



CHINMORE INDUSTRY CO.,LTD

Specification

1. Product Type: Antenna for GNSS/L1L2
2. Chinmore's No: GG-GNSS174R55-199
3. Frequency for GNSS: 1575.42/1602 MHz
4. Frequency for L1/L2: 1227.6 MHz
5. Cable: RG-174 5M
6. Connector: SMA (M) ST

Test environment:

Room temperature: 22 °C / humidity: 50%

※RoHS Compliant

※ISO 9001 & ISO 14001

	Connector	Cable	OD	Cover	Frequency
GNSS	SMA M (Gold 鍍金)	RG174/U	ø2.7±0.15	Black (黑)	1575.42/1602MHz
L1/L2					1227.6MHz

ISO 9001
 ISO 14001

Material:		Treatment:		竣茂工業有限公司 Chinmore Industry CO.,LTD			
NO	DESCRIPTION	MATERIAL / FINISH	Q'TY	Unit: mm	Ver: A	Scale 1:1	TITLE R55(GNSS+L1/L2)+174U+SMA M
Part NO	GG-GNSS174R55-199			Model NO	File NO: QR0402	Drawing NO	100-22045-0507

ENVIRONMENTAL CONDITIONS

Operation Temperature	- 20°C to + 65°C
Storage Temperature	- 30°C to + 75°C
Relative Humidity	40% to 95%

ELECTRICAL SPECIFICATIONS

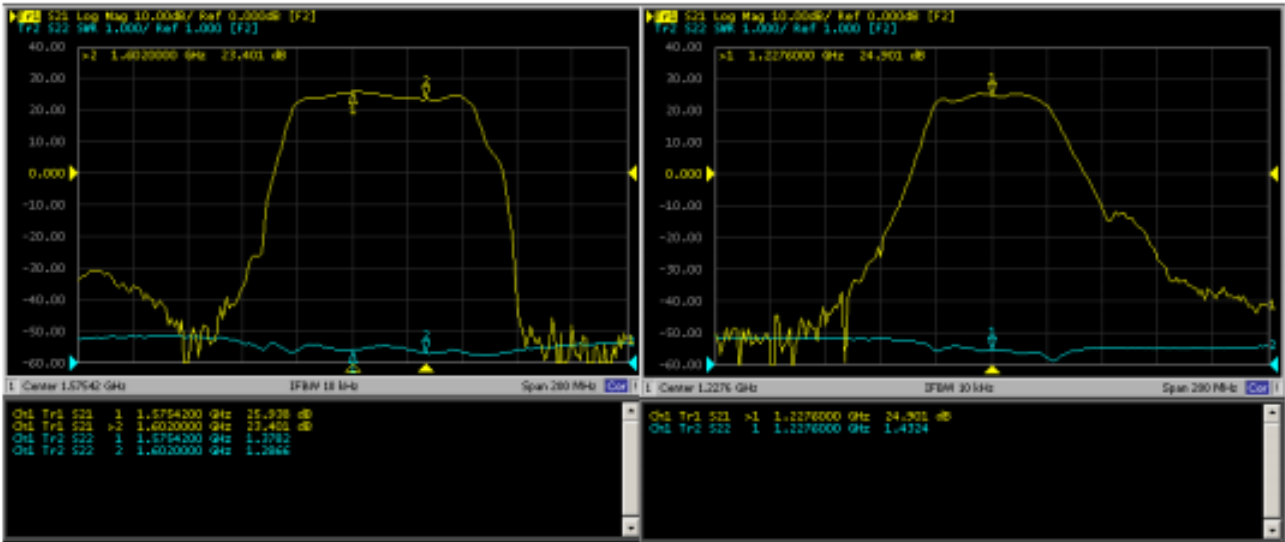
Operation Voltage	Min: 2.5 V	Typ.: 3.0 V	Max: 5.5V
Current Consumption@ 3.0V	Typ: 20mA	Max: 40mA	

