

### FCC TEST REPORT

### FCC ID: 2BC8J-PS-B003WS

On Behalf of

### SHENZHEN SNAPPER TECHNOLOGY CO., LTD

Universal Power Charger

Model No.: PS-B003WS, TTUNITPWRBA-BLA, TTUNITPWRBA-WHI, TTUNITPWRBA

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		

Report Number	: A2308285-C01-R04
Date of Receipt	: September 11, 2023
Date of Test	: September 11, 2023- October 18, 2023
Date of Report	: October 19, 2023
Version Number	: VO

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## **TEST REPORT DECLARATION**

Applicant	:	SHENZHEN SNAPPER TECHNOLOGY CO., LTD				
Address	:	F4, BldgE, Fenghuang third Industrial area, Tengfeng Road, Fuyong, Baoan, Shenzhen				
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-B003WS, TTUNITPWRBA-BLA, TTUNITPWRBA-WHI, TTUNITPWRBA				
		(B) Trademark : N/A				

### 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).....:

Lucas Pang **Project Engineer** 

Lucas Poung

Reak Yang Project Manager

Date of issue.....:

Approved by (name + signature).....:

October 19, 2023

#### **Revision History**

Revision	Issue Date	Revisions	Revised By
V0	October 19, 2023	Initial released Issue	Lucas 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(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.

5. Decision rules for the conclusion of this test report: decision by actual test data without considering neasurement uncertainty.

# 2. General Information

2.1. Description of Device (EUT)					
EUT Name	:	Universal Power Charger			
Model No.	:	PS-B003WS, TTUNITPWRBA-BLA, TTUNITPWRBA-WHI, TTUNITPWRBA			
DIFF.	:	There is no difference except the name of the model. All tests are made with the PS-B003WS model.			
Power supply	:	AC Input: 100~240VAC 50/60Hz 0.3A Max Type-C Input: DC 5V~12V PD18W Max Type-C Output: DC 5V~12V PD20W Max Type-C cable output: DC 5V~12V 20W PD Max USB-A Output: 5V 3A, 9V 2A, 12V 1.5A 18W Max Wireless output: 15W Max Adaptor Mode Output: 10W Max Total Sharing Output: 5V 3A Battery: 10000mAh@ 3.7V 37Wh			
Radio Technology	:	Wireless power transmission systems			
Operation frequency	:	115-205KHz			
Modulation	:	MSK			
Antenna Type	:	Coil Antenna, Maximum Gain is 0dBi (This value is supplied by applicant).			
Connector cable loss	:	0.5dB (This value is supplied by applicant).			
Software version	:	V1.0			
Hardware version	:	V1.0			

### 2.2. Accessories of Device (EUT)

Accessories	:	/
Manufacturer	:	/
Model	:	/
Input	:	/
Output	:	/

### 2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDoC
1	Wireless charging load	N/A	N/A	N/A	N/A

### 2.4. Block Diagram of connection between EUT and simulators



### 2.5. Description of Test Modes

Numbers         Test Modes		
1	151 (Communication)	
2	Charging	

### 2.6. Test Conditions

Items	Required	Actual
Temperature range:	<b>15-35</b> ℃	<b>24</b> °C
Humidity range:	25-75%	56%
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: 12135A

### 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 <sup>-8</sup> GHz
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%

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	SCHWARZBECK	FMZB 1519B	/	00128	2023.08.19	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	1 Year
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	JUNKE	JK12010S	/	20140927-6	2023.08.16	1 Year
Adjustable attenuator	MWRFtest	N/A	/	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	/	N/A	N/A	N/A

# 2.9. Test Equipment List

Software Information								
Test Item	st Item Software Name Manufacturer							
RE	EZ-EMC	Farad	Alpha-3A1					
CE	EZ-EMC	Farad	Alpha-3A1					
RF-CE	MTS 8310	MWRFtest	2.0.0.0					

