

High Frequency Ceramic Solutions

1.575 GHz GPS SMD Chip Antenna

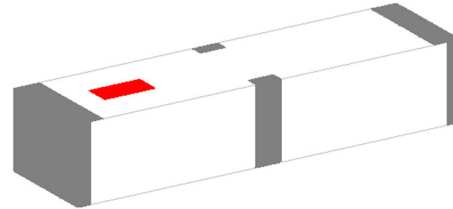
P/N 1575AT54A0010

Detail Specification: 4/23/2020

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General Specifications

Part Number	1575AT54A0010
Frequency (MHz)*	1570 - 1580 MHz
Peak Gain (YZ-total)	1.3 dBi typ.
Average Gain (YZ-total)	-0.7 dBi typ.
Return Loss	9.5 dB min.
Impedance	50 Ω
Power Capacity	2W max. (CW)
Reel Quantity	500 pcs
Operating Temperature	-40 to +85°C
Recommended Storage Conditions of uninstalled product still on T&R	+5 to +35°C Humidity 45~75%RH 18 months max.



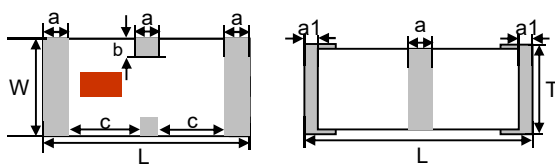
*Plus 5MHz of guard band on each side

Part Number Explanation

P/N Suffix	Packaging Style	Bulk	Suffix = S	e.g. 1575AT54A0010S
		T & R	Suffix = E	e.g. 1575AT54A0010E
	Termination style	100% Tin	Suffix = E or S	e.g. 1575AT54A0010(E or S)
	Evaluation Board	1575AT54A0010-EB1SMA		

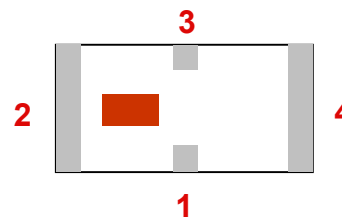
Mechanical Dimensions

	In	mm
L	0.591 $\pm$ 0.008	15.00 $\pm$ 0.20
W	0.157 $\pm$ 0.008	4.00 $\pm$ 0.20
T	0.126 $\pm$ 0.008	3.20 $\pm$ 0.20
a	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20
a1	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20
b	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20
c	0.236 $\pm$ 0.008	6.00 $\pm$ 0.20



Terminal Configuration

No.	Function
1	Feeding Point
2	GND
3	NC
4	GND



Johanson Technology, Inc. reserves the right to make design changes without notice.

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<http://www.johansontechnology.com>

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GPS-only Mounting Considerations

EVB Johanson with SMA (orderable!)
reference p/n: 1575AT54A0010-EB1SMA and go to:
<https://www.johansontechnology.com/component/request-a-sample>

Want the layout file of this? Send us a message at:
<https://www.johansontechnology.com/ask-a-question>

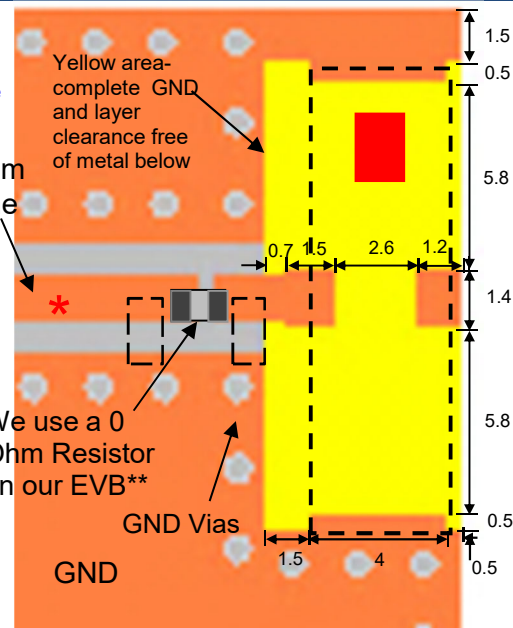
****Note 2:** It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to: <https://www.johansontechnology.com/tuning> and see how to obtain the new values.

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness. Grounded CPWG will provide best results!

