

# XS4 Original+ and XS4 One S

## E2131

### W40M and W80M

Antennas

Version	Date	Changes	Author
1.0	15/09/2021	First edition	M.U.
2.0	30/05/2023	Inclusion of the XS4 One S Keypad model. Electronic model W61MK. Update of control and motor circuit of W40M, W60M and W80M.	M.U.
3.0	19/03/2024	Update of control and motor circuit W40M, W60M and W80M	M.U.
4.0	22/04/2024	Update of docs as per FCC ID	A.U.

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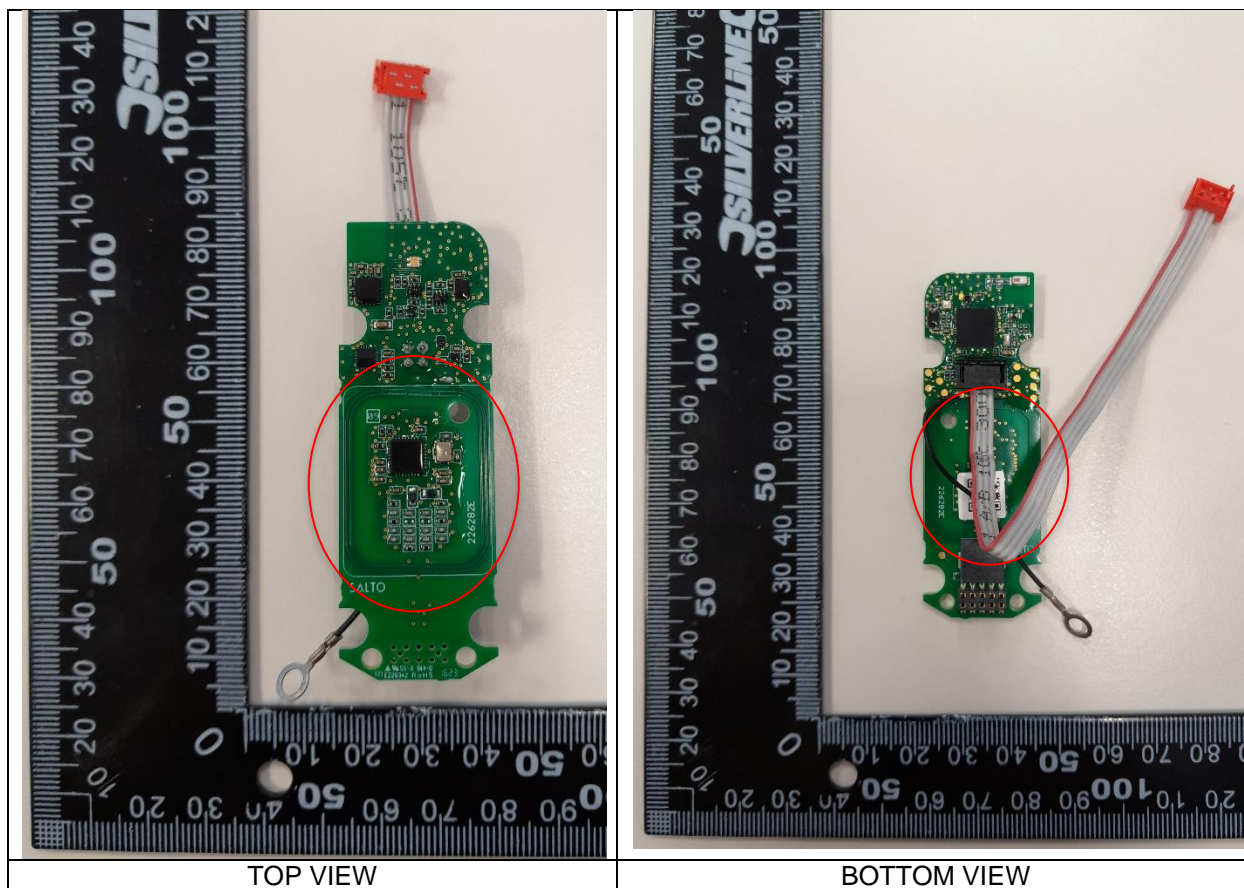
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## 1 W40M

