FCC TEST REPORT

FCC ID: 2BKMD-HT-331

On Behalf of

Shenzhen Haitao Technology Co.,Ltd

CLOCK/ALARMWRELESS CHARGER

Model No.: HT-331

Prepared for	:	Shenzhen Haitao Technology Co.,Ltd
Address	:	2F Building 2,West Industrial Park, Hezhou District, Hangcheng Street, Bao'an District, Shenzhen, China

Prepared By	:	Shenzhen PSI Testing Co., Ltd.
Address	:	1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Report Number	:	psi2504204-C01-R01
Date of Receipt	:	April 22, 2025
Date of Test	:	April 22, 2025-Jun. 09, 2025
Date of Report	:	Jun. 09, 2025
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	Shenzhen Haitao Technology Co.,Ltd
Address	:	2F Building 2,West Industrial Park, Hezhou District, Hangcheng Street, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Haitao Technology Co.,Ltd
Address	:	2F Building 2,West Industrial Park, Hezhou District, Hangcheng Street, Bao'an District, Shenzhen, China
EUT Description	:	CLOCK/ALARMWRELESS CHARGER
		(A) Model No. : HT-331
		(B) Trademark : N/A

Measurement Standard Used:

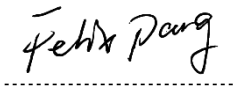
FCC CFR Title 47 Part 15 Subpart C

ANSI C63.10:2013

Test Result: PASS

The device described above is tested by Shenzhen PSI 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 PSI 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 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen PSI Testing Co., Ltd.

Tested by (name + signature).....:	Felix Pang Test Engineer	
Approved by (name + signature).....:	Simple Guan Project Manager	
Date of issue.....:	Jun. 09, 2025	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	Jun. 09, 2025	Initial released Issue	Felix Pang

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	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.

5. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.

2. General Information

2.1. Description of Device (EUT)

EUT Name	:	CLOCK/ALARMWRELESS CHARGER
Model No.	:	HT-331
DIFF.	:	/
Power supply	:	Input: 5 V⎓2 A, 9V⎓2 A Output: 15W/ 10W /7.5W /5W
Radio Technology	:	Wireless power transmission systems
Operation frequency	:	111KHz -205KHz
Modulation	:	MSK
Antenna Type	:	Coil Antenna
Connector cable loss	:	0dB
Software version	:	V1.0
Hardware version	:	V1.0
Note	:	Antenna information is provided by applicant. Testing lab is not responsible for the accuracy of the information.

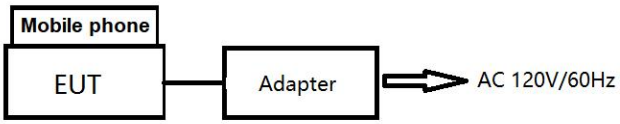
2.2. Accessories of Device (EUT)

Accessories	:	N/A
Manufacturer	:	N/A
Model	:	N/A
specifications	:	N/A

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	Adapter	Xiaomi	MDY-08-EH	N/A	N/A
2	Mobile phone	Xiaomi Communications Co., Ltd.	Xiaomi 12S Pro	N/A	N/A

2.4. Block Diagram of connection between EUT and simulators



2.5. Description of Test Modes

Number	Modes
1	AC Adapter+Wireless Charger mode (Battery Status:≥98))
2	AC Adapter+Wireless Charger mode (Battery Status:50%)
3	AC Adapter+Wireless Charger mode (Battery Status:≤1%)
4	Standby

Note:1. All test modes has been tested, this report only reflected the worst mode.
2. Mode 1 is worst case for Conducted Emission and Spurious Emission.

