



# Datasheet

**Part No:**  
CGGP.18.4.C.02

**Description:**  
18mm Ceramic GPS/GLONASS/Galileo Patch Antenna, 1575-1610MHz

**Features:**  
GPS/GLONASS/Galileo Operational  
18mm\*18mm\*4mm  
3dBi Peak Gain (on 70mm\*70mm ground-plane)  
Pin type  
Automotive TS16949 Production and Quality Approved  
RoHS & REACH compliant

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# 1. Introduction



This 18mm ceramic GPS/GLONASS/Galileo patch antenna, by means of a double resonance design, has unique wide-band operation over the whole operating bands of GPS and GLONASS systems from 1575MHz to 1610MHz. It is mounted via pin and double-sided adhesive.

This antenna has been tuned for a centre position on a 70mm\*70mm ground-plane. It is manufactured and tested in a TS16949 first tier automotive approved facility. For further optimization to customer specific device environments where positioning is off centre or on different ground-plane sizes, custom tuned patch antennas can be supplied. For further information please contact your regional Taoglas customer support team.

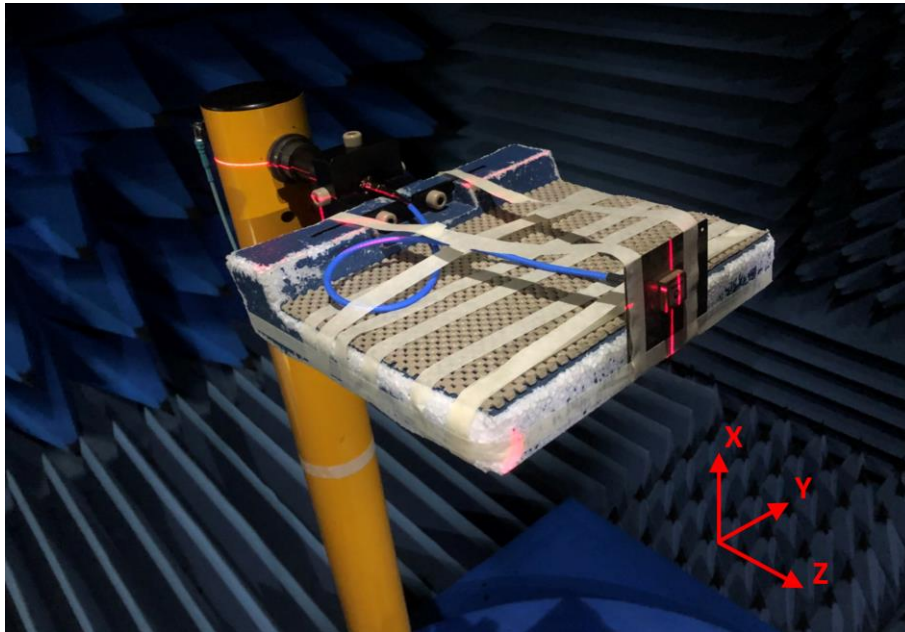
## 2. Specifications

Electrical	
Range of Receiving Frequency	GPS: 1575.42±1.023MHz GLONASS: 1602±5MHz
Center Frequency	1592MHz ± 3MHz
Return Loss	<-4 dB
Efficiency	75%
Gain at Zenith	+3.0 dBi typ.
Impedance	50 ohms
Mechanical	
Ceramic Dimension	18mm x 18mm x 4mm
Pin Diameter	0.9mm
Pin Length	1.8mm
Weight	7g
Environmental	
Operation Temperature	-40°C to 85°C
Moisture Sensitivity	Level 3

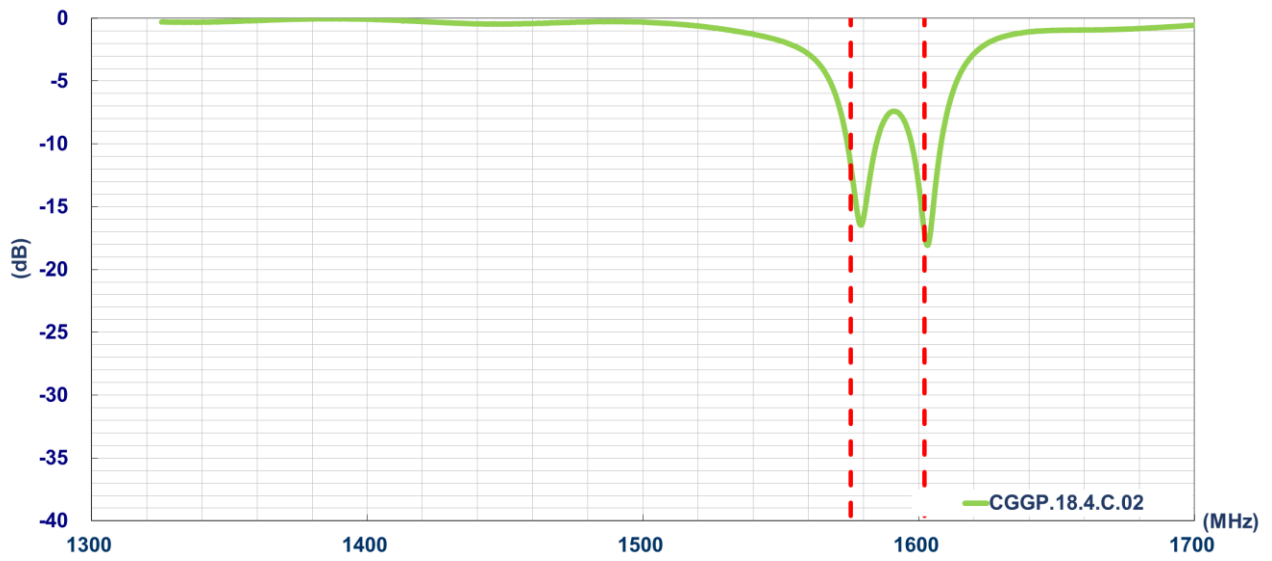
\* Antenna properties were measurement with the antenna mounted on 70\*70mm Ground Plane

