

"High Frequency Ceramic Solutions"

2.45 GHz High Gain Chip Antenna (Vertical Orientation)

P/N 2450AT45A100

Detail Specification: 01/05/2012

Page 1 of 10

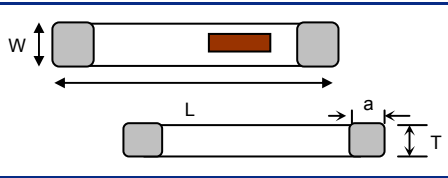
General Specifications

Part Number	2450AT45A100
Frequency Range	2400 - 2500 Mhz
Peak Gain	3.0 dBi typ. (XZ-V)
Average Gain	1.0 dBi typ. (XZ-V)
Return Loss	9.5 dB min.

Input Power	3W max.
Impedance	50 Ω
Operating Temperature	-40 to +85°C
Reel Quantity	1,000

Mechanical Dimensions

	In	mm
L	0.374 $\pm$ 0.008	9.50 $\pm$ 0.20
W	0.079 $\pm$ 0.008	2.00 $\pm$ 0.20
T	0.047 $\pm$ 0.004/-0.008	1.20 $\pm$ 0.1/-0.2
a	0.020 $\pm$ 0.012	0.50 $\pm$ 0.30



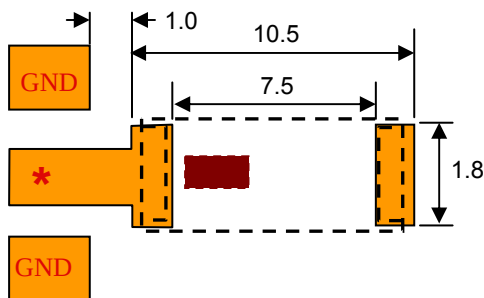
Terminal Configuration

No.	Function
1	Feeding Point
2	NC

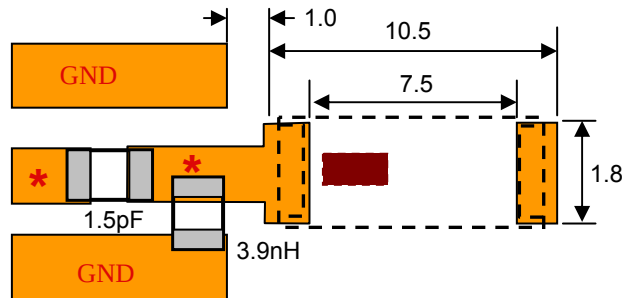
Mounting Considerations 1

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

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



a) Without Matching Circuit (moderate bandwidth)



b) With Matching Circuit* (wide bandwidth)

* matching circuit and component values will depend and vary on PCB layout, thickness, material, etc.

EVB p/n:
2450AT45A100-EB1SMA

JTI P/N for Matching Circuit:
Cap (1.5pF): 500R07S1R5BV4T
Inductor (3.9nH): L-07C3N9SV6T

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2.45 GHz High Gain Chip Antenna (Vertical Orientation)

P/N 2450AT45A100

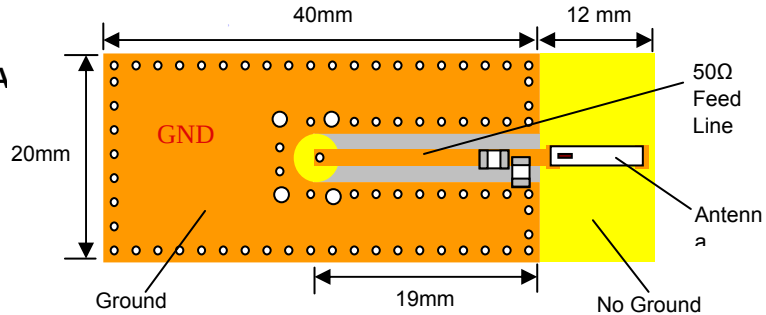
Detail Specification: 01/05/2012

Page 2 of 10

Typical Electrical Characteristics (T=25°C)