2.6. Test Conditions

Items	Required
Temperature range:	15-35℃
Humidity range:	25-75%
Pressure range:	86-106kPa

2.7. Test Facility

Shenzhen PSI Testing Co., Ltd.
1-2/F., Building 5, Yudafu Industrial Park, No.10, Xingye West Road, Shajing Subdistrict, Bao'an District, Shenzhen, Guangdong, China

September 13, 2023 File on Federal Communication Commission
Registration Number: 916281

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power Line Conducted Emissions Test	2.17dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	2.74dB(Polarize: V)
	2.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 18GHz)	4.29dB(Polarize: V)
	4.82dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (18GHz to 40GHz)	4.31 dB(Polarize: V)
	4.30 dB(Polarize: H)
Uncertainty for radio frequency	48.24KHz
Uncertainty for conducted RF Power	0.41dB
Occupied Bandwidth	968Hz

2.9. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Firmware Version	Last Cal.	Cal. Interval
1.	9*6*6 anechoic chamber	SKET	9*6*6	N/A	/	2022.12.20	3 Year
2.	Test Receiver	Rohde&Schwarz	ESCI 7	101032/003	4.42 SP3	2024.12.18	1 Year
3.	L.I.S.N.#1	Rohde&Schwarz	ENV216	102282	/	2024.12.18	1 Year
4.	L.I.S.N.#2	RFT	NNB111	13835240	/	2024.12.18	1 Year
5.	Loop Antenna	Schwarz beck	FMZB 1519B	00128	/	2025.01.02	2 Year
6.	Bilog Antenna	Schwarz beck	VULB 9168	01448	/	2025.01.02	2 Year
7.	Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101648	3.70	2024.12.18	1 Year
8.	Horn Antenna	Schwarz beck	BBHA 9120 D	02706	/	2025.01.02	2 Year
9.	Amplifier	SKET	LAPA_01G18G-45dB	SK2022032901	/	2024.12.18	1 Year
10.	Horn Antenna	Schwarz beck	BBHA 9170	00946	/	2024.12.31	2 Year
11.	Amplifier	SKET	LNPA_0118G-45	SK2020010801	/	2024.12.18	1 Year
12	RF Power Probe	Rohde&Schwarz	NRP-Z11	1138.3004.02-1111533-Fz	/	2024.12.18	1 Year
13	RF Sensor Unit	Tachoy	TR1029-2	20220428P008	/	2024.12.18	1 Year
14	Spectrum Analyzer	Agilent	N9020A	MY51281067	A.14.03	2024.12.18	1 Year
15	Temp. & Humid Chamber	Auchno	9606	/	/	2024.12.18	1 Year
16	Regulated DC Power Supply	Xinouhua	ADC120V10A	202211251638		2024.12.18	1 Year

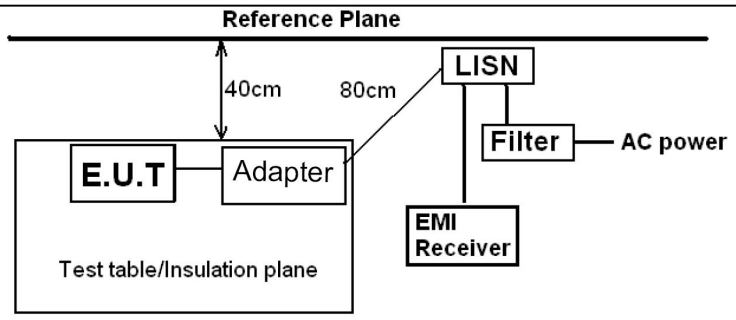
For Test Software Information

Item	Software Name	Manufacturer	Version
RE	EZ_EMC	Farad	PSI-3A1
CE	EZ_EMC	Farad	PSI-3A1
RF	RTS	TACHOY	V1.0.0

3. Test Results and Measurement Data

3.1. Conducted Emission

3.1.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Frequency Range:</td><td>150 kHz to 30 MHz</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9 kHz, VBW=30 kHz, Sweep time=auto</td></tr>
<tr><td>Limits:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Test Setup:</td><td> 

Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test Mode:</td><td>Transmitting Mode</td></tr>
<tr><td>Test Procedure:</td><td>1. 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.
2. 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).
3. 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.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

