FCC/ISED - TEST REPORT

Report Number	:	**68.930.23.0049.01** Date of Issue: March 15, 2024
Model	:	**BBZ32-AA01, BBZ32-AB01, BBZ32-BB01, BBZ32-DB01**
Product Type	:	Blood Pressure Monitor
Applicant	:	Guangdong Transtek Medical Electronics Co., Ltd.
Address	:	Zone A, No.105, Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
Manufacturer	:	Guangdong Transtek Medical Electronics Co., Ltd.
Address	:	Zone A, No.105, Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
Production Facility	:	Guangdong Transtek Medical Electronics Co., Ltd.
Address	:	Zone A, No.105, Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	**63**

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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
IC Registration No.:	10320A
ISED CAB identifier	CN0077

3 Description of the Equipment Under Test

Product:	Blood Pressure Monitor
Model no.:	BBZ32-AA01, BBZ32-AB01, BBZ32-BB01, BBZ32-DB01
Hardware Version Identification No. (HVIN)	BBZ32-AA01, BBZ32-AB01, BBZ32-BB01, BBZ32-DB01
Product Marketing Name (PMN)	Blood pressure monitor
Brand name:	TRANSTEK
FCC ID:	OU9BBZ32-AA01
IC:	12725A-BBZ32-AA01
Options and accessories:	N/A
Rating:	6.0VDC, 4*1.5VDC AAA battery
RF Transmission Frequency:	2402MHz-2480MHz
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	PCB
Antenna Gain	0.36dBi
Description of the EUT:	The Equipment Under Test (EUT) is a Blood Pressure Monitor which support Low Energy Bluetooth(1M&2M).

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 + Amendment 1 March 2019 + Amendment 2 February 2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 3 August 2023	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 C63.10-2020.

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5 Summary of Test Results

Technical Requirements						
FCC Part 15 Subpart C/ RSS-247 Issue 3/RSS-Gen Issue 5						
Test Condition		Test Site	Test Result			Test Environment
			Pass	Fail	N/A	
§15.207 & RSS-GEN 8.8	Conducted emission AC power port	Site 1	☐	☐	☒	T: 23.1℃ H: 51.2%
§15.247 (b) (3) & RSS-247 5.4(d)	Conducted peak output power	Site 1	☒	☐	☐	T: 23.4℃ H: 52.7%
RSS-247 5.4(d)	Equivalent Isotropic Radiated Power	Site 1	☒	☐	☐	T: 23.4℃ H: 52.7%
§15.247(a)(2) & RSS-247 5.2(a) & RSS-GEN 6.7	6dB bandwidth and 99% Occupied Bandwidth	Site 1	☒	☐	☐	T: 23.4℃ H: 52.7%
§15.247(e) & RSS-247 5.2(b)	Power spectral density	Site 1	☒	☐	☐	T: 23.7℃ H: 52.7%
§15.247(d) & RSS-247 5.5	Spurious RF conducted emissions	Site 1	☒	☐	☐	T: 23.8℃ H: 52.7%
§15.247(d) & RSS-247 5.5	Band edge	Site 1	☒	☐	☐	T: 23.1℃ H: 58.0%
§15.247(d) & §15.209 & §15.205 & RSS-247 5.5 & RSS-Gen 6.13	Spurious radiated emissions for transmitter	Site 1	☒	☐	☐	T: 23.2℃ H: 58.1%
§15.203 & RSS-Gen 6.8	Antenna requirement	See note 2	☒	☐	☐	--

Note 1: N/A=Not Applicable.
Note 2: The EUT uses a PCB antenna, which gain is 0.36dBi. In accordance to §15.203 & RSS-Gen 6.8, 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: OU9BBZ32-AA01, IC: 12725A-BBZ32-AA01, complies with Section 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C rules and RSS-247, RSS-GEN.

All models are identical in RF module, main schematic, critical components and main software. The differences are listed in the below table, So all the RF tests were applied on the models BBZ32-AA01, other models were deemed to fulfil the relevant requirement without further testing.

Model list table as below:

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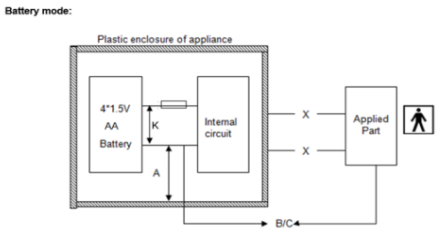
Model Difference				
Model name	**BBZ32-AA01**	**BBZ32-AB01**	**BBZ32-BB01**	**BBZ32-DB01**
Product Picture				
Dimension	121.3 mm × 98.8 mm × 42.3 mm, Same overall size			
Power supply	Internal battery power supply: 4*AAA dry batteries			
classification of insulation	internal battery supply			
keystroke mode	Four-physical keying	Four-physical keying	Two physical buttons + Bluetooth	PET Double key
voice function	voice-enabled	No voice function	No voice function	No voice function
Hardware	PCBA with Bluetooth chips and voice IC.	PCBA has paste Bluetooth chip, not paste the voice IC	PCBA has paste Bluetooth chip, not paste the voice IC	PCBA has paste Bluetooth chip, not paste the voice IC
intended use	This is a split arm sphygmomanometer for indoor measurement of blood pressure and pulse rate in adults with arm circumference of 22-32cm, 22-42cm.			
Differences on Insulation diagram	Insulation diagrams are the same. 			
Differences on function	completed after pressing the start button. However, there is no restriction on continuous use by the user.			
Difference on critical components	Critical key components are the same: PCB, housing, Pressure Pump,Release Valve,Pressure Sensor, Thermistor;			
Enclosure material	The same shell material: shell material ABS, lens PET			
Schematic	Same schematic.			
PCB layouts	PCB Layout same			
Operation panel	No independent keyplate			
Software	Sampling circuits, algorithms are the same. BBZ32-AA01, BBZ32-AB01, BBZ32-BB01, BBZ32-DB01 are only in the voice button function there are differences in the software only have to realize the differences in the small functions.			

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:	2023-10-30
Testing Start Date:	2023-10-30
Testing End Date:	2023-11-06

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

Reviewed by:	Prepared by:	Tested by:
John Zhi	Grace Gao	Carry Cai
EMC Project Manager	Project Engineer	Test Engineer

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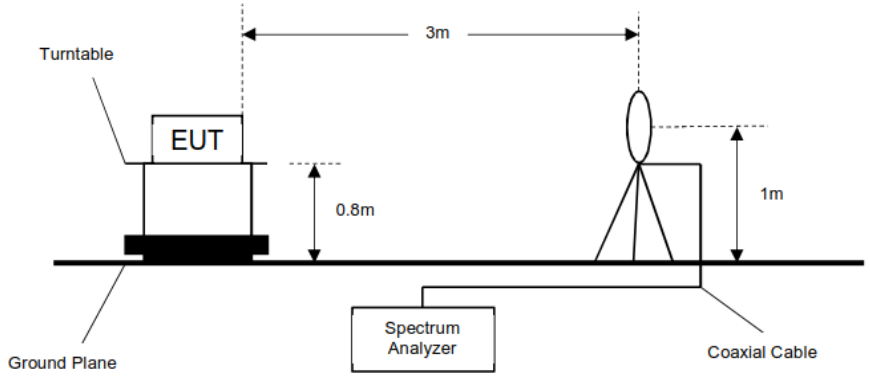
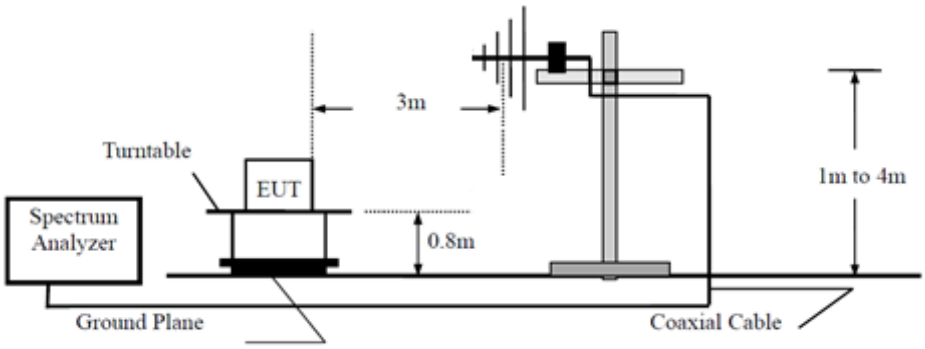
7 Test Setups

7.1 Radiated test setups

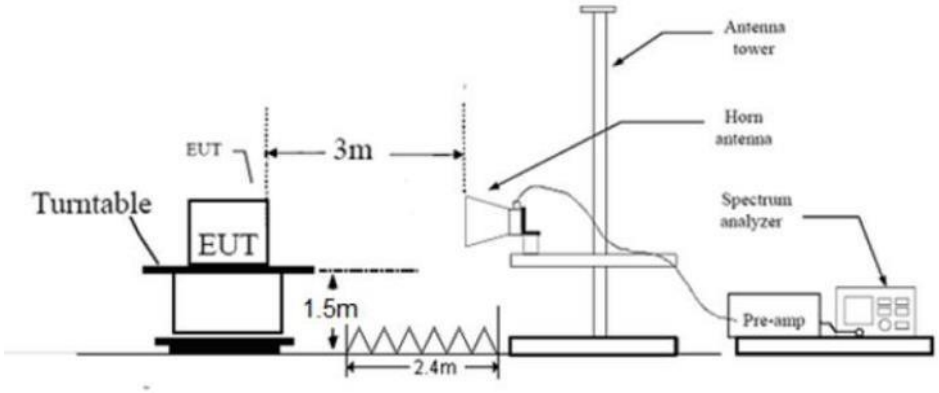
9KHz - 30MHz



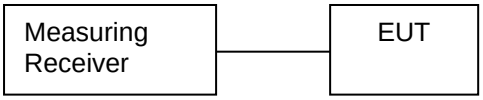
30MHz - 1GHz



Above 1GHz



7.2 Conducted RF test setups



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8 Systems Test Configuration

Auxiliary Equipment Used during Test:

Description	Manufacturer	Model NO.	S/N
Notebook	Thinkpad	X220	429044C
Serial port board	---	---	---

Cables Used During Test:

Cable	Length	Shielded/unshielded	With / without ferrite
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Test software information:

Test Software Version	PhyPlusKit	
Modulation	Setting TX Power	Packet Type
GFSK	-2dBm	/

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

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9 Technical Requirement

9.1 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

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 1Mbps	-3.09	0.36	-2.73	Pass
Middle channel 2440MHz	LE 1Mbps	-3.22	0.36	-2.86	Pass
Top channel 2480MHz	LE 1Mbps	-3.5	0.36	-3.14	Pass
Bottom channel 2402MHz	LE 2Mbps	-2.4	0.36	-2.04	Pass
Middle channel 2440MHz	LE 2Mbps	-2.8	0.36	-2.44	Pass
Top channel 2480MHz	LE 2Mbps	-2.68	0.36	-2.32	Pass

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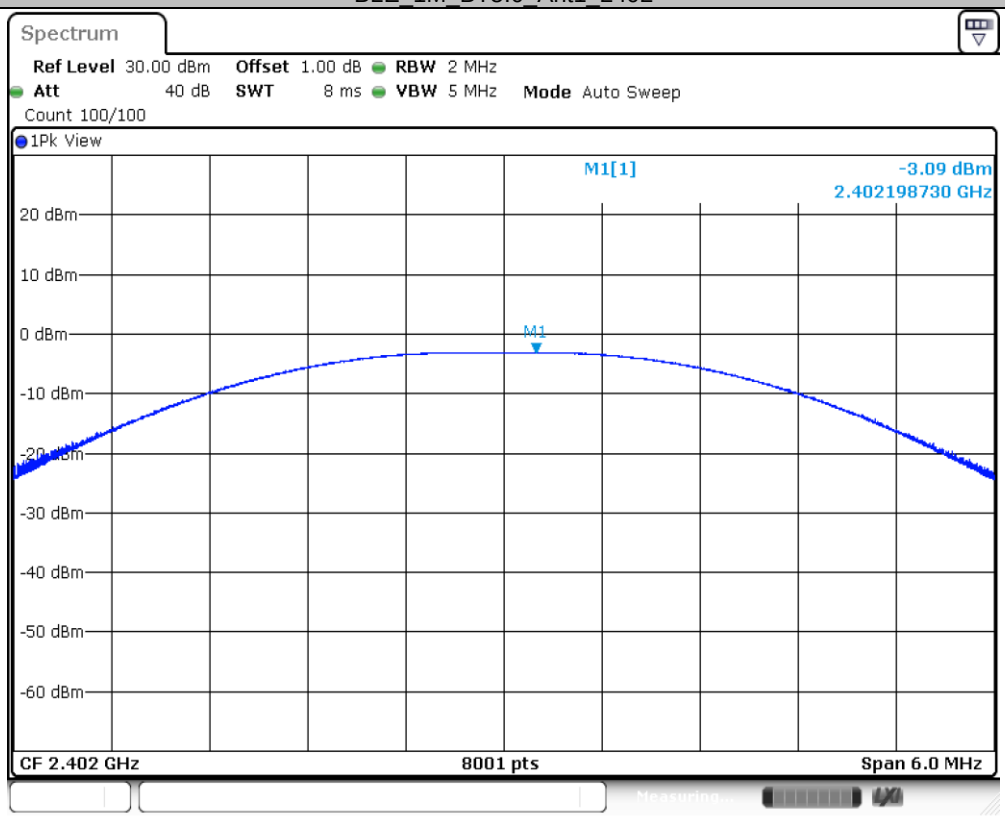
BLE_1M_BT5.0_Ant1_2402



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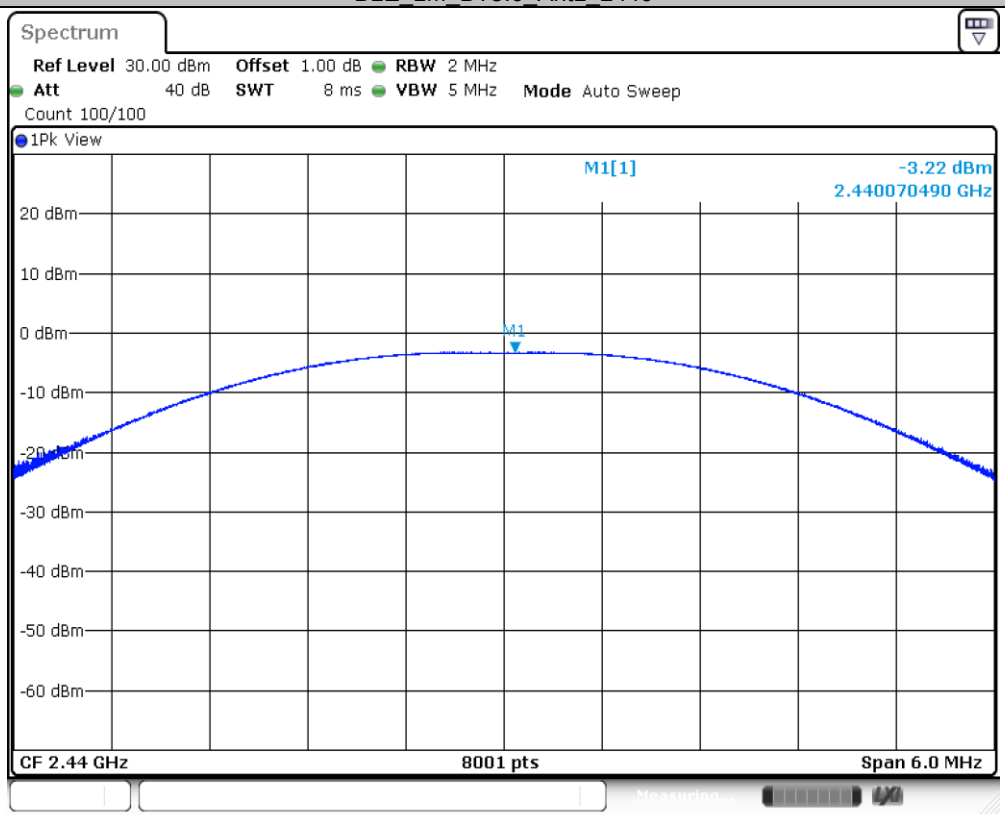

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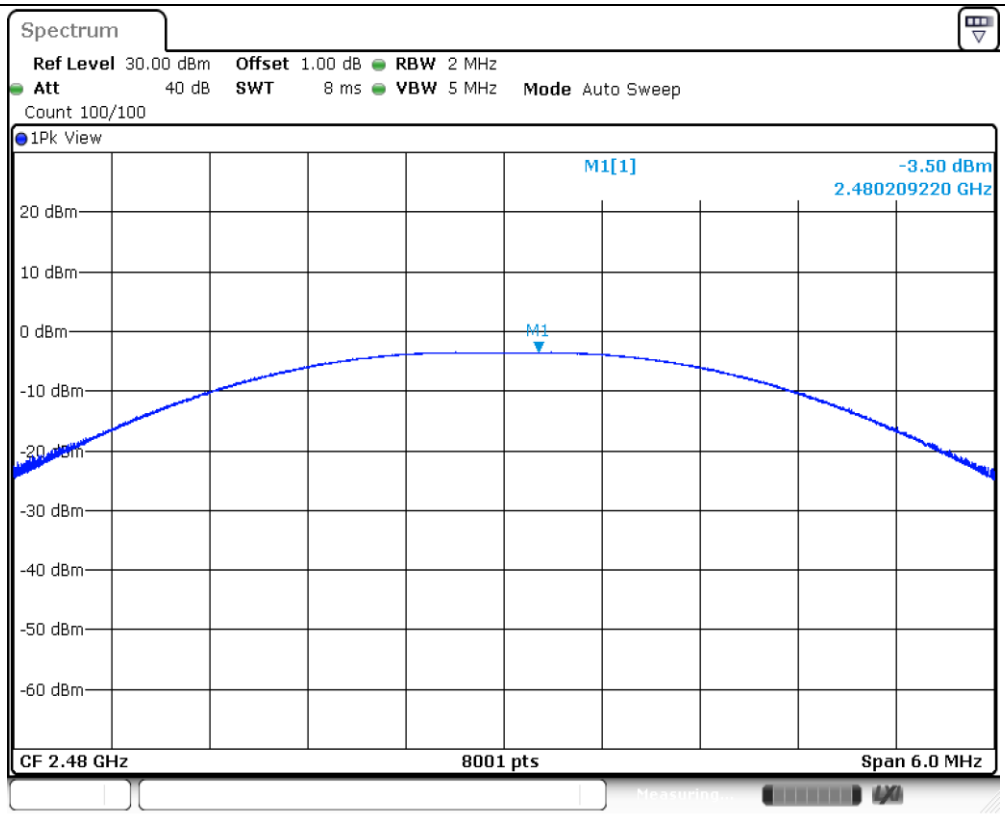

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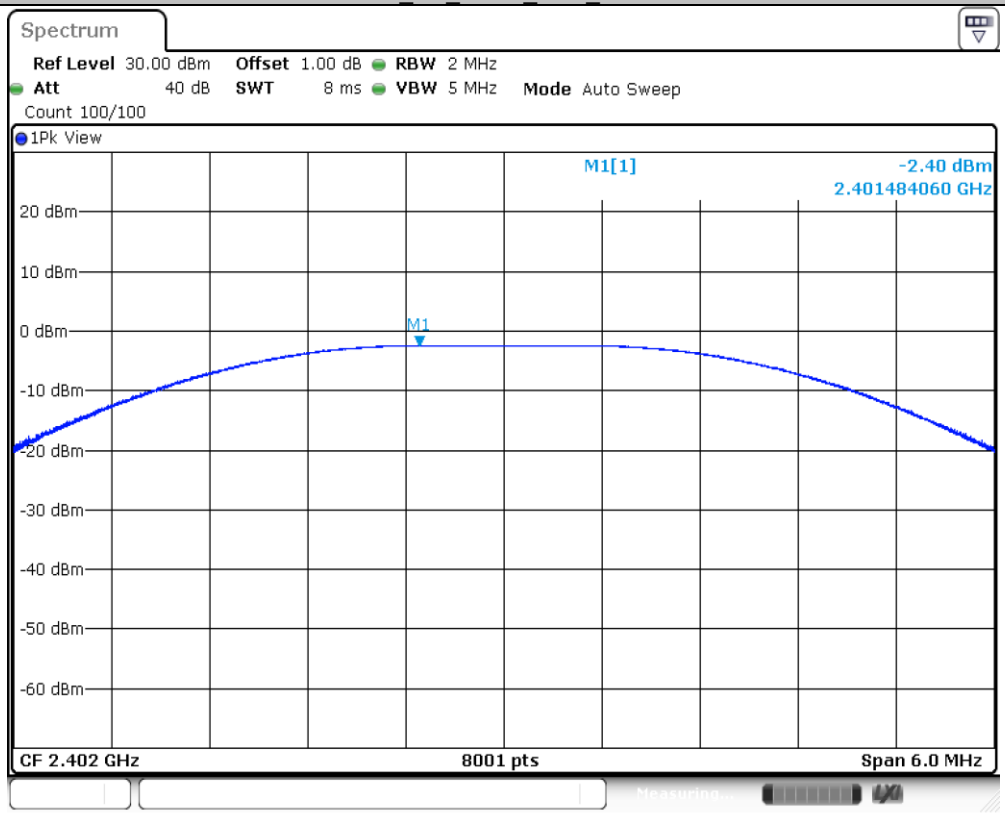

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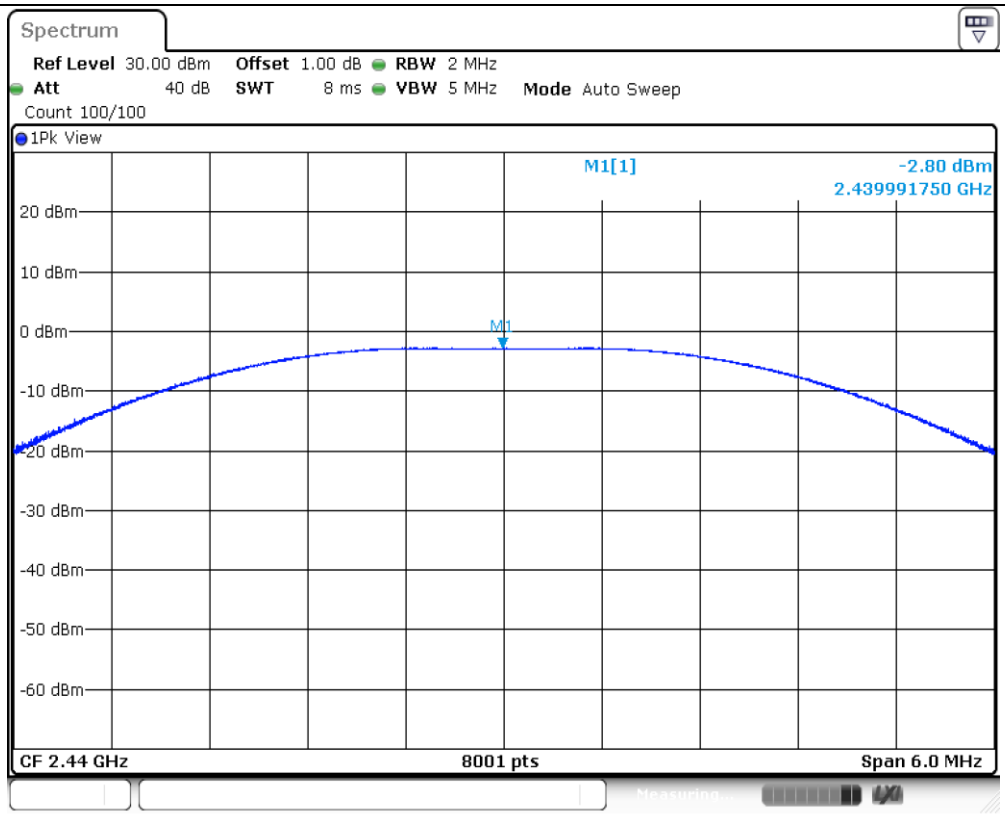

