

# XS4 Original+ and XS4 One S

## E2131

### W41M, and W81M

Antennas

Version	Date	Changes	Author
1.0	20/12/2022	First edition	M.U.

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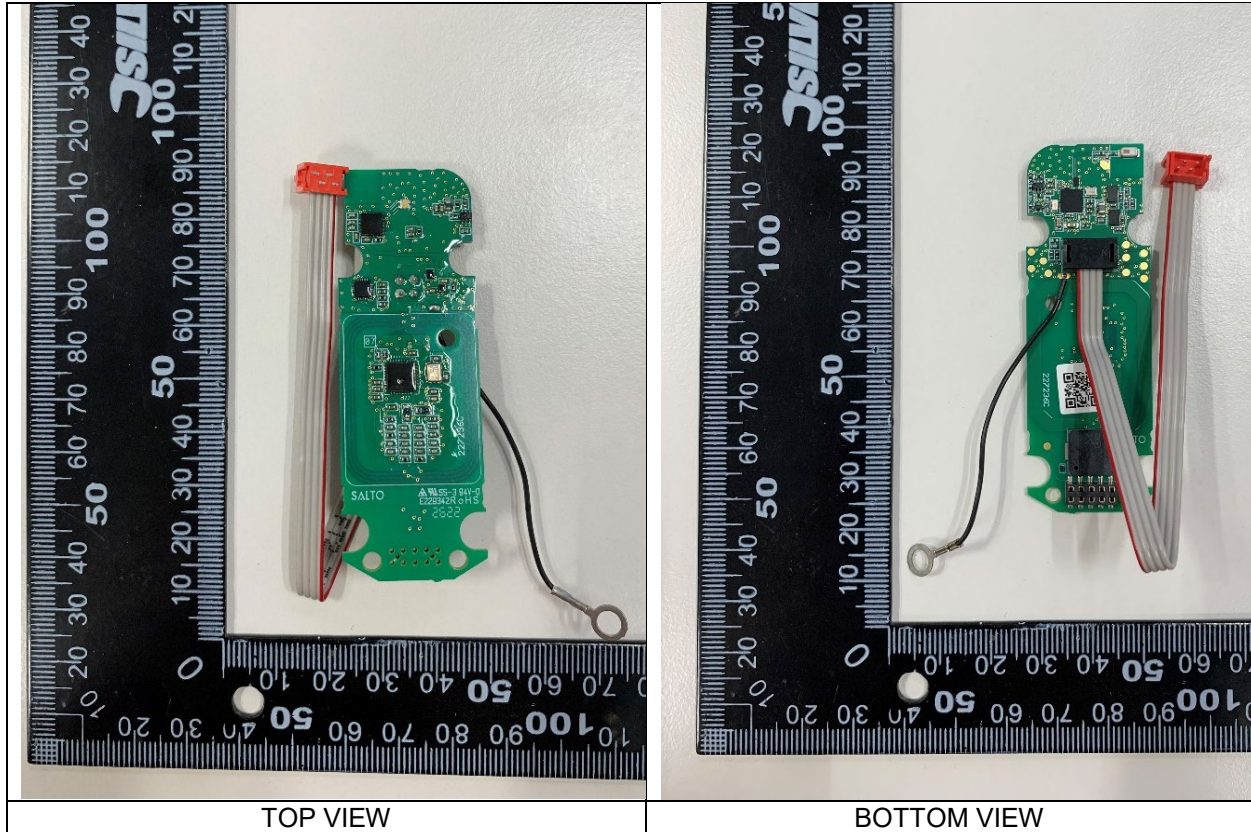
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## 1 W41M

XS4 Original+ and XS4 One S E2131		W41M
		MIFARE (1) + Bluetooth LE SoC (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N/A
	Model number	1- W41M 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- 2 MHz
Type of Modulation		1- ASK 100%, OOK (subcarrier fc/16) & ASK 10% - 30%, OOK (subcarrier fc/32) 2- GFSK
Declared Nominal Output Power (Max.)		1- 22 dBm 2- 6 dBm
ITU Emission Designator		1- K1D 2- F1D
Equipment Configuration for frequency Stability: Data Rate		1- 106 Kbit/s, 26.48 Kbit/s 2- 1 Mbit/s
Equipment Configuration for Field Strenght Measurement: Data Rate		1- 106 Kbit/s, 26.48 Kbit/s 2- 1 Mbit/s