3.1.2. Test data

Please refer to following diagram for individual

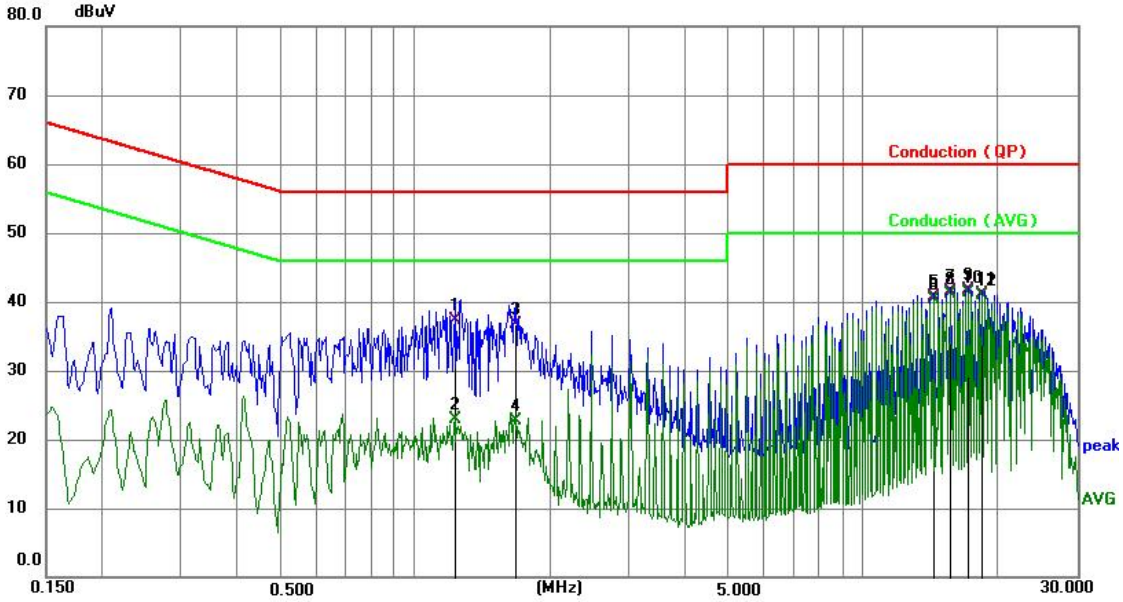
Test Mode	:	Mode 1
Test Results	:	**PASS**

Note: 1. The test results are listed in next pages.

2. 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.

3. 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 need not be carried out.

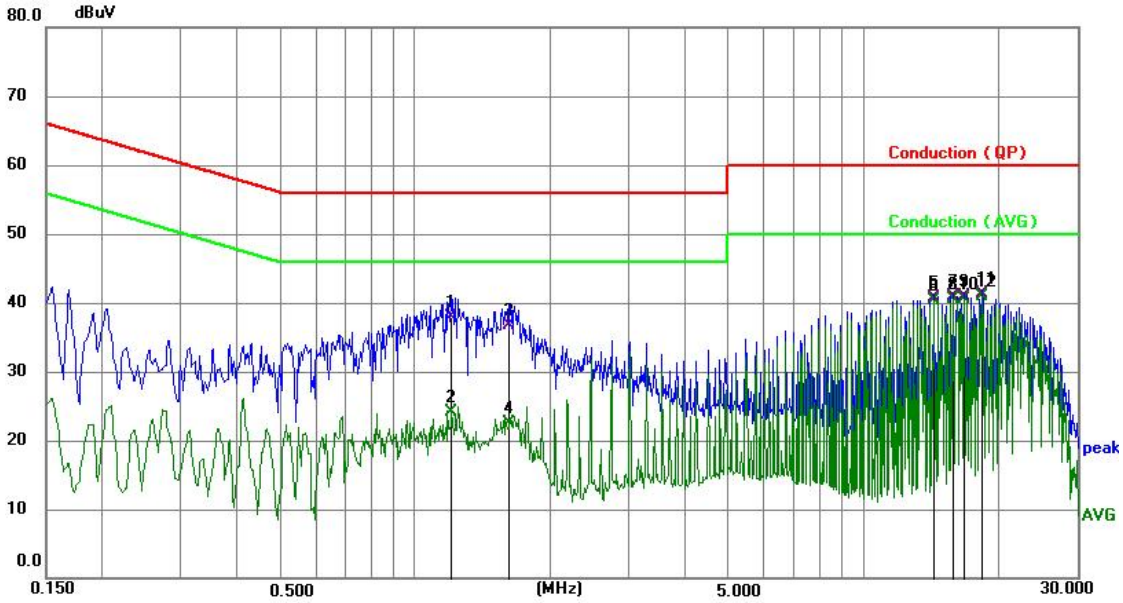
Temperature	26℃	Humidity	54%
Pol	Line		AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	1.2344	27.25	10.06	37.31	56.00	-18.69	QP
2	1.2344	12.75	10.06	22.81	46.00	-23.19	AVG
3	1.6800	26.59	10.06	36.65	56.00	-19.35	QP
4	1.6800	12.72	10.06	22.78	46.00	-23.22	AVG
5	14.4060	30.71	10.09	40.80	60.00	-19.20	QP
6	14.4060	30.26	10.09	40.35	50.00	-9.65	AVG
7	15.6390	31.50	10.10	41.60	60.00	-18.40	QP
8	15.6390	31.03	10.10	41.13	50.00	-8.87	AVG
9	17.1464	31.60	10.10	41.70	60.00	-18.30	QP
10 *	17.1464	31.22	10.10	41.32	50.00	-8.68	AVG
11	18.3795	31.09	10.11	41.20	60.00	-18.80	QP
12	18.3795	30.76	10.11	40.87	50.00	-9.13	AVG

