP2258.A

Description

Passive L1/L2 GNSS Antenna

25mm Single Feed Stacked Patch

Features:

Pin Passive Patch Antenna

Bands Covered:

- GPS L1/L2,
- GLONASS G1/G2
- BeiDou B1
- Galileo E1

Dimensions: 25x25x8mm

Pin and Adhesive Mount

RoHS & Reach Compliant

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1. Introduction



The Taoglas Accura HP2258.A, is a compact multi-band L1/L2 GNSS, high-performance directional antenna for high precision GPS and BeiDou accuracy and fast positioning. It utilizes a 25*25*8mm advanced wide-band dual stacked ceramic patch antenna with optimized gain for GPS L1/L2, Galileo, GLONASS and BeiDou bands.

Typical Applications Include:

- Wearables
- Transportation
- Precision Agriculture
- Navigation
- Security
- Autonomous Vehicles

The HP2258.A has been tuned and tested on a 70 x 70 mm ground plane and exhibits excellent radiation patterns. The HP2258.A has been optimized to cover the bands required for the next generation of L1/L2 GNSS receivers that are currently on the market.

The HP2258.A has a compact size of 25x25x8mm allows it to be used in areas where larger patches won't fit, this makes it an excellent option for compact navigation devices.

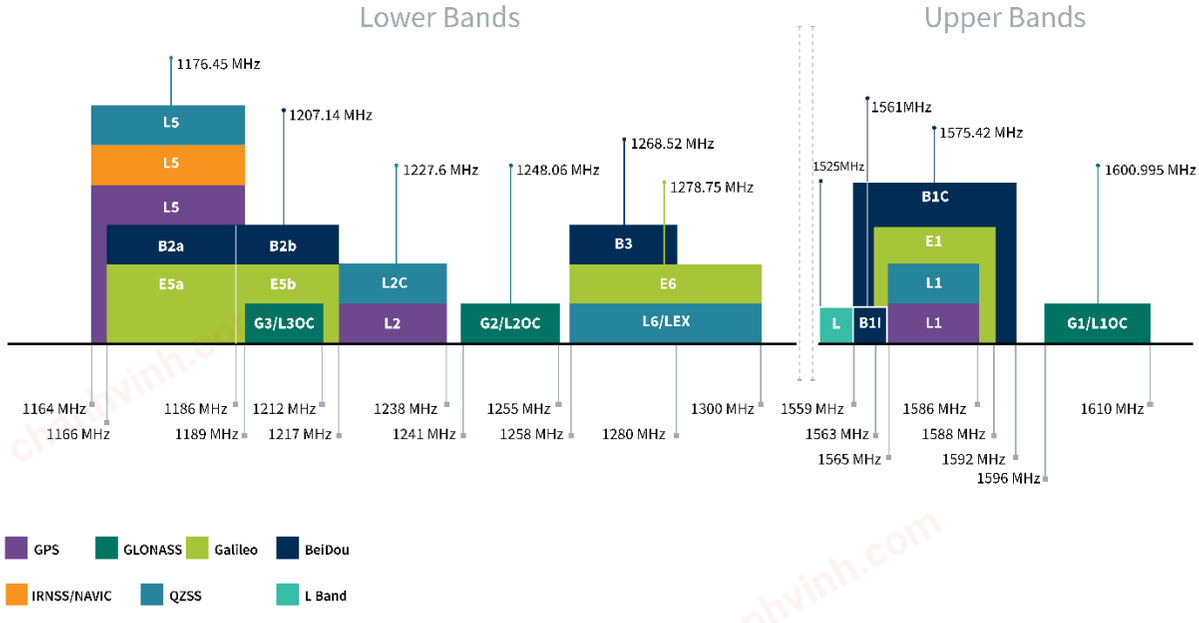
Patch antennas can be specifically tuned to customer-specific device environments, subject to NRE and MOQ. Contact your regional Taoglas customer support team to request these services or additional support to integrate and test this antenna's performance in your device.

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2. Specifications

GNSS Frequency Bands					
GPS	L1 1575.42 MHz	L2 1227.6 MHz	L5 1176.45 MHz		
	■	■	□		
GLONASS	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz		
	■	■	□		
Galileo	E1 1575.24 MHz	E5a 1176.45 MHz	E5b 1201.5 MHz	E6 1278.75 MHz	
	■	□	□	□	
BeiDou	B1C 1575.42 MHz	B1I 1561 MHz	B2a 1176.45 MHz	B2b 1207.14 MHz	B3 1268.52 MHz
	■	■	□	□	□
QZSS (Regional)	L1 1575.42 MHz	L2C 1227.6 MHz	L5 1176.45 MHz	L6 1278.75e6	
	■	■	□	□	
IRNSS (Regional)	L5 1176.45 MHz				
	□				
SBAS	L1/E1/B1 1575.42 MHz	L5/B2a/E5a 1176.45 MHz	G1 1602 MHz	G2 1248 MHz	G3 1207 MHz
	■	□	■	■	□



