TAOGLAS

Datasheet

Part No:
CGGP.25.4.E.02

Description:

GPS/GLONASS/Galileo Patch Antenna 25*25*4mm

Features:

GPS/Galileo L1 and GLONASS G1 Operation

1575.42MHz and 1602MHz Resonance

Dimensions: 25*25*4mm

Pin type Ceramic Patch Antenna

Automotive TS16949 Production and Quality Approved

RoHS & REACH Compliant

1. Introduction

The CGGP.25.4.E.02 is a 25*25*4 mm embedded ceramic GPS/GLONASS/Galileo Patch antenna. It features a double resonance design at GPS/Galileo and GLONASS bands, 1575.42 MHz and 1602MHz respectively. This antenna has been tuned for a center position on a 70mm *70mm ground plane. Return loss is -28dB at 1575.42MHz and -22dB at GLONASS. Overall, the antenna has greater than 60% efficiency.

For further optimization to customer specific device environments where positioning is off center or a different ground-plane size, custom tuned patch antennas can be supplied. For more information please contact your regional Taoglas customer support team.

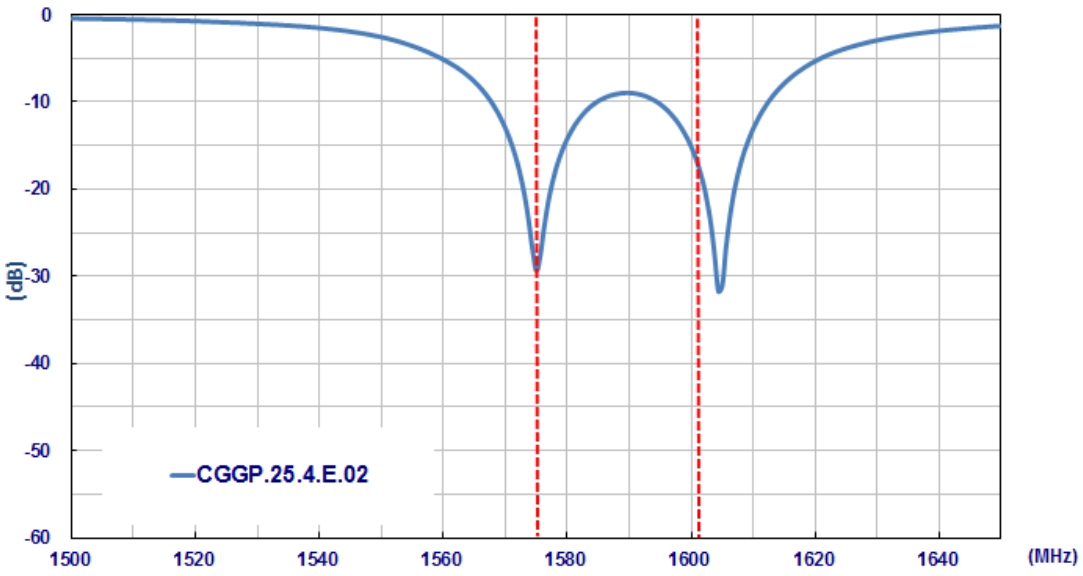
2. Specifications

Electrical		
Application Bands	GPS/GALILEO	GLONASS
Operation Frequency	1575.42 ±1.023MHz	1602±5MHz
VSWR	1.8 max	
Efficiency	88.02%	88.63%
Peak Gain	5.39dBi	5.46dBi
Axial Ratio	~10	~9
Polarization	Linear	
Impedance	50 ohms	
Mechanical		
Ceramic Dimension	25x25x4 mm	
Pin Diameter	Ø0.9 mm	
Pin Length	2.4mm	
Weight	9.5g	
Environmental		
Operation Temperature	-40°C to 105°C	
Moisture Sensitivity	Level 3	

