	RF TEST REPORT
	For Tennrich International Corp.
	Product Name: POWER BANK
М	odel(s).: QE20008PQ, QE10008PQ
Report Reference No.	: POCE230726826BRW
FCC ID	: 2AU4P-QE20008PQ
Applicant's Name	: Tennrich International Corp.
Address	1-3, Alley 5, Lane 305, Sec 1, Shin Nan Road, Lu Chu District, Taoyuan City, Taiwan
Testing Laboratory	: Shenzhen POCE Technology Co., Ltd.
Address	102 Building H1 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Test Specification Standar	rd : FCC CFR Title 47 Part 15 Subpart C
Date of Receipt	: July 26, 2023
Date of Test	: July 26, 2023 to July 28, 2023
Data of Issue	: July 28, 2023
Result	: Pass
	POUT
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apply to the tested sample	



Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	POCE230726826BRW	July 28, 2023
		<u>></u>	
		4	E .
	20	F	

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:

Amy Zhu / File administrators

Supervised by:

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1 TEST SUMMARY

1.1 Test Standards

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The tests were performed according to following standards:

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47 CFR Part 15.209: Radiated emission limits; general requirements

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result			
Antenna requirement	47 CFR Part 15.209		Part 15.203	Pass			
Conducted Emission at AC power line	47 CFR Part 15.209	ANSI C63.10-2013 section 6.2	47 CFR 15.207(a)	Pass			
20dB Occupied Bandwidth	47 CFR Part 15.209	ANSI C63.10-2013, section 6.9.2	47 CFR 15.215(c)	Pass			
Emissions in restricted frequency bands (below 30MHz)	47 CFR Part 15.209	ANSI C63.10-2013 section 6.6.4	47 CFR 15.209	Pass			
Emissions in restricted frequency bands (30MHz - 1GHz)	47 CFR Part 15.209	ANSI C63.10-2013 section 6.6.4	47 CFR 15.209	Pass			

Note: 1.N/A -this device(EUT) is not applicable to this testing item 2. RF-conducted test results including cable loss.

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Report No.: POCE230726826BRW V1 0 **GENERAL INFORMATION** 2.1 Client Information **Applicant's Name** Tennrich International Corp. 1-3, Alley 5, Lane 305, Sec 1, Shin Nan Road, Lu Chu District, Taoyuan City, Address 2 Taiwan Manufacturer Shenzhen Blue Times Technology Co.,Ltd

B Block, Taixinglong Technology Zone, Hezhou, Xixiang Town, Bao-an District, Shenzhen, Guangdong Province, China 518126

