FCC PART 15C

TEST REPORT

For

JEM ACCESSORIES, INC

32 Brunswick Avenue Edison, NJ 08817,United States

FCC ID: 2AHAS-XBB80147

Report Type:	**Product Type:**
Original Report	10,000mAh Wireless Power Bank

Report Number:	SZ3210913-47553E-RF-00
Report Date:	2021-10-15
Reviewed By:	Candy Li RF Engineer
Prepared By:	Shenzhen Accurate Technology Co., Ltd. 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396 Http://www.atc-lab.com

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

Product	10,000mAh Wireless Power Bank
Tested Model	XBB8-0147
Frequency Range	110-205kHz
Maximum Wireless Power	5W
Antenna Specification	Coil
Voltage Range	DC 5V from USB port or DC 3.7V from battery
Date of Test	2021-09-23 to 2021-10-11
Sample serial number	SZ3210913-47553E-RF-S1
Received date	2021-09-13
Sample/EUT Status	Good Condition

Objective

This report is in accordance with Part 2, Subpart J, and Part 15, Subparts A and C of the Federal Communications Commission's rules.

The objective is to determine the compliance of EUT with FCC rules, section 15.203, 15.205, 15.207 and 15.209.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Expanded Measurement uncertainty
Conducted Emissions	AC Mains	*2.72 dB (k=2, 95% level of confidence)*
Radiated emission	9kHz-30MHz	*2.66 dB (k=2, 95% level of confidence)*
	30MHz-1GHz	*4.28 dB (k=2, 95% level of confidence)*

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189.

The test site has been registered with ISED Canada under ISED Canada Registration Number 5077A-2.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a test mode

EUT Exercise Software

No software used in test.

Support Equipment List and Details

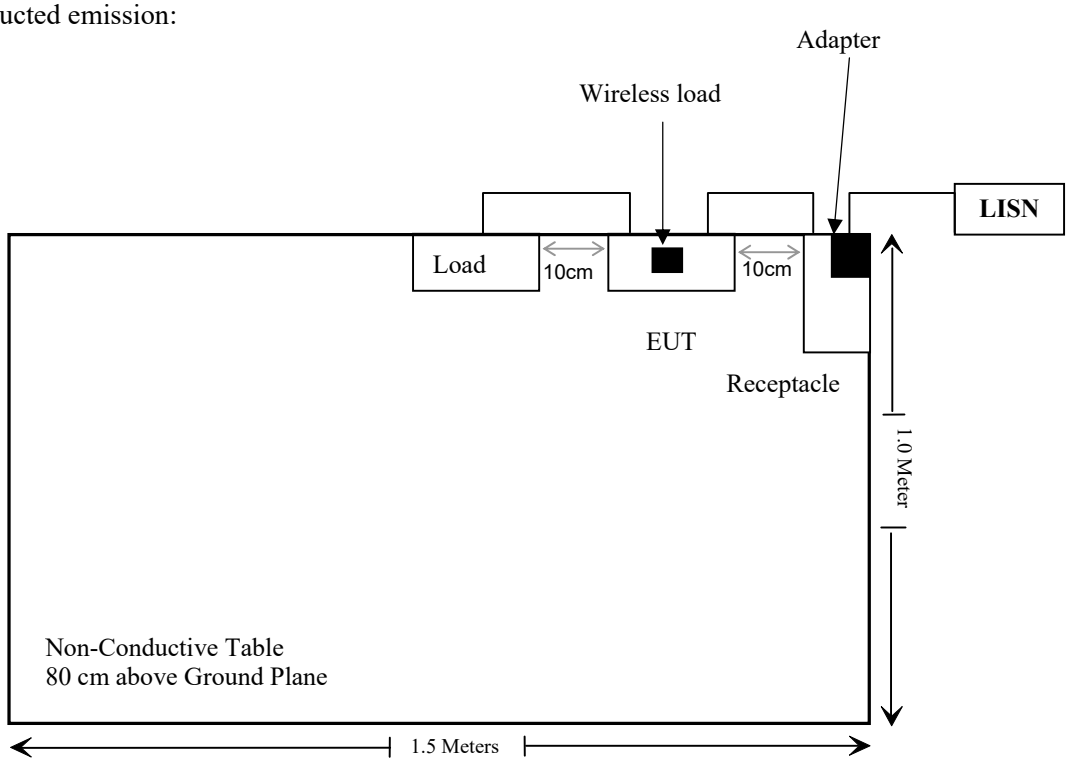
Manufacturer	Description	Model	Serial Number
HD	Wireless load	E237212	1752
HUAJIN	adapter	HU-0502000W2-US	HU-0502000W2-US
Unknown	Load	Unknown	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielding Un-Detachable AC Cable	1.2	LISN	Receptacle
Un-shielding Detachable USB Cable	0.3	Adapter	EUT
Un-shielding Detachable USB Cable	0.5	EUT	Load