## 3. Antenna Characteristics

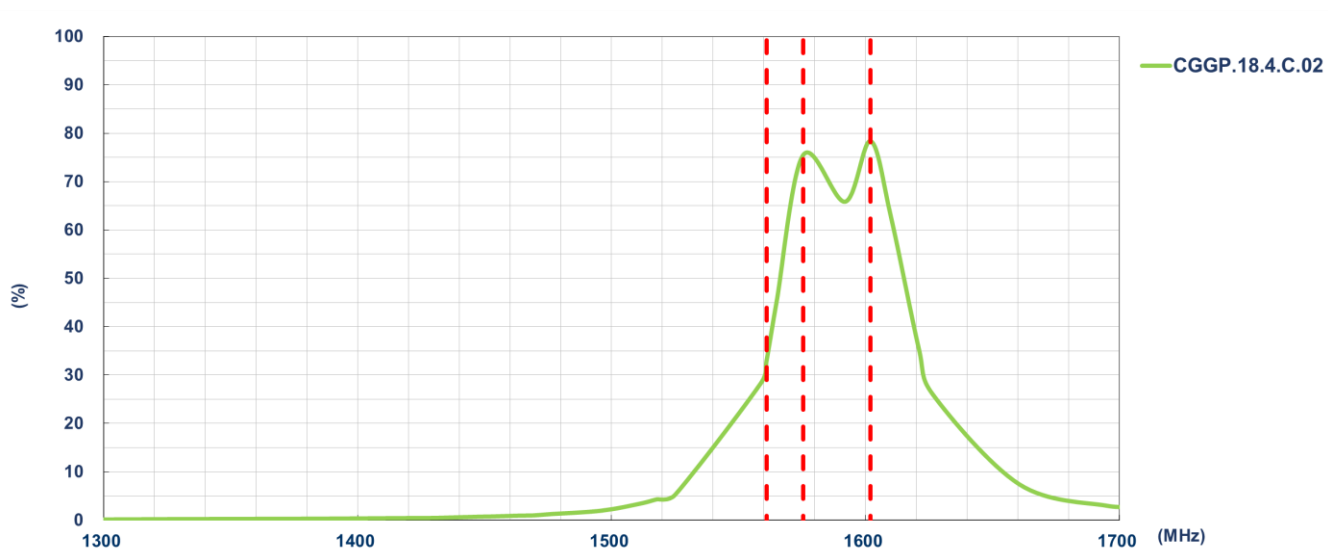
### 3.1 Test Setup



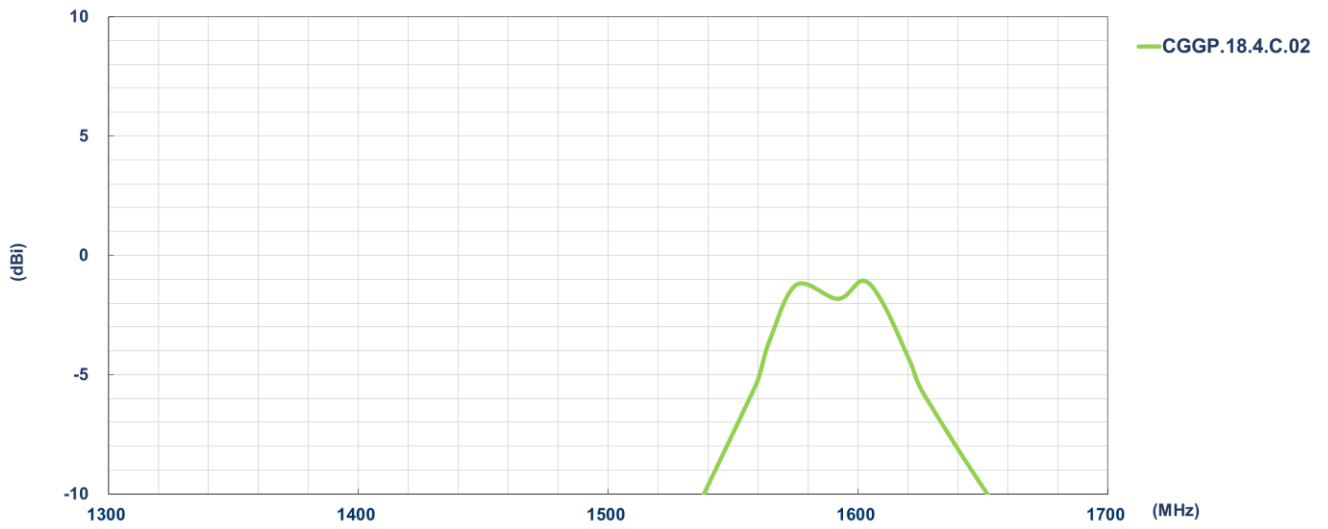
### 3.2 Return Loss



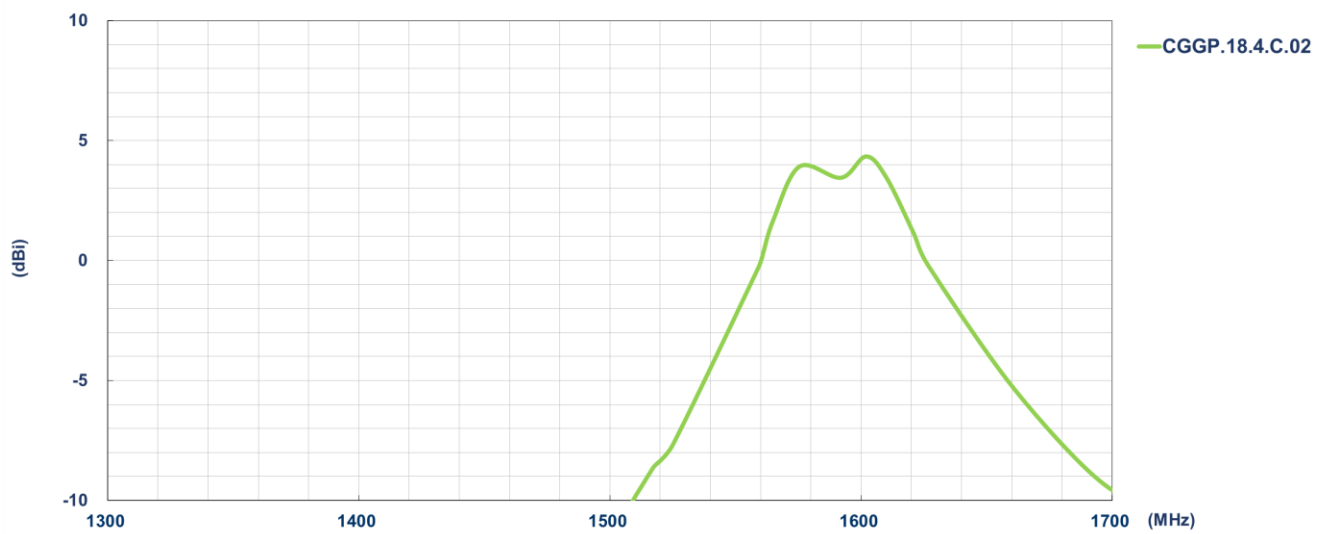
### 3.3 Efficiency



### 3.4 Average Gain



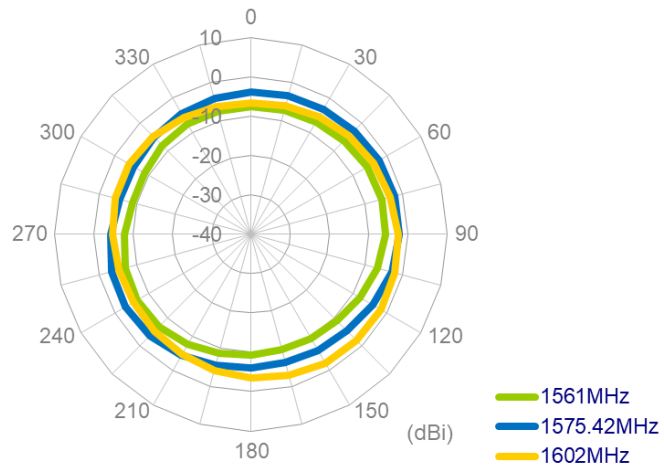
### 3.5 Peak Gain



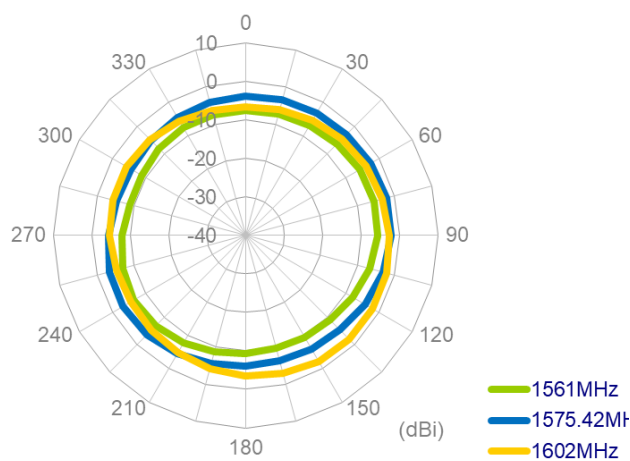
## 4. Antenna 2D Radiation Pattern

### 4.1 2D Radiation Pattern

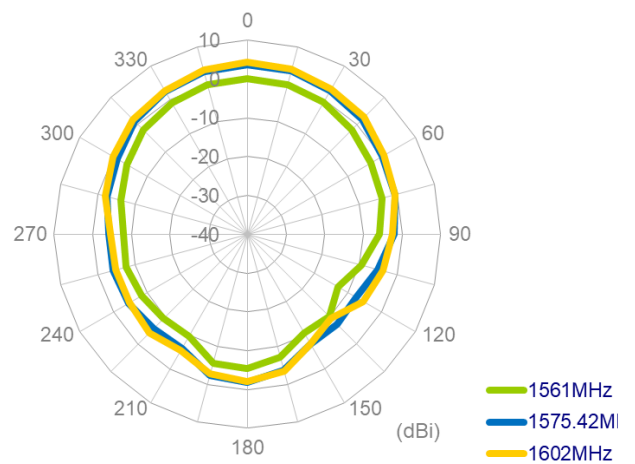
