



# FCC PART 15.249 TEST REPORT

On Behalf of

**Qingdao Yeelink information Technology Co., Ltd.**

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Qingdao, Shandong

**FCC ID:2ABEU-YLYYD-0026**

**Model: YLYYD-0026**

Apr. 22, 2025

**This Report Concerns:**

☒ Original Report

**Equipment Type:**

YEELIGHT RGB NIGHT LIGHT

**Test Engineer:**

LBi Li / LBi Li

**Report Number:**

QCT25DR-0048E-01

**Test Date:**

Apr. 4~15, 2025

**Test Result:**

Pass

**Reviewed By:**

Vincent Yang *Vincent Yang*

**Approved By:**

Kendy Wang *Kendy Wang*

**Prepared By:**

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## Report Number

QCT25DR-0048E-01

## Description

## Initial Issue

**Issued Date**

2025-4-22





## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment under Test (EUT)

EUT Description	YEELIGHT RGB NIGHT LIGHT
Model No.	YLYYD-0026
Tested Model	YLYYD-0026
Sample(s) Status	Engineer sample
Operation Frequency:	5780-5840MHz
Channel numbers:	60
Modulation type:	CW
Antenna Type:	PCB antenna
Antenna gain*1:	1.3dBi
Power supply:	DC 5V --- 0.5A
Trade Mark:	Yeelight
Applicant	Qingdao Yeelink information Technology Co., Ltd.
Address	F10-B4, Bldg.B, International Innovation Park, 1# Keyuanweiyi Rd., Laoshan, Qingdao, Shandong
Manufacturer	Hangzhou Taige Antu industrial Co., Ltd.
Address	2nd Floor, Building 2, Phase II, Electronic Equipment IndustryPark, No. 16 Yaojia Road, Fengchuan Street, Tonglu County, Hangzhou City, Zhejiang Province, P.R.China
Sample No.	Y25D0048E01WC

Note: \*1This information provided by Manufacturer, SZ QC Lab is not responsible for the accuracy of this information.

### 1.2 System Test Configuration

#### 1.2.1 Support Equipment

N/A

#### 1.2.2 Test mode and voltage

Transmitting mode: Keep the EUT in continuously transmitting.

Test voltage: AC 120V/60Hz





### 1.3 Test Facility

Test Firm : Shenzhen QC Testing Laboratory Co., Ltd.

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19. The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS – Registration No.: L8464

The EMC Laboratory has been accredited by CNAS, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

A2LA Certificate Number: 6759.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 561109

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 29628

CAB identifier: CN0141

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

### 1.4 Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	$\pm 1.42 \times 10^{-4}\%$
RF output power, conducted	$\pm 1.06\text{dB}$
Power Spectral Density, conducted	$\pm 1.06\text{dB}$
Unwanted Emissions, conducted	$\pm 2.51\text{dB}$
AC Power Line Conducted Emission	$\pm 1.80\text{dB}$
Radiated Spurious Emission test (9kHz-30MHz)	$\pm 2.66\text{dB}$
Radiated Spurious Emission test (30MHz-1000MHz)	$\pm 4.04\text{dB}$
Radiated Spurious Emission test (1000MHz-18000MHz)	$\pm 4.70\text{dB}$
Radiated Spurious Emission test (18GHz-40GHz)	$\pm 4.80\text{dB}$
Temperature	$\pm 0.8^{\circ}\text{C}$
Humidity	$\pm 3.2\%$
DC and low frequency voltages	$\pm 0.1\%$
Time	$\pm 5\%$
Duty cycle	$\pm 5\%$

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$





## 2. Summary of Test Results

Test Item	Section	Result
Antenna Requirement	15.203	Pass
Conduction Emission	15.207	Pass
Radiated Emissions	15.205, 15.209, 15.249	Pass
20dB Bandwidth	15.215 (c)	Pass

Note: 1. In the configuration tested, the EUT complied with the standards specified above.  
2. Test according to ANSI C63.10:2013  
3.. All indications of Pass/Fail in this report are opinions expressed by Shenzhen QC Testing Laboratory Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.





