

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna P/N 2500AT44M0400

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

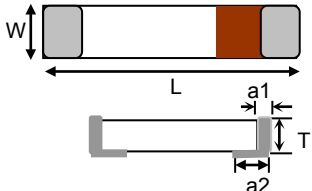
Detail Specification: 5/24/2013

Page 1 of 9

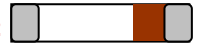
General Specifications

Part Number	2500AT44M0400		
Operating Frequency (MHz)	2300 - 2700		
Impedance	50 Ω		
Operating Temperature	-40 to +85°C		
Return Loss (2.3-2.7GHz)	9.5 dB min.		
Peak Gain @ 2.38GHz	2.0 dBi typ. (XZ-V)		
Average Gain @ 2.38GHz	0.0 dBi typ. (XZ-V)		
Peak Gain @ 2.45GHz	2.5 dBi typ. (XZ-V)		
Average Gain @ 2.45GHz	0.5 dBi typ. (XZ-V)		
Peak Gain @ 2.60GHz	2.0 dBi typ. (XZ-V)		
Average Gain @ 2.60GHz	0.0 dBi typ. (XZ-V)		
		Quantity per Reel	1,000
		Recommended Storage Conditions	+5 ~ +35 °C, Humidity 45~75%RH

Mechanical Specifications

	In	mm	
L	0.315 $\pm$ 0.008	8.00 $\pm$ 0.20	
W	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	
T	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	
a	0.020 $\pm$ 0.008	0.50 $\pm$ 0.20	
a2	0.039 $\pm$ 0.008	1.00 $\pm$ 0.20	

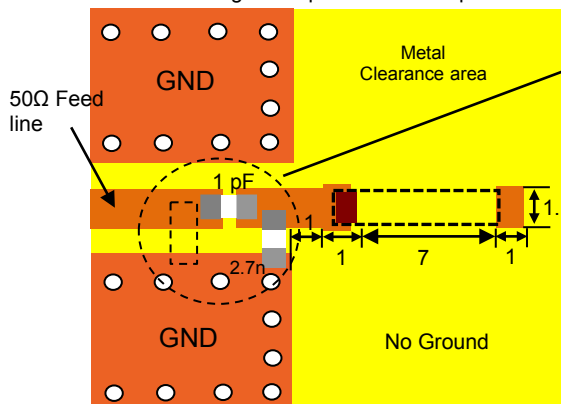
Terminal Configuration

No.	Function
1	Feeding Point
2	NC
	

Mounting Considerations - Layout #1

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

*Line width should be designed to provide 50 Ω impedance matching characteristics.



It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values 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. If you need further help, contact our RF Applications Eng Team at: www.johansontechnology.com/en/ask-a-technical-question.html

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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

