TEST REPORT

For

Watch

Model Number: OPWE242

FCC ID: 2ABZ2-OPWE242

IC: 12739A-OPWE242

Report Number : WT248002348

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection
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Revision History

No	Date	Remark
V1.0	2025.03.26	Initial issue

TEST REPORT DECLARATION

Applicant	:	OnePlus Technology (Shenzhen) Co., Ltd.
Address	:	18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North,Futian District, Shenzhen, Guangdong, 518100, P.R. China
Manufacturer	:	OnePlus Technology (Shenzhen) Co., Ltd.
Address	:	18C02, 18C03, 18C04 and 18C05, Shum Yip Terra Building, Binhe Avenue North,Futian District, Shenzhen, Guangdong, 518100, P.R. China
EUT Description	:	Watch
Model No.	:	OPWE242
HVIN	:	OPWE242
Trade mark	:	ONEPLUS
IC	:	12739A-OPWE242
FCC ID	:	2ABZ2-OPWE242

Test Standards:

FCC Part 15 Subpart C
RSS-210 Issue 11 (2024-06)
RSS-GEN Issue 5 (2021-02)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Zhou Fangai 周芳媛)	Date:	Mar.26, 2025
Checked by:	(Wan Xiaojing 万晓婧)	Date:	Mar.26, 2025
Approved by:	(Lin Bin 林斌)	Date:	Mar.26, 2025

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	IC Rules	Test Results
Occupied Bandwidth	2.1049	RSS-GEN, Section 6.7	Pass
In-Band Emission	15.225(a)(b)(c)	RSS-210, Annex B.6(a)	Pass
Out-of-Band Emission	15.209 15.225(d)	RSS-210, Annex B.6(a)	Pass
Conducted emission test for AC power port	15.207	RSS-GEN, Section 8.8	Pass
Frequency Stability Tolerance	15.225(e)	RSS-GEN, Annex B.6(b)	Pass
Antenna Requirement	15.203	RSS-GEN, Section 6.8	Pass

Remark: “N/A” means “Not applicable.”

2. GENERAL INFORMATION

2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

The lab will not be liable for any loss or damage resulting for false, inaccurate, inappropriate or incomplete product information provided by the applicant/manufacturer.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.

The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918.

The Laboratory is registered to perform emission tests with Innovation, Science and Economic Development (ISED), and the registration number is 11177A.

The Laboratory is registered to perform emission tests with VCCI, and the registration number are C-20048, G20076, R-20077, R-20078 and T-20047.

The Laboratory is Accredited Testing Laboratory of American Association for Laboratory Accreditation (A2LA) and certificate number is 3292.01.

2.3. Measurement Uncertainty

Conducted Emission

9 kHz~150 kHz *U*=3.7dB k=2
150 kHz~30MHz *U*=3.3dB k=2

Radiated Emission
30MHz~1000MHz *U*=4.3dB k=2

3. PRODUCT DESCRIPTION

NOTE: The extreme test conditions for temperature and antenna gain were declared by the manufacturer.

3.1. EUT Description

Description	:	Watch
Manufacturer	:	OnePlus Technology (Shenzhen) Co., Ltd.
Model Number	:	OPWE242
Operate Frequency	:	13.56MHz
Modulation	:	ASK
Antenna Designation	:	Integral antenna
Operating voltage	:	DC 3.52 V (Low)/ DC 3.92 V (Normal)/ DC 4.53 V (Max)
Software Version	:	OPWE242_11_A.02
Hardware Version	:	XK935

Remark: ---

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2ABZ2-OPWE242 filing to comply with Section 15.207, 15.209 and 15.225 of the FCC Part 15 Subpart C Rules.
This submittal(s) (test report) is intended for IC: 12739A-OPWE242, filing to comply with RSS-210 Issue 11, RSS-GEN Issue 5 of the IC Rules.

3.3. Block Diagram of EUT Configuration

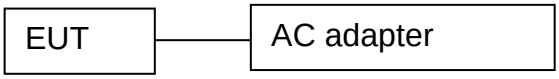


Figure 1 EUT setup

3.4. Operating Condition of EUT

The Radiated spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission (X plane).

