



EMC TEST REPORT

Report No.: 20250117G00948X-W1

Product Name: SOLIS Hero

Model No. : SolHero24

FCC ID: 2A9UP-25HERO

IC: 31476-25HERO

Trade Name: SIMO

Applicant: SIMO Holdings Inc.

Address: PO.Box 309, Ugland House, GrandCayman, KY1-1104, Cayman Islands

Received Date: 2025.01.13

Dates of Testing: 2025.01.14~2025.01.23

Issued by: CCIC Southern Testing Co., Ltd.

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Test Report

Product Name SOLIS Hero

Model No. SolHero24

Applicant..... SIMO Holdings Inc.

Applicant Address..... PO.Box 309, Ugland House, GrandCayman, KY1-1104, Cayman Islands

Manufacturer..... SIMO Holdings Inc.

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Test Standards 47 CFR Part 15 Subpart B
ICES-003 Issue 7

Test Result..... PASS

Tested by Deng Shanfei
Deng Shanfei, Test Engineer

2025.02.25

Reviewed by Sun Jiaohui
Sun Jiaohui, Senior Engineer

2025.02.25

Approved by Chris You
Chris You, Manager

2025.02.25



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Change History		
Issue	Date	Reason for change
1.0	2025.02.25	First edition



1. GENERAL INFORMATION

1.1 EUT Description

EUT Name	SOLIS Hero
Trade Name.....	SIMO
Power supply.....	Battery Model No: SOLHero24 Capacitance: 5250mAh/19.95Wh Nominal Voltage: 3.8V I/P: 5V 3A O/P: 5V 1A Manufacturer: Shenzhen Jiayuantongda technology Co., Ltd

Note1: The EUT is a SOLIS Hero;

Note2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B & ICES-003:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart B	Radio Frequency Devices
2	ICES-003 Issue 7	Information Technology Equipment (Including Digital Apparatus) — Limits and Methods of Measurement

Test detailed items/section required by FCC & ISED rules and results are as below:

No.	Section	Description	Result
1	15.107	Conducted Emission	PASS
2	15.109	Radiated Emission	PASS

NOTE:

- (1) The EUT has been tested according to 47 CFR Part 15 Subpart B, Class B. The test procedure is according to ANSI C63.4:2014.
- (2) The EUT has been tested according to ICES 003 Issue 7. The test procedure is according to ANSI C63.4:2014.



1.3 Facilities and Accreditations

1.3.1 Facilities

☒ CCIC-SET Lab 1

Address: Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

FCC-Registration No.: CN1283

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until Jun. 30th, 2025.

ISED Registration: 11185A, CAB number: CN0064

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

☐ CCIC-SET Lab 4

Address: No.125, Hongmei Section, Wangsha Road, Hongmei Town, Dongguan City, Guangdong Province, China

CNAS L1659

CCIC Southern Testing Co., Ltd. CCIC is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	25% -75%



Atmospheric Pressure (kPa):	86kPa-106kPa
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1.3.3 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission:	Uc = 3.2 dB (k=2)
Uncertainty of Radiated Emission: (30MHz~1GHz)	Uc = 5.8 dB (k=2)
Uncertainty of Radiated Emission: (1~6GHz)	Uc = 5.1 dB (k=2)
Uncertainty of Radiated Emission: (6~18GHz)	Uc = 5.5 dB (k=2)

2. TEST CONDITIONS SETTING

2.1 Test Peripherals

The following is a listing of the EUT and peripherals utilized during the performance of EMC test:

Support Equipment:

Description	Brand name	Model	Serial No.	FCCID
Adapter	/	VC56JBCH	/	/
Sliding rheostat	/	/	/	/

Support Cable:

Description	Shield Type	Ferrite Core	Length
AC Power Cable	Un- shielding	/	1.2m

2.2 Test Mode

Note 1: The EUT have the following typical setups during the test: It could support the following operating mode and frequency band:

GSM 850/1900; WCDMA Band 2/4/5; LTE Band 2/4/5/7/12/13/17/25/26/41/66/71;
Bluetooth; 2.4G/5G WIFI; GNSS

Setup1: GSM 850 Traffic + Adapter + charger;

Setup2: GSM 1900 Traffic + Adapter + charger;

Setup3: WCDMA Band 2 Traffic + Adapter + charger;

Setup4: WCDMA Band 4 Traffic + Adapter + charger;

Setup5: WCDMA Band 5 Traffic + Adapter + charger;

Setup6: LTE Band 2 Traffic + Adapter + charger;

Setup7: LTE Band 4 Traffic + Adapter + charger;

Setup8: LTE Band 5 Traffic + Adapter + charger;

Setup9: LTE Band 7 Traffic + Adapter + charger;

Setup10: LTE Band 12 Traffic + Adapter + charger;

Setup11: LTE Band 13 Traffic + Adapter + charger;

Setup12: LTE Band 17 Traffic + Adapter + charger;