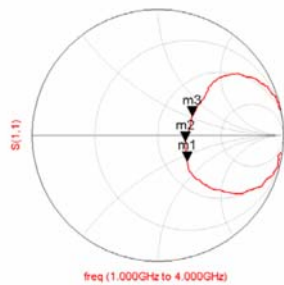
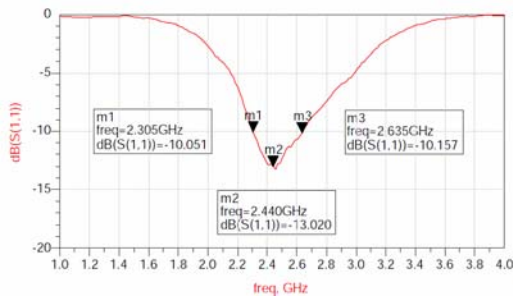
Test Board

EVB p/n:
2450AT45A100-EB1SMA

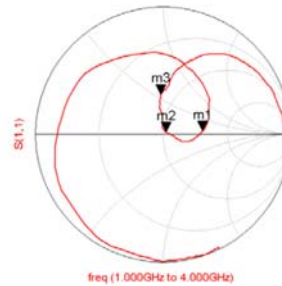
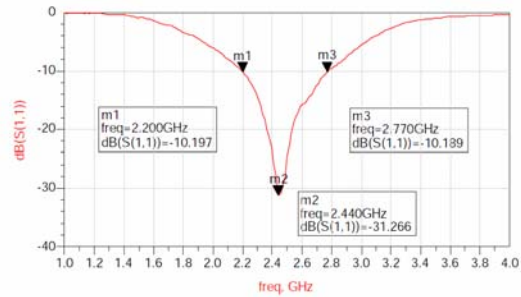


Return Loss

a) Without Matching Circuit



a) With Matching Circuit



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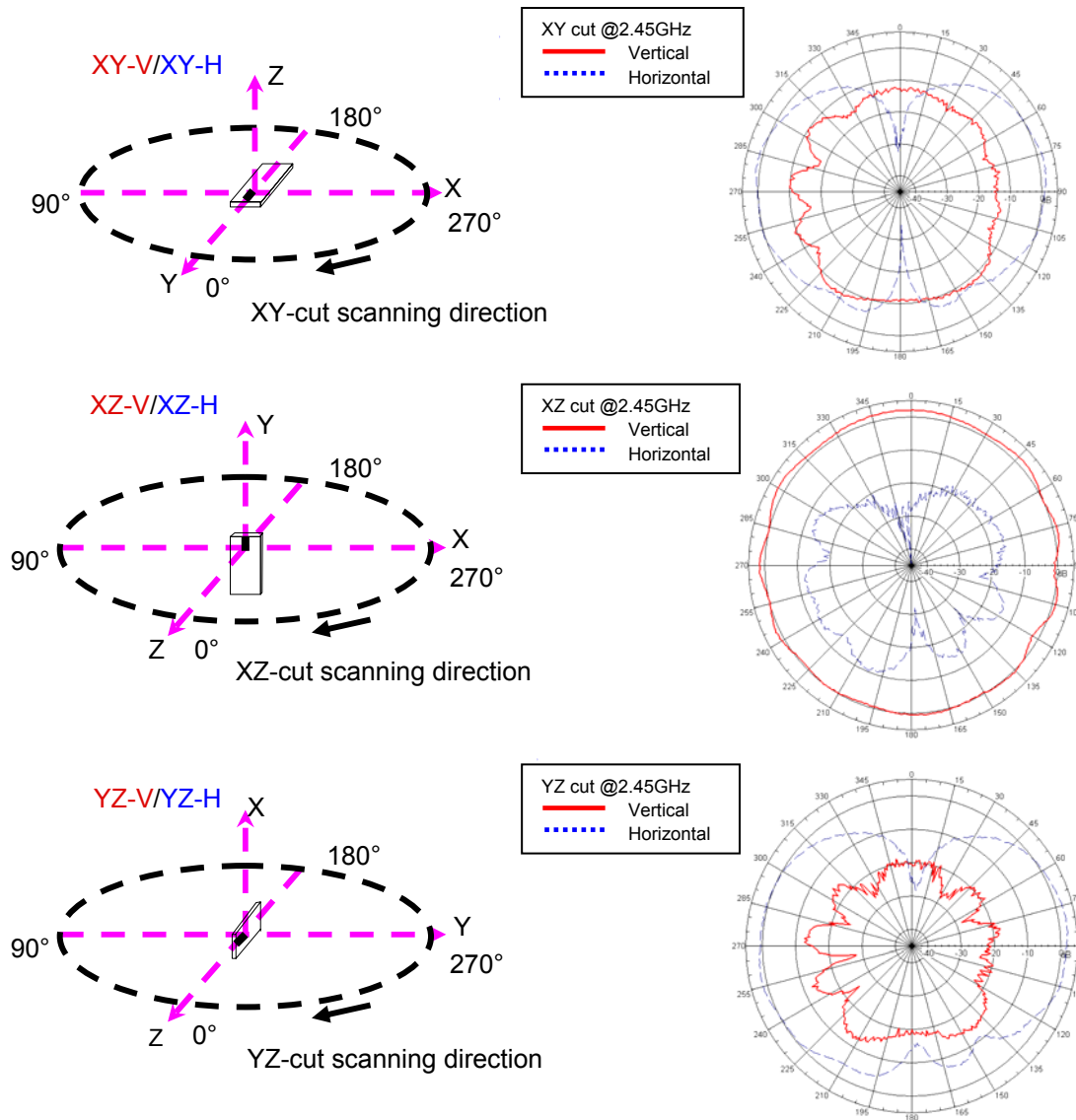
2.45 GHz High Gain Chip Antenna (Vertical Orientation)