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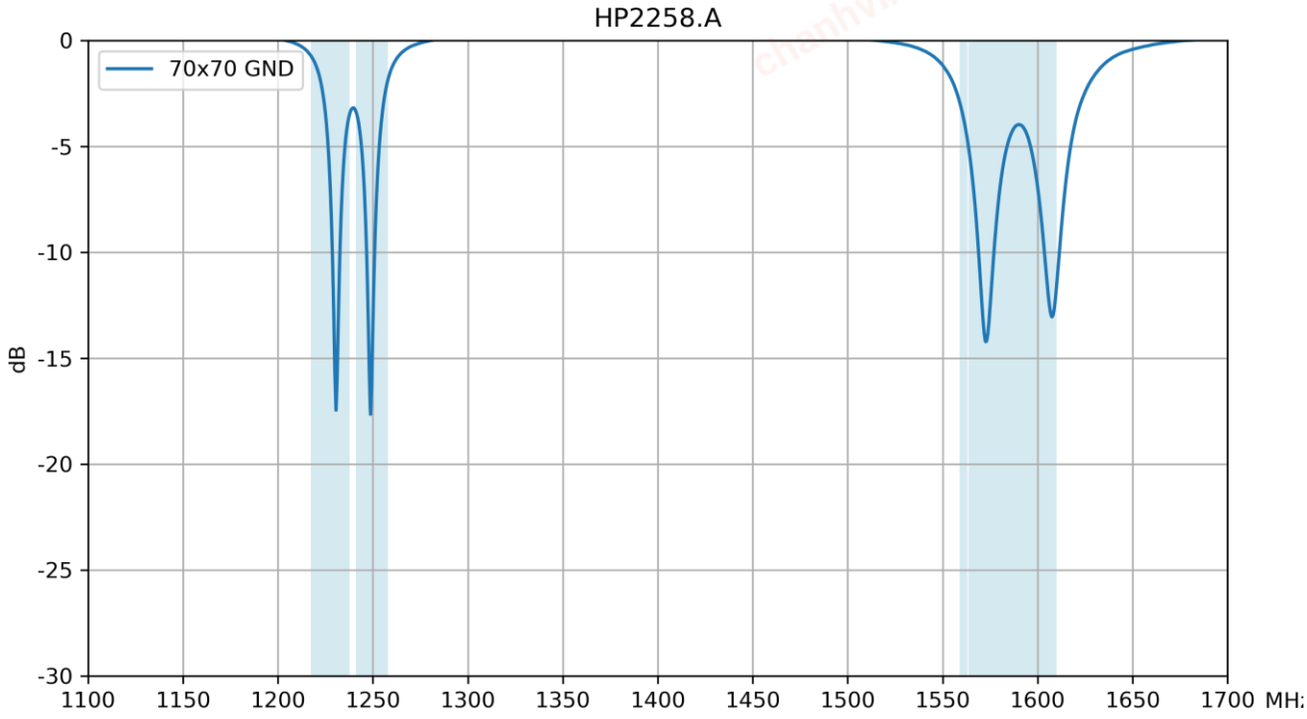
GNSS Electrical					
Frequency (MHz)	GPS L2	GLONASS_G2	BeiDou_B1	GPS_L1	GLONASS_G1
	1217-1237	1241-1258	1559-1563	1563-1587	1569-1610
Efficiency (%)					
70x70 GND	47.9	49.6	44.5	56.5	56.2
Average Gain (dB)					
70x70 GND	-3.20	-3.04	-3.52	-2.48	-2.51
Peak Gain (dBi)					
70x70 GND	3.08	3.08	1.40	2.56	3.44
Impedance	50 Ω				
Polarization	RHCP				
Radiation Pattern	Directional				
***Tested on 70x70 mm ground plane**					

Mechanical	
Dimensions	25*25*8mm
Weight	18g
Material	Ceramic
Connector	Pin & Adhesive Mount
Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

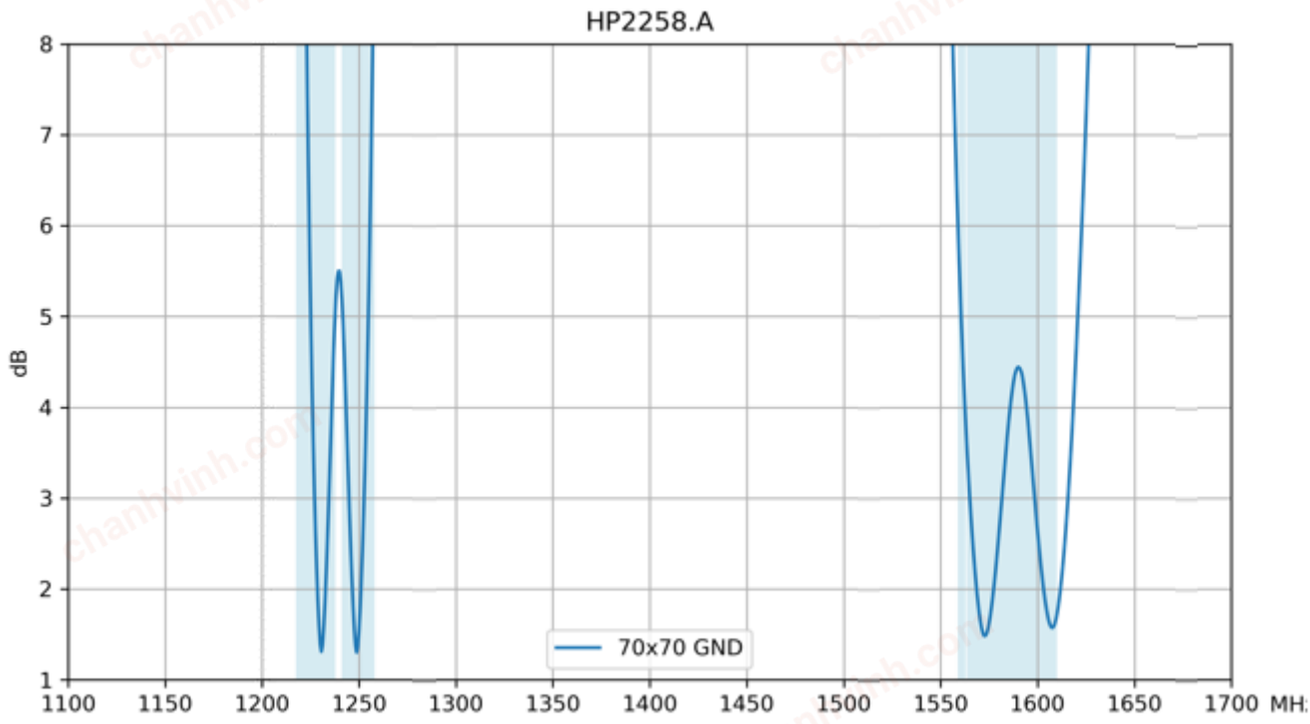
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3. Antenna Characteristics

