**DEKRA Certification, Inc.**
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DEKRA

ACCREDITED
Test Lab
Cert 2764.01

FCC LISTED, REGISTRATION NUMBER: 2764.01

ISED LISTED REGISTRATION NUMBER: 23595-1

Test report No:
2683ERM.002

# Test report

**USA FCC Part 15.247, 15.209, 15.207**
**CANADA RSS-247, RSS-Gen**
**Radio Frequency Devices. Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz.**
**Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices.**

| | |
|---|---|
| Identification of item tested | Sensor Device |
| Trademark | Zen-Me |
| Model and /or type reference | ZMH01A |
| Other identification of the product | FCC ID: 2AUHU-ZMHT01A<br>IC: 25841-ZMHT01A |
| Features | Bluetooth LE |
| Manufacturer | ZEN-ME LABS LTD<br>Visiokatu 1, 33720 Tampere, Finland |
| Test method requested, standard | USA FCC Part 15.247, 10-1-18 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz<br>USA FCC Part 15.209, 10-1-18 Edition: Radiated emission limits; general requirements.<br>CANADA RSS-247 Issue 2 (February 2017).<br>CANADA RSS-Gen Issue 5 (February 2018).<br>Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Measure Guidance v04 dated 05/04/2017.<br>ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices. |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Domingo Galvez<br>EMC&RF Lab Manager<br>Digitally signed by Domingo Galvez<br>DN: cn=Domingo Galvez, o=DEKRA Certification Inc., ou=Regulatory Lab, email=dgalvez@dekra.com, c=US<br>Date: 2020.03.19 22:24:14 -04'00' |
| Date of issue | 01/06/2020 |
| Report template No | FDT08_21 |

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# Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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# General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

# Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Certification internal document PODT000.

| Frequency (MHz) | U(k=2) | Units |
|---|---|---|
| 0,009 - 30 | 2.69 | dB |
| 30-180 | 3.82 | dB |
| 180-1000 | 2.61 | dB |
| 1000-18000 | 2.92 | dB |
| 18000-40000 | 2.15 | dB |

# Data provided by the client

ZMH01A and ZMT01A is a battery powered, integrated sensor device. It's leveraging the benefits of Bluetooth Low Energy (BLE) connectivity.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

# Usage of samples

Samples undergoing test have been selected by: The client.

Sample S/01 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 2683.03 | Conducted Test Sample | ZMH01A/ZMT01A | ---- | 12/13/2019 |

1. Sample S/01 has undergone following test(s):

   All conducted tests indicated in appendix A.

Sample S/02 is composed of the following elements:

| Control Nº | Description | Model | Serial Nº | Date of reception |
|---|---|---|---|---|
| 2683.01 | Radiated Test Sample | ZMH01A/ZMT01A | ---- | 12/13/2019 |

1. Sample S/02 has undergone following test(s):

   All radiated tests indicated in appendix A.

# Test sample description

| | | | | | | |
|---|---|---|---|---|---|---|
| Ports…… : | Port name and description | | Cable | | | |
| | | | Specified length [m] | Attached during test | Shielded | |
| | | | | ☐ | ☐ | |
| | | | | ☐ | ☐ | |
| | | | | ☐ | ☐ | |
| Supplementary information to the ports…… : | *No user accessible ports.* | | | | | |
| Rated power supply .....: | Voltage and Frequency | | Reference poles | | | |
| | | | L1 | L2 | L3 | N | PE |
| | ☐ | AC: | ☐ | ☐ | ☐ | ☐ | ☐ |
| | ☐ | AC: | ☐ | ☐ | ☐ | ☐ | ☐ |
| | ☐ | DC: | | | | | |
| | ☒ | DC: Battery: 3.7V | | | | | |
| Rated Power .....: | 0.19W(3.7V / 50mA max power) | | | | | | |
| Clock frequencies .....: | CPU 64MHz, Crystal 32MHz, RTC 32768Hz | | | | | | |
| Other parameters.....: | | | | | | | |
| Software version .....: | N/A | | | | | | |
| Hardware version.....: | 1.0 | | | | | | |
| Dimensions in cm (L x W x D) ....: | | | | | | | |
| Mounting position.....: | ☐ | Table top equipment | | | | | |
| | ☐ | Wall/Ceiling mounted equipment | | | | | |
| | ☐ | Floor standing equipment | | | | | |
| | ☐ | Hand-held equipment | | | | | |
| | ☐ | Other: | | | | | |
| Modules/parts .....: | Module/parts of test item | | Type | Manufacturer | | |
| | Document “041219 Zen-Me Labs Test Device Instructions v0.2” | | | | | |

| | | | |
|---|---|---|---|
| Accessories (not part of the test item) .....: | Description | Type | Manufacturer |
| | Document “041219 Zen-Me Labs Test Device Instructions v0.2” | | |
| | | | |
| Documents as provided by the applicant.....: | Description | File name | Issue date |
| | Documents “041219 Zen-Me Labs Test Device Instructions v0.2” and “291019 ZMx01A Technical spec v0_9” | | |
| **Copy of marking plate:** | | | |
| -- | | | |

# Identification of the client

ZEN-ME LABS LTD

Visiokatu 1, 33720 Tampere, Finland

# Testing period and place

| | |
|---|---|
| **Test Location** | DEKRA Certification Inc. |
| **Date (start)** | 12-13-2019 |
| **Date (finish)** | 12-20-2019 |

# Document history

| Report number | Date | Description |
|---|---|---|
| 2683ERM.002 | 01-06-2020 | First release |

# Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 75 % |
| **Air pressure** | Min. = 860 mbar<br>Max. = 1060 mbar |

In the semianechoic chamber, the following limits were not exceeded during the test.

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 75 % |
| **Air pressure** | Min. = 860 mbar<br>Max. = 1060 mbar |

In the chamber for conducted measurements, the following limits were not exceeded during the test:

| | |
|---|---|
| **Temperature** | Min. = 15 ºC<br>Max. = 35 ºC |
| **Relative humidity** | Min. = 30 %<br>Max. = 60 % |
| **Air pressure** | Min. = 860 mbar<br>Max. = 1060 mbar |

# Remarks and comments

The tests have been performed by the technical personnel: Divya Adusumilli, Lakshmi Gollamudi, Poojita Bhattu and Koji Nishimoto.

# Testing verdicts

| | |
|---|---|
| Not applicable : | N/A |
| Pass : | P |
| Fail : | F |
| Not measured : | N/M |

# Summary

| FCC PART 15 PARAGRAPH / RSS-247 (Bluetooth Low Energy) | | | | | |
|---|---|---|---|---|---|
| **Report Section** | **15.247 Spec Clause** | **RSS Spec Clause** | **Test Description** | **Verdict** | **Remark** |
| A.1 | | RSS-Gen 6.7 | 99% Occupied Bandwidth | P | N/A |
| A.2 | § 15.247 (a) (2) | RSS-247 5.2. (a) | 6dB Emission Bandwidth | P | N/A |
| A.3 | § 15.247 (b) (3) | RSS-247 5.4. (d) | Maximum peak conducted output power and antenna gain | P | N/A |
| A.4 | § 15.247 (d) | RSS-247 5.5. | Band-edge emissions compliance (Transmitter) | P | N/A |
| A.5 | § 15.247 (e) | RSS-247 5.2. (b) | Power spectral density | P | N/A |
| A.6 | § 15.247 (d) | RSS-Gen 8.9 & 8.10. | Emission limitations radiated (Transmitter) | P | N/A |
| - | §15.207 (a) | RSS Gen 8.8 | Conducted Emission Limits | N/A | Refer 1 |

Supplementary information and remarks:

1. Device under test supports integral antenna.

# List of equipment used during the test

Conducted Measurements

Test system Rohde & Schwarz TS 8997:

| CONTROL NUMBER | DESCRIPTION | MANUFACTURER | MODEL | LAST CALIBRATION | NEXT CALIBRATION |
|---|---|---|---|---|---|
| 1039 | Signal Analyzer | ROHDE & SCHWARZ | FSV40 | 2018/10 | 2020/10 |
| 1040 | Switch unit Rohde & Schwarz with power detector OSP120 / OSP-B157 | ROHDE & SCHWARZ | OSP120 / OSPB157 | 2018/10 | 2020/10 |
| 1041 | RF generator | ROHDE & SCHWARZ | SMB100A | 2018/04 | 2020/04 |
| 1042 | RF generator | ROHDE & SCHWARZ | SMBV100A | 2018/01 | 2020/01 |
| 0101 | Climatic Chamber | ESPEC NA | ESL-2CA | 2019/01 | 2020/01 |

Radiated Measurements

| CONTROL NUMBER | DESCRIPTION | MANUFACTURER | MODEL | LAST CALIBRATION | NEXT CALIBRATION |
|---|---|---|---|---|---|
| 1014 | Signal Analyzer | ROHDE & SCHWARZ | FSV40 | 2018/10 | 2021/05 |
| 1012 | EMI Test Receiver | ROHDE & SCHWARZ | ESR26 | 2018/09 | 2020/09 |
| 1058 | Double Ridged Waveguide Horn Antenna | ETS LINDGREN | 3115 | 2017/03 | 2020/03 |
| 1055 | Double Ridged Waveguide Horn Antenna | ETS LINDGREN | 3116C | 2017/12 | 2020/03 |
| 1065 | Biconilog Antenna | ETS LINDGREN | 3142E | 2017/03 | 2020/03 |
| 0981 | Preamplifier | BONN ELEKTRONIK | BLMA 0118-2A | 2018/10 | 2020/10 |
| 1017 | EMC measurement software | ROHDE & SCHWARZ | EMC32 V9.01 | --- | --- |

# **Appendix A:** Test results

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# PRODUCT INFORMATION

The following information is provided by the client

| **Information** | **Description** |
|---|---|
| Modulation | Other than FHSS |
| Adaptive | Non-Adaptive Equipment |
| Operation mode 1: Single Antenna Equipment | Equipment with only one antenna |
| - Operating Frequency Range | 2402 – 2480 MHz |
| - Nominal Channel Bandwidth | 1 MHz & 2MHz |
| - RF Output Power | 0 dBm |
| Antenna type | Integral antenna |
| Antenna gain | -1.9 dBi |
| Nominal Voltage | 3 .7 V |
| - Type of power source | Battery Powered |
| Equipment type | Bluetooth Low Energy |
| Geo-location capability | No |

# DESCRIPTION OF TEST CONDITIONS

| TEST CONDITIONS | DESCRIPTION |
|---|---|
| TC#01<br>(1Mbps) | Power supply (V):<br>Battery Powered<br><br>Test Frequencies for Conducted / Radiated tests:<br>Lowest channel: 2402 MHz<br>Middle channel: 2440 MHz<br>Highest channel: 2480 MHz |
| TC#02<br>(2Mbps) | Power supply (V):<br>Battery Powered<br><br>Test Frequencies for Conducted / Radiated tests:<br>Lowest channel: 2402 MHz<br>Middle channel: 2440 MHz<br>Highest channel: 2480 MHz |

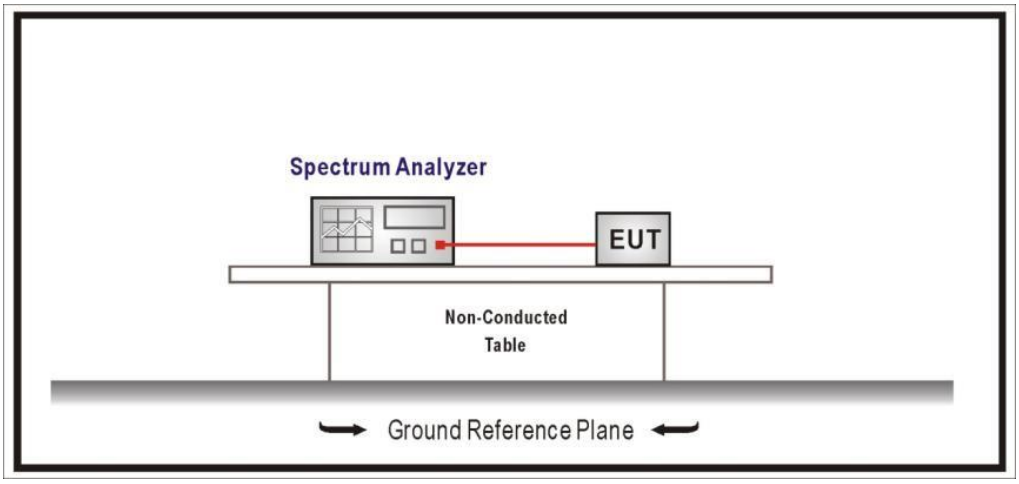
# TEST A.1: 99% EMISSION BANDWIDTH

| | | |
|---|---|---|
| **LIMITS:** | Product standard: | RSS-Gen |
| | Test standard: | RSS-Gen 6.7 |

LIMITS

The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs

| **TEST SETUP** | |
|---|---|

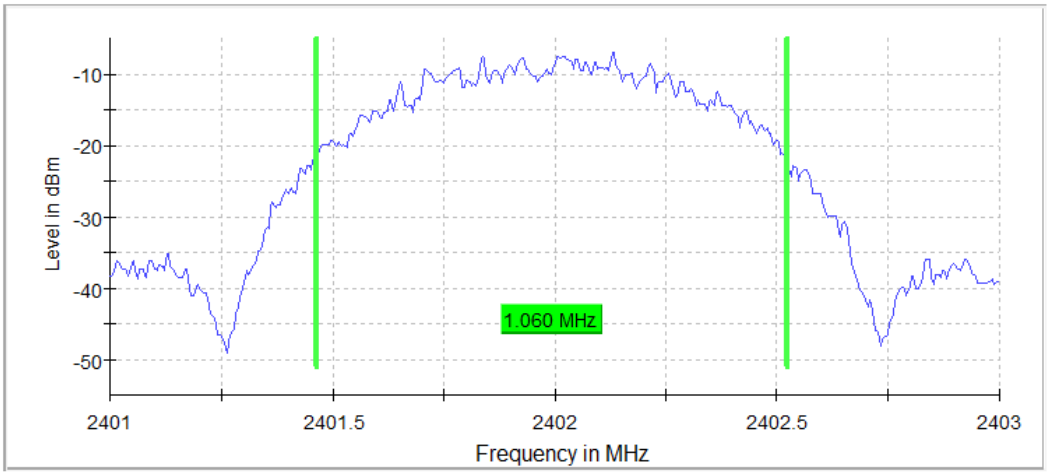



| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#01 |
| **TEST RESULTS:** | PASS |

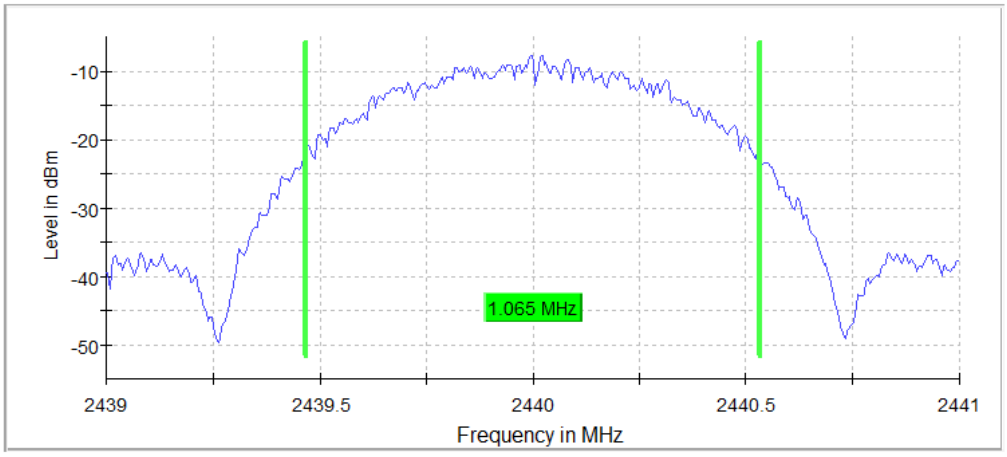
| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| 99% bandwidth (MHz) | 1.06 | 1.065 | 1.065 |
| Measurement uncertainty (kHz) | <± 8.33 | | |

| TEST RESULTS (Cont.): | |
|---|---|

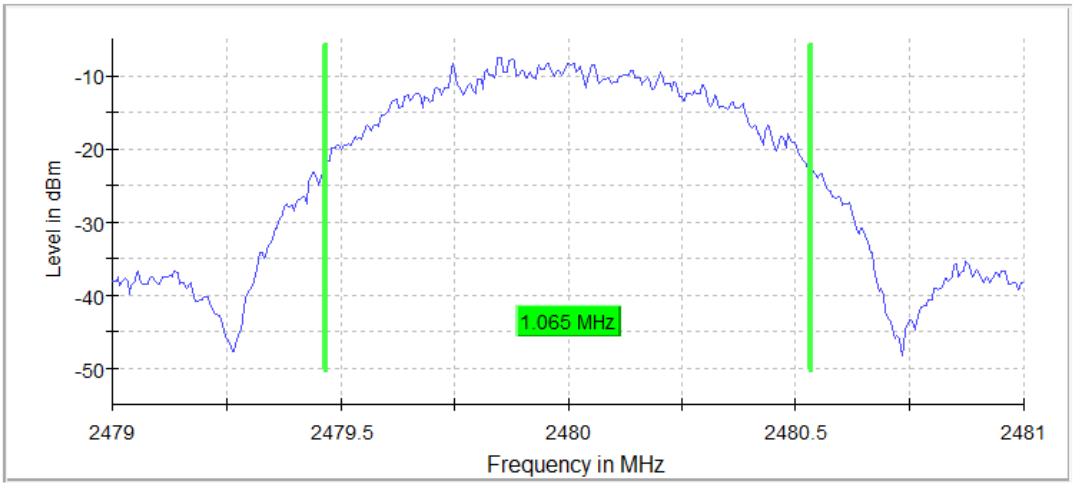
**Lowest Channel**




**Middle Channel**




**Highest Channel**



| TEST RESULTS (Cont.): | |
|---|---|

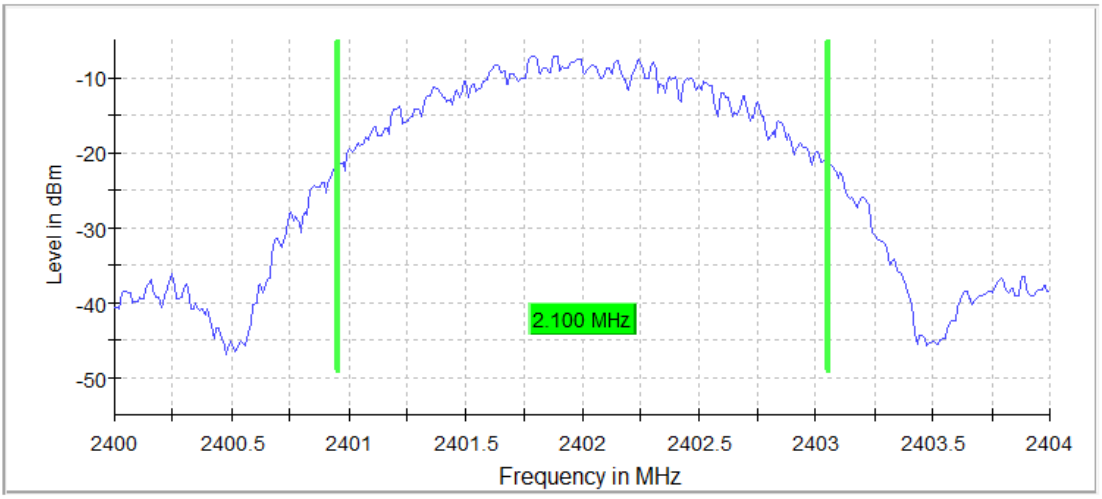
**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40100 GHz | 2.43900 GHz | 2.47900 GHz |
| Stop Frequency | 2.40300 GHz | 2.44100 GHz | 2.48100 GHz |
| Span | 2.000 MHz | 2.000 MHz | 2.000 MHz |
| RBW | 10.000 kHz | 10.000 kHz | 10.000 kHz |
| VBW | 30.000 kHz | 30.000 kHz | 30.000 kHz |
| SweepPoints | 400 | 400 | 400 |
| Sweeptime | 189.648 µs | 189.648 µs | 189.648 µs |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB | 0.30 dB |
| Run | 9 / max. 150 | 8 / max. 150 | 9 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.25 dB | 0.19 dB | 0.21 dB |

