

SPECIFICATION

- Part No. : **CGIP.25.4.A.02**
- Product Name : 25mm Iridium® / GPS / GALILEO Ceramic
Patch Antenna
1575–1626MHz Single Feed
- Feature : Wide Operation Band
High Gain
Dims:25*25*4mm
Single feed ceramic patch for combined
Iridium®/GPS/GALILEO applications
Iridium® has certified the CGIP.25.4.A.02
antenna for commercial use in
connection with the Iridium®
Communications System
RoHS Compliant



1. Introduction

The Taoglas GPS/GALILEO/Iridium® CGIP.25 ceramic patch antenna is a low profile (4mm), small footprint (25*25mm), single feed antenna designed for combined Iridium®/GPS/GALILEO applications. It has been specifically designed to provide excellent performance in the 1575.42 to 1626.5MHz range.

This ceramic patch offers a typical peak gain of 5dBi for GPS/GALILEO and Iridium®.

These patches are mounted via pin and double-sided adhesive.

While the antenna is certified, some antenna detuning or device or layout issues* may prevent a device from passing Iridium® certification. Taoglas offers performance testing and verification, as well as a custom tuning service for the patch for a specific customer device and ground-plane mounting. Taoglas can also pre-test the whole device for Iridium® certification. Please Contact Us for any assistance required.

*Actual GPS/GALILEO/Iridium® system performance on a device is a function of the overall system design of the device and environment where the device is used. Use of even a tuned patch or any antenna on a compromised device design or application will not guarantee good GPS/GALILEO/Iridium® performance.

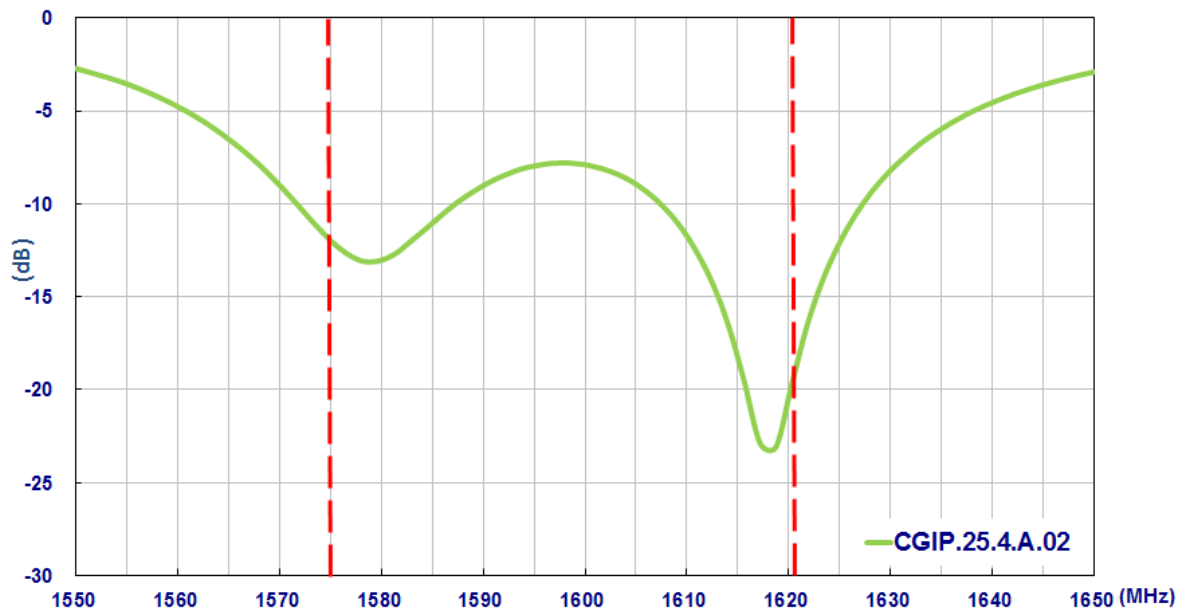
2. Specification

| GPS/GALILEO/Iridium® Antenna | | |
|------------------------------|----------------------------|----------|
| Operating Bands | GPS/GALILEO | Iridium® |
| Frequency (MHz) | 1575.42 | 1621 |
| VSWR | < 2:1 | <1.5:1 |
| Efficiency (%) | 75 typ. | 75 typ. |
| Gain @ Zenith (dBi) | 5 typ. | 5 typ. |
| Average Gain (dBi) | >-2 | >-2 |
| Impedance | 50Ω | |
| MECHANICAL | | |
| Patch Dimensions (mm) | 25x 25 x 4 | |
| Pin Dimension (mm) | φ0.9 x 1.65 | |
| Weight (g) | 5 | |
| ENVIRONMENTAL | | |
| Operation Temperature | -40°C to 85°C | |
| Storage Temperature | -40°C to 105°C | |
| Humidity | Non-condensing 40°C 95% RH | |
| Soldering Temperature | 290°C for 3 seconds max. | |