3.1 Return Loss

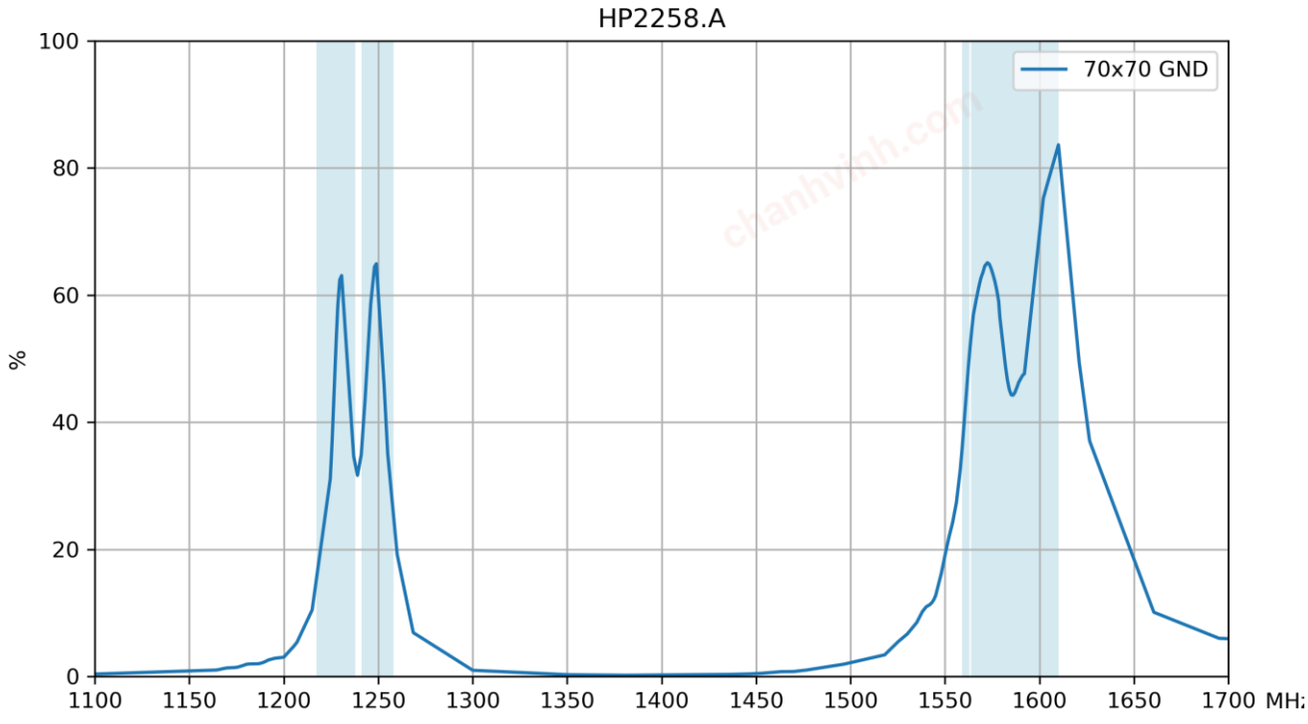


3.2 VSWR

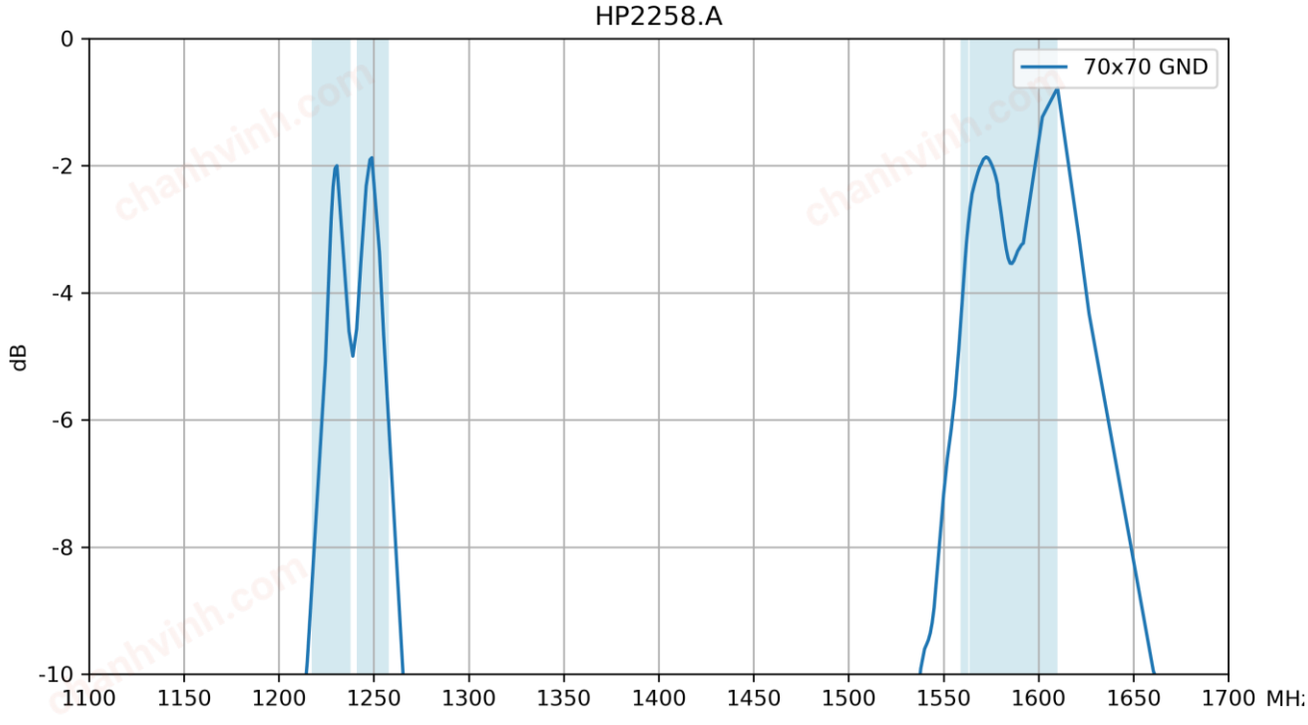


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3.3 Efficiency

