



TEST REPORT

FCC ID: 2A5K3-HW103D

Applicant: Shenzhen Qikaixin Electronic Technology Co., Ltd.
Address: Floor 5, building 1, Tianfu 'an industrial zone, Bouzhujiao village, yellow linen community, Hangcheng Street, Bao 'an district, Shenzhen
Manufacturer: Shenzhen Qikaixin Electronic Technology Co., Ltd.
Address: Floor 5, building 1, Tianfu 'an industrial zone, Bouzhujiao village, yellow linen community, Hangcheng Street, Bao 'an district, Shenzhen
EUT: Wireless charging desk lamp
Trade Mark: N/A
Model Number: HW-103D
Date of Receipt: Feb. 28, 2022
Test Date: Feb. 28, 2022 - Mar. 10, 2022
Date of Report: Mar. 10, 2022
Prepared By: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China
Applicable Standards: FCC PART 15 Subpart C
ANSI C63.10:2013
Test Result: Pass
Report Number: DL-20220308019E

Prepared (Engineer): Alisa Song

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.



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**1. VERSION**

Version No.	Date	Description
00	Mar. 10, 2022	Original

2. TEST SUMMARY

EMC Emission			
Test Item	Section in CFR 47	Result	Remark
AC Power Line Conducted Emission	15.203	PASS	
Spurious Emission	15.207	PASS	
20dB Bandwidth	15.209(a)(f)	PASS	
Antenna requirement	15.215	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) Test Facility: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone,
Baolong Street, Longgang District, Shenzhen, Guangdong, China



3.5 Test Auxiliary Equipment

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Wireless charging desk lamp	HW-103D	N/A	EUT
E-2	Adapter	AD652G	N/A	Provide by test lab
E-3	Phone	Galaxy S21 5G	N/A	Provide by test lab

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	0.5m	Mini USB Line

3.6 Test Uncertainty

Conducted Emission Uncertainty
(150KHz-30MHz) : $\pm 2.56\text{dB}$

Radiated Emission Uncertainty
(9KHz-1GHz) : $\pm 3.24\text{dB}$



4. TEST INSTRUMENT USED

For Conducted Emission Test (843 Shielded Room)

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
843 Shielded Room	ChengYu	843 Room	843	Nov. 25, 2019	Nov. 24, 2022
EMI Receiver	R&S	ESR	101421	Nov. 06, 2021	Nov. 05, 2022
LISN	R&S	ENV216	102417	Nov. 06, 2021	Nov. 05, 2022
Clamp	COM-POWER	CLA-050	431071	Nov. 06, 2021	Nov. 05, 2022
3-Loop Antenna	DAZE	ZN30401	13021	Nov. 06, 2021	Nov. 05, 2022
ISN T8	Schwarzbeck	NTFM 8158	101135	Nov. 06, 2021	Nov. 05, 2022
ISN T5	Schwarzbeck	NTFM 8158	101136	Nov. 06, 2021	Nov. 05, 2022
843 Cable 1#	ChengYu	CE Cable	001	Nov. 06, 2021	Nov. 05, 2022
843 Cable 1#	ChengYu	CE Cable	002	Nov. 06, 2021	Nov. 05, 2022