Detail Specification: 01/05/2012

P/N 2450AT45A100

Page 3 of 10

Typical Radiation Patterns



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2.45 GHz High Gain Chip Antenna (Horizontal Orientation_1)

P/N 2450AT45A100

Detail Specification: 01/05/2012

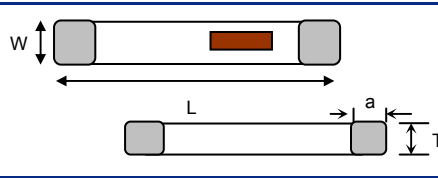
Page 4 of 10

General Specifications

Part Number	2450AT45A100
Frequency Range	2400 - 2500 Mhz
Peak Gain	1.5 dBi typ. (XZ-V)
Average Gain	0.0 dBi typ. (XZ-V)
Return Loss	9.5 dB min.

Mechanical Dimensions

	In	mm
L	0.374 ± 0.008	9.50 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.047 +.004/-0.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



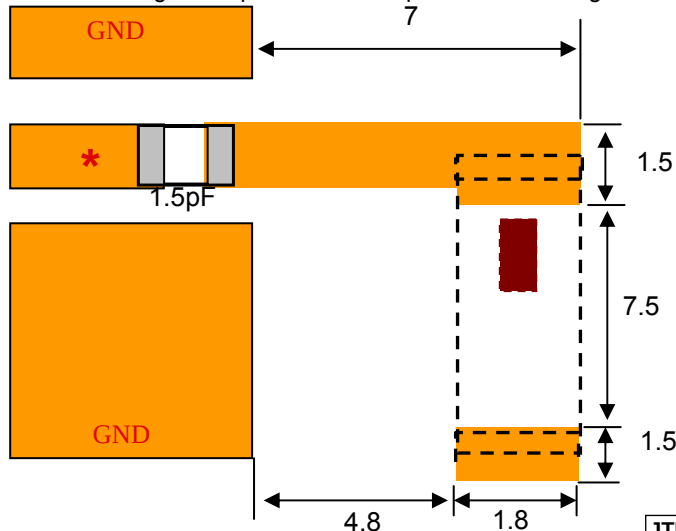
Terminal Configuration

No.	Function
1	Feeding Point
2	NC

Mounting Considerations 2

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

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



EVB p/n:
2450AT45A100-EB2SMA

Units in mm

* matching circuit and component values will depend on PCB layout, thickness, material, etc.

JTI P/N for Matching Circuit:
Cap (1.5pF): 500R07S1R5BV4T

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"High Frequency Ceramic Solutions"

