RF TEST REPORT

For

Guangzhou Pinzhong Electronic Technology Co.,Ltd.

Product Name: BEITONG KunPeng 20 Intelligent Gaming Controller

Test Model(s).: BTP-KP20

Report Reference No.	:	**DACE241030023RL002**
FCC ID	:	**2AWMK-BTP-KP20**
Applicant's Name	:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address	:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City
Testing Laboratory	:	Shenzhen DACE Testing Technology Co., Ltd.
Address	:	102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Test Specification Standard	:	**47 CFR Part 15.249**
Date of Receipt	:	October 30, 2024
Date of Test	:	October 30, 2024 to November 22, 2024
Data of Issue	:	November 22, 2024
Result	:	**Pass**

Apply for company information

Applicant's Name	:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address	:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City
Product Name	:	BEITONG KunPeng 20 Intelligent Gaming Controller
Test Model(s)	:	BTP-KP20
Series Model(s)	:	N/A
Test Specification Standard(s)	:	47 CFR Part 15.249

NOTE1:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

Compiled by:	Supervised by:	Approved by:
Keren Huang / Test Engineer	Ben Tang / Project Engineer	Machael Mo / Manager

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE241030023RL002	November 22, 2024

CONTENTS

1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHZ, and 24.0-24.25 GHz

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Antenna requirement	47 CFR Part 15.249		47 CFR Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.249	ANSI C63.10-2013 section 6.2	47 CFR 15.207(a)	Pass
Occupied Bandwidth	47 CFR Part 15.249	ANSI C63.10-2013, section 6.9.2	47 CFR 15.215(c)	Pass
Field strength of fundamental	47 CFR Part 15.249	ANSI C63.10-2013 section 6.6	47 CFR 15.249(a) 47 CFR 15.249(b)(1)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.249	ANSI C63.10-2013 section 6.6.4	47 CFR 15.249(d)	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.249	ANSI C63.10-2013 section 6.5	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.249	ANSI C63.10-2013 section 6.6	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)	Pass

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name	:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address	:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City
Manufacturer	:	Guangzhou Pinzhong Electronic Technology Co.,Ltd.
Address	:	Room 611-612, Greenland Center of Financial City, No. 662, Huangpu Avenue Middle Road, Tianhe District, Guangzhou City

2.2 Description of Device (EUT)

Product Name:	BEITONG KunPeng 20 Intelligent Gaming Controller
Model/Type reference:	BTP-KP20
Series Model:	N/A
Trade Mark:	BEITONG
Power Supply:	DC 5V/0.5A from adapter Battery:DC3.7V 600mAh
Operation Frequency:	2404MHz to 2478MHz
Number of Channels:	38
Modulation Type:	GFSK
Antenna Type:	PCB
Antenna Gain:	1.6dBi
Hardware Version:	V1.0
Software Version:	V1.0

Operation Frequency each of channel

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

Note:

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

Test channel	Frequency (MHz)
Lowest channel	2404MHz
Middle channel	2440MHz
Highest channel	2478MHz
Remark:Only the data of the worst mode would be recorded in this report.	

2.3 Description of Test Modes

No	Title	Description
TM1	Lowest channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.
TM2	Middle channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.
TM3	Highest channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.

2.4 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
AC-DC adapter	HUAWEI TECHNOLOGY	HW100400C01	

2.5 Equipments Used During The Test

Conducted Emission at AC power line					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Power absorbing clamp	SCHWARZ BECK	MESS-ELEKTRONIK	/	2024-03-25	2025-03-24
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	2023-12-12	2024-12-11
Cable	SCHWARZ BECK	/	/	2024-03-20	2025-03-19
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Attenuation	561-G071	2023-12-12	2024-12-11
50ΩCoaxial Switch	Anritsu	MP59B	M20531	2023-12-12	2024-12-11
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	ID:1164.6607K 03-102109-MH	2024-06-12	2025-06-11
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2023-12-12	2024-12-11
L.I.S.N	SCHWARZ BECK	NSLK 8126	05055	2024-06-14	2025-06-13
Pulse Limiter	CYBERTEK	EM5010A	/	2024-09-27	2025-09-26
EMI test software	EZ -EMC	EZ	V1.1.42	2023-12-12	2024-12-11

Occupied Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RF Test Software	TACHOY	RTS-01	V1.0.0	2023-12-12	2024-12-11
Power divider	MIDEWEST	PWD-2533	SMA-79	2023-05-11	2026-05-10
RF Sensor Unit	Tachoy Information Technology(shenzhen) Co.,Ltd.	TR1029-2	000001	2023-12-12	2024-12-11
Wideband radio communication tester	R&S	CMW500	113410	2024-06-12	2025-06-11
Signal Generator	Keysight	N5181A	MY48180415	2023-12-11	2024-12-10
Signal Generator	Keysight	N5182A	MY50143455	2023-12-12	2024-12-11
Spectrum Analyzer	Keysight	N9020A	MY53420323	2023-12-12	2024-12-11

Emissions in frequency bands (above 1GHz) **Field strength of fundamental** **Band edge emissions (Radiated)** **Emissions in frequency bands (below 1GHz)**					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI Test software	Farad	EZ -EMC	V1.1.42	2023-12-12	2024-12-11
Positioning Controller	/	MF-7802	/	2023-12-12	2024-12-11
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2022-04-05	2025-04-04
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2023-04-05	2025-04-04
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2024-06-14	2026-06-13
Cable(LF)#2	Schwarzbeck	/	/	2024-02-19	2025-02-18
Cable(LF)#1	Schwarzbeck	/	/	2024-02-19	2025-02-18
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2024-03-20	2025-03-19
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	/	2024-03-20	2025-03-19
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2024-06-12	2025-06-11
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2024-06-12	2025-06-11
Wideband radio communication tester	R&S	CMW500	113410	2024-06-12	2025-06-11
Spectrum Analyzer	R&S	FSP30	1321.3008K40-101729-jR	2024-06-12	2025-06-11
Test Receiver	R&S	ESCI 3	1166.5950K03-101431-Jq	2024-06-13	2025-06-12
Horn Antenna	Sunol Sciences	DRH-118	A091114	2023-05-13	2025-05-12
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2024-09-28	2026-09-27

2.6 Statement Of The Measurement Uncertainty

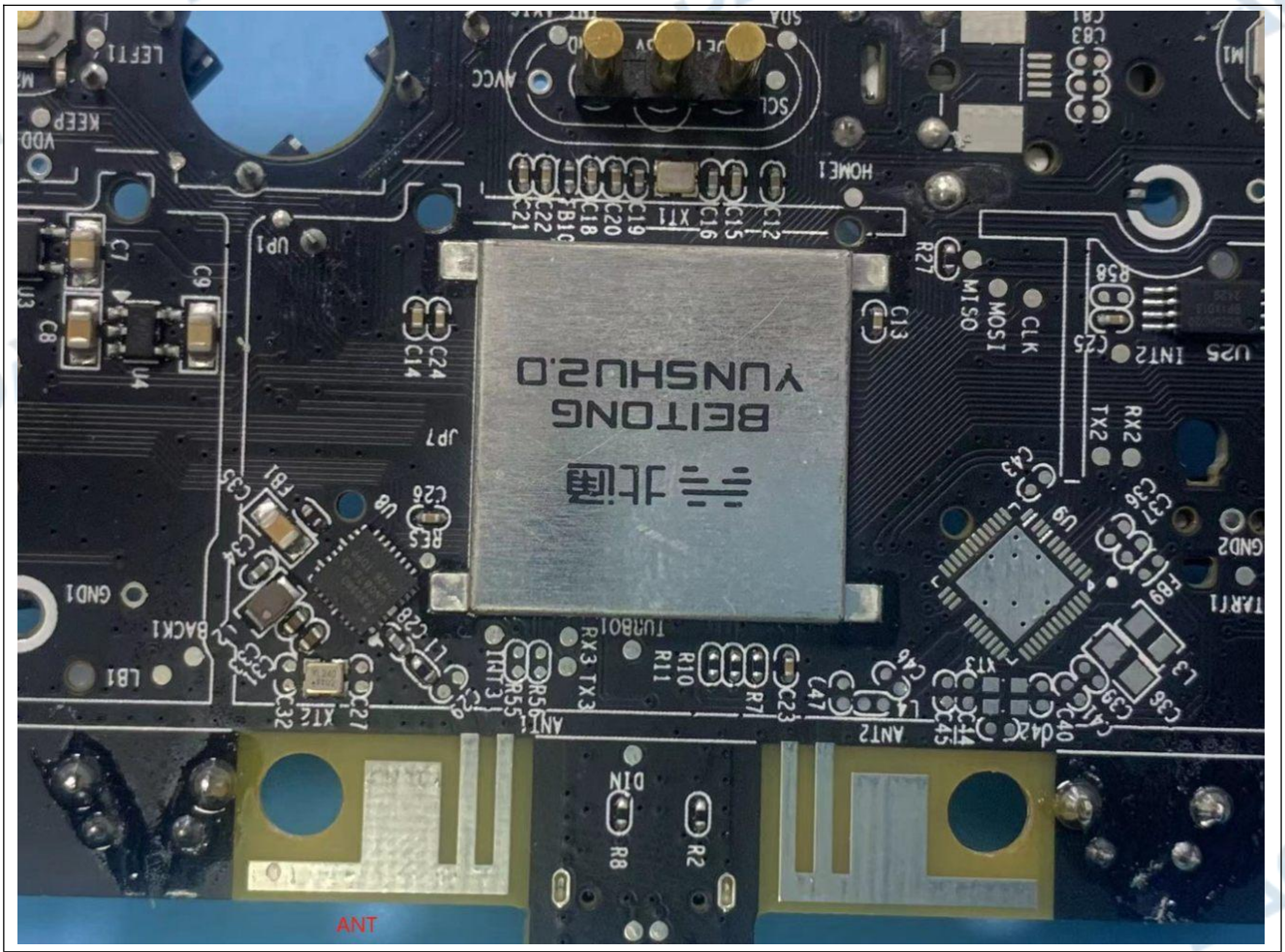
Test Item	Measurement Uncertainty
Conducted Disturbance (0.15~30MHz)	±3.41dB
Occupied Bandwidth	±3.63%
Radiated Emission (Above 1GHz)	±5.46dB
Radiated Emission (Below 1GHz)	±5.79dB
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 Evaluation Results (Evaluation)

3.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.1 Conclusion:



4 Radio Spectrum Matter Test Results (RF)

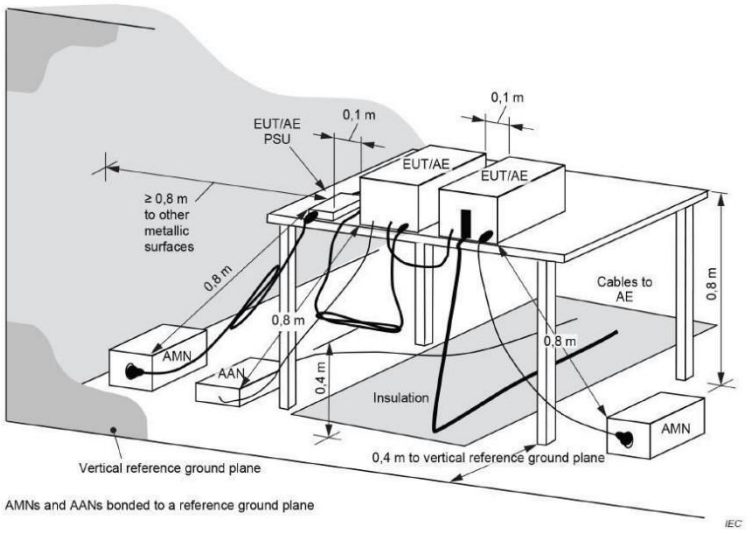
4.1 Conducted Emission at AC power line

Test Requirement:	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 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.
Test Method:	ANSI C63.10-2013 section 6.2
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.1.1 E.U.T. Operation:

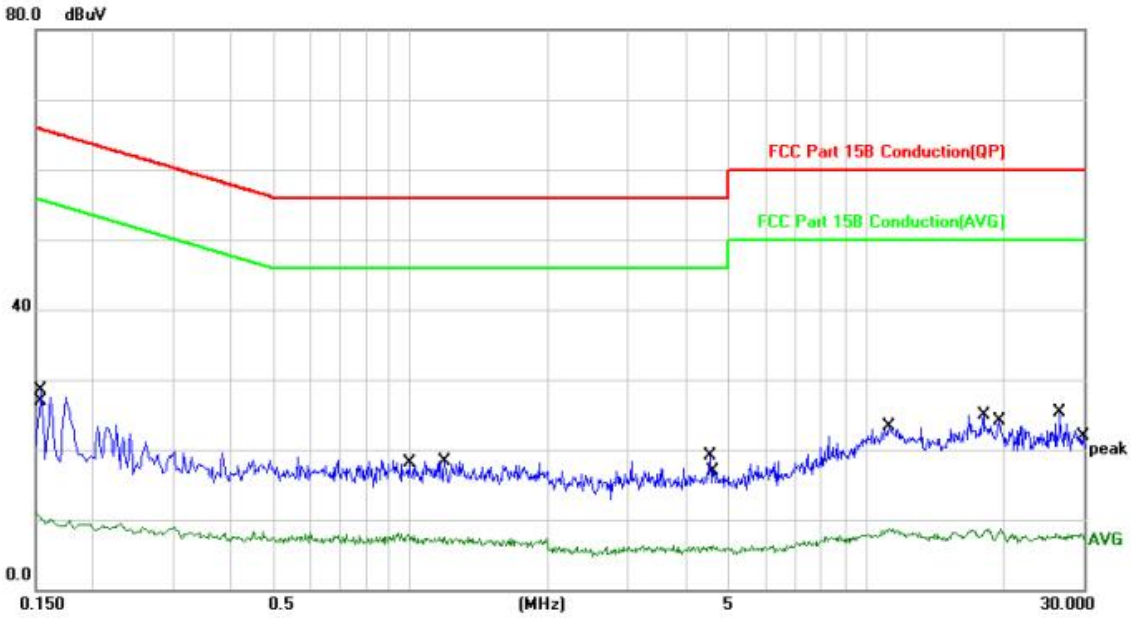
Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa
Pretest mode:	TM1, TM2,TM3				
Final test mode:	TM1				

4.1.2 Test Setup Diagram:



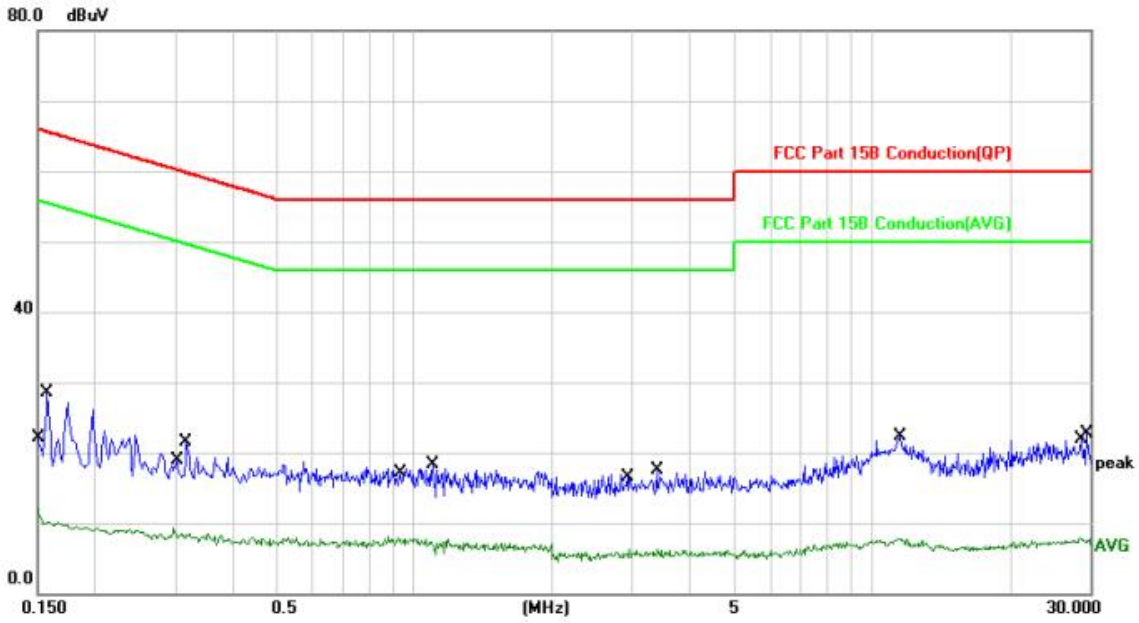
4.1.3 Test Data:

TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	0.90	10.13	11.03	55.99	-44.96	AVG	
2		0.1539	18.34	10.13	28.47	65.78	-37.31	QP	
3		0.9860	-2.17	10.11	7.94	46.00	-38.06	AVG	
4		1.1900	8.29	10.10	18.39	56.00	-37.61	QP	
5		4.5460	8.86	10.17	19.03	56.00	-36.97	QP	
6		4.6140	-3.90	10.17	6.27	46.00	-39.73	AVG	
7		11.2380	12.86	10.35	23.21	60.00	-36.79	QP	
8		11.2380	-1.69	10.35	8.66	50.00	-41.34	AVG	
9		18.0459	14.41	10.55	24.96	60.00	-35.04	QP	
10		19.7860	-1.79	10.57	8.78	50.00	-41.22	AVG	
11	*	26.6660	14.45	10.85	25.30	60.00	-34.70	QP	
12		29.4060	-3.10	11.05	7.95	50.00	-42.05	AVG	

TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	1.87	10.13	12.00	55.99	-43.99	AVG	
2	*	0.1580	18.41	10.13	28.54	65.56	-37.02	QP	
3		0.2980	-0.89	10.10	9.21	50.30	-41.09	AVG	
4		0.3180	11.47	10.10	21.57	59.76	-38.19	QP	
5		0.9220	-2.23	10.10	7.87	46.00	-38.13	AVG	
6		1.0940	8.30	10.10	18.40	56.00	-37.60	QP	
7		2.9580	-3.81	10.06	6.25	46.00	-39.75	AVG	
8		3.3940	7.42	10.10	17.52	56.00	-38.48	QP	
9		11.4180	-2.61	10.36	7.75	50.00	-42.25	AVG	
10		11.5580	11.94	10.37	22.31	60.00	-37.69	QP	
11		28.4780	-3.09	10.99	7.90	50.00	-42.10	AVG	
12		29.4140	11.71	11.05	22.76	60.00	-37.24	QP	

4.2 Occupied Bandwidth

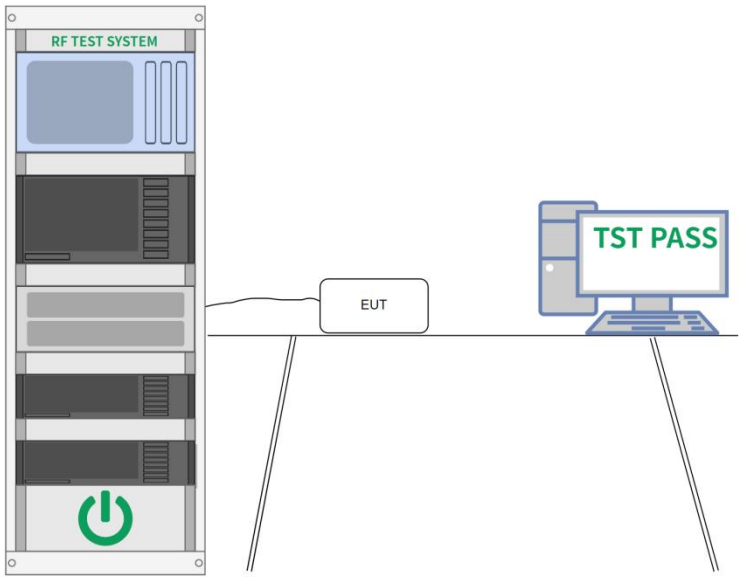
Test Requirement:	47 CFR 15.215(c)
Test Limit:	Refer to 47 CFR 15.215(c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.
Test Method:	ANSI C63.10-2013, section 6.9.2
Procedure:	a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "−xx dB down" requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the "−xx dB down amplitude" using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place 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 "-xx dB down amplitude" determined in step h). If a marker is below this "−xx dB down amplitude" value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the "-xx dB down amplitude" determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

4.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa
Pretest mode:	TM1, TM2,TM3				

Final test mode:	TM1, TM2,TM3

4.2.2 Test Setup Diagram:



4.2.3 Test Data:

Condition	Antenna	Modulation	Frequency (MHz)	-20dB BW(MHz)	if larger than CFS
NVNT	ANT1	1-DH5	2404.00	1.219	Yes
NVNT	ANT1	1-DH5	2440.00	1.218	Yes
NVNT	ANT1	1-DH5	2478.00	1.224	Yes

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2404_00

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2440_00

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2478_00

4.3 Field strength of fundamental

Test Requirement:	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:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

The field strength of emissions in this band shall not exceed 2500 millivolts/meter.

