



MEASUREMENT REPORT

FCC Part 15.245

FCC ID: 2AH30-V3PRO
Applicant: Rapsodo Pte Ltd
Application Type: Certification
Product: V3 Pro
Model No.: V3 Pro
Brand Name: Rapsodo
FCC Classification: Part 15 Field Disturbance Sensor (FDS)
FCC Rule Part(s): FCC Part 15.245
Test Procedure(s): ANSI C63.10-2013
Test Date: December 22 ~ 28, 2020

Reviewed By

Vincent Yu

Vincent Yu

Approved By

Robin Wu

Robin Wu



The test results relate only to the samples tested.

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 ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2012RSU050-U1	Rev. 01	Initial Report	01-04-2021	Invalid
2012RSU050-U1	Rev. 02	Revise FCC ID and product information	01-12-2021	Valid

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1. INTRODUCTION

1.1. Applicant

Rapsodo Pte Ltd
 Block 67, Ayer Rajah Crescent, #04-10, Singapore 139950

1.2. Manufacturer

Rapsodo Pte Ltd
 Block 67, Ayer Rajah Crescent, #04-10, Singapore 139950

1.3. Testing Facility

<input checked="" type="checkbox"/>	Test Site – MRT Suzhou Laboratory
	Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
	Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China
	Laboratory Accreditations
	A2LA: 3628.01 CNAS: L10551
	FCC: CN1166 ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020
<input type="checkbox"/>	Test Site – MRT Shenzhen Laboratory
	Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China
	Laboratory Accreditations
	A2LA: 3628.02 CNAS: L10551
	FCC: CN1284 ISED: CN0105
<input type="checkbox"/>	Test Site – MRT Taiwan Laboratory
	Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
	Laboratory Accreditations
	TAF: L3261-190725
	FCC: 291082, TW3261 ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name	V3 Pro
Model No.	V3 Pro
Power Rating	Input: 100-240VAC 1.5A 50/60Hz Output: 20.5V 4.7A
Battery	Rated Voltage: 12VDC Charge Limit Voltage: 13VDC Capacity: 156WH
Hardware Version Number	TRT-RevB
Software Version Number	Ver 0.2
Working Frequency Range	24.075GHz ~ 24.175GHz
Antenna Type	Integrated Antenna

2.2. Test Mode

Test Mode	Mode 1: Continuous Transmit
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Note: The engineer test sample was provided by the manufacturer, it was configured into continuous TX status after power on and the duty cycle of the EUT is 100%.

2.3. Test Environment Condition

Ambient Temperature	15°C ~ 35°C
Relative Humidity	20%RH ~ 75%RH

3. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of this device is permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. TEST EQUIPMENT CALIBRATION DATE

Occupied Channel Bandwidth / Unwanted Emissions / Radiated Restricted Band Edge (SIP-AC2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2021/07/02
EXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2021/09/03
Bilog Period Antenna	Schwarzbeck	VULB9168	MRTSUE06646	1 year	2021/12/17
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06648	1 year	2021/12/17
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2021/12/17
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2021/11/14
Preamplifier	EMCI	EMC051845SE	MRTSUE06644	1 year	2021/11/12
Micro-Wave Antenna	MI-WWAVE	261U-25	MRTSUE06273	N/A	N/A
Micro-Wave Antenna	MI-WWAVE	261E-25	MRTSUE06276	N/A	N/A
Micro-Wave Antenna	MI-WWAVE	261F-25	MRTSUE06275	N/A	N/A
Micro-Wave Antenna	MI-WWAVE	261G	MRTSUE06274	N/A	N/A
Standard Gain Horn Antenna	A-INFOMW	LB-10-25-A	MRTSUE06410	N/A	N/A
Standard Gain Horn Antenna	A-INFOMW	LB-15-25-A	MRTSUE06409	N/A	N/A
Waveguide Harmonic Mixer	Keysight	M1970V	MRTSUE06271	N/A	N/A
Waveguide Harmonic Mixer	Keysight	M1970W	MRTSUE06272	N/A	N/A
RF Signal Generator	Keysight	E8257D	MRTSUE06453	N/A	N/A
SA Extension Module	Keysight	N9029AV06	MRTSUE06368	N/A	N/A
SA Extension Module	Keysight	N9029AV05	MRTSUE06367	N/A	N/A
SA Extension Module	Keysight	N9029AV03	MRTSUE06366	N/A	N/A
Millimeter wave signal source frequency expander	Keysight	E8257DV15	MRTSUE06456	N/A	N/A
Thermal Hygrometer	testo	608-H1	MRTSUE06624	1 year	2021/12/29
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2021/12/25

Conducted Emission (SIP-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2021/07/02
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2021/09/09
Thermal Hygrometer	testo	608-H1	MRTSUE06621	1 year	2021/12/29

Software	Version	Function
EMI Software	V3	EMI Test Software

5. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Conducted Emission Measurement

Measurement Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):

9kHz~150kHz: 3.74dB

150kHz~30MHz: 3.44dB

Radiated Emission Measurement

Measurement Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$):

Horizontal: 30MHz~300MHz: 5.04dB

300MHz~1GHz: 4.95dB

1GHz~40GHz: 6.40dB

Vertical: 30MHz~300MHz: 5.24dB

300MHz~1GHz: 6.03dB

1GHz~40GHz: 6.40dB

6. TEST RESULT

6.1. Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.215(c)	Occupied Bandwidth	N/A	Radiated	Pass	Section 6.2
15.209 15.245	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		Pass	Section 6.3 & 6.4
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 6.5

Notes: The radiation measurements are performed in X, Y, Z axis positioning. Only the worst-case data is shown in the report.

