



FCC LISTED, REGISTRATION
NUMBER: 2764.01

ISED LISTED REGISTRATION
NUMBER: 23595-1

Test report No:
2840ERM.007

Partial 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 | Dual band WiFi and BLE 5 radio module |
| Trademark | Telit |
| Model and /or type reference | WE866C6-P |
| Other identification of the product | - |
| Features | BT BR/EDR/LE 5.0 + Wifi a/b/g/n/ac (wave 1=> Max BW= 80 MHz) |
| Manufacturer | TELIT COMMUNICATIONS S.P.A. Viale Stazione di Prosecco 5/B, 34010 Sgonico, Trieste (Italy) |
| Test method requested, standard | USA FCC Part 15.247, 10-1-19 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. USA FCC Part 15.209, 10-1-19 Edition: Radiated emission limits; general requirements CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 (April 2018). 558074 D01 15.247 Meas Guidance v05r02. Guidance for Compliance Measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under section §15.247 of the FCC Rules ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices. |
| Summary | IN COMPLIANCE |
| Approved by (name / position & signature) | Domingo Galvez EMC&RF Lab Manager |
| Date of issue | 07-13-2020 |
| 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.

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Uncertainty

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

| Frequency (MHz) | U(k=2) | Units |
|-----------------|--------|-------|
| 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

Companion module, supporting Wi-Fi 802.11 a/b/g/n/ac (wave 1) and BT (BR/EDR/LE(5.0)). Single RF antenna port for both technologies Wifi and BT. SDIO and HCI I/F, respectively for Wi-Fi and BT control. Module is controlled via a host Telit module, LE920A4 or LE910C1.

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 N° | Description | Model | Serial N° | Date of reception |
|------------|--|----------------|----------------------|-------------------|
| 2840/01 | Telit module WE866C6-P in Cradle | LE910C4- AP | IMEI:357575100004589 | 04/27/2020 |

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

All conducted tests indicated in appendix A & B.

Sample S/02 is composed of the following elements:

| Control N° | Description | Model | Serial N° | Date of reception |
|------------|--|------------|----------------------|-------------------|
| 2840/02 | Telit module WE866C6-P in Cradle | LE910C4-AP | IMEI:357575100005412 | 04/27/2020 |

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

All radiated tests indicated in appendix B.

Sample S/01 & S/02 is composed of the following accessories:

| Control N° | Description | Model | Serial N° | Date of reception |
|------------|--------------|---------------------------|-----------|-------------------|
| 2840/08 | power cable | --- | --- | 04/27/2020 |
| 2840/11 | USB Cable | --- | --- | 04/27/2020 |
| 2840/05 | WLAN Antenna | ATEL-ANTENNAS T-AT9552 | --- | 04/27/2020 |

Test sample description

| | | | | | | | |
|---|--|--------------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| Ports..... : | Port name and description | | Cable | | | | |
| | | | Specified length [m] | Attached during test | Shielded | | |
| | WI-FI/BT RF Port | | 0.1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | |
| | | | | <input type="checkbox"/> | <input type="checkbox"/> | | |
| | | | <input type="checkbox"/> | <input type="checkbox"/> | | | |
| Supplementary information to the ports..... : | Not provided | | | | | | |
| Rated power supply..... : | Voltage and Frequency | | Reference poles | | | | |
| | | | L1 | L2 | L3 | N | PE |
| | <input type="checkbox"/> | AC: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | <input type="checkbox"/> | AC: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | <input type="checkbox"/> | DC | | | | | |
| <input checked="" type="checkbox"/> | DC: 3.8V (Internal DCDC converter supplying the WE866C3-P module with regulated voltage = 3.3 V) | | | | | | |
| Rated Power | 18 dBm max | | | | | | |
| Clock frequencies | 48 MHz | | | | | | |
| Other parameters | Not provided | | | | | | |
| Software version..... | 25.20.308 | | | | | | |
| Hardware version | 1.0 / CS2049b-a | | | | | | |
| Dimensions in cm (L x W x D)..... | 15x13mm | | | | | | |
| Mounting position | <input type="checkbox"/> | Table top equipment | | | | | |
| | <input checked="" type="checkbox"/> | Wall/Ceiling mounted equipment | | | | | |
| | <input type="checkbox"/> | Floor standing equipment | | | | | |
| | <input type="checkbox"/> | Hand-held equipment | | | | | |
| | <input type="checkbox"/> | Other: | | | | | |
| Modules/parts..... : | Module/parts of test item | | Type | Manufacturer | | | |
| | | | | | | | |
| Accessories (not part of the test item) | Description | | Type | Manufacturer | | | |
| | | | | | | | |

| Documents as provided by the applicant | Description | File name | Issue date |
|--|-------------|-----------|------------|
| | | | |
| | | | |
| | | | |

Copy of marking plate:



Identification of the client

TELIT COMMUNICATIONS S.P.A.

Viale Stazione di Prosecco 5/B, 34010 Sgonico, Trieste (Italy)

Testing period and place

| | |
|----------------------|--------------------------|
| Test Location | DEKRA Certification Inc. |
| Date (start) | 07-06-2020 |
| Date (finish) | 07-10-2020 |

Document history

| Report number | Date | Description |
|---------------|------------|---------------|
| 2840ERM.007 | 07-13-2020 | First release |

Environmental conditions

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

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

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

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 75 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

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

| | |
|--------------------------|-------------------------------------|
| Temperature | Min. = 15 °C Max. = 35 °C |
| Relative humidity | Min. = 30 % Max. = 60 % |
| Air pressure | Min. = 860 mbar Max. = 1060 mbar |

Remarks and comments

The tests have been performed by the technical personnel: Divya Adusumilli, Lakshmi Gollamudi, Bhagyashree Chaudhary, Koji Nishimoto and Lourdes Maria Valverde.

Testing verdicts

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

Summary

| FCC PART 15 PARAGRAPH / RSS-247 (Bluetooth Low Energy) | | | | | |
|--|--------------------|---------------------|--|---------|---------|
| Section | 15.247 Spec Clause | RSS Spec Clause | Test Description | Verdict | Remark |
| - | § 2.1049 | RSS-Gen 6.7 | 99% Occupied Bandwidth | N/M | Refer 1 |
| - | § 15.247 (a) (2) | RSS-247 5.2. (a) | 6dB Emission Bandwidth | N/M | Refer 1 |
| A.1 | § 15.247 (b) (3) | RSS-247 5.4. (d) | Maximum peak conducted output power and antenna gain | P | N/A |
| - | § 15.247 (d) | RSS-247 5.5. | Band-edge emissions compliance (Transmitter) | N/M | Refer 1 |
| - | § 15.247 (e) | RSS-247 5.2. (b) | Power spectral density | N/M | Refer 1 |
| - | §15.207 (a) | RSS Gen 8.8 | Conducted Emission Limits | N/M | Refer 1 |
| - | § 15.247 (d) | RSS-Gen 8.9 & 8.10. | Emission limitations radiated (Transmitter) | N/M | Refer 1 |
| <u>Supplementary information and remarks:</u> | | | | | |
| 1. Customer not requested. | | | | | |

| FCC PART 15 PARAGRAPH (WIFI 2.4GHZ) | | | | | |
|---|----------------------------|-----------------|--|---------|---------|
| Section | 15.247 Spec Clause | RSS Spec Clause | Test Description | Verdict | Remark |
| - | § 2.1049 & §15.247 (a) (2) | RSS-247 5.2 (a) | 99% Occupied Bandwidth & 6dB Bandwidth | N/M | Refer 1 |
| B.1 | § 15.247 (b) | RSS-247 5.4 (d) | Maximum Output Power and antenna gain | P | N/A |
| - | § 15.247 (d) | RSS-247 5.5 | Band-edge conducted emissions compliance (Transmitter) | N/M | Refer 1 |
| - | § 15.247 (e) | RSS-247 5.2 (b) | Power Spectral Density | N/M | Refer 1 |
| - | §15.247(d) | RSS-247 5.5 | Emission limitations Conducted (Transmitter) | N/M | Refer 1 |
| B.2 | §15.247 (d) | RSS-247 5.5 | Emission limitations Radiated (Transmitter) | P | N/A |
| <u>Supplementary information and remarks:</u> | | | | | |
| 1. Customer not requested. | | | | | |

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 | FSV40 Signal analyzer 40 GHz | Rohde & Schwarz | FSV40 | 2018/10 | 2020/10 |
| 1309 | Switch unit | Rohde & Schwarz | OSP120 / OSP-B157 | 2020/03 | 2022/03 |
| 1009 | RF generator | ROHDE & SCHWARZ | SMB100A | 2019/08 | 2021/08 |
| 1042 | RF Vector Signal generator | Rohde & Schwarz | SMBV100A | 2020/03 | 2022/03 |

Radiated Measurements

| CONTROL NUMBER | DESCRIPTION | MANUFACTURER | MODEL | LAST CALIBRATION | NEXT CALIBRATION |
|----------------|--|-----------------|----------------|------------------|------------------|
| 1179 | Semi anechoic Absorber Lined Chamber | Frankonia | SAC 3 plus "L" | N/A | N/A |
| 1064 | Biconical Log antenna | ETS LINDGREN | 3142E | 2018/01 | 2021/01 |
| 1058 | Double-ridge Waveguide Horn antenna 1-18 GHz | ETS LINDGREN | 3115 | 2020/05 | 2023/05 |
| 1056 | Double-ridge Waveguide Horn antenna | ETS LINDGREN | 3116C | 2020/01 | 2023/01 |
| 1014 | Spectrum analyzer | Rohde & Schwarz | FSV40 | 2019/04 | 2021/04 |
| 1012 | EMI TEST RECEIVER | Rohde & Schwarz | ESR 26 | 2019/12 | 2021/12 |
| 0981 | RF pre-amplifier 1-18 GHz | Bonn Elektronik | BLMA 0118-2A | 2018/10 | 2021/10 |

Appendix A: Test results (Bluetooth Low Energy)

Appendix A Content

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PRODUCT INFORMATION

The following information is provided by the client

| Information | Description |
|------------------------------|---|
| Modulation | Other than FHSS |
| Adaptive | Adaptive Equipment which can operate in Non-Adaptive mode |
| Operation mode | |
| - Operating Frequency Range | 2402 – 2480 MHz |
| - Nominal Channel Bandwidth | 1 MHz |
| - RF Output Power | 9 dBm |
| Extreme operating conditions | |
| - Temperature range | -40 °C to +85 °C |
| Antenna type | Dedicated Antenna |
| Antenna gain | + 2.5 dBi |
| Nominal Voltage | |
| - Supply Voltage | 3.8 Vdc |
| - Type of power source | DC voltage |
| Equipment type | Bluetooth Low Energy |
| Geo-location capability | No |

DESCRIPTION OF TEST CONDITIONS

| TEST CONDITIONS | DESCRIPTION |
|-----------------|---|
| TC#01 | <p><u>Power supply (V):</u> $V_{\text{nominal}} = 3.8 \text{ Vdc}$</p> <p><u>Test Frequencies for Conducted/ Radiated tests:</u> Lowest channel: 2402 MHz Middle channel: 2440 MHz Highest channel: 2480 MHz</p> |

TEST A.1: 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

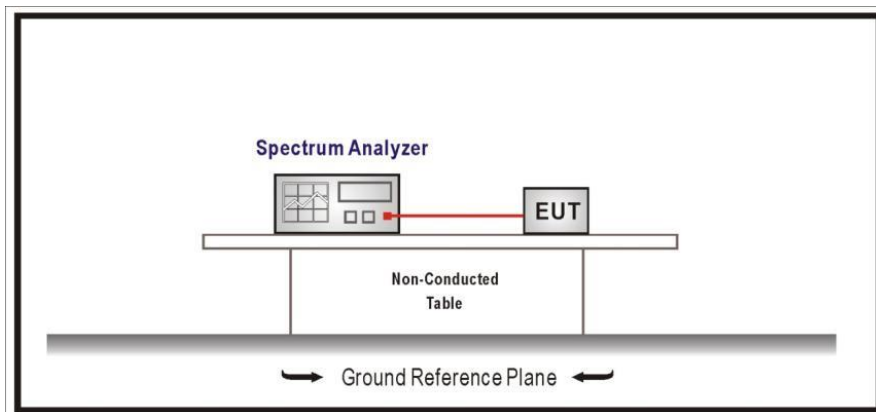
§15.247(b)(3) and RSS-247 5.4(d): For systems using digital modulation in the 2400-2483.5 MHz band: 1 watt (30 dBm).

