

**FCC/ISED - TEST REPORT**

Report Number : **68.950.20.0615.02** Date of Issue: June 22, 2022

Model : PI7L, Pi7S2L

Product Type : In-ear True Wireless Headphone

Applicant : B&W Group Ltd.

Address : Dale Road Worthing United Kingdom BN11 2BH

Factory : Charter Media (Dongguan) Co., Ltd.

Address : Dabandi Industrial Zone, Daning District, Humen Town,  
: 523930 Dongguan City, Guangdong Province,  
: PEOPLE'S REPUBLIC OF CHINA

Test Result : **n Positive      o Negative**

Total pages including Appendices : **50**

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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 514049

No.:

ISED#: 10320A



### 3 Description of the Equipment Under Test

|                            |                                                                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product:                   | In-ear True Wireless Headphone                                                                                                                                   |
| Model no/HVIN/PMN:         | PI7L, Pi7 S2L                                                                                                                                                    |
| FVIN:                      | V.1.0.X                                                                                                                                                          |
| FCC ID:                    | 2ACIX-PI7L                                                                                                                                                       |
| IC:                        | 11946B-PI7L                                                                                                                                                      |
| Options and accessories:   | Type-C Cable, Charging Case, Aux in Cable                                                                                                                        |
| Rating:                    | PI7L:<br>Earbud: 3.7VDC, 55mAh, 0.204Wh (Supplied by Built Li-ion battery)<br><br>Pi7 S2L:<br>Earbud: 3.85VDC, 70mAh, 0.270Wh (Supplied by Built Li-ion battery) |
| RF Transmission Frequency: | 2402MHz-2480MHz                                                                                                                                                  |
| No. of Operated Channel:   | 40                                                                                                                                                               |
| Modulation:                | GFSK                                                                                                                                                             |
| Antenna Type:              | Mono pole antenna                                                                                                                                                |
| Antenna Gain:              | 1.0dBi for PI7L, -3.0dBi for Pi7 S2L                                                                                                                             |
| Description of the EUT:    | The Equipment Under Test (EUT) is an In-ear True Wireless Headphone support Bluetooth function.                                                                  |

## 4 Summary of Test Standards

| Test Standards                                 |                                                                                                                              |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| FCC Part 15 Subpart C<br>10-1-2020 Edition     | PART 15 - RADIO FREQUENCY DEVICES<br>Subpart C - Intentional Radiators                                                       |
| RSS-Gen<br>Issue 5, Amendment 1,<br>March 2019 | General Requirements for the Certification of Radio Apparatus                                                                |
| RSS-247 Issue 2<br>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<br>AC power port               | --            | N/A         |
| §15.247 (b) (1)                                        | RSS-247 Clause 5.4(d)                  | Conducted peak output<br>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<br>separation                   | ---           | N/A         |
| §15.247(a)(1)(iii)                                     | RSS-247 Clause 5.1(d)                  | Number of hopping<br>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)<br>& RSS-GEN 6.7 | 6dB bandwidth and<br>99% Occupied<br>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<br>conducted emissions                | Site 1        | PASS        |
| §15.247(d)                                             | RSS-247 Clause 5.5                     | Band edge                                         | Site 1        | PASS        |
| §15.247(d) &<br>§15.209 &<br>§15.205                   | RSS-247 Clause 5.5 &<br>RSS-GEN 6.13   | Spurious radiated<br>emissions for<br>transmitter | Site 1        | PASS        |
| §15.203                                                | RSS-GEN 6.8                            | Antenna requirement                               | See<br>note 2 | PASS        |

Note 1: N/A=Not Applicable.

Note 2: The EUT uses a Mono pole antenna, which gain is 1.0dBi for PI7L, -3.0dBi for Pi7 S2L. 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: 2ACIX-PI7L, IC: 11946B-PI7L complies with Section 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C and RSS-247 issue 2 and RSS-Gen issue 5 rules.

PI7, Pi7 S2L is a Bluetooth Headset with Bluetooth 5.2, BLE supports 1MHz bandwidth and 2MHz bandwidth. The TX and RX range is 2402MHz-2480MHz.

The report base 68.950.20.0615.01 additional a model Pi7 S2L, was identical with PI7L except for battery of earbuds, antenna of earbuds and appearance of earbuds. Additional Antenna Power tests. Other the test data in this report was referred from 68.950.20.0615.01.

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: August 27, 2020

Testing Start Date: August 27, 2020

Testing End Date: October 15, 2020

Updated test date: April 18, 2022-June 10, 2022

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

Reviewed by:

Prepared by:

Tested by:



John Zhi  
EMC Project Manager



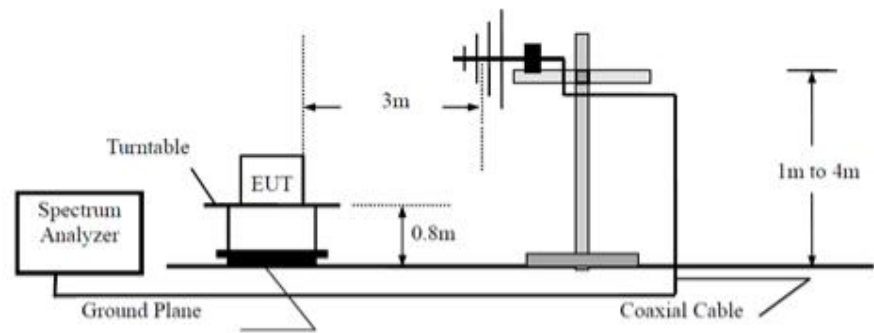
Mark Chen  
EMC Project Engineer



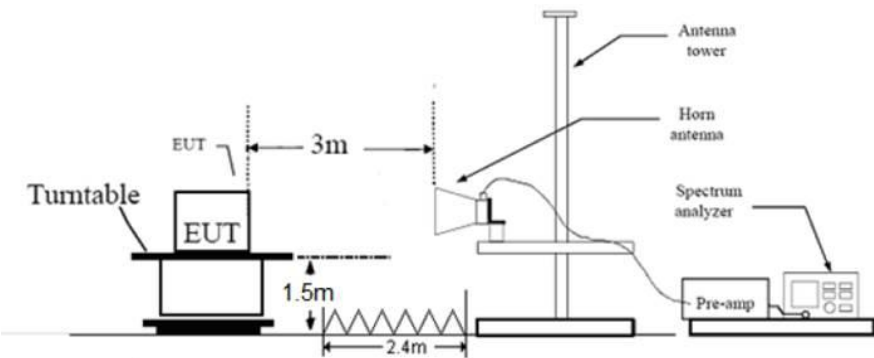
Carry Cai  
EMC Test Engineer

7 Test Setups

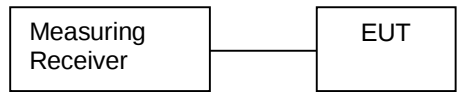
Below 1GHz



Above 1GHz



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: Bluetooth 3 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 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 $\geq$ 3RBW, Span $\geq$ 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<br>MHz | Limit<br>W | Limit<br>dBm |
|------------------------|------------|--------------|
| 2400-2483.5            | $\leq 1$   | $\leq 30$    |

#### For e.i.r.p

| Frequency Range<br>MHz | Limit<br>W | Limit<br>dBm |
|------------------------|------------|--------------|
| 2400-2483.5            | $\leq 4$   | $\leq 36$    |

PI7:

Test result as below table 1MHz Bandwidth

| Frequency<br>MHz       | Conducted<br>Peak Output<br>Power<br>dBm | e.i.r.p<br>dBm | Result |
|------------------------|------------------------------------------|----------------|--------|
| Low channel 2402MHz    | 8.24                                     | 9.24           | Pass   |
| Middle channel 2440MHz | 8.16                                     | 9.16           | Pass   |
| High channel 2480MHz   | 8.14                                     | 9.14           | Pass   |

Test result as below table 2MHz Bandwidth

| Frequency<br>MHz       | Conducted<br>Peak Output<br>Power<br>dBm | e.i.r.p<br>dBm | Result |
|------------------------|------------------------------------------|----------------|--------|
| Low channel 2402MHz    | 8.37                                     | 9.37           | Pass   |
| Middle channel 2440MHz | 8.16                                     | 9.16           | Pass   |
| High channel 2480MHz   | 8.12                                     | 9.12           | Pass   |

Pi7 S2L:

Test result as below table 1MHz Bandwidth

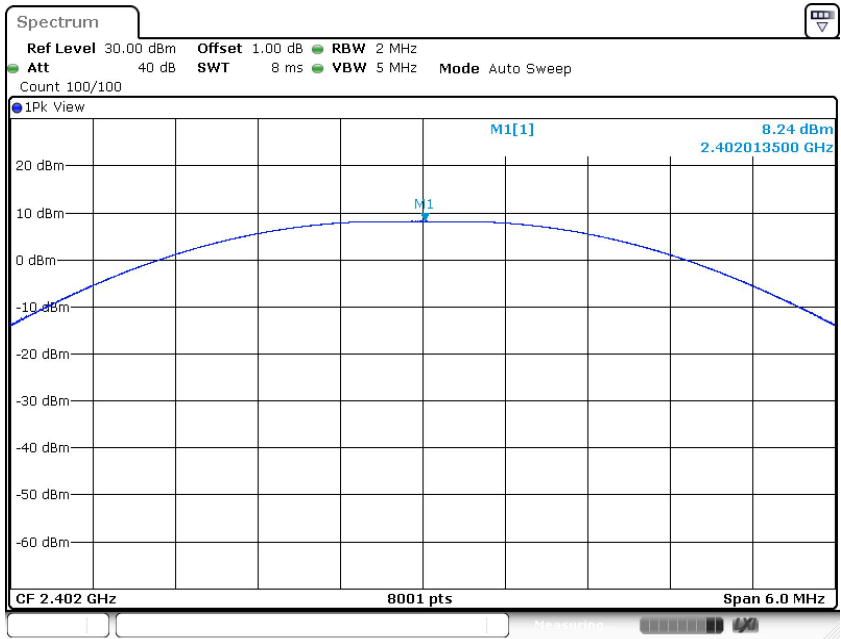
| Frequency<br>MHz       | Conducted<br>Peak Output<br>Power<br>dBm | e.i.r.p<br>dBm | Result |
|------------------------|------------------------------------------|----------------|--------|
| Low channel 2402MHz    | 5.34                                     | 2.34           | Pass   |
| Middle channel 2440MHz | 4.45                                     | 2.45           | Pass   |
| High channel 2480MHz   | 4.37                                     | 2.37           | Pass   |

Test result as below table 2MHz Bandwidth

| Frequency<br>MHz       | Conducted<br>Peak Output<br>Power<br>dBm | e.i.r.p<br>dBm | Result |
|------------------------|------------------------------------------|----------------|--------|
| Low channel 2402MHz    | 5.36                                     | 2.36           | Pass   |
| Middle channel 2440MHz | 4.48                                     | 1.48           | Pass   |
| High channel 2480MHz   | 4.4                                      | 1.4            | Pass   |

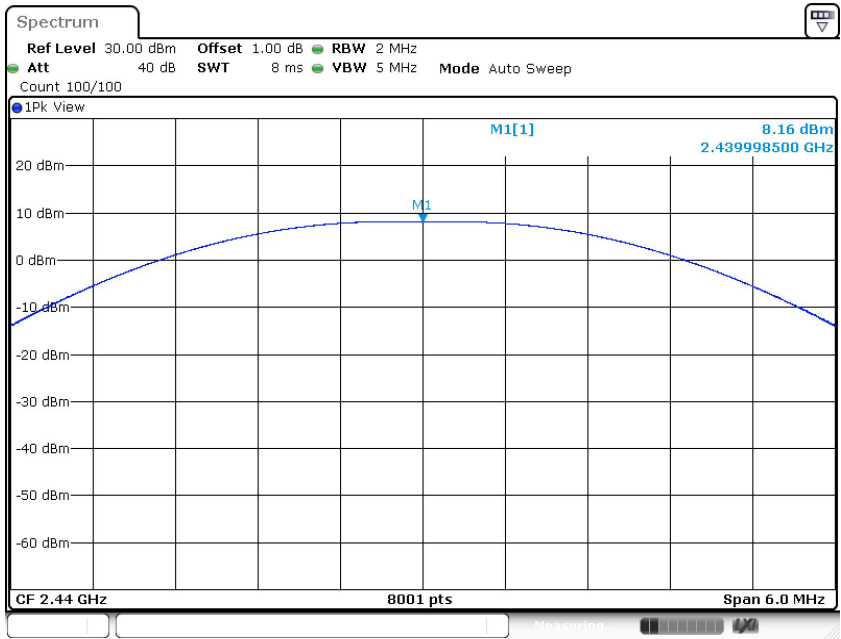


PI7:  
1MHz bandwidth  
Low channel 2402MHz



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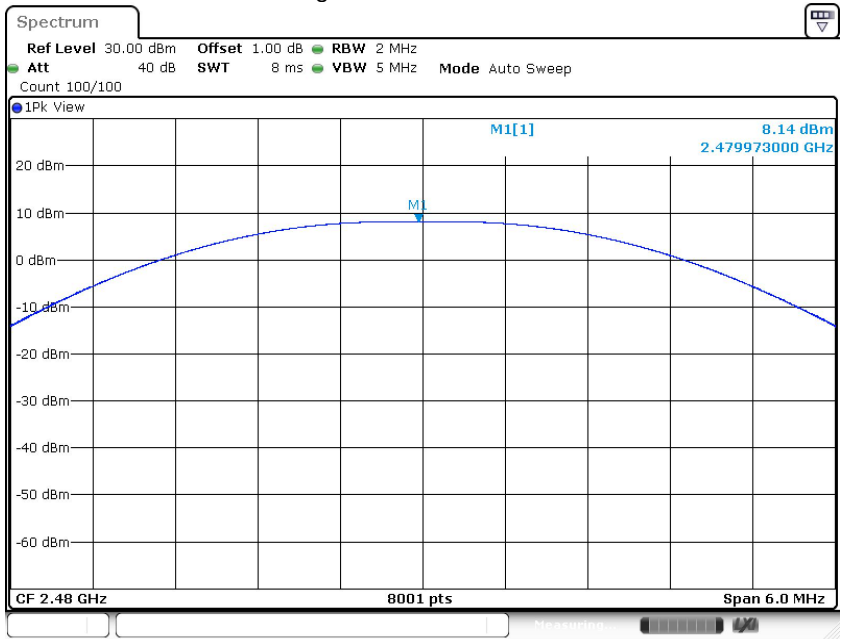
Middle channel 2440MHz



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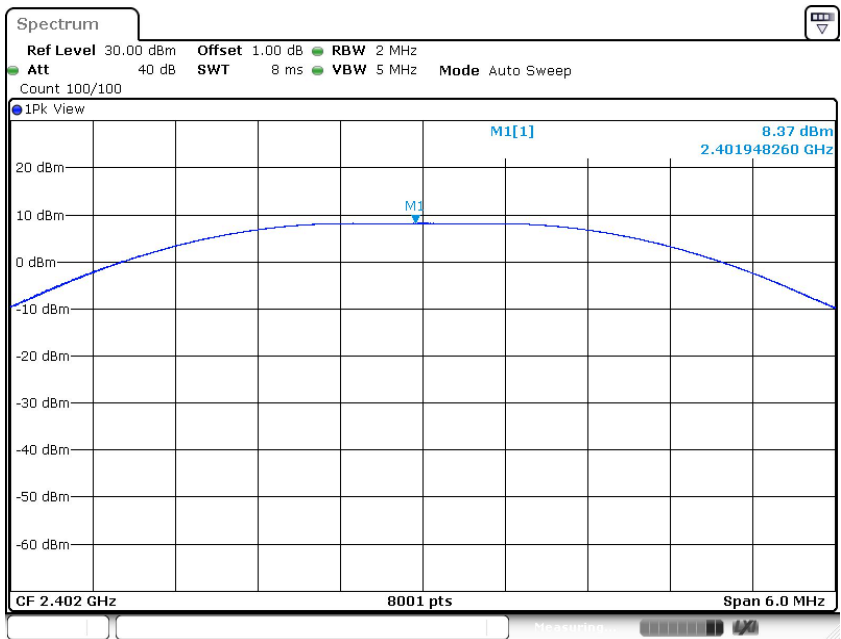


High channel 2480MHz



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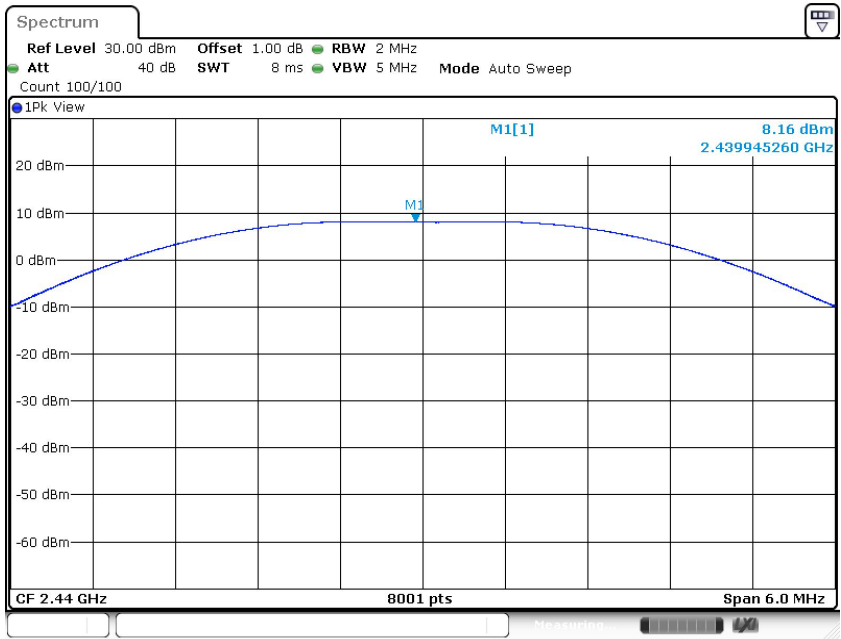
2MHz bandwidth  
Low channel 2402MHz



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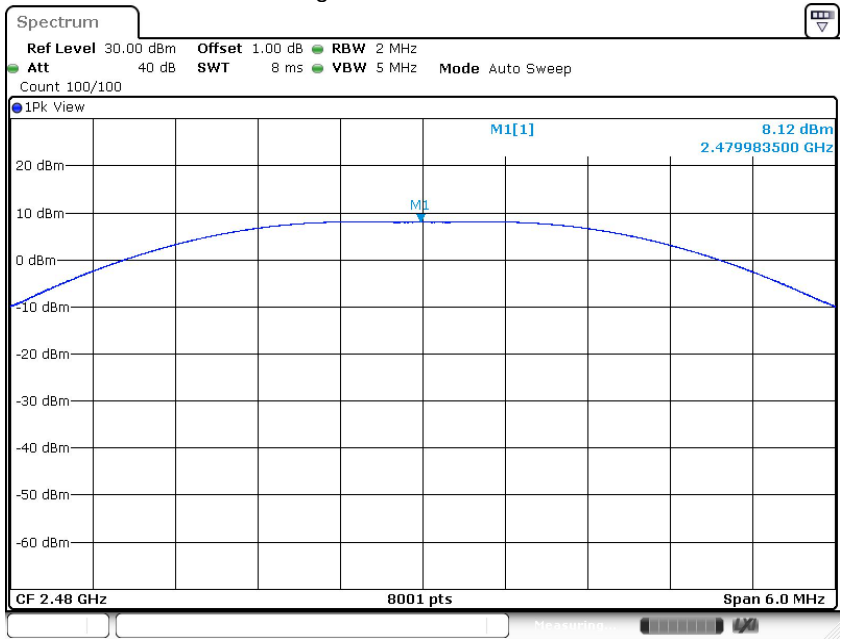


Middle channel 2440MHz



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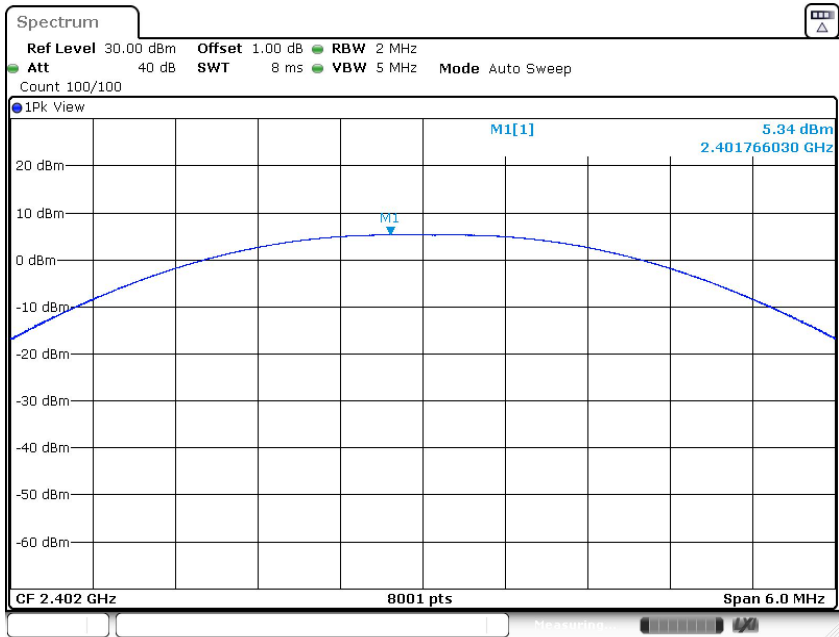
High channel 2480MHz



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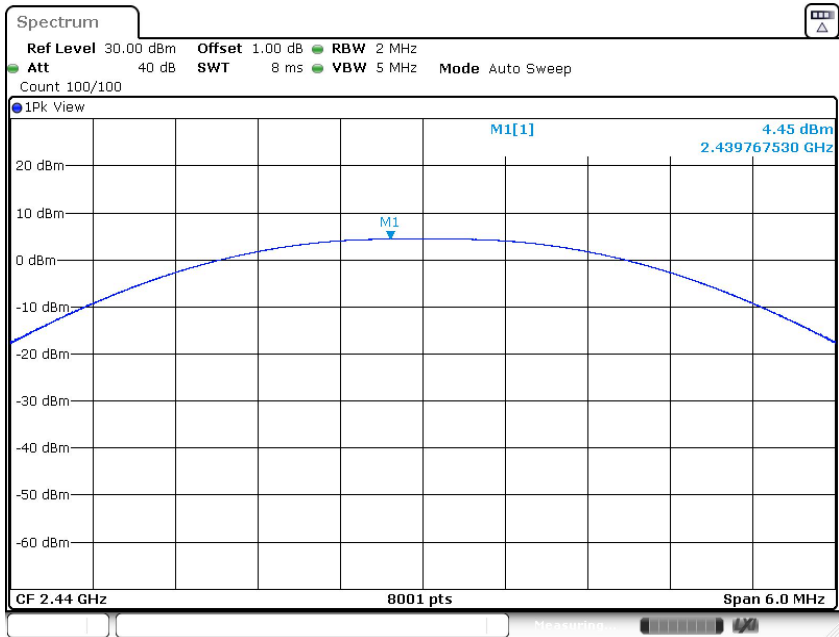


Pi7 S2L:  
1MHz bandwidth  
Low channel 2402MHz



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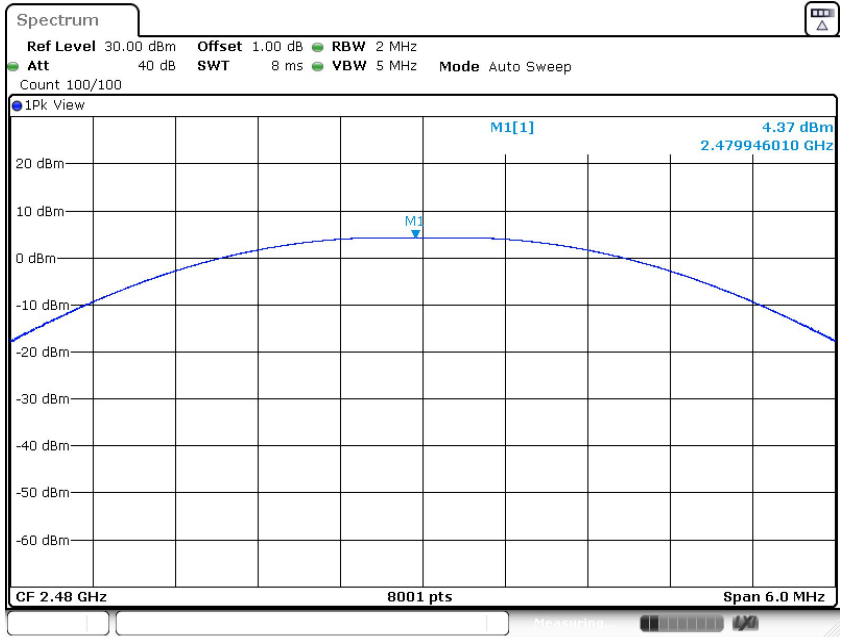
Middle channel 2440MHz



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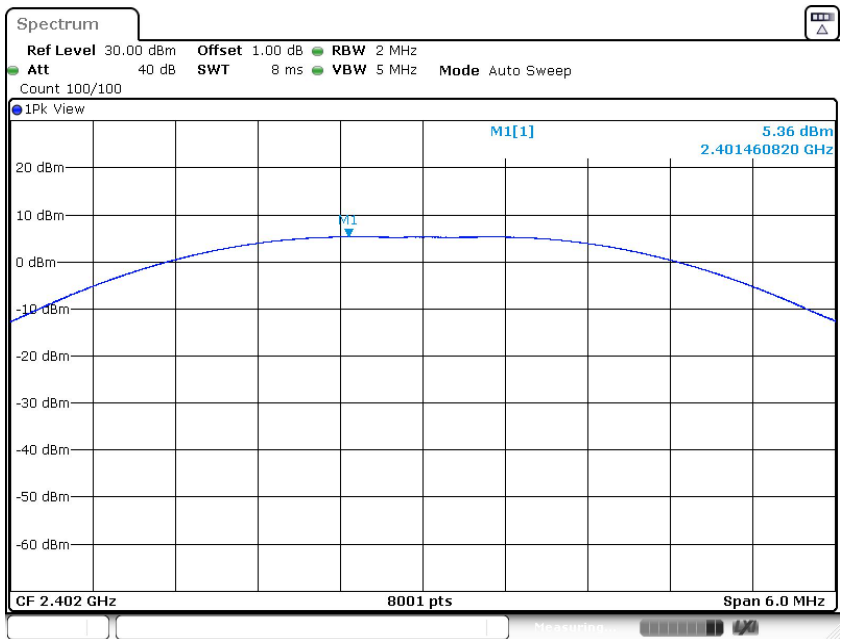


High channel 2480MHz



Date: 21.MAY.2022 16:43:17

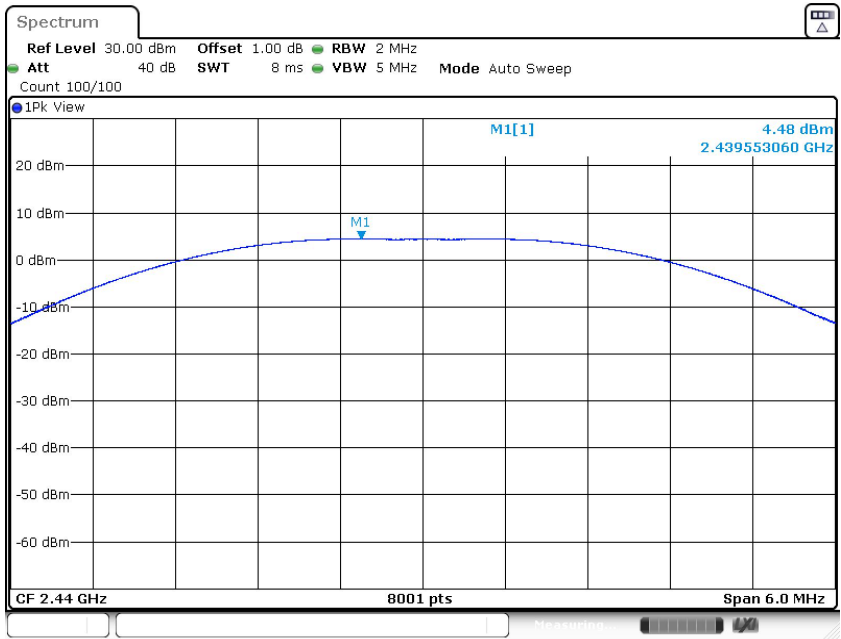
2MHz bandwidth  
Low channel 2402MHz



Date: 21.MAY.2022 16:44:14

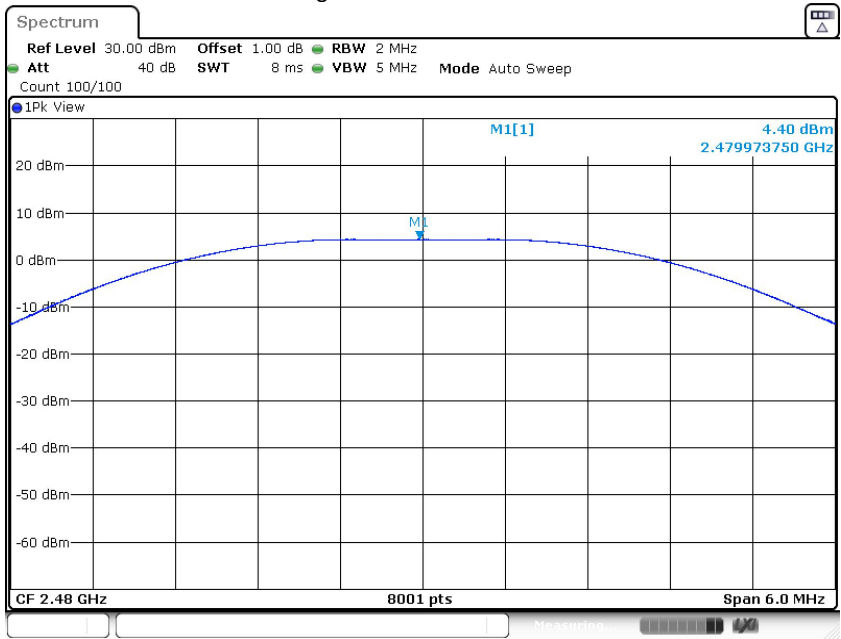


Middle channel 2440MHz



Date: 21.MAY.2022 16:45:17

High channel 2480MHz



Date: 21.MAY.2022 16:46:11

## 9.2 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<br>MHz       | Power spectral<br>density<br>dBm/3KHz | Result |
|------------------------|---------------------------------------|--------|
| Top channel 2402MHz    | -7.08                                 | Pass   |
| Middle channel 2440MHz | -7.05                                 | Pass   |
| Bottom channel 2480MHz | -6.94                                 | Pass   |

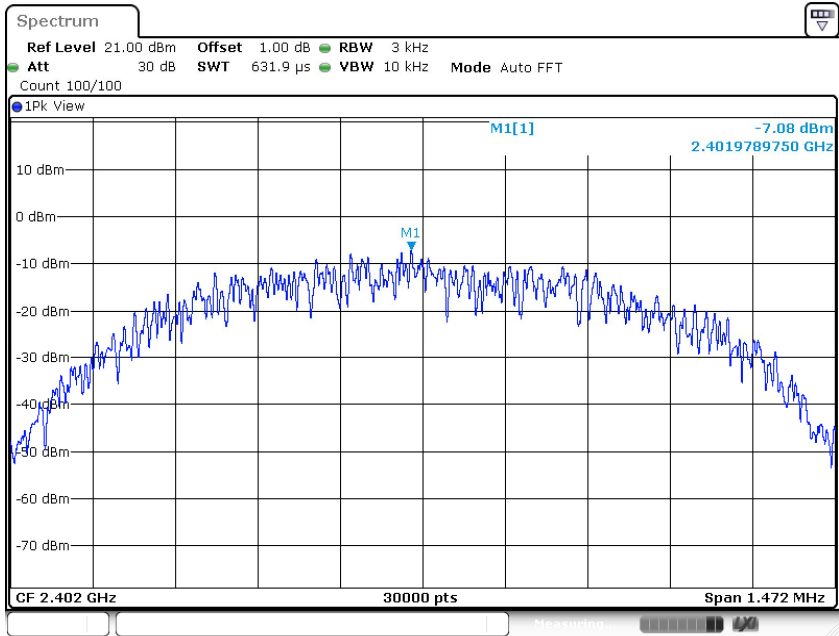
#### 2MHz Bandwidth

##### Test result

| Frequency<br>MHz       | Power spectral<br>density<br>dBm/3KHz | Result |
|------------------------|---------------------------------------|--------|
| Top channel 2402MHz    | -9.84                                 | Pass   |
| Middle channel 2440MHz | -10.02                                | Pass   |
| Bottom channel 2480MHz | -9.93                                 | Pass   |

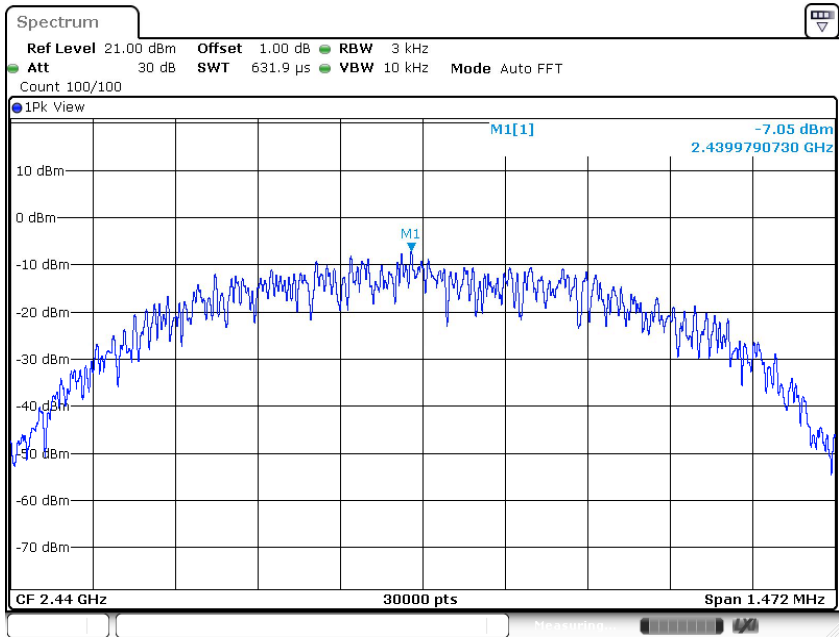


1MHz Bandwidth  
Low channel 2402MHz



Date: 23.SEP.2020 13:53:36

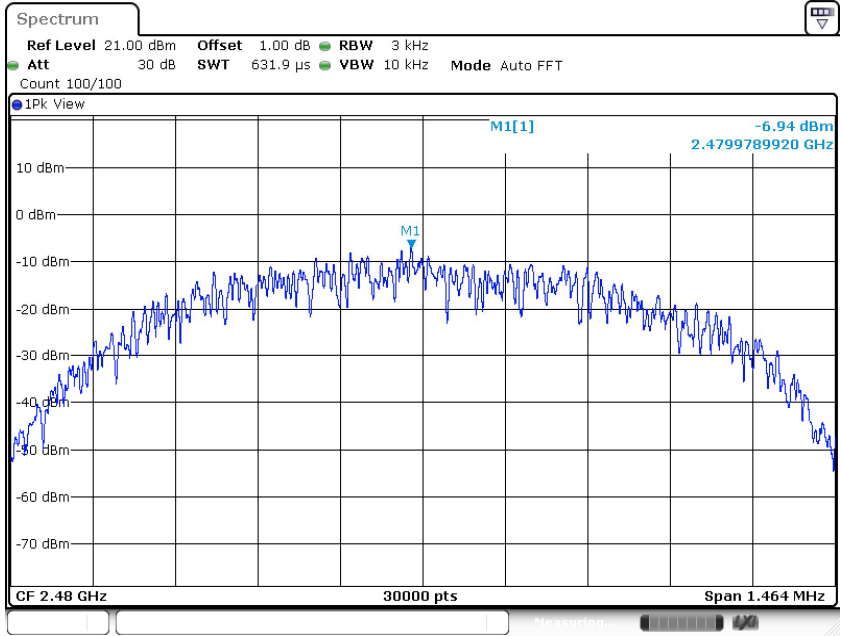
Middle channel 2440MHz



Date: 23.SEP.2020 13:50:23

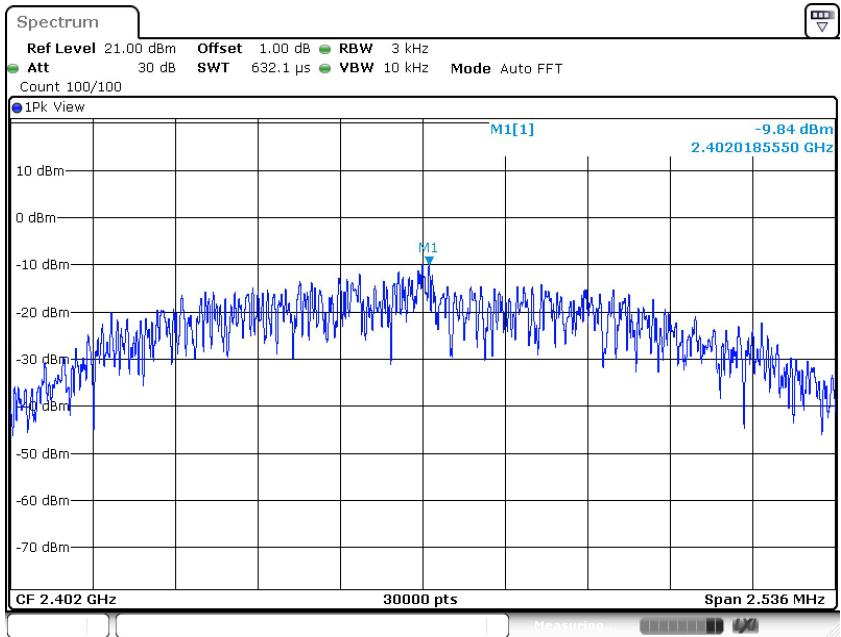


High channel 2480MHz



Date: 23.SEP.2020 13:51:50

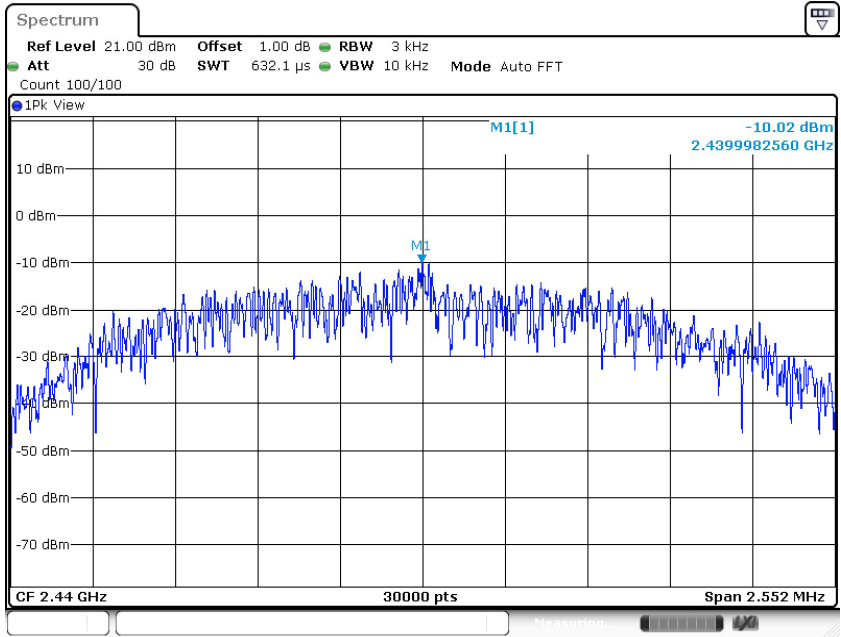
2MHz Bandwidth  
Low channel 2402MHz



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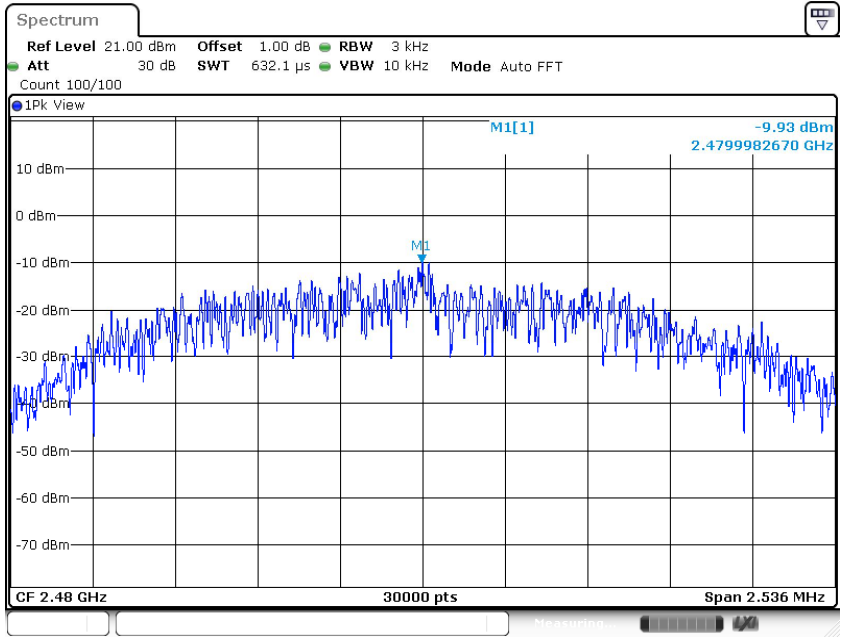


Middle channel 2440MHz



Date: 23.SEP.2020 13:56:47

High channel 2480MHz



Date: 23.SEP.2020 13:57:34

### 9.3 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  $\geq$  6 dB.
3. Allow the trace to stabilize, record the X dB Bandwidth value.

#### Limit

Limit [kHz]

$\geq 500$

#### 1MHz Bandwidth

##### Test result

| Frequency<br>MHz       | 6dB bandwidth<br>kHz | 99% bandwidth<br>kHz | Result |
|------------------------|----------------------|----------------------|--------|
| Bottom channel 2402MHz | 736                  | 1047                 | Pass   |
| Middle channel 2440MHz | 736                  | 1043                 | Pass   |
| Top channel 2480MHz    | 732                  | 1039                 | Pass   |

#### 2MHz Bandwidth

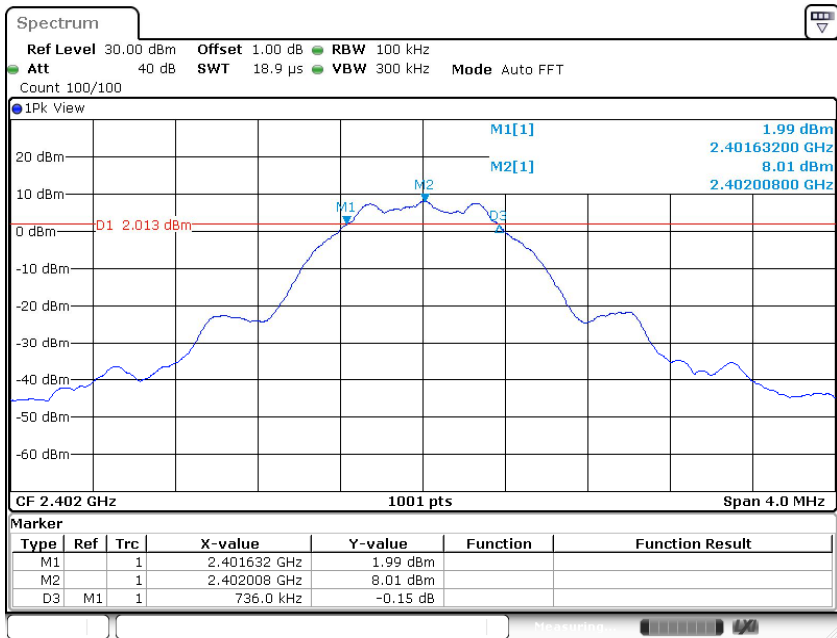
##### Test result

| Frequency<br>MHz       | 6dB bandwidth<br>kHz | 99% bandwidth<br>kHz | Result |
|------------------------|----------------------|----------------------|--------|
| Bottom channel 2402MHz | 1268                 | 2062                 | Pass   |
| Middle channel 2440MHz | 1276                 | 2062                 | Pass   |
| Top channel 2480MHz    | 1268                 | 2054                 | Pass   |

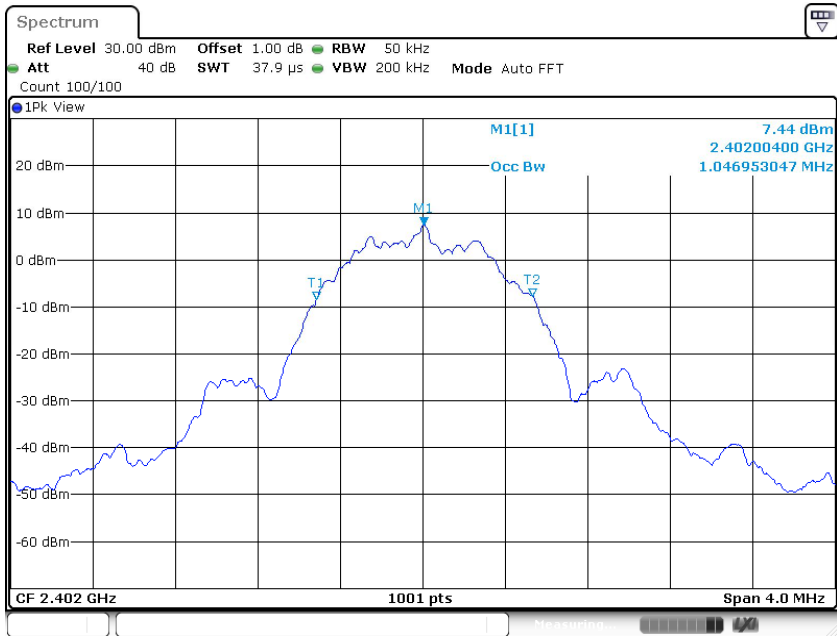


6 dB Bandwidth

1MHz Bandwidth  
Low channel 2402MHz



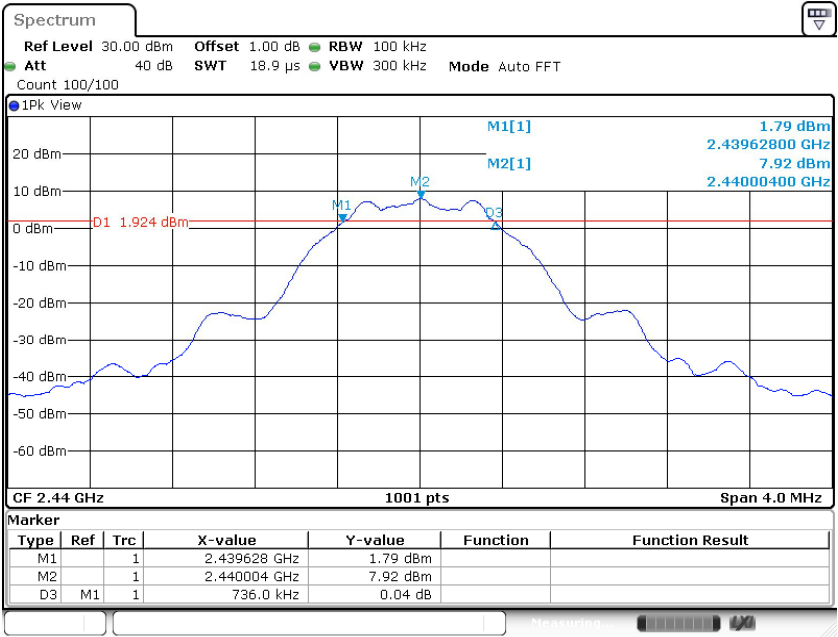
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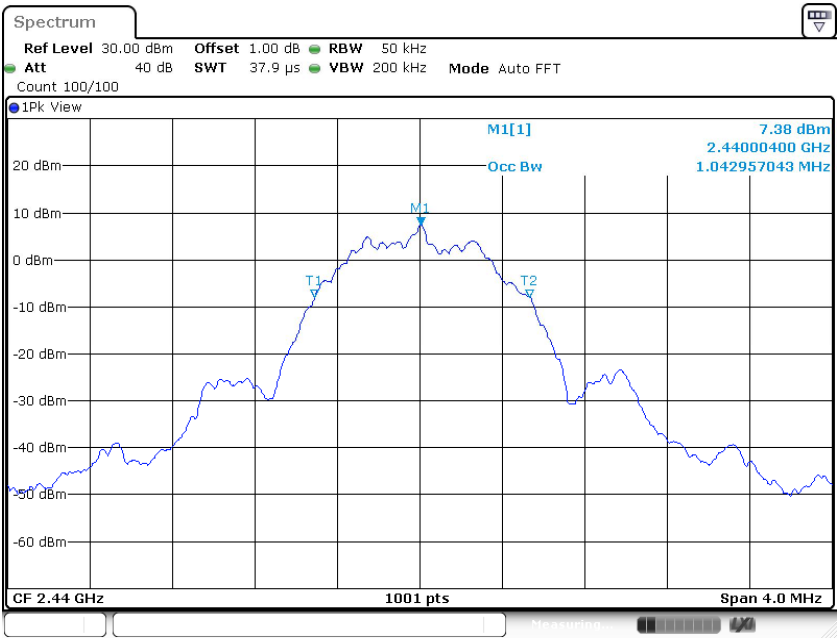
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Middle channel 2440MHz



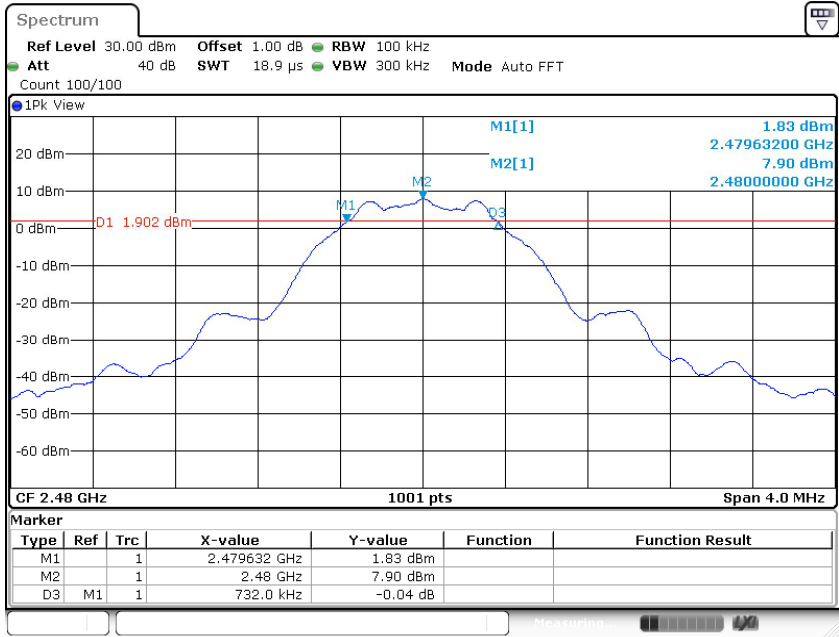
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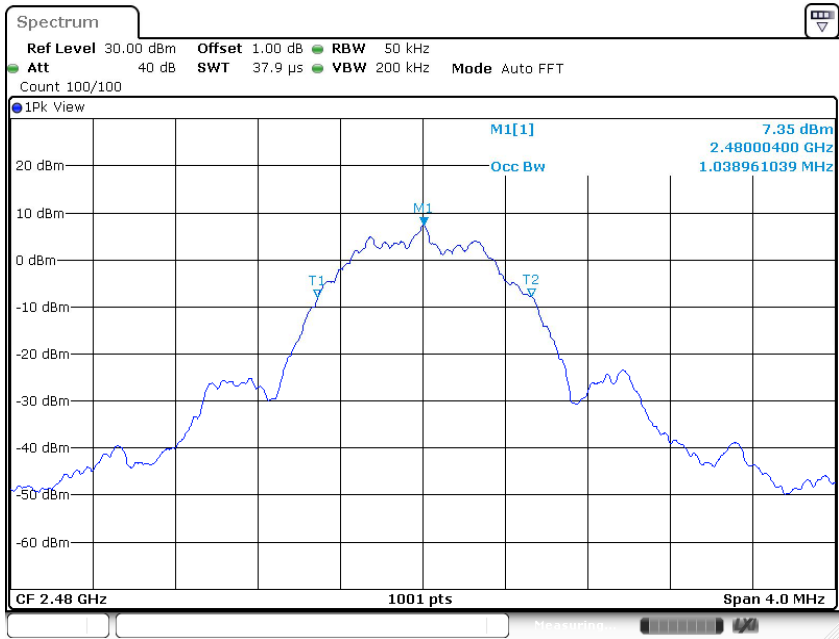
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High channel 2480MHz



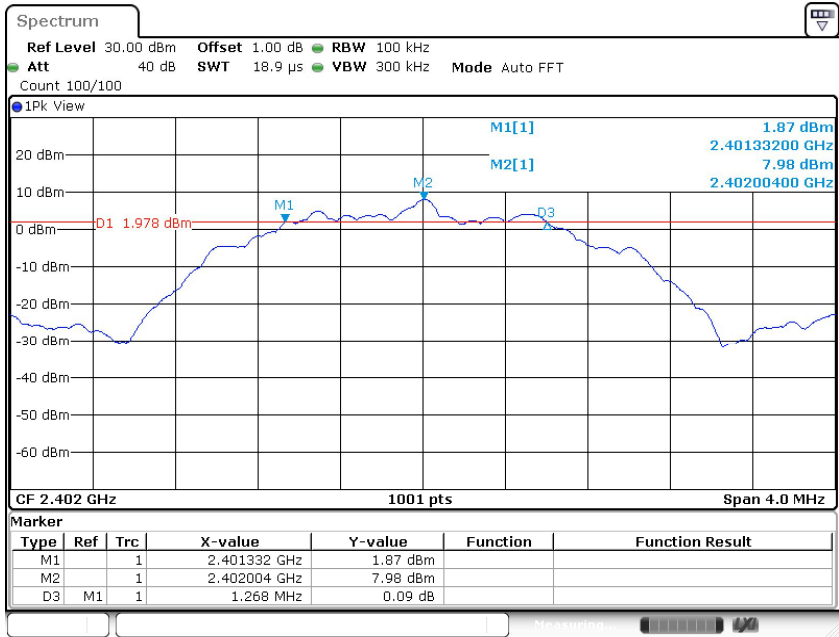
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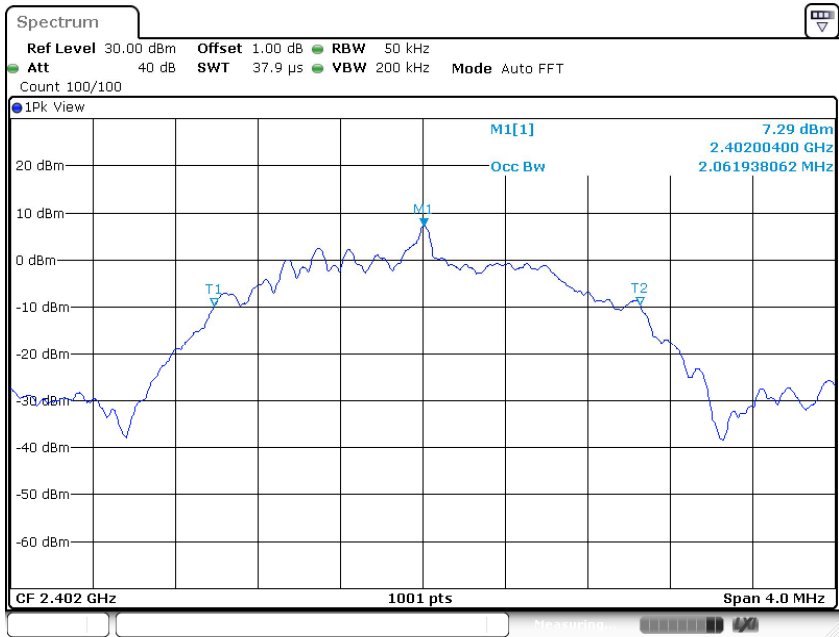
Date: 23.SEP.2020 13:51:38



2MHz Bandwidth  
Low channel 2402MHz



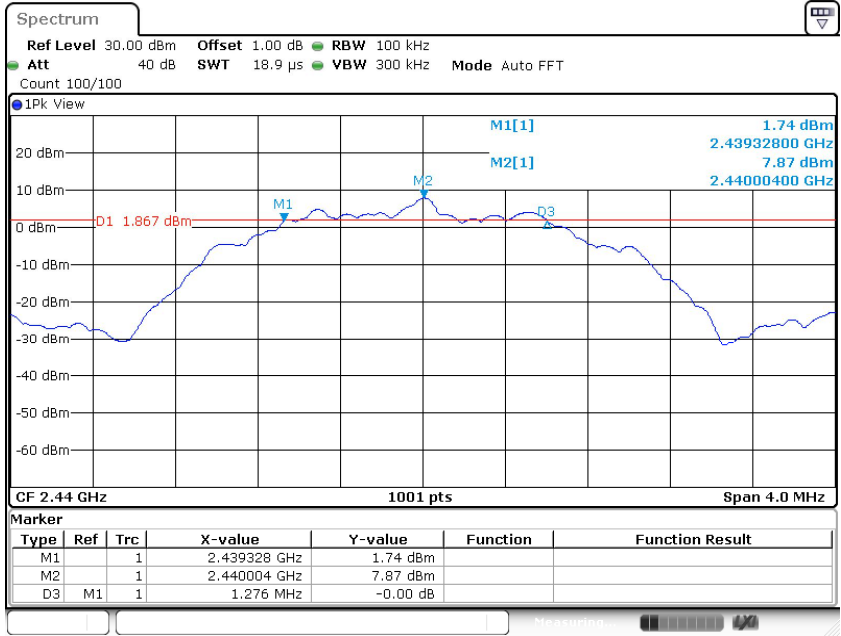
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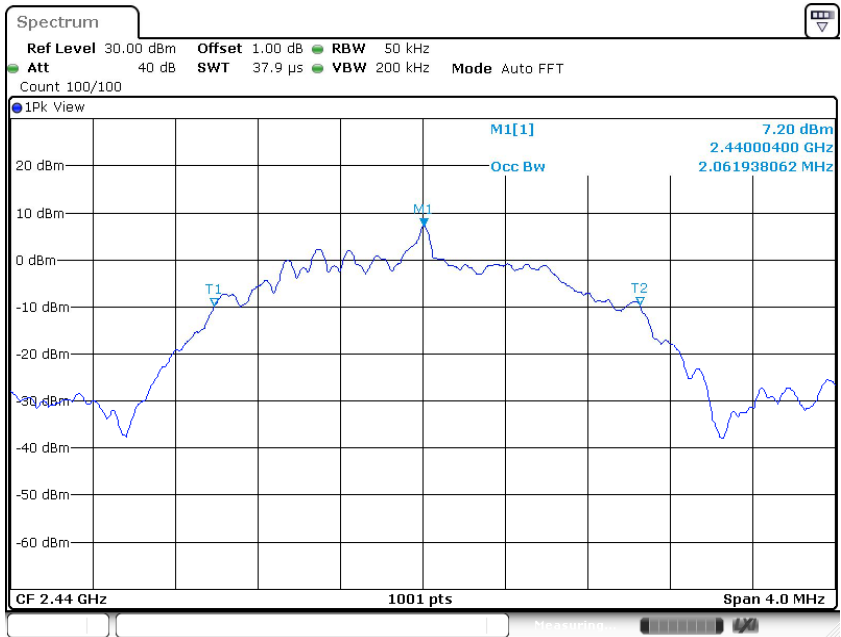
Date: 23.SEP.2020 13:55:42



Middle channel 2440MHz



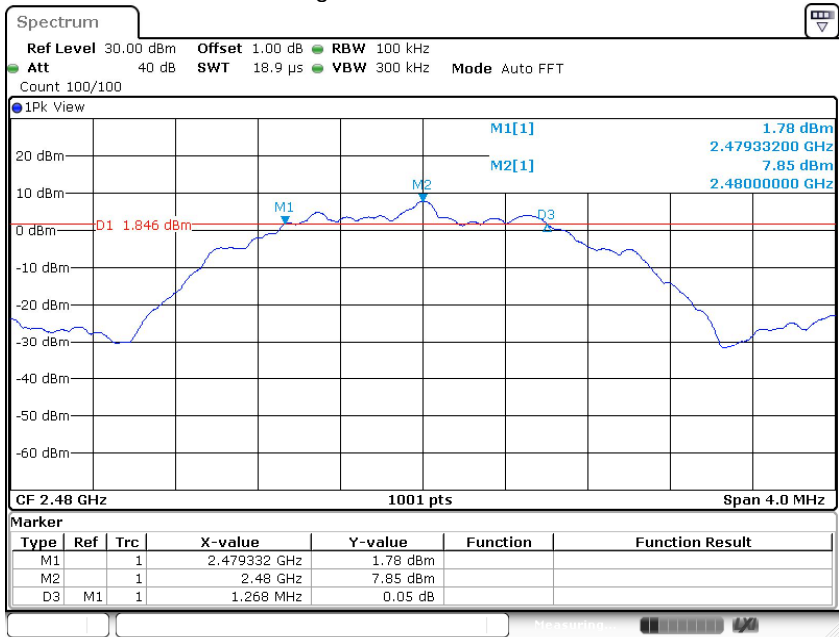
Date: 23.SEP.2020 13:56:24



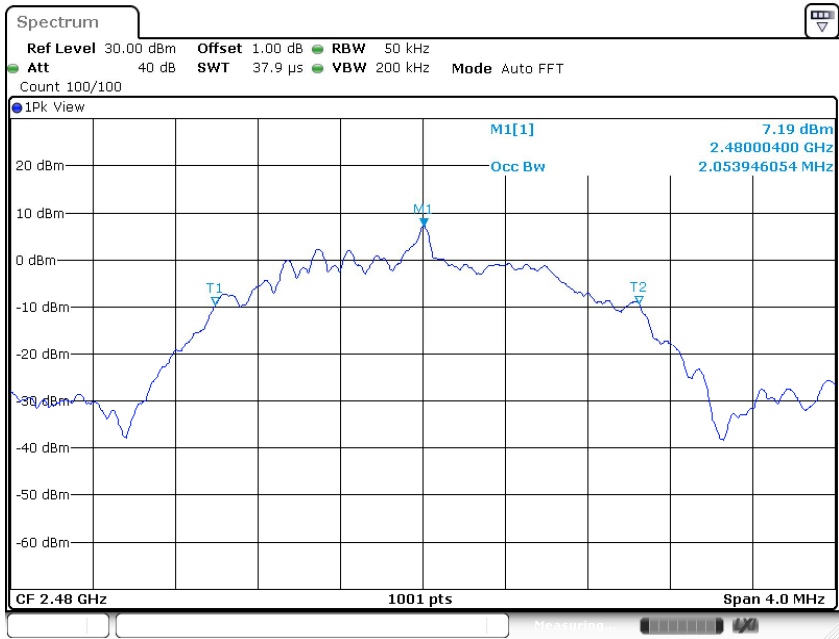
Date: 23.SEP.2020 13:56:35



High channel 2480MHz



Date: 23.SEP.2020 13:57:12



Date: 23.SEP.2020 13:57:22

## 9.4 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.

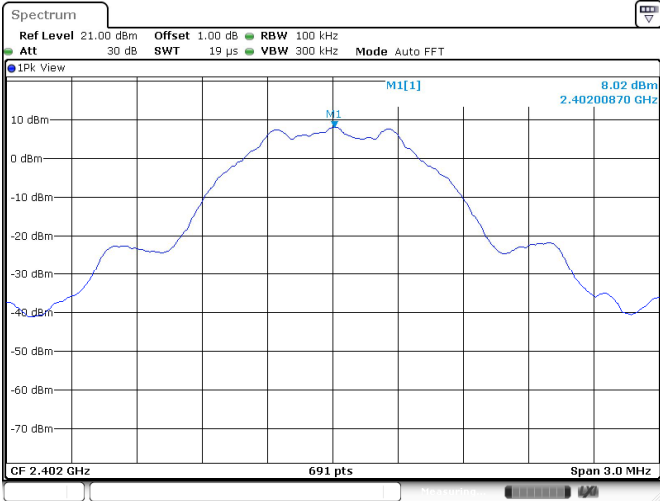
### Limit

| Frequency Range<br>MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000               | -20         |



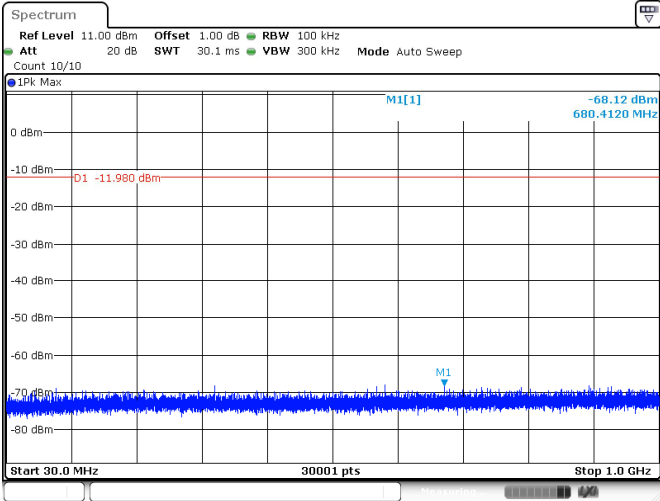
1MHz Bandwidth

BLE\_BT5.0\_Ant1\_2402\_0~Reference



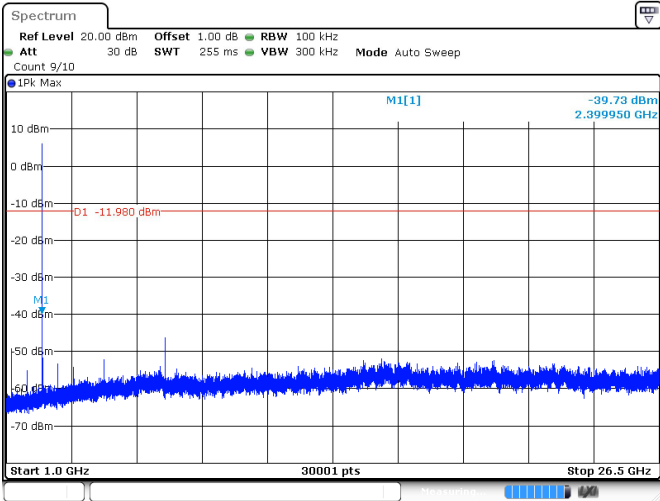
Date: 23 SEP 2020 13:53:50

BLE\_BT5.0\_Ant1\_2402\_30~1000

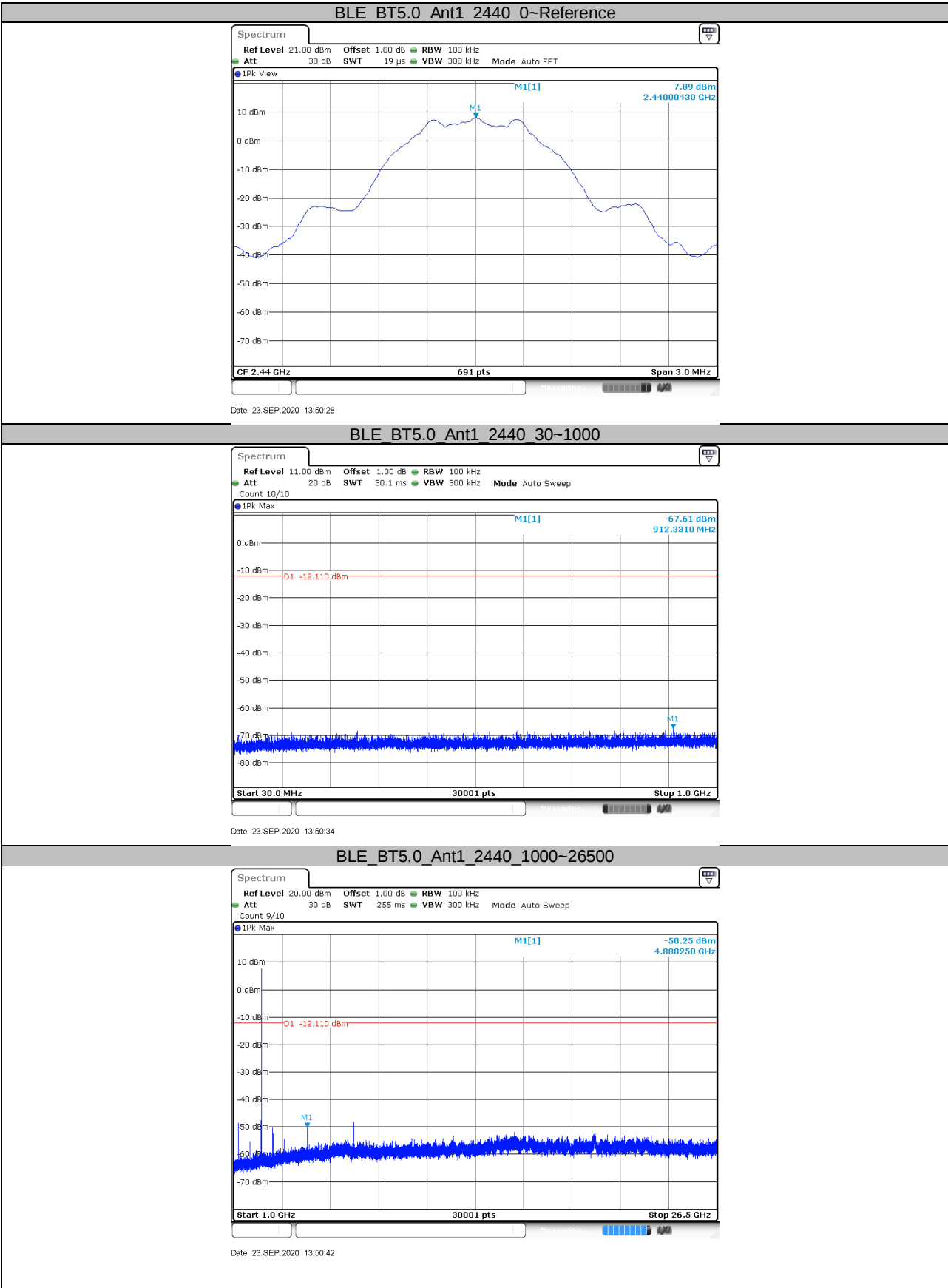


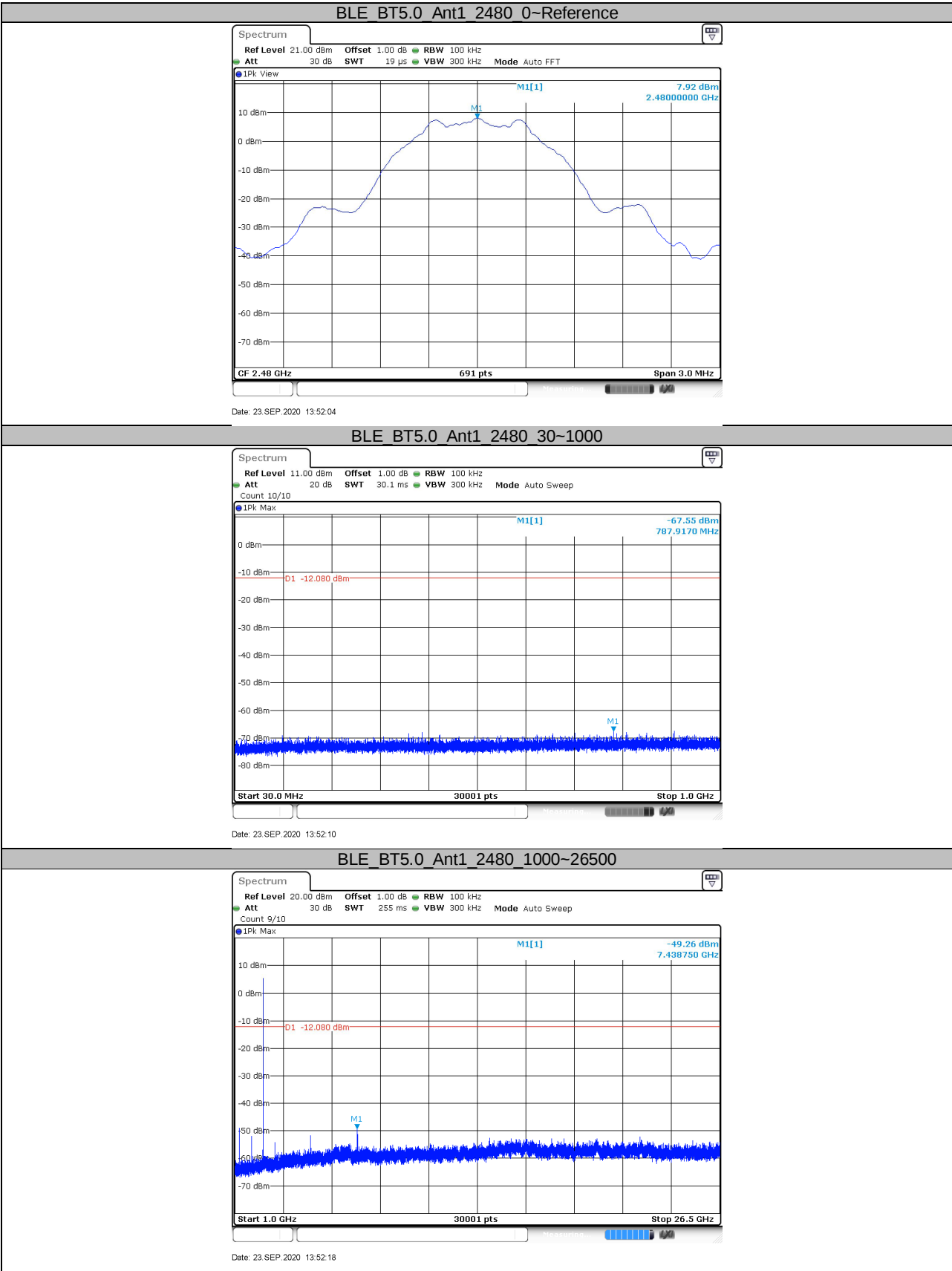
Date: 23 SEP 2020 13:53:56

BLE\_BT5.0\_Ant1\_2402\_1000~26500



Date: 23 SEP 2020 13:54:04

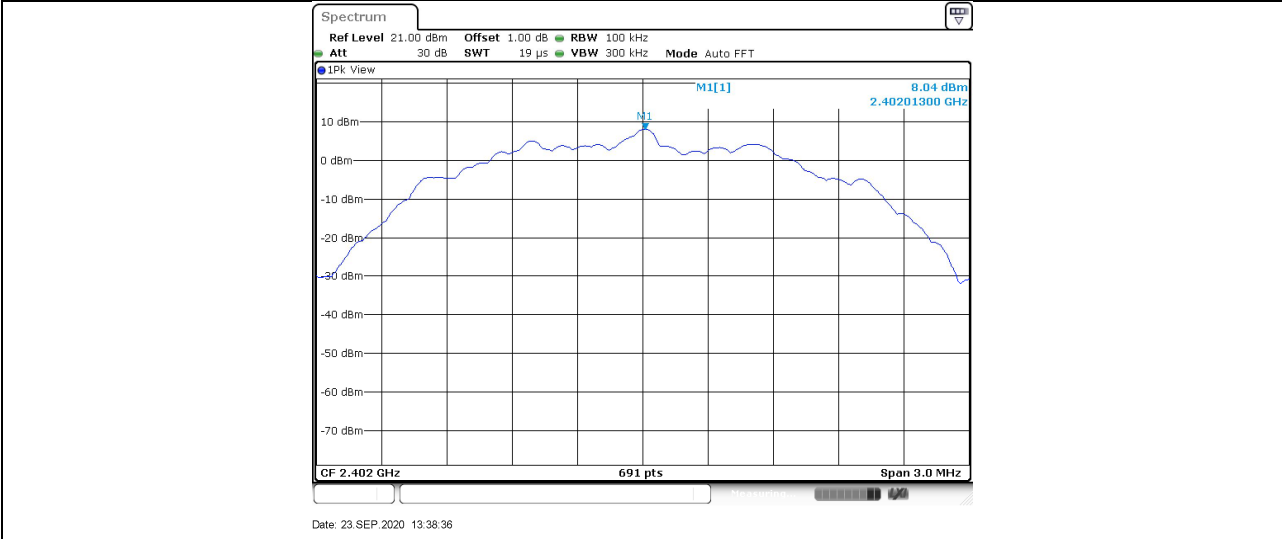




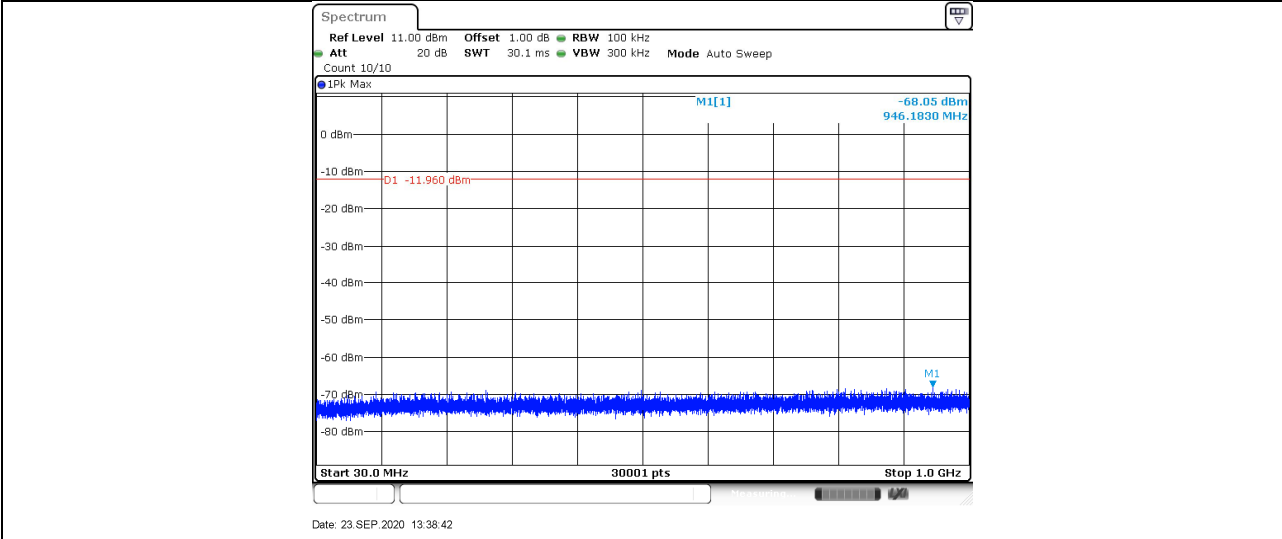


2MHz Bandwidth

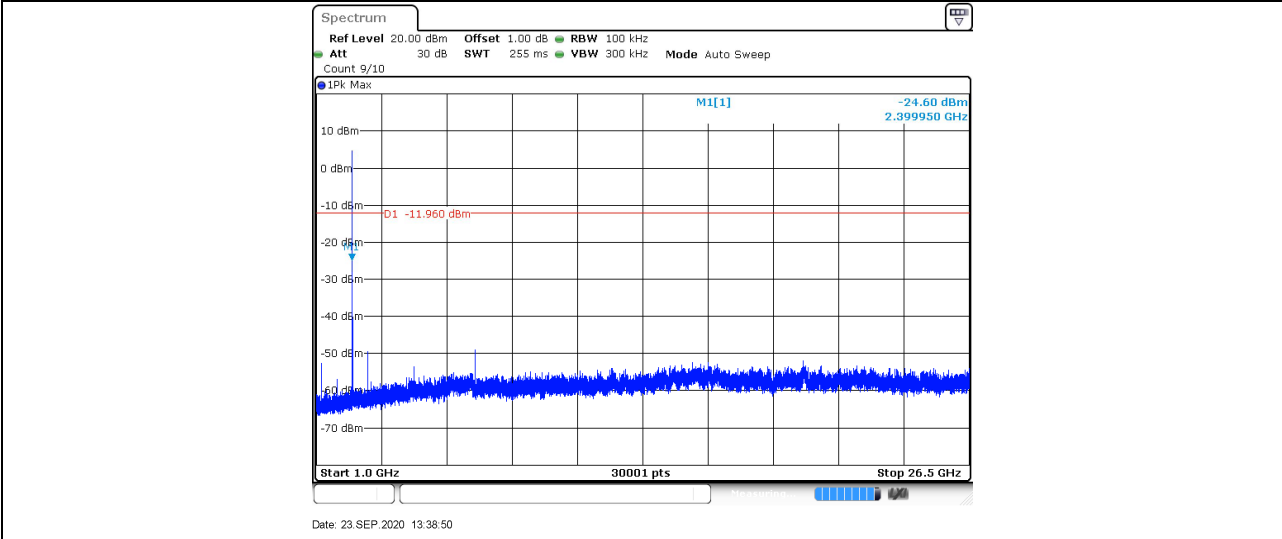
BLE\_BT5.0\_Ant1\_2402\_0~Reference

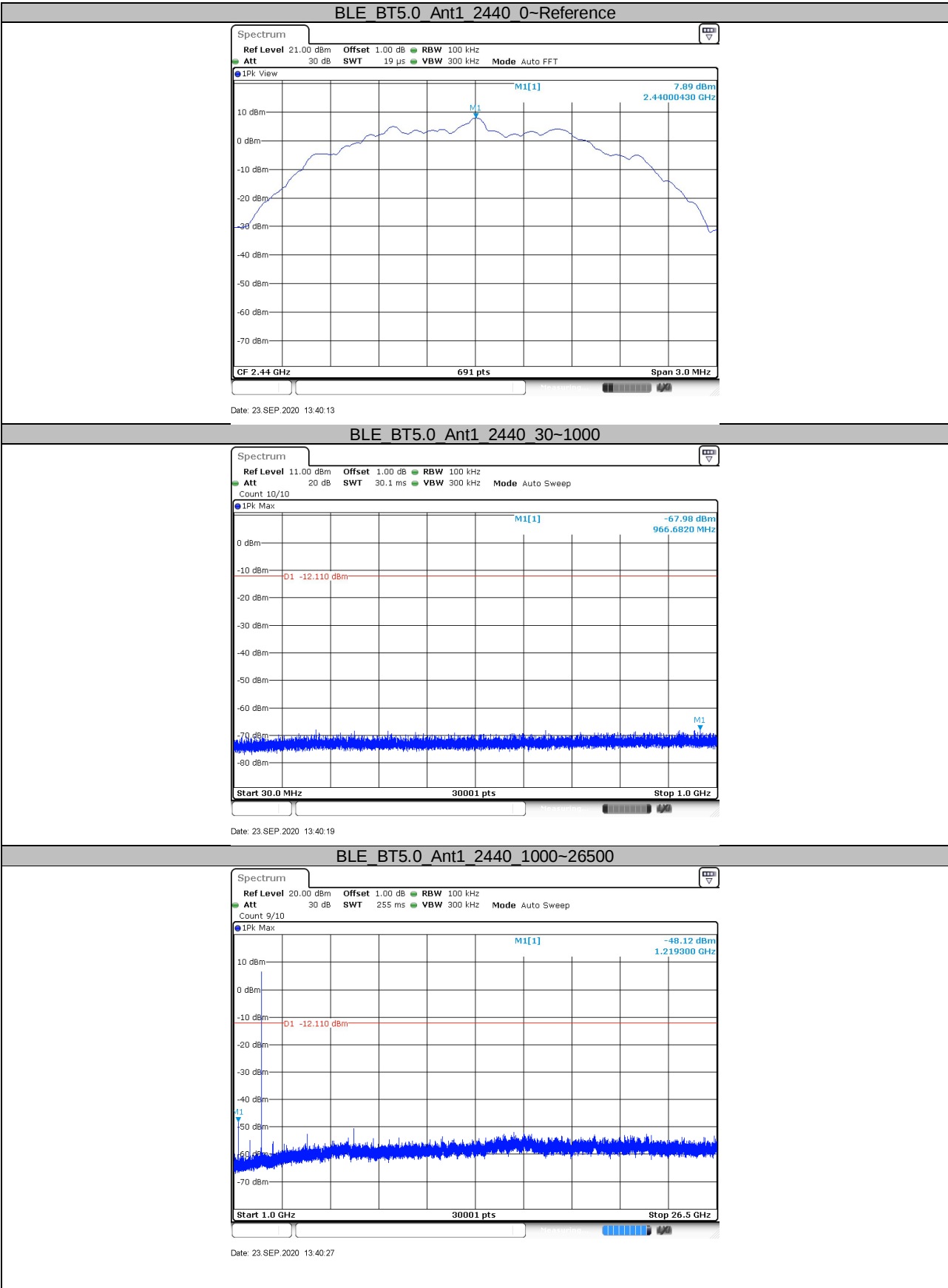


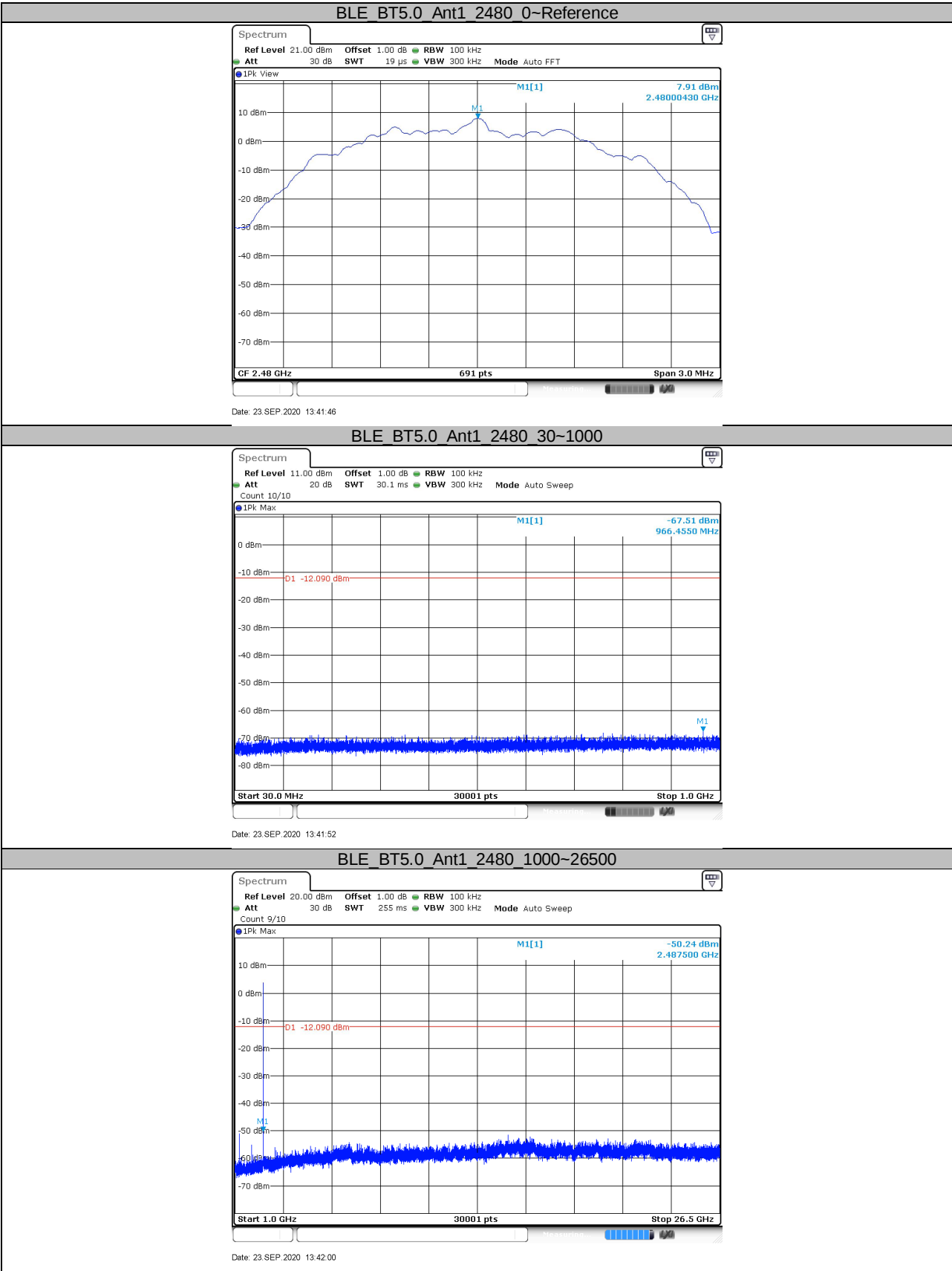
BLE\_BT5.0\_Ant1\_2402\_30~1000



BLE\_BT5.0\_Ant1\_2402\_1000~26500







## 9.5 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.

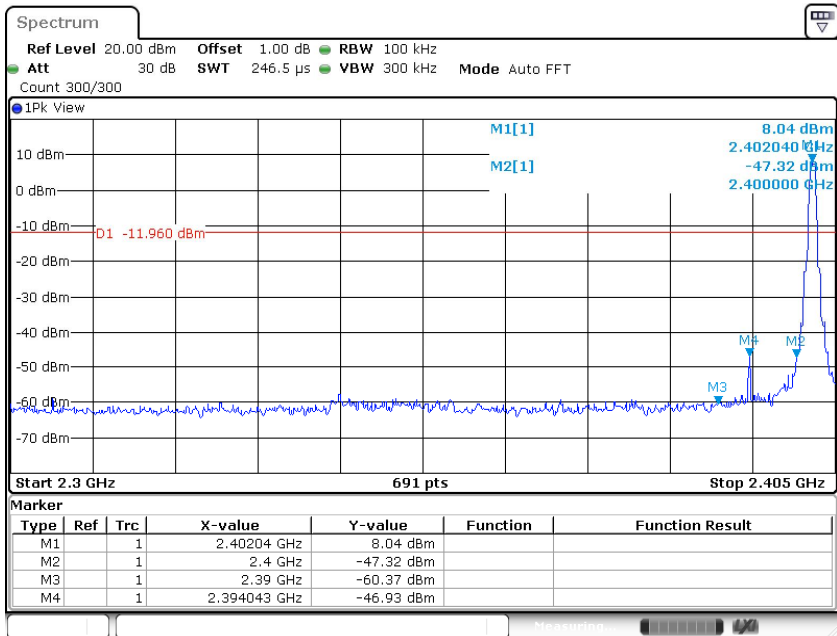
### Limit

| Frequency Range<br>MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000               | -20         |



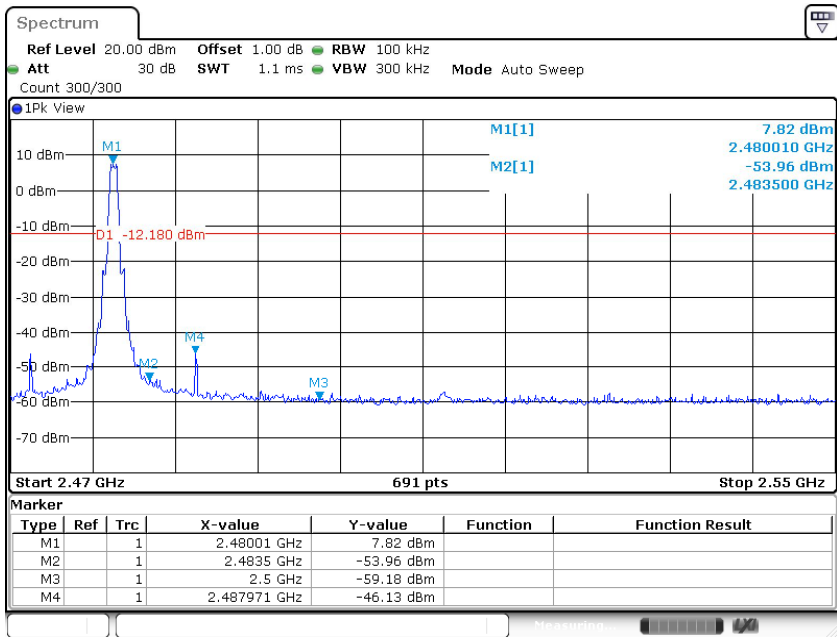
Band edge testing

1MHz Bandwidth  
2402MHz



Date: 23.SEP.2020 13:53:45

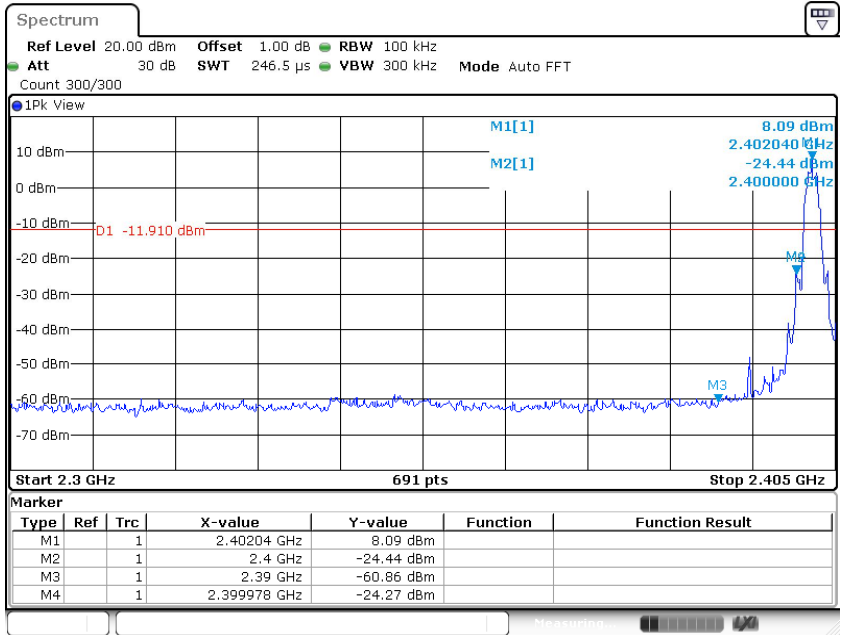
2480MHz



Date: 23.SEP.2020 13:51:59

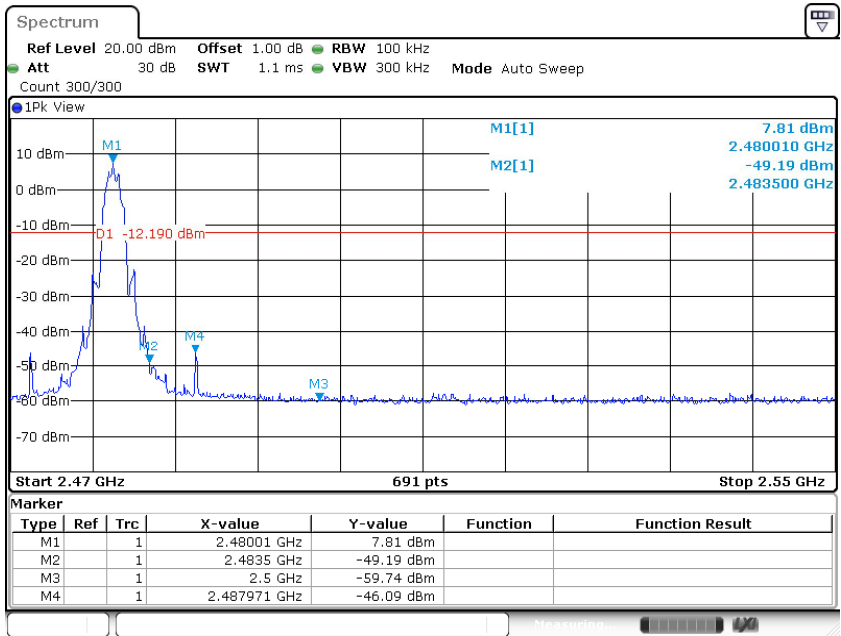


2MHz Bandwidth  
2402MHz



Date: 23.SEP.2020 13:38:30

2480MHz



Date: 23.SEP.2020 13:41:40

## 9.6 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  $[\text{span} / (\# \text{ of points in sweep})] \geq \text{RBW} / 2$ .  
 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<br>MHz | Field Strength<br>uV/m | Field Strength<br>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.

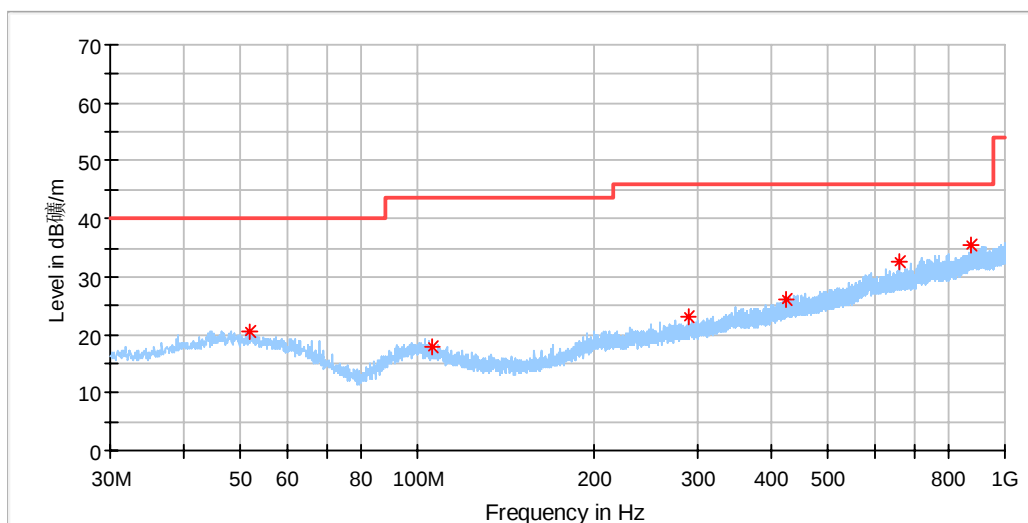
### Transmitting spurious emission test result as below:

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

EUT: In-ear True Wireless Headphone

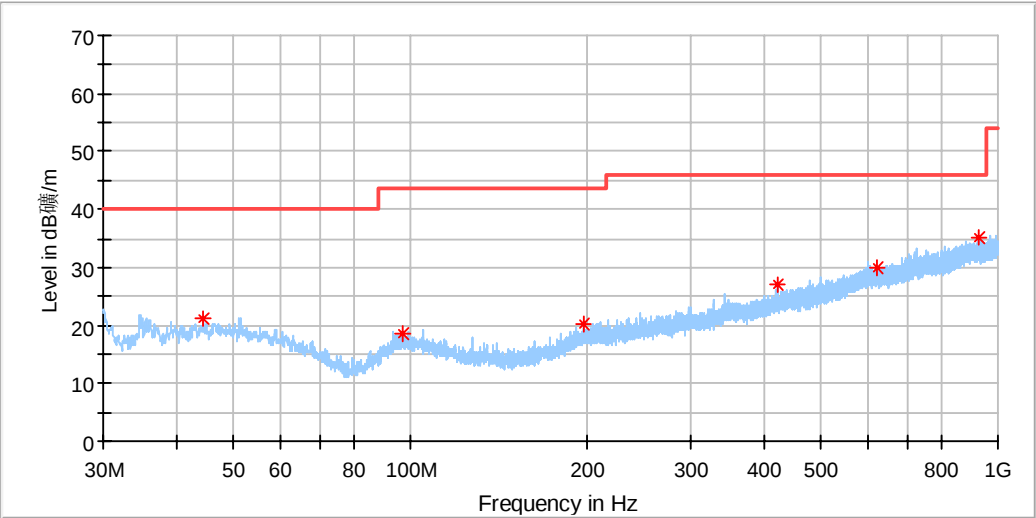
M/N: PI7L

Operating Condition: Tx 2402MHz, lowest Channel



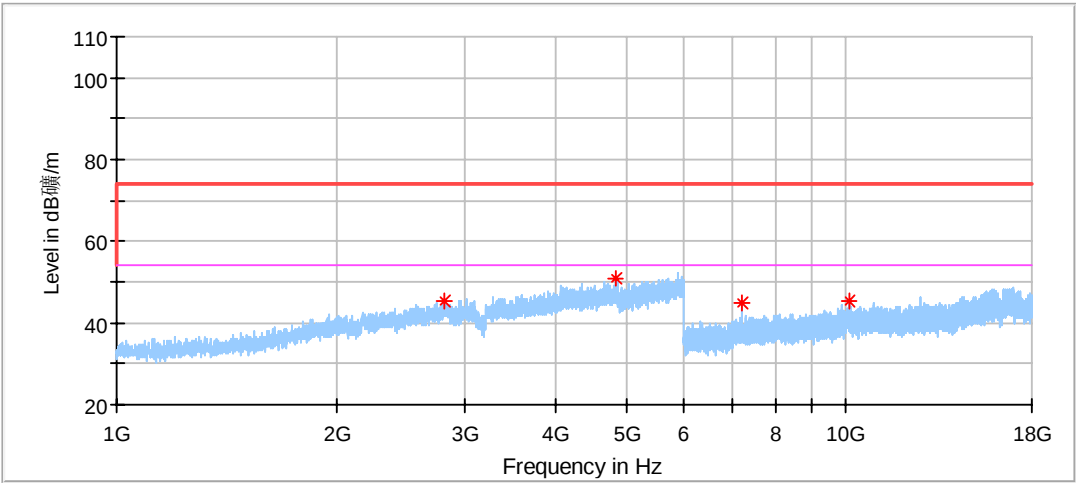
### Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 51.885625       | 20.35            | 40.00          | 19.65       | 200.0       | H   | 0.0           | 18           |
| 106.387500      | 18.00            | 43.50          | 25.50       | 200.0       | H   | 345.0         | 15           |
| 288.505000      | 23.01            | 46.00          | 22.99       | 100.0       | H   | 31.0          | 18           |
| 425.638750      | 26.14            | 46.00          | 19.86       | 100.0       | H   | 0.0           | 22           |
| 660.075625      | 32.53            | 46.00          | 13.47       | 100.0       | H   | 22.0          | 26           |
| 876.810000      | 35.35            | 46.00          | 10.65       | 100.0       | H   | 22.0          | 29           |



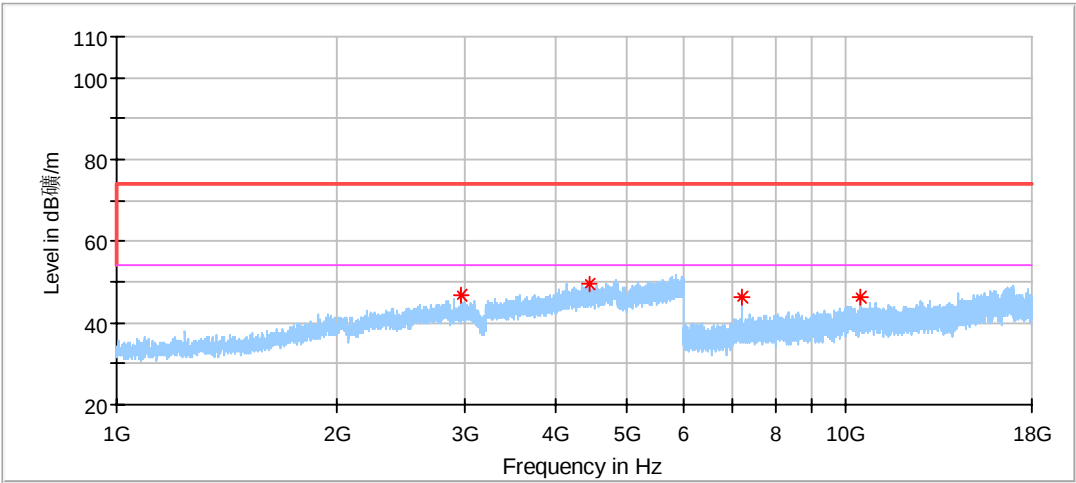
Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 44.489375       | 21.05            | 40.00          | 18.95       | 100.0       | V   | 157.0         | 18           |
| 96.687500       | 18.67            | 43.50          | 24.83       | 100.0       | V   | 63.0          | 16           |
| 197.325000      | 20.17            | 43.50          | 23.33       | 100.0       | V   | 178.0         | 16           |
| 420.788750      | 26.90            | 46.00          | 19.10       | 100.0       | V   | 0.0           | 22           |
| 623.397500      | 29.97            | 46.00          | 16.03       | 100.0       | V   | 0.0           | 26           |
| 928.038125      | 35.16            | 46.00          | 10.84       | 100.0       | V   | 0.0           | 30           |



Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2818.500000     | 45.53            | 74.00          | 28.47       | 150.0       | H   | 226.0         | -1.99        |
| 4824.500000     | 50.69            | 74.00          | 23.31       | 150.0       | H   | 194.0         | 2.82         |
| 7205.500000     | 45.01            | 74.00          | 28.99       | 150.0       | H   | 141.0         | 5.12         |
| 10120.000000    | 45.21            | 74.00          | 28.79       | 150.0       | H   | 164.0         | 9.15         |

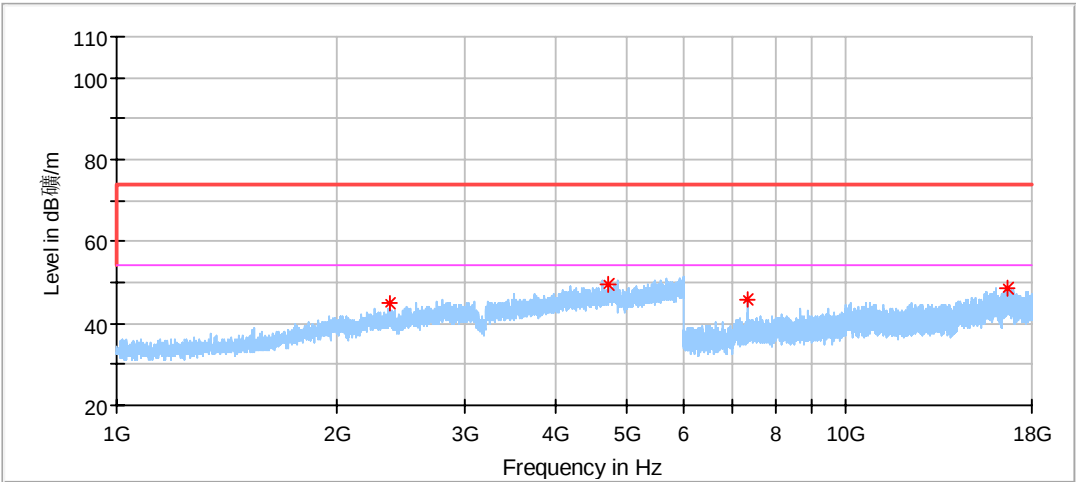


Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2972.500000     | 46.58            | 74.00          | 27.42       | 150.0       | V   | 282.0         | -1.50        |
| 4460.000000     | 49.73            | 74.00          | 24.27       | 150.0       | V   | 275.0         | 2.33         |
| 7207.000000     | 46.38            | 74.00          | 27.62       | 150.0       | V   | 214.0         | 5.12         |
| 10458.000000    | 46.45            | 74.00          | 27.55       | 150.0       | V   | 30.0          | 8.59         |

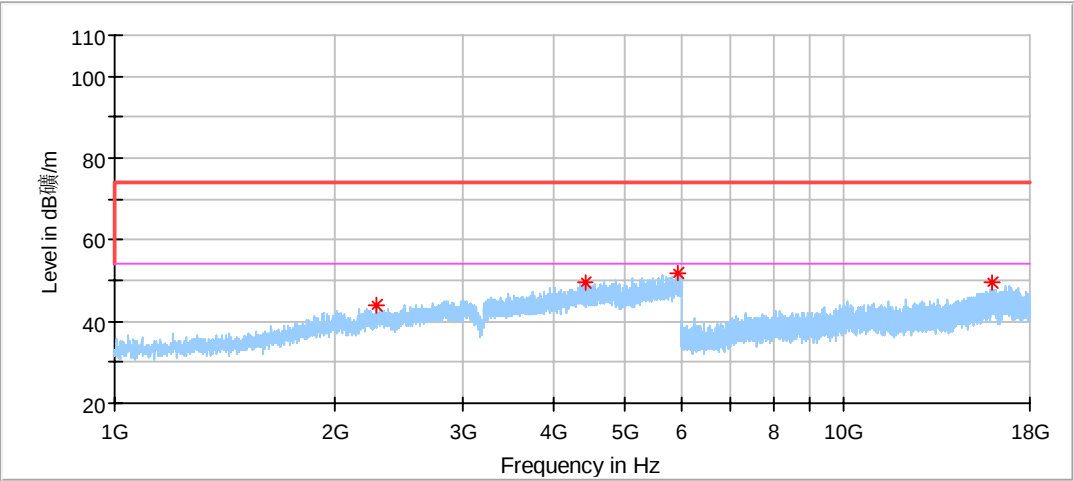


EUT: In-ear True Wireless Headphone  
M/N: PI7L  
Operating Condition: Tx 2440MHz, Middle Channel



Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2375.000000     | 44.85            | 74.00          | 29.15       | 150.0       | H   | 211.0         | -3.20        |
| 4721.000000     | 49.62            | 74.00          | 24.38       | 150.0       | H   | 179.0         | 2.62         |
| 7320.500000     | 45.90            | 74.00          | 28.10       | 150.0       | H   | 98.0          | 5.29         |
| 16703.000000    | 48.68            | 74.00          | 25.32       | 150.0       | H   | 144.0         | 15.92        |

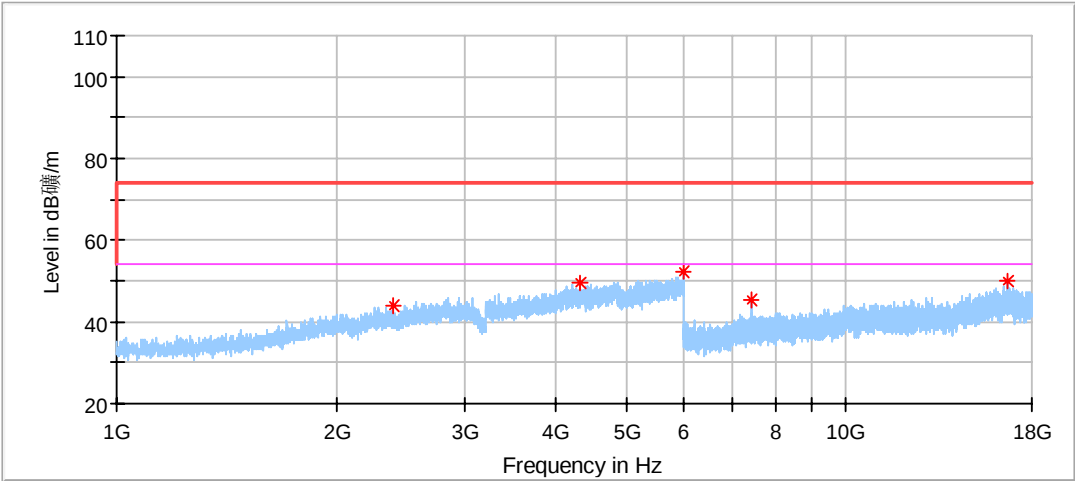


Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2286.000000     | 43.98            | 74.00          | 30.02       | 150.0       | V   | 359.0         | -3.44        |
| 4412.500000     | 49.60            | 74.00          | 24.40       | 150.0       | V   | 218.0         | 2.28         |
| 5917.500000     | 50.94            | 74.00          | 23.06       | 150.0       | V   | 359.0         | 5.48         |
| 15963.000000    | 49.54            | 74.00          | 24.46       | 150.0       | V   | 116.0         | 14.23        |

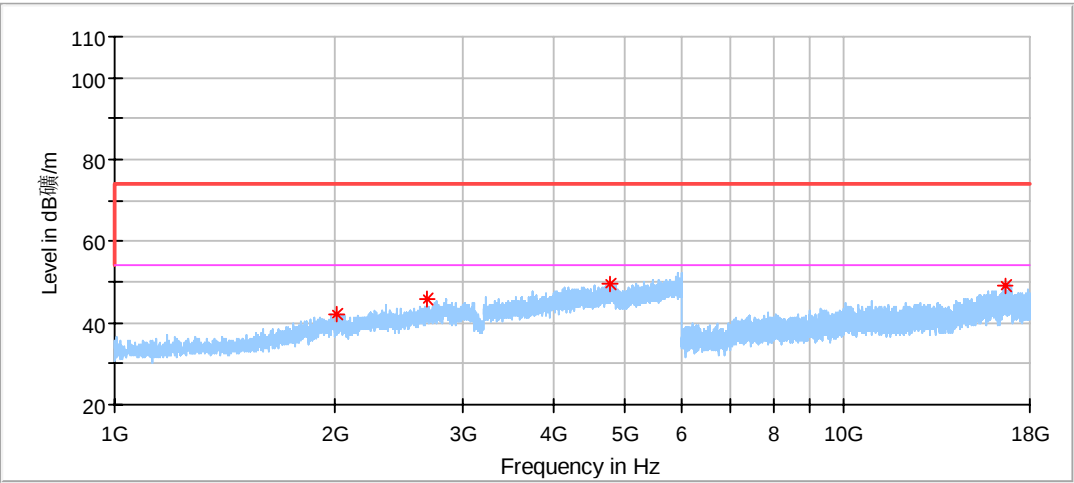


EUT: In-ear True Wireless Headphone  
M/N: PI7L  
Operating Condition: Tx 2480MHz, High Channel



Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2394.000000     | 44.23            | 74.00          | 29.77       | 150.0       | H   | 101.0         | -3.15        |
| 4314.500000     | 49.39            | 74.00          | 24.61       | 150.0       | H   | 171.0         | 2.02         |
| 5977.500000     | 51.77            | 74.00          | 23.23       | 150.0       | H   | 124.0         | 5.48         |
| 7439.500000     | 45.56            | 74.00          | 28.44       | 150.0       | H   | 210.0         | 5.49         |
| 16700.000000    | 50.15            | 74.00          | 23.85       | 150.0       | H   | 164.0         | 15.91        |



Critical\_Freqs

| Frequency (MHz) | MaxPeak (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|--------------|
| 2017.000000     | 42.01            | 74.00          | 31.99       | 150.0       | V   | 77.0          | -4.22        |
| 2688.000000     | 45.80            | 74.00          | 28.20       | 150.0       | V   | 101.0         | -2.36        |
| 4790.000000     | 49.47            | 74.00          | 24.53       | 150.0       | V   | 93.0          | 2.72         |
| 16656.500000    | 49.18            | 74.00          | 24.82       | 150.0       | V   | 356.0         | 15.85        |

Remark:

- (1) Data of measurement within frequency range18-26GHz 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

#### 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                   | 2021-6-29     |
| Trilog Super Broadband Test Antenna | Schwarzbeck     | VULB 9162         | 68-4-80-19-003     | 284             | 1                   | 2021-2-24     |
| Wave Guide Antenna                  | ETS             | 3117              | 68-4-80-19-001     | 00218954        | 1                   | 2021-6-15     |
| Pre-amplifier                       | Rohde & Schwarz | SCU 18F           | 68-4-29-19-001     | 100745          | 1                   | 2020-12-14    |
| Pre-amplifier                       | Rohde & Schwarz | SCU 08F2          | 68-4-29-19-004     | 08400018        | 1                   | 2020-12-14    |
| Sideband Horn Antenna               | Q-PAR           | QWH-SL-18-40-K-SG | 68-4-80-14-008     | 12827           | 1                   | 2021-8-5      |
| Pre-amplifier                       | Rohde & Schwarz | SCU 40A           | 68-4-29-14-002     | 100432          | 1                   | 2021-7-30     |
| 3m Semi-anechoic chamber            | TDK             | 9X6X6             | 68-4-90-19-006     | ----            | 3                   | 2022-12-29    |
| 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                   | 2022-6-21     |

## 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                                                                 |
| Radiated Spurious Emission 30MHz-1000MHz    | Horizontal: 4.70dB;<br>Vertical: 4.67dB;                                             |
| Radiated Spurious Emission 1000MHz-18000MHz | Horizontal: 4.65dB;<br>Vertical: 4.63dB;                                             |
| Conducted RF test with TS 8997              | RF Power Conducted: 1.31dB<br>Frequency test involved:<br>$0.6 \times 10^{-7}$ or 1% |