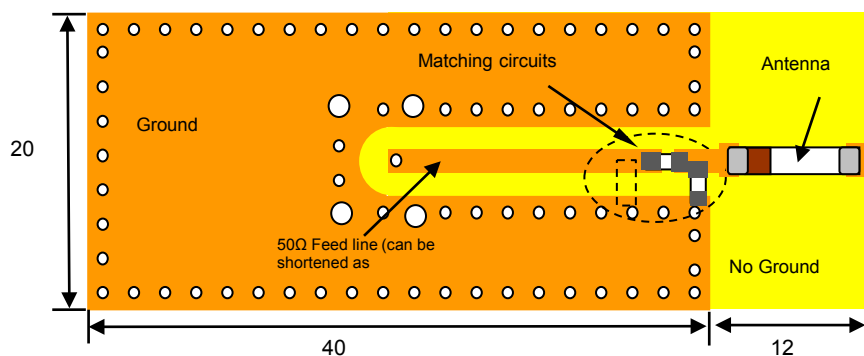
P/N 2500AT44M0400

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

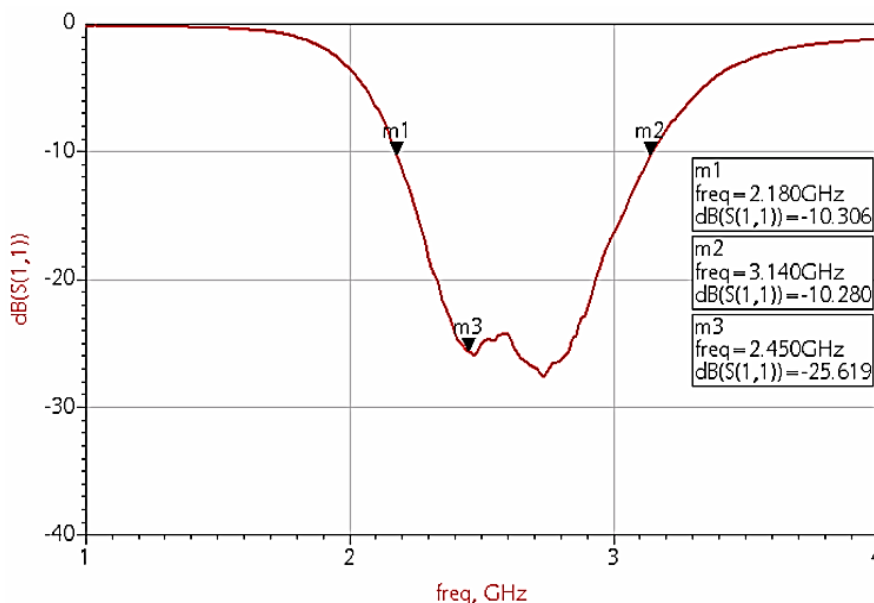
Page 2 of 9

Layout #1 example (units in mm)



Orderable EVB p/n: 2500AT44M0400-EB1SMA

Return Loss - with Matching Circuits



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

P/N 2500AT44M0400

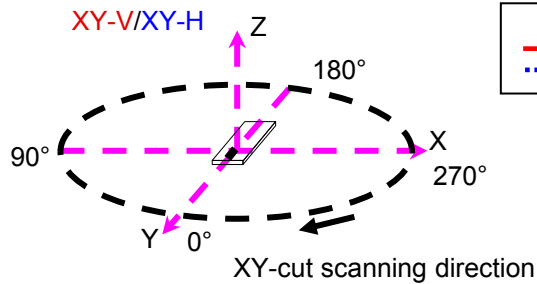
Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

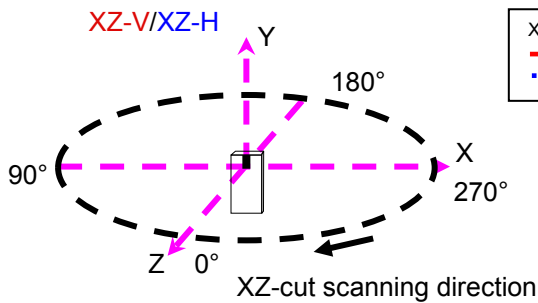
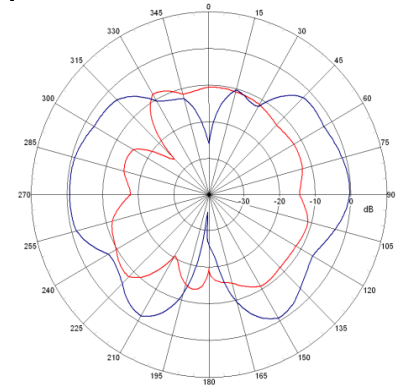
Page 3 of 9

Typical Radiation Patterns @ 2.38GHz - Layout #1

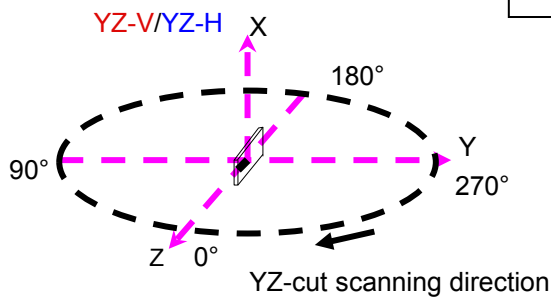
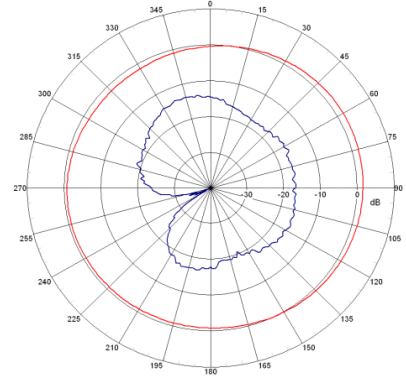
Typical Radiation Patterns - Layout #1