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) | -4.2 | -3.2 | -4.3 |
| Maximum EIRP power (dBm) | -1.7 | -0.7 | -1.8 |
| Measurement uncertainty (dB) | <±0.78 | | |

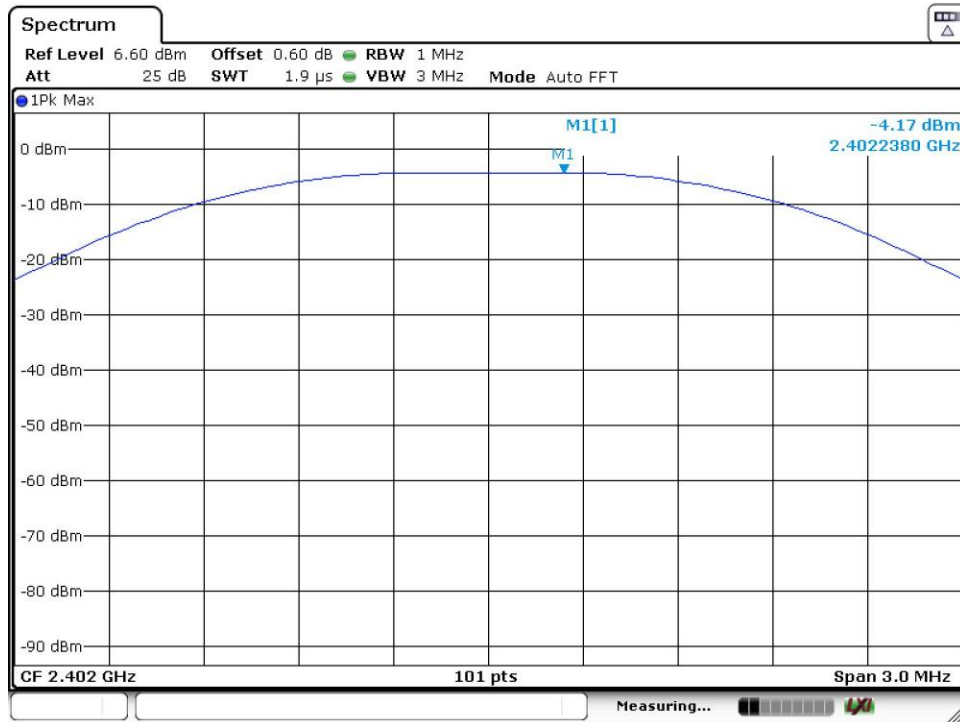
Maximum declared antenna gain: + 2.5 dBi

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.

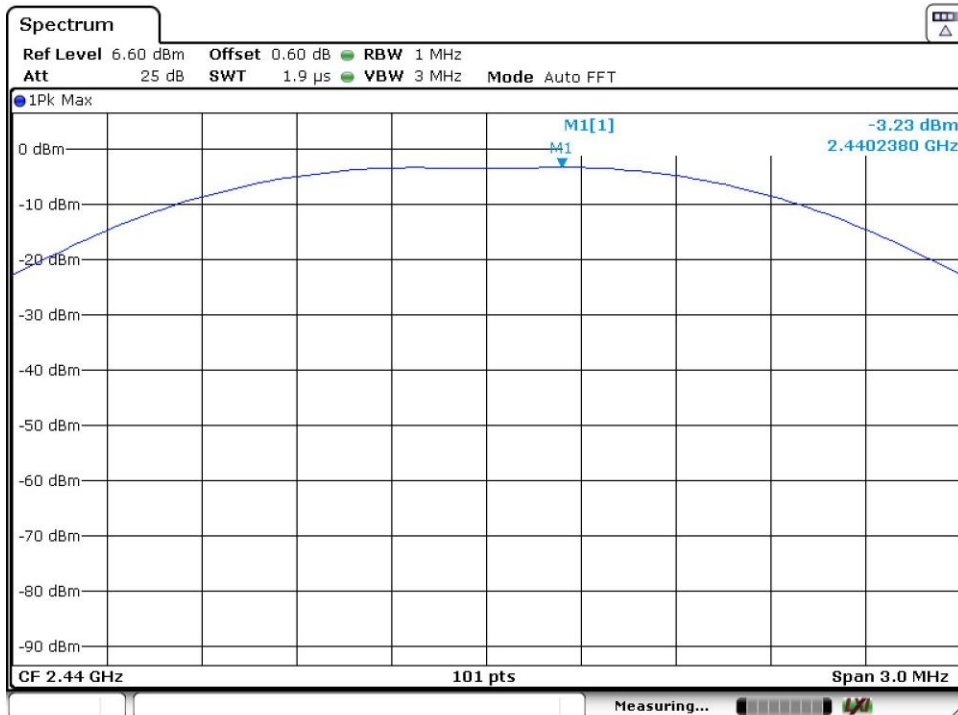
TEST RESULTS (Cont.):

CONDUCTED PEAK POWER

Lowest Channel

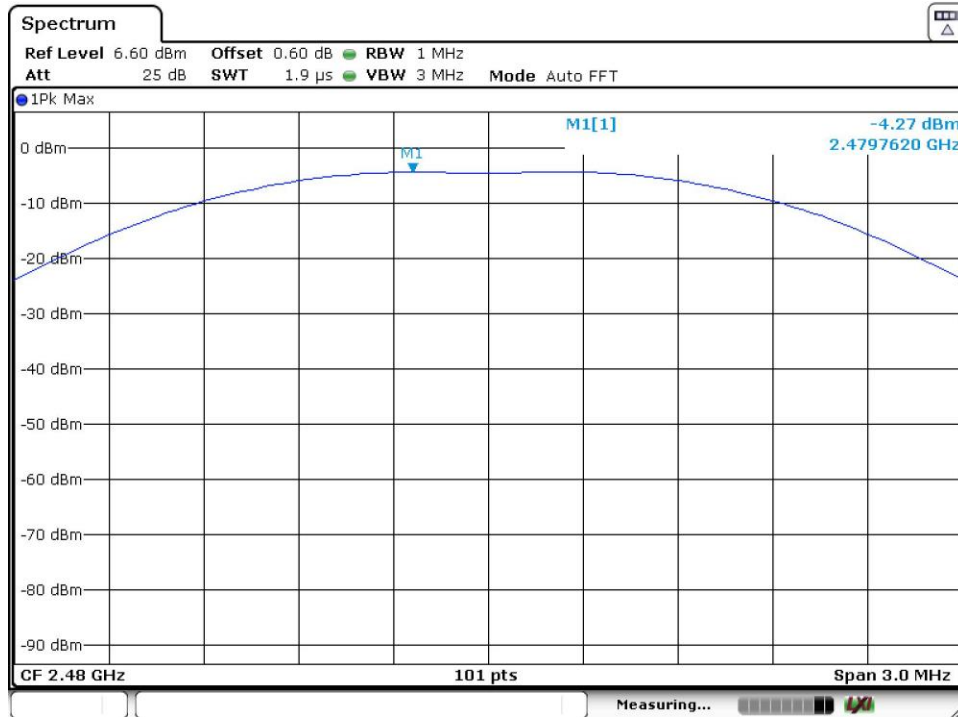


Middle Channel



TEST RESULTS (Cont.):

Highest Channel



Appendix B: Test results (WIFI 2.4GHz)

Appendix B Content

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PRODUCT INFORMATION

The following information is provided by the supplier, in accordance with clause 5.4.1:

| Information | Description |
|------------------------------|---------------------------------|
| Modulation | DSSS/OFDM |
| Maximum RF Output Power | 18 dBm |
| Operation mode | Equipment with only one antenna |
| - Operating Frequency Range | 2412 – 2462 MHz |
| - Nominal Channel Bandwidth | 20 / 40 MHz |
| Extreme operating conditions | |
| - Temperature range | -40 °C to +85 °C |
| Antenna type | Dedicated Antenna |
| Antenna gain | +2.5 dBi |
| Nominal Voltage | |
| - Supply Voltage | 3.8 Vdc |
| - Type of power source | DC voltage |
| Equipment type | WIFI 2.4GHz b/g/n20/n40 |
| Geo-location capability | No |

DESCRIPTION OF TEST CONDITIONS

During transmitter test the EUT was being controlled by the SW tool to operate in a continuous transmit mode on the test channel as required and in each of the different modulation modes.

| TEST CONDITIONS | DESCRIPTION |
|---|--|
| TC#01 ⁽¹⁾ (b mode) | <u>Power supply (V):</u> $V_{\text{nominal}} = 3.8 \text{ Vdc}$ <u>Channel Bandwidth:</u> 20 MHz <u>Test Frequencies for Conducted/Radiated tests:</u> Lowest channel: 2412 MHz Middle channel: 2437 MHz Highest channel: 2462 MHz |
| TC#02 ⁽¹⁾ (g mode) | <u>Power supply (V):</u> $V_{\text{nominal}} = 3.8 \text{ Vdc}$ <u>Channel Bandwidth:</u> 20 MHz <u>Test Frequencies for Conducted/Radiated tests:</u> Lowest channel: 2412 MHz Middle channel: 2437 MHz Highest channel: 2462 MHz |
| TC#03 ⁽¹⁾ (n mode) | <u>Power supply (V):</u> $V_{\text{nominal}} = 3.8 \text{ Vdc}$ <u>Channel Bandwidth:</u> 20 MHz <u>Test Frequencies for Conducted:</u> Lowest channel: 2412 MHz Middle channel: 2437 MHz Highest channel: 2462 MHz |
| TC#04 ⁽¹⁾ (n mode) | <u>Power supply (V):</u> $V_{\text{nominal}} = 3.8 \text{ Vdc}$ <u>Channel Bandwidth:</u> 40 MHz <u>Test Frequencies for Conducted:</u> Lowest channel: 2422 MHz Middle channel: 2437 MHz Highest channel: 2452 MHz |

Note (1): For spurious emissions for OFDM modes 802.11b, 802.11g and 802.11n a preliminary scan was performed to determine the worst case. The following tables and plots show the results for the worst case in DSSS modulation (802.11b) and OFDM modulation (802.11g). The data rates of 1Mb/s for 802.11b, 6Mb/s for 802.11g, MCS0 for 802.11n20/n40 were selected based on preliminary testing that identified those rates corresponding to the worst cases.

TEST B.1: MAXIMUM CONDUCTED OUTPUT POWER AND ANTENNA GAIN

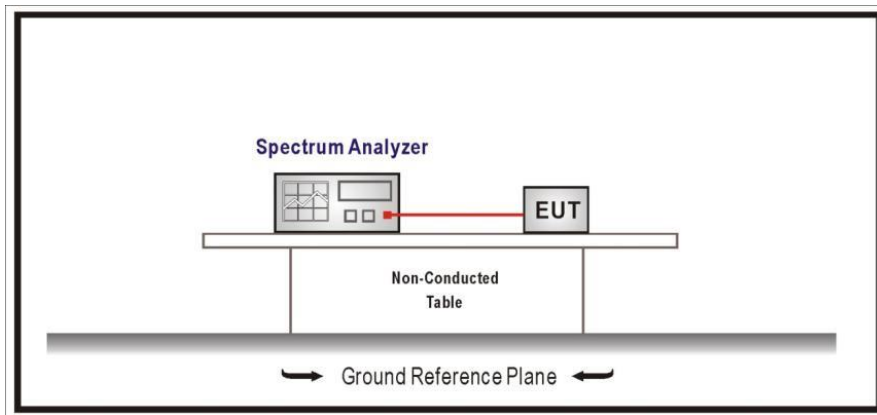
| | | |
|----------------|-------------------|---|
| LIMITS: | Product standard: | Part 15 Subpart C §15.247 and RSS-247 |
| | Test standard: | Part 15 Subpart C §15.247(b) and RSS-247 5.4(d) |

LIMITS

For systems using digital modulation in the 2400 -2483.5 MHz band: 1 watt (30 dBm).
 The e.i.r.p. shall not exceed 4 W (RSS-247).

