

High Frequency Ceramic Solutions

BT/WiFi and GPS/BDS/GLNSS Quad band, Dual Feed Chip Antenna:
2.4/1.561/1.575/1.602GHz, SMD, AEC-Q200 Qualified

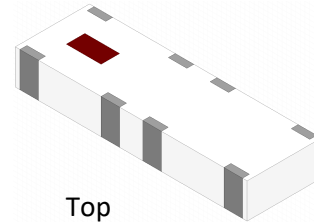
P/N 2450AD47A1590E-AEC

Detail Specification: 10/28/2021

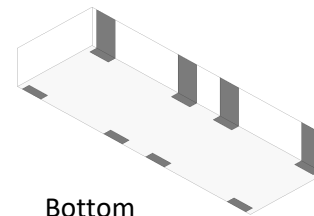
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General Specifications

Part Number	2450AD47A1590E-AEC			
Frequency (MHz)	2400 - 2500	1561	1575	1602
Peak Gain (dBi typ.)	1.0 (YZ-Total)	0.5 (YZ-Total)	1.0 (YZ-Total)	0.5 (YZ-Total)
Average Gain (dBi typ.)	-1.0 (YZ-Total)	-2.0 (YZ-Total)	-2.0 (YZ-Total)	-3.0 (YZ-Total)
Return Loss (dB)	7.36 min.	7.36 min.	7.36 min.	7.36 min.
Isolation	20	15	15	15
Radiation Efficiency % ¹	79	47	50	41
Impedance (Ω)	50	50	50	50
Power Capacity (W)	2 max. (CW)			
Operating Temperature	-40°C to +105°C			
Reel Quantity (pcs./reel)	1,000			
Recommended Storage Conditions and Period for unused Product on T&R	+5°C to +35°C Humidity 45 - 75% RH 18 months max.			



Top



Bottom

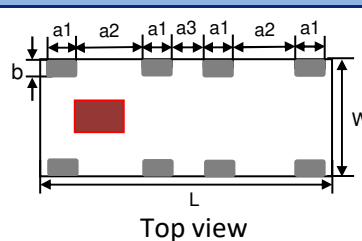
¹Efficiency measured on Johanson's evaluation board P/N: 2450AD47A1590-EB1SMA

Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose pcs.)	Suffix = S	E.g. 2450AD47A1590S-AEC
		T & R	Suffix = E	E.g. 2450AD47A1590E-AEC
	Evaluation Board	2450AD47A1590-EB1SMA (Pre-tuned with SMA connectors)		

Mechanical Dimensions

	In	mm
L	0.394 ± 0.008	10.00 ± 0.20
W	0.126 ± 0.008	3.20 ± 0.20
T	0.059 ± 0.008	1.50 ± 0.20
a1	0.031 ± 0.008	0.80 ± 0.20
a2	0.106 ± 0.008	2.70 ± 0.20
a3	0.039 ± 0.008	1.00 ± 0.20
b	0.012 ± 0.004/-0.008	0.30 ± 0.1/-0.2



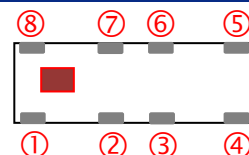
Top view



Side view

Terminal Configuration

No.	Function
1	2.4GHz Feed Point
2	GND
3	GND
4	1.5-1.6GHz Feed Point
5	GND
6	GND
7	GND
8	GND



