

FCC EMC Test Report

Report No.: JYTSZ-R01-2500078

Applicant: Voxx Electronics Corporation

Address of Applicant: 2365 Pontiac Road, Auburn Hills, Michigan 48326 - USA

Equipment Under Test (EUT)

Product Name: 7957V

Model No.: 7957V

Trade Mark: N/A

FCC ID: EZS7957V

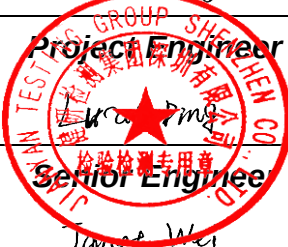
Applicable Standards: FCC CFR Title 47 Part 15B

Date of Sample Receipt: 10 Feb., 2025

Date of Test: 11 Feb., to 10 Mar., 2025

Date of report Issued: 11 Mar., 2025

Test Result: PASS

Project by:	<u>Vieta Zhang</u>	Date:	<u>11 Mar., 2025</u>
			
Reviewed by:	<u>Li Wang</u>	Date:	<u>11 Mar., 2025</u>
			
Approved by:	<u>James Wei</u>	Date:	<u>11 Mar., 2025</u>
	Manager		

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

1 Version

Version No.	Date	Description
00	11 Mar., 2025	Original

2 Contents

	Page
Cover Page	1
1 Version	2
2 Contents.....	3
3 General Information.....	4
3.1 Client Information	4
3.2 General Description of E.U.T.	4
3.3 Test Mode	4
3.4 Description of Test Auxiliary Equipment	5
3.5 Description of Cable Used.....	5
3.6 Measurement Uncertainty	5
3.7 Additions to, Deviations, or Exclusions from the Method	5
3.8 Laboratory Facility	5
3.9 Laboratory Location.....	6
3.10 Test Instruments List.....	6
4 Measurement Setup and Procedure	7
4.1 Test Setup	7
4.2 Test Procedure	9
5 Test Results.....	10
5.1 Summary	10
5.1.1 Clause and data summary	10
5.1.2 Test Limit.....	10
5.2 Conducted Emission	11
5.3 Radiated Emission	13

3 General Information

3.1 Client Information

Applicant:	Voxx Electronics Corporation
Address:	2365 Pontiac Road, Auburn Hills, Michigan 48326 - USA
Manufacturer:	Nutek Coroproration
Address:	no. 167, Lane 235, Bauchiau Rd, Xindian District, New Taeipi City 23145, Taiwan
Factory:	Voxx Automotive Corporation
Address:	2351 J. Lawson Blvd, Orlando, FL 32824 - USA

3.2 General Description of E.U.T.

Product Name:	7957V
Model No.:	7957V
Power Supply:	Rechargeable Li-ion Battery DC3.7V, 190mAh
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Test Mode

Operating Mode	Detail Description
Charging mode	Keep the EUT in Charging by USB mode(Worst-case)
Working mode	Keep the EUT in Working mode

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

3.4 Description of Test Auxiliary Equipment

Manufacturer	Description	Model	S/N	FCC ID/DoC
KEYU	AC/DC ADAPTER	KA1501A-0503000US	/	DoC
XIAOMI	USB Cable	/	/	/

3.5 Description of Cable Used

Cable Type	Description	Length	From	To
Detached USB Cable	Shielding	1.0m	EUT	Adapter

3.6 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.0 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.4 dB
Radiated Emission (30MHz ~ 200MHz) (3m SAC)	±4.6 dB
Radiated Emission (200MHz ~ 1000MHz) (3m SAC)	±5.8 dB
Radiated Emission (1GHz ~ 6GHz) (3m SAC)	±4.5 dB
Radiated Emission (6GHz ~ 18GHz) (3m SAC)	4.7 dB

Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

3.7 Additions to, Deviations, or Exclusions from the Method

No

3.8 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

3.9 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

3.10 Test Instruments List

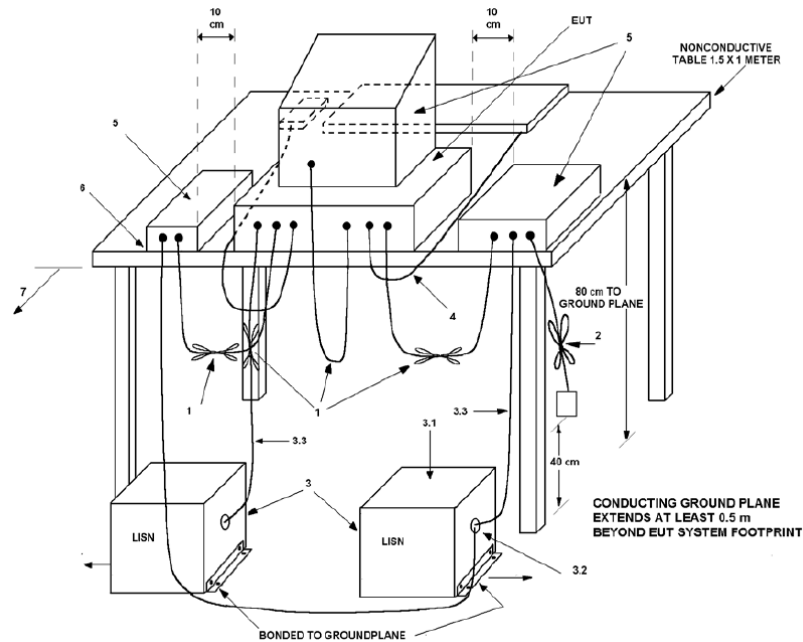
Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2026
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	01-03-2025	01-02-2026
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	01-03-2025	01-02-2026
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	12-16-2024	12-15-2025
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXJ001-3	12-16-2024	12-15-2025
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	12-16-2024	12-15-2025
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-15-2025	01-14-2026
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	01-15-2025	01-14-2026
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESR3	WXJ003-2	06-11-2024	06-10-2025
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	12-17-2024	12-16-2025
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	12-17-2024	12-16-2025
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	01-15-2025	01-14-2026
RF Switch	TOP PRECISION	RSU0301	WXG003	N/A	
Test Software	AUDIX	E3	Version: 6.110919b		

4 Measurement Setup and Procedure

4.1 Test Setup

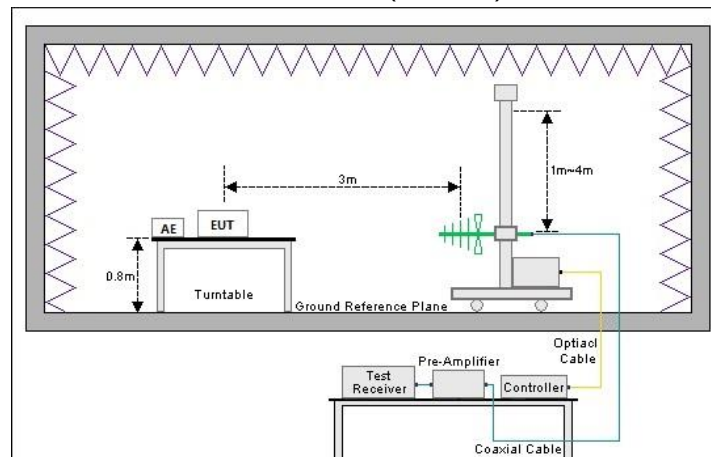
1) Conducted emission measurement:

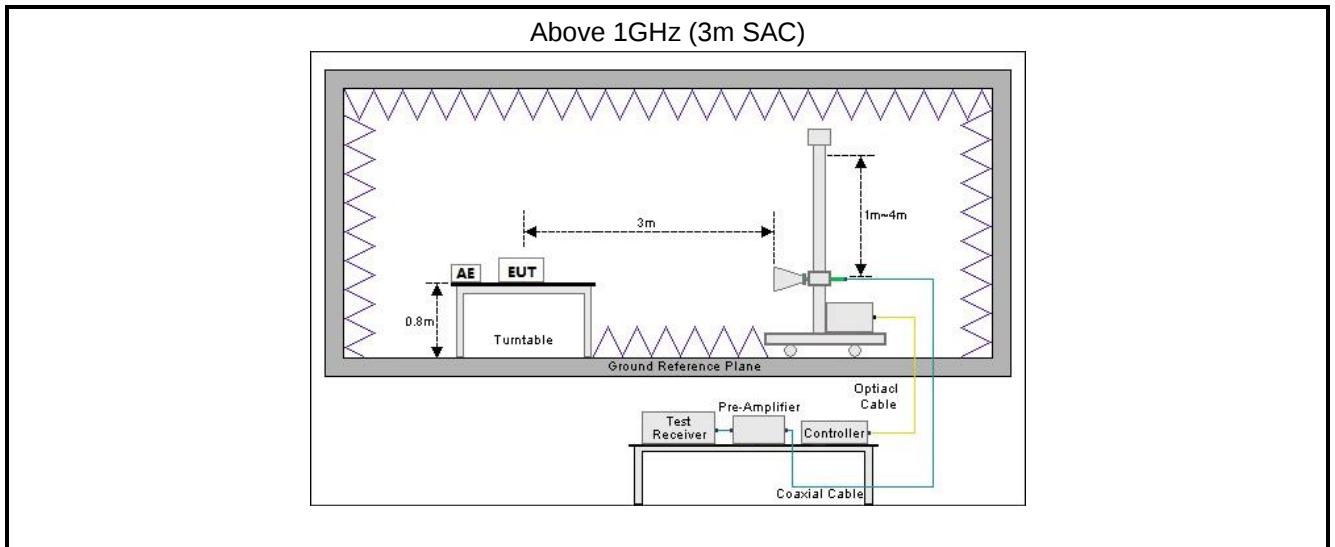


Note: The detailed descriptions please refer to Figure 8 of ANSI C63.4:2014.

2) Radiated emission measurement:

Below 1GHz (3m SAC)





4.2 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power 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 C63.4 on conducted measurement.
Radiated emission	For below 1GHz: 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. For above 1GHz: 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.

5 Test Results

5.1 Summary

5.1.1 Clause and data summary

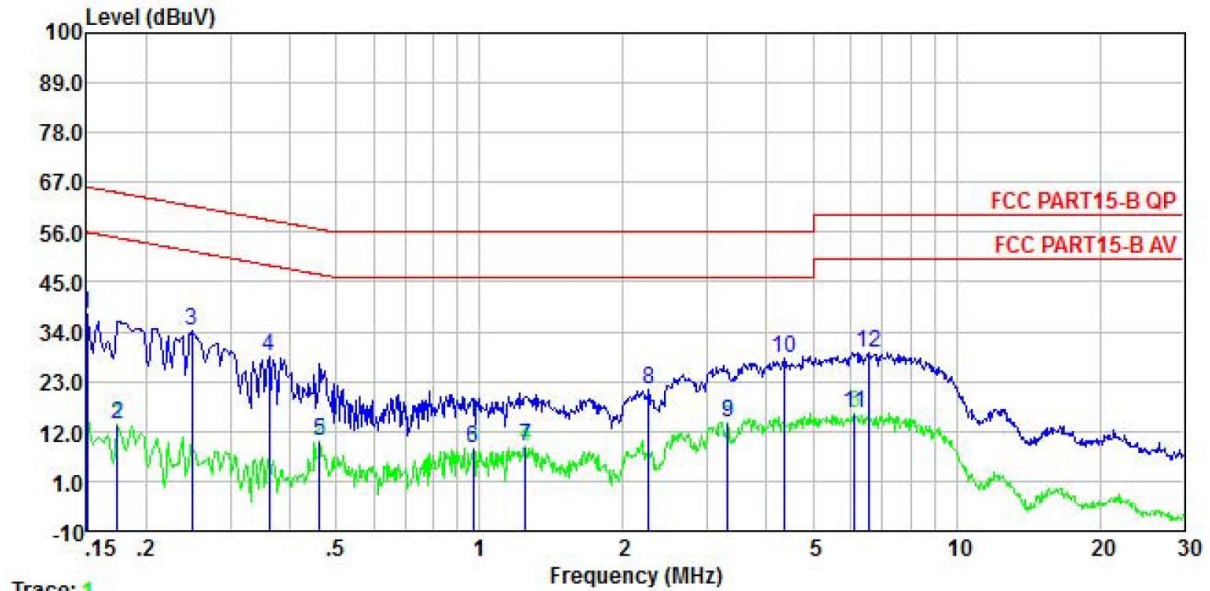
Test items	Standard clause	Test data	Result
Conducted Emission	Part 15.107	See Section 5.2	Pass
Radiated Emission	Part 15.109	See Section 5.3	Pass
Remark: 1. The EUT is a Class B digital device. 2. Pass: The EUT complies with the essential requirements in the standard. 3. N/A: Not Applicable.			
Test Method:	ANSI C63.4:2014		

