



TAOGLAS®



Datasheet

GPS & BeiDou Stacked Patch Multi-Band Antenna

Part No:
GPVBSF.25.8.A

Description:

GPS L1 / L5 & BeiDou B1 Single Feed Stacked Patch Antenna

Features:

Single Feed Stacked Patch Assembly

Covering Bands

- GPS L1 & L5
- BeiDou B1

Low Axial Ratio

Pin Mount

Dimensions: 25*25*8.12mm

RoHS & REACH Compliant

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1. Introduction



The GPVBSF.25.8.A, with Taoglas Sure Technology, is a multi-band GPS, BeiDou/Compass and IRNSS, 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/L5, Galileo and BeiDou bands.

Typical Applications Include:

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

The GPVBSF.25.8.A has been tuned and tested on a 70 x 70 mm ground plane and exhibits excellent radiation patterns.

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.

2. Specifications

GNSS Frequency Bands Covered							
GPS/QZSS	L1	L2	L5	L6			
	1575.42MHz	1227.6MHz	1176.45MHz	1278.75MHz			
	■	□	■	□			
GLONASS	L5R	L3PT	L2PT	L1CR	L1PT		
	1176.45MHz	1201.5MHz	1246MHz	1575.42MHz	1602MHz		
	■	□	□	■	□		
Galileo	E5a	E5b	E4	E3	E6	E2	L1
	1176.45MHz	1201.5MHz	1215MHz	1256MHz	1278.75MHz	1561MHz	1575.42MHz
	■	□	□	□	□	■	■
BeiDou	B1	B2	B3				
	1561MHz	1207.14MHz	1268.52MHz				
	■	□	□				
Compass	E5B(B2)/ E6(B3)	E2(B1)					
	1268.56MHz	1561MHz					
	□	■					
SBAS	Omnistar	WAAS/EGN OS					
	1542.5MHz	1575.42MHz					
	□	■					

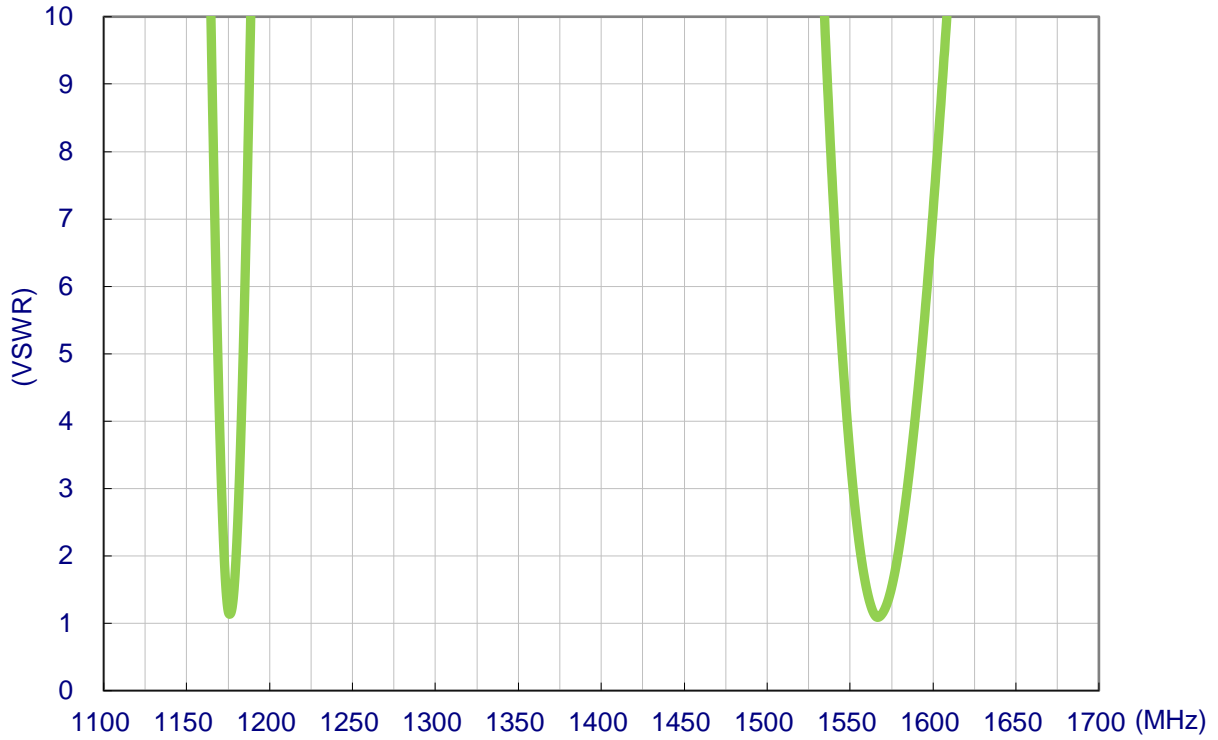
GNSS Electrical			
Frequency (MHz)	1176.45	1561	1575.42
VSWR (max.)	2:1	2:1	2:1
Efficiency (%)	60.8	63.9	59.6
Peak Gain(dBi)	2.5	3.4	3.1
Average Gain(dB)	-3	-2	-2.3
Polarization	R.H.C.P.		

