

GAT ECO.Lock and XS4 ECO.Lock

E2438

GAT ECO.Lock 7102 NW F/ISO, GAT ECO.Lock 7102 NW F/ISO ICLS and LM100

Antennas

Version	Date	Changes	Author
1.0	14/11/2023	First edition	U.T, M.J

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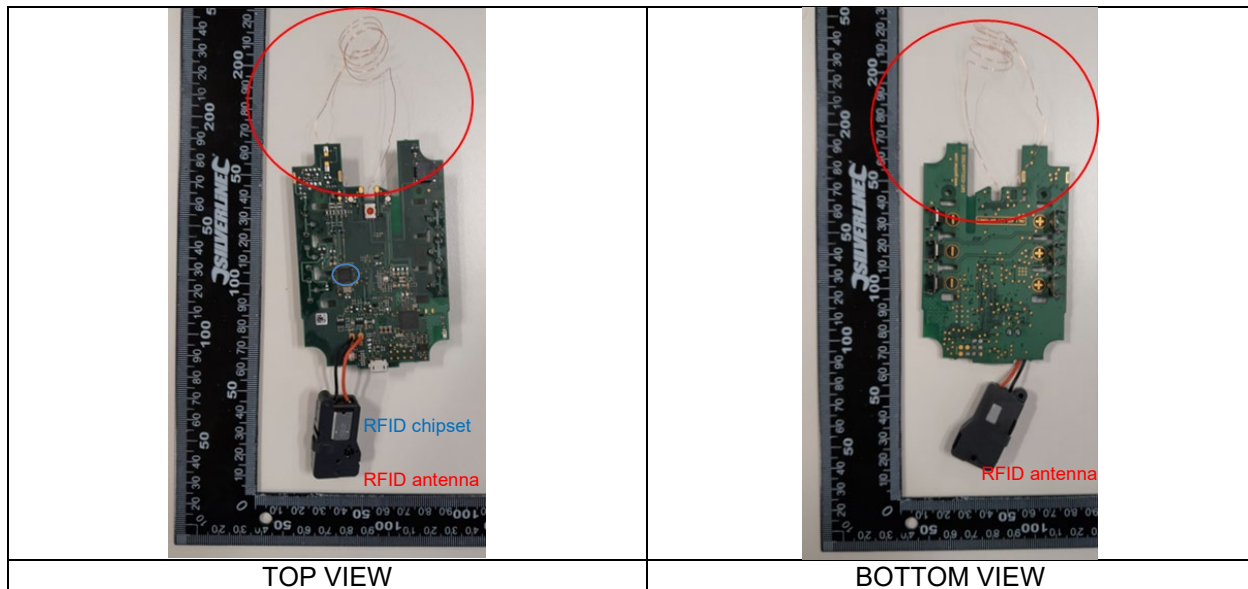
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1 GAT ECO.Lock 7102 NW F/ISO

XS4 ECO.Lock and GAT ECO.Lock E2438		GAT ECO.Lock 7102 NW/ISO
		MIFARE (1) + BLE (3)
Antennas	Number of antennas	2
	Manufacturer	1- Gantner Electronic GmbH 3- N\A
	Model number	1- LM100 3- N\A
	Type	1- Integral, PCB 3- Integral, Chip
	Gain	1- N\A 3- 0.5 dBi
	Frequency of Operation	1- 13.553 - 13.567 MHz 3- 2400 - 2483.5 MHz
Channels	Number of channels	1- N\A 3- 40
	Spacing	1- N\A 3- 2 MHz
	Bandwidth	1- N\A 3- 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 10% - 30%, card to reader OOK (subcarrier $f_c/32$) 3- GFSK
Declared Nominal Output Power (Max.)		1- 27 dBm 3- 6 dBm
ITU Emission Designator		1- K1D 3- F1D
Equipment Configuration for frequency Stability: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 3- 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 3- 1 Mbit/s

