



FCC PART 15B, CLASS B TEST REPORT

For

Velong Enterprises Co., Ltd

No.3-7 west of 5th Najin Rd., North of 4th Huoda Rd., Nahou Industrial Zone, Yangdong District,
Yangjiang City, China

FCC ID: 2AJUYGT003801

Report Type: Original Report	Product Type: EG WIRELESS THERMOMETER
Report Number: RSZ160922004-00	
Report Date: 2016-09-29	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Velong Enterprises Co.,Ltd*'s product, model number: *XG1709603586 (FCC ID: 2AJUYGT003801)* or the "EUT" in this report was a *EG WIRELESS THERMOMETER*, which was measured approximately: 11.5 cm(L) × 5.8 cm (W) × 2.0 cm (H), rated with input voltage: DC 3V battery. The highest operating frequency is 433.92 MHz.

Note: This series products model: STG-5951-KBand XG1709603586 are electrically identical, the difference between them is just model name. Model XG1709603586 was selected for fully testing, the detailed information can be referred to the declaration letter that stated and guaranteed by the applicant.

**All measurement and test data in this report was gathered from production sample serial number: 1603305 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2016-09-22*

Objective

This test report is prepared on behalf of *Velong Enterprises Co., Ltd* in accordance with Part 2-Subpart J, Part 15-Subparts A, B of the Federal Communication Commissions rules.

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

Related Submittal(s)/Grant(s)

FCC Part 15.231 DSC submissions with FCC ID: 2AJUYGT003802.

Measurement Uncertainty

Item		Uncertainty
Radiated emission	30MHz~1 GHz	5.91dB
	Above 1 GHz	4.92dB

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the Chenghu Lake Road, Kunshan Development Zone No.248, Kunshan, Jiangsu, China

Test site at Bay Area Compliance Laboratories Corp. (Kunshan) 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 November 06, 2014. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. 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 manufacturer testing fashion.

EUT operation mode: Receiving & Displaying

EUT Exercise Software

No special accessories was used

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

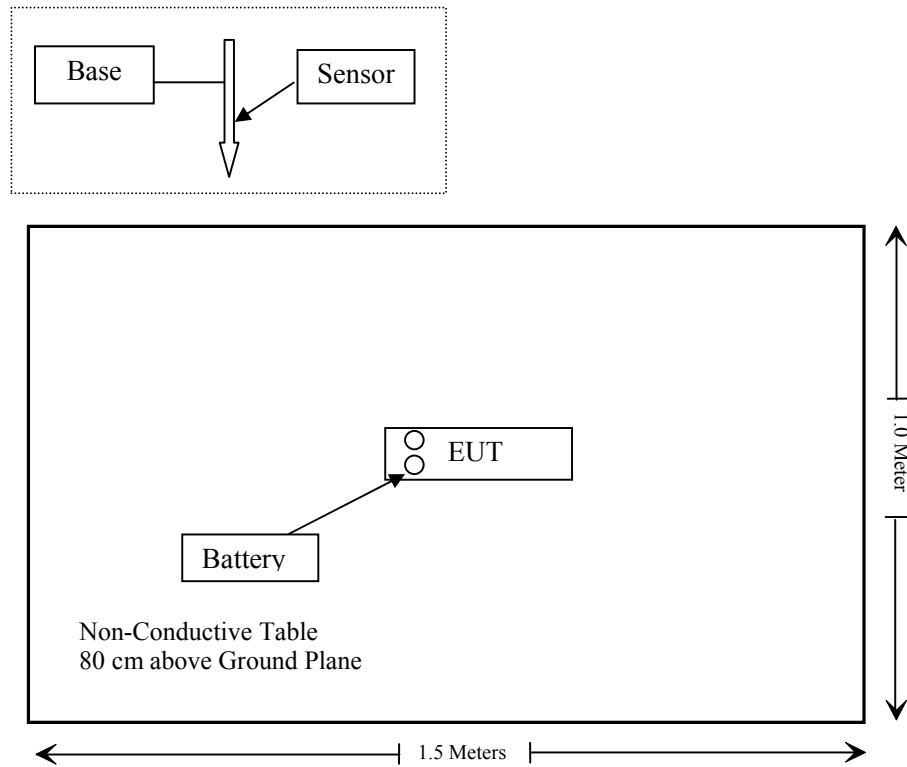
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
NANFU	Batteries	LR03	N/A
Velong Enterprises	Sensor	N/A	N/A
Velong Enterprises	Base	XG1709603586	N/A

External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielding Un-detachable Signal Cable	1.24	Sensor	Base

Block Diagram of Test Setup:



SUMMARY OF TEST RESULTS

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

Note: The EUT is powered by battery, conducted emission test is not required

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sonoma Instrument	Amplifier	330	171377	2016-09-16	2017-09-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2015-11-12	2016-11-11
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2015-11-07	2016-11-06
ETS	Horn Antenna	3115	6229	2015-11-07	2016-11-06
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2015-11-12	2016-11-11
Mini	Pre-amplifier	ZVA-183-S+	857001418	2016-09-16	2017-09-16
R&S	Auto test Software	EMC32	V 09.10.0	-	-
BACL	RF cable	KS-LAB-012	KS-LAB-012	2015-12-16	2016-12-15
BACL	RF cable	KS-LAB-010	KS-LAB-010	2015-12-16	2016-12-15

