FCC Part 15B
Measurement and Test Report

For

SHENZHEN WINTACT ELECTRONICS CO., LTD.

ROOM C, FLOOR 6BLOCK B, DONGFANG JIANFU YIJING

INDUSTRIAL ZONE, GONGMING TOWN, GUANGMING DISTRICT,

SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	Gas Monitor
Tested Model:	WT8811
Report No.:	STR18118205E-3
Sample Receipt Date:	2018-11-19
Tested Date:	2018-11-19 to 2018-11-22
Issued Date:	2018-11-22
Tested By:	Gan Li / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

Shenzhen SEM Test Technology Co., Ltd.
1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,
Bao'an District, Shenzhen, P.R.C.（518101）
Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	SHENZHEN WINTACT ELECTRONICS CO., LTD.
Address of applicant:	ROOM C, FLOOR 6BLOCK B, DONGFANG JIANFU YIJING INDUSTRIAL ZONE, GONGMING TOWN, GUANGMING DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA
Manufacturer:	SHENZHEN WINTACT ELECTRONICS CO., LTD.
Address of manufacturer:	ROOM C, FLOOR 6BLOCK B, DONGFANG JIANFU YIJING INDUSTRIAL ZONE, GONGMING TOWN, GUANGMING DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, CHINA

General Description of EUT	
Product Name:	Gas Monitor
Trade Name:	WINTACT
Model No.:	WT8811
Adding Model(s):	WT8800、WT8801、WT8802、WT8803、WT8804、WT8805、WT8806、WT8807、WT8808、WT8809、WT8820、WT8821、WT8822、WT8823、WT8825、WT8826、GM8800A、GM8800B
Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model WT8811, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	Input:DC 5V;Output:DC 3.2V
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	/
Highest Internal Frequency:	Below 108MHz
Classification of ITE:	Class B

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15 Subpart B: Unintentional Radiators

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.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 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.

1.4 Test Facility

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark	Power Supply Mode
TM1	Charging	Connected to adapter	DC 5V(with a adapter input AC 120V/60Hz)
TM2	Discharging	battery powered	DC 3.2V

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Probe Cable*2	0.8	Unshielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Battery*3	/	/	/
adapter	Kezhen	KZ0501500V	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB
Radiated Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2018-05-22	2019-05-21
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2018-05-22	2019-05-21
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2018-05-22	2019-05-21
Amplifier	Agilent	8447F	3113A06717	2018-05-22	2019-05-21
Amplifier	C&D	PAP-1G18	2002	2018-05-22	2019-05-21
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2020-06-07
Horn Antenna	ETS	3117	00086197	2017-06-08	2020-06-07
Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2020-06-07
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2018-05-22	2019-05-21
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2018-05-22	2019-05-21
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2018-05-22	2019-05-21

2. SUMMARY OF TEST RESULTS

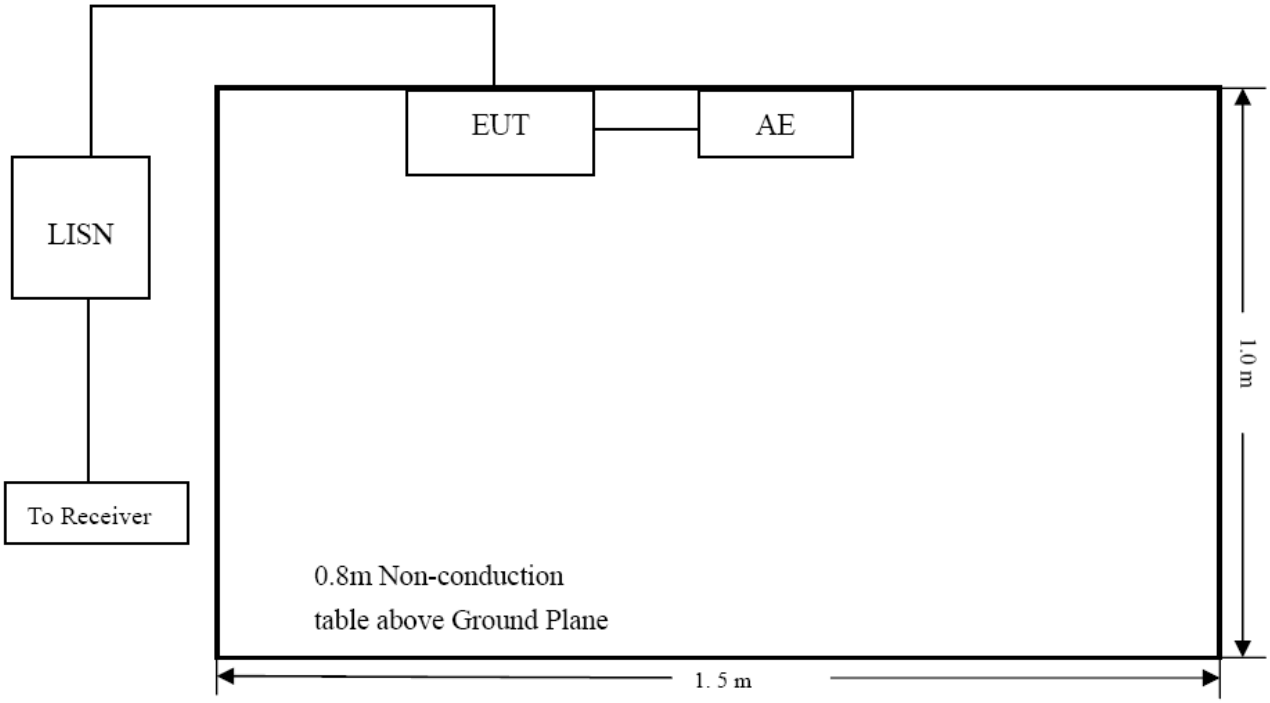
Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of 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.

