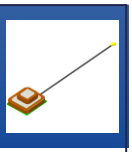
GNSS L1/L2/L5 Internal Active Patch Antenna



APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

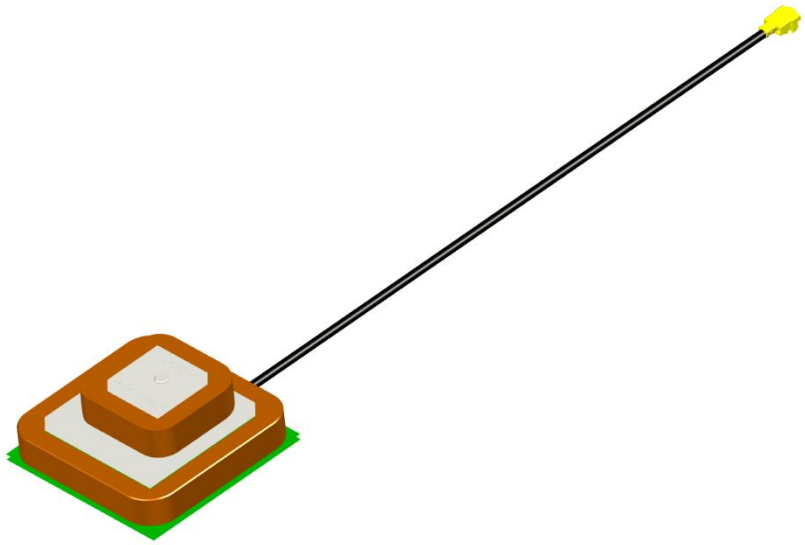
Features

- L1(E1)/L2/L5 Active GNSS Antenna
- Low Profile with Size 25 x 25 x 11.6 mm
- LNA Gain: 28 dB
- Noise Figure: 1.3 dB
- Low Current Consumption: 10 mA@ 3.3V
- Custom Cable & Connector Options Available

Applications

- RTK System
- GNSS Modules
- UAVs and Drones
- Asset Tracking & Telematics
- Intelligent Transportation
- Precision Agriculture
- Geolocation and Tracking

Product Image



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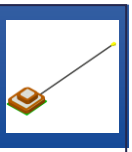


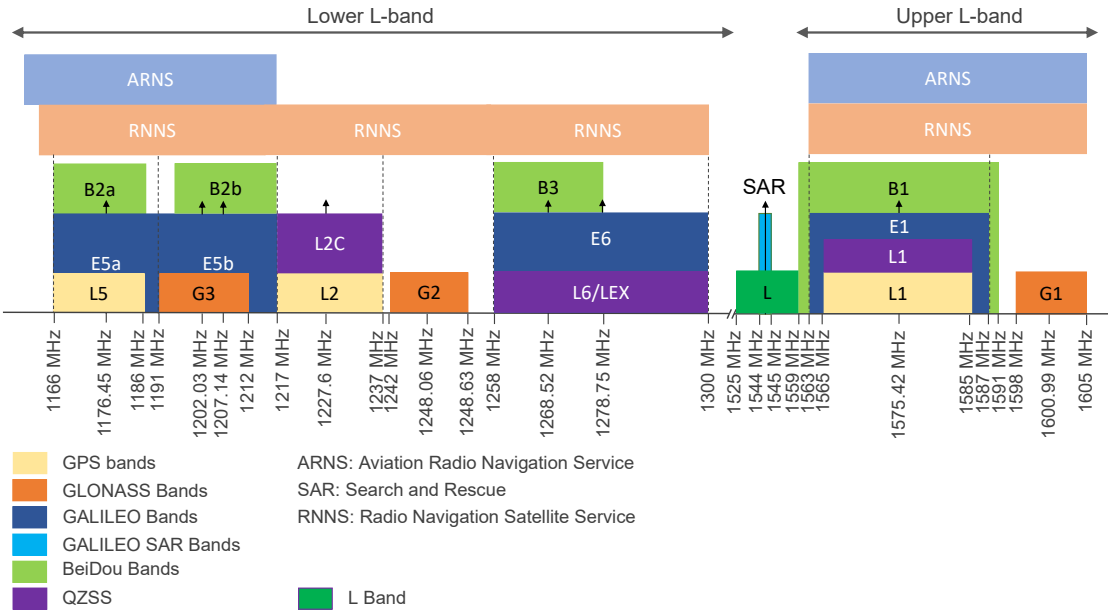
APARC2511X-SGL2L5

Request Samples

Check Inventory

25 x 25 x 11.6 mm
RoHS 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

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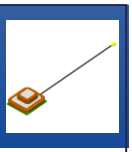

APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Electrical Specification

Parameters		Typ.		Units	Note
Antenna					
Frequency	1166.22 ~ 1186.68 (L5)	1212 ~ 1242 (L2)	1560 ~ 1590 (L1/E1)	MHz	
VSWR	≤ 2			-	
Polarization	RHCP			-	(Right Hand Circular Polarization)
Nominal Impedance	50			Ω	
Peak Gain	-1.2	0.3	3.7	dBic	On 70 × 70 mm ground plane
Maximum Efficiency	56	57	74	%	
Average Efficiency	29	25	62	%	
LNA					
VSWR	≤ 2.0			-	
Gain	30 ± 3	27 ± 3	28 ± 3	dB	
Noise Figure	1.12	1.4	1.07	dB	
Supply Voltage	2.7	3.3	5.0	V	
Current Consumption	-	10	-	mA	

Please note: All measurement data is based on the standard configuration (conducted in free space unless otherwise specified).

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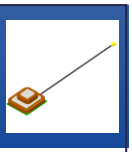

APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Mechanical Specification

Parameter	Specification
Antenna Dimension	25 x 25 x 11.6 mm
Mounting Type	Adhesive Mount
RF Connector (1)	u.FL/IPEX-1/MHF1
Cable Type	Ø 1.13mm
Cable Length (1)	100 ± 10 mm
Weight	18.4 g

(1)**:** Fully customizable RF Cable & Connector

Environmental Specification

Parameter	Specification
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +105°C
RoHS Compliance	Yes
ESD Sensitive	No
Relative Humidity	Up to 95%

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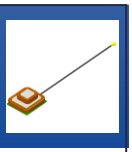
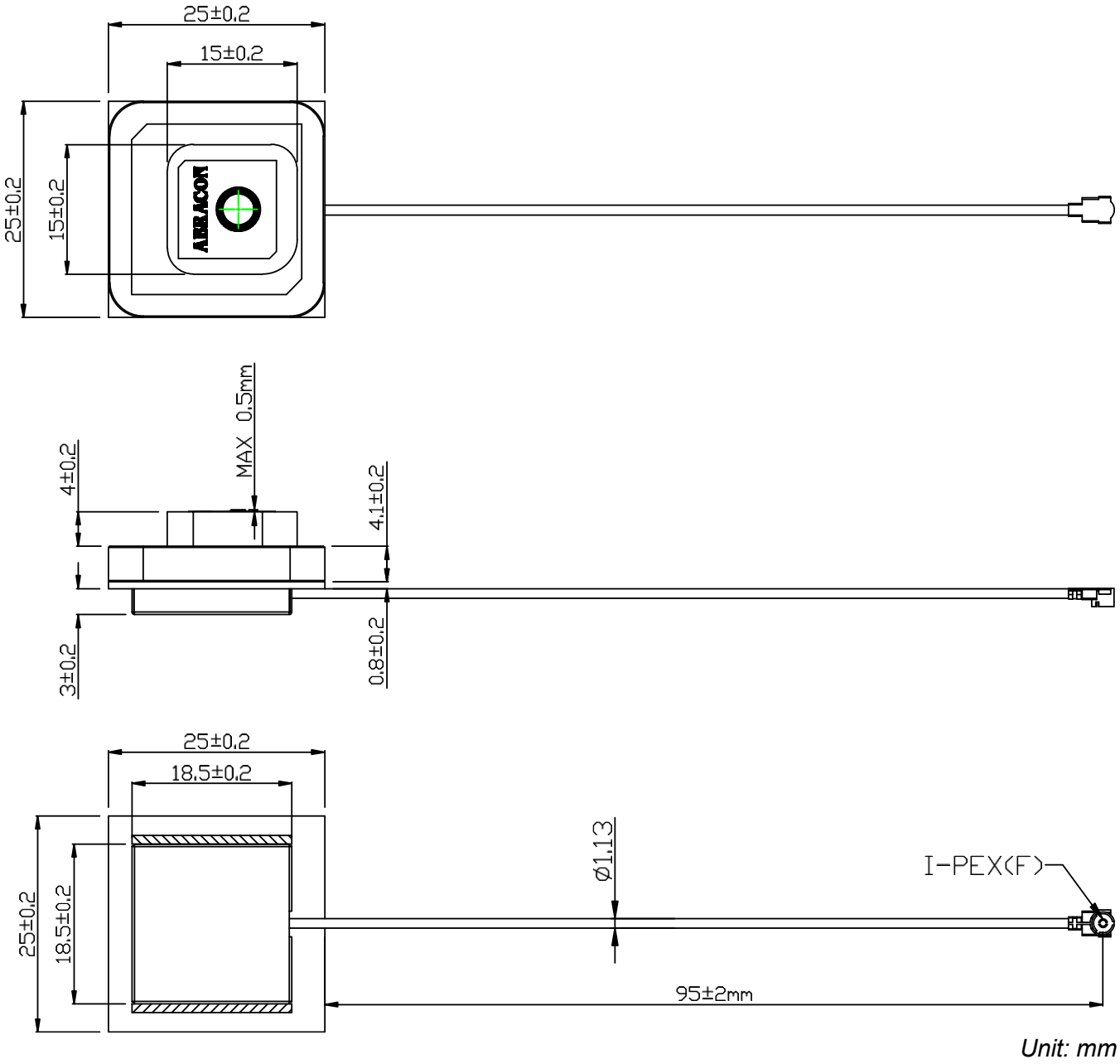


APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Product Dimension



Unit: mm

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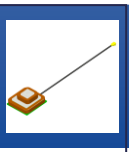
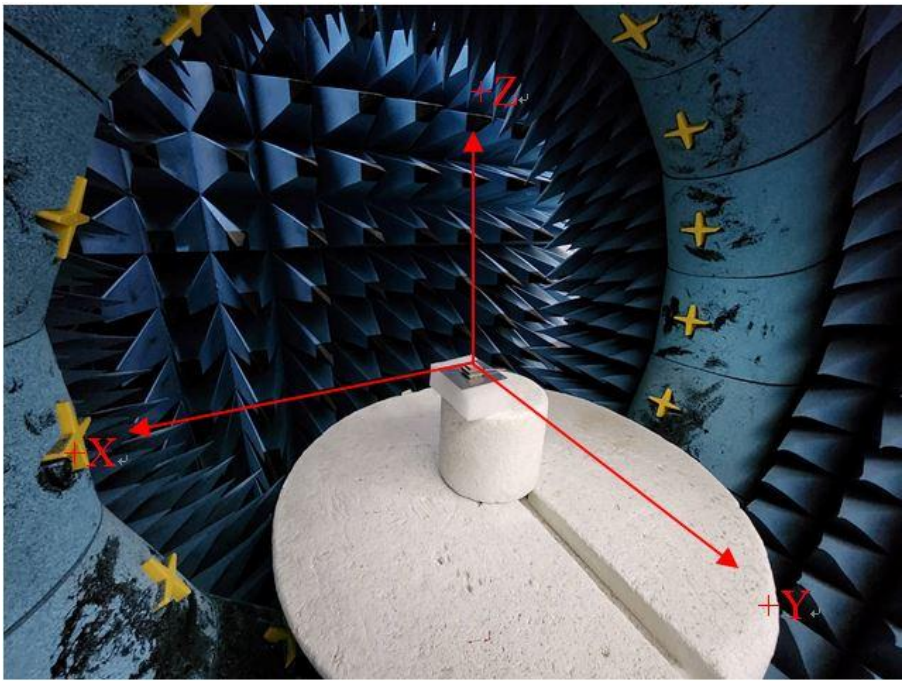


