



# TEST REPORT

**Report Number** : TZ0059250201FRF14  
**Product Name** : 5 in 1 charging cable with iwatch charger  
**Model/Type reference** : 7143-79, 240732  
**FCC ID** : 2ANFN7143-79  
**Prepared for** : Anhui Inno-Sign International Co.,Ltd  
Room 1409-1410, Building B, Sky Blue Business, Center, No.188 South Qianshan Road, Hefei, Anhui, China

**Prepared By** : Shenzhen Tongzhou Testing Co.,Ltd.  
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**Standards** : FCC CFR Title 47 Part 15 Subpart C, ANSI C63.10: 2013  
**Date of Test** : Feb. 14, 2025~Feb. 28, 2025  
**Date of Issue** : Feb. 28, 2025

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**\*\* Report Revise Record \*\***

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Feb. 28, 2025	Valid	Initial release



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## 1. GENERAL INFORMATION

### 1.1. Client Information

Applicant	: Anhui Inno-Sign International Co.,Ltd
Address	: Room 1409-1410, Building B,Sky Blue Business, Center, No.188 South Qianshan Road, Hefei, Anhui, China
Manufacturer	: Anhui Inno-Sign International Co.,Ltd
Address	: Room 1409-1410, Building B,Sky Blue Business, Center, No.188 South Qianshan Road, Hefei, Anhui, China

### 1.2. Description of Device (EUT)

Product Name	: 5 in 1 charging cable with iwatch charger
Trade Mark	: N/A
Model Number	: 7143-79, 240732
Model Declaration	: All the same except the model name.
Test Model	: 7143-79
Power Supply	Input: 5V/2A Wireless charger Output: 2W Lightning port Output: 5V/2A Type-C port Output: 5V/2A Total Output:10W
Hardware version	: V0.1
Software version	: V1.0

### 1.3. Wireless Function Tested in this Report

WPT	
Operation Frequency	: 325kHz-330kHz
Test Frequency	: 326.125 kHz
Modulation Technology	: ASK
Antenna Type and Gain	: Coil Antenna with 0dBi Gain

Note 1: Antenna position refer to EUT Photos.

Note 2: the above information was supplied by the applicant.



#### 1.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● supplied by the manufacturer

○ supplied by the lab

○	Adapter	Model:	HW-200440C00
		Input:	100V-240V 50/60Hz 2.4A
		Output:	USB-C(5V/3A;9V/3A;10V/4A;11V/6A; 12V/3A;15V/3A;20V4.4A) USB-A(5V/2A;10V/4A;11V/6A;20V/4.4A)

#### 1.5. Description of Test Facility

##### FCC

Designation Number: CN1275

Test Firm Registration Number: 167722

Shenzhen Tongzhou Testing Co.,Ltd has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

##### A2LA

Certificate Number: 5463.01

Shenzhen Tongzhou Testing Co.,Ltd has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

##### IC

ISED#: 22033

CAB identifier: CN0099

Shenzhen Tongzhou Testing Co.,Ltd has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4 and CISPR 16-1-4:2010



## 1.6. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Shenzhen Tongzhou Testing Co.,Ltd’s quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 1.7. Measurement Uncertainty

Test Item		Uncertainty	Note
Radiation Uncertainty(9KHz~30MHz)	:	±3.26dB	(1)
Radiation Uncertainty(30MHz~1000MHz)	:	±3.92dB	(1)
Conduction Uncertainty	:	±2.71dB	(1)
Occupied Channel Bandwidth	:	±3.0%	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 1.8. Description of Test Modes

The EUT has been tested under operating condition.

This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in X position.

