# SPECIFICATION

Part No.      :  **CGGP.25.4.A.02**

Product Name  :  4mm thick GPS/GLONASS Patch Antenna, 1575-1610MHz

Feature        :  Wide-band Operation
25*25*4mm
5dBi Peak Gain (on 70mm*70mm ground-plane)
Pin type
Automotive TS16949 Production and Quality Approved
RoHS compliant

# 1. Introduction

This 25 mm ceramic GPS/Glonass 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.
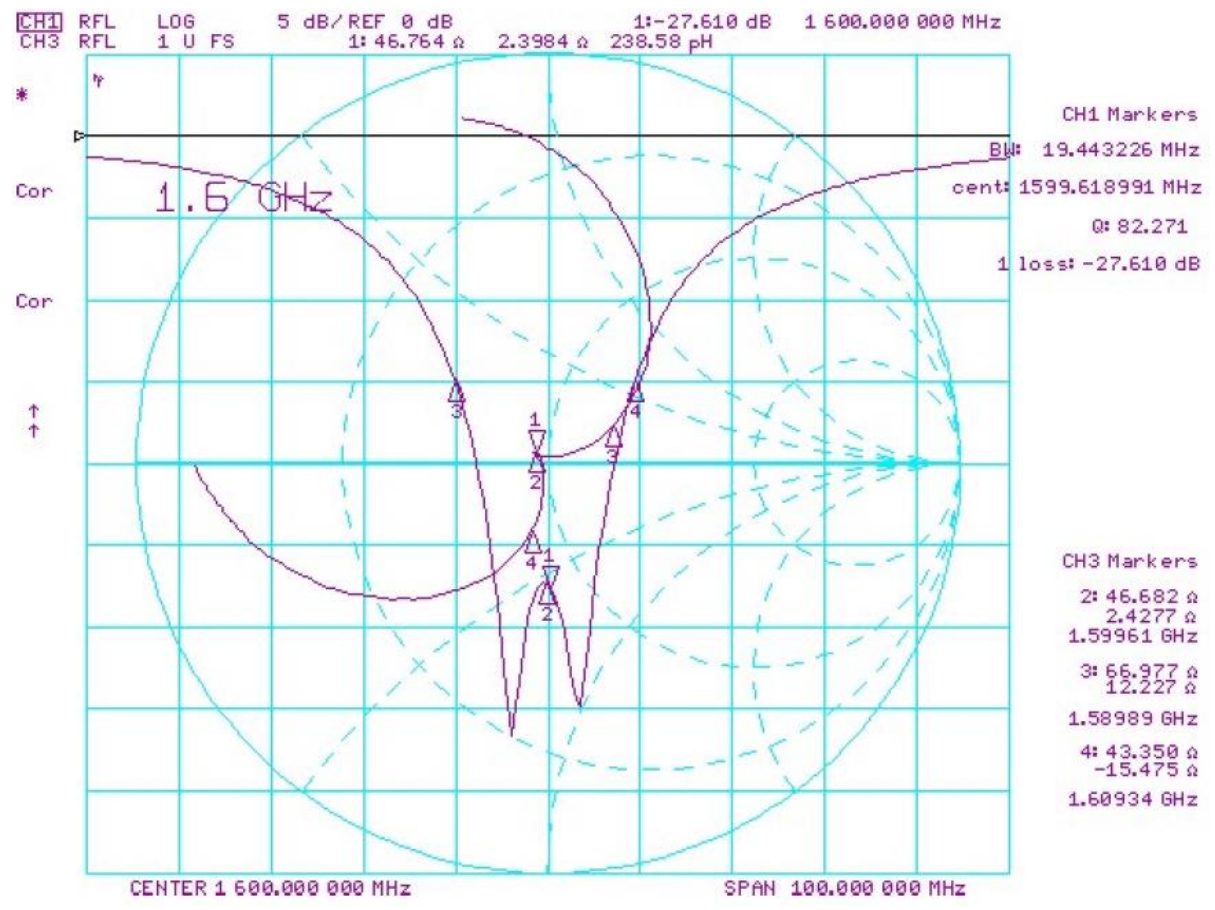
This antenna has been tuned for a centre position on a 70mm*70mm ground-plane. It is manufactured and tested in a TS16949 first tier automotive approved facility. For further optimization to customer specific device environments where positioning is off centre or on different ground-plane sizes, custom tuned patch antennas can be supplied. For more details please Contact Us.
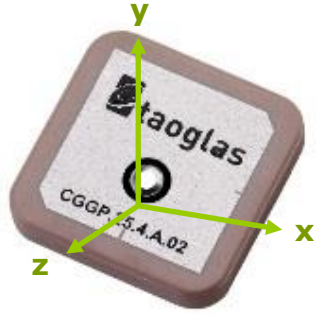
# 2. Specification

