

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

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Test specification	
Test specification Standard Shenzhen CTA Testing Tech	
Standard Shenzhen CTA Testing Tech This publication may be repro Shenzhen CTA Testing Techr material. Shenzhen CTA Test liability for damages resulting placement and context.	FCC Rules and Regulations Part 15 Subpart C (Section 15.209), ANSI C63.10: 2013 anology Co., Ltd. All rights reserved. duced in whole or in part for non-commercial purpses as long as the nology Co., Ltd. is acknowledged as copyright owner and source of the ng Technology Co., Ltd. takes no responsibility for and will not assume from the reader's interpretation of the reproduced material due to its
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Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China Tel:+86-755 2322 5875 E-mail:cta@cta-test.cn Web:http://www.cta-test.cn

TEST REPORT Equipment under Test Magnetic Power Bank NX-YSP04 Model /Type NX-YSP01,NX-YSP02, NX-YSP03,NX-YZP01,NX-YSP04,NX-Listed Models CTATESTING YSP08,NX-P11, NX-65W, NX-P07-1, NX-P07-2, NX-P15/PD286-1, NX-P09, NX-P10, NX-P11, NX-P12, NX-P13 Shenzhen NOHON Industrial Co.,Ltd Applicant CTATESTING Address 7E010, Gangshen International Center, Xinniu Community, Minzhi Street, Longhua District, Shenzhen, China Shenzhen NOHON Industrial Co.,Ltd Manufacturer : CTATESTING 7E010, Gangshen International Center, Xinniu Community, Minzhi : Street, Longhua District, Shenzhen, China Test Result: PASS The test report merely corresponds to the test sample. it is not polaboratory. It is not permitted to copy extracts of these test result without the written permission of the test GTA CTATESTING Shenzhen CTA Testing Technology Co., Ltd. Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China Tel:+86-755 2322 5875 E-mail:cta@cta-test.cn Web:http://www.cta-test.cn

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TEST STANDARDS 1

The tests were performed according to following standards:

FCC Rules and Regulations Part 15 Subpart C (Section 15.207): Conducted limits. FCC Rules and Regulations Part 15 Subpart C (Section 15.209): Radiated emission limits; general requirements. ANSI C63.10: 2013: American National Standard for Testing Unlicensed Wireless Devices

2 SUMMARY

2.1 General Remarks

2.1 General Remarks		TATESTING
Date of receipt of test sample		Jun. 05, 2023
Testing commenced on		Jun. 05, 2023
Testing concluded on	:	Jun. 14, 2023

2.2 Product Description

	Testing commenced on	: Jun. 05, 2023
	Testing concluded on	: Jun. 14, 2023
	2.2 Product Description	
ATE	Product Name:	Magnetic Power Bank
	Model/Type reference:	NX-YSP04
	Hardware version:	V1.0
	Software version:	V1.0 CTA
	Test samples ID:	CTA230327005-1# (Engineer sample), CTA230327005-2# (Normal sample)
	Power supply:	Input Type-C: 5V/2A 9V/2A Output Type-C: 5V/2.4A, 9V/2.22A, 12V/1.5A Input Lightning: 5V/2A Wireless Output: 5W/7.5W/10W Battery:3.85V
	Adapter information (Auxiliary test supplied by test Lab) :	Model: GS-551
	Operation frequency:	110KHz - 205KHz
	Modulation type:	ASK
	Antenna type:	Loop coil antenna

2.3 Description of the test mode

Equipment under test was operated during the measurement under the following conditions: ⊠ Charging and communication mode

Test Modes:					
Mode 1	Wireless Charging	CTA .	Recorded		
Mode 2	Standby	G	Pre-tested		
Note: All test modes were pre-tested, but we only recorded the worst case in this report.					

