FCC/IC - TEST REPORT

Report Number	:	**68.950.22.1141.01**	Date of Issue:	**2023-03-02**
Model / HVIN	:	**20-20444**		
Product Type	:	TV Pro 300		
Applicant	:	Teladoc Health		
Address	:	7406 Hollister Ave, Goleta, California, United States, 93117		
Manufacturer	:	Teladoc Health		
Address	:	7406 Hollister Ave, Goleta, California, United States, 93117		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	**51**		

Any use for advertising purposes must be granted in writing. This technical report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

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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
IC Registration No.:	10320A

3 Description of the Equipment Under Test

Product:	TV Pro 300
Model no.:	20-20444
Hardware Version Identification No. (HVIN)	20-20444
Brand name:	Teladoc Health
FCC ID:	2A9VE2020444
IC:	29989-2020444
Options and accessories:	N/A
Rating:	100-240VAC, 50/60Hz, 2.0A Max
RF Transmission Frequency:	2402MHz-2480MHz
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	Integrated antenna
Antenna 1	Gain: -3.49dBi
Description of the EUT:	The Equipment Under Test (EUT) is a TV Pro 300 which support Bluetooth function and Wi-Fi operated at 5GHz and 2.4GHz. 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 10-1-2022 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-Gen Issue 5 April 2018 + A1 + A2	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2 February 2017	Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSS) and License-Exempt Local Area Network (LE-LAN) Devices

All the test methods were according to KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement Guidance and ANSI C63.10 (2013).

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5 Summary of Test Results

Technical Requirements			
FCC Part 15 Subpart C/ RSS-247 Issue 2/RSS-Gen Issue 5			
Test Condition		Pages	Test Result
§15.207& RSS-Gen 8.8	Conducted emission AC power port	10	Pass
§15.247(b)(3)	Conducted peak output power	13	Pass
RSS-247 5.4(b)	Equivalent Isotropic Radiated Power	13	Pass
§15.247(e) & RSS-247 5.2(b)	Power spectral density	17	Pass
§15.247(a)(2) & RSS-247 5.2(a) & RSS-Gen 6.7	6dB bandwidth and 99% Occupied Bandwidth	20	Pass
§15.247(a)(1) & RSS-247 5.1(a) & RSS-Gen 6.7	20dB bandwidth and 99% Occupied Bandwidth	--	N/A
§15.247(a)(1) & RSS-247 5.1(b)	Min. of Hopping Channel Carrier Frequency Separation	--	N/A
§15.247(a)(1)(iii) & RSS-247 5.1(d)	Min number of hopping frequencies	--	N/A
§15.247(a)(1)(iii) & RSS-247 5.1(d)	Dwell Time - Average Time of Occupancy	--	N/A
§15.247(d) & RSS-247 5.5	Spurious RF conducted emissions	25	Pass
§15.247(d) & RSS-247 5.5	Band edge	33	Pass
§15.247(d) & §15.209 & RSS-247 5.5 & RSS-Gen 6.13	Spurious radiated emissions for transmitter	36	Pass
§15.203 & RSS-Gen 6.8	Antenna requirement	See note 2	Pass

Note 1: N/A=Not Applicable.
Note 2: The EUT uses an external antenna and manufacturer will stick it down with glue, which gain is -3.49dBi. In accordance to §15.203 & RSS-Gen 6.8, it is considered sufficiently to comply with the provisions of this section.

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6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2A9VE2020444, IC: 29989-2020444, complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C rules and RSS-247, RSS-GEN.

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:	2022-12-20
Testing Start Date:	2022-12-20
Testing End Date:	2023-02-14

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

Reviewed by:	Prepared by:	Tested by:
John Zhi	Warlen Song	Carry Cai
Section Manager	Project Engineer	Test Engineer

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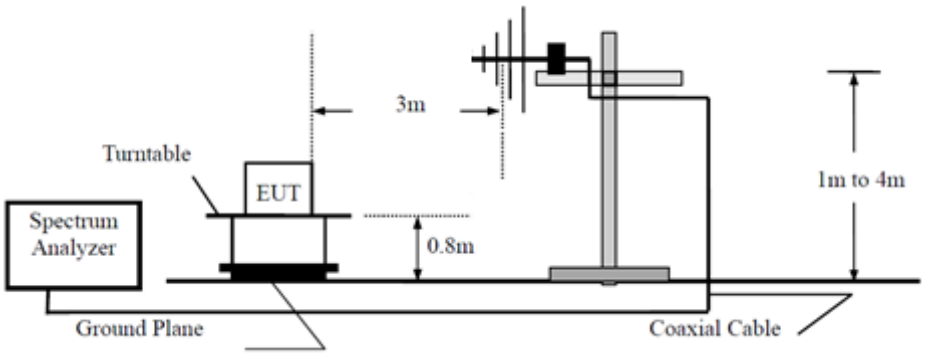
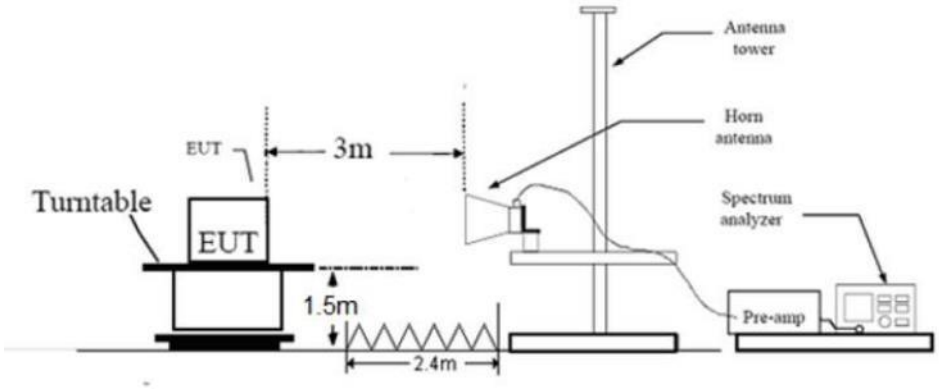
7 Test Setups

7.1 Radiated test setups

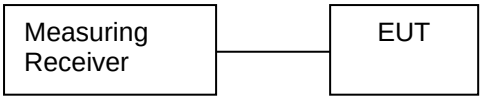
Below 1GHz



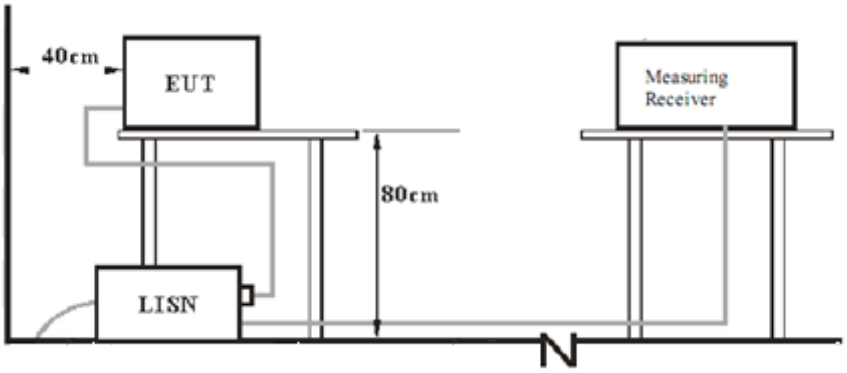
Above 1GHz



7.2 Conducted RF test setups



7.3 AC Power Line Conducted Emission test setups



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8 Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Display	LENOVO	---	---

Cables Used During Test:

Cable	Length	Shielded/unshielded	With / without ferrite
HDMI Cable	1.0m	Unshielded	Without ferrite

The system was configured to hopping mode and non-hopping mode.

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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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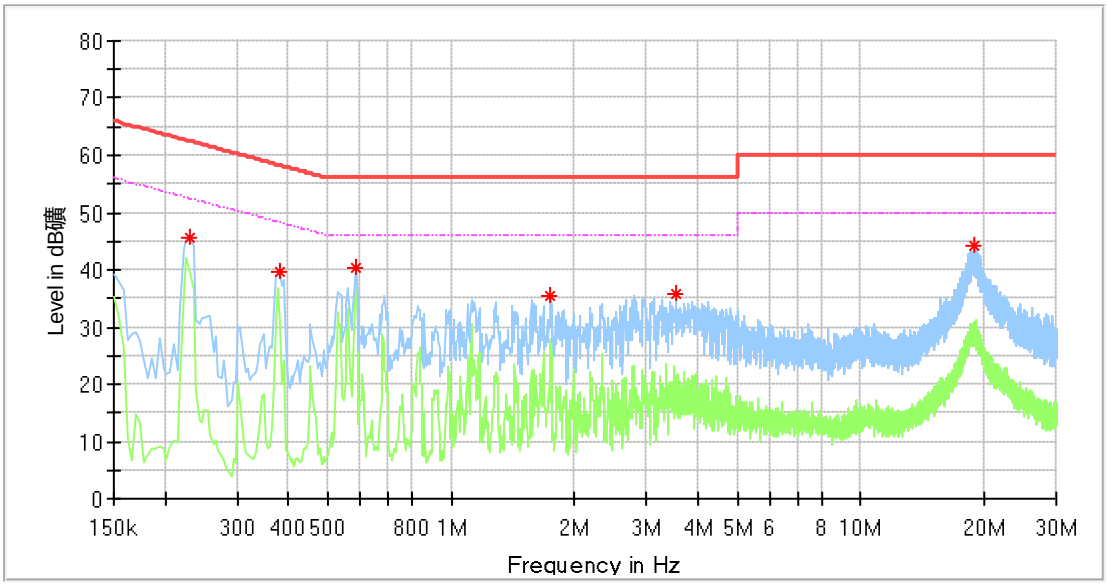
Conducted Emission

Product Type : TV Pro 300
M/N : 20-20444
Operating Condition : Transmit
Test Specification : Line
Comment : AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.230000	45.71	---	62.45	16.74	L1	10.33
0.382000	39.71	---	58.24	18.53	L1	10.35
0.586000	40.49	---	56.00	15.51	L1	10.36
1.750000	35.51	---	56.00	20.49	L1	10.40
3.534000	35.79	---	56.00	20.21	L1	10.49
18.870000	44.24	---	60.00	15.76	L1	11.20

Remark:
Max Peak= Read level + Corrector factor
Correct factor=cable loss + LISN factor

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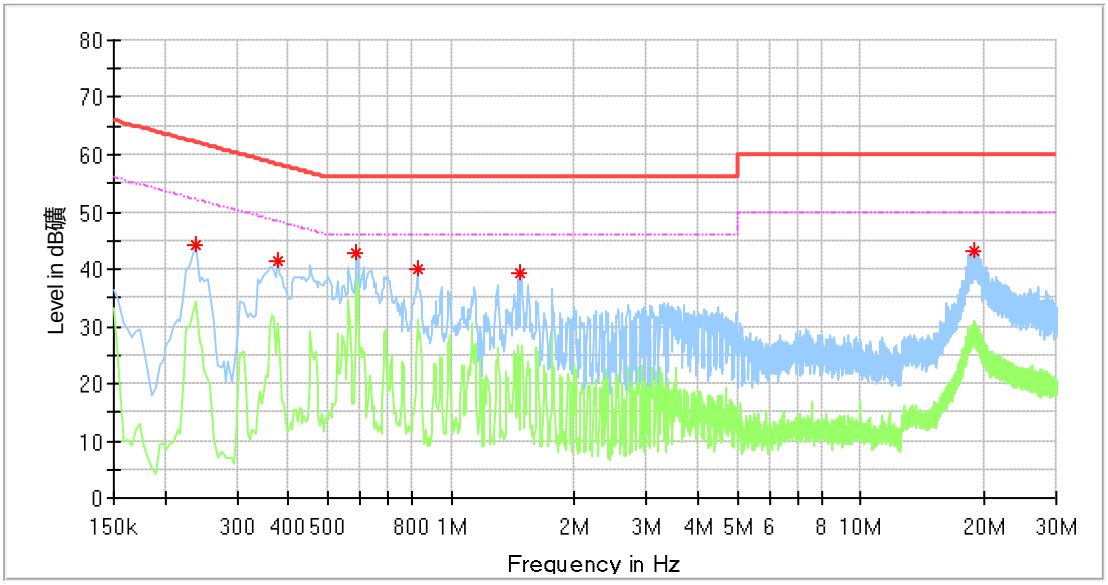
Conducted Emission

Product Type : TV Pro 300
M/N : 20-20444
Operating Condition : Transmit
Test Specification : Neutral
Comment : AC 120V/60Hz



Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.238000	44.19	---	62.17	17.98	N	10.40
0.378000	41.30	---	58.32	17.03	N	10.44
0.586000	42.88	---	56.00	13.12	N	10.48
0.826000	40.11	---	56.00	15.89	N	10.50
1.478000	39.40	---	56.00	16.60	N	10.52
18.858000	43.28	---	60.00	16.72	N	11.47

Remark:
Max Peak= Read level + Corrector factor
Correct factor=cable loss + LISN factor

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9.2 Conducted Peak Output Power & EIRP

Test Method

1. The RF output of EUT was connected to the power meter 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 hopping channel
   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

According to & RSS-247 5.4(d), EIRP limit as below:

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤4	≤36

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Conducted Peak Output Power & EIRP

Frequency MHz	Mode	Conducted Peak Output Power dBm	Antenna Gain dBi	EIRP dBm	Result
Bottom channel 2402MHz	LE 1M	4.60	-3.49	1.15	Pass
Middle channel 2440MHz	LE 1M	4.55	-3.49	1.10	Pass
Top channel 2480MHz	LE 1M	4.82	-3.49	1.37	Pass
Bottom channel 2402MHz	LE 2M	4.61	-3.49	1.16	Pass
Middle channel 2440MHz	LE 2M	4.56	-3.49	1.11	Pass
Top channel 2480MHz	LE 2M	4.83	-3.49	1.38	Pass