### 3. List of Test and Measurement Instruments

#### 3.1 Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	Rohde&Schwarz	ESIB 7	2277573376	2025.03.17	2026.03.16
2	EMI Test Receiver	Rohde&Schwarz	ESCI3	101820	2024.08.06	2025.08.05
3	Artificial Mains Network	SCHWARZBECK	NSLK8126	8126200	2024.08.06	2025.08.05
4	PULSE LIMITER	Rohde&Schwarz	ESH3-Z2	100058	2025.03.18	2026.03.17

Conducted Emission Measurement Software: TS+ JS32-CE Ver 5.0.0

#### 3.2 Radiated Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1.	EMI Test Receiver	Rohde&Schwarz	ESIB 7	2277573376	2025.03.17	2026.03.16
2.	EMI Test Receiver	Rohde&Schwarz	ESPI3	101131	2025.03.17	2026.03.16
3.	Spectrum Analyzer	Rohde&Schwarz	FSV 40	101458	2025.03.18	2026.03.17
4.	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9168	VULB9168-588	2025.03.22	2026.03.21
5.	Loop Antenna	EMCO	6502	2133	2025.03.19	2026.03.18
6.	horn antenna	SCHWARZBECK	BBHA9120D	2069	2024.08.10	2025.08.09
7.	Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2024.08.10	2026.08.09
8.	Pre-amplifier	MITEQ	TTA0001-18	2063645	2025.03.17	2026.03.16
9.	Pre-amplifier	MITEQ	TTA1800-30-HG	2063644	2025.03.17	2026.03.16
10.	Pre-amplifier	COM-MW	DLAN-18000-40000-02	10229104	2025.03.22	2026.03.21
11.	966 Camber	ZhongYU	9*6*6	/	2023.05.08	2026.05.07

Radiated Emission Measurement Software: EZ\_EMC Ver QCT03A2 RE+





### 3.3 RF Conducted test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1.	Wideband Radio Communication Tester	Rohde & Schwarz	CW500	151583	2025.03.18	2026.03.17
2.	MXA Signal Analyzer	Keysight	N9020A	MY51281805	2025.03.18	2026.03.17
3.	Signal Generator	Agilent	N5182A	MY50141563	2025.03.18	2026.03.17
4.	RF Automatic Test System	MW	MW100-RFCB/ MW100-PSB	MW2007004	2025.03.18	2026.03.17

RF Conducted Measurement Software: MTS 8310 Ver 2.0.0.0





## 4. Antenna requirement

**Standard requirement:** FCC Part15 C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

**EUT Antenna:** The antenna is PCB antenna, reference to the Internal Photos for details.



## 5. Conducted Emissions

### 5.1 Applicable Standard

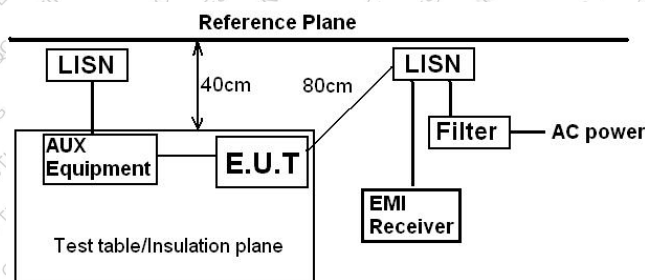
FCC Part15 C Section 15.207

### 5.2 Limit

Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Note \*: The level decreases linearly with the logarithm of the frequency.