XS4 Original+ and XS4 One S E2131		W40M
		MIFARE (1) + Bluetooth LE SoC (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N\A
	Model number	1- W40M 2- N\A
	Type	1- Integral, PCB 2- Integral, Chip
	Gain	1- N\A 2- 0.5 dBi
	Frequency of Operation	1- 13.553 - 13.567 MHz 2- 2400 - 2483.5 MHz
Channels	Number of channels	1- N\A 2- 40
	Spacing	1- N\A 2- 2 MHz
	Bandwidth	1- N\A 2- 1 MHz at 1Mbps
Type of Modulation		1- <u>ISO 14443A</u> : reader to card ASK 100%, card to reader OOK (subcarrier fc/16) & <u>ISO 15693</u> : reader to card ASK 100%, card to reader OOK (subcarrier fc/32) 2- GFSK
Declared Nominal Output Power (Max.)		1- 25 dBm 2- 6 dBm
ITU Emission Designator		1- K1D 2- F1D
Equipment Configuration for frequency Stability: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 2- 1 Mbit/s
Equipment Configuration for Field Strenght Measurement: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 2- 1 Mbit/s

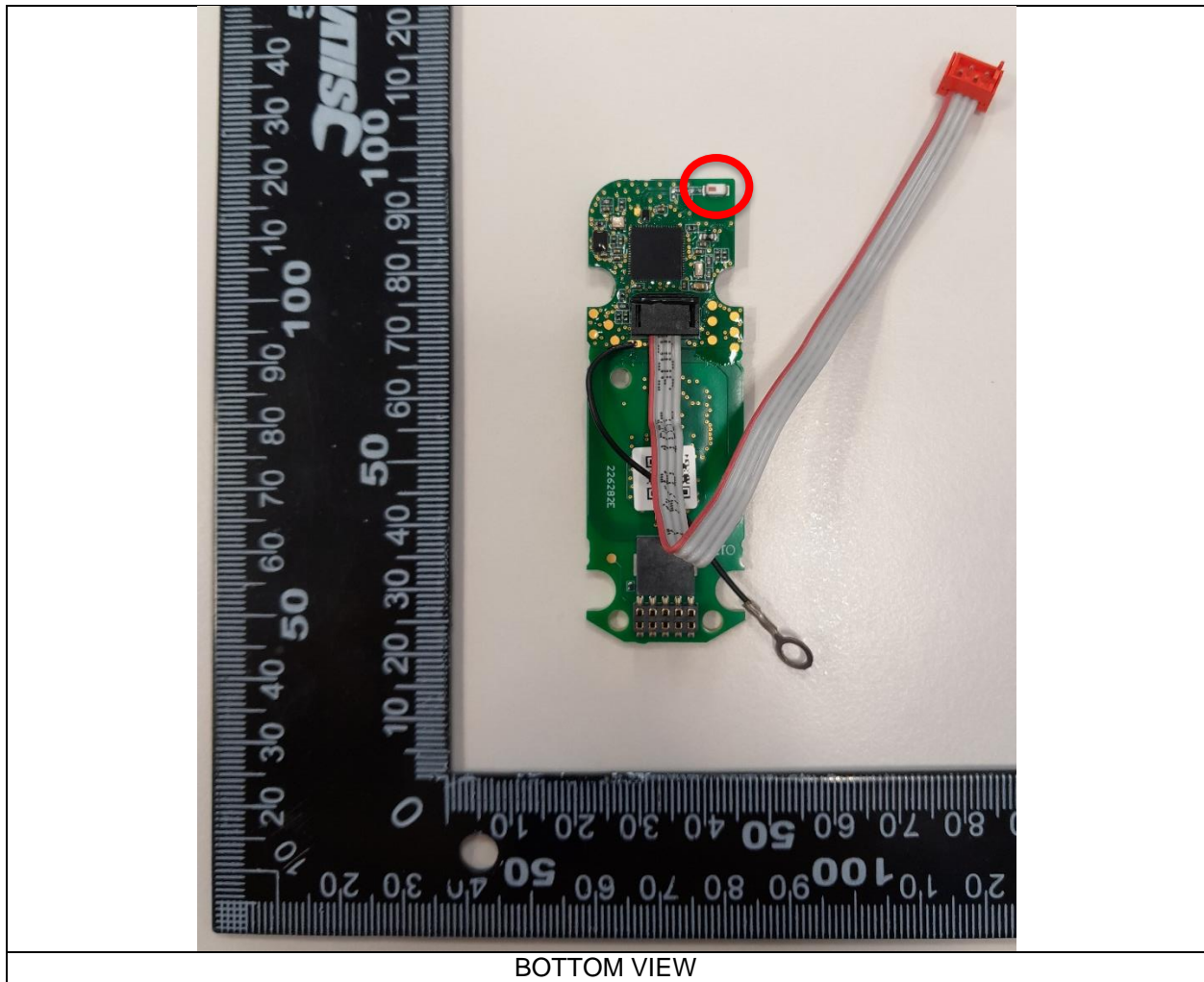
## RFID Antenna

The RFID antenna was designed by Salto Systems, S.L. at Arkotz 9, Pol. Lanbarren 20180 Oiartzun (Gipuzkoa), Spain. The antenna model is W40M and it is located on the control circuit, 226282. The dimensions of the circuit and the antenna are shown in the following pictures.



## Bluetooth LE Antenna

The Bluetooth LE antenna is the 2450AT18B100 model form Johanson Technology. The antenna is located on the bottom side of the control circuit, 226282. The following image shows the location of the antenna on the control circuit.



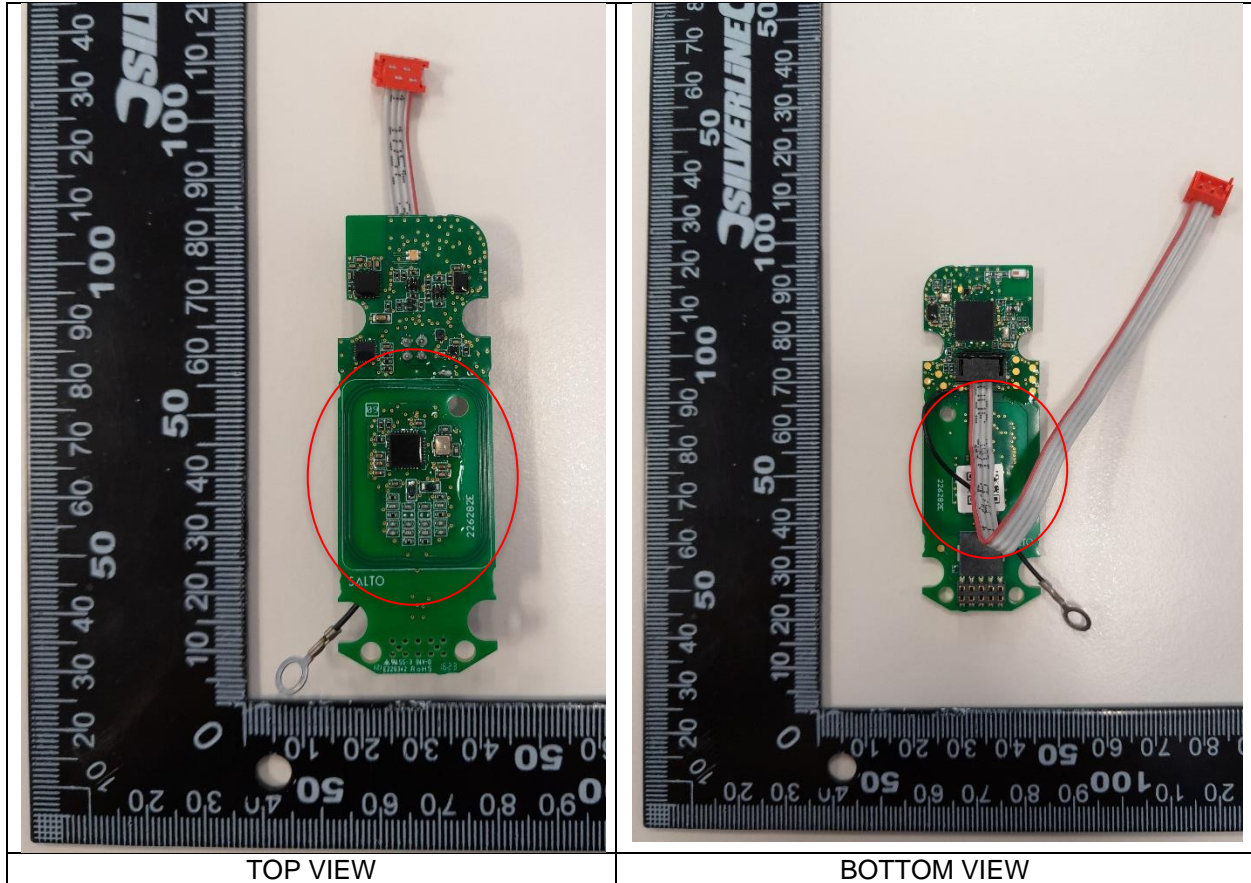
The remaining technical information of the antenna is described in the data sheet attached in Annex I.