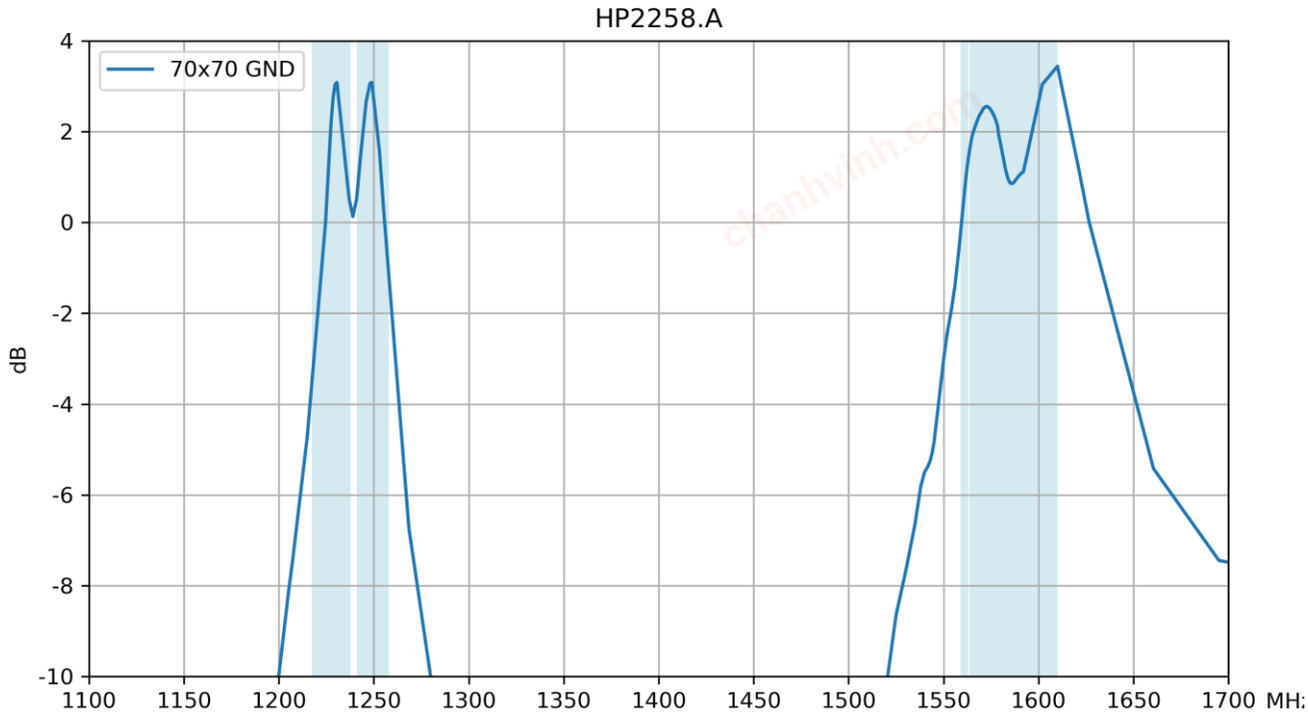


3.4 Average Gain



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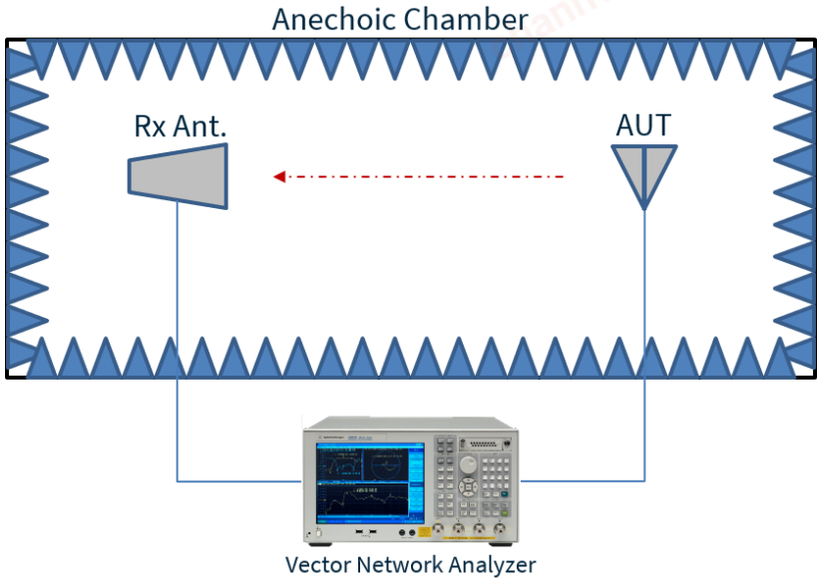
3.5 Peak Gain