2.45 GHz High Gain Chip Antenna (Horizontal Orientation_1)

P/N 2450AT45A100

Detail Specification: 01/05/2012

Page 5 of 10

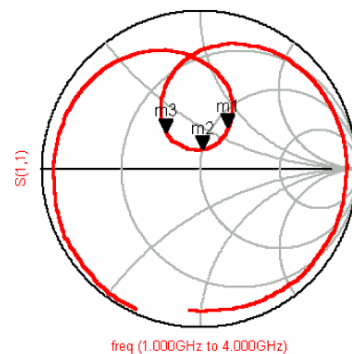
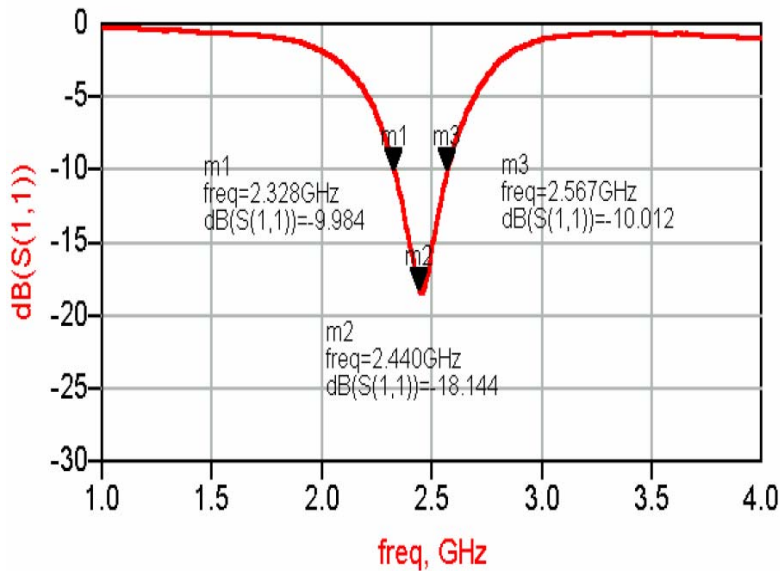
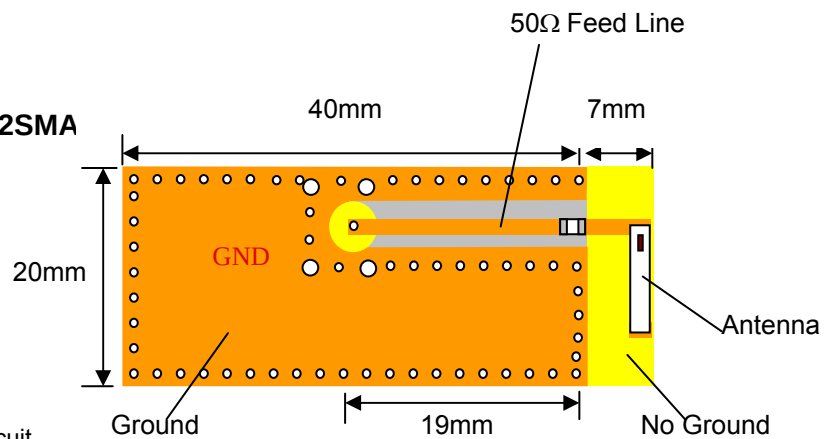
Typical Electrical Characteristics (T=25°C)

Test Board

EVB p/n:
2450AT45A100-EB2SMA

Return Loss

a) With Matching Circuit



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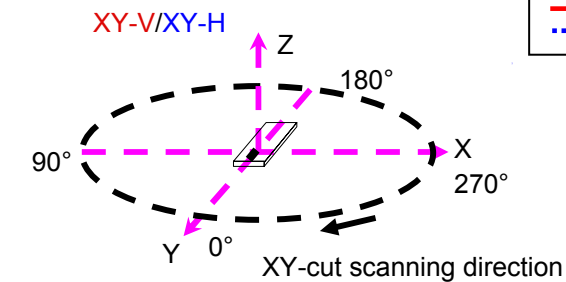
2.45 GHz High Gain Chip Antenna (Horizontal Orientation_1)

P/N 2450AT45A100

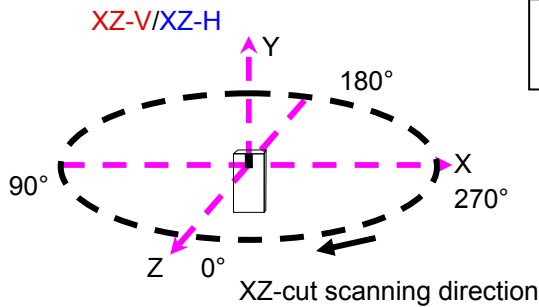
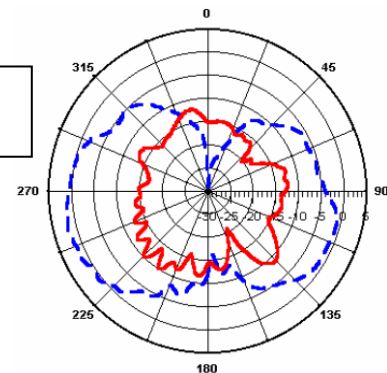
Detail Specification: 01/05/2012