6.2. Occupied Bandwidth Measurement

6.2.1. Test Limit

N/A

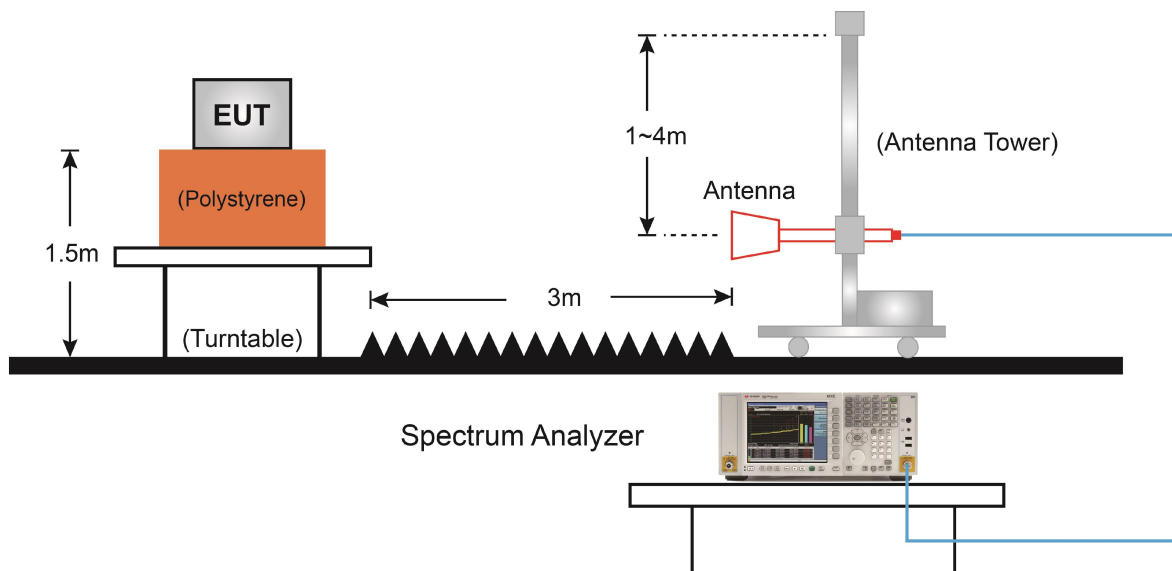
6.2.2. Test Procedure used

ANSI C63.10-2013 Section 6.9

6.2.3. Test Setting

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
2. RBW = approximately 1% to 5% of the OBW.
3. VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold.

6.2.4. Test Setup

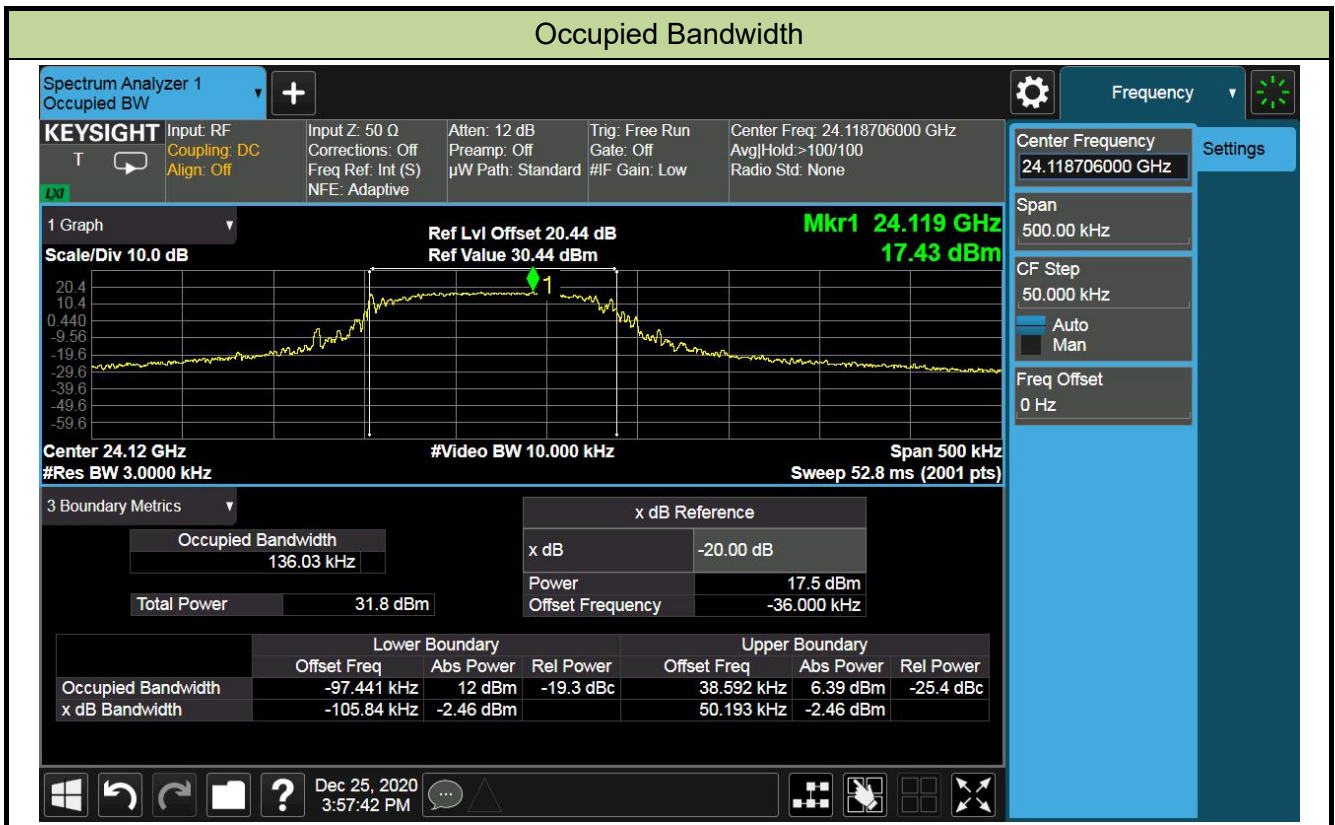


6.2.5. Test Result

Product	V3 Pro	Test Engineer	Ternence Wang
Test Site	SIP-AC2	Test Date	2020/12/25

99% Bandwidth (kHz)	20dB Bandwidth (kHz)
136.03	156.03 (Note)

Note: 20dB Bandwidth (kHz) = $F_{Upper} - F_{Lower} = 50.193\text{kHz} - (-105.84\text{kHz}) = 156.03\text{kHz}$



6.3. Radiated Emission

6.3.1. Test Limit

FCC Part 15.245		
Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (millivolts/meter)
902 ~ 928	500	1.6
2435 ~ 2465	500	1.6
5785 ~ 5815	500	1.6
10500 ~ 10550	2500	25.0
24075 ~ 24175	2500	25.0

Note 1: Regardless of the limits shown in the above table, harmonic emissions in the restricted bands below 17.7 GHz, as specified in §15.205, shall not exceed the field strength limits shown in § 15.209. Harmonic emissions in the restricted bands at and above 17.7GHz shall not exceed the following field strength limits:

- (i) For the second and third harmonics of field disturbance sensors operating in the 24075-24175 MHz band and for other field disturbance sensors designed for use only within a building or to open building doors, 25.0 mV/m.
- (ii) For all other field disturbance sensors, 7.5 mV/m.
- (iii) Field disturbance sensors designed to be used in motor vehicles or aircraft must include features to prevent continuous operation unless their emissions in the restricted bands, other than the second and third harmonics from devices operating in the 24075-24175 MHz band, fully comply with the limits given in § 15.209. Continuous operation of field disturbance sensors designed to be used in farm equipment, vehicles such as fork lifts that are intended primarily for use indoors or for very specialized operations, or railroad locomotives, railroad cars and other equipment which travels on fixed tracks is permitted. A field disturbance sensor will be considered not to be operating in a continuous mode if its operation is limited to specific activities of limited duration (e.g., putting a vehicle into reverse gear, activating a turn signal, etc.).

