

FCC Test Report

Report No.: AGC04094190103FE01

PRODUCT DESIGNATION : 2600mAh powerbank

BRAND NAME : N/A

MODEL NAME : P324.203

CLIENT : Xindao B.V.

DATE OF ISSUE : Jan.18, 2019

STANDARD(S) : FCC Part 15 Subpart B

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan.18, 2019	Valid	Initial release

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TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY	4
2. SYSTEM DESCRIPTION	5
3. MEASUREMENT UNCERTAINTY	5
5. SUPPORT EQUIPMENT	7
6. TEST FACILITY	8
7. TEST ITEMS AND THE RESULTS	9
8. FCC LINE CONDUCTED EMISSION TEST	10
8.1. LIMITS OF LINE CONDUCTED EMISSION TEST	10
8.2. BLOCK DIAGRAM OF TEST SETUP	10
8.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST	11
8.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST	12
9. FCC RADIATED EMISSION TEST	14
9.1. LIMITS OF RADIATED EMISSION TEST	14
9.2. BLOCK DIAGRAM OF TEST SETUP	14
9.3. PROCEDURE OF RADIATED EMISSION TEST	15
9.4. TEST RESULT OF RADIATED EMISSION TEST	16
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	18
APPENDIX B: PHOTOGRAPHS OF EUT	19

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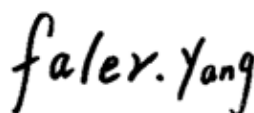
1. VERIFICATION OF CONFORMITY

Applicant	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Manufacturer	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Address	Xindao B.V.
Address	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
Product Designation	2600mAh powerbank
Brand Name	N/A
Test Model	P324.203
Measurement Procedure	ANSI C63.4: 2014
Date of test	Jan.15, 2019 to Jan.17, 2019
Deviation	None
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-IT/AC(2013-03-01)

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2014. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested By



Faler Yang(Yang Feiyue)

Jan.18, 2019

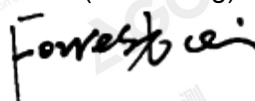
Reviewed By



Stone Zhou(Zhou Dong)

Jan.18, 2019

Approved By



Forrest Lei(Lei Yonggang)
Authorized Officer

Jan.18, 2019

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2. SYSTEM DESCRIPTION

TEST MODE DESCRIPTION		
NO.	TEST MODE DESCRIPTION	WORST
1	Full Load	V
2	Half Load	--
3	Charging	--
Note: 1. V means EMI worst mode 2. Only worst mode data recorded in the test report.		

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, $U_c = \pm 3.2$ dB
- Uncertainty of Radiated Emission, $U_c = \pm 3.9$ dB

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4. PRODUCT INFORMATION

Housing Type	Plastic and metal
EUT Input Rating	DC 5V 1A
EUT Output Rating	DC 5V 1A

I/O Port Information (☒ Applicable ☐ Not Applicable)

I/O Port of EUT			
I/O Port Type	Number	Cable Description	Tested With
USB	1	--	1
Micro B	1	0.5m Unshielded	1

Note:

1. All the above "--" means that EUT has no cable.
2. All the cables were provided by AGC Lab.

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5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
Adapter	KUANTEN	KT05W050100USU	--	--	--
Resistor	--	--	--	--	0.8m unshielded

Note:

1 All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

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6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun.12, 2018	Jun.11, 2019
LISN	R&S	ESH2-Z5	100086	Aug.28, 2018	Aug.27, 2019

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun.12, 2018	Jun.11, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.28, 2017	Sep.27, 2019

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7. TEST ITEMS AND THE RESULTS

Test item	Test Requirement	Test Method	Class/Severity	Result
CONDUCTED EMISSION	FCC Part 15 Subpart B	ANSI C63.4	Class B	Pass
RADIATED EMISSION	FCC Part 15 Subpart B	ANSI C63.4	Class B	Pass

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8. FCC LINE CONDUCTED EMISSION TEST

