RF Test Report

For

Applicant name:	**Guangdong Nanguang Photo&Video Systems Co., Ltd.**
Address:	Dongli Section, Highway 324, Chenghai, Shantou City, Guangdong Province, China
EUT name:	LED Full-color Spot Light
Brand name:	NANLUX
Model number:	Matrix 2500C
Series model number:	N/A
FCC ID:	2A2Y8-MATRIX2500C

Issued By

Company name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	Plant 101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, Guangdong, China
Report number:	BTF251013R01801
Test standards:	47 CFR Part 15.247
Test conclusion:	Pass
Date of sample receipt:	2025-11-06
Test date:	2025-11-06 to 2025-11-12
Date of issue:	2026-01-09
Test by:	Sean.He Sean.He / Tester
Prepared by:	Chris Liu Chris.Liu / Project engineer
Approved by:	Ryan.Cj / EMC Manager

BTF Testing Lab (Shenzhen) Co., Ltd.

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2026-01-09	Original

Note:
Once the revision has been made, then previous versions reports are invalid.

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1 Introduction

1.1 Laboratory Location

Test location:	BTF Testing Lab (Shenzhen) Co., Ltd.
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Phone number:	+86-0755-23146130
Fax number:	+86-0755-23146130

1.2 Laboratory Facility

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

- **FCC - Designation No.: CN1409**
  BTF Testing Lab (Shenzhen) Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 695374.
- **CNAS - Registration No.: CNAS L17568**
  BTF Testing Lab (Shenzhen) Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L17568.
- **A2LA - Registration No.: 6660.01**
  BTF Testing Lab (Shenzhen) Co., Ltd. is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

1.3 Announcement

(1) The test report reference to the report template version v0.
(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
(3) The test report is invalid if there is any evidence and/or falsification.
(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.
(7) All entrusted information in this report is provided by the client and has been confirmed through consultation with the client; The testing items for this report have been discussed and confirmed with the client, and our company is only responsible for the content reflected in the report.

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2 Product Information

2.1 Application Information

Company name:	Guangdong Nanguang Photo&Video Systems Co., Ltd.
Address:	Dongli Section, Highway 324, Chenghai, Shantou City, Guangdong Province, China

2.2 Manufacturer Information

Company name:	Guangdong Nanguang Photo&Video Systems Co., Ltd.
Address:	Dongli Section, Highway 324, Chenghai, Shantou City, Guangdong Province, China

2.3 Factory Information

Company name:	Guangdong Nanguang Photo&Video Systems Co., Ltd.
Address:	Dongli Section, Highway 324, Chenghai, Shantou City, Guangdong Province, China

2.4 General Description of Equipment under Test (EUT)

EUT name:	LED Full-color Spot Light
Under test model name:	Matrix 2500C
Series model name:	N/A
Description of model name differentiation:	N/A
Hardware version:	N/A
Software version:	N/A
Ratings:	INPUT: 100-240VAC 50/60Hz Max. 2500W

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2.5 Technical Information

Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz; 802.11n(HT40): 2422MHz to 2452MHz
Channel numbers:	802.11b/g/n(HT20): 11 Channels; 802.11n(HT40): 7 Channels
Channel separation:	5MHz
Modulation technology:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20 and HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Maximum Conducted Output Power:	16.51dBm
Antenna type:	FPC Antenna
Antenna gain:	2.96dBi

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3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:
47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

3.2 Uncertainty of Test

Measurement	Value
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.45 dB
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Radiated Emission(1GHz~18GHz)	±4.82 dB
Radiated Emission(30MHZ~1000MHZ)	±4.80 dB
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15.247	47 CFR 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.247	47 CFR 15.207(a)	Pass
6dB Bandwidth	47 CFR Part 15.247	47 CFR 15.247(a)(2)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(3)	Pass
Power Spectral Density	47 CFR Part 15.247	47 CFR 15.247(e)	Pass
Emissions in non-restricted frequency bands	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
Remark: *1. Pass: Meet the requirements.* *2. N/A: not applicable.*			

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3.4 Additions to, deviations, or exclusions from the method

None

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4 Test Configuration

4.1 Test Equipment List

Conducted Emission at AC power line					
Test Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Software	Frad	EZ_EMC	Version: EMC-CON 3A1.1+	/	/
EMI Receiver	Rohde & Schwarz	ESCI3	101422	2025-10-17	2026-10-16
V-LISN	Schwarzbeck	NSLK 8127	01073	2025-08-23	2026-08-22
Coaxial Switcher	Schwarzbeck	CX210	CX210	/	/
Pulse Limiter	Schwarzbeck	VTSD 9561-F	00953	/	/
LISN-Cable	REBES Talent	LISN9K30M	21101580	2025-08-23	2026-08-22

Maximum Conducted Output Power Power Spectral Density Emissions in non-restricted frequency bands 6dB Bandwidth					
Test Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Software	TST Pass	/	Version: 2.0	/	/
Cell Site Test Set	HP	8921A	US35010158	2025-10-17	2026-10-16
Spectrum Analyzer	Keysight	N9020A	MY50410020	2025-10-17	2026-10-16
ESG Vector Signal Generator	Agilent	E4438C	MY45094854	2025-10-17	2026-10-16
MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2025-10-17	2026-10-16
Wideband Radio Communication Tester	Rohde&Schwarz	CMW500	161997	2025-10-17	2026-10-16
Programmable Constant Temperature And Humidity Test Chamber	ZZCKONG	ZZ-K02A	20210928007	2025-10-17	2026-10-16
DC Power Supply	Tongmen	etm-6050c	20211026123	2025-10-17	2026-10-16
RF Control Unit	Techy	TR1029-1	/	2025-10-17	2026-10-16
RF Sensor Unit	Techy	TR1029-2	/	2025-10-17	2026-10-16
RF shielding box	Yinuoxin Electronics	50*50*50 cm	/	2025-05-26	2026-05-25