# 3. Test Results and Measurement Data

### 3.1. Conducted Emission

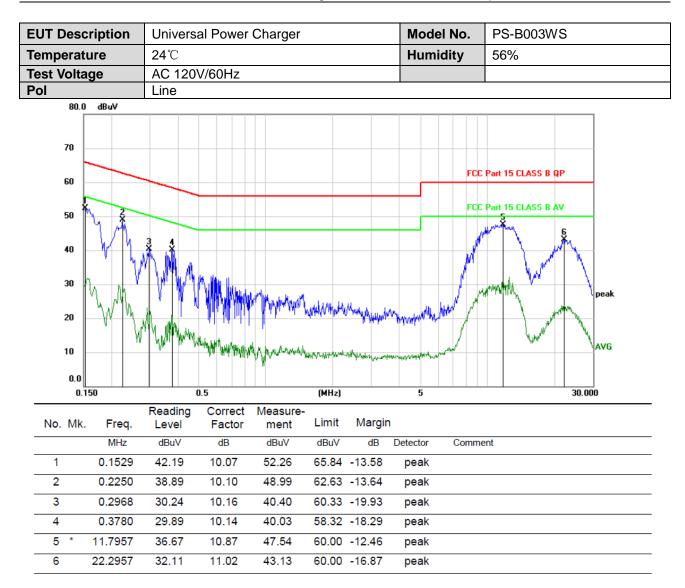
### 3.1.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.20	07	1		
· · · · · · · · · · · · · · · · · · ·					
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	,		
1 toolf a		Quasi-peak	Average		
Limits:	0.15-0.5 0.5-5	66 to 56* 56	56 to 46* 46		
	5-30	60	50		
		00			
	Referen	nce Plane			
Test Setup:	40cm       80cm       LISN         Filter       AC power         Filter       AC power         E.U.T       Adapter         Fest 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 stabilization network (L. coupling impedance for th 2. The peripheral devices through a LISN that provi- with 50ohm termination. test setup and photograp</li> <li>Both sides of A.C. line interference. In order to the positions of equipment a changed according to measurement.</li> </ol>	I.S.N.). This provide he measuring equipm are also connected ides a 50ohm/50uH c (Please refer to the b ohs). are checked for ma find the maximum en and all of the interfa	es a 500hm/50uH hent. to the main power coupling impedance lock diagram of the aximum conducted nission, the relative ce cables must be		
Test Result:	PASS				

### 3.1.2. Test data

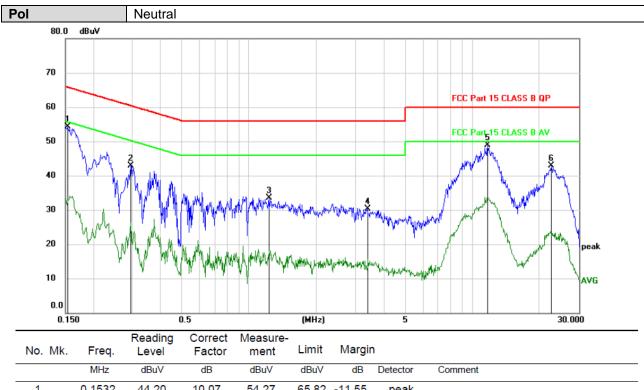
#### Please refer to following diagram for individual

Test Mo	ode : Charging
Test Re	esults : PASS
Note:	The test results are listed in next pages.
	All test modes has been tested, this report only reflected the worst mode.
	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 !:over margin 