3.2 Basic Test Setup Block Diagram



3.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

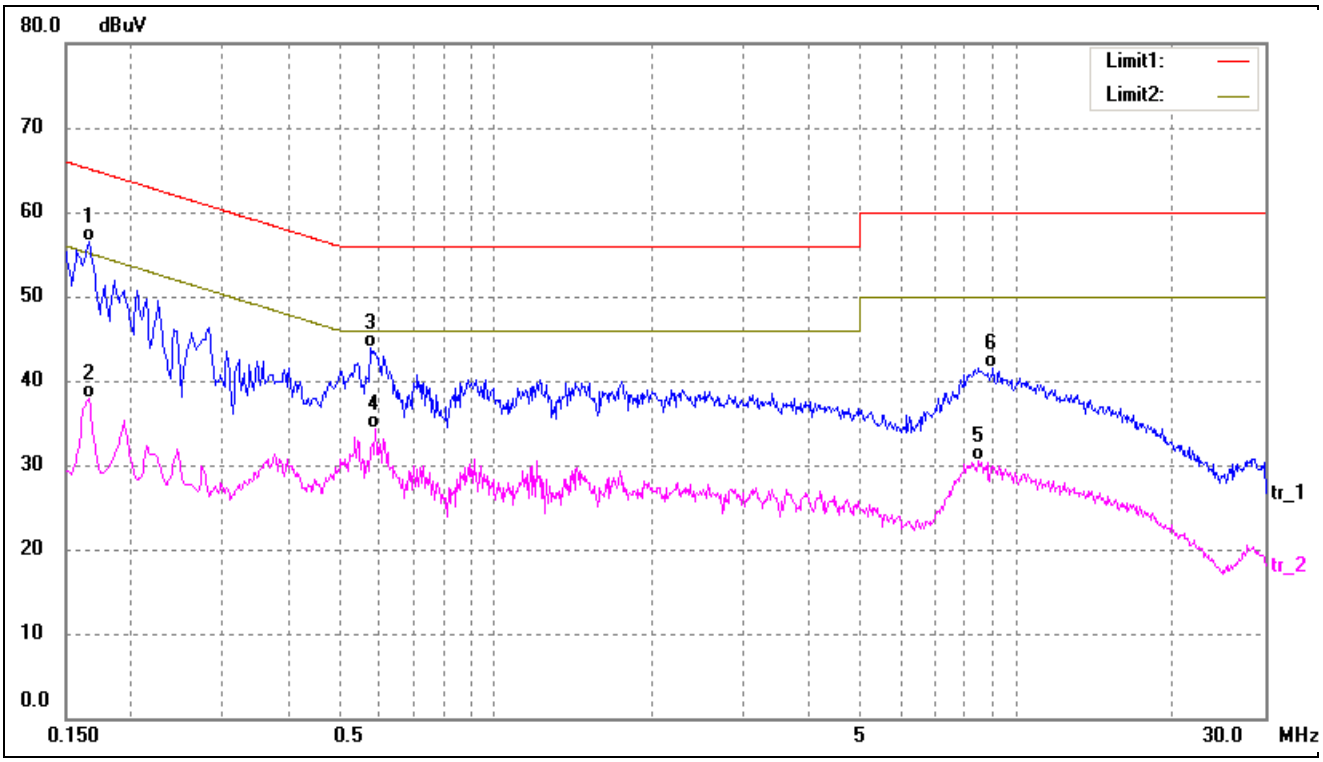
3.4 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

-8.60 dB at **0.1660 MHz** in the **Line, QP** detector, **TM1** mode, 0.15-30MHz

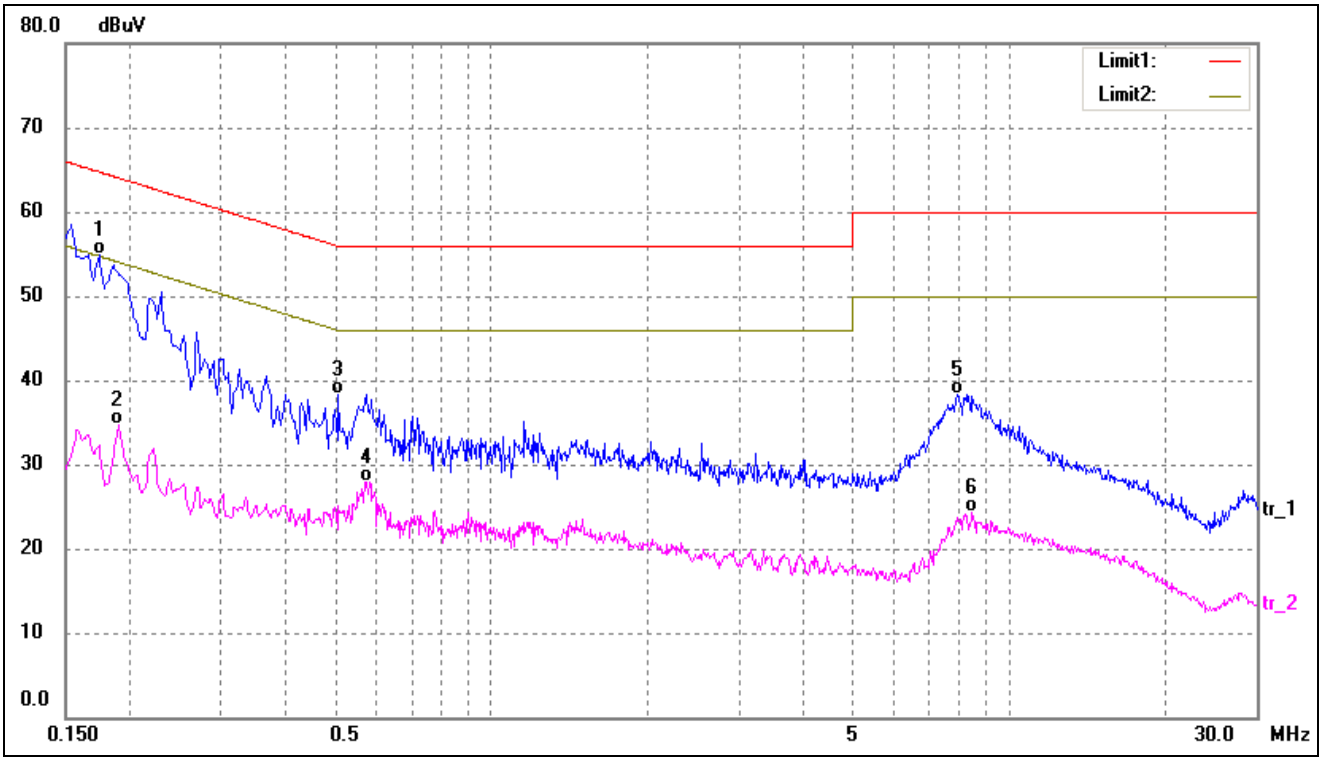
3.5 Conducted Emissions Test Data

Test mode:	TM1	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1660	46.45	10.11	56.56	65.16	-8.60	QP
2	0.1660	27.86	10.11	37.97	55.16	-17.19	AVG
3	0.5780	33.55	10.33	43.88	56.00	-12.12	QP
4	0.5900	23.90	10.33	34.23	46.00	-11.77	AVG
5	8.4900	19.67	10.90	30.57	50.00	-19.43	AVG
6	9.0260	30.54	10.92	41.46	60.00	-18.54	QP