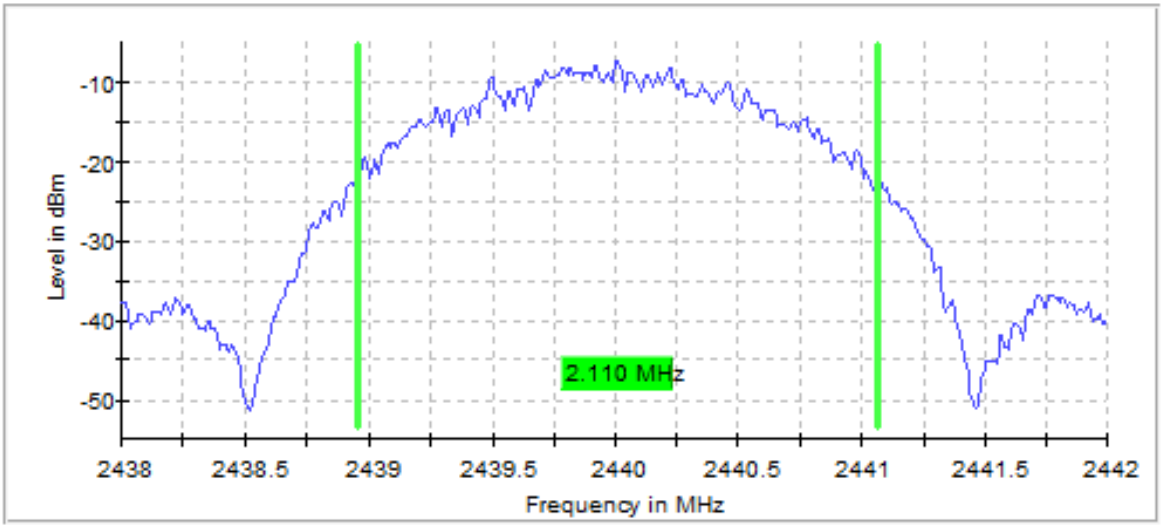
| TESTED CONDITIONS MODES: | TC#02 |
|---|---|
| TEST RESULTS: | PASS |

| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| 99% bandwidth (MHz) | 2.1 | 2.11 | 2.09 |
| Measurement uncertainty (kHz) | <± 8.33 | | |

**Lowest Channel**

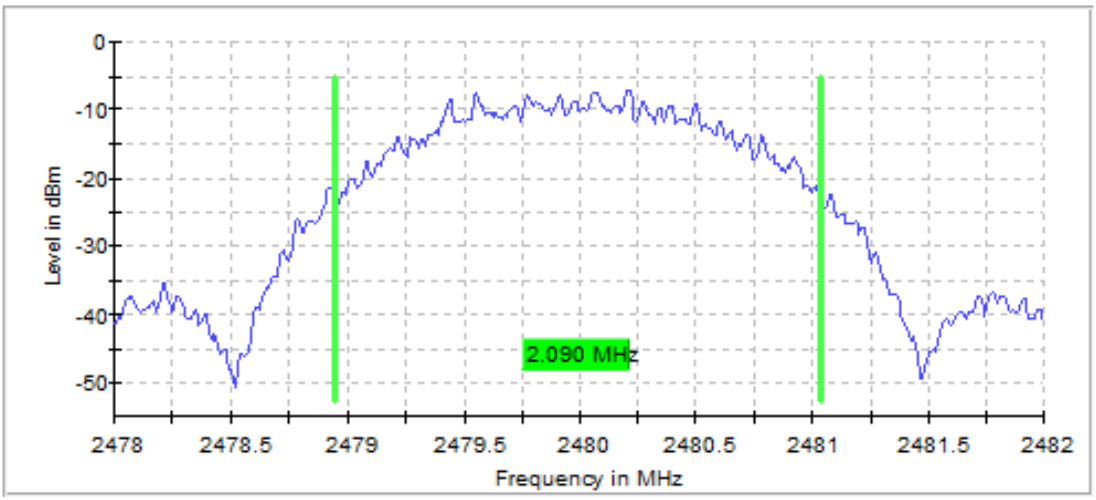



**Middle Channel**



| TEST RESULTS (Cont.): | |
|---|---|

### Highest Channel




### Measurement

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40000 GHz | 2.43800 GHz | 2.47800 GHz |
| Stop Frequency | 2.40400 GHz | 2.44200 GHz | 2.48200 GHz |
| Span | 4.000 MHz | 4.000 MHz | 4.000 MHz |
| RBW | 20.000 kHz | 20.000 kHz | 20.000 kHz |
| VBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| SweepPoints | 400 | 400 | 400 |
| Sweeptime | 94.824 µs | 94.824 µs | 94.824 µs |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.30 dB | 0.30 dB | 0.30 dB |
| Run | 11 / max. 150 | 11 / max. 150 | 11 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.12 dB | 0.18 dB | 0.20 dB |

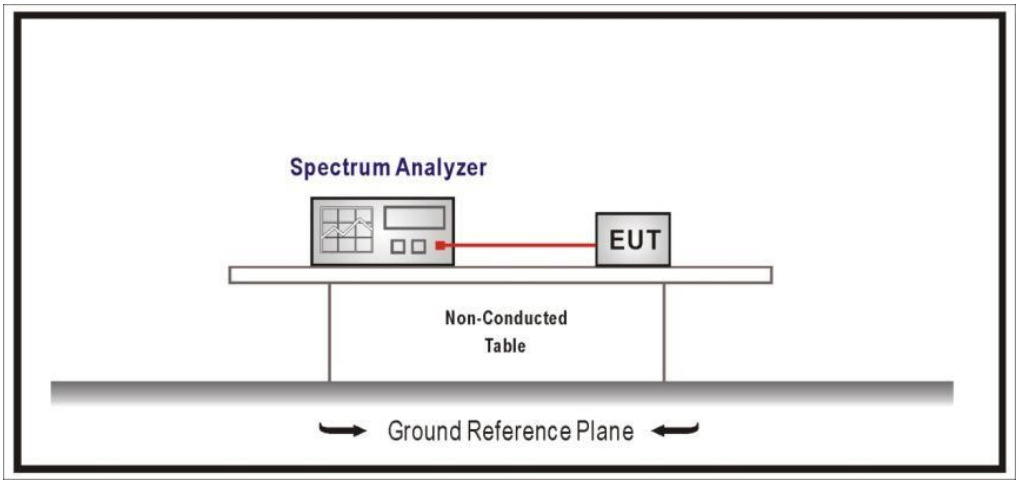
## TEST A.2: 6DB BANDWIDTH

| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
|---|---|---|
| | Test standard: | Part 15 Subpart C §15.247(a)(2) and RSS-247 5.2(a) |

LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

| TEST SETUP | |
|---|---|

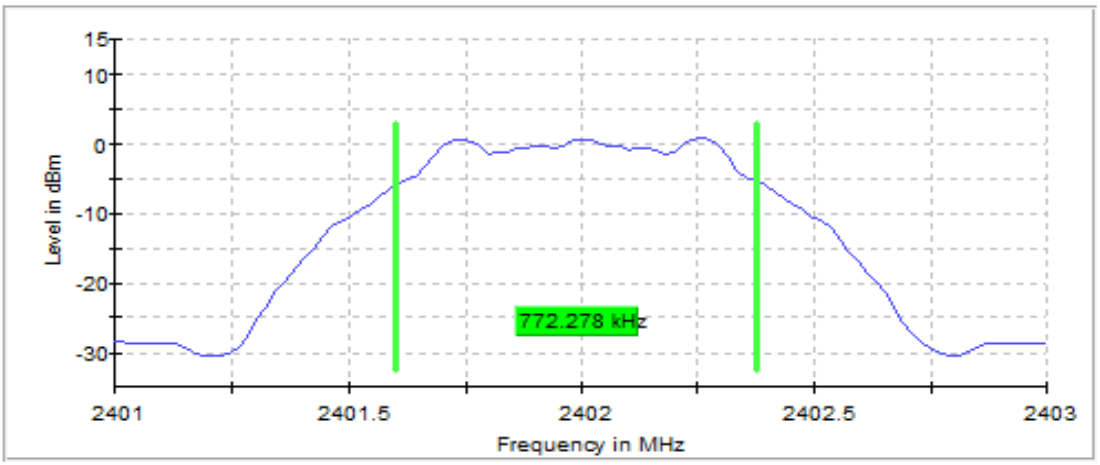



| TESTED SAMPLES: | S/01 |
|---|---|
| TESTED CONDITIONS MODES: | TC#01 |
| TEST RESULTS: | PASS |

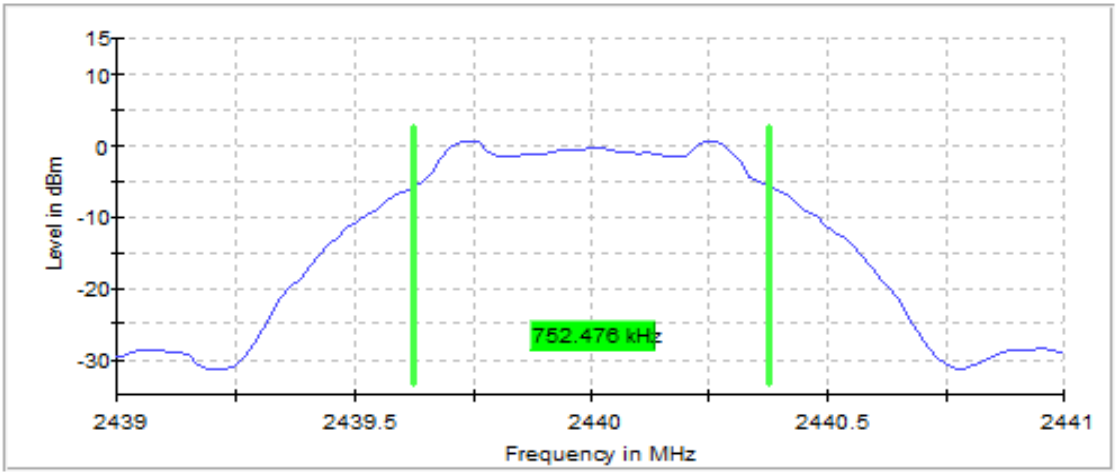
| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| 6 dB Spectrum bandwidth (KHz) | 772.278 | 752.476 | 772.278 |
| Measurement uncertainty (kHz) | <±20.0 | | |

| TEST RESULTS (Cont.): | |
|---|---|

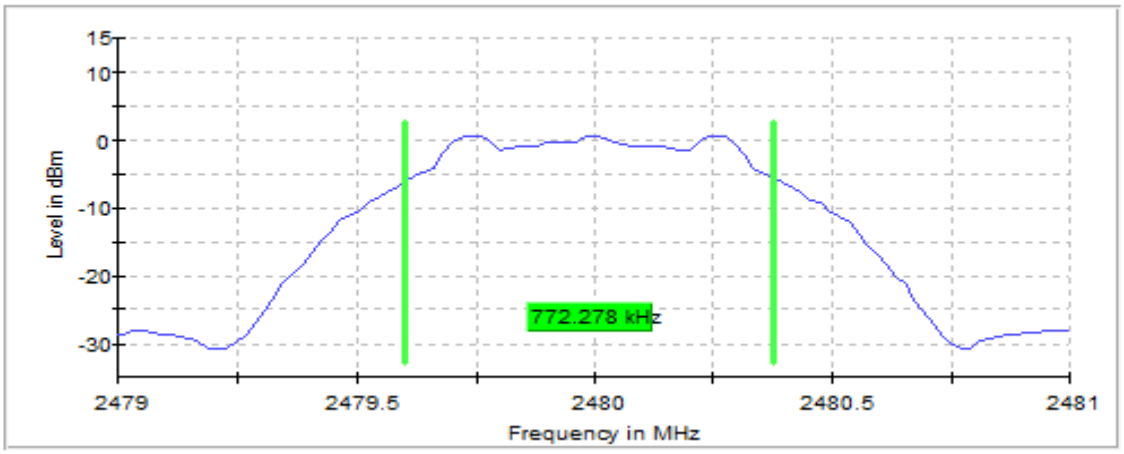
**Low Channel:**




**Mid Channel:**




**High Channel:**



| TEST RESULTS (Cont.): | |
|---|---|

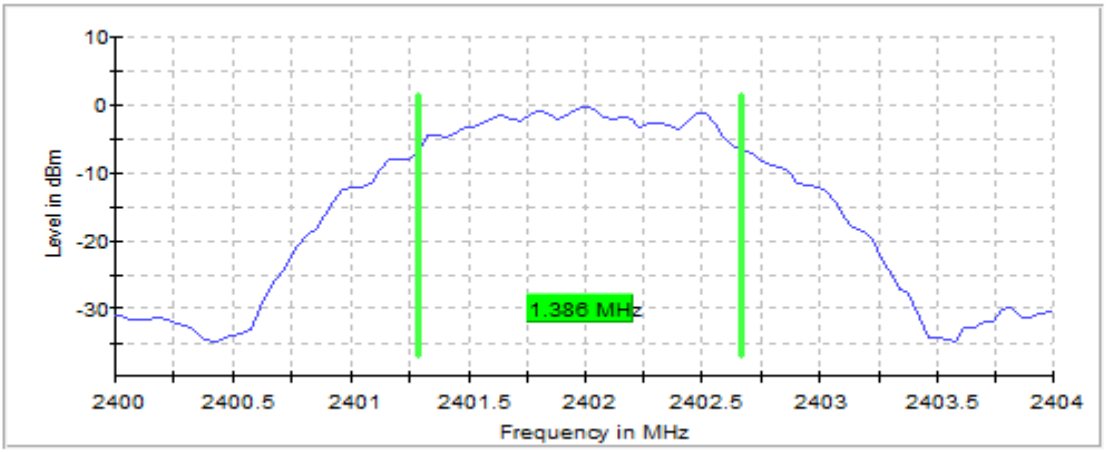
**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40100 GHz | 2.43900 GHz | 2.47900 GHz |
| Stop Frequency | 2.40300 GHz | 2.44100 GHz | 2.48100 GHz |
| Span | 2.000 MHz | 2.000 MHz | 2.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 101 | 101 | 101 |
| Sweeptime | 18.938 µs | 18.938 µs | 18.938 µs |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 13 / max. 150 | 11 / max. 150 | 11 / max. 150 |
| Stable | 5 / 5 | 5 / 5 | 5 / 5 |
| Max Stable Difference | 0.00 dB | 0.18 dB | 0.06 dB |

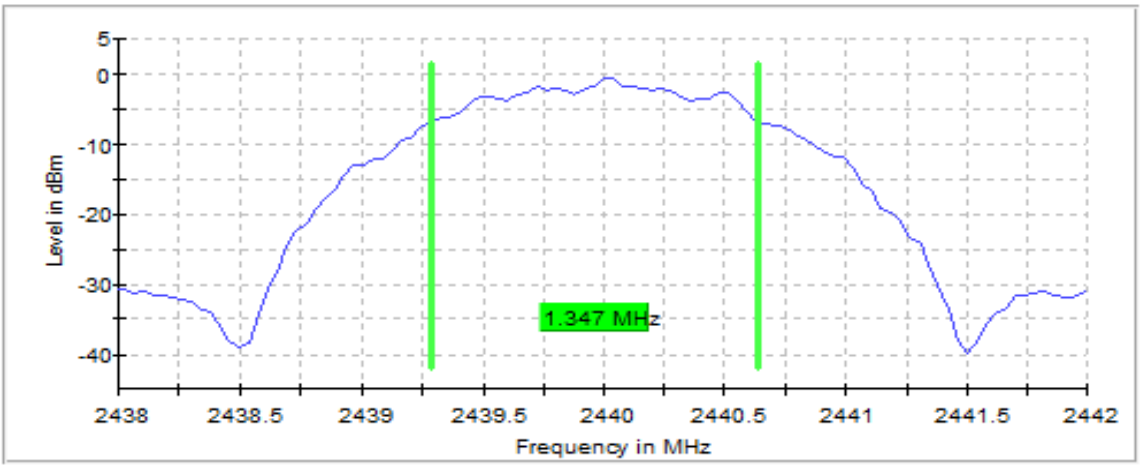
| TESTED CONDITIONS MODES: | TC#02 |
|---|---|
| TEST RESULTS: | PASS |

| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| 6dB bandwidth (MHz) | 1.386 | 1.347 | 1.386 |
| Measurement uncertainty (kHz) | <±20.0 | | |

**Lowest Channel**

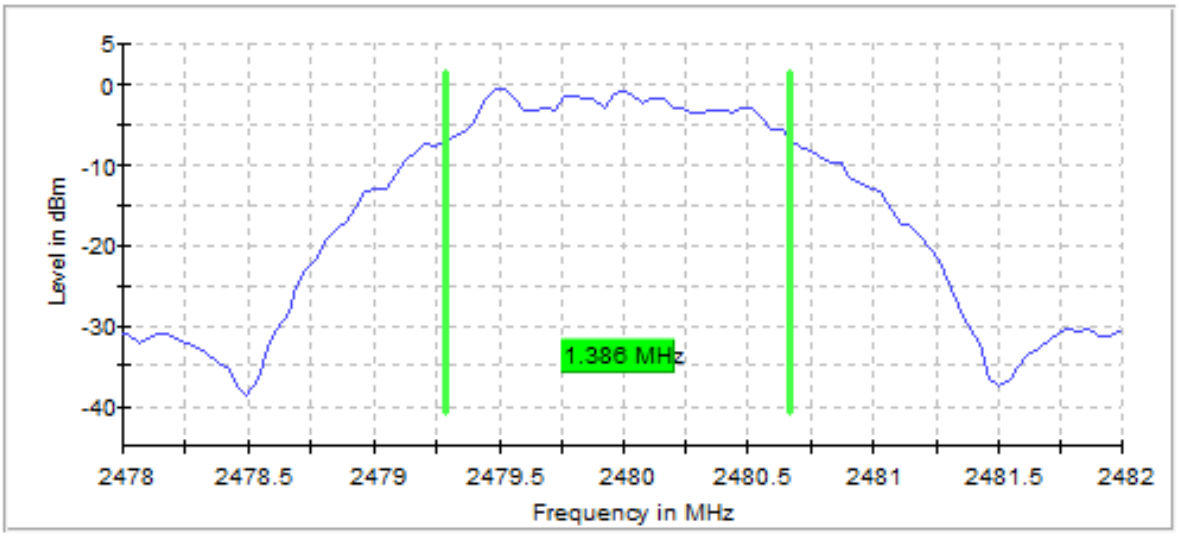



**Middle Channel**



| TEST RESULTS (Cont.): | |
|---|---|

**Highest Channel**




**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40000 GHz | 2.43800 GHz | 2.47800 GHz |
| Stop Frequency | 2.40400 GHz | 2.44200 GHz | 2.48200 GHz |
| Span | 4.000 MHz | 4.000 MHz | 4.000 MHz |
| RBW | 100.000 kHz | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz | 300.000 kHz |
| SweepPoints | 101 | 101 | 101 |
| Sweeptime | 18.938 µs | 18.938 µs | 18.938 µs |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 10 / max. 150 | 11 / max. 150 | 11 / max. 150 |
| Stable | 5 / 5 | 5 / 5 | 5 / 5 |
| Max Stable Difference | 0.08 dB | 0.26 dB | 0.00 dB |

# TEST A.3: MAXIMUM PEAK CONDUCTED OUTPUT POWER AND ANTENNA GAIN

| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
|---|---|---|
| | Test standard: | Part 15 Subpart C §15.247(b)(3) and RSS-247 5.4(d) |

LIMITS

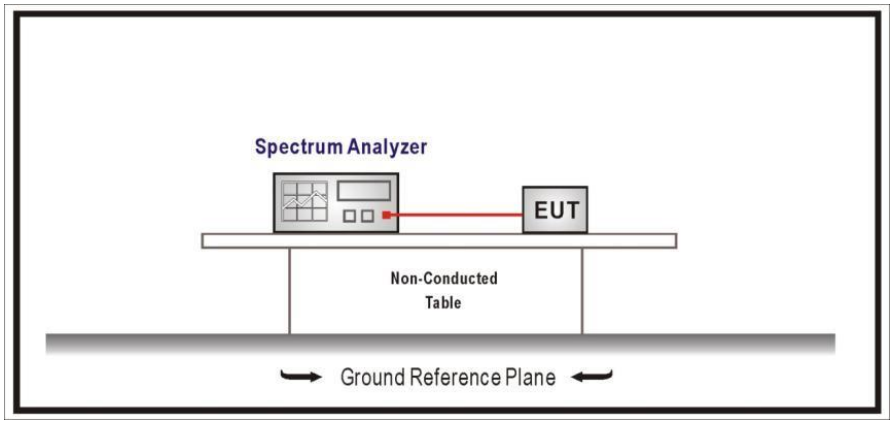
§15.247(b)(3) and RSS-247 5.4(d): For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).