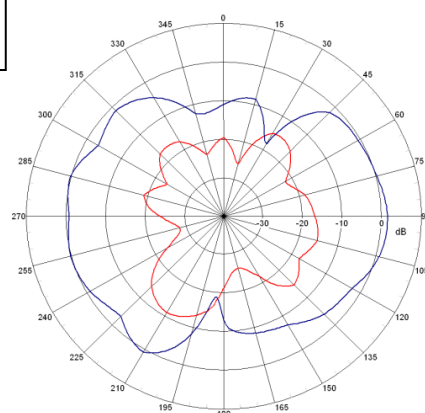
XY cut @2.38GHz
 — Vertical
 Horizontal



XZ cut @2.38GHz
 — Vertical
 Horizontal



YZ cut @2.38GHz
 — Vertical
 Horizontal



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

P/N 2500AT44M0400

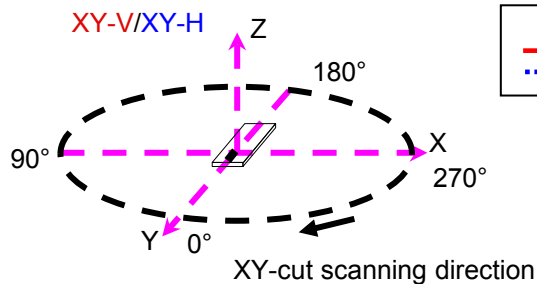
Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

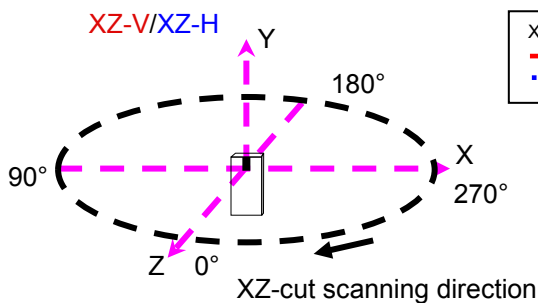
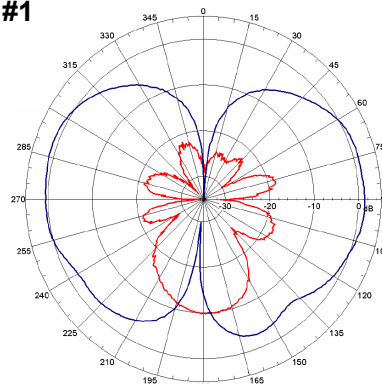
Page 4 of 9

Typical Radiation Patterns @ 2.45GHz - Layout #1

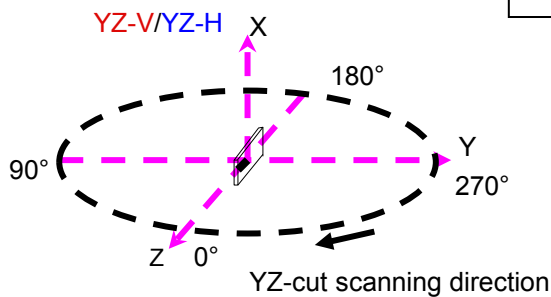
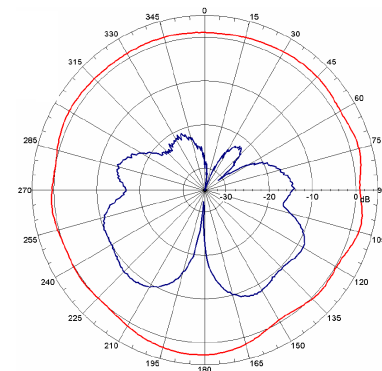
Typical Radiation Patterns - Layout #1