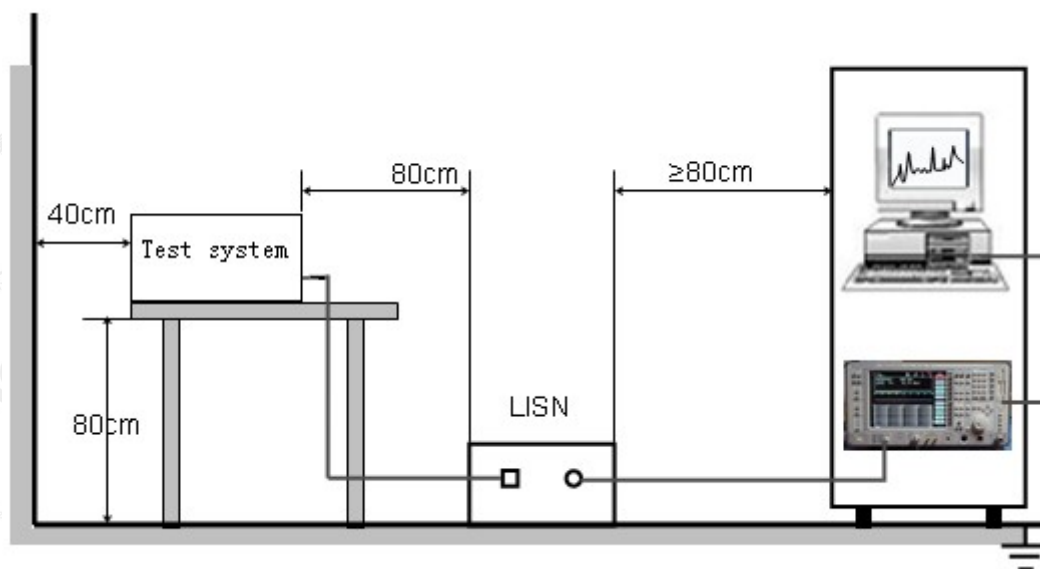
8.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

8.2. BLOCK DIAGRAM OF TEST SETUP



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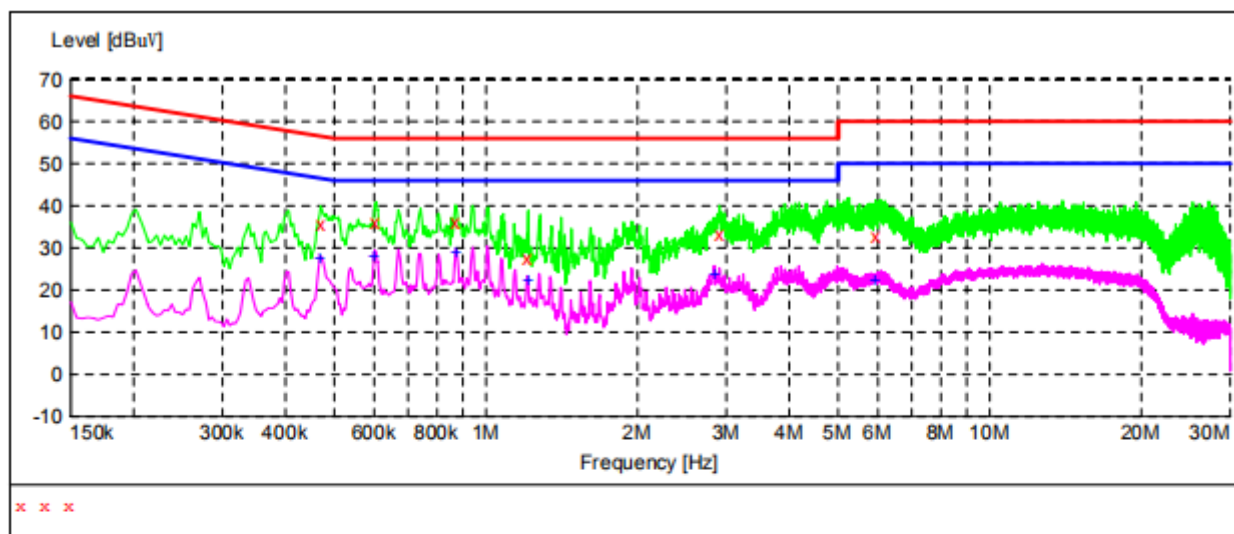
8.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When 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 C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.4.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- (4) The EUT received DC 5V power from adapter with receive 120V/60Hz power from a LISN.
- (5) 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.
- (6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- (7) During the above scans, the emissions were maximized by cable manipulation.
- (8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- (9) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

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8.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L



MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line
0.470000	35.60	10.3	57	20.9	QP	L1
0.602000	36.30	10.3	56	19.7	QP	L1
0.874000	36.20	10.4	56	19.8	QP	L1
1.214000	27.60	10.4	56	28.4	QP	L1
2.906000	33.40	10.4	56	22.6	QP	L1
5.942000	33.00	10.5	60	27.0	QP	L1

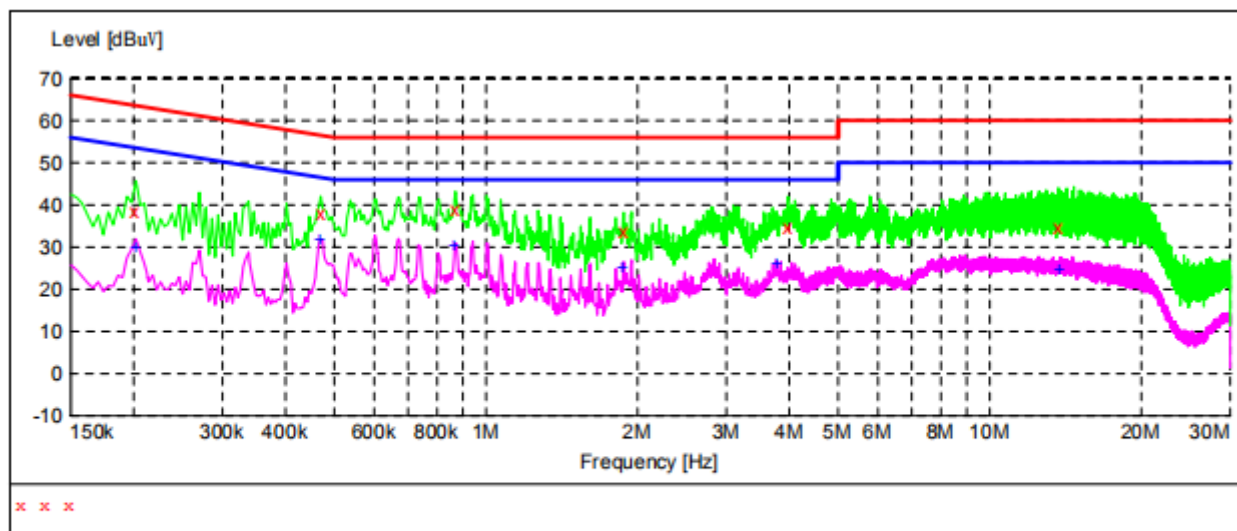
MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line
0.470000	27.50	10.3	47	19.0	AV	L1
0.602000	28.00	10.3	46	18.0	AV	L1
0.874000	29.10	10.4	46	16.9	AV	L1
1.210000	22.40	10.4	46	23.6	AV	L1
2.838000	23.70	10.4	46	22.3	AV	L1
5.926000	22.50	10.5	50	27.5	AV	L1

RESULT: PASS

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LINE CONDUCTED EMISSION TEST-N



MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line
0.202000	38.60	10.3	64	24.9	QP	N
0.470000	38.00	10.3	57	18.5	QP	N
0.870000	38.70	10.4	56	17.3	QP	N
1.878000	33.80	10.4	56	22.2	QP	N
3.974000	34.70	10.4	56	21.3	QP	N
13.682000	34.70	10.8	60	25.3	QP	N

MEASUREMENT RESULT:

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line
0.202000	30.00	10.3	54	23.5	AV	N
0.470000	31.90	10.3	47	14.6	AV	N
0.870000	30.30	10.4	46	15.7	AV	N
1.878000	25.40	10.4	46	20.6	AV	N
3.778000	25.90	10.4	46	20.1	AV	N
13.706000	24.80	10.8	50	25.2	AV	N

RESULT: PASS

Note:

Measurement Level(dBuV) = Receiver reading(dBuV)+Tansd(dB)

Transd(dB)=AMN Factor(dB)+Cable Loss(dB)+Attenuation(dB) for Attenuator

Margin= Limits-Level

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9. FCC RADIATED EMISSION TEST

