

FCC TEST REPORT FCC ID: 2AP2N-DOCK5

On Behalf of

Shenzhen Esorun Technology Co., LTD

Magnet Wireless power bank with bracket

Model No.: Dock5, Dock10

Prepared for	:	Shenzhen Esorun Technology Co.,LTD
Address	:	Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan Community, Dalang Street, Longhua District, 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

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TABLE OF CONTENTS

<u>D</u>	Description	Page
1.	Test Result Summary	5
2.	General Information	6
	2.1. Description of Device (EUT)2.2. Accessories of Device (EUT)	
	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
	3.1.1. Test Specification	10
	3.1.2. Test Data	11
	3.2. Radiated Spurious Emission Measurement	14
	3.2.1. Test Specification	14
	3.2.2. Test Data	17
	3.3. Test Specification	23
	3.3.1. Test Data	
4.	Photos of Test Setup	25
5.	Photographs of EUT	27

Applicant	:	Shenzhen Esorun Technology Co.,LTD			
Address	:	Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan Community, Dalang Street, Longhua District, Shenzhen			
Manufacturer	:	Shenzhen Esorun Technology Co.,LTD			
Address	:	Room 226, Building A, B, C, Zone B, Yuanfen Industrial Zone, Taoyuan Community, Dalang Street, Longhua District, Shenzhen			
EUT Description	:	Magnet Wireless power bank with bracket			
		(A) Model No. : Dock5, Dock10			
		(B) Trademark : ESORUN			

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):	Jack Xu Project Manager	Jan. Po
Date of issue	August 16, 2022	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	August 16, 2022	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	:	Magnet Wireless power bank with bracket		
Model No.	:	Dock5, Dock10		
DIFF.	:	There is no difference between the models except the model name. So all the test were performed on the model Dock5.		
Trademark	:	ESORUN		
Power supply	:	Power from adapter DC 3.85V from battery		
EUT information	:	Input : $5V = 2.5A$, $9V = 2A$, $12V = 1.5A$ (Max18W) Type-C Output : $5V = 2.4A$, $9V = 2.22A$, $12V = 1.5A$ (Max 20W) Wireless Output : $5W$, 7.5W, 10W(Max) Simultaneous Output: $5V=3A$		
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	:	V1.1		
Connector cable loss	:	0.5dB (This value is supplied by applicant).		
Intend use environment	:	Residential, commercial and light industrial environment		

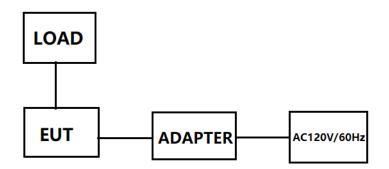
2.2. Accessories of Device (EUT)

Accessories1	:	Cable
Manufacturer	:	Shenzhen Esorun Technology Co.,LTD
Model	:	/
Ratings	:	/

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	BlitzForce PD Pioneer 65W 2-Port Wall Charger	BlitzForce.	BZ-PC001		
2	Wireless load				

2.4. Block Diagram of Connection between EUT and Simulators



2.5. Description of Test Modes

Channel	Frequency (KHz)
1	147

2.6. Test Conditions

Items	Required	Actual		
Temperature range:	15-35°C	24°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: 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 ⁻⁸ 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%

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	2020.09.02	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	2.3	102137	2021.08.25	1Year
Spectrum analyzer	Agilent	N9020A	A.14.16	MY499100060	2021.08.25	1Year
Receiver	ROHDE&SCHWARZ	ESR	2.28 SP1	1316.3003K03-10 2082-Wa	2021.08.25	1Year
Receiver	R&S	ESCI	4.42 SP1	101165	2021.08.25	1Year
Bilog Antenna	Schwarzbeck	VULB 9168	/	VULB 9168#627	2021.08.30	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	/	2106	2021.08.30	2Year
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	/	00059	2021.08.30	2Year
RF Cable	Resenberger	Cable 1	/	RE1	2021.08.25	1Year
RF Cable	Resenberger	Cable 2	/	RE2	2021.08.25	1Year
RF Cable	Resenberger	Cable 3	/	CE1	2021.08.25	1Year
Pre-amplifier	HP	HP8347A	/	2834A00455	2021.08.25	1Year
Pre-amplifier	Agilent	8449B	/	3008A02664	2021.08.25	1Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	/	8126-466	2021.08.25	1Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	/	101043	2021.08.25	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	/	00946	2021.08.30	2 Year
Preamplifier	SKET	LNPA_1840 -50	/	SK2018101801	2021.08.25	1 Year
Power Meter	Agilent	E9300A	/	MY41496628	2021.08.25	1 Year
Power Sensor	DARE	RPR3006W	/	15100041SNO91	2021.08.25	1 Year
Temp. & Humid. Chamber	Weihuang	WHTH-1000 -40-880	/	100631	2022.04.22	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	/	20140927-6	2021.08.25	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