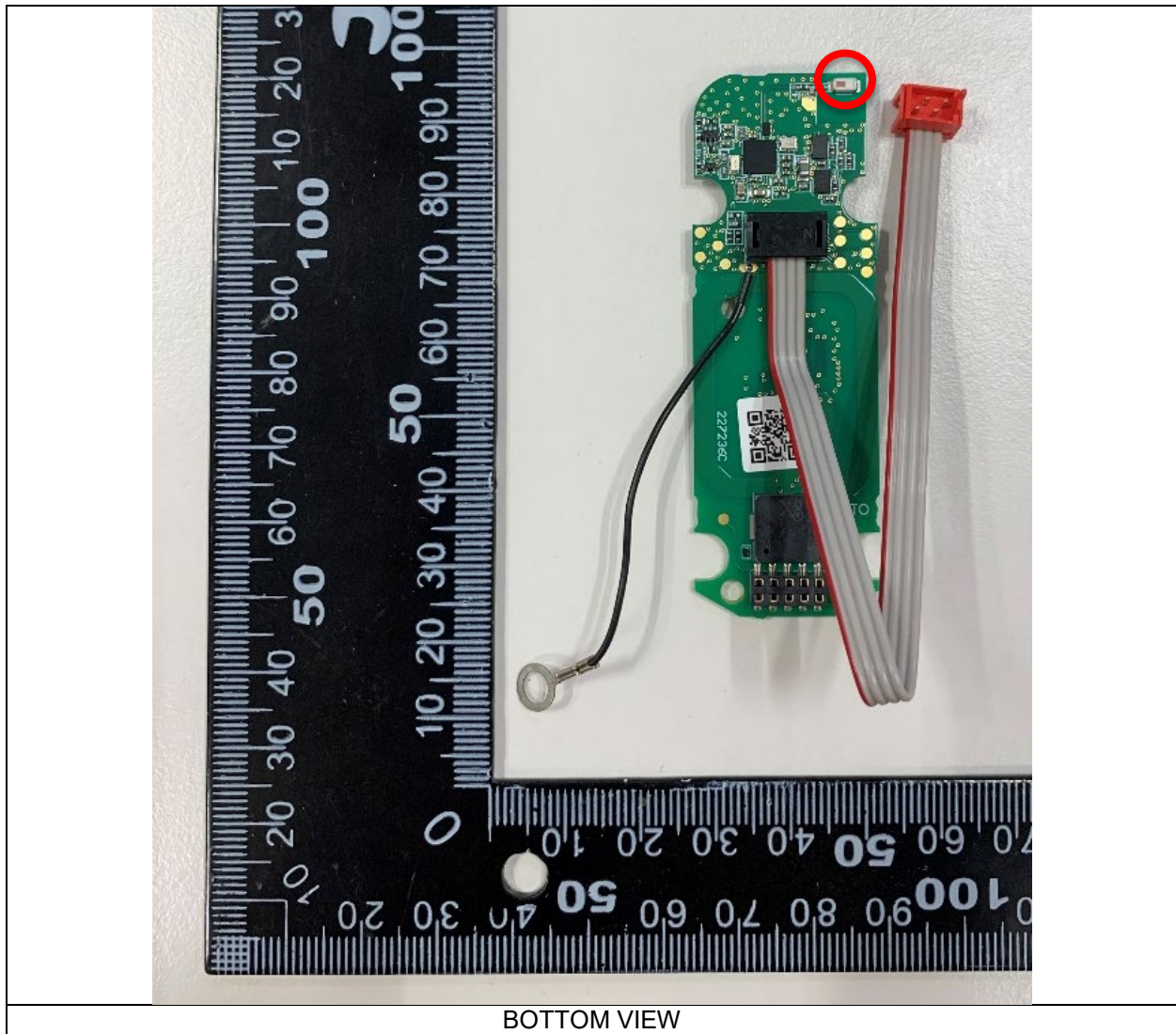
## RFID Antenna

The RFID antenna was designed by Salto Systems, S.L. at Arkotz 9, Pol. Lanbarren 20180 Oiartzun (Gipuzkoa), Spain. The antenna model is W41M and it is located on the control circuit, 227236. 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, 227236. The following image shows the location of the antenna on the control circuit.



