TEST REPORT

Applicant:	Zhejiang Shunshu Lighting CO.,LTD
Address of Applicant:	4th Floor North Building, 1732 Yanhua Industrial Park, Shangyu District, Shaoxing City, Zhejiang Province, China
Manufacturer/Factory:	Zhejiang Shunshu Lighting CO.,LTD
Address of Manufacturer/Factory:	4th Floor North Building, 1732 Yanhua Industrial Park, Shangyu District, Shaoxing City, Zhejiang Province, China
Equipment Under Test (EUT)	
Product Name:	LED module
Model No.:	MODEL BEACON
FCC ID:	2A7EM-A19BEACON
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	June 27, 2022
Date of Test:	June 28, 2022-August 04, 2022
Date of report issued:	August 04, 2022
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*August 04, 2022*	*Original*

Prepared By: *Tiger Chen* ***Date:*** *August 04, 2022*

Project Engineer

Check By: ***Date:*** *August 04, 2022*

Reviewer

3 Contents

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.

2. Test according to ANSI C63.10:2013

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz-30MHz	3.1dB	(1)
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	LED module
Model No.:	MODEL BEACON
Test sample(s) ID:	GTS202206000273-1
Sample(s) Status:	Engineer sample
Serial No.:	N/A
Operation Frequency:	2402MHz~2480MHz
Channel Numbers:	40
Channel Separation:	2MHz
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	1.1dBi(declare by applicant)
Power Supply:	DC 3.3V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
Lenovo	Notebook PC	E40	N/A
HP	Notebook PC	N/A	N/A

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC—Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

● **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Test software provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17, 2021	Oct. 16, 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17, 2021	Oct. 16, 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17, 2021	Oct. 16, 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

RF Conducted Test:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

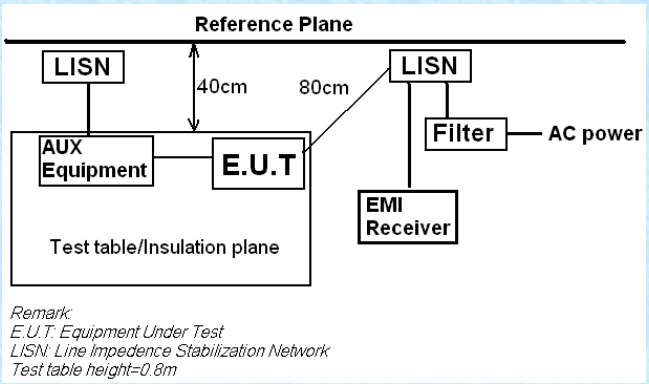
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

7 Test results and Measurement Data

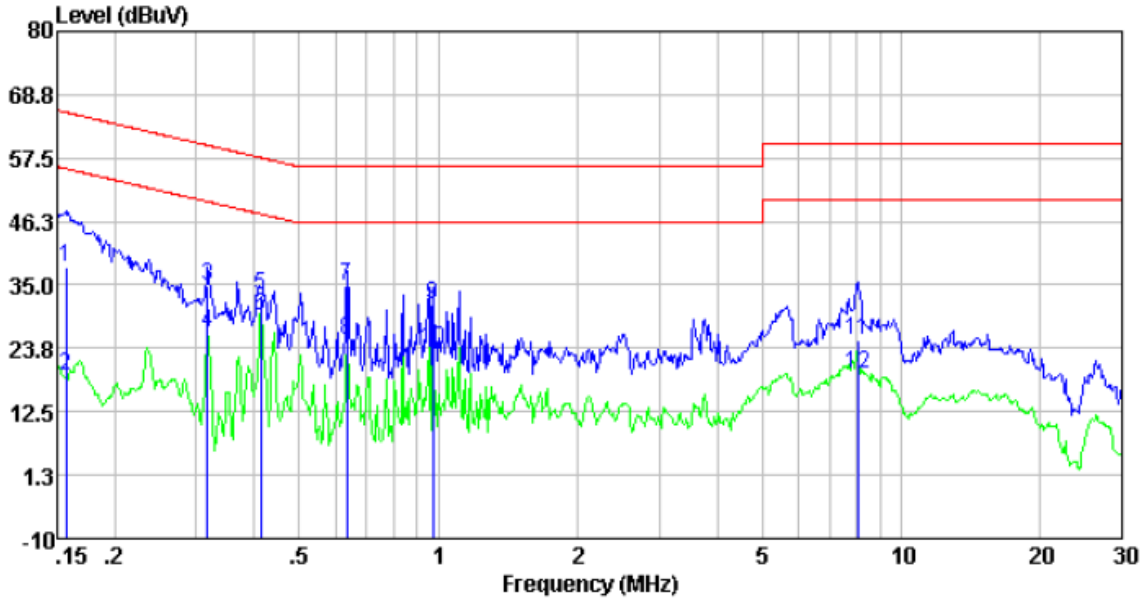
7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
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. **15.247(c) (1)(i) requirement:** (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna:	
The antenna is PCB antenna, reference to the appendix II for details	

7.2 Conducted Emissions

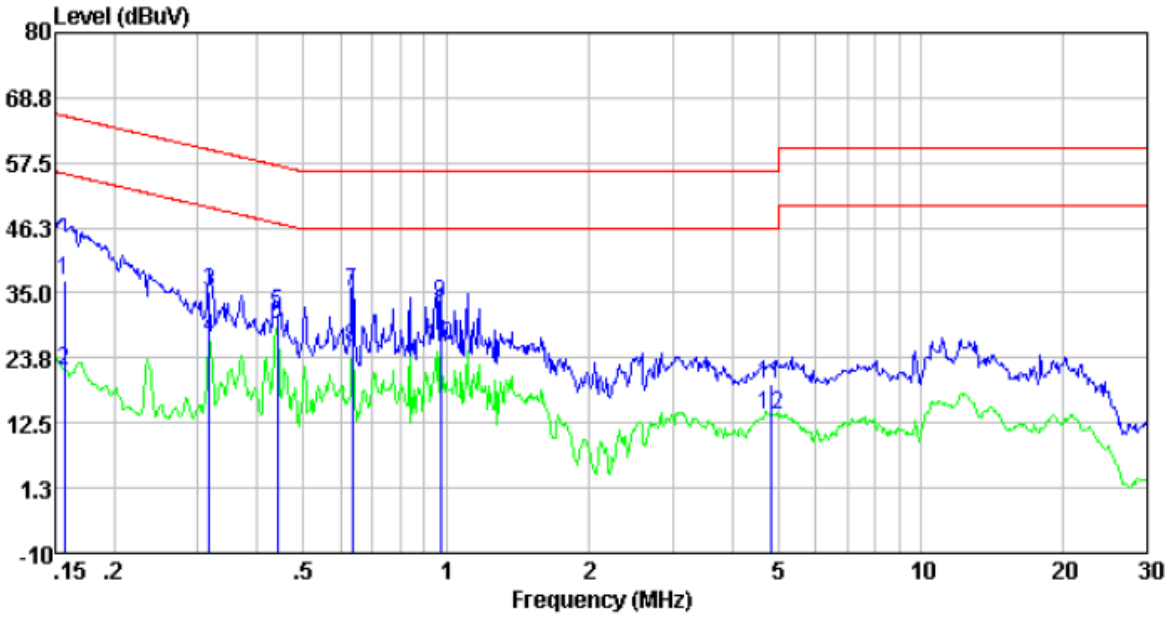
Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2013
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
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 C63.10:2013 on conducted measurement.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1012mbar
Test voltage:	AC 120V
Test results:	Pass

