



APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Features

- Compact Multiband GNSS patch antenna
- GPS/GLONASS/BEIDOU support
- Active antenna with integrated LNA
- Low VSWR across bands
- RHCP polarization
- GND plane included with cable and IPEX connector

Applications

- GPS/GLONASS/Galileo/Beidou applications
- IoT
- M2M
- Remote technology monitoring
- Geofencing
- Surveying and mapping systems
- Logistics

Electrical Specifications

Parameters	BeiDou	GPS	GLONASS	Units	Notes
Operating Frequency	1561.098 ± 2.046	1575.420 ± 1.023	1602.000 ± 8.000	MHz	
VSWR	2.0				Max.
Gain	-6.5	-6.5	-6.0	dBi	Typ. @ Zenith
Impedance	50			Ω	
Polarization	RHCP				

LNA

Parameters	BeiDou	GPS	GLONASS	Units	Notes
Operating Frequency	1561.098 ± 2.046	1575.420 ± 1.023	1602.000 ± 8.000	MHz	
VSWR	2.0				Max.
Gain	28 ± 3	29 ± 3	27 ± 3	dB	Typ. 25°C ± 5 °C
Noise Figure	2.4	2.4	2.7		
Impedance	50			Ω	

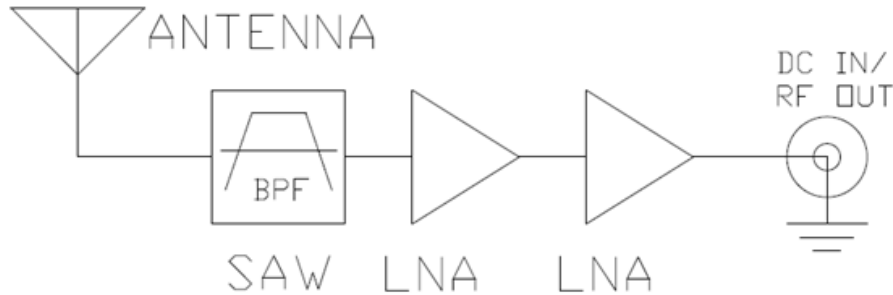


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

System Set-up (Through Antenna, LNA, Cable, Connector)



Parameters	BeiDou	GPS	GLONASS	Units	Notes
Operating Frequency	1561.098 ± 2.046	1575.420 ± 1.023	1602.000 ± 8.000	MHz	
VSWR		2.0			Max.
Gain	21.5	22.5	21	dB	Typ. @ 90°
Impedance		50		Ω	
Input Voltage (DC)		1.8		V	Min.
		3.0			Typ.
		5.5			Max.

Mechanical Specification

Parameters	Description	Units	Notes
RF Cable	Ø1.13 ± 0.1, L = 68 ± 2	mm	Color : Gray
RF Connector	I-PEX		

Environmental Specification

Parameters	Description
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +90°C
Relative Humidity	40% to 95%

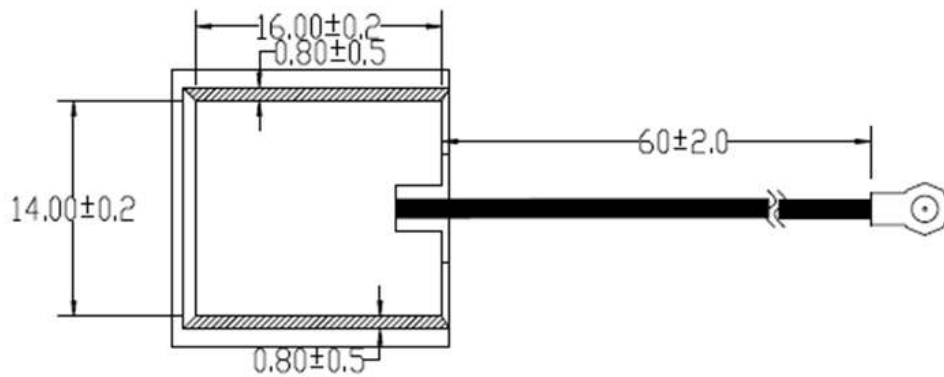
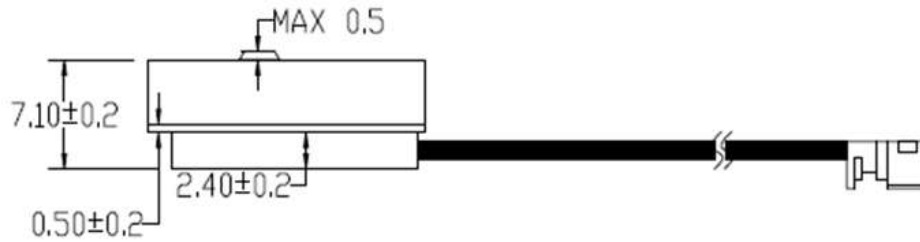
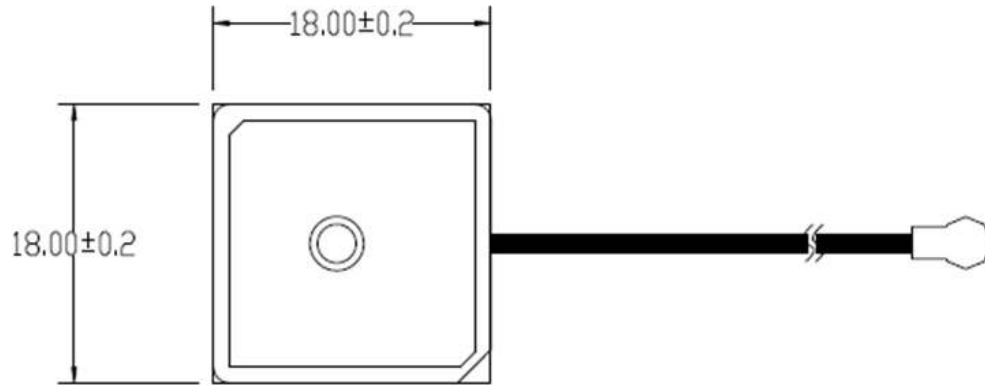