ANTENNA

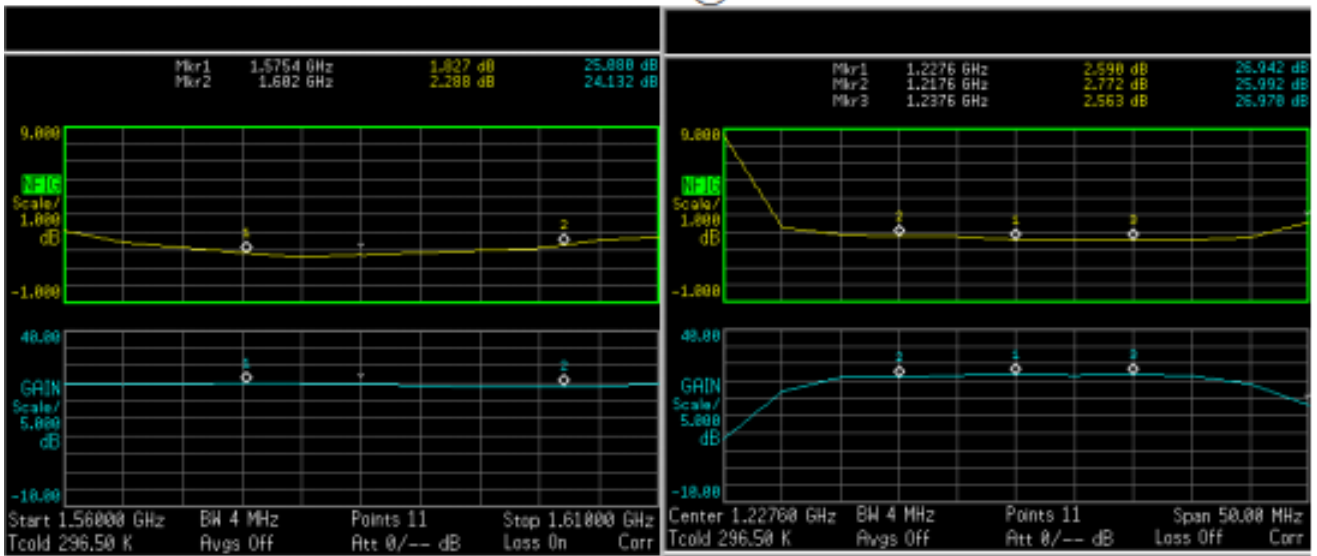
Frequency Range	L1: 1575.42 ±10 MHz , 1602.6 ±10 MHz L2: 1227.6 ±10 MHz
Bandwidth	L1: 10 MHz min L2: 10 MHz min. (Return loss -10 dB)
Gain	1575.42MHz : +0 dBi Typ. 1602.6MHz : +3 dBi Typ. 1227.6MHz : +1.5 dBi Typ.
Polarization	RHCP
Axial Ratio	4.0dB Max.

LNA

Frequency Range	L1: 1575.42 ±10 MHz , 1602 ±10 MHz L2: 1227.6 ±10 MHz
Gain	1575.42MHZ : 25±3 dB Typ. (+ 25 °C± 5°C) 1602MHZ : 23±3 dB Typ. (+ 25 °C± 5°C) 1227.6MHZ : 25±3 dB Typ. (+ 25 °C± 5°C)
Noise Figure	1575.42MHZ: 1.8 dB Typ. (+ 25 °C± 5°C) 1602MHZ: 2.3 dB Typ. (+ 25 °C± 5°C) 1227.6MHZ: 2.6 dB Typ. (+ 25 °C± 5°C)
Output Impedance	50Ω
Output VSWR	2.0 Max



LNA Gain @3.0V

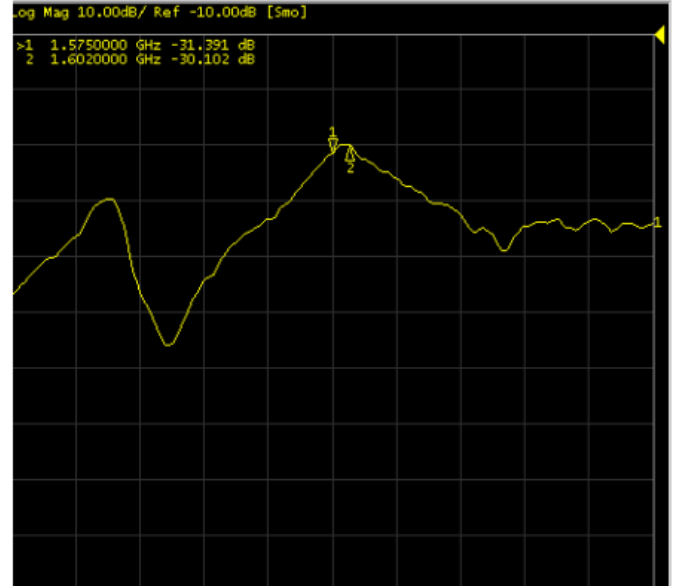
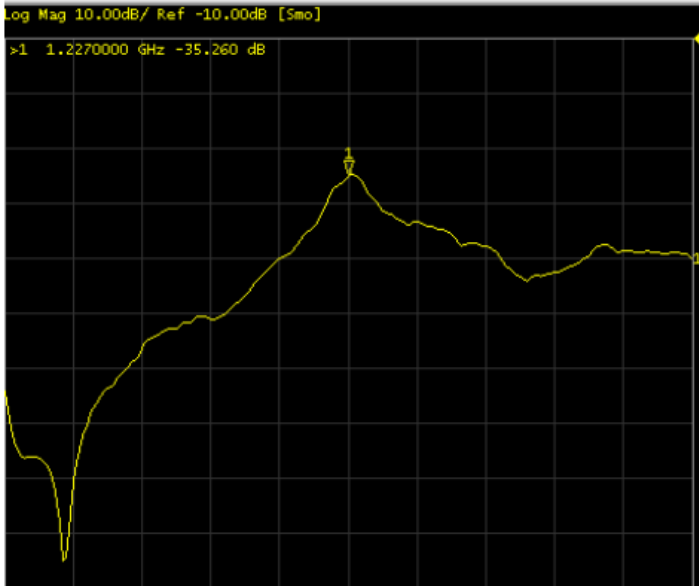


LNA Noise Figure @3.0V

TOTAL SPECIFICATIONS (Through Antenna, LNA, Cable and Connector)

