

"High Frequency Ceramic Solutions"

2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

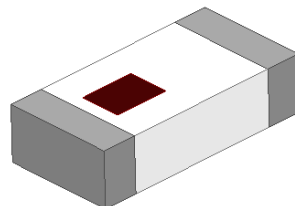
Page 1 of 10

General Specifications

Part Number	2450AT14A0100
Frequency (GHz)	2.4 - 2.48
Avg. Rad Efficiency ¹	48%
Peak Gain ¹ (dBi typ.)	-0.5 dBi typ. (XZ-Total)
Average Gain (dBi typ.)	-2.0 dBi typ. (XZ-Total)
Return Loss (dB)	9.5 Typ. (6 min.)
Impedance	50 Ω
Input Power	2 Watts max. (CW)

¹Measured on 2450AT14A0100-EB2SMA

Let us help you with the antenna design (free), optimization, and tuning (small fee may apply)
www.johansontechnology.com/ask-a-question



Operating Temperature	-40 to +85°C	Recommended Storage Conditions of unused product on T&R and period	+5 to +35°C, Humidity 45~75%RH, 18 months max.
Storage Temperature	-40 to +85°C		
Reel Quantity	4000		

AEC-Q200 qualification available.

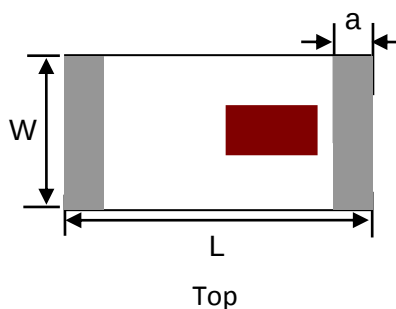
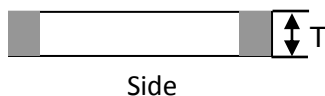
Part Number Explanation

P/N Suffix	Packing Style	Bulk (loose)	Suffix = S	e.g. 2450AT14A0100S
		T & R	Suffix = T	e.g. 2450AT14A0100T (4,000pcs/reel)
		100% Tin	Suffix = T or S	e.g. 2450AT14A0100(T or S)
	Evaluation Board	2450AT14A0100-EB1SMA & 2450AT14A0100-EB2SMA see pages 2&6 for details		

Contact our RF Engineers at: www.johansontechnology.com/ask-a-question for any questions you have, including tips or help on tuning the antenna

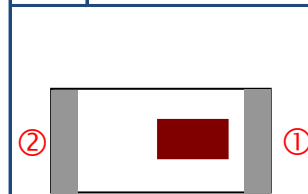
Chip Antenna Mechanical Dimensions

	In	mm
L	0.063 $\pm$ 0.004	1.60 $\pm$ 0.10
W	0.031 $\pm$ 0.004	0.80 $\pm$ 0.10
T	0.016 max.	0.40 max.
a	0.010 $\pm$ 0.004	0.25 $\pm$ 0.10



Terminal Configuration

No.	Function
1	FEED
2	NC



Johanson Technology, Inc. reserves the right to make design changes without notice.
 All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
 4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
 Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