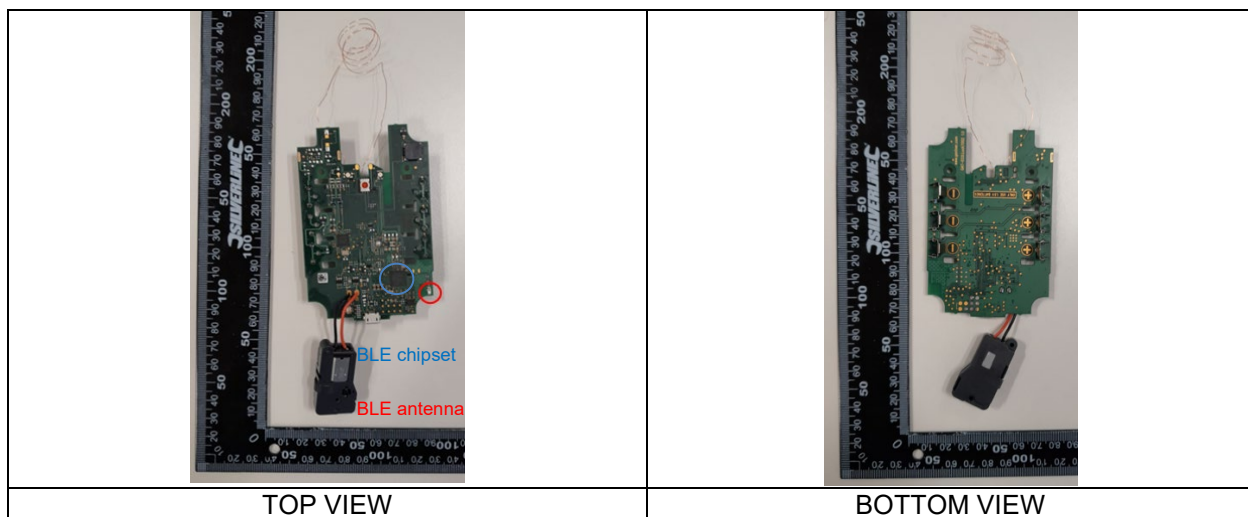
RFID Antenna

The RFID antenna was designed by Gantner Electronic GmbH at Bundesstraße 12, 6714 Nüziders, Austria. The antenna model is LM100 and it is located on the control circuit, GAT-ECO.Lock7002. 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 control circuit, GAT-ECO.Lock7002. The following image shows the location of the antenna on the control circuit.



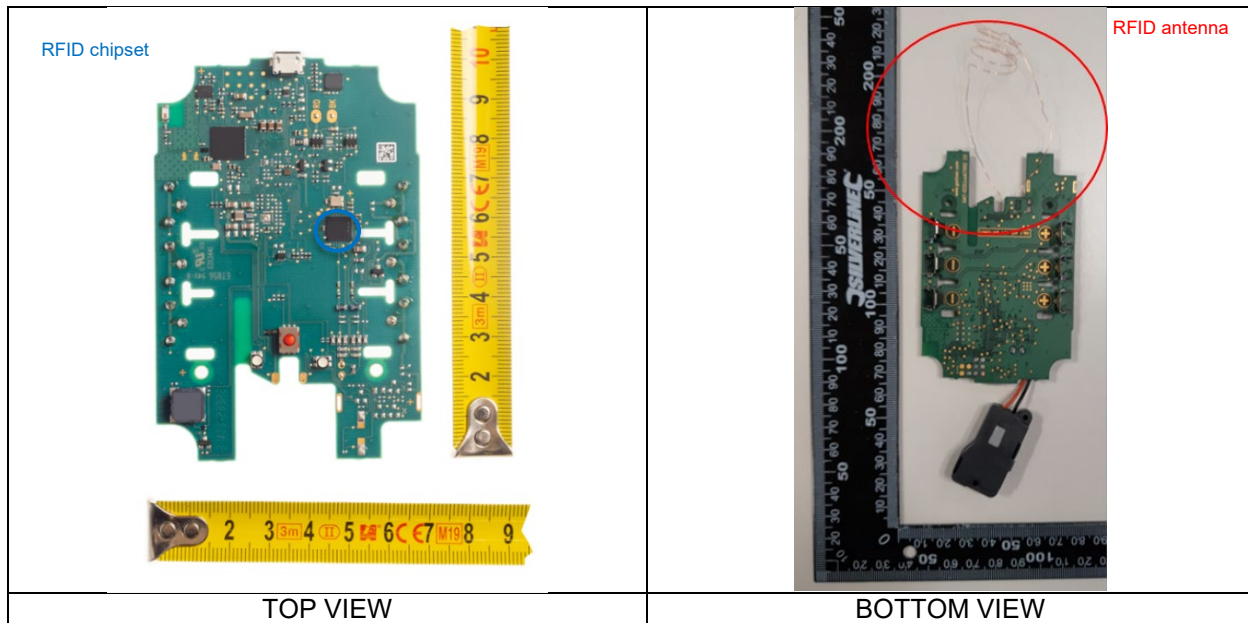
The remaining technical information of the antenna is described in the data sheet attached in Annex I.

