

## FCC - TEST REPORT

Report Number : **68.950.19.0617.01** Date of Issue: July 30, 2019

Model : PI3

Product Type : Hybrid dual drive 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, HumenTown, 523930  
: Dongguan City, Guangdong Province, PEOPLE'S REPUBLIC OF  
: CHINA

Test Result :  Positive  Negative

Total pages including Appendices : 34

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## 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.....                  | 13 |
| 9.3 | Power spectral density .....                      | 16 |
| 9.4 | 6 dB Bandwidth and 99% Occupied Bandwidth.....    | 19 |
| 9.5 | Spurious RF conducted emissions.....              | 23 |
| 9.6 | Band edge.....                                    | 27 |
| 9.7 | Spurious radiated emissions for transmitter ..... | 29 |
| 10  | Test Equipment List.....                          | 33 |
| 11  | System Measurement Uncertainty .....              | 34 |

## 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

### 3 Description of the Equipment Under Test

|                               |  |
|-------------------------------|--|
| Product:                      | Hybrid dual drive wireless headphone   |
| Model no.:                    | PI3  |
| FCC ID:                       | 2ACIX-PI3  |
| Options and accessories:      | USB Cable  |
| Rating:                       | 3.8VDC, 115mAh (Supplied by Secondary Li-ion battery)<br>5VDC, 150mA (Charged by USB port) |
| RF Transmission<br>Frequency: | 2402MHz-2480MHz  |
| No. of Operated Channel:      | 40   |
| Modulation:                   | GFSK   |
| Antenna Type:                 | Integrated Antenna   |
| Antenna Gain:                 | 1.0dBi   |
| Description of the EUT:       | The Equipment Under Test (EUT) is Hybrid dual drive wireless headphone operated at 2.4GHz  |

## 4 Summary of Test Standards

| Test Standards                             |  |
|--|--|
| FCC Part 15 Subpart C<br>10-1-2017 Edition | PART 15 - RADIO FREQUENCY DEVICES<br>Subpart C - Intentional Radiators |

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                |   |            |           |                                     |                          |                                     |
| Test Condition                       |   | Pages      | Test Site | Test Result                         |                          |                                     |
|                                      |   |            |           | Pass                                | Fail                     | N/A                                 |
| §15.207                              | Conducted emission AC power port            | 10         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247 (b) (1)                      | Conducted peak output power                 | 13         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247(a)(1)                        | 20dB bandwidth                              | ---        | ---       | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| §15.247(a)(1)                        | Carrier frequency separation                | ---        | ---       | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| §15.247(a)(1)(iii)                   | Number of hopping frequencies               | ---        | ---       | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| §15.247(a)(1)(iii)                   | Dwell Time                                  | ---        | ---       | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| §15.247(a)(2)                        | 6dB bandwidth and 99% Occupied Bandwidth    | 16         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247(e)                           | Power spectral density                      | 19         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247(d)                           | Spurious RF conducted emissions             | 23         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247(d)                           | Band edge                                   | 27         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.247(d) &<br>§15.209 &<br>§15.205 | Spurious radiated emissions for transmitter | 29         | Site 1    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |
| §15.203                              | Antenna requirement                         | See note 1 |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            |

Note 1: N/A=Not Applicable.

Note 2: The EUT uses a Integrated antenna, which gain is 1.0dBi. In accordance to §15.203, 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-PI3 complies with Section 15.205, 15.209, 15.247 of the FCC Part 15, Subpart C.

PI3 is a Bluetooth Headset with Bluetooth 5.0, but it supports 1Mbps only for for Bluetooth Low Energy, but does not support 2Mbps. The TX and RX range is 2402MHz-2480MHz.

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: June 14, 2019

Testing Start Date: June 14, 2019

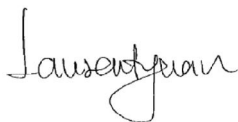
Testing End Date: June 27, 2019

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

Reviewed by:

Prepared by:

Tested by:



Laurent Yuan  
EMC Project Manager



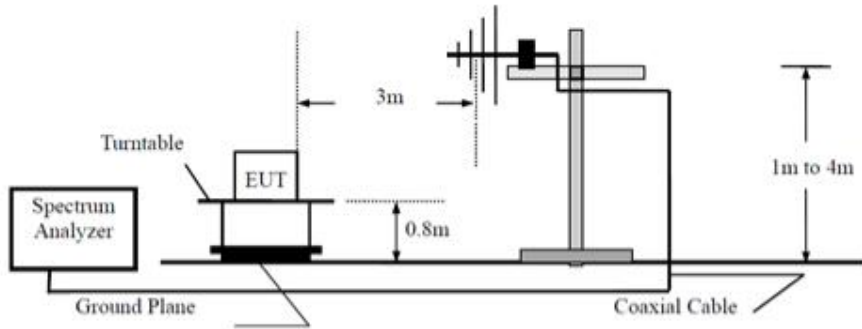
Mark Chen  
EMC Project Engineer



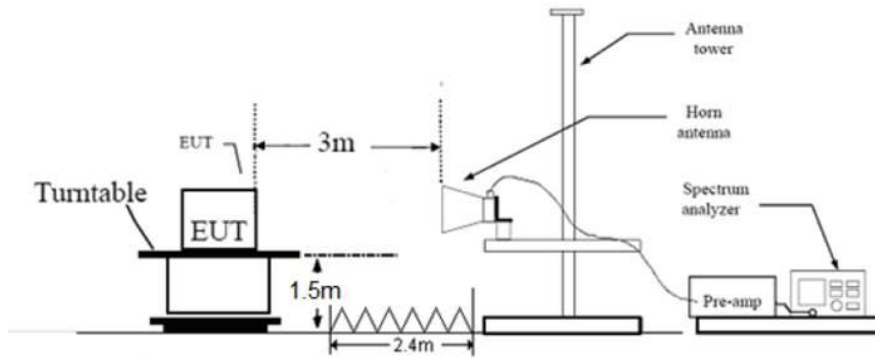
Carry Cai  
EMC Test Engineer

## 7 Test Setups

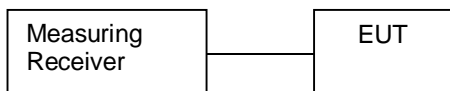
Below 1GHz



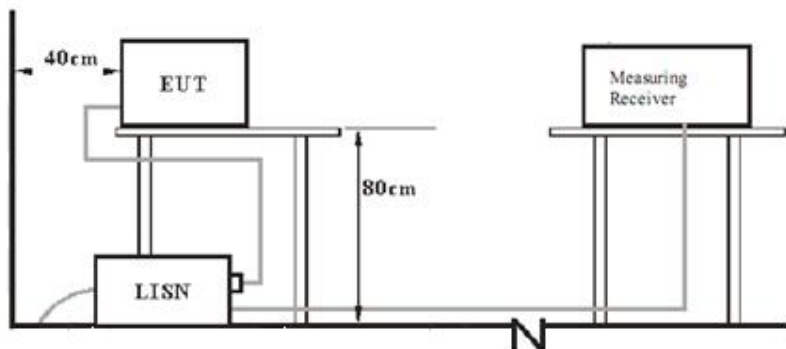
Above 1GHz



Conducted RF test setups



AC Power Line Conducted Emission test setups





## 8 Systems test configuration

Auxiliary Equipment Used during Test:

| DESCRIPTION  | MANUFACTURER | MODEL NO.(SHIELD) | S/N(LENGTH) |
|--------------|--------------|-------------------|-------------|
| Notebook     | Lenovo       | X220              | ---         |
| Mobile Phone | Huawei       | ---               |             |