2.2 Description of Device (EUT)

Address

2

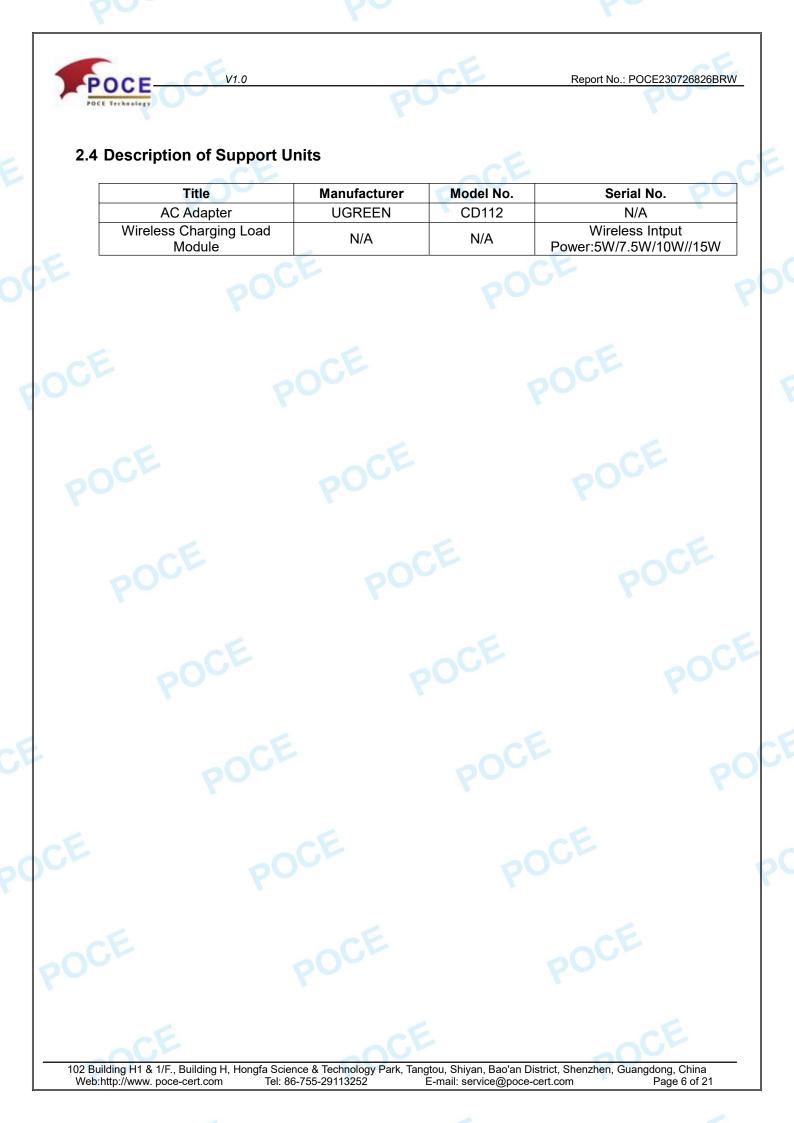
2

Description of Devi	
Product Name:	POWER BANK
Sample number:	230726826
Model/Type reference:	QE20008PQ
Series Model:	QE10008PQ
Model Difference:	The product has many models, only the model name is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
HW/SW:	V1.0
Trade Mark:	Energizer
Power Supply:	Battery Capacity : 20000mAh/74Wh (Max.) Rated Input : Micro USB 5V=2A Rated input: USB-C PD 5V=2A, 9V=2A Rated Output1:USB-A 5V=3A,9V=2A,12V=1.5A Rated Output 2 :USB-C PD 5V=2A,9V=2.22A,12V=1.5A Wireless Output :5W/7.5W/10W//15W Total Output : 20W (Max.)
Operation Frequency:	110KHz-205KHz
Number of Channels:	N/A
Modulation Type:	Backscatter modulation
Antenna Type:	Inductive loop coil Antenna
Antenna Gain:	0dBi (Max)

2.3 Description of Test Modes

No	Title	Description		
TM1	Wireless output: 15W	Keep the EUT in wireless charging mode		
TM2	Wireless output: 10W	Keep the EUT in wireless charging mode		
TM3	Wireless output: 7.5W	Keep the EUT in wireless charging mode		
TM4	Wireless output: 5W	Keep the EUT in wireless charging mode		
	TM1 is the full load mode, ould be recorded in this rep	and the full load mode is the worst mode,Only the data of the worst ort.		

Test channel	Frequency (KHz)		
channel	111.6		



2.5 Equipments Used During The Test

V1.0

Conducted Emission at AC power line						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
loop antenna	EVERFINE	LLA-2	80900L-C	2023-02-27	2024-02-26	
Power absorbing clamp	SCHWARZ BECK	MESS- ELEKTRO NIK	1	2023-02-28	2024-02-27	
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207		/	
Cable	SCHWARZ BECK	/	,	2022-12-27	2023-12-27	
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Ateennato r	561-G071	2023-02-27	2024-02-26	
50ΩCoaxial Switch	Anritsu	MP59B	M20531	1		
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVE R	ID:1164.6607K0 3-102109-MH	2023-06-13	2024-06-12	
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2022-12-29	2023-12-28	
-CV			GF		all	

20dB Occupied Band	width	00		<	
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Test Software	TACHOY	RTS-01	V2.0.0.0	/	/
High Pass filter	ZHINAN	OQHPF1- M1.5- 18G-224	6210075	/	
Power divider	MIDEWEST	PWD- 2533	SMA-79	2023-05-11	2026-05-10
DC power	HP	66311B	38444359	/	/
RF Sensor Unit	Tachoy Information Technology(sh enzhen) Co.,Ltd.	TR1029-2	000001	1	1
Wideband radio communication tester	R&S	CMW500	113410	2023-06-13	2024-06-12
Vector signal generator	Keysight	N5181A	MY48180415	2022-12-10	2023-12-09
Signal generator	Keysight	N5182A	MY50143455	2022-12-29	2023-12-28
Spectrum Analyzer	Keysight	N9020A	MY53420323	2022-12-29	2023-12-28
				- AU	