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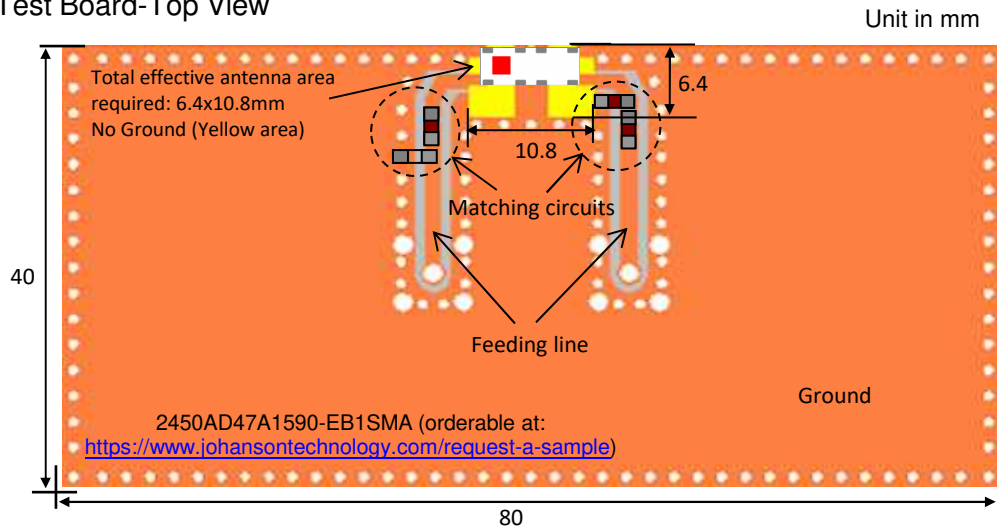
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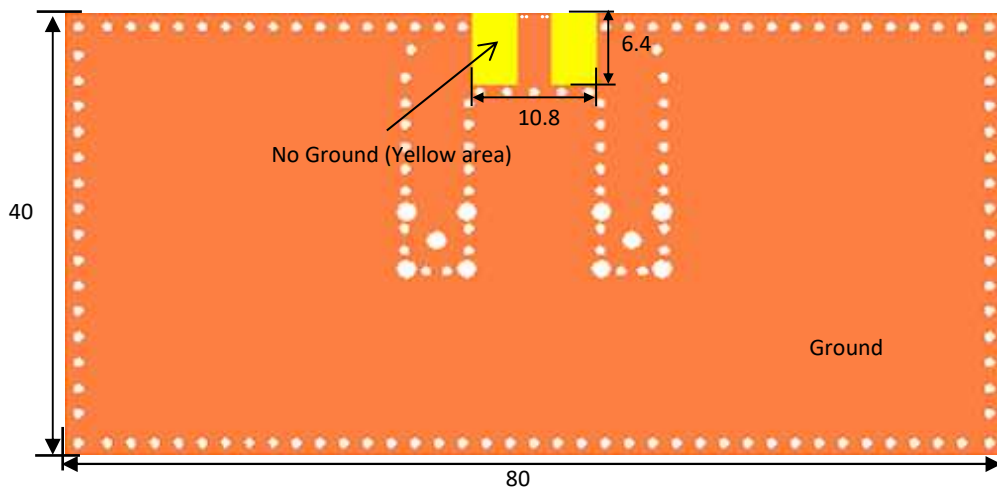
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Johanson Technology Evaluation Board Mounting Configuration

❖ Test Board-Top View



❖ Test Board-Bottom View



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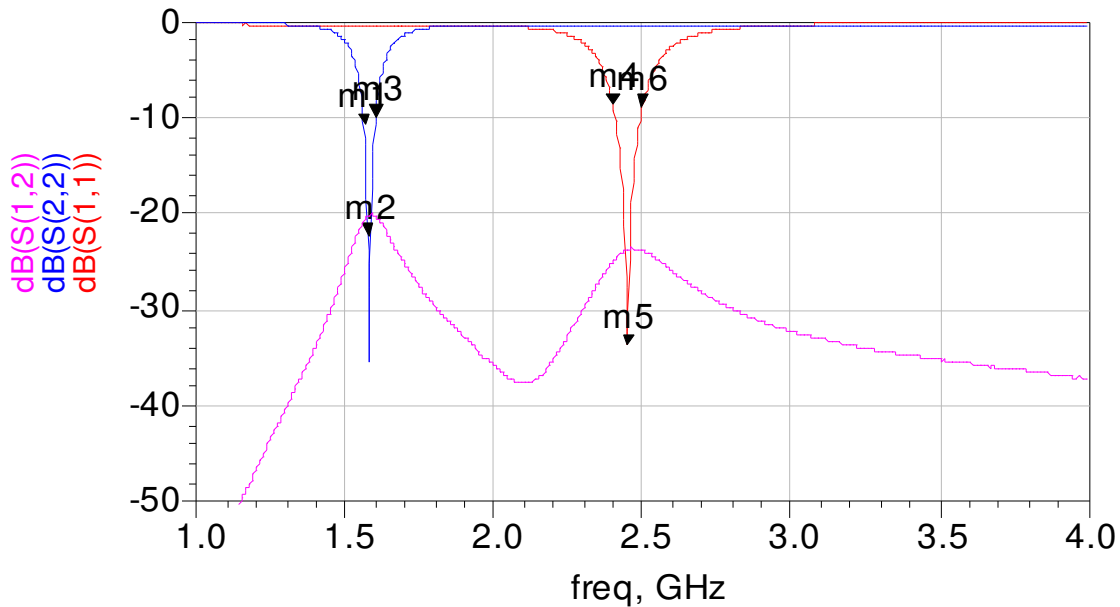
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Typical Electrical Characteristics (T=25°C)

