XS4 One+

E1722

EM17

Antennas

Version	Date	Changes	Author
1.0	23/09/2022	First edition	M.U.

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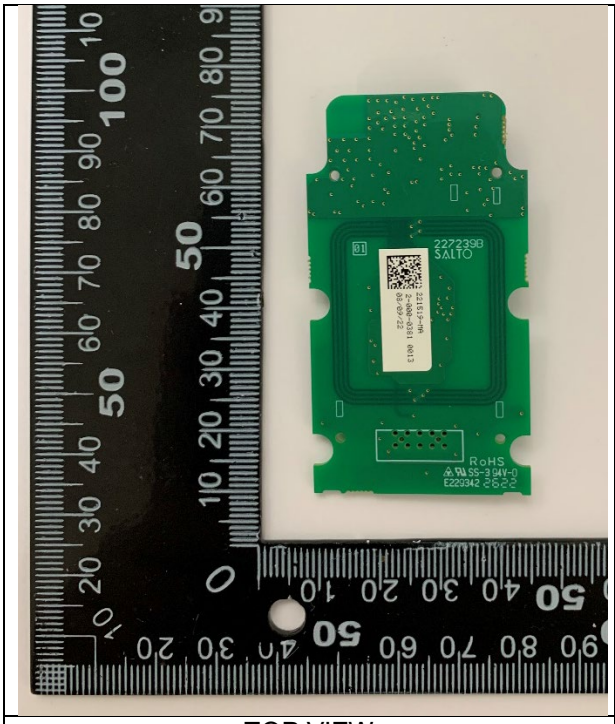
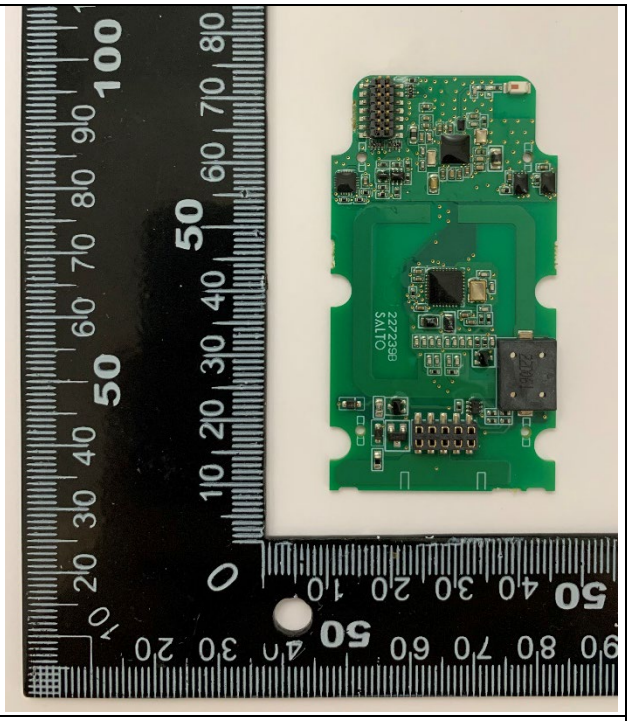
1 EM17

XS4 One+ E1722		EM17 MIFARE (1) + Bluetooth LE SoC (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N/A
	Model number	1- EM17 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
	Bandwith	1- N/A 2- 2 MHz
Type of Modulation		1- ASK 100%, OOK (subcarrier fc/16) 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

