FCC TEST REPORT
FCC ID:2BC5B-XW-T19

Report Number.....:	**ZKT-2401080328E**
Date of Test.....	Jan. 02, 2024 to Jan. 12, 2024
Date of issue.....:	Jan. 12, 2024
Total number of pages.....	16
Test Result .....:	PASS
Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address .....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name .....:	**Shenzhen Xinwang Pet Products Co., Ltd**
Address .....:	298 No.168 Hengping Highway, Bao'an Community, Yuanshan Street, Longgang District, Shenzhen City, Guangdong
Manufacturer's name .....:	**Shenzhen Xinwang Pet Products Co., Ltd**
Address .....:	298 No.168 Hengping Highway, Bao'an Community, Yuanshan Street, Longgang District, Shenzhen City, Guangdong
Test specification:	
Standard.....:	FCC Part 15 B ANSI C63.4:2014
Test procedure.....:	/
Non-standard test method .....:	N/A
Test Report Form No.....:	TRF-EL-117_V0
Test Report Form(s) Originator.....:	ZKT Testing
Master TRF .....:	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name.....:	**Dog trainer (pet electronic fence)**
Trademark .....:	XWPET
Model/Type reference.....:	XW-T19 XW-T20, XW-T21
Ratings.....:	Input: DC 5V or Battery 3.7V

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature).....:	Jim Liu
Reviewer (name + signature).....:	Jackson Fang
Approved (name + signature).....:	Lake Xie

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1.VERSION

Report No.	Version	Description	Approved
ZKT-2401080328E	Rev.01	Initial issue of report	Jan. 12, 2024

2.GENERAL INFORMATION

2.1 Description of Device (EUT)

EUT		Dog trainer (pet electronic fence)
Trademark	:	XWPET
Model Number		XW-T19 XW-T20, XW-T21
Model Difference	:	Only the model name is different.
GPS RX Frequency range		1575.42MHz
Bandwidth		10M
Gain		3.5dBi
Power Supply	:	Input: DC 5V or Battery 3.7V

2.2 Tested System Details

None.

2.3 Test Facility

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.4 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Conducted Emission (150K-30MHZ)	3.20
Radiated disturbance(30MHz-1000MHz)	4.80
3m chamber Radiated spurious emission(1GHz-6GHz)	4.9
3m chamber Radiated spurious emission(6GHz-40GHz)	5.0

2.5 Test Instrument Used

Conducted emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Nov. 14, 2023	Nov. 13, 2024
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Nov. 02, 2023	Nov. 01, 2024
3	Test Cable	N/A	C-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
4	Test Cable	N/A	C-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
5	Test Cable	N/A	C-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
6	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Nov. 02, 2023	Nov. 01, 2024
7	Triple-Loop Antenna	N/A	RF300	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
8	Absorbing Clamp	DZ	ZN23201	15034	N/A	Nov. 07, 2023	Nov. 06, 2024
9	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

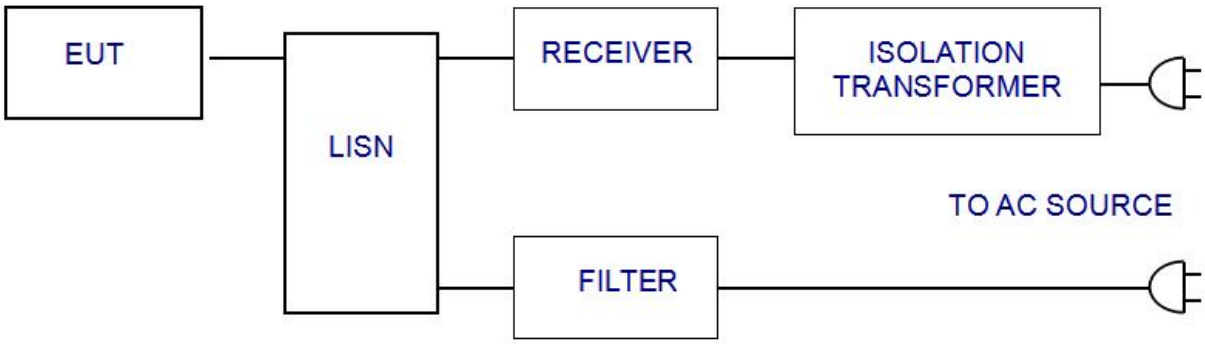
Radiation emissions& Radio Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	A.17.05	Nov. 02, 2023	Nov. 01, 2024
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Nov. 02, 2023	Nov. 01, 2024
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Nov. 02, 2023	Nov. 01, 2024
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	N/A	Nov. 13, 2023	Nov. 12, 2024
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Nov. 13, 2023	Nov. 12, 2024
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Nov. 13, 2023	Nov. 12, 2024
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Nov. 16, 2023	Nov. 15, 2024
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Nov. 02, 2023	Nov. 01, 2024
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Nov. 02, 2023	Nov. 01, 2024
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Nov. 02, 2023	Nov. 01, 2024
11	Test Cable	N/A	R-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
12	Test Cable	N/A	R-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
13	Test Cable	N/A	R-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
14	Test Cable	N/A	RF-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
15	Test Cable	N/A	RF-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024