Mechanical	
Planner Dimension	25*25*8mm
Ground Plane	70*70mm
Connection Type	Pin & Adhesive Mount

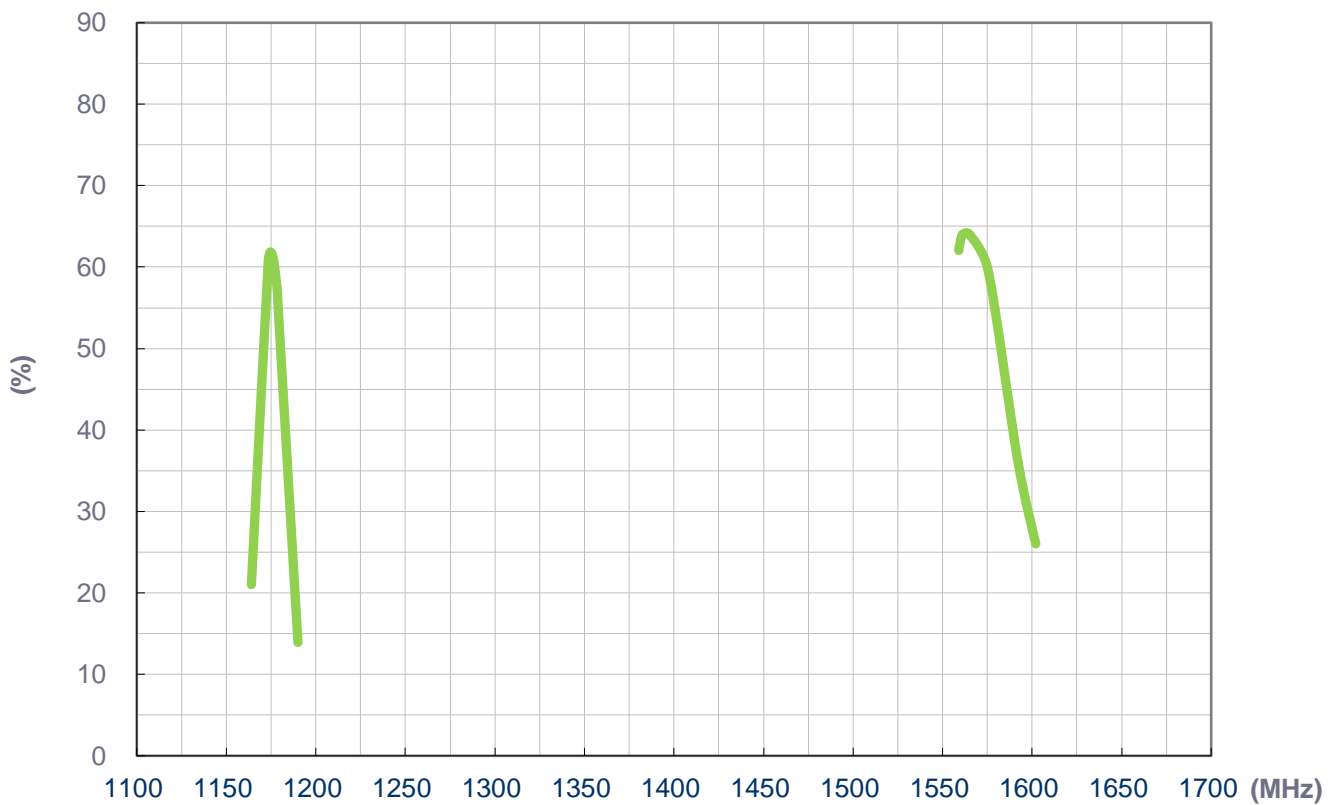
Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

