CHINMORE INDUSTRY CO.,LTD

Specification

1.Product Type: GNSS Antenna

2.Chinmore No: GNSS L1/L2 Antenna

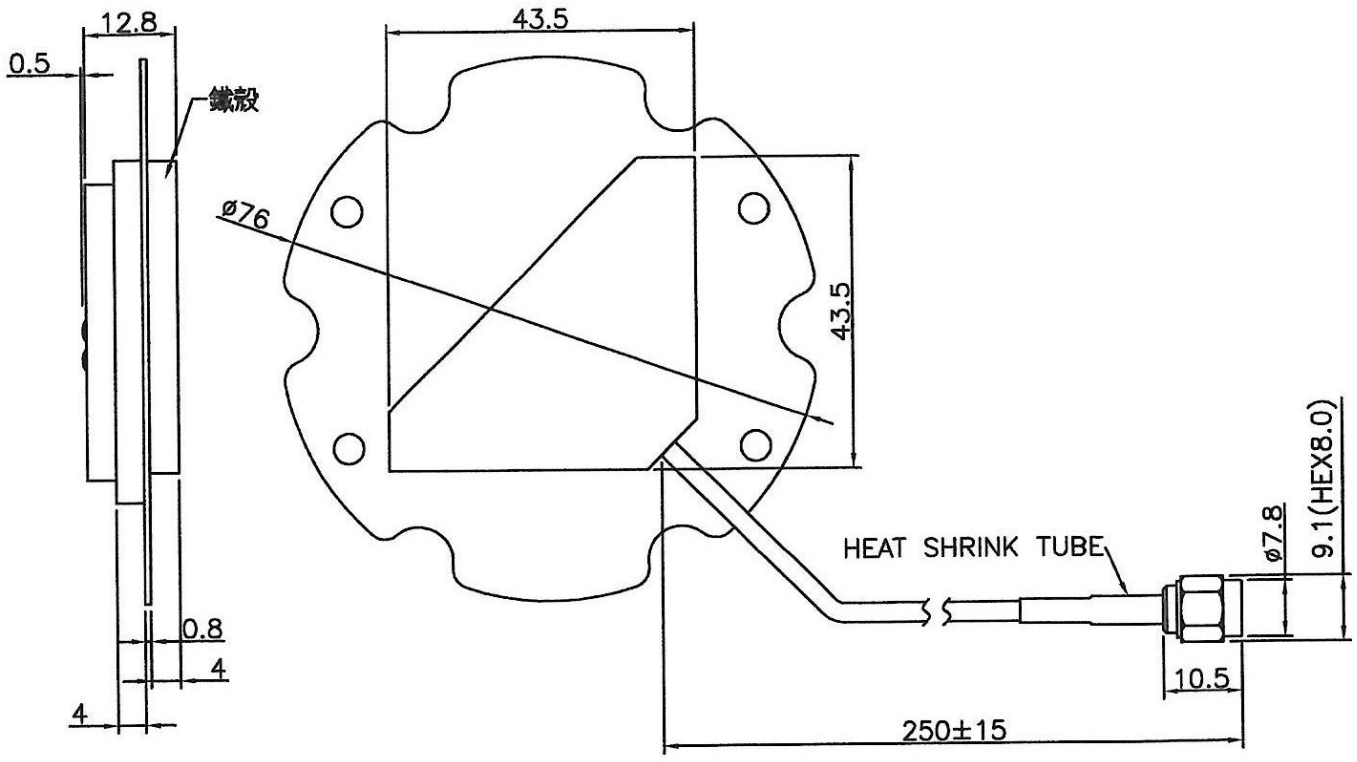
3.Frequency(GNSS): 1575.42/1602 MHz

(L1/L2): 1227.6 MHz

4.Cable: RG174U

5.Connector: SMA M

※RoHS Compliant



ENVIRONMENTAL CONDITIONS

Operation Temperature	- 40℃ to + 85℃
Storage Temperature	- 40℃ to + 90℃
Relative Humidity	40% to 95%

ELECTRICAL SPECIFICATIONS

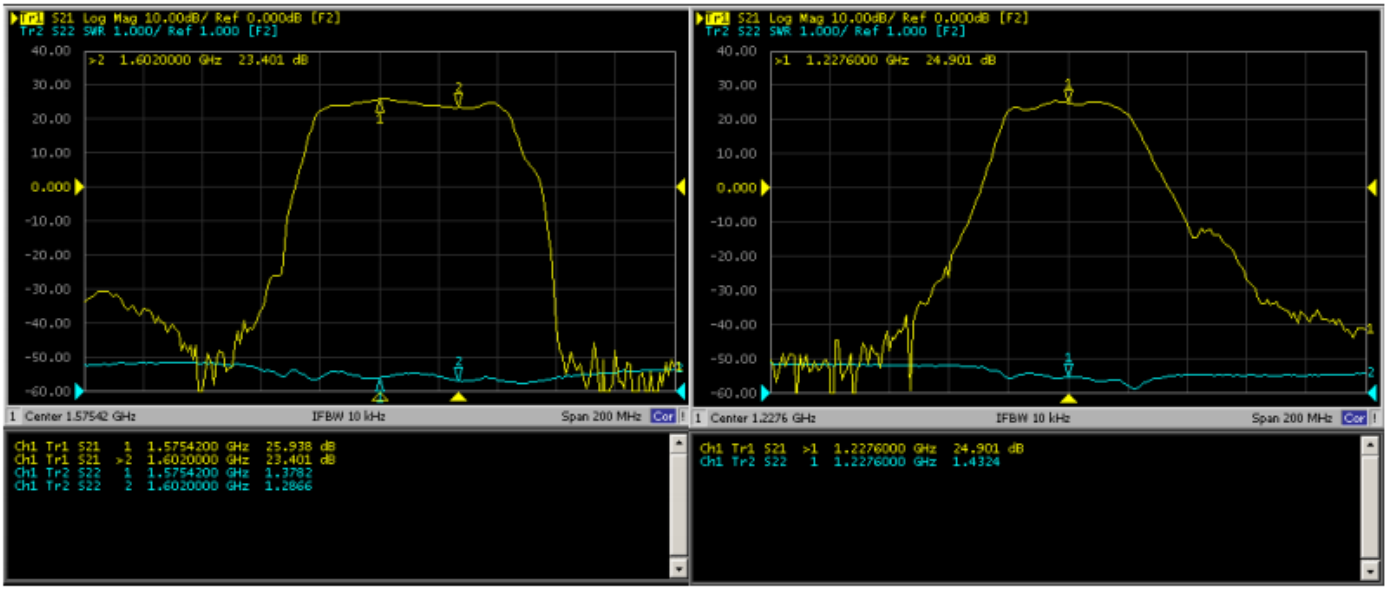
Operation Voltage	Min: 2.5 V	Typ.: 3.0 V	Max: 5.5V
Current Consumption@ 3.0V	Typ: 20mA	Max: 40mA	