TEST SETUP

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



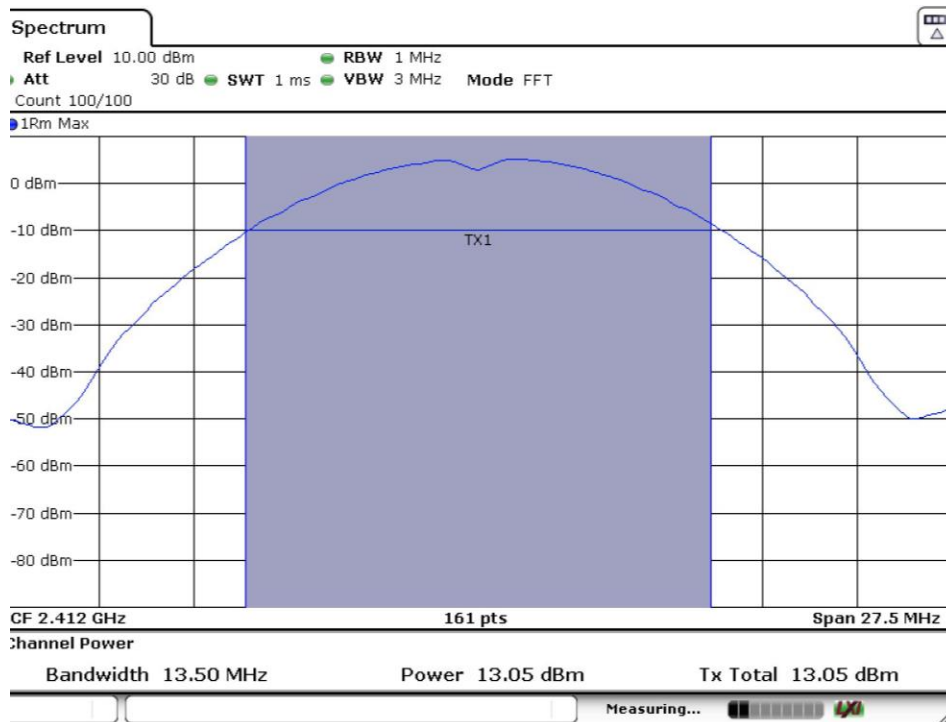
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#01 (b mode) |
| TEST RESULTS: | PASS |

Maximum declared antenna gain: + 2.5 dBi

| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 13.05 | 14.04 | 12.88 |
| Maximum EIRP power (dBm) | 15.55 | 16.54 | 15.38 |
| Measurement uncertainty (dB) | <±0.78 | | |

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.

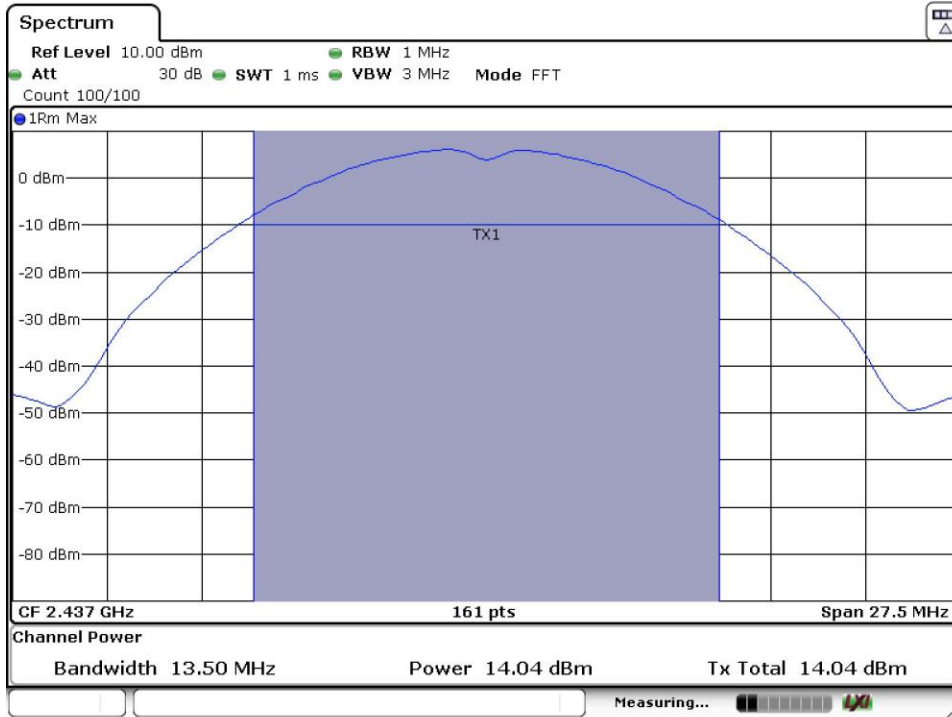
Lowest Channel



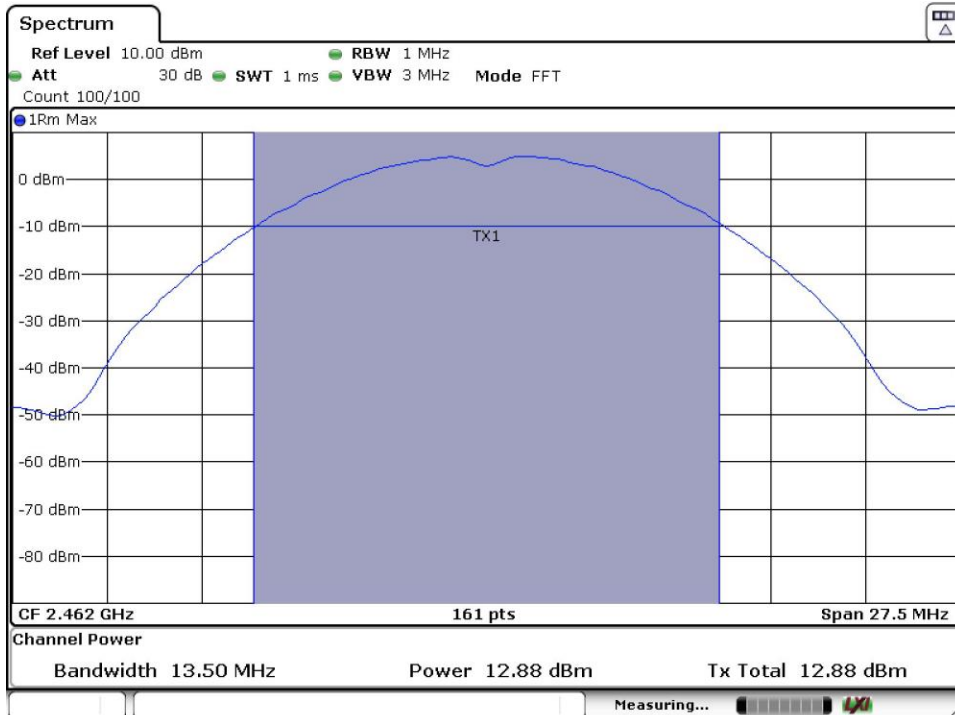
TEST RESULTS (Cont.):

CONDUCTED OUTPUT POWER

Middle Channel



Highest Channel



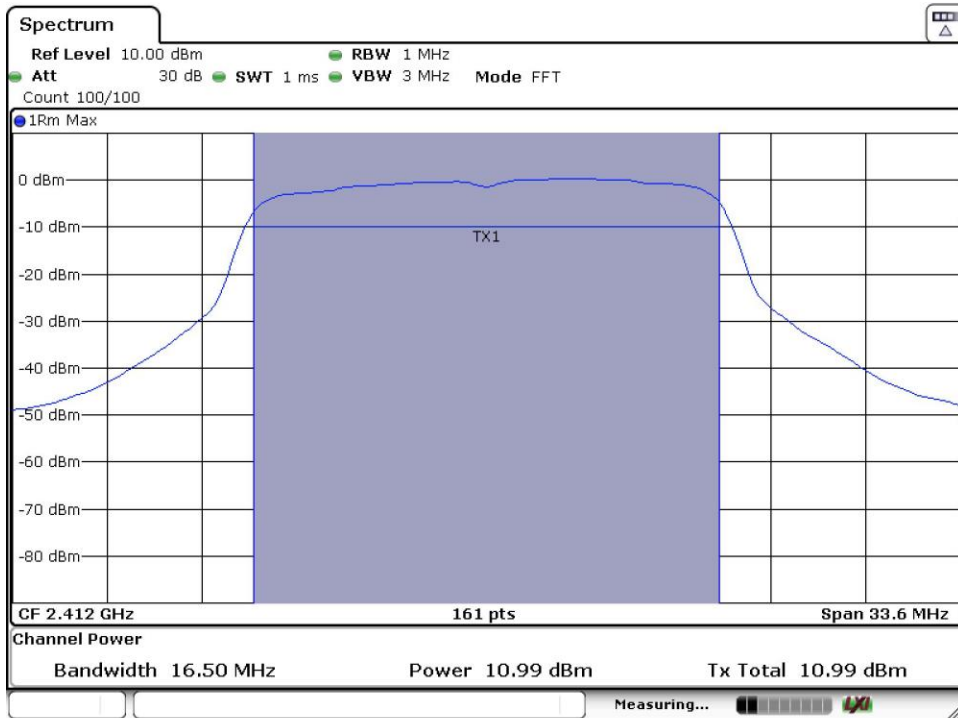
| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

Maximum declared antenna gain: 2.5 dBi

| | Lowest frequency 2412 MHz | Middle frequency 2437 MHz | Highest frequency 2462 MHz |
|-------------------------------|------------------------------|------------------------------|-------------------------------|
| Maximum conducted power (dBm) | 10.99 | 11.18 | 10.68 |
| Maximum EIRP power (dBm) | 13.49 | 13.68 | 13.18 |
| Measurement uncertainty (dB) | <±0.78 | | |

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.

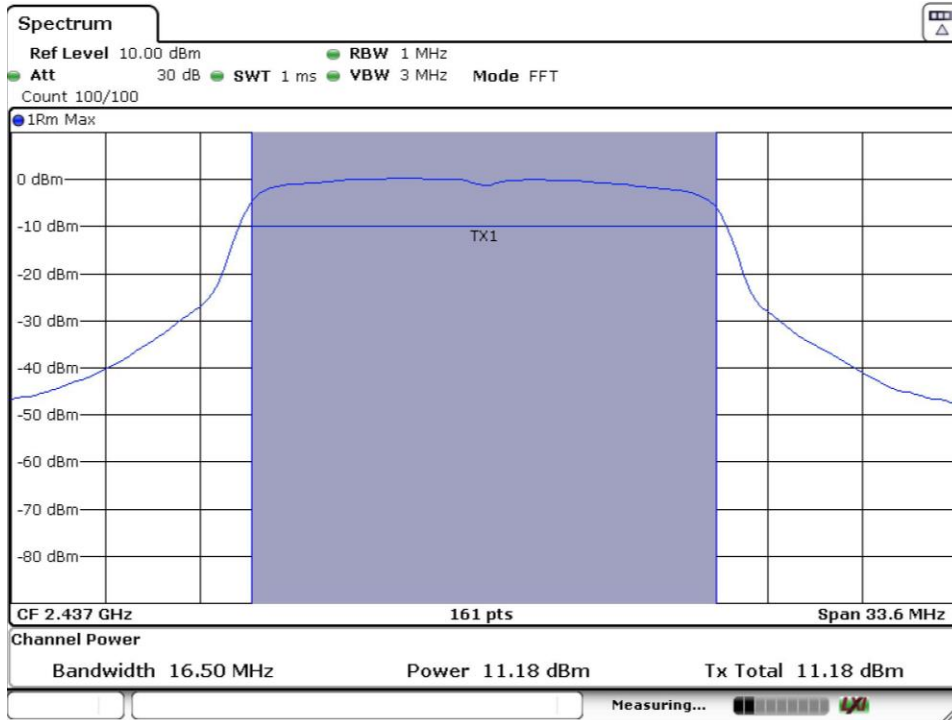
Lowest Channel



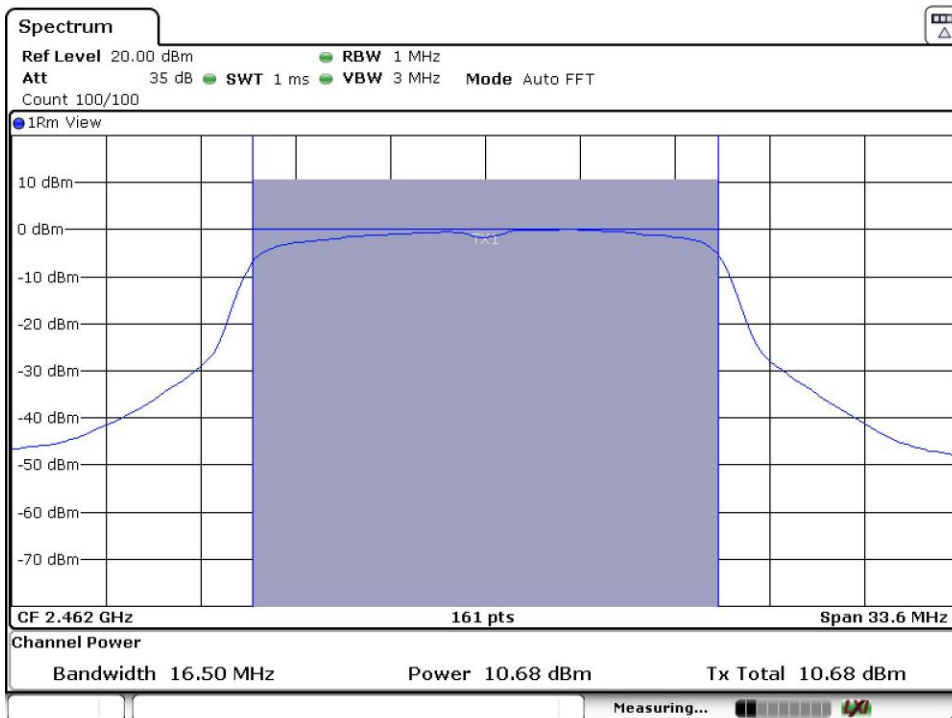
TEST RESULTS (Cont.):