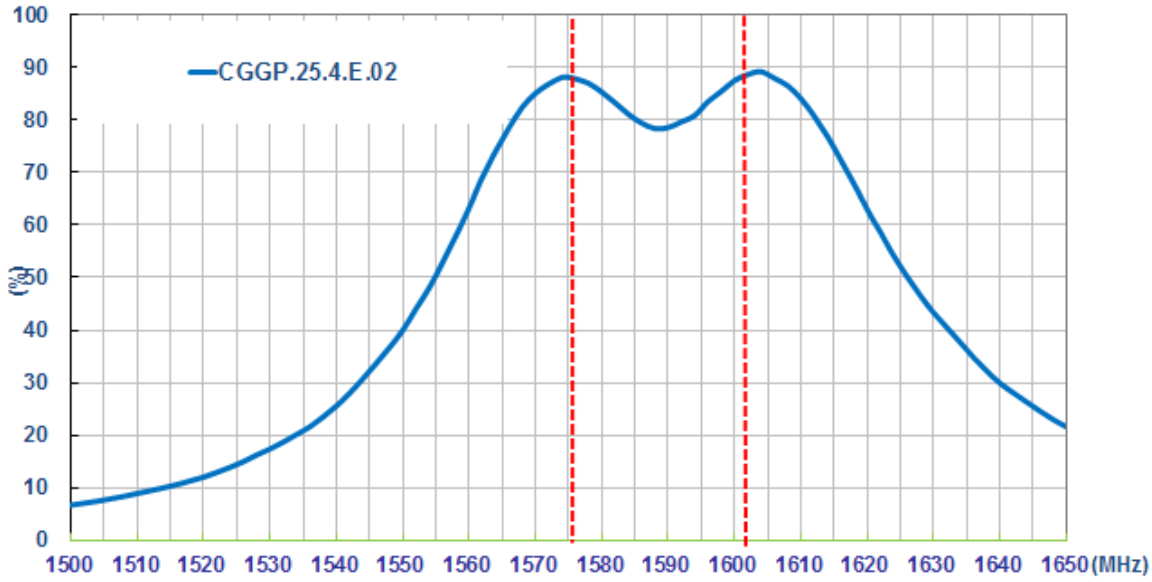
* Antenna properties were measured with the antenna mounted on 70*70mm Ground Plane

