

XS4 One+

E1722

EM17

Antennas

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

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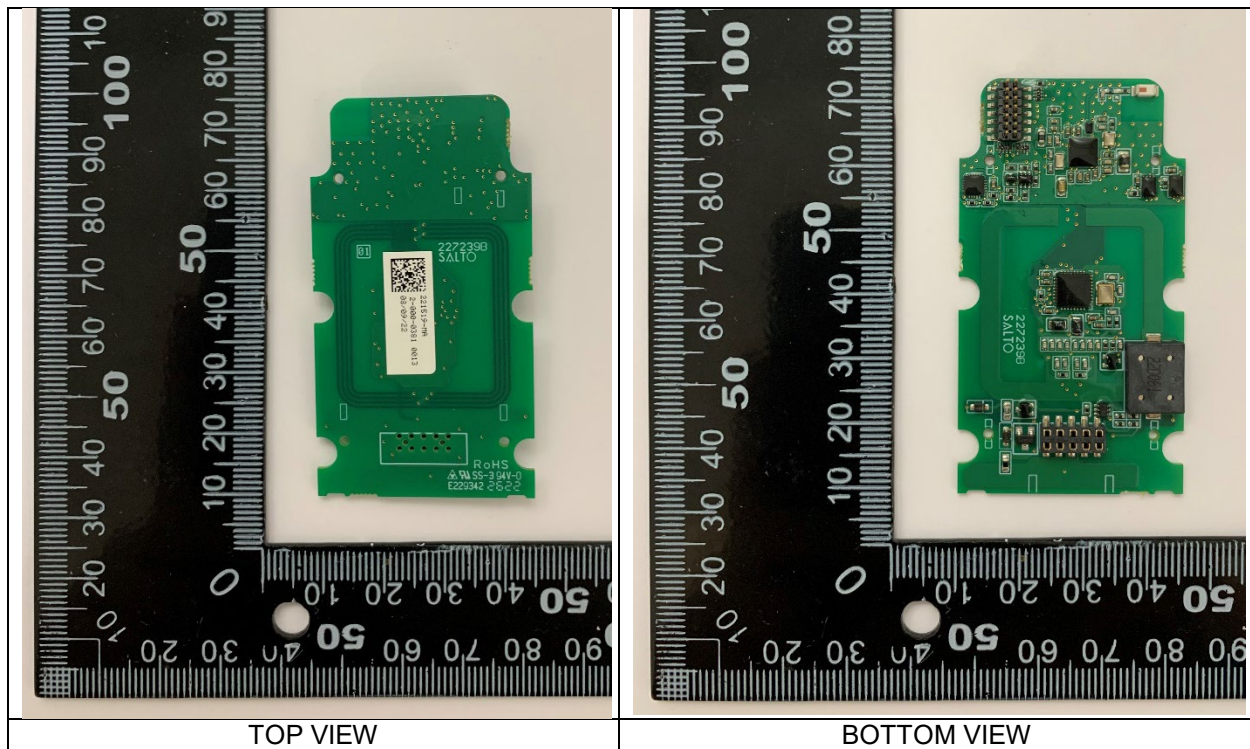
Annex I 6

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
	Bandwidth	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