Test Method:	ANSI C63.10-2013 section 6.6
Procedure:	ANSI C63.10-2013 section 6.6

4.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa
Pretest mode:	TM1, TM2,TM3				
Final test mode:	TM1, TM2,TM3				

4.3.2 Test Data:

Frequency	Emission Level	Limits	Margin	Detector	Polarization
(MHz)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(PK/AV)	(H/V)
2404	98.35	114.00	-15.65	PK	H
2404	91.24	94.00	-2.76	AV	H
2404	97.24	114.00	-16.76	PK	V
2404	90.48	94.00	-3.52	AV	V
Frequency	Emission Level	Limits	Margin	Detector	Polarization
(MHz)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(PK/AV)	(H/V)
2440	98.65	114.00	-15.35	PK	H
2440	92.84	94.00	-1.16	AV	H
2440	96.68	114.00	-17.32	PK	V
2440	93.12	94.00	-0.88	AV	V
Frequency	Emission Level	Limits	Margin	Detector	Polarization
(MHz)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(PK/AV)	(H/V)
2478	97.58	114.00	-16.42	PK	H
2478	92.10	94.00	-1.9	AV	H
2478	96.24	114.00	-17.76	PK	V
2478	91.64	94.00	-2.36	AV	V

4.4 Band edge emissions (Radiated)

Test Requirement:	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.
Test Limit:	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

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

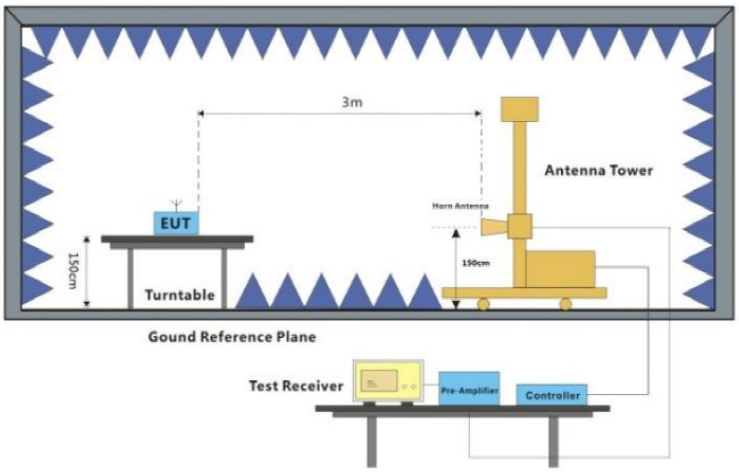
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this 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.

Test Method:	ANSI C63.10-2013 section 6.6.4
Procedure:	ANSI C63.10-2013 section 6.6.4

4.4.1 E.U.T. Operation:

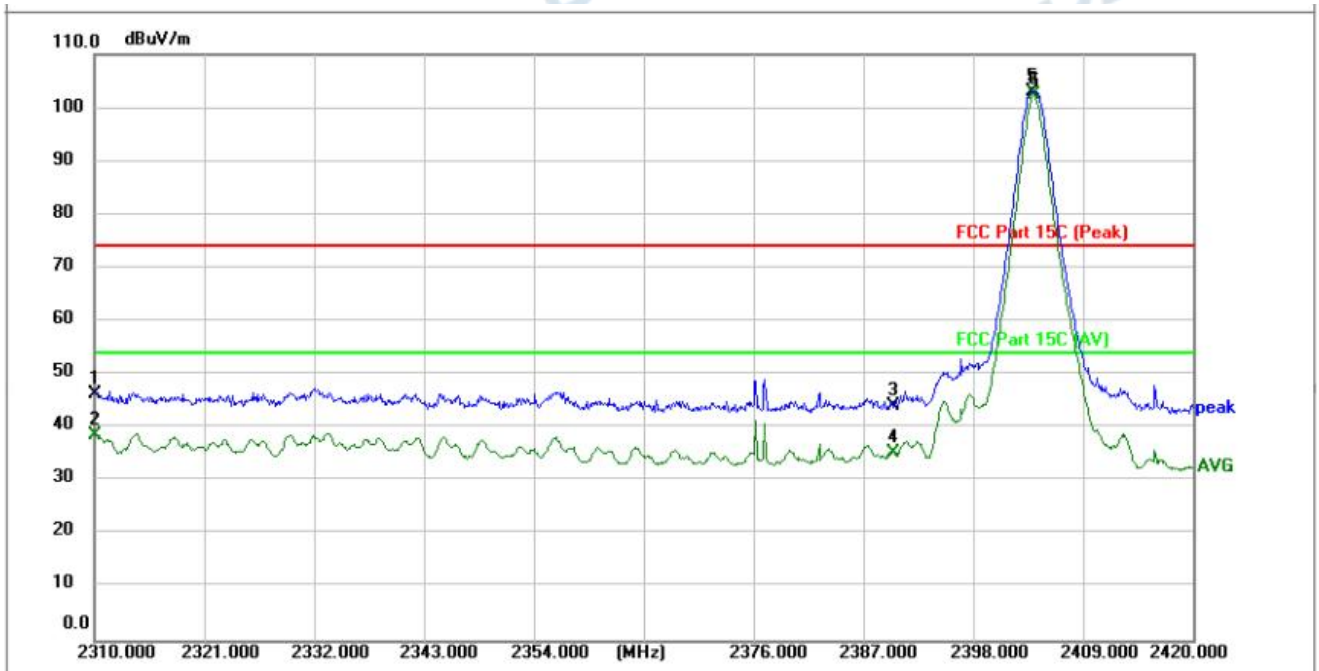
Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa
Pretest mode:	TM1, TM2,TM3				
Final test mode:	TM1				

4.4.2 Test Setup Diagram:



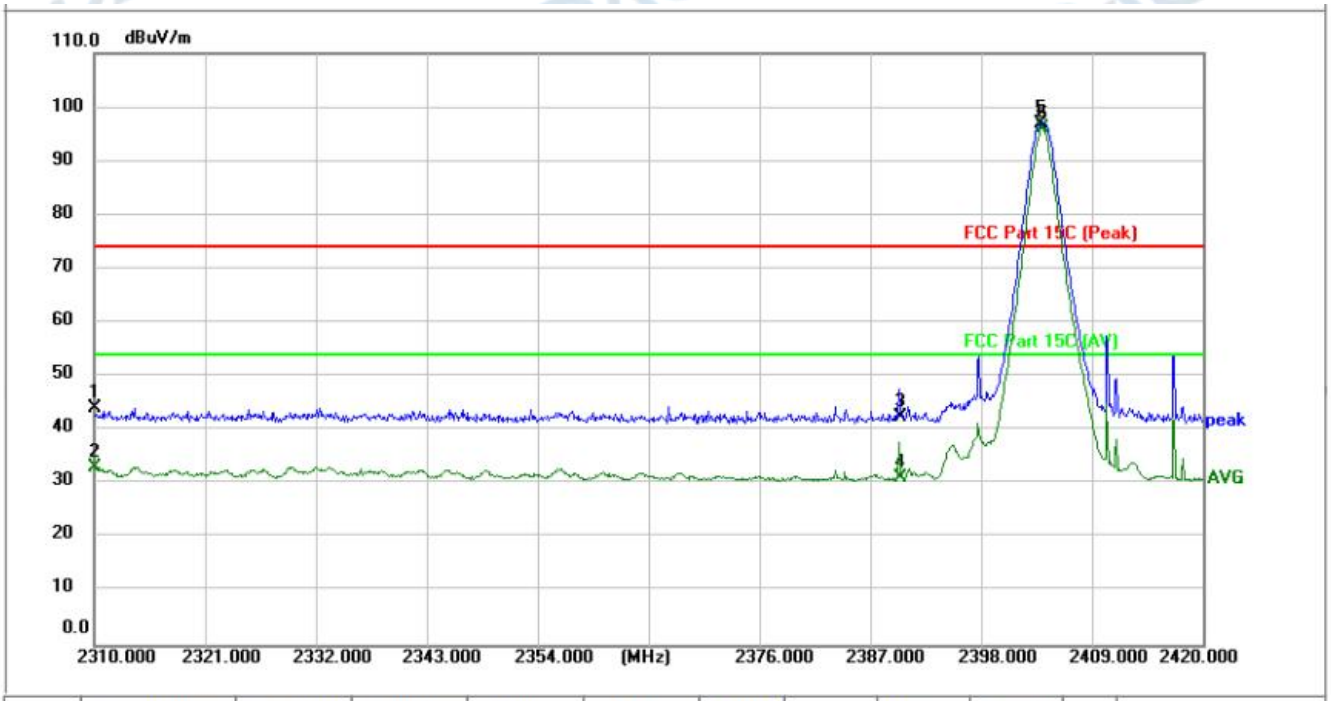
4.4.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L



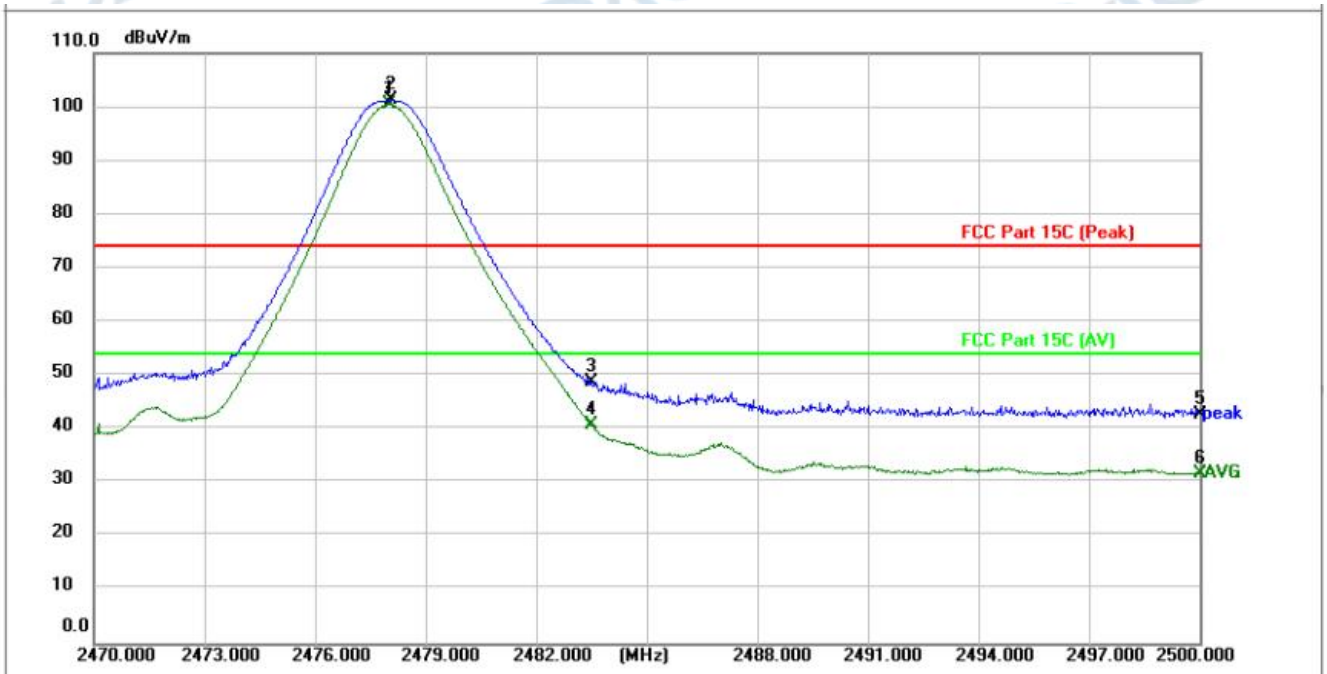
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	49.65	-3.43	46.22	74.00	-27.78	peak	150		P	
2	2310.000	41.97	-3.43	38.54	54.00	-15.46	AVG	150		P	
3	2390.000	47.43	-3.17	44.26	74.00	-29.74	peak	150		P	
4	2390.000	38.59	-3.17	35.42	54.00	-18.58	AVG	150		P	
5 X	2403.940	106.14	-3.12	103.02	74.00	29.02	peak	150		F	
6 *	2404.050	105.45	-3.12	102.33	54.00	48.33	AVG	150		F	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L



