



# FCC PART 15 B TEST REPORT

For

**Fuzhou Emax Electronic Co., Ltd.**

Building #12-#16, Cangshan Industrial Area, Juyuanzhou, Jinshan District, Fuzhou, China.

**FCC ID: WEC-EM2245**

<b>Report Type:</b> Original Report	<b>Product Name:</b> WIRELESS COOKING THERMOMETER
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<b>Report Number:</b>	RXM170324050
<b>Report Date:</b>	2017-04-24
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## GENERAL INFORMATION

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### Product Description for Equipment Under Test (EUT)

The **Fuzhou Emax Electronic Co., Ltd.**'s product, model number: **EM2245** (**FCC ID: WEC-EM2245**) (the "EUT") in this report was a **WIRELESS COOKING THERMOMETER**, which was measured approximately: 11.1 cm (L) × 6.2 cm (W) × 1.4 cm (H), rated input voltage: DC3.0V battery. The highest operation frequency is 434MHz.

*\*All measurement and test data in this report was gathered from final production sample, serial number: 170324050 (assigned by the BACL, Chengdu). It may have deviation from any other sample. The EUT supplied by the applicant was received on 2017-03-24, and EUT conformed to test requirement.*

### Objective

This test report is prepared on behalf of **Fuzhou Emax Electronic Co., Ltd.** in accordance with Part 2, Subpart J, and Part 15-Subparts A and B of the Federal Communications Commission's rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Rules Part 15 B Class B.

### Related Submittal(s)/Grant(s)

Submitted with the part of a system with FCC ID: WEC-EM2245-F.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The Bay Area Compliance Laboratories Corp. Chengdu's measurement Uncertainties (calculated for a k=2 Coverage Factor corresponding to approximately 95% Coverage) were as follows:

-For all of the AC Line Conducted Emissions Tests reported herein:  $\pm 3.17$  dB.

-For of all of the direct Radiated Emissions Tests reported herein are:

30 MHz to 200 MHz:  $\pm 4.7$  dB;

200 MHz to 1 GHz:  $\pm 6.0$  dB;

1 GHz to 6 GHz:  $\pm 5.13$ dB; and,

6 GHz to 40 GHz:  $\pm 5.47$ dB.

And the uncertainty will not be taken into consideration for all test data recorded in the report.

## **Test Facility**

The test site used by BACL to collect test data is located in the No.5040, Huilongwan Plaza, No.1, Shawan Road, Jinniu District, Chengdu, Sichuan, China.

Test site at BACL has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the

requirements of Section 2.948 of the FCC Rules on April 24, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 560332. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

### EUT Exercise Software

No software was used during test.

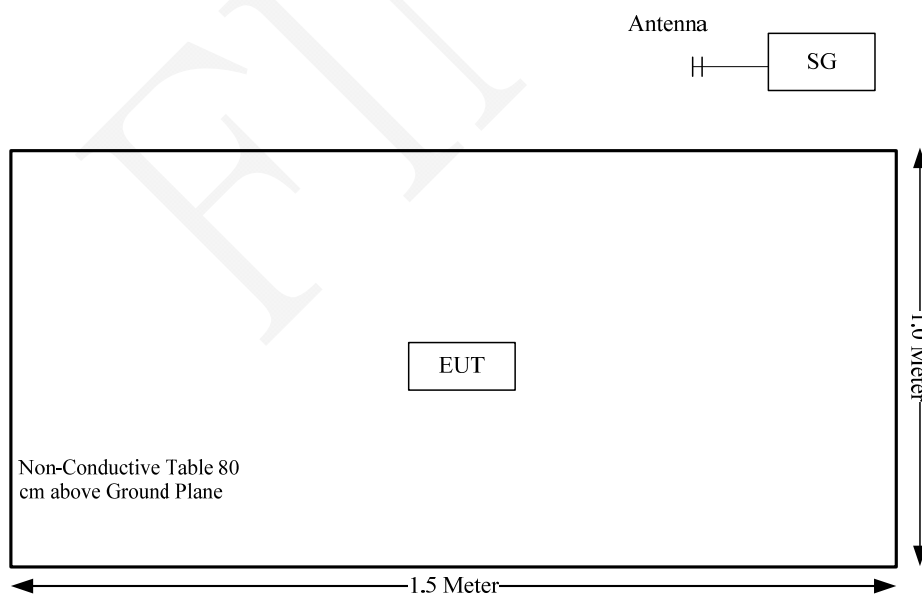
### Equipment Modifications

No modification was made to the EUT tested.

### Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HP	Signal Generator	8648C	3623A04150

### Configuration of Test Setup



## SUMMARY OF TEST RESULTS

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FCC Rules	Description of Test	Results
§15.107	Conducted Emissions	Not Applicable
§15.109	Radiated Emissions	Compliance

## FCC §15.109 - RADIATED SPURIOUS EMISSIONS

### Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If  $U_{lab}$  is less than or equal to  $U_{cispr}$  of Table 2, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{cispr}$  of Table 2, then:

- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Chengdu) is:

30M~200MHz:  $\pm 4.7$  dB;

200M~1GHz:  $\pm 6.0$  dB;

1G~6GHz:  $\pm 5.13$  dB;

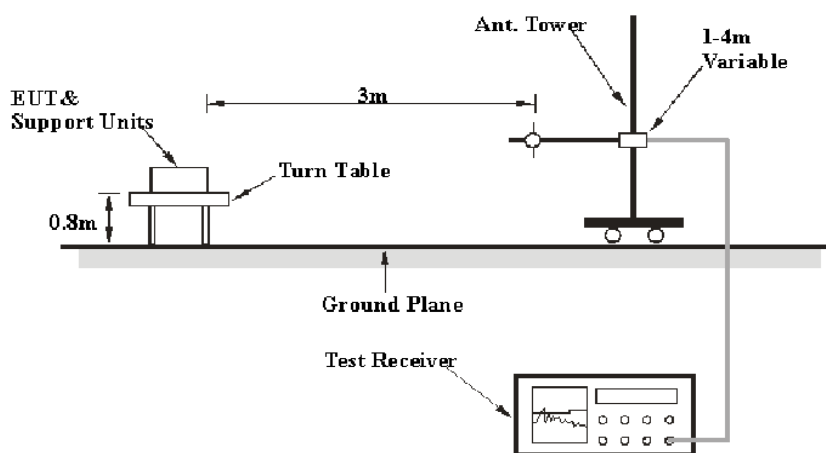
6G~25GHz:  $\pm 5.47$  dB;

Table 2 – Values of  $U_{cispr}$

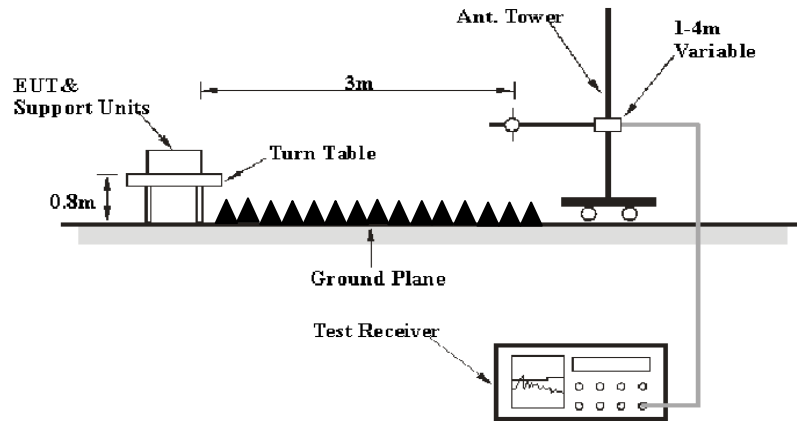
Measurement		$U_{cispr}$
Radiated disturbance (electric field strength at an OATS or in a SAC)	(30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR)	(1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR)	(6 GHz to 18 GHz)	5.5 dB

### EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed at the 3 meters distance in chamber, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

### EMI Test Receiver Setup

The system was investigated from 30 MHz to 2 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	10 Hz	/	AVG

### Test Procedure

During the radiated emissions, the monitor was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.



## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Amplifier	8447D	2944A10442	2016-12-02	2017-12-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2016-12-02	2017-12-01
Sunol Sciences	Broadband Antenna	JB3	A121808	2016-04-10	2019-04-09
Rohde & Schwarz	Spectrum Analyzer	FSEM30	100018	2016-12-02	2017-12-01
ETS	Horn Antenna	3115	003-6076	2016-12-02	2017-12-01
Mini-circuits	Amplifier	ZVA-183-S+	771001215	2016-05-20	2017-05-19
EMCT	Semi-Anechoic Chamber	966	N/A	2015-04-24	2018-04-23
N/A	RF Cable (below 1GHz)	NO.1	N/A	2016-11-10	2017-11-09
N/A	RF Cable (below 1GHz)	NO.4	N/A	2016-11-10	2017-11-09
N/A	RF Cable (above 1GHz)	NO.2	N/A	2016-11-10	2017-11-09