3.5. Support Equipment List

Table 2 Support Equipment List

Name	Model No	S/N	Manufacturer
Rechargeable Li-ion Polymer Battery	BLW018	---	Dongguan NVT Technology Limited
USB Cable	DL154	---	---
Charging Base	ODP52	---	Guangdong OPPO Mobile

			Telecommunications Corp., Ltd.
Adapter	VCB3HDUH	---	HUIZHOU GOLDEN LAKE INDUSTRIAL CO., LTD.

3.6. Test Conditions

Date of test：Mar.25, 2025
Date of EUT Receive：Dec.10, 2024
Temperature: 21 ℃-24 ℃
Relative Humidity: 42 %-46 %

3.7. Modifications

No modification was made.

3.8. Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 3 Test Equipment

No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB9058/05	Test Receiver	R&S	ESCI 3	Sep.03,2024	1 Year
SB4357	AMN	R&S	ENN216	Oct.31,2024	1 Year
SB9549	Shielded Room	Albatross	SR	Aug.28,2024	1 Year
SB15044/01	Test Receiver	R&S	ESW8	Mar.05,2025	1 Year
SB18856	Broadband Antenna	SCHWARZBECK	VULB9163	Aug.26,2024	1 Year
SB3345	Loop Antenna	Schwarzbeck	FMZB1516-113	Jan.06,2025	1 Year
SB18844	Semi Anechoic Chamber	Albatross	9×6×6(m)	Feb.10,2025	1 Year
SB6152	Spectrum Analyzer	R&S	FSL6	Apr.22,2024	1 year
SB10758	REGULATED DC POWER SUPPLY	KIKUSUI	PWR1600H	---	---
SB11818	Temperature Humidity Chamber	Espec	EH-010U	Oct.30,2024	1 Year