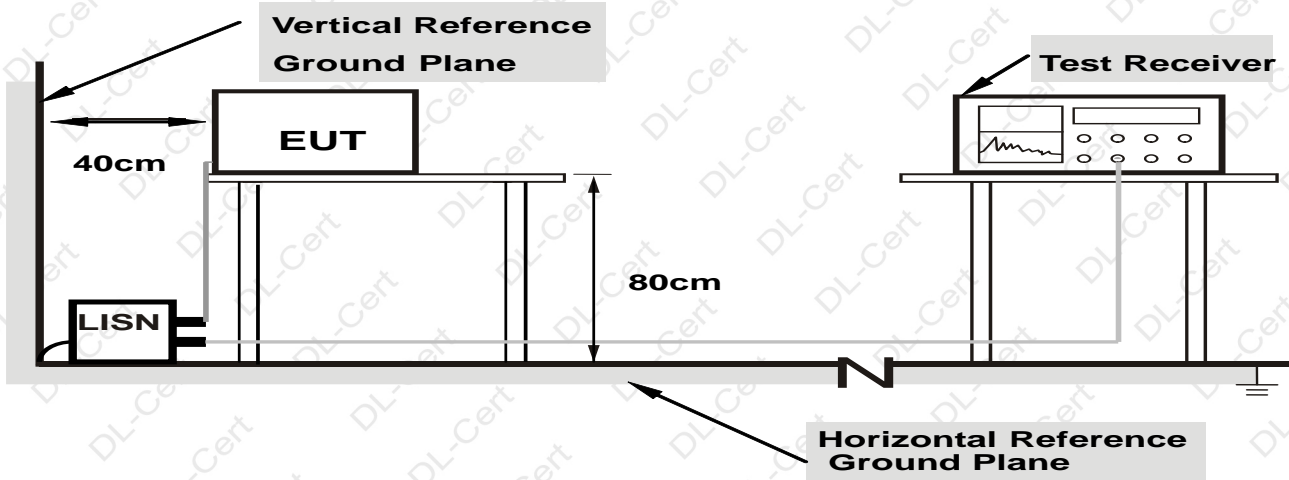
For Radiated Emission Test (966 chamber)

Equipment	Manufacturer	Model	Serial	Last Cal.	Next Cal.
966 Chamber	ChengYu	966 Room	966	Nov. 25, 2019	Nov. 24, 2022
Spectrum Analyzer	Agilent	E4408B	MY50140780	Nov. 06, 2021	Nov. 05, 2022
EMI Receiver	R&S	ESRP7	101393	Nov. 06, 2021	Nov. 05, 2022
Amplifier	Schwarzbeck	BBV9743B	00153	Nov. 06, 2021	Nov. 05, 2022
Amplifier	EMEC	EM01G8GA	00270	Nov. 06, 2021	Nov. 05, 2022
Broadband Trilog Antenna	Schwarzbeck	VULB9162	00306	Nov. 06, 2021	Nov. 05, 2023
Horn Antenna	Schwarzbeck	BBHA9120D	02139	Nov. 06, 2021	Nov. 05, 2023
966 Cable 1#	ChengYu	966	004	Nov. 06, 2021	Nov. 05, 2022
966 Cable 2#	ChengYu	966	003	Nov. 06, 2021	Nov. 05, 2022

5. CONDUCTED EMISSION TEST

5.1 Block Diagram of Test Setup

For Mains Terminals Test



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

5.2 Test Standard and Limit

FCC Part 15 Subpart B

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15~0.50	66 ~ 56*	55 ~ 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.

5.3 EUT Configuration on Test

The following equipment's are installed on conducted emission test to meet FCC Part 15 Subpart B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

5.4 Operating Condition of EUT

5.4.1 Setup the EUT and simulators as shown in Section 5.1.

5.4.2 Turn on the power of all equipments.

5.4.3 Let the EUT work in test modes and test it.



5.5 Test Procedure

The EUT is put on the table and connected to the AC mains through a Artificial Mains Network (AMN) or ISN. 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 **ANSI C63.4** regulations during conducted emission test.

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

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

We pretest all mode, the result only show the worst mode's data.

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.Measurement Level = Reading level + Correct Factor