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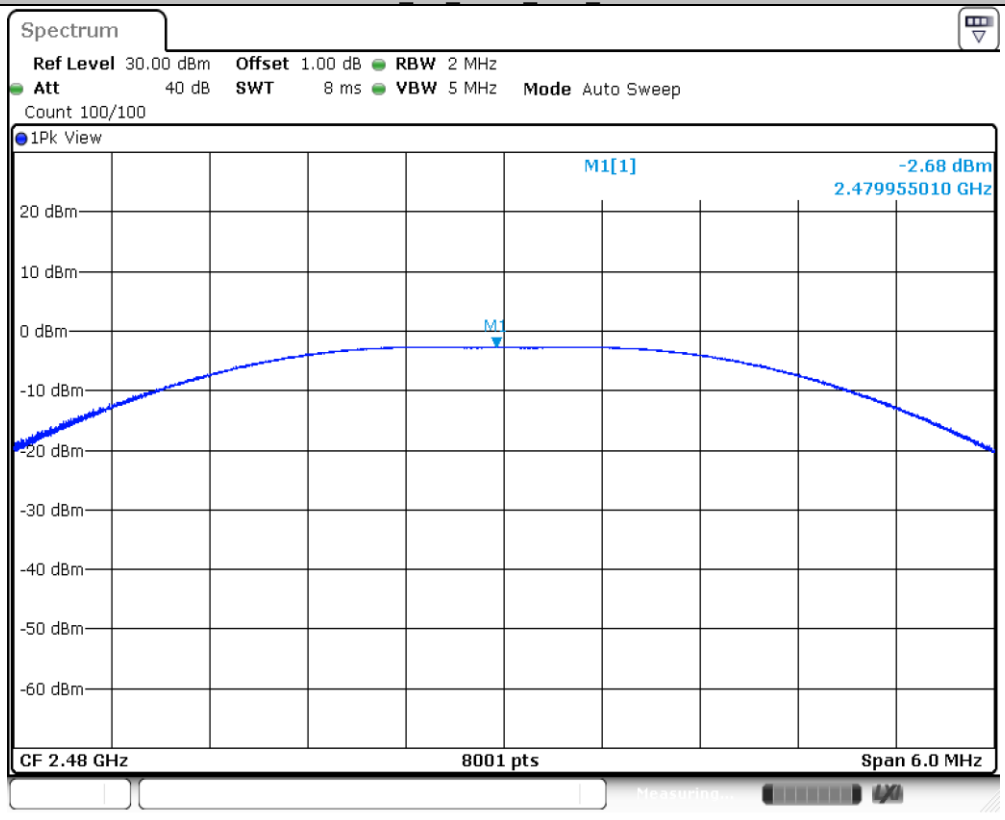

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9.2 Power Spectral Density

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

Frequency MHz	Mode	Power spectral density dBm/3KHz	Result
Bottom channel 2402MHz	LE 1Mbps	-19.27	Pass
Middle channel 2440MHz	LE 1Mbps	-19.18	Pass
Top channel 2480MHz	LE 1Mbps	-19.32	Pass
Bottom channel 2402MHz	LE 2Mbps	-20.85	Pass
Middle channel 2440MHz	LE 2Mbps	-21.00	Pass
Top channel 2480MHz	LE 2Mbps	-20.53	Pass

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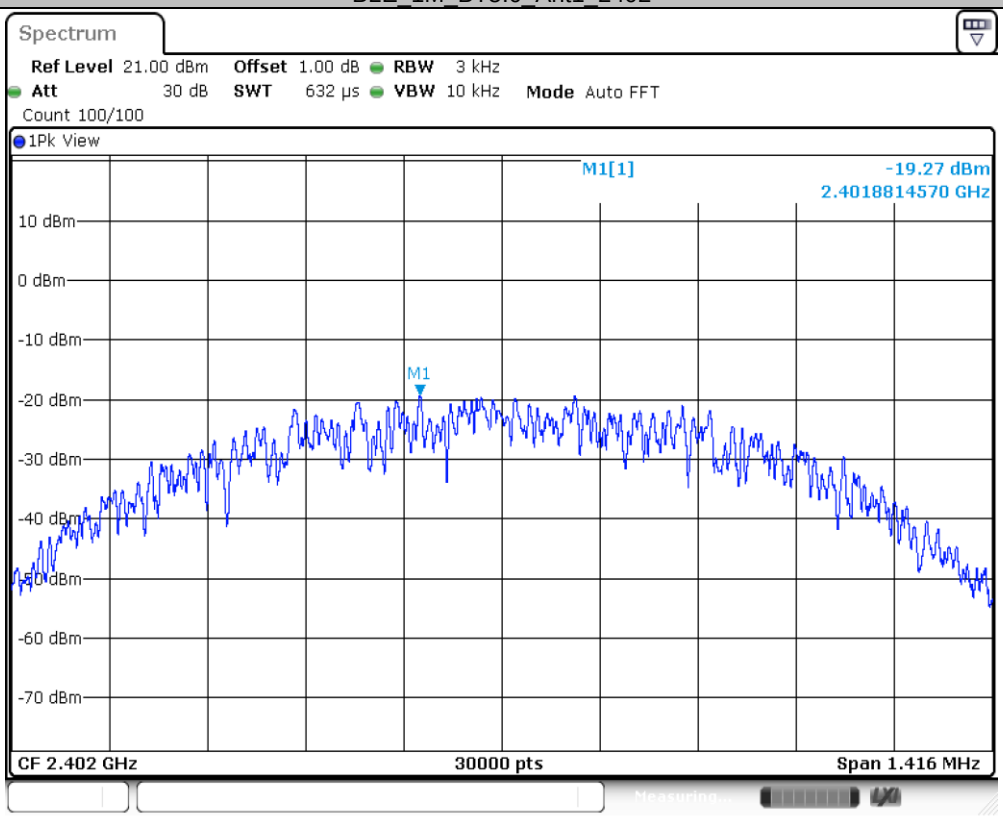
BLE_1M_BT5.0_Ant1_2402



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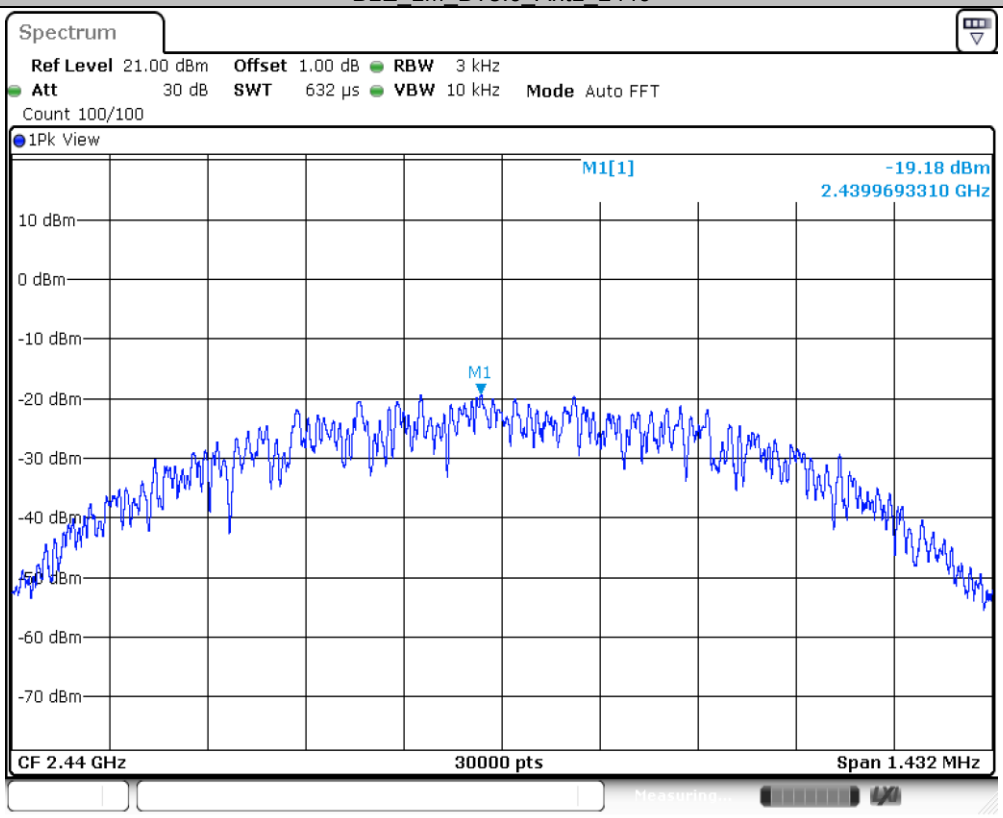

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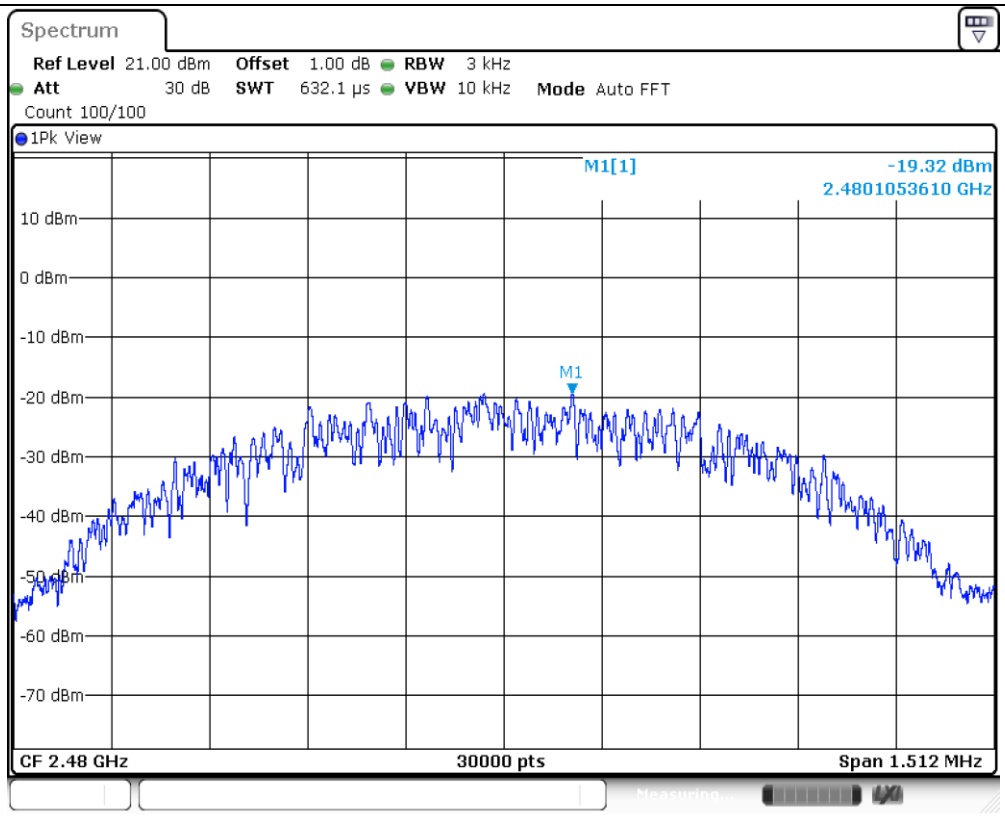

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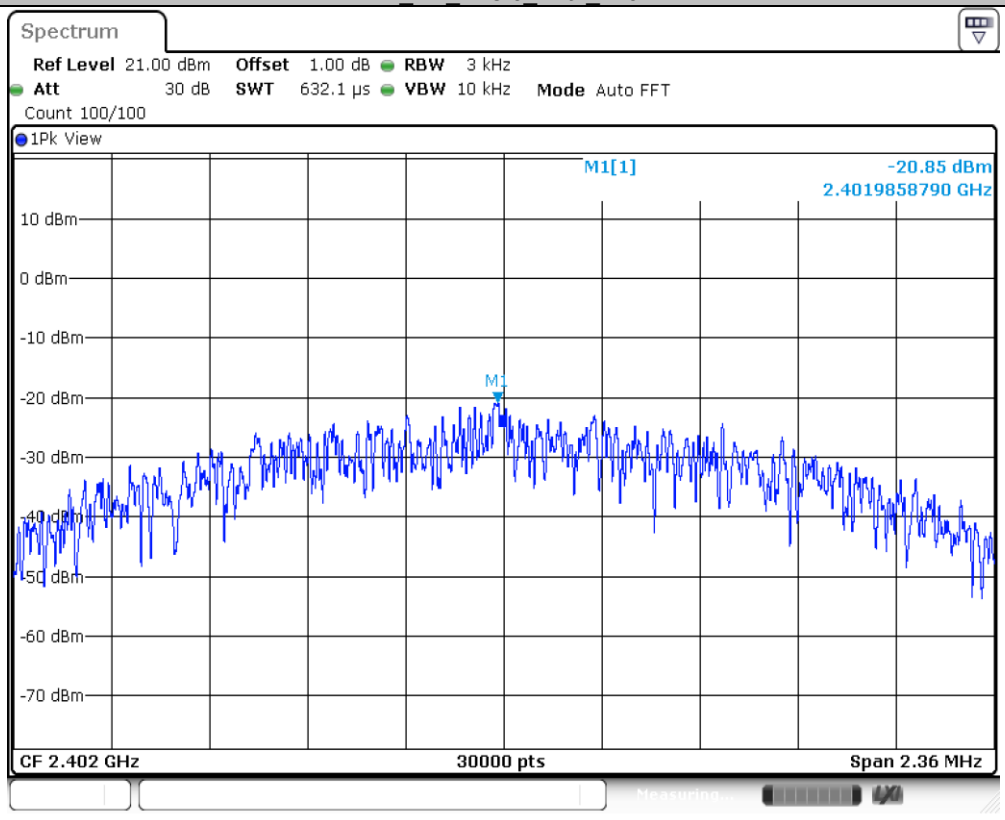

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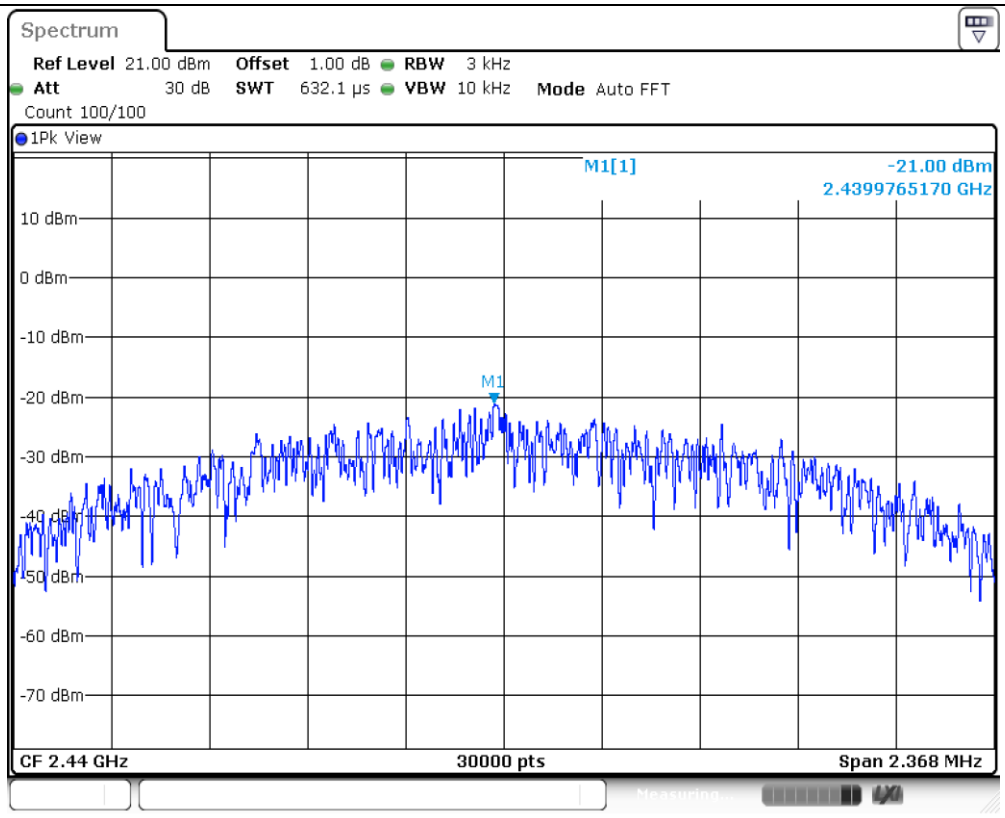

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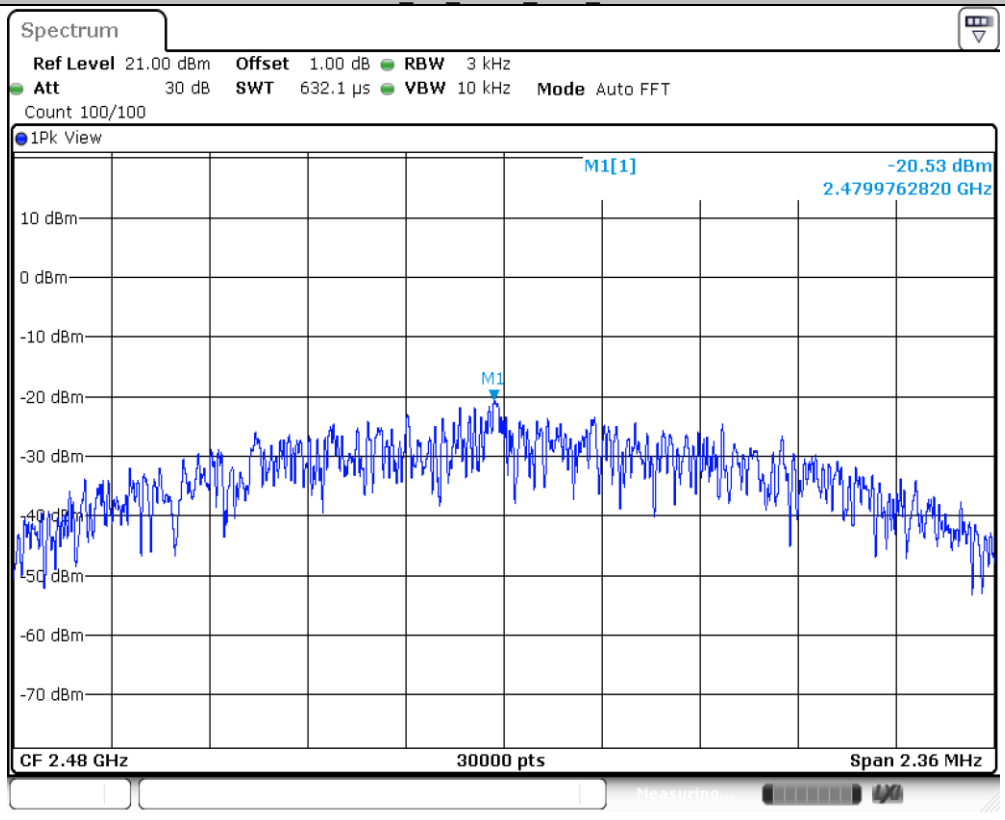

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9.3 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method for 6 dB Bandwidth

1. Set center frequency to the nominal EUT channel center frequency
2. Set RBW = 1 % to 5 % of the emission bandwidth
3. Set the video bandwidth (VBW) ≥ 3 × RBW
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = Sweep = No faster than coupled (auto) time.
7. Allow the trace to stabilize.
8. 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.
9. 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.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 RBW
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Use the 99 % power bandwidth function of the instrument.
9. Record the results in the test report.

Limit

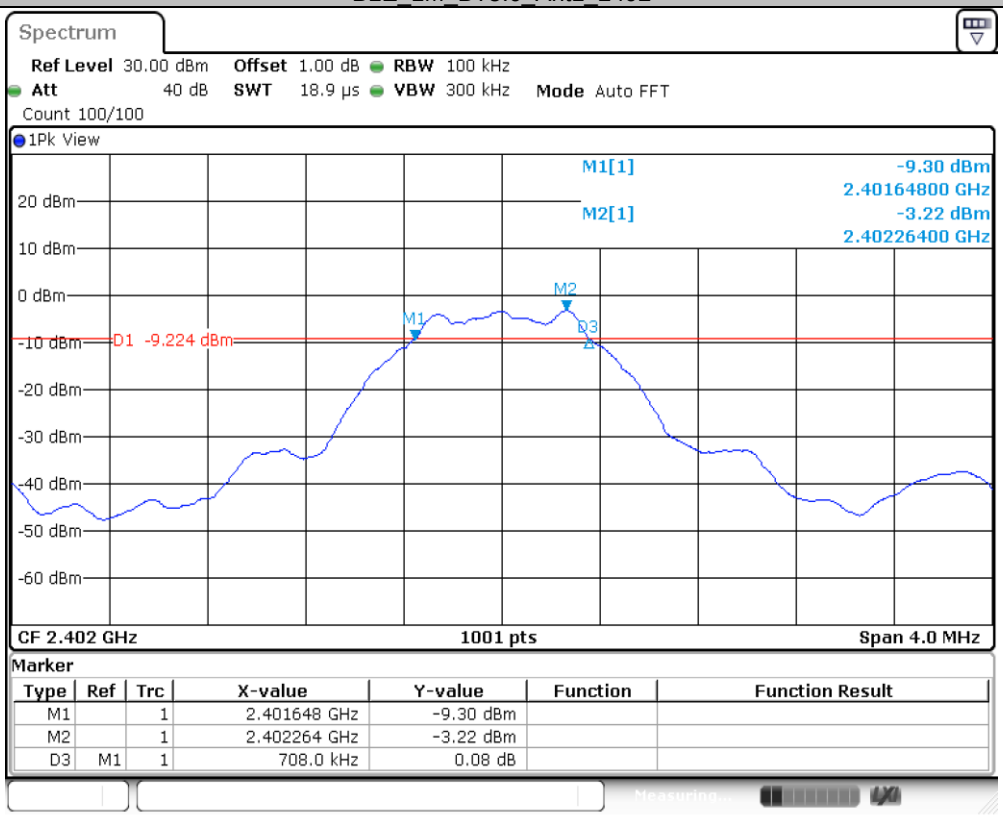
Limit [kHz]

Test result

Frequency MHz	Mode	6dB bandwidth MHz	99% bandwidth MHz	Result
Bottom channel 2402MHz	LE 1Mbps	0.708	1.047	Pass
Middle channel 2440MHz	LE 1Mbps	0.716	1.051	Pass
Top channel 2480MHz	LE 1Mbps	0.756	1.055	Pass
Bottom channel 2402MHz	LE 2Mbps	1.180	2.05	Pass
Middle channel 2440MHz	LE 2Mbps	1.184	2.05	Pass
Top channel 2480MHz	LE 2Mbps	1.180	2.062	Pass