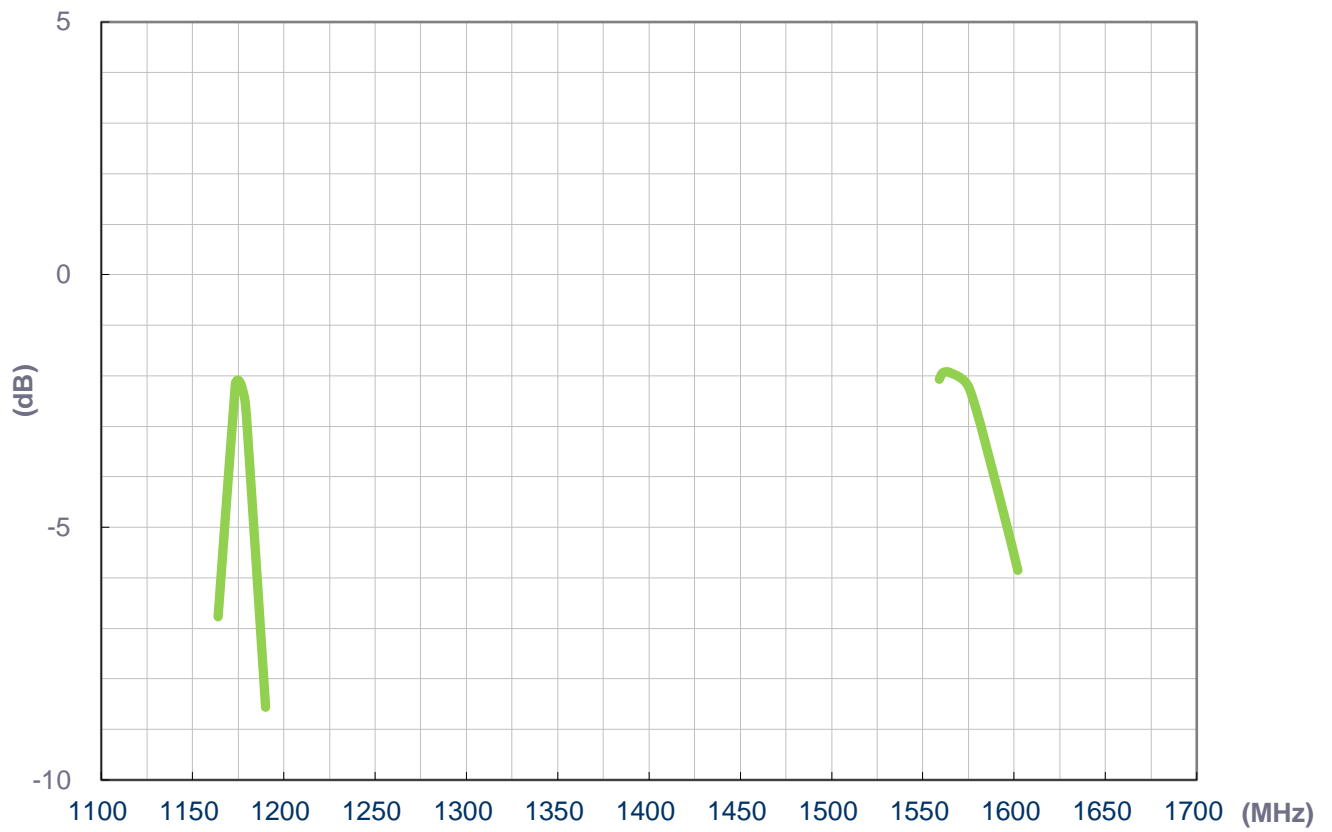
3.1 VSWR



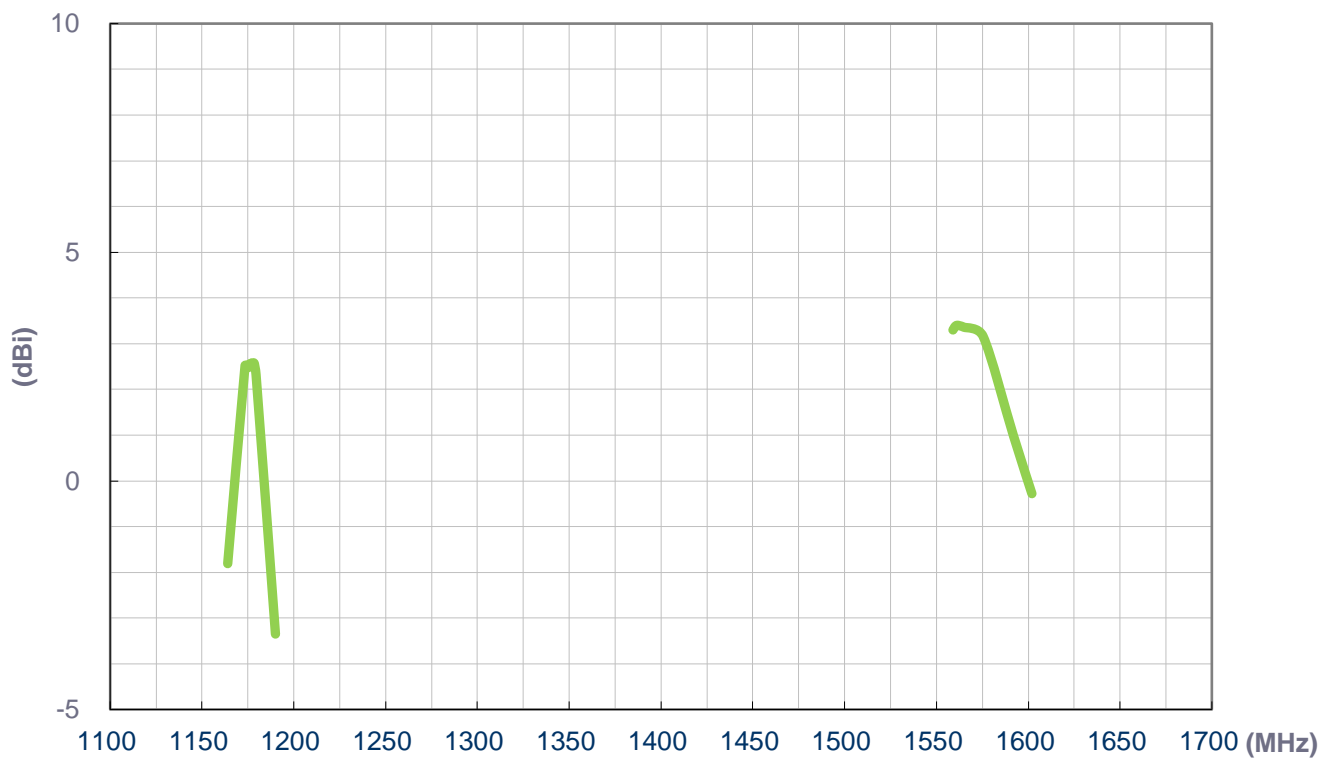
3.2 Efficiency



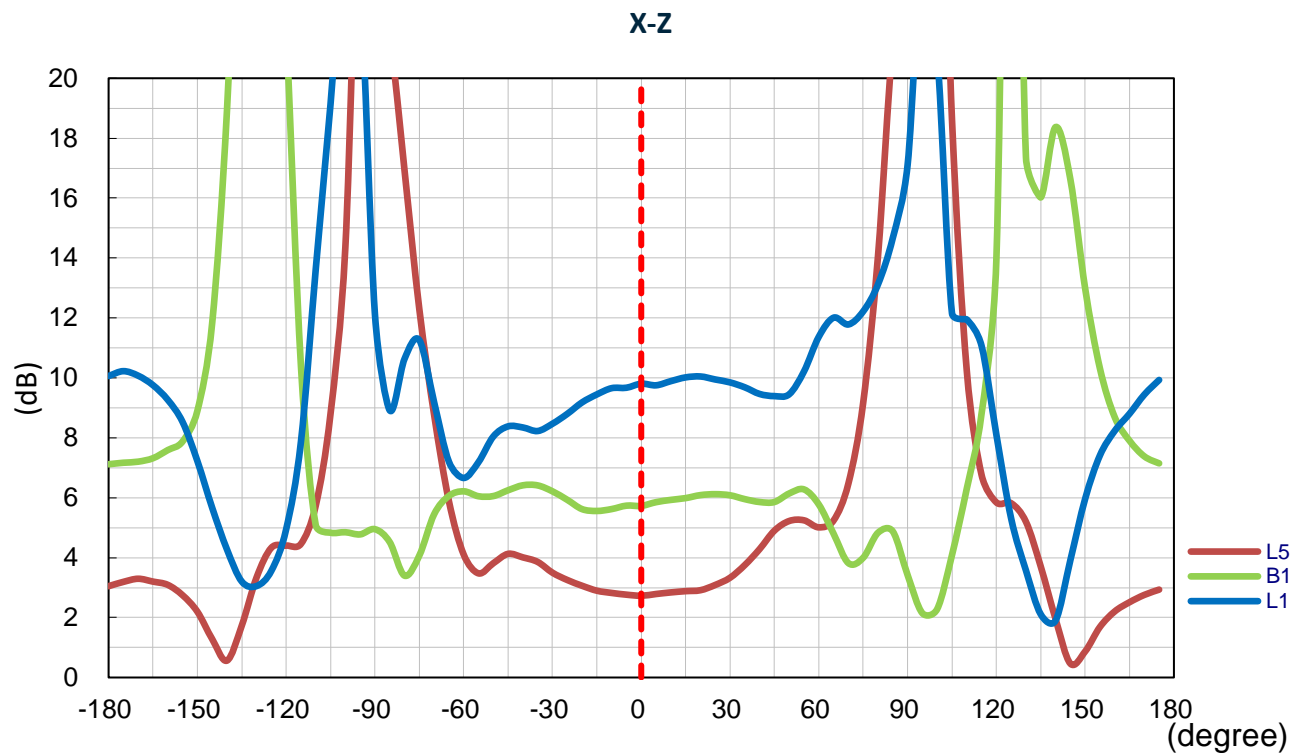
3.3 Average Gain