Test software: InstallBlueSuiteCda\_3\_2\_0\_898 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

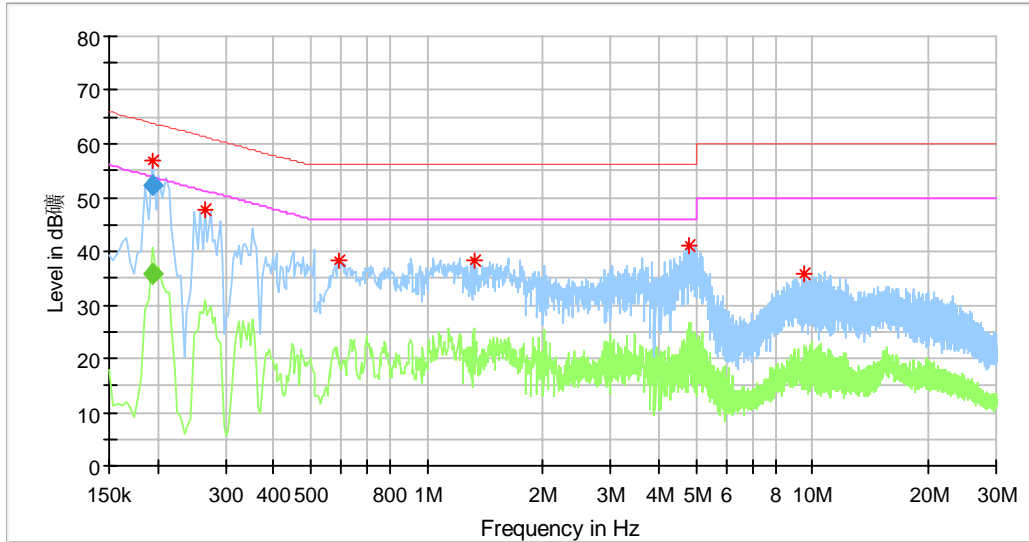
1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of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

#### Limit

| Frequency<br>MHz | QP Limit<br>dB $\mu$ V | AV Limit<br>dB $\mu$ V |
|------------------|------------------------|------------------------|
| 0.150-0.500      | 66-56*                 | 56-46*                 |
| 0.500-5          | 56                     | 46                     |
| 5-30             | 60                     | 50                     |

Decreasing linea

Product Type : Hybrid dual drive wireless headphone  
 M/N : PI3  
 Operating Condition : Charging+ BT Link  
 Test Specification : Line  
 Comment : 5VDC(Supplied by USB Port)



**Critical Freqs**

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB/m) |
|-----------------|----------------|----------------|--------------|-------------|------|--------------|
| 0.193500        | 56.75          | ---            | 63.86        | 7.11        | L1   | 10.2         |
| 0.266000        | 47.82          | ---            | 61.24        | 13.42       | L1   | 10.2         |
| 0.594000        | 38.16          | ---            | 56.00        | 17.84       | L1   | 10.3         |
| 1.326000        | 38.41          | ---            | 56.00        | 17.59       | L1   | 10.3         |
| 4.786000        | 41.18          | ---            | 56.00        | 14.82       | L1   | 10.4         |
| 9.502000        | 35.88          | ---            | 60.00        | 24.12       | L1   | 10.6         |

**Final Result**

| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB/m) |
|-----------------|------------------|----------------|--------------|-------------|------|--------------|
| 0.193500        | ---              | 35.96          | 53.88        | 17.92       | L1   | 10.2         |
| 0.193500        | 52.18            | ---            | 63.88        | 11.70       | L1   | 10.2         |

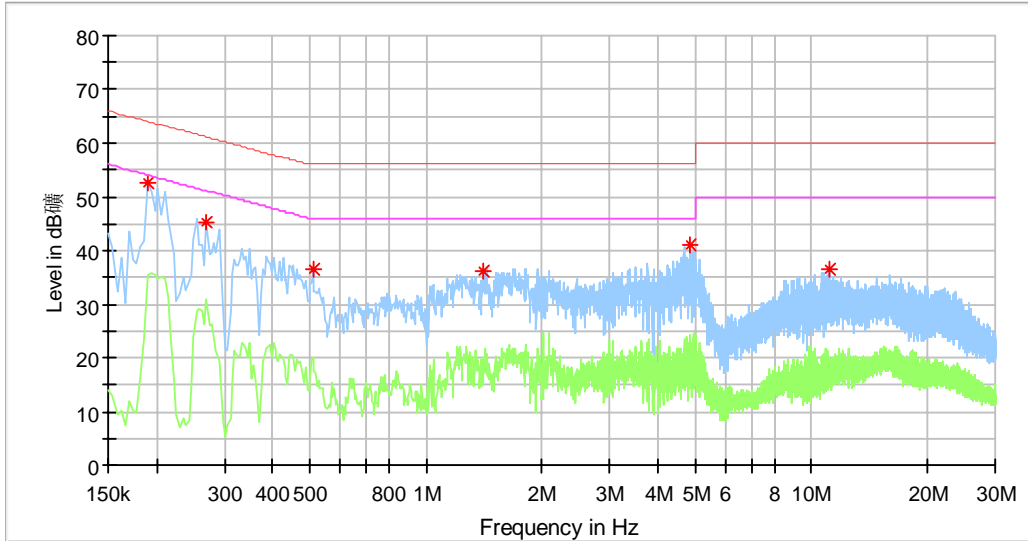
Remark:

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)

Product Type : Hybrid dual drive wireless headphone  
 M/N : PI3  
 Operating Condition : Charging+ BT Link  
 Test Specification : Neutral  
 Comment : 5VDC(Supplied by USB Port)



**Critical Freqs**

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB/m) |
|-----------------|----------------|----------------|--------------|-------------|------|--------------|
| 0.190000        | 52.70          | ---            | 64.04        | 11.33       | N    | 10.2         |
| 0.270000        | 45.40          | ---            | 61.12        | 15.72       | N    | 10.2         |
| 0.510000        | 36.50          | ---            | 56.00        | 19.50       | N    | 10.3         |
| 1.414000        | 36.14          | ---            | 56.00        | 19.86       | N    | 10.3         |
| 4.870000        | 41.18          | ---            | 56.00        | 14.82       | N    | 10.5         |
| 11.190000       | 36.41          | ---            | 60.00        | 23.59       | N    | 10.7         |

