TEST REPORT

Reference No.	:	WTF20S04022234W001 V2
FCC ID	:	2AWNQ-RUV-55
Applicant	:	Foshan Rayven lighting Co., Ltd
Address	:	A1 New Lighting Source Industry Zone, Luocun, Nanhai District, Foshan, Guangdong, China
Manufacturer	:	Foshan Rayven lighting Co., Ltd
Address	:	A1 New Lighting Source Industry Zone, Luocun, Nanhai District, Foshan, Guangdong, China
Product	:	Disinfection Light
Model(s)	:	RUV-55, RUV-38, RUV-36, RUV-24, RUV-12, RUV-6
Brand Name	:	N/A
Standards	:	FCC CFR47 Part 15 Section 15.249: 2016
Date of Receipt sample	:	2020-05-23
Date of Test	:	2020-05-25 to 2020-06-25
Date of Issue	:	2020-06-30
Test Result	:	Pass

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
Waltek Services (Shenzhen) Co., Ltd.
Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China
Tel :+86-755-83551033
Fax:+86-755-83552400

Compiled by: Approved by:

Ford Wang / Project Engineer Philo Zhong / Manager

2 content

Page

1 COVER PAGE 1

2 CONTENT 2

3 REVISION HISTORY 3

4 TEST SUMMARY 4

5 GENERAL INFORMATION 5

5.1 GENERAL DESCRIPTION OF E.U.T 5
5.2 DETAILS OF E.U.T. 5
5.3 CHANNEL LIST 5

6 EQUIPMENT USED DURING TEST 6

6.1 EQUIPMENTS LIST 6
6.2 MEASUREMENT UNCERTAINTY 7
6.3 TEST EQUIPMENT CALIBRATION 7

7 CONDUCTED EMISSION 8

7.1 E.U.T. OPERATION 8
7.2 EUT SETUP 8
7.3 MEASUREMENT DESCRIPTION 8
7.4 CONDUCTED EMISSION TEST RESULT 9

8 RADIATION EMISSION TEST 11

8.1 EUT OPERATION 11
8.2 TEST SETUP 12
8.3 SPECTRUM ANALYZER SETUP 14
8.4 TEST PROCEDURE 15
8.5 TEST RESULT 16

9 RESTRICTED BAND 22

9.1 REQUIMENTS: 22
9.2 TEST RESULT 22

10 20 DB BANDWIDTH MEASUREMENT 28

10.1 TEST PROCEDURE 28
10.2 TEST RESULT 28

11 ANTENNA REQUIREMENT 31

12 PHOTOGRAPHS- TEST SETUP 32

12.1 PHOTOGRAPH –CONDUCTED EMISSIONS 32
12.2 PHOTOGRAPH – RADIATION EMISSION 32

13 PHOTOGRAPHS - CONSTRUCTIONAL DETAILS 34

3 Revision History

Test report #	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTF20S04022234 W001	2020-05-23	2020-05-25 to 2020-06-25	2020-06-28	original	-	Replaced
WTF20S04022234 W001 V1	2020-05-23	2020-05-25 to 2020-06-25	2020-06-29	Version 1	Updated	Replaced
WTF20S04022234 W001 V2	2020-05-23	2020-05-25 to 2020-06-25	2020-06-30	Version 2	Updated	Valid

4 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207	PASS
Radiated Emission	15.249(a) 15.209 15.205(a)	PASS
Outside Restricted band	15.249 15.205 15.209	PASS
20dB Bandwidth	15:215(c)	PASS
Antenna Requirement	15.203	PASS

5 General Information

5.1 General Description of E.U.T

Product:	Disinfection Light
Model(s):	RUV-55, RUV-38, RUV-36, RUV-24, RUV-12, RUV-6
Model Differences:	Only the power is different, the others are the same
Type of Modulation:	Unmodulated
Frequency Range:	5750MHz-5870MHz
Hardware Version:	ED158S-N-2S-2S-R30
Software Version:	654E
Antenna Gain:	4.49dBi
Antenna installation:	planar antenna
Antenna material :	FR4

5.2 Details of E.U.T.

Ratings: Input: 120V~60Hz ,Max power 55W.

5.3 Channel List

Channel No.	Frequency (MHz)
Low	5750
Mid	5800
High	5870

5.3.1 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test mode	Lower channel	Middle channel	Upper channel
Transmitting	5750MHz	5800MHz	5870MHz

6 Equipment Used during Test

6.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	2019.09.17	2020.09.16
2.	LISN	R&S	ENV216	100115	2019.09.17	2020.09.16
3.	Cable	Top	TYPE16(3.5M)	-	2019.09.17	2020.09.16
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Spectrum Analyzer	R&S	FSP	100091	2020-04-20	2020-04-19
2	Amplifier	Agilent	8447D	2944A10178	2020-04-20	2020-04-19
3	Active Loop Antenna	Beijing Dazhi	ZN30900A	336	2019-08-08	2020-08-07
4	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	-	2020-04-20	2021-04-19
5	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	667	2020-04-25	2021-04-24
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	335	2020-04-20	2021-04-19
7	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	2004	2020-04-20	2021-04-19
8	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	NA	2020-04-20	2021-04-19
9	Coaxial Cable (above 1GHz)	Top	1GHz-18GHz	100091	2020-04-20	2021-04-19
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	2020-04-20	2021-04-19
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2020-04-25	2021-04-24
3	Amplifier	ANRITSU	MH648A	M43381	2020-04-20	2021-04-19
4	Cable	HUBER+SUHNER	CBL2	525178	2020-04-20	2021-04-19
RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	2020-04-20	2021-04-19
2.	Spectrum Analyzer	R&S	FSL6	100959	2019-09-17	2020-09-16

	(9k-6GHz)					
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	2020-04-20	2021-04-19
4.	Humidity Chamber	GF	GTH-225-40-1P	IAA061213	2020-04-20	2021-04-19

6.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 5.47 dB (Horn antenna 1000M~25000MHz)

6.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by GUANG ZHOU GRG METROLOGY & TEST CO., L TD. address is No.163, Pingyun Rd. West of Huangpu Ave,Tianhe District, Guangzhou, Guangdong, China.

7 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI 63.10: 2013
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

7.1 E.U.T. Operation

Operating Environment **:**

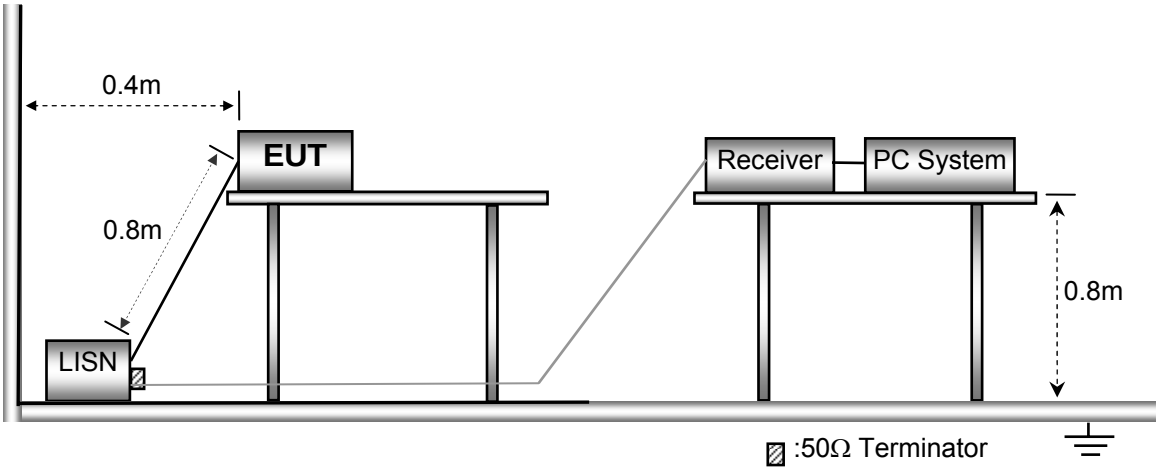
Temperature:	25.5 °C
Humidity:	51 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation **:**

The test was performed in Transmitting mode, the test data were shown in the report.

7.2 EUT Setup

The EUT was placed on the test table in shielding room.