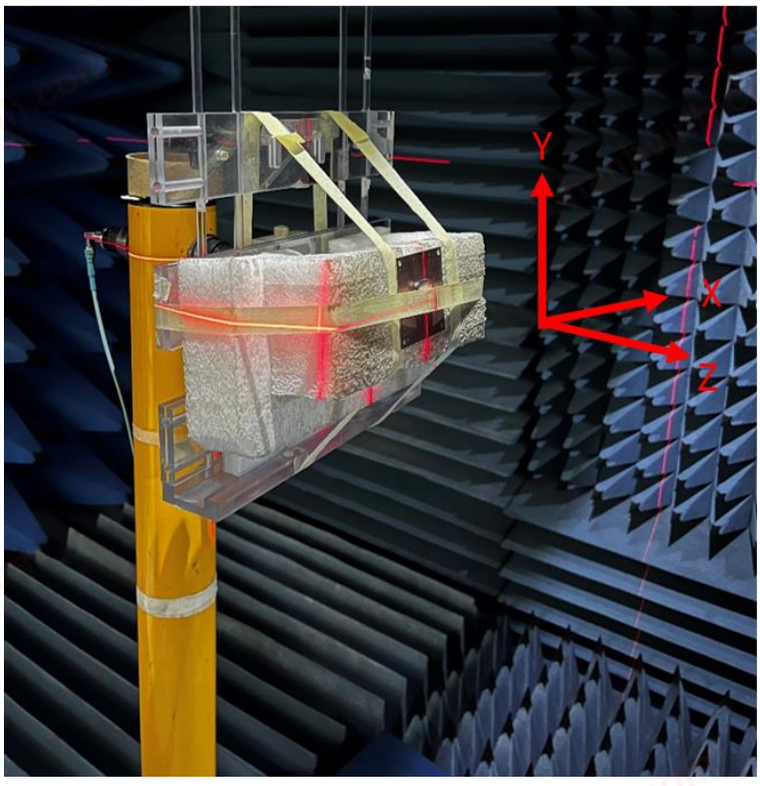


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4. Radiation Patterns

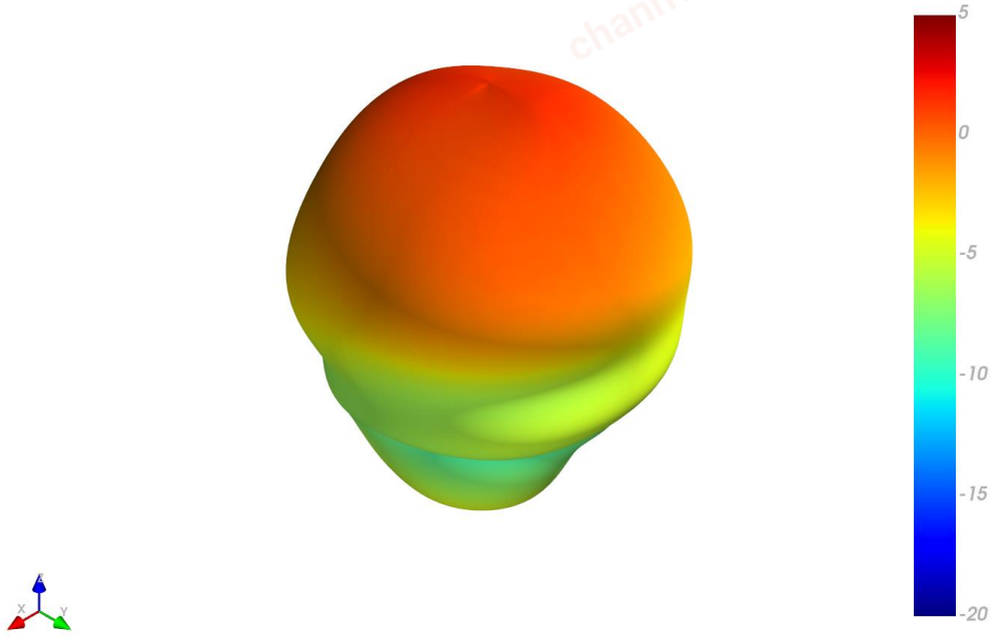
4.1 Test Setup

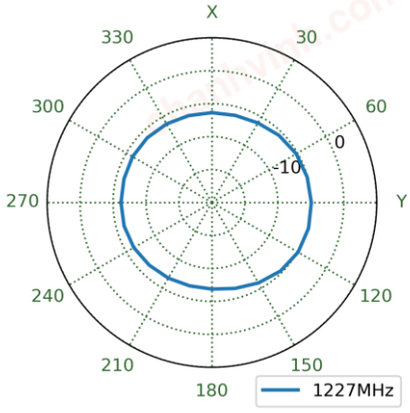
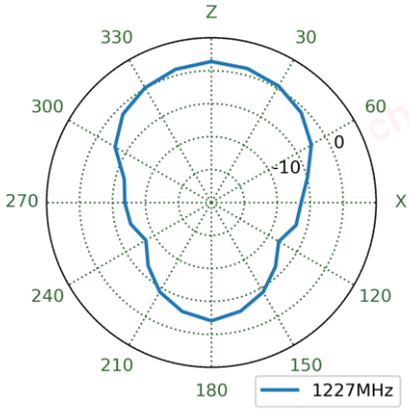
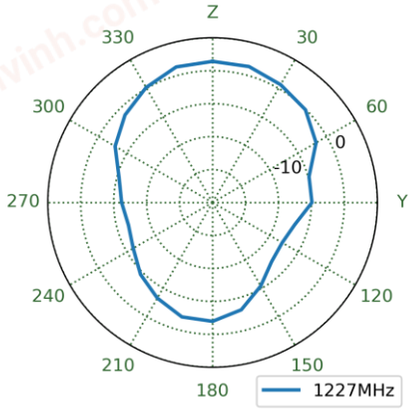




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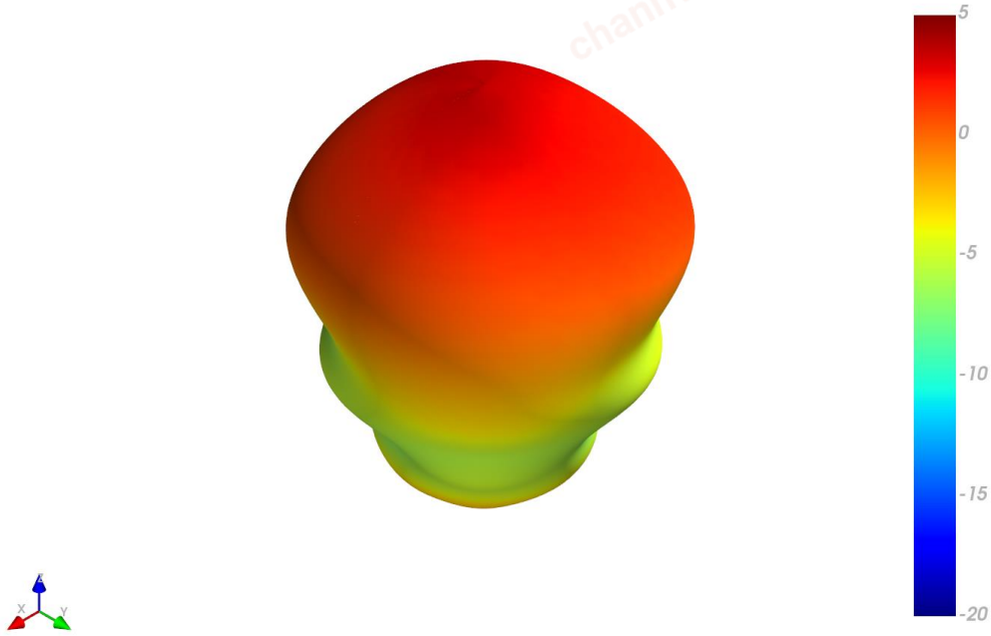
4.2 3D and 2D Radiation Patterns at 1227 MHz

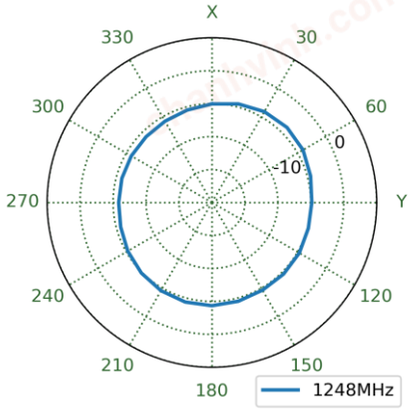
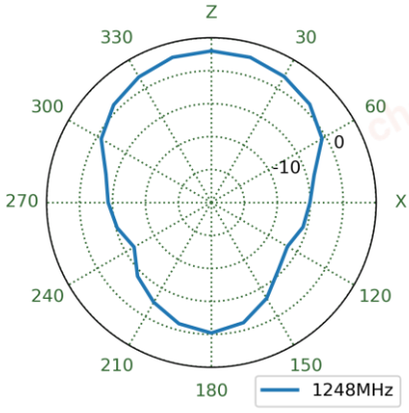
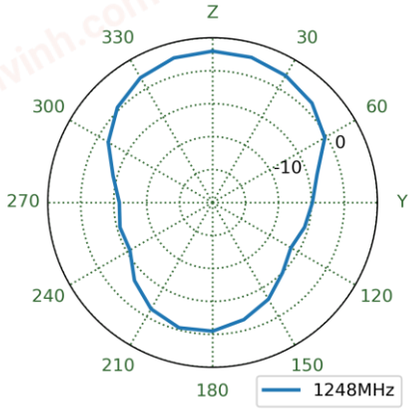