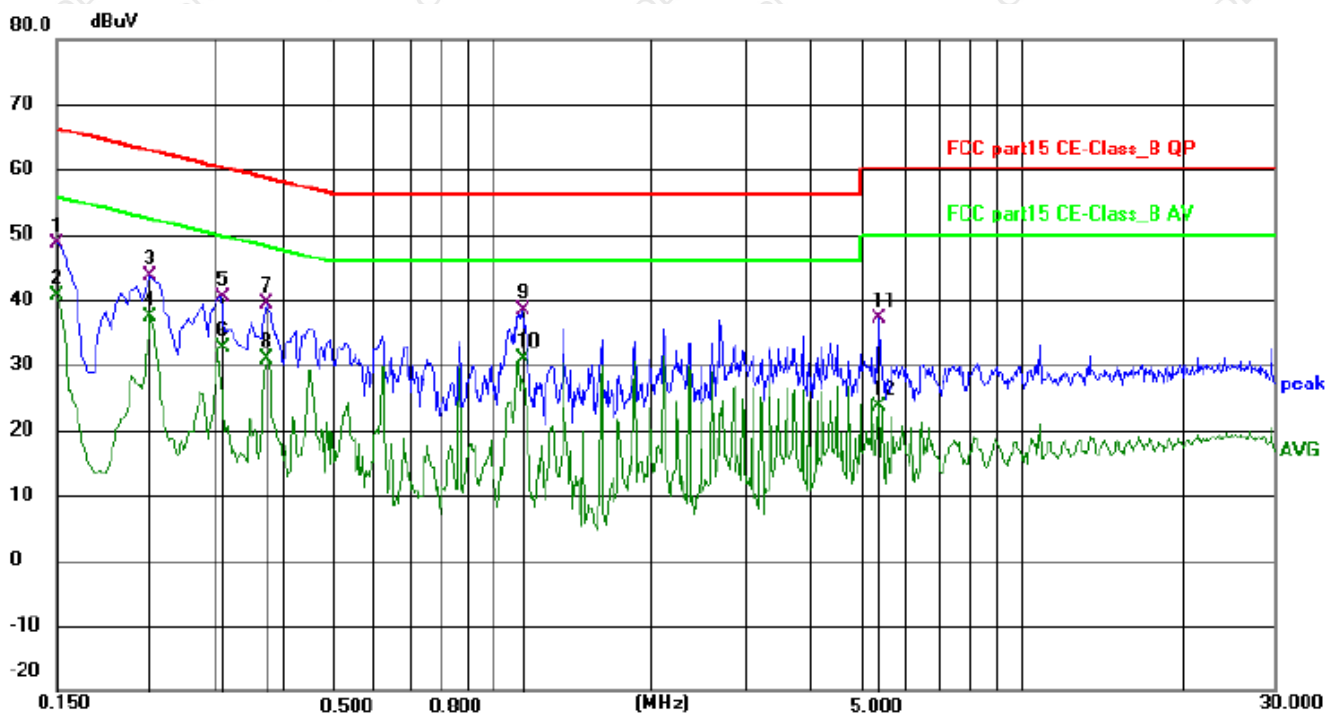
5.6 Test Result

PASS

Please refer to the following page.