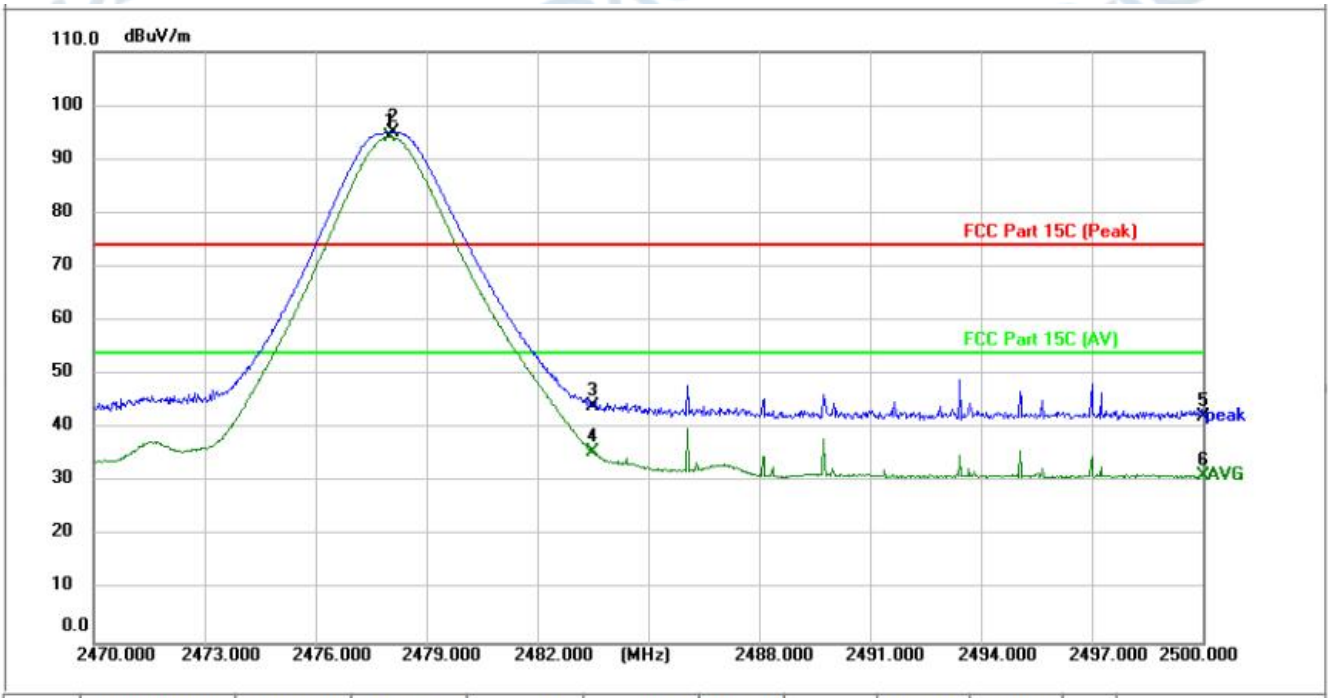
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2310.000	47.63	-3.43	44.20	74.00	-29.80	peak	150		P	
2	2310.000	36.54	-3.43	33.11	54.00	-20.89	AVG	150		P	
3	2390.000	45.70	-3.17	42.53	74.00	-31.47	peak	150		P	
4	2390.000	34.49	-3.17	31.32	54.00	-22.68	AVG	150		P	
5 X	2403.940	100.06	-3.12	96.94	74.00	22.94	peak	150		F	
6 *	2404.050	99.36	-3.12	96.24	54.00	42.24	AVG	150		F	

TM3 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	2478.010	103.32	-2.88	100.44	54.00	46.44	AVG	150		F	
2 X	2478.070	104.12	-2.88	101.24	74.00	27.24	peak	150		F	
3	2483.500	51.70	-2.86	48.84	74.00	-25.16	peak	150		P	
4	2483.500	43.60	-2.86	40.74	54.00	-13.26	AVG	150		P	
5	2500.000	45.54	-2.81	42.73	74.00	-31.27	peak	150		P	
6	2500.000	34.58	-2.81	31.77	54.00	-22.23	AVG	150		P	

TM3 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	2478.010	97.18	-2.88	94.30	54.00	40.30	AVG	150		F	
2 X	2478.100	97.82	-2.88	94.94	74.00	20.94	peak	150		F	
3	2483.500	46.99	-2.86	44.13	74.00	-29.87	peak	150		P	
4	2483.500	38.40	-2.86	35.54	54.00	-18.46	AVG	150		P	
5	2500.000	44.94	-2.81	42.13	74.00	-31.87	peak	150		P	
6	2500.000	33.92	-2.81	31.11	54.00	-22.89	AVG	150		P	

Note: The test software only records the worst height and cannot record the worst angle. Only the worst situation is displayed in the test report.

4.5 Emissions in frequency bands (below 1GHz)

<table>
<tr><td>Test Requirement:</td><td>47 CFR 15.249(a)
47 CFR 15.249(d)
47 CFR 15.249(e)</td></tr>
<tr><td>Test Limit:</td><td>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:

<table>
<tr><th>Fundamental frequency</th><th>Field strength of fundamental (millivolts/meter)</th><th>Field strength of harmonics (microvolts/meter)</th></tr>
<tr><td>902-928 MHz</td><td>50</td><td>500</td></tr>
<tr><td>2400-2483.5 MHz</td><td>50</td><td>500</td></tr>
<tr><td>5725-5875 MHz</td><td>50</td><td>500</td></tr>
<tr><td>24.0-24.25 GHz</td><td>250</td><td>2500</td></tr>
</table>

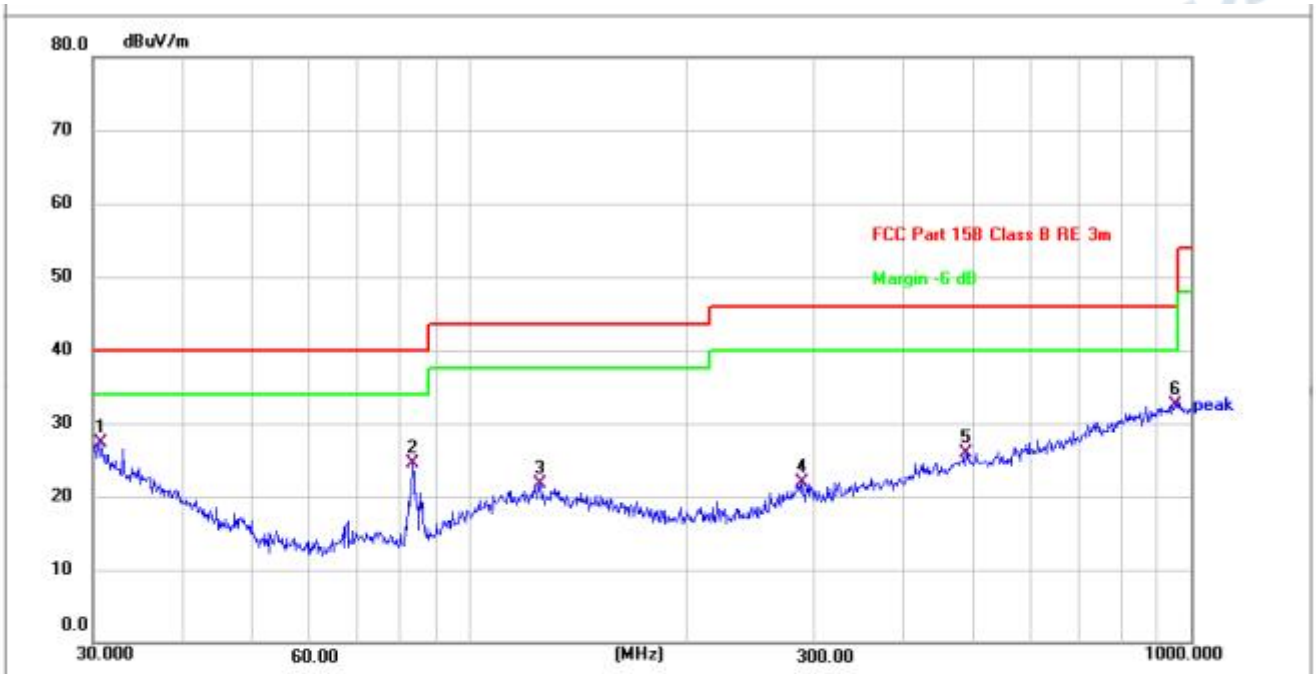
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** 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.
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section 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 point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2013 section 6.5</td></tr>
<tr><td>Procedure:</td><td>ANSI C63.10-2013 section 6.5</td></tr>
</table>

4.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa
Pretest mode:	TM1, TM2,TM3				
Final test mode:	TM1				

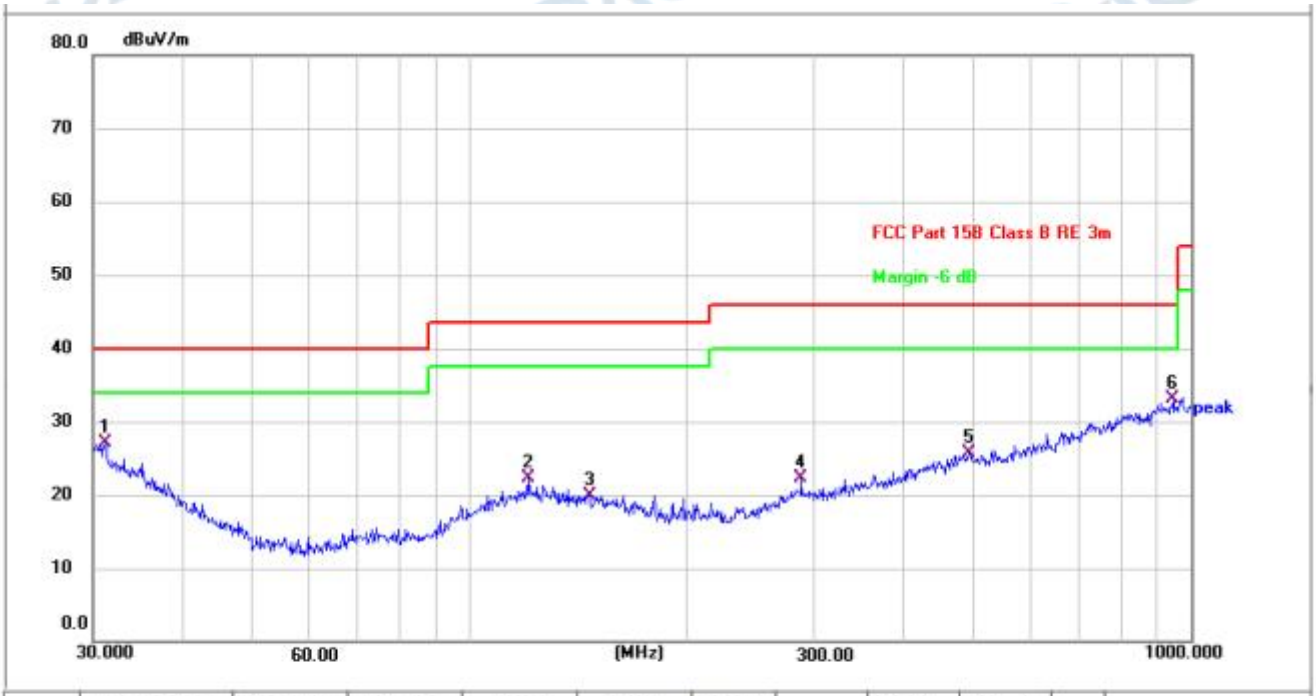
4.5.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	30.7455	26.91	0.33	27.24	40.00	-12.76	QP	100		P	
2	83.2298	36.13	-11.65	24.48	40.00	-15.52	QP	100		P	
3	125.0066	27.16	-5.39	21.77	43.50	-21.73	QP	100		P	
4	289.0021	27.60	-5.79	21.81	46.00	-24.19	QP	100		P	
5	487.3151	27.18	-1.21	25.97	46.00	-20.03	QP	100		P	
6	952.0937	26.75	5.71	32.46	46.00	-13.54	QP	100		P	

