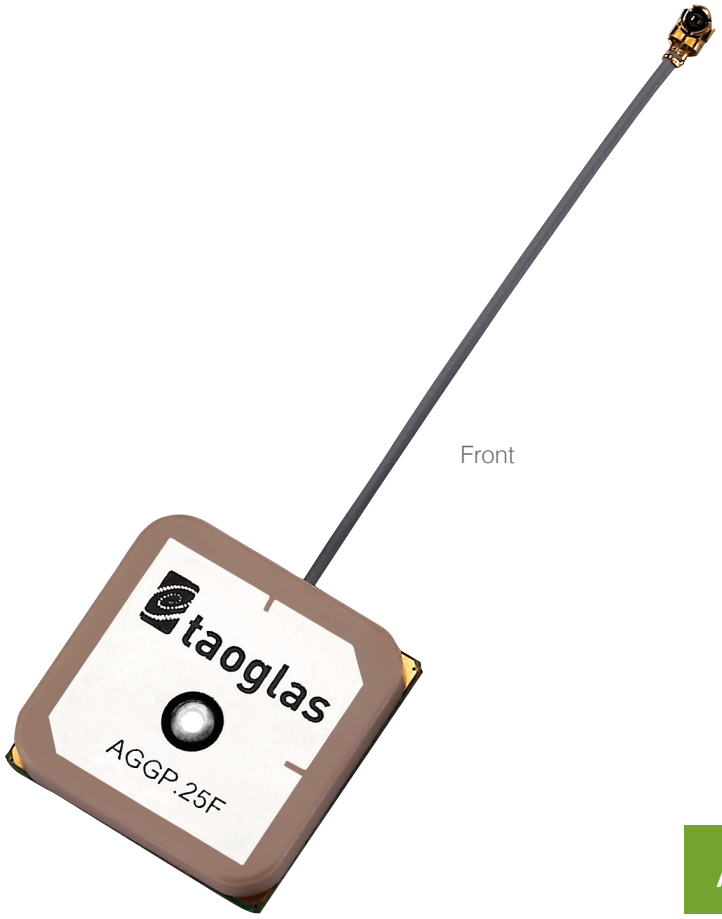
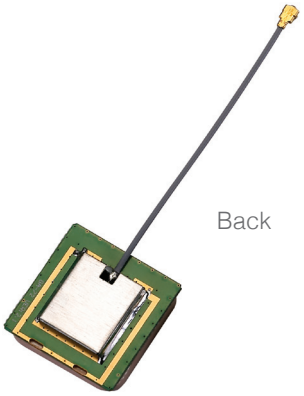
taoglas
antenna solutions



Front



Back

AGGP.25F.07.0060A

Specification

Part No.	**AGGP.25F.07.0060A**
Product Name	25mm Two Stage GPS-Glonass- GNSS Active Patch Antenna Module with Front-end Saw Filter
Features	Industry leading GPS~GLONASS antenna performance 25.1*25.1*7.4mm (Ground Plane) 60mm Ø1.13 IPEX MHFI (U.FL) 28dB LNA Wide Input Voltage 1.8V to 5.5V Low Power Consumption RoHS Compliant

1. Introduction

The AGGP.25F GPS – Glonass- GNSS active patch antenna (along with the AGGP.35 model) is the best choice to use as an embedded antenna with the latest generation of GPS-Glonass -GNSS receivers.

