# CFR 47 FCC PART 15 SUBPART C
# ISED RSS-247 ISSUE 2

## CERTIFICATION TEST REPORT

*For*

**WiFi module**

**MODEL NUMBER: AEH-W0G1**

**FCC ID: 2AGCCAEH-W0G1**

**IC: 20778-AEHW0G1**

**REPORT NUMBER: 4789533027-1**

**ISSUE DATE: July 23, 2020**

*Prepared for*

**Hisense (Guangdong) Air Conditioning Co., Ltd.**
**No.8 Hisense Road，Advanced Manufacturing Jiangsha Demonstration Park,Jiangmen City,Guangdong Province,P.R.China**

*Prepared by*

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Revision History

| Rev. | Issue Date | Revisions | Revised By |
|---|---|---|---|
| V0 | 07/23/2020 | Initial Issue | |

| Summary of Test Results | | | |
|---|---|---|---|
| **Clause** | **Test Items** | **FCC/ISED Rules** | **Test Results** |
| 1 | 6dB Bandwidth and 99% Occupied Bandwidth | FCC Part 15.247 (a) (2)<br>RSS-247 Clause 5.2 (a)<br>ISED RSS-Gen Clause 6.7 | Pass |
| 2 | Conducted Output Power | FCC Part 15.247 (b) (3)<br>RSS-247 Clause 5.4 (d) | Pass |
| 3 | Power Spectral Density | FCC Part 15.247 (e)<br>RSS-247 Clause 5.2 (b) | Pass |
| 4 | Conducted Bandedge and Spurious Emission | FCC Part 15.247 (d)<br>RSS-247 Clause 5.5 | Pass |
| 5 | Radiated Bandedge and Spurious Emission | FCC Part 15.247 (d)<br>FCC Part 15.209<br>FCC Part 15.205<br>RSS-247 Clause 5.5<br>RSS-GEN Clause 8.9 | Pass |
| 6 | Conducted Emission Test for AC Power Port | FCC Part 15.207<br>RSS-GEN Clause 8.8 | Pass |
| 7 | Antenna Requirement | FCC Part 15.203<br>RSS-GEN Clause 6.8 | Pass |

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.

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# 1. ATTESTATION OF TEST RESULTS

**Applicant Information**

| | |
|---|---|
| Company Name: | Hisense (Guangdong) Air Conditioning Co., Ltd. |
| Address: | No.8 Hisense Road，Advanced Manufacturing Jiangsha Demonstration Park,Jiangmen City,Guangdong Province,P.R.China |

**Manufacturer Information**

| | |
|---|---|
| Company Name: | Hisense (Guangdong) Air Conditioning Co., Ltd. |
| Address: | No.8 Hisense Road，Advanced Manufacturing Jiangsha Demonstration Park,Jiangmen City,Guangdong Province,P.R.China |

**EUT Information**

| | |
|---|---|
| EUT Name: | WiFi module |
| Model: | AEH-W0G1 |
| Sample Received Date: | July 9, 2020 |
| Sample Status: | Normal |
| Sample ID: | 3181780 |
| Date of Tested: | July 9~16, 2020 |

| APPLICABLE STANDARDS | |
|---|---|
| **STANDARD** | **TEST RESULTS** |
| CFR 47 FCC PART 15 SUBPART C | PASS |
| ISED RSS-247 Issue 2 | PASS |
| ISED RSS-GEN Issue 5 | PASS |

Prepared By:

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Project Engineer

Checked By:

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Laboratory Leader

Approved By:

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Laboratory Manager

# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

# 3. FACILITIES AND ACCREDITATION

| | |
|---|---|
| Accreditation Certificate | **A2LA (Certificate No.: 4102.01)**<br>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.<br>**FCC (FCC Designation No.: CN1187)**<br>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules<br>**ISED (Company No.: 21320)**<br>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320.<br>**VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)**<br>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.<br>Facility Name:<br>Chamber D, the VCCI registration No. is G-20019 and R-20004<br>Shielding Room B , the VCCI registration No. is C-20012 and T-20011 |