Test mode:	TM1	Polarity:	Neutral

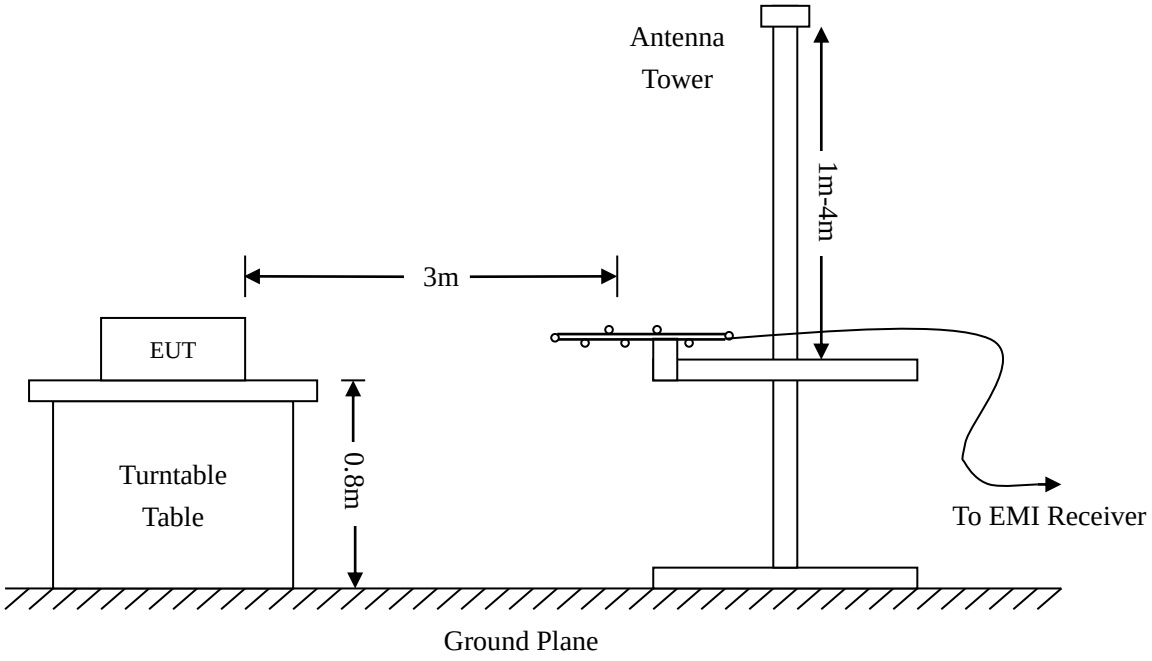


No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1740	44.73	10.11	54.84	64.77	-9.93	QP
2	0.1900	24.63	10.12	34.75	54.04	-19.29	AVG
3	0.5060	28.01	10.29	38.30	56.00	-17.70	QP
4	0.5740	17.54	10.33	27.87	46.00	-18.13	AVG
5	7.9460	27.39	10.88	38.27	60.00	-21.73	QP
6	8.4780	13.48	10.90	24.38	50.00	-25.62	AVG

4. RADIATED EMISSION

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.
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.



4.2 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

4.3 Corrected Amplitude & Margin Calculation

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

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for a Class B device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15.109(a) Limit

4.4 Environmental Conditions

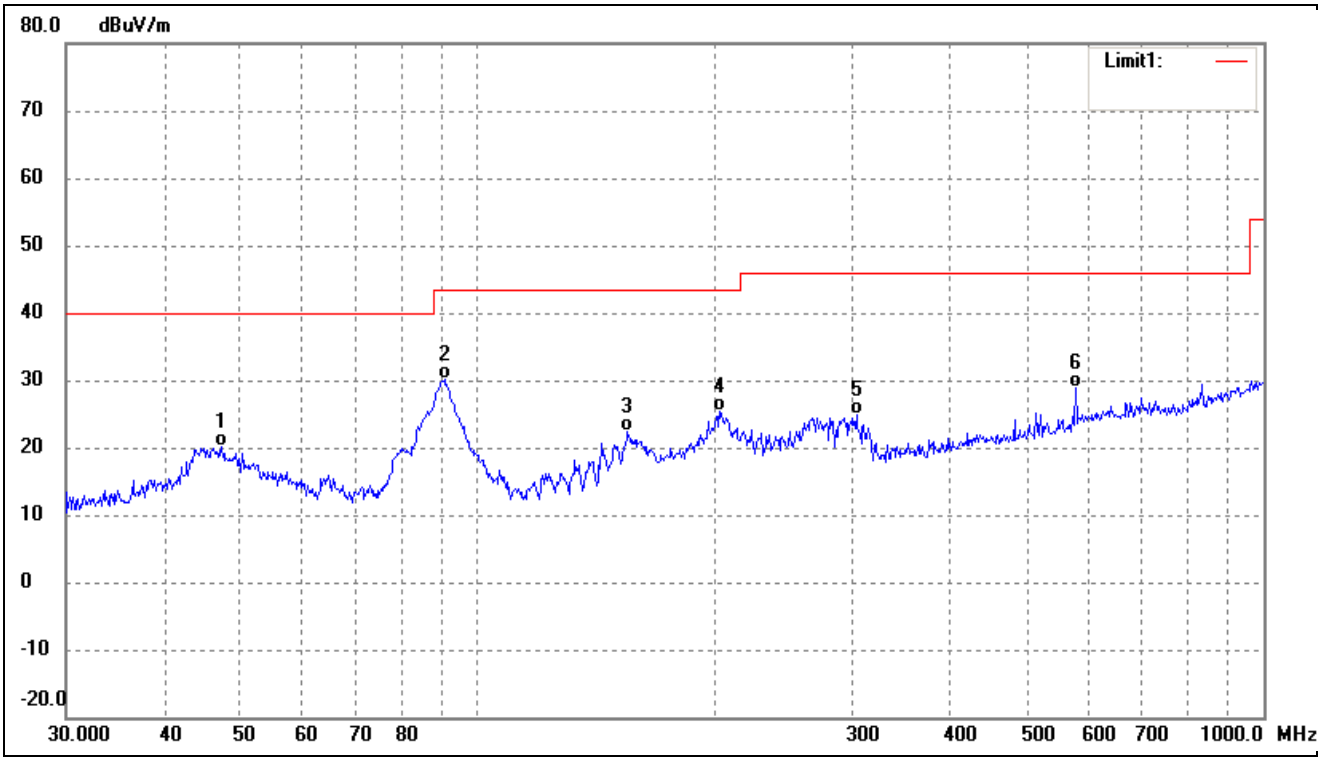
Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