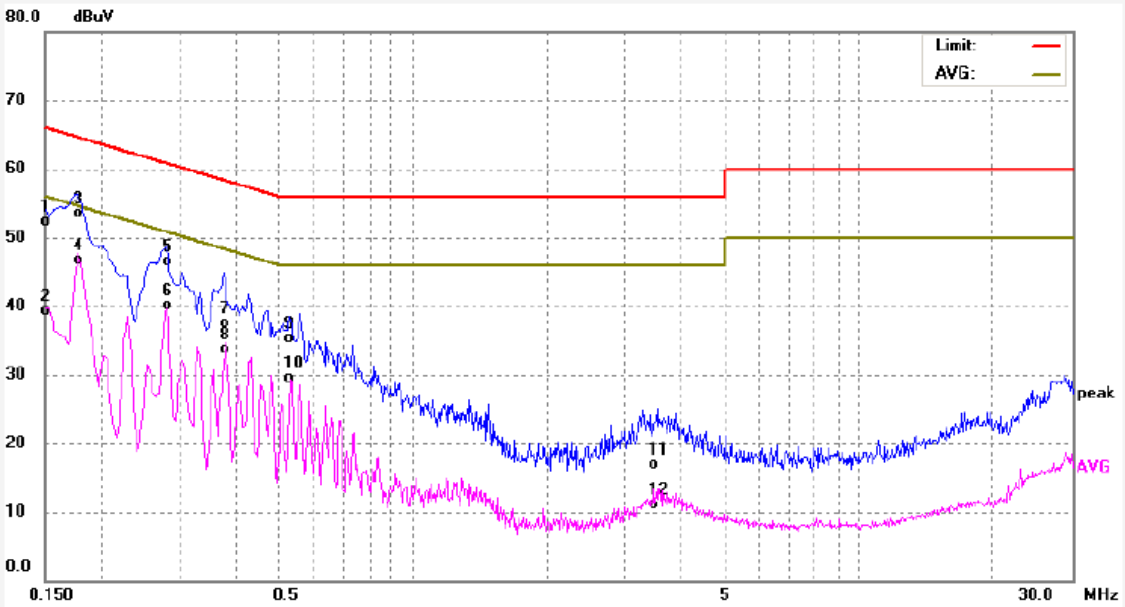
7.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

7.4 Conducted Emission Test Result

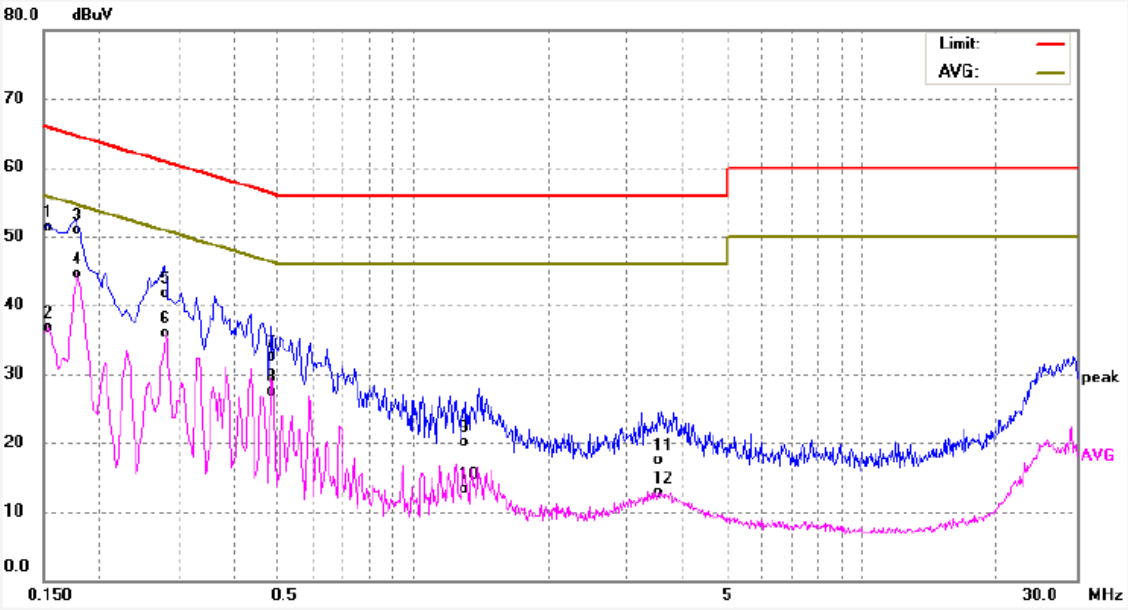
An initial pre-scan was performed on the live and neutral lines.

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	42.59	9.75	52.34	65.99	-13.65	QP	
2	0.1500	29.49	9.75	39.24	55.99	-16.75	AVG	
3	0.1780	43.70	9.78	53.48	64.57	-11.09	QP	
4	0.1780	36.83	9.78	46.61	54.57	-7.96	AVG	
5	0.2819	36.78	9.80	46.58	60.76	-14.18	QP	
6	0.2819	30.36	9.80	40.16	50.76	-10.60	AVG	
7	0.3820	27.67	9.82	37.49	58.23	-20.74	QP	
8	0.3820	23.83	9.82	33.65	48.23	-14.58	AVG	
9	0.5340	25.56	9.82	35.38	56.00	-20.62	QP	
10	0.5340	19.71	9.82	29.53	46.00	-16.47	AVG	
11	3.4780	7.03	9.93	16.96	56.00	-39.04	QP	
12	3.4780	1.14	9.93	11.07	46.00	-34.93	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	41.55	9.76	51.31	65.78	-14.47	QP	
2	0.1539	26.90	9.76	36.66	55.78	-19.12	AVG	
3	0.1780	41.03	9.78	50.81	64.57	-13.76	QP	
4	0.1780	34.76	9.78	44.54	54.57	-10.03	AVG	
5	0.2819	32.00	9.80	41.80	60.76	-18.96	QP	
6	0.2819	26.09	9.80	35.89	50.76	-14.87	AVG	
7	0.4860	22.75	9.81	32.56	56.24	-23.68	QP	
8	0.4860	17.63	9.81	27.44	46.24	-18.80	AVG	
9	1.3020	10.16	9.90	20.06	56.00	-35.94	QP	
10	1.3020	3.50	9.90	13.40	46.00	-32.60	AVG	
11	3.5220	7.48	9.93	17.41	56.00	-38.59	QP	
12	3.5220	2.82	9.93	12.75	46.00	-33.25	AVG	

8 Radiation Emission Test

Test Requirement: FCC Part15 Paragraph 15.249&15.209&15.205

Test Method: ANSI 63.10: 2013

Measurement Distance: 3m

Test Result: PASS

15.249(a)Limit:

Fundamental frequency	Field strength of fundamental		Field strength of harmonics	
	mV/m	dBuV/m	uV/m	dBuV/m
902-928 MHz	50	94	500	54
2400-2483.5 MHz	50	94	500	54
5725-5875 MHz	50	94	500	54
24.0-24.25 GHz	250	108	2500	68

15.209 Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Note: RF Voltage(dBuV)=20 $\log_{10}$ RF Voltage(uV)

