

"High Frequency Ceramic Solutions"

1.575 & 1.602 GHz GPS/GLONASS SMD Chip Antenna

P/N 1575AT54A0010

Detail Specification: 1/29/2015

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General Specifications

Part Number	1575AT54A0010	Reel Quantity	500 pcs
Frequency (MHz)*	1575 - 1605 Mhz	Operating Temperature	-40 to +85°C
Peak Gain (YZ-total)	1.3 dBi typ.	Recommended Storage	+5 ~ +35 °C, Humidity
Average Gain (YZ-total)	-0.7 dBi typ.	Conditions	45~75%RH
Return Loss	9.5 dB min.	Storage Period	18 months max.
Impedance	50 Ω	Power Capacity	2W max. (CW)

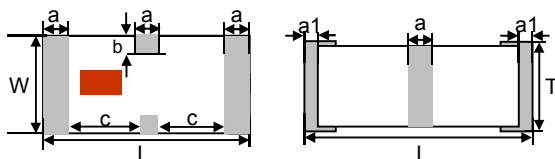
*Plus 5MHz of guard band on each side

Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 1575AT54A0010S
		T & R	Suffix = E	eg. 1575AT54A0010E
		100% Tin	Suffix = E or S	eg. 1575AT54A0010(E or S)
	Termination style	Tin / Lead	Please Consult Factory (www.johansontechnology.com/component/quoterequest)	

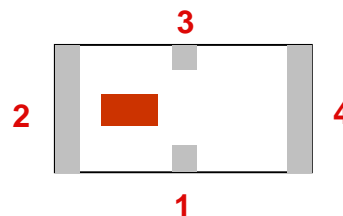
Mechanical Dimensions

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



Terminal Configuration

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



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GPS-only Mounting Considerations

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

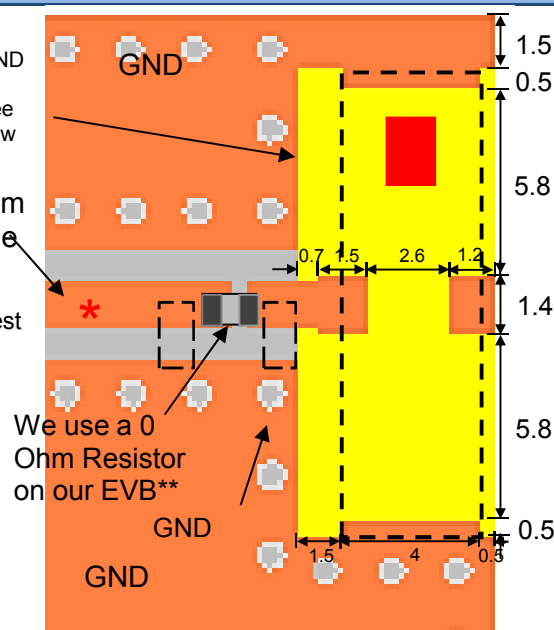
Yellow area- complete GND and layer clearance free of metal below

*50 ohm feedline

EVB Johanson with SMA (orderable!)
reference p/n: 1575AT54A0010-EB1SMA and go to:
www.johansontechnology.com/component/samplerrequest

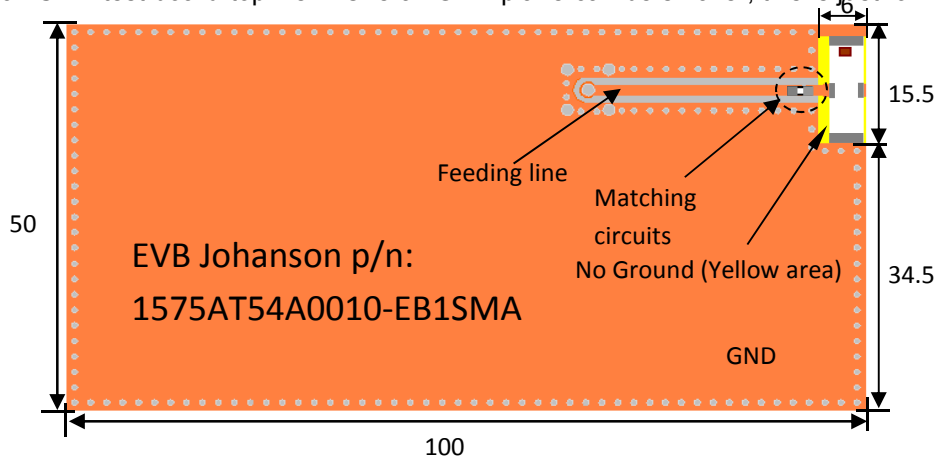
****Note 2:** It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to:
<http://johansontechnology.com/tuning> and see how to obtain the new values. If you need further help, contact our RF Applications Eng Team at:

<http://www.johansontechnology.com/en/ask-a-technical-question.html>



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

Johanson Technology, Inc. reserves the right to make design changes without notice. Please confirm the specifications and delivery conditions when placing your order. All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
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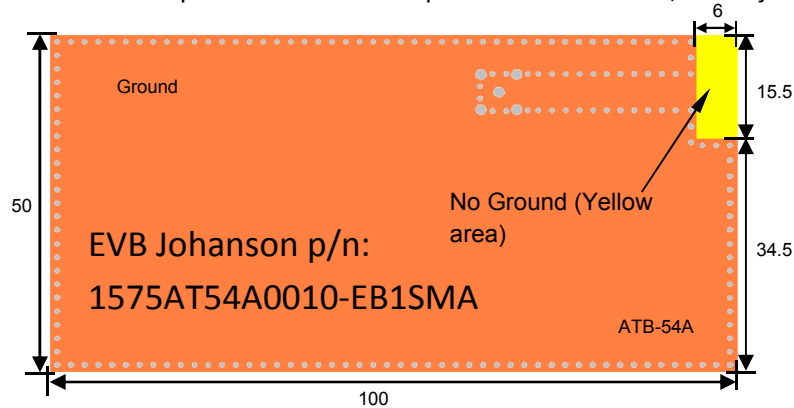
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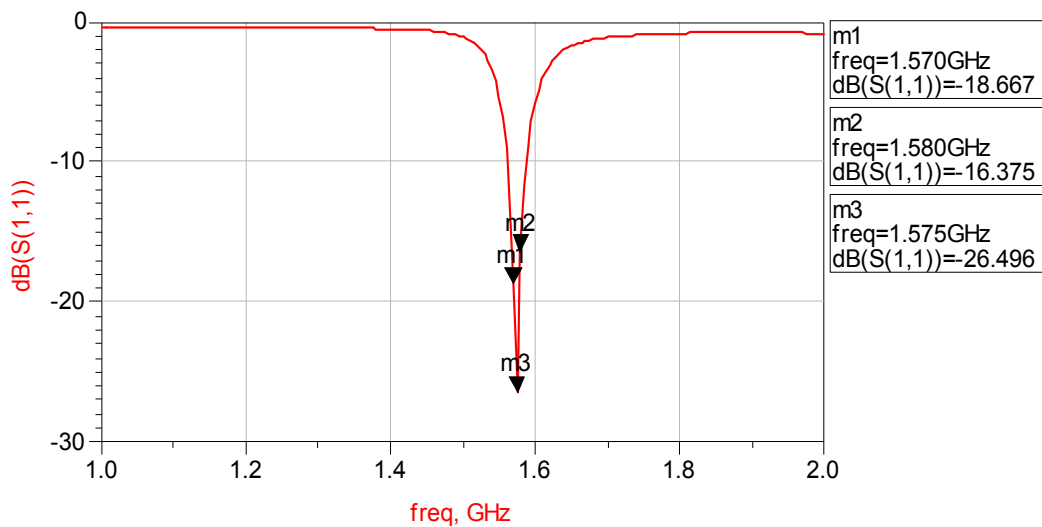
GPS-only Mounting Considerations

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



Typical Electrical Characteristics (T=25°C)

Return Loss / Without Matching Circuits



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GPS + GLONASS Mounting Considerations

* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

EVB Johanson with SMA (orderable!)
reference p/n: 1575AT54A0010-EB2SMA and go to:
www.johansontechnology.com/component/samplerquest