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

3. Test Results and Measurement Data

3.1. Conducted Emission

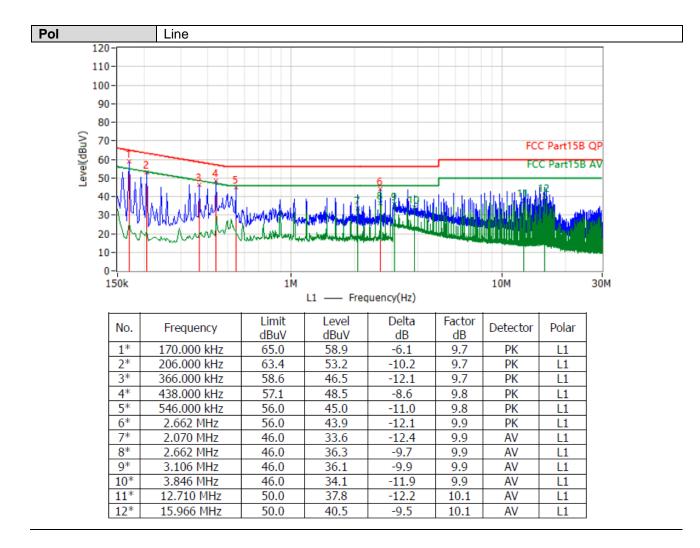
3.1.1. Test Specification

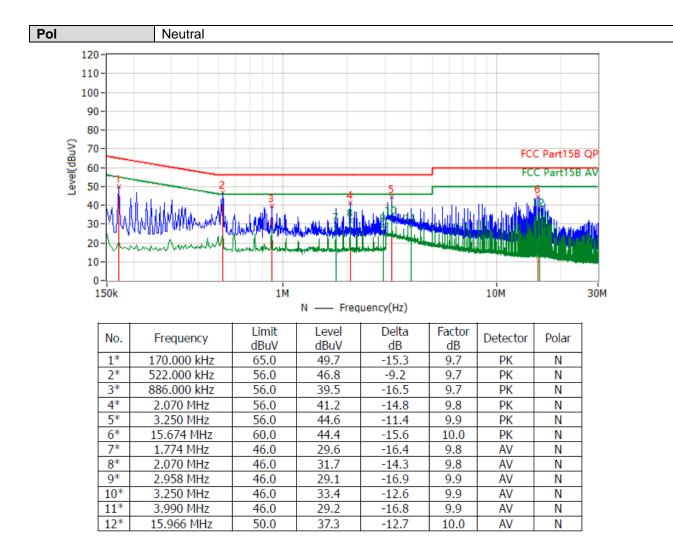
Test Requirement:	FCC Part15 C Section 15.20	07				
Test Method:	ANSI C63.10:2013					
Frequency Range:	150 kHz to 30 MHz					
Receiver setup:	RBW=9 kHz, VBW=30 kHz,	Sweep time=auto				
	Frequency range (MHz)	Limit (d	IBuV)			
		Quasi-peak	Average			
Limits:	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	5-30	60	50			
	Refere	nce Plane				
Test Setup:	40cm 80cm Filter AC power E.U.T Adapter Filter AC power EMI EMI Remark: E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m					
Test Mode:	Transmitting Mode					
Test Procedure:	 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. 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). 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 Mo	ode : Charging+10W
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.(15W+5W)
	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.

