



FCC TEST REPORT

FCC ID: 2AN4Y-PB4D

On Behalf of

Shenzhen Torras Technology Co., Ltd.

Power Bank

Model No.: PB4D

Prepared for : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi
ST, Longhua DIST, Shenzhen, China

Prepared By : Shenzhen PSI Testing Co., Ltd.
Address : 1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road,
Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Report Number : psi2503075-C01-R02
Date of Receipt : February 28, 2025
Date of Test : March 1, 2025-March 20, 2025
Date of Report : March 21, 2025
Version Number : V0

TABLE OF CONTENTS

<u>Description</u>	<u>Page</u>
1. Test Result Summary	5
2. General Information	6
2.1. DESCRIPTION OF DEVICE (EUT)	6
2.2. ACCESSORIES OF DEVICE (EUT)	7
2.3. TESTED SUPPORTING SYSTEM DETAILS	7
2.4. BLOCK DIAGRAM OF CONNECTION BETWEEN EUT AND SIMULATORS	7
2.5. DESCRIPTION OF TEST MODES	7
2.6. TEST CONDITIONS	7
2.7. TEST FACILITY	8
2.8. MEASUREMENT UNCERTAINTY	8
2.9. TEST EQUIPMENT LIST	9
3. Test Results and Measurement Data	10
3.1. CONDUCTED EMISSION	10
3.2. TEST SPECIFICATION	21
4. Photos of test setup	23
5. Photos of EUT	23

TEST REPORT DECLARATION

Applicant : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi ST,
Longhua DIST, Shenzhen, China
Manufacturer : Shenzhen Torras Technology Co., Ltd.
Address : RM1215, BLK C, Zhantao Technology BLDG, Minzhi Avenue, Minzhi ST,
Longhua DIST, Shenzhen, China
EUT Description : Power Bank
(A) Model No. : PB4D
(B) Trademark : TORRAS

Measurement Standard Used:

FCC CFR Title 47 Part 15 Subpart C

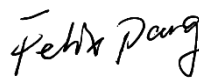
ANSI C63.10:2013

Test Result: PASS

The device described above is tested by Shenzhen PSI Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen PSI Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the FCC CFR Title 47 Part 15 Subpart C requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen PSI Testing Co., Ltd.

Tested by (name + signature).....: Felix Pang
Test Engineer



Approved by (name + signature).....: Simple Guan
Project Manager



Date of issue.....: March 21, 2025

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 21, 2025	Initial released Issue	Felix Pang

1. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious Emission	§15.209	PASS
Occupied Bandwidth	§15.215 (c)	PASS

Note:

1. *PASS: Test item meets the requirement.*
2. *Fail: Test item does not meet the requirement.*
3. *N/A: Test case does not apply to the test object.*
4. *The test result judgment is decided by the limit of test standard.*
5. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.

2. General Information

2.1. Description of Device (EUT)

EUT Name	: Power Bank
Model No.	: PB4D
DIFF.	: N/A
Power supply	: DC 5V(Adapter Input 120V 60Hz) or DC 3.87V from battery
Ratings:	USB-C Input:DC5V,3A USB-C Output:DC5V,2A/DC9V,2A Wireless Charging Output:7.5W Max USB-C+Wireless Charging Output:5W+5W MAX
Radio Technology	: Wireless power transmission systems
Operation frequency	: 115KHz -148KHz
Modulation	: ASK
Antenna Type	: Coil Antenna
Connector cable loss	: 0.5dB
Software version	: N/A
Hardware version	: N/A
Note	: Antenna information is provided by applicant. Testing lab is not responsible for the accuracy of the information.

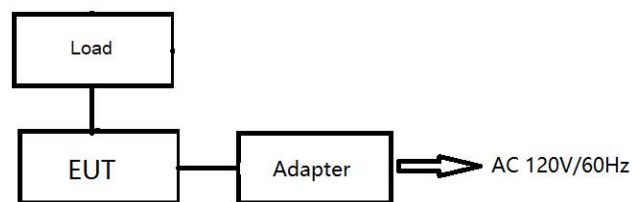
2.2. Accessories of Device (EUT)

None

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	Adapter	Baseus	CCXFK65CC	N/A	N/A
2	USB Cable	N/A	N/A	N/A	N/A
3.	Load	Yuebuzhe	YBZ	N/A	N/A

2.4. Block Diagram of connection between EUT and simulators



2.5. Description of Test Modes

Number	Modes
1	Wireless output: 7.5W
2	Wireless output: 5W
3	No Load

Note:1. All test modes has been tested, this report only reflected the worst mode.

