

TEST REPORT

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1. Client • Name Sena Technologies Co., Ltd. • Address...... 19, Heolleung-ro 569-gil, Gangnam-gu, Seoul, Korea 2. Use of Report FCC & IC Approval 3. Sample Description • Product Name : **VIBE UNIVERSAL** Model Name : SP164 4. Date of Receipt.....: 2024-04-04 5. Date of Test:: 2024-04-24 ~ 2024-05-08 6. Test Method : FCC Part 15 Subpart C 15.247 RSS-247 Issue 2(2017-02), RSS-GEN Issue 5(2019-03) 7. Test Results Refer to the test results * The results shown in this test report are the results of testing the samples provided. * This test report is prepared according to the requirements of ISO / IEC 17025. Technical Manager Tested by Affirmation Jong-Myoung, Shir (Sign) Joonyoung, Jeon (Sign) May 27, 2024 EMC Labs Co., Ltd.

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 1 / 42

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<u>Contents</u>

1.	Applicant & Manufacturer & Test Laboratory Information	4
2.	Equipment under Test(EUT) Information	5
3.	Test Summary	6
4.	Used equipment on test······	7
5.	Antenna Requirement·····	7
6.	6 dB Bandwidth·····	9
7.	Maximum Peak Output Power	13
8.	Peak Power Spectral Density	16
9.	TX Radiated Spurious Emission and Conducted Spurious Emission	19
10.	Conducted Emission	36
	APPENDIX	

APPENDIX I	TEST SETUP	39
APPENDIX II	UNCERTAINTY	41

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 2 / 42

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<u>Version</u>

TEST REPORT NO.	DATE	DESCRIPTION	
KR0140-RF2405-003	May 27, 2024	Initial Issue	

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 3 / 42



1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant Information

Applicant	Sena Technologies Co., Ltd.		
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1.2. Manufacturer Information

Manufacturer Sena Technologies Co., Ltd.	
Manufacturer Address	19, Heolleung-ro 569-gil, Gangnam-gu, Seoul, Korea

1.3 Test Laboratory Information

Laboratory	EMC Labs Co., Ltd.
Laboratory Address	100, Jangjateo-ro, Hobeop-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
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FCC Designation No.	KR0140
FCC Registration No.	580000
IC Site Registration No.	28751



2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	VIBE UNIVERSAL
Model Name	SP164
FCC ID	S7A-SP164
IC	8154A-SP164
Power Supply	DC 3.7 V

2.2 Additional Information

Operating Frequency	2 410 MHz ~ 2 475 MHz
Number of channel	14
Modulation Type	OQPSK
Antenna Type	PCB Antenna
Antenna Gain	Max. Gain 0.46 dBi
Firmware Version	1.0
Hardware Version	1.0
Test software	CMD v10.0.19044.1889

2.3 Test Frequency

Test mode	Test Frequency (MHz)			
	Low Frequency	Middle Frequency	High Frequency	
MESH	2 410	2 445	2 475	

2.4 Used Test Software Setting Value

Test Mode	Setting Item
Test Mode	Power
MESH	12

2.5 Mode of operation during the test

- The EUT continuous transmission mode during the test with set at Low Channel, Middle Channel, and High Channel. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, YZ, XZ planes.

2.6 Modifications of EUT

- None



3. Test Summary

FCC Rule	IC Rule	Test Items	Test Condition	Result
15.203	_	Antenna Requirement		С
15.247(a)	RSS-247 (5.2)	6 dB Bandwidth		С
-	RSS GEN (6.7)	Occupied Bandwidth (99%)	Canduatad	С
15.247(b)	RSS-247 (5.4)	Maximum Peak Output Power	Conducted	С
15.247(e)	RSS-247 (5.2)	Peak Power Spectral Density		С
15.247(d)	RSS-247 (5.5)	Conducted Spurious Emission		С
15.247(d) 15.205 & 15.209	RSS-247 (5.5) RSS-GEN (8.9 & 8.10)	Radiated Spurious Emission	Radiated	С
15.207 RSS-GEN (8.8) Conducted Emissions		AC Line Conducted	С	
	15.247(a) - 15.247(b) 15.247(e) 15.247(d) 15.247(d) 15.205 & 15.209 15.207	15.247(a) RSS-247 (5.2) - RSS GEN (6.7) 15.247(b) RSS-247 (5.4) 15.247(c) RSS-247 (5.2) 15.247(d) RSS-247 (5.5) 15.247(d) RSS-247 (5.5) 15.205 & 15.205 & 15.209 RSS-247 (5.5) 15.207 RSS-GEN (8.8)	15.247(a)RSS-247 (5.2)6 dB Bandwidth-RSS GEN (6.7)Occupied Bandwidth (99%)15.247(b)RSS-247 (5.4)Maximum Peak Output Power15.247(e)RSS-247 (5.2)Peak Power Spectral Density15.247(d)RSS-247 (5.5)Conducted Spurious Emission15.247(d)RSS-247 (5.5)Radiated Spurious Emission15.205 & 15.209RSS-GEN (8.8)Conducted Emissions	15.247(a)RSS-247 (5.2)6 dB Bandwidth-RSS GEN (6.7)Occupied Bandwidth (99%)-RSS GEN (6.7)Occupied Bandwidth (99%)15.247(b)RSS-247 (5.4)Maximum Peak Output Power15.247(e)RSS-247 (5.2)Peak Power Spectral Density15.247(d)RSS-247 (5.5)Conducted Spurious Emission15.247(d)RSS-247 (5.5)Radiated Spurious Emission15.247(d)RSS-247 (5.5)Radiated Spurious Emission15.205 & 15.205 & 15.209RSS-GEN (8.8)Conducted Emissions15.207RSS-GEN (8.8)Conducted Emissions

The sample was tested according to the following specification: ANSI C63.10:2013.

Compliance was determined by specification limits of the applicable standard according to customer requirements.



4. Used equipment on test

Description	Manufacturer	Model Name	Serial Name	Next Cal.
TEMP & HUMID CHAMBER	JFM	JFMA-001	20200929-01	2024.12.07
CONTROLLER	AMWON TECHNOLOGY	TEMI2500	S7800VK191 0707	2024.12.07
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	MY45304057	2024.12.08
MXG ANALOG SIGNAL GENERATOR	AGILENT	N5183A	MY50141890	2024.12.08
SYSTEM DC POWER SUPPLY	AGILENT	6674A	MY53000118	2024.12.11
VECTOR SIGNAL GENERATOR	ROHDE & SCHWARZ	SMBV100A	257524	2024.12.08
BLUETOOTH TESTER	TESCOM	TC-3000A	3000A480088	2024.12.08
DIRECTIONAL COUPLER	AGILENT	773D	2839A01855	2024.12.08
ATTENUATOR	AGILENT	8493C	73193	2024.12.08
TERMINATIOM	HEWLETT PACKARD	909D	07492	2024.12.08
POWER DIVIDER	HEWLETT PACKARD	11636A	06916	2024.12.08
SLIDE-AC	DAEKWANG TECH	SV-1023	NONE	2024.11.10
DIGITAL MULTIMETER	HUMANTECHSTORE	15B+	50561541WS	2024.12.08
ATTENUATOR	ACE RF COMM	ATT SMA 20W 20dB 8GHz	A-0820.SM20.2	2025.04.04
DC POWER SUPPLY	AGILENT	E3634A	MY40012120	2025.02.22
USB Peak Power Sensor	Anritsu	MA24408A	12321	2024.11.09
High Pass Filter	WT Microwave INC.	WT-A3314-HS	WT22111804-1	2024.12.08
High Pass Filter	WT Microwave INC.	WT-A1935-HS	WT22111804-2	2024.12.08
SPECTRUM ANALYZER	ROHDE & SCHWARZ	FSU26	200444	2025.02.22
ACTIVE LOOP ANTENNA	TESEQ	HLA 6121	55685	2024.12.22
Biconilog ANT	Schwarzbeck	VULB 9160	3260	2025.01.09
Biconilog ANT	Schwarzbeck	VULB9168	902	2024.11.30
Horn ANT	Schwarzbeck	BBHA9120D	974	2024.11.30
Horn ANT	Schwarzbeck	BBHA9120D	1497	2025.01.04
Amplifier	TESTEK	TK-PA18H	200104-L	2025.03.14
Horn ANT	Schwarzbeck	BBHA9170	01188	2025.03.19
Horn ANT	Schwarzbeck	BBHA9170	01189	2025.03.19
AMPLIFIER	TESTEK	TK-PA1840H	220105-L	2025.03.14
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW44	101952	2025.03.14
Test Receiver	ROHDE & SCHWARZ	ESR7	101616	2024.06.27
LISN	ROHDE & SCHWARZ	ENV216	100409	2025.01.04
PULSE LIMITER	lignex1	EPL-30	NONE	2025.01.04

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 7 / 42



5. Antenna Requirement

Accoding to §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 replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Accoding to §15.247(b)(4) e conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.1 Result

Complies

(The transmitter has a PCB Antenna. The directional peak gain of the antenna is 0.46 dBi.)



6. 6 dB Bandwidth

6.1 Test Setup

Refer to the APPENDIX I.

6.2 Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

6.3 Test Procedure

The bandwidth at 6 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the EUT's antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = Max Hold.
- 5. Sweep = Auto
- 6. Allow the trace to stabilize.
- 7. Option 1 Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
 - Option 2 The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW ≥ 3 x RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

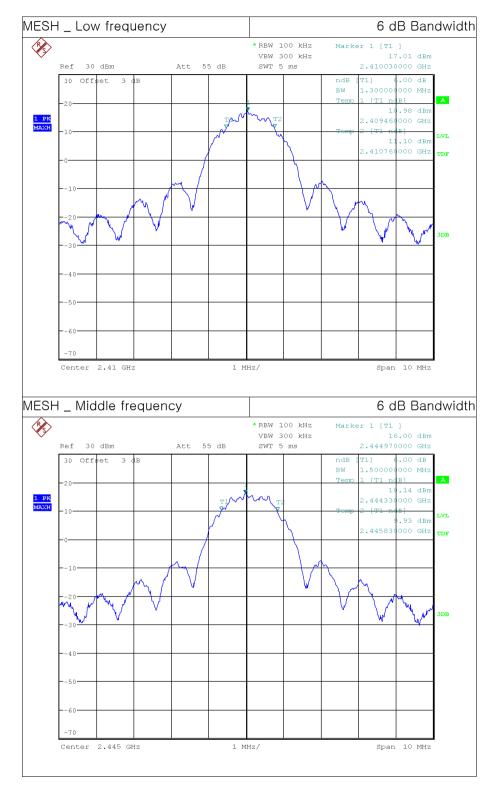
6.4 Test Result

Test Mode	Test Frequency	6 dB Bandwidth (MHz)	Occupied Bandwidth (MHz)
	Low	1.300	2.340
MESH	Middle	1.500	2.350
	High	1.300	2.400

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 9 / 42

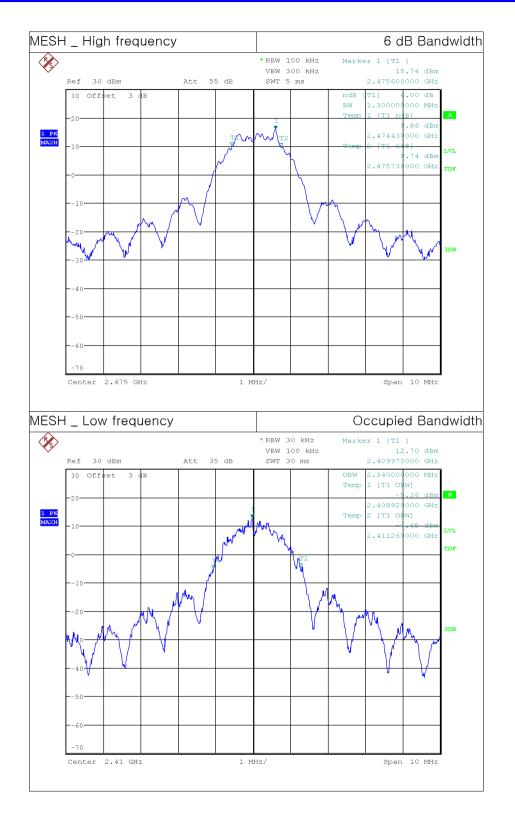


6.5 Test Plot



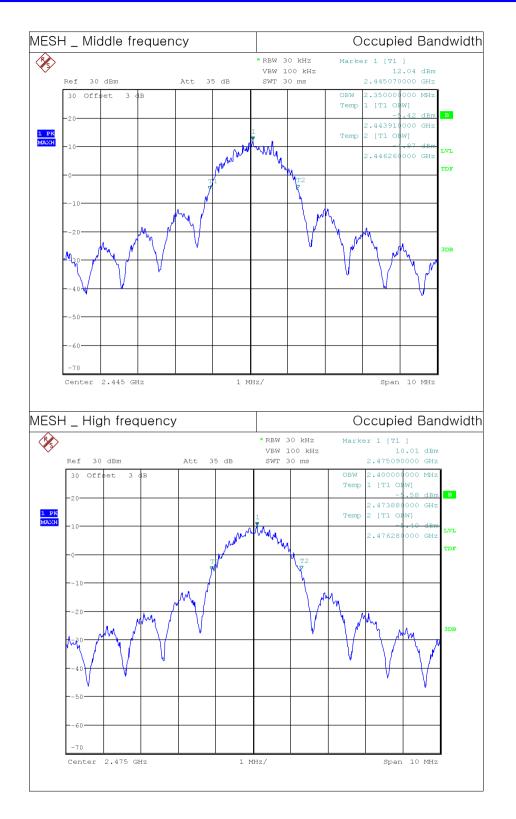
EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 10 / 42





EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 11 / 42





EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 12 / 42



7. Maximum Peak Output Power

7.1 Test Setup

Refer to the APPENDIX I.

7.2 Limit

The maximum permissible conducted output power is 1 Watt.

7.3 Test Procedure

A transmitter antenna terminal of EUT is connected to the input of a spectrum analyzer. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies.

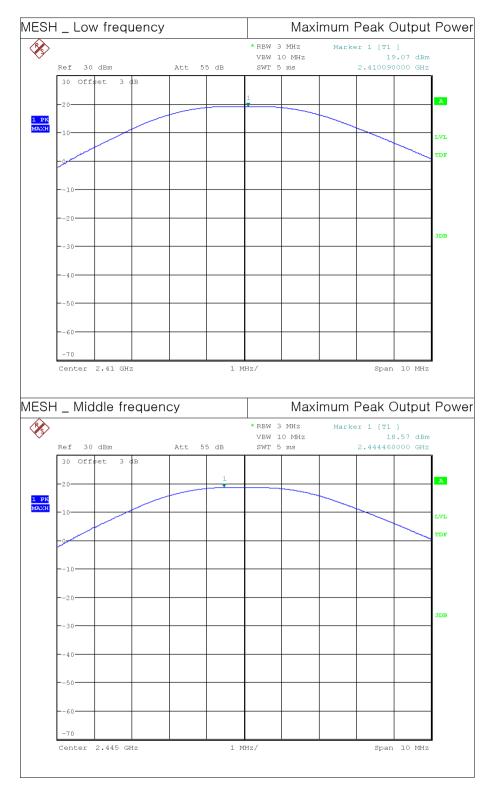
- 1. Set the RBW \geq DTS bandwidth
- 2. Set VBW \geq 3 x RBW
- 3. Set span \geq 3 x RBW.
- 4. Sweep time = auto couple
- 5. Detector = peak
- 6. Trace mode = max hold
- 7. Allow trace to fully stabilize
- 8. Use peak search function to determine the peak amplitude level.

7.4 Test Result

Toot Modo	Test Frequency	Peak Out	out Power
Test Mode	Test Frequency	dBm	mW
	Low	19.07	80.72
MESH	Middle	18.57	71.94
	High	17.42	55.21

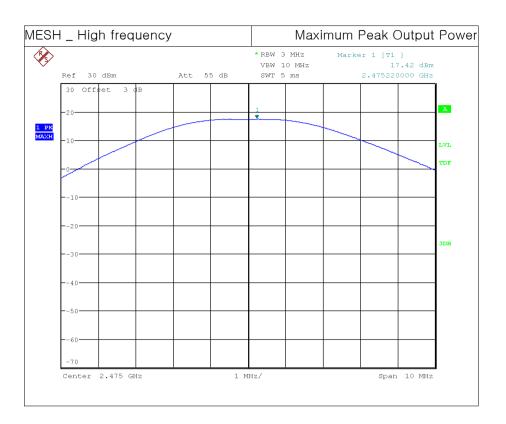


7.5 Test Plot



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 14 / 42







8. Peak Power Spectral Density

8.1 Test Setup

Refer to the APPENDIX I.

8.2 Limit

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

8.3 Test Procedure

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

(ANSI C63.10-2013 _ Section 11.10.2 - Method PKPSD)

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS bandwidth.
- 3. Set the RBW : 3 kHz \leq RBW \leq 100 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = Peak.
- 6. Sweep time = Auto
- 7. Trace mode = Max Hold.

- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level within the RBW.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

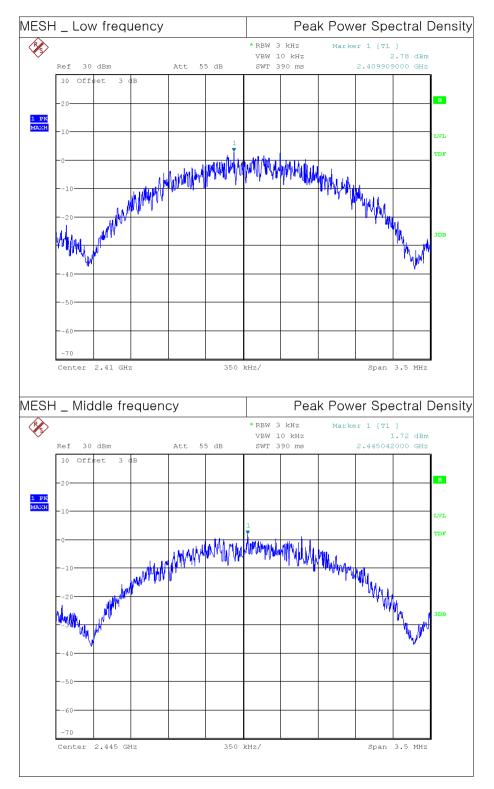
8.4	Test	Result	

Test Mode	Test Frequency	Peak Power Spectral Density (dBm)
	Low	2.78
MESH	Middle	1.72
	High	0.54

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 16 / 42

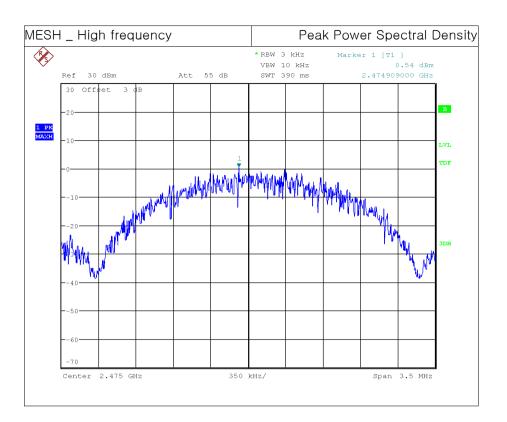


8.5 Test Plot



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 17 / 42





EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 18 / 42



9. TX Radiated Spurious Emission and Conducted Spurious Emission

9.1 Test Setup

Refer to the APPENDIX I.

9.2 Limit

According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in section §15.209(a) is not required. In addition, radiated emission which in the restricted band, as define in section §15.205(a), must also comply the radiated emission limits specified in section §15.209(a) (see section §15.205(c))

According to § 15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional

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Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1705	24000/F (kHz)	30
1705 ~ 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

radiator shall not exceed the field strength levels specified in the following table

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54 - 72 MHz, 76 - 88 MHz, 174 - 216 MHz or 470 - 806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.



According to § 15.205(a) and (b), only spurious emissions are permitted in any of the frequency bands listed below:

001011		
MHz	MHz	GHz
16.42 ~ 16.423	399.90 ~ 410	4.5 ~ 5.15
16.69475 ~ 16.69525	608 ~ 614	5.35 ~ 5.46
16.80425 ~ 16.80475	960 ~ 1240	7.25 ~ 7.75
25.5 ~ 25.67	1300 ~ 1427	8.025 ~ 8.5
37.5 ~ 38.	1435 ~ 1626.5	9.0 ~ 9.2
25 73 ~ 74.6	1645.5 ~ 1646.5	9.3 ~ 9.5
74.8 ~ 75.2	1660 ~ 1710	10.6 ~ 12.7
108 ~ 121.94	1718.8 ~ 1722.2	13.25 ~ 13.4
149.9 ~ 150.05	2200 ~ 2300	14.47 ~ 14.5
156.52475 ~ 156.52525	2310 ~ 2390	15.35 ~ 16.2
156.7 ~ 156.9	2483.5 ~ 2500	17.7 ~ 21.4
162.0125 ~ 167.17	2690 ~ 2900	22.01 ~ 23.12
3345.8 ~ 3358	3260 ~ 3267	23.6 ~ 24.0
3600 ~ 4400	3332 ~ 3339	31.2 ~ 31.8
3345.8 ~ 3358	240 ~ 285	36.43 ~ 36.5
3600 ~ 4400	322 ~ 335.4	Above 38.6
	$\begin{array}{r} \mbox{MHz} \\ 16.42 \sim 16.423 \\ 16.69475 \sim 16.69525 \\ 16.80425 \sim 16.80475 \\ 25.5 \sim 25.67 \\ 37.5 \sim 38. \\ 25.73 \sim 74.6 \\ 74.8 \sim 75.2 \\ 108 \sim 121.94 \\ 149.9 \sim 150.05 \\ 156.52475 \sim 156.52525 \\ 156.7 \sim 156.9 \\ 162.0125 \sim 167.17 \\ 3345.8 \sim 3358 \\ 3600 \sim 4400 \\ 3345.8 \sim 3358 \\ \end{array}$	MHzMHz $16.42 \sim 16.423$ $399.90 \sim 410$ $16.69475 \sim 16.69525$ $608 \sim 614$ $16.80425 \sim 16.80475$ $960 \sim 1240$ $25.5 \sim 25.67$ $1300 \sim 1427$ $37.5 \sim 38.$ $1435 \sim 1626.5$ $25 73 \sim 74.6$ $1645.5 \sim 1646.5$ $74.8 \sim 75.2$ $1660 \sim 1710$ $108 \sim 121.94$ $1718.8 \sim 1722.2$ $149.9 \sim 150.05$ $2200 \sim 2300$ $156.52475 \sim 156.52525$ $2310 \sim 2390$ $156.7 \sim 156.9$ $2483.5 \sim 2500$ $162.0125 \sim 167.17$ $2690 \sim 3267$ $3600 \sim 4400$ $3332 \sim 3339$ $3345.8 \sim 3358$ $240 \sim 285$

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.



9.3 Test Procedure for Radiated Spurious Emission

- 1. The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 3.75 meter away from the interference-receiving antenna.
- 3. For measurements above 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.
- 4. The antenna is a Broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading. (The EUT was pre-tested with three axes (X, Y, Z) and the final test was performed at the worst case.)
- 6. Repeat above procedures until the measurements for all frequencies are complete.

Measurement Instrument Setting

- 1. Frequency Range: Below 1 GHz RBW = 100 or 120 kHz, VBW = 3 x RBW, Detector = Peak or Quasi Peak
- 2. Frequency Range: Above 1 GHz

```
Peak Measurement
RBW = 1 MHz, VBW = 3 MHz, Detector = Peak, Sweep time = Auto,
Trace mode = Max Hold until the trace stabilizes
```

Average Measurement RBW = 1 MHz, VBW = 3 MHz, Detector = RMS (Number of points ≥ 2 x Span / RBW), Trace Mode = Average (Averaging type = power(i.e. RMS)), Sweep Time = Auto, Sweep Count = at least 100 traces

A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 21 / 42



- 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is 10 log(1/x), where x is the duty cycle.
- 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is 20 log(1/x), where x is the duty cycle.
- 3) If a specific emission is demonstrated to be continuous (≥ 98 percent duty cycle) rather than tuming on and off with the transmit cycle, then no duty cycle correction is required for that emission.

9.4 Test Procedure for Conducted Spurious Emission

- 1. The transmitter output was connected to the spectrum analyzer.
- 2. The reference level of the fundamental frequency was measured with the spectrum analyzer using RBW = 100 kHz, VBW = 300 kHz.
- 3. The conducted spurious emission was tested each ranges were set as below. Frequency range: 30 MHz ~ 26.5 GHz RBW = 100 kHz, VBW = 300 kHz, Sweep Time = Auto, Detector = Peak, Trace = Max Hold

LIMIT LINE = 20 dB below of the reference level of above measurement procedure Step 2. (RBW = 100 kHz, VBW = 300 kHz)



9.5 Test Result

9 kHz \sim 25 GHz Data for MESH

• Low frequency

Fraguanay	Rea	ding			0.005	Lin	nits	Re	sult	Ma	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCCF (dB)	(dBu	V/m)	(dBu	V/m)	(d	B)
(MHz)	AV ,	/ Peak		(00)	(00)	AV /	Peak	AV /	Peak	AV /	Peak
2 389.32	N/A	37.64	Н	9.04	-34.23	54.0	74.0	12.5	46.7	41.5	27.3
4 821.17	N/A	71.22	Н	-1.14	-34.23	54.0	74.0	35.9	70.1	18.1	3.9
7 228.73	N/A	60.76	Н	8.47	-34.23	54.0	74.0	35.0	69.2	19.0	4.8
9 638.32	N/A	44.73	Н	10.75	-34.23	54.0	74.0	21.3	55.5	32.7	18.5

• Middle frequency

		,									
Fraguaday	Rea	ding		- -	0.005	Lin	nits	Re	sult	Mai	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCCF (dB)	(dBu	IV/m)	(dBu	V/m)	(d	B)
(MHz)	AV ,	/ Peak		(00)	(00)	AV /	Peak	AV /	Peak	AV /	Peak
4 891.12	N/A	68.28	Н	-1.14	-34.23	54.0	74.0	32.9	67.1	21.1	6.9
7 336.67	N/A	60.70	Н	8.63	-34.23	54.0	74.0	35.1	69.3	18.9	4.7
9 782.33	N/A	42.76	Н	11.24	-34.23	54.0	74.0	19.8	54.0	34.2	20.0

• High frequency

Fraguanav	Rea	ding		ŦĊ	0.005	Lin	nits	Re	sult	Mai	rgin
Frequency	(dBu	V/m)	Pol.	T.F (dB)	DCCF (dB)	(dBu	V/m)	(dBu	IV/m)	(d	B)
(MHz)	AV /	[/] Peak		(48)	(48)	AV /	Peak	AV /	Peak	AV /	Peak
2 483.51	N/A	52.41	Н	9.87	-34.23	54.0	74.0	28.1	62.3	25.9	11.7
4 951.16	N/A	67.41	Н	-0.94	-34.23	54.0	74.0	32.2	66.5	21.8	7.5
7 426.74	N/A	59.53	Н	8.76	-34.23	54.0	74.0	34.1	68.3	19.9	5.7
9 902.37	N/A	42.22	Н	11.32	-34.23	54.0	74.0	19.3	53.5	34.7	20.5

Note 1: The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found above listed frequencies.

Note 2: DCCF(Duty Cycle Correction Factor)

 $- T_{on} = 0.648 \text{ ms} / T_{off} = 39.41 \text{ ms}$

- DCCF = 20 x log(The Worst Case Dwell Time / 100 ms) dB = 20 x log(1.944 / 100) dB = -34.23 dB Note 3: Sample Calculation.

Margin = Limit - Result / Peak Result = Peak Reading + TF / Average Result = Peak Reading + TF + DCCF TF = Ant factor + Cable Loss + Filter Loss - Amp Gain + Distance Factor

Distance Factor = 20log(applied distance/required distance) = 20log(3.75m/3m) = 1.94



9.6 Test Plot for Radiated Spurious Emission MESH

• MESH _ Low frequency

NultiView Spect			um 3 🛛 🗶 Spectrum 4 🖉 🛛		∇
Att 0 c Input 1 A	IV ● R IB SWT 1.01 ms ● V IC PS On N	BW 3 MHz Mode Auto otch Off	Sweep	Frequency 2.3	3500000 GH
Frequency Sweep				M1[1]	
) dBµV					2.3893210 GH
I dBµV					
I dBµV					
) dBµV					
) dBµV					
, aph.					
) dBµV					+ +
1				h	un
) dBpV	mohellandryananytaska	un Muchander	anywee in the more thanks the	and a superior and the second and the second s	
) dBµV	hole and a local out of the second of the se				
) dBµV					
dBµV					
.31 GHz		1001 pts	8.0 MHz/		2.39 GH
				Spuriou	us – Pe
				Spuriou	us – Pe
				Spuriou	us – Pe
		Spectrum 2		Spuriou	us – Pe
RefLevel 78.00 dBµ Att 0 di input 1 A			Sweep	Spuriou Frequency 4.8	V
RefLevel 78.00 dBµ Att 0 di input 1 A				Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ Att 0 d Input 1 A Frequency Sweep			Sweep	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ Att 0 d nput 1 At Frequency Sweep			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ Att 0 d Input 1 At Frequency Sweep			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ Att O di Input 1 At Frequency Sweep) dBµV			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ htt 0 dBµ gat 1 Ai rrequency Sweep 0 dBµV 0 dBµV 0 dBµV			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Ref Level 78.00 dBµ htt 0 dBµ gat 1 Ai rrequency Sweep 0 dBµV 0 dBµV 0 dBµV			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet Level 78.00 dBj. tt 0 dBj.vl. input 1 Ai input 2 Ai input 3 Ai input 3 Ai input 4 Ai input 3 Ai input 3 Ai input 4 Ai input 3 Ai			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet f evel 78.00 dBj. tt 0 Bj. input 1 Al Frequency Sweep 0 dBj.v 0			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet f evel 78.00 dBj. tt 0 Bj. input 1 Al Frequency Sweep 0 dBj.v 0			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet Level 78.00 dBj.d tt 0.0 mput 1.4 Frequencysweep dBj.v dBj.v dBj.v dBj.v dBj.v dBj.v dBj.v dBj.v			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Frequency Sweep 0 dbµv			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Part Level 78.00.dbj:dbj:dbj:dbj:dbj:dbj:dbj:dbj:dbj:dbj:			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet [teed 78.00 dbj.) tt 0 dbj.v input 1 Ai Frequency Sweep 0 0 dbj.v 0			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
tet [teed 78.00 dbj.) tt 0 dbj.v input 1 Ai Frequency Sweep 0 0 dbj.v 0			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ
Part Level 78.00.dBy Att Object Att Disput Disput Disput			M1	Frequency 4.8	▼ 3200000 GH ● 1Pk Max 71.22 dBµ

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 24 / 42



						Spuriou	s – Pe
ultiView Spect		ctrum 2	X				V
af Level 78.00 dBµV t 0 dB ∺ put 1 AC 1	● RBW SWT 1.01 ms ● VBW PS Off Notch	1 MHz 3 MHz Mode Off	Auto Sweep		Fn	equency 7.2	
requency Sweep						M1[1]	 1Pk Max 60.76 dB 22873100 G
d8µV		M1					
νųat				 			
d8µV						m.	
18µV						- market	
dBµV							
dBµV							
IBµ∨							
3µV							
dBµV							
dвµ∨ 7.23 GHz		1001 pts		 .0 MHz/			Span 10.0 MF
						Spuriou	s – Pe
						Spuriou	s – Pe
f Level 78.00 dBiA/	= PBW 1	MH7					4
af Level 78.00 dBµV tt 0 dB : put 1 AC ∣		MH7	III uto Sweep			equency 9.64	400000 GH
af Level 78.00 dBµV tt 0 dB : put 1 AC 1 requency Sweep	= PBW 1	MH7				equency 9.6	400000 GH
af Level 78.00 dBµV tt 0 dB put 1 AC 1 requency Sweep dBµV	= PBW 1	MH7				equency 9.6	400000 GF • 1Pk Max 44.73 dB
ef Level 78.00 dBµV tt 0 dB : I AC 11 AC 11 requency Sweep dBµV	= PBW 1	MH7				equency 9.6	400000 GF • 1Pk Max 44.73 dB
ef Level 78.00 dBµV tt 0 dB : pput 1 AC 1 requency Sweep dBµV	= PBW 1	MH7				equency 9.6	400000 GF • 1Pk Max 44.73 dB
ef Level 78.00 dB;// tr 0 dB :: requency Sweep dB;// dB;// dB;// dB;//	= PBW 1	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
fLevel 78.00 dB// put 0 dB / 0 dB / requercy Sweep ////////////////////////////////////	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6	400000 GF • 1Pk Max 44.73 dB
ft Level 78.00 dB _µ /r 0 dB _µ t 0 dB ippit 1.8C ippit 1.8C dB _µ /v	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
f Level 78.00 48,0/ 0 d8 : 0 d8 : port 1 AC i requercy Sweep d8μV d8μV d8μV d8μV d8μV d8μV d8μV d8μV	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
f Level 78.00 dBµ/ 0 dB iput 0 dB iput 1 AC iput 1 AC iput 1 AC dBµ/ 0	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
of Level 78.00 dBill	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
ft Level 78.00 dBµ/ dB iput 0 dB iput 1.8C iput 1.8C dBµ/ dB dBµ/ dBµ/ dBµ/ dBµ/	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A				equency 9.6- M1[1] 9	400000 GF • 1Pk Max 44.73 dB
ef Lavel 78.00 dB ₀ // 0 dB : ppt 1 AC : requency Sweep dB ₀ // dB ₀ // dB ₀ // dB ₀ // dB ₀ // dB ₀ // dB ₀ //	PEW 12 EW 949W 3 PS Off Notch	MHz Mode A	March March	.0 MHz/		equency 9.64	400000 GF • 1Pk Max 44.73 dB

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 25 / 42



• MESH _ Middle frequency

ultiView	Spectrum	x Sp	ectrum 2	X				V
ef Level 79.0 tt nput	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW Off Note	1 MHz 3 MHz Mode	Auto Sweep		Fre	equency 4.8	900000 GH
requency S	weep						M1[1]	 1Pk Max 68.28 dBμ
dBµV−−−−					M1 V		4	89111900 GF
dBµV								
						- Andrew		
івµ∨—		- Marine Mar					Madmen	mennen
iΒµV—								- market
dBµV ———								
iBμV								
івµ∨———								
3µV								
dBµV								
dBµV 4.89 GHz			1001 pts		 L.0 MHz/			Span 10.0 MH
							Spuriou	s – Pe
							Spuriou	s – Pe
f Level 79.0			ectrum 2	X				
ef Level 79.0 t put	0 dBµV 0 dB SWT 1 AC PS		1 MHz 3 MHz Mode	X Auto Sweep			Spuriou equency 7.32	₹ 350000 GH
af Level 79.0 t put requency S	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode					₹ 350000 GH ● 1Pk Max 60.70 dβμ
af Level 79.0 t put requency S	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
f Level 79.0 t put requency S /βμν	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode		MI		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
ef Level 79.0 It put requency S IBµV IBµV	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dBµ
ef Level 79.0 t put requency S d8μν d8μν d8μν	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode		ML V		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
ef Level 79.0 t put requency S d8μν d8μν d8μν	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode		NI V		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
sf Level 79.0 t put requency S IвµV IвµV IвµV IвµV	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode		911 ¥		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
ef Level 79.0 t t put requency S I8µV I8µV I8µV I8µV	0 dBµV 0 dB SWT 1 AC PS	● RBW 1.01 ms ● VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
f Level 79.0 f Level 79.0 put yequency S /8μν //////////////////////////////////	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode		MI		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
f Level 79.0 f Level 79.0 put yequency S /8μν //////////////////////////////////	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
f Level 79.0 f Level 79.0 put requency S /вµ/ /вµ/ /вµ/ /вµ/ /вµ/ /вµ/ /вµ/ /вµ	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode		NI V		equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
af Level 79.0 f Level 79.0 put put dbμv bμv bμv	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ
altiView of Level 79.0 for the second se	0 dBµV 0 dB SWT 1 AC PS	RBW 1.01 ms VBW	1 MHz 3 MHz Mode				equency 7.3	₹ 350000 GH ● 1Pk Max 60.70 dβμ

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 26 / 42





				Spurious – Pe
IltiView 🗄 Spectrum	Spectrum 2	x		
f Level 77.00 dBuV	● RBW 1 MHz	Auto Sweep		requency 9.7800000 GH
put 1 AC PS requency Sweep	Off Notch Off	Auto Sweep	F	• 1Pk Max
				M1[1] 42.76 dBµ 9.78232800 GH
iBμV				5.78232800 GH
вµч				
Βμν				
IBµV			MI	
	and a start of the	muneman Mansher Miles	b-unand the	man marken in
18pt and allow and				
Bµ∨				
Івµ∨				
μν				
dBµV				
dBμV 9.78 GHz	1001 pt		1.0 MHz/	Span 10.0 MH
2.70 GHZ	1001 pt	3	1.0 MinZ/	apan 10.0 Min.

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 27 / 42



• MESH _ High frequency

IltiView 🕀	Spectrum	Spectru		Spectrum 3	X Spectru	im 4 🛛 🕱			
ef Level 97 .tt nput	0 dB SWT 1 AC PS	= RBV 1.01 ms = VBV On Not	/ 1 MHz / 3 MHz Mod ch Off	e Auto Sweep			Fn	equency 2.49	917500 GH
requency S	Sweep						N	1[1]	 1Pk Max 52.41 dBμ
iBµV								:	2.4835080 GF
IBµV									
вµ∨									
pha									
Вµ∨									
BµV									
IBµV		mentand	- man	menne					
юµ+						mannah	manna	Muneroway	man
IBµV									
IBµV									
BµV									
ын» —									
^{8µ∨}			1001 pt		<u> </u>	65 MHz/			2.5 GH
								Spuriou	s – Pe
								Spuriou	s – Pe
f Level 75.			ectrum 2 1 MHz Mode	Z.					V
f Level 75. t put	00 dBµV 0 dB SWT 1 AC PS	Sp RBW 1.01 ms = VBW Off Note		Z Auto Sweep				equency 4.9	500000 GH ● 1Pk Max
of Level 75. t put requency \$	00 dBµV 0 dB SWT 1 AC PS			\sim					₹ 500000 GH
f Level 75. t put requency \$ IBµV	00 dBµV 0 dB SWT 1 AC PS			\sim		512 ¥		equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put requency s IBµV 	00 dBµV 0 dB SWT 1 AC PS			\sim		413 ¥		equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put requency s IBµV 	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put еquency \$ iвµv	00 dBµV 0 dB SWT 1 AC PS			\sim		414 Y		equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put requency 5 iвµv iвµv iвµv 	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put equency S ввµv ввµv ввµv ввµv ввµv ввµv ввµv	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put «quency S вµV 	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
if Level 75. t put «quency S вµV 	00 dBµV 0 dB SWT 1 AC PS			\sim		¥ ¥		equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
f Level 75. t t t t t t t t t t t t t t t t t t t	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
f Level 75. tut requency S ввич —	00 dBµV 0 dB SWT 1 AC PS			\sim		×		equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp
зі tiView sf Level 75. t put "equency 5" звµv звµv	00 dBµV 0 dB SWT 1 AC PS			\sim				equency 4.9	▼ 500000 GH ● 1Pk Max 67.34 dBp

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 28 / 42





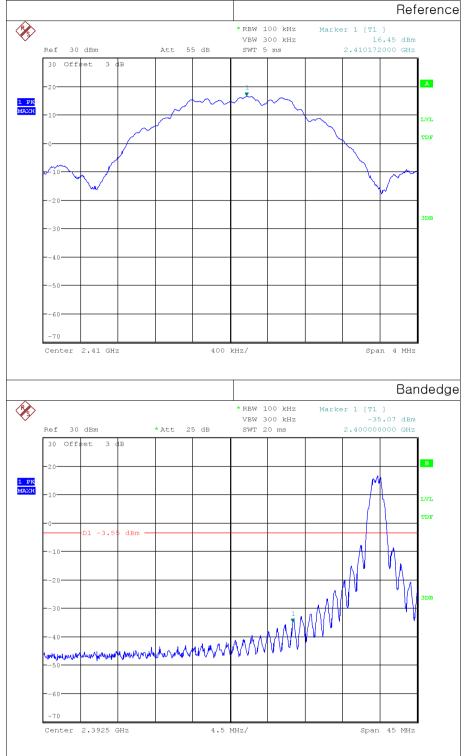
					ç	Spurious	s – Pe
MultiView 🗉 Spectru		ectrum 2	X				▽
Ref Level 75.00 dBµV Att 0 dB SV Input 1 AC PS	● RBW WT 1.01 ms ● VBW Off Note	1 MHz 3 MHz Mode h Off	Auto Sweep		Fn	equency 7.42	50000 GH
Frequency Sweep						M1[1]	1Pk Max 59.53 dBµ
0 dBµV				M1		7.4	2673800 GH
D dBµV				 			
) dBµV						an .	
I dBµV	and the second se					- march	Martin and Martin And
- And							
dBµV							
dBµV							
dBµV							
IBµV							
D dBµV							
0 dBµV							
7.425 GHz		1001 pt	5	.0 MHz/		5	an 10.0 MH
						Spurious	<u> </u>
					(Spurious	s – Pe
						Spurious	s – Pe
ultiView 🗊 Spectru	um 🕱 Sp	ectrum 2	X			Spurious	s – Pe
ef Level 75.00 dBµV	● RBW VT 1.2 ms ● VBW	3 MHz Mode	I Auto Sweep				V
tef Level 75.00 dBµV htt 0 dB SV nput 1 AC PS	● RBW VT 1.2 ms ● VBW	1 MHz 3 MHz Mode				equency 9.900	• 1Pk Max
tef Level 75.00 dBµV tt 0 dB SY nput 1 AC PS requency Sweep	● RBW VT 1.2 ms ● VBW	1 MHz 3 MHz Mode					© 000000 GH • 1Pk Max 42.22 dB
ef Level 75.00 dBµV tt 0 dB SV iput 1AC PS requency Sweep dBµV	● RBW VT 1.2 ms ● VBW	1 MHz 3 MHz Mode				equency 9.900	© 000000 GH • 1Pk Max 42.22 dB
ef Level 75.00 dBµ/ tt 0 dB SV nput 1 AC PS requency Sweep dBµ/ dBµ/	● RBW VT 1.2 ms ● VBW	1 MHz 3 MHz Mode				equency 9.900	© 000000 GH • 1Pk Max 42.22 dBj
ef Level 75.00 dBµ/ tt 0 dB SV nput 1 AC PS requency Sweep dBµ/ dBµ/	● RBW VT 1.2 ms ● VBW	1 MHz 3 MHz Mode			Fr	equency 9.900	© 000000 GH • 1Pk Max 42.22 dB
ef Level 75.00 dBµ/ put 0.48 sv put 1.4C PS rèquency sweep dBµ/ dBµ/ dBµ/ dBµ/	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode				equency 9.90	v 000000 GF 1Pk Max 42,22 dB 0236800 G
ef Level 75.00 dBµ/ tt 0 dB SV requency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.900	© 000000 GH • 1Pk Max 42.22 dB
ef Level 75.00 dBµ/ прит 0.d6 sv прит 0.d6 sv prequency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	00000 GH 1Pk Max 42,22 dbs 0236800 Gi
ef Level 75.00 dB ₁ // tt 0 dB 5// 0 dB 5// 1 AC. PS Tequency Sweep dB ₁ // dB ₁ //	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	▼ 000000 GH ● 1Pk Max 42.22 dBp 0236800 GP
ef Level 75.00 dB ₁ // tt 0 dB 5// 0 dB 5// 1 AC. PS Tequency Sweep dB ₁ // dB ₁ //	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	▼ 000000 GH ● 1Pk Max 42.22 dBp 0236800 GP
lef favel 75.00 dBj// tt 0 dB 5% pput 1 dC PS requency Sweep dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/ dBµ/	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	▼ 000000 GH ● 1Pk Max 42.22 dBp 0236800 GP
left evel 75.00 dBj/V 0 dB SW nput 1 AC requency SW22p dBµV	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	00000 GH 1Pk Max 42,22 dbs 0236800 Gi
tef Level 75.00 dB ₁ // th O dB SY mput 0 dB SY mput 0 dB SY mput 0 dB SY mput 0 dB ₁ // dB ₁ /	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep		Fr	equency 9.90	▼ 000000 GH ● 1Pk Max 42.22 dBp 0236800 GP
tet Level 75.00 dB/V vite 0 dB SV input 1 AC. PS rrequency Sweep	RBW PR PR PV Off Notch	1 MHz 3 MHz Mode	Auto Sweep	.0 MHz/	Fr	equency 9.900	▼ 00000 GH ● 1Pk Max 42.22 dBp 0236800 GP

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 29 / 42



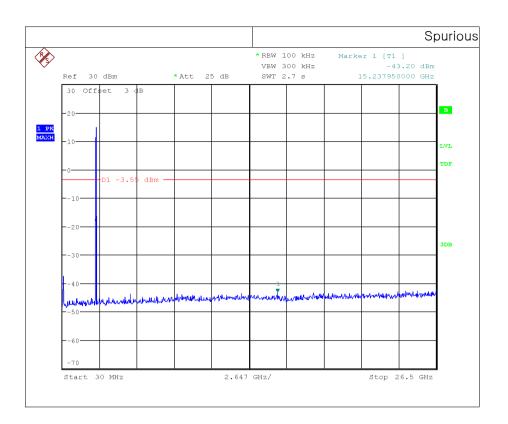
9.7 Test Plot for Conducted Spurious Emission

• MESH _ Low frequency



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 30 / 42

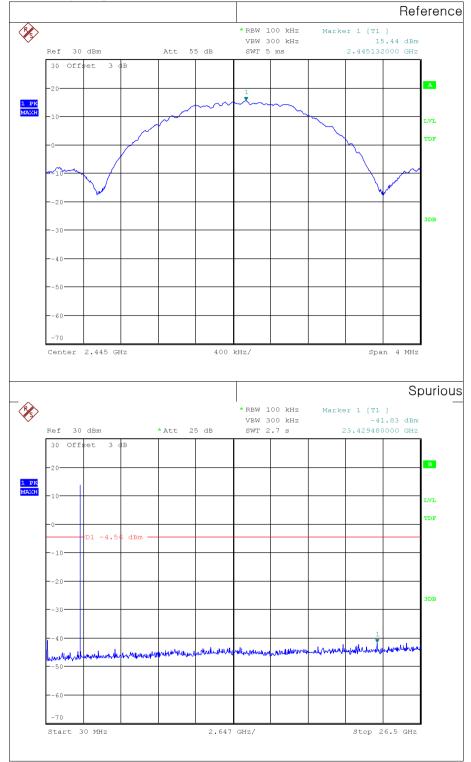




EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 31 / 42



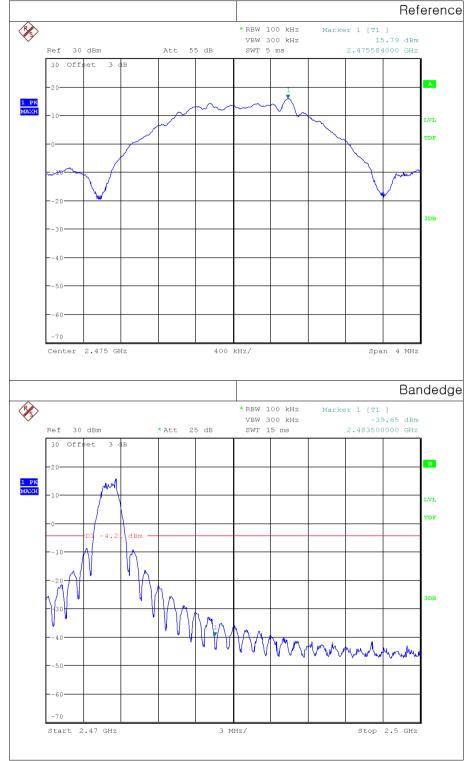
• MESH _ Middle frequency



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 32 / 42

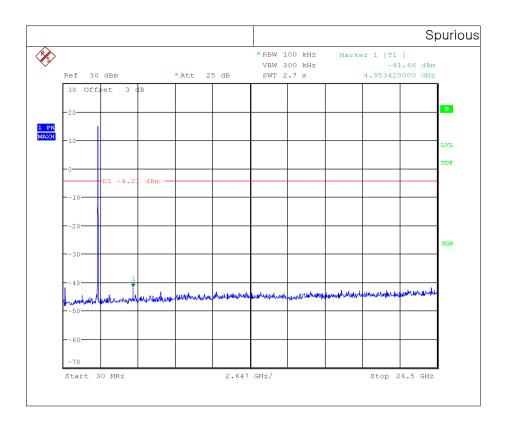


• MESH _ High frequency



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 33 / 42

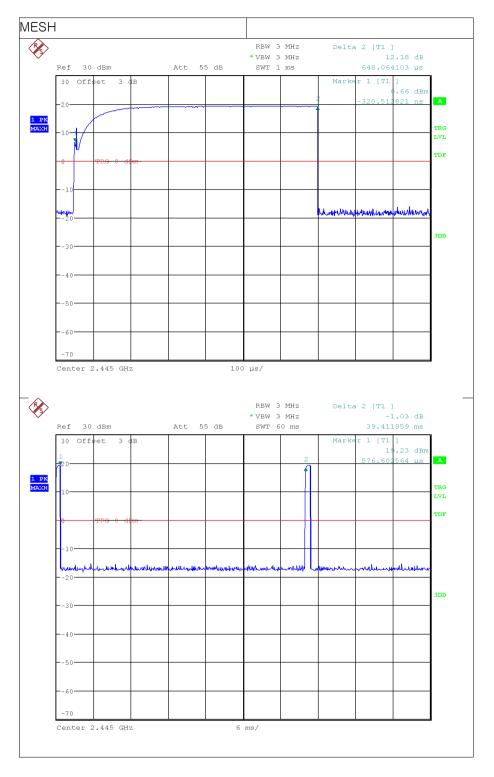




EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 34 / 42



9.8 Test Plot for Duty Cycle



EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 35 / 42



10. Conducted Emission

10.1 Test Setup

See test photographs for the actual connections between EUT and support equipment.

10.2 Limit

According to §15.207(a) for an intentional radiator that 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 the limits in the following table, as measured using a 50 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower applies at the boundary between the frequency ranges.

	Conducted Limit (dBuV)				
Frequency Range (MHz)	Quasi-Peak	Average			
0.15 ~ 0.5	66 to 56 *	56 to 46 *			
0.5 ~ 5	56	46			
5 ~ 30	60	50			

* Decreases with the logarithm of the frequency

10.3 Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10.

- The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
- 2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
- 3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
- 4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

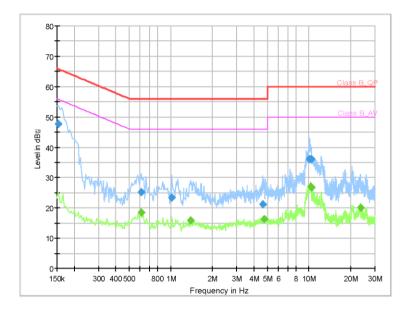
EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 36 / 42



10.4 Test Result

• AC Line Conducted Emission (Graph)

SP164_MESH_L1



Conducted Emission

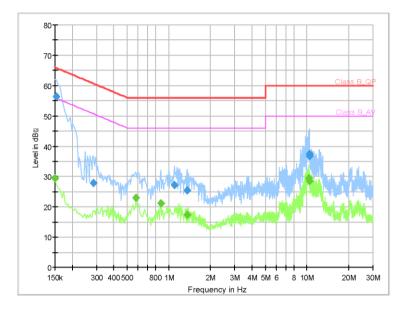
Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.154	47.67	(dbµv) 	65.78	18.12	(KH2)	L1	20.7
0.610	47.07	18.50	46.00	27.50	9	11	20.7
0.610	25.13		56.00	30.87	9	L1	20.7
1.020	23.40		56.00	32.60	9	L1	20.0
1.390		15.79	46.00	30.21	9	L1	19.9
4.660	21.12		56.00	34.88	9	L1	19.9
4.720		16.33	46.00	29.67	9	L1	19.9
10.130	36.01		60.00	23.99	9	L1	20.0
10.350		26.90	50.00	23.10	9	L1	20.0
10.400	36.10		60.00	23.90	9	L1	20.0
10.410		26.63	50.00	23.37	9	L1	20.0
23.690		20.00	50.00	30.00	9	L1	20.1

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 37 / 42



SP164_MESH_N



Conducted Emission

Final_Result

Frequency	QuasiPeak	CAverage	Limit	Margin	Bandwidth (kHz)	Line	Corr.
(MHz)	(dBµV)	(dBµV)	(dBµV)	(dB)	(KHZ)		(dB)
0.150		29.31	56.00	26.69	9	N	20.6
0.154	56.38		65.78	9.40	9	N	20.7
0.286	27.81		60.64	32.83	9	N	20.6
0.580		22.88	46.00	23.12	9	N	20.7
0.880		21.20	46.00	24.80	9	N	19.9
1.100	27.28		56.00	28.72	9	N	20.0
1.360	25.48		56.00	30.52	9	N	19.9
1.360		17.40	46.00	28.61	9	N	19.9
10.310		29.45	50.00	20.55	9	N	20.0
10.370	36.68		60.00	23.32	9	N	20.0
10.400		28.56	50.00	21.44	9	N	20.0
10.400	37.53		60.00	22.47	9	N	20.0

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 38 / 42



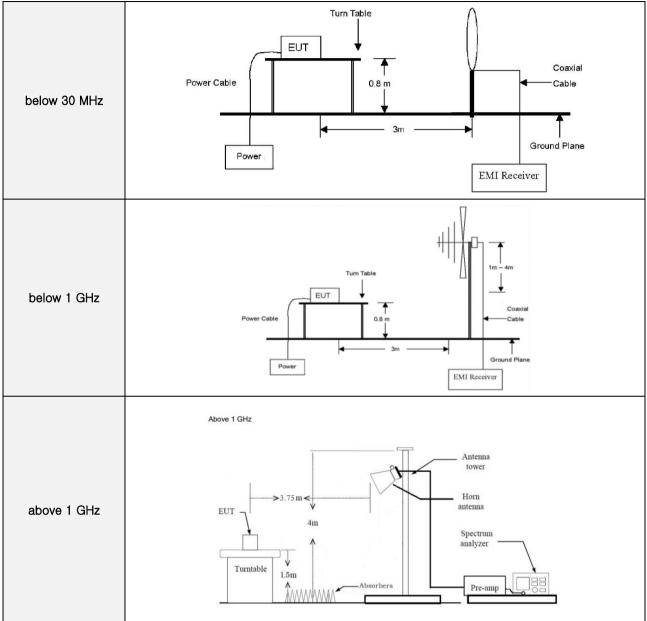
APPENDIX I

TEST SETUP

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 39 / 42



Radiated Measurement



• Conducted Measurement

Conducted	EUT Attenuator Spectrum Analyzer

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 40 / 42



APPENDIX II

UNCERTAINTY

EMCLabs-QPF-26-25 [Revision_01 / 2024. 04. 15] Page 41 / 42



Measurement Item	Expanded Uncertainty U = <i>k</i> Uc (<i>k</i> =2)
Conducted RF power	0.34 dB
Conducted Spurious Emissions	0.34 dB
Radiated Spurious Emissions	6.34 dB
Conducted Emissions	1.74 dB