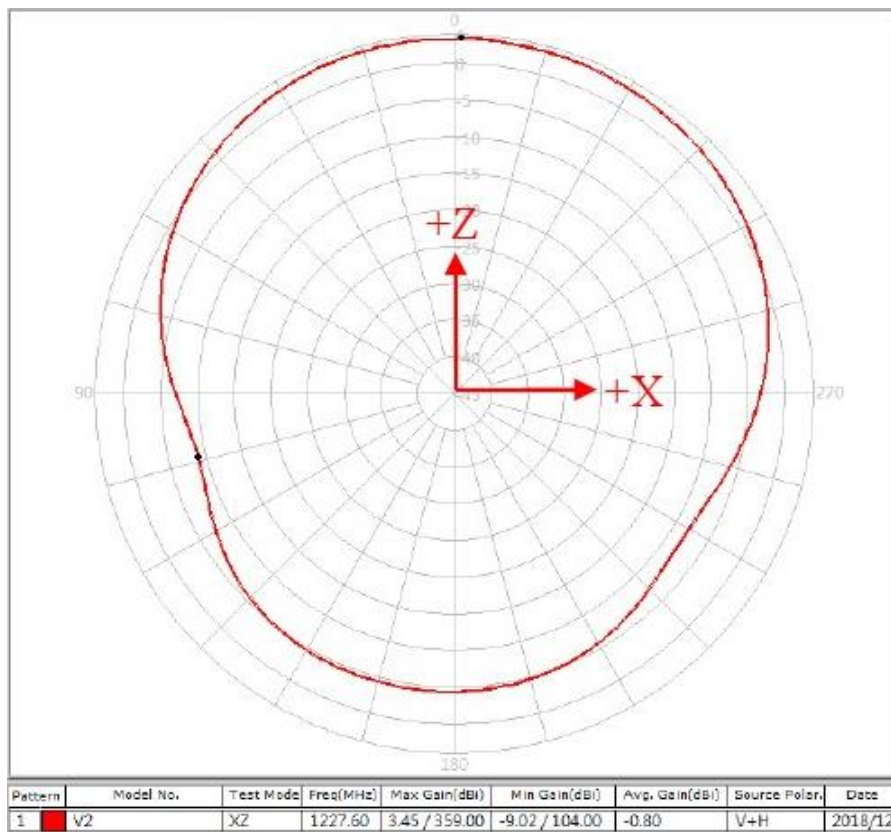
Frequency Range	L1: 1575.42 ±10 MHz , 1602 ±10 MHz L2: 1227.6 ±10 MHz
Gain@3V	At 90° L1 1575.42 ±10 MHz : 25 ± 5dBi At 90° L1 1602 ±10 MHz : 26 ± 5dBi At 90° L2 1227.6 ±10 MHz : 26.5 ± 5dBi
Output Impedance	50 Ω

