



FCC Part 15C Test Report

FCC ID:2AS6X-HD21

Applicant: **Shenzhen Future Charger Technology co.,LTD.**
Address: Yongfengtian Industrial Park , fenghuang third industrial zone,Fuyong town,Baoan District,Shenzhen, China
Manufacturer: **F&C TECHNOLOGY COMPANY LIMITED (VIETNAM)**
Address: Factory No. 09 (Production Area Type 2), Lot TR-C-15, Tien Phong 5 Street, BW Supply Chain City Industrial Park, Binh Duong Ward, Ho Chi Minh City, Vietnam.
EUT: **Wireless Charger**
Trade Mark: N/A
Model Number: HD21-2
HD21-1, HD21-3, HD21-2G, HD21-2W, HD21-2B, HD21-1B, HD21-1W, HD21-1P
Date of Receipt: Sep. 01, 2025
Test Date: Sep. 01, 2025 - Nov. 20, 2025
Date of Report: Nov. 20, 2025
Prepared By: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China
Applicable Standards: FCC CFR Title 47 Part 15 Subpart C
Test Result: Pass
Report Number: DLE-251126012R

Prepared (Test Engineer): Dimon Tan

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

**TABLE OF CONTENTS**

1. VERSION	3
2. TEST SUMMARY	4
2.1 TEST FACILITY	5
2.2 MEASUREMENT UNCERTAINTY	5
3. GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF EUT	6
3.2 Test mode	7
3.3 Block Diagram of EUT Configuration	8
3.4 Test Conditions	8
3.5 Description Of Support Units (Conducted Mode)	8
3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS	9
4. CONDUCTED EMISSION TEST	11
4.1 CONDUCTED EMISSION MEASUREMENT	11
4.1.1 POWER LINE CONDUCTED EMISSION Limits	11
4.1.2 TEST PROCEDURE	11
4.1.3 DEVIATION FROM TEST STANDARD	11
4.1.4 TEST SETUP	12
4.1.5 EUT OPERATING CONDITIONS	12
4.1.6 Test Result	12
5. RADIATED EMISSION MEASUREMENT	15
5.1 Radiated Emission Limits	15
5.2 Anechoic Chamber Test Setup Diagram	16
5.3 Test Procedure	16
5.4 DEVIATION FROM TEST STANDARD	16
5.5 Test Result	17
6. ANTENNA REQUIREMENT	22
7. TEST SETUP PHOTO	23
8. EUT CONSTRUCTIONAL DETAILS	23



1. VERSION

Report No.	Version	Description	Approved
DLE-251126012R	Rev.01	Initial issue of report	Nov. 20, 2025

**2. TEST SUMMARY**

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Spurious Emission	15.209(a)(f)	Pass
20dB Bandwidth	15.215	Pass

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report



2.1 TEST FACILITY

Test lab: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Roa Baolong Industrial Zone, Baolong Street, Longgang Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	3m camber Radiated spurious emission(9KHz-30MHz)	$U=4.5\text{dB}$
2	3m camber Radiated spurious emission(30MHz-1GHz)	$U=4.8\text{dB}$
3	3m chamber Radiated spurious emission(1GHz-18GHz)	$U=4.9\text{dB}$
4	3m chamber Radiated spurious emission(18GHz-40GHz)	$U=5.0\text{dB}$
5	Conducted Adjacent channel power	$U=1.38\text{dB}$
6	Conducted output power uncertainty Above 1G	$U=1.576\text{dB}$
7	Conducted output power uncertainty below 1G	$U=1.28\text{dB}$
8	humidity uncertainty	$U=5.3\%$
9	Temperature uncertainty	$U=0.59^{\circ}\text{C}$



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wireless Charger
Model No.:	HD21-2 HD21-1, HD21-3, HD21-2G, HD21-2W, HD21-2B, HD21-1B, HD21-1W, HD21-1P
Model Difference:	N/A
Serial No.:	N/A
Hardware version:	H1.0
Software version:	S1.0
Operation Frequency:	Phone:115kHz-205kHz
Modulation type:	ASK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi
Power supply:	Input: 5V===1.5A Wireless Output: 5W
Test description:	Battery $\geq 98\%$, $\approx 50\%$ and $\leq 1\%$ are tested, and the worst is $\leq 1\%$.