Block Diagram of Test Setup

For conducted emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC§1.1310 & §2.1091	Maximum Permissible Exposure(MPE)	Compliance
FCC§15.203	Antenna Requirement	Compliance
FCC§15.207	AC Line Conducted Emission	Compliance
§15.209 §15.205	Radiated Emission Test	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
MPE					
NARDA	Magnetic field tester	2300/90.10	B-0137	2021/01/06	2024/01/05
SCHWARZBECK	Vander Hoofden Test-Head	VDHH 9502	56	2020/12/25	2021/12/24
ETS-Lindgreen	Isotropic Field Probe	HI－6005	69461	2018/9/28	2022/9/28
Conducted Emission					
Rohde& Schwarz	Test Receiver	ESPI3	100396	2020/12/24	2021/12/23
R & S	L.I.S.N.	ENV216	101314	2020/12/25	2021/12/24
Anritsu Corp	50ΩCoaxial Switch	MP59B	6200506474	2020/12/25	2021/12/24
Rohde & Schwarz	Test Software	ES-K1	V1.71	NCR	NCR
Radiated Emission					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
SCHWARZBECK	LOOP ANTENNA	FMZB1516	1516131	2020/01/05	2023/01/04
OREGON SCIENTIFIC	Temperature & Humidity Meter	JB913R	GZ-WS004	2021/01/02	2022/01/01
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
FARAD	Test Software	EZ_EMC	V 1.1.4.2	NCR	NCR
Rohde & Schwarz	Test Software	ES-K1	V1.71	NCR	NCR

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1310, §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

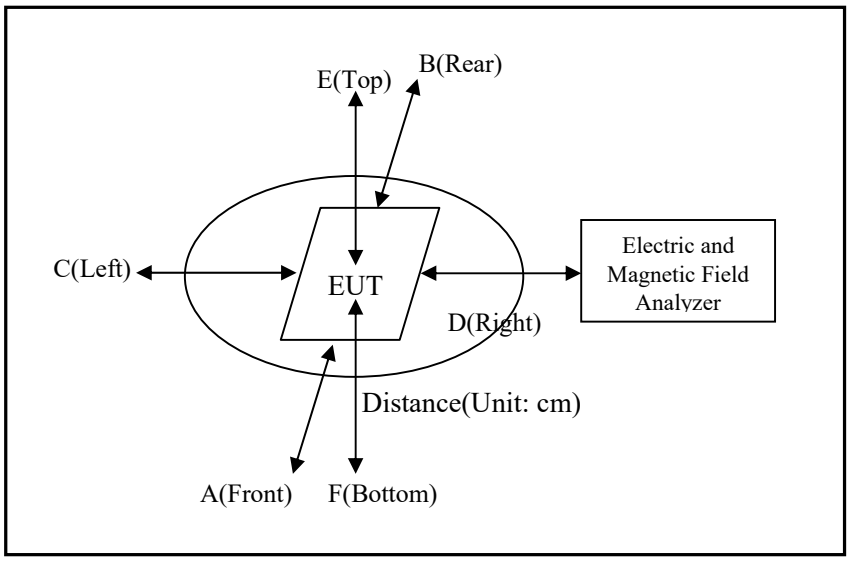
According with KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01 clause 3 c)

c) For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

According to KDB 680106 D01 RF Exposure Wireless Charging App v03r01 clause 5 b)