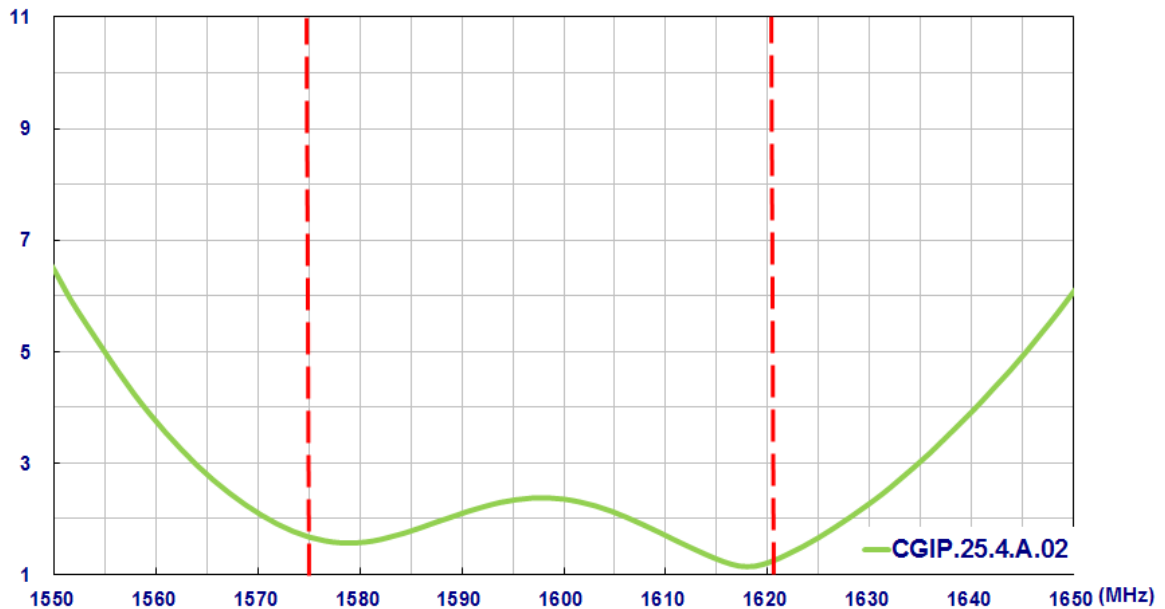
* All electrical properties are tested with the patch on 70*70mm ground.