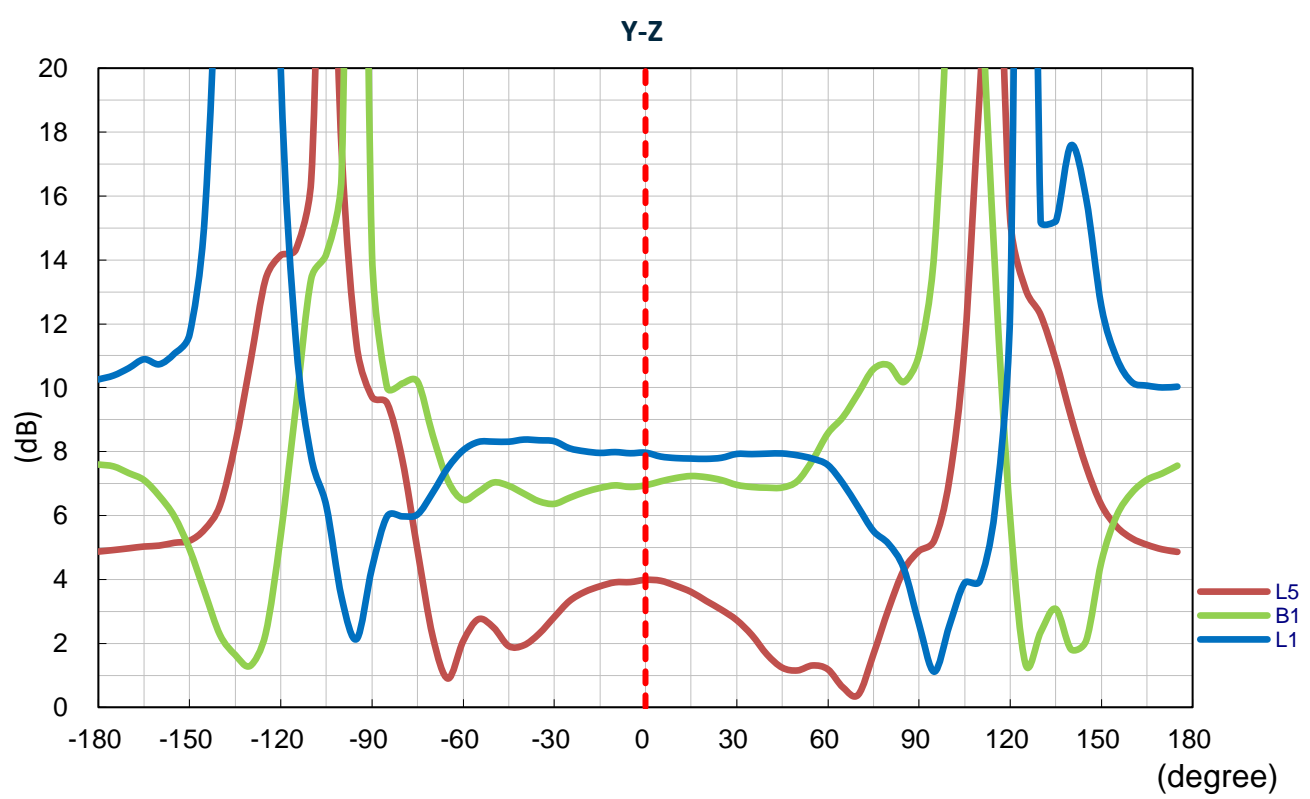
3.4 Peak Gain



3.5 Axial Ratio – X-Z

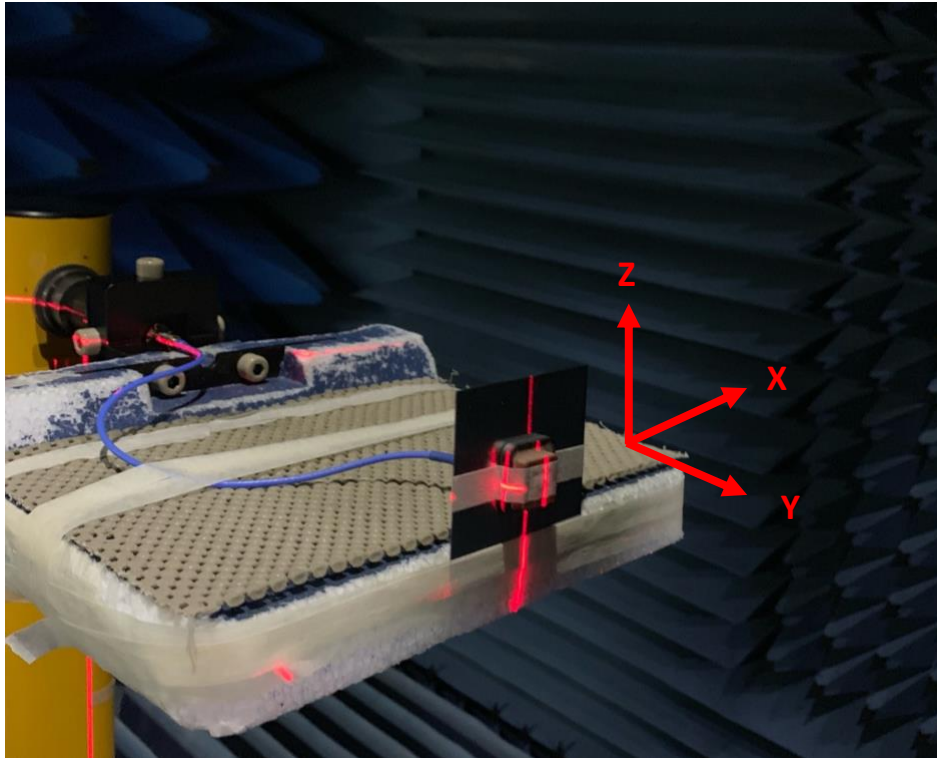


3.6 Axial Ratio – Y-Z



