"High Frequency Ceramic Solutions"

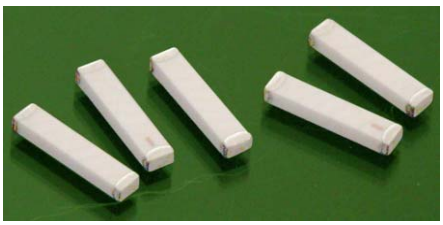
Tri-Band GPS, BDS, and GLNSS, Low Cost, Linearly Polarized, Omnidirectional Chip Antenna **P/N 1575AT43A0040**

Detail Specification: 7/20/2015

Let us help tune and validate this antenna to your PCB, go to: www.johansontechnology.com/ipcantennaservices for details

General Specifications

Part Number	1575AT43A0040		
Frequency (MHz)	1561	1575	1602
Ave. Radiated Efficiency[1]	50%	50%	50%
Peak Gain (dBi typ.)	0.5 (XZ-Total)	0.5 (XZ-Total)	1.0 (XZ-Total)
Average Gain (dBi typ.)	-2.0 (XZ-Total)	-2.0 (XZ-Total)	-2.0 (XZ-Total)
Return Loss (min.)	9.5 dB	9.5 dB	9.5 dB
Input Power	3W max. (CW)		
Reel Quantity	1,000		
Storage Period	18 months max.		



Operating Temperature	-40 to +85°C
Storage Temperature	-40 to +85°C
Recommended Storage Conditions of unused product on T&R	+5 to +35°C, Humidity 45~75%RH

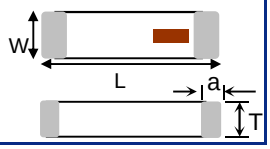
[1]On test board 1575AT43A0040-EB2SMA

Part Number Explanation

P/N Suffix	**Packing Style**	Bulk (loose)	Suffix = S	e.g.. 1575AT43A0040S
		T & R	Suffix = E	e.g.. 1575AT43A0040E
		100% Tin	Suffix = E or S	e.g.. 1575AT43A0040(E or S)

Mechanical Dimensions

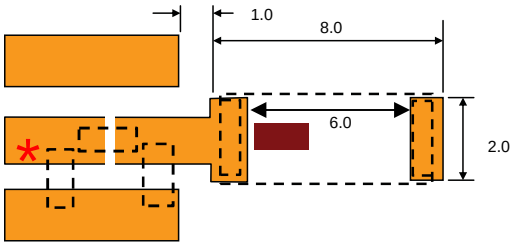
	In	mm
L	0.276 ± 0.008	7.00 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.031 ± +.004/-.008	0.80 ± +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



Terminal Configuration

No.	Function
1	Feeding Point
2	NC (must still be soldered on pad)

Layout Recommendations



Go to the next page for more layout details/guidelines and

Orderable EVB for evaluation, it comes with a female SMA connector. Go to: www.johansontechnology.com/component/samplerequest and ask for p/n 1575AT43A0040-EB1SMA

Need help laying out the antenna, want us to review your antenna design (free!), require the Gerber files for this EVB, or would like us to validate the new tuning values of your PCB (fee may apply) go to: www.johansontechnology.com/component/techquestion/

*Line width should be designed to match 50ohm characteristic impedance, depending on your PCB material and thickness (distance to GND). CPWG (co-planar waveguide) trace type strongle suggested

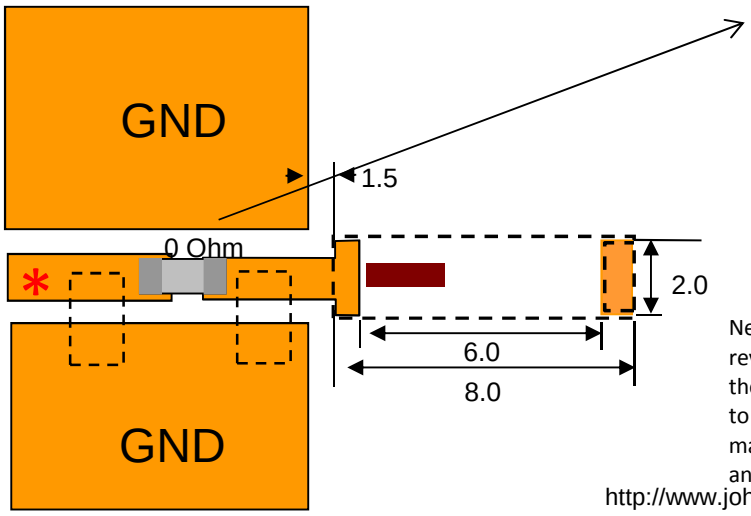
JOHANSON TECHNOLOGY

www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Let us help tune and validate this antenna to your PCB, go to: www.johansontechnology.com/ipcantennaservices for details