Level = Reading + Factor Margin = Level - Limit

Pol	Neutral

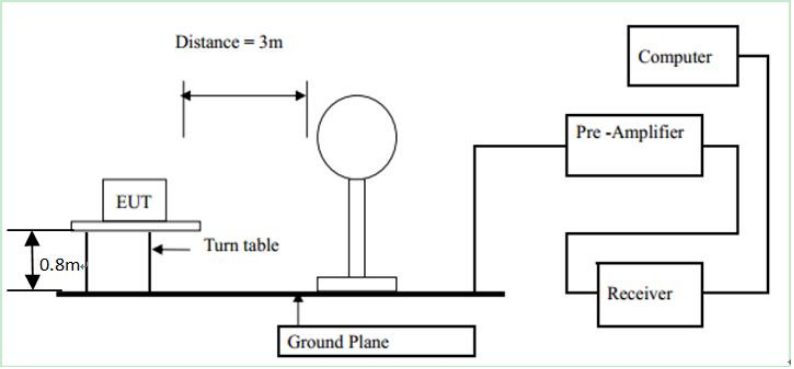


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	1.2075	27.79	10.06	37.85	56.00	-18.15	QP
2	1.2075	14.09	10.06	24.15	46.00	-21.85	AVG
3	1.6215	26.57	10.06	36.63	56.00	-19.37	QP
4	1.6215	12.53	10.06	22.59	46.00	-23.41	AVG
5	14.3655	30.61	10.09	40.70	60.00	-19.30	QP
6	14.3655	30.14	10.09	40.23	50.00	-9.77	AVG
7	15.8685	30.75	10.10	40.85	60.00	-19.15	QP
8	15.8685	30.44	10.10	40.54	50.00	-9.46	AVG
9	16.8270	30.80	10.10	40.90	60.00	-19.10	QP
10	16.8270	30.45	10.10	40.55	50.00	-9.45	AVG
11	18.3300	31.20	10.10	41.30	60.00	-18.70	QP
12 *	18.3300	30.77	10.10	40.87	50.00	-9.13	AVG

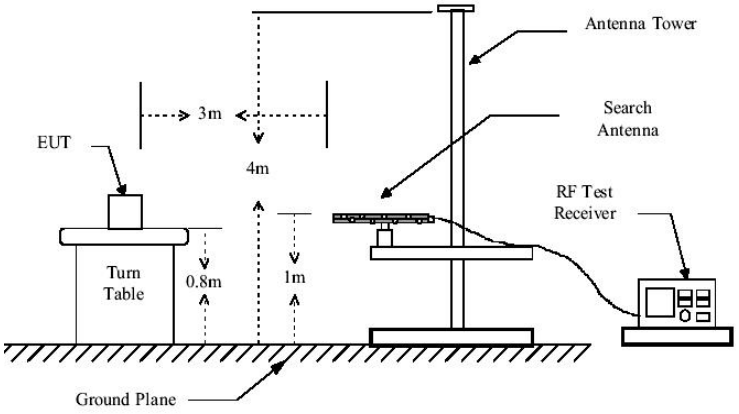
Level = Reading + Factor Margin = Level - Limit