Page 6 of 10

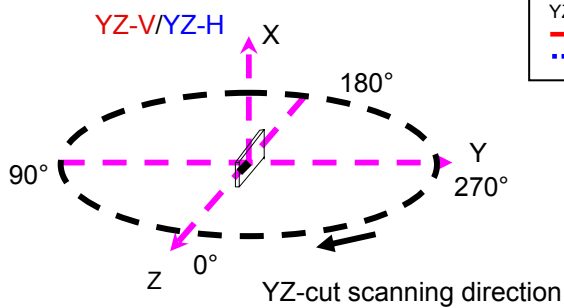
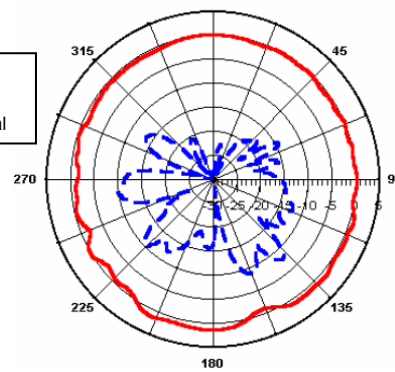
Typical Radiation Patterns



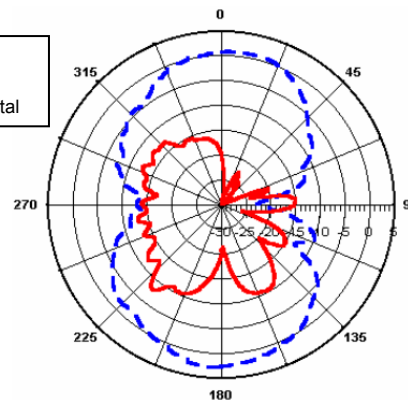
XY cut @2.45GHz
 — Vertical
 Horizontal



XZ cut @2.45GHz
 — Vertical
 Horizontal



YZ cut @2.45GHz
 — Vertical
 Horizontal



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"High Frequency Ceramic Solutions"

2.45 GHz Antenna (Horizontal Orientation_2)

P/N 2450AT45A100

Detail Specification: 01/05/2012

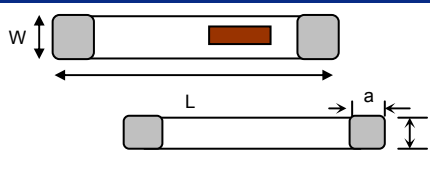
Page 7 of 10

General Specifications

Part Number	2450AT45A100
Frequency Range	2400 - 2500 Mhz
Peak Gain	1.3 dBi typ. (XZ-V)
Average Gain	0.6 dBi typ. (XZ-V)
Return Loss	9.5 dB min.

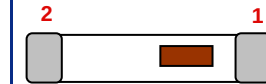
Mechanical Dimensions

	In	mm
L	0.374 ± 0.008	9.50 ± 0.20
W	0.079 ± 0.008	2.00 ± 0.20
T	0.047 +.004/-.008	1.20 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



Terminal Configuration

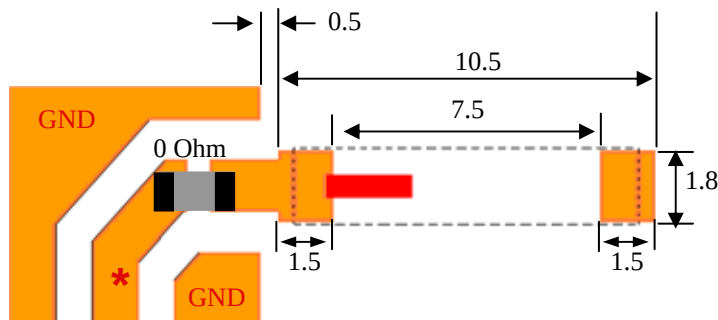
No.	Function
1	Feeding Point
2	NC



Mounting Considerations 3

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

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



Units in mm

* matching circuit and component values will depend on PCB layout, thickness, material, etc.

