

Copper Wire Antenna Data Sheet



Antenna Part Number	E-AL-Z-C-4-868908
Antenna Description	SEM Panel _ Z-Wave Antenna (EU & US Frequencies)
Antenna Frequency	868MHz & 908MHz

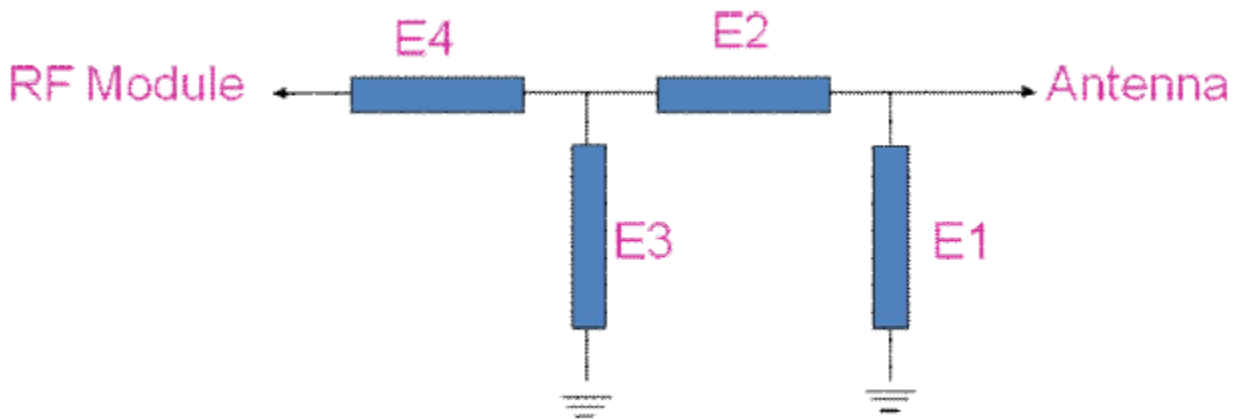
Approved by	Mason Lin
Check by	Jim Yang
PM	Matthew Lin



A. Description

The content of this data sheet is to provide the testing measurements for the Z-Wave antenna put inside the SEM panel. The antenna is tuned for 868MHz & 908MHz covering both the US & EU frequencies. The antenna is designed by copper wire and monopole antenna design method.