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

# 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

## 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test Item | Uncertainty |
|---|---|
| Conduction emission | 3.62dB |
| Radiated Emission (Included Fundamental Emission) (9kHz ~ 30MHz) | 2.2dB |
| Radiated Emission (Included Fundamental Emission) (30MHz ~ 1GHz) | 4.00dB |
| Radiated Emission (Included Fundamental Emission) (1GHz to 26GHz) | 5.78dB (1GHz ~ 18GHz) |
| | 5.23dB (18GHz ~ 26GHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. | |

# 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

| | |
|---|---|
| EUT Name | WiFi module |
| Model | AEH-W0G1 |
| Radio Technology | WLAN (IEEE 802.11b/g/n HT20/n HT40) |
| Operation frequency | IEEE 802.11b: 2412MHz ~ 2462MHz<br>IEEE 802.11g: 2412MHz ~ 2462MHz<br>IEEE 802.11n HT20: 2412MHz ~ 2462MHz<br>IEEE 802.11n HT40: 2422MHz ~ 2452MHz |
| Modulation | IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK)<br>IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Rated Input | 3.3Vdc |

## 5.2. CHANNEL LIST

| Channel List for 802.11b/g/n (20 MHz) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 1 | 2412 | 4 | 2427 | 7 | 2442 | 10 | 2457 |
| 2 | 2417 | 5 | 2432 | 8 | 2447 | 11 | 2462 |
| 3 | 2422 | 6 | 2437 | 9 | 2452 | / | / |

| Channel List for 802.11n (40 MHz) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 3 | 2422 | 5 | 2432 | 7 | 2442 | 9 | 2452 |
| 4 | 2427 | 6 | 2437 | 8 | 2447 | / | / |

## 5.3. MAXIMUM OUTPUT POWER

| IEEE Std. 802.11 | Frequency (MHz) | Channel Number | Maximum Conducted AVG Output Power (dBm) |
|---|---|---|---|
| b | 2412 ~ 2462 | 1-11[11] | 12.86 |
| g | 2412 ~ 2462 | 1-11[11] | 10.96 |
| n HT20 | 2412 ~ 2462 | 1-11[11] | 9.89 |
| n HT40 | 2422 ~ 2452 | 3-9[7] | 10.31 |

## 5.4. TEST CHANNEL CONFIGURATION

| IEEE Std. 802.11 | Test Channel Number | Frequency |
|---|---|---|
| b | CH 1, CH 6, CH 11/ Low, Middle, High | 2412MHz, 2437MHz, 2462MHz |
| g | CH 1, CH 6, CH 11/ Low, Middle, High | 2412MHz, 2437MHz, 2462MHz |
| n HT20 | CH 1, CH 6, CH 11/ Low, Middle, High | 2412MHz, 2437MHz, 2462MHz |
| n HT40 | CH 3, CH 6, CH 9/ Low, Middle, High | 2422MHz, 2437MHz, 2452MHz |

## 5.5. THE WORSE CASE POWER SETTING PARAMETER

| The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band | | | | | | | |
|---|---|---|---|---|---|---|---|
| Test Software | | UI _mptool | | | | | |
| Modulation Mode | Transmit Antenna Number | Test Software setting value | | | | | |
| | | NCB: 20MHz | | | NCB: 40MHz | | |
| | | CH 1 | CH 6 | CH 11 | CH 3 | CH 6 | CH 9 |
| 802.11b | 1 | 32 | 30 | 30 | / | | |
| 802.11g | 1 | default | default | default | | | |
| 802.11n HT20 | 1 | default | default | default | | | |
| 802.11n HT40 | 1 | / | | | default | default | default |