3.2 Test mode

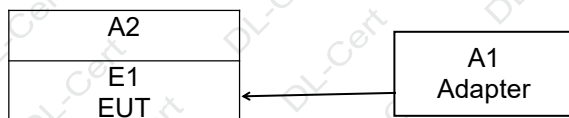
Test Modes:			Description:	
Mode 1	Input:5V, 1.5A Wireless Output:5W	AC/DC Adapter +EUT+ Earphone	Battery $\geq 98\%$	Pretest
			Battery =50%	
			Battery $\leq 1\%$	

Note: All modes have been tested, and the report only reflects the worst case data.

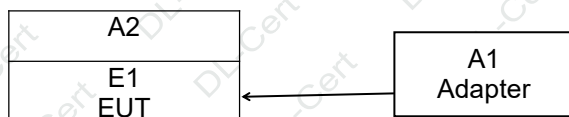


3.3 Block Diagram of EUT Configuration

Conducted Emission



Radiated Emission



3.4 Test Conditions

Temperature: 23~26℃

Relative Humidity: 54~63 %

3.5 Description Of Support Units (Conducted Mode)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E1	Wireless Charger	N/A	HD21-2	N/A	EUT
A1	AC/DC Adapter	Aohai	A895-200150C-CN1	N/A	Auxiliary
A2	Earphone	APPLE	Air Pods Pro 3	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	1.0M	DC cable unshielded

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 「Length」 column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



3.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conduction Emissions Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	N/A	Sep. 23, 2025	Sep. 22, 2026
2	LISN	CYBERTEK	EM5040A	E1850400149	N/A	Sep. 19, 2025	Sep. 18, 2026
3	Test Cable	N/A	C-01	N/A	N/A	May. 22, 2025	May. 21, 2026
4	EMI Test Receiver	R&S	ESCI3	101393	4.42 SP3	Oct. 24, 2025	Oct. 23, 2026
5	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	N/A	\	\

Radiation Emissions & Radiation Spurious Emissions Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	100969	4.32	Oct. 24, 2025	Oct. 23, 2026
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	00877	N/A	Sep. 20, 2025	Sep. 19, 2026
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	N/A	Sep. 20, 2025	Sep. 19, 2026
6	Horn Antenna (15GHz-40GHz)	A.H.System	SAS-574	588	N/A	Sep. 30, 2025	Sep. 29, 2026
7	Loop Antenna	TESEQ	HLA6121	58357	N/A	Sep. 20, 2025	Sep. 19, 2026
8	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	60747	N/A	Sep. 19, 2025	Sep. 18, 2026
9	Amplifier (1GHz-26.5GHz)	HuiPu	8449B	3008A00315	N/A	Sep. 19, 2025	Sep. 18, 2026
10	Amplifier (500MHz-40GHz)	QuanJuDa	DLE-161	097	N/A	Oct. 24, 2025	Oct. 23, 2026
11	Test Cable	N/A	R-01	N/A	N/A	May. 25, 2025	May. 24, 2026
12	Test Cable	N/A	R-02	N/A	N/A	May. 25, 2025	May. 24, 2026
13	Test Cable	N/A	R-03	N/A	N/A	May. 25, 2025	May. 24, 2026
14	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
15	EMC Software	Frad	EZ-EMC	Ver.EMC-CO N 3A1.1	N/A	\	\
16	Turntable	MF	MF-7802BS	N/A	N/A	\	\
17	Antenna tower	MF	MF-7802BS	N/A	N/A	\	\

RF Conducted Test

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer	KEYSIGHT	N9020A	MY55370835	A.17.05	Sep. 20, 2025	Sep. 19, 2026



Shenzhen DL Testing Technology Co., Ltd.

