

SALTO DBolt

E2133

DM0M

Antennas

Version	Date	Changes	Author
1.0	03/04/2023	First edition	U.T.
2.0	04/06/2024	DM0M – change in reader circuit	A.U.
3.0	18/09/2024	Separate files DM0M & DZ0M	A.U.

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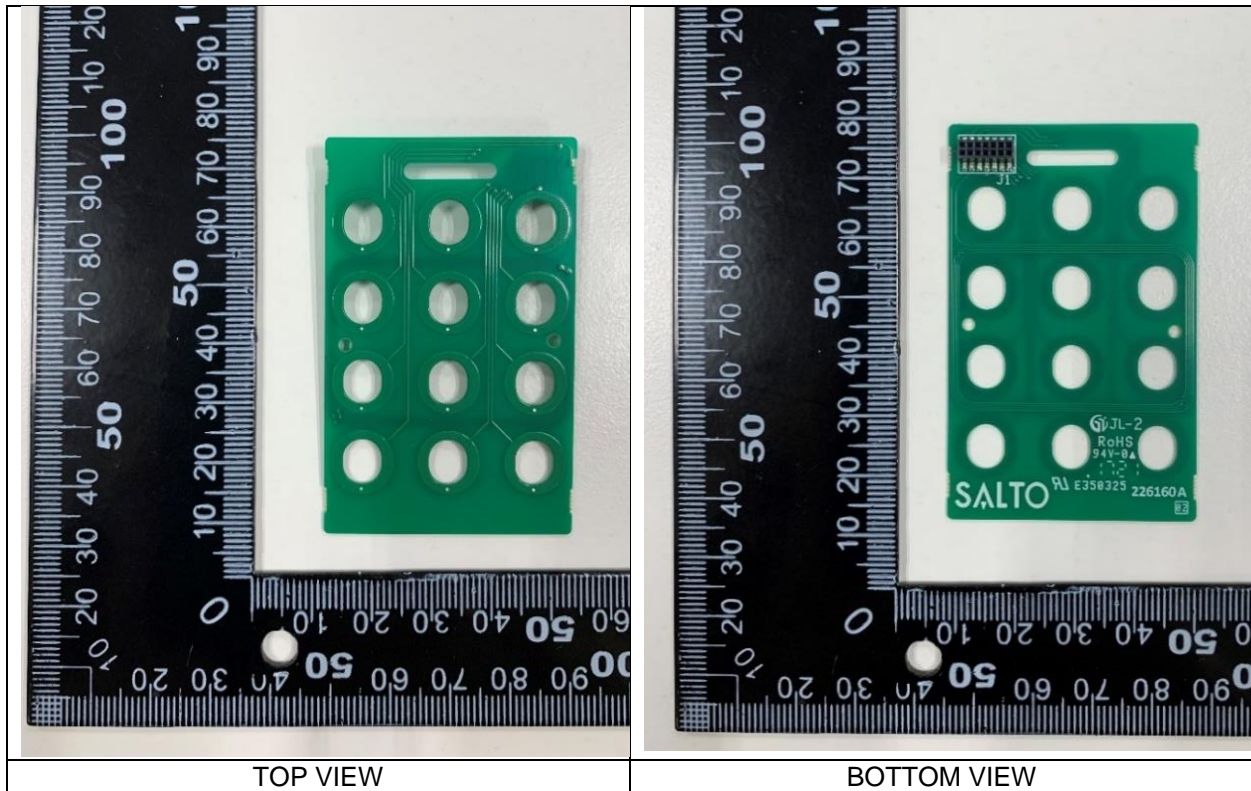
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1 DM0M

SALTO DBolt E2133		DM0M
		MIFARE (1) + BLE (2)
Antennas	Number of antennas	2
	Manufacturer	1- SALTO Systems, S.L. 2- N\A
	Model number	1- DM0M 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- <u>ISO 14443A</u> : ASK 100%, OOK (subcarrier $f_c/16$) & <u>ISO 15693</u> : ASK 10% - 30%, OOK (subcarrier $f_c/32$) 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