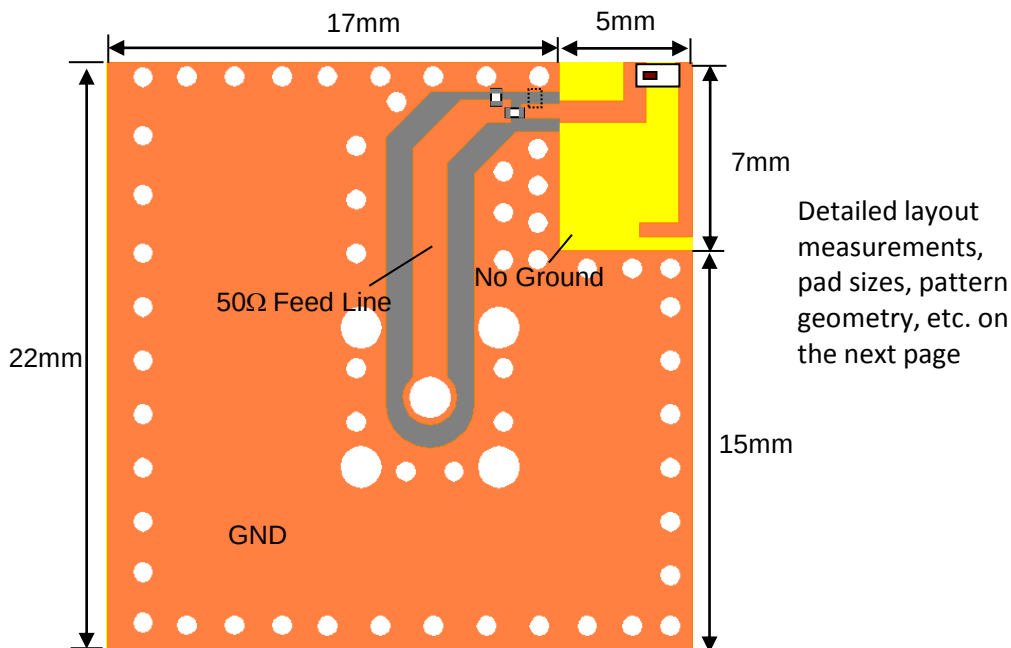
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 2 of 10

Mounting Considerations 1: Evaluation Board (small PCB)



Would you like the layout file of the above? Having antenna tuning issues?
Contact us by clicking on the link below (we're fast to respond!) . If you have any questions regarding the implementation of this antenna in your PCB, we'll be happy to guide you to maximize the antenna's performance.

Contact our applications engineers at:

www.johansontechnology.com/ask-a-question

To order a pre-tuned 50Ω EVB like the above with a female SMA connector

click here: www.johansontechnology.com/request-a-sample

Reference p/n: 2450AT14A0100-EB1SMA

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 3 of 10

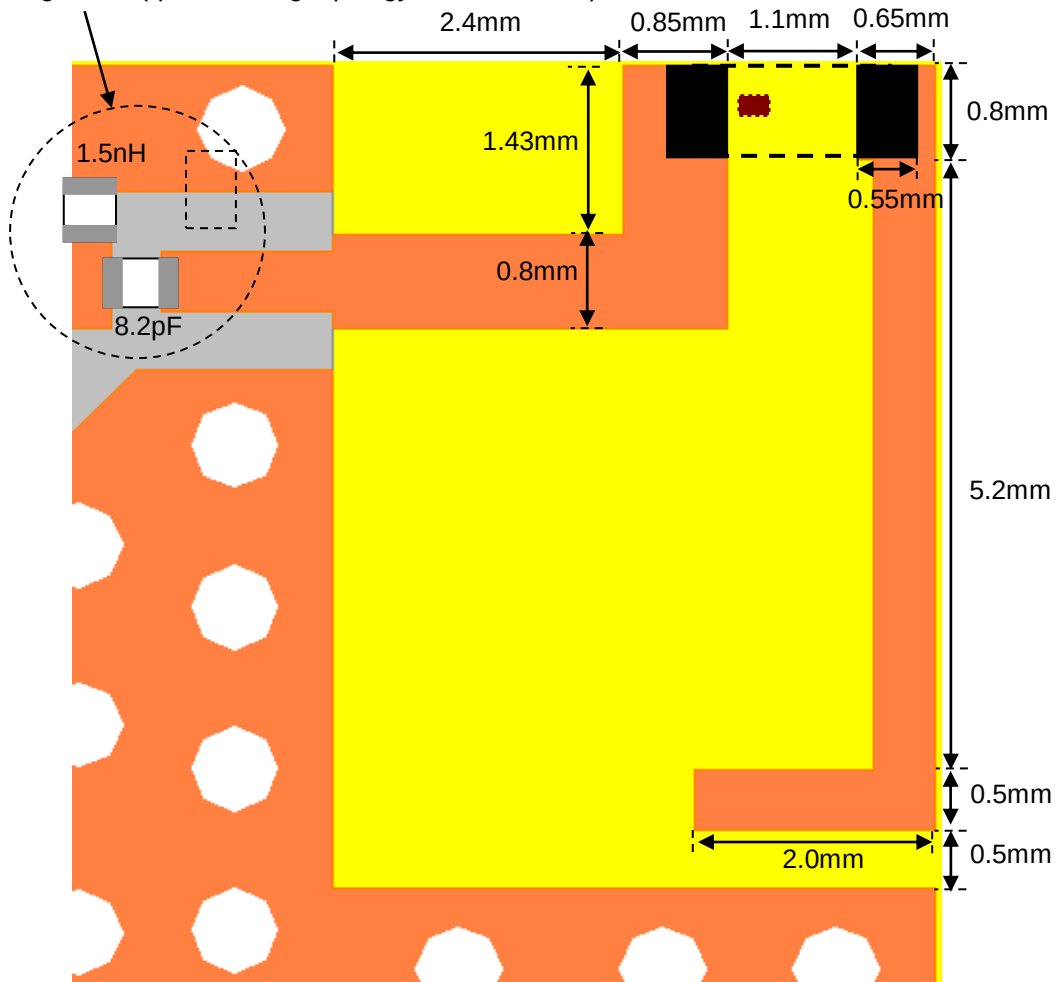
Mounting Considerations 1: Antenna Footprint