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



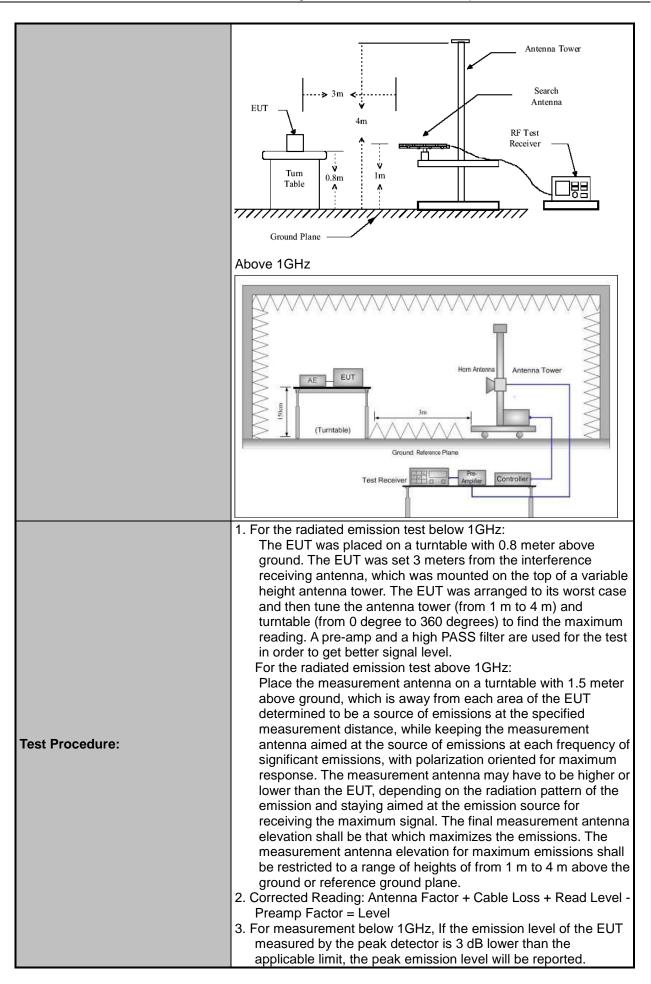
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 (	0.1532	44.20	10.07	54.27	65.82	-11.55	peak	
2 (	0.2938	32.72	10.15	42.87	60.42	-17.55	peak	
3 1	1.2269	23.02	10.42	33.44	56.00 ·	-22.56	peak	
4 3	3.3870	19.71	10.53	30.24	56.00	-25.76	peak	
5 * 11	1.7000	37.96	10.86	48.82	60.00 ·	-11.18	peak	
6 22	2.5600	31.88	11.03	42.91	60.00	-17.09	peak	

\*:Maximum data x:Over limit !:over margin 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	on 15	.20	9				
Test Method:	ANSI C63.10: 2	2013							
Frequency Range:	9 kHz to 25 GH	lz							
Measurement Distance:	3 m								
Antenna Polarization:	Horizontal & Ve	ertical							
Operation mode:	Refer to item 4.	.1							
	Frequency 9kHz- 150kHz 150kHz-	Qua	tecto asi-pe k	ea	RBW 200Hz 9kHz	VBW 1kHz 30kHz	Q	Remark uasi-peak Value	
Receiver Setup:	30MHz 30MHz		asi-pe <u>k</u> asi-pe		9KHZ 100KH	300KH		uasi-peak Value uasi-peak	
	z		k .		z	z		Value	
	Above 1GHz		<u>Peak</u> Peak		1MHz 1MHz	3MHz 10Hz		eak Value erage Value	
	Frequer	1		(	Field Stre microvolts/		Measurement Distance (meters)		
	0.009-0.490				2400/F(k		300		
	0.490-1.705				24000/F( 30	KHz)	<u> </u>		
	30-88			100			3		
	88-210			150			3		
Limit:	216-96				200			3	
	Above 9	60			500			3	
	Frequency	,	Field Strength (microvolts/mete r)		olts/mete	Measure nt Distan (meter	се	Detector	
	Above 1GH	z		500		3		Average	
	For radiated en	niseio	ns ha		000 v 30MHz	3		Peak	
		113510		5101			-		
	Distance = 3m								
Test setup:	EUT	 Turn	table				Rece	tiver	
			G	roun	d Plane				
	30MHz to 1GH	z							



	<ul> <li>Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.</li> <li>4. 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		:	151kHz				
Test Results		:	PASS				
Note:	1. The test	res	ults are listed in next pages.				
	2. This mo	de is	s 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 receive							
			r, the test unit shall be deemed to meet both limits and the measurement with the ector need not be carried out.				