Measurement data:
Pre-scan all test modes, found worst case at 2480MHz, and so only show the test result of 2480MHz
Line:



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.16	27.70	10.40	0.01	38.11	65.65	-27.54	QP
0.16	8.35	10.40	0.01	18.76	55.65	-36.89	Average
0.32	24.42	10.39	0.01	34.82	59.80	-24.98	QP
0.32	16.19	10.39	0.01	26.59	49.80	-23.21	Average
0.41	22.74	10.35	0.01	33.10	57.59	-24.49	QP
0.41	19.10	10.35	0.01	29.46	47.59	-18.13	Average
0.63	24.67	10.28	0.02	34.97	56.00	-21.03	QP
0.63	14.90	10.28	0.02	25.20	46.00	-20.80	Average
0.97	21.32	10.20	0.03	31.55	56.00	-24.45	QP
0.97	13.28	10.20	0.03	23.51	46.00	-22.49	Average
8.06	14.97	10.20	0.10	25.27	60.00	-34.73	QP
8.06	8.98	10.20	0.10	19.28	50.00	-30.72	Average

Neutral:

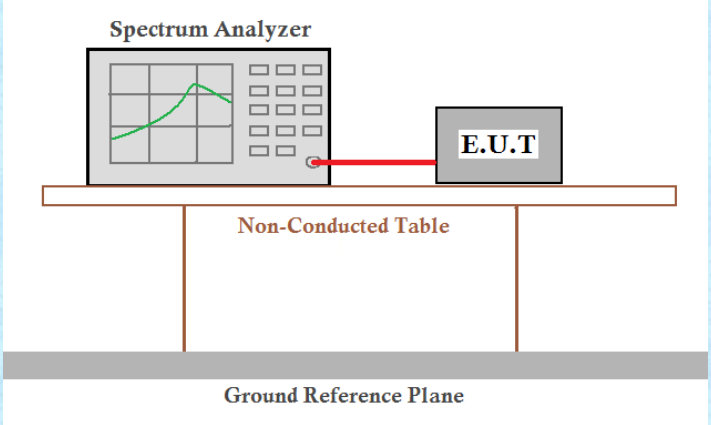


Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.16	26.89	10.40	0.01	37.30	65.65	-28.35	QP
0.16	11.22	10.40	0.01	21.63	55.65	-34.02	Average
0.32	24.86	10.39	0.01	35.26	59.80	-24.54	QP
0.32	16.80	10.39	0.01	27.20	49.80	-22.60	Average
0.44	21.22	10.34	0.01	31.57	57.07	-25.50	QP
0.44	19.01	10.34	0.01	29.36	47.07	-17.71	Average
0.63	24.79	10.28	0.02	35.09	56.00	-20.91	QP
0.63	15.28	10.28	0.02	25.58	46.00	-20.42	Average
0.97	23.10	10.20	0.03	33.33	56.00	-22.67	QP
0.97	15.56	10.20	0.03	25.79	46.00	-20.21	Average
4.82	8.81	10.20	0.06	19.07	56.00	-36.93	QP
4.82	3.57	10.20	0.06	13.83	46.00	-32.17	Average

Notes:

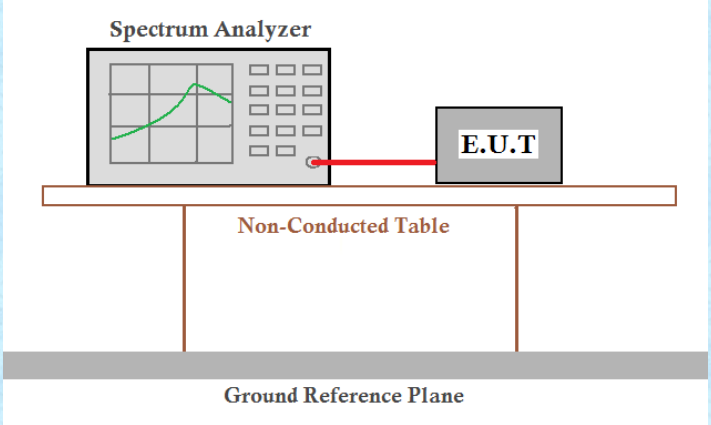
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

7.3 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

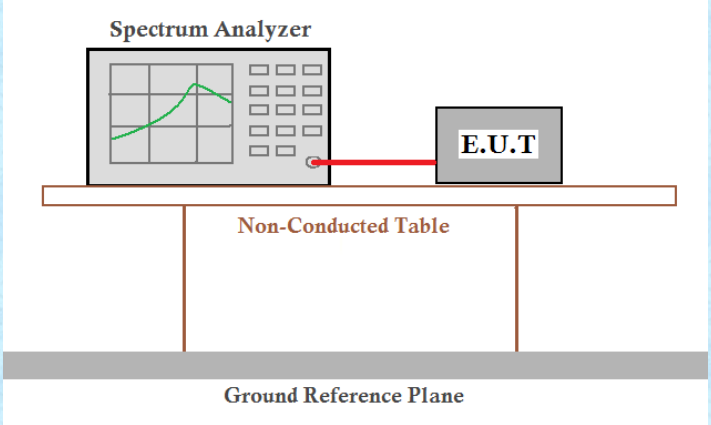
Measurement Data: The detailed test data see Appendix for BLE.

7.4 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data: The detailed test data see Appendix for BLE.