### 5.3 Test setup



Remark:  
E.U.T: Equipment Under Test  
LISN: Line Impedance Stabilization Network  
Test table height=0.8m

### 5.4 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.  
RBW=9 kHz, VBW=30 kHz, Sweep time=auto

### 5.5 Test procedure

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

### 5.6 Test Data

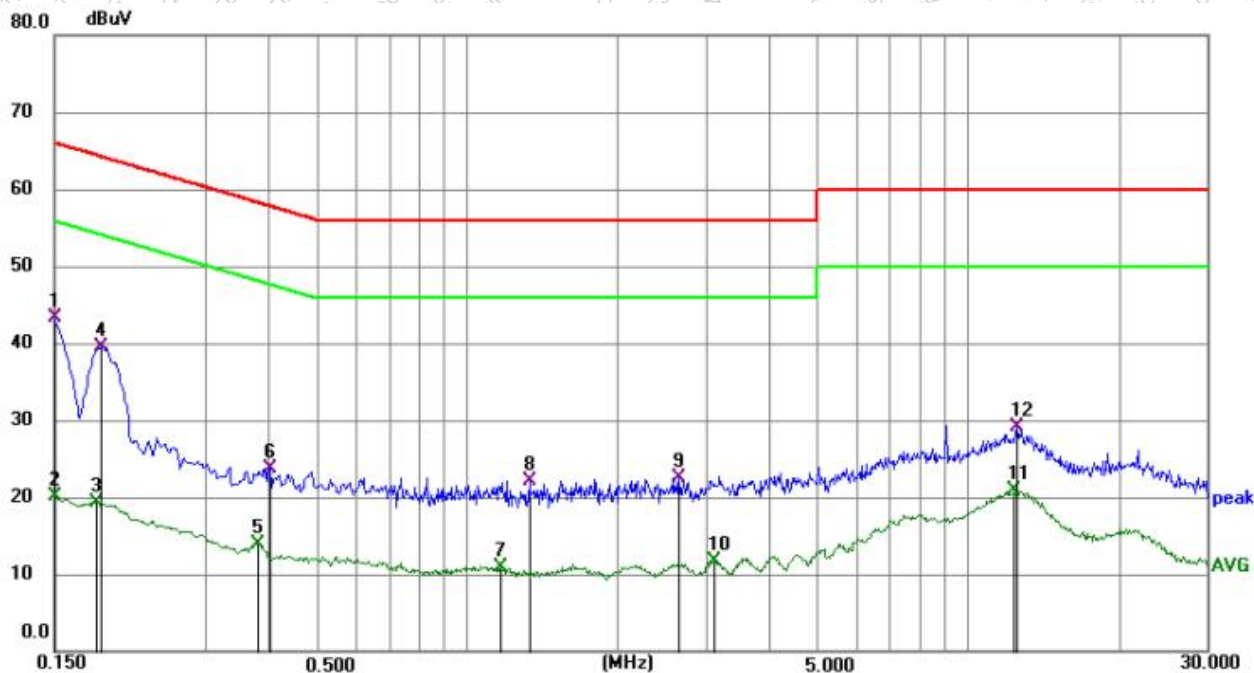
Temperature	23℃	Humidity	55%
ATM Pressure	101.1kPa	Antenna Gain	1.3dBi
Test by	LBi Li	Test result	PASS





Measurement data:

Line:

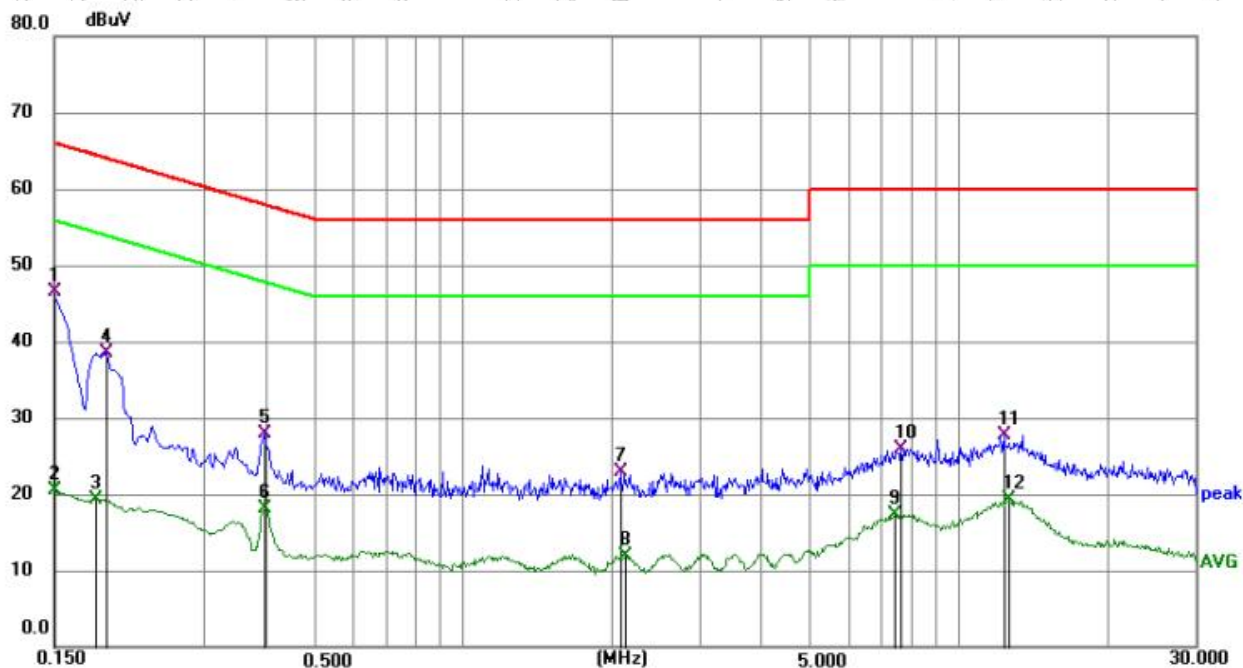


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.1500	32.72	10.59	43.31	66.00	-22.69	QP
2	0.1500	9.61	10.59	20.20	56.00	-35.80	AVG
3	0.1814	8.73	10.57	19.30	54.42	-35.12	AVG
4	0.1859	29.00	10.57	39.57	64.22	-24.65	QP
5	0.3795	3.30	10.61	13.91	48.29	-34.38	AVG
6	0.4020	13.16	10.61	23.77	57.81	-34.04	QP
7	1.1670	0.34	10.64	10.98	46.00	-35.02	AVG
8	1.3334	11.50	10.65	22.15	56.00	-33.85	QP
9	2.6520	11.82	10.77	22.59	56.00	-33.41	QP
10	3.1379	0.91	10.81	11.72	46.00	-34.28	AVG
11	12.4480	9.97	11.00	20.97	50.00	-29.03	AVG
12	12.5739	18.10	10.99	29.09	60.00	-30.91	QP





Neutral:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.1500	35.82	10.59	46.41	66.00	-19.59	QP
2	0.1500	9.95	10.59	20.54	56.00	-35.46	AVG
3	0.1814	8.79	10.57	19.36	54.42	-35.06	AVG
4	0.1905	27.94	10.57	38.51	64.01	-25.50	QP
5	0.3975	17.33	10.61	27.94	57.91	-29.97	QP
6	0.3975	7.56	10.61	18.17	47.91	-29.74	AVG
7	2.0849	12.28	10.68	22.96	56.00	-33.04	QP
8	2.1255	1.20	10.68	11.88	46.00	-34.12	AVG
9	7.4435	6.65	10.73	17.38	50.00	-32.62	AVG
10	7.6820	15.23	10.74	25.97	60.00	-34.03	QP
11	12.3445	16.84	10.90	27.74	60.00	-32.26	QP
12	12.6370	8.32	10.89	19.21	50.00	-30.79	AVG

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.



## 6. Radiated Emission Method

### 6.1 Applicable Standard

FCC Part15 C Section 15.249

### 6.2 Limit

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

As per FCC Section 15.249

(c) Field strength limits are specified at a distance of 3 meters.