6 dB Bandwidth

BLE_1M_BT5.0_Ant1_2402



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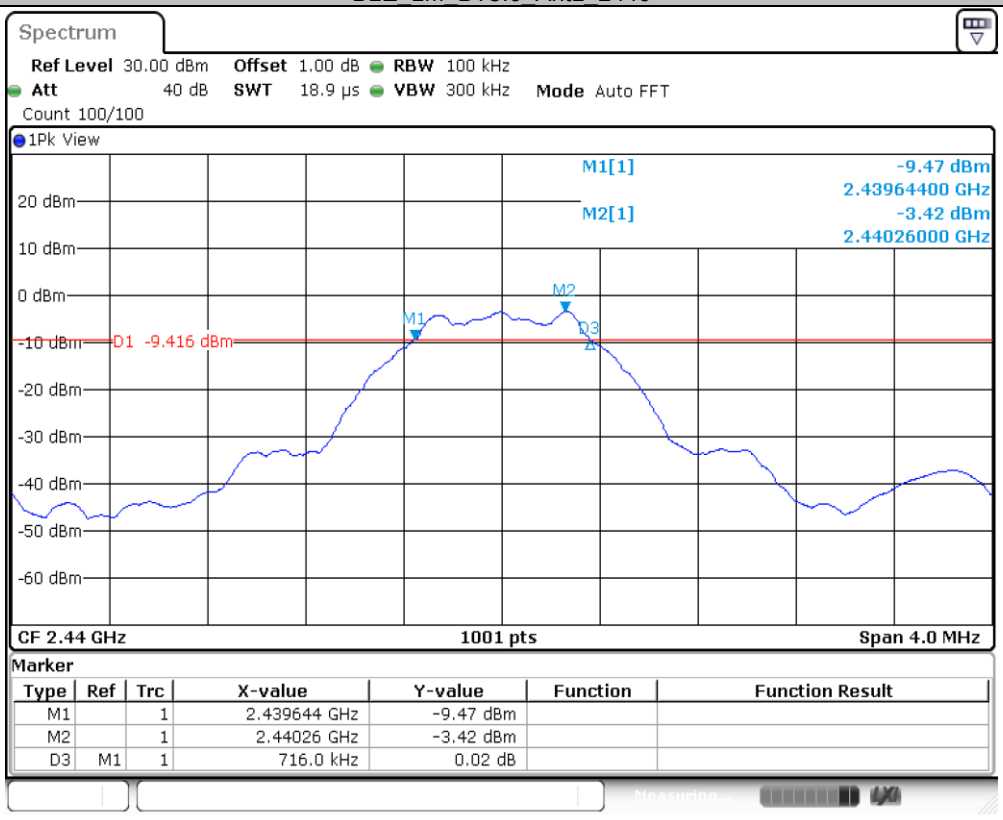

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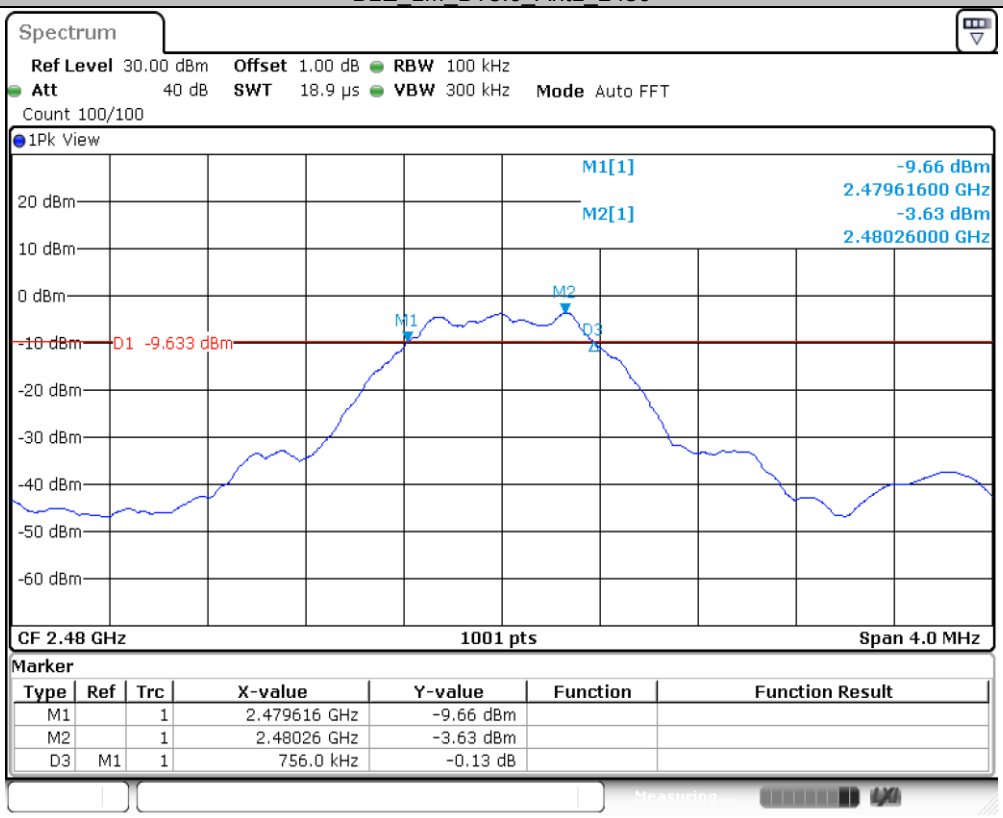
BLE_1M_BT5.0_Ant1_2480



Date: 6.NOV.2023 16:46:35

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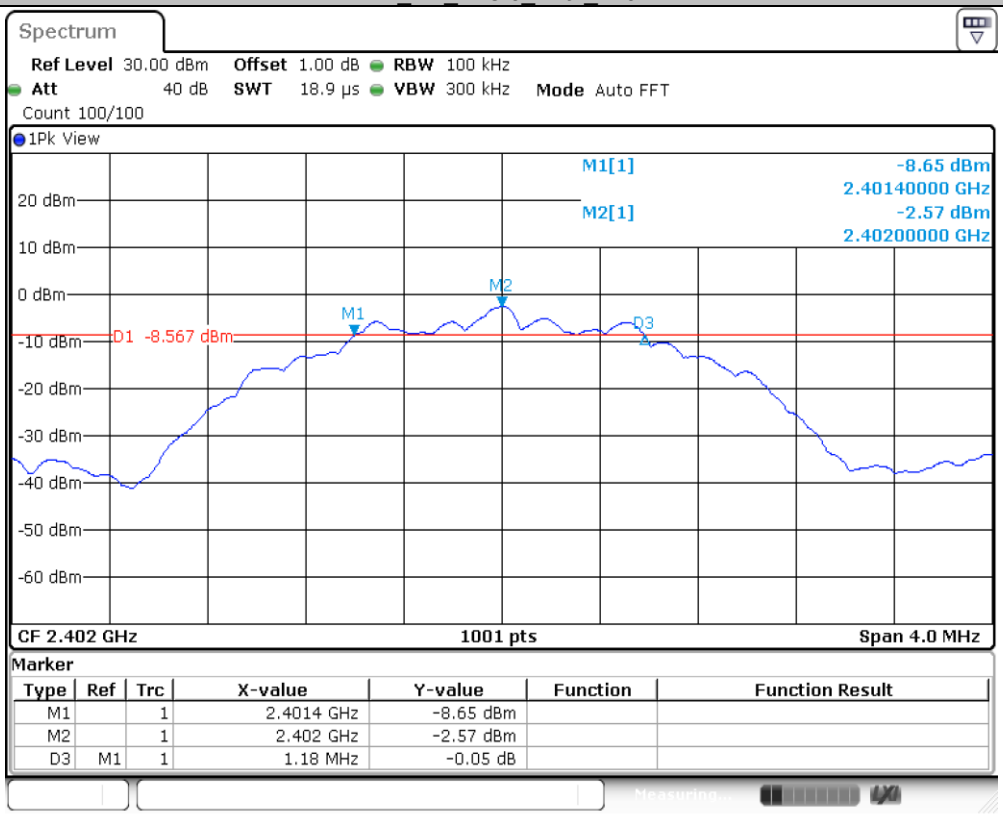
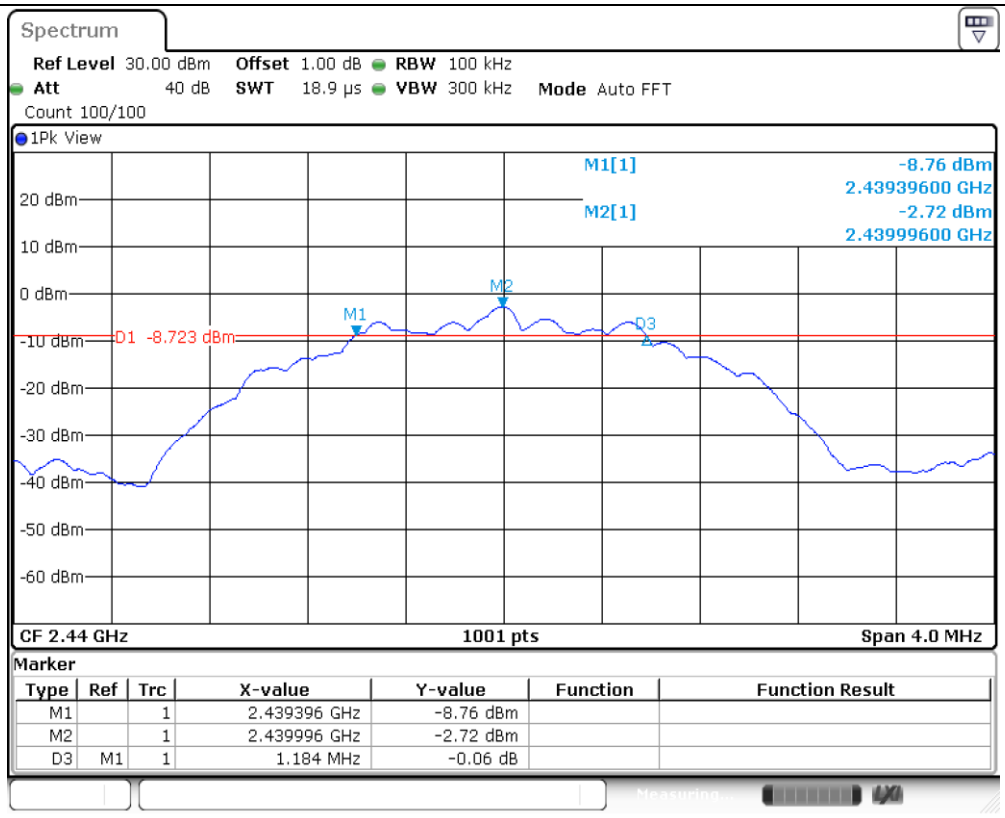


Date: 6.NOV.2023 16:07:23

BLE_2M_BT5.0_Ant1_2440



Date: 6.NOV.2023 16:15:52

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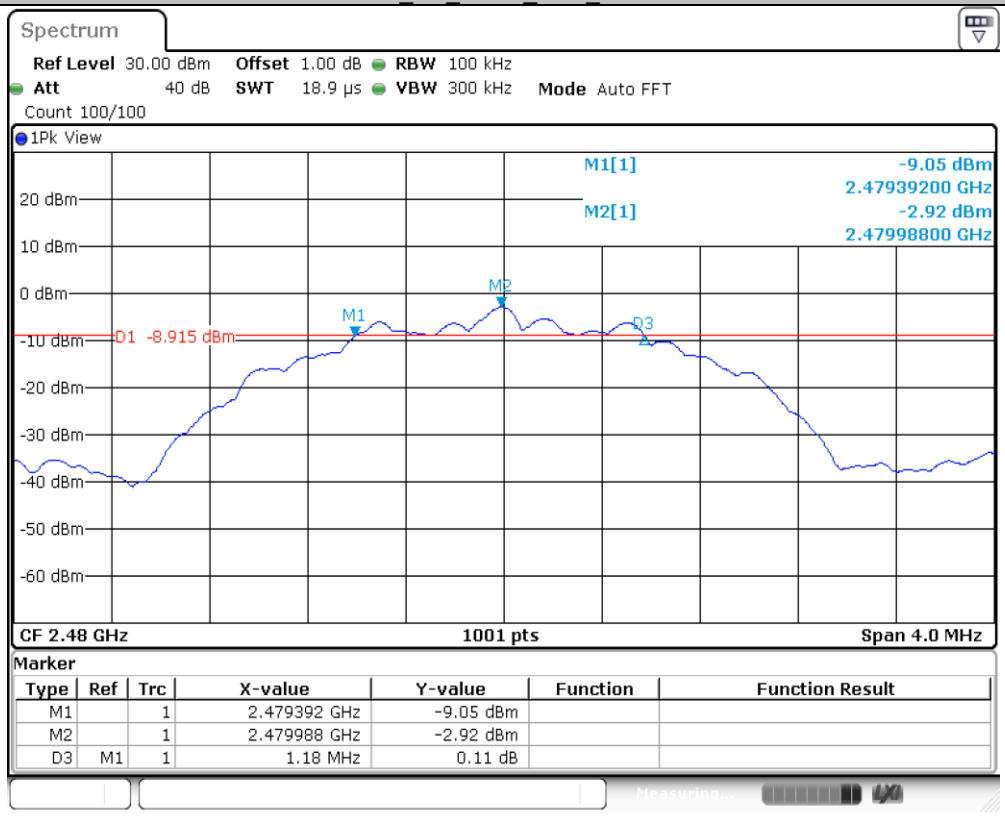

Date: 6.NOV.2023 16:18:09

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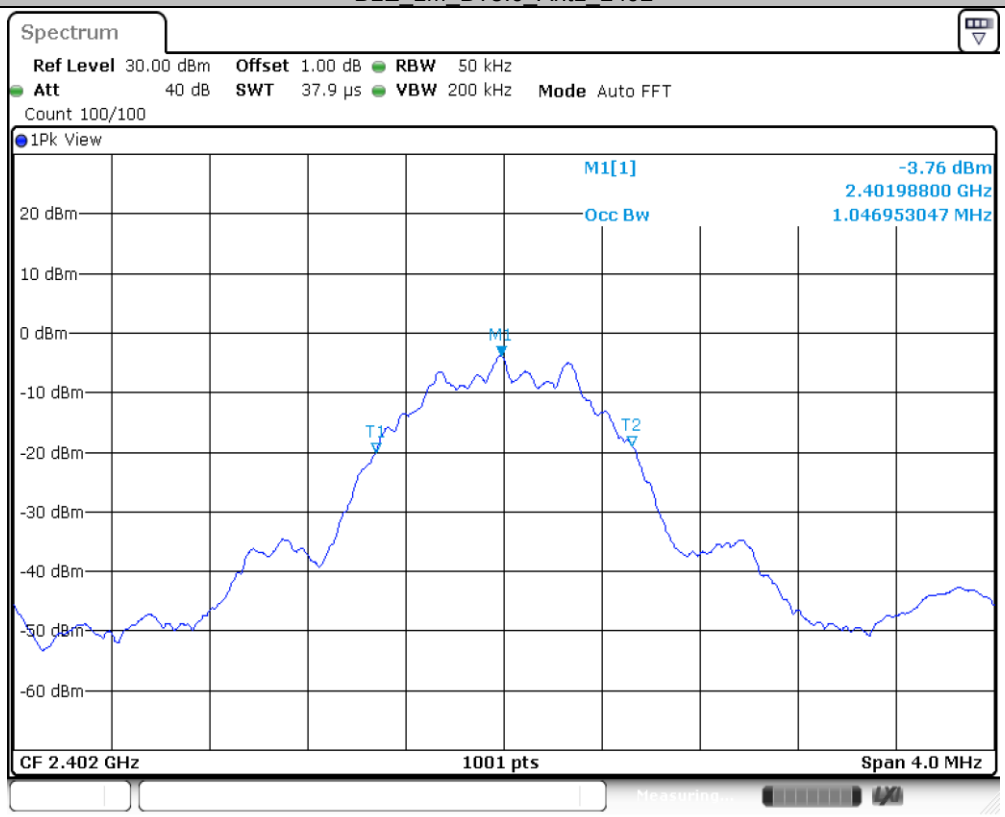
99% Bandwidth

BLE_1M_BT5.0_Ant1_2402



Date: 6.NOV.2023 16:42:38

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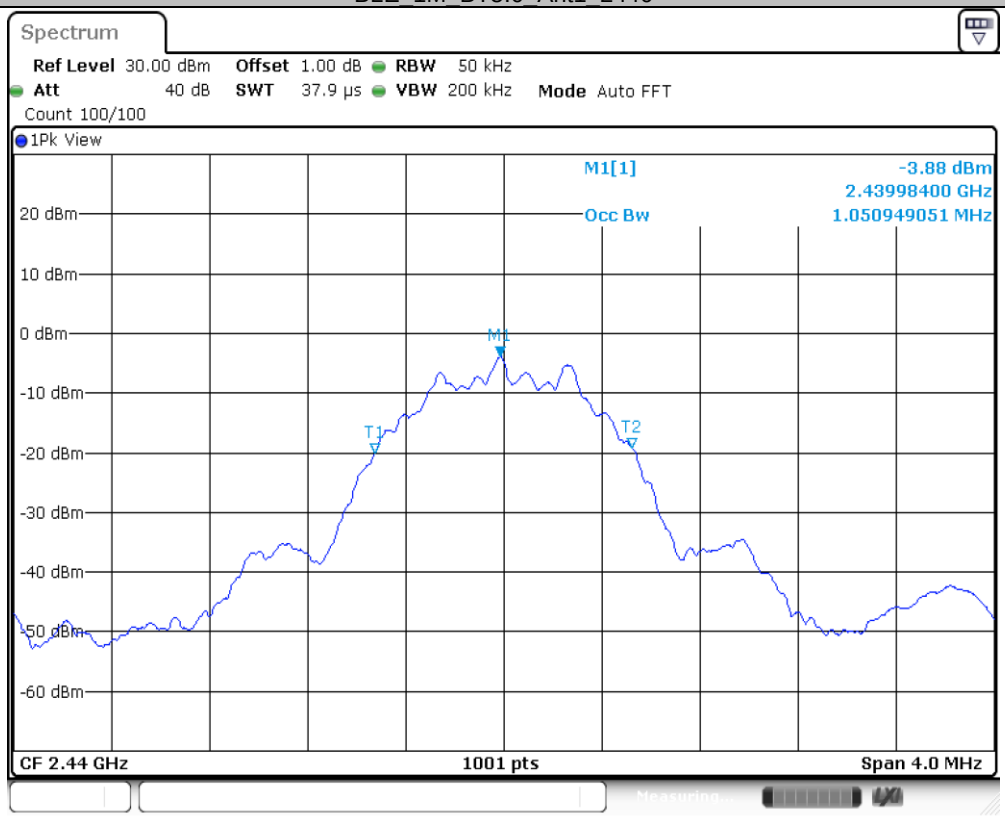
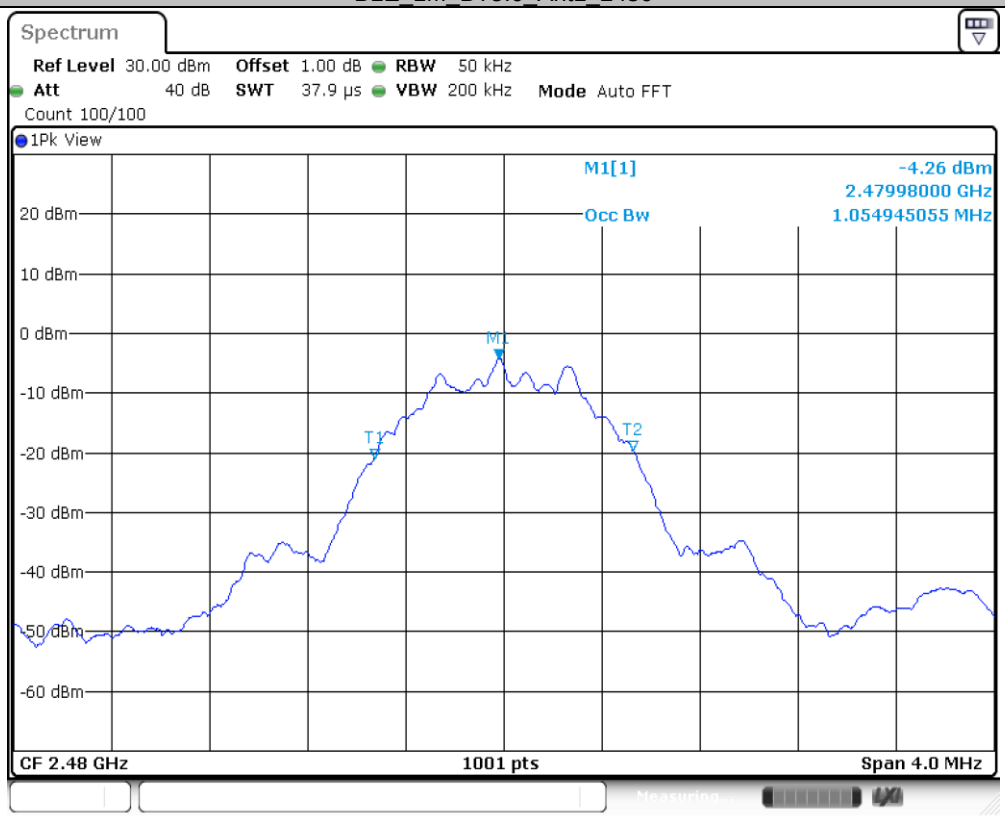


Date: 6.NOV.2023 16:44:22

BLE_1M_BT5.0_Ant1_2480



Date: 6.NOV.2023 16:46:46

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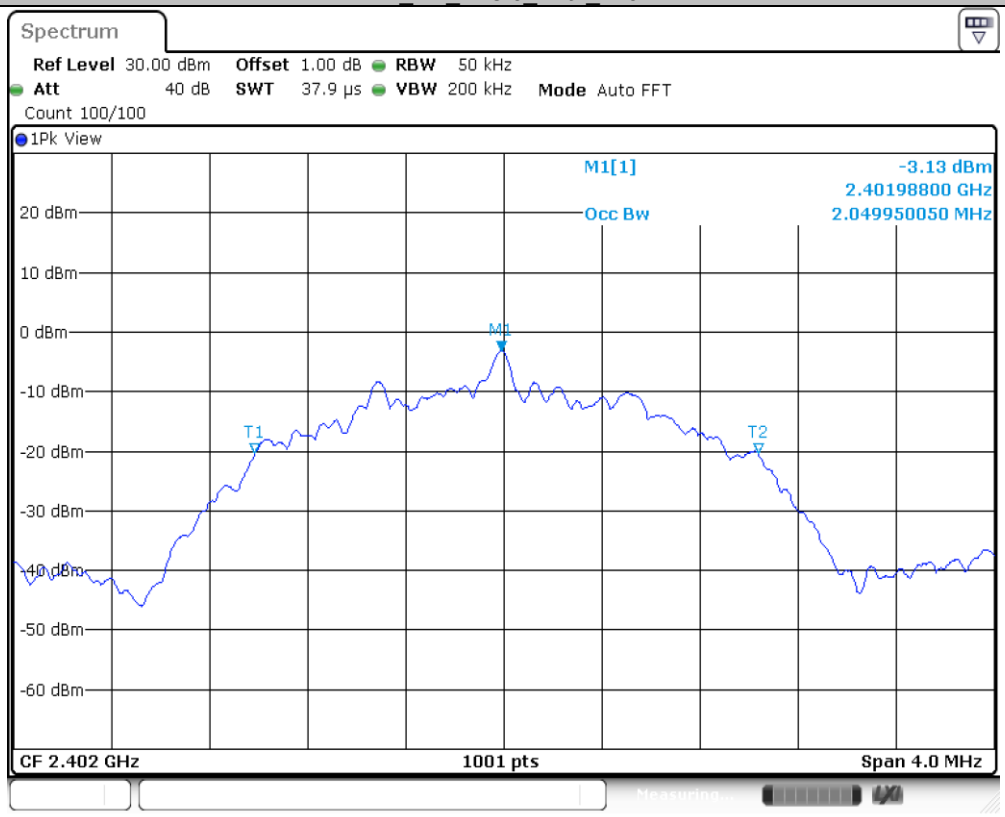
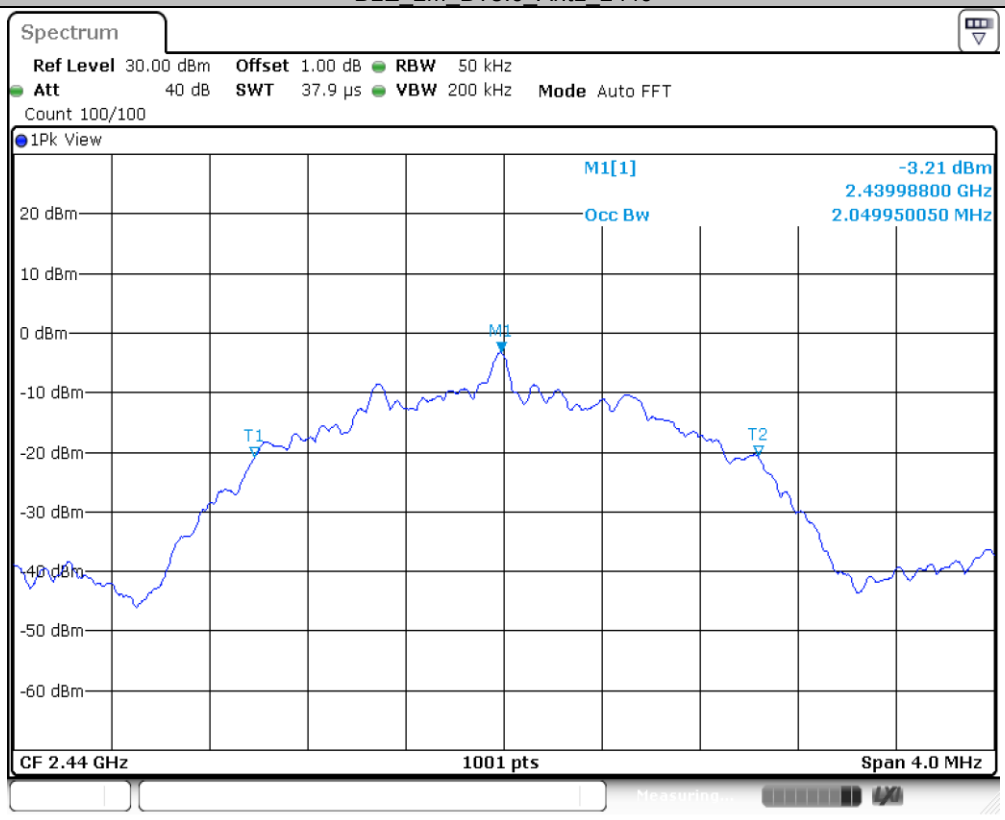
BLE_2M_BT5.0_Ant1_2402