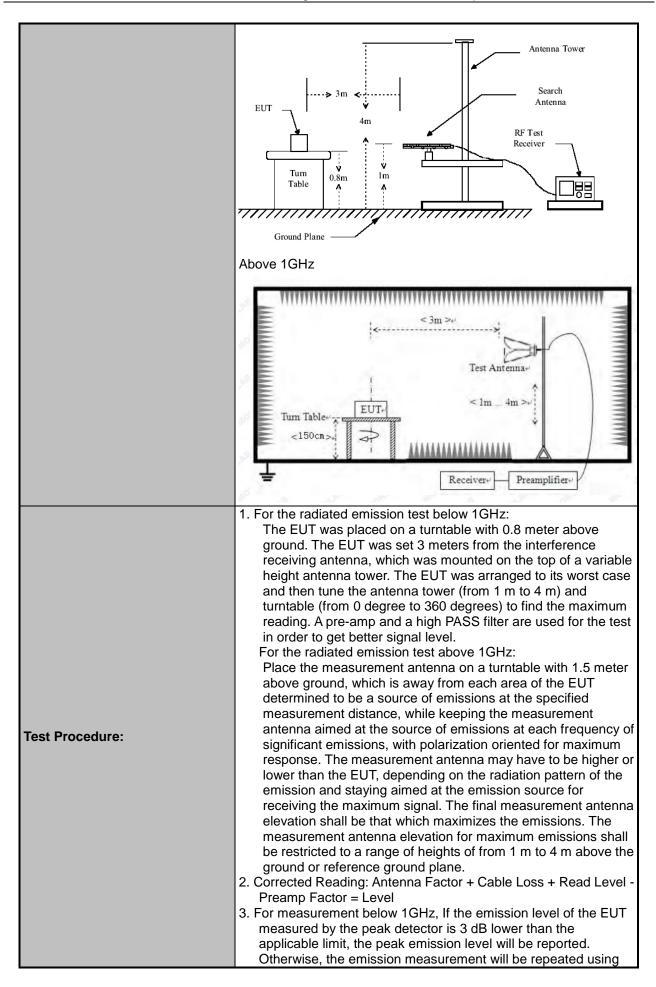




3.2. Radiated Spurious Emission Measurement

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		tecto		RBW	VBW		Remark	
	9kHz- 150kHz	Qua	asi-pe k	ea	200Hz	1kHz	Q	uasi-peak Value	
Receiver Setup:	150kHz- 30MHz	Qua	asi-pe k	ea	9kHz	30kHz	Q	uasi-peak Value	
Receiver Setup.	30MHz-1GH	Qua	asi-pe	ea	100KH	300KH	Q	uasi-peak	
	z		k		Z	Z		Value	
	Above 1GHz		<u>eak</u>		1MHz	<u>3MHz</u>		eak Value	
		ŀ	Peak		1MHz	10Hz		erage Value	
	Frequer	су			Field Stre		Measurement Distance (meters)		
	0.009-0.490)		2400/F(k	(Hz)		300	
	0.490-1.7		5 24000/F(KHz)		30		
	1.705-3		0		30		30		
	30-88			100 150				3	
Limit:	88-210 216-96			200			3		
	Above 9			500			3		
	Frequency			eld Strength crovolts/mete		Measure nt Distan		Detector	
					r)	(meter	rs)		
	Above 1GHz			500		3		Average	
					000	3		Peak	
	For radiated en	nissio	ns be	elov	v 30MHz				
	Distance = 3m							Computer	
		•	,		\frown	[Pre -Am	plifier	
Test setup:	EUT	— _ Turn	table	1m					
	║╶┸╼┙			roun	d Plane	⊥ └ ᄀ	Reco	eiver	
	30MHz to 1GH	7				 1			
		<u> </u>							

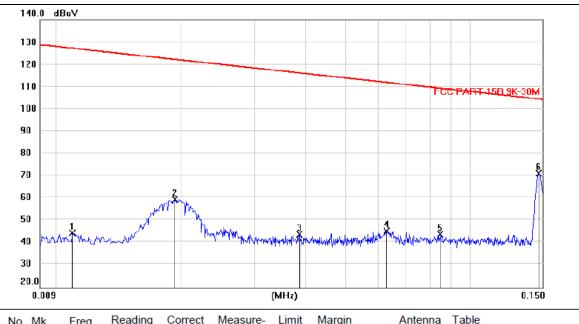


	 the quasi-peak detector and reported. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f □ 1 GHz for peak measurement. 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.
Test mode:	Refer to section 4.1 for details
Test results:	PASS