Patch Antenna on CH-L1+L2 PCB +Hybrid Coupler S21 Log Mag Data



Frequency (MHz)	Log Mag Data (dB)
1227	-32.55
1575.42	-30.17
1602.6	-30.24

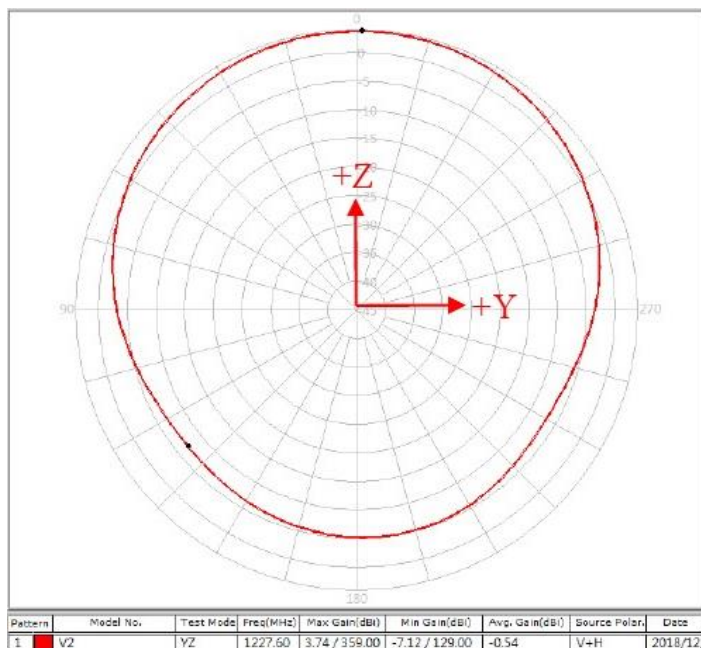
XZ-Plane 1227MHz



Peak Gain : 3.45 dBi

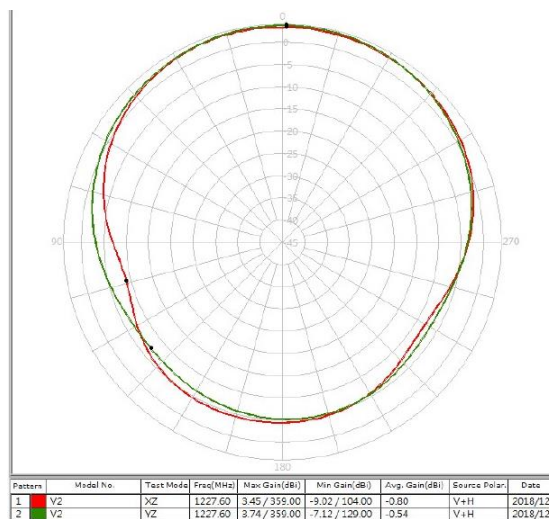
At Zenith Gain : 3.21 dBi

YZ-Plane 1227MHz



Peak Gain : 3.74 dBi
 At Zenith Gain : 3.70 dBi

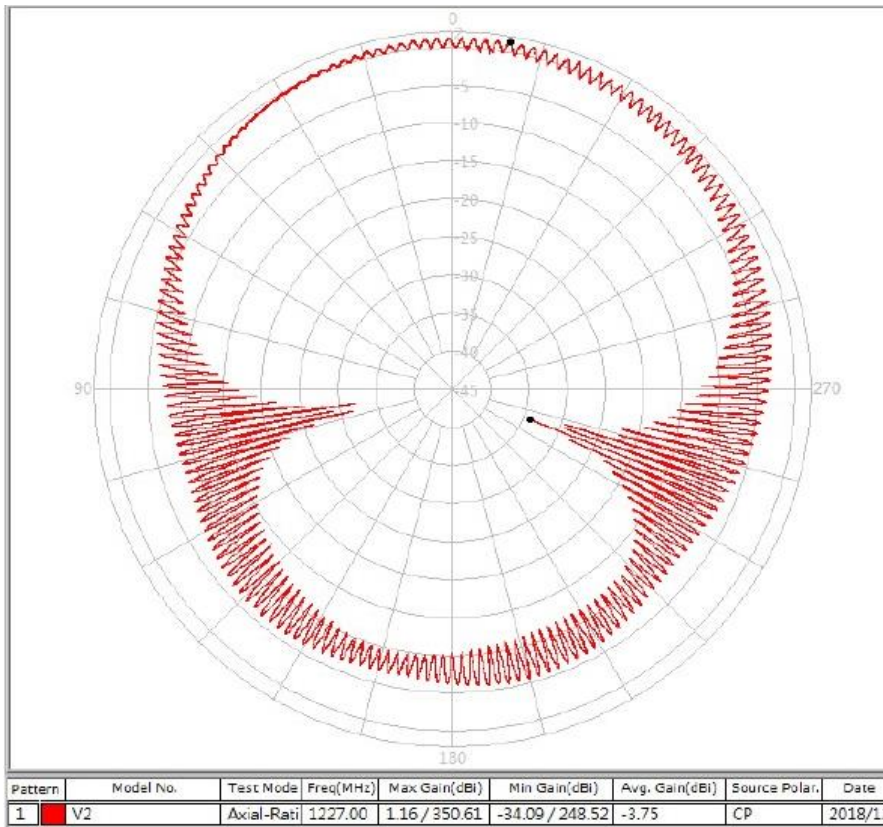
Gain Pattern Value : (1227MHz)



Angle	XZ-Plane	YZ-Plane
90°	-7.03	-3.21
75°	-3.57	-1.14
60°	-0.75	0.53
45°	1.26	1.81
30°	2.58	2.76
15°	3.22	3.40
0°	3.21	3.70
345°	3.19	3.54
330°	2.82	2.96
315°	2.17	1.94
300°	1.04	0.51
285°	-0.75	-1.33
270°	-3.23	-3.51

(Unit : dBi)

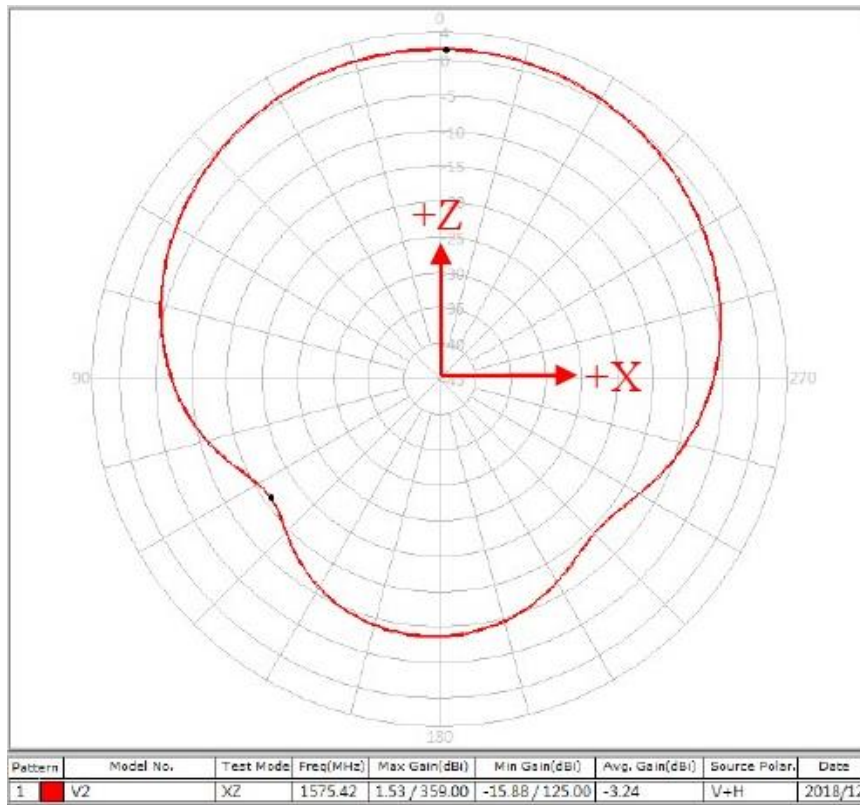
Axial Ratio Pattern (Spin Dipole Method) : (1227MHz)