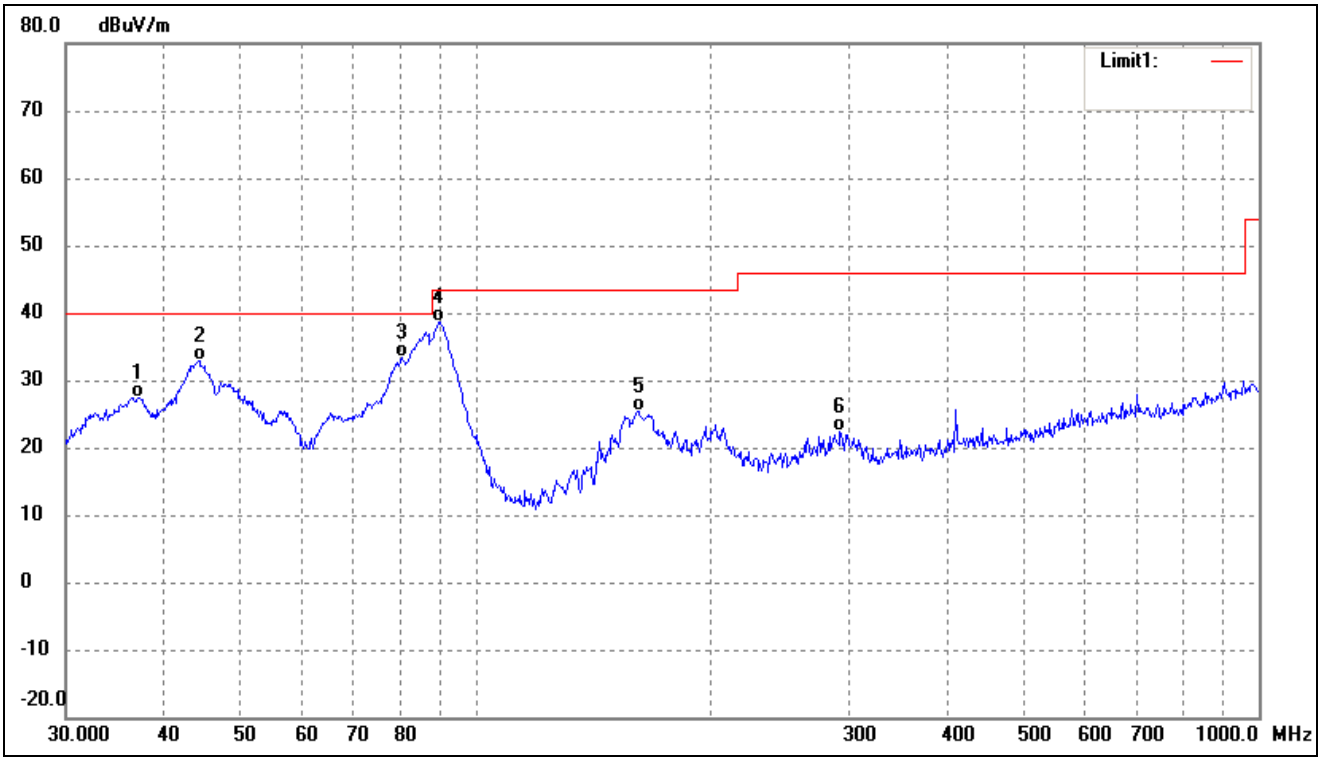
-4.80 dB at **89.5900 MHz** in the **Vertical** polarization, **TM1** mode, **30MHz** to **1 GHz**, **3Meters**

Test mode:	TM1	Polarity:	Horizontal



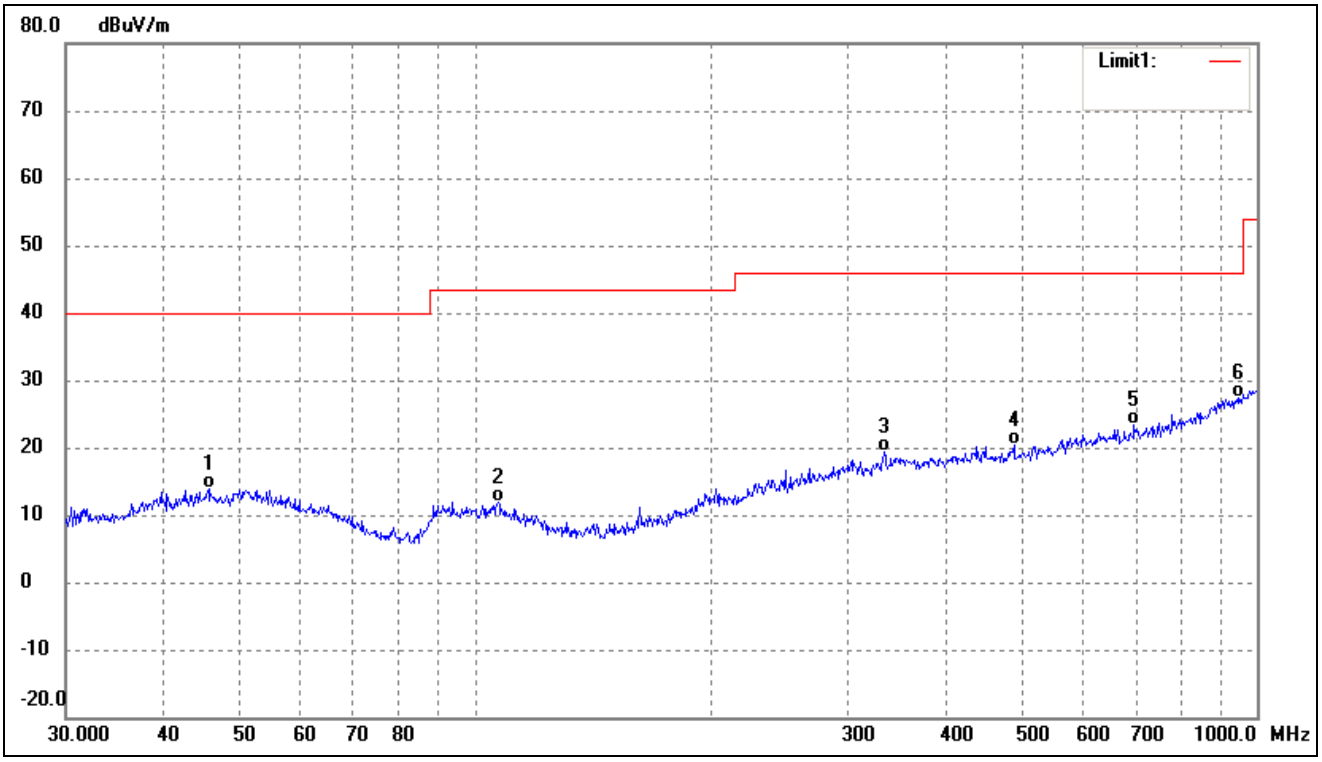
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	47.3255	31.86	-11.70	20.16	40.00	-19.84	357	100	QP
2	90.8554	43.63	-13.57	30.06	43.50	-13.44	97	100	QP
3	155.3644	39.28	-16.84	22.44	43.50	-21.06	214	100	QP
4	203.5228	38.59	-13.10	25.49	43.50	-18.01	101	100	QP
5	303.5437	33.20	-8.22	24.98	46.00	-21.02	184	100	QP
6	576.6443	32.65	-3.89	28.76	46.00	-17.24	235	100	QP