2 GAT ECO.Lock 7102 NW F/ISO ICLS

XS4 ECO.Lock and GAT ECO.Lock E2438		GAT ECO.Lock 7102 NW/ISO ICLS
		HID iCLASS (2) + BLE (3)
Antennas	Number of antennas	2
	Manufacturer	2- Gantner Electronic GmbH 3- N\A
	Model number	2- LM100 3- N\A
	Type	2- Integral, PCB 3- Integral, Chip
	Gain	2- N\A 3- 0.5 dBi
	Frequency of Operation	2- 13.553 - 13.567 MHz 3- 2400 - 2483.5 MHz
Channels	Number of channels	2- N\A 3- 40
	Spacing	2- N\A 3- 2 MHz
	Bandwidth	2- N\A 3- 1 MHz at 1Mbps
Type of Modulation		2- <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 10% - 30%, card to reader OOK (subcarrier $f_c/32$) 3- GFSK
Declared Nominal Output Power (Max.)		2- 27 dBm 3- 6 dBm
ITU Emission Designator		2- K1D 3- F1D
Equipment Configuration for frequency Stability: Data Rate		2- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 3- 1 Mbit/s
Equipment Configuration for Field Strenght Measurement: Data Rate		2- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 3- 1 Mbit/s

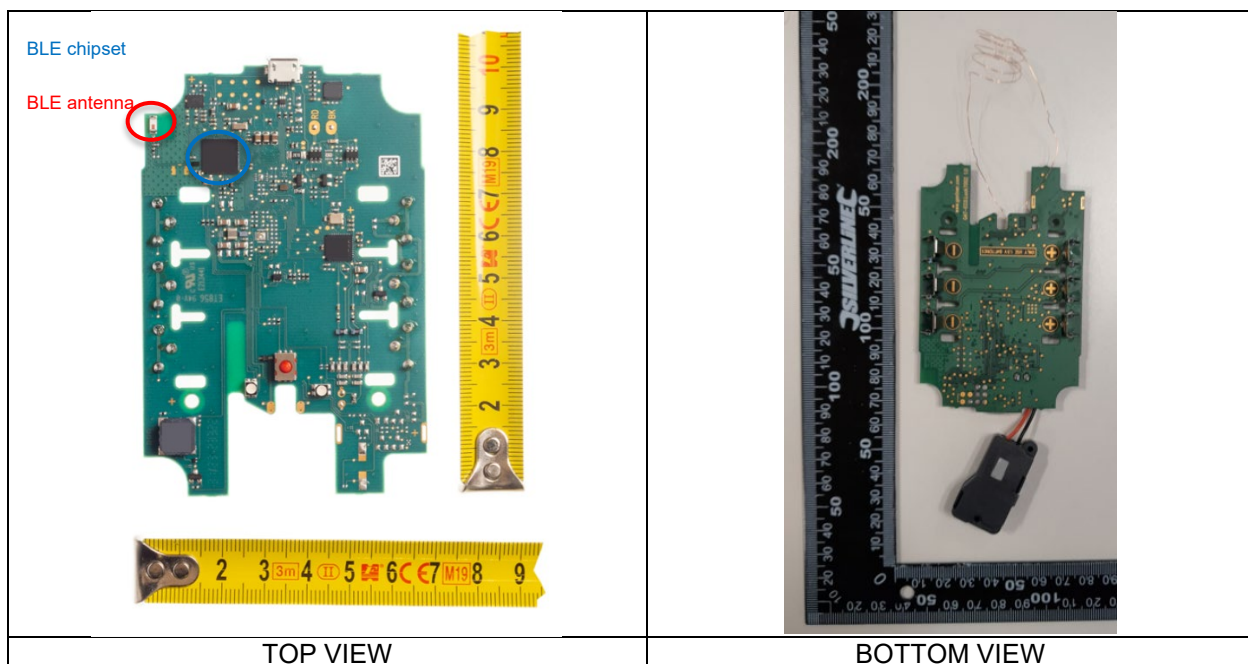
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Bluetooth LE Antenna