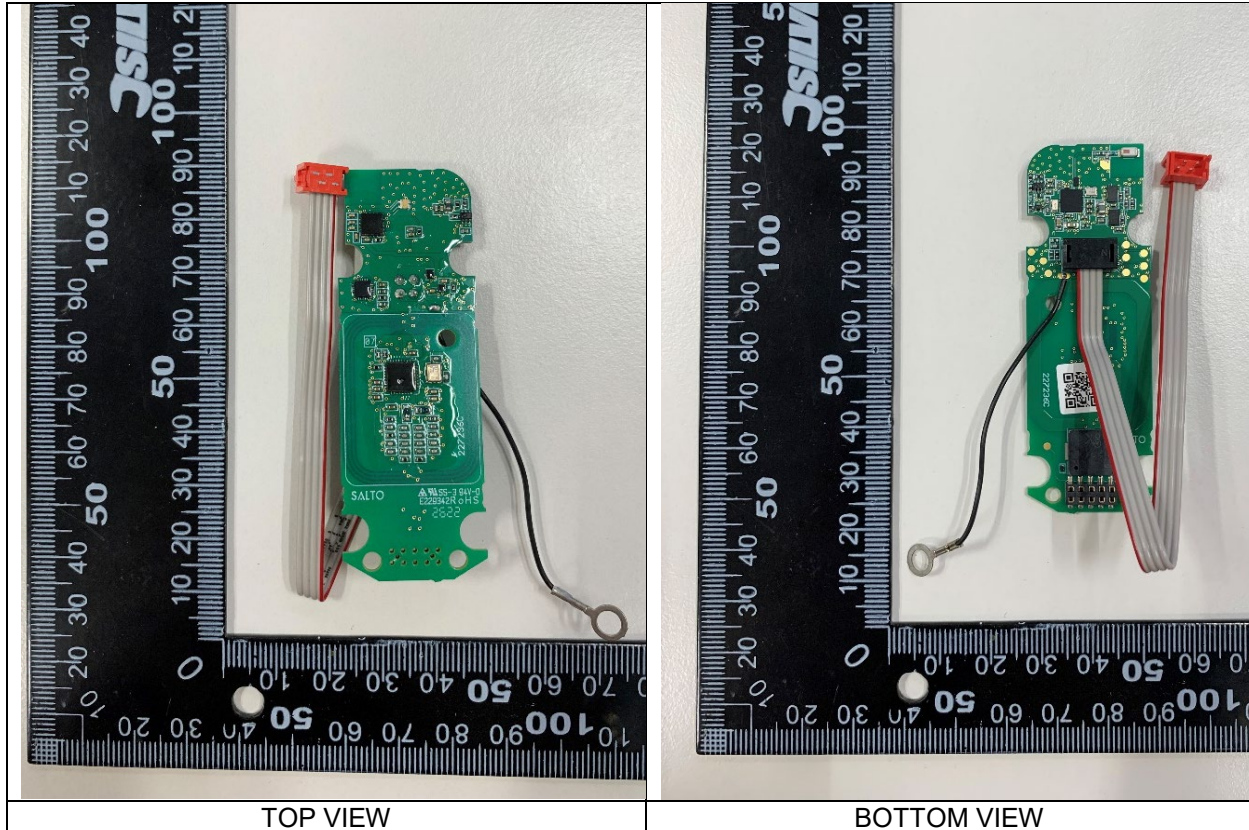
The remaining technical information of the antenna is described in the data sheet attached in Annex I.