## 2 W80M

XS4 Original+ and XS4 One S E2131		W80M
		MIFARE (1) + Bluetooth LE SoC (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N\A
	Model number	1- W40M 2- N\A
	Type	1- Integral, PCB 2- Integral, Chip
	Gain	1- N\A 2- 0.5 dBi
	Frequency of Operation	1- 13.553 - 13.567 MHz 2- 2400 - 2483.5 MHz
Channels	Number of channels	1- N\A 2- 40
	Spacing	1- N\A 2- 2 MHz
	Bandwidth	1- N\A 2- 1 MHz at 1Mbps
Type of Modulation		1- <u>ISO 14443A</u> : reader to card ASK 100%, card to reader OOK (subcarrier $f_c/16$ ) & <u>ISO 15693</u> : reader to card ASK 100%, card to reader OOK (subcarrier $f_c/32$ ) 2- GFSK
Declared Nominal Output Power (Max.)		1- 25 dBm 2- 6 dBm
ITU Emission Designator		1- K1D 2- F1D
Equipment Configuration for frequency Stability: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 2- 1 Mbit/s
Equipment Configuration for Field Strenght Measurement: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 2- 1 Mbit/s

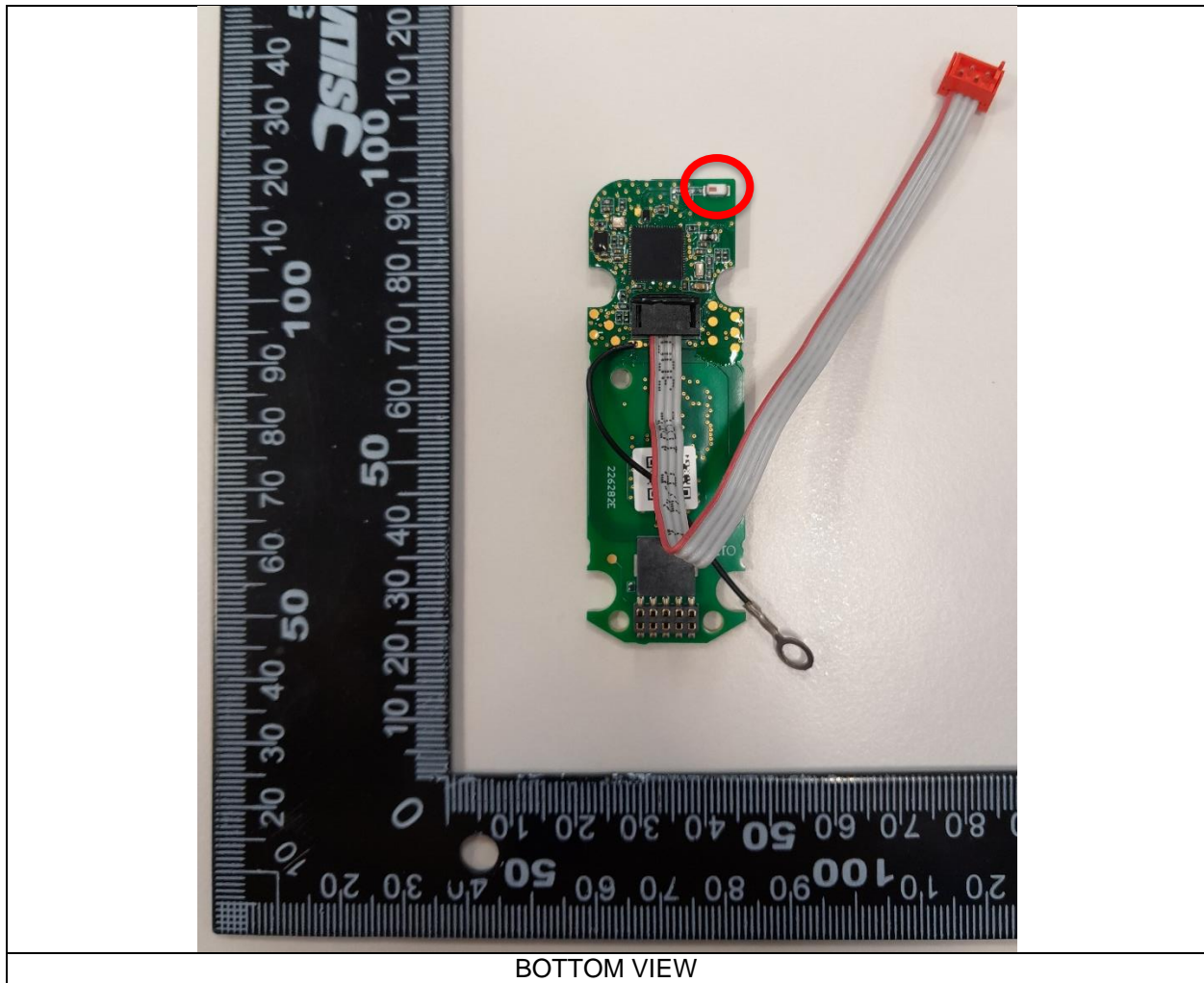
## RFID Antenna

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## Bluetooth LE Antenna

The Bluetooth LE antenna is the 2450AT18B100 model form Johanson Technology. The antenna is located on the bottom side of the control circuit, 226282. The following image shows the location of the antenna on the control circuit.



The remaining technical information of the antenna is described in the data sheet attached in Annex I.



# Annex I

## "High Frequency Ceramic Solutions"

**2450 MHz Antenna** **P/N 2450AT18B100**  
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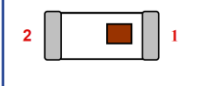
**General Specifications**

Part Number	2450AT18B100
Frequency Range	2400 - 2500 Mhz
Peak Gain	0.5 dBi typ. (XZ-V)
Average Gain	-0.5 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	3,000