EVB p/n:
2450AT45A100-EB3SMA

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"High Frequency Ceramic Solutions"

2.45 GHz Antenna (Horizontal Orientation_2)

P/N 2450AT45A100

Detail Specification: 01/05/2012

Page 8 of 10

Typical Electrical Characteristics (T=25°C)

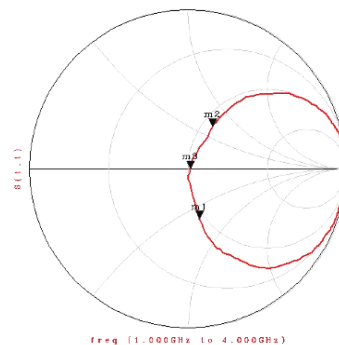
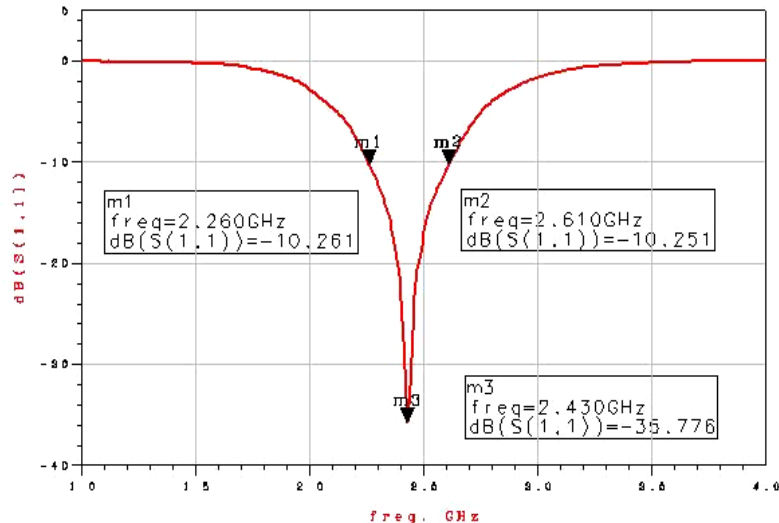
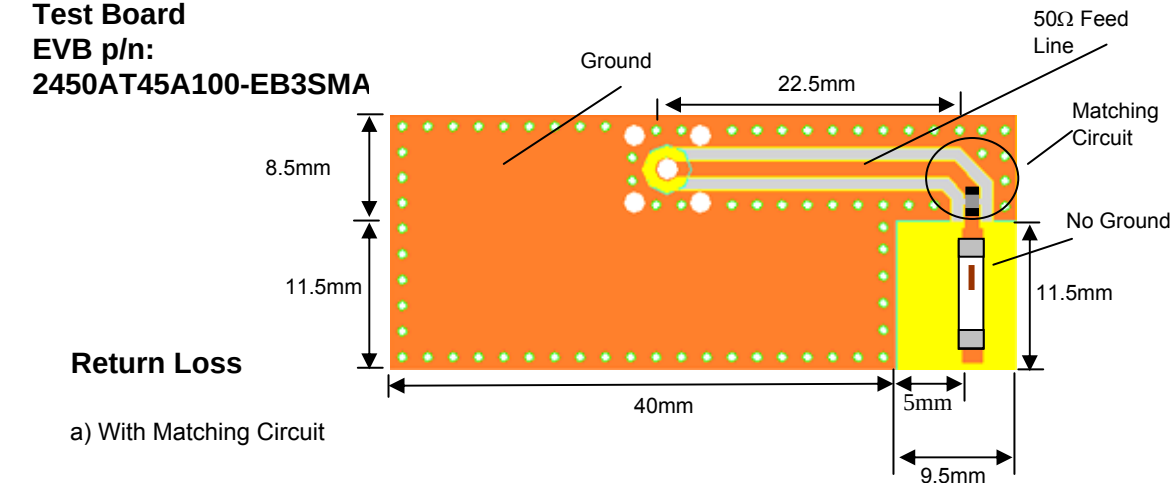
Test Board

EVB p/n:

2450AT45A100-EB3SMA

Return Loss

a) With Matching Circuit



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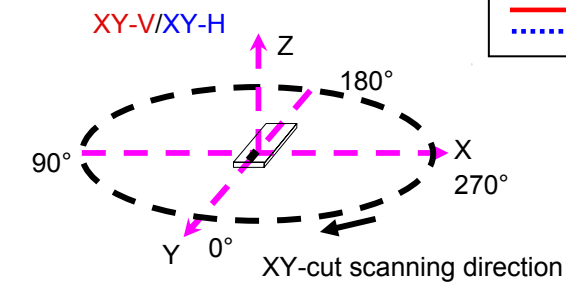
2.45 GHz Antenna (Horizontal Orientation_2)