## 2 W81M

XS4 Original+ and XS4 One S E2131		W81M
		MIFARE (1) + Bluetooth LE SoC (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N/A
	Model number	1- W41M 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- 2 MHz
Type of Modulation		1- ASK 100%, OOK (subcarrier fc/16) & ASK 10% - 30%, OOK (subcarrier fc/32) 2- GFSK
Declared Nominal Output Power (Max.)		1- 22 dBm 2- 6 dBm
ITU Emission Designator		1- K1D 2- F1D
Equipment Configuration for frequency Stability: Data Rate		1- 106 Kbit/s, 26.48 Kbit/s 2- 1 Mbit/s
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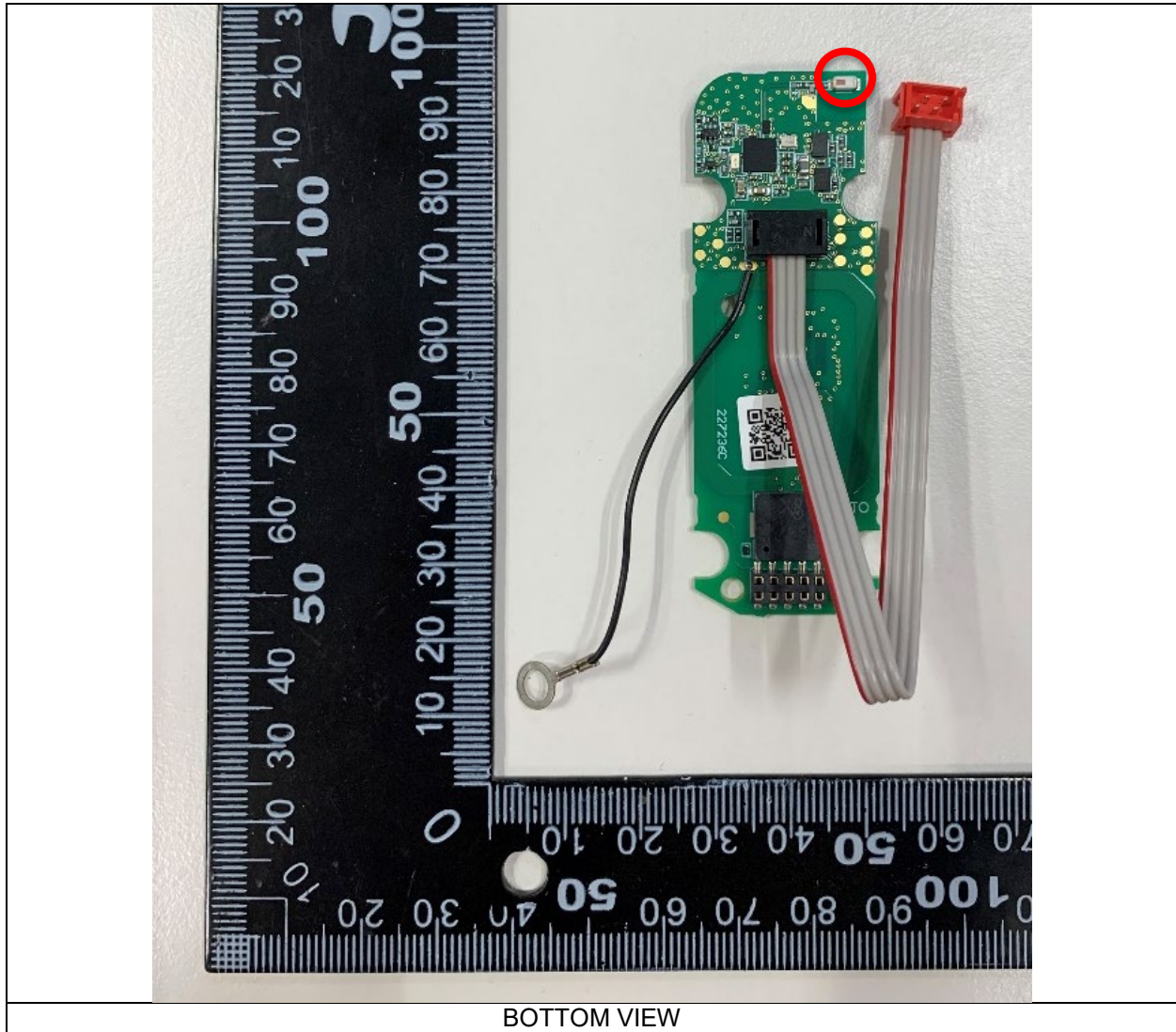
### RFID Antenna