| ELECTRICAL | |
|---|---|
| Center Frequency | 1600MHz ± 3MHz |
| Bandwidth | 15 MHz min Return Loss <-10dB |
| VSWR | 1.5 max |
| Gain at Zenith | +5.0 dBi typ. |
| Gain at 10° Elevation | -1.0 dBi typ. |
| Impedance | 50 ohms |
| MECHANICAL | |
| Ceramic Dimension | 25.1 x 25.1 x 4mm |
| Pin Diameter | 0.9mm |
| Pin Length | 1.8mm |
| ENVIRONMENTAL | |
| Operation Temperature | -40°C to 105°C |
| Humidity | Non-condensing 65°C 95% RH |

\* Antenna properties were measurement with the antenna mounted on 70mm*70mm Ground Plane
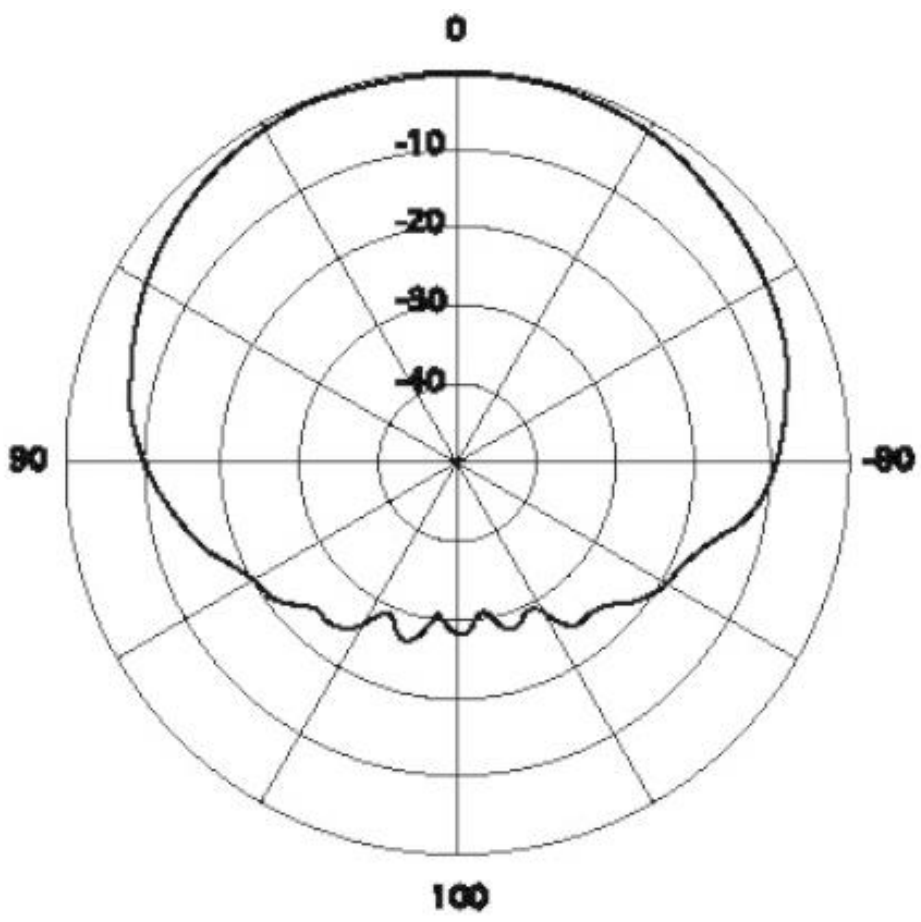
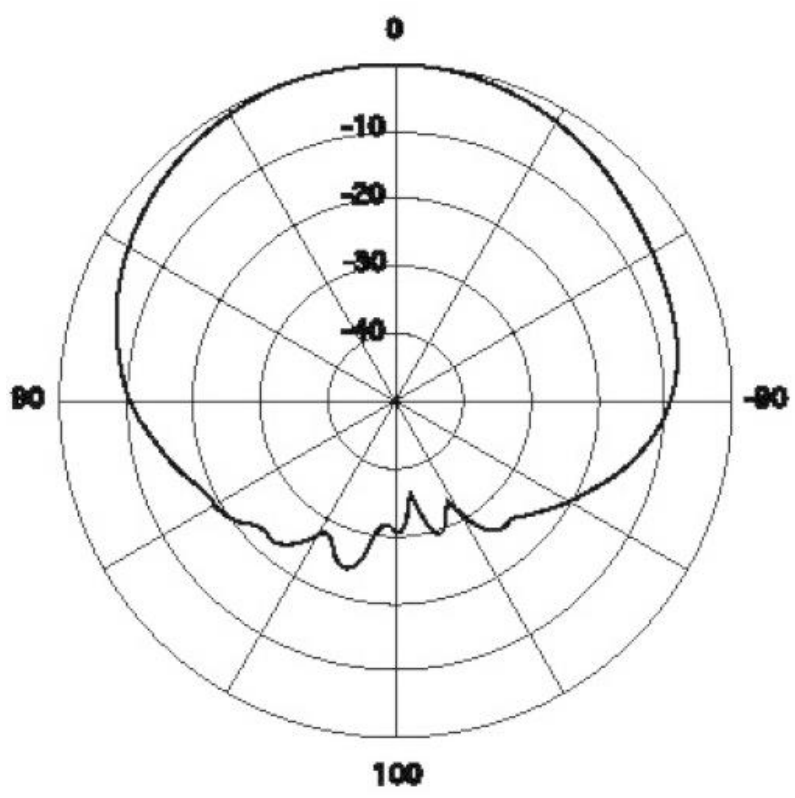Taoglas Part # CGGPD.25.A