5.1.2 Test Limit

Test items	Limit																													
Conducted Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBμV)</th><th colspan="2">Class B Limit (dBμV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>79</td><td>66</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr><tr><td>0.5 – 5</td><td>73</td><td>60</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>73</td><td>60</td><td>60</td><td>50</td></tr></table>	Frequency (MHz)	Class A Limit (dBμV)		Class B Limit (dBμV)		Quasi-Peak	Average	Quasi-Peak	Average	0.15 – 0.5	79	66	66 to 56 Note 1	56 to 46 Note 1	0.5 – 5	73	60	56	46	5 – 30	73	60	60	50					
	Frequency (MHz)		Class A Limit (dBμV)		Class B Limit (dBμV)																									
		Quasi-Peak	Average	Quasi-Peak	Average																									
	0.15 – 0.5	79	66	66 to 56 Note 1	56 to 46 Note 1																									
	0.5 – 5	73	60	56	46																									
	5 – 30	73	60	60	50																									
Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency.																														
Note 2: The more stringent limit applies at transition frequencies.																														
Radiated Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Class A Limit (dBμV/m)</th><th colspan="2">Class B Limit (dBμV/m)</th></tr><tr><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th><th>Quasi-Peak @ 3m</th><th>Quasi-Peak @ 10m</th></tr><tr><td>30 – 88</td><td>49.0</td><td>39.0</td><td>40.0</td><td>30.0</td></tr><tr><td>88 – 216</td><td>53.5</td><td>43.5</td><td>43.5</td><td>33.5</td></tr><tr><td>216 – 960</td><td>56.0</td><td>46.0</td><td>46.0</td><td>36.0</td></tr><tr><td>960 – 1000</td><td>60.0</td><td>50.0</td><td>54.0</td><td>44.0</td></tr></table>	Frequency (MHz)	Class A Limit (dBμV/m)		Class B Limit (dBμV/m)		Quasi-Peak @ 3m	Quasi-Peak @ 10m	Quasi-Peak @ 3m	Quasi-Peak @ 10m	30 – 88	49.0	39.0	40.0	30.0	88 – 216	53.5	43.5	43.5	33.5	216 – 960	56.0	46.0	46.0	36.0	960 – 1000	60.0	50.0	54.0	44.0
	Frequency (MHz)		Class A Limit (dBμV/m)		Class B Limit (dBμV/m)																									
		Quasi-Peak @ 3m	Quasi-Peak @ 10m	Quasi-Peak @ 3m	Quasi-Peak @ 10m																									
	30 – 88	49.0	39.0	40.0	30.0																									
	88 – 216	53.5	43.5	43.5	33.5																									
	216 – 960	56.0	46.0	46.0	36.0																									
	960 – 1000	60.0	50.0	54.0	44.0																									
	Note: The more stringent limit applies at transition frequencies.																													
	<table><tr><th rowspan="2">Frequency</th><th colspan="2">Class A Limit (dBμV/m) @ 3m</th><th colspan="2">Class B Limit (dBμV/m) @ 3m</th></tr><tr><th>Average</th><th>Peake</th><th>Average</th><th>Peake</th></tr><tr><td>Above 1 GHz</td><td>60.0</td><td>80.0</td><td>54.0</td><td>74.0</td></tr></table>	Frequency	Class A Limit (dBμV/m) @ 3m		Class B Limit (dBμV/m) @ 3m		Average	Peake	Average	Peake	Above 1 GHz	60.0	80.0	54.0	74.0															
	Frequency		Class A Limit (dBμV/m) @ 3m		Class B Limit (dBμV/m) @ 3m																									
Average		Peake	Average	Peake																										
Above 1 GHz	60.0	80.0	54.0	74.0																										
Note: The measurement bandwidth shall be 1 MHz or greater.																														