Test Modes:		
Mode 1	AC/DC Adapter+EUT + Wireless charger (Full Load: 99% of 2W)+Full Load of cable	Record
Mode 2	AC/DC Adapter+EUT + Wireless charger (Half Load: 50% of 2W)+Full Load of cable	Pre-test
Mode 3	AC/DC Adapter+EUT + Wireless charger (Null Load: <1%)+Full Load of cable	Pre-test
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		



## 2. 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.

The radiated testing was performed at an antenna-to-EUT distance of 3 meters. All radiated and conducted emissions measurement was performed at Shenzhen Tongzhou Testing Co.,Ltd

### 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.203, 15.205, 15.207, 15.209 under the FCC Rules Part 15 Subpart C.

### 2.3. Test Sample

Sample ID	Description
TZ0059250201-1#	Normal sample



### 3. SYSTEM TEST CONFIGURATION

#### 3.1. Justification

The system was configured for testing in a continuous transmits condition.

#### 3.2. Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
1	WPT Test Load	YBZ	EPP	/	/	/	/
2	Phone	iPhone	iPhone 11	/	/	/	/
3	Phone	X-TIGI	X-TIGI_A20 S	/	/	/	/

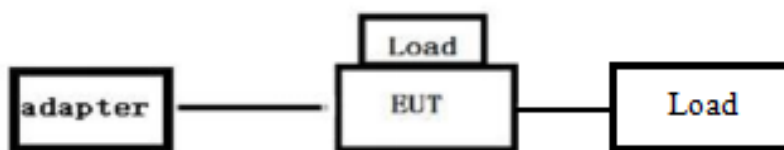
#### 3.3. Block Diagram/Schematics

Please refer to the related document

#### 3.4. Equipment Modifications

Shenzhen Tongzhou Testing Co.,Ltd has not done any modification on the EUT.

#### 3.5. Configuration of Tested System





#### 4. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Sample ID	Result
§15.215	Occupied Bandwidth	TZ0059250201-1#	Compliant
§15.209	Radiated Emissions	TZ0059250201-1#	Compliant
§15.207(a)	Conducted Emissions	TZ0059250201-1#	Compliant
§15.203	Antenna Requirements	TZ0059250201-1#	Compliant
Note 1: The wireless output function of the EUT cannot operate when is in normal charged.			

Remark: The measurement uncertainty is not included in the test result.



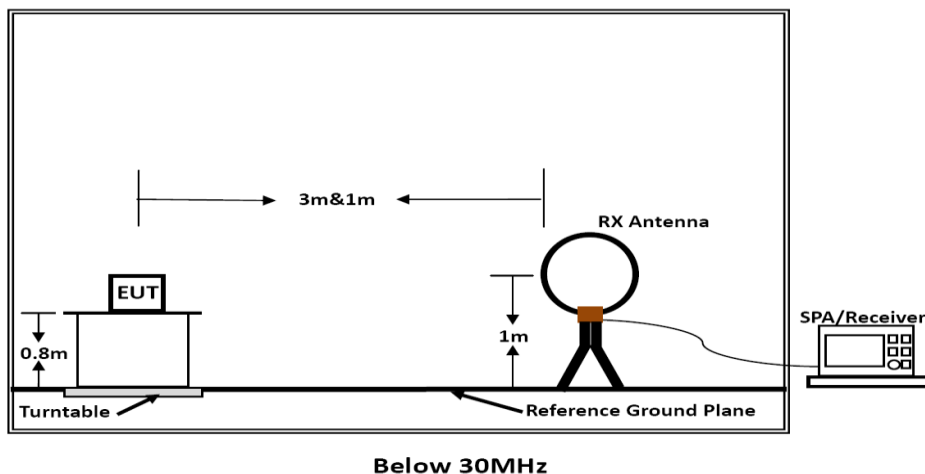
## 5. TEST RESULT

### 5.1. Bandwidth Measurement

#### 5.1.1. Standard Applicable

CFR 47 Part 15.215(c).

#### 5.1.2. Block Diagram of Test Setup



#### 5.1.3. Test Procedures

Set the parameters of SPA as below:

1. Centre frequency = Operation Frequency
2. The resolution bandwidth of 100 Hz and the video bandwidth of 300 Hz were used.
3. Span: 2kHz, Sweep time: Auto
4. Set the EUT to continue transmitting mode. Allow the trace to stabilize. Use the "N dB down" function of SPA to define the bandwidth.
5. Measured the spectrum width with power higher than 20dB below carrier.
6. Record the plots and reported.