ANTENNA

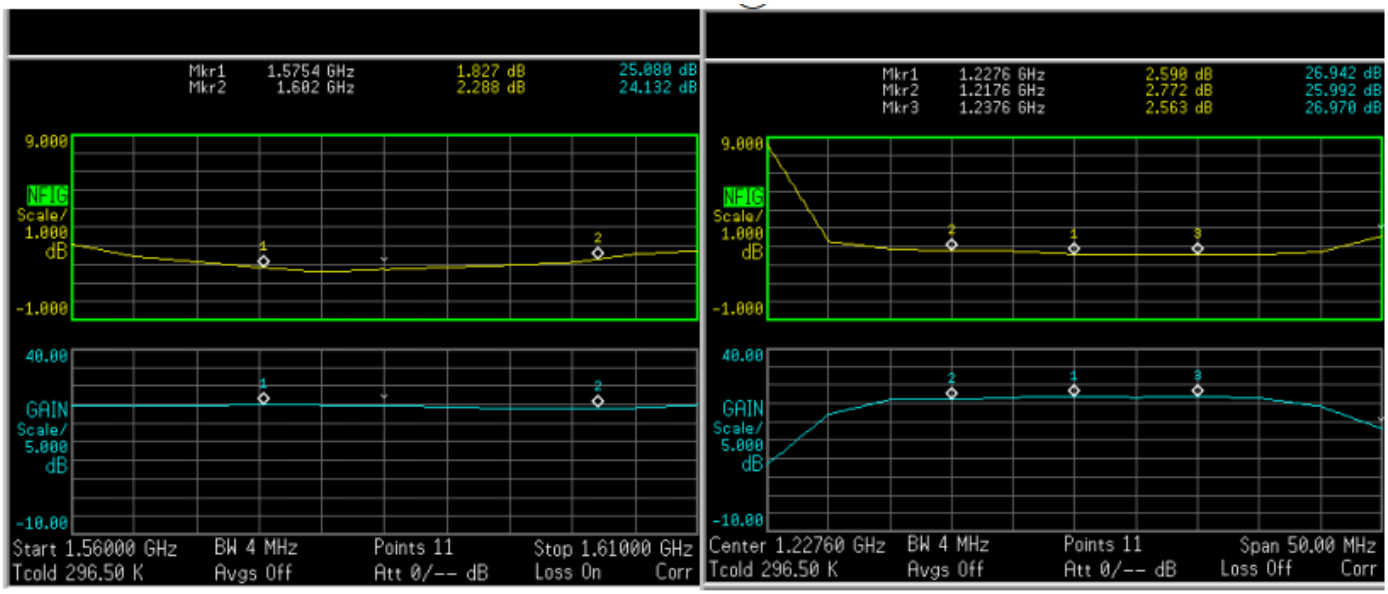
Frequency Range	L1： 1575.42 ± 1.023 MHz, 1602.6 ± 8 MHz L2： 1227.6 ± 10 MHz
Gain	1575.42MHz: +0 dBi Typ. 1602.6MHz: +3 dBi Typ. 1227.6MHz: +1.5 dBi Typ.
Polarization	RHCP
Axial Ratio	4.0dB Max.

LNA

Frequency Range	L1： 1575.42 ± 1.023 MHz, 1602 ± 8 MHz L2： 1227.6 ± 10 MHz
Gain	1575.42MHZ : 25±3 dB Typ. (+ 25 ℃± 5℃) 1602MHZ : 23±3 dB Typ. (+ 25 ℃± 5℃) 1227.6MHZ : 25±3 dB Typ. (+ 25 ℃± 5℃)
Noise Figure	1575.42MHZ: 1.8 dB Typ. (+ 25 ℃± 5℃) 1602MHZ: 2.3 dB Typ. (+ 25 ℃± 5℃) 1227.6MHZ: 2.6 dB Typ. (+ 25 ℃± 5℃)
Output Impedance	50Ω
Output VSWR	2.0 Max