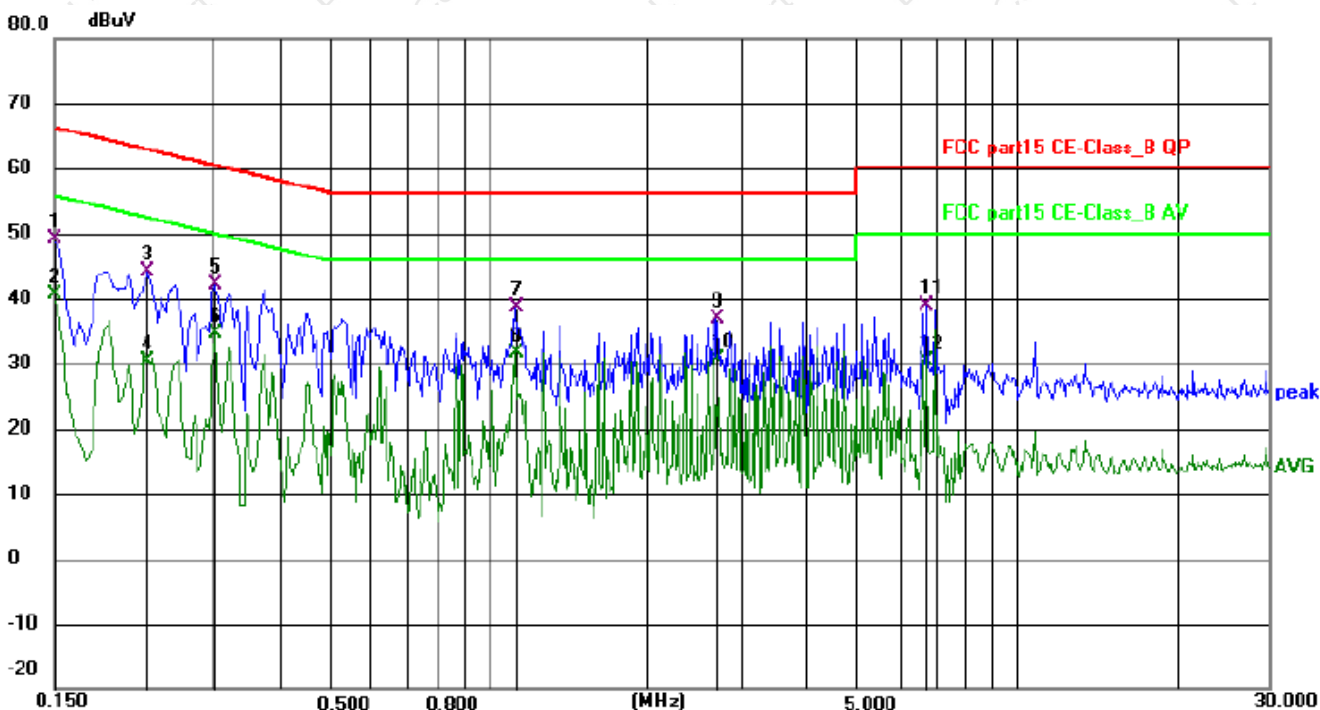
Conducted Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase:	Line
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	38.25	10.50	48.75	66.00	17.25	QP	P	
2	0.1500	30.23	10.50	40.73	56.00	15.27	AVG	P	
3	0.2265	34.13	9.40	43.53	62.58	19.05	QP	P	
4	0.2265	28.08	9.40	37.48	52.58	15.10	AVG	P	
5	0.3075	31.47	9.01	40.48	60.04	19.56	QP	P	
6	0.3075	23.55	9.01	32.56	50.04	17.48	AVG	P	
7	0.3750	30.34	9.10	39.44	58.39	18.95	QP	P	
8	0.3750	21.85	9.10	30.95	48.39	17.44	AVG	P	
9	1.1354	28.99	9.36	38.35	56.00	17.65	QP	P	
10 *	1.1354	21.55	9.36	30.91	46.00	15.09	AVG	P	
11	5.3745	27.48	9.68	37.16	60.00	22.84	QP	P	
12	5.3745	13.88	9.68	23.56	50.00	26.44	AVG	P	



Conducted Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase:	Neutral
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode1