3. Antenna Characteristics

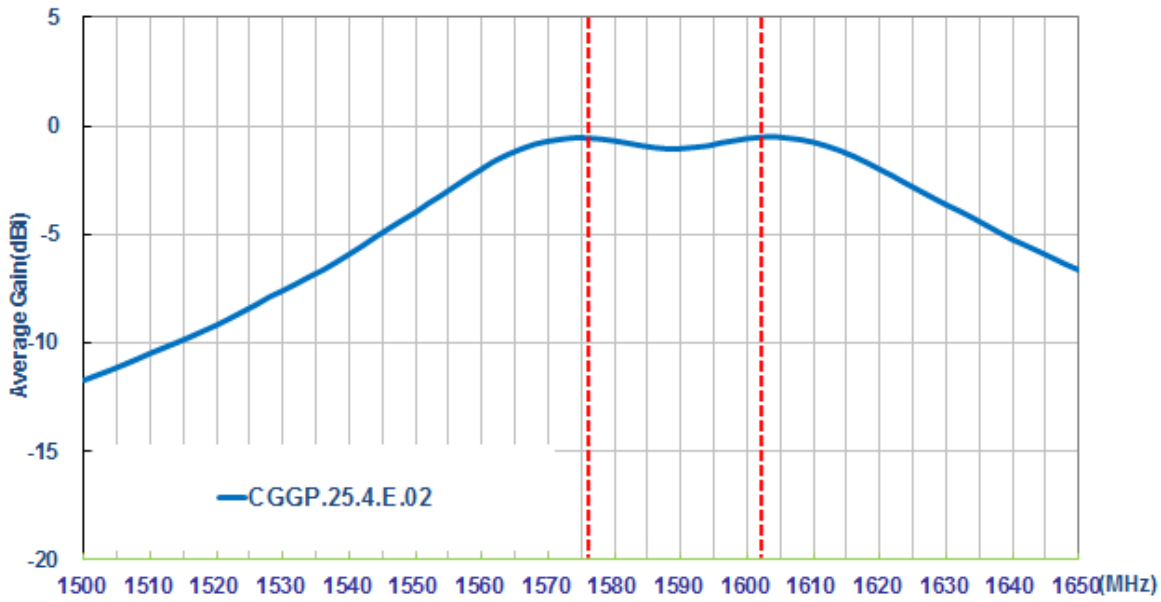
3.1 Return Loss



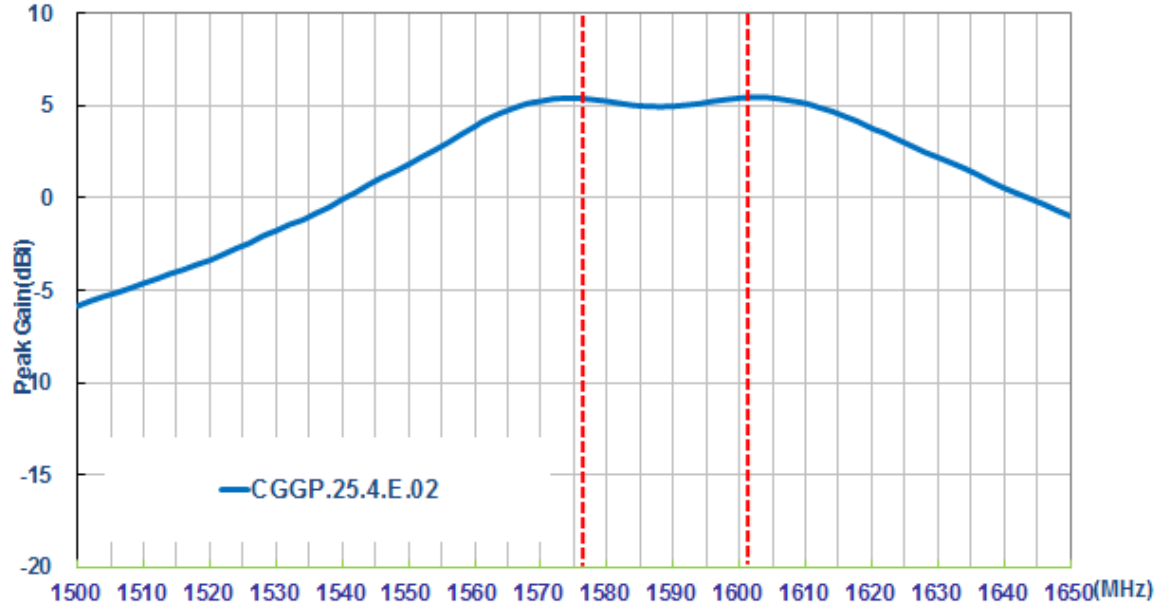
3.2 Efficiency



3.3 Average Gain

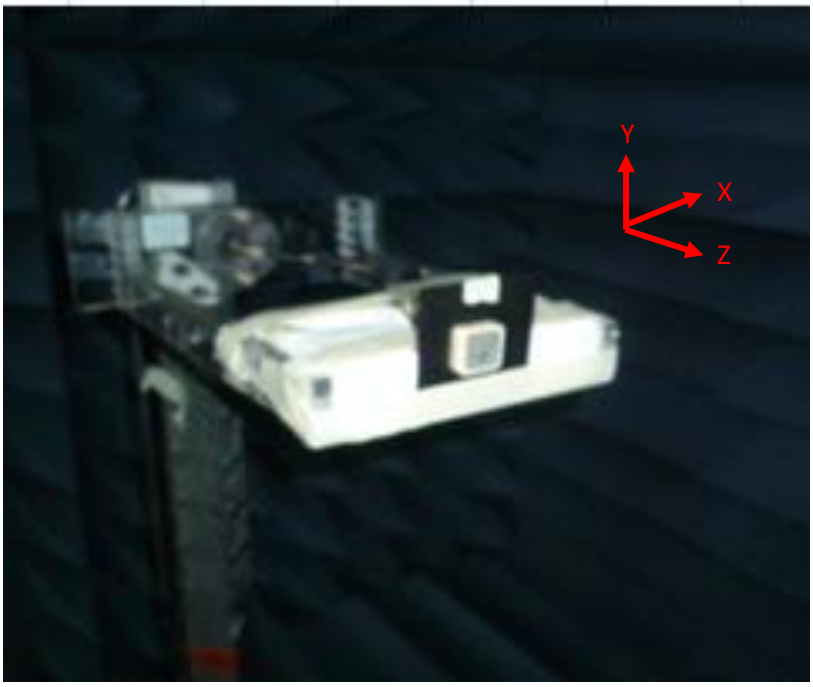


3.4 Peak Gain



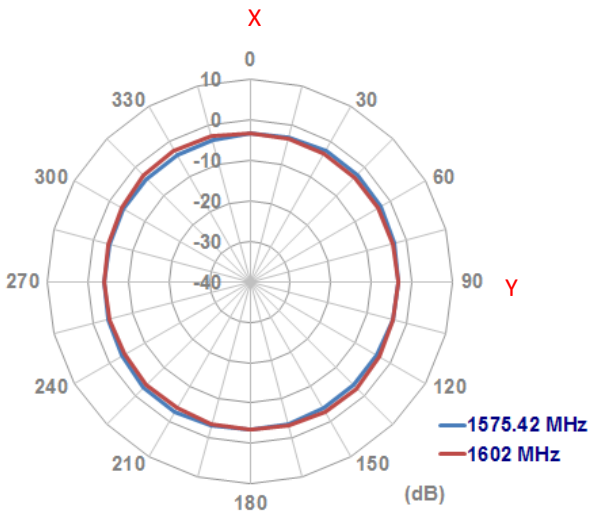