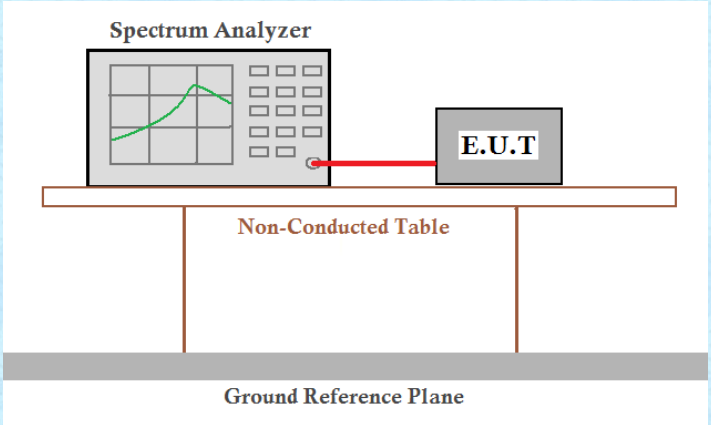
7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data: The detailed test data see Appendix for BLE.

7.6 Spurious Emission in Non-restricted & restricted Bands

7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data: The detailed test data see Appendix for BLE.

7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m

Receiver setup:

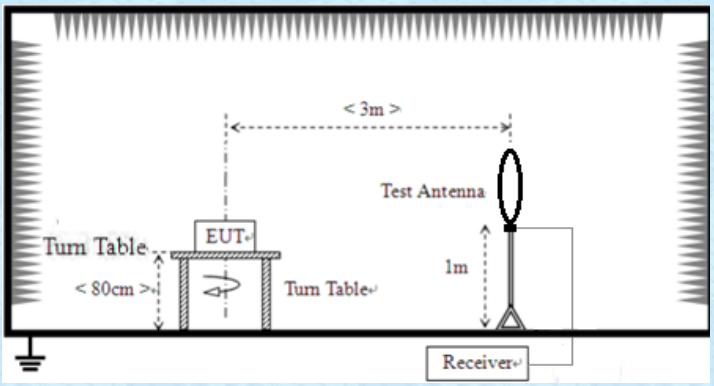
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

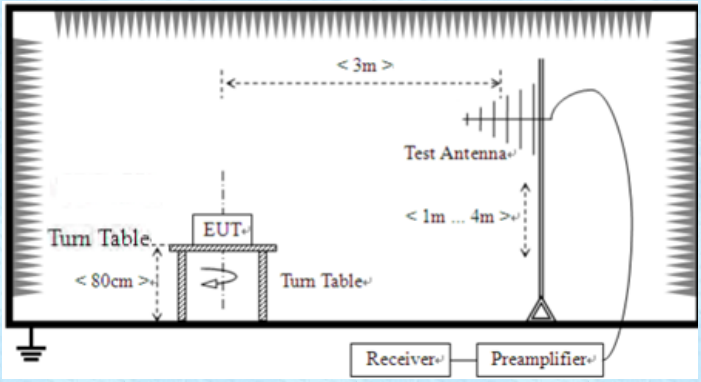
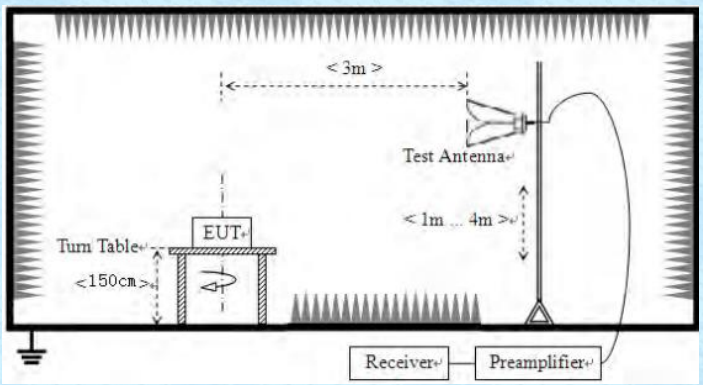
Limit:

Frequency	Limit (uV/m)	Value	Measurement Distance
0.009MHz-0.490MHz	2400/F(KHz)	PK/QP/AV	300m
0.490MHz-1.705MHz	24000/F(KHz)	QP	30m
1.705MHz-30MHz	30	QP	30m
30MHz-88MHz	100	QP	3m
88MHz-216MHz	150	QP	
216MHz-960MHz	200	QP	
960MHz-1GHz	500	QP	
Above 1GHz	500	Average	
	5000	Peak	

Test setup:

For radiated emissions from 9kHz to 30MHz



	For radiated emissions from 30MHz to1GHz  For radiated emissions above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) 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.

Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AV 120V					
Test results:	Pass					

Measurement data:

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

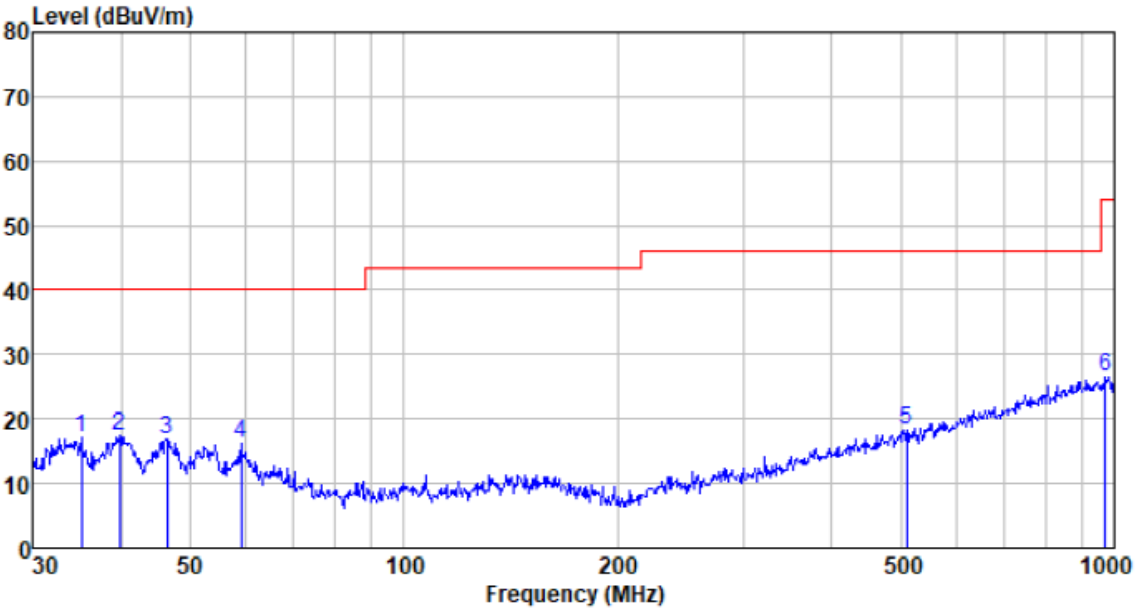
■ **9kHz~30MHz**

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**

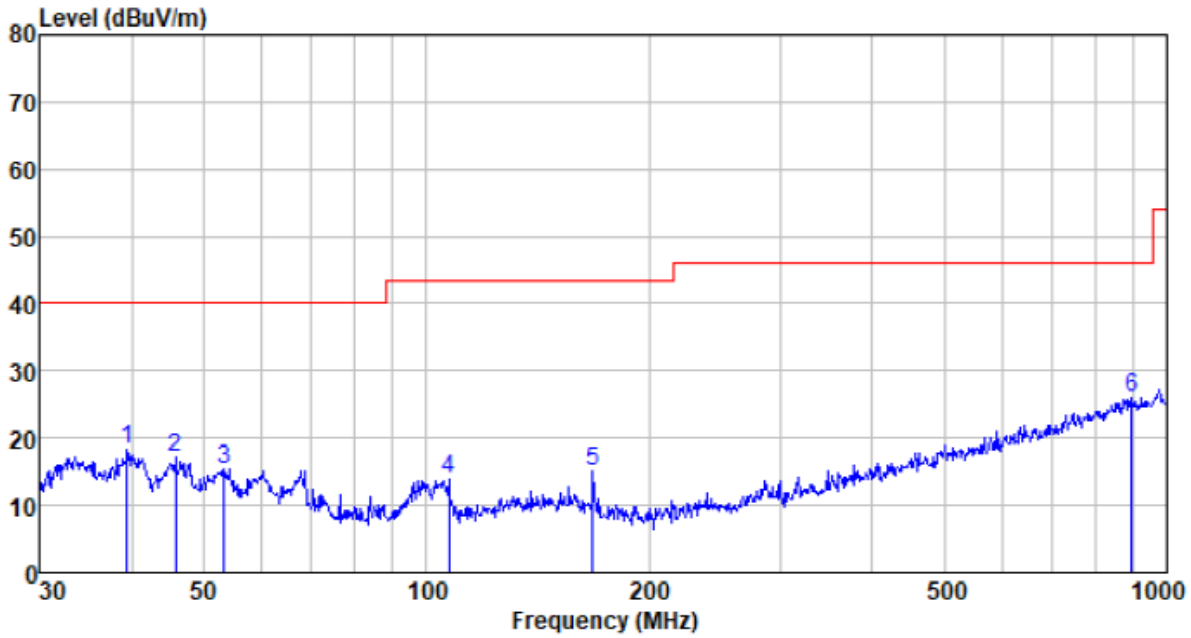
Pre-scan all test modes, found worst case at 2480MHz, and so only show the test result of 2480MHz

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
35.128	39.03	12.72	0.61	35.36	17.00	40.00	-23.00	QP
39.715	39.02	13.46	0.66	35.65	17.49	40.00	-22.51	QP
46.340	38.90	13.30	0.73	36.00	16.93	40.00	-23.07	QP
59.025	39.19	12.65	0.85	36.31	16.38	40.00	-23.62	QP
510.044	34.80	17.79	3.35	37.51	18.43	46.00	-27.57	QP
972.337	34.63	24.49	5.12	37.53	26.71	54.00	-27.29	QP

Vertical:

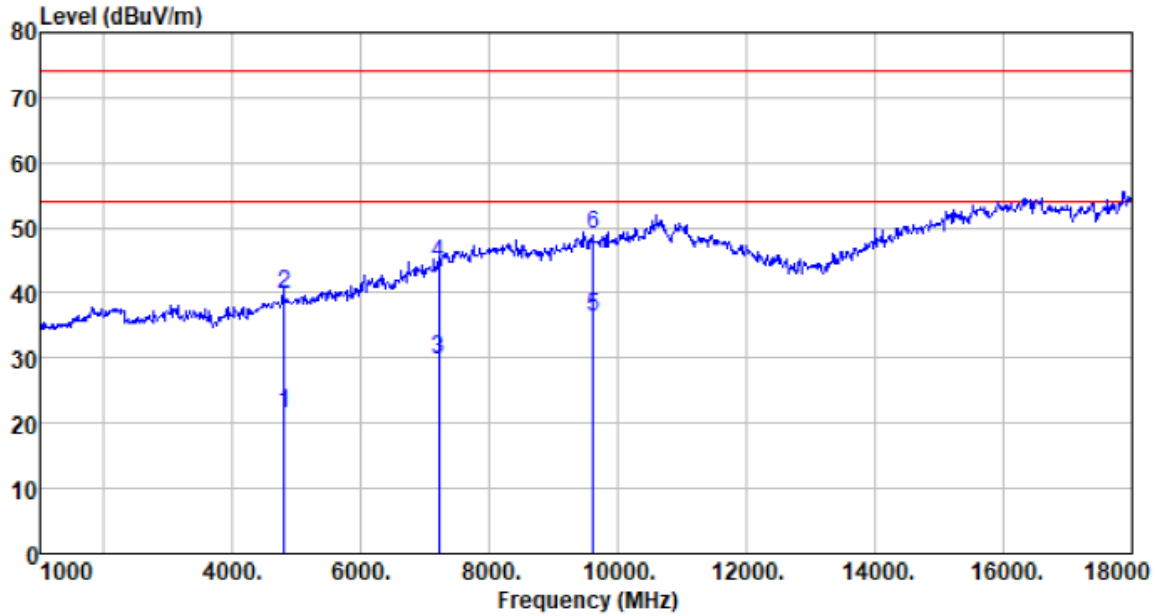


Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
39.437	39.72	13.42	0.65	35.63	18.16	40.00	-21.84	QP
45.855	39.17	13.32	0.73	35.98	17.24	40.00	-22.76	QP
53.318	37.87	12.99	0.80	36.23	15.43	40.00	-24.57	QP
107.134	39.22	10.27	1.25	36.78	13.96	43.50	-29.54	QP
167.824	38.76	11.67	1.67	37.18	14.92	43.50	-28.58	QP
896.997	34.96	23.87	4.83	37.60	26.06	46.00	-19.94	QP