3.2.2. Test Data

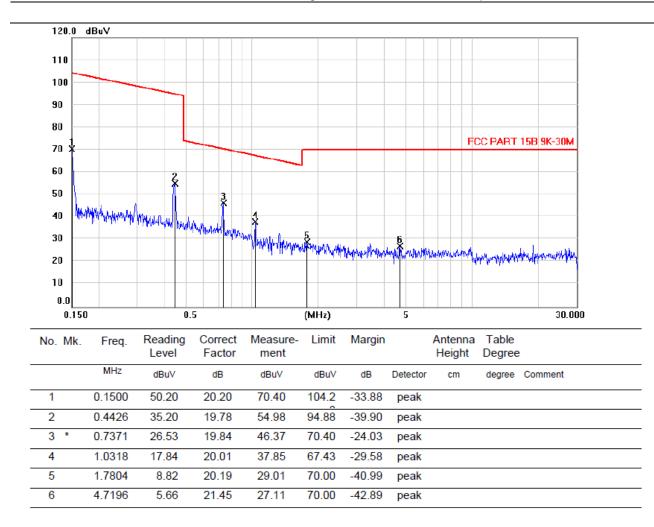
Please refer to following diagram for individual

Freque	ncy Range	:	9KHz~30MHz						
Test Mode :		:	TX: 147kHz						
Test Re	sults	:	PASS						
Note:	te: 1. The test results 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 guasi-peak detector need not be carried out.								



NO. MK.	Freq.	Level	Factor	ment	Limit	wargin		Height		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1	0.0108	22.98	21.48	44.46	127.1	-82.66	peak			
2	0.0191	38.27	21.27	59.54	122.1	-62.63	peak			
3	0.0384	23.33	20.53	43.86	116.1	-72.25	peak			
4	0.0628	25.33	20.09	45.42	111.8	-66.42	peak			
5	0.0846	23.97	19.98	43.95	109.2	-65.30	peak			
6 *	0.1473	51.13	20.16	71.29	104.4	-33.15	peak			

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

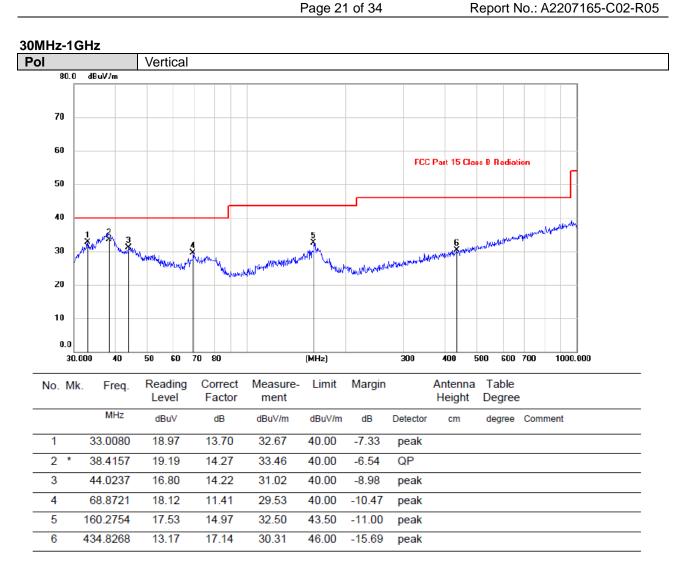


Note:1. *:Maximum data; x:Over limit; I:over margin.

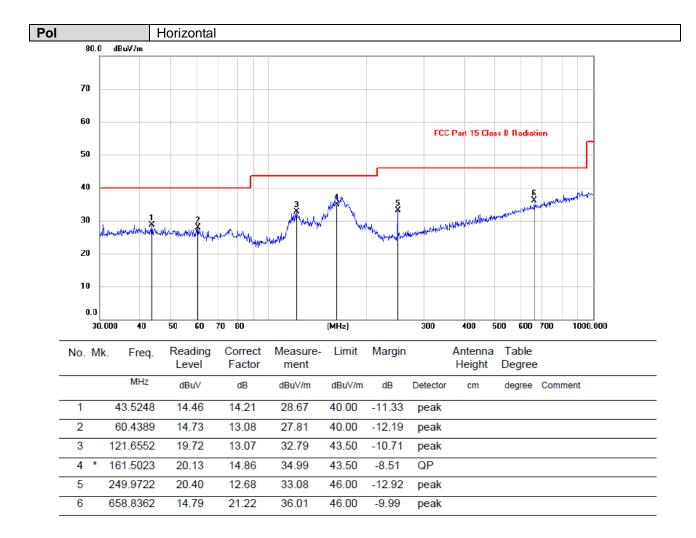
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Frequer	ncy Range	:	30MHz~1000MHz						
Test Mode :		:	all modes						
Test Re	sults	:	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. (Charging+10W)								
	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			
 The highest frequency of the internal sources of Note: measurement shall only be made up to 1 GHz. So the fr not applicable. 			