4. Antenna Radiation Pattern

4.1 Measurement Setup

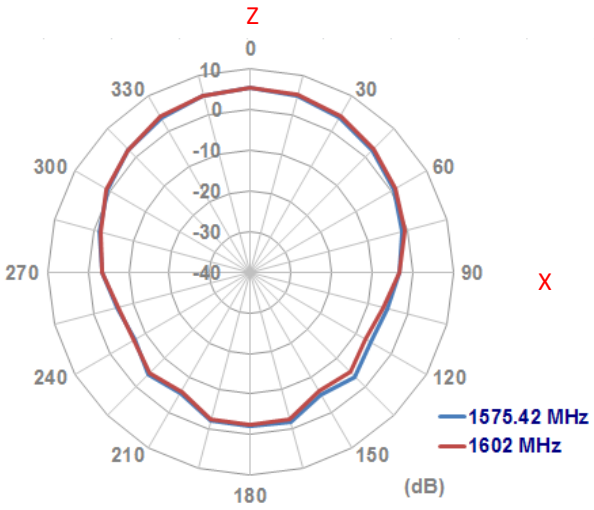


4.2 2D Radiation Pattern

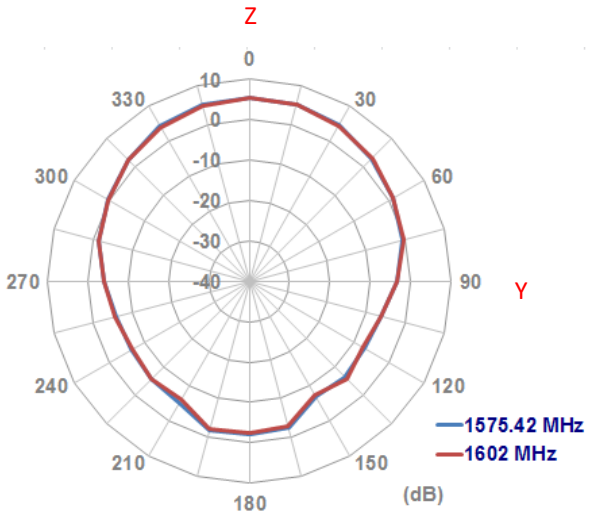
XY Plane



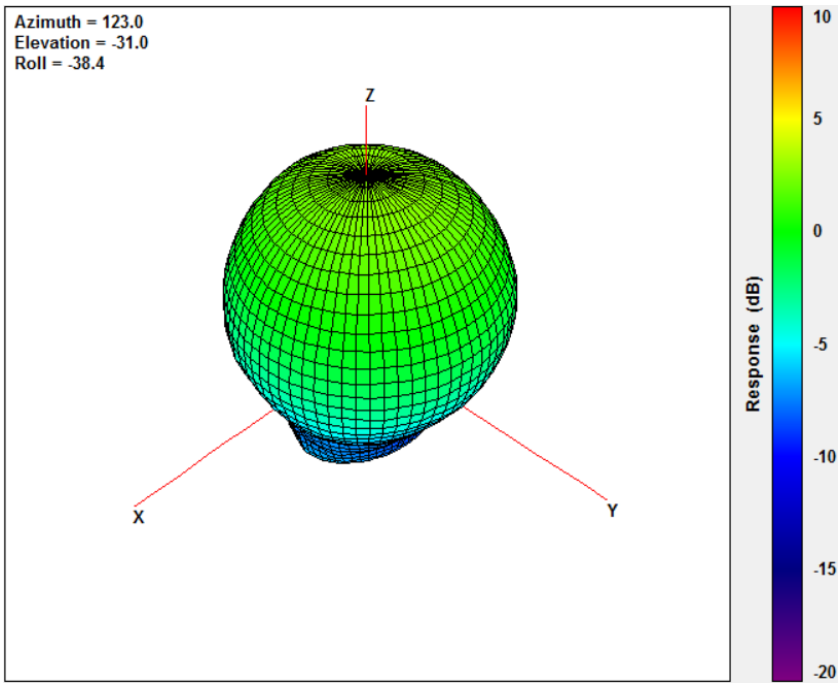
XZ Plane



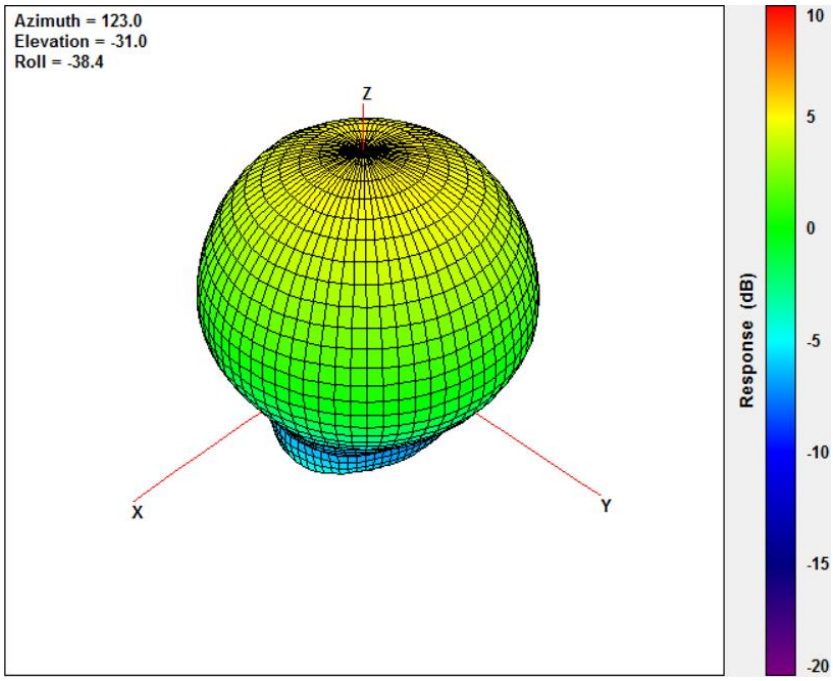
YZ Plane