3. Antenna Properties

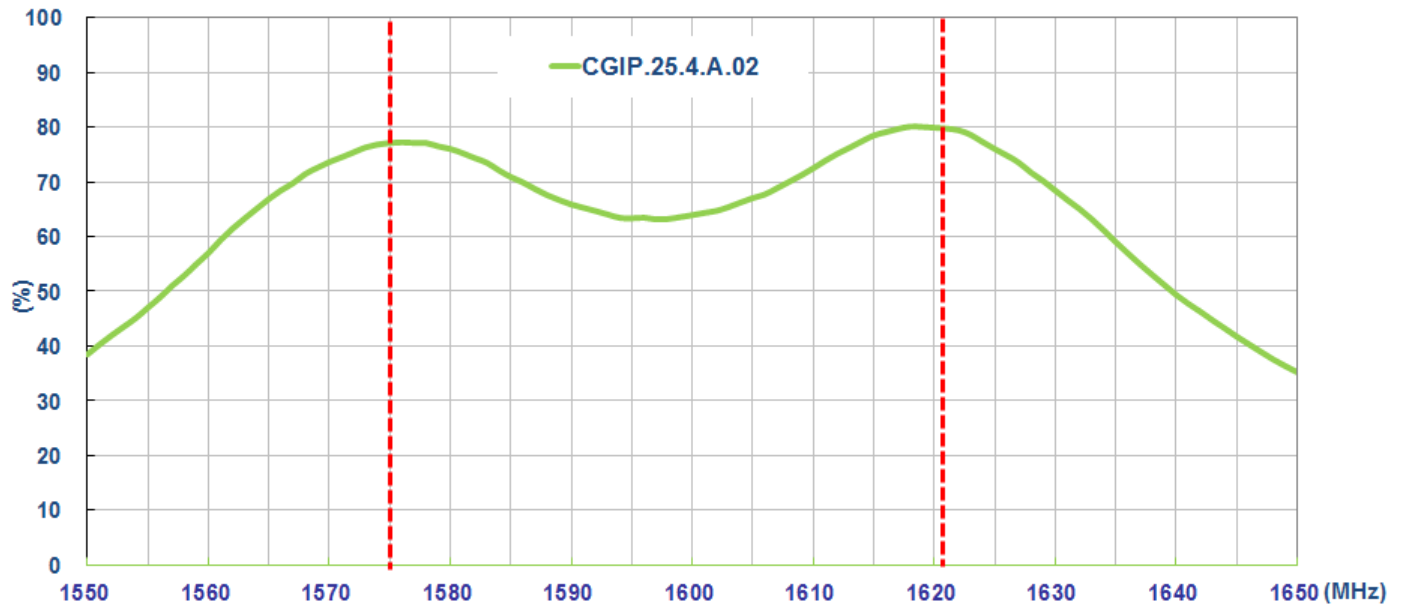
3.1. Return Loss



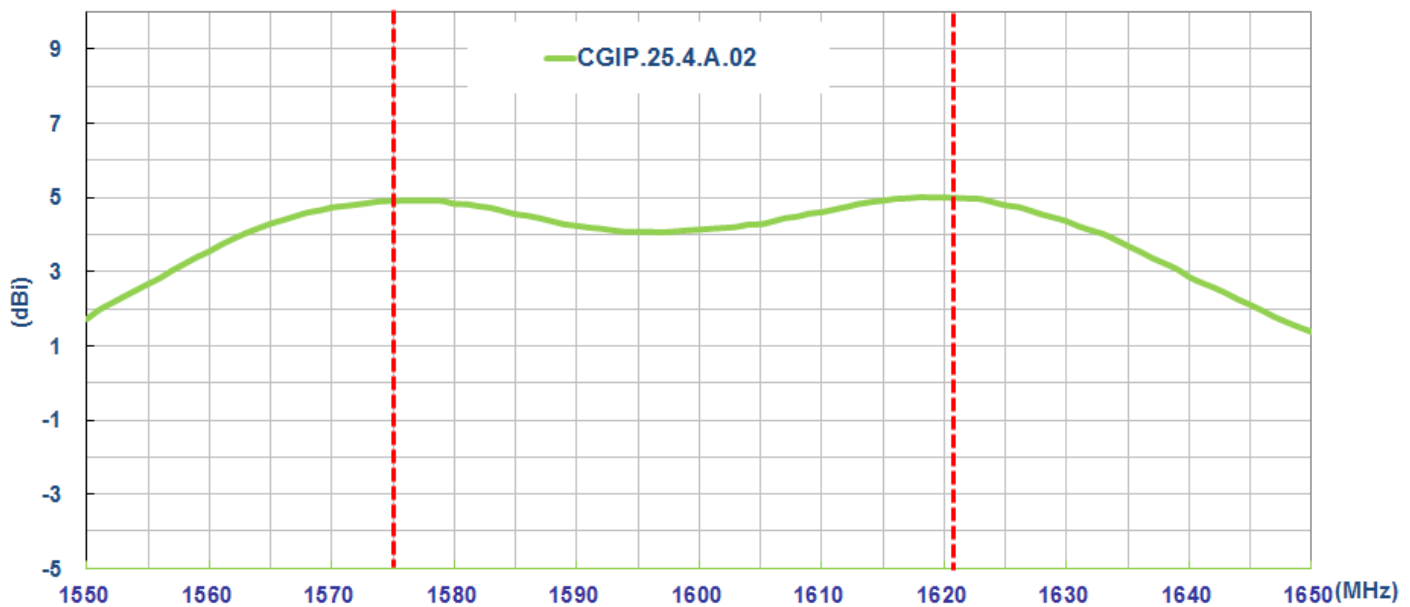
3.2. VSWR



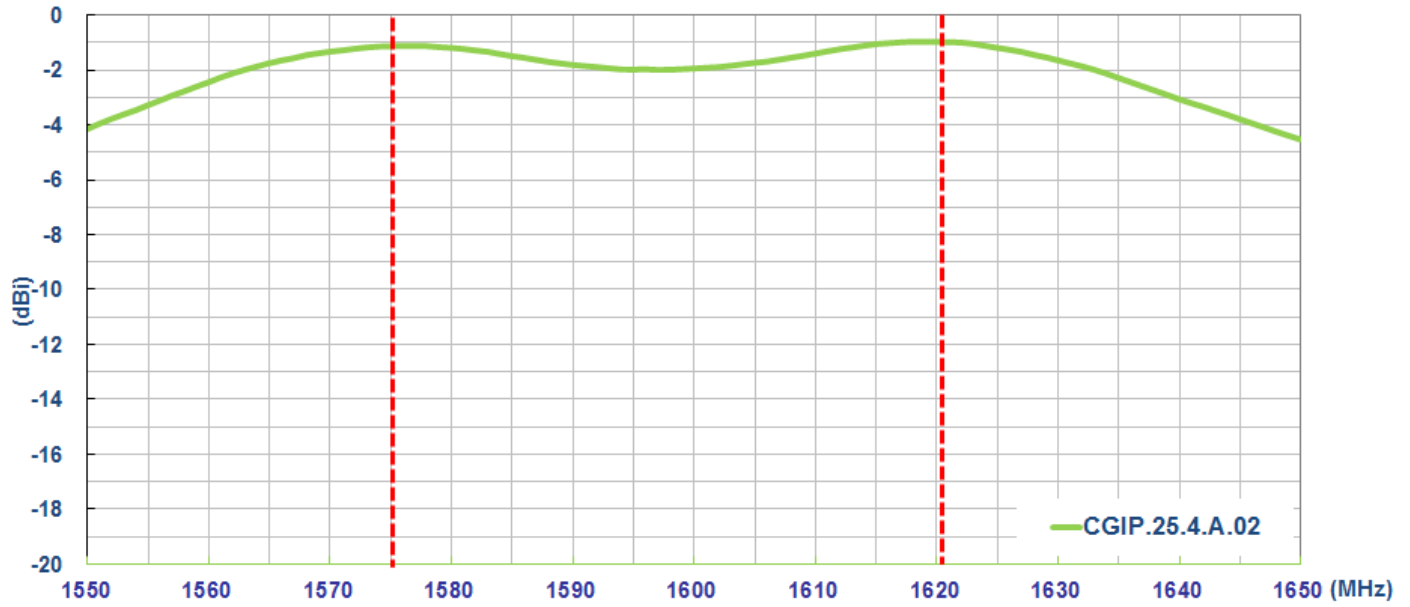
3.3. Radiation Efficiency



3.4. Peak Gain