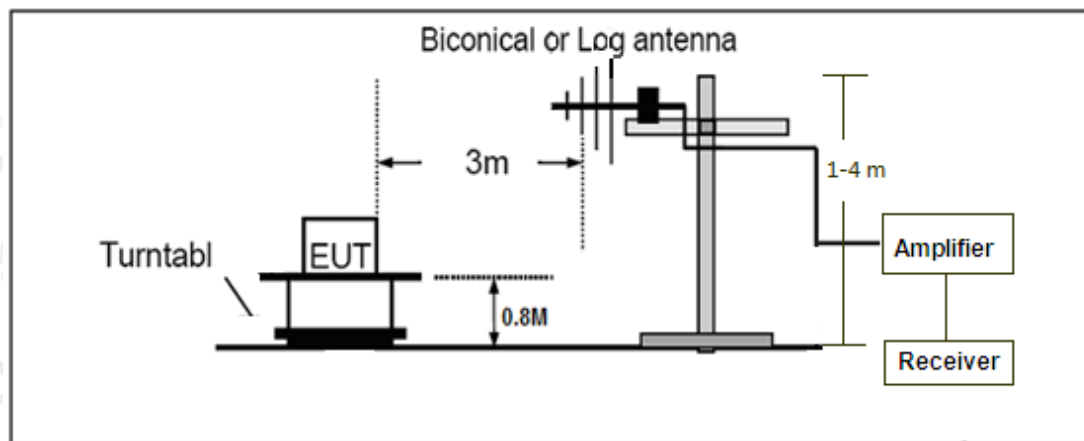
9.1. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

Note: The lower limit shall apply at the transition frequency.

9.2. BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators



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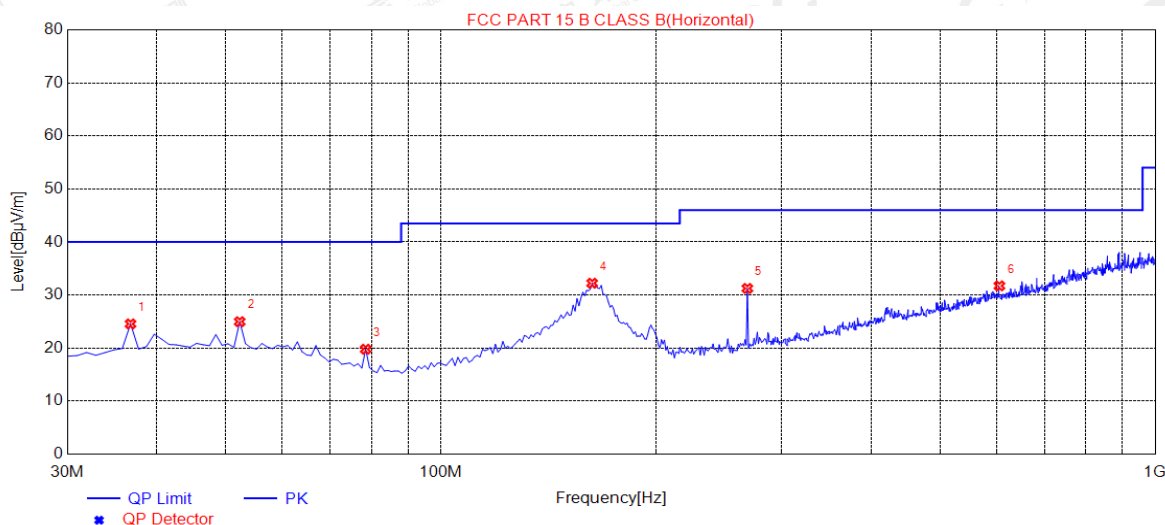
9.3. PROCEDURE OF RADIATED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per ANSI C63.4.
- (3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- (4) The EUT was discharged from the resistor.
- (5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- (6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- (7) The test mode(s) were scanned during the test:
- (8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

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9.4. TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Test at 3m Distance-Horizontal