CONDUCTED OUTPUT POWER

Middle Channel



Highest Channel



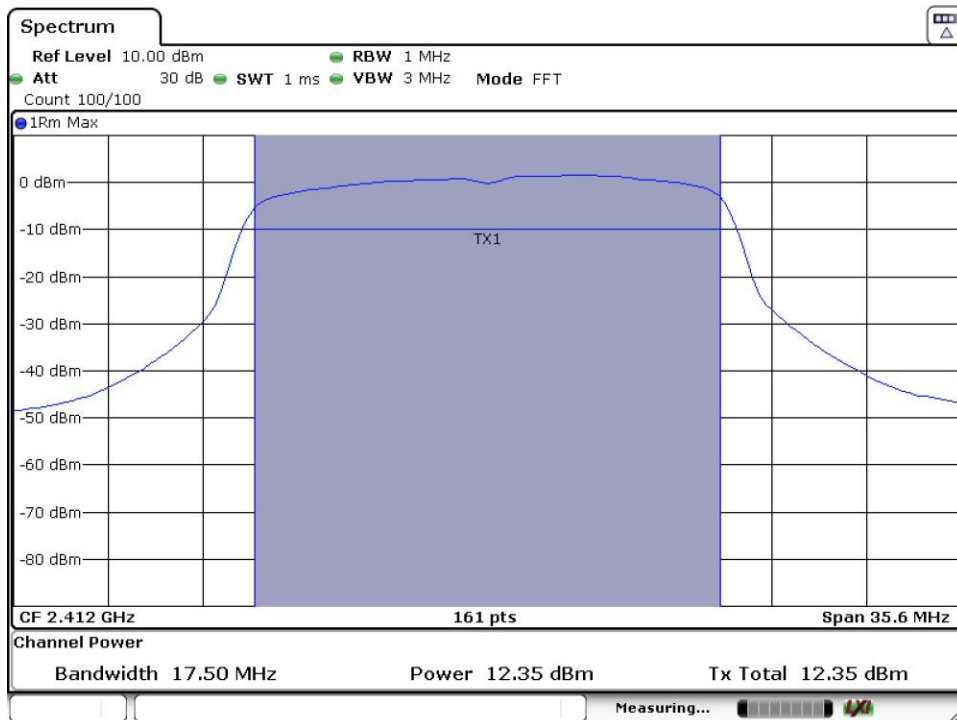
| | |
|---------------------------------|------------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#03 (n20 mode) |
| TEST RESULTS: | PASS |

Maximum declared antenna gain: 2.5 dBi

| | Lowest frequency | Middle frequency | Highest frequency |
|-------------------------------|------------------|------------------|-------------------|
| | 2412 MHz | 2437 MHz | 2462 MHz |
| Maximum conducted power (dBm) | 12.35 | 12.96 | 12.43 |
| Maximum EIRP power (dBm) | 14.85 | 15.46 | 14.93 |
| Measurement uncertainty (dB) | <±0.78 | | |

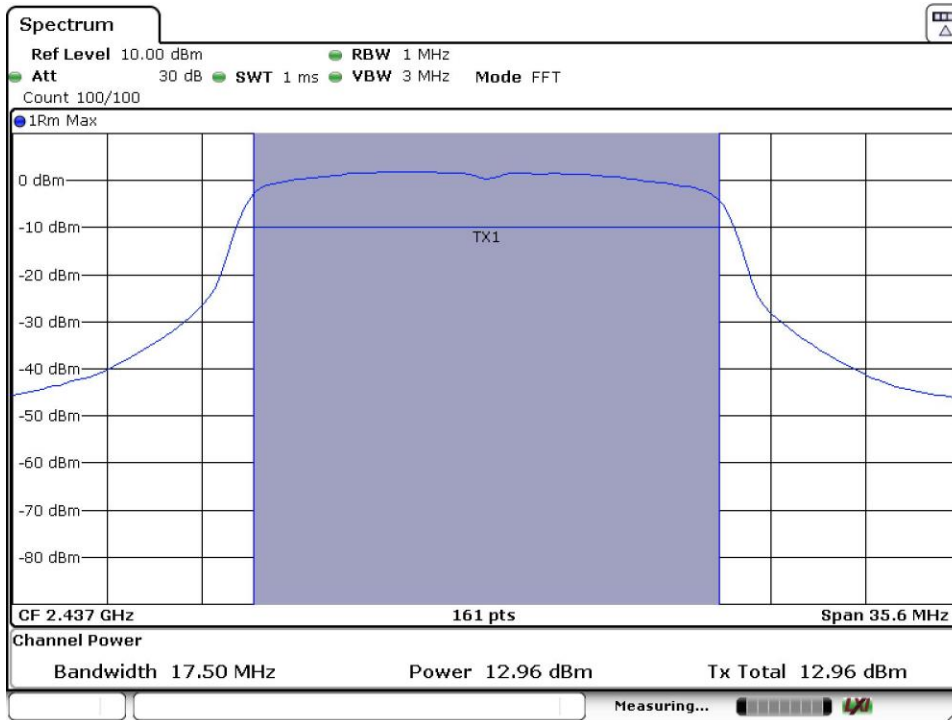
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

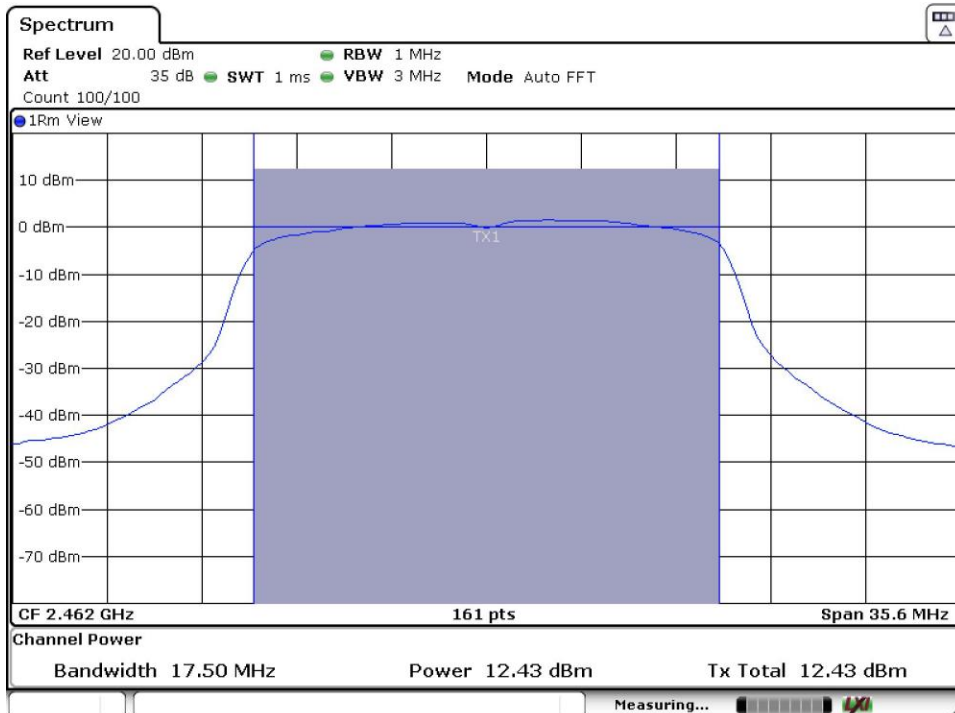


TEST RESULTS (Cont.)

Middle Channel



Highest Channel



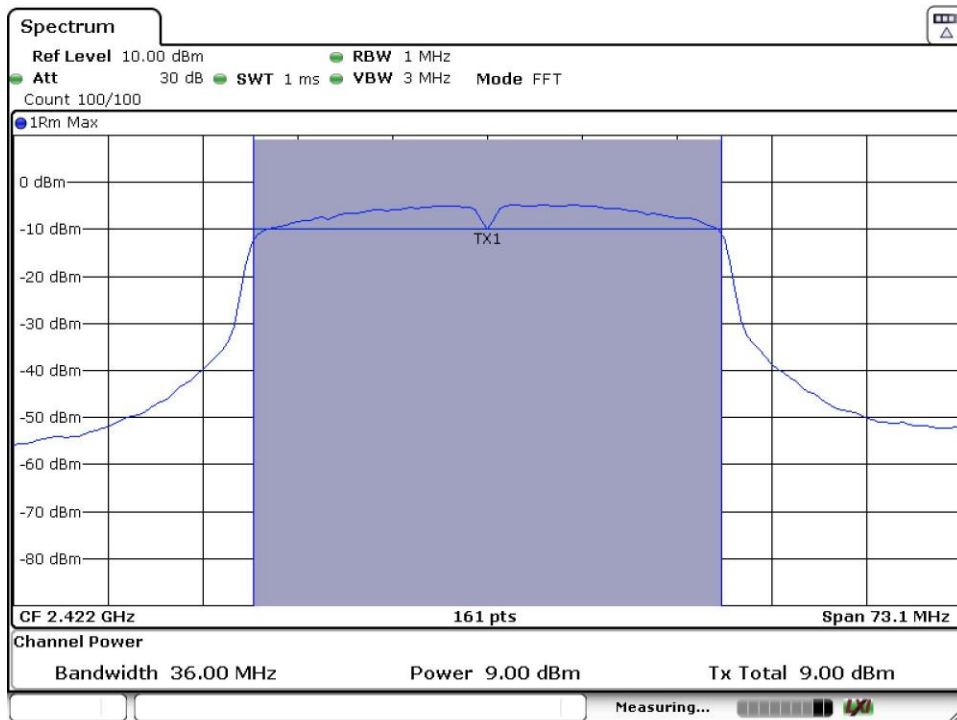
| | |
|---------------------------------|------------------|
| TESTED SAMPLES: | S/01 |
| TESTED CONDITIONS MODES: | TC#04 (n40 mode) |
| TEST RESULTS: | PASS |

Maximum declared antenna gain: 2.5 dBi

| | Lowest frequency | Middle frequency | Highest frequency |
|-------------------------------|------------------|------------------|-------------------|
| | 2412 MHz | 2437 MHz | 2462 MHz |
| Maximum conducted power (dBm) | 9.00 | 9.00 | 8.95 |
| Maximum EIRP power (dBm) | 11.50 | 11.50 | 11.45 |
| Measurement uncertainty (dB) | <±0.78 | | |

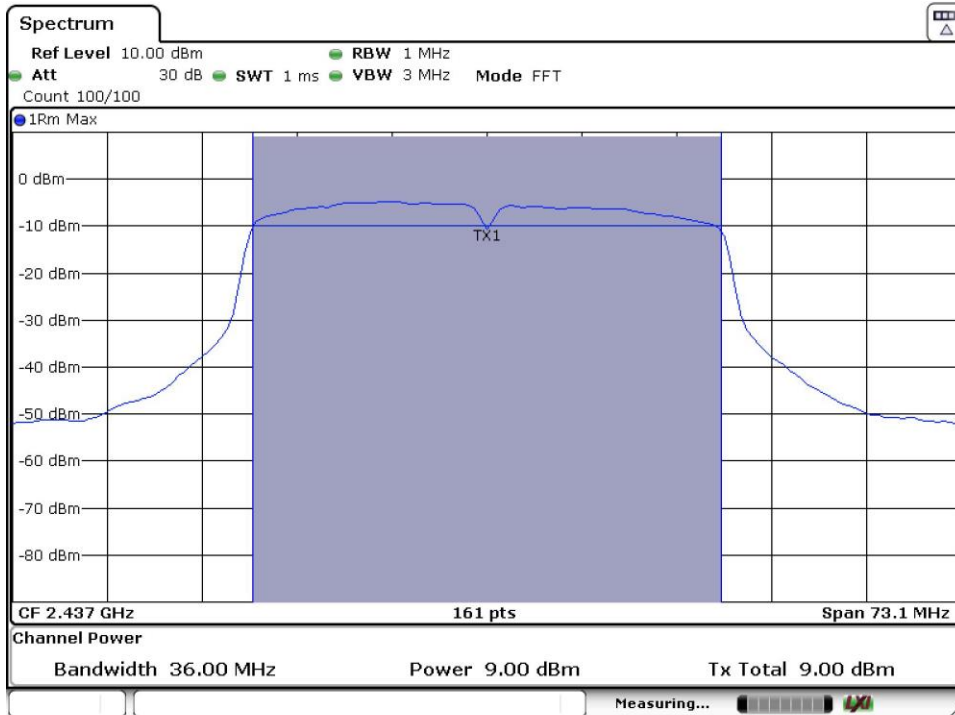
The maximum directional gain of the antenna is less than 6 dBi and therefore the maximum output power is not required to be reduced from the stated values.

