FCC TEST REPORT

Report No.:	VTC-2020050611F1
Product:	Smart home sensors
Model No.:	JMWD01,JMWD02,JMWD03,JMWD04,JMWD05, JMZD01, JMZD02, JMWG01,JMWG02,JMWZG5, JMPIR01, JMWG03, JMTRH02, JMWZG1
Applicant:	Shenzhen Netplus Tech Co.,Ltd
Address:	2/F,Building D, Senhainuo Weijian Industrial Park, Shiyan, Bao'an, Shenzhen, China
Issued by:	Shenzhen VTC Testing Technology Co., Ltd.
Lab Location:	211 Factory Room,No.96,Yangchong Road, Tangxiachong Community,Yanluo Street, Bao'an District, Shenzhen,Guangdong,China

Date of Receipt:
Apr.28, 2020
Date of Test:
Apr.28, 2020- May.06,2020
Date of Issue:
May.06,2020
Test Result: Pass

Testing Engineer : Jake Wang
(Jake Wang)

Technical Manager : Ada Li
(Ada Li)

Authorize Signatory : Can Liu
(Can Liu)

Shenzhen VTC Testing Technology Co.,Ltd. VTC approved

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INFORMATION

Applicant	:	Shenzhen Netplus Tech Co.,Ltd
Address	:	2/F, Building D, Senhainuo Weijian Industrial Park, Shiyan, Bao'an, Shenzhen
Manufacturer	:	Shenzhen Netplus Tech Co.,Ltd
Address	:	2/F, Building D, Senhainuo Weijian Industrial Park, Shiyan, Bao'an, Shenzhen
EUT	:	Smart home sensors
Model Number	:	JMWD01,JMWD02,JMWD03,JMWD04,JMWD05, JMZD01, JMZD02, JMWG01,JMWG02,JMWZG5, JMPIR01, JMWG03, JMTRH02, JMWZG1
Trademark	:	N/A
Standard	:	FCC Part 15 B:2016 ANSI C63.4:2014
Test Result:	:	PASS

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : Smart home sensors

Trademark : N/A

Model Number : JMWD01,JMWD02,JMWD03,JMWD04,JMWD05, JMZD01, JMZD02, JMWG01,JMWG02,JMWZG5, JMPIR01, JMWG03, JMTRH02, JMWZG1

Model Difference : Apart from the name of the model, the others are the same

Power Supply : DC3.0V (2 x 1.5V AA batteries), 0.5A

Note: JMWD01 was selected as the test model and the datas have been recorded in this report.

1.2. Tested System Details

Personal Computer : ASUS

M/N : D6-02

1.3. Test Uncertainty

Conducted Emission Uncertainty : ±2.66dB

Radiated Emission Uncertainty : ±4.26dB

2. TEST INSTRUMENT USED

For Conducted Emission at the mains terminals Test

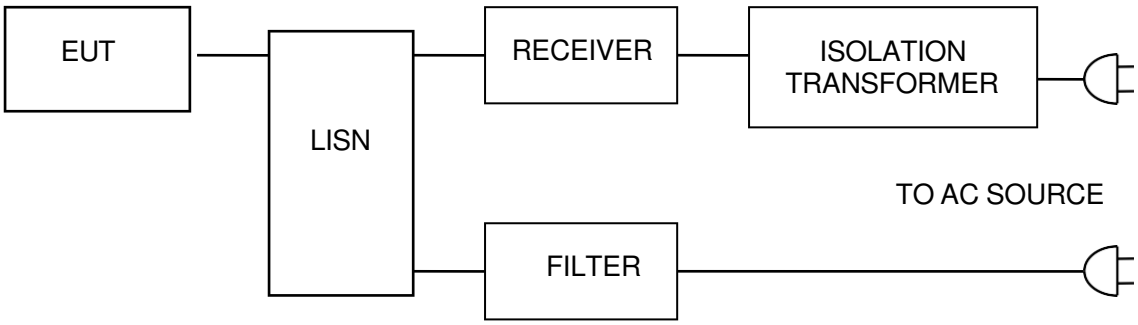
Conducted Emission Test (A --- site)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
843 Shielded Room	ChengYu	843 Room	843	July.14, 2019	July.13, 2020
EMI Receiver	R&S	ESCI	101421	July.14, 2019	July.13, 2020
LISN	Schwarzbeck	NSLK8127	8127739	July.14, 2019	July.13, 2020
Attenuator	R&S	ESH3-Z2	BCTC021E	July.14, 2019	July.13, 2020
843 Cable 1#	FUJIKURA	843C1#	001	July.14, 2019	July.13, 2020