8.1 EUT Operation

Operating Environment **:**

Temperature: 23.5 °C

Humidity: 51.1 % RH

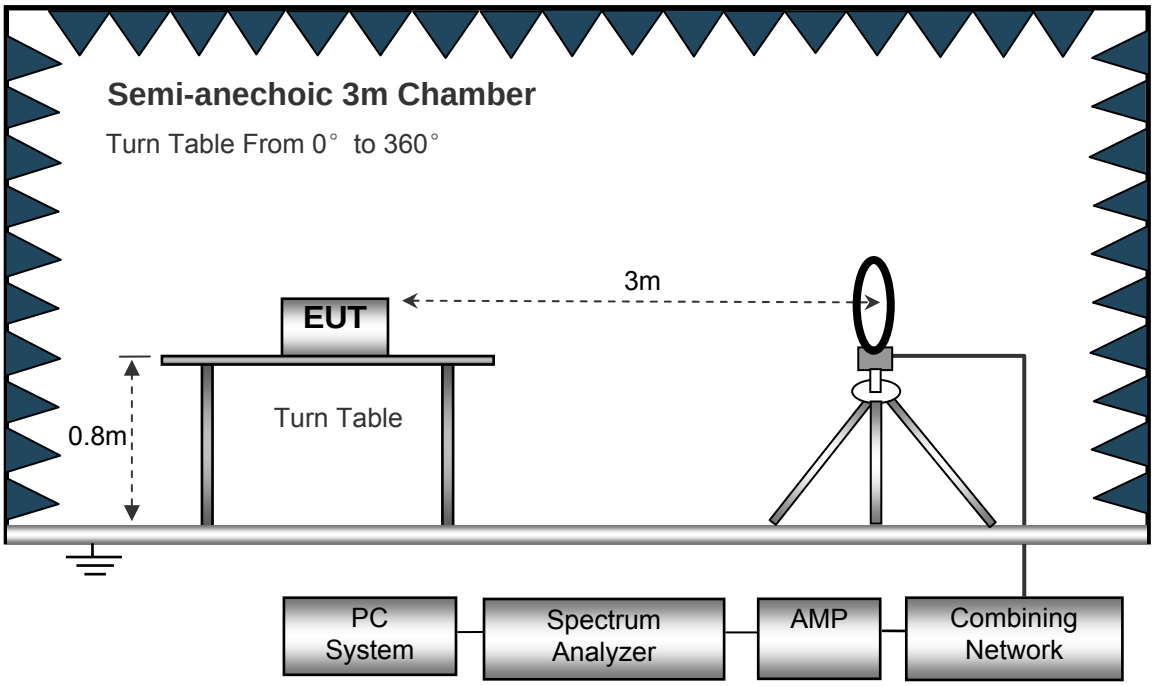
Atmospheric Pressure: 101.2kPa

EUT Operation **:**

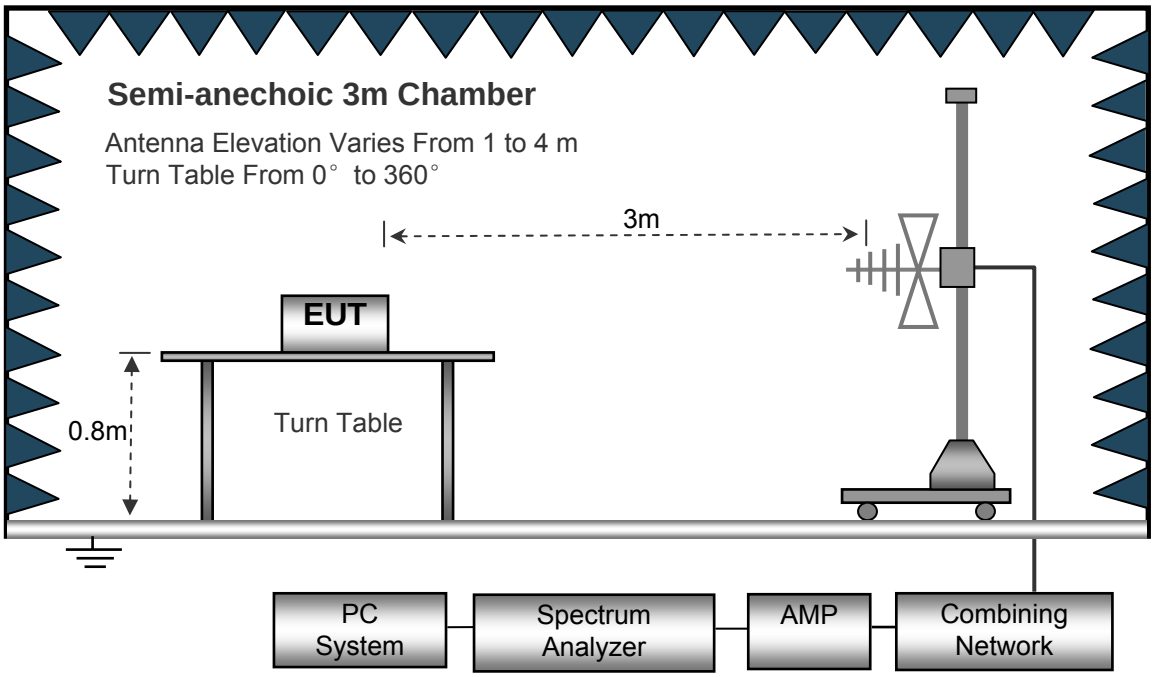
The test was performed in transmitting mode, the test data were shown in the report.

8.2 Test Setup

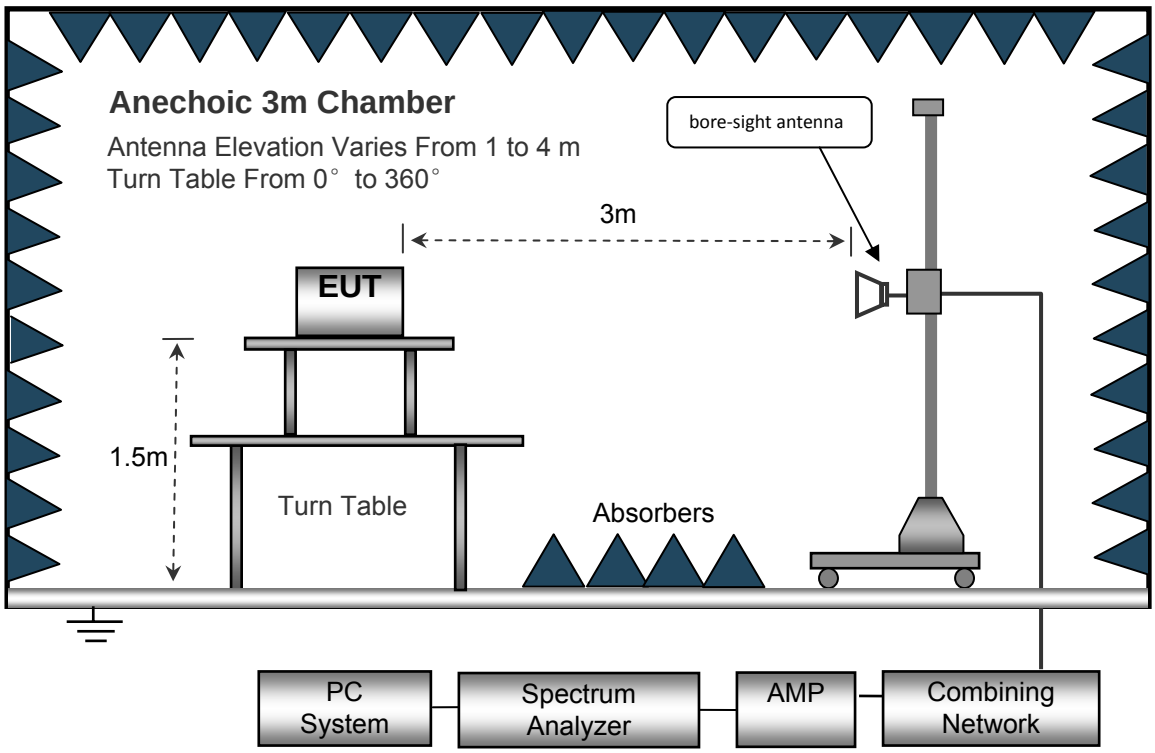
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10.
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1 GHz.



8.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto
IF Bandwidth..... 10kHz
Video Bandwidth 10kHz

Resolution Bandwidth 10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth 10Hz

8.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

8.5 Test Result

Test Frequency : 9KHz~ 30MHz
The measurements were more than 20 dB below the limit and not reported.