Angle	Axial Ratio
90°	9.87
75°	3.06
60°	1.46
45°	0.56
30°	0.16
15°	0.58
0°	1.11
345°	1.49
330°	1.74
315°	1.92
300°	3.01
285°	4.85
270°	9.23

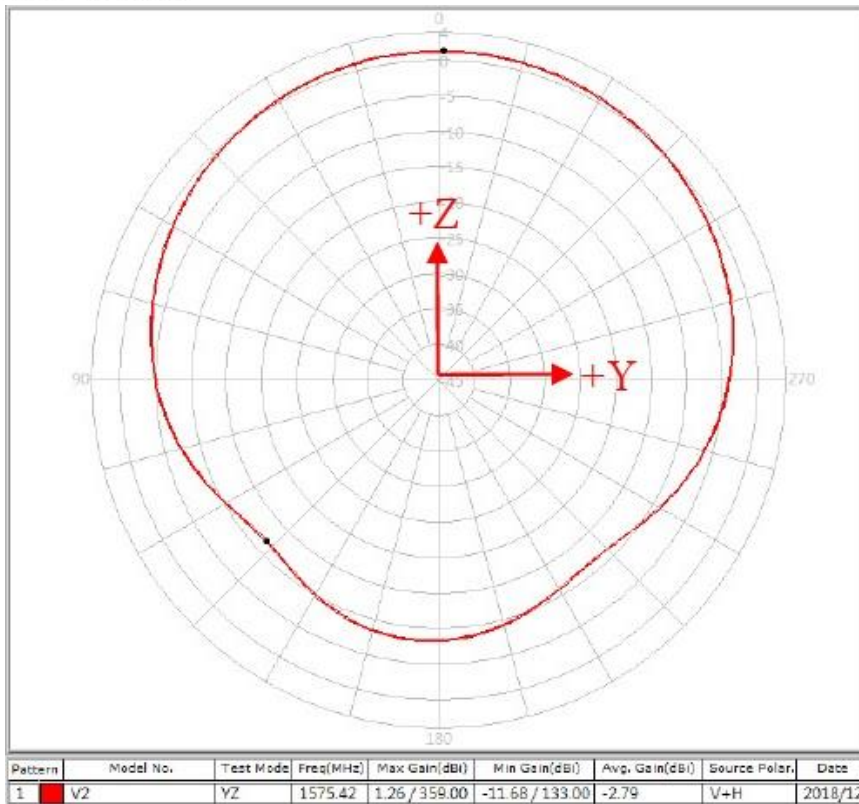
(At 1227 MHz)

XZ-Plane 1575.42MHz



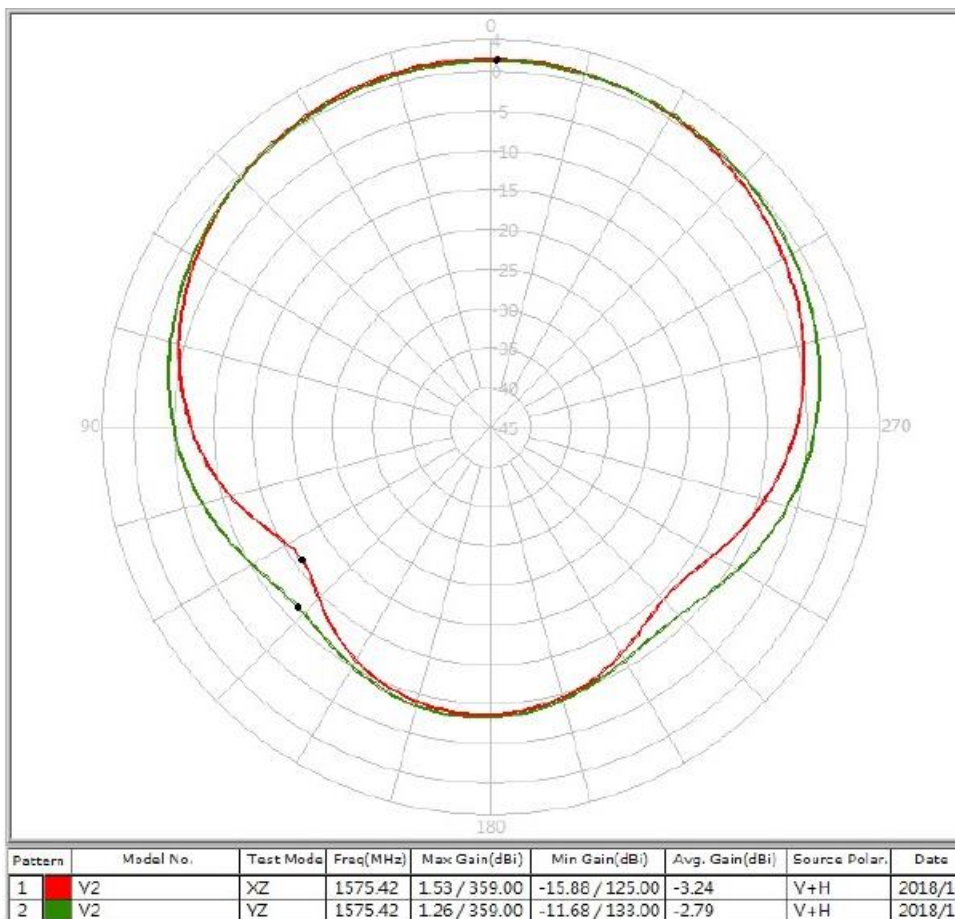
Peak Gain : 1.53 dBi
At Zenith Gain : 1.51 dBi