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Band edge emissions (Radiated) Emissions in frequency bands (below 1GHz) Emissions in frequency bands (above 1GHz)					
Test Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Software	Frad	EZ_EMC	Version: FA-03A2 RE+	/	/
EMI Receiver	Rohde & Schwarz	ESCI7	101032	2025-10-17	2026-10-16
Signal Analyzer	Rohde & Schwarz	FSQ40	100010	2025-10-17	2026-10-16
Log periodic antenna	Schwarzbeck	VULB 9168	01328	2025-10-18	2026-10-17
Preamplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9744	00246	2025-05-26	2026-05-25
BELOW-Cable	REBES Talent	9K1G	21101576	2025-08-23	2026-08-22
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2025-10-18	2026-10-17
Preamplifier (1GHz ~ 18GHz)	Schwarzbeck	BBV9718D	00008	2025-10-18	2026-10-17
Preamplifier	TSTPASS	LNA10180G45	TS2215007	2025-05-26	2026-05-25
ABOVE-Cable	REBES Talent	1~18G	21101558	2025-08-23	2026-08-22
Horn Antenna	SCHWARZBECK	BBHA9170	1157	2025-10-18	2026-10-17
Low Noise Pre-amplifier	Sket	LNPA_1840G-50	SK2022032902	2025-10-17	2026-10-16
ABOVE-Cable2	REBES Talent	18~40G	21101686	2025-08-23	2026-08-22
ABOVE-Cable1	REBES Talent	18~40G	21101687	2025-08-23	2026-08-22

4.2 Test Auxiliary Equipment

The EUT has been tested as an independent unit.

4.3 Test Modes

No.	Test Modes
TM1	802.11b mode
TM2	802.11g mode
TM3	802.11n(HT20) mode
TM4	802.11n(HT40) mode

4.4 Test Channel of EUT

Operation Band: 2400-2483.5 MHz

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
20	2412	2437	2462
40	2422	2437	2452

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4.5 Test software

Test software:	Version:	Power Class:
EspRFTestTool_v3.6	3.6	0

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5 Evaluation Results (Evaluation)

5.1 Antenna requirement

§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(b) (4) requirement:

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

E.U.T Antenna:	The Bluetooth antenna is an FPC antenna which permanently attached, and the best case gain of the antenna is 2.96 dBi. See product internal photos for details.

6 Radio Spectrum Matter Test Results (RF)

6.1 Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).
Test Method:	ANSI C63.10-2020 section 6.2
Test Limit:	

Frequency of emission (MHz)	Conducted limit (dBμV)	
	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.

Procedure:	Refer to ANSI C63.10-2020 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices

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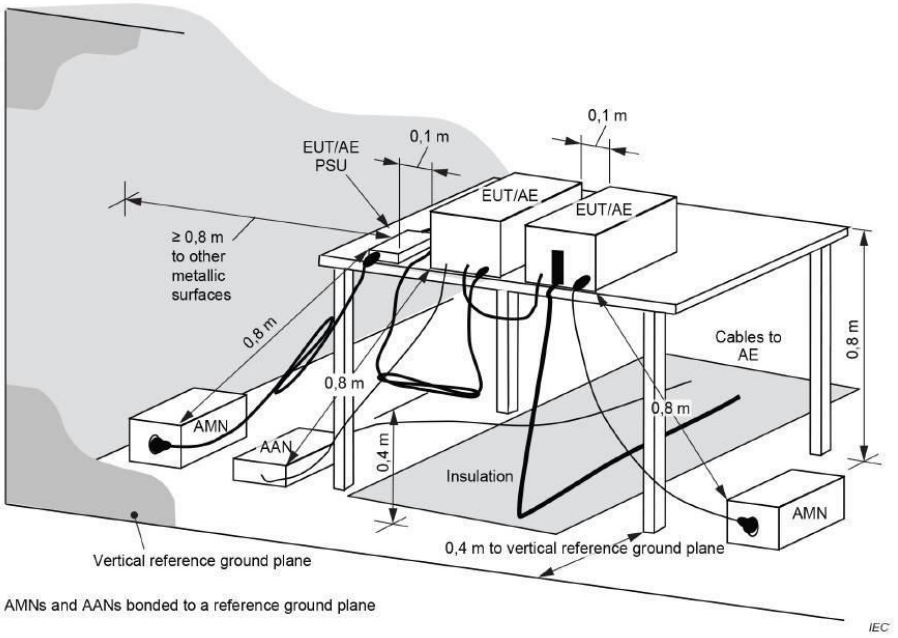
Test Setup:	
Operating Environment:	
Temperature:	26 °C
Humidity:	54 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

