

TEST REPORT

Product Name : Outdoor Fixed Security Light with Wifi video
Brand Mark : N/A
Model No. : 17000214
FCC ID : 2AQUQGB17214
Report Number : BLA-EMC-202307-A6701
Date of Sample Receipt : 2023/7/21
Date of Test : 2023/7/25 to 2023/8/3
Date of Issue : 2023/8/3
Test Standard : 47 CFR Part 15, Subpart C 15.247
Test Result : Pass

Prepared for:

GLOBE ELECTRIC COMPANY INC.
150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8

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Date:

2023/8/3



REPORT REVISE RECORD

Version No.	Date	Description
00	2023/8/3	Original

BlueAsia

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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(1) & 15.247(b)(3)	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass

2 GENERAL INFORMATION

Applicant	GLOBE ELECTRIC COMPANY INC.
Address	150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8
Manufacturer	GLOBE ELECTRIC COMPANY INC.
Address	150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8
Factory	N/A
Address	N/A
Product Name	Outdoor Fixed Security Light with Wifi video
Test Model No.	17000214

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	v5
Software Version	v1.4.0
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	PCB Antenna
Antenna gain:	Antenna:3.44dBi
Remark:The Antenna Gain is supplied by the customer.BlueAsia is not responsible for this data	

4 OPERATION FREQUENCY EACH OF CHANNEL

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	5	2432MHz	9	2452MHz	13	2472MHz
2	2417MHz	6	2437MHz	10	2457MHz	--	--
3	2422MHz	7	2442MHz	11	2462MHz	--	--
4	2427MHz	8	2447MHz	12	2467MHz	--	--

Operation Frequency each of channel(802.11n HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz	11	2462MHz	--	--
4	2427MHz	8	2447MHz	--	--	--	--
5	2432MHz	9	2452MHz	--	--	--	--
6	2437MHz	10	2457MHz	--	--	--	--

For 802.11b/g/n (HT20), the lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 1 (2412MHz), 7 (2442MHz) and 13 (2472MHz); 802.11n HT40, the lowest, middle, highest channel numbers of the EUT used and tested in this report are separately 3 (2422MHz), 7 (2442MHz) and 11 (2462MHz).

5 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	AC120V

6 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation. (Duty cycle>98%)
Remark: Only the data of the worst mode would be recorded in this report.	

7 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30MHz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

Parameter	Expanded Uncertainty (Confidence of 95%)
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %
Unwanted Radiated Emission (30MHz ~ 1000MHz)	±4.35 dB
Unwanted Radiated Emission (1GHz ~ 18GHz)	±4.44 dB

8 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
PC	lenovo	E460C	N/A	From lab (No.BLA-ZC-BS-2022005)

9 LABORATORY LOCATION

All tests were performed at:
BlueAsia of Technical Services(Shenzhen) Co., Ltd.
Building C, No. 107, Shihuan Road, Shiyuan Sub-District, Baoan District, Shenzhen, Guangdong Province,
China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

10 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber 1	SKET	966	N/A	2020/11/10	2023/11/9
Chamber 2	SKET	966	N/A	2021/07/20	2024/07/19
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Receiver	R&S	ESR7	101199	2022/09/15	2023/09/14
Receiver	R&S	ESPI7	101477	2022/07/16	2024/07/15
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/09/15	2023/09/14
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2022/07/16	2024/07/15
Amplifier	SKET	PA-000318G-45	N/A	2022/09/13	2023/09/12
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2022/07/14	2024/07/13
Filter group	SKET	2.4G/5G Filter group r	N/A	2022/07/16	2024/07/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/9/14	2025/9/13
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A
SignalGenerator	Agilent	N5182A	MY47420955	2022/9/7	2023/9/6
Audio Analyzer	ATS-1	Audio Precision	ATS141094	2023/07/01	2024/06/30
Electric and Magnetic Field Analyzer	EHP-200A	Narda	180ZX11016	2023/03/30	2024/03/29
Audio shielding box	SB-ABT-C35	SKET	N/A	2022/09/14	2023/09/13
1kHz calibration audio source	MCS-ABT-C35	SKET	N/A	2022/09/14	2023/09/13
Free Field Microphone	MGS MP 663	SKET	0414	2022/09/09	2023/09/08

Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Shield room	SKET	833	N/A	2020/11/25	2023/11/24
Receiver	R&S	ESPI3	101082	2022/09/14	2023/09/13
LISN	R&S	ENV216	3560.6550.15	2022/09/14	2023/09/13
LISN	AT	AT166-2	AKK1806000003	2022/09/14	2023/09/13
ISN	TESEQ	ISNT8-cat6	53580	2022/09/14	2023/09/13
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01045	2022/08/17	2024/08/16
Single-channel vehicle artificial power network	Schwarzbeck	NNBM 8124	01075	2022/08/17	2024/08/16
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A

Test Equipment Of RF Conducted Test					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Spectrum	Agilent	N9020A	MY49100060	2022/09/07	2023/09/06
Spectrum	KEYSIGHT	N9030A	MY52350152	2022/07/01	2024/06/30
Spectrum	KEYSIGHT	N9010A	MY54330814	2022/07/01	2024/06/30
Signal Generator	Agilent	N5182A	MY47420955	2022/09/07	2023/09/06
Signal Generator	Agilent	E8257D	MY44320250	2022/07/01	2024/06/30
Signal Generator	Agilent	N5181A	MY46240904	2022/08/02	2024/08/01
Signal Generator	R&S	CMW500	132429	2022/09/07	2023/09/06
BluetoothTester	Anritsu	MT8852B	06262047872	2022/09/07	2023/09/06
Power probe	DARE	RPR3006W	14100889SN042	2022/09/07	2023/09/06
DCPowersupply	zhaoxin	KXN-305D	20K305D1221363	2022/09/14	2023/09/13
DCPowersupply	zhaoxin	RXN-1505D	19R1505D050168	2022/09/14	2023/09/13
Audio Analyzer	Audioprecision	N/A	ATSI-41094	2022/7/1	2024/6/30
2.4GHz/5GHz RF Test software	MTS	MTS 8310	Version 2.0.0.0	N/A	N/A

11 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

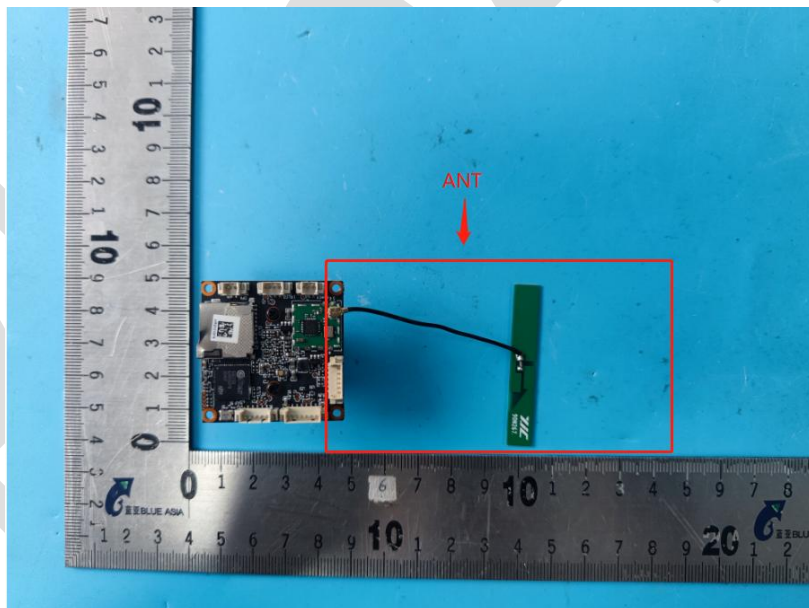
11.1 CONCLUSION

Standard 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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an 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 integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3.44dBi.