5.2 Conducted Emission

Product name:	7957V	Product model:	7957V
Test by:	Alan Chen	Test mode:	Charging mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz		



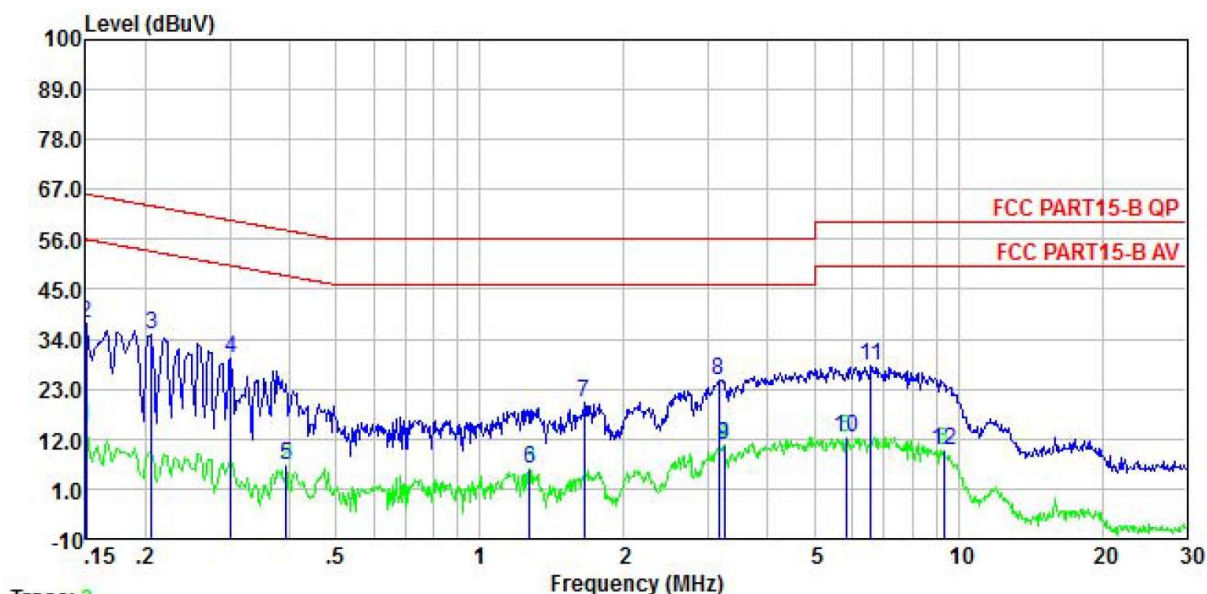
Trace: 1

	Freq	Read Level	LISN Factor	Aux Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	28.40	-0.30	0.00	9.88	0.01	37.99	66.00	-28.01	QP
2	0.174	3.87	-0.25	0.00	9.88	0.01	13.51	54.77	-41.26	Average
3	0.249	24.57	-0.20	0.00	9.88	0.01	34.26	61.78	-27.52	QP
4	0.361	18.99	-0.20	0.00	9.88	0.02	28.69	58.69	-30.00	QP
5	0.461	0.18	-0.20	0.00	9.88	0.03	9.89	46.67	-36.78	Average
6	0.968	-1.32	-0.29	0.00	9.88	0.05	8.32	46.00	-37.68	Average
7	1.249	-1.09	-0.27	0.00	9.88	0.10	8.62	46.00	-37.38	Average
8	2.261	11.21	-0.20	0.00	9.88	0.17	21.06	56.00	-34.94	QP
9	3.310	4.24	-0.20	0.00	9.89	0.07	14.00	46.00	-32.00	Average
10	4.338	18.38	-0.21	0.00	9.89	0.08	28.14	56.00	-27.86	QP
11	6.121	6.41	-0.28	0.00	9.90	0.09	16.12	50.00	-33.88	Average
12	6.523	19.75	-0.29	0.00	9.90	0.10	29.46	60.00	-30.54	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	7957V	Product model:	7957V
Test by:	Alan Chen	Test mode:	Charging mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