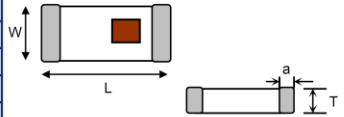
P/N	Packaging Style	Bulk	Suffix = S	Eg. 2450AT18B100S
	Termination Style	T & R	Suffix = E	Eg. 2450AT18B100E
Suffix	Termination Style	100% Tin	Suffix = None	Eg. 2450AT18B100(E or S)
	Termination Style	Tin / Lead	Please consult Factory	

Terminal Configuration	
No.	Function
1	Feeding Point
2	NC



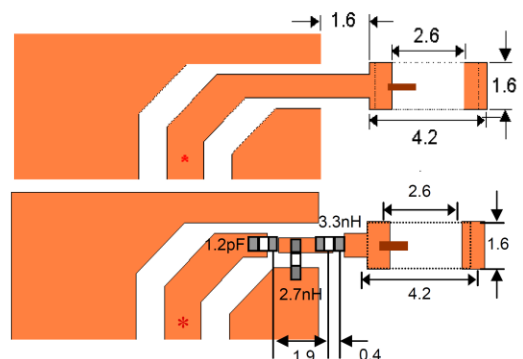
**Mechanical Dimensions**

	In	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.063 ± 0.008	1.60 ± 0.20
T	0.051 +0.004/-0.008	1.30 +0.1/-0.2
a	0.020 ± 0.012	0.50 ± 0.30



**Mounting Considerations**

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 Circuits**

**b) With Matching Circuits**

JTI P/N for Matching Circuit:  
 Cap (1.2pF): 500R07S1R2BV4T  
 Inductor (2.7nH): L-07C2N7SV6T  
 Inductor (3.3nH): L-07C3N3SV6T

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# "High Frequency Ceramic Solutions"

