

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

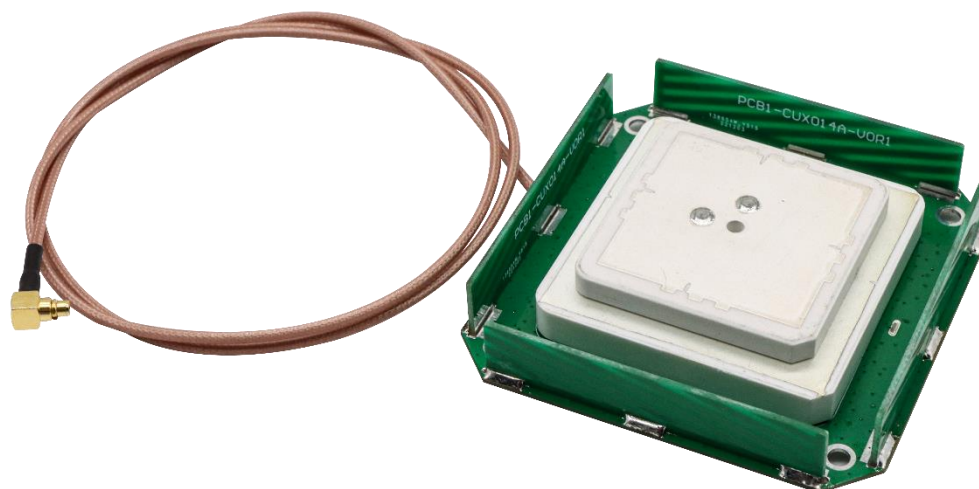
Features

- Multiband Active GNSS
GPS: L1/L2/L5
GLONASS: G1/G2/G3
Galileo: E1/E5a/E5b/E6
Beidou: B1/B2/B3
QZSS: L1/L2/L5/L6
SBAS: L1/E1/B1, L5/B2a/E5a
L-band correction service
- Active GNSS patch with LNA max gain of 33±2 dB
- Centimeter phase center repeatability
- Pre-filtered LNA to minimize de-sensing
- Strong anti-interference performance
- Low profile, light weight, low power Consumption

Applications

- Autonomous driving and UAVs
- Precision land survey positioning
- Surveying and mapping systems
- Precision agriculture
- Tri-band RTK and PPP receivers
- Mission-critical GNSS timing
- Geofencing

Product Image



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



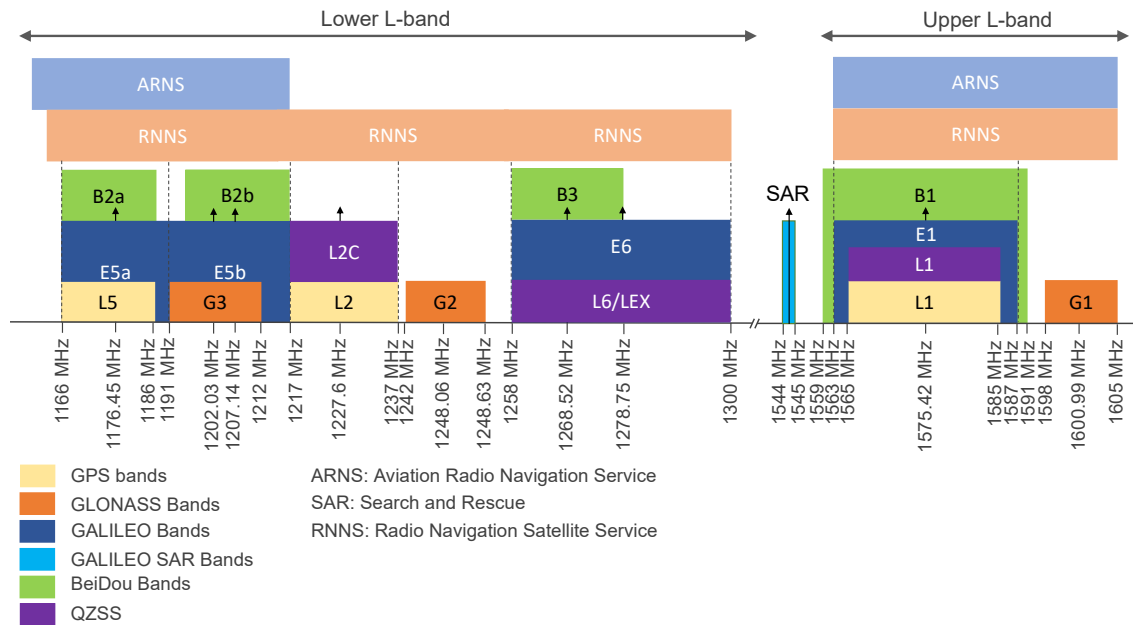
Check Inventory



64 x 64 x 13.4 mm
RoHS/RoHS II Compliant
MSL Level = N/A

GNSS Frequency Bands Covered

GPS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	
	■	■	■	
GLONASS	G1 1598.06-1609.31MHz	G2 1242.93-1251.68MHz	G3 1202.025MHz	
	■	■	■	
Galileo	E1 1575.42MHz	E5a 1176.45MHz	E5b 1201.5MHz	E6 1278.75MHz
	■	■	■	■
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz	
	■	■	■	
QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz
	■	■	■	■
IRNSS/NAVIC			L5 1176.45MHz	
			■	
SBAS	L1/E1/B1 1575.42MHz		L5/B2a/E5a 1176.45MHz	
	■		■	



Frequency allocation: GNSS systems, upper L bands and lower L bands



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: 04-26-23

ABRACON IS
 ISO9001-2015
 CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Electrical Specification

Parameters	Typ.	Units	Note
Antenna			
Frequency	GPS: L1/L2/L5 GLONASS: G1/G2/G3 Galileo: E1/E5a/E5b/E6 Beidou: B1/B2/B3 QZSS: L1/L2/L5/L6 IRNSS/NAVIC: L5 SBAS: L1/E1/B1 L5/B2a/E5a L band correction service		
Polarization	RHCP	-	(Right Hand Circular Polarization)
Nominal Impedance	50	Ω	
Gain RHCP (maximum)	4.7	dBic (@Zenith)	1565–1585 MHz (L1)
	4.6		1212-1242MHz (L2)
	1.0		1166-1186MHz (L5)
	1.9		1257-1299MHz (L6)
Axial Ratio	≤ 3	dB	
Group delay variation	≤ 5	ns	
LNA			
Noise Figure	≤ 2	dB	
Gain	33 ± 2	dB	
Output VSWR	≤ 2.0	-	
Operating Voltage	+3 to 5	V	
Current Consumption	≤ 50	mA	

The test data is based on a 120mm ground plane.