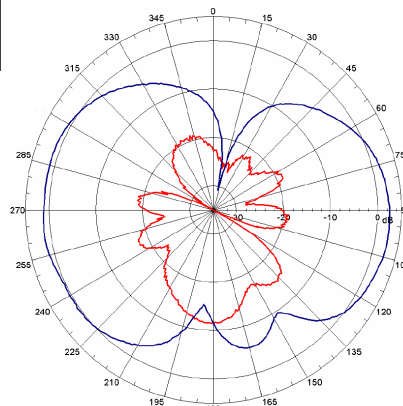
XY cut @2.45GHz
— Vertical
... Horizontal



XZ cut @2.45GHz
— Vertical
... Horizontal



YZ cut @2.45GHz
— Vertical
... Horizontal



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

P/N 2500AT44M0400

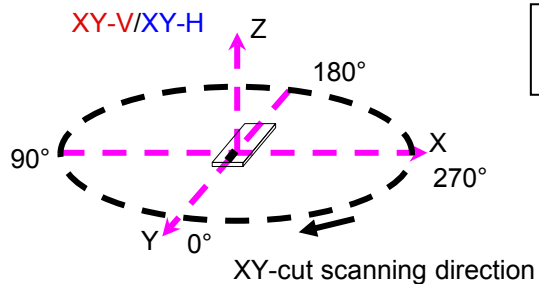
Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

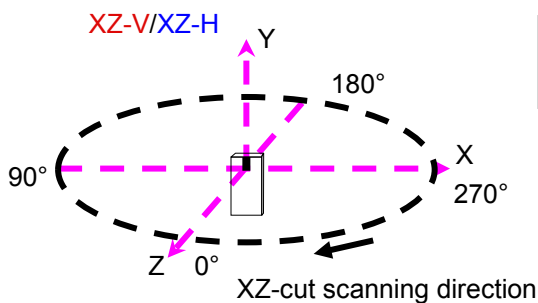
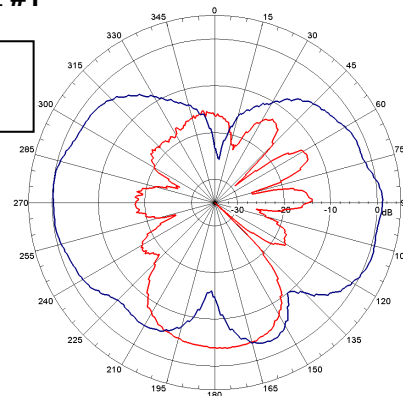
Page 5 of 9

Typical Radiation Patterns @ 2.6GHz - Layout #1

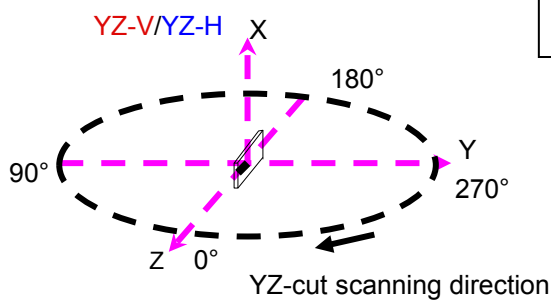
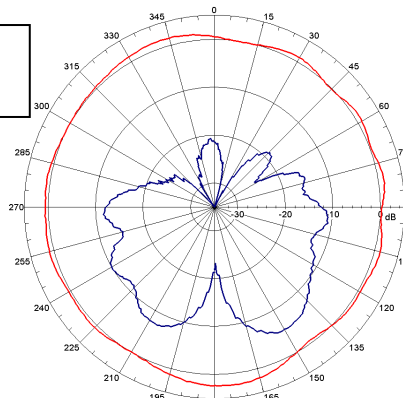
Typical Radiation Patterns - Layout #1



