SPECIFICATION

Part No. : **AA.162.301111**

Product Name : Ulysses Ultra-Low Profile Miniature Magnet Mounted GPS-GLONASS Antenna

Feature :
1575MHz – 1610MHz
40mm*38mm*10mm
1.8-5.5V
3m RG174 SMA(M)
IP67 Rated
Custom cables and connectors available
RoHS ✓

1. Introduction

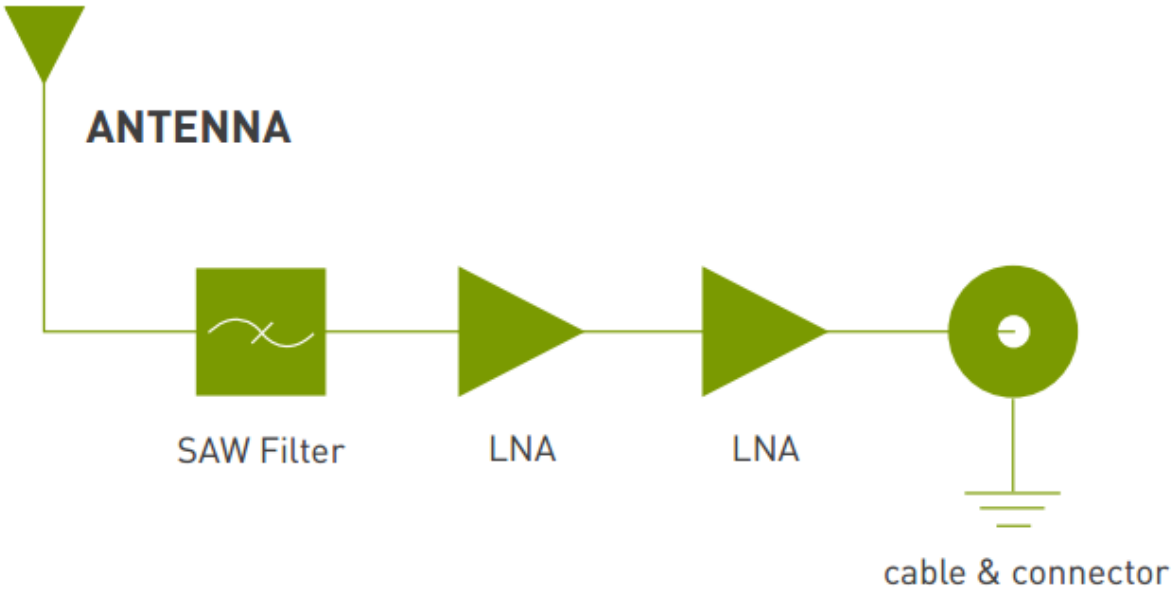
The Ulysses miniature super low profile (only 10mm in height) GNSS antenna is designed for applications which require high positioning accuracy by combining signals from GPS and GLONASS systems. A high gain wide-band patch antenna on an integral ground delivers reliable performance. Fully IP67 waterproof rating allows use in outdoors environments. Front end SAW filter configuration eliminates potential LNA burn-out from nearby out of band radiated power bursts from other antennas that may be co-located nearby.

The antenna is manufactured to strict first tier Automotive quality controlled manufacturing process in TS16949 approved facility.