### For signal coil(151KHz):

1

2

3

4

5 \*

6

0.0102

0.0126

0.0146

0.0252

0.0637

0.1179

13.89

15.34

11.59

16.04

17.93

12.16

21.49

21.43

21.38

21.12

20.11

19.78

35.38

36.77

32.97

37.16

38.04

31.94

127.5

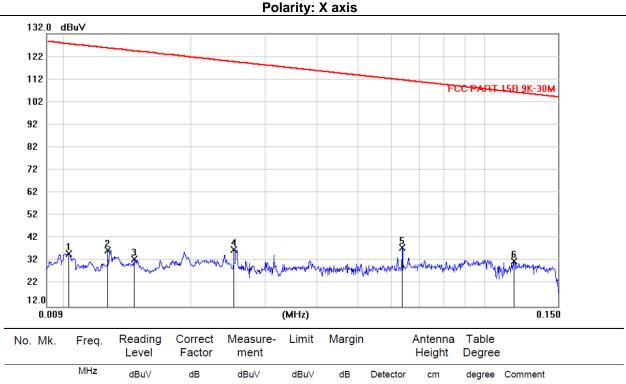
125.6

124.4

119.6

111.6

106.3



peak

peak

peak

peak

peak

peak

-92.14

-88.92

-91.45

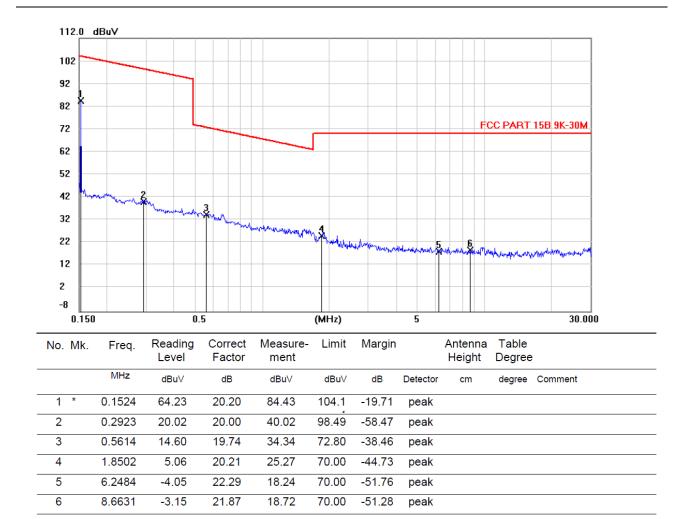
-82.53

-73.62

-74.39

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.

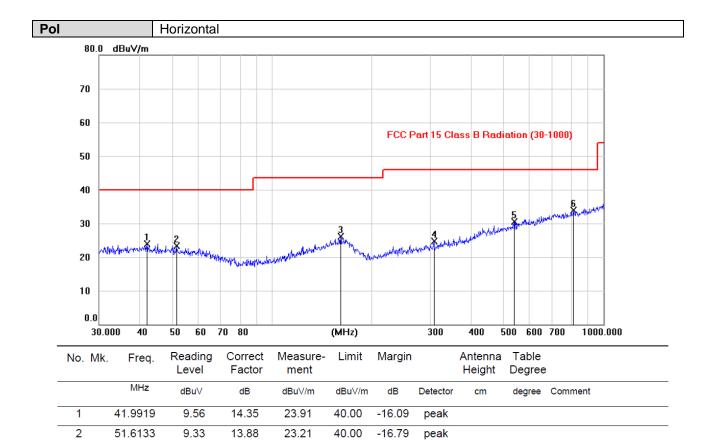
Frequer	ncy Range	:	30MHz~1000MHz				
Test Mode		:	151KHz				
Test Results		:	PASS				
Note:	1. The tes	t res	ults are listed in next pages.				
	2. All test	mode	es has been tested, this report only reflected the worst mode.				
	a peak de	If the limits for the measurement with the average detector are met when using a receiver with peak detector, the test unit shall be deemed to meet both limits and the measurement with the uasi-peak detector need not be carried out.					

