

**Antenna Info**

A chip antenna is soldered to the PCB inside the device. Consistent with paragraph 15.203 of the FCC rules, there are no cables or connectors and the user does not have access to the antenna.

**Chip antenna details:**

Manufacturer: Johanson Technology Inc

Manufacturer part number: 2450AT18D0100E

Max gain: 1.5dBi

Type: ceramic chip antenna

Refer to attached datasheet.

# "High Frequency Ceramic Solutions"

2.45 GHz SMD Antenna, EIA 1210, Detuning resilient, Edge Mount

P/N 2450AT18D0100

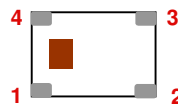
Detail Specification: 9/22/2014

Page 1 of 5

## General Specifications

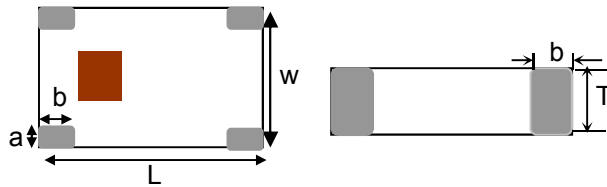
|                       |                          |                    |              |
|-----------------------|--------------------------|--------------------|--------------|
| Part Number           | 2450AT18D0100            | Input/Output Power | 2W max. (CW) |
| Frequency (MHz)       | 2400 - 2500              | Impedance          | 50 $\Omega$  |
| Peak Gain             | 1.5 dBi typ. (XZ-total)  | Reel Quantity      | 3,000        |
| Average Gain          | -1.0 dBi typ. (XZ-total) | Storage Temp       | -40 to +85°C |
| Return Loss           | 10.0 dB min.             |                    |              |
| Operating Temperature | -40 to +125°C            |                    |              |

| No | Terminal Function |       |
|----|-------------------|-------|
| 1  | Feeding Point     | 3 GND |
| 2  | GND               | 4 GND |



## Mechanical Specifications

|   | In                      | mm                  |
|---|-------------------------|---------------------|
| L | 0.126 $\pm$ 0.008       | 3.20 $\pm$ 0.20     |
| W | 0.063 $\pm$ 0.008       | 1.60 $\pm$ 0.20     |
| T | 0.047 $\pm$ 0.008       | 1.20 $\pm$ 0.20     |
| a | 0.012 $\pm$ .004/-0.008 | 0.30 $\pm$ 0.1/-0.2 |
| b | 0.020 $\pm$ 0.008       | 0.50 $\pm$ 0.20     |



## Mounting Considerations

Mount these devices with red mark facing up.

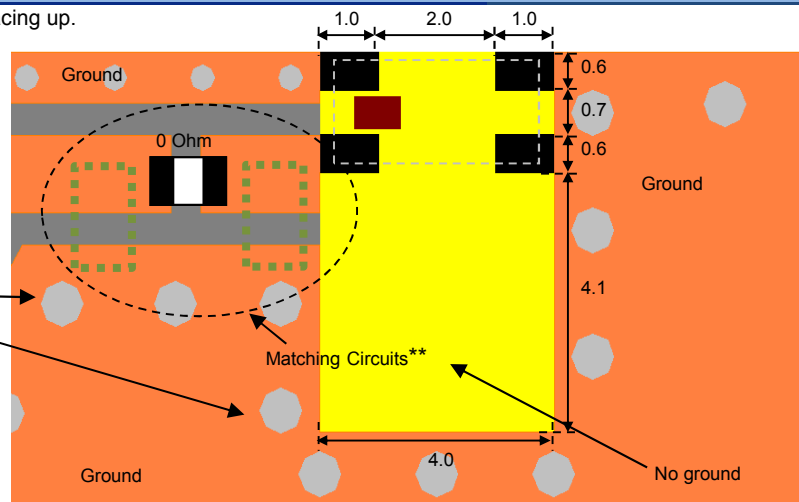
Solder Resist

Land

50 $\Omega$  Trace

GND Vias

Want the layout file of this antenna?  
Send us a message at:  
[www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)



\*\*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.