RSS-247 5.4(d): The e.i.r.p. shall not exceed 4 W (36 dBm)

**TEST SETUP**

The maximum peak conducted output power was measured using the method according to point 9.1.1. of Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Meas Guidance v04 dated 05/04/2017.

The EIRP power (dBm) is calculated by adding the declared maximum antenna gain to the measured conducted power




| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#01 |
| **TEST RESULTS:** | PASS |

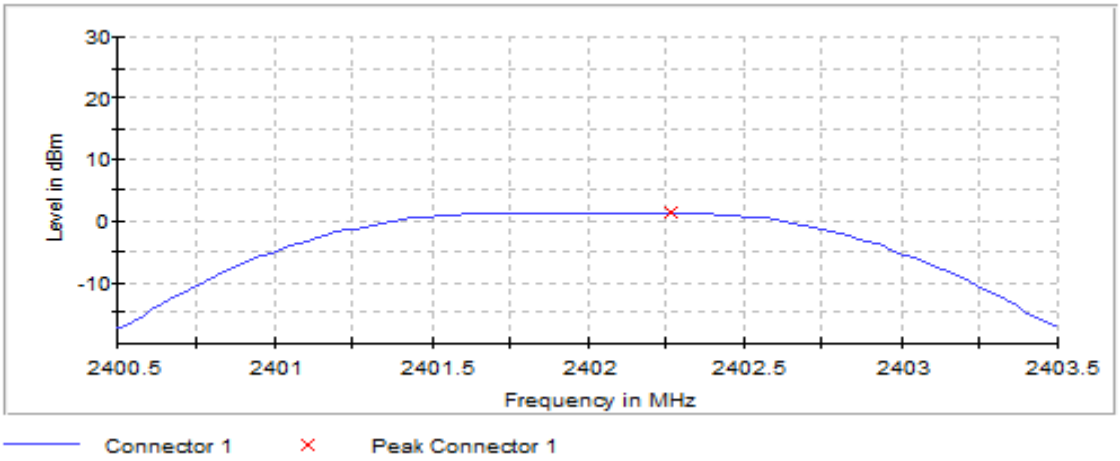
| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| Maximum conducted power (dBm) | 1.4 | 0.9 | 1.1 |
| Maximum EIRP power (dBm) | -0.5 | -1.0 | -0.8 |
| Measurement uncertainty (dB) | <±0.78 | | |

Maximum declared antenna gain: -1.9 dBi

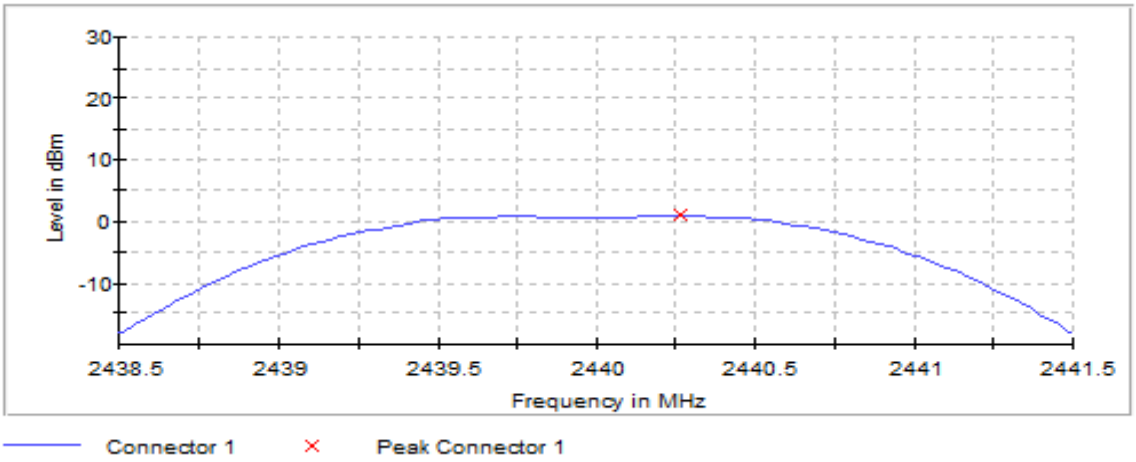
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

| TEST RESULTS (Cont.): | CONDUCTED PEAK POWER |
|---|---|

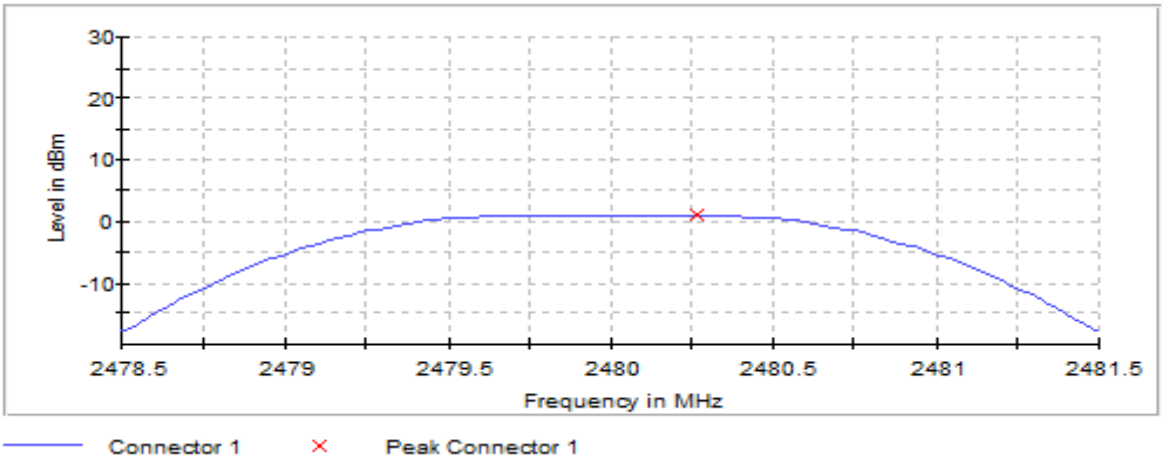
**Lowest Channel**




**Middle Channel**




**Highest Channel**



| TEST RESULTS (Cont.): | |
|---|---|

**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40050 | 2.43850 | 2.47850 |
| Stop Frequency | 2.40350 | 2.44150 | 2.48150 |
| Span | 3.000 MHz | 3.000 MHz | 3.000 MHz |
| RBW | 1.000 MHz | 1.000 MHz | 1.000 MHz |
| VBW | 3.000 MHz | 3.000 MHz | 3.000 MHz |
| SweepPoints | 101 | 101 | 101 |
| Sweeptime | 1.907 µs | 1.907 µs | 1.907 µs |
| Reference Level | 10.000 dBm | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | 4 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.05 dB | 0.01 dB | 0.02 dB |

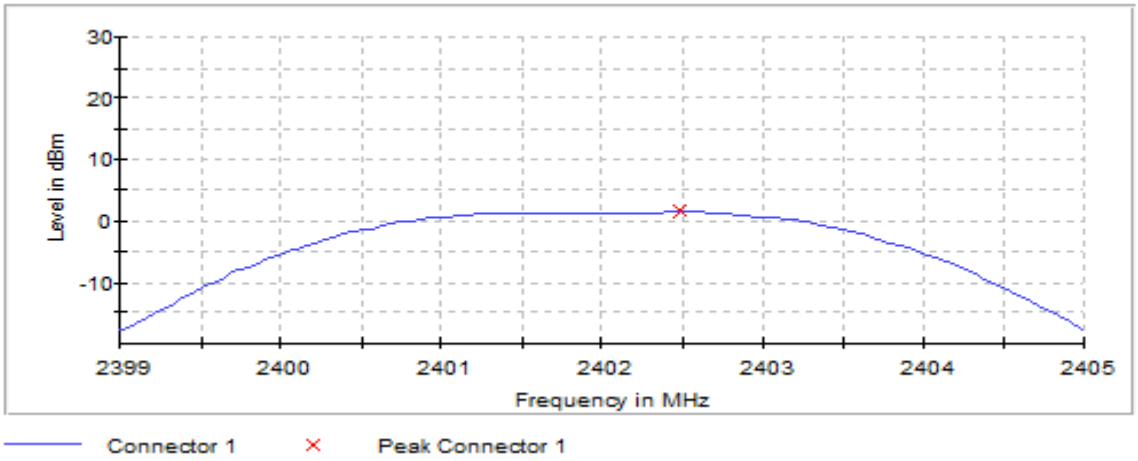
| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#02 |
| **TEST RESULTS:** | PASS |

| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| Maximum conducted power (dBm) | 1.5 | 1.0 | 1.2 |
| Maximum EIRP power (dBm) | -0.4 | -0.9 | -0.7 |
| Measurement uncertainty (dB) | <±0.78 | | |

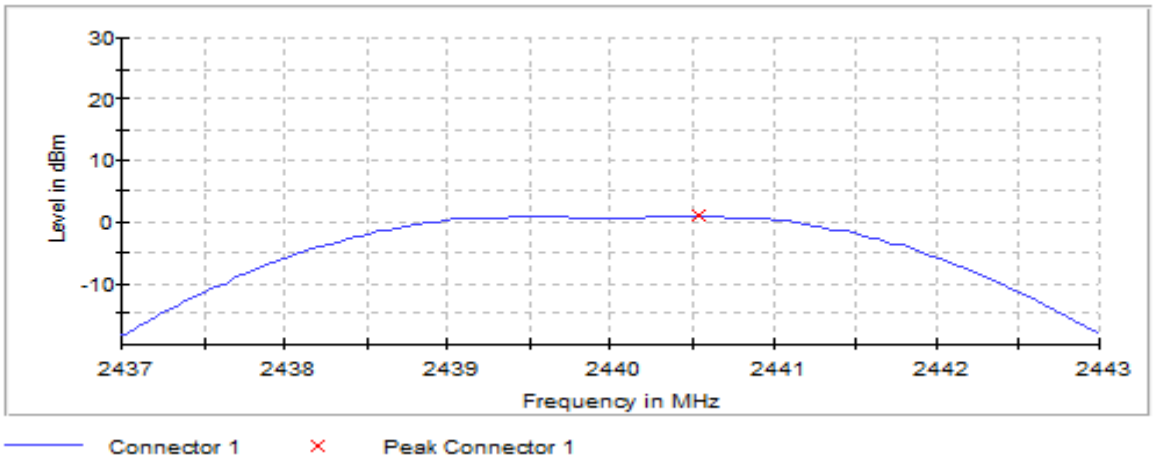
Maximum declared antenna gain: -1.9 dBi

The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

**Lowest Channel**

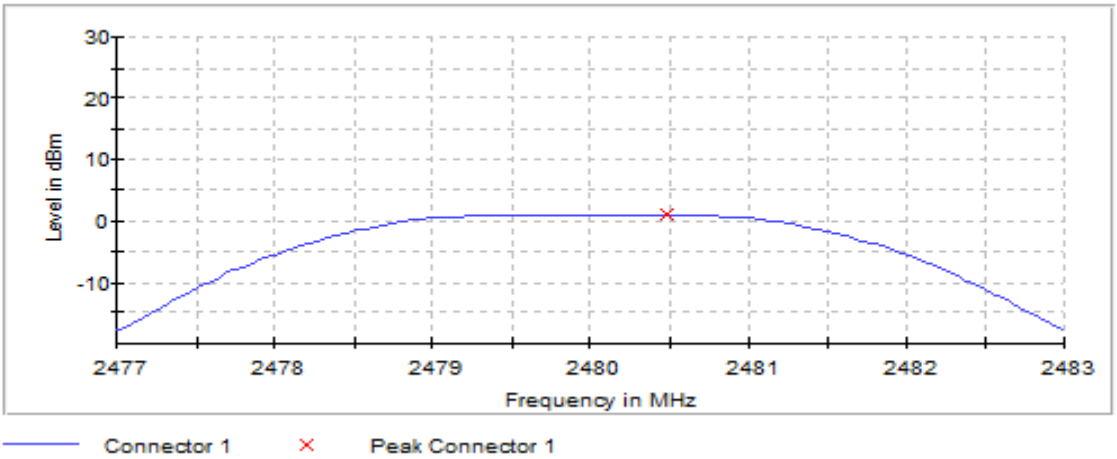



**Middle Channel**



| TEST RESULTS (Cont.): | CONDUCTED PEAK POWER |
|---|---|

**Highest Channel**




**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.39900 | 2.43700 | 2.47700 |
| Stop Frequency | 2.40500 | 2.44300 | 2.48300 |
| Span | 6.000 MHz | 6.000 MHz | 6.000 MHz |
| RBW | 2.000 MHz | 2.000 MHz | 2.000 MHz |
| VBW | 10.000 MHz | 10.000 MHz | 10.000 MHz |
| SweepPoints | 101 | 101 | 101 |
| Sweeptime | 953.450 µs | 953.450 µs | 953.450 µs |
| Reference Level | 10.000 dBm | 10.000 dBm | 10.000 dBm |
| Attenuation | 30.000 dB | 30.000 dB | 30.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | FFT | FFT | FFT |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | 4 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.01 dB | 0.04 dB | 0.13 dB |

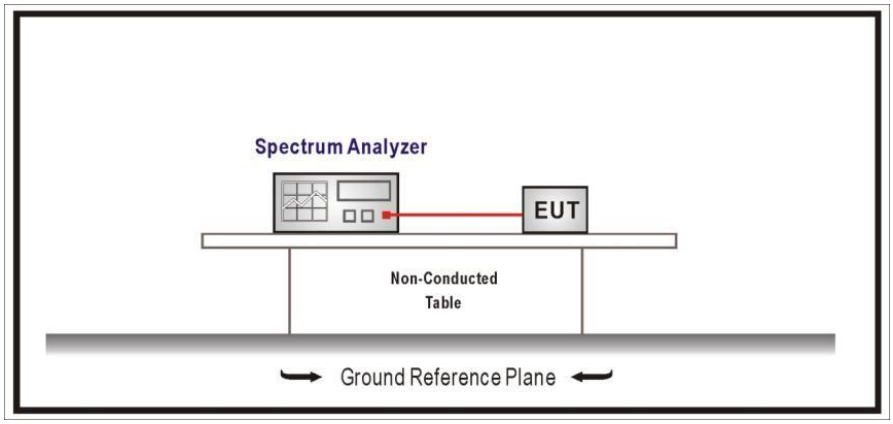
# TEST A.4: BAND-EDGE EMISSIONS COMPLIANCE (TRANSMITTER)

| | | |
|---|---|---|
| **LIMITS:** | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(d) and RSS-247 5.5 |

LIMITS

In any 100 kHz bandwidth outside the frequency band in which the digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB instead of 20 dB.

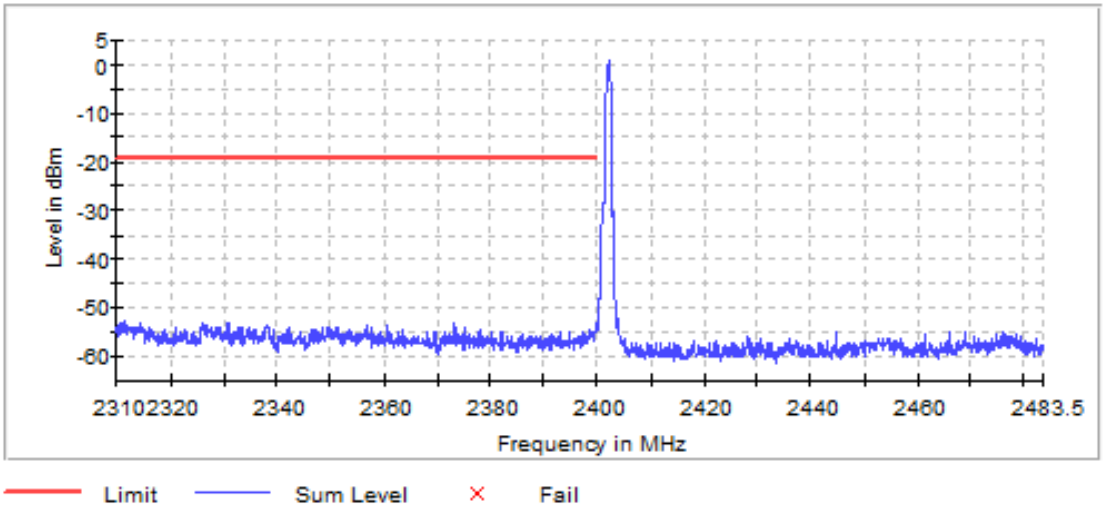
| **TEST SETUP** | |
|---|---|

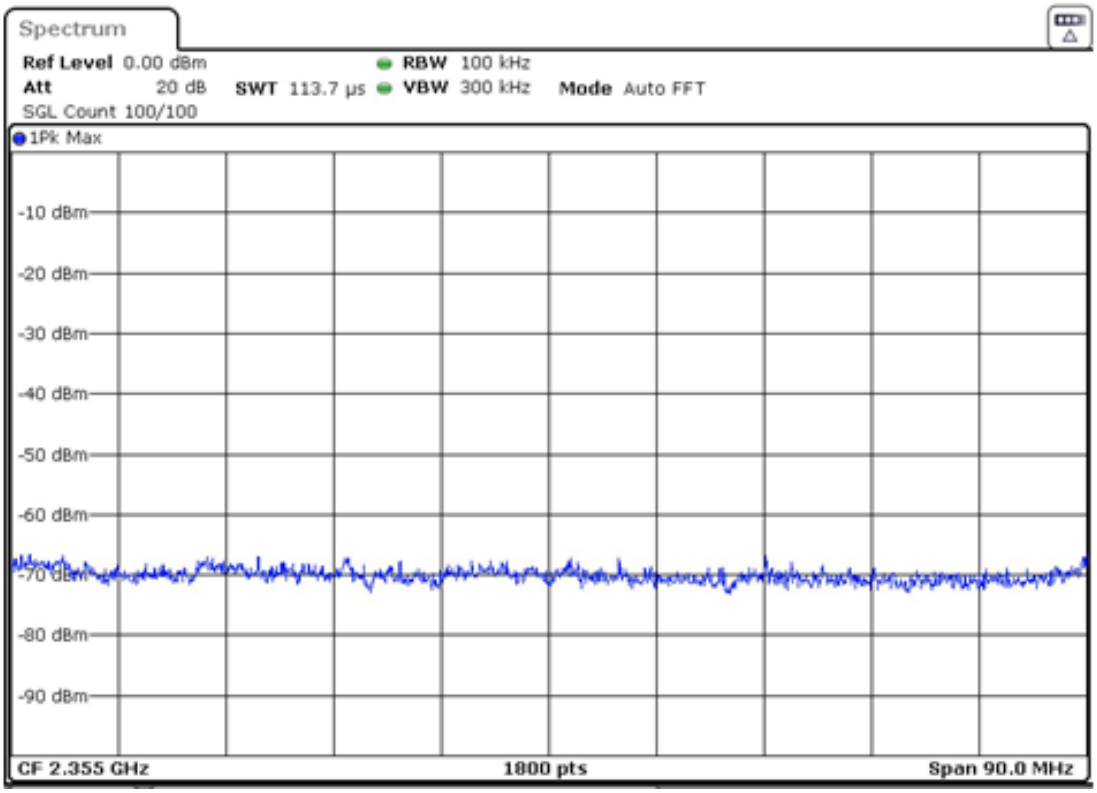



| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#01 |
| **TEST RESULTS:** | PASS |