XZ Plane	YZ Plane	XY Plane
		

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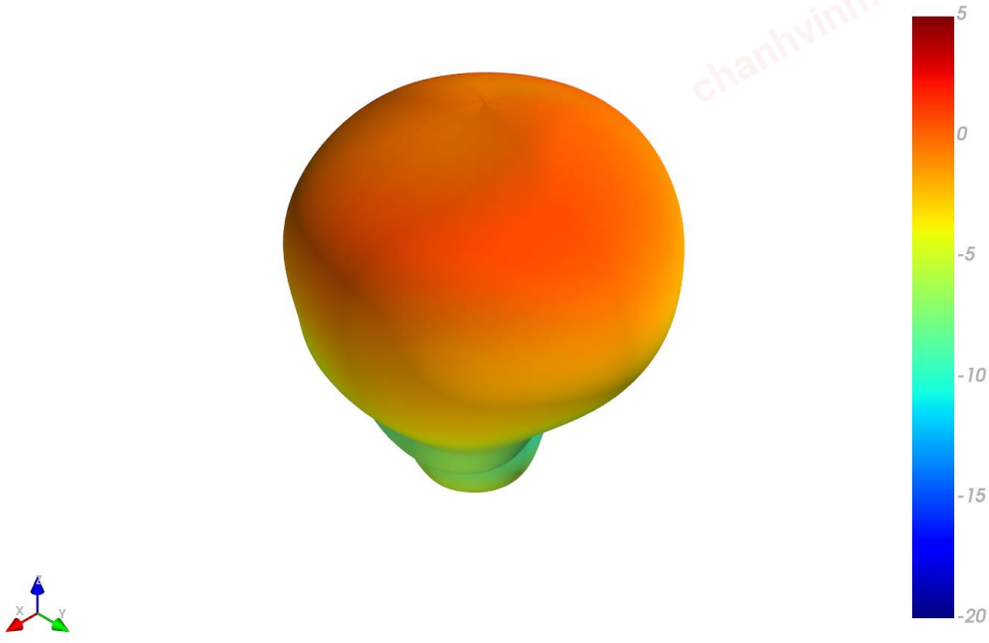
4.3 3D and 2D Radiation Patterns at 1248 MHz

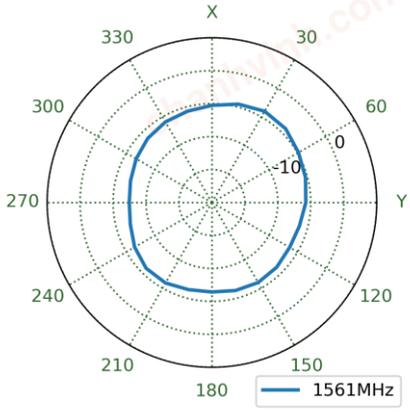
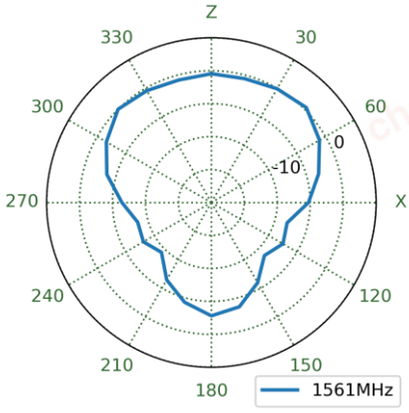
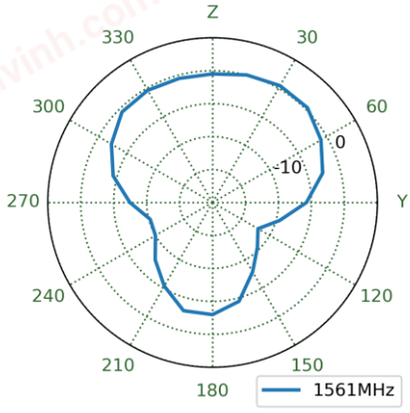


XZ Plane	YZ Plane	XY Plane
		

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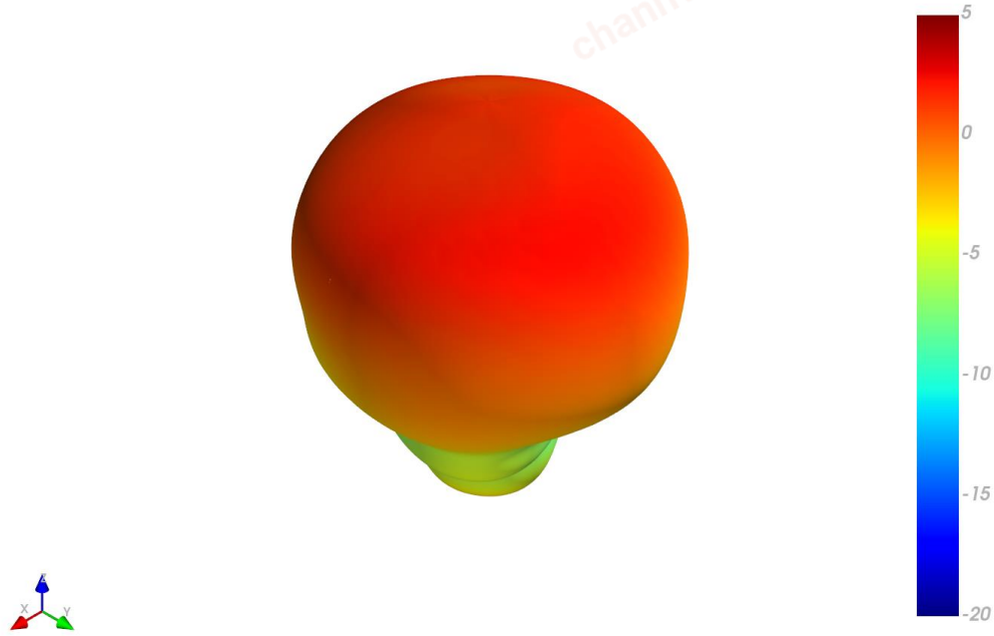
4.4 3D and 2D Radiation Patterns at 1561 MHz

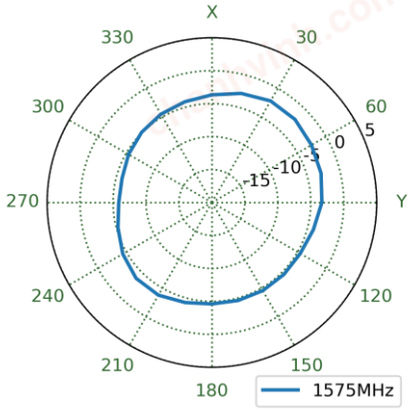
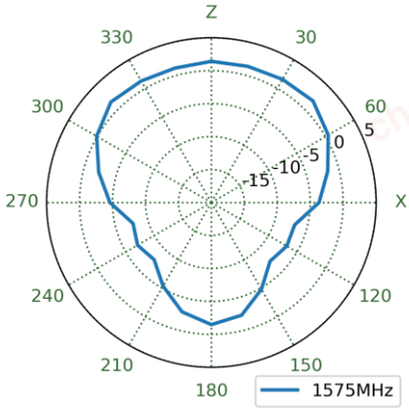
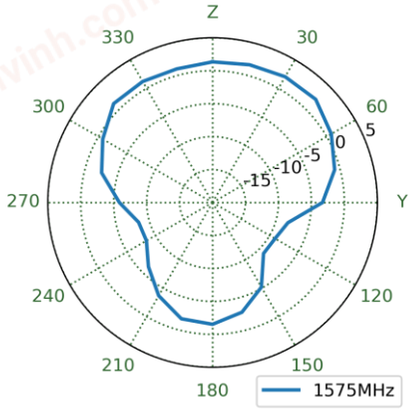