Mounting Considerations, End Mount, GPS/BDS/GLNSS 1.561/1.575/1.602GHz

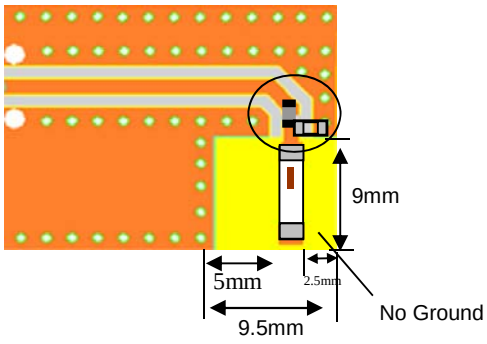


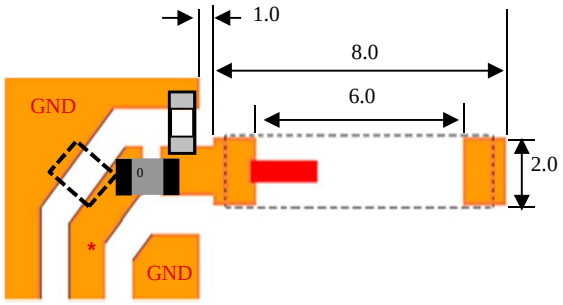
Note: Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, encasement, etc. It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values you see here are used when antenna is mounted on Johanson's evaluation board.

Need help laying out the antenna, want us to review your antenna design (free!), require the Gerber files for this EVB, or would like us to measure your board, come up with the matching values, and validate on our anechoic chamber (fee may apply) go to:
http://www.johansontechnology.com/ask-a-question

*Line width should be designed to match 50ohm characteristic impedance, depending on your PCB material and thickness (distance to GND)

Mounting Considerations, Corner Mount, GPS 1.575GHz Only





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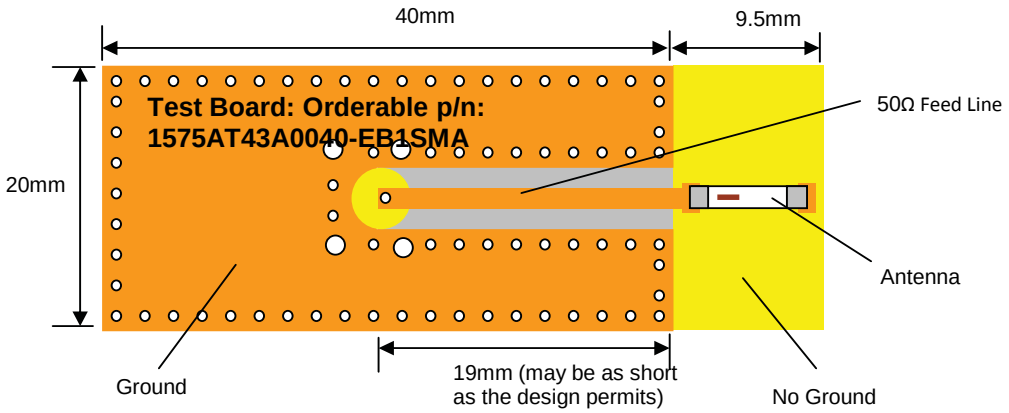
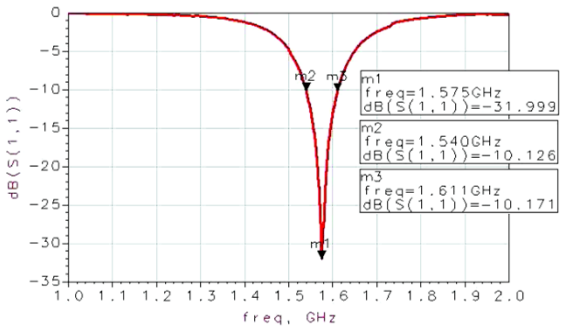
EVB 1, End Mount, Tri-Band GPS/BDS/GLNSS layout guidelines