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

### 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.

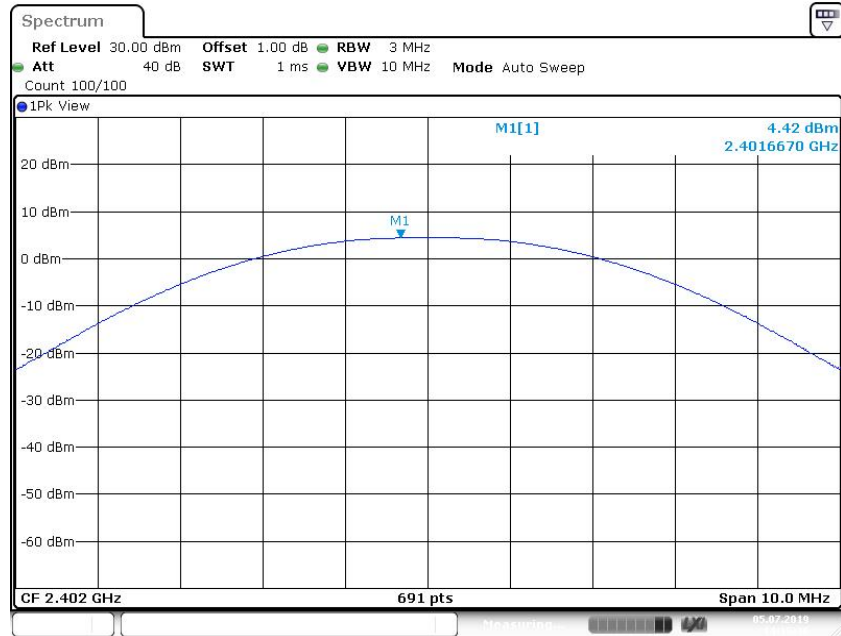
### Limits

According to §15.247 (b) (1), conducted peak output power limit as below:

| Frequency Range<br>MHz | Limit<br>W | Limit<br>dBm |
|------------------------|------------|--------------|
| 2400-2483.5            | ≤1         | ≤30          |

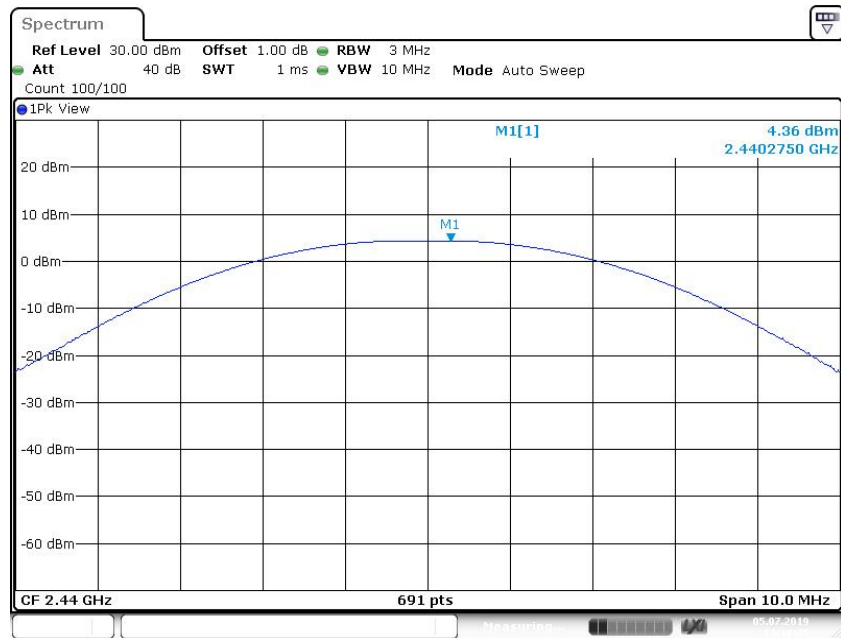
Test result as below table

| Frequency<br>MHz       | Conducted<br>Peak Output<br>Power<br>dBm | Result |
|------------------------|--|--------|
| Low channel 2402MHz    | 4.42                                     | Pass   |
| Middle channel 2440MHz | 4.36                                     | Pass   |
| High channel 2480MHz   | 4.23                                     | Pass   |



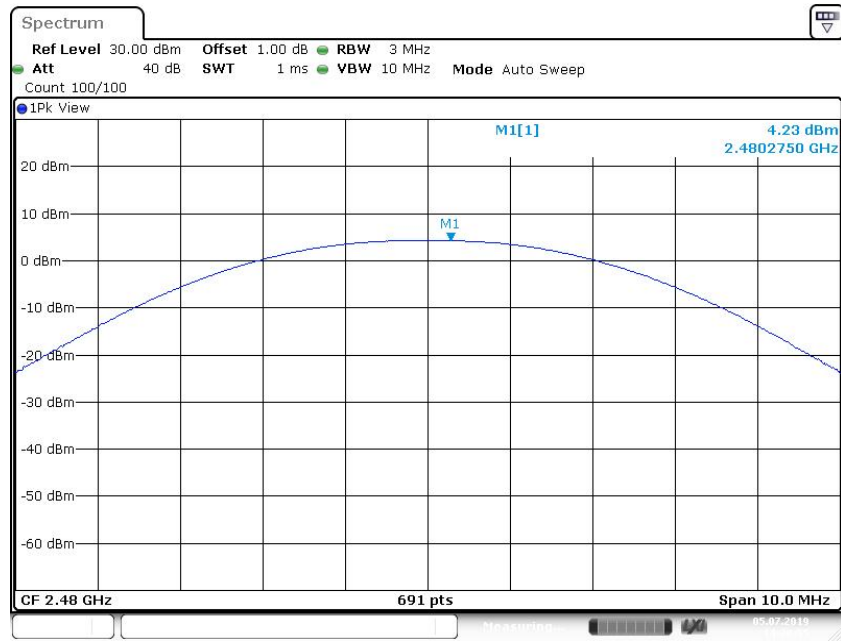
Date: 5 JUL 2019 14:15:36

Low channel 2402MHz



Date: 5 JUL 2019 14:18:45

Middle channel 2440MHz



High channel 2480MHz

### 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

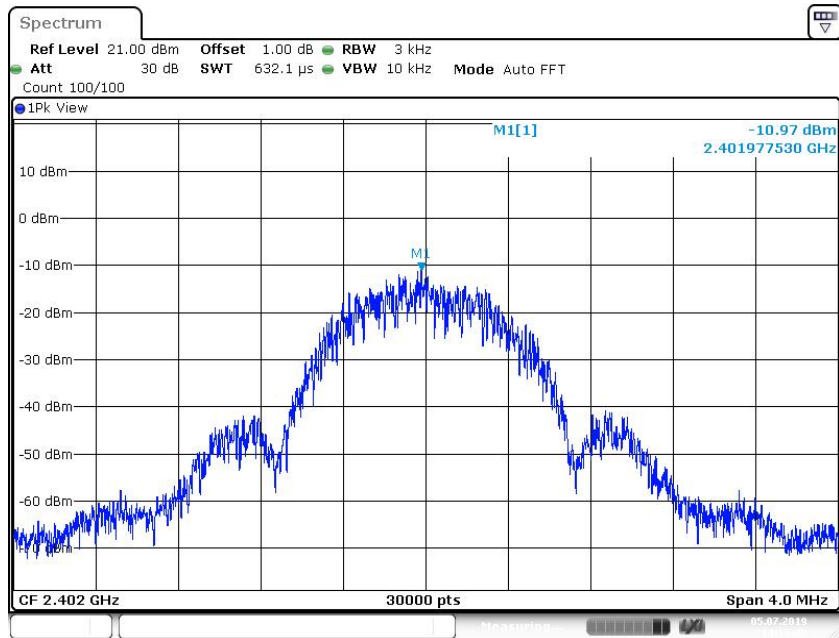
Limit [dBm]