Mount these devices with red mark facing up.

Antenna Reference Layout

 Solder Resist
 Land

Matching circuit ("pi" matching topology recommended)



(Matching circuit and component values will be different, depending on PCB layout)

Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

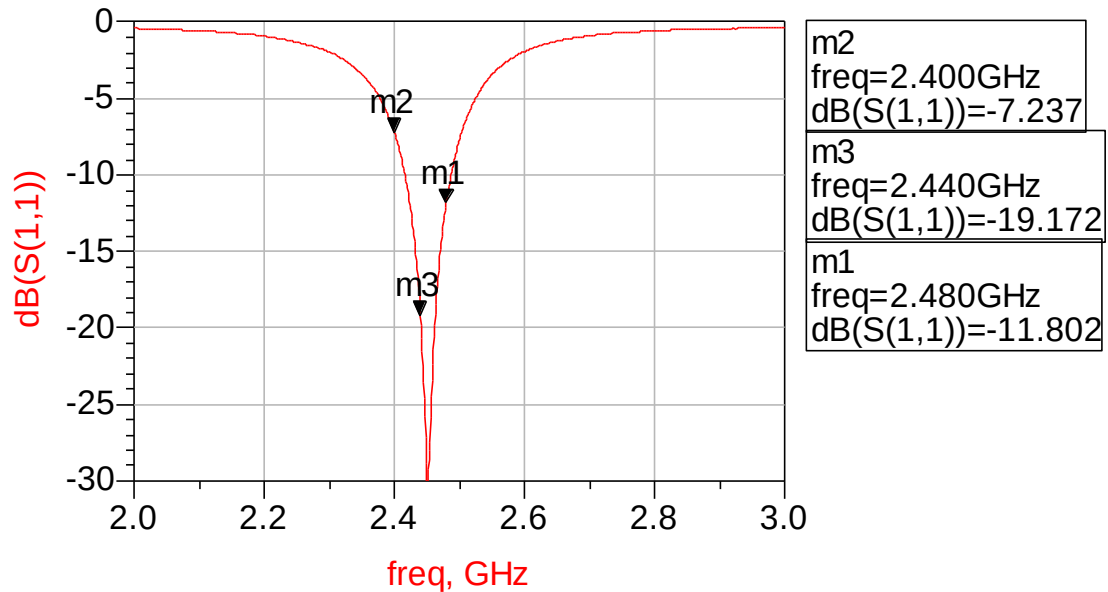
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 4 of 10

Mounting Considerations 1: Typical Electrical Performance (T=25°C)