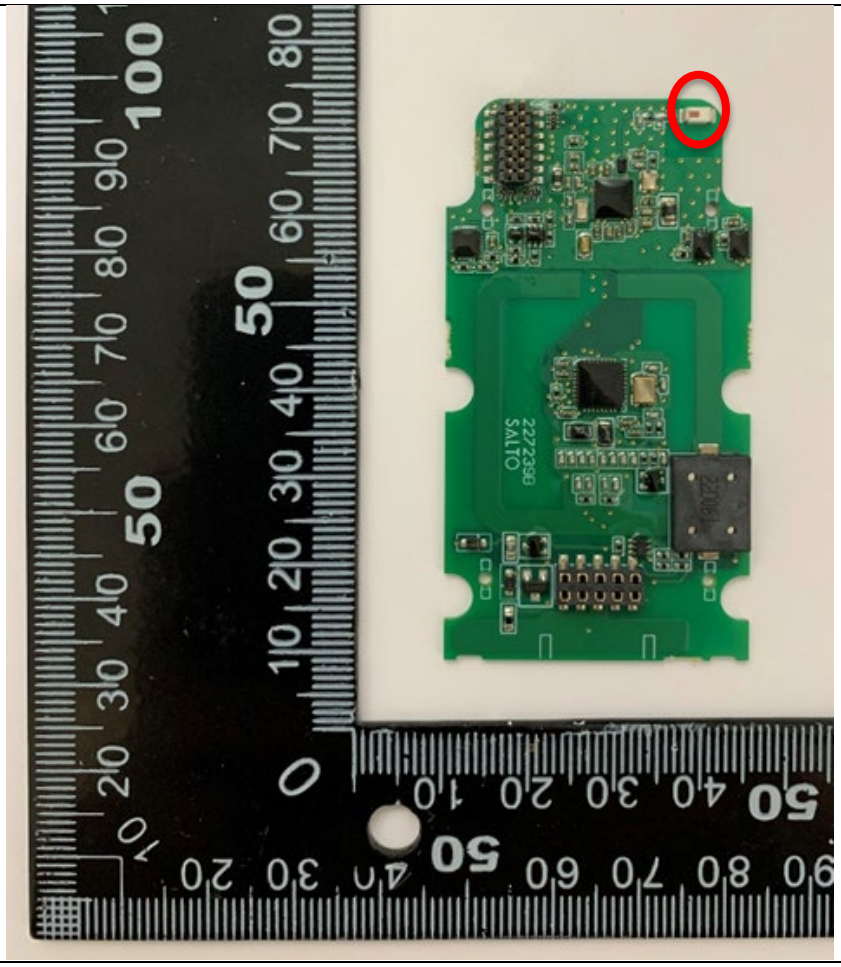
RFID Antenna

The RFID antenna was designed by Salto Systems, S.L. at Arkotz 9, Pol. Lanbarren 20180 Oiartzun (Gipuzkoa), Spain. The antenna model is EM17 and it is located on the reader circuit, 227239. The dimensions of the circuit and the antenna are shown in the following pictures.

	
TOP VIEW	BOTTOM VIEW

Bluetooth LE Antenna

The Bluetooth LE antenna is the 2450AT18B100 model form Johanson Technology. The antenna is located on the top right side of the reader circuit, 227236. The following image shows the location of the antenna on the control circuit.



BOTTOM VIEW

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

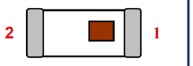
Part Number	2450AT18B100
Frequency Range	2400 - 2500 Mhz
Peak Gain	0.5 dBi typ. (XZ-V)
Average Gain	-0.5 dBi typ. (XZ-V)
Return Loss	9.5 dB min.

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

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

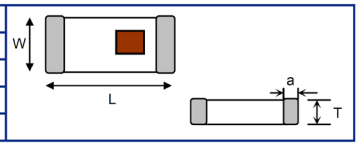
Terminal Configuration

No.	Function
1	Feeding Point
2	NC



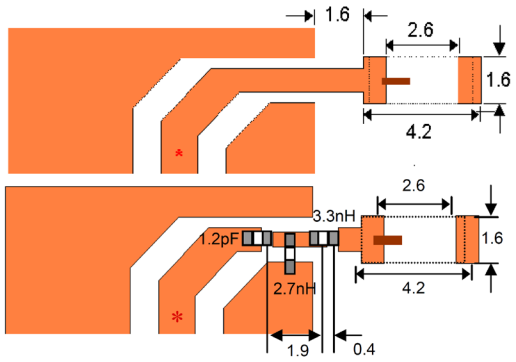
Mechanical Dimensions

	In	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.063 ± 0.008	1.60 ± 0.20
T	0.051 +.004/-.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

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

JOHANSON TECHNOLOGY

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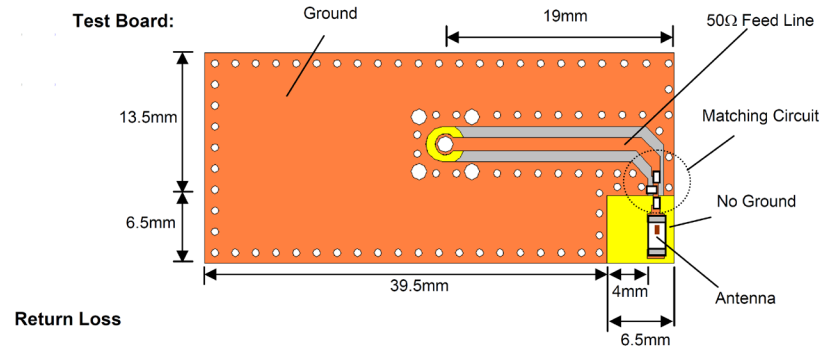
"High Frequency Ceramic Solutions"