4. Radiation Patterns

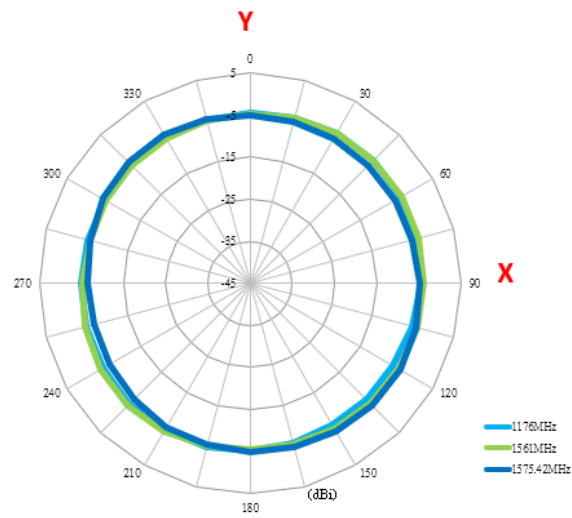
4.1 Test Setup



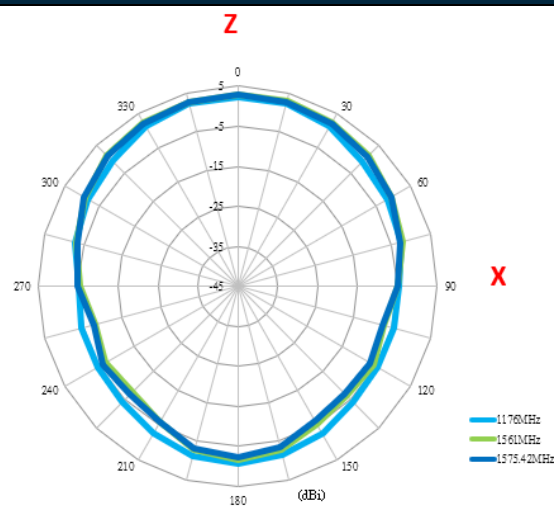
Tested on 70*70mm Ground Plane Evaluation Board