Lowest Channel

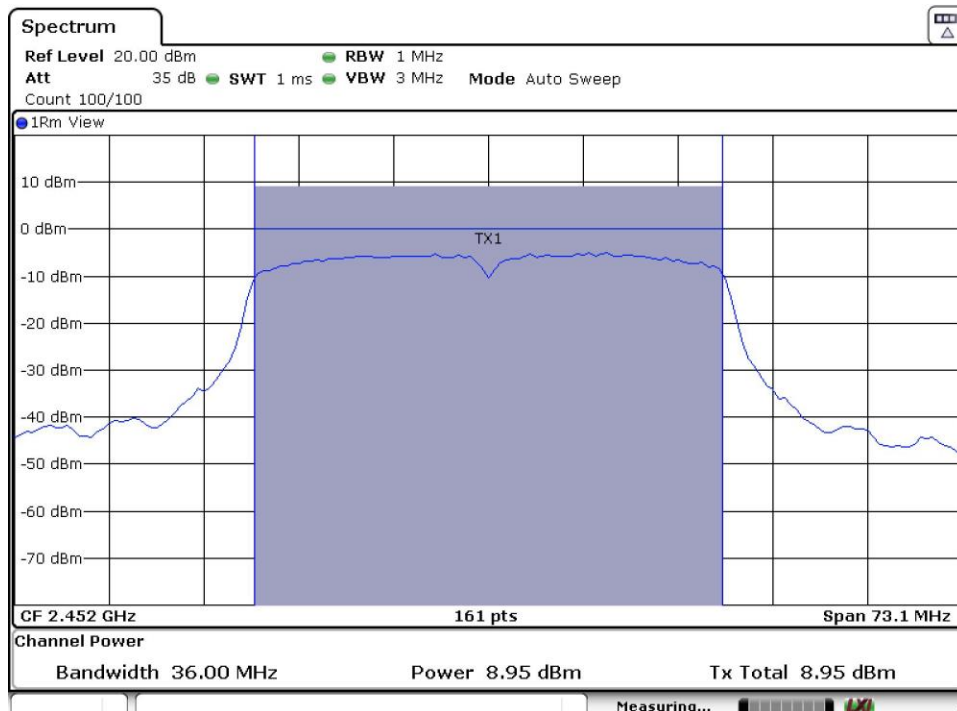


TEST RESULTS (Cont.)

Middle Channel



Highest Channel



TEST B.2: 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-247 5.5 |

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 3 m for the frequency range 30-1000 MHz (Bilog antenna) and at 1m for the frequency range 1-40 GHz (1 GHz-18 GHz and 18 GHz-26 GHz Double ridge horn antennas).

For radiated emissions in the range 1-26 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.

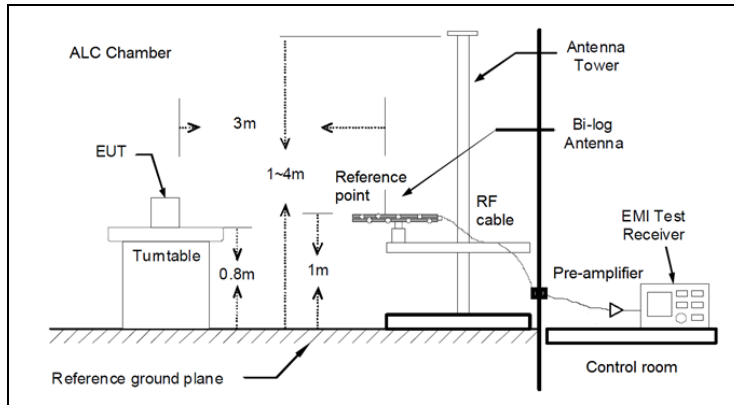
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

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

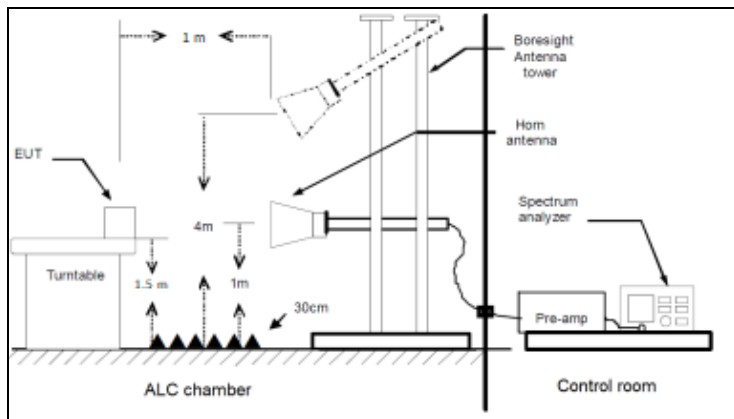
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

TEST SETUP (CONT.)

Radiated measurements Setup $f < 1$ GHz



Radiated measurements setup $f > 1$ GHz



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

Frequency range 30 MHz – 1000 MHz

The spurious emissions below 1 GHz do not depend on the operating channel and mode selected in the EUT. See worst operation mode selected for this range. (b mode)

Frequency range 1 GHz – 26 GHz

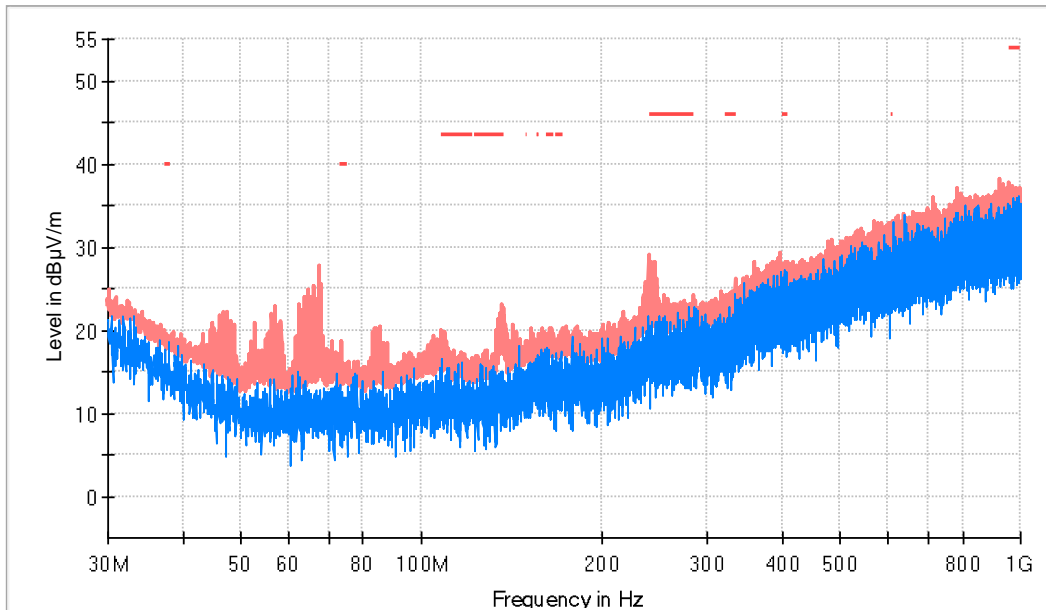
The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz (see next plots).

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 – 1 GHz |

CHANNEL: Middle (2437 MHz).

RF_FCC_15.247_E Field_30MHz_1GHz



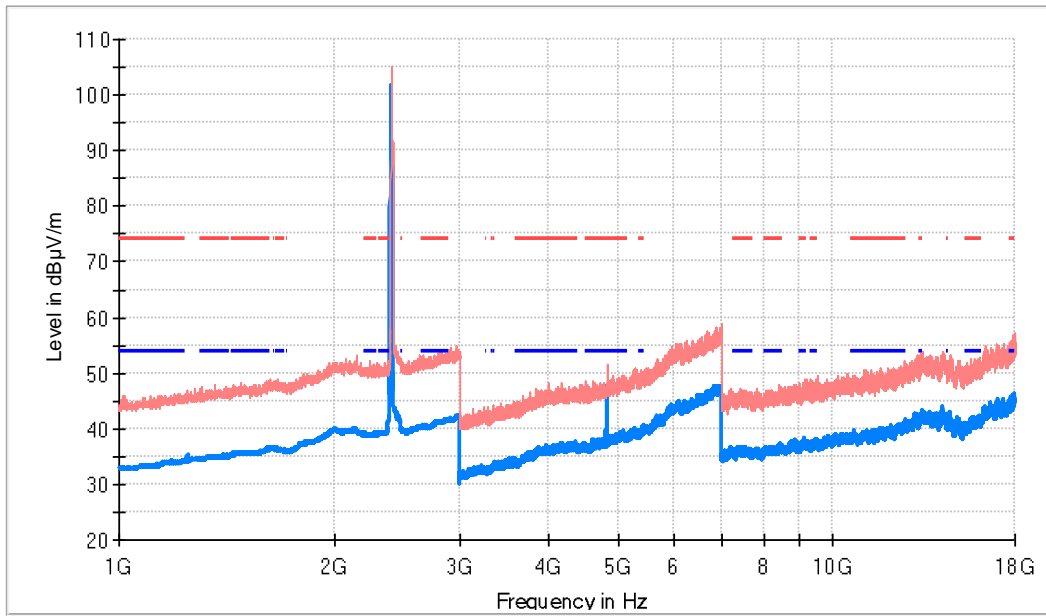
- PK+_MAXH
- PK+_CLRWR
- TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit

| Frequency (MHz) | PK+_CLRWR (dBµV/m) | PK+_MAXH (dBµV/m) | PoI | Margin - PK+ (dB) | Limit - PK+ (dBµV/m) |
|-----------------|--------------------|-------------------|-----|-------------------|----------------------|
| 37.614500 | 15.3 | 19.452 | H | 20.5 | 40.0 |
| 67.587500 | 8.8 | 27.761 | V | --- | --- |
| 136.797000 | 9.1 | 23.075 | H | 20.4 | 43.5 |
| 239.956500 | 20.6 | 28.994 | H | --- | --- |
| 255.234000 | 16.5 | 24.025 | V | 22.0 | 46.0 |
| 975.071000 | 30.0 | 37.292 | V | 16.7 | 54.0 |

TEST RESULTS (Cont.)

1 – 18 GHz

CHANNEL: Low (2412 MHz).