Setup13: LTE Band 25 Traffic + Adapter + charger;

Setup14: LTE Band 26 Traffic + Adapter + charger;

Setup15: LTE Band 41 Traffic + Adapter + charger;

Setup16: LTE Band 66 Traffic + Adapter + charger;

Setup17: LTE Band 71 Traffic + Adapter + charger;

Setup18: Bluetooth + Adapter + charger;

Setup19: 2.4G WIFI + Adapter + charger;

Setup20: 5G WIFI + Adapter + charger;



Setup21: GNSS + Adapter + charger;

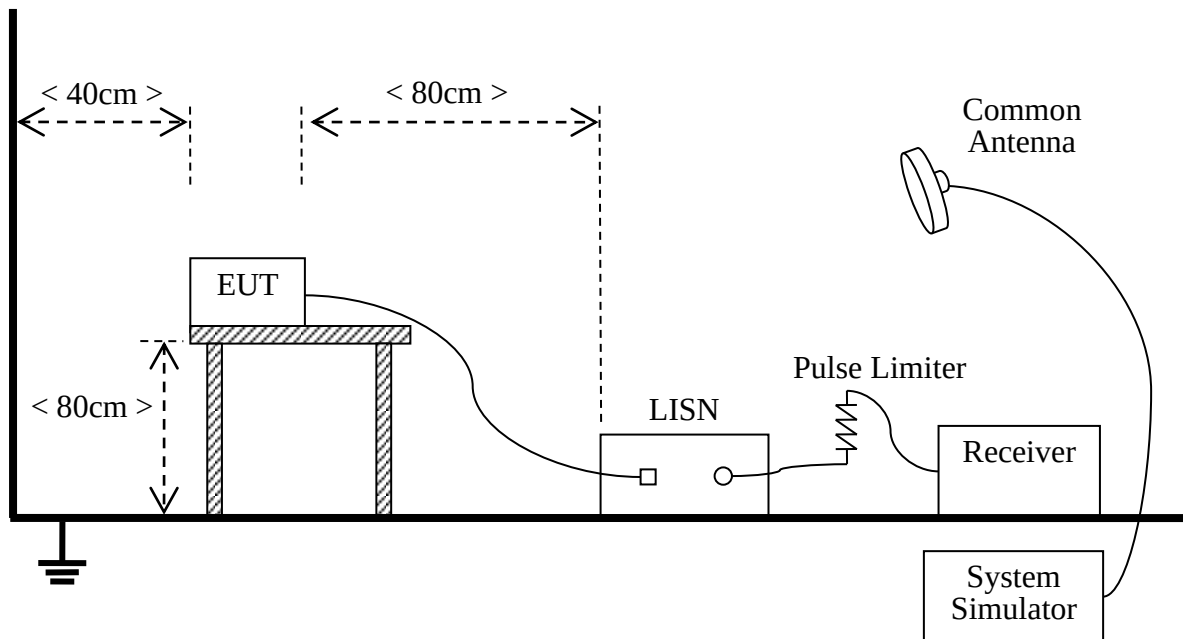
Setup22: EUT + load (Sliding rheostat) + discharger;

Note 2: Only the worst test patterns are recorded in the report.

2.3 Test Setup and Equipment List

2.3.1 Conducted Emission

A. Test Setup:



The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument. The Common Antenna is used for the call between the EUT and the System Simulator (SS). A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

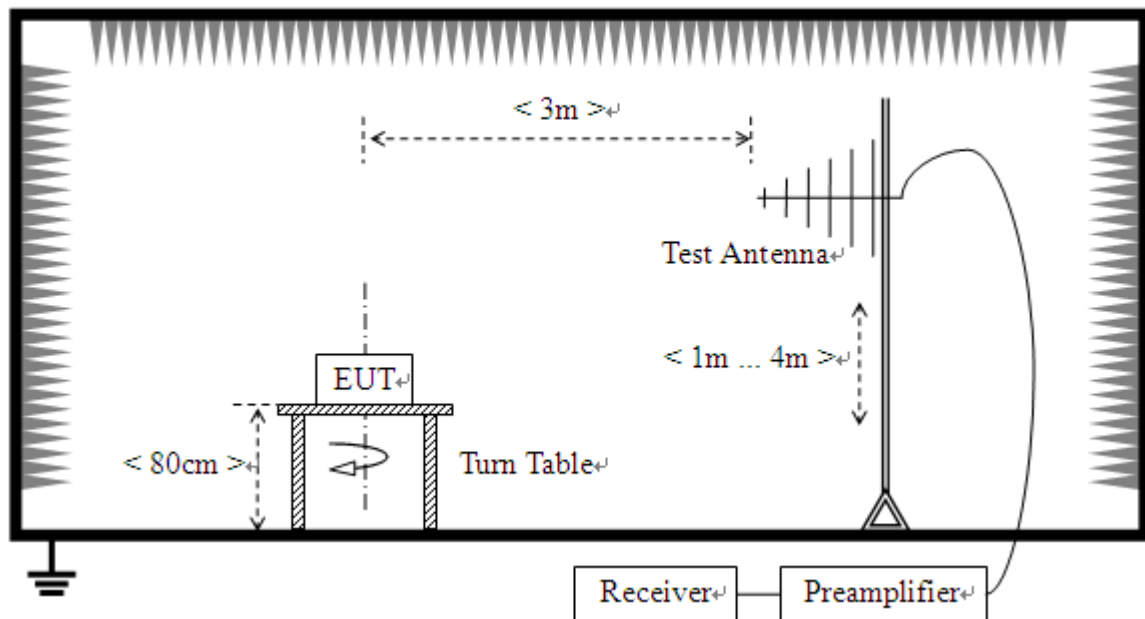
B. Equipments List:

Description	Manufacturer	Model	Serial No.	Calibration Date	Calibration Due. Date
Test Receiver	ROHDE&SCHWARZ	ESR3	A181103297	2024.03.20	2025.03.19
LISN	ROHDE&SCHWARZ	ENV216	A140701847	2024.05.23	2025.05.22
Cable	MATCHING PAD	W7	/	2024.08.02	2025.08.01

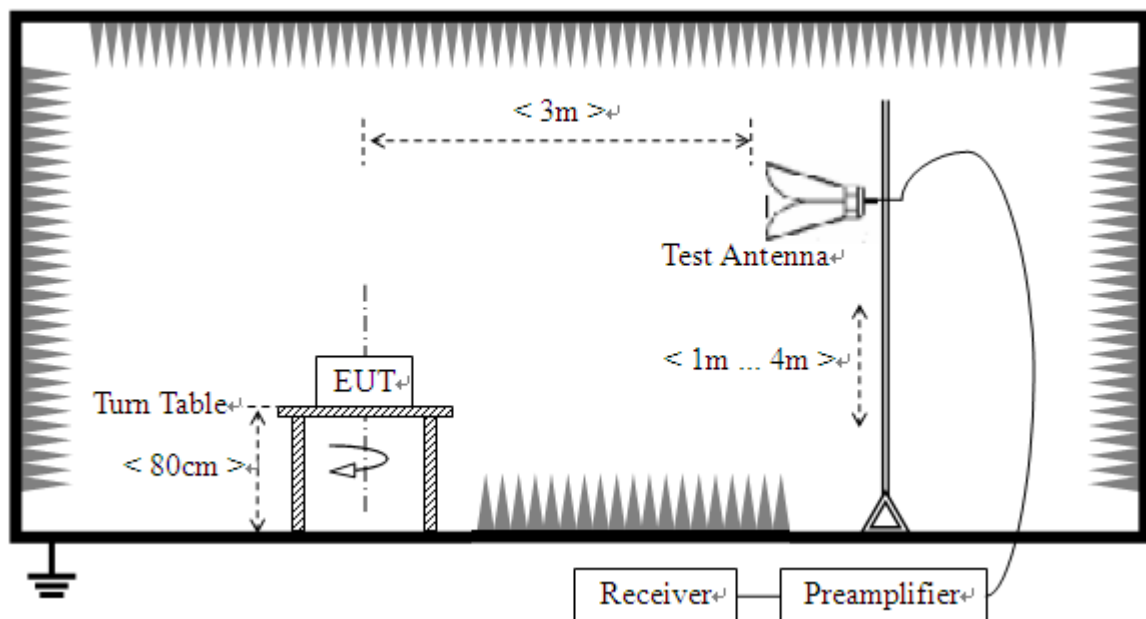
2.3.2 Radiated Emission

A. Test Setup:

- 1) For radiated emissions from 30MHz to 1GHz



- 2) For radiated emissions above 1GHz



**B. Test Procedure**

The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

- 1) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

C. Equipments List:

Description	Manufacturer	Model	Serial No.	Calibration Date	Calibration Due. Date
EMI Test Receiver	ROHDE&SCHWARZ	ESIB7	A0501375	2024.02.29	2025.02.28
Broadband Ant.	ETC	MCTD2786	A150402239	2024.06.01	2025.05.31
3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2024.02.28	2027.02.27
EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2024.05.24	2025.05.23
5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2024.06.08	2027.06.07
EMI Horn Ant.	ROHDE&SCHWARZ	HF906	A0304225	2024.04.11	2025.04.10



3. 47 CFR PART 15B REQUIREMENTS

3.1 Conducted Emission

3.1.1 Requirement

According to FCC section 15.107 and ICES-003, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

- a) The limit subjects to the Class B digital device.
- b) The lower limit shall apply at the band edges.
- c) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2 Test Description

See section 2.3.1 of this report.