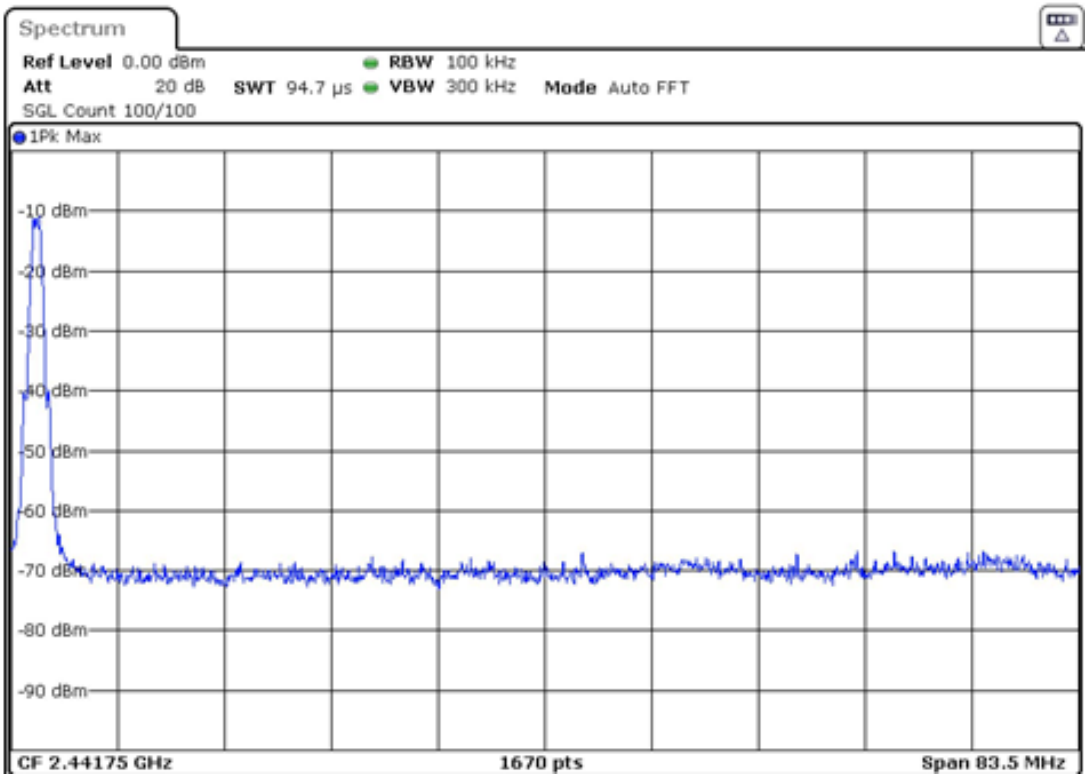
Note: Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

| TEST RESULTS (Cont.): | Lowest Channel |
|---|---|



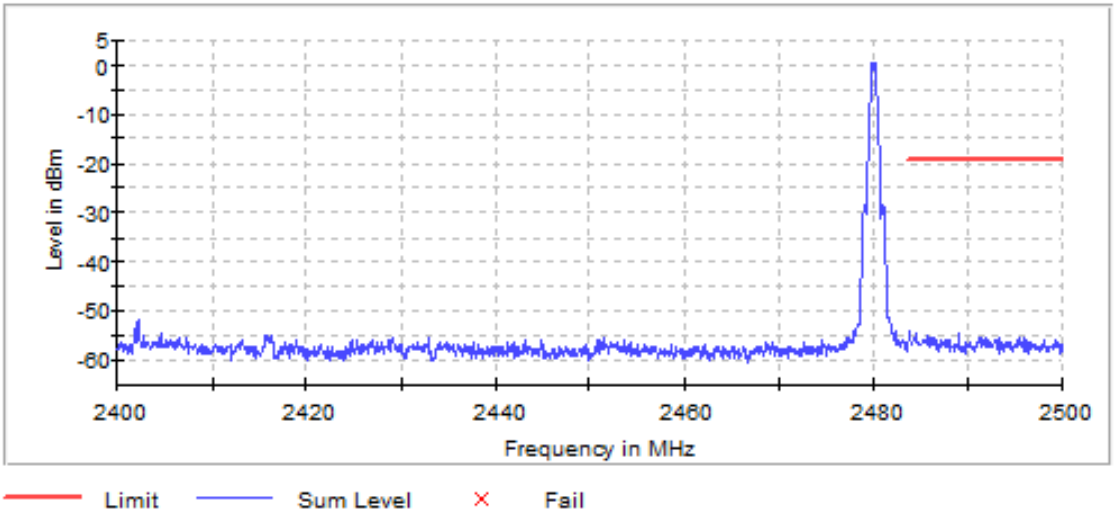
| TEST RESULTS (Cont.): | Lowest Channel |
|---|---|

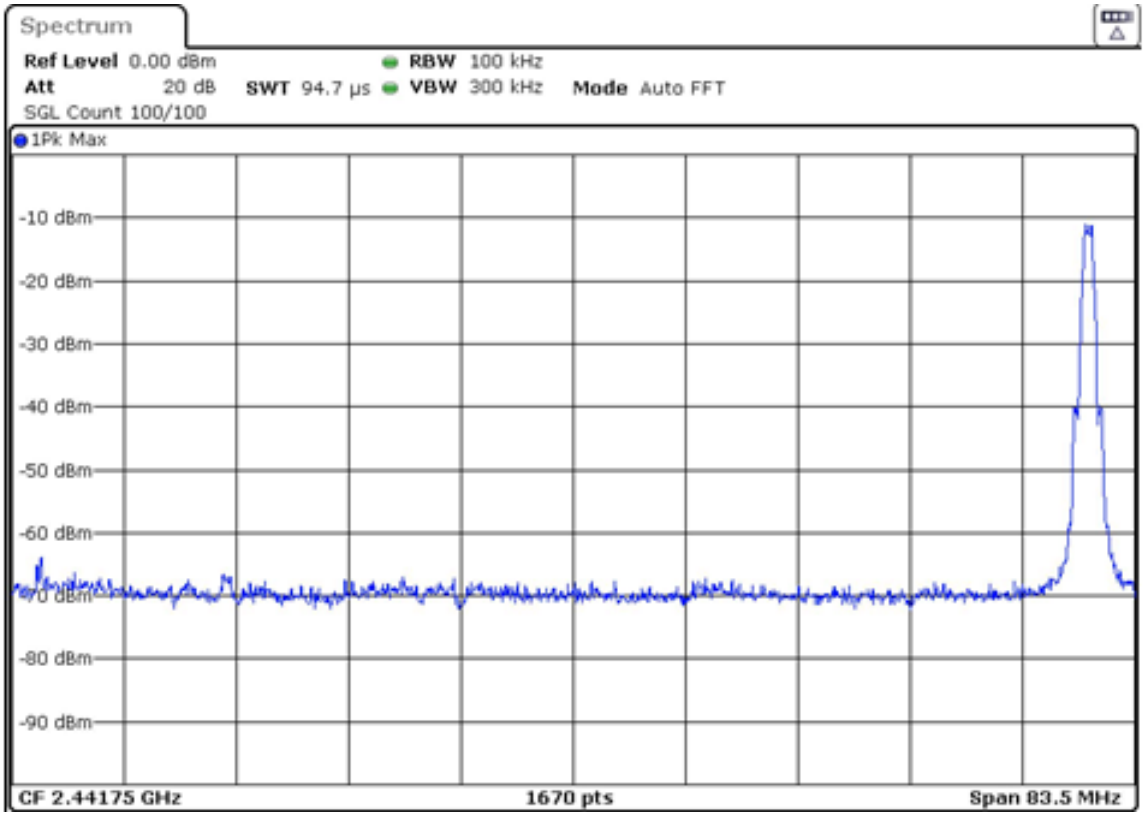



**Measurement**

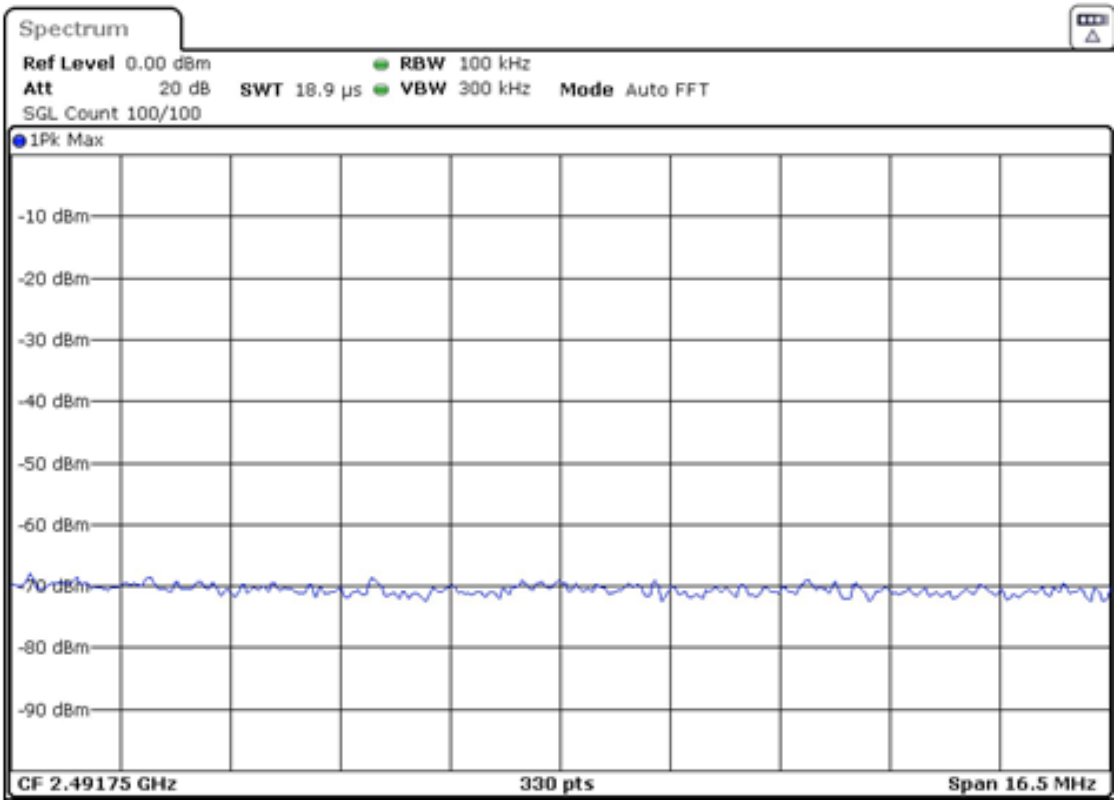
| Setting | Instrument Value | Instrument Value |
|---|---|---|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.000 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweeptime | 113.672 µs | 94.727 µs |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 4 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.00 dB | 0.32 dB |

| TEST RESULTS (Cont.): | Highest Channel |
|---|---|



| TEST RESULTS (Cont.): | Highest Channel |
|---|---|



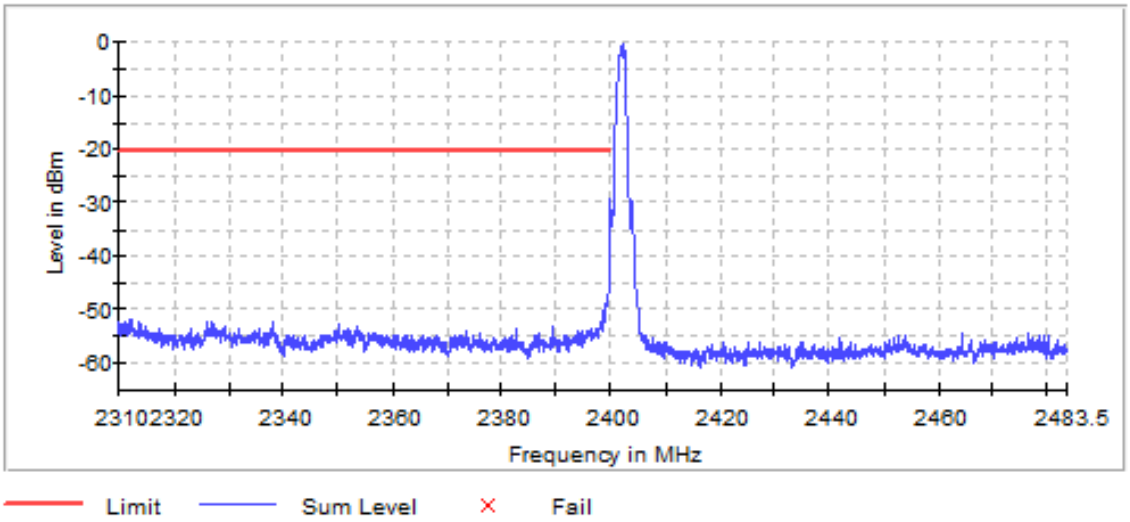

**Measurement**

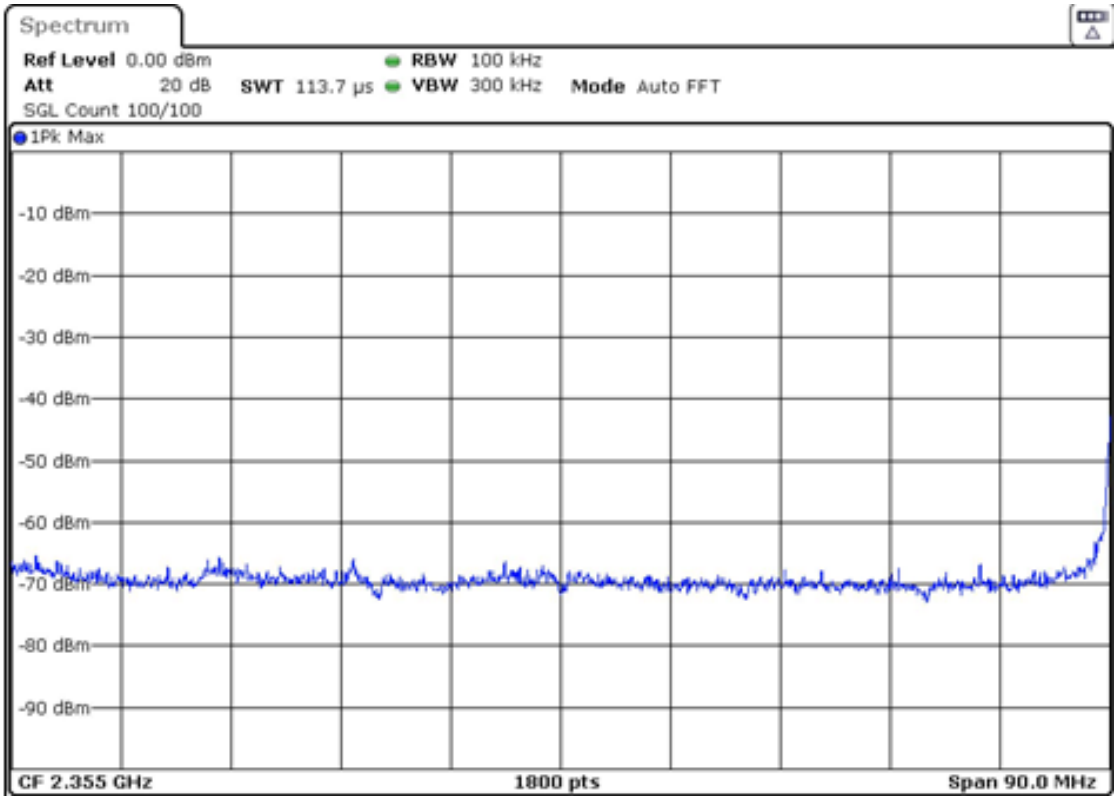
| Setting | Instrument Value | Instrument Value |
|---|---|---|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 µs | 18.945 µs |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 9 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.12 dB | 0.00 dB |

| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#02 |
| **TEST RESULTS:** | PASS |

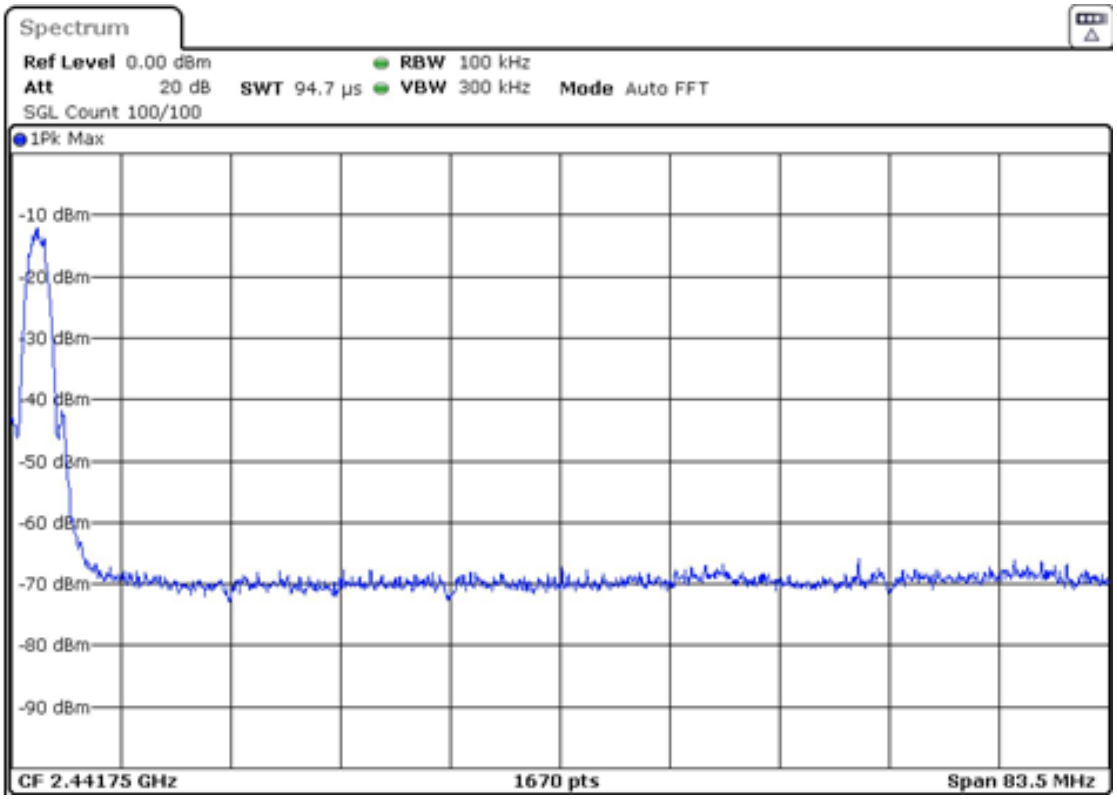
Note: Radiated measurements were used to show compliance with the limits in the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz.