Trace: 3

	Read	LISN	Aux	Aux2	Cable		Limit	Over	
Freq	Level	Factor	Factor	Factor	Loss	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	5.15	-0.20	0.00	9.88	0.01	14.84	56.00	-41.16 Average
2	0.150	27.85	-0.20	0.00	9.88	0.01	37.54	66.00	-28.46 QP
3	0.206	25.15	-0.20	0.00	9.88	0.04	34.87	63.36	-28.49 QP
4	0.302	20.17	-0.25	0.00	9.88	0.03	29.83	60.19	-30.36 QP
5	0.393	-3.44	-0.27	0.00	9.88	0.04	6.21	47.99	-41.78 Average
6	1.269	-4.22	-0.30	0.00	9.88	0.10	5.46	46.00	-40.54 Average
7	1.654	10.12	-0.30	0.00	9.88	0.17	19.87	56.00	-36.13 QP
8	3.156	15.25	-0.37	0.00	9.89	0.07	24.84	56.00	-31.16 QP
9	3.241	1.18	-0.37	0.00	9.89	0.07	10.77	46.00	-35.23 Average
10	5.836	2.72	-0.40	0.00	9.90	0.09	12.31	50.00	-37.69 Average
11	6.557	18.39	-0.40	0.00	9.90	0.10	27.99	60.00	-32.01 QP
12	9.302	-0.07	-0.40	0.00	9.91	0.12	9.56	50.00	-40.44 Average

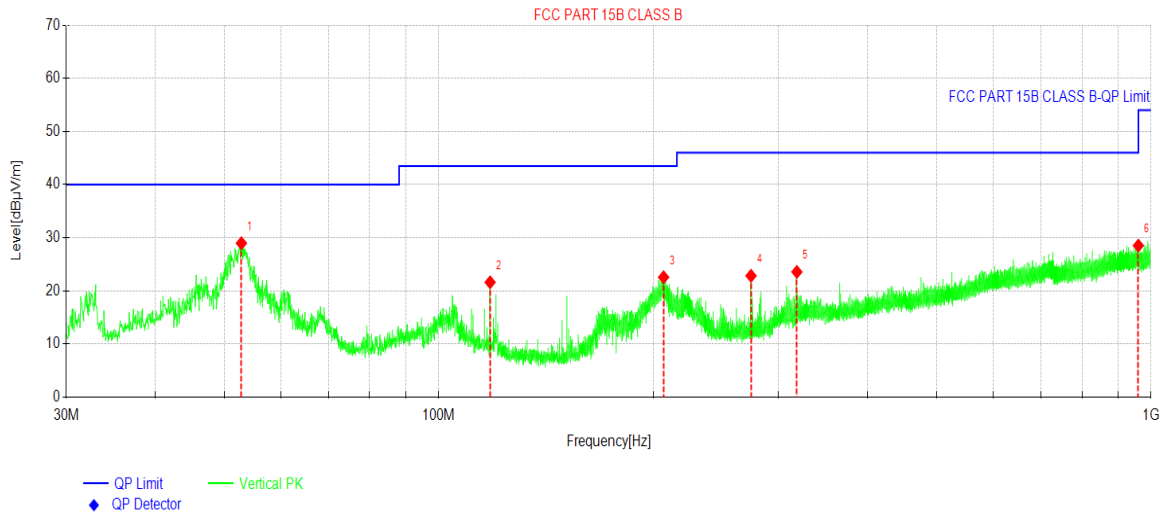
Remark:

1. Level = Read level + LISN Factor + Cable Loss.

5.3 Radiated Emission

Below 1GHz:

Product Name:	7957V	Product Model:	7957V
Test By:	Kiran Zeng	Test mode:	Charging mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