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

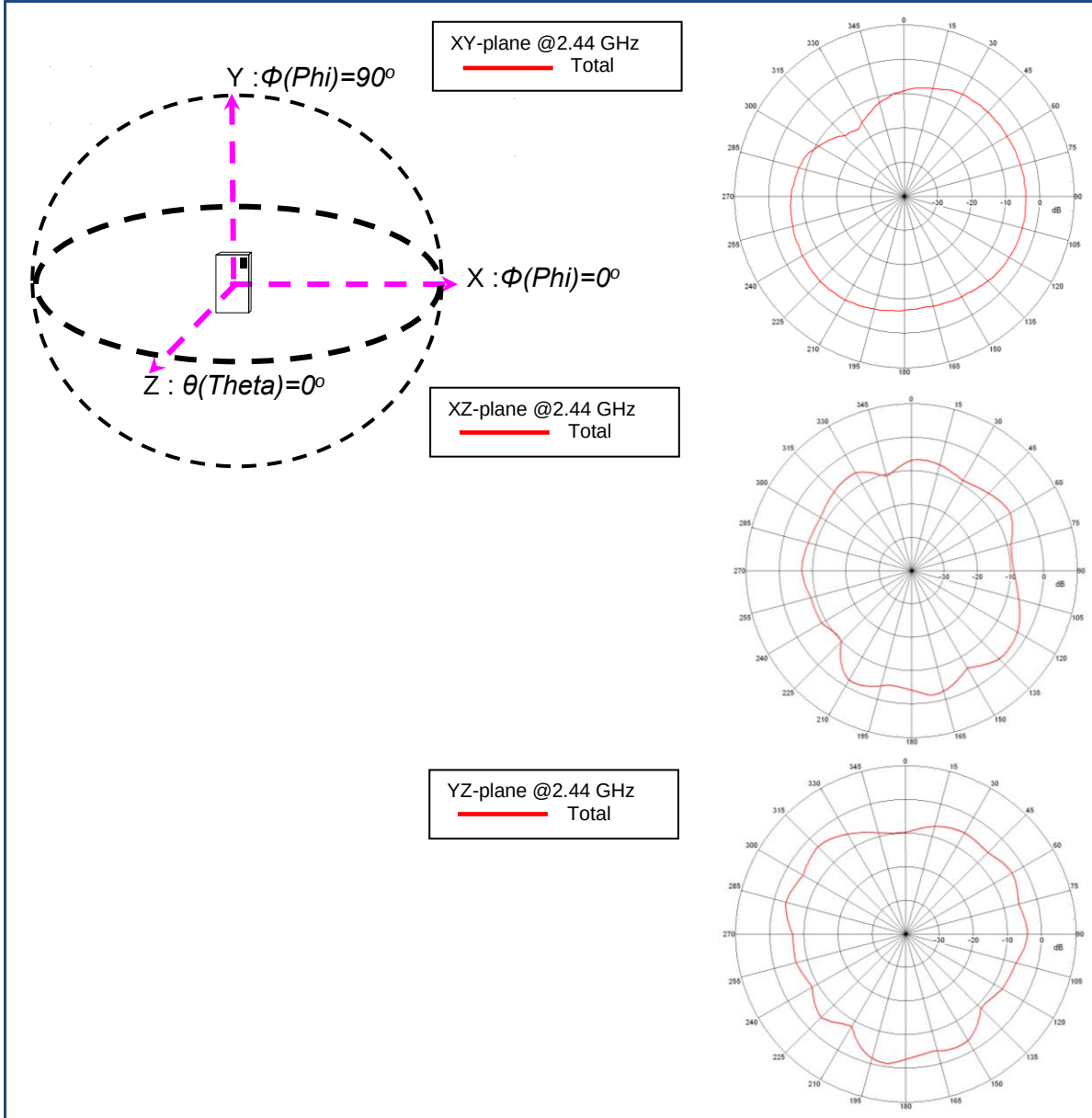
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 5 of 10

Mounting Considerations 1: Typical EM Radiation Performance @ 2.44GHz (T=25°C)



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.

"High Frequency Ceramic Solutions"

