

Specification

Patent Pending

Part No. : **GGBTP.35.3.A.40**

Description : Terrablast - Lightweight
GPS/GLONASS/GALILEO/BEIDOU
35mm Patch Antenna

Features : GPS L1 / GLONASS L1 / GALILEO E1 / BEIDOU B1
Low Profile – 3.5mm Height
Pin Type Terrablast Patch Antenna
10g Ultra-Lightweight Patch
Peak Gain: 4dBi
Efficiency: 70%
Ultra-Impact Resistant
Low Axial Ratio
Dimensions: 35x35x3.72mm
Patent Pending Design
RoHS compliant



1. Introduction

The Terrablast GGBTP.35.3.A.40 is a revolutionary new antenna developed to meet the unique needs of the UAV and automotive industries. It uses a patent pending antenna technology which results in much lighter weight and withstands impacts. The GGBTP.35.3.A.40 weights just 10g, compared with 15.5g for an equivalent ceramic patch antenna. Its impact-resistant characteristics make it ideal for applications such as automotive e-call systems or UAVs, where the antenna's mechanical and electrical integrity should survive after a crash.

The GGBTP.35.3.A.40 is mounted via a pin and double-sided adhesive. This antenna works well without modifications in most environments but can be tuned and further optimized to different ground-planes and enclosures if required. Custom antenna modifications are subject to possible NRE and minimum order quantity.

Terrablast antennas are not suitable for SMD reflow. The correct method is manual soldering at a soldering temperature of 380°C +/- 20°C for a duration of 3 to 5 seconds. All Terrablast antennas undergo rigorous temperature, vibration and impact tests and exceed the highest ISO16750 standards.

For further information, or support to test and integrate Taoglas Terrablast technology please contact your regional Taoglas facility.