Need help from us to review your layout and/or tune and characterize this antenna on your PCB? Go to:

[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices) and contact us directly at: [www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)

(nominal lab fee may apply)



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

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# "High Frequency Ceramic Solutions"

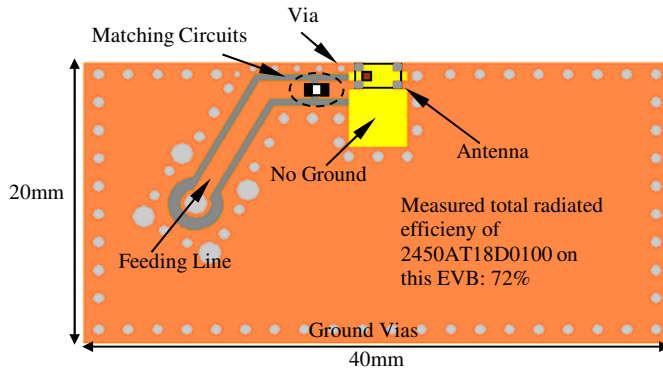
2.45 GHz SMD Antenna, EIA 1210, Detuning resilient, Edge Mount

P/N 2450AT18D0100

Detail Specification: 04/04/12

Page 2 of 5

## Mounting Considerations



Orderable EVB p/n (comes with 1 female SMA connector mounted on the opposite side):

2450AT18D0100-EB1SMA

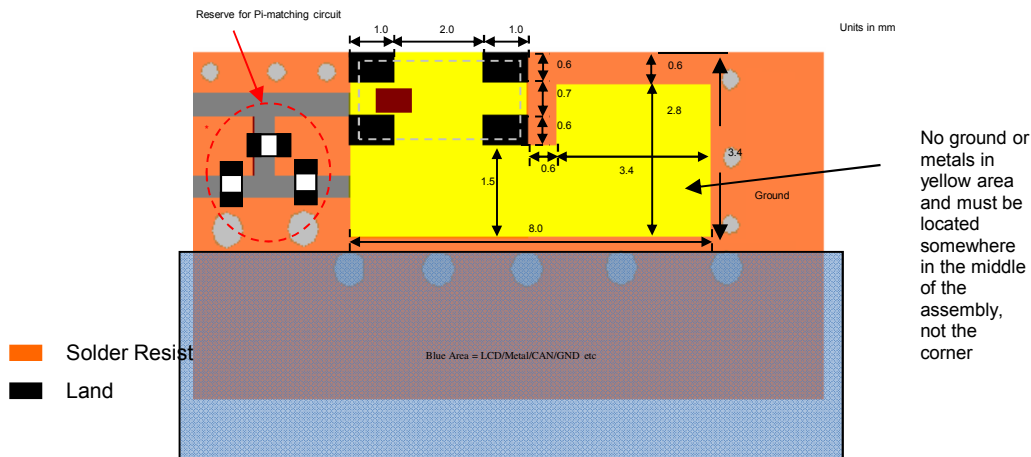
We offer 2 free layout reviews as well as antenna tuning and characterization services (lab fee may apply). Go to: [www.johansontechnology.com/ipcantenna](http://www.johansontechnology.com/ipcantenna) services for more info

Want the layout file of the above? Send us a message at: [www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)

To order a pre-tuned 50Ω EVB with a female SMA connector Click here: [www.johansontechnology.com/component/samplerequest](http://www.johansontechnology.com/component/samplerequest)

Reference p/n: 2450AT18D0100-EB1SMA

## Mounting Considerations - Small clearance or "thin edge" applications



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.