5. OCCUPIED BANDWIDTH

5.1. Test Standard

5.1.1. Test Standard

FCC part 2.1049
RSS-GEN, Section 6.7

5.2. TEST PROCEDURE

The occupied bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

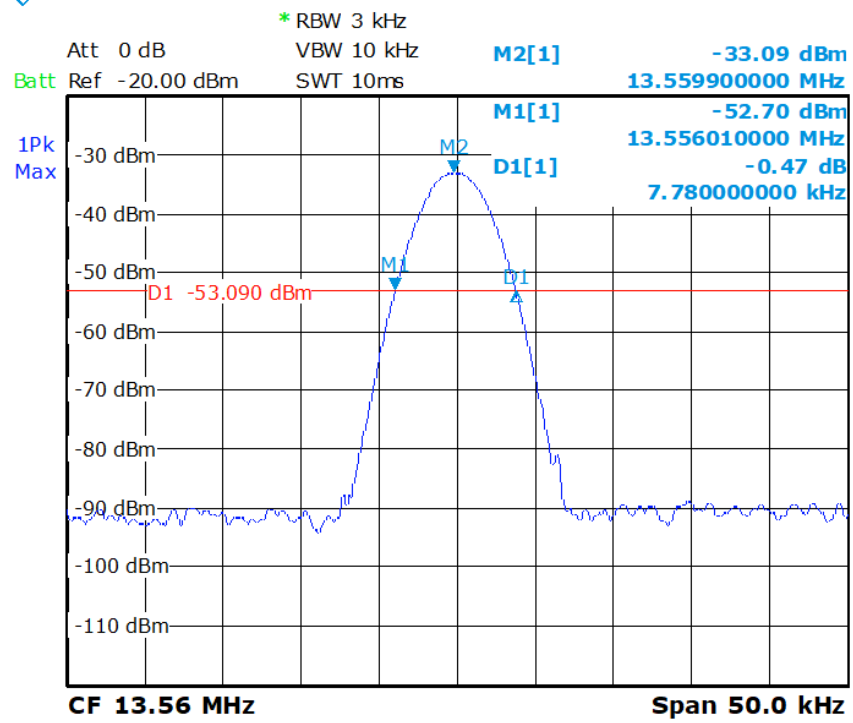
5.3. TEST SETUP

5.4. Test Data

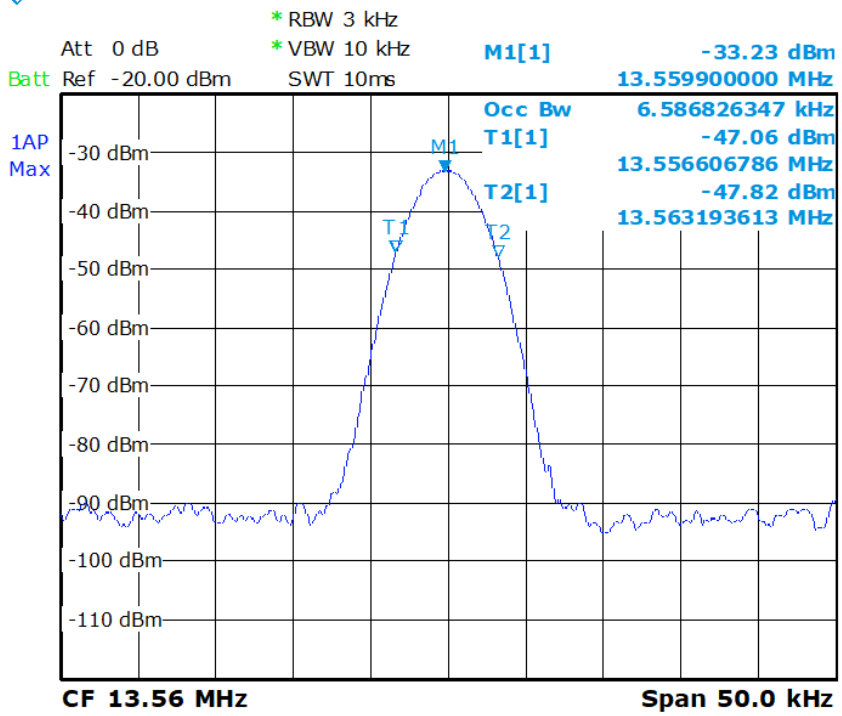
Table 4 Bandwidth Test Data

FREQUENCY (MHz)	20dB BANDWIDTH (kHz)	99% BANDWIDTH (kHz)
13.560	7.780	6.587

20dB Bandwidth



99% Bandwidth



6. IN-BAND RADIATED SPURIOUS EMISSION MEASUREMENTS

6.1. Test Standard

6.1.1. Test Standard

FCC part 15.225(a)(b)(c)
RSS-210, Annex B.6 (a)