4.2 2D Radiation Patterns

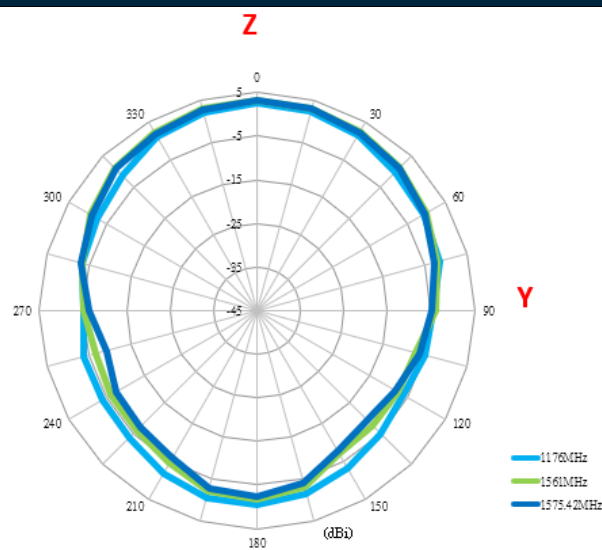
XY Plane



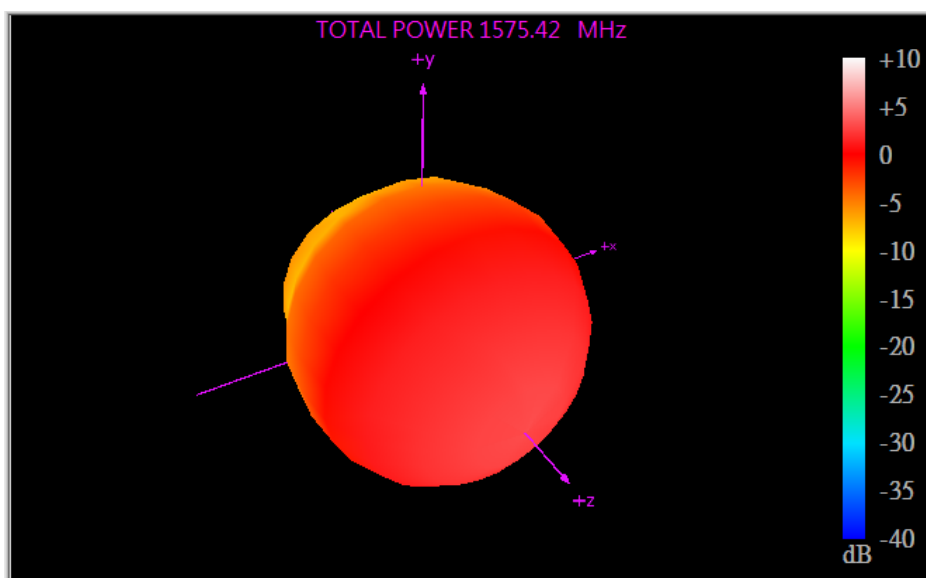
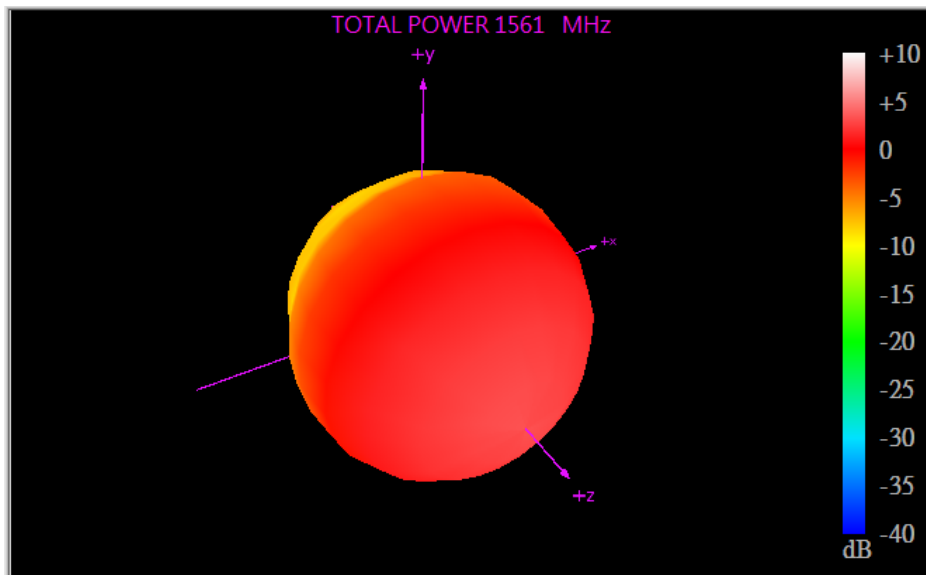
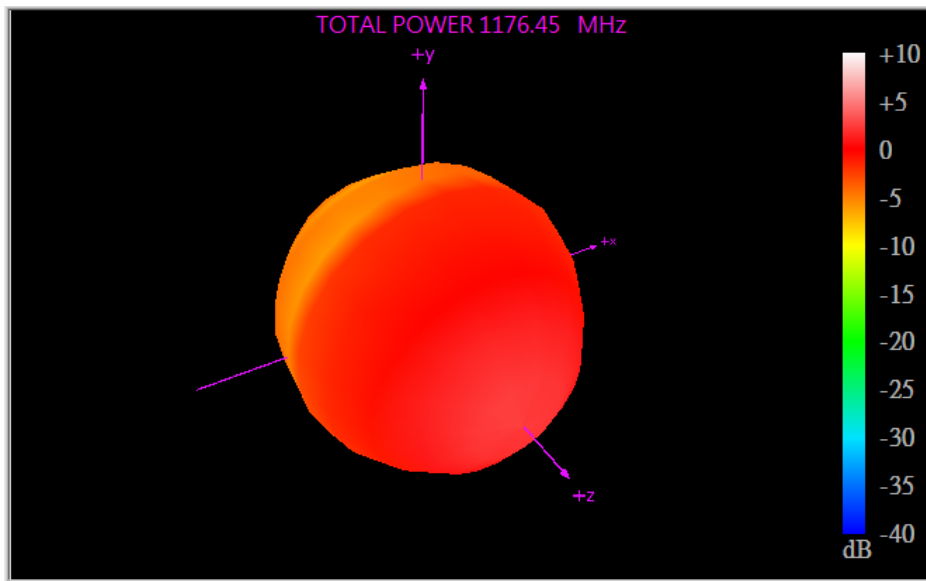
XZ Plane