# 3. Antenna S11 Properties



CH1 RFL LOG 5 dB/ REF 0 dB 1:-27.610 dB 1 600.000 000 MHz
CH3 RFL 1 U FS 1: 46.764 Ω 2.3984 Ω 238.58 pH

CH1 Markers
BW: 19.443226 MHz
cent: 1599.618991 MHz
Q: 82.271
1 loss: -27.610 dB

CH3 Markers
2: 46.682 Ω
2.4277 Ω
1.59961 GHz
3: 66.977 Ω
12.227 Ω
1.58989 GHz
4: 43.350 Ω
-15.475 Ω
1.60934 GHz

CENTER 1 600.000 000 MHz      SPAN 100.000 000 MHz
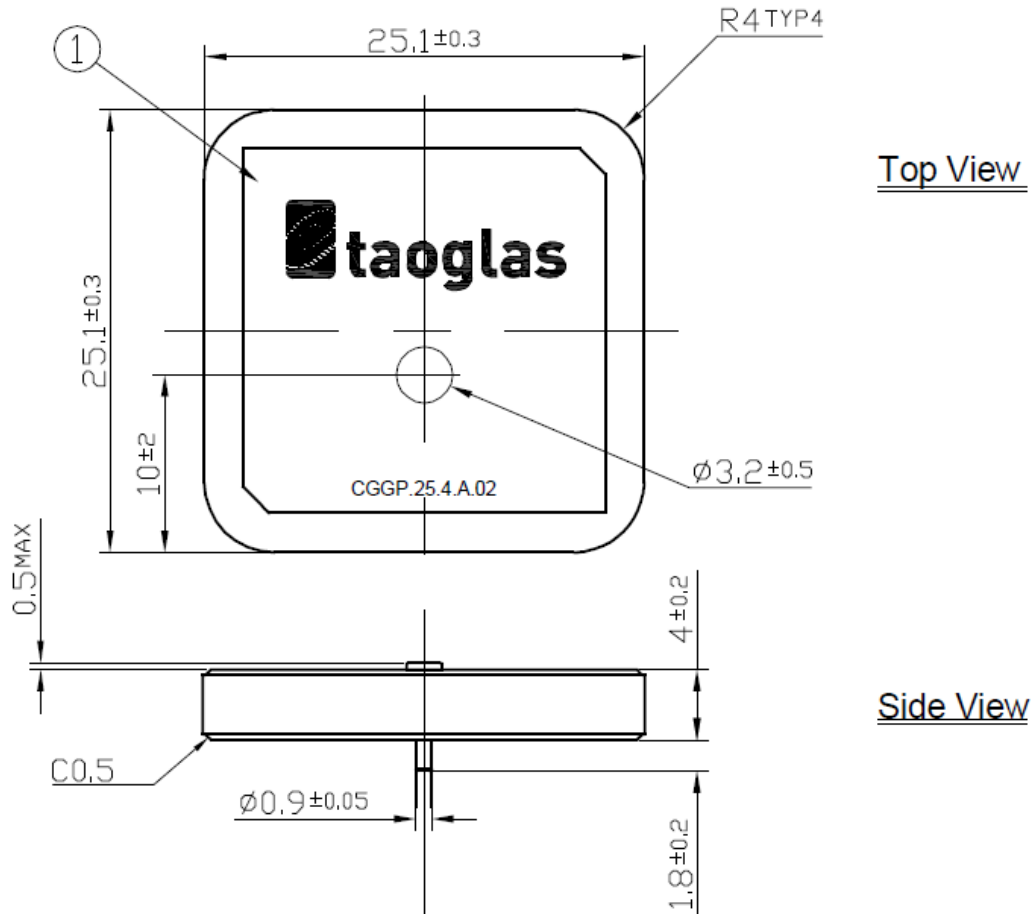
# 4. Antenna Radiation Properties