Test Frequency: 30MHz ~ 40GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)
Low channel: 5750MHz									
5750.00	78.10	PK	149	2.0	H	-2.23	75.87	114	-38.13
5750.00	74.15	PK	129	1.3	V	-2.23	71.92	114	-42.08
11445.2	44.12	PK	269	1.1	H	-13.19	30.93	74	-43.07
11445.2	42.23	PK	338	1.5	V	-13.19	29.04	74	-44.96
17310.22	41.25	PK	328	1.4	H	-13.14	28.11	74	-45.89
17310.22	39.56	PK	118	1.5	V	-13.14	26.42	74	-47.58
23108.46	41.02	PK	61	2.0	H	-13.08	27.94	74	-46.06
23108.46	40.25	PK	117	1.6	V	-13.08	27.17	74	-46.83
23111.25	42.15	PK	275	1.0	V	0.09	42.24	74	-32.76
23111.25	42.78	PK	347	1.3	V	0.09	42.87	74	-33.13
23120.22	45.12	PK	84	1.7	V	3.01	48.13	74	-28.87
23120.22	44.78	PK	8	1.3	V	3.01	47.79	74	-30.21

AV = Peak +20Log10(duty cycle) =PK+(0) [refer to section 8 for more detail]

Frequency	PK	Turn table Angle	RX Antenna		Duty cycle Factor	AV	FCC Part 15.249/209/205	
			Height	Polar			Limit	Margin
(MHz)	(dBμV/m)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Low channel: 5750MHz								
5750.00	75.87	142	1.6	H	0.00	75.87	94.00	-18.13
5750.00	71.92	301	1.4	V	0.00	71.92	94.00	-22.08
11478.00	32.78	196	1.3	H	0.00	32.78	54	-21.22
11478.00	31.00	327	1.1	V	0.00	31.00	54	-23.00
17155.00	29.58	237	1.4	H	0.00	29.58	54	-24.42
17155.00	27.46	233	1.5	V	0.00	27.46	54	-26.54
22589.00	29.58	187	1.3	H	0.00	29.58	54	-24.42
22589.00	29.44	84	1.5	V	0.00	29.44	54	-24.56
23100.00	42.25	55	1.4	V	0.00	42.25	54	-11.75
23100.00	42.39	316	1.6	V	0.00	42.39	54	-11.61
23106.15	48.15	332	1.1	V	0.00	48.15	54	-5.85
23106.15	48.02	76	1.7	V	0.00	48.02	54	-5.98

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)
Mid channel: 5800MHz									
5800.00	78.25	PK	91	1.0	H	-2.23	76.02	114	-37.98
5800.00	79.26	PK	16	2.0	V	-2.23	77.03	114	-36.97
11550.48	45.61	PK	351	1.9	H	-13.19	32.42	74	-41.58
11550.48	44.37	PK	336	1.1	V	-13.19	31.18	74	-42.82
17325.72	43.68	PK	267	1.8	H	-13.14	30.54	74	-43.46
17325.72	42	PK	262	1.3	V	-13.14	28.86	74	-45.14
23100.96	42.15	PK	23	2.0	H	-13.08	29.07	74	-44.93
23100.96	42.88	PK	286	1.2	V	-13.08	29.80	74	-44.20
23101.96	44.12	PK	103	1.3	V	0.09	44.21	74	-30.79
23102.96	42.3	PK	253	1.8	V	0.09	42.39	74	-33.61
23103.96	46.16	PK	69	1.5	V	3.01	49.17	74	-27.83
23104.96	45.22	PK	118	1.1	V	3.01	48.23	74	-29.77

AV = Peak +20Log10(duty cycle) =PK+(0) [refer to section 8 for more detail]

Frequency	PK	Turn table Angle	RX Antenna		Duty cycle Factor	AV	FCC Part 15.249/209/205	
			Height	Polar			Limit	Margin
(MHz)	(dBμV/m)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Mid channel: 5800MHz								
5800.00	77.15	304	1.8	H	0.00	77.15	94.00	-16.85
5800.00	78.20	127	1.8	V	0.00	78.20	94.00	-15.80
11600.00	32.42	47	1.2	H	0.00	32.42	54	-21.58
11600.00	31.18	226	1.3	V	0.00	31.18	54	-22.82
17400.00	30.54	116	1.3	H	0.00	30.54	54	-23.46
17400.00	28.86	255	1.8	V	0.00	28.86	54	-25.14
23200.00	29.07	67	1.8	H	0.00	29.07	54	-24.93
23200.00	29.80	176	1.6	V	0.00	29.80	54	-24.20
23102.85	44.21	285	1.9	V	0.00	44.21	54	-9.79
23102.85	42.39	343	1.6	V	0.00	42.39	54	-11.61
23103.96	49.17	203	1.3	V	0.00	49.17	54	-4.83
23104.96	48.23	286	1.7	V	0.00	48.23	54	-5.77

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.249/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)
High channel: 5870MHz									
5870.00	80.08	PK	324	1.6	H	-2.23	77.85	114	-36.15
5870.00	79.99	PK	281	1.3	V	-2.23	77.76	114	-36.24
11415.3	42.25	PK	78	1.2	H	-13.19	29.06	74	-44.94
11415.3	41.25	PK	331	1.2	V	-13.19	28.06	74	-45.94
17312.25	43.15	PK	170	1.2	H	-13.14	30.01	74	-43.99
17312.25	38.26	PK	307	2.0	V	-13.14	25.12	74	-48.88
23106.55	44.14	PK	303	1.2	H	-13.08	31.06	74	-42.94
23106.25	42.31	PK	15	1.2	V	-13.08	29.23	74	-44.77
23110.1	40.25	PK	328	1.1	V	0.09	40.34	74	-34.66
23110.1	40.15	PK	359	1.6	V	0.09	40.24	74	-35.76
23114.5	44.15	PK	114	1.7	V	3.01	47.16	74	-29.84
23114.5	44.28	PK	87	1.5	V	3.01	47.29	74	-30.71

AV = Peak +20Log10(duty cycle) =PK+(0) [refer to section 8 for more detail]

Frequency	PK	Turn table Angle	RX Antenna		Duty cycle Factor	AV	FCC Part 15.249/209/205	
			Height	Polar			Limit	Margin
(MHz)	(dBμV/m)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
High channel: 5870MHz								
5870.00	78.15	304	2.0	H	0.00	78.15	94.00	-15.85
5870.00	72.56	194	1.6	V	0.00	72.56	94.00	-21.44
11445.26	30.45	155	1.4	H	0.00	30.45	54	-23.55
11445.26	30.25	307	1.3	V	0.00	30.25	54	-23.75
17401.30	28.25	211	1.7	H	0.00	28.25	54	-25.75
17401.30	26.45	209	1.1	V	0.00	26.45	54	-27.55
22602.20	28.47	18	1.0	H	0.00	28.47	54	-25.53
22602.20	26.66	34	1.2	V	0.00	26.66	54	-27.34
23145.25	40.15	270	1.5	V	0.00	40.15	54	-13.85
23145.25	39.25	141	1.4	V	0.00	39.25	54	-14.75
23104.20	46.25	113	1.4	V	0.00	46.25	54	-7.75
23104.20	46.02	220	1.0	V	0.00	46.02	54	-7.98