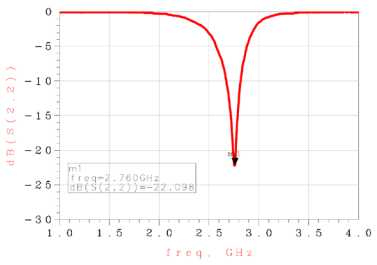
2450 MHz Antenna **P/N 2450AT18B100**
Detail Specification: 08/10/09 Page 2 of 3

Typical Electrical Characteristics (T=25°C)

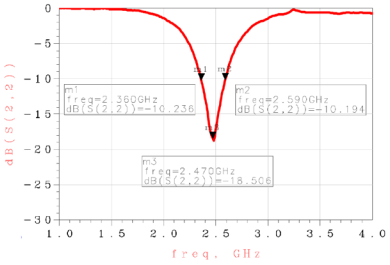


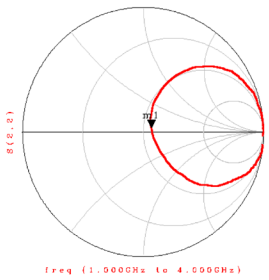
Return Loss

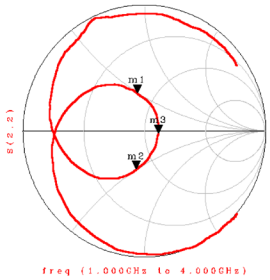
a) Without Matching Circuit



b) With Matching Circuit







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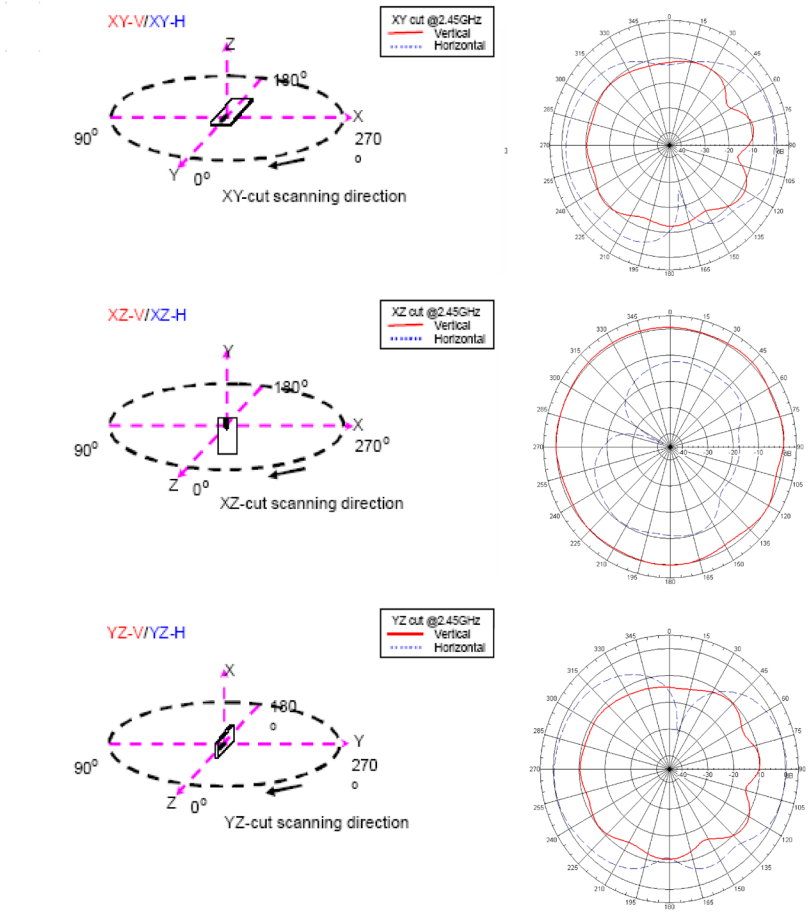
Typical Radiation Patterns



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