XY Plane



XZ Plane



YZ Plane





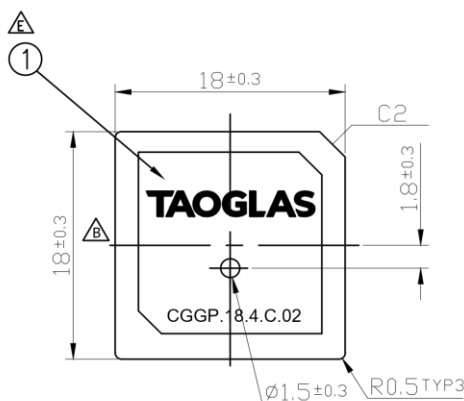
# 5. Mechanical Drawing (Unit: mm)

ISO NO.: EDW-11-8-474

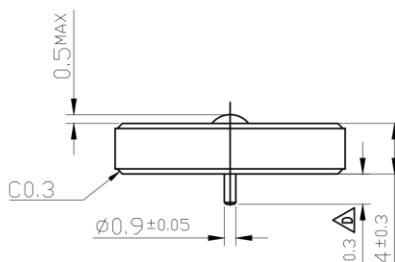
STATE: Release

NOTES: 1. Double sided adhesive area

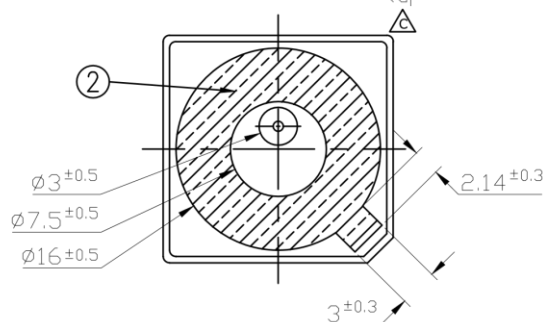
REV.	DESCRIPTION	ENG.	APPROVED	DATE
A	Initial Design	Kiwi	Jaonna	2011/09/13