■ **Above 1GHz**

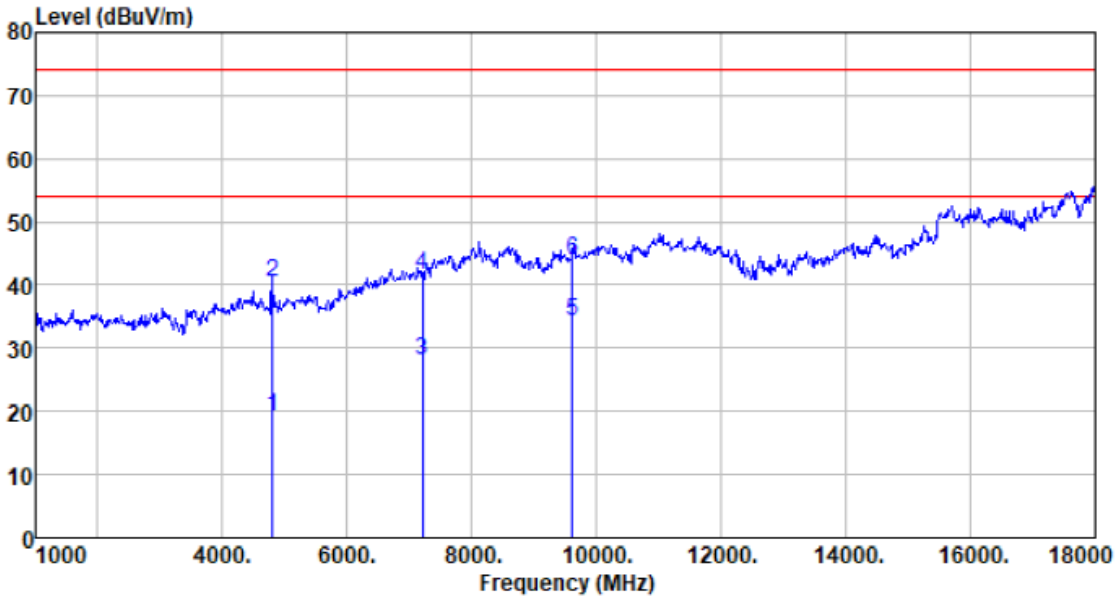
■ **Unwanted Emissions in Restricted Frequency Bands**

Test channel:	Lowest	Polarization:	Horizontal



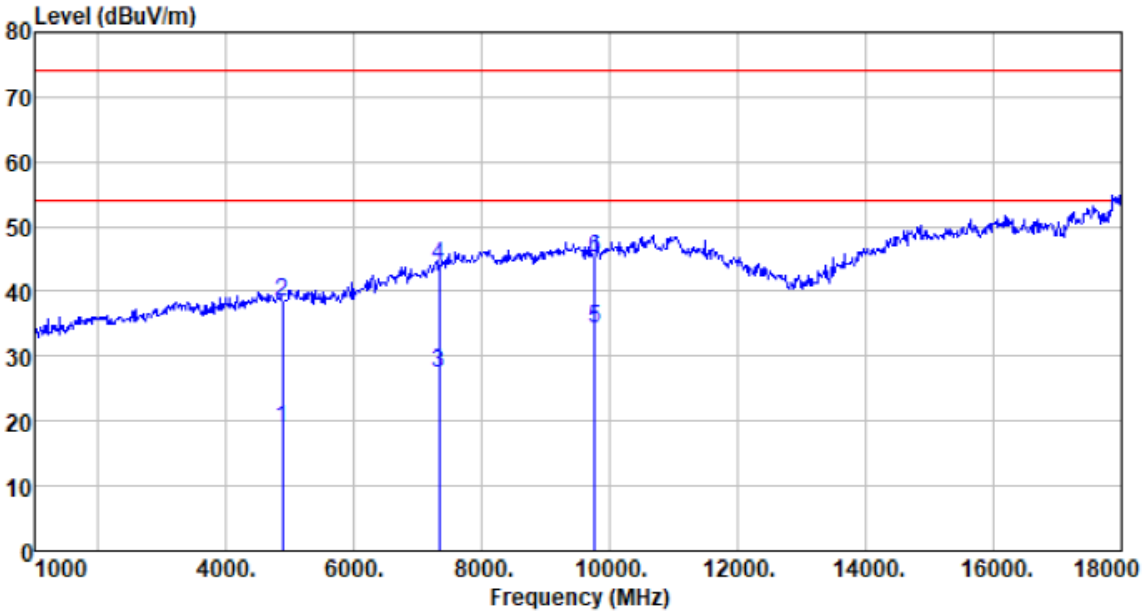
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4804.000	23.50	31.20	4.61	37.70	21.61	54.00	-32.39	Average
4804.000	41.75	31.20	4.61	37.70	39.86	74.00	-34.14	Peak
7206.000	25.06	36.16	6.48	37.82	29.88	54.00	-24.12	Average
7206.000	39.81	36.16	6.48	37.82	44.63	74.00	-29.37	Peak
9608.000	28.25	37.93	7.97	37.92	36.23	54.00	-17.77	Average
9608.000	41.00	37.93	7.97	37.92	48.98	74.00	-25.02	Peak

Test channel:	Lowest	Polarization:	Vertical



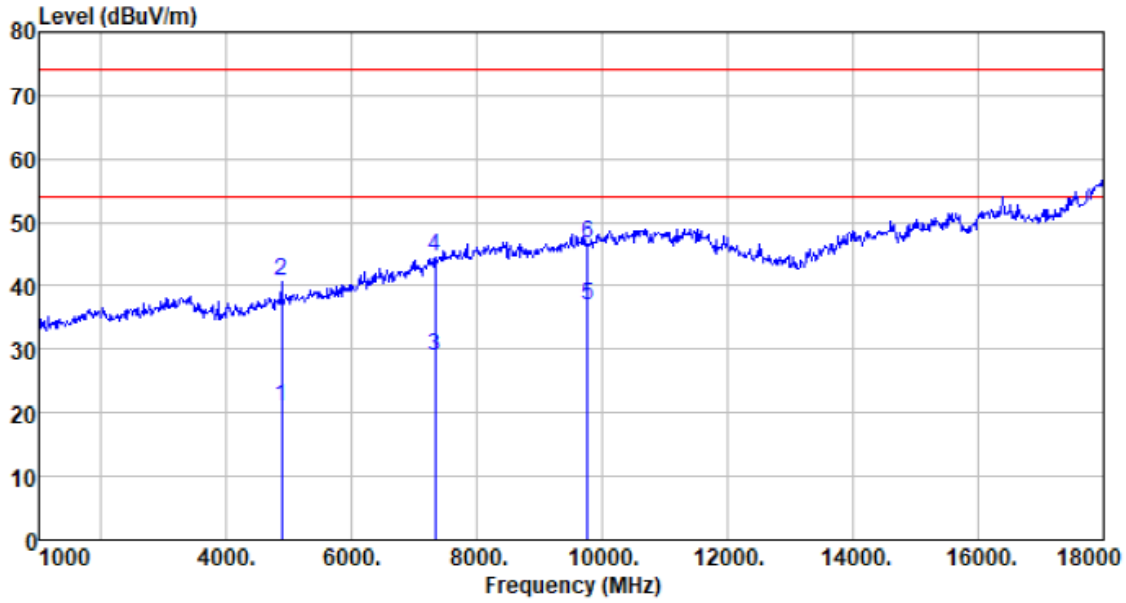
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4804.000	21.15	31.20	4.61	37.70	19.26	54.00	-34.74	Average
4804.000	42.22	31.20	4.61	37.70	40.33	74.00	-33.67	Peak
7206.000	23.34	36.16	6.48	37.82	28.16	54.00	-25.84	Average
7206.000	36.84	36.16	6.48	37.82	41.66	74.00	-32.34	Peak
9608.000	26.36	37.93	7.97	37.92	34.34	54.00	-19.66	Average
9608.000	35.94	37.93	7.97	37.92	43.92	74.00	-30.08	Peak