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

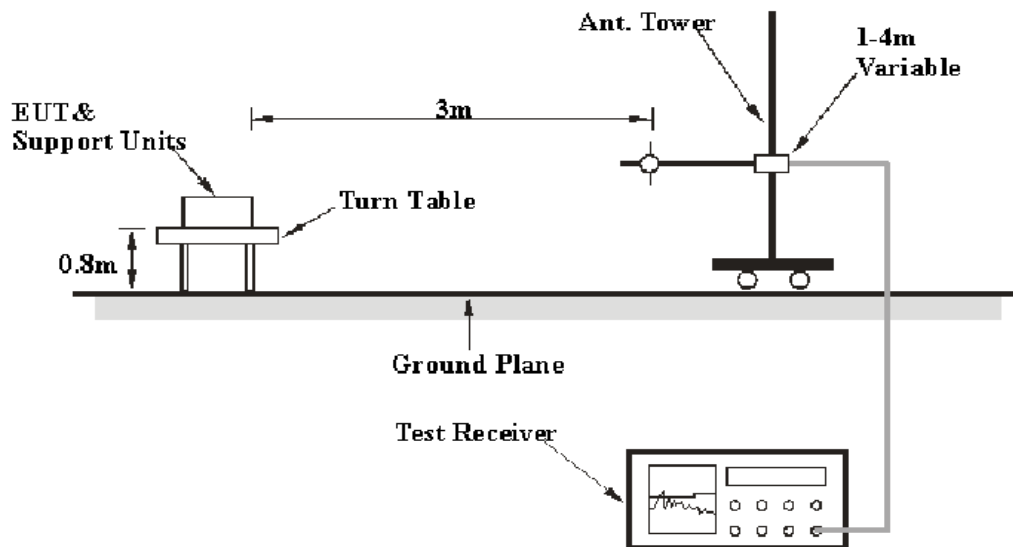
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

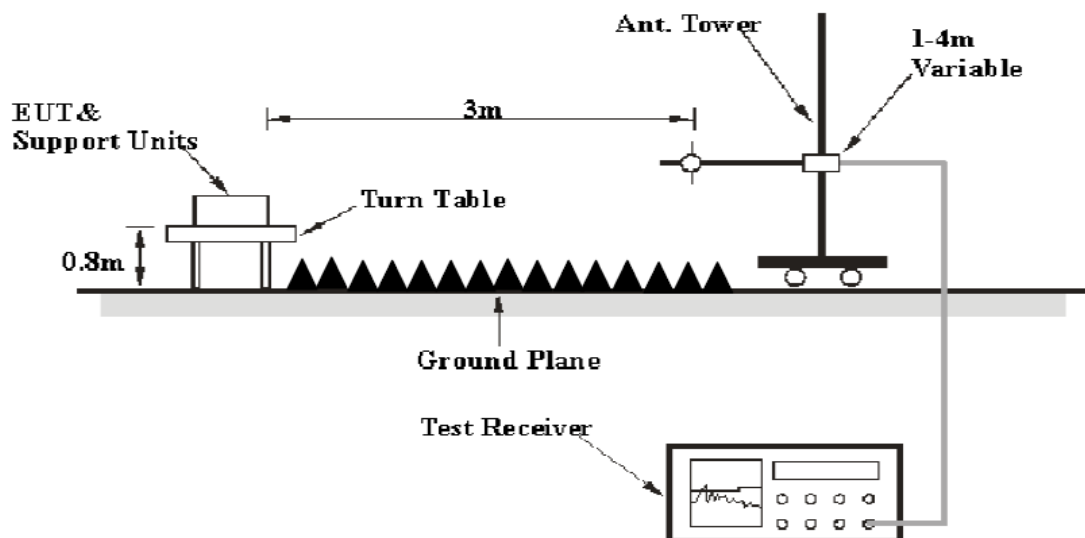
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



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

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

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	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

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

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

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

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

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 Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{\text{lim}} + U_{\text{cispr}}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data**Environmental Conditions**

Temperature:	28 °C
Relative Humidity:	61 %
ATM Pressure:	101.0 kPa

The testing was performed by Chris Wang on 2016-09-24.

EUT Operation Mode: Receiving

30 MHz – 2 GHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15B	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
32.23	24.68	QP	71	1.62	H	-6.25	18.43	40	21.57
34.61	24.70	QP	354	3.39	V	-7.56	17.14	40	22.86
85.22	35.66	QP	0	4	H	-16.87	18.79	40	21.21
87.38	34.56	QP	13	1.76	H	-16.89	17.67	40	22.33
789.51	28.39	QP	191	1.63	V	-1.68	26.71	46	19.29
949.03	27.33	QP	16	4	V	0.17	27.50	46	18.5
1256.51	53.46	PK	204	1.3	H	-8.71	44.75	74	29.25
1256.51	38.85	Ave.	204	1.3	H	-8.71	30.14	54	23.86
1300.6	54.91	PK	29	1.5	V	-8.35	46.56	74	27.44
1300.6	38.51	Ave.	29	1.5	V	-8.35	30.16	54	23.84

Note:

- 1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
- 2) Corrected Amplitude = Correction Factor + Reading
- 3) Margin = Limit - Corrected Amplitude

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