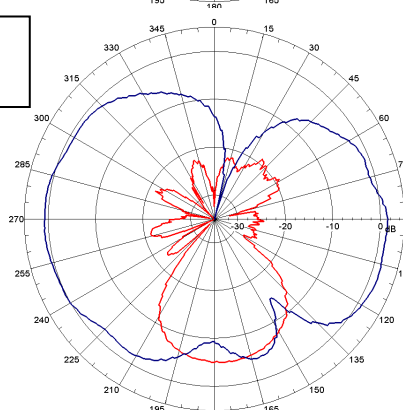
XY cut @2.6GHz
 — Vertical
 Horizontal



XZ cut @2.6GHz
 — Vertical
 Horizontal



YZ cut @2.6GHz
 — Vertical
 Horizontal



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

P/N 2500AT44M0400

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

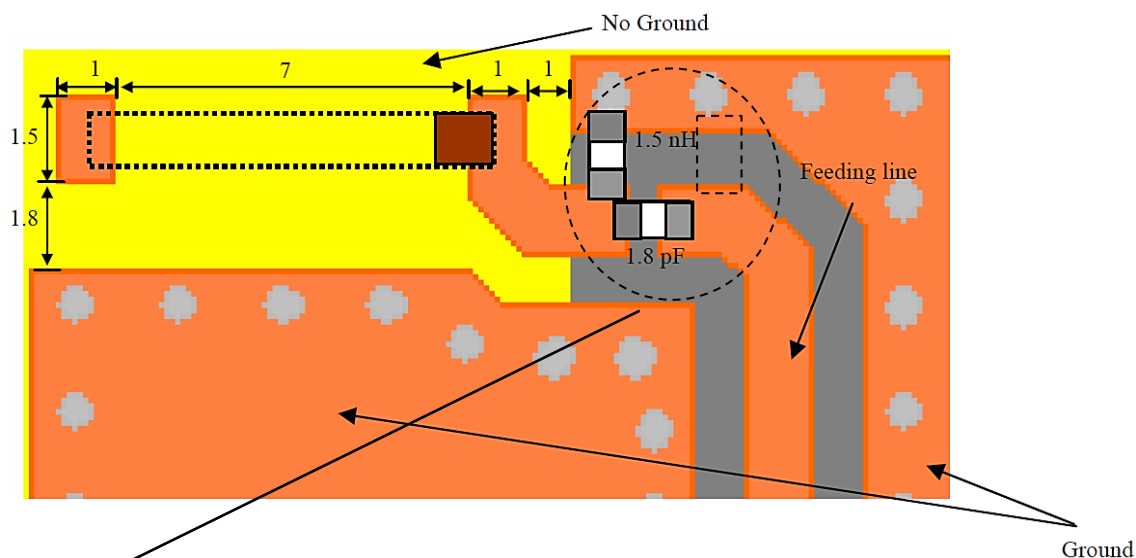
Page 6 of 9

Alternate layout - Layout #2

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

*Line width should be designed to provide 50 Ω impedance matching characteristics.

Layout #2 example (units in mm)**



It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values are used when antenna is mounted on Johanson's evaluation board. The matching values on clinet's PCB will be different.

Go to: <http://johansontechnology.com/tuning> and see how to obtain the new values.

If you need further help, contact our RF Applications Eng Team at:
www.johansontechnology.com/en/ask-a-technical-question.html

**Bandwidth is about 190MHz in this configuration

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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