4.3 3D Radiation Pattern

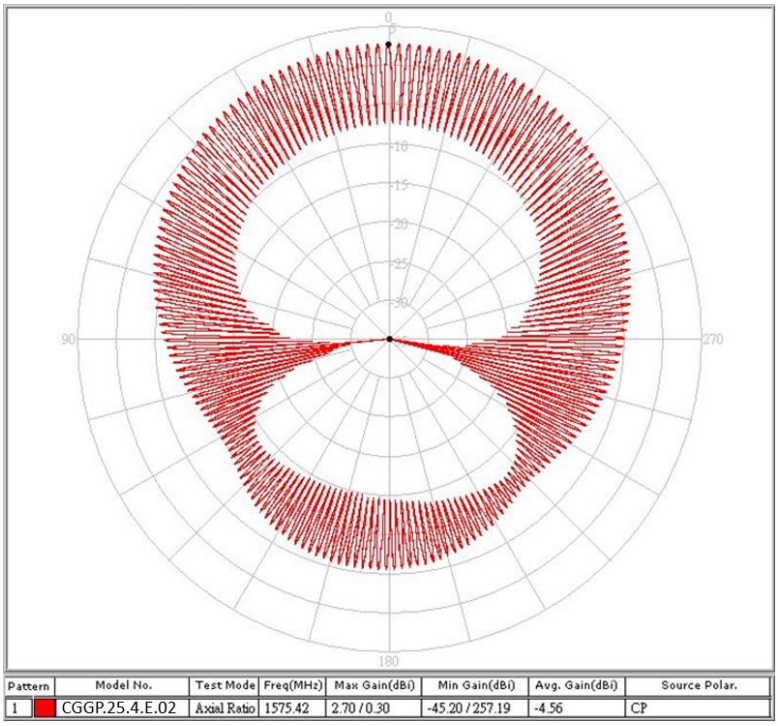


1575.42MHz



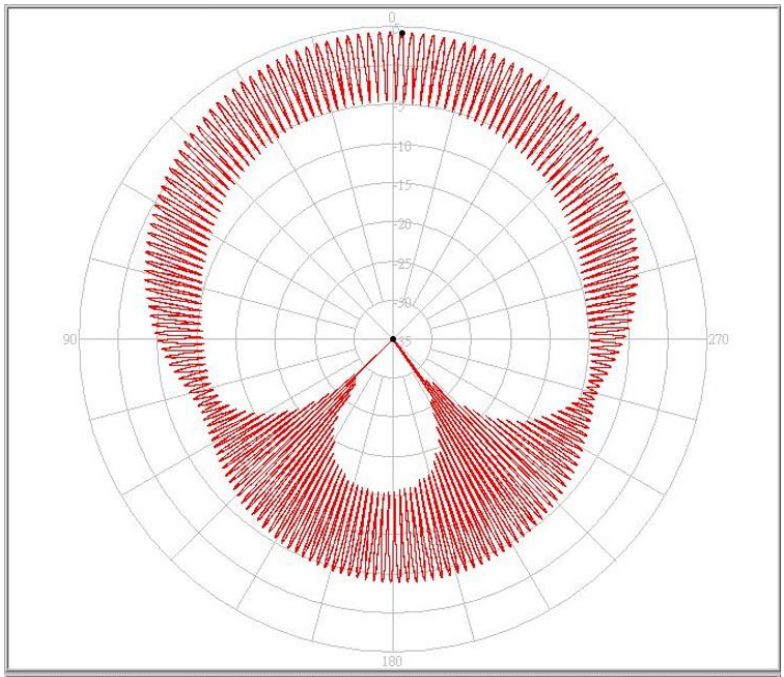
1602MHz

5. Axial Ratio



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	CGGP.25.4.E.02	Axial Ratio	1575.42	2.70 / 0.30	-45.20 / 257.19	-4.56	CP