16	Test Cable	N/A	RF-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
17	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Nov. 02, 2023	Nov. 01, 2024
18	Signal Generator	Agilent	N5182A	N/A	A.01.87	Nov. 02, 2023	Nov. 01, 2024
19	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Nov. 16, 2023	Nov. 15, 2024
20	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Nov. 02, 2023	Nov. 01, 2024
21	MWRF Power Meter Test system	MW	MW100-RF CB	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
22	Power Meter	KEYSIGHT	N1912A P	N/A	A.05.00	Nov. 02, 2023	Nov. 01, 2024
23	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
24	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
25	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\
26	Turntable	MF	MF-7802BS	N/A	N/A	\	\
23	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\

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

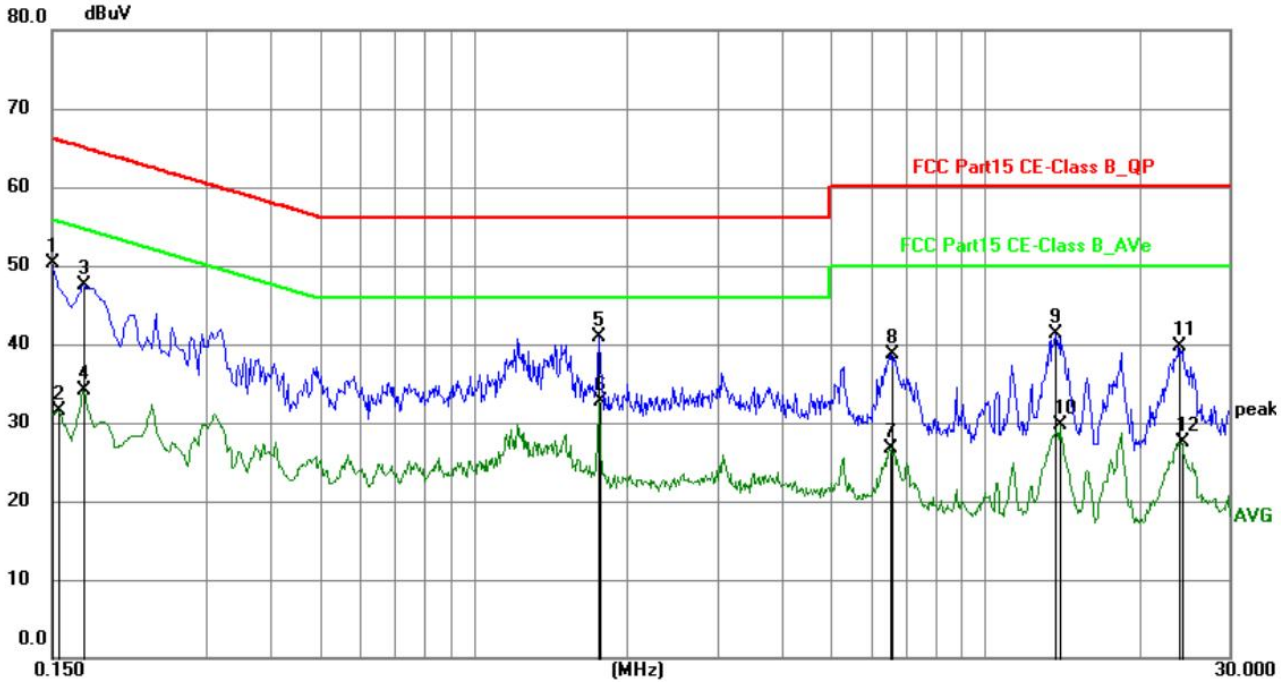
3.5.1 Setup the EUT and simulators as shown in Section 3.1.
3.5.2 Turn on the power of all equipments.
3.5.3 Let the EUT work in test modes and test it.