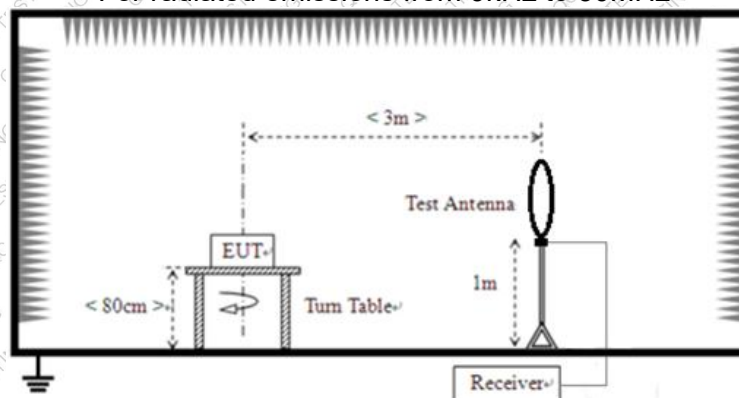
(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

### 6.3 Receiver setup

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

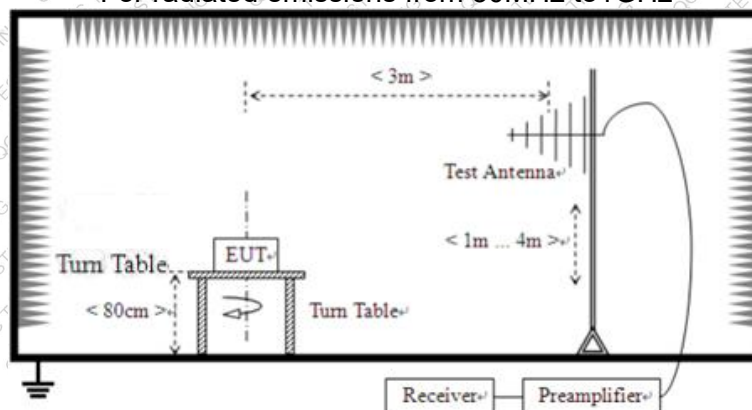
### 6.4 Test setup

For radiated emissions from 9kHz to 30MHz

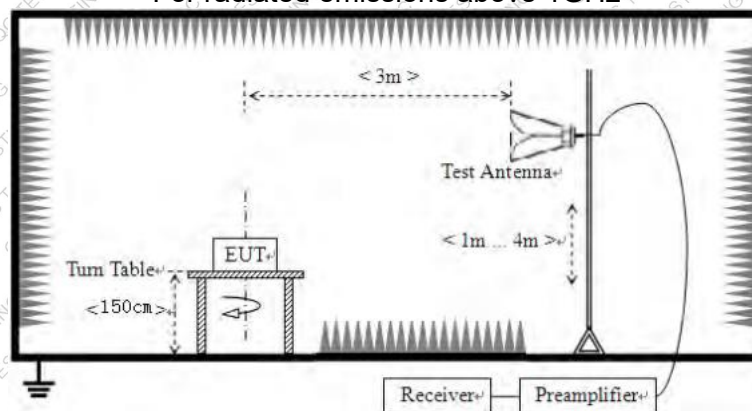




For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



## 6.5 Test Procedure

1. The EUT was placed on the top of a rotating table (0.8 meters for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.





## 6.6 Test Data

Temperature	25-26°C	Humidity	50-54%
ATM Pressure	101.1kPa	Antenna Gain	1.3dBi
Test by	LBi Li	Test result	PASS

### Remarks:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

### Measurement data:

9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.