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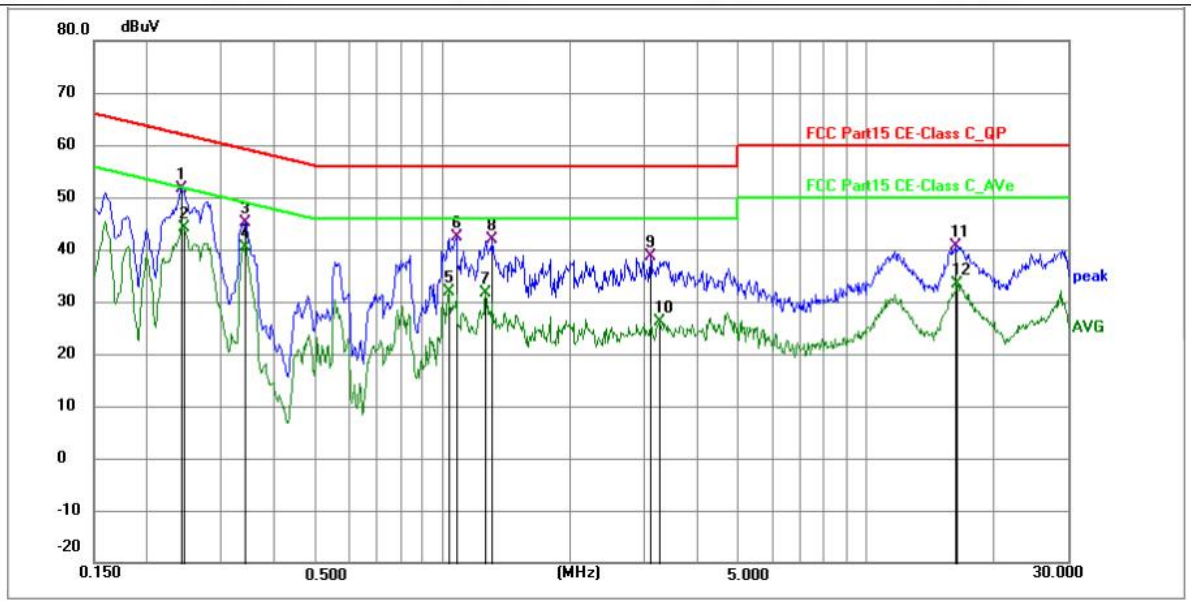
6.1.1 Test Data

Remark: The report only reflects the test data of worst mode.

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 20 / CH: M



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2416	40.95	10.69	51.64	62.04	-10.40	QP	P	
2 *	0.2444	33.43	10.69	44.12	51.95	-7.83	AVG	P	
3	0.3410	34.38	10.70	45.08	59.18	-14.10	QP	P	
4	0.3410	29.77	10.70	40.47	49.18	-8.71	AVG	P	
5	1.0362	20.79	10.97	31.76	46.00	-14.24	AVG	P	
6	1.0770	31.31	10.95	42.26	56.00	-13.74	QP	P	
7	1.2660	20.76	10.91	31.67	46.00	-14.33	AVG	P	
8	1.3110	30.98	10.89	41.87	56.00	-14.13	QP	P	
9	3.1020	27.96	10.76	38.72	56.00	-17.28	QP	P	
10	3.2730	15.42	10.78	26.20	46.00	-19.80	AVG	P	
11	16.3410	29.52	11.12	40.64	60.00	-19.36	QP	P	
12	16.5029	22.18	11.12	33.30	50.00	-16.70	AVG	P	

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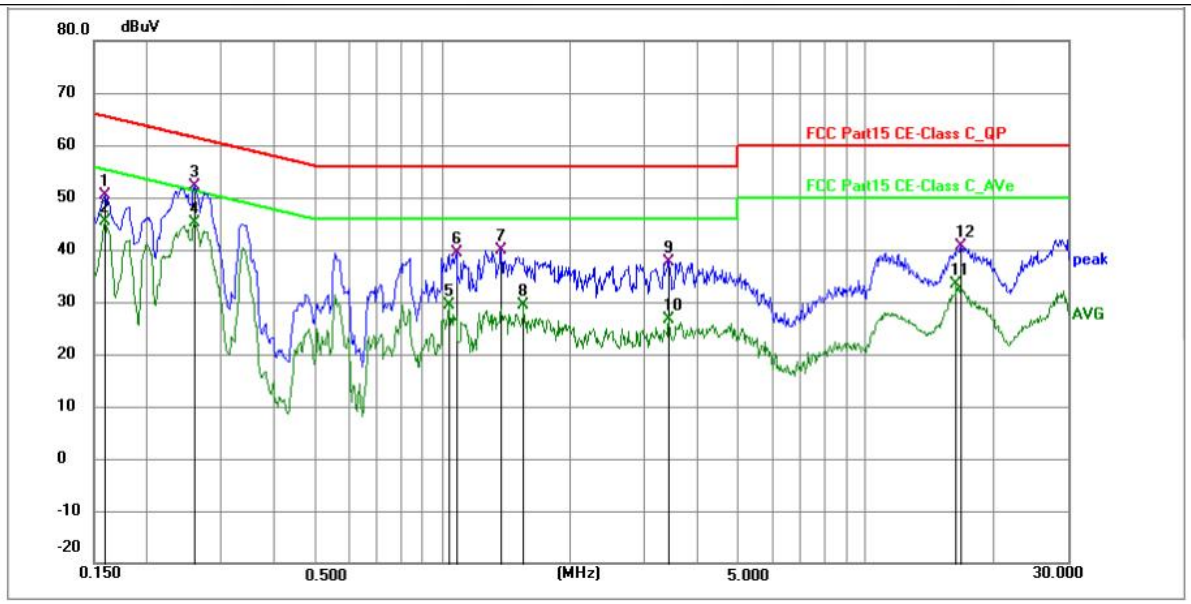
TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 20 / CH: M