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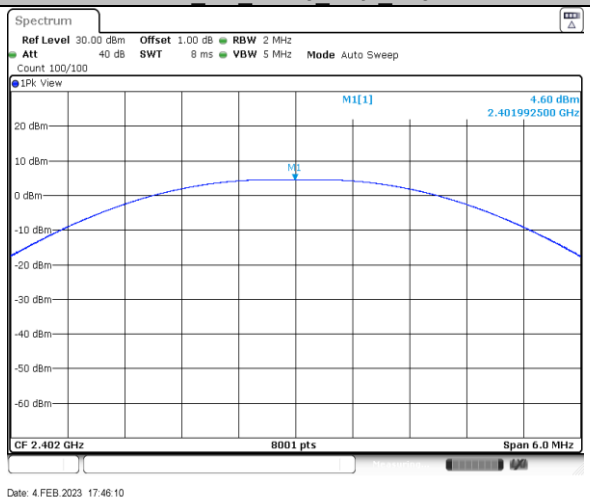
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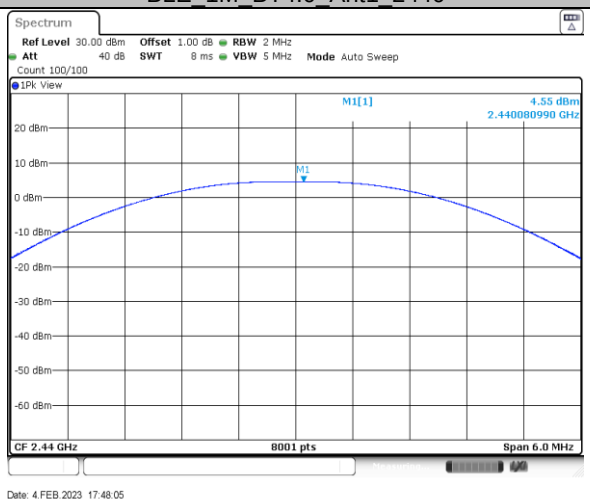
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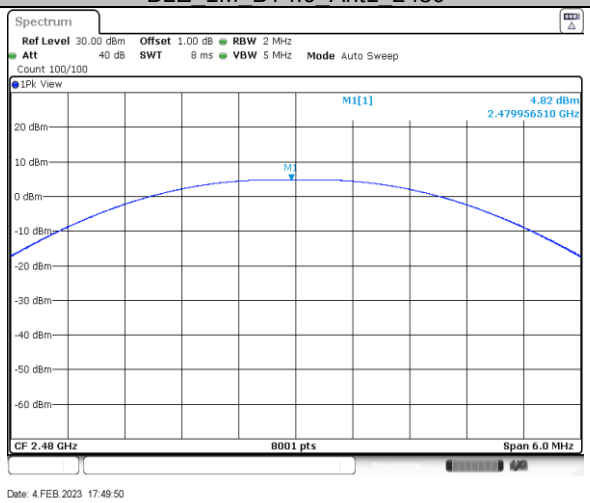
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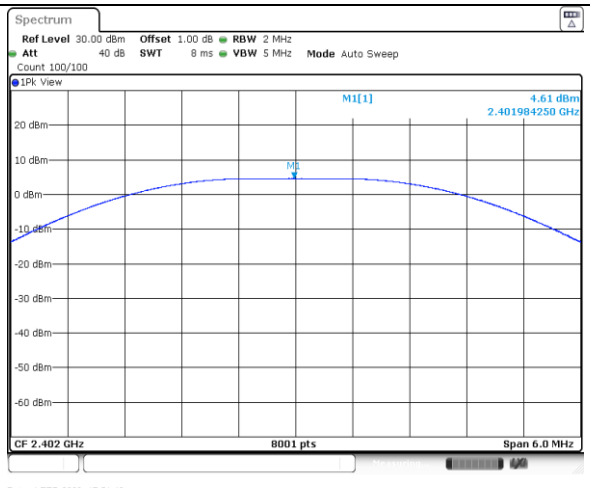

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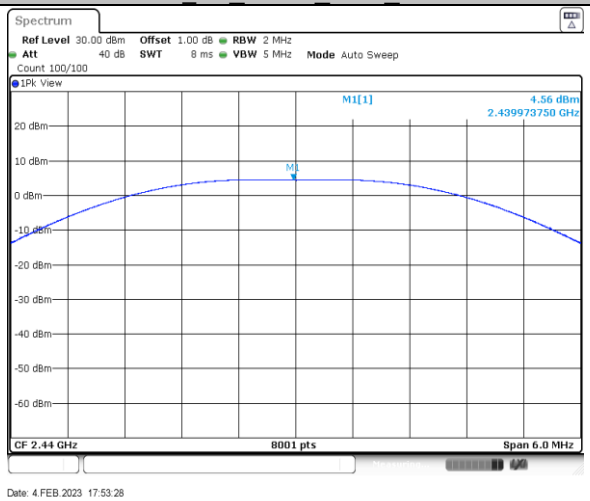

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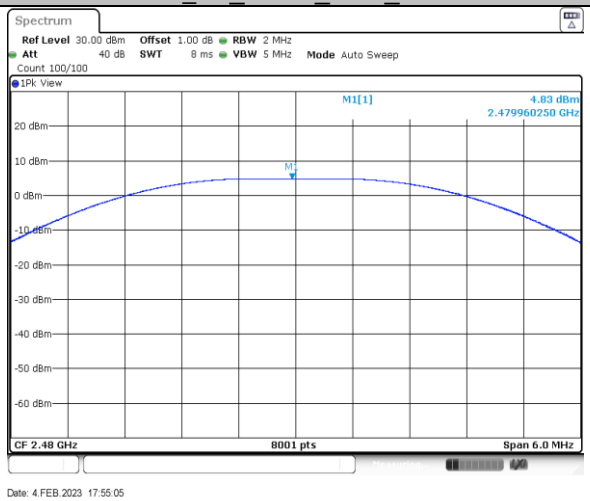

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9.3 Power Spectral Density

Test Method

1. The RF output of EUT was connected to the test receiver 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. 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.
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 other frequencies measured were completed.

Limit

Limit [dBm dBm/3KHz]
≤8

Test result

Frequency MHz	Mode	Power spectral density dBm/3KHz	Result
Bottom channel 2402MHz	LE 1M	-10.52	Pass
Middle channel 2440MHz	LE 1M	-11.00	Pass
Top channel 2480MHz	LE 1M	-11.04	Pass
Bottom channel 2402MHz	LE 2M	-13.13	Pass
Middle channel 2440MHz	LE 2M	-13.46	Pass
Top channel 2480MHz	LE 2M	-12.85	Pass

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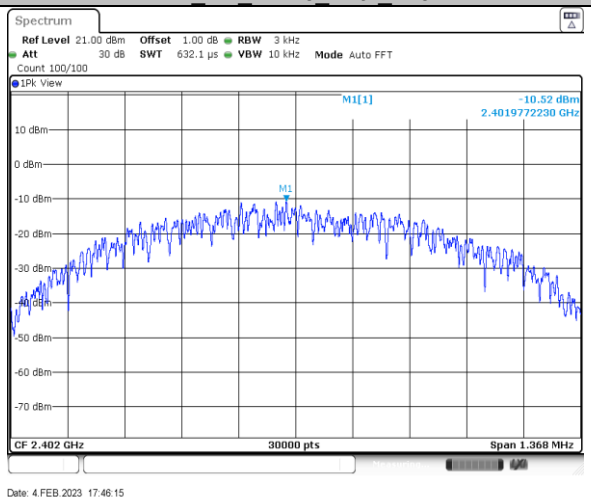
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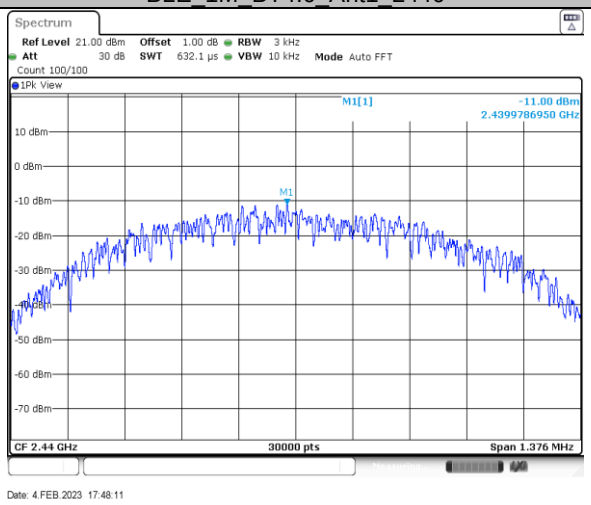
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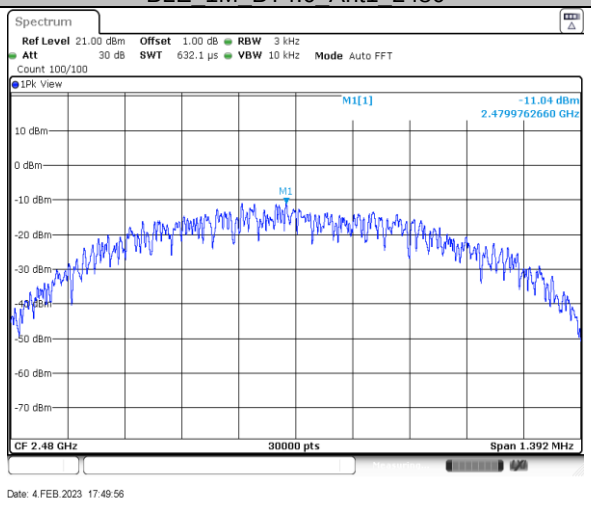
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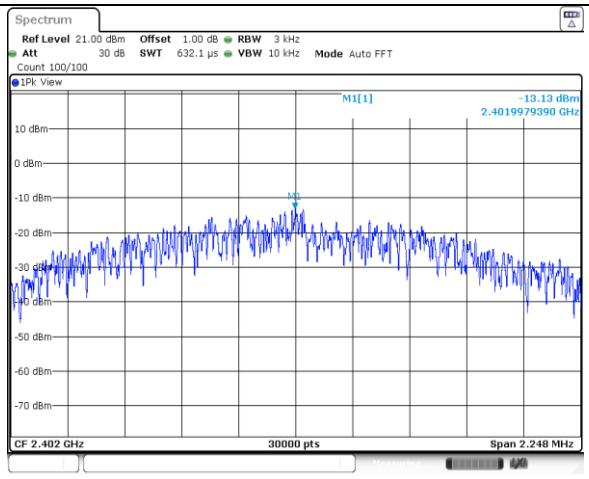

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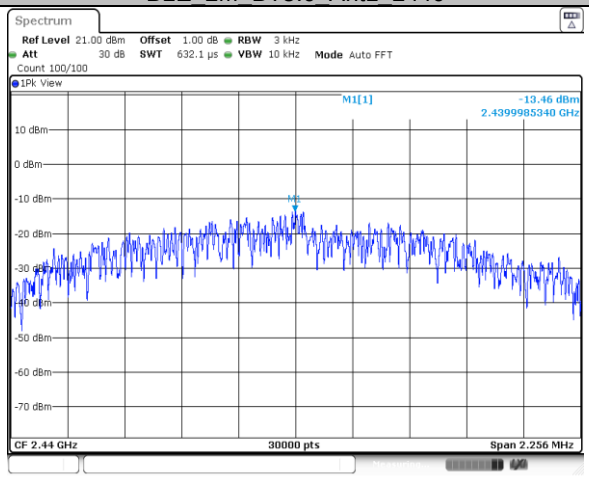

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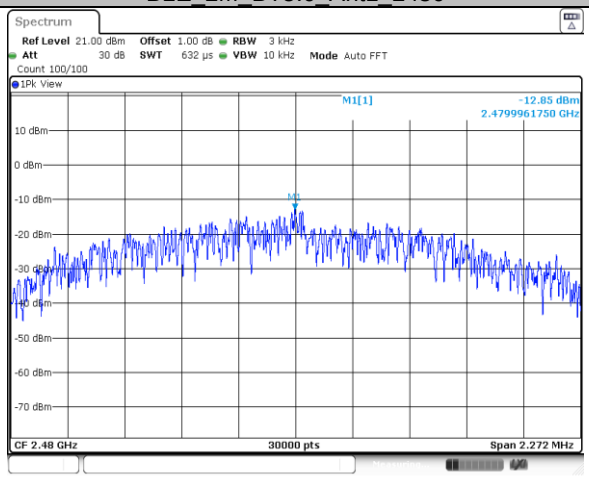

9.4 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method

1. The RF output of EUT was connected to the test receiver 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 hopping channel
   RBW =100KHz, 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. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth. Record the results.
5. Repeat above procedures until all frequencies measured were complete.