3.2. Radiated Spurious Emission Measurement

3.2.1. Test Specification

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Frequency Range:</td><td>9 kHz to 1 GHz</td></tr>
<tr><td>Measurement Distance:</td><td>3 m</td></tr>
<tr><td>Antenna Polarization:</td><td>Coaxial & Coplanar(9KHz-30MHz)
Horizontal & Vertical(30MHz-1GHz)</td></tr>
<tr><td>Operation mode:</td><td>Refer to item 4.1</td></tr>
<tr><td>Receiver Setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>9kHz- 150kHz</td><td>Quasi-peak</td><td>200Hz</td><td>1kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>150kHz-30MHz</td><td>Quasi-peak</td><td>9kHz</td><td>30kHz</td><td>Quasi-peak Value</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
</table>
Note: 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 and above 1000 MHZ. Radiated emission limits in these three bands are based on measurements employing an average detector.
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Field Strength (microvolts/meter)</th><th>Measurement Distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(KHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(KHz)</td><td>30</td></tr>
<tr><td>1.705-30</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions below 30MHz
 

30MHz to 1GHz</td></tr>
</table>

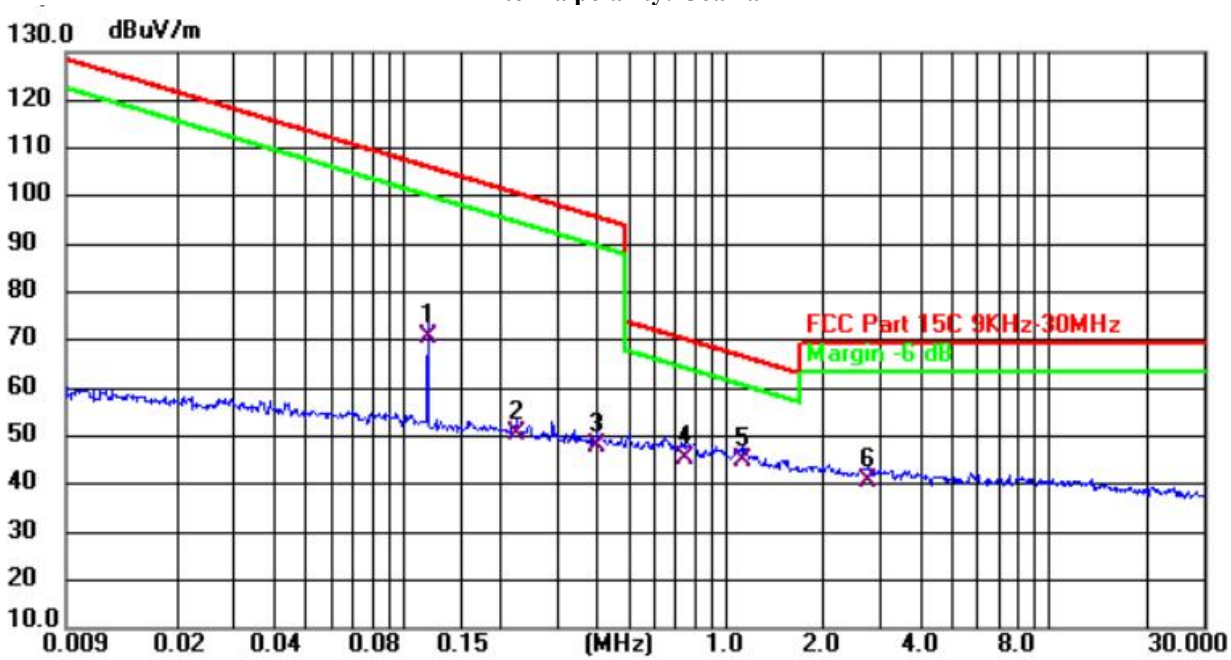
	
Test Procedure:	1. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. 2. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using 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; 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

Frequency Range	:	9KHz~30MHz
Test Mode	:	Mode 1
Test Results	:	**PASS**
Note:	1. The test results are listed in next pages. 2. 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.	