2. Specification

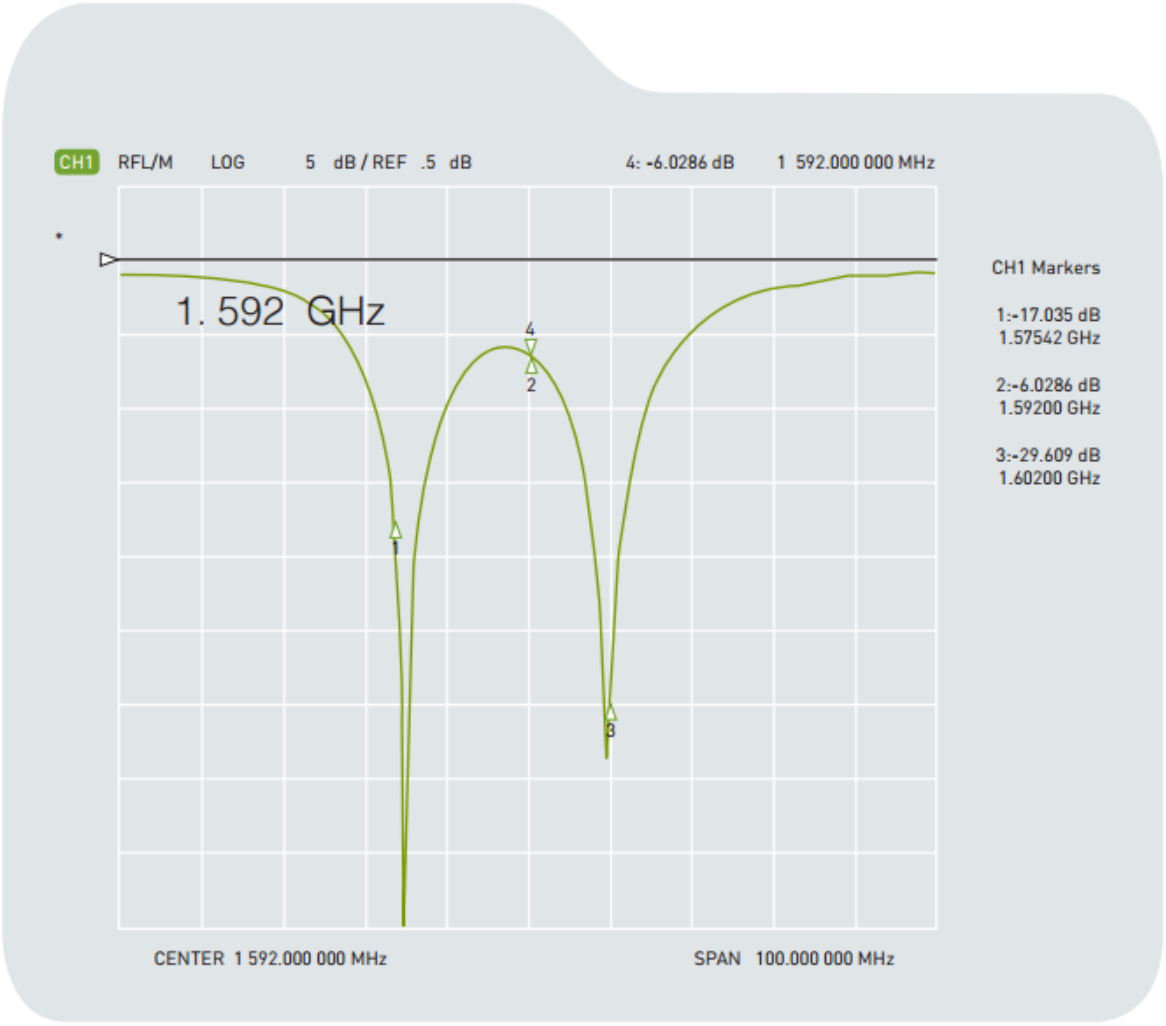
ELECTRICAL			
Centre Frequency	1574~1610MHz		
Antenna Gain	26±3dBic @ zenith @ 1575.42MHz 27±3dBic @ zenith @ 1602MHz		
VSWR	2.0 max.		
Impedance	50Ω		
Outer Band Attenuation	1592±140MHz 15dB Min		
Pout at 1dB Gain Compression Point	-6dBm Min. -2dBm Typ.		
DC input	1.8V (min.)	3.0V (typ.)	5.5V (max.)
LNA Gain	22dB	28dB	31dB
Noise Figure	2.6dB	2.6dB	2.9dB
Power Consumption	5mA	10mA	23mA
MECHANICAL			
Antenna Dimensions	37.8 x 40.4 x 10mm		
Housing Material	UV Resistant ABS		
Cable	3m RG174 (fully customizable)		
Connector	SMA(M) (fully customizable)		
ENVIRONMENTAL			
Operation Temperature	-40°C to 85°C		
Storage Temperature	-40°C to 85°C		
Relative Humidity	40% to 95%		