3.5. Average Gain

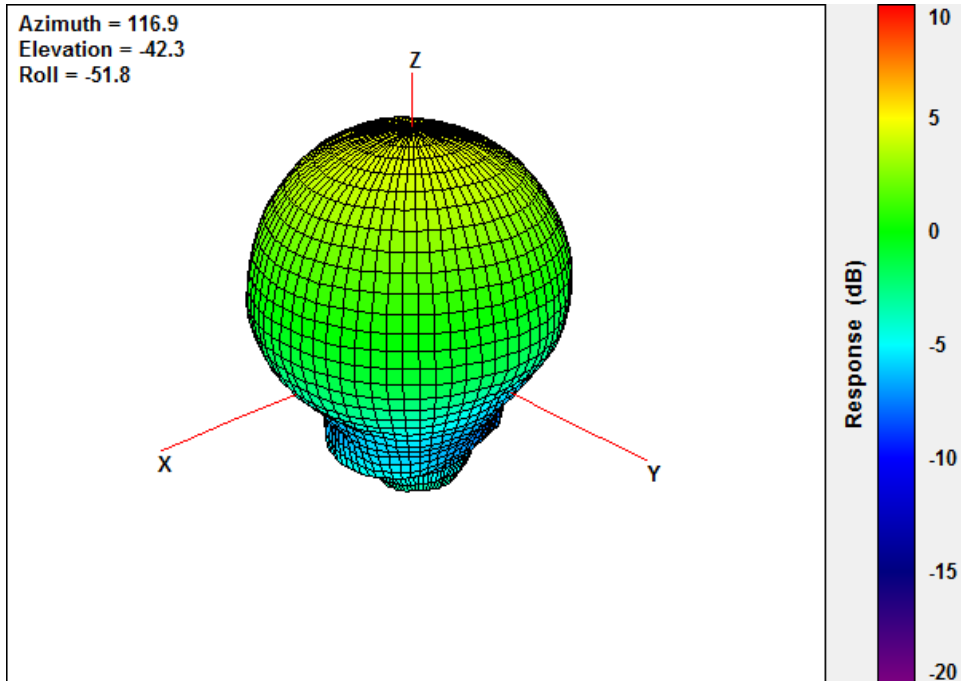


4. Antenna Radiation

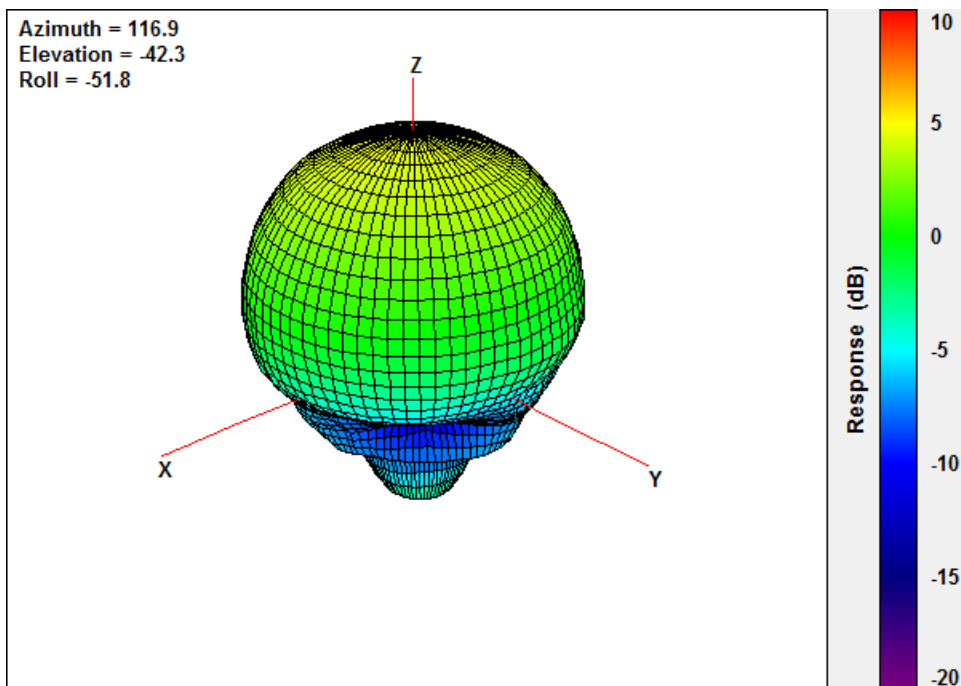


The antenna is measured on a CTIA certified anechoic chamber. The CGIP.25 antenna is put on a 70*70mm ground plane.