12 RADIATED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

12.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

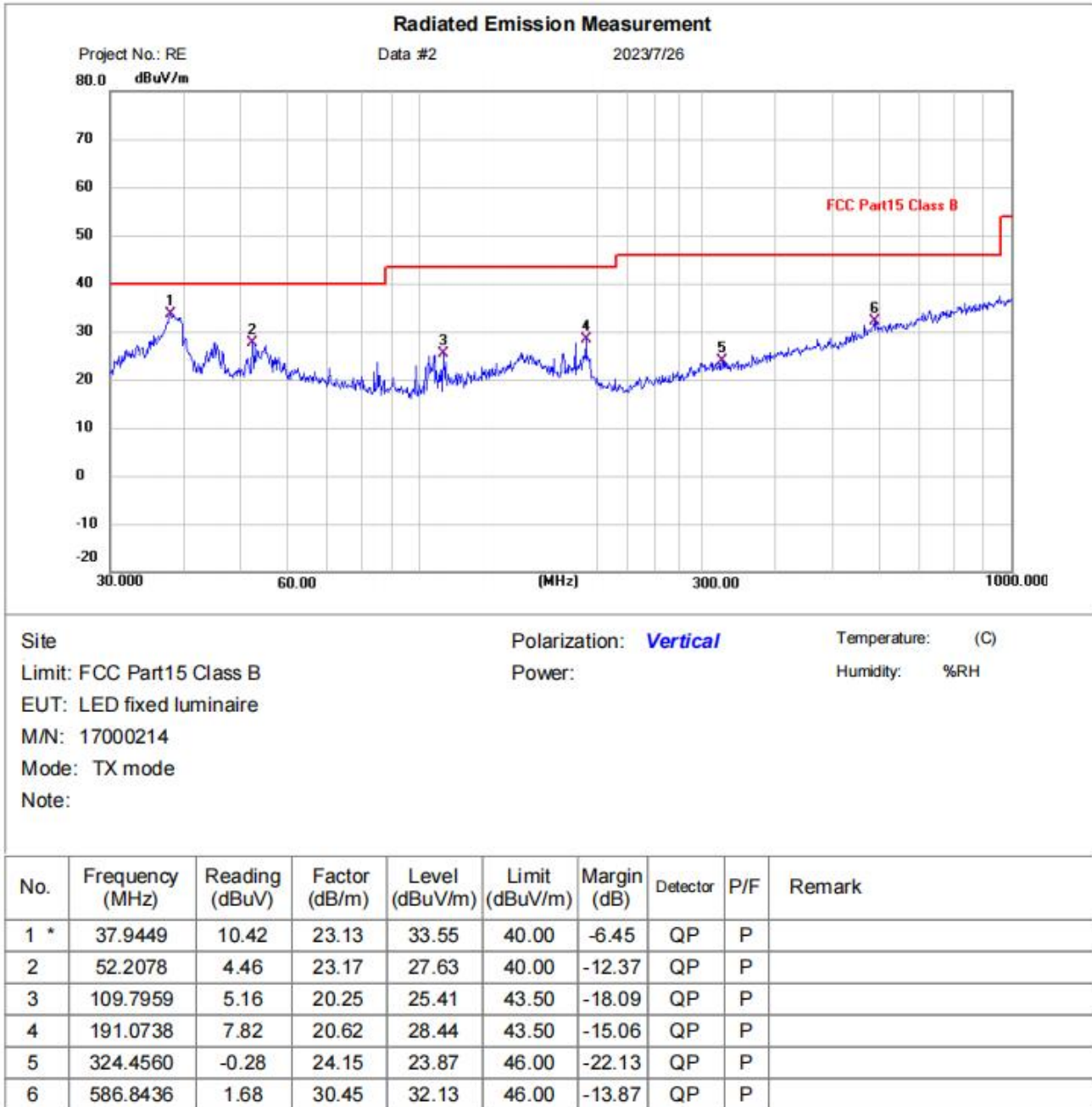
Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

12.4 TEST DATA

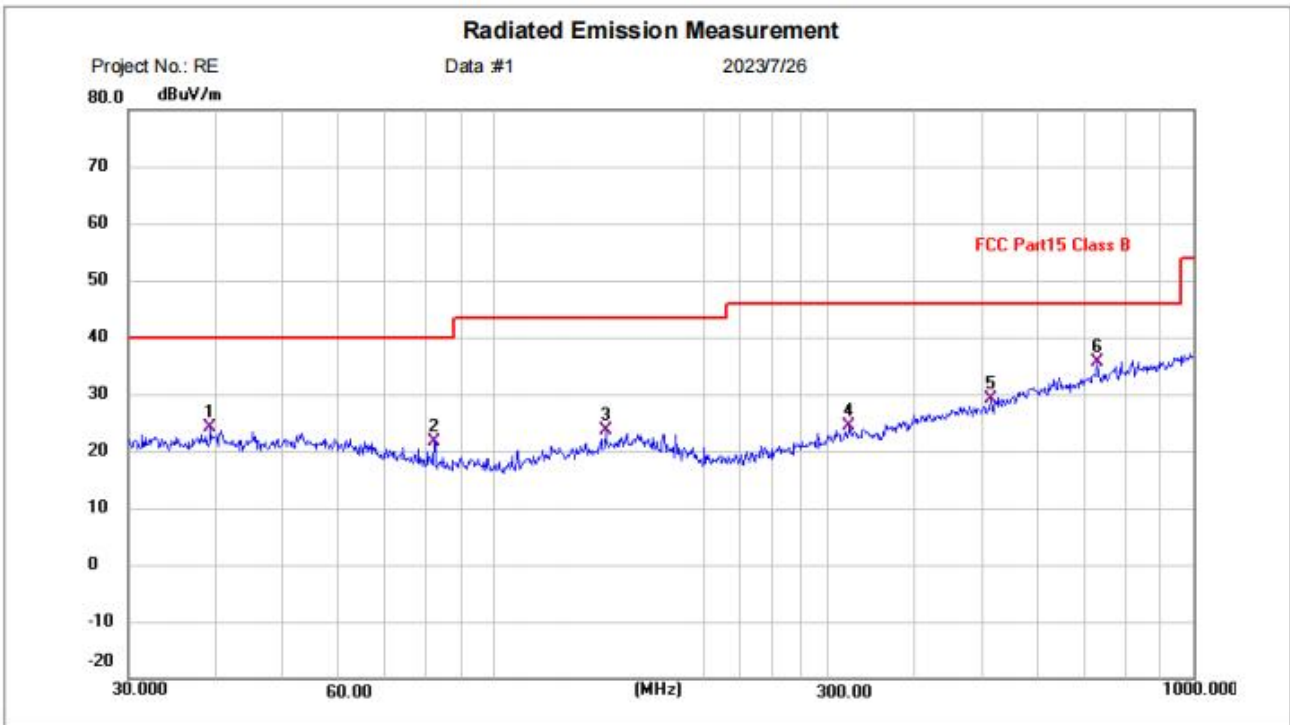
Remark: During the test, pre-scan the 802.11b/g/n mode, and found the 802.11b mode which it is worse case.

[TestMode: TX mode (SE) below 1G]; [Polarity: Vertical]



Test Result: Pass

[TestMode: TX mode (SE) below 1G]; [Polarity: Horizontal]



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 Class B Power: Humidity: %RH

EUT: LED fixed luminaire

M/N: 17000214

Mode: TX mode

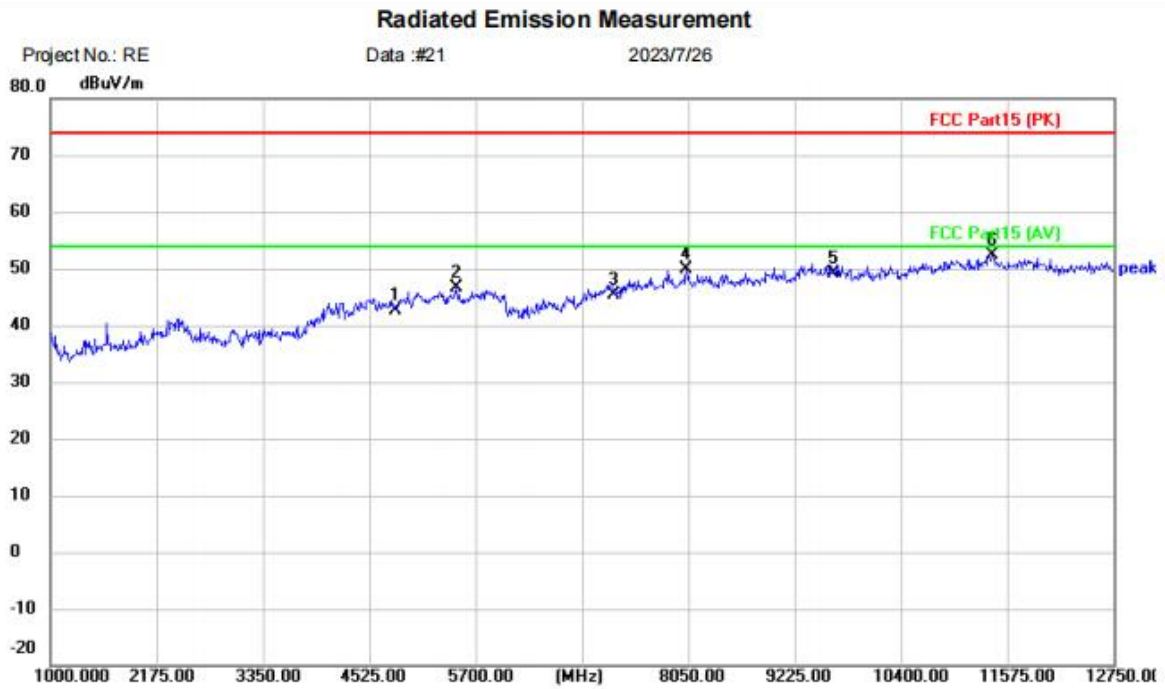
Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	39.2991	0.88	23.28	24.16	40.00	-15.84	QP	P	
2	82.0705	2.68	18.95	21.63	40.00	-18.37	QP	P	
3	144.3347	1.08	22.49	23.57	43.50	-19.93	QP	P	
4	322.1885	0.38	24.03	24.41	46.00	-21.59	QP	P	
5	513.6331	1.21	27.93	29.14	46.00	-16.86	QP	P	
6 *	729.3582	3.18	32.51	35.69	46.00	-10.31	QP	P	

Test Result: Pass

Above 1GHz:

[TestMode: TX B low channel]; [Polarity: Horizontal]