1575.42 MHz



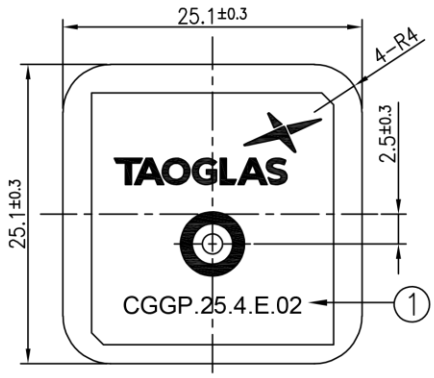
Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	CGGP.25.4.E.02	Axial Ratio	1602.00	4.21 / 358.39	-33.06 / 216.52	-3.02	CP

1602MHz

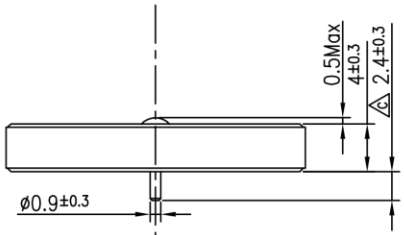
6. Mechanical Drawing (Unit: mm)

ISO NO.: EDW-18-8-0703
STATE: Release
NOTES: 1. Double sided adhesive area
2. Soldermask area

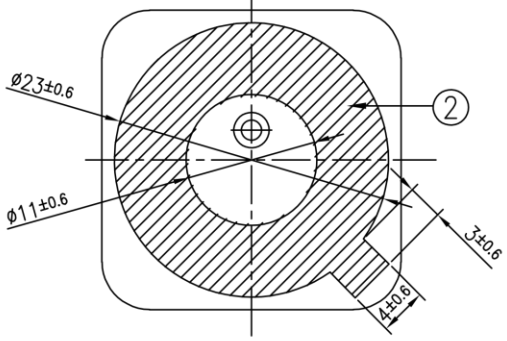
REV.	DESCRIPTION	ENG.	APPROVED	DATE
A	Initial Design	Eva	Paul	2018/09/06
B	Replace the new LOGO <ECR-18-8-259>	Bonnie	Haley	2019/04/08
C	EC-21-08-010	Mickey	Buluto	2021/03/02



Top View B



Side View



Bottom View

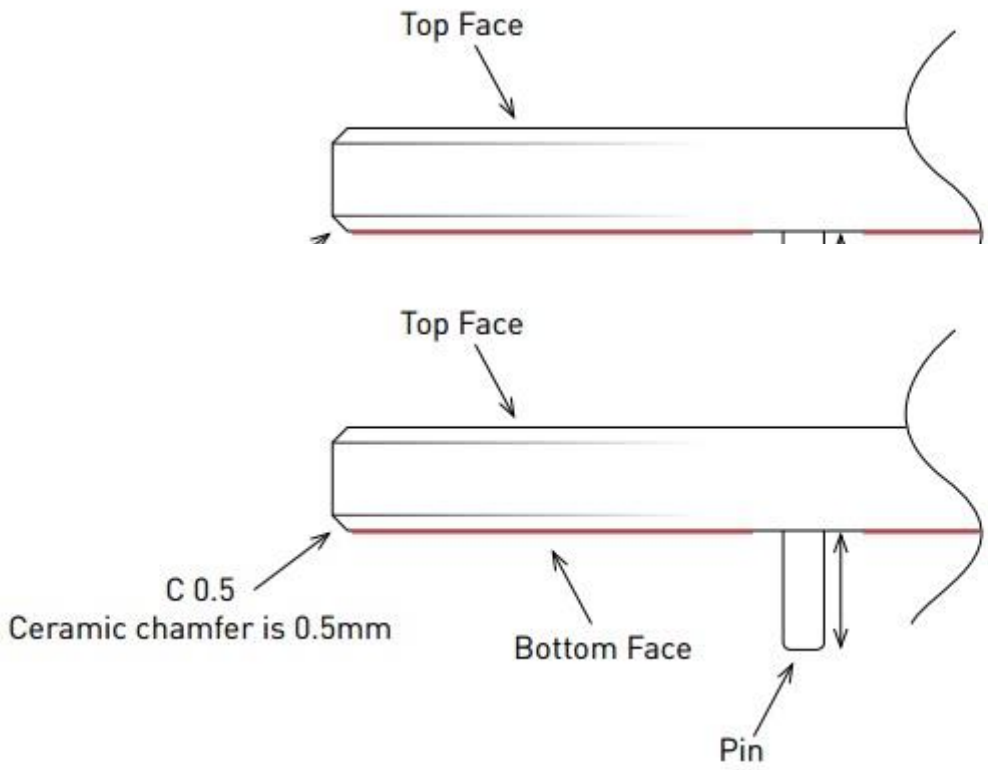
	Name	P/N	Material	Finish	QTY
1	Patch	00151H180000A	Ceramic	Clear	1
2	Double sided Adhesive	00151H180000A	NITTO 5015	White Linter	1