-----  
≤8

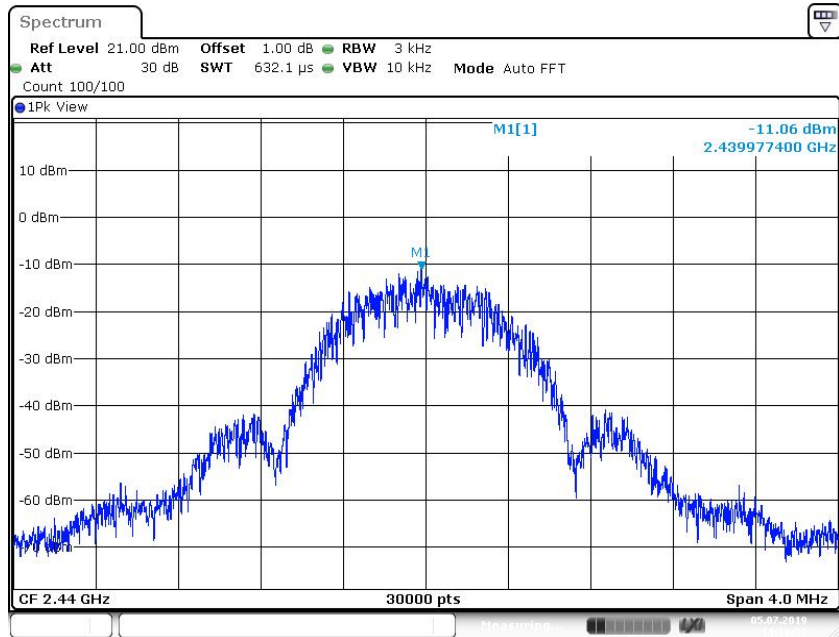
#### Test result

| Frequency<br>MHz       | Power spectral<br>density<br>dBm | Result |
|------------------------|----------------------------------|--------|
| Top channel 2402MHz    | -10.97                           | Pass   |
| Middle channel 2440MHz | -11.06                           | Pass   |
| Bottom channel 2480MHz | -11.15                           | Pass   |

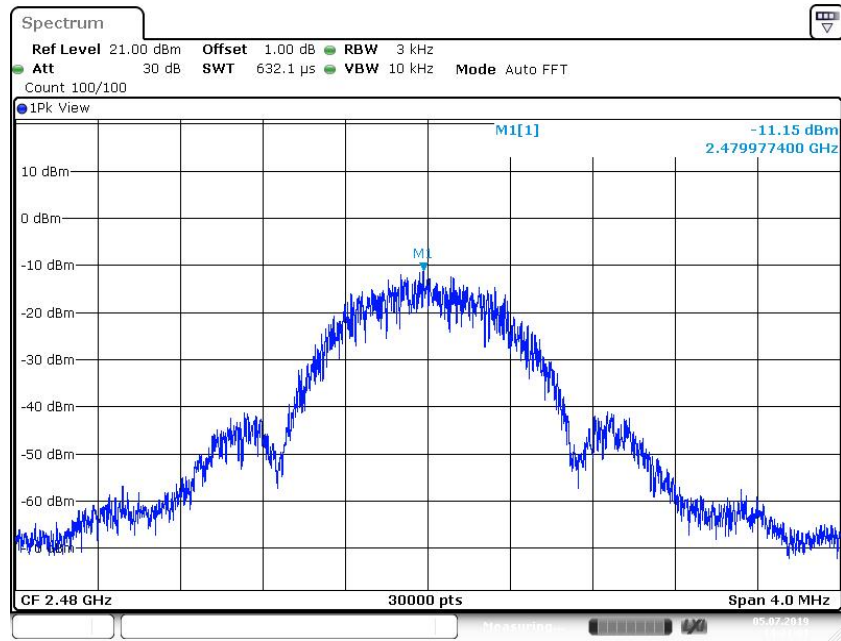




Low channel 2402MHz



Middle channel 2440MHz



High channel 2480MHz

## 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]

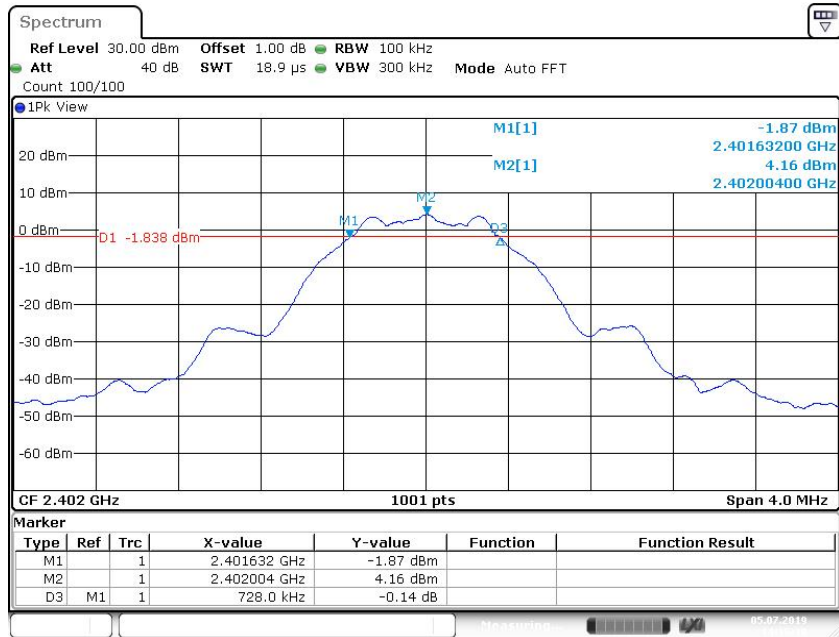
---

≥500

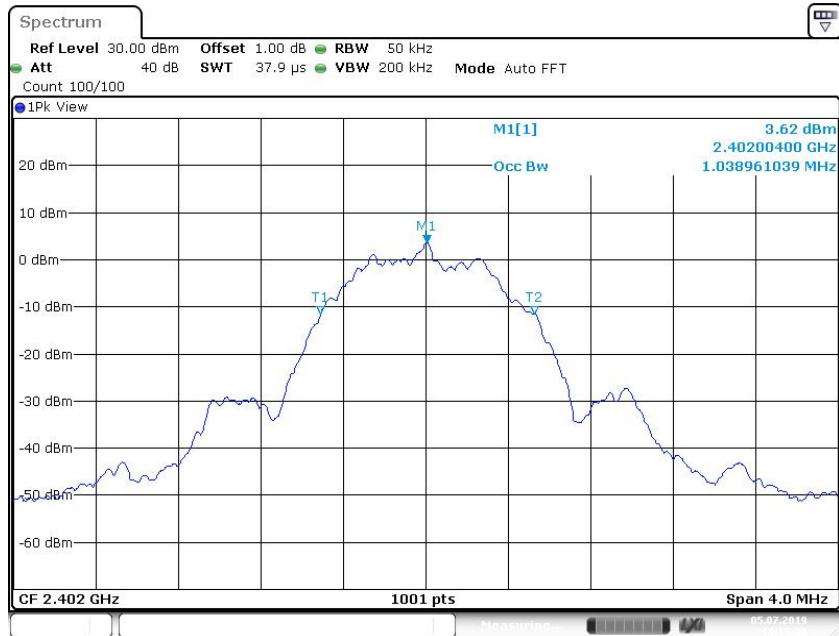
### Test result

| Frequency<br>MHz       | 6dB bandwidth<br>kHz | 99 bandwidth<br>kHz | Result |
|------------------------|----------------------|---------------------|--------|
| Bottom channel 2402MHz | 728                  | 1039                | Pass   |
| Middle channel 2440MHz | 728                  | 1039                | Pass   |
| Top channel 2480MHz    | 728                  | 1039                | Pass   |

### 6 dB Bandwidth

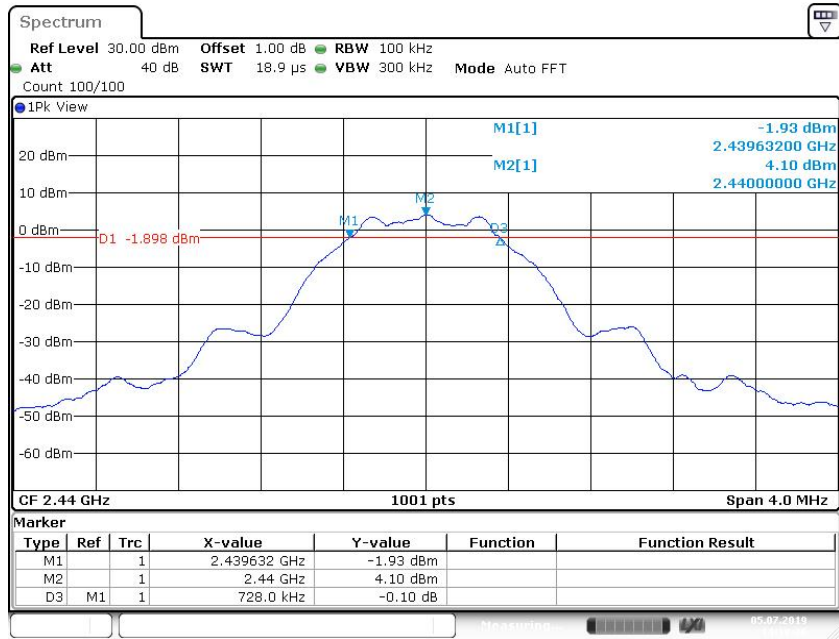


Date: 5 JUL 2019 14:15:18

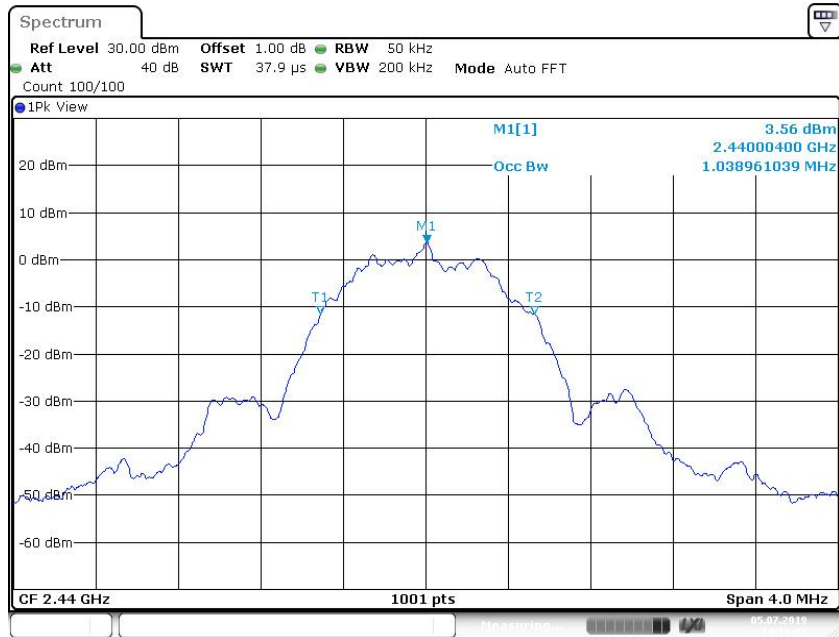


Date: 5 JUL 2019 14:15:29

Low channel 2402MHz

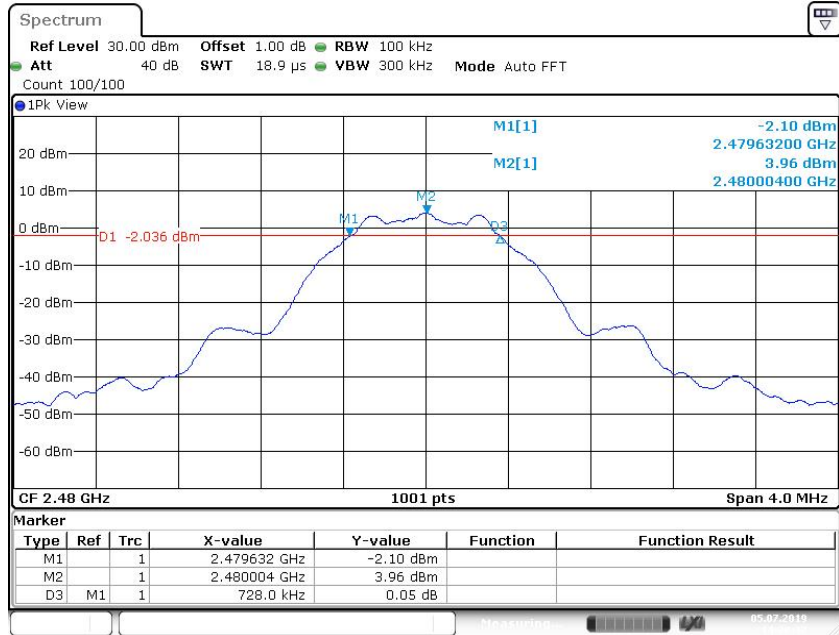


Date: 5 JUL 2019 14:18:27

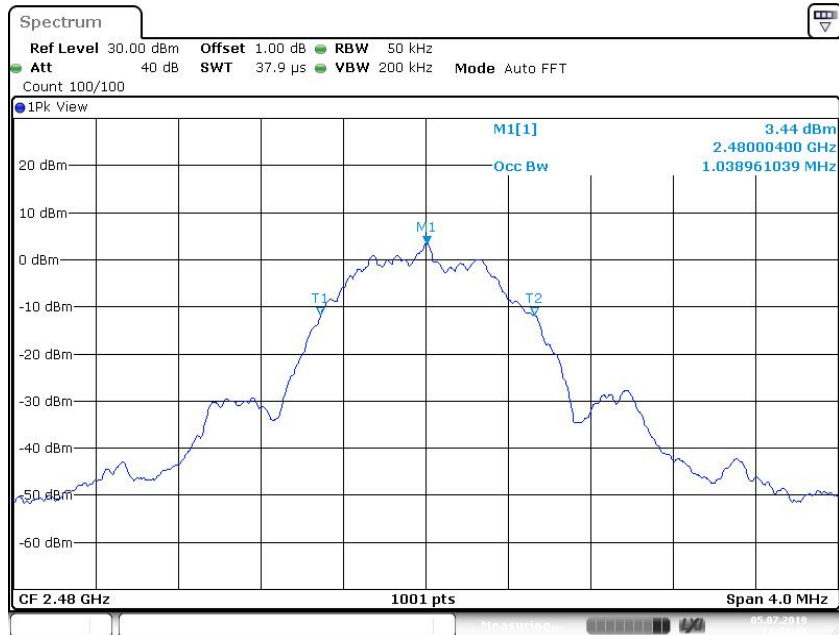


Date: 5 JUL 2019 14:18:38

Middle channel 2440MHz



Date: 5 JUL 2019 14:20:37



Date: 5 JUL 2019 14:20:48

High channel 2480MHz

## 9.5 Spurious RF conducted emissions

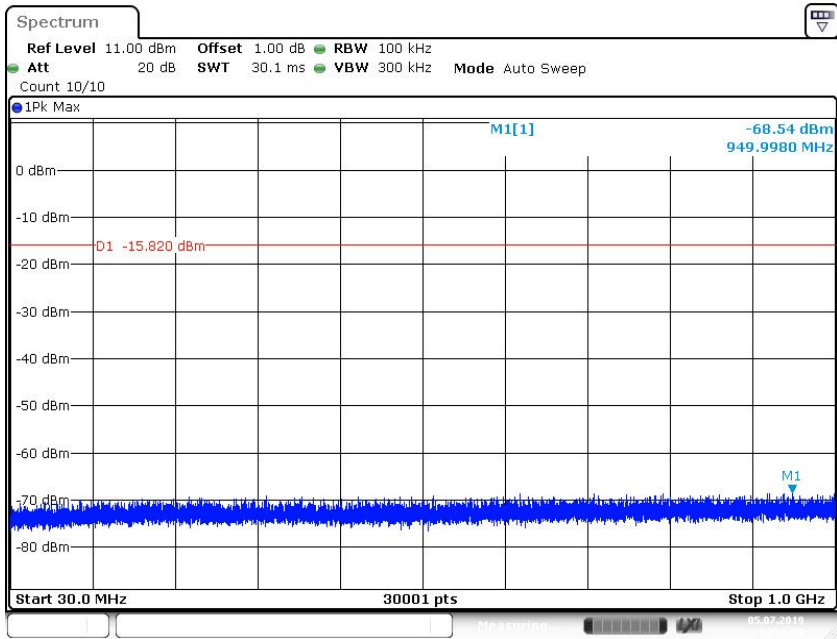
### Test Method

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.

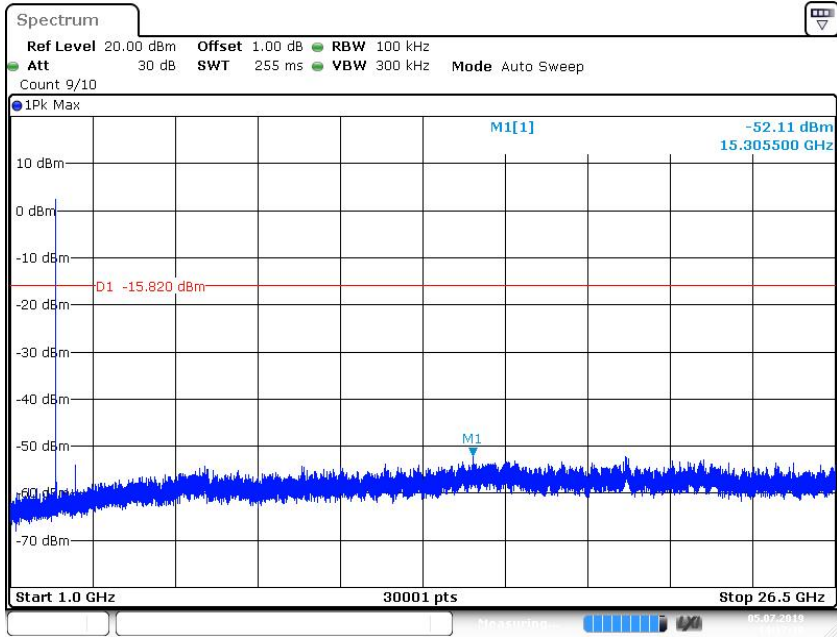
### Limit

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

### Spurious RF conducted emissions



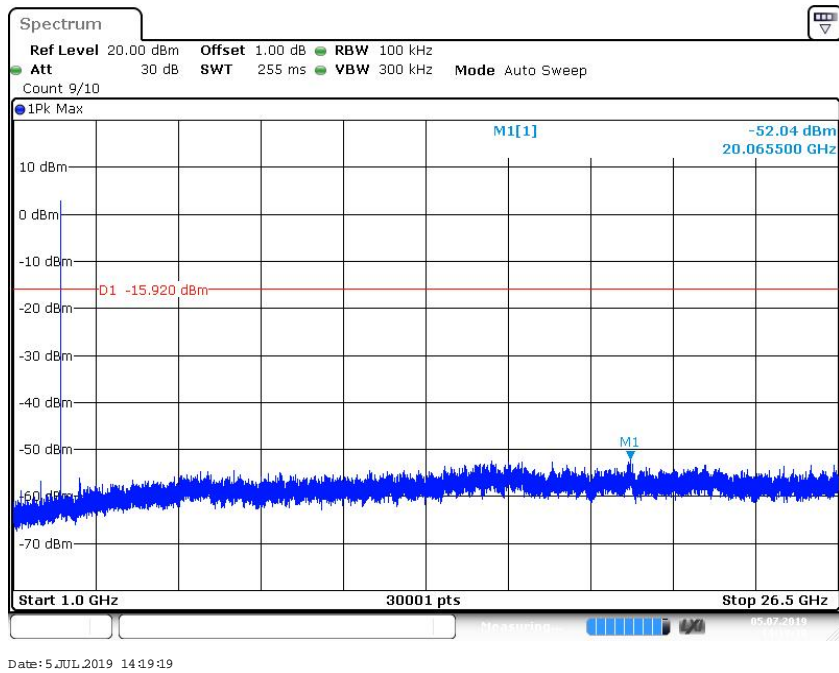
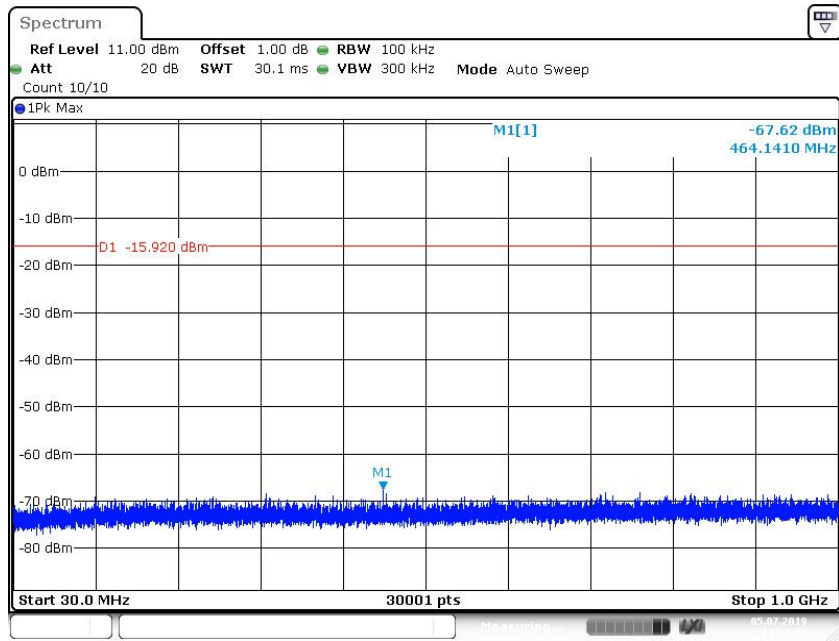
Date: 5 JUL 2019 14:17:00



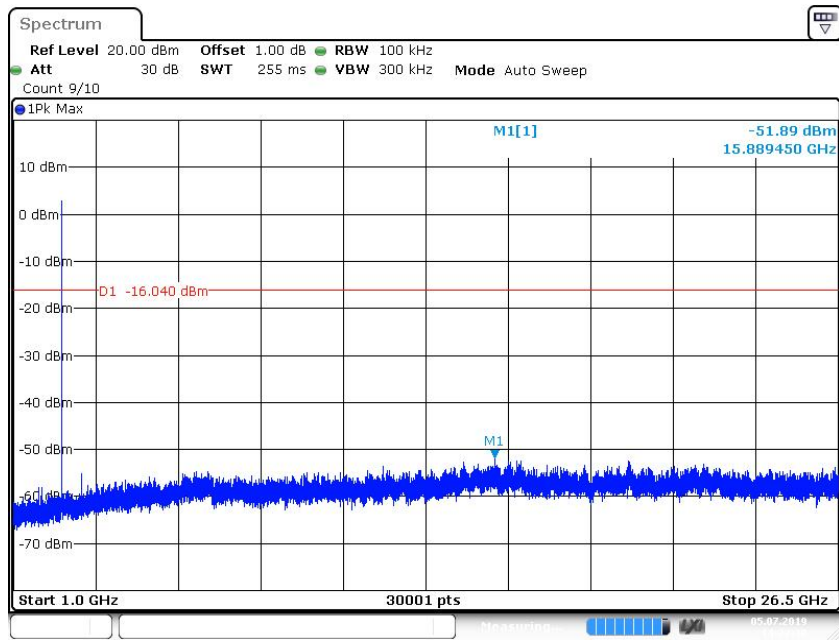
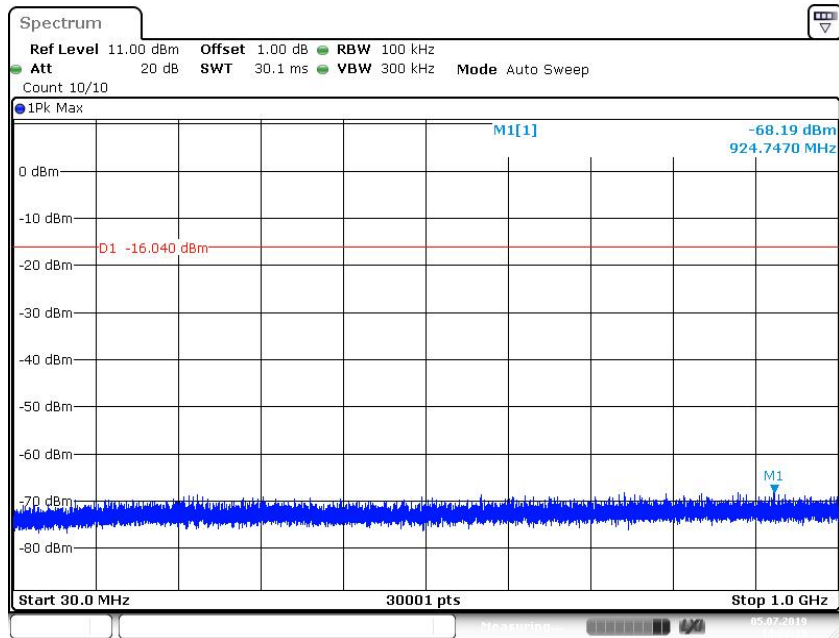
Date: 5 JUL 2019 14:17:11

2402MHz





2440MHz



2480MHz

## 9.6 Band edge

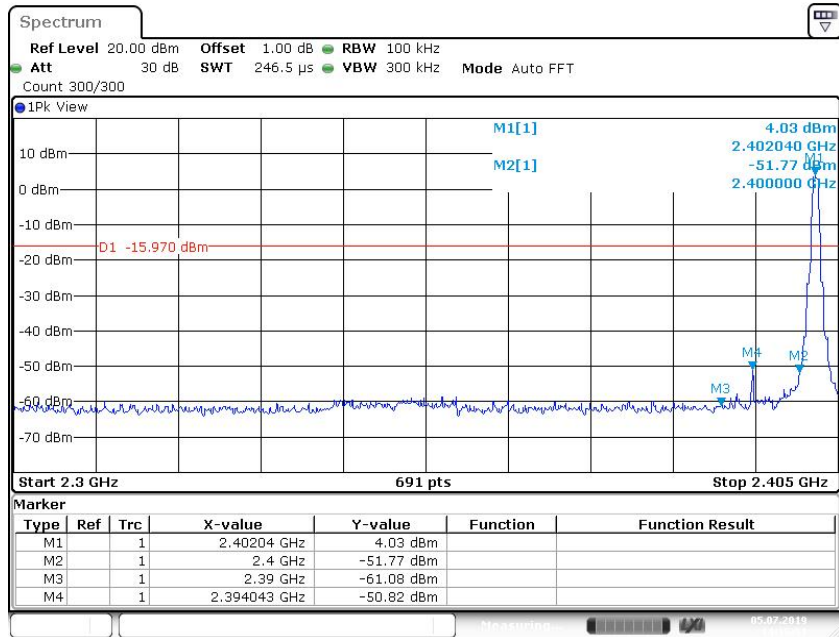
### Test Method

- 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

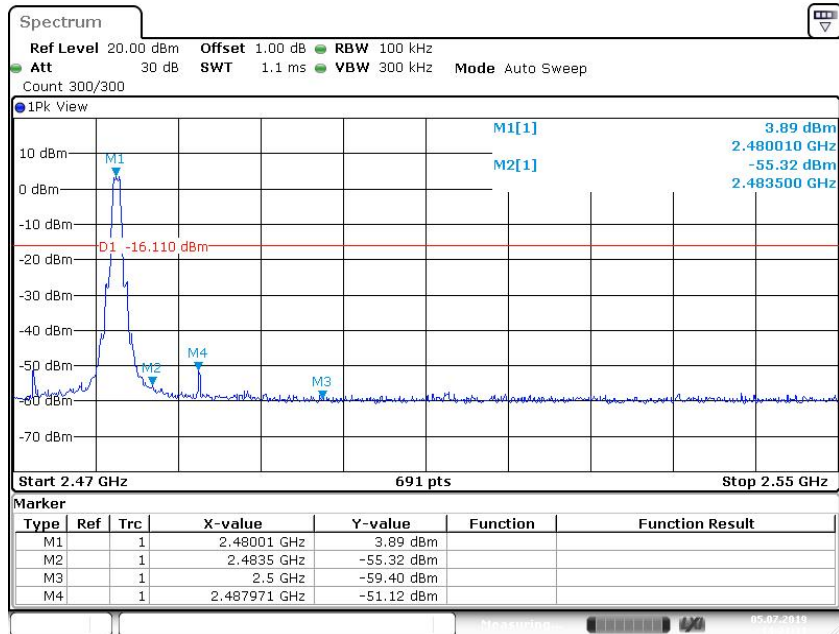
| Frequency Range<br>MHz | Limit (dBc) |
|------------------------|-------------|
| 30-25000               | -20         |