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Product Dimensions



unit: mm



APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Return Loss and Impedance Characteristics - Antenna



Frequency (MHz)	Return Loss (dB)
1561.00	-4.30
1575.42	-4.18
1602.60	-4.56

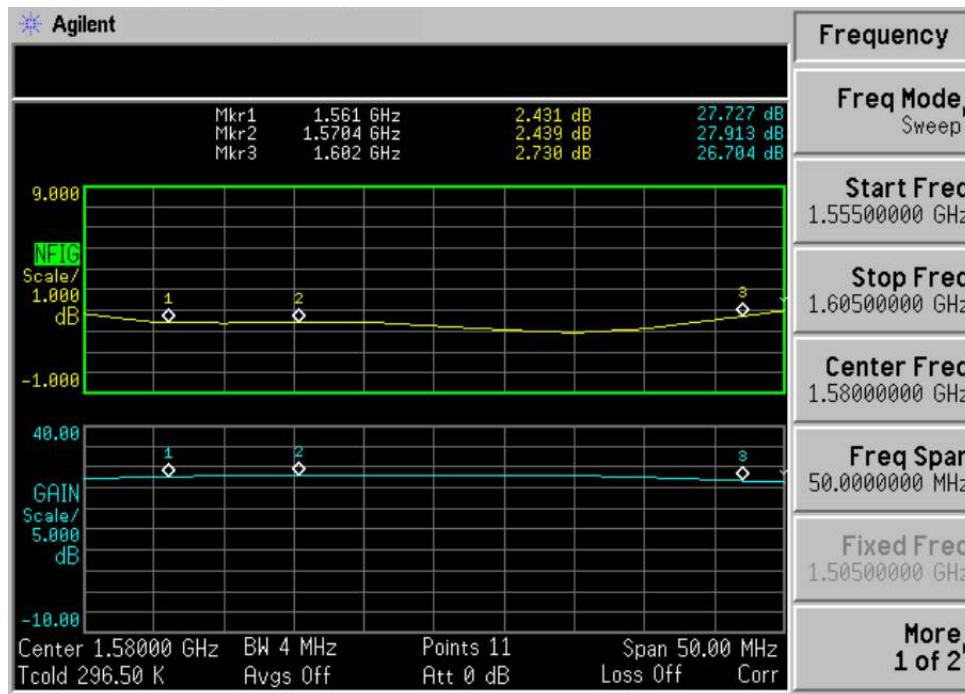
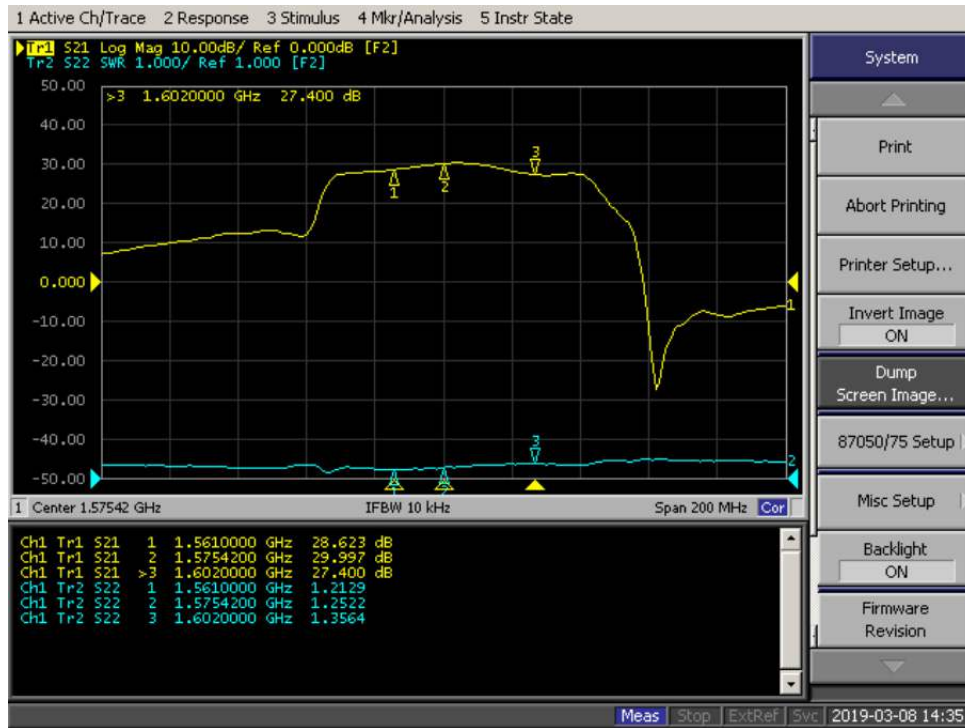