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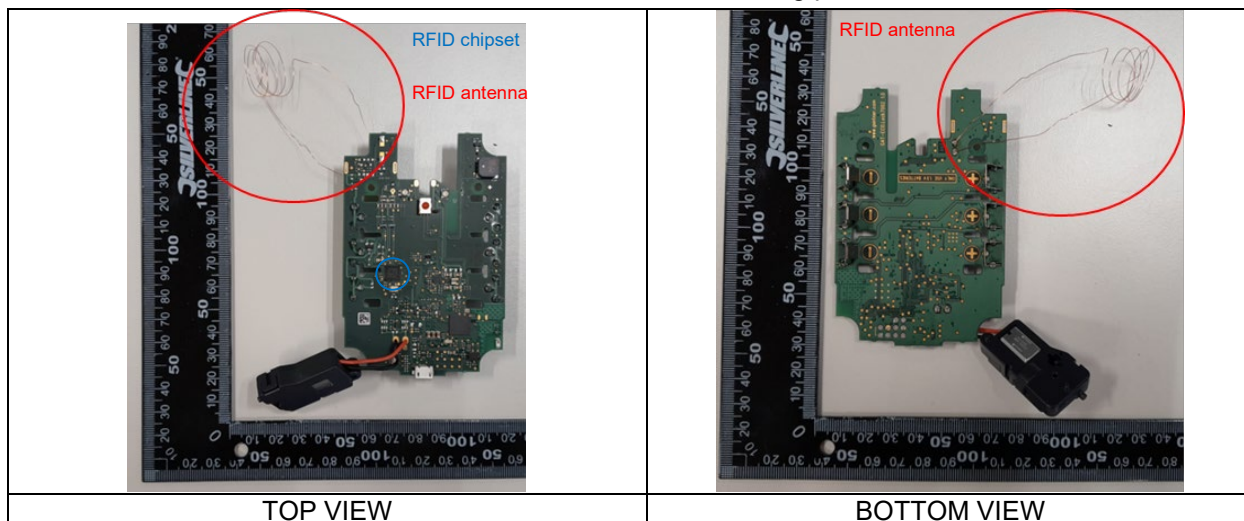
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3 LM100

XS4 ECO.Lock and GAT ECO.Lock E2438		LM100
		MIFARE (1) + BLE (3)
Antennas	Number of antennas	2
	Manufacturer	1- Gantner Electronic GmbH 3- N\A
	Model number	1- LM100 3- N\A
	Type	1- Integral, PCB 3- Integral, Chip
	Gain	1- N\A 3- 0.5 dBi
	Frequency of Operation	1- 13.553 - 13.567 MHz 3- 2400 - 2483.5 MHz
Channels	Number of channels	1- N\A 3- 40
	Spacing	1- N\A 3- 2 MHz
	Bandwidth	1- N\A 3- 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 10% - 30%, card to reader OOK (subcarrier $f_c/32$) 3- GFSK
Declared Nominal Output Power (Max.)		1- 27 dBm 3- 6 dBm
ITU Emission Designator		1- K1D 3- F1D
Equipment Configuration for frequency Stability: Data Rate		1- <u>ISO 14443A</u> : 106 Kbit/s & <u>ISO 15693</u> : 26.48 Kbit/s 3- 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 3- 1 Mbit/s