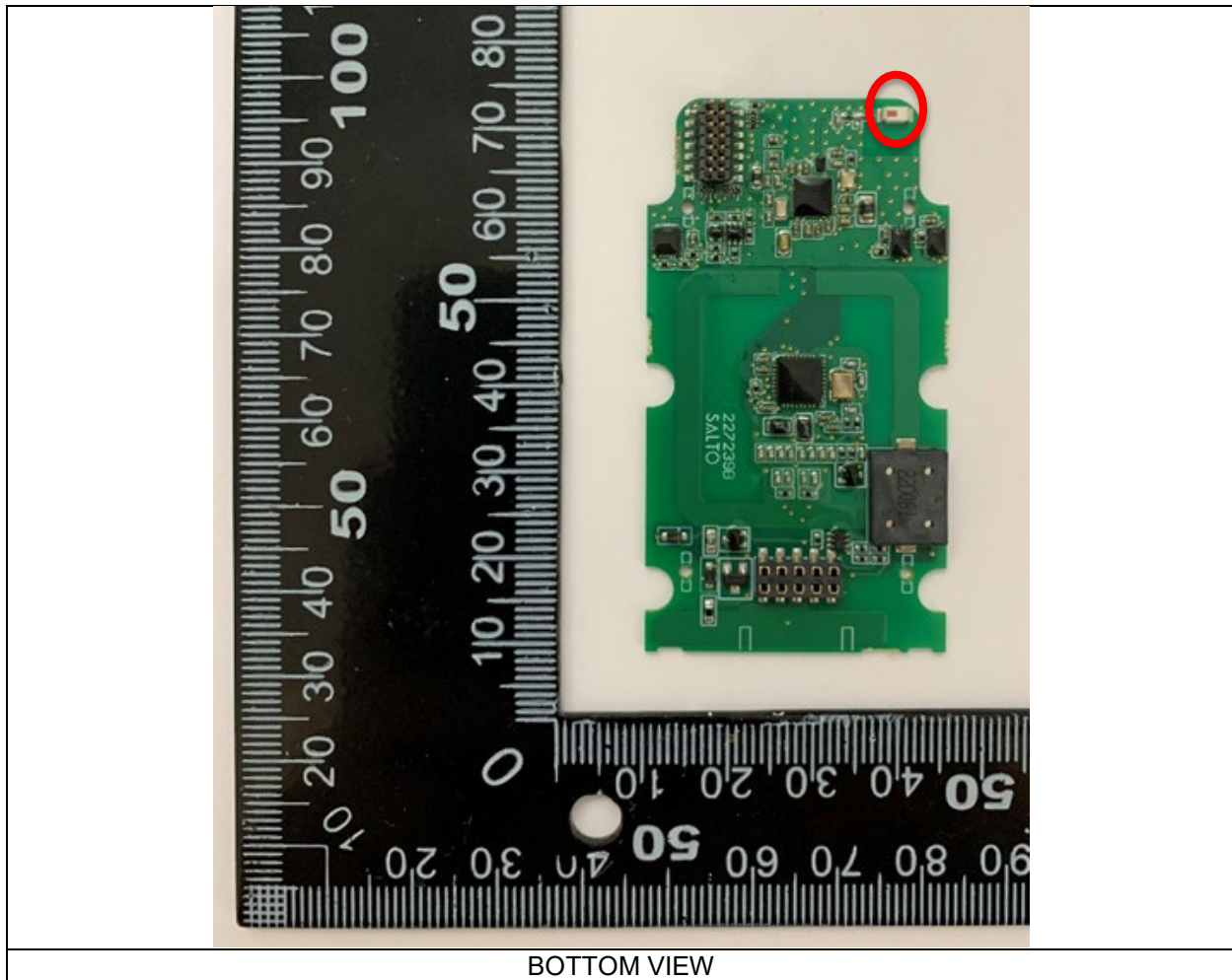
RFID Antenna

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.



Bluetooth LE Antenna

The Bluetooth LE antenna is the 2450AT18B100 model from 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.