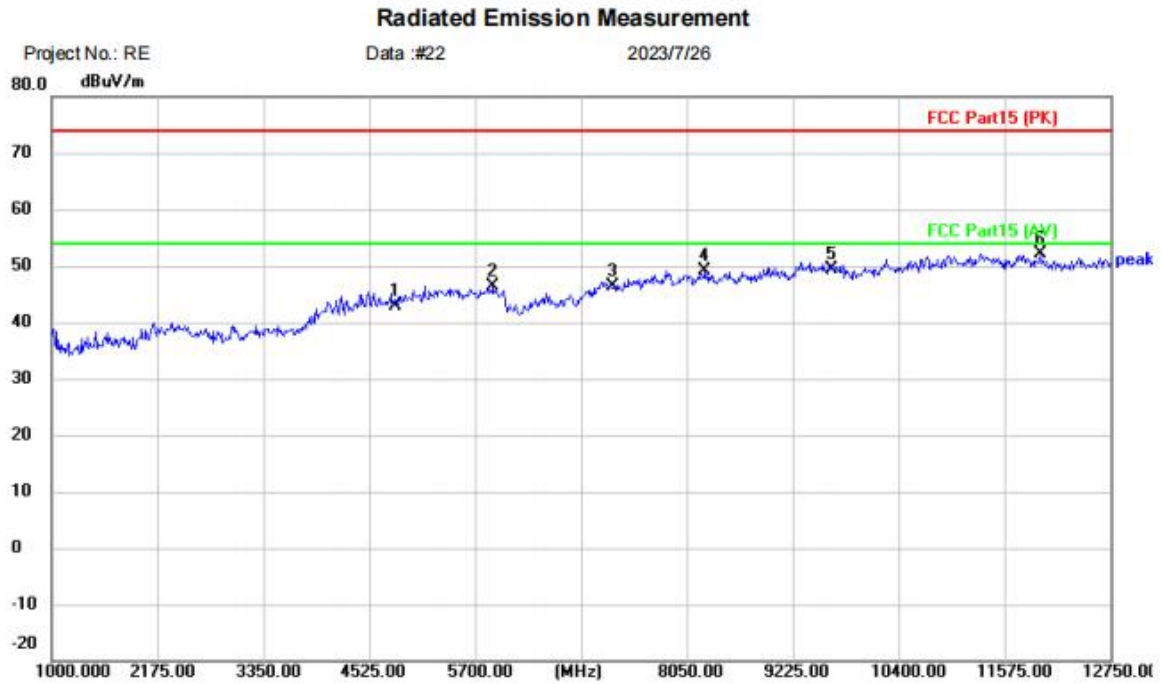


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11B TX-L		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	38.04	4.52	42.56	74.00	-31.44	peak	
2		5488.500	40.33	6.24	46.57	74.00	-27.43	peak	
3		7236.000	37.96	7.47	45.43	74.00	-28.57	peak	
4		8026.500	41.22	8.65	49.87	74.00	-24.13	peak	
5		9648.000	37.59	11.63	49.22	74.00	-24.78	peak	
6	*	11410.50	38.96	13.42	52.38	74.00	-21.62	peak	

Test Result: Pass

[TestMode: TX B low channel]; [Polarity: Vertical]



Site: Polarization: **Vertical** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: LED fixed luminaire

M/N: 17000214

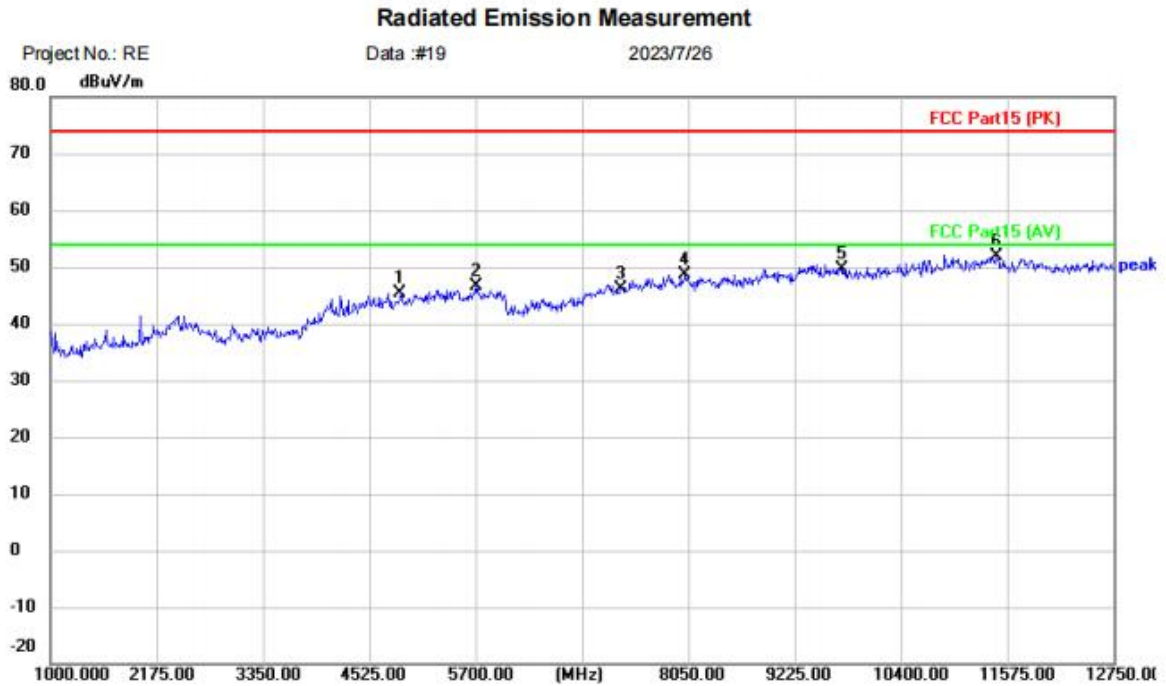
Mode: 11B TX-L

Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	4824.000	38.40	4.52	42.92	74.00	-31.08	peak	
2	5899.750	39.51	6.75	46.26	74.00	-27.74	peak	
3	7236.000	38.79	7.47	46.26	74.00	-27.74	peak	
4	8249.750	40.53	8.54	49.07	74.00	-24.93	peak	
5	9648.000	37.86	11.63	49.49	74.00	-24.51	peak	
6 *	11974.50	38.99	13.18	52.17	74.00	-21.83	peak	

Test Result: Pass

[TestMode: TX B mid channel]; [Polarity: Horizontal]

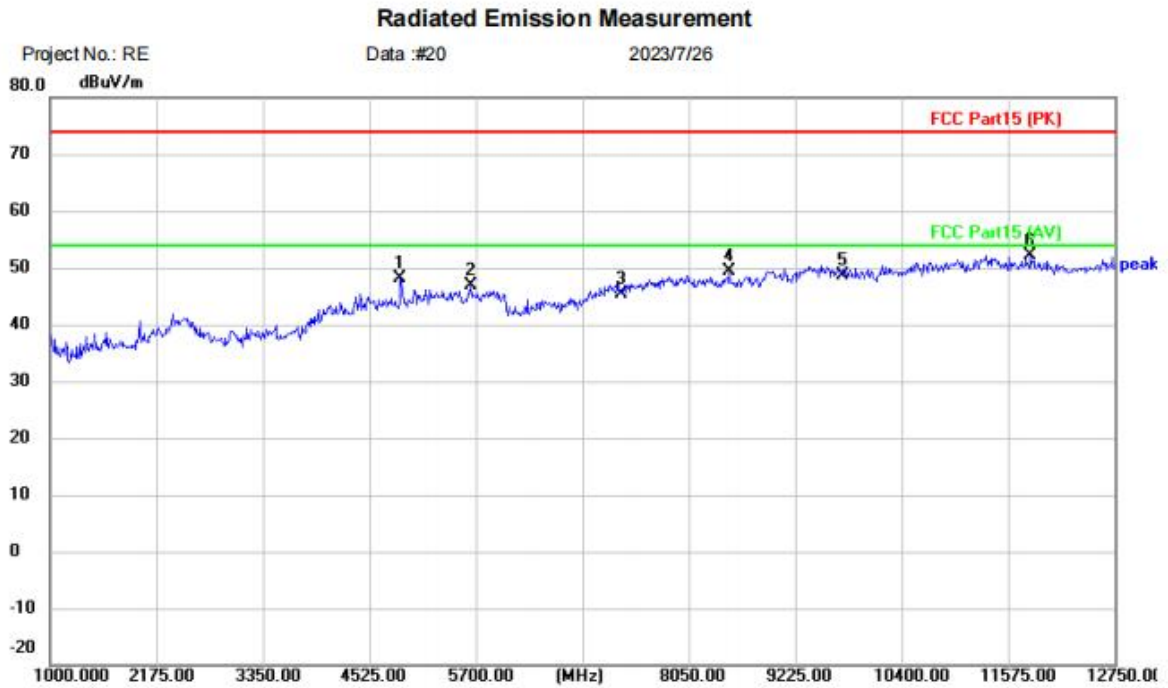


Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-M
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	40.68	4.58	45.26	74.00	-28.74	peak	
2		5700.000	40.24	6.41	46.65	74.00	-27.35	peak	
3		7311.000	38.31	7.80	46.11	74.00	-27.89	peak	
4		8014.750	40.03	8.69	48.72	74.00	-25.28	peak	
5		9748.000	37.93	11.71	49.64	74.00	-24.36	peak	
6	*	11457.50	38.43	13.48	51.91	74.00	-22.09	peak	