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	31.1798	27.22	-0.14	27.08	40.00	-12.92	QP	100		P	
2	120.2766	27.58	-5.34	22.24	43.50	-21.26	QP	100		P	
3	146.3735	26.15	-6.25	19.90	43.50	-23.60	QP	100		P	
4	287.9904	27.98	-5.61	22.37	46.00	-23.63	QP	100		P	
5	492.4685	26.68	-1.05	25.63	46.00	-20.37	QP	100		P	
6	945.4399	27.33	5.69	33.02	46.00	-12.98	QP	100		P	

Note: The test software only records the worst height and cannot record the worst angle. Only the worst situation is displayed in the test report.

4.6 Emissions in frequency bands (above 1GHz)

Test Requirement:	47 CFR 15.249(a) 47 CFR 15.249(d) 47 CFR 15.249(e)
Test Limit:	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:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

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.
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section 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 point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

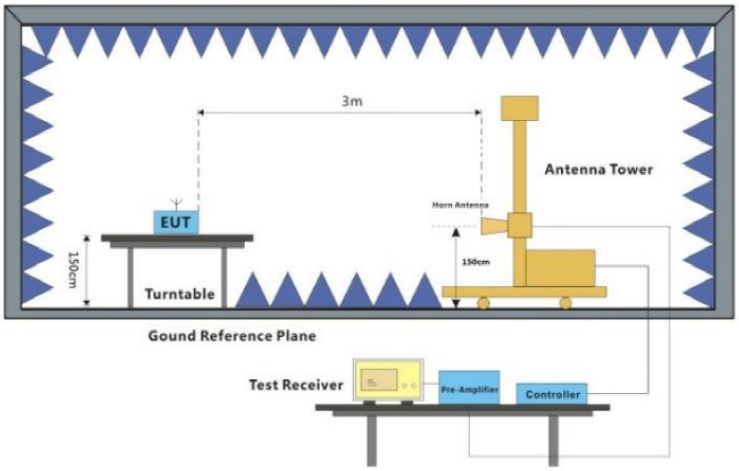
Test Method:	ANSI C63.10-2013 section 6.6
Procedure:	ANSI C63.10-2013 section 6.6

4.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.8 °C	Humidity:	53 %	Atmospheric Pressure:	102 kPa

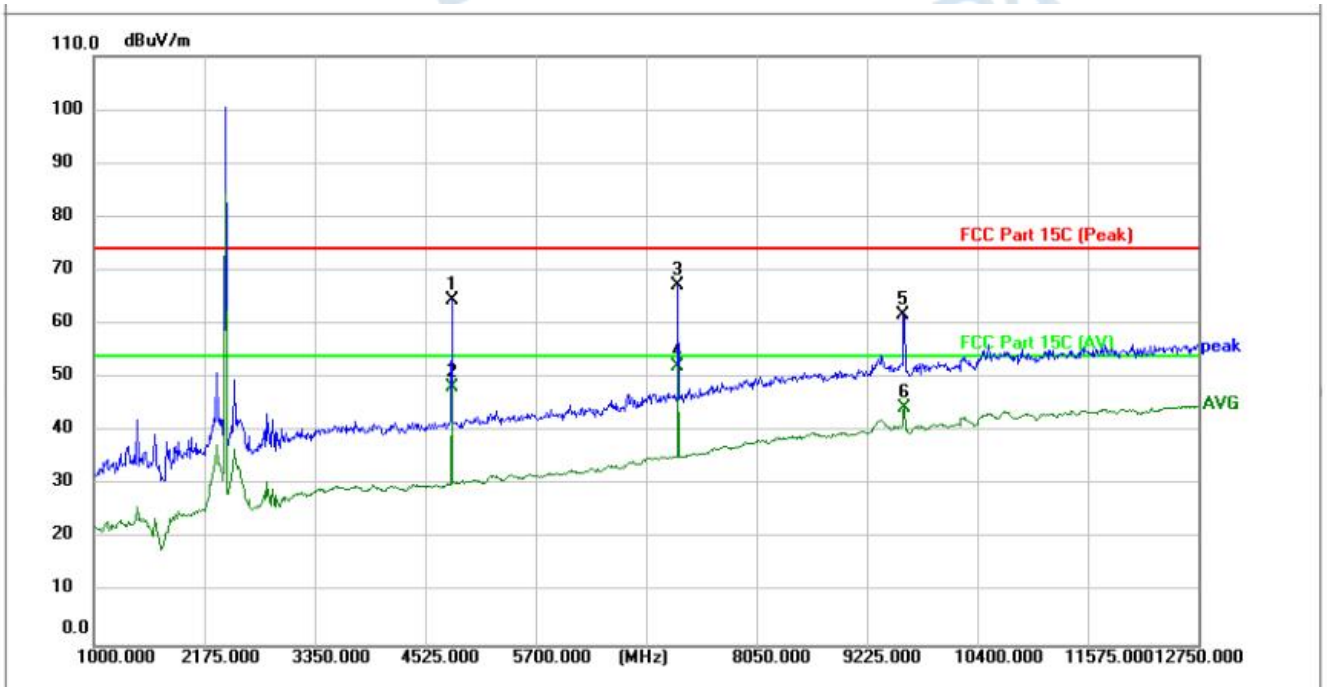
Pretest mode:	TM1, TM2,TM3
Final test mode:	TM1

4.6.2 Test Setup Diagram:



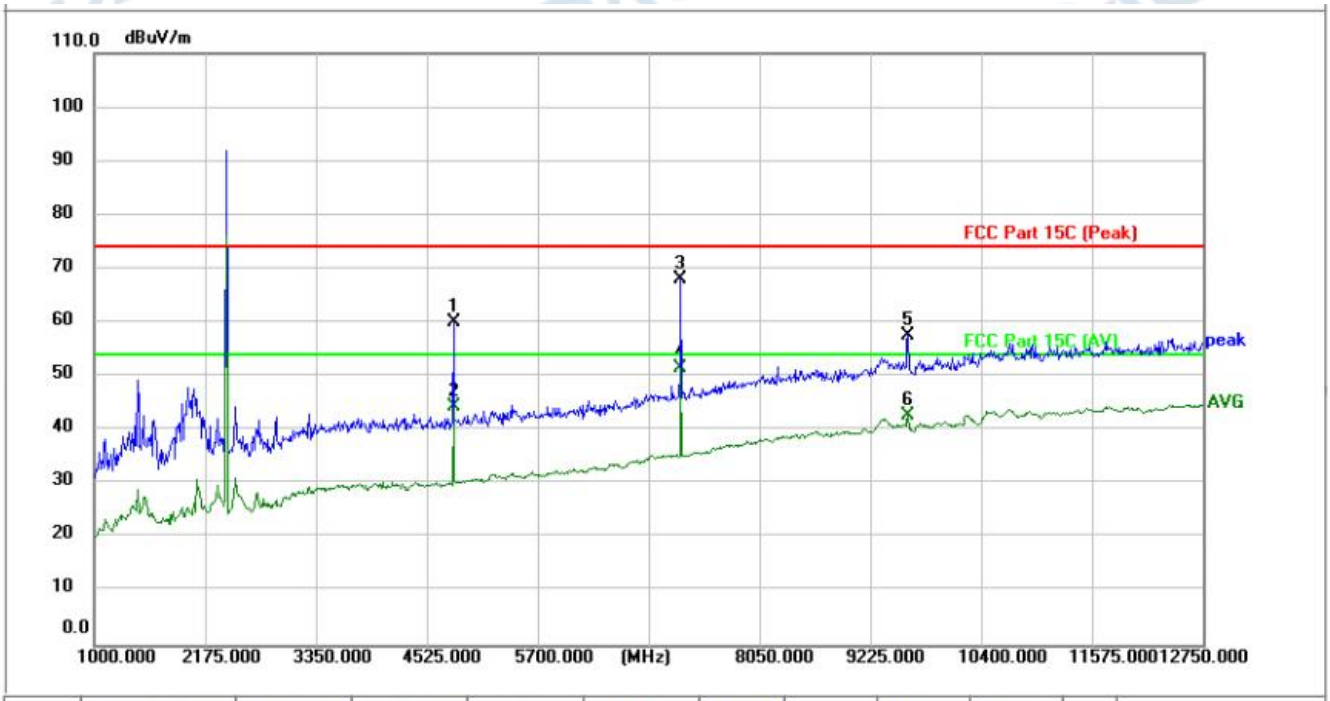
4.6.3 Test Data:

TM1 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: L



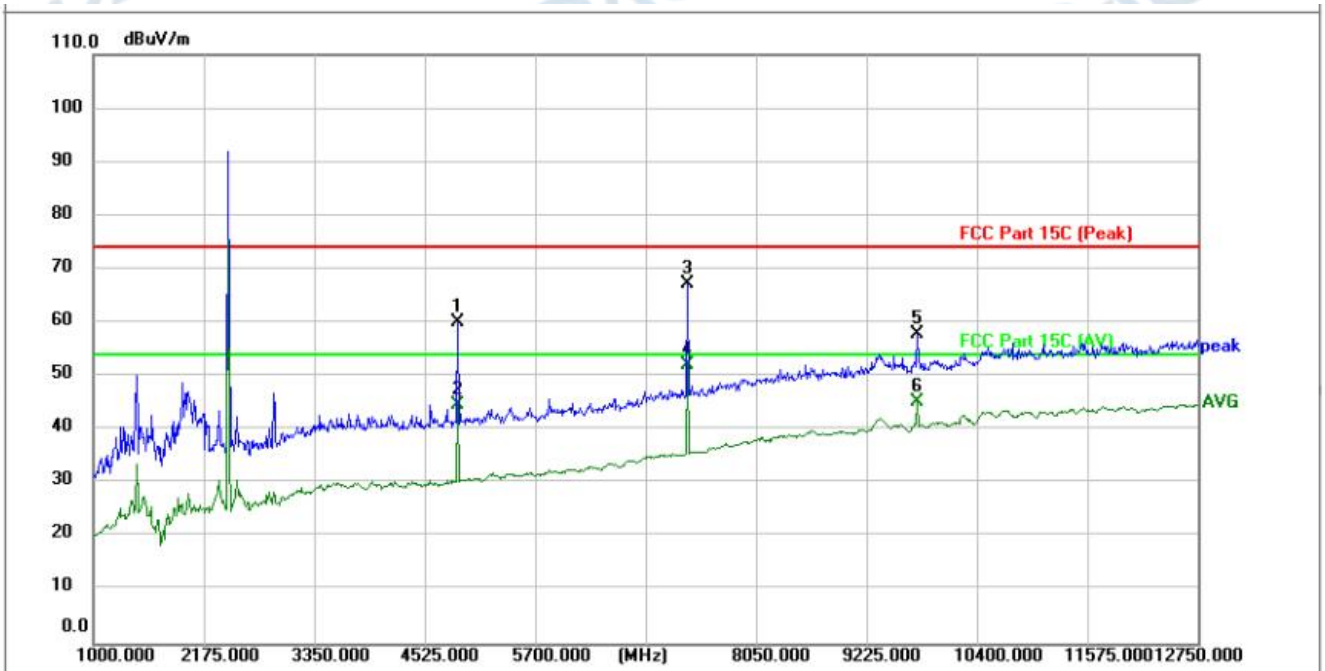
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4807.000	60.74	3.75	64.49	74.00	-9.51	peak	150		P	
2	4807.000	44.64	3.75	48.39	54.00	-5.61	AVG	150		P	
3	7215.750	56.60	10.69	67.29	74.00	-6.71	peak	150		P	
4 *	7215.750	41.54	10.69	52.23	54.00	-1.77	AVG	150		P	
5	9612.750	45.93	15.74	61.67	74.00	-12.33	peak	150		P	
6	9624.500	28.78	15.74	44.52	54.00	-9.48	AVG	150		P	

TM1 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: L



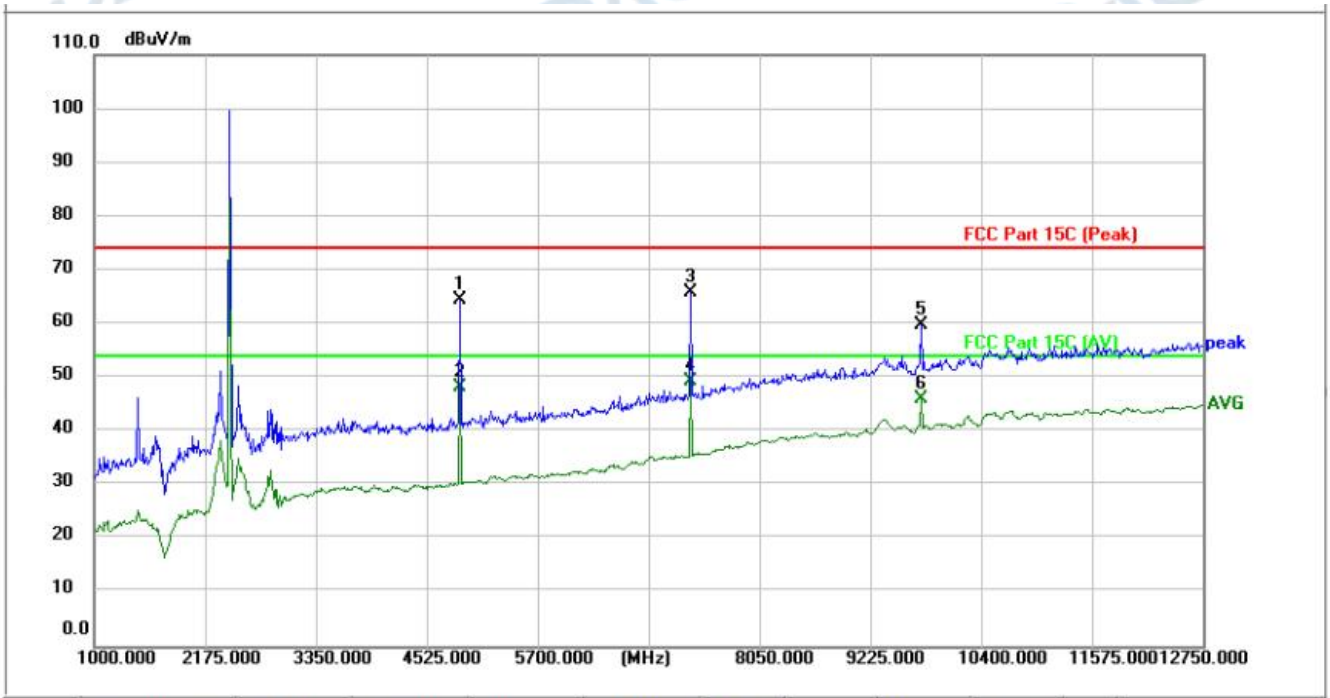
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4807.000	56.22	3.75	59.97	74.00	-14.03	peak	150		P	
2	4807.000	40.65	3.75	44.40	54.00	-9.60	AVG	150		P	
3	7215.750	57.28	10.69	67.97	74.00	-6.03	peak	150		P	
4 *	7215.750	40.97	10.69	51.66	54.00	-2.34	AVG	150		P	
5	9624.500	41.87	15.74	57.61	74.00	-16.39	peak	150		P	
6	9624.500	27.13	15.74	42.87	54.00	-11.13	AVG	150		P	

TM2 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: M



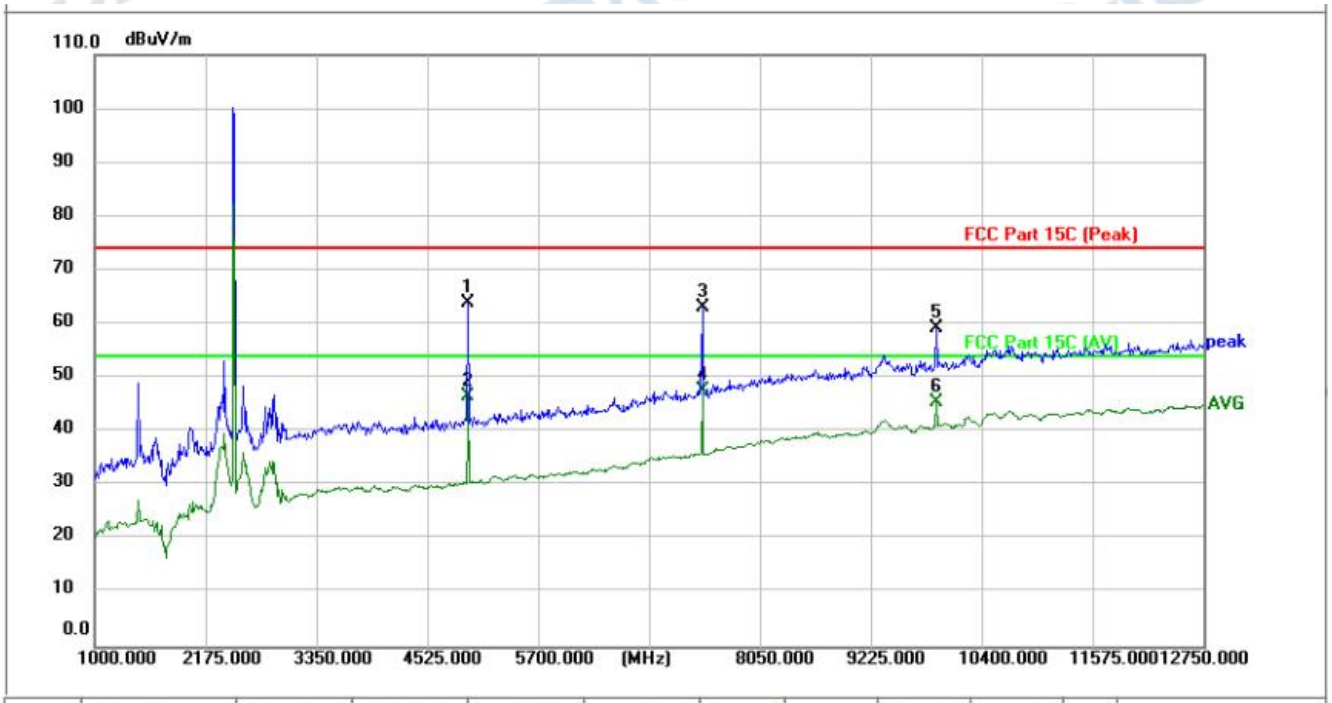
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4877.500	56.19	4.01	60.20	74.00	-13.80	peak	150		P	
2	4877.500	40.62	4.01	44.63	54.00	-9.37	AVG	150		P	
3	7321.500	56.33	10.91	67.24	74.00	-6.76	peak	150		P	
4 *	7321.500	41.08	10.91	51.99	54.00	-2.01	AVG	150		P	
5	9765.500	42.16	15.84	58.00	74.00	-16.00	peak	150		P	
6	9765.500	29.30	15.84	45.14	54.00	-8.86	AVG	150		P	