Test mode:	TM1	Polarity:	Vertical



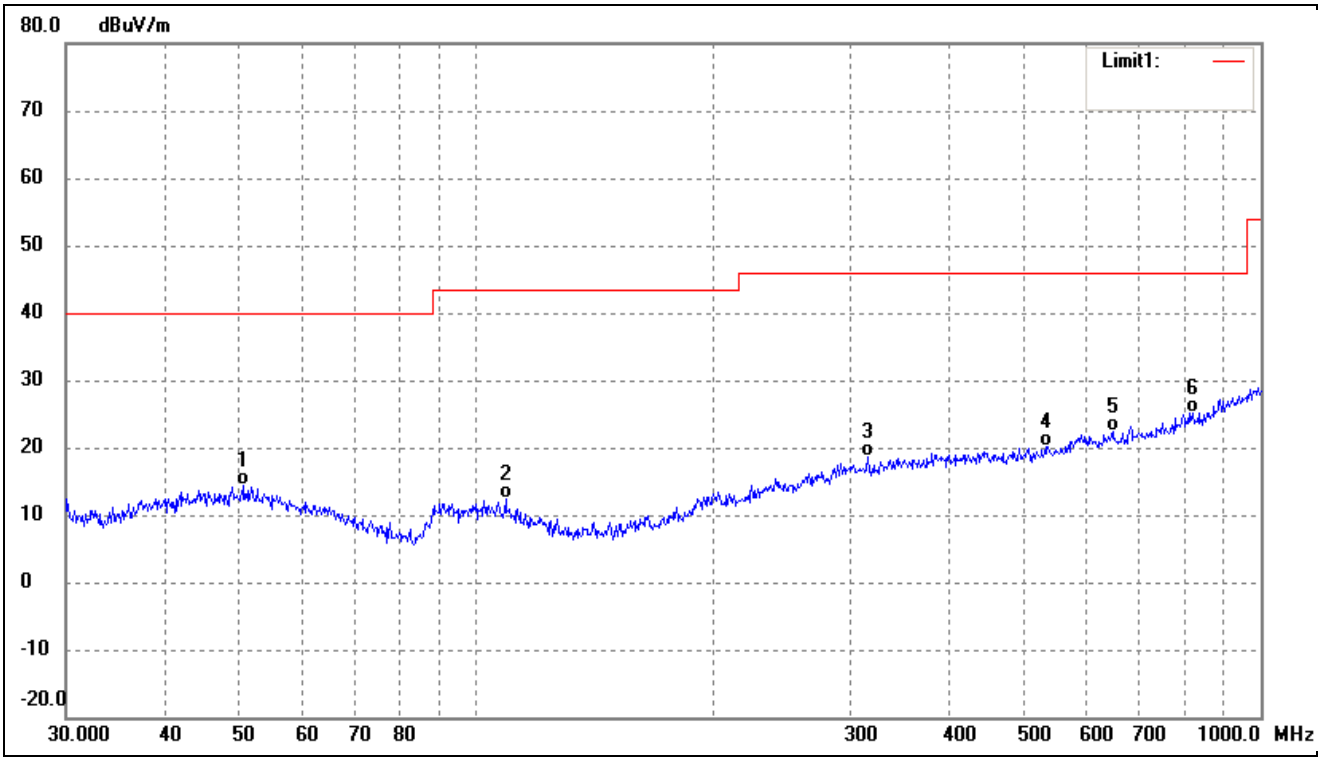
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	37.1550	41.06	-13.58	27.48	40.00	-12.52	231	100	QP
2	44.4308	44.99	-12.00	32.99	40.00	-7.01	90	100	QP
3	80.6442	51.01	-17.74	33.27	40.00	-6.73	85	100	QP
4	89.5900	52.42	-13.72	38.70	43.50	-4.80	97	100	QP
5	161.4742	41.84	-16.46	25.38	43.50	-18.12	203	100	QP
6	292.0583	30.67	-8.37	22.30	46.00	-23.70	313	100	QP

Test mode:	TM2	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	45.6948	27.59	-13.83	13.76	40.00	-26.24	85	100	QP
2	107.1337	27.42	-15.47	11.95	43.50	-31.55	230	100	QP
3	333.6867	28.20	-8.84	19.36	46.00	-26.64	70	100	QP
4	489.0269	28.63	-8.36	20.27	46.00	-25.73	304	100	QP
5	696.8567	28.90	-5.53	23.37	46.00	-22.63	339	100	QP
6	948.7610	27.25	0.25	27.50	46.00	-18.50	228	100	QP

Test mode:	TM2	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	50.5860	27.89	-13.60	14.29	40.00	-25.71	161	100	QP
2	109.0286	28.09	-15.63	12.46	43.50	-31.04	287	100	QP
3	315.4808	28.06	-9.38	18.68	46.00	-27.32	72	100	QP
4	531.9635	28.13	-7.93	20.20	46.00	-25.80	236	100	QP
5	647.3856	28.42	-6.00	22.42	46.00	-23.58	125	100	QP
6	818.8341	28.20	-3.07	25.13	46.00	-20.87	248	100	QP

EXHIBIT 1 - PRODUCT LABELING

Proposed FCC Label Format

Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. Where the EUT is constructed in two or more sections connected by wires and marketed together, the above statement is required to be affixed only to the main control unit. When the EUT is so small or for such use that it is not practicable to place the statement on it, the above information shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed.