2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
GT I	/	/	TED' I	1	/
	fications ons were impleme	nted to meet t	esting criteria.	ESTINC	

Modifications 2.5

3 TEST ENVIRONMENT

Address of the test laboratory 3.1

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations: FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

24 ° C
ATA
45 %
950-1050mbar

AC Power Conducted Emission:

	Temperature:	25 ° C
1	INC	
	Humidity:	46 %
	-INI	2
	Atmospheric pressure:	950-1050mbar

Conducted testing:

Atmospheric pressure:	950-1050mbar
Conducted testing:	ESTING
Temperature:	25 ° C
	C
Humidity:	44 %
	Constant of the second s
Atmospheric pressure:	950-1050mbar

3.4 Summary of measurement results

Description of test	Result
Conducted emissions test	Compliant
Radiated emission test	Compliant
The 20dB bandwidth measurement	Compliant
Antenna requirement	Compliant
	Completit
5 Statement of the measurement uncortainty	

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods - Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. TESTING

Hereafter the best measurement capability for Shenzhen CTA laboratory is reported:

Test	Test Range		Notes
Radiated Emission	30~1000MHz	4.06 dB [🔽	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. CTATES

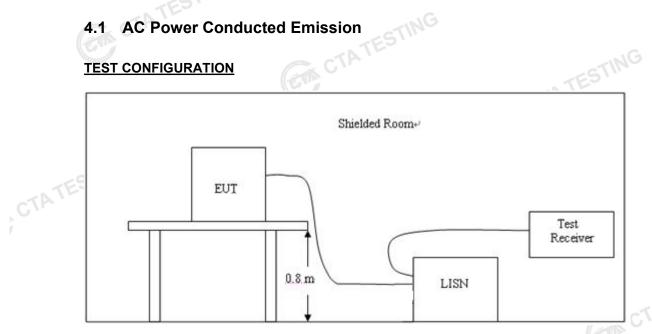
TATE

Equipments Used during the Test 3.6

	Test Equipment	Manufacturer	Model No.	Equipment No.	Calibration Date	Calibration Due Date
	LISN	R&S	ENV216	CTA-308	2022/08/03	2023/08/02
	LISN	R&S	ENV216	CTA-314	2022/08/03	2023/08/02
	EMI Test Receiver	R&S	ESPI	CTA-307	2022/08/03	2023/08/02
	EMI Test Receiver	R&S	ESCI	CTA-306	2022/08/03	2023/08/02
ATE	Spectrum Analyzer	Agilent	N9020A	CTA-301	2022/08/03	2023/08/02
	Spectrum Analyzer	R&S	FSP	CTA-337	2022/08/03	2023/08/02
	Vector Signal generator	Agilent	N5182A	CTA-305	2022/08/03	2023/08/02
	Analog Signal Generator	R&S	SML03	CTA-304	2022/08/03	2023/08/02
	Universal Radio Communication	CMW500	R&S	CTA-302	2022/08/03	2023/08/02
	Temperature and humidity meter	Chigo	ZG-7020	CTA-326	2022/08/03	2023/08/02
	Ultra-Broadband Antenna	G Schwarzbeck	VULB9163	CTA-310	2021/08/07	2024/08/06
	Horn Antenna	Schwarzbeck	BBHA 9120D	CTA-309	2021/08/07	2024/08/06
	Loop Antenna	Zhinan	ZN30900C	CTA-311	2021/08/07	2024/08/06
	Horn Antenna	Beijing Hangwei Dayang	OBH100400	CTA-336	2021/08/07	2024/08/06
	Amplifier	Schwarzbeck	BBV 9745	CTA-312	2022/08/03	2023/08/02
	Amplifier	Taiwan chengyi	EMC051845B	CTA-313	2022/08/03	2023/08/02
	Directional coupler	NARDA	4226-10	CTA-303	2022/08/03	2023/08/02
	High-Pass Filter	XingBo	XBLBQ-GTA18	CTA-402	2022/08/03	2023/08/02
	High-Pass Filter	XingBo	XBLBQ-GTA27	CTA-403	2022/08/03	2023/08/02
	Automated filter bank	Tonscend	JS0806-F	CTA-404	2022/08/03	2023/08/02
	Power Sensor	Agilent	U2021XA	CTA-405	2022/08/03	2023/08/02
	Amplifier	Schwarzbeck	BBV9719	CTA-406	2022/08/03	2023/08/02
			CTP CTP		CTA CT	ATESTING

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

- 1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
- 2, Support equipment, if needed, was placed as per ANSI C63.10.
- 3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5, All support equipments received AC power from a second LISN, if any.
- 6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

CTATES AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following :

	Limit	(dBuV)
Frequency range (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* D		

Decreases with the logarithm of the frequency.

