



Topside View



Underside View

## Dominator

AA.161.301111

## Specification

<b>Part No.</b>	AA.161.301111
<b>Product Name</b>	<b>Dominator</b> Magnet Mounted GPS-GLONASS Antenna
<b>Feature</b>	1575MHz – 1610MHz 1.8-5.5V 3M RG174 SMA(M) IP67 Rated Custom cables and connectors available RoHS Compliant

# 1. Introduction

This antenna is designed for applications which require high positioning accuracy by combining signals from GPS and

GLONASS systems. High gain wide-band patch antenna on a large integral ground delivers maximum performance.

# 2. Specification

## Electrical

<b>Centre Frequency</b>	1574~1610MHz		
<b>Antenna Gain</b>	26 ± 3dBic @ Zenith @ 1575.42MHz 27 ± 3dBic @ Zenith @ 1602MHz		
<b>Axial Ratio</b>	3.0dB max. @ Zenith @ Center Frequency		
<b>Polarization</b>	RHCP		
<b>VSWR</b>	2.0 max.		
<b>Impedance</b>	50Ω		
<b>DC input</b>	1.8V (min.)	3.0V (typ.)	5.5V (max.)
<b>LNA Gain</b>	22dB	28dB	31dB
<b>Noise Figure</b>	2.6dB	2.6dB	2.6dB
<b>Power Consumption</b>	5mA	10mA	10mA

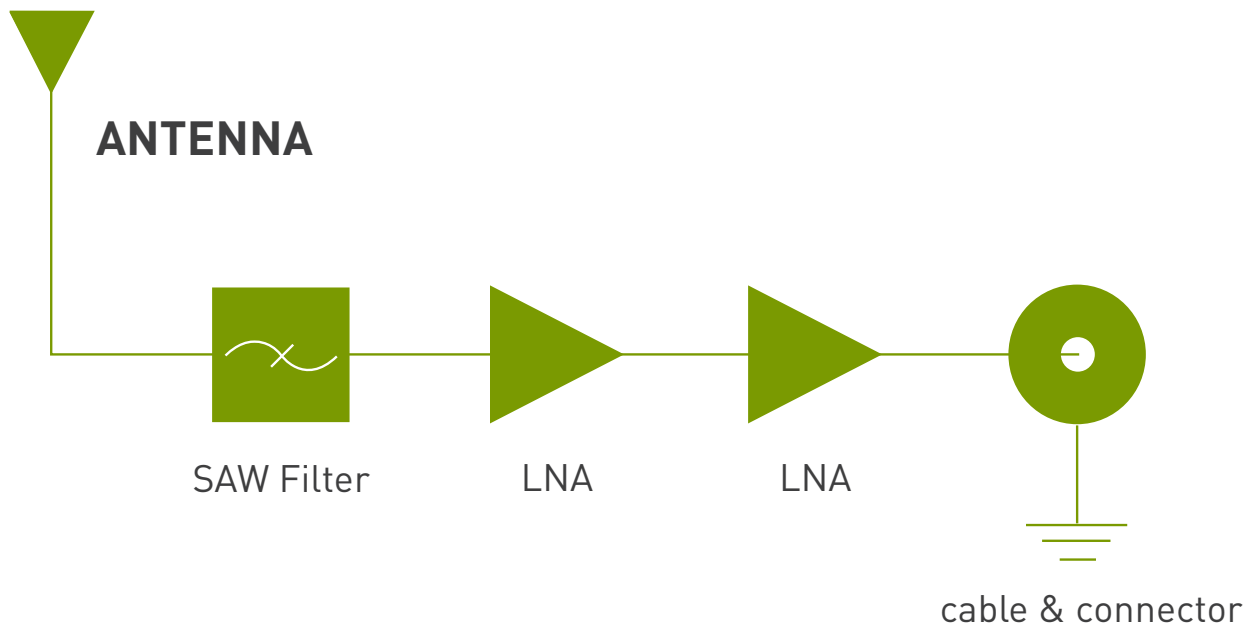
## Mechanical

<b>Antenna Dimensions</b>	65.7 x 49.7 mm
<b>Housing Material</b>	ABS
<b>Cable</b>	3M RG174 (fully customizable)
<b>Connector</b>	SMA(M) (fully customizable)

## Environmental

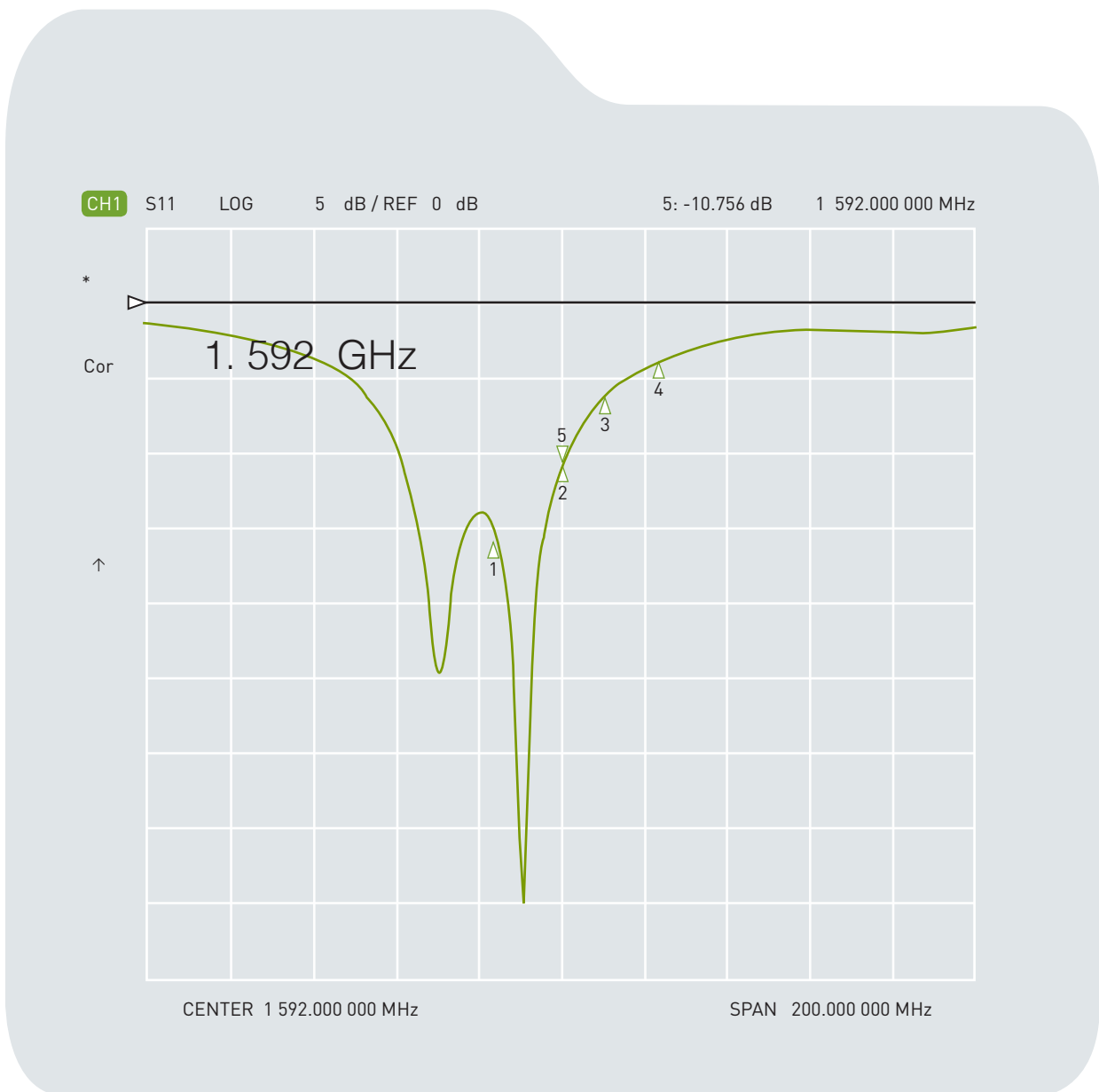
<b>Operation Temperature</b>	-40°C to 85°C
<b>Storage Temperature</b>	-40°C to 105°C
<b>Relative Humidity</b>	40% to 95%