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

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

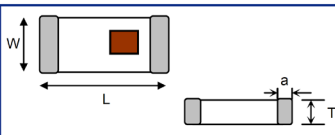
Terminal Configuration

No.	Function
1	Feeding Point
2	NC



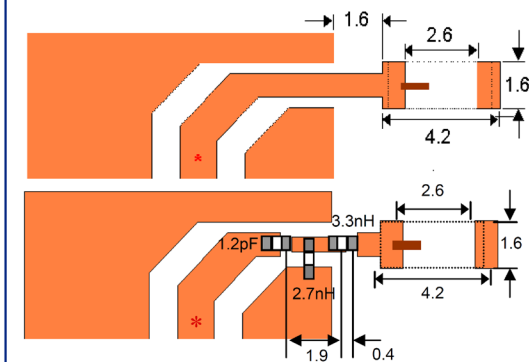
Mechanical Dimensions

	In	mm
L	0.126 $\pm$ 0.008	3.20 $\pm$ 0.20
W	0.063 $\pm$ 0.008	1.60 $\pm$ 0.20
T	0.051 $\pm$ 0.004/-0.008	1.30 $\pm$ 0.1/-0.2
a	0.020 $\pm$ 0.012	0.50 $\pm$ 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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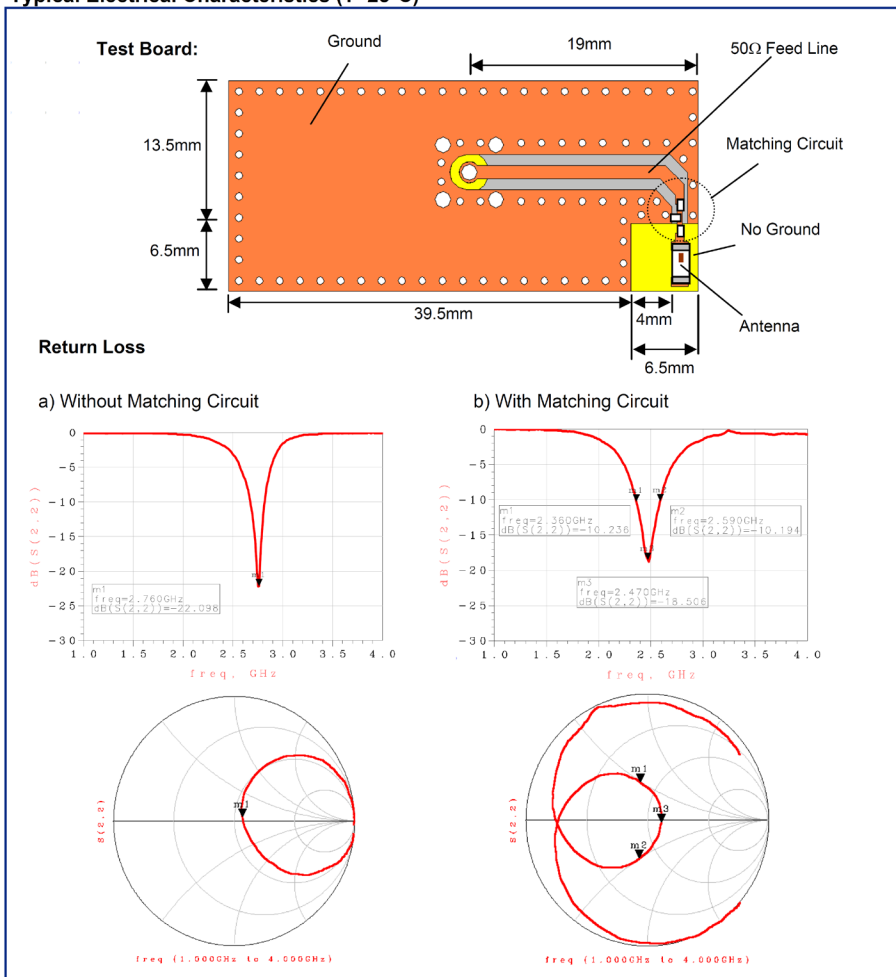
2450 MHz Antenna

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Typical Electrical Characteristics (T=25°C)



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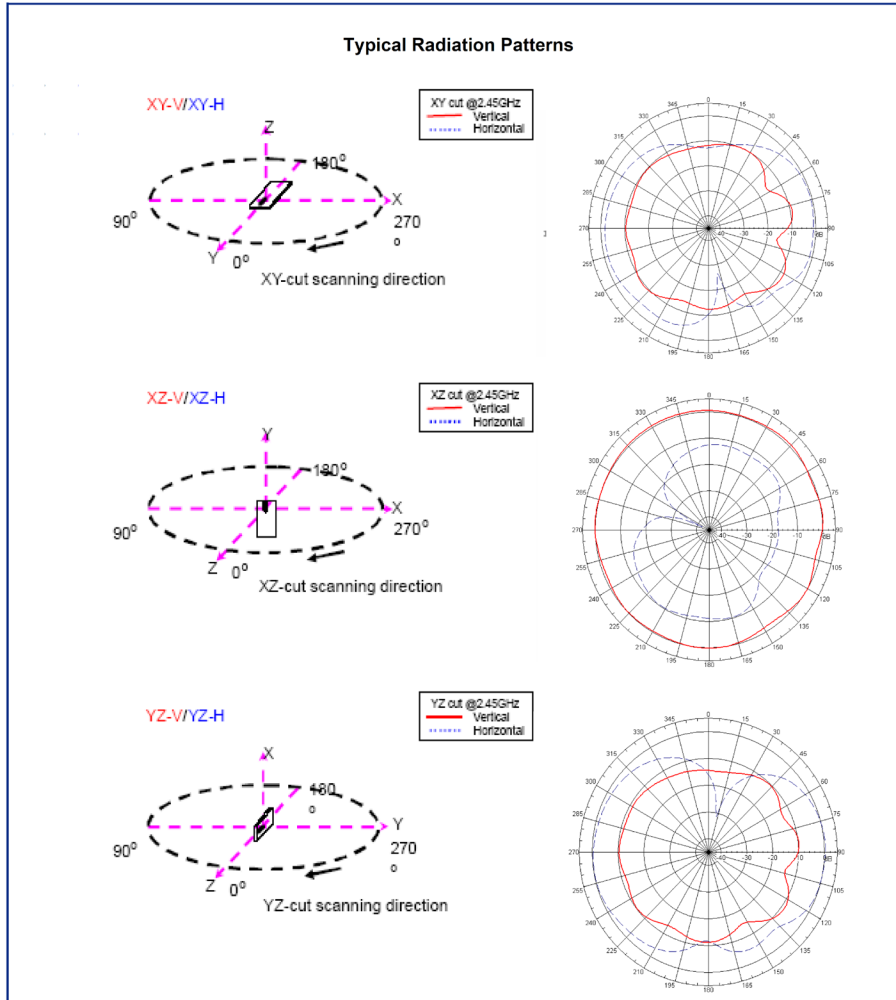
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2450 MHz Antenna

Detail Specification: 08/10/09

P/N 2450AT18B100

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