4.1. 3D Radiation Pattern @ 1575.42MHz

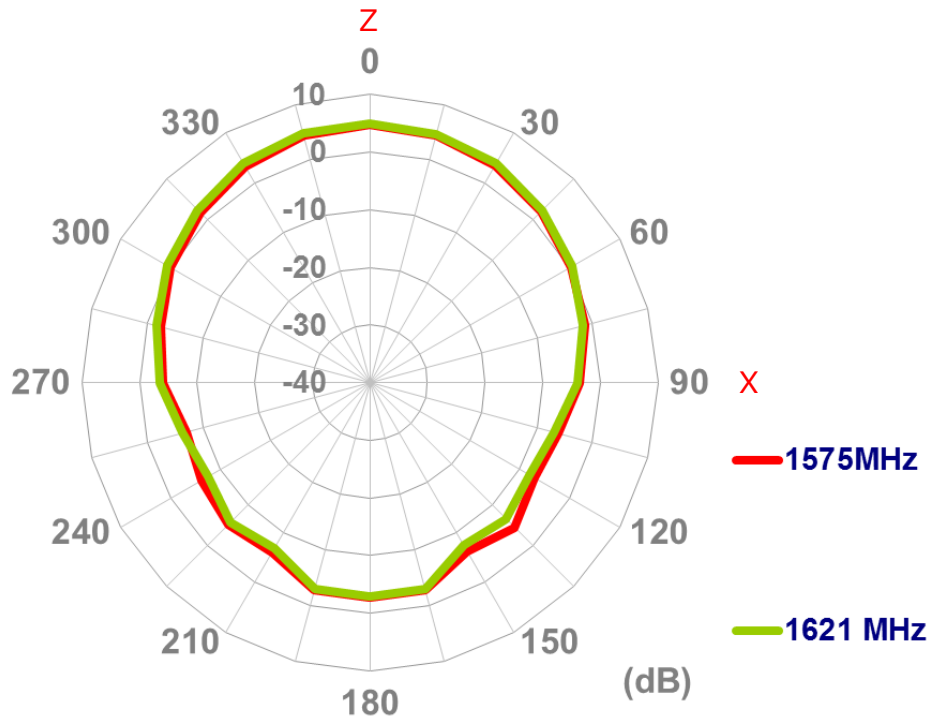


4.2. 3D Radiation Pattern @ 1621MHz

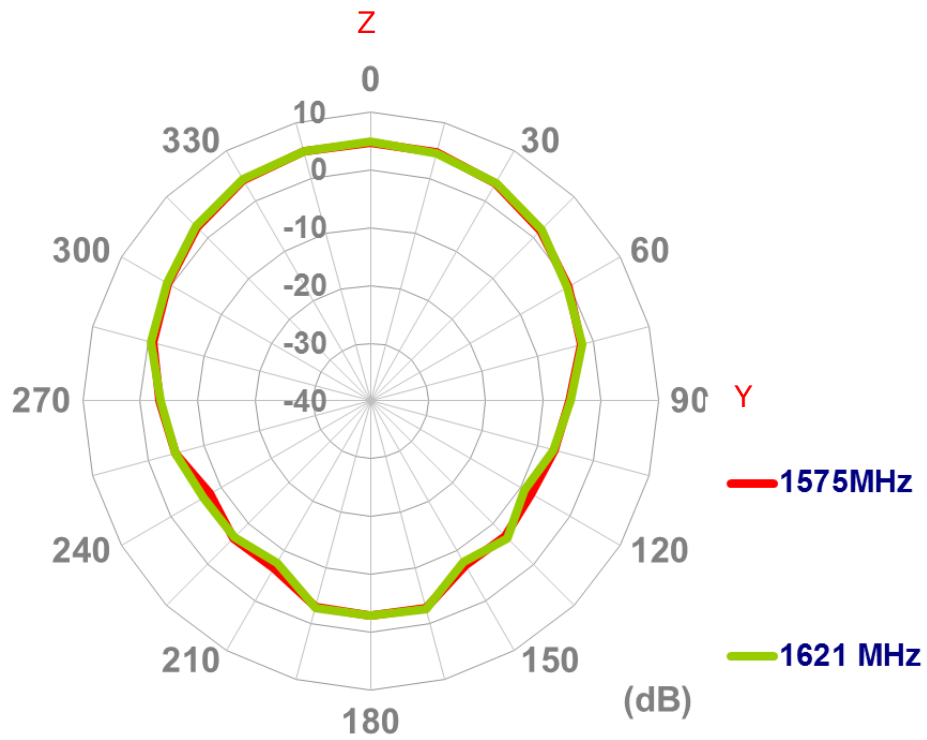


4.3. 2D Radiation Pattern

XZ Plane