For Radiated Emission Test

Radiation Emission Test (966 chamber)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	July.14, 2019	July.13, 2020
Spectrum Analyzer	Agilent	E4407B	MY45109572	July.14, 2019	July.13, 2020
Amplifier	Schwarzbeck	BBV9743	9743-119	July.14, 2019	July.13, 2020
Amplifier	Schwarzbeck	BBV9718	9718-270	July.14, 2019	July.13, 2020
Log-periodic Antenna	Schwarzbeck	VULB9160	VULB9160-3369	July.14, 2019	July.13, 2020
EMI Receiver	R&S	ESCI	101421	July.14, 2019	July.13, 2020
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1275	July.14, 2019	July.13, 2020
966 Cable 1#	CHENGYU	966	004	July.14, 2019	July.13, 2020
966 Cable 2#	CHENGYU	966	003	July.14, 2019	July.13, 2020

3. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

3.1. Block Diagram Of Test Setup



3.2. Test Standard

FCC PART 15 B

3.3. Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC PART 15 B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5. Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.
3.5.2 Turn on the power of all equipment.
3.5.3 Let the EUT work in test modes and test it.

3.6. Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipment. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **FCC PART 15 B** regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.

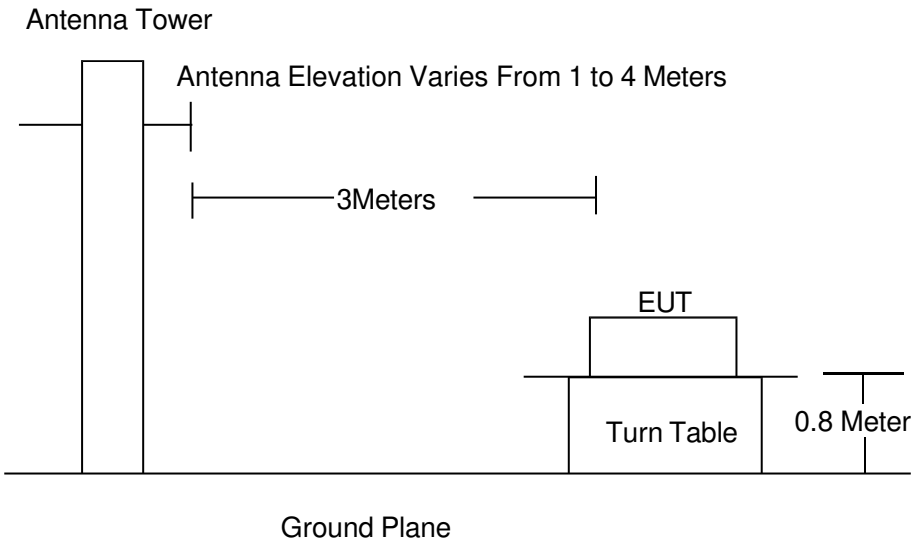
The frequency range from 150 KHz to 30 MHz is investigated.

3.7. Test Result

The EUT is powered by the DC only, the test item is not applicable.

4. RADIATION EMISSION TEST

4.1. Block Diagram of Test Setup



4.2. Test Standard

FCC PART 15 B

4.3. Radiation Limit

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

4.4. EUT Configuration on Test

The FCC PART 15 B regulations test method must be used to find the maximum emission during radiated emission test.
The configuration of EUT is the same as used in conducted emission test. Please refer to Section 2.2.

4.5. Operating Condition of EUT

Same as conducted emission test, which is listed in Section 2.2 except the test set up replaced as Section 4.1.

4.6. Test Procedure

The EUT and its simulators are placed on a turned table that is 0.8 meter above the ground. The turned table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find the maximum emission levels, the interface cable must be manipulated according to FCC PART 15 B on radiated emission test.
The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz below 1GHz, set at 1MHz above 1GHz
The frequency range from 30MHz to 1000MHz is checked.

The highest frequency of the internal sources of the EUT was 1.3GHz, so the measurement was only made up to 6GHz.