CTATES

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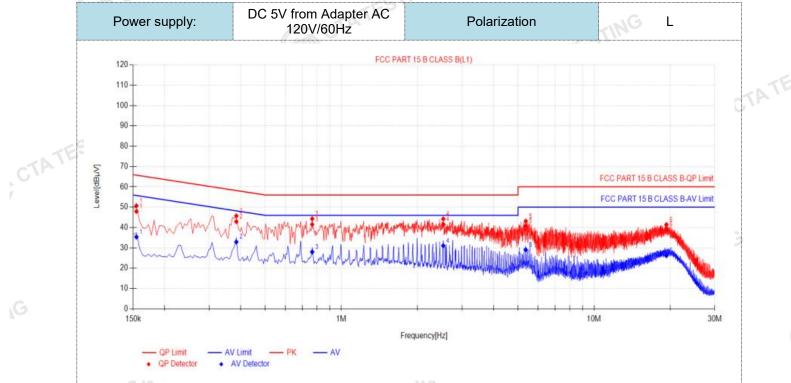
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TATE

CTA TESTING

TEST RESULTS

1. Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:



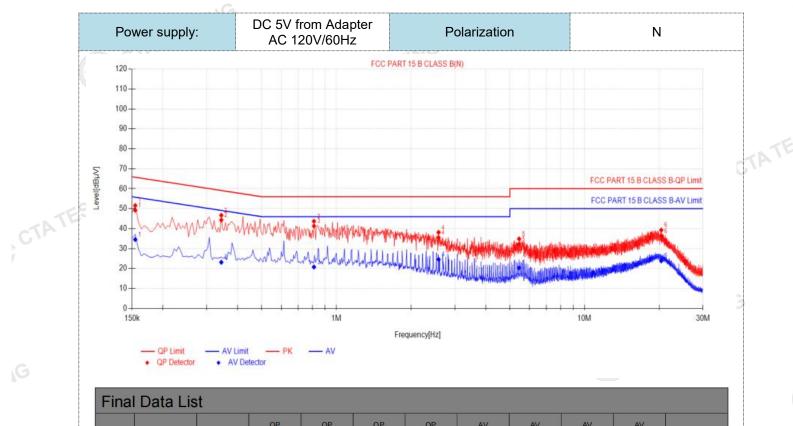
Final Data Lis

NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1545	10.50	37.40	47.90	65.75	17.85	24.84	35.34	55.75	20. <mark>4</mark> 1	PASS
2	0.384	10.50	32.40	42.90	58.19	15.29	22.40	32.90	48.1 9	15.29	PASS
3	0.7665	10.50	30.99	41.49	56.00	14.51	17.49	27.99	46.00	18.01	PASS
4	2.5305	10.50	31.03	41.53	56.00	14.47	20.55	31.05	46.00	14.95	PASS
5	5.3655	10.50	30.30	40.80	60.00	19.20	18.51	29.01	50.00	20.99	PASS
6	19.3245	10.50	28.67	39.17	60.00	20.83	15.67	26.17	50.00	23.83	PASS

CTATEE Note: Note:1).QP Value ($dB\mu V$)= QP Reading ($dB\mu V$)+ Factor (dB)

- ESTING 2). Factor (dB)=insertion loss of LISN (dB) + Cable loss (dB)
- 3). QPMargin(dB) = QP Limit (dB μ V) QP Value (dB μ V)
- 4). AVMargin(dB) = AV Limit (dBµV) AV Value (dBµV)

Report No.: CTA23060501401



NO.	Freq. [MHz]	Factor [dB]	QP Reading[dB μV]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Reading [dBµV]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.1545	10.50	38.71	49.21	65.75	16.54	24.04	34.54	55.75	21.21	PASS
2	0.3435	10.50	33.81	44.31	59.12	14.81	12.64	23.14	49.12	25.98	PASS
3	0.8115	10.50	30.83	41.33	56.00	14.67	10.26	20.76	46.00	25.24	PASS
4	2.58	10.50	24.96	35.46	56.00	20.54	14.10	24.60	46.00	21.40	PASS
5	5.4465	10.50	21.75	32.25	60.00	27.75	9.83	20.33	50.00	29.67	PASS
6	20.382	10.50	25.80	36.30	60.00	23.70	13.34	23.84	50.00	26.16	PASS