2.6. Test Conditions

Items	Required
Temperature range:	15-35℃
Humidity range:	25-75%
Pressure range:	86-106kPa

2.7. Test Facility

Shenzhen PSI Testing Co., Ltd.

1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

September 13, 2023 File on Federal Communication Commission

Registration Number: 916281

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power Line Conducted Emissions Test	2.17dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	2.74dB(Polarize: V)
	2.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 18GHz)	4.29dB(Polarize: V)
	4.82dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (18GHz to 40GHz)	4.31 dB(Polarize: V)
	4.30 dB(Polarize: H)
Uncertainty for radio frequency	48.24KHz
Uncertainty for conducted RF Power	0.41dB
Occupied Bandwidth	968Hz

2.9. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Last Cal.	Cal. Interval
1.	9*6*6 anechoic chamber	SKET	9*6*6	N/A	/	2022.12.20	3 Year
2.	Test Receiver	Rohde&Schwarz	ESCI 7	101032/003	4.42 SP3	2024.12.18	1 Year
3.	L.I.S.N.#1	Rohde&Schwarz	ENV216	102282	/	2024.12.18	1 Year
4.	L.I.S.N.#2	RFT	NNB111	13835240	/	2024.12.18	1 Year
5.	Loop Antenna	Schwarz beck	FMZB 1519B	00128	/	2025.01.02	2 Year
6.	Bilog Antenna	Schwarz beck	VULB 9168	01448	/	2025.01.02	2 Year
7.	Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101648	3.70	2024.12.18	1 Year
8.	Horn Antenna	Schwarz beck	BBHA 9120 D	02706	/	2025.01.02	2 Year
9.	Amplifier	SKET	LAPA_01G1 8G-45dB	SK20220329 01	/	2024.12.18	1 Year
10.	Horn Antenna	Schwarz beck	BBHA 9170	00946	/	2024.12.31	2 Year
11.	Amplifier	SKET	LNPA_0118 G-45	SK20200108 01	/	2024.12.18	1 Year
12.	RF Power Probe	Rohde&Schwarz	NRP-Z11	1138.3004.02 -1111533-Fz	/	2024.12.18	1 Year
13.	RF Sensor Unit	Tachoy	TR1029-2	20220428P0 08	/	2024.12.18	1 Year
14.	Spectrum Analyzer	Agilent	N9020A	MY51281067	A.14.03	2024.12.18	1 Year
15.	Temp. & Humid Chamber	Auchno	9606	/	/	2024.12.18	1 Year
16.	Regulated DC Power Supply	Xinouhua	ADC120V10 A	20221125163 8		2024.12.18	1 Year

For Test Software Information

Item	Software Name	Manufacturer	Version
RE	EZ EMC	Farad	PSI-3A1
CE	EZ EMC	Farad	PSI-3A1
RF	RTS	TACHOY	V1.0.0

3. Test Results and Measurement Data

3.1. Conducted Emission

3.1.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	Reference Plane 40cm 80cm E.U.T Adapter LISN Filter AC power EMI Receiver Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Transmitting Mode														
Test Procedure:	1. The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.														
Test Result:	PASS														