TM2 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: M



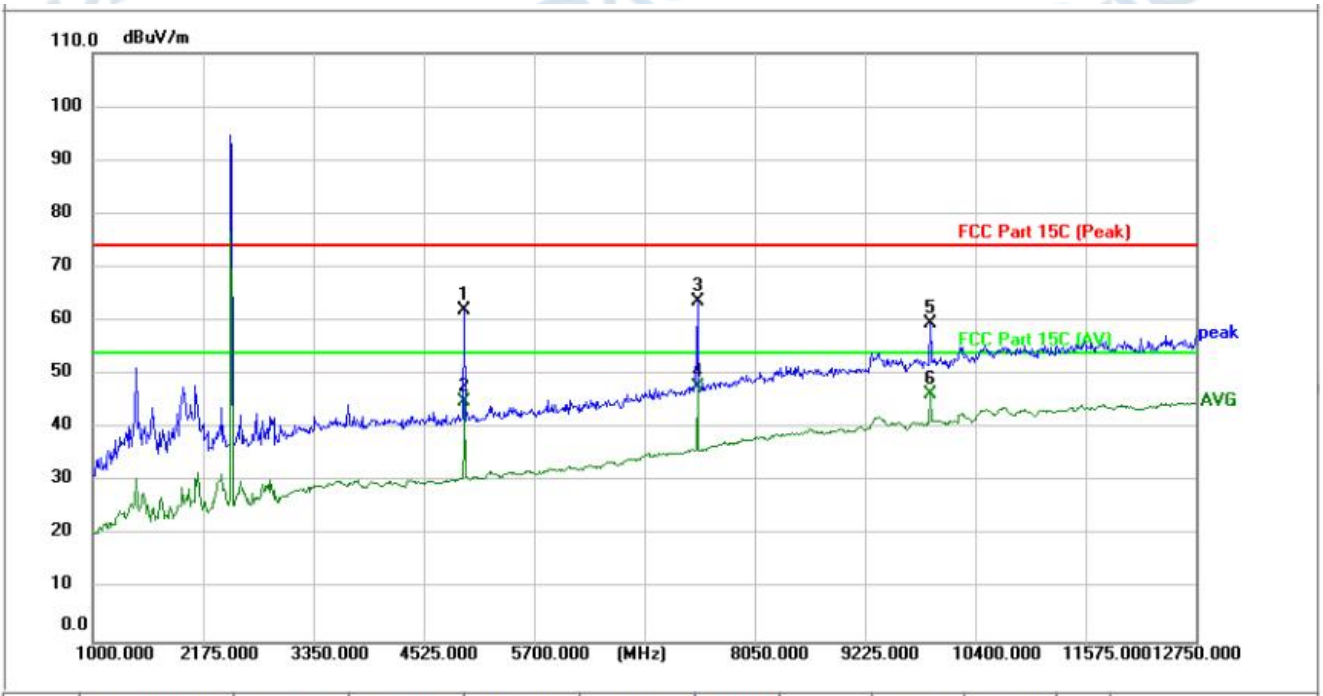
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4877.500	60.54	4.01	64.55	74.00	-9.45	peak	150		P	
2	4877.500	44.32	4.01	48.33	54.00	-5.67	AVG	150		P	
3	7321.500	54.96	10.91	65.87	74.00	-8.13	peak	150		P	
4 *	7321.500	38.45	10.91	49.36	54.00	-4.64	AVG	150		P	
5	9765.500	44.08	15.84	59.92	74.00	-14.08	peak	150		P	
6	9765.500	30.28	15.84	46.12	54.00	-7.88	AVG	150		P	

TM2 / Polarization: Horizontal / Band: 2.4G / BW: 1 / CH: H



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4959.750	59.75	4.30	64.05	74.00	-9.95	peak	150		P	
2	4959.750	42.29	4.30	46.59	54.00	-7.41	AVG	150		P	
3	7439.000	51.90	11.16	63.06	74.00	-10.94	peak	150		P	
4 *	7439.000	36.63	11.16	47.79	54.00	-6.21	AVG	150		P	
5	9918.250	43.33	15.95	59.28	74.00	-14.72	peak	150		P	
6	9918.250	29.62	15.95	45.57	54.00	-8.43	AVG	150		P	

TM2 / Polarization: Vertical / Band: 2.4G / BW: 1 / CH: H

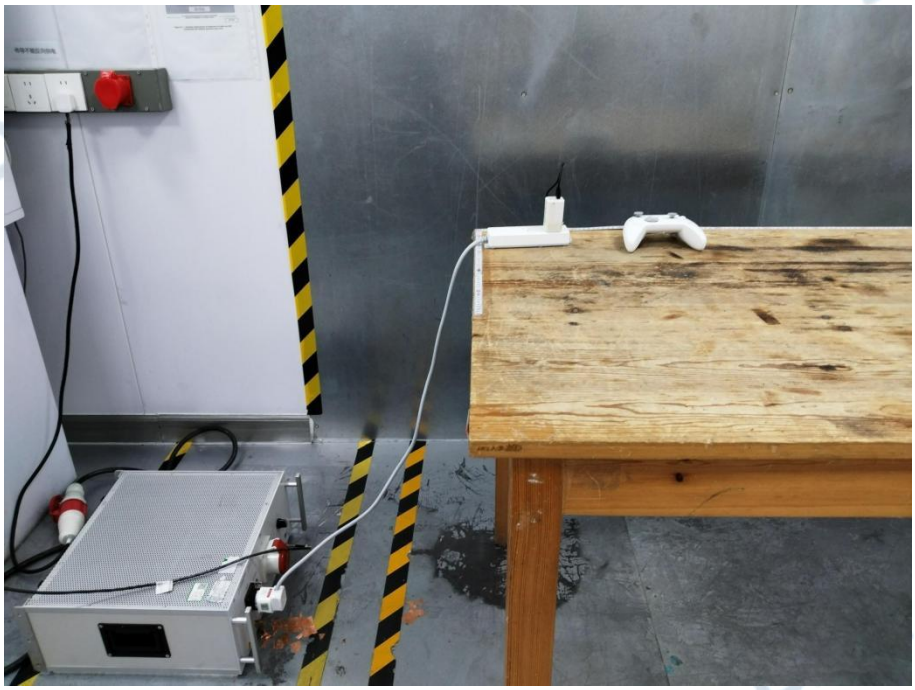


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4959.750	57.58	4.30	61.88	74.00	-12.12	peak	150		P	
2	4959.750	40.66	4.30	44.96	54.00	-9.04	AVG	150		P	
3	7439.000	52.55	11.16	63.71	74.00	-10.29	peak	150		P	
4 *	7439.000	36.63	11.16	47.79	54.00	-6.21	AVG	150		P	
5	9918.250	43.62	15.95	59.57	74.00	-14.43	peak	150		P	
6	9918.250	30.45	15.95	46.40	54.00	-7.60	AVG	150		P	

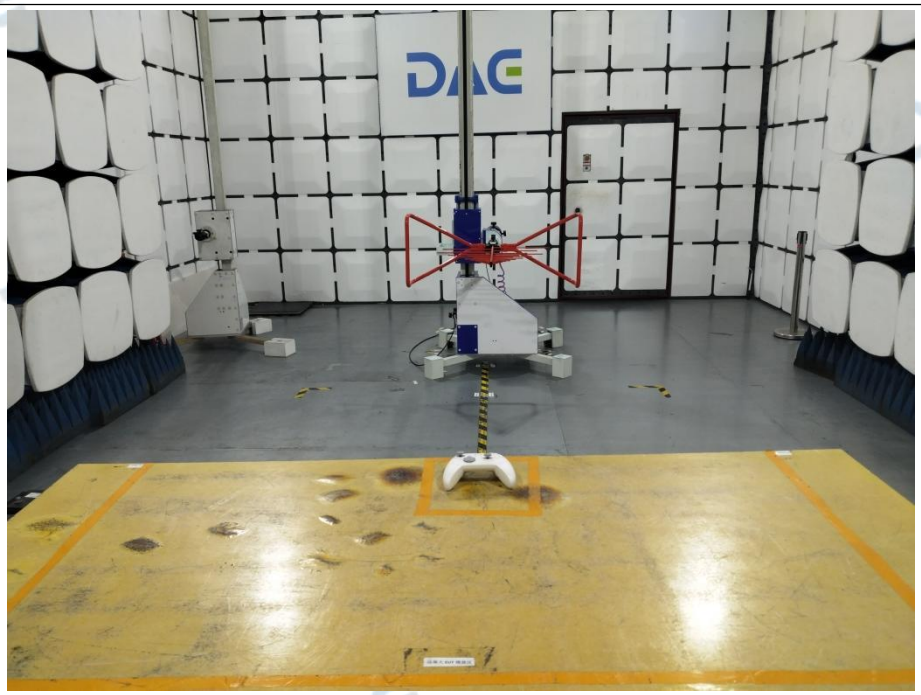
Note: The test software only records the worst height and cannot record the worst angle. Only the worst situation is displayed in the test report.

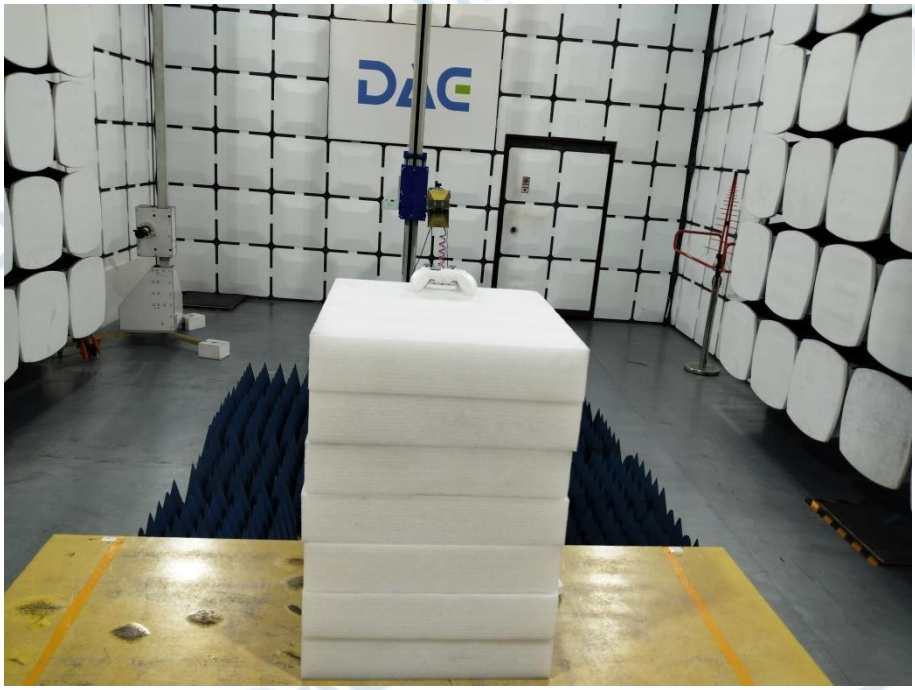
5 TEST SETUP PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



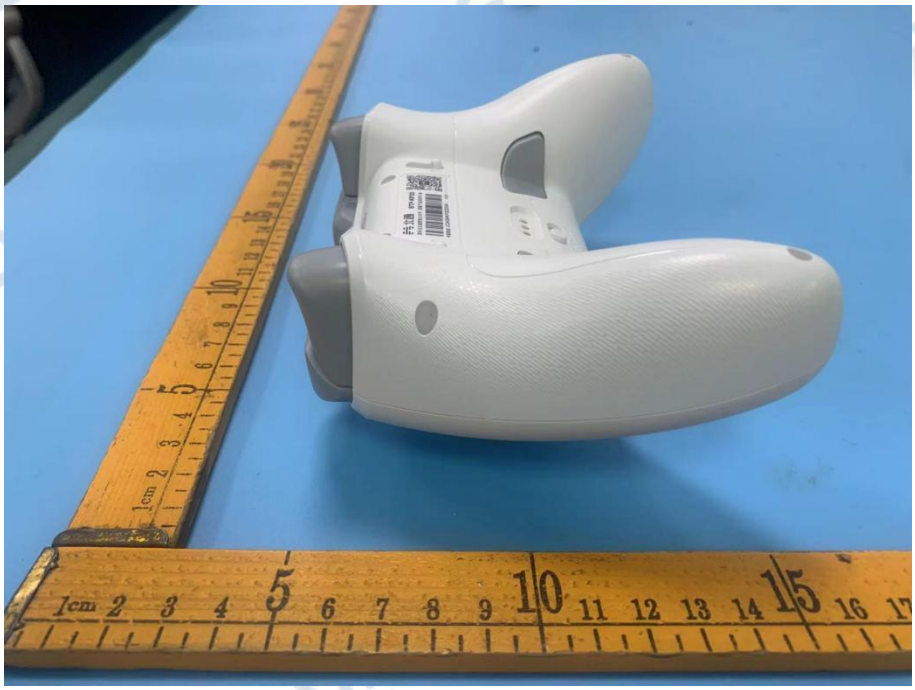
Emissions in frequency bands (above 1GHz)