3). QPMargin(dB) = QP Limit (dB μ V) - QP Value (dB μ V)

4). AVMargin(dB) = AV Limit (dBμV) - AV Value (dBμV) CTATESTING

Radiated Emission 4.2

Limit

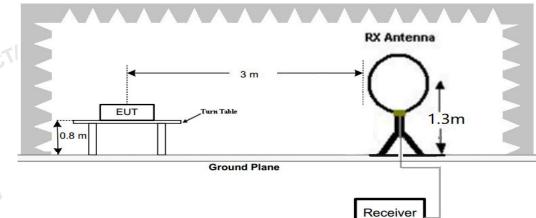
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

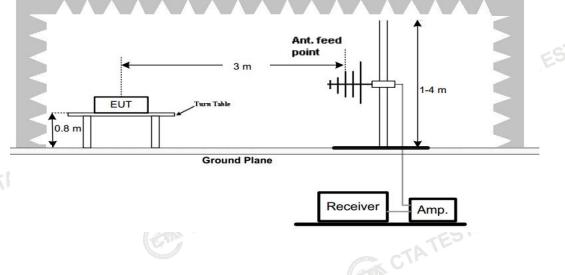
		Rac	diated emission limits	All and All an
	Frequency (MHz)	Distance (Meters)	Radiated (dBµV/m)	Radiated (µV/m)
	0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
TATE	0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
G	1.705-30	3	20log(30)+ 40log(30/3)	30
1.	30-88	3	40.0	100
	88-216	3	43.5	150
	216-960	3	46.0	200
	Above 960	3	54.0	500
				CIAI
	TEST CONFIGURATION	ON		

TEST CONFIGURATION





Radiated Emission Test Set-Up, Frequency below 1000MHz 2.



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- 1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane.
- Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn 2 table from 0°C to 360°C to acquire the highest emissions from EUT

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- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Repeat above procedures until all frequency measurements have been completed. 4.
- 5. Radiated emission test frequency band from 9KHz to 1000MHz.
- The distance between test antenna and EUT as following table states: 6.

Test Frequency range	Test Antenna Type	Test Distance	
9KHz-30MHz	Active Loop Antenna	3	
30MHz-1GHz	Bilog Antenna	3	

CTATEST Setting test receiver/spectrum as following table states:

	Test Frequency range	Test Receiver/Spectrum Setting	Detector	
	9KHz-150KHz RBW=200Hz/VBW=3KHz,Sweep time=Auto		QP	
	150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP	
	30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP	
R	ESULTS	GTA CTATES		STING
K	Hz-30MHz		CTAT	
	WOR	ST-CASE RADIATED EMISSION BELOW 30 MHz 🚿	Constants	

TEST RESULTS

For 9 KHz-30MHz

WORST-CASE RADIATED EMISSION BELOW 30 MHz

Frequency	Reading	Polar	Antenna Factor	Cable Loss	Emission Levels	Limits at 3m	Margin	Detector Mode
(MHz) 📈	(dBµV/m)	Loop	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
0.123750(F)	76.21	Loop	23.63	0.02	99.86	105.75	5.89	PK
0.123750(F)	53.66	Loop	23.63	5 0.02	77.31	85.75	8.44	AV
0.110	52.39	Loop	23.51	0.02	75.92	106.78	30.86	PK
0.110	47.92	Loop	23.51	0.02	71.45	86.78	15.33	AV
0.288	43.97	Loop	23.82	-0.17	67.62	98.42	30.80	QP
0.471	40.11	Loop	24.21	-0.28	64.04	94.14	30.10	QP
0.549	33.64	Loop	24.32	-0.3	57.66	72.81	15.15	QP
19								

Remark:

- 2. The test limit distance is 3m limit.
- 3. PK means Peak Value, QP means Quasi Peak Value, AV means Average Value.
- 4. F means Fundamental Frequency.
- 5. Emission level (dBuV/m) =Reading + Antenna Factor + Cable Loss.
- 6. Margin value = Limit value- Emission level.

