



FCC/ISED - TEST REPORT

Report Number : **68.950.22.0767.01** Date of Issue: October 25, 2022

Model : QS02

Product Type : BenQ HDMI Media Streaming

Applicant : Benq Corporation

Address : 16 Jihu Road, Neihu, Taipei 114, Taiwan

Manufacturers : Benq Corporation

Address : 16 Jihu Road, Neihu, Taipei 114, Taiwan

Test Result : **Positive** **Negative**

Total pages including Appendices : 49

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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, Nantou
Checkpoint Road 2, Nanshan District
Shenzhen 518052
P.R. China

Telephone: 86 755 8828 6998

Fax: 86 755 8288 5299

FCC Registration No.: 514049

No.:

ISED test site number: 10320A



3 Description of the Equipment Under Test

Product/PMN:	BenQ HDMI Media Streaming
Model no/HVIN:	QS02
FVIN:	11.1.7
FCC ID:	JVPQS02
IC:	6175A-QS02
Options and accessories:	HDMI Cable, USB Cable
Rating:	Input: 5.0VDC, 1.0A
RF Transmission Frequency:	Bluetooth BR+EDR: 2402-2480MHz Bluetooth LE: 2402-2480MHz Wi-Fi 2.4G: 2412-2462MHz Wi-Fi 5G: 5150MHz~5350MHz; Wi-Fi 5G: 5470MHz – 5725MHz Wi-Fi 5G: 5725MHz – 5850MHz. Note: until further notice, device subject to this section shall not be capable of transmitting in the band 5600-5650MHz. This restriction is for the protection of Environment Canada's weather radars operating in this band.
No. of Operated Channel:	40
Modulation:	GFSK
Antenna Type:	PIFA antenna
Antenna Gain:	2.59dBi
Description of the EUT:	The Equipment Under Test (EUT) is a BenQ HDMI Media Streaming support Bluetooth function.

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C 10-1-2020 Edition	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-Gen Issue 5, Amendment 2, February 2021	General Requirements for the Certification 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 KDB558074 D01 v05r02 DTS Measurement Guidance and ANSI C63.10 (2013).



5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart C/ RSS-247 Issue 2/RSS-Gen Issue 5				
Test Condition			Test Site	Test Result
§15.207	RSS-GEN 8.8	Conducted emission AC power port	Site 1	PASS
§15.247 (b) (1)	RSS-247 Clause 5.4(d)	Conducted peak output power	Site 1	PASS
§15.247(a)(1)	RSS-247 Clause 5.1 (b)	20dB bandwidth	---	N/A
§15.247(a)(1)	RSS-247 Clause 5.1(b)	Carrier frequency separation	---	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Number of hopping frequencies	---	N/A
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Dwell Time	---	N/A
§15.247(a)(2)	RSS-247 Clause 5.2(a) & RSS-GEN 6.7	6dB bandwidth and 99% Occupied Bandwidth	Site 1	PASS
§15.247(e)	RSS-247 Clause 5.2(b)	Power spectral density	Site 1	PASS
§15.247(d)	RSS-247 Clause 5.5	Spurious RF conducted emissions	Site 1	PASS
§15.247(d)	RSS-247 Clause 5.5	Band edge	Site 1	PASS
§15.247(d) & §15.209 & §15.205	RSS-247 Clause 5.5 & RSS-GEN 6.13	Spurious radiated emissions for transmitter	Site 1	PASS
§15.203	RSS-GEN 6.8	Antenna requirement	See note 2	PASS

Note 1: N/A=Not Applicable.

Note 2: The EUT uses PIFA antenna, which gain is 2.59dBi. In accordance to §15.203 and RSS-GEN 6.8, it is considered sufficiently to comply with the provisions of this section.



6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: FCC ID: JVPQS02, IC: 6175A-QS02 complies with Section 15.205, 15.207, 15.209, 15.247 of the FCC Part 15, Subpart and RSS-247 issue 2 and RSS-Gen issue 5 rules.

Note: The report is for BLE only

SUMMARY:

All tests according to the regulations cited on page 5 were

n - Performed

o - **Not** Performed

The Equipment under Test

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

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

Sample Received Date: July 22, 2022

Testing Start Date: July 22, 2022

Testing End Date: October 14, 2022

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

Reviewed by:

John Zhi
Project Manager

Prepared by:

Mark Chen
Project Engineer

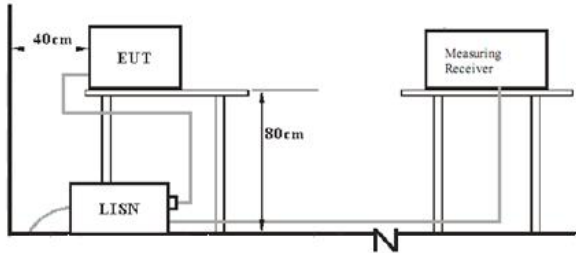
Tested by:



Carry Cai
Test Engineer

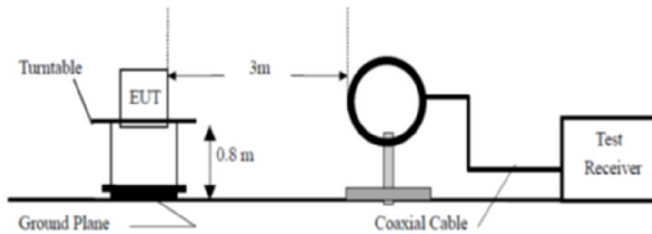
7 Test Setups

7.1 AC Power Line Conducted Emission test setups

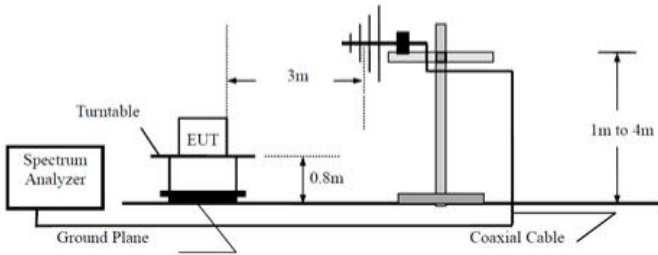


7.2 Radiated test setups

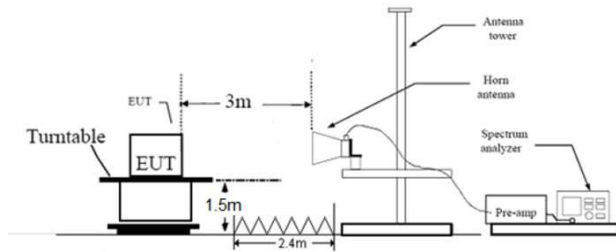
9KHz-30MHz



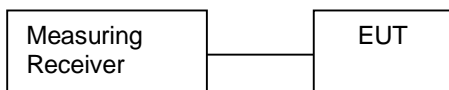
Below 1GHz



Above 1GHz



7.3 Conducted RF test setups



8 Systems test configuration

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	Lenovo	X220	---
Display	DELL	---	---
Remote Control	---	---	---
Adapter	---	---	---

Test software: APK Test Tool, which used to control the EUT in continues transmitting mode.

The system was configured to channel 0, 19, and 39 for the test.

9 Technical Requirement

9.1 Conducted Emission

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

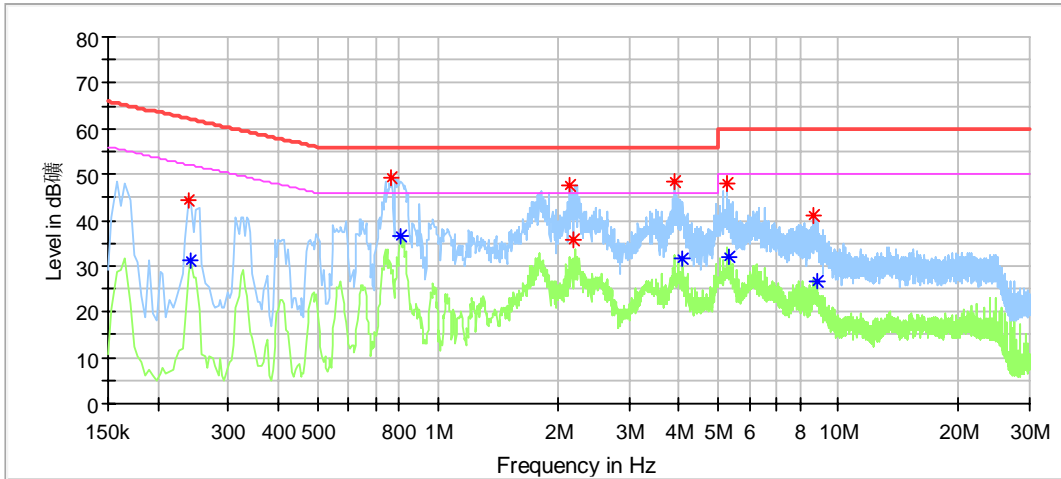
Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

*Decreasing linearly with logarithm of the frequency.



Conducted Emission

Product Type : BenQ HDMI Media Streaming
 M/N : QS02
 Operating Condition : Normal working with transmitting
 Test specification : Live
 Comment : AC 120V/60Hz



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB/m)
0.238000	44.27	---	62.17	17.90	L1	9.23
0.242000	---	31.31	62.03	30.71	L1	9.23
0.766000	49.12	---	56.00	6.88	L1	9.20
0.806000	---	36.48	56.00	19.52	L1	9.20
2.134000	47.55	---	56.00	8.45	L1	9.23
2.178000	35.59	---	56.00	20.41	L1	9.23
3.902000	48.37	---	56.00	7.63	L1	9.28
4.094000	---	31.60	56.00	24.40	L1	9.28
5.266000	47.90	---	60.00	12.10	L1	9.31
5.362000	---	32.02	60.00	27.98	L1	9.32
8.674000	41.17	---	60.00	18.83	L1	9.38
8.870000	---	26.47	60.00	33.53	L1	9.38

Remark:

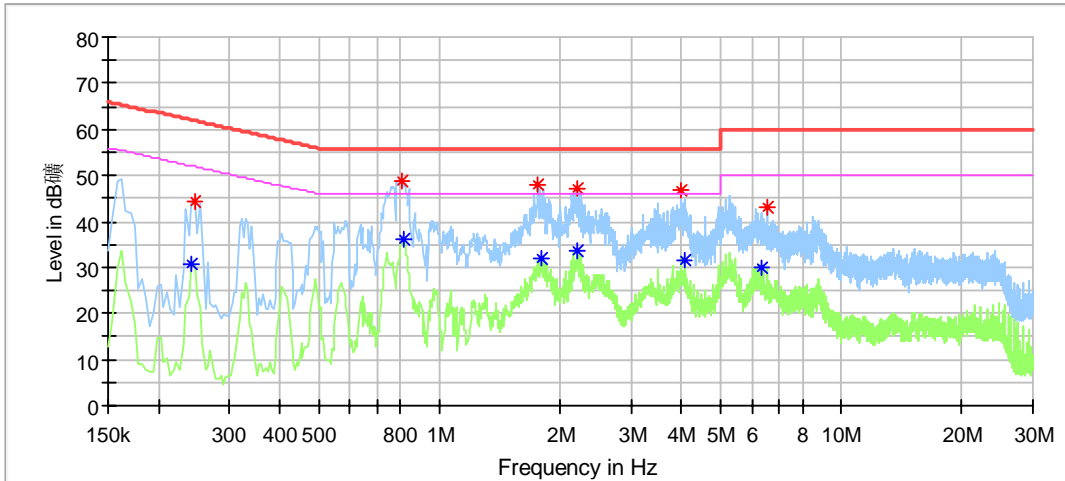
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

(The Reading Level is recorded by software which is not shown in the sheet)

Conducted Emission

Product Type : BenQ HDMI Media Streaming
 M/N : QS02
 Operating Condition : Normal working with transmitting
 Test specification : Neutral
 Comment : AC 120V/60Hz



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB/m)
0.242000	---	30.68	62.03	31.35	N	9.39
0.246000	44.40	---	61.89	17.50	N	9.39
0.806000	48.88	---	56.00	7.12	N	9.39
0.818000	---	36.02	56.00	19.98	N	9.39
1.762000	47.83	---	56.00	8.17	N	9.41
1.798000	---	32.08	56.00	23.92	N	9.41
2.206000	---	33.53	56.00	22.47	N	9.42
2.210000	47.12	---	56.00	8.88	N	9.42
3.994000	46.85	---	56.00	9.15	N	9.47
4.090000	---	31.53	56.00	24.47	N	9.47
6.334000	---	30.06	60.00	29.94	N	9.54
6.530000	43.01	---	60.00	16.99	N	9.54

Remark:

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



9.2 Conducted peak output power and e.i.r.p.

Test Method

1. Use the following spectrum analyzer settings:
 RBW > the 6dB bandwidth of the emission being measured, VBW≥3RBW, Span≥3RBW
 Sweep = auto, Detector function = peak, Trace = max hold.
2. Add a correction factor to the display.
3. 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.

Limits:

Conducted peak output power:

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

For e.i.r.p

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

EIRP(dBm)=conducted output power (dBm)+ antenna gain (dBi)

Test result as below 1MHz Bandwidth

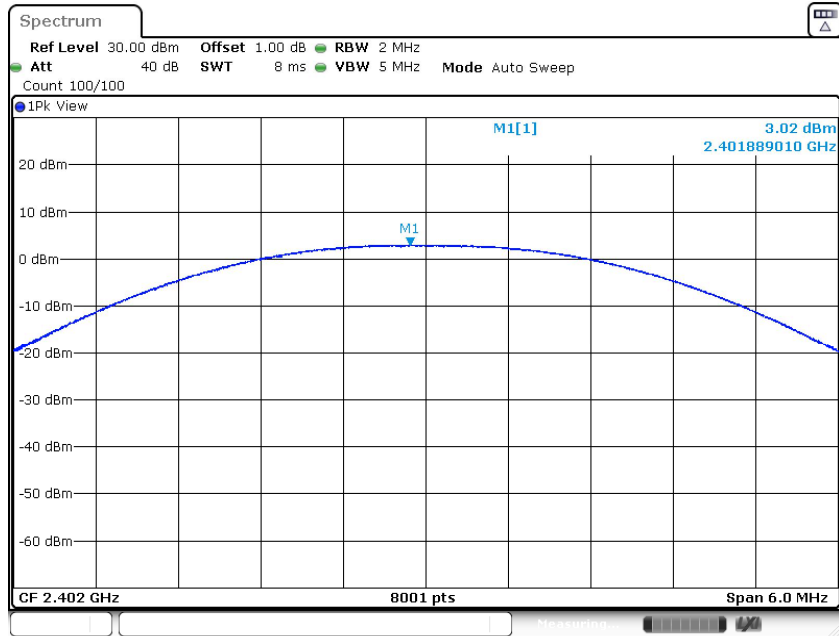
Frequency MHz	Conducted Peak Output Power dBm	e.i.r.p dBm	Result
Low channel 2402MHz	3.02	5.61	Pass
Middle channel 2440MHz	2.49	5.08	Pass
High channel 2480MHz	1.82	4.41	Pass

Test result as below table 2MHz Bandwidth

Frequency MHz	Conducted Peak Output Power dBm	e.i.r.p dBm	Result
Low channel 2402MHz	3.36	5.95	Pass
Middle channel 2440MHz	2.54	5.13	Pass
High channel 2480MHz	1.89	4.48	Pass