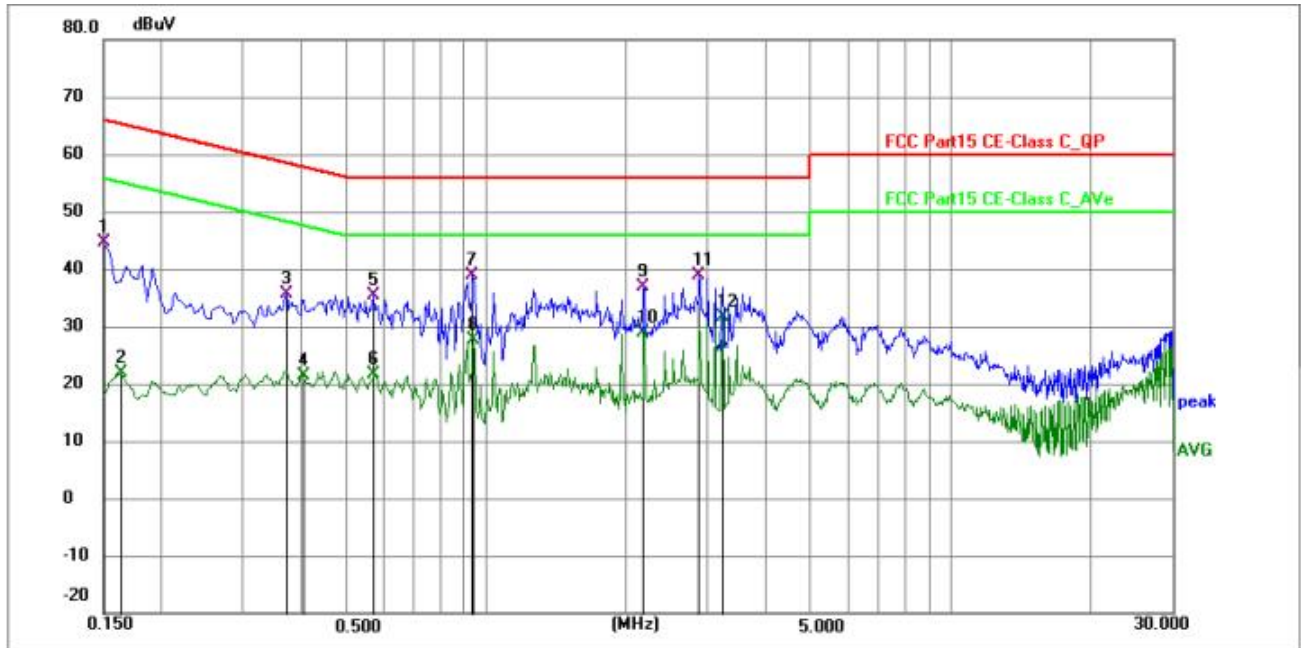
3.1.2. Test data

Please refer to following diagram for individual

Test Mode	: Mode 1
Test Results	: PASS
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out. 3. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Mode 1:

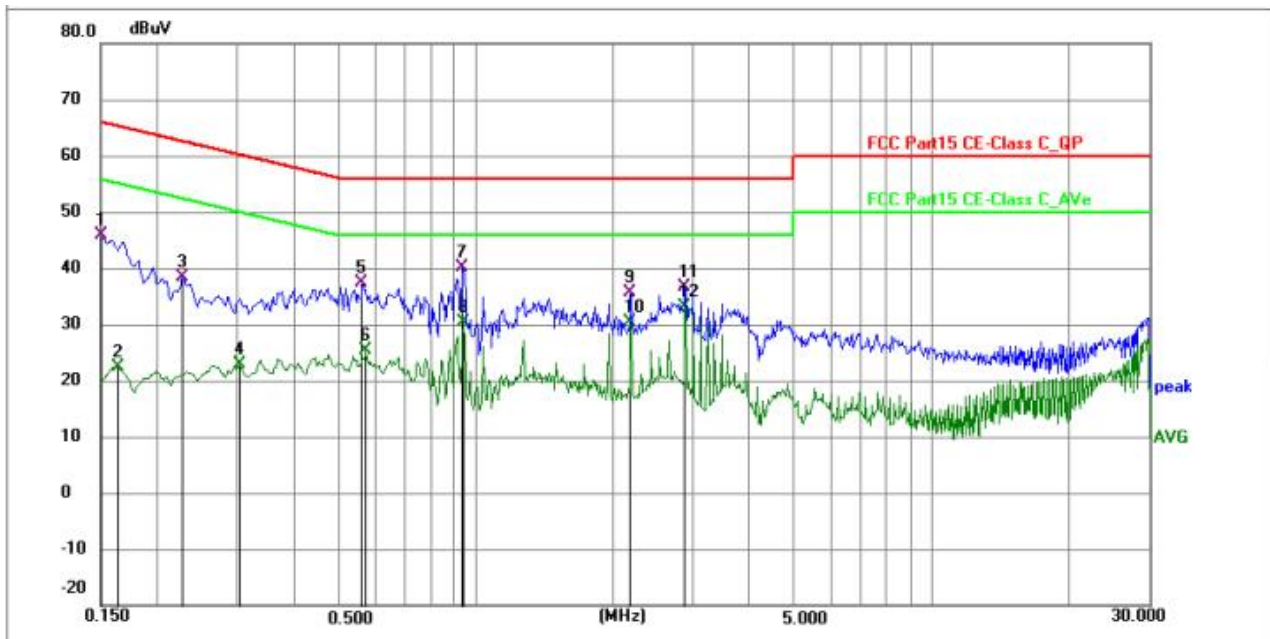
Temperature	25°C	Humidity	50%
Pol	Line		AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	34.02	10.55	44.57	66.00	-21.43	QP	P	
2	0.1635	11.23	10.58	21.81	55.28	-33.47	AVG	P	
3	0.3704	24.88	10.67	35.55	58.49	-22.94	QP	P	
4	0.4020	10.69	10.67	21.36	47.81	-26.45	AVG	P	
5	0.5730	24.66	10.64	35.30	56.00	-20.70	QP	P	
6	0.5730	10.99	10.64	21.63	46.00	-24.37	AVG	P	
7	0.9375	28.14	10.81	38.95	56.00	-17.05	QP	P	
8	0.9420	16.92	10.81	27.73	46.00	-18.27	AVG	P	
9	2.1929	26.14	10.69	36.83	56.00	-19.17	QP	P	
10	2.1929	18.31	10.69	29.00	46.00	-17.00	AVG	P	
11	2.8814	28.18	10.72	38.90	56.00	-17.10	QP	P	
12 *	3.2280	20.85	10.72	31.57	46.00	-14.43	AVG	P	