Test Result: Pass

[TestMode: TX B mid channel]; [Polarity: Vertical]

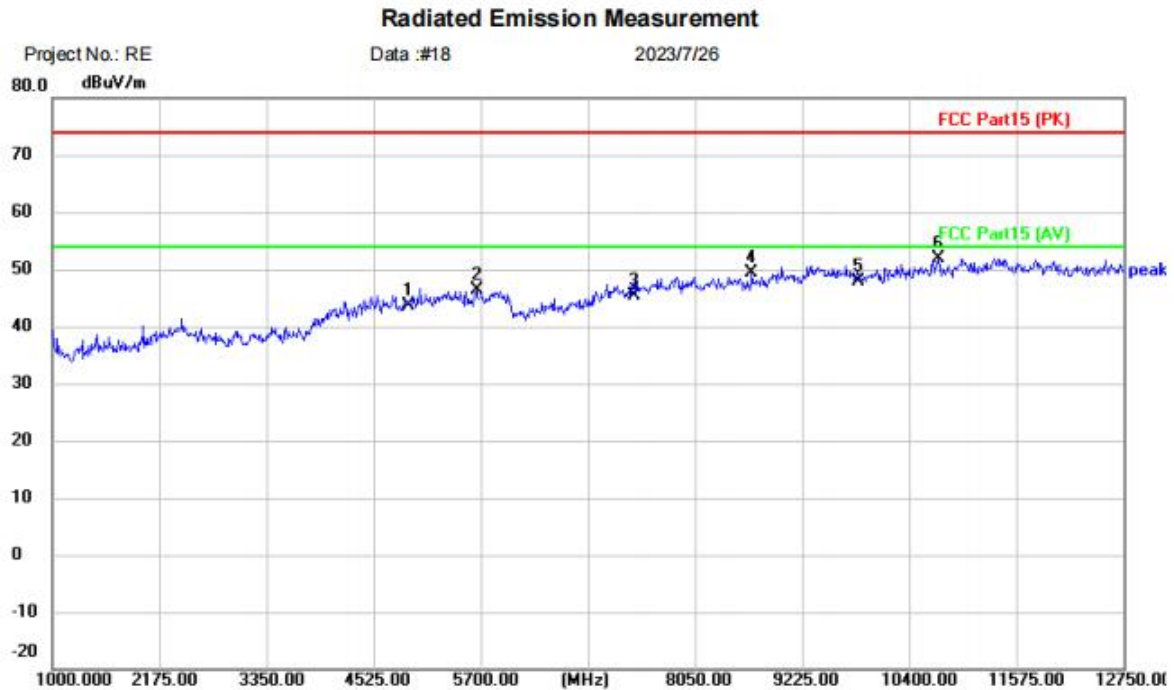


Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-M
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	43.55	4.58	48.13	74.00	-25.87	peak	
2		5641.250	40.67	6.12	46.79	74.00	-27.21	peak	
3		7311.000	37.66	7.80	45.46	74.00	-28.54	peak	
4		8496.500	40.04	9.43	49.47	74.00	-24.53	peak	
5		9748.000	37.03	11.71	48.74	74.00	-25.26	peak	
6	*	11821.75	39.21	13.00	52.21	74.00	-21.79	peak	

Test Result: Pass

[TestMode: TX B high channel]; [Polarity: Vertical]

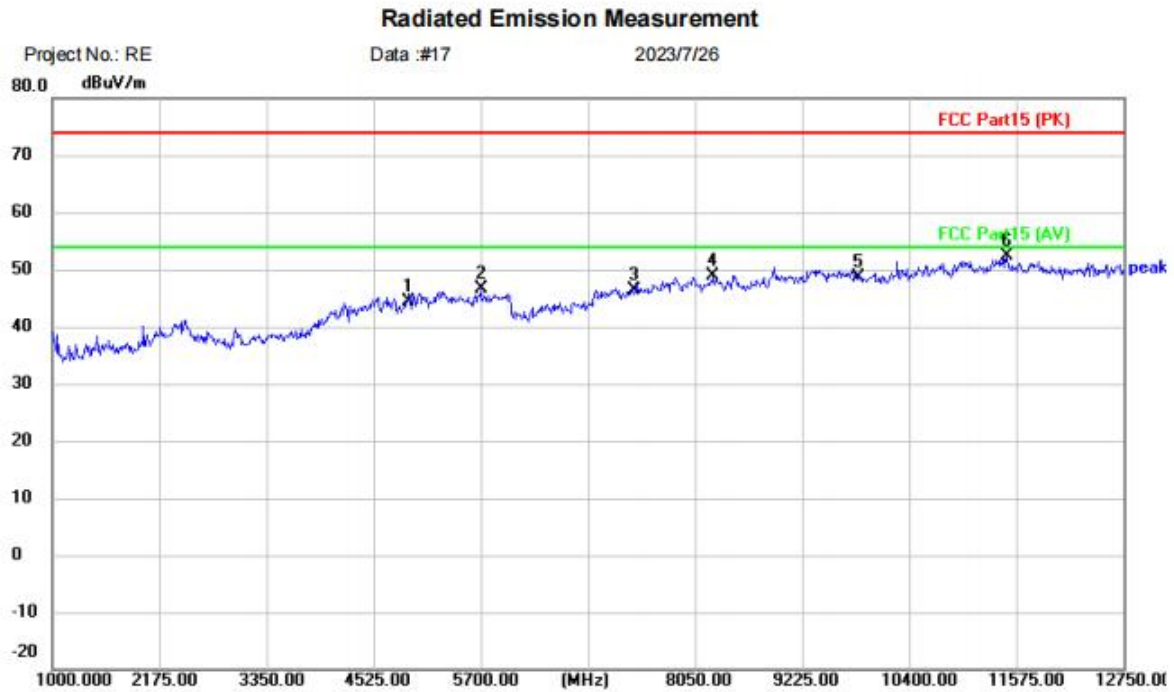


Site	Polarization: Vertical	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11B TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	38.57	4.96	43.53	74.00	-30.47	peak	
2		5653.000	40.12	6.21	46.33	74.00	-27.67	peak	
3		7386.000	37.61	7.87	45.48	74.00	-28.52	peak	
4		8672.750	39.46	9.81	49.27	74.00	-24.73	peak	
5		9848.000	35.98	12.00	47.98	74.00	-26.02	peak	
6	*	10717.25	38.65	13.32	51.97	74.00	-22.03	peak	

Test Result: Pass

[TestMode: TX B high channel]; [Polarity: Horizontal]



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-H
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	39.44	4.96	44.40	74.00	-29.60	peak	
2		5700.000	40.22	6.41	46.63	74.00	-27.37	peak	
3		7386.000	38.49	7.87	46.36	74.00	-27.64	peak	
4		8249.750	40.36	8.54	48.90	74.00	-25.10	peak	
5		9848.000	36.51	12.00	48.51	74.00	-25.49	peak	
6	*	11469.25	38.96	13.49	52.45	74.00	-21.55	peak	

Test Result: Pass

13 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

13.1 LIMITS

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

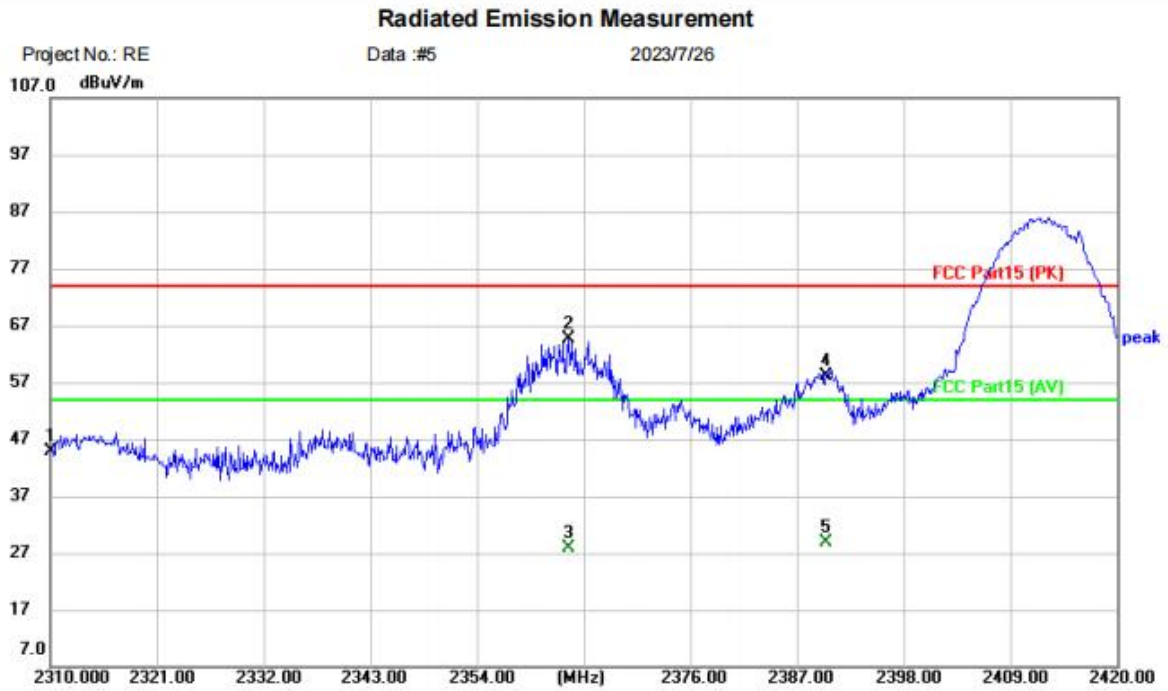
Remark 1: $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