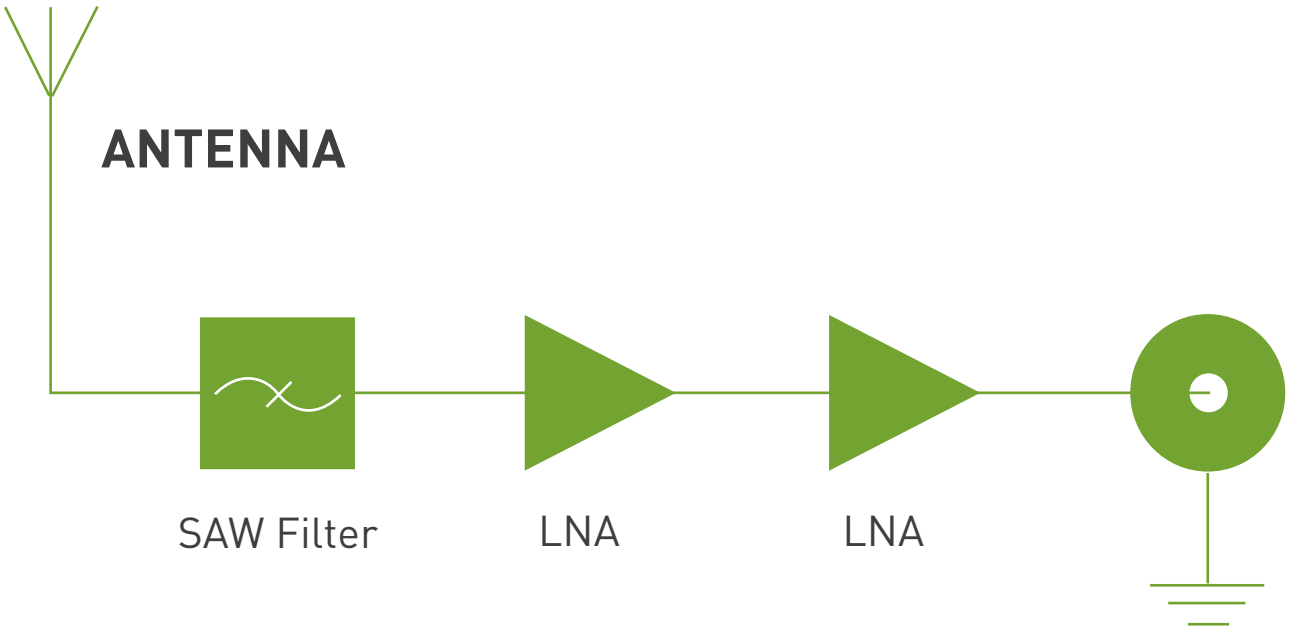
It utliizes a 25.1*25.1*4mm advanced wide-band ceramic patch antenna with optimized gain, radiation patttern and axial ratio at GPS and Glonass centre frequencies.

The AGGP.25F aslo includes a two stage LNA and a front-end SAW filter to reduce out of band noise such as from nearby cellular transceiver, and improve probability of the wireless device passing radiated spurious emissions certification.

Produced in TS16949 automotive quality approved facility and 100% tested for gain (S21), return loss (S11) to ensure total consistency of performance.

Cable type, length and connectors can be customized and samples offered according to requirement, subject to minimum order quantities in production. Taoglas also offers custom tuning service based on minimum order quantities, contact your local regional sales office for details.

The AGGP.25F consists of 2 functional blocks – the LNA and also the patch antenna.



2. Specification

2.1 Patch Antenna

Parameter	Specification
Frequency	1574~1610MHz
Gain @ Zenith	1575.42MHz 1.5 dBic Typ. @ Zenith
	1602MHz +0 dBic Typ. @ Zenith
Polarization	RHCP
Axial Ratio	3.0dB max @ Zenith
Patch Dimension	25.1*25.1*4mm

2.2 LNA

Parameter	Specification
Frequency	1574~1610MHz
Outer Band Attenuation	1592±140MHz 15dB min.
Output Impedance	50Ω
Output VSWR	2.0 Max
Pout at 1dB Gain Compression point	Typ. -2dBm Min. -6dBm