## 4.1. XZ – Plane Radiation

## 4.2. YZ- Plane Radiation

# 5. Mechanical Drawing



**Top View**

25.1±0.3

25.1±0.3

R4 TYP4

10±2

Ø3.2±0.5

CGGP.25.4.A.02

**Side View**

0.5 MAX

C0.5

Ø0.9±0.05
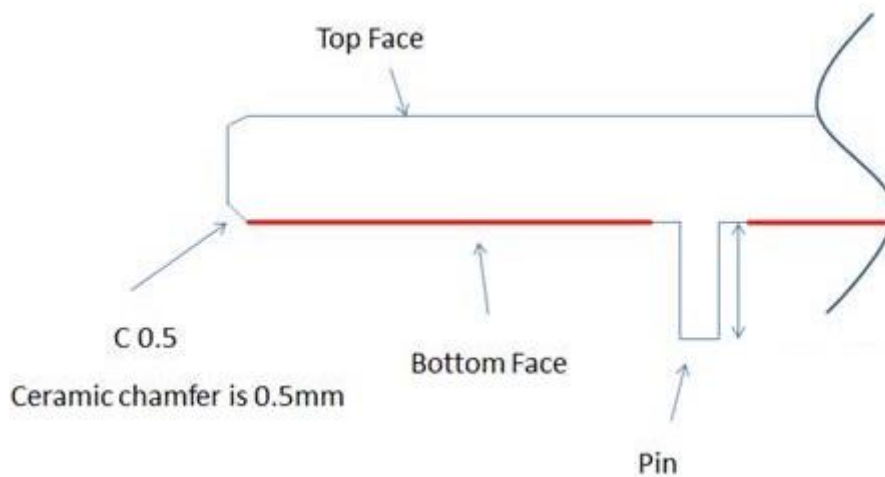
4±0.2

1.8±0.2

Ø1.7±0.5

Ø3±0.5

Bottom View

② Ø23±0.3

Ø11±0.3

3.17±0.3

4±0.3
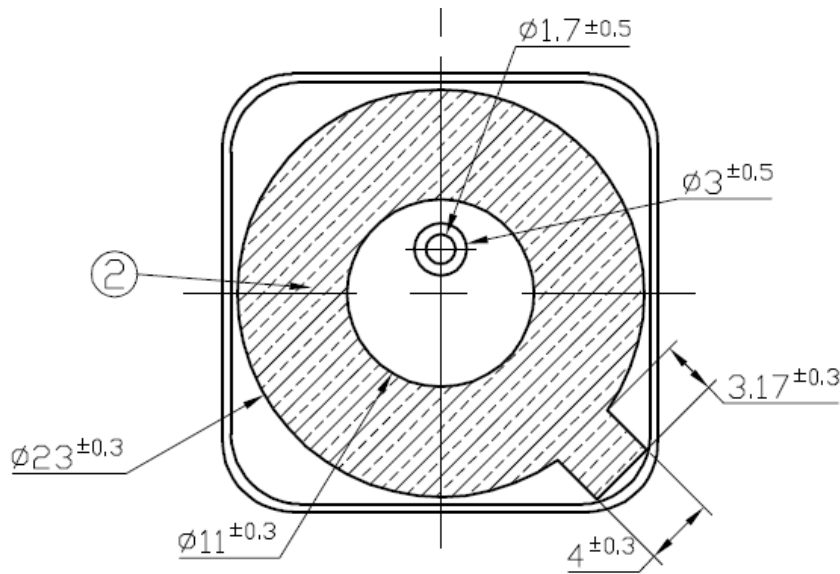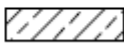
NOTES:
1. Double sided adhesive area.

Unit : mm