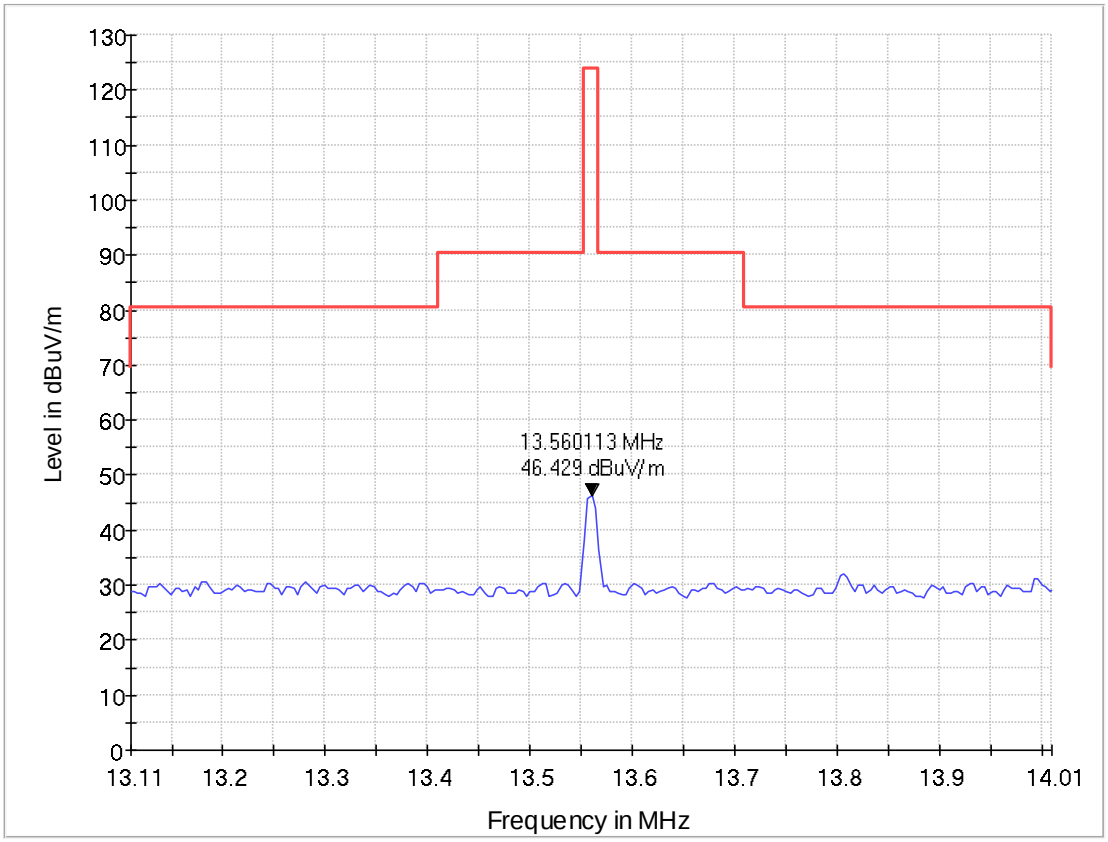
6.2. TEST PROCEDURE

Radiated emission testing was performed in the band 13.110 – 14.010 MHz.
1. All measurements were performed using a loop antenna. The antenna was positioned in three orthogonal positions (X front, Y side, Z top) and the position with the highest emission level was recorded.
2. The EUT was positioned in three orthogonal planes to determine the orientation resulting in the worst case emissions.
3. Measurements were performed at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)(2).
Extrapolation Factor = 20 log 10 (30/3) 2 = 40dB.
4. The spectrum was investigated from 9kHz up to 30MHz using the loop antenna. Only the emissions shown in the table above were found to be significant.
5. All measurements were recorded using a spectrum analyzer employing a quasi-peak detector.

6.3. TEST DATA

Emission level (dBuV)=Read Value(dBuV/m) + Antenna Factor(dB)+ Cable Loss + preamp (dB)

The emissions don’t show in above result tables are more than 20dB below the limits



Frequency (MHz)	Quasi Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Azimuth (deg)	Corr. (dB)
13.560	46.429	124	77.571	0	20

7. RADIATED SPURIOUS EMISSION MEASUREMENTS, OUT-OF-BAND

7.1. Test Standard and Limit

7.1.1. Test Standard

FCC part 15.205, 15.209 &15.225(d)
RSS-210, Annex B.6 (a)
RSS-GEN, Section 8.9

7.1.2. Test Limit

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)	Fieldstrength (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.

Formula for converting the filed strength from μV/m to dBμV/m is:

$dB\mu V/m = 20\log^{(\mu V/m)}$

RSS-GEN, Section 8.9

Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission.

Table 5 – General field strength limits at frequencies above 30 MHz

Frequency (MHz)	Field strength (μV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field)	Measurement distance (m)

	(μA/m)	
9 - 490 kHz 1	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.
Formula for converting the filed strength from μV/m to dBμV/m is:
$dB\mu V/m = 20\log^{(\mu V/m)}$

7.2. TEST PROCEDURE

The EUT was tested from 9 kHz up to the 1GHz excluding the band 13.110 – 14.010 MHz. All measurement sup to 960MHz were recorded with a spectrum analyzer employing a quasi-peak detector. All out-of-band emissions must not exceed the limits shown in Table 8-5 per Section 15.209. A loop antenna was used to investigate emissions below 30MHz

7.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

7.4. TEST DATA

The emissions don't show in following result tables are more than 20dB below the limits.