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1590	39.77	10.63	50.40	65.52	-15.12	QP	P	
2	0.1590	34.82	10.63	45.45	55.52	-10.07	AVG	P	
3	0.2580	41.50	10.63	52.13	61.50	-9.37	QP	P	
4 *	0.2580	34.49	10.63	45.12	51.50	-6.38	AVG	P	
5	1.0362	18.42	10.98	29.40	46.00	-16.60	AVG	P	
6	1.0770	28.48	10.98	39.46	56.00	-16.54	QP	P	
7	1.3740	28.99	10.99	39.98	56.00	-16.02	QP	P	
8	1.5540	18.30	10.99	29.29	46.00	-16.71	AVG	P	
9	3.4304	26.63	10.95	37.58	56.00	-18.42	QP	P	
10	3.4304	15.65	10.95	26.60	46.00	-19.40	AVG	P	
11	16.3365	22.35	11.00	33.35	50.00	-16.65	AVG	P	
12	16.7500	29.63	11.02	40.65	60.00	-19.35	QP	P	

Note:Margin=Level-Limit=Reading+factor-Limit

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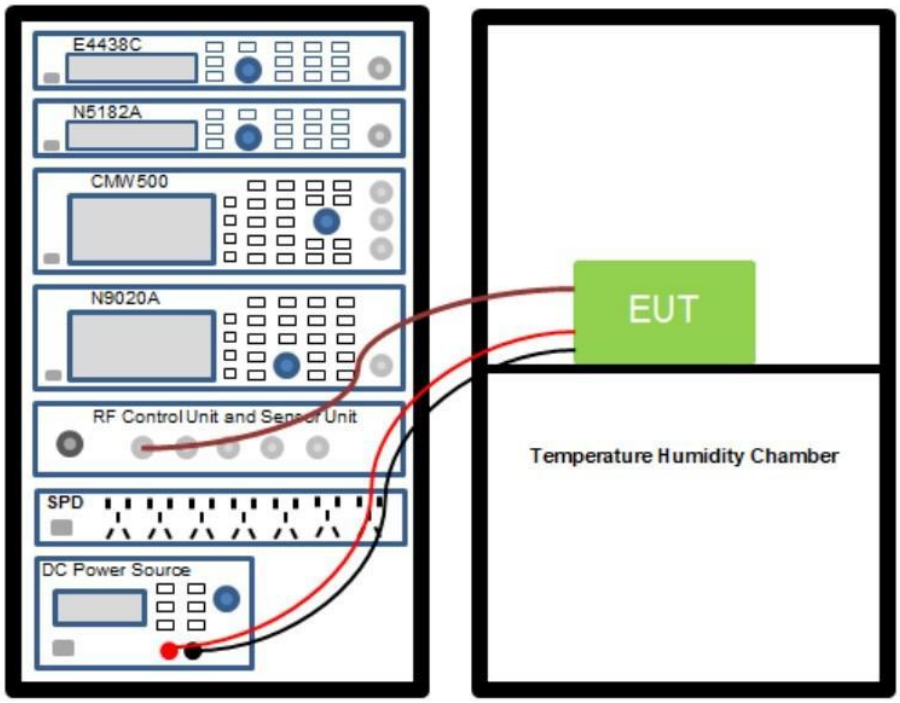
6.2 6dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Method:	ANSI C63.10-2020, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Procedure:	11.8.1 Option 1 The steps for the first option are as follows: a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz. b) Set the VBW ≥ [3 × RBW]. c) Detector = peak. d) Trace mode = max-hold. e) Sweep = No faster than coupled (auto) time. f) Allow the trace to stabilize. g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−6 dB down amplitude". If a marker is below this "−6 dB down amplitude" value, then it shall be as close as possible to this value. 11.8.2 Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW ≥ 3 × RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
Test Setup:	

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Operating Environment:	
Temperature:	24.5 °C
Humidity:	51.4 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

6.2.1 Test Data

Please Refer to Appendix for Details.

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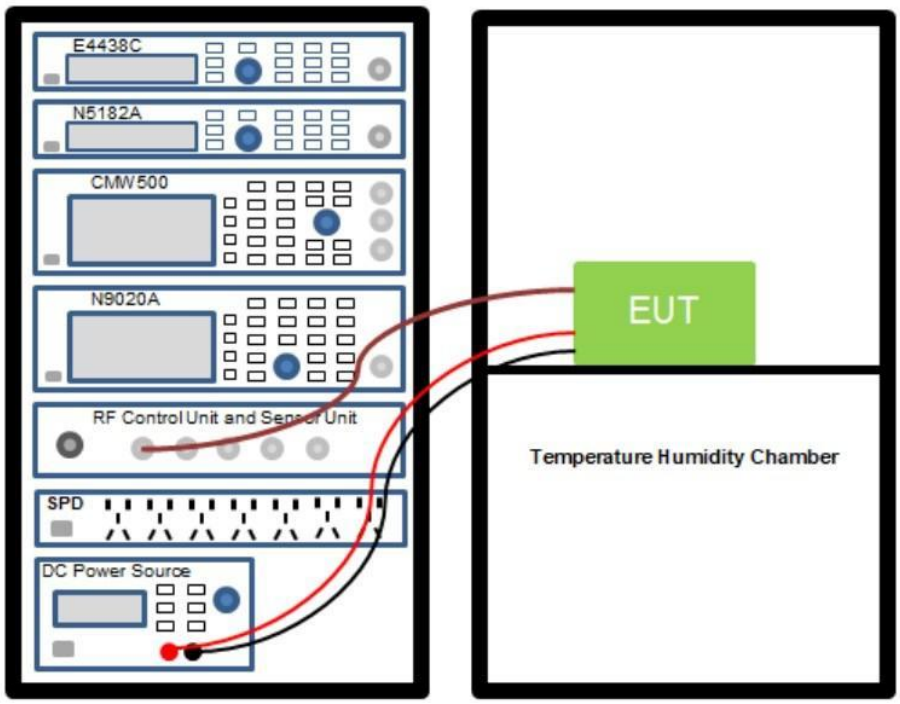
6.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Method:	ANSI C63.10-2020, section 11.9.2 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Procedure:	ANSI C63.10-2020, section 11.9.2 Maximum conducted (average) output power
Test Setup:	
Operating Environment:	
Temperature:	24.5 °C
Humidity:	51.4 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

6.3.1 Test Data

Please Refer to Appendix for Details.

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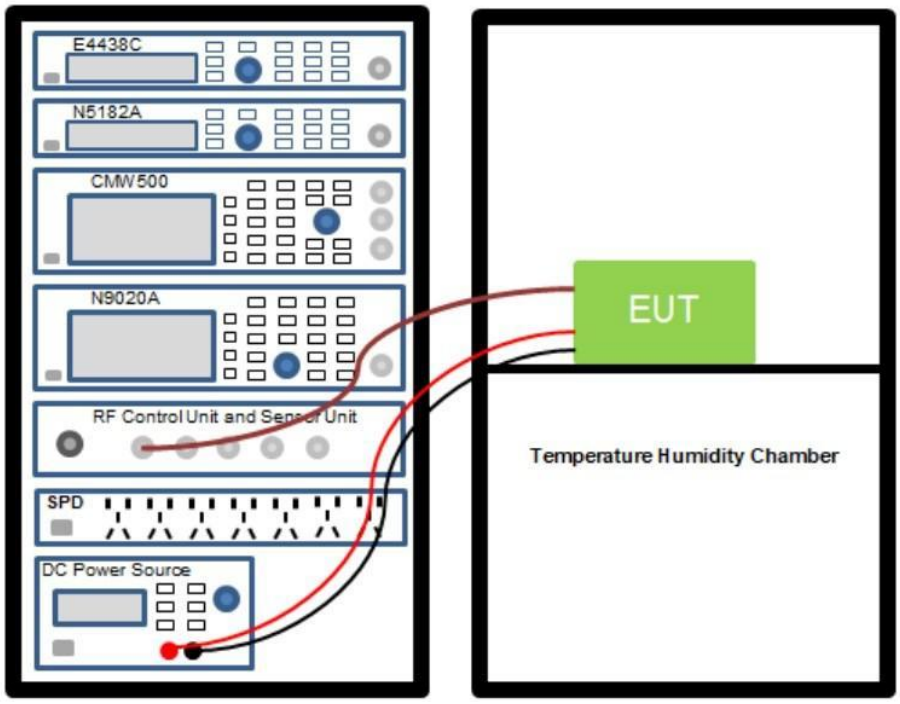
6.4 Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Method:	ANSI C63.10-2020, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Procedure:	ANSI C63.10-2020, section 11.10, Maximum power spectral density level in the fundamental emission
Test Setup:	
Operating Environment:	
Temperature:	24.5 °C
Humidity:	51.4 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

6.4.1 Test Data

Please Refer to Appendix for Details.

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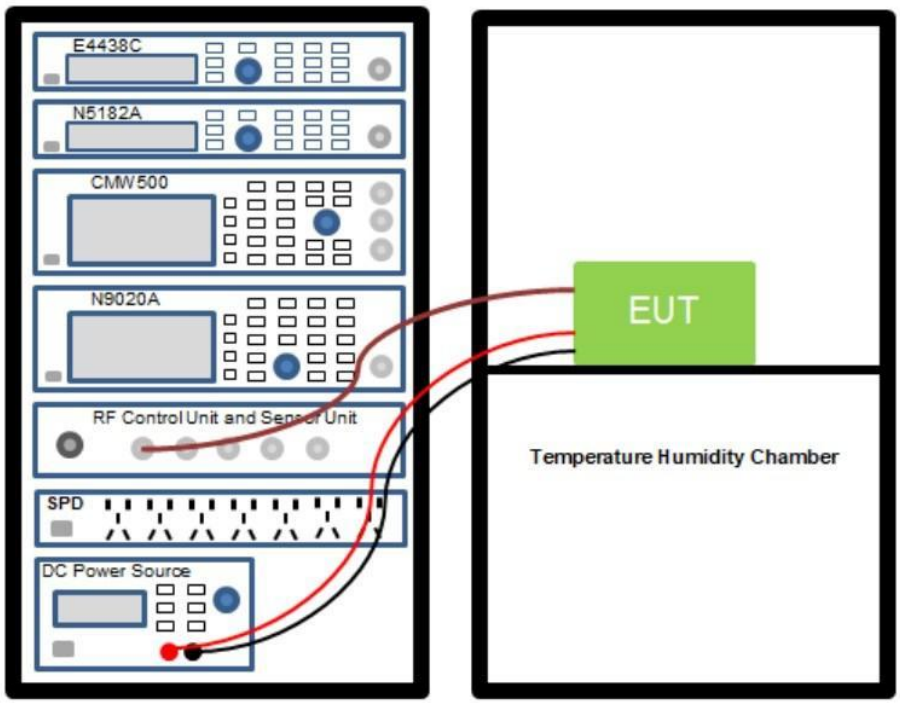
6.5 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Method:	ANSI C63.10-2020 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	Refer to 47 CFR 15.247(d), 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.
Procedure:	ANSI C63.10-2020 Section 11.11.1, Section 11.11.2, Section 11.11.3
Test Setup:	
Operating Environment:	
Temperature:	24.5 °C
Humidity:	51.4 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

6.5.1 Test Data

Please Refer to Appendix for Details.

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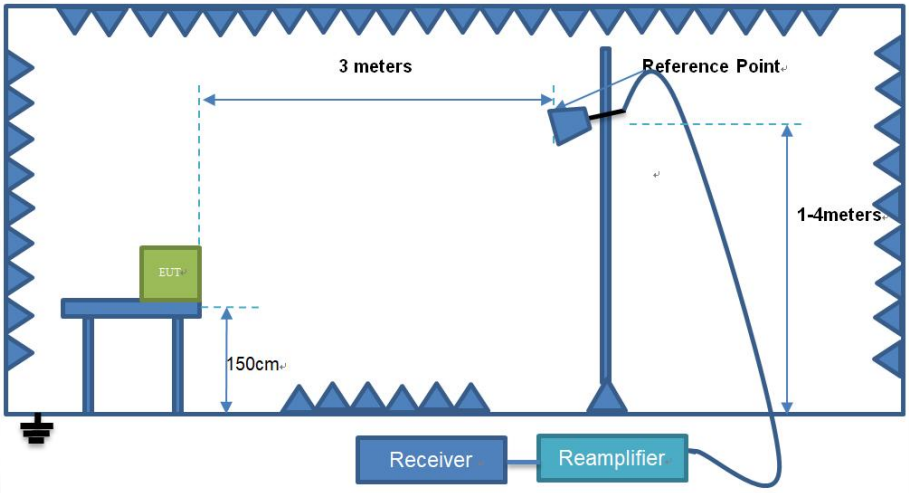
6.6 Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)).`
Test Method:	ANSI C63.10-2020 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Procedure:	ANSI C63.10-2020 section 6.10.5.2
Test Setup:	

Operating Environment:	
Temperature:	24.6 °C
Humidity:	55 %
Atmospheric Pressure:	1010 mbar
Test voltage:	AC 120V 60Hz

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6.6.1 Test Data

Remark: The report only reflects the test data of worst mode.

Test Channel: Lowest channel, Test Polarization: Vertical							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
2310.00	51.94	3.85	55.79	74.00	-18.21	Peak	Pass
2310.00	41.41	3.85	45.27	54.00	-8.73	AVG	Pass
2390.00	52.76	3.91	56.68	74.00	-17.32	Peak	Pass
2390.00	43.14	3.91	47.06	54.00	-6.94	AVG	Pass
Test Channel: Lowest channel, Test Polarization: Horizontal							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
2310.00	51.86	3.85	55.71	74.00	-18.29	Peak	Pass
2310.00	41.09	3.85	44.94	54.00	-9.06	AVG	Pass
2390.00	52.82	3.91	56.73	74.00	-17.27	Peak	Pass
2390.00	43.13	3.91	47.04	54.00	-6.96	AVG	Pass
Test Channel: Highest channel, Test Polarization: Vertical							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
2483.50	51.64	3.99	55.62	74.00	-18.38	Peak	Pass
2483.50	41.97	3.99	45.96	54.00	-8.04	AVG	Pass
2500.00	51.14	4.00	55.14	74.00	-18.86	Peak	Pass
2500.00	41.22	4.00	45.22	54.00	-8.78	AVG	Pass
Test Channel: Highest channel, Test Polarization: Horizontal							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
2483.50	52.31	3.99	56.30	74.00	-17.70	Peak	Pass
2483.50	42.66	3.99	46.65	54.00	-7.35	AVG	Pass
2500.00	52.90	4.00	56.90	74.00	-17.10	Peak	Pass
2500.00	42.43	4.00	46.43	54.00	-7.57	AVG	Pass

Note:Margin=Level-Limit=Reading+factor-Limit

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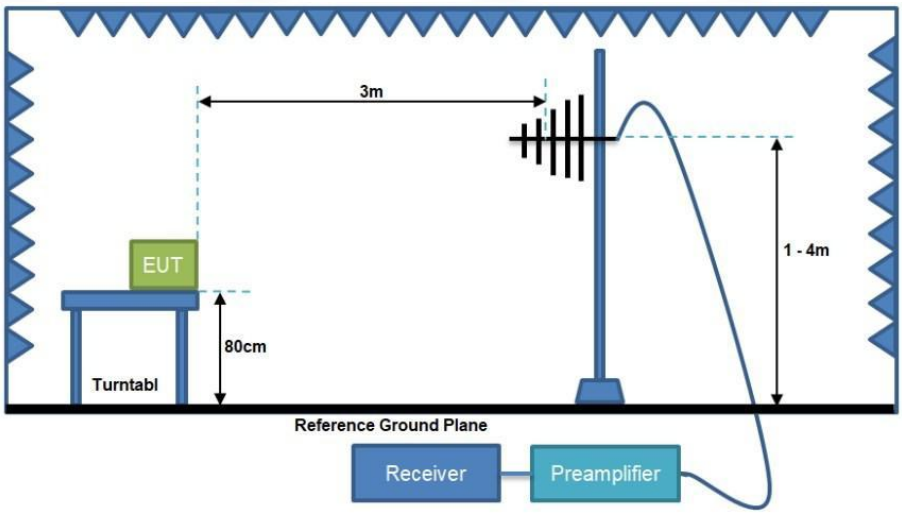
6.7 Emissions in frequency bands (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)).`
Test Method:	ANSI C63.10-2020 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Procedure:	ANSI C63.10-2020 section 6.6.4
Test Setup:	

Operating Environment:	
Temperature:	24.6 °C
Humidity:	55 %
Atmospheric Pressure:	1010 mbar

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Test voltage:	AC 120V 60Hz

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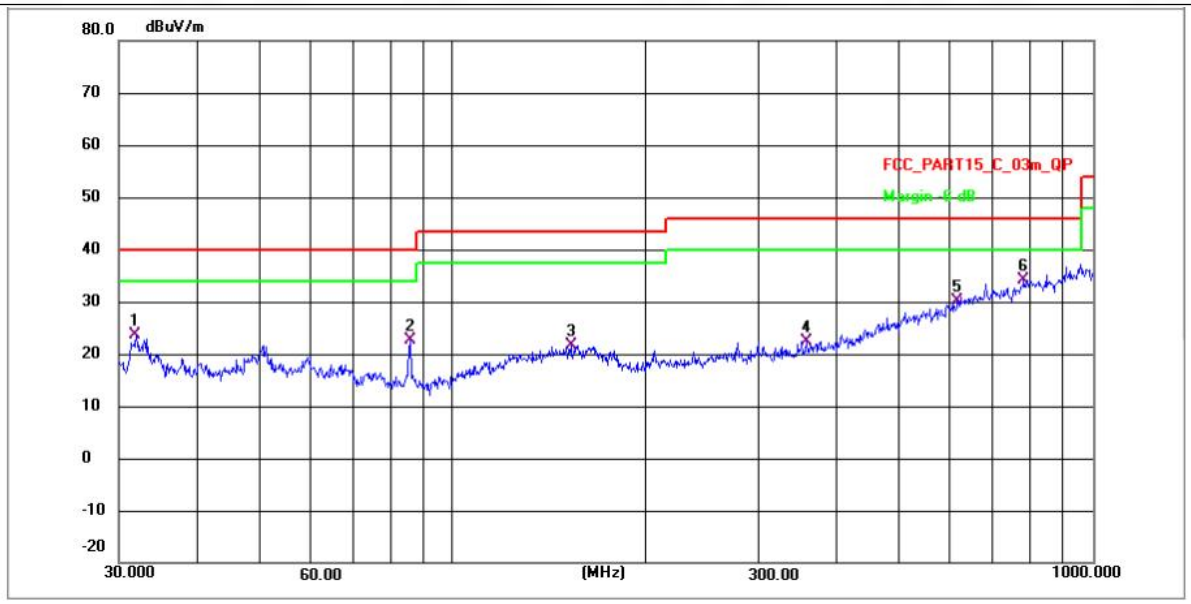
6.7.1 Test Data

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	32.0667	34.04	-10.32	23.72	40.00	-16.28	QP	P
2	85.7479	50.69	-28.11	22.58	40.00	-17.42	QP	P
3	153.2004	49.02	-27.28	21.74	43.50	-21.76	QP	P
4	357.9287	47.77	-25.27	22.50	46.00	-23.50	QP	P
5	615.2920	53.35	-23.13	30.22	46.00	-15.78	QP	P
6 *	779.6068	55.85	-21.84	34.01	46.00	-11.99	QP	P

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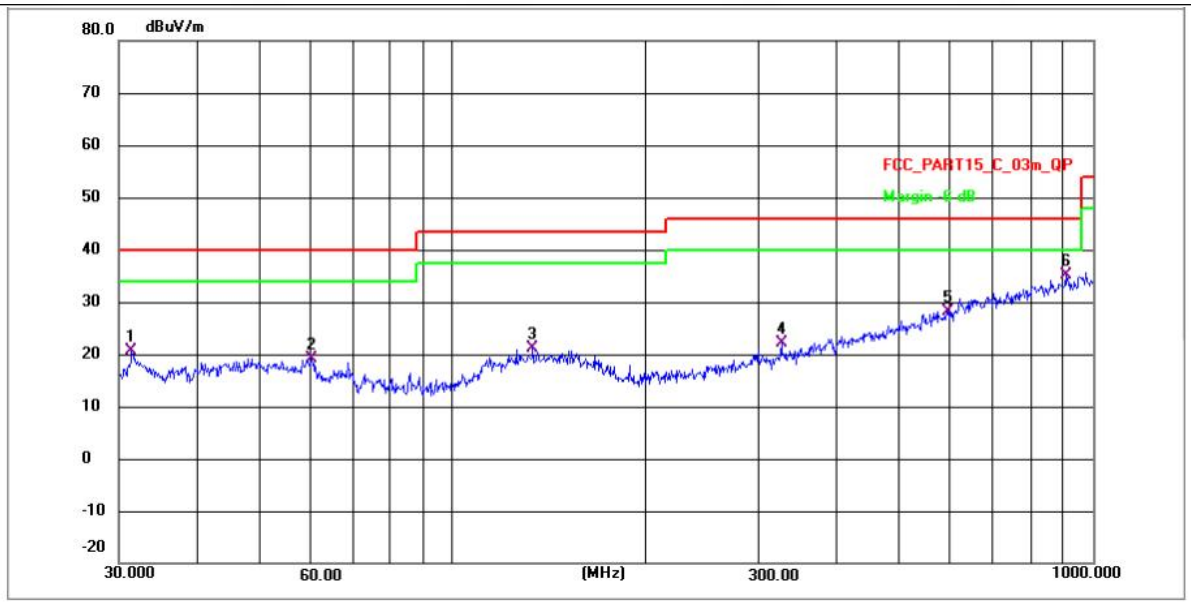
TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	31.5095	30.86	-10.35	20.51	40.00	-19.49	QP	P
2	60.1745	28.61	-9.49	19.12	40.00	-20.88	QP	P
3	133.3847	29.33	-8.09	21.24	43.50	-22.26	QP	P
4	326.7395	30.07	-8.01	22.06	46.00	-23.94	QP	P
5	594.0904	36.08	-7.93	28.15	46.00	-17.85	QP	P
6 *	909.6667	56.07	-20.87	35.20	46.00	-10.80	QP	P

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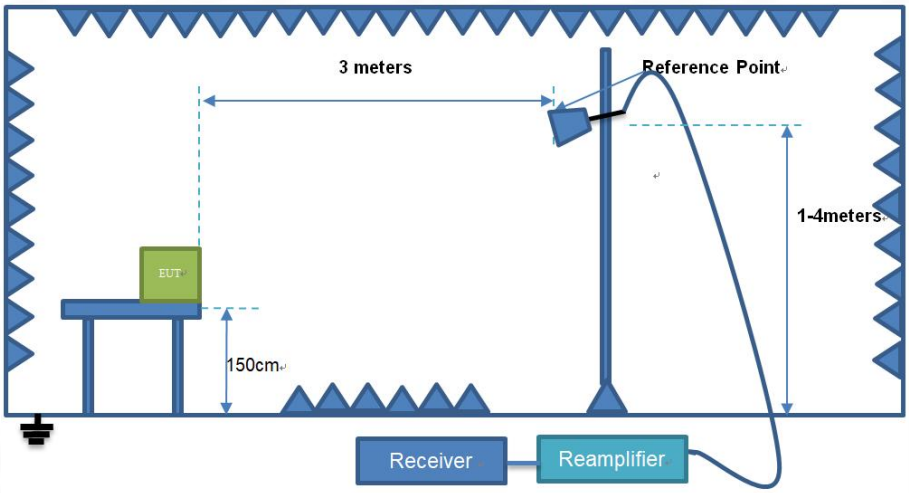
6.8 Emissions in frequency bands (above 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), 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)).`
Test Method:	ANSI C63.10-2020 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Test Limit:	

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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Procedure:	ANSI C63.10-2020 section 6.6.4
Test Setup:	

Operating Environment:	
Temperature:	24.6 °C
Humidity:	55 %
Atmospheric Pressure:	1010 mbar

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Test voltage:	AC 120V 60Hz

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6.8.1 Test Data

Remark: The report only reflects the test data of worst mode.

Test Channel: Lowest channel, Test Polarization: Vertical							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4804.00	79.74	-48.89	30.86	74.00	-43.14	Peak	Pass
4804.00	69.60	-48.89	20.72	54.00	-33.28	AVG	Pass
7206.00	85.09	-47.02	38.07	74.00	-35.93	Peak	Pass
7206.00	74.89	-47.02	27.86	54.00	-26.14	AVG	Pass
Test Channel: Lowest channel, Test Polarization: Horizontal							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4804.00	79.45	-48.89	30.57	74.00	-43.43	Peak	Pass
4804.00	69.02	-48.89	20.14	54.00	-33.86	AVG	Pass
7206.00	86.93	-47.02	39.91	74.00	-34.09	Peak	Pass
7206.00	77.35	-47.02	30.32	54.00	-23.68	AVG	Pass
Test Channel: Middle channel, Test Polarization: Vertical							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4882.00	79.48	-48.84	30.64	74.00	-43.36	Peak	Pass
4882.00	69.65	-48.84	20.82	54.00	-33.18	AVG	Pass
7323.00	86.56	-46.88	39.68	74.00	-34.32	Peak	Pass
7323.00	76.62	-46.88	29.74	54.00	-24.26	AVG	Pass
Test Channel: Middle channel, Test Polarization: Horizontal							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4882.00	78.64	-48.84	29.81	74.00	-44.19	Peak	Pass
4882.00	68.60	-48.84	19.77	54.00	-34.23	AVG	Pass
7323.00	85.48	-46.88	38.59	74.00	-35.41	Peak	Pass
7323.00	75.03	-46.88	28.15	54.00	-25.85	AVG	Pass
Test Channel: Highest channel, Test Polarization: Vertical							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4960.00	78.64	-48.79	29.85	74.00	-44.15	Peak	Pass

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4960.00	67.82	-48.79	19.04	54.00	-34.96	AVG	Pass
7440.00	86.12	-46.74	39.38	74.00	-34.62	Peak	Pass
7440.00	76.35	-46.74	29.61	54.00	-24.39	AVG	Pass
Test Channel: Highest channel, Test Polarization: Horizontal							
Frequency (MHz)	Reading (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Marging (dB)	Detector	Result
4960.00	78.90	-48.79	30.11	74.00	-43.89	Peak	Pass
4960.00	68.70	-48.79	19.92	54.00	-34.08	AVG	Pass
7440.00	86.51	-46.74	39.77	74.00	-34.23	Peak	Pass
7440.00	75.69	-46.74	28.94	54.00	-25.06	AVG	Pass

Note:Margin=Level-Limit=Reading+factor-Limit

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7 Test Setup Photos

Please refer to the Appendix I Test Setup Photos

8 EUT Constructional Details (EUT Photos)

Please refer to the Appendix II External Photos &Appendix III External Photos

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