APPROVED BY:	Wayne
CHECK BY:	Aine
DRAWN BY:	Haley
DATE:	2015/08/24
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	XX.±0.5 X.±0.3 .X±0.2 .XX±0.1 .XXX±0.05
THIRD ANGLE PROJECTION	

TAOGLAS. TW Design Centre

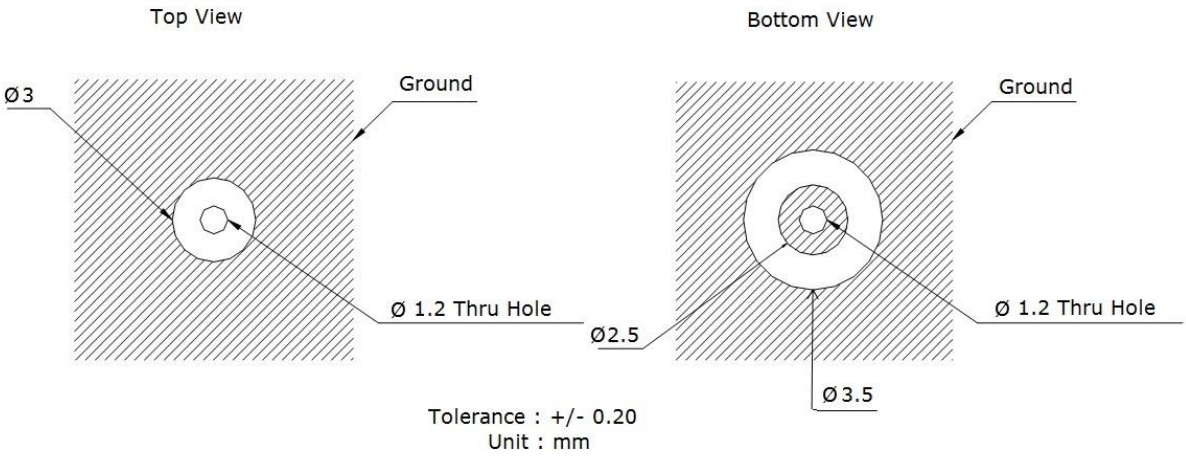
TITLE : GPS/GLONASS Dual-Band Patch Antenna 25*25*4mm
PART NO. : CGGP.25.4.E.02
UNIT: mm | SCALE: 2:1 | PAGES: 1/1 | REV. C

Adhesive Thickness



Red Line shows the adhesive without Liner – thickness 0.08~0.1mm

7. PCB Footprint Recommendation



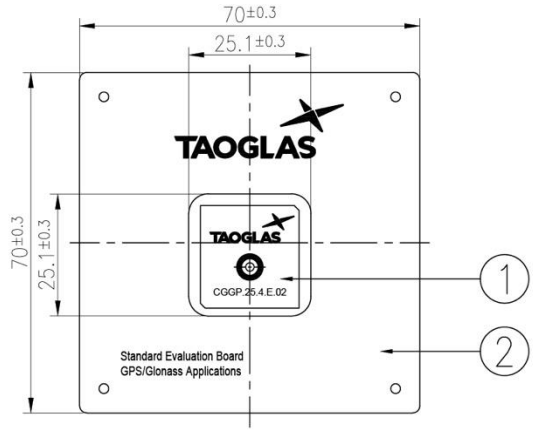
8. Evaluation Board (CGGPD.25.H)

REV	ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
A	ALL	Initial Design	Eva	Paul	2018/09/06
B	ALL	Modify the EVB <ECR-18-8-214>	Rachel	Joey	2019/02/15
C	ALL	Replace the new LOGO <ECR-18-8-259>	Aron	Aaron	2019/11/18