(1) Power transfer frequency is less than 1 MHz
(2) Output power from each primary coil is less than or equal to 15 watts.
(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.
(4) Client device is placed directly in contact with the transmitter.
(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
(6) The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

Block Diagram of Test Setup



Note:
For mobile condition distance: A/B/C/D is 15cm; E is 20cm;

Test Data

Environmental Conditions

Temperature:	25.8 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Black Ding on 2021-10-11.

Test mode: Full Load

H-Field Strength

Frequency Range (kHz)	Position A (uT)	Position B (uT)	Position C (uT)	Position D (uT)	Position E (uT)	50% Limit (uT)	Limit Test (uT)
110-205	0.249	0.230	0.306	0.221	0.186	/	/
	Position A (A/m)	**Position B (A/m)**	**Position C (A/m)**	**Position D (A/m)**	**Position E (A/m)**	**50% Limit (A/m)**	**Limit Test (A/m)**
	0.199	0.184	0.245	0.177	0.149	0.815	1.63

Note: A/m =uT/1.25

E-Field Strength

Frequency Range (kHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	50% Limit (V/m)	Limit Test (V/m)
110-205	0.457	0.441	0.483	0.425	0.546	307	614

Note:
For mobile condition distance: A/B/C/D is 15cm; E is 20cm;

Result: Compliance

Considerations of compliance 680106 D01 RF Exposure Wireless Charging App v03r01 clause 5 b:

(1) Power transfer frequency is less than 1 MHz.

Yes, the operation frequency is 110-205 kHz.

(2) Output power from each primary coil is less than or equal to 15 watts.

Yes, the maximum output power of primary coil is 5 Watts, less than 15 watts.

(3) The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.

The transfer system includes only single primary coil.

(4) Client device is placed directly in contact with the transmitter.

Yes, client device is placed directly in contact with the transmitter

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

Yes, mobile exposure conditions only.

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Yes, the test result for H and E-field strength less than 50% of the MPE limit.

FCC§15.203 – ANTENNA REQUIREMENT

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Antenna Connected Construction

The EUT has one internal coil arrangement, which were permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

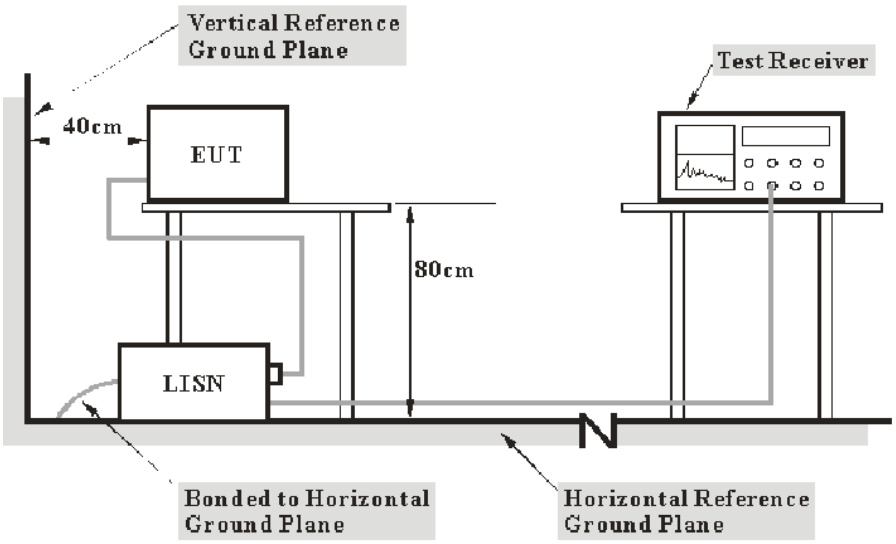
Result: Compliance.