Antenna polarity: Coaxial



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.119	70.34	0.16	70.50	106.09	-35.59	QP
2	0.224	49.75	0.58	50.33	100.60	-50.27	QP
3	0.398	47.22	0.92	48.14	95.61	-47.47	QP
4	0.749	43.86	1.60	45.46	70.11	-24.65	QP
5 *	1.113	42.57	2.34	44.91	66.67	-21.76	QP
6	2.719	34.89	5.63	40.52	69.54	-29.02	QP

Level = Reading + Factor Margin = Level – Limit

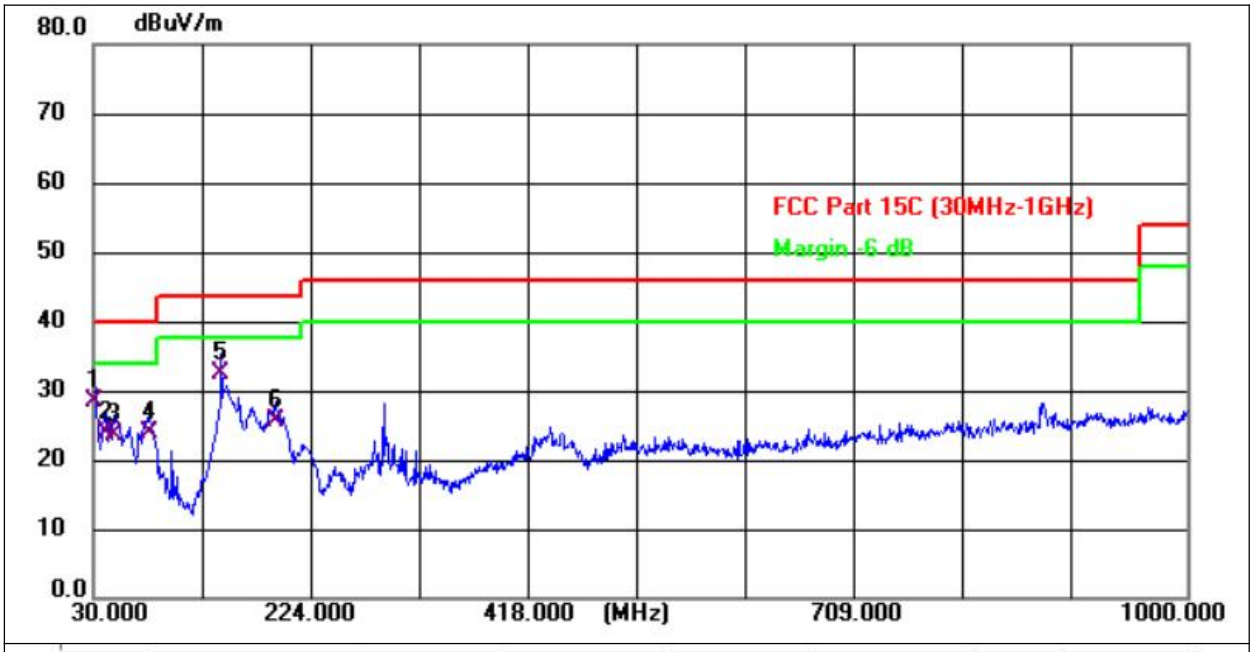
Frequency Range	:	30MHz~1000MHz
Test Mode	:	Mode 1
Test Results	:	**PASS**

Note: 1. The test results are listed in next pages.

2. 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.