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13.4 TEST DATA

[TestMode: TX B low channel]; [Polarity: Horizontal]



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-L
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	49.27	-4.40	44.87	74.00	-29.13	peak	
2	*	2363.460	68.89	-4.33	64.56	74.00	-9.44	peak	
3		2363.460	32.15	-4.33	27.82	54.00	-26.18	AVG	
4		2390.000	62.41	-4.31	58.10	74.00	-15.90	peak	
5		2390.000	33.20	-4.31	28.89	54.00	-25.11	AVG	

Test Result: Pass

[TestMode: TX B low channel]; [Polarity: Vertical]

Radiated Emission Measurement

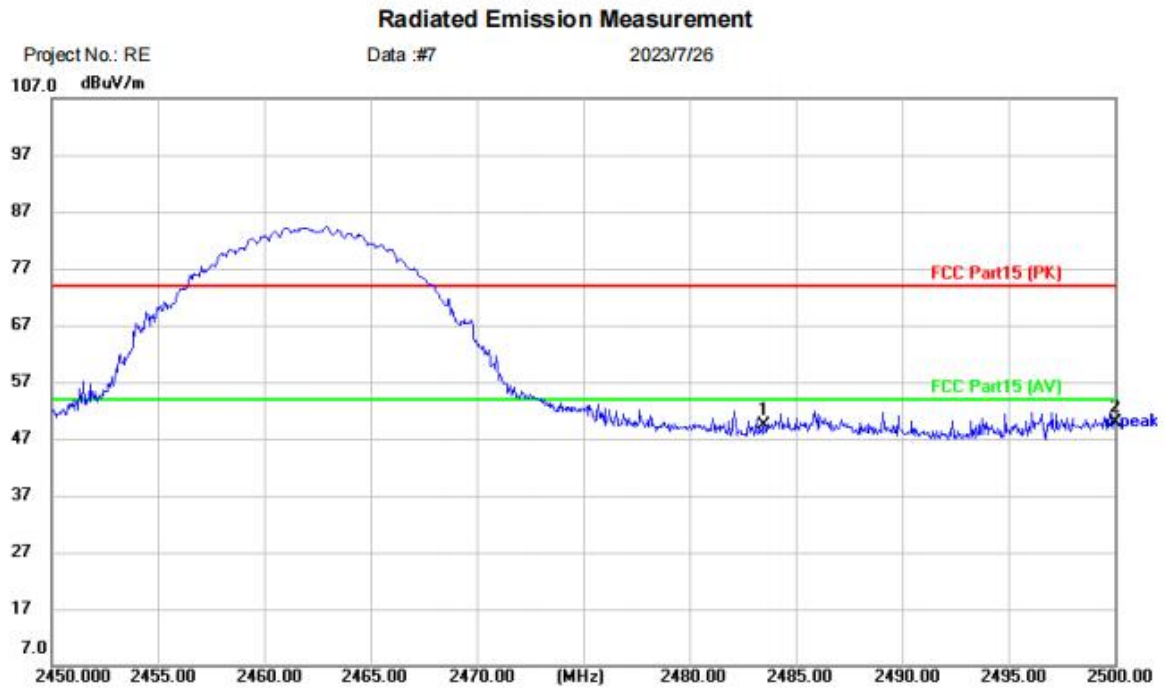


Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-L
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	43.16	-4.40	38.76	74.00	-35.24	peak	
2	*	2365.660	55.26	-4.33	50.93	74.00	-23.07	peak	
3		2390.000	49.27	-4.31	44.96	74.00	-29.04	peak	

Test Result: Pass

[TestMode: TX B high channel]; [Polarity: Horizontal]

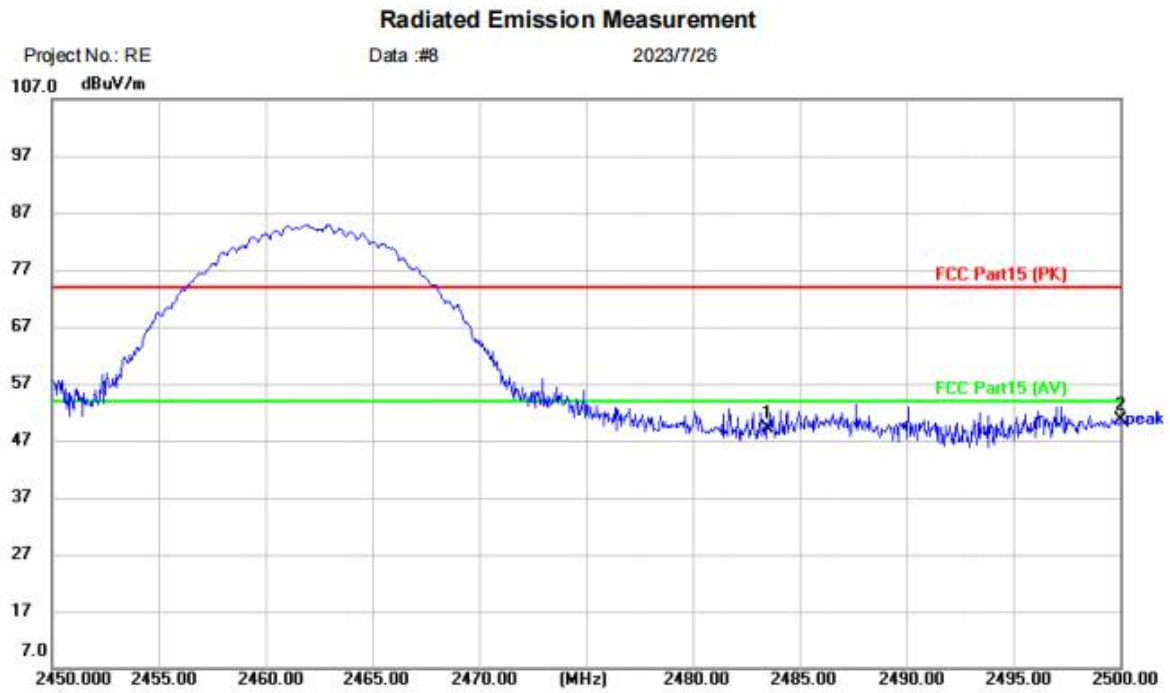


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11B TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	54.00	-4.64	49.36	74.00	-24.64	peak	
2	*	2500.000	54.59	-4.75	49.84	74.00	-24.16	peak	

Test Result: Pass

[TestMode: TX B high channel]; [Polarity: Vertical]

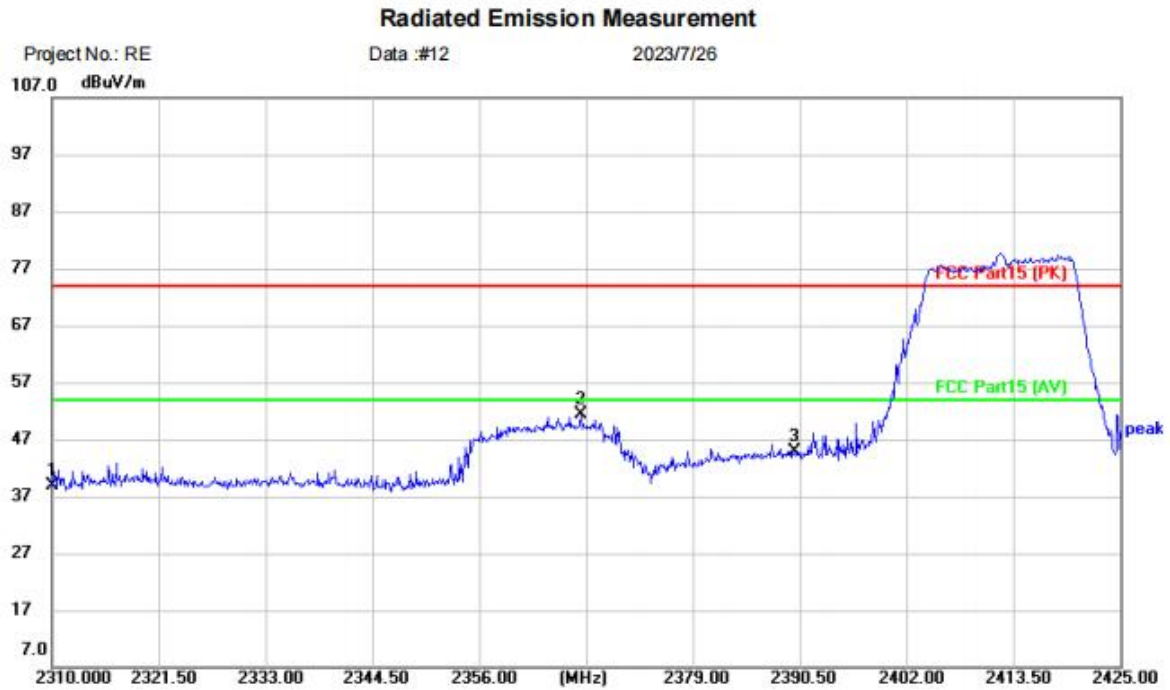


Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11B TX-H
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2483.500	53.73	-4.64	49.09	74.00	-24.91	peak	
2	*	2500.000	55.34	-4.75	50.59	74.00	-23.41	peak	

