

SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	1/9	

SPECIFICATION

SPEC NO. : SP03BD15750-0200

PART NO. : 03D1031133R010T

PRODUCT NAME : Beidou/GPS/Galileo/Glonass L1 & GPS L5
/GLBNA-210

DESCRIPTION : 2.7~5V/29dB/RG174/3M/SMA180°(M)
RoHS & REACH Compliant Product

REVISION STATUS

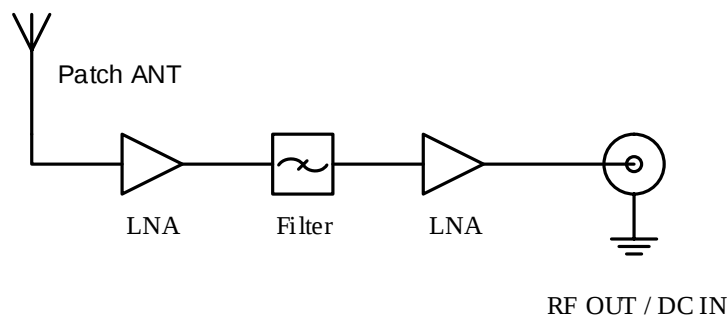
VERSION	DATE	PAGE	REVISION DESCRIPTION	PREPARED	CHECKED	APPROVED
01	2019/08/12	Whole	New Issued.	薛任凱	楊昆霖	張敦信 楊昆霖

Prepared By	Checked By	Approved By
薛任凱	楊昆霖	張敦信 楊昆霖

SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	2/9	

1.0 SYSTEM:

This antenna system consists of two functional blocks, the LNA portion and the patch antenna.



2.0 GENERAL

2.1 ENVIRONMENTAL CONDITIONS

2.1.1	Operation Temperature	- 40°C to + 85°C
2.1.2	Storage Temperature	- 40°C to + 85°C
2.1.3	Relative Humidity	40% to 95%

2.2 ELECTRICAL SPECIFICATIONS

2.2.1	Operation Voltage	Min: 2.7 V	Typ.: 3.3 V	Max: 5.0V
2.2.2	Current Consumption@ 3.3V	Typ: 10mA	Max: 15mA	

2.3 CABLE & CONNECTOR

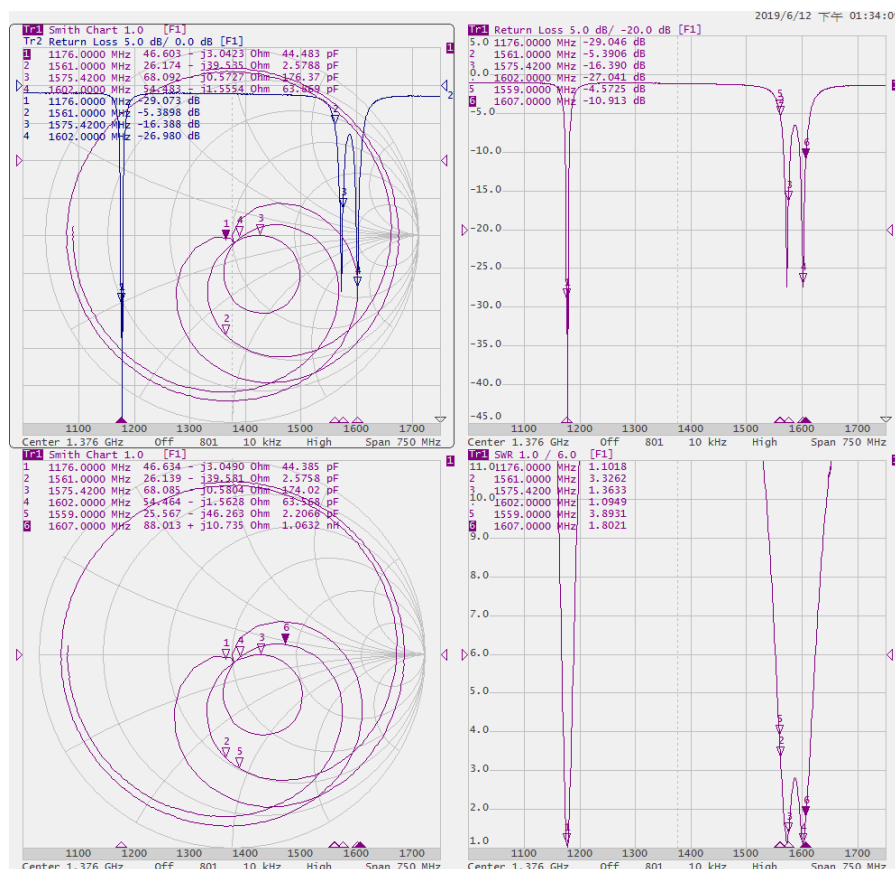
2.3.1	RF Cable	RG174 , $\phi 2.7 \pm 0.2\text{mm}$, COLOR: Black ,80 braid L =3M $\pm$ 30mm
2.3.2	RF Connector	SMA180°(M)