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: 04-26-23

ABRACON IS
 ISO9001-2015
 CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Mechanical Specifications

Parameter	Specification
Antenna Dimension	64 x 64 x 13.4 mm
Weight	≤ 90g
Mounting Type	Embedded Screw mount (4 x M2.5), adhesive available
RF Connector	MMCX-JW

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +85°C
RoHS Compliance	Yes
Relative Humidity	Up to 95%



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory

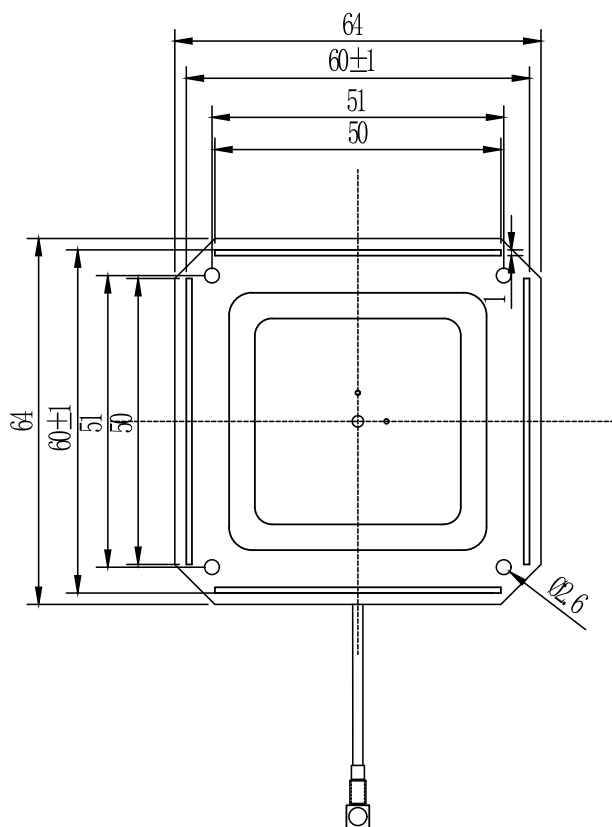


64 x 64 x 13.4 mm

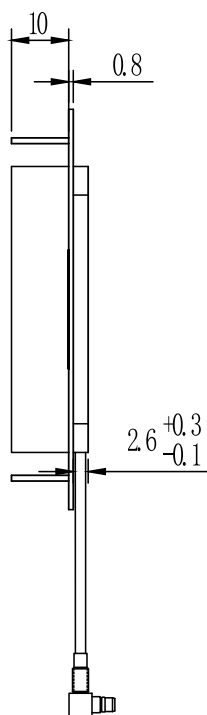
RoHS/RoHS II Compliant

MSL Level = N/A