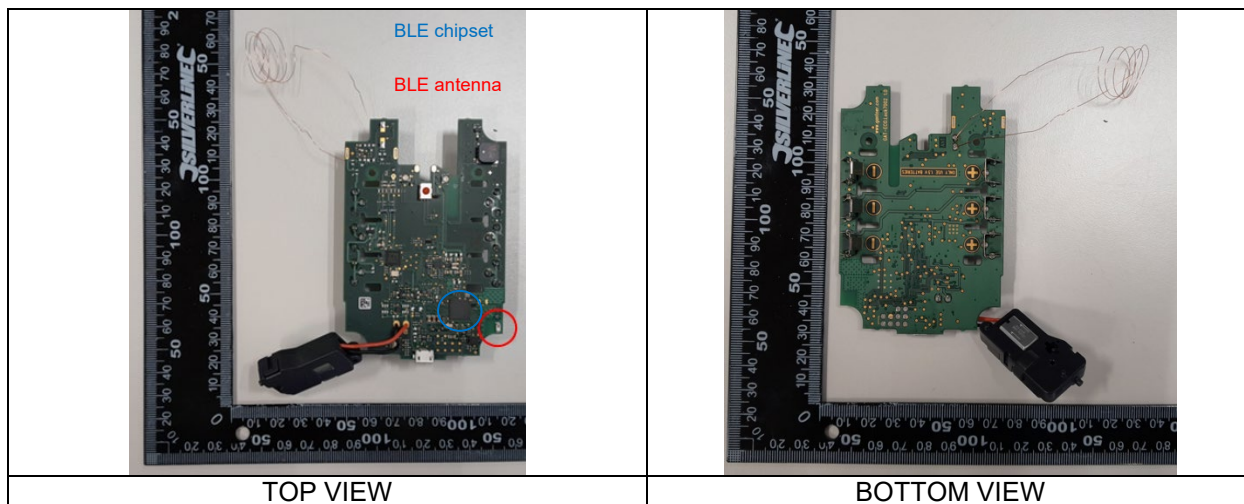
RFID Antenna

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Bluetooth LE Antenna

The Bluetooth LE antenna is the 2450AT18B100 model form Johanson Technology. The antenna is located on the control circuit, GAT-ECO.Lock7002. 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

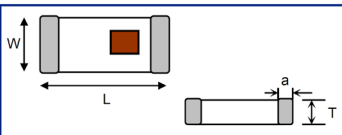
P/N Suffix	Packaging	Bulk	Suffix = S	Eg. 2450AT18B100S
	Style	T & R	Suffix = E	Eg. 2450AT18B100E
	Termination	100% Tin	Suffix = None	Eg. 2450AT18B100(E or S)
	Style	Tin / Lead	Please consult Factory	

Terminal Configuration

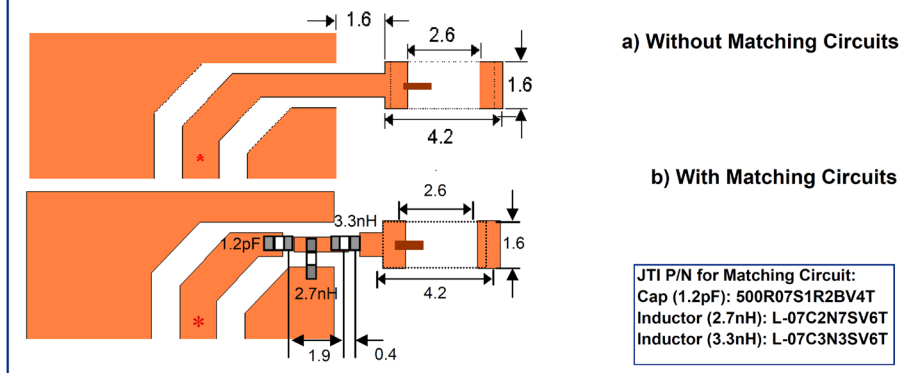
No.	Function
1	Feeding Point
2	NC

**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.

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"High Frequency Ceramic Solutions"