## 5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

## 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

| Antenna | Frequency (MHz) | Antenna Type | MAX Antenna Gain (dBi) |
|---|---|---|---|
| 1 | 2412-2462 | integral antenna | 1 |

| IEEE 802.11 Protocol | Transmit and Receive Mode | Description |
|---|---|---|
| IEEE 802.11b | ☒1TX, 1RX | ANT 1 and ANT 2 can be used as transmitting antenna. |
| IEEE 802.11g | ☒1TX, 1RX | ANT 1 and ANT 2 can be used as transmitting antenna. |
| IEEE 802.11n HT20 | ☒1TX, 1RX | ANT 1 and ANT 2 can be used as transmitting antenna. |
| IEEE 802.11n HT40 | ☒1TX, 1RX | ANT 1 and ANT 2 can be used as transmitting antenna. |

Note: The value of the antenna gain was declared by customer.

## 5.8. DESCRIPTION OF TEST SETUP

**SUPPORT EQUIPMENT**

| Item | Equipment | Brand Name | Model Name | Remarks |
|---|---|---|---|---|
| 1 | Laptop | ThinkPad | X230i | / |
| 2 | USB TO UART | / | / | / |
| 3 | Test fixture | / | / | / |

**I/O CABLES**

| Item | Port | Connector Type | Cable Type | Cable Length(m) | Remarks |
|---|---|---|---|---|---|
| 1 | USB | NA | NA | 1 | / |

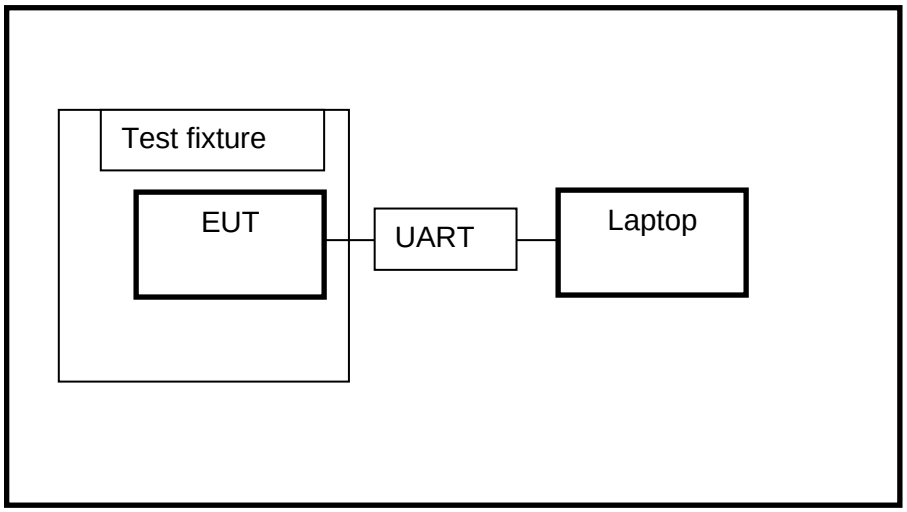
**ACCESSORIES**

| Item | Accessory | Brand Name | Model Name | Description |
|---|---|---|---|---|
| 1 | / | / | / | / |

**TEST SETUP**

The EUT can work in engineering mode with a software through a Laptop.

