

# "High Frequency Ceramic Solutions"

## 2.4 GHz WLAN, Home RF, Bluetooth, 802.11 b/g, Antenna

P/N 2450AT43B100

With Ground Clearance Requirements Minimized

Detail Specification: 11/14/2016

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**Tip: This antenna "loves" to be mounted on PCB corners for optimum performance**

### General Specifications

|                   |                      |                                                            |                                                 |
|-------------------|----------------------|------------------------------------------------------------|-------------------------------------------------|
| Part Number       | 2450AT43B100         | Input Power                                                | 2W max. (CW)                                    |
| Frequency Range   | 2400 - 2500 Mhz      | Reel Quantity                                              | 1,000                                           |
| Peak Gain         | 1.3 dBi typ. (XZ-V)  | Operating Temperature                                      | -40 to +105°C                                   |
| Average Gain      | -0.5 dBi typ. (XZ-V) | Storage Temperature                                        | -40 to +105°C                                   |
| Return Loss       | 9.5 dB min.          | Recommended Storage Conditions (for unused product on T&R) | +5 to +35°C, Humidity: 45-75%RH, 18 months max. |
| Radiation Pattern | Omnidirectional      |                                                            |                                                 |

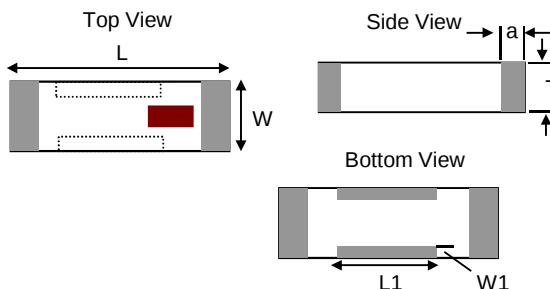
Would you like us to tune the antenna to your PCB? Contact us at:  
www.johansontechnology.com/ask-a-question

### Part Number Explanation

|            |                   |                                                          |               |                          |
|------------|-------------------|----------------------------------------------------------|---------------|--------------------------|
| P/N Suffix | Packaging Style   | Bulk                                                     | Suffix = S    | Eg. 2450AT43B100S        |
|            |                   | T & R                                                    | Suffix = E    | Eg. 2450AT43B100E        |
|            | Termination Style | 100% Tin                                                 | Suffix = None | Eg. 2450AT43B100(E or S) |
|            | Evalution Board   | 2450AT43B100-EB1SMA (comes pre-tuned with SMA connector) |               |                          |

### Mechanical Dimensions

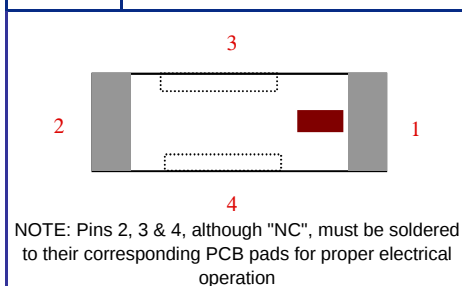
|    | In                | mm             |
|----|-------------------|----------------|
| L  | 0.276 ± 0.008     | 7.00 ± 0.20    |
| W  | 0.079 ± 0.008     | 2.00 ± 0.20    |
| L1 | 0.102 ± 0.008     | 2.60 ± 0.20    |
| W1 | 0.020 ± 0.008     | 0.50 ± 0.20    |
| T  | 0.079 +.004/-.008 | 2.00 +0.1/-0.2 |
| a  | 0.020 ± 0.012     | 0.50 ± 0.30    |



Want the layout file? Request it at:  
www.johansontechnology.com/ask-a-question

### Terminal Configuration

| No. | Function   |
|-----|------------|
| 1   | Feed Point |
| 2   | NC         |
| 3   | NC         |
| 4   | NC         |



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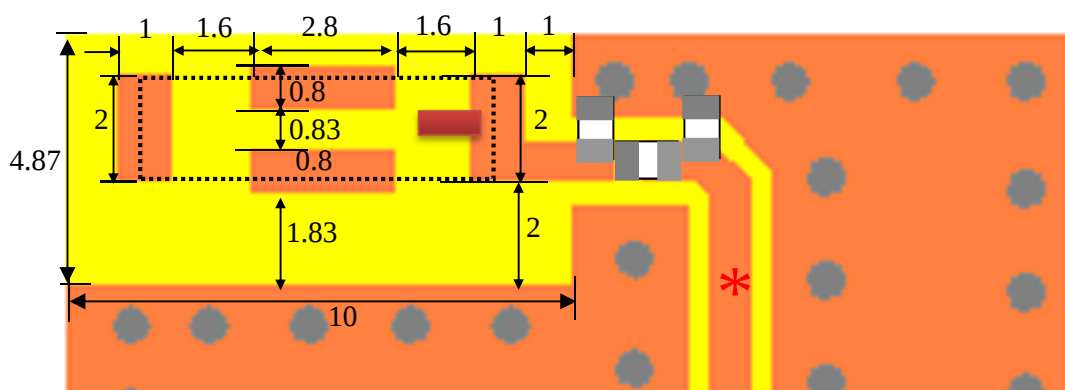
## Mounting and Layout Guidelines:

Mount these devices with red mark facing up. Units: mm

**Need help designing the antenna in? Use our antenna design services!**

[www.johansontechnology.com/ipc-antenna-services](http://www.johansontechnology.com/ipc-antenna-services)

**We provide 2 Free layout reviews and if you need us to tune and characterize the antenna on your design (anechoic chamber) we can do that too (lab fee may apply for the latter).**



**IMPORTANT!** Matching circuit and component values will be different on your PCB, this will depend on PCB layout and shape, encasement, etc

\*Antenna feed line width should be designed to provide 50  $\Omega$  impedance otherwise improper operation

**Note 1:** Pins 2, 3 & 4, although "NC", must be soldered to their corresponding PCB pads for proper operation

**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: [www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning) and see how to obtain the new values. If you need need us to tune it for you or would like the layout files, please contact our RF Applications Eng Team at: [www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

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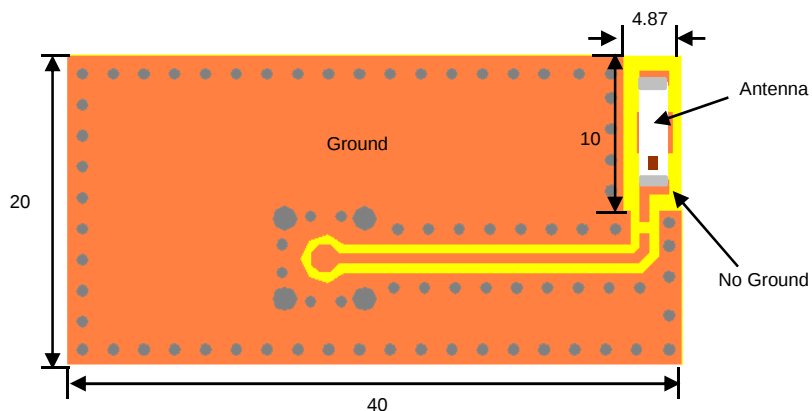
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Detail Specification: 11/14/2016

## EVB used to characterize the antenna

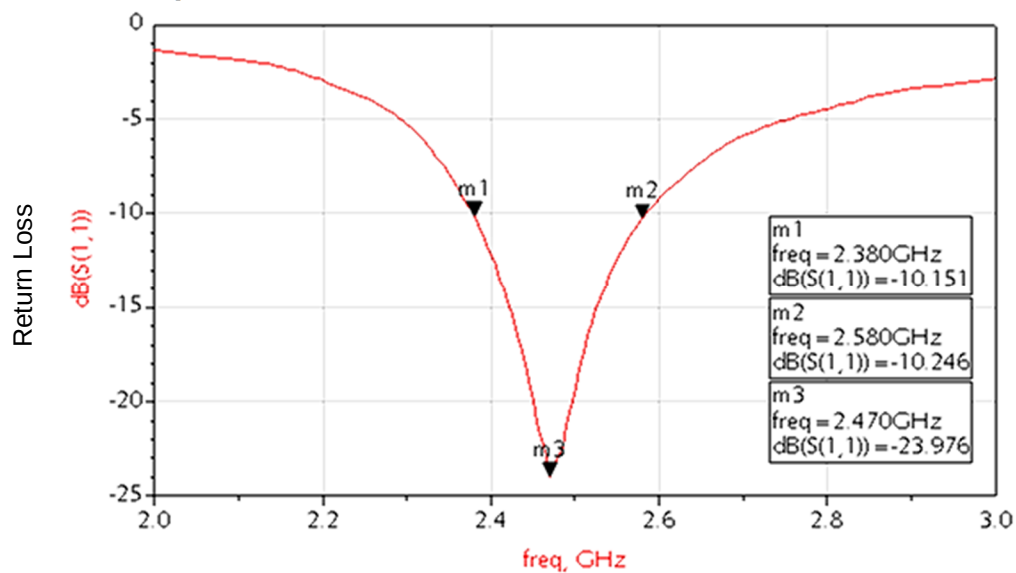
Would you like to order this pre-tuned EVB? Click on:

[www.johansontechnology.com/request-a-sample](http://www.johansontechnology.com/request-a-sample) and please reference p/n: 2450AT43B100-EB1SMA  
(comes with SMA connector)