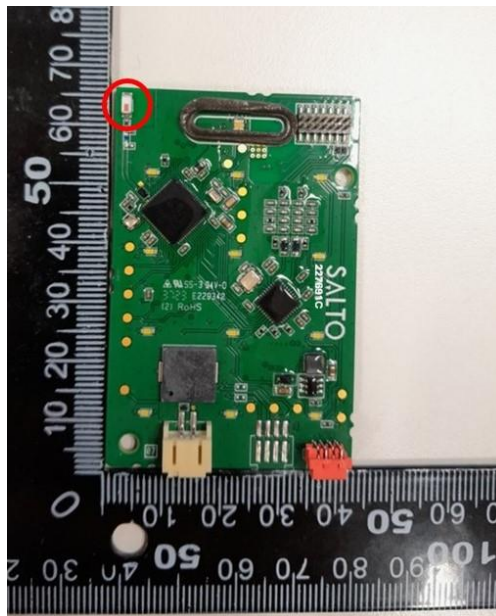
RFID Antenna

The RFID antenna was designed by Salto Systems S.L. at Arkotz 9, Pol. Lanbarren, 20180 Oiartzun, (Gipuzkoa), Spain. The antenna model is DM0M and it is located on the keypad circuit, 226160. The dimensions of the circuit and the antenna are shown in the following images.



Bluetooth LE antenna

The antenna used for Bluetooth LE is a monopole from Johanson Technology. The model is 2450AT18B100. The antenna is located on the top left side of the circuit, 227691. The following image shows the location and dimensions of the antenna on the circuit.



The remaining technical information of the antenna is described on the data sheet included 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

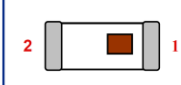
Part Number	2450AT18B100
Frequency Range	2400 - 2500 Mhz
Peak Gain	0.5 dBi typ. (XZ-V)
Average Gain	-0.5 dBi typ. (XZ-V)
Return Loss	9.5 dB min.

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

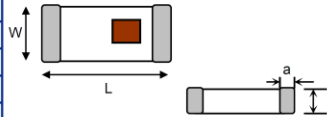
Terminal Configuration

No.	Function
1	Feeding Point
2	NC



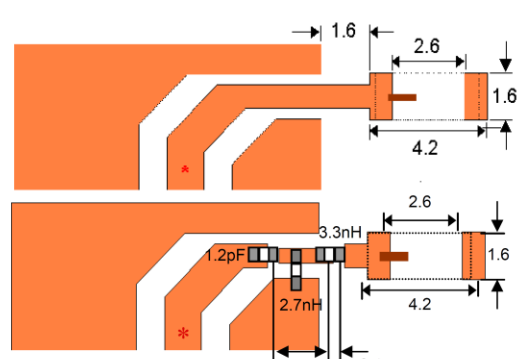
Mechanical Dimensions

	In	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.063 ± 0.008	1.60 ± 0.20
T	0.051 +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"