| | |
|---|---|
| **TEST RESULTS:** | **Lowest Channel** |



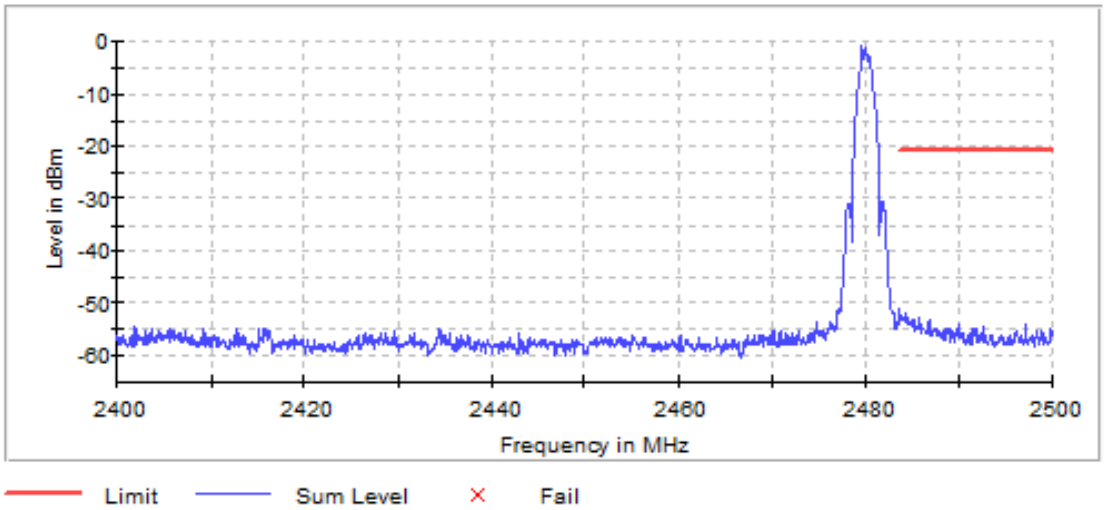
| TEST RESULTS (Cont.): | Lowest Channel |
|---|---|

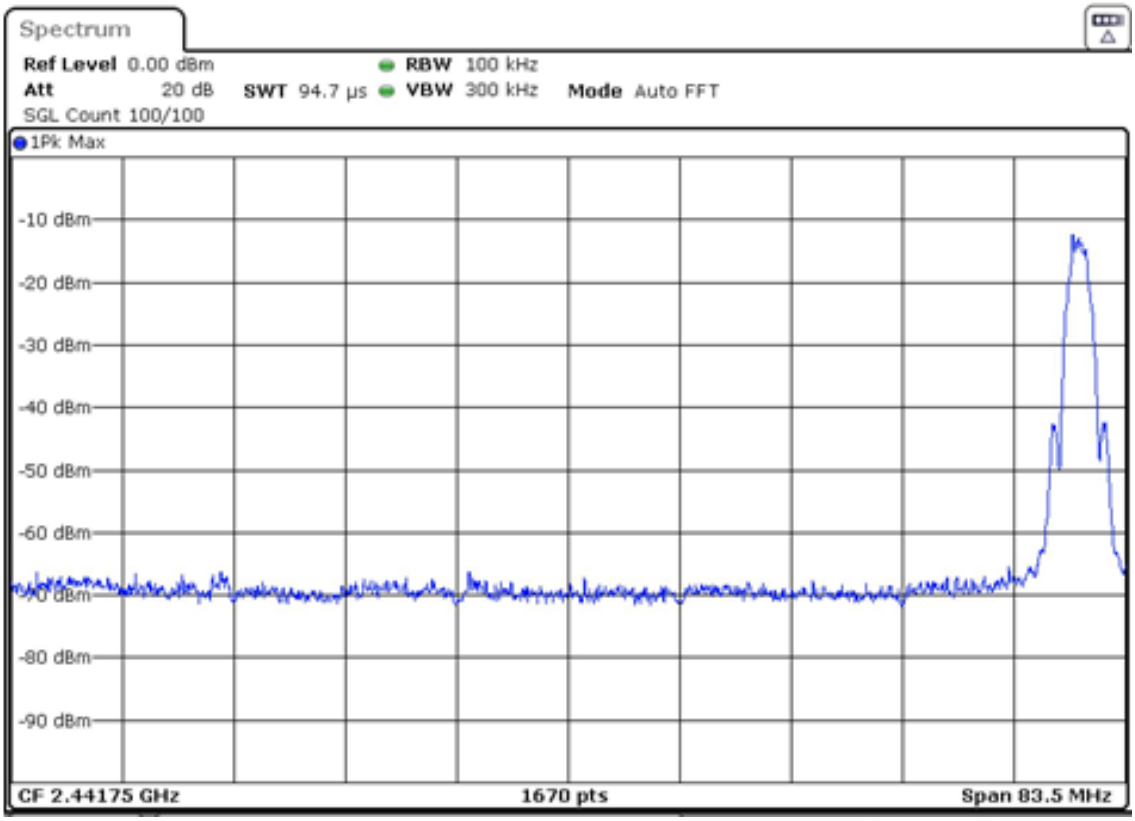



**Measurement**

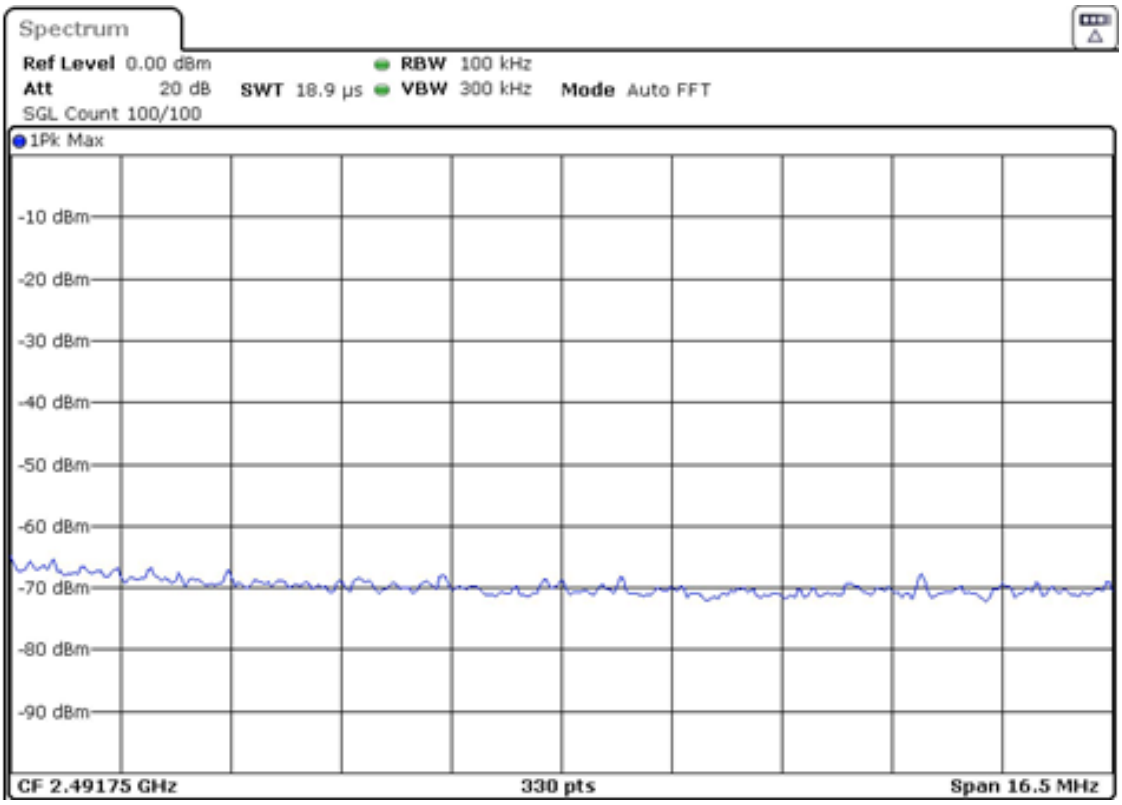
| Setting | Instrument Value | Instrument Value |
|---|---|---|
| Start Frequency | 2.31000 GHz | 2.40000 GHz |
| Stop Frequency | 2.40000 GHz | 2.48350 GHz |
| Span | 90.000 MHz | 83.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1800 | 1670 |
| Sweeptime | 113.672 µs | 94.727 µs |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 8 / max. 150 | 10 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.00 dB | 0.21 dB |

| TEST RESULTS (Cont.): | Highest Channel |
|---|---|



| TEST RESULTS (Cont.): | Highest Channel |
|---|---|




**Measurement**

| Setting | Instrument Value | Instrument Value |
|---|---|---|
| Start Frequency | 2.40000 GHz | 2.48350 GHz |
| Stop Frequency | 2.48350 GHz | 2.50000 GHz |
| Span | 83.500 MHz | 16.500 MHz |
| RBW | 100.000 kHz | 100.000 kHz |
| VBW | 300.000 kHz | 300.000 kHz |
| SweepPoints | 1670 | 330 |
| Sweeptime | 94.727 µs | 18.945 µs |
| Reference Level | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 |
| Filter | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold |
| Sweeptype | FFT | FFT |
| Preamp | off | off |
| Stablemode | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB |
| Run | 11 / max. 150 | 4 / max. 150 |
| Stable | 3 / 3 | 3 / 3 |
| Max Stable Difference | 0.17 dB | 0.00 dB |

## TEST A.5: POWER SPECTRAL DENSITY

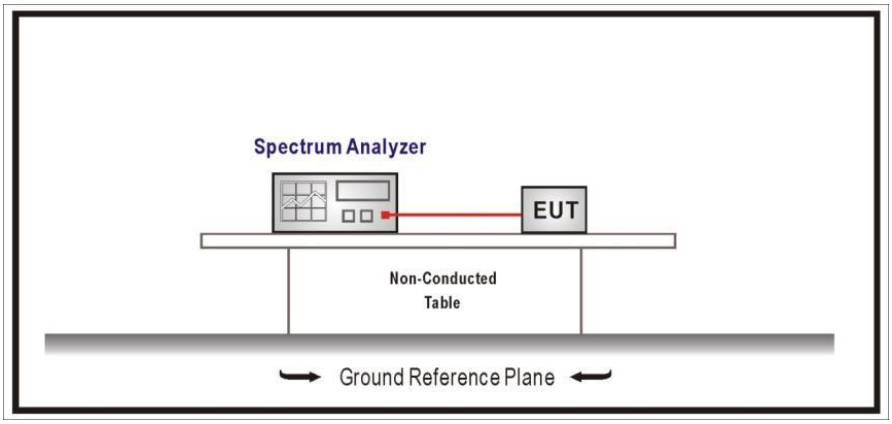
| | | |
|---|---|---|
| **LIMITS:** | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(e) and RSS-247 5.2 (b) |

LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

| **TEST SETUP** | |
|---|---|

The maximum power spectral density level in the fundamental emission was measured using the method PKPSD (Peak PSD) according to point 10.2. of Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 558074 D01 DTS Meas Guidance v04 dated 05/04/2017.

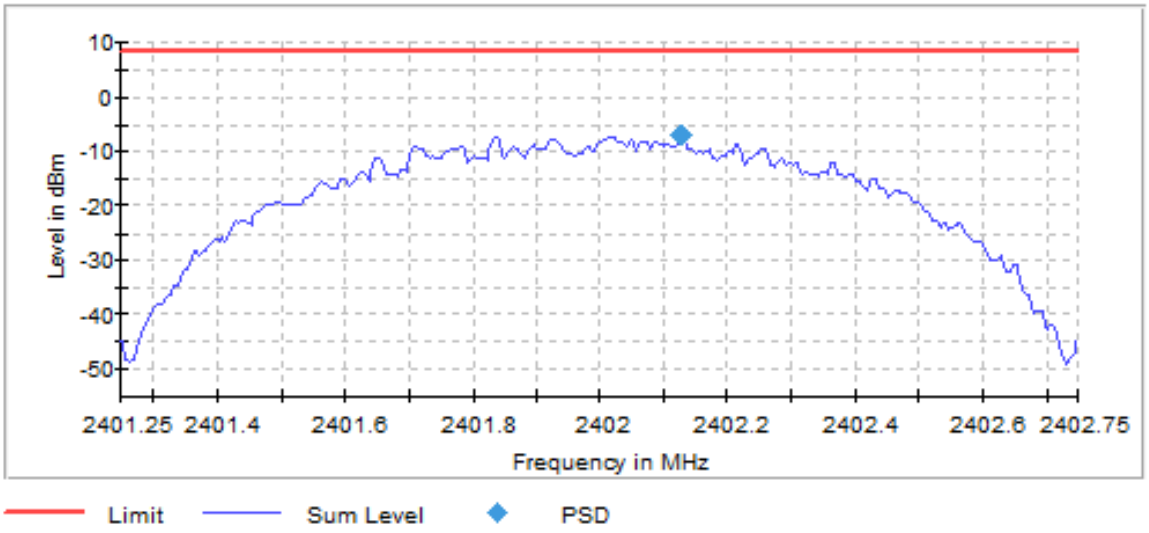



| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#01 |
| **TEST RESULTS:** | PASS |

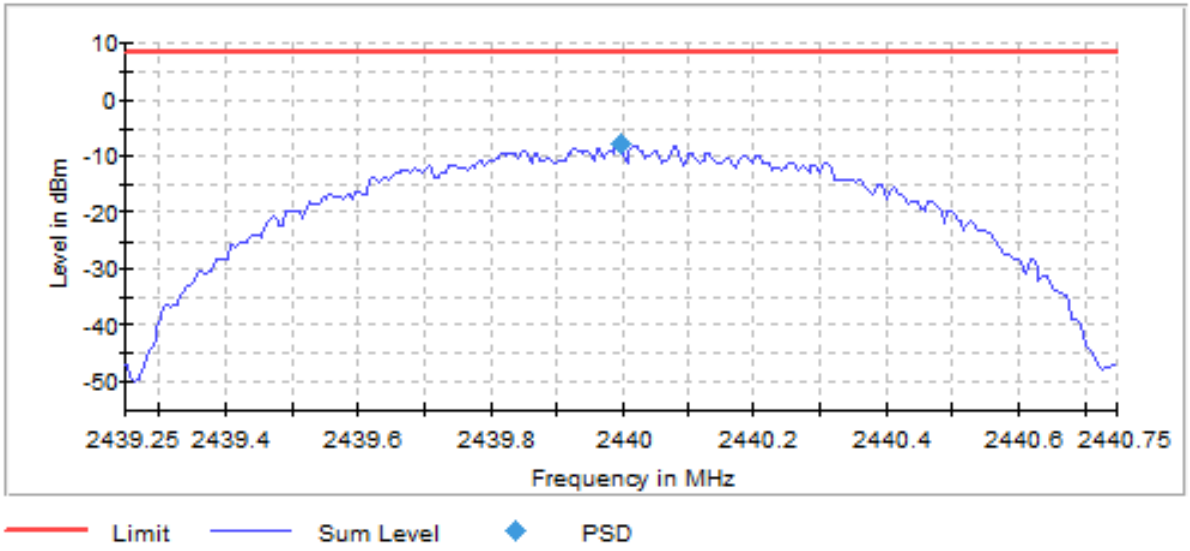
| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| Power spectral density (dBm) | -7.003 | -7.659 | -7.507 |
| Measurement uncertainty (dB) | <±0.78 | | |

| TEST RESULTS (Cont.): | |
|---|---|

**Low Channel:**

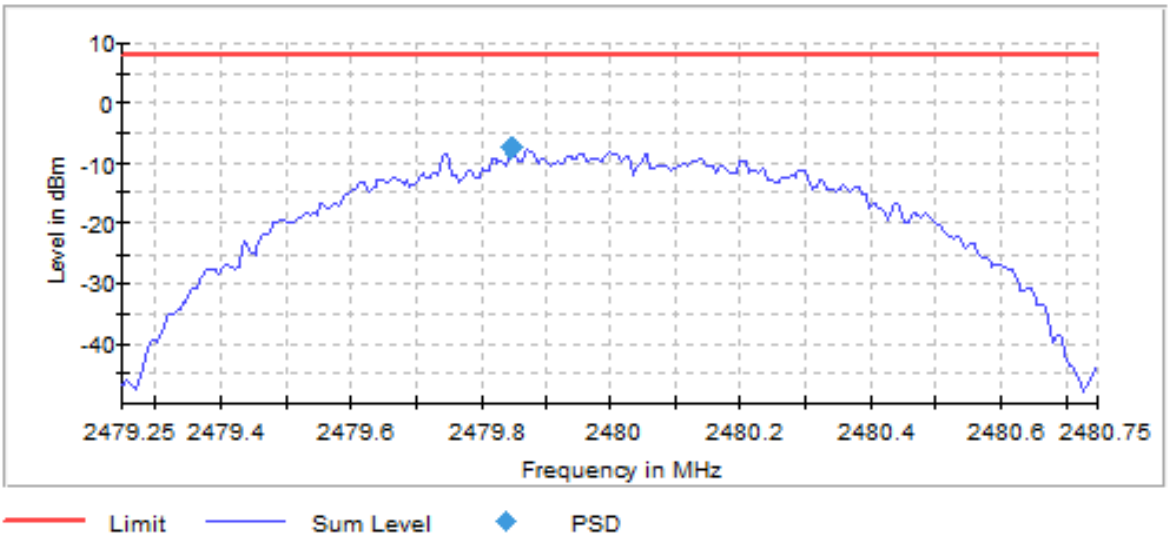



**Mid Channel:**



| TEST RESULTS (Cont.): | |
|---|---|

**High Channel:**




**Measurement**

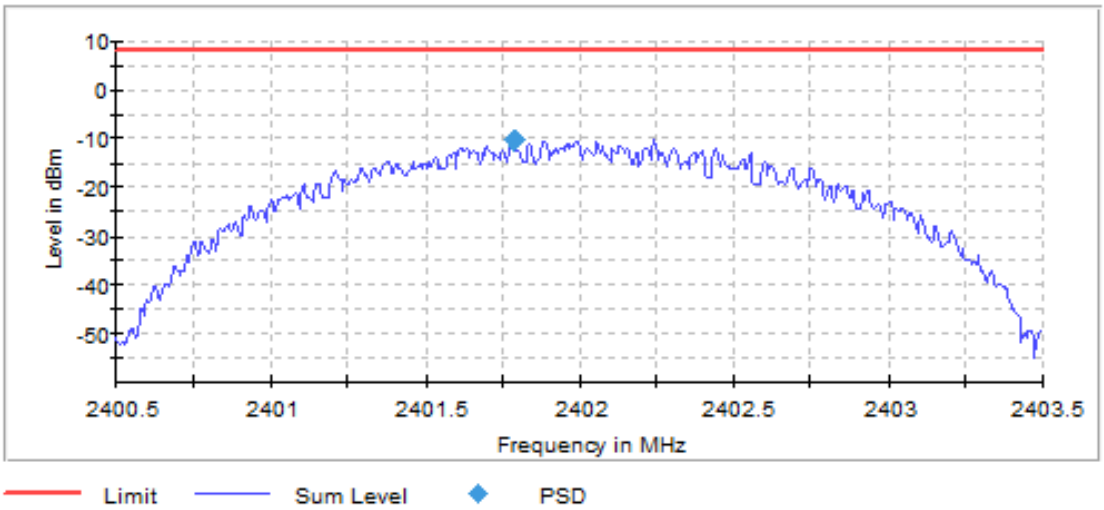
| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40125 | 2.43925 | 2.47925 |
| Stop Frequency | 2.40275 | 2.44075 | 2.48075 |
| Span | 1.500 MHz | 1.500 MHz | 1.500 MHz |
| RBW | 10.000 kHz | 10.000 kHz | 10.000 kHz |
| VBW | 30.000 kHz | 30.000 kHz | 30.000 kHz |
| SweepPoints | 300 | 300 | 300 |
| Sweeptime | 1.500 ms | 1.500 ms | 1.500 ms |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 8 / max. 150 | 6 / max. 150 | 6 / max. 150 |
| Stable | 2 / 2 | 2 / 2 | 2 / 2 |
| Max Stable Difference | 0.21 dB | 0.50 dB | 0.34 dB |

| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED CONDITIONS MODES:** | TC#02 |
| **TEST RESULTS:** | PASS |