Test Result: Pass

[TestMode: TX G low channel]; [Polarity: Vertical]

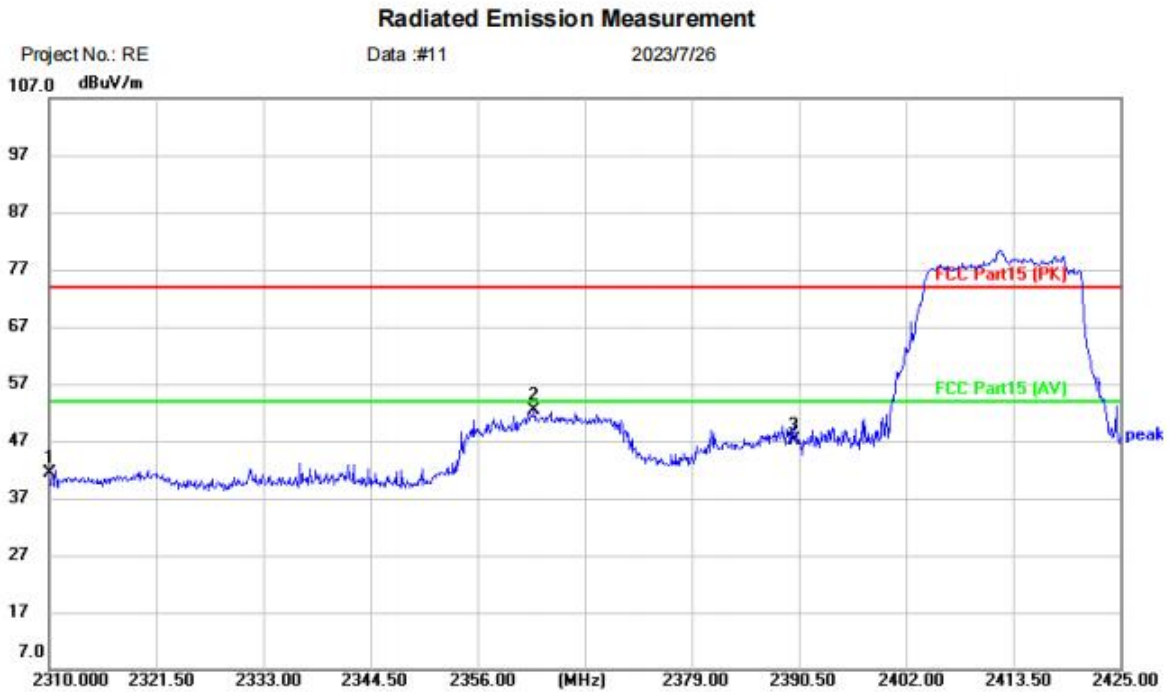


Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11G TX-L
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	43.18	-4.40	38.78	74.00	-35.22	peak	
2	*	2366.925	55.63	-4.33	51.30	74.00	-22.70	peak	
3		2390.000	49.07	-4.31	44.76	74.00	-29.24	peak	

Test Result: Pass

[TestMode: TX G low channel]; [Polarity: Horizontal]

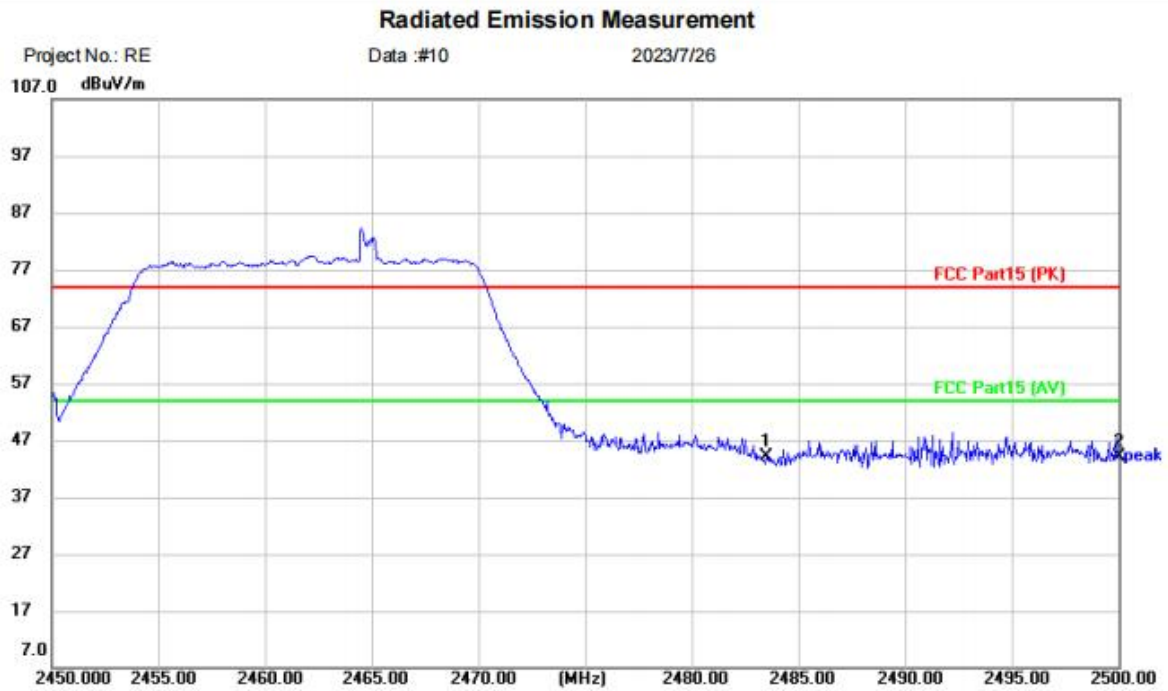


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11G TX-L		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	45.78	-4.40	41.38	74.00	-32.62	peak	
2	*	2362.095	56.68	-4.32	52.36	74.00	-21.64	peak	
3		2390.000	51.50	-4.31	47.19	74.00	-26.81	peak	

Test Result: Pass

[TestMode: TX G high channel]; [Polarity: Vertical]



Site Polarization: **Vertical** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: LED fixed luminaire

M/N: 17000214

Mode: 11G TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2483.500	48.68	-4.64	44.04	74.00	-29.96	peak	
2	*	2500.000	48.94	-4.75	44.19	74.00	-29.81	peak	

Test Result: Pass

[TestMode: TX G high channel]; [Polarity: Horizontal]

Radiated Emission Measurement

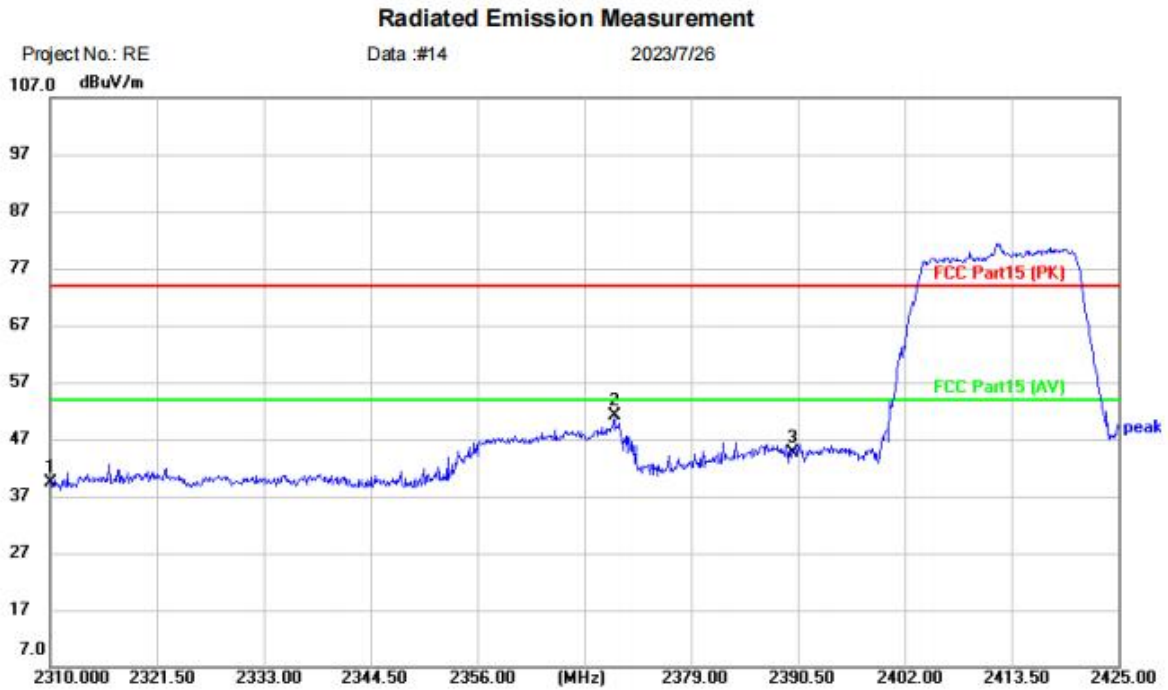


Site Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11G TX-H
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	50.13	-4.64	45.49	74.00	-28.51	peak	
2	*	2500.000	50.92	-4.75	46.17	74.00	-27.83	peak	