#### 5.1.4. EUT Operation during Test

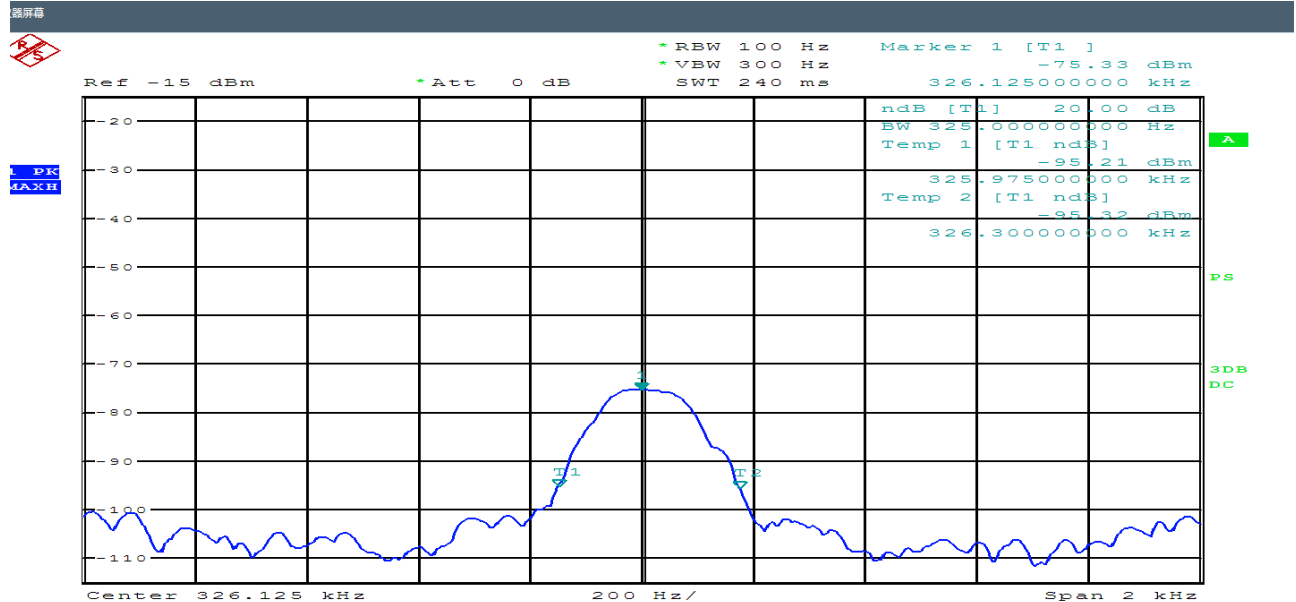
The EUT was programmed to be in continuously transmitting mode.



### 5.1.5. Test Result

Temperature	22.6°C	Humidity	56%
Test Engineer	Tony Luo	Configurations	Mode 1

Mode	Freq (kHz)	20dB Bandwidth (Hz)	Limit (kHz)	Conclusion
Tx Mode	326.125	325	/	PASS





## 5.2. Radiated Emissions Measurement

### 5.2.1. Standard Applicable

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\1\ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.Android 10-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293.	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(\2\)
13.36-13.41			

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510MHz.