Return Loss and Isolation With Matching Circuits On Johanson EVB



m1	m4
Freq=1.561GHz	Freq=2.400GHz
dB(S(2,2))=-10.697	dB(S(1,1))=-8.678
m2	m5
Freq=1.575GHz	Freq=2.450GHz
dB(S(2,2))=-22.294	dB(S(1,1))=-33.793
m3	m6
Freq=1.602GHz	Freq=2.500GHz
dB(S(2,2))=-9.842	dB(S(1,1))=-8.901

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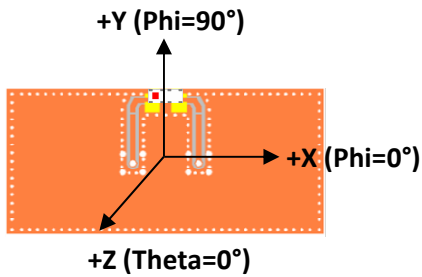
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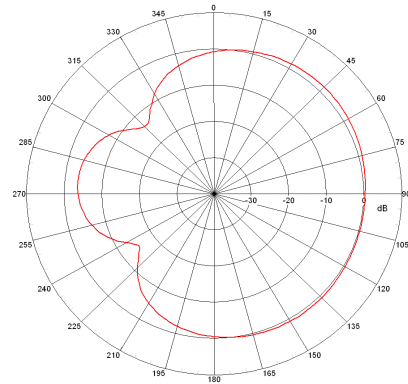
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Typical Radiation Patterns

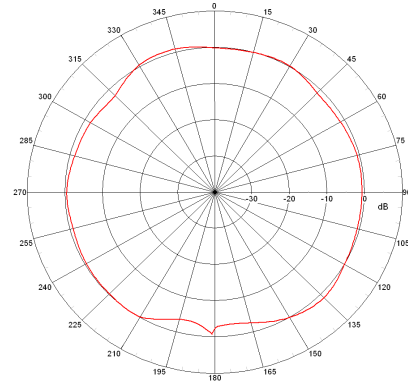
❖ Radiation Patterns @ 2.45GHz



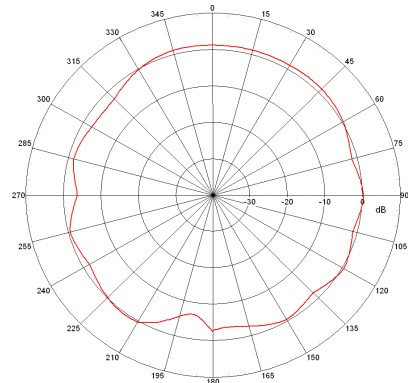
XY-Plane



YZ-Plane



XZ-Plane



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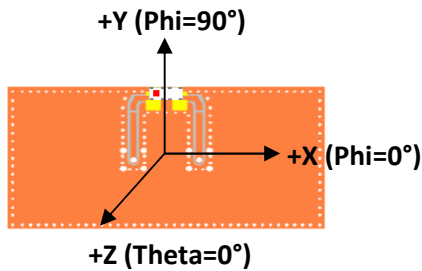
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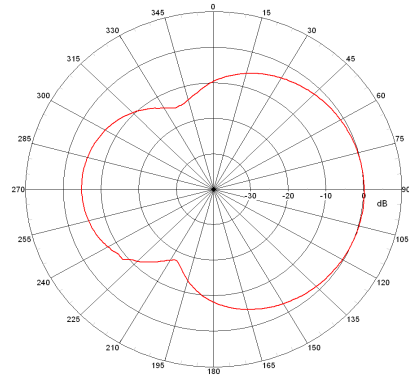
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Typical Radiation Patterns