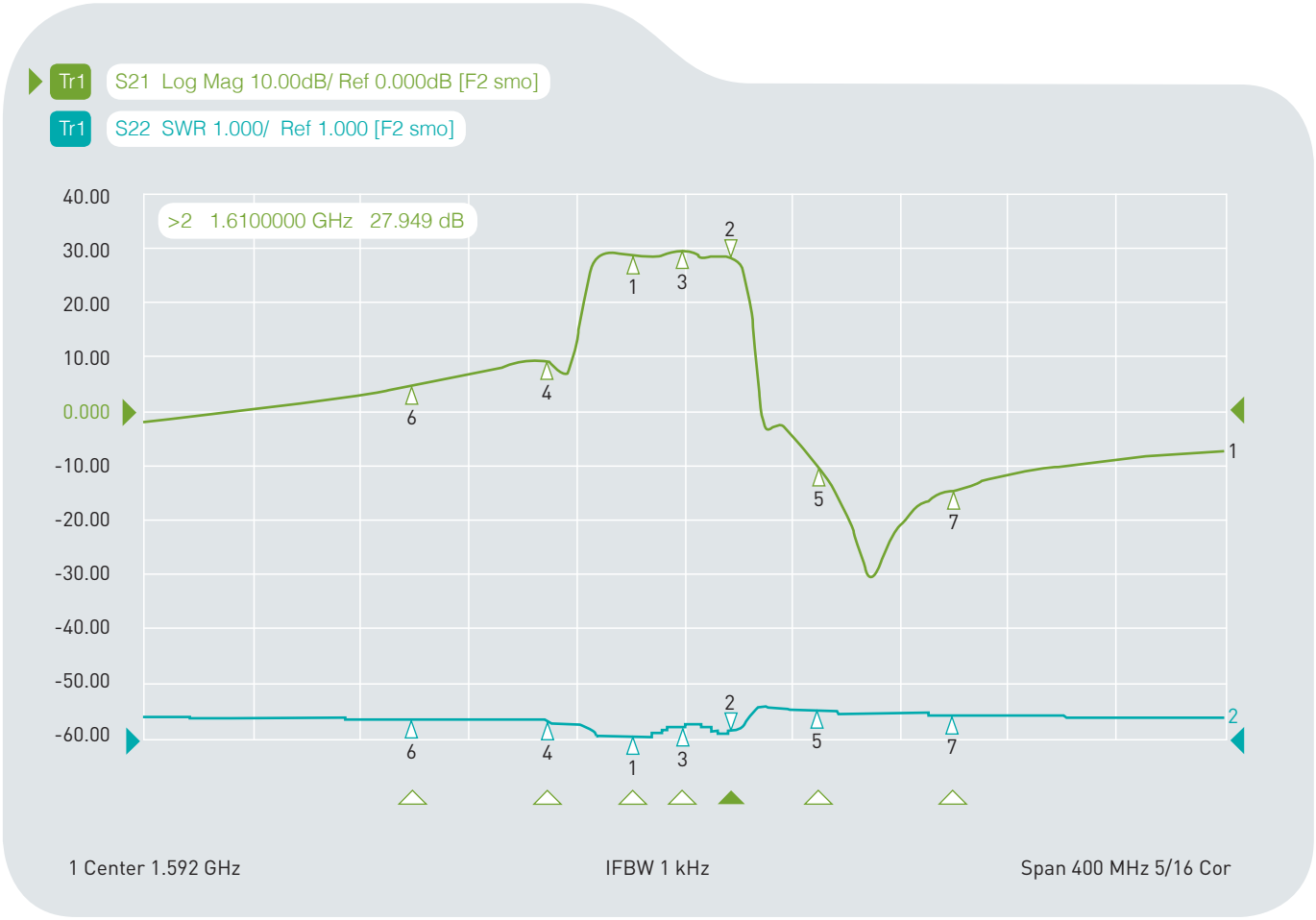
LNA Gain, Power Consumption and Noise Figure

Voltage	LNA Gain (Typ)	Power Consumption (mA) Typ	Noise Figure Typ
Min. 1.8V	22dB	5mA	2.6dB
Typ. 3.0V	28dB	10mA	2.6dB
Max. 5.5V	31dB	23mA	2.9dB

2.3 Cable* & Connector

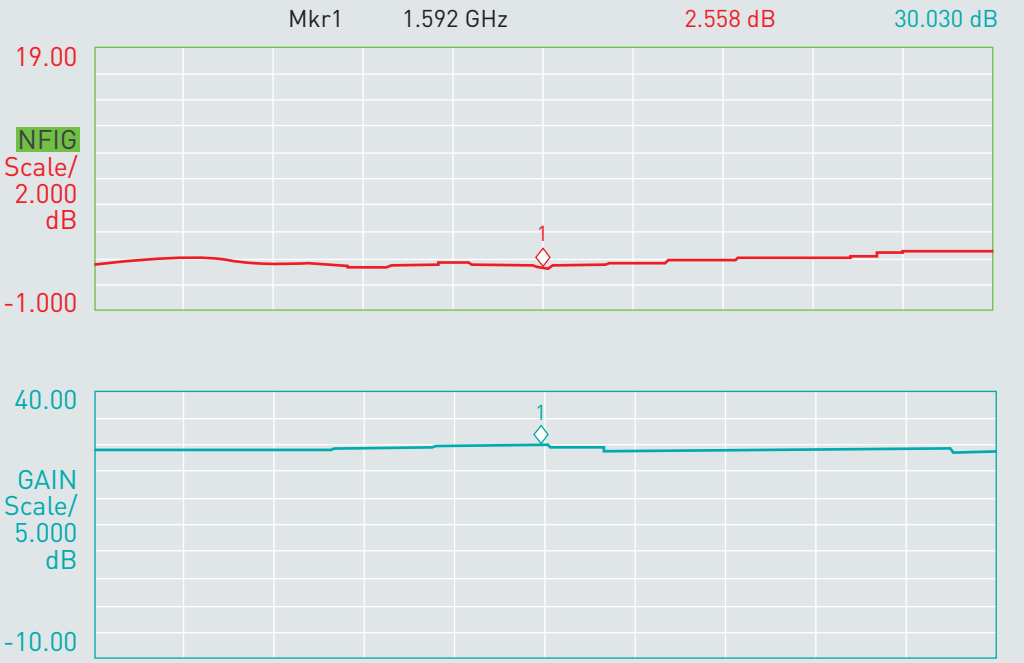
Parameter	Specification
RF Cable	Coaxial Cable Ø 1.13 ± 0.1mm, length 60 ± 2.5mm
Connector	IPEX MHFI (U.FL)