Test channel:	Middle	Polarization:	Horizontal



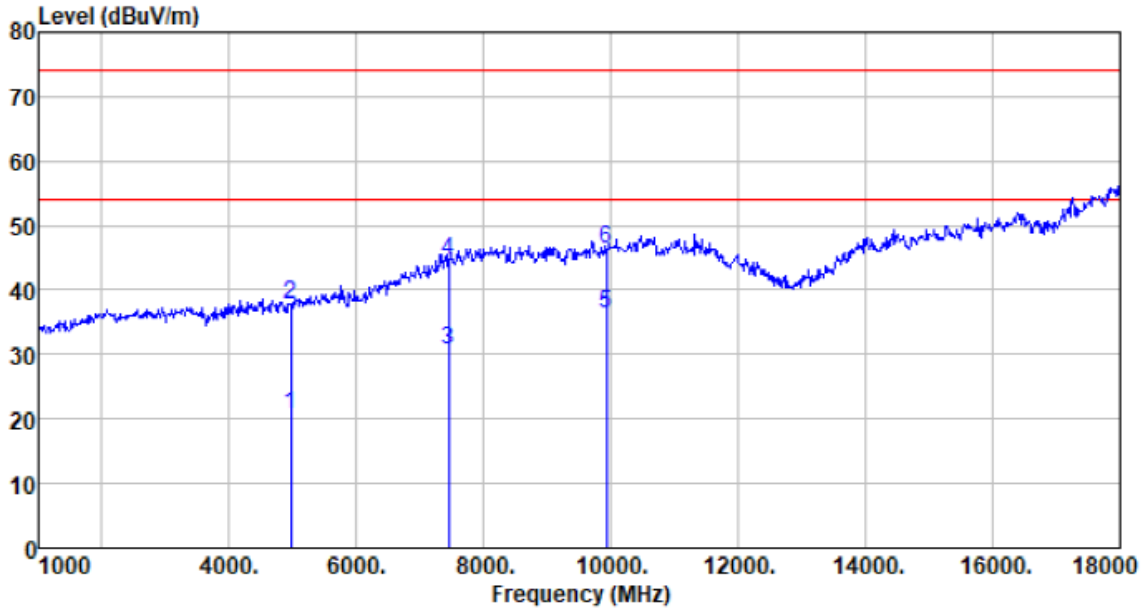
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4880.000	20.55	31.31	4.69	37.62	18.93	54.00	-35.07	Average
4880.000	39.95	31.31	4.69	37.62	38.33	74.00	-35.67	Peak
7320.000	22.20	36.43	6.63	37.77	27.49	54.00	-26.51	Average
7320.000	38.82	36.43	6.63	37.77	44.11	74.00	-29.89	Peak
9760.000	26.03	38.10	8.03	37.95	34.21	54.00	-19.79	Average
9760.000	37.00	38.10	8.03	37.95	45.18	74.00	-28.82	Peak

Test channel:	Middle	Polarization:	Vertical



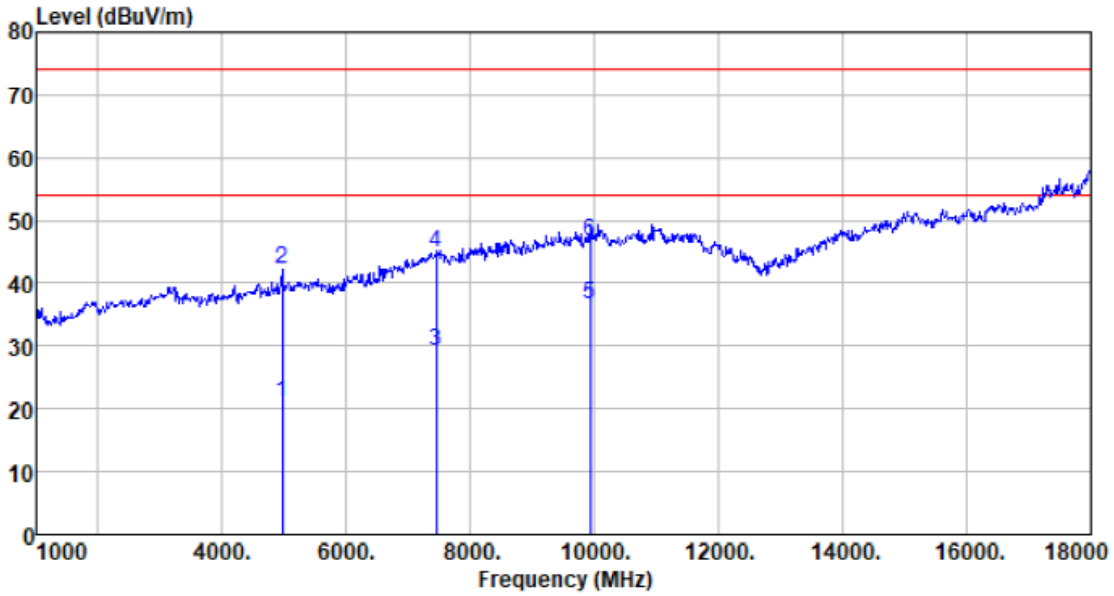
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	22.71	31.31	4.69	37.62	21.09	54.00	-32.91	Average
4880.000	42.27	31.31	4.69	37.62	40.65	74.00	-33.35	Peak
7320.000	23.73	36.43	6.63	37.77	29.02	54.00	-24.98	Average
7320.000	39.17	36.43	6.63	37.77	44.46	74.00	-29.54	Peak
9760.000	28.86	38.10	8.03	37.95	37.04	54.00	-16.96	Average
9760.000	38.58	38.10	8.03	37.95	46.76	74.00	-27.24	Peak