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 equipments. 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.

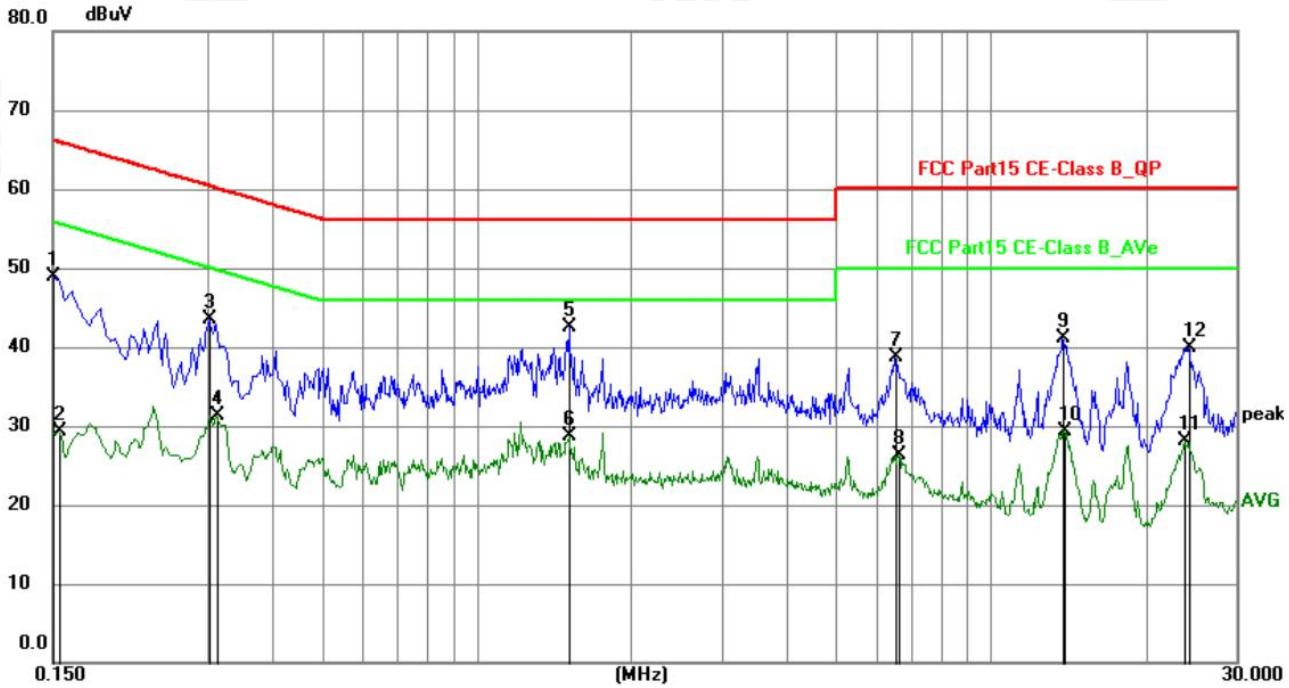
3.7 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Working



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	30.02	20.38	50.40	66.00	-15.60	QP	P	
2	0.1544	11.17	20.40	31.57	55.76	-24.19	AVG	P	
3	0.1725	26.92	20.49	47.41	64.84	-17.43	QP	P	
4	0.1725	13.68	20.49	34.17	54.84	-20.67	AVG	P	
5	1.7609	20.19	20.70	40.89	56.00	-15.11	QP	P	
6	1.7654	12.01	20.70	32.71	46.00	-13.29	AVG	P	
7	6.5040	5.94	20.78	26.72	50.00	-23.28	AVG	P	
8	6.5850	17.83	20.78	38.61	60.00	-21.39	QP	P	
9	13.7130	20.41	20.87	41.28	60.00	-18.72	QP	P	
10	14.0415	8.74	20.88	29.62	50.00	-20.38	AVG	P	
11	23.9910	18.74	20.99	39.73	60.00	-20.27	QP	P	
12	24.1709	6.58	20.99	27.57	50.00	-22.43	AVG	P	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Working