Proposed Label Location on EUT

FCC Label Location

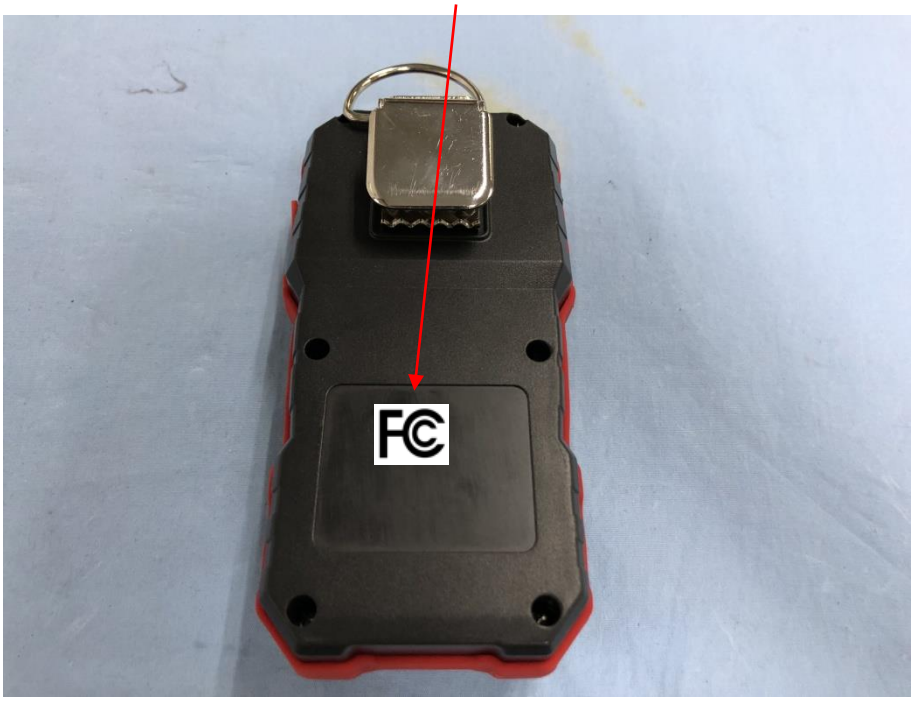


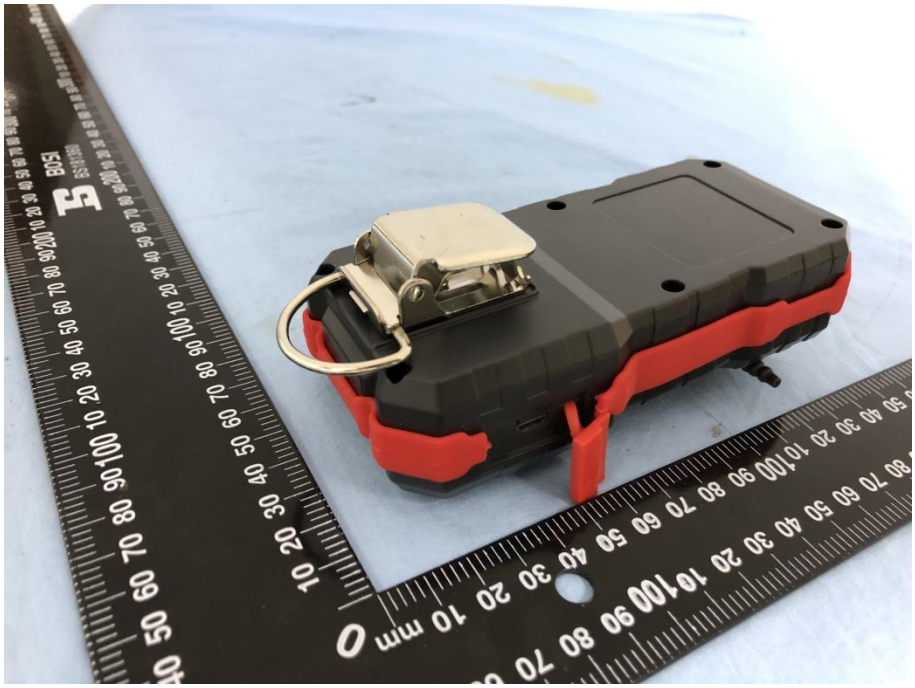
EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1

EUT View 2

EUT View 3

EUT View 4



EUT View 5

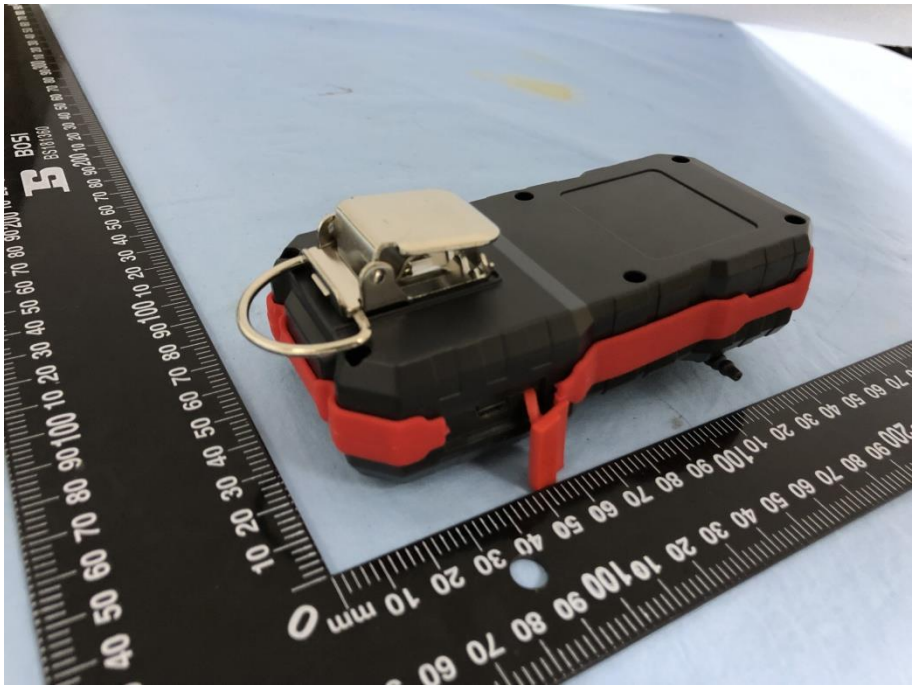
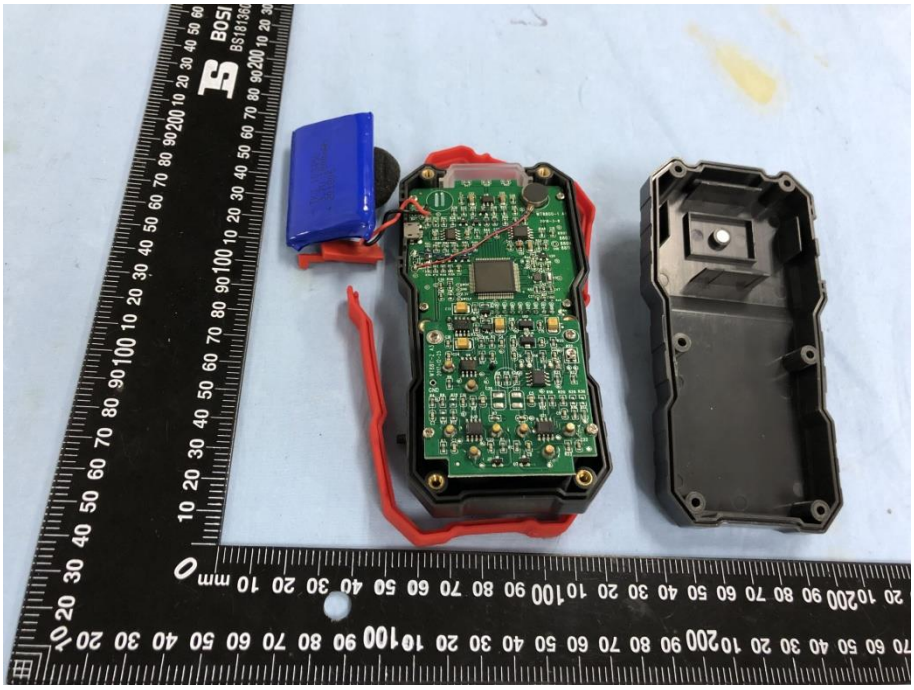
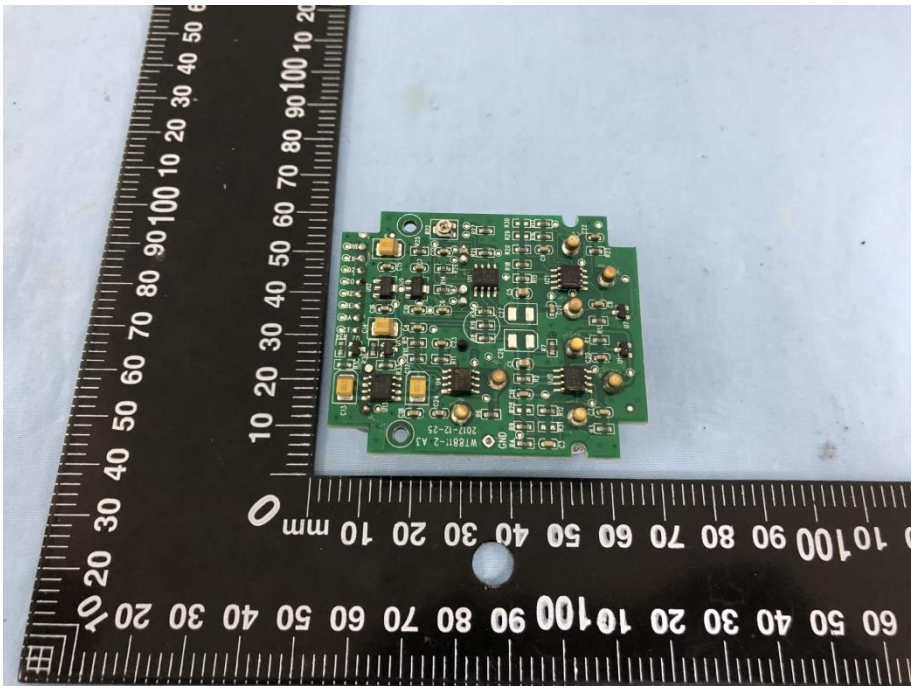