**SETUP DIAGRAM FOR TESTS**



# 6. MEASURING INSTRUMENT AND SOFTWARE USED

| Conducted Emissions | | | | | | |
|---|---|---|---|---|---|---|
| Instrument | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
| ☑ | EMI Test Receiver | R&S | ESR3 | 101961 | Dec.05,2019 | Dec.05,2020 |
| ☑ | Two-Line V-Network | R&S | ENV216 | 101983 | Dec.05,2019 | Dec.05,2020 |
| Software | | | | | | |
| Used | Description | | | Manufacturer | Name | Version |
| ☑ | Test Software for Conducted disturbance | | | Farad | EZ-EMC | Ver. UL-3A1 |
| **Radiated Emissions** | | | | | | |
| Instrument | | | | | | |
| Used | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
| ☑ | MXE EMI Receiver | KESIGHT | N9038A | MY56400036 | Dec.06,2019 | Dec.05,2020 |
| ☑ | Hybrid Log Periodic Antenna | TDK | HLP-3003C | 130960 | Sep.17,2018 | Sep.17,2021 |
| ☑ | Preamplifier | HP | 8447D | 2944A09099 | Dec.05,2019 | Dec.05,2020 |
| ☑ | EMI Measurement Receiver | R&S | ESR26 | 101377 | Dec.05,2019 | Dec.05,2020 |
| ☑ | Horn Antenna | TDK | HRN-0118 | 130939 | Sep.17,2018 | Sep.17,2021 |
| ☑ | High Gain Horn Antenna | Schwarzbeck | BBHA-9170 | 691 | Aug.11,2018 | Aug.11,2021 |
| ☑ | Preamplifier | TDK | PA-02-0118 | TRS-305-00067 | Dec.05,2019 | Dec.05,2020 |
| ☑ | Preamplifier | TDK | PA-02-2 | TRS-307-00003 | Dec.05,2019 | Dec.05,2020 |
| ☑ | Loop antenna | Schwarzbeck | 1519B | 00008 | Jan.07,2019 | Jan.07,2022 |
| ☑ | Band Reject Filter | Wainwright | WRCJV8-2350-2400-2483.5-2533.5-40SS | 4 | Dec.05,2019 | Dec.05,2020 |
| ☑ | High Pass Filter | Wi | WHKX10-2700-3000-18000-40SS | 23 | Dec.05,2019 | Dec.05,2020 |
| Software | | | | | | |
| Used | Description | | | Manufacturer | Name | Version |
| ☑ | Test Software for Radiated disturbance | | | Farad | EZ-EMC | Ver. UL-3A1 |

| Other instruments | | | | | | |
|---|---|---|---|---|---|---|
| Used | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Next Cal. |
| ☑ | Spectrum Analyzer | Keysight | N9030A | MY55410512 | Dec.06,2019 | Dec.05,2020 |
| ☑ | Power sensor, Power Meter | R&S | OSP120 | 100921 | Dec.06,2019 | Dec.06,2020 |

# 7. ANTENNA PORT TEST RESULTS

## 7.1. ON TIME AND DUTY CYCLE

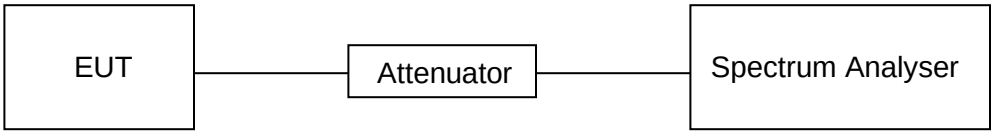
**LIMITS**

None; for reporting purposes only

**PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

**TEST SETUP**




**TEST ENVIRONMENT**

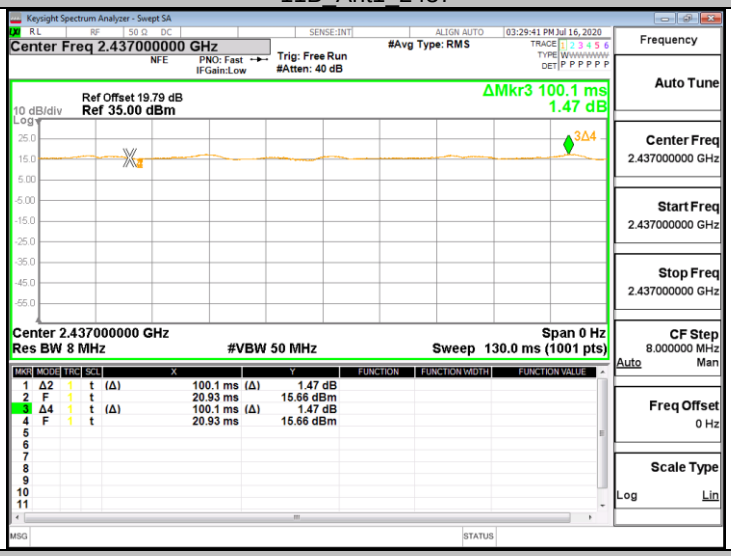
| | | | |
|---|---|---|---|
| Temperature | 25.7℃ | Relative Humidity | 60.8% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

