

## FCC TEST REPORT

### FCC ID: 2BC8J-PS-B004WA

On Behalf of

## SHENZHEN SNAPPER TECHNOLOGY CO., LTD

# Universal Power Charger

## Model No.: PS-B004WA, PS-B004W

Prepared for	:	SHENZHEN SNAPPER TECHNOLOGY CO., LTD
Address	:	F4, BldgE, Fenghuang third Industrial area, Tengfeng Road, Fuyong, Baoan, Shenzhen

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Test Result	:	Pass
Version Number	:	VO
Date of Report	:	April 7, 2024
Date of Test	:	November 17, 2023 – April 7, 2024
Date of Receipt	:	November 17, 2023
Report Number	:	A2310172-C01-R06

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Applicant	: SHENZHEN SNAPPER TECHNOLOGY CO., LTD		
Address	F4, BldgE, Fenghuang third Industrial area, Tengfeng Road, Fuyong, Baoa Shenzhen.	an,	
Manufacturer	: SHENZHEN SNAPPER TECHNOLOGY CO., LTD		
Address	F4, BldgE, Fenghuang third Industrial area, Tengfeng Road, Fuyong, Baoan, Shenzhen.		
EUT Description	: Universal Power Charger		
	(A) Model No. : PS-B004WA, PS-B004W		
	(B) Trademark : N/A		

### **TEST REPORT DECLARATION**

Measurement Standard Used: FCC CFR Title 47 Part 15 Subpart C Section 15.209

The device described above is tested by Shenzhen Alpha Product 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 Alpha Product 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 Section 15.209 requirements.

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

Tested by (name + signature):	Yannis Wen Project Engineer	Yannis wen
Approved by (name + signature):	Reak Yang Project Manager	Rr. 43
Date of issue	April 7, 2024	

# **Revision History**

Revision	Issue Date	Issue Date Revisions	
V0	April 7, 2024	Initial released Issue	Yannis Wen

# 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(a)(f)	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.

# 2. General Information

2.1. Description of Device (EUT)			
EUT Name	:	Universal Power Charger	
Model No.	:	PS-B004WA, PS-B004W	
DIFF.	:	N/A	
Power supply	:	AC Input : 100-240VAC 50/60Hz 0.6A Max Type-C Input : DC5V3A, 9V2A, 12V1.5A PD18W Max Type-C Output : DC5V3A, 9V2.22A, 12V1.67A PD20W Max Type-C cable output : DC5V3A, 9V2.22A, 12V1.67A PD20W Max Lightning Cable Output: DC5V2.4A Max USB-A Output : DC5V3A, 9V2A, 12V1.5A 18W Max Wireless output : 5W/7.5W/10W/15W Max Total Sharing Output : DC 5V3A Max Charge and discharge simultaneous : In AC charging mode DC5V2A 10W Max	
Radio technology		Wireless charging technolohy	
Operation frequency	:	115~205KHz	
Modulation	:	MSK	
Antenna Type	:	Coil Antenna, Maximum Gain is 0dBi (This value is supplied by applicant).	
Software version	:	V1.0	
Hardware version	:	V1.0	
Coaxial cable loss		Max. coaxial cable loss:0.5dB (Cable loss value is provided by applicant.)	
Intend use environment	:	Residential, commercial and light industrial environment	

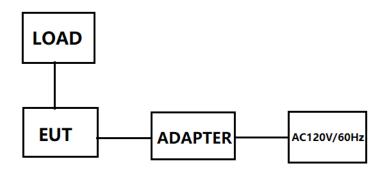
### 2.2. Accessories of Device (EUT)

Accessories1	:	/	
Manufacturer	:	/	
Model	:	/	
Ratings	:	/	

### 2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	N/A	N/A	N/A	N/A	N/A

2.4. Block Diagram of Connection between EUT and Simulators



### 2.5. Description of Test Modes

Channel	Frequency (KHz)	
1	145	

## 2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35°C	<b>23</b> °C
Humidity range:	25-75%	55%
Pressure range:	86-106kPa	98kPa