P/N 2450AT45A100

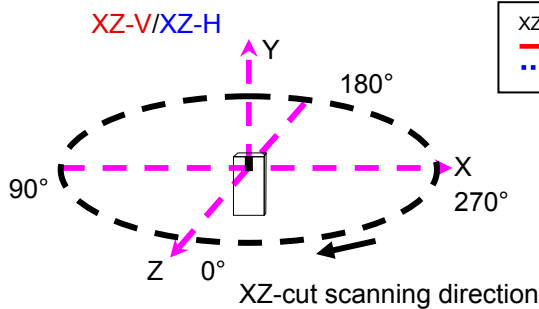
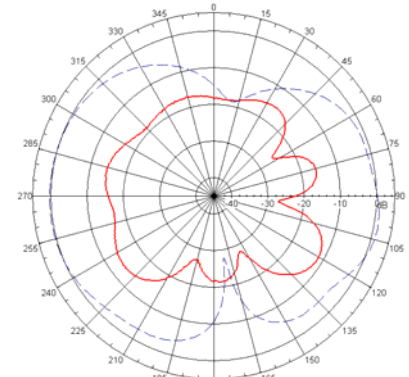
Detail Specification: 01/05/2012

Page 9 of 10

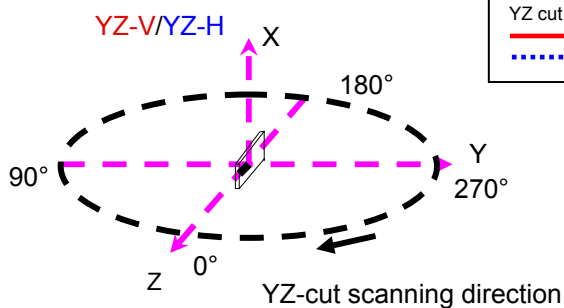
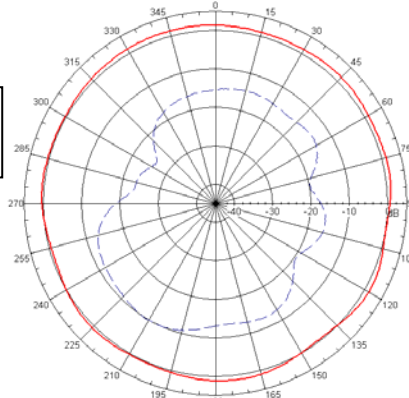
Typical Radiation Patterns



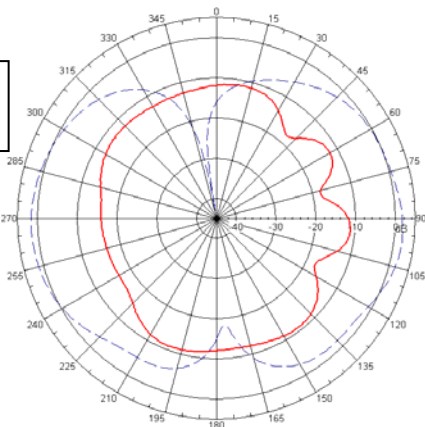
XY cut @2.45GHz
— Vertical
... Horizontal



XZ cut @2.45GHz
— Vertical
... Horizontal



YZ cut @2.45GHz
— Vertical
... Horizontal



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2.45 GHz Antenna

P/N 2450AT45A100

Detail Specification: 01/05/2012

Page 10 of 10

Ordering Information

Packaging Style*	Bulk (loose pieces)	Suffix = S	Eg. 2450AT45A100S
	T & R	Suffix = E	Eg. 2450AT45A100E
	T & R (Reverse)	Suffix = R	Eg. 2450AT45A100R
Termination Style	100% Tin	Suffix = None	Eg. 2450AT45A100(S, E, R)
	Tin / Lead	Please consult Factory	
Evaluation Boards (1-port SMA antenna test boards)	2450AT45A100-EB1SMA (Page 2)		
	2450AT45A100-EB2SMA (Page 5)		
	2450AT45A100-EB3SMA (Page 8)		

*<http://johansontechnology.com/en/integrated-passives/integrated-passive-tape-a-reel-packaging.html>

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