APARC2511X-SGL2L5

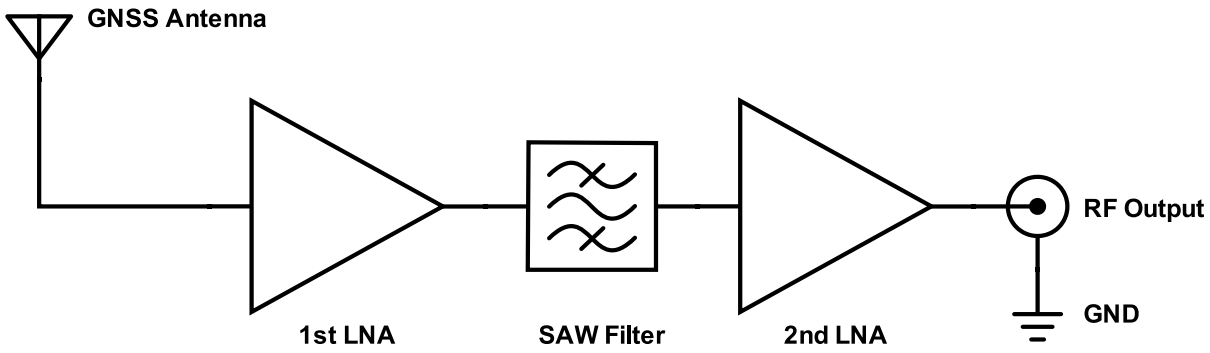
Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Measurement Setup



GNSS Block Diagram



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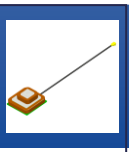
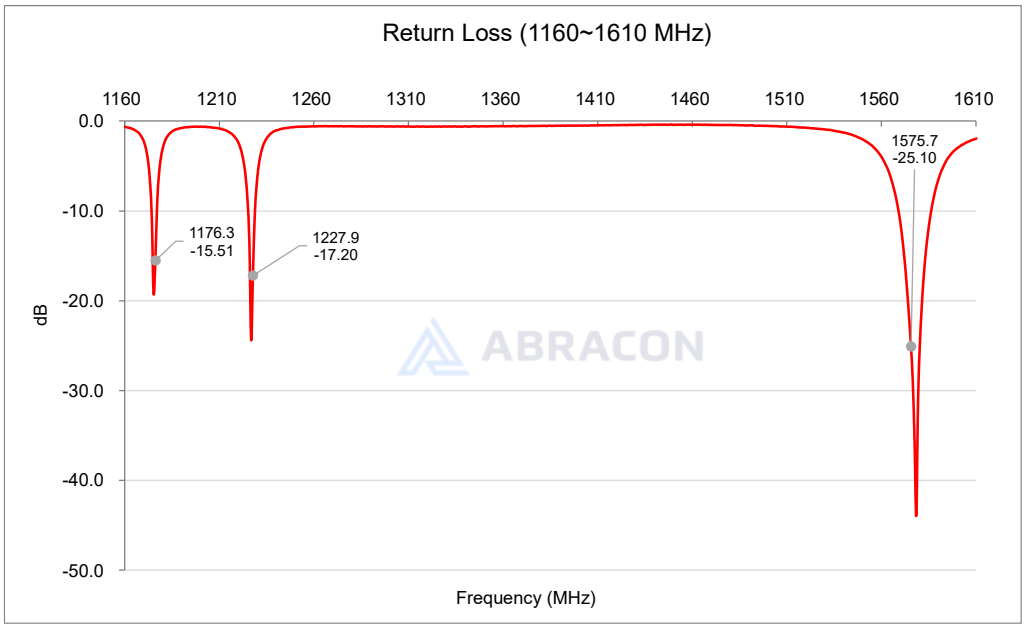


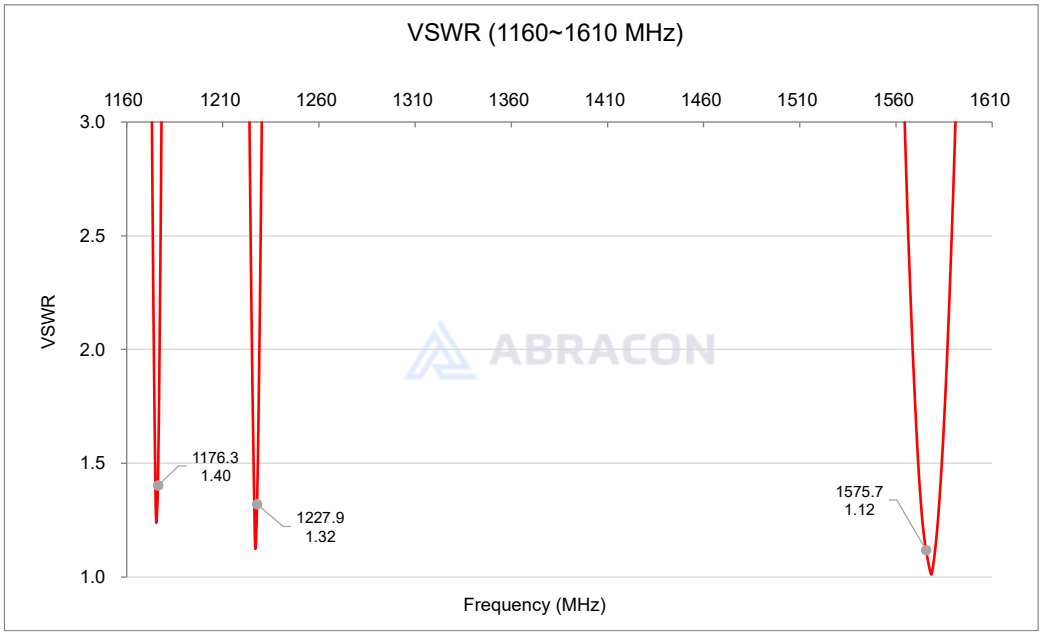
APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Reflection Characteristics – Return Loss & VSWR