FCC §15.207 – AC LINE CONDUCTED EMISSION

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The basic equation is as follows:

Level (QuasiPeak or Average) = Reading Level + Transd Factor

Note:
Transd Factor = Cable loss + Factor of coupling device

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Level

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data

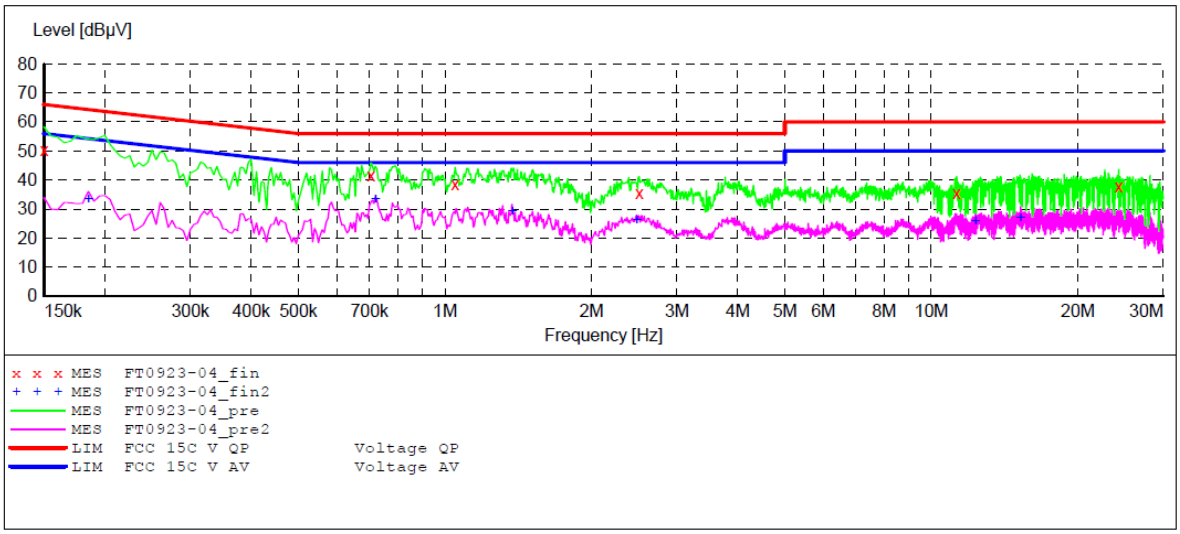
Environmental Conditions

Temperature:	25°C
Relative Humidity:	65 %
ATM Pressure:	101.0 kPa

The testing was performed by Mo Chao on 2021-09-23.

Test mode: Full Load

AC 120 V/60 Hz, Line:



MEASUREMENT RESULT: "FT0923-04_fin"

2021-9-23 05:05

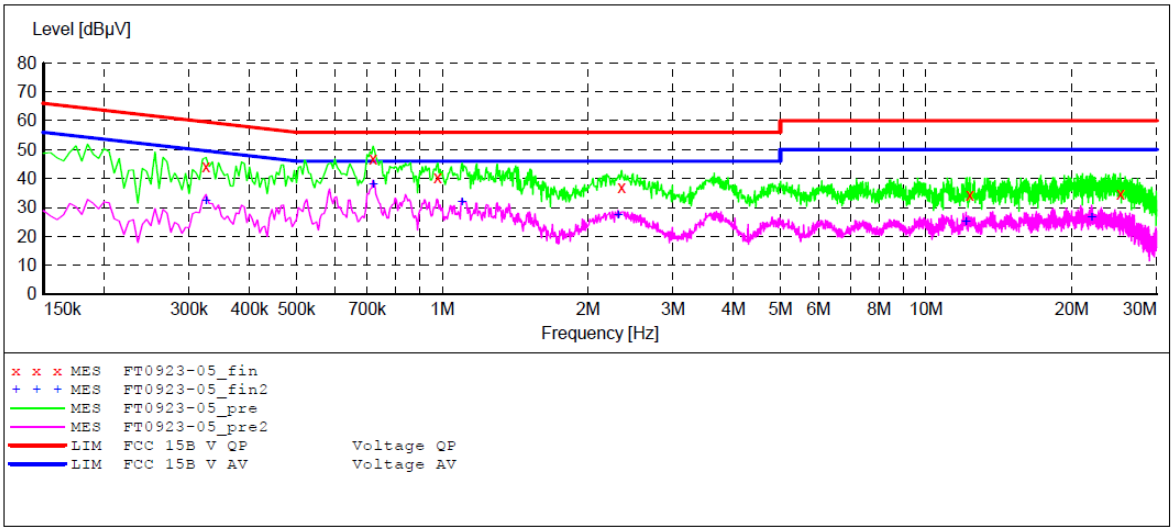
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	50.10	10.8	66	15.9	QP	L1	GND
0.705000	41.40	11.1	56	14.6	QP	L1	GND
1.050000	38.40	11.1	56	17.6	QP	L1	GND
2.510000	35.60	11.3	56	20.4	QP	L1	GND
11.275000	35.50	11.6	60	24.5	QP	L1	GND
24.300000	37.60	11.7	60	22.4	QP	L1	GND