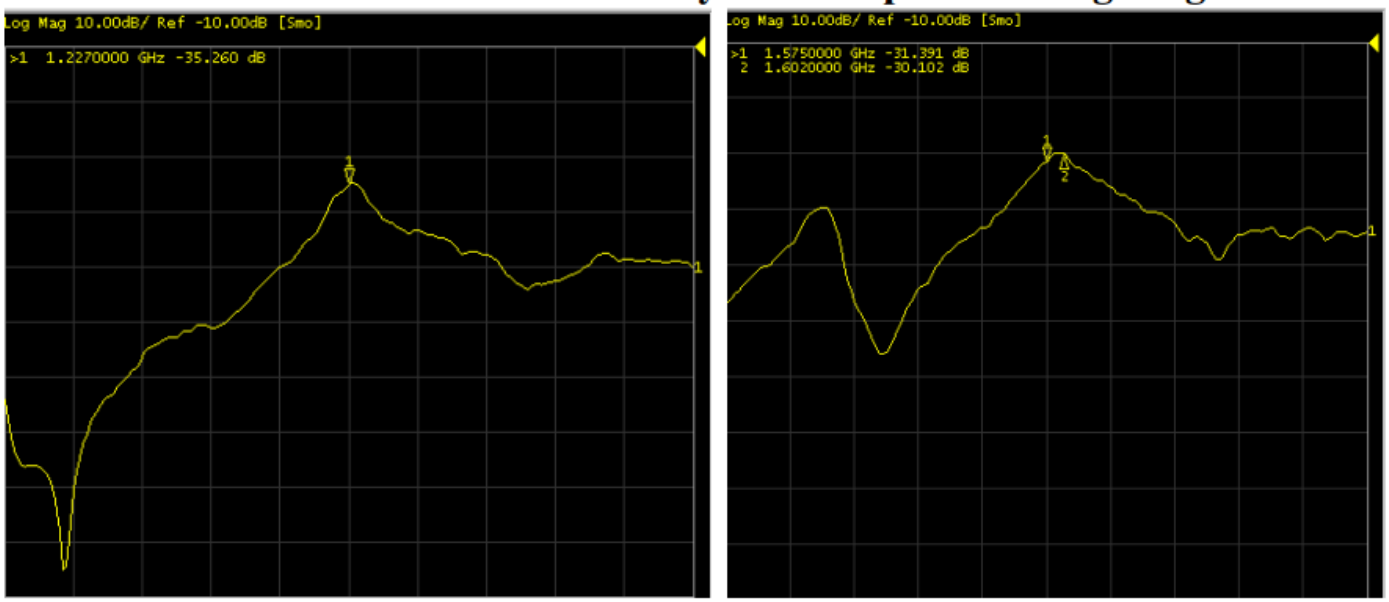
LNA Gain @3.0V



LNA Noise Figure @3.0V

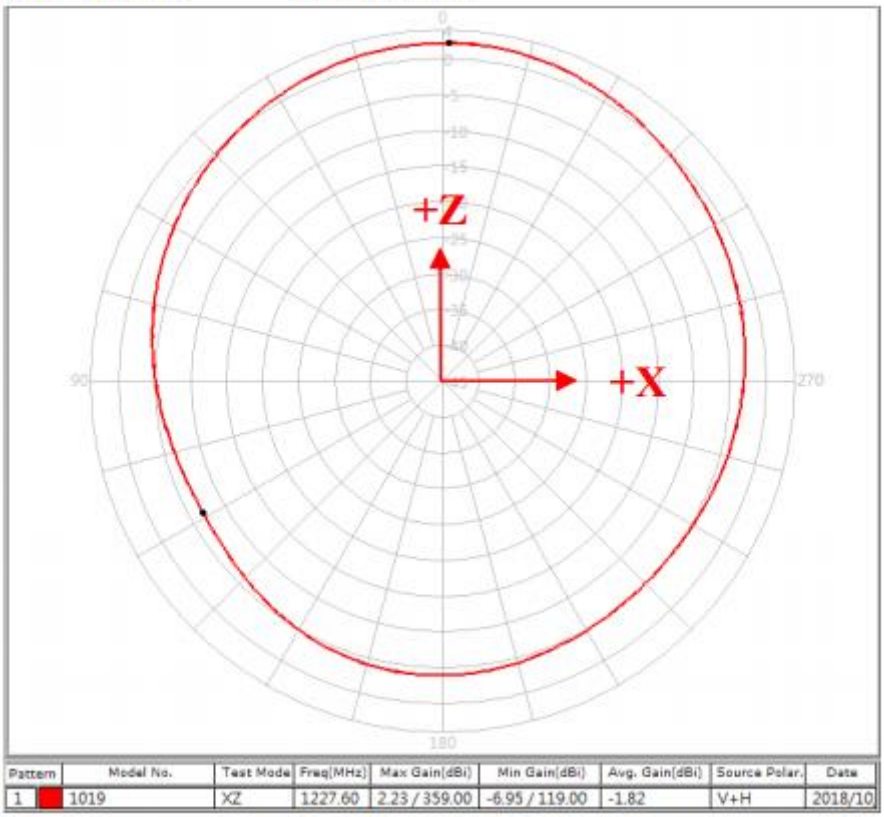
Radiation patterns

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



Frequency	Log Mag Data(dB)
1227	-35.26
1575.42	-31.39
1602.6	-30.10

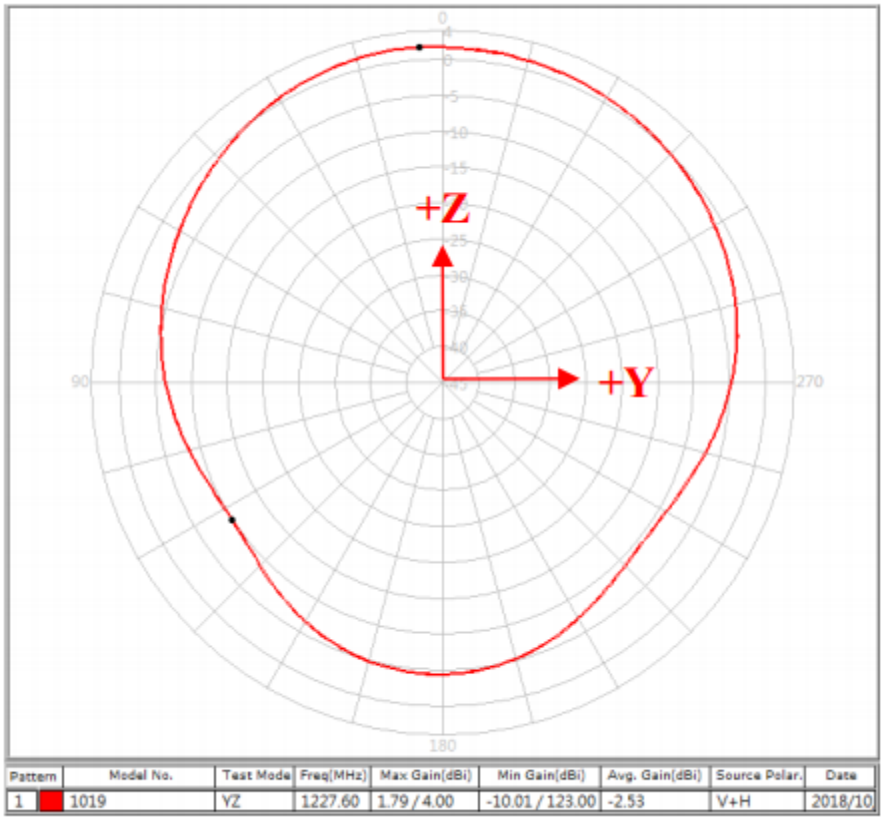
XZ-Plane **1227MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1227.60	2.23 / 359.00	-6.95 / 119.00	-1.82	V+H	2018/10