Note 2: Field strength limits are specified at a distance of 3 meters.

Note 3: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Note 4: The emission limits shown above are based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.3.2. Test Procedure used

ANSI C63.10-2013 Section 6.3 to 6.6

6.3.3. Test Procedure

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

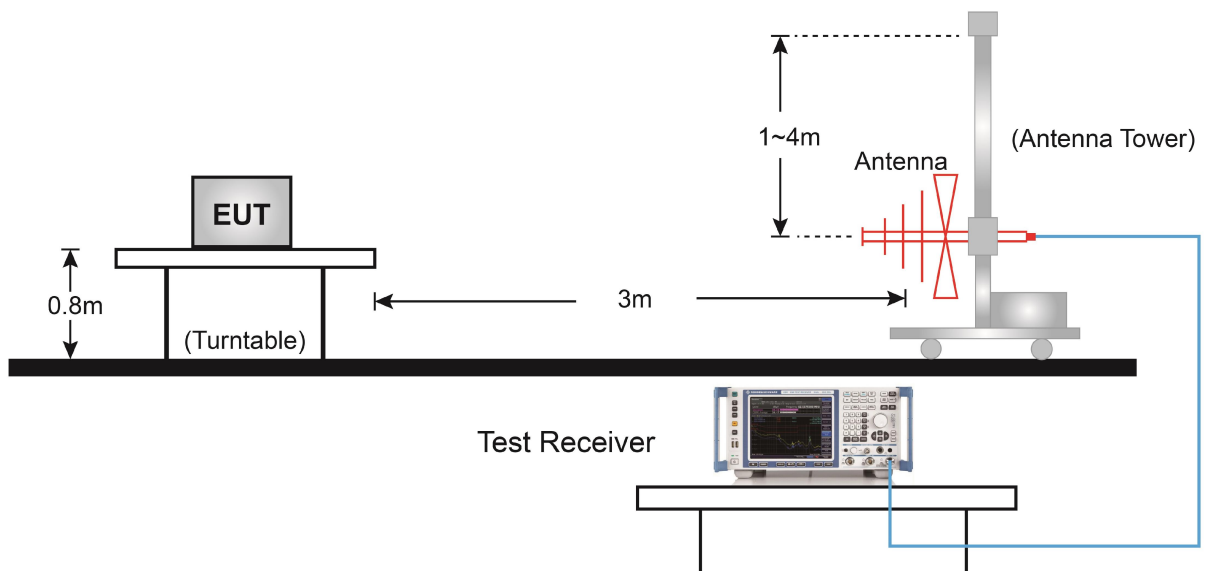
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

Average Field Strength Measurements

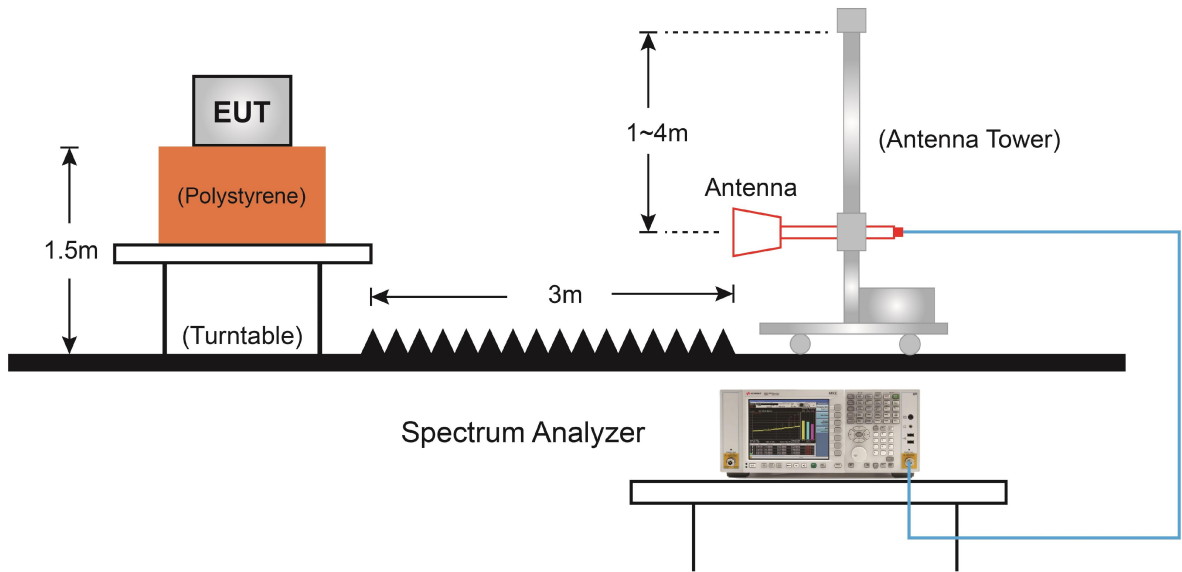
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 10Hz
4. De As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.3.4. Test Setup

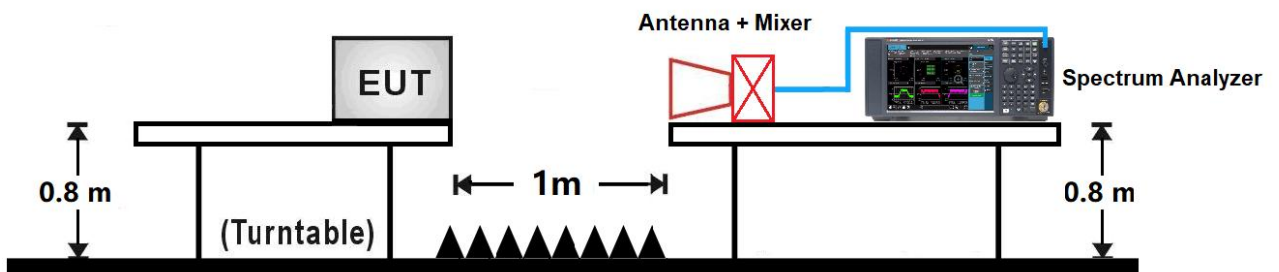
Below 1GHz Test Setup:



1GHz ~ 40GHz Test Setup:



Above 40GHz Test Setup:



6.3.5. Test Results

Product	V3 Pro	Test Engineer	Ternence Wang
Test Site	SIP-AC2	Test Date	2020/12/22
Remark:	Fundamental Radiated Emission		

Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
24119.0	98.8	-9.1	89.7	148.0	-58.3	Peak	Horizontal
24119.3	98.3	-9.1	89.2	128.0	-38.8	Average	Horizontal
24119.0	121.0	-9.1	111.9	148.0	-36.1	Peak	Vertical
24119.0	121.0	-9.1	111.9	128.0	-16.1	Average	Vertical

Note: Peak Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Product	V3 Pro	Test Engineer	Ternence Wang
Test Site	SIP-AC2	Test Date	2020/12/25
Remark:	Harmonics Radiated Emission (Below 1GHz)		

Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
96.0	17.8	10.4	28.2	43.5	-15.3	QP	Horizontal
334.1	16.5	14.7	31.2	46.0	-14.8	QP	Horizontal
356.4	20.5	15.1	35.6	46.0	-10.4	QP	Horizontal
407.8	17.5	16.1	33.6	46.0	-12.4	QP	Horizontal
556.7	15.2	18.9	34.1	46.0	-11.9	QP	Horizontal
936.0	10.2	23.9	34.1	46.0	-11.9	QP	Horizontal
31.0	14.5	13.6	28.1	40.0	-11.9	QP	Vertical
45.5	8.9	14.1	23.0	40.0	-17.0	QP	Vertical
94.5	12.3	10.3	22.6	43.5	-20.9	QP	Vertical
407.8	15.2	16.1	31.3	46.0	-14.7	QP	Vertical
556.7	13.5	18.9	32.4	46.0	-13.6	QP	Vertical
888.0	11.5	23.3	34.8	46.0	-11.2	QP	Vertical

Note:

1. Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)
2. The test trace is same as the ambient noise (the test frequency range: 9kHz ~ 30MHz), therefore no data appear in the report.

Product	V3 Pro	Test Engineer	Ternence Wang
Test Site	SIP-AC2	Test Date	2020/12/26
Remark:	Harmonics Radiated Emission (1GHz ~ 40GHz)		

Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
14166.5	46.7	4.1	50.8	74.0	-23.2	PK	Horizontal
17660.0	52.0	5.9	57.9	74.0	-16.1	PK	Horizontal
17660.0	35.2	5.9	41.1	54.0	-32.9	AV	Horizontal
36777.0	57.8	-4.9	52.9	74.0	-21.1	PK	Horizontal
39208.0	55.6	-0.1	55.5	74.0	-18.5	PK	Horizontal
39208.0	42.2	-0.1	42.1	54.0	-31.9	AV	Horizontal
14056.0	47.4	3.9	51.3	74.0	-22.7	PK	Vertical
17983.0	46.5	10.8	57.3	74.0	-16.7	PK	Vertical
17983.0	33.3	10.8	44.1	54.0	-29.9	AV	Vertical
36733.0	58.0	-4.9	53.1	74.0	-20.9	PK	Vertical
38988.0	55.8	0.4	56.2	74.0	-17.8	PK	Vertical
38988.0	41.3	0.4	41.7	54.0	-32.3	AV	Vertical

Note:

- Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre Amplifier Gain (dB)
- Average measurement was not performed when the peak level lower than average limit.
- The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.
Therefore, the data is not presented in the report.

Product	V3 Pro	Test Engineer	Ternence Wang
Test Site	SIP-AC2	Test Date	2020/12/25
Remark:	Harmonics Radiated Emission (40GHz ~ 100GHz)		

Frequency (GHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level @ 1m (dB μ V/m)	Measure Level @ 3m (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
49.4	23.1	46.1	69.2	59.7	74.0	-14.3	PK	Horizontal
49.4	-5.2	46.1	40.9	31.3	54.0	-22.7	AV	Horizontal
61.3	35.8	41.2	77.0	67.5	74.0	-6.5	PK	Horizontal
61.3	14.3	41.2	55.5	46.0	54.0	-8.0	AV	Horizontal
85.8	36.2	44.3	80.5	71.0	74.0	-3.0	PK	Horizontal
85.8	17.5	44.3	61.8	52.3	54.0	-1.7	AV	Horizontal
49.4	22.9	46.1	69.0	59.5	74.0	-14.5	PK	Vertical
49.4	-6.2	46.1	39.9	30.3	54.0	-23.7	AV	Vertical
61.0	35.7	41.2	76.9	67.4	74.0	-6.6	PK	Vertical
61.0	14.8	41.2	56.0	46.5	54.0	-7.5	AV	Vertical
82.4	34.7	44.2	78.9	69.4	74.0	-4.6	PK	Vertical
82.4	17.1	44.2	61.3	51.8	54.0	-2.2	AV	Vertical

Note:

1. Measure Level @1m (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)
2. Measure Level @3m (dB μ V/m) = Measure Level @1m (dB μ V/m) + 20 * log (1/3) (dB)
3. Average measurement was not performed when the peak level lower than average limit.