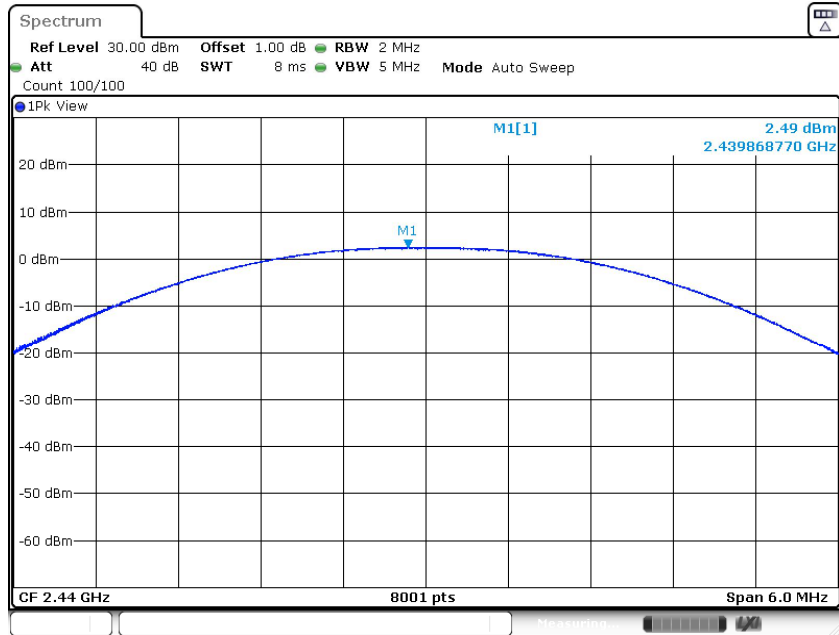


1MHz Bandwidth Low channel 2402MHz



Date: 1.AUG.2022 18:43:55

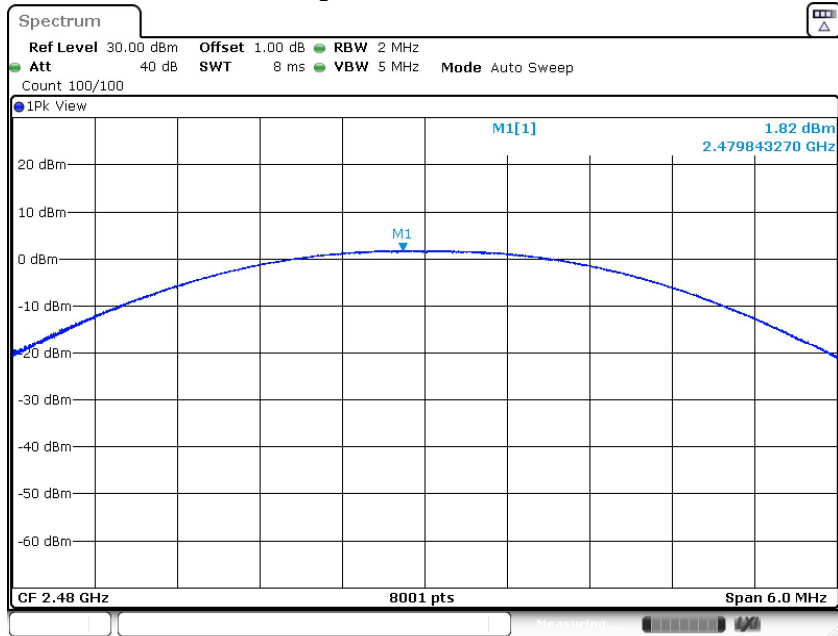
Middle channel 2440MHz



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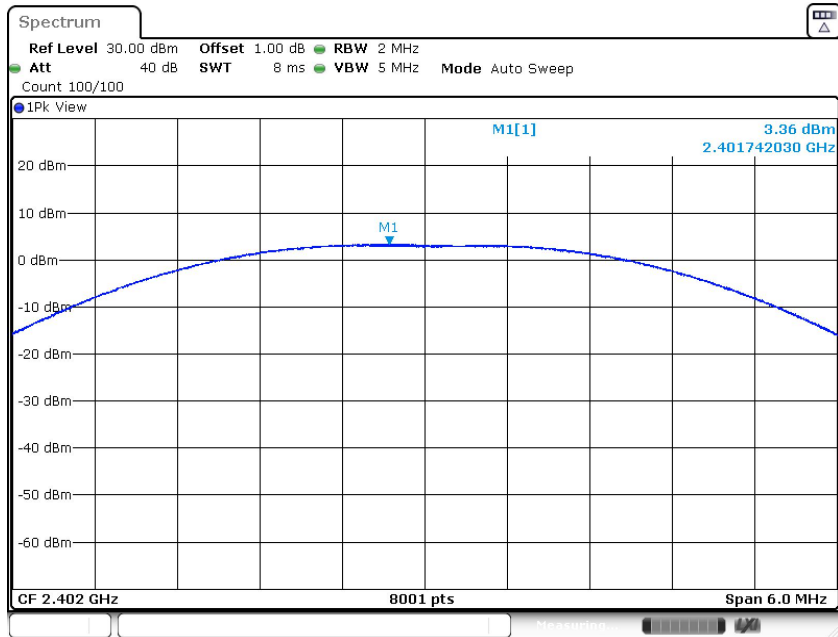


High channel 2480MHz



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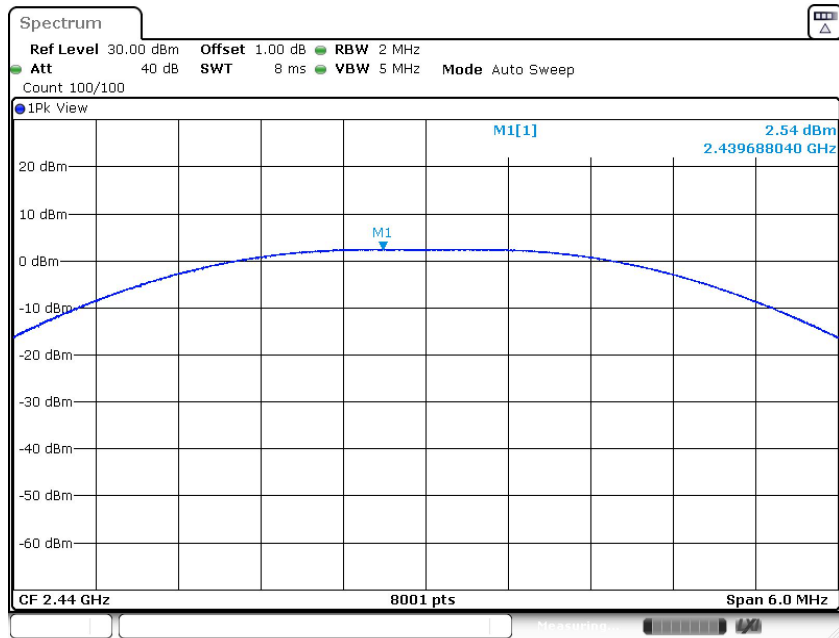
2MHz bandwidth Low channel 2402MHz



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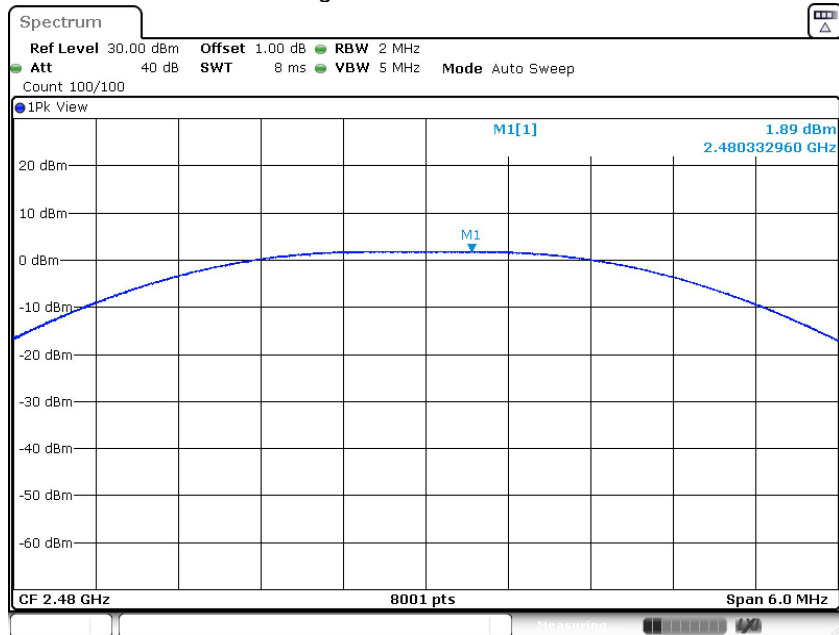


Middle channel 2440MHz



Date: 1.AUG.2022 18:51:29

High channel 2480MHz



Date: 1.AUG.2022 18:53:19



9.3 Power spectral density

Test Method

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance:

1. 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.
2. Allow trace to fully stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
3. Repeat above procedures until other frequencies measured were completed.

Limit

Limit [dBm/3KHz]

≤8dBm/3KHz

1MHz Bandwidth
Test result

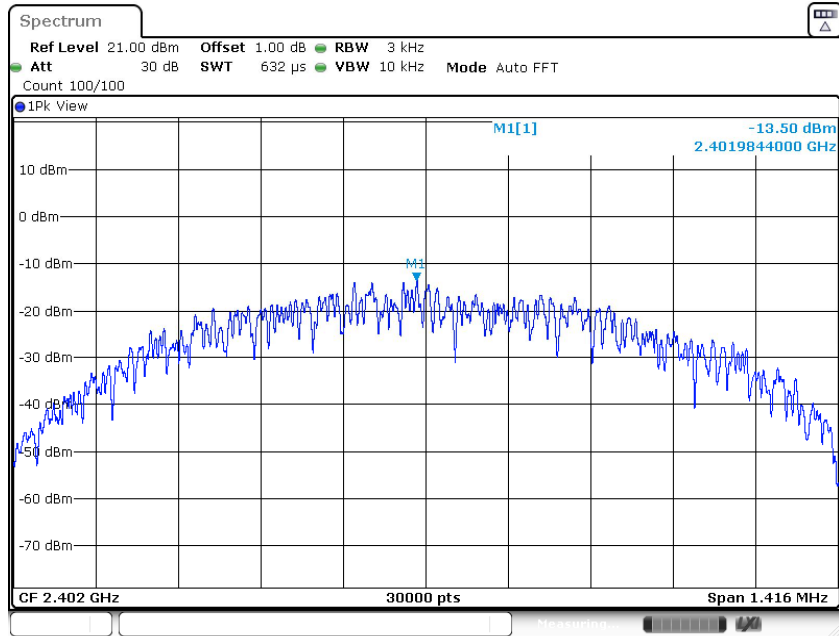
Frequency MHz	Power spectral density dBm/3KHz	Result
Top channel 2402MHz	-13.5	Pass
Middle channel 2440MHz	-13.67	Pass
Bottom channel 2480MHz	-14.48	Pass

2MHz Bandwidth
Test result

Frequency MHz	Power spectral density dBm/3KHz	Result
Top channel 2402MHz	-15.92	Pass
Middle channel 2440MHz	-15.99	Pass
Bottom channel 2480MHz	-16.78	Pass

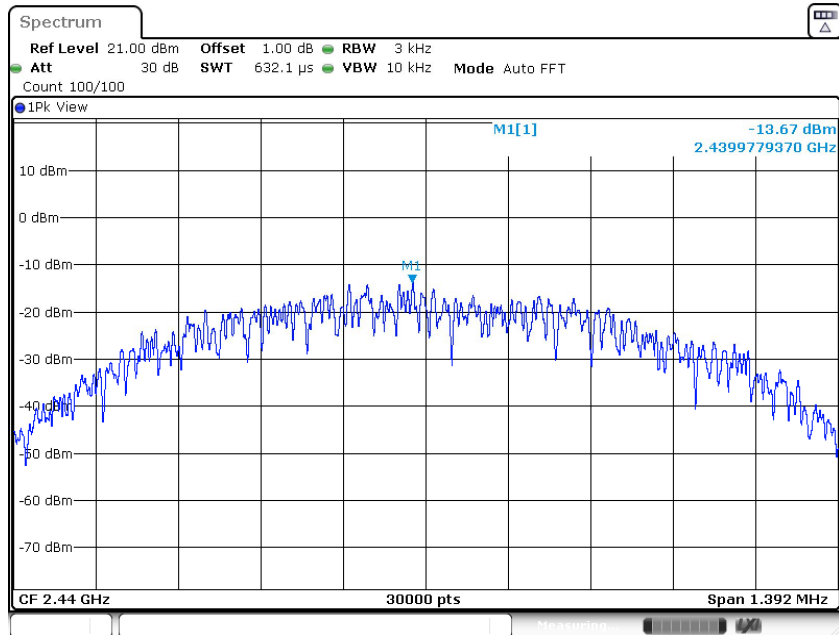


1MHz Bandwidth Low channel 2402MHz



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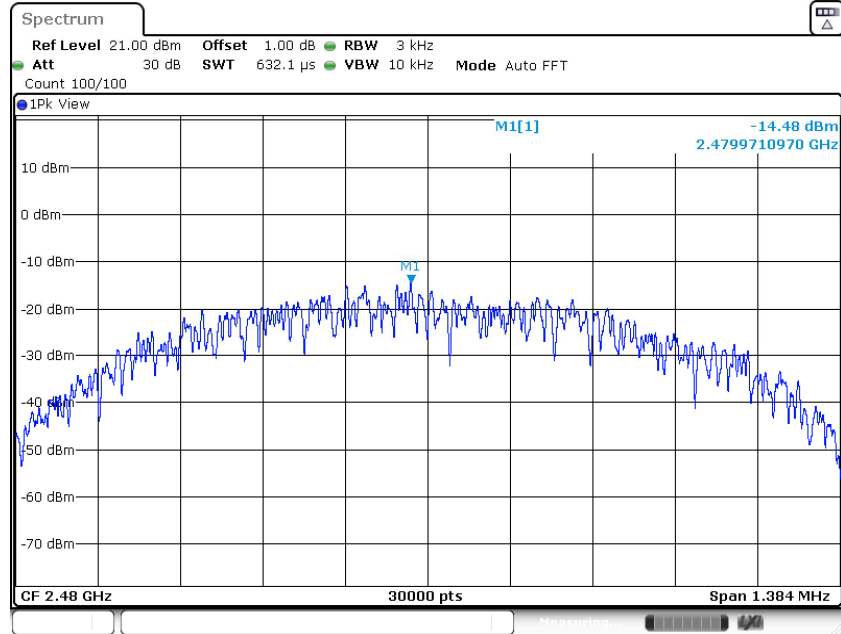
Middle channel 2440MHz



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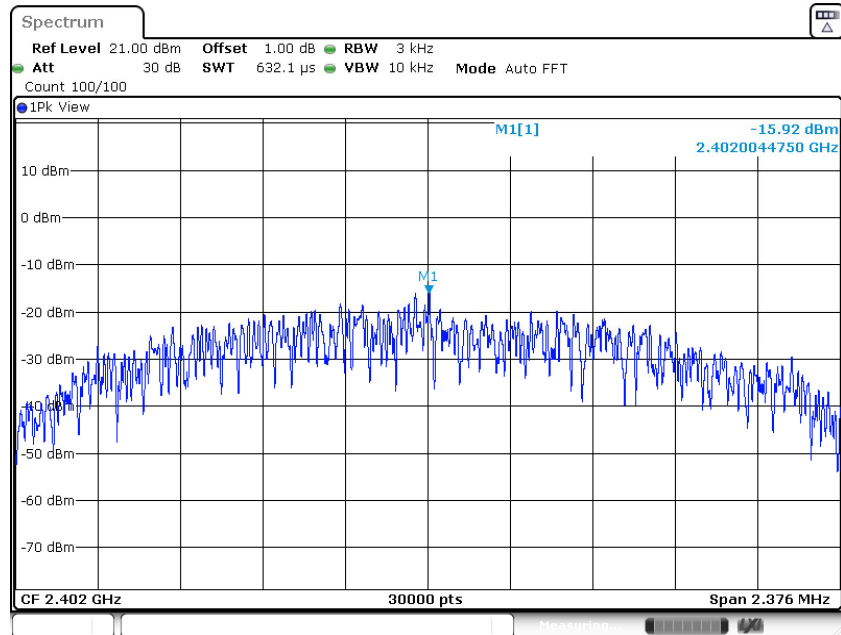