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Gain and Noise Figure - LNA





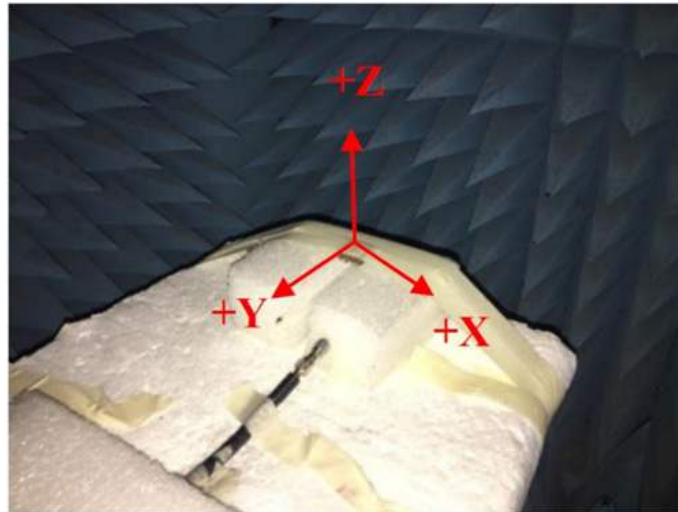
APARC1807A-SG3



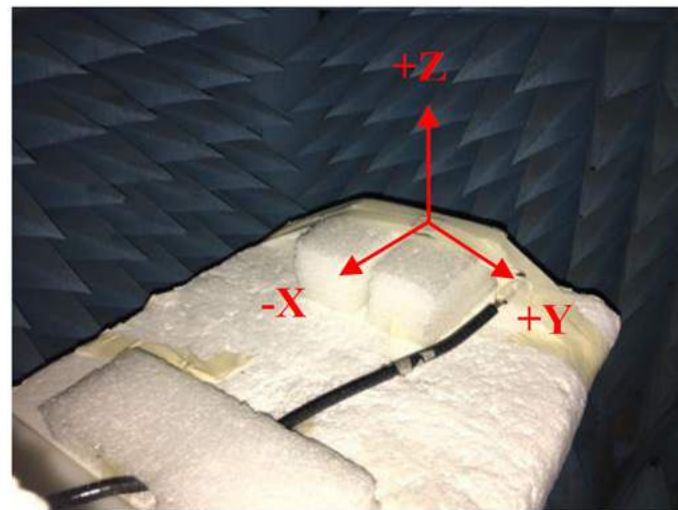
18.0 x 18.0 x 7.6 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Radiation Pattern

XZ - Plane



YZ - Plane





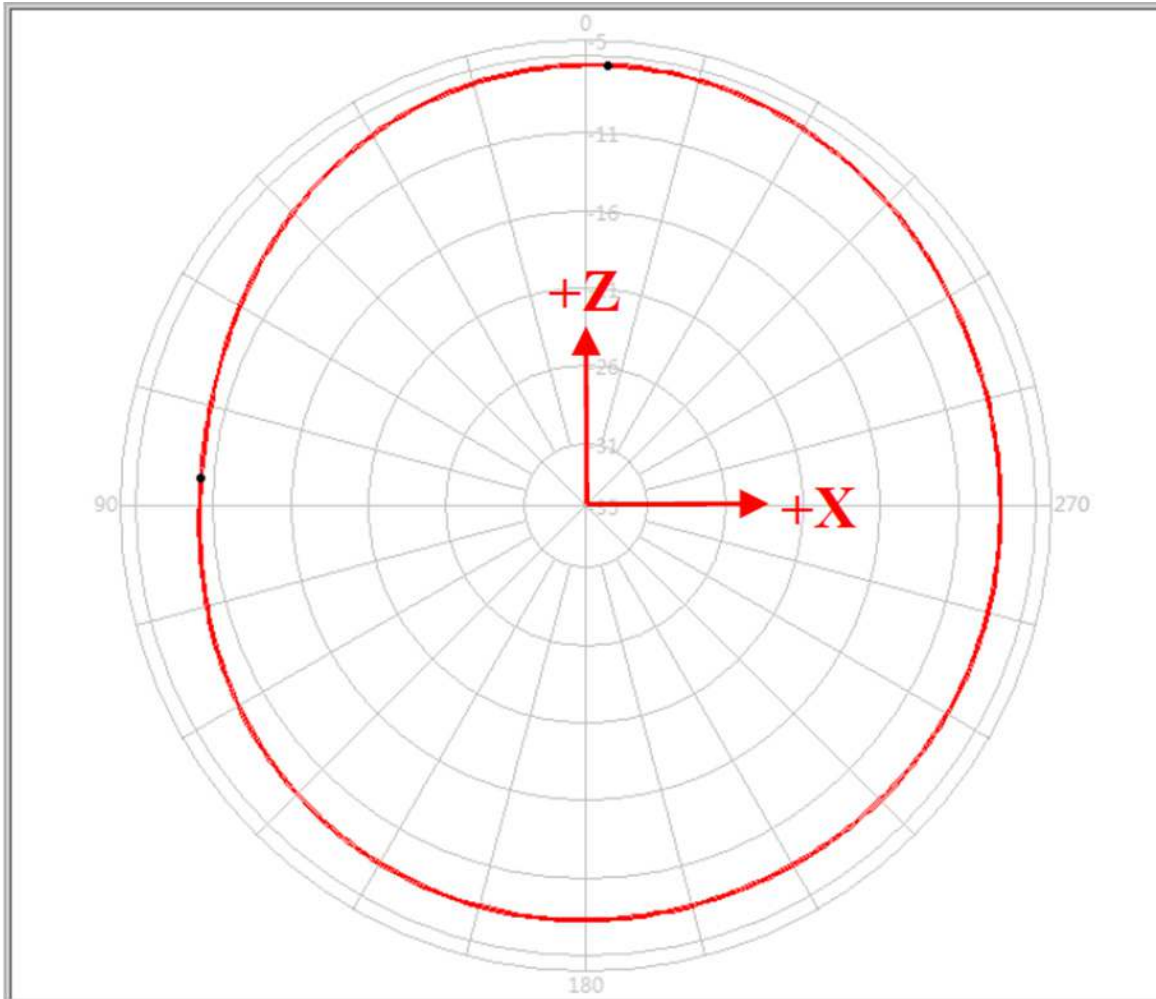
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

BeiDou : 1561 MHz
 XZ – Plane
 Gain : Peak = -6.59 dBi,
 Zenith = -6.61 dBi



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	XZ	1561.00	-6.59 / 357.00	-10.14 / 86.00	-8.14	V+H	2019/3/1