Report No.:DLE-251126012R

	(9kHz-26.5GHz)						
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Sep. 20, 2025	Sep. 19, 2026
3	Test Cable	N/A	RF-01	N/A	N/A	May. 25, 2025	May. 24, 2026
4	Test Cable	N/A	RF-02	N/A	N/A	May. 25, 2025	May. 24, 2026
5	Test Cable	N/A	RF-03	N/A	N/A	May. 25, 2025	May. 24, 2026
6	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Sep. 19, 2025	Sep. 18, 2026
7	Signal Generator	Agilent	N5182A	N/A	A.01.87	Sep. 20, 2025	Sep. 19, 2026
8	Magnetic Field Probe Tester	Narda	ELT-400	0-0344/M-17 52	N/A	Sep. 25, 2025	Sep. 24, 2026
9	SHIELD BOX	TESCOM	TC-5970C	5970C01555 3	N/A	Dec. 18, 2024	Dec. 17, 2025
10	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Sep. 28, 2025	Sep. 27, 2026
11	MWRF Power Meter Test system	MW	MW100-RF CB	N/A	N/A	Sep. 19, 2025	Sep. 18, 2026
12	D.C. Power Supply	LongWei	TPR-6405 D	N/A	N/A	\	\
13	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\



4. CONDUCTED EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

4.1.2 TEST PROCEDURE

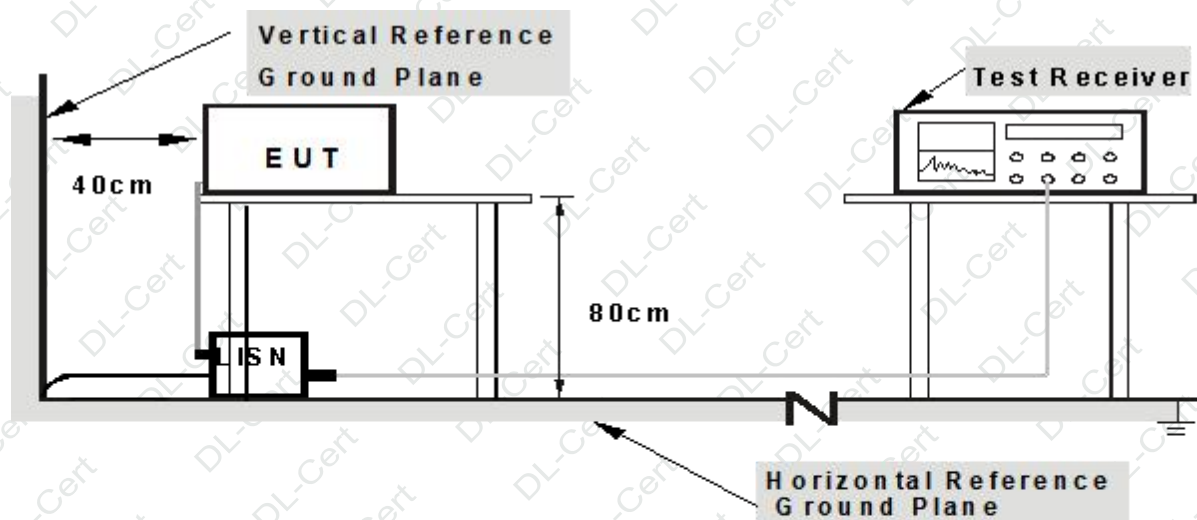
- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation



4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

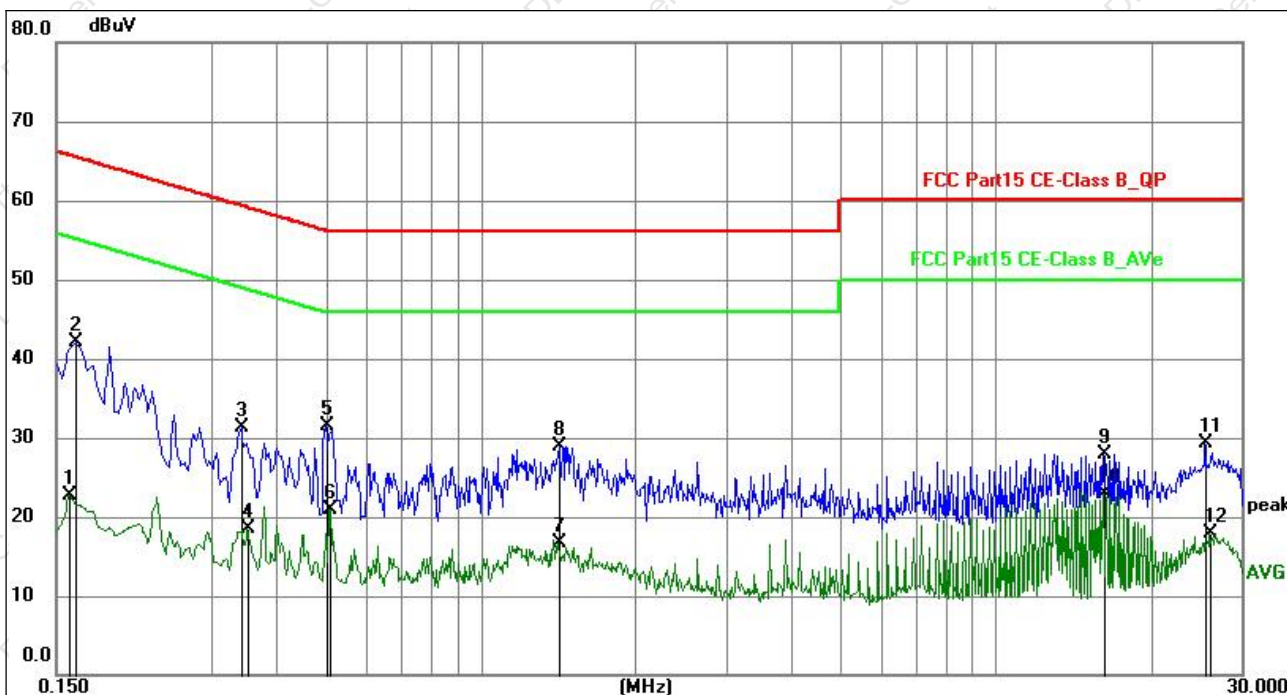
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