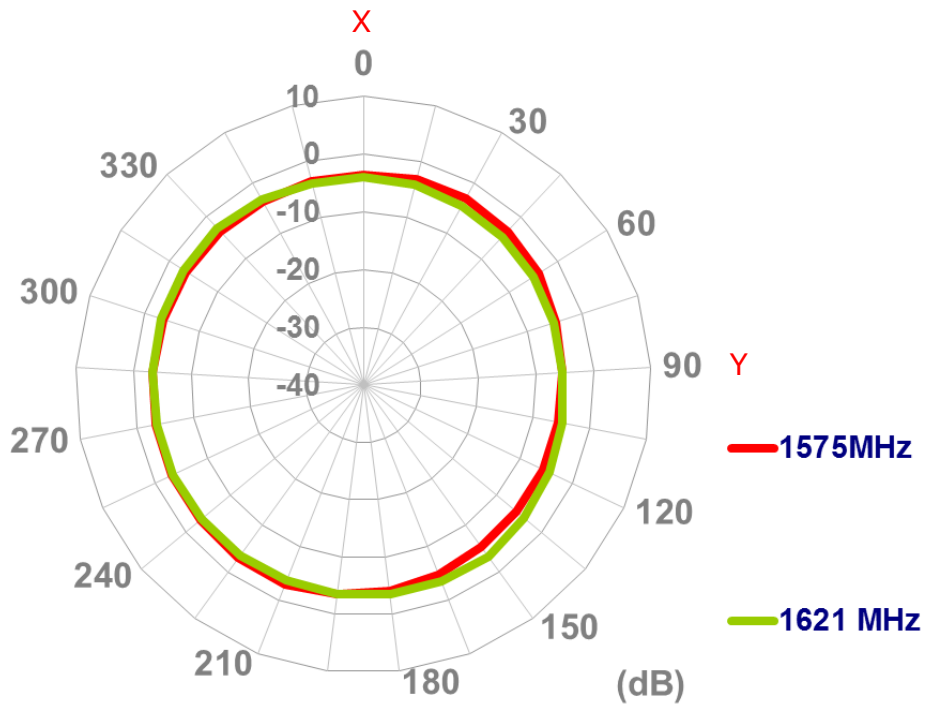


ZY Plane

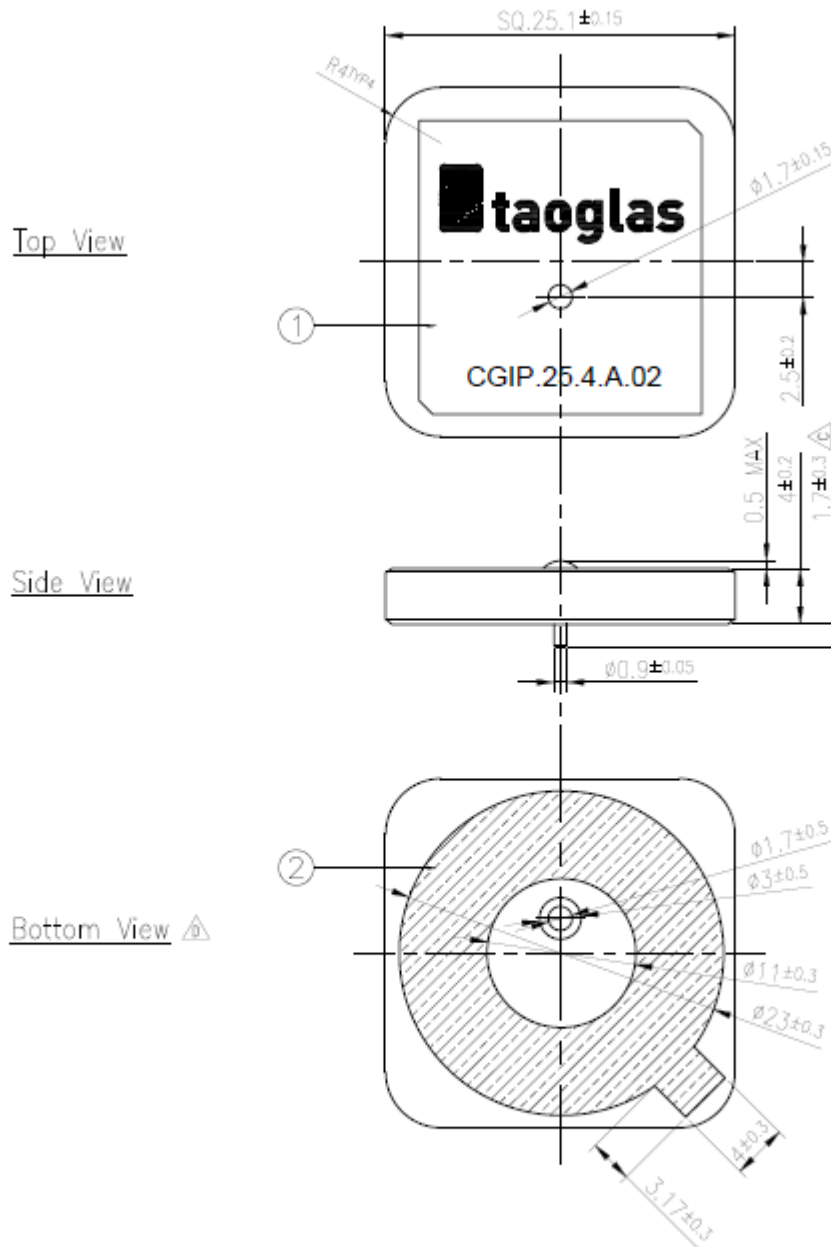





XY Plane



5. Mechanical Drawing (Unit: mm)



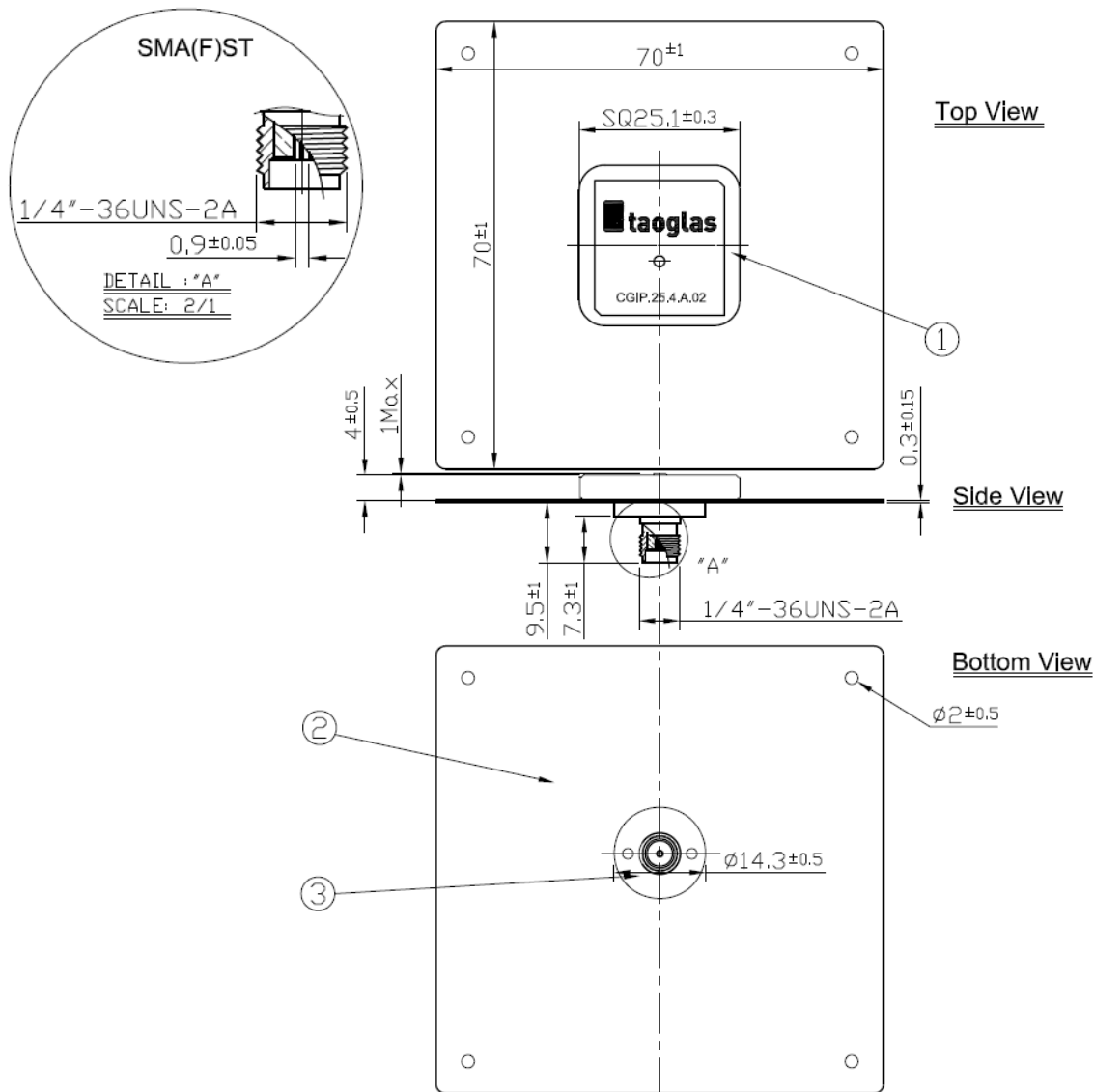
Note:

1. Double sided adhesive area 

| | Name | P/N | Material | Finish | QTY |
|---|-----------------------|----------------|------------|-------------|-----|
| 1 | Patch 25.1*25.1*4mm | 001515E000007A | Ceramic | Clear | 1 |
| 2 | Double sided adhesive | 001515E000007A | NITTO05015 | White Liner | 1 |

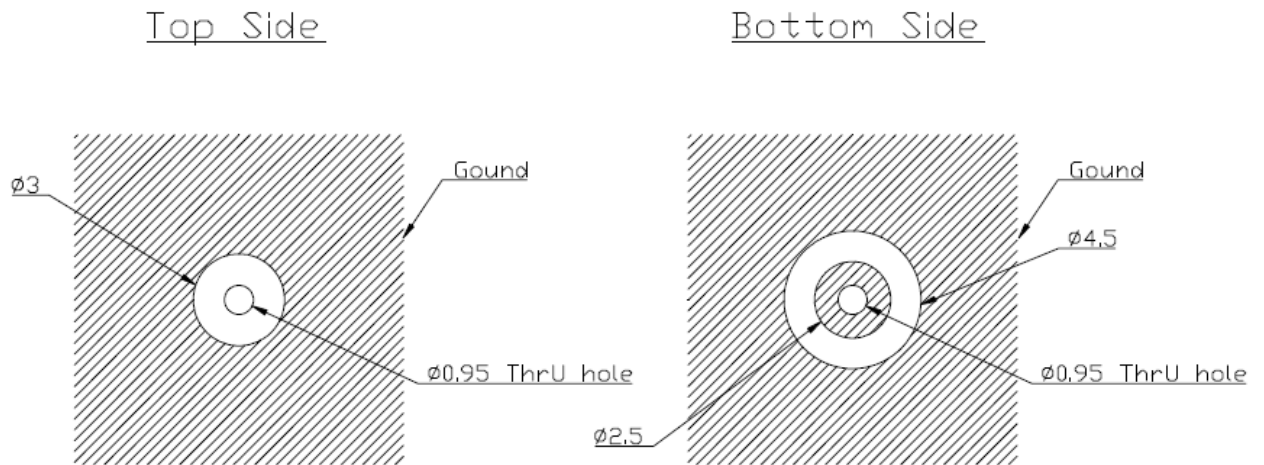
6. CGIP.25.4.A.02 on Evaluation Board

The CGIP.25.4.A.02 is designed with 70*70mm square metal plane, put the antenna at the center of the metal ground, and then the antenna will have excellent performance. The recommendation setup is shown as follows.



| | Name | Material | Finsh | QTY |
|---|---------------|----------|-------|-----|
| 1 | Patch 25x25x4 | Ceramic | Clear | 1 |
| 2 | Ground | Brass | Clear | 1 |
| 3 | SMA(F)ST | Brass | Gold | 1 |