Frequen	cy Range :	Above 1GHz			
EUT	:	/	Test Date	:	/
M/N	:	/	Temperature	:	/
Test Eng	gineer :	/	Humidity	:	/
Test Mo	de :	/			
Test Res	sults :	N/A			
Note:		t frequency of the internal sources of the EU shall only be made up to 1 GHz. So the free			

			3	0MHz-1	GHz						
UT Description	Universal I	Power C	harger			Мо	del No.	PS	PS-B003WS		
emperature	<b>24</b> ℃					Hu	Humidity 56%				
est Voltage	DC 3.7V fr	om batte	ery								
ol	Vertical										
80.0 dBuV/m											
70											
60					FCC P	art 15 Cla	ıss B Radi	ation (30-	-1000)		
50										ſ	
40										6, .	
30	1. 2		Ś	3		4	www.	within	New Westerstory	- Ann	
20	with which we wanted	moliterenter	When hit we have not	production while	Whatshelder	northeliter and	wyww.				
10											
0.0											
30.000 40	50 60 7	0 80		(MHz)		300	400 5	500 600	700 1	000.000	
No. Mk. Fred	. Reading Level	Correct Factor	Measure- ment	Limit	Margin		Antenna Height	Table Degree	;		
MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Commer	nt	
1 48.140	1 10.33	14.07	24.40	40.00	-15.60	peak					
2 62.220	1 10.03	12.80	22.83	40.00	-17.17	peak					
3 147.438	1 10.03	10.03 14.86		43.50	-18.61	peak					
4 360.827	1 10.58	15.45	26.03	46.00	-19.97	peak					
5 593.604	5 11.84	20.09	31.93	46.00	-14.07	peak					
6 * 913.929	7 9.94	24.23	34.17	46.00	-11.83	peak					

30MHz-1GHz

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.

11.09

10.31

11.46

10.79

14.94

14.31

18.99

23.10

26.03

24.62

30.45

33.89

43.50

46.00

46.00

46.00

-17.47

-21.38

-15.55

-12.11

peak

peak

peak

peak

161.0783

308.6239

537.9663

814.6337

3

4

5

6

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

### 3.3. Test Specification

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

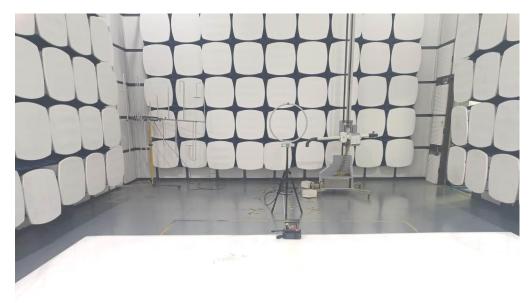
Frequency(kHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
151	0.289		Pass