YZ Plane



4.3 3D Radiation Patterns



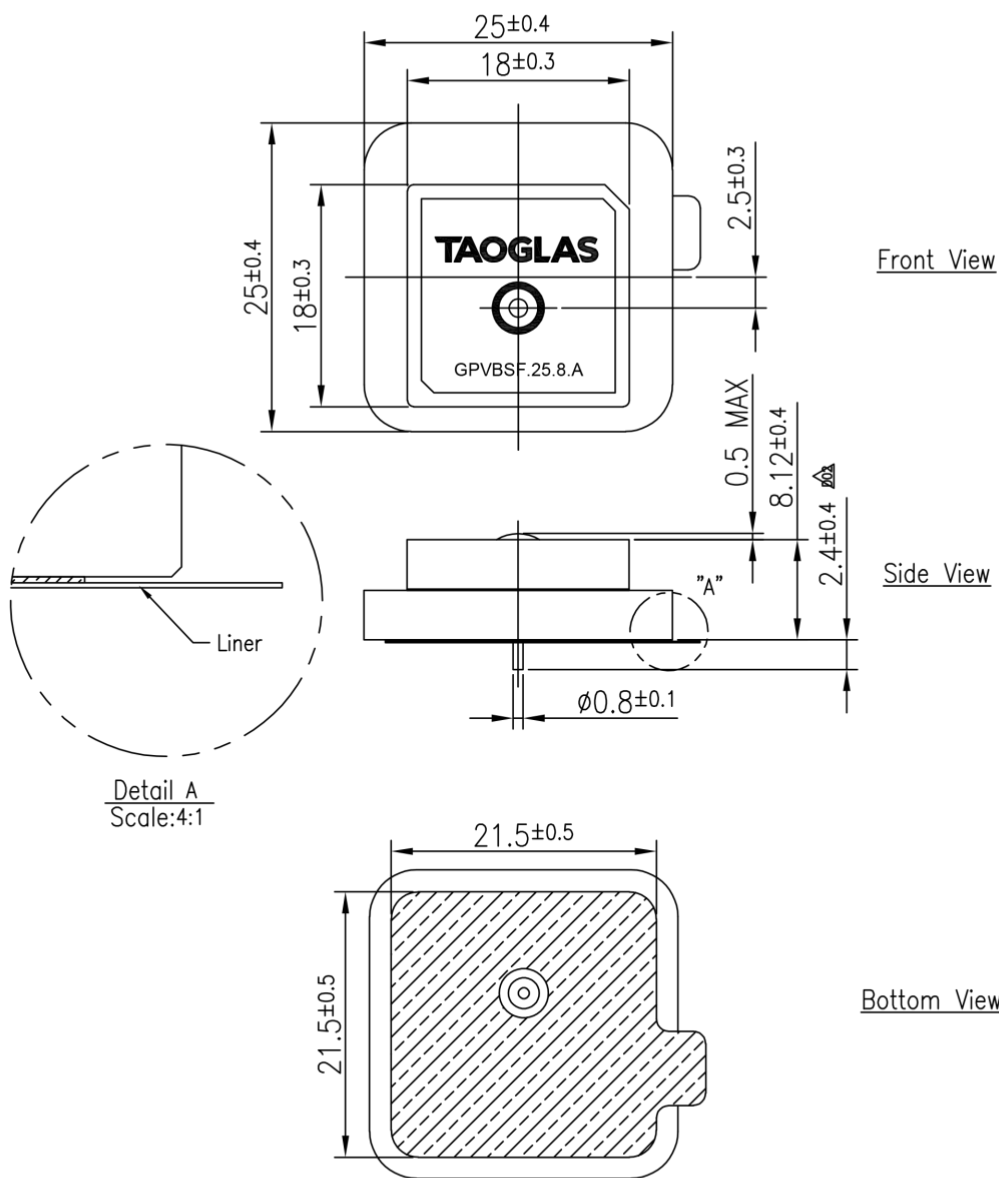
5. Mechanical Drawing (Units: mm)

ISO NO.: EDW-19-8-1549

STATE: Release

NOTES: 1. Double Sided Adhesive Area 2. Soldermask Area

REV.	DESCRIPTION	ENG.	APPROVED	DATE
	Initial Design	Tony	Buluto	2019/11/22
	EC-21-08-010	Mickey	Buluto	2021/03/02