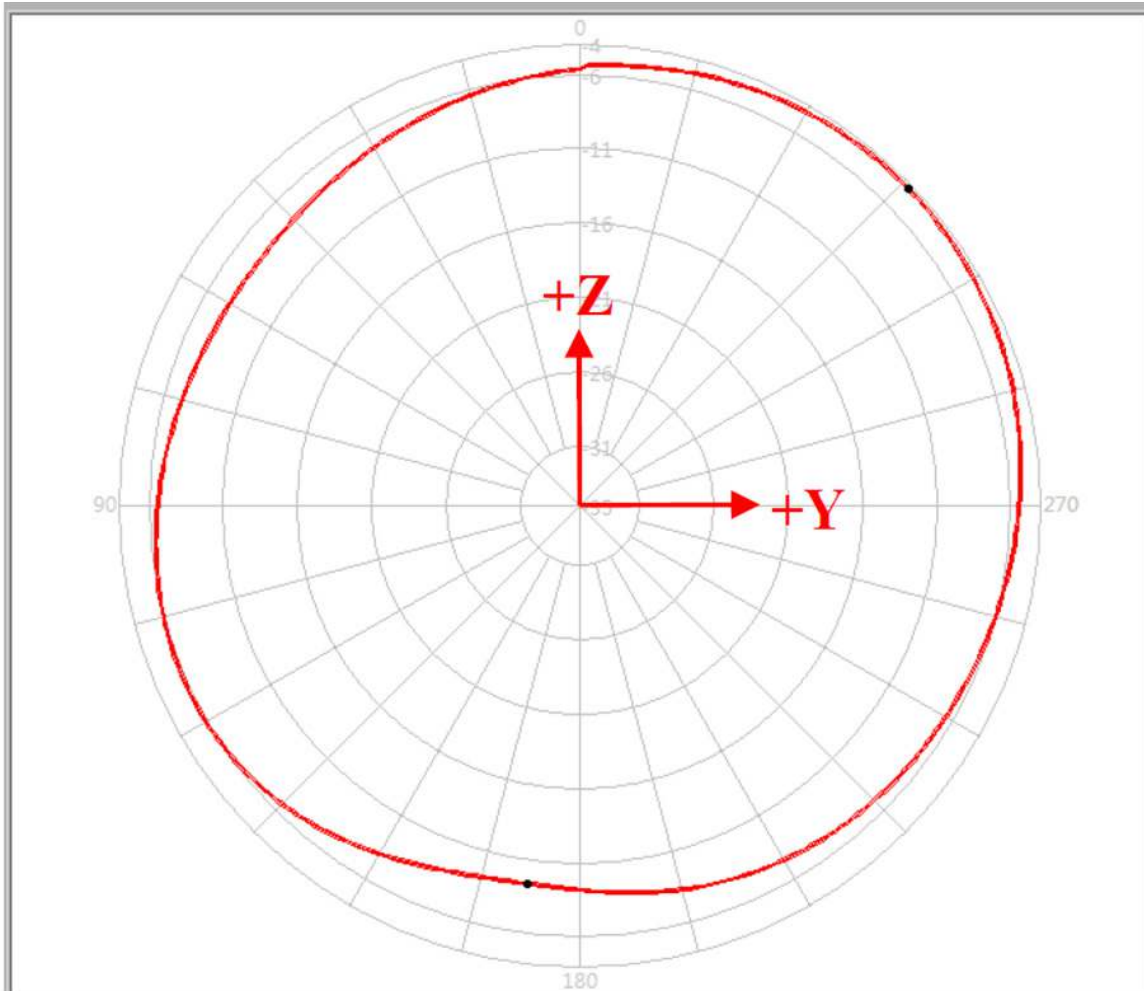
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

BeiDou : 1561 MHz
 YZ – Plane :
 Gain : Peak = -4.29 dBi,
 Zenith = -5.66 dBi



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	YZ	1561.00	-4.29 / 314.00	-9.37 / 172.00	-6.34	V+H	2019/3/3