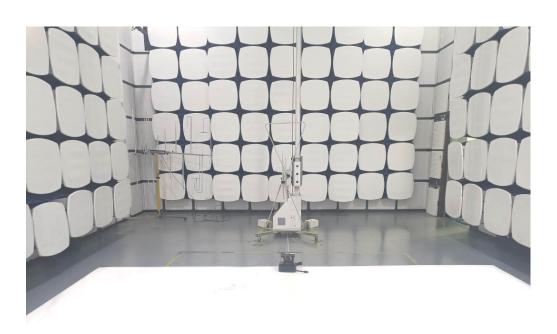
Test plots as follows:									
Agilent Spectrum Analyzer - Occupied BW									
Center Freq 151.000 kHz	🛶 Trig	SENSE:INT SOURCE OFF ter Freq: 151.000 kHz Free Run Avg Ho an: 0 dB	Radio S Id: 10/10	5 AM Oct 17, 2023 itd: None evice: BTS	Frequency				
#IF	Gain:Low #Atte	en: V ab	Radio L	evice: BTS					
10 dB/div Ref -20.00 dBm									
-30.0 -40.0					Center Freq 151.000 kHz				
-50.0									
-70.0									
-100									
Center 151 kHz				Span 2 kHz	05.04-5				
#Res BW 100 Hz		#VBW 300 Hz		weep FFT	CF Step 200 Hz				
Occupied Bandwidth		Total Power	-43.0 dBm		<u>Auto</u> Man				
	269 Hz				Freq Offset				
Transmit Freq Error	244 Hz	<b>OBW Power</b>	99.00 %		0 Hz				
x dB Bandwidth	289 Hz	x dB	-20.00 dB						
MSG STATUS ACC oupled: Accy unspec'd < 10MHz									