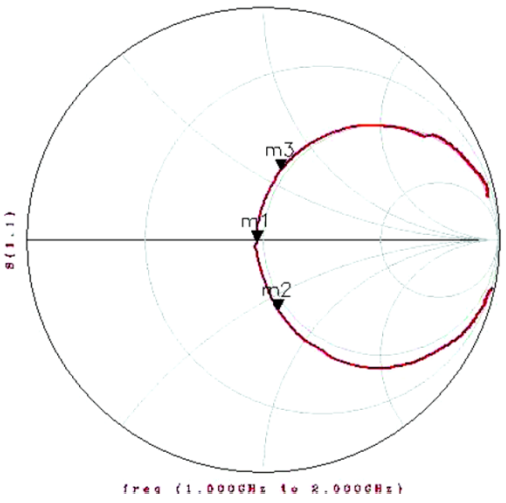


This board has a female SMA connector on the opposite side
Would you like the layout files? Send us a message at:
http://www.johansontechnology.com/ask-a-question/

Order it here:
http://www.johansontechnology.com/request-a-sample

Return Loss and Impedance





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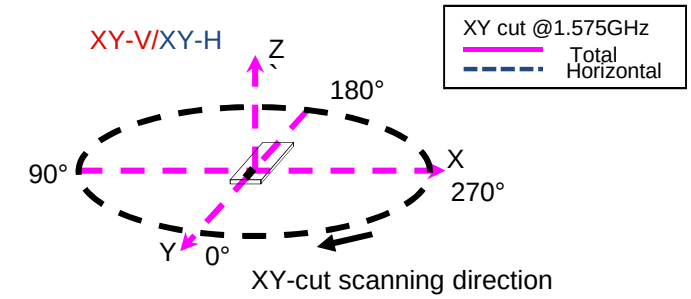
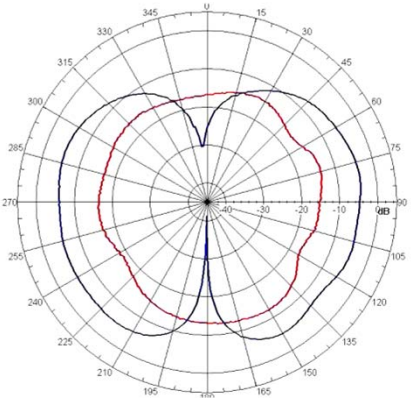
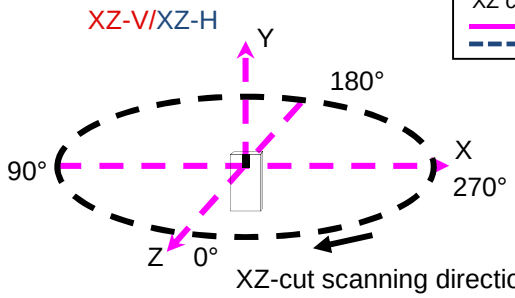
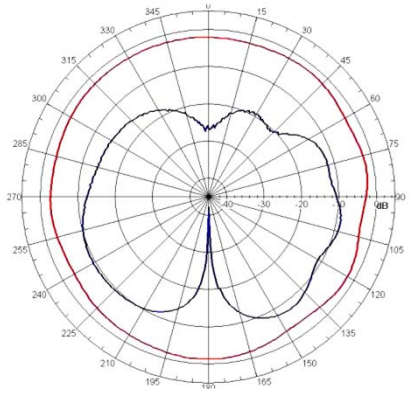
Typical Radiation Patterns on EVB 1, End Mount