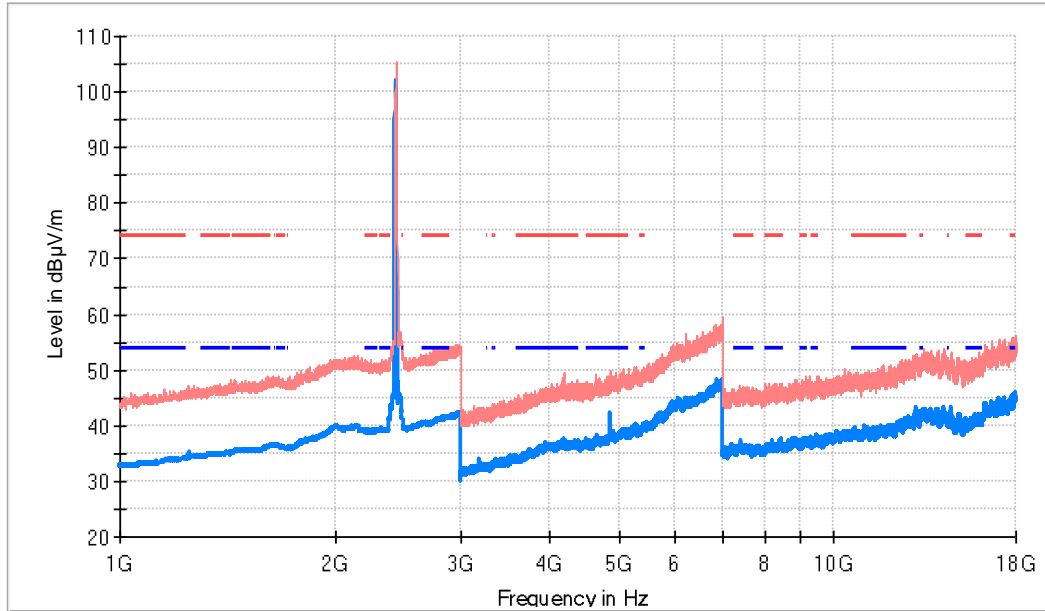
- AVG_MAXH
- PK+_MAXH
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - AVG (dB) | Limit - AVG (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|-------------------|----------------------|-------------|
| 2413.500000 | 105.2 | 101.4 | V | --- | --- | Fundamental |
| 4824.000000 | 51.6 | 47.6 | V | 6.4 | 54.0 | |

TEST RESULTS (Cont.)

1 – 18 GHz

CHANNEL: Middle (2437 MHz).



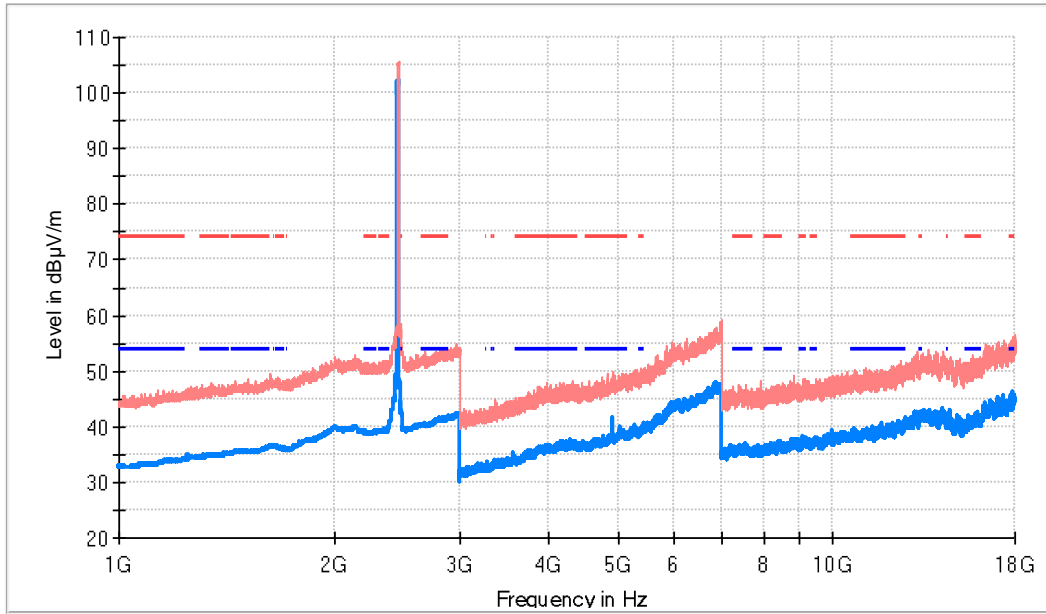
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+ MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - AVG (dB) | Limit - AVG (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|-------------------|----------------------|-------------|
| 2438.500000 | 105.3 | 101.4 | V | --- | --- | Fundamental |
| 4874.000000 | 49.9 | 42.2 | V | 11.8 | 54.0 | |

TEST RESULTS (Cont.)

1 – 18 GHz

CHANNEL: Highest (2462 MHz).

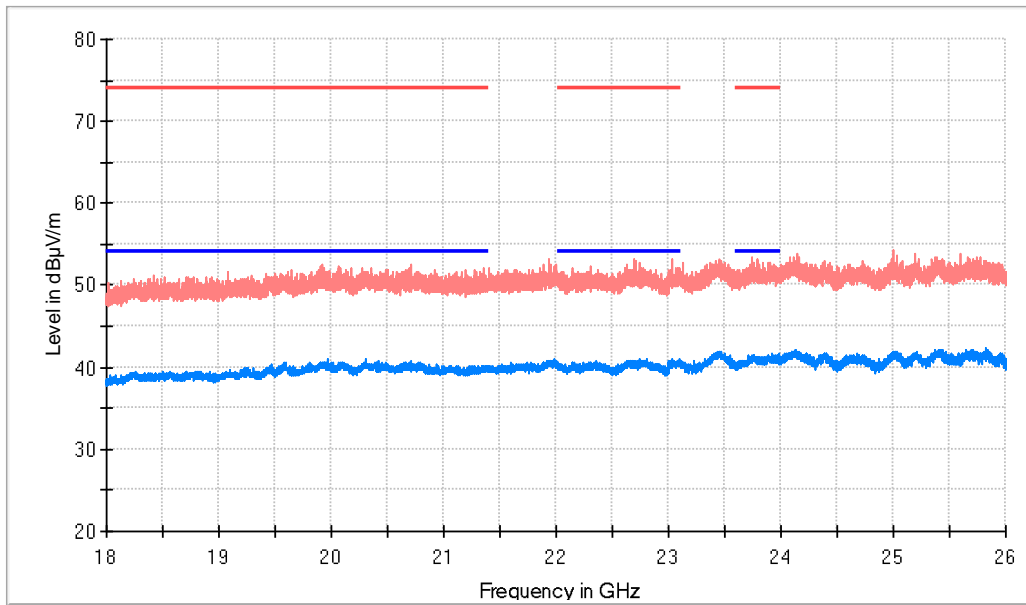


- AVG_MAXH
- PK+_MAXH
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- - - TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - AVG (dB) | Limit - AVG (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|-------------------|----------------------|-------------|
| 2463.500000 | 105.7 | 101.9 | V | --- | --- | Fundamental |
| 4924.000000 | 50.0 | 41.6 | V | 12.4 | 54.0 | |

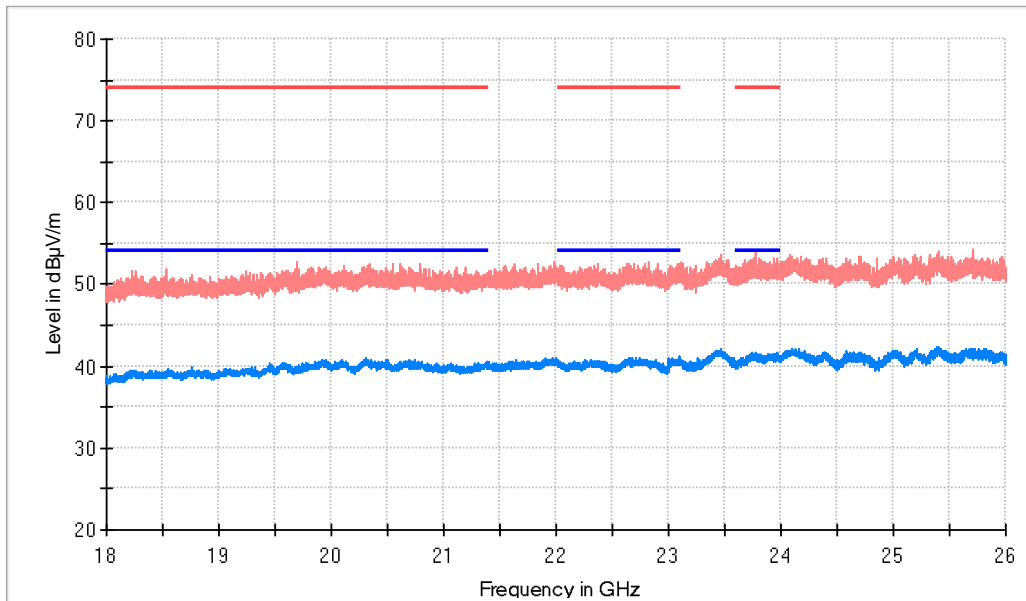
| | |
|-----------------------------|------------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 18 GHz – 26 GHz |

CHANNEL: Lowest (2412 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

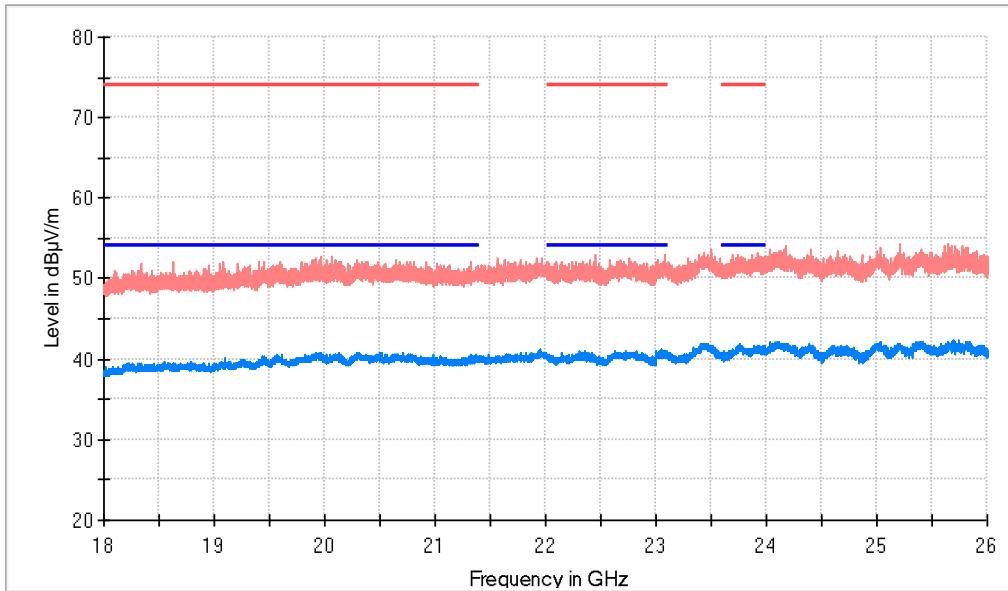
CHANNEL: Middle (2437 MHz).



- 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 (2462 MHz).