3. Antenna Block Diagram



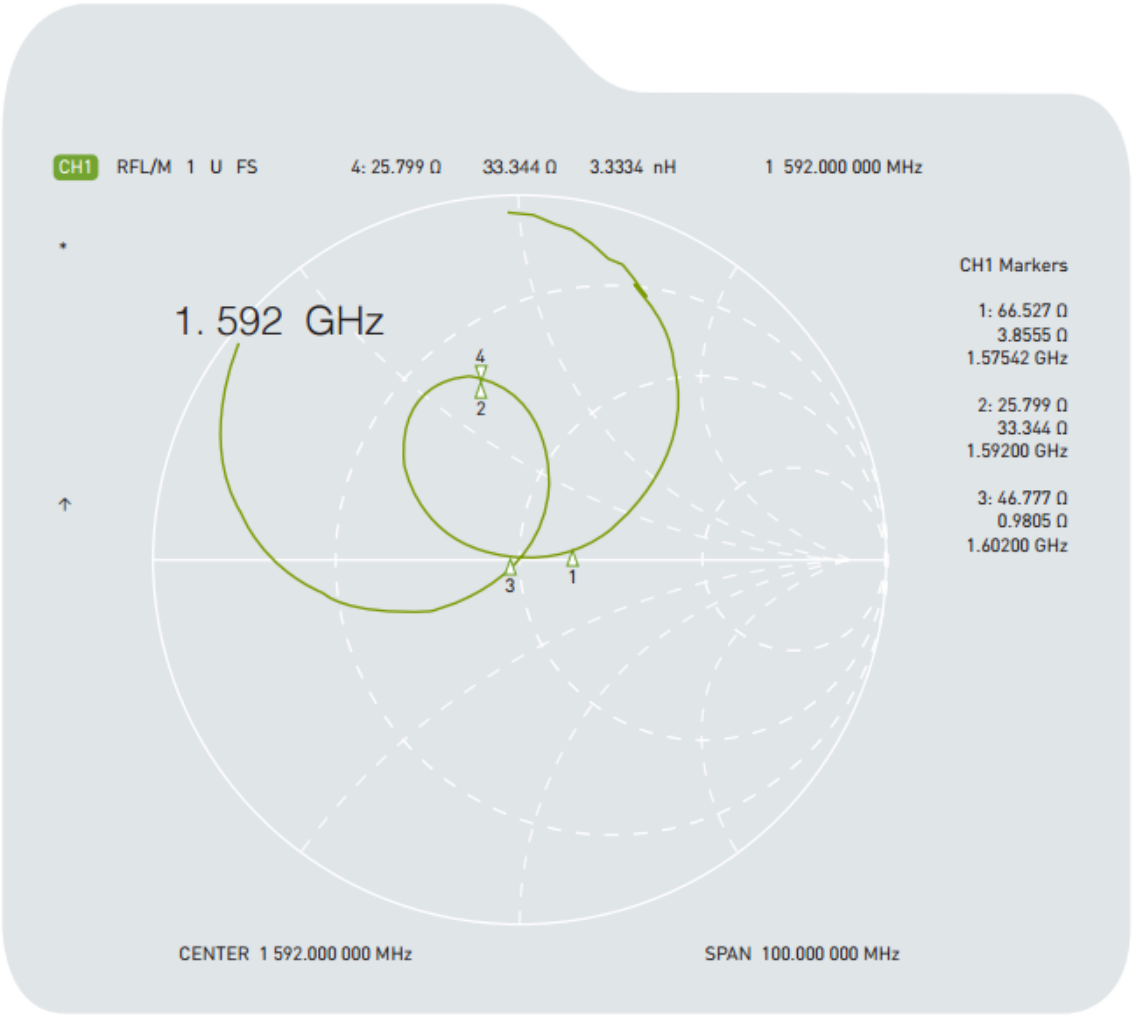
4. Antenna S11 Property