3.1.3 Test Result

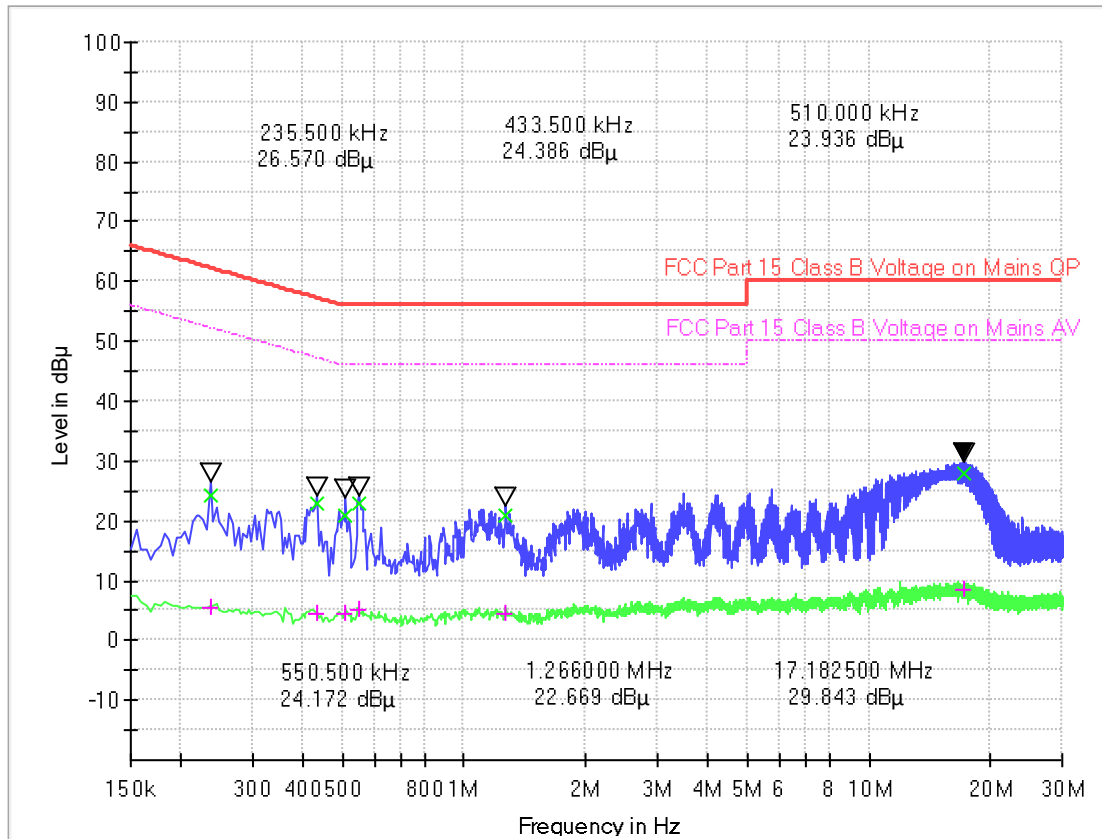
The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

Note:

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a Nominal 120V AC, 50/60Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

Test voltage and frequency (120V AC, 60Hz)

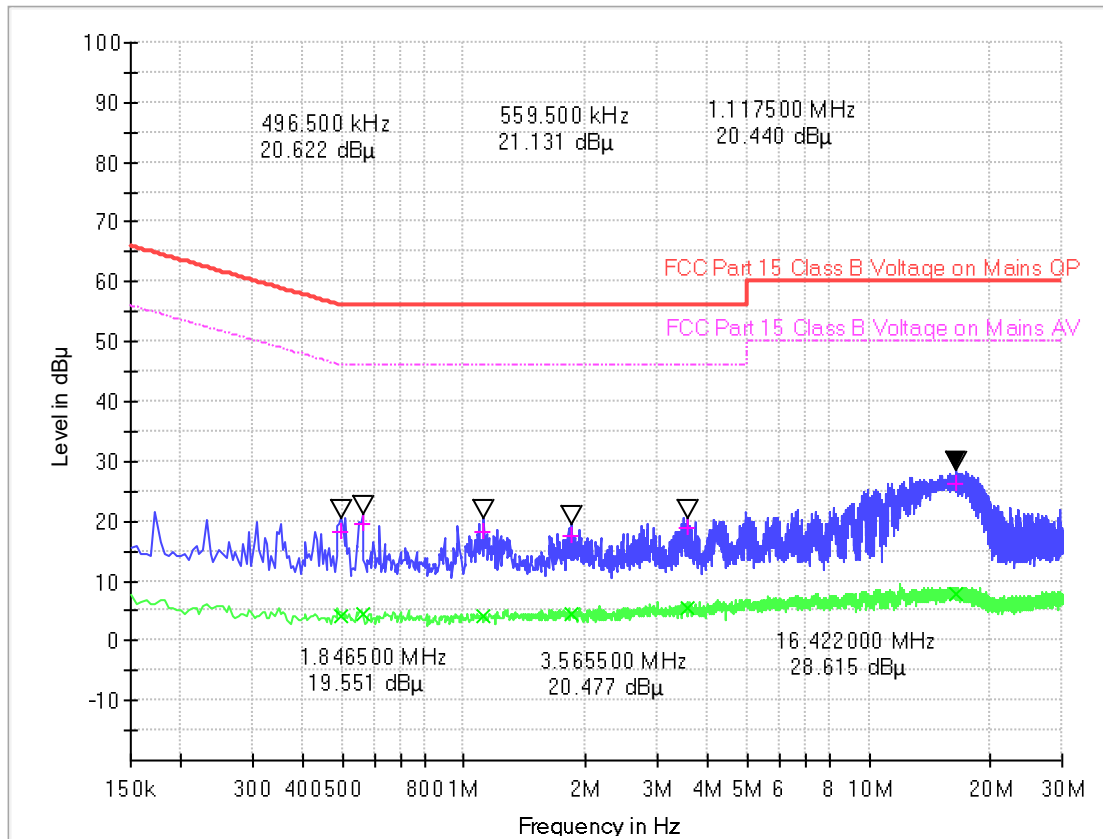
A. Mains terminal disturbance voltage, L phase, Setup 1