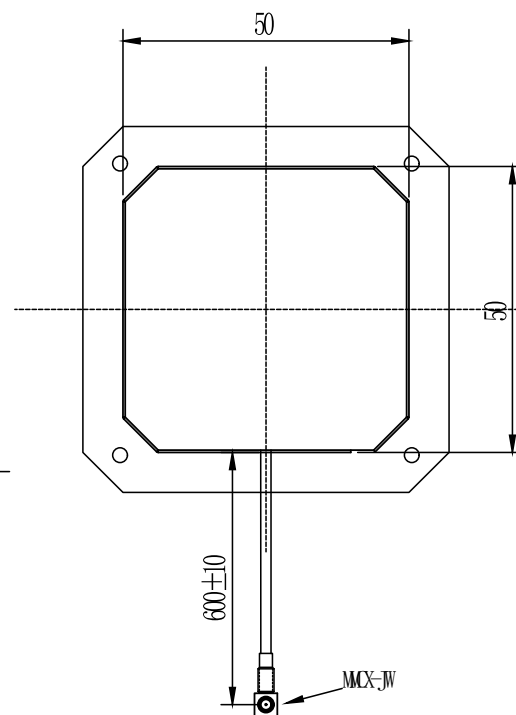
Product Dimension



TOP VIEW



SIDE VIEW



BOTTOM VIEW

Unit : mm



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



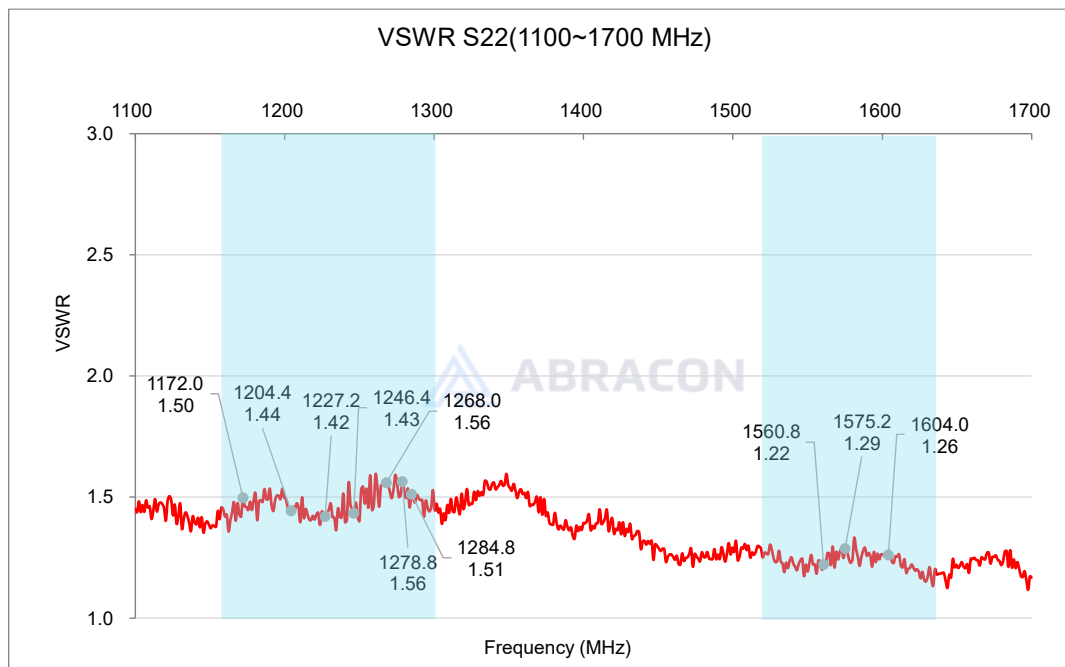
64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Test Measurement – S-Parameter Characteristics

LNA output VSWR:



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory

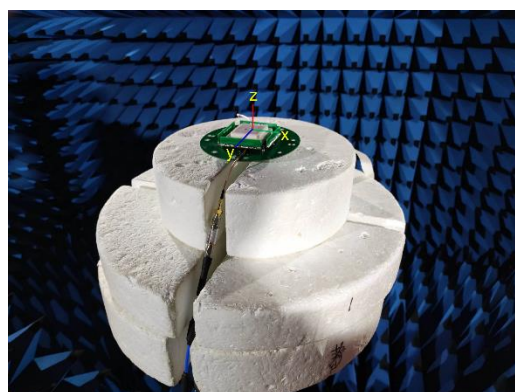
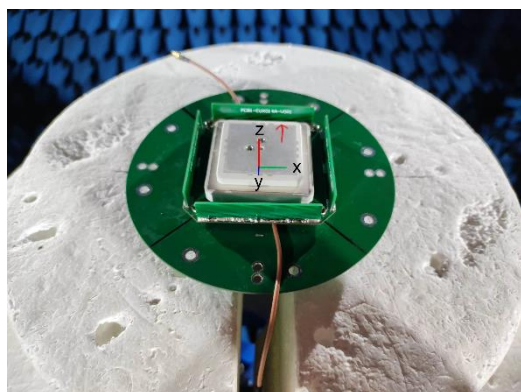
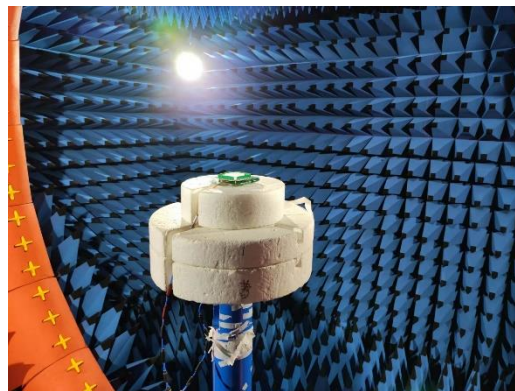
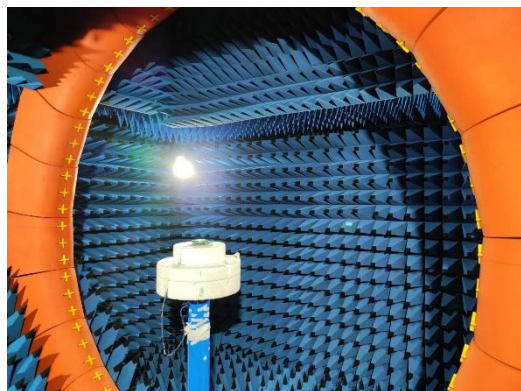


64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Antenna Gain Test – Chamber Setup