The RFID antenna was designed by Salto Systems, S.L. at Arkotz 9, Pol. Lanbarren 20180 Oiartzun (Gipuzkoa), Spain. The antenna model is W41M and it is located on the control circuit, 227236. 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, 227236. 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**  
 Detail Specification: 08/10/09 Page 1 of 3

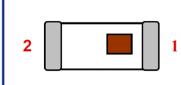
**General Specifications**

<b>Part Number</b>	2450AT18B100	<b>Input Power</b>	3W max.
<b>Frequency Range</b>	2400 - 2500 Mhz	<b>Impedance</b>	50 Ω
<b>Peak Gain</b>	0.5 dBi typ. (XZ-V)	<b>Operating Temperature</b>	-40 to +85°C
<b>Average Gain</b>	-0.5 dBi typ. (XZ-V)	<b>Reel Quantity</b>	3,000
<b>Return Loss</b>	9.5 dB min.		

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

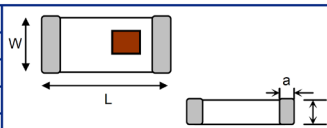
**Terminal Configuration**

No.	Function
1	Feeding Point
2	NC



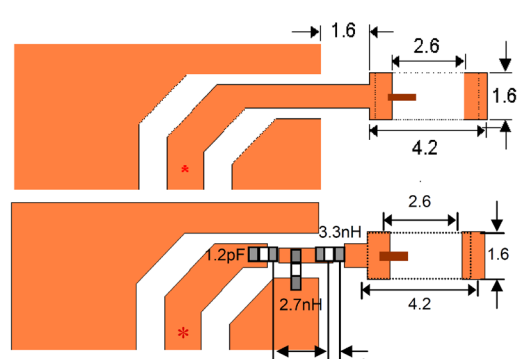
**Mechanical Dimensions**

	In	mm
<b>L</b>	0.126 ± 0.008	3.20 ± 0.20
<b>W</b>	0.063 ± 0.008	1.60 ± 0.20
<b>T</b>	0.051 +0.004/-0.008	1.30 +0.1/-0.2
<b>a</b>	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.