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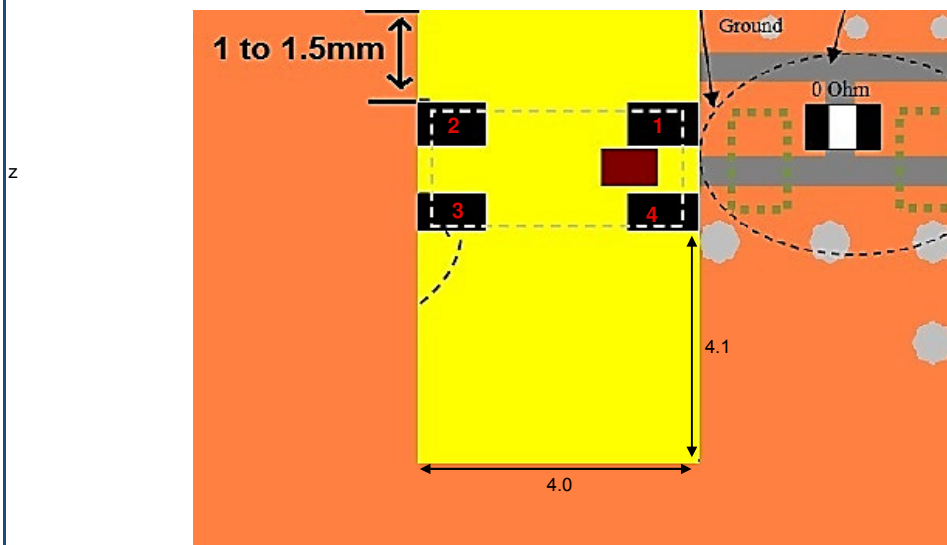
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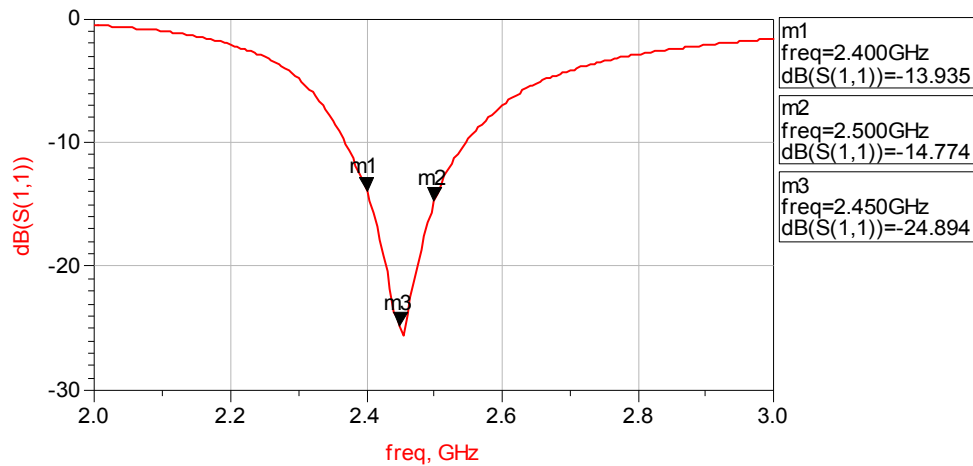
Detail Specification: 04/04/12

Page 3 of 5

## Mounting Considerations - chip antenna fed from the right



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



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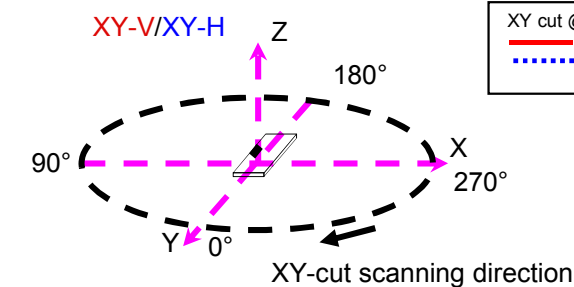
P/N 2450AT18D0100