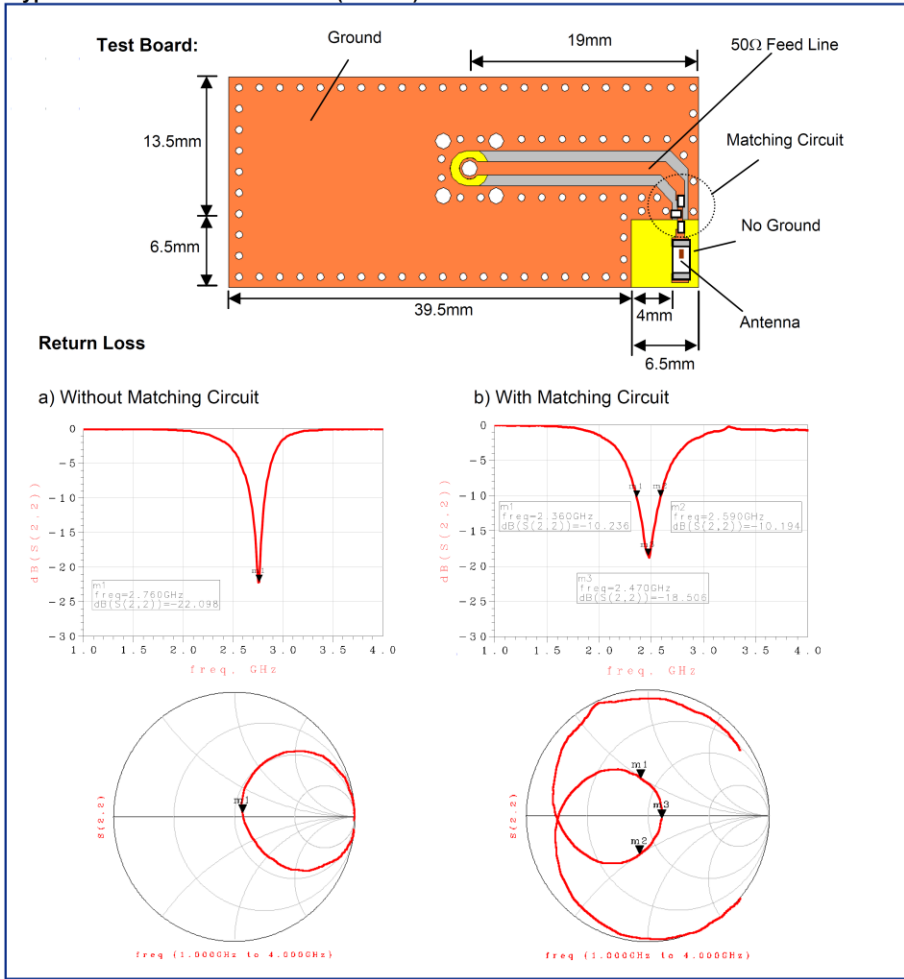
2450 MHz Antenna

P/N 2450AT18B100

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Typical Electrical Characteristics (T=25°C)



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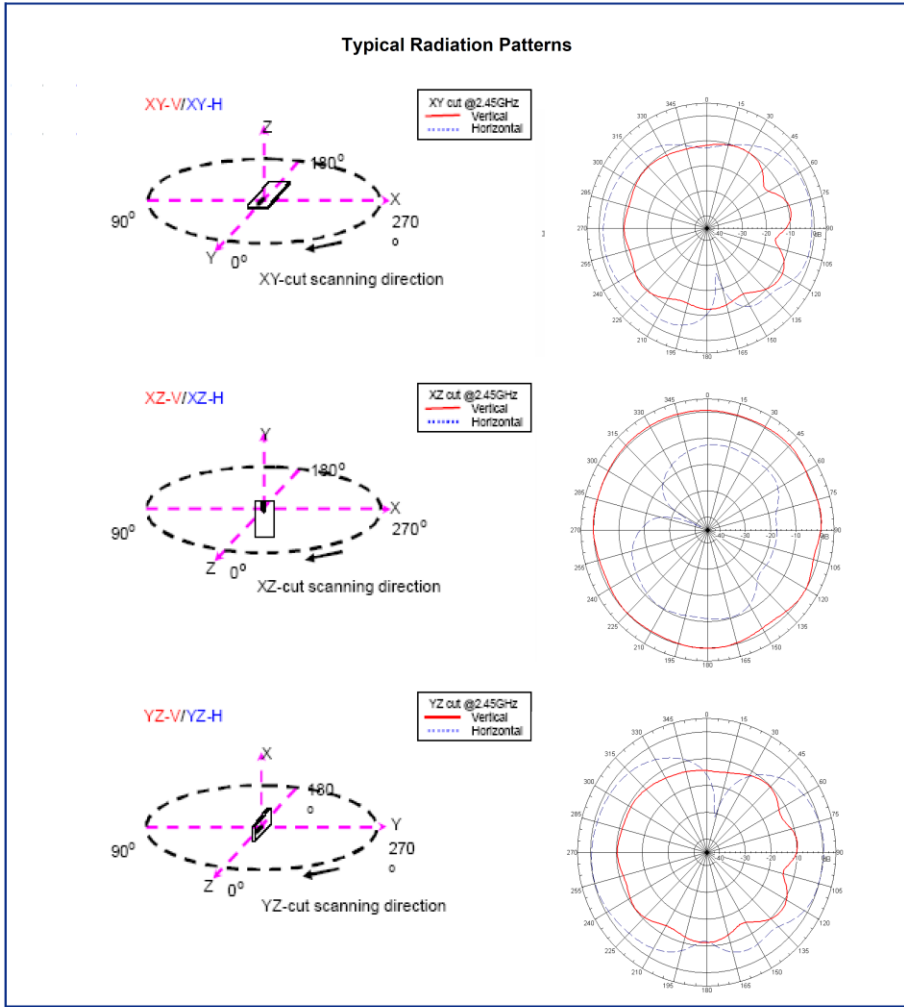
"High Frequency Ceramic Solutions"

2450 MHz Antenna

P/N 2450AT18B100

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