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory

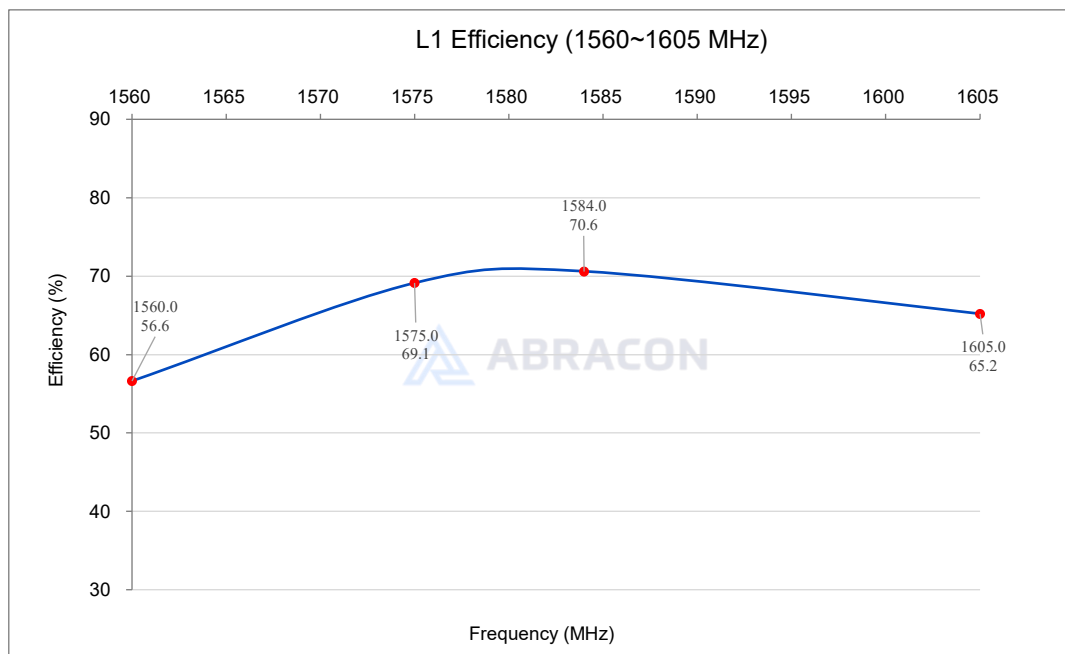
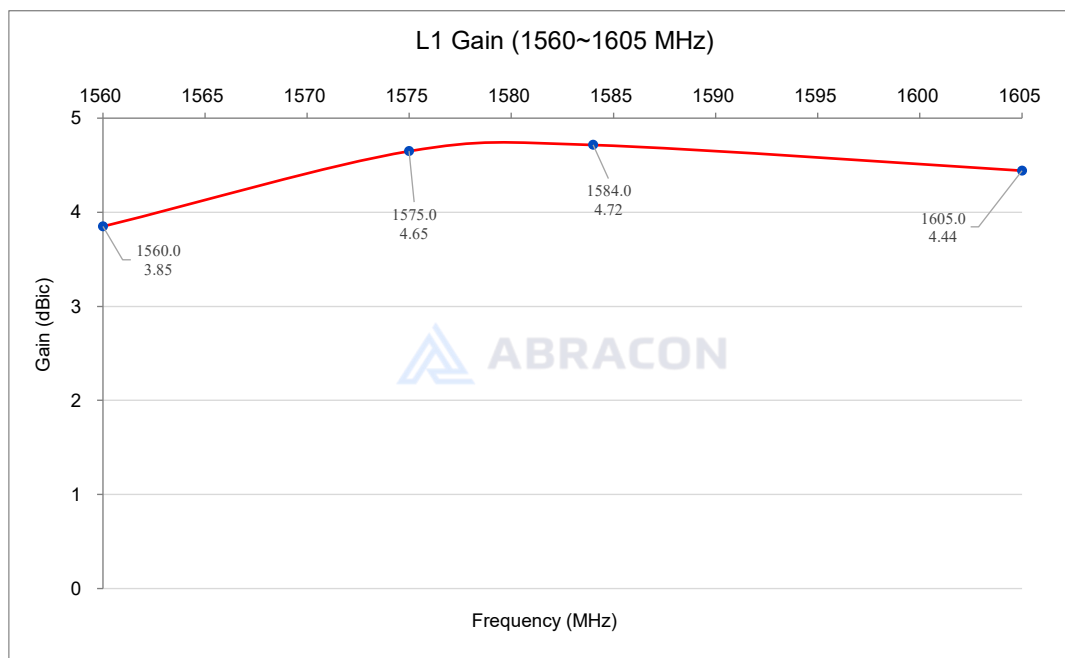


64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Radiation Characteristics –Passive Gain