\2\ Above 38.6

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (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



### 5.2.2. Measuring Instruments and Setting

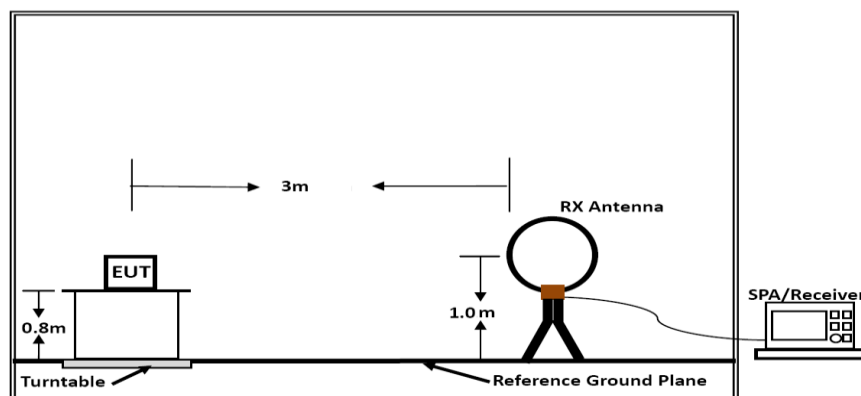
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10 <sup>th</sup> carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 3 MHz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 3 MHz for Average

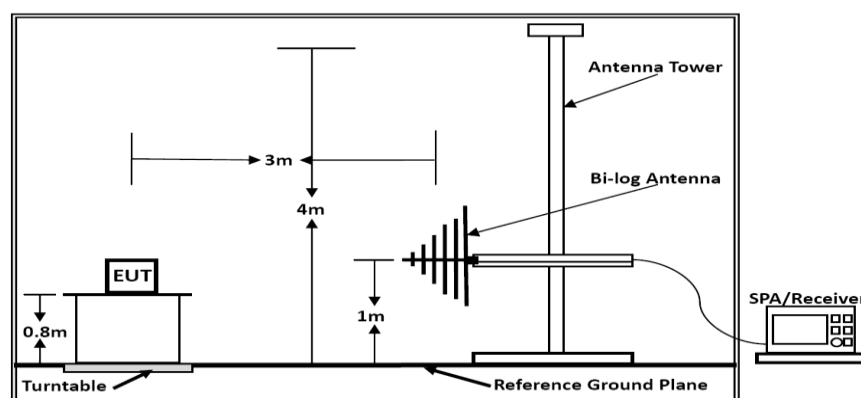
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB/VB 120kHz/1MHz for QP

### 5.2.3. Block Diagram of Test Setup

For radiated emissions below 30MHz



Below 30MHz



Below 1GHz



## 5.2.4. Test Procedures

### 1) Sequence of testing 9 kHz to 30 MHz

#### Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

#### Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

#### Final measurement:

- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).
- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

### 2) Sequence of testing 30 MHz to 1 GHz

#### Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

#### Premeasurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 to 3 meter.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

#### Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ( $\pm 45^\circ$ ) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.



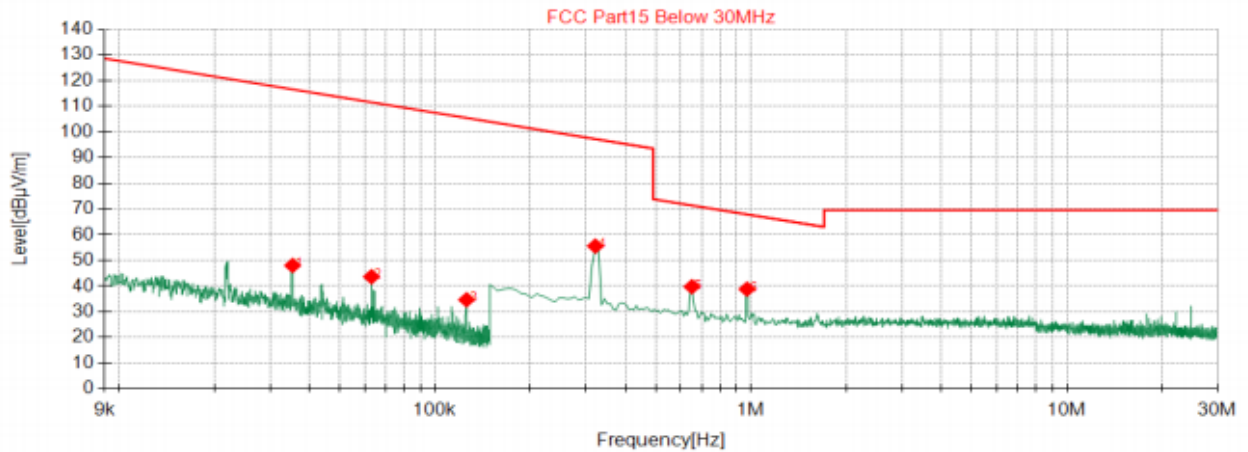
### 5.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 5.2.6. Test Results