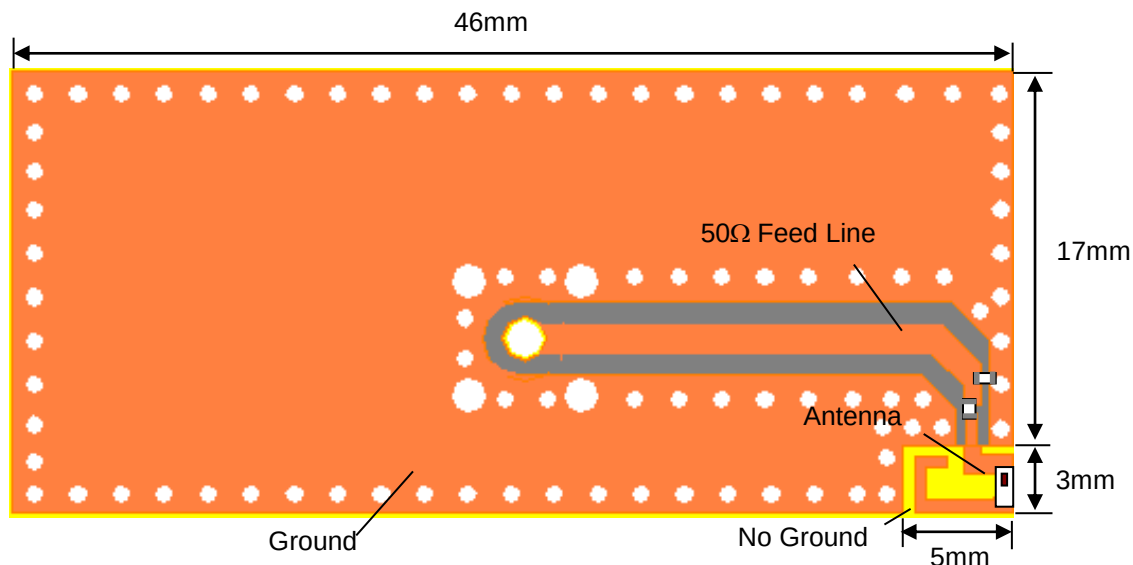
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 6 of 10

Mounting Considerations 2: Evaluation Board (larger PCB)



Frequency (GHz)	Radiated Efficiency (%)
2.44	48

To order a pre-tuned 50Ω EVB with a female SMA connector click here:

www.johansontechnology.com/request-a-sample

Reference p/n: 2450AT14A0100-EB2SMA

Would you like the layout file of the above? Have antenna tuning issues?

Please contact us if you have any questions regarding the implementation of this antenna in your PCB's layout. We'll be happy to guide you to maximize the antenna's performance.

Contact our applications engineers at:

www.johansontechnology.com/ask-a-question

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 7 of 10

Mounting Considerations 2: Antenna Footprint

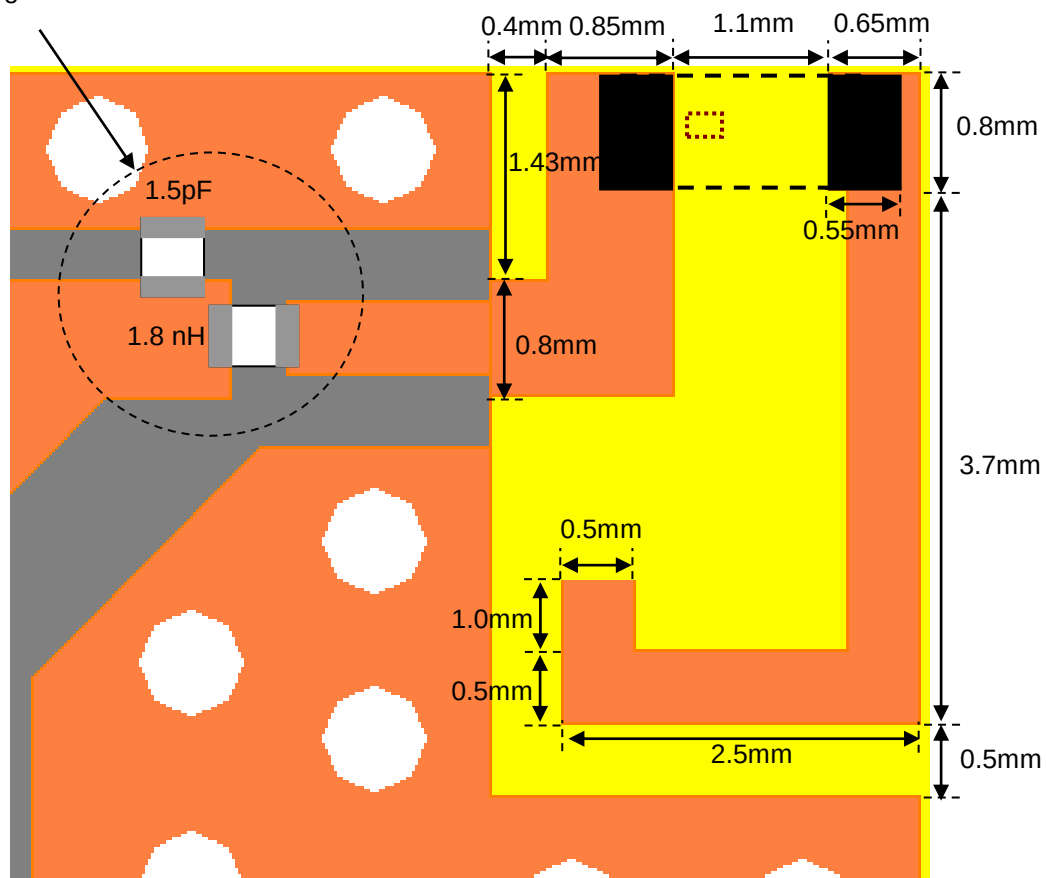
Mount these devices with brown mark facing up.

