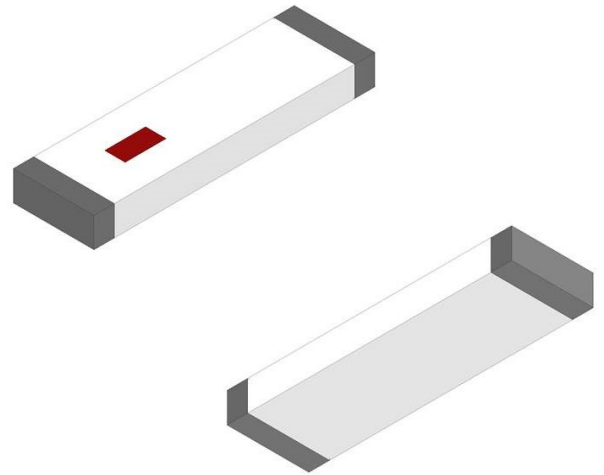


868 MHz RF Chip Antenna, AEC-Q200 Qualified

Johanson Technology, Inc. (JTI) miniature RF ceramic chip antennas are made using Low Temperature Co-fired Ceramic (LTCC) technology which has the ability to embed low and high dielectric constants inside our antenna. This enables our components to have high detuning resilience and stability over extreme temperatures (~2ppm).



Recommended mounting locations for this antenna

PCB End

PCB Corner



General Specifications^{1,2}

Frequency Range (MHz)	858 - 878
Return Loss (dB)	9.5 Min.
Peak Gain (dBi)	-1.0 typ. (XZ-total)
Average Gain (dBi)	-4.0 typ. (XZ-total)
Impedance (Ω)	50

Maximum Ratings

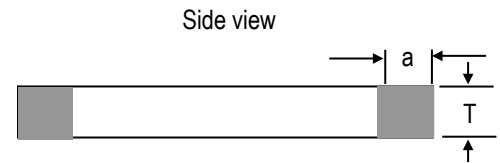
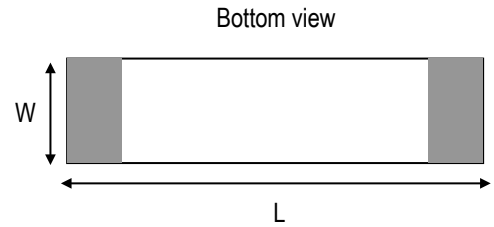
Power Capacity (W)	3 Max. (CW)
Operating Temperature ($^{\circ}\text{C}$)	-40 to +105
Recommended Storage Conditions post-installation ($^{\circ}\text{C}$)	-40 to +105
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 $^{\circ}\text{C}$ 18 Months Max.

¹ Typical value represents average measurement at 25 $^{\circ}\text{C}$. Min./Max. values represent measurements from -40 $^{\circ}\text{C}$ to +105 $^{\circ}\text{C}$

² General specifications measured on Johanson's evaluation board PN 0868AT43A0020001CE1

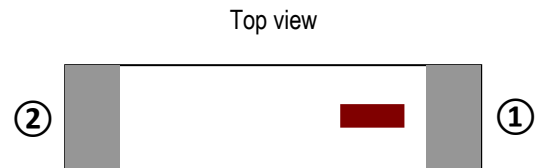
Mechanical Dimensions

	Inches			Millimeters		
L	0.276	±	0.008	7.00	±	0.20
W	0.079	±	0.008	2.00	±	0.20
T	0.031	+0.004/-	0.008	0.80	+0.1/-	0.2
a	0.020	±	0.012	0.50	±	0.30