(Plot A: L Phase)

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Cabel Loss (dB)	Corr. (dB)	Margin - QPK	Limit - QPK	Margin - AV	Limit - AV (dB μ V)
0.235500	24.22	5.49	0.1	10.1	38.03	62.25	46.76	52.25
0.433500	22.95	4.58	0.1	10.1	34.24	57.19	42.61	47.19
0.510000	21.01	4.54	0.1	10.1	34.99	56.00	41.46	46.00
0.550500	22.81	5.30	0.1	10.1	33.19	56.00	40.70	46.00
1.266000	20.84	4.61	0.2	10.2	35.16	56.00	41.39	46.00
17.182500	27.97	8.52	0.5	10.5	32.03	60.00	41.48	50.00

B. Mains terminal disturbance voltage, N phase, Setup 1



(Plot B: N Phase)

Frequency (MHz)	QuasiPea k	CAverage (dB μ V)	Cabel Loss (dB)	Corr. (dB)	Margin - QPK	Limit - QPK	Margin - AV	Limit - AV (dB μ V)
0.496500	18.34	4.29	0.1	10.1	37.72	56.06	41.77	46.06
0.559500	19.66	4.41	0.1	10.1	36.34	56.00	41.59	46.00
1.117500	18.22	4.14	0.2	10.2	37.78	56.00	41.86	46.00
1.846500	17.62	4.53	0.2	10.2	38.38	56.00	41.47	46.00
3.565500	18.83	5.35	0.3	10.3	37.17	56.00	40.65	46.00
16.422000	26.30	7.87	0.5	10.5	33.70	60.00	42.13	50.00

3.2 Radiated Emission

3.2.1 Requirement

According to FCC section 15.109 and ICES-003, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength		Field Strength Limitation at 3m Measurement Dist	
	$\mu\text{V/m}$	Dist	(uV/m)	(dBuV/m)
30.0 - 88.0	100	3m	100	$20\log 100$
88.0 - 216.0	150	3m	150	$20\log 150$
216.0 - 960.0	200	3m	200	$20\log 200$
Above 960.0	500	3m	500	$20\log 500$

- For frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.
- Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.
- For below 1G: QP detector RBW 120 kHz, VBW 300 kHz.

For Above 1G: PK detector RBW 1MHz, VBW 3MHz for PK value; AV detector RBW 1MHz, VBW 10Hz for AV value.

Note:

- The tighter limit shall apply at the boundary between two frequency range.
- Limitation expressed in dBuV/m is calculated by $20\log \text{Emission Level}(\text{uV/m})$.
- If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

Example:

F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as

$$Ld1 = L1 = 30\text{uV/m} * (10)^2 = 100 * 30\text{uV/m}.$$



3.2.2 Test Description

See section 2.3.2 of this report.