#### Test plots as follows:

# 4. Photos of test setup

Radiated Emission

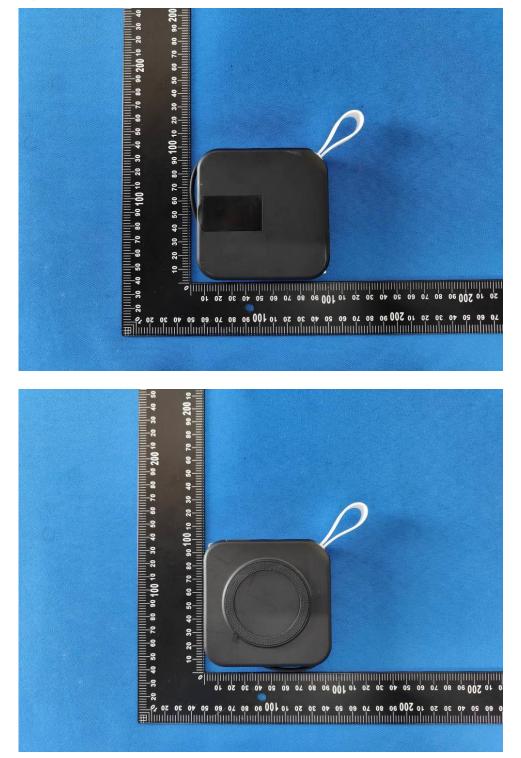






Conducted Emission

# 5. Photographs of EUT



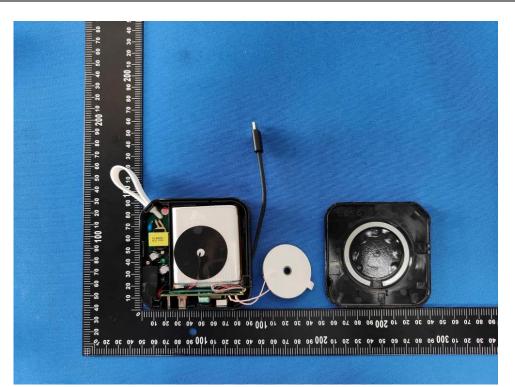


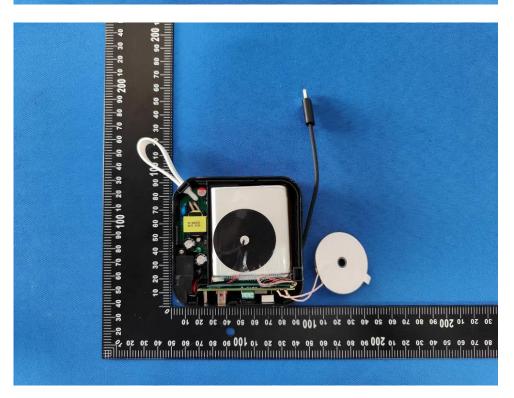


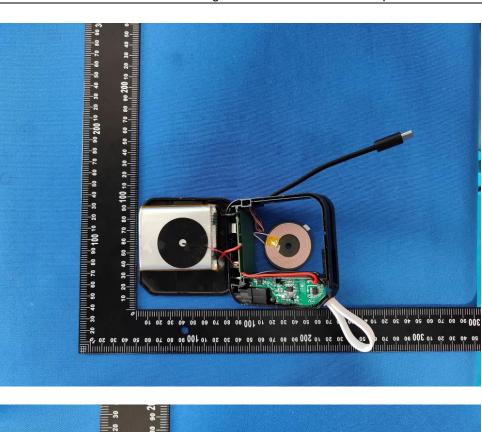


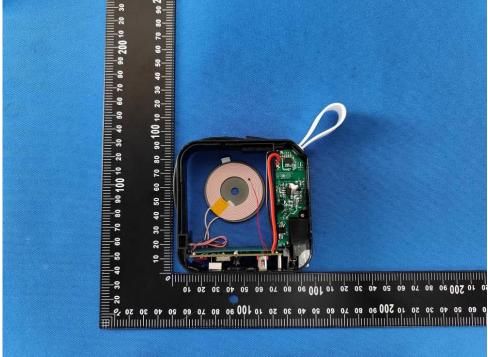