Peak Gain：2.33 dBi **At Zenith Gain：2.16 dBi**

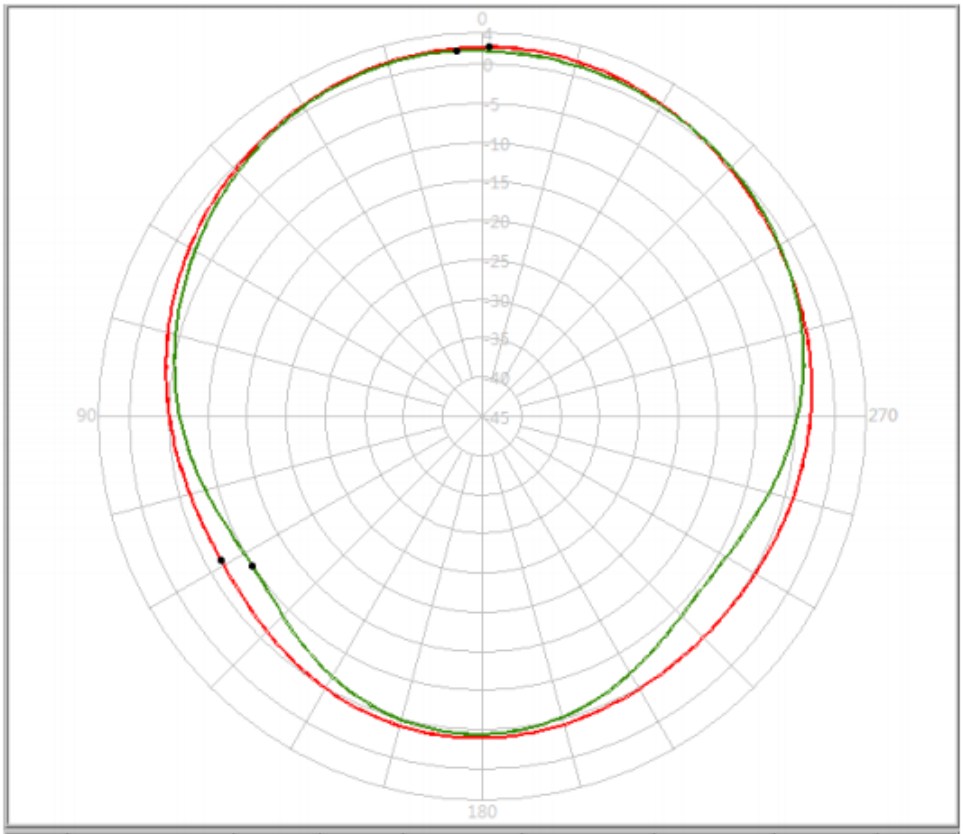
YZ-Plane **1227MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	YZ	1227.60	1.79 / 4.00	-10.01 / 123.00	-2.53	V+H	2018/10

Peak Gain：1.79 dBi **At Zenith Gain：1.75 dBi**

Gain Pattern Value：(1227MHz)

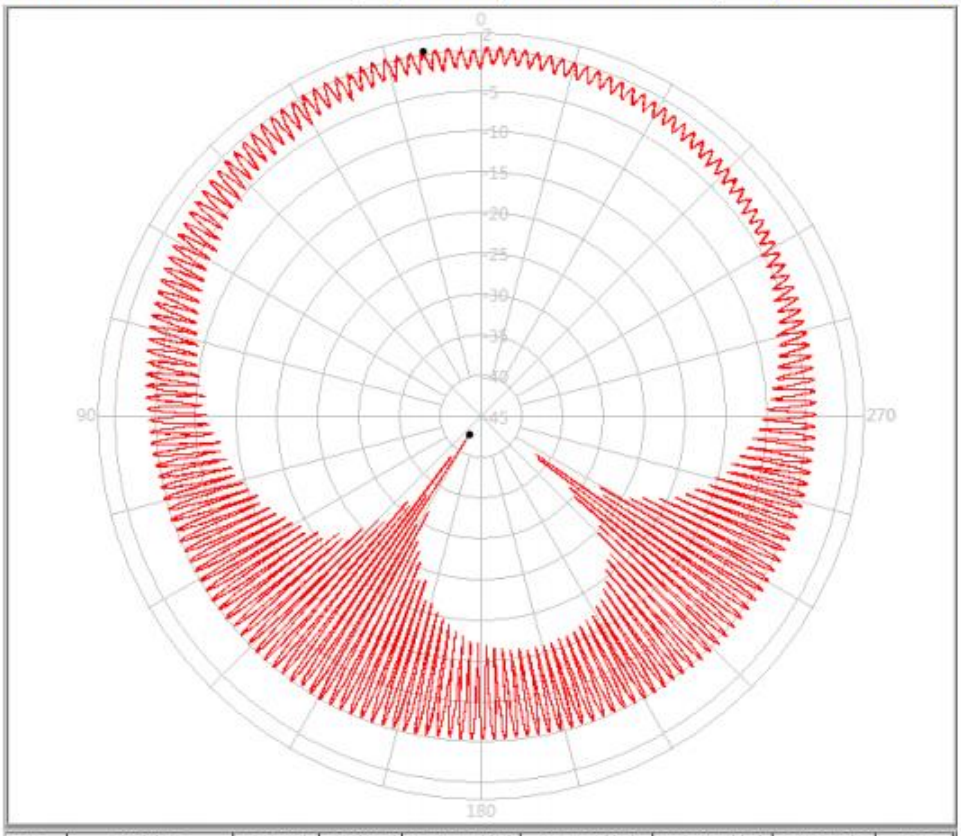


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1227.60	2.23 / 359.00	-6.95 / 119.00	-1.82	V+H	2018/10
2	1019	YZ	1227.60	1.79 / 4.00	-10.01 / 123.00	-2.53	V+H	2018/10