9 Restricted band

Test Requirement: FCC Part15 Paragraph 15.205

Test Method: ANSI C63.10: 2013

Test Result: N/A

9.1 Requiments:

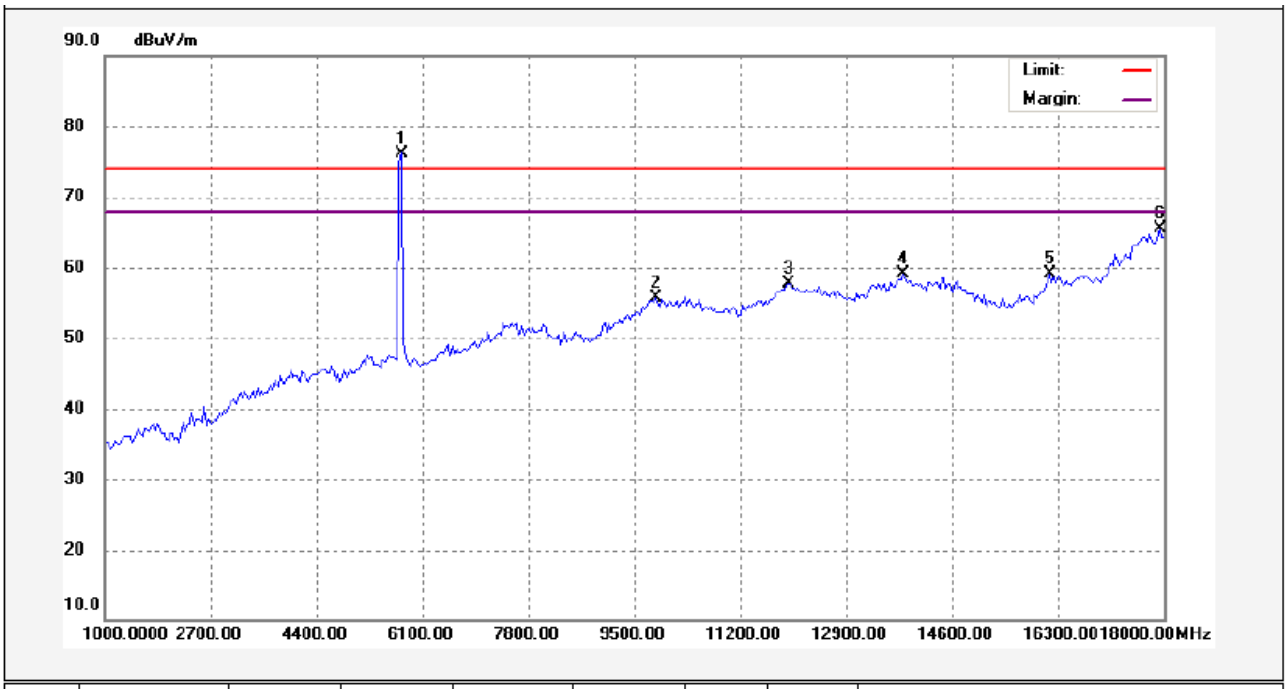
emissions that fall in the restricted bands(15.205).Above 1000MHz, compliance with the emissions limits in section 15.209 shall be demonstrated based on the average value of the measured emissions,The provisions in section 15.35apply to these measurements.

9.2 Test Result

Mode: Continuously Transmitting

Antenna Polarization: Vertical

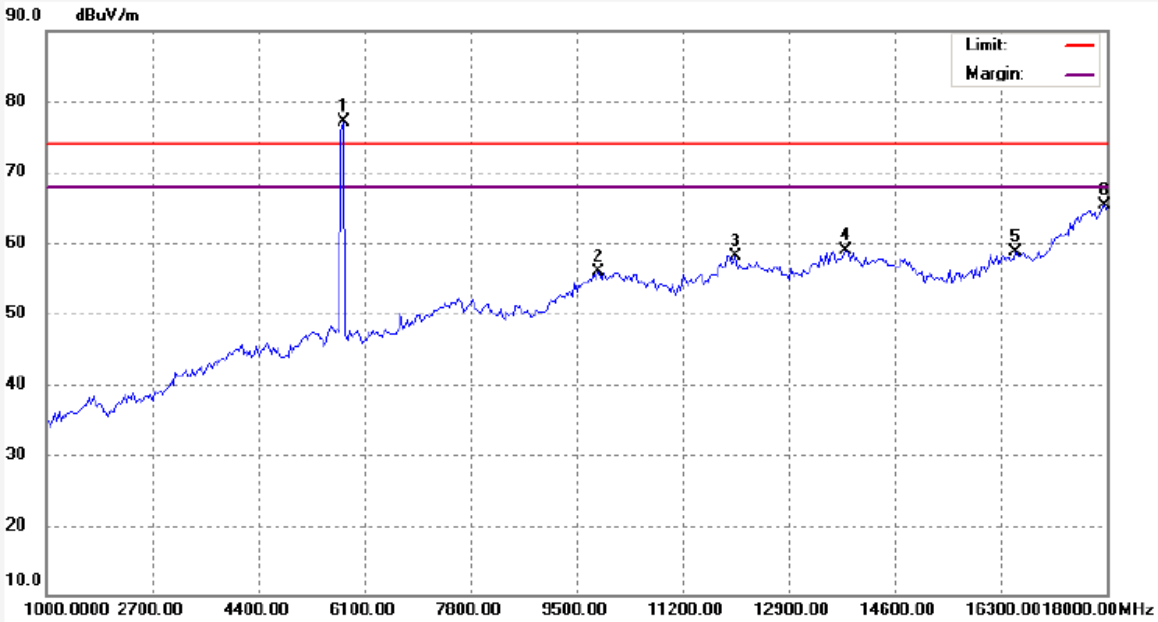
Low channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5750.000	77.59	-1.39	76.20	74.00	2.20	peak	
2	9840.000	50.28	5.49	55.77	74.00	-18.23	peak	
3	11982.000	51.53	6.23	57.76	74.00	-16.24	peak	
4	13818.000	49.96	9.20	59.16	74.00	-14.84	peak	
5	16164.000	49.73	9.37	59.10	74.00	-14.90	peak	
6	17932.000	48.58	16.91	65.49	74.00	-8.51	peak	

Antenna Polarization: Horizontal

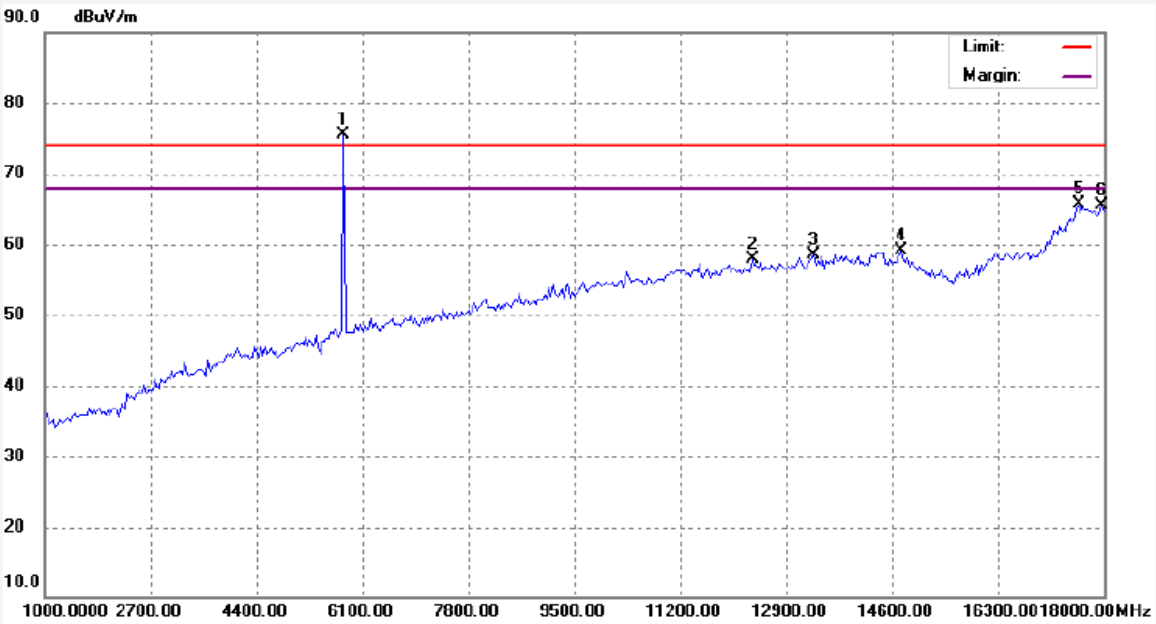
Low channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5750.000	78.55	-1.39	77.16	74.00	3.16	peak	
2	9840.000	50.46	5.49	55.95	74.00	-18.05	peak	
3	12050.000	51.83	6.23	58.06	74.00	-15.94	peak	
4	13818.000	49.64	9.20	58.84	74.00	-15.16	peak	
5	16538.000	47.79	10.97	58.76	74.00	-15.24	peak	
6	17966.000	48.40	16.98	65.38	74.00	-8.62	peak	