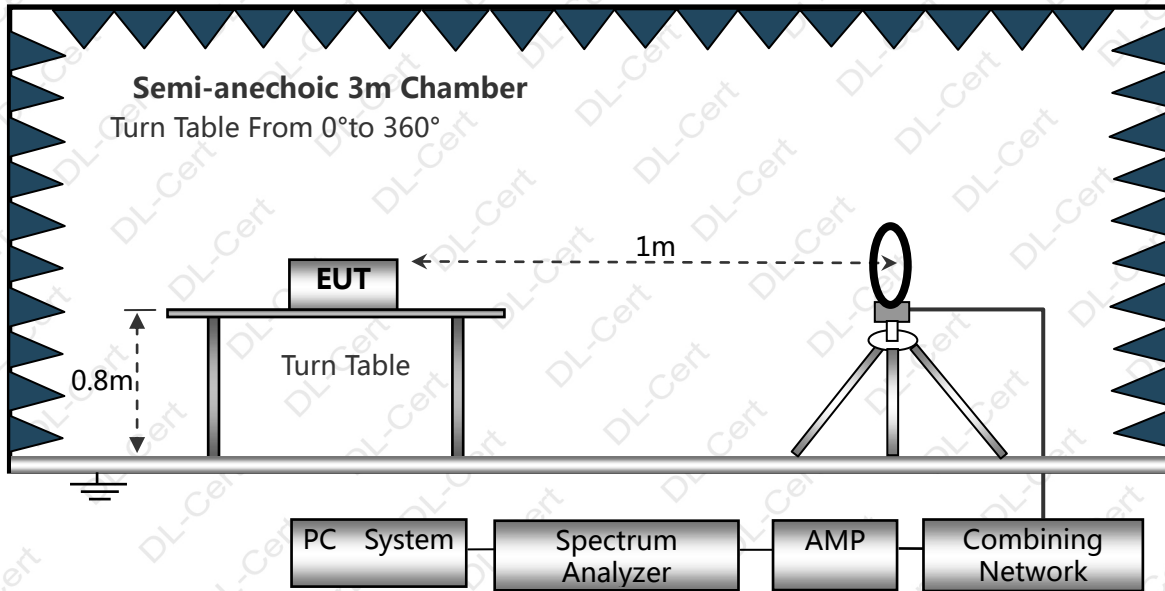


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	38.66	10.35	49.01	66.00	16.99	QP	P	
2	0.1500	30.28	10.35	40.63	56.00	15.37	AVG	P	
3	0.2265	35.20	8.91	44.11	62.58	18.47	QP	P	
4	0.2265	21.35	8.91	30.26	52.58	22.32	AVG	P	
5	0.3030	33.11	9.05	42.16	60.16	18.00	QP	P	
6	0.3030	25.68	9.05	34.73	50.16	15.43	AVG	P	
7	1.1174	29.10	9.46	38.56	56.00	17.44	QP	P	
8 *	1.1174	22.16	9.46	31.62	46.00	14.38	AVG	P	
9	2.7060	26.97	9.83	36.80	56.00	19.20	QP	P	
10	2.7060	20.87	9.83	30.70	46.00	15.30	AVG	P	
11	6.7560	29.10	9.85	38.95	60.00	21.05	QP	P	
12	6.7560	20.56	9.85	30.41	50.00	19.59	AVG	P	

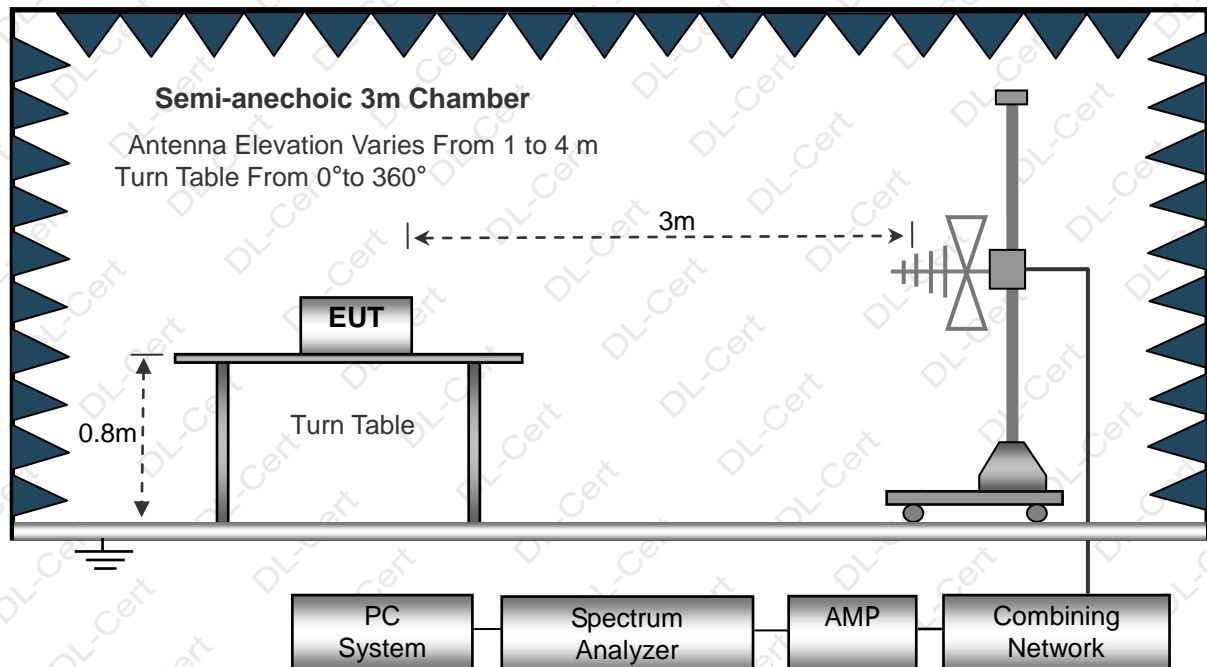
6. RADIATION EMISSION TEST

6.1 Block Diagram of Test Setup

Radiated Emission Test-Up Frequency Below 30MHz



Below 1GHz



6.2 Test Standard and Limit

FCC Part 15 Subpart B



Limits for frequency below 30MHz

Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Quasi-peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Above 30MHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)	Remark
30 ~ 88	3	40.0	Quasi-peak Value
88 ~ 216	3	43.5	Quasi-peak Value
216 ~ 960	3	46.0	Quasi-peak Value
960 ~ 1000	3	54.0	Quasi-peak Value
Above 1000	3	74.0	PEAK
		54.0	AVERAGE

Remark:

(1) The smaller limit shall apply at the cross point between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

6.3 EUT Configuration on Test

The FCC Part 15 Subpart 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 5.3.