Angle	XZ-Plane	YZ-Plane
90°	-5.09	-6.41
75°	-3.50	-4.52
60°	-1.92	-2.72
45°	-0.45	-0.92
30°	0.82	0.63
15°	1.75	1.57
0°	2.16	1.75
345°	1.90	1.34
330°	0.95	0.77
315°	-0.27	-0.04
300°	-1.32	-1.16
285°	-2.17	-2.67
270°	-3.05	-4.69

(Unit：dBi)

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

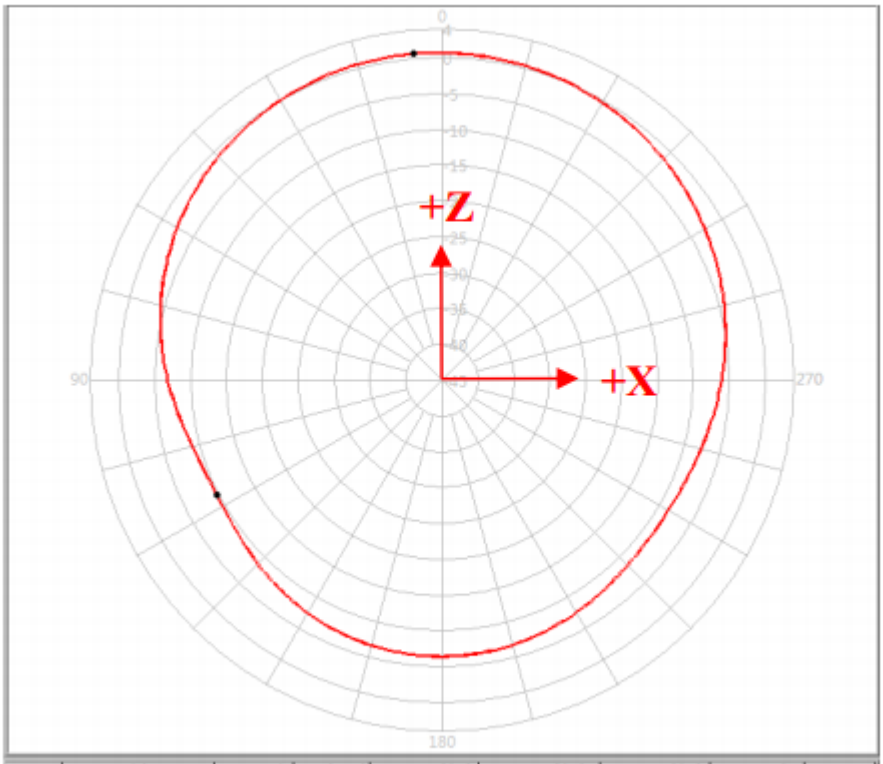


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	Axial-Rati	1227.00	0.28 / 9.09	-42.29 / 147.34	-4.42	CP	2018/11

Angle	Axial Ratio
90°	6.97
75°	6.01
60°	4.57
45°	3.92
30°	3.49
15°	2.44
0°	1.40
345°	1.66
330°	1.78
315°	1.42
300°	1.92
285°	3.42
270°	6.05

（At 1227 MHz）

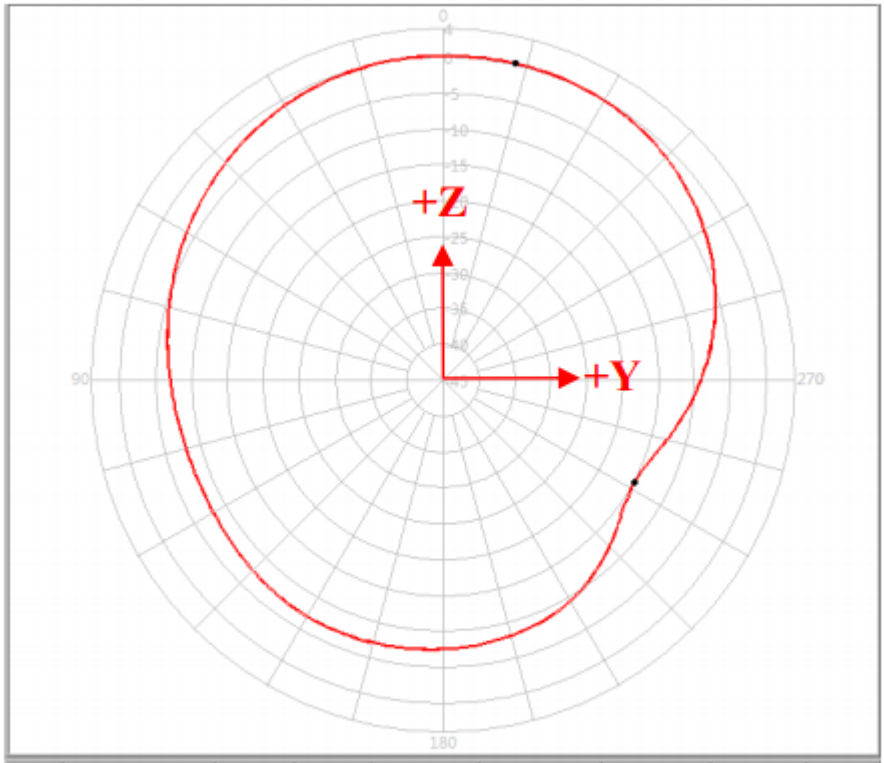
XZ-Plane **1575.42MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1575.42	0.71 / 5.00	-9.76 / 117.00	-3.39	V+H	2018/10