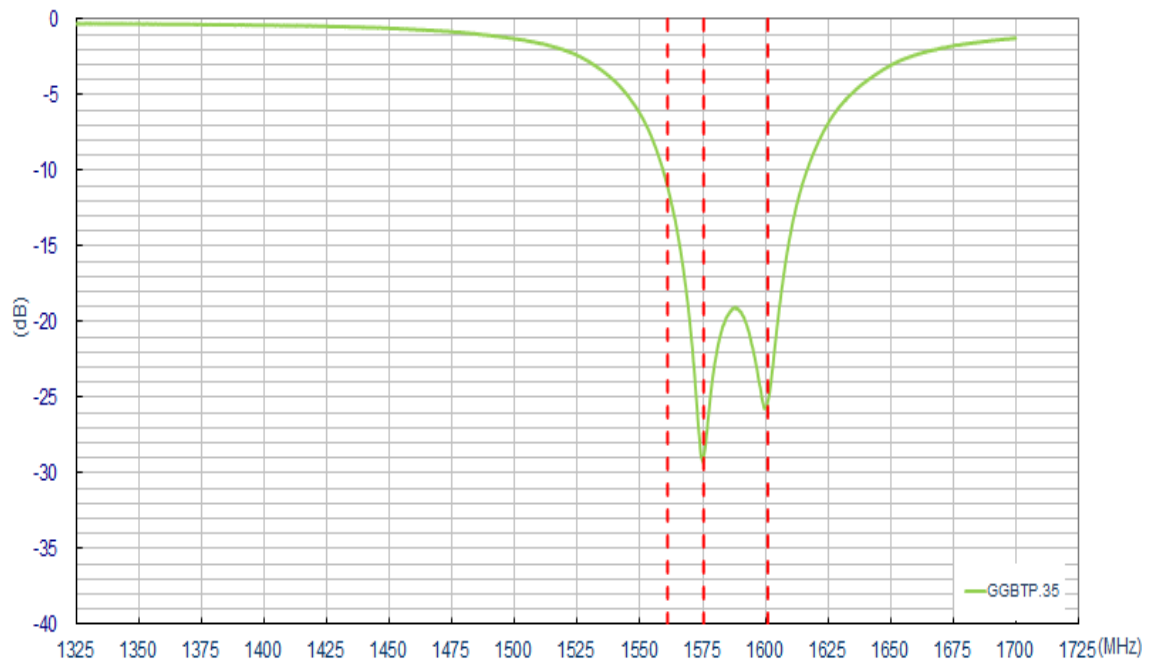
2. Specification

ELECTRICAL*			
Application Bands	Beidou B1	GPS L1	GLONASS L1
Operation Frequency (MHz)	1561	1575.42	1602
Efficiency (%)	72.58	69.81	70.27
Peak Gain (dBi)	4.12	4.03	4.33
Average Gain (dBi)	-1.39	-1.56	-1.53
Impedance	50 ohms		
Return Loss (dB)	<- 10 across operating bands		
Polarization	RHCP		
MECHANICAL			
Patch Dimension (mm)	35 x 35 x 3.5		
Pin Diameter (mm)	0.9		
Pin Length (mm)	2.0		
Weight (g)	9.7		
ENVIRONMENTAL			
Storage Temperature	-40°C to 85°C		
Operation Temperature	-40°C to 85°C		
Humidity	Non-condensing 65°C 95% RH		
RELIABILITY TEST			
Low Temperature	-40°C, 24hrs		
High Temperature	+85°C, 48hrs		
Temperature Cycling	ISO16750 standard, total 240hrs		
Temperature Step	ISO16750 standard, total 300mins		
Free fall	12m		
Shock	10 shocks per axis on 6 faces		
Vibration	ISO16750 standard, 8 hours / axis		
Pin pull force	>5kg-f		
Production life testing (+105°C)	AECQ200 standard, total 1000hrs		

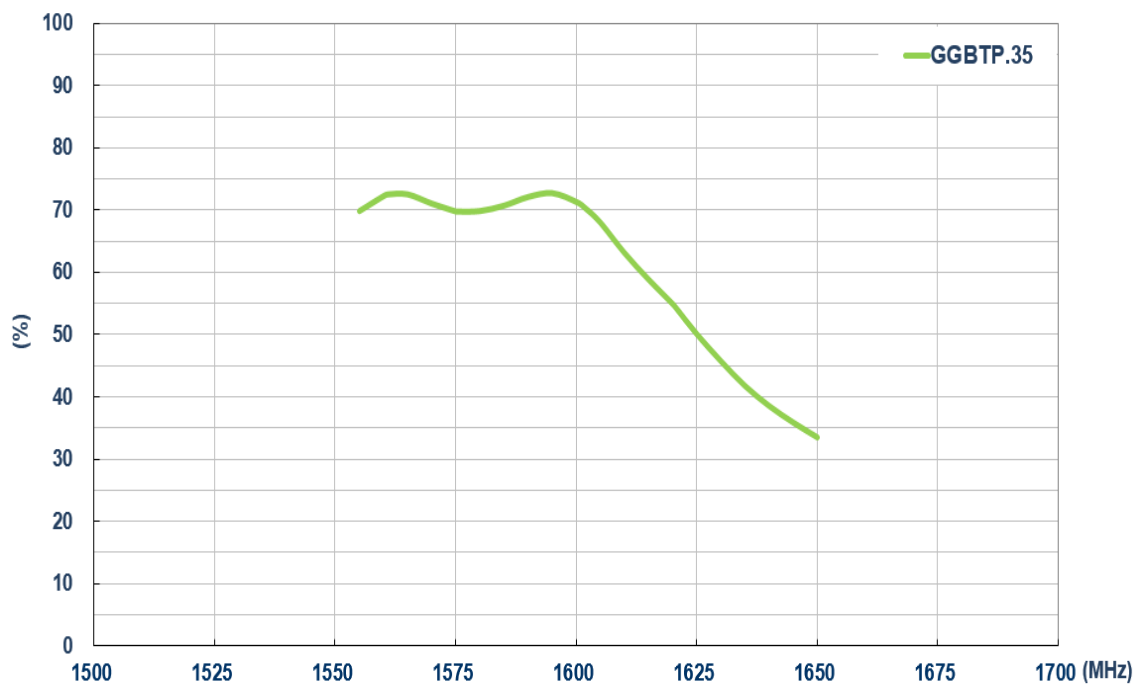
* Antenna properties were measured with the antenna mounted on 70*70mm Ground Plane