YZ-Plane 1575.42MHz



Peak Gain : 1.26 dBi
At Zenith Gain : 1.25 dBi

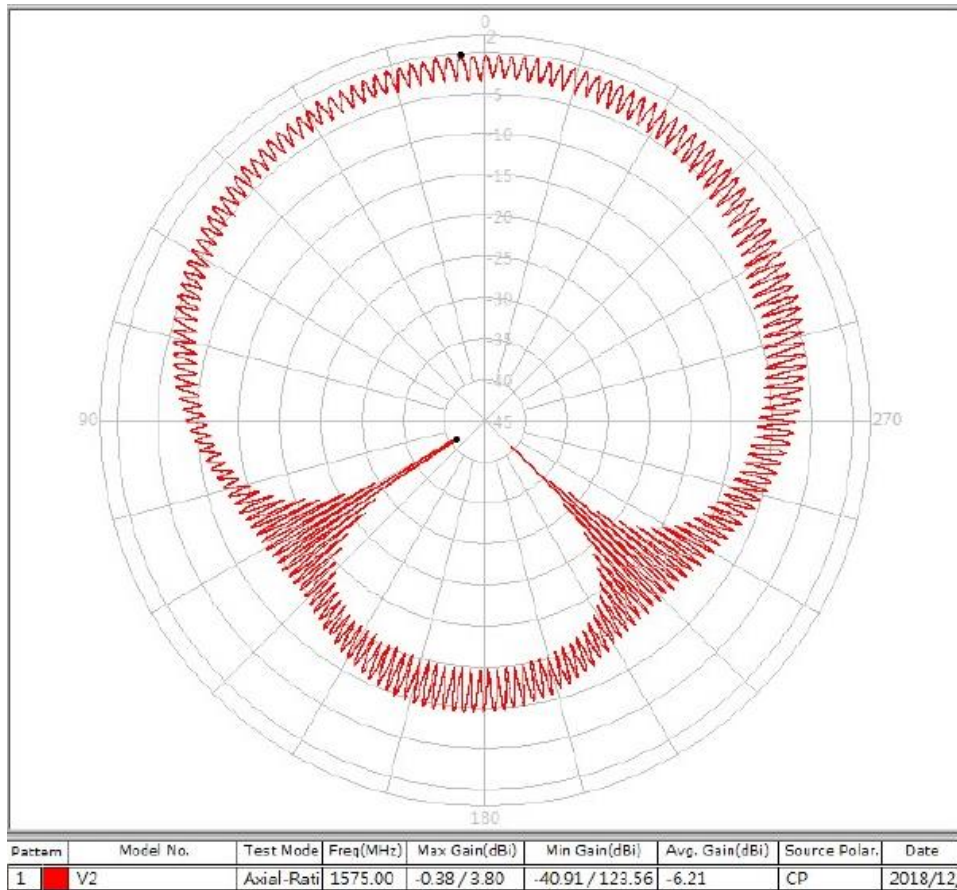
Gain Pattern Value : (1575.42MHz)



Angle	XZ-Plane	YZ-Plane
90°	-7.23	-5.05
75°	-4.33	-3.21
60°	-2.16	-1.71
45°	-0.48	-0.48
30°	0.69	0.42
15°	1.33	1.00
0°	1.51	1.25
345°	1.22	1.11
330°	0.48	0.68
315°	-0.70	-0.08
300°	-2.24	-1.07
285°	-4.12	-2.33
270°	-6.39	-4.01

(Unit : dBi)

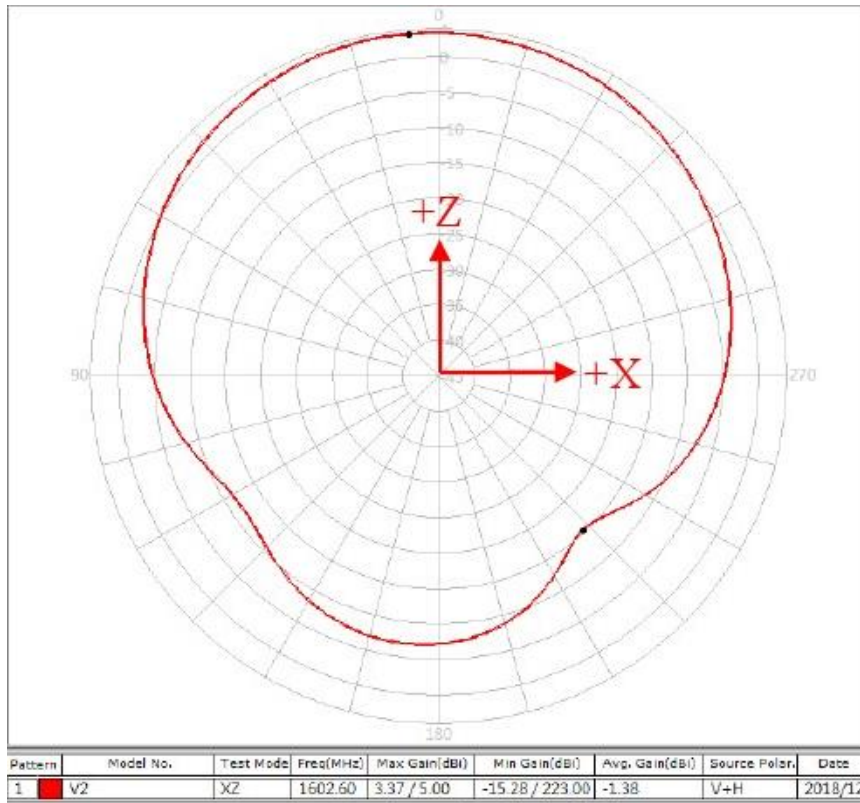
Axial Ratio Pattern (Spin Dipole Method) : (1575.42MHz)



