

**FCC/ISED - TEST REPORT**

Report Number	:	68.950.22.0674.01	Date of Issue:	<u>August 18, 2022</u>
Model	:	<u>MDZ-28-AA</u>		
Product Type	:	<u>Xiaomi Box 4K</u>		
Applicant	:	<u>Beijing Xiaomi Electronics Co., Ltd</u>		
Address	:	<u>Room 802, 8F, Building 5, No.15, Kechuang Ten Street, Beijing</u>		
	:	<u>Economic & Technological Development Zone Beijing China 100085</u>		
Manufacturers	:	<u>Beijing Xiaomi Electronics Co., Ltd</u>		
Address	:	<u>Room 802, 8F, Building 5, No.15, Kechuang Ten Street, Beijing</u>		
	:	<u>Economic & Technological Development Zone Beijing China 100085</u>		
Test Result	:	☒ Positive ☐ Negative		
Total pages including Appendices	:	<u>49</u>		

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

1 Table of Contents

1	Table of Contents.....	2
2	Details about the Test Laboratory	3
3	Description of the Equipment Under Test.....	4
4	Summary of Test Standards	5
5	Summary of Test Results.....	6
6	General Remarks.....	7
7	Test Setups	8
8	Systems test configuration.....	9
9	Technical Requirement.....	10
9.1	Conducted Emission	10
9.2	Conducted peak output power and e.i.r.p.....	13
9.3	Power spectral density	17
9.4	6 dB Bandwidth and 99% Occupied Bandwidth.....	21
9.5	Spurious RF conducted emissions.....	28
9.6	Band edge	35
9.7	Spurious radiated emissions for transmitter	38
10	Test Equipment List.....	48
11	System Measurement Uncertainty	49



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:	Xiaomi Box 4K
Model no/HVIN/PMN:	MDZ-28-AA
FVIN:	R104
FCC ID:	2AIMRMITVMDZ28AA
IC:	25940-MITVMDZ28AA
Options and accessories:	Adapter, HDMI Cable
Rating:	5.2VDC, 2.1A(Supplied by AC/DC Adapter) Adapter information: Model: AD-0100520210US-1 Input: 100-240V~50/60Hz, 0.3A Output: 5.2VDC, 2.1A, 10.92W
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:	Integrated antenna
Antenna Gain:	0.5dBi
Description of the EUT:	The Equipment Under Test (EUT) is a Xiaomi Box 4K 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 Integrated antenna, which gain is 0.5dBi. 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: 2AIMRMITVMDZ28AA, IC: 25940-MITVMDZ28AA 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.

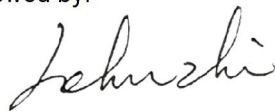
Sample Received Date: July 6, 2022

Testing Start Date: July 6, 2022

Testing End Date: July 20, 2022

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

Reviewed by:



John Zhi
EMC Project Manager

Prepared by:



Mark Chen
EMC Project Engineer

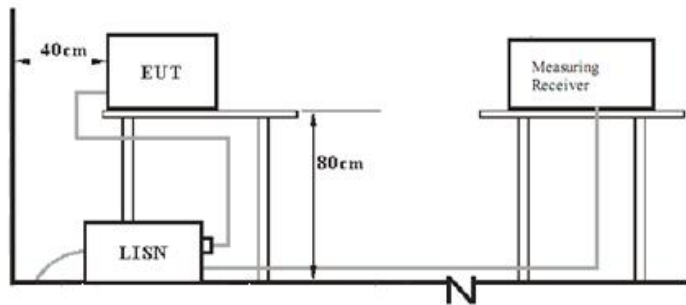
Tested by:



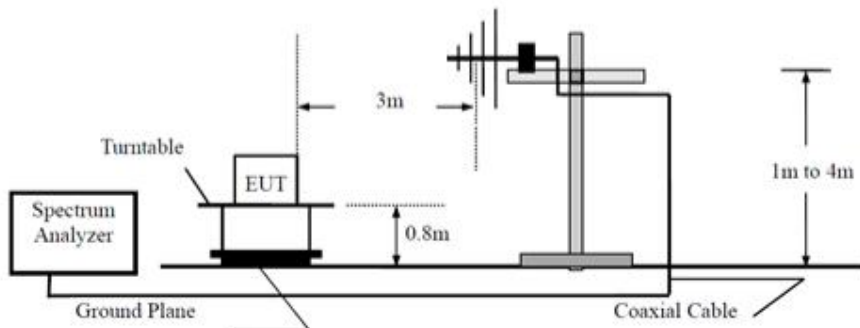
Carry Cai
EMC Test Engineer

7 Test Setups

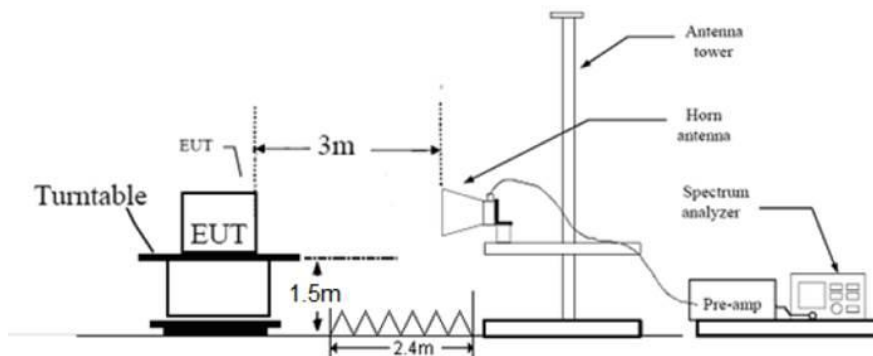
7.1 AC Power Line Conducted Emission test setups



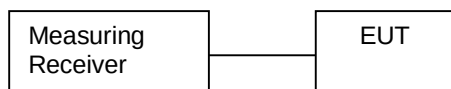
7.2 Below 1GHz



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	---
--	---	---	

Test software: serial port 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

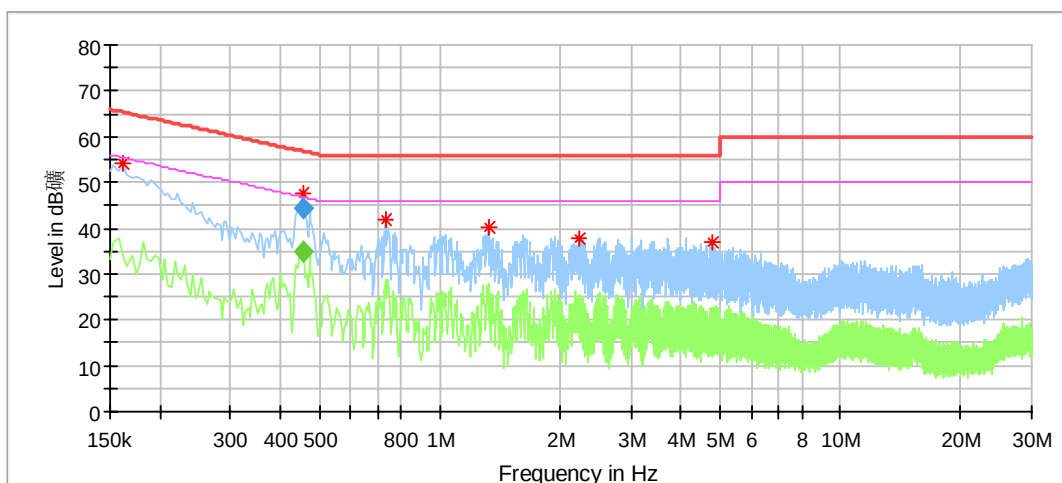
Limit

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 : Xiaomi Box 4K
 M/N : MDZ-28-AA
 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)
0.162000	54.09	---	65.36	11.27	L1	9.26
0.453500	47.42	---	56.73	9.31	L1	9.20
0.730000	41.69	---	56.00	14.31	L1	9.20
1.322000	40.06	---	56.00	15.94	L1	9.21
2.230000	37.90	---	56.00	18.10	L1	9.23
4.798000	36.74	---	56.00	19.26	L1	9.30

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB/m)
0.453500	---	34.77	46.81	12.04	L1	9.20
0.453500	44.51	---	56.81	12.30	L1	9.20

Remark:

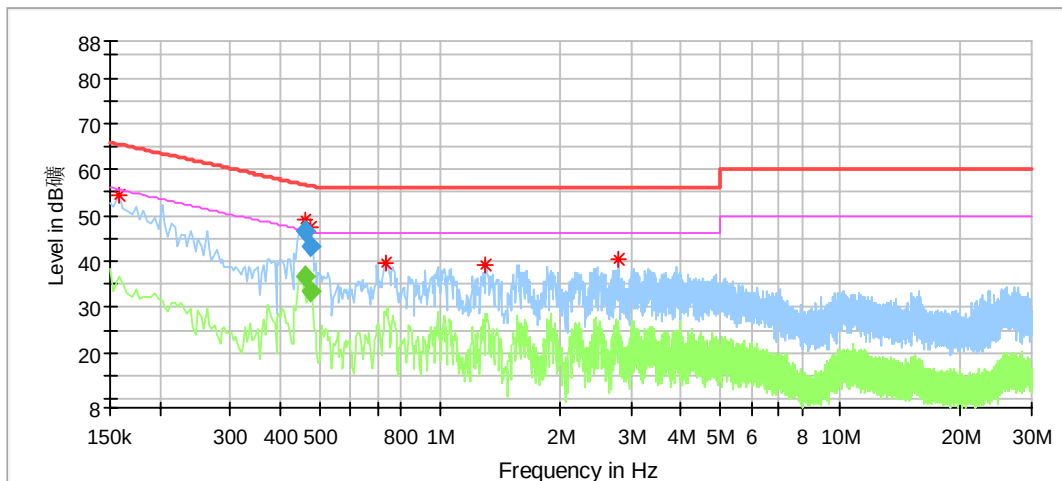
Level=Reading Level + Correction Factor

Correction Factor=Cable Loss + LISN Factor

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

Conducted Emission

Product Type : Xiaomi Box 4K
 M/N : MDZ-28-AA
 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)
0.158000	54.48	---	65.57	11.09	N	9.40
0.458500	48.96	---	56.80	7.84	N	9.39
0.473500	47.53	---	56.37	8.85	N	9.39
0.730000	39.66	---	56.00	16.34	N	9.39
1.302000	38.98	---	56.00	17.02	N	9.41
2.806000	40.45	---	56.00	15.55	N	9.44

Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB/m)
0.458500	---	36.85	46.72	9.87	N	9.39
0.458500	46.42	---	56.72	10.30	N	9.39
0.473500	---	33.50	46.45	12.95	N	9.39
0.473500	43.37	---	56.45	13.08	N	9.39

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

Test result as below 1MHz Bandwidth

Frequency MHz	Conducted Peak Output Power dBm	e.i.r.p dBm	Result
Low channel 2402MHz	6.71	7.21	Pass
Middle channel 2440MHz	6.52	7.02	Pass
High channel 2480MHz	6.61	7.11	Pass

Test result as below table 2MHz Bandwidth

Frequency MHz	Conducted Peak Output Power dBm	e.i.r.p dBm	Result
Low channel 2402MHz	6.64	7.14	Pass
Middle channel 2440MHz	6.48	6.98	Pass
High channel 2480MHz	6.58	7.08	Pass

Spectrum

Ref Level 30.00 dBm Offset 1.00 dB RBW 2 MHz
Att 40 dB SWT 8 ms VBW 5 MHz Mode Auto Sweep
Count 100/100

● 1Pk View

M1[1] 6.71 dBm
2.402056240 GHz

20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm

CF 2.402 GHz 8001 pts Span 6.0 GHz

Spectrum

Ref Level 30.00 dBm Offset 1.00 dB RBW 2 MHz
Att 40 dB SWT 8 ms VBW 5 MHz Mode Auto Sweep
Count 100/100

● 1Pk View

M1[1] 6.52 dBm
2.440006750 GHz

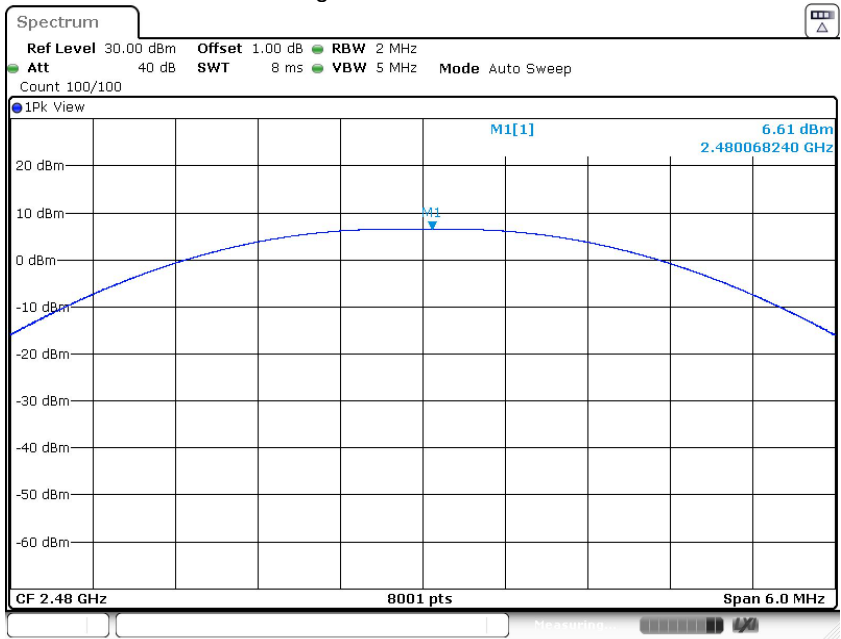
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm

CF 2.44 GHz 8001 pts Span 6.0 MHz

Page 14 of 49

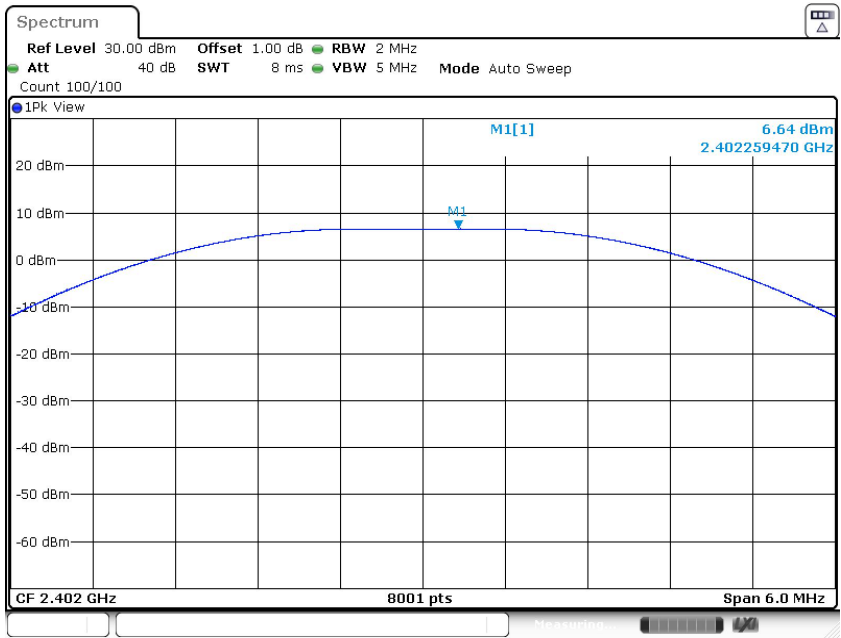


High channel 2480MHz



Date: 12 JUL 2022 16:38:14

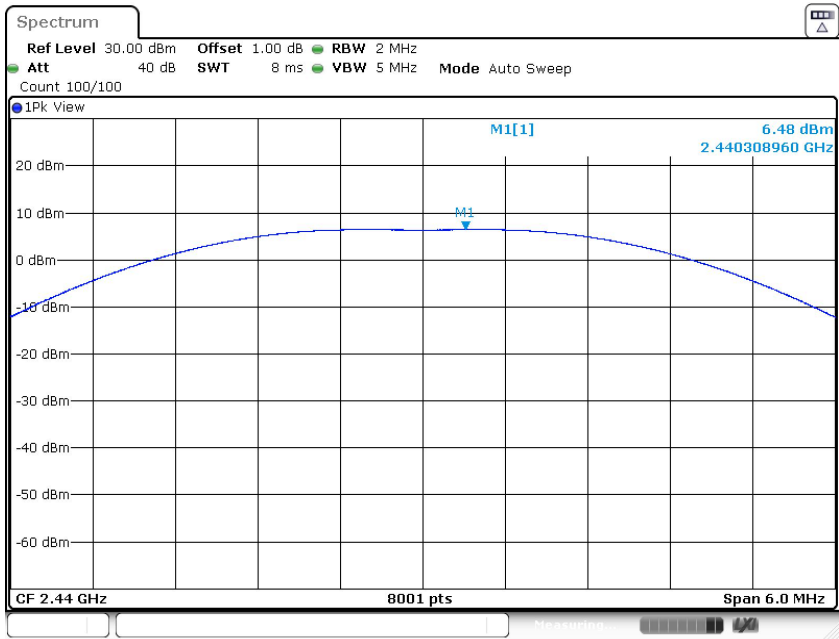
2MHz bandwidth
Low channel 2402MHz



Date: 12 JUL 2022 16:39:36

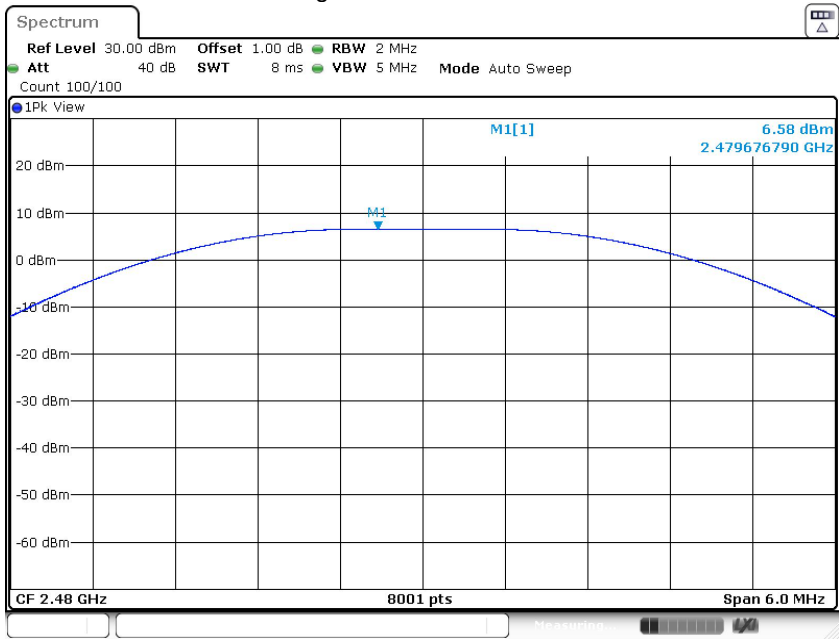


Middle channel 2440MHz



Date: 12.JUL.2022 16:41:20

High channel 2480MHz



Date: 12.JUL.2022 16:42:10

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 $\geq$ 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]

$\leq 8\text{dBm/3KHz}$

1MHz Bandwidth

Test result

Frequency MHz	Power spectral density dBm/3KHz	Result
Top channel 2402MHz	-8.37	Pass
Middle channel 2440MHz	-8.27	Pass
Bottom channel 2480MHz	-8.37	Pass

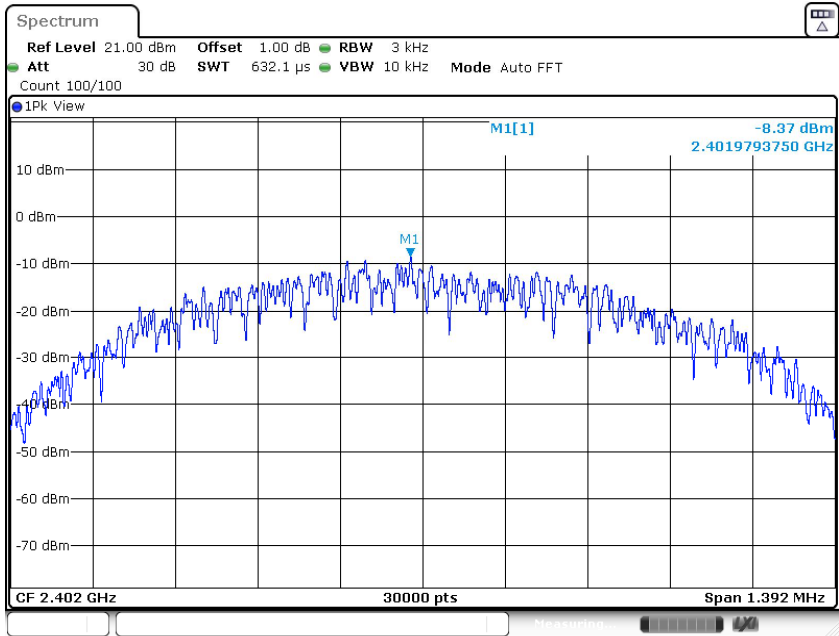
2MHz Bandwidth

Test result

Frequency MHz	Power spectral density dBm/3KHz	Result
Top channel 2402MHz	-12.22	Pass
Middle channel 2440MHz	-11.96	Pass
Bottom channel 2480MHz	-7.51	Pass

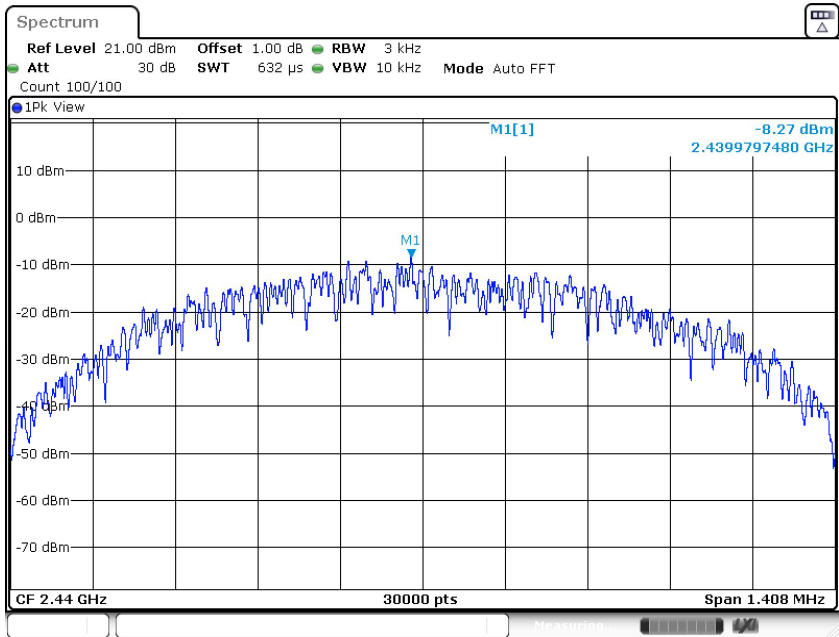


1MHz Bandwidth
Low channel 2402MHz



Date: 13 JUL 2022 15:33:43

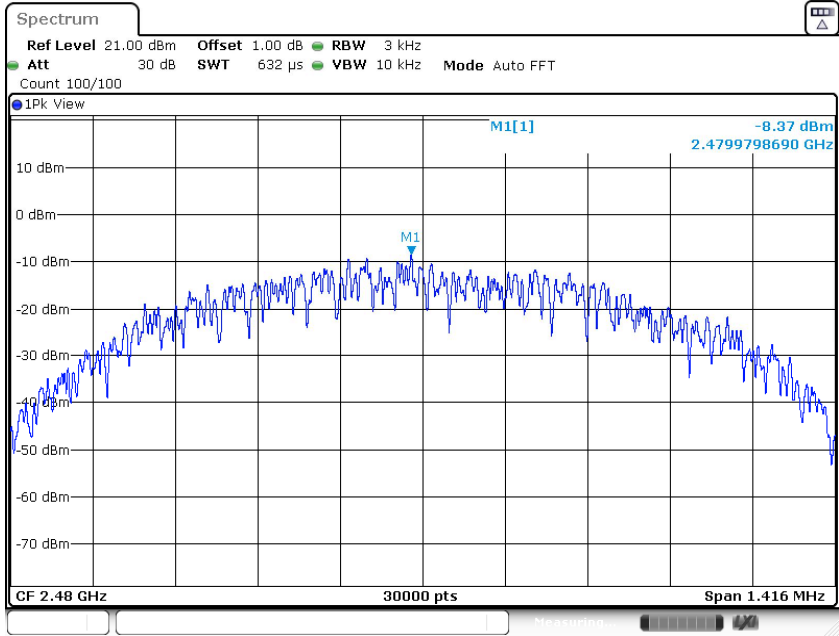
Middle channel 2440MHz



Date: 13 JUL 2022 15:35:33

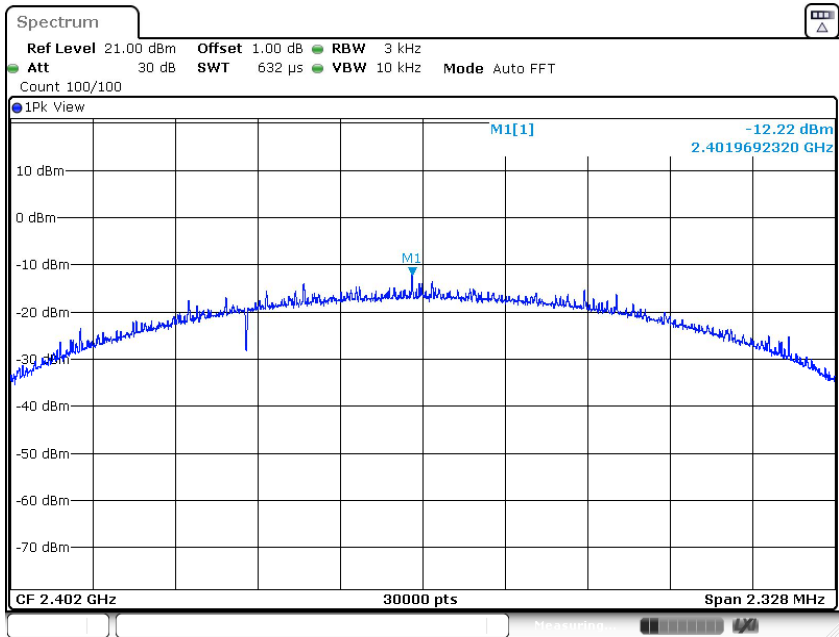


High channel 2480MHz



Date: 13.JUL.2022 15:36:20

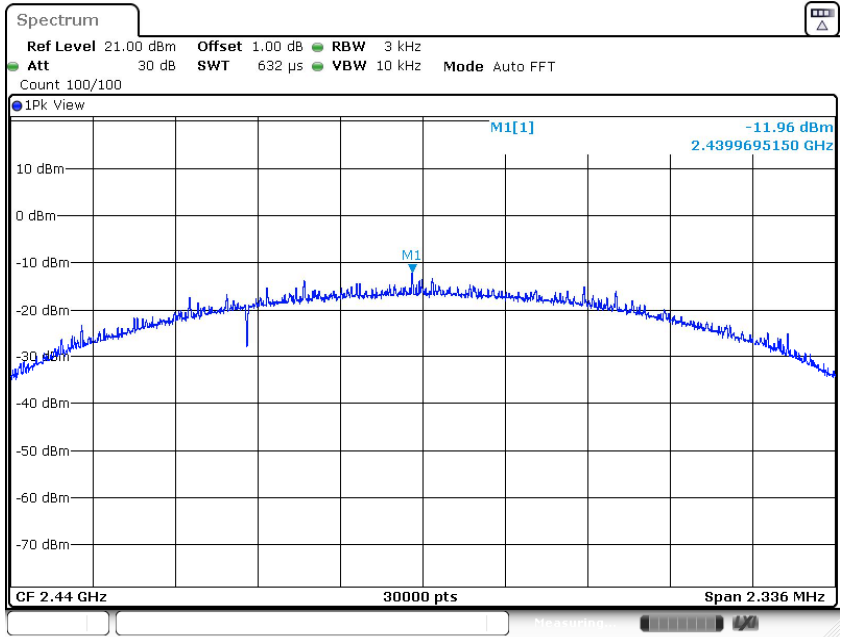
2MHz Bandwidth
Low channel 2402MHz



Date: 13.JUL.2022 15:39:09

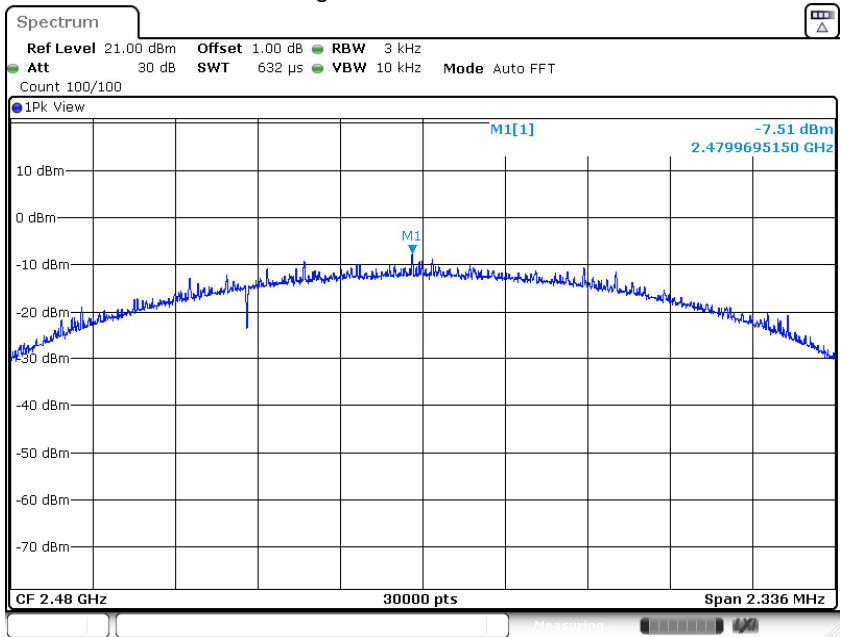


Middle channel 2440MHz



Date: 13.JUL.2022 15:40:10

High channel 2480MHz



Date: 13.JUL.2022 15:40:58

9.4 6 dB Bandwidth and 99% Occupied Bandwidth

Test Method

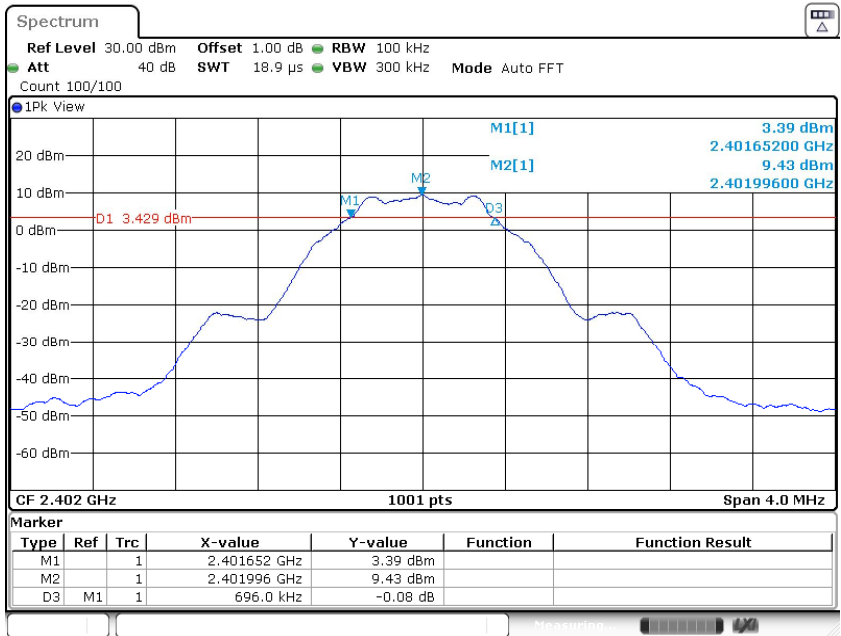
1. Use the following spectrum analyzer settings:
RBW=100K, VBW $\geq$ 3RBW, Sweep = auto, Detector function = peak, Trace = max hold
2. Use the automatic bandwidth measurement capability of an instrument, may be employed using the X dB bandwidth mode with X set to 6 dB, care shall be taken so that the 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

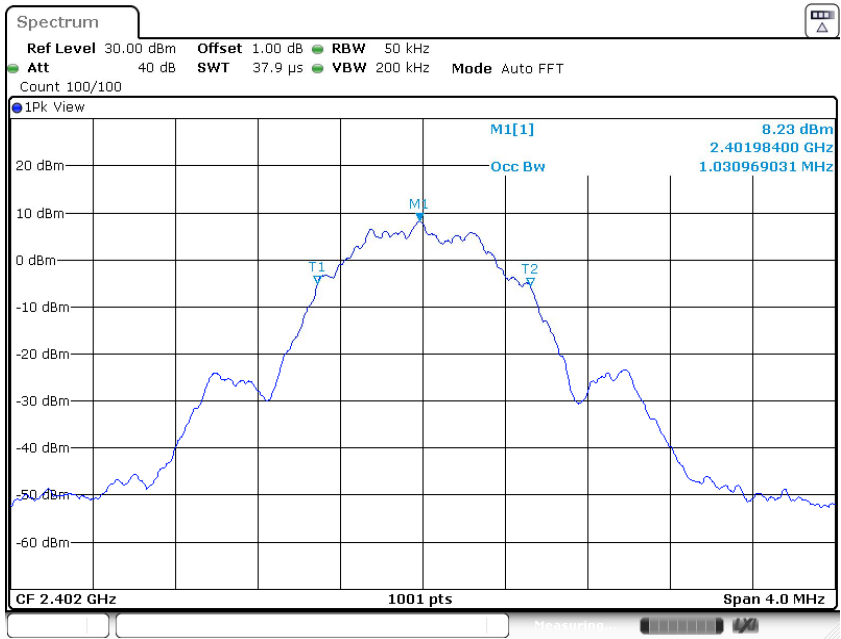
Limit [kHz]			
≥ 500			
1MHz Bandwidth			
Test result			
Frequency MHz	6dB bandwidth kHz	99% bandwidth kHz	Result
Bottom channel 2402MHz	696	1031	Pass
Middle channel 2440MHz	704	1039	Pass
Top channel 2480MHz	708	1039	Pass
2MHz Bandwidth			
Test result			
Frequency MHz	6dB bandwidth kHz	99% bandwidth kHz	Result
Bottom channel 2402MHz	1164	2062	Pass
Middle channel 2440MHz	1168	2062	Pass
Top channel 2480MHz	1168	2062	Pass



1MHz Bandwidth
Low channel 2402MHz



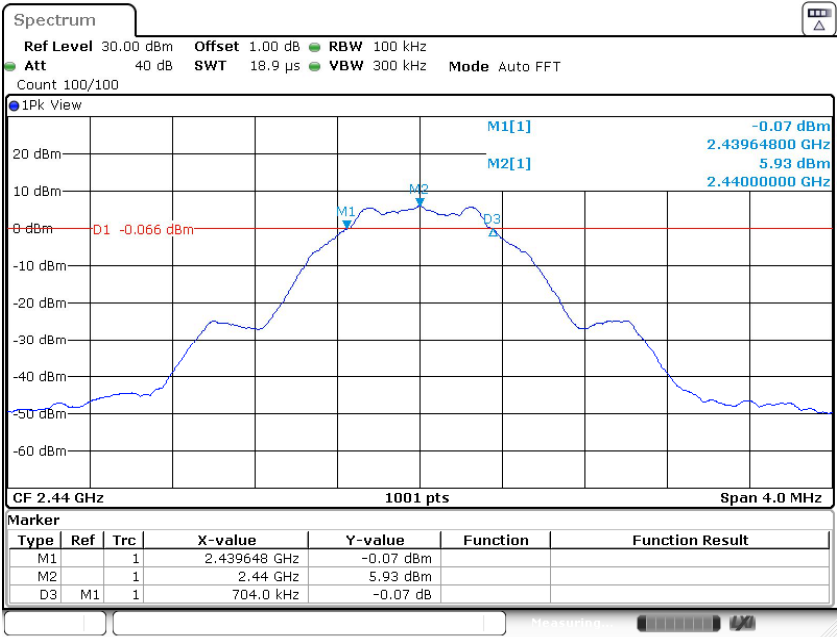
Date: 12 JUL 2022 16:22:26



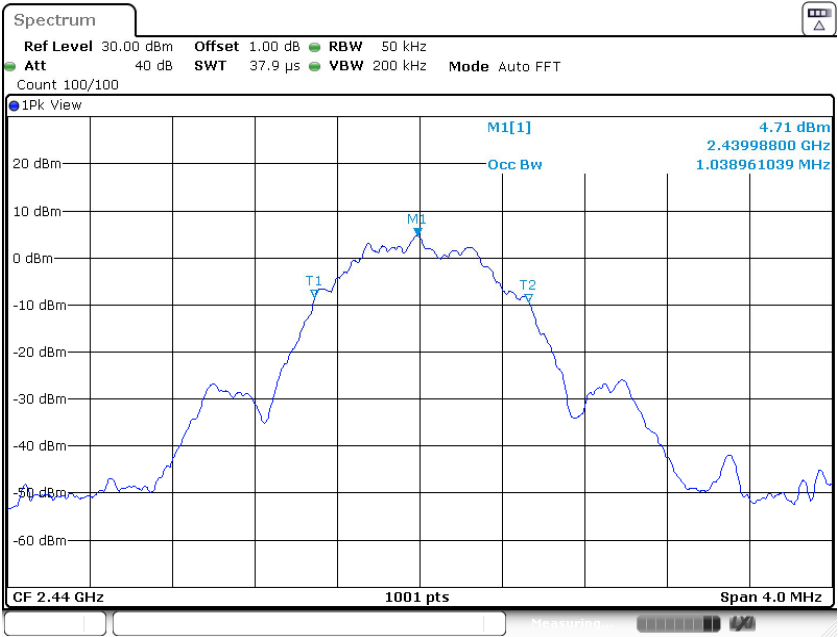
Date: 12 JUL 2022 16:22:37



Middle channel 2440MHz



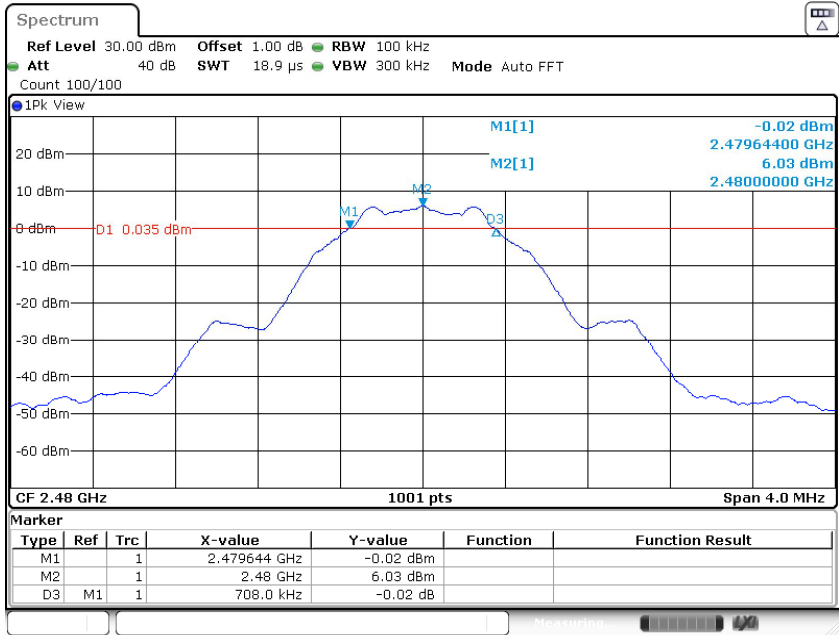
Date: 12 JUL 2022 16:36:45



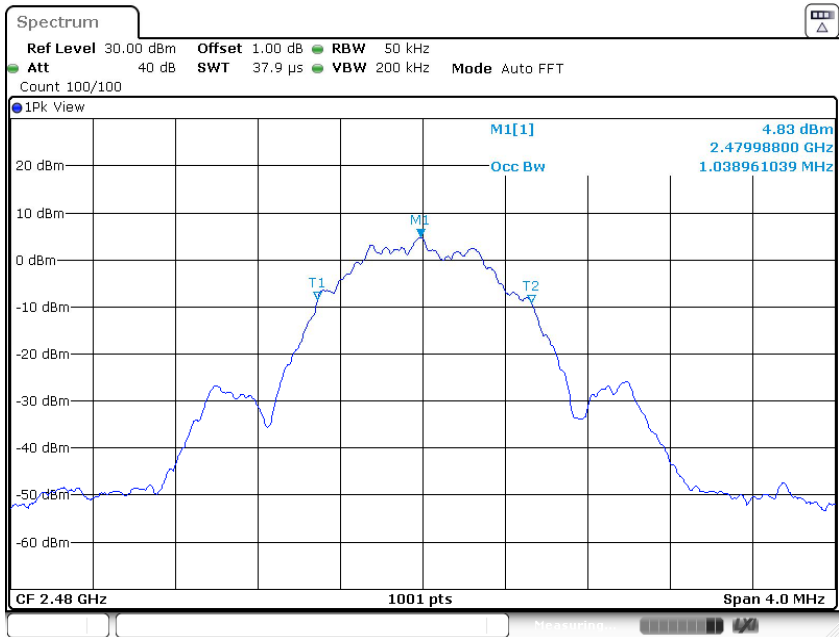
Date: 12 JUL 2022 16:36:56



High channel 2480MHz



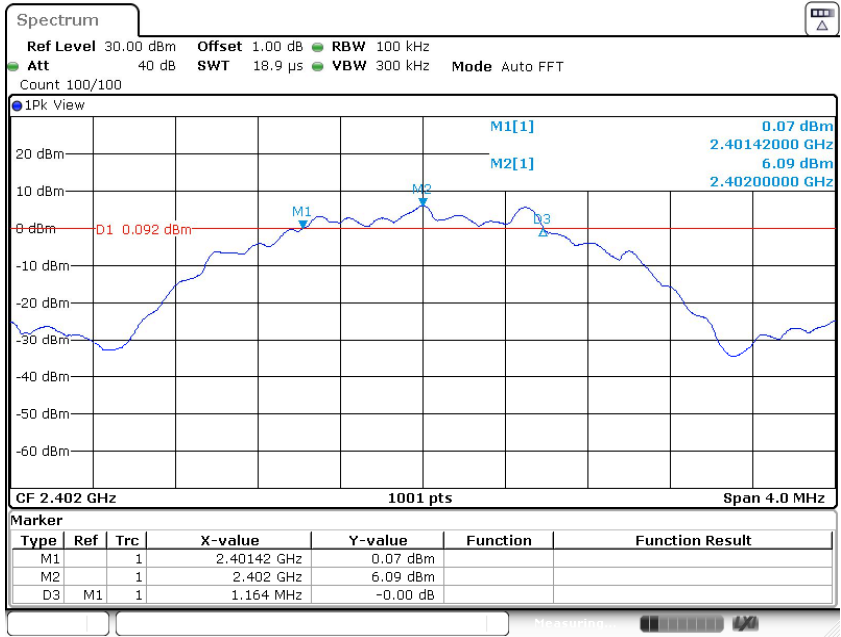
Date: 12 JUL 2022 16:37:57



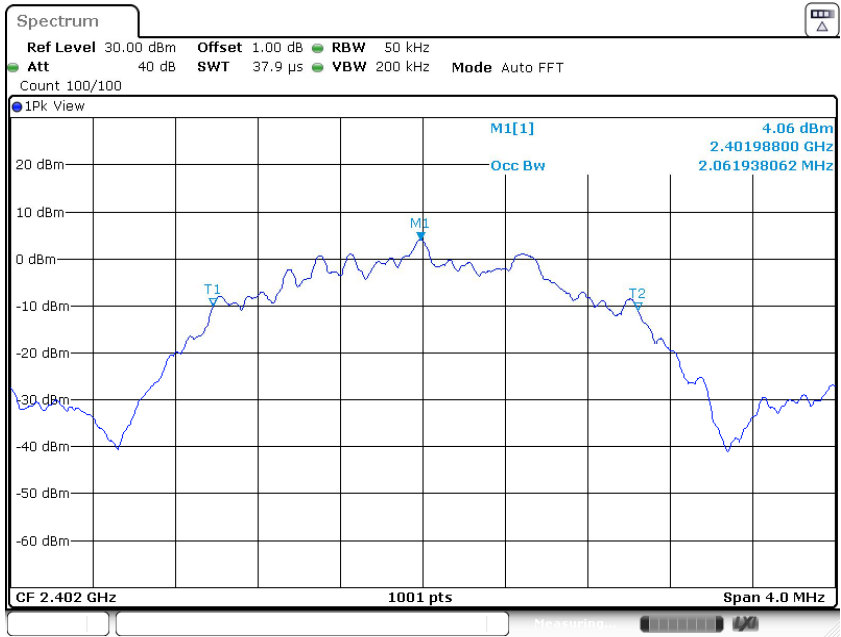
Date: 12 JUL 2022 16:38:07



2MHz Bandwidth
Low channel 2402MHz



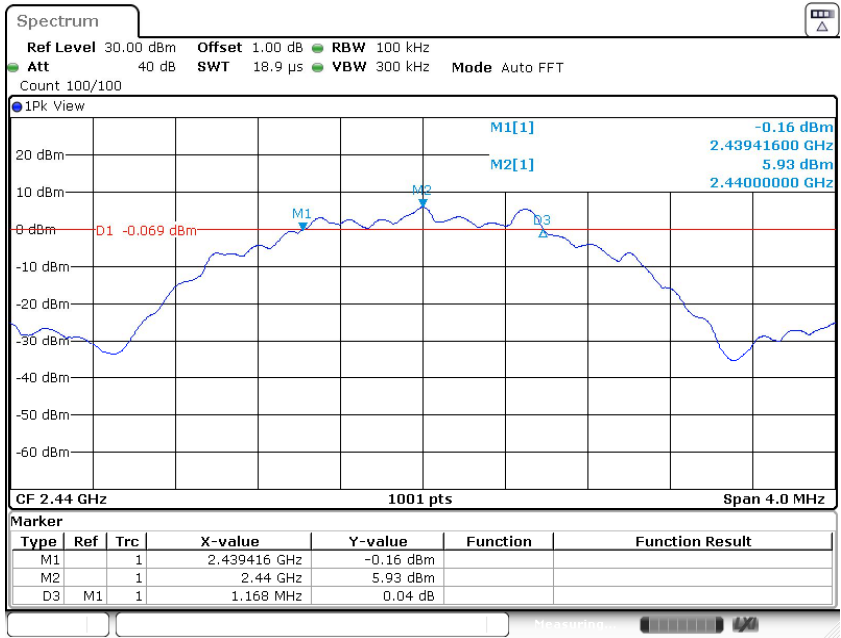
Date: 12 JUL 2022 16:39:19



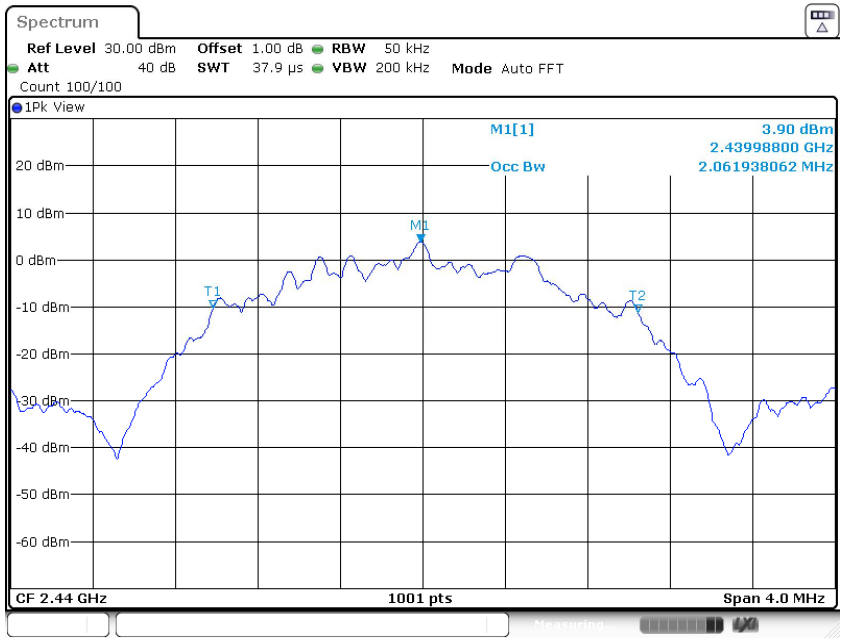
Date: 12 JUL 2022 16:39:29



Middle channel 2440MHz



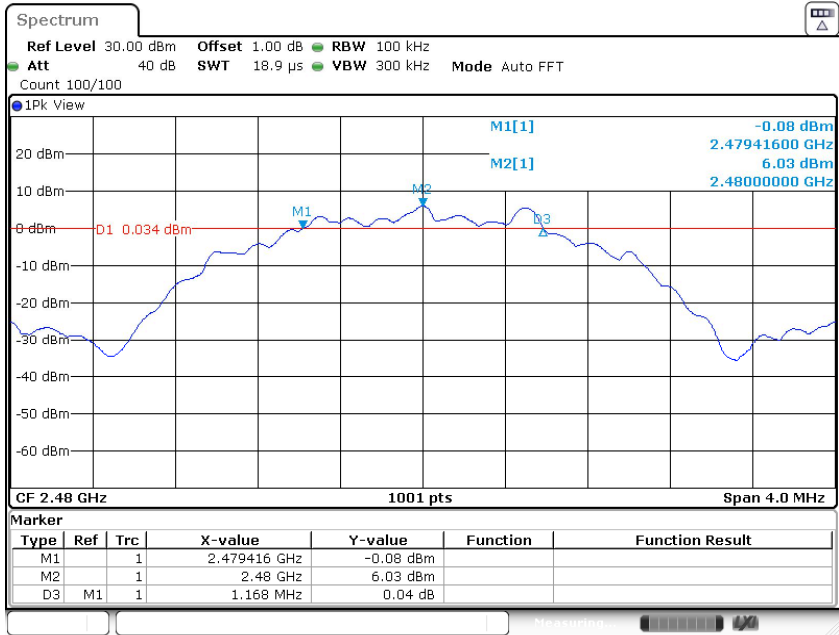
Date: 12.JUL.2022 16:41:03



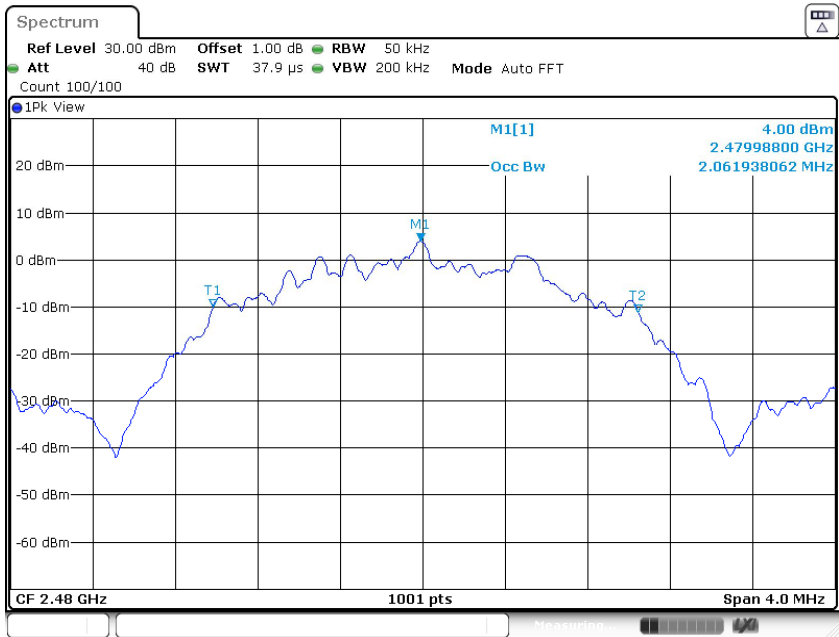
Date: 12.JUL.2022 16:41:13



High channel 2480MHz



Date: 12 JUL 2022 16:41:53



Date: 12 JUL 2022 16:42:03

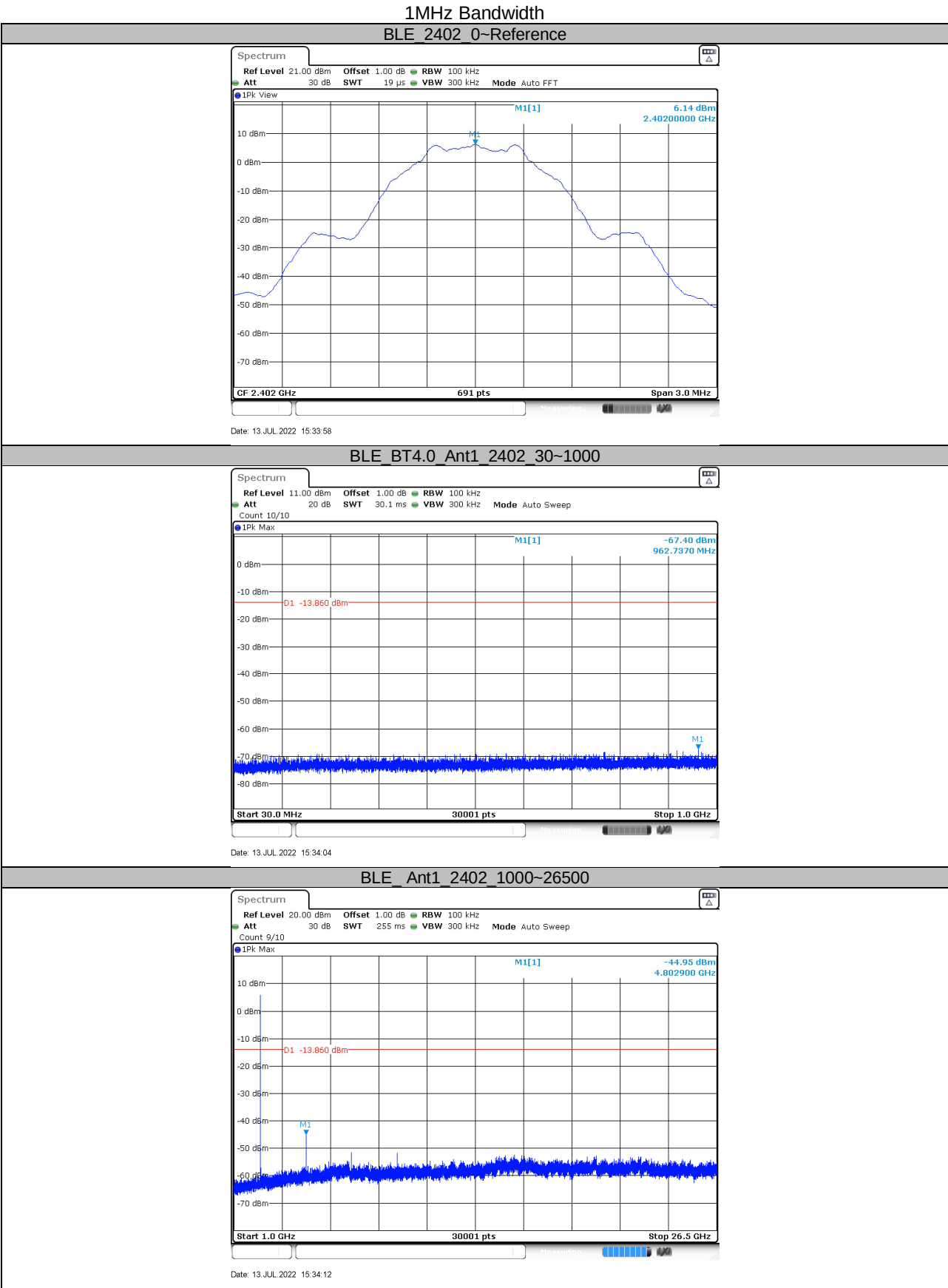
9.5 Spurious RF conducted emissions

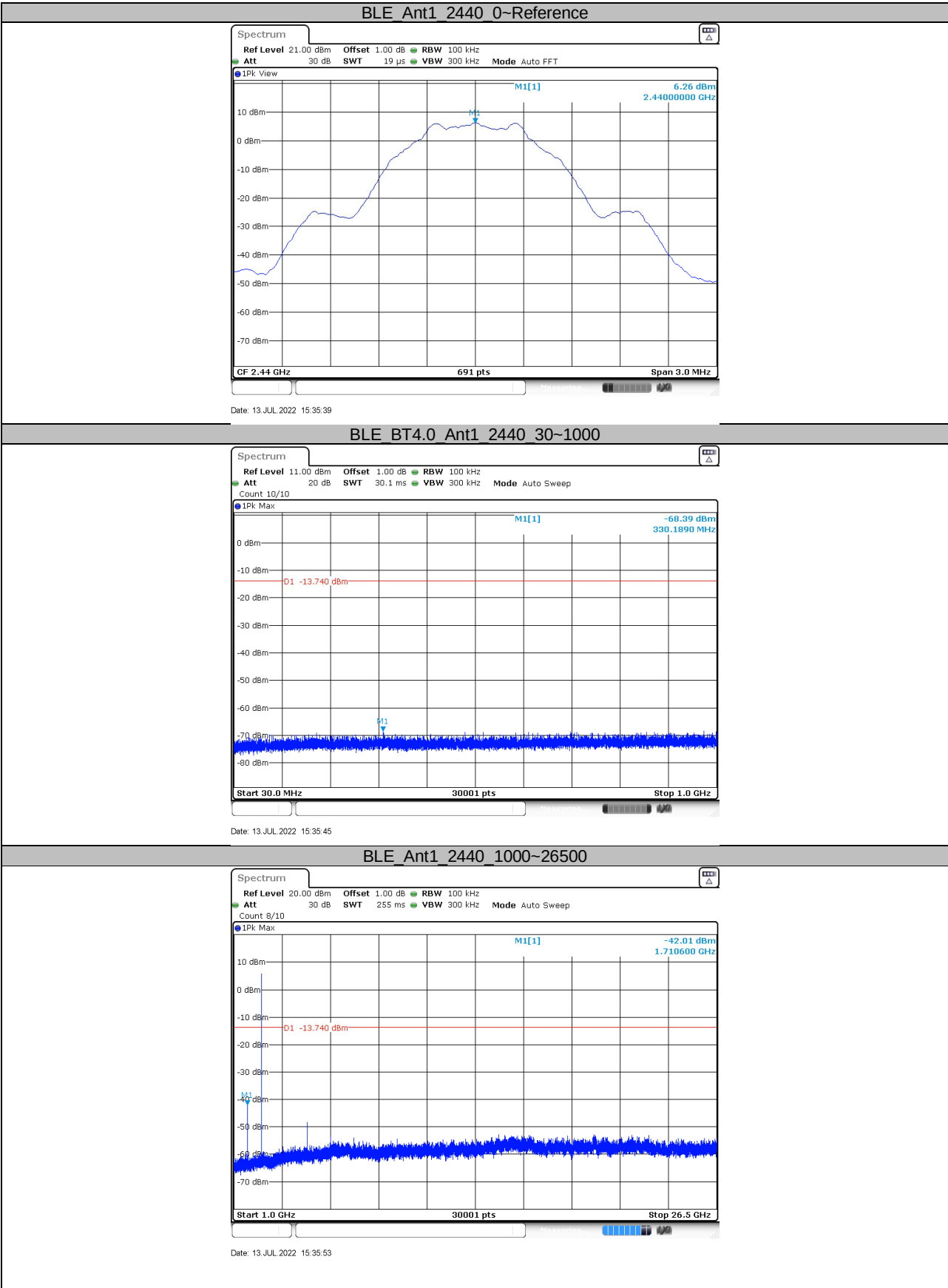
Test Method

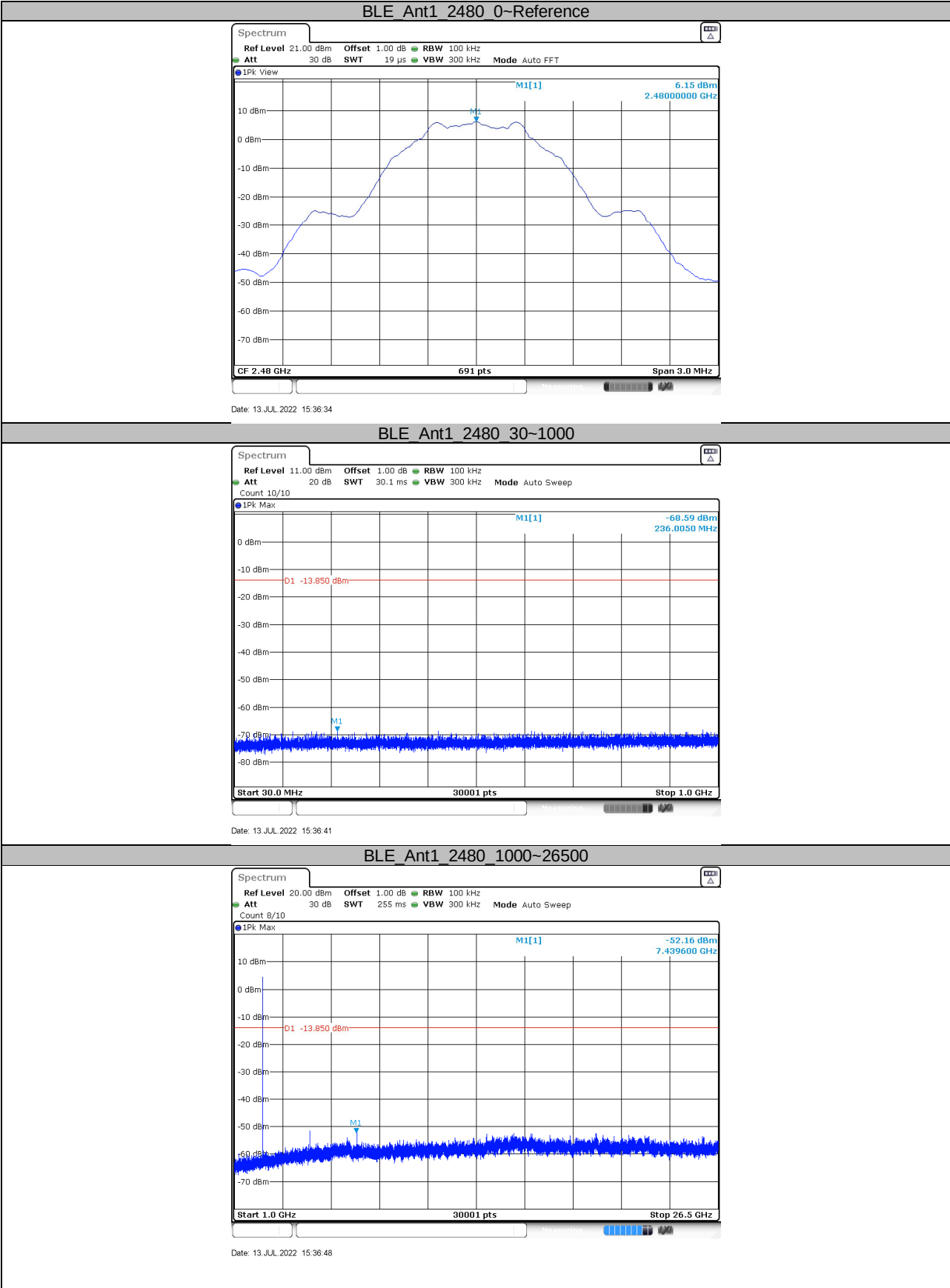
1. Establish a reference level by using the following procedure:
 - a. Set RBW=100 kHz. VBW $\geq$ 3RBW. Detector =peak, Sweep time = auto couple, Trace mode = max hold.
 - b. Allow trace to fully stabilize, use the peak marker function to determine the maximum PSD level.
2. Use the maximum PSD level 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

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

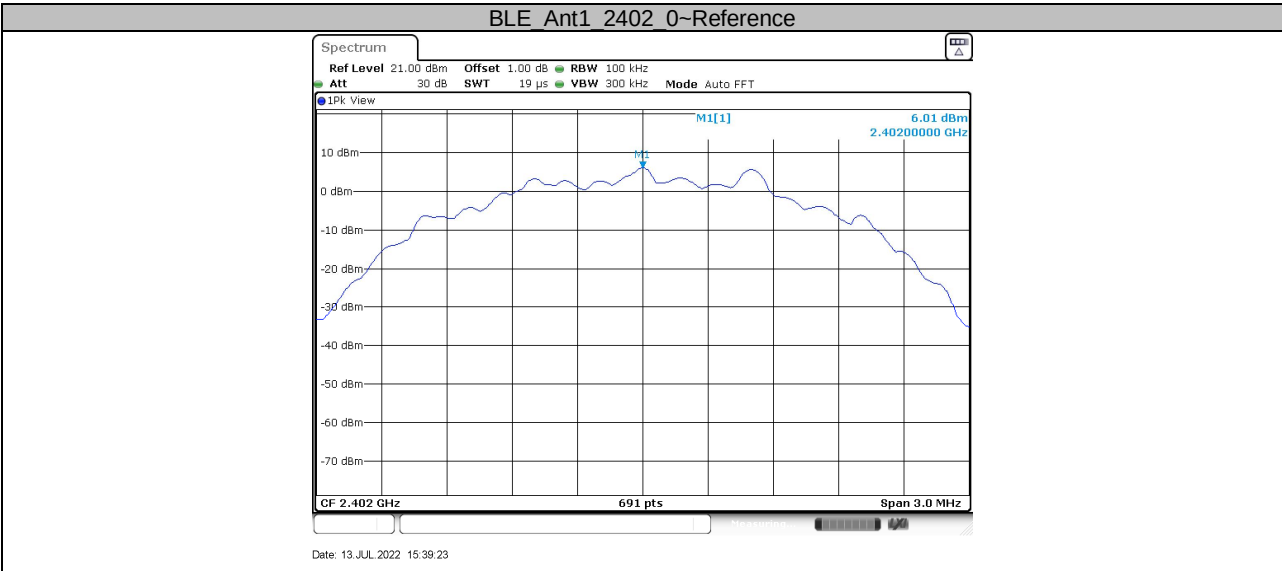




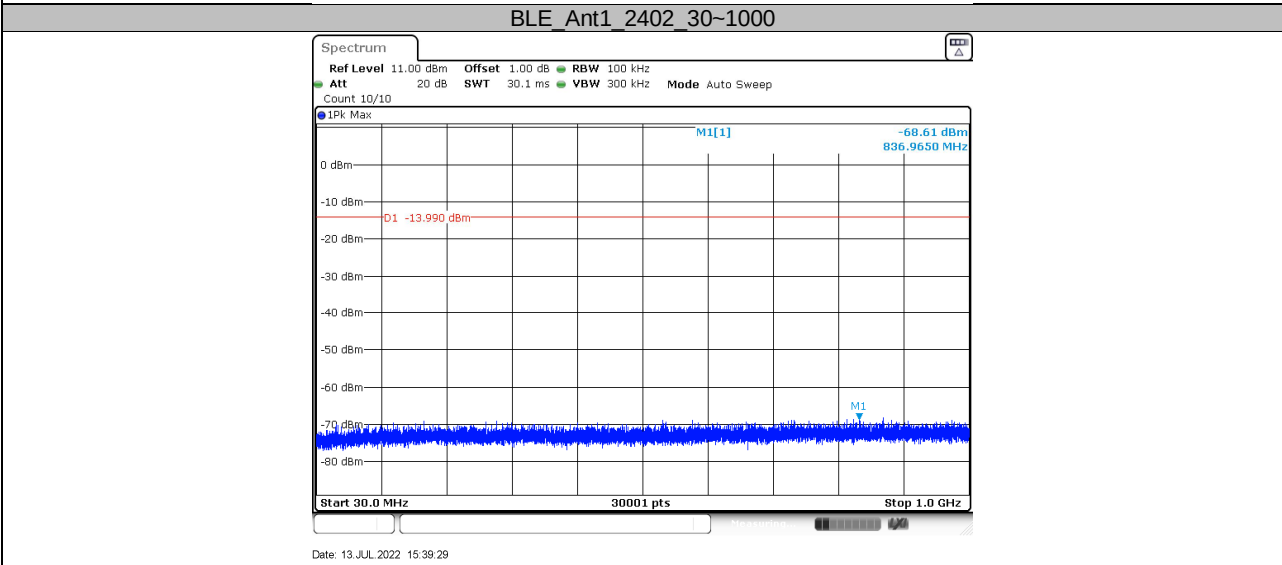




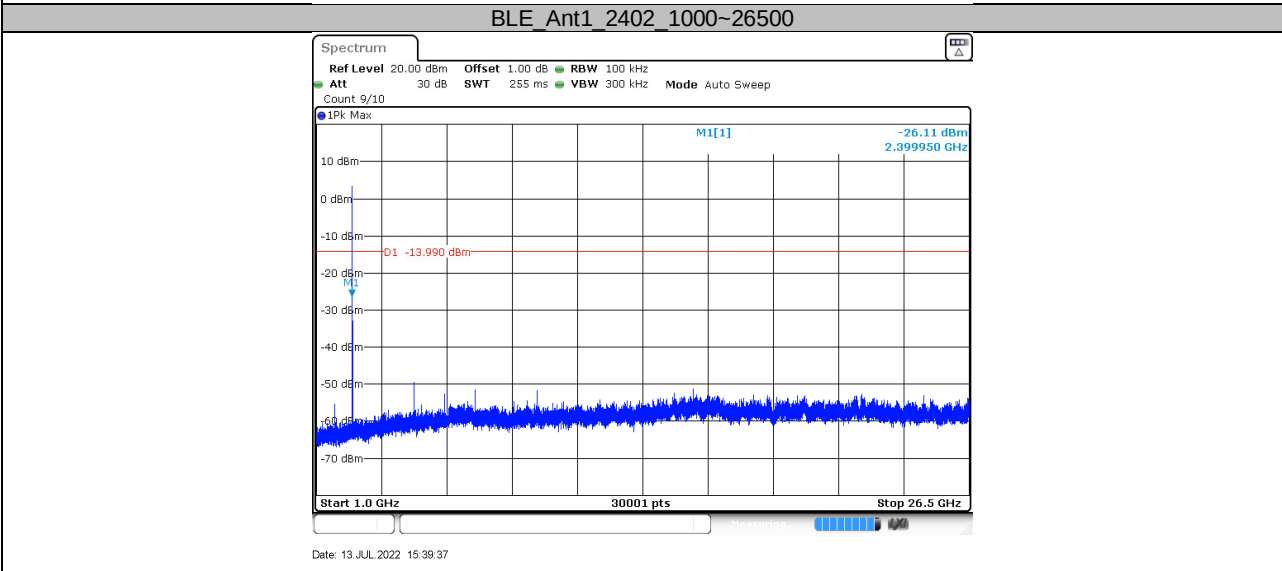
2MHz Bandwidth
BLE_Ant1_2402_0-Reference

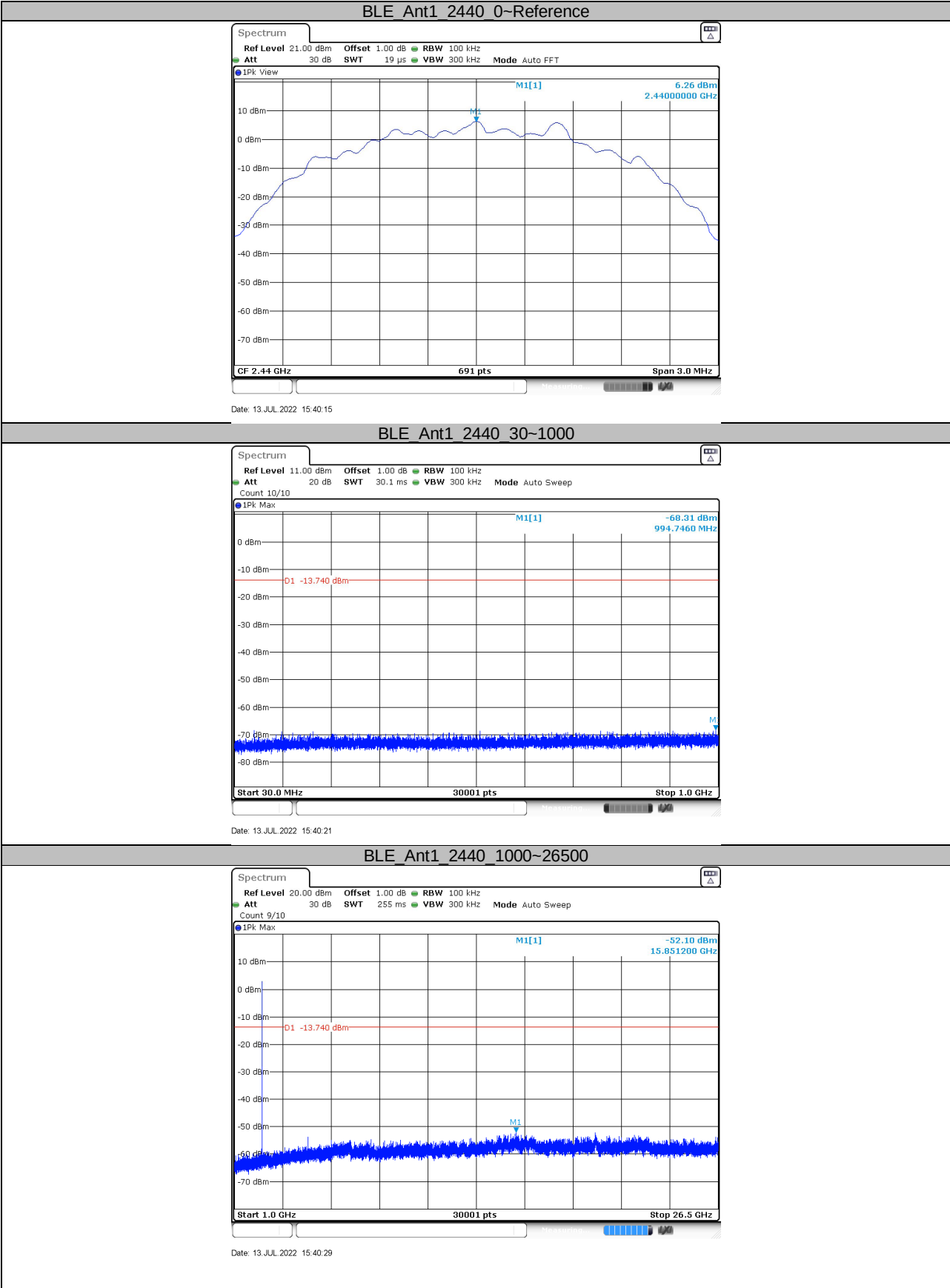


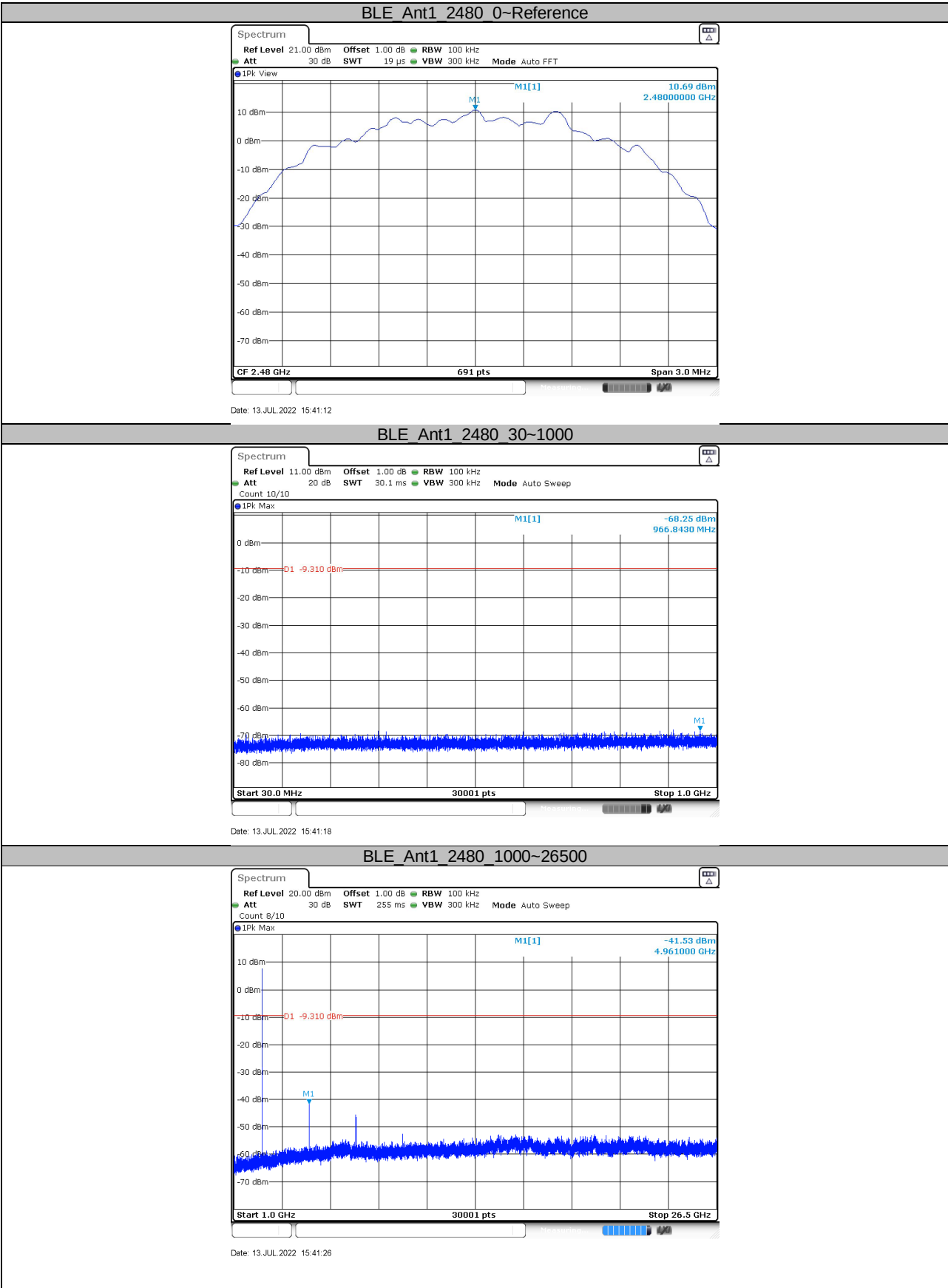
BLE_Ant1_2402_30-1000



BLE_Ant1_2402_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 $\geq$ 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.

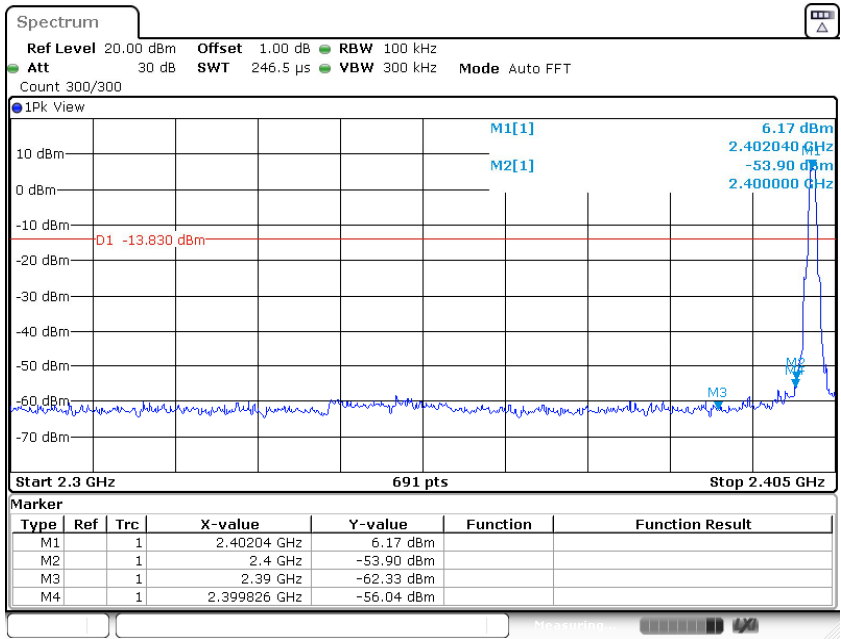
Limit

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



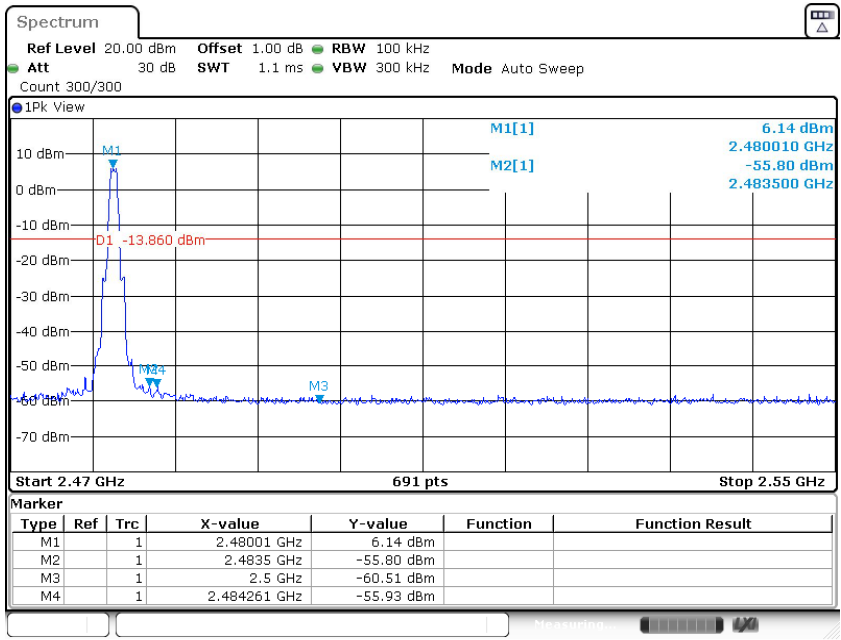
Band edge testing

1MHz Bandwidth
2402MHz



Date: 13.JUL.2022 15:33:52

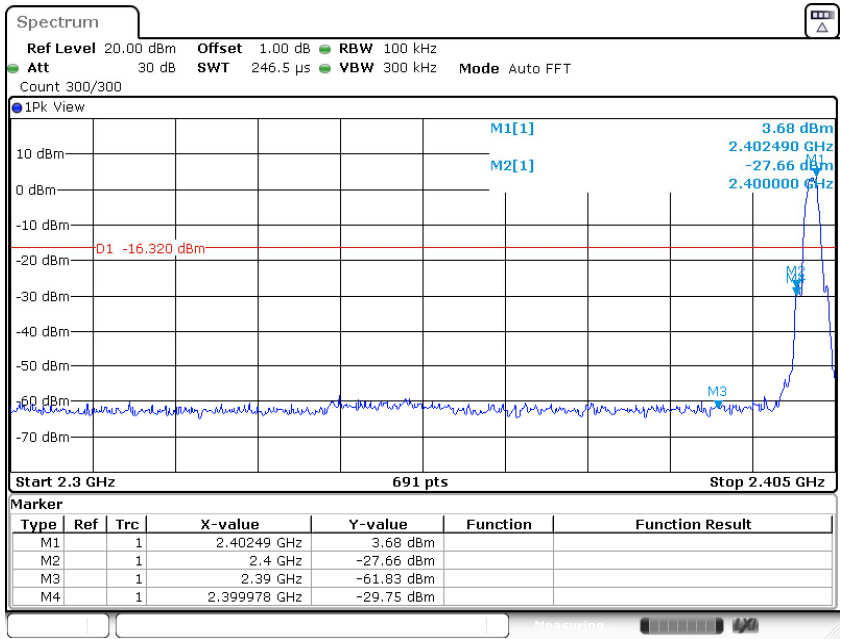
2480MHz



Date: 13.JUL.2022 15:36:29

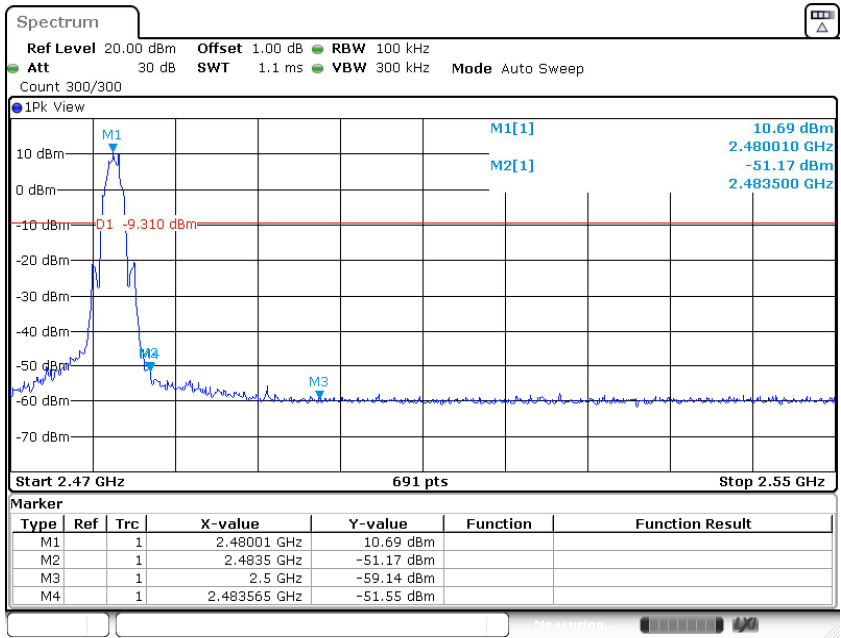


2MHz Bandwidth
2402MHz



Date: 13.JUL.2022 15:39:18

2480MHz



Date: 13.JUL.2022 15:41:07

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 ≥ 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 = 1 MHz.
- 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.

Limit

The radio emission outside the operating frequency band shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. Radiated emissions which fall in the restricted bands, as defined in section 15.205, must comply with the radiated emission limits specified in section 15.209.

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 root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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.

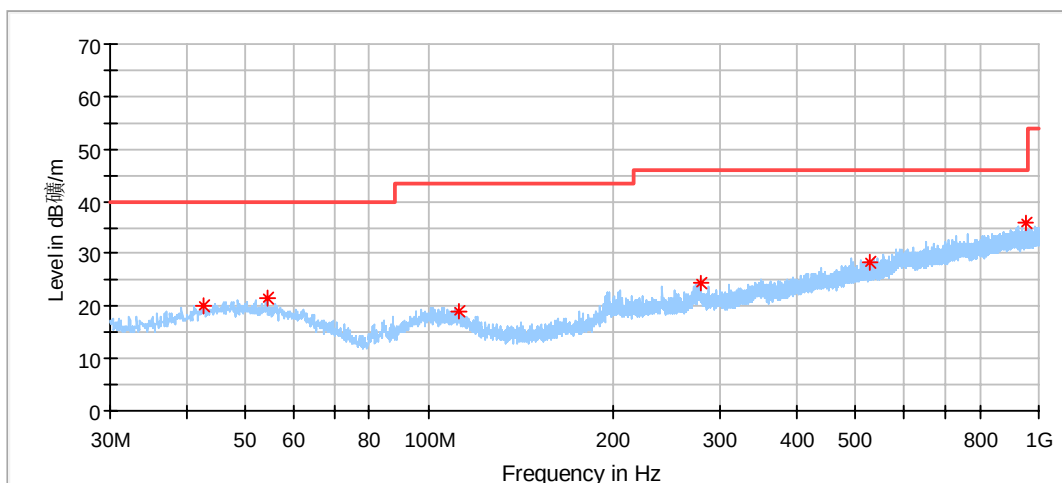
Transmitting spurious emission test result as below:

Only worst case 1MHz bandwidth test data was listed in this report.

EUT: Xiaomi Box 4K

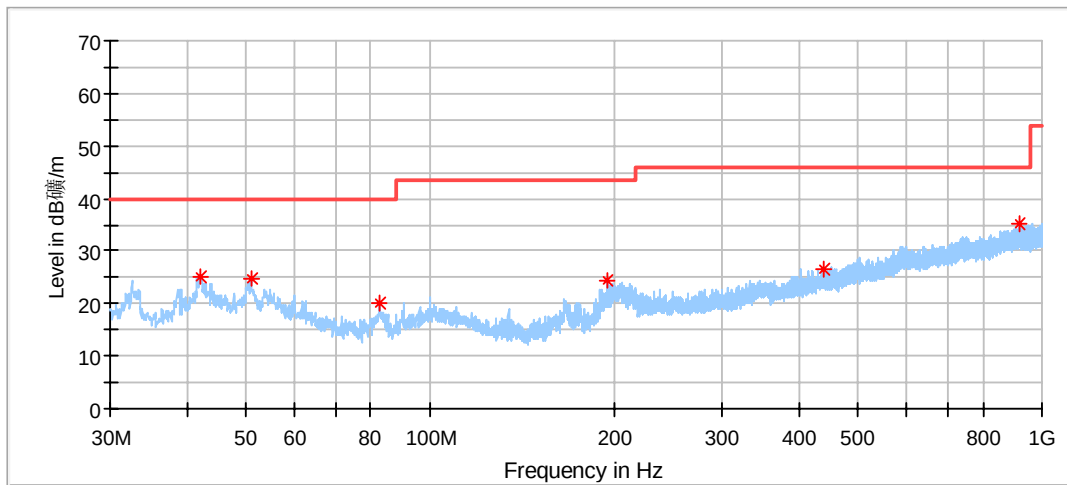
M/N: MDZ-28-AA

Operating Condition: Tx 2402MHz, lowest Channel



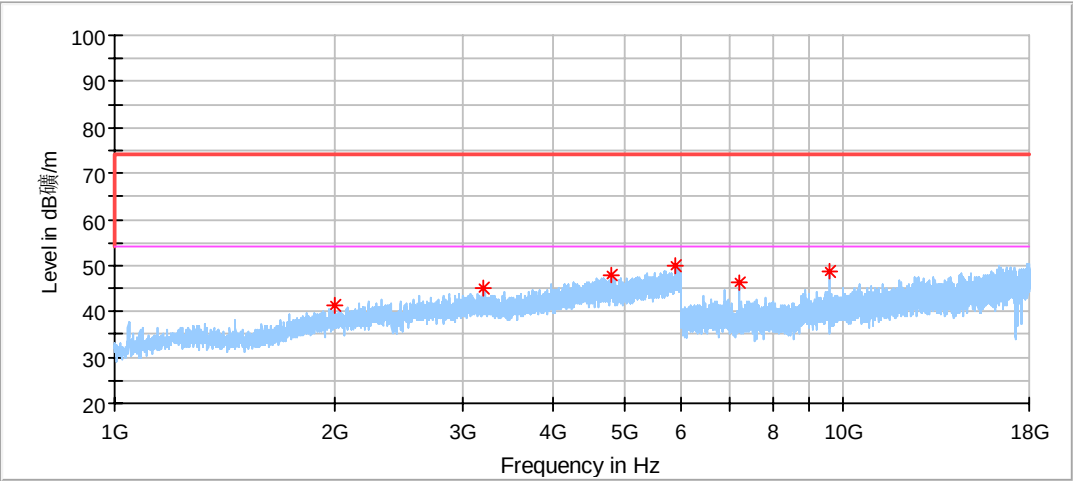
Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.717778	20.20	40.00	19.80	100.0	H	359.0	19.88
54.411667	21.67	40.00	18.33	100.0	H	131.0	20.37
111.641667	18.89	43.50	24.61	100.0	H	74.0	18.06
279.559444	24.54	46.00	21.46	100.0	H	237.0	20.38
526.855556	28.53	46.00	17.47	200.0	H	0.0	25.70
948.859444	35.96	46.00	10.04	200.0	H	132.0	31.44



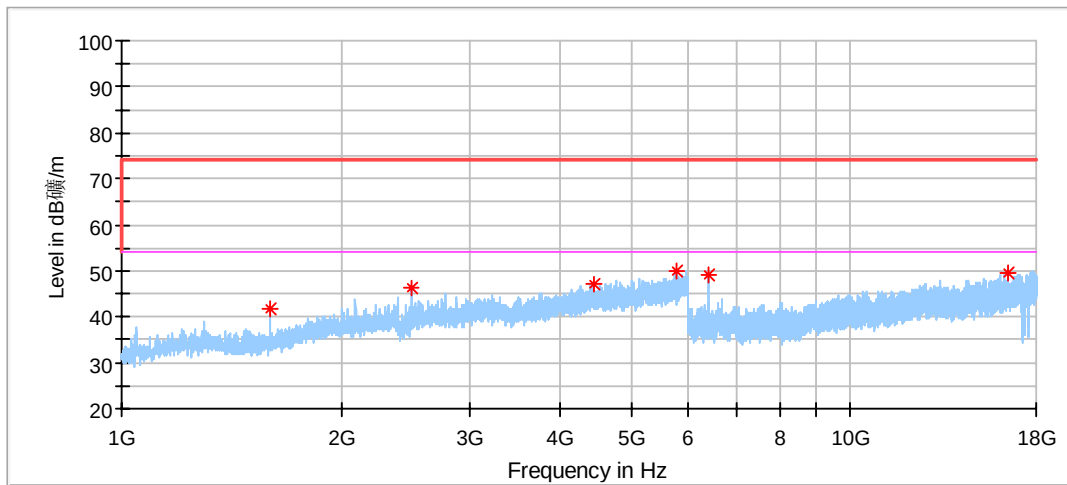
Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
42.286667	25.07	40.00	14.93	100.0	V	47.0	19.88
51.016667	24.69	40.00	15.31	100.0	V	150.0	20.54
82.595556	19.94	40.00	20.06	100.0	V	68.0	14.05
195.277222	24.24	43.50	19.26	100.0	V	123.0	18.63
439.663333	26.51	46.00	19.49	100.0	V	86.0	24.11
918.304444	35.33	46.00	10.67	100.0	V	330.0	31.53



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2009.500000	41.33	74.00	32.67	150.0	H	80.0	-4.14
3199.000000	44.99	74.00	29.01	150.0	H	169.0	-0.40
4804.000000	48.05	74.00	25.95	150.0	H	312.0	3.86
5889.000000	49.89	74.00	24.11	150.0	H	187.0	6.52
7206.000000	46.32	74.00	27.68	150.0	H	216.0	8.49
9608.000000	48.92	74.00	25.08	150.0	H	330.0	12.20

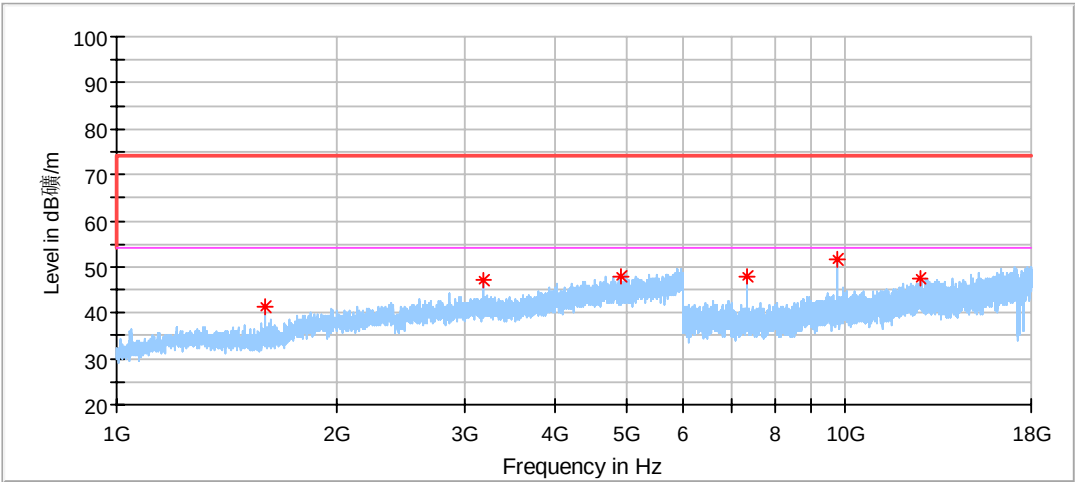


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1599.500000	41.81	74.00	32.19	150.0	V	15.0	-8.18
2500.500000	46.28	74.00	27.72	150.0	V	317.0	-2.35
4449.000000	46.88	74.00	27.12	150.0	V	255.0	2.84
5784.500000	50.00	74.00	24.00	150.0	V	255.0	6.08
6383.000000	49.10	74.00	24.90	150.0	V	162.0	8.72
16466.500000	49.52	74.00	24.48	150.0	V	0.0	20.53

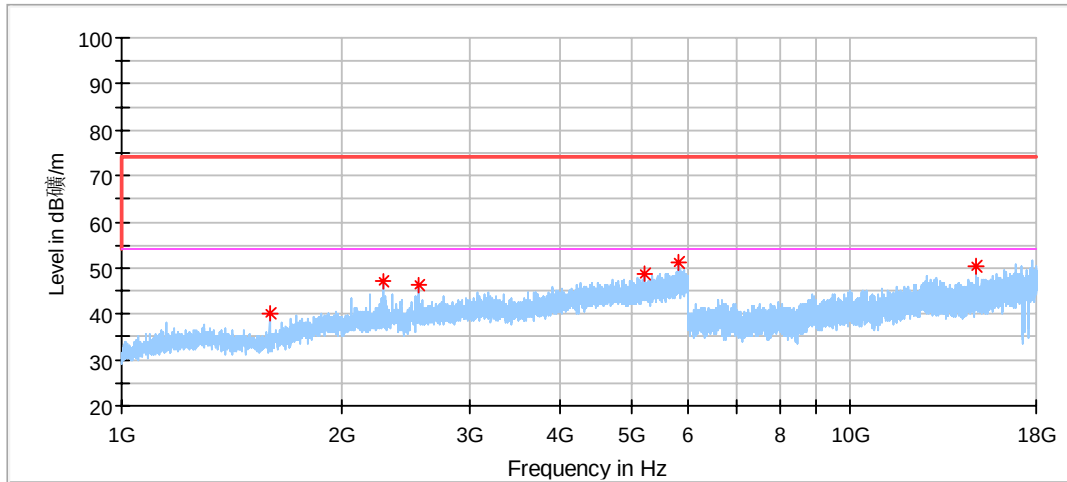


EUT: Xiaomi Box 4K
M/N: MDZ-28-AA
Operating Condition: Tx 2440MHz, Middle Channel



Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1598.500000	41.40	74.00	32.60	150.0	H	139.0	-8.19
3189.000000	47.21	74.00	26.79	150.0	H	335.0	-0.35
4911.000000	47.80	74.00	26.20	150.0	H	23.0	3.87
7321.000000	47.82	74.00	26.18	150.0	H	105.0	8.84
9760.000000	51.41	74.00	22.59	150.0	H	105.0	12.54
12653.500000	47.53	74.00	26.47	150.0	H	327.0	16.66

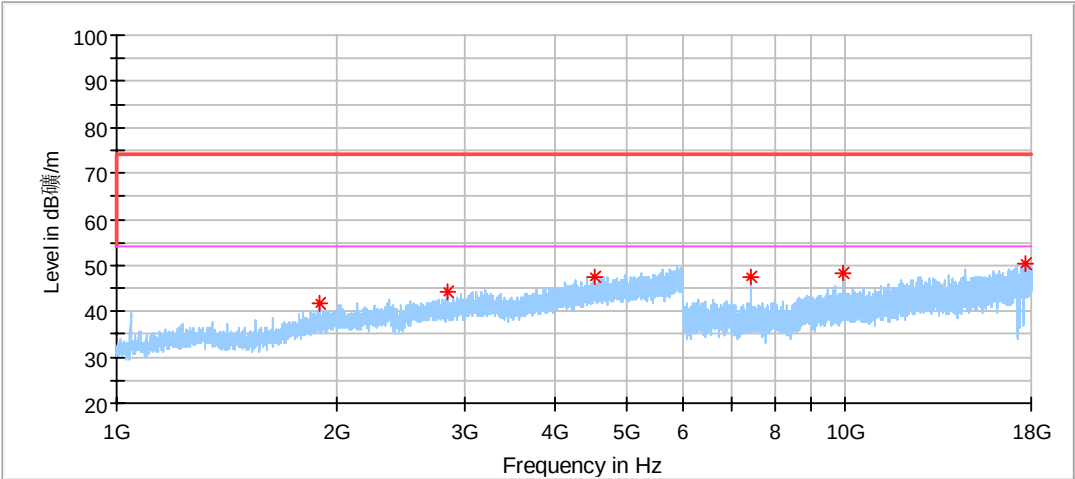


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1595.500000	39.96	74.00	34.04	150.0	V	94.0	-8.21
2291.500000	47.08	74.00	26.92	150.0	V	192.0	-2.99
2558.500000	46.31	74.00	27.69	150.0	V	350.0	-2.06
5219.500000	48.78	74.00	25.22	150.0	V	32.0	5.14
5822.000000	51.05	74.00	22.95	150.0	V	4.0	6.21
14895.500000	50.30	74.00	23.70	150.0	V	272.0	17.29

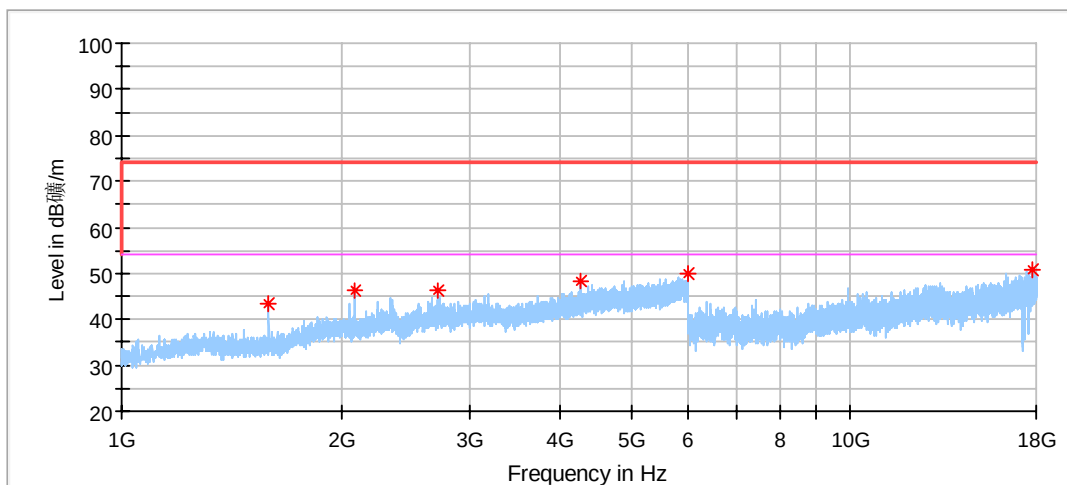


EUT: Xiaomi Box 4K
M/N: MDZ-28-AA
Operating Condition: Tx 2480MHz, High Channel



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1905.000000	41.78	74.00	32.22	150.0	H	112.0	-4.52
2853.500000	44.20	74.00	29.80	150.0	H	148.0	-1.60
4524.500000	47.64	74.00	26.36	150.0	H	273.0	3.11
7439.500000	47.38	74.00	26.62	150.0	H	29.0	8.94
9920.000000	48.18	74.00	25.82	150.0	H	7.0	12.22
17710.000000	50.48	74.00	23.52	150.0	H	272.0	22.12



Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1594.000000	43.36	74.00	30.64	150.0	V	222.0	-8.22
2092.000000	46.06	74.00	27.94	150.0	V	312.0	-4.05
2717.500000	46.18	74.00	27.82	150.0	V	240.0	-1.87
4262.500000	48.29	74.00	25.71	150.0	V	356.0	2.27
6000.000000	50.06	74.00	23.94	150.0	V	204.0	6.77
17784.500000	50.65	74.00	23.35	150.0	V	29.0	22.23

Remark:

- (1) Data of measurement within frequency range 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.
- (2) 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	68-4-74-14-001	101782	1	2023-5-27
LISN	Rohde & Schwarz	ENV4200	68-4-87-14-001	100249	1	2023-5-27
LISN	Rohde & Schwarz	ENV432	68-4-87-16-001	101318	1	2023-5-27
LISN	Rohde & Schwarz	ENV216	68-4-87-14-002	100326	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	68-4-90-14-003-A10	Version9.15.00	N/A	N/A
Shielding Room	TDK	CSR #1	68-4-90-19-004	----	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	Version10.35.02	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 Conducted Emission in new shielding room 9kHz-150KHz	3.62dB
Radiated Spurious Emission 30MHz-1000MHz	Horizontal: 4.70dB; Vertical: 4.67dB;
Radiated Spurious Emission 1000MHz-18000MHz	Horizontal: 4.65dB; Vertical: 4.63dB;
Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10 ⁻⁷ or 1%