Limit

Limit [kHz]
≥500

Test result

Frequency MHz	Mode	6dB bandwidth MHz	99% bandwidth MHz	Result
Bottom channel 2402MHz	LE 1M	0.684	1.043	Pass
Middle channel 2440MHz	LE 1M	0.688	1.039	Pass
Top channel 2480MHz	LE 1M	0.696	1.039	Pass
Bottom channel 2402MHz	LE 2M	1.124	2.046	Pass
Middle channel 2440MHz	LE 2M	1.128	2.046	Pass
Top channel 2480MHz	LE 2M	1.136	2.046	Pass

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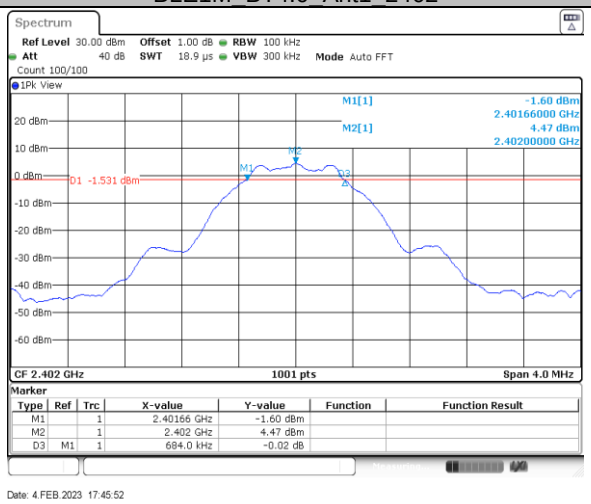
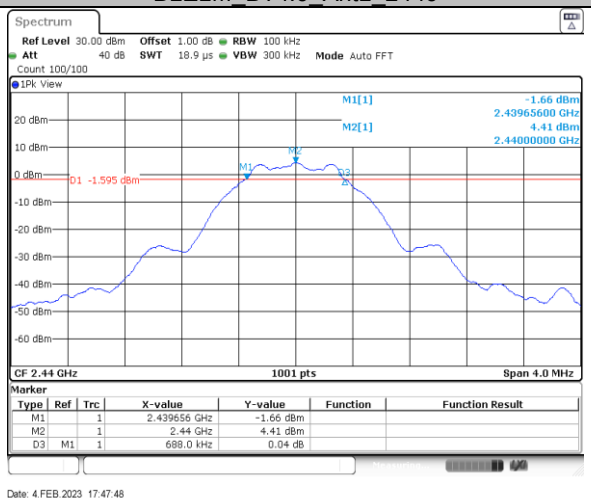
6 dB Bandwidth

BLE1M_BT4.0_Ant1_2402



BLE1M_BT4.0_Ant1_2440



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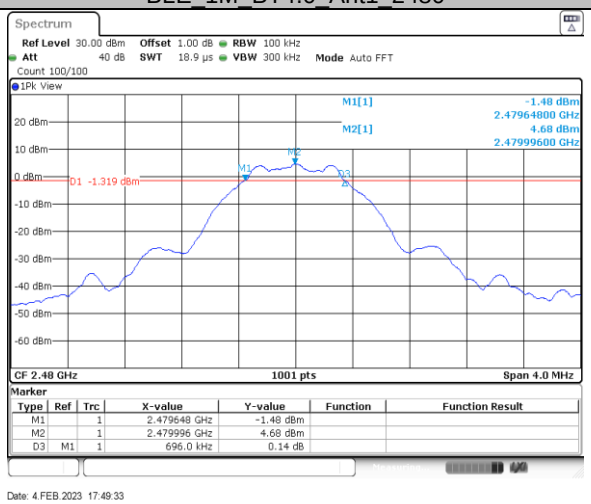

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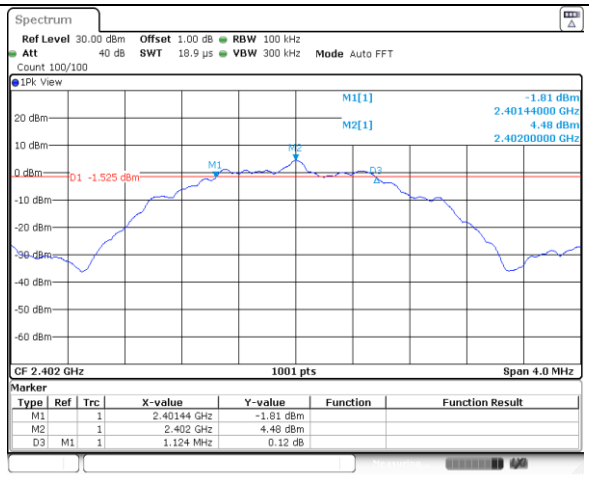

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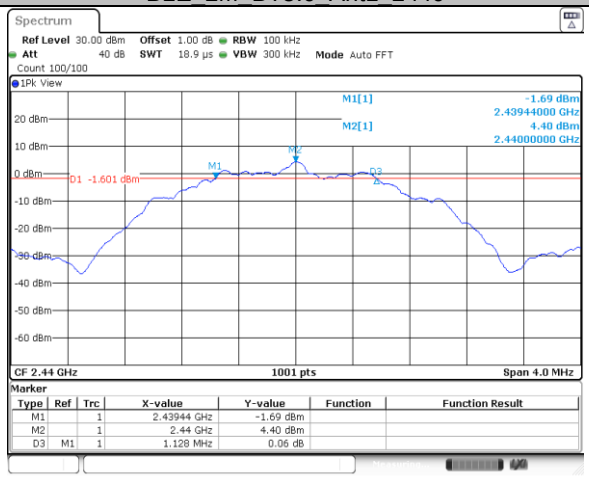

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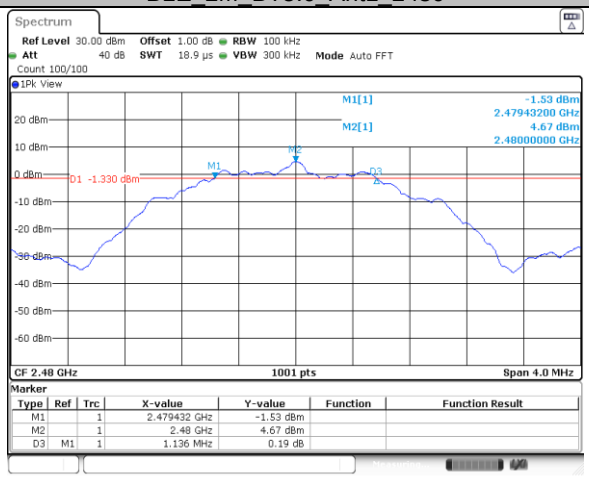

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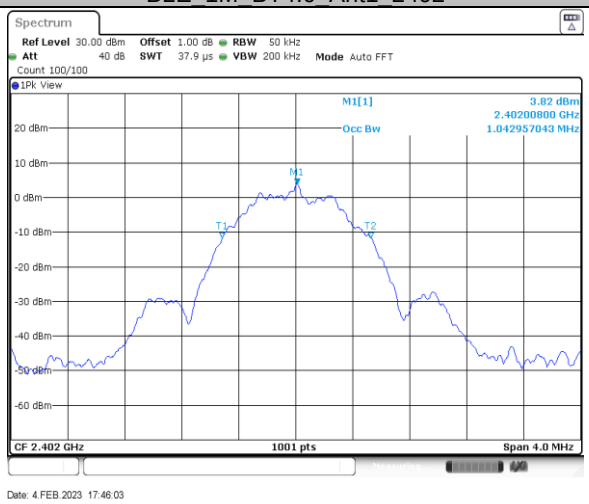
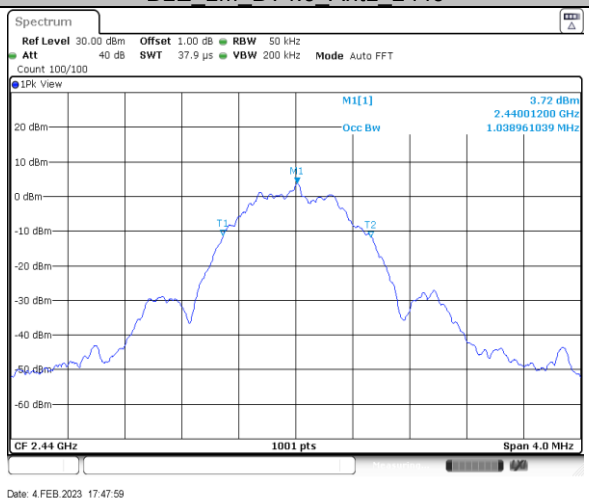
99% Bandwidth

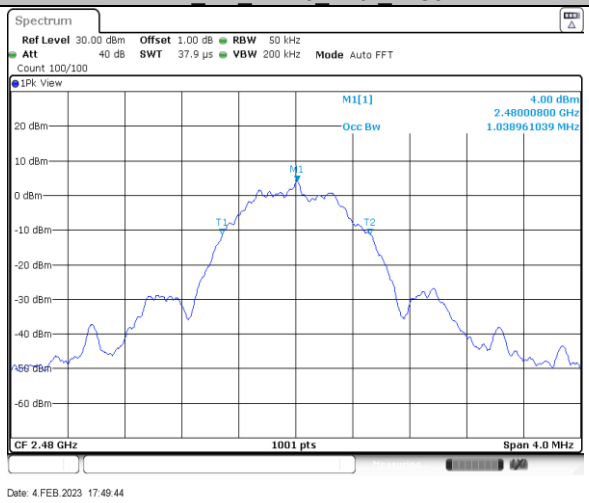
BLE_1M_BT4.0_Ant1_2402



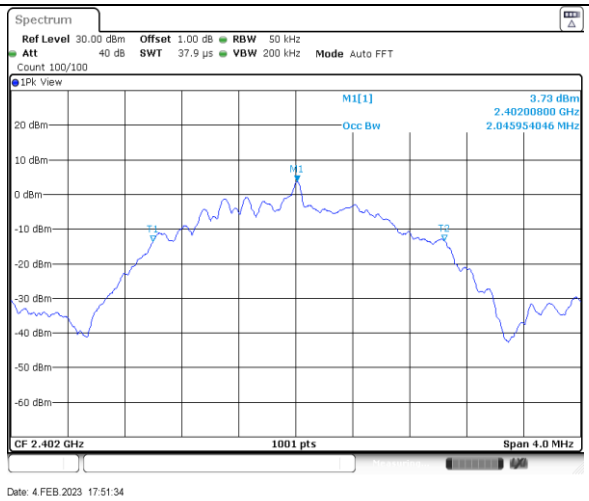
BLE_1M_BT4.0_Ant1_2440



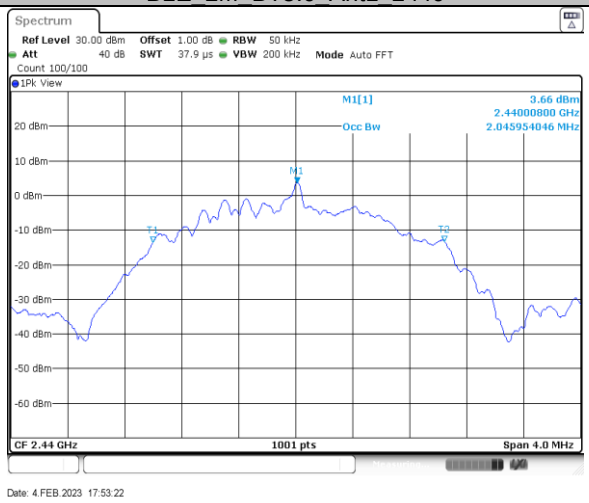
BLE_1M_BT4.0_Ant1_2480



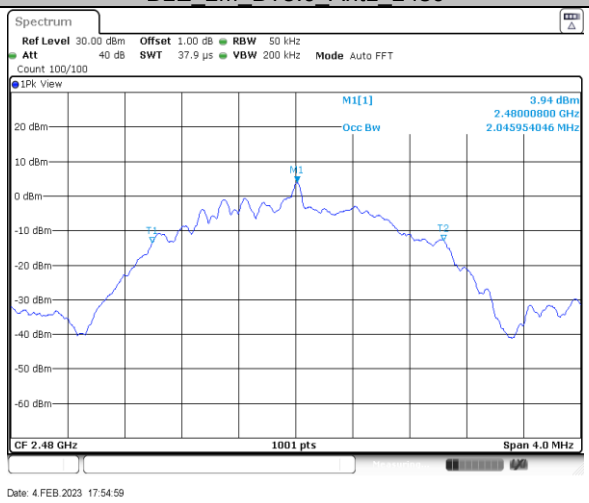
BLE_2M_BT5.0_Ant1_2402



BLE_2M_BT5.0_Ant1_2440



BLE_2M_BT5.0_Ant1_2480



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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 and enable the EUT transmit continuously.
3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
4. Measure and record the results in the test report.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency

Limit

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

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Spurious RF conducted emissions

Test Mode	Antenna	Channel (MHz)	Frequency Range (MHz)	Reference Level	Result (dBm)	Limit (dBm)	Verdict
BLE_1M	Ant0	2402	Reference	4.49 dBm	4.49	---	PASS
			30~1000	30~1000 MHz	-68.28	<=-15.51	PASS
			1000~26500	1000~26500 MHz	-47.2	<=-15.51	PASS
		2440	Reference	4.36 dBm	4.36	---	PASS
			30~1000	30~1000 MHz	-68.03	<=-15.64	PASS
			1000~26500	1000~26500 MHz	-52.26	<=-15.64	PASS
		2480	Reference	4.65 dBm	4.65	---	PASS
			30~1000	30~1000 MHz	-67.95	<=-15.35	PASS
			1000~26500	1000~26500 MHz	-52.42	<=-15.35	PASS
BLE_2M	Ant0	2402	Reference	4.48 dBm	4.48	---	PASS
			30~1000	30~1000 MHz	-68.01	<=-15.52	PASS
			1000~26500	1000~26500 MHz	-26.83	<=-15.52	PASS
		2440	Reference	4.35 dBm	4.35	---	PASS
			30~1000	30~1000 MHz	-68.33	<=-15.65	PASS
			1000~26500	1000~26500 MHz	-52.44	<=-15.65	PASS
		2480	Reference	4.66 dBm	4.66	---	PASS
			30~1000	30~1000 MHz	-68.31	<=-15.34	PASS
			1000~26500	1000~26500 MHz	-52.43	<=-15.34	PASS