Peak Gain：0.71 dBi At Zenith Gain：0.70 dBi

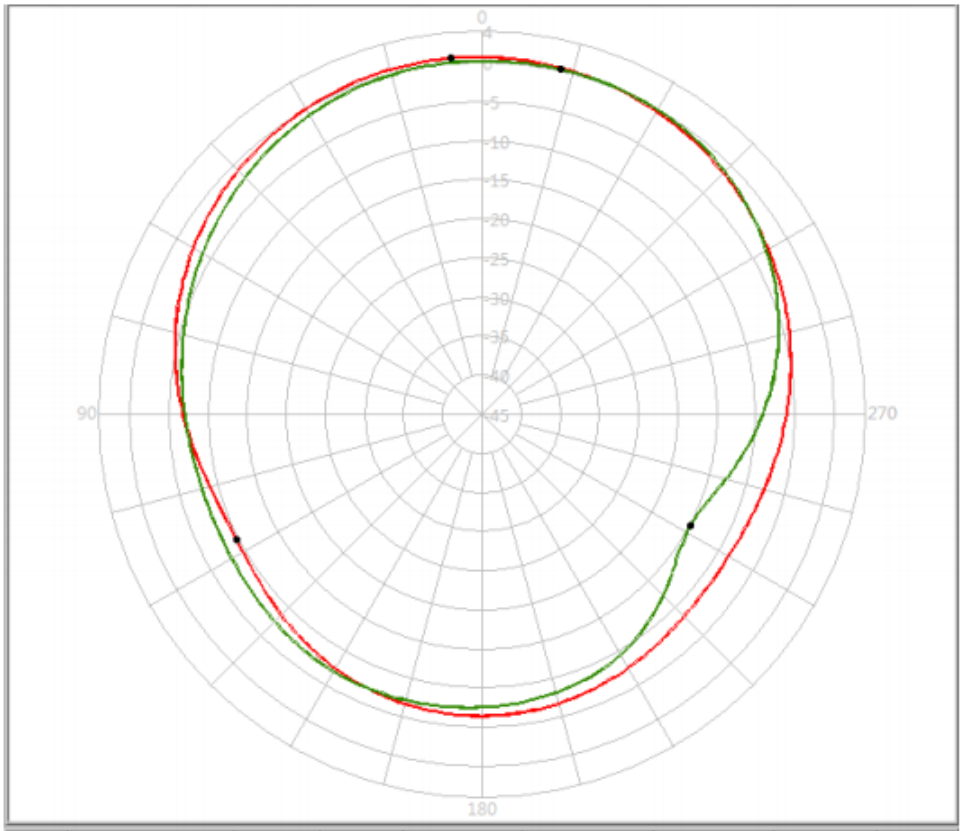
YZ-Plane **1575.42MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	YZ	1575.42	0.23 / 347.00	-14.80 / 242.00	-4.02	V+H	2018/10

Peak Gain：0.23 dBi At Zenith Gain：0.19 dBi

Gain Pattern Value：(1575.42MHz)

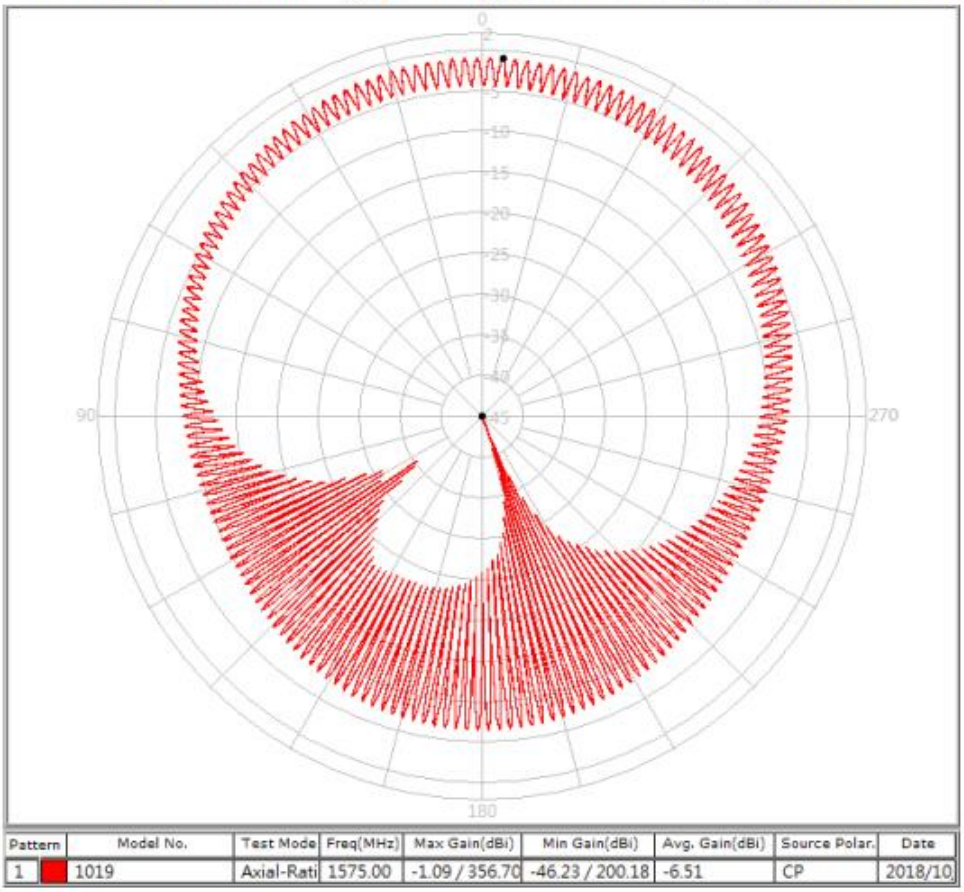


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1575.42	0.71 / 5.00	-9.76 / 117.00	-3.39	V+H	2018/10
2	1019	YZ	1575.42	0.23 / 347.00	-14.80 / 242.00	-4.02	V+H	2018/10

Angle	XZ-Plane	YZ-Plane
90°	-6.79	-7.00
75°	-4.45	-5.50
60°	-2.45	-3.81
45°	-0.95	-2.19
30°	0.06	-0.88
15°	0.60	-0.10
0°	0.70	0.19
345°	0.33	0.21
330°	-0.32	-0.07
315°	-1.37	-1.06
300°	-2.73	-2.99
285°	-4.33	-5.72
270°	-6.07	-9.06