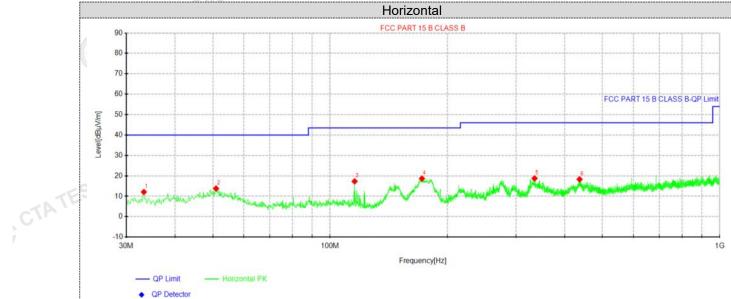
^{1.} Data of measurement within this frequency range shown "-- in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits and not recorded.



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For 30MHz-1GHz



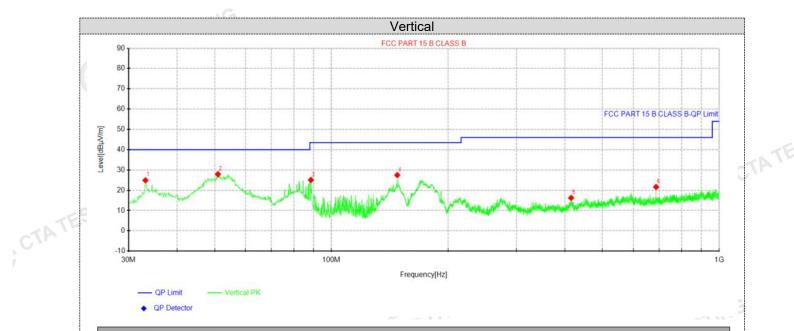
Suspected Data List

NO.	Freq.	Reading	Level	Factor	Limit	Margin	Height	Angle	Polarity
	[MHz]	[dBµV]	[dBµV/m]	[dB/m]	[dBµV/m]	[dB]	[cm]	[°]	
1	33.2738	30.26	12.10	-18.16	40.00	27.90	100	308	Horizontal
2	50.9762	30.06	13.79	-16.27	40.00	26.21	100	282	Horizontal
3	115.602	36.97	17.31	-19.66	43.50	26.19	100	334	Horizontal
4	172.105	39.61	18.67	-20.94	43.50	24.83	100	77	Horizontal
5	334.822	35.21	18.75	-16.46	46.00	27.25	100	84	Horizontal
6	436.793	33.47	18.31	-15.16	46.00	27.69	100	68	Horizontal

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dB μ V/m) - Level (dB μ V/m)



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COM CTATE

Suspected	Data List
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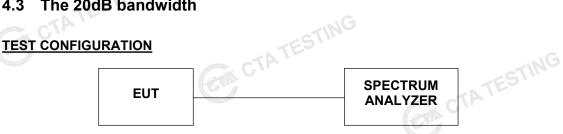
Susp	ected Data	LIST							
NO.	Freq. [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	33.1525	43.09	24.91	-18.18	40.00	15.09	100	70	Vertical
2	50.9762	44.18	27.91	-16.27	40.00	12.09	100	224	Vertical
3	88.5638	45.19	25.06	-20.13	43.50	18.44	100	79	Vertical
4	147.855	49.22	27.46	-21.76	43.50	16.04	100	224	Vertical
5	415.09	31.62	16.22	-15.40	46.00	29.78	100	360	Vertical
6	687.538	33.35	21.61	-11.74	46.00	24.39	100	309	Vertical

Note:1).Level (dBµV/m)= Reading (dBµV)+ Factor (dB/m)

2). Factor(dB/m)=Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB)

3). Margin(dB) = Limit (dB μ V/m) - Level (dB μ V/m)

The 20dB bandwidth 4.3



TEST PROCEDURE

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 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equip compliance with the 20dB attenuation specification may base on measurement at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be deomonstrated by measuring the radiated emissions.

LIMIT

The 20dB bandwidth shall be less than 80% of the permitted frequency band.

TEST RESULTS

Mode	Freq (KHz)	20dB Bandwidth (KHz)	Conclusion
Tx Mode	123.750	STING 10.00	PASS
Constanting of the second s	CTA	-	GTING





Standard Applicable

Standard Applicable

GTA CTATESTING For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to GTA CTATE ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Information

The antenna used in this product is a Coil Antenna, The directional gains of antenna used for transmitting is GTA CTATES 0dBi.