Antenna Polarization: Vertical

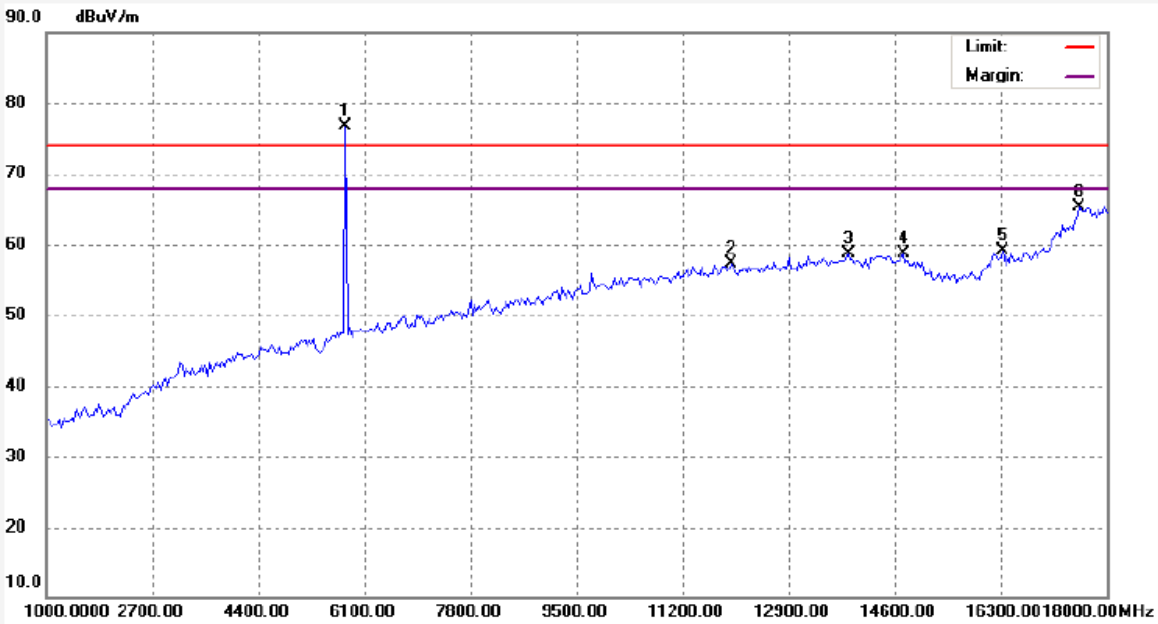
Mid channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5800.000	76.78	-1.34	75.44	74.00	1.44	peak	
2	12356.000	51.52	6.32	57.84	74.00	-16.16	peak	
3	13342.000	50.41	8.16	58.57	74.00	-15.43	peak	
4	14736.000	49.75	9.31	59.06	74.00	-14.94	peak	
5	17592.000	49.55	16.14	65.69	74.00	-8.31	peak	
6	17966.000	48.43	16.98	65.41	74.00	-8.59	peak	

Antenna Polarization: Horizontal

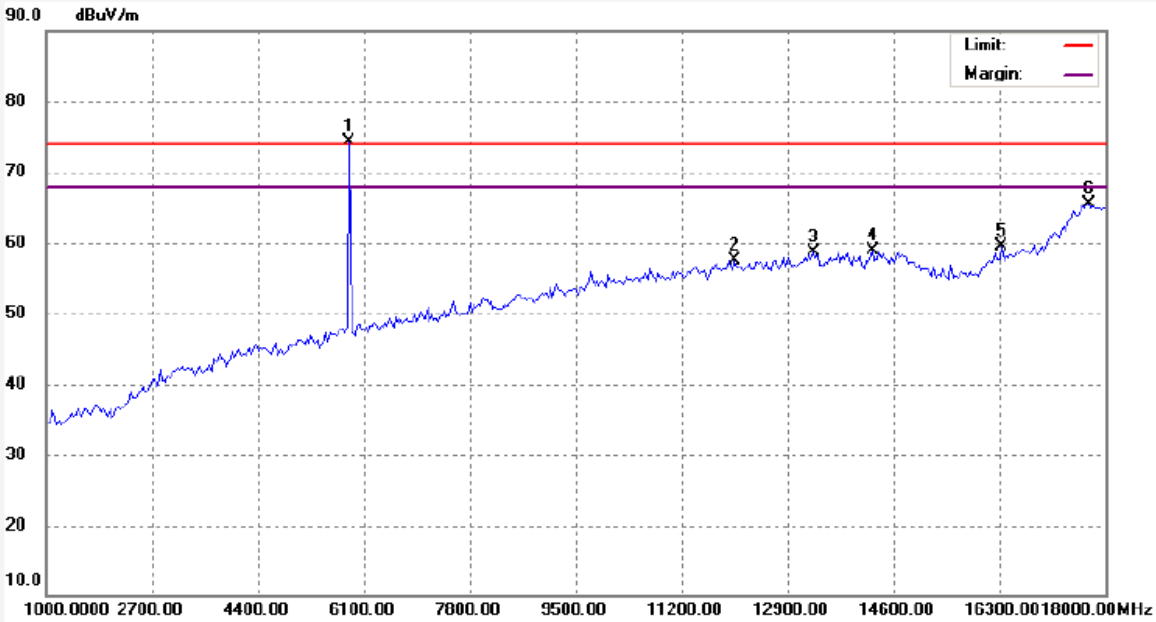
Mid channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5800.000	78.07	-1.34	76.73	74.00	2.73	peak	
2	11982.000	51.05	6.23	57.28	74.00	-16.72	peak	
3	13852.000	49.40	9.25	58.65	74.00	-15.35	peak	
4	14736.000	49.35	9.31	58.66	74.00	-15.34	peak	
5	16334.000	49.00	10.13	59.13	74.00	-14.87	peak	
6	17558.000	49.19	16.07	65.26	74.00	-8.74	peak	

Antenna Polarization: Vertical

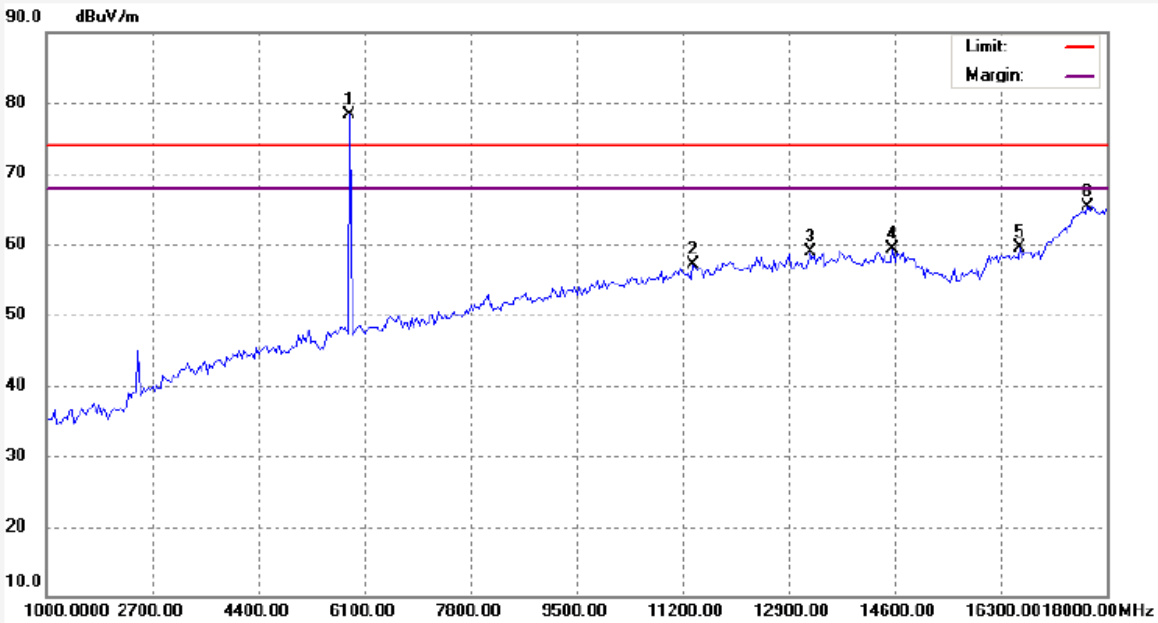
High channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5870.000	75.60	-1.24	74.36	74.00	0.36	peak	
2	12050.000	51.34	6.23	57.57	74.00	-16.43	peak	
3	13308.000	50.66	8.07	58.73	74.00	-15.27	peak	
4	14260.000	49.21	9.72	58.93	74.00	-15.07	peak	
5	16334.000	49.32	10.13	59.45	74.00	-14.55	peak	
6	17728.000	49.04	16.45	65.49	74.00	-8.51	peak	