Level = Reading + Factor Margin = Level - Limit

Pol	Neutral
-----	---------

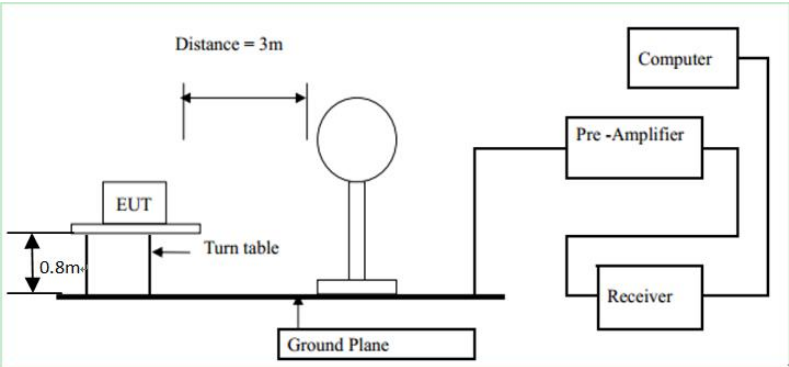


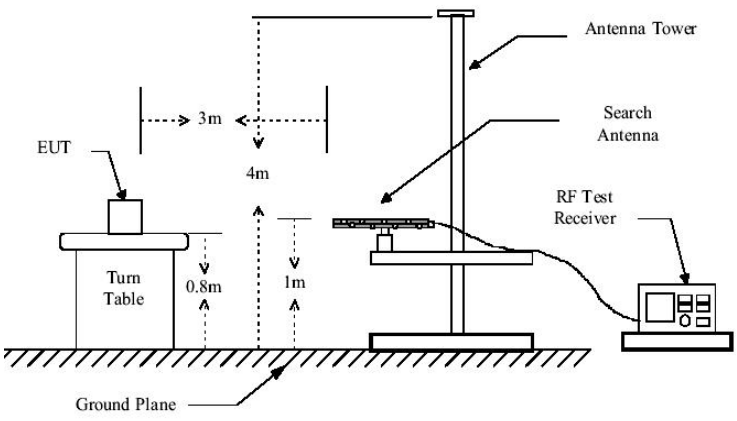
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	35.45	10.55	46.00	66.00	-20.00	QP	P	
2	0.1635	11.94	10.55	22.49	55.28	-32.79	AVG	P	
3	0.2265	27.74	10.58	38.32	62.58	-24.26	QP	P	
4	0.3030	12.33	10.64	22.97	50.16	-27.19	AVG	P	
5	0.5639	26.47	10.81	37.28	56.00	-18.72	QP	P	
6	0.5730	14.51	10.82	25.33	46.00	-20.67	AVG	P	
7	0.9330	29.15	10.87	40.02	56.00	-15.98	QP	P	
8	0.9420	19.48	10.87	30.35	46.00	-15.65	AVG	P	
9	2.1929	24.75	10.97	35.72	56.00	-20.28	QP	P	
10	2.1929	19.39	10.97	30.36	46.00	-15.64	AVG	P	
11	2.8814	25.69	10.94	36.63	56.00	-19.37	QP	P	
12 *	2.8814	22.13	10.94	33.07	46.00	-12.93	AVG	P	