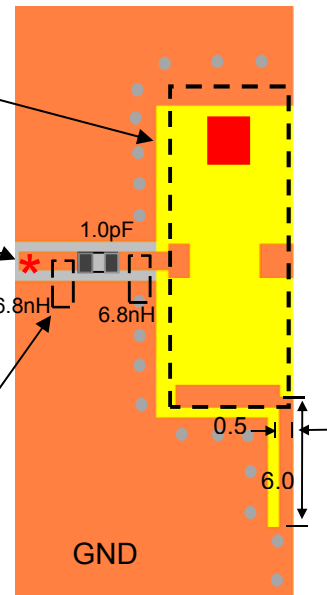
****Note 2:** It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to: <http://johansontechnology.com/tuning>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

<http://www.johansontechnology.com/en/ask-a-technical-question.html>

Yellow area-
complete GND
and layer
clearance free of

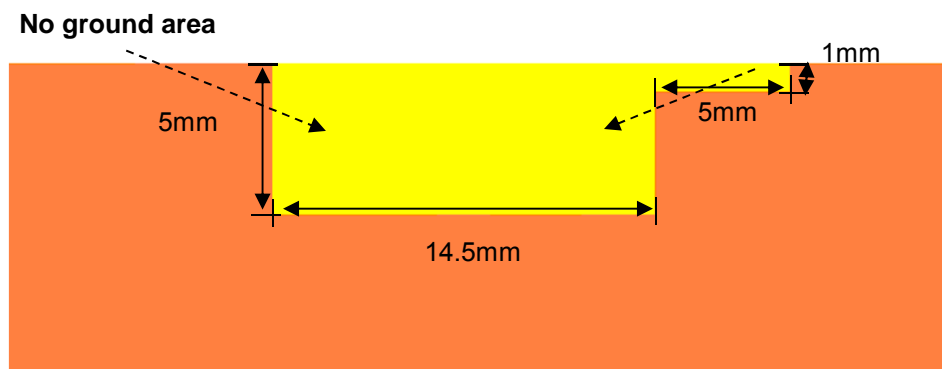
*50 ohm
feedline

We use a 6.8nH
shunt, 1pF series,
and 6.8nH shunt
on our EVB, but**



All units in mm

Bottom view:



All units in mm

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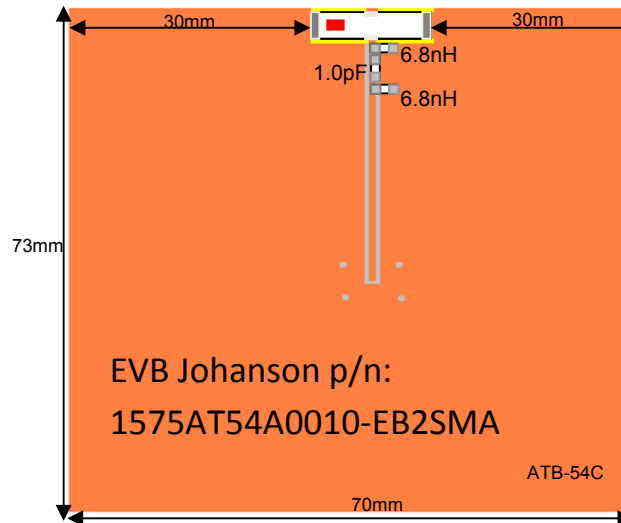
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GPS + GLONASS Mounting Considerations