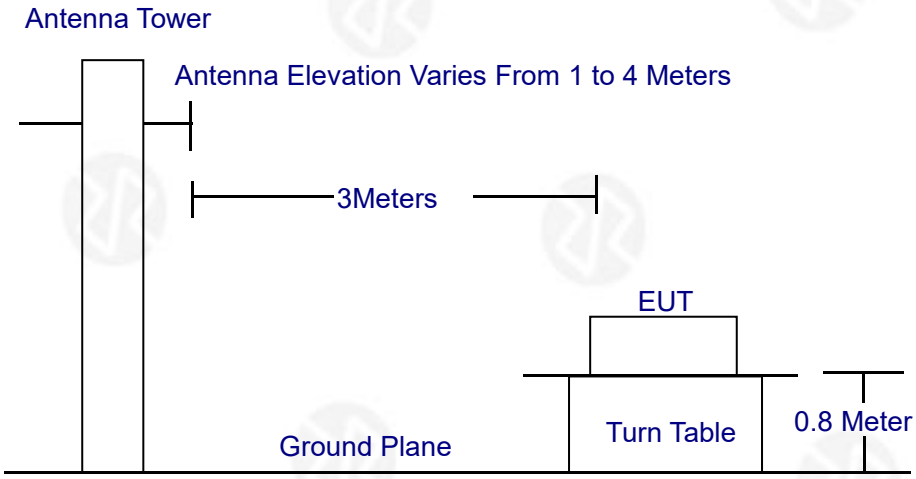


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	28.64	20.23	48.87	66.00	-17.13	QP	P	
2	0.1544	9.11	20.25	29.36	55.76	-26.40	AVG	P	
3	0.3030	23.09	20.50	43.59	60.16	-16.57	QP	P	
4	0.3120	10.83	20.50	31.33	49.92	-18.59	AVG	P	
5	1.5134	21.80	20.72	42.52	56.00	-13.48	QP	P	
6	1.5134	7.99	20.72	28.71	46.00	-17.29	AVG	P	
7	6.4995	17.97	20.75	38.72	60.00	-21.28	QP	P	
8	6.6030	5.52	20.75	26.27	50.00	-23.73	AVG	P	
9	13.8165	20.31	20.82	41.13	60.00	-18.87	QP	P	
10	13.8480	8.58	20.82	29.40	50.00	-20.60	AVG	P	
11	23.8560	7.18	21.01	28.19	50.00	-21.81	AVG	P	
12	24.1575	18.80	21.02	39.82	60.00	-20.18	QP	P	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor
4.Only the worst test voltages were recorded is 120VAC.

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

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

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.

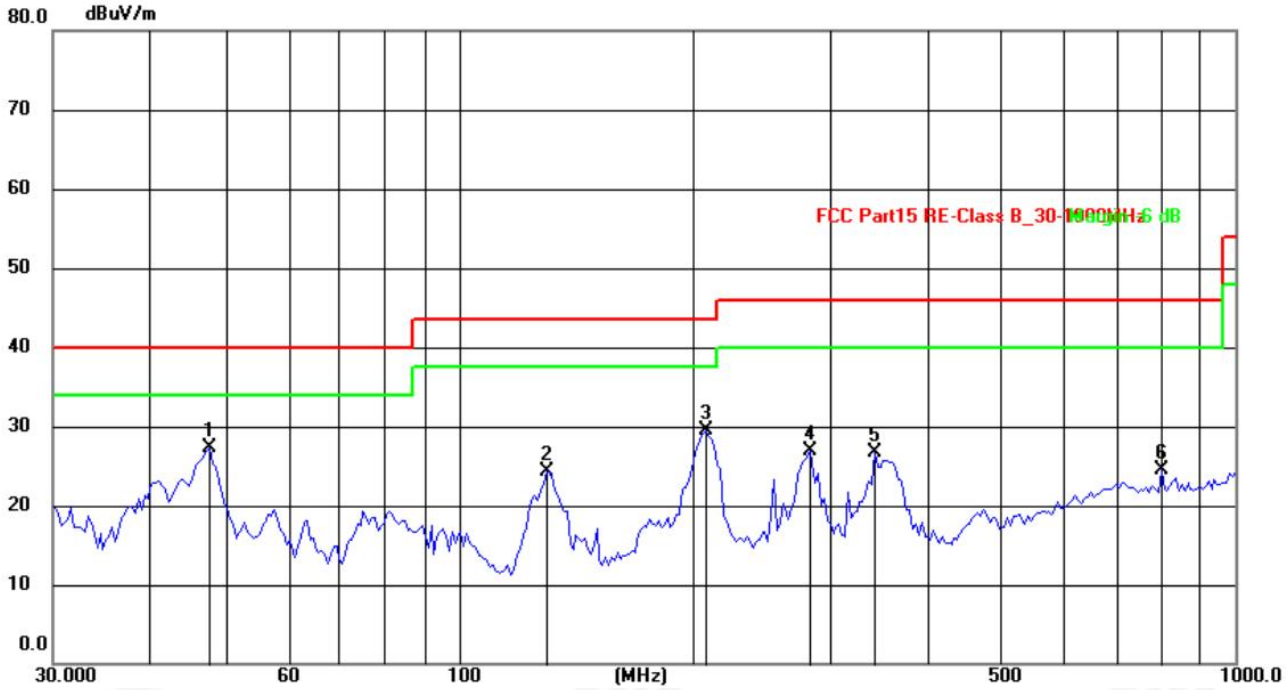
The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz below 1GHz,