4.1 Return Loss



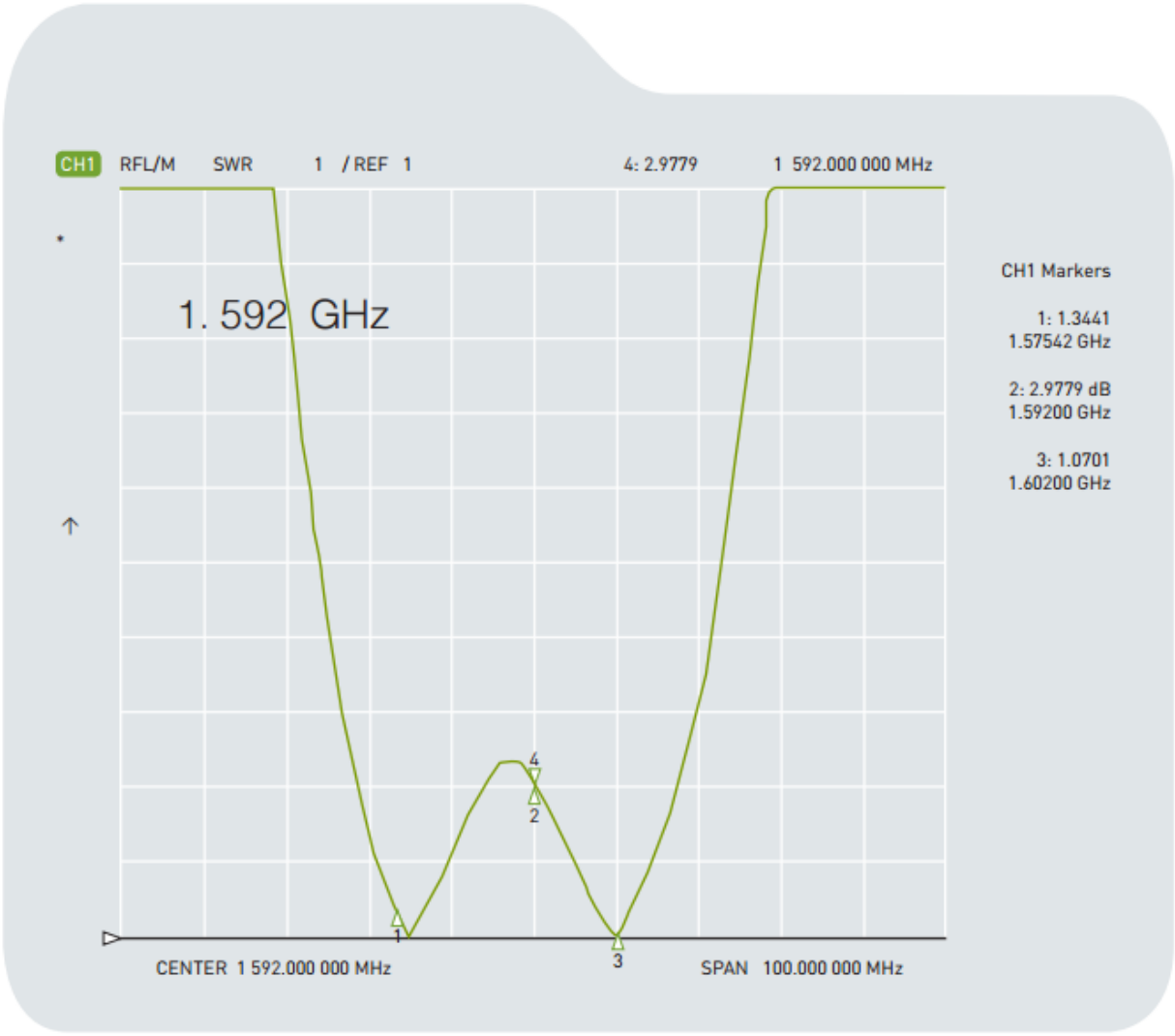
Return Loss
-17.03 dB @ 1575MHz
-29.60 dB @ 1602MHz