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



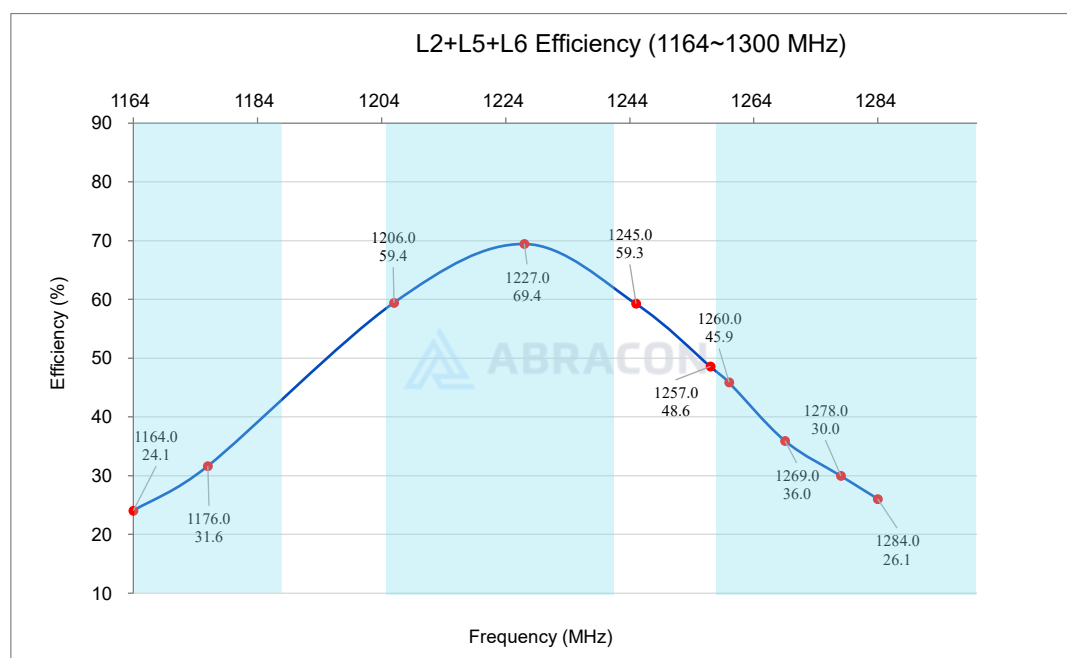
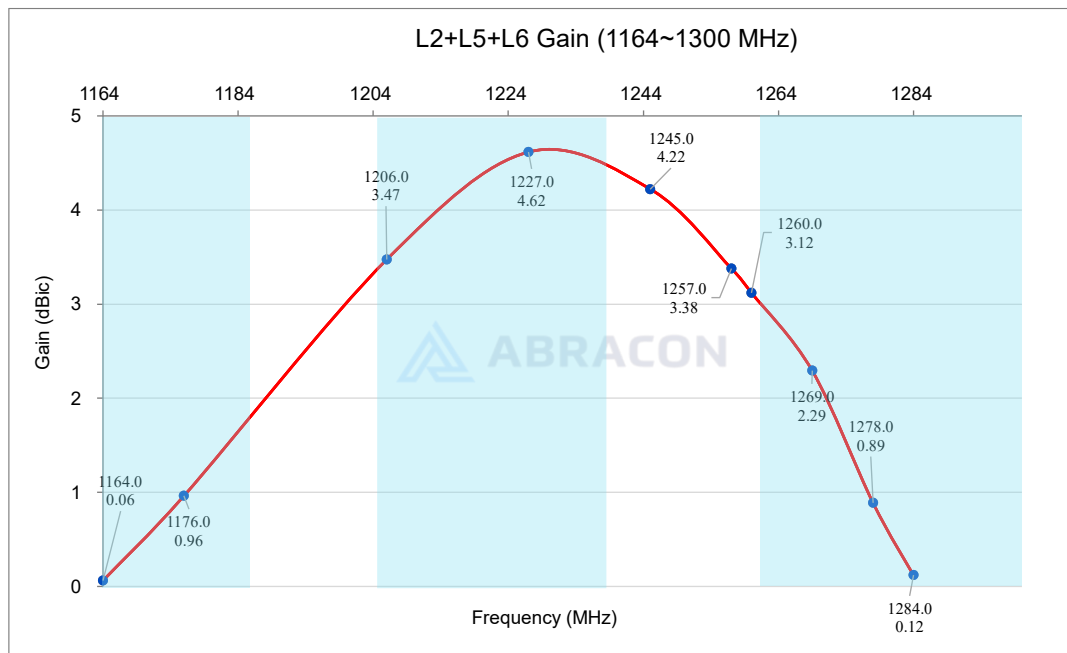
Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A