#### Results of Radiated Emissions (9kHz-30MHz)

Temperature	22.3℃	Humidity	56%
Test Engineer	Tony Luo	Configurations	Mode 1



◆ QP Detector

Suspected Data List							
NO.	Freq. [MHz]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]
1	0.0354	20.15	48.00	116.52	68.52	100	51
2	0.0629	20.49	43.64	111.48	67.84	100	86
3	0.1258	19.87	34.67	105.41	70.74	100	154
4	0.3216	20.10	55.54	97.19	41.65	100	241
5	0.65	20.30	39.73	71.35	31.62	100	42
6	0.9709	20.30	38.80	67.88	29.08	100	287

Note:

Distance extrapolation factor = 40 log (specific distance / test distance) (dB).

Limit line = specific limits (dBuV) + distance extrapolation factor.

Measured at antenna position coaxial and coplanar, only record the Coaxial.

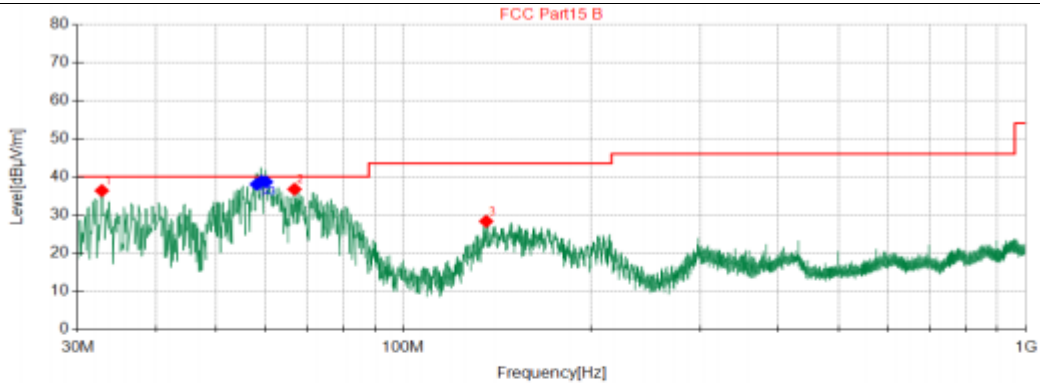
**RESULT: PASS**



### Results of Radiated Emissions (30MHz~1GHz)

Temperature	22.5℃	Humidity	56%
Test Engineer	Tony Luo	Configurations	Mode 1

#### Vertical



#### Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	32.78	52.51	-16.14	36.37	40.00	3.63	100	338	Vertical
2	66.86	54.14	-17.40	36.74	40.00	3.26	100	76	Vertical
3	135.8	47.64	-19.32	28.32	43.50	15.18	100	306	Vertical