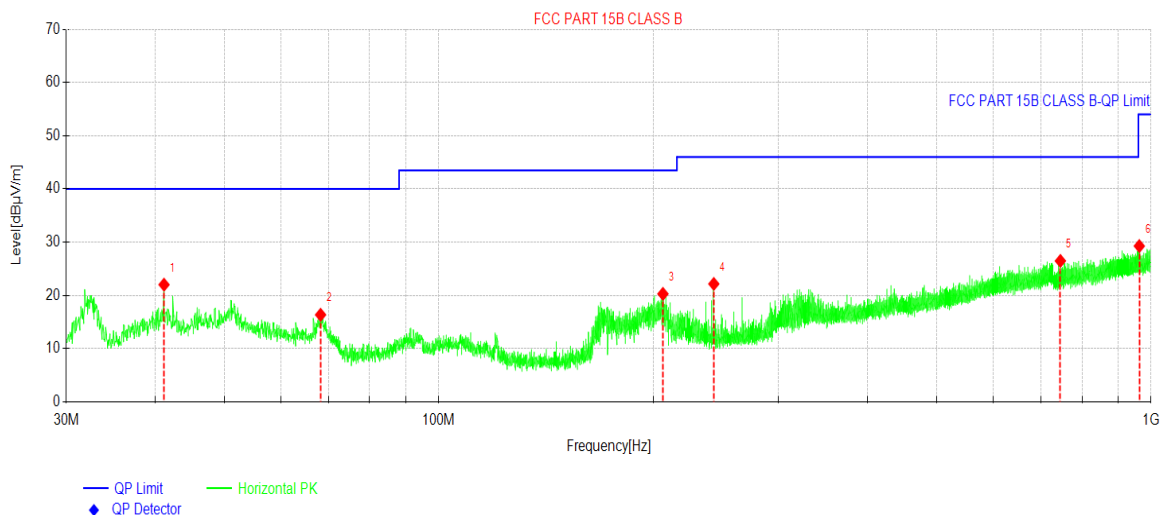
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	52.8446	41.48	-12.51	28.97	40.00	11.03	PK	Vertical
2	118.0804	37.47	-15.86	21.61	43.50	21.89	PK	Vertical
3	206.8883	37.52	-14.96	22.56	43.50	20.94	PK	Vertical
4	274.4522	36.17	-13.33	22.84	46.00	23.16	PK	Vertical
5	318.2984	35.97	-12.41	23.56	46.00	22.44	PK	Vertical
6	959.9855	30.26	-1.74	28.52	46.00	17.48	PK	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	7957V	Product Model:	7957V
Test By:	Kiran Zeng	Test mode:	Charging mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Suspected Data List

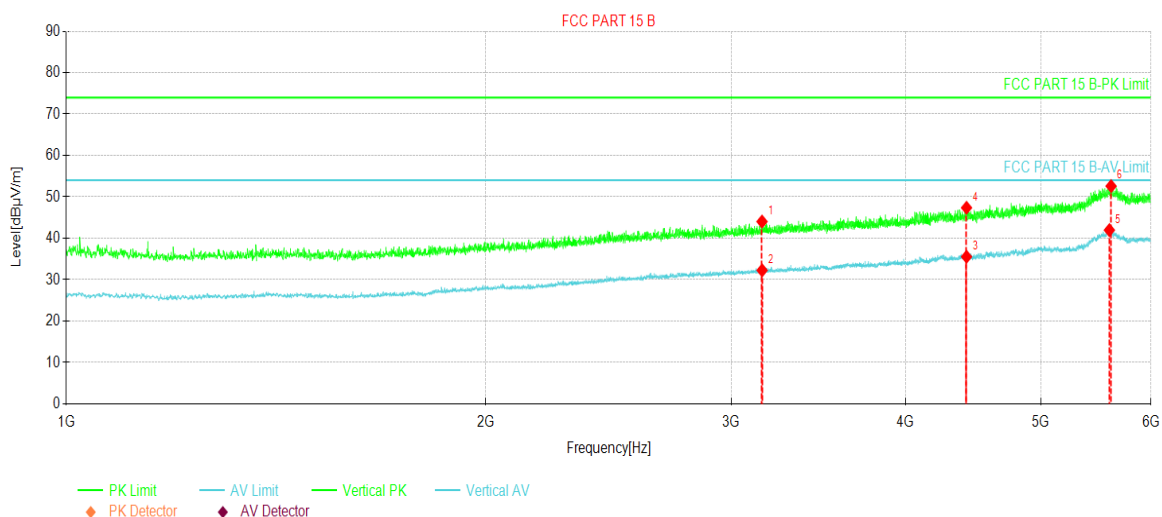
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	41.1556	34.96	-12.94	22.02	40.00	17.98	PK	Horizontal
2	68.2684	32.20	-15.84	16.36	40.00	23.64	PK	Horizontal
3	206.4518	35.23	-14.95	20.28	43.50	23.22	PK	Horizontal
4	243.3622	35.94	-13.78	22.16	46.00	23.84	PK	Horizontal
5	746.0413	30.71	-4.23	26.48	46.00	19.52	PK	Horizontal
6	962.9441	31.08	-1.81	29.27	54.00	24.73	PK	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Above 1GHz:

Product Name:	7957V	Product Model:	7957V
Test By:	Kiran Zeng	Test mode:	Charging mode
Test Frequency:	1000 MHz ~ 6000 MHz	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



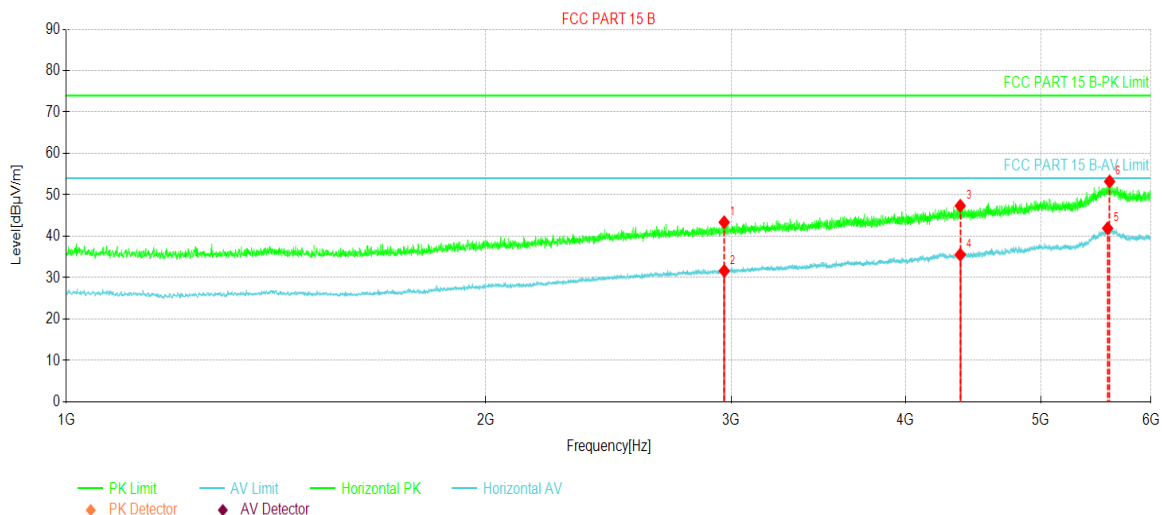
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	3155.8945	60.51	44.03	-16.48	74.00	29.97	PK	Vertical
2	3156.5196	48.74	32.26	-16.48	54.00	21.74	AV	Vertical
3	4424.1780	47.39	35.54	-11.85	54.00	18.46	AV	Vertical
4	4424.1780	59.21	47.36	-11.85	74.00	26.64	PK	Vertical
5	5601.2002	46.56	41.98	-4.58	54.00	12.02	AV	Vertical
6	5617.4522	57.34	52.60	-4.74	74.00	21.40	PK	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	7957V	Product Model:	7957V
Test By:	Kiran Zeng	Test mode:	Charging mode
Test Frequency:	1000 MHz ~ 6000 MHz	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	2964.6206	60.41	43.38	-17.03	74.00	30.62	PK	Horizontal
2	2965.2457	48.66	31.63	-17.03	54.00	22.37	AV	Horizontal
3	4378.5473	59.39	47.36	-12.03	74.00	26.64	PK	Horizontal
4	4378.5473	47.58	35.55	-12.03	54.00	18.45	AV	Horizontal
5	5584.9481	46.75	41.92	-4.83	54.00	12.08	AV	Horizontal
6	5603.7005	57.84	53.23	-4.61	74.00	20.77	PK	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

-----End of report-----