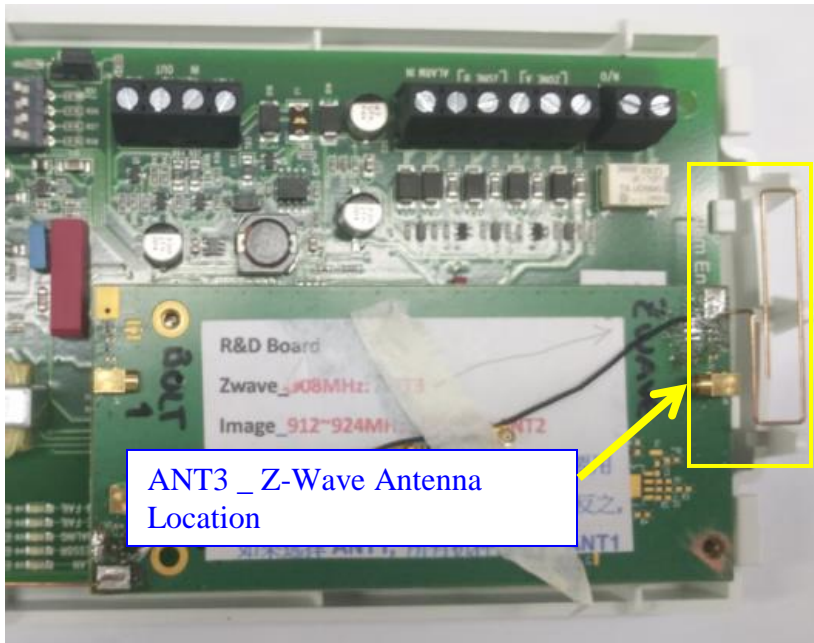
B. Antenna Matching Circuit



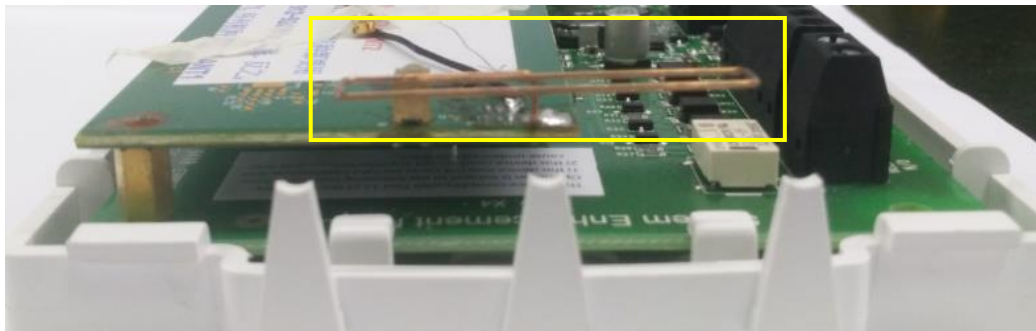
Element	Value
E1(0402)	NA
E2(0402)	0Ω
E3(0402)	NA
E4(0402)	0Ω