Detail Specification: 9/22/2014

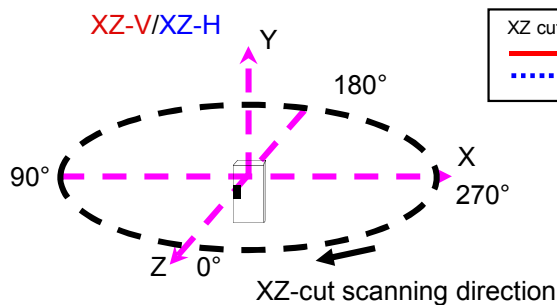
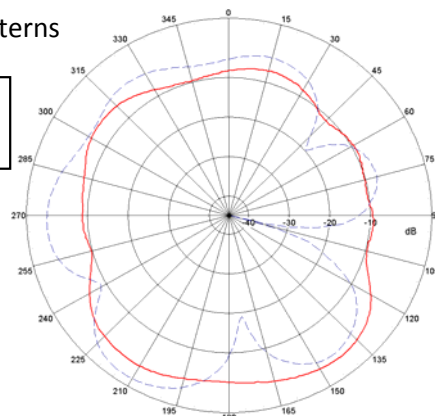
Page 4 of 5

## Typical EM Radiation Performance (T=25°C)

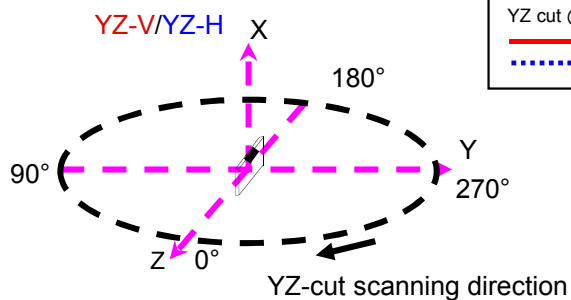
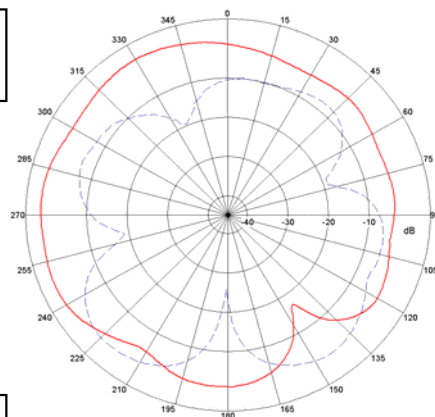
### Typical Radiation Patterns



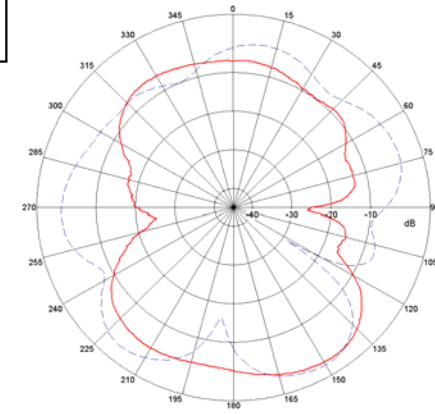
XY cut @2.45GHz  
— Vertical  
- - - Horizontal



XZ cut @2.45GHz  
— Vertical  
- - - Horizontal



YZ cut @2.45GHz  
— Vertical  
- - - Horizontal



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Page 5 of 5

### Part Number Explanation

|   |               |   |            |                    |
|---|---------------|---|------------|--------------------|
| P/N Suffix  | Packing Style | Bulk  | Suffix = S | eg.2450AT18D0100S  |
|   |               | T & R                                       | Suffix = E | eg. 2450AT18D0100E |
|   | EVN p/n       | 2450AT18D0100-EB1SMA                        |            |                    |
| Recommended Storage Conditions of<br>uninstalled product still on T&R |               | +5 ~ +35 °C, Humidity 45~75%RH, 18 mos. Max |            |                    |

### More SMD Chip Antennas at:

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

### Packaging information

[www.johansontechnology.com/ipcpackaging.html](http://www.johansontechnology.com/ipcpackaging.html)

### 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)

### Antenna layout review, tuning, and characterization services

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

### RoHS Compliance

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

### MSL Info

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

### P/N Explanation and Breakdown

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

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