**Band edge testing**



Date: 5 JUL 2019 14:15:52

2402MHz



Date: 5 JUL 2019 14:21:11

2480MHz

## 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 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 and VBW = 10Hz for average measurement, Sweep = auto, Detector function = peak, Trace = max hold.  
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, VBW $\geq$ RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

### Note:

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

**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.

| <b>Frequency<br/>MHz</b> | <b>Field Strength<br/>uV/m</b> | <b>Field Strength<br/>dBµV/m</b> | <b>Detector</b> |
|--------------------------|--------------------------------|----------------------------------|-----------------|
| 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**

**Transmitting spurious emission test result as below:**

Low channel 2402MHz Test Result

| Frequency Band | Frequency | Emission Level | Polarization | Limit  | Detector | Margin | Correct factor (dB/m) | Result |
|----------------|-----------|----------------|--------------|--------|----------|--------|-----------------------|--------|
|                | MHz       | dBuV/m         |              | dBuV/m |          | dBuV/m |                       |        |
| 30-1000MHz     | 879.94*   | 32.54          | H            | 46     | QP       | 13.46  | -15.8                 | Pass   |
|                | 943.20*   | 33.01          | V            | 46     | QP       | 12.99  | -15.3                 | Pass   |
| 1000-25000MHz  | 7206      | 51.14          | H            | 74     | PK       | 22.86  | 5.2                   | Pass   |
|                | --        | --             | H            | 54     | AV       | --     | --                    | Pass   |
|                | 7206      | 51.66          | V            | 74     | PK       | 22.34  | 5.2                   | Pass   |
|                | --        | --             | V            | 54     | AV       | --     | --                    | Pass   |

Middle channel 2440MHz Test Result

| Frequency Band | Frequency | Emission Level | Polarization | Limit  | Detector | Margin | Correct factor (dB/m) | Result |
|----------------|-----------|----------------|--------------|--------|----------|--------|-----------------------|--------|
|                | MHz       | dBuV/m         |              | dBuV/m |          | dBuV/m |                       |        |
| 30-1000MHz     | --        | --             | H            | 43.5   | QP       | --     | --                    | Pass   |
|                | --        | --             | H            | 46     | QP       | --     | --                    | Pass   |
| 1000-25000MHz  | 7320*     | 49.61          | H            | 74     | PK       | 24.39  | 5.2                   | Pass   |
|                | --        | --             | H            | 54     | AV       | --     | --                    | Pass   |
|                | 7320*     | 47.88          | V            | 74     | PK       | 26.12  | 5.2                   | Pass   |
|                | --        | --             | V            | 54     | AV       | --     | --                    | Pass   |

High channel 2480MHz Test Result

| Frequency Band | Frequency | Emission Level | Polarization | Limit  | Detector | Margin | Correct factor (dB/m) | Result |
|----------------|-----------|----------------|--------------|--------|----------|--------|-----------------------|--------|
|                | MHz       | dBuV/m         |              | dBμV/m |          | dBuV/m |                       |        |
| 30-1000MHz     | --        | --             | H            | 43.5   | QP       | --     | --                    | Pass   |
|                | --        | --             | H            | 46     | QP       | --     | --                    | Pass   |
| 1000-25000MHz  | 7440*     | 43.00          | H            | 74     | PK       | 31     | 6.0                   | Pass   |
|                | --        | --             | H            | 54     | AV       | --     | --                    | Pass   |
|                | 7440*     | 45.72          | V            | 74     | PK       | 28.28  | 6.0                   | Pass   |
|                | --        | --             | V            | 54     | AV       | --     | --                    | Pass   |

Remark:

- (1) "\*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
- (2) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are the noise floor or attenuated more than 10dB below the permissible limits or the field strength is too small to be measured.
- (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

#### Radiated Spurious Emission Test

| Description                         | Manufacturer    | Model no.         | Serial no.      | Cal. due date |
|-------------------------------------|-----------------|-------------------|-----------------|---------------|
| Signal Analyzer                     | Rohde & Schwarz | FSV40             | 101031          | 2019-7-6      |
| Trilog Super Broadband Test Antenna | Schwarzbeck     | VULB 9163         | 708             | 2019-7-13     |
| Horn Antenna                        | Rohde & Schwarz | HF907             | 102295          | 2019-7-13     |
| Wideband Horn Antenna               | Q-PAR           | QWH-SL-18-40-K-SG | 12827           | 2019-7-12     |
| Pre-amplifier                       | Rohde & Schwarz | SCU 18            | 102230          | 2019-7-6      |
| Pre-amplifier                       | Rohde & Schwarz | SCU 40A           | 100432          | 2019-7-6      |
| Fully Anechoic Chamber              | TDK             | 8X4X4             | --              | 2020-7-7      |
| Test software                       | Rohde & Schwarz | EMC32             | Version 9.15.00 | N/A           |

#### RF Test System

| Description     | Manufacturer    | Model no. | Serial no. | cal. due date |
|-----------------|-----------------|-----------|------------|---------------|
| Signal Analyzer | Rohde & Schwarz | FSV40     | 101030     | 2019-7-6      |

#### Conducted Emission Test

| Description        | Manufacturer      | Model no.      | Serial no.     | cal. due date |
|--------------------|-------------------|----------------|----------------|---------------|
| EMI Test Receiver  | Rohde & Schwarz   | ESR 3          | 101782         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV4200        | 100249         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV432         | 101318         | 2019-7-6      |
| LISN               | Rohde & Schwarz   | ENV216         | 100326         | 2019-7-6      |
| ISN                | Rohde & Schwarz   | ENY81          | 100177         | 2019-7-6      |
| ISN                | Rohde & Schwarz   | ENY81-CA6      | 101664         | 2019-7-6      |
| High Voltage Probe | Rohde & Schwarz   | TK9420(VT9420) | 9420-584       | 2019-6-30     |
| RF Current Probe   | Rohde & Schwarz   | EZ-17          | 100816         | 2019-6-30     |
| Attenuator         | Shanghai Huaxiang | TS2-26-3       | 080928189      | 2019-7-6      |
| Test software      | Rohde & Schwarz   | EMC32          | Version9.15.00 | N/A           |

## 11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

| System Measurement Uncertainty   |  |
|--|--|
| Test Items   | Extended Uncertainty   |
| Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV432 or ENV4200) | 3.21dB   |
| Uncertainty for Radiated Spurious Emission 25MHz-3000MHz                               | Horizontal: 4.80dB;<br>Vertical: 4.87dB;   |
| Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz                            | Horizontal: 4.59dB;<br>Vertical: 4.58dB;   |
| Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz                           | Horizontal: 5.05dB;<br>Vertical: 5.04dB;   |
| Uncertainty for Conducted RF test with TS 8997   | RF Power Conducted: 1.16dB<br>Frequency test involved:<br>0.6×10 <sup>-7</sup> or 1% |