

FCC TEST REPORT

FCC ID:2AVV6-827373-WATCH

Applicant Name..... : Liquipel Protection LLC

Address..... : 19800 MacArthur Blvd. Suite 300, Irvine California, CA 92612, United States

Manufacturer Name..... : Dong Guan You & Me Electronics.,LTD

Address..... : 2nd Floor, 3rd building,YongFa High-Tech Park, Jiaoping Road, TangXia District, Dongguan City, China.

Product..... : Powertek 2in1 Watch Charger, 2in1 Watch Charger

Model(s)..... : 827373-Watch

Additional Model(s)..... : T8U-Watch, YM-U1, PT827373-Watch

Trademark..... : Powertek

Model Difference..... : 827373-Watch is tested model, other models are derivative models .The models are identical in circuit, only different on the model names. So the test data of 827373-Watch can represent the remaining models.

Prepared by..... : Guangdong Zhonghan Testing Technology Co., Ltd.

Address..... : Room 104/201, Building 1, Yibaolai Industrial Park, Qiaotou, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Date of Receipt..... : June 5, 2026

Date of Test(s)..... : June 5, 2026-June 18, 2026

Date of Issue..... : June 22, 2026

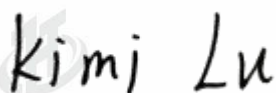
Test Requested..... : Select test(s) as requested by the client.

Test Standard(s)..... : FCC CFR Title 47 Part 15 Subpart C

Test procedure..... : ANSI C63.10-2020 + Cor. 1-2023

In the configuration tested, the EUT complied with the standards specified above.

Prepared by:



Kimi Lu/ Engineer

Reviewed by:



Baret Wu/ Director

Approved by:



Levi Lee/ Manager

Note: The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report shall not be reproduced except in full, without prior written approval of ZHT. This document may be altered or revised by ZHT, personnel only, and shall be noted in the revision of the document.



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1. 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. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

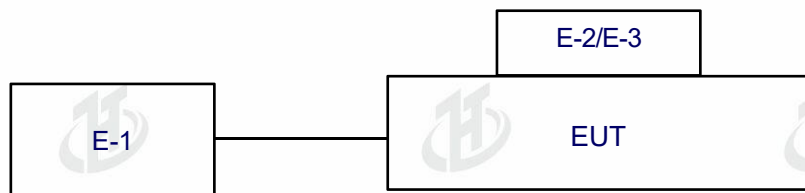
Product Name:	Powertek 2in1 Watch Charger, 2in1 Watch Charger
Test Model No:	827373-Watch
Hardware version:	V1.0
Software version:	V1.0
Operation Frequency:	Apple Watch coil: 320-325kHz Samsung Watch coil: 115-205kHz
Modulation type:	FSK
Antenna Type:	Inductive loop coil Antenna
Antenna gain:	0dBi
Power supply:	Input : 5 V==1 A Apple Watch wireless charging: 2.5 W Max Samsung Watch wireless charging: 2 W Max
Sample Number:	260605103YP001
Remark: The antenna gain is provided by the customer, if the data provided by the customer is not accurate, Guangdong Zhonghan Testing Technology Co., Ltd. does not assume any responsibility.	

2.2 TEST MODE

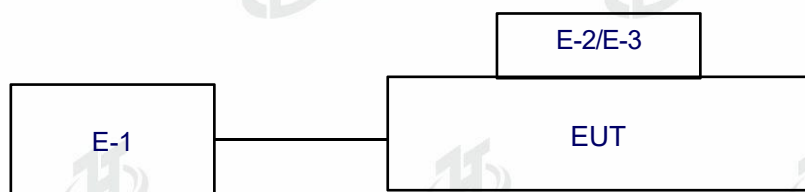
Test Modes:	
Mode 1	AC Adapter + Apple Watch charging port (Battery Status: $\leq 1\%$) -320-325kHz-2.5 W
Mode 2	AC Adapter + Apple Watch charging port (Battery Status:50%)-320-325kHz-2.5 W
Mode 3	AC Adapter + Apple Watch charging port (Battery Status: $\geq 98\%$)-320-325kHz-2.5 W
Mode 4	AC Adapter + Samsung Watch charging port (Battery Status: $\leq 1\%$) -115-205kHz-2 W
Mode 5	AC Adapter + Samsung Watch charging port (Battery Status:50%)-115-205kHz-2 W
Mode 6	AC Adapter + Samsung Watch charging port (Battery Status: $\geq 98\%$)-115-205kHz-2 W
Mode 7	Standby mode
Note: All modes were tested, only the worst-case was recorded in the report. Mode 1 is the worst mode.	

2.3 BLOCK DIAGRAM OF EUT CONFIGURATION

Conducted Emission



Radiated Emission



2.4 TEST CONDITIONS

Temperature: 25.6℃

Relative Humidity: 54.3%RH

2.5 DESCRIPTION OF SUPPORT UNITS

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
1	AC Adapter	iforg	191106C	/	AE
2	Apple watch	Apple Inc.	ultra 2	/	AE
3	Samsung Watch	Samsung	SM-L310N	/	AE

Item	Shielded Type	Ferrite Core	Length	Note

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. TEST FACILITY AND TEST INSTRUMENT USED****3.1 TEST FACILITY**

Guangdong Zhonghan Testing Technology Co., Ltd.

Add. :Room 104/201, Building 1, Yibaolai Industrial Park, Qiaotou, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

FCC Registration Number:255941

Designation Number: CN0325

IC Registered No.: 29832

CAB identifier: CN0143

3.2 INSTRUMENT LIST FOR ALL TEST ITEMS

Item	Equipment	Manufacturer	Model	Serial No.	Last Cal.	Next Cal.
1	Receiver	R&S	ESCI	100874	Apr. 24, 2026	Apr. 23, 2027
2	Loop antenna	EMCI	LAP600	272	Sept. 8, 2025	Sept. 7, 2026
3	Amplifier	Schwarzbeck	BBV 9743 B	00378	Apr. 24, 2026	Apr. 23, 2027
4	Amplifier	Schwarzbeck	BBV 9718 B	00040	May 8, 2026	May 7, 2027
5	Bilog Antenna	Schwarzbeck	VULB9162	00498	Apr. 25, 2026	Apr. 24, 2027
6	Horn Antenna	Schwarzbeck	BBHA9120D	02623	Apr. 25, 2026	Apr. 24, 2027
7	Horn Antenna	A.H.SYSTEMS	SAS574	588	Oct. 20, 2025	Oct. 19, 2026
8	Amplifier	AEROFLEX	100KHz-40GHz	097	Oct. 20, 2025	Oct. 19, 2026
9	Spectrum Analyzer	R&S	FSV40	101413	Apr. 24, 2026	Apr. 23, 2027
10	Spectrum Analyzer	KEYSIGHT	N9020A	MY53420208	Apr. 24, 2026	Apr. 23, 2027
11	WIDBAND RADIO COMMUNICATION TESTER	R&S	CMW500	109863	Apr. 24, 2026	Apr. 23, 2027
12	Single Generator	Agilent	N5182A	MY48180575	Apr. 24, 2026	Apr. 23, 2027
13	Power Sensor	MWRFTest	MW100-RFCB	/	Apr. 24, 2026	Apr. 23, 2027
14	CABLE	EMToni	DA800-NM-NM-11000MM	/	Apr. 24, 2026	Apr. 23, 2027



Conduction Test equipment

Equipment	Manufacturer	Model	Serial No.	Last Cal.	Next Cal.
Receiver	R&S	ESCI	100874	Apr. 24, 2026	Apr. 23, 2027
LISN	R&S	ENV216	102794	Aug. 22, 2025	Aug. 21, 2026
ISN CAT 6	Schwarzbeck	NTFM 8158	00318	Apr. 24, 2026	Apr. 23, 2027
ISN CAT 5	Schwarzbeck	CAT5 8158	00343	Apr. 24, 2026	Apr. 23, 2027
Capacitive Voltage Probe	Schwarzbeck	CVP 9222 C	00101	May 8, 2026	May 7, 2027
Current Transformer Clamp	Schwarzbeck	SW 9605	SW9605 #209	May 8, 2026	May 7, 2027
CABLE	EMToni	G223-NM-BNCM -2000MM	/	Apr. 24, 2026	Apr. 23, 2027

3.3 TESTING SOFTWARE

Project	Software name	Edition
Conducted Emission	EZ-EMC	EMC-CON 3A1.1+
Radiated Emission	EZ-EMC	FA-03A2 RE+
RF Test	MTS 8310	2.0.0.0

3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded 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	Conducted Emission Test	0.92dB
2	RF conducted power	0.16dB
3	Conducted spurious emissions	0.21dB
4	All radiated emissions (9k-30MHz)	4.68dB
5	All radiated emissions (30-1GHz)	5.1dB
6	All radiated emissions (1-6GHz)	3.9dB
7	All radiated emissions (6GHz-18GHz)	4.3dB
8	All radiated emissions (18-40GHz)	4.65dB
9	Temperature	0.5°C
10	Humidity	2%
11	Occupied Bandwidth	4.96%

Decision Rule

- ☒ Uncertainty is not included
☐ Uncertainty is included



4. CONDUCTED EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10-2020 + Cor. 1-2023
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
	QP	AVG	
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.

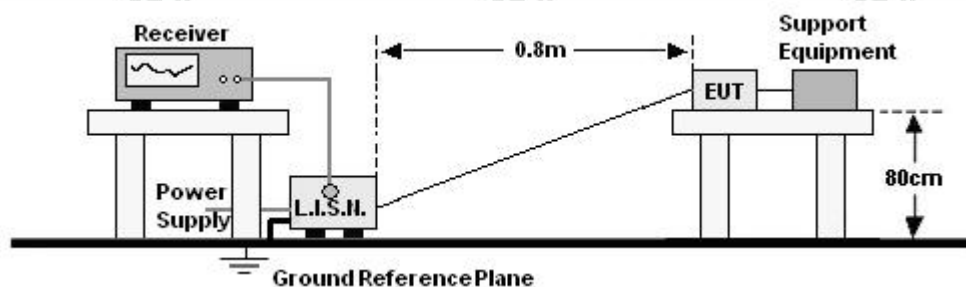
4.1.2 TEST PROCEDURE

- 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



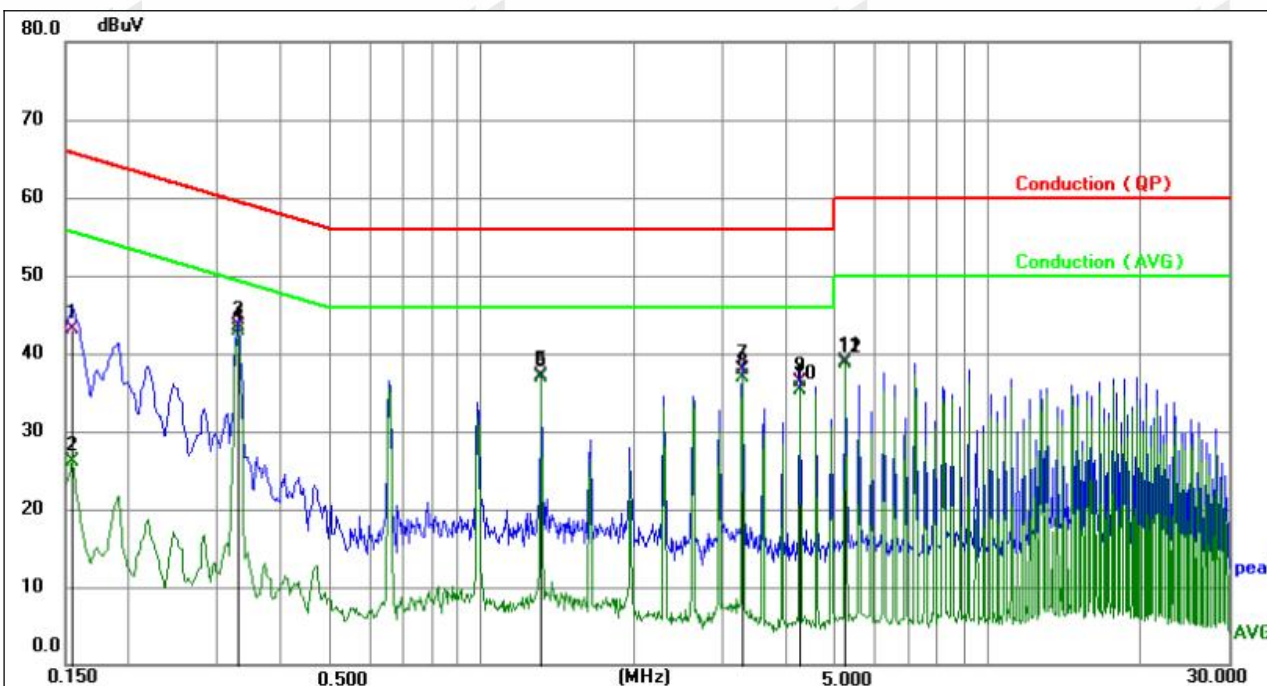
4.1.5 EUT OPERATING CONDITIONS

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.



4.1.6 TEST RESULT

Temperature:	24.5°C	Relative Humidity:	54.3%
Pressure:	101kPa	Phase :	L
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1



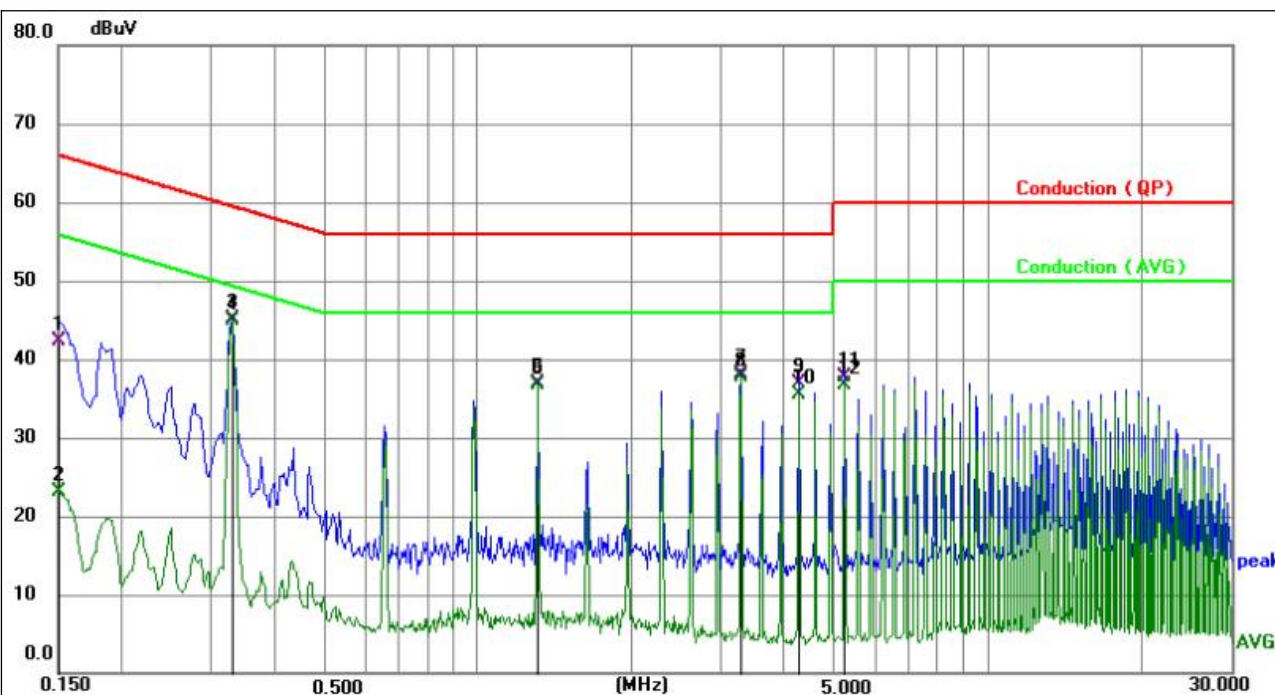
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1545	33.20	9.89	43.09	65.75	-22.66	QP	P	
2	0.1545	16.15	9.89	26.04	55.75	-29.71	AVG	P	
3	0.3300	33.53	9.97	43.50	59.45	-15.95	QP	P	
4 *	0.3300	32.88	9.97	42.85	49.45	-6.60	AVG	P	
5	1.3110	27.14	10.06	37.20	56.00	-18.80	QP	P	
6	1.3110	26.80	10.06	36.86	46.00	-9.14	AVG	P	
7	3.2775	27.84	10.08	37.92	56.00	-18.08	QP	P	
8	3.2775	26.86	10.08	36.94	46.00	-9.06	AVG	P	
9	4.2585	26.14	10.10	36.24	56.00	-19.76	QP	P	
10	4.2585	25.15	10.10	35.25	46.00	-10.75	AVG	P	
11	5.2440	28.73	10.12	38.85	60.00	-21.15	QP	P	
12	5.2440	28.53	10.12	38.65	50.00	-11.35	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:	24.5°C	Relative Humidity:	54.3%
Pressure:	101kPa	Phase :	N
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1500	32.32	9.89	42.21	66.00	-23.79	QP	P	
2	0.1500	13.27	9.89	23.16	56.00	-32.84	AVG	P	
3	0.3300	35.13	9.97	45.10	59.45	-14.35	QP	P	
4 *	0.3300	34.88	9.97	44.85	49.45	-4.60	AVG	P	
5	1.3110	26.84	10.06	36.90	56.00	-19.10	QP	P	
6	1.3110	26.55	10.06	36.61	46.00	-9.39	AVG	P	
7	3.2774	28.02	10.08	38.10	56.00	-17.90	QP	P	
8	3.2774	27.63	10.08	37.71	46.00	-8.29	AVG	P	
9	4.2584	26.86	10.10	36.96	56.00	-19.04	QP	P	
10	4.2584	25.39	10.10	35.49	46.00	-10.51	AVG	P	
11	5.2440	27.53	10.12	37.65	60.00	-22.35	QP	P	
12	5.2440	26.62	10.12	36.74	50.00	-13.26	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.Mesurement Level = Reading level + Correct Factor

5. RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10-2020 + Cor. 1-2023				
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

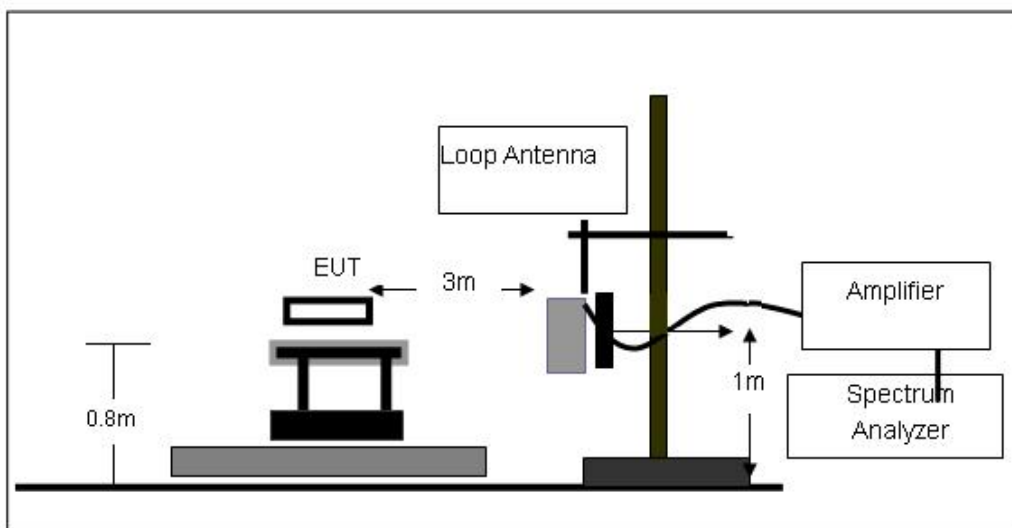
Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Limits for frequency Above 30MHz

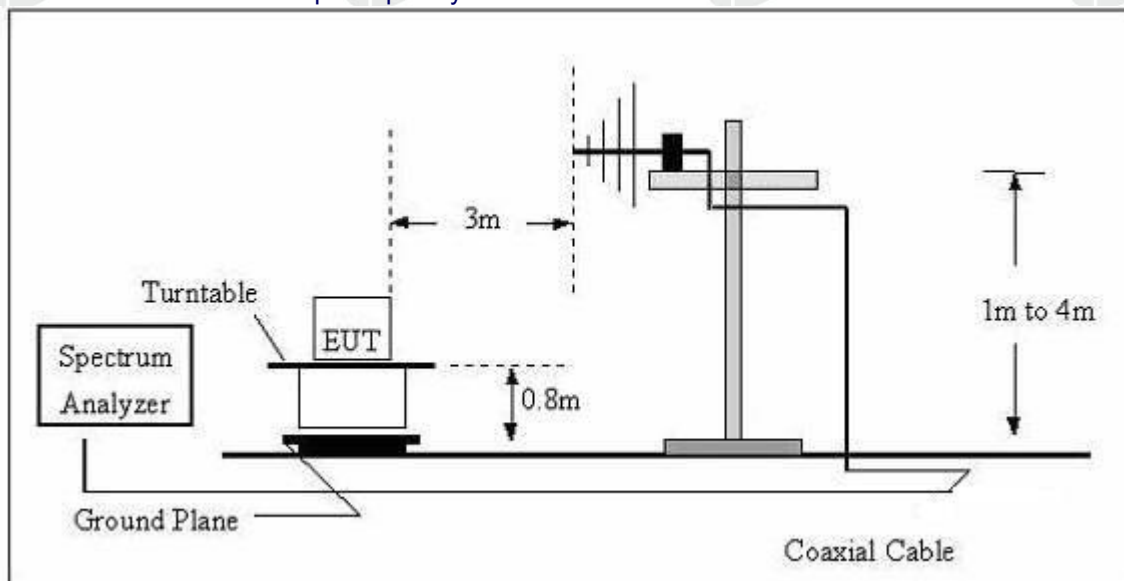
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

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 + Cor. 1-2023. 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

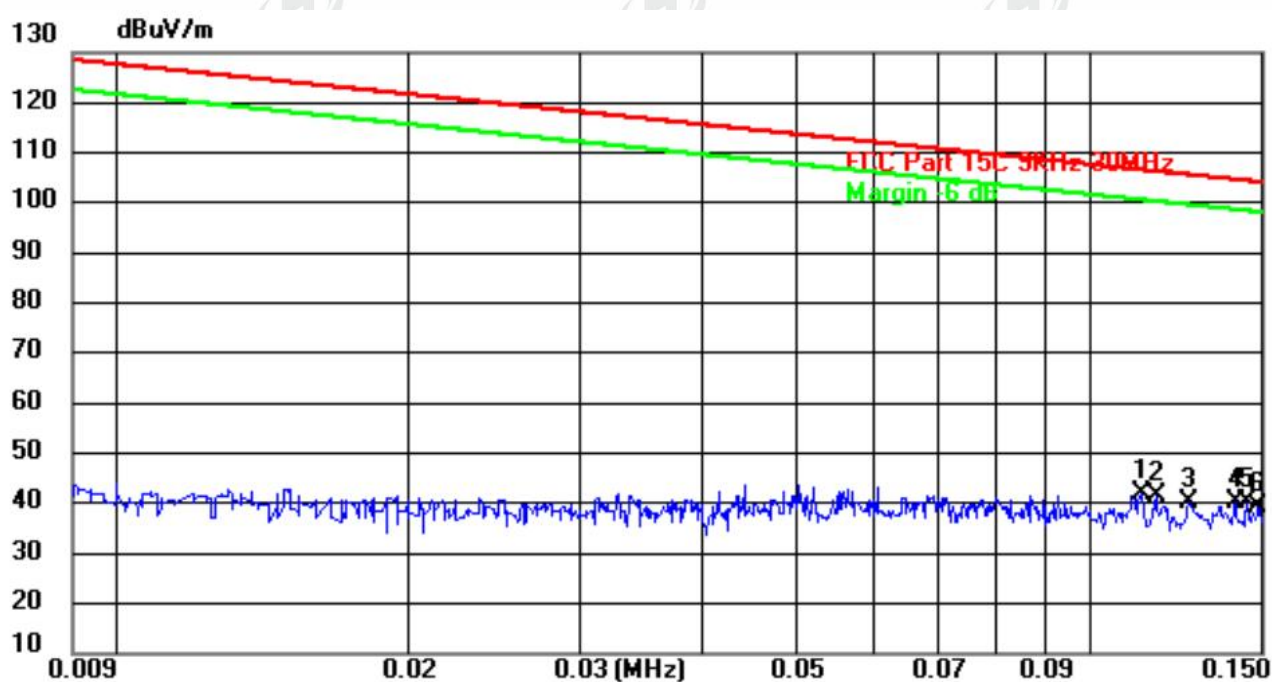
Measurement data:

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

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

9 kHz~150 kHz

Temperature:	24.0℃	Relative Humidity:	53.6%
Pressure:	101.4kPa	Polarization:	coaxial
Test Voltage:	AC 120V/60Hz	Test Modes:	Mode 1

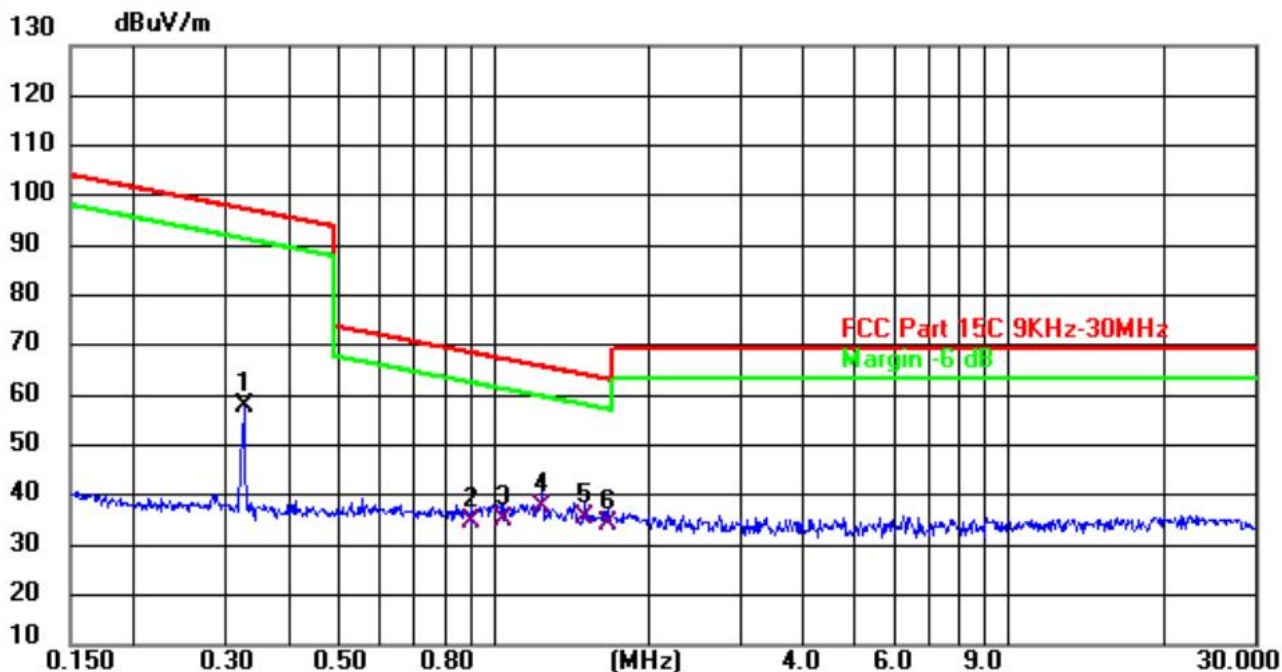


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	0.1126	21.69	20.08	41.77	106.57	-64.80	peak	-	-	P
2	0.1170	21.25	20.08	41.33	106.24	-64.91	peak	-	-	P
3	0.1262	20.16	20.10	40.26	105.58	-65.32	peak	-	-	P
4	0.1413	19.92	20.12	40.04	104.60	-64.56	peak	-	-	P
5 *	0.1454	19.93	20.12	40.05	104.35	-64.30	peak	-	-	P
6	0.1491	19.25	20.13	39.38	104.13	-64.75	peak	-	-	P



150 kHz~ 30MHz

Temperature:	24.0℃	Relative Humidity:	53.6%
Pressure:	101.4kPa	Polarization:	coaxial
Test Voltage:	AC 120V/60Hz	Test Modes:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	0.3280	37.74	20.14	57.88	97.29	-39.41	peak	-	-	P
2	0.9040	14.57	19.90	34.47	68.48	-34.01	QP	-	-	P
3	1.0430	15.39	19.88	35.27	67.24	-31.97	QP	-	-	P
4 *	1.2356	17.59	19.89	37.48	65.77	-28.29	QP	-	-	P
5	1.5032	15.76	19.91	35.67	64.06	-28.39	QP	-	-	P
6	1.6624	14.23	19.92	34.15	63.19	-29.04	QP	-	-	P

Note:

Pre-scan in the all of mode, the worst case in of was recorded.

Factor = antenna factor + cable loss – pre-amplifier.

Emission Level = Meter Reading - Factor

Margin = Emission Level- Limit.

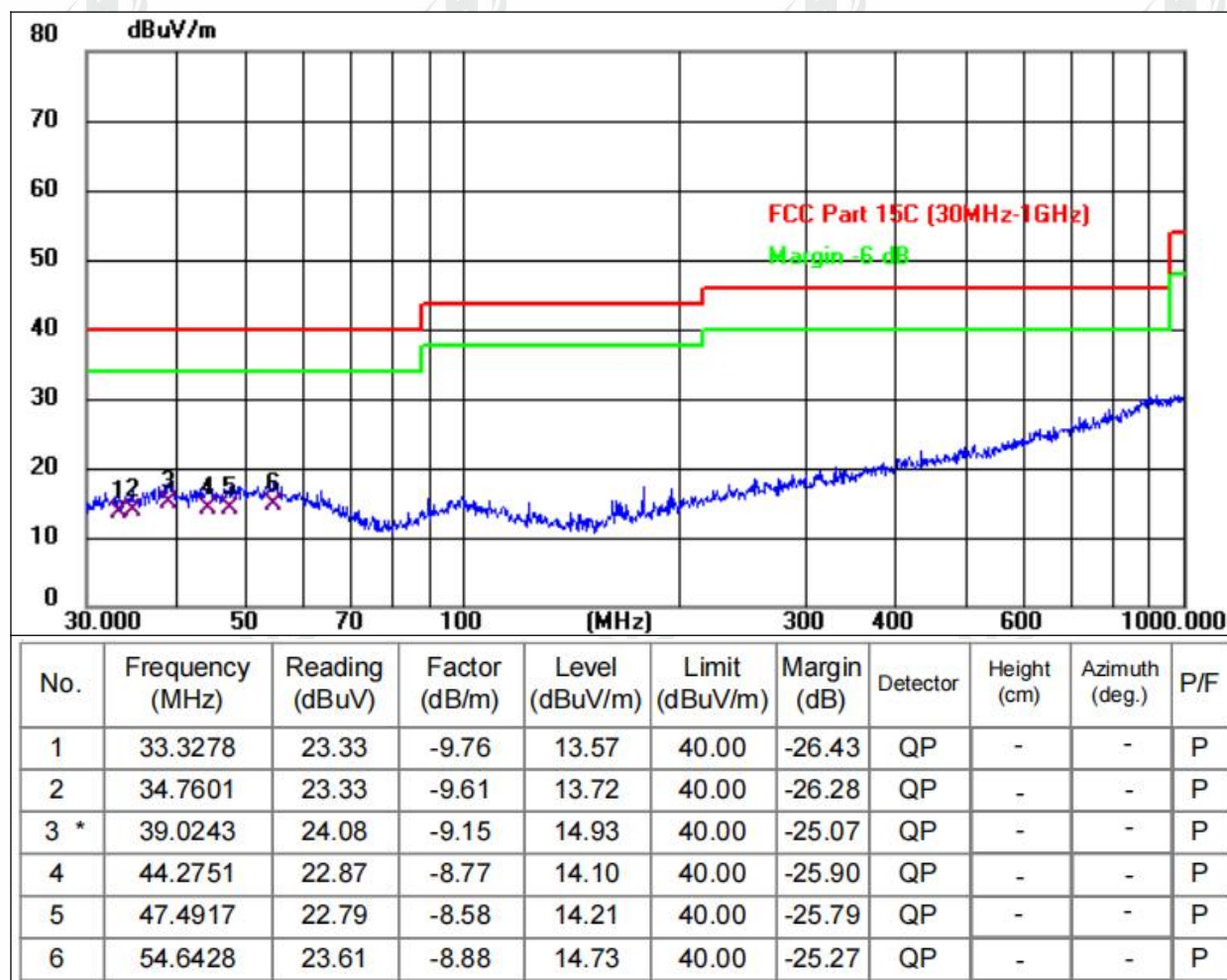
The amplitude of emissions which are attenuated by more than 20db below the permissible value has no need to be reported.

'-Means the test Degree and Height are not recorded by the test software and only show the worstcase in the test report.



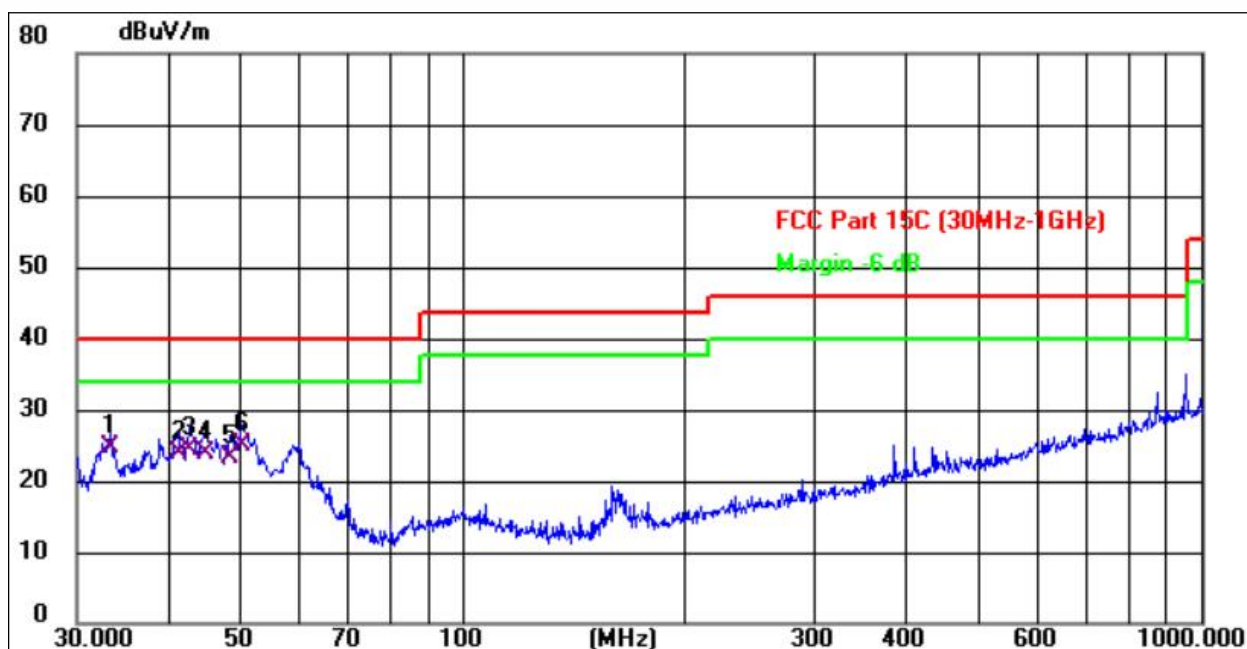
30MHz-1GHz

Temperature:	24.0℃	Relative Humidity:	53.6%
Pressure:	101.4kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Modes:	Mode 1





Temperature:	24.0°C	Relative Humidity:	53.6%
Pressure:	101.4kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Test Modes:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	33.3278	34.57	-9.76	24.81	40.00	-15.19	QP	-	-	P
2	41.2765	32.93	-8.96	23.97	40.00	-16.03	QP	-	-	P
3	42.7495	33.42	-8.88	24.54	40.00	-15.46	QP	-	-	P
4	44.9006	32.54	-8.75	23.79	40.00	-16.21	QP	-	-	P
5	48.3316	31.84	-8.54	23.30	40.00	-16.70	QP	-	-	P
6 *	50.4090	33.33	-8.47	24.86	40.00	-15.14	QP	-	-	P

Remarks:

1. Factor = Antenna Factor + Cable Loss – Preamplifier Factor
2. Level = Reading + Factor
3. Margin = Emission Level- Limit.
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. '-' Means the test Degree and Height are not recorded by the test software and only show the worstcase in the test report.



6. BANDWIDTH TEST

1. Set RBW = 1%-5%OBW.
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

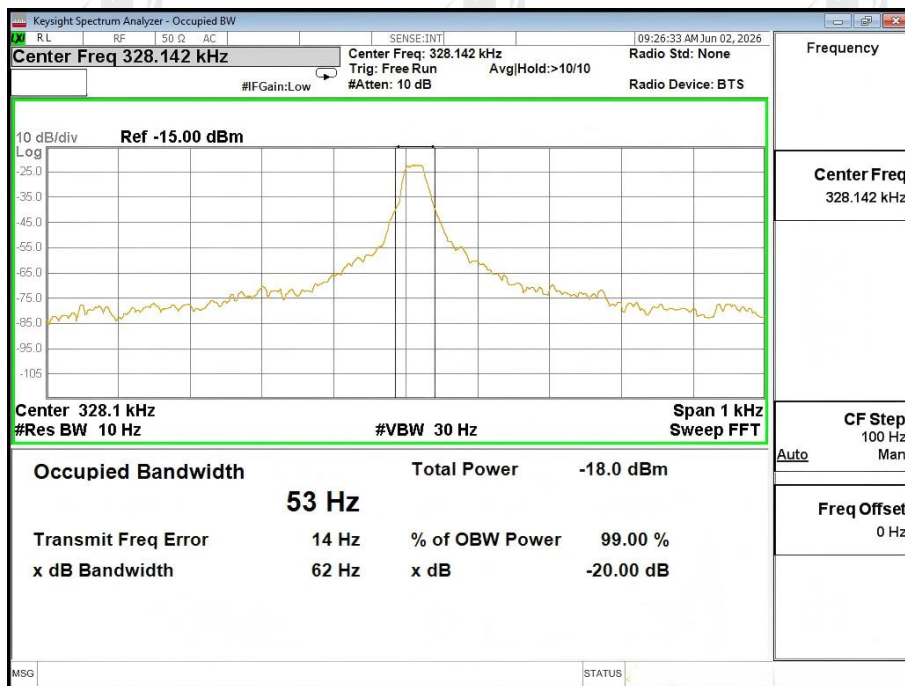




Temperature:	24.2°C	Relative Humidity:	54.3%
Pressure:	101.4kPa		

Coil	Frequency (kHz)	20dB bandwidth (kHz)	Result
Apple Watch	328.1	0.062	Pass
Samsung Watch	116.1	0.032	Pass

Apple Watch



Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 10 Hz to perform the 20dB bandwidth test.

Samsung Watch



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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 Inductive loop coil 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 *******