(Unit：dBi)

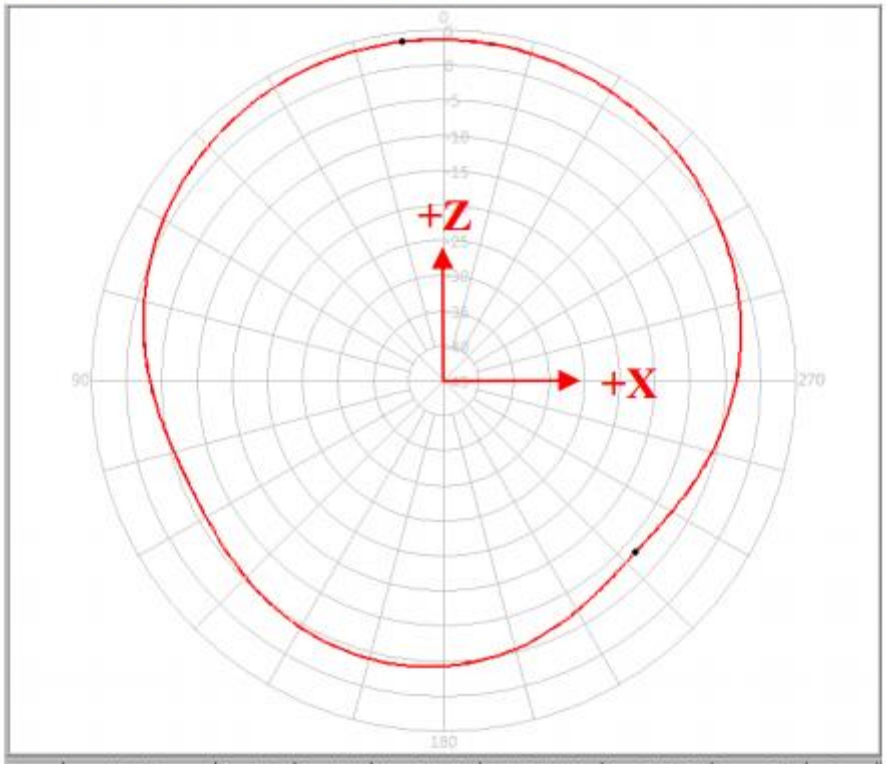
Axial Ratio Pattern （Spin Dipole Method）: (1575.42MHz)



Angle	Axial Ratio
90°	3.88
75°	1.94
60°	1.87
45°	2.43
30°	2.60
15°	3.04
0°	2.62
345°	3.19
330°	3.31
315°	3.52
300°	3.30
285°	3.32
270°	3.09

（At 1575.42MHz）

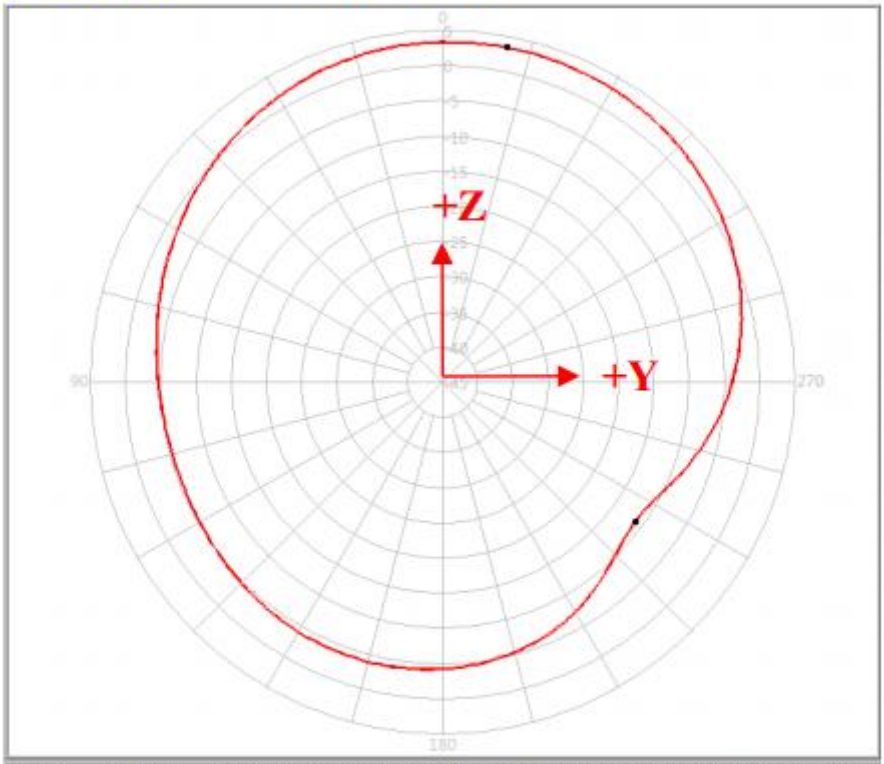
XZ-Plane **1602.6MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1602.60	3.66 / 7.00	-8.39 / 228.00	-0.51	V+H	2018/10