Below 1GHz:

Horizontal



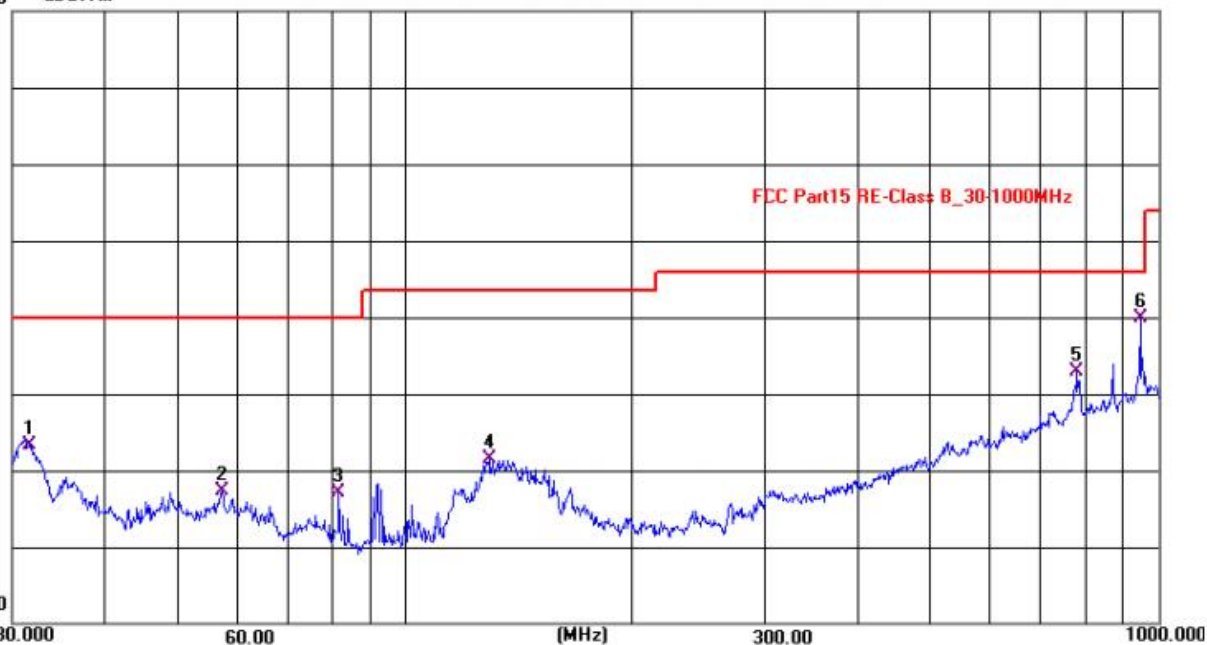
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	41.2693	30.74	-14.64	16.10	40.00	-23.90	QP
2	65.4464	30.08	-16.97	13.11	40.00	-26.89	QP
3	141.4289	34.19	-14.92	19.27	43.50	-24.23	QP
4	317.3114	35.36	-14.34	21.02	46.00	-24.98	QP
5	782.6196	35.59	-5.22	30.37	46.00	-15.63	QP
6 *	948.5947	35.50	-3.25	32.25	46.00	-13.75	QP





Vertical

80.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	31.6812	38.64	-15.40	23.24	40.00	-16.76	QP
2	57.0212	32.23	-15.02	17.21	40.00	-22.79	QP
3	81.6687	36.42	-19.26	17.16	40.00	-22.84	QP
4	129.2636	37.73	-16.20	21.53	43.50	-21.97	QP
5	781.1118	37.43	-4.61	32.82	46.00	-13.18	QP
6 *	948.7610	41.75	-1.77	39.98	46.00	-6.02	QP





**Above 1G:Test channel: Lowest**

Frequency (MHz)	Read Level (dBμV)	polarization	Factor (dB/m)	Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector
5780	96.95	H	-3.87	93.08	114	-20.92	peak
5780	76.33	V	-3.62	72.71	94	-21.29	AVG
5780	99.63	H	-3.82	95.81	114	-18.19	peak
5780	75.59	V	-3.62	71.97	94	-22.03	AVG
11560	45.21	H	7.62	52.83	74	-21.17	peak
11560	45.94	V	7.42	53.36	74	-20.64	peak
17340	42.87	H	9.88	52.75	74	-21.25	peak
17340	40.34	V	9.72	50.06	74	-23.94	peak