We pretest AC 120V and AC 230V, the worst voltage was AC 120V and the data recording in the report.

4.1.6 Test Result



Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 8



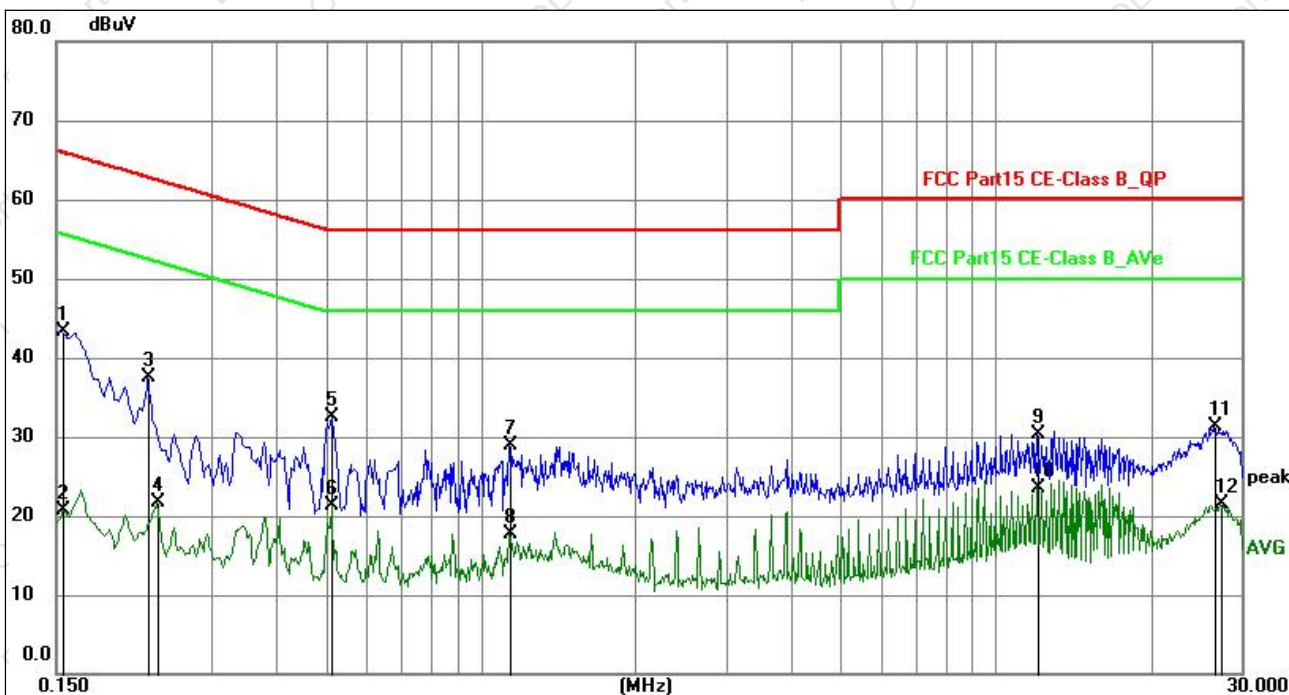
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1590	11.53	11.15	22.68	55.52	-32.84	AVG	P
2	0.1635	30.84	11.18	42.02	65.28	-23.26	QP	P
3	0.3435	19.96	11.34	31.30	59.12	-27.82	QP	P
4	0.3525	7.22	11.33	18.55	48.90	-30.35	AVG	P
5	0.5010	20.30	11.30	31.60	56.00	-24.40	QP	P
6	0.5100	9.59	11.30	20.89	46.00	-25.11	AVG	P
7	1.4144	5.33	11.34	16.67	46.00	-29.33	AVG	P
8	1.4234	17.57	11.34	28.91	56.00	-27.09	QP	P
9	16.1835	16.49	11.41	27.90	60.00	-32.10	QP	P
10	16.1835	11.50	11.41	22.91	50.00	-27.09	AVG	P
11	25.5345	17.90	11.48	29.38	60.00	-30.62	QP	P
12	26.0430	6.45	11.49	17.94	50.00	-32.06	AVG	P