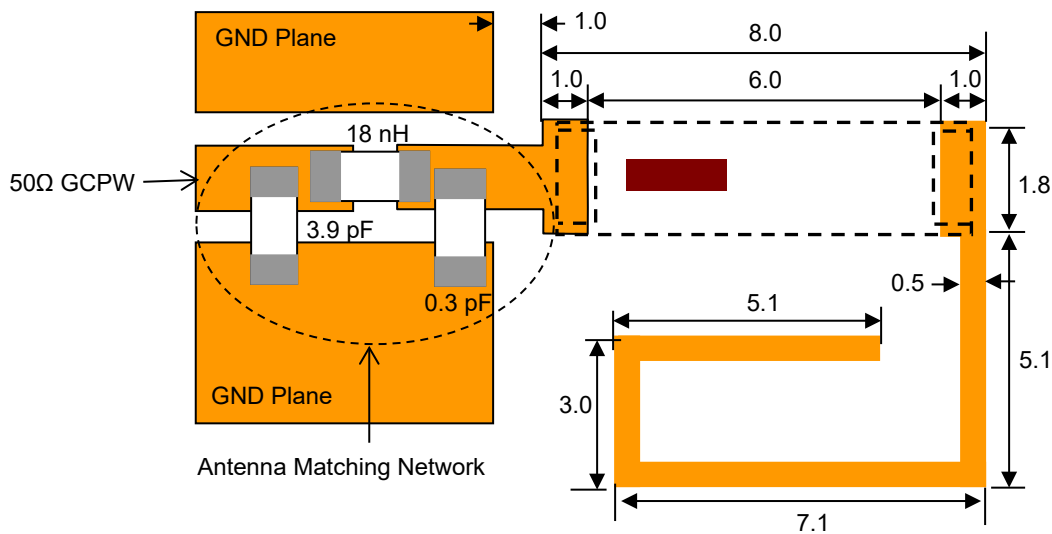
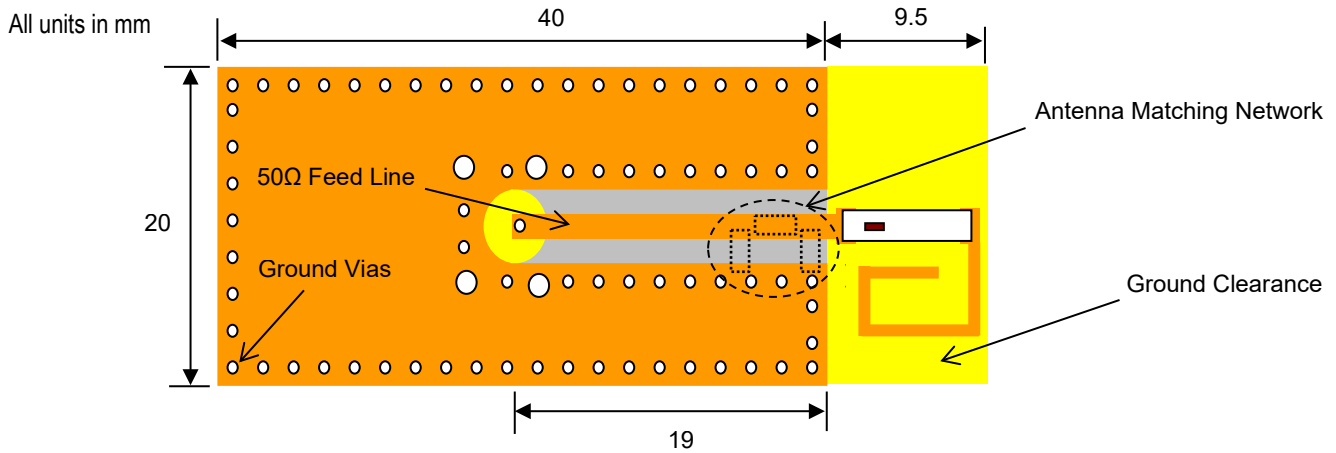
Terminal Configuration

Pin Number	Function
1	Feed
2	NC*



* This terminal must be soldered for anchoring and functionality purposes.