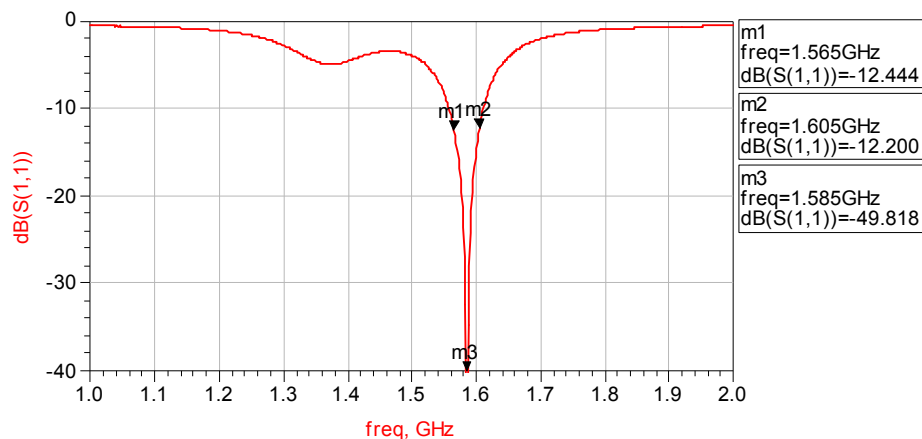
Johanson SMA test board-top view: Overall GND plane can be smaller, this is just for reference



The middle placement at the edge of the board is for optimum performance, it not necessarily has to have 30mm on each side to function properly

Typical Electrical Characteristics (T=25°C)

Return Loss / Without Matching Circuits



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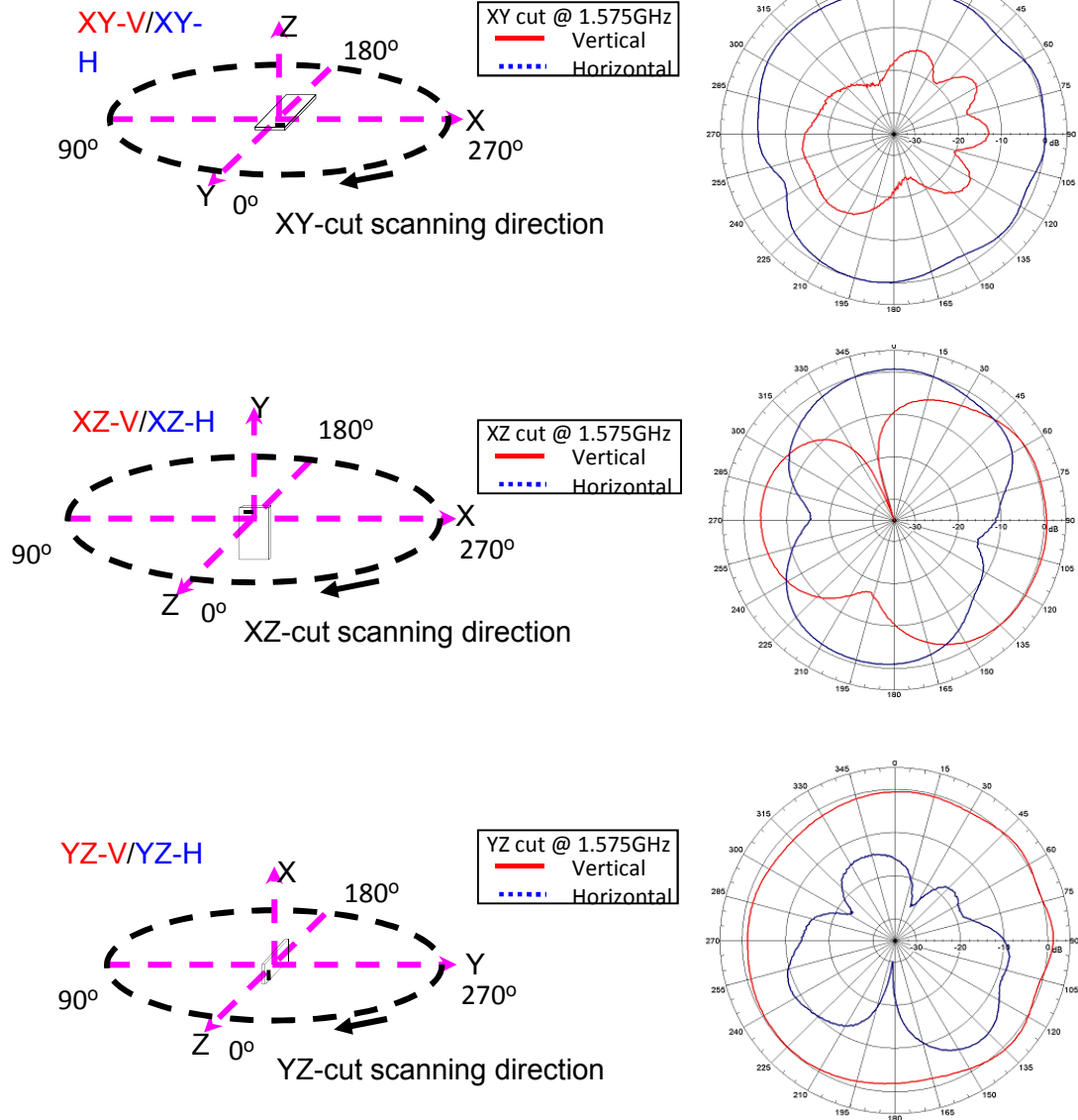
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GPS Typical Electrical Characteristics (T=25°C)