P/N 2500AT44M0400

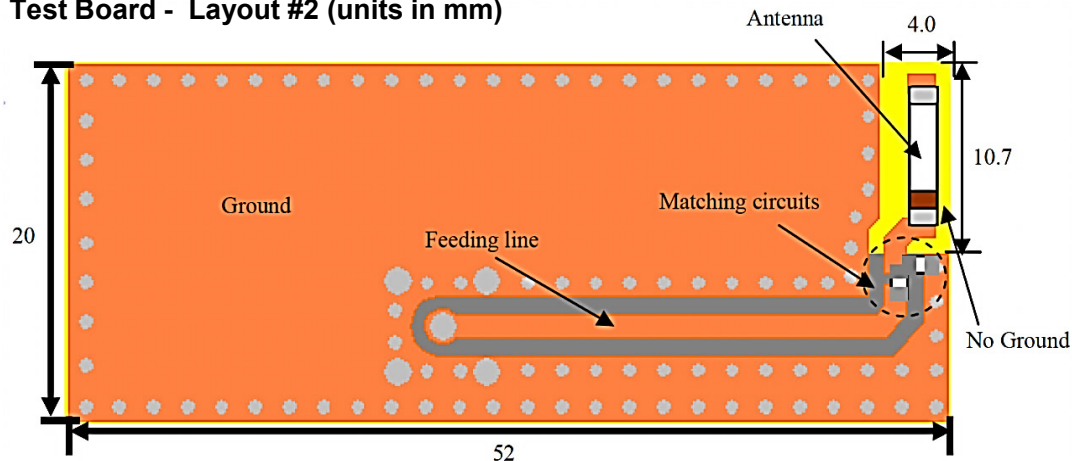
Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

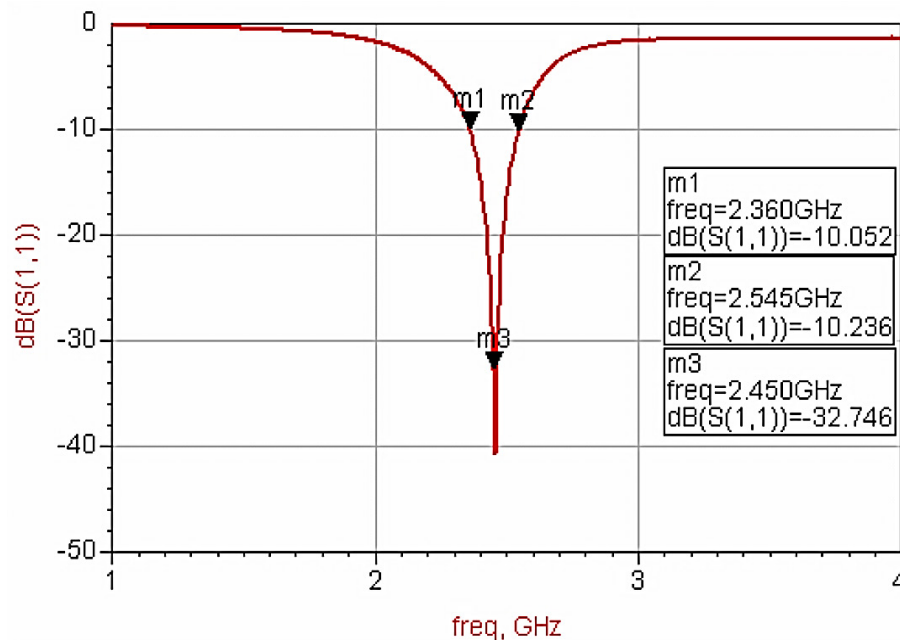
Page 7 of 9

Typical Electrical Characteristics (T=25 °C)

Test Board - Layout #2 (units in mm)