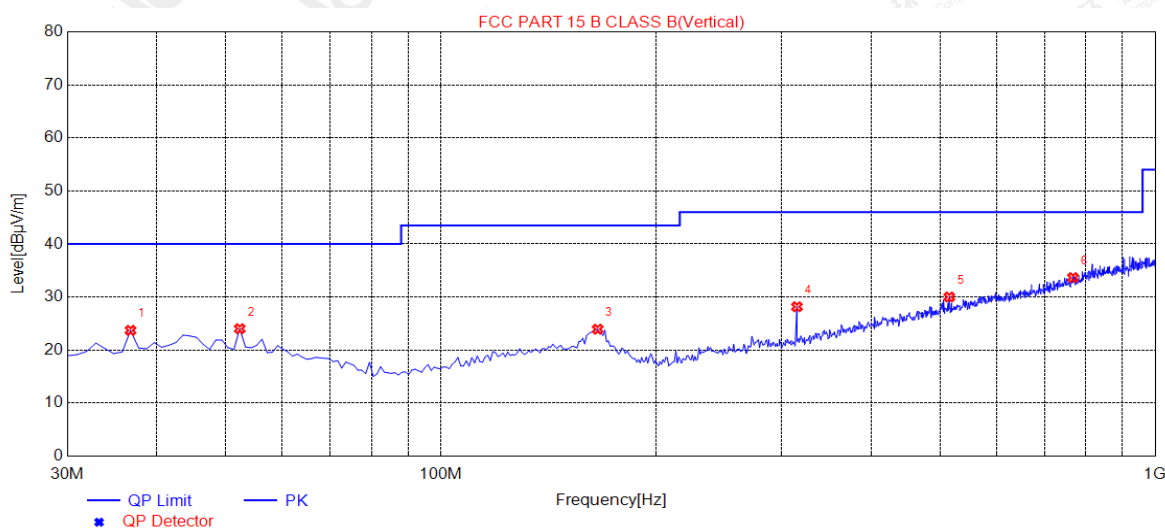
Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.7900	24.56	14.16	40.00	15.44	150	53	Horizontal
2	52.3100	24.98	14.49	40.00	15.02	200	2	Horizontal
3	78.5000	19.79	10.46	40.00	20.21	100	59	Horizontal
4	162.8900	32.23	14.65	43.50	11.27	200	206	Horizontal
5	268.6200	31.25	15.30	46.00	14.75	150	346	Horizontal
6	605.2100	31.73	24.40	46.00	14.27	100	200	Horizontal

RESULT: PASS

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Radiated Emission Test at 3m Distance-Vertical



Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.7900	23.72	14.16	40.00	16.28	100	174	Vertical
2	52.3100	24.03	14.49	40.00	15.97	150	355	Vertical
3	165.8000	23.94	14.36	43.50	19.56	200	131	Vertical
4	315.1800	28.17	16.48	46.00	17.83	200	178	Vertical
5	515.0000	30.01	22.49	46.00	15.99	200	357	Vertical
6	767.2000	33.66	27.63	46.00	12.34	200	357	Vertical

RESULT: PASS

Note:

Level(dBuV/m)=Reading(dBuV)+Factor(dB/m)

Factor(dB/m)=Antenna Factor(dB/m)+Cable loss(dB)+Attenuation(dB)for Attenuator

Margin= Limit -Level

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APPENDIX B: PHOTOGRAPHS OF EUT