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: 04-26-23

ABRACON IS
 ISO9001-2015
 CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

L1 Band

Frequency (MHz)	Axial ratio (dB)	Gain (dBic)	Efficiency (%)
1560	0.64	3.85	56.62
1575	0.65	4.65	69.12
1584	0.53	4.72	70.61
1605	0.08	4.44	65.19

The test data is based on a 120mm ground plane.

L2+L5+L6 Band

Frequency (MHz)	Axial ratio (dB)	Gain (dBic)	Efficiency (%)
1164	0.23	0.06	24.06
1176	0.47	0.96	31.64
1206	1.10	3.47	59.44
1227	1.29	4.62	69.44
1245	1.27	4.22	59.27
1257	1.25	3.38	48.58
1260	1.25	3.12	45.88
1269	1.23	2.29	35.96
1278	1.21	0.89	30.00
1284	1.19	0.12	26.06

The test data is based on a 120mm ground plane.



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: 04-26-23

ABRACON IS
 ISO9001-2015
 CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory

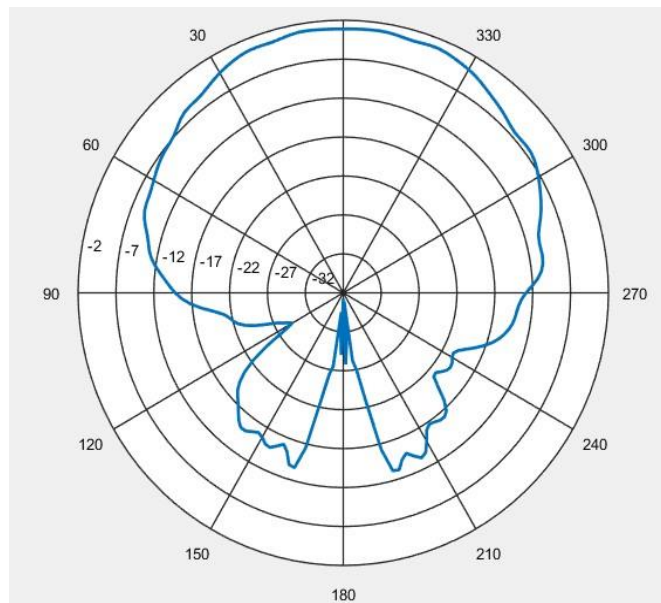


64 x 64 x 13.4 mm

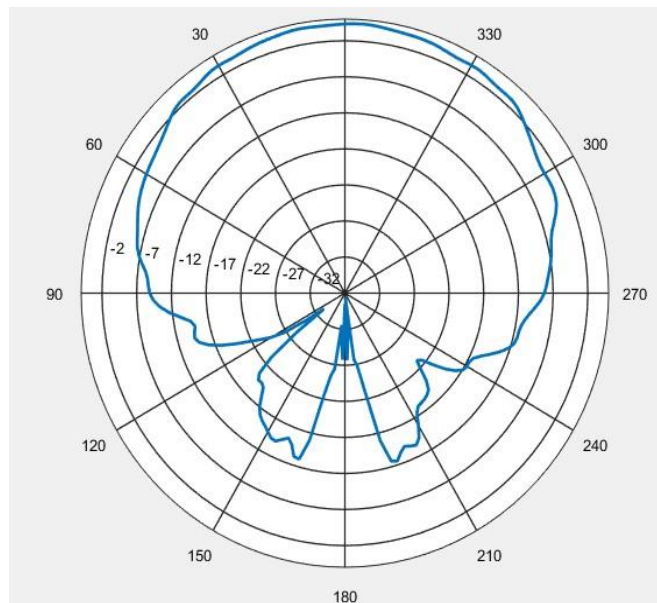
RoHS/RoHS II Compliant

MSL Level = N/A

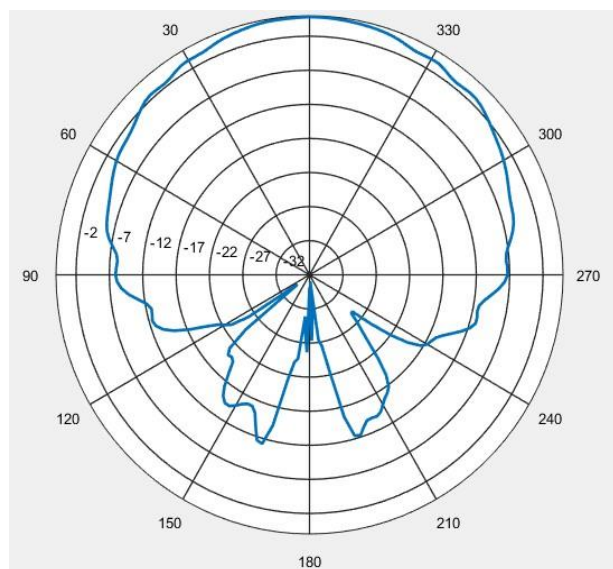
Test Measurement – 2D radiation pattern



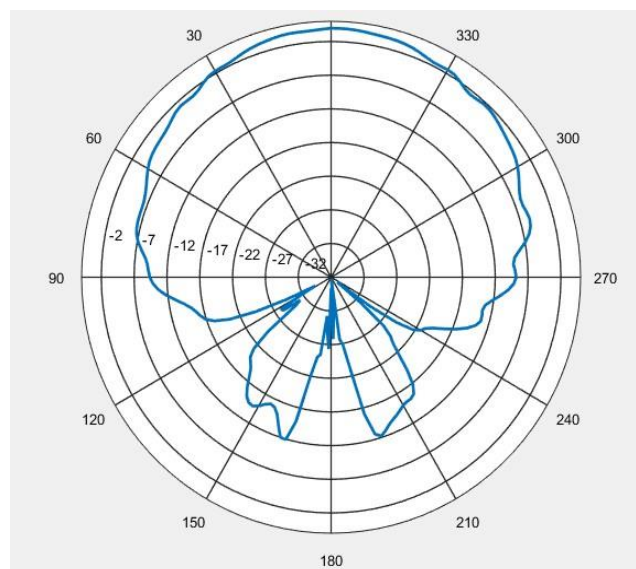
1164MHz



1176MHz



1207MHz



1227MHz



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



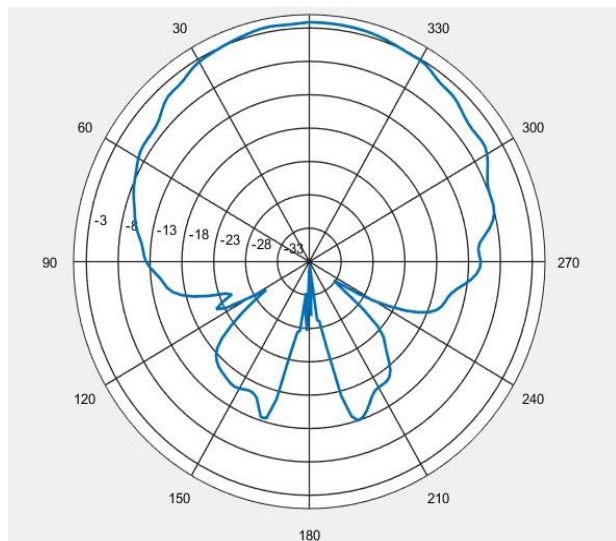
Check Inventory



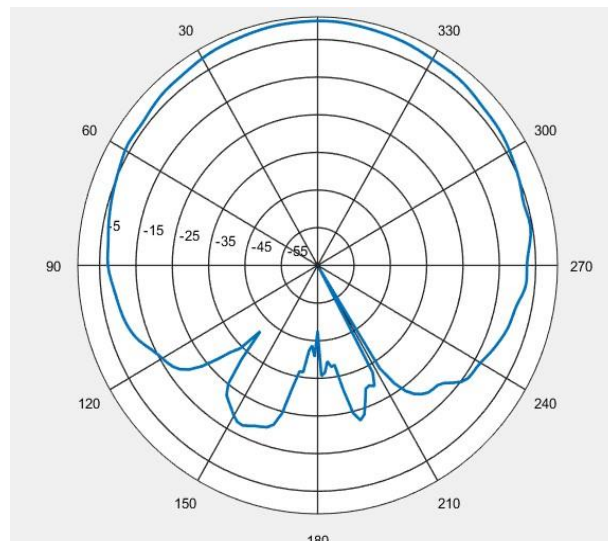
64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