3. Antenna Characteristics

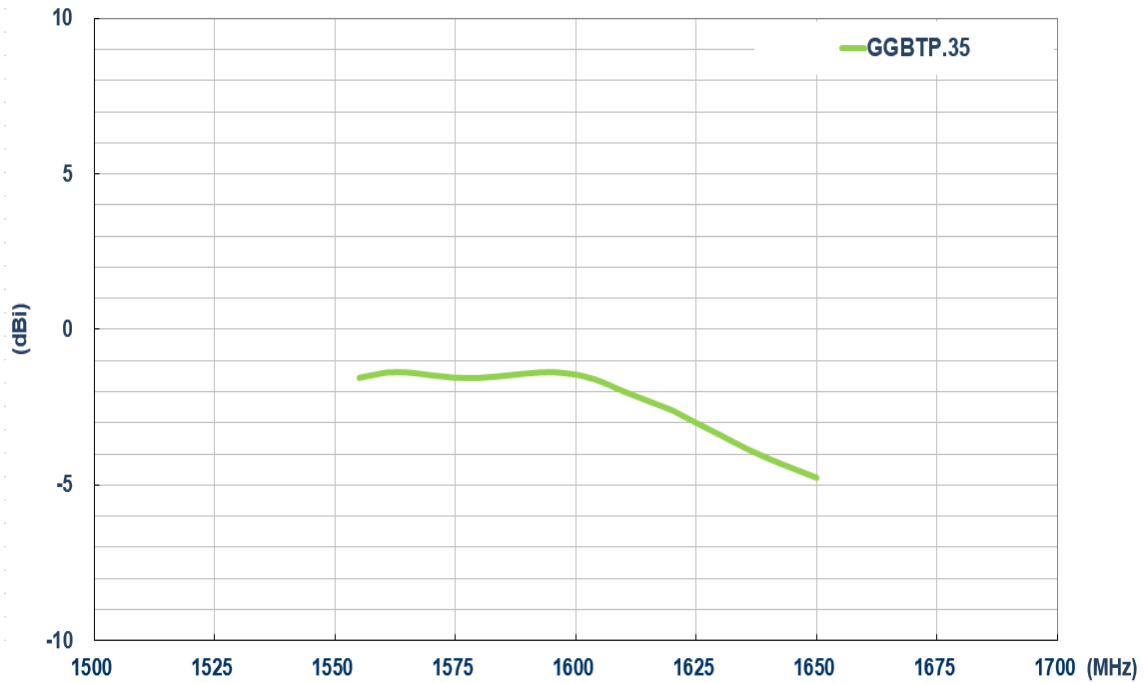
3.1 Return Loss



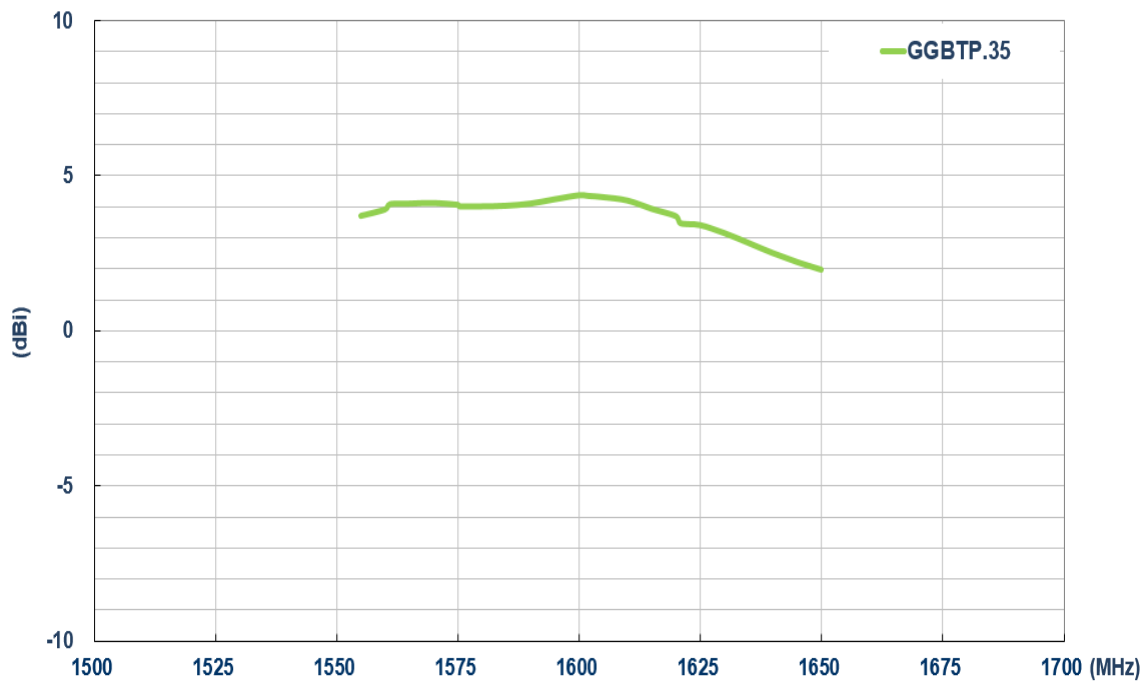
3.2 Efficiency



3.3 Average Gain



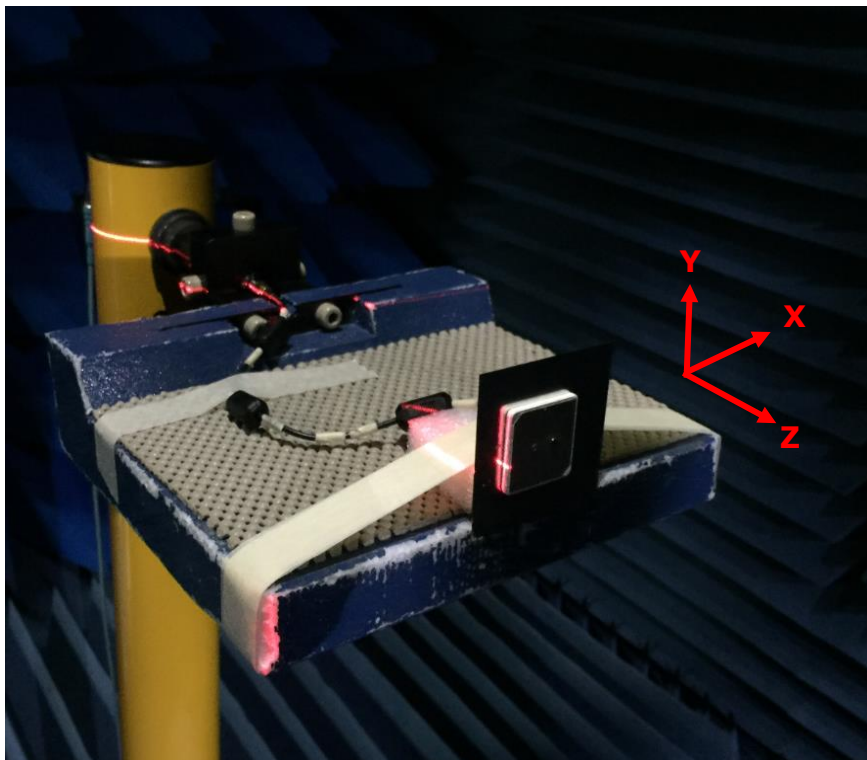
3.4 Peak Gain



4. Antenna Radiation Pattern

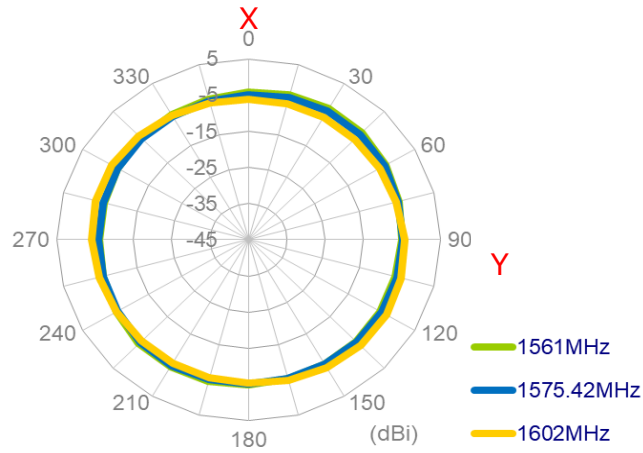
4.1. Measurement Setup

The GGBTP.35.3.A.40 antenna is tested with 70*70mm ground plane in a CTIA certified Anechoic Chamber. The test setup is shown below.