Level = Reading + Factor Margin = Level - Limit

Radiated Spurious Emission Measurement

3.1.3. Test Specification

Test Requirement:	FCC Part15 C Section 15.209																											
Test Method:	ANSI C63.10: 2013																											
Frequency Range:	9 kHz to 1 GHz																											
Measurement Distance:	3 m																											
Antenna Polarization:	Coaxial & Coplanar(9KHz-30MHz) Horizontal & Vertical(30MHz-1GHz)																											
Operation mode:	Transmitting Mode																											
Receiver Setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr><tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value			
	Frequency	Detector	RBW	VBW	Remark																							
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value																							
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value																							
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value																							
Note: 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.																												
Limit:	<table><tr><td>Frequency</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance (meters)</td></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</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>				Frequency	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	30	30	30-88	100	3	88-216	150	3	216-960	200	3	Above 960	500	3
	Frequency	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	30	30																									
	30-88	100	3																									
	88-216	150	3																									
	216-960	200	3																									
	Above 960	500	3																									
Test setup:	For radiated emissions below 30MHz																											
																												
	30MHz to 1GHz																											

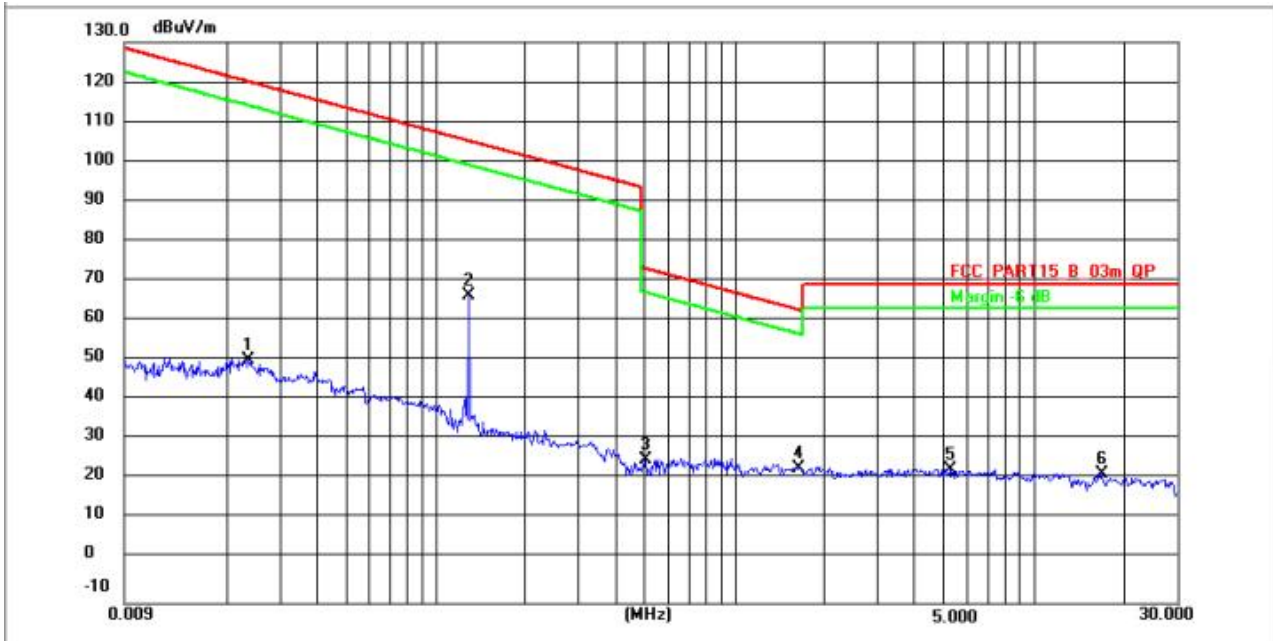
	
Test Procedure:	1. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. 2. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold; For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test mode:	Transmitting Mode
Test results:	PASS

3.1.4. Test Data

Please refer to following diagram for individual

Frequency Range	: 9KHz~30MHz
Test Mode	: Mode 1
Test Results	: PASS
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the quasi-peak detector need not be carried out.