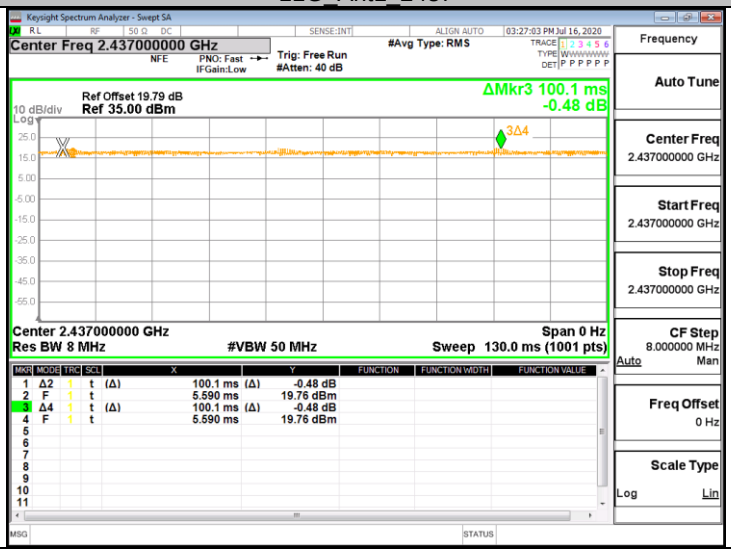
| Mode | On Time (msec) | Period (msec) | Duty Cycle x (Linear) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | 1/T Minimum VBW (kHz) | Final setting For VBW (kHz) |
|---|---|---|---|---|---|---|---|
| 11b | 100 | 100 | 1.00 | 100% | 0 | 0.01 | 0.01 |
| 11g | 100 | 100 | 1.00 | 100% | 0 | 0.01 | 0.01 |
| 11n HT20 | 100 | 100 | 1.00 | 100% | 0 | 0.01 | 0.01 |
| 11n HT40 | 100 | 100 | 1.00 | 100% | 0 | 0.01 | 0.01 |

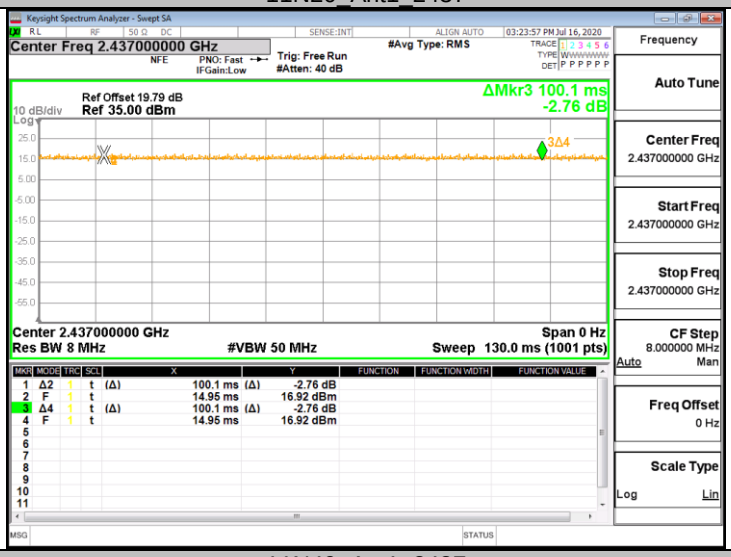
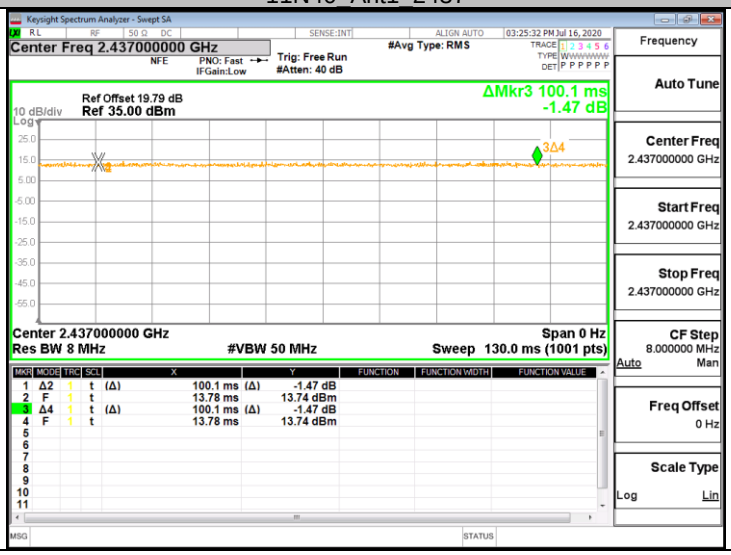
Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