### 3. Antenna Block Diagram

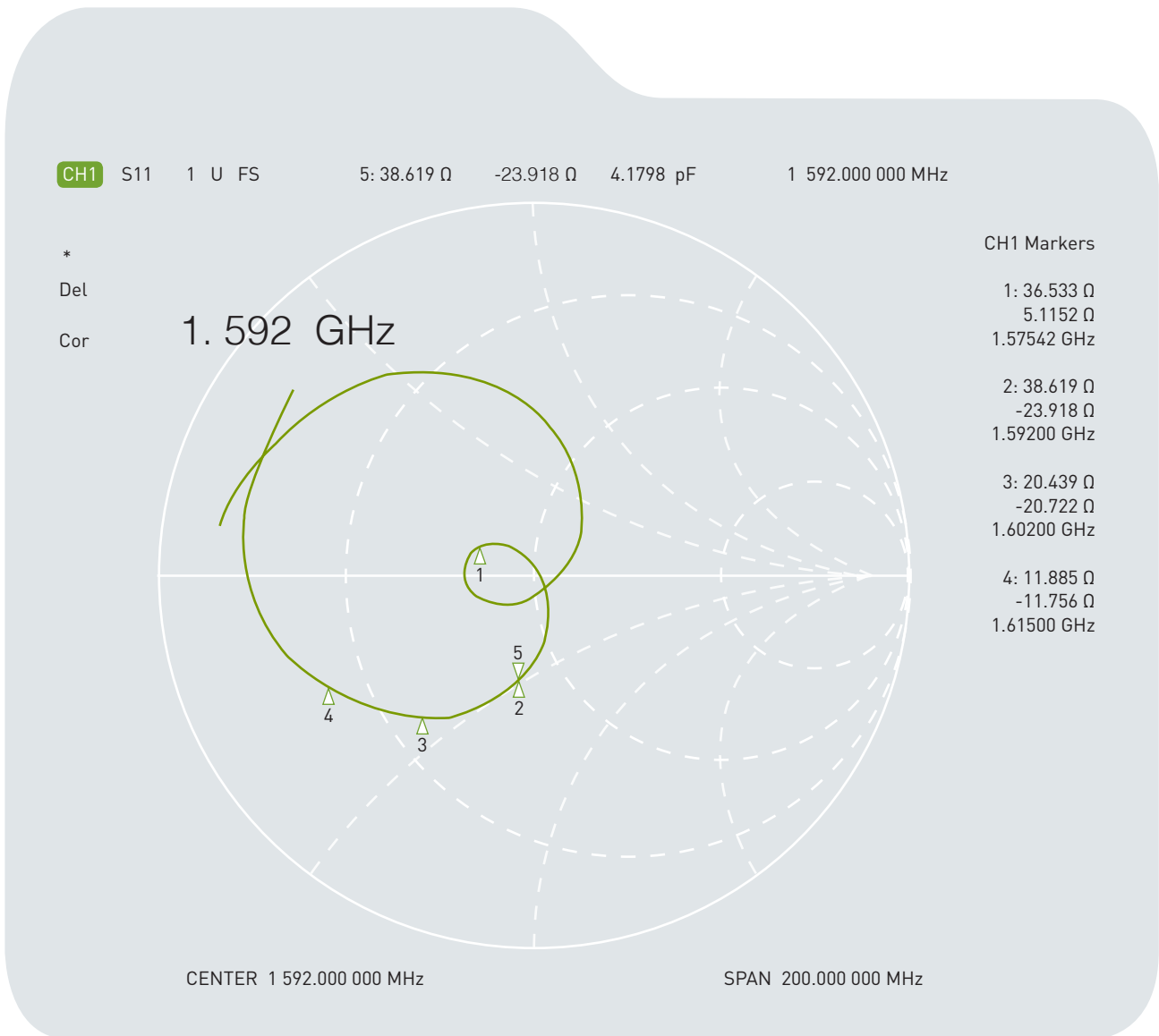


## 4. Antenna S11 Property

### 4.1 Return Loss

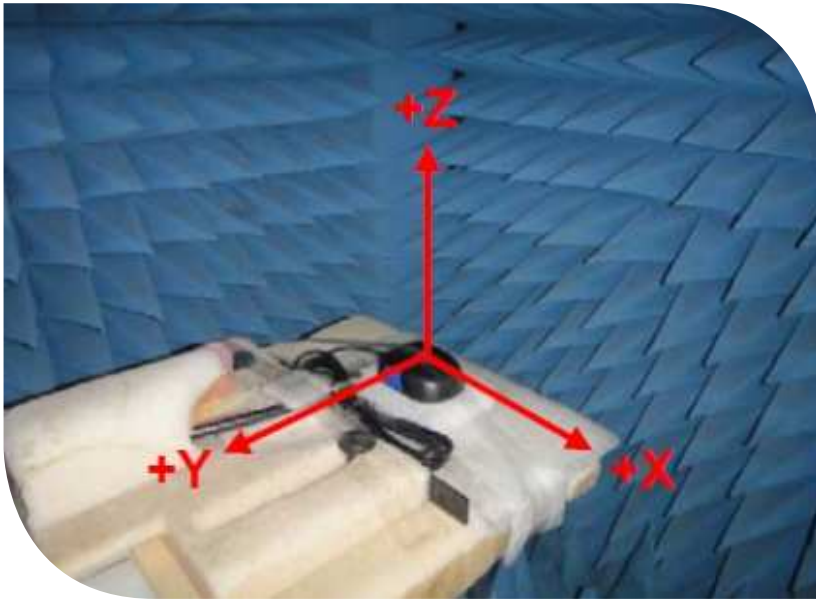