High channel 2480MHz



Date: 1.AUG.2022 18:47:43

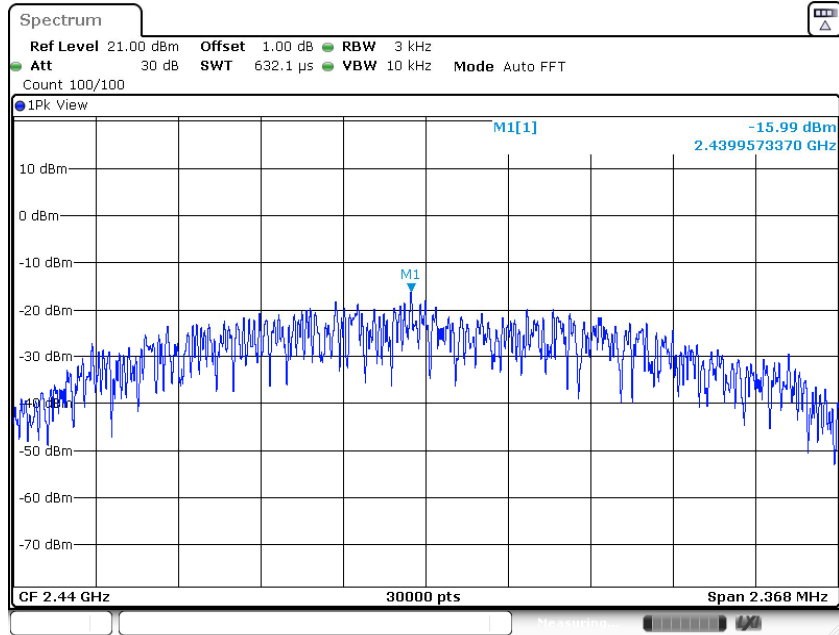
2MHz Bandwidth Low channel 2402MHz



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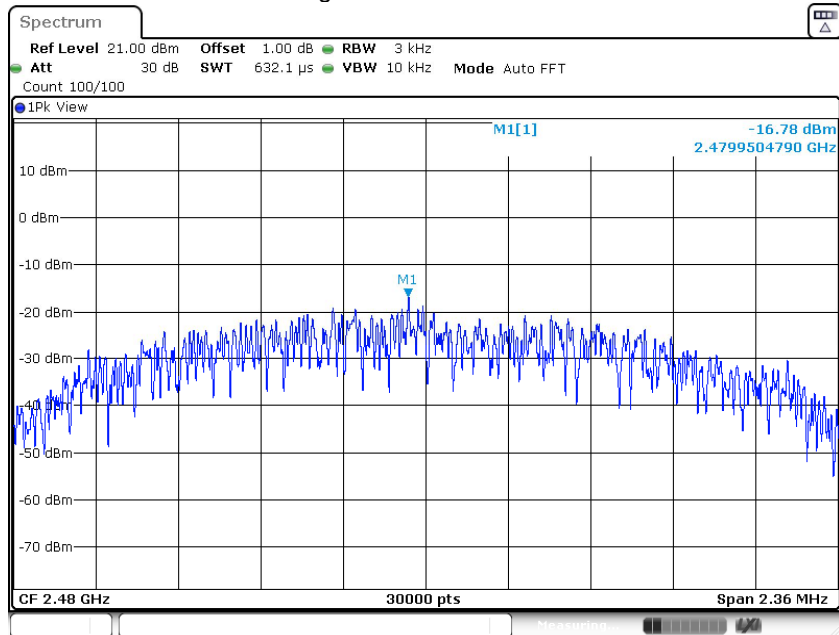


Middle channel 2440MHz



Date: 1.AUG.2022 18:51:35

High channel 2480MHz



Date: 1.AUG.2022 18:53:25



9.4 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method

1. Use the following spectrum analyzer settings:
RBW=100K, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

Limit

Limit [kHz]

≥500

1MHz Bandwidth

Test result

Frequency MHz	6dB bandwidth kHz	99% bandwidth kHz	Result
Bottom channel 2402MHz	708	1051	Pass
Middle channel 2440MHz	696	1055	Pass
Top channel 2480MHz	692	1055	Pass

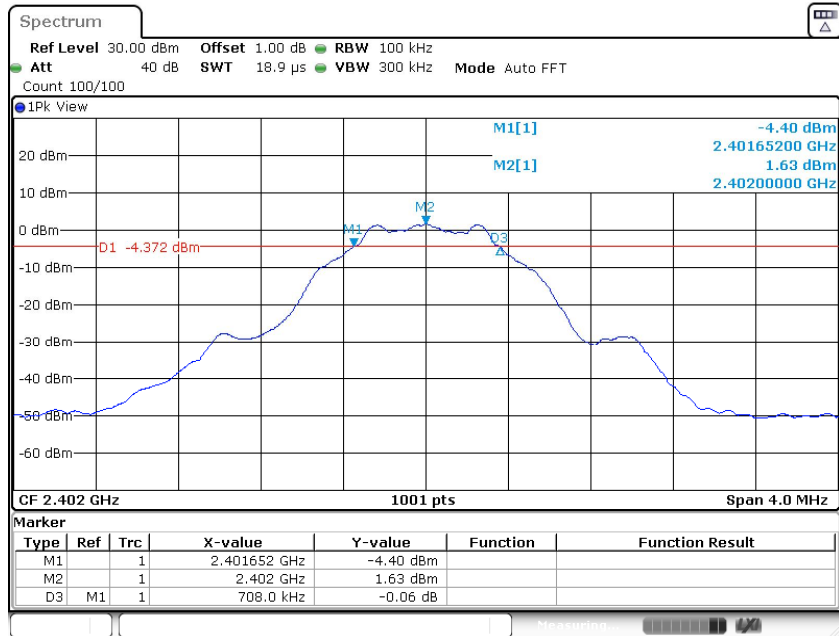
2MHz Bandwidth

Test result

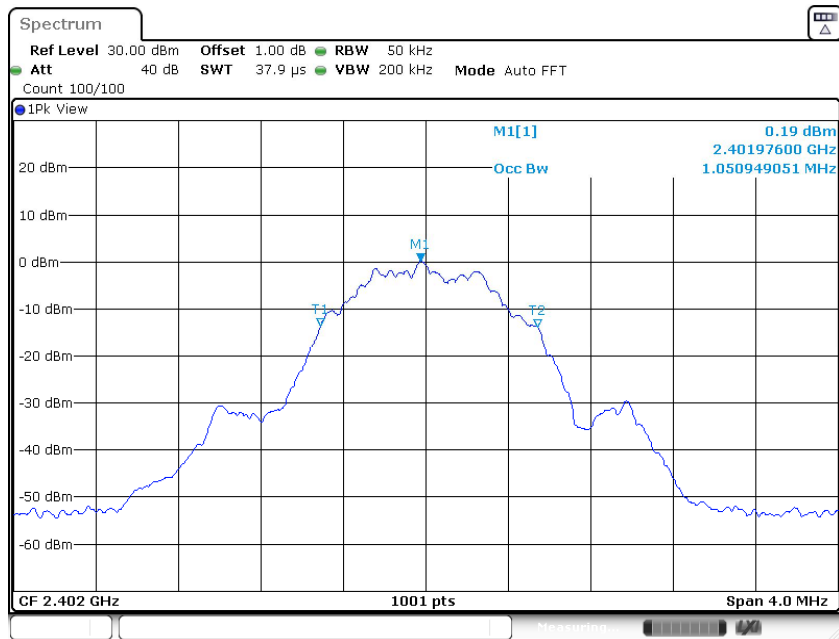
Frequency MHz	6dB bandwidth kHz	99% bandwidth kHz	Result
Bottom channel 2402MHz	1188	2042	Pass
Middle channel 2440MHz	1184	2046	Pass
Top channel 2480MHz	1180	2042	Pass



1MHz Bandwidth Low channel 2402MHz



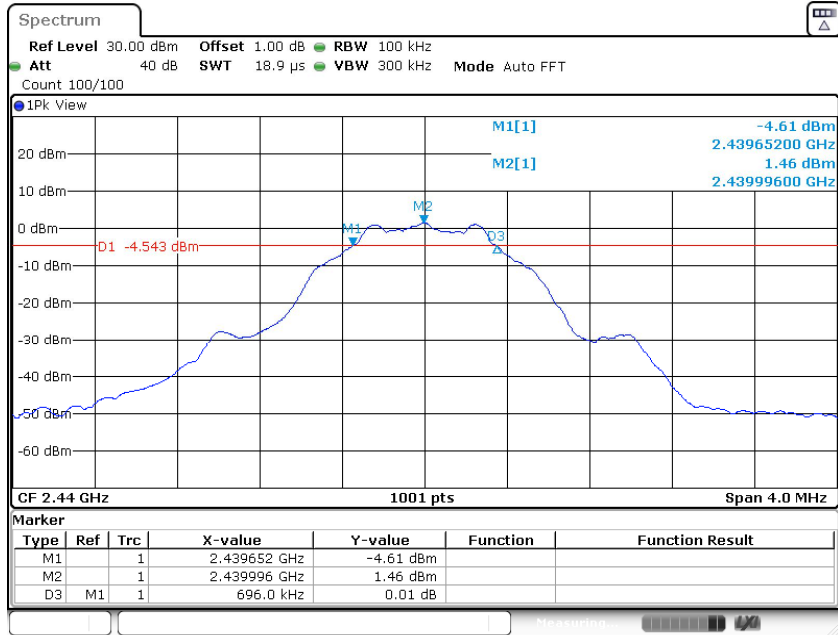
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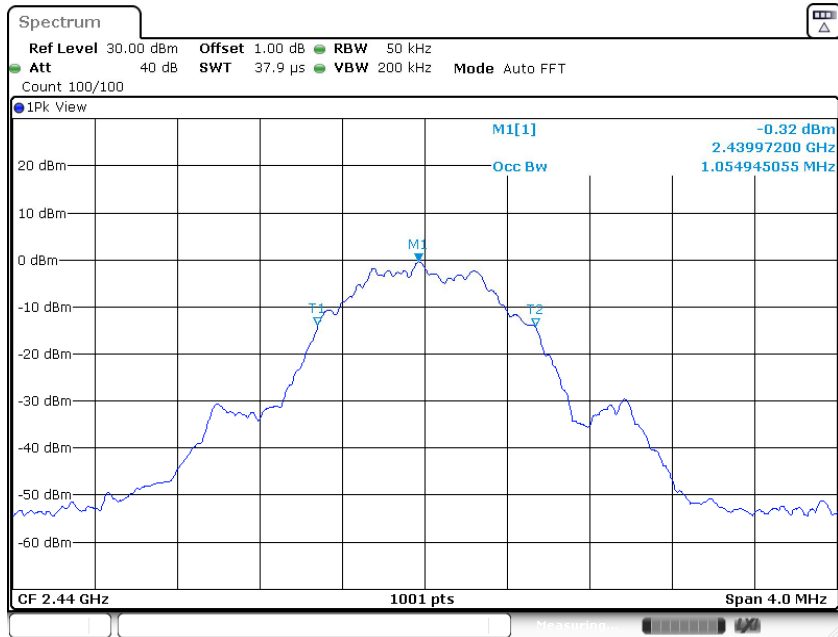
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Middle channel 2440MHz



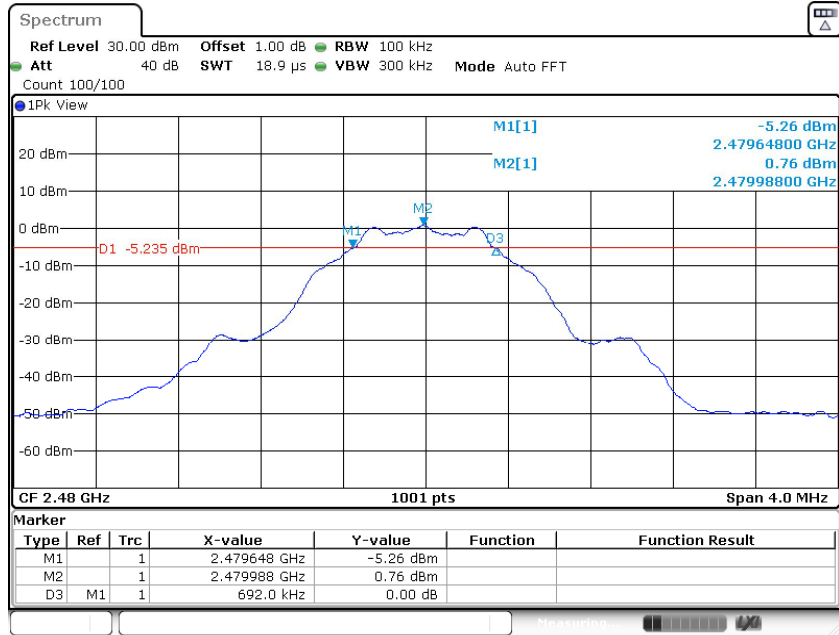
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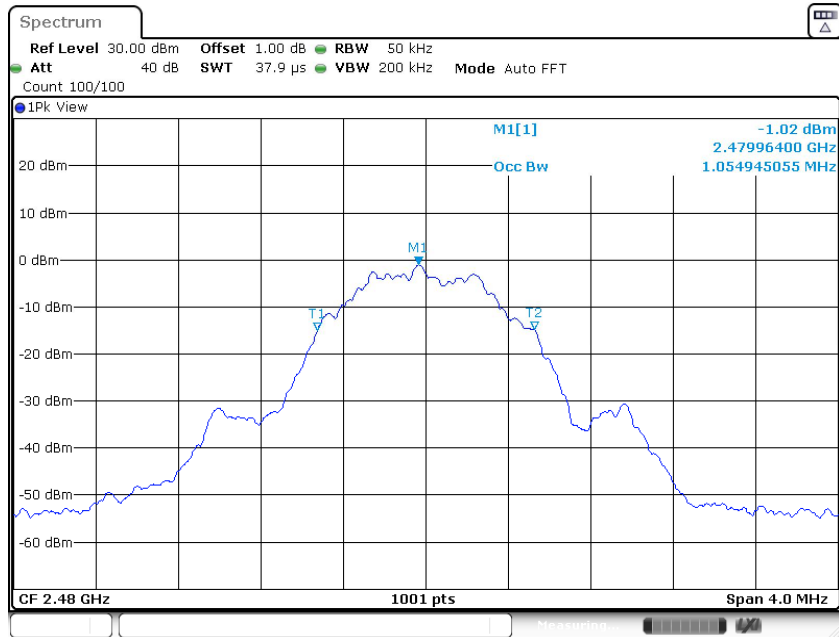
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High channel 2480MHz