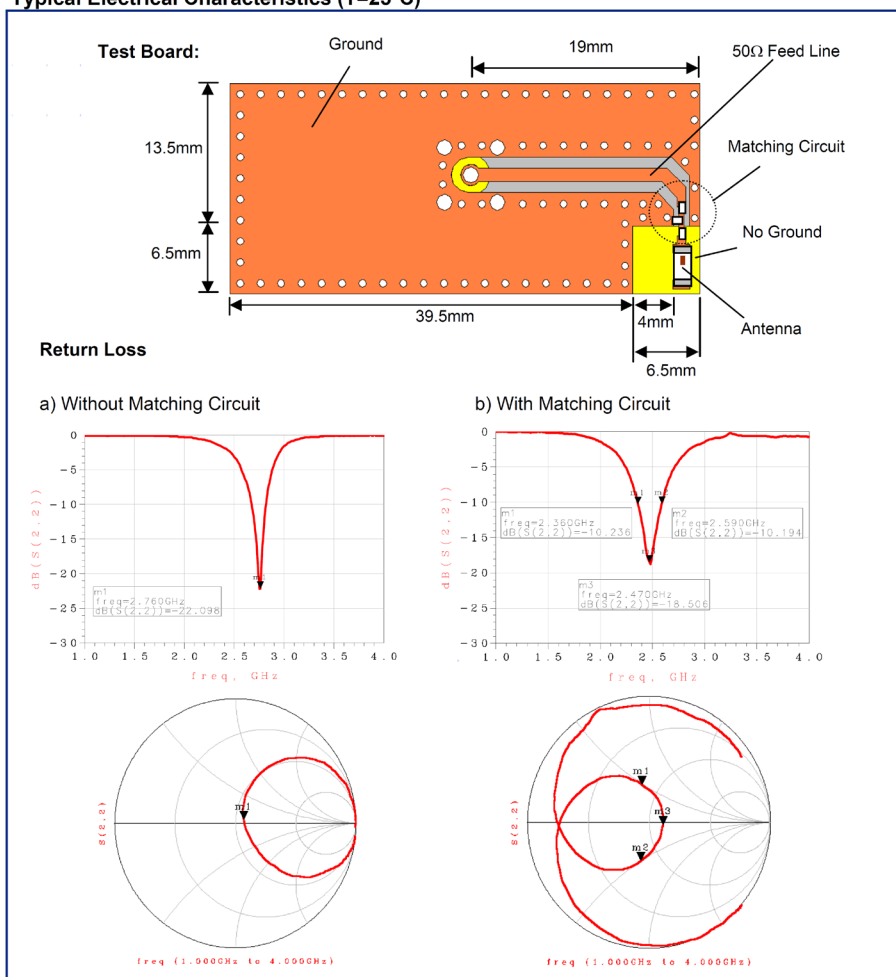
2450 MHz Antenna

P/N 2450AT18B100

Detail Specification: 08/10/09

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Typical Electrical Characteristics (T=25°C)



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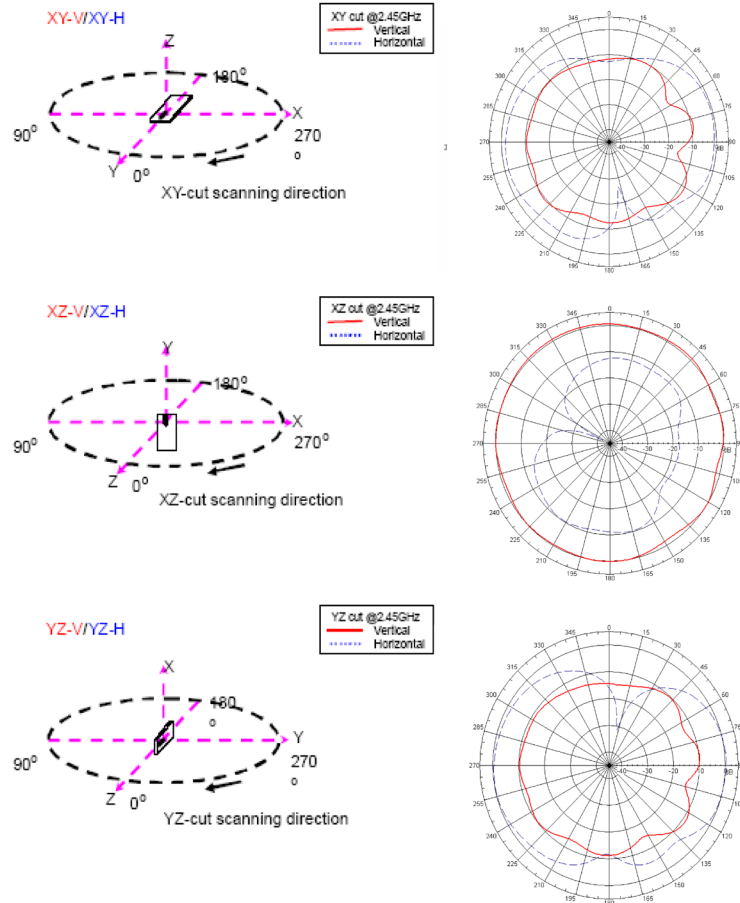
2450 MHz Antenna

Detail Specification: 08/10/09

P/N 2450AT18B100

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Typical Radiation Patterns



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