Date: 6.NOV.2023 16:07:34

BLE_2M_BT5.0_Ant1_2440



Date: 6.NOV.2023 16:16:03

BLE_2M_BT5.0_Ant1_2480

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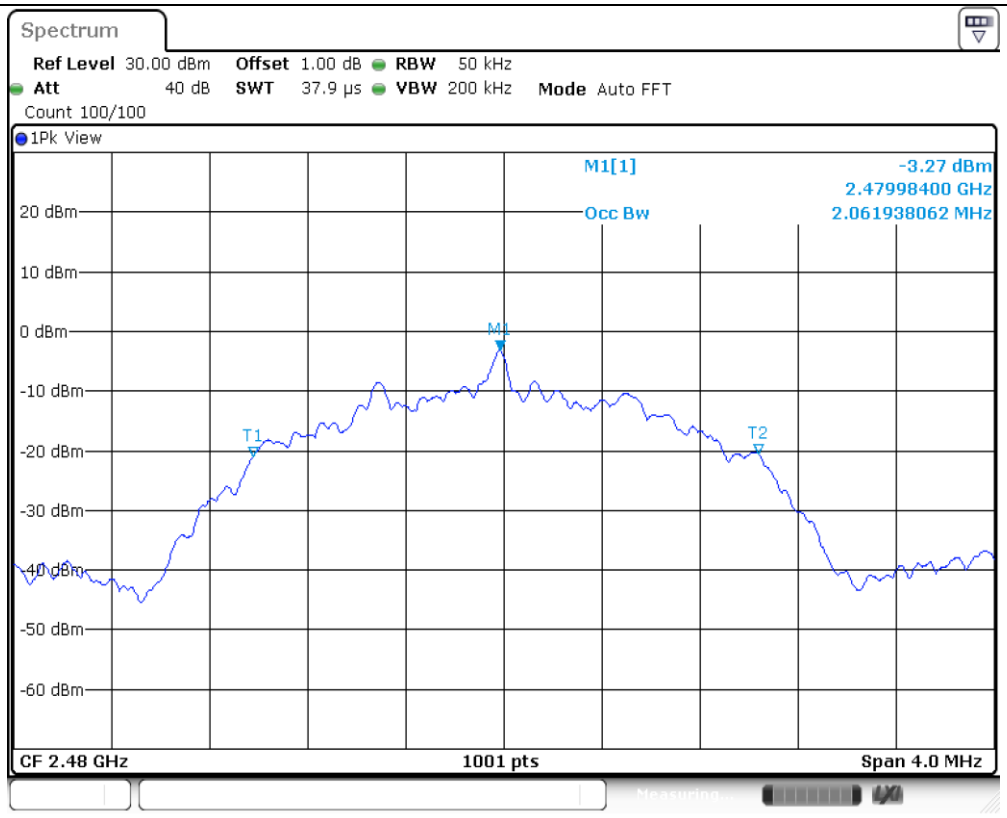

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9.4 Spurious RF Conducted Emissions

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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Spurious RF conducted emissions

TestMode	Antenna	Channel (MHz)	Frequency Range (MHz)	RefLevel (dBm)	Result (dBm)	Limit (dBm)	Verdict
BLE-1M_BT5.0	Ant1	2402	Reference	-3.29	-3.29	---	PASS
			30~1000	30~1000	-61.93	<=-23.29	PASS
			1000~26500	1000~26500	-49.75	<=-23.29	PASS
		2440	Reference	-3.42	-3.42	---	PASS
			30~1000	30~1000	-61.96	<=-23.42	PASS
			1000~26500	1000~26500	-49.94	<=-23.42	PASS
		2480	Reference	-3.70	-3.70	---	PASS
			30~1000	30~1000	-62.24	<=-23.7	PASS
			1000~26500	1000~26500	-51.98	<=-23.7	PASS

TestMode	Antenna	Channel (MHz)	Frequency Range (MHz)	RefLevel (dBm)	Result (dBm)	Limit (dBm)	Verdict
BLE-2M_BT5.0	Ant1	2402	Reference	-2.64	-2.64	---	PASS
			30~1000	30~1000	-60.73	<=-22.64	PASS
			1000~26500	1000~26500	-34.7	<=-22.64	PASS
		2440	Reference	-3.01	-3.01	---	PASS
			30~1000	30~1000	-61.2	<=-23.01	PASS
			1000~26500	1000~26500	-52.47	<=-23.01	PASS
		2480	Reference	-2.93	-2.93	---	PASS
			30~1000	30~1000	-60.92	<=-22.93	PASS
			1000~26500	1000~26500	-52.85	<=-22.93	PASS

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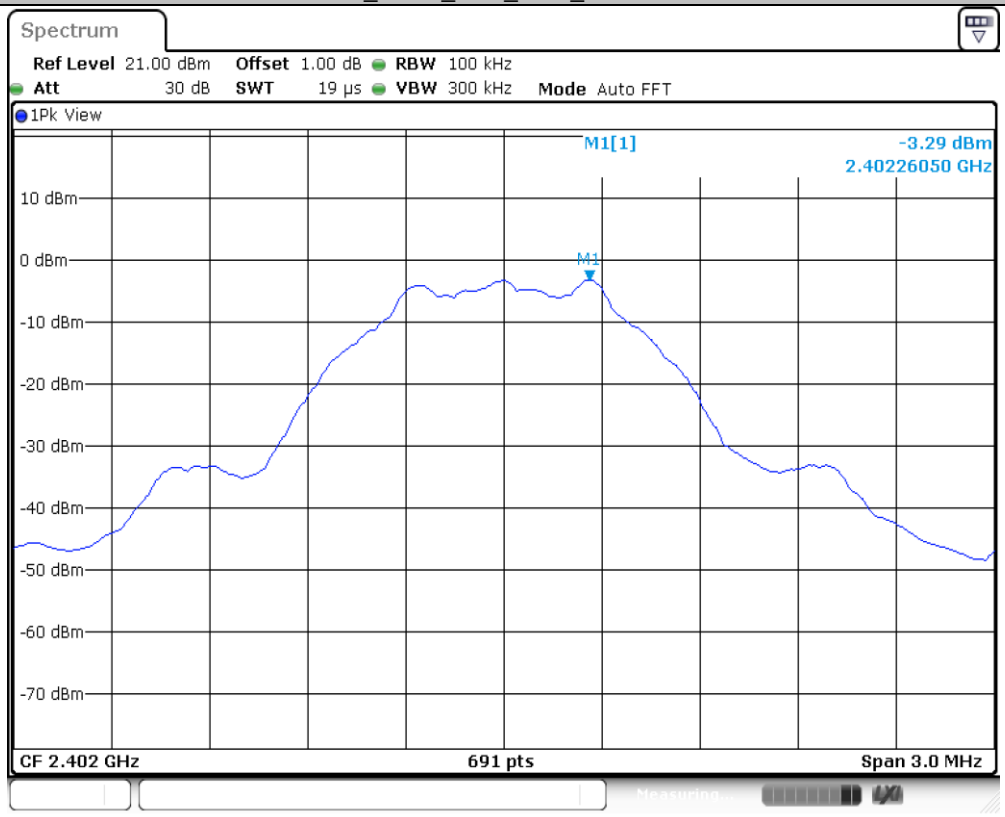
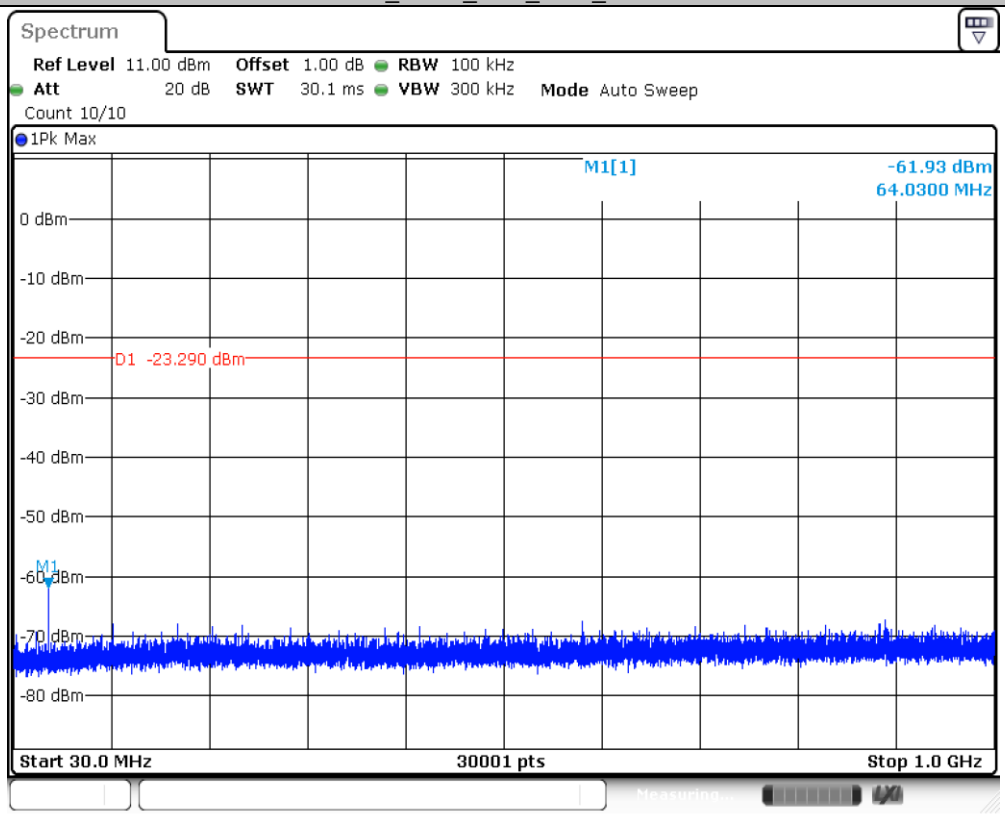
BLE1M_BT5.0_Ant1_2402_0~Reference



Date: 6.NOV.2023 16:43:05

BLE1M_BT5.0_Ant1_2402_30~1000



Date: 6.NOV.2023 16:43:11

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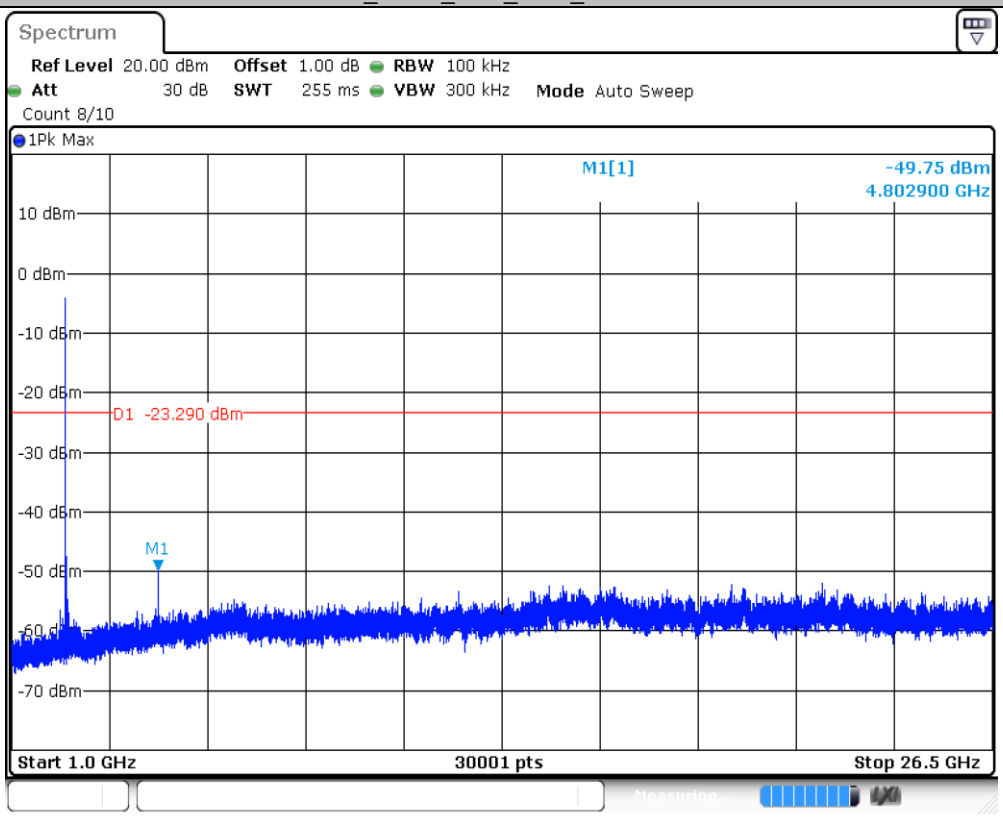
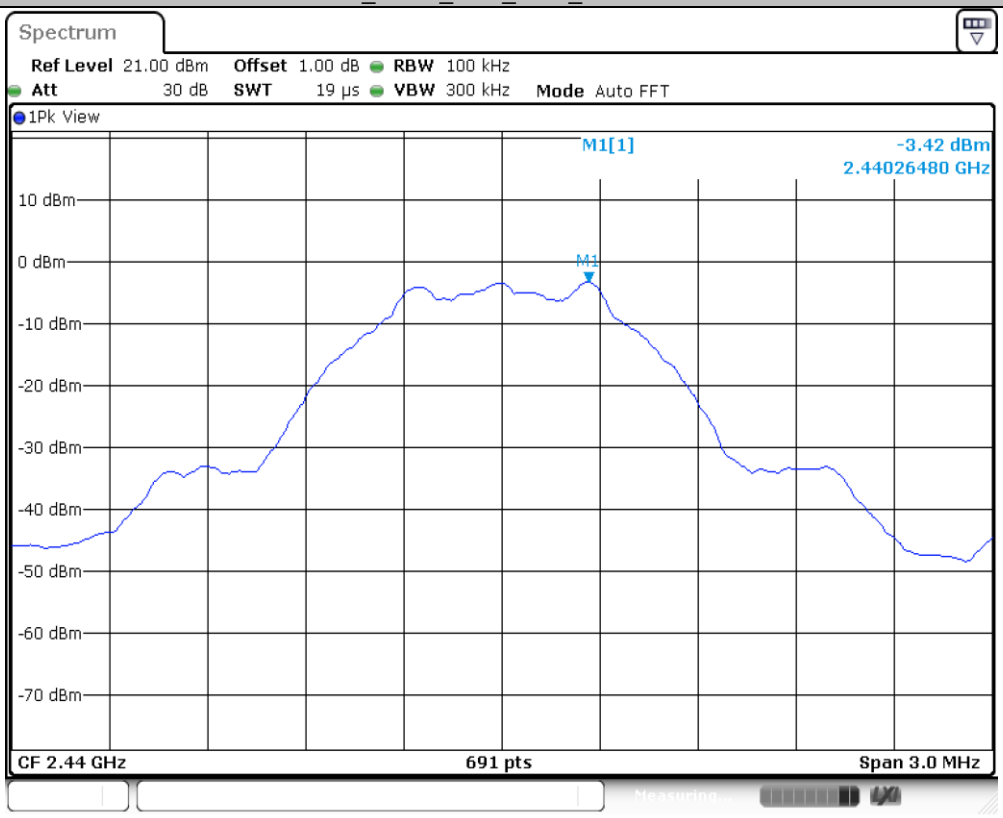
BLE1M_BT5.0_Ant1_2402_1000~26500



Date: 6.NOV.2023 16:43:19

BLE1M_BT5.0_Ant1_2440_0~Reference



Date: 6.NOV.2023 16:44:40

BLE1M_BT5.0_Ant1_2440_30~1000

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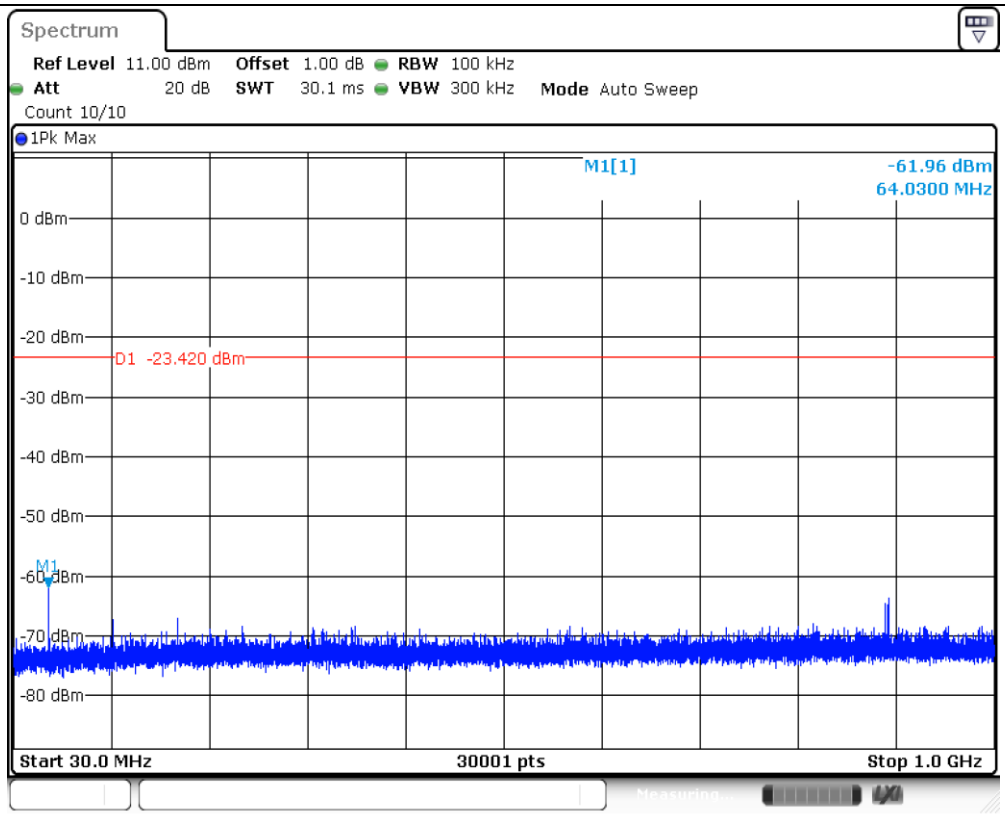
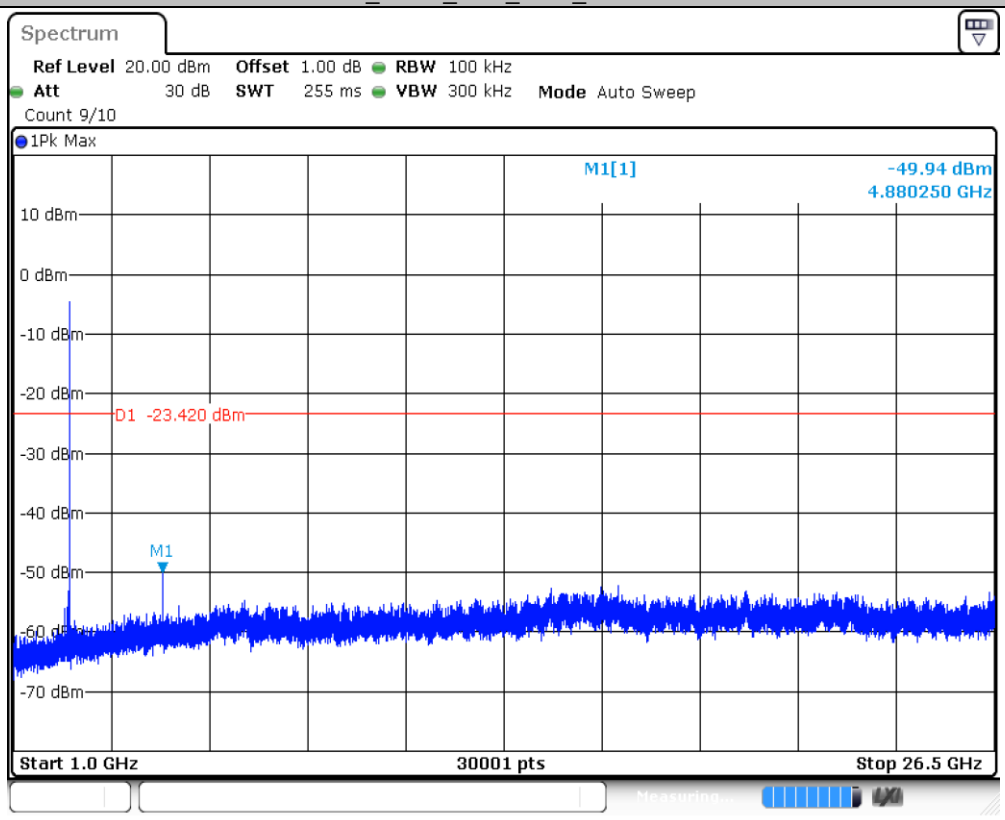