Test channel:	Highest	Polarization:	Horizontal



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4960.000	21.98	31.44	4.79	37.54	20.67	54.00	-33.33	Average
4960.000	39.19	31.44	4.79	37.54	37.88	74.00	-36.12	Peak
7440.000	24.85	36.66	6.77	37.72	30.56	54.00	-23.44	Average
7440.000	38.78	36.66	6.77	37.72	44.49	74.00	-29.51	Peak
9920.000	27.91	38.30	8.09	37.98	36.32	54.00	-17.68	Average
9920.000	37.79	38.30	8.09	37.98	46.20	74.00	-27.80	Peak

Test channel:	Highest	Polarization:	Vertical



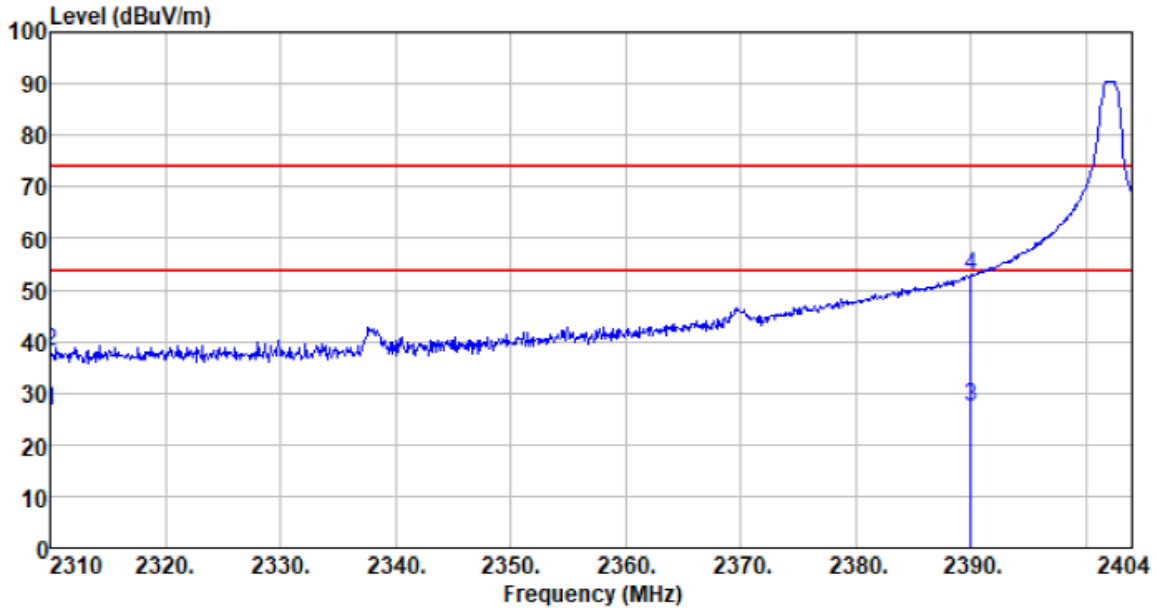
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4960.000	22.20	31.44	4.79	37.54	20.89	54.00	-33.11	Average
4960.000	43.52	31.44	4.79	37.54	42.21	74.00	-31.79	Peak
7440.000	23.43	36.66	6.77	37.72	29.14	54.00	-24.86	Average
7440.000	39.14	36.66	6.77	37.72	44.85	74.00	-29.15	Peak
9920.000	28.30	38.30	8.09	37.98	36.71	54.00	-17.29	Average
9920.000	38.33	38.30	8.09	37.98	46.74	74.00	-27.26	Peak

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.*

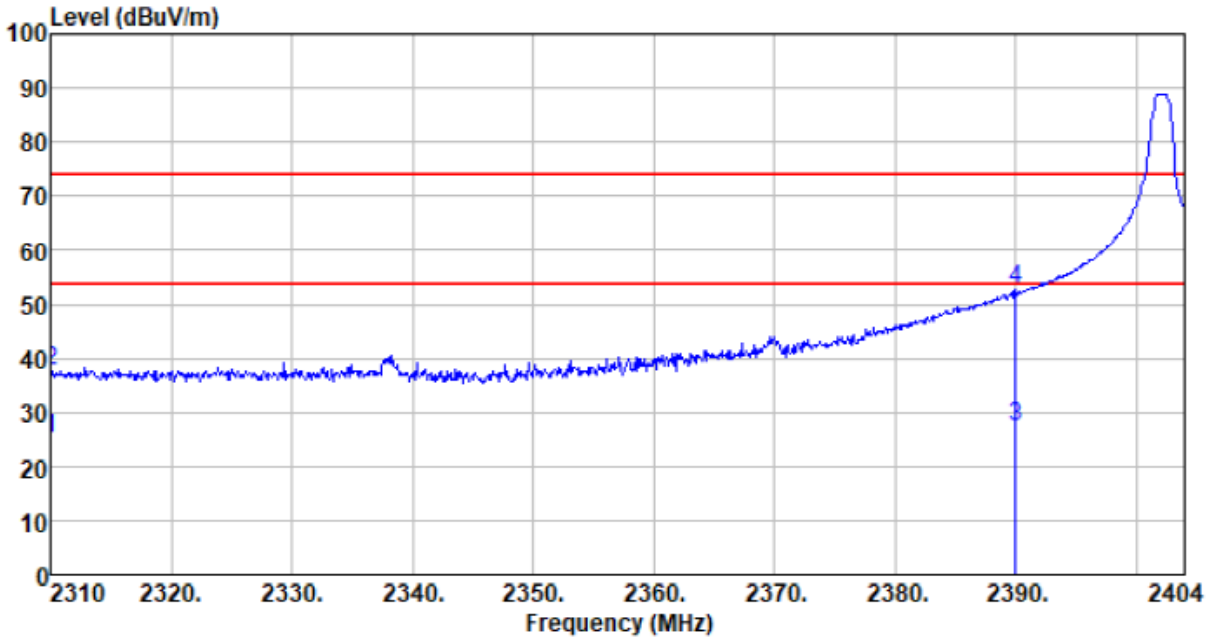
■ **Unwanted Emissions in Non-restricted Frequency Bands**