EXHIBIT 3 - EUT INTERNAL PHOTOGRAPHS

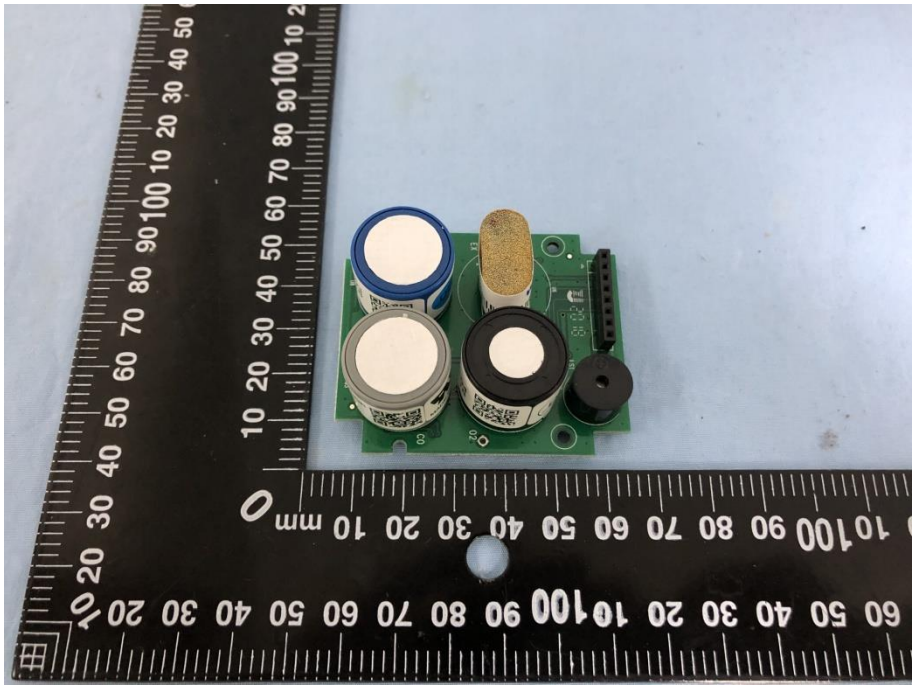
EUT Housing and Board View 1



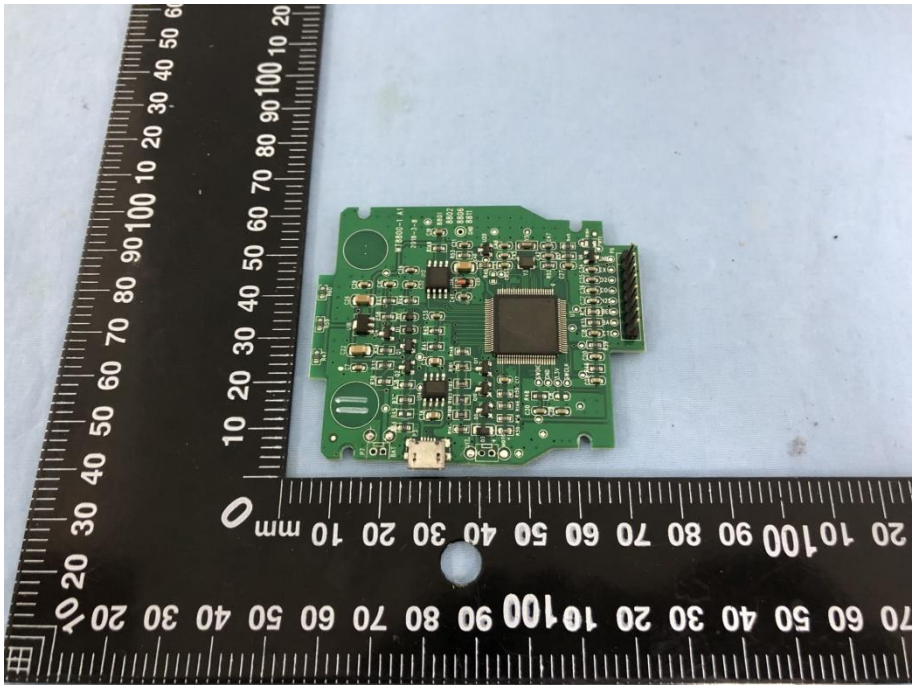
EUT Housing and Board View 2



EUT Housing and Board View 3



EUT Housing and Board View 4



EUT Housing and Board View 5

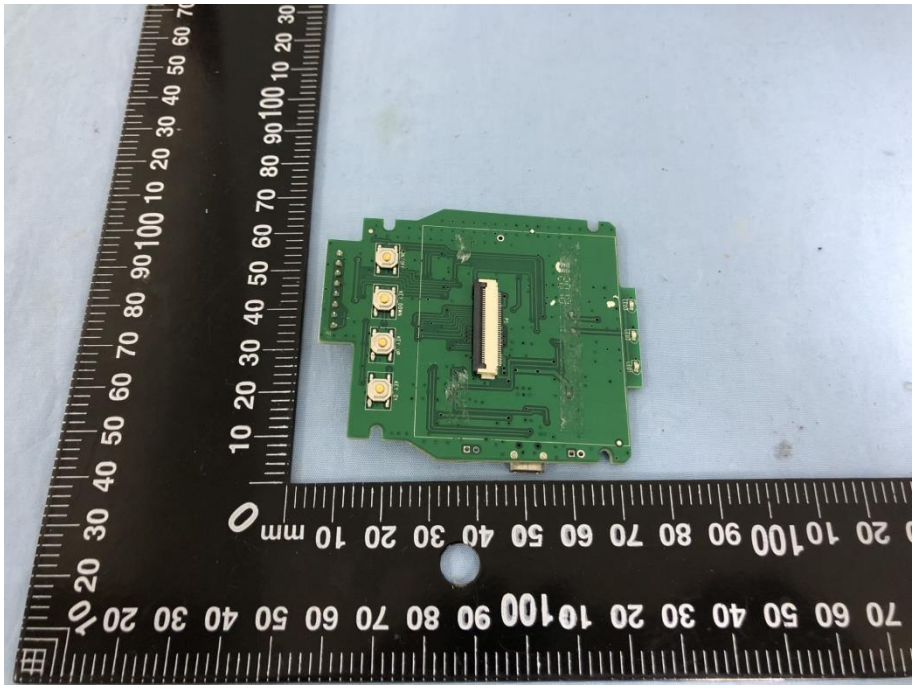
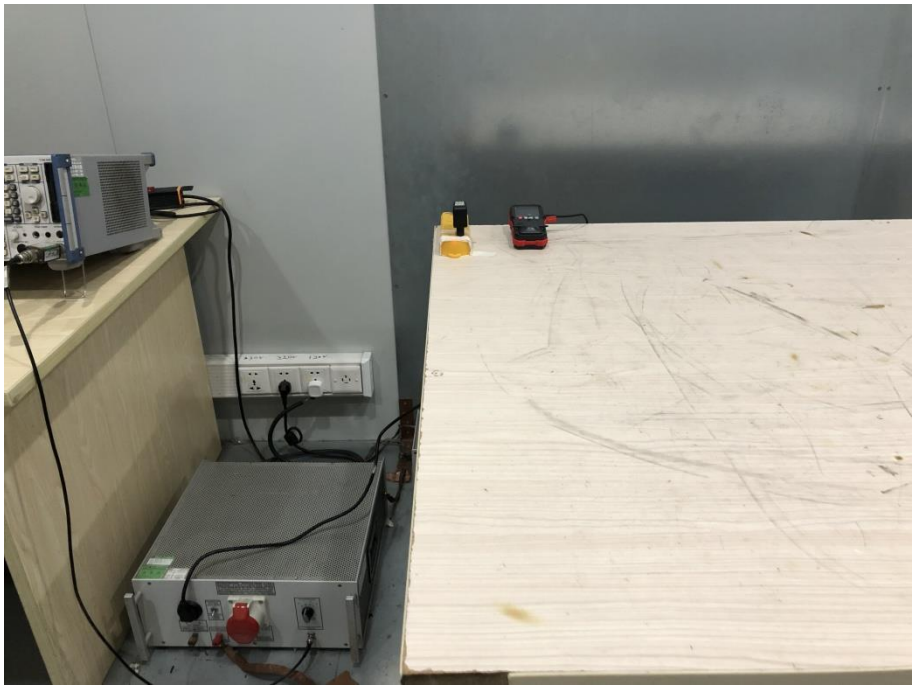


EXHIBIT 4 - TEST SETUP PHOTOGRAPHS

Conducted Emission Test Setup