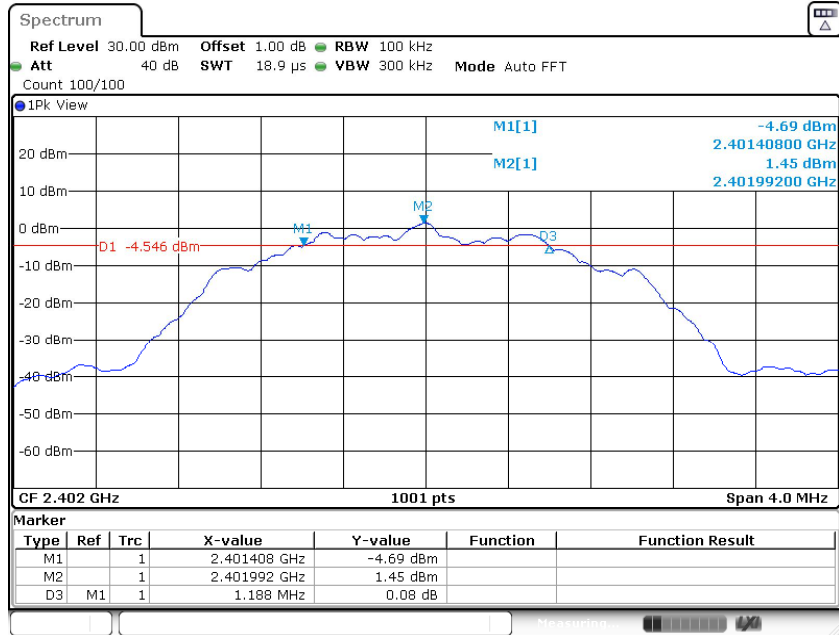
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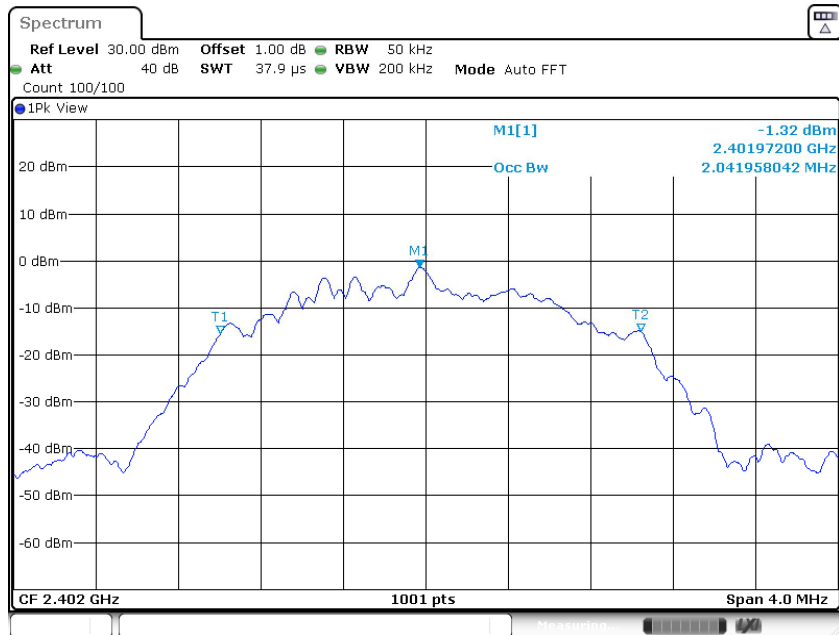
Date: 1.AUG.2022 18:47:30



2MHz Bandwidth Low channel 2402MHz



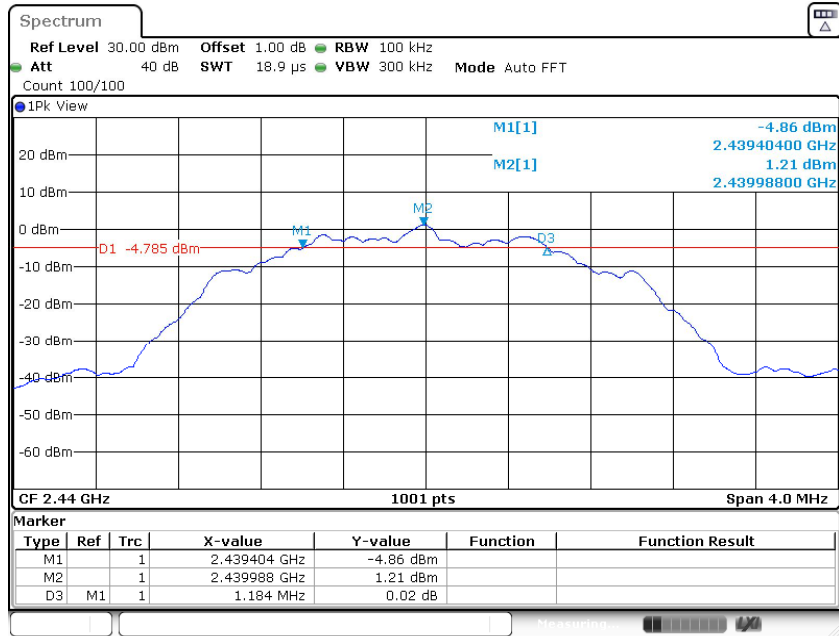
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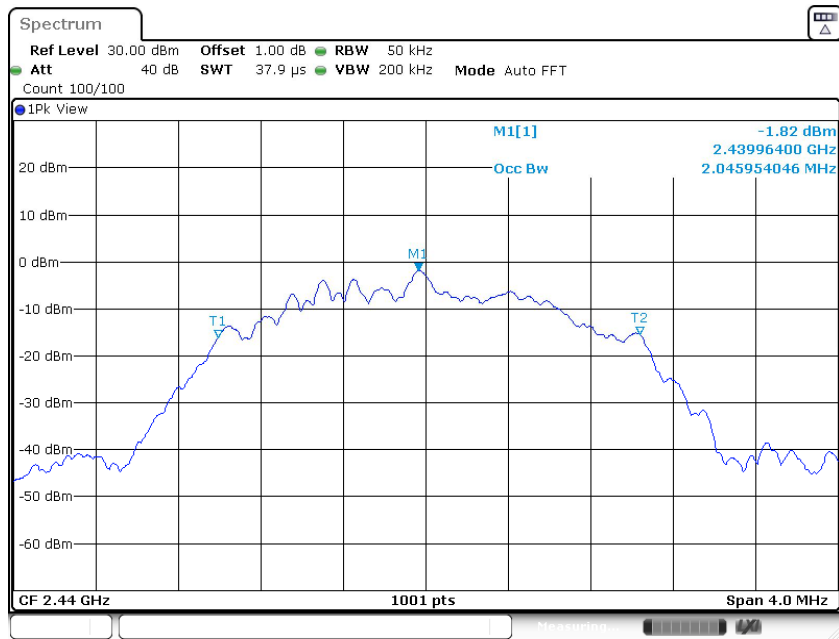
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Middle channel 2440MHz



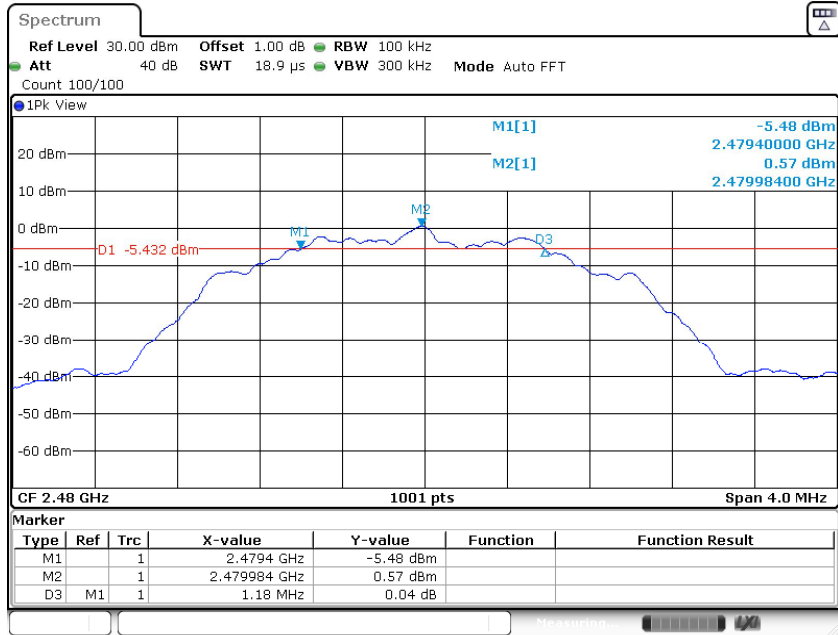
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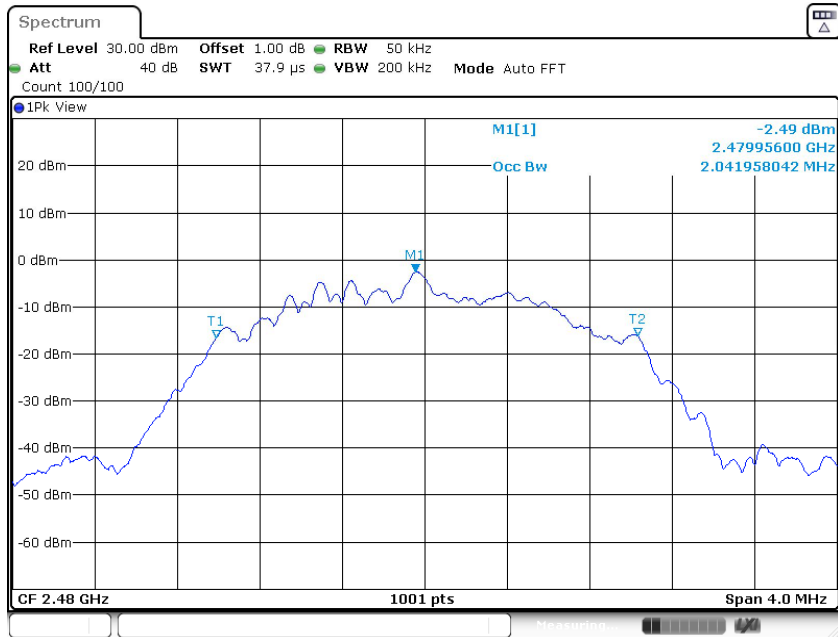
Date: 1.AUG.2022 18:51:22



High channel 2480MHz



Date: 1.AUG.2022 18:53:02



Date: 1.AUG.2022 18:53:13

9.5 Spurious RF conducted emissions

Test Method

1. Establish a reference level by using the following procedure:
 - a. Set RBW=100 kHz. VBW \geq 3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
 - b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
2. Use the maximum PSD level to establish the reference level.
 - a. Set the center frequency and span to encompass frequency range to be measured.
 - b. Use the peak marker function to determine the maximum amplitude level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements, report the three highest emissions relative to the limit.
3. Repeat above procedures until other frequencies measured were completed.

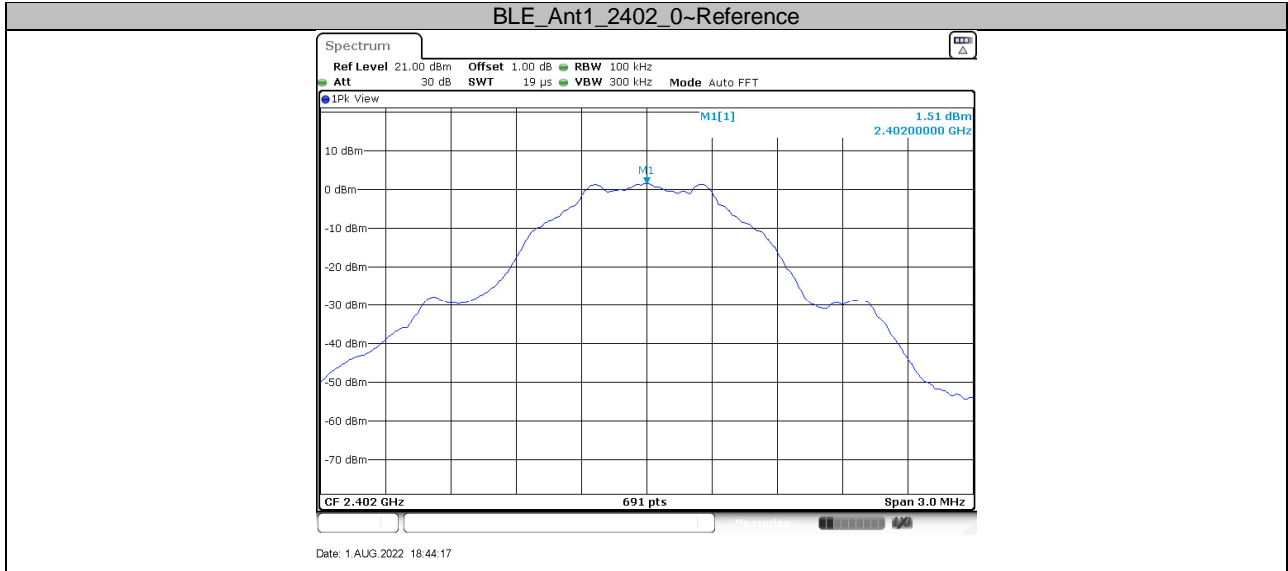
Limit

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.

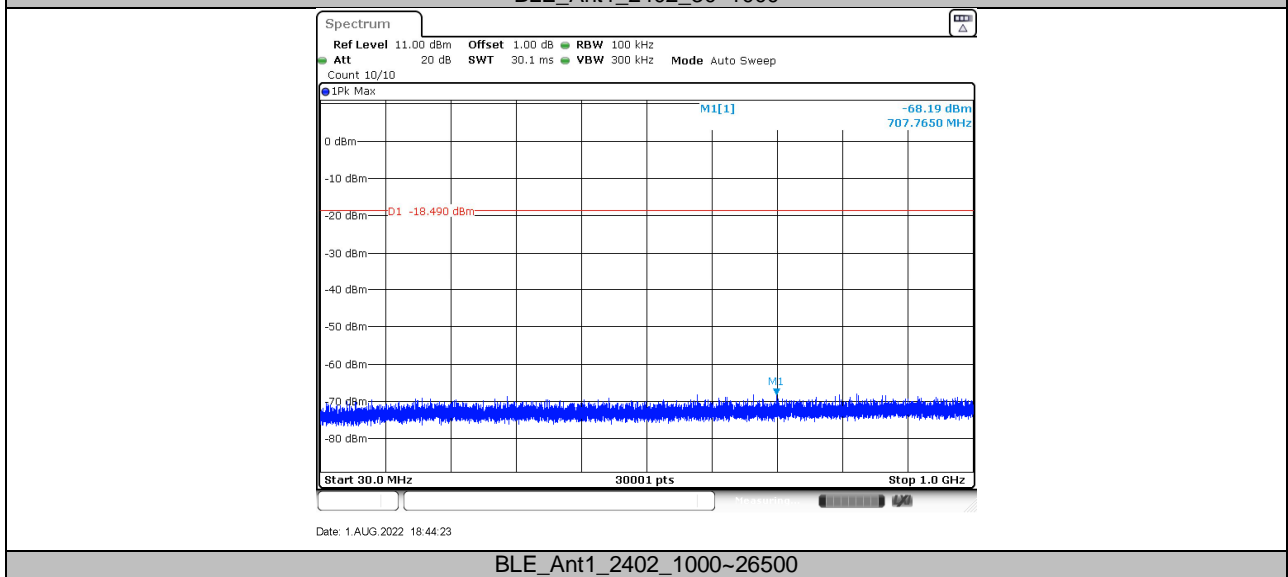
Frequency Range MHz	Limit (dBc)
30-25000	-20



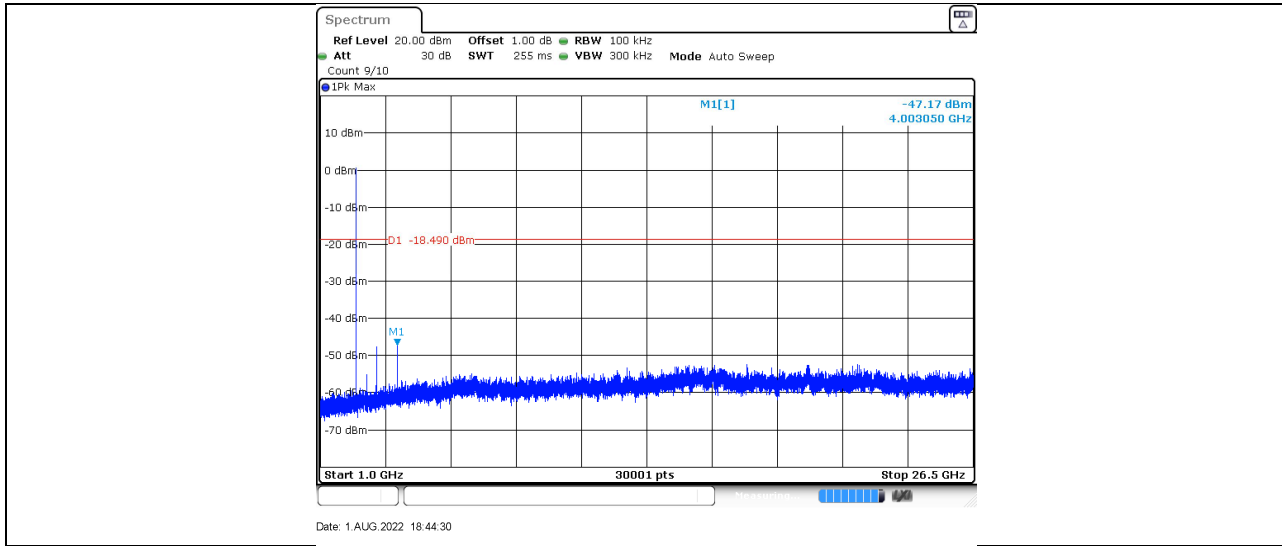
1MHz Bandwidth
BLE_Ant1_2402_0~Reference



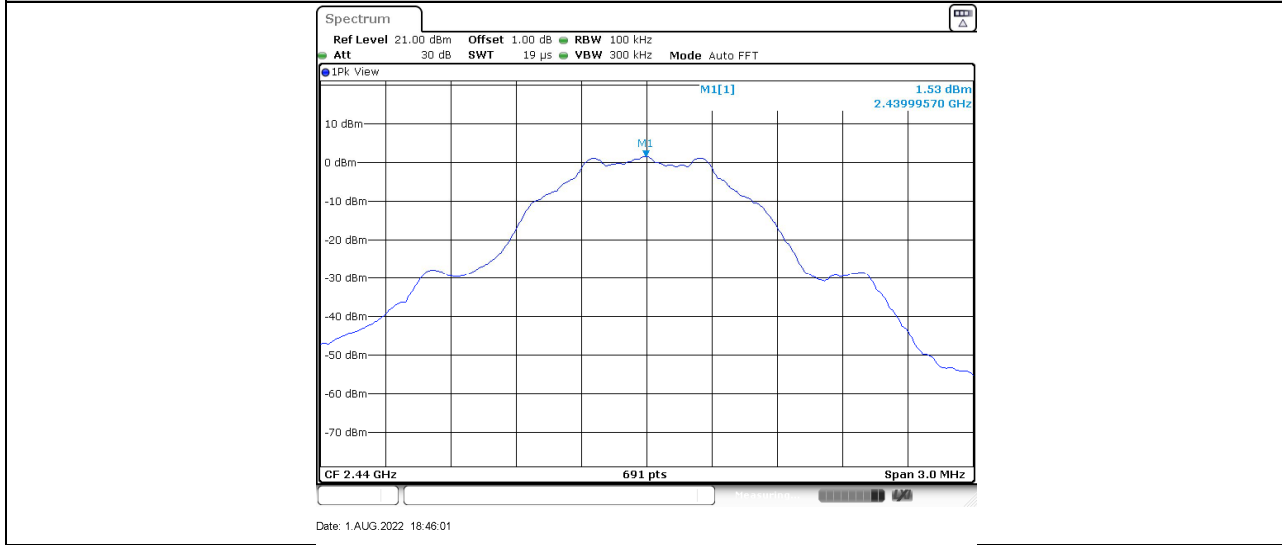
BLE_Ant1_2402_30~1000



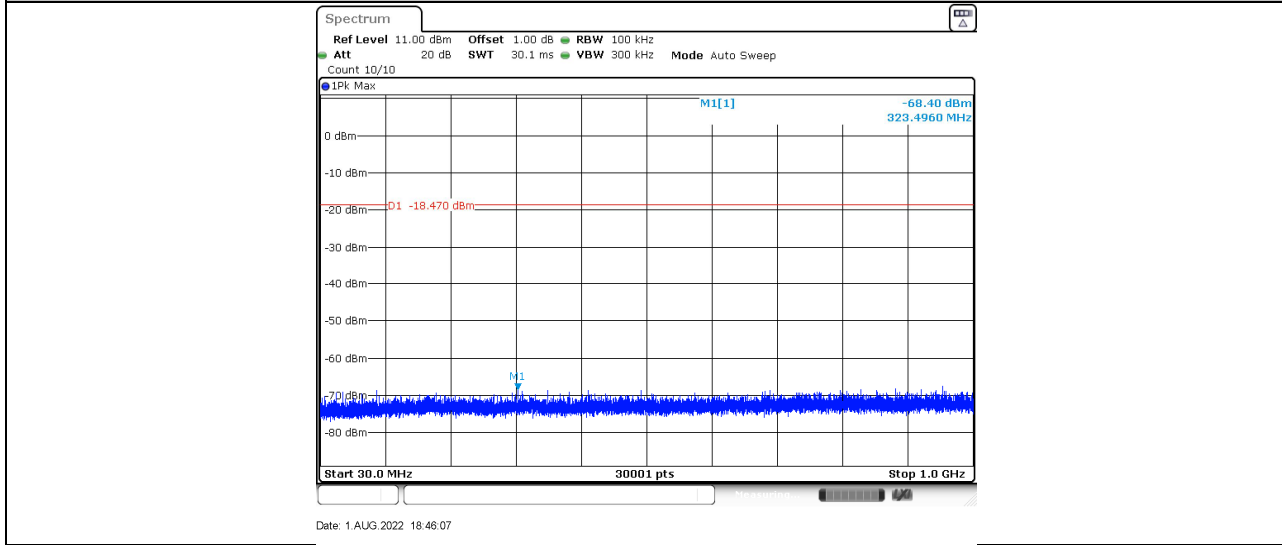
BLE_Ant1_2402_1000~26500



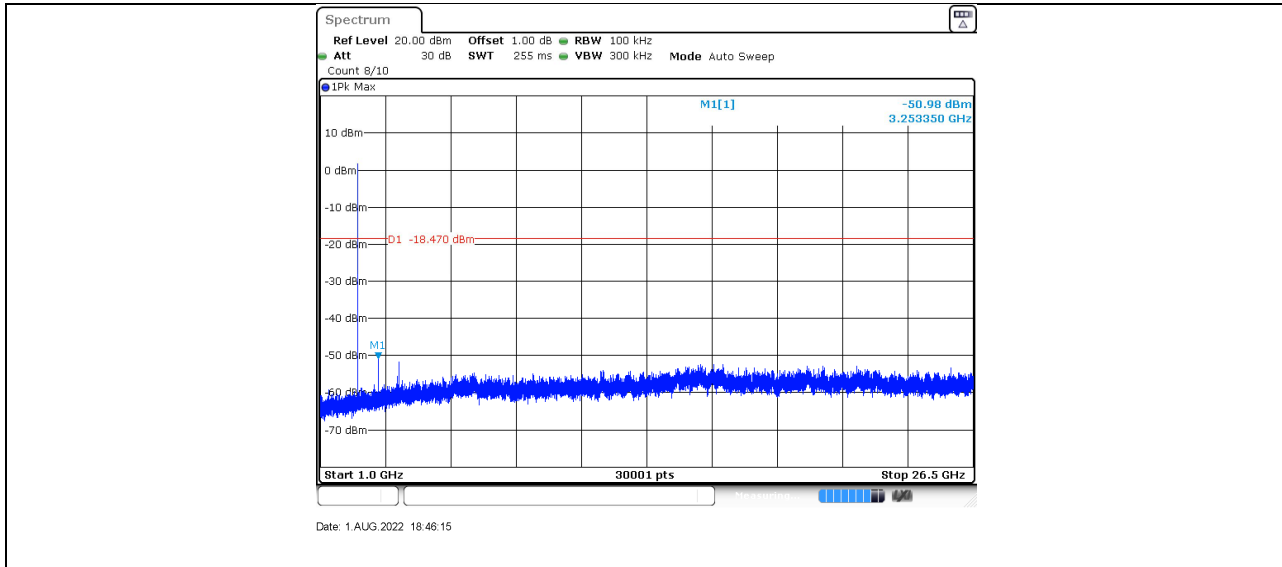
BLE_Ant1_2440_0~Reference



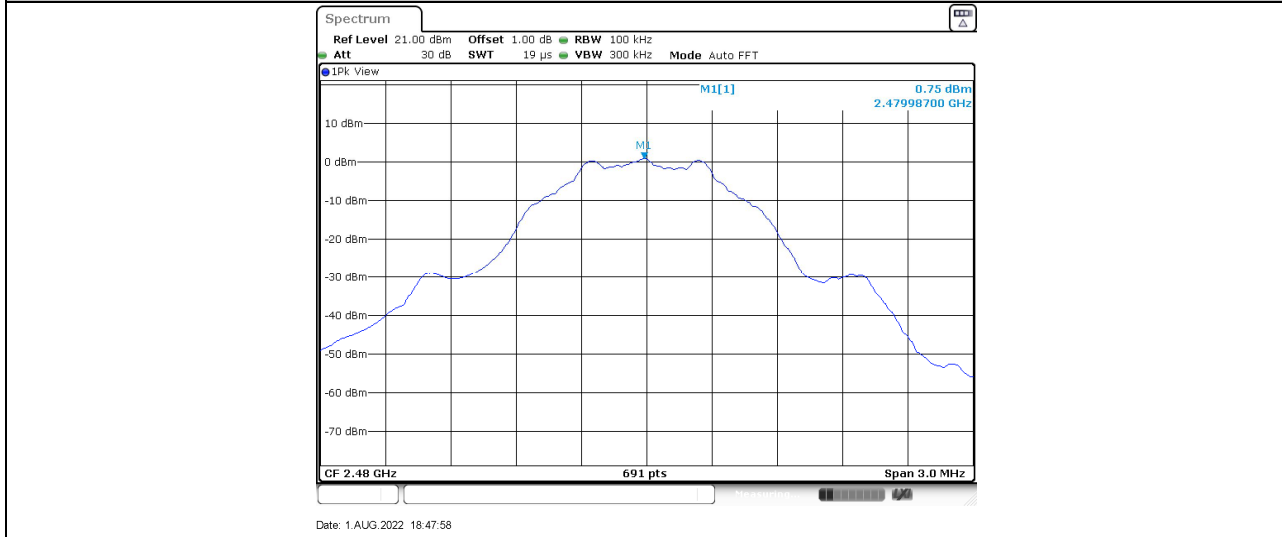
BLE_Ant1_2440_30~1000



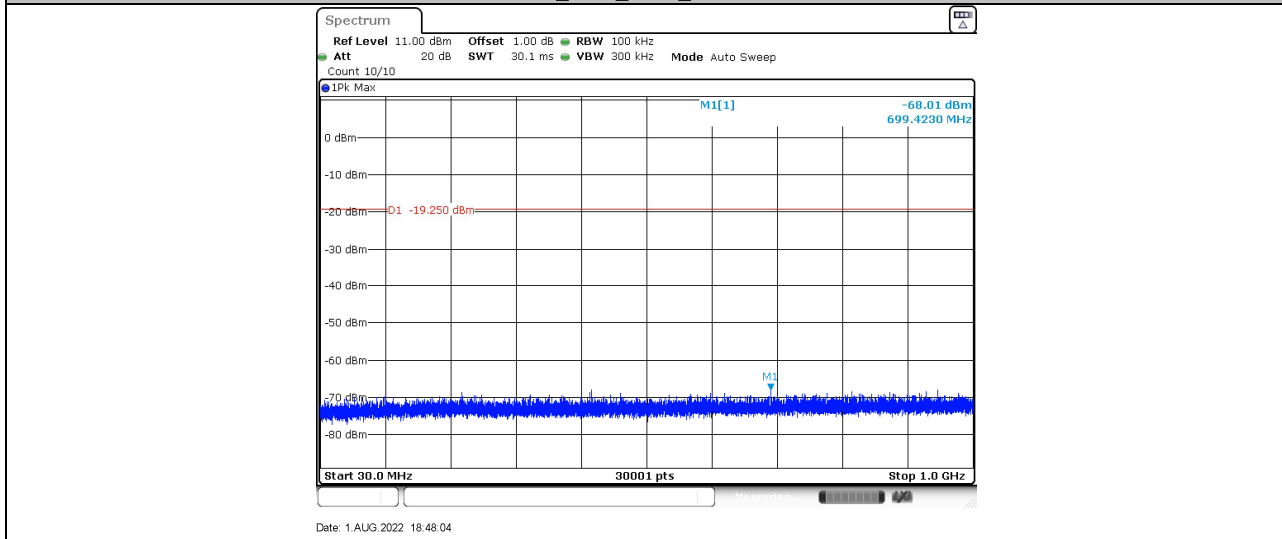
BLE_Ant1_2440_1000~26500



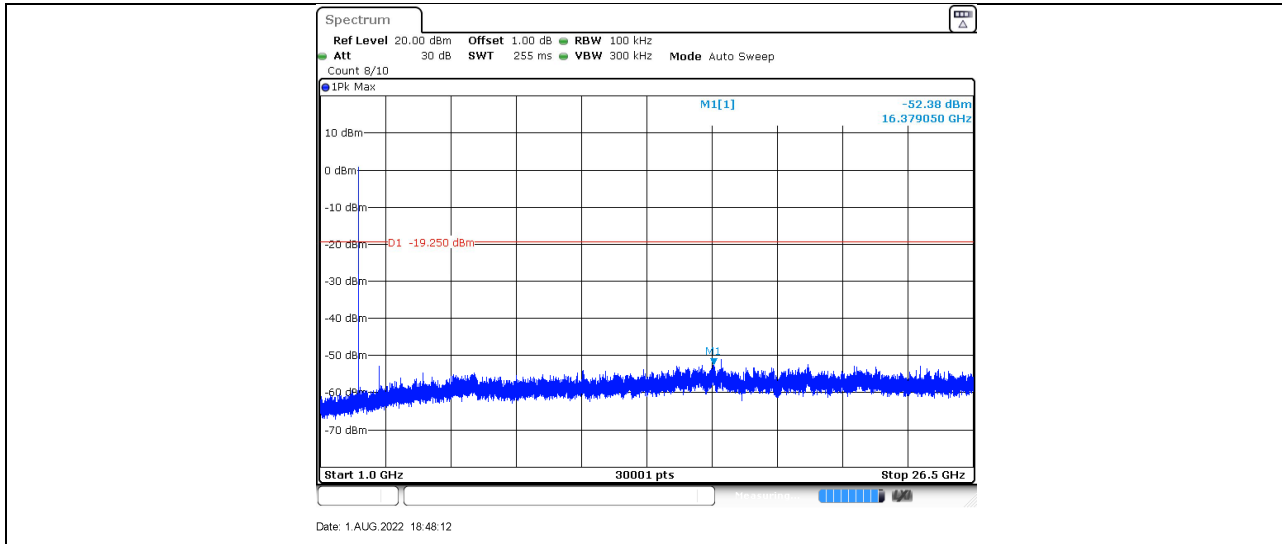
BLE_Ant1_2480_0~Reference



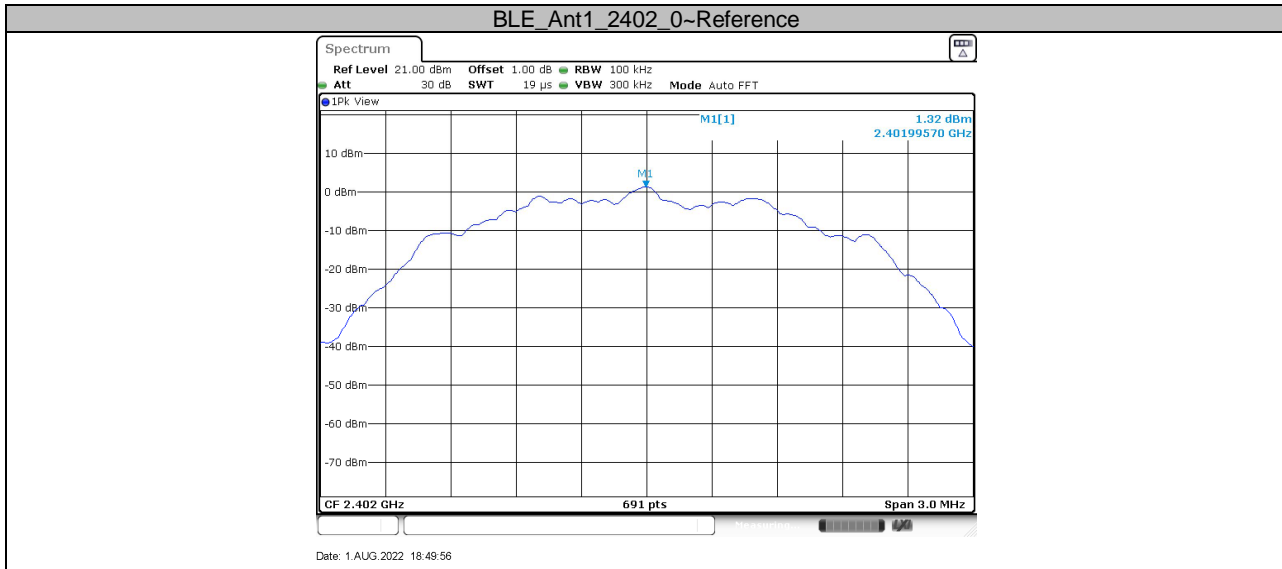
BLE_Ant1_2480_30~1000



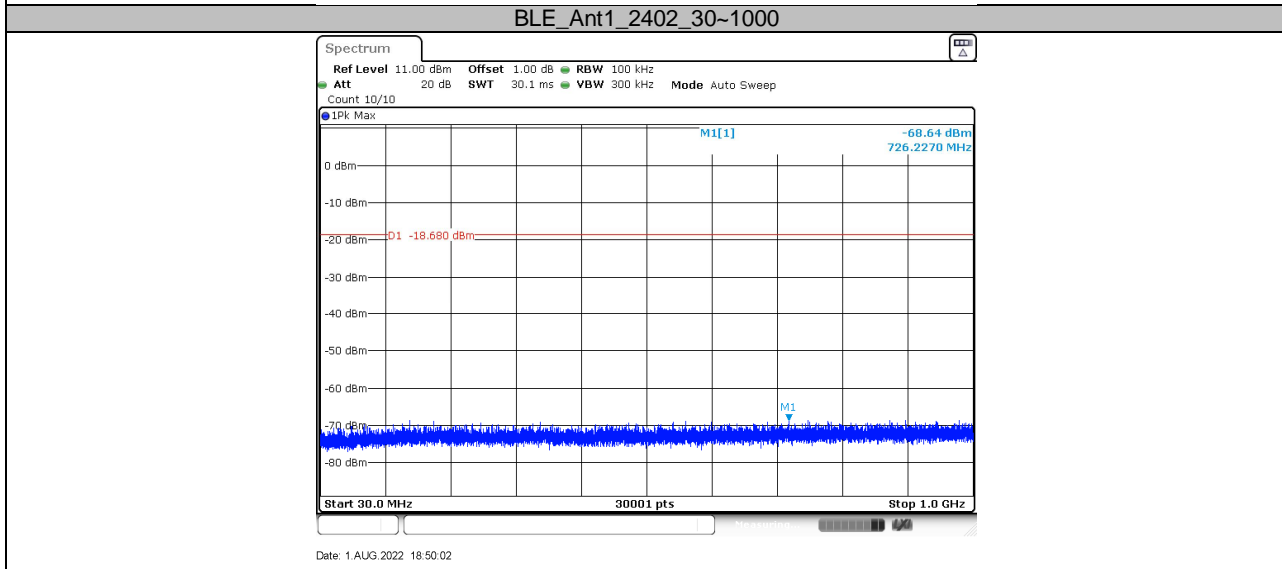
BLE_Ant1_2480_1000~26500

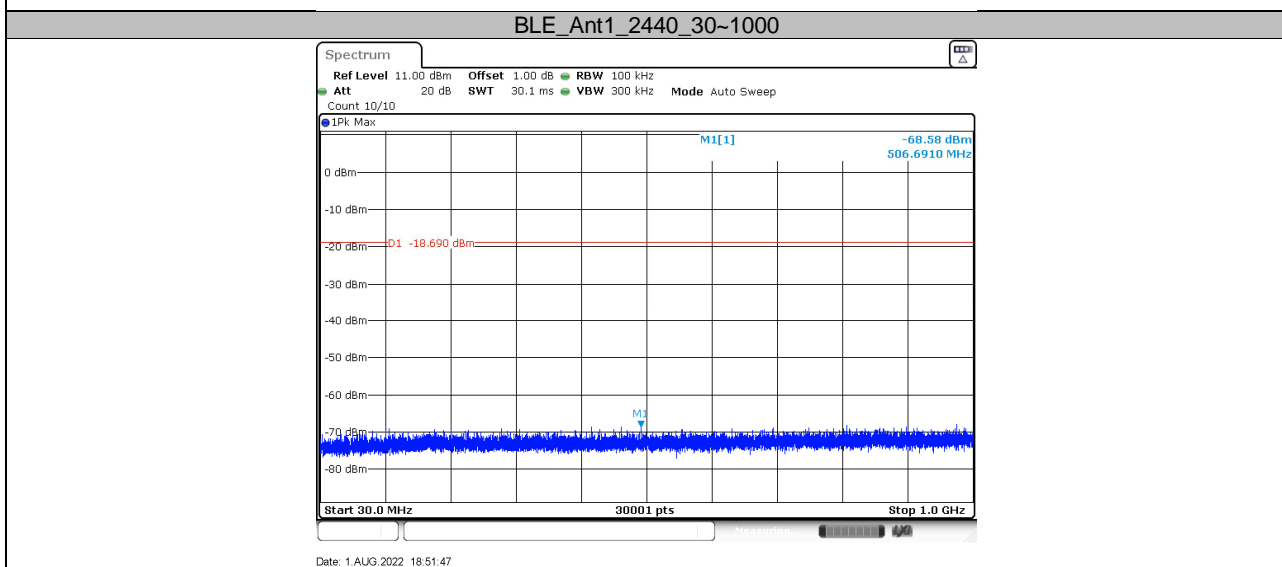
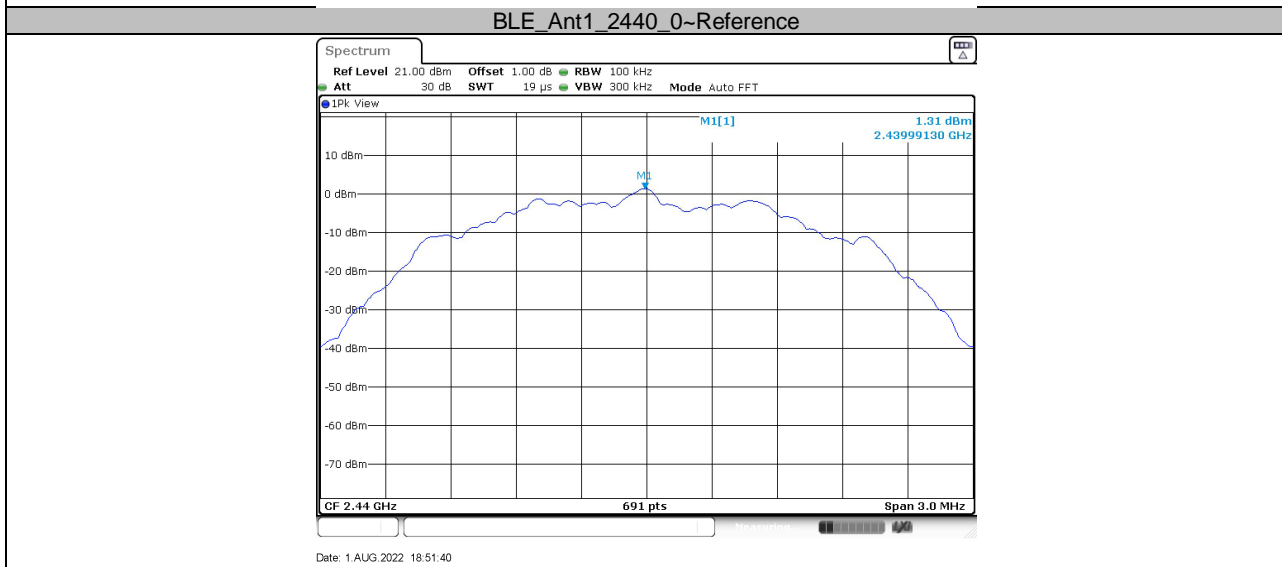
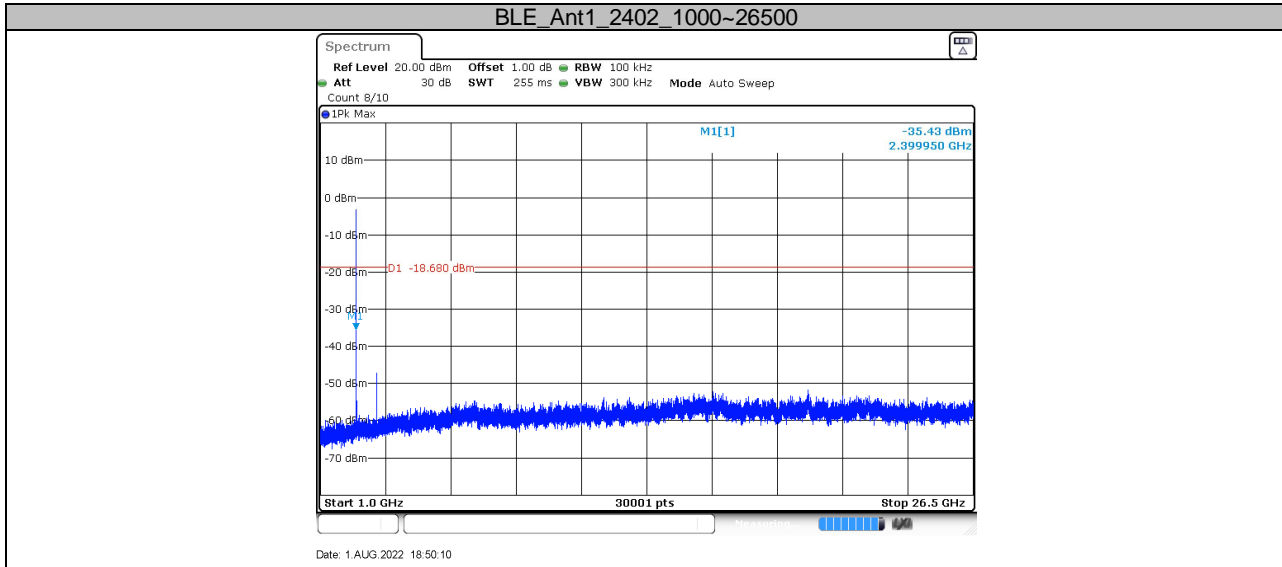


2MHz Bandwidth
BLE_Ant1_2402_0~Reference

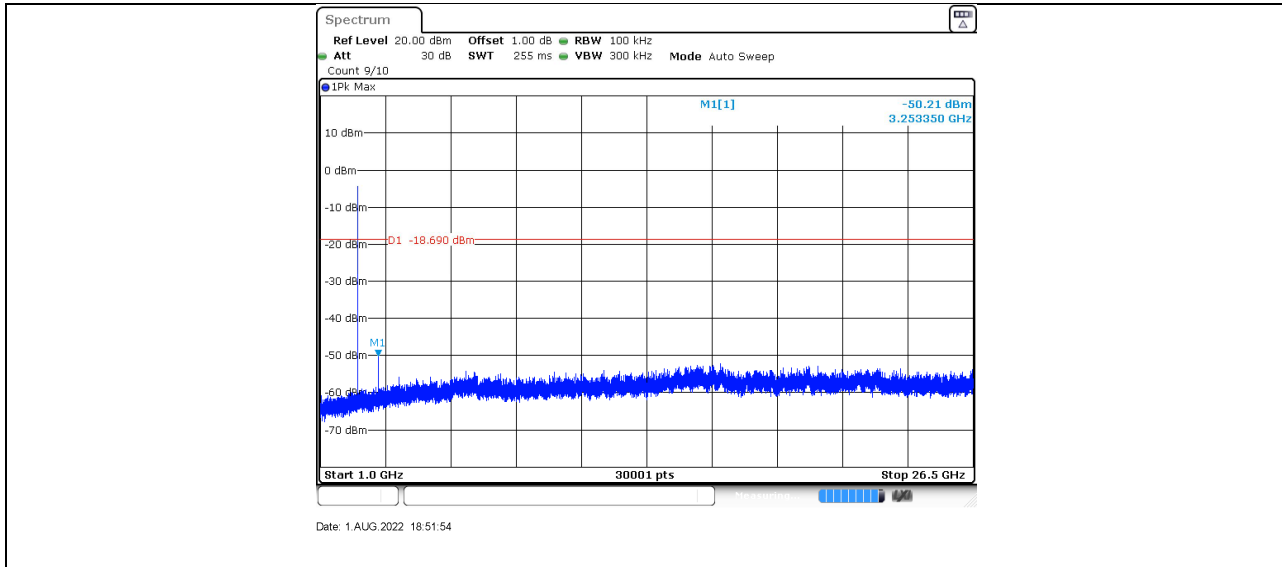


BLE_Ant1_2402_30~1000

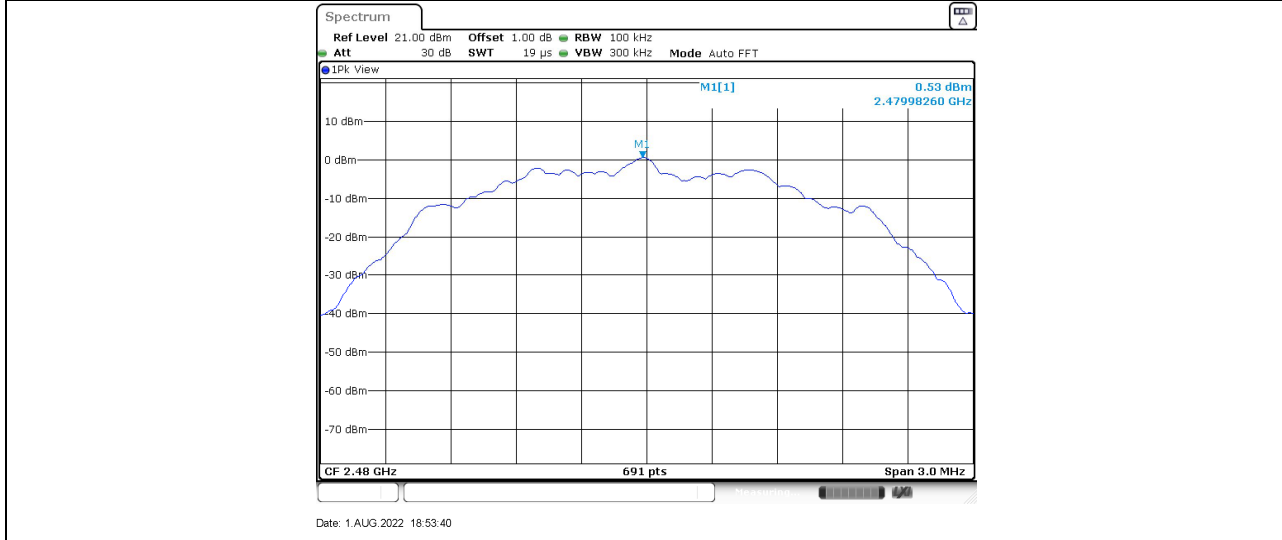




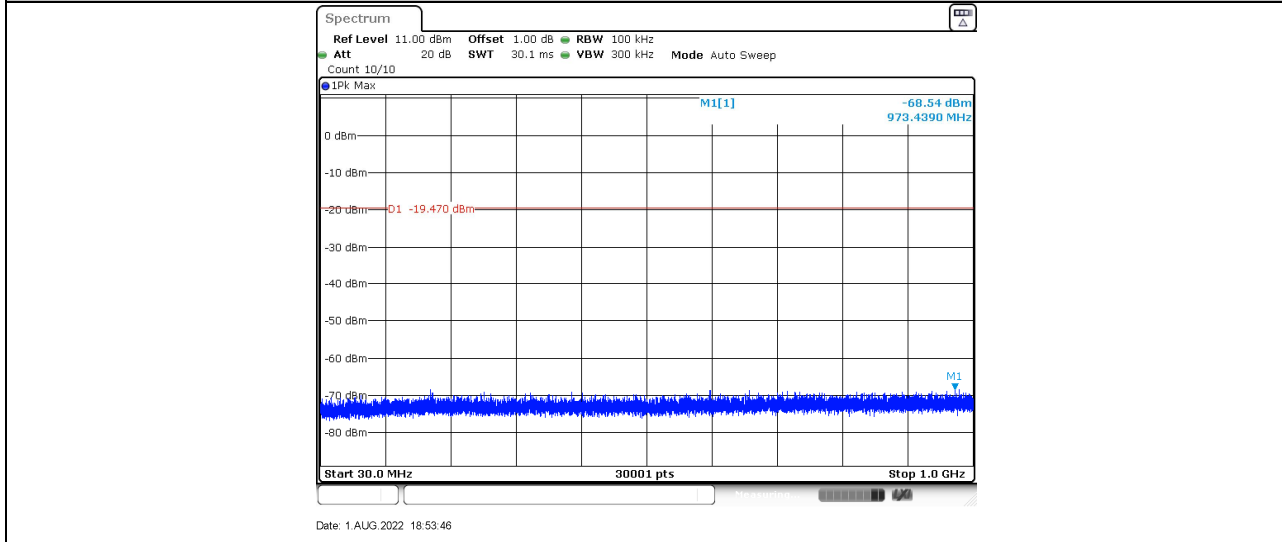
BLE_Ant1_2440_1000~26500



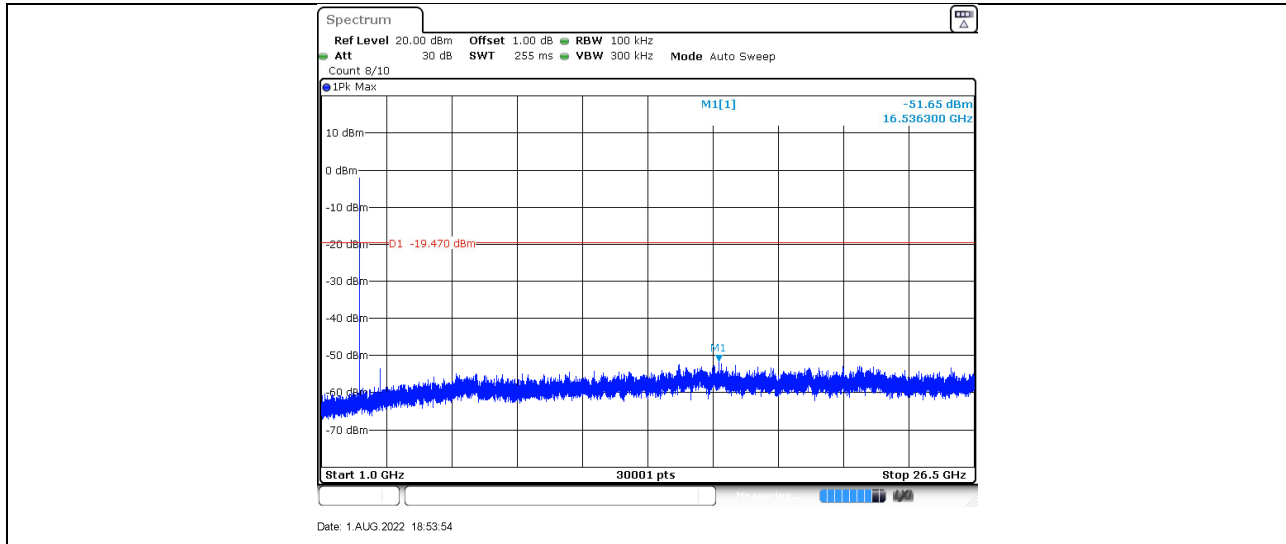
BLE_Ant1_2480_0~Reference



BLE_Ant1_2480_30~1000



BLE_Ant1_2480_1000~26500



9.6 Band edge

Test Method

- 1 Use the following spectrum analyzer settings:
 Span = wide enough to capture the peak level of the in-band emission and all spurious
 RBW = 100 kHz, VBW ≥ RBW, Sweep = auto, Detector function = peak, Trace = max hold.
- 2 Allow the trace to stabilize, use the peak and delta measurement to record the result.
- 3 The level displayed must comply with the limit specified in this Section.

Limit

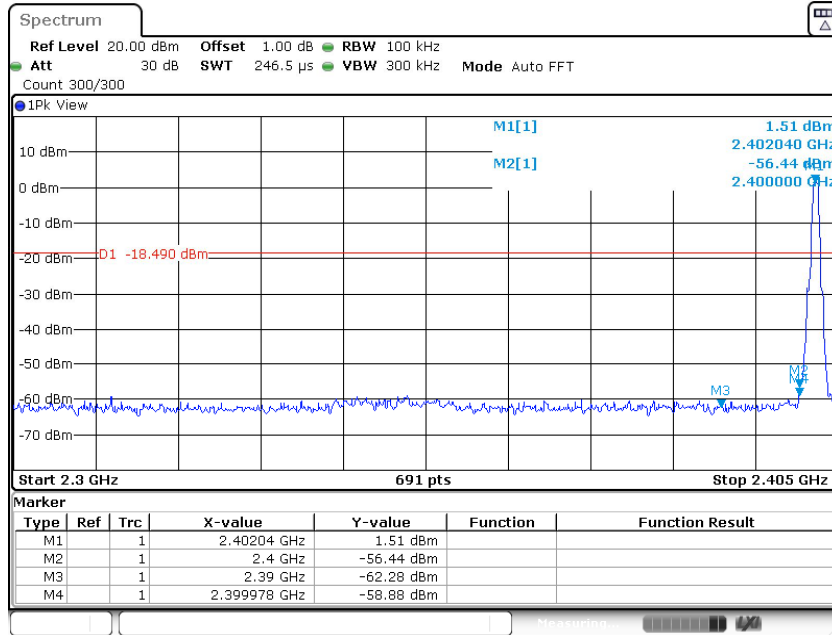
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either 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



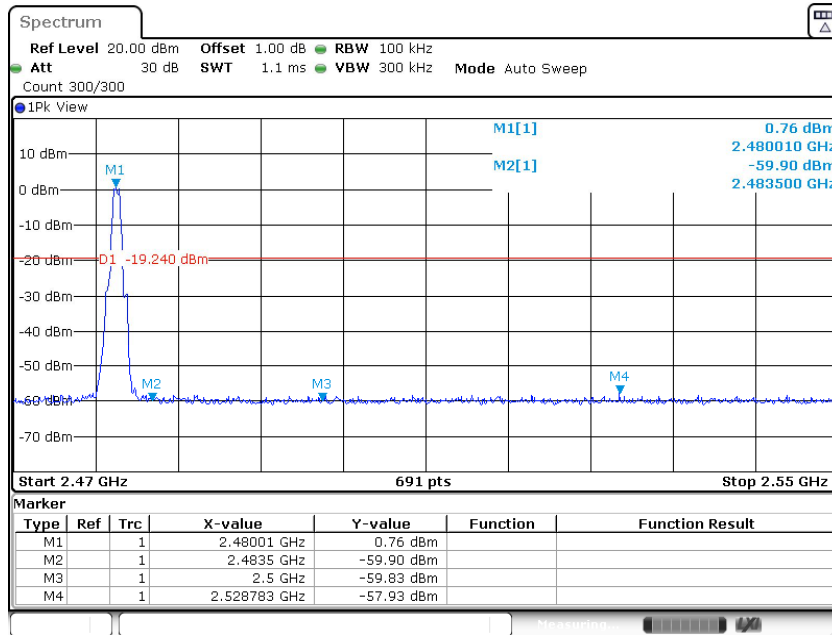
Band edge testing

1MHz Bandwidth
2402MHz



Date: 1.AUG.2022 18:44:10

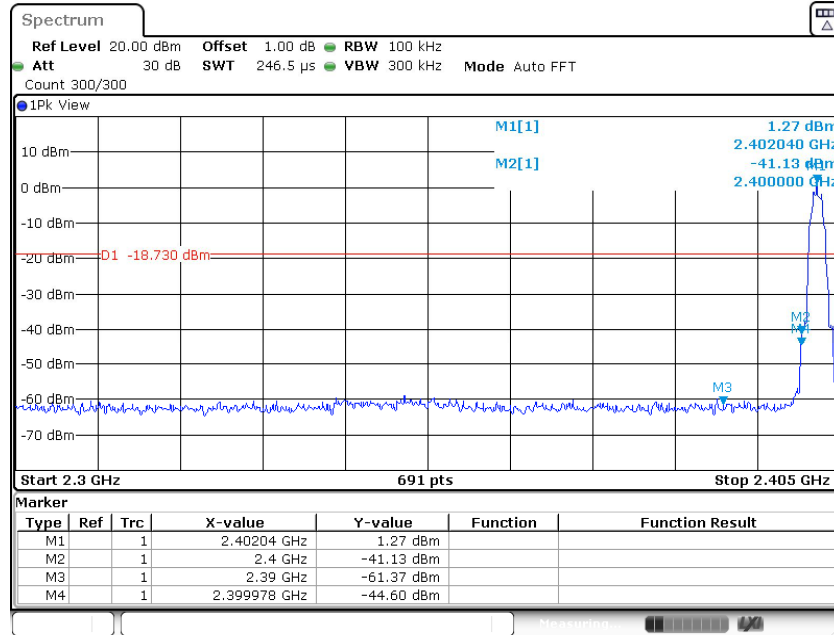
2480MHz



Date: 1.AUG.2022 18:47:52

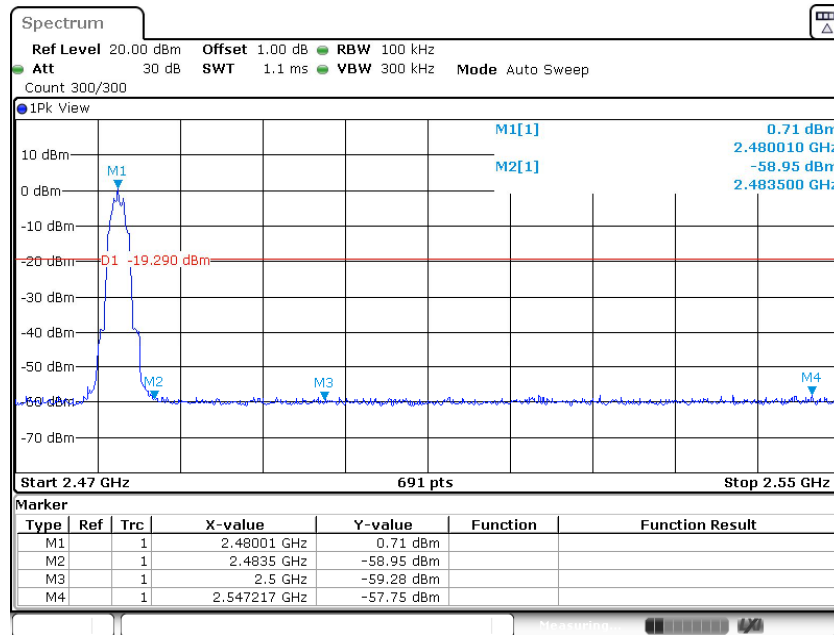


2MHz Bandwidth
2402MHz



Date: 1.AUG.2022 18:49:50

2480MHz



Date: 1.AUG.2022 18:53:34

9.7 Spurious radiated emissions for transmitter

Test Method

- 1: The EUT was placed 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 spectrum analyzer settings:

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

Procedures for average unwanted emissions measurements above 1000 MHz

- a) RBW = 1 MHz.
- b) VBW \geq [3 \times RBW].
- c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \leq 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.

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 section 8.9, must also comply with the radiated emission limits specified in § 15.209(a) and RSS-Gen section 8.10.

Frequency MHz	Field Strength uV/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

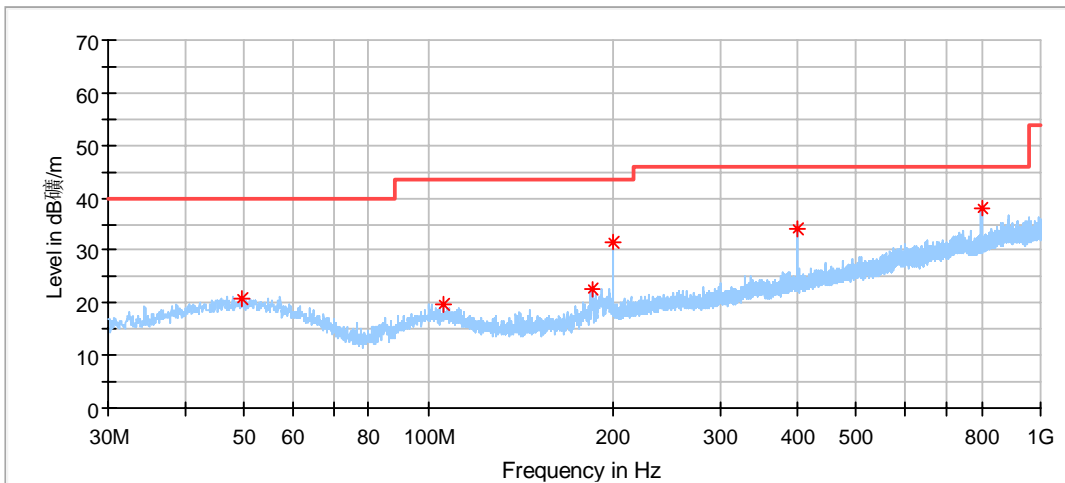


Spurious radiated emissions for transmitter

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.

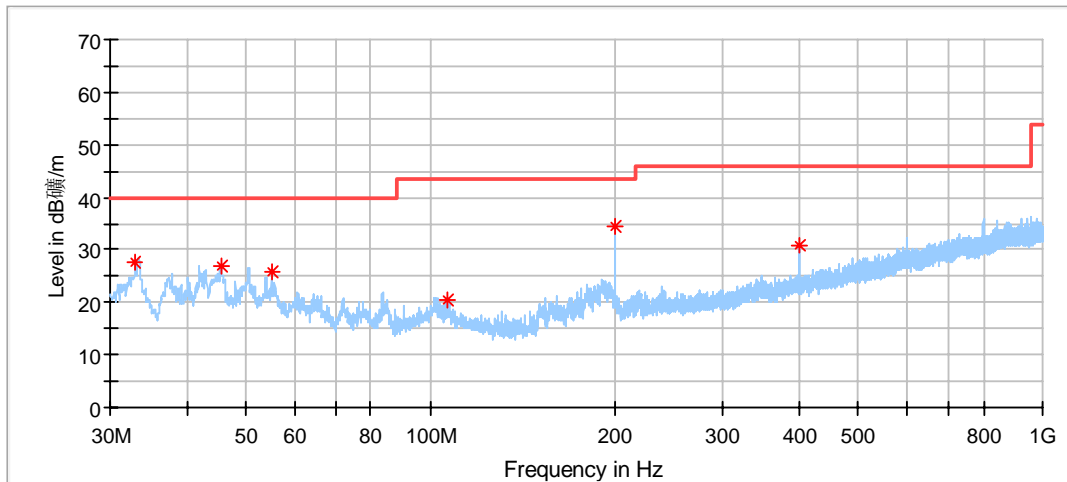
Transmitting spurious emission test result as below:

Only worst case 1MHz bandwidth test data was listed in this report.
 EUT: BenQ HDMI Media Streaming
 M/N: QS02
 Operating Condition: Tx 2402MHz, lowest Channel



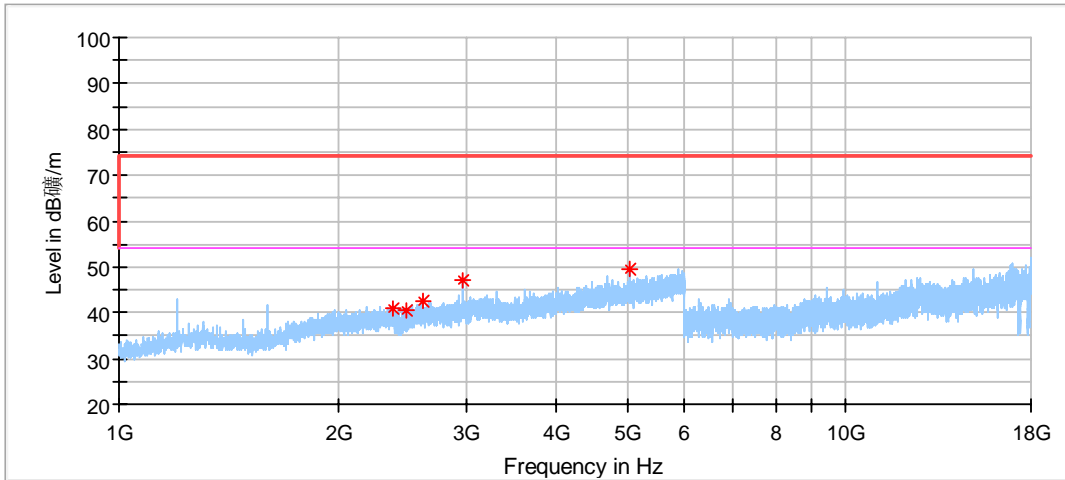
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
49.507778	20.98	40.00	19.02	100.0	H	155.0	20.91
106.091111	19.75	43.50	23.75	100.0	H	56.0	18.34
185.092222	22.75	43.50	20.75	100.0	H	102.0	17.20
199.965556	31.72	43.50	11.78	100.0	H	83.0	18.46
400.001111*	34.27	46.00	11.73	100.0	H	120.0	23.56
800.018333	38.17	46.00	7.83	100.0	H	260.0	30.12



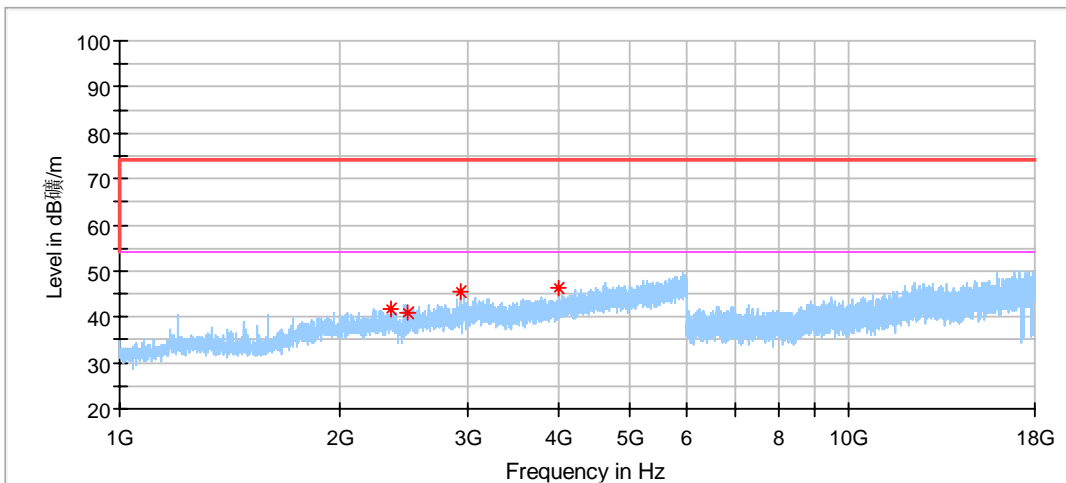
Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.963889	27.77	40.00	12.23	100.0	V	337.0	16.86
45.520000	26.88	40.00	13.12	100.0	V	353.0	20.79
55.058333	25.74	40.00	14.26	100.0	V	74.0	20.43
106.737778	20.59	43.50	22.91	100.0	V	65.0	18.34
199.965556	34.51	43.50	8.99	100.0	V	157.0	18.46
400.001111*	30.92	46.00	15.08	100.0	V	111.0	23.56



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2379.500000*	40.91	74.00	33.09	150.0	H	285.0	-2.80
2490.500000*	40.58	74.00	33.42	150.0	H	0.0	-2.36
2615.500000	42.75	74.00	31.25	150.0	H	329.0	-2.01
2966.500000	47.19	74.00	26.81	150.0	H	320.0	-0.99
5029.500000*	49.43	74.00	24.57	150.0	H	50.0	4.10

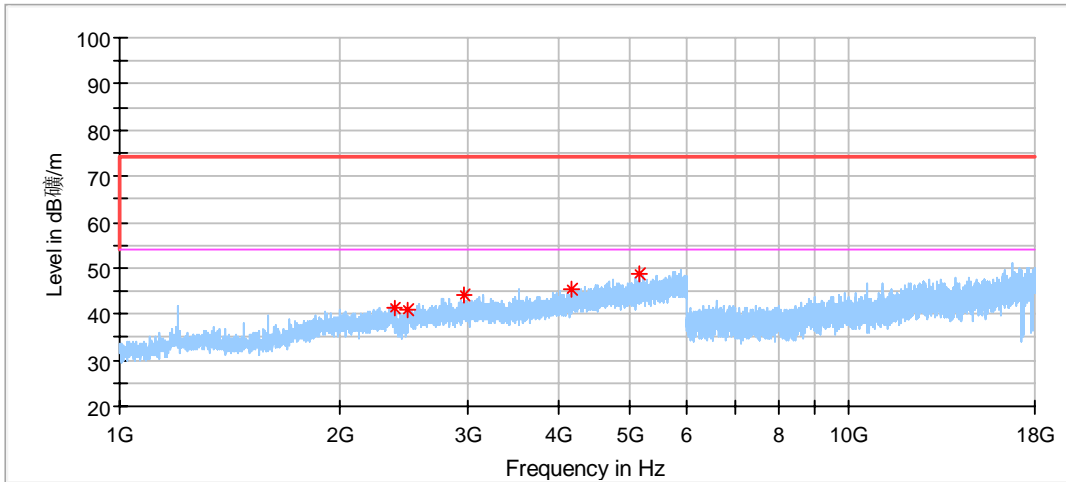


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2354.000000*	41.78	74.00	32.22	150.0	V	41.0	-2.82
2490.000000*	40.95	74.00	33.05	150.0	V	222.0	-2.36
2940.000000	45.28	74.00	28.72	150.0	V	204.0	-1.18
4004.000000*	46.36	74.00	27.64	150.0	V	303.0	1.33

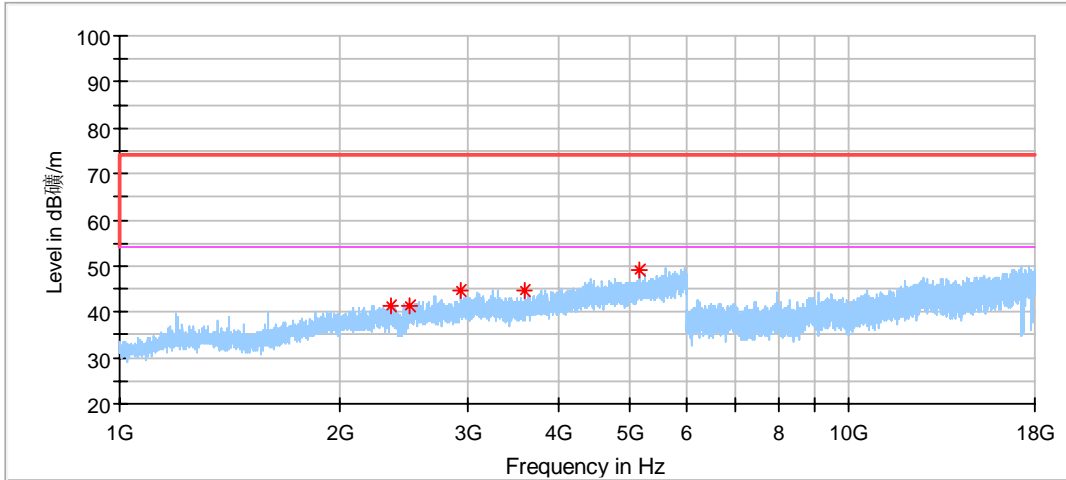


EUT: BenQ HDMI Media Streaming
 M/N: QS02
 Operating Condition: Tx 2440MHz, Middle Channel



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2385.500000*	41.49	74.00	32.51	150.0	H	294.0	-2.75
2488.500000*	40.88	74.00	33.12	150.0	H	213.0	-2.36
2966.000000	44.35	74.00	29.65	150.0	H	240.0	-0.99
4172.500000*	45.57	74.00	28.43	150.0	H	169.0	1.91
5155.000000	48.54	74.00	25.46	150.0	H	222.0	4.86

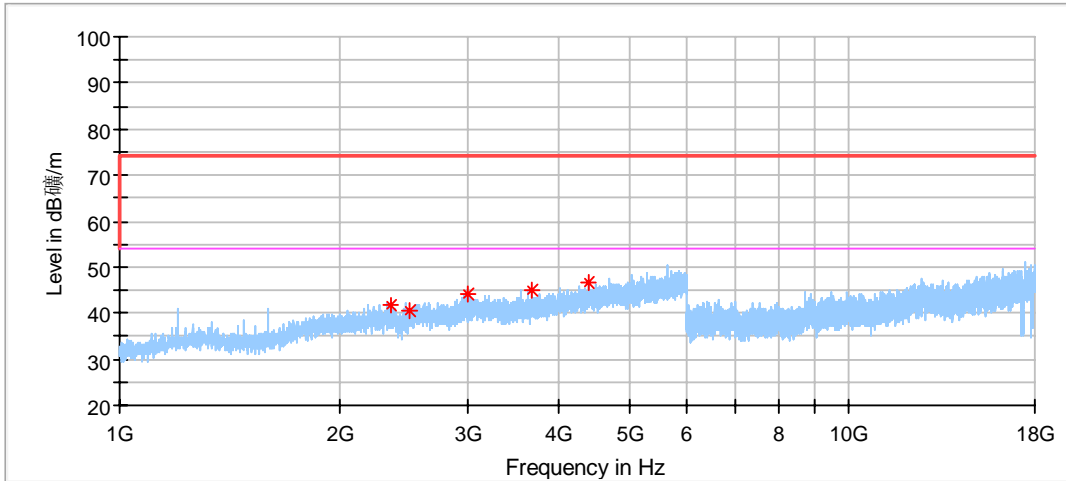


Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2359.000000*	41.14	74.00	32.86	150.0	V	303.0	-2.82
2495.000000*	41.14	74.00	32.86	150.0	V	329.0	-2.37
2939.500000	44.64	74.00	29.36	150.0	V	285.0	-1.19
3597.500000	44.58	74.00	29.42	150.0	V	352.0	0.18
5153.000000	49.08	74.00	24.92	150.0	V	303.0	4.85

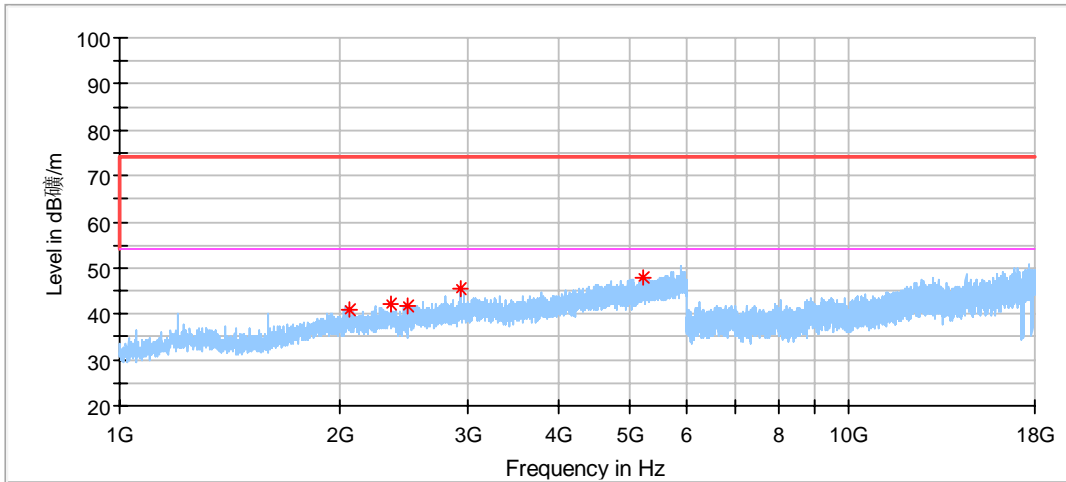


EUT: BenQ HDMI Media Streaming
 M/N: QS02
 Operating Condition: Tx 2480MHz, High Channel



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2355.500000*	41.63	74.00	32.37	150.0	H	293.0	-2.82
2493.000000*	40.64	74.00	33.36	150.0	H	150.0	-2.36
3004.000000	44.38	74.00	29.62	150.0	H	25.0	-0.87
3677.500000*	45.05	74.00	28.95	150.0	H	212.0	0.40
4404.000000	46.79	74.00	27.21	150.0	H	168.0	2.92



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2060.000000	41.00	74.00	33.00	150.0	V	150.0	-4.11
2359.000000*	42.00	74.00	32.00	150.0	V	284.0	-2.82
2489.500000*	41.69	74.00	32.31	150.0	V	293.0	-2.36
2941.000000	45.40	74.00	28.60	150.0	V	221.0	-1.17
5217.000000	47.96	74.00	26.04	150.0	V	159.0	5.15

Remark:

- (1) "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) Data of measurement within frequency range 9kHz-30MHz, 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) Level=Reading Level + Correction 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)

10 Test Equipment List

List of Test Instruments

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
ISN	Rohde & Schwarz	ENY81	68-4-87-14-003	100177	1	2023-5-27
ISN	Rohde & Schwarz	ENY81-CA6	68-4-87-14-004	101664	1	2023-5-27
High Voltage Probe	Schwarzbeck	TK9420(VT9420)	68-4-27-14-001	9420-584	1	2023-5-27
RF Current Probe	Rohde & Schwarz	EZ-17	68-4-27-14-002	100816	1	2023-5-31
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	Version10.35.0 2	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2022-11-07

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	2023-1-17
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	Version10.35.0 2	N/A	N/A

RF conducted test

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
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	2022-11-07

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 9kHz-30MHz	4.70dB
Uncertainty for Conducted Emission in shielding room 150kHz-30MHz	3.33dB
Radiated Spurious Emission 30MHz-1000MHz	Horizontal: 4.59dB; Vertical: 4.75dB;
Radiated Spurious Emission 1000MHz-18000MHz	Horizontal: 5.08dB; Vertical: 5.09dB;
Conducted RF test with TS 8997	RF Power Conducted: 1.30dB Frequency test involved: 0.6x10 ⁻⁸ or 1%