### 2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission Registration Number: 293961

July 15, 2019 Certificated by IC Registration Number: CN0085

### 2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	1.63dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber	3.74dB(Polarize: V)
(30MHz to 1GHz)	3.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber	3.77dB(Polarize: V)
(1GHz to 25GHz)	3.80dB(Polarize: H)
Uncertainty for radio frequency	5.06×10⁻8GHz
Uncertainty for conducted RF Power	0.40dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

# 2.9. Test Equipment List

Equipment	Manufacture	Model No.	Firmware version	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	/	N/A	2022.05.17	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	2.3	102137	2023.08.16	1Year
Spectrum analyzer	Agilent	N9020A	A.14.16	MY499100060	2023.08.16	1Year
Receiver	ROHDE&SCHWARZ	ESR	2.28 SP1	1316.3003K03-10 2082-Wa	2023.08.16	1Year
Receiver	R&S	ESCI	4.42 SP1	101165	2023.08.16	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	/	VULB 9168#627	2023.08.28	1Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	/	2106	2023.08.19	1Year
Loop Antenna	pp Antenna SCHWARZBECK		/	/ 00128		1Year
RF Cable	Resenberger	Cable 1	/	RE1	2023.08.16	1Year
RF Cable	Resenberger	Cable 2	/	RE2	2023.08.16	1Year
RF Cable	Resenberger	Cable 3	/	CE1	2023.08.16	1Year
Pre-amplifier	HP	HP8347A	/	2834A00455	2023.08.16	1Year
Pre-amplifier	Agilent	8449B	/	3008A02664	2023.08.16	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	/	8126-466	2023.08.16	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	/	101043	2023.08.16	1Year
Horn Antenna	SCHWARZBECK	BBHA 9170	/	00946	2023.08.19	1Year
Preamplifier	SKET	LNPA_1840 -50	/	SK2018101801	2023.08.16	1 Year
Power Meter	Agilent	E9300A	/	MY41496628	2023.08.16	1 Year
Power Sensor	DARE	RPR3006W	/	15100041SNO91	2023.08.16	1 Year
Temp. & Humid. Chamber	Teelong	TL-HW408S	/	TL-20191205-01	2023.07.25	1 Year
Switching Mode Power Supply			/	20140927-6	2023.08.16	1 Year
Adjustable attenuator	Adjustable MW/REtest		/ N/A		N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	/	N/A	N/A	N/A

Software Information									
Test Item	Software Name	Version							
RE	EZ-EMC	Farad	Alpha-3A1						
CE	EZ-EMC	Farad	Alpha-3A1						
RF-CE	MTS 8310	MW	V2.0.0.0						

# 3. Test Results and Measurement Data

### 3.1. Conducted Emission

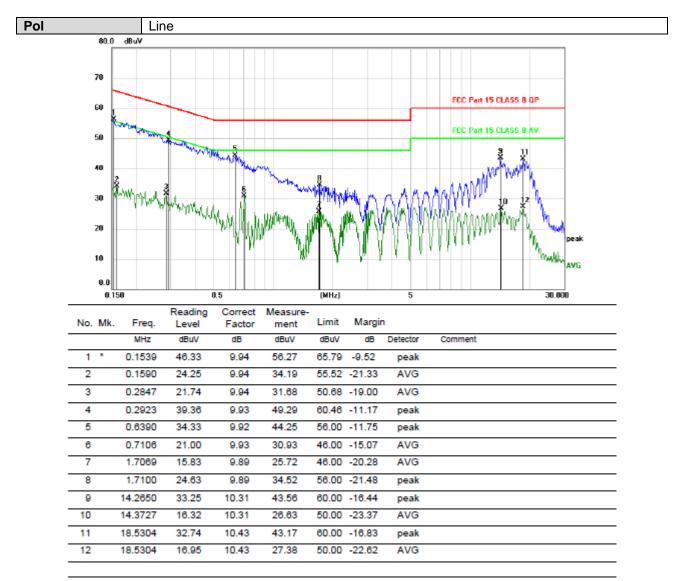
### 3.1.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.2	07			
Test Method:	ANSI C63.10:2013				
Frequency Range:	150 kHz to 30 MHz				
Receiver setup:	RBW=9 kHz, VBW=30 kHz,	Sweep time=auto			
	Frequency range (MHz)	Limit (d	/		
Limits:	0.15-0.5	Quasi-peak 66 to 56*	Average 56 to 46*		
Limits:	0.5-5	56	46		
	5-30	60	50		
	Refere	nce Plane			
Test Setup:	40cm       80cm         Filter       AC power         Filter       AC power         E.U.T       Adapter         Test table/Insulation plane       EMI Receiver         Remark:       E.U.T: Equipment Under Test         LISN: Line Impedence Stabilization Network       Test table height=0.8m				
Test Mode:	Transmitting Mode				
Test Procedure:	<ol> <li>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.</li> <li>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).</li> <li>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.</li> </ol>				
Test Result:	PASS				