Radiation Emission View

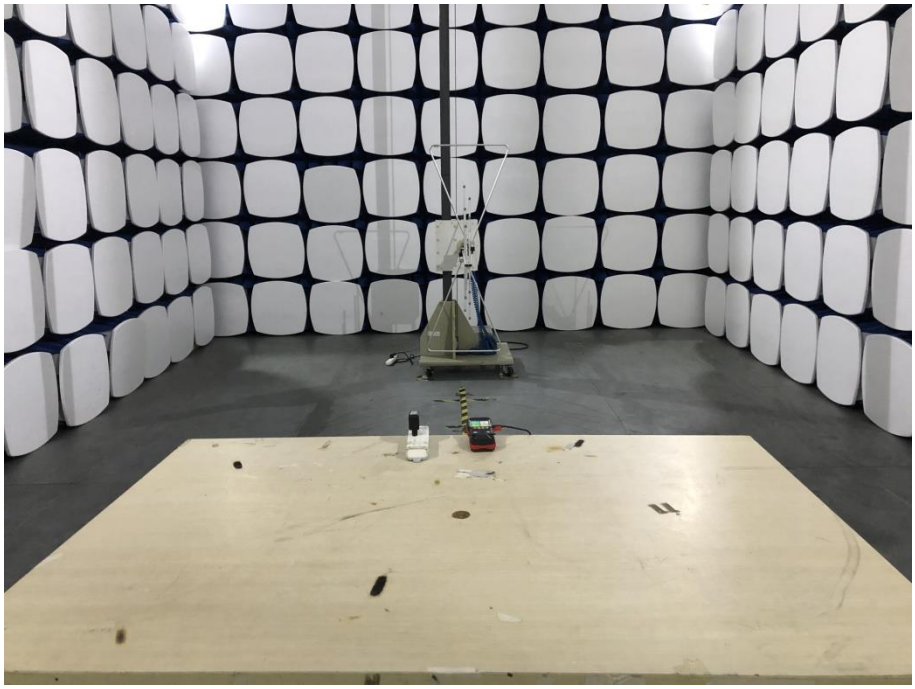


EXHIBIT 5 - USERS MANUAL

Information to Users

According to the FCC Part 15.19, 15.21, and 15.105 rules, for this EUT, the instructions or operation manual furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

FCC Caution

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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