6.4 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 5.4 except the test set up replaced as Section 6.2.

6.5 Test Procedure

- 1) The radiated emissions test was conducted in a semi-anechoic chamber.
- 2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
- 3) Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.
- 4) The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.
- 5) The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz.
- 6) The frequency range from 30MHz to 1000MHz is checked.
- 7) We pretest all mode, the result only show the worst mode's data.

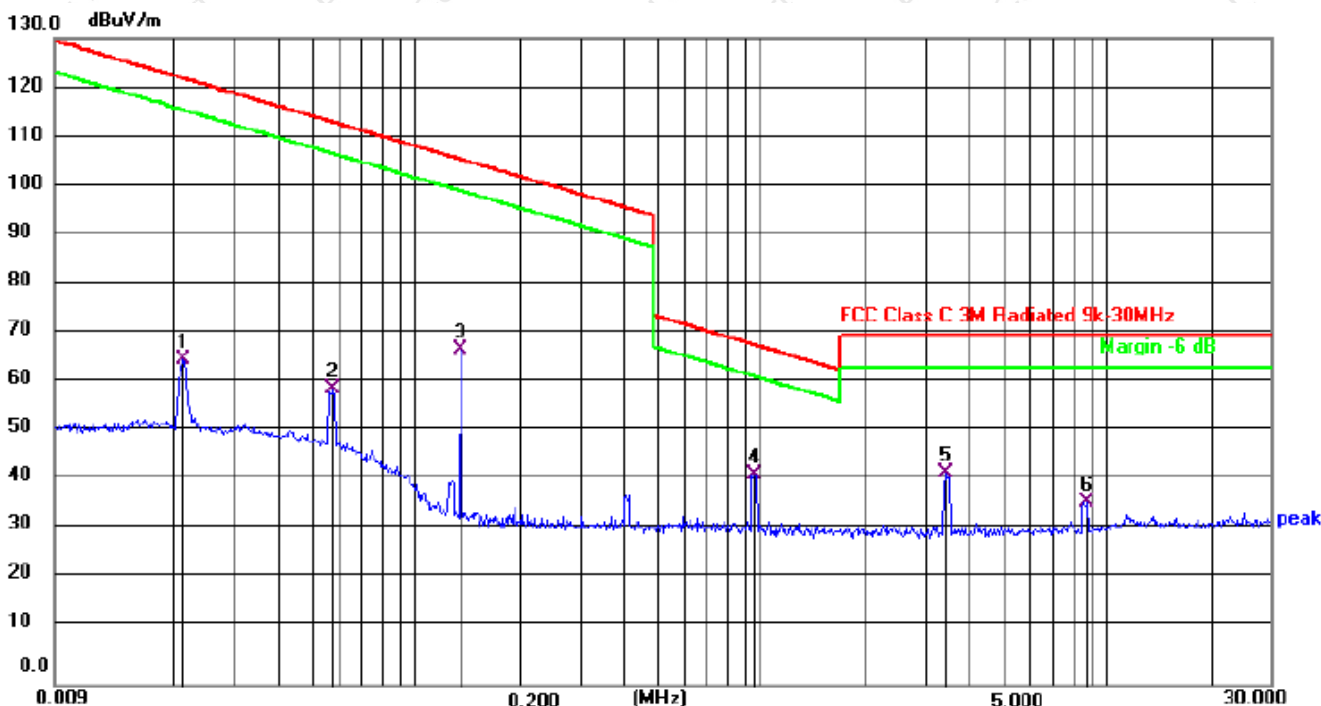
6.6 Test Result

PASS

Please refer to the following page.