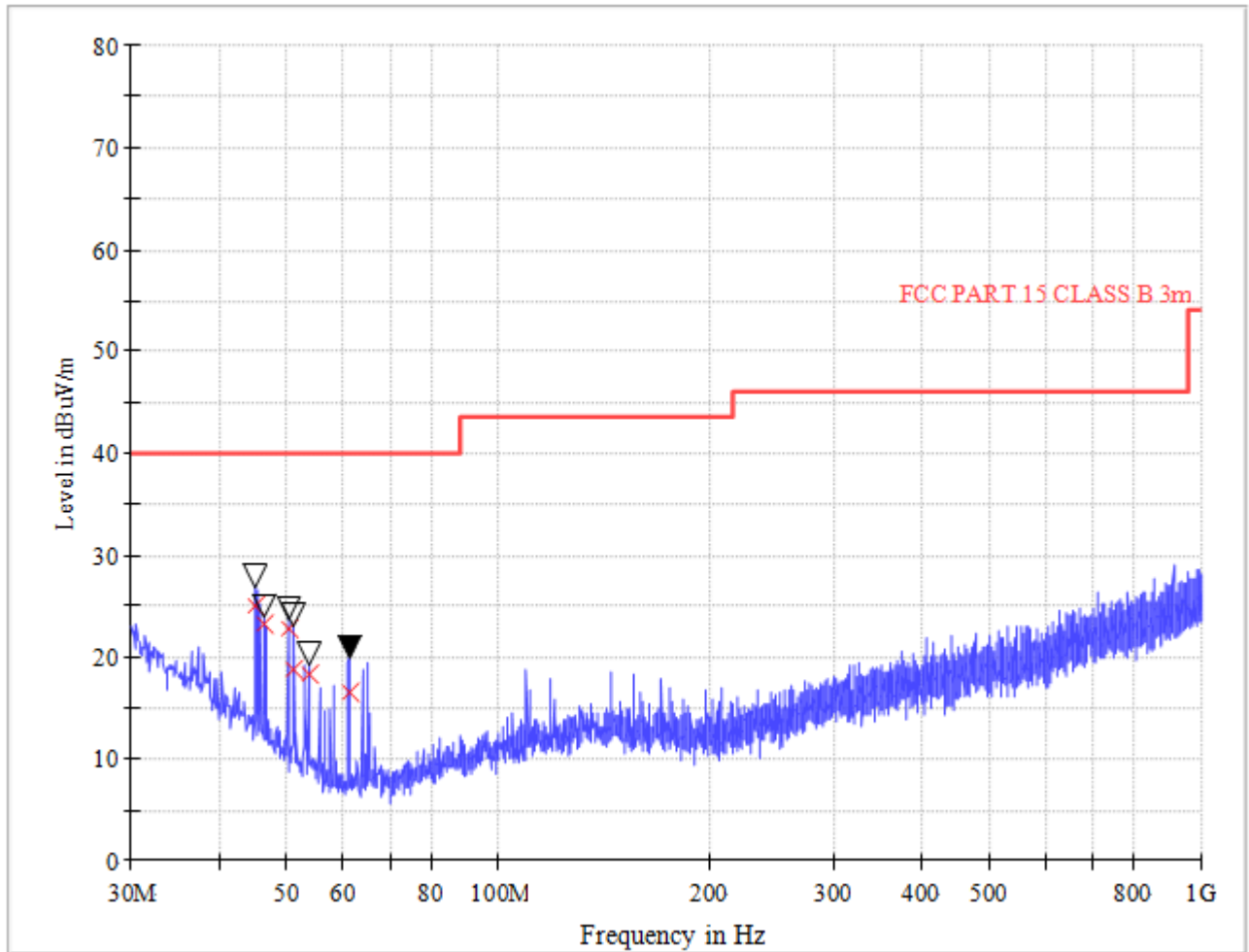
3.2.3 Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.