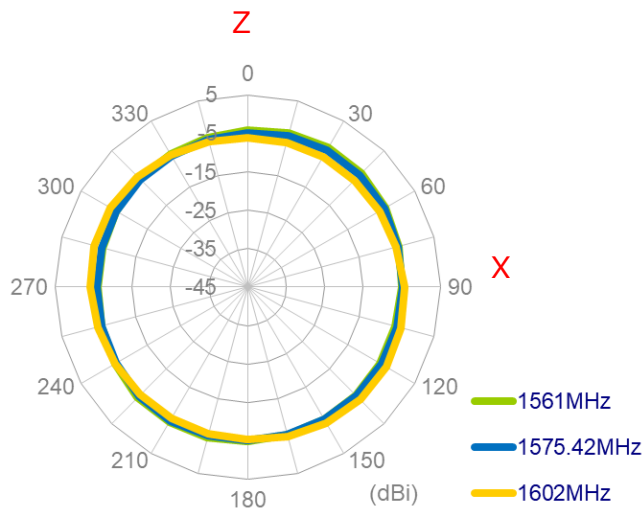


4.2. 2D Radiation Pattern

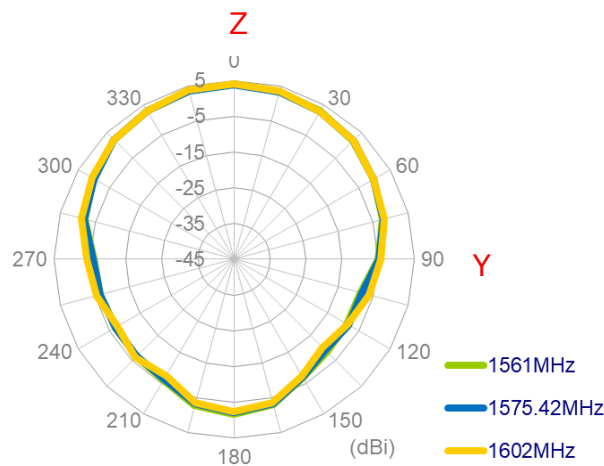
XY Plane



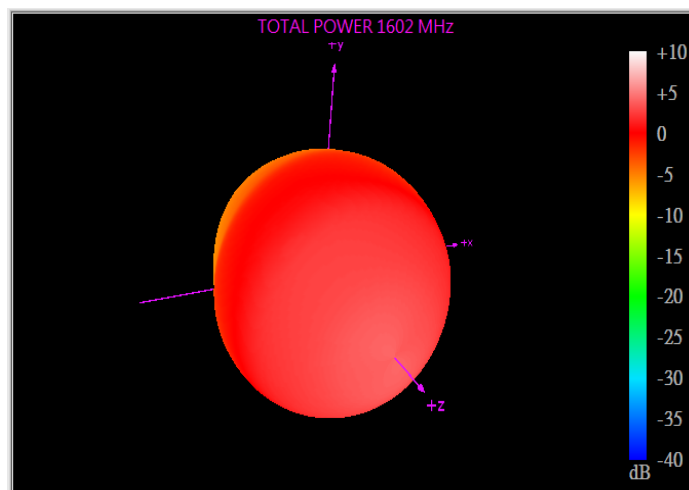
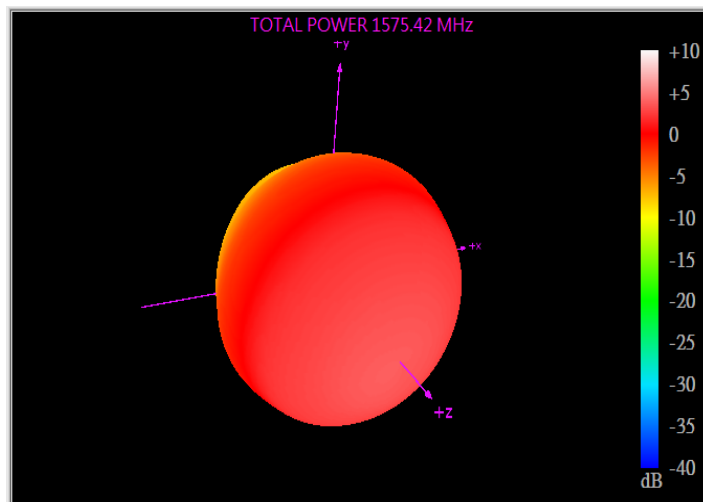
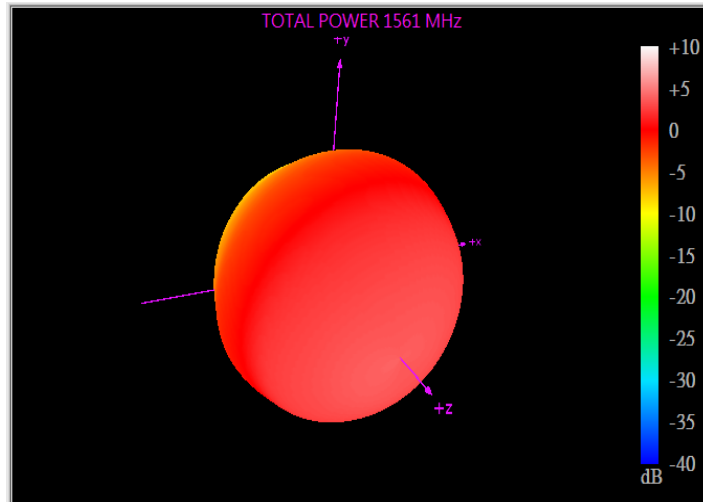
XZ Plane



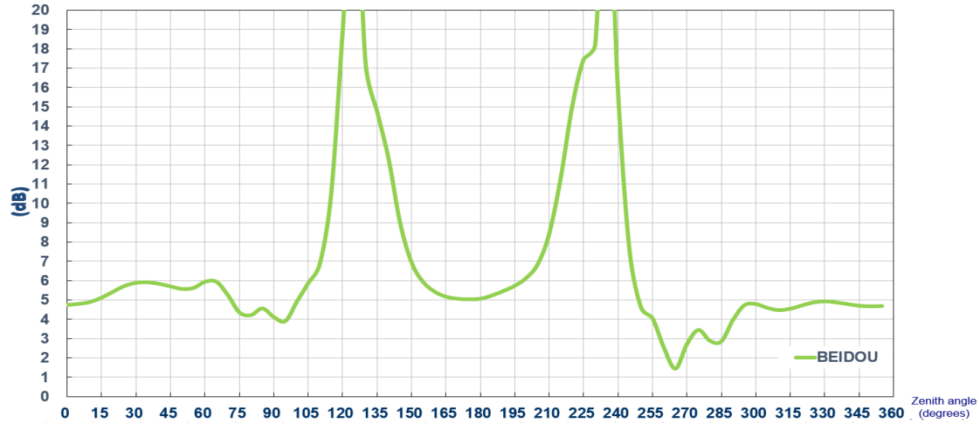
YZ Plane



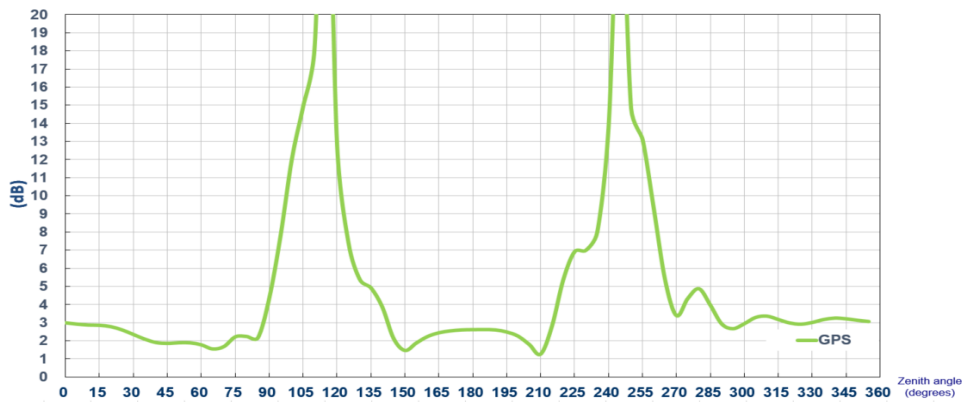
4.3. 3D Radiation Pattern



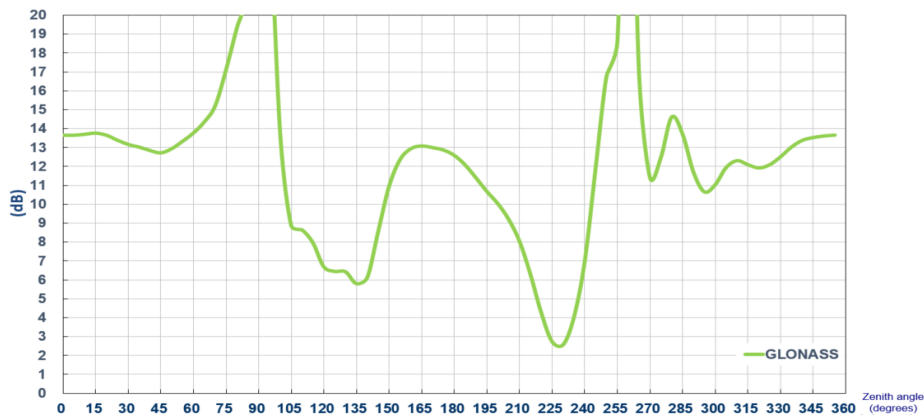
4.4. BeiDou Axial Ratio (0° is towards Zenith)