## 5.1 Adhesive Thickness



Top Face

C 0.5
Ceramic chamfer is 0.5mm

Bottom Face

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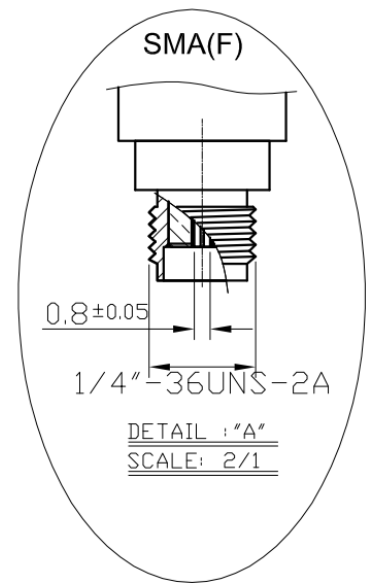
Red Line shows the adhesive without Liner – thickness 0.08~0.1mm

# 6. PCB Footprint Recommendation



Ø3
Ground
Ø 1.2 Thru Hole

Ground
Ø 1.2 Thru Hole
Ø2.5
Ø 3.5

Tolerance : +/- 0.20
Unit : mm
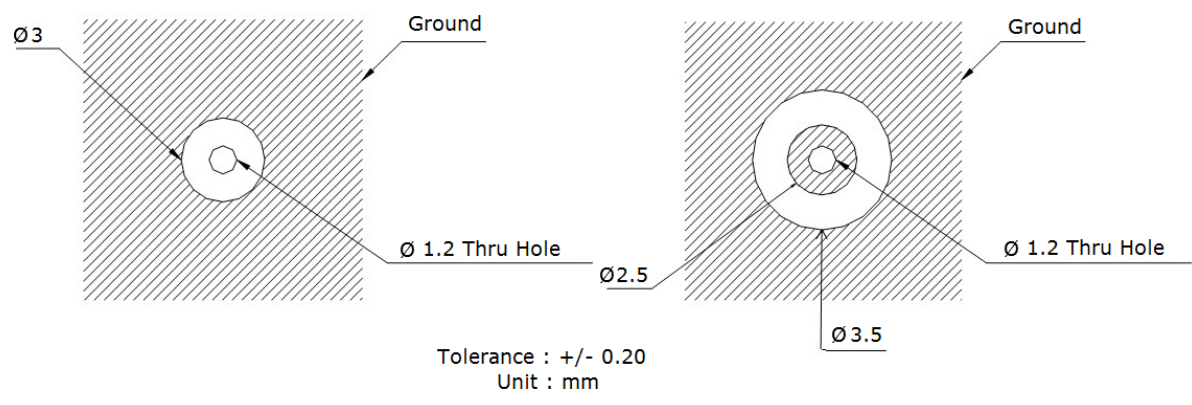
# 7. Evaluation Board (CGGPD.25.A)