Note:1. *:Maximum data; x:Over limit; I: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.

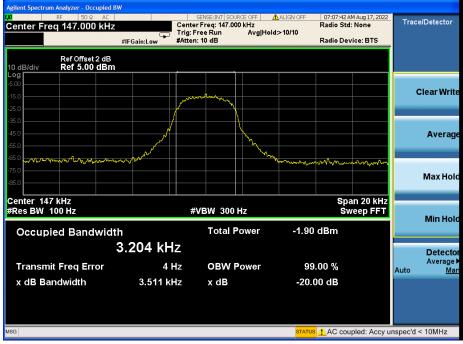
3.3. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)	
Test Method:	ANSI C63.10: 2013	
Limit:	N/A	
Test Procedure:	 According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. Set to the maximum power setting and enable the EUT transmit continuously. 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. Measure and record the results in the test report. 	
Test setup:	Spectrum Analyzer EUT	
Test Mode:	Refer to section 4.1 for details	
Test results:	PASS	

3.3.1. Test Data

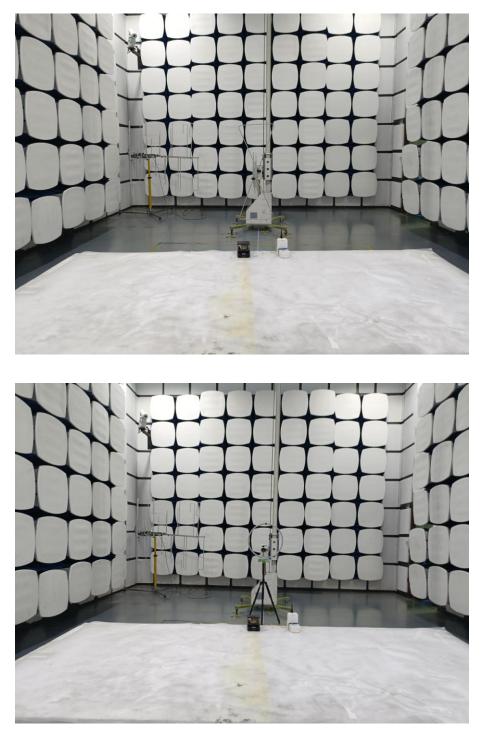
Frequency(KHz)	20dB Occupy Bandwidth (kHz)	Limit (kHz)	Conclusion
147	3.511		PASS

Test plots as follows:



4. Photos of Test Setup

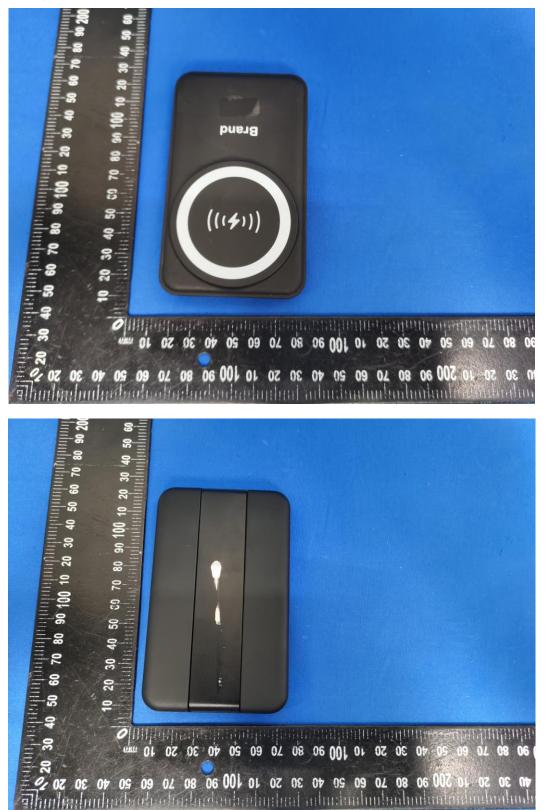
Radiated Emission



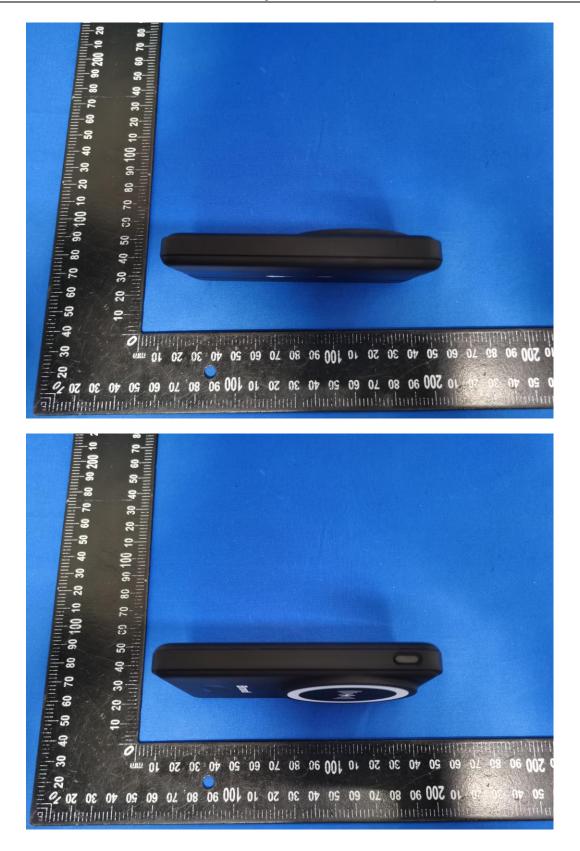
Conducted Emission



5. Photographs of EUT

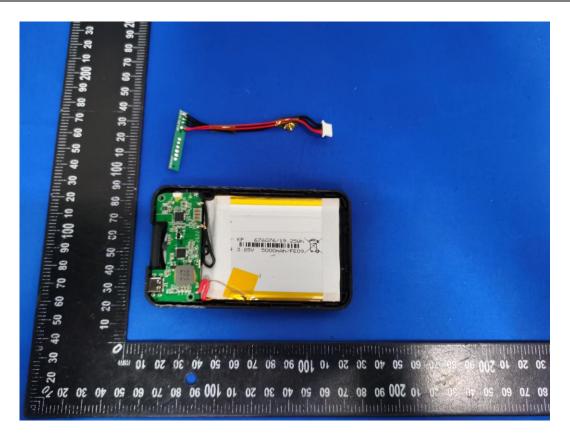