30MHz-1GHz

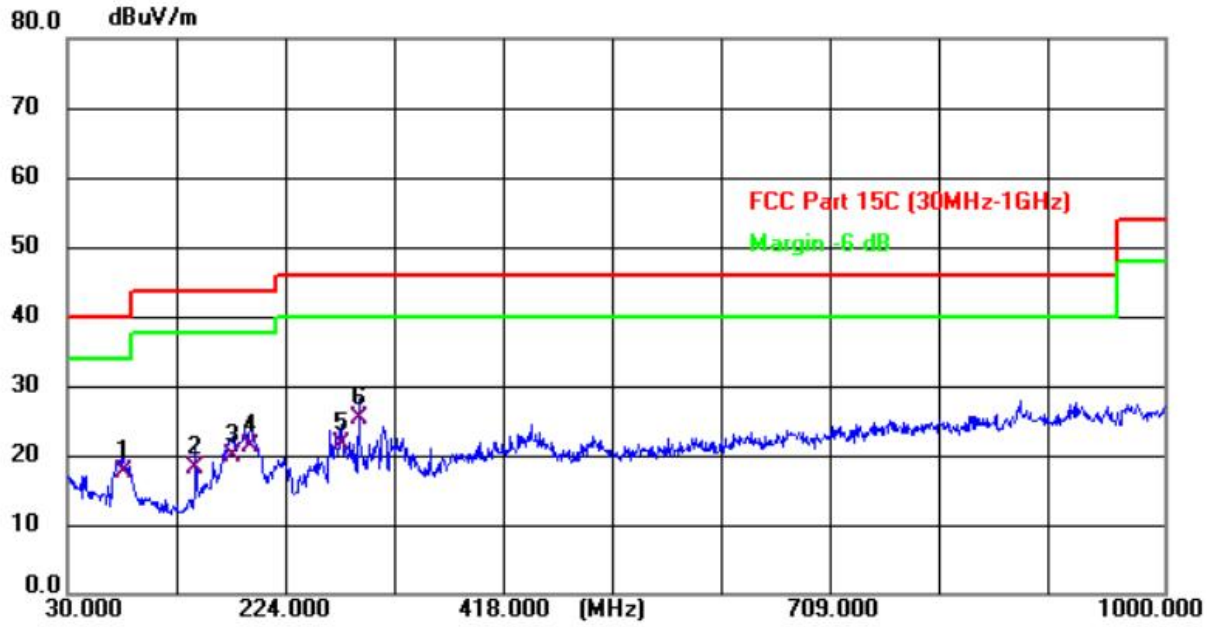
Temperature	26℃	**Humidity**	54%
Pol	Vertical	**Test Voltage**	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.970	36.61	-8.26	28.35	40.00	-11.65	QP
2	40.670	32.43	-8.60	23.83	40.00	-16.17	QP
3	48.430	32.77	-9.22	23.55	40.00	-16.45	QP
4	79.470	38.10	-14.31	23.79	40.00	-16.21	QP
5 *	143.490	46.18	-13.88	32.30	43.50	-11.20	QP
6	191.990	37.18	-11.69	25.49	43.50	-18.01	QP

Level = Reading + Factor Margin = Level – Limit

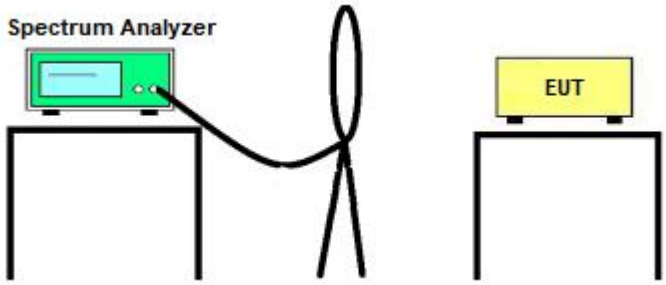
Pol	Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	79.470	31.93	-14.31	17.62	40.00	-22.38	QP
2	143.490	31.96	-13.88	18.08	43.50	-25.42	QP
3	176.470	32.43	-12.69	19.74	43.50	-23.76	QP
4	191.990	32.91	-11.69	21.22	43.50	-22.28	QP
5	272.500	30.25	-8.81	21.44	46.00	-24.56	QP
6 *	288.020	33.67	-8.49	25.18	46.00	-20.82	QP

Level = Reading + Factor Margin = Level – Limit

3.3. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)
Test Method:	ANSI C63.10: 2013
Limit:	N/A
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Center frequency is set to the nominal EUT channel center frequency; Span = between two times and five times the OBW; RBW: 1% to 5% of the OBW; VBW: approximately three times RBW; Sweep = auto; Detector function = peak; Trace = max hold. 4. Measure and record the results in the test report.
Test setup:	
Test Mode:	Refer to section 4.1 for details
Test results:	PASS

3.3.1. Test data

Temperature：	25.7 ℃	Relative Humidity：	55%
Pressure：	101kPa		

	Frequency (KHz)	20dB bandwidth (KHz)	Result
Phone coil	119.2	0.082	Pass

Mobile coil

4. Photos of test setup

Reference to the **appendix I Test Setup Photo** for details.

5. Photos of EUT

Reference to the **appendix II external photos** and **appendix III internal photos** for details.

------ END OF REPORT------