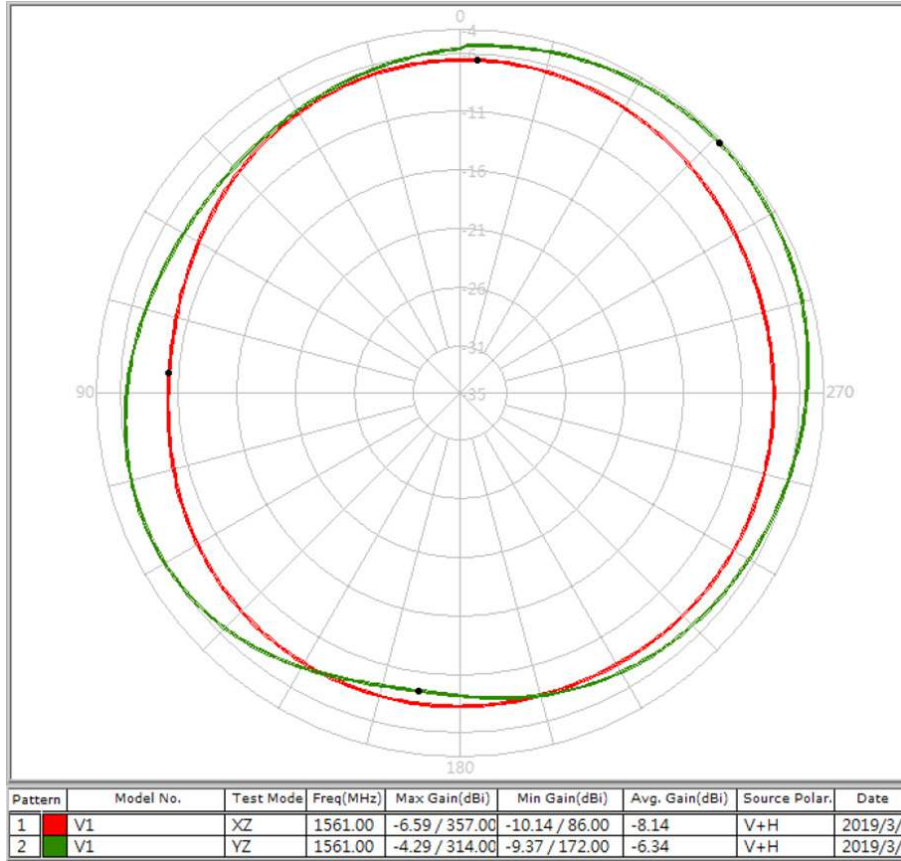


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern



Angle	XZ - Plane (dBi)	YZ - Plane (dBi)
90°	-10.12	-6.58
75°	-9.99	-7.33
60°	-9.29	-7.81
45°	-8.34	-7.77
30°	-7.46	-7.24
15°	-6.87	-6.46
0°	-6.61	-5.66
345°	-6.66	-4.94
330°	-6.97	-4.48
315°	-7.45	-4.30
300°	-7.92	-4.42
285°	-8.21	-4.83
270°	-8.25	-5.44



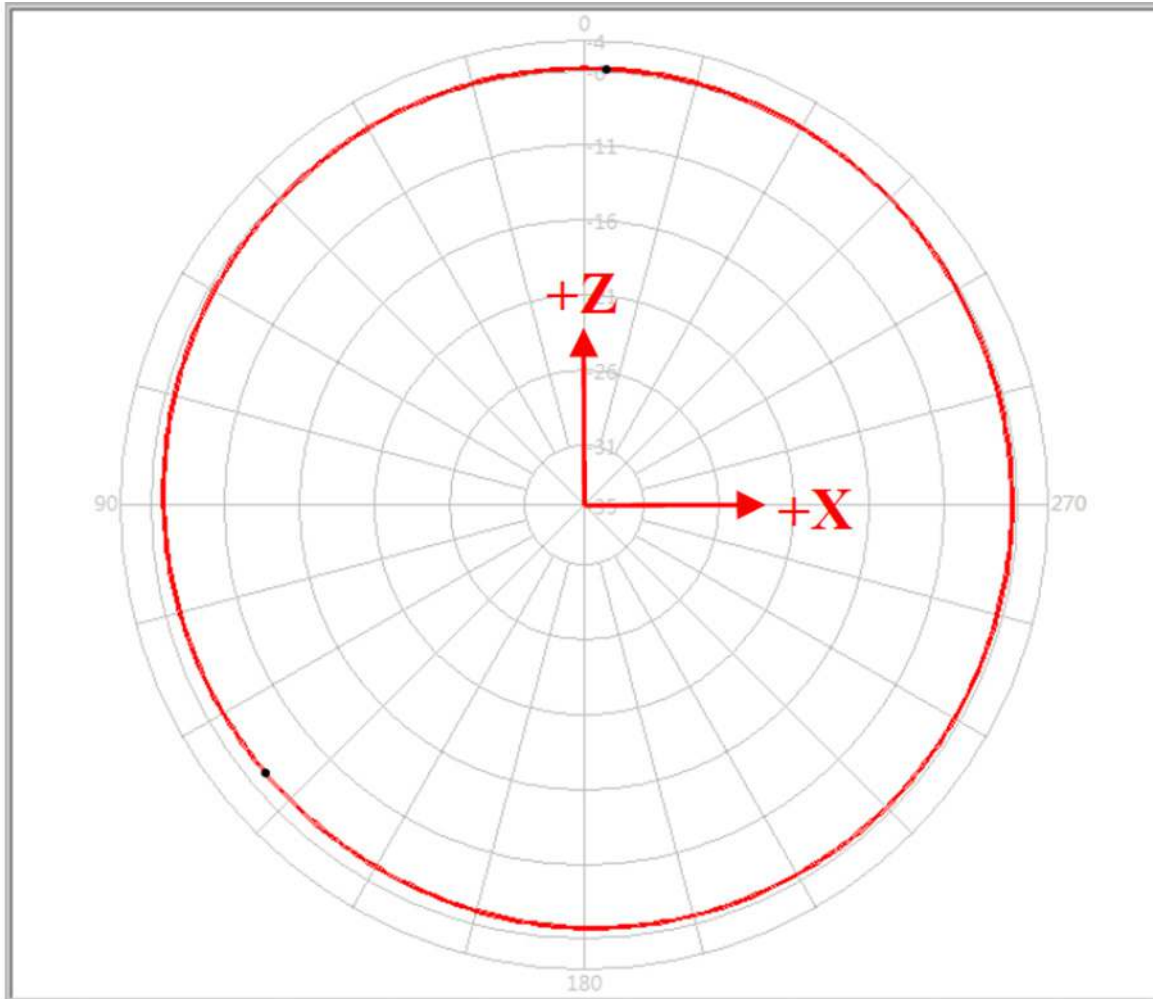
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

GPS : 1575.42 MHz
 XZ – Plane :
 Gain : Peak = -5.87 dBi,
 Zenith = -5.87 dBi



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	XZ	1575.42	-5.87 / 357.00	-7.19 / 130.00	-6.46	V+H	2019/3/