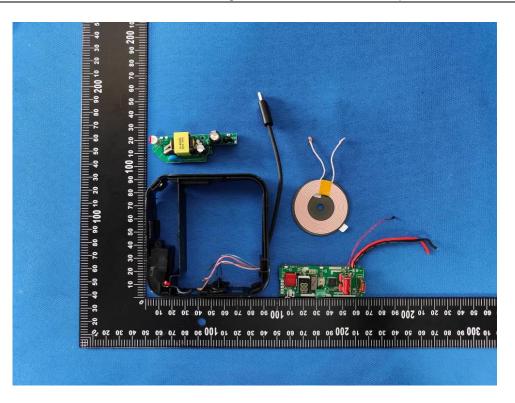


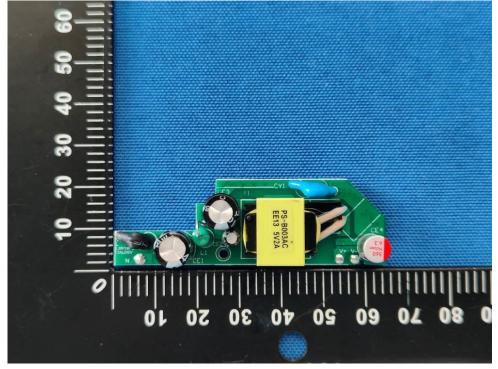


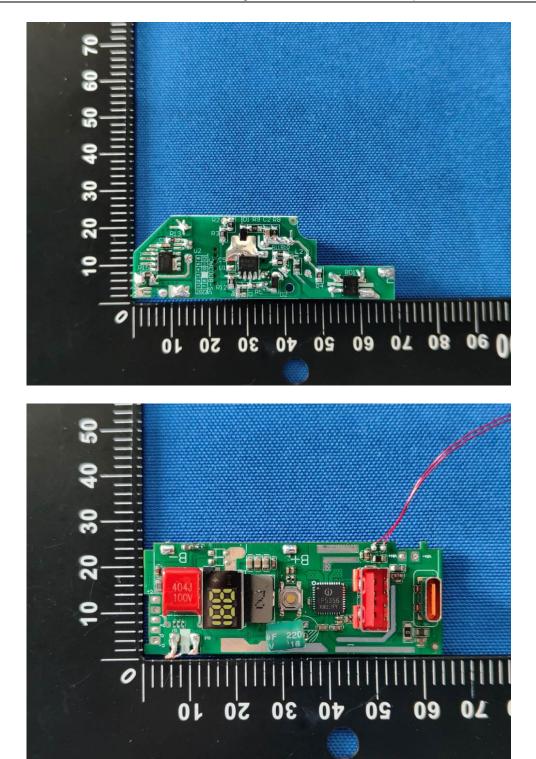


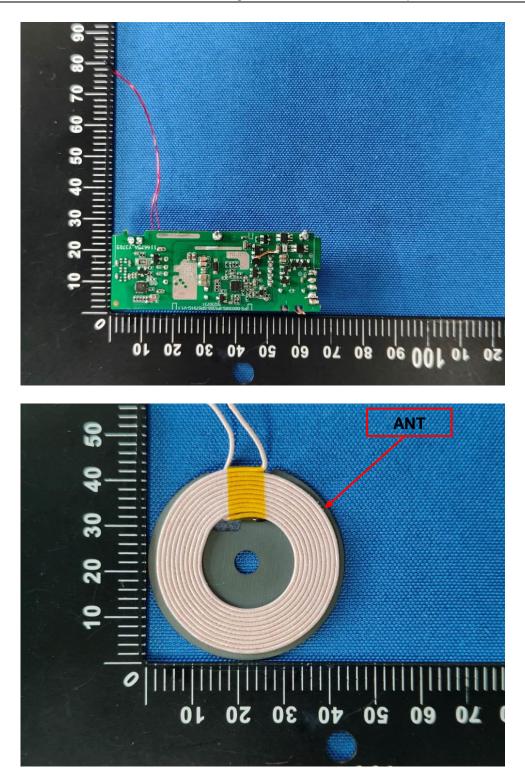


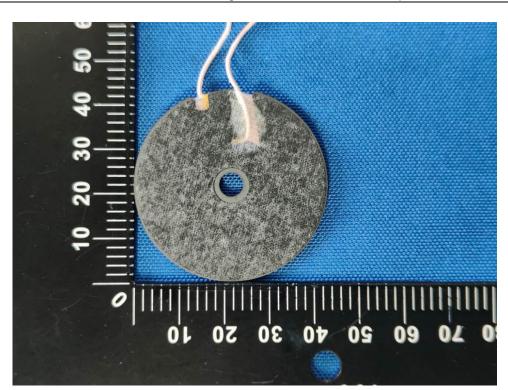




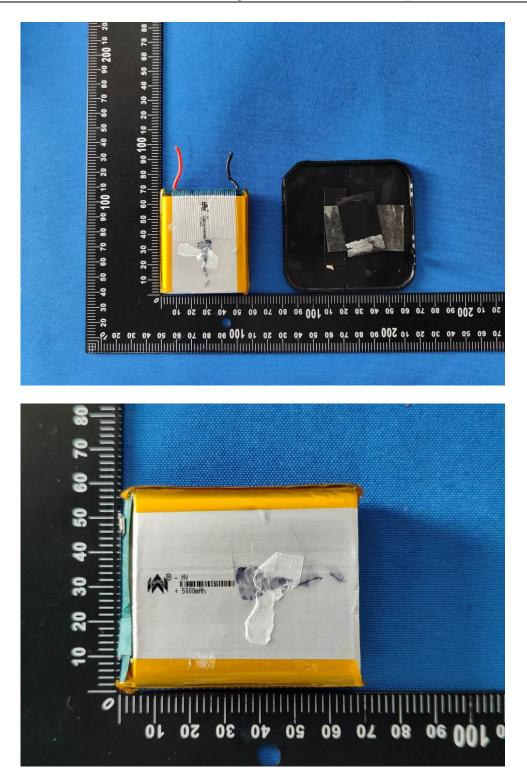












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