Angle	Axial Ratio
90°	2.13
75°	2.39
60°	2.60
45°	2.22
30°	2.48
15°	2.70
0°	2.69
345°	2.45
330°	3.39
315°	3.93
300°	4.89
285°	4.75
270°	4.46

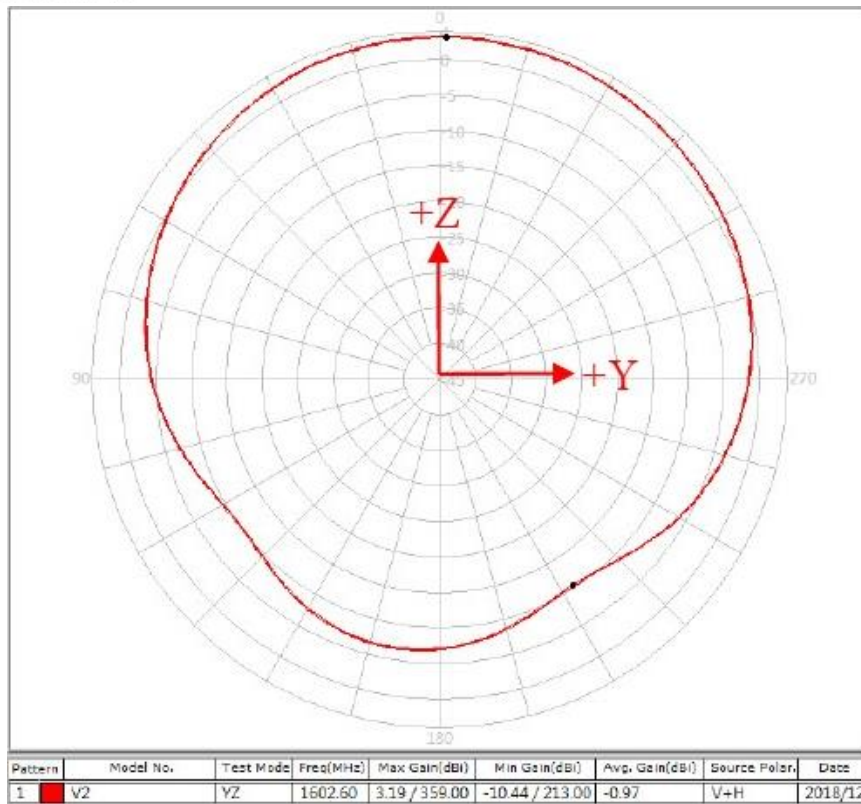
(At 1575.42MHz)

XZ-Plane 1602.6MHz



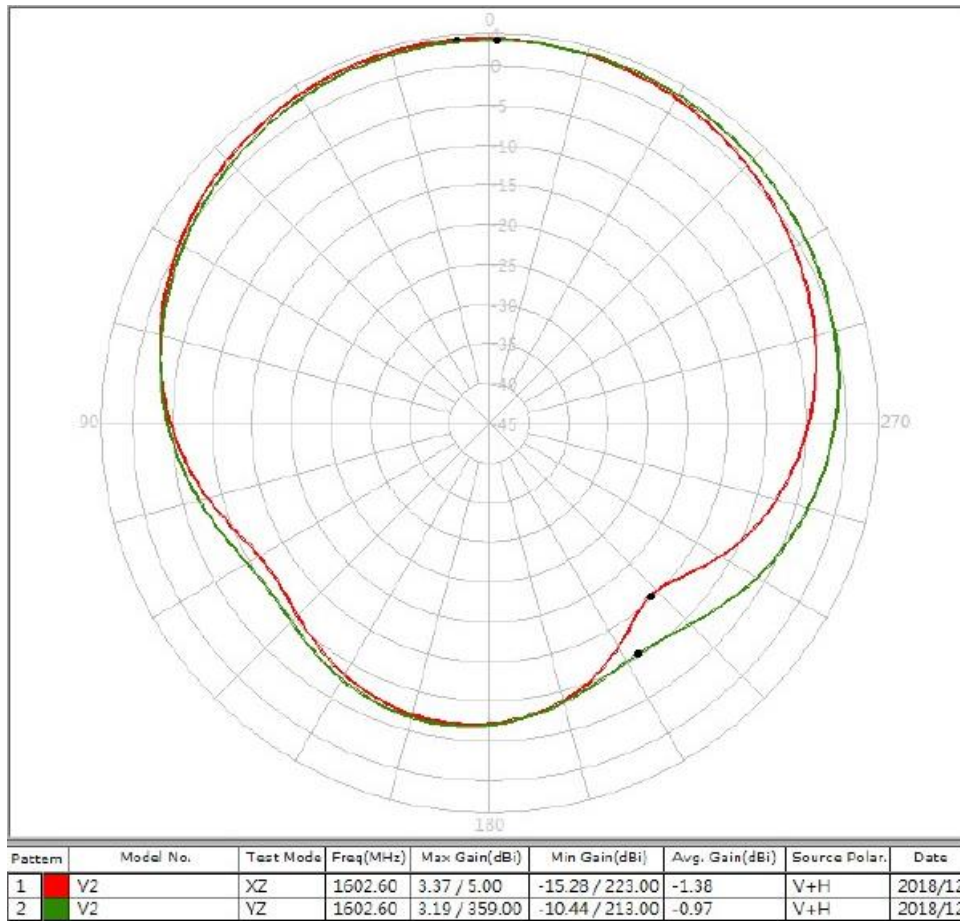
Peak Gain : 3.37 dBi
At Zenith Gain : 3.33 dBi