B	Add CGGP.18.4.C.02 On Patch	Sandy	Jaonna	2012/10/30
C	Add P/N, Amend PIN Dimension.	Kim	Jaonna	2015/06/25
D	EC-21-08-010	Mickey	Buluto	2021/03/02
E	Replace the new LOGO <EDR-18-8-259>	Ruby	Aaron	2022/03/02



Top View



Side View

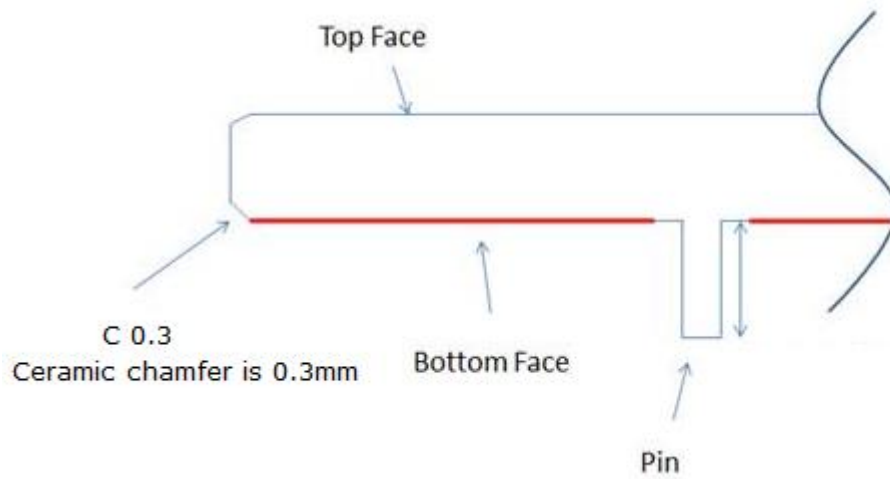


Bottom View

	Name	P/N	Material	Finish	QTY
1	CGGP.18 Patch 18x18x4	001513C079007A	Ceramic	Clear	1
2	Double sided Adhesive	001013C000007A	NITTO 5015	White Linter	1