Test channel:	Lowest	Polarization:	Horizontal



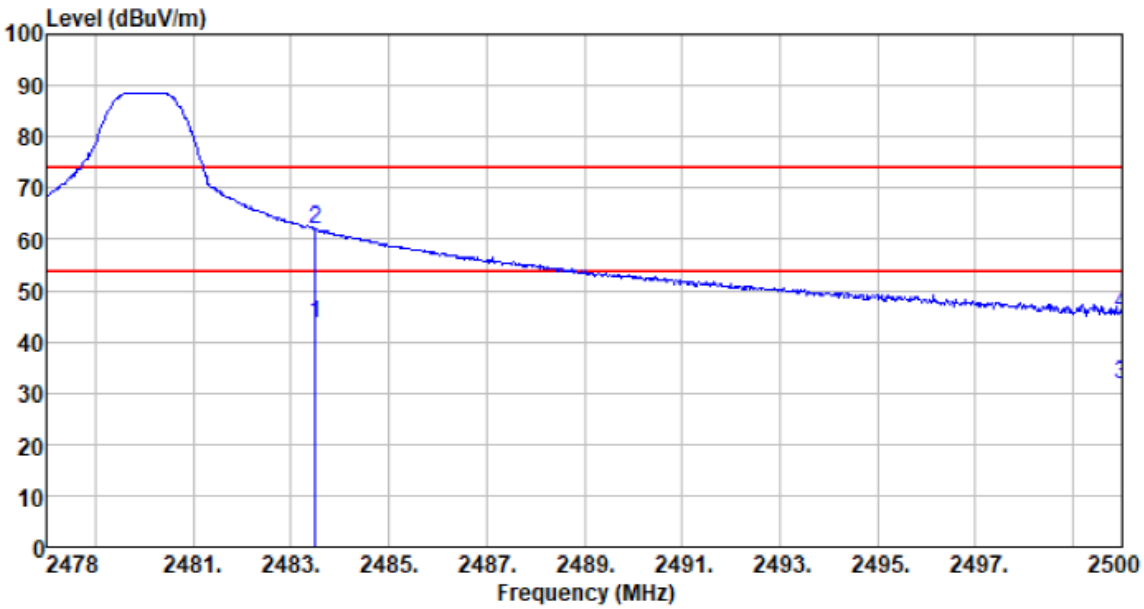
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	35.18	27.14	2.81	38.64	26.49	54.00	-27.51	Average
2310.000	46.81	27.14	2.81	38.64	38.12	74.00	-35.88	Peak
2390.000	35.96	27.37	2.91	38.84	27.40	54.00	-26.60	Average
2390.000	61.40	27.37	2.91	38.84	52.84	74.00	-21.16	Peak

Test channel:	Lowest	Polarization:	Vertical



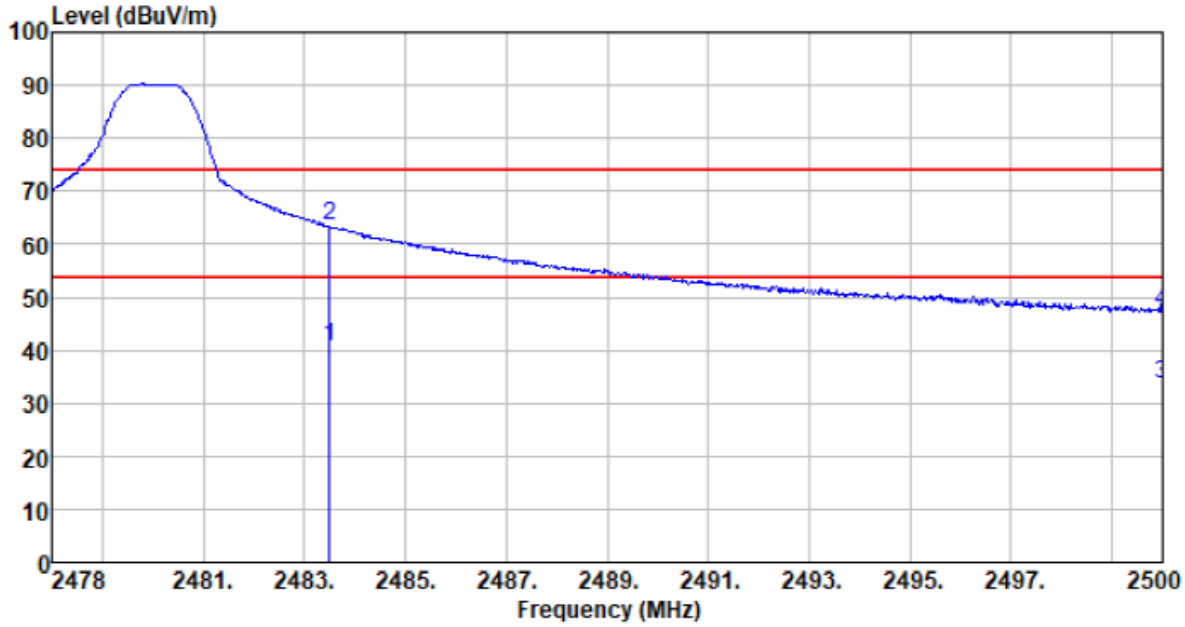
Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2310.000	33.68	27.14	2.81	38.64	24.99	54.00	-29.01	Average
2310.000	46.24	27.14	2.81	38.64	37.55	74.00	-36.45	Peak
2390.000	35.76	27.37	2.91	38.84	27.20	54.00	-26.80	Average
2390.000	61.48	27.37	2.91	38.84	52.92	74.00	-21.08	Peak

Test channel:	Highest	Polarization:	Horizontal



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2483.500	51.94	27.66	2.99	39.06	43.53	54.00	-10.47	Average
2483.500	70.40	27.66	2.99	39.06	61.99	74.00	-12.01	Peak
2500.000	40.08	27.70	3.01	39.10	31.69	54.00	-22.31	Average
2500.000	53.81	27.70	3.01	39.10	45.42	74.00	-28.58	Peak

Test channel:	Highest	Polarization:	Vertical



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2483.500	49.08	27.66	2.99	39.06	40.67	54.00	-13.33	Average
2483.500	71.81	27.66	2.99	39.06	63.40	74.00	-10.60	Peak
2500.000	42.07	27.70	3.01	39.10	33.68	54.00	-20.32	Average
2500.000	55.71	27.70	3.01	39.10	47.32	74.00	-26.68	Peak

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. *"*", means this data is the too weak instrument of signal is unable to test.*

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

------End------