3. LNA Gain and Out Band Rejection @3.0V



Ch1 Tr1 S21	1	1.5740000 GHz	28.186	dB
Ch1 Tr1 S21	>2	1.6100000 GHz	27.949	dB
Ch1 Tr1 S21	3	1.5920000 GHz	29.044	dB
Ch1 Tr1 S21	4	1.5420000 GHz	9.0245	dB
Ch1 Tr1 S21	5	1.6420000 GHz	-10.035	dB
Ch1 Tr1 S21	6	1.4920000 GHz	4.4105	dB
Ch1 Tr1 S21	7	1.6920000 GHz	-14.431	dB
Ch1 Tr2 S22	1	1.5740000 GHz	1.0816	
Ch1 Tr2 S22	2	1.6100000 GHz	1.1855	
Ch1 Tr2 S22	3	1.5920000 GHz	1.2488	
Ch1 Tr2 S22	4	1.5420000 GHz	1.3486	

4. LNA Noise Figure @3.0V

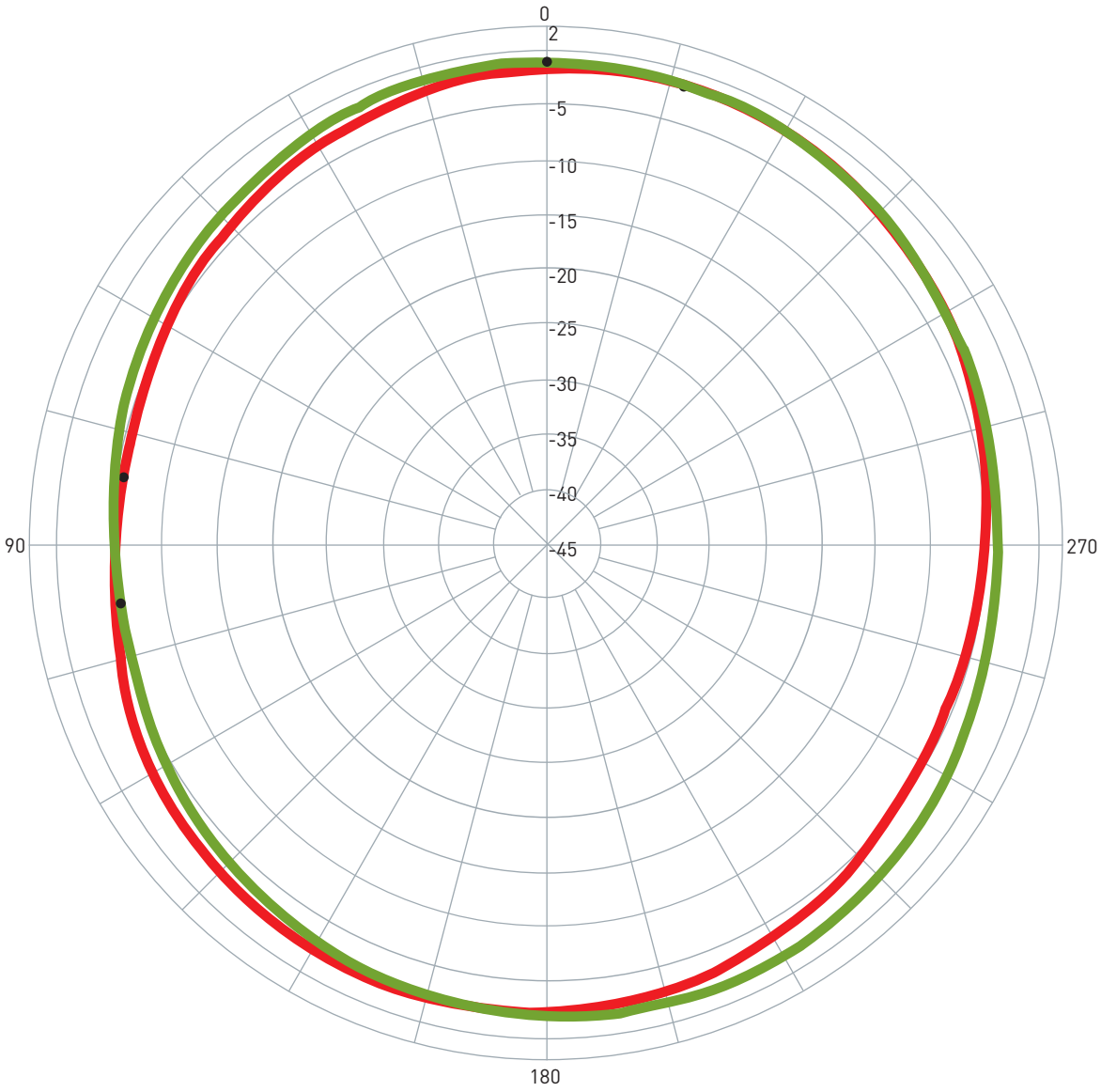


5. Total Specification (through Antenna, LNA, Cable and Connector)

Parameter	Specification
Frequency	1574~1610MHz
Gain at 90°	1575.42MHz: 26.5 ± 3dBic
	1602MHz: 28 ± 3dBic
Output Impedance	50Ω
Polarization	RHCP
Output VSWR	Max 2.0
Operation Temperature	-40°C to + 85°C
Storage Temperature	-40°C to + 85°C
Relative Humidity	40% to 95%
Input Voltage	Min. 1.8V, Typ. 3.0V, Max. 5V
Antenna	25.1*25.1*7.4mm