4.7. Test Result

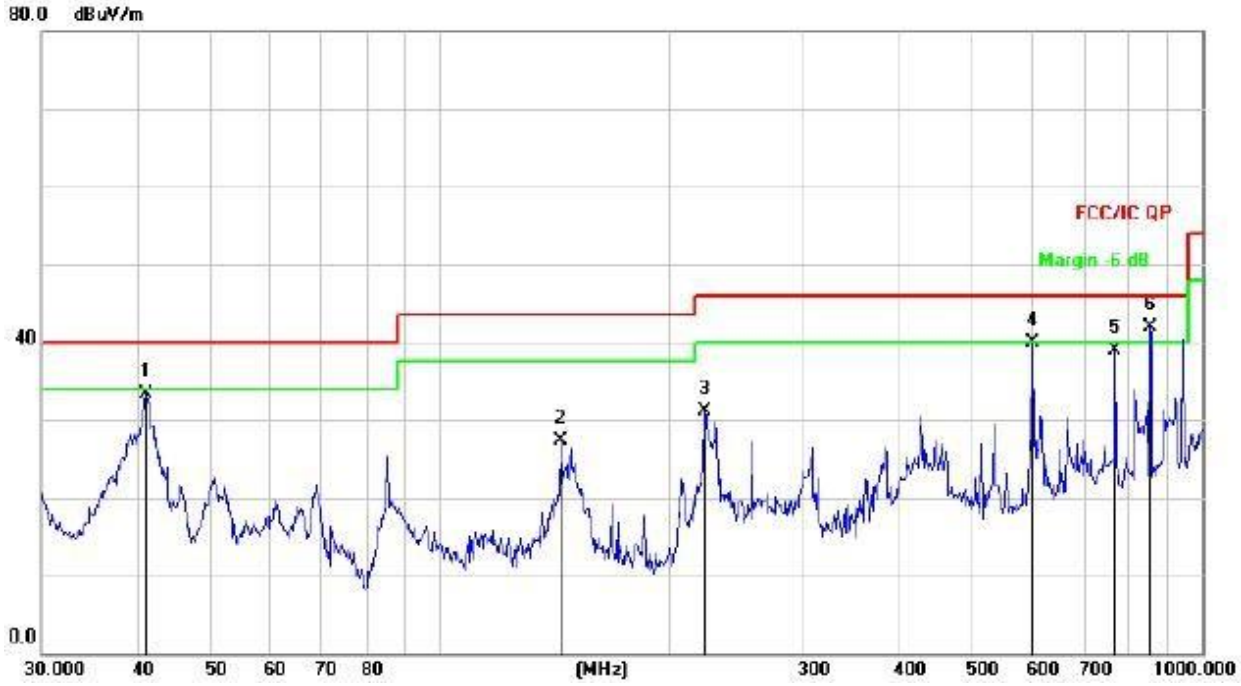
PASS

Please refer to the following page.

Radiation Emission Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	DC 3V	Test Mode:	ON Mode

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		148.4410	45.73	-19.72	26.01	43.50	-17.49	QP			
2		256.5211	50.03	-13.52	36.51	46.00	-9.49	QP			
3	!	599.3212	45.08	-4.50	40.58	46.00	-5.42	QP			
4	!	768.7481	43.84	-1.52	42.32	46.00	-3.68	QP			
5	*	854.0247	42.60	-0.20	42.40	46.00	-3.60	QP			
6	!	942.1305	40.68	1.15	41.83	46.00	-4.17	QP			

Radiation Emission Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	DC 3V	Test Mode:	ON Mode



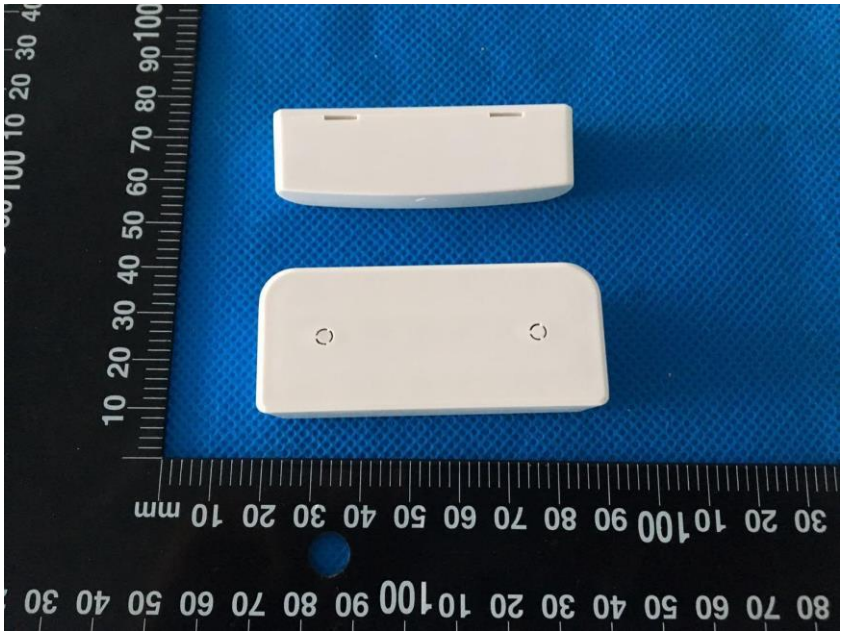
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		41.1320	48.61	-15.40	33.21	40.00	-6.79	QP			
2		143.8295	47.18	-19.89	27.29	43.50	-16.21	QP			
3		222.1698	46.27	-15.20	31.07	46.00	-14.93	QP			
4		599.3212	44.43	-4.50	39.93	46.00	-6.07	QP			
5		768.7481	40.36	-1.52	38.84	46.00	-7.16	QP			
6	*	854.0247	42.17	-0.20	41.97	46.00	-4.03	QP			