6.4. Radiated Restricted Band Edge Measurement

6.4.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (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
6.215 - 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	--	--	--

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.4.2. Test Procedure used

ANSI C63.10-2013 Section 6.10

6.4.3. Test Procedure

Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

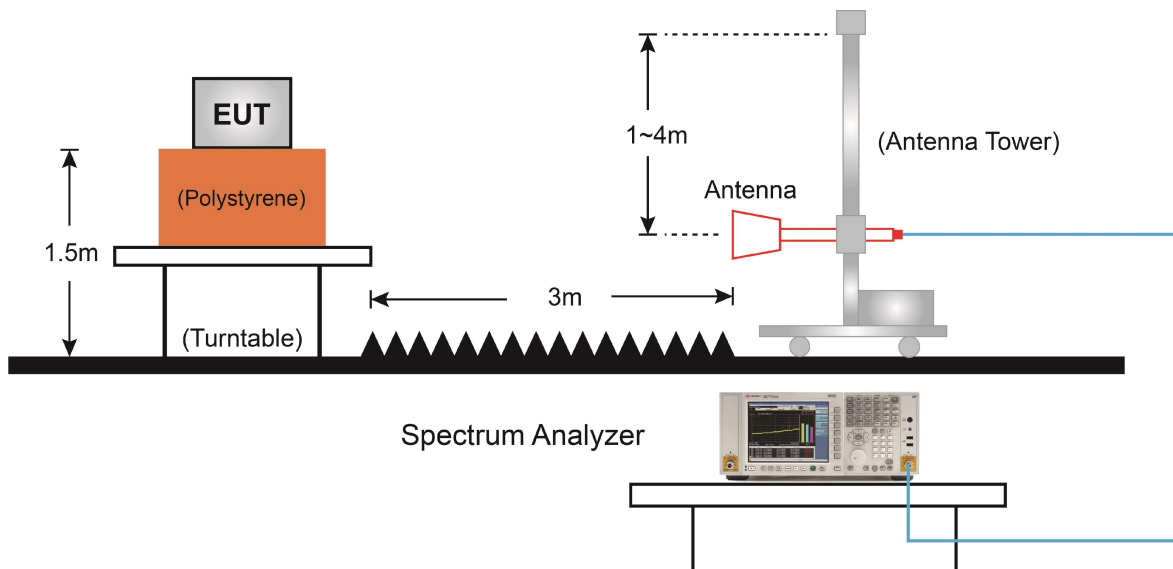
Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 10Hz
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is

applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode

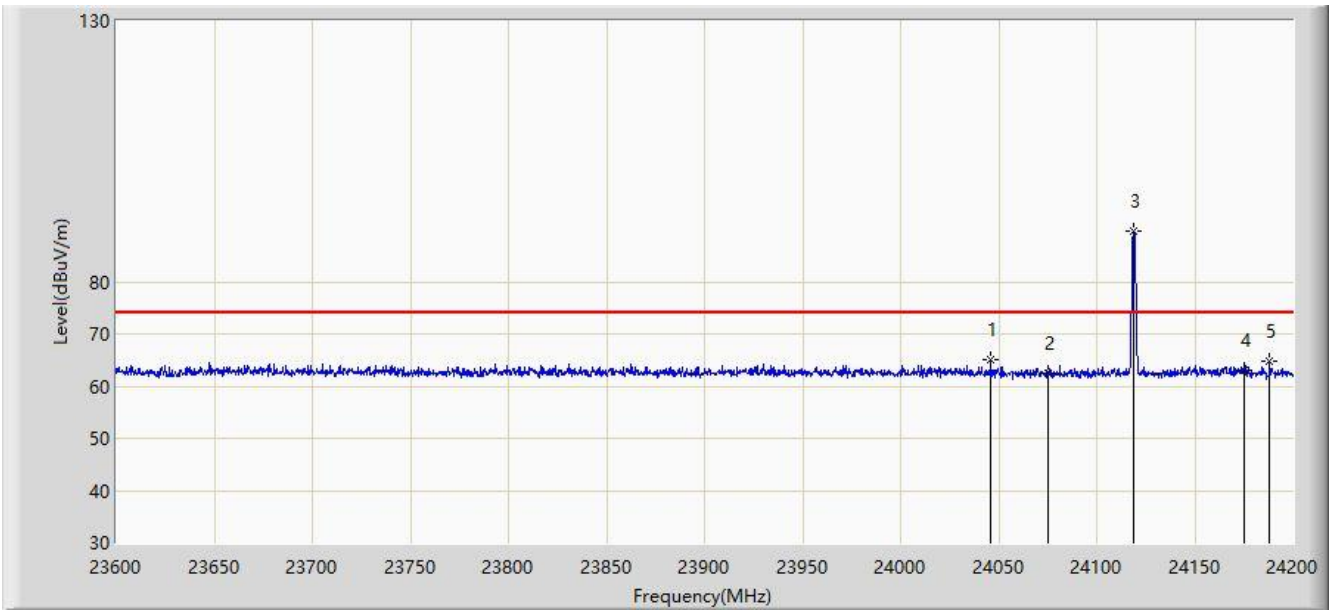
5. Detector = Peak
6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.4.4. Test Setup



6.4.5. Test Result

Site: SIP-AC2	Time: 2020/12/25 - 16:11
Limit: FCC_Part15.209_RE(3m)	Engineer: Allen Zou
Probe: SIP-AC2_BBHA9170_18-40GHz	Polarity: Horizontal
EUT: V3 Pro	Power: AC 120V/60Hz
Test Mode 1	