6 PHOTOS OF THE EUT

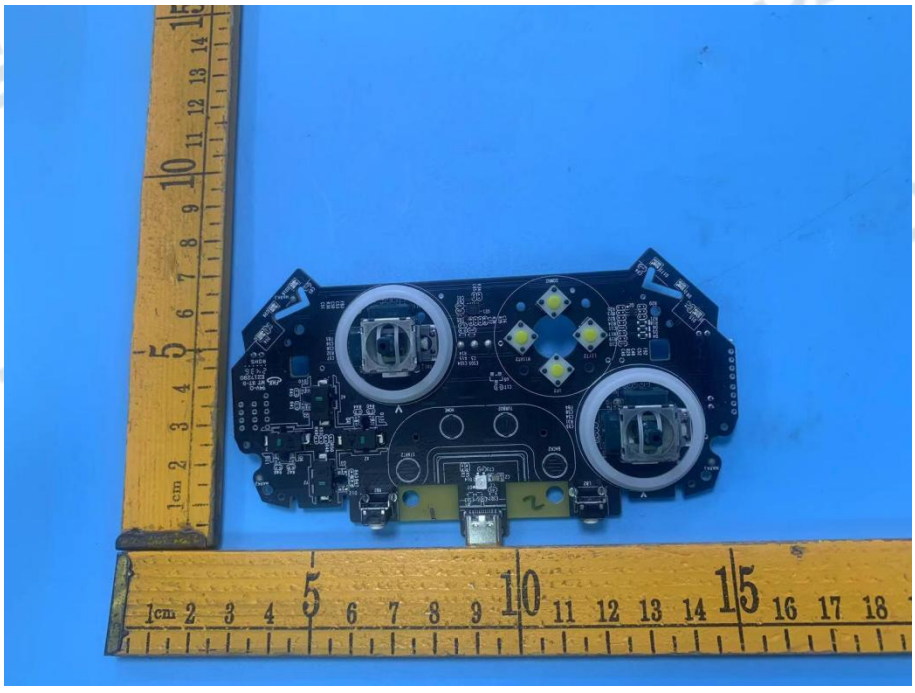
External

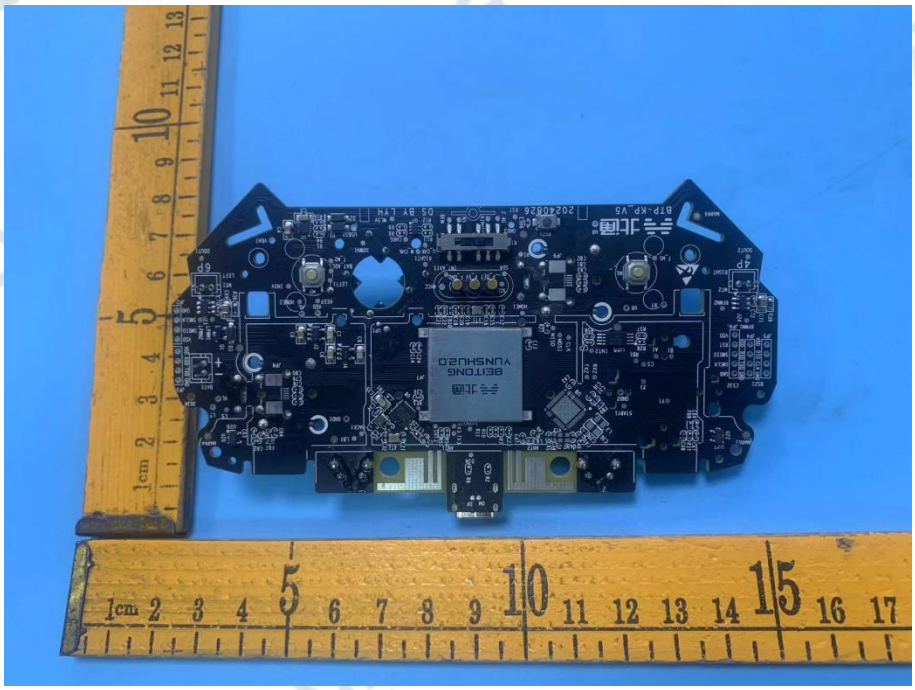


BTP-KP20

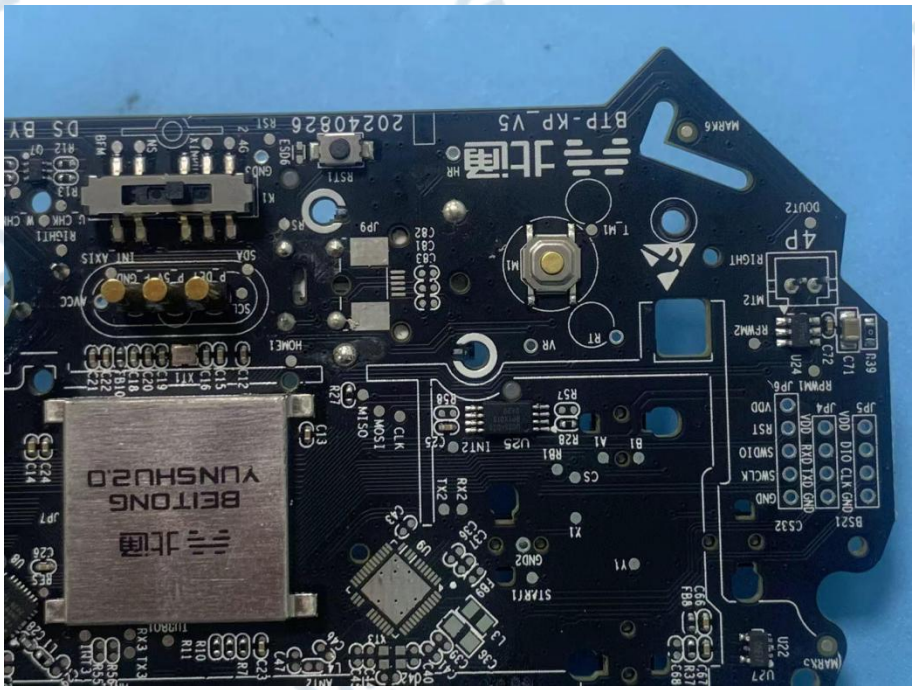


Internal




1cm 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17


BEITONG
YUNSHU2.0


BTP-KP V5
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BEITONG
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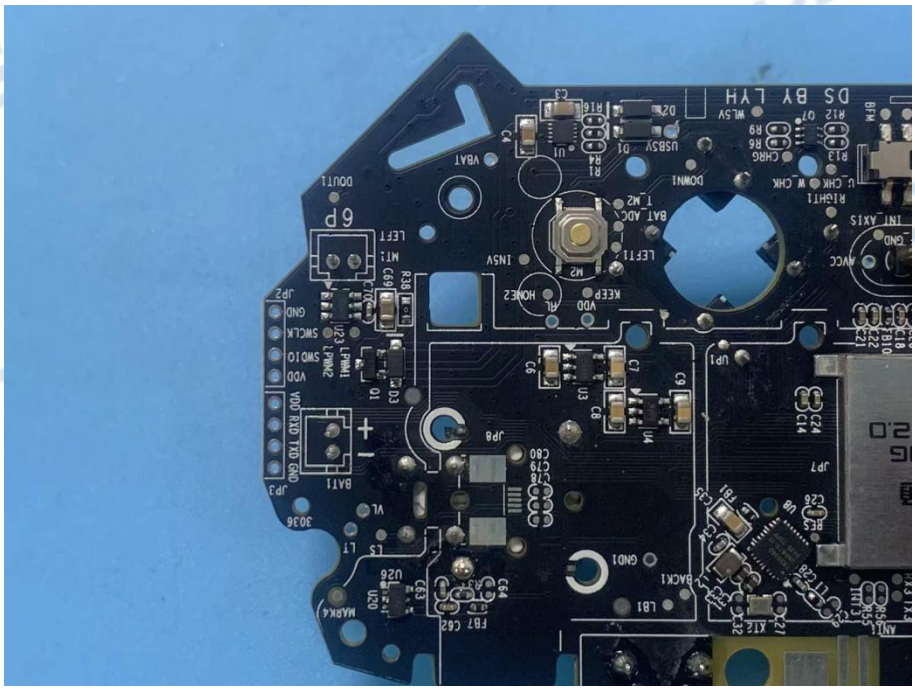
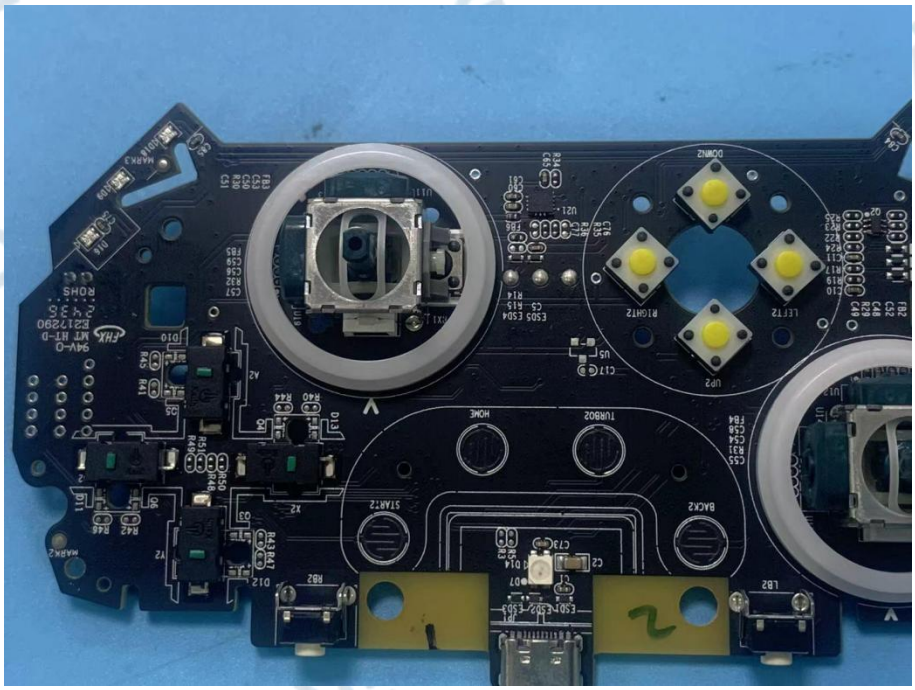

DS BY LYH



********** End of Report **********