MEASUREMENT RESULT: "FT0923-04_fin2"

2021-9-23 05:03

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.185000	33.40	10.8	54	20.6	AV	L1	GND
0.720000	33.60	11.1	46	12.4	AV	L1	GND
1.375000	29.30	11.2	46	16.7	AV	L1	GND
2.480000	26.30	11.3	46	19.7	AV	L1	GND
12.325000	25.90	11.6	50	24.1	AV	L1	GND
15.275000	27.10	11.7	50	22.9	AV	L1	GND

AC 120V/ 60 Hz, Neutral:



MEASUREMENT RESULT: "FT0923-05_fin"

2021-9-23 05:08

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.325000	44.30	10.9	60	15.7	QP	N	GND
0.720000	46.80	11.1	56	9.2	QP	N	GND
0.980000	40.50	11.1	56	15.5	QP	N	GND
2.350000	37.10	11.3	56	18.9	QP	N	GND
12.325000	34.30	11.6	60	25.7	QP	N	GND
25.225000	34.70	11.7	60	25.3	QP	N	GND

MEASUREMENT RESULT: "FT0923-05_fin2"

2021-9-23 05:07

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.325000	32.60	10.9	50	17.4	AV	N	GND
0.720000	38.00	11.1	46	8.0	AV	N	GND
1.100000	32.00	11.1	46	14.0	AV	N	GND
2.310000	27.60	11.3	46	18.4	AV	N	GND
12.100000	25.00	11.6	50	25.0	AV	N	GND
22.025000	26.60	11.7	50	23.4	AV	N	GND

FCC §15.205 & §15.209 - RADIATED EMISSIONS TEST

Applicable Standard

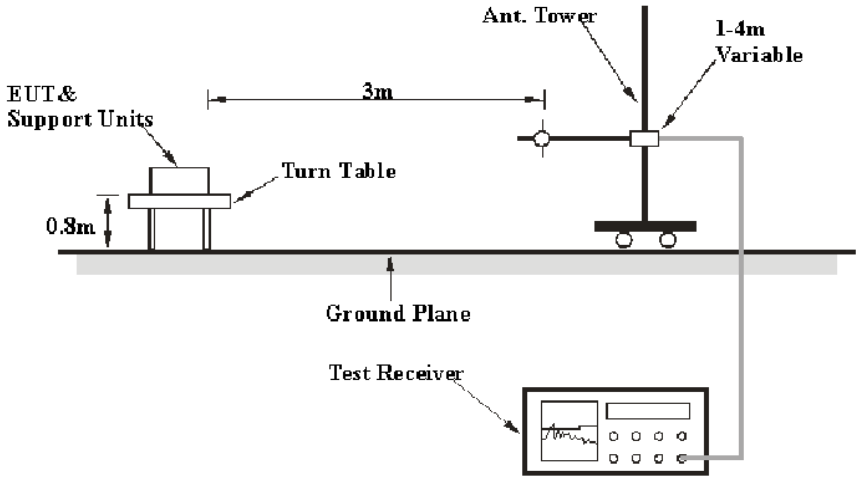
As per FCC Part 15.209

(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

EUT Setup



The radiated emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 9 kHz to 1 GHz.