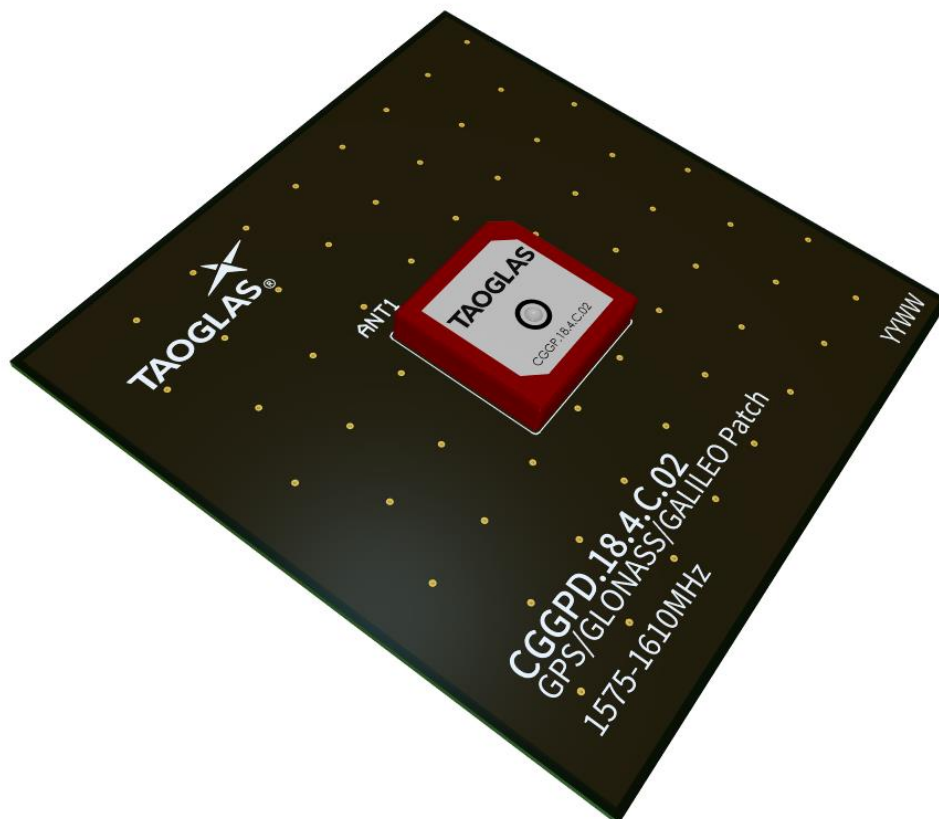
APPROVED BY: Joanna	 <small>TW Design Centre</small> <small>This drawing and its inherent design concepts are property of Taoglas. Not to be copied or given to third parties without the written consent of Taoglas.</small>
CHECK BY: Jimmy	
DRAWN BY: Kiwi	
DATE: 2011/09/13	
UNLESS OTHERWISE SPECIFIED TOLERANCES	<small>XX±0.5</small> <small>X±0.3</small> <small>XX±0.2</small> <small>.XX±0.1</small> <small>.XXX±0.05</small>
45° CHAMFER ANGLE	TITLE : 18x18x4 GPS/GLONASS Ceramic Patch
PROJECTION	PART NO. CGGP.18.4.C.02
	UNIT: mm
	SCALE: 2:1
	PAGES: 1/1
	REV. E

## Adhesive Thickness



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

## 6. Antenna Integration Guide

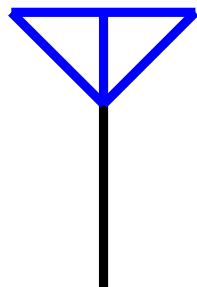


## 6.1 Schematic Symbol and Pin Definition

The circuit symbol for the antenna is shown below. The antenna has 1 pin as indicated below.

Pin	Description
1	RF Feed

ANT1



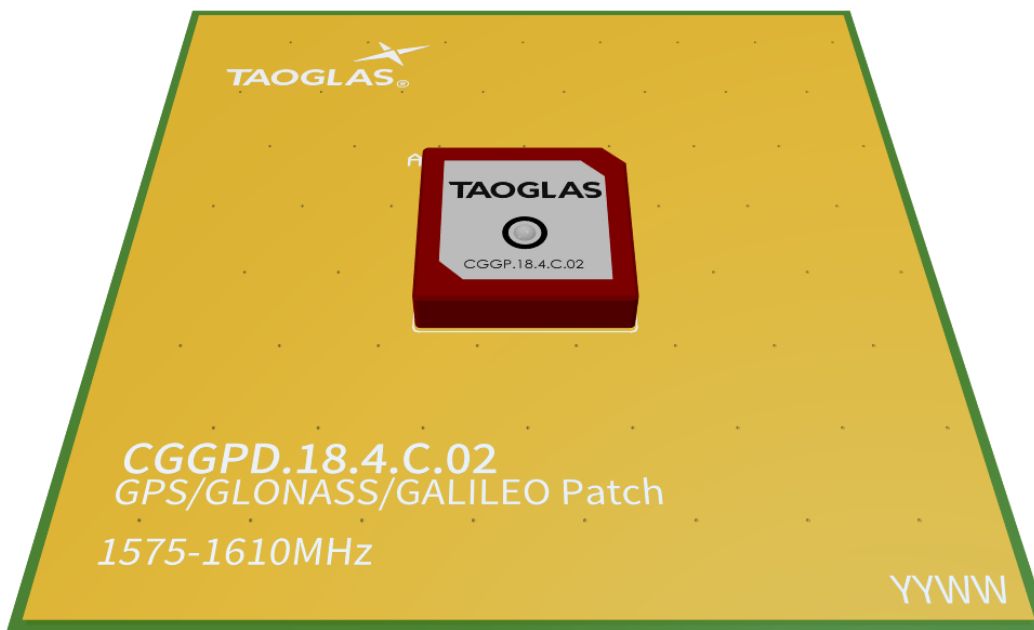
CGGP.18.4.C.02

## 6.2 Antenna Integration

The antenna should be placed at the center of the ground plane with a length and width of 70mm. Maintaining a square symmetric ground plane shape and symmetric environment around the antenna is critical to maintaining the excellent axial ratio and phase center performance shown in this datasheet.