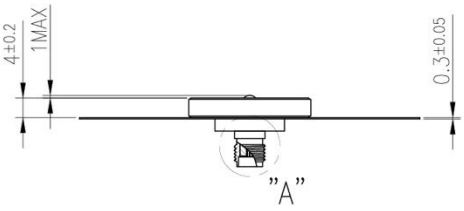
ISO NO: EDW-18-8-0712

<Release>

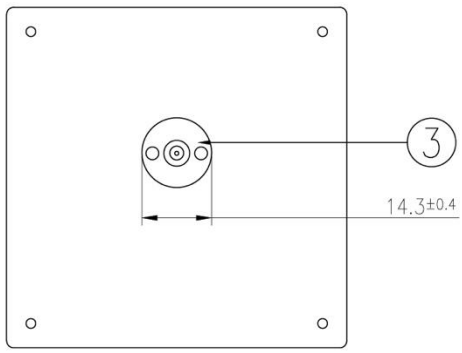
B C Top View



Side View



B Bottom View



NOTE: B
1.All material must be RoHS compliant.
2.Open/short QC, VSWR required.
3.Soldermask Area

	Name	P/N	Material	Finish	QTY
1	Patch	001515H040007A	Ceramic	Clear	1
B 2	Ground-Plane	000514B000007A	SPTE	Silver	1
B 3	SMA(F)ST	200419A000094A	Brass	Au Plated	1

UNLESS OTHERWISE SPECFIED TOLERANCES ON:
.X± 0.2
XX.± 0.5 .XX± 0.1
X.± 0.3 .XXX± 0.05

DATE: 2015/09/14
UNIT: mm
THIRD ANGLE PROJECTION
MAT'L:
FINISH:
SCALE: 1/1.25

TAOGLAS. TW Design Centre

REV C

TITLE. : CGGP.25.4.E.02 25mm CGGP Patch Antenna on 70mm*70mm Ground-Plane with SMA(F)

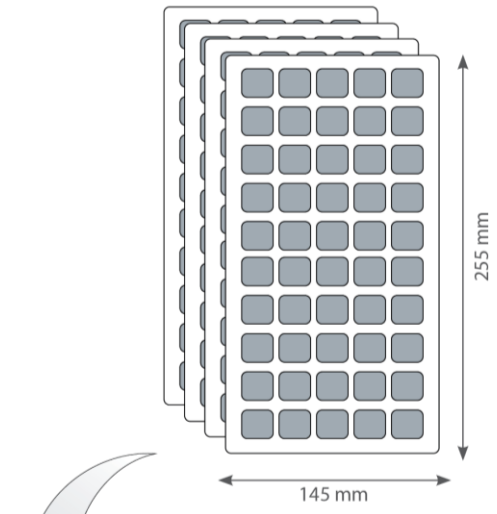
PART NO. : CGGPD.25.H

APPROVED BY:	CHECKED BY:	DRAWN BY:	CUSTOMERS SIGNATURE / DATE
Wayne	Aine	Haley	

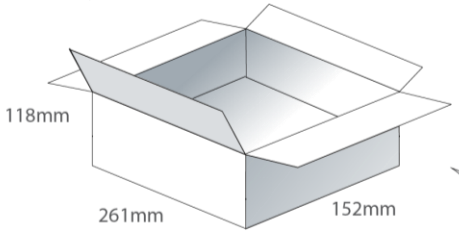
9. Packaging

CGGP.25.4.E.02
Packaging Specifications

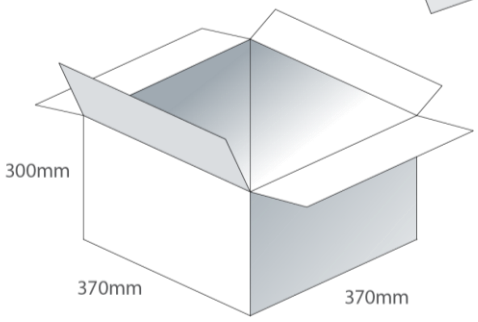
50 pcs CGGP.25.4.E.02 per tray
Tray Dimensions - 255*145*32mm
Weight - 519g



200 pcs CGGP.25.4.E.02 per Inner Carton
Inner Carton Dimensions - 261*152*118mm
Weight - 2.2kg



800 pcs CGGP.25.4.E.02 per Carton
Carton Dimensions - 370*370*300mm
Weight - 9.3kg



Changelog for the datasheet

SPE-16-8-018 – CGGP.25.E.02

Revision: E (Current Version)	
Date:	2022-02-17
Changes:	Updated Packaging Graphic
Changes Made by:	Paul Doyle

Previous Revisions

Revision: D	
Date:	2021-06-12
Changes:	Updated Pin Length to 2.4mm Updated Drawing
Changes Made by:	Dan Cantwell

Revision: C	
Date:	2020-11-19
Changes:	Updated to new format Added Moisture Sensitivity Level 3 to Environmental Specifications
Changes Made by:	Dan Cantwell

Revision: B	
Date:	2019-11-15
Changes:	Updated Images Reference ECR-18-8-259
Changes Made by:	Russell Meyler

Revision: A (Original First Release)	
Date:	2016-09-03
Notes:	
Author:	Jack Conroy