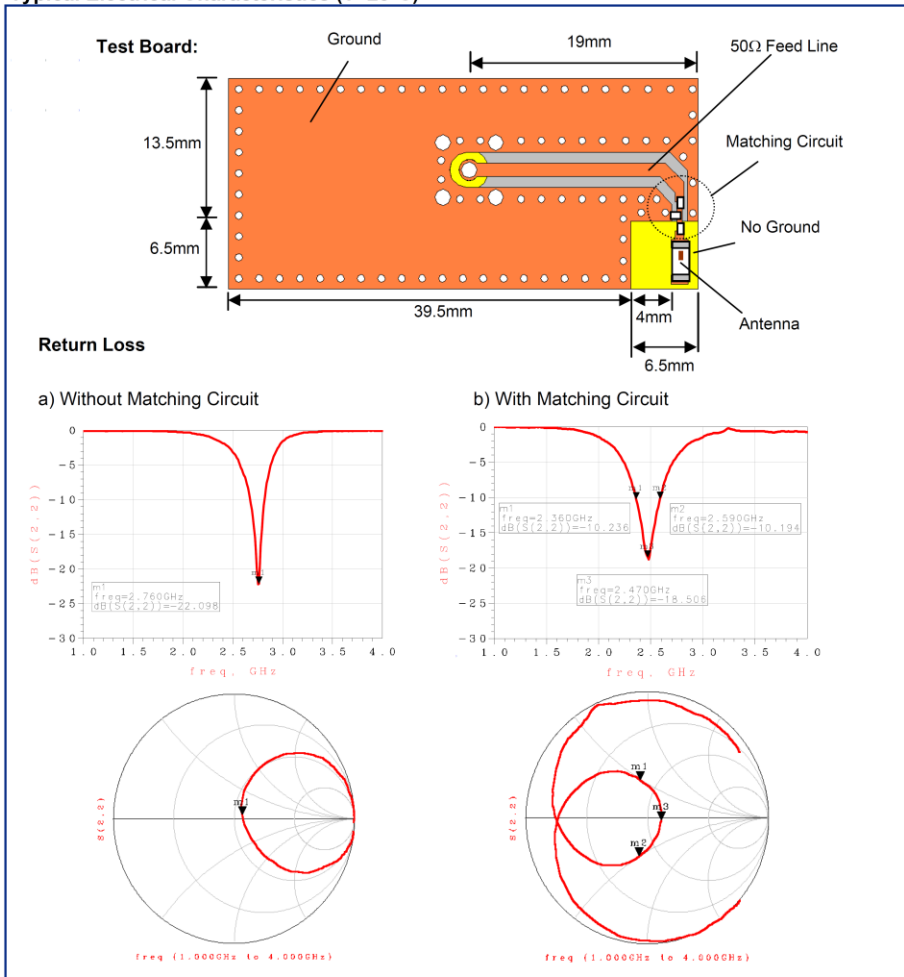
**2450 MHz Antenna**

**P/N 2450AT18B100**

Detail Specification: 08/10/09

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



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