### 3.1.2. Test Data

### Please refer to following diagram for individual

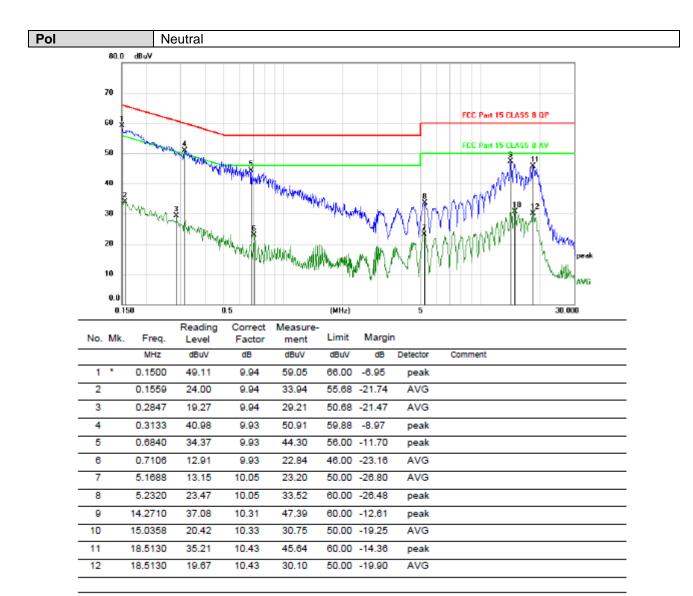
Test Mo	ode : TM1:Charging(AC in)+Wireless output(15W)
Test Re	esult : PASS
Note:	The test results are listed in next pages.
	All test modes has been tested, this report only reflected the worst mode.( Charging+15W)
	If the limits for the measurement with the average detector are met when using a receiver 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. 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 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.



':Maximum data x:Over limit	l:over margin
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Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable



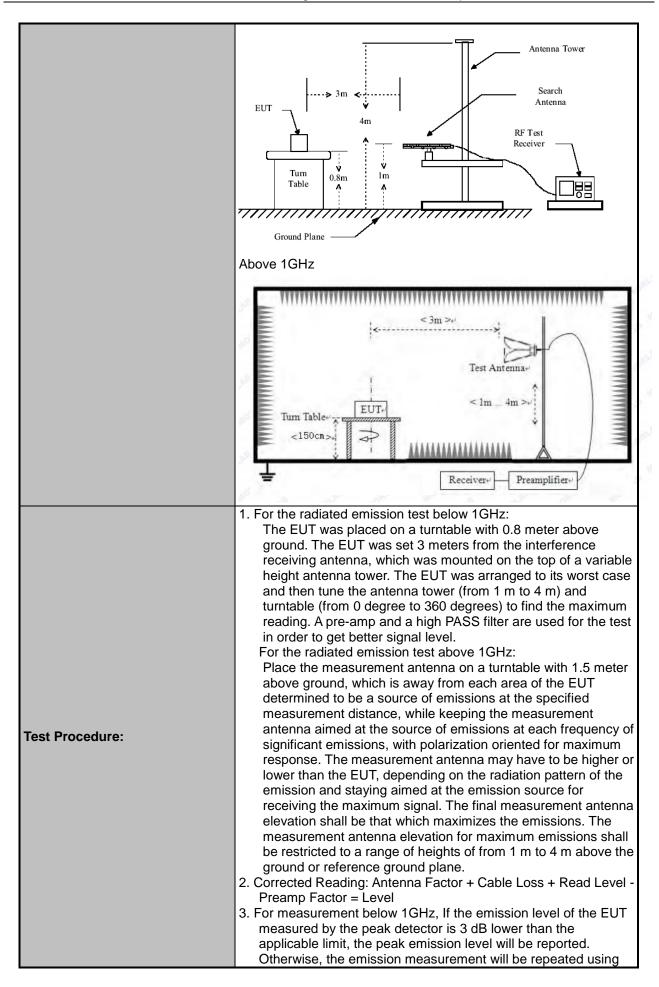
\*:Maximum data x:Over limit !:over margin Reference Only

Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

# 3.2. Radiated Spurious Emission Measurement

### 3.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.10: 2	2013							
Frequency Range:	9 kHz to 25 GH	z							
Measurement Distance:	3 m								
Antenna Polarization:	Horizontal & Ve	ertical							
Operation mode:	Refer to item 4.	.1							
	Frequency 9kHz- 150kHz		tecto isi-pe k		RBW 200Hz	VBW 1kHz		Remark uasi-peak Value	
Receiver Setup:	150kHz- 30MHz	Qua	isi-pe k	ea	9kHz	30kHz	Q	uasi-peak Value	
	30MHz-1GH z	Qua	isi-pe k	ea	100KH z	300KH z	Q	uasi-peak Value	
	Above 1GHz		<sup>r</sup> eak reak		1MHz 1MHz	3MHz 10Hz		eak Value rage Value	
	Frequen			Field Stre (microvolts/		ength Dista		asurement Distance meters)	
	0.009-0.4			2400/F(K		(Hz)		300	
	0.490-1.7			24000/F( 30		KHZ)		30 30	
	30-88			100				3	
	88-216			150			3		
Limit:	216-96			200			3		
	Above 9	60			500			3	
	Frequency		Field Strength (microvolts/mete r)		Measure nt Distan (meter	се	Detector		
	Above 1GHz			500 5000		3		Average	
	For radiated em	nissio	ns be			<u> </u>	3 Peak		
	Distance = 3m								
Test setup:							Pre -Am	plifier	
	0.8m+	Turn		1m		[	Reco	iver	
			G	round	i Plane				
	30MHz to 1GH	Z							

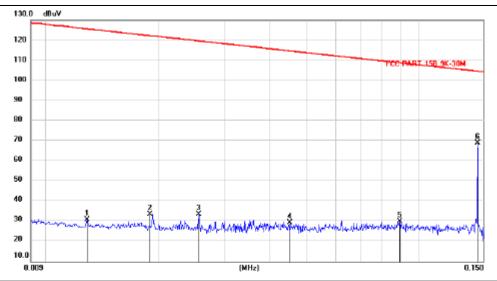


	<ul> <li>the quasi-peak detector and reported.</li> <li>Use the following spectrum analyzer settings: <ul> <li>(1) Span shall wide enough to fully capture the emission being measured;</li> <li>(2) Set RBW=100 kHz for f &lt; 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold;</li> <li>(3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement.</li> <li>For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 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.</li> </ul> </li> </ul>
Test mode:	Refer to section 4.1 for details
Test results:	PASS

### 3.2.2. Test Data

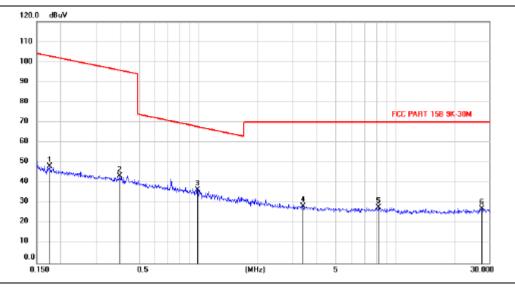
### Please refer to following diagram for individual

Freque	ncy Range	:	9KHz~30MHz							
Test Mode		:	TX: 145kHz							
Test Re	sults	:	PASS							
Note:	1. The test	res	ults are listed in next pages.							
	2. This mode is worst case mode, so this report only reflected the worst mode.									
	3. 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.									