9 kHz-30MHz

Table 7 Radiated Emission Test Data 9 kHz-30MHz

Frequency (MHz)	Cable Loss +preamp (dB)	Antenna Factor (dB)	Reading (dBμV/m)	Level (dBμV/m)	Polarity (Horizontal /Vertical)	Limit (dBμV/m)	Margin (dB)	Note
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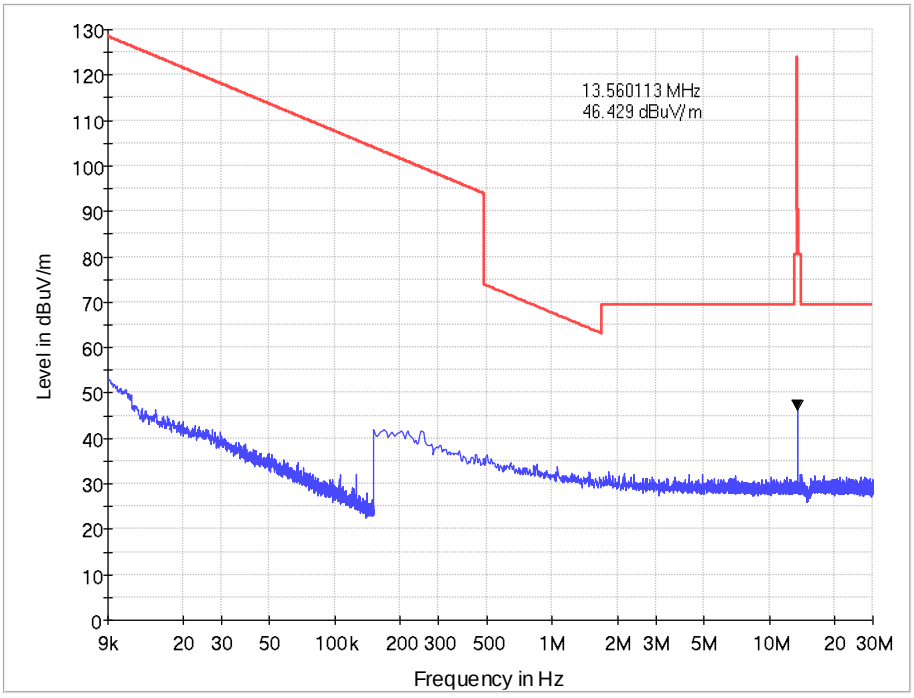
Remark: Emission level (dBuV) =Read Value (dBuV/m) + Antenna Factor (dB) + Cable Loss +preamp (dB)



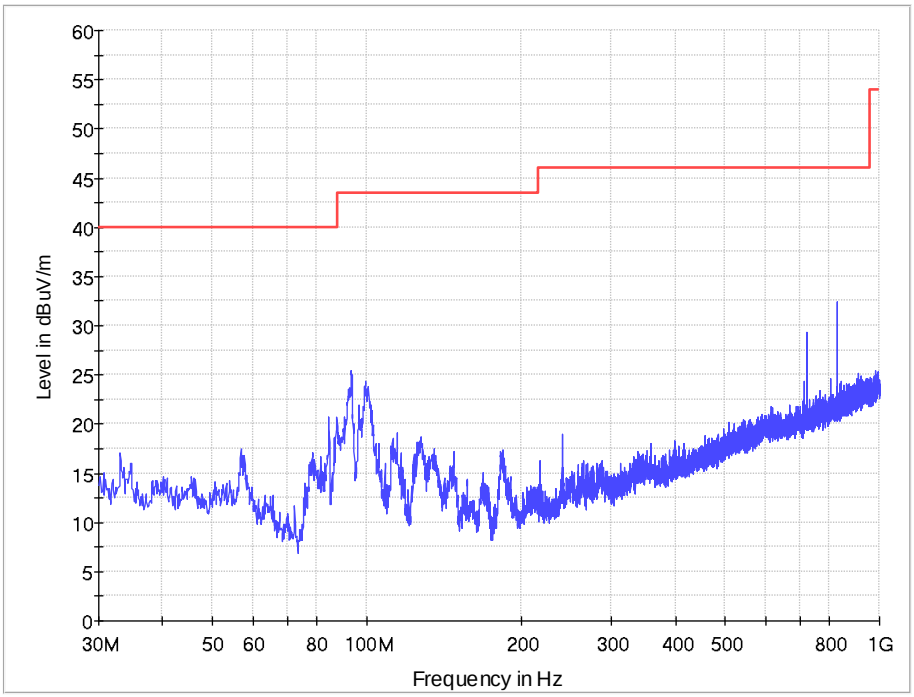
30MHz-1GHz

Table 8 Radiated Emission Test Data 30MHz-1GHz

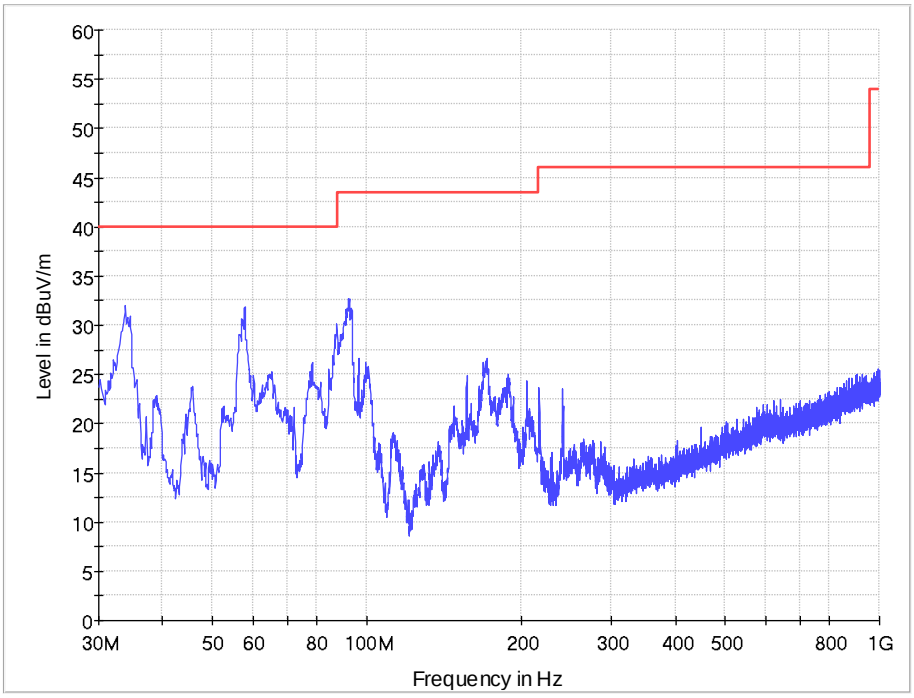
Frequency (MHz)	Cable Loss +preamp (dB)	Antenna Factor (dB)	Reading (dBμV/m)	Level (dBμV/m)	Polarity (Horizontal /Vertical)	Limit (dBμV/m)	Margin (dB)	Note
33.880	0.7	12.3	12.3	25.3	Vertical	40	14.7	QP
57.807	0.8	13.0	16.5	30.3	Vertical	40	9.7	QP
65.243	0.9	10.7	11.0	22.6	Vertical	40	17.4	QP
87.338	1.1	10.3	15.3	26.7	Vertical	40	13.3	QP
91.972	1.2	11.9	15.3	28.4	Vertical	43.5	15.1	QP
171.728	1.5	9.0	12.1	22.6	Vertical	43.5	20.9	QP
33.018	0.7	12.3	2.1	15.1	Horizontal	40	24.9	QP
56.837	0.8	13.0	1.5	15.3	Horizontal	40	24.7	QP
84.320	0.9	8.5	7.4	16.8	Horizontal	40	23.2	QP
93.158	1.1	11.9	8.7	21.7	Horizontal	43.5	21.8	QP
99.517	1.1	12.8	9.0	22.9	Horizontal	43.5	20.6	QP
127.862	1.3	10.5	4.8	16.6	Horizontal	43.5	26.9	QP

Remark: Emission level (dBuV) =Read Value (dBuV/m) + Antenna Factor (dB) + Cable Loss +preamp (dB)

Horizontal



Vertical



8. CONDUCTED EMISSION TEST FOR AC POWER PORT MEASUREMENT

8.1. Test Standard and Limit

8.1.1. Test Standard

FCC Part 15.207
RSS-GEN, Section 8.8

8.1.2. Test Limit

Table 9 Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

* Decreasing linearly with logarithm of the frequency
* The lower limit shall apply at the transition frequency.

8.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4a-2017.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.
The bandwidth of EMI test receiver is set at 9 kHz.

8.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

8.4. Test Data

The emissions don’t show in below are too low against the limits. Refer to the test curves.

Table 10 Conducted Emission Test Data

	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBμV)	Emission Level (dBμV)	Limit (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limit (dBμV)
Line	0.150	9.7	29.9	39.6	66	18.6	28.3	56
	0.181	9.7	27.1	36.8	64.4	17.8	27.5	54.4
	0.388	9.7	28.2	37.9	58.1	22.7	32.4	48.1
	0.762	9.8	14.9	24.7	56	11.6	21.4	46
	2.782	9.9	15.0	24.9	56	9.5	19.4	46
	4.101	9.9	15.3	25.2	56	8.9	18.8	46
Neutral	0.150	9.7	32.9	42.6	66	19.9	29.6	56
	0.177	9.7	28.9	38.6	64.6	17.4	27.1	54.6
	0.393	9.7	24.4	34.1	58	18.7	28.4	48
	3.187	9.9	15.2	25.1	56	9.4	19.3	46
	4.371	9.9	17.2	27.1	56	11.5	21.4	46
	11.499	9.9	23.5	33.4	60	19.3	29.2	50

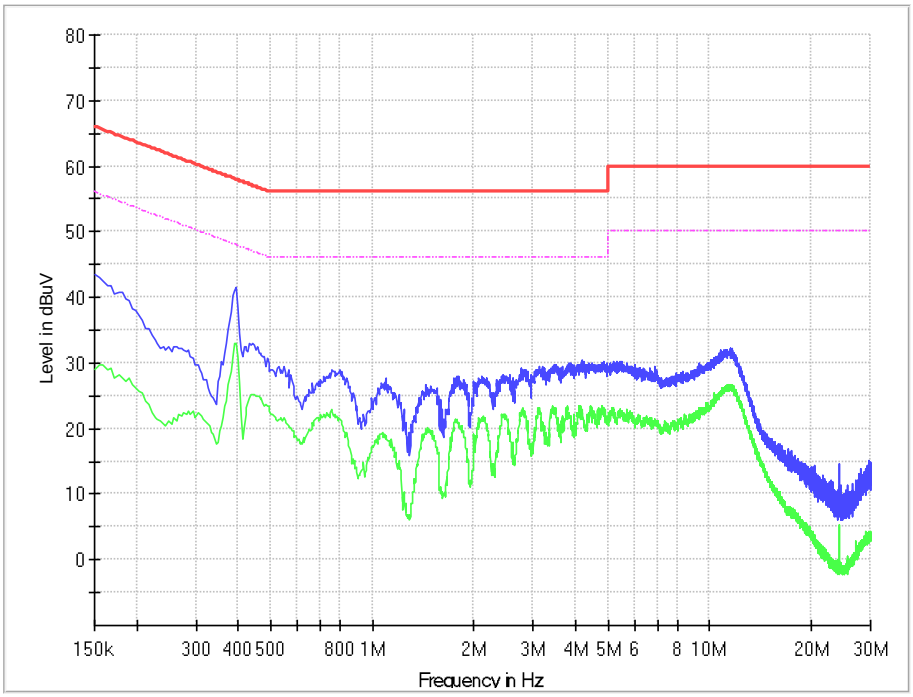
REMARKS: 1. Emission level (dBuV)=Read Value (dBuV) + Correction Factor(dB)