11B_Ant1_2437




11G_Ant1_2437



| 11N20_Ant1_2437 |
| --- |
|  |
| 11N40_Ant1_2437 |
|  |

## 7.2. 6 dB DTS BANDWIDTH AND 99% OCCUPIED BANDWIDTH

**LIMITS**

| CFR 47 FCC Part15 (15.247) Subpart C<br>ISED RSS-247 ISSUE 2 | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| CFR 47 FCC 15.247(a)(2)<br>ISED RSS-247 5.2 (a) | 6 dB Bandwidth | ≥ 500KHz | 2400-2483.5 |
| ISED RSS-Gen Clause 6.7 | 99% Occupied Bandwidth | For reporting purposes only. | 2400-2483.5 |

**TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

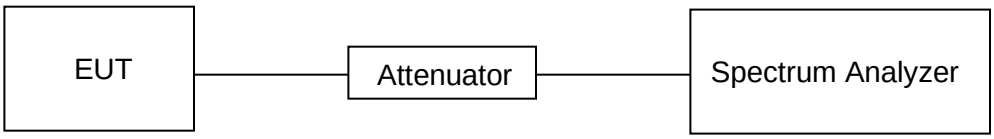
Connect the EUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Frequency Span | Between 1.5 times and 5.0 times the OBW |
| Detector | Peak |
| RBW | For 6 dB Bandwidth: 100kHz<br>For 99% Occupied Bandwidth: 1% to 5% of the occupied bandwidth |
| VBW | For 6dB Bandwidth: ≥3 × RBW<br>For 99% Occupied Bandwidth: ≥3 × RBW |
| Trace | Max hold |
| Sweep | Auto couple |

a) Use the 99% power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 25.7℃ | Relative Humidity | 60.8% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

Please refer to appendix A & B.

## 7.3. CONDUCTED OUTPUT POWER

**LIMITS**

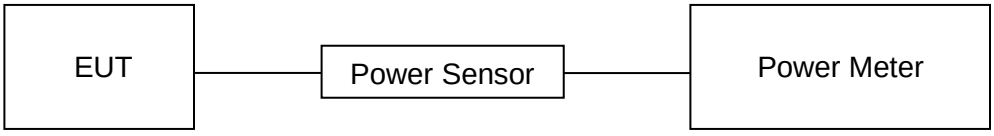
| CFR 47 FCC Part15 (15.247) Subpart C<br>ISED RSS-247 ISSUE 2 | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| CFR 47 FCC 15.247(b)(3)<br>ISED RSS-247 5.4 (d) | AVG Output Power | 1 watt or 30dBm | 2400-2483.5 |

**TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.9.

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the AVG output power, after any corrections for external attenuators and cables.

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 25.7℃ | Relative Humidity | 60.8% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

Please refer to appendix C.