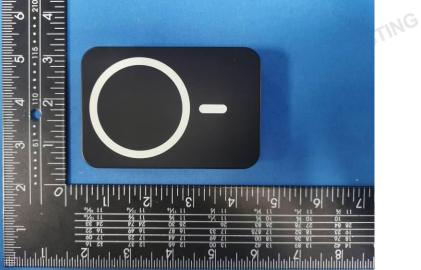
5 Test Setup Photos of the EUT

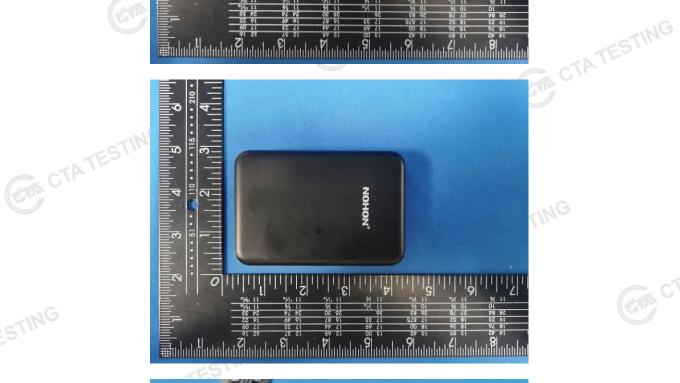


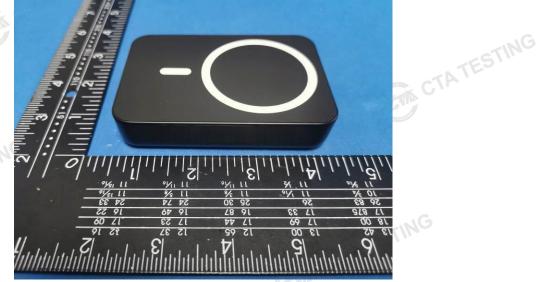


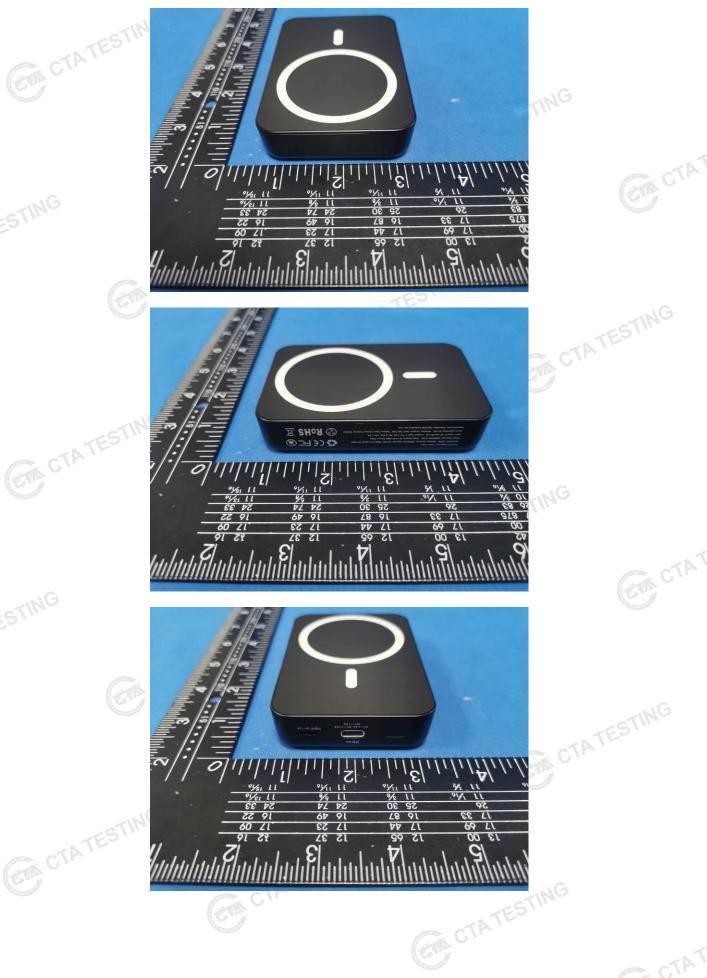












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