YZ-Plane 1602.6MHz



Peak Gain : 3.19 dBi
At Zenith Gain : 3.14 dBi

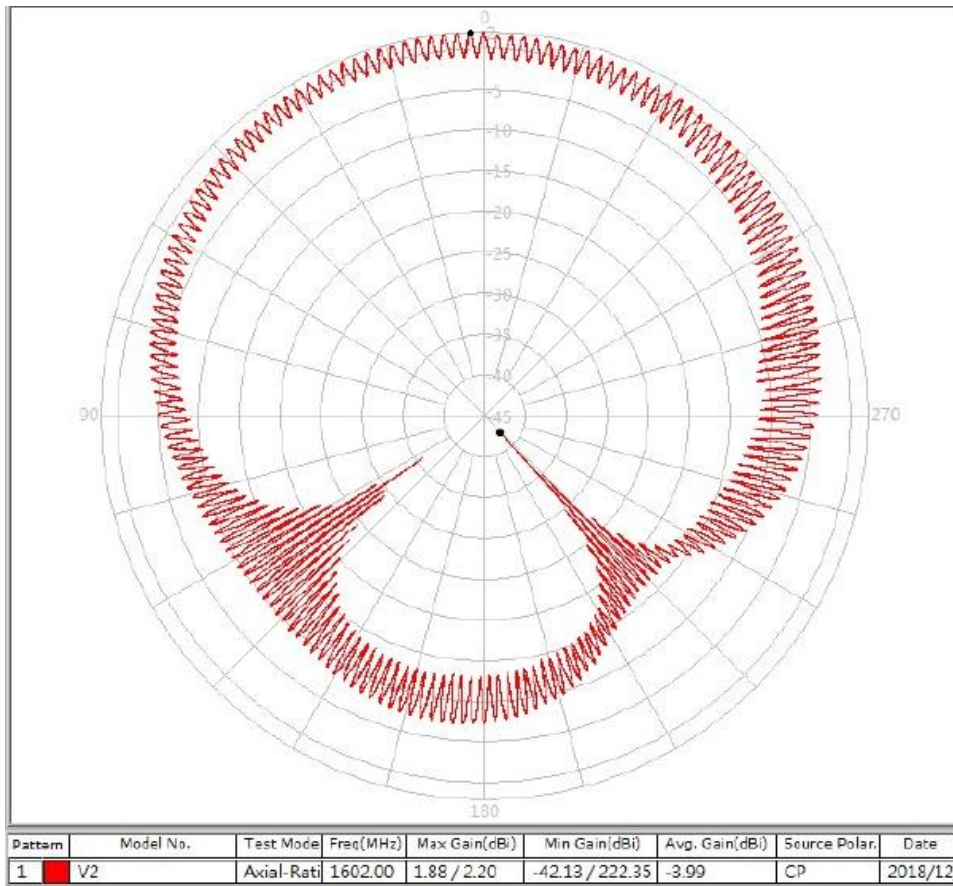
Gain Pattern Value : (1602.6MHz)



Angle	XZ-Plane	YZ-Plane
90°	-4.79	-4.44
75°	-2.01	-2.25
60°	0.11	-0.43
45°	1.69	1.07
30°	2.74	2.18
15°	3.27	2.87
0°	3.33	3.14
345°	2.92	3.01
330°	2.10	2.58
315°	0.88	1.91
300°	-0.69	1.06
285°	-2.56	0.02
270°	-4.76	-1.42

(Unit : dBi)

Axial Ratio Pattern (Spin Dipole Method) : (1602.6MHz)



Angle	Axial Ratio
90°	3.58
75°	2.93
60°	2.82
45°	2.38
30°	2.38
15°	2.51
0°	2.47
345°	2.96
330°	3.49
315°	4.48
300°	5.46
285°	6.54
270°	6.33

(At 1602.6 MHz)