Antenna Polarization: Horizontal

High channel:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	5870.000	79.45	-1.24	78.21	74.00	4.21	peak	
2	11370.000	50.45	6.65	57.10	74.00	-16.90	peak	
3	13240.000	51.02	7.90	58.92	74.00	-15.08	peak	
4	14566.000	49.62	9.71	59.33	74.00	-14.67	peak	
5	16606.000	48.39	11.11	59.50	74.00	-14.50	peak	
6	17694.000	49.03	16.37	65.40	74.00	-8.60	peak	

10 20 dB Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.215(c)

Test Method: ANSI C63.10:2013

Test Mode: Transmitting

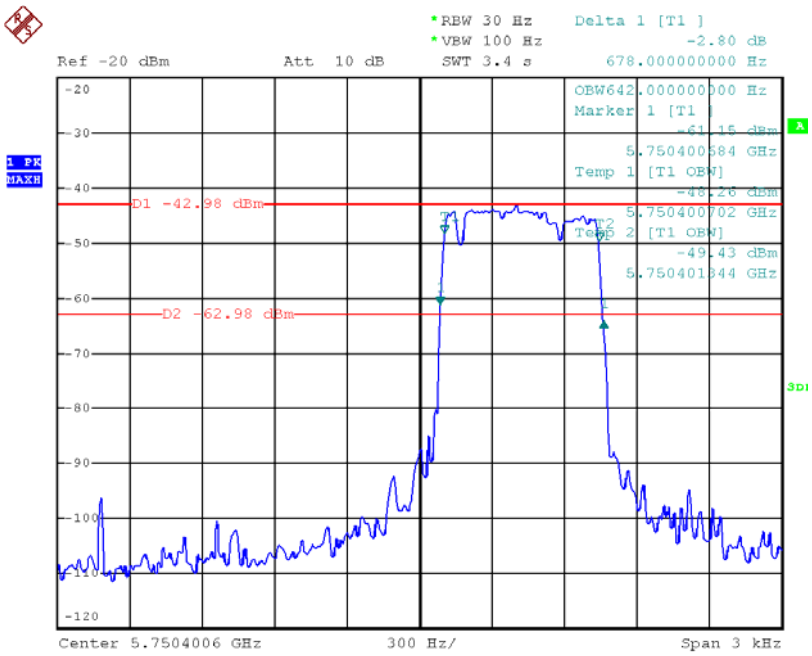
10.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 1%-5% OBW, VBW = 3RBW

10.2 Test Result

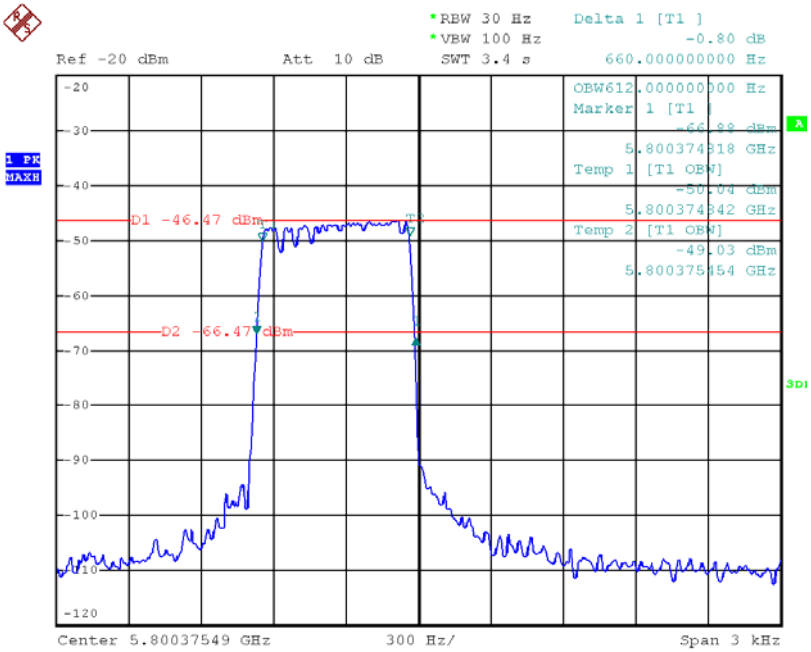
Frequency (MHz)	Bandwidth Emission (Hz)
5750	678
5800	660
5870	690

Low channel Test plots



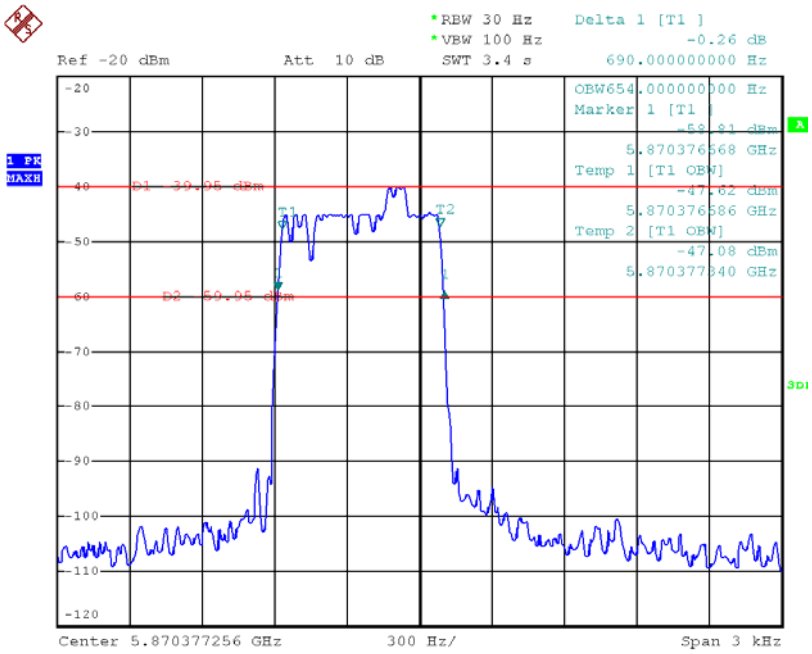
Date: 31.JUL.2020 01:56:17

Mid channel Test plots



Date: 31.JUL.2020 02:19:18

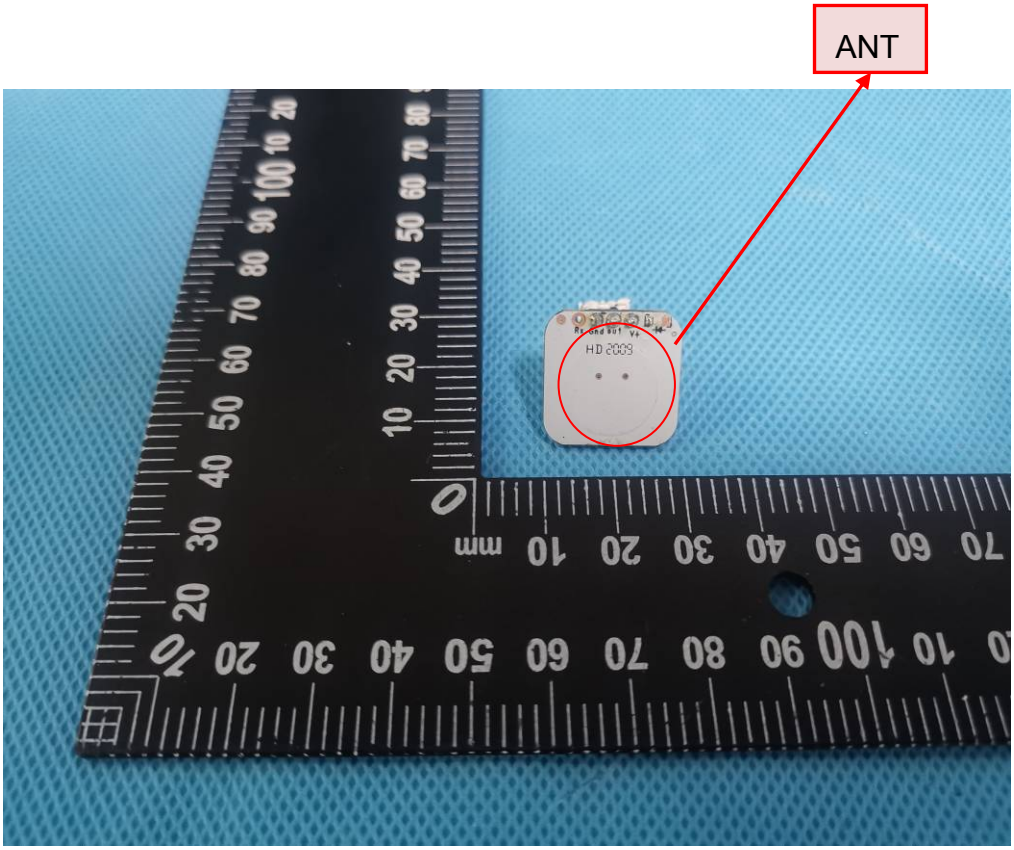
High channel Test plots



Date: 31.JUL.2020 02:06:11

11 Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, 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. This product has a planar antenna , Antenna material is FR4, fulfil the requirement of this section.