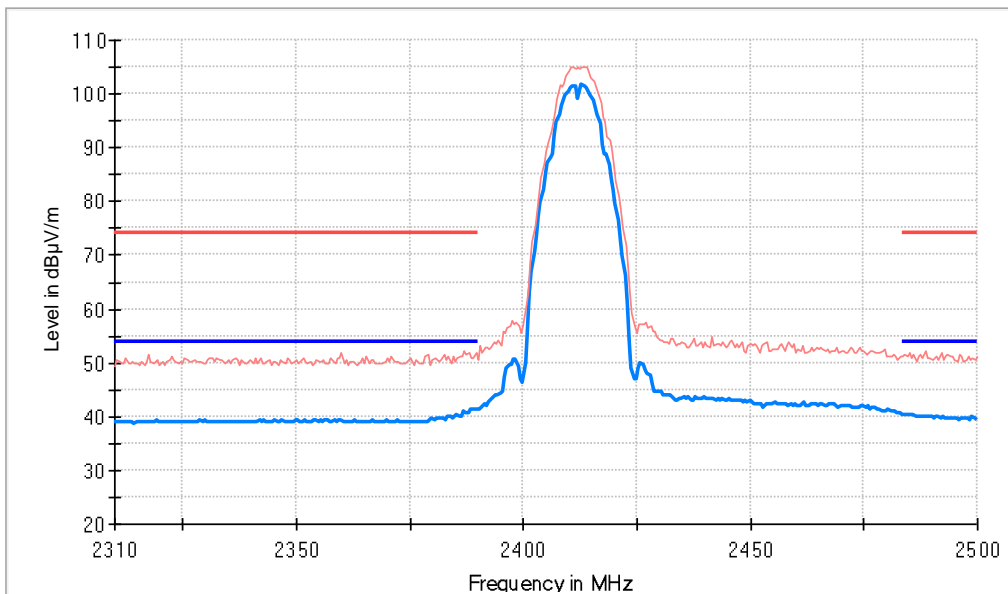


- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

RESTRICTED BANDS

2.31 GHz – 2.5 GHz

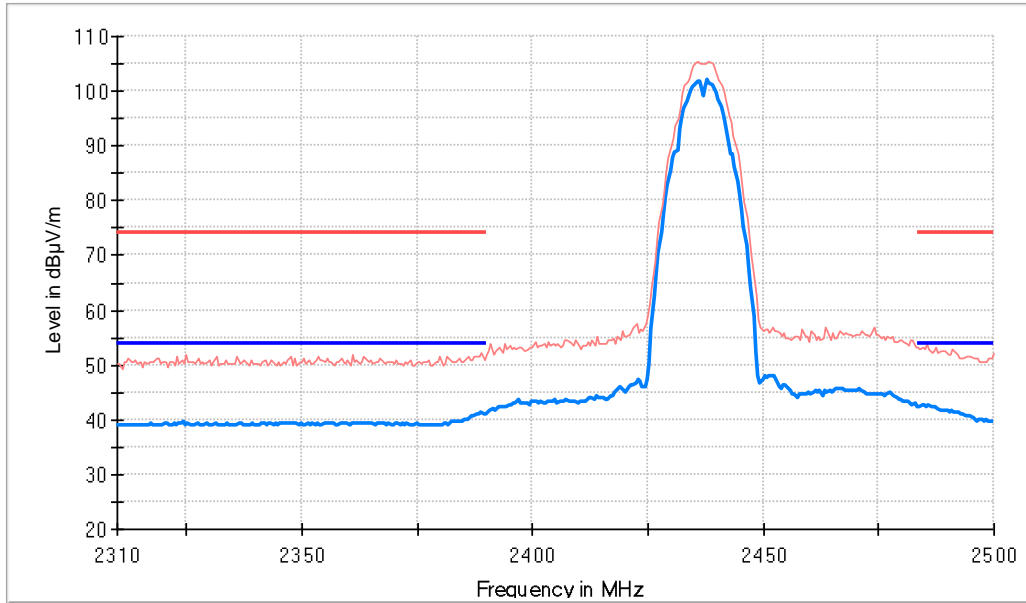
CHANNEL: Lowest (2412 MHz)



- 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

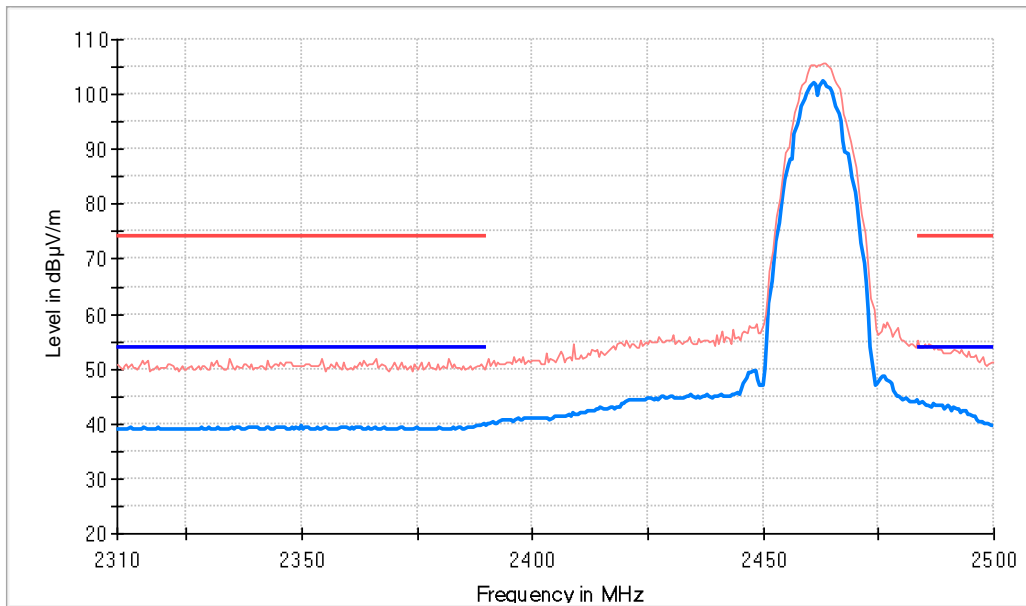
TEST RESULTS (Cont.)

CHANNEL: Middle (2437 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

CHANNEL: Highest (2462 MHz)



- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| | |
|---------------------------------|----------------|
| TESTED SAMPLES: | S/02 |
| TESTED CONDITIONS MODES: | TC#02 (g mode) |
| TEST RESULTS: | PASS |

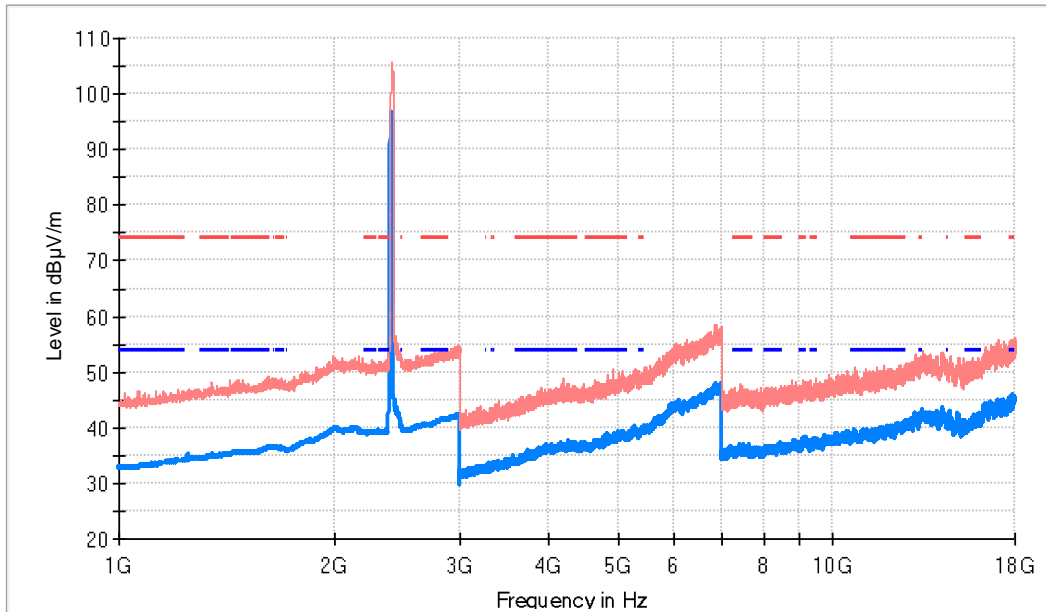
Frequency range 1 GHz – 26 GHz

The results in the next tables show the maximum measured levels in the 1-26 GHz range including the restricted bands 2.31-2.39 GHz and 2.4835-2.5 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.

| | |
|------------------------|------------------|
| FREQUENCY RANGE | 1- 18 GHz |
|------------------------|------------------|

CHANNEL: Low (2412 MHz).



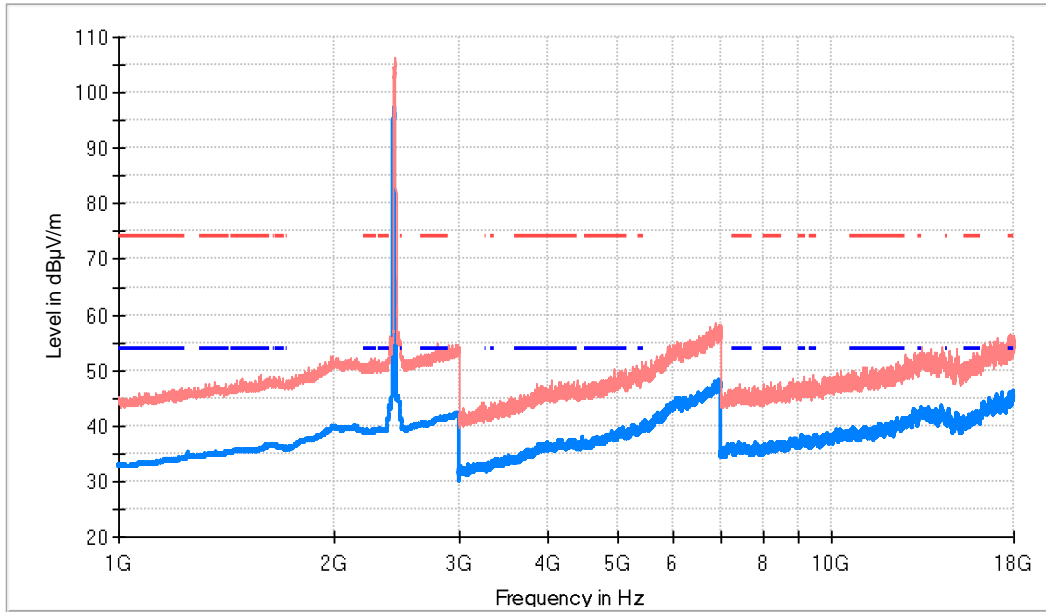
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - (dB) | Limit - (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|---------------|------------------|-------------|
| 2415.500000 | 105.7 | 96.7 | V | --- | --- | Fundamental |

TEST RESULTS (Cont.)

1 – 18 GHz

CHANNEL: Middle (2437 MHz).



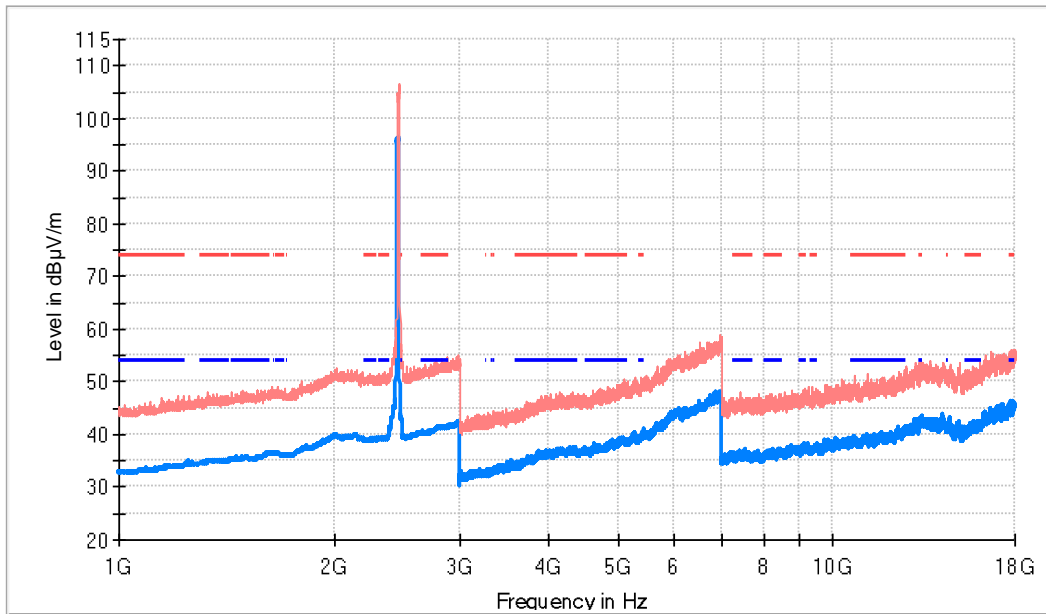
- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - (dB) | Limit - (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|---------------|------------------|-------------|
| 2439.500000 | 106.2 | 97.4 | V | --- | --- | Fundamental |

TEST RESULTS (Cont.)

1 – 18 GHz

CHANNEL: Highest (2462 MHz).