*50 ohm feedline

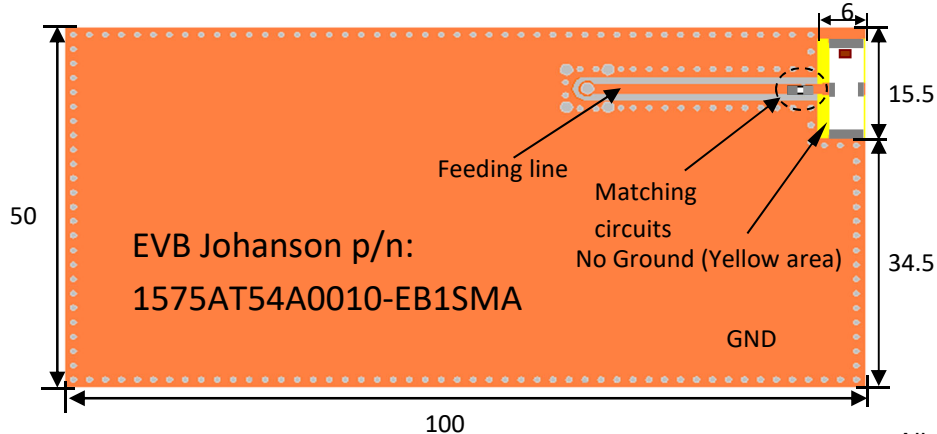
We use a 0 Ohm Resistor on our EVB**

GND Vias
GND



All units in mm

Johanson SMA test board-top view: Overall GND plane can be smaller, this is just for reference



All units in mm

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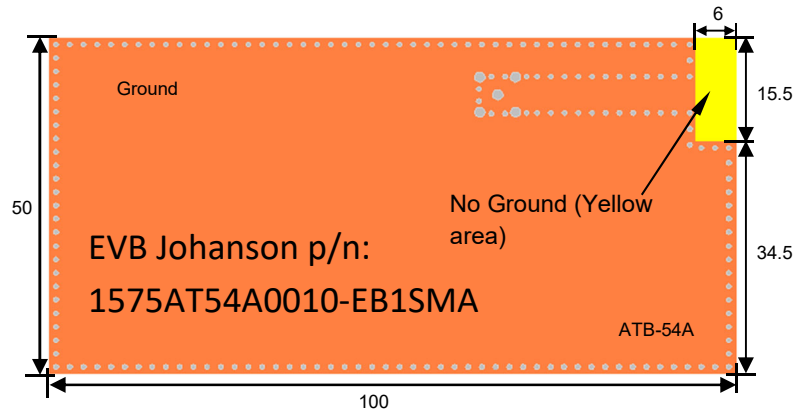
P/N 1575AT54A0010

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Mounting Considerations

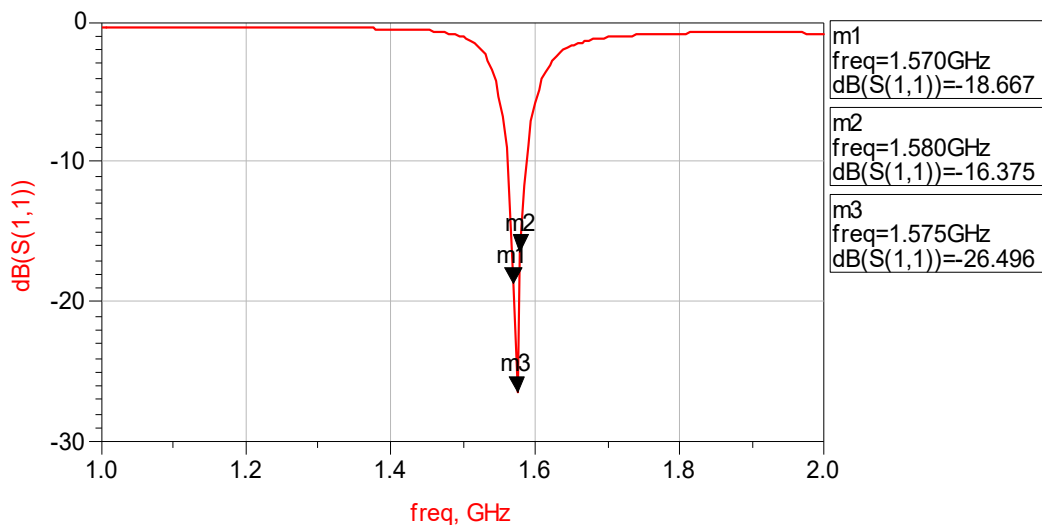
Johanson SMA test board-top view: Overall GND plane may be smaller, this is just for reference