Return Loss - with Matching Circuits



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna

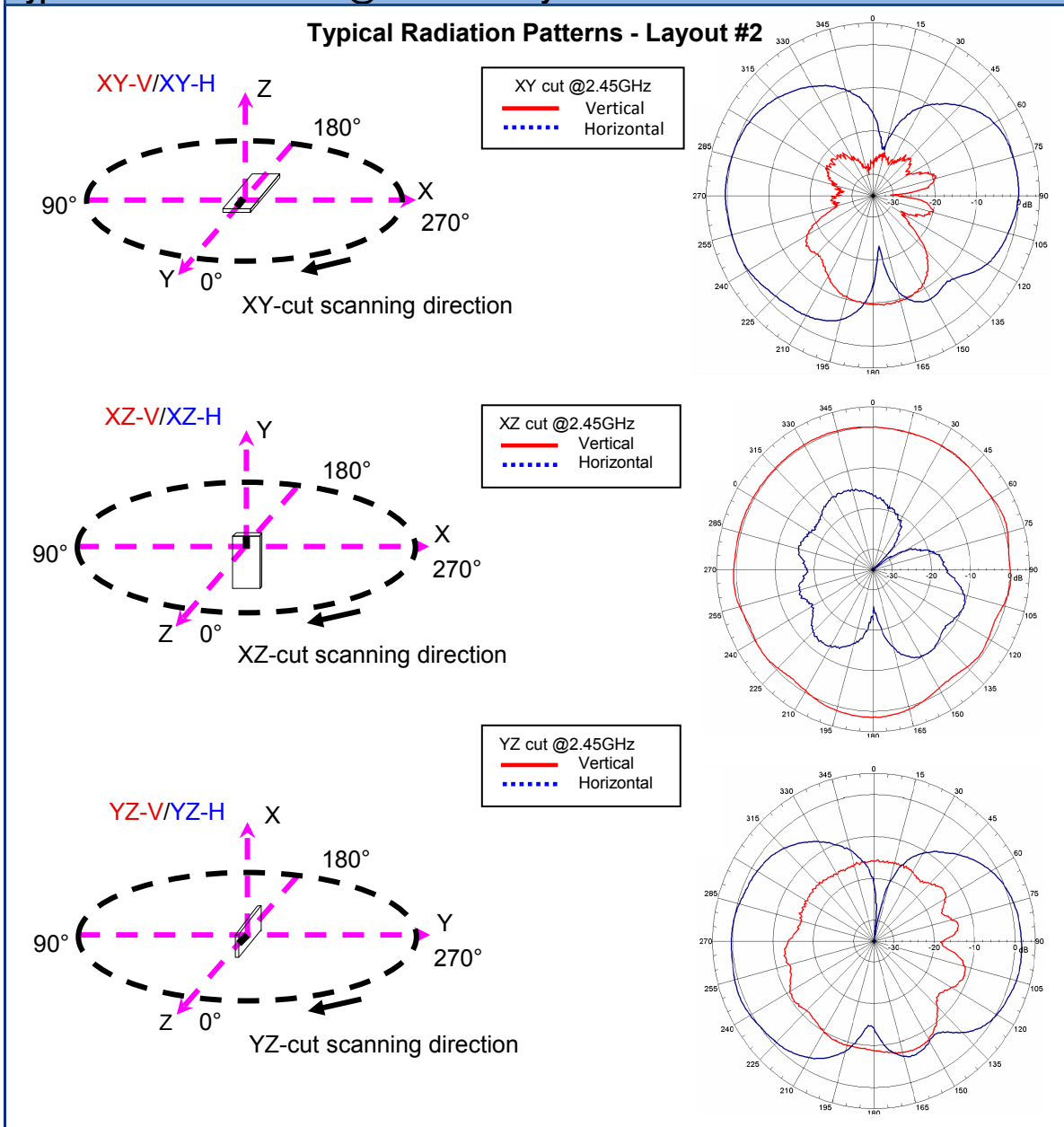
P/N 2500AT44M0400

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

Page 8 of 9

Typical Radiation Patterns @ 2.45GHz - Layout #2



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 1.2

2013 Johanson Technology, Inc. All Rights Reserved

"High Frequency Ceramic Solutions"

2.38GHz / 2.45GHz / 2.6GHz Wideband SMD Chip Antenna **P/N 2500AT44M0400**

Designed for: BAN, Bluetooth, 802.11, WLAN, Zigbee, Proprietary Protocol, ISM, Smart Energy, WiMax

Detail Specification: 5/24/2013

Page 9 of 9

Additional Info

Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 2500AT44M0400S
		T & R	Suffix = T	eg. 2500AT44M0400E
	Evaluation Board	SMA	Suffix = -EB1SMA	eg. 2500AT44M0400-EB1SMA

Tape & Reel Specifications

<http://www.johansontechnology.com/ipcpackaging.html>

Soldering Profile

<http://johansontechnology.com/ipcsoldering-profile>

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 1.2

2013 Johanson Technology, Inc. All Rights Reserved