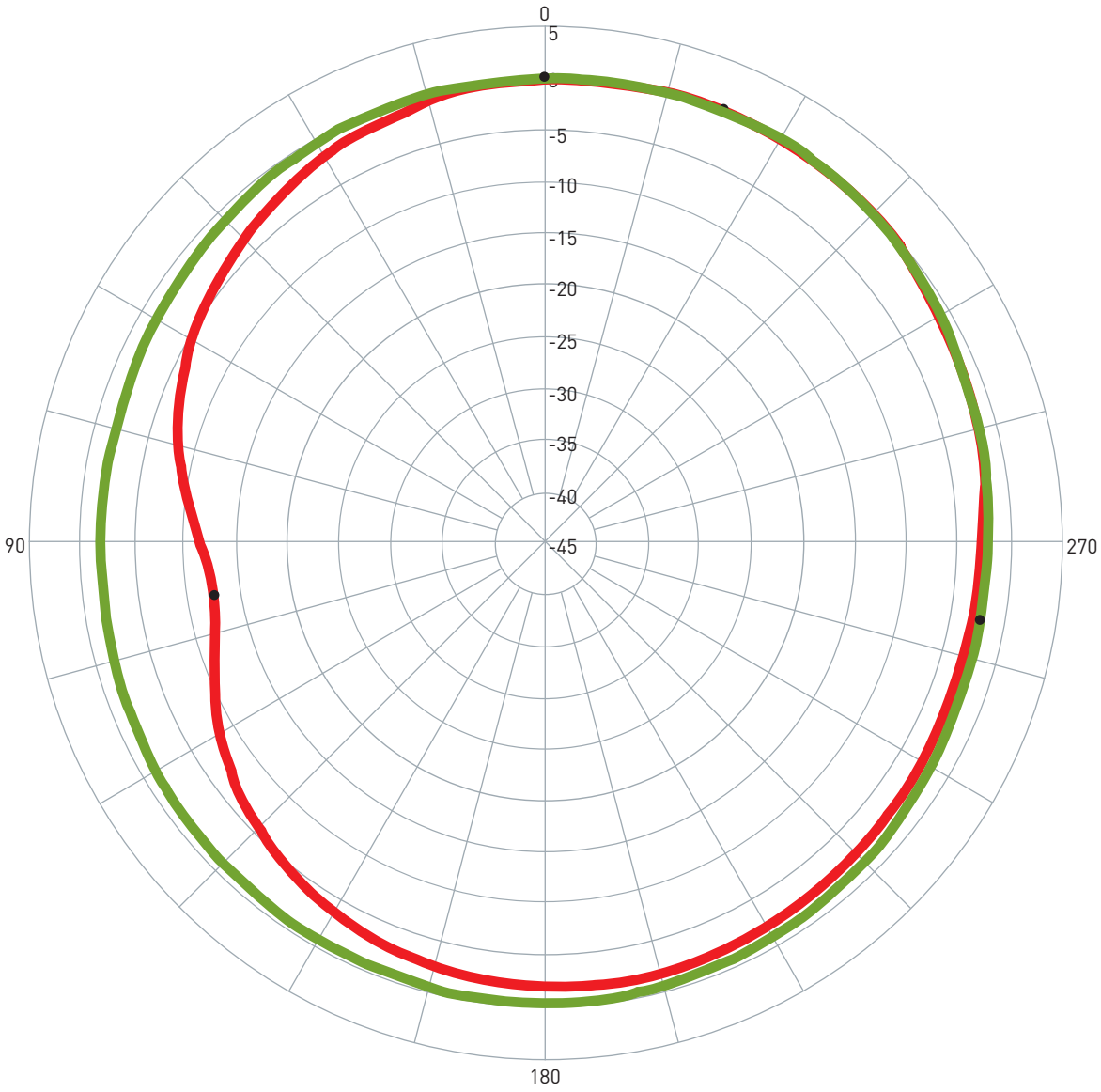
6. Radiation Patterns

6.1 1575.42MHz XZ & YZ Plane



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AGGP.25F.07.0060A	XZ	1575.42	-1.41 / 343.00	-5.88 / 82.00	-3.32	V+H
2	AGGP.25F.07.0060A	YZ	1575.42	-1.09 / 0.00	-5.80 / 99.00	-2.76	V+H

6.2 1602MHz XZ &YZ Plane



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AGGP.25F.07.0060A	XZ	1602.00	0.28 / 338.00	-12.36 / 99.00	-2.49	V+H