**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"

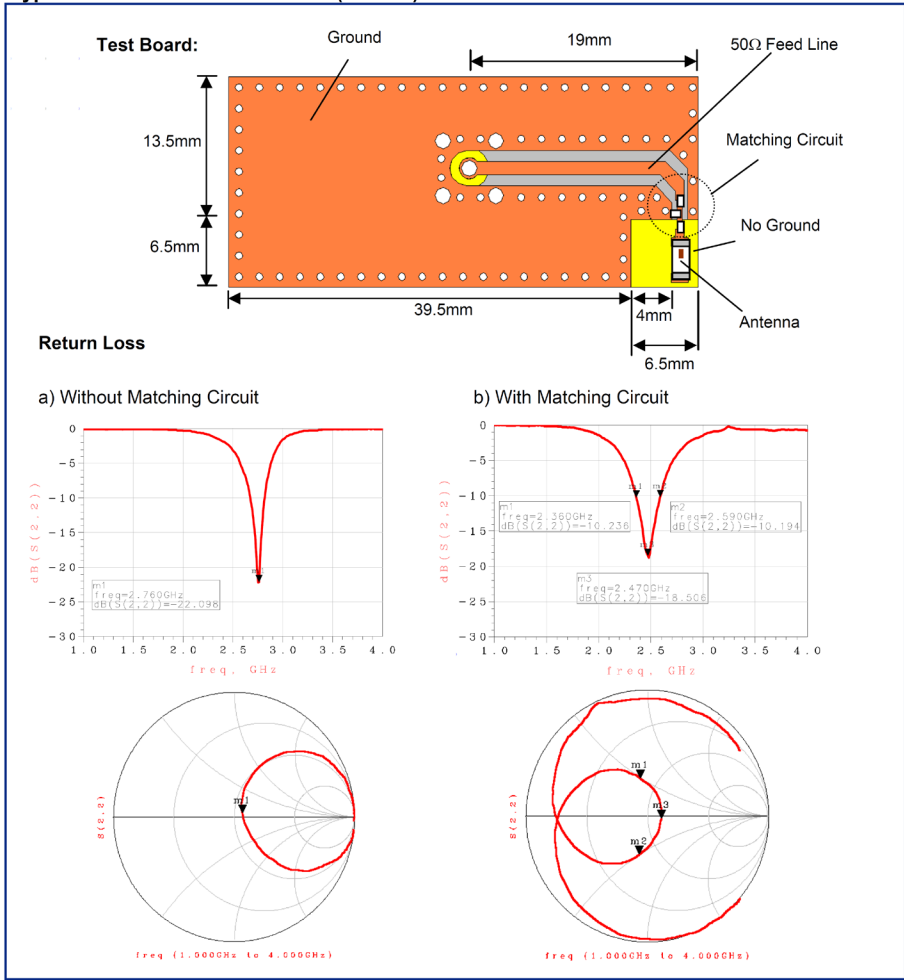
**2450 MHz Antenna**

**P/N 2450AT18B100**

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



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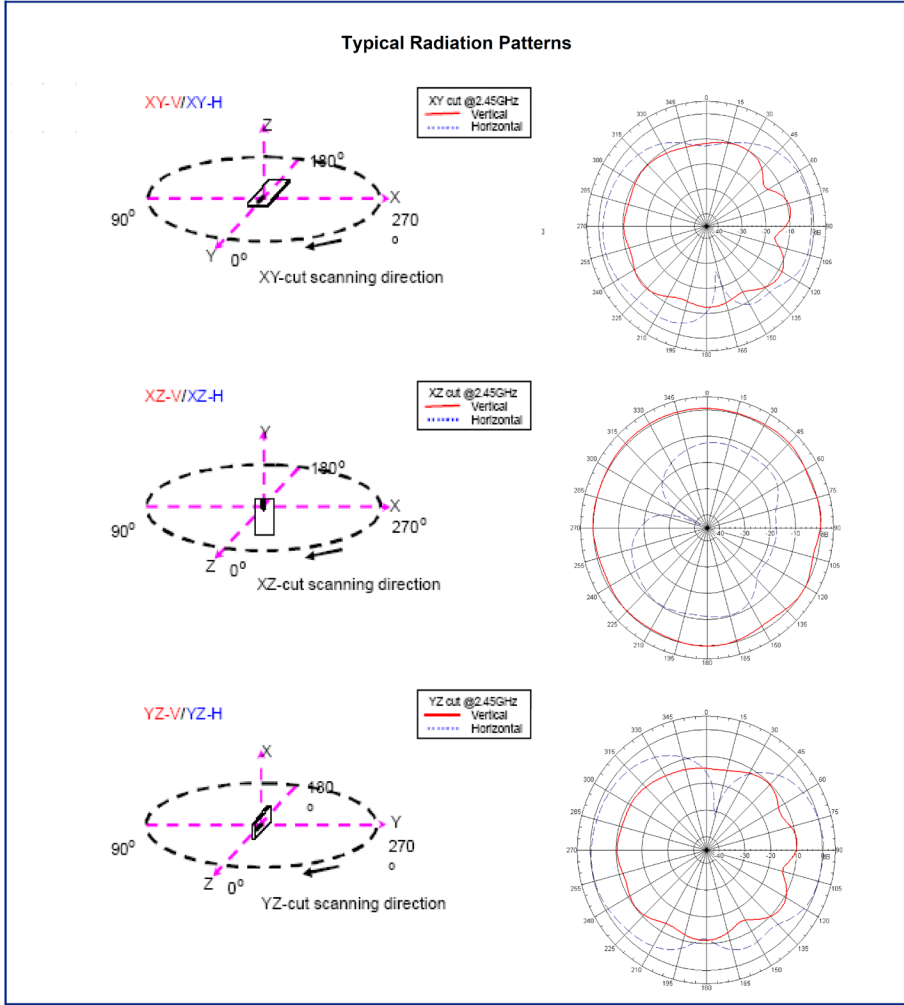
## "High Frequency Ceramic Solutions"

**2450 MHz Antenna**

**P/N 2450AT18B100**

Detail Specification: 08/10/09

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