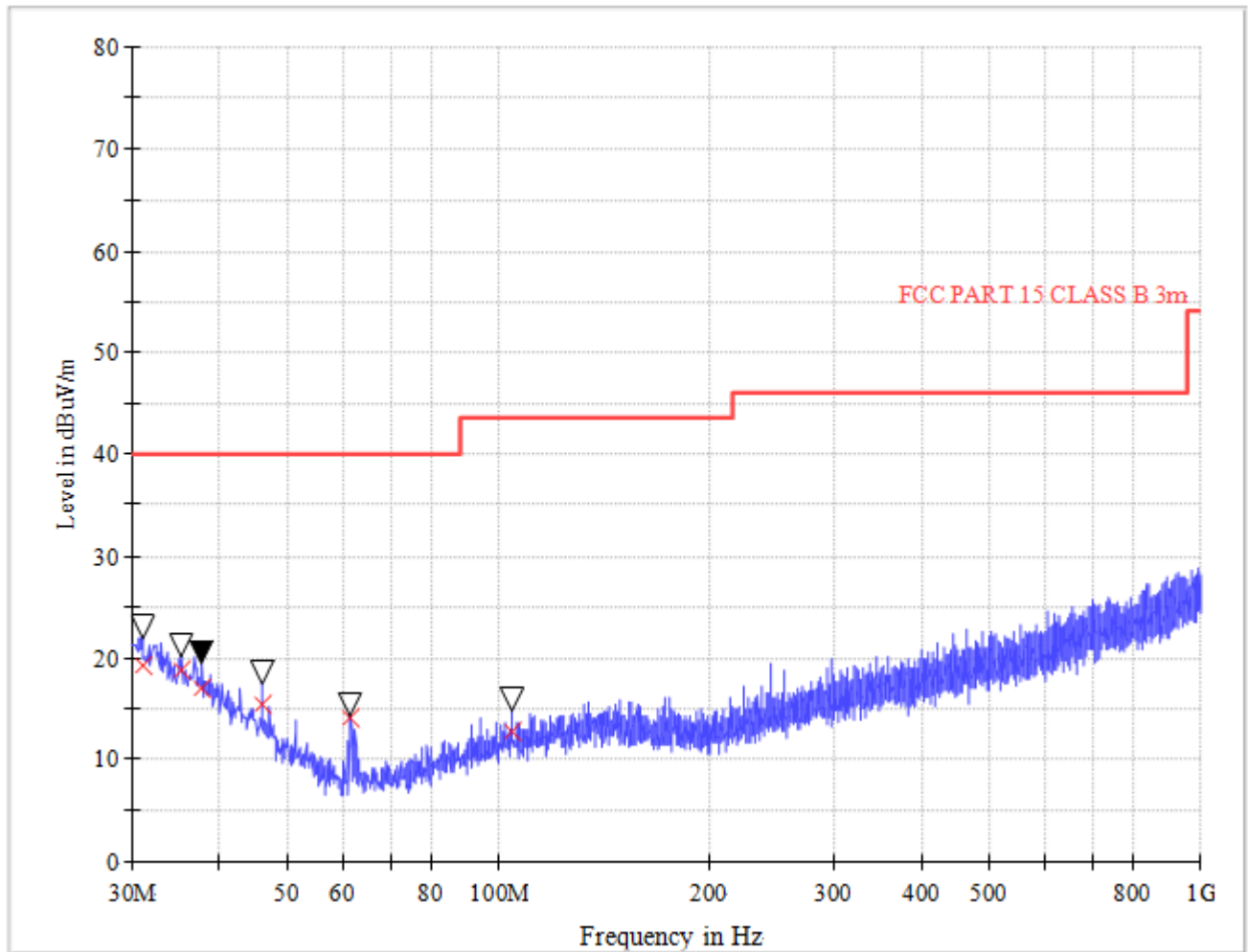
A. Radiation disturbances, antenna polarization: Vertical, Setup1



(Plot C: Test Antenna Vertical 30M - 1G)

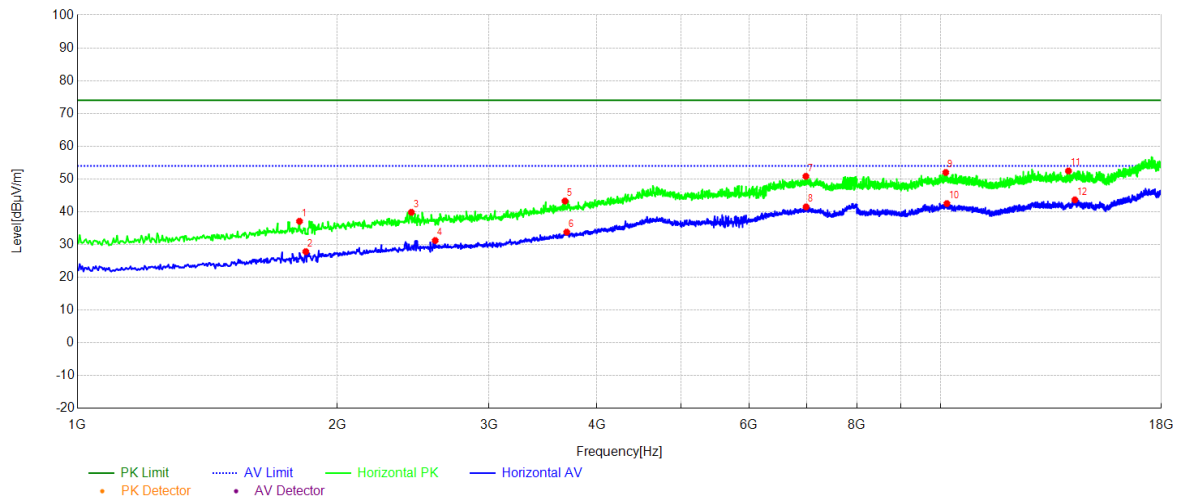
Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB)	Verdict
45.16	25.07	120.000	103	40.0	14.93	Vertical	0.5	10.5	Pass
46.48	23.14	120.000	107	40.0	16.86	Vertical	0.5	9.8	Pass
50.12	22.73	120.000	102	40.0	17.27	Vertical	0.6	7.9	Pass
51.20	18.80	120.000	106	40.0	21.20	Vertical	0.6	7.5	Pass
53.64	18.36	120.000	101	40.0	21.64	Vertical	0.6	7.1	Pass
61.28	16.53	120.000	103	40.0	23.47	Vertical	0.8	5.4	Pass

B. Radiation disturbances, antenna polarization: Horizontal, Setup1



(Plot D: Test Antenna Horizontal 30M - 1G)