Evaluation Board and Recommended Mounting Configuration 1 (P/N. 0868AT43A0020001CE1)



JTI P/N's for Matching Network³

Cap (0.3pF): QSCF500Q0R3B1GV001T

Cap (3.9pF): QSCF500Q3R9B1GV001T

Inductor (18nH): LRC0402CJ18NGV001T

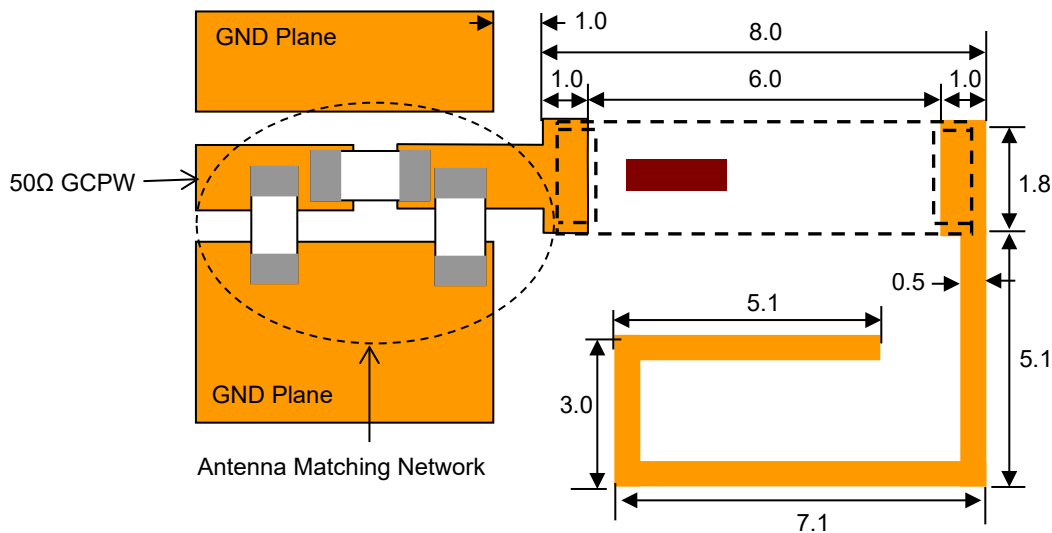
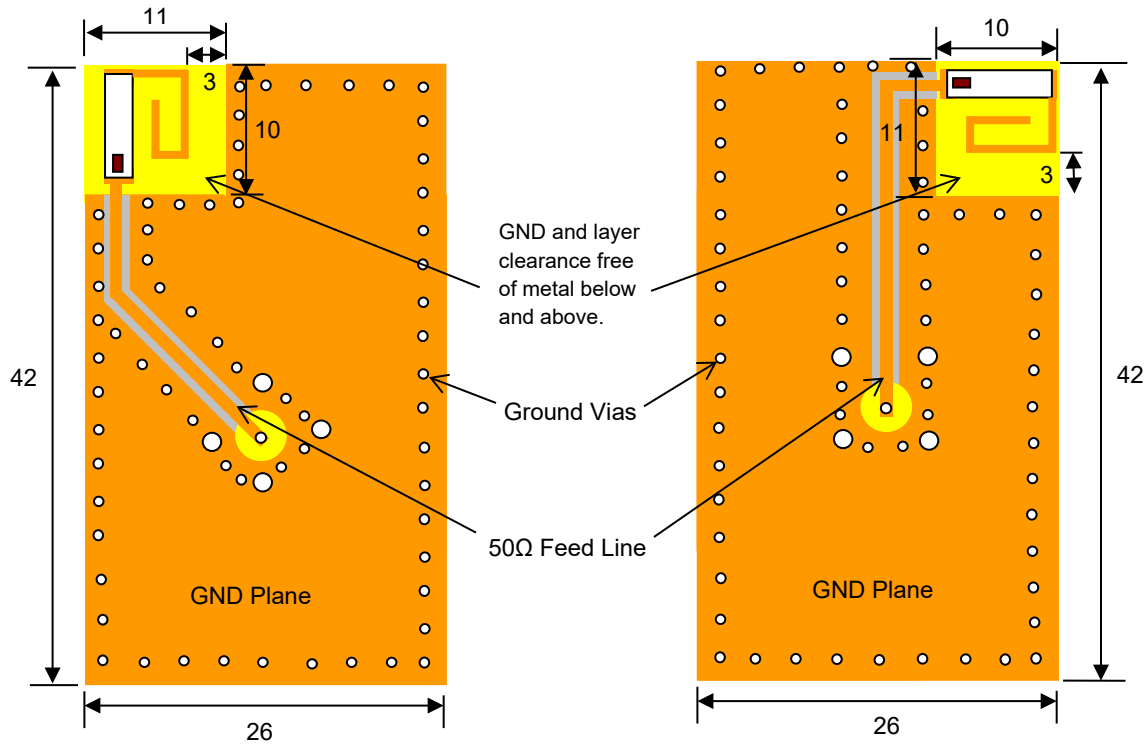
If you'd like the CAD PCB layout or have any questions,
contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