## 7.4. POWER SPECTRAL DENSITY

**LIMITS**

| CFR 47 FCC Part15 (15.247) Subpart C<br>ISED RSS-247 ISSUE 2 | | | |
|---|---|---|---|
| Section | Test Item | Limit | Frequency Range (MHz) |
| CFR 47 FCC §15.247 (e)<br>ISED RSS-247 5.2 (b) | Power Spectral Density | 8 dBm/3 kHz | 2400-2483.5 |

**TEST PROCEDURE**

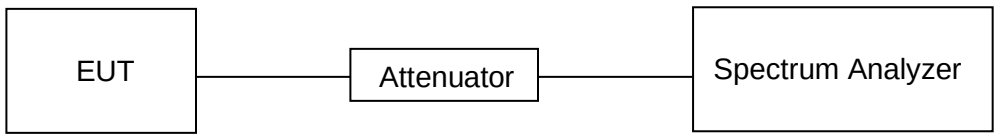
Refer to ANSI C63.10-2013 clause 11.10.

Connect the EUT to the spectrum analyser and use the following settings:

| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | Peak |
| RBW | 3 kHz ≤ RBW ≤ 100 kHz |
| VBW | ≥3 × RBW |
| Span | 1.5 x DTS bandwidth |
| Trace | Max hold |
| Sweep time | Auto couple |

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 25.7℃ | Relative Humidity | 60.8% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

Please refer to appendix D.

## 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

**LIMITS**

| CFR 47 FCC Part15 (15.247) Subpart C<br>ISED RSS-247 ISSUE 2 | | |
|---|---|---|
| Section | Test Item | Limit |
| CFR 47 FCC §15.247 (d)<br>ISED RSS-247 5.5 | Conducted Bandedge and Spurious Emissions | at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power |

**TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

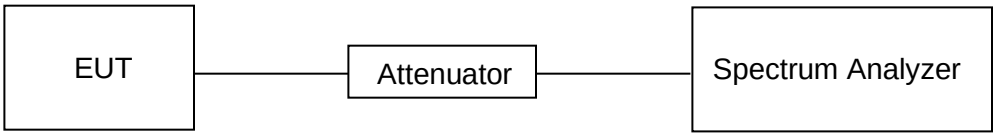
| | |
|---|---|
| Center Frequency | The center frequency of the channel under test |
| Detector | Peak |
| RBW | 100kHz |
| VBW | ≥3 × RBW |
| Span | 1.5 x DTS bandwidth |
| Trace | Max hold |
| Sweep time | Auto couple. |

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.
Change the settings for emission level measurement:

| | |
|---|---|
| Span | Set the center frequency and span to encompass frequency range to be measured |
| Detector | Peak |
| RBW | 100kHz |
| VBW | ≥3 × RBW |
| measurement points | ≥span/RBW |
| Trace | Max hold |
| Sweep time | Auto couple. |

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

**TEST SETUP**




**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 25.7℃ | Relative Humidity | 60.8% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

Please refer to appendix E & F.

# 8. RADIATED TEST RESULTS

**LIMITS**

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9kHz-1GHz)

| Emissions radiated outside of the specified frequency bands above 30MHz | | | |
|---|---|---|---|
| Frequency Range (MHz) | Field Strength Limit (uV/m) at 3 m | Field Strength Limit (dBuV/m) at 3 m | |
| | | Quasi-Peak | |
| 30 - 88 | 100 | 40 | |
| 88 - 216 | 150 | 43.5 | |
| 216 - 960 | 200 | 46 | |
| Above 960 | 500 | 54 | |
| Above 1000 | 500 | Peak | Average |
| | | 74 | 54 |

| FCC Emissions radiated outside of the specified frequency bands below 30MHz | | |
|---|---|---|
| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |

ISED General field strength limits at frequencies below 30 MHz

**Table 6 – General field strength limits at frequencies below 30 MHz**

| Frequency | Magnetic field strength (H-Field) (µA/m) | Measurement distance (m) |
|---|---|---|
| 9 - 490 kHz[Note 1] | 6.37/F (F in kHz) | 300 |
| 490 - 1705 kHz | 63.7/F (F in kHz) | 30 |
| 1.705 - 30 MHz | 0.08 | 30 |

**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

| Table 7 – Restricted frequency bands[Note 1] | | |
|---|---|---|
| MHz | MHz | GHz |
| 0.090 - 0.110 | 149.9 - 150.05 | 9.0 - 9.2 |
| 0.495 - 0.505 | 156.52475 - 156.52525 | 9.3 - 9.5 |
| 2.1735 - 2.1905 | 156.7 - 156.9 | 10.6 - 12.7 |
| 3.020 - 3.026 | 162.0125 - 167.17 | 13.25 - 13.4 |
| 4.125 - 4.128 | 167.72 - 173.2 | 14.47 - 14.5 |
| 4.17725 - 4.17775 | 240 – 285 | 15.35 - 16.2 |
| 4.20725 - 4.20775 | 322 - 335.4 | 17.7 - 21.4 |
| 5.677 - 5.683 | 399.9 - 410 | 22.01 - 23.12 |
| 6.215 - 6.218 | 608 - 614 | 23.6 - 24.0 |
| 6.26775 - 6.26825 | 960 - 1427 | 31.2 - 31.8 |
| 6.31175 - 6.31225 | 1435 - 1626.5 | 36.43 - 36.5 |
| 8.291 - 8.294 | 1645.5 - 1646.5 | Above 38.6 |
| 8.362 - 8.366 | 1660 - 1710 | |
| 8.37625 - 8.38675 | 1718.8 - 1722.2 | |
| 8.41425 - 8.41475 | 2200 - 2300 | |
| 12.29 - 12.293 | 2310 - 2390 | |
| 12.51975 - 12.52025 | 2483.5 - 2500 | |
| 12.57675 - 12.57725 | 2655 - 2900 | |
| 13.36 - 13.41 | 3260 – 3267 | |
| 16.42 - 16.423 | 3332 - 3339 | |
| 16.69475 - 16.69525 | 3345.8 - 3358 | |
| 16.80425 - 16.80475 | 3500 - 4400 | |
| 25.5 - 25.67 | 4500 - 5150 | |
| 37.5 - 38.25 | 5350 - 5460 | |
| 73 - 74.6 | 7250 - 7750 | |
| 74.8 - 75.2 | 8025 – 8500 | |
| 108 – 138 | | |

**Note 1:** Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

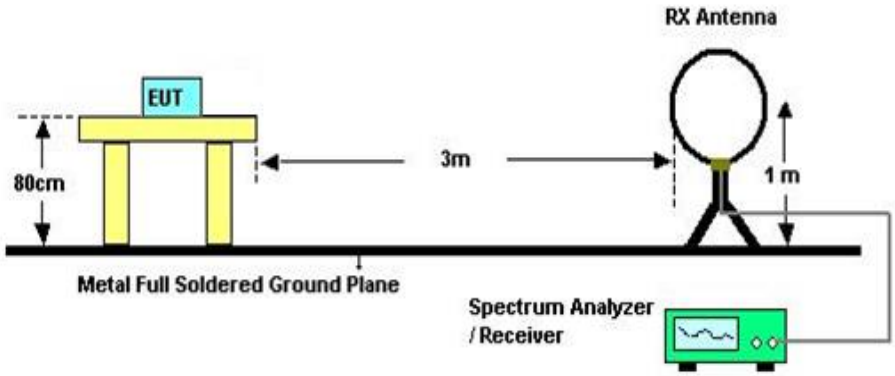
FCC Restricted bands of operation refer to FCC §15.205 (a):

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

**TEST SETUP AND PROCEDURE**

Below 30MHz




The setting of the spectrum analyser

| | |
|---|---|
| RBW | 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz) |
| VBW | 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz) |
| Sweep | Auto |
| Trace | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