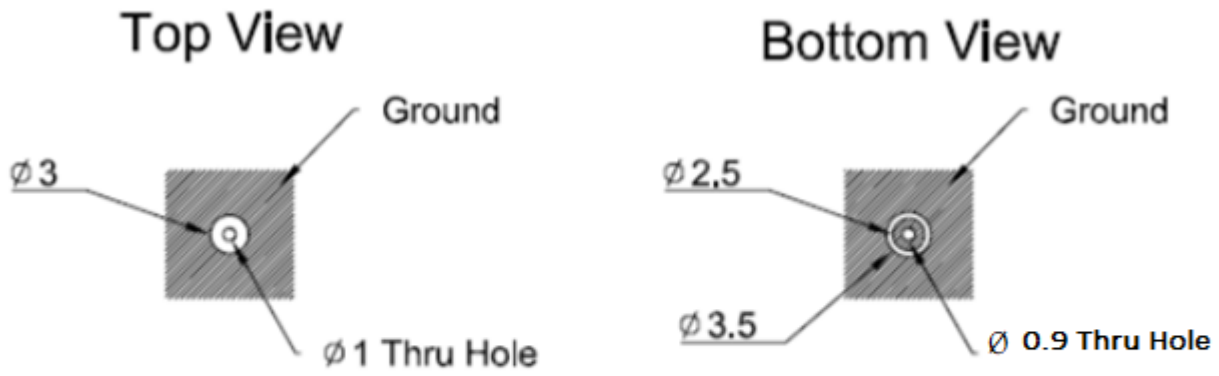


Detail A
Scale:4:1

APPROVED BY: Buluto	TW Design Centre This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.
CHECK BY: Amos	
DRAWN BY: Tony	
DATE: 2019/11/22	
UNLESS OTHERWISE SPECIFIED TOLERANCES ON: XL±0.5 X±0.3 X±0.2 X±0.1 X±0.05	TITLE : GPS Single Feed Stacked Patch Antenna L1:1575.42/1561MHz L5:1176MHz
THIRD ANGLE PROJECTION	PART NO. : GPVBSF.25.8.A
	UNIT: mm SCALE: 2:1 PAGES: 1/1 REV. D02

	Name	P/N	Material	Finish	QTY
1	Patch(18*18*)	01348CAW00000	Ceramic	Clear	1
2	Patch(25*25*)	01348CAW00000	Ceramic	Clear	1

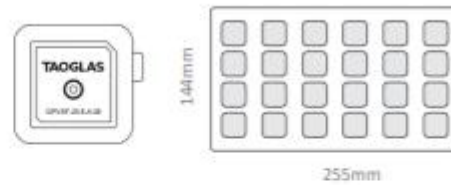
6. Footprint



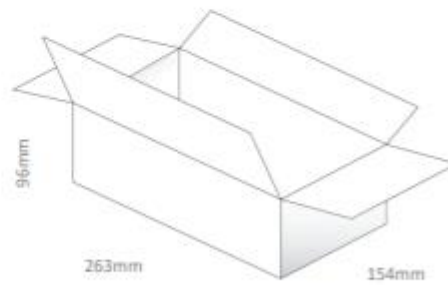
Tolerance: +/- 0,20
Unit:mm

7. Packaging

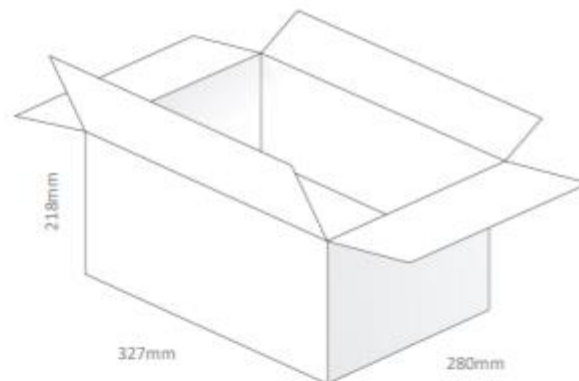
24pcs GPVBSF.25.8.A per Tray
 Tray Dimensions: 255*144*8mm
 Weight: 0.460Kg



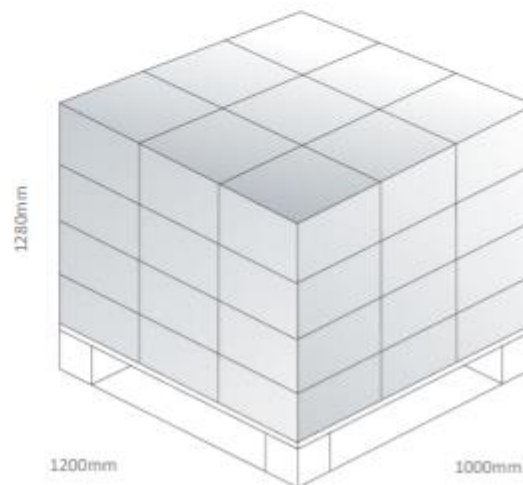
96pcs GPVBSF.25.8.A per Inner Carton
 Dimensions: 263*154*96mm
 Weight: 2Kg



384pcs GPVBSF.25.8.A per Large Carton
 Dimensions: 327*280*218mm
 Weight: 9Kg



Pallet Dimensions:
 1200*1000*1280mm
 36 Cartons Per Pallet
 9 Cartons Per Layer, 4 Layers



Changelog for the datasheet

SPE-19-8-139 – GPVBSF.25.8.A

Revision: B (Current Version)

Date:	2021-06-19
Notes:	Updated Pin Length to 2.4mm Updated Drawing
Author:	Dan Cantwell

Previous Revisions

Revision: A (Original First Release)

Date:	2019-11-07
Notes:	Initial Release
Author:	Jack Conroy



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