Antenna polarity: Coaxial



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	0.0234	81.15	-30.35	50.80	120.21	-69.41	peak	P
2 *	0.1282	96.93	-30.23	66.70	105.44	-38.74	peak	P
3	0.5010	55.15	-29.13	26.02	73.61	-47.59	peak	P
4	1.6370	50.59	-26.69	23.90	63.26	-39.36	peak	P
5	5.2656	42.83	-19.26	23.57	69.50	-45.93	peak	P
6	16.8654	19.20	3.18	22.38	69.50	-47.12	peak	P

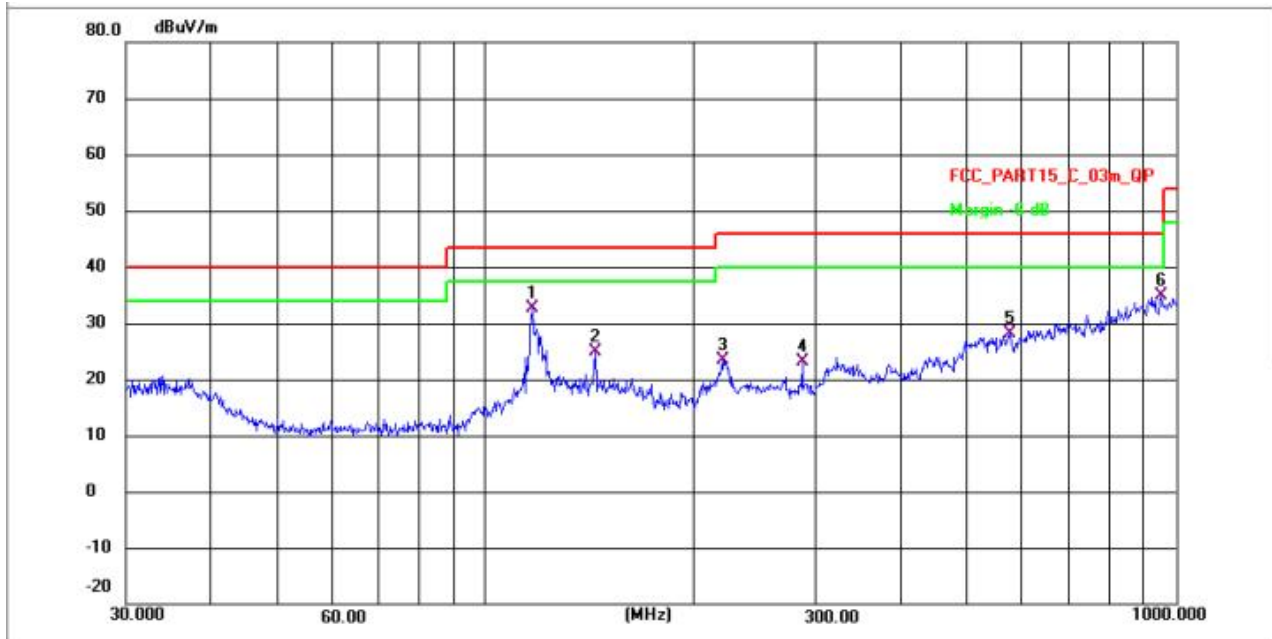
Level = Reading + Factor Margin = Level – Limit

Note: All polarization has been tested and only the worst polarization direction data is displayed.

Frequency Range	: 30MHz~1000MHz
Test Mode	: Mode 1
Test Results	: PASS
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the quasi-peak detector need not be carried out.