³ 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, depending on the layout, thickness, material, etc. Go to: <https://www.johansontechnology.com/tuning> and see how to obtain the new values.

Recommended Mounting Configuration 2 (Evaluation Board Unavailable)

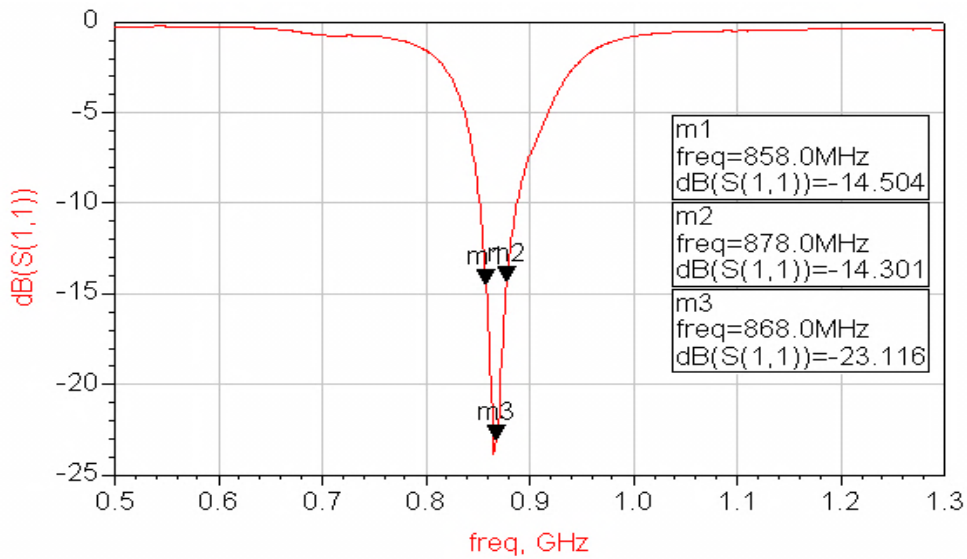
We have conducted internal studies to show that the following corner placements provide antenna efficiency results with minimal detrimental effects.