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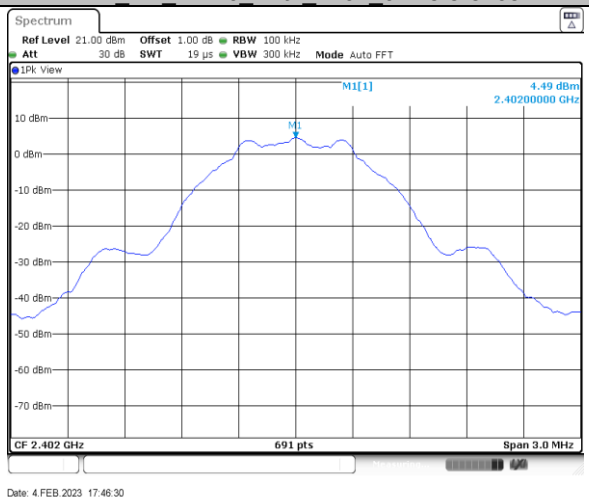
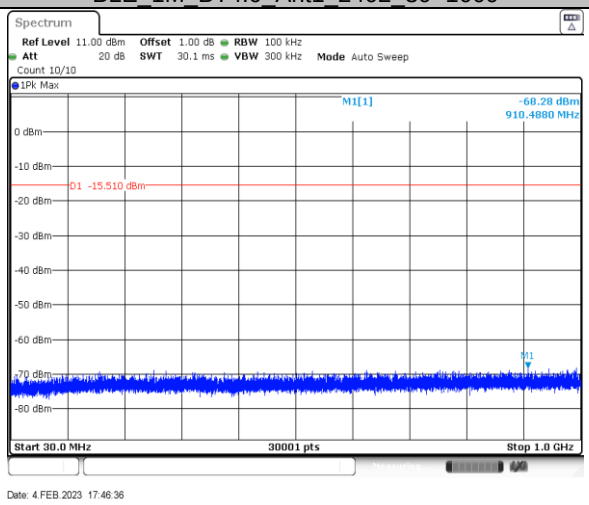
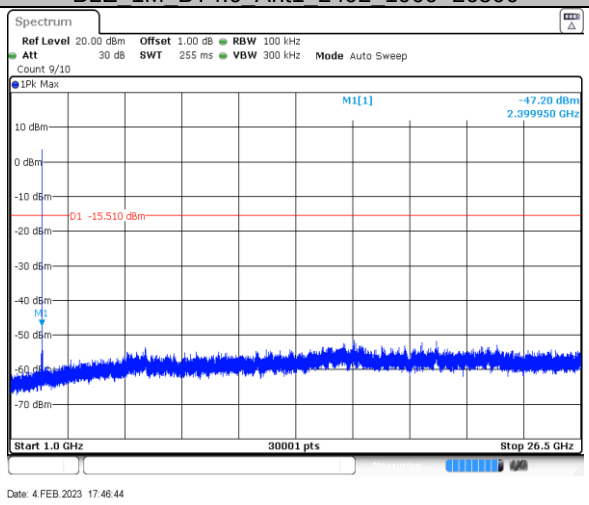
BLE_1M_BT4.0_Ant1_2402_0~Reference



BLE_1M_BT4.0_Ant1_2402_30~1000



BLE_1M_BT4.0_Ant1_2402_1000~26500



BLE_1M_BT4.0_Ant1_2440_0~Reference

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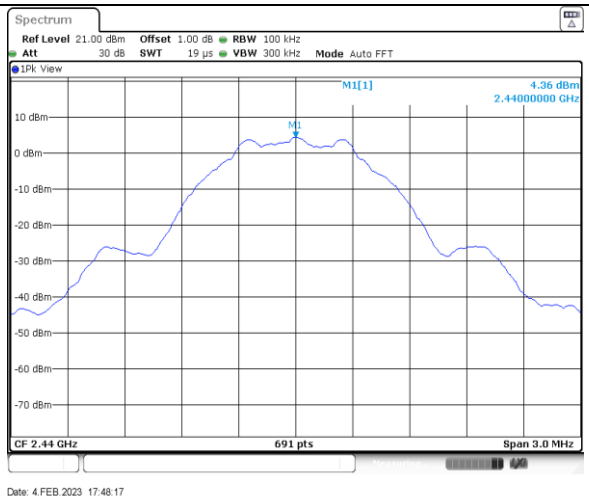
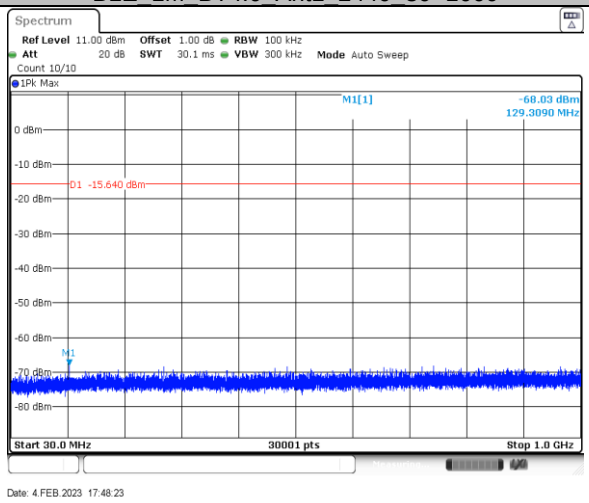
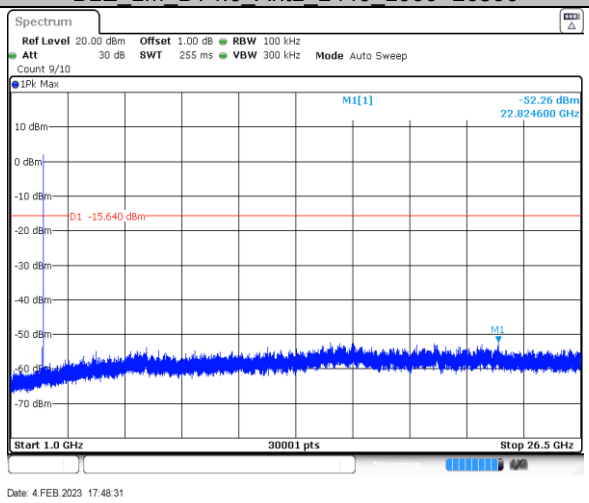


BLE_1M_BT4.0_Ant1_2440_30~1000



BLE_1M_BT4.0_Ant1_2440_1000~26500



BLE_1M_BT4.0_Ant1_2480_0~Reference

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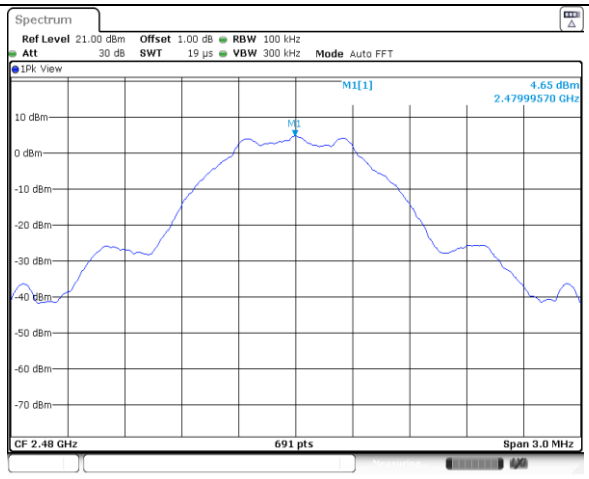
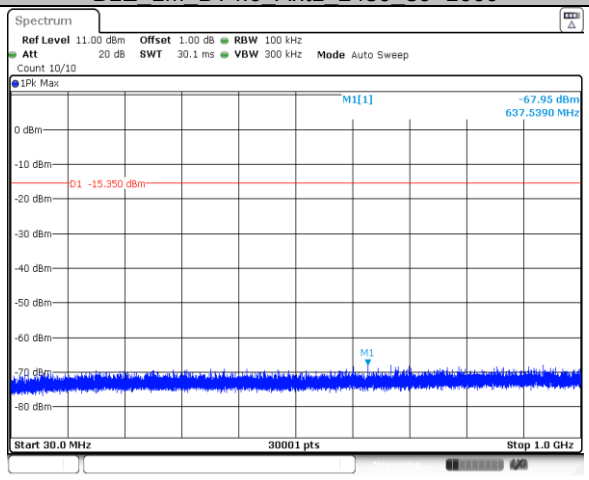
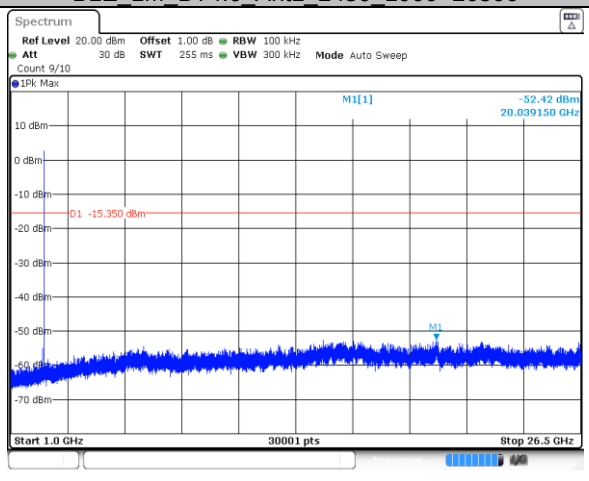


BLE_1M_BT4.0_Ant1_2480_30~1000



BLE_1M_BT4.0_Ant1_2480_1000~26500



BLE_2M_BT5.0_Ant1_2402_0~Reference

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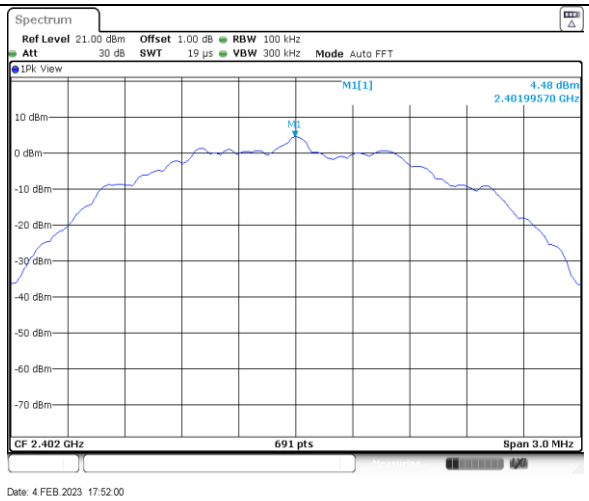
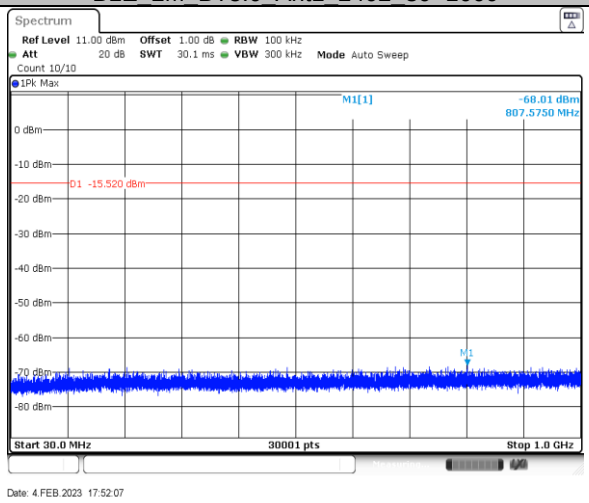
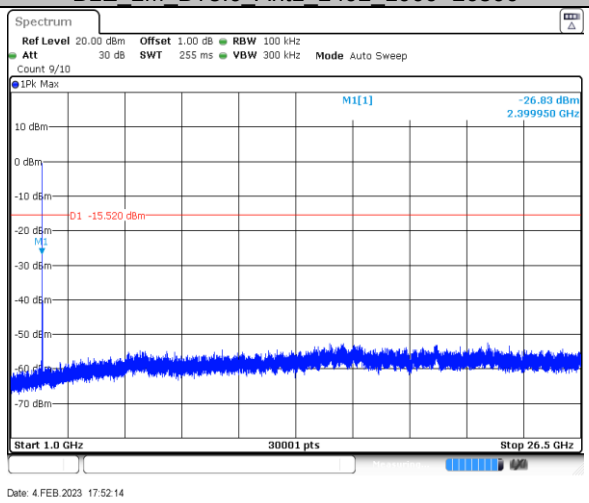


BLE_2M_BT5.0_Ant1_2402_30~1000



BLE_2M_BT5.0_Ant1_2402_1000~26500



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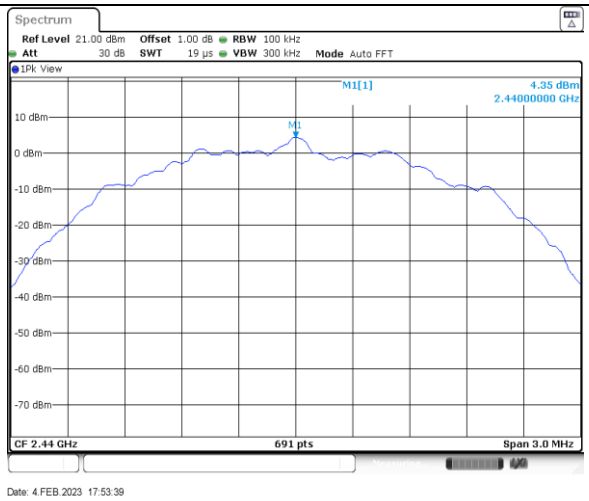
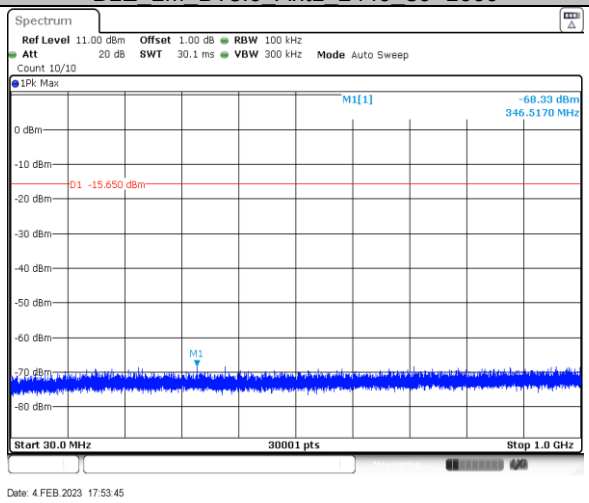
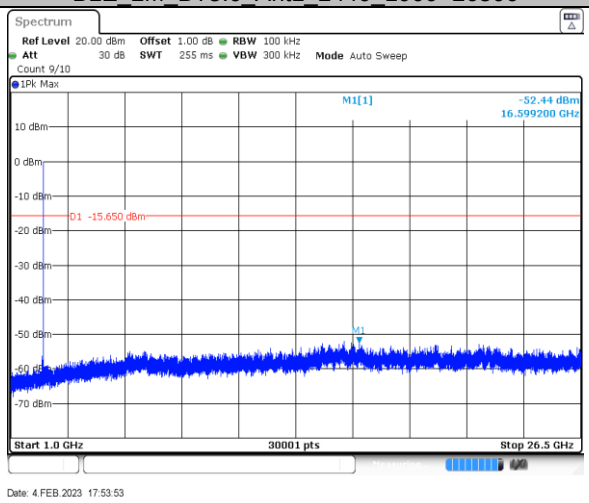


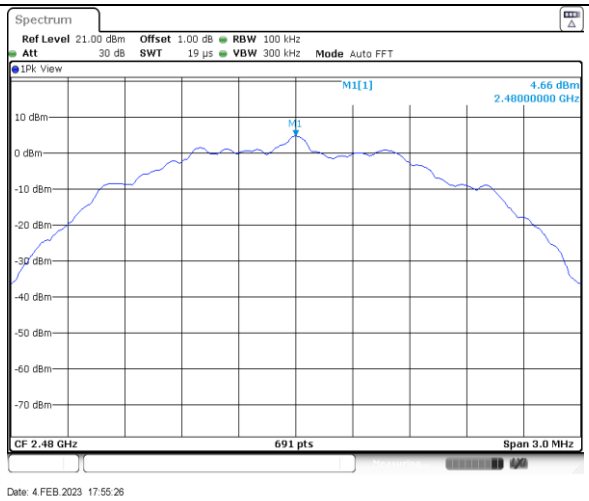
BLE_2M_BT5.0_Ant1_2440_30~1000



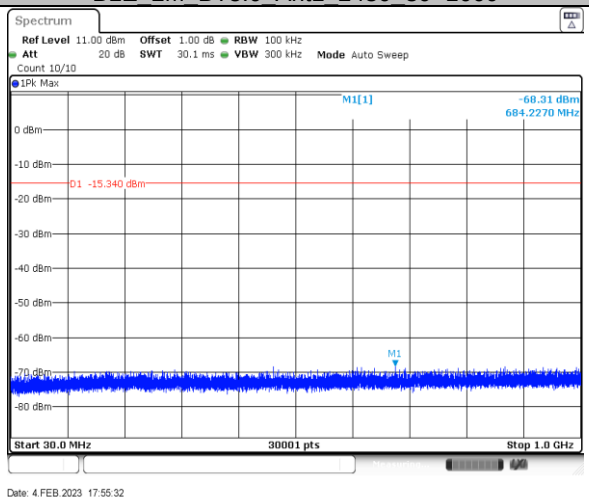
BLE_2M_BT5.0_Ant1_2440_1000~26500



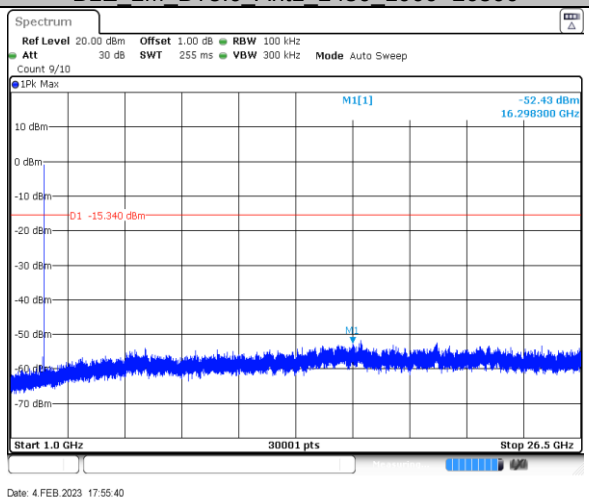
BLE_2M_BT5.0_Ant1_2480_0~Reference



BLE_2M_BT5.0_Ant1_2480_30~1000



BLE_2M_BT5.0_Ant1_2480_1000~26500



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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 and enable the EUT transmit continuously.
3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
4. Measure and record the results in the test report.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency
6. Set to the maximum power setting and enable the EUT hopping mode, repeat the test.

Limit

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

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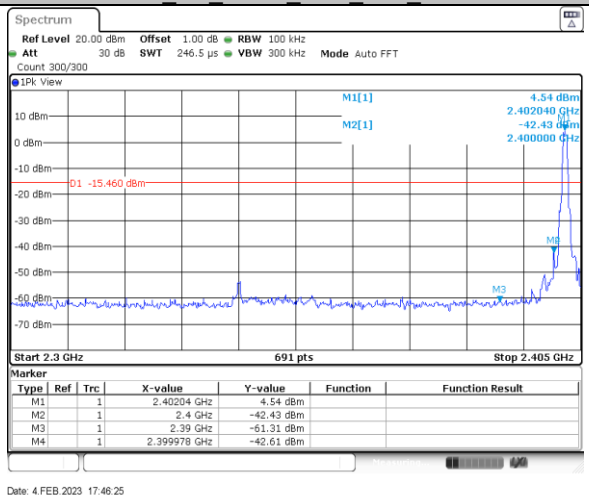
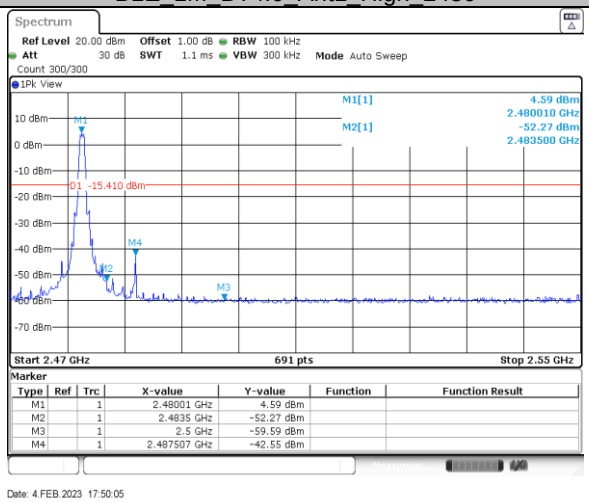
Band edge testing

Test Mode	Antenna	Channel	Channel (MHz)	Reference Level (dBm)	Result (dBm)	Limit (dBm)	Verdict
BLE_1M	Ant0	Low	2402	4.54	-42.61	<=-15.46	PASS
		High	2480	4.59	-42.55	<=-15.41	PASS
BLE_2M	Ant0	Low	2402	4.33	-30.58	<=-15.67	PASS
		High	2480	4.58	-42.76	<=-15.42	PASS

BLE_1M_BT4.0_Ant1_Low_2402



BLE_1M_BT4.0_Ant1_High_2480



BLE_2M_BT5.0_Ant1_Low_2402

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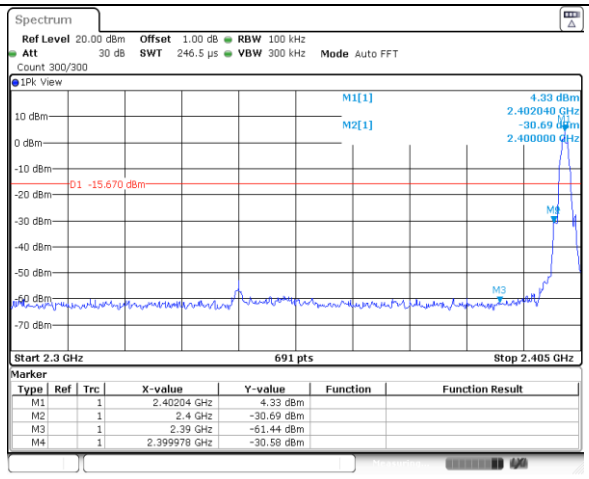
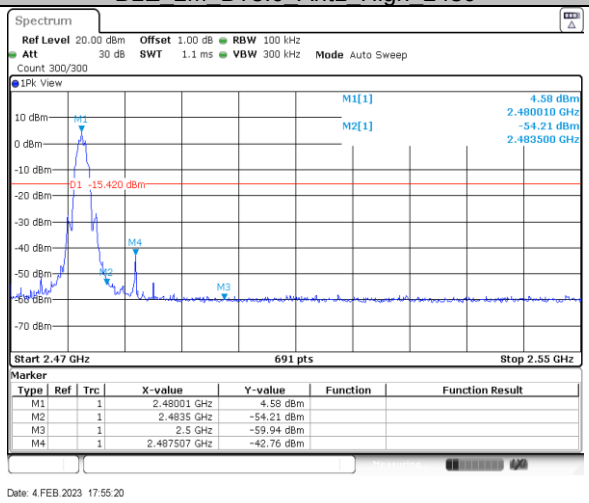


BLE_2M_BT5.0_Ant1_High_2480



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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 meters chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
4. 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.
5. 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.
6. Use the following spectrum analyzer settings According to C63.10:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW=100 kHz, VBW= 300KHz for f < 1 GHz; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW=1 MHz, VBW= 3MHz for f ≥1 GHz for peak measurement.
   For average measurement:
   VBW = 10 Hz, when duty cycle is no less than 98 percent.
   VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
7. Repeat above procedures until all frequencies measured were complete.

Note:

1: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Quasi-peak detection (QP) at frequency below 1GHz.
2: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for peak detection (PK) at frequency above 1GHz.
3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average ((duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (20log(1/duty cycle)).
4: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.

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Spurious radiated emissions for transmitter

Limit

The radio emission outside the operating frequency band 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. Radiated emissions which fall in the restricted bands, as defined in section15.205 & RSS-GEN 8.10, must comply with the radiated emission limits specified in section 15.209 & RSS-Gen 6.13.

Frequency MHz	Field Strength µV/m	Field Strength dBµV/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

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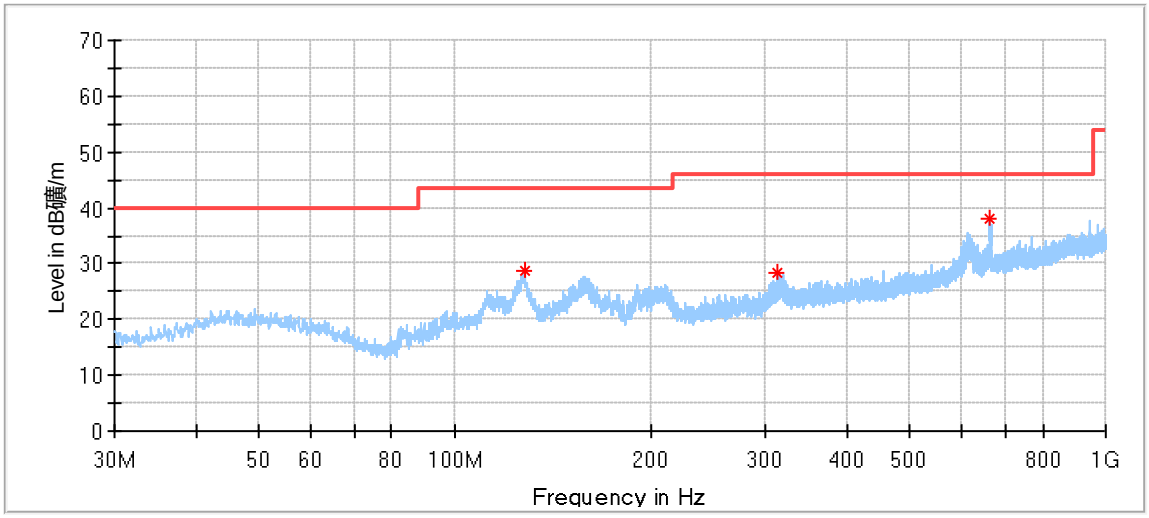
Spurious radiated emissions for transmitter

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.

Test data_30MHz to 1000MHz



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
128.131667*	28.81	43.50	14.69	200.0	H	232.0	16.04
312.862778	28.19	46.00	17.81	100.0	H	168.0	21.24
664.056667	38.14	46.00	7.86	100.0	H	192.0	28.16

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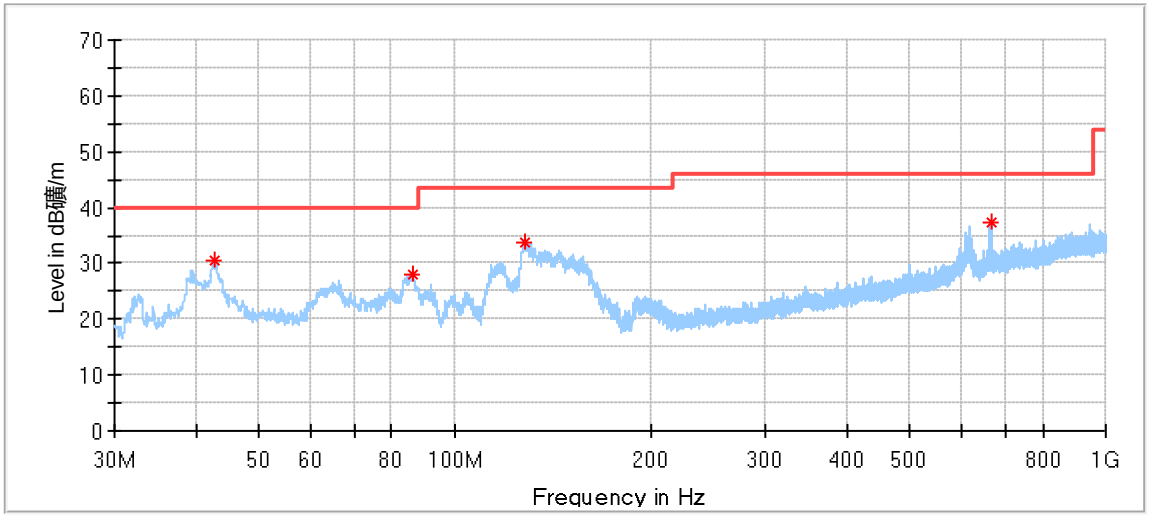

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.879444	30.36	40.00	9.64	100.0	V	33.0	20.16
86.313889	28.04	40.00	11.96	100.0	V	25.0	15.13
128.185556*	33.88	43.50	9.62	100.0	V	349.0	16.03
666.481667	37.23	46.00	8.77	100.0	V	239.0	28.23

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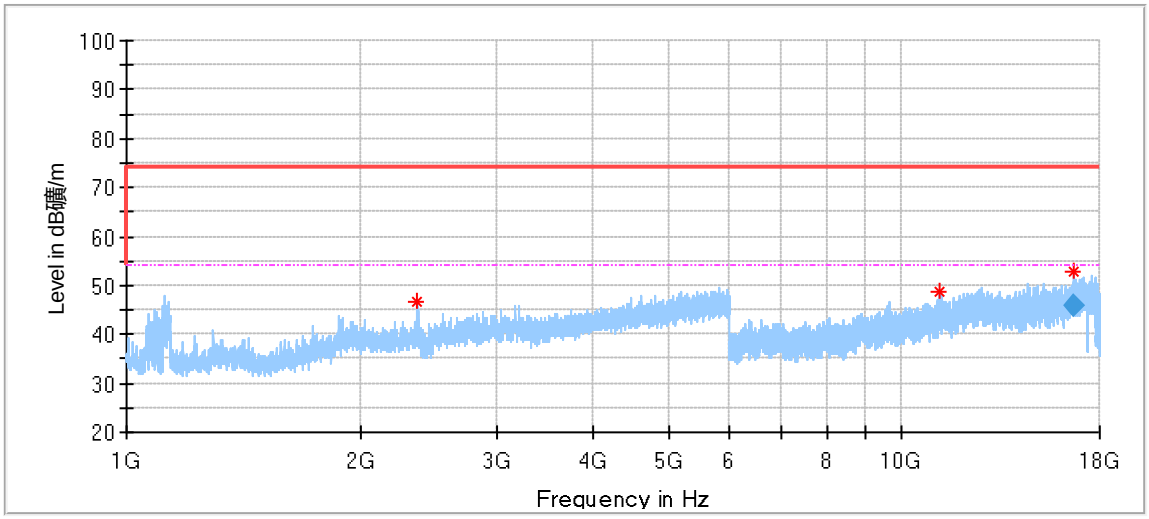
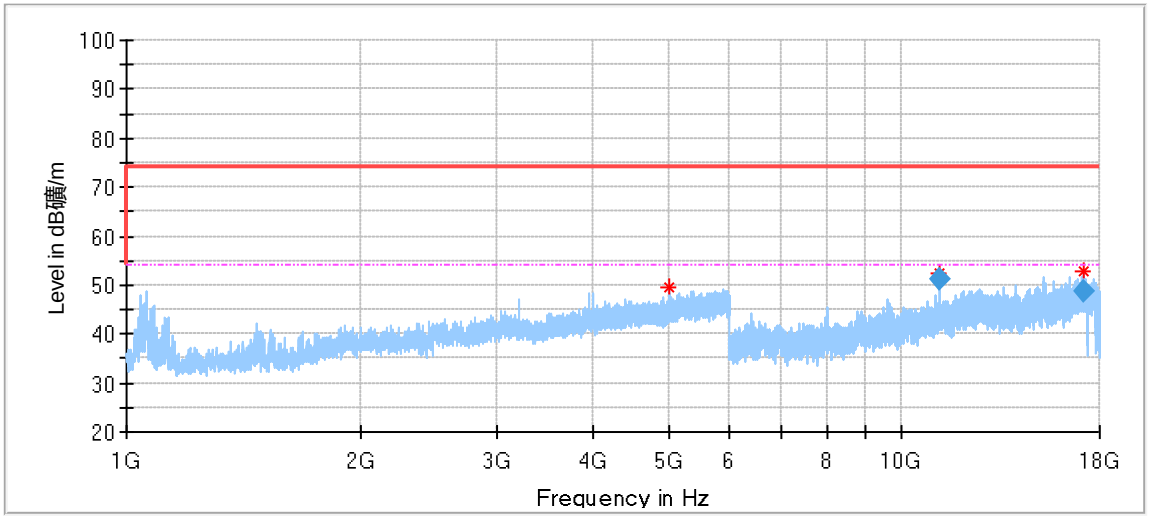
Test data 1GHz to 18GHz:
BLE_1MHz_Low Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2375.000000*	46.63	74.00	27.37	150.0	H	284.0	-3.15
11198.500000	48.85	74.00	25.15	150.0	H	330.0	15.48
16675.000000	52.65	74.00	21.35	150.0	H	60.0	23.24
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
16675.000000	45.69	54.00	8.31	150.0	H	60.0	23.24



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5011.000000	49.66	74.00	24.34	150.0	V	355.0	4.57
11198.500000*	52.21	74.00	21.79	150.0	V	6.0	15.48
17122.000000	52.65	74.00	21.35	150.0	V	157.0	24.16
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
11198.500000*	51.03	54.00	2.97	150.0	V	6.0	15.48
17122.000000	48.68	54.00	5.32	150.0	V	157.0	24.16

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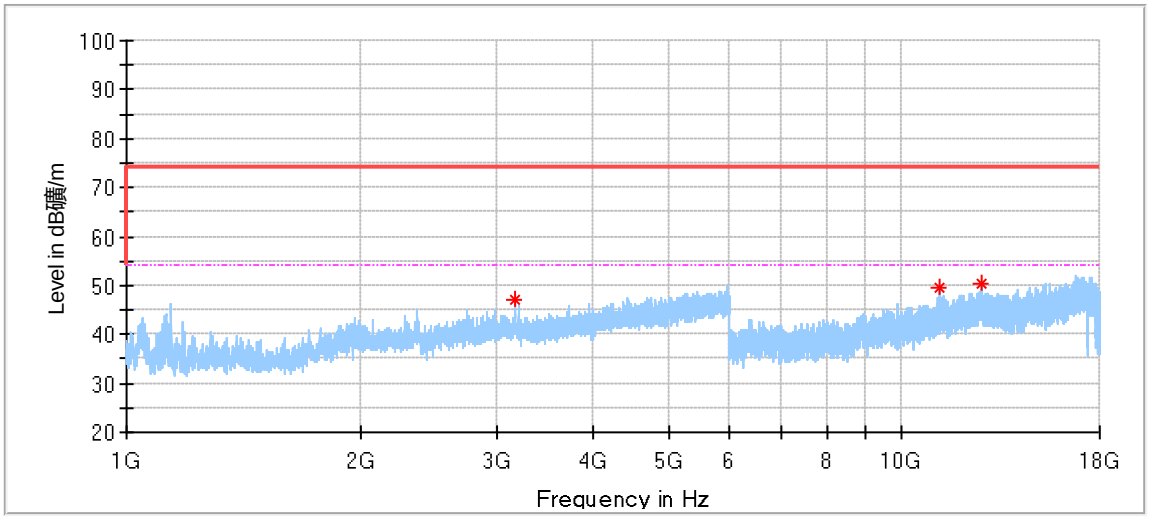
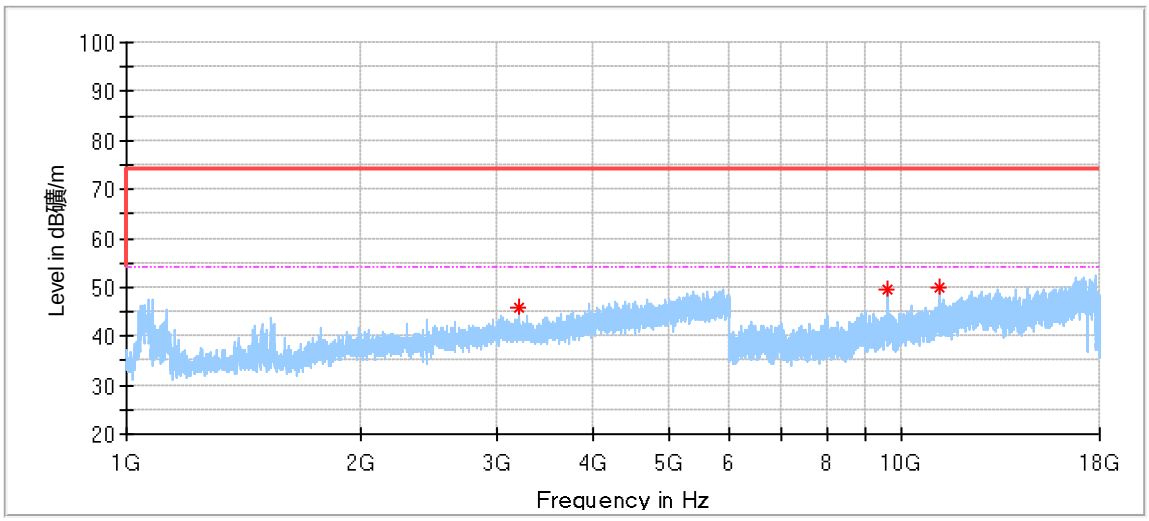
BLE_1MHz_Middle Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3168.000000	47.11	74.00	26.89	150.0	H	10.0	-0.65
11198.000000*	49.51	74.00	24.49	150.0	H	334.0	15.48
12636.000000*	50.24	74.00	23.76	150.0	H	334.0	18.57



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3199.500000	45.91	74.00	28.09	150.0	V	351.0	-0.69
9598.500000	49.49	74.00	24.51	150.0	V	4.0	13.11
11198.000000*	49.79	74.00	24.21	150.0	V	60.0	15.48

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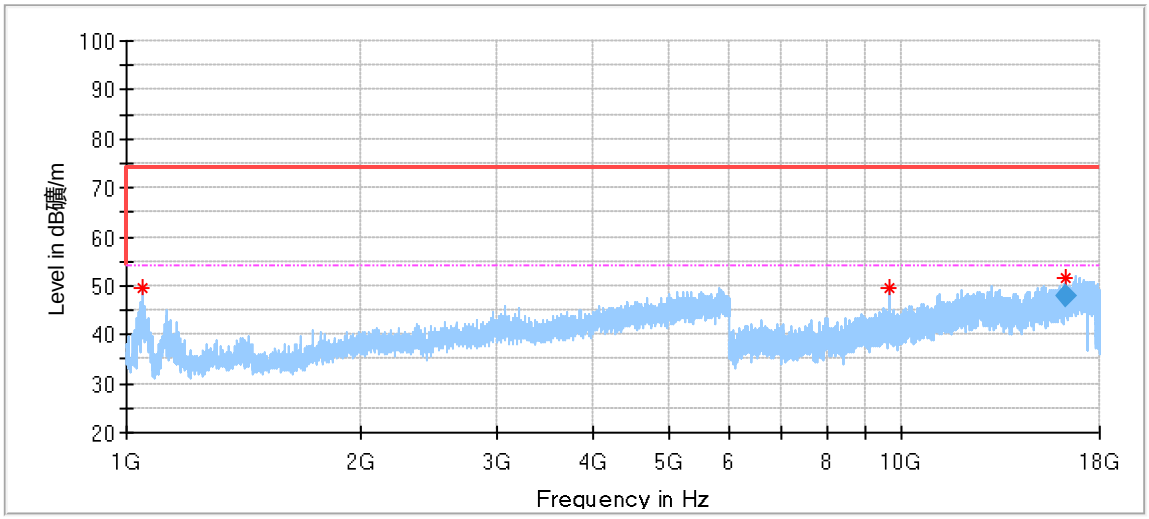
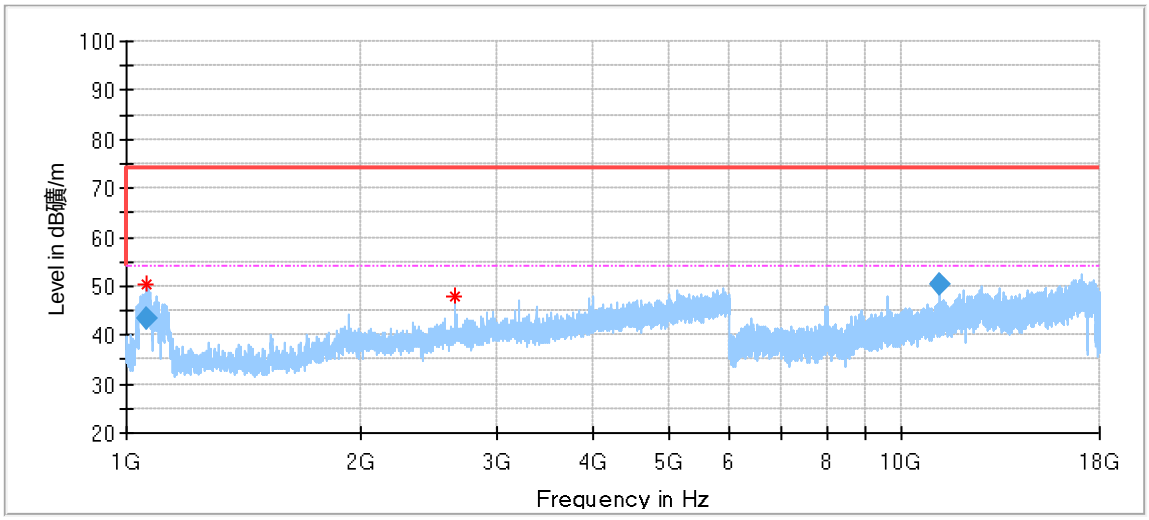
BLE_1MHz_High Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1046.500000	49.42	74.00	24.58	150.0	H	284.0	-10.34
9648.000000	49.68	74.00	24.32	150.0	H	30.0	13.31
16296.000000	51.76	74.00	22.24	150.0	H	144.0	21.34
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
16296.000000	47.98	54.00	6.02	150.0	H	144.0	21.34



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1063.500000	50.55	74.00	23.45	150.0	V	0.0	-10.51
2658.000000	47.82	74.00	26.18	150.0	V	52.0	-2.04
11198.500000*	50.86	74.00	23.14	150.0	V	334.0	15.48
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
1063.500000	43.29	54.00	10.71	150.0	V	0.0	-10.51
11198.500000*	50.23	54.00	3.77	150.0	V	334.0	15.48

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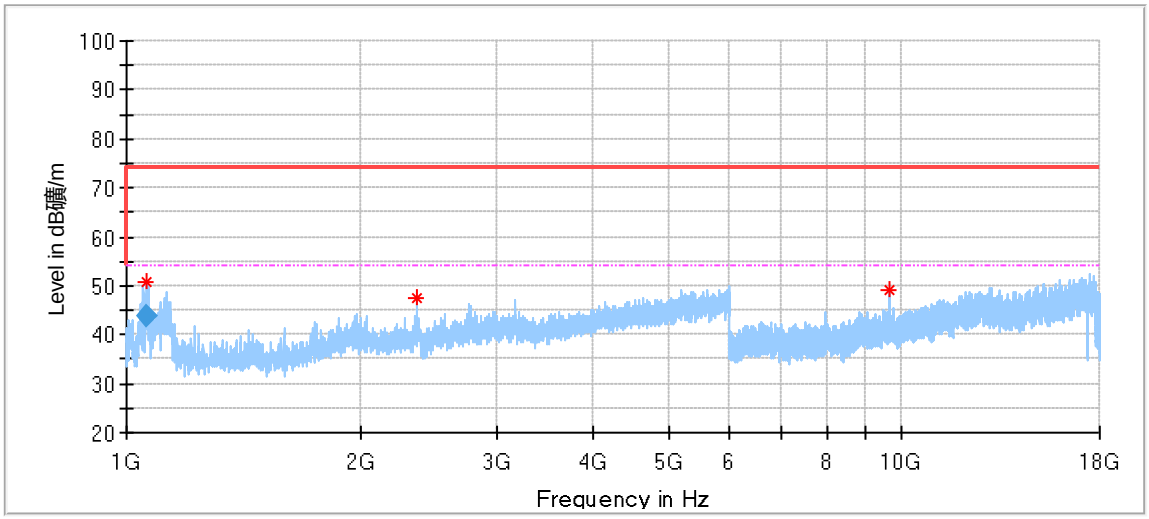
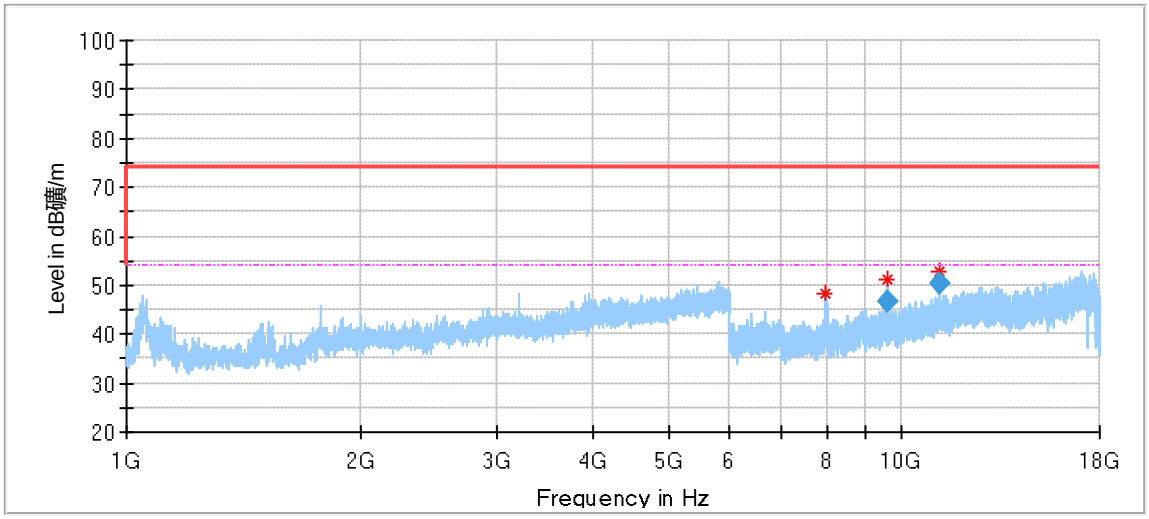
BLE_2MHz_Low Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1062.500000	50.63	74.00	23.37	150.0	H	98.0	-10.50
2374.000000*	47.68	74.00	26.32	150.0	H	293.0	-3.16
9648.000000	49.00	74.00	25.00	150.0	H	29.0	13.31
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
1062.500000	43.75	54.00	10.25	150.0	H	98.0	-10.50



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7978.000000	48.43	74.00	25.57	150.0	V	88.0	10.88
9598.500000	51.11	74.00	22.89	150.0	V	334.0	13.11
11197.500000*	52.79	74.00	21.21	150.0	V	4.0	15.48
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
9598.500000	46.87	54.00	7.13	150.0	V	334.0	13.11
11197.500000*	50.38	54.00	3.62	150.0	V	4.0	15.48

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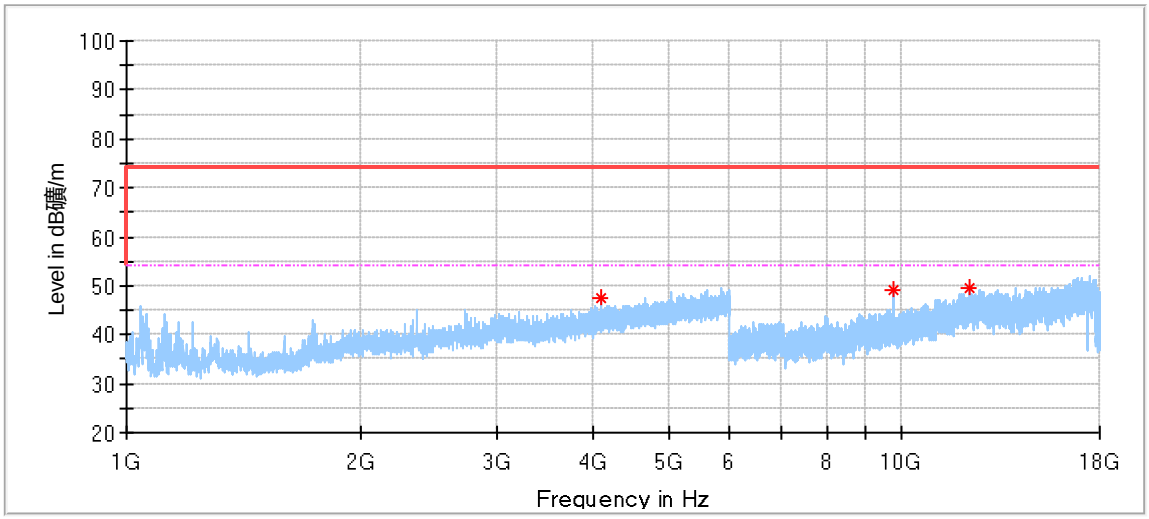
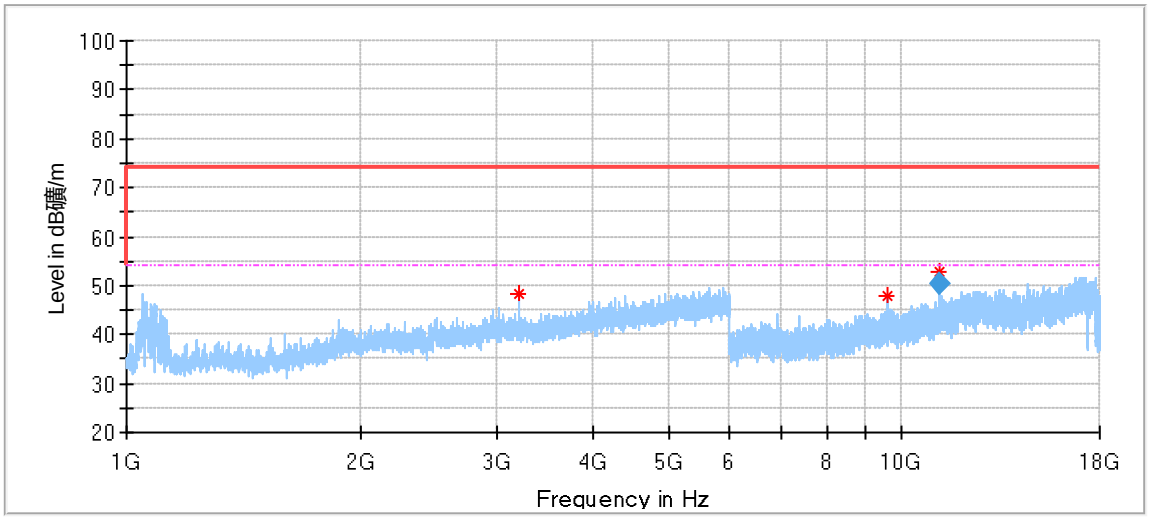
BLE_2MHz_Middle Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4100.000000*	47.31	74.00	26.69	150.0	H	310.0	2.11
9768.000000	49.27	74.00	24.73	150.0	H	29.0	13.57
12259.500000*	49.63	74.00	24.37	150.0	H	4.0	17.37



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3200.000000	48.19	74.00	25.81	150.0	V	25.0	-0.69
9599.000000	47.80	74.00	26.20	150.0	V	4.0	13.12
11199.000000*	52.66	74.00	21.34	150.0	V	4.0	15.48
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
11199.000000*	50.19	54.00	3.81	150.0	V	4.0	15.48

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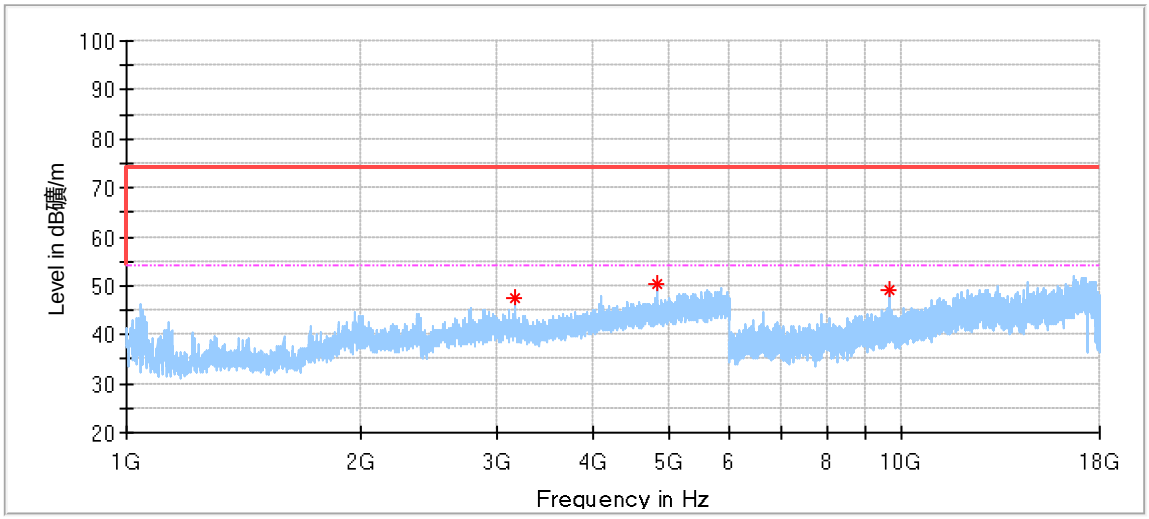
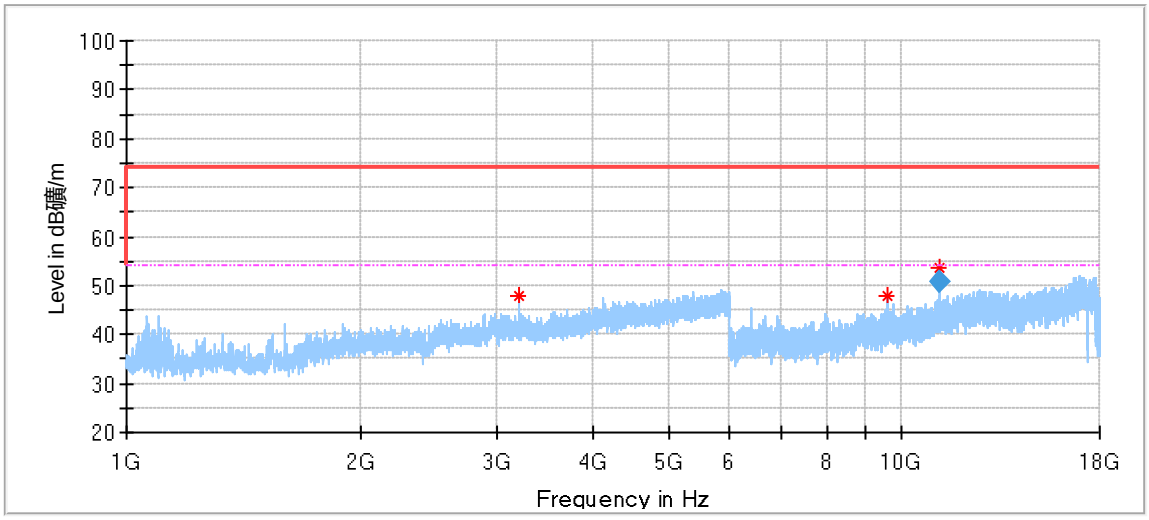
BLE_2MHz_High Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3165.000000	47.45	74.00	26.55	150.0	H	2.0	-0.67
4824.000000	50.22	74.00	23.78	150.0	H	0.0	3.80
9648.000000	49.17	74.00	24.83	150.0	H	29.0	13.31



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3200.000000	47.94	74.00	26.06	150.0	V	350.0	-0.69
9598.500000	48.08	74.00	25.92	150.0	V	30.0	13.11
11199.000000*	53.53	74.00	20.47	150.0	V	57.0	15.48
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
11199.000000*	50.82	54.00	3.18	150.0	V	57.0	15.48

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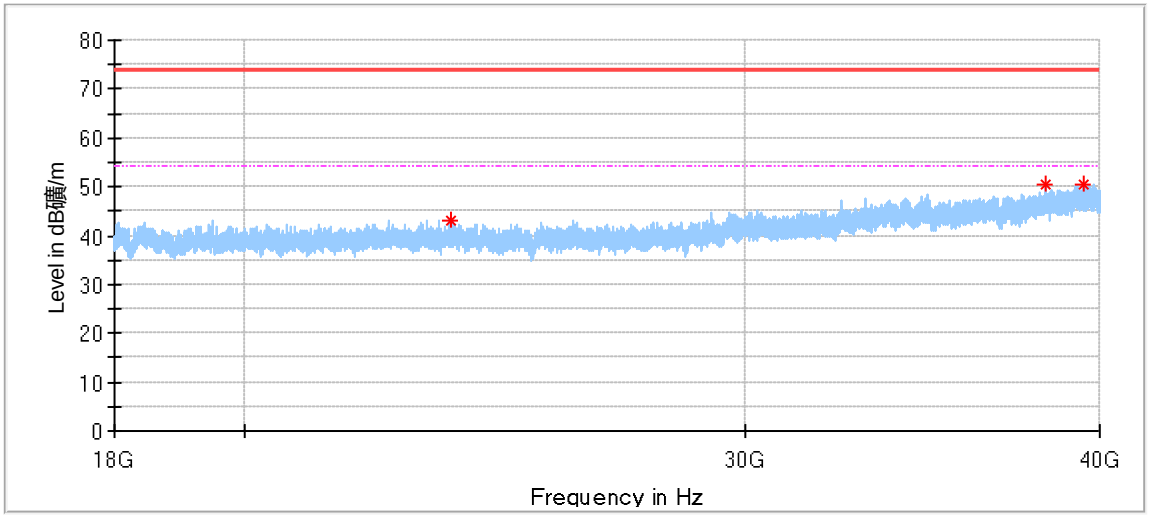
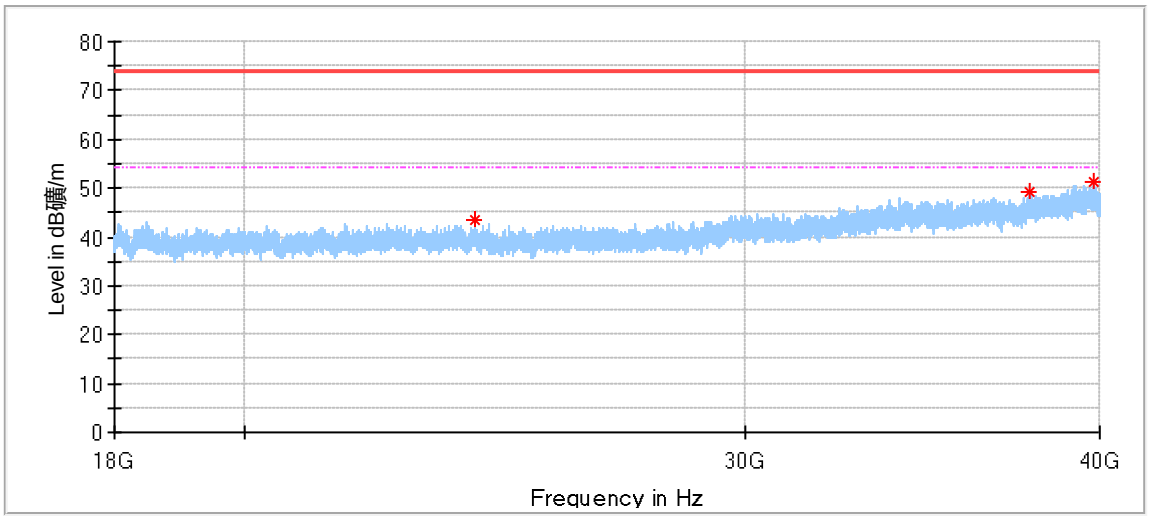
Test data 18GHz to 40GHz:
BLE_1MHz_Low Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
23643.000000*	43.27	74.00	30.73	150.0	H	314.0	1.79
38295.687500	50.49	74.00	23.51	150.0	H	161.0	6.50
39452.750000	50.58	74.00	23.42	150.0	H	82.0	7.99



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
24120.812500	43.48	74.00	30.52	150.0	V	48.0	1.77
37794.500000	49.07	74.00	24.93	150.0	V	231.0	5.75
39794.437500	51.13	74.00	22.87	150.0	V	293.0	8.64

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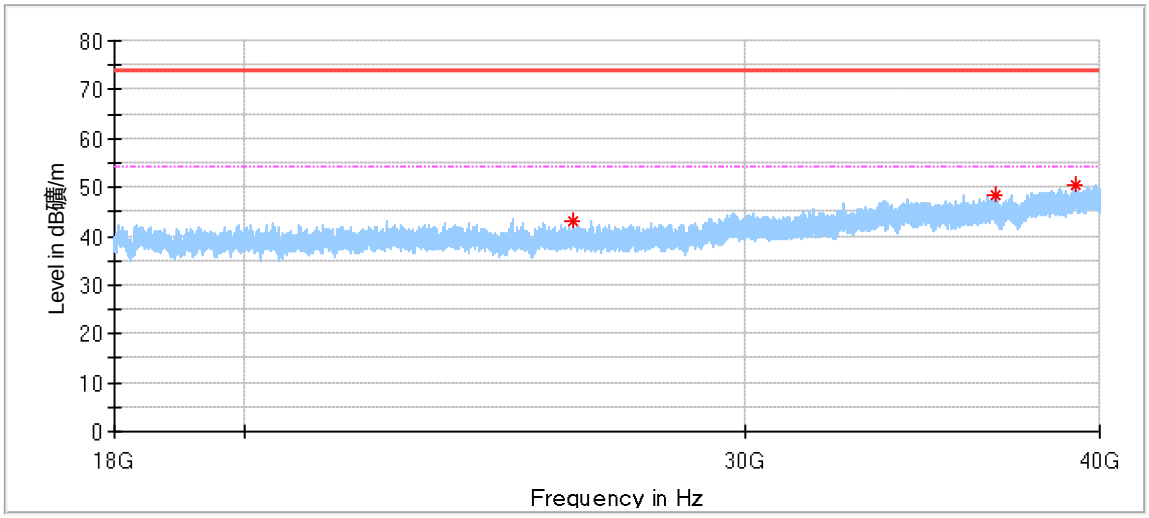
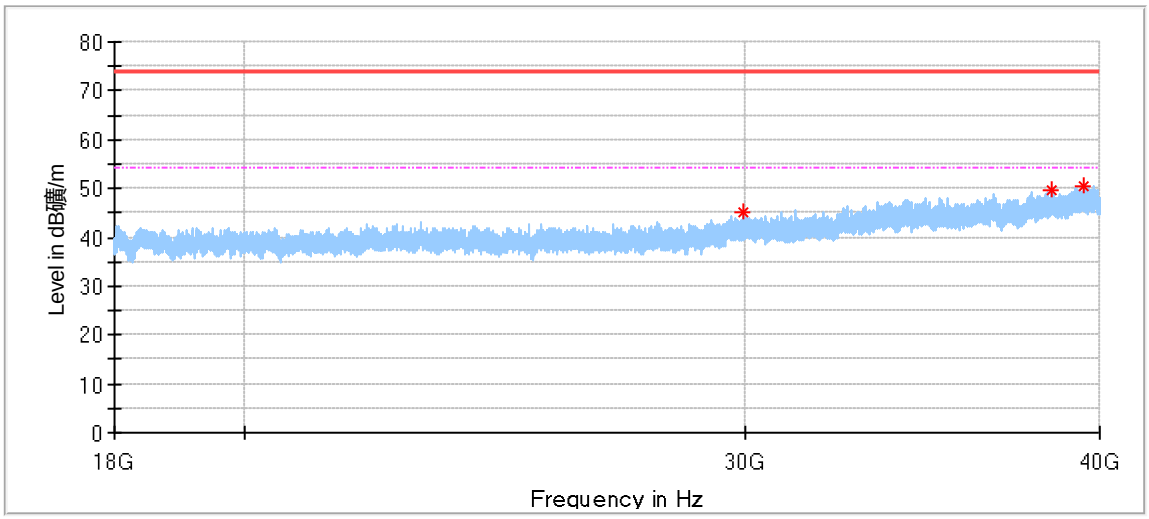
BLE_1MHz_ Middle Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
26102.875000	43.11	74.00	30.90	150.0	H	95.0	2.31
36769.437500	48.53	74.00	25.47	150.0	H	110.0	5.61
39198.375000	50.53	74.00	23.47	150.0	H	232.0	7.22



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
29955.625000	45.27	74.00	28.73	150.0	V	241.0	2.89
38457.250000	49.78	74.00	24.22	150.0	V	271.0	6.56
39494.000000	50.58	74.00	23.42	150.0	V	195.0	8.11

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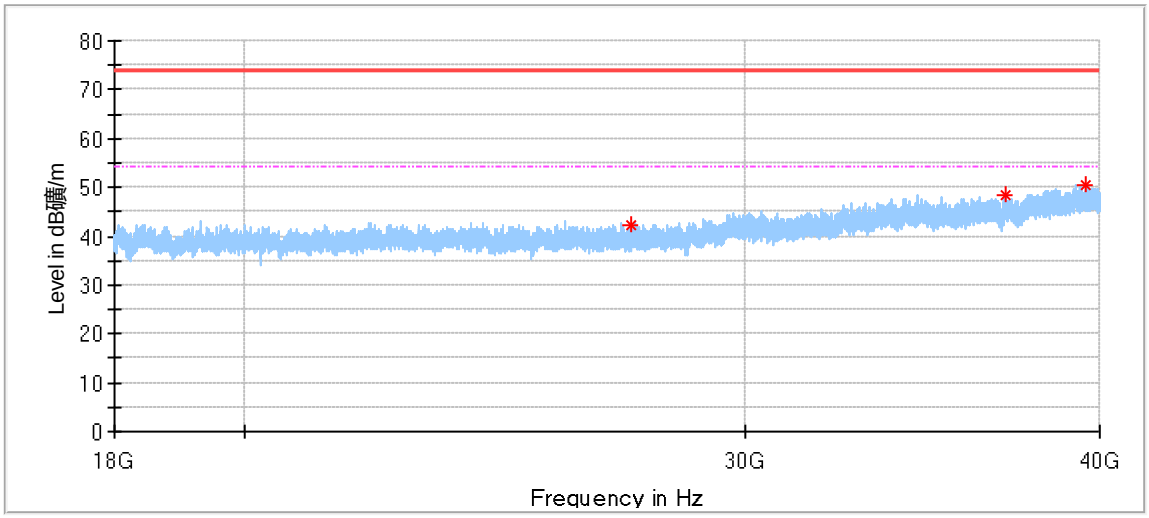
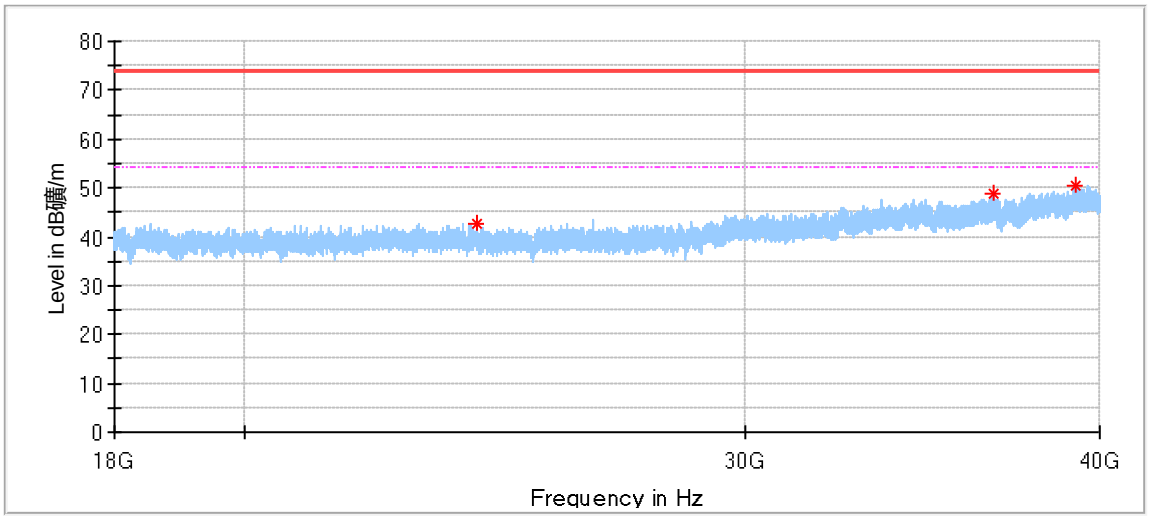
BLE_1MHz_High Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
27377.500000	42.15	74.00	31.85	150.0	H	173.0	2.53
37034.125000	48.48	74.00	25.52	150.0	H	0.0	5.36
39529.750000	50.44	74.00	23.56	150.0	H	15.0	8.18



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
24134.562500	42.54	74.00	31.46	150.0	V	0.0	1.75
36694.500000	48.69	74.00	25.31	150.0	V	29.0	5.63
39254.062500	50.63	74.00	23.37	150.0	V	295.0	7.42

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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 this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) We test both rates for Low channel, Middle channel and High channel separately, only the worse case recorded in this report.

(4) 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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10 Test Equipment List

List of Test Instruments

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2023-5-28
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2023-7-12
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2023-5-9
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2023-5-28
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2023-5-28
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2023-7-12
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2023-7-27
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2023-5-27
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2023-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-19-002	102590	1	2023-5-27
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2023-5-27
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2023-5-27
Test software	Rohde & Schwarz	EMC32	68-4-90-19-005-A01	Version10.35.02	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2025-10-15

Conducted RF Test System

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2023-5-27
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	68-4-93-14-003	101226/100851	1	2023-5-27
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2023-5-28
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2023-5-28
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2023-5-27
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2025-10-15

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 Tel. +86 755 8828 6998, Fax: +86 755 8828 5299

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 Conducted Emission 150kHz-30MHz (for test using AMN ENV432 or ENV4200)	3.57dB
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 30MHz-1000MHz	Horizontal: 4.59dB; Vertical: 4.75dB
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 1000MHz-18000MHz	Horizontal: 5.08dB; Vertical: 5.09dB;
Uncertainty for Radiated Emission 18000MHz-40000MHz	Horizontal: 4.52dB; Vertical: 4.51dB
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: 2021, clause 4.4.3 and 4.5.1.

THE END

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 Tel. +86 755 8828 6998, Fax: +86 755 8828 5299