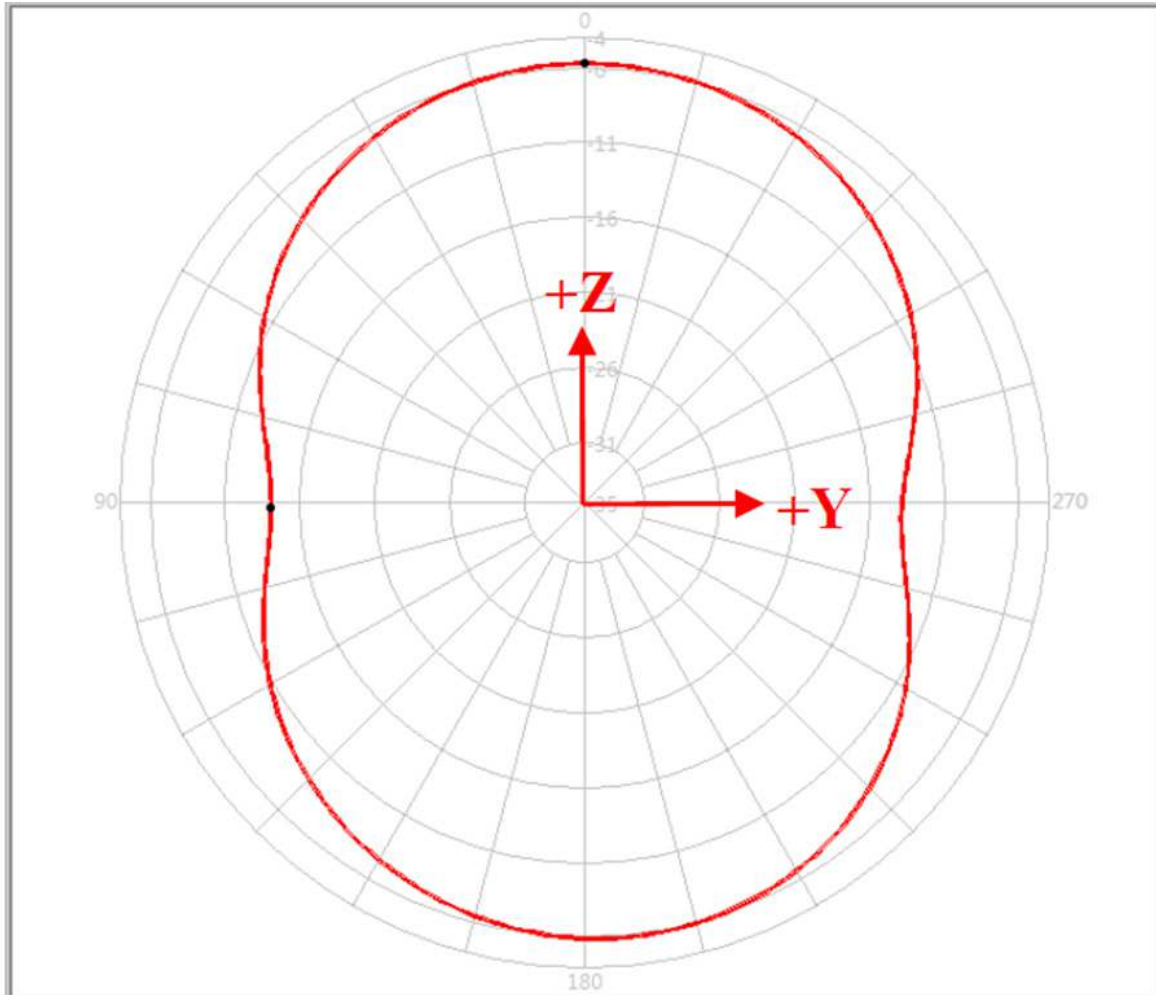
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

YZ – Plane :
Gain : Peak = -5.73 dBi,
Zenith = -5.73 dBi



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	YZ	1575.42	-5.73 / 0.00	-14.08 / 91.00	-8.29	V+H	2019/3/

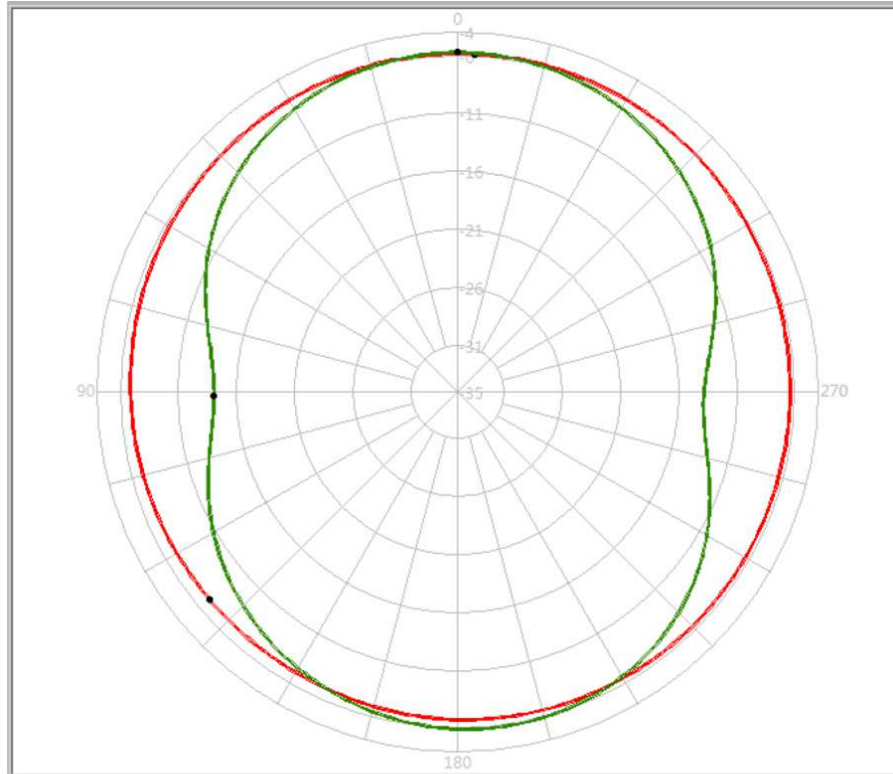


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Radiation Pattern



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	XZ	1575.42	-5.87 / 357.00	-7.19 / 130.00	-6.46	V+H	2019/3/3
2	V1	YZ	1575.42	-5.73 / 0.00	-14.08 / 91.00	-8.29	V+H	2019/3/3