Peak Gain：3.66 dBi At Zenith Gain：3.61 dBi

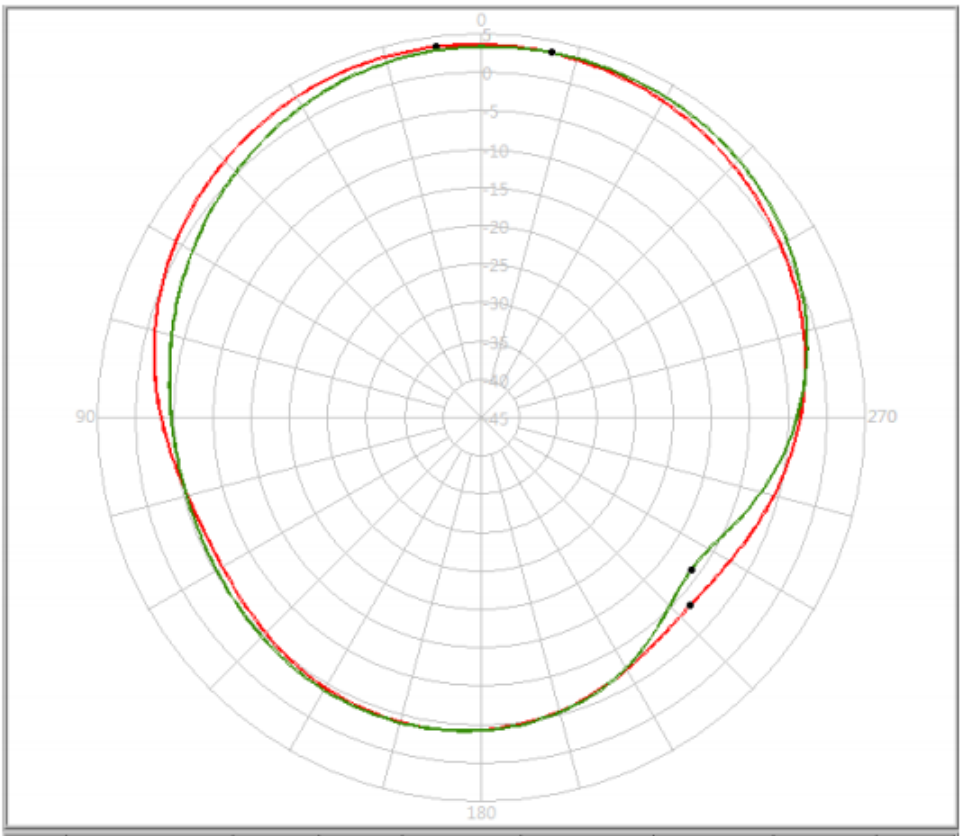
YZ-Plane **1602.6MHz**



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	YZ	1602.60	3.41 / 349.00	-11.24 / 234.00	-0.89	V+H	2018/10

Peak Gain：3.41 dBi At Zenith Gain：3.34 dBi

Gain Pattern Value：(1602.6MHz)

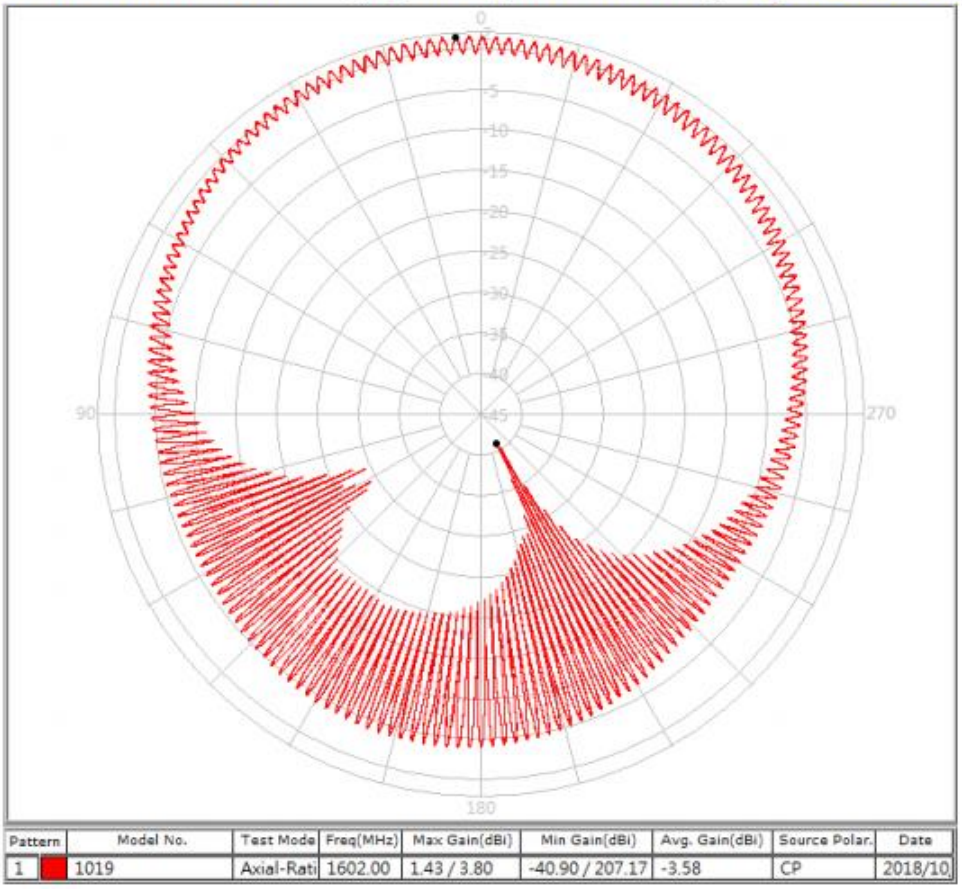


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	XZ	1602.60	3.66 / 7.00	-8.39 / 228.00	-0.51	V+H	2018/10
2	1019	YZ	1602.60	3.41 / 349.00	-11.24 / 234.00	-0.89	V+H	2018/10

Angle	XZ-Plane	YZ-Plane
90°	-3.30	-4.65
75°	-1.02	-3.29
60°	0.86	-1.59
45°	2.26	0.17
30°	3.18	1.74
15°	3.61	2.84
0°	3.61	3.34
345°	3.22	3.39
330°	2.51	3.16
315°	1.44	2.43
300°	0.06	1.00
285°	-1.54	-1.12
270°	-3.42	-3.83

(Unit：dBi)

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



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	1019	Axial-Rati	1602.00	1.43 / 3.80	-40.90 / 207.17	-3.58	CP	2018/10

Angle	Axial Ratio
90°	5.01
75°	2.51
60°	1.34
45°	1.10
30°	1.54
15°	1.84
0°	1.82
345°	1.76
330°	2.05
315°	1.89
300°	1.98
285°	1.57
270°	1.84

（At 1602.6 MHz）