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		Antenna Height	Table Degree	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1	0.0128	9.31	21.43	30.74	125.5	-94.82	peak			
2	0.0189	12.30	21.27	33.57	122.1	-88.61	peak			
3	0.0256	12.55	21.11	33.66	119.5	-85.90	peak			
4	0.0451	9.12	20.17	29.29	114.6	-85.36	peak			
5	0.0892	10.00	19.91	29.91	108.7	-78.84	peak			
6 *	0.1449	48.84	20.12	68.96	104.5	-35.59	peak			

Note:1. \*:Maximum data; x:Over limit; !:over margin. 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

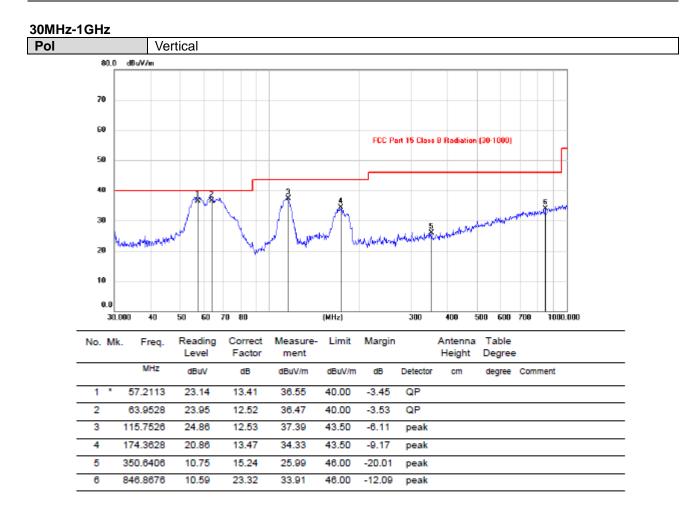


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1		0.1748	28.13	20.16	48.29	102.9	-54.63	peak			
2		0.3970	23.47	19.85	43.32	95.82	-52.50	peak			
3	*	0.9886	16.43	19.99	36.42	67.81	-31.39	peak			
4		3.4131	7.52	20.73	28.25	70.00	-41.75	peak			
5		8.2248	5.78	22.09	27.87	70.00	-42.13	peak			
6		27.5470	6.48	20.68	27.16	70.00	-42.84	peak			

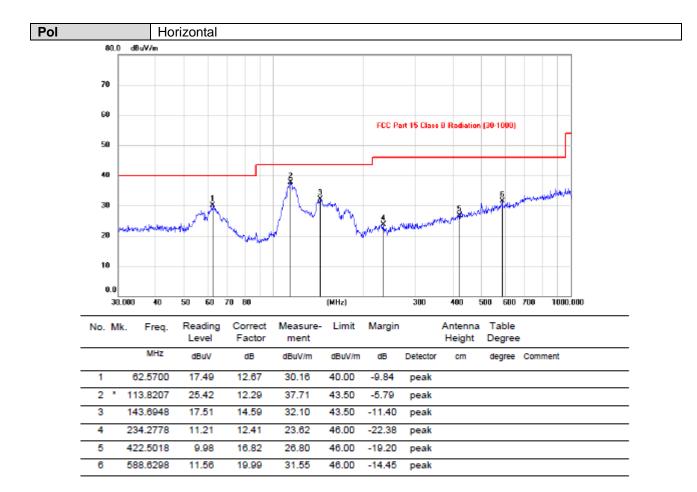
Note:1. \*:Maximum data; x:Over limit; !:over margin. 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Frequency Range		:	30MHz~1000MHz		
Test Mode		:	TM1:Charging(AC in)+Wireless output(15W)		
Test Results			PASS		
Note:	1. The test results are listed in next pages.				
	2. All test modes has been tested, this report only reflected the worst mode.				
	3. 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.				