Emissions in restricted frequency bands (below 30MHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test software	Farad	EZ -EMC	V1.1.42	/	/	
Positioning Controller	1	MF-7802		1	CEI	

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High Pass filter	ZHINAN	OQHPF1- M1.5- 18G-224	6210075	1	1
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	ZN30900 C	ZN30900C	2021-07-05	2024-07-04
Cable(LF)#2	Schwarzbeck	/	1.0	2023-02-27	2024-02-26
Cable(LF)#1	Schwarzbeck	/	/	2023-02-27	2024-02-26
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2023-02-28	2024-02-27
Cable(HF)#1	Schwarzbeck	SYV-50-3- 1	1	2023-02-27	2024-02-26
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2023-06-13	2024-06-12
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2023-06-13	2024-06-12
Wideband radio communication tester	R&S	CMW500	113410	2023-06-13	2024-06-12
Spectrum Analyzer	R&S	FSP30	1321.3008K40- 101729-jR	2023-06-14	2024-06-13
Horn Antenna	Sunol Sciences	DRH-118	A091114	2023-05-13	2025-05-12
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2023-05-21	2025-05-20
Test Receiver	R&S	ESCI	102109	2023-06-13	2024-06-12

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Emissions in restricted frequency bands (30MHz - 1GHz)						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test software	Farad	EZ -EMC	V1.1.42	/		
Positioning Controller	1	MF-7802	1	/	1	
High Pass filter	ZHINAN	OQHPF1- M1.5- 18G-224	6210075	1	1	
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	ZN30900 C	ZN30900C	2021-07-05	2024-07-04	
Cable(LF)#2	Schwarzbeck	/		2023-02-27	2024-02-26	
Cable(LF)#1	Schwarzbeck	/	/	2023-02-27	2024-02-26	
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2023-02-28	2024-02-27	
Cable(HF)#1	Schwarzbeck	SYV-50-3- 1	1	2023-02-27	2024-02-26	
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2023-06-13	2024-06-12	
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2023-06-13	2024-06-12	
Wideband radio	R&S	CMW500	113410	2023-06-13	2024-06-12	

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communication tester			1		
Spectrum Analyzer	R&S	FSP30	1321.3008K40- 101729-jR	2023-06-14	2024-06-13
Horn Antenna	 Sunol Sciences 	DRH-118	A091114	2023-05-13	2025-05-12
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2023-05-21	2025-05-20
Test Receiver	R&S	ESCI	102109	2023-06-13	2024-06-12

2.6 Statement Of The Measurement Uncertainty

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

2.7 Identification of Testing Laboratory

Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
Identification of the Respons	ible Testing Location
Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
FCC Registration Number:	0032847402
Designation Number:	CN1342

2.8 Announcement

(1) The test report reference to the report template version v0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) This document may not be altered or revised in any way unless done so by POCE and all revisions are duly noted in the revisions section.

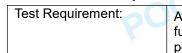
(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.



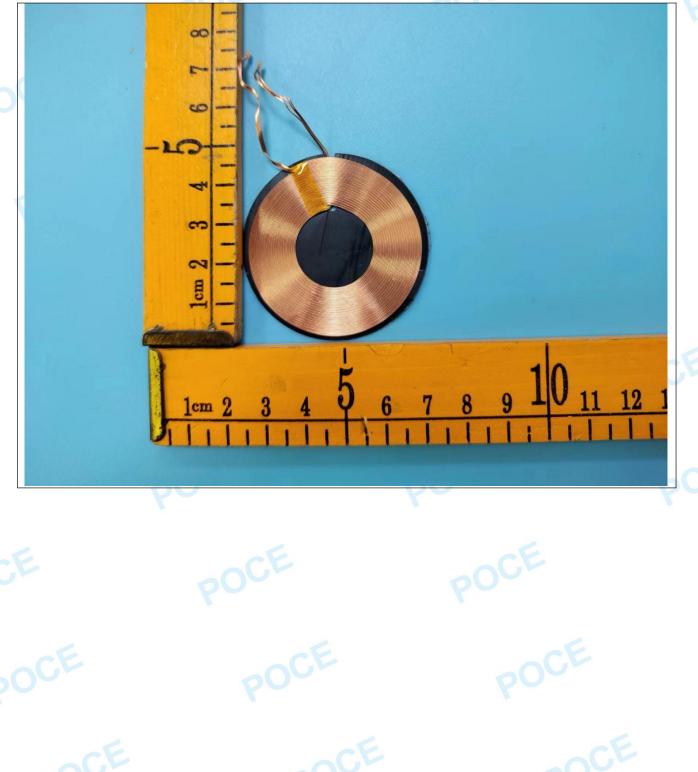
3 Evaluation Results (Evaluation)