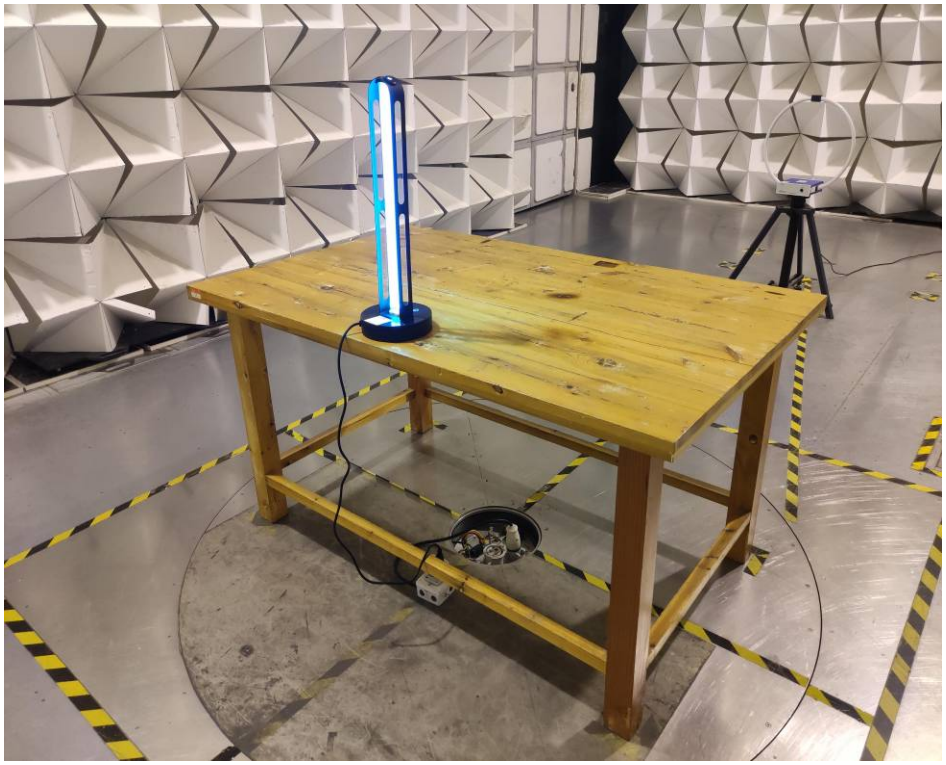


12 Photographs- Test Setup

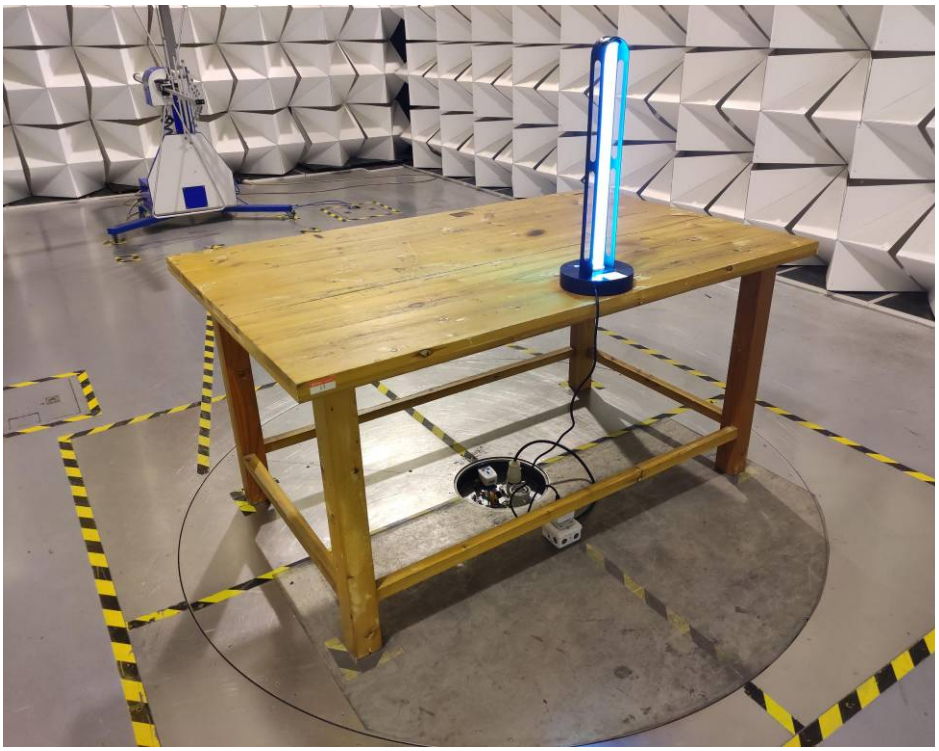
12.1 Photograph –Conducted Emissions

12.2 Photograph – Radiation Emission

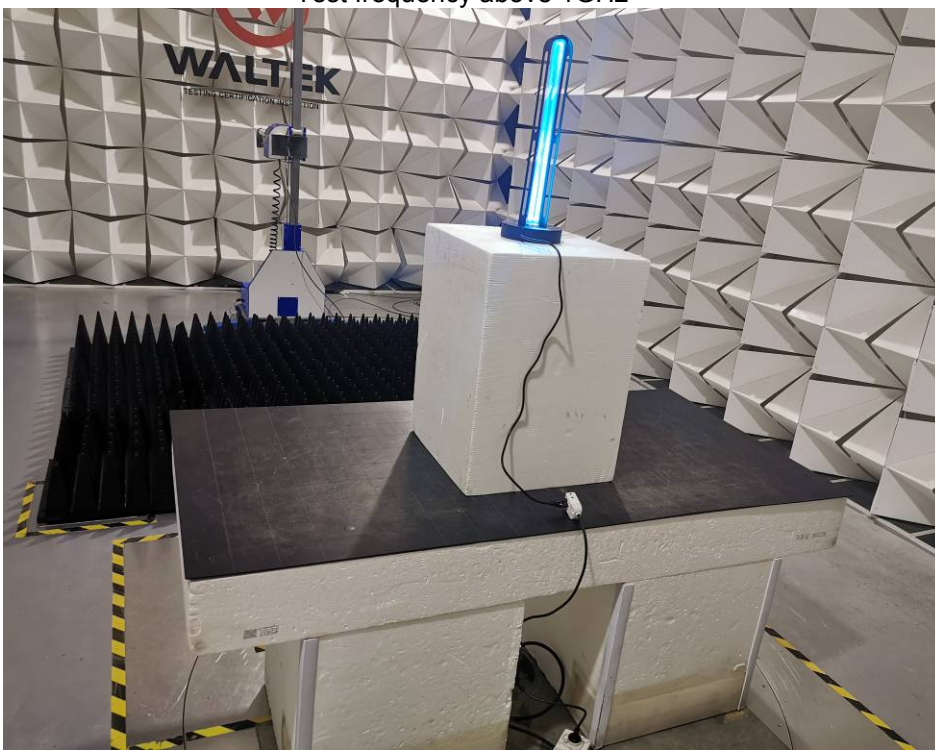
Test frequency from 9KHz to 30MHz



Test frequency from 30MHz to 1GHz



Test frequency above 1GHz



13 Photographs - Constructional Details

Note: Please refer to appendix: Appendix-RUV-55-Photos.

======End of Report======