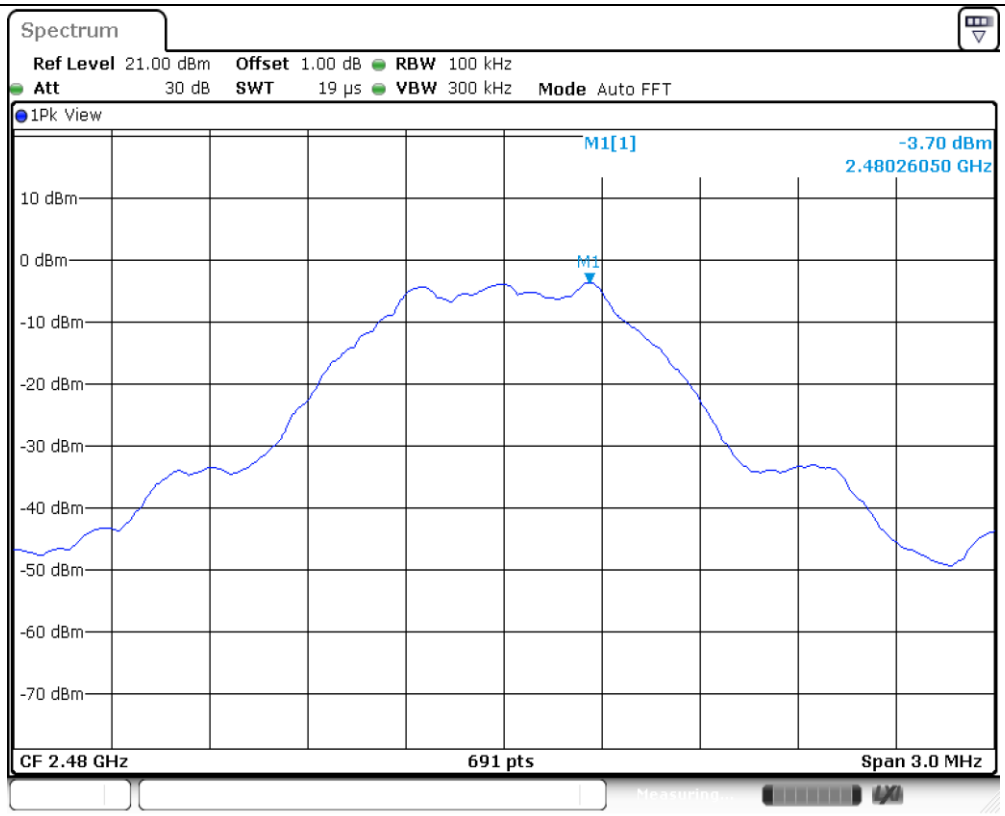
Date: 6.NOV.2023 16:44:46

BLE1M_BT5.0_Ant1_2440_1000~26500



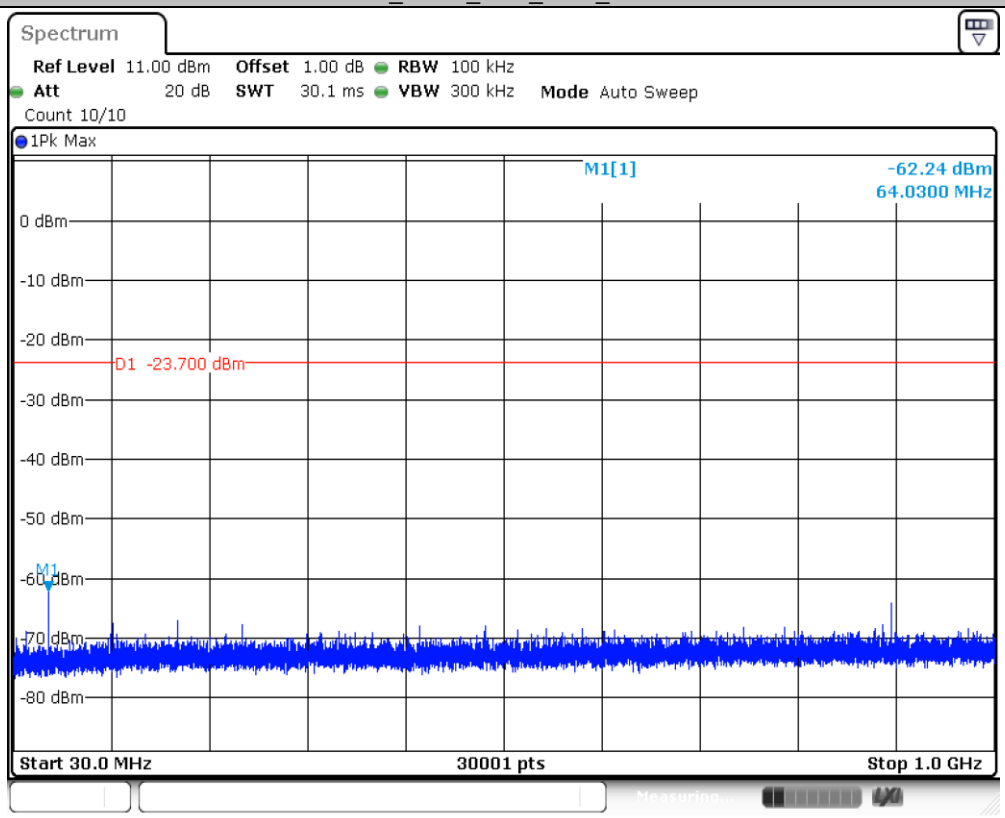
Date: 6.NOV.2023 16:44:54

BLE1M_BT5.0_Ant1_2480_0~Reference



Date: 6.NOV.2023 16:47:13

BLE1M _BT5.0_Ant1_2480_30~1000



Date: 6.NOV.2023 16:47:19

BLE1M_BT5.0_Ant1_2480_1000~26500

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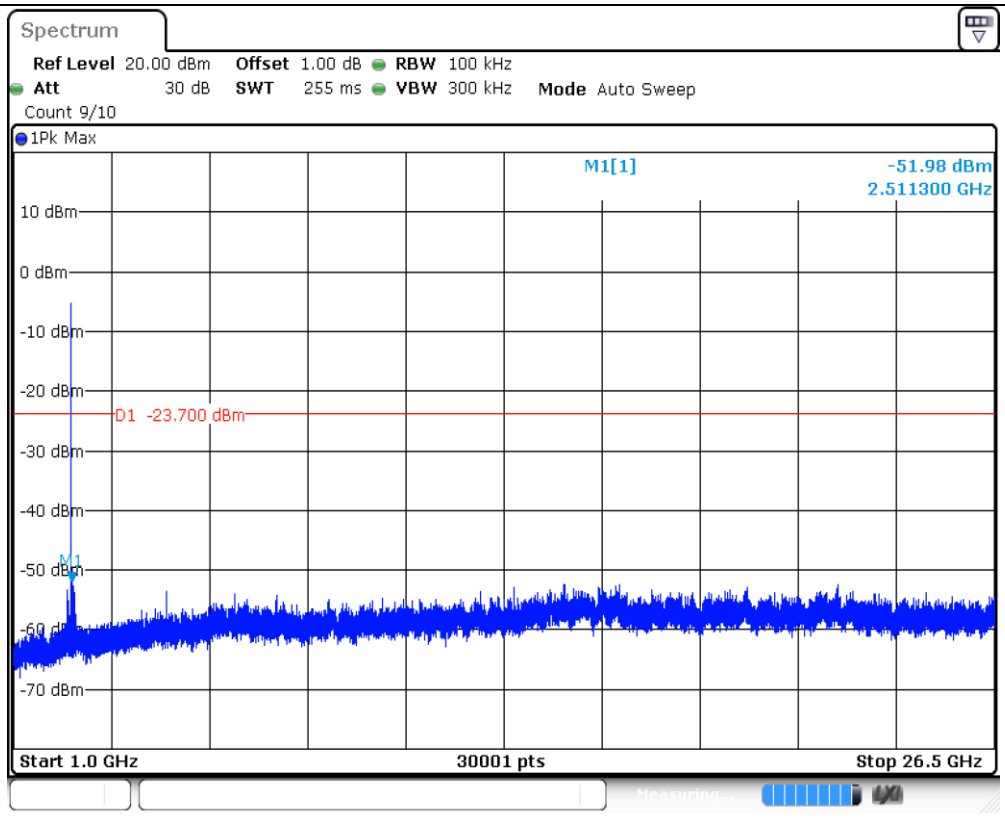

Date: 6.NOV.2023 16:47:26

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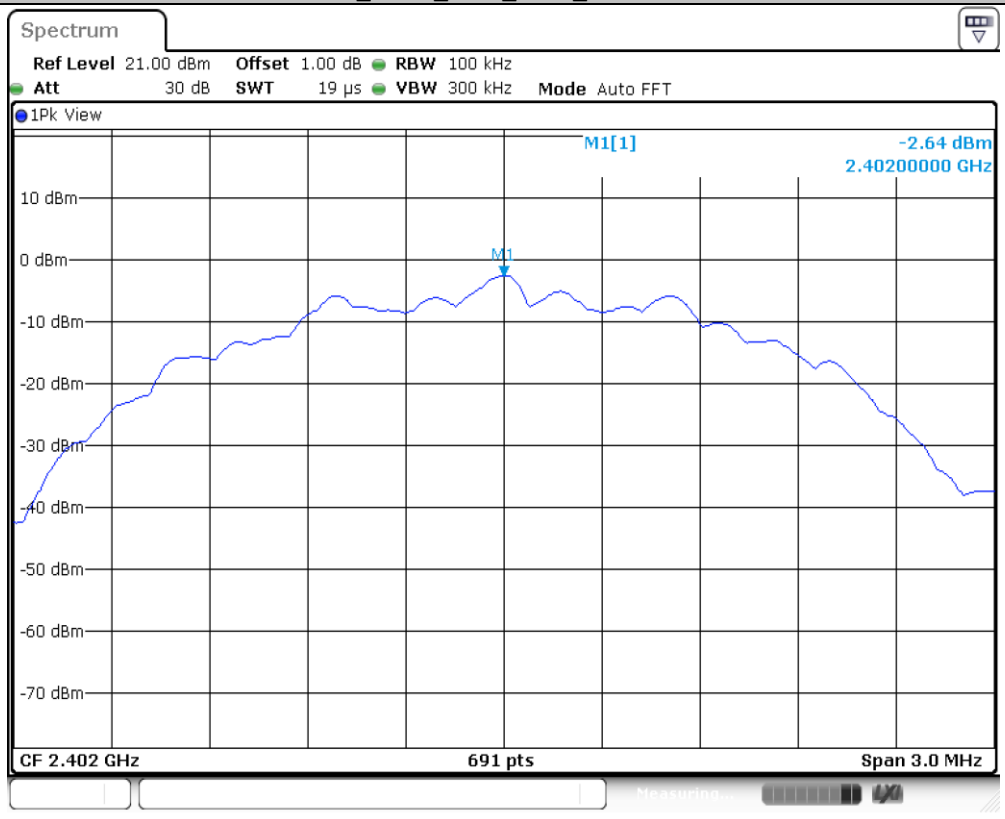

Date: 6.NOV.2023 16:08:02

BLE2M_BT5.0_Ant1_2402_30~1000

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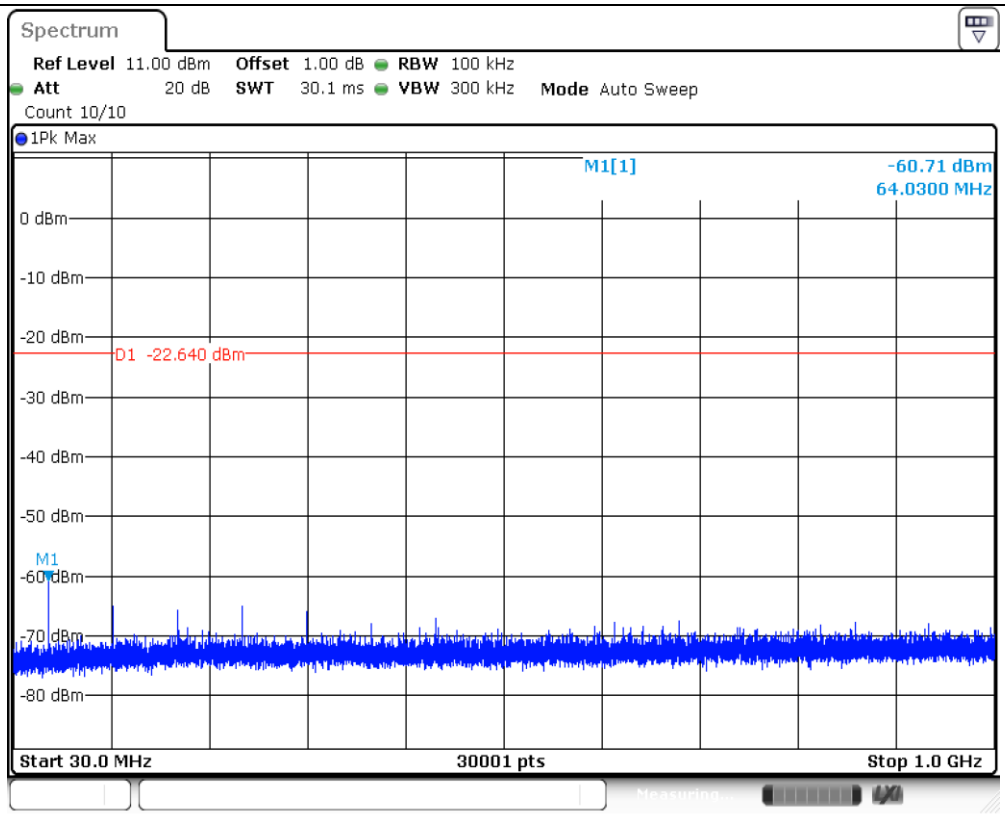

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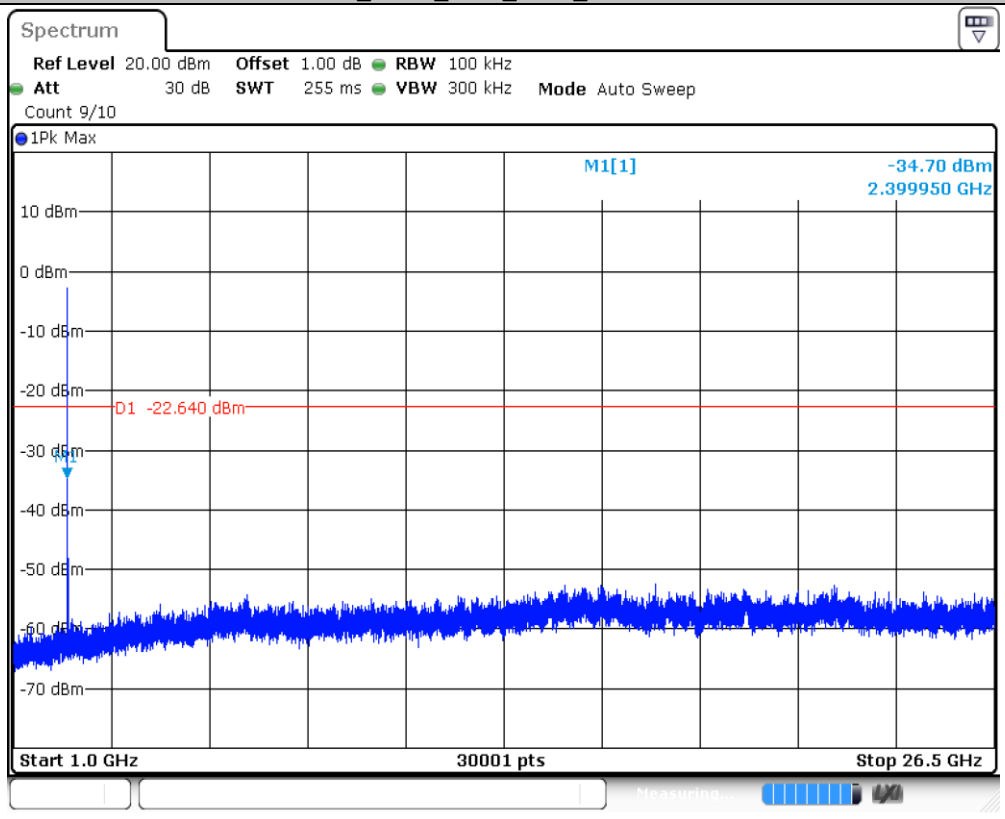
BLE2M_BT5.0_Ant1_2402_1000~26500



Date: 6.NOV.2023 16:08:16

BLE_BT5.0_Ant1_2440_0~Reference

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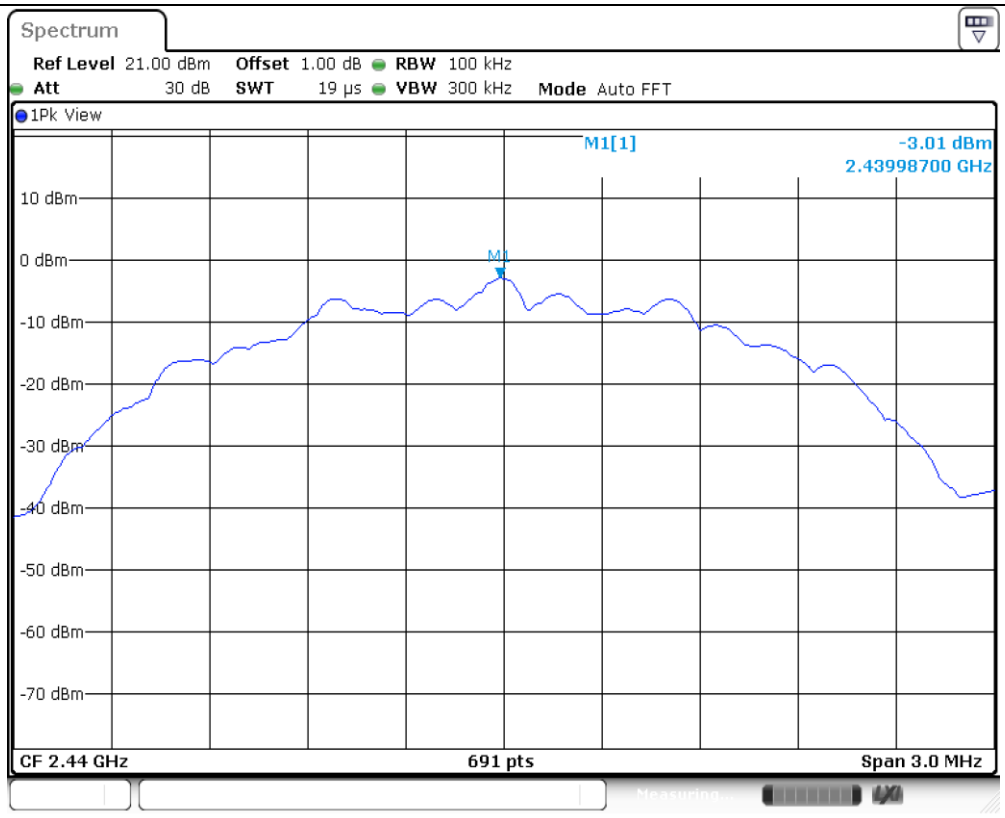

Date: 6.NOV.2023 16:16:21

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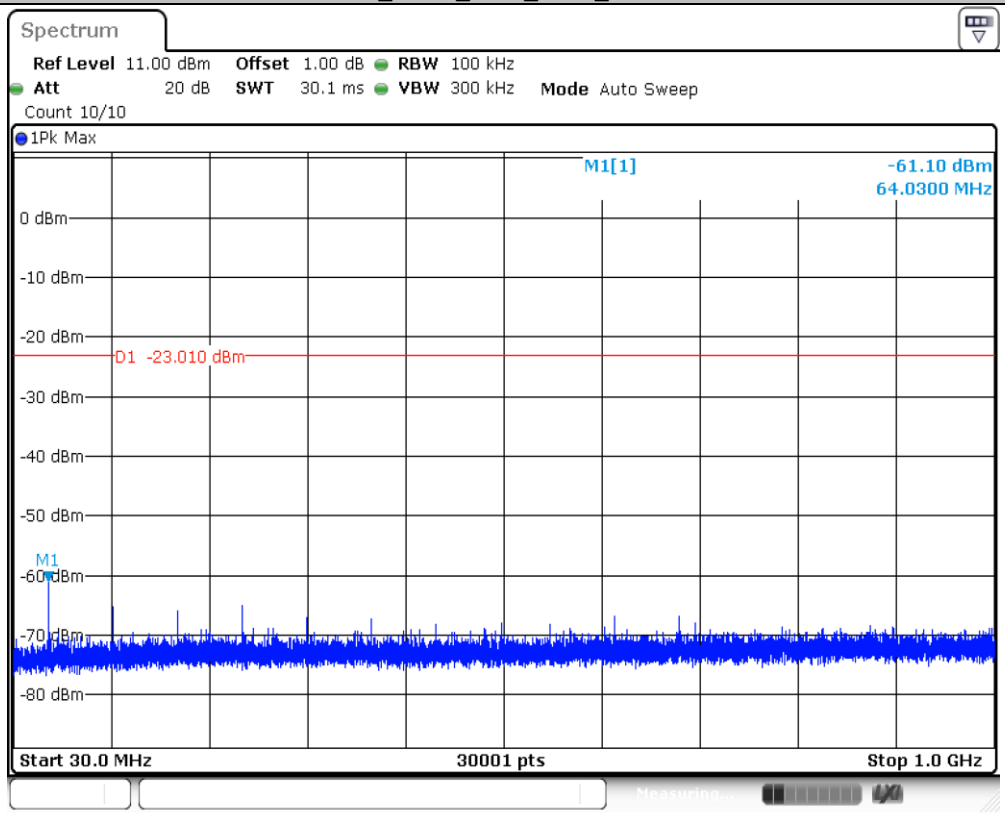
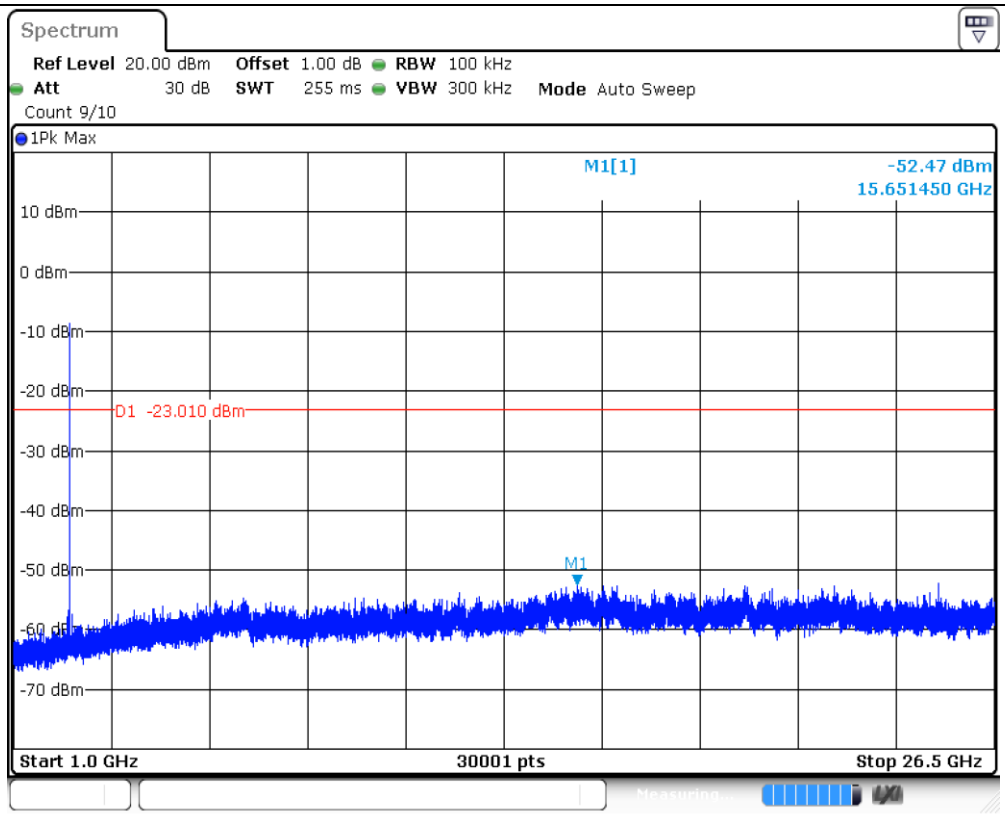