C. Antenna Installation on PCB Inside The SEM Panel



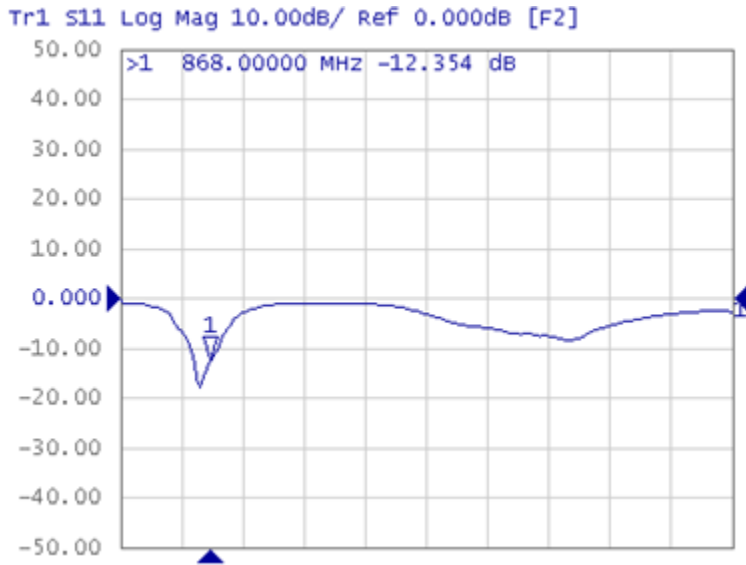
Top View



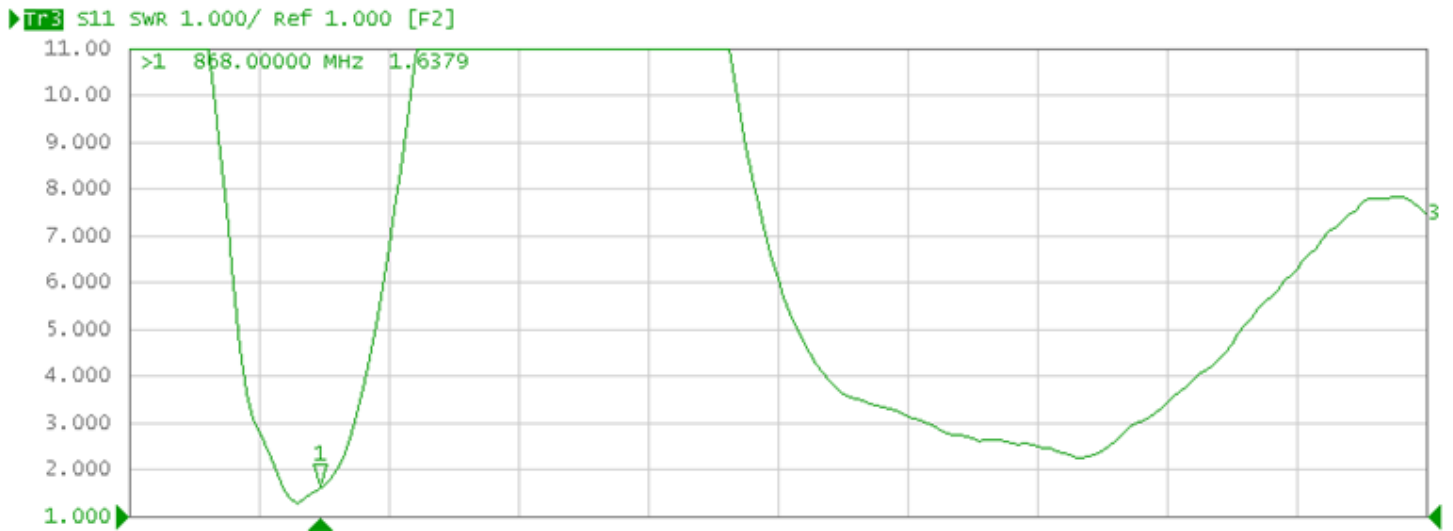
Antenna Side View



D.Return Loss & VSWR Curve _ 868MHz



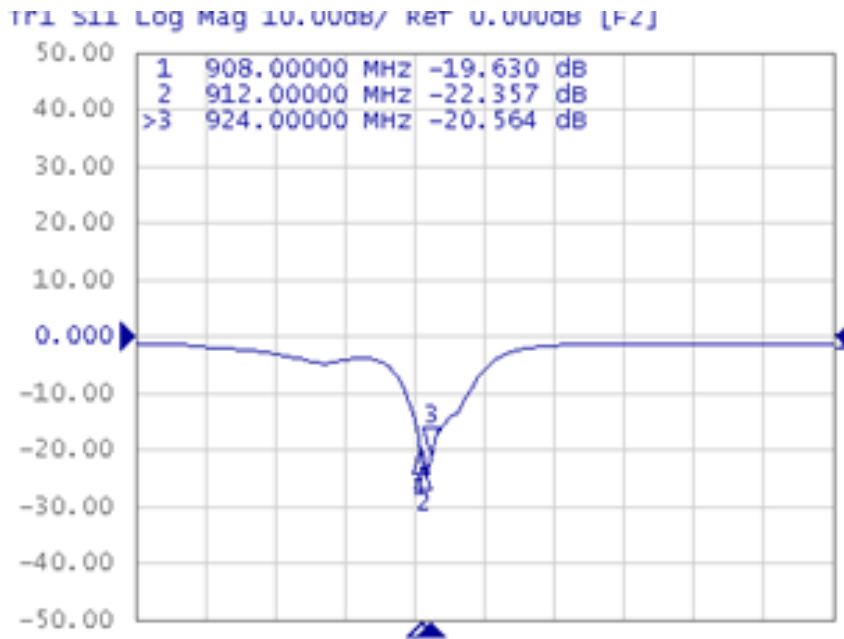
Return Loss Curve



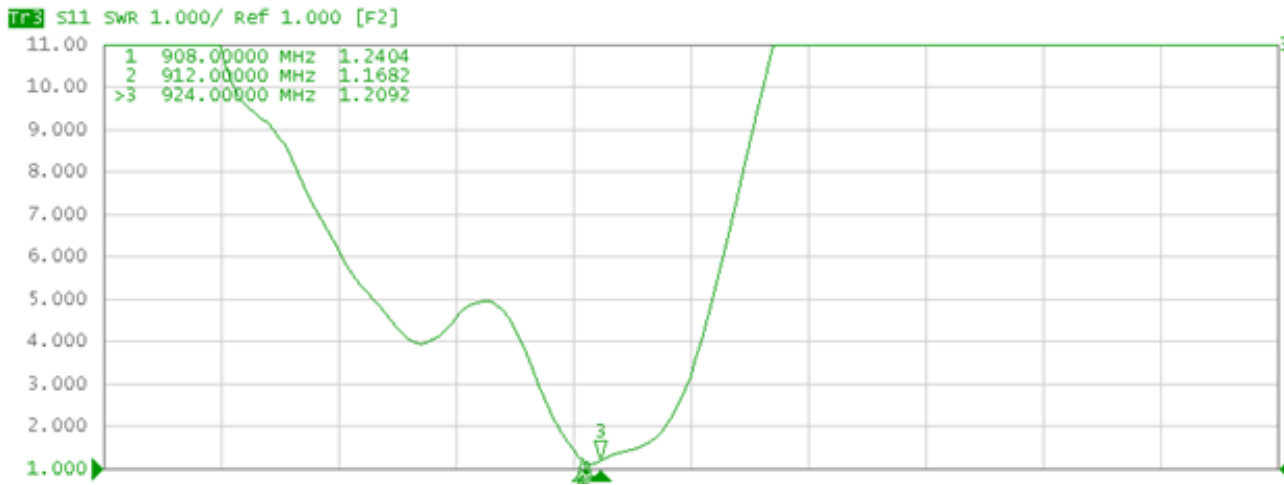
VSWR Curve



E. Return Loss & VSWR Curve _ 908MHz



Return Loss Curve



VSWR Curve



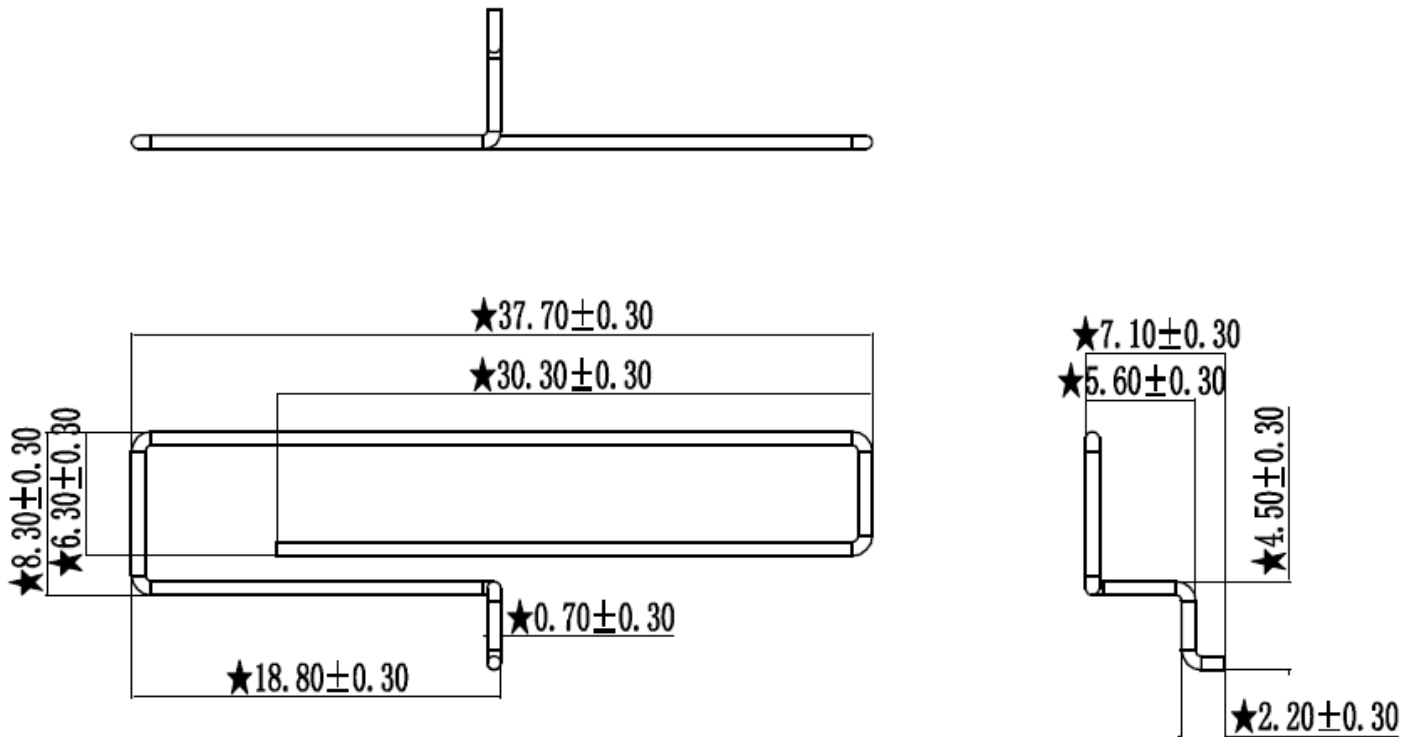
F. Antenna Efficiency & Gain

Frequency(MHZ)	Efficiency	Efficiency . dB	Peak Gain _ dBi
860	30.08%	-5.22	-1.01
870	31.79%	-4.98	-0.91
880	31.54%	-5.01	-0.95
890	34.08%	-4.68	-0.60
900	34.68%	-4.60	-0.23
910	35.33%	-4.52	-0.09
920	34.39%	-4.64	-0.24
930	32.62%	-4.86	-0.57
940	30.98%	-5.09	-0.97

** Antenna is tested inside the Satimo Starlab Anechoic Chamber



G.Antenna Drawing



SEM Panel – Z-Wave Antenna_868MHz & 908MHz
 Part Number: E-AL-Z-C-4-868908

Part Number	Description
E	Custom Embedded
AL	Alarm.com
Z	Z-Wave Application
C	Copper Wire
4	SEM Panel
868908	Frequency: 868MHz & 908MHz