3.0 ANTENNA

3.1	Frequency Range	L1: 1561 $\pm$ 2.046 MHz for Beidou L1: 1575.42 $\pm$ 1.023 MHz for GPS/Galileo L1: 1602 $\pm$ 8 MHz for GLONASS L5: 1176 $\pm$ 10 MHz
3.2	Gain	1561 MHz: 1 dBi Typ. @zenith 1575.42 MHz: 2 dBi Typ. @zenith 1602 MHz: 3.5 dBi Typ. @zenith 1176 MHz: 0 dBi Typ. @zenith
3.3	Polarization	RHCP

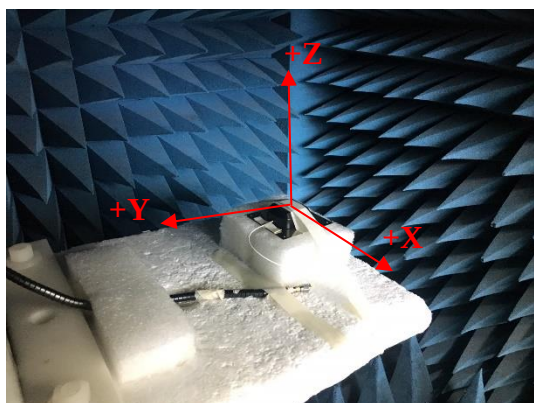
SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	3/9	

DA25/DA15 (stack) On GLA-210 Housing S11 Return Loss & Smith Chart Measure

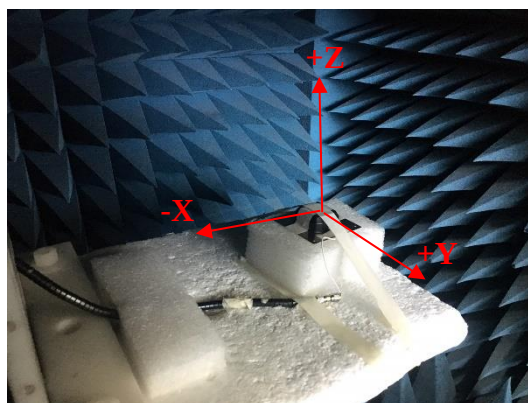


MTK-GLA	Return Loss(dB)	Impedance(Ohm)	VSWR
1176MHz	-29.04	46.63-j03.04	1.10
1559MHz	-4.57	25.56-j46.26	3.89
1561MHz	-5.39	26.13-j39.58	3.32
1575.42MHz	-16.39	68.08-j00.58	1.36
1602MHz	-27.04	54.46-j01.56	1.09
1607MHz	-10.91	88.01+j10.73	1.80