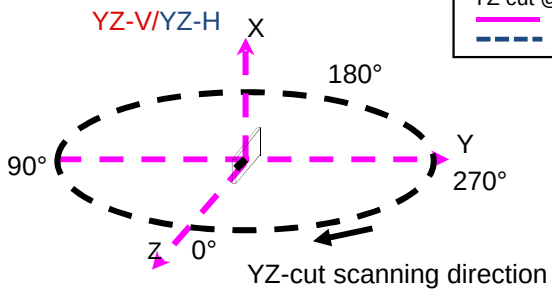
Typical Radiation Patterns

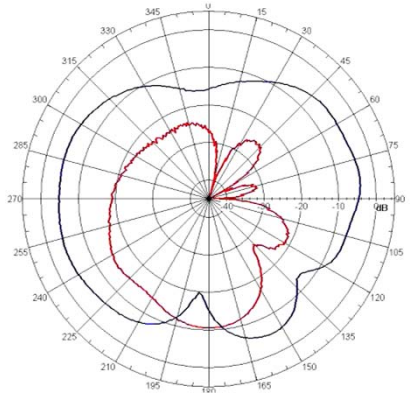












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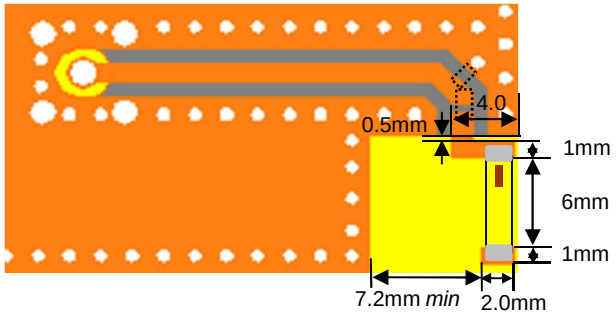
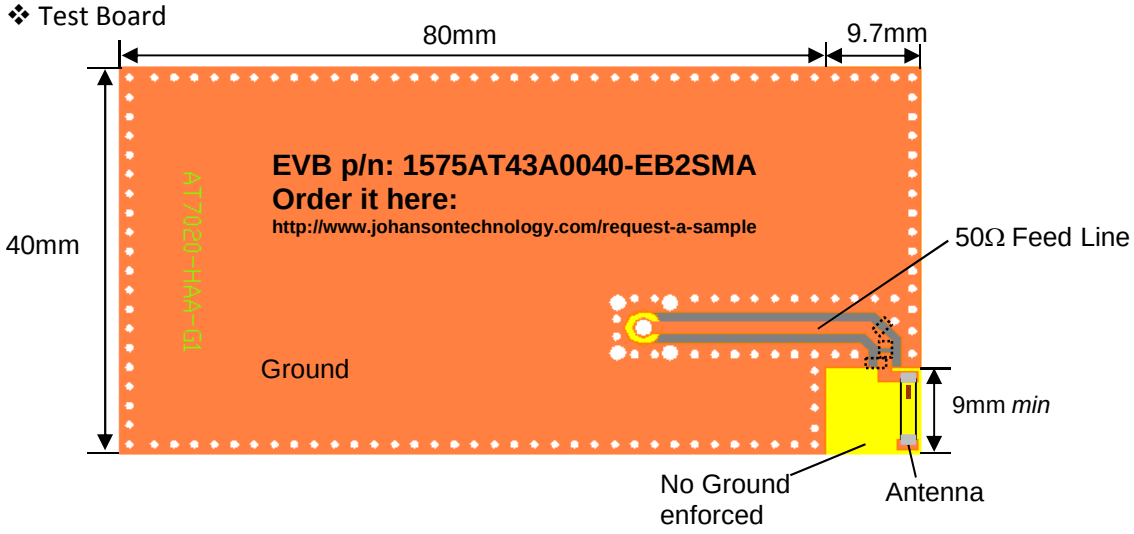
Mounting Considerations, Corner Mount, Tri-Band GPS/BDS/GLNSS layout guidelines

Orderable EVB p/n: 1575AT43A0040-EB2SMA



Matching circuit and component values will be different, depending on PCB layout.
Line width should be designed to match 50ohm characteristic impedance, depending on PCB material and thickness. CPWG (co-panar waveguide) type trace strongly recommended.