Top Side w/ Solder Mask



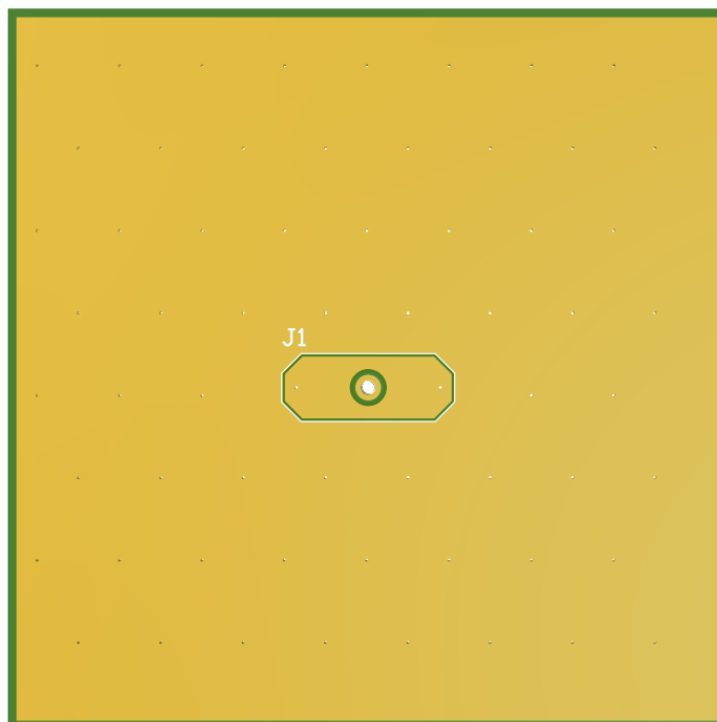
Top Side w/o Solder Mask

## 6.3 PCB Layout

The footprint and clearance on the PCB must comply with the antenna specification. The PCB layout shown in the diagram below demonstrates the antenna footprint.

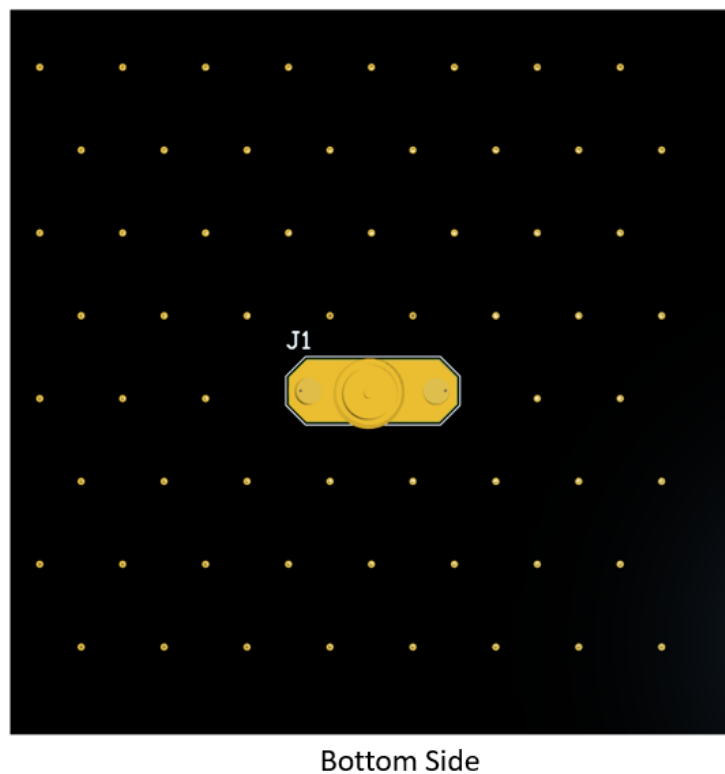
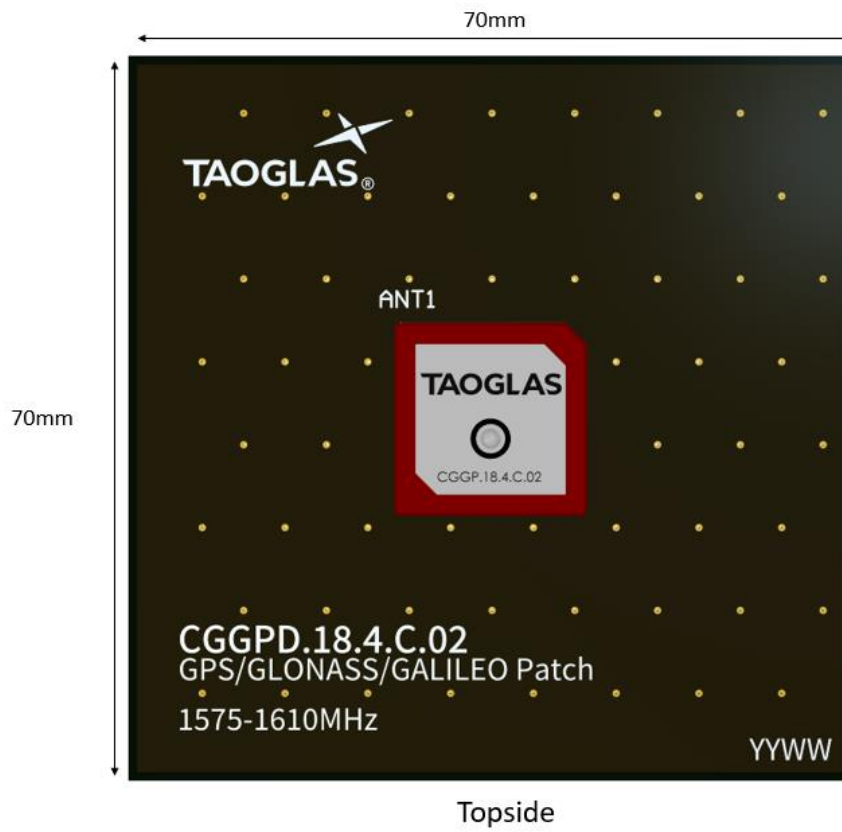