Frequency Range : Above 1GHz					
EUT : /	Test Date	:	/		
M/N : /	Temperature	:	/		
Test Engineer : /	Humidity	:	/		
Test Mode : /					
Test Results : N/A					
1. The highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. So the frequency rang above 1GHz radiation test not applicable.					



Note:1. \*:Maximum data; x:Over limit; !:over margin. 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



Note:1. \*:Maximum data; x:Over limit; !:over margin.

2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

3.3. Tes	t Specification
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Test Requirement:	FCC Part15 C Section 15.215(c)			
Test Method:	ANSI C63.10: 2013			
Limit:	N/A			
Test Procedure:	<ol> <li>According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>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≥1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>Measure and record the results in the test report.</li> </ol>			
Test setup:	Spectrum Analyzer EUT			
Test Mode:	Refer to section 4.1 for details			
Test results:	PASS			

### 3.3.1. Test Data

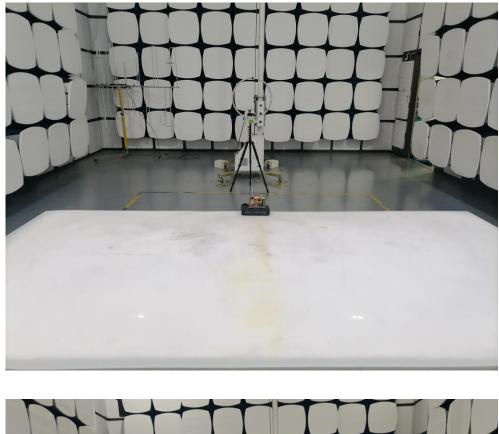
Frequency(KHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion	
145	3.166		PASS	

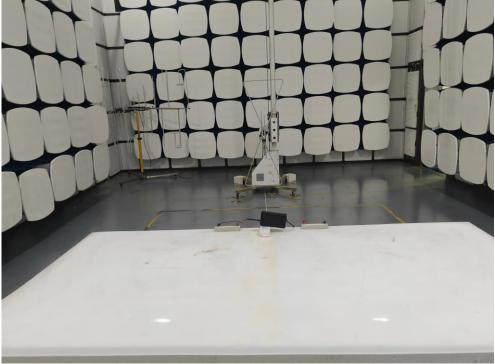
### Test plots as follows:

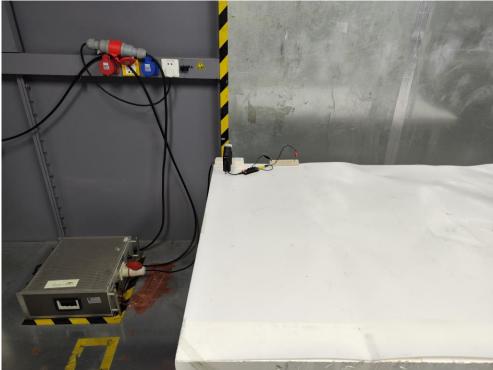
Agilent Spectrum Analyzer - Occupied BV VI RF 50 & AC Center Freq 145.000 kHz Ref Offset 2 dB		SENSE:INT  SOU Center Freq: 145.00 Trig: Free Run #Atten: 10 dB		Radio Std		Frequency
Cer Unset 2 dB 10 dB/div Ref 5.00 dBm Log -5.00 -15.0 -25.0		and the second s				<b>Center Freq</b> 145.000 kHz
	mmm		h	man and a second		
-75.0 -85.0 Center 145 kHz				Spa	an 20 kHz	CF Step
#Res BW 100 Hz Occupied Bandwidtl	, 3.166 kH;	#VBW 300 Total F		-2.82 dBm	veep FFT	2.000 kHz <u>uto</u> Man
Transmit Freq Error x dB Bandwidth	-4 H 3.666 kH	Iz OBW F	ower	99.00 % -26.00 dB		Freq Offset 0 Hz
MSG				STATUS 🔔 AC COL	pled: Accy uns	pec'd < 10MHz

# 4. Photos of Test Setup

Radiated Emission







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

### Conducted Emission