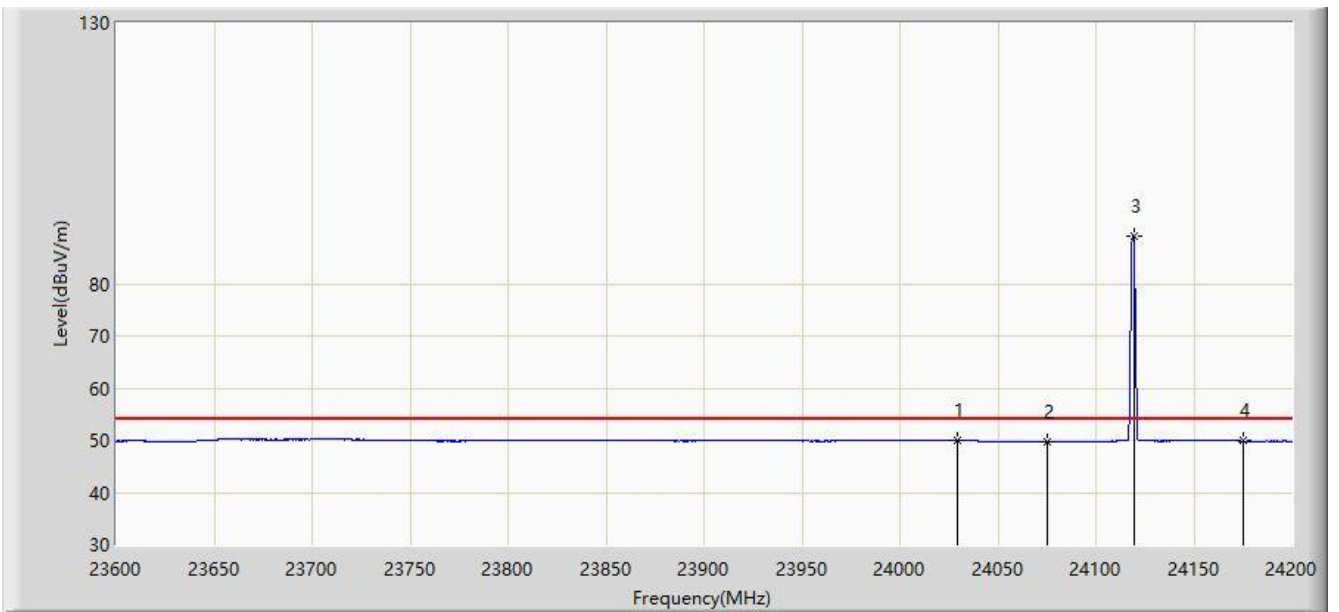


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24045.801	65.019	74.114	-8.981	74.000	-9.095	PK
2			24075.000	62.402	71.616	-11.598	74.000	-9.213	PK
3		*	24119.000	89.655	98.781	N/A	N/A	-9.126	PK
4			24175.000	63.105	72.259	-10.895	74.000	-9.154	PK
5			24188.301	64.690	73.924	-9.310	74.000	-9.234	PK

Note: Peak Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: SIP-AC2	Time: 2020/12/25 - 16:22
Limit: FCC_Part15.209_RE(3m)	Engineer: Allen Zou
Probe: SIP-AC2_BBHA9170_18-40GHz	Polarity: Horizontal
EUT: V3 Pro	Power: AC 120V/60Hz
Test Mode 1	

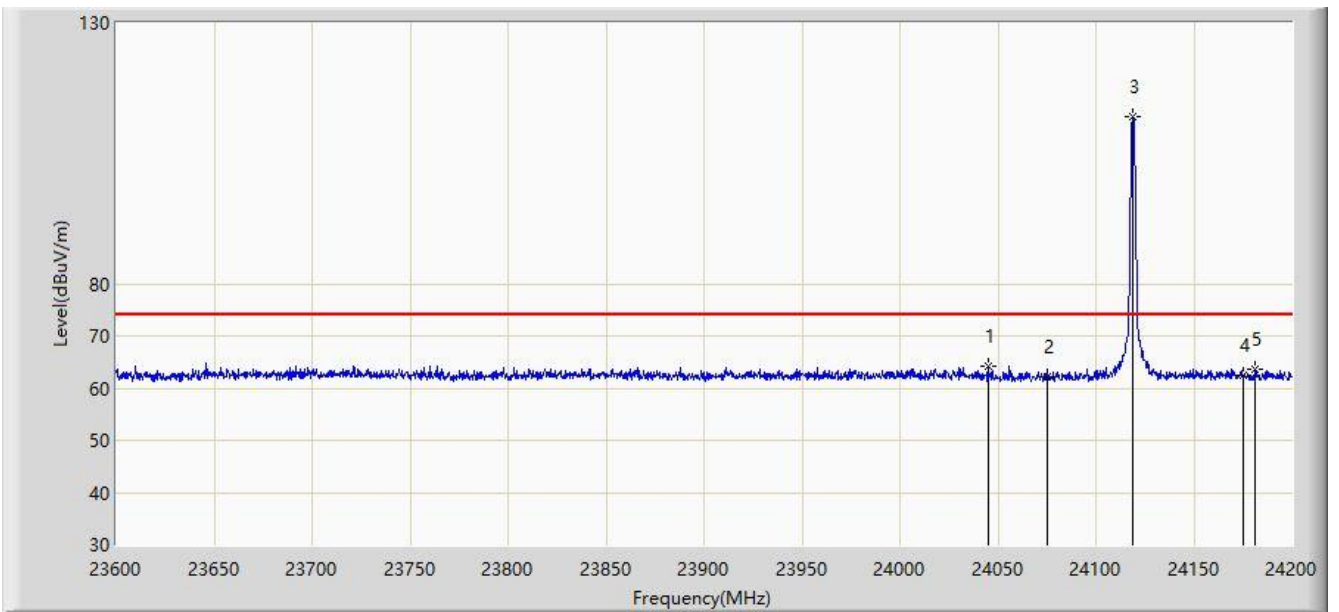


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24029.000	50.041	59.035	-3.959	54.000	-8.994	AV
2			24075.000	49.730	58.944	-4.270	54.000	-9.213	AV
3		*	24119.301	89.166	98.292	N/A	N/A	-9.127	AV
4			24175.000	49.856	59.010	-4.144	54.000	-9.154	AV

Note: Peak Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: SIP-AC2	Time: 2020/12/25 - 16:24
Limit: FCC_Part15.209_RE(3m)	Engineer: Allen Zou
Probe: SIP-AC2_BBHA9170_18-40GHz	Polarity: Vertical
EUT: V3 Pro	Power: AC 120V/60Hz
Test Mode 1	