❖ Test Board



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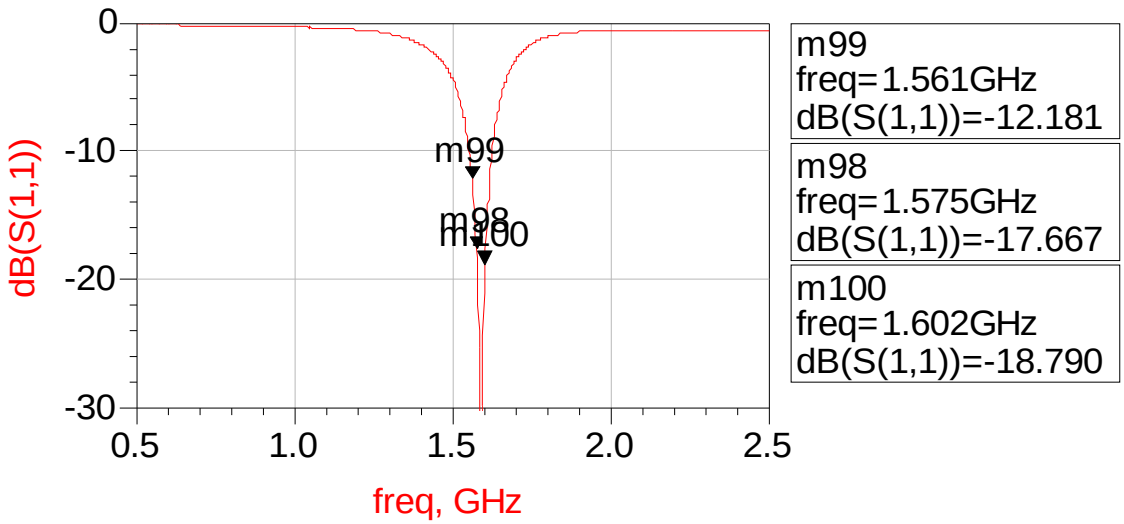
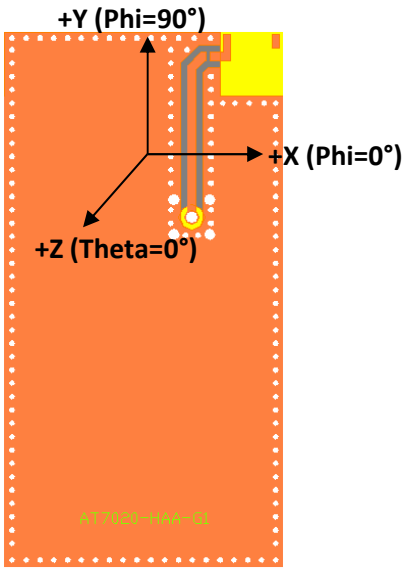
Electrical Characteristics (T=25°C)