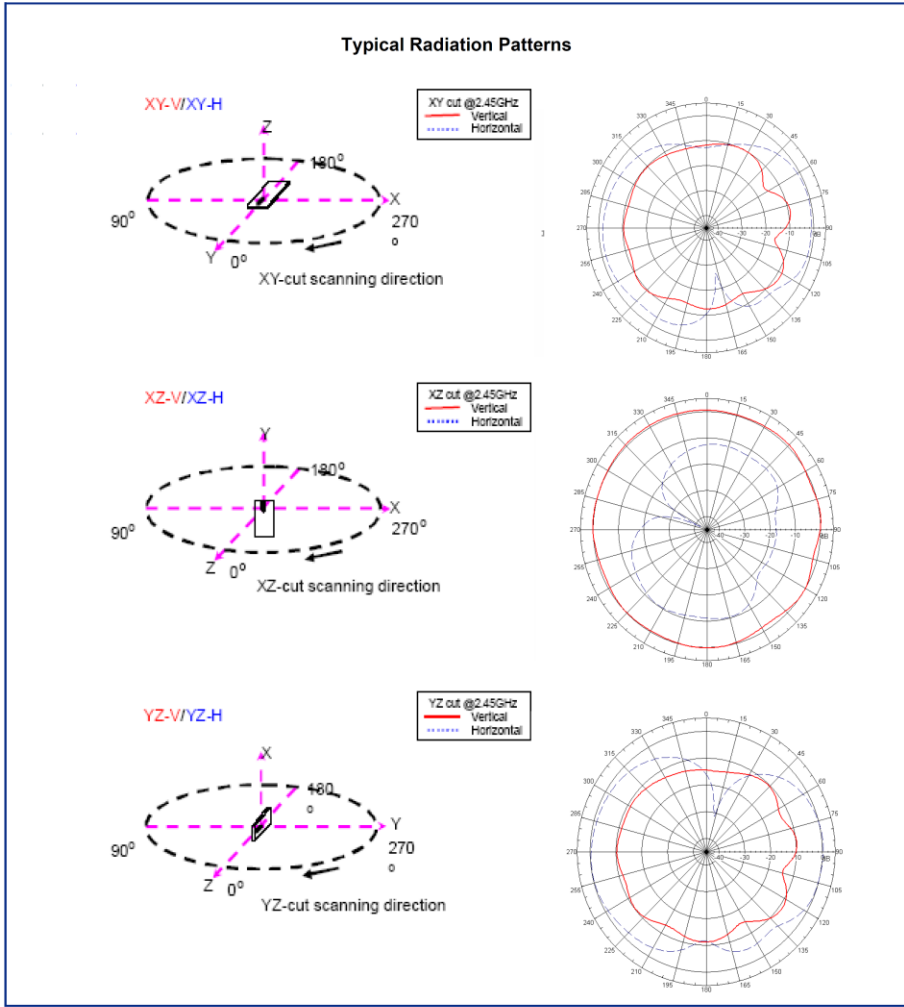
## "High Frequency Ceramic Solutions"

**2450 MHz Antenna**

**P/N 2450AT18B100**

Detail Specification: 08/10/09

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