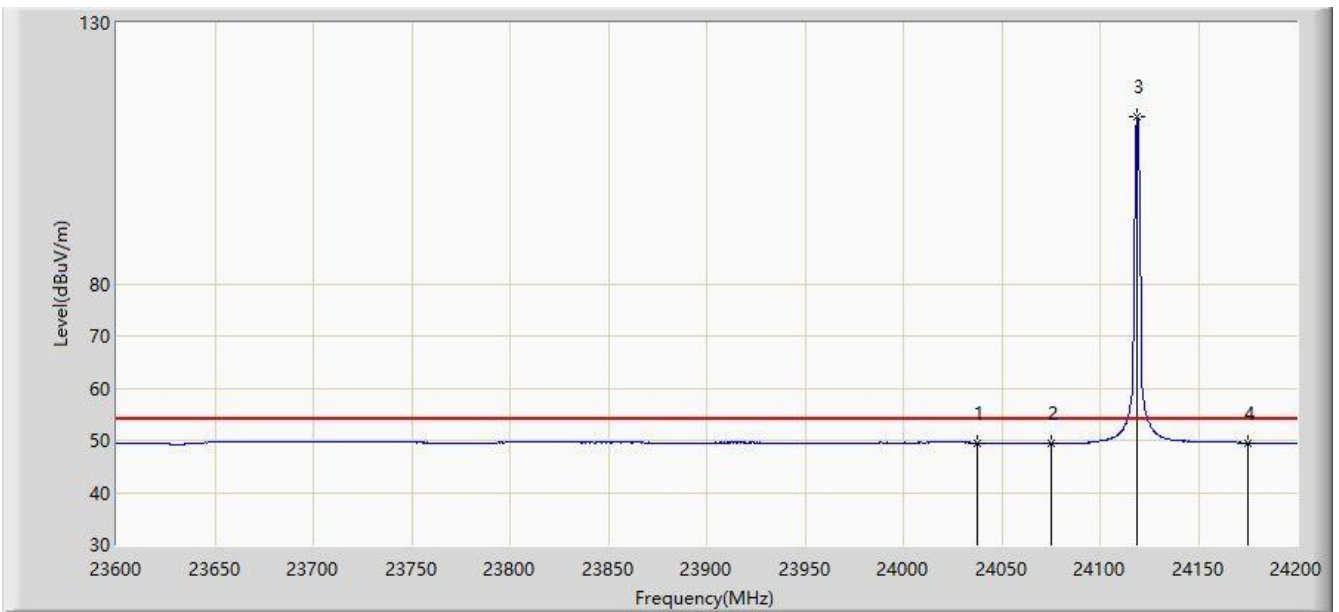


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24044.900	64.241	73.331	-9.759	74.000	-9.090	PK
2			24075.000	62.101	71.315	-11.899	74.000	-9.213	PK
3		*	24119.000	111.915	121.041	N/A	N/A	-9.126	PK
4			24175.000	62.331	71.485	-11.669	74.000	-9.154	PK
5			24181.400	63.545	72.773	-10.455	74.000	-9.228	PK

Note: Peak Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Site: SIP-AC2	Time: 2020/12/25 - 16:27
Limit: FCC_Part15.209_RE(3m)	Engineer: Allen Zou
Probe: SIP-AC2_BBHA9170_18-40GHz	Polarity: Vertical
EUT: V3 Pro	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			24037.400	49.525	58.569	-4.475	54.000	-9.044	AV
2			24075.000	49.435	58.649	-4.565	54.000	-9.213	AV
3	X	*	24119.000	111.919	121.045	N/A	N/A	-9.126	AV
4			24175.000	49.491	58.645	-4.509	54.000	-9.154	AV

Note: Peak Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

6.5. AC Conducted Emissions Measurement

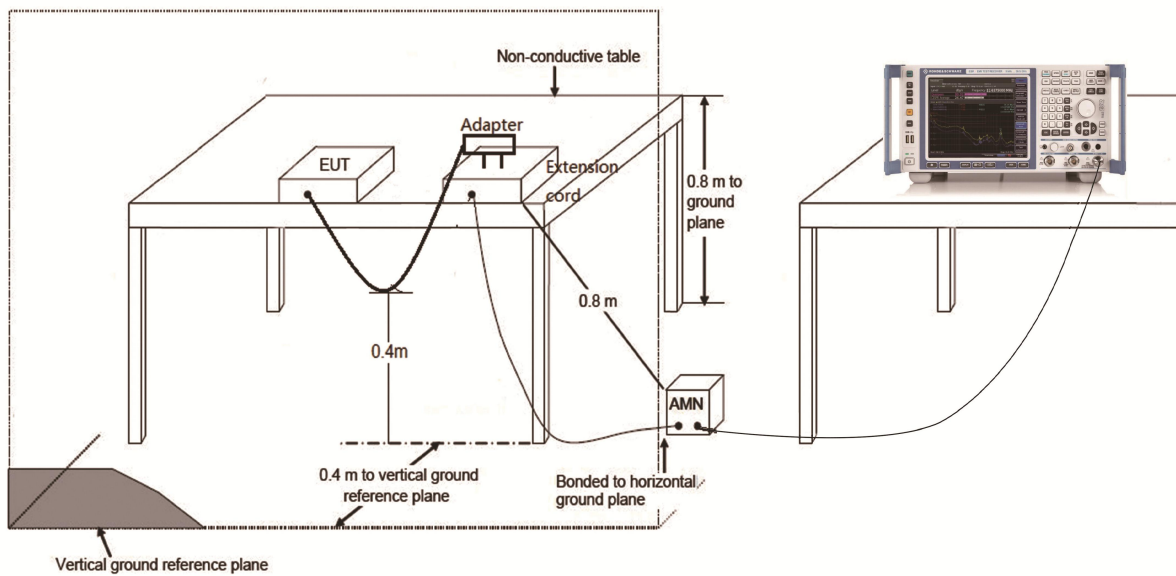
6.5.1. Test Limit

FCC Part 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 ~ 0.50	66 ~ 56	56 ~ 46
0.50 ~ 5.0	56	46
5.0 ~ 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

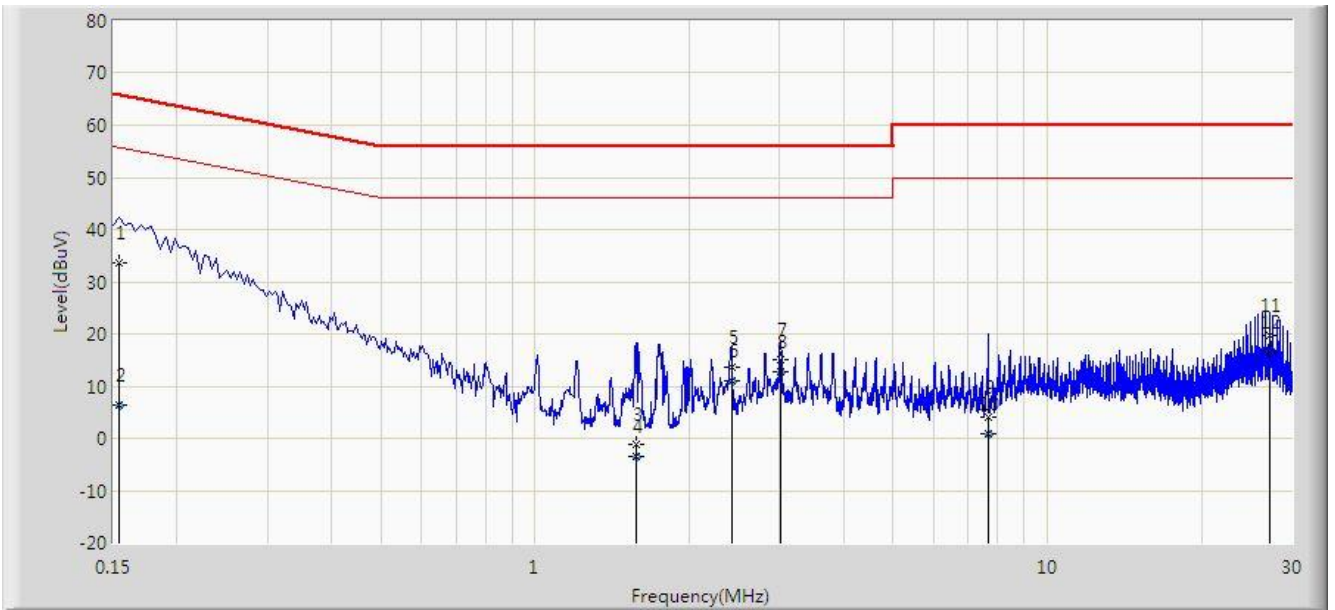
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.5.2. Test Setup