5. EUT PHOTOGRAPHS

EUT Photo 1

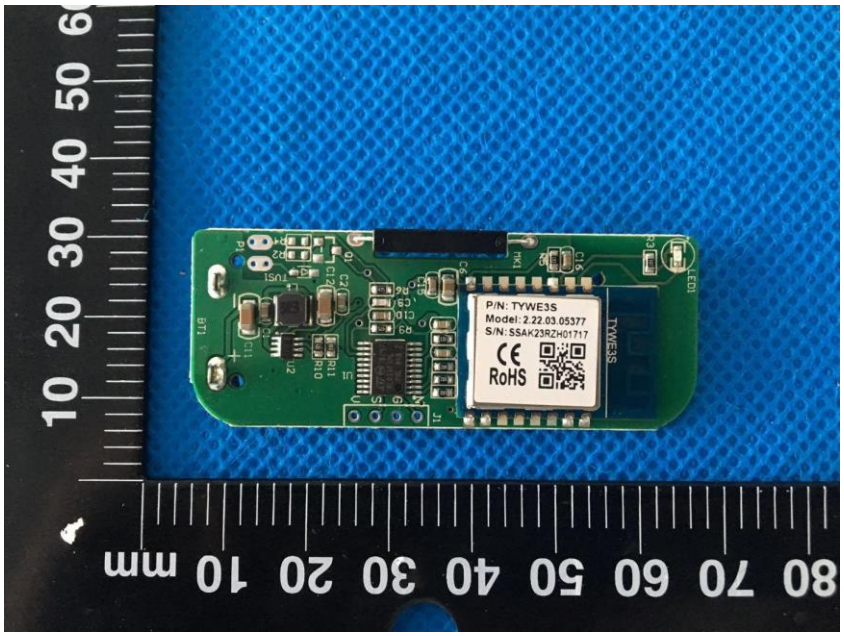
EUT Photo 2

EUT Photo 3

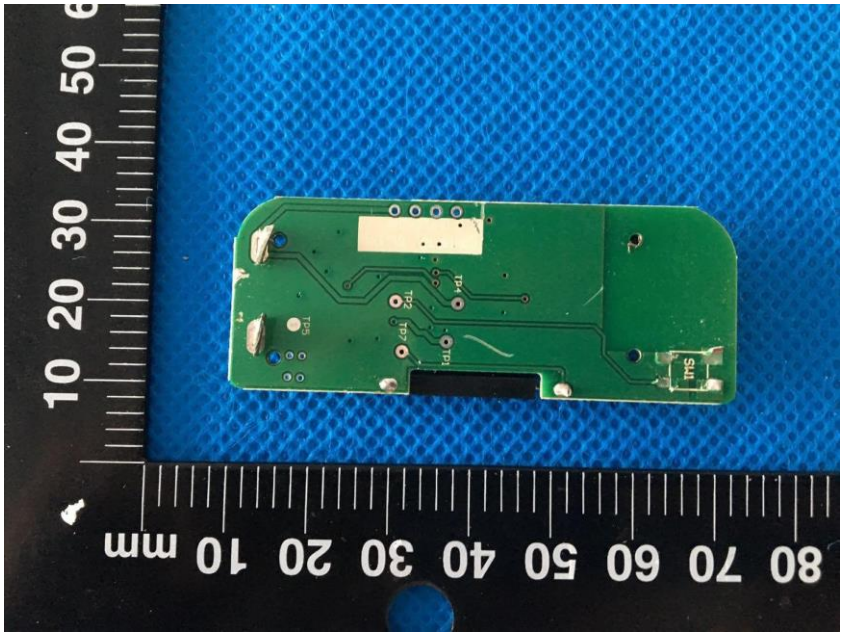


EUT Photo 4

EUT Photo 5



EUT Photo 6



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