## Typical Electrical Characteristics (T=25°C)

With Proper Matching Circuit



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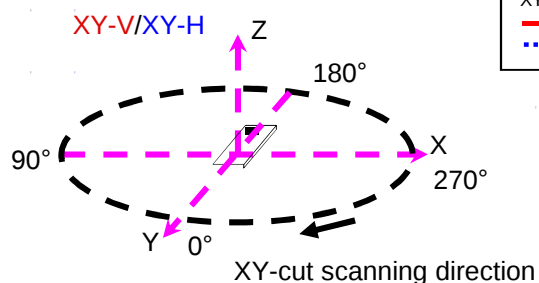
P/N 2450AT43B100

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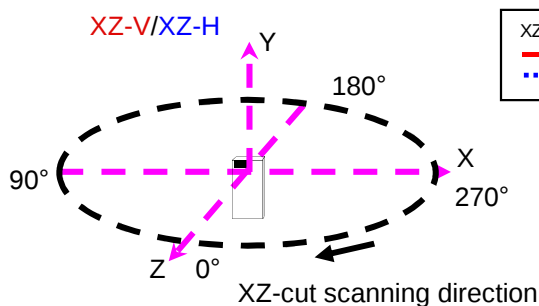
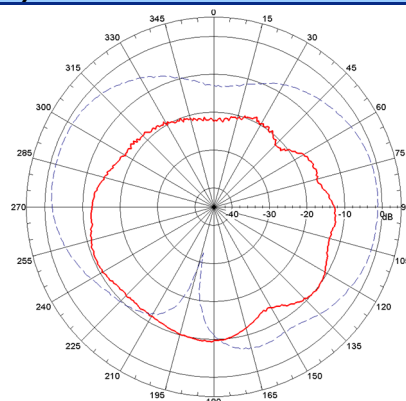
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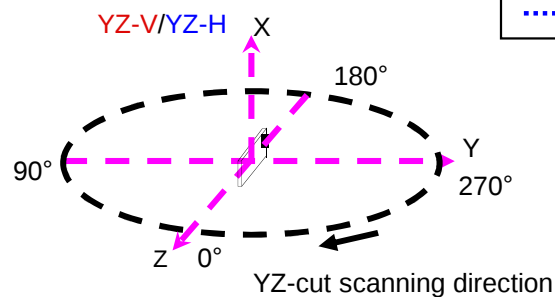
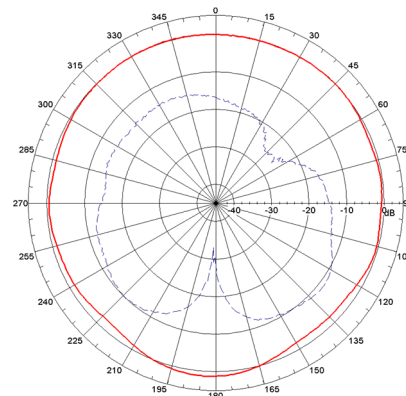
## Typical Electrical Characteristics/Radiation Patterns (T=25°C)



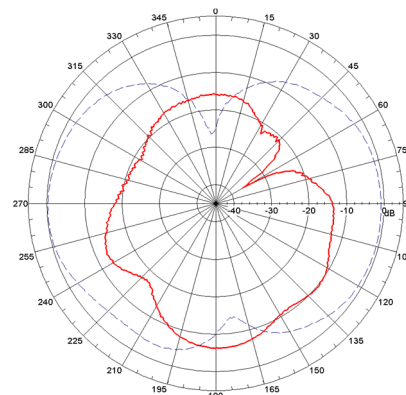
XY cut @2.45GHz  
— Vertical  
- - - Horizontal



XZ cut @2.45GHz  
— Vertical  
- - - Horizontal



YZ cut @2.45GHz  
— Vertical  
- - - Horizontal



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###

## Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipc-antenna-services](http://www.johansontechnology.com/ipc-antenna-services)

## More SMD Chip Antennas at:

[www.johansontechnology.com/antennas](http://www.johansontechnology.com/antennas)

## Soldering Information

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

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

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

## Packaging information

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

## RoHS2 (6/6) full compliance

[www.johansontechnology.com/rohs-compliance](http://www.johansontechnology.com/rohs-compliance)

## MSL Info

[www.johansontechnology.com/msl-rating](http://www.johansontechnology.com/msl-rating)

## P/N Explanation and Breakdown

[www.johansontechnology.com/ipc-pn-explained](http://www.johansontechnology.com/ipc-pn-explained)

## Recommended Storage Conditions of uninstalled product still on T&R

-40 ~ +85 °C, Humidity 45~75%RH, 18 mos. Max

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Technical Author: Manuel Carmona



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