Typical Radiation Patterns



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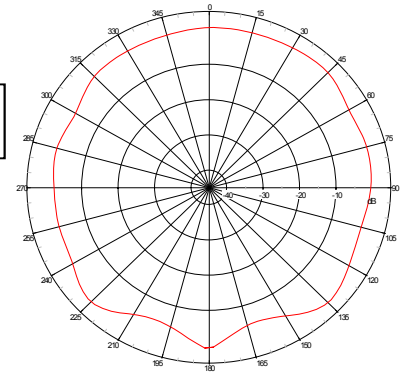
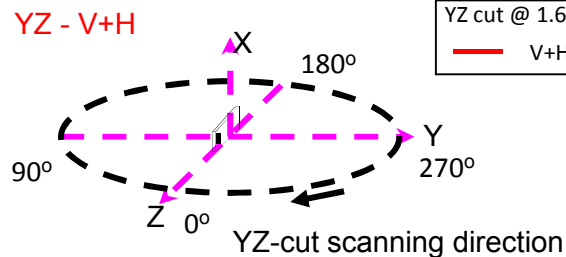
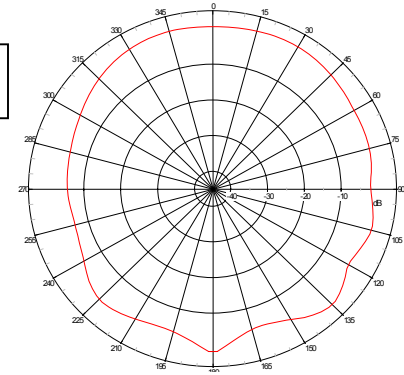
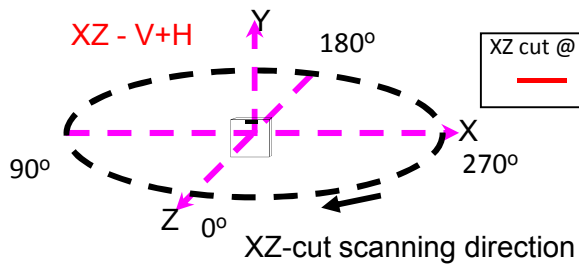
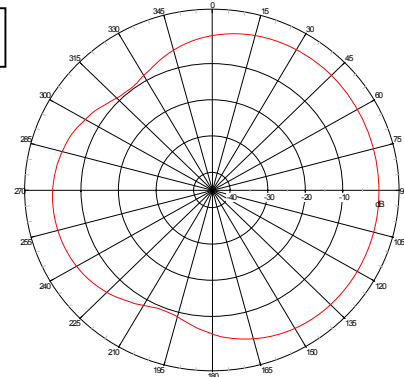
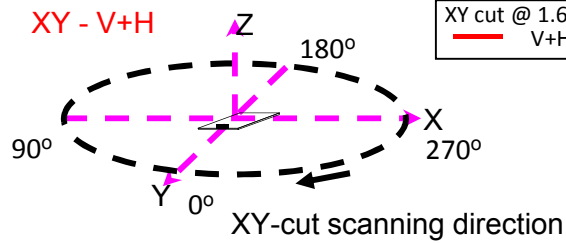
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GLNASS Typical Electrical Characteristics (T=25°C)

Typical Radiation Patterns: Vertical and Horizontal Cuts are added together in these plots



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