XZ Plane	YZ Plane	XY Plane
		

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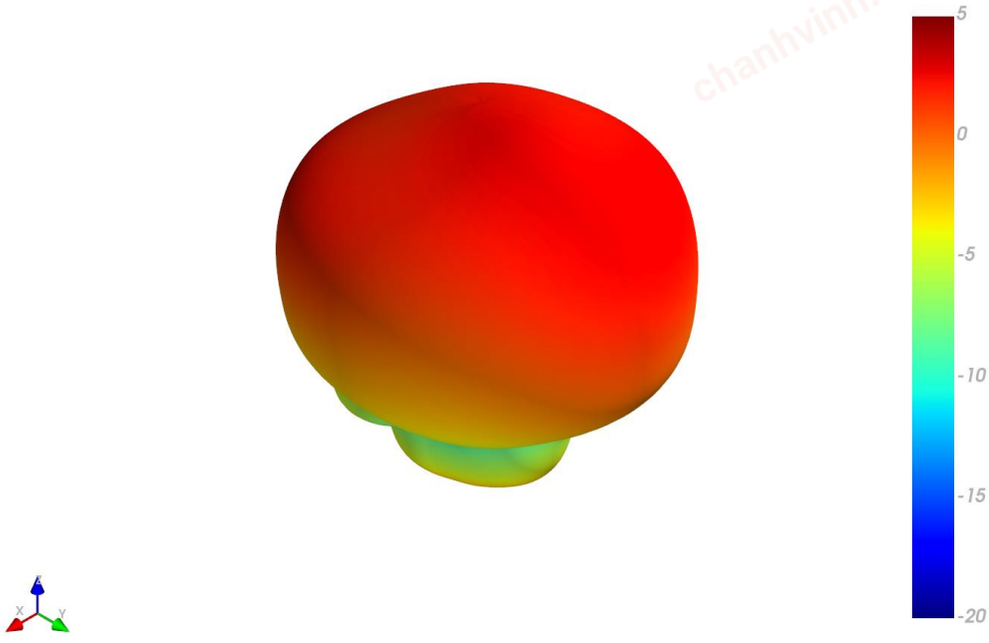
4.5 3D and 2D Radiation Patterns at 1575 MHz



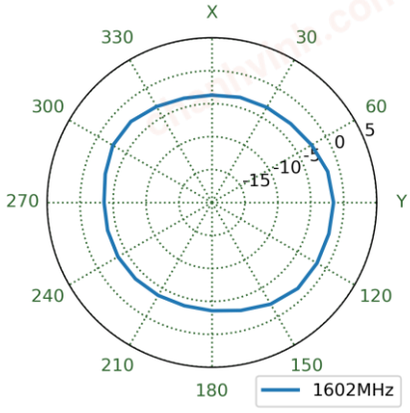
XZ Plane	YZ Plane	XY Plane
		

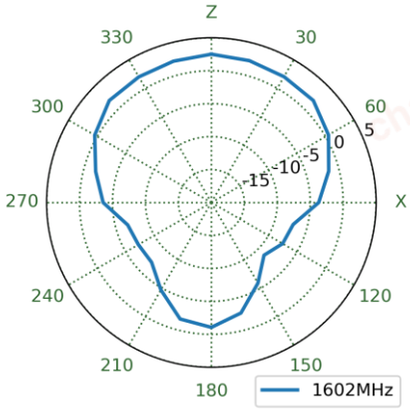
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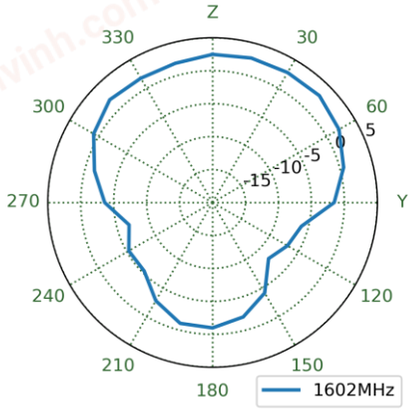
4.6 3D and 2D Radiation Patterns at 1602 MHz