During the radiated emission test, the EMI test Receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	Measurement
9 kHz – 150 kHz	200 Hz	1 kHz	QP/Average
150 kHz – 30 MHz	9 kHz	30 kHz	QP/Average
30 MHz – 1000 MHz	120 kHz	300 kHz	QP

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

If the maximized peak measured value complies with the limit, then it is unnecessary to perform an QP/Average measurement

Corrected Amplitude & Margin Calculation

For 9kHz-30MHz:
The basic equation is as follows:

Level (QuasiPeak or Average) = Reading Level + Transd Factor

Note:
Transd Factor = Cable loss + Factor of coupling device

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Level

For above 30MHz:
The basic equation is as follows:

Result = Meter Reading+ Factor

Note:
Factor = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Result - Limit

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209&15.205.

Test Data

Environmental Conditions

Temperature:	21~23 °C
Relative Humidity:	48~56 %
ATM Pressure:	101.0 kPa

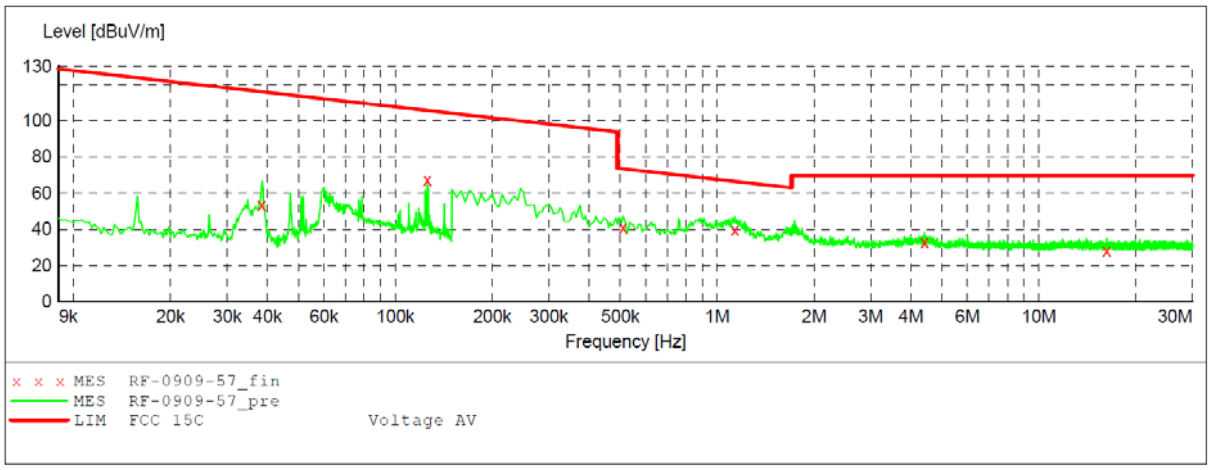
The testing was performed by Mo Chao on 2021-09-29.

Test mode: Full Load

Result: Compliance

9 kHz~30MHz:

Worst case (Full load, Z Axis) was recorded in the report.



MEASUREMENT RESULT: "RF-0909-57_fin"