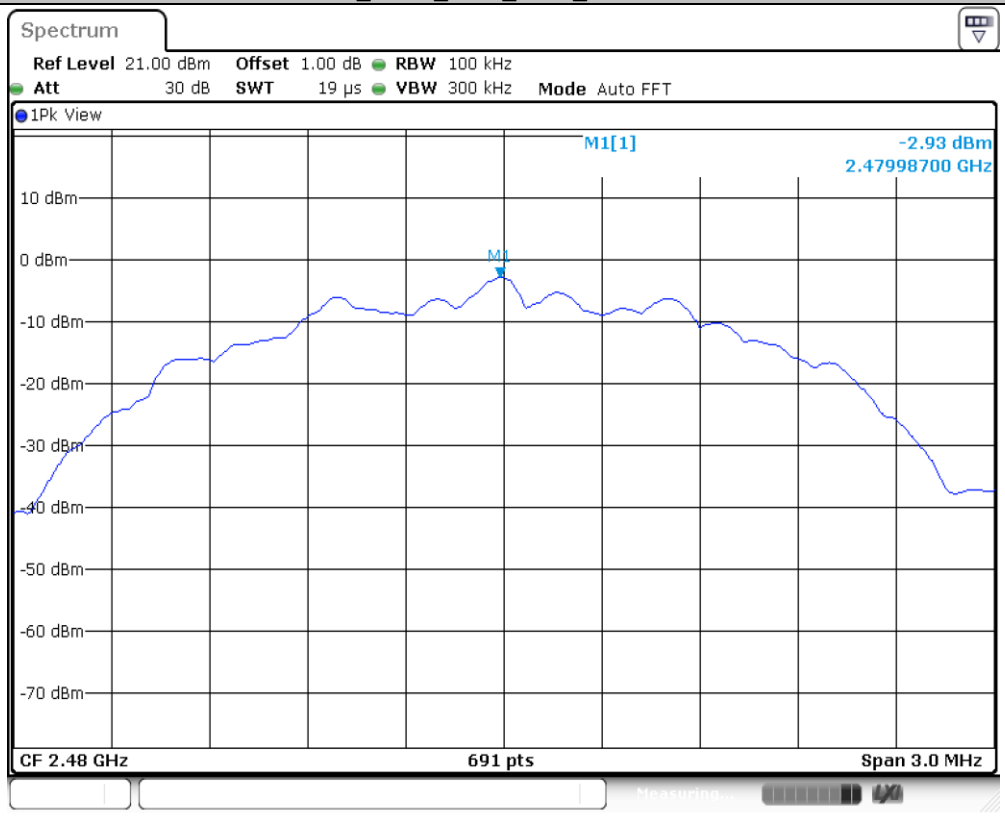
Date: 6.NOV.2023 16:16:27

BLE2M_BT5.0_Ant1_2440_1000~26500



Date: 6.NOV.2023 16:16:35

BLE2M_BT5.0_Ant1_2480_0~Reference



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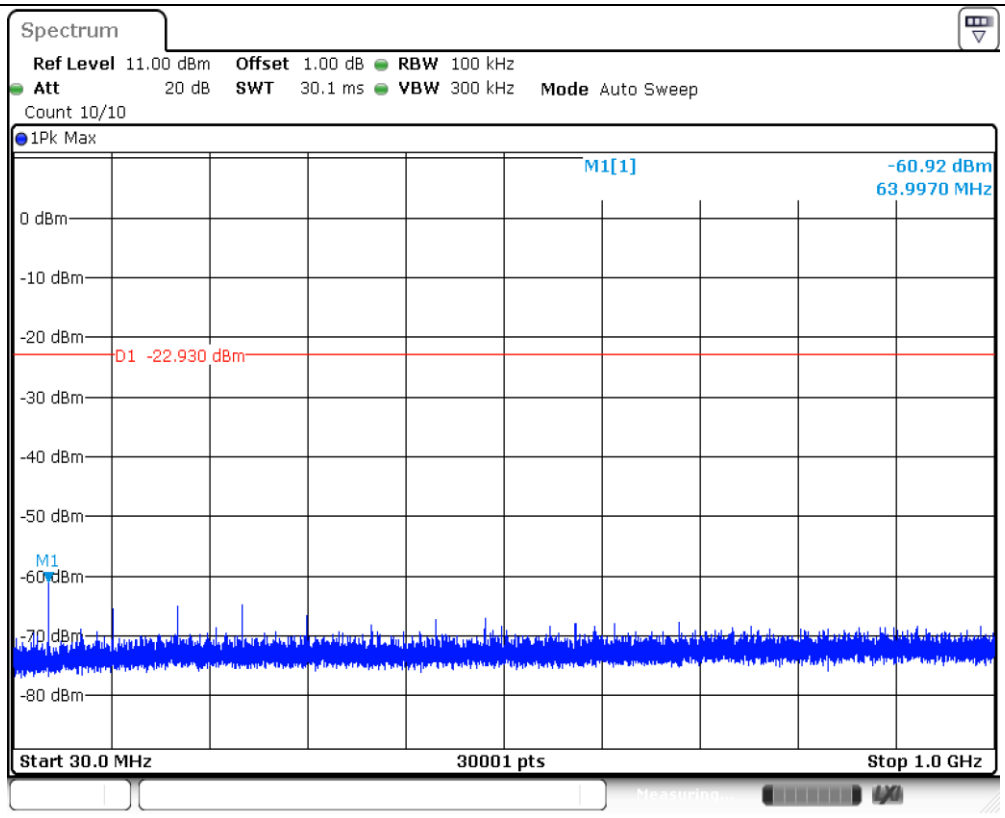
BLE2M_BT5.0_Ant1_2480_30~1000



Date: 6.NOV.2023 16:18:53

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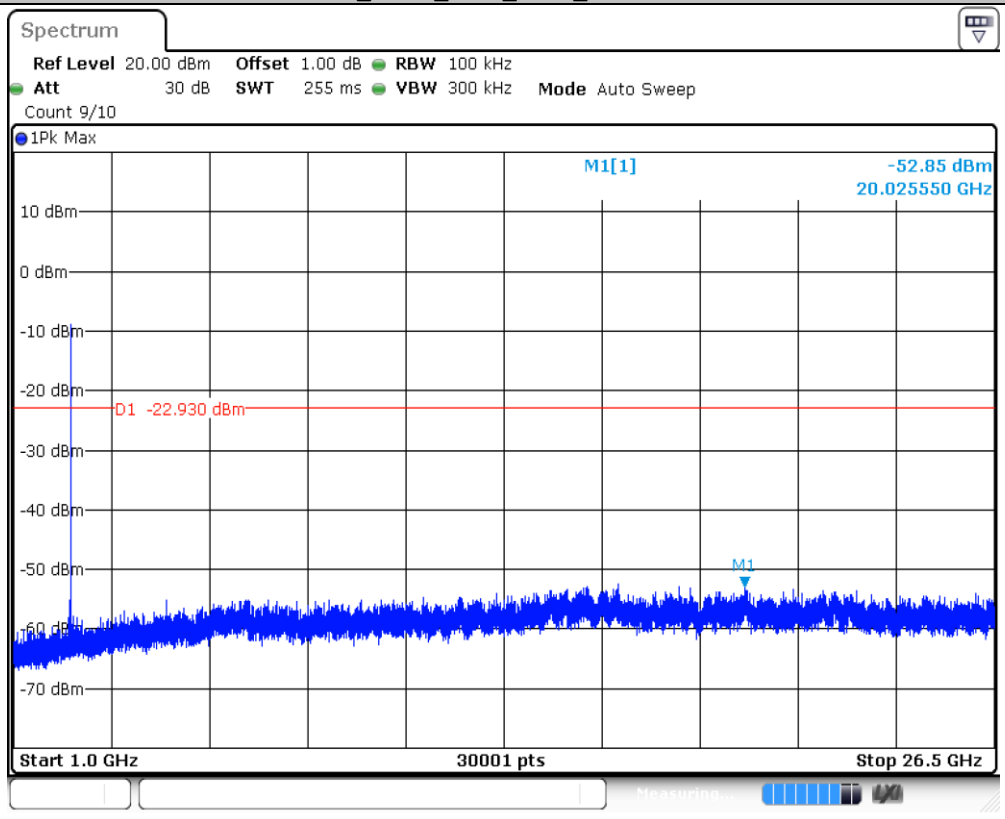

Date: 6.NOV.2023 16:19:01

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9.5 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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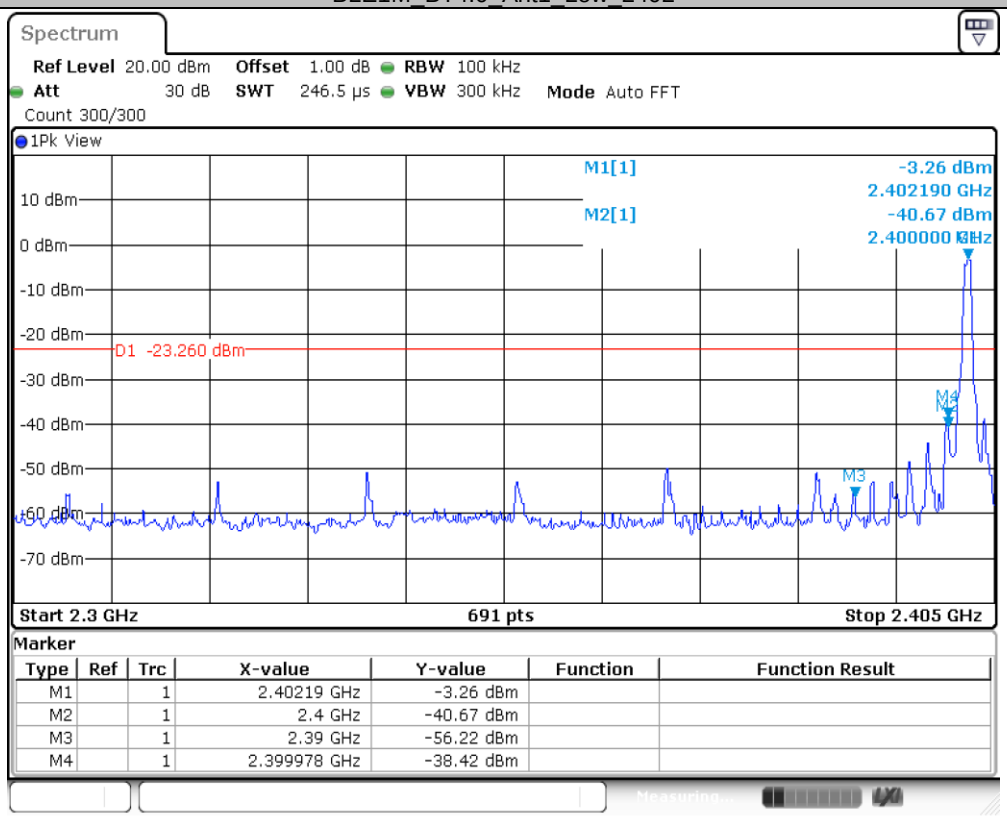
Band edge testing

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-3.26
		2480	1	-3.76
2M	SISO	2402	1	-2.80
		2480	1	-2.98
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.				

BLE1M_BT4.0_Ant1_Low_2402



BLE1M_BT4.0_Ant1_High_2480

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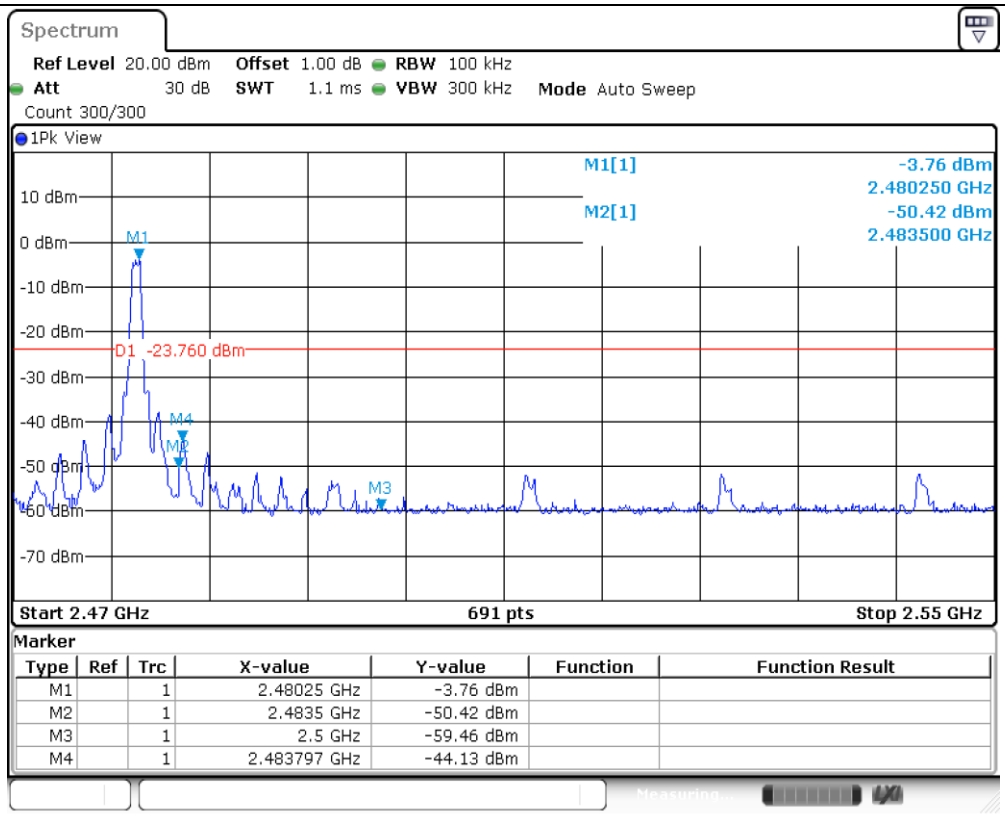
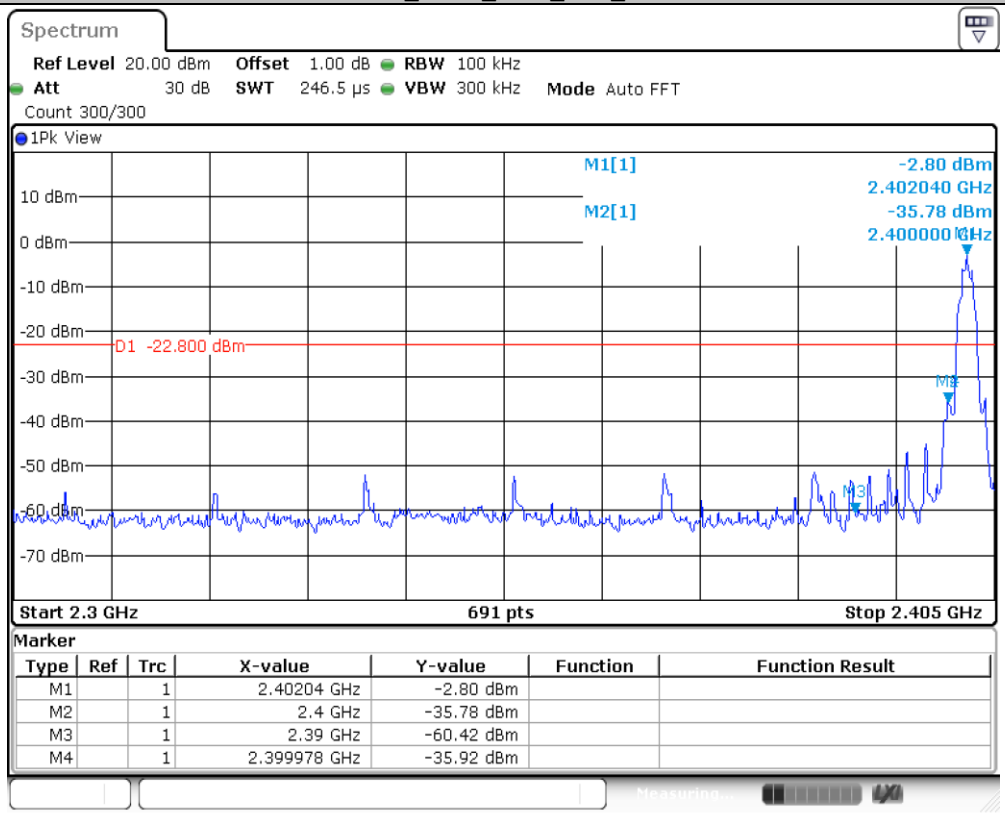


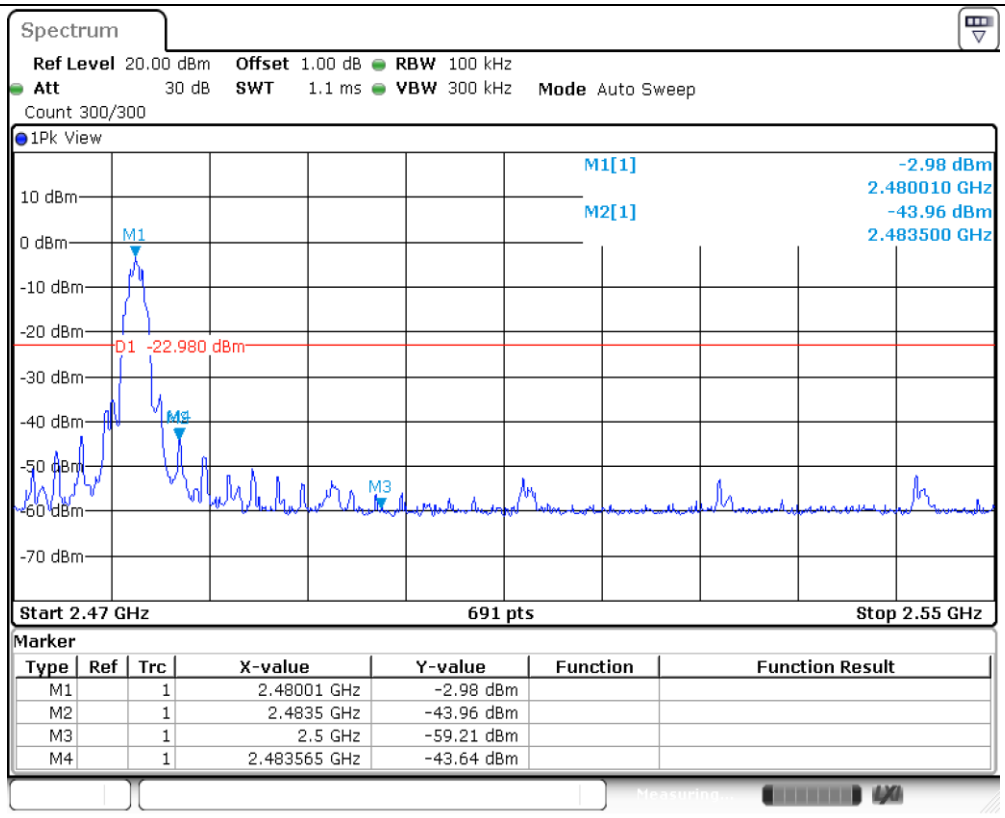
Date: 6.NOV.2023 16:47:07

BLE1M_BT4.0_Ant1_Low_2402



Date: 6.NOV.2023 16:07:55

BLE2M_BT4.0_Ant1_High_2480



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9.6 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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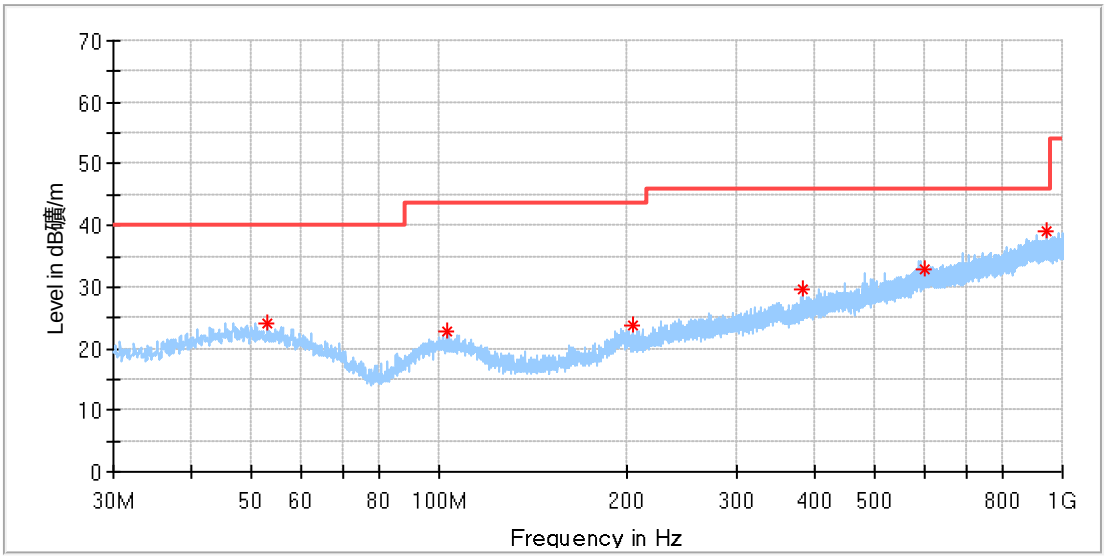
Spurious radiated emissions for transmitter

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



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
52.976875	24.21	40.00	15.79	200.0	H	0.0	20.71
103.174375	22.64	43.50	20.86	200.0	H	146.0	19.07
203.811875	23.67	43.50	19.83	200.0	H	80.0	18.56
383.928750	29.77	46.00	16.23	200.0	H	51.0	23.53
602.057500	32.88	46.00	13.12	200.0	H	190.0	28.28
945.801250	39.05	46.00	6.95	200.0	H	0.0	32.19

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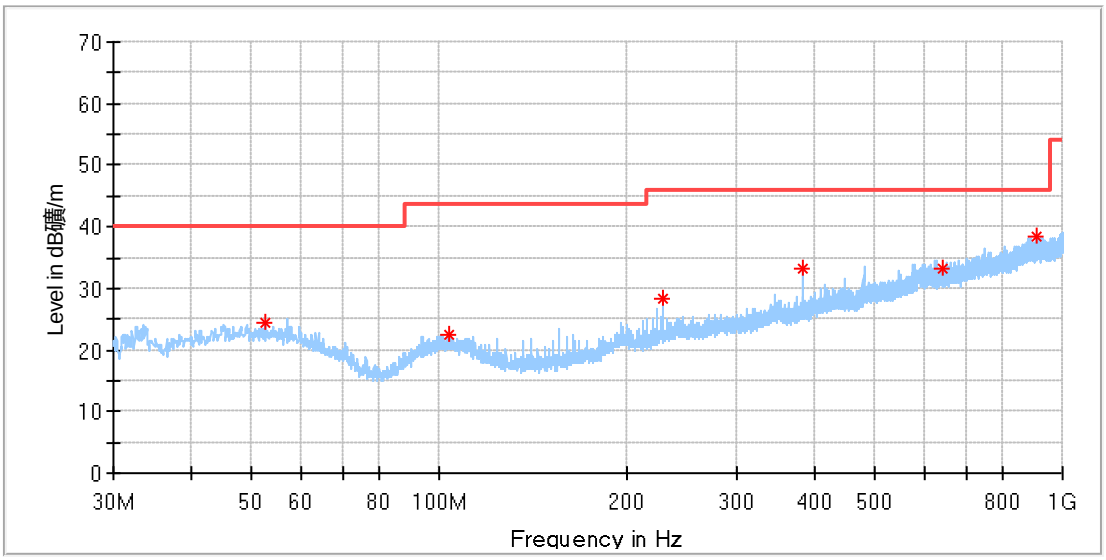

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
52.613125	24.52	40.00	15.48	200.0	V	125.0	20.70
103.659375	22.60	43.50	20.90	200.0	V	0.0	19.08
228.001250	28.45	46.00	17.55	100.0	V	218.0	19.50
383.989375	33.13	46.00	12.87	100.0	V	38.0	23.53
642.070000	33.30	46.00	12.70	100.0	V	106.0	28.37
906.516250	38.42	46.00	7.58	100.0	V	175.0	32.12

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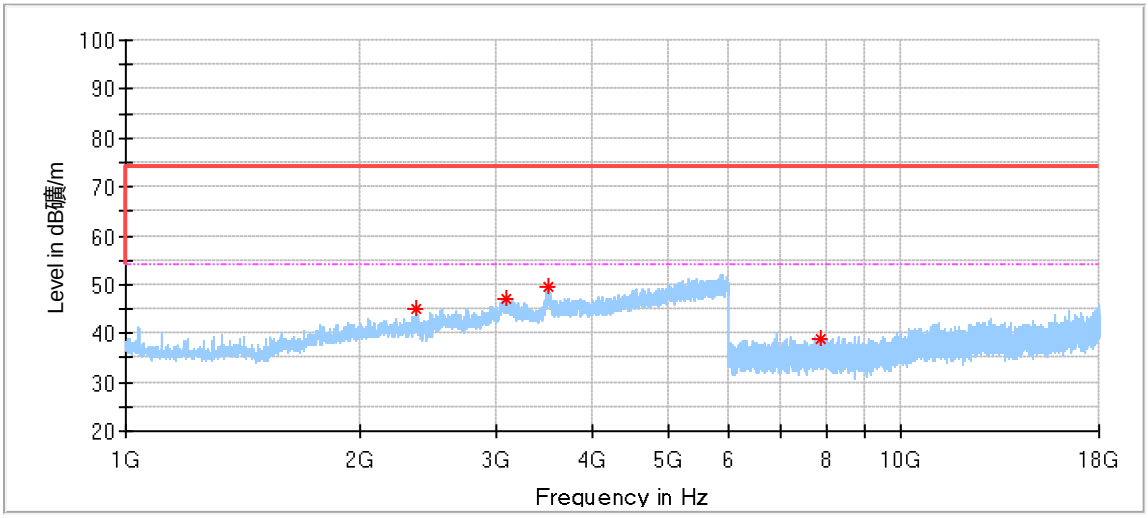
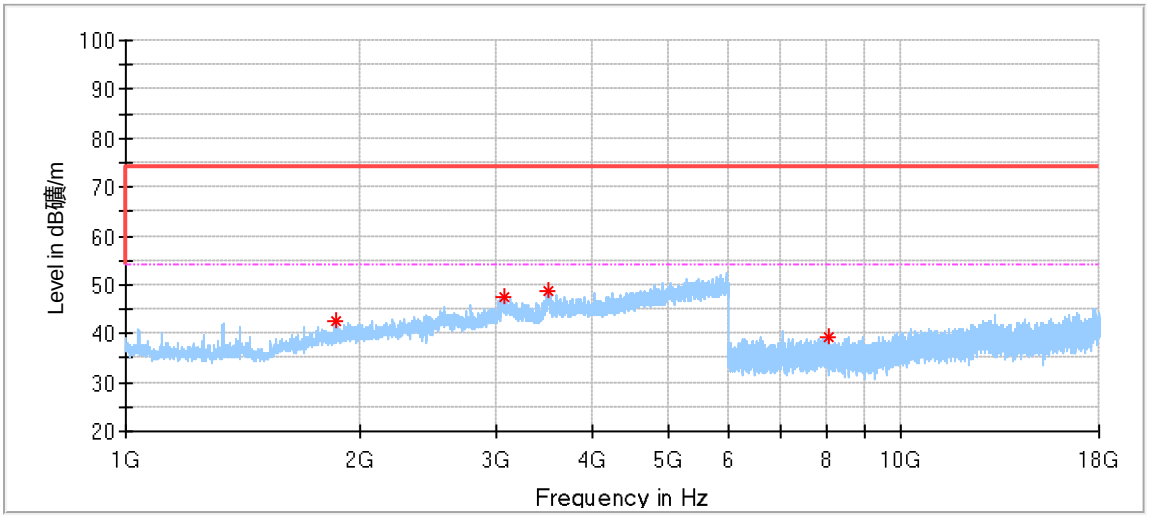
Test data 1GHz to 18GHz:
BLE_1Mbps_Low Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.500000	44.90	74.00	29.10	150.0	H	0.0	-2.63
3087.000000	47.03	74.00	26.97	150.0	H	88.0	1.57
3511.000000	49.44	74.00	24.56	150.0	H	2.0	3.93
7856.000000	38.81	74.00	35.19	150.0	H	261.0	7.25



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1872.000000	42.57	74.00	31.43	150.0	V	201.0	-5.14
3076.000000	47.67	74.00	26.33	150.0	V	160.0	1.53
3500.500000	48.92	74.00	25.08	150.0	V	160.0	4.46
8058.000000	39.27	74.00	34.73	150.0	V	51.0	7.49

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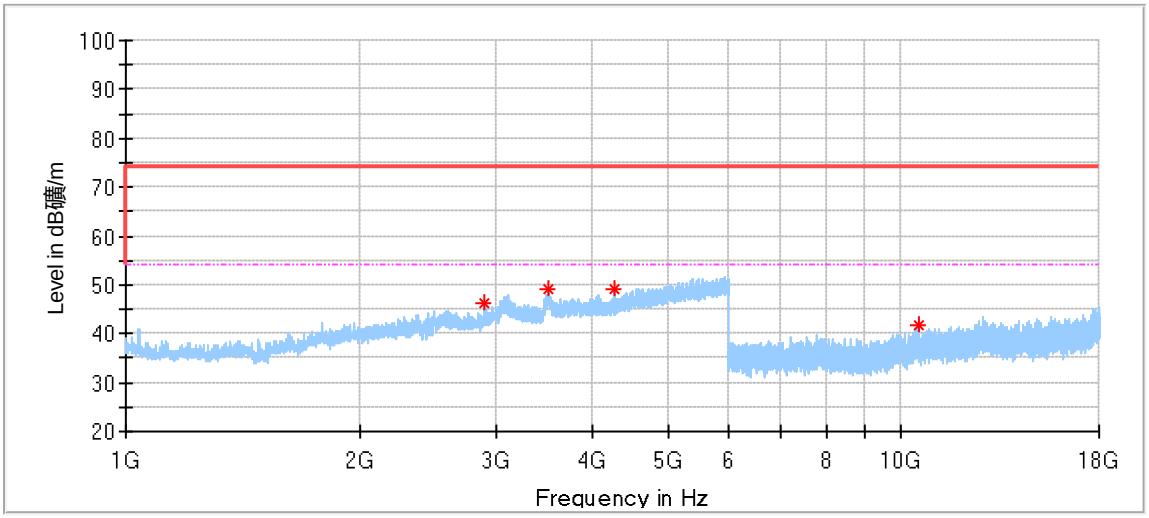
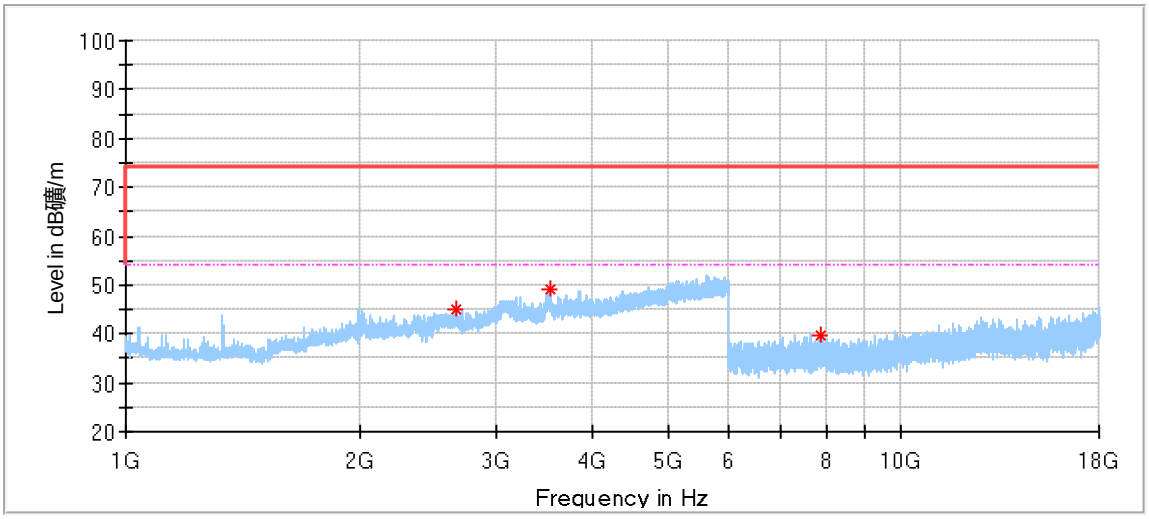
BLE_1Mbps _Middle Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2897.000000	46.23	74.00	27.77	150.0	H	234.0	-0.94
3500.000000	49.02	74.00	24.98	150.0	H	316.0	4.48
4277.000000	49.24	74.00	24.76	150.0	H	306.0	2.87
10534.500000	41.72	74.00	32.28	150.0	H	73.0	10.10



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2670.000000	45.05	74.00	28.95	150.0	V	296.0	-1.51
3518.500000	49.08	74.00	24.92	150.0	V	347.0	3.55
7863.000000	39.82	74.00	34.18	150.0	V	118.0	7.25

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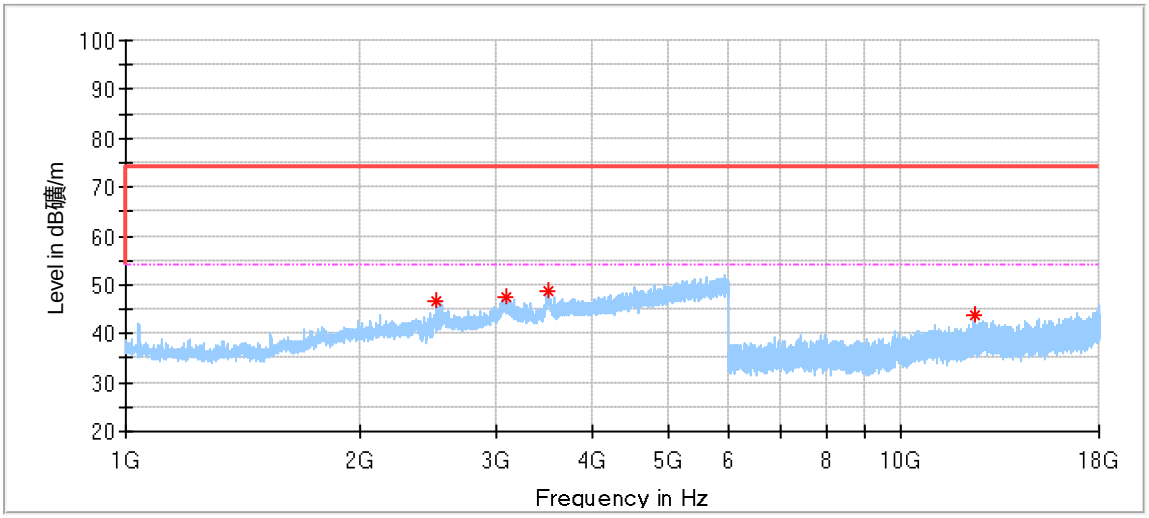
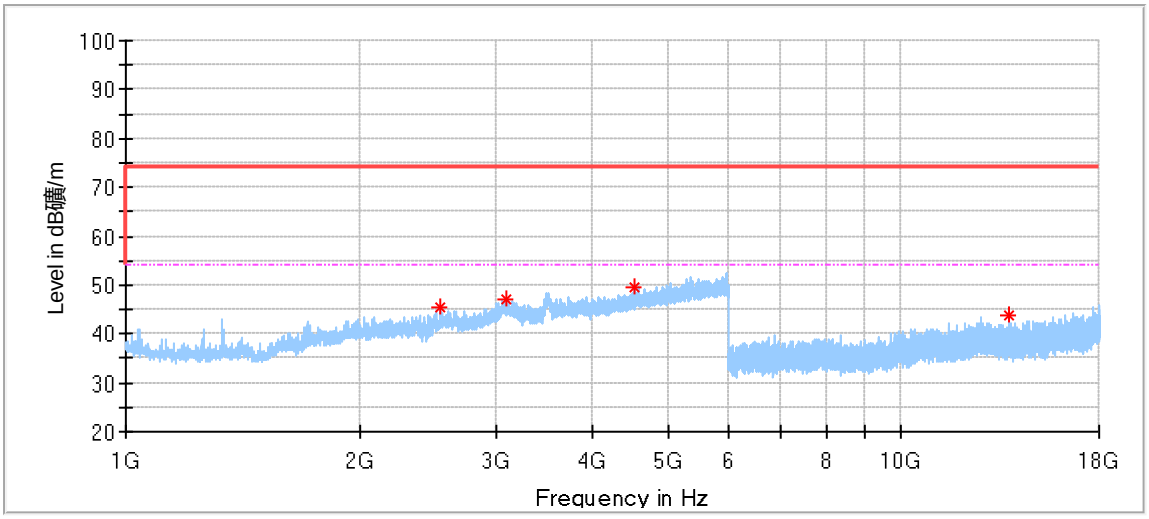
BLE_1Mbps _High Channel:

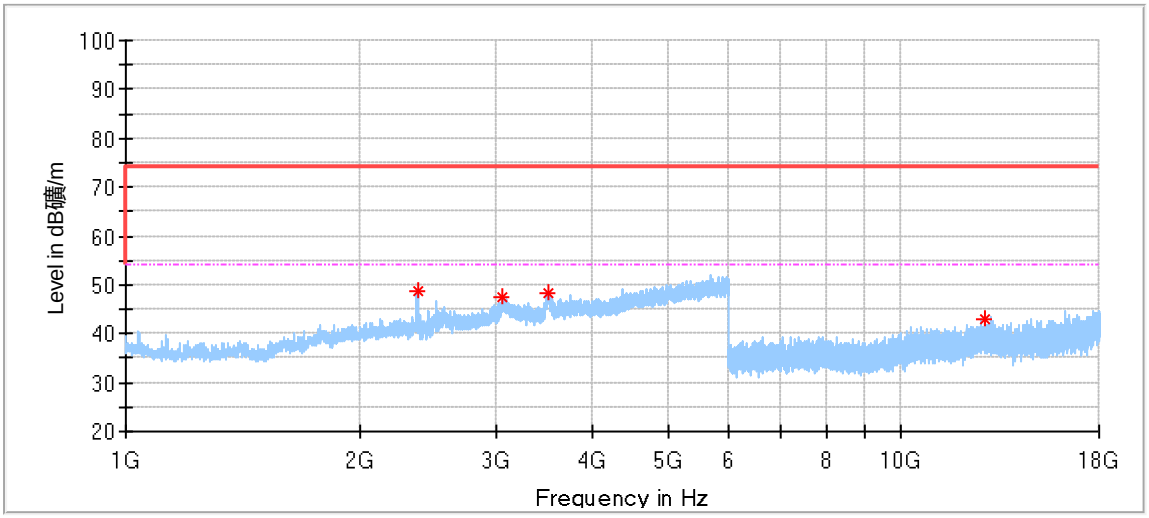


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2511.500000	46.71	74.00	27.29	150.0	H	7.0	-1.77
3098.500000	47.48	74.00	26.52	150.0	H	234.0	1.63
3497.500000	48.54	74.00	25.46	150.0	H	244.0	4.29
12425.500000	43.79	74.00	30.21	150.0	H	303.0	12.26

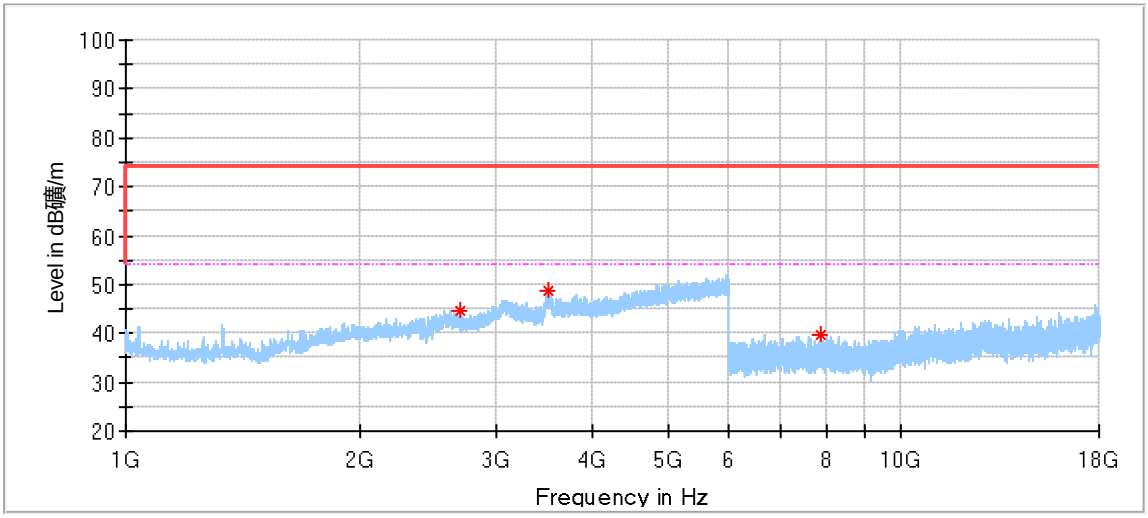


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2543.500000	45.40	74.00	28.60	150.0	V	2.0	-1.43
3100.000000	47.10	74.00	26.90	150.0	V	140.0	1.64
4539.500000	49.49	74.00	24.51	150.0	V	0.0	4.21
13782.000000	43.91	74.00	30.09	150.0	V	359.0	12.71

BLE_2Mbps_Low Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.500000	48.71	74.00	25.29	150.0	H	307.0	-2.49
3063.000000	47.57	74.00	26.43	150.0	H	287.0	1.59
3497.000000	48.29	74.00	25.71	150.0	H	246.0	4.25
12809.000000	42.91	74.00	31.09	150.0	H	51.0	12.97



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2700.500000	44.72	74.00	29.28	150.0	V	183.0	-1.81
3511.000000	48.71	74.00	25.29	150.0	V	33.0	3.93
7874.500000	39.50	74.00	34.50	150.0	V	160.0	7.24

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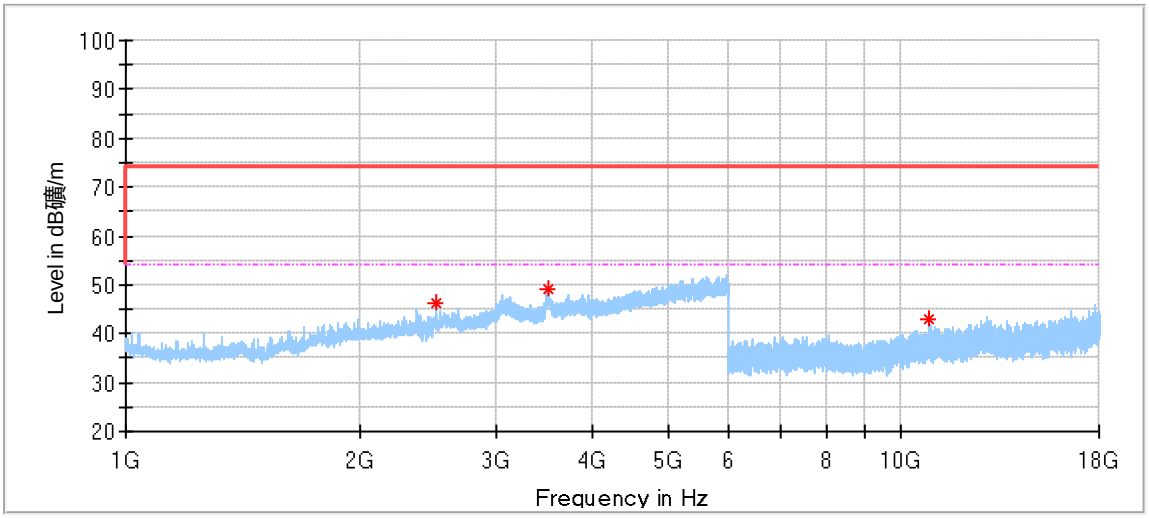
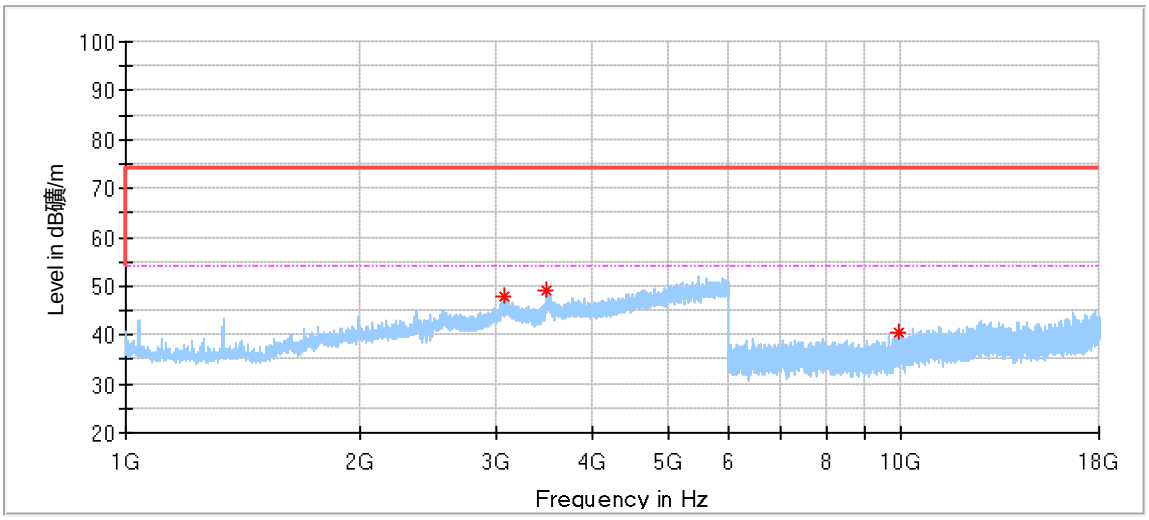
BLE_2Mbps_Middle Channel:

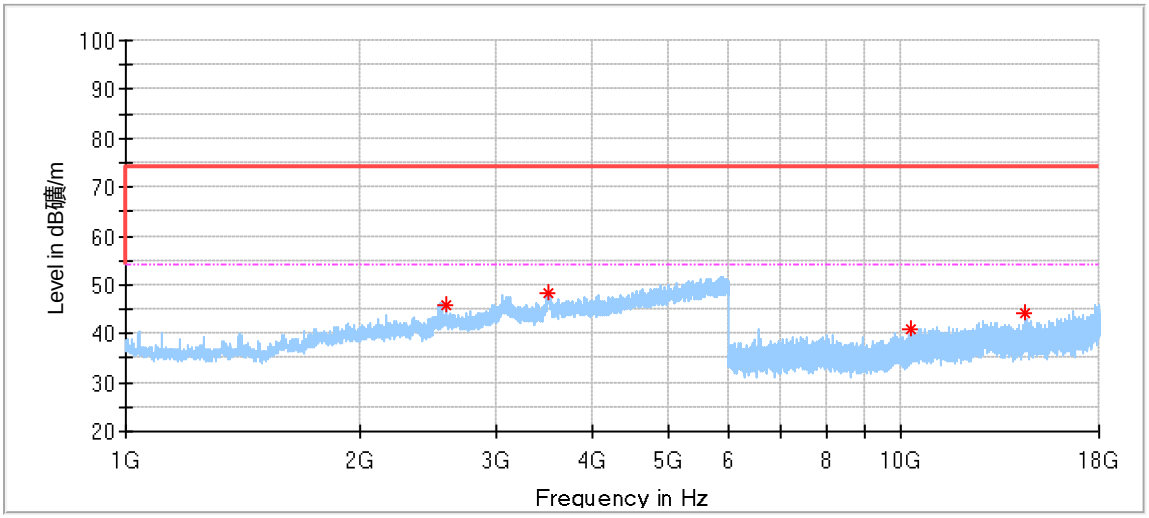


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2519.500000	46.41	74.00	27.59	150.0	H	316.0	-1.71
3502.000000	48.98	74.00	25.02	150.0	H	46.0	4.39
10880.500000	42.85	74.00	31.15	150.0	H	136.0	10.82

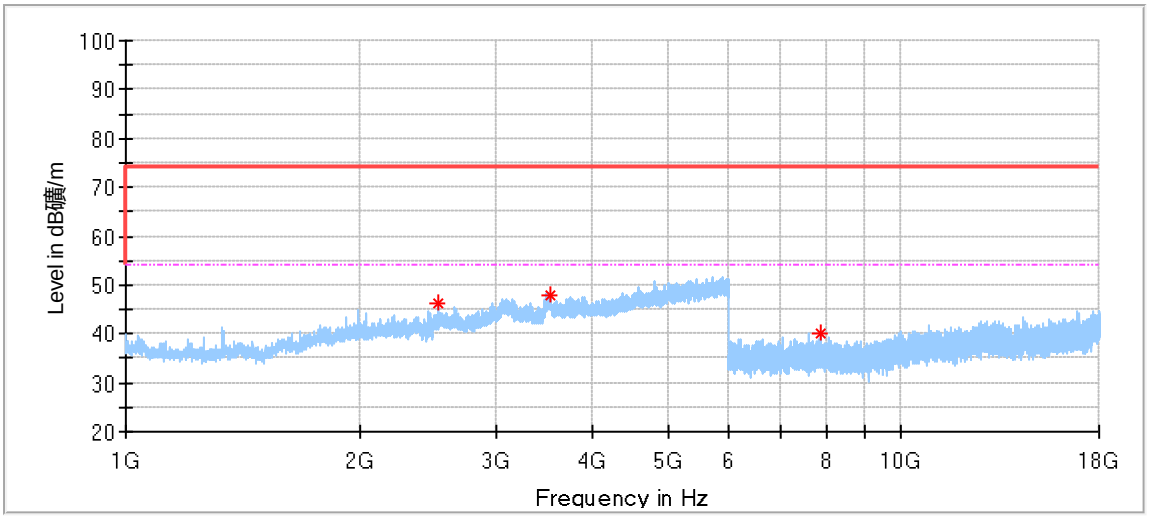


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3070.000000	48.04	74.00	25.96	150.0	V	160.0	1.56
3494.500000	49.31	74.00	24.69	150.0	V	78.0	4.06
9956.000000	40.69	74.00	33.31	150.0	V	180.0	9.42

BLE_2Mbps_High Channel:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2591.000000	45.99	74.00	28.01	150.0	H	306.0	-1.09
3510.000000	48.40	74.00	25.60	150.0	H	50.0	3.98
10301.000000	41.10	74.00	32.90	150.0	H	359.0	9.83
14412.500000	44.34	74.00	29.66	150.0	H	156.0	13.27

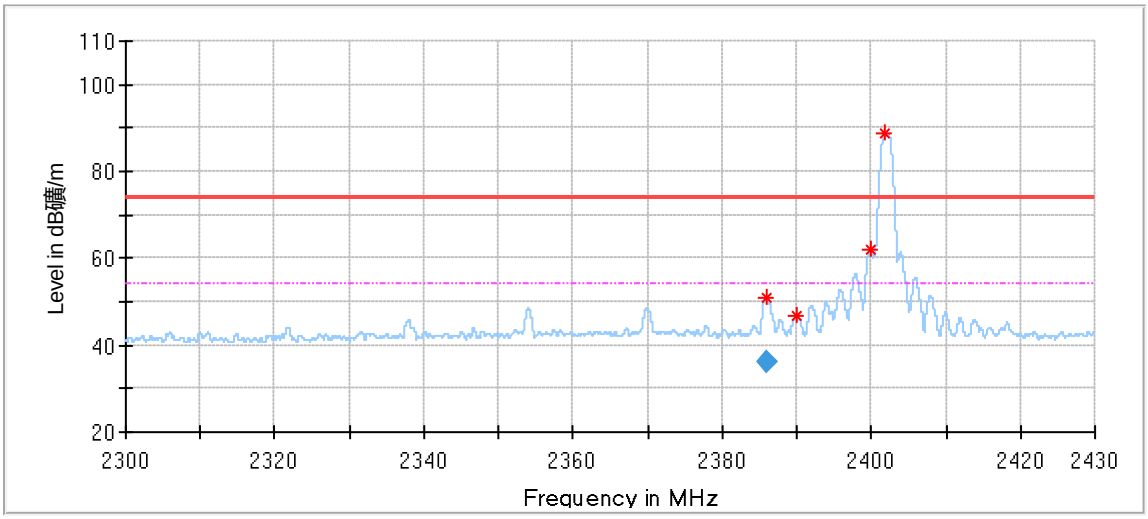


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2528.000000	46.20	74.00	27.80	150.0	V	2.0	-1.62
3525.000000	47.81	74.00	26.19	150.0	V	160.0	3.22
7862.500000	40.01	74.00	33.99	150.0	V	94.0	7.25

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 18-26GHz 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)

Restricted bands of operation. test result as below:

1M 2402MHz：



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.865000	51.11	74.00	22.89	150.0	H	303.0	-2.87
2389.999000	46.64	74.00	27.36	150.0	H	11.0	-2.88
2399.983000	62.17	74.00	11.83	150.0	H	330.0	-2.91
2401.738000	88.68	74.00	-14.68	150.0	H	321.0	-2.90

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.865000	36.21	54.00	17.79	150.0	H	303.0	-2.87

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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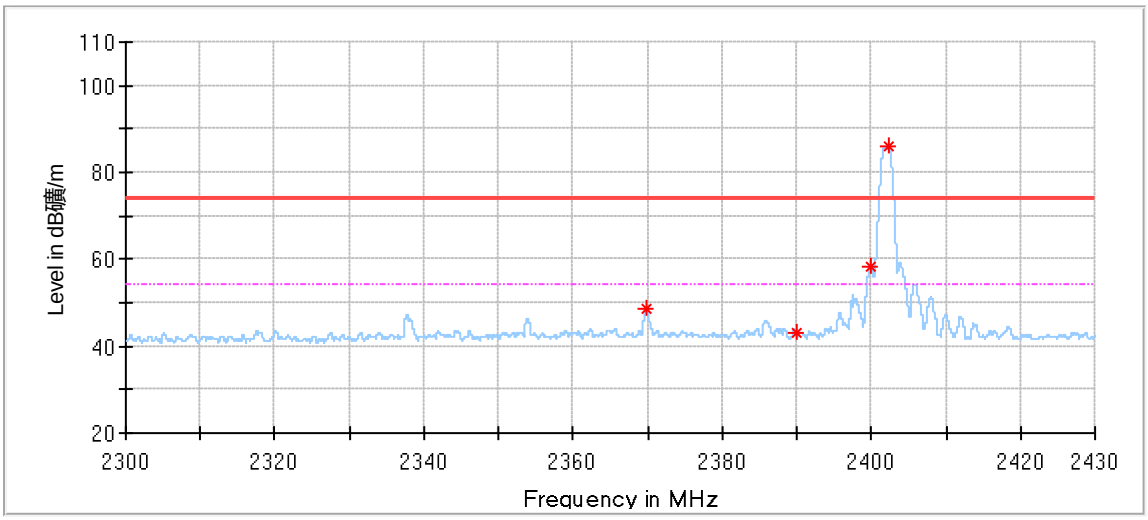

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.810000	48.47	74.00	25.53	150.0	V	349.0	-2.98
2389.986000	43.20	74.00	30.80	150.0	V	205.0	-2.88
2399.996000	58.22	74.00	15.78	150.0	V	349.0	-2.91
2402.258000	85.98	74.00	-11.98	150.0	V	349.0	-2.89

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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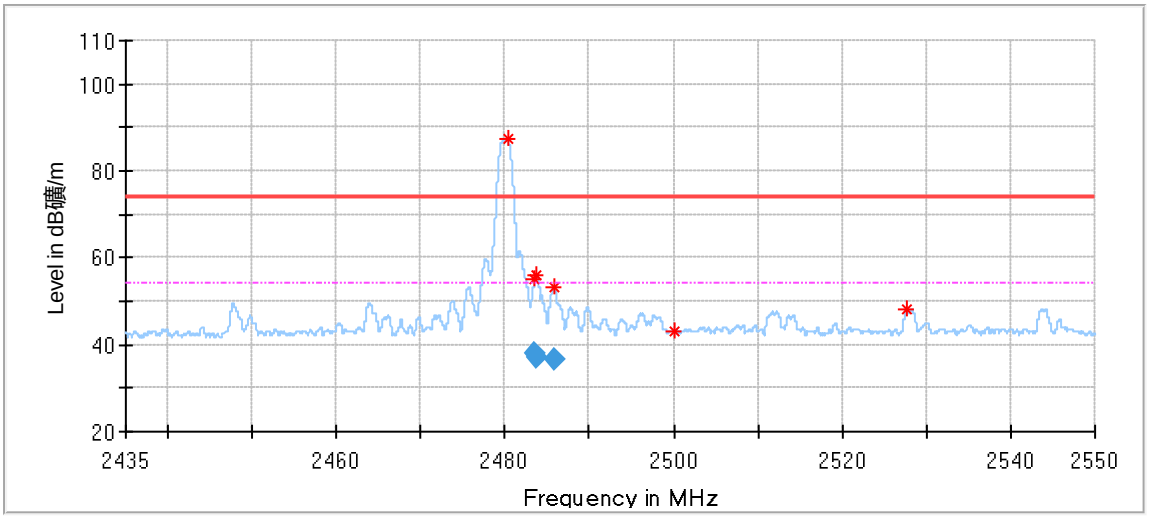
1M 2480MHz：



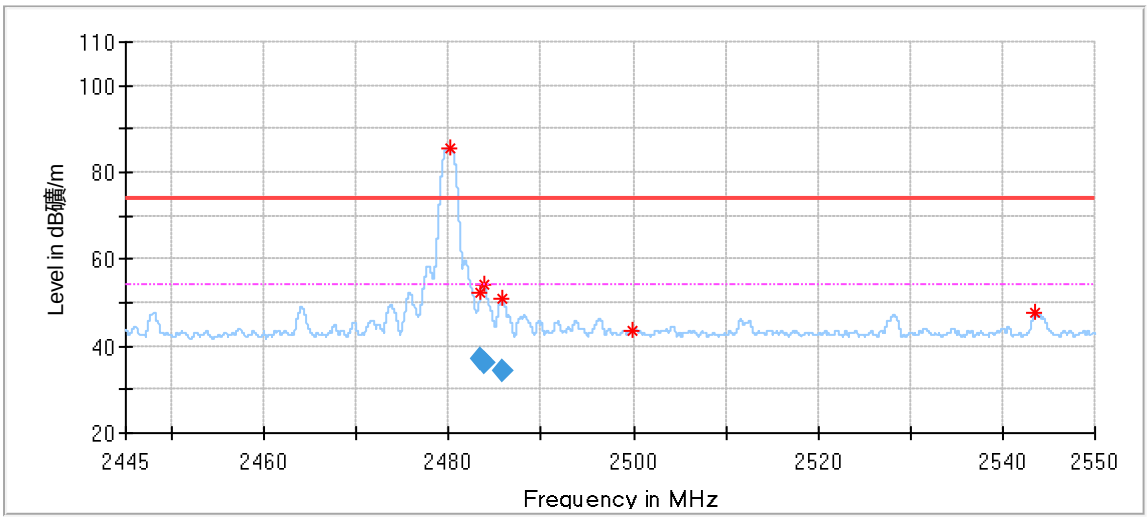
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.264000	87.16	74.00	-13.16	150.0	H	88.0	-2.39
2483.495500	54.93	74.00	19.07	150.0	H	88.0	-2.38
2483.691000	55.83	74.00	18.17	150.0	H	88.0	-2.38
2485.772500	53.20	74.00	20.80	150.0	H	88.0	-2.37
2500.067000	43.09	74.00	30.91	150.0	H	203.0	-2.35
2527.655500	48.23	74.00	25.77	150.0	H	140.0	-2.20

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.495500	37.86	54.00	16.14	150.0	H	88.0	-2.38
2483.691000	37.18	54.00	16.82	150.0	H	88.0	-2.38
2485.772500	36.46	54.00	17.54	150.0	H	88.0	-2.37

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2480.238000	85.48	74.00	-11.48	150.0	V	0.0	-2.39
2483.493000	52.35	74.00	21.65	150.0	V	359.0	-2.38
2483.755500	53.96	74.00	20.04	150.0	V	0.0	-2.38
2485.750500	50.72	74.00	23.28	150.0	V	0.0	-2.38
2499.978000	43.53	74.00	30.47	150.0	V	334.0	-2.35
2543.532000	47.55	74.00	26.45	150.0	V	4.0	-2.06

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.493000	36.89	54.00	17.11	150.0	V	359.0	-2.38
2483.755500	36.01	54.00	17.99	150.0	V	0.0	-2.38
2485.750500	34.25	54.00	19.75	150.0	V	0.0	-2.38

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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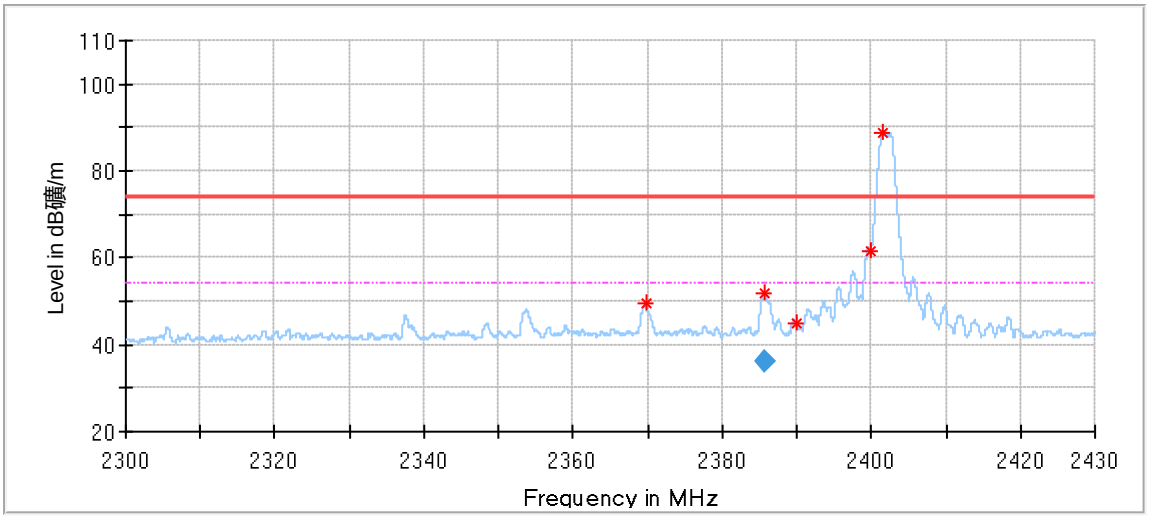
2M 2402MHz：



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.706000	49.37	74.00	24.63	150.0	H	4.0	-2.98
2385.618000	51.76	74.00	22.24	150.0	H	304.0	-2.87
2389.986000	44.75	74.00	29.25	150.0	H	304.0	-2.88
2399.996000	61.75	74.00	12.25	150.0	H	313.0	-2.91
2401.517000	88.83	74.00	-14.83	150.0	H	322.0	-2.90

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.618000	36.12	54.00	17.88	150.0	H	304.0	-2.87

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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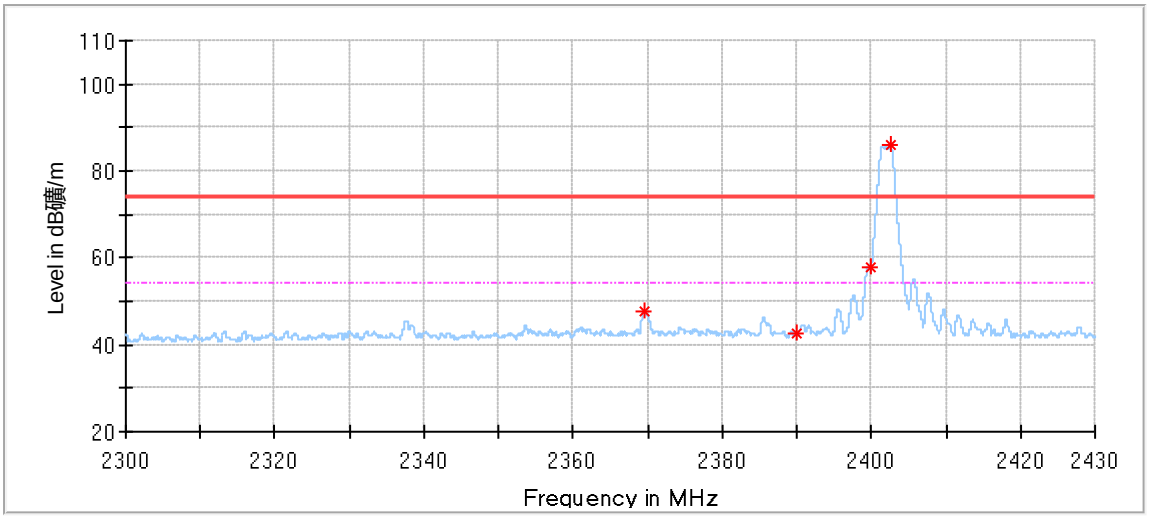

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2369.472000	47.64	74.00	26.36	150.0	V	1.0	-2.99
2389.986000	42.49	74.00	31.51	150.0	V	140.0	-2.88
2400.009000	58.04	74.00	15.96	150.0	V	0.0	-2.91
2402.492000	85.94	74.00	-11.94	150.0	V	356.0	-2.89

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
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Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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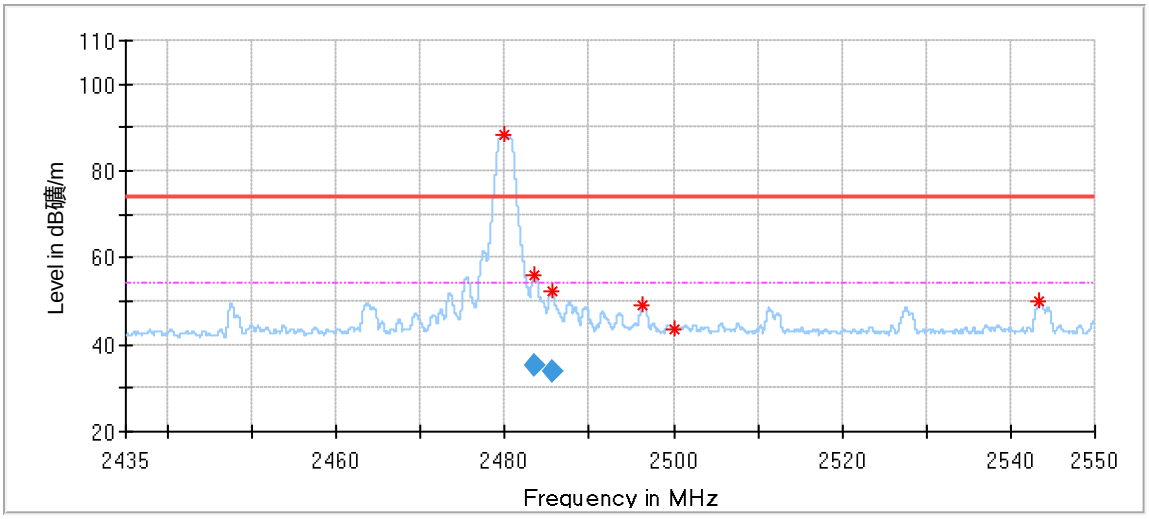
2M 2480MHz：



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.976500	88.22	74.00	-14.22	150.0	H	313.0	-2.39
2483.495500	56.23	74.00	17.77	150.0	H	313.0	-2.38
2485.508000	52.23	74.00	21.77	150.0	H	324.0	-2.38
2496.398500	49.10	74.00	24.90	150.0	H	86.0	-2.36
2500.067000	43.71	74.00	30.29	150.0	H	24.0	-2.35
2543.433500	50.06	74.00	23.94	150.0	H	336.0	-2.06

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2483.495500	35.27	54.00	18.73	150.0	H	313.0	-2.38
2485.508000	33.96	54.00	20.04	150.0	H	324.0	-2.38

Remark：
Level=Reading Level + Correction Factor
Correction Factor=Antenna Factor + Cable Loss – Pre-amplifier
(The Reading Level is recorded by software which is not shown in the sheet)

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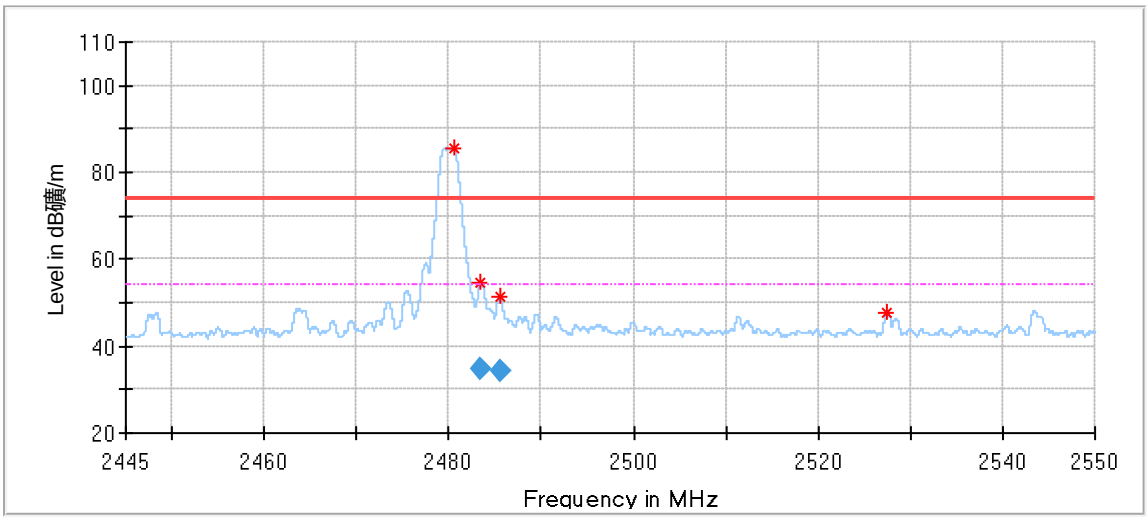

Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Corr. (dB)
2480.511000	85.67	74.00	-11.67	150.0	V	359.0	-2.38	---
2483.503500	54.43	74.00	19.57	150.0	V	0.0	-2.38	---
2485.477500	51.20	74.00	22.80	150.0	V	0.0	-2.38	---
2527.530000	47.83	74.00	26.17	150.0	V	0.0	-2.20	---

Final_Result

Frequency (MHz)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Corr. (dB)
2483.503500	34.72	54.00	19.28	150.0	V	0.0	-2.38	---
2485.477500	34.48	54.00	19.52	150.0	V	0.0	-2.38	---

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10 Test Equipment List

List of Test Instruments

Radiated Emission Test 1# (9kHz – 1GHz)

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	2024-5-20
Loop Antenna	Rohde & Schwarz	HFH2-Z2	68-4-80-14-006	100398	1	2024-8-7
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2024-5-19
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2024-8-01
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2024-5-19
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2024-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Radiated Emission 2# Test (1GHz – 40GHz)

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	2024-5-20
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2024-3-5
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2024-4-26
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2024-5-19
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2024-7-11
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2024-8-1
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2024-5-19
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2024-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

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	2024-5-19
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157W	68-4-93-14-003	101226/100929	1	2024-5-20
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2024-5-20
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2024-5-19
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2024-5-19
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2024-5-19
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2024-5-19
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2024-5-19
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

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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 in 3m chamber (68-4-90-14-001) 9kHz-30MHz	4.70dB
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 30MHz-1000MHz	Horizontal: 4.63dB; Vertical: 4.78dB;
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 1000MHz-18000MHz	Horizontal: 5.38dB; Vertical: 5.38dB;
Uncertainty for Radiated Emission in new 3m chamber (68-4-90-19-006) 18GHz-40GHz	5.29dB
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 OF REPORT---

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