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 below 108MHz, so the measurement was only made up to 1GHz.

4.7 Test Result

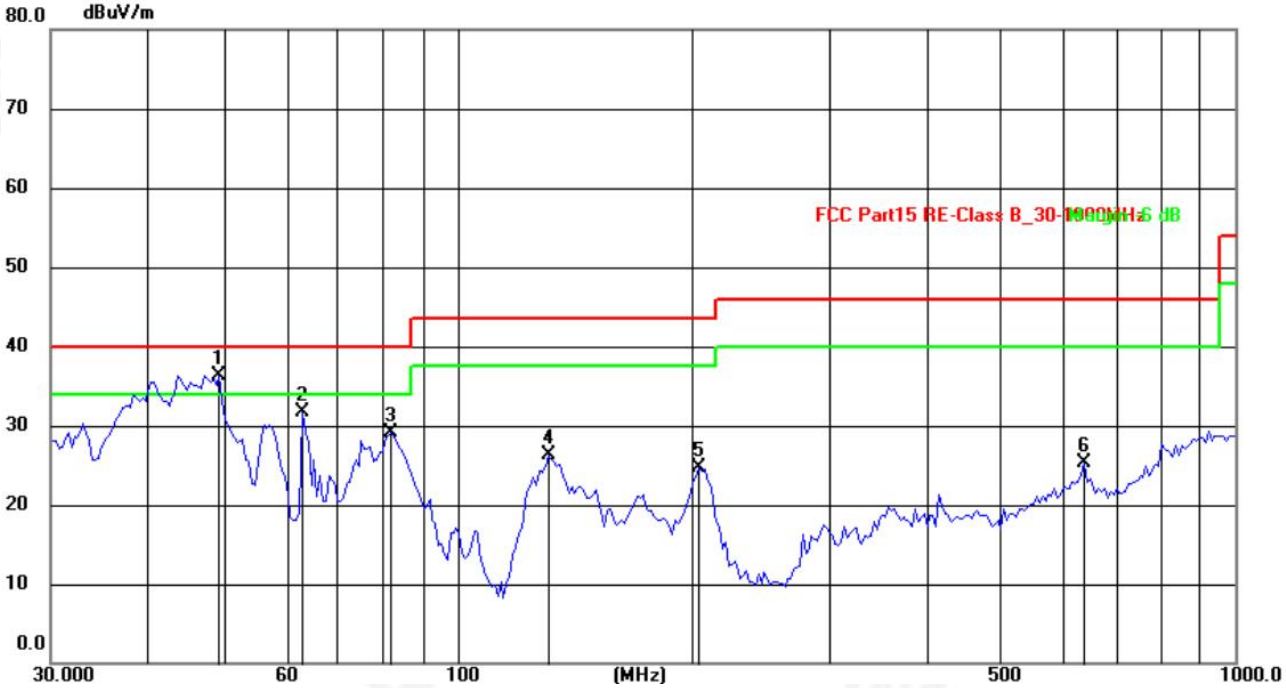
Between 30MHz – 1GHz:

Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	60%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	DC 3.7V	Test Mode:	Working



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.7422	41.32	-14.06	27.26	40.00	-12.74	QP
2	129.6949	42.13	-17.77	24.36	43.50	-19.14	QP
3	208.2148	47.85	-18.38	29.47	43.50	-14.03	QP
4	282.9851	41.67	-14.73	26.94	46.00	-19.06	QP
5	343.1800	43.43	-16.81	26.62	46.00	-19.38	QP
6	803.1933	31.46	-6.94	24.52	46.00	-21.48	QP

Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	60%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	DC 3.7V	Test Mode:	Working

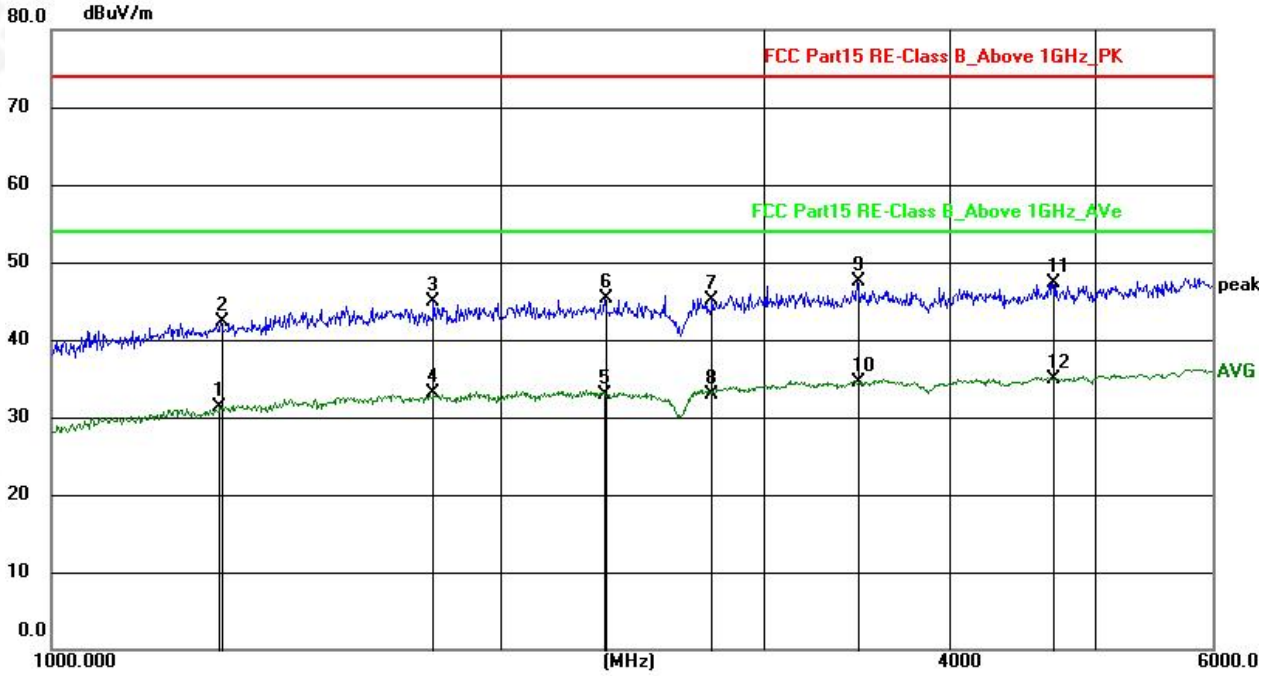


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	49.4459	53.62	-17.27	36.35	40.00	-3.65	QP
2	63.2023	50.35	-18.64	31.71	40.00	-8.29	QP
3	82.2145	50.90	-21.78	29.12	40.00	-10.88	QP
4	130.8369	47.37	-21.14	26.23	43.50	-17.27	QP
5	204.5961	45.41	-20.63	24.78	43.50	-18.72	QP
6	639.4887	32.92	-7.71	25.21	46.00	-20.79	QP

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss － Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.Only the worst test voltages were recorded is 120VAC.