TOP VIEW OF EUT



BOTTOM VIEW OF EUT

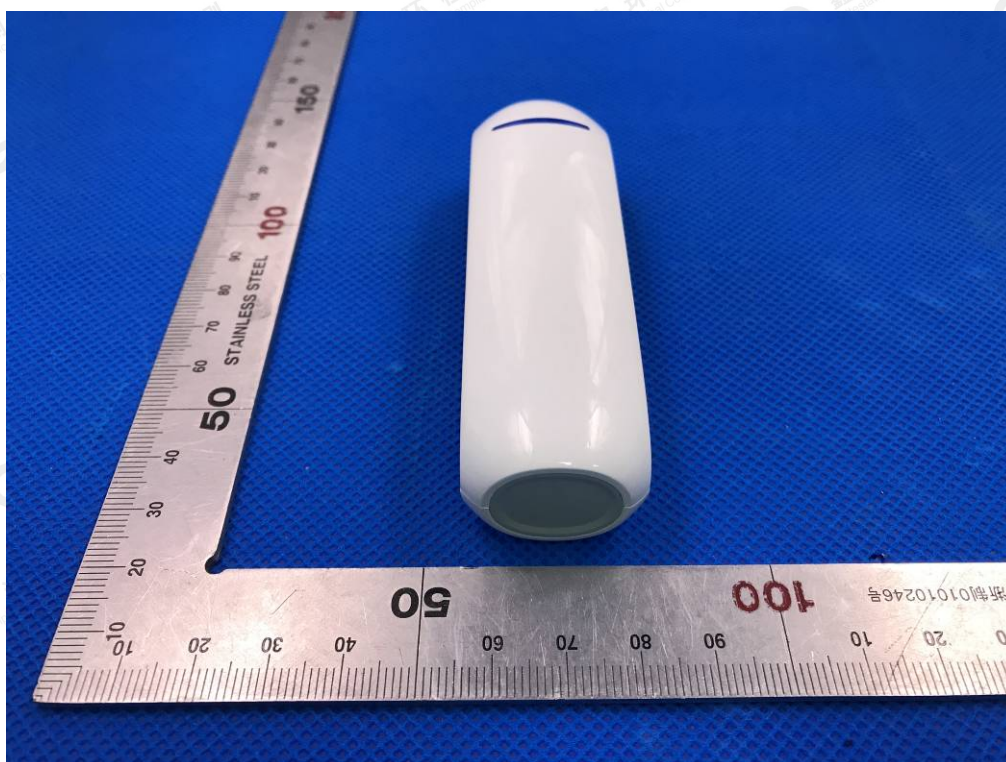


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FRONT VIEW OF EUT



BACK VIEW OF EUT



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LEFT VIEW OF EUT

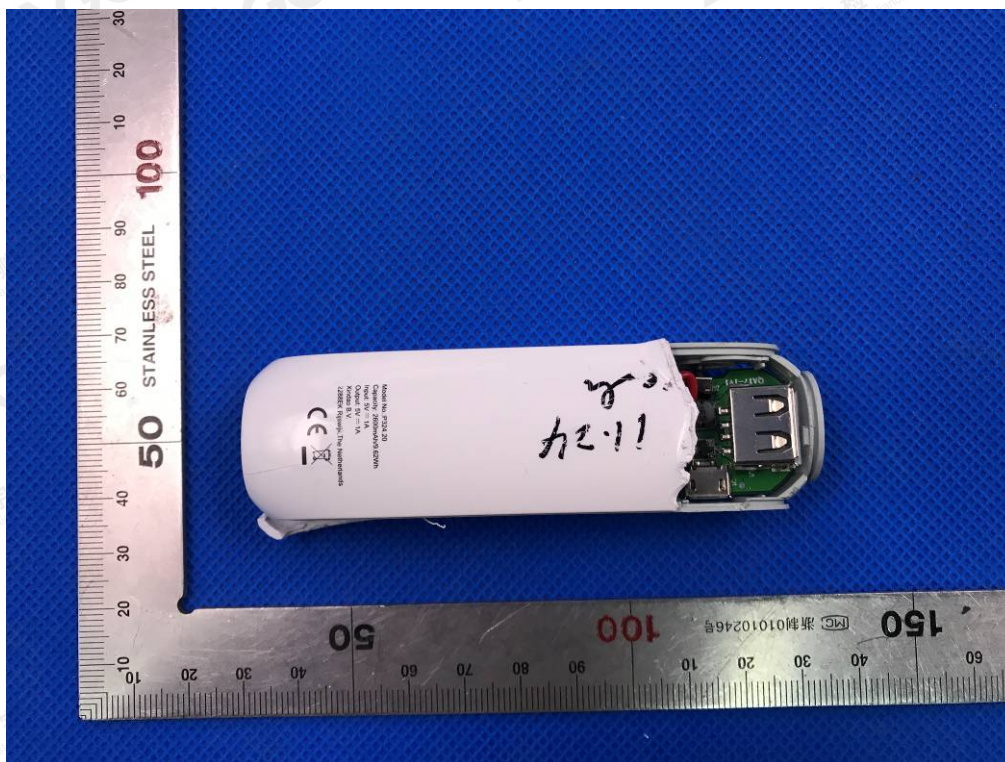


RIGHT VIEW OF EUT