Test Result: Pass

[TestMode: TX N20 low channel]; [Polarity: Vertical]

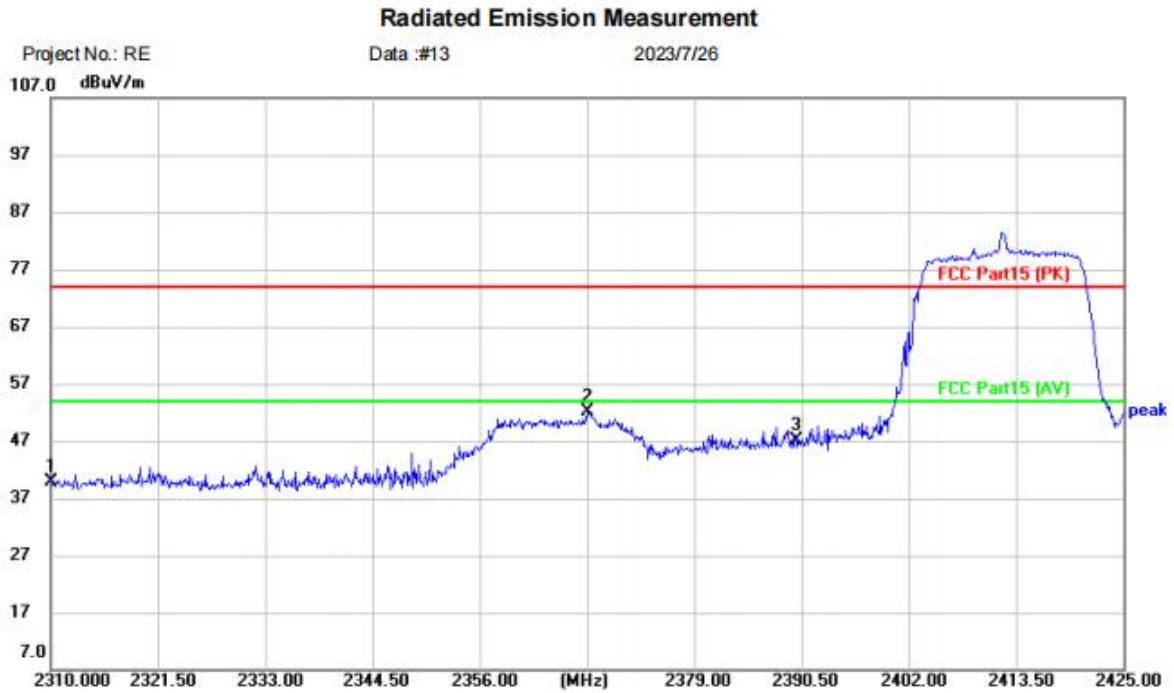


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: LED fixed luminaire
M/N: 17000214
Mode: 11N20 TX-L
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	43.74	-4.40	39.34	74.00	-34.66	peak	
2	*	2370.720	55.35	-4.32	51.03	74.00	-22.97	peak	
3		2390.000	48.95	-4.31	44.64	74.00	-29.36	peak	

Test Result: Pass

[TestMode: TX N20 low channel]; [Polarity: Horizontal]

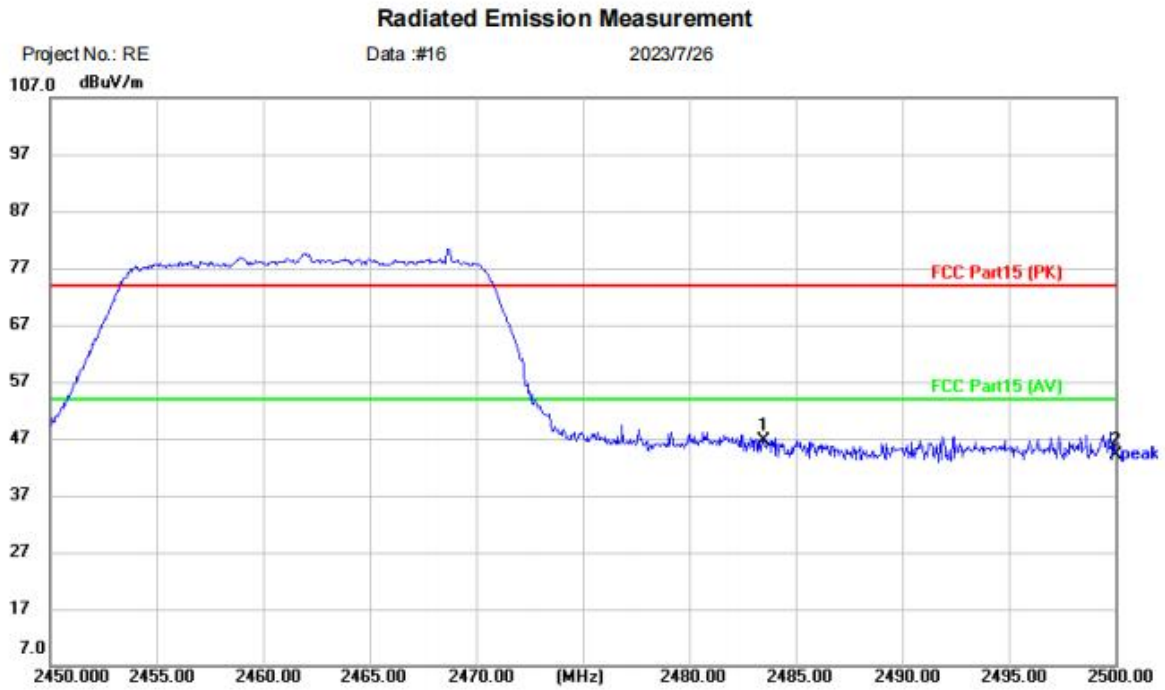


Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11N20 TX-L
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	44.37	-4.40	39.97	74.00	-34.03	peak	
2	*	2367.500	56.56	-4.33	52.23	74.00	-21.77	peak	
3		2390.000	51.48	-4.31	47.17	74.00	-26.83	peak	

Test Result: Pass

[TestMode: TX N20 high channel]; [Polarity: Vertical]

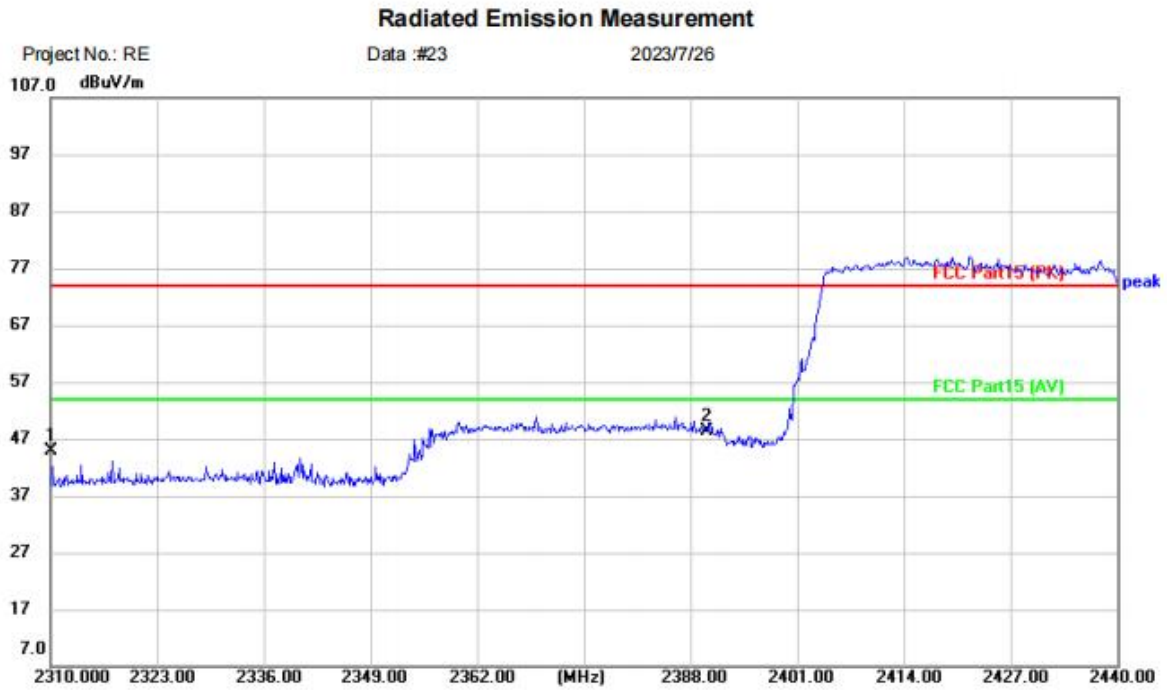


Site Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: LED fixed luminaire
M/N: 17000214
Mode: 11N20 TX-H
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	2483.500	51.22	-4.64	46.58	74.00	-27.42	peak	
2		2500.000	48.84	-4.75	44.09	74.00	-29.91	peak	