2	AGGP.25F.07.0060A	YZ	1602.00	0.19 / 0.00	-2.17 / 260.00	-0.91	V+H

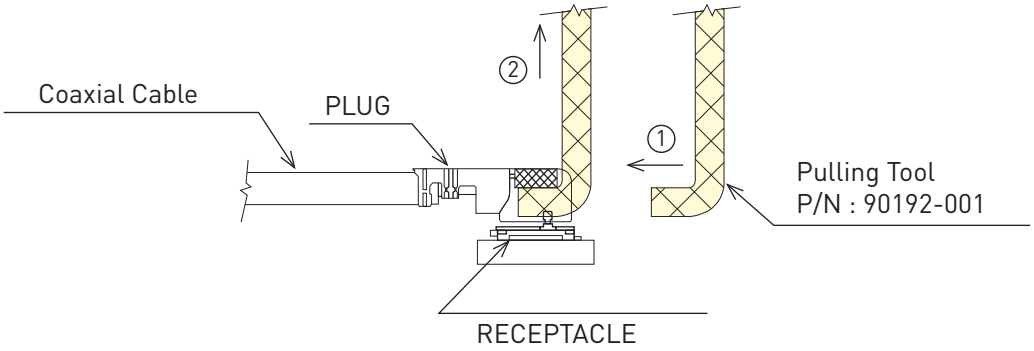
7. Plugs Usage Precautions

7.I Mating / unmating

(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

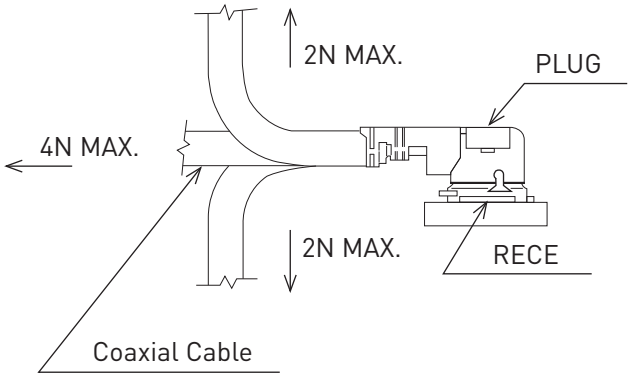
(2) To mate the connectors, the mating axes of both connectors must be aligned and the connectors can be mated. The “click” will confirm fully mated connection.