#### Final Data List

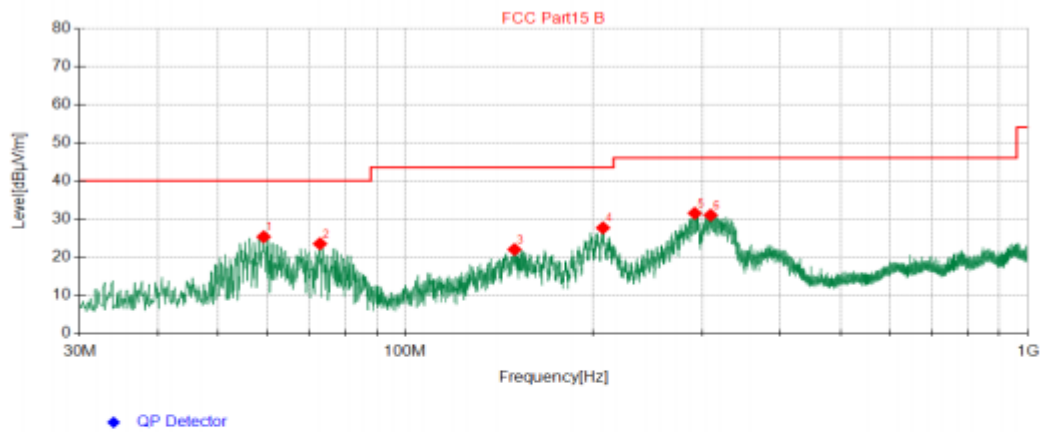
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	58.13	53.4	-15.38	38.02	40.00	1.98	100	271	Vertical
2	59.210	54.31	-15.51	38.80	40.00	1.20	102	14.2	Vertical
3	60.191	54.34	-15.70	38.64	40.00	1.36	100	294	Vertical

\*\*\*Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]

2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]

**RESULT: PASS**

**Horizontal**

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	59.22	40.85	-15.53	25.32	40.00	14.68	100	359	Horizontal
2	72.92	42.26	-18.76	23.50	40.00	16.50	100	338	Horizontal
3	149.7	41.10	-19.10	22.00	43.50	21.50	100	344	Horizontal
4	207.7	42.88	-15.20	27.68	43.50	15.82	100	124	Horizontal
5	291.7	44.48	-12.98	31.50	46.00	14.50	100	6	Horizontal
6	309.3	43.55	-12.55	31.00	46.00	15.00	100	6	Horizontal

\*\*\*Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]

2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m]

**RESULT: PASS**



### 5.3. AC Power line conducted emissions

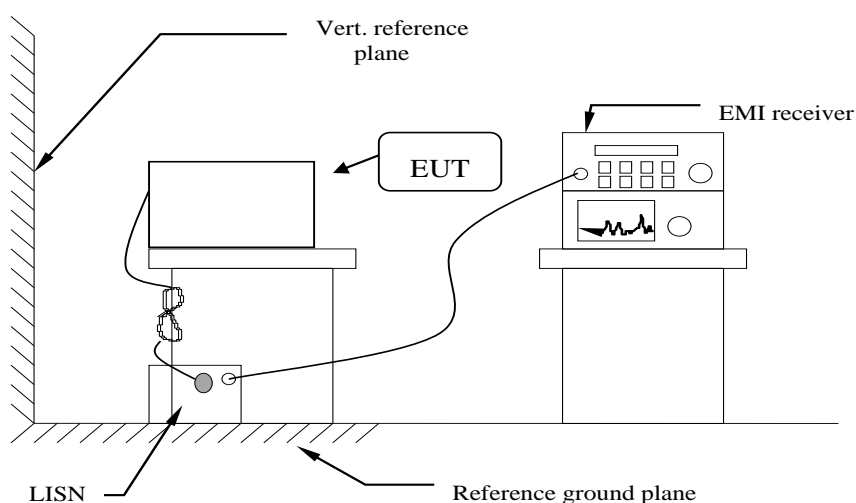
#### 5.3.1. Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