30MHz-1GHz

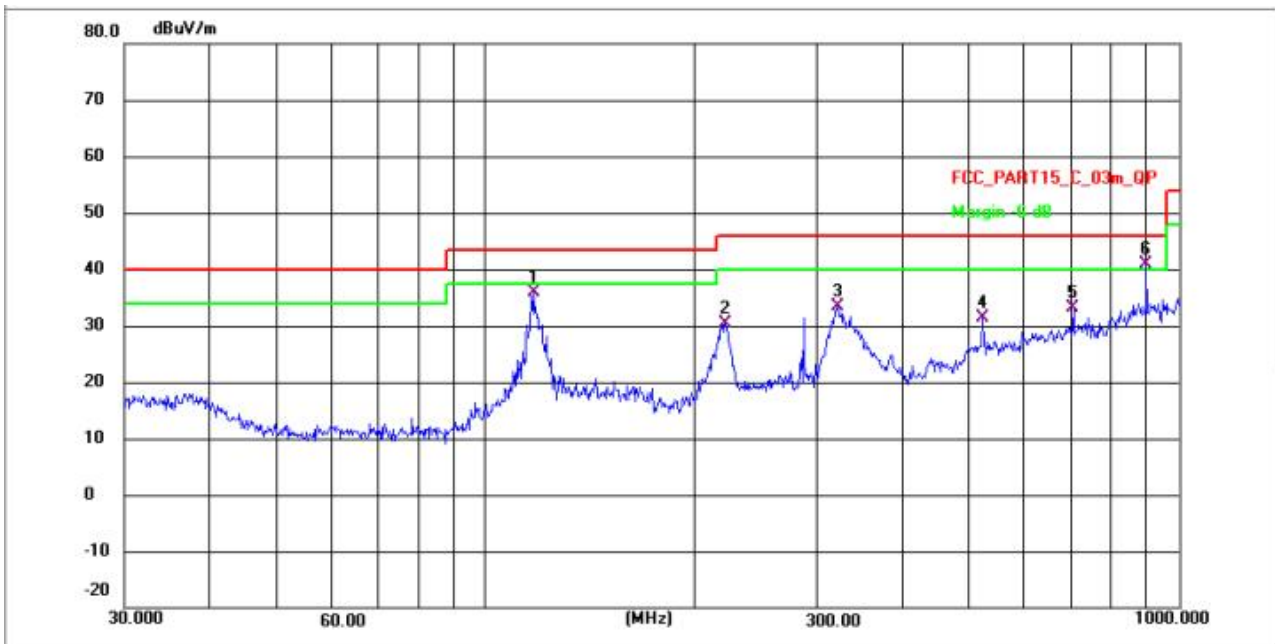
Temperature	24.8℃	Humidity	51%
Pol	Vertical	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1 *	116.9493	54.83	-22.32	32.51	43.50	-10.99	QP	P
2	144.0820	46.83	-22.06	24.77	43.50	-18.73	QP	P
3	220.2306	44.68	-21.33	23.35	46.00	-22.65	QP	P
4	287.9904	43.74	-20.72	23.02	46.00	-22.98	QP	P
5	576.6443	46.52	-18.50	28.02	46.00	-17.98	QP	P
6	952.0937	50.66	-15.90	34.76	46.00	-11.24	QP	P

Level = Reading + Factor Margin = Level – Limit

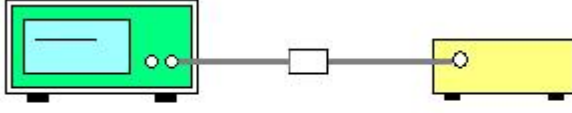
Pol	Horizontal
-----	------------



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	117.1547	58.12	-22.32	35.80	43.50	-7.70	QP	P
2	221.7806	51.72	-21.32	30.40	46.00	-15.60	QP	P
3	322.7540	53.94	-20.44	33.50	46.00	-12.50	QP	P
4	521.8023	50.24	-18.85	31.39	46.00	-14.61	QP	P
5	705.4619	50.79	-17.63	33.16	46.00	-12.84	QP	P
6 *	898.5706	57.23	-16.25	40.98	46.00	-5.02	QP	P

Level = Reading + Factor Margin = Level – Limit

3.2. Test Specification

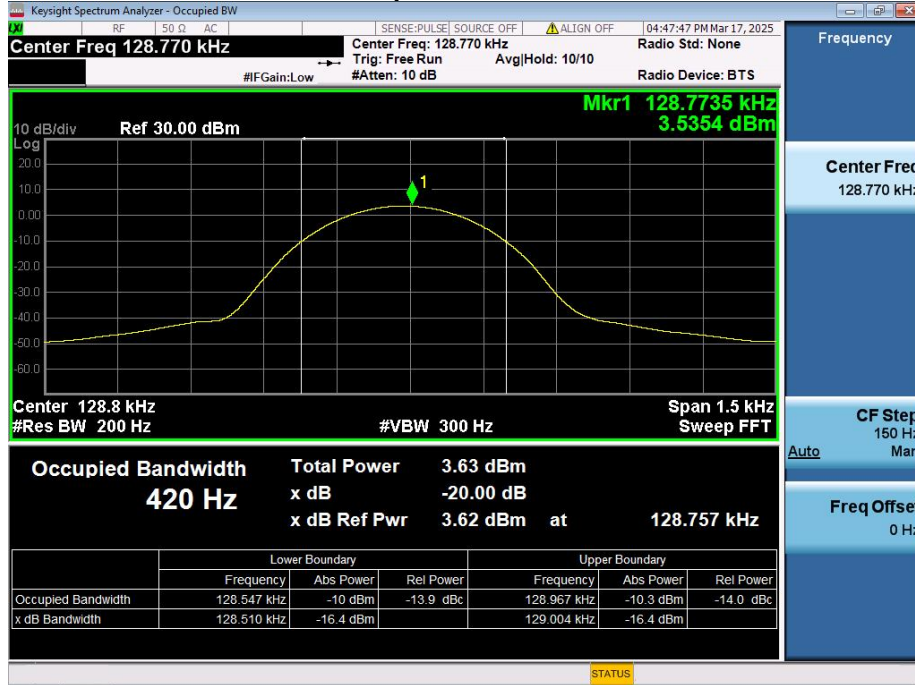
Test Requirement:	FCC Part15 C Section 15.215(c)
Test Method:	ANSI C63.10: 2013
Limit:	N/A
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW$\geq$1% of the 20 dB bandwidth; VBW$\geq$RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting Mode
Test results:	PASS

3.2.1. Test data

Mode 1:

Frequency(kHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
128.773	0.494	---	Pass

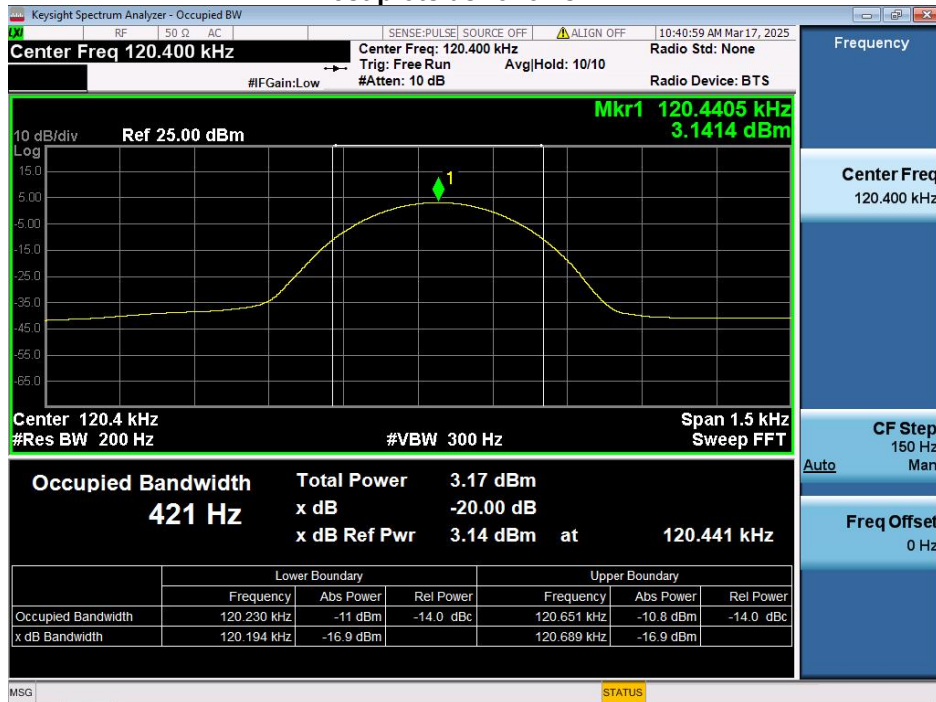
Test plots as follows:



Mode 2:

Frequency(kHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
120.4	0.495	---	Pass

Test plots as follows:



Note: Mode 3 is standby mode and does not have a transmission frequency.

4. Photos of test setup

Reference to the **appendix I Test Setup Photo** for details.

5. Photos of EUT

Reference to the **appendix II external photos** and **appendix III internal photos** for details.

----- END OF REPORT-----