SMA(F)

0.8±0.05

1/4"-36UNS-2A

DETAIL : "A"
SCALE: 2/1
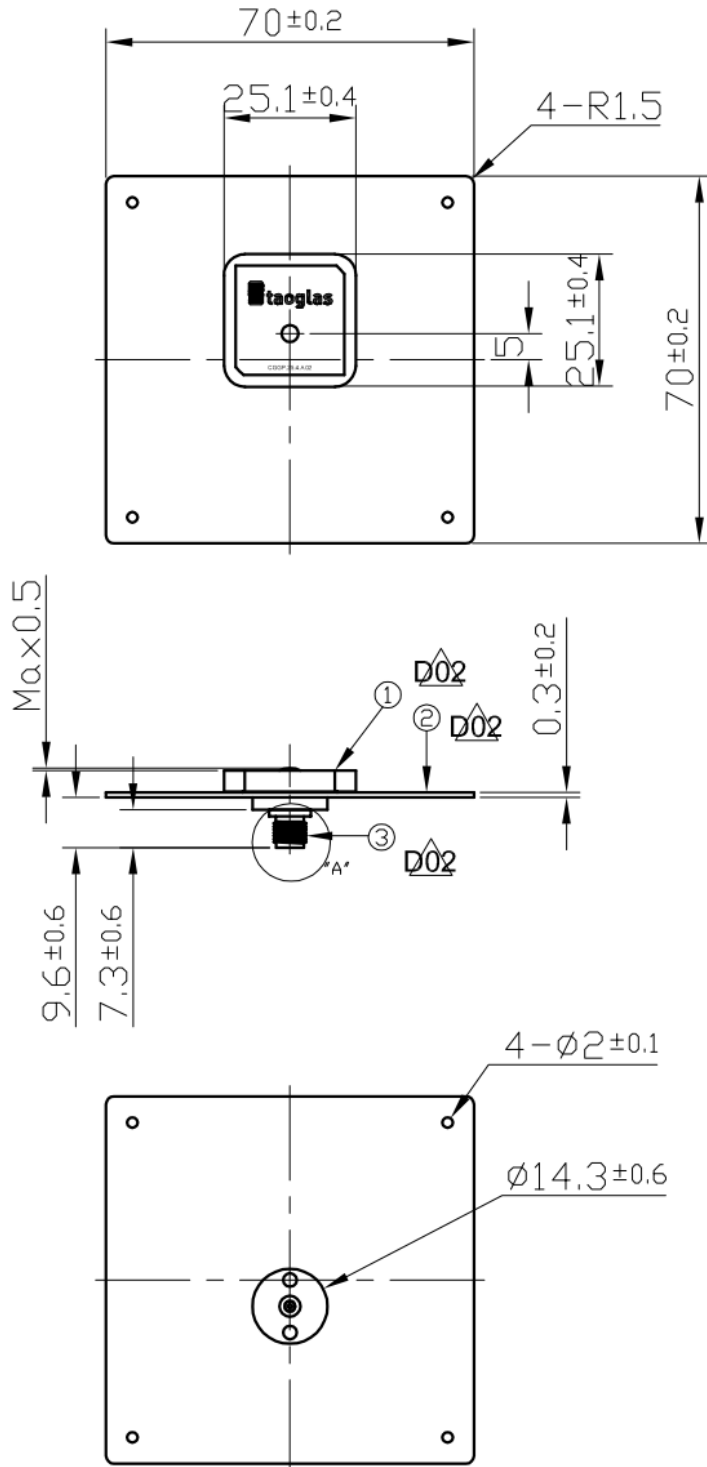
| | Name | Finish | QTY |
|---|---|---|---|
| 1 | Patch(25x25x4mm) | Clear | 1 |
| 2 | Ground-Plane(70x70x0.3mm) | Ni Plated | 1 |
| 3 | SMA(F) ST | Gold | 1 |