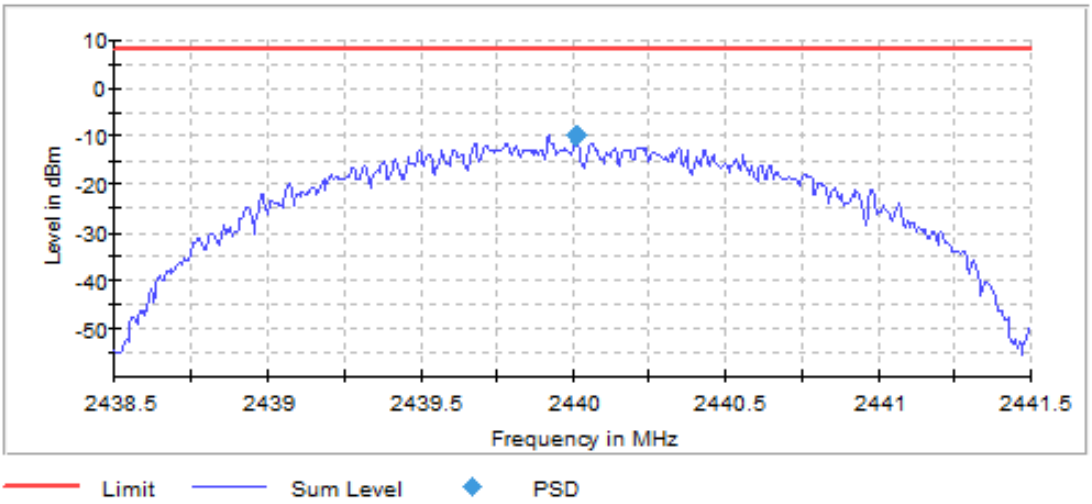
| | Lowest frequency 2402 MHz | Middle frequency 2440 MHz | Highest frequency 2480 MHz |
|---|---|---|---|
| Power spectral density (dBm) | -10.201 | -9.708 | -9.489 |
| Measurement uncertainty (dB) | <±0.78 | | |

| | |
|---|---|
| **TEST RESULTS (Cont.):** | |

**Low Channel:**

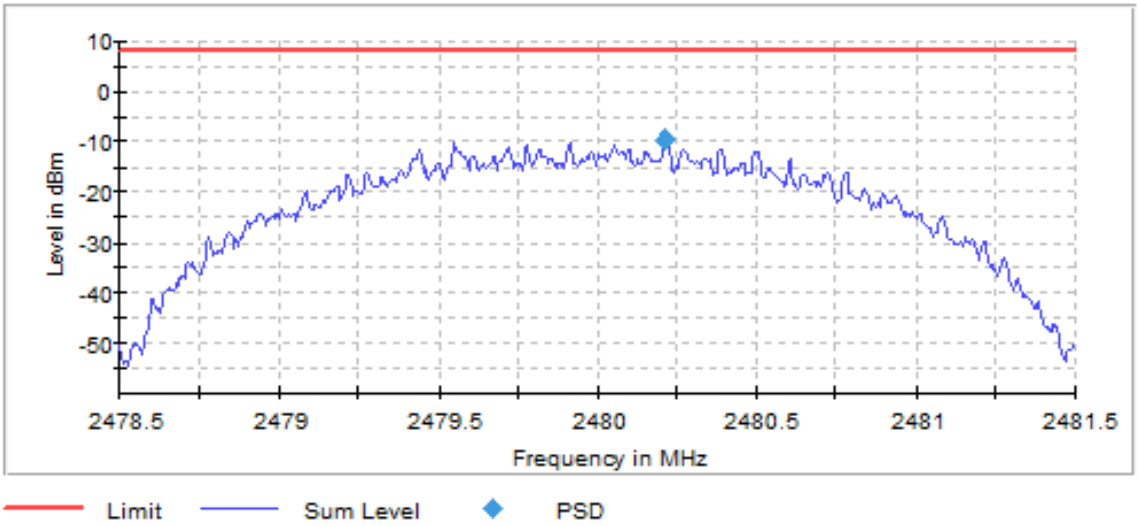



**Mid Channel:**



| TEST RESULTS (Cont.): | |
|---|---|

**High Channel:**




**Measurement**

| Setting | Instrument Value | Instrument Value | Instrument Value |
|---|---|---|---|
| Start Frequency | 2.40050 | 2.43850 | 2.47850 |
| Stop Frequency | 2.40350 | 2.44150 | 2.48150 |
| Span | 3.000 MHz | 3.000 MHz | 3.000 MHz |
| RBW | 10.000 kHz | 10.000 kHz | 10.000 kHz |
| VBW | 30.000 kHz | 30.000 kHz | 30.000 kHz |
| SweepPoints | 600 | 600 | 600 |
| Sweeptime | 3.000 ms | 3.000 ms | 3.000 ms |
| Reference Level | 0.000 dBm | 0.000 dBm | 0.000 dBm |
| Attenuation | 20.000 dB | 20.000 dB | 20.000 dB |
| Detector | MaxPeak | MaxPeak | MaxPeak |
| SweepCount | 100 | 100 | 100 |
| Filter | 3 dB | 3 dB | 3 dB |
| Trace Mode | Max Hold | Max Hold | Max Hold |
| Sweeptype | Sweep | Sweep | Sweep |
| Preamp | off | off | off |
| Stablemode | Trace | Trace | Trace |
| Stablevalue | 0.50 dB | 0.50 dB | 0.50 dB |
| Run | 5 / max. 150 | 4 / max. 150 | 5 / max. 150 |
| Stable | 2 / 2 | 2 / 2 | 2 / 2 |
| Max Stable Difference | 0.32 dB | 0.49 dB | 0.34 dB |

## TEST A.6: EMISSION LIMITATIONS RADIATED (TRANSMITTER)

| **LIMITS:** | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
|---|---|---|
| | Test standard: | Part 15 Subpart C §15.247(d) and RSS-Gen 8.9 and 8.10 |

LIMITS

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c) / RSS-Gen):

| Frequency Range (MHz) | Field strength (µV/m) | Field strength (dBµV/m) | Measurement distance (m) |
|---|---|---|---|
| 0.009-0.490 | 2400/F(kHz) | - | 300 |
| 0.490-1.705 | 24000/F(kHz) | - | 30 |
| 1.705 - 30.0 | 30 | - | 30 |
| 30 - 88 | 100 | 40 | 3 |
| 88 - 216 | 150 | 43.5 | 3 |
| 216 - 960 | 200 | 46 | 3 |
| 960 - 25000 | 500 | 54 | 3 |

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247. Attenuation below the general field strength limits specified in RSS-Gen is not required

**TEST SETUP**

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at a distance of 3 m for the frequency range 30-1000 MHz (Bilog antenna) and at a distance of 1m for the frequency range 1-40 GHz (1 GHz-18 GHz and 18 GHz-40 GHz Double ridge horn antennas).

For radiated emissions in the range 1-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

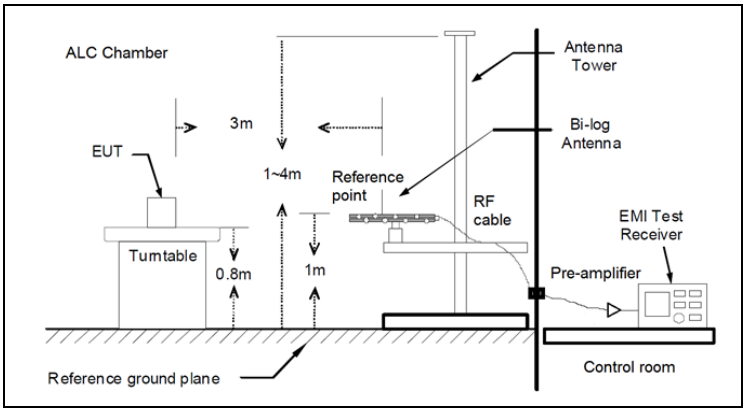
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

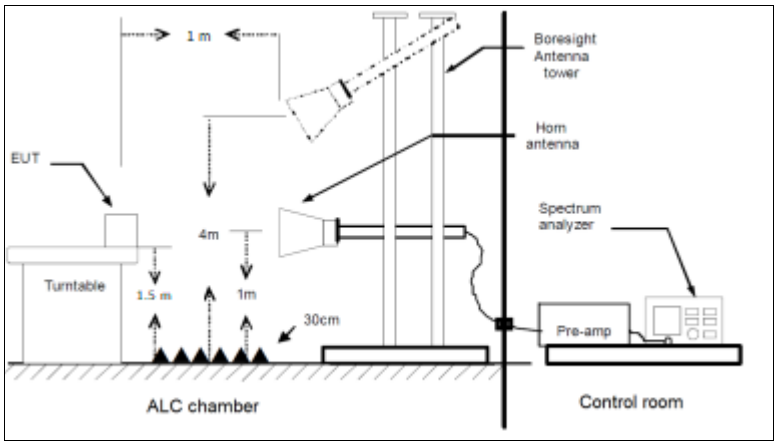
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

| TEST SETUP (CONT.) | |
|---|---|

Radiated measurements Setup f < 1 GHz




Radiated measurements setup f > 1 GHz




| TESTED SAMPLES: | S/02 |
|---|---|
| TESTED CONDITIONS MODES: | TC#01 |
| TEST RESULTS: | PASS |

**Frequency range 30 MHz – 1000 MHz**

The spurious emissions below 1 GHz do not depend on the operating channel selected in the EUT.
The radiated spurious signals detected at less than 20 dB respect to the limit for the operating channel shown below in the plots and table.

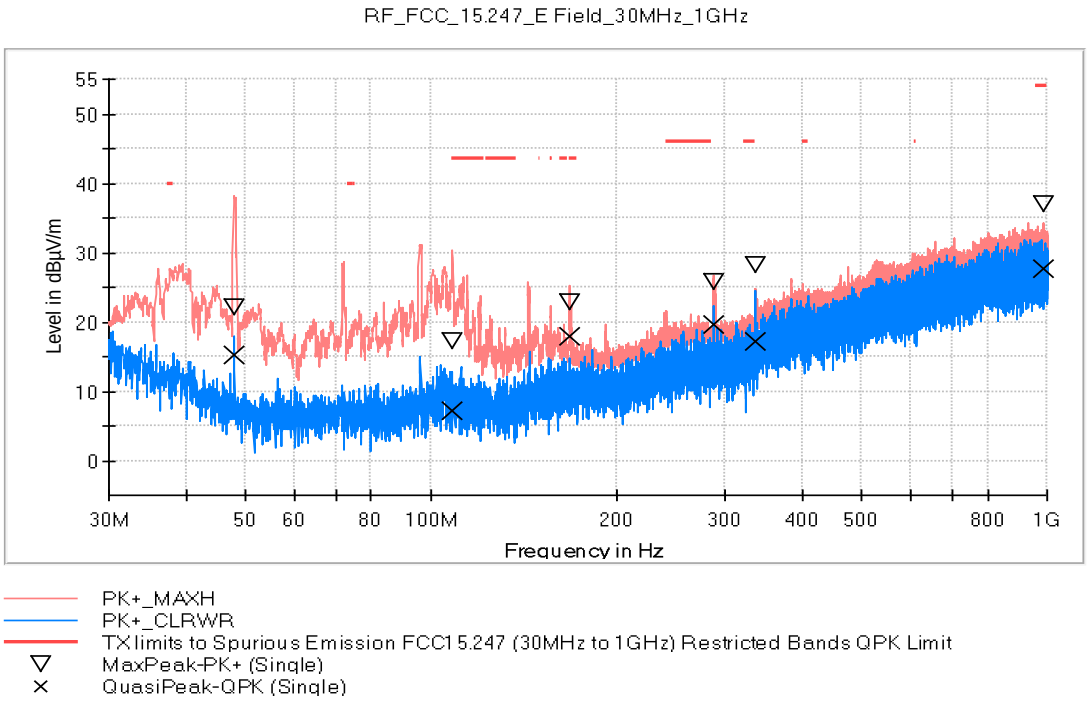
**Frequency range 1 GHz – 26 GHz**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.5 GHz (see next plots).

The radiated spurious signals detected at less than 10 dB respect to the limit for the lowest, middle and highest operating channels are showed in the tables below of each frequency range.

| TEST RESULTS (Cont.): | |
|---|---|
| FREQUENCY RANGE | 30 MHz – 1000 MHz |

## CHANNEL: Middle (2440 MHz)



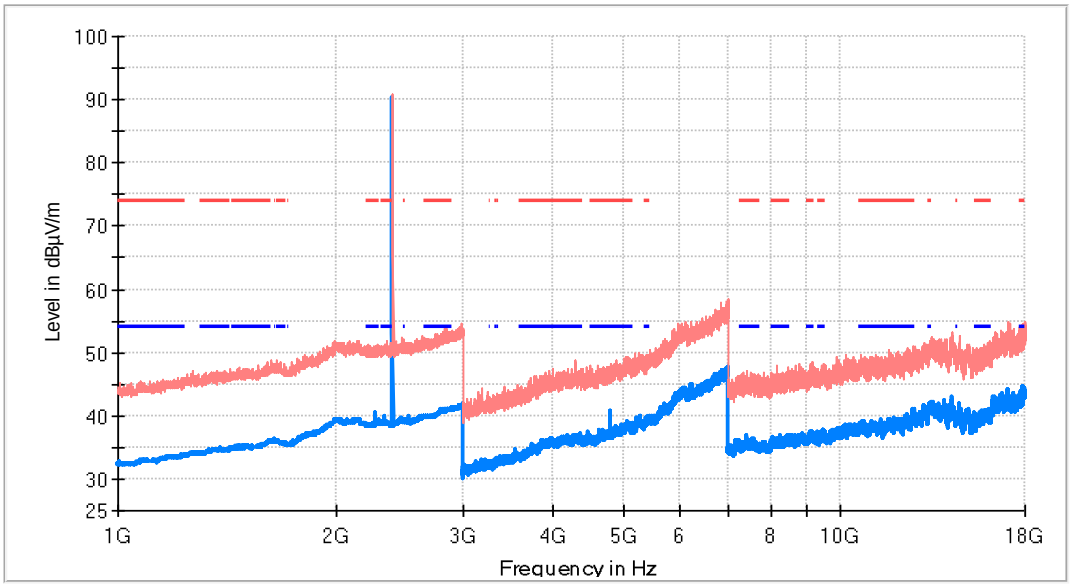

## Result Table_Single

| Frequency (MHz) | MaxPeak (dBµV/m) | QuasiPeak (dBµV/m) | Pol |
|---|---|---|---|
| 47.799500 | 22.0 | 15.3 | V |
| 108.473000 | 17.3 | 7.2 | V |
| 167.934000 | 22.7 | 17.8 | V |
| 287.680500 | 25.8 | 19.7 | V |
| 335.259000 | 28.2 | 17.1 | H |
| 982.928000 | 36.8 | 27.6 | H |

| TEST RESULTS (Cont.): | |
|---|---|
| FREQUENCY RANGE | 1 GHz – 18 GHz |

## CHANNEL: Lowest (2402 MHz)

1GHz_18GHz_ HP & VP_CH Low




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

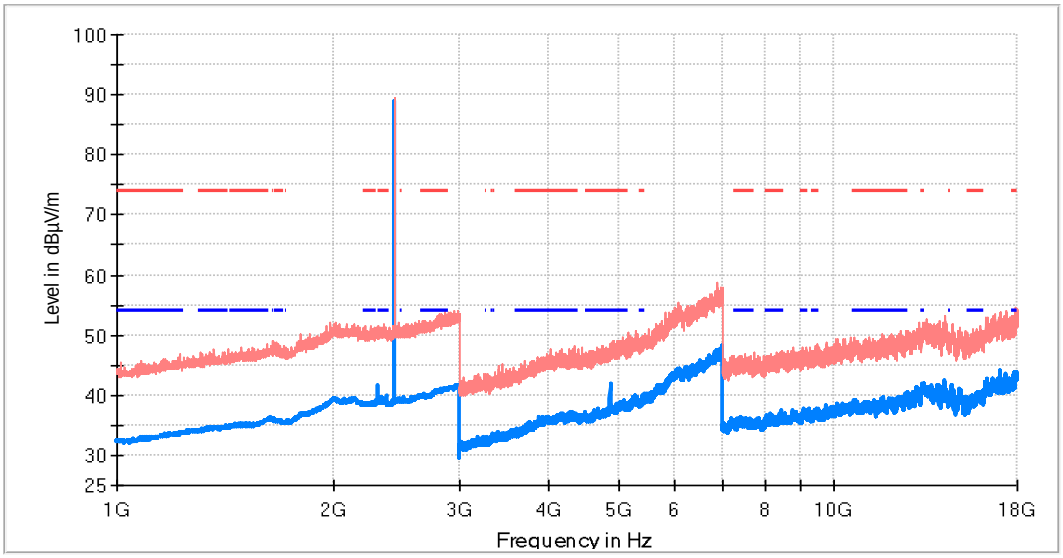
# Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 2402.000000 | 90.8 | 90.2 | H | Fundamental |
| 4803.500000 | 47.2 | 40.6 | H | |