Antenna Reference Layout

 Solder Resist

 Land

Matching circuit



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.



Ver. 1.3

www.johansontechnology.com

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

2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

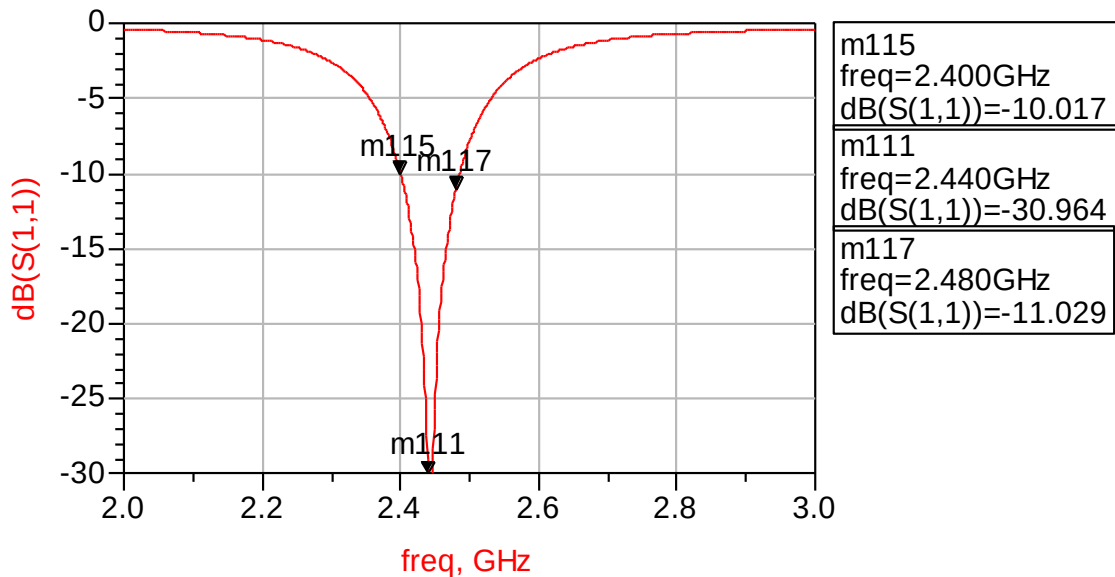
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 8 of 10

Mounting Considerations 2: Typical Electrical Performance (T=25°C)