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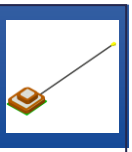
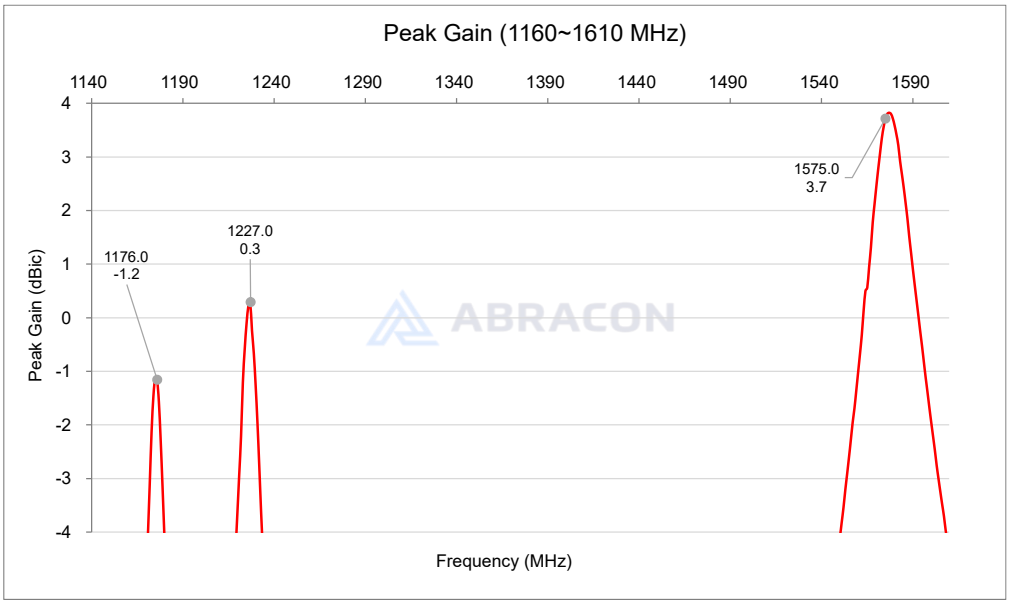


APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Radiation Characteristics –Peak Gain



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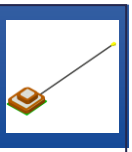

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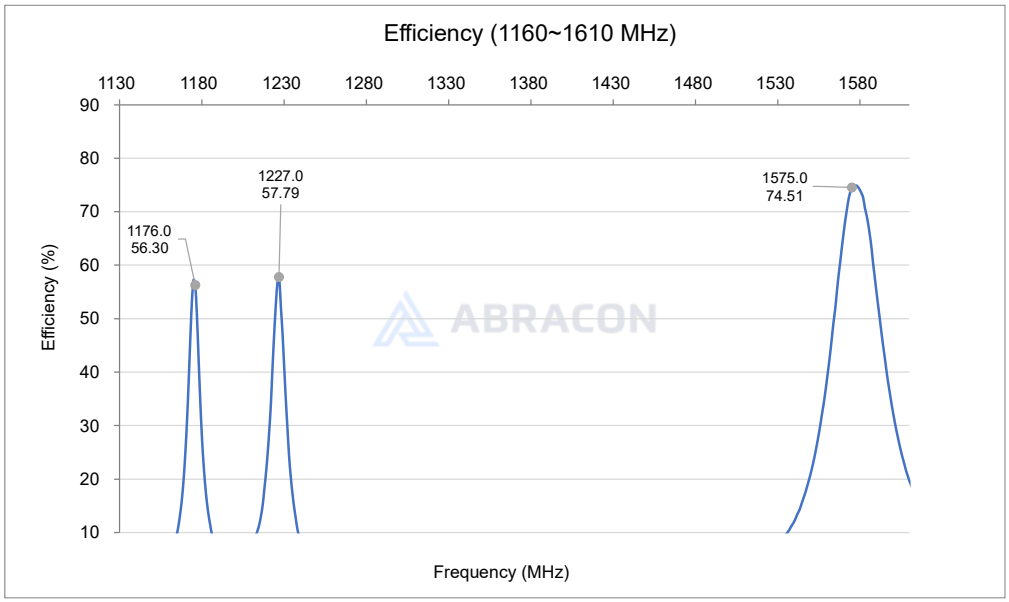
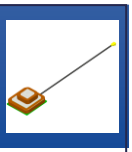
25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Radiation Characteristics –Efficiency