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Measurement Level = Reading level + Correct Factor



Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 8



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1545	32.11	11.15	43.26	65.75	-22.49	QP	P
2	0.1545	9.61	11.15	20.76	55.75	-34.99	AVG	P
3	0.2265	26.15	11.27	37.42	62.58	-25.16	QP	P
4	0.2355	10.39	11.27	21.66	52.25	-30.59	AVG	P
5	0.5144	21.14	11.30	32.44	56.00	-23.56	QP	P
6	0.5144	10.02	11.30	21.32	46.00	-24.68	AVG	P
7	1.1400	17.70	11.22	28.92	56.00	-27.08	QP	P
8	1.1400	6.57	11.22	17.79	46.00	-28.21	AVG	P
9	12.0390	18.87	11.44	30.31	60.00	-29.69	QP	P
10	12.0390	12.16	11.44	23.60	50.00	-26.40	AVG	P
11	26.6235	19.60	11.64	31.24	60.00	-28.76	QP	P
12	27.3705	9.84	11.66	21.50	50.00	-28.50	AVG	P

Notes:

- 1.An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3.Measurement Level = Reading level + Correct Factor



5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10-2020				
Test Frequency Range:	9kHz to 1GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average

5.1 Radiated Emission Limits

Limits for frequency below 30MHz

Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	$2400/F(\text{kHz})$	300	Quasi-peak Value
0.490-1.705	$24000/F(\text{kHz})$	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