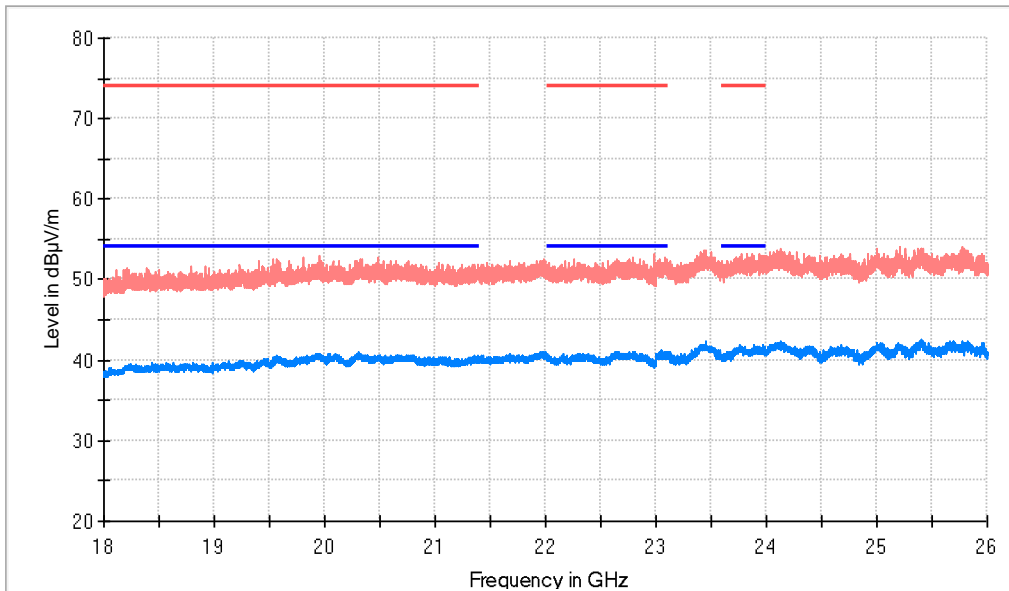


- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC1 5.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

| Frequency (MHz) | PK+_MAXH (dBµV/m) | AVG_MAXH (dBµV/m) | PoI | Margin - (dB) | Limit - (dBµV/m) | Comment |
|-----------------|-------------------|-------------------|-----|---------------|------------------|-------------|
| 2463.000000 | 106.7 | 95.6 | V | --- | --- | Fundamental |

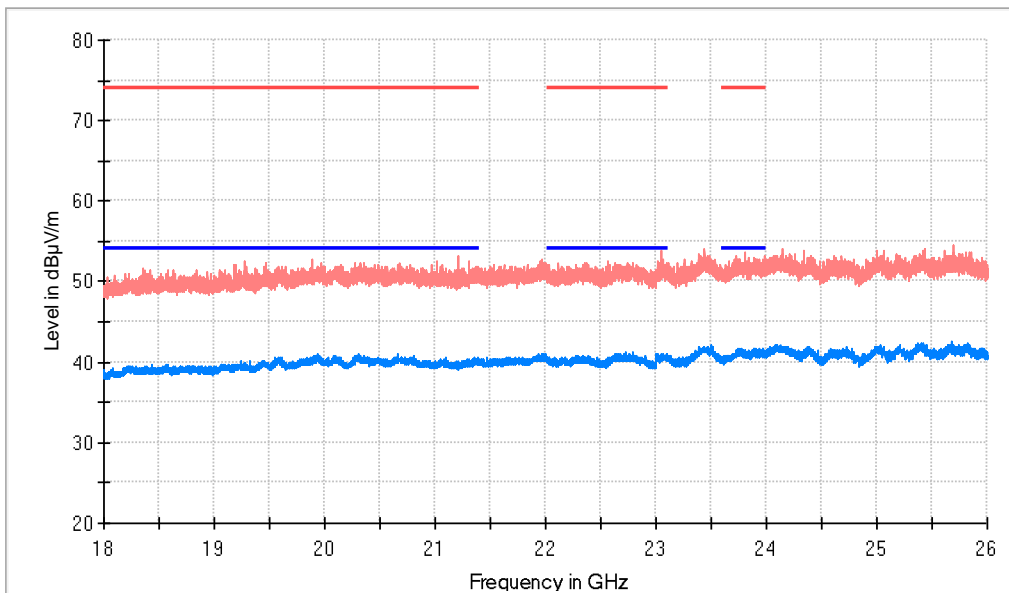
| | |
|-----------------------------|------------------------|
| TEST RESULTS (Cont.) | |
| FREQUENCY RANGE | 18 GHz – 26 GHz |

CHANNEL: Lowest (2412 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

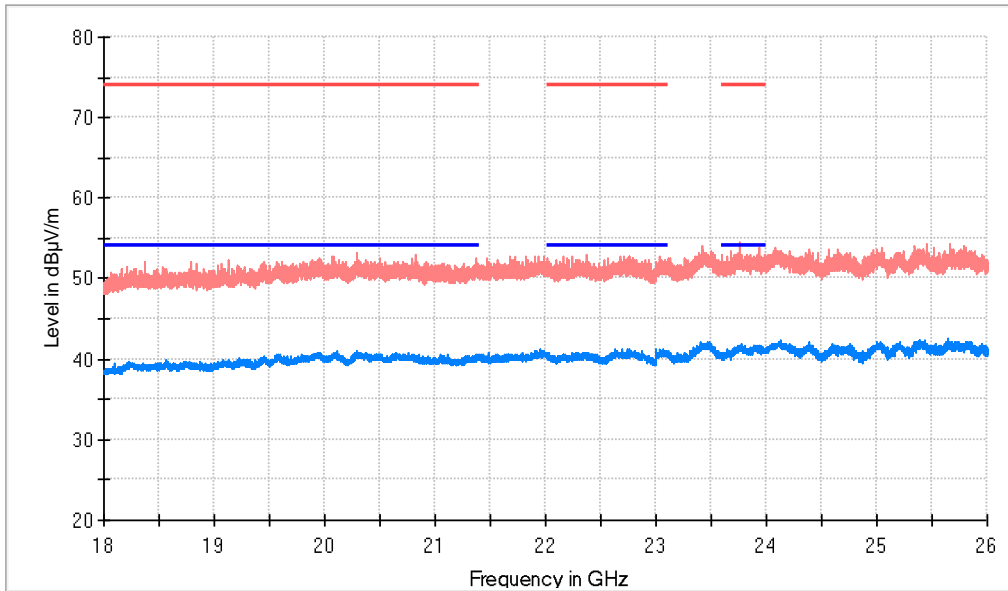
CHANNEL: Middle (2437 MHz).



- 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 (2462 MHz).

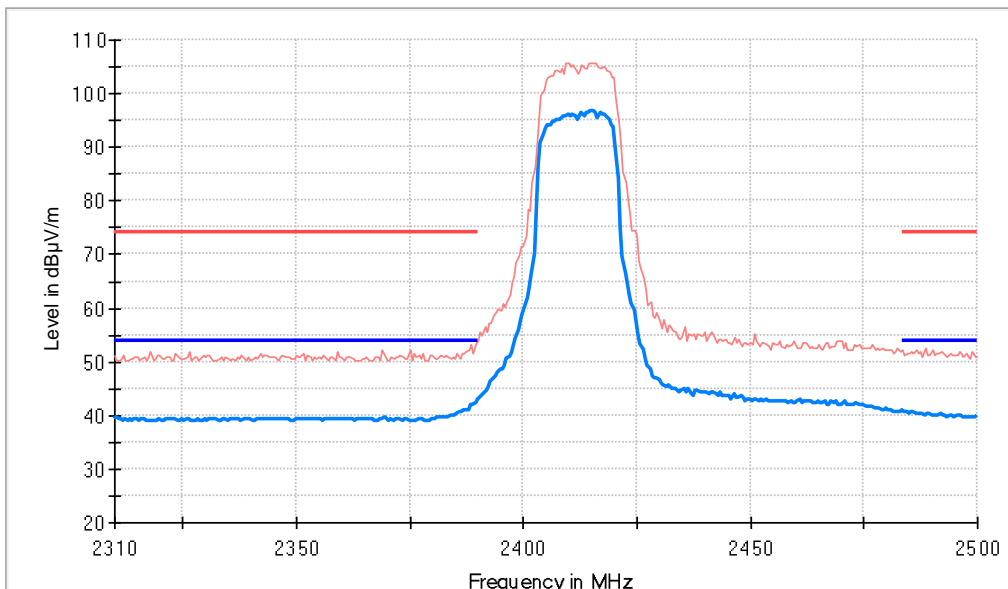


- AVG_MAXH
- PK+_MAXH
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
- TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

RESTRICTED BANDS

2.31 GHz – 2.5 GHz

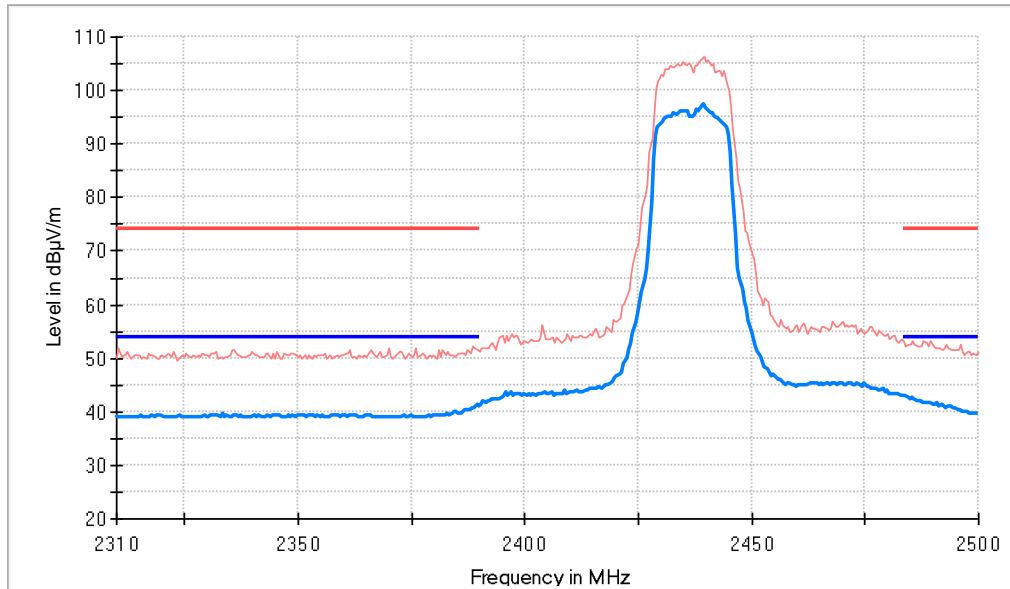
CHANNEL: Lowest (2412 MHz)



- 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

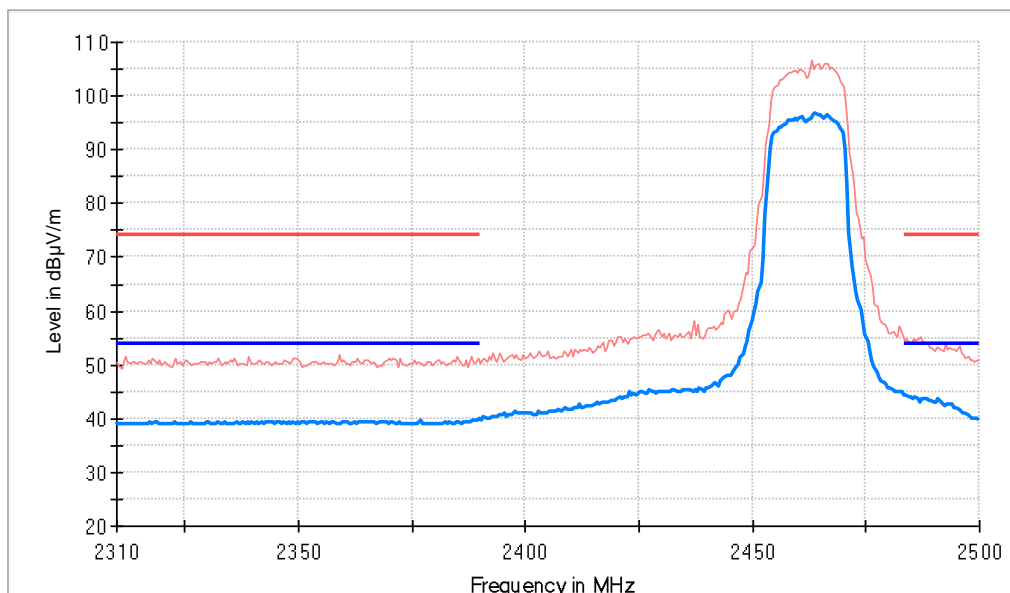
TEST RESULTS (Cont.)

CHANNEL: Middle (2437 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: Highest (2462 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