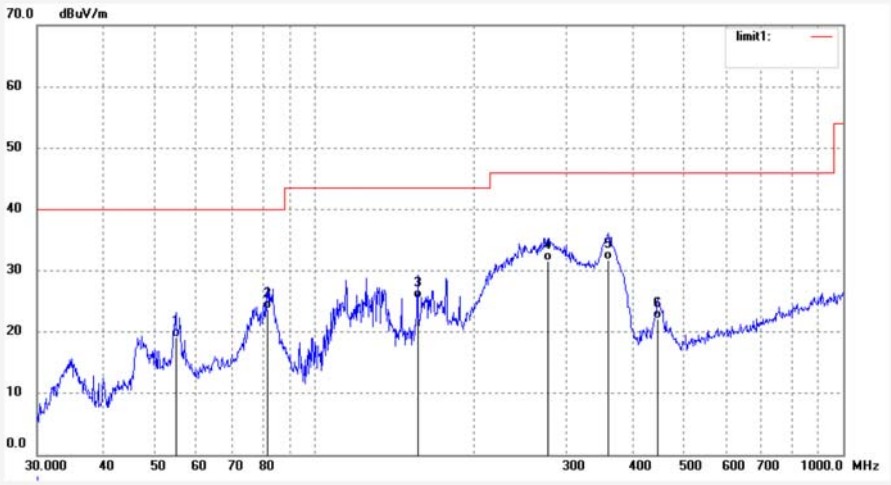
2021-9-29 06:33

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg
0.038200	53.70	20.1	112.9	59.2	QP	105.0	0.00
0.125600	67.30	20.1	105.6	38.3	QP	105.0	0.00
0.510000	40.90	20.3	73.5	32.6	QP	105.0	0.00
1.135000	39.90	20.4	66.5	26.6	QP	105.0	0.00
4.405000	32.80	20.5	69.5	36.7	QP	105.0	0.00
16.240000	28.00	21.2	69.5	41.5	QP	105.0	0.00

Part 15 Section 15.31(f)(2) (9kHz-30MHz)
Limit at 3m=Limit at 300m-40*log(3(m)/300(m))
Limit at 3m=Limit at 30m-40*log(3(m)/30(m))

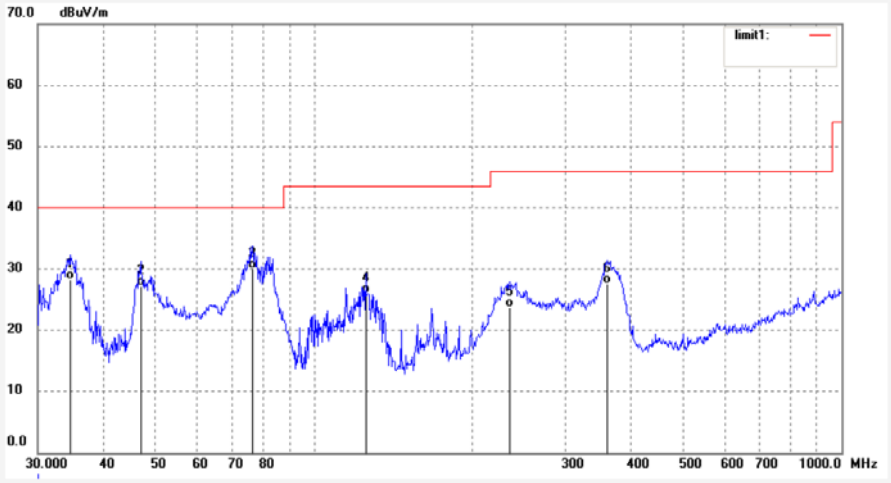
30 MHz ~ 1GHz

Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	54.8348	36.54	-17.39	19.15	40.00	-20.85	QP			
2	81.7833	46.32	-22.59	23.73	40.00	-16.27	QP			
3	157.0074	45.26	-19.81	25.45	43.50	-18.05	QP			
4	277.0935	46.94	-15.36	31.58	46.00	-14.42	QP			
5	359.1860	44.92	-13.18	31.74	46.00	-14.26	QP			
6	446.4141	32.85	-10.78	22.07	46.00	-23.93	QP			

Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.5173	43.15	-14.92	28.23	40.00	-11.77	QP			
2	46.9948	44.55	-17.29	27.26	40.00	-12.74	QP			
3	76.5121	51.62	-21.52	30.10	40.00	-9.90	QP			
4	125.4457	44.64	-18.69	25.95	43.50	-17.55	QP			
5	234.9909	40.23	-16.58	23.65	46.00	-22.35	QP			
6	360.4476	40.67	-13.16	27.51	46.00	-18.49	QP			

******* END OF REPORT *******