**Above 1G:Test channel: Middle**

Frequency (MHz)	Read Level (dBμV)	polarization	Factor (dB/m)	Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector
5810	103.22	H	-3.55	99.67	114	-14.33	peak
5810	78.96	V	-3.78	75.18	94	-18.82	AVG
5810	102.86	H	-3.55	99.31	114	-14.69	peak
5810	79.32	V	-3.78	75.54	94	-18.46	AVG
11620	42.22	H	7.21	49.43	74	-24.57	peak
11620	44.33	V	7.49	51.82	74	-22.18	peak
17430	42.69	H	9.62	52.31	74	-21.69	peak
17430	41.55	V	9.52	51.07	74	-22.93	peak





Above 1G: Test channel: Highest

Frequency (MHz)	Read Level (dBμV)	polarization	Factor (dB/m)	Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector
5840	102.88	H	-3.69	99.19	114	-14.81	peak
5840	80.11	V	-0.354	79.76	94	-14.24	AVG
5840	100.58	H	-3.69	96.89	114	-17.11	peak
5840	79.31	V	-0.354	78.96	94	-15.04	AVG
11680	53.44	H	7.76	61.2	74	-12.80	peak
11680	51.28	V	7.19	58.47	74	-15.53	peak
17520	42.88	H	9.62	52.50	74	-21.50	peak
17520	42.39	V	9.42	51.81	74	-22.19	peak

Remarks:

1. Level = Receiver Read level + Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. If the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in above table if the peak value complies with average limit.





### Radiated Band Edge:

Test channel: Middle

Frequency (MHz)	Read Level (dBμV)	polarization	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
5725	62.82	H	-3.69	59.13	74	-14.87	Peak
5725	66.51	V	-3.72	62.79	74	-11.21	Peak
5750	43.82	H	-3.77	40.05	54	-13.95	AVG
5750	43.51	V	-3.83	39.68	54	-14.32	AVG

Test channel: Highest

Frequency (MHz)	Read Level (dBμV)	polarization	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
5875	64.51	H	-3.69	60.82	74	-13.18	Peak
5875	69.58	V	-3.72	65.86	74	-8.14	Peak
5900	42.19	H	-3.77	38.42	54	-15.58	AVG
5900	44.19	V	-3.83	40.36	54	-13.64	AVG

Remarks:

1. Level = Reading + Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.



## 7. 20dB Occupy Bandwidth

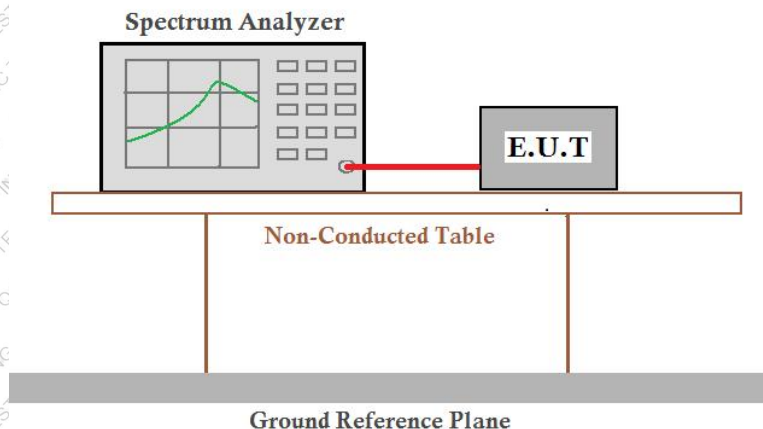
### 7.1 Applicable Standard

FCC Part15 C Section 15.215

### 7.2 Limit

N/A

### 7.3 Test setup



### 7.4 Test Data

Temperature	24.2 °C	Humidity	43%
ATM Pressure	101.1kPa	Antenna Gain	1.3dBi
Test by	LBi Li	Test result	PASS

Please refer to following table and plots.

Test Frequency (MHz)	20dB bandwidth (MHz)
5780	0.948
5810	0.951
5840	0.953





Test plot as follows:



5780



5810





5840

-----THE END OF TEST REPORT-----