Order this pre-tuned EVB! Limited to one per customer: <https://www.johansontechnology.com/request-a-sample>

Typical Electrical Characteristics (T=25°C)

Evaluation Board Return Loss



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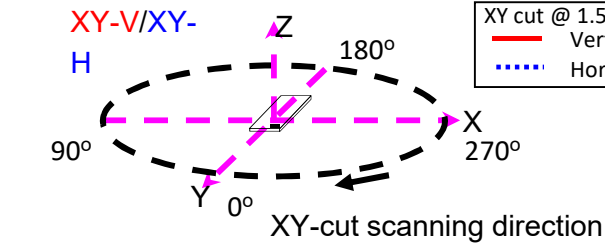
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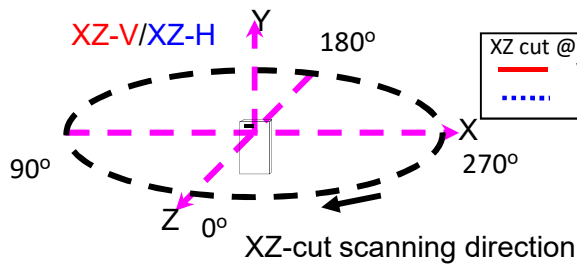
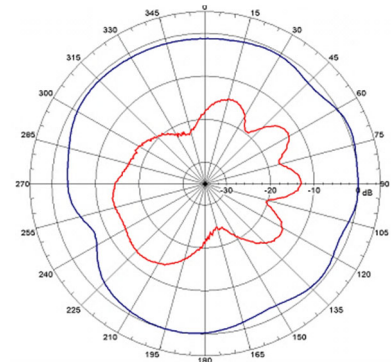
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GPS Typical Electrical Characteristics (T=25°C)

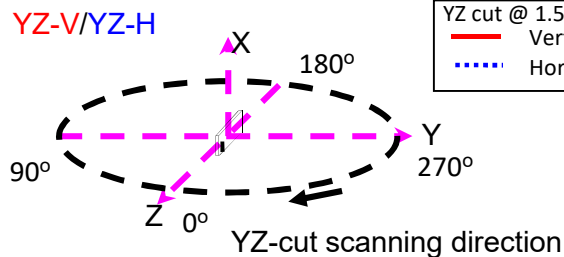
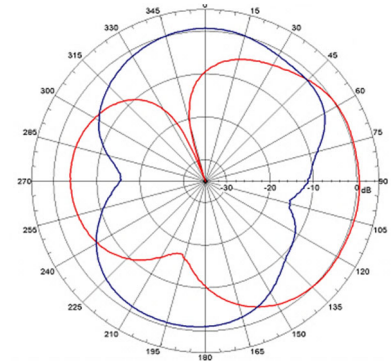
Typical Radiation Patterns



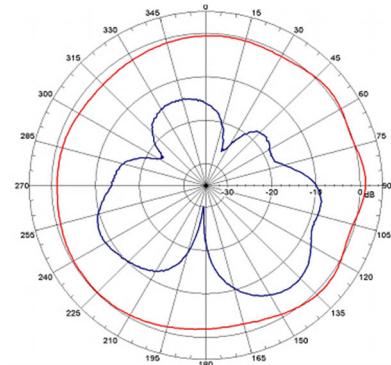
XY cut @ 1.575GHz
— Vertical
... Horizontal



XZ cut @ 1.575GHz
— Vertical
... Horizontal



YZ cut @ 1.575GHz
— Vertical
... Horizontal



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Antenna layout review, tuning, and characterization services

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

More SMD Chip Antennas at:

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

Soldering Information

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

Antenna layout and tuning techniques (How to obtain the new antenna matching values)

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

Packaging information

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

RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

MSL Info

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

P/N Explanation and Breakdown

<https://www.johansontechnology.com/ipc-pn-explained>

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