3.1 Antenna requirement



An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.1 Conclusion:



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4 Radio Spectrum Matter Test Results (RF)

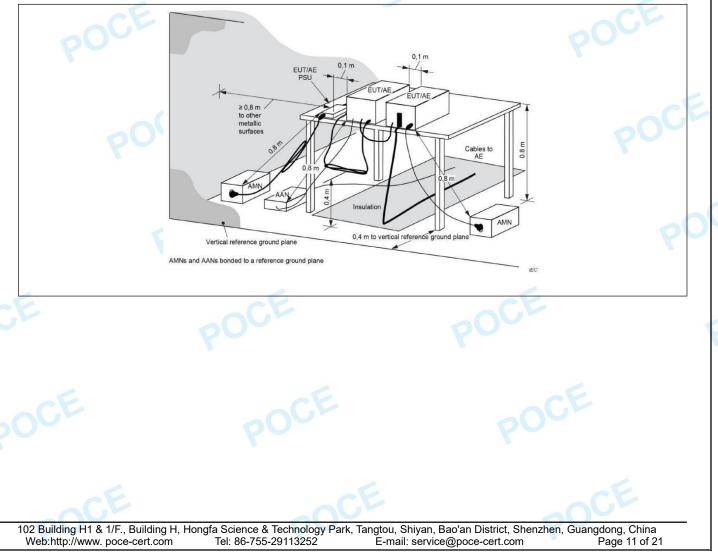
4.1 Conducted Emission at AC power line

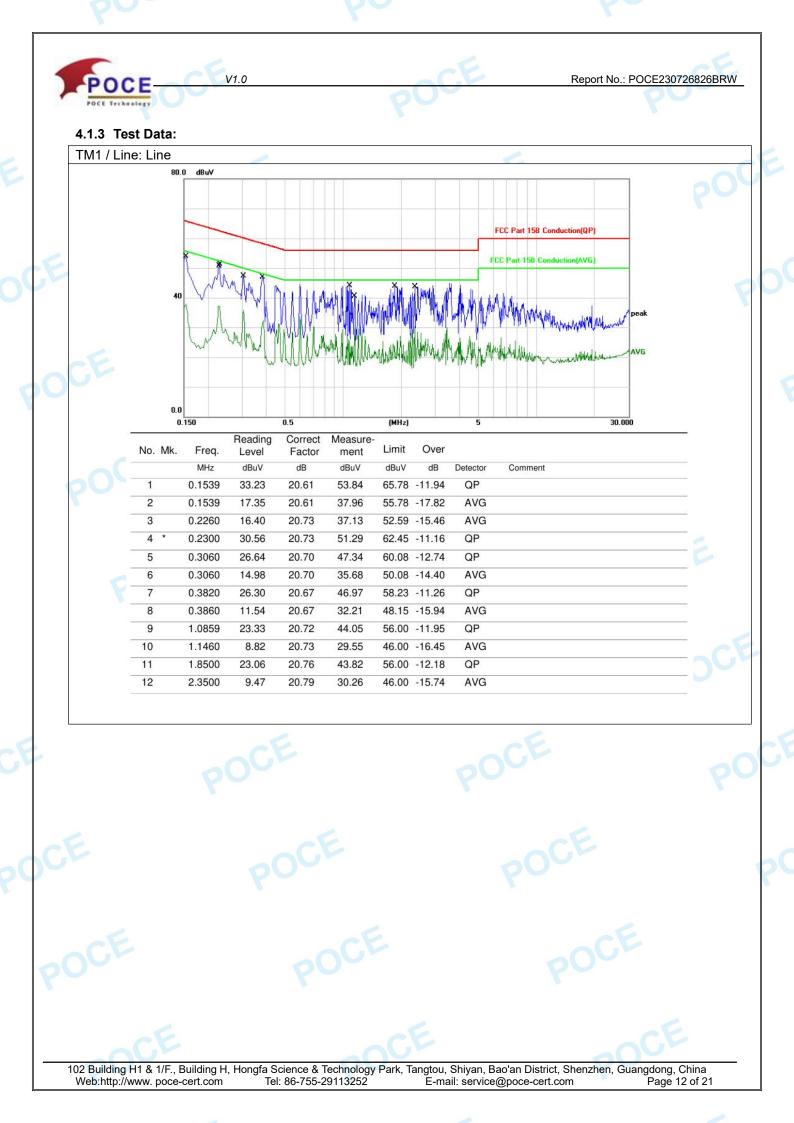
Test Requirement:	Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/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							
CE	*Decreases with the logarithm of the frequency.							
Test Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices							

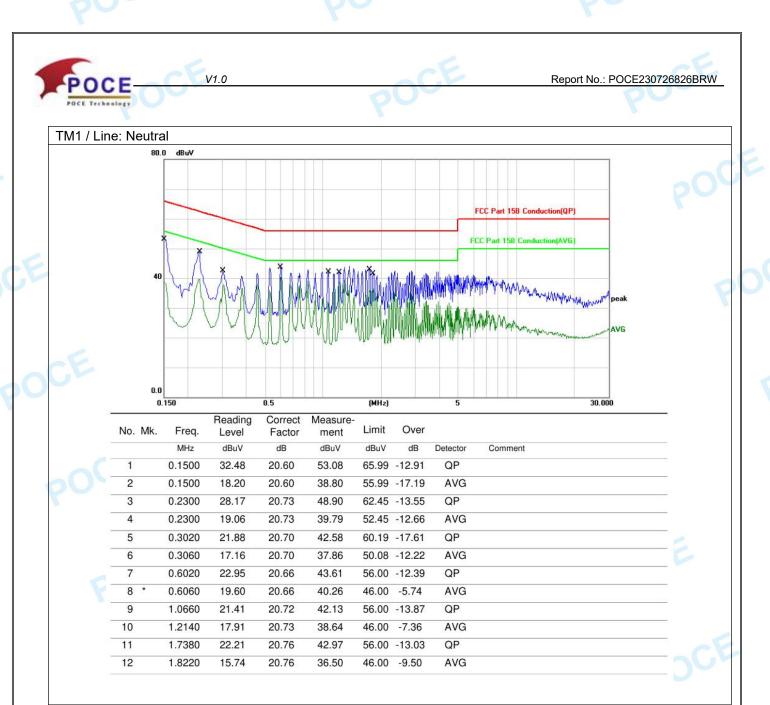
4.1.1 E.U.T. Operation:

Operating Environment:							
Temperature:	23.6 °C		Humidity:	52.6 %	Atmospheric Pressure:	102 kPa	
Pre test mode:	•	TM1	P		Y		
Final test mode:		TM1					

4.1.2 Test Setup Diagram:







1.An initial pre-scan was performed on the line and neutral lines with peak detector.

2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3.Mesurement Level = Reading level + Correct Factor, Over=Limit- Mesurement

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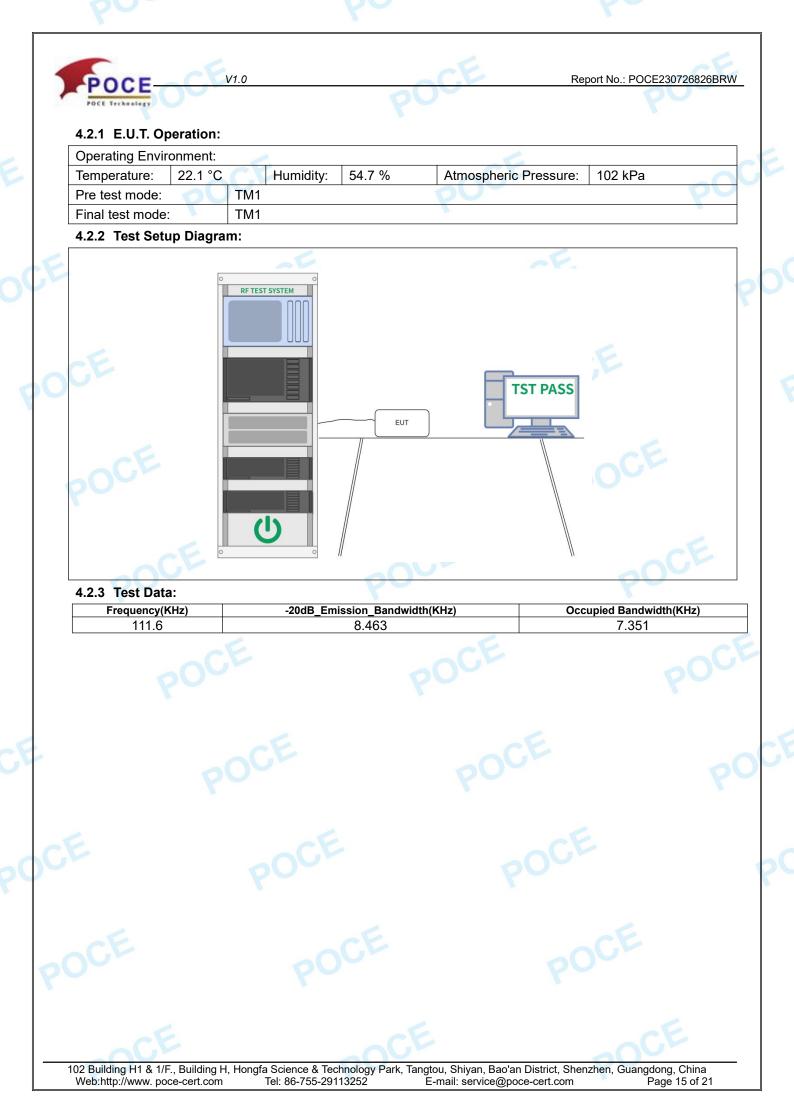
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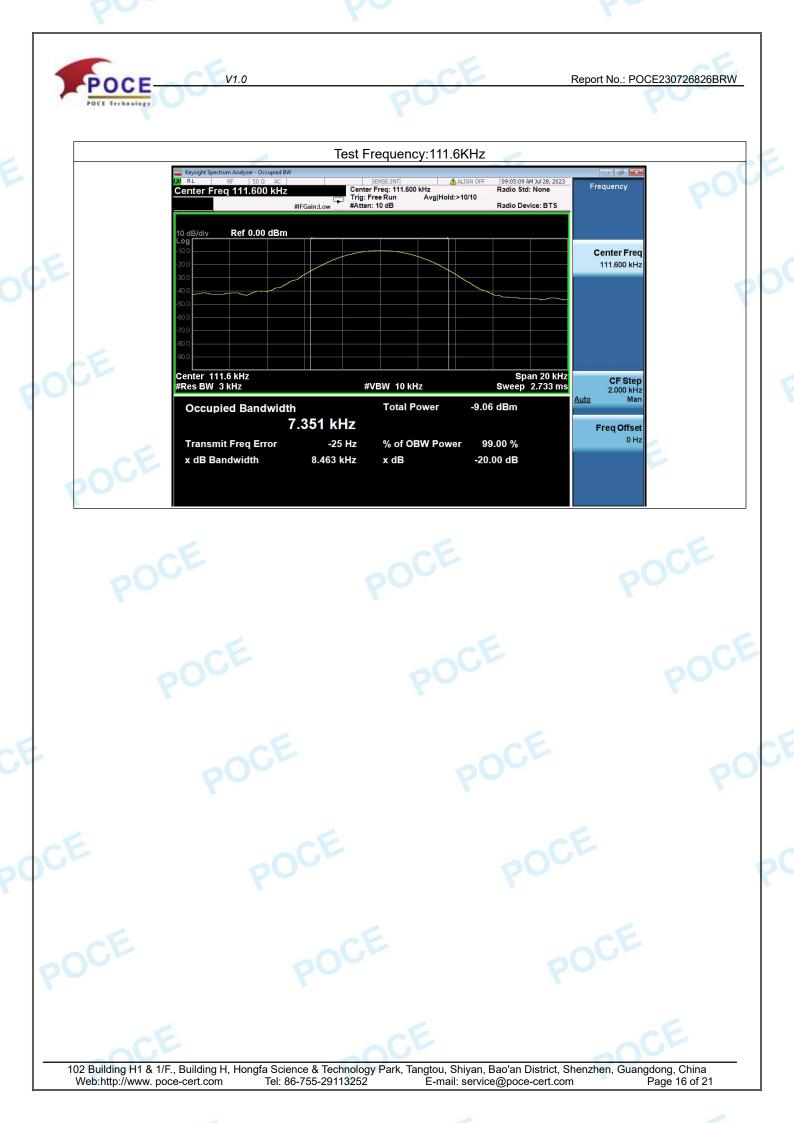
4.2 20dB Occupied Bandwidth

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	2 20dB Occupied i	Sandwidth
	est Requirement:	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.
E	st Limit:	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.
Те	est Method:	Occupied bandwidth—relative measurement procedure
Pr	ocedure:	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.
	CE.	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.
P	064	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.
	CE	d) Steps a) through c) might require iteration to adjust within the specified tolerances.
	POUL	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.
	POC	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.
	P	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).
CE		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
20	CE	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.
	OCE	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).

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4.3 Emissions in restricted frequency bands (below 30MHz)

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Test Requirement:	47 CFR 15.209	ACE	-0
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
CE POCE	radiators operating under thi 54-72 MHz, 76-88 MHz, 174 these frequency bands is pe §§ 15.231 and 15.241. As shown in § 15.35(b), for f paragraphs (a)and (b)of this peak field strength of any en average limits specified abor modulation. For point-to-point	agraph (g), fundamental emissions s section shall not be located in th -216 MHz or 470-806 MHz. Howe rmitted under other sections of thi section are based on average lim hission shall not exceed the maxin we by more than 20 dB under any ht operation under paragraph (b)of exceed 2500 millivolts/meter at 3	e frequency bands ver, operation within s part, e.g., field strength limits in its. However, the num permitted condition of f this section, the
Test Method:	Radiated emissions tests		2005
Procedure:	ANSI C63.10-2013 section 6	5.6.4	Y
424 FUT Operation			

4.3.1 E.U.T. Operation:

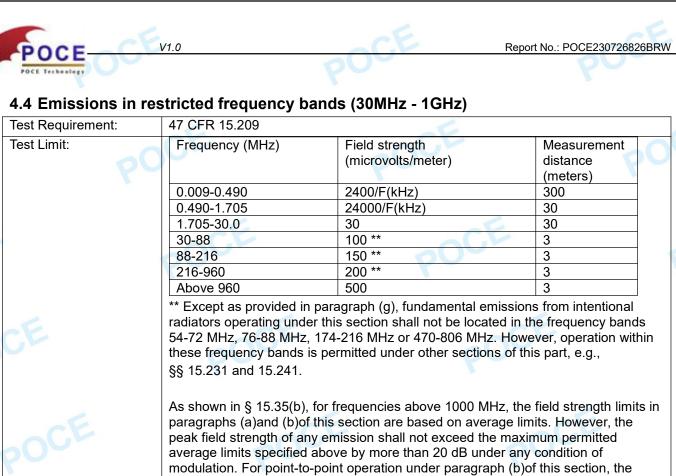
Operating Enviro	onment:				E		
Temperature:	22.1 °C	L	Humidity:	54.7 %	Atmospheric Pressure:	102 kPa	AC.
Pre test mode:	504	TM1			DU		pu-
Final test mode:		TM1					

4.3.2 Test Data:

Frequenc	Reading	Polar	Antenna Factor	Cable Loss	Emission Levels	Limits at 3m		Detector
(MHz)	(dBµV/m)	Loop	(dB/m)	(dB)			Margin	Mode
0.1116	73.24	Loop	23.62	-0.17	96.69	106.65	-9.96	QP
0.1534	73.36	Loop	23.62	-0.17	71.45	104.26	-32.81	QP
0.1647	48.94	Loop	23.62	-0.17	72.39	103.27	-30.88	QP
0.2034	46.03	Loop	23.61	0.01	69.65	101.44	-31.78	QP
0.4571	41.59	Loop	25.13	0.01	66.73	114.40	-47.68	QP
1.241	32.84	Loop	27.15	-0.25	59.74	65.73	-5.99	QP
13.456	36.48	Loop	23.72	-0.24	59.96	69.54	-9.58	QP
M	leasurement		Limit ceiver reading + co Factor + Cable los			oci	E	1

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an	peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.				
Test Method: Ra	adiated emissions tests	CE			
Procedure: AN	NSI C63.10-2013 section 6.6.4	2001			

4.4.1 E.U.T. Operation:

Operating Envir	onment:						
Temperature:	22.1 °C		Humidity:	54.7 %	Atmospheric Pressure:	102 kPa	
Pre test mode:	~C.	TM1			ACE		ACV.
Final test mode:	50Y	TM1			000		pu