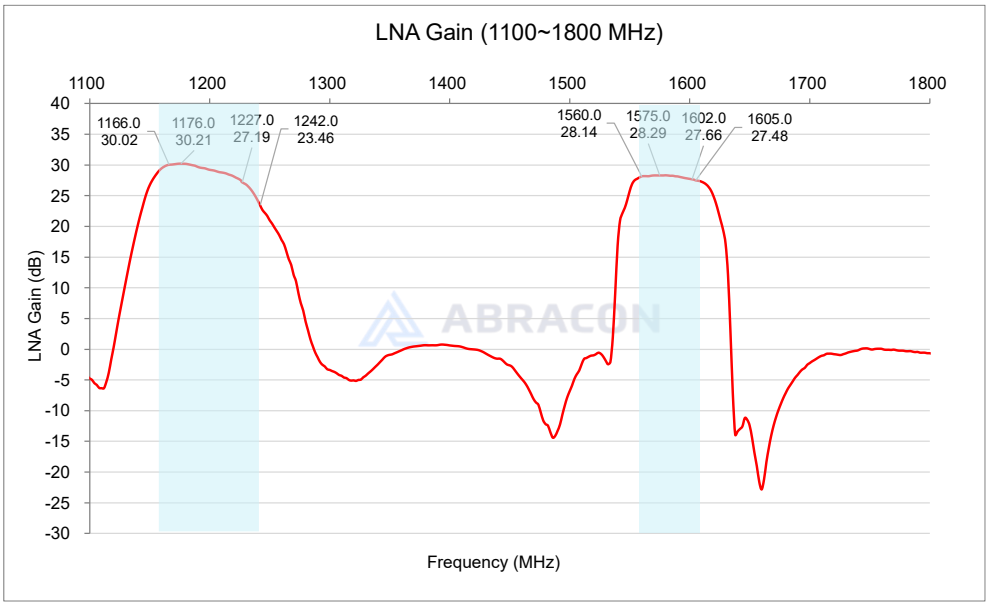


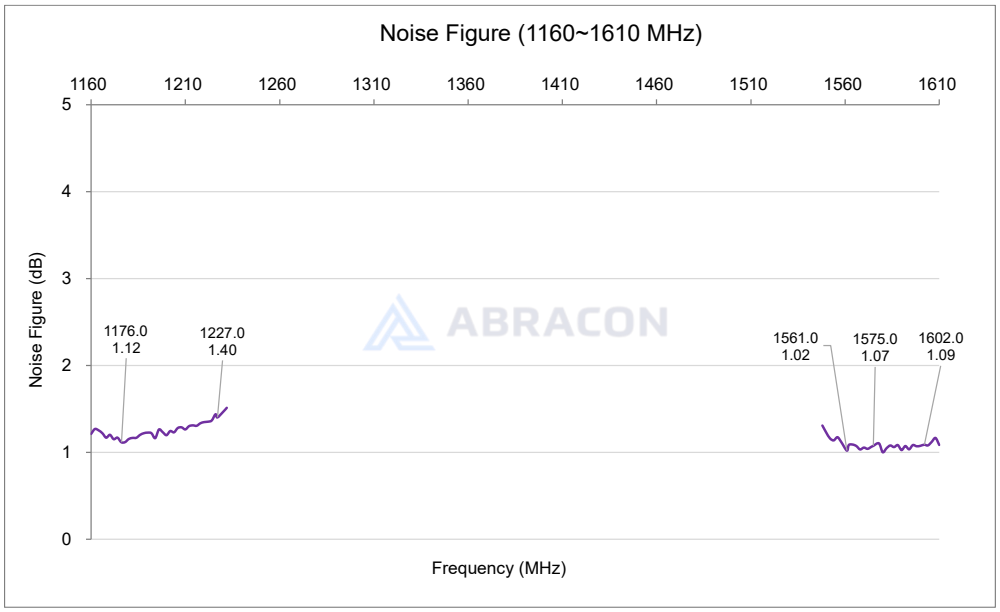
APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