Radiation Emission Test Data 9 kHz~30 MHz			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Test Mode:	Mode 1
Test Voltage:	DC 12V		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		0.0212	65.37	0.00	65.37	121.5	56.13	QP
2		0.0575	59.76	0.00	59.76	112.7	53.00	QP
3		0.1350	67.49	0.00	67.49	105.2	37.80	QP
4	*	0.9546	42.37	0.00	42.37	68.12	25.75	QP
5		3.4394	42.82	0.00	42.82	70.00	27.18	QP
6		8.8138	37.02	0.00	37.02	70.00	32.98	QP

Note:

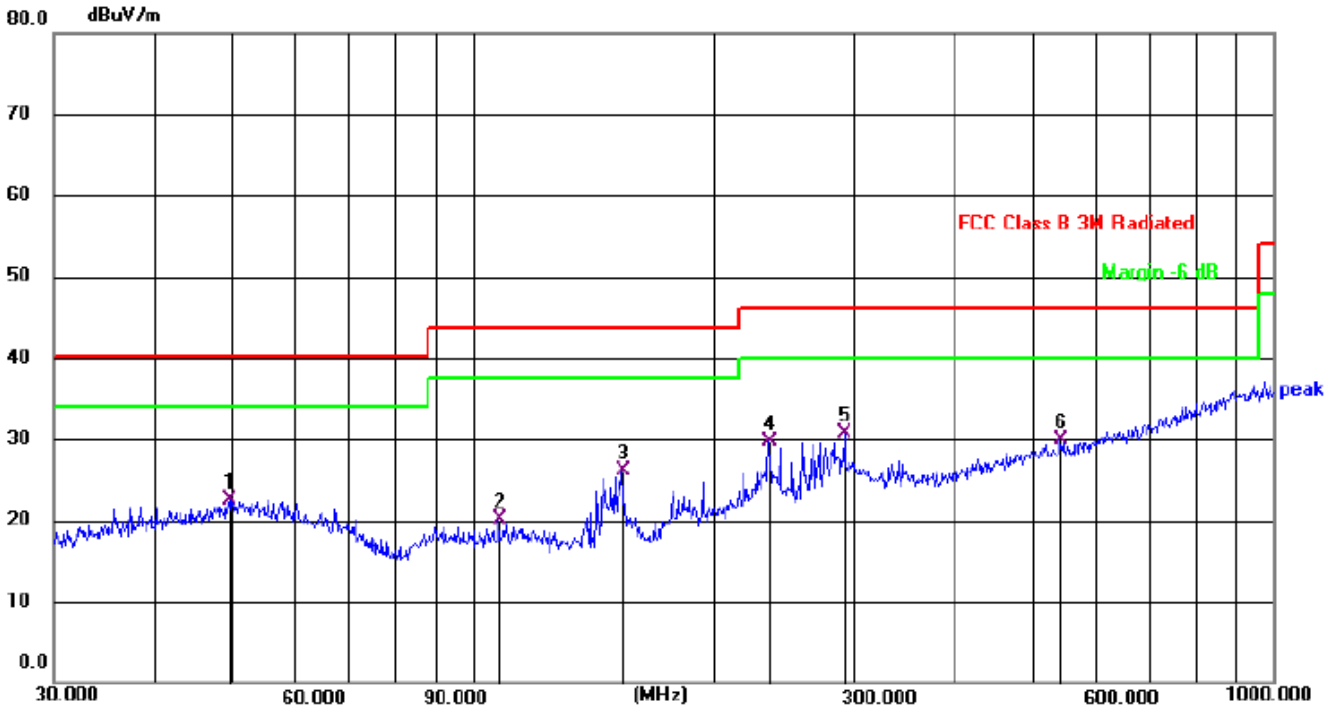
Pre-scan in the all of mode, the worst case in of was recorded.

Factor = antenna factor + cable loss – pre-amplifier.

Margin = Emission Level(Meter Reading+ Factor) - Limit.