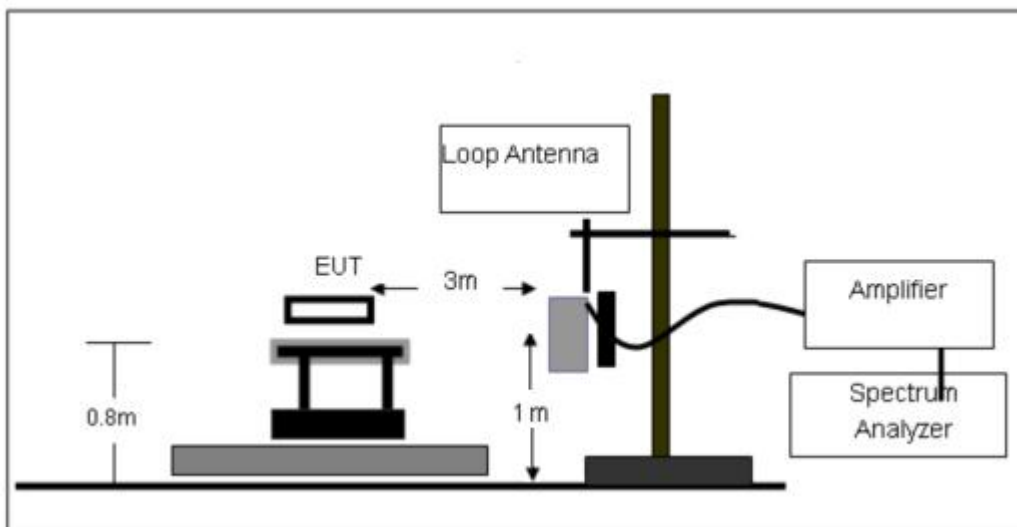
Limits for frequency Above 30MHz

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

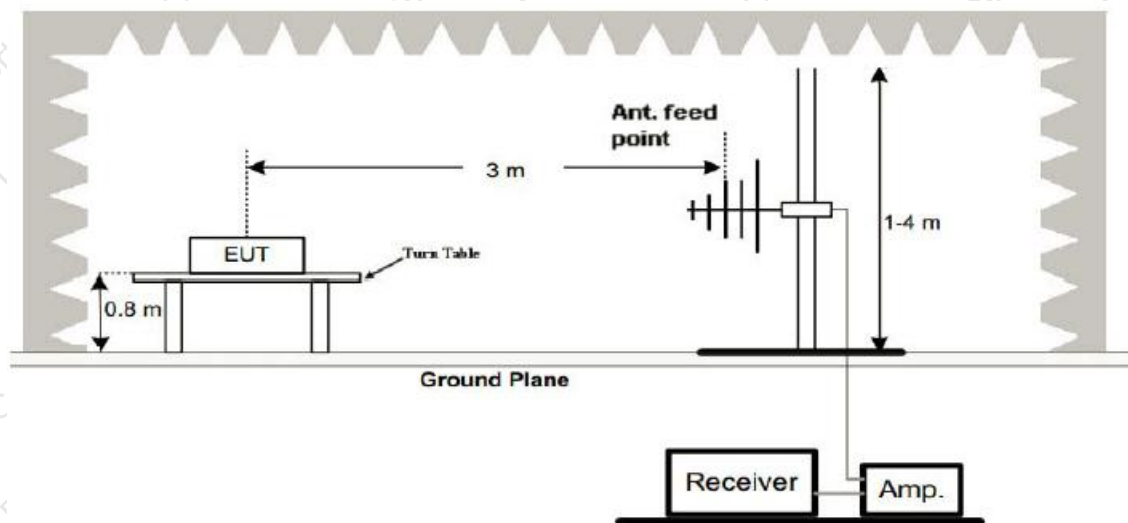


5.2 Anechoic Chamber Test Setup Diagram

(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209 and FCC 15.205 limits.

5.3 Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

5.4 DEVIATION FROM TEST STANDARD

No deviation



5.5 Test Result

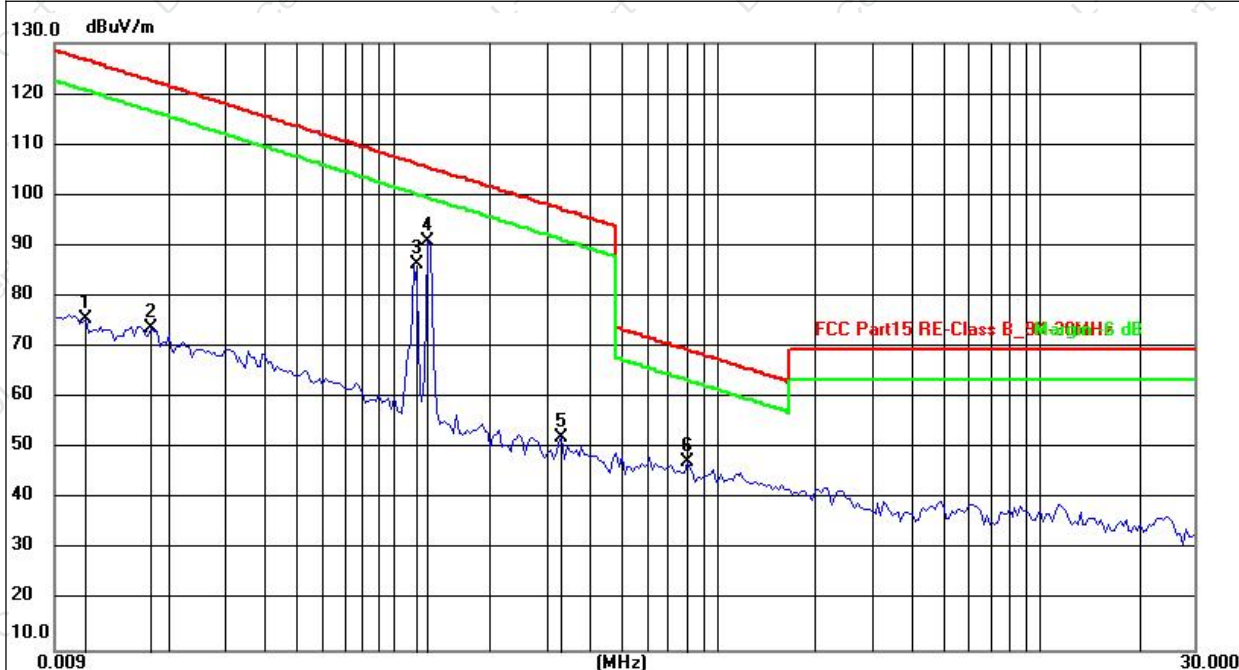
Measurement data:

Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80

Limit dBuV/m @3m = Limit dBuV/m @30m + 40

9 kHz~30 MHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	coaxial
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 8



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0111	55.12	20.54	75.66	126.70	-51.04	peak
2	0.0177	53.28	20.47	73.75	122.65	-48.90	peak
3	0.1162	66.41	19.86	86.27	106.30	-20.03	peak
4	0.1273	70.79	19.92	90.71	105.51	-14.80	peak
5	0.3326	32.09	20.13	52.22	97.17	-44.95	peak
6	0.8114	27.13	20.31	47.44	69.42	-21.98	peak

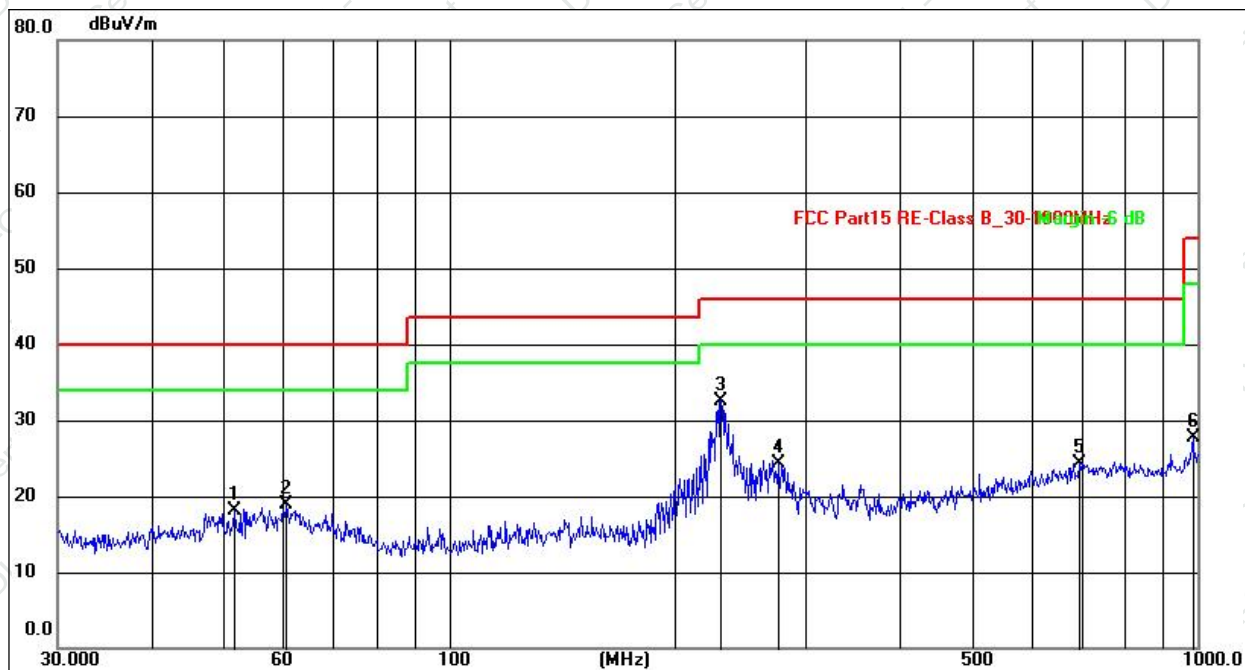
Remarks:

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3.All modes have been tested, and the report only reflects the worst case data.