4.2 Impedance



Impedance :
66.52 +j3.85 Ohm@ 1575MHz
46.77 +j0.98 Ohm@ 1602MHz

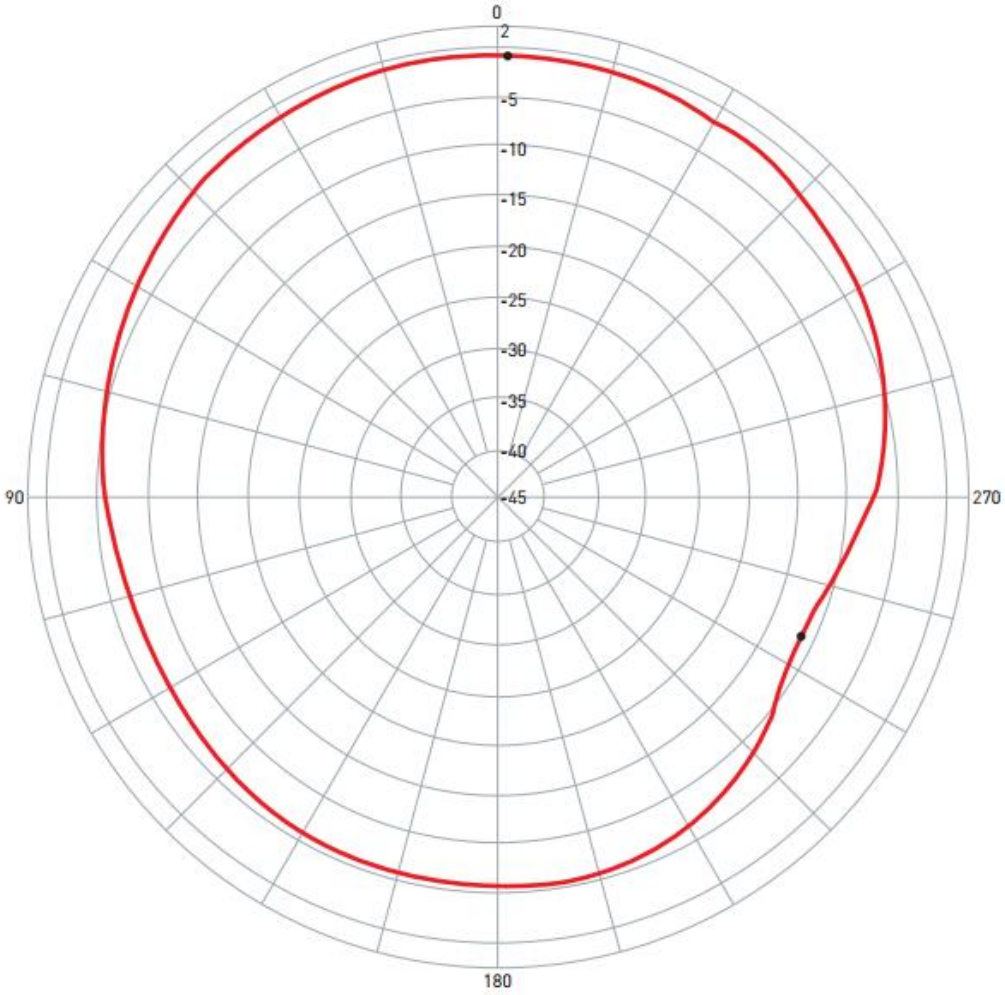
4.3 VSWR



VSWR
1.34 @ 1575MHz
1.07 @ 1602MHz

5. Radiation Patterns

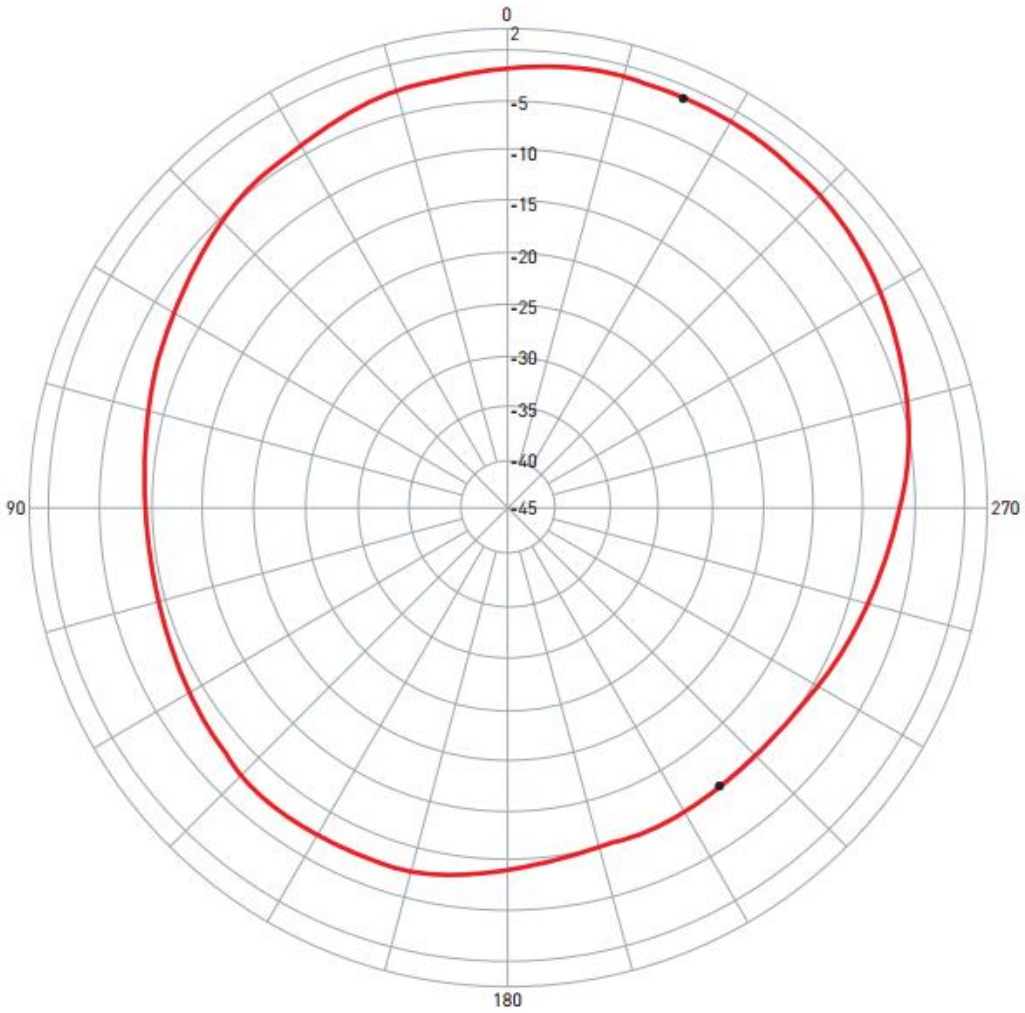
1575.42MHz XZ Plane



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.162.301111	XZ	1575.42	-0.69 / 359.00	-11.62 / 245.00	-4.12	V+H

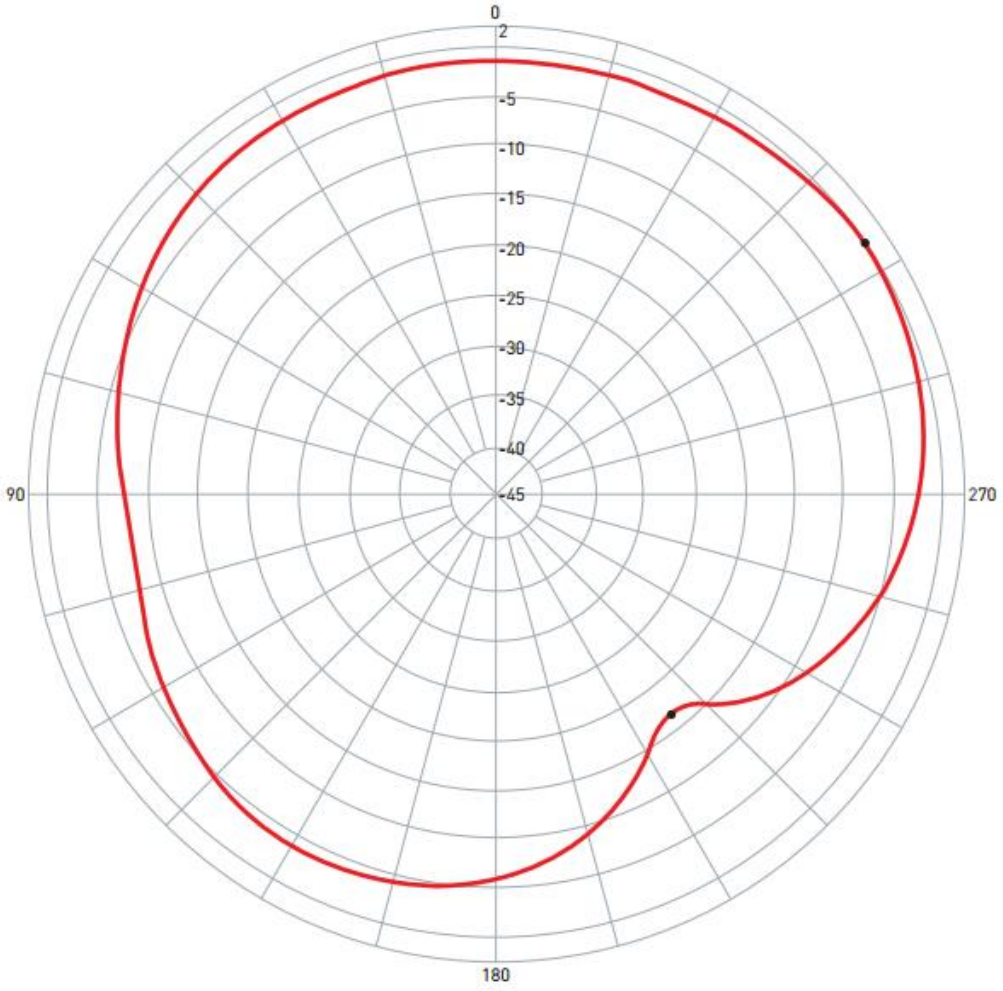
1575.42MHz YZ Plane

1575.42MHz YZ Plane



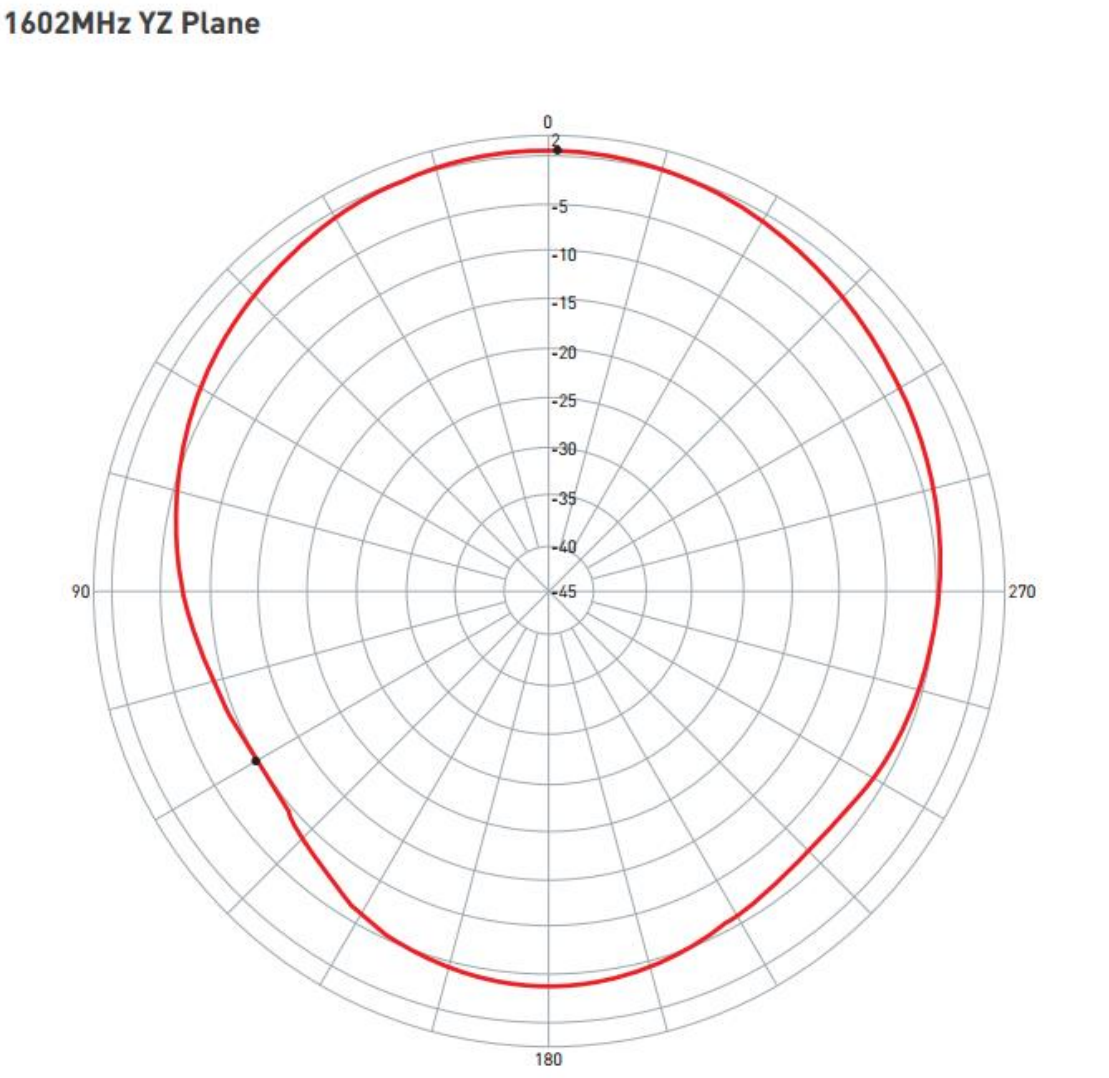
Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.162.301111	YZ	1575.42	-1.15 / 337.00	-10.60 / 217.00	-5.28	V+H

1602MHz XZ Plane



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.162.301111	XZ	1602.00	-0.34 / 304.00	-16.71 / 218.00	-3.63	V+H

1602MHz YZ Plane

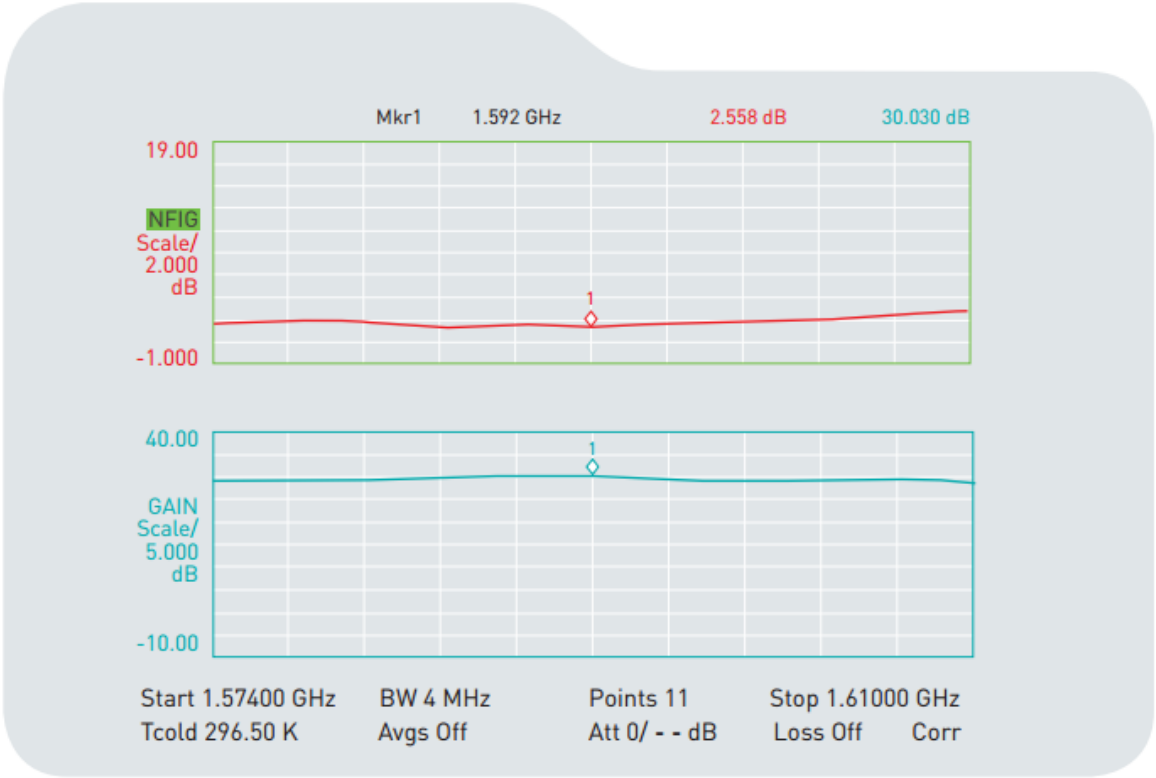


Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.162.301111	YZ	1602.00	0.49 / 359.00	-10.13 / 120.00	-3.46	V+H

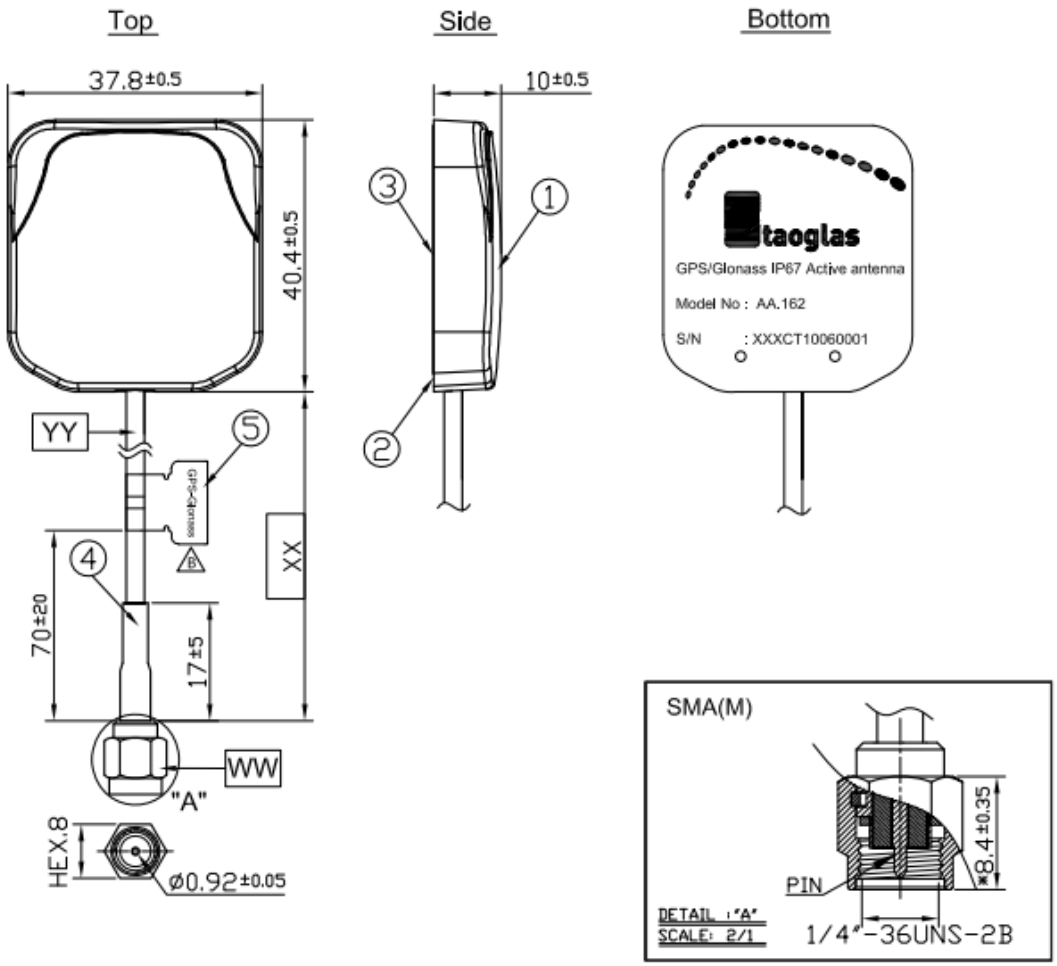
6. LNA Gain and Output Band Rejection @3.0V

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	S21	1	1.5740000 GHz	1.0816
Ch1	Tr2	S21	2	1.6100000 GHz	1.1855
Ch1	Tr2	S21	3	1.5920000 GHz	1.2488
Ch1	Tr2	S21	4	1.5420000 GHz	1.3486

7. LNA Noise Figure @3.0V



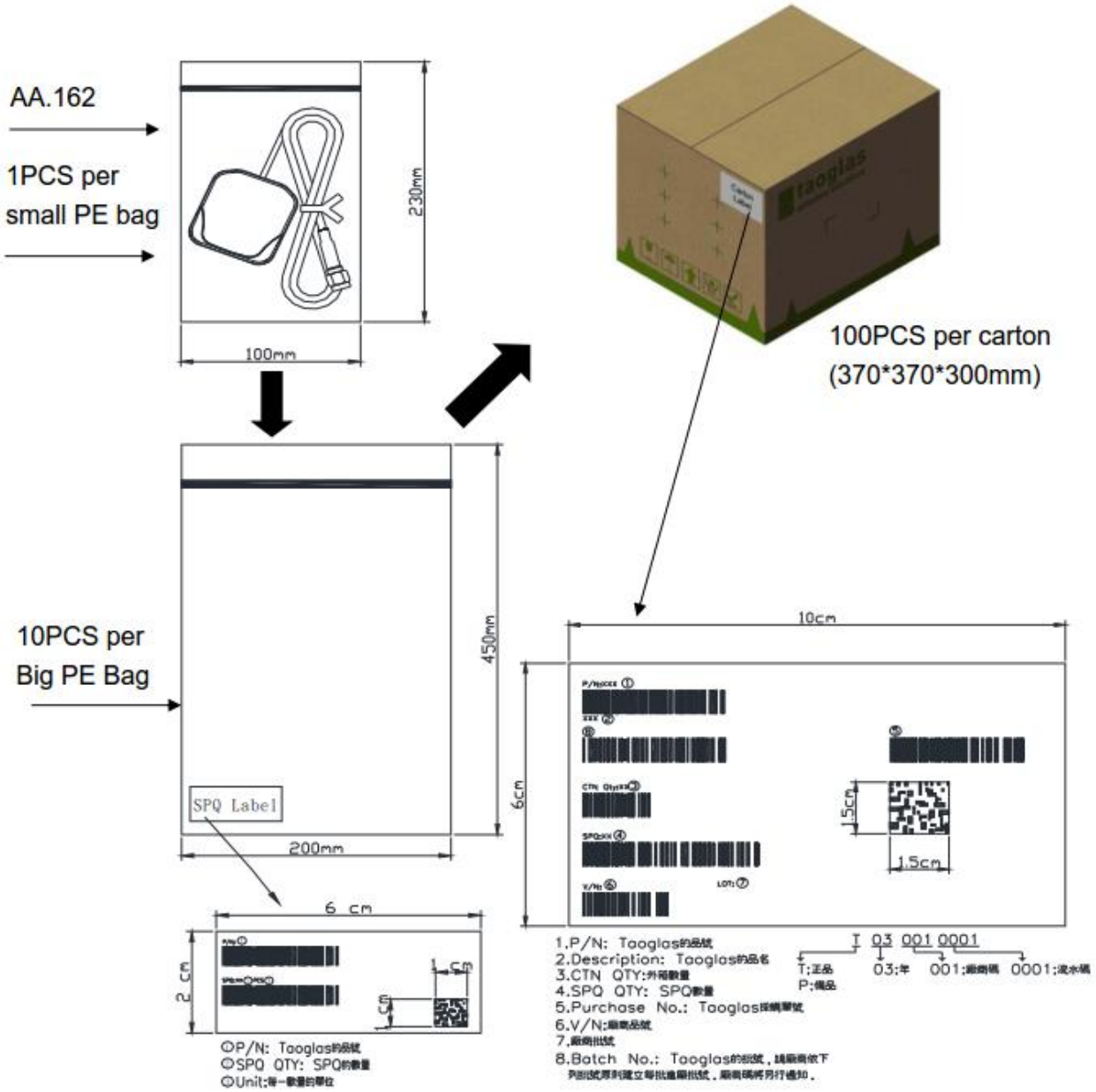
8.Drawing



	Name	Material	Finish	QTY
1	AA.162 Antenna Housing Top	ABS	Black	1
2	AA.162 Antenna Housing Bottom	ABS	Black	1
3	AA.162 Sticker	Gloss Silver PET	Silver	1
4	Heat Shrink Tube	PE	Black	1
5	GPS-Glonass Label	Coated Paper	Orange	1

	Name	Material	Finish	QTY
WW	Connector Type	SMA(M) ST	Gold	1
XX	Cable Length	3000±50mm		1
YY	Cable Type	RG174	Black	1

9.Packaging


AA.162
1PCS per
small PE bag
230mm
100mm
100PCS per carton
(370*370*300mm)
10PCS per
Big PE Bag
450mm
SPQ Label
200mm
6 cm
2 cm
1cm
1cm
OP/N: Taoglas的品號
OSPQ QTY: SPQ的數量
OUnit:每一數量的單位
10cm
6cm
1.5cm
1.5cm
1.P/N: Taoglas的品號
2.Description: Taoglas的品名
3.CTN QTY:外箱數量
4.SPQ QTY: SPQ數量
5.Purchase No.: Taoglas採購單號
6.V/N:廠商品號
7.廠商批號
8.Batch No.: Taoglas的批號，建廠商依下
列批號原則建立每批進廠批號，廠商碼將另行通知。
T 03 001 0001
T:正品
P:備品
03:年
001:廠商碼
0001:流水碼