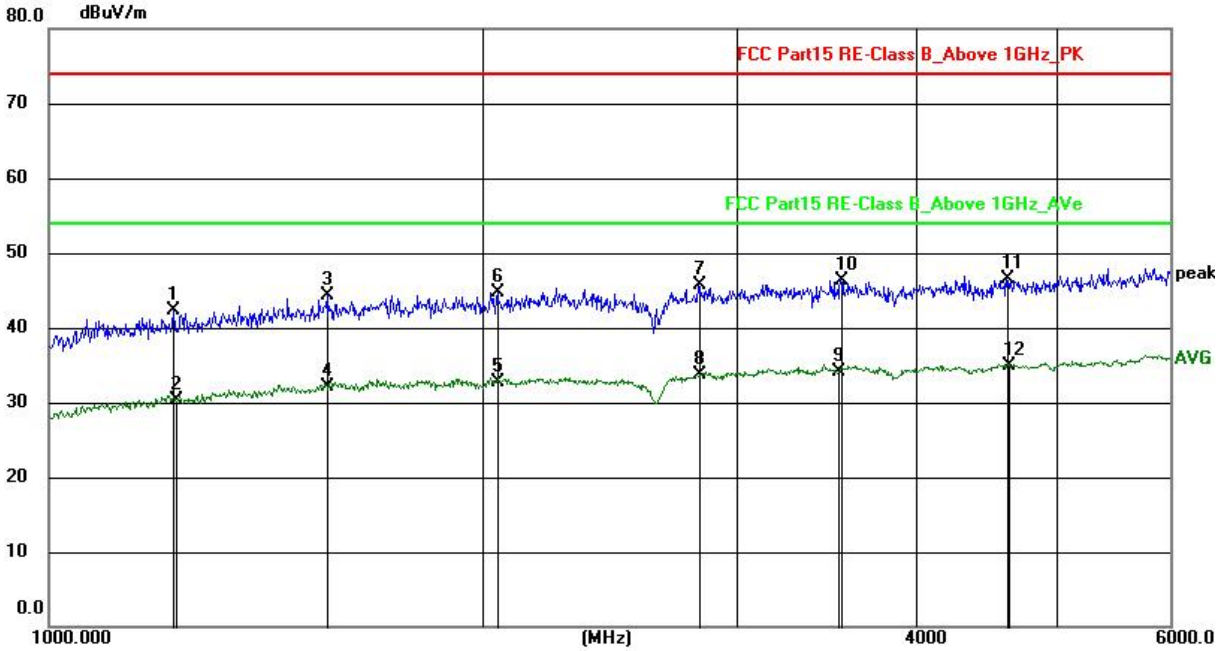
Above 1GHz:

Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	60%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	DC 3.7V	Test Mode:	Working



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1296.677	33.17	-1.88	31.29	54.00	-22.71	AVG
2	1299.003	44.19	-1.88	42.31	74.00	-31.69	peak
3	1803.066	46.38	-1.48	44.90	74.00	-29.10	peak
4	1803.066	34.55	-1.48	33.07	54.00	-20.93	AVG
5	2346.389	33.87	-1.06	32.81	54.00	-21.19	AVG
6	2350.597	46.45	-1.06	45.39	74.00	-28.61	peak
7	2771.839	45.93	-0.73	45.20	74.00	-28.80	peak
8	2771.839	33.73	-0.73	33.00	54.00	-21.00	AVG
9	3467.664	47.73	-0.18	47.55	74.00	-26.45	peak
10	3473.882	34.75	-0.18	34.57	54.00	-19.43	AVG
11	4685.613	46.58	0.76	47.34	74.00	-26.66	peak
12	4685.613	34.22	0.76	34.98	54.00	-19.02	AVG

Radiation Emission Test Data			
Temperature:	26℃	Relative Humidity:	60%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	DC 3.7V	Test Mode:	Working



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1220.042	44.29	-1.94	42.35	74.00	-31.65	peak
2	1224.422	32.28	-1.94	30.34	54.00	-23.66	AVG
3	1559.486	45.91	-1.67	44.24	74.00	-29.76	peak
4	1559.486	33.85	-1.67	32.18	54.00	-21.82	AVG
5	2044.007	33.94	-1.30	32.64	54.00	-21.36	AVG
6	2047.672	46.10	-1.30	44.80	74.00	-29.20	peak
7	2821.952	46.30	-0.69	45.61	74.00	-28.39	peak
8	2832.082	34.38	-0.68	33.70	54.00	-20.30	AVG
9	3536.687	34.31	-0.14	34.17	54.00	-19.83	AVG
10	3543.030	46.53	-0.13	46.40	74.00	-27.60	peak
11	4618.928	45.86	0.71	46.57	74.00	-27.43	peak
12	4635.509	34.11	0.72	34.83	54.00	-19.17	AVG

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss － Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.Only the worst test voltages were recorded is 120VAC.
4. If peak below the average limit, the average emission was no test.
5. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5.EUT TEST PHOTOGRAPHS

Reference to the appendix I for details.

6.EUT PHOTOGRAPHS

Reference to the appendix II for details.

※※※※※ **END OF REPORT** ※※※※※