XZ Plane	YZ Plane	XY Plane

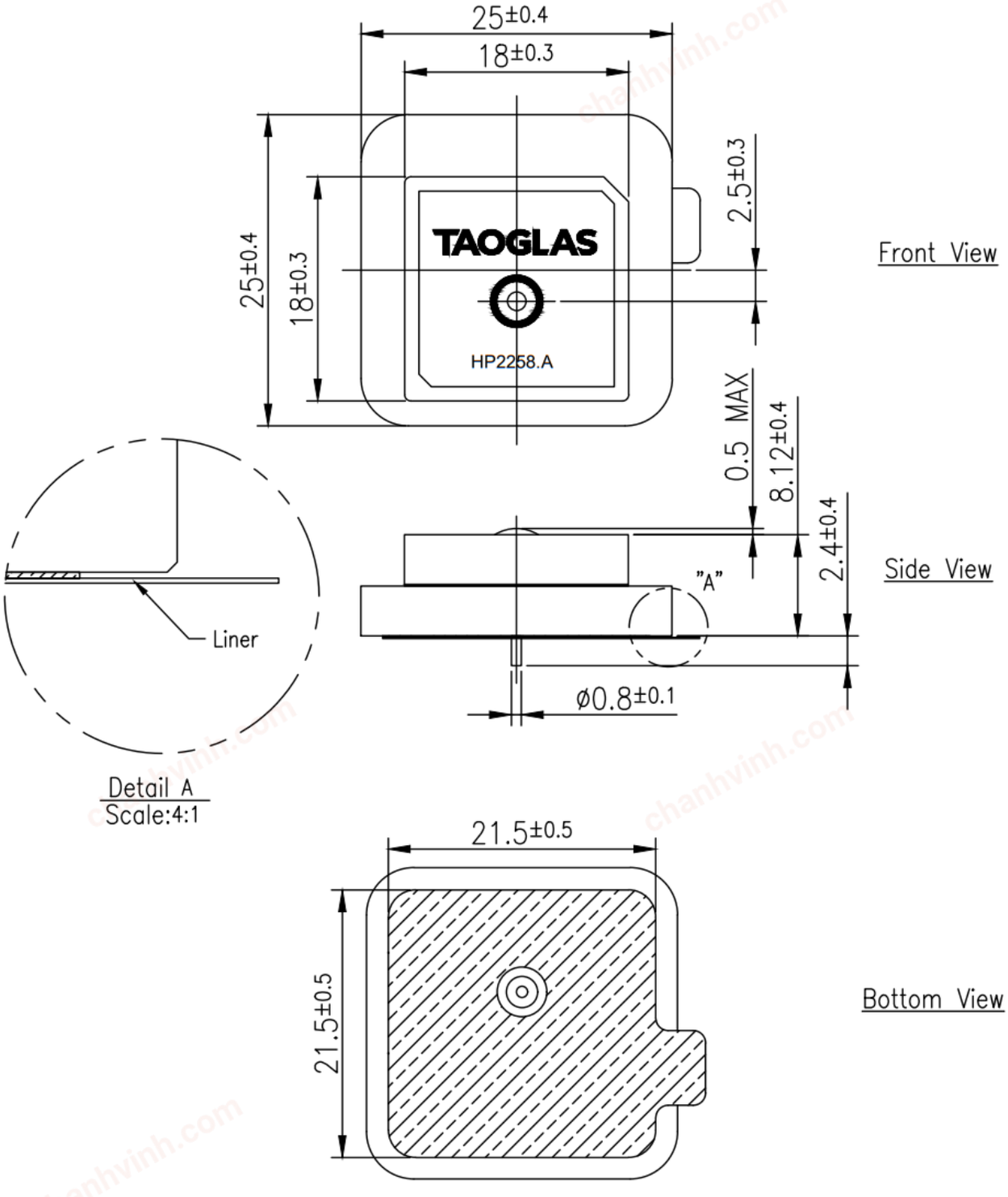






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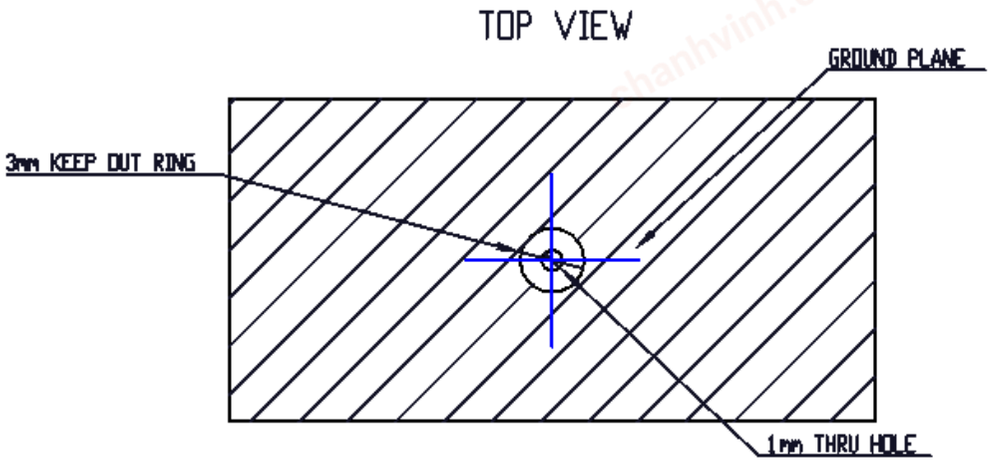
5. Mechanical Drawing

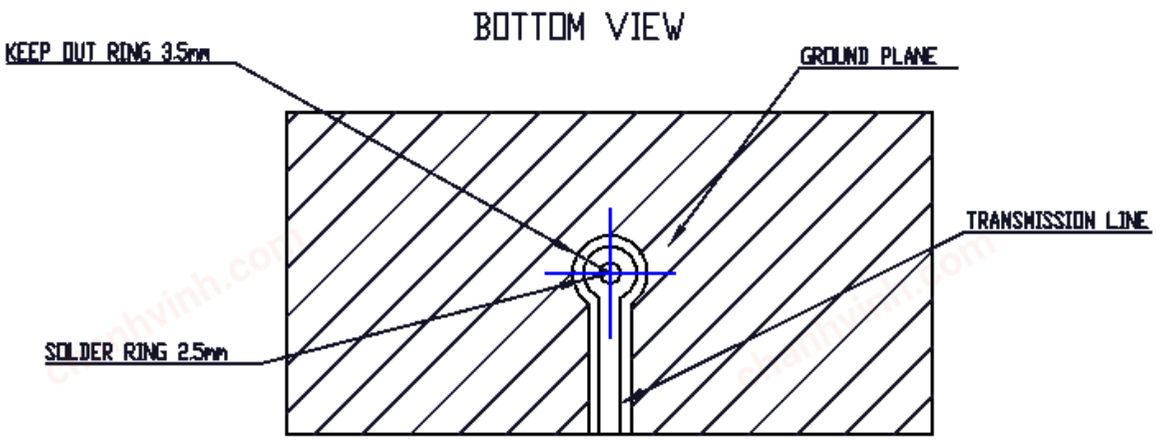


	Name	Material	Finish	QTY
1	Patch(18*18*4)	Ceramic	Clear	1
2	Patch(25*25*4)	Ceramic	Clear	1

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6. Footprint

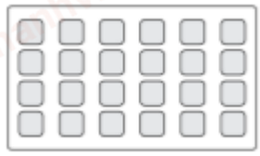




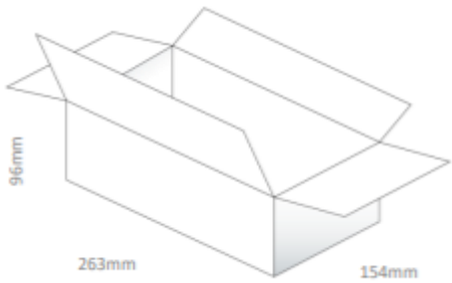
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7. Packaging

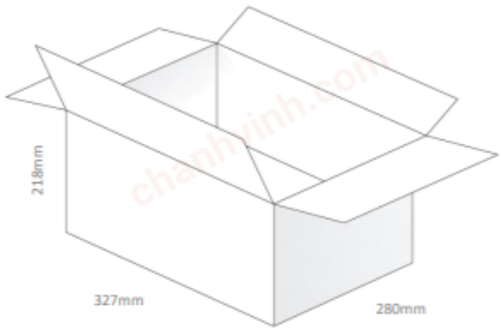
24pcs HP2258.A per Tray



96pcs HP2258.A per Inner Carton
Dimensions: 263*154*96 mm



384pcs HP2258.A per Inner Carton Dimensions:
327*280*218 mm



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Changelog for the datasheet

SPE-23-8-248– HP2258.A

Revision: A (Original First Release)	
Date:	2023-09-12
Notes:	Initial Release
Author:	Cesar Sousa

Previous Revisions

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