30MHz-1GHz

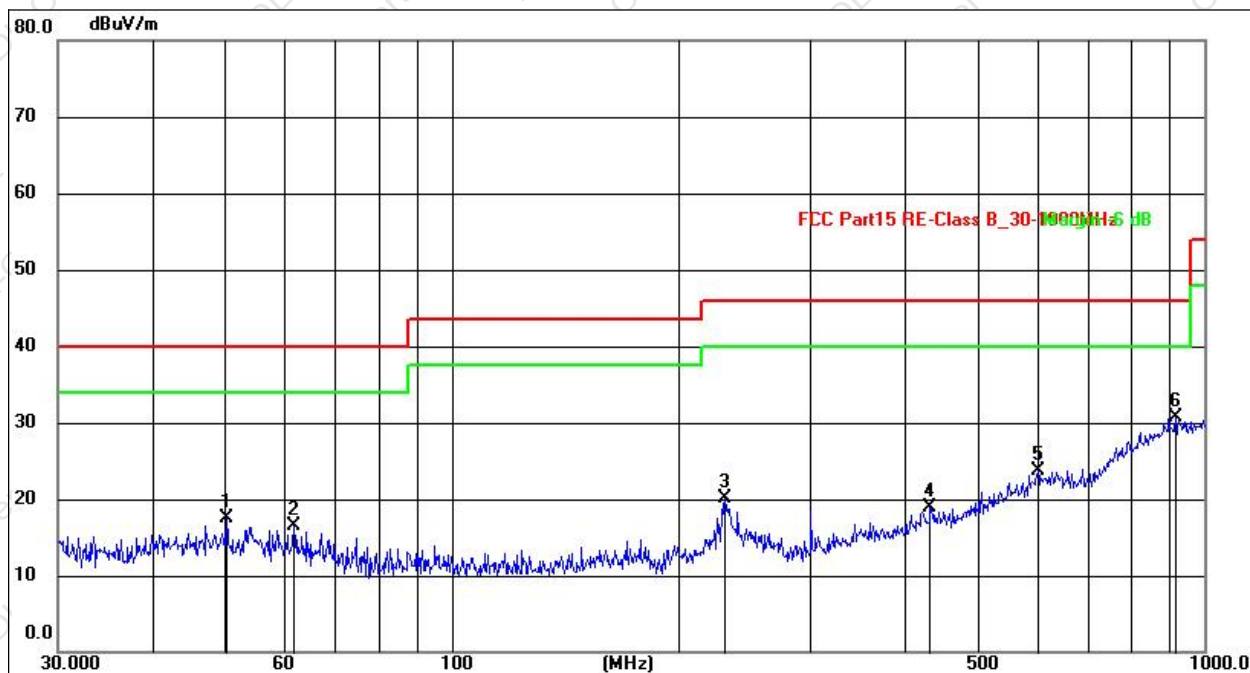
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 8



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	51.6613	32.12	-13.96	18.16	40.00	-21.84	QP
2	60.7043	33.14	-14.31	18.83	40.00	-21.17	QP
3	230.9067	49.17	-16.63	32.54	46.00	-13.46	QP
4	275.1569	38.50	-14.24	24.26	46.00	-21.74	QP
5	694.4174	30.92	-6.54	24.38	46.00	-21.62	QP
6	986.0715	32.56	-4.86	27.70	54.00	-26.30	QP



Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 8



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	50.2323	34.68	-17.21	17.47	40.00	-22.53	QP
2	61.7779	34.97	-18.40	16.57	40.00	-23.43	QP
3	230.9067	40.03	-19.99	20.04	46.00	-25.96	QP
4	432.5455	32.27	-13.37	18.90	46.00	-27.10	QP
5	601.4265	30.94	-7.33	23.61	46.00	-22.39	QP
6	916.0683	31.03	-0.34	30.69	46.00	-15.31	QP

Remarks:

- 1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- 2.The emission levels of other frequencies are very lower than the limit and not show in test report.



6. BANDWIDTH TEST

1. Set RBW = 1%-5% 20dB bandwidth.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP





Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa		

Phone Coil	Frequency (KHz)	20dB bandwidth (Hz)	Result
	116.40	835	Pass





7. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: 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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is Loop antenna, the best case gain of the antennas is 0dBi, reference to the appendix II for details	



8. TEST SETUP PHOTO

Reference to the appendix I for details.

9. EUT CONSTRUCTIONAL DETAILS

Reference to the appendix II for details.

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