XZ-Plane

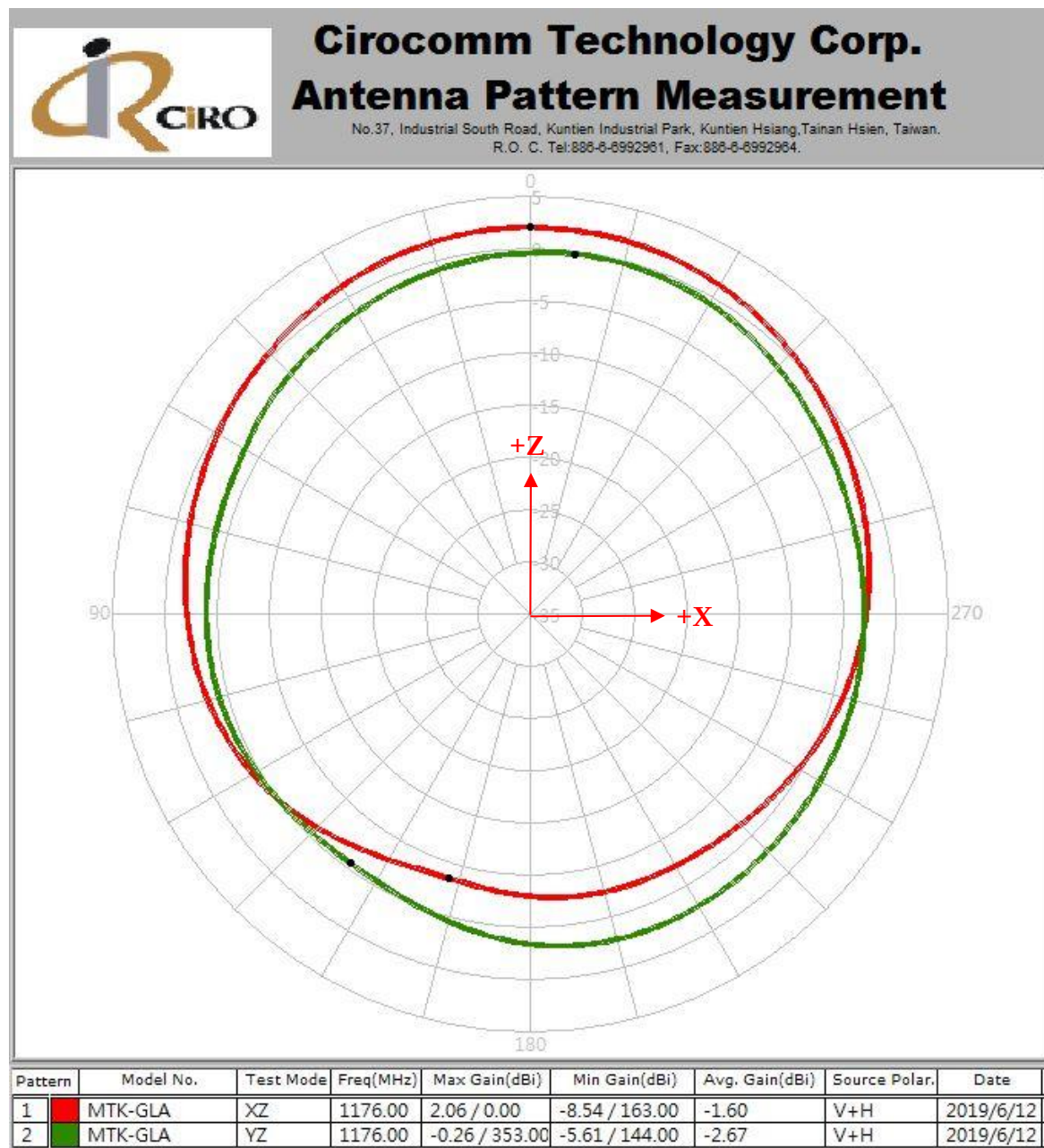


YZ-Plane



SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	4/9	

Gain Pattern Value(1176MHz) :