| TEST RESULTS (Cont.): | |
|---|---|

## CHANNEL: Middle (2440 MHz).

1GHz_18GHz_HP & VP_CH Mid




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

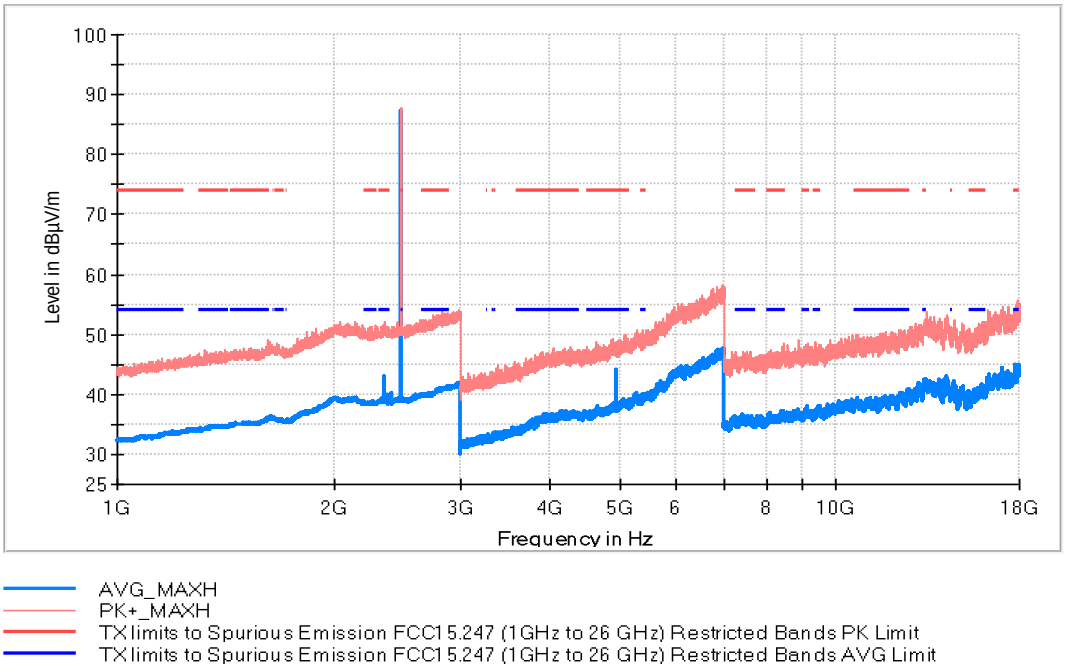
# Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 2440.000000 | 89.6 | 88.9 | H | Fundamental |
| 4880.000000 | 48.7 | 41.8 | H | |

| TEST RESULTS (Cont.): | |
|---|---|

## CHANNEL: Highest (2480 MHz).

1GHz_18GHz_HP & VP_CH High

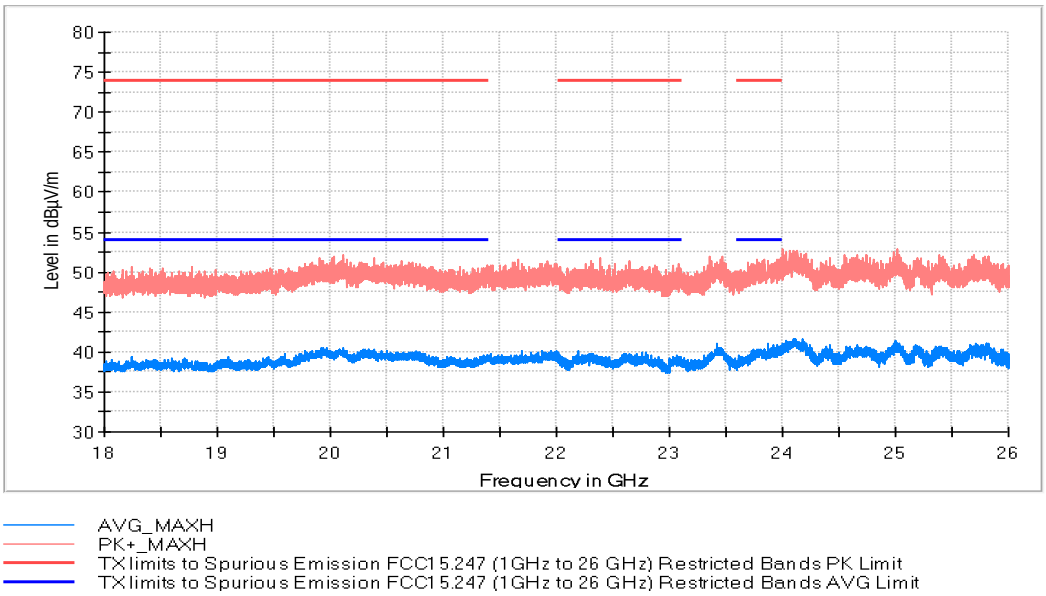



## Maximizations

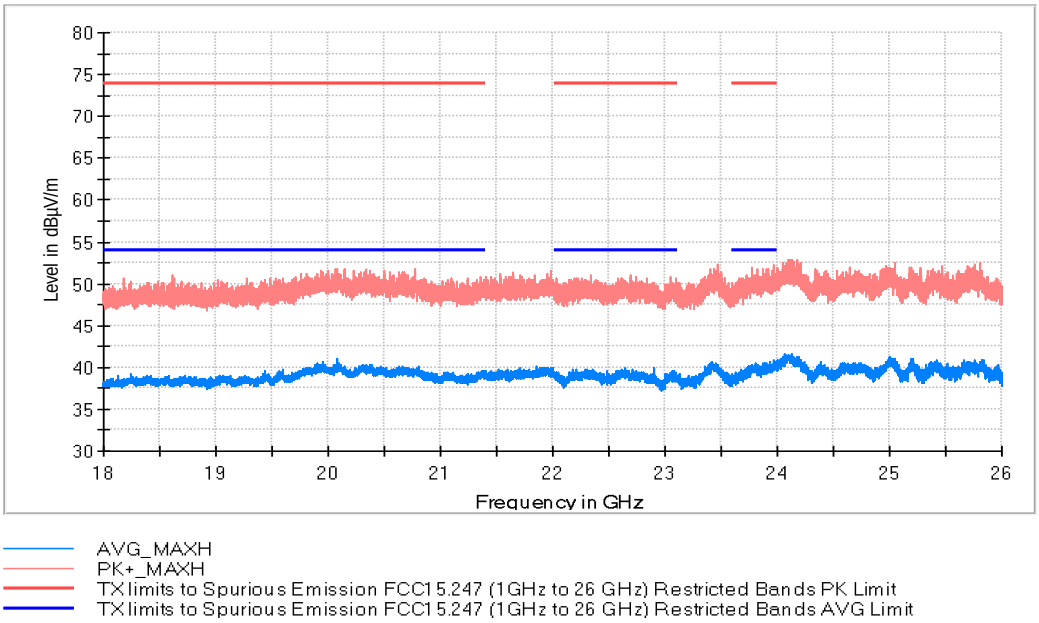
| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 2480.000000 | 87.9 | 87.3 | H | Fundamental |
| 4960.000000 | 48.5 | 44.0 | H | |

| TEST RESULTS (Cont.): | |
|---|---|
| **FREQUENCY RANGE** | **18 GHz – 26 GHz** |

## CHANNEL: Lowest (2402 MHz)

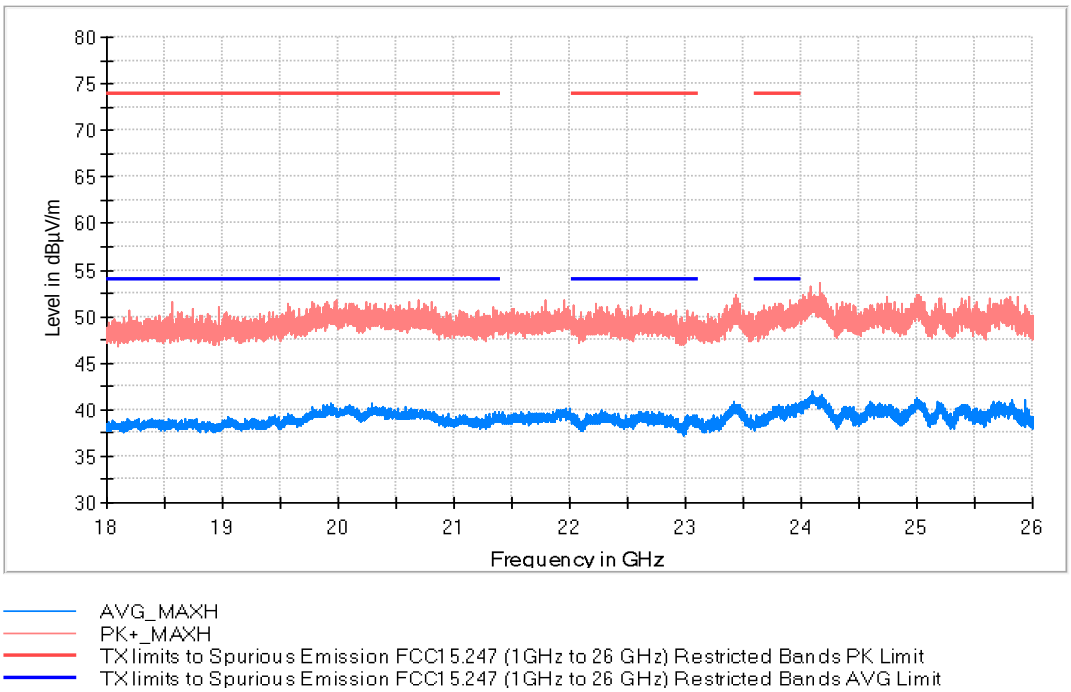



## CHANNEL: Middle (2440 MHz)



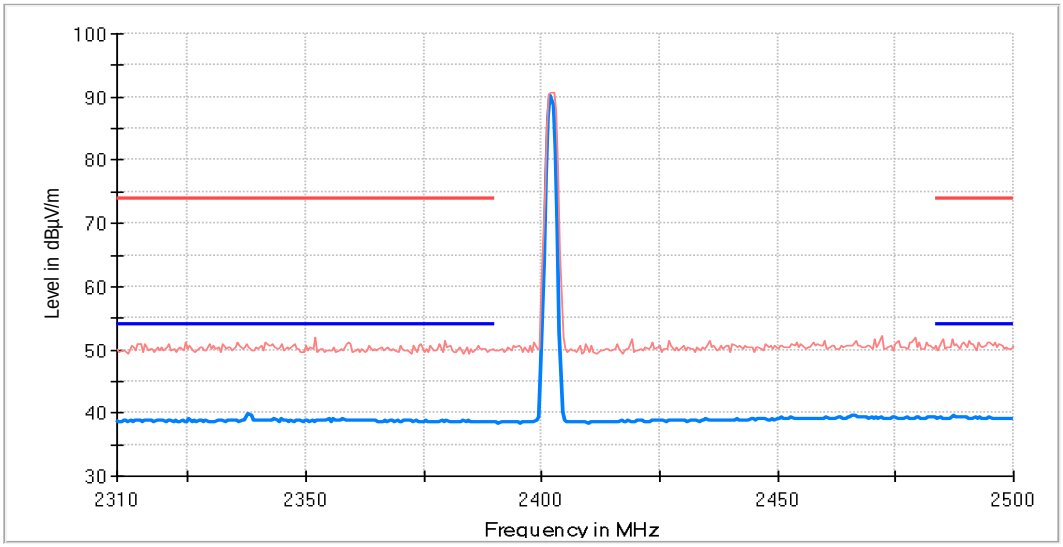
| TEST RESULTS (Cont.): | |
|---|---|

## CHANNEL: High (2480 MHz).



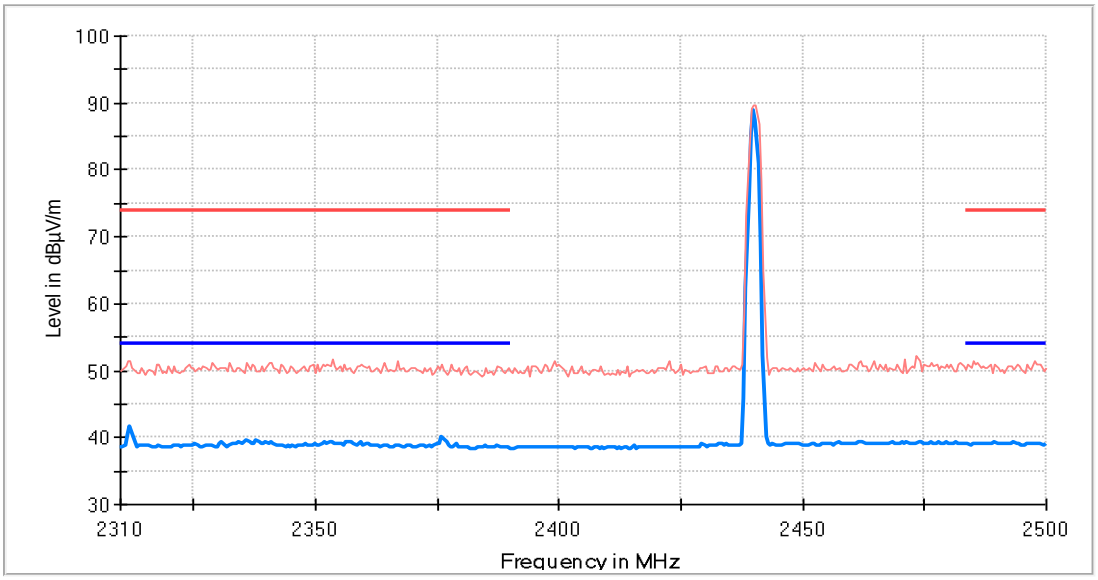
| TEST RESULTS (Cont.): | RESTRICTED BAND (2.31 GHz to 2.5 GHz) |
|---|---|

**CHANNEL: Lowest (2402 MHz).**




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

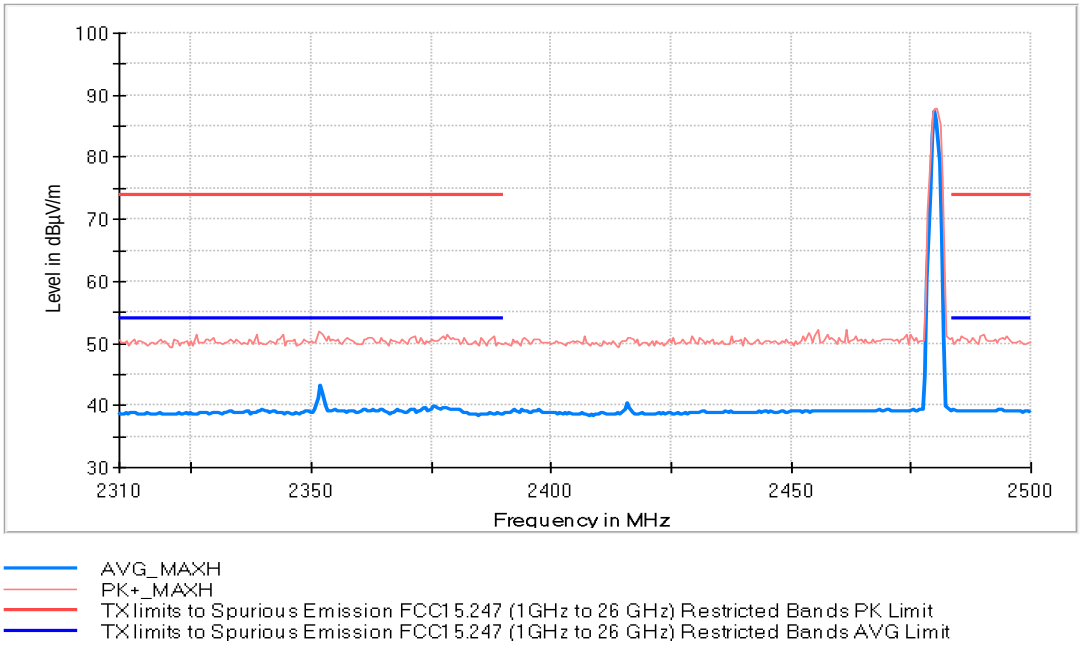
**CHANNEL: Middle (2440 MHz).**




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| TEST RESULTS (Cont.): | |
|---|---|

**CHANNEL: Highest (2480 MHz).**



| | |
|---|---|
| **TESTED SAMPLES:** | S/02 |
| **TESTED CONDITIONS MODES:** | TC#02 |
| **TEST RESULTS:** | PASS |

**Frequency range 30 MHz – 1000 MHz**

The spurious emissions below 1 GHz do not depend on the operating channel selected in the EUT.
The radiated spurious signals detected at less than 20 dB respect to the limit for the operating channel shown below in the plots and table.

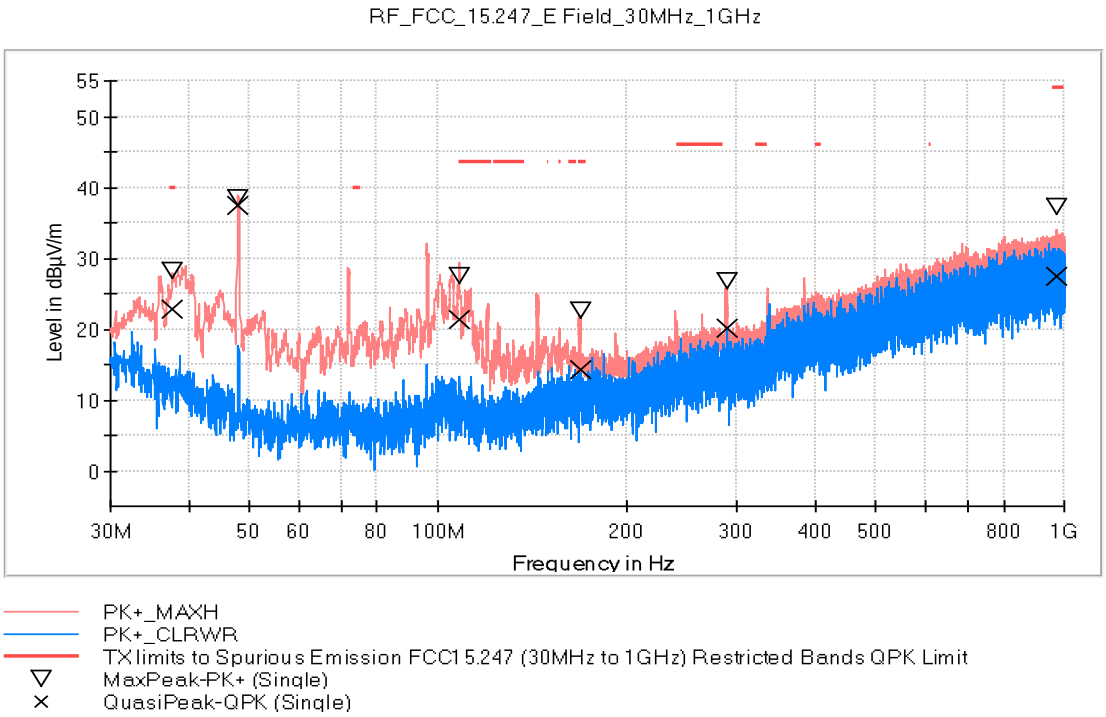
**Frequency range 1 GHz – 26 GHz**

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.5 GHz (see next plots).