Angle	XZ - Plane (dBi)	YZ - Plane (dBi)
90°	-6.89	-14.08
75°	-6.68	-12.74
60°	-6.44	-10.32
45°	-6.22	-8.32
30°	-6.03	-6.89
15°	-5.91	-6.05
0°	-5.87	-5.73
345°	-5.89	-6.03
330°	-5.97	-6.79
315°	-6.09	-8.07
300°	-6.24	-9.87
285°	-6.35	-12.17
270°	-6.41	-13.82



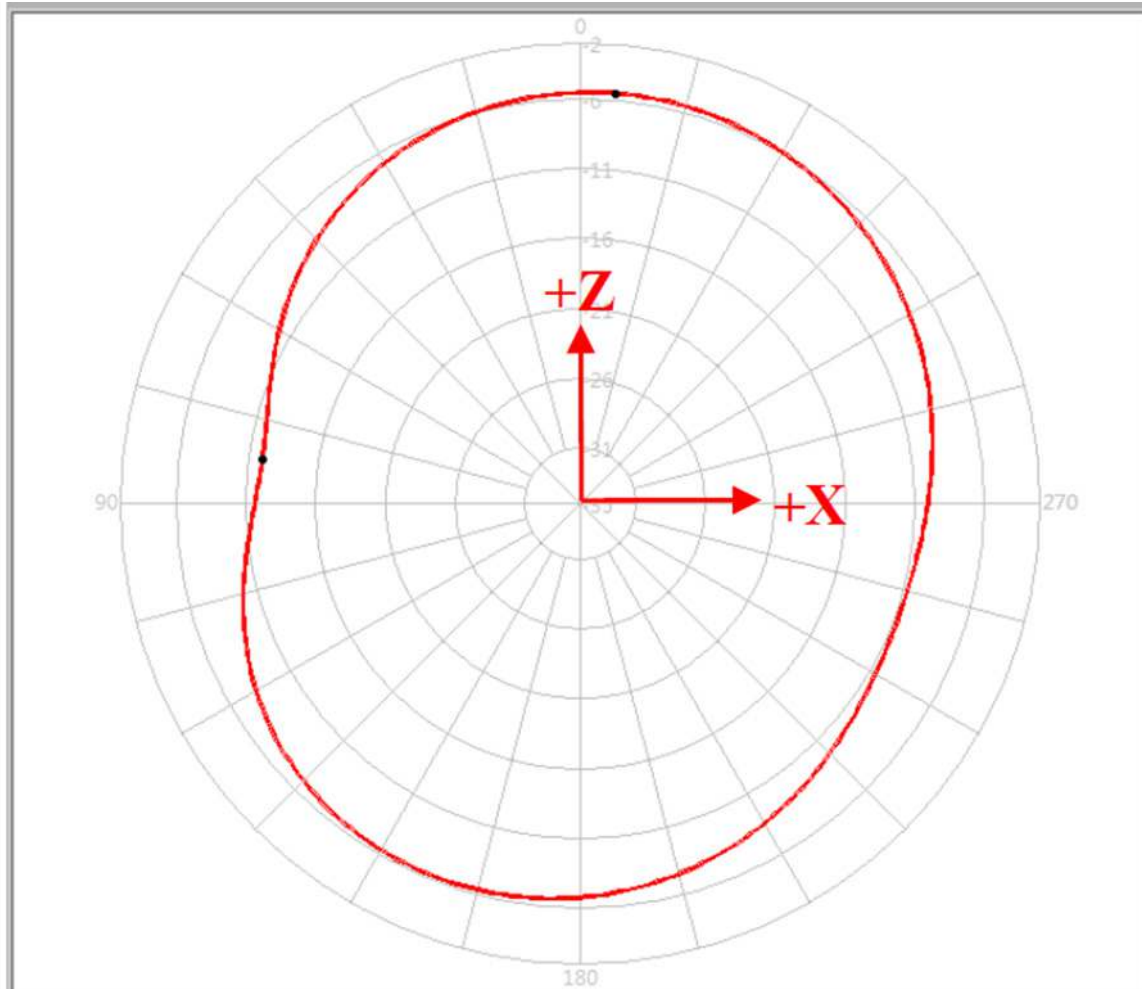
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

GLONASS : 1602.6 MHz
 XZ – Plane :
 Gain : Peak = -5.48 dBi,
 Zenith = -5.55 dBi



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	V1	XZ	1602.60	-5.48 / 355.00	-11.95 / 82.00	-7.78	V+H	2019/3/7



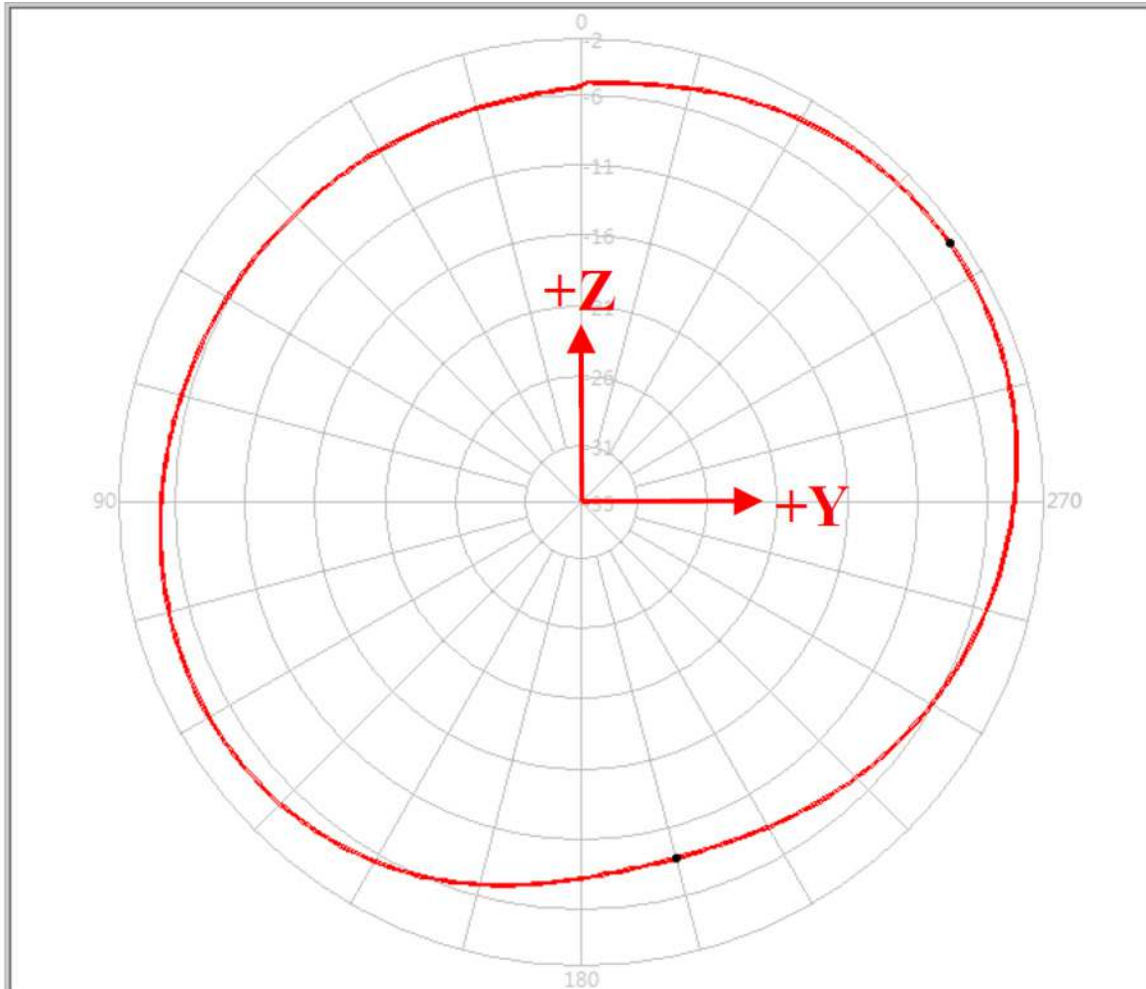
APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern

YZ – Plane :
Gain : Peak = -2.88 dBi,
Zenith = -5.42 dBi



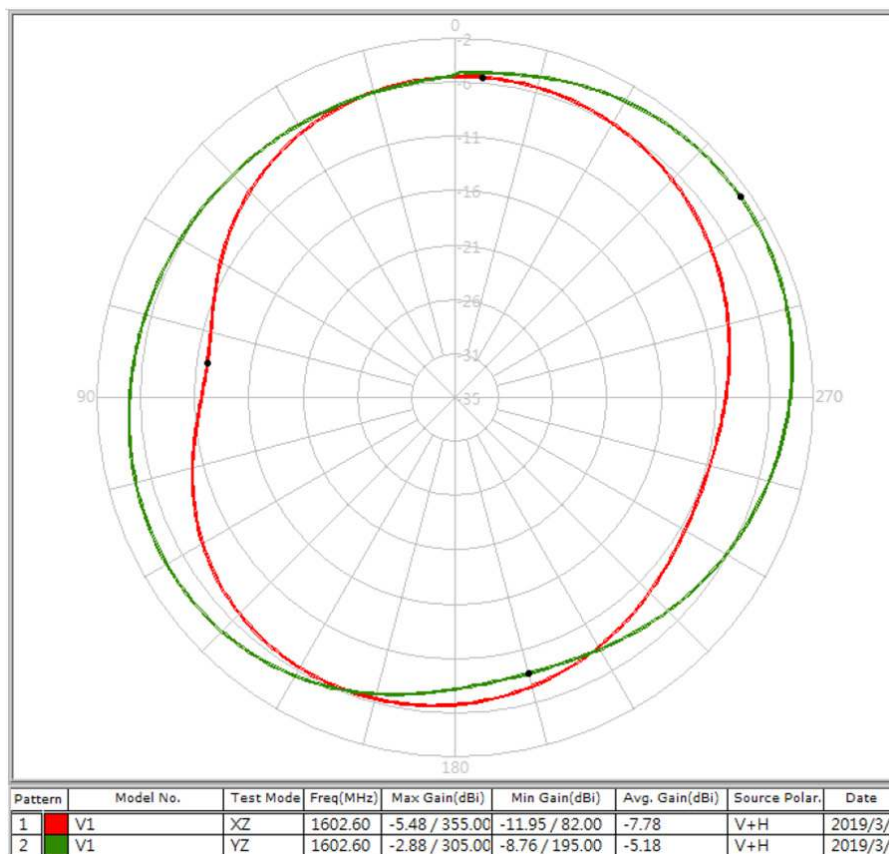


APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
 RoHS/RoHS II Compliant
 MSL = N/A: Not Applicable

Radiation Pattern



Angle	XZ - Plane (dBi)	YZ - Plane (dBi)
90°	-11.65	-5.01
75°	-11.69	-5.50
60°	-10.04	-5.83
45°	-8.24	-6.04
30°	-6.86	-6.13
15°	-5.96	-6.02
0°	-5.55	-5.42
345°	-5.55	-4.53
330°	-5.95	-3.60
315°	-6.69	-3.00
300°	-7.72	-2.91
285°	-8.92	-3.31
270°	-10.04	-4.08

Compact Multiband Active GNSS (GPS/GLONASS/BEIDOU) Patch Antenna



APARC1807A-SG3



18.0 x 18.0 x 7.6 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Packaging

Each carton is of dimension 390 x 320 x 290 mm and has 450 pcs of antenna.

ATTENTION: Abracon LLC's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.



5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com

REVISED: 06-20-19

ABRACON IS
ISO9001-2015
CERTIFIED