LNA Characteristics –LNA Gain & Noise Figure





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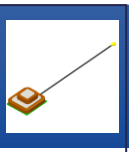


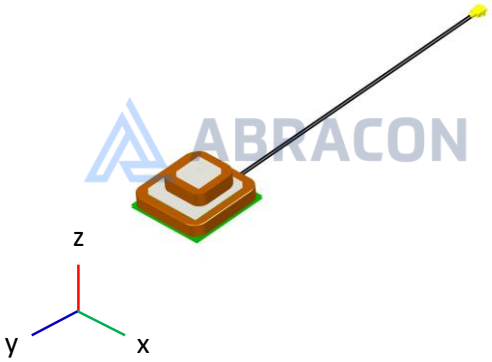
APARC2511X-SGL2L5

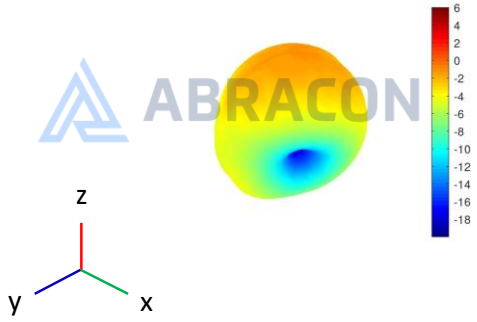
Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

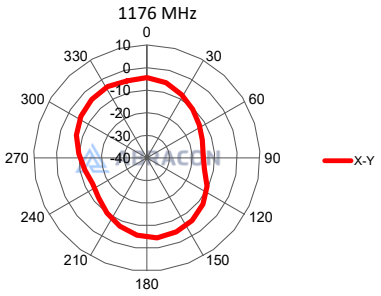
Radiation Characteristics – 3D & 2D Pattern

1176MHz

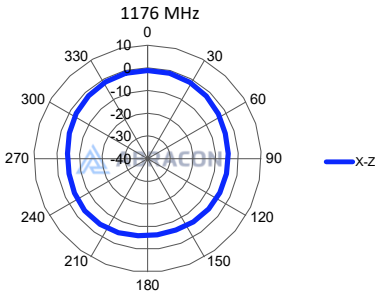




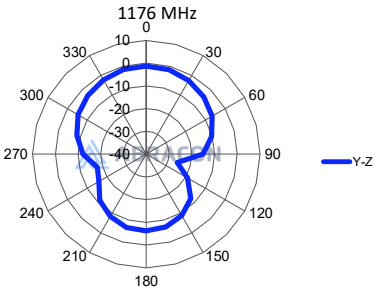
XY plane



XZ plane



YZ plane



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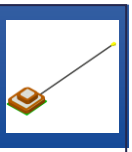

APARC2511X-SGL2L5

Request Samples | Check Inventory

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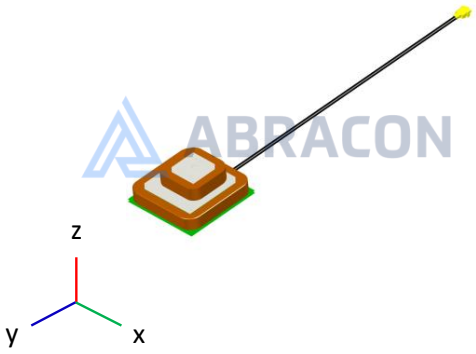
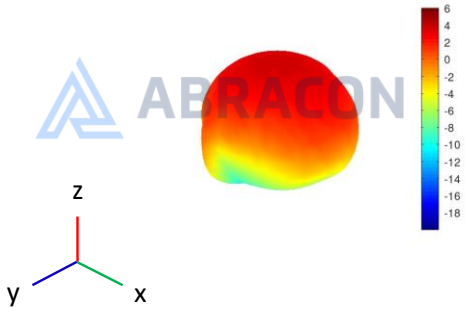
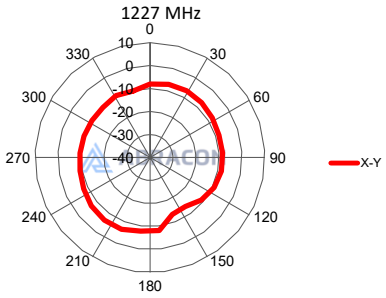
RoHS Compliant
MSL Level = N/A