Patch Antenna

SMA Adapter

Ground Plane
70 by 70mm

Calibration Point
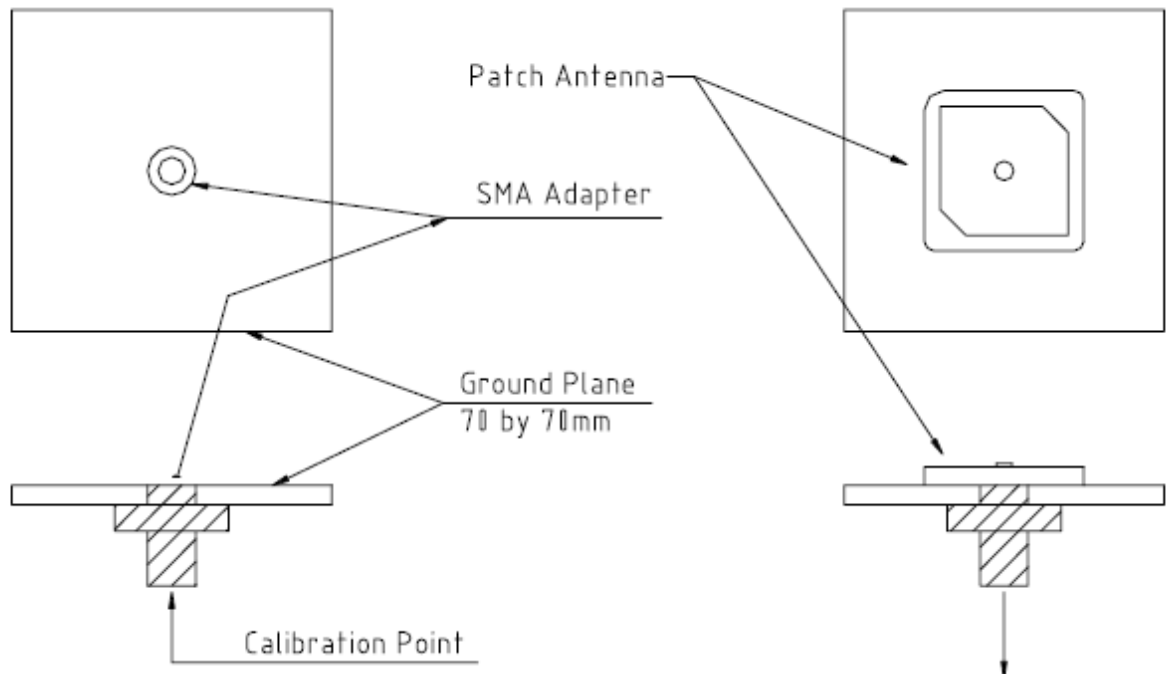
# 8. Packaging

## 8.1.  Inner Tray
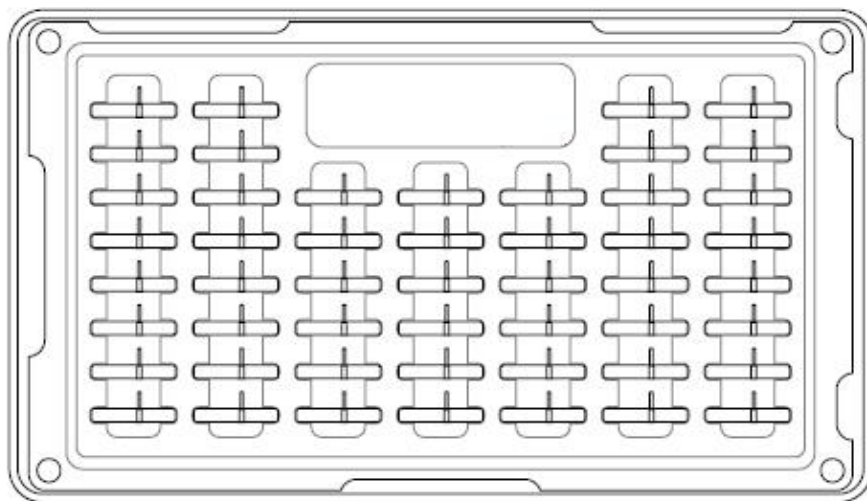




200 pieces per tray

## 8.2.  Carton



Inside Box — DA package disassembly

118
261
152



exterior case
270
330
280

Inside Box      Outside Box      Shipping Label