6.5.3. Test Result

Site: SIP-SR2	Time: 2020/12/28 - 17:22
Limit: FCC_Part15.207_CE_AC Power	Engineer: Kyrie Xie
Probe: SIP-SR2-ENV216_101684_Filter On	Polarity: Line
EUT: V3 Pro	Power: AC 120V/60Hz
Note: Mode 1	

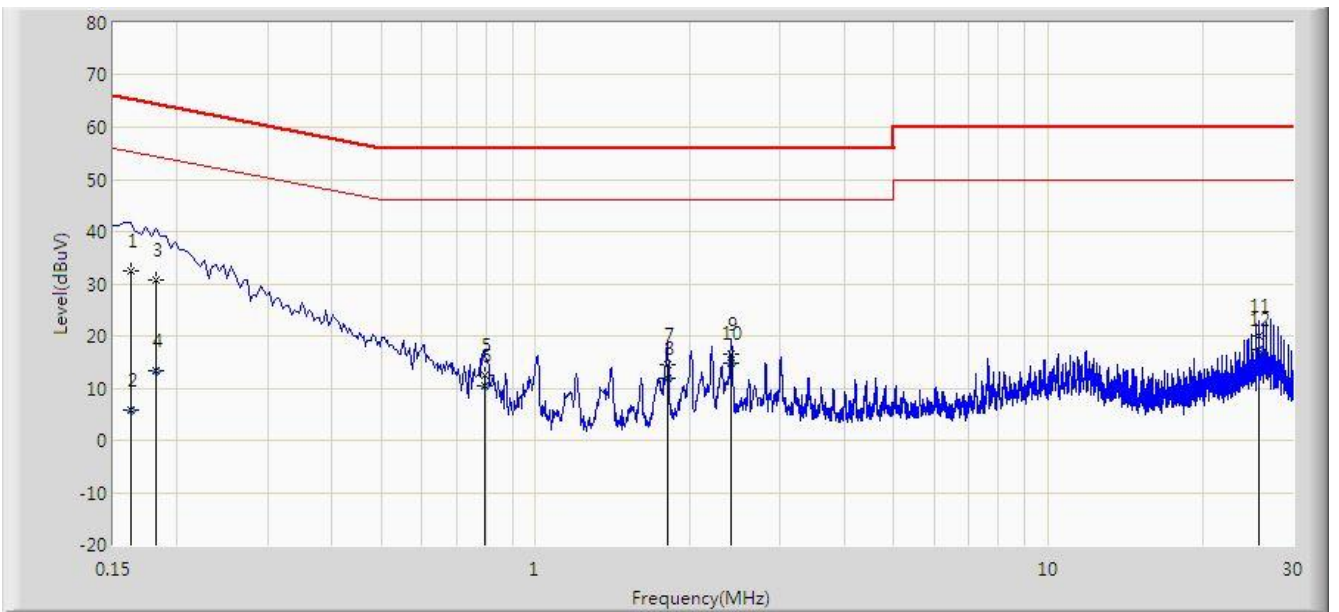


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1		*	0.154	33.690	24.241	-32.092	65.781	9.449	QP
2			0.154	6.315	-3.133	-49.466	55.781	9.449	AV
3			1.570	-1.257	-10.797	-57.257	56.000	9.539	QP
4			1.570	-3.402	-12.942	-49.402	46.000	9.539	AV
5			2.414	13.602	4.030	-42.398	56.000	9.572	QP
6			2.414	11.139	1.567	-34.861	46.000	9.572	AV
7			3.018	15.080	5.471	-40.920	56.000	9.610	QP
8			3.018	12.743	3.133	-33.257	46.000	9.610	AV
9			7.674	4.175	-5.642	-55.825	60.000	9.817	QP
10			7.674	0.731	-9.086	-49.269	50.000	9.817	AV
11			27.134	19.627	9.290	-40.373	60.000	10.337	QP
12			27.134	16.628	6.291	-33.372	50.000	10.337	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SIP-SR2	Time: 2020/12/28 - 17:27
Limit: FCC_Part15.207_CE_AC Power	Engineer: Kyrie Xie
Probe: SIP-SR2-ENV216_101684_Filter On	Polarity: Neutral
EUT: V3 Pro	Power: AC 120V/60Hz
Note: Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.162	32.535	23.106	-32.826	65.361	9.430	QP
2			0.162	5.727	-3.702	-49.633	55.361	9.430	AV
3			0.182	30.665	21.233	-33.729	64.394	9.433	QP
4			0.182	13.410	3.978	-40.984	54.394	9.433	AV
5			0.794	12.588	3.101	-43.412	56.000	9.487	QP
6			0.794	10.532	1.045	-35.468	46.000	9.487	AV
7			1.810	14.533	4.999	-41.467	56.000	9.534	QP
8			1.810	11.946	2.412	-34.054	46.000	9.534	AV
9			2.406	16.574	7.016	-39.426	56.000	9.558	QP
10		*	2.406	14.715	5.157	-31.285	46.000	9.558	AV
11			25.830	20.006	9.681	-39.994	60.000	10.325	QP
12			25.830	17.362	7.037	-32.638	50.000	10.325	AV

Note: Measure Level (dBμV) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

7. CONCLUSION

The data collected relate only the item(s) tested and show that this device is in compliance with Part 15C of the FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to "2012RSU050-UT" file.

Appendix B - EUT Photograph

Refer to "2012RSU050-UE" file.