The radiated spurious signals detected at less than 10 dB respect to the limit for the lowest, middle and highest operating channels are showed in the tables below of each frequency range.

| TEST RESULTS (Cont.): | |
|---|---|
| FREQUENCY RANGE | 30 MHz – 1000 MHz |

## CHANNEL: Middle (2440 MHz)



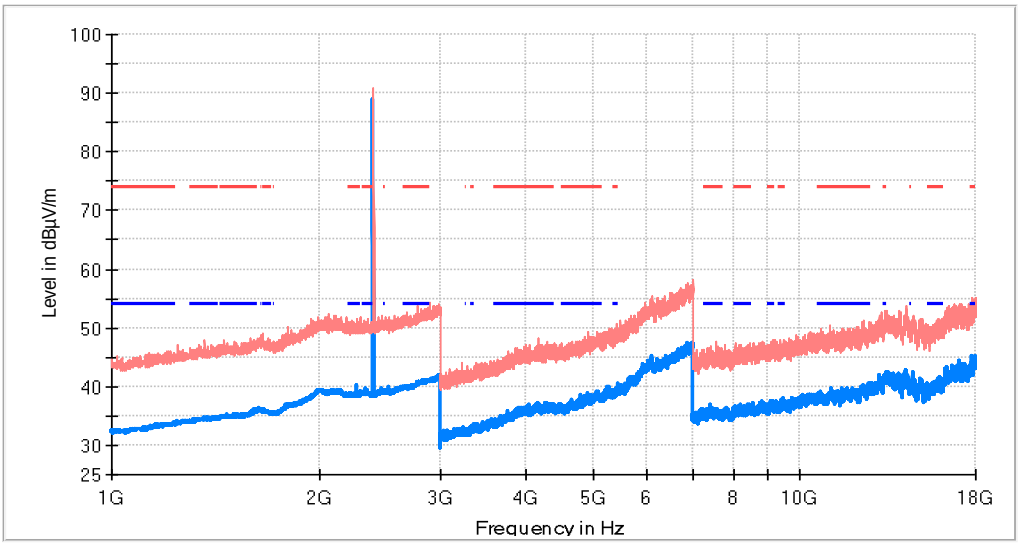

## Result Table_Single

| Frequency (MHz) | MaxPeak (dBµV/m) | QuasiPeak (dBµV/m) | Pol |
|---|---|---|---|
| 37.760000 | 28.1 | 22.8 | V |
| 48.042000 | 38.5 | 37.5 | V |
| 108.133500 | 27.5 | 21.3 | V |
| 168.710000 | 22.6 | 14.4 | V |
| 288.699000 | 26.7 | 20.2 | V |
| 971.821500 | 37.2 | 27.5 | V |

| TEST RESULTS (Cont.): | |
|---|---|
| FREQUENCY RANGE | 1 GHz – 18 GHz |

## CHANNEL: Lowest (2402 MHz)

1GHz_18GHz_ HP & VP_CH Low




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

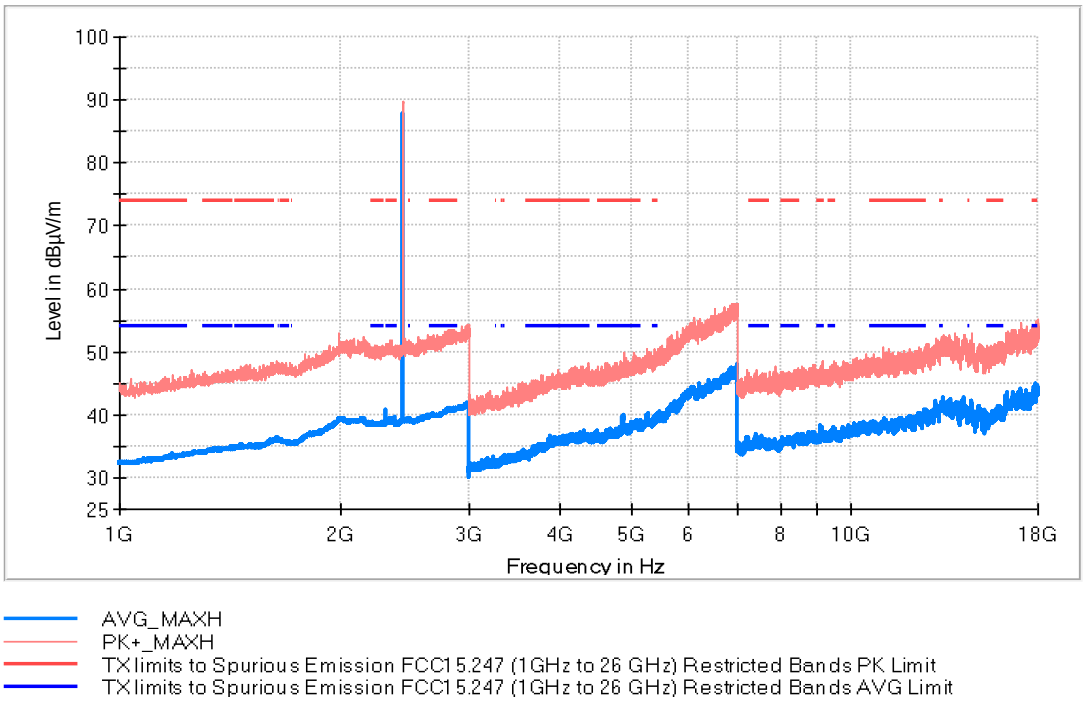
# Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 2274.000000 | 51.4 | 40.2 | H | |
| 2401.500000 | 91.0 | 86.3 | H | Fundamental |

| TEST RESULTS (Cont.): | |
|---|---|

## CHANNEL: Middle (2440 MHz).

1GHz_18GHz_HP & VP_CH Mid



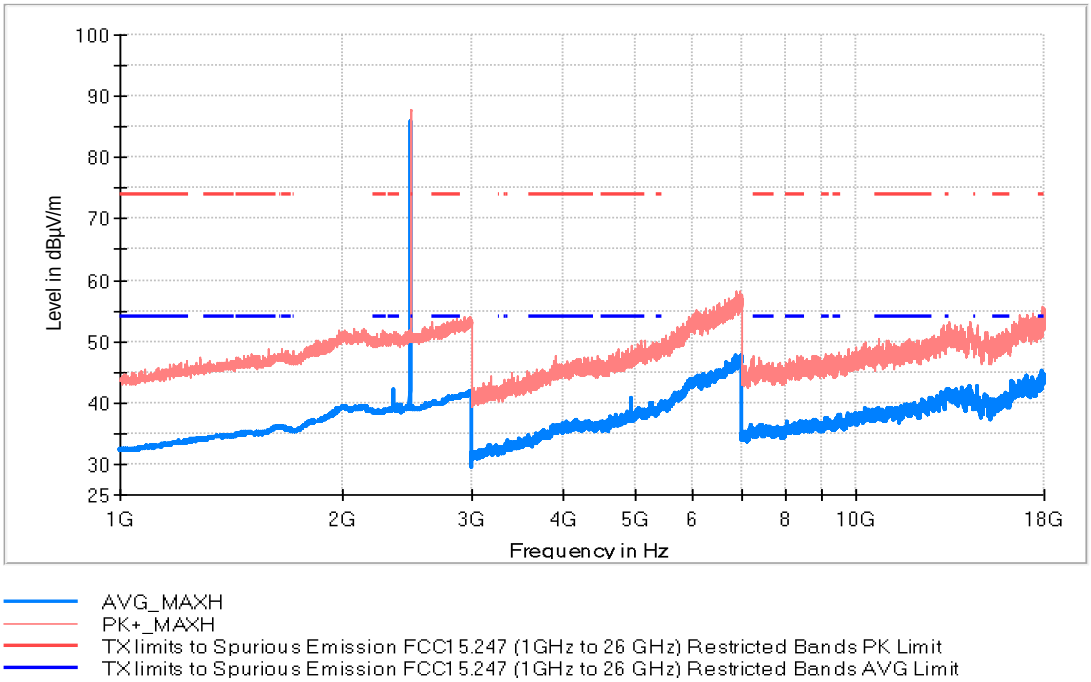

## Maximizations

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 2312.500000 | 50.6 | 40.9 | H | |
| 2439.500000 | 89.8 | 85.3 | H | |
| 4880.500000 | 49.8 | 40.1 | H | Fundamental |

| TEST RESULTS (Cont.): | |
|---|---|

## CHANNEL: Highest (2480 MHz).

1GHz_18GHz_HP & VP_CH High

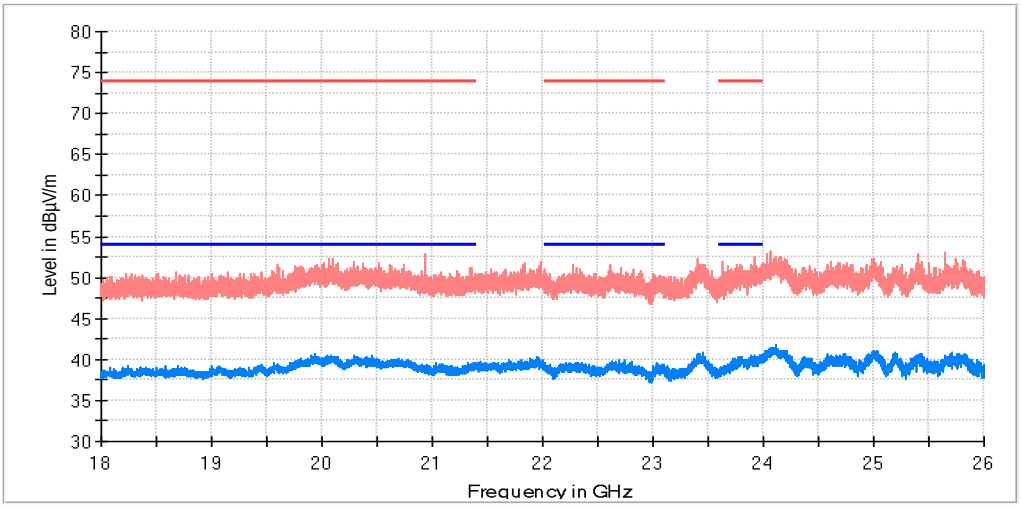



## Maximizations

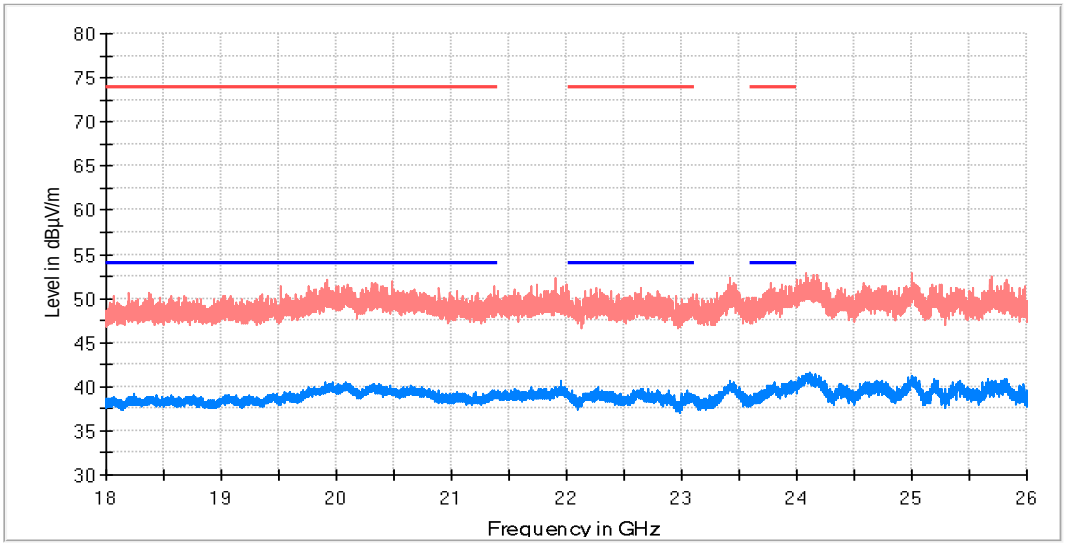
| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | Pol | Comment |
|---|---|---|---|---|
| 4959.500000 | 47.7 | 40.9 | H | Fundamental |
| 2352.000000 | 51.6 | 42.2 | H | |
| 2479.500000 | 87.8 | 82.9 | H | |

| TEST RESULTS (Cont.): | |
|---|---|
| **FREQUENCY RANGE** | **18 GHz – 26 GHz** |

## CHANNEL: Lowest (2402 MHz)

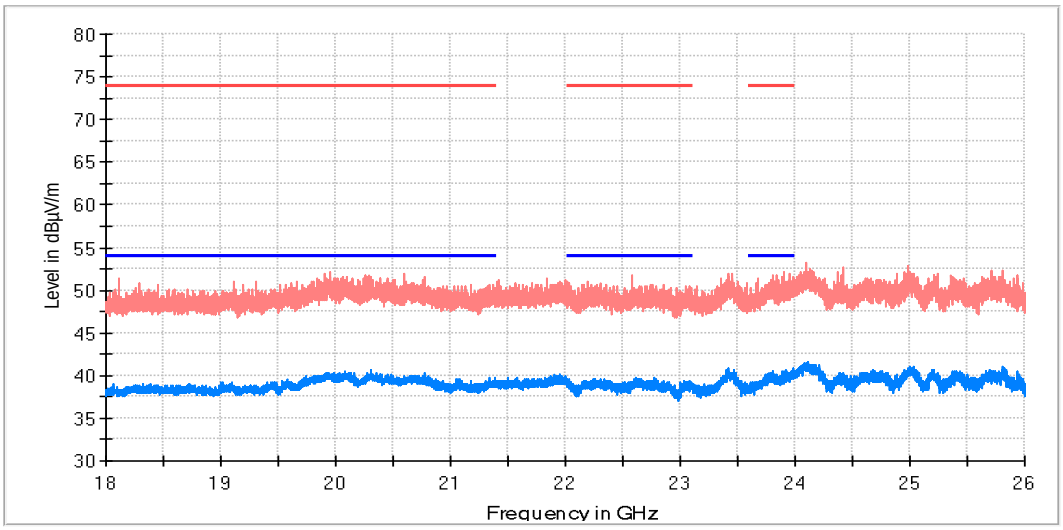



## CHANNEL: Middle (2440 MHz)



| TEST RESULTS (Cont.): | |
|---|---|

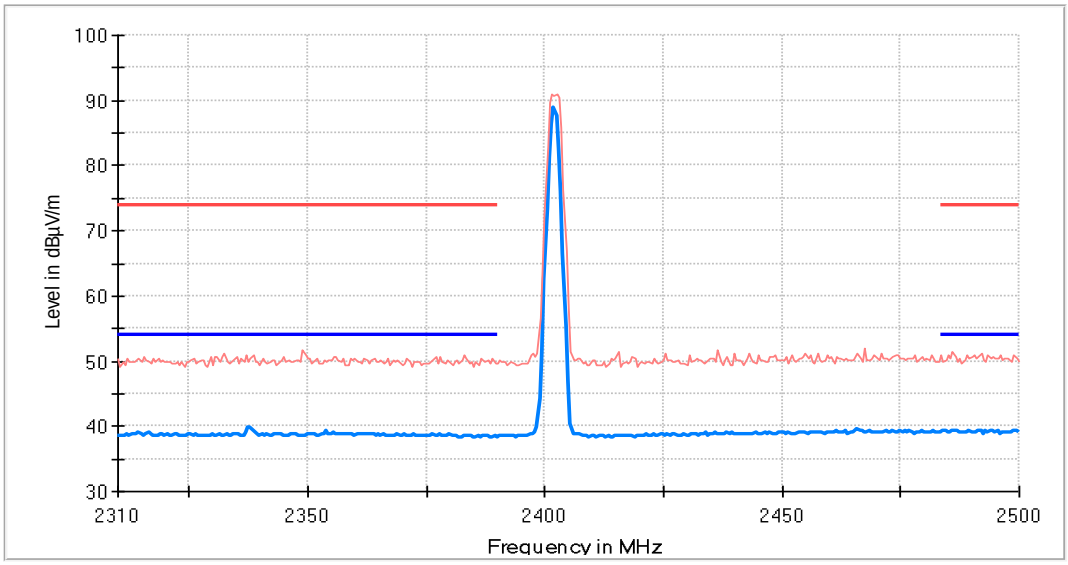
## CHANNEL: High (2480 MHz).




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

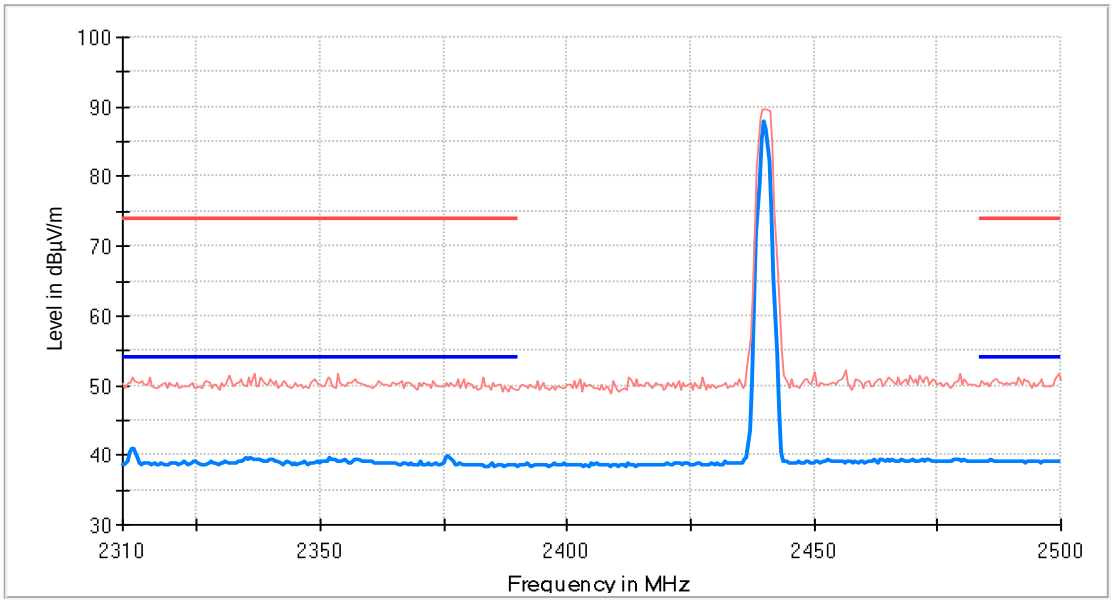
| TEST RESULTS (Cont.): | RESTRICTED BAND (2.31 GHz to 2.5 GHz) |
|---|---|

**CHANNEL: Lowest (2402 MHz).**




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

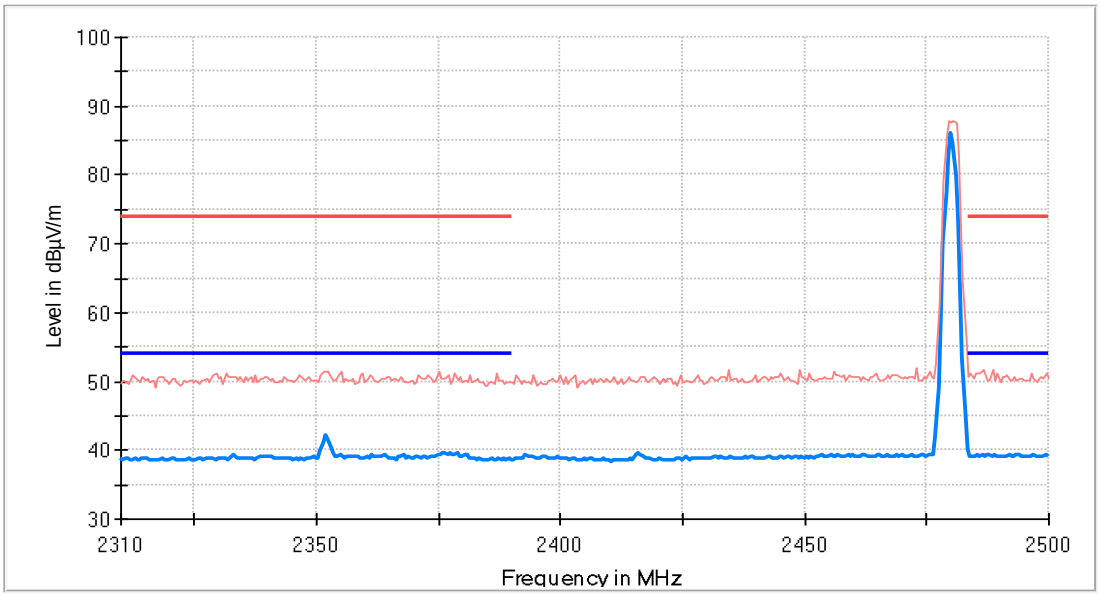
**CHANNEL: Middle (2440 MHz).**




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| TEST RESULTS (Cont.): | |
|---|---|

**CHANNEL: Highest (2480 MHz).**




AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit