

TEST REPORT

On behalf of

Hengdian Group Tospo Lighting Co., Ltd.

Product Name: LED Lamp

Model No.: G117P38MO6C

FCC ID: 2AZJ6TP01S72LK

Prepared For: Hengdian Group Tospo Lighting Co., Ltd.
Hengdian Electronic Industrial Zone, Dongyang City,
Zhejiang Province, P.R.China

Prepared By: Audix Technology (Shanghai) Co., Ltd.
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File No. : C1D2503047
Report No. : ACI-F25040
Date of Test : 2025.03.21-04.15
Date of Report : 2025.04.16

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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TEST REPORT

Applicant : Hengdian Group Tospo Lighting Co., Ltd.
EUT Description : LED Lamp
(A) Model No. : Refer to Sec.2.1
(B) Power Supply : AC 120V/60Hz
(C) Test Voltage : AC 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 2 SUBPART J
FCC RULES AND REGULATIONS PART 15 SUBPART C
AND ANSI C63.10-2013*

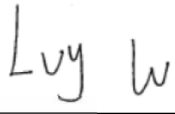
The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

This report applies to above tested Sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

Date of Test : 2025.03.21-04.15 Date of Report : 2025.04.16

Producer : 
JAREY LU / Deputy Assistant Manager

Review : 
LVVY LV / Deputy Assistant Manager

 For and on behalf of
Audix Technology (Shanghai) Co., Ltd.


Authorized Signatory(s) : KAMP CHEN / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The result is determined according to the decision rules of customer selection in the ASC-403 application service form.

1. According to IEC GUIDE 115 Procedure 2 and ILAC-G8, the uncertainties value is not used in determining the PASS/FAIL results.

2. If the required specification or standard already contains the decision rules, it will be carried out in accordance with the regulations or standard documents or the requirements of the competent units. If the required specification or standard does not contain a decision rule, the same paragraph 1.

3. If your company has a required decision rule, it will be implemented in accordance with the requirements and ISO/IEC Guide 98-4 specifications.

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.209(a) 15.205(a)(c)
Radiated Fundamental	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.209(a) 15.249
20 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 2 SUBPART J AND ANSI C63.10:2013	Pass	2.1049
Antenna Requirement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.203
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : LED Lamp

Brand : Ecosmart

Type of EUT : ☒ Production ☐ Pre-product ☐ Pro-type

Model Number : G117P38MO6C

Test Model : G117P38MO6C

Technology : Microwave

Frequency Range: 5725MHz ~ 5875MHz

Modulation : Pulsed CW.

Antenna Info. : Antenna Type: PCB Antenna
Antenna Gain: 3.5 dBi

Applicant : Hengdian Group Tospo Lighting Co., Ltd.
Hengdian Electronic Industrial Zone, Dongyang City,
Zhejiang Province, P.R.China

Manufacturer : RUJIN TOSPO LIGHTING CO., LTD
North Shengli Rd,Economic and Technological
Development Zone,Ruijin, Jiangxi 342500 CHINA

Factory : Same as Manufacturer.

2.2 EUT Specifications Assessed in Current Report

Mode	Modulation
5.8G	Pulsed CW

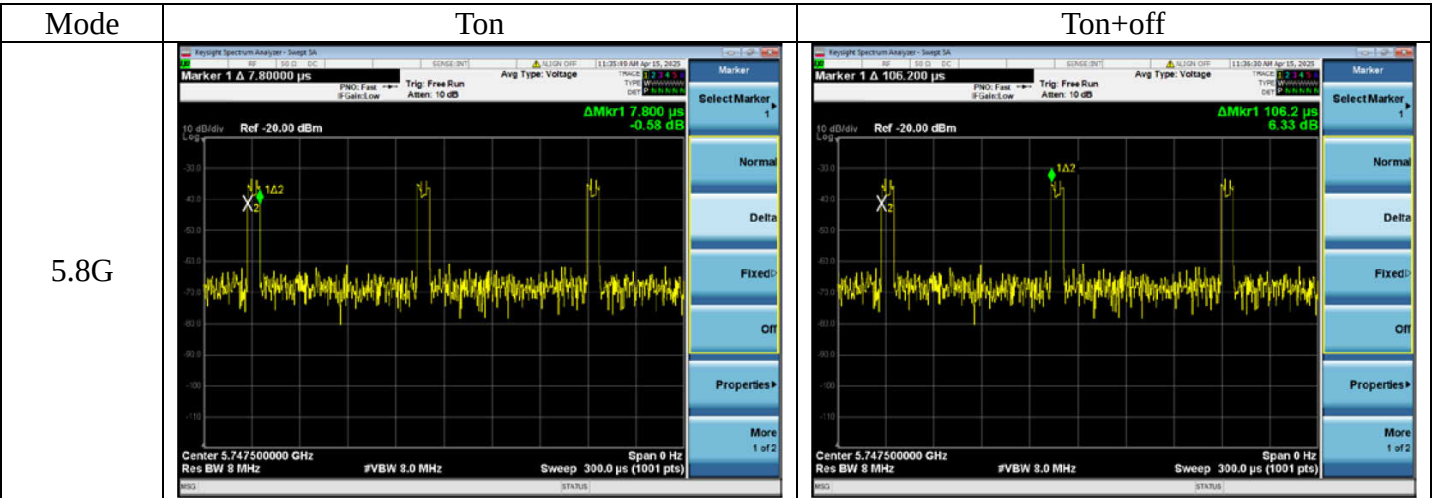
2.3 Test Information

The specify firmware downloaded in the sample for each test channel to control EUT work in TX mode, Power Setting and select test channel.

Mode	Power Setting	Test Channel	Frequency (MHz)
5.8G	default	Low:	5750
	default	Middle:	5795
	default	High:	5848

2.4 Duty Cycle Check

Mode	Transmission Duration (us)	Transmission Period (us)	Duty Cycle (%)
5.8G	7.8	106.2	7.34



Note: According to the Manufacturer, This Duty Cycle meets the shipped typical specification.

2.5 Sample Description

Test Item	Model Number	Sample Number	Channel (MHz)	Date of receipted
All test	G117P38MO6C	E20250321144-02/04	5750	2025.03.21
		E20250321144-03/04	5795	2025.03.21
		E20250321144-04/04	5848	2025.03.21

2.6 Supported equipment

Product Name : Test Fixture (Bulb Base)
Mode Number : N/A
Power Cord : Unshielded Detachable 1.25m 2pin

2.7 Description of Test Facility

Name of Firm : Audix Technology (Shanghai) Co., Ltd.
Site Location : 3F, Building 34, No. 680 Guiping Rd.,
Caohejing, Hi-Tech Park,
Shanghai 200233, China
Accredited by NVLAP, Lab Code : 200371-0
FCC Designation Number : CN5027
Test Firm Registration Number : 954668

3 CONDUCTED EMISSION TEST

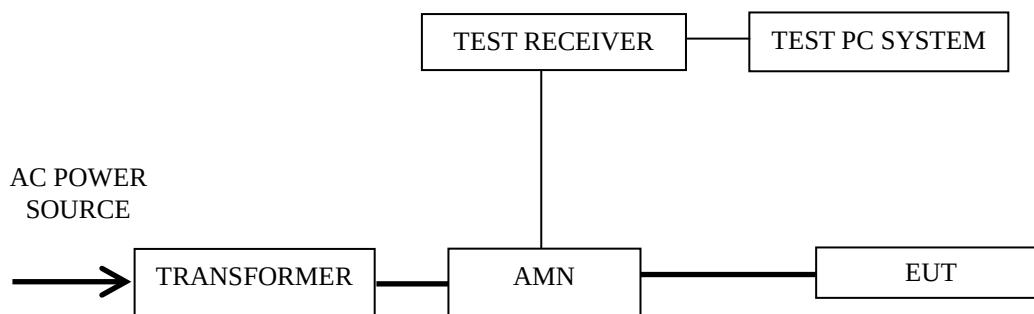
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	101302	2025.02.22	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2025.02.22	1 Year
3.	Fixed Attenuator	SHYL	TTS-1	001	2025.02.22	1 Year
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200655085	2025.02.22	1 Year
5.	Coaxial Cable	Audix	CE Cable	CE-SH1-001	2025.02.22	1 Year
6.	Software	Audix	e3	e3.v9.210616	--	--

3.2 Block Diagram of Test Setup

3.2.1 Conducted Disturbance Test Setup



— : Signal Line

— : Power Line

3.3 Conducted Emission Limits (§15.207)

Frequency Range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Turn the EUT on the test mode, and then test.

3.6 Test Procedures

The EUT was placed upon a non-metallic table, which is 0.8 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 Ω coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to FCC Part 15 Subpart C and ANSI C63.10: 2013 requirements during conducted disturbance test.

The I.F. bandwidth of Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

Test with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. (According to KDB 174176 D01 Line Conducted FAQ)

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Worst case emission:

No.	Operation	Mode	Channel	Frequency (MHz)	Data Page
1.	Transmitting	5.8G	Low	5750	P11-12

NOTE 1 – Emission Level = Read Level + AMN Factor + Aux Factor + Cable Loss
Margin = Limits - Emission Level

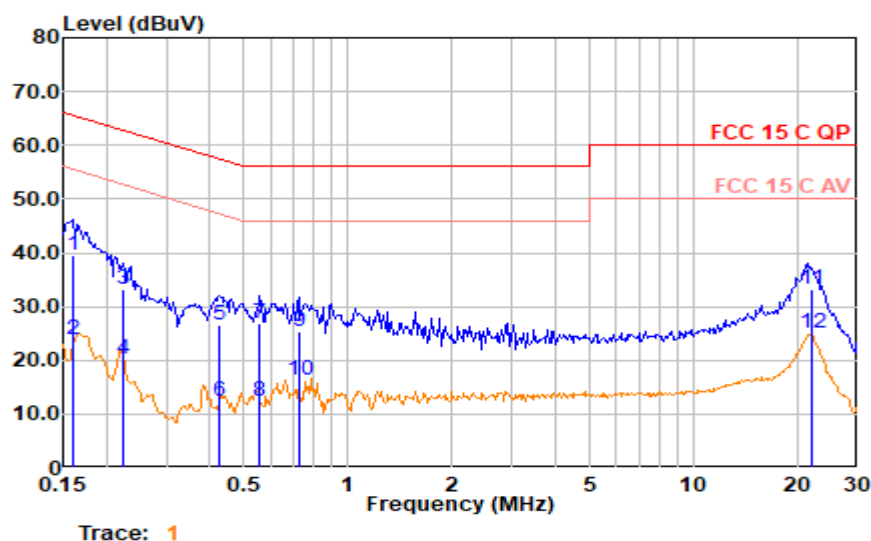
NOTE 2 – “QP” means “Quasi-Peak” values.

NOTE 3 – The emission levels which not reported are too low against the official limit.

Worst case emission

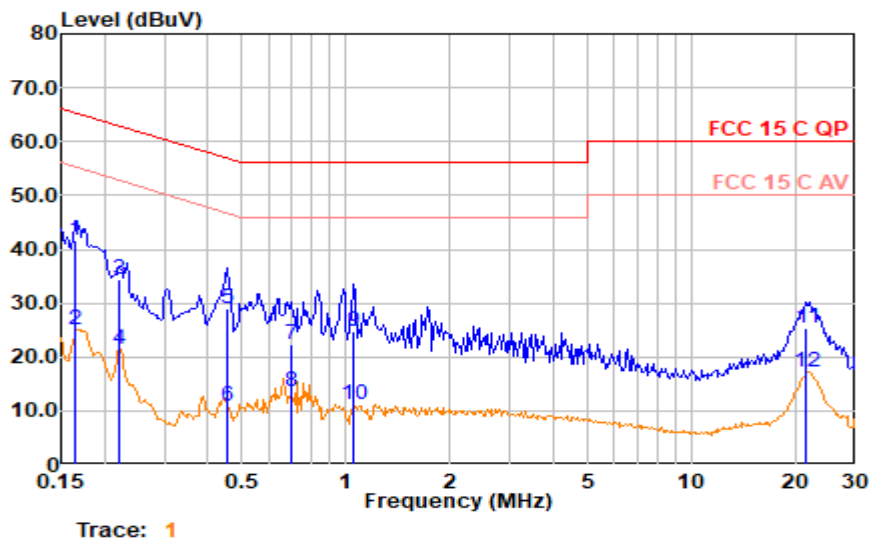
Test Date:	2025.03.21	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: Microwave CH Low



Polarization at Line

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.161	29.77	0.20	9.50	0.11	39.58	65.42	25.85	QP
0.161	14.10	0.20	9.50	0.11	23.91	55.42	31.51	Average
0.223	23.51	0.20	9.50	0.11	33.32	62.70	29.38	QP
0.223	10.46	0.20	9.50	0.11	20.27	52.70	32.43	Average
0.426	16.76	0.20	9.50	0.12	26.58	57.33	30.75	QP
0.426	2.49	0.20	9.50	0.12	12.30	47.33	35.03	Average
0.557	17.19	0.20	9.50	0.12	27.02	56.00	28.98	QP
0.557	2.69	0.20	9.50	0.12	12.51	46.00	33.49	Average
0.721	15.61	0.20	9.50	0.13	25.44	56.00	30.56	QP
0.721	6.50	0.20	9.50	0.13	16.33	46.00	29.67	Average
22.044	23.02	0.52	9.51	0.26	33.32	60.00	26.68	QP
22.044	14.82	0.52	9.51	0.26	25.11	50.00	24.89	Average

Mode: Microwave CH Low**Polarization at Neutral**

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.166	31.96	0.20	9.50	0.11	41.77	65.17	23.41	QP
0.166	15.26	0.20	9.50	0.11	25.07	55.17	30.10	Average
0.221	24.65	0.20	9.50	0.11	34.46	62.78	28.32	QP
0.221	11.73	0.20	9.50	0.11	21.54	52.78	31.24	Average
0.452	19.15	0.20	9.50	0.12	28.97	56.84	27.86	QP
0.452	1.07	0.20	9.50	0.12	10.89	46.84	35.95	Average
0.693	12.37	0.20	9.50	0.13	22.20	56.00	33.80	QP
0.693	3.81	0.20	9.50	0.13	13.64	46.00	32.36	Average
1.053	15.01	0.20	9.50	0.14	24.85	56.00	31.15	QP
1.053	1.19	0.20	9.50	0.14	11.03	46.00	34.97	Average
21.610	15.21	0.50	9.51	0.26	25.48	60.00	34.52	QP
21.610	7.07	0.50	9.51	0.26	17.34	50.00	32.66	Average

4 RADIATED EMISSION TEST

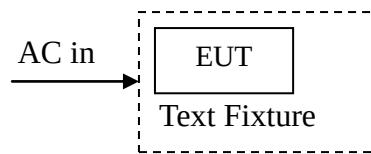
4.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

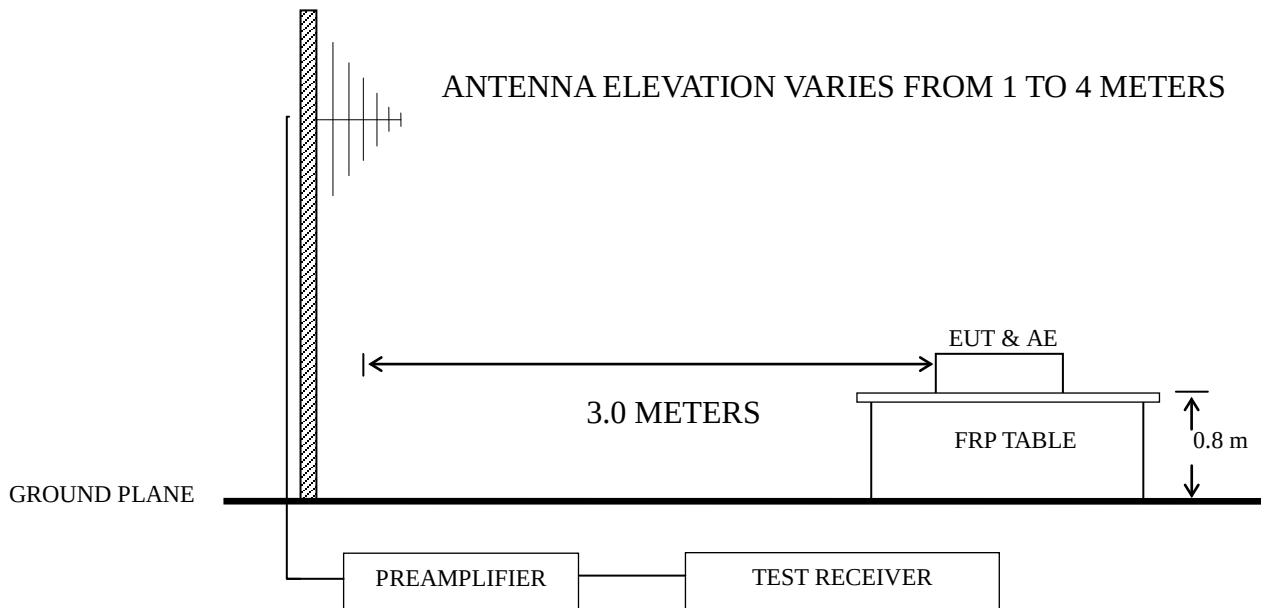
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Preamplifier	Agilent	8447D	2944A10548	2025.02.22	1 Year
2.	Preamplifier	HP	8449B	3008A00864	2025.02.22	1 Year
3.	EXA Signal Analyzer	Agilent	N9010A	MY52221182	2024.08.09	1 Year
4.	Test Receiver	R&S	ESCI	101303	2025.02.22	1 Year
5.	Bilog Antenna+6dB Attenuator	Schwarzbeck	VULB 9168+EMCI-N-6-06	708+AT-N0638	2025.02.07	1 Year
6.	Horn Antenna	EMCO	3115	96074878	2024.08.02	1 Year
7.	Horn Antenna	EMCO	3116	00062643	2025.01.30	2 Year
8.	RE Cable-1m+Coaxial Switch	HARBOUR+ANRITSU	RE Cable-1m+MP59B	RE-1m-00x+6200655086	2025.02.22	1 Year
9.	RE Cable-3m+RE Cable-10m	TIMES+SCHAFFNER	LMR400-NM NM-3.0M+RG 212U-MIL C 17	20250211-0001+RE-10m-001	2025.02.22	1 Year
10.	Coaxial Cable(CH.3)	Mini-Circuits	FLC-2FT-SM SM+	21112086	2025.02.22	1 Year
11.	RE Cable-5m	TIMES	SFT205-SMNM-5.0M	20250211-0001	2025.02.22	1 Year
12.	Software	Audix	e3	v9.210616	--	--

4.2 Block Diagram of Test Setup

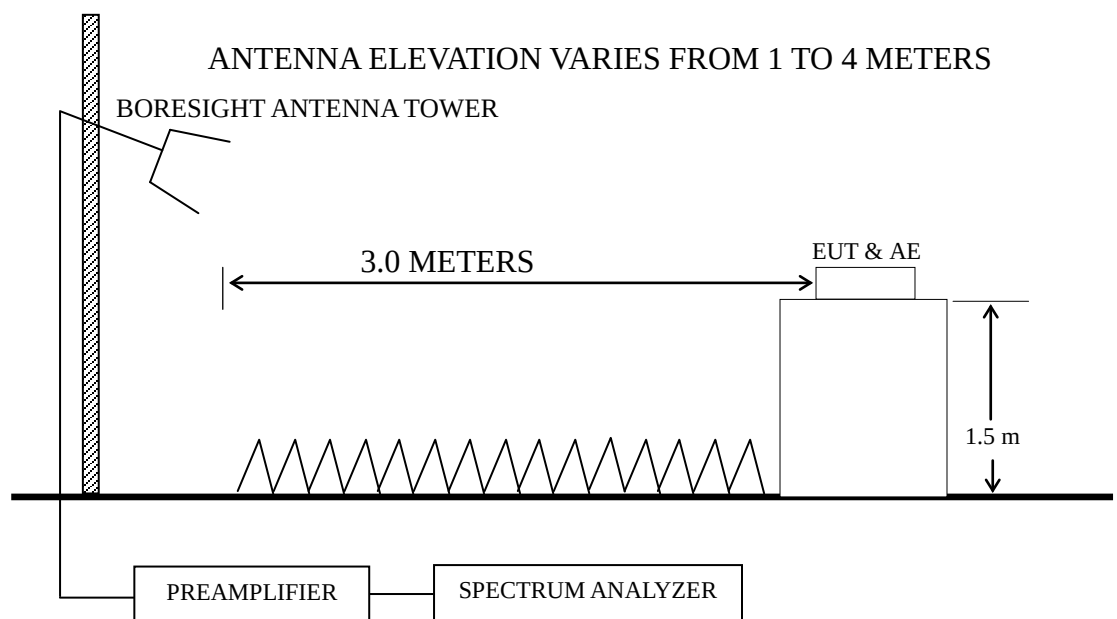
4.2.1 EUT & Peripherals



4.2.2 Below 1GHz



4.2.3 Above 1GHz



4.3 Radiated Emission Limit (§15.209&15.249)

§15.209(a):

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	dB(μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)			
NOTE 2 - The tighter limit applies at the band edges.			
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.			
NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.			
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT			

§15.205(a):

Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
¹ 0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	(²)
13.36–13.41			

§15.249(a):

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency (MHz)	Distance (m)	Field strength of fundamental		Field strength of harmonics	
		(mV/m)	dB(μ V/m)	(μ V/m)	dB(μ V/m)
902 ~ 928	3	50	94	500	54
2400 ~ 2483.5	3	50	94	500	54
5725 ~ 5875	3	50	94	500	54
24000 ~ 24250	3	250	108	250	68
NOTE 1 - Emission Level dB (μ V/m) = 20 log Emission Level (μ V/m) NOTE 2 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. NOTE 3 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz. NOTE 4 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT					

4.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (listed in Sec.2.2) were installed as shown on Sec.4.2 to meet FCC requirements and operating in a manner that tends to maximize its emission level in a normal application.

4.5 Operating Condition of EUT

4.5.1 Setup the EUT as shown in Sec. 4.2.

4.5.2 Turn EUT on, then test.

4.5.3 Repeat step 4.5.1 and 4.5.2, until the test of all modes finished.

4.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a turntable. Below 1 GHz, the table height is 80 cm above the reference ground plane. Above 1 GHz, the table height is 1.5 m. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10: 2013

requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESCI was set at 120 kHz from 30MHz to 1000MHz.

The bandwidth of Agilent N9010A was set at 1MHz for above 1GHz.

The frequency range from 30 MHz to 40 GHz (Up to 10th harmonics from fundamental frequency) was checked.

According to the ANSI C63.10 section 7.5 (Procedure for determining the average value of pulsed emissions), The average field strength may be found by measuring the peak pulse amplitude (in log equivalent units) and determining the duty cycle correction factor (in dB) associated with the pulse modulation as shown in Equation:

$$\delta(\text{dB}) = 20\log(\Delta)$$

where

δ is the duty cycle correction factor (dB)

Δ is the duty cycle (dimensionless)

So, For Pulse Emissions:

The Average field strength = Peak field strength – DCCF(dB).

All the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Frequency range: below 1GHz (Worst case emission)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	5.8G	Low	5730 MHz	P19-20

Frequency range: above 1GHz

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	5.8G	Low	5750 MHz	P21-22
2.			Middle	5795 MHz	P23-24
3.			High	5848 MHz	P25-26

Fundamental, Band-Edge and Restricted bands:

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	5.8G	Low	5750 MHz	P27-28
2.			Middle	5795 MHz	P29-30
3.			High	5848 MHz	P31-32

NOTE 1 – Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin = Limits - Emission Level.

NOTE 2 – “QP” means “Quasi-Peak” values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The emission levels which not reported are too low against the official limit.

NOTE 5 – The emission levels recorded below is data of EUT configured in Standing direction, for this direction was the maximum emission direction during the test. The data of Side & Lying direction are too low against the official limit to be reported.

NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

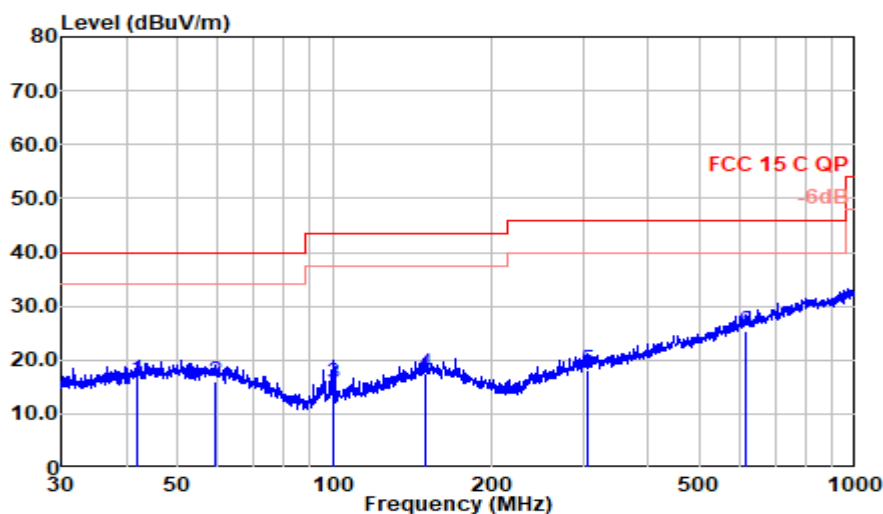
For above 1GHz test, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 7 – The frequency range 5350-5460MHz & 7250-7750MHz were tested for Restricted bands.

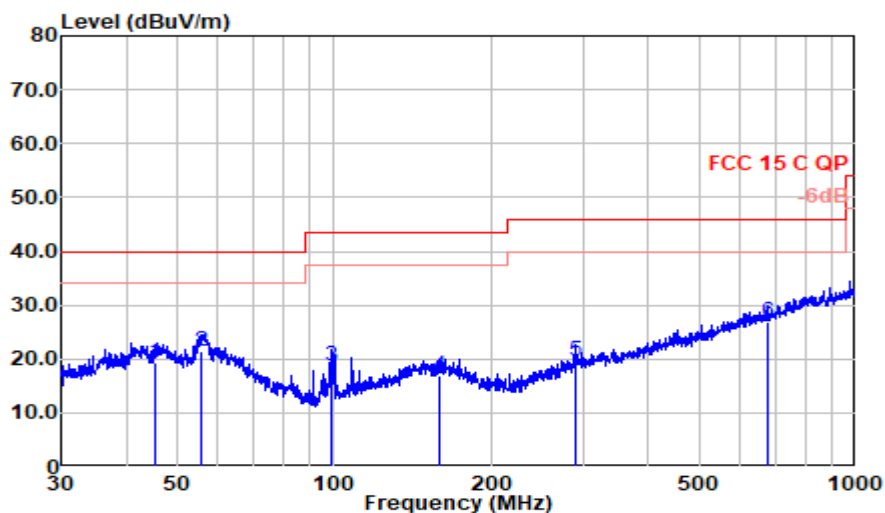
NOTE 8 – For Pulsed Emissions, The DCCF(Duty Cycle Correct Factor)
 $\delta(\text{dB}) = 20\log(\Delta) = 20\log(7.43\%) = 17.31 \text{ dB}$. The Duty Cycle refers to section 2.4.

Radiated emission < 1GHz

Test Date:	2025.03.30	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: Microwave CH Low**Polarization at Horizontal**

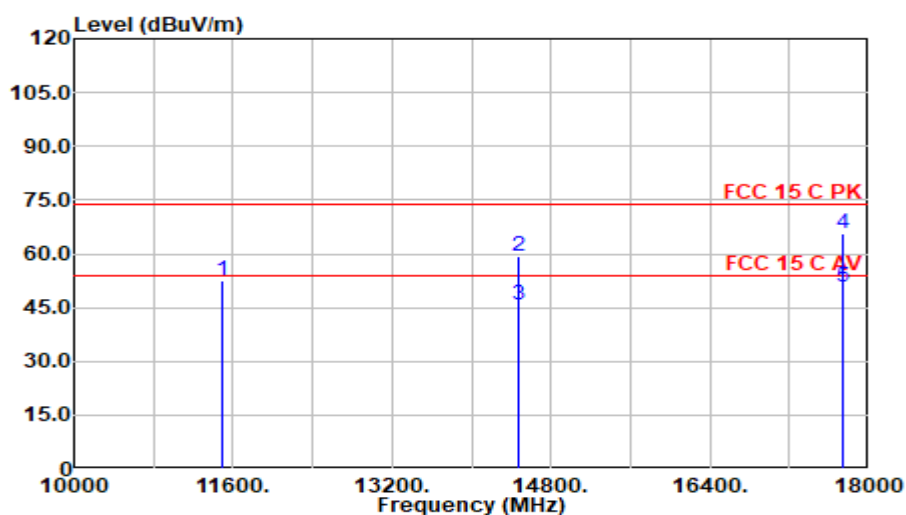
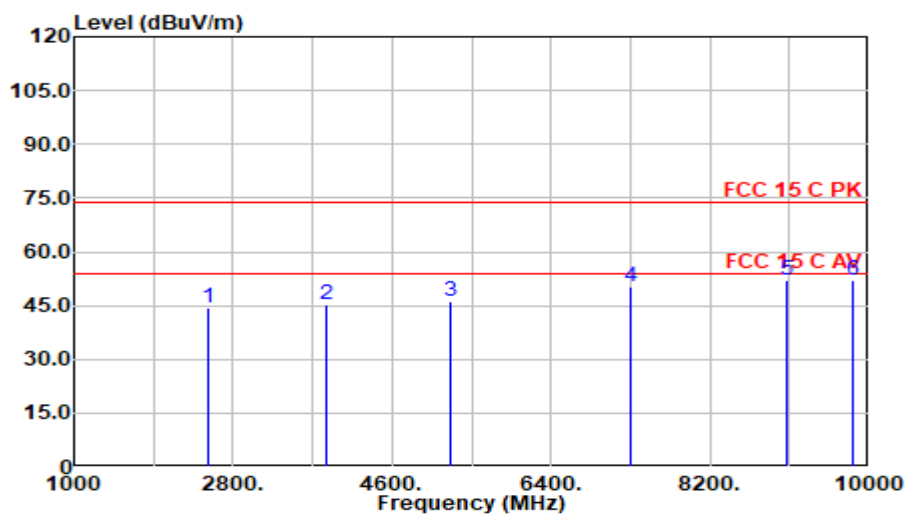
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
41.933	25.65	19.29	0.78	29.53	16.18	40.00	23.82	QP
59.232	25.26	19.18	0.91	29.46	15.88	40.00	24.12	QP
99.878	29.46	14.60	1.20	29.50	15.76	43.50	27.74	QP
150.011	25.84	19.20	1.36	29.00	17.40	43.50	26.10	QP
306.216	25.08	19.37	2.06	28.27	18.24	46.00	27.76	QP
613.138	25.26	25.83	3.00	28.82	25.27	46.00	20.73	QP

Mode: Microwave CH Low**Polarization at Vertical**

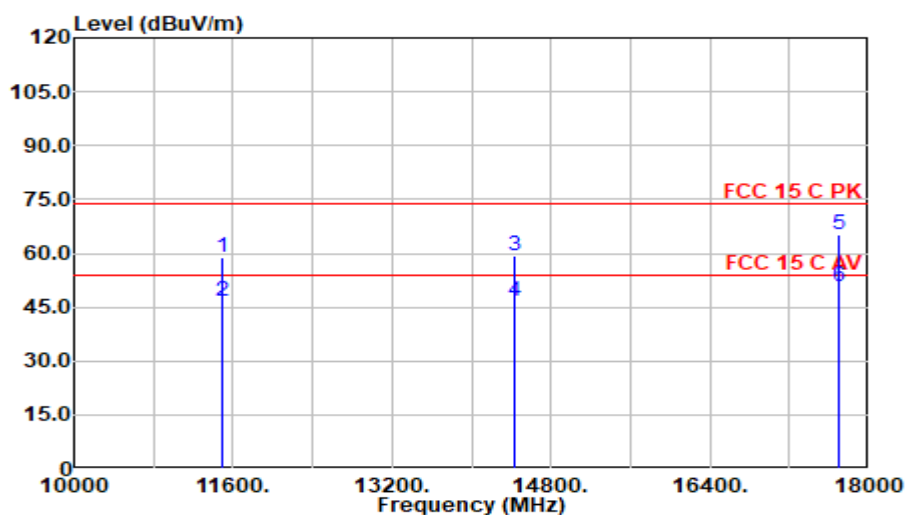
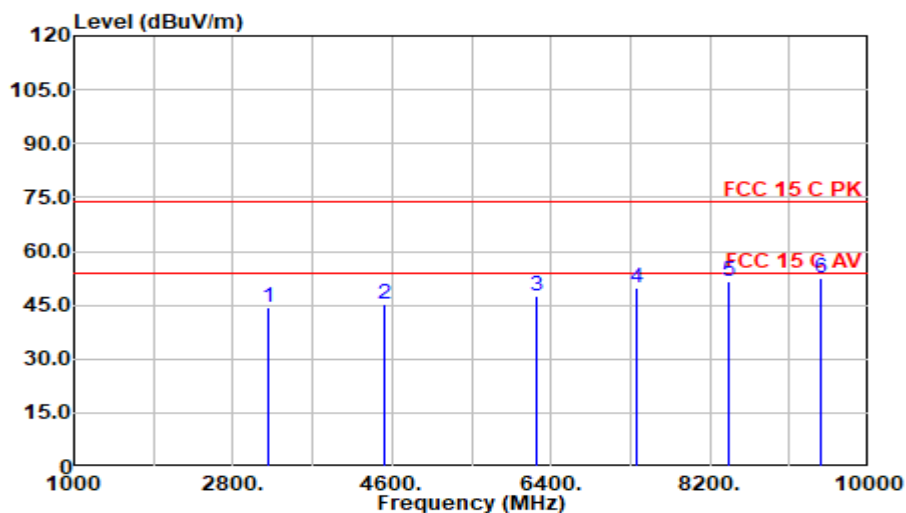
Frequency (MHz)	Meter Reading dB (μ V)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μ V/m)	Limits dB (μ V/m)	Margin (dB)	Remark
45.375	28.73	19.44	0.81	29.52	19.46	40.00	20.54	QP
55.609	30.55	19.50	0.88	29.48	21.45	40.00	18.55	QP
99.006	32.35	14.60	1.19	29.50	18.65	43.50	24.85	QP
159.225	25.53	19.10	1.41	29.00	17.04	43.50	26.46	QP
291.036	26.94	19.02	2.02	28.33	19.66	46.00	26.34	QP
678.769	25.84	26.48	3.04	28.37	26.99	46.00	19.01	QP

Radiated Emission > 1GHz

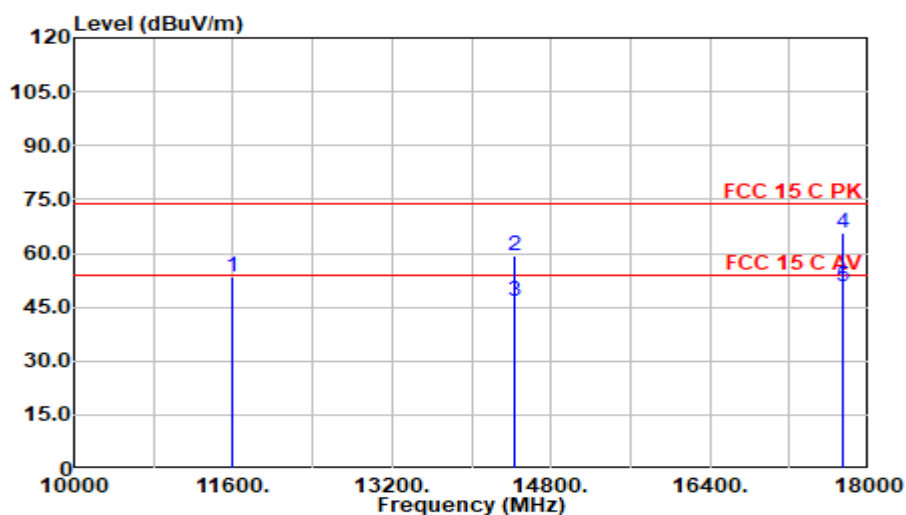
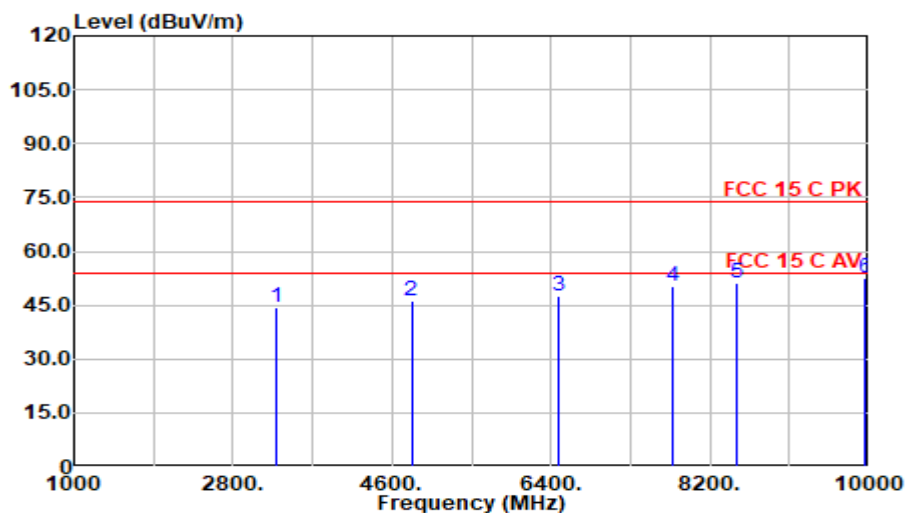
Test Date:	2025.03.30	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: Microwave CH Low**Polarization at Horizontal**

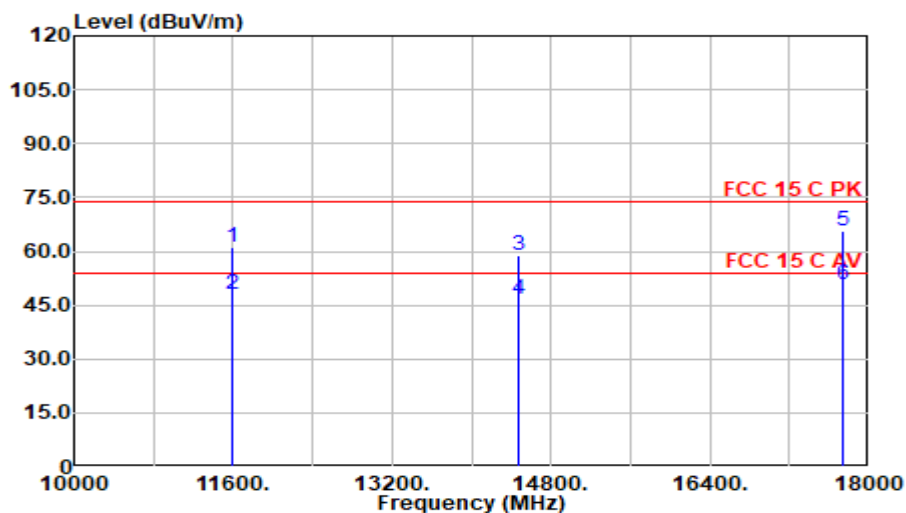
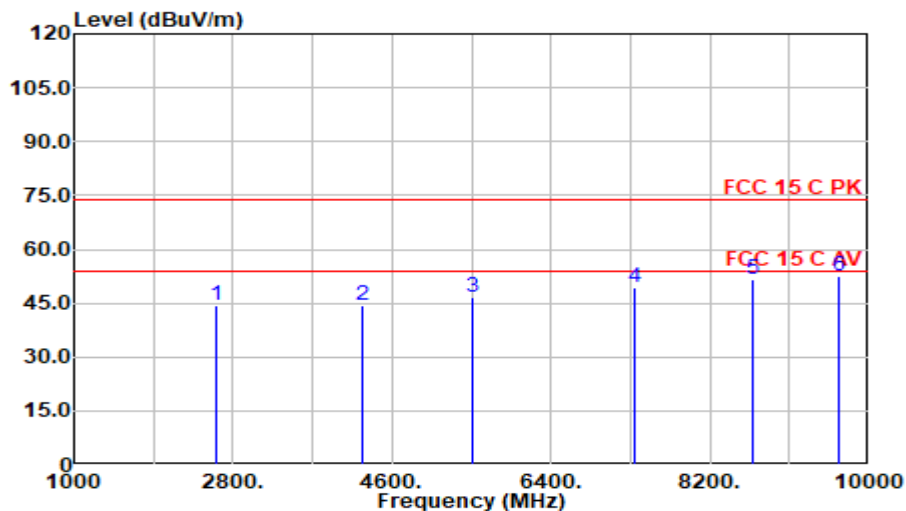
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2530.000	48.44	28.68	3.34	35.95	44.52	74.00	29.48	Peak
3864.500	43.94	32.76	4.46	36.02	45.14	74.00	28.86	Peak
5271.250	43.49	34.00	5.27	36.59	46.17	74.00	27.83	Peak
7311.250	44.41	36.90	6.19	37.03	50.47	74.00	23.53	Peak
9079.250	44.20	38.34	6.75	37.28	52.02	74.00	21.98	Peak
9827.250	43.69	38.45	7.19	37.05	52.28	74.00	21.72	Peak
11493.250	42.25	38.79	8.13	36.75	52.42	74.00	21.58	Peak
14472.500	41.89	42.42	10.44	35.46	59.28	74.00	14.72	Peak
14472.500	28.39	42.42	10.44	35.46	45.78	54.00	8.22	Average
17740.750	42.34	45.32	12.57	34.50	65.73	74.00	8.27	Peak
17740.750	27.53	45.32	12.57	34.50	50.93	54.00	3.07	Average

Mode: Microwave CH Low**Polarization at Vertical**

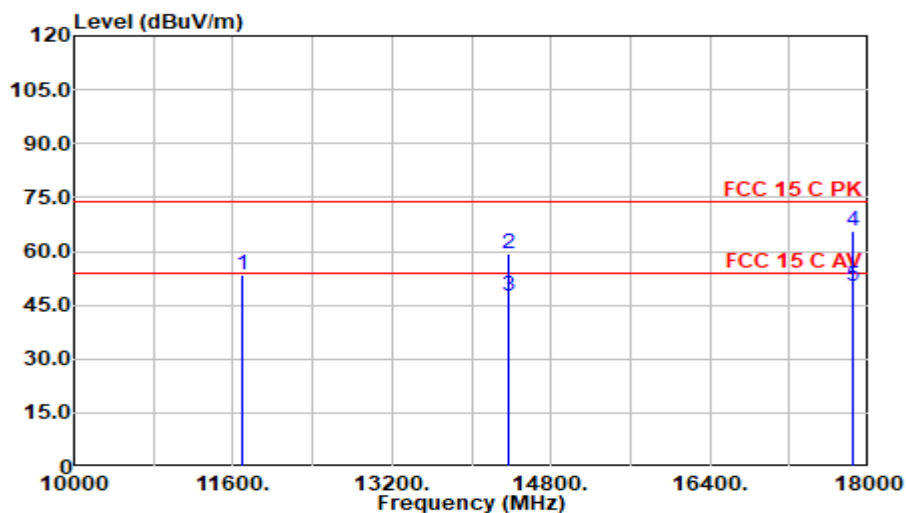
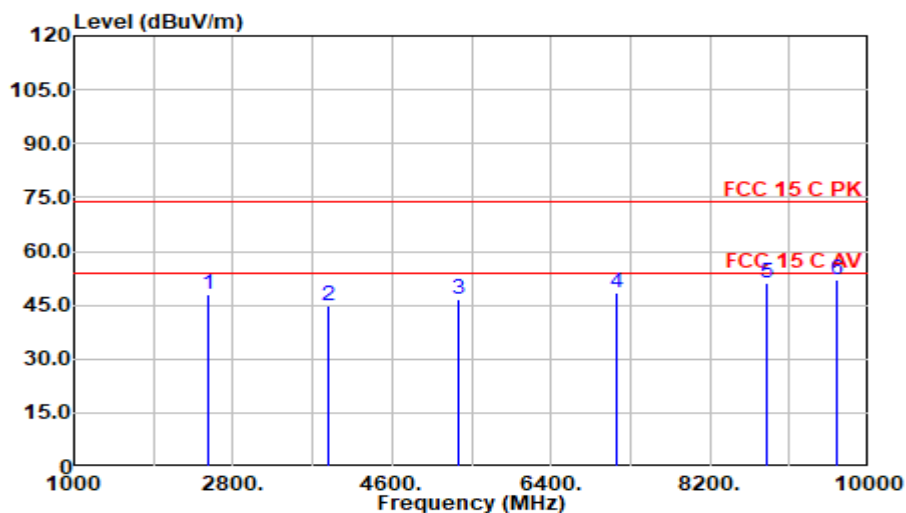
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
3197.250	45.17	31.10	3.75	35.55	44.46	74.00	29.54	Peak
4506.250	43.98	32.59	4.87	36.31	45.13	74.00	28.87	Peak
6240.250	43.88	34.52	5.87	36.83	47.44	74.00	26.56	Peak
7375.000	43.85	36.95	6.21	37.06	49.95	74.00	24.05	Peak
8416.250	43.89	38.27	6.61	37.30	51.46	74.00	22.54	Peak
9453.250	44.17	38.30	7.08	37.16	52.39	74.00	21.61	Peak
11493.250	48.71	38.79	8.13	36.75	58.87	74.00	15.13	Peak
11493.250	36.25	38.79	8.13	36.75	46.42	54.00	7.58	Average
14438.500	42.00	42.32	10.43	35.49	59.26	74.00	14.74	Peak
14438.500	29.43	42.32	10.43	35.49	46.69	54.00	7.31	Average
17698.250	42.17	45.19	12.54	34.52	65.38	74.00	8.62	Peak
17698.250	27.42	45.19	12.54	34.52	50.63	54.00	3.37	Average

Mode: Microwave CH Middle**Polarization at Horizontal**

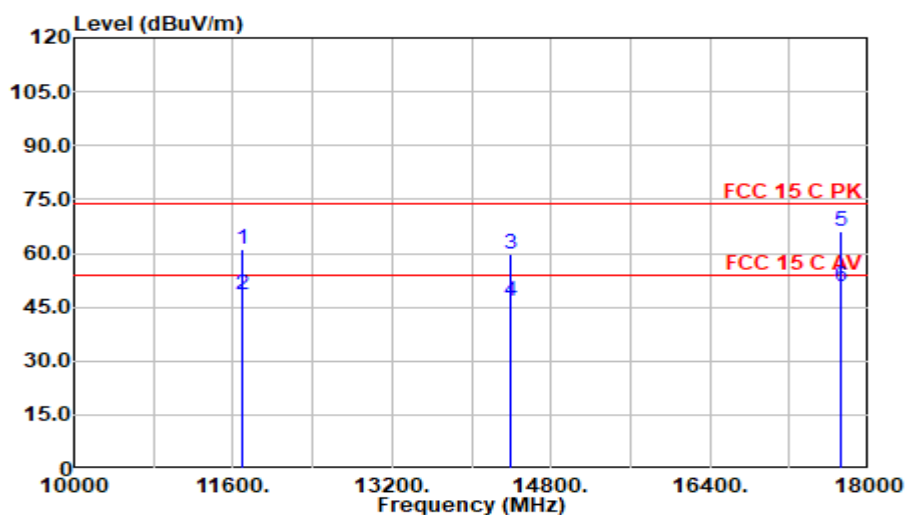
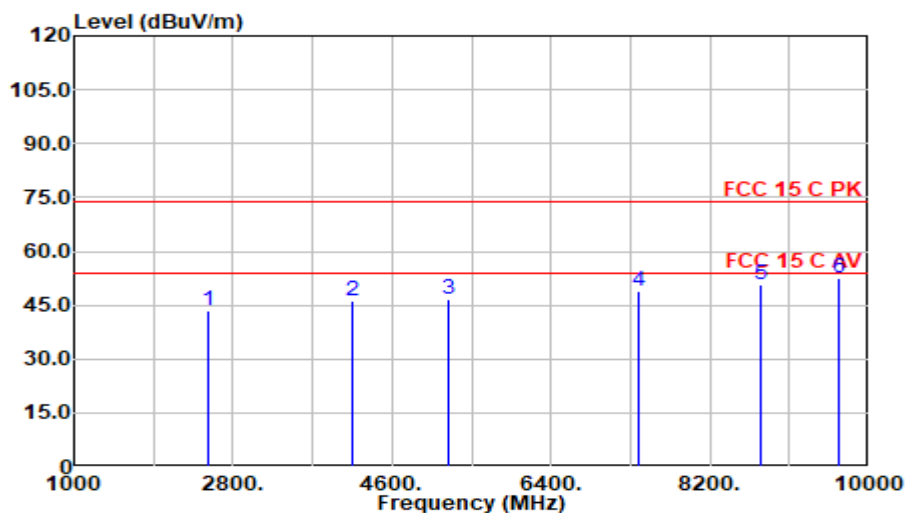
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
3286.500	44.68	31.30	3.84	35.62	44.19	74.00	29.81	Peak
4820.750	44.10	33.26	5.05	36.43	45.97	74.00	28.03	Peak
6495.250	43.58	34.59	6.02	36.85	47.33	74.00	26.67	Peak
7774.500	43.90	37.10	6.40	37.21	50.19	74.00	23.81	Peak
8497.000	43.66	38.39	6.62	37.30	51.37	74.00	22.63	Peak
9954.750	43.95	38.50	7.21	37.01	52.65	74.00	21.35	Peak
11599.500	42.38	39.40	8.23	36.74	53.26	74.00	20.74	Peak
14430.000	42.15	42.29	10.43	35.49	59.37	74.00	14.63	Peak
14430.000	29.41	42.29	10.43	35.49	46.64	54.00	7.36	Average
17732.250	42.52	45.30	12.57	34.50	65.88	74.00	8.12	Peak
17732.250	27.15	45.30	12.57	34.50	50.51	54.00	3.49	Average

Mode: Microwave CH Middle**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2610.750	48.15	28.88	3.38	35.85	44.56	74.00	29.44	Peak
4255.500	43.59	32.39	4.74	36.21	44.51	74.00	29.49	Peak
5513.500	43.64	34.23	5.39	36.66	46.59	74.00	27.41	Peak
7358.000	43.34	36.92	6.20	37.05	49.41	74.00	24.59	Peak
8679.750	43.63	38.52	6.64	37.30	51.49	74.00	22.51	Peak
9653.000	44.23	38.20	7.15	37.10	52.48	74.00	21.52	Peak
11599.500	50.19	39.40	8.23	36.74	61.08	74.00	12.92	Peak
11599.500	37.15	39.40	8.23	36.74	48.04	54.00	5.96	Average
14468.250	41.69	42.40	10.44	35.47	59.07	74.00	14.93	Peak
14468.250	29.47	42.40	10.44	35.47	46.84	54.00	7.16	Average
17745.000	42.43	45.34	12.58	34.50	65.84	74.00	8.16	Peak
17745.000	27.24	45.34	12.58	34.50	50.66	54.00	3.34	Average

Mode: Microwave CH High**Polarization at Horizontal**

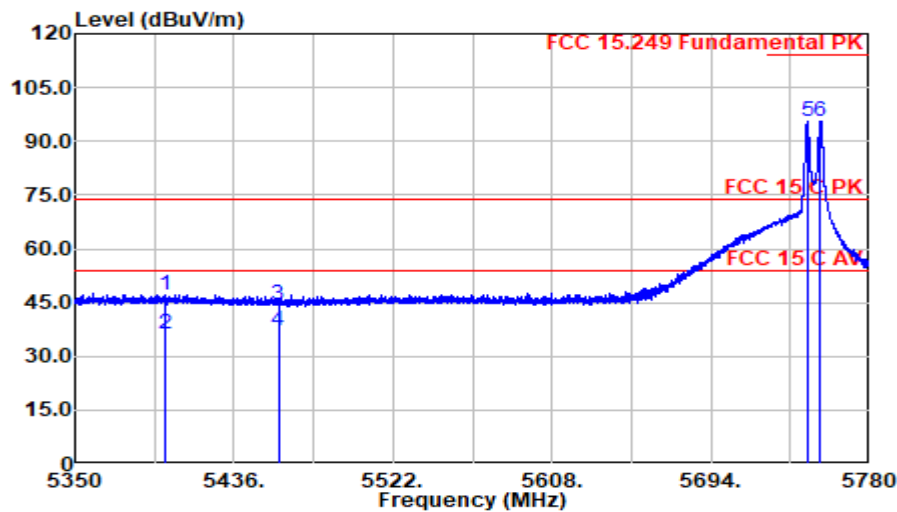
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2530.000	51.96	28.68	3.34	35.95	48.04	74.00	25.96	Peak
3885.750	43.49	32.84	4.48	36.03	44.78	74.00	29.22	Peak
5352.000	43.37	34.39	5.31	36.61	46.46	74.00	27.54	Peak
7145.500	43.30	35.99	6.16	36.96	48.49	74.00	25.51	Peak
8845.500	43.43	38.39	6.66	37.30	51.19	74.00	22.81	Peak
9644.500	44.01	38.19	7.15	37.10	52.25	74.00	21.75	Peak
11688.750	42.21	39.67	8.32	36.73	53.46	74.00	20.54	Peak
14374.750	42.22	42.17	10.42	35.53	59.28	74.00	14.72	Peak
14374.750	30.52	42.17	10.42	35.53	47.59	54.00	6.41	Average
17838.500	41.70	45.62	12.65	34.46	65.50	74.00	8.50	Peak
17838.500	26.37	45.62	12.65	34.46	50.17	54.00	3.83	Average

Mode: Microwave CH High**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2530.000	47.53	28.68	3.34	35.95	43.60	74.00	30.40	Peak
4157.750	45.04	32.48	4.69	36.17	46.04	74.00	27.96	Peak
5250.000	44.11	34.00	5.26	36.58	46.79	74.00	27.21	Peak
7383.500	42.94	36.97	6.21	37.06	49.06	74.00	24.94	Peak
8769.000	43.27	38.18	6.65	37.30	50.80	74.00	23.20	Peak
9670.000	44.06	38.20	7.15	37.10	52.31	74.00	21.69	Peak
11688.750	49.68	39.67	8.32	36.73	60.94	74.00	13.06	Peak
11688.750	37.36	39.67	8.32	36.73	48.61	54.00	5.39	Average
14400.250	42.44	42.20	10.42	35.51	59.55	74.00	14.45	Peak
14400.250	29.54	42.20	10.42	35.51	46.66	54.00	7.34	Average
17723.750	42.64	45.27	12.56	34.51	65.96	74.00	8.04	Peak
17723.750	27.26	45.27	12.56	34.51	50.59	54.00	3.41	Average

Fundamental, Band-Edge and Restricted bands:

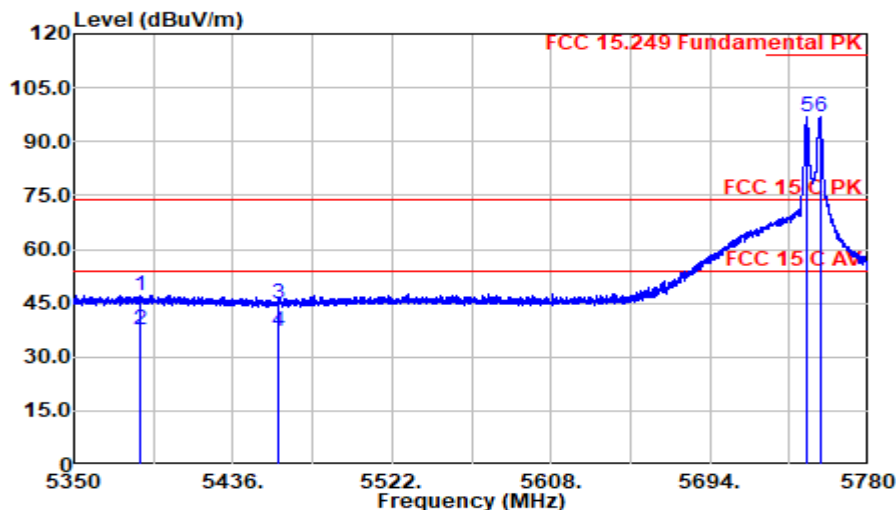
Test Date:	2025.03.30	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: Microwave CH Low**Polarization at Horizontal**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5398.913	44.35	34.11	5.33	36.63	47.16	74.00	26.84	Peak
5398.913	33.33	34.11	5.33	36.63	36.14	54.00	17.86	Average
5459.973	41.90	33.96	5.36	36.64	44.58	74.00	29.42	Peak
5459.973	34.64	33.96	5.36	36.64	37.32	54.00	16.68	Average
5746.245	93.03	33.72	5.55	36.73	95.57	114.00	18.43	Fundamental Peak
5753.447	93.04	33.69	5.56	36.73	95.56	114.00	18.44	Fundamental Peak

The Average field strength of Pulsed Emissions (including Fundamental):

Frequency (MHz)	Peak filed strength Emission Level dB (μV)	DCCF (dB)	Average filed strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5746.245	95.57	17.31	78.26	94	15.74	Fundamental Average
5753.447	95.56	17.31	78.25	94	15.75	Fundamental Average

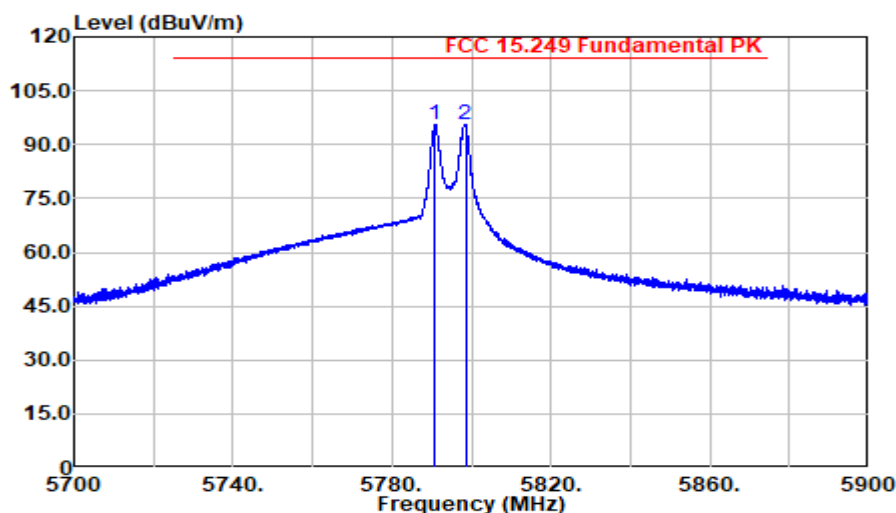
Mode: Microwave CH Low

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5385.690	44.39	34.19	5.33	36.62	47.28	74.00	26.72	Peak
5385.690	34.54	34.19	5.33	36.62	37.43	54.00	16.57	Average
5460.000	42.19	33.96	5.36	36.64	44.87	74.00	29.13	Peak
5460.000	34.32	33.96	5.36	36.64	37.00	54.00	17.00	Average
5746.245	94.16	33.72	5.55	36.73	96.70	114.00	17.30	Fundamental Peak
5753.770	94.28	33.68	5.56	36.73	96.79	114.00	17.21	Fundamental Peak

The Average field strength of Pulsed Emissions (including Fundamental):

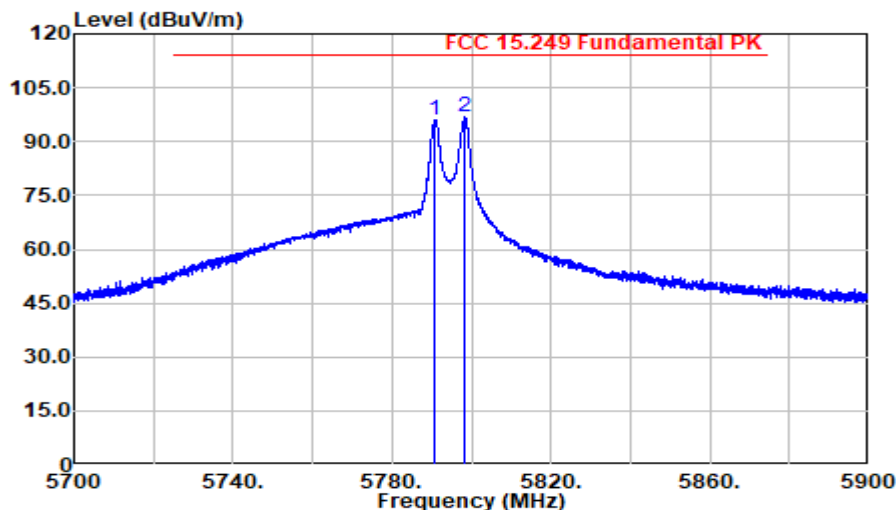
Frequency (MHz)	Peak filed strength Emission Level dB (μV)	DCCF (dB)	Average filed strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5746.245	96.7	17.31	79.39	94	14.61	Fundamental Average
5753.77	96.79	17.31	79.48	94	14.52	Fundamental Average

Mode: Microwave CH Middle**Polarization at Horizontal**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5790.900	93.05	33.54	5.58	36.74	95.43	114.00	18.57	Fundamental Peak
5798.500	93.18	33.51	5.59	36.74	95.54	114.00	18.46	Fundamental Peak

The Average field strength of Pulsed Emissions (including Fundamental):

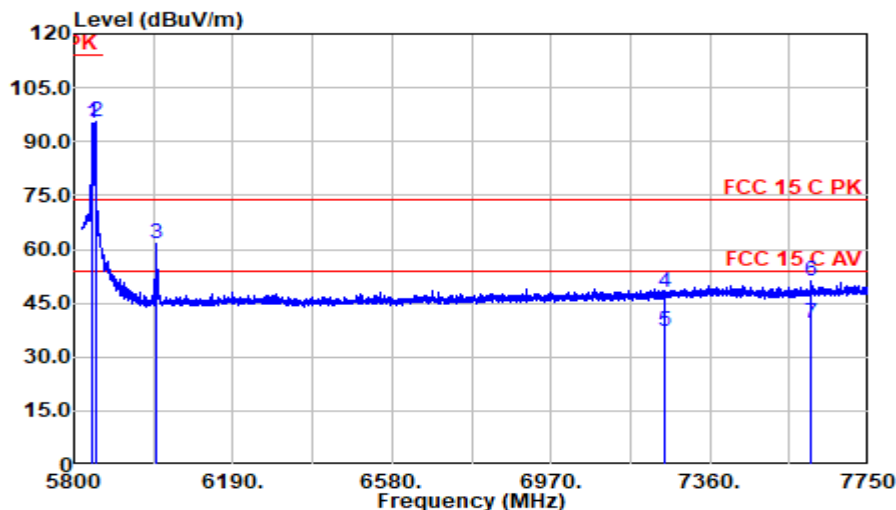
Frequency (MHz)	Peak field strength Emission Level dB (μV)	DCCF (dB)	Average field strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5790.9	95.43	17.31	78.12	94	15.88	Fundamental Average
5798.5	95.54	17.31	78.23	94	15.77	Fundamental Average

Mode: Microwave CH Middle**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5790.850	93.83	33.54	5.58	36.74	96.21	114.00	17.79	Fundamental Peak
5798.350	94.37	33.51	5.59	36.74	96.73	114.00	17.27	Fundamental Peak

The Average field strength of Pulsed Emissions (including Fundamental):

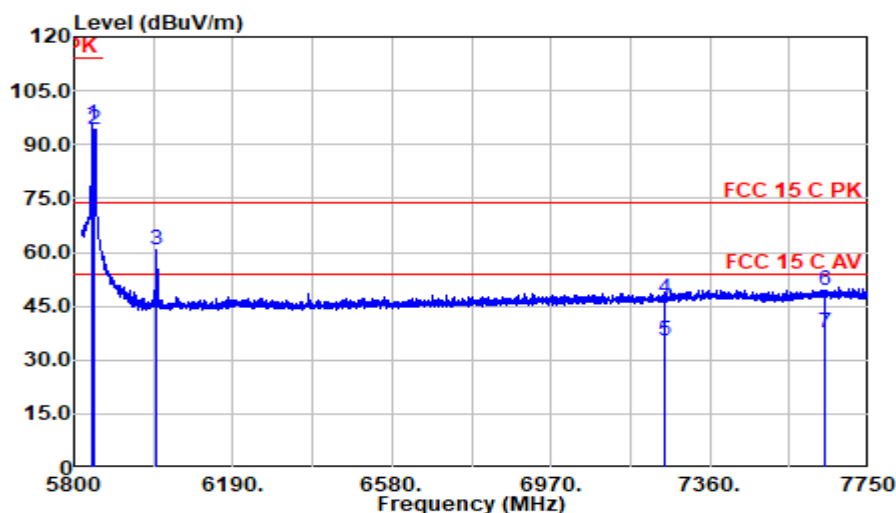
Frequency (MHz)	Peak field strength Emission Level dB (μV)	DCCF (dB)	Average field strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5790.85	96.21	17.31	78.9	94	15.1	Fundamental Average
5798.35	96.73	17.31	79.42	94	14.58	Fundamental Average

Mode: Microwave CH High**Polarization at Horizontal**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5843.643	92.55	33.76	5.62	36.76	95.17	114.00	18.83	Fundamental Peak
5852.328	92.70	33.80	5.62	36.76	95.36	114.00	18.64	Fundamental Peak
6001.902	58.39	34.21	5.72	36.80	61.52	74.00	12.48	Peak
7250.000	42.11	36.60	6.18	37.01	47.88	74.00	26.12	Peak
7250.000	31.36	36.60	6.18	37.01	37.13	54.00	16.87	Average
7609.592	45.21	37.00	6.30	37.15	51.36	74.00	22.64	Peak
7609.592	33.29	37.00	6.30	37.15	39.44	54.00	14.56	Average

The Average field strength of Pulsed Emissions (including Fundamental):

Frequency (MHz)	Peak field strength Emission Level dB (μV)	DCCF (dB)	Average field strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5843.643	95.17	17.31	77.86	94	16.14	Fundamental Average
5852.328	95.36	17.31	78.05	94	15.95	Fundamental Average
6001.902	61.52	17.31	44.21	54	9.79	Average

Mode: Microwave CH High**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5844.125	92.84	33.76	5.62	36.76	95.47	114.00	18.53	Fundamental
5851.362	91.66	33.80	5.62	36.76	94.32	114.00	19.68	Fundamental
6002.385	57.77	34.21	5.72	36.80	60.90	74.00	13.10	Peak
7250.000	41.37	36.60	6.18	37.01	47.15	74.00	26.85	Peak
7250.000	29.54	36.60	6.18	37.01	35.31	54.00	18.69	Average
7642.402	43.42	37.00	6.32	37.16	49.58	74.00	24.42	Peak
7642.402	31.24	37.00	6.32	37.16	37.40	54.00	16.60	Average

The Average field strength of Pulsed Emissions (including Fundamental):

Frequency (MHz)	Peak field strength Emission Level dB (μV)	DCCF (dB)	Average field strength Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
5844.125	95.47	17.31	78.16	94	15.84	Fundamental Average
5851.362	94.32	17.31	77.01	94	16.99	Fundamental Average
6002.385	60.9	17.31	43.59	54	10.41	Average

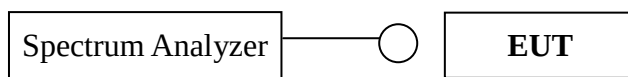
5 20 dB BANDWIDTH MEASUREMENT

5.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2024.08.09	1 Year

5.2 Block Diagram of Test Setup



5.3 Specification Limits (§2.1049)

For Reported.

5.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

5.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with settings: RBW = 1% to 5% of the 20 dB Bandwidth, VBW approximately three times of RBW. Set detection mode to peak and trace mode to max hold. Set the “x dB” function to “-20 dB” on Spectrum Analyzer to measure 20 dB Bandwidth, record it.

The 20 dB bandwidth is defined as the total spectrum the power of which is lower than peak power minus 20 dB .

The test procedure is defined in ANSI C63.10-2013 (the 6.9.2 Measurement Procedure “ Occupied bandwidth—relative measurement procedure” was used).

5.6 Test Results

PASSED.

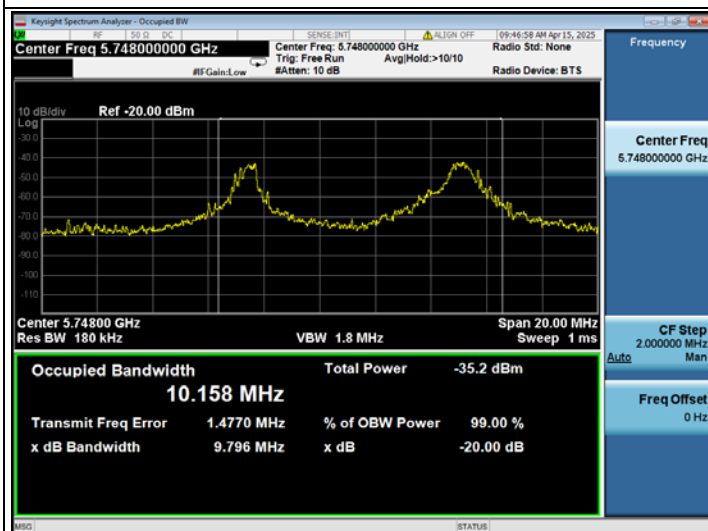
All the test results are attached in next pages.

(Test Date: 2025.04.11-15 Temperature: 23°C Humidity: 51 %)

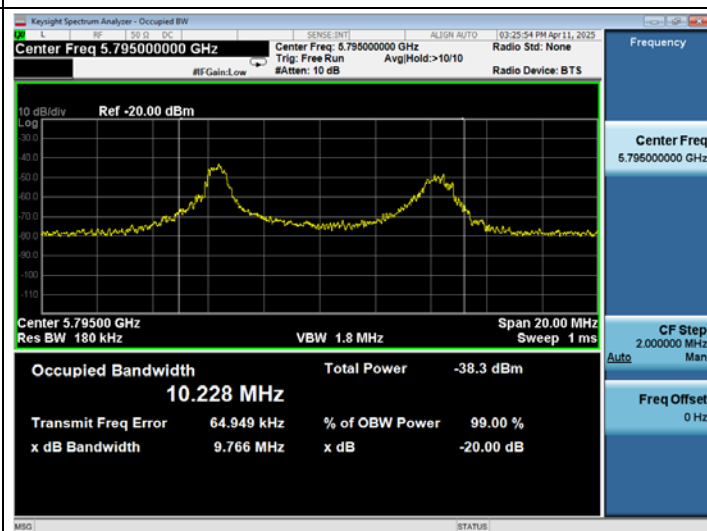
Mode	Channel	Frequency (MHz)	20dB Bandwidth (MHz)
5.8G	Low	5750	9.796
	Middle	5795	9.766
	High	5848	10.18

5.8G

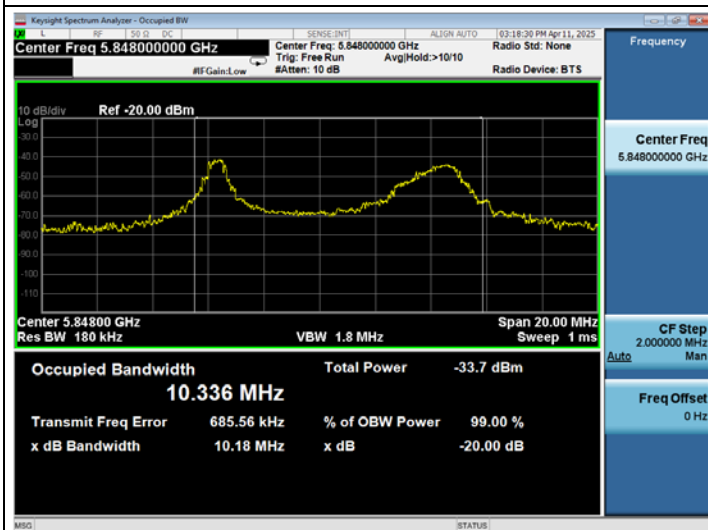
CH Low



CH Middle



CH High



6 ANTENNA REQUIREMENT

6.1 Specification Limits (§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.

6.2 Result

According to KDB 353028 D1, the following describes the three ways that can be used to demonstrate compliance to Section 15.203:

- a) Antenna permanently attached.
- b) Unique (non-standard) antenna connector.
- c) Professional installation.

For this product, the antenna is:

- ☒ Antenna permanently attached
- ☐ Unique (non-standard) antenna connector
- ☐ Professional installation
- ☐ not meet any of ways list above

that

- ☒ compliant
- ☐ not compliant

with the requirement of Section 15.203.

7 DEVIATION TO TEST SPECIFICATIONS

None.

8 MEASUREMENT UNCERTAINTY LIST

The measurement uncertainty was estimated for test on the EUT according to CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage of K=2.

The uncertainties value is not used in determining the PASS/FAIL results.

Test Items/Facilities	Frequency/Equipment/Unit	Uncertainty
Conducted Emission No.1 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Conducted Emission No.3 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Radiated Emission	30MHz~200MHz, Horizontal	±3.8 dB
	30MHz~200MHz, Vertical	±4.1 dB
	200MHz~1000MHz, Horizontal	±3.6 dB
	200MHz~1000MHz, Vertical	±5.1 dB
	1GHz~6GHz	±5.3 dB
	6GHz~18GHz	±5.3 dB
	18GHz~40GHz	±3.5 dB
Output Power Test	50MHz~18GHz	0.77 dB
Power Density Test	9kHz~6GHz	1.08 dB
RF Frequency Test	9kHz~40GHz	6×10^{-4}
Bandwidth Test	9kHz~6GHz	1.5×10^{-3}
RF Radiated Power Test	30MHz~1000MHz	3.06 dB
Conducted Output Power Test	50MHz~18GHz	0.83 dB
AC Voltage(<10kHz) Test	120V~230V	0.04 %
DC Power Test	0V~30V	0.4 %
Temperature	-40°C~+100°C	0.52 °C
Humidity	30%~95%	2.6 %