❖ Return Loss

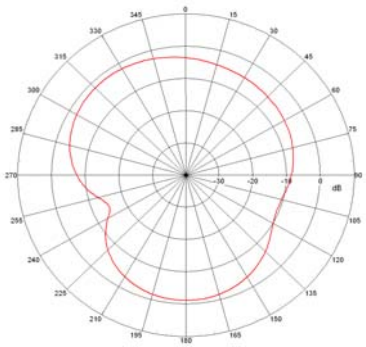


Typical Radiation Patterns on EVB 2, Corner Mount

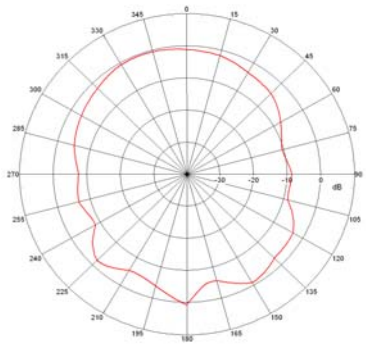
❖Radiation Patterns @ 1.561GHz



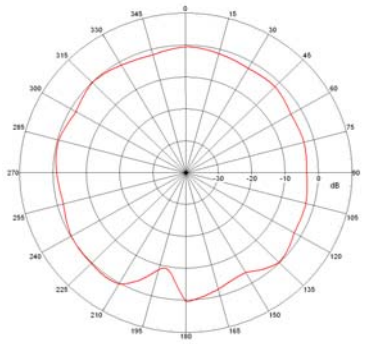
YZ-Plane



YZ-Plane

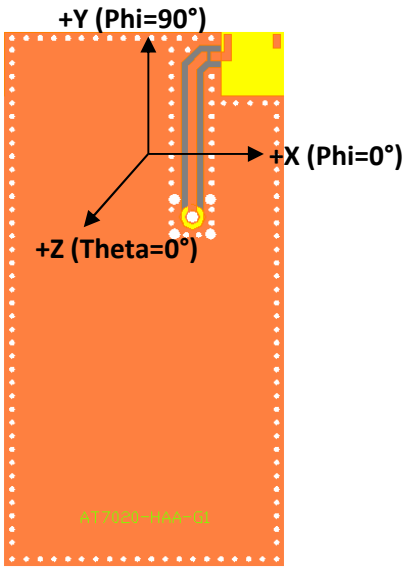


XZ-Plane

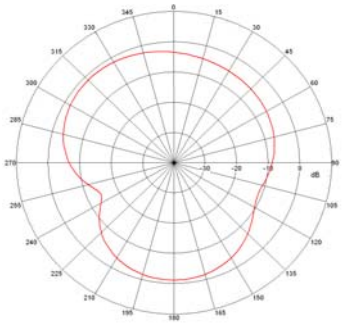


Typical Radiation Patterns on EVB 2, Corner Mount

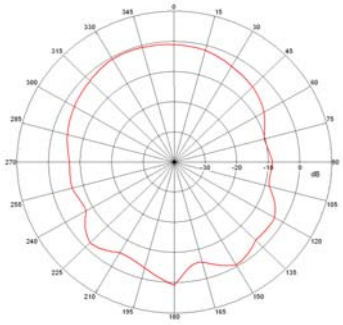
❖Radiation Patterns @ 1.575GHz



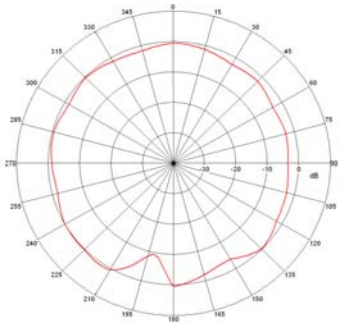
XY-Plane



YZ-Plane

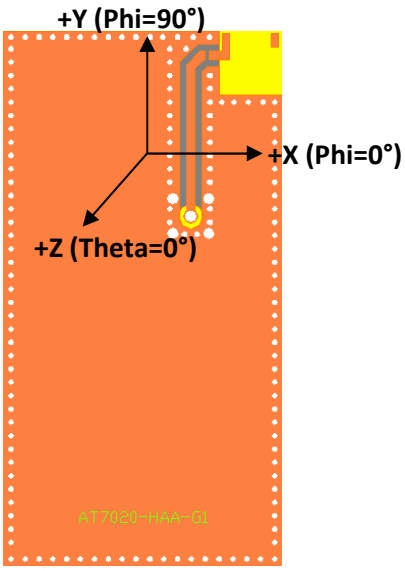


XZ-Plane

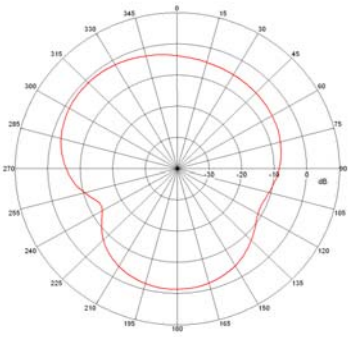


Typical Radiation Patterns on EVB 2, Corner Mount

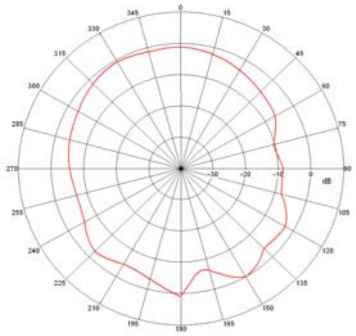
❖Radiation Patterns @ 1.602GHz



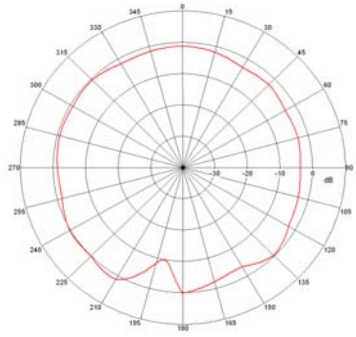
XY-Plane



YZ-Plane



XZ-Plane



Antenna tuning, optimization, and validation services:
www.johansontechnology.com/ipcantennaservices

For more antennas and to download measured S-parameters, go to:
www.johansontechnology.com/antennas

Soldering Information
www.johansontechnology.com/ipcsoldering-profile

MSL Info
www.johansontechnology.com/technical-notes/msl-rating.html

Packaging information
www.johansontechnology.com/ipcpackaging.html

For layout review contact our Applications Team at:
www.johansontechnology.com/component/techquestion

RoHS Compliance
www.johansontechnology.com/technical-notes/rohs-compliance.html

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