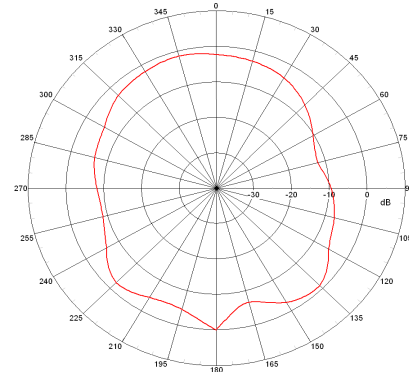
❖ Radiation Patterns @ 1.561GHz



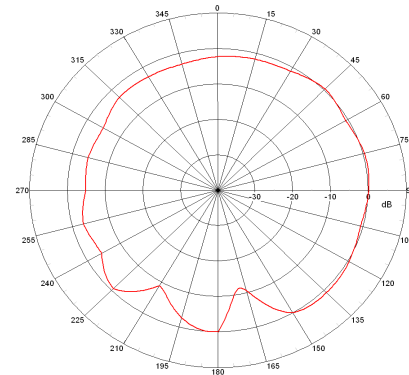
XY-Plane



YZ-Plane



XZ-Plane



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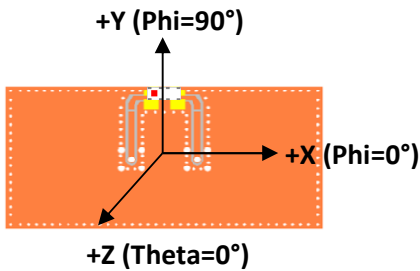
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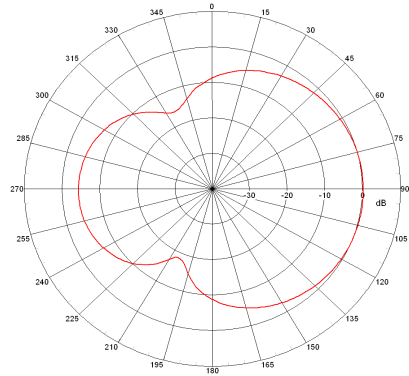
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Typical Radiation Patterns

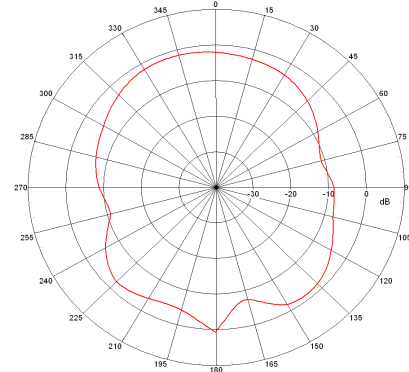
❖ Radiation Patterns @ 1.575GHz



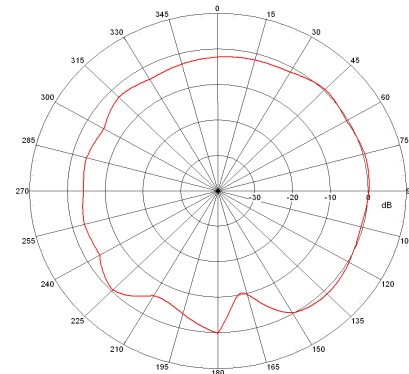
XY-Plane



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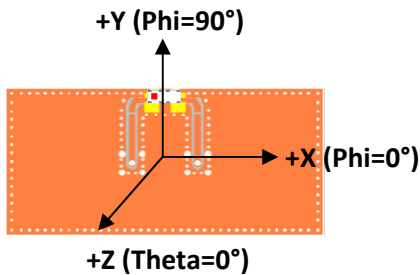
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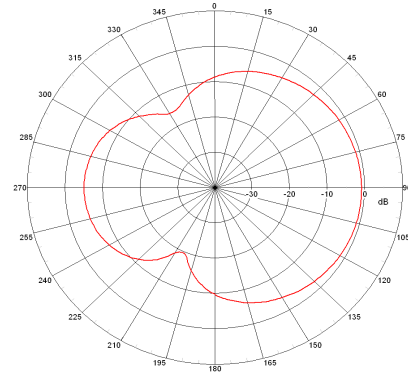
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Typical Radiation Patterns

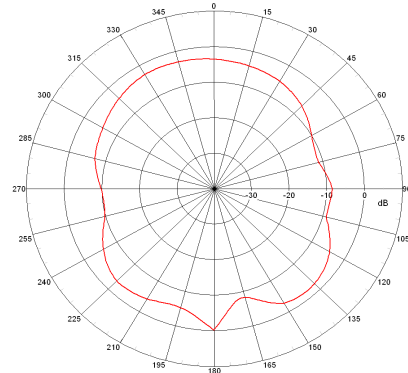
❖ Radiation Patterns @ 1.602GHz



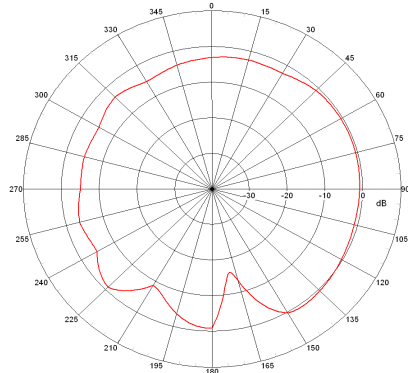
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YZ-Plane



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Antenna tuning, optimization, and validation services:

<https://www.johansontechnology.com/ipc-antenna-services>

For more antennas and to download measured S-parameters, go to:

<https://www.johansontechnology.com/antennas>

Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

MSL Info

<https://www.johansontechnology.com/msl-rating>

Packaging information

<https://www.johansontechnology.com/tape-reel-packaging>

For layout review contact our Applications Team at:

<https://www.johansontechnology.com/ask-a-question>

RoHS Compliance

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Recommended Storage Condition and Max Shelf Life

<https://www.johansontechnology.com/recommended-storage-conditions>

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