2. Correction Factor (dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)

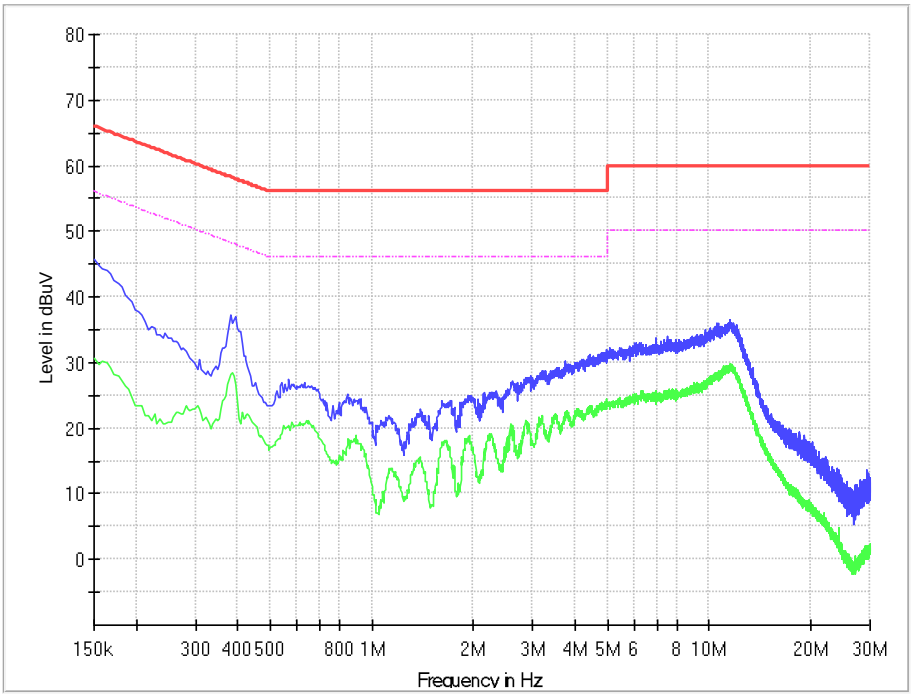
3. The other emission levels were very low against the limit.

4.13.56MHz is a fundamental frequency of the EUT

Line



Neutral



9. FREQUENCY STABILITY TOLERANCE

9.1. Test Standard

9.1.1. Test Standard

FCC part 15.225(e)
The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
RSS-210, Annex B.6 (b)
Carrier frequency stability shall be maintained to ±0.01% (±100 ppm).

9.2. TEST PROCEDURE

ANSI C63.10-2020 Clause 6.8

9.3. TEST DATA

Table 11 Frequency Stability Tolerance Test Data

Nominal Frequency (MHz)	Voltage (%)	Voltage (Vdc)	Temperature (°C)	Measured Frequency Error (Hz)	Limit (Hz)	Verdict
13.56	100%	3.92	-20	23	1356	PASS
	100%	3.92	-10	20	1356	PASS
	100%	3.92	0	-63	1356	PASS
	100%	3.92	+10	-50	1356	PASS
	100%	3.92	+20	0	1356	PASS
	100%	3.92	+30	89	1356	PASS
	100%	3.92	+40	123	1356	PASS
	100%	3.92	+50	-5	1356	PASS
	High	4.53	+20	89	1356	PASS
	End. Point	3.52	+20	46	1356	PASS

10. ANTENNA REQUIREMENT

According to Section 15.203 and RSS-GEN Section 6.8, 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 EUT has a built in antenna which is integrated inside the enclosure, this is permanently attached antenna and meets the requirements of this section.

----------End of Report ----------