\* **Statement of Traceability:** BACL (Chengdu) attested that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Data

### Environmental Conditions

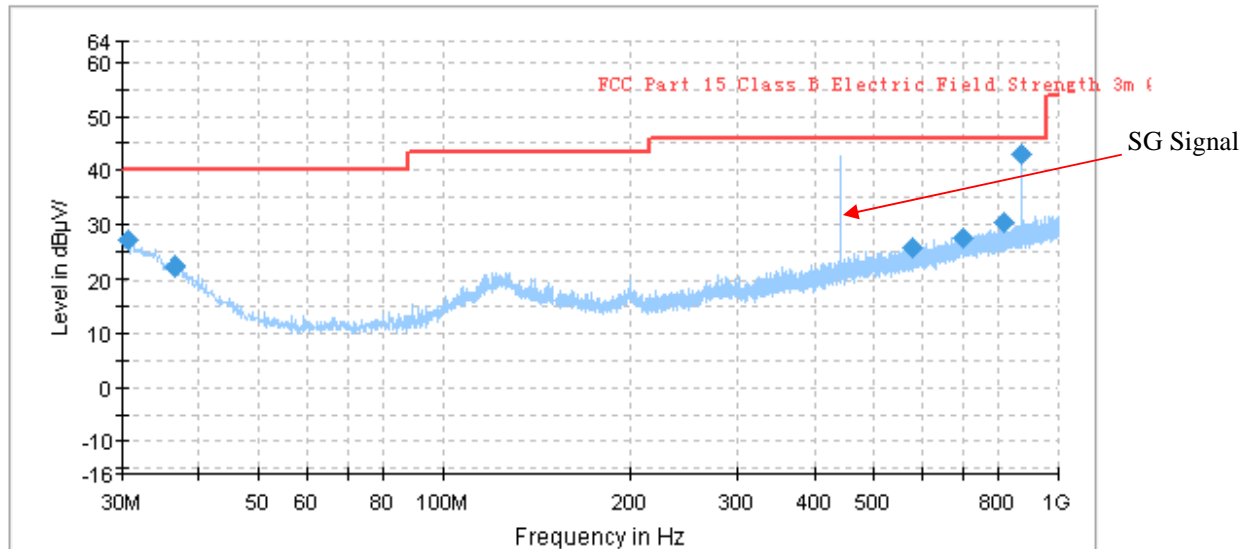
Temperature:	21 °C
Relative Humidity:	60 %
ATM Pressure:	95.8 kPa

\* The testing was performed by Kevin Hu on 2017-03-30.

Test Result: Compliance

Test Mode: Receiving

1) Below 1GHz:



Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
30.606250	26.9	100.0	H	155.0	0.6	13.1	40.0
36.668750	22.2	100.0	H	249.0	-3.7	17.8	40.0
578.777500	25.7	100.0	H	198.0	-1.1	20.3	46.0
699.300000	27.4	100.0	H	138.0	1.2	18.6	46.0
814.608750	30.2	100.0	H	112.0	2.7	15.8	46.0
868.443750	42.8	100.0	H	121.0	3.7	3.2	46.0

2) 1-2GHz:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB)					
1527.5	33.18	PK	H	24.14	2.69	26.36	33.65	74.00	40.35
1527.5	21.32	AV	H	24.14	2.69	26.36	21.79	54.00	32.21
1645	33.21	PK	H	24.33	2.78	26.47	33.85	74.00	40.15
1645	21.42	AV	H	24.33	2.78	26.47	22.06	54.00	31.94
2170	38.51	PK	H	24.32	3.03	26.84	39.02	74.00	34.98
2170	26.28	AV	H	24.32	3.03	26.84	26.79	54.00	27.21
1507.5	34.01	PK	V	24.11	2.68	26.34	34.46	74.00	39.54
1507.5	23.44	AV	V	24.11	2.68	26.34	23.89	54.00	30.11
1665	32.6	PK	V	24.36	2.80	26.49	33.27	74.00	40.73
1665	20.97	AV	V	24.36	2.80	26.49	21.64	54.00	32.36
1832.5	33.09	PK	V	24.63	2.92	26.66	33.98	74.00	40.02
1832.5	21.13	AV	V	24.63	2.92	26.66	22.02	54.00	31.98

\*\*\*\*\* **END OF REPORT** \*\*\*\*\*