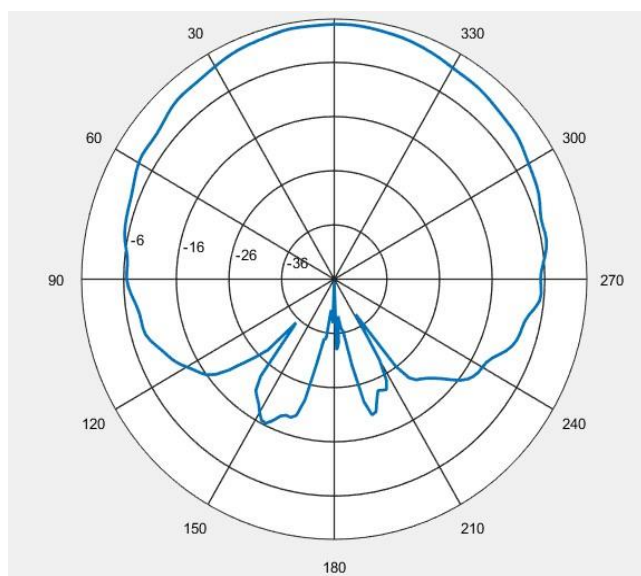
MSL Level = N/A



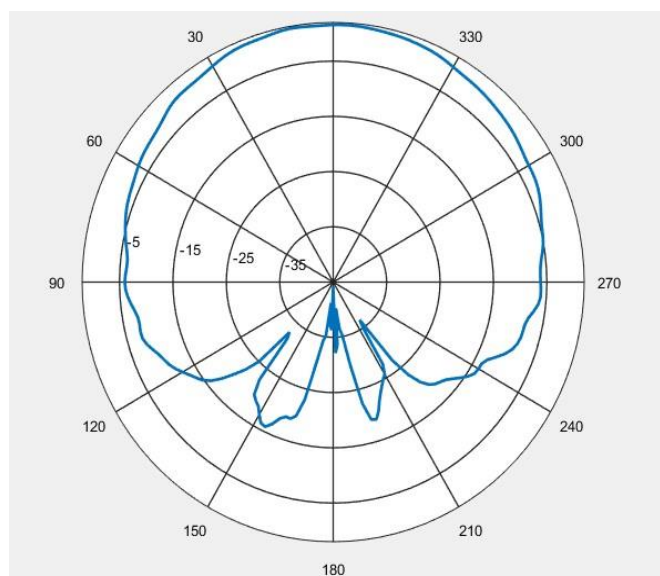
1246MHz



1258MHz



1561MHz



1575MHz



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory

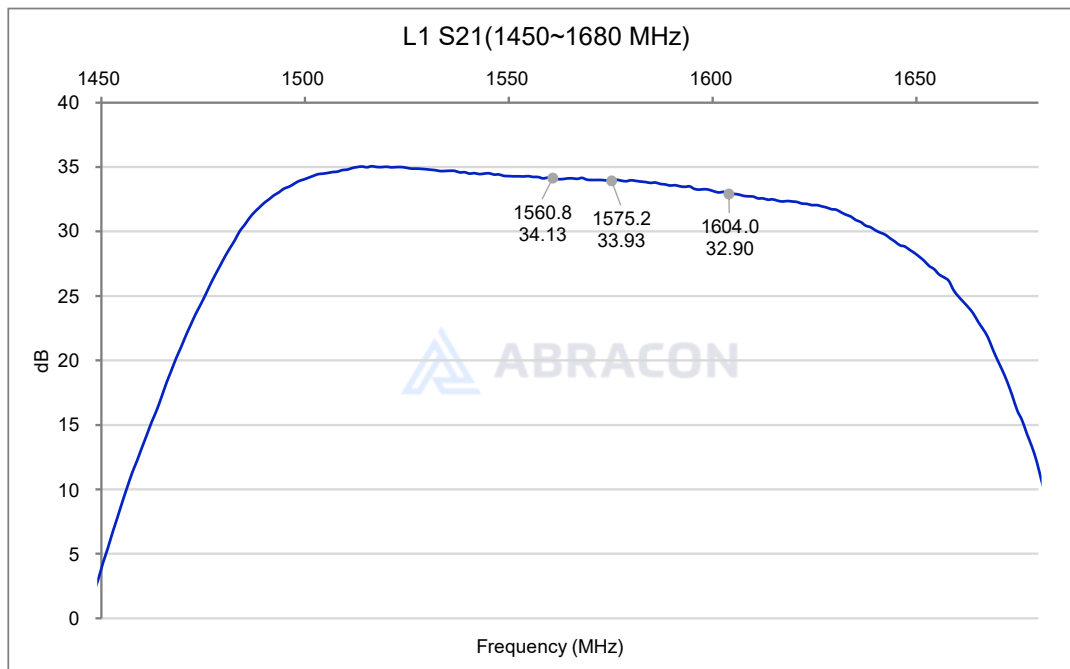


64 x 64 x 13.4 mm

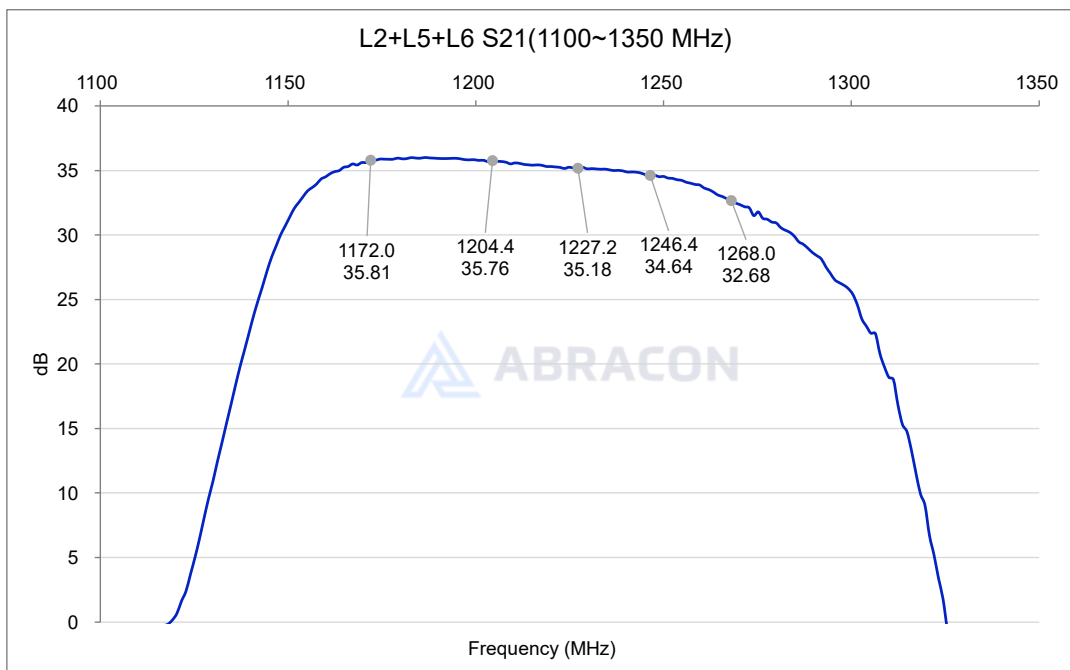
RoHS/RoHS II Compliant

MSL Level = N/A

Test Measurement – LNA Gain and Noise Figure



LNA gain (Band L1)