Do not attempt to insert on an extreme angle.

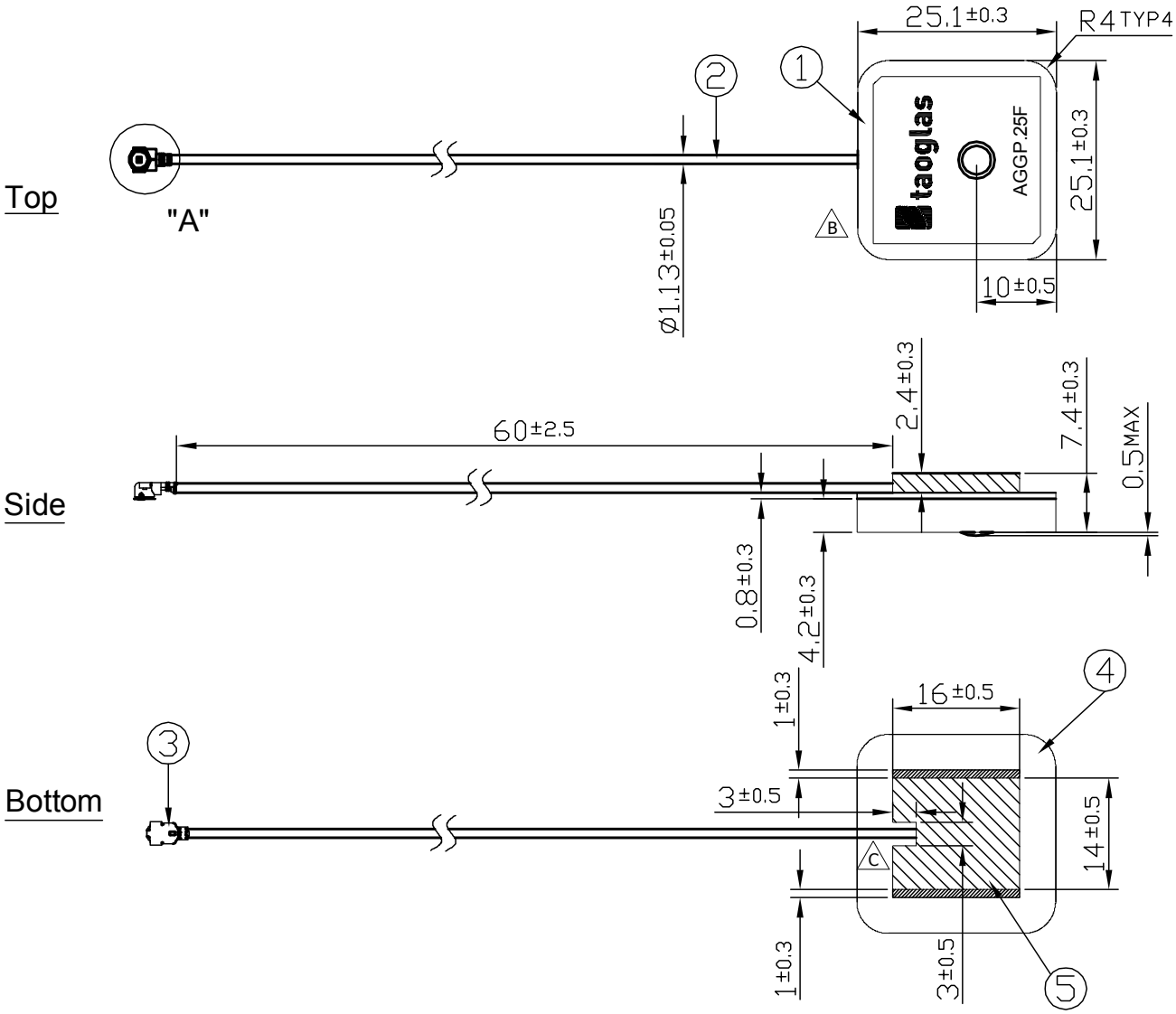


7.2 Pull forces on the cable after connectors are mated

After the connectors are mated, do not apply a load to the cable in excess of the values indicated in the diagram below.



8. Technical Drawing



NOTE:

1. Soldered area

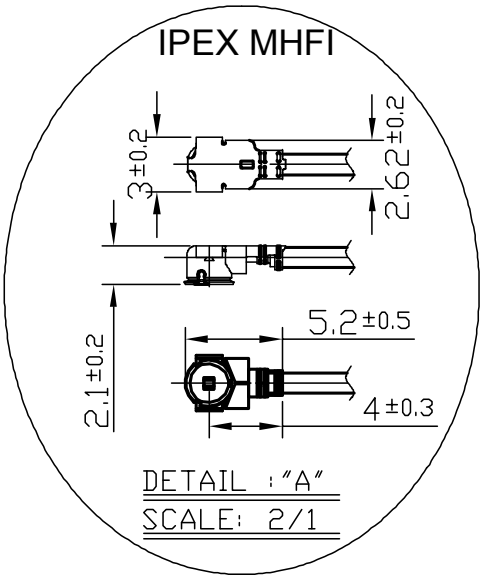
2. Shielding case area

3. All material must be RoHS compliant.

4. The connector orientation has a fixed position to the antenna as per drawing.

	Name	P/N	Material	Finish	QTY
1	AGGP.25F Patch (25*25*4.2mm)	AGGP.25F	Ceramic	Clear	1
2	1.13 Coaxial Cable	OD.113.CM	FEP	Gray	1
3	IPEX MHF1 Connector	IPEX.MHFI.113	Brass	Gold	1
4	PCB		FR4 0.8t	Green	1
5	Shielding Case		(Tin)SPTE	Tin Plated	1

8.1 Connector Drawing

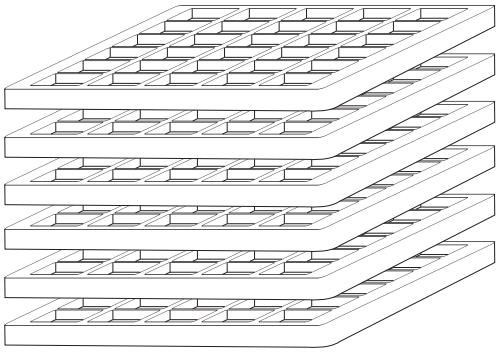


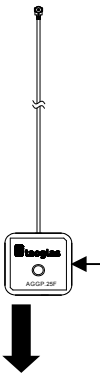
9. Packaging

Packaged in plastic tray with foam

Each comparment in tray contains 2 pcs of AGGP.25F

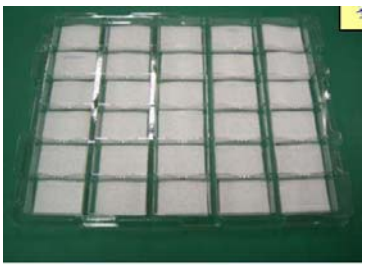
60 pcs of antenna per tray



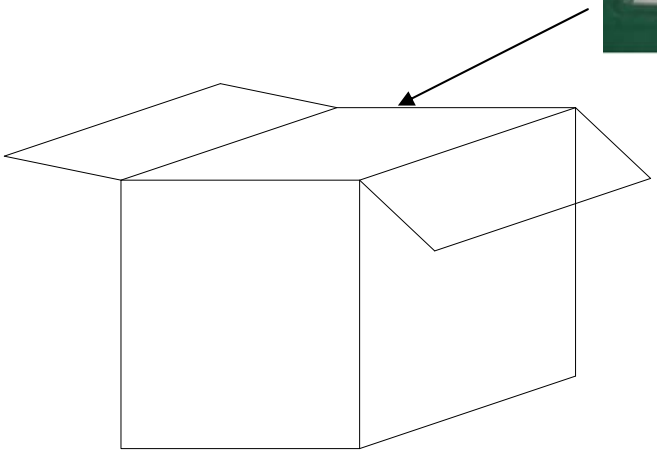


AGGP.25F

6 trays together in one section



Tray



3 sections per carton

1080 pcs of antenna per carton