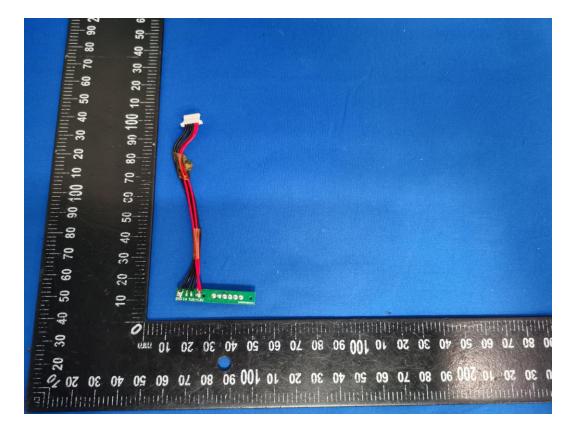


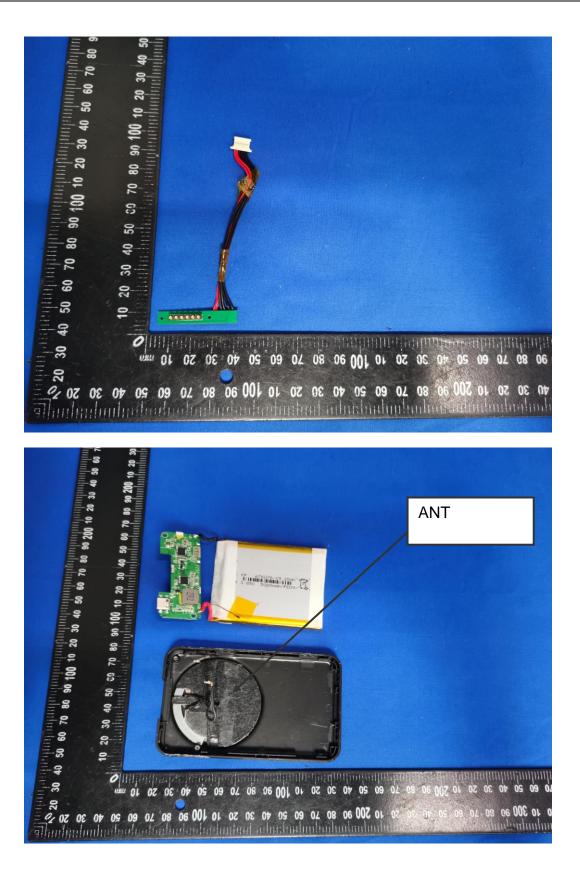


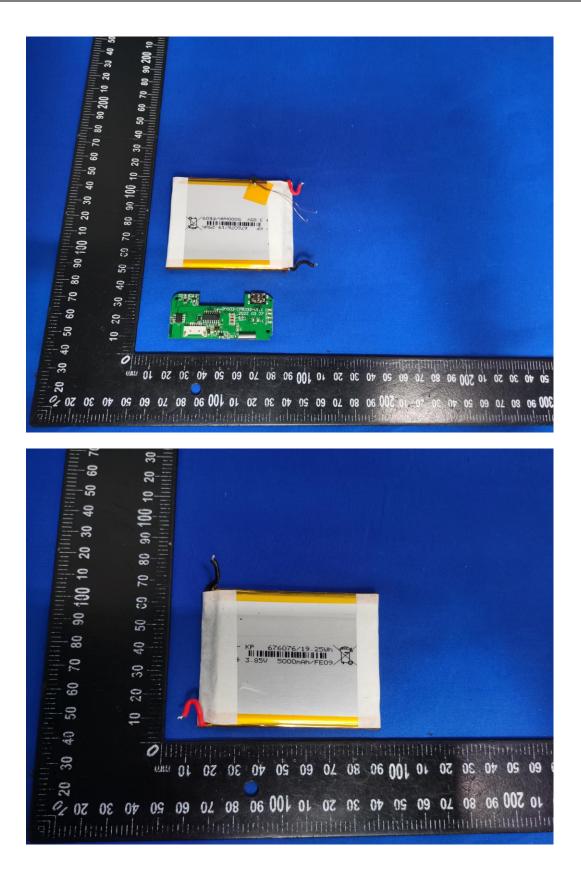


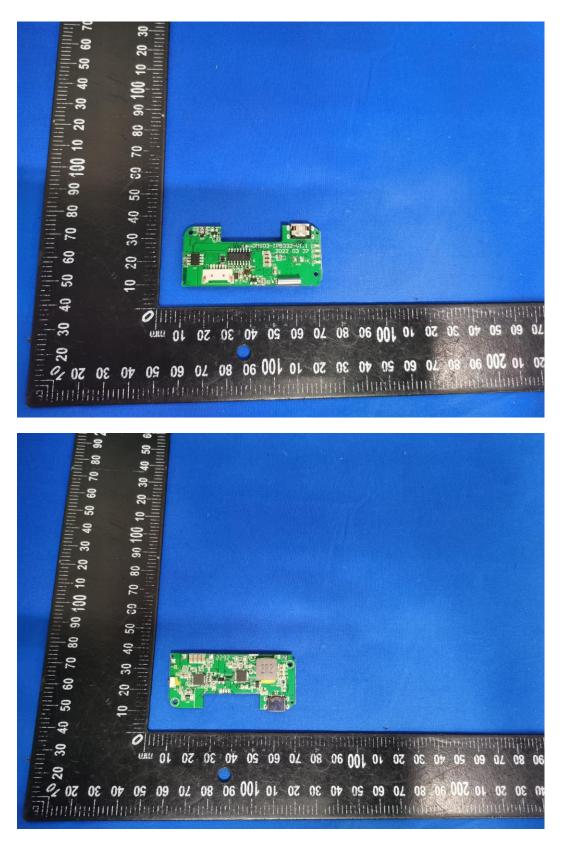












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