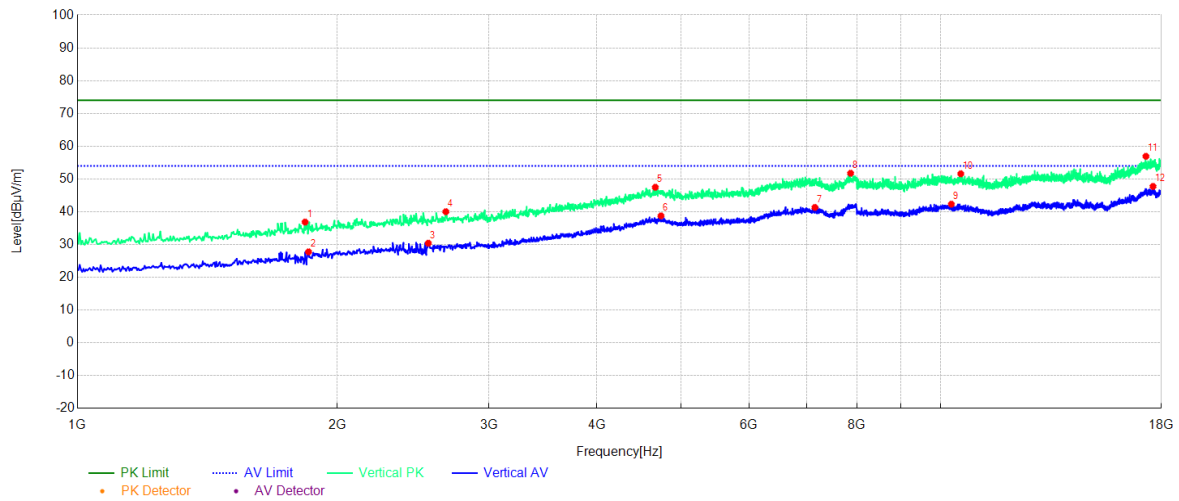
Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB)	Verdict
31.08	19.26	120.000	105	40.0	20.74	Horizontal	0.5	18.2	Pass
35.32	18.82	120.000	102	40.0	21.18	Horizontal	0.5	16.0	Pass
37.76	17.07	120.000	103	40.0	22.94	Horizontal	0.5	14.6	Pass
46.00	15.53	120.000	106	40.0	24.47	Horizontal	0.5	10.1	Pass
61.52	13.99	120.000	101	40.0	26.01	Horizontal	0.8	5.4	Pass
104.32	12.79	120.000	104	43.5	30.71	Horizontal	0.9	10.3	Pass

**A. Radiation disturbances, antenna polarization: Horizontal, Setup1**

(Plot M: Test Antenna Horizontal 1G – 18G)

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin[dB μV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	1809.36	37.10	-12.13	74.00	36.90	PK	103	3	Horizont
2	1839.97	27.83	-11.95	54.00	26.17	AV	108	87	Horizont
3	2438.49	39.84	-9.62	74.00	34.16	PK	103	22	Horizont
4	2598.32	31.23	-9.24	54.00	22.77	AV	102	321	Horizont
5	3672.93	43.26	-4.97	74.00	30.74	PK	105	189	Horizont
6	3689.94	33.79	-4.89	54.00	20.21	AV	106	162	Horizont
7	6981.80	50.82	4.22	74.00	23.18	PK	107	43	Horizont
8	6985.20	41.48	4.22	54.00	12.52	AV	101	157	Horizont
9	10137.63	51.98	7.27	74.00	22.02	PK	102	202	Horizont
10	10168.23	42.49	7.19	54.00	11.51	AV	106	91	Horizont
11	14062.01	52.45	9.50	74.00	21.55	PK	108	334	Horizont
12	14303.46	43.64	10.20	54.00	10.36	AV	154	33	Horizont

B. Radiation disturbances, antenna polarization: Vertical, Setup1



(Plot N: Test Antenna Vertical 1G – 18G)

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin[dB μV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	1836.57	36.85	-11.97	74.00	37.15	PK	105	243	Vertical
2	1853.57	27.77	-11.87	54.00	26.23	AV	107	258	Vertical
3	2550.71	30.42	-9.28	54.00	23.58	AV	101	202	Vertical
4	2673.13	40.01	-8.99	74.00	33.99	PK	103	242	Vertical
5	4672.73	47.47	0.28	74.00	26.53	PK	104	203	Vertical
6	4744.15	38.75	0.38	54.00	15.25	AV	102	327	Vertical
7	7151.83	41.32	4.15	54.00	12.68	AV	108	134	Vertical
8	7865.97	51.75	5.13	74.00	22.25	PK	106	92	Vertical
9	10290.66	42.32	7.05	54.00	11.68	AV	105	271	Vertical
10	10552.51	51.59	7.16	74.00	22.41	PK	102	306	Vertical
11	17289.26	56.91	14.02	74.00	17.09	PK	104	335	Vertical
12	17619.12	47.73	14.55	54.00	6.27	AV	107	244	Vertical

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