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

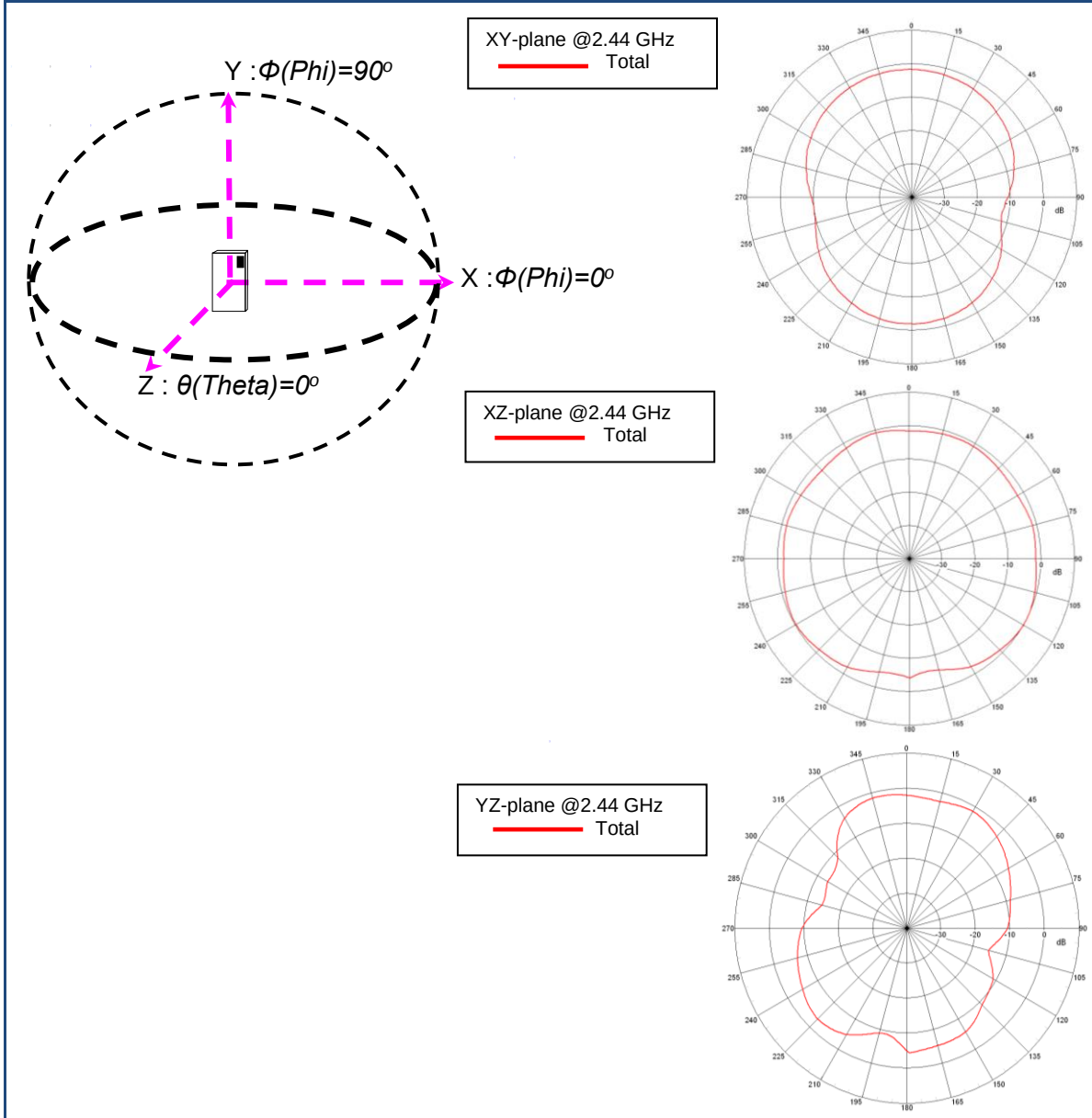
2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 9 of 10

Mounting Considerations 2: Typical EM Radiation Performance @ 2.44 GHz (T=25°C)



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.

"High Frequency Ceramic Solutions"

2.4 GHz Mini Chip Antenna for 802.11, WiFi, WLAN, IoT with Small Area and GND size, ultra low profile

P/N 2450AT14A0100

Detail Specification: 2/8/2018

Page 10 of 10

Antenna tuning, optimization, and validation services:

www.johansontechnology.com/ipc-antenna-services

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/msl-rating

Packaging information

www.johansontechnology.com/tape-reel-packaging

For layout review contact our Applications Team at:

www.johansontechnology.com/ask-a-question

RoHS Compliance

www.johansontechnology.com/rohs-compliance

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

www.johansontechnology.com/ipc-antenna-services

2 free layout reviews and if you need us to tune and characterize the antenna on your product (inside anechoic chamber) we can do that too. Small lab fee may apply for the latter.

We can do Electromagnetic simulations using your existing mechanical files too!

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
Ver. 1.3 2017 Johanson Technology, Inc. All Rights Reserved