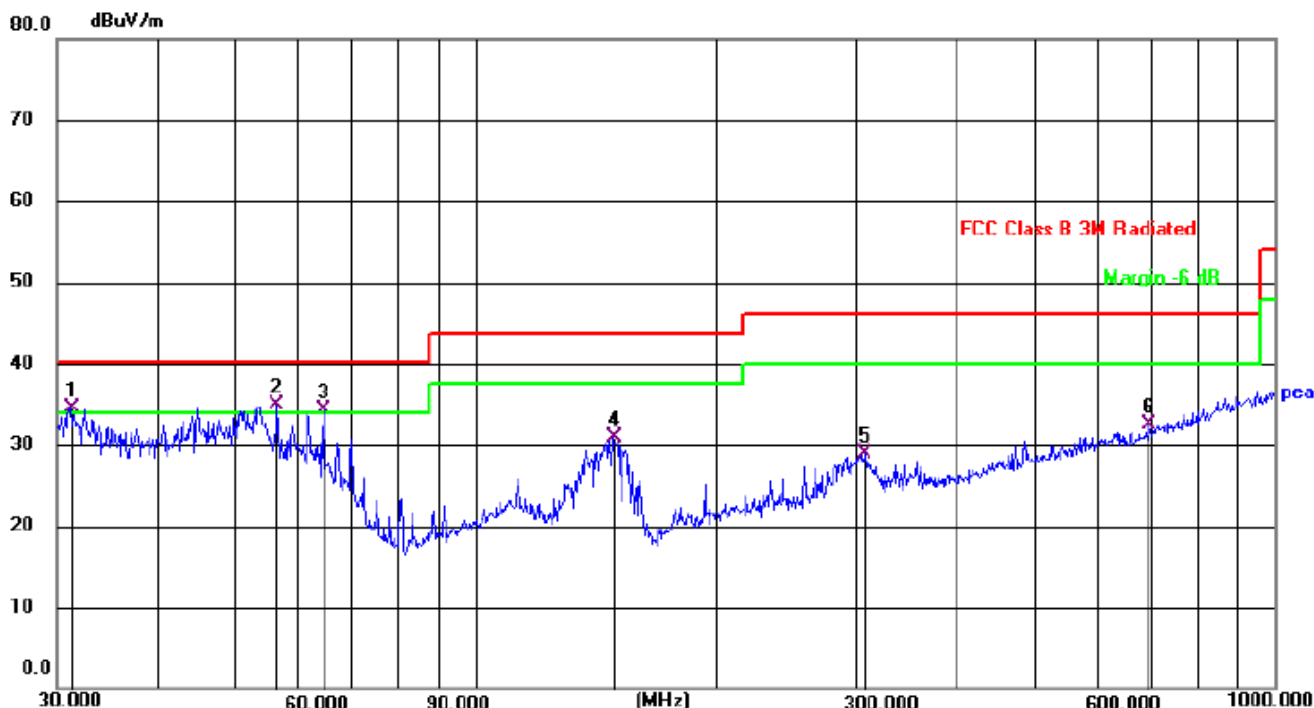
Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Horizontal
Test Voltage:	DC 12V	Test Mode:	Mode 1



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		49.7068	33.99	-11.52	22.47	40.00	17.53	QP
2		107.8877	35.49	-15.36	20.13	43.50	23.37	QP
3		153.7385	42.14	-16.08	26.06	43.50	17.44	QP
4		234.1684	42.00	-12.24	29.76	46.00	16.24	QP
5	*	291.0360	41.59	-10.89	30.70	46.00	15.30	QP
6		541.3725	36.15	-6.32	29.83	46.00	16.17	QP



Radiation Emission Test Data			
Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Vertical
Test Voltage:	DC 12V	Test Mode:	Mode 1



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	!	31.1798	49.06	-14.55	34.51	40.00	5.49	QP
2	*	56.5929	46.53	-11.66	34.87	40.00	5.13	QP
3	!	64.6594	47.69	-13.38	34.31	40.00	5.69	QP
4		148.9625	47.39	-16.47	30.92	43.50	12.58	QP
5		306.7537	38.46	-9.52	28.94	46.00	17.06	QP
6		696.8567	35.16	-2.67	32.49	46.00	13.51	QP

Remarks:

- 1.Final Level =Receiver Read level + Correct factor (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.



8. SETUP PHOTOGRAPHS

Reference to the setup photo for details.

9. EUT PHOTOGRAPHS

Reference to the external and internal photo for details.

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