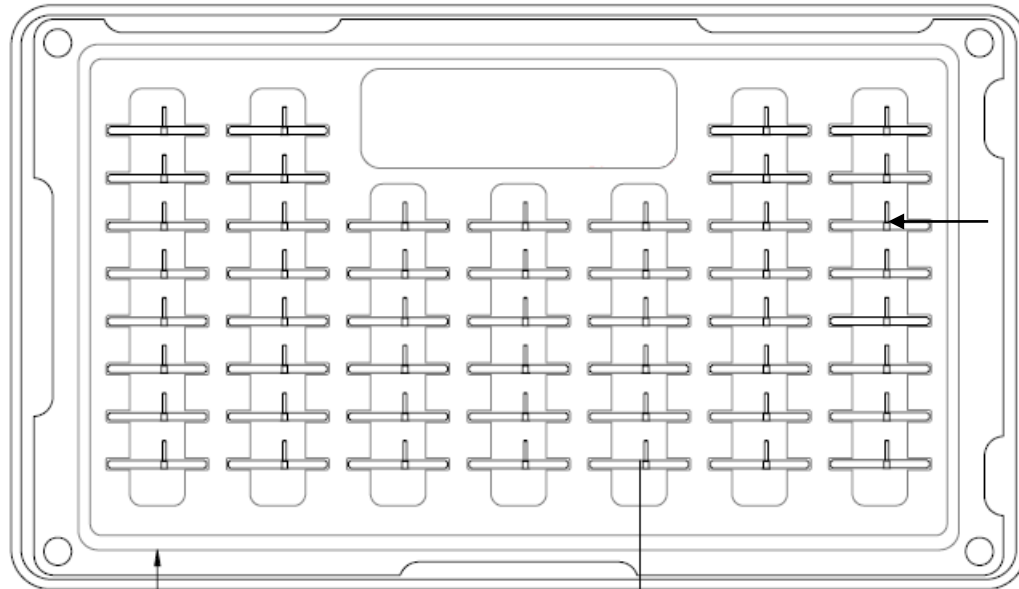
7. PCB Layout Recommendation



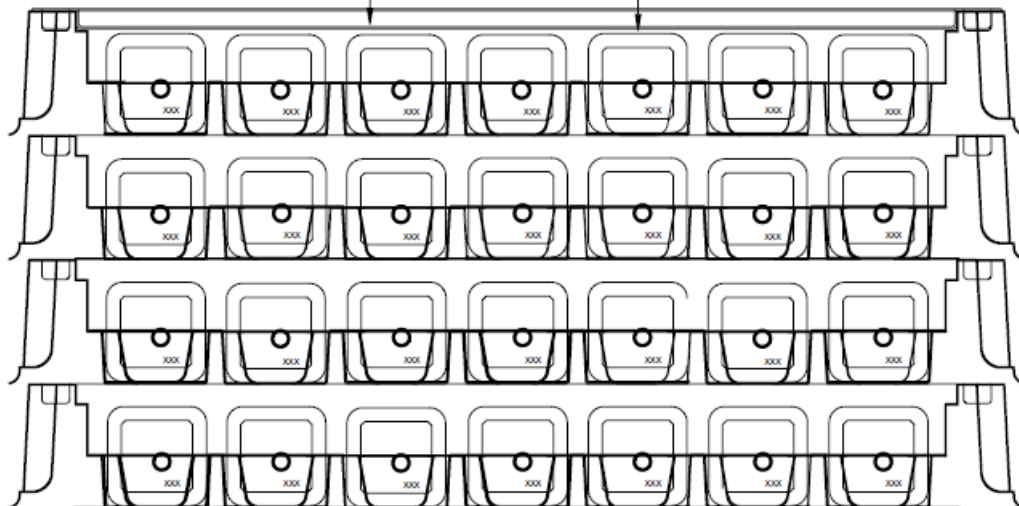
*The antenna feeding in transmission line should connect with the $\phi 2.5$ circle at the Bottom Side, and keep transmission line impedance at 50 ohms for good power transmit from system to antenna.

8. Packaging (Unit: mm)

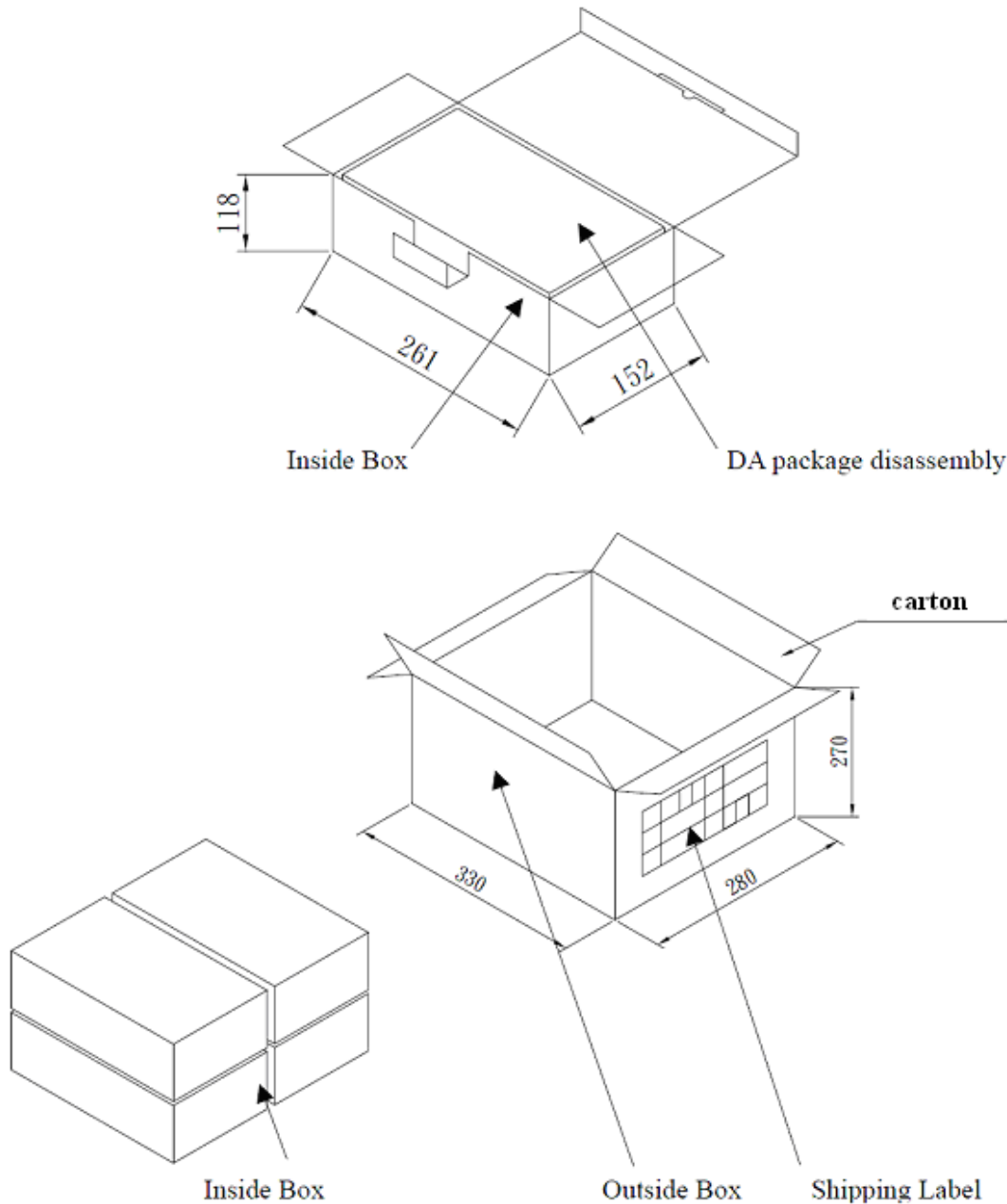
50 pieces
per tray



4 trays
per box



50 pieces per tray
 4 trays per box = 200 pieces per box
 4 boxes per carton = 800 piece per carton



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