## 4.2 Impedance



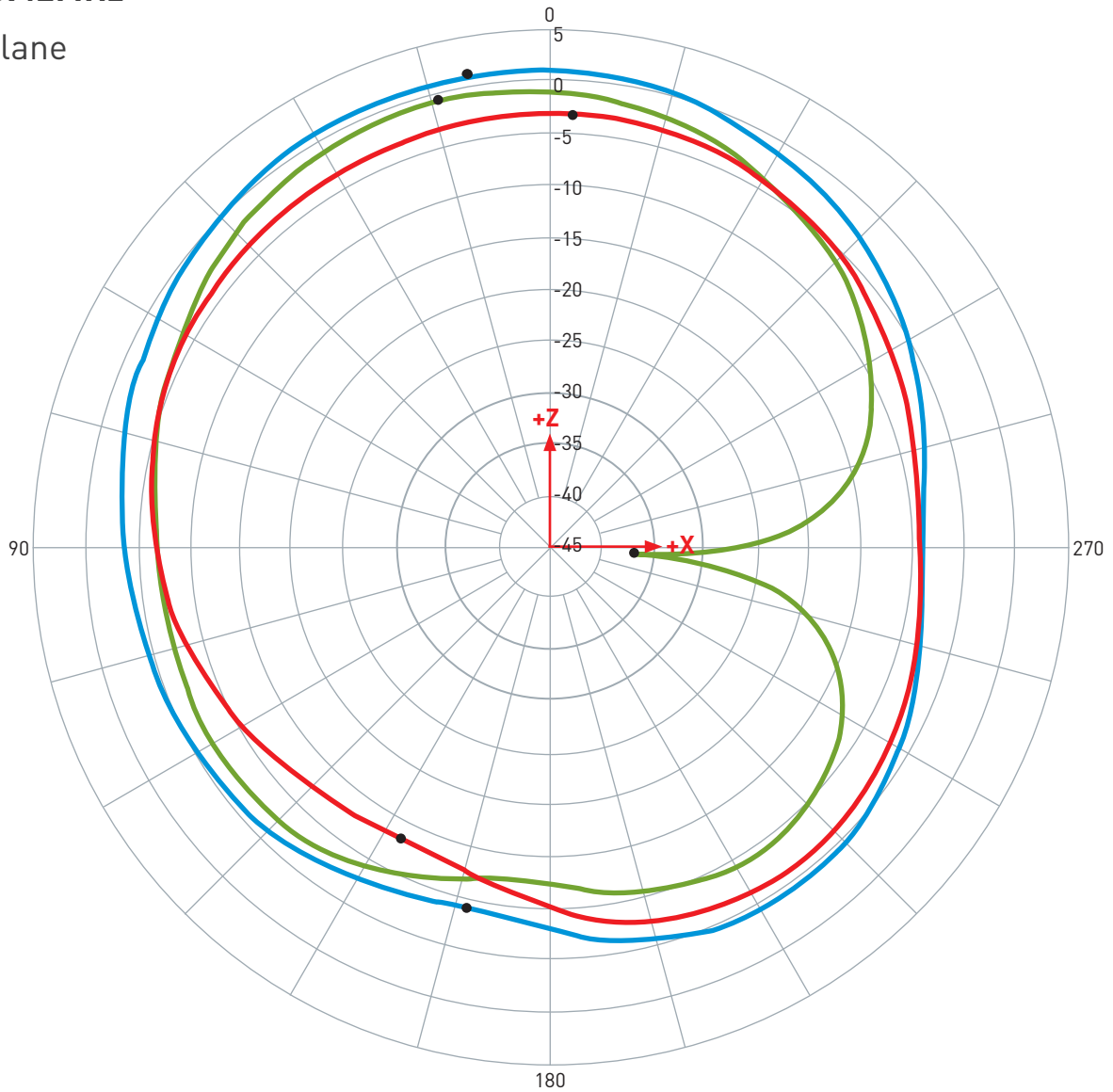
Test Frequency	Return Loss (dB)	Impedance ( $\Omega$ )	VSWR
1575MHz	-15.8	35.6 + j5.1	1.4
1602MHz	-6.2	20.4 - j20.7	2.9

## 5. Radiation Patterns



1575.42MHz

XZ Plane

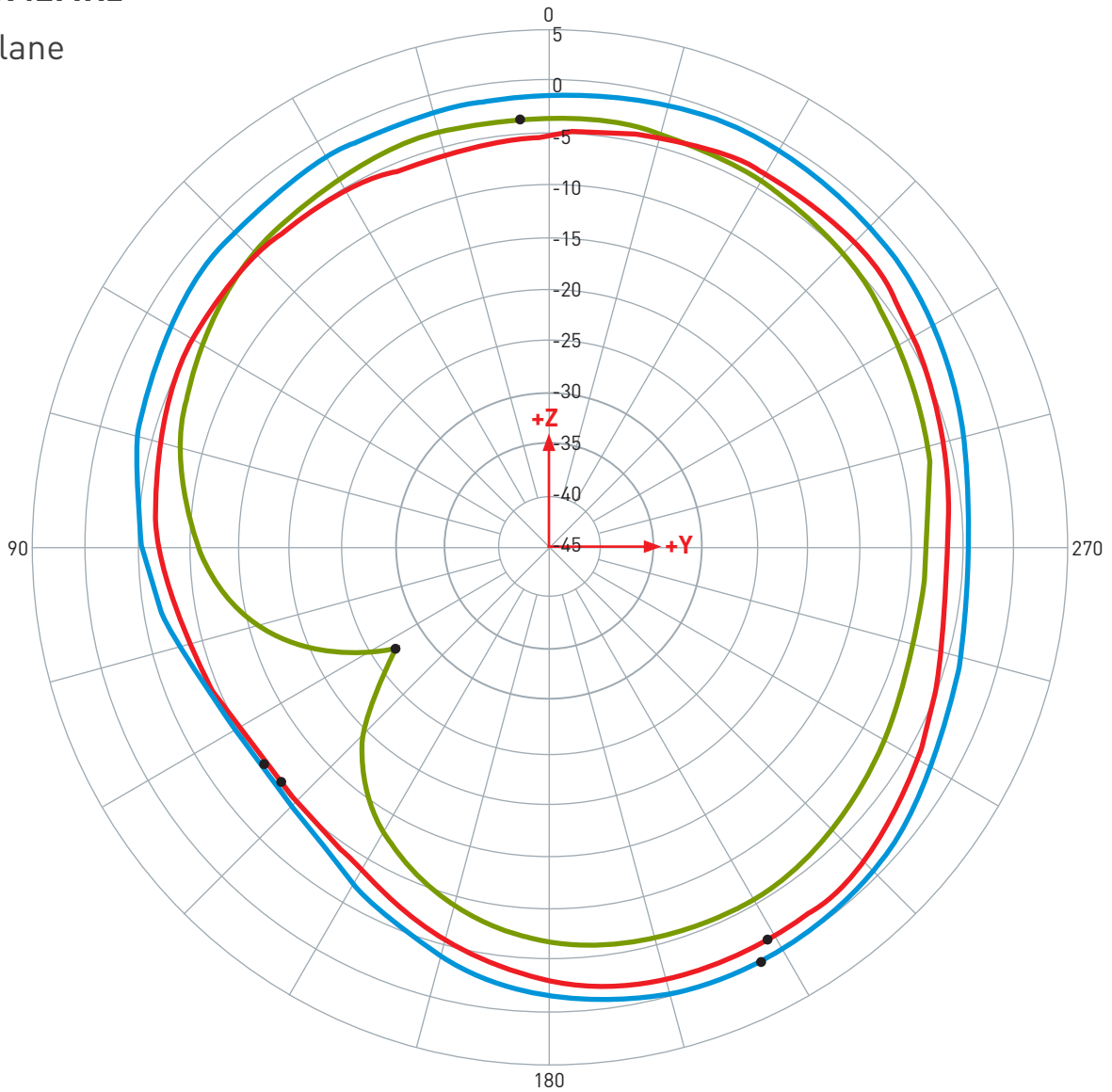


	Peak Gain	Zenith Gain
Horizontal	-3.0	-3.1
Vertical	-0.6	-0.9
Total	1.3	1.1

(unit : dBi)

1575.42MHz

YZ Plane

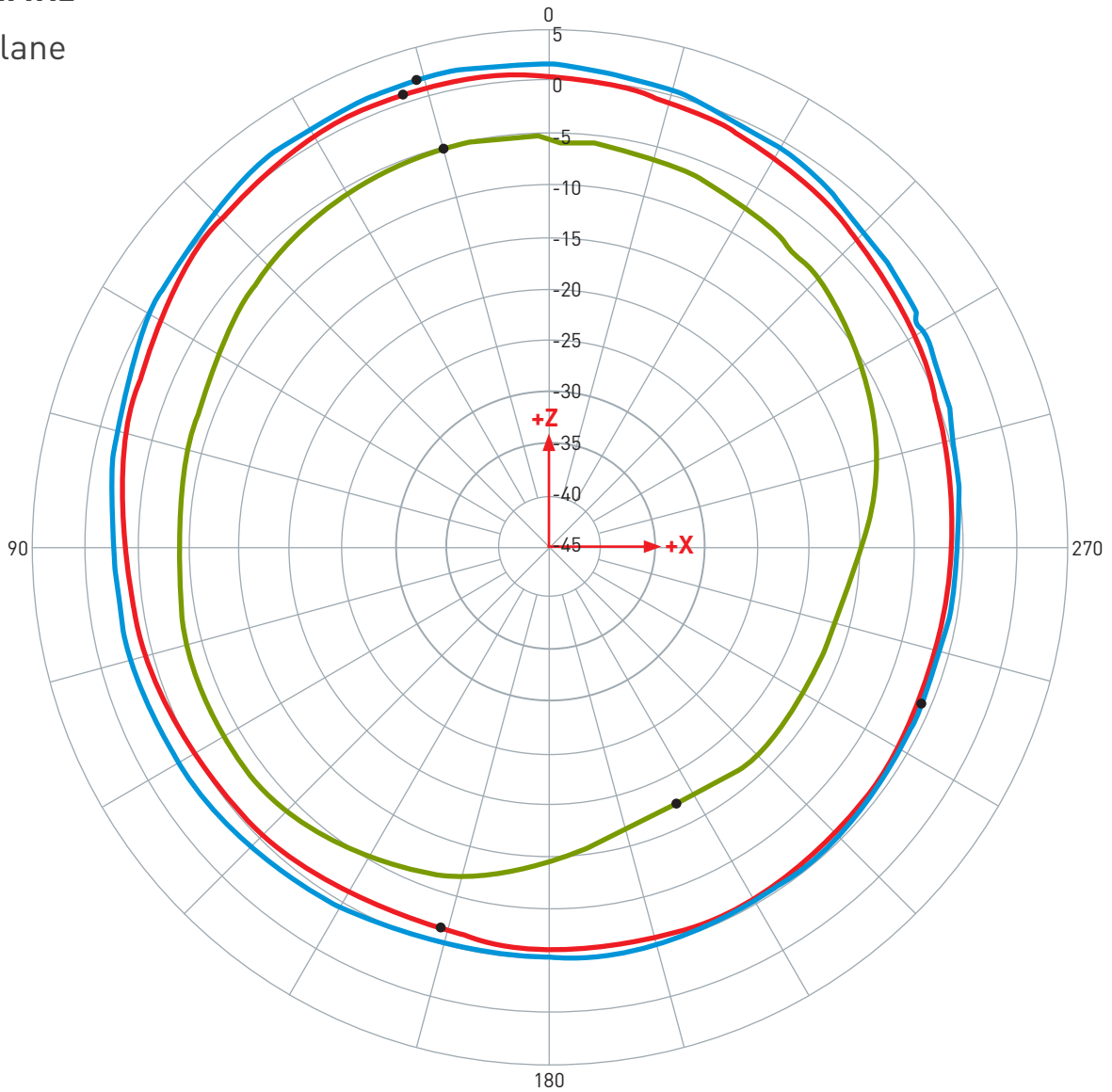


	Peak Gain	Zenith Gain
Horizontal	-1.7	-5.2
Vertical	-3.5	-3.5
Total	-0.3	-1.3

(unit : dBi)



**1602MHz**  
XZ Plane

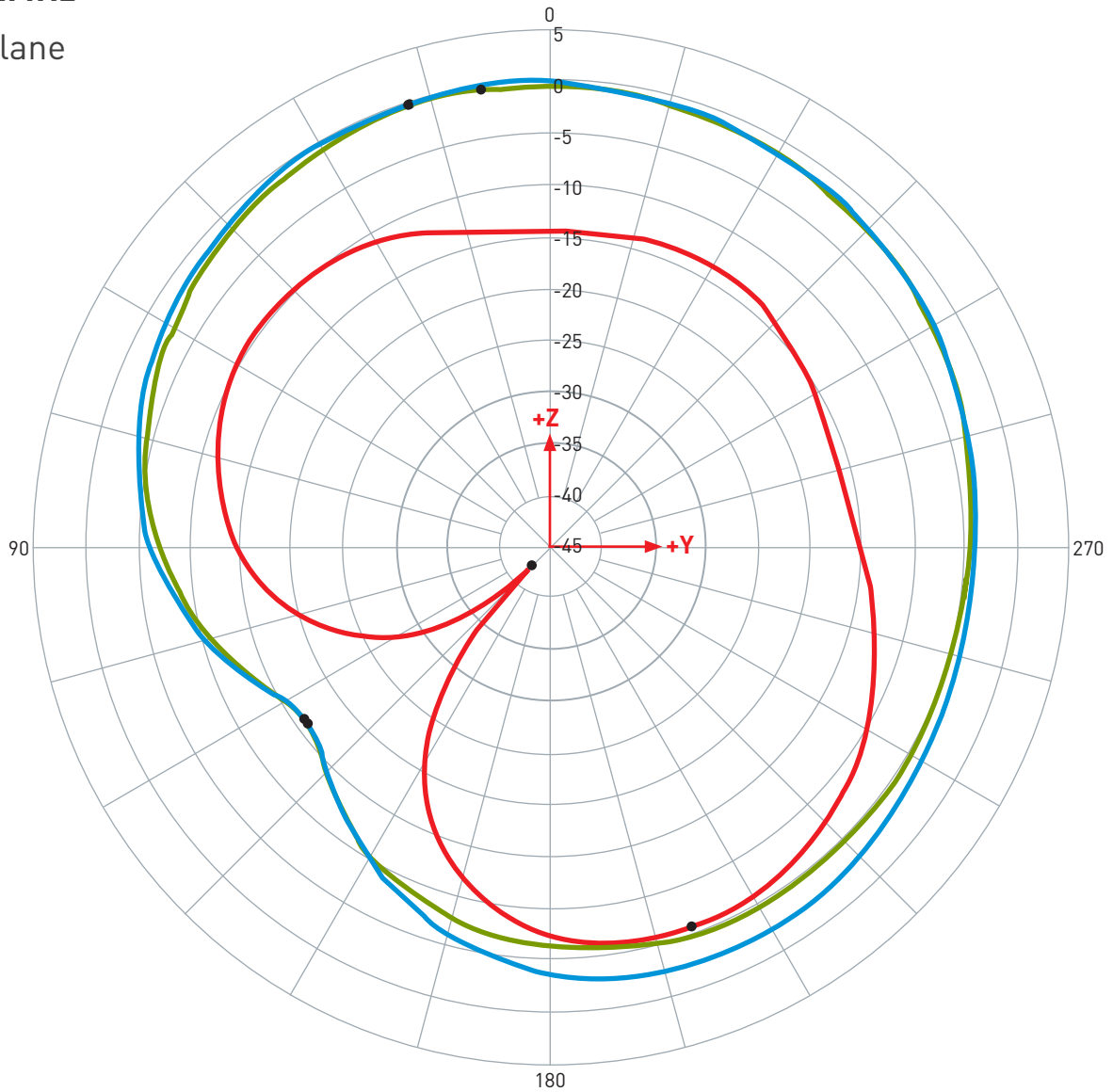


	Peak Gain	Zenith Gain
Horizontal	0.8	0.6
Vertical	-5.2	-5.4
Total	1.8	1.6

(unit : dBi)

# 1602MHz

## YZ Plane



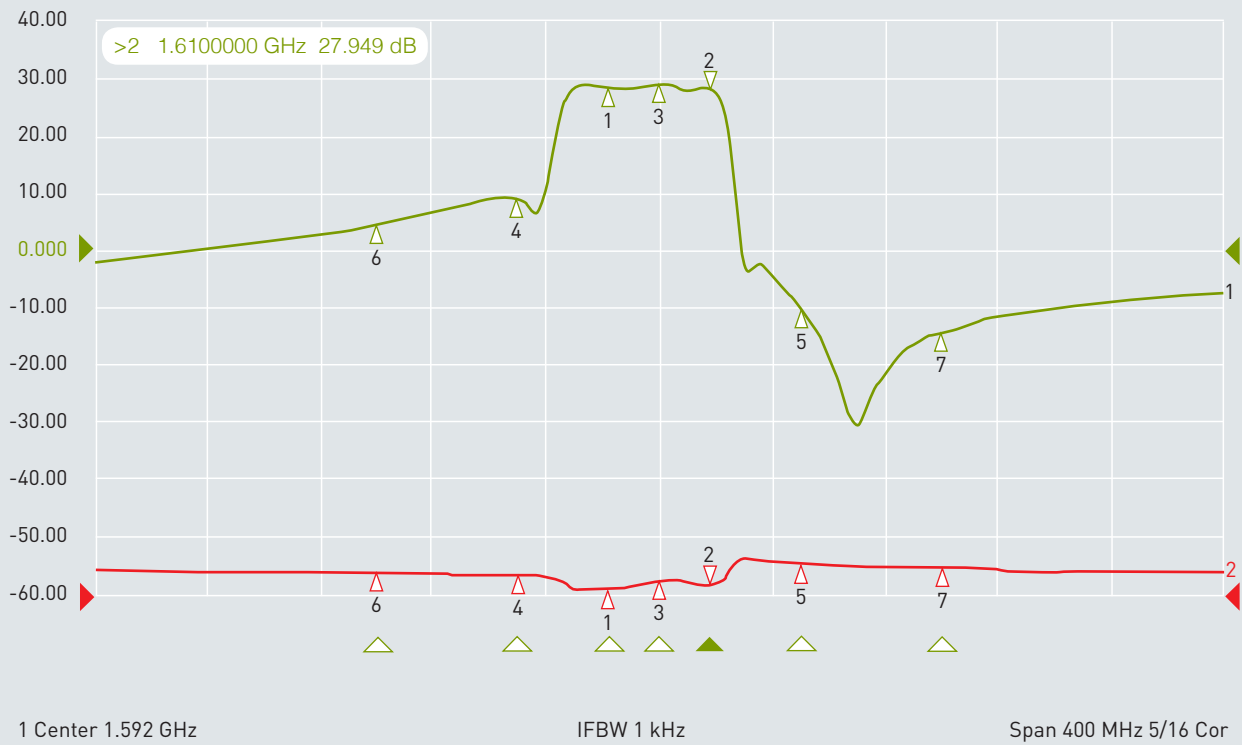
	Peak Gain	Zenith Gain
Horizontal	-5.8	-14.7
Vertical	-0.4	-0.4
Total	-0.2	-0.3

(unit : dBi)

## 6. LNA Gain and Out Band Rejection @3.0V

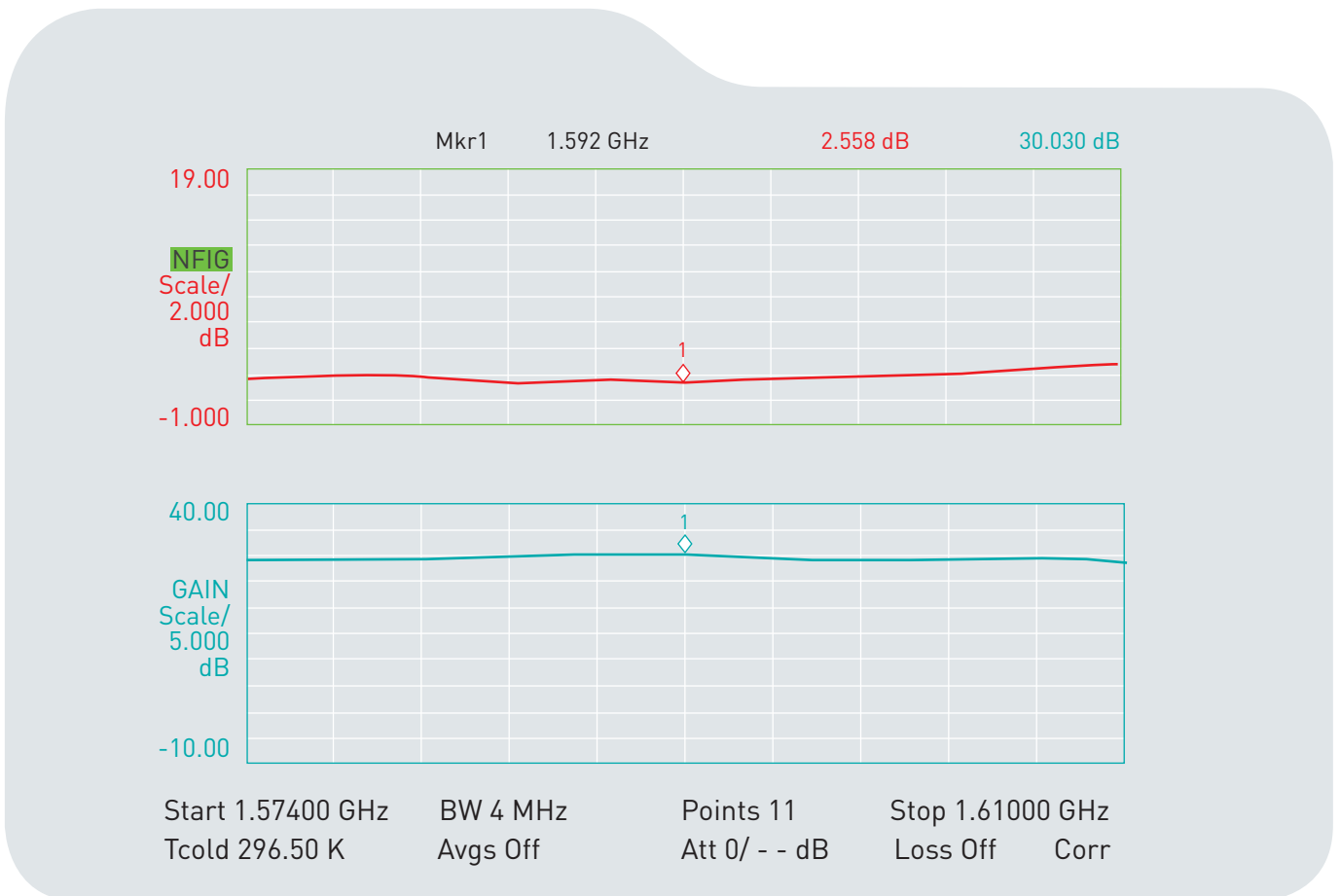
Tr1 S21 Log Mag 10.00dB/ Ref 0.000dB [F2 Smo]

Tr2 S22 SWR 1.000 / Ref 1.000 [F2 Smo]



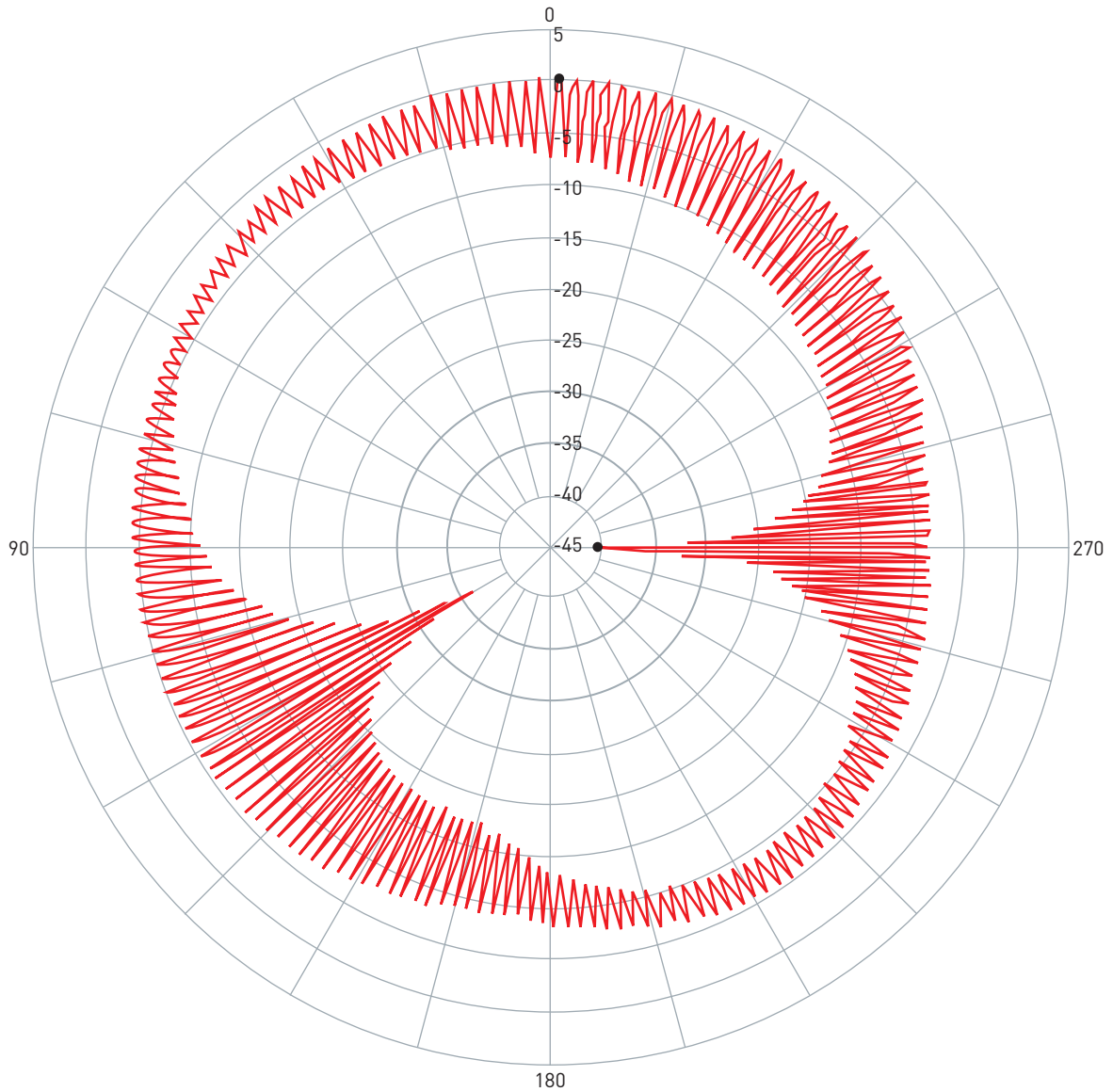
Ch1	Tr1	S21	1	1.5740000 GHz	28.186 dB
Ch1	Tr1	S21	>2	1.6100000 GHz	27.949 dB
Ch1	Tr1	S21	3	1.5920000 GHz	29.044 dB
Ch1	Tr1	S21	4	1.5420000 GHz	9.0245 dB
Ch1	Tr1	S21	5	1.6420000 GHz	-10.035 dB
Ch1	Tr1	S21	6	1.4920000 GHz	4.4105 dB
Ch1	Tr1	S21	7	1.6920000 GHz	-14.431 dB

## 7. LNA Noise Figure @3.0V



## 8. Axial Ratio

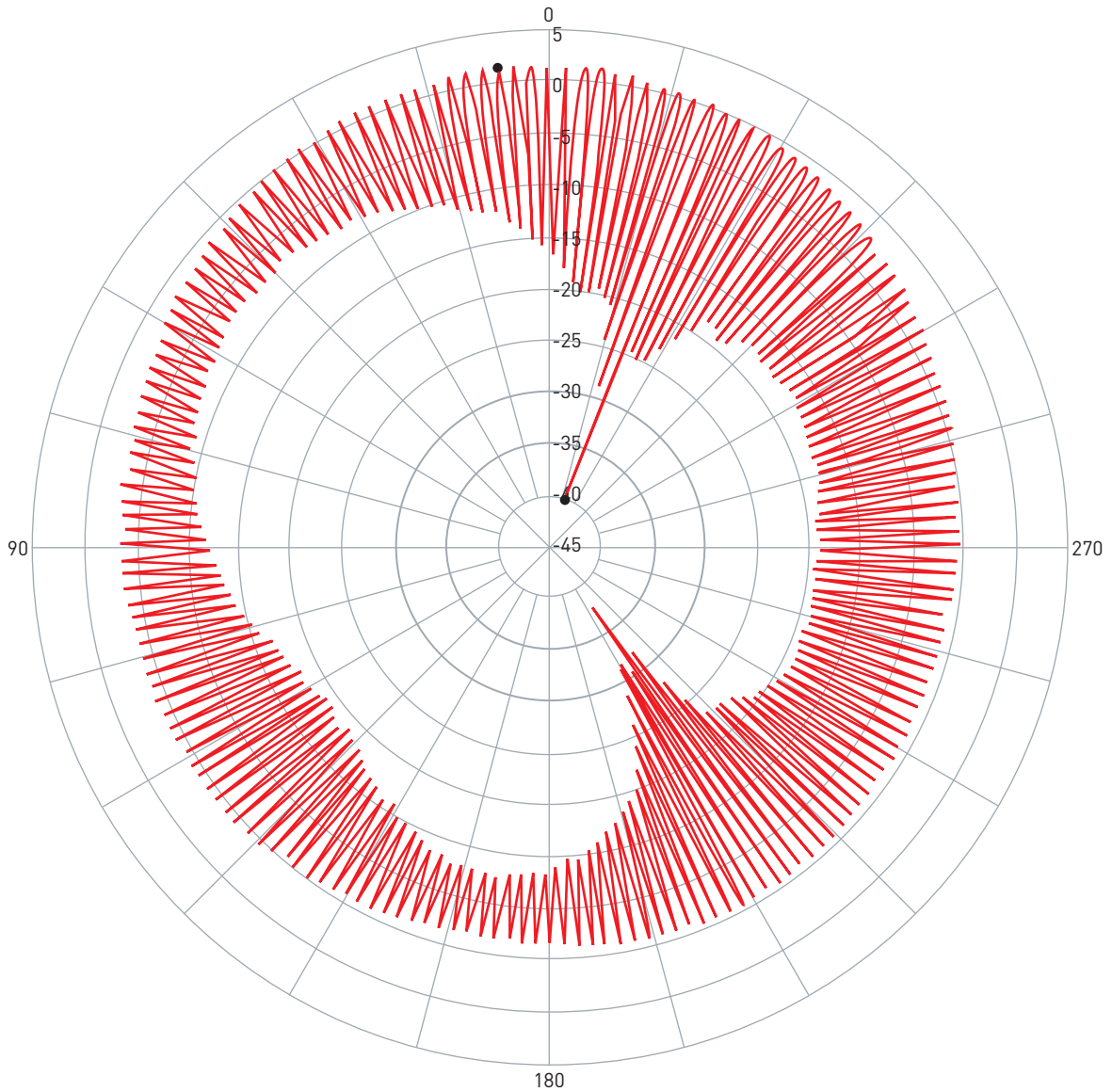
### 1575.42MHz Axial Ratio



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.161.301111	Axial Ratio	1575.42	0.21 / 359.30	-40.73 / 263.95	-5.89	CP

Angle	90°	75°	60°	45°	30°	15°	0°	345°	330°	315°	300°	285°	270°
Axial Ratio	6.97	3.06	1.27	1.89	3.62	5.30	7.10	9.03	9.61	9.56	9.11	10.55	31.83

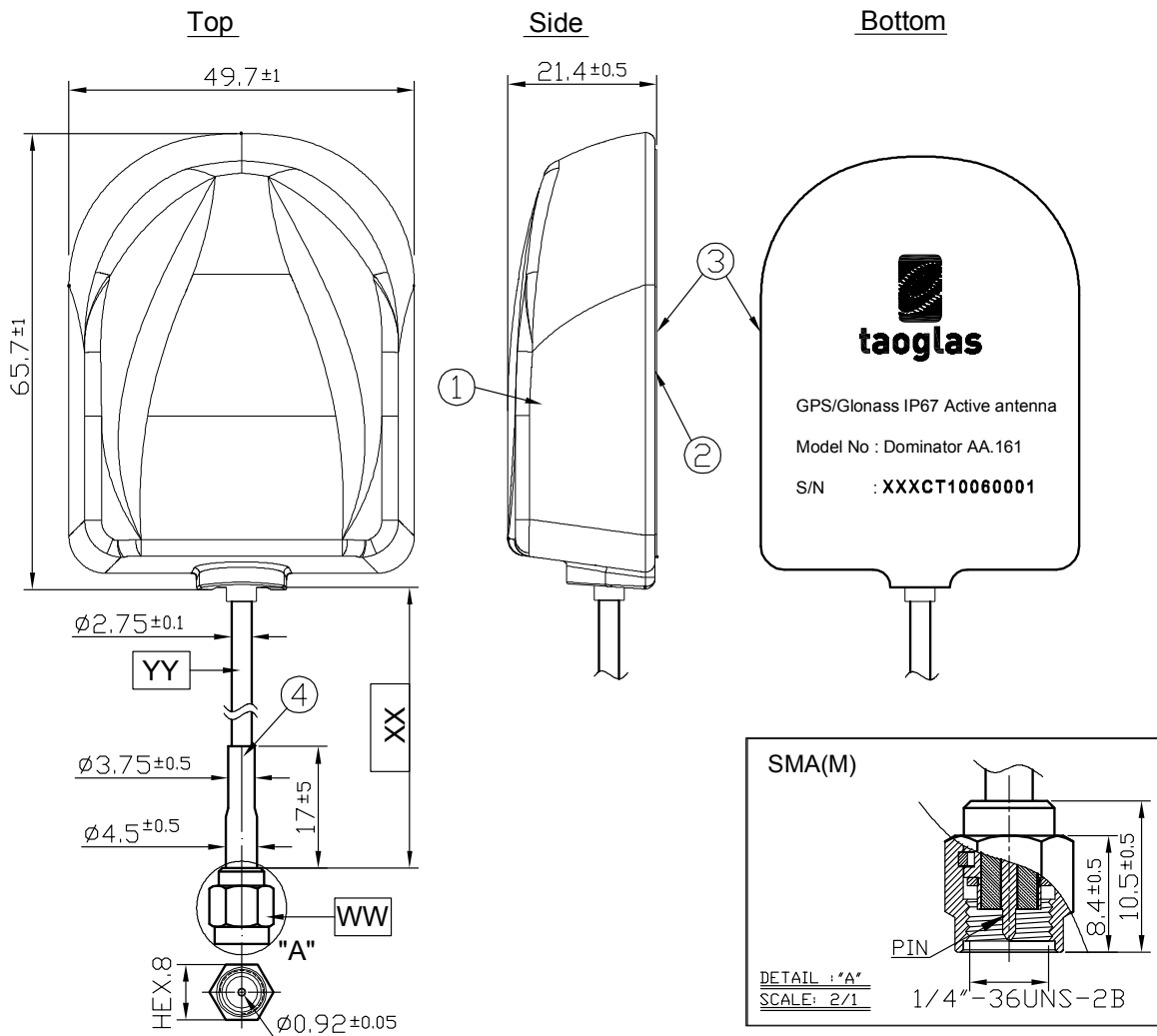
### 1602MHz XZ Plane



Pattern	Model No.	Test Mode	Freq (MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.
1	AA.161.301111	Axial Ratio	1602.00	1.63 / 6.32	-40.19 / 341.15	-5.20	CP

Angle	90°	75°	60°	45°	30°	15°	0°	345°	330°	315°	300°	285°	270°
Axial Ratio	8.46	6.32	5.84	6.97	9.11	12.43	17.25	25.33	22.57	15.29	14.09	13.39	13.23

## 9. Drawing



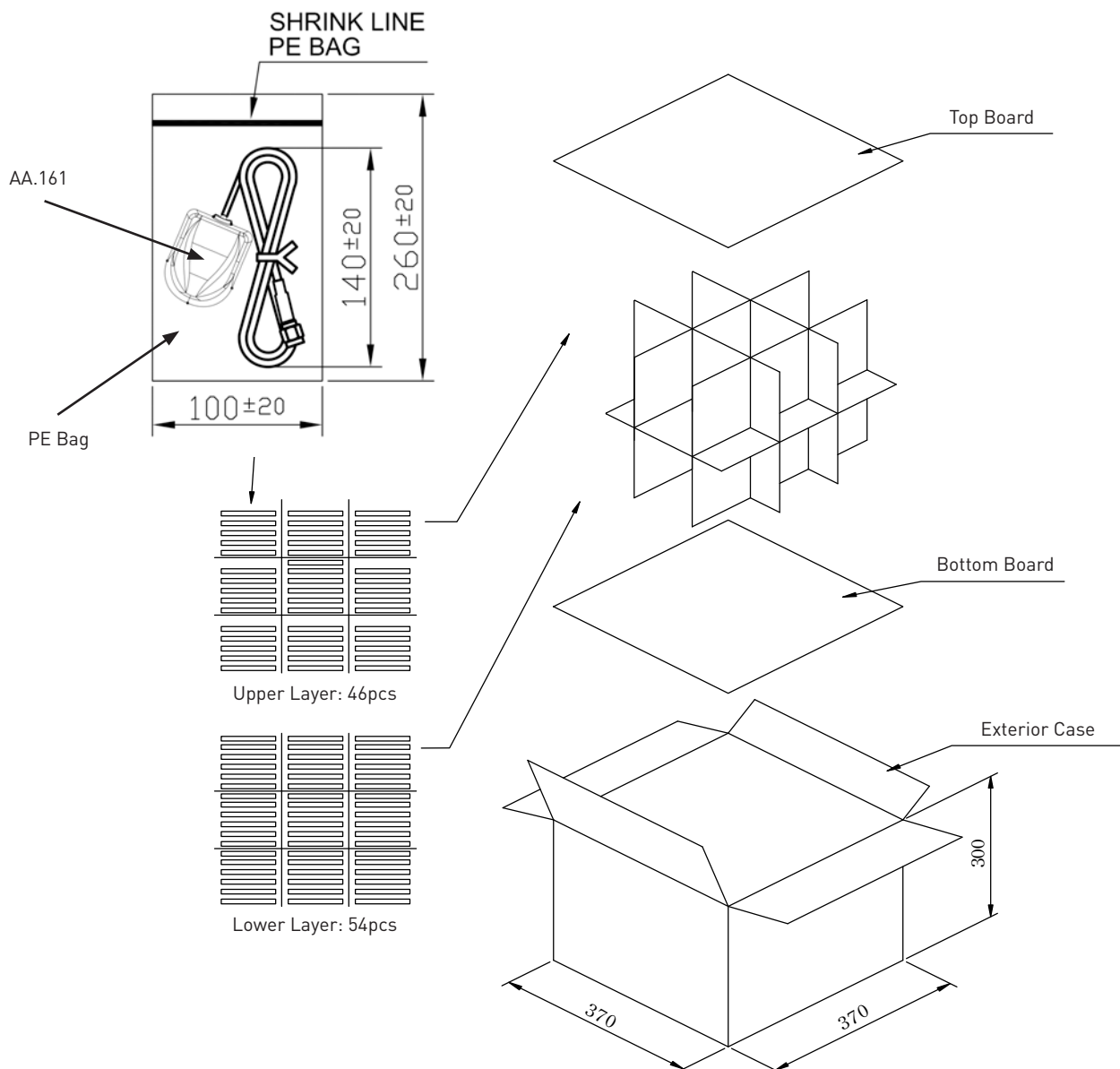
	Name	Material	Finish	QTY
1	AA.161 Antenna Housing Top	ABS	Black	1
2	AA.161 Antenna Housing Bottom	ABS	Black	1
3	AA.161 Sticker	Matte Silver PEF	Silver	1
4	Heat Shrink Tube	PE	Black	1

	Name	Material	Finish	QTY
WW	Connector Type	SMA(M) ST	Gold	1
XX	Cable Length	300±10mm		1
YY	Cable Type	RG174	Black	1

## 10. Packaging

1pcs antenna per small PE bag

100pcs antennas per Box



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