LNA gain (Band L2+L5+L6)



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples

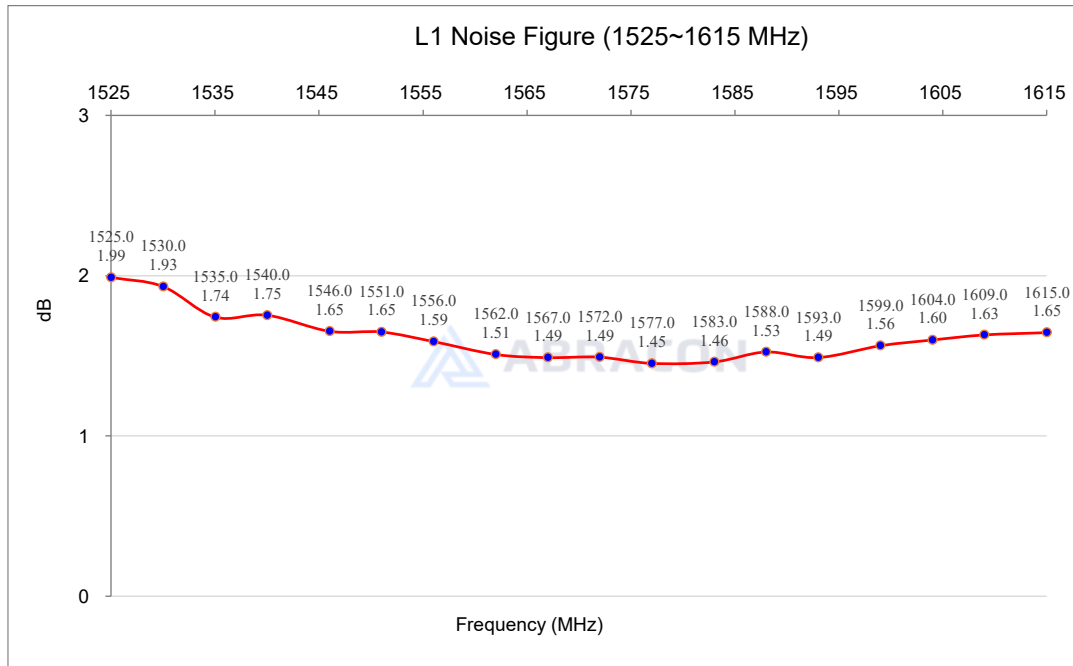


Check Inventory

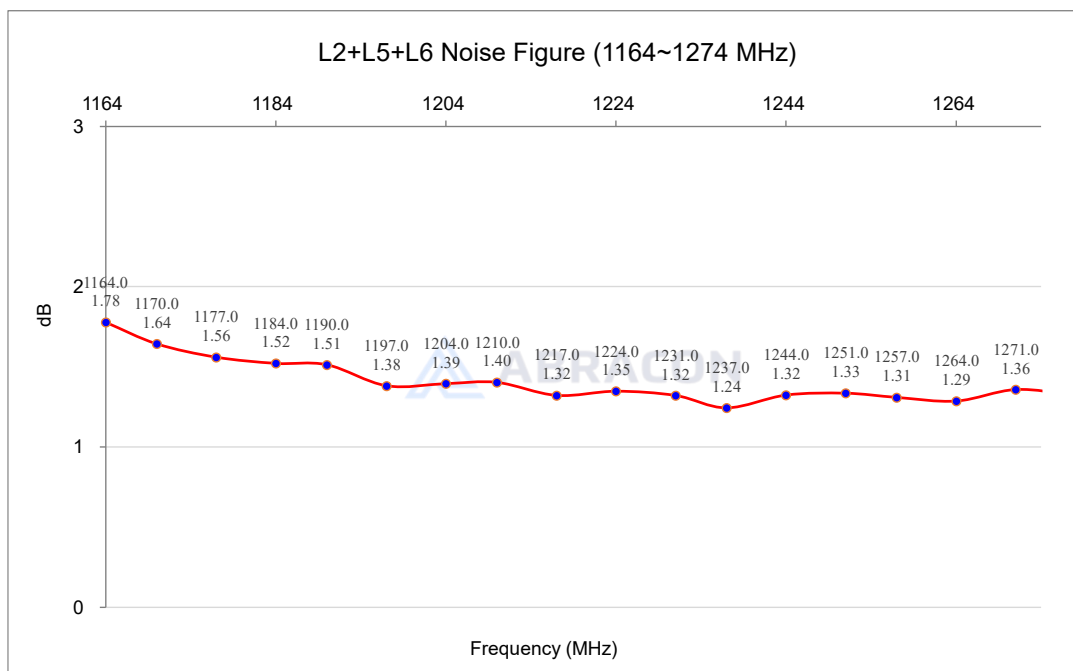


64 x 64 x 13.4 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Noise Figure



L1 Band



L2+L5+L6 Band



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

LNA Test Data

Frequency (MHz)	Circuit Gain (dB)	VSWR
1172	34.4	1.6
1204	34.5	1.6
1227	34.1	1.6
1246	33.7	1.6
1268	32.7	1.6
1561	34.2	1.2
1575	34.0	1.1
1604	33.1	1.1

The test data is based on a 120mm ground plane.



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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED

Full-Band Internal Active High-Precision GNSS Antenna



APXG6413GH-0600A

Request Samples



Check Inventory



64 x 64 x 13.4 mm

RoHS/RoHS II Compliant

MSL Level = N/A

Packaging Information

40pcs APXG6413GH antennas per tray

Dimensions: 610 x 560 x 100mm

120pcs APXG6413GH antennas per carton (3 trays)

Dimensions: L x W x H: 610 x 560 x 310mm

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: 04-26-23

ABRACON IS
ISO9001-2015
CERTIFIED