\* Decreasing linearly with the logarithm of the frequency

#### 5.3.2. Block Diagram of Test Setup

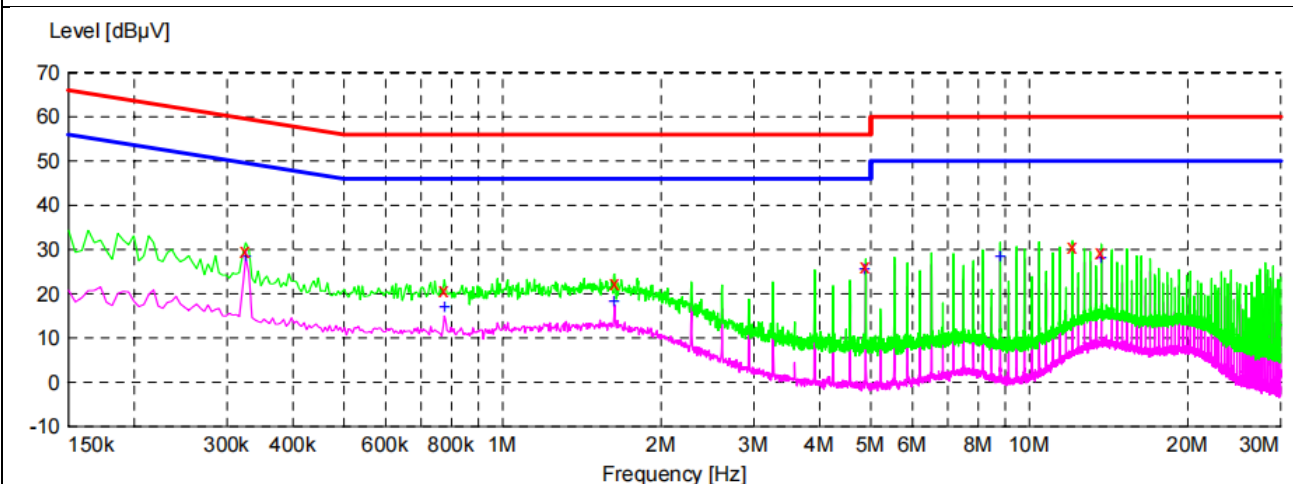


Note: the distance between LISN and Vertical reference plane is 40 cm and the distance between LISN and EUT is 80 cm.

#### 5.3.3. Test Results

Temperature	22.8°C	Humidity	54%
Test Engineer	Allen Lai	Configurations	Mode 1

The test data please refer to following page.

**Neutral Line**

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.325500	29.80	10.1	60	29.8	QP	N	GND
0.775500	20.90	9.8	56	35.1	QP	N	GND
1.630500	22.30	9.7	56	33.7	QP	N	GND
4.893000	26.20	9.7	56	29.8	QP	N	GND
12.066000	30.70	9.9	60	29.3	QP	N	GND
13.699500	29.30	9.9	60	30.7	QP	N	GND