1227MHz

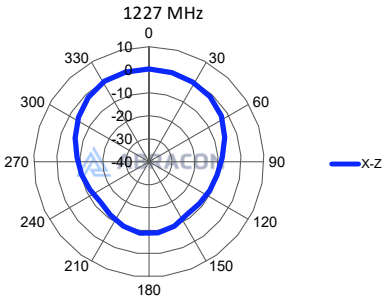




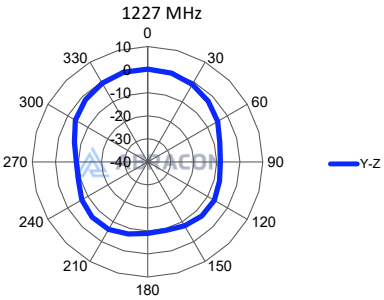
XY plane



XZ plane



YZ plane



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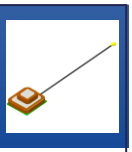
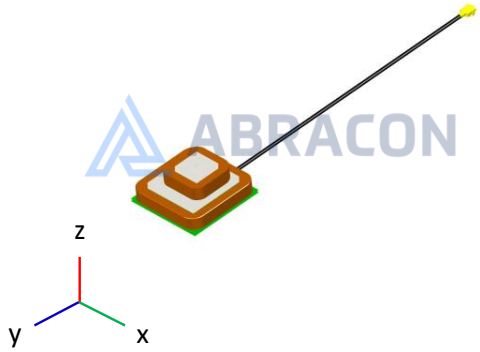


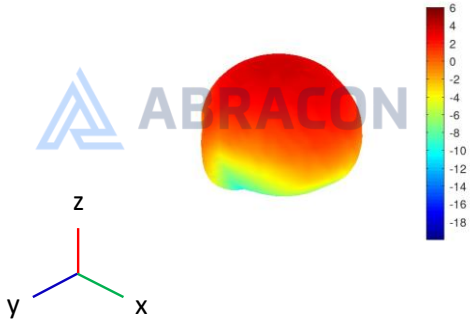
APARC2511X-SGL2L5

Request Samples | Check Inventory

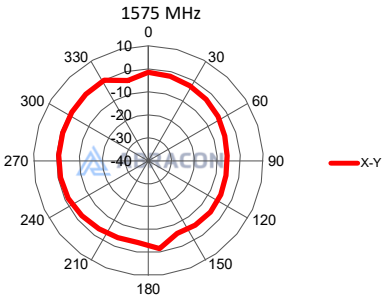
25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

1575MHz

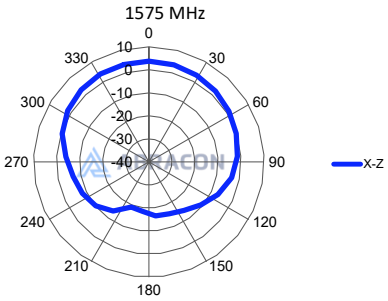




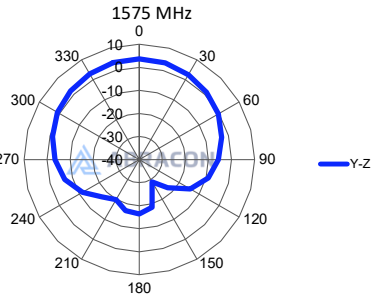
XY plane



XZ plane



YZ plane



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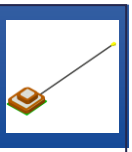

APARC2511X-SGL2L5

Request Samples | Check Inventory

25 x 25 x 11.6 mm
RoHS Compliant
MSL Level = N/A

Packaging

30 pcs antennas per vacuum

120 pcs antennas per batch

360 pcs antennas per carton

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf ('COTS'), which are designed, intended, and validated for use in commercial, industrial, and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.

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