Topside

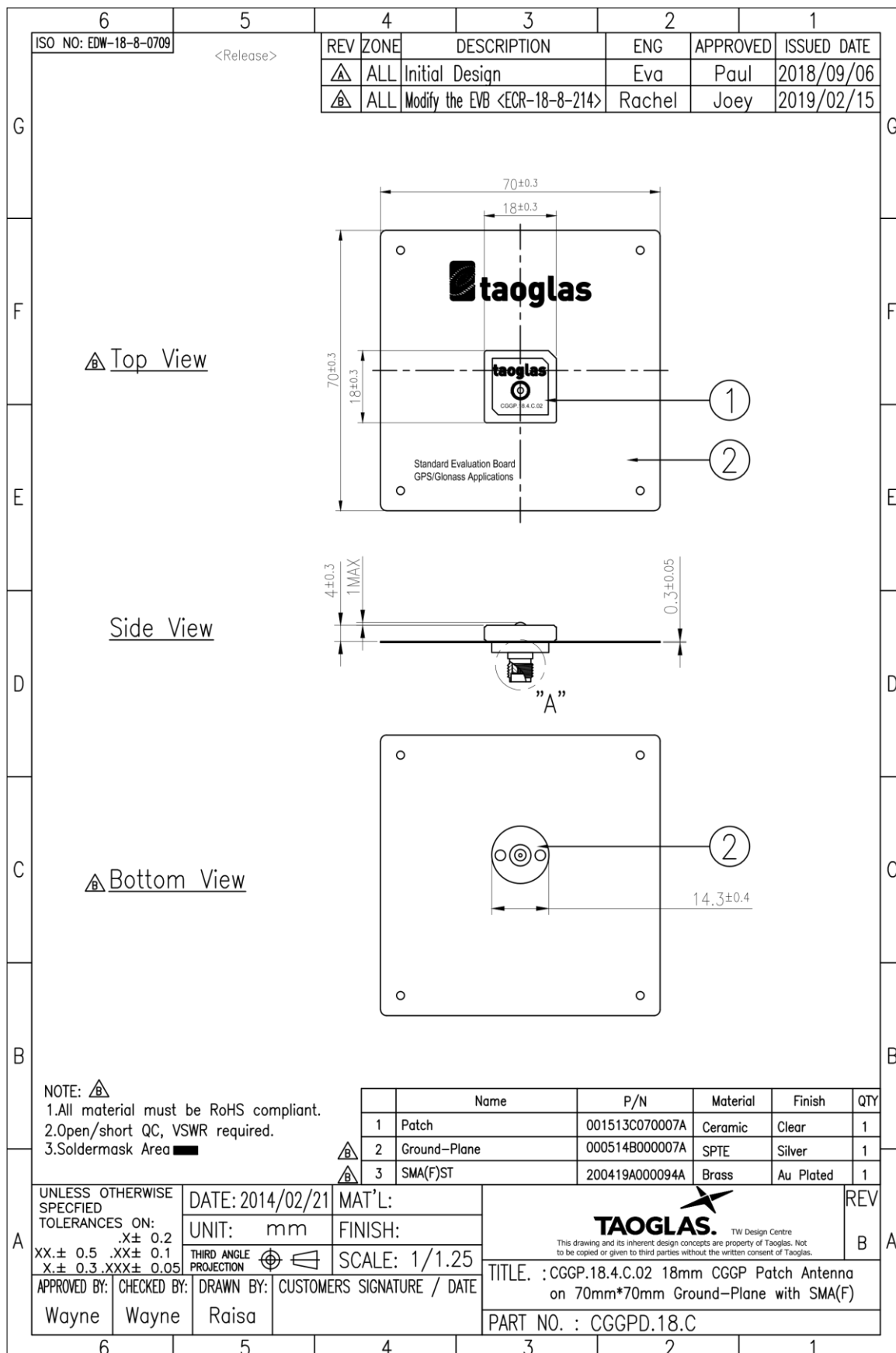


Bottom Side

6.5 Evaluation Board

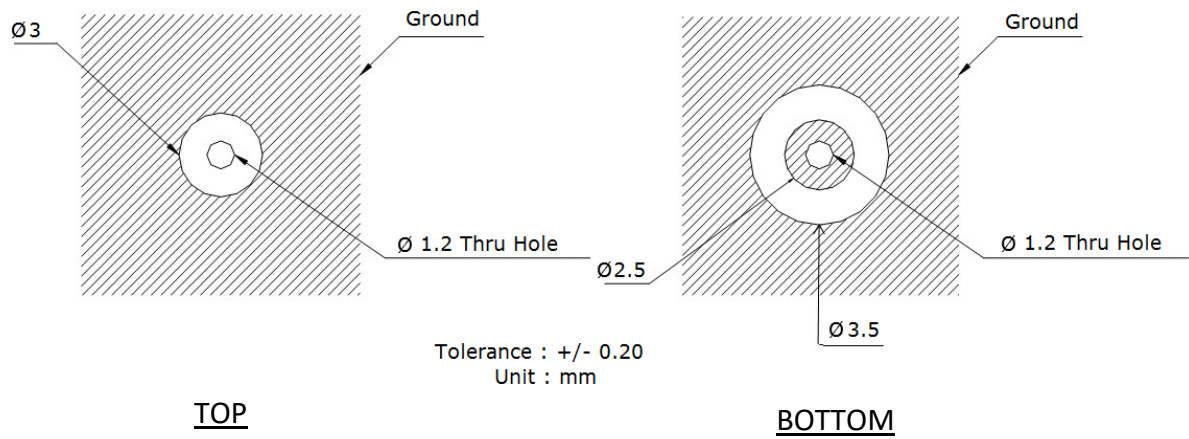


# 7. Evaluation Board (CGGPD.18.C) (Unit: mm)





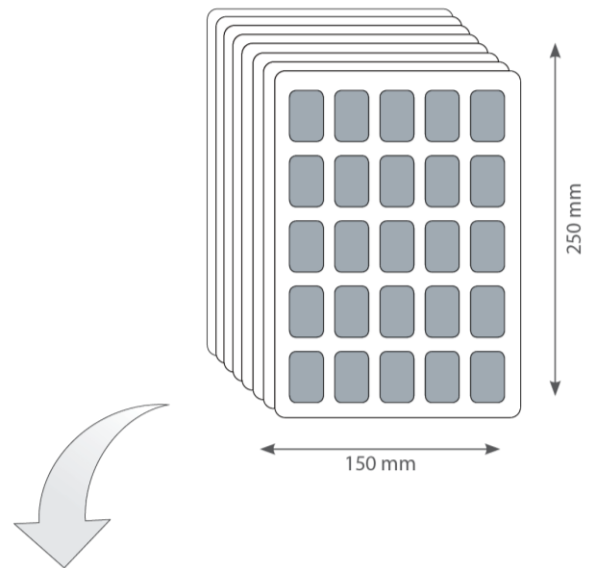
## 8. PCB Footprint Recommendation



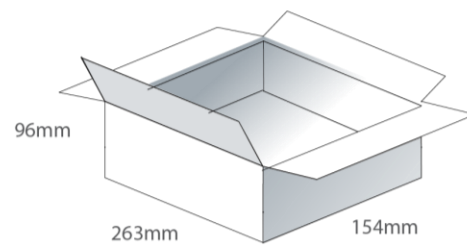
## 9. Packaging

25 pcs CGGBP.18.2.A.02 per tray  
Tray Dimensions - 250\*150\*11 mm

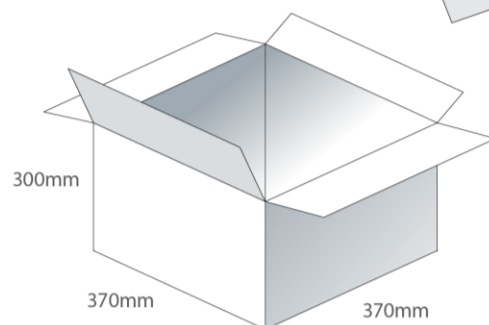
Weight - 22g



200 pcs CGGBP.18.4.A.02 per Inner Carton  
Inner Carton Dimensions - 96\*263\*154 mm



800 pcs CGGBP.18.4.A.08 per Carton  
Carton Dimensions - 370\*370\*300 mm



Changelog for the datasheet

**SPE-11-8-098– CGGP.18.4.C.02**

**Revision: N (Current Version)**

Date:	2023-02-24
Changes:	Integration Guide Added
Changes Made by:	Cesar Sousa

**Previous Revisions**

**Revision: M**

Date:	2021-06-21
Changes:	Updated Pin Length to 2.4mm
Changes Made by:	Dan Cantwell

**Revision: H**

Date:	2018-11-06
Changes:	Added Plots
Changes Made by:	Technical Writer

**Revision: L**

Date:	2021-06-11
Changes:	Updated Mechanical Drawing
Changes Made by:	Gary West

**Revision: G**

Date:	2015-06-01
Changes:	Amended PCB footprint doc
Changes Made by:	Aine Doyle

**Revision: K**

Date:	2021-06-03
Changes:	Updated 2D & 3D Radiation Patterns
Changes Made by:	Gary West

**Revision: F**

Date:	2014-08-19
Changes:	Removed Circular Polarization from Spec
Changes Made by:	Aine Doyle

**Revision: J**

Date:	2021-03-26
Changes:	Updated Weight and Efficiency
Changes Made by:	Jack Conroy

**Revision: E**

Date:	2014-11-06
Changes:	Added EBV info
Changes Made by:	Aine Doyle

**Revision: I**

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

**Revision: D**

Date:	2012-08-14
Changes:	
Changes Made by:	Technical Writer

**Previous Revisions**

<b>Revision: C</b>	
Date:	2012-02-27
Changes:	Added Packaging
Changes Made by:	Technical Writer

<b>Revision: B</b>	
Date:	2012-01-16
Changes:	
Changes Made by:	Technical Writer

<b>Revision: A (Original First Release)</b>	
Date:	2011-09-14
Notes:	
Author:	Technical Writer



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