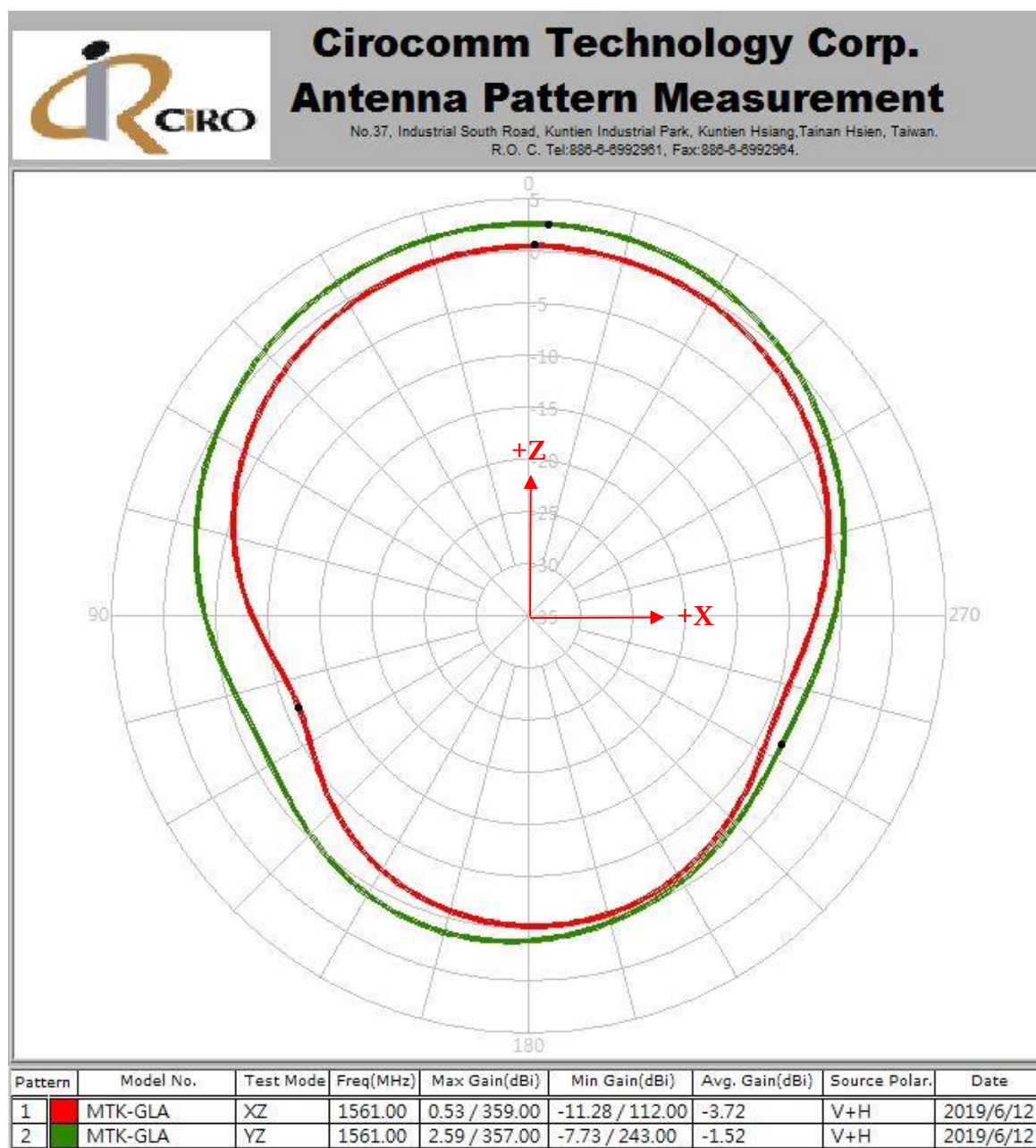


1176 MHz	Peak Gain	Zenith Gain
XZ	2.06	2.06
YZ	-0.26	-0.45

(dBi)

SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	5/9	

Gain Pattern Value(1561MHz) :

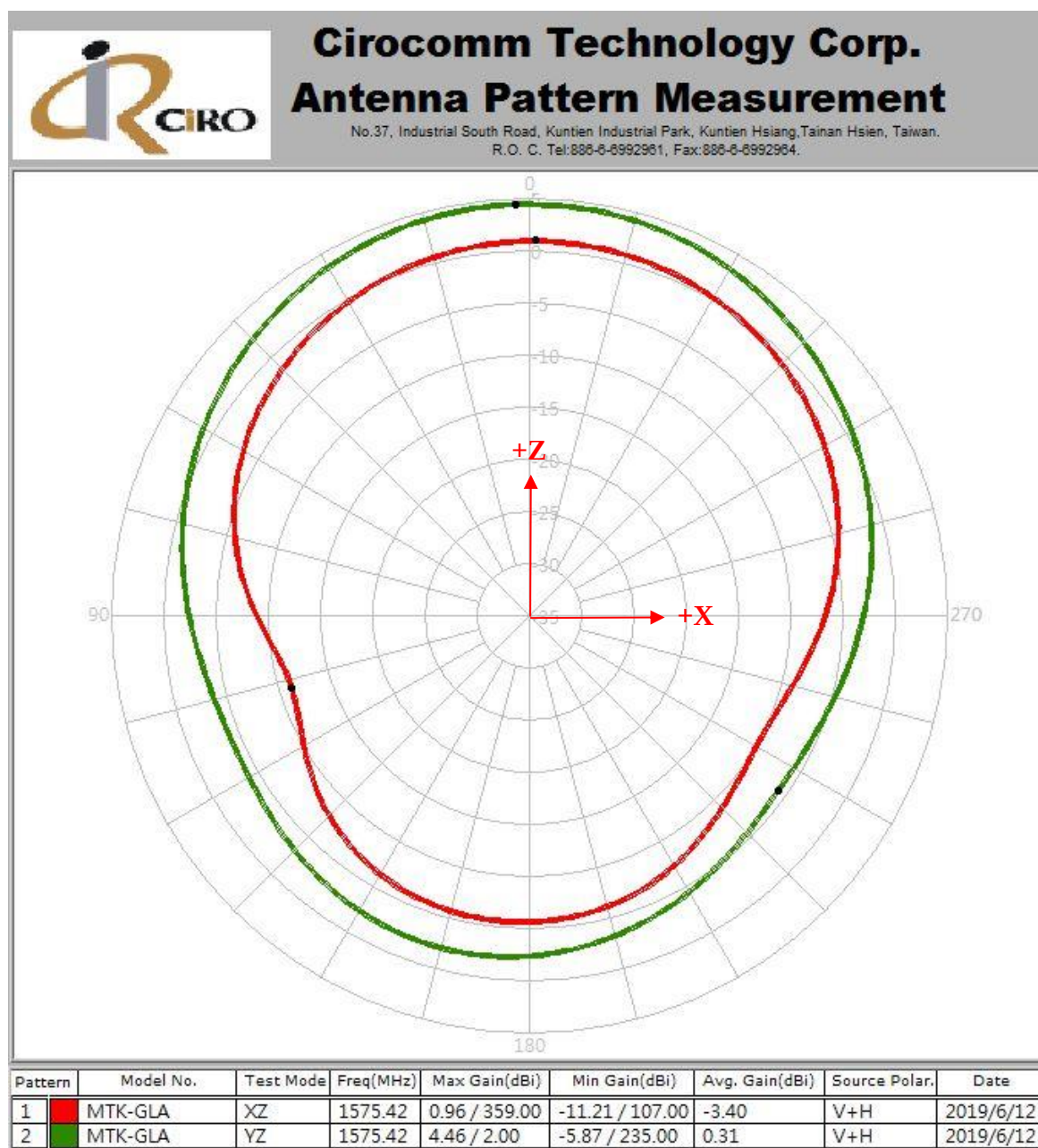


1575.42 MHz	Peak Gain	Zenith Gain
XZ	0.53	0.45
YZ	2.59	2.56

(dBi)

SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	6/9	

Gain Pattern Value(1575.42MHz) :

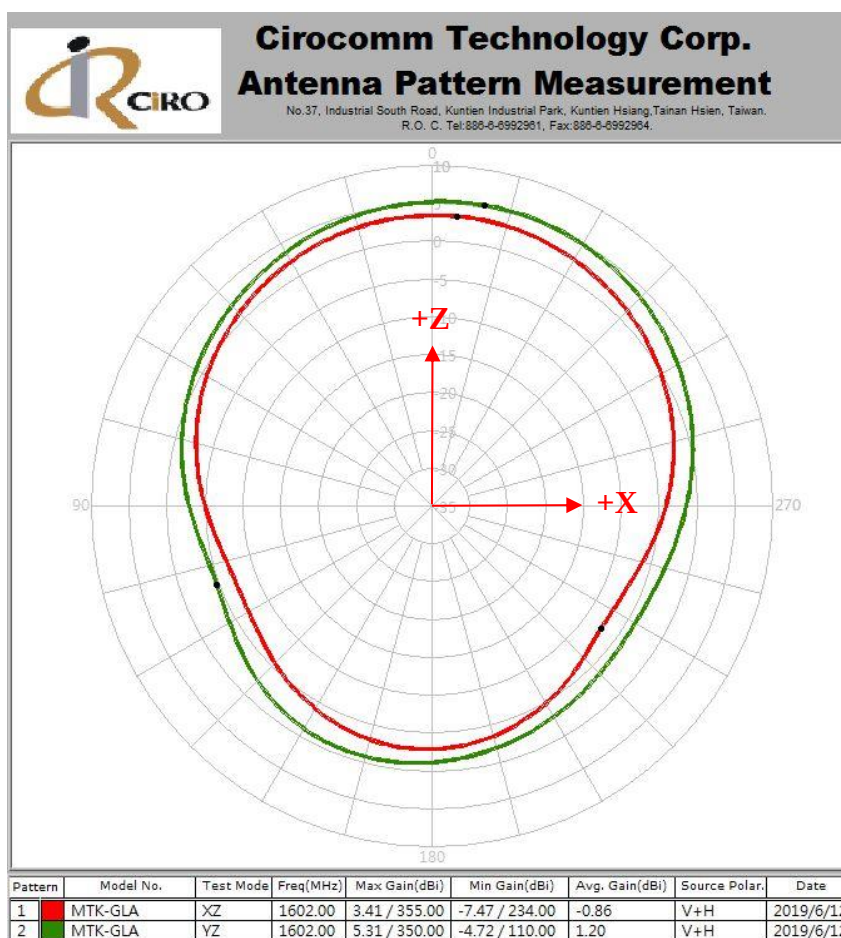


1575.42 MHz	Peak Gain	Zenith Gain
XZ	0.96	0.93
YZ	4.45	4.45

(dBi)

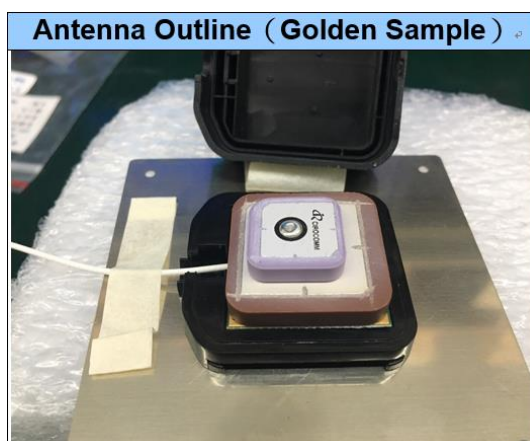
SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	7/9	

Gain Pattern Value(1602MHz) :



1575.42 MHz	Peak Gain	Zenith Gain
XZ	3.41	3.36
YZ	5.31	5.13

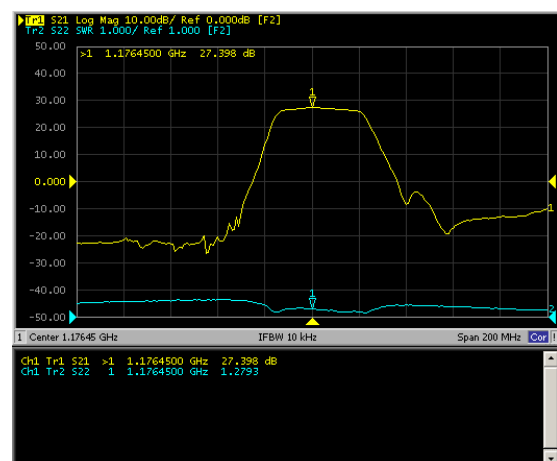
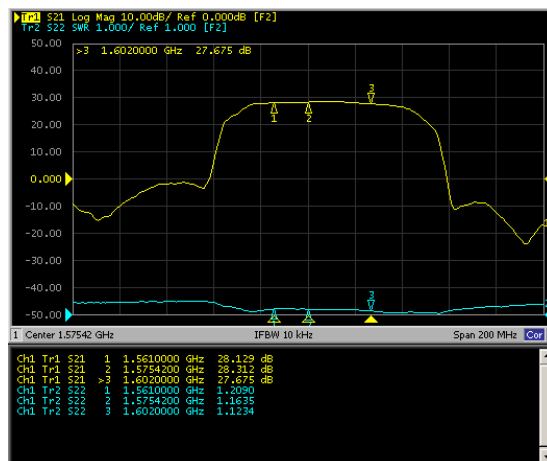
(dBi)



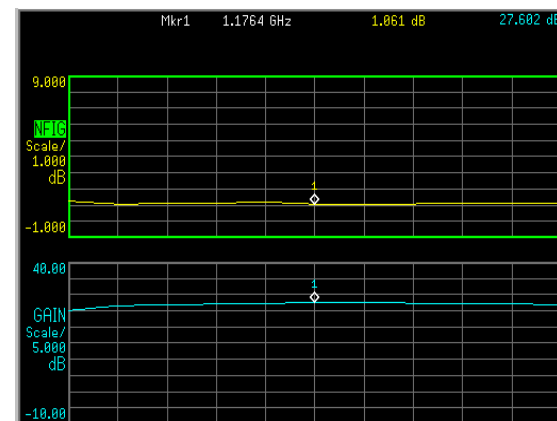
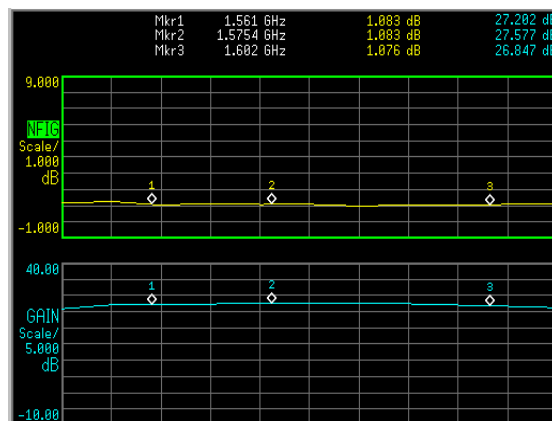
SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	8/9	

4.0 LNA

4.1	Frequency Range	L1: 1561±2.046 MHz for Beidou L1: 1575.42±1.023 MHz for GPS/Galileo L1: 1602±8 MHz for GLONASS L5: 1176.45 ±10 MHz
4.2	Gain	1561 MHz: 28±3 dB Typ. (+ 25 °C ± 5°C) 1575.42 MHz: 28±3 dB Typ. (+ 25 °C ± 5°C) 1602 MHz: 27±3 dB Typ. (+ 25 °C ± 5°C) 1176.45 MHz: 27±3 dB Typ. (+ 25 °C ± 5°C)
4.3	Noise Figure	1561 MHz: 1 dB Typ. (+ 25 °C ± 5°C) 1575.42 MHz: 1 dB Typ. (+ 25 °C ± 5°C) 1602 MHz: 1 dB dB Typ. (+ 25 °C ± 5°C) 1176.45 MHz: 1 dB Typ. (+ 25 °C ± 5°C)
4.4	Output Impedance	50 Ω
4.5	Output VSWR	2.0 Max



LNA Gain @3.3V



LNA Noise Figure @3.3V

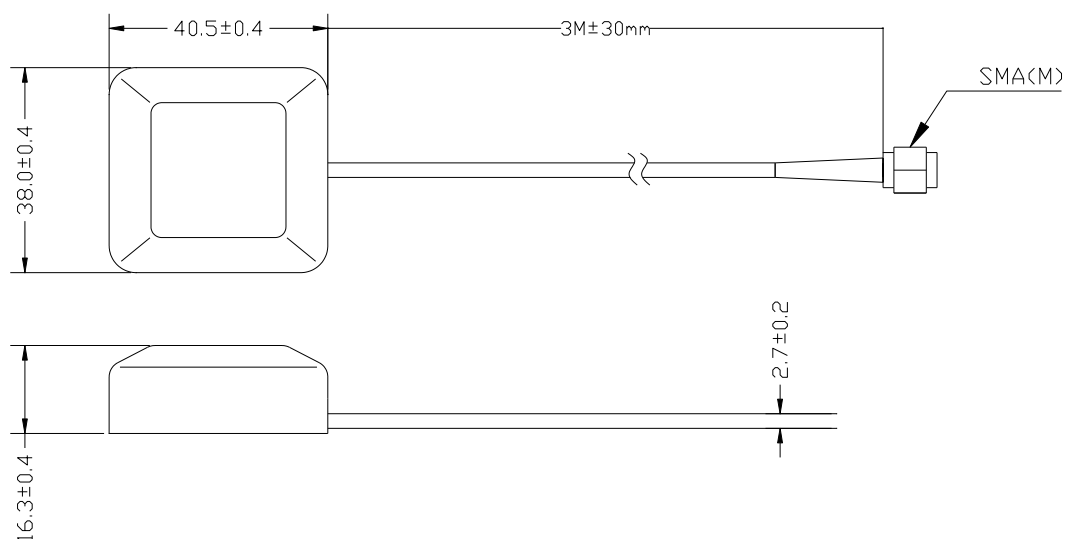
SPEC NO.	SP03BD15750-0200	ISSUED DATE	2019/08/12	PUBLISHED BY
PRODUCT NAME	Beidou/GPS/Galileo/Glonass L1 & GPS L5/GLBNA-210	VERSION	01	
		PAGE	9/9	

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

5.1	Frequency Range	L1: 1561±2.046 MHz for Beidou L1: 1575.42±1.023 MHz for GPS/Galileo L1: 1602±8 MHz for GLONASS L5: 1176.45 ±10 MHz
5.2	Gain@3.3V	At 90° L1: 1561 MHz: 29 dBi @Zenith – Cable Loss(Note:1) L1: 1575.42 MHz: 30 dBi @Zenith – Cable Loss(Note:1) L1: 1602 MHz: 30.5 dBi @Zenith – Cable Loss(Note:1) L5: 1176.45 MHz: 27 dBi @Zenith – Cable Loss(Note:1)
5.3	Output Impedance	50Ω

Note:1 Cable Loss = Max.(-1.4dB/meter)

6.0 OUTLINE



Unit:mm