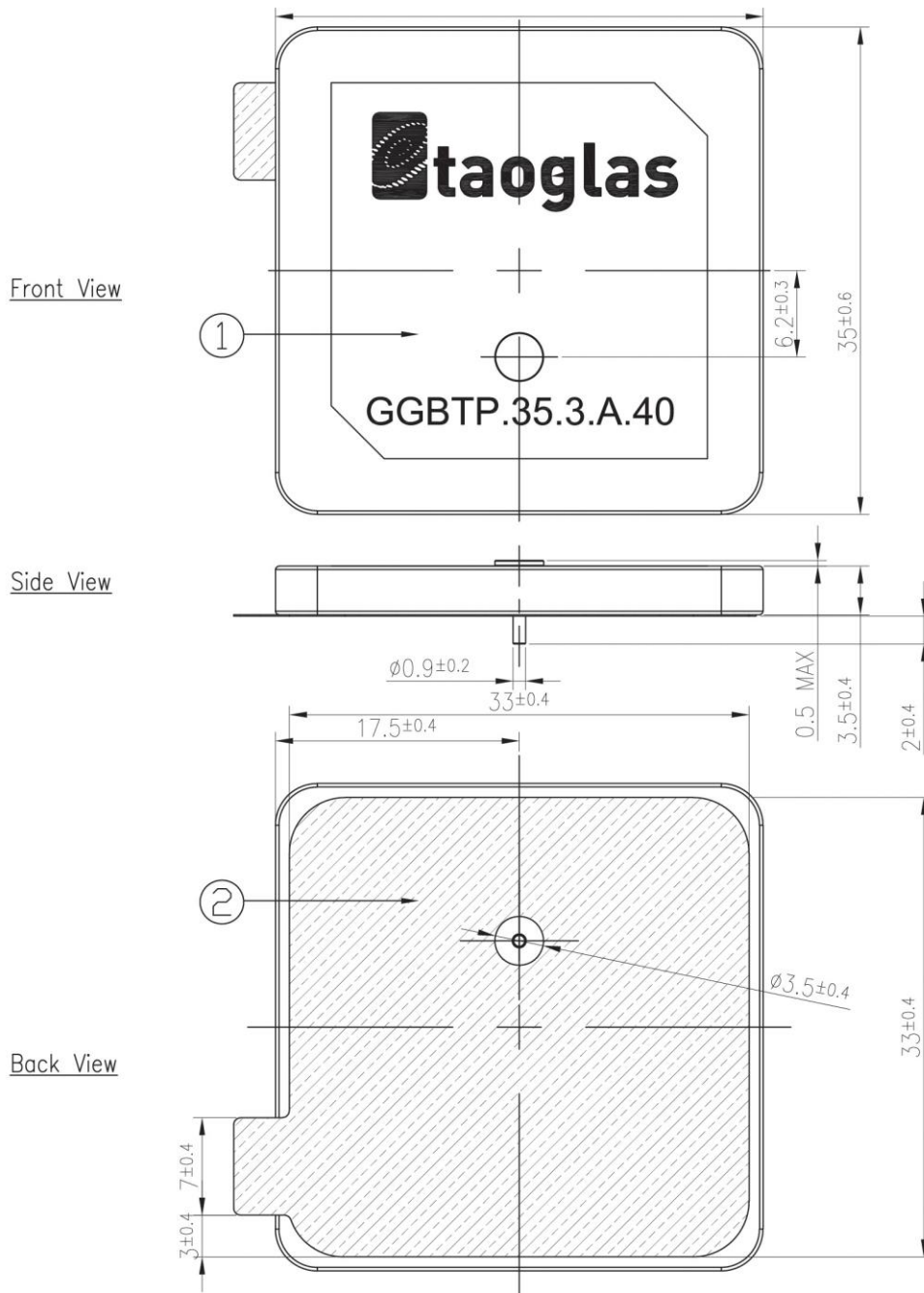
4.5. GPS Axial Ratio (0° is towards Zenith)



4.6. GLONASS Axial Ratio (0° is towards Zenith)



5. Mechanical Drawing (Unit: mm)

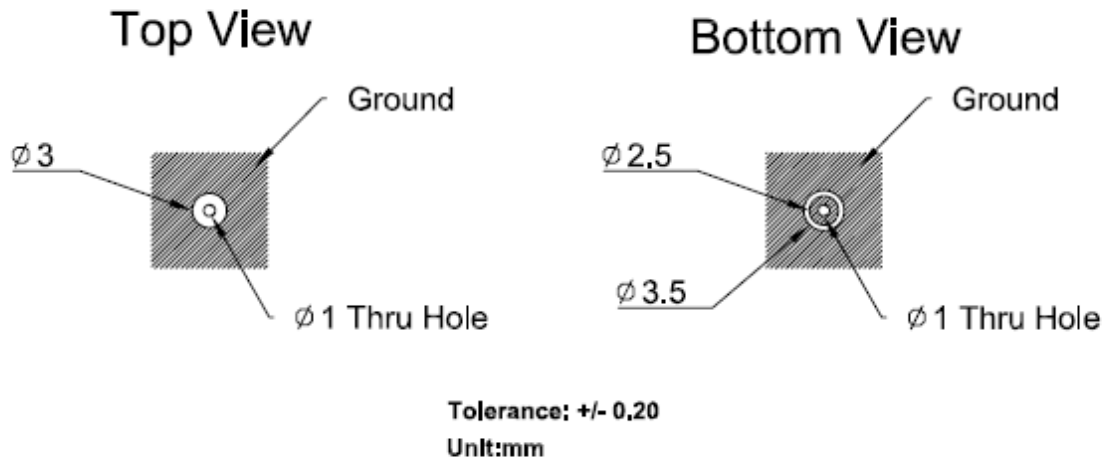


NOTES:

1. Double sided adhesive area. 

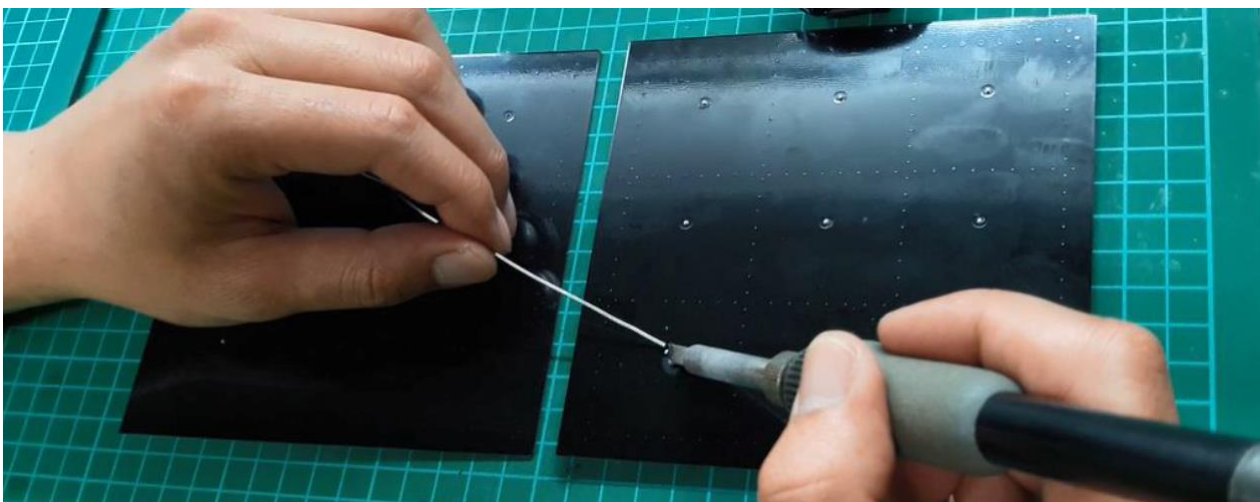
	Name	Material	Finish	QTY
1	GGBTP.35 Patch	Terrablast	Clear	1
2	Double Sided Adhesive	NITTO 5015	White Liner	1

6. PCB Footprint Recommendation



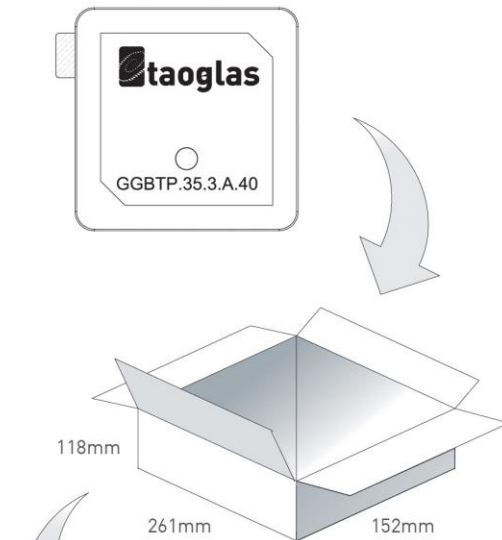
7. Soldering Method Recommendation

Soldering Method: Manually soldering
 Soldering Temperature: 380°C +/- 20°C
 Soldering Duration: 3~5 seconds

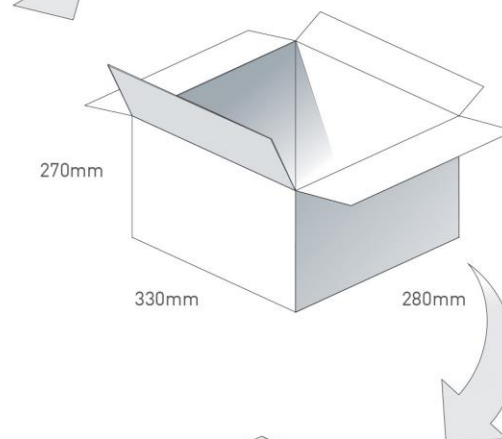


8. Packaging

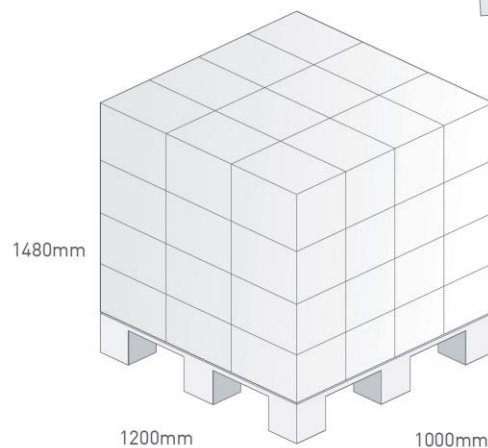
72 pcs GGBTP.35.3.A.40 per box
 Box Dimensions - 261*152*118mm
 Total Weight - 1.17kg



4 boxes / 288 pcs GTP.35.3.A.40 per carton
 Carton Dimensions - 330*280*270
 Weight - 4.94Kg



Pallet Dimensions 1200mm*1000mm*1480mm
 48 Cartons per pallet
 12 Cartons per layer
 4 Layers



Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

Copyright © Taoglas Ltd.