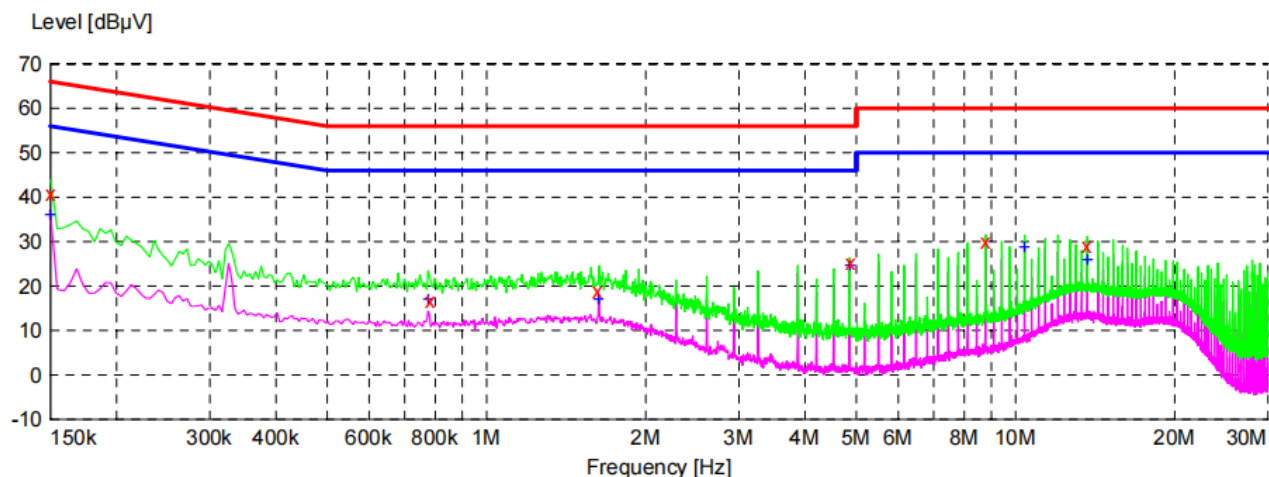
  

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.325500	28.40	10.1	50	21.2	AV	N	GND
0.775500	17.10	9.8	46	28.9	AV	N	GND
1.630500	18.20	9.7	46	27.8	AV	N	GND
4.893000	25.70	9.7	46	20.3	AV	N	GND
8.803500	28.30	9.8	50	21.7	AV	N	GND
13.699500	28.20	9.9	50	21.8	AV	N	GND

Note:

1.  $\text{Margin(dB)} = \text{Limit(dB}\mu\text{V)} - \text{Level(dB}\mu\text{V)}$
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 9 kHz (150 kHz—30 MHz), Step size: 4 kHz, Scan time: auto.

**RESULT: PASS**

**Live Line**

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	40.80	9.8	66	25.2	QP	L1	GND
0.784500	16.70	9.8	56	39.3	QP	L1	GND
1.626000	18.90	9.7	56	37.1	QP	L1	GND
4.893000	25.10	9.7	56	30.9	QP	L1	GND
8.803500	29.90	9.8	60	30.1	QP	L1	GND
13.695000	29.10	9.9	60	30.9	QP	L1	GND

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	36.00	9.8	56	20.0	AV	L1	GND
0.775500	17.10	9.8	46	28.9	AV	L1	GND
1.630500	17.10	9.7	46	28.9	AV	L1	GND
4.893000	24.70	9.7	46	21.3	AV	L1	GND
10.437000	28.70	9.8	50	21.3	AV	L1	GND
13.699500	25.80	9.9	50	24.2	AV	L1	GND

**Note:**

1.  $\text{Margin(dB)} = \text{Limit(dB}\mu\text{V)} - \text{Level(dB}\mu\text{V)}$
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 9 kHz (150 kHz—30 MHz), Step size: 4 kHz, Scan time: auto.

**RESULT: PASS**



## **5.4. Antenna Requirements**

### **5.4.1. Standard Applicable**

According to antenna requirement of §15.203.

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. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

### **5.4.2. Antenna Connected Construction**

The antenna is an Internal antenna connect to PCB board and no consideration of replacement. Please see EUT photo for details.

### **5.4.3. Results**

#### **Compliance**



## 6. LIST OF MEASURING EQUIPMENTS

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
1	Loop Antenna	schwarzbeck	FMZB1519 B	00023	2022/11/13	2025/11/12
2	Wideband Antenna	schwarzbeck	VULB 9163	958	2022/11/13	2025/11/12
3	EMI Test Receiver	R&S	ESCI	100849/003	2024/12/31	2025/12/30
4	Controller	MF	MF7802	N/A	N/A	N/A
5	Amplifier	schwarzbeck	BBV 9743	209	2024/12/31	2025/12/30
6	Amplifier	Tonscend	TSAMP-05 18SE	--	2024/12/31	2025/12/30
7	RF Cable(below 1GHz)	HUBER+SUHNER	RG214	N/A	2024/12/31	2025/12/30

Test software used:

Item	Test Software	Manufacturer	Name	Version
1	EMI Test Software	ROHDE & SCHWARZ	ES-K1	V1.71
2	RE test software	Tonscend	JS32-RE	V5.0.0.0



## **7. TEST SETUP PHOTOGRAPHS OF EUT**

Please refer to separated files for Test Setup Photos of the EUT.

## **8. EXTERIOR PHOTOGRAPHS OF EUT**

Please refer to separated files for External Photos of the EUT.

## **9. INTERIOR PHOTOGRAPHS OF EUT**

Please refer to separated files for Internal Photos of the EUT.

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