Test Result: Pass

[TestMode: TX N40 low channel]; [Polarity: Horizontal]

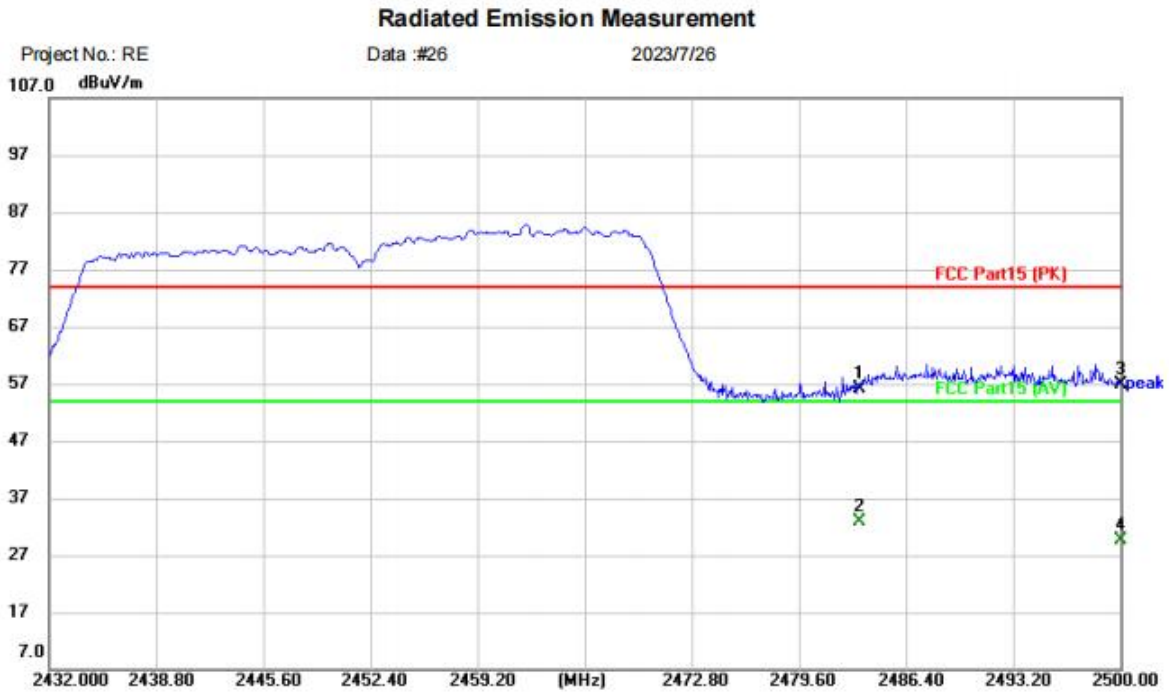


Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11N40 TX-L		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	49.31	-4.40	44.91	74.00	-29.09	peak	
2	*	2390.000	52.59	-4.31	48.28	74.00	-25.72	peak	

Test Result: Pass

[TestMode: TX N40 high channel]; [Polarity: Vertical]



Site	Polarization: Vertical	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: LED fixed luminaire		
M/N: 17000214		
Mode: 11N40 TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	60.73	-4.64	56.09	74.00	-17.91	peak	
2		2483.500	37.50	-4.64	32.86	54.00	-21.14	AVG	
3	*	2500.000	61.51	-4.75	56.76	74.00	-17.24	peak	
4		2500.000	34.49	-4.75	29.74	54.00	-24.26	AVG	

Test Result: Pass

[TestMode: TX N40 high channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: LED fixed luminaire
 M/N: 17000214
 Mode: 11N40 TX-H
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	63.91	-4.64	59.27	74.00	-14.73	peak	
2	*	2483.500	45.93	-4.64	41.29	54.00	-12.71	AVG	
3		2500.000	64.02	-4.75	59.27	74.00	-14.73	peak	
4		2500.000	37.59	-4.75	32.84	54.00	-21.16	AVG	

Test Result: Pass

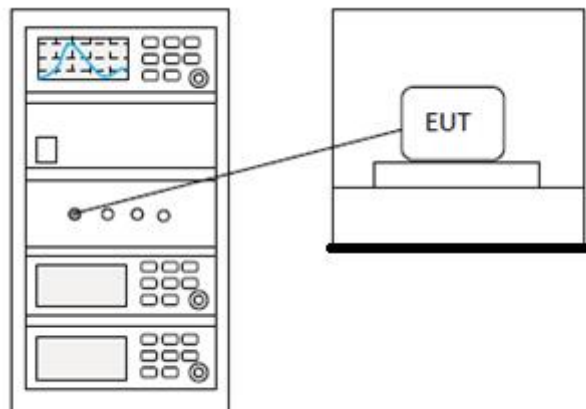
14 CONDUCTED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

14.1 LIMITS

Limit:	<p>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).</p>
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14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

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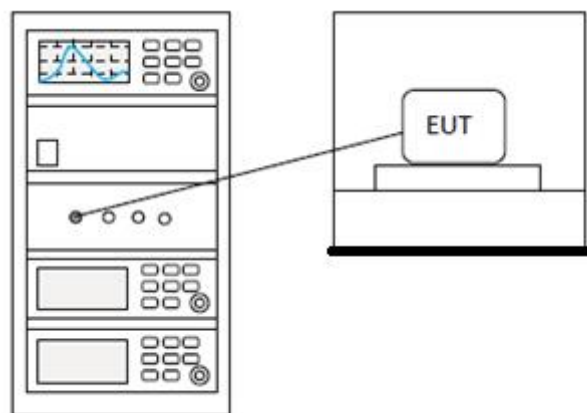
15 CONDUCTED BAND EDGES MEASUREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

15.1 LIMITS

Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).
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15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

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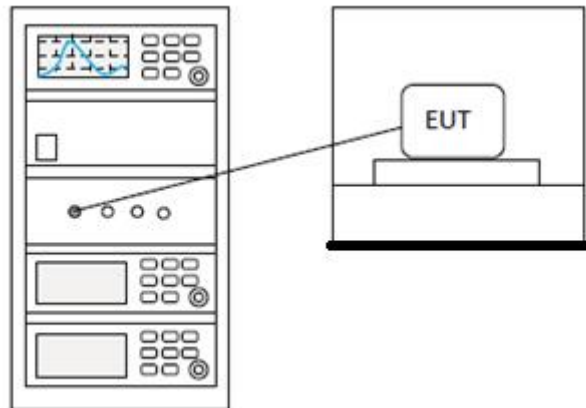
16 MINIMUM 6DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.8.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

16.1 LIMITS

Limit:	≥500 kHz
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16.2 BLOCK DIAGRAM OF TEST SETUP



16.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

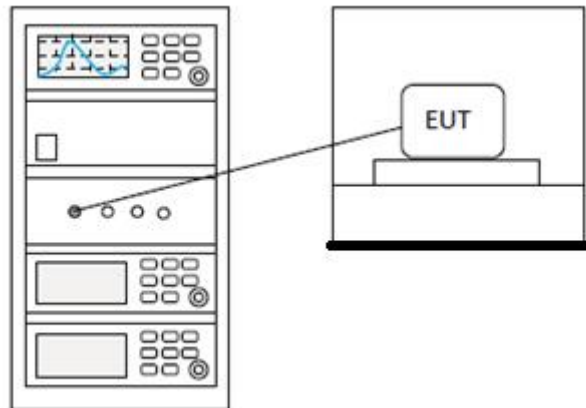
17 POWER SPECTRUM DENSITY

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 11.10.2
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

17.1 LIMITS

Limit: $\leq 8\text{dBm}$ in any 3 kHz band during any time interval of continuous transmission

17.2 BLOCK DIAGRAM OF TEST SETUP



17.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

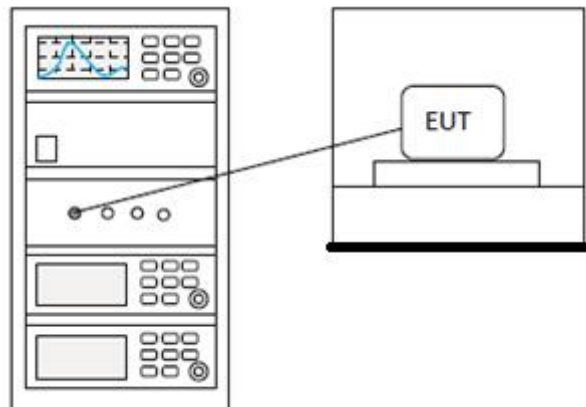
18 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Leo
Temperature	25°C
Humidity	60%

18.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

18.2 BLOCK DIAGRAM OF TEST SETUP



18.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

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