All units in mm

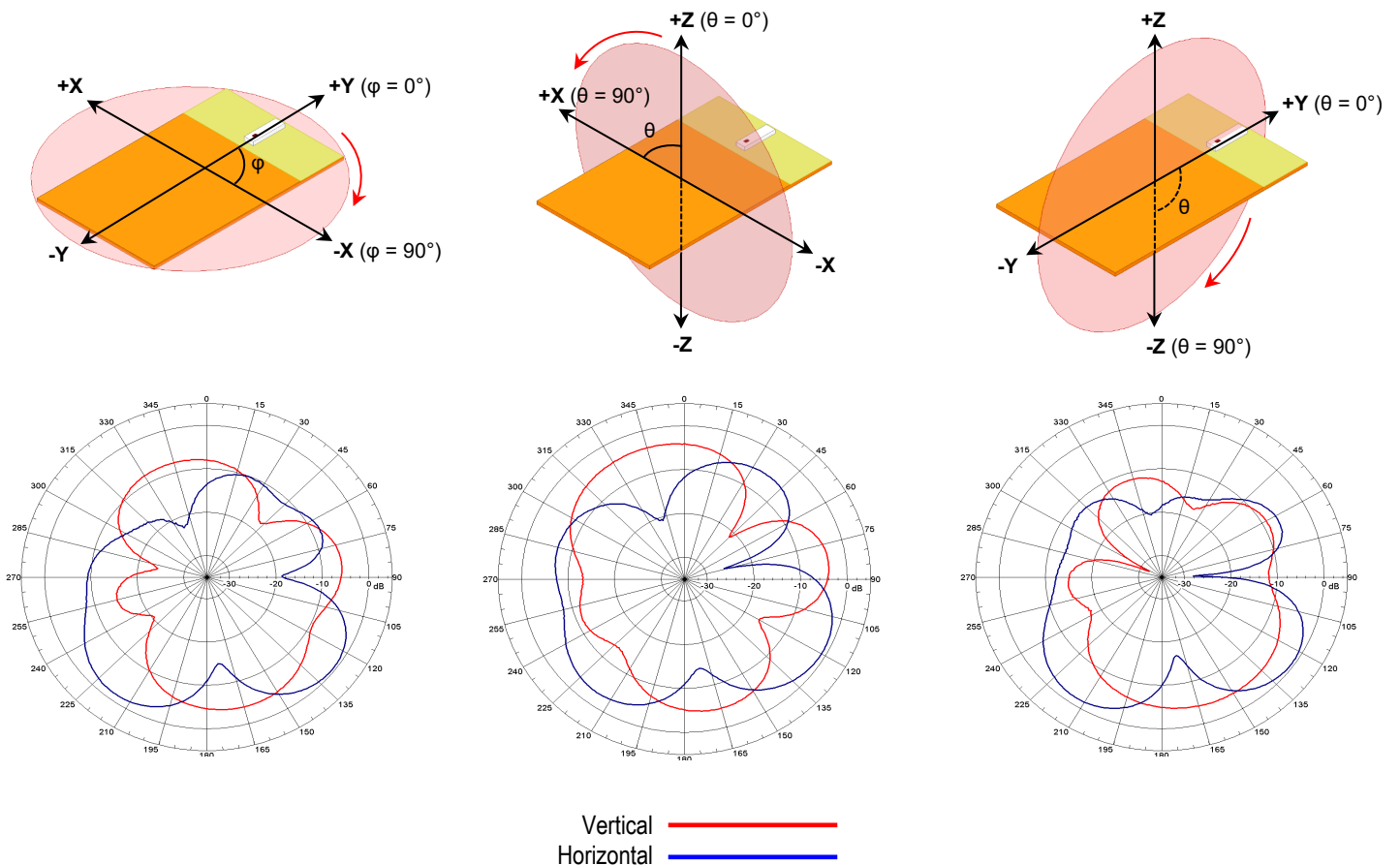


If you'd like the CAD PCB layout or have any questions, contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

Evaluation Board Return Loss Measurement (P/N. 0868AT43A0020001CE1)



Evaluation Board 2D Radiation Patterns @ 868MHz (P/N. 0868AT43A0020001CE1)



Orderable Part Number

Part Number Explanation		
Packaging Style	Bulk (loose pcs.)	P/N. 0868AT43A0020002B
	T & R (7" Reel Embossed Tape)	P/N. 0868AT43A0020002E (Qty: 1,000 pcs./reel)
Evaluation Board	Assembled PCB (50Ω SMA)	P/N. 0868AT43A0020001CE1

Important Links

[0868AT43A0020002E Downloads](#)

[More Antennas](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[RoHS Compliance](#)

Contact our application engineers for a PCB layout review!