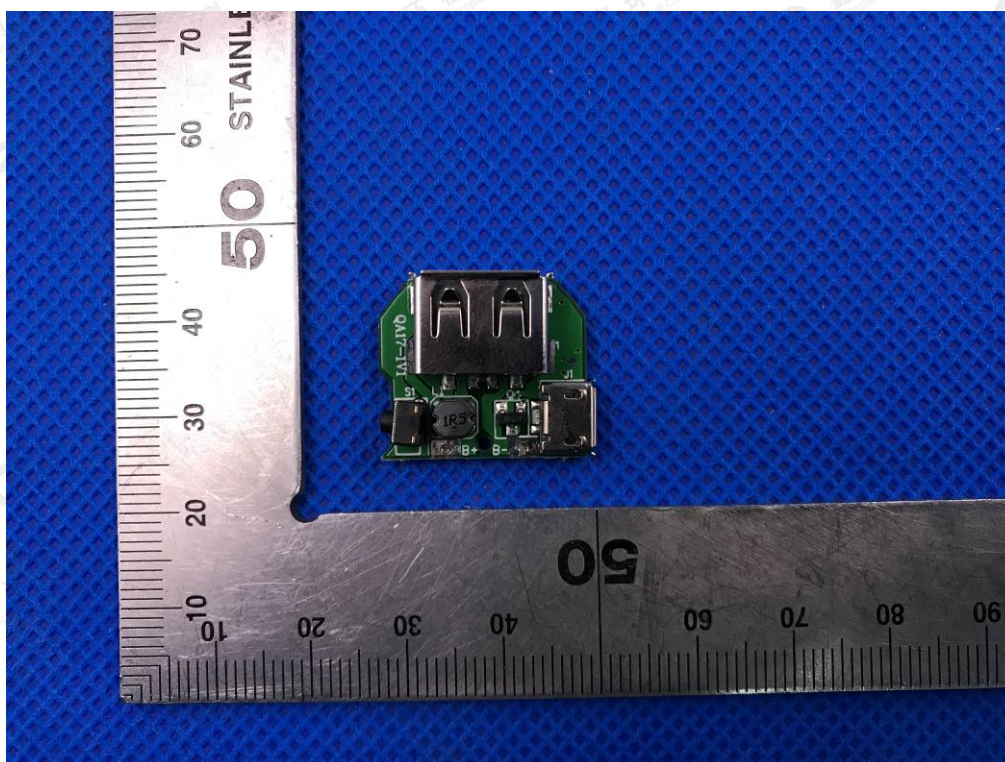


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OPEN VIEW OF EUT

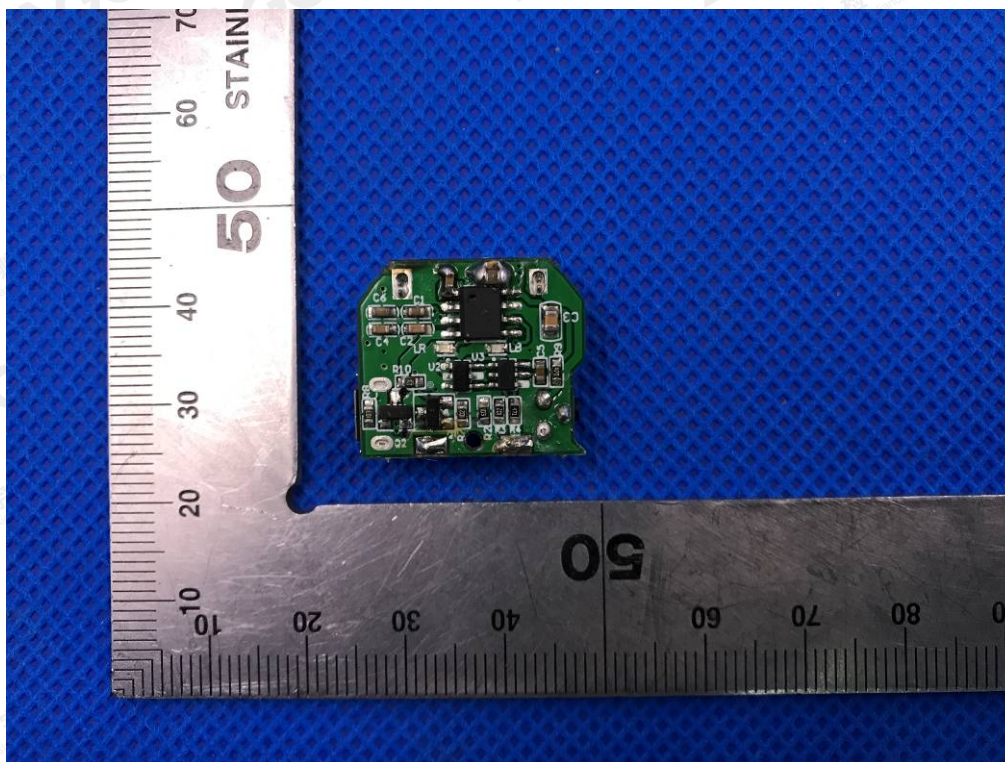


INTERNAL VIEW OF EUT-1



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INTERNAL VIEW OF EUT-2



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