FCC - TEST REPORT

Report Number	: **68.950.24.0509.01**	Date of Issue:	**2024-07-26**
Model/HVIN	: **EAV-RC50**		
Product Type	: Remote Controller		
Applicant	: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO., LTD		
Address	: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP Suzhou, Jiangsu China 215000		
Manufacturer	: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO., LTD		
Address	: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP Suzhou, Jiangsu China 215000		
Factory	: SUZHOU EAVISION ROBOTIC TECHNOLOGIES CO., LTD		
Address	: Unit 1-A, No.3 Workshop, 28 Xiasheng Road, SIP Suzhou, Jiangsu China 215000		
Test Result	: ■ **Positive** ☐ **Negative**		
Total pages including Appendices	: **53**		

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1 Table of Contents

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2 Details about the Test Laboratory

Details about the Test Laboratory
Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Building 12 & 13, Zhiheng Wisdomland Business Park, Guankou Erlu, Nantou, Nanshan District, Shenzhen, Guangdong, China
Telephone:	+86 755 8828 6998
Fax:	+86 755 8828 5299
FCC Registration No.:	514049
FCC Designation Number:	CN5009

3 Description of the Equipment Under Test

Product:	Remote Controller
Model no.:	EAV-RC50
Brand name:	EAVISION
FCC ID:	2AXLB-EAV-RC50
Rating:	Input: DC20V⎓ 3.25A Battery Capacity:7.6V, 13100mAh
RF Transmission Frequency:	2402MHz-2480MHz
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	FPC antenna
Antenna Gain	-3.3dBi
Description of the EUT:	EUT is a Remote Controller which support 2.4G (BR, Slot), Bluetooth (BR+EDR+BLE), Wi-Fi operated at 2.4GHz and 5GHz, GSM, WCDMA and LTE. Only Bluetooth Low Energy included in this report.

NOTE 1: The above EUT's information is declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2023 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10-2020.

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5 Summary of Test Results

Test Condition		Test Result	Test Site
		Pass	
§15.207	Conducted emission AC power port	Pass	Site 1
§15.247 (b) (3)	Conducted peak output power	Pass	Site 1
§15.247(a)(2)	6dB bandwidth and 99% Occupied Bandwidth	Pass	Site 1
§15.247(e)	Power spectral density	Pass	Site 1
§15.247(d)	Spurious RF conducted emissions	Pass	Site 1
§15.247(d)	Band edge	Pass	Site 1
§15.247(d) & §15.209 & §15.205	Spurious radiated emissions for transmitter	Pass	Site 1
§15.203	Antenna requirement	See Note 2	--

Note 1: N/A=Not Applicable.
Note 2: The EUT uses a FPC antenna, which gain is -3.3dBi. In accordance to §15.203, it is considered sufficiently to comply with the provisions of this section.
Note 3: T :Temperature, H: Humidity.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AXLB-EAV-RC50, complies with Section 15.207, 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C rules.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date:	2024-03-26
Testing Start Date:	2024-03-26
Testing End Date:	2024-04-02

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:	Prepared by:	Tested by:
John Zhi	Hayden Hu	Carry Cai
EMC Project Manager	Project Engineer	Test Engineer

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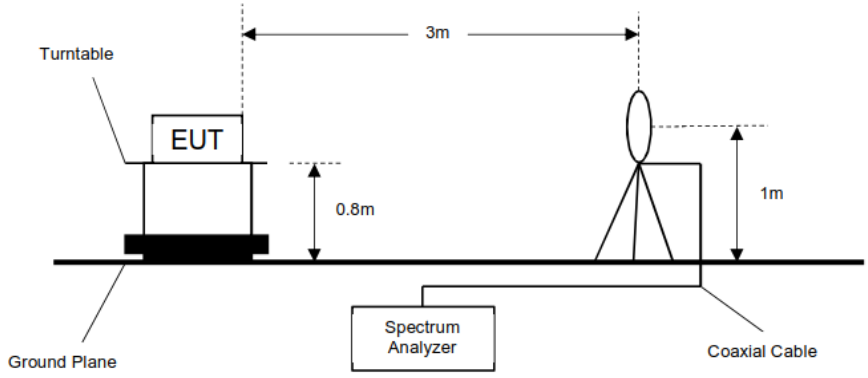
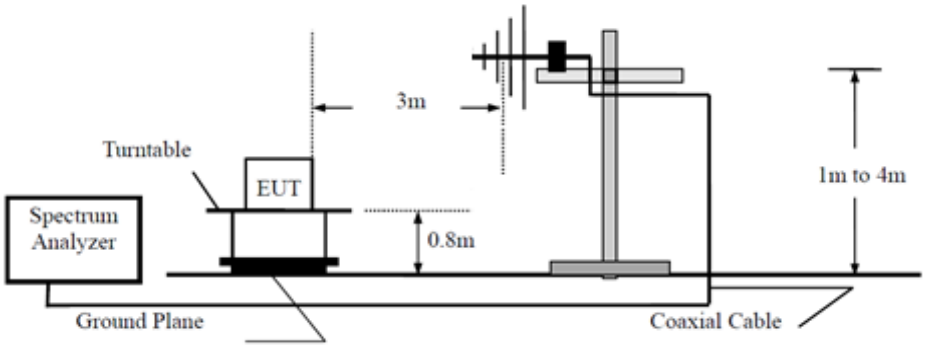
7 Test Setups

7.1 Radiated test setups

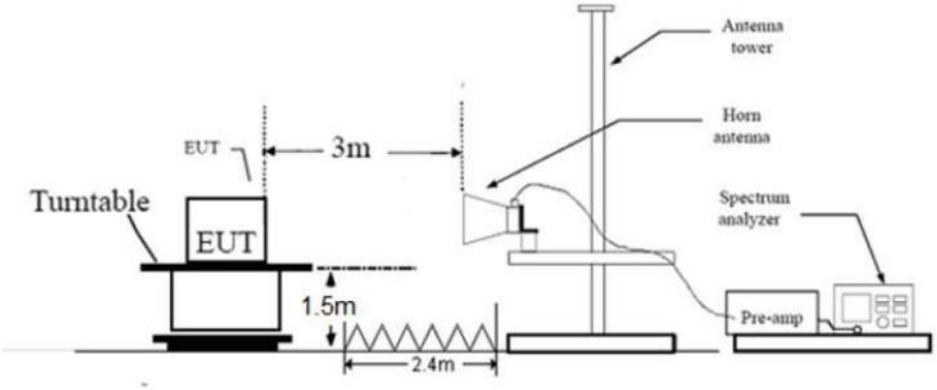
9KHz - 30MHz



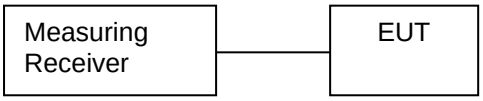
30MHz - 1GHz



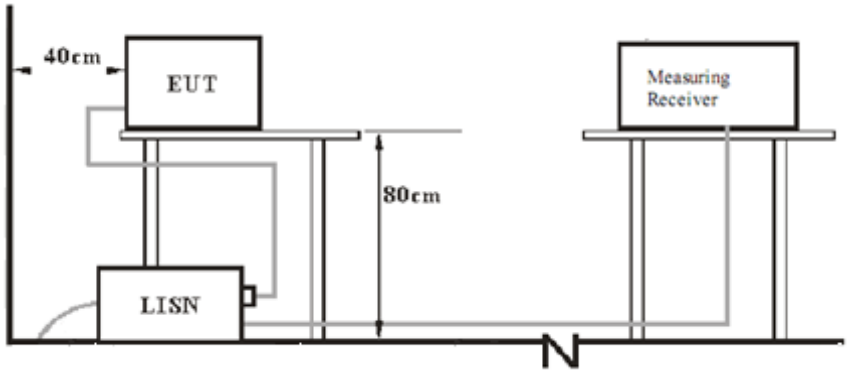
Above 1GHz



7.2 Conducted RF test setups



7.3 AC Power Line Conducted Emission test setups



8 Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Notebook	LENOVO	X220	---
Serial port board	---	---	---

Cables Used During Test:

Cable	Length	Shielded/unshielded	With / without ferrite
---	---	---	---

Test software information:

Test Software Version	EspRFTestTool_v2.8_Manual	
Modulation	Setting TX Power	Packet Type
GFSK	9	RBS9

The system was configured to non-hopping mode, testing channel 0, 19, 39.

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

Limit

Frequency MHz	QP Limit dBµV	AV Limit dBµV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

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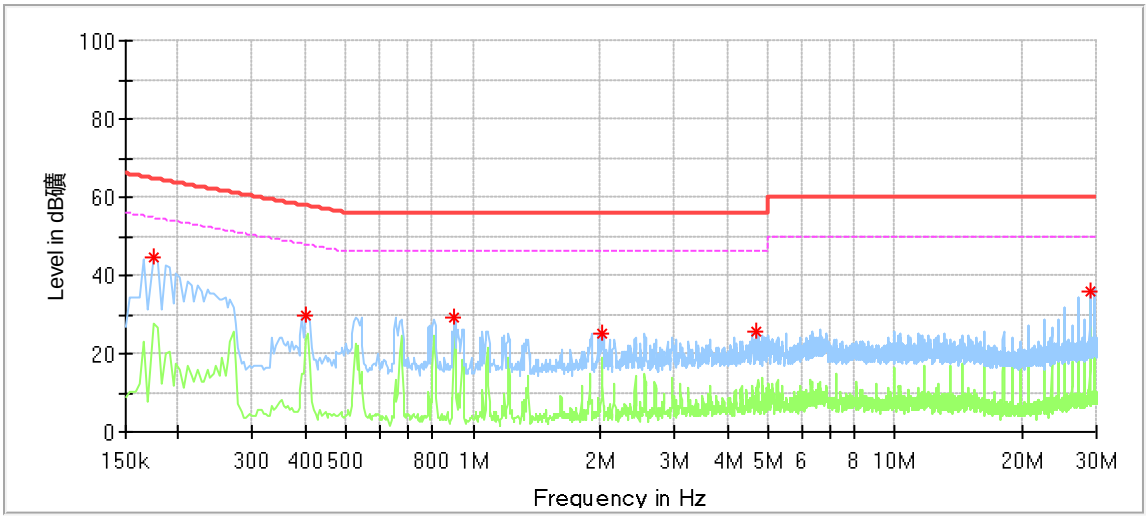
Conducted Emission

Product Type : Remote Controller
M/N : EAV-RC50
Operating Condition : Transmitting
Test Specification : Line
Comment : AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.174000	44.46	---	64.77	20.31	L1	9.54
0.402000	29.87	---	57.81	27.94	L1	9.58
0.902000	29.44	---	56.00	26.56	L1	9.60
2.026000	25.08	---	56.00	30.92	L1	9.62
4.698000	25.62	---	56.00	30.38	L1	9.73
28.886000	35.86	---	60.00	24.14	L1	10.03

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Remark:
*Level=Reading Level + Correction Factor
**Correction Factor=Cable Loss + LISN Factor
(The Reading Level is recorded by software which is not shown in the sheet)

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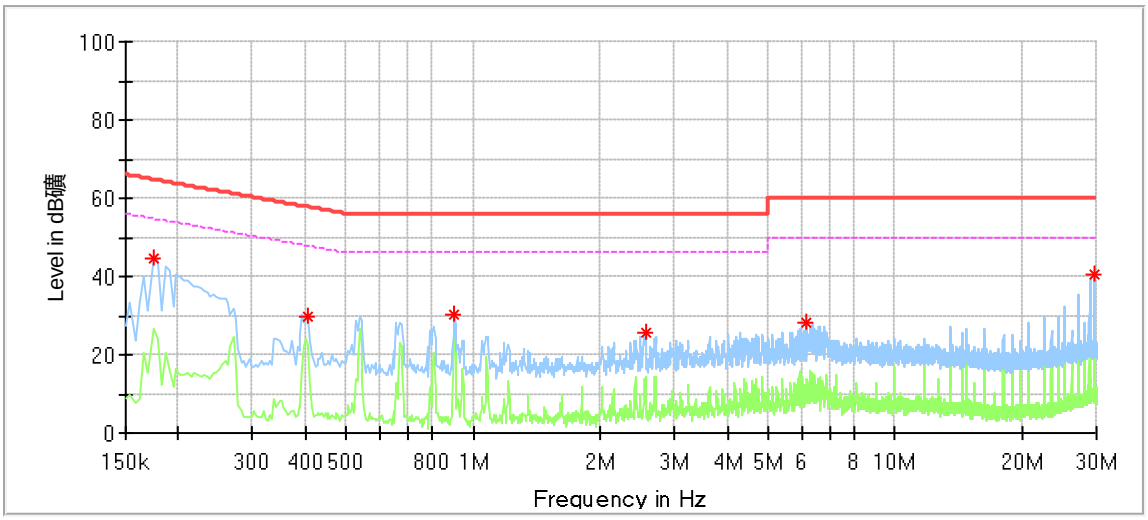
Conducted Emission

Product Type	:	Remote Controller
M/N	:	EAV-RC50
Operating Condition	:	Transmitting
Test Specification	:	Neutral
Comment	:	AC 120V/60Hz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.174000	44.66	---	64.77	20.11	N	9.57
0.406000	29.90	---	57.73	27.83	N	9.61
0.902000	30.17	---	56.00	25.83	N	9.63
2.558000	25.83	---	56.00	30.17	N	9.67
6.146000	28.28	---	60.00	31.72	N	9.83
29.786000	40.43	---	60.00	19.57	N	9.88

Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
---	---	---	---	---		---

Remark:
*Level=Reading Level + Correction Factor
**Correction Factor=Cable Loss + LISN Factor
(The Reading Level is recorded by software which is not shown in the sheet)

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9.2 Conducted Peak Output Power & EIRP

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following test receiver settings:
   Span = approximately 5 times the 6dB bandwidth, centered on a channel need to test,
   RBW > the 6dB bandwidth of the emission being measured, VBW≥3RBW,
   Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power and record the results in the test report.
5. Repeat above procedures until all frequencies measured were complete.

Limits

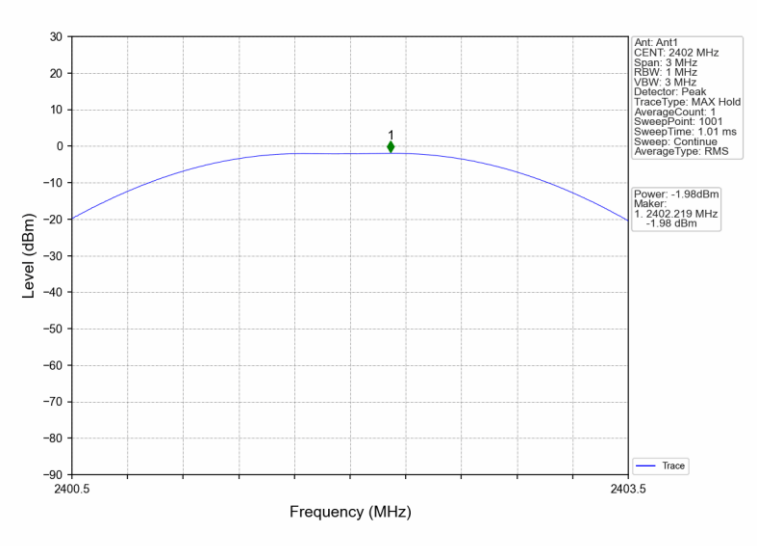
According to §15.247 (b) (3) & RSS-247 5.4(d), conducted peak output power limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1	≤30

Conducted Peak Output Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-1.98	<=30	Pass
		2440	-1.45	<=30	Pass
		2480	-2.74	<=30	Pass
2M	SISO	2402	-1.93	<=30	Pass
		2440	-1.42	<=30	Pass
		2480	-2.65	<=30	Pass

1M_LCH_2402MHz_Ant1_NTNV



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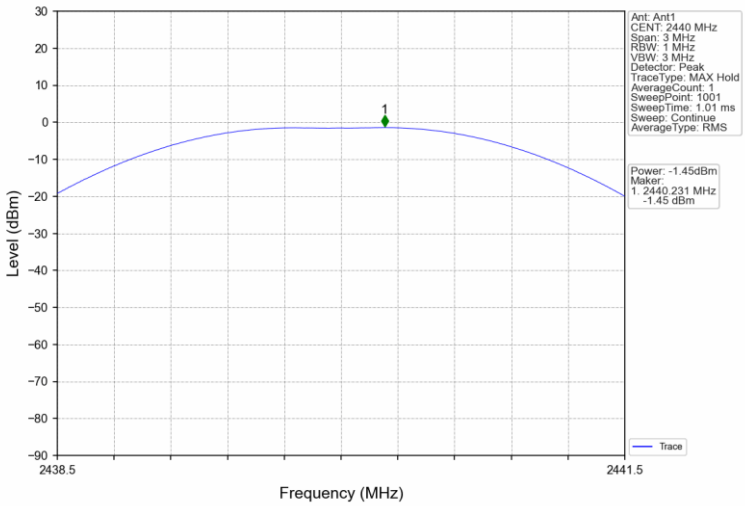
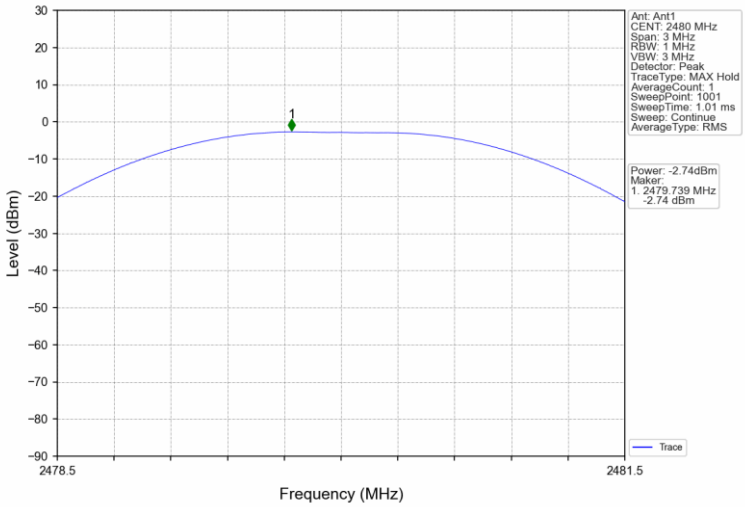
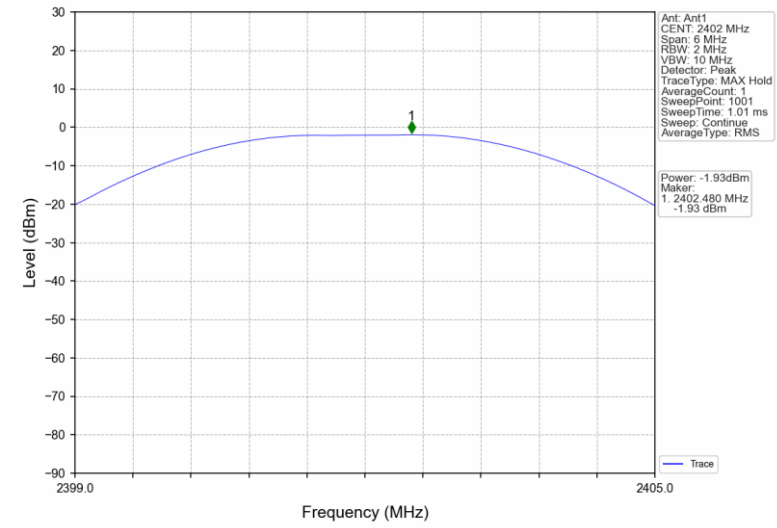
1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV



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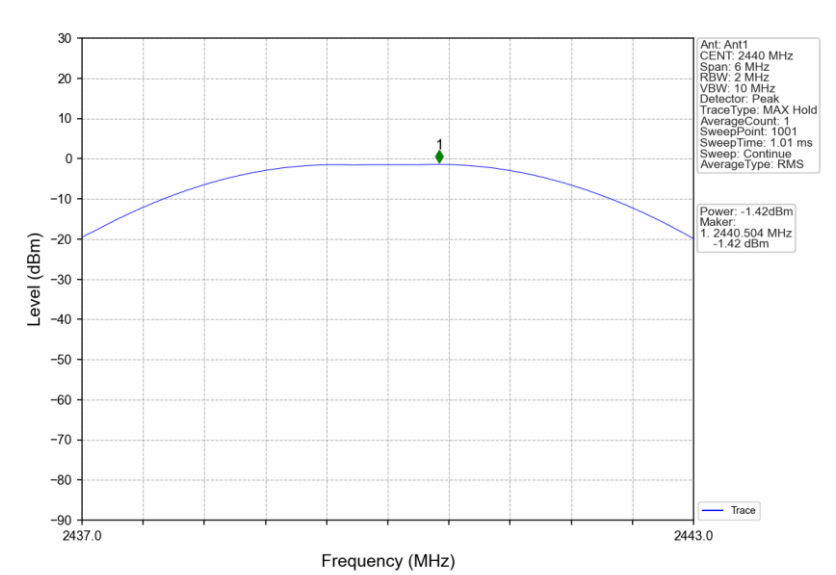

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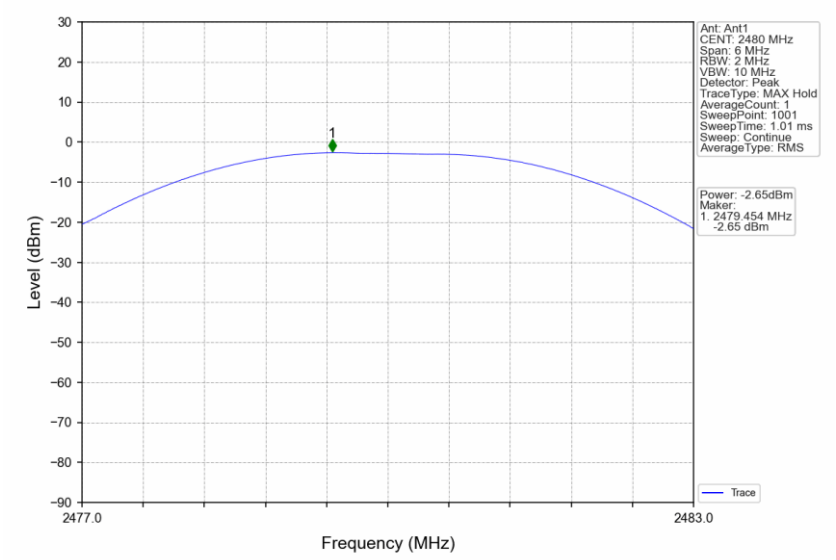


9.3 Power Spectral Density

Test Method

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
4. Set analyzer center frequency to DTS channel center frequency. RBW=3kHz, VBW≥3RBW, Span=1.5 times DTS bandwidth, Detector=Peak, Sweep=auto, Trace= max hold.
5. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
6. Repeat above procedures until other frequencies measured were completed.

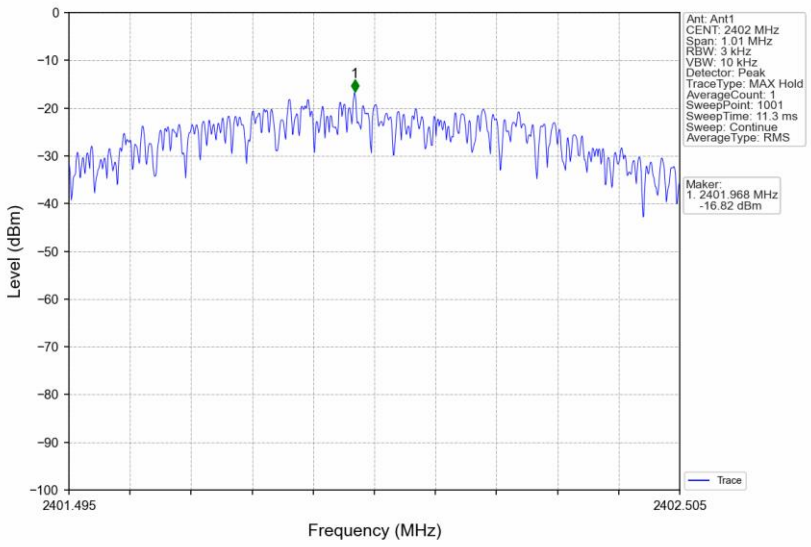
Limit

Limit [dBm/3KHz]
≤8

Test result

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-16.82	<=8	Pass
		2440	-16.29	<=8	Pass
		2480	-17.62	<=8	Pass
2M	SISO	2402	-19.81	<=8	Pass
		2440	-19.30	<=8	Pass
		2480	-20.66	<=8	Pass

1M_LCH_2402MHz_Ant1_NTNV



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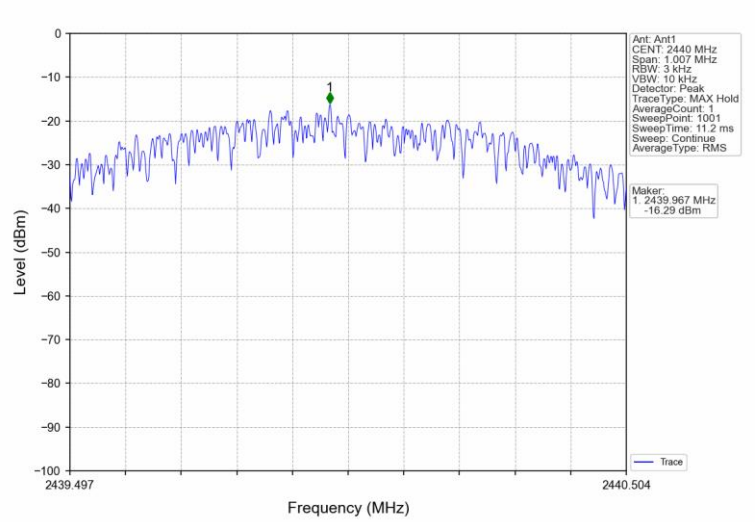
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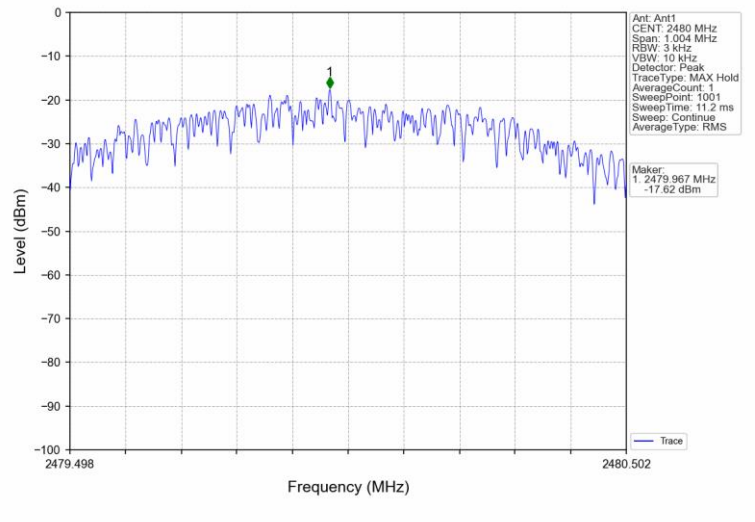
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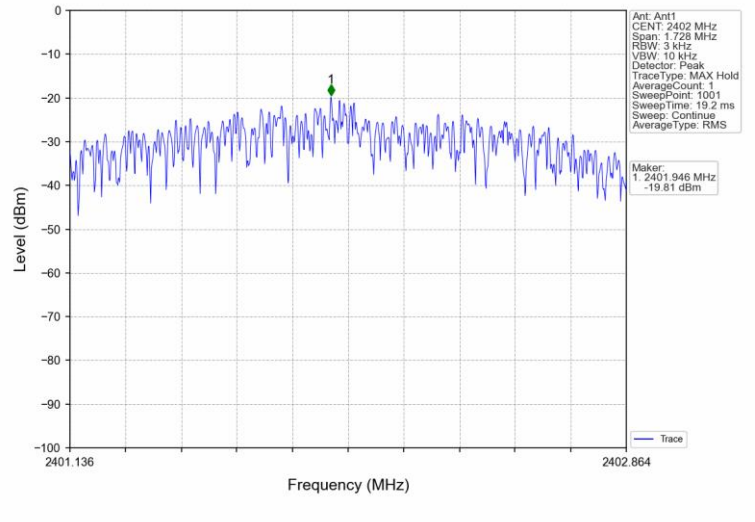

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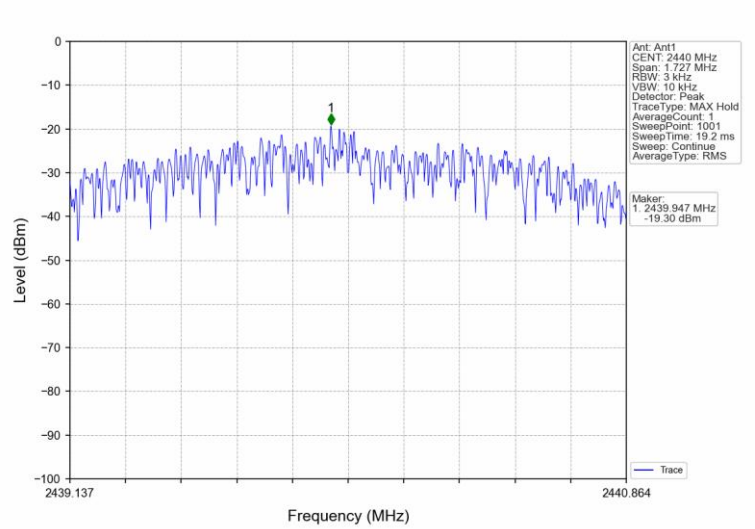
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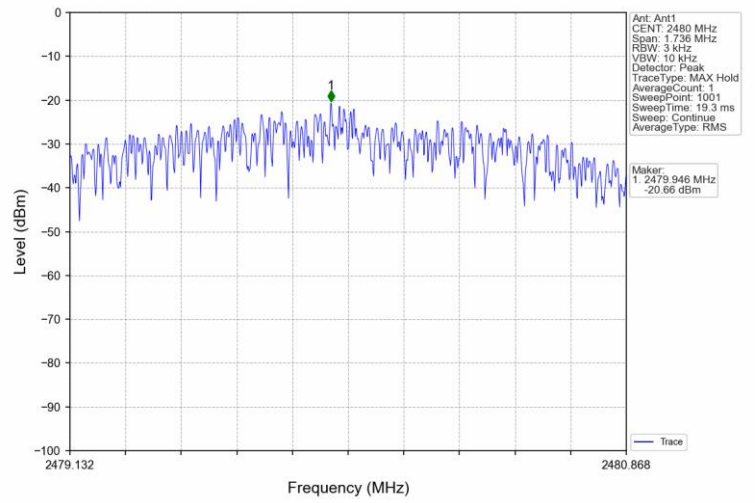

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9.4 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method for 6 dB Bandwidth

1. The RF output of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Set center frequency to the nominal EUT channel center frequency
3. Set RBW =1% to 5% of the OBW but not less than 100kHz, VBW≥ 3 × RBW Detector = Peak. Trace mode = max hold. Sweep = auto Trace = max hold
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
5. Record the results in the test report.

Limit

Limit [kHz]
≥500

Test Method for 99 % Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set span = 1.5 times to 5.0 times the OBW. Set RBW = 1 % to 5 % of the OBW
   Set VBW ≥ 3 RBW Trace mode = max hold. Sweep = auto couple.
   Allow the trace to stabilize.
3. Use the 99 % power bandwidth function of the instrument.
4. Record the results in the test report.

Limit

Limit [kHz]

Test result

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	Result	Limit	
1M	SISO	2402	1	0.673	>=0.5	1.017	/	Pass
		2440	1	0.671	>=0.5	1.017	/	Pass
		2480	1	0.669	>=0.5	1.015	/	Pass
2M	SISO	2402	1	1.152	>=0.5	2.011	/	Pass
		2440	1	1.151	>=0.5	2.012	/	Pass
		2480	1	1.157	>=0.5	2.014	/	Pass

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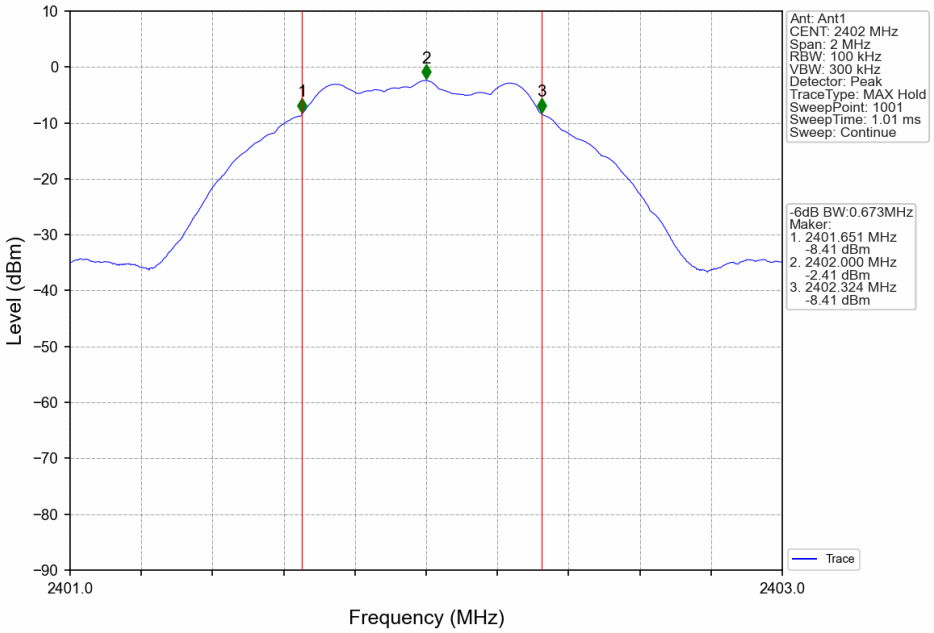
6 dB Bandwidth

1M_LCH_2402MHz_Ant1_NTNV



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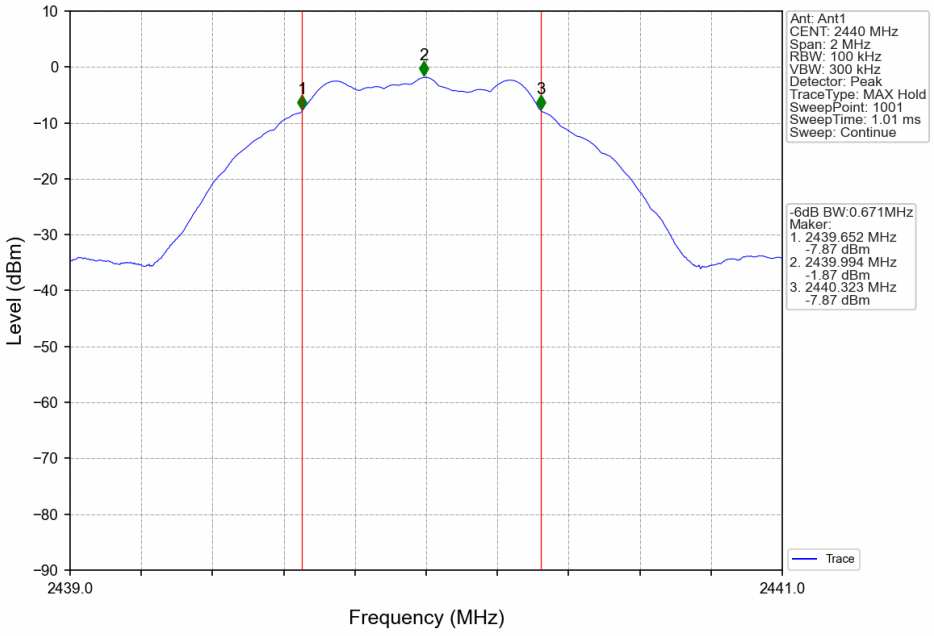
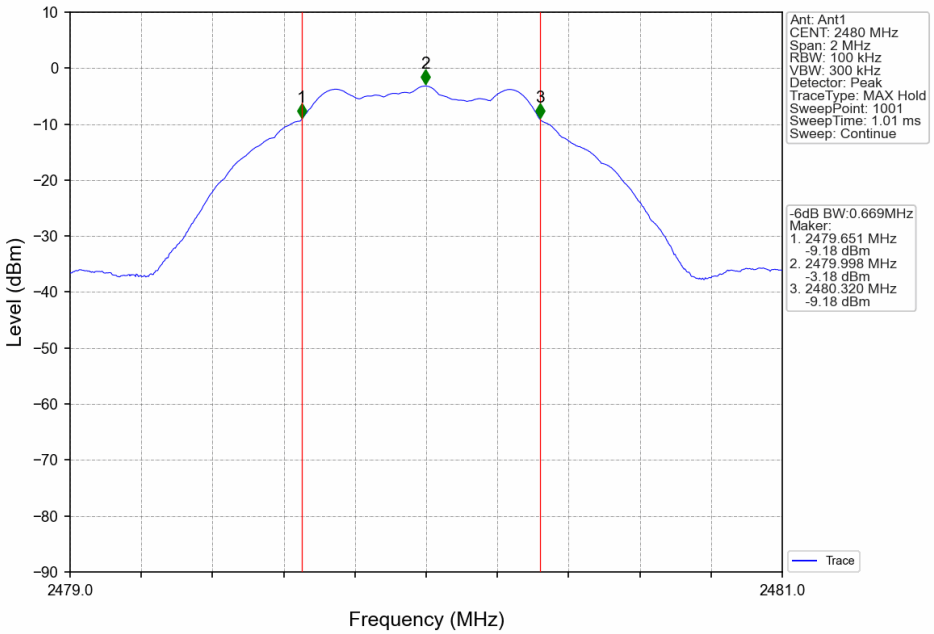


1M_HCH_2480MHz_Ant1_NTNV



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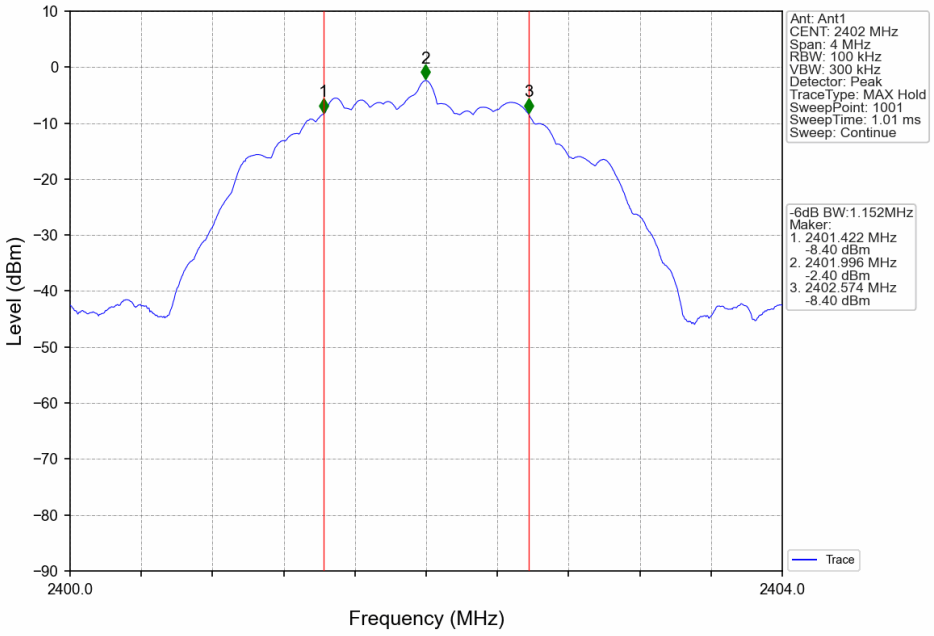

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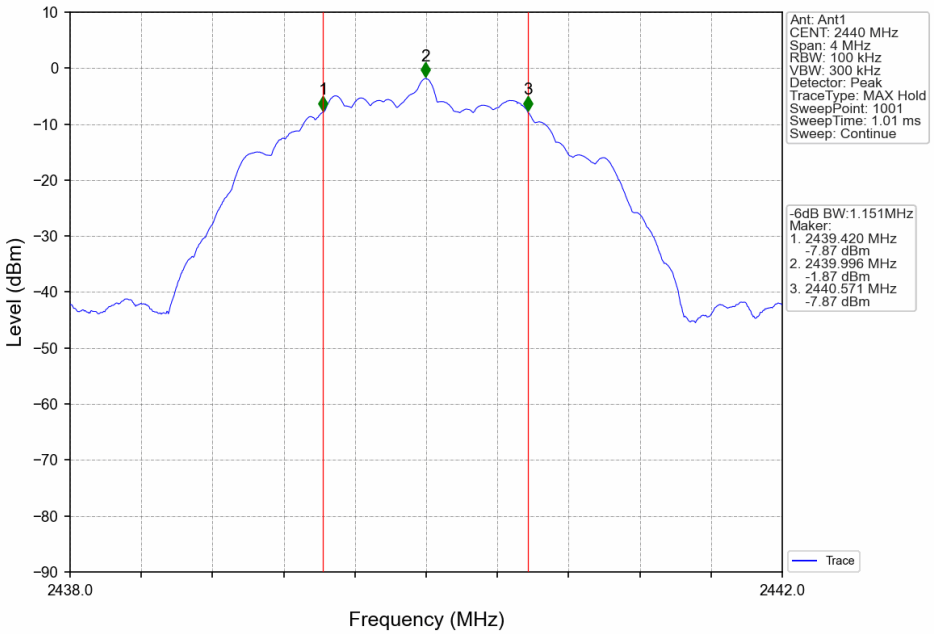
2M_MCH_2440MHz_Ant1_NTNV



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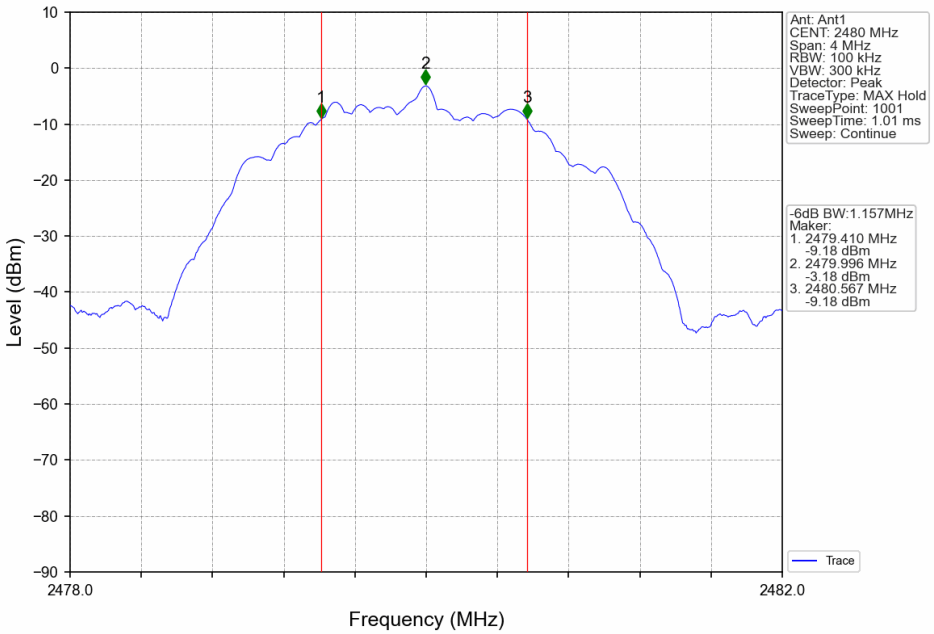

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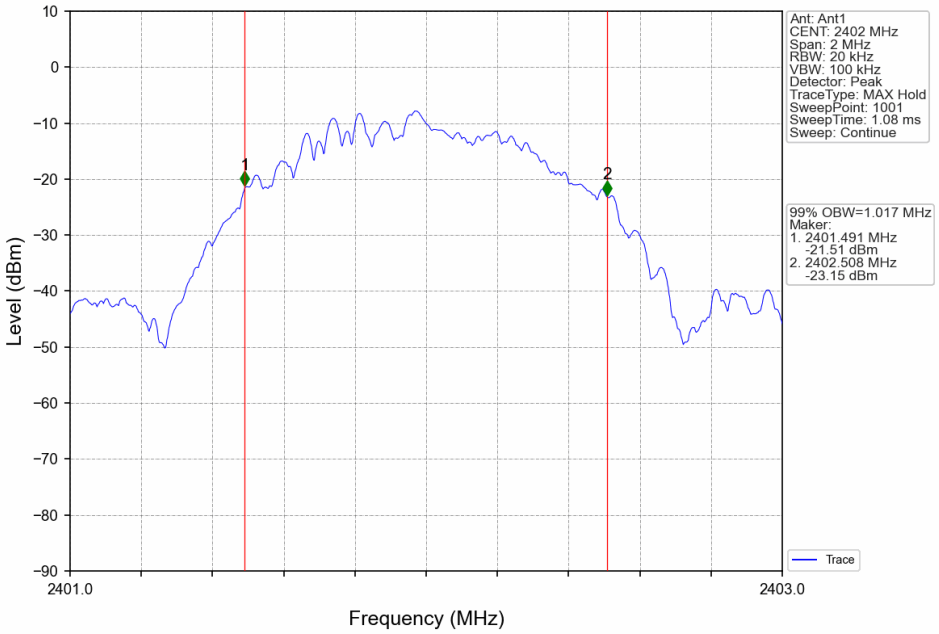
99% Bandwidth

1M_LCH_2402MHz_Ant1_NTNV



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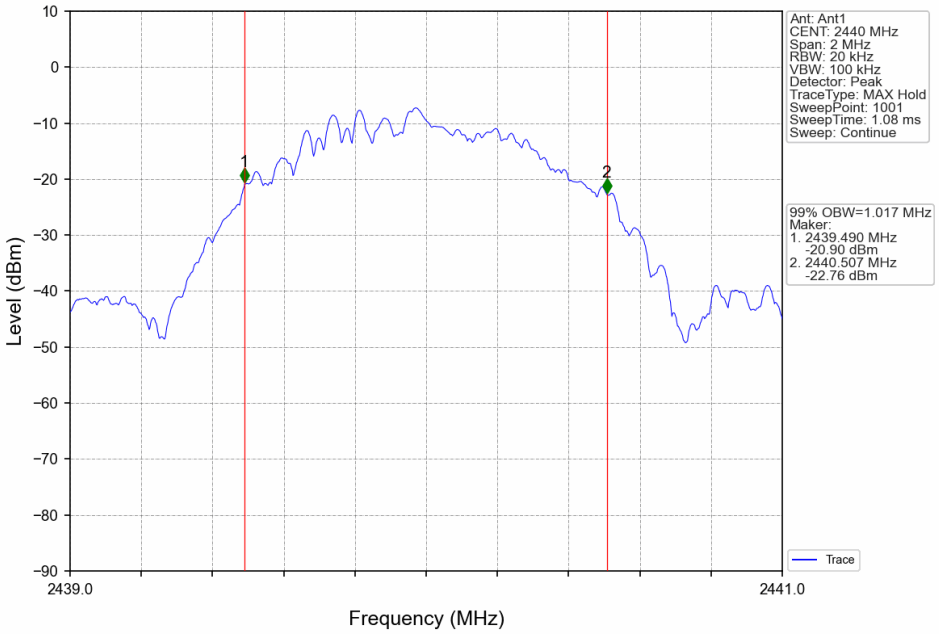

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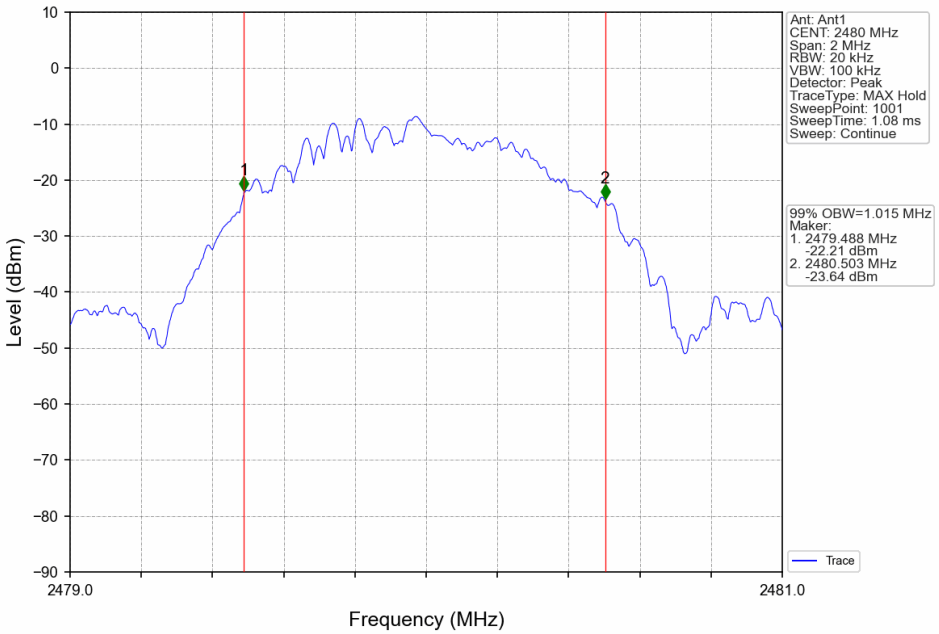
1M_HCH_2480MHz_Ant1_NTNV



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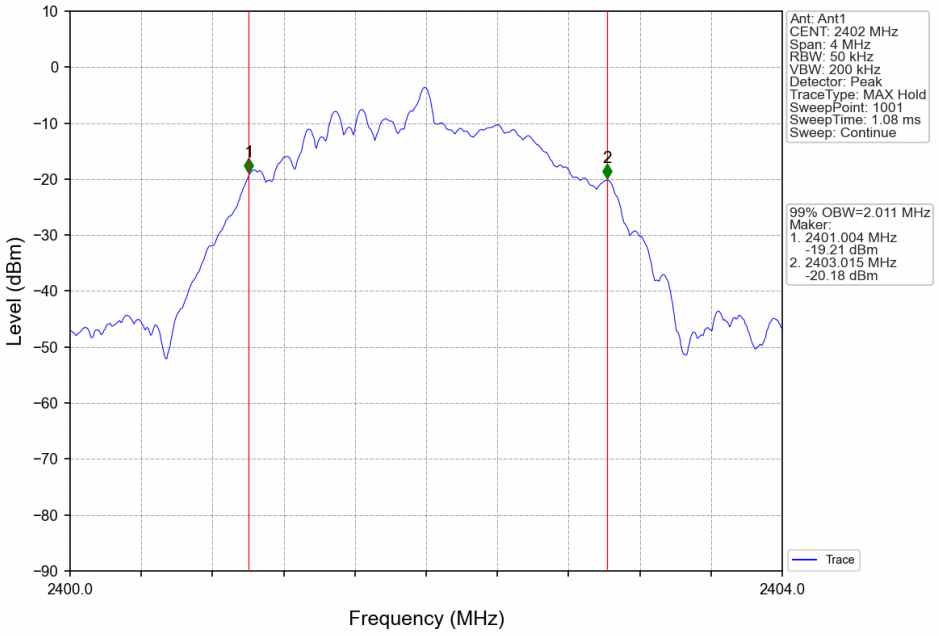

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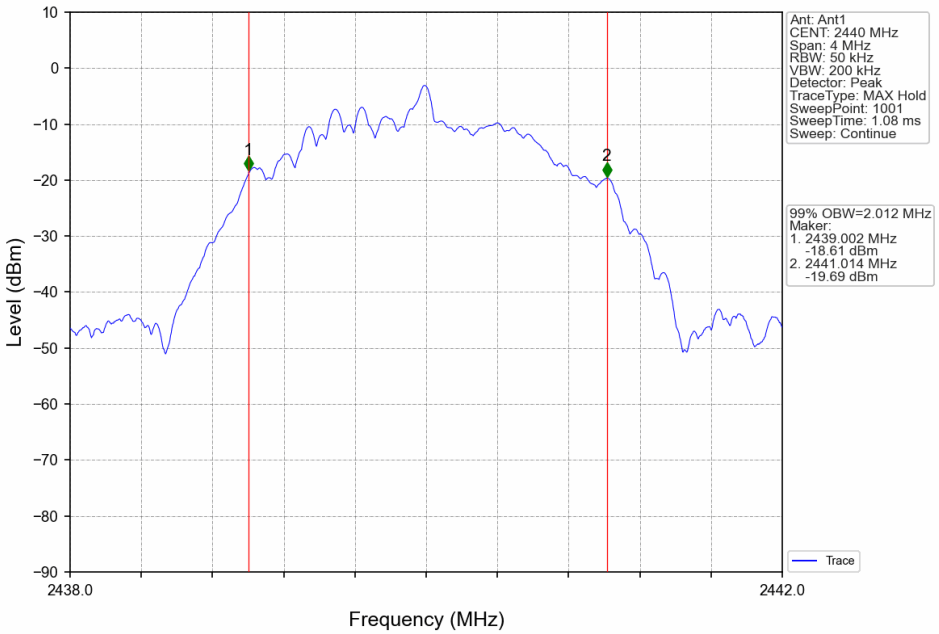
2M_MCH_2440MHz_Ant1_NTNV



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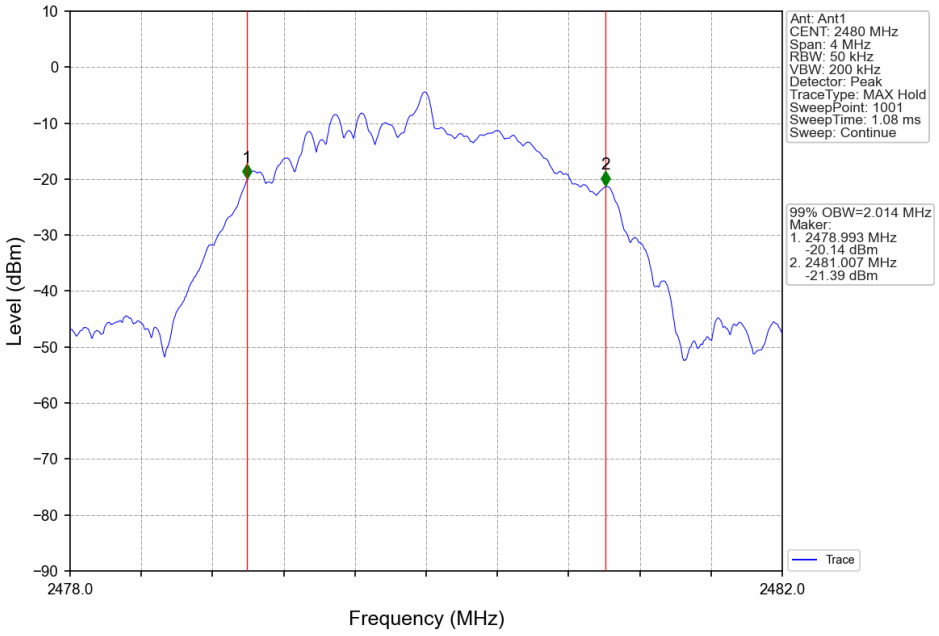

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9.5 Spurious RF Conducted Emissions

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
5. The level displayed must comply with the limit specified in this Section. Submit these plots.
6. Repeat above procedures until all frequencies measured were complete.

Limit

Frequency Range MHz	Limit (dBc)
30-25000	-20

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Test results

Reference:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-2.40
		2440	1	-1.86
		2480	1	-3.17
2M	SISO	2402	1	-2.41
		2440	1	-1.89
		2480	1	-3.21
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.				

Conducted spurious emission:

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-2.40	-22.40	Pass
		2440	1	-1.86	-21.86	Pass
		2480	1	-3.17	-23.17	Pass
2M	SISO	2402	1	-2.41	-22.41	Pass
		2440	1	-1.89	-21.89	Pass
		2480	1	-3.21	-23.21	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.						

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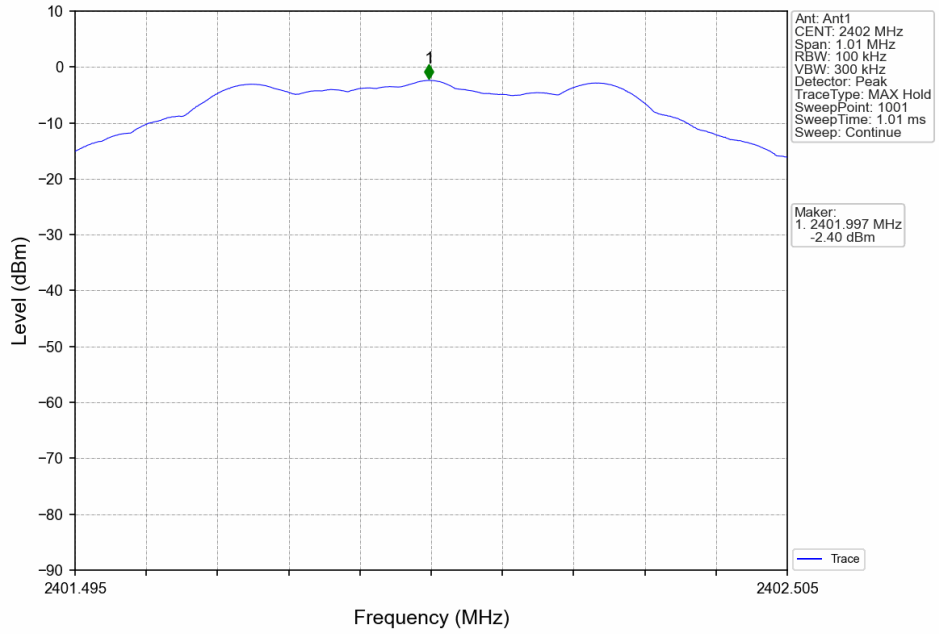
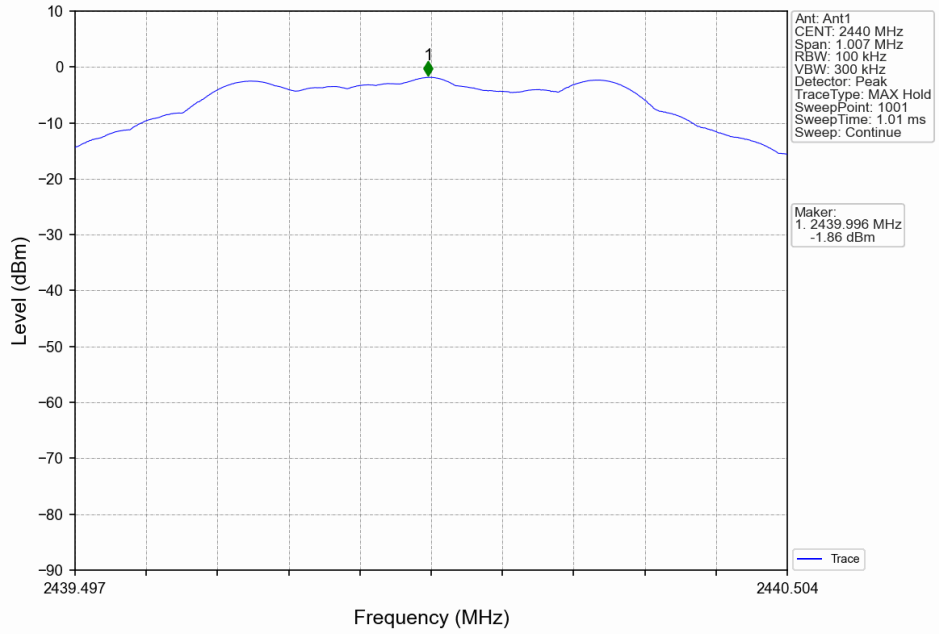
Reference:

1M_LCH_2402MHz_Ant1_NTNV



1M_MCH_2440MHz_Ant1_NTNV



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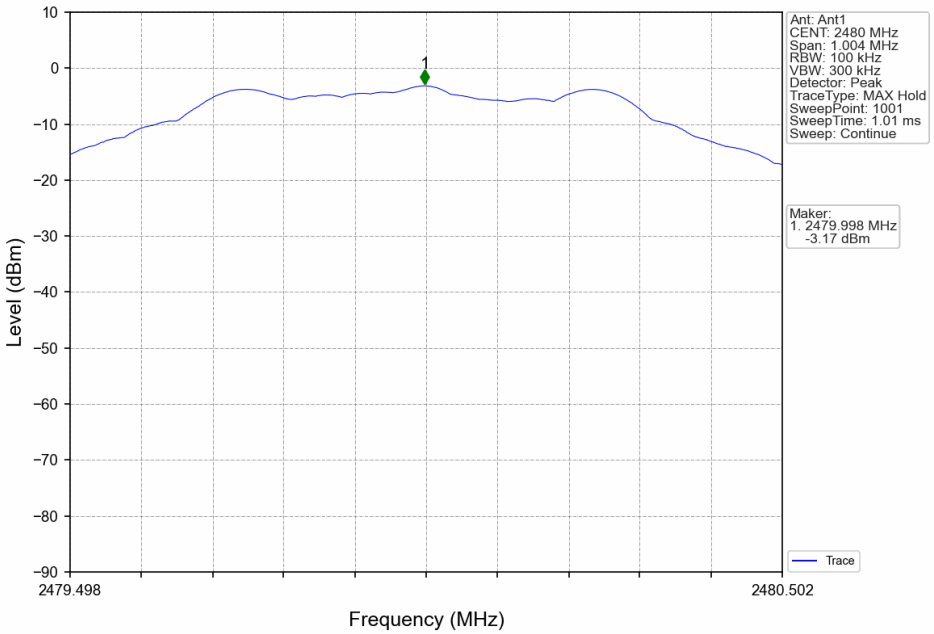
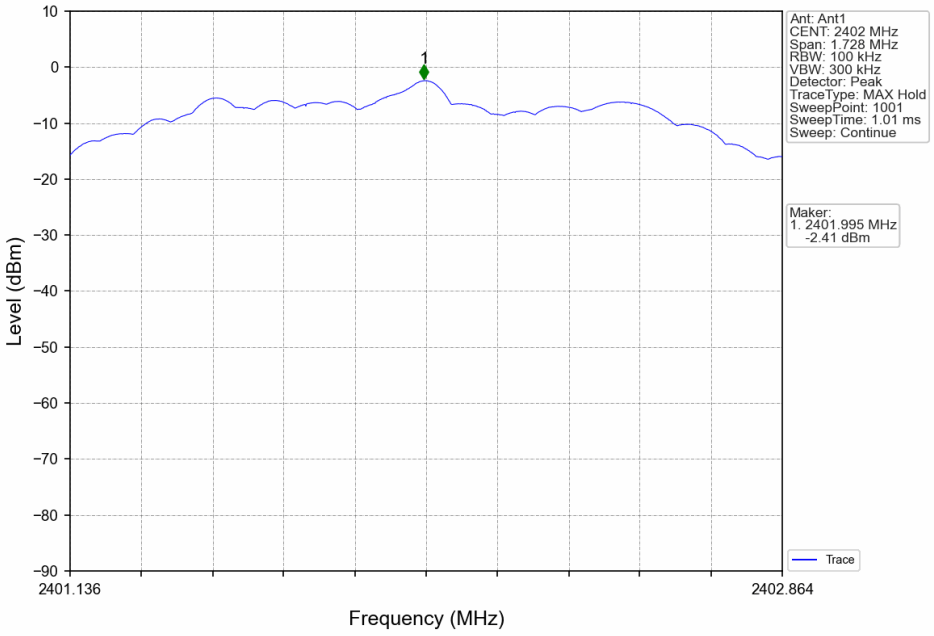
1M_HCH_2480MHz_Ant1_NTNV



2M_LCH_2402MHz_Ant1_NTNV



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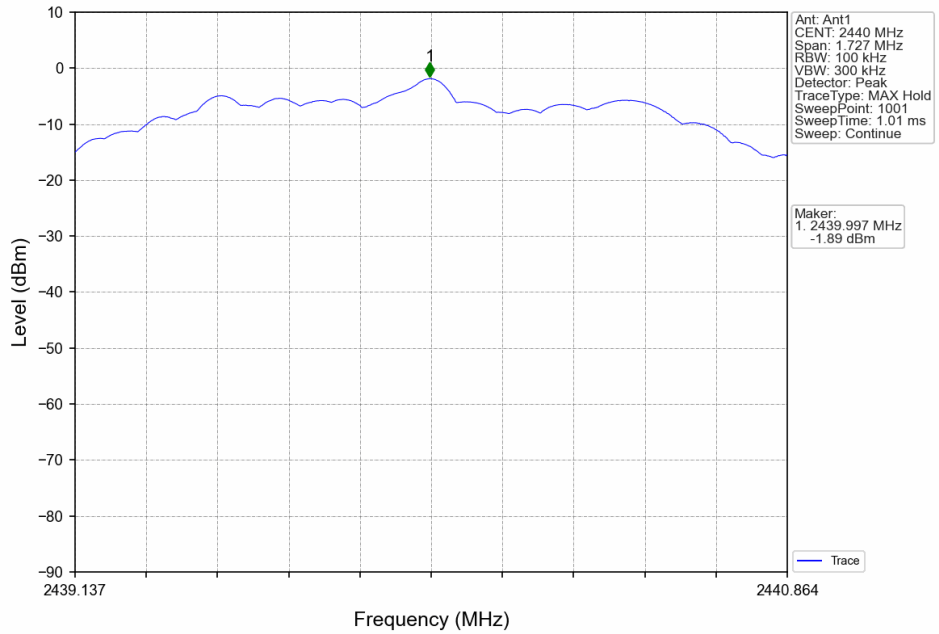
2M_MCH_2440MHz_Ant1_NTNV



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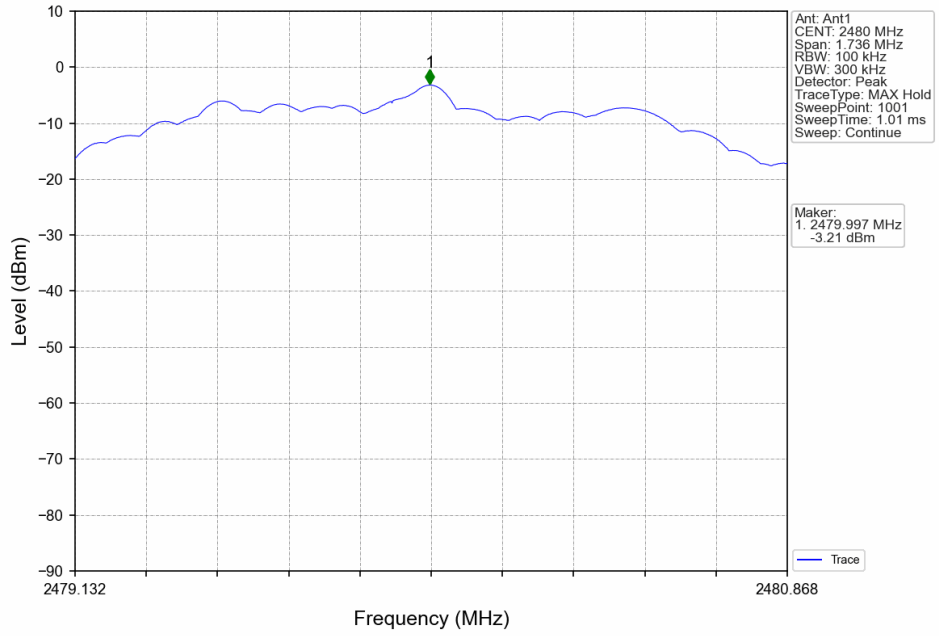

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CSE：

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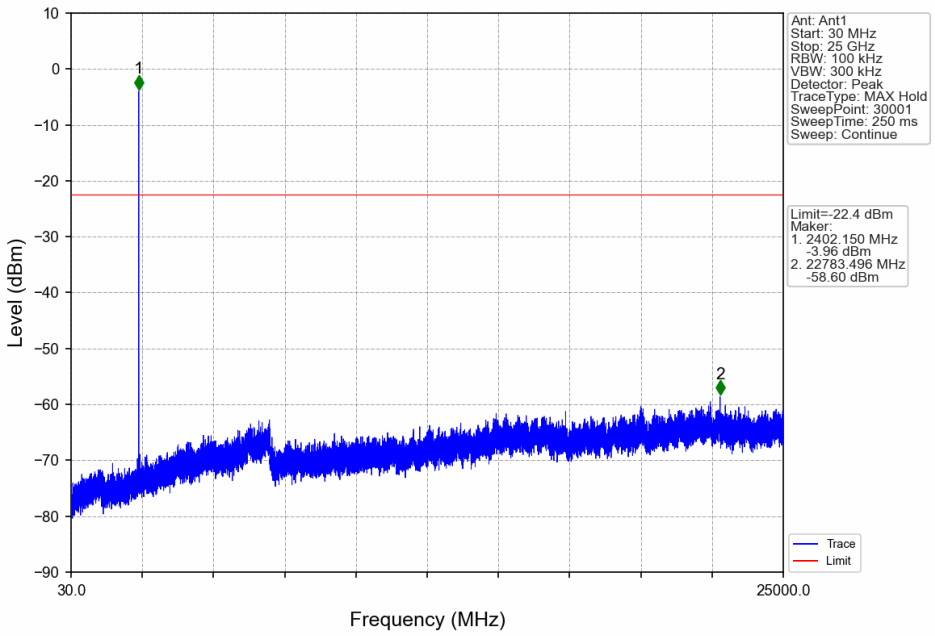
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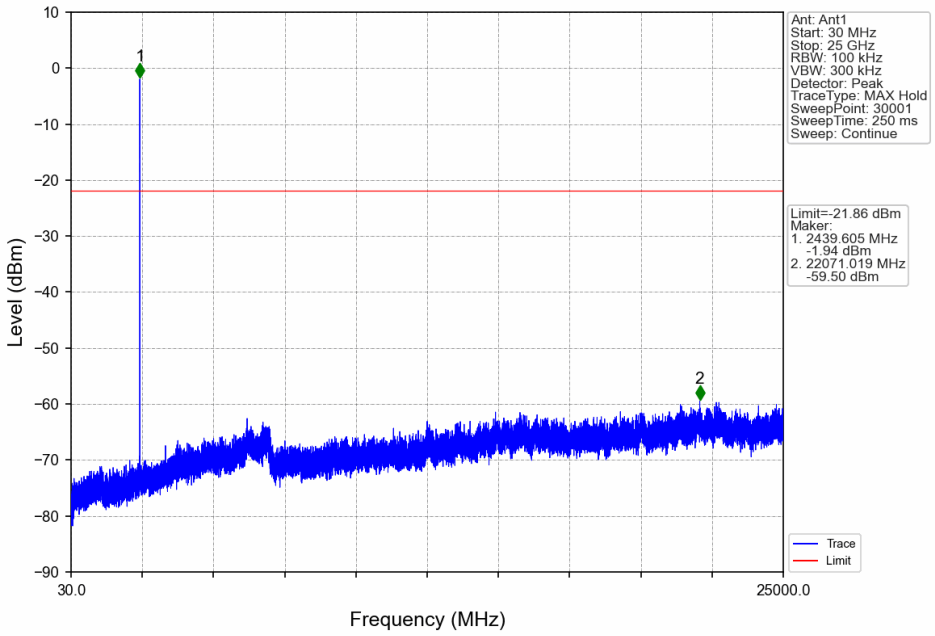

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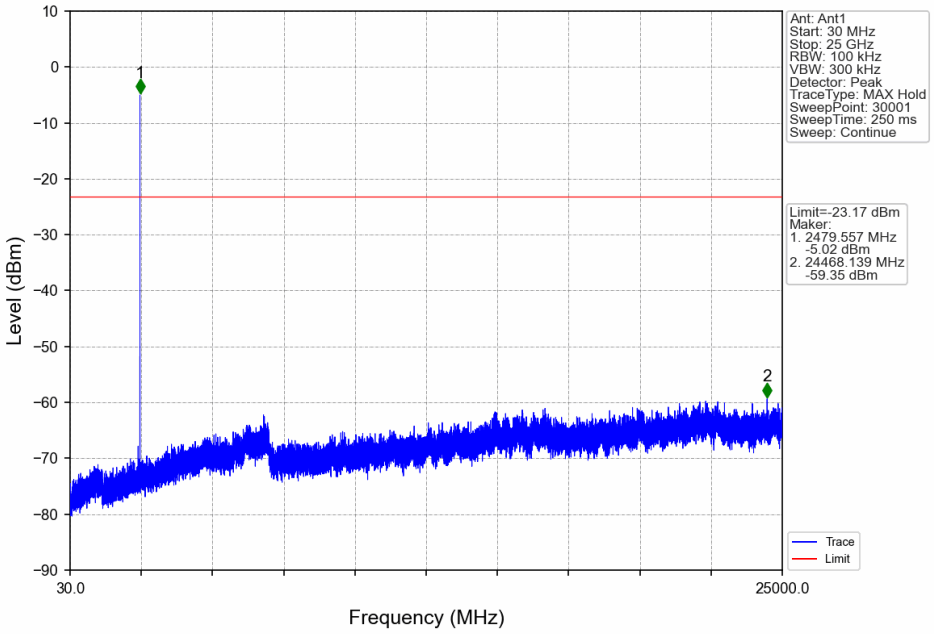
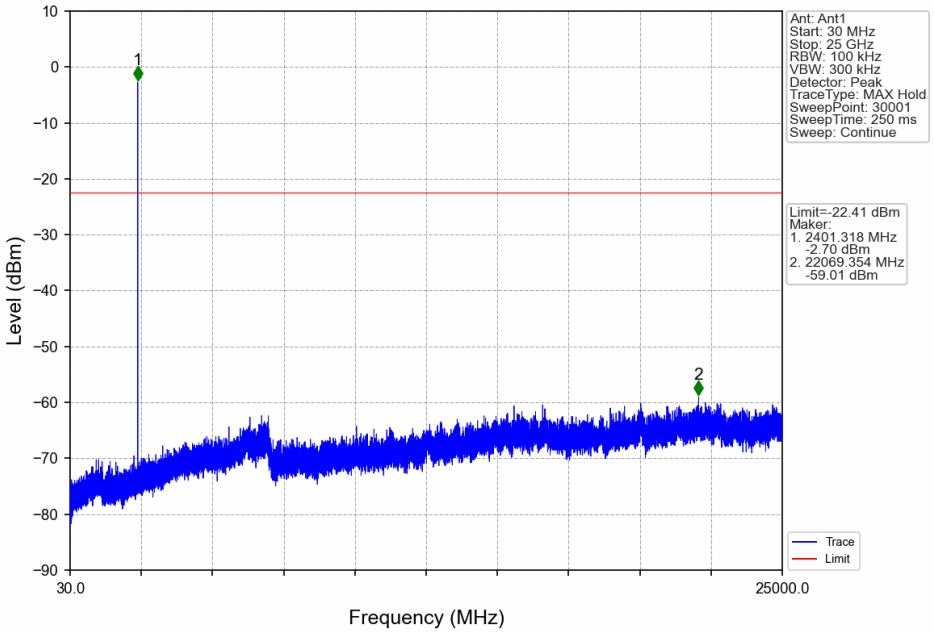


2M_LCH_2402MHz_Ant1_NTNV



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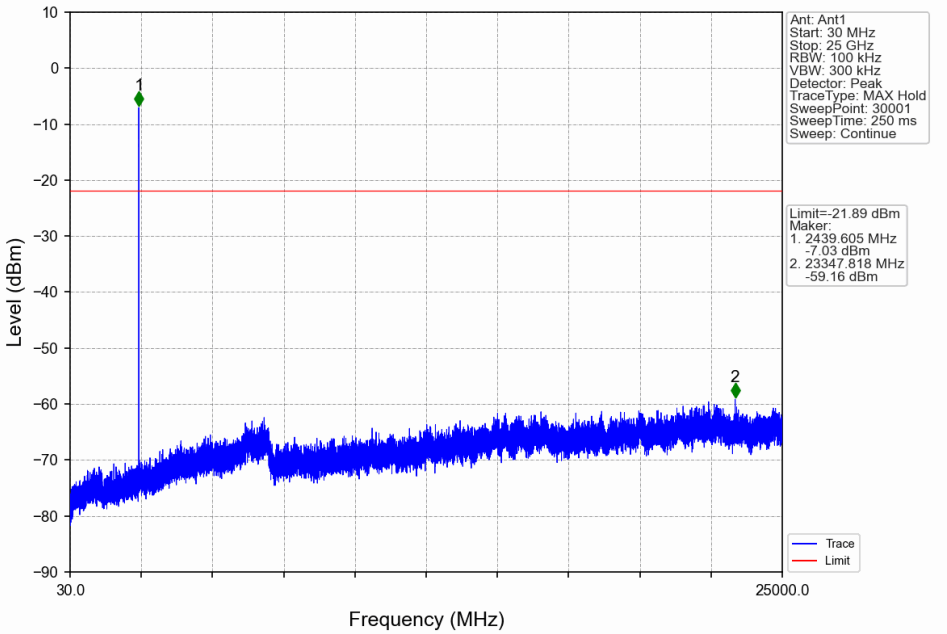
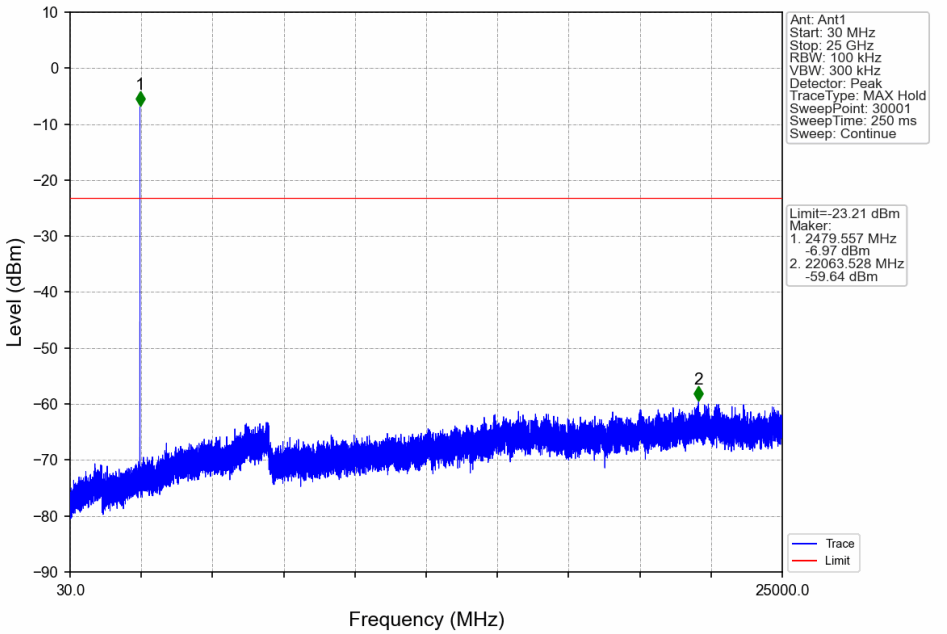
2M_MCH_2440MHz_Ant1_NTNV



2M_HCH_2480MHz_Ant1_NTNV



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9.6 Band Edge

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
   RBW = 100 kHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded.
5. The level displayed must comply with the limit specified in this Section. Submit these plots.
6. Repeat above procedures until all frequencies measured were complete.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that 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 § 15.247(b)(3) and RSS-247 section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB.

Frequency Range MHz	Limit (dBc)
30-25000	-20

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Test results

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-2.40	-22.40	Pass
		2440	1	-1.86	-21.86	Pass
		2480	1	-3.17	-23.17	Pass
2M	SISO	2402	1	-2.41	-22.41	Pass
		2440	1	-1.89	-21.89	Pass
		2480	1	-3.21	-23.21	Pass
Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.						

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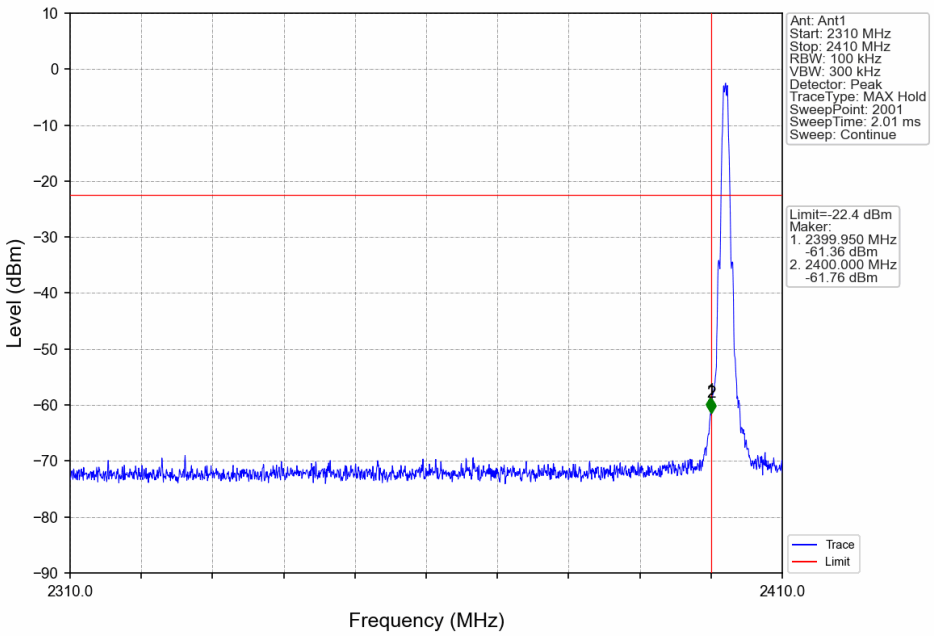
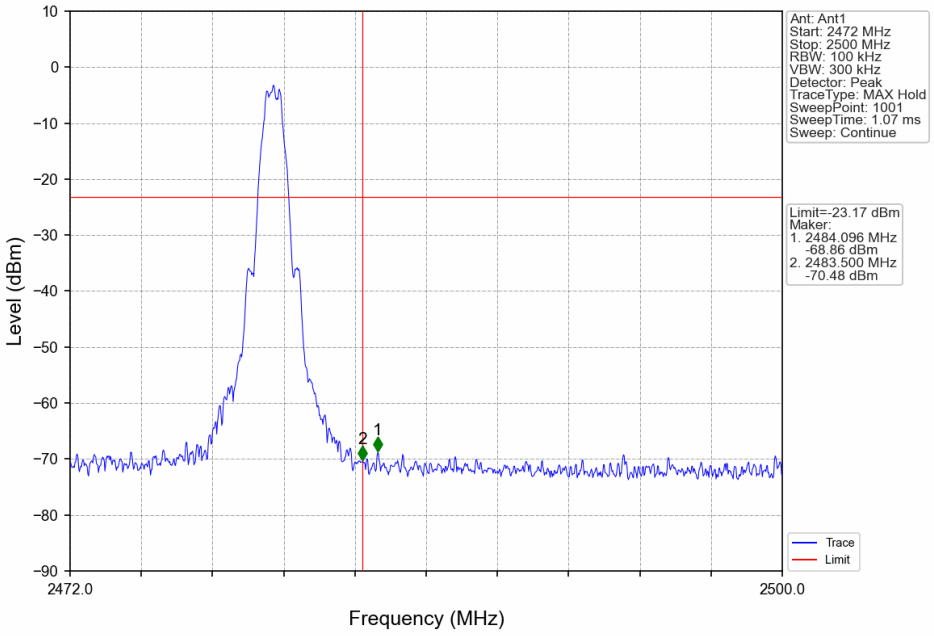
1M_LCH_2402MHz_Ant1_NTNV


1M_HCH_2480MHz_Ant1_NTNV


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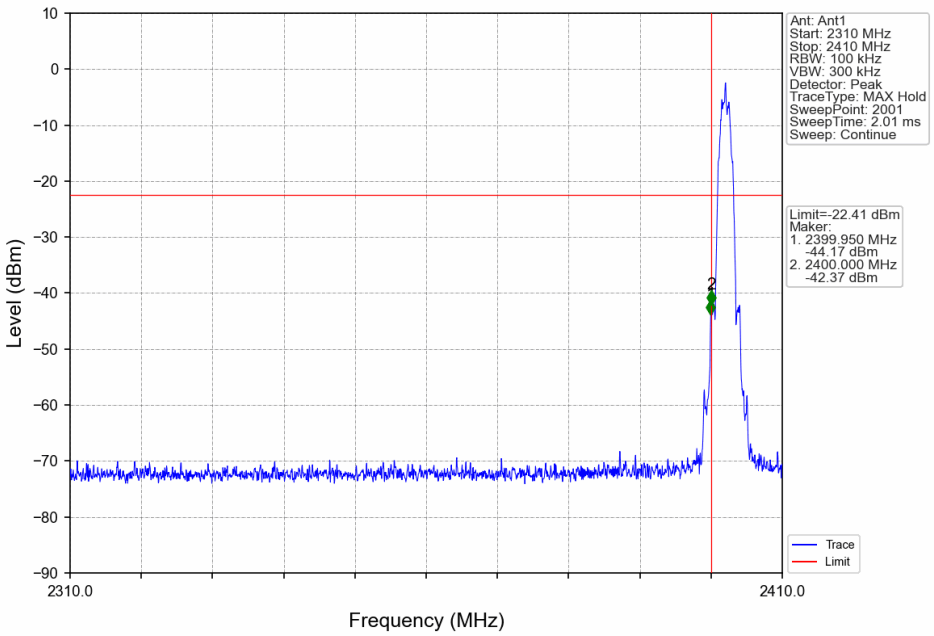
2M_LCH_2402MHz_Ant1_NTNV



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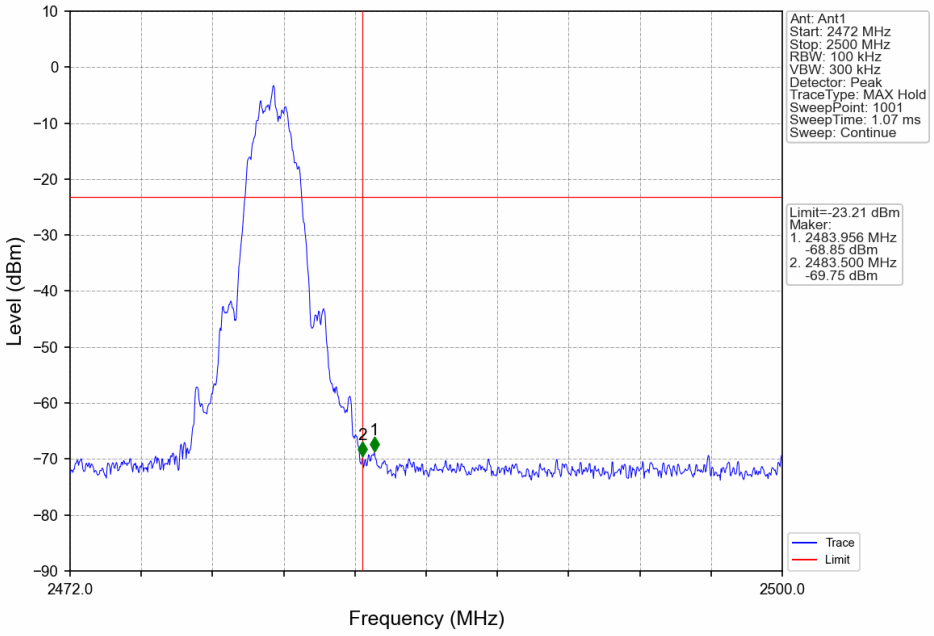

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9.7 Spurious Radiated Emissions for Transmitter

Test Method

1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna 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.
4. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10:

For Below 1GHz

Use the following test receiver settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 KHz to 120KHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

For Peak unwanted emissions Above 1GHz:

Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

Procedures for average unwanted emissions measurements above 1000 MHz

a) RBW = 1MHz.

b) VBW \ [3 × RBW].

c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction

factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission (AV) at frequency above 1GHz.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that 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 § 15.247(b)(3) and RSS 247 section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in § 15.209(a) and RSS-Gen is not required. In addition, radiated emissions which fall in the restricted bands, as defined in§ 15.205(a) and RSS-Gen scetion8.9, must also comply with the radiated emission limits specified in § 15.209(a) and RSS-Gen section 8.10.

Frequency MHz	Field Strength μV/m	Field Strength dBμV/m	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: Limit 3m(dBμV/m)=Limit 300m(dBμV/m)+40Log(300m/3m) (Below 30MHz)
Note 2: Limit 3m(dBμV/m)=Limit 30m(dBμV/m)+40Log(30m/3m) (Below 30MHz)

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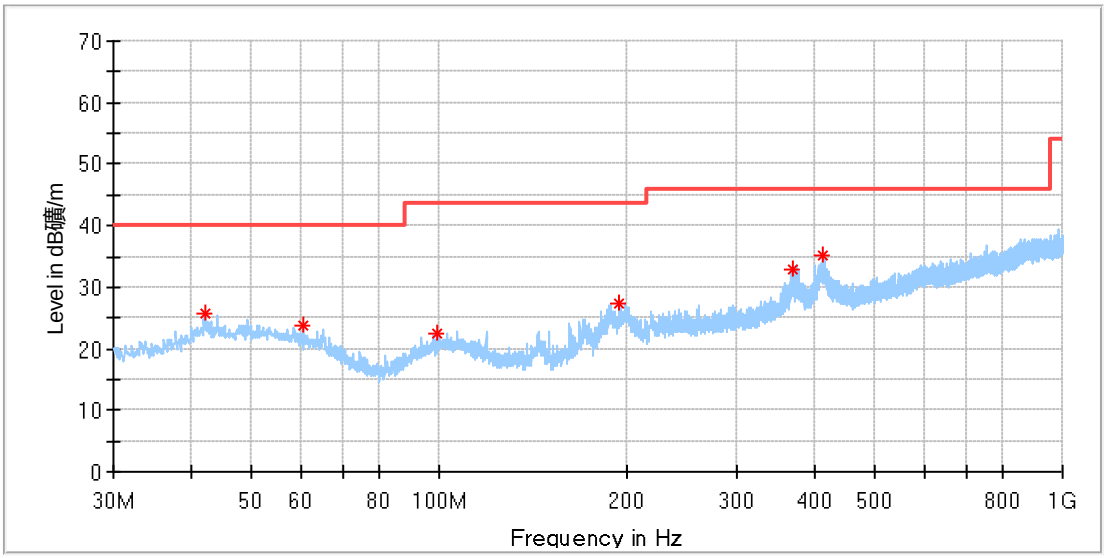
Spurious radiated emissions for transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Transmitting spurious emission test result as below:

Test data_30MHz to 1000MHz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.003750	25.62	40.00	14.38	100.0	H	0.0	19.81
60.312500	23.82	40.00	16.18	200.0	H	208.0	19.60
99.536875	22.45	43.50	21.05	200.0	H	302.0	18.85
194.718125	27.29	43.50	16.21	100.0	H	9.0	19.02
370.045625	33.03	46.00	12.97	100.0	H	195.0	22.99
411.573750	35.22	46.00	10.78	200.0	H	0.0	24.30

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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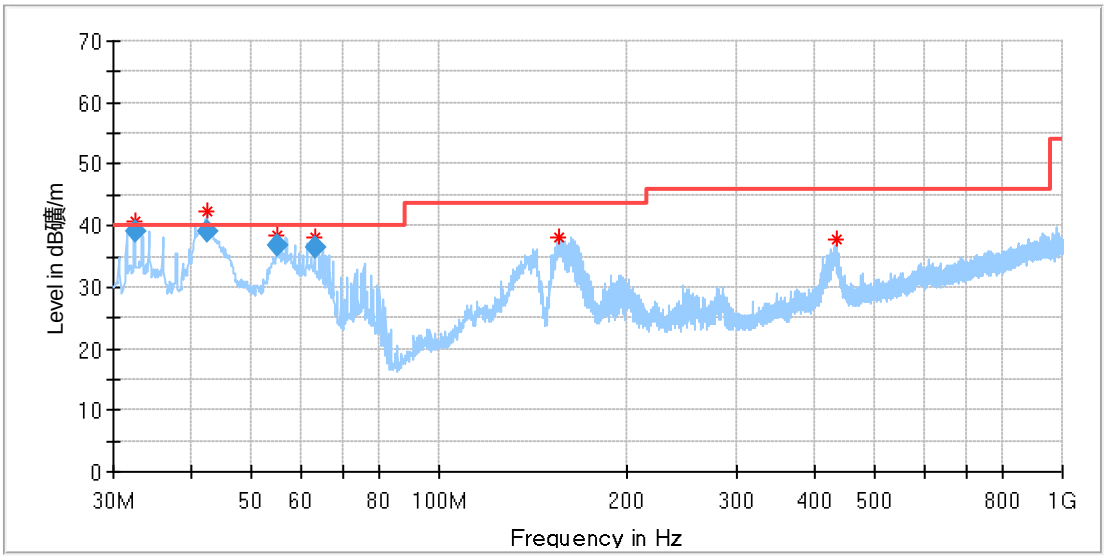

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.485625	40.61	40.00	-0.61	100.0	V	244.0	16.68
42.428125	42.24	40.00	-2.24	100.0	V	47.0	19.90
55.038125	38.28	40.00	1.72	100.0	V	175.0	20.51
63.101250	38.21	40.00	1.79	100.0	V	209.0	18.87
155.190625	38.21	43.50	5.29	100.0	V	244.0	15.59
433.459375	37.65	46.00	8.35	100.0	V	315.0	24.80

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.485625	39.00	40.00	1.00	100.0	V	244.0	16.68
42.428125	39.20	40.00	0.80	100.0	V	47.0	19.90
55.038125	36.70	40.00	3.30	100.0	V	175.0	20.51
63.101250	36.40	40.00	3.60	100.0	V	209.0	18.87

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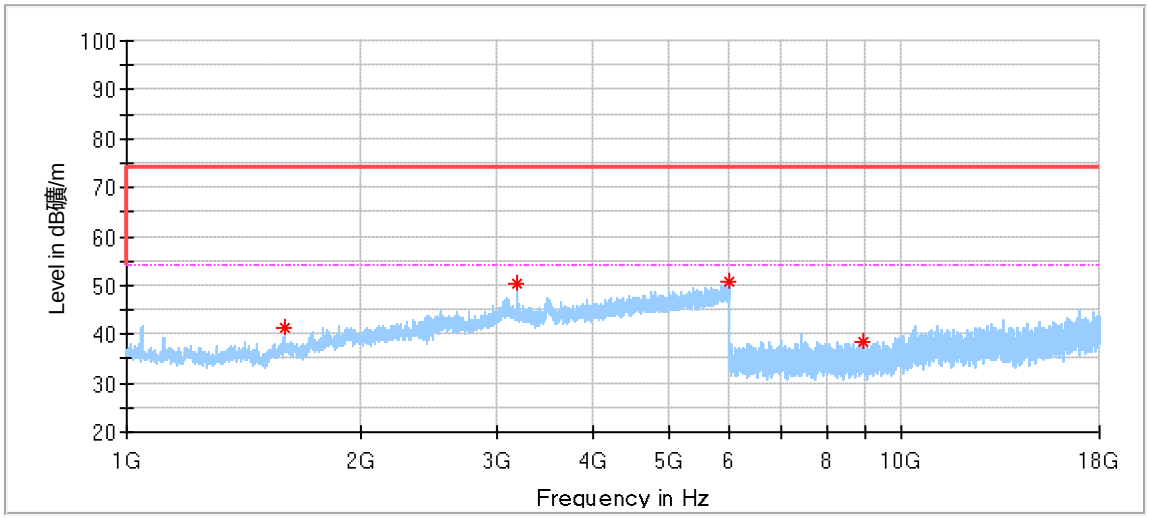
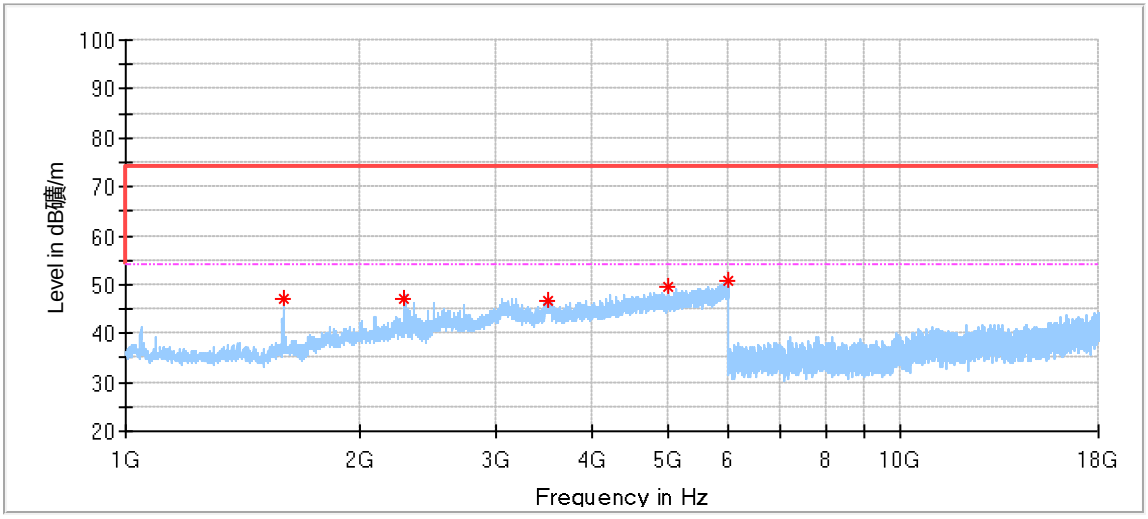
Test data 1GHz to 18GHz:
BLE_1Mbps_Low Channel:



Critical_Freqs

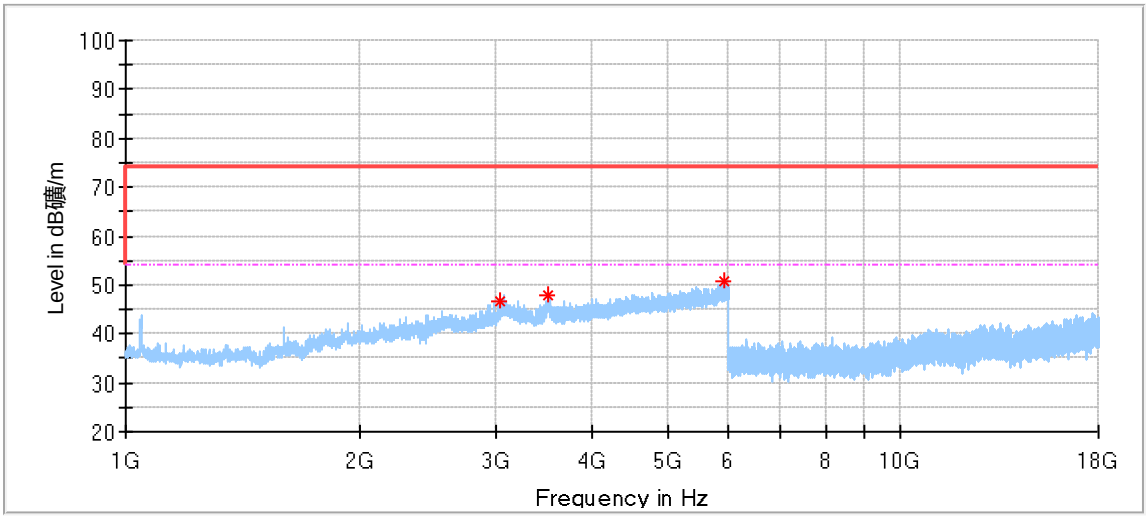
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1597.500000	41.33	74.00	32.67	150.0	H	144.0	-7.24
3186.000000	50.19	74.00	23.81	150.0	H	240.0	0.44
5976.500000	50.93	74.00	23.07	150.0	H	1.0	6.90
8943.500000	38.48	74.00	35.52	150.0	H	157.0	7.07



Critical_Freqs

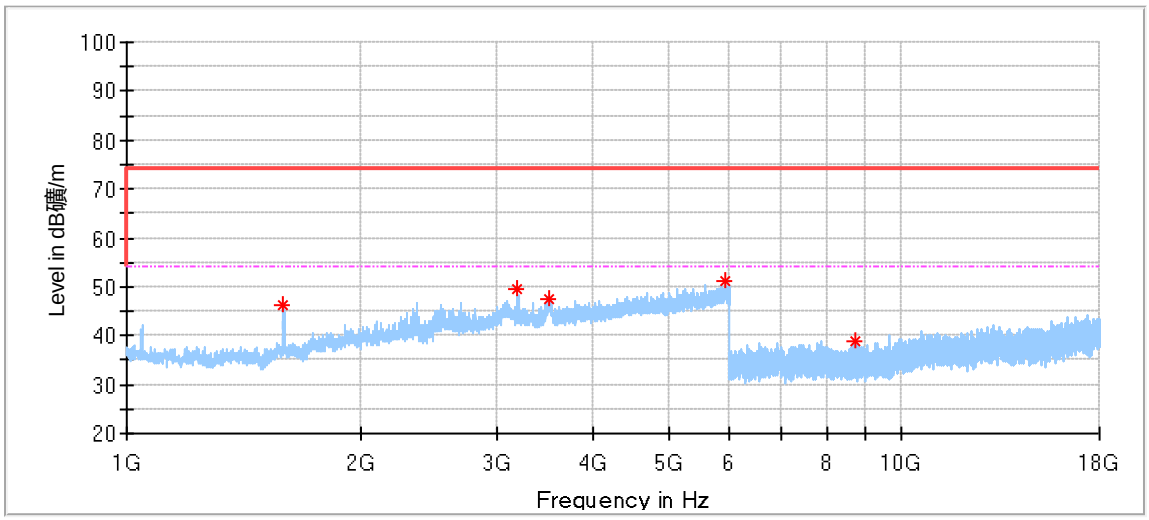
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1599.000000	47.22	74.00	26.78	150.0	V	192.0	-7.21
2289.500000	47.17	74.00	26.83	150.0	V	153.0	-3.58
3516.000000	46.71	74.00	27.29	150.0	V	129.0	2.85
5022.500000	49.34	74.00	24.66	150.0	V	34.0	4.39
5979.500000	50.59	74.00	23.41	150.0	V	336.0	6.90

BLE_1Mbps _Middle Channel:



Critical_Freqs

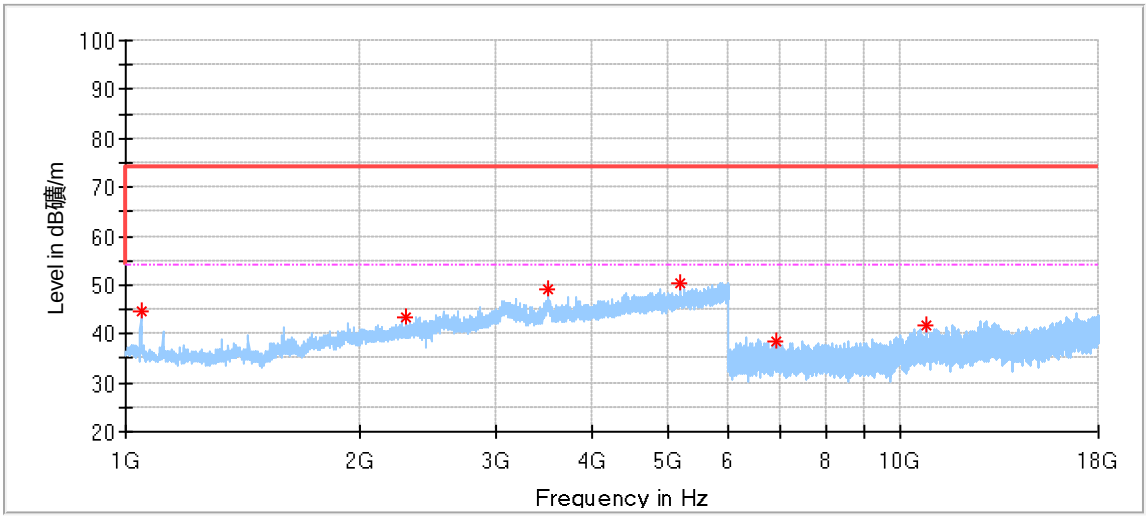
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3049.500000	46.86	74.00	27.14	150.0	H	356.0	1.34
3503.000000	47.71	74.00	26.29	150.0	H	276.0	3.60
5919.500000	50.96	74.00	23.04	150.0	H	105.0	6.87



Critical_Freqs

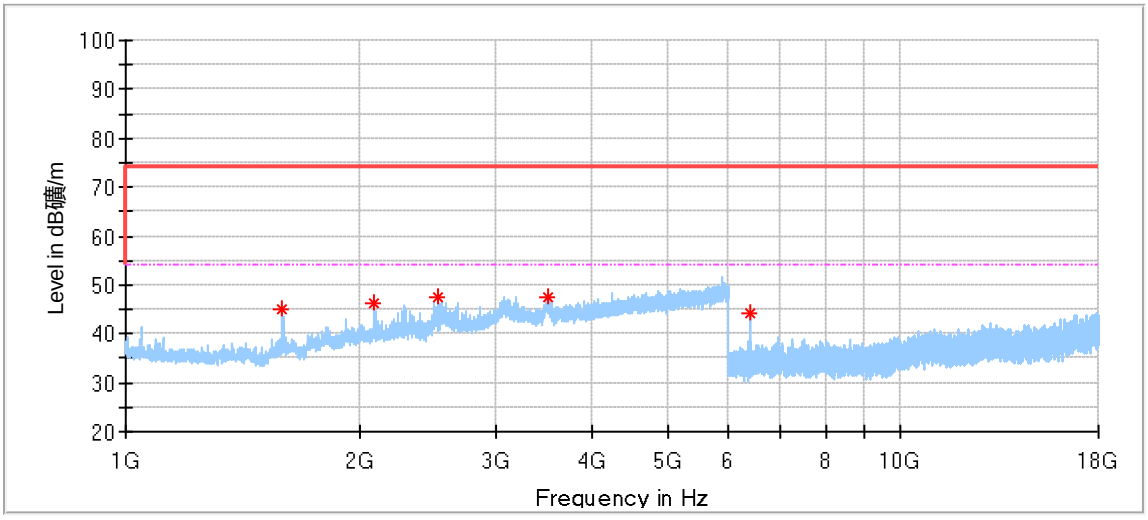
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1594.500000	46.07	74.00	27.93	150.0	V	192.0	-7.28
3191.500000	49.54	74.00	24.46	150.0	V	156.0	0.41
3510.500000	47.49	74.00	26.51	150.0	V	3.0	3.17
5912.500000	51.21	74.00	22.79	150.0	V	156.0	6.87
8702.000000	38.71	74.00	35.29	150.0	V	349.0	6.92

BLE_1Mbps _High Channel:



Critical_Freqs

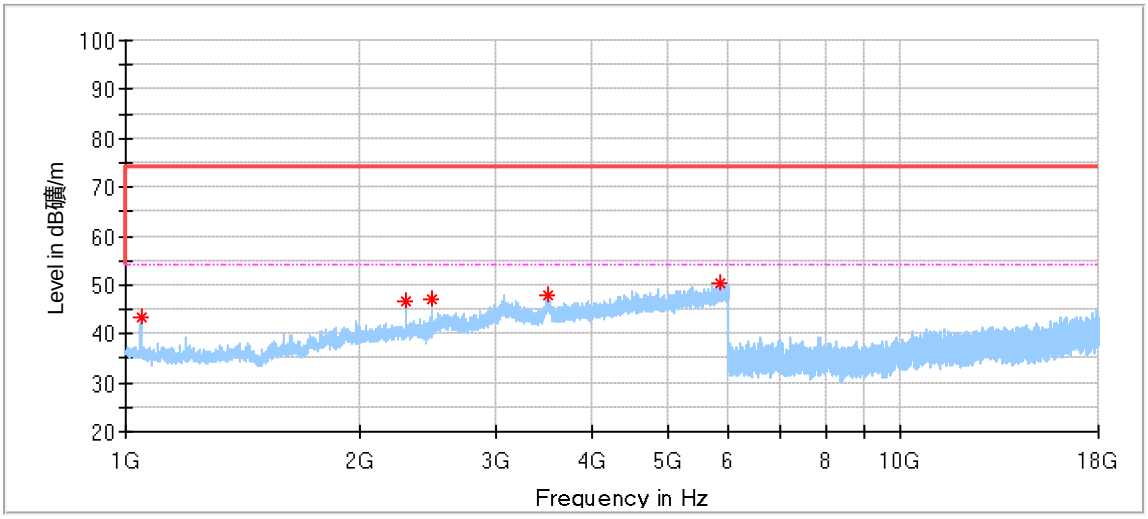
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1046.500000	44.81	74.00	29.19	150.0	H	189.0	-8.57
2298.000000	43.48	74.00	30.52	150.0	H	177.0	-3.54
3509.500000	48.94	74.00	25.06	150.0	H	117.0	3.23
5201.000000	50.44	74.00	23.56	150.0	H	252.0	4.94
6893.500000	38.61	74.00	35.39	150.0	H	153.0	5.71
10782.500000	41.93	74.00	32.07	150.0	H	55.0	9.67



Critical_Freqs

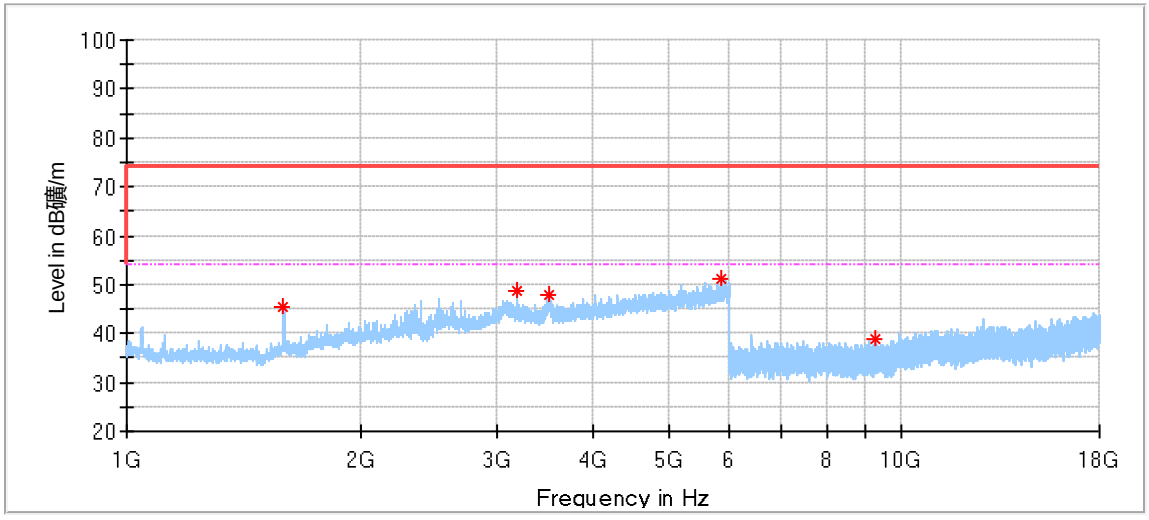
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1593.500000	45.11	74.00	28.89	150.0	V	180.0	-7.30
2095.000000	46.30	74.00	27.70	150.0	V	216.0	-4.47
2526.500000	47.62	74.00	26.38	150.0	V	180.0	-1.85
3499.500000	47.62	74.00	26.38	150.0	V	132.0	3.72
6378.000000	44.13	74.00	29.87	150.0	V	227.0	5.33

BLE_2Mbps_Low Channel:



Critical_Freqs

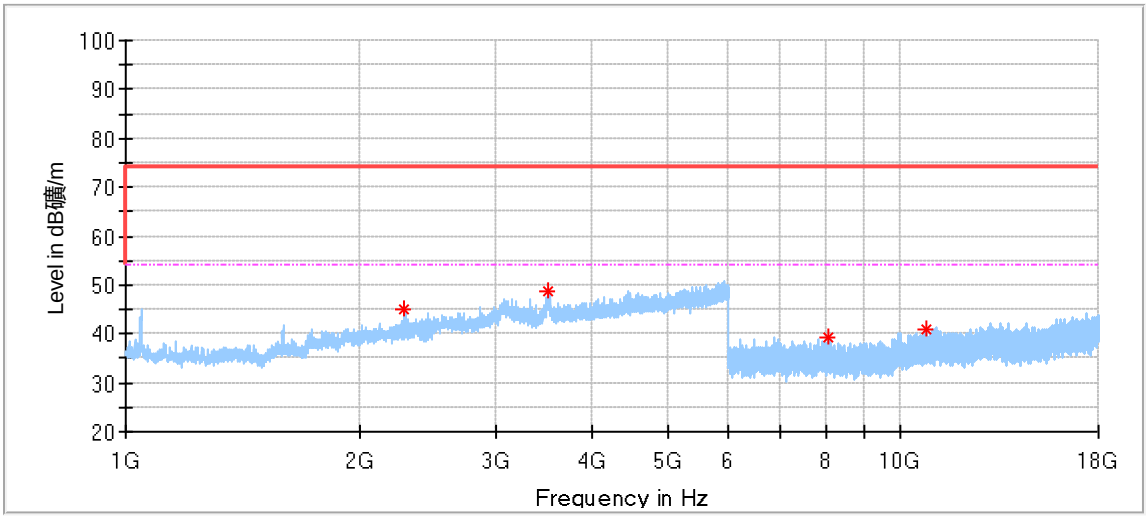
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1047.000000	43.35	74.00	30.65	150.0	H	240.0	-8.58
2297.000000	46.55	74.00	27.45	150.0	H	180.0	-3.55
2479.500000	47.02	74.00	26.98	150.0	H	356.0	-2.04
3501.000000	48.09	74.00	25.91	150.0	H	132.0	3.71
5864.500000	50.47	74.00	23.54	150.0	H	34.0	6.76



Critical_Freqs

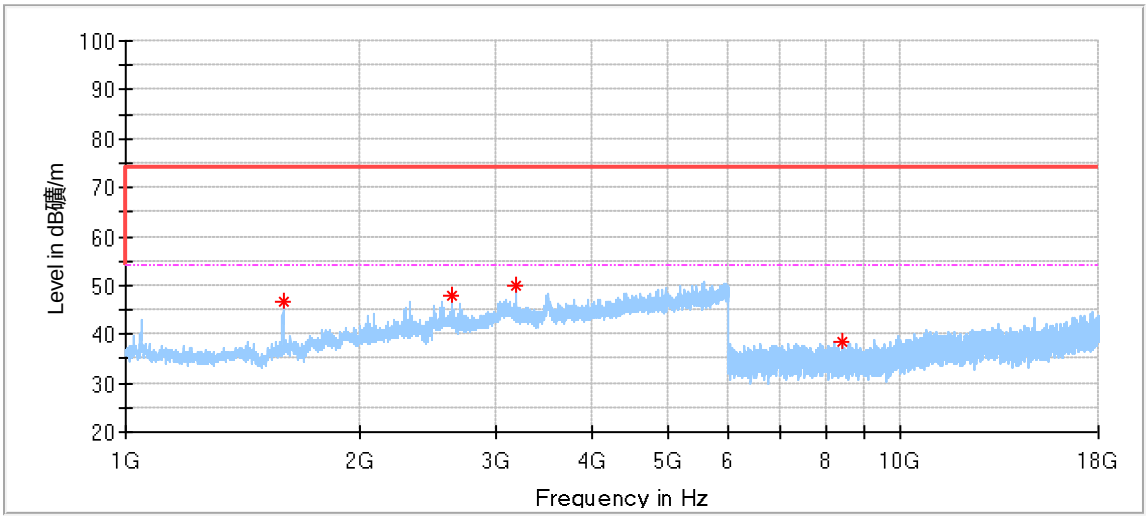
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1593.000000	45.53	74.00	28.47	150.0	V	153.0	-7.30
3192.500000	48.63	74.00	25.37	150.0	V	153.0	0.41
3500.000000	47.90	74.00	26.10	150.0	V	165.0	3.76
5865.000000	51.26	74.00	22.74	150.0	V	93.0	6.76
9268.000000	38.88	74.00	35.12	150.0	V	179.0	7.47

BLE_2Mbps_Middle Channel:



Critical_Freqs

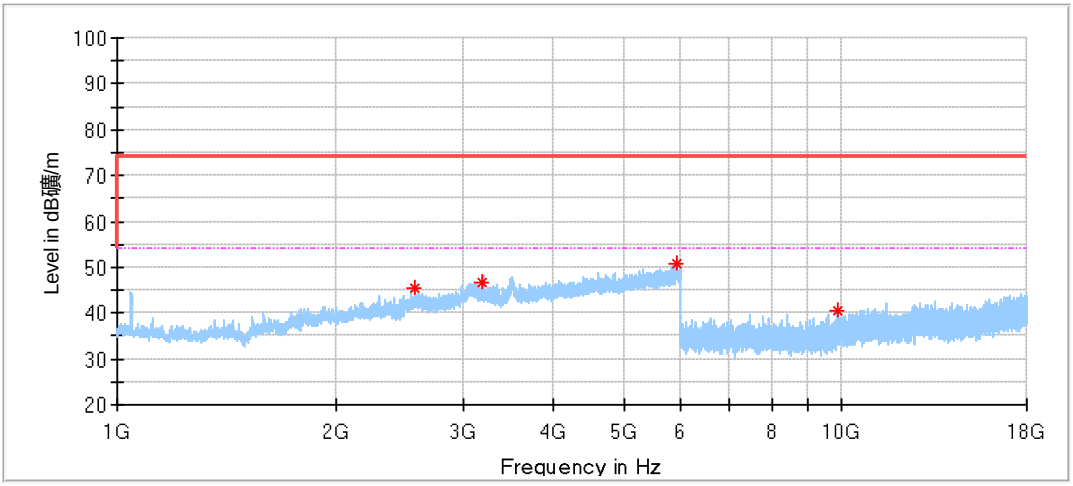
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2291.000000	45.18	74.00	28.82	150.0	H	177.0	-3.57
3503.500000	48.89	74.00	25.11	150.0	H	177.0	3.57
8045.500000	39.34	74.00	34.66	150.0	H	177.0	6.64
10786.500000	41.05	74.00	32.95	150.0	H	302.0	9.68



Critical_Freqs

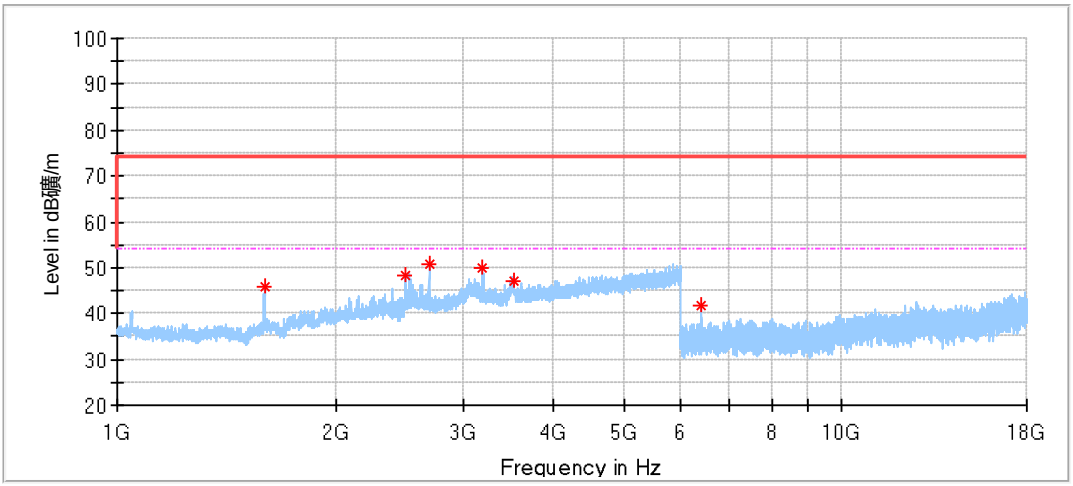
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1599.000000	46.82	74.00	27.18	150.0	V	201.0	-7.21
2632.500000	47.97	74.00	26.03	150.0	V	237.0	-1.54
3190.000000	49.76	74.00	24.24	150.0	V	225.0	0.42
8429.000000	38.33	74.00	35.67	150.0	V	250.0	6.64

BLE_2Mbps_High Channel:



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2580.000000	45.29	74.00	28.71	150.0	H	132.0	-1.43
3187.000000	46.86	74.00	27.14	150.0	H	228.0	0.44
5911.500000	50.69	74.00	23.31	150.0	H	192.0	6.87
9894.500000	40.34	74.00	33.66	150.0	H	157.0	8.40



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1596.000000	46.01	74.00	27.99	150.0	V	180.0	-7.26
2496.500000	48.50	74.00	25.50	150.0	V	180.0	-2.09
2692.500000	50.65	74.00	23.35	150.0	V	168.0	-2.01
3186.500000	50.13	74.00	23.87	150.0	V	156.0	0.44
3525.000000	47.10	74.00	26.90	150.0	V	36.0	2.33
6379.500000	41.60	74.00	32.40	150.0	V	108.0	5.33

Remark:
(1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205 & RSS-GEN 8.10.
(2) Data of measurement within frequency range 9kHz-30MHz and 18GHz-26MHz are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report.
(3) Corrected Amplitude = Read level + Corrector factor
Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
(The Reading Level is recorded by software which is not shown in the sheet)

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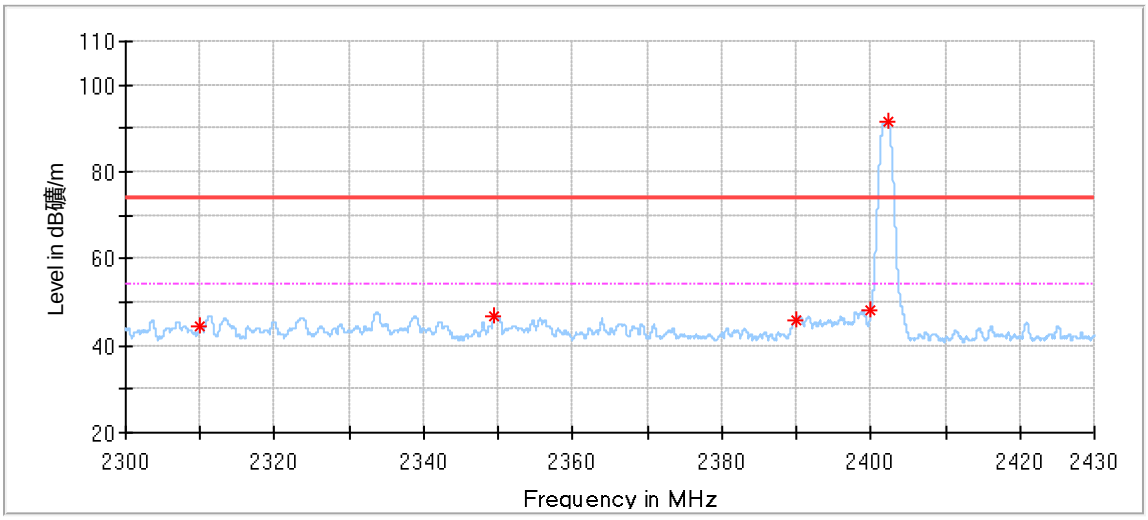
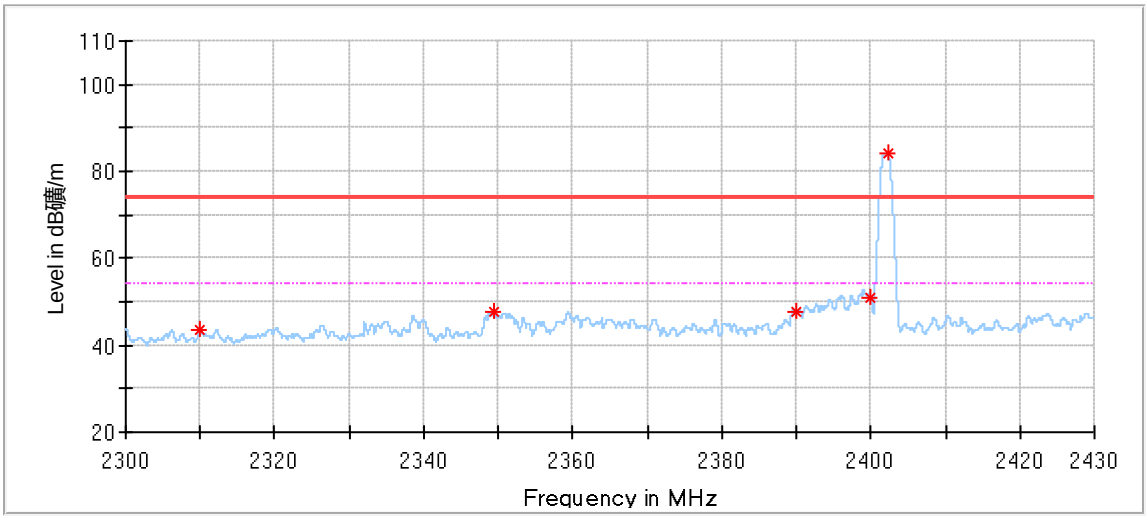
Emissions at Restricted Band:

BLE_1Mbps_Low Channel:



Critical_Freqs

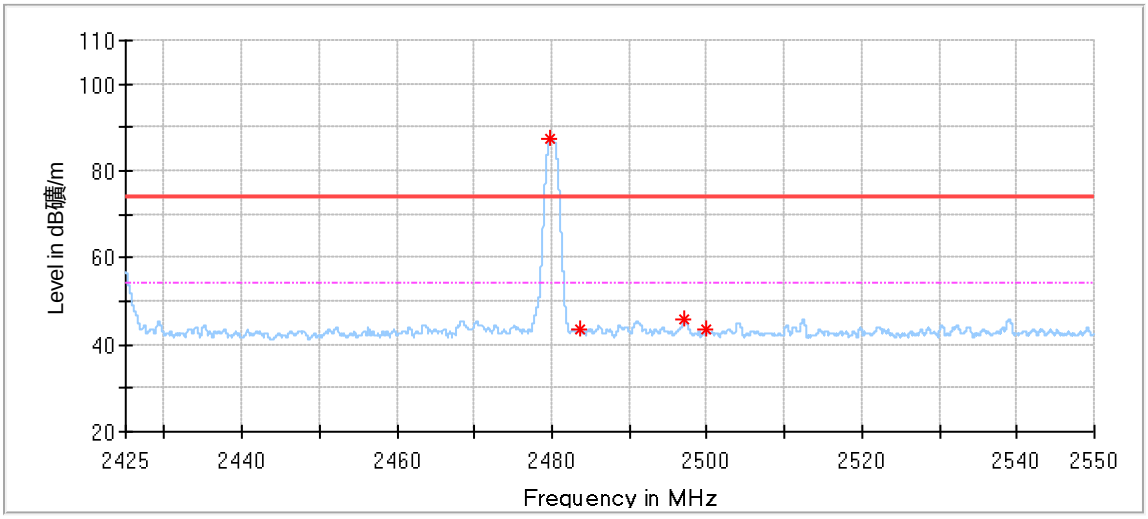
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2310.000000	44.38	74.00	29.62	150.0	H	0.0	-4.05
2349.504000	46.72	74.00	27.28	150.0	H	8.0	-3.82
2390.000000	45.77	74.00	28.23	150.0	H	3.0	-3.36
2400.000000	48.19	74.00	25.81	150.0	H	356.0	-3.32
2402.256000	91.48	74.00	-17.48	150.0	H	53.0	-3.30



Critical_Freqs

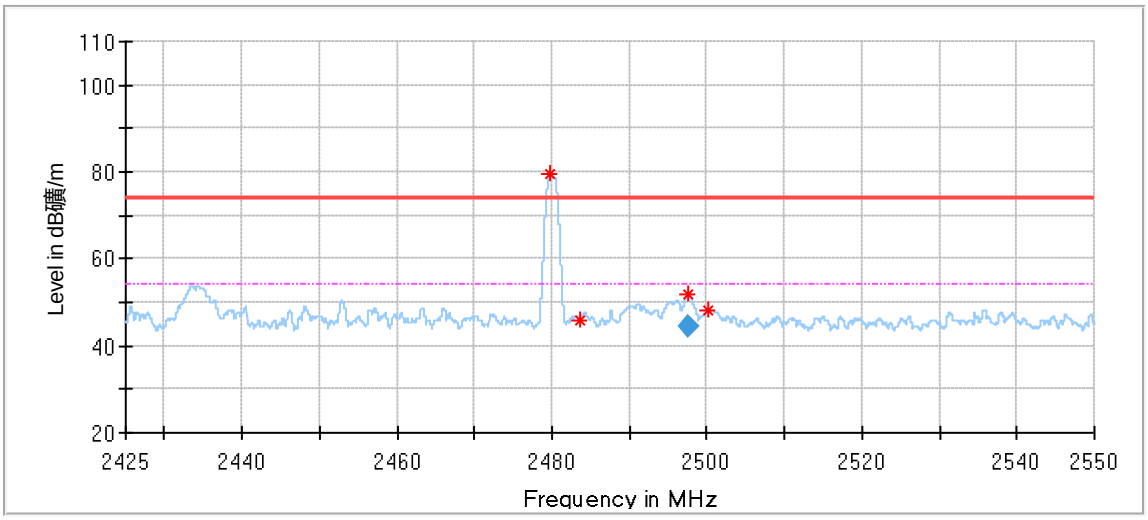
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2310.000000	43.40	74.00	30.60	150.0	V	61.0	-4.05
2349.312000	47.60	74.00	26.40	150.0	V	40.0	-3.82
2390.000000	47.61	74.00	26.39	150.0	V	323.0	-3.36
2400.000000	50.94	74.00	23.06	150.0	V	359.0	-3.32
2402.256000	83.94	74.00	-9.94	150.0	V	277.0	-3.30

BLE_1Mbps _High Channel:



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.750000	87.20	74.00	-13.20	150.0	H	31.0	-2.69
2483.500000	43.61	74.00	30.39	150.0	H	0.0	-2.68
2497.162500	45.68	74.00	28.32	150.0	H	285.0	-2.65
2500.000000	43.33	74.00	30.67	150.0	H	285.0	-2.64



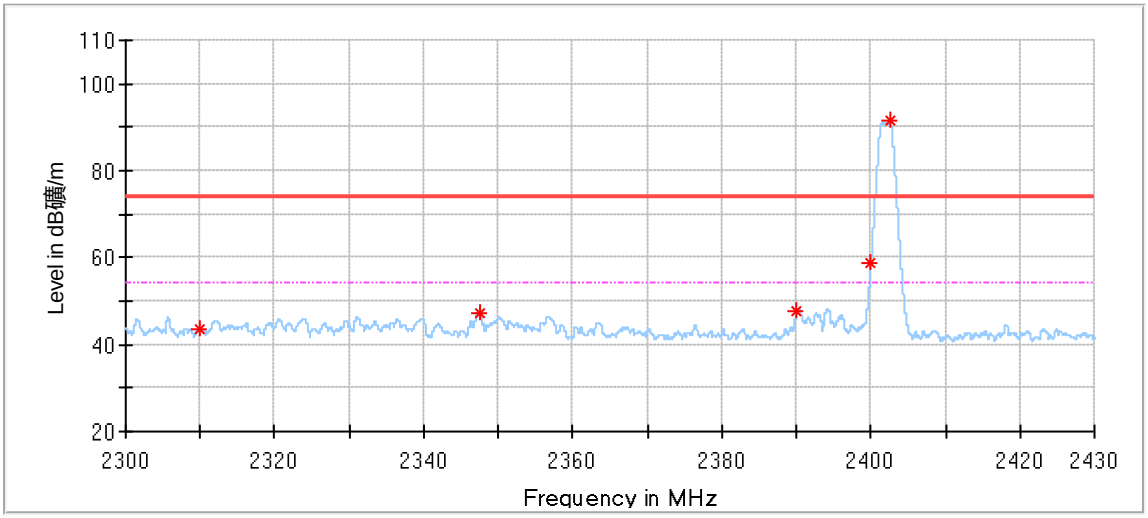
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.750000	79.49	74.00	-5.49	150.0	V	278.0	-2.69
2483.500000	45.91	74.00	28.09	150.0	V	0.0	-2.68
2497.575000	51.74	74.00	22.26	150.0	V	357.0	-2.65
2500.037500	48.20	74.00	25.80	150.0	V	0.0	-2.64

Final_Result

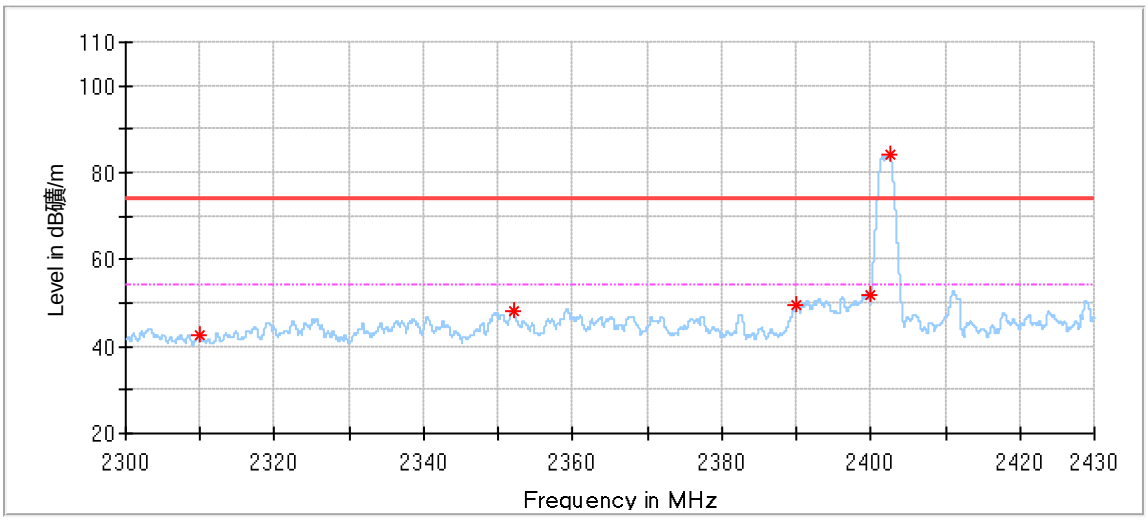
Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2497.575000	44.39	54.00	9.61	150.0	V	357.0	-2.65

BLE_2Mbps_Low Channel:



Critical_Freqs

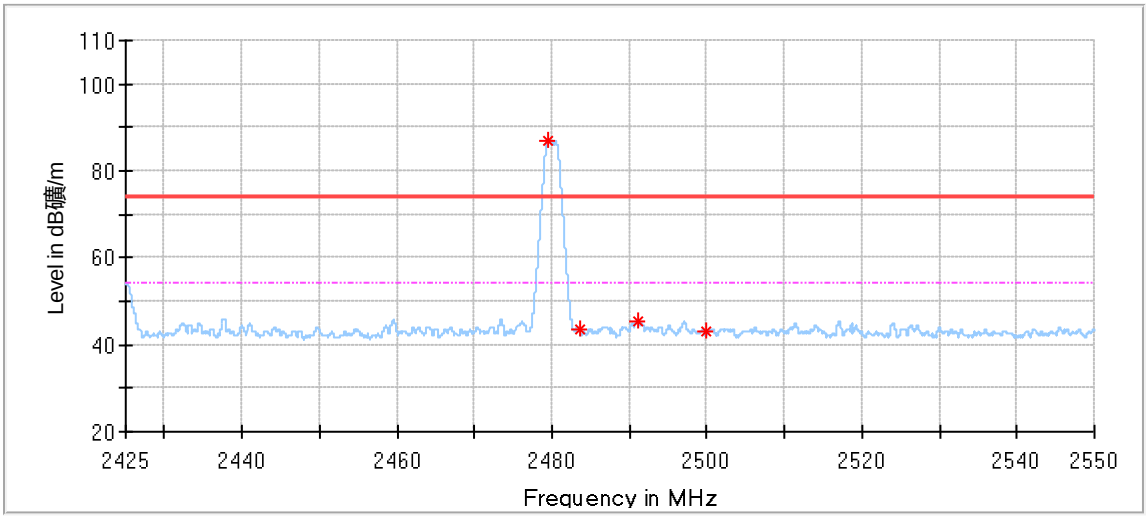
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2310.000000	43.53	74.00	30.47	150.0	H	0.0	-4.05
2347.408000	47.40	74.00	26.60	150.0	H	61.0	-3.83
2390.000000	47.78	74.00	26.22	150.0	H	295.0	-3.36
2400.000000	58.60	74.00	15.40	150.0	H	52.0	-3.32
2402.496000	91.50	74.00	-17.50	150.0	H	356.0	-3.29



Critical_Freqs

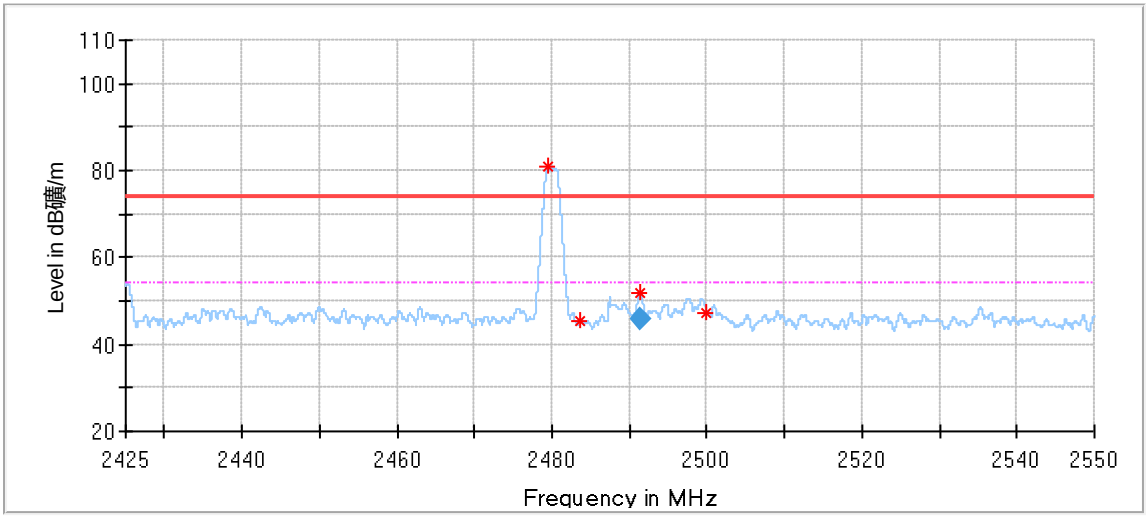
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2310.000000	42.66	74.00	31.34	150.0	V	320.0	-4.05
2352.048000	48.32	74.00	25.68	150.0	V	42.0	-3.79
2390.000000	49.66	74.00	24.34	150.0	V	359.0	-3.36
2400.000000	51.75	74.00	22.25	150.0	V	283.0	-3.32
2402.496000	83.96	74.00	-9.96	150.0	V	283.0	-3.29

BLE_2Mbps _High Channel:



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.500000	87.12	74.00	-13.12	150.0	H	75.0	-2.69
2483.500000	43.62	74.00	30.38	150.0	H	0.0	-2.68
2491.200000	45.28	74.00	28.72	150.0	H	4.0	-2.66
2500.000000	42.92	74.00	31.08	150.0	H	0.0	-2.64



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.500000	81.10	74.00	-7.10	150.0	V	285.0	-2.69
2483.500000	45.58	74.00	28.42	150.0	V	0.0	-2.68
2491.350000	51.80	74.00	22.20	150.0	V	348.0	-2.66
2500.000000	47.10	74.00	26.90	150.0	V	1.0	-2.64

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2491.350000	45.86	54.00	8.14	150.0	V	348.0	-2.66

10 Test Equipment List

List of Test Instruments

Radiated Emission Test, SAC-3 #1

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 7	68-4-74-19-001	102176	1	2025-5-13
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	68-4-80-14-002	707	1	2025-7-2
Horn Antenna	Rohde & Schwarz	HF907	68-4-80-14-005	102294	1	2025-5-27
Loop Antenna	Rohde & Schwarz	HFH2-Z2	68-4-80-14-006	100398	1	2024-8-7
Pre-amplifier	Rohde & Schwarz	SCU 18	68-4-29-14-001	102230	1	2025-5-11
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-001	15542	1	2025-5-11
Cable	HUBER-SUHNER	RG214	68-4-90-14-001-A20	----	----	----
Cable	HUBER-SUHNER	RG214	68-4-90-14-001-A21	----	----	----
Cable	JUNFLON	MWX221	68-4-90-14-001-A22	----	----	----
3m Semi-anechoic chamber	TDK	SAC-3 #1	68-4-90-14-001	----	3	2026-10-25
Test software	Rohde & Schwarz	EMC32	68-4-90-14-001-A10	Version10.35.02	N/A	N/A

RF Conducted Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	68-4-48-14-001	108272	1	2025-5-11
Vector Signal Generator	Rohde & Schwarz	SMBV100A	68-4-48-18-001	262825	1	2025-5-11
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2025-5-11
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157W	68-4-93-14-003	101226/100929	1	2025-5-11
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2025-5-11
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2025-5-11
RF Meas. and Switch Matrix Unit	TST PASS	TSCB3023R2	68-4-93-23-001	2811685c	1	2025-5-11
Frequency Extender	TST PASS	TSTCMWEXT7	68-4-93-23-001-A01	WEX230017C	1	2025-5-12
Frequency Extender	TST PASS	TSTSGEXT7	68-4-93-23-001-A02	EX2300BA	1	2025-5-12
Cable	JUNFLON	J12J103539	68-4-90-19-003-A20	----	----	----
Test software	TST PASS	System for BT/WIFI	68-4-93-23-001-A03	Version 2.0	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2025-10-15

Conducted Emission Test 1# Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-14-001	101782	1	2025-5-13
LISN	Rohde & Schwarz	ENV4200	68-4-87-14-001	100249	1	2025-5-13
High Voltage Probe	Schwarzbeck	TK9420(VT9420)	68-4-27-14-001	9420-584	1	2025-5-12
RF Current Probe	Rohde & Schwarz	EZ-17	68-4-27-14-002	100816	1	2025-5-13
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2025-5-11
Cable	OUQIAO	RG142	68-4-90-19-004-A20	----	----	----
Test software	Rohde & Schwarz	EMC32	68-4-90-14-003-A10	Version9.15.00	N/A	N/A
Shielding Room	TDK	CSR #1	68-4-90-19-004	----	3	2025-10-15

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Radiated Emission 9kHz-30MHz	4.69dB
Uncertainty for Radiated Emission 30MHz-1000MHz	Horizontal: 4.78dB Vertical: 5.85dB
Uncertainty for Radiated Spurious Emission 1000MHz-18000MHz	5.11dB
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	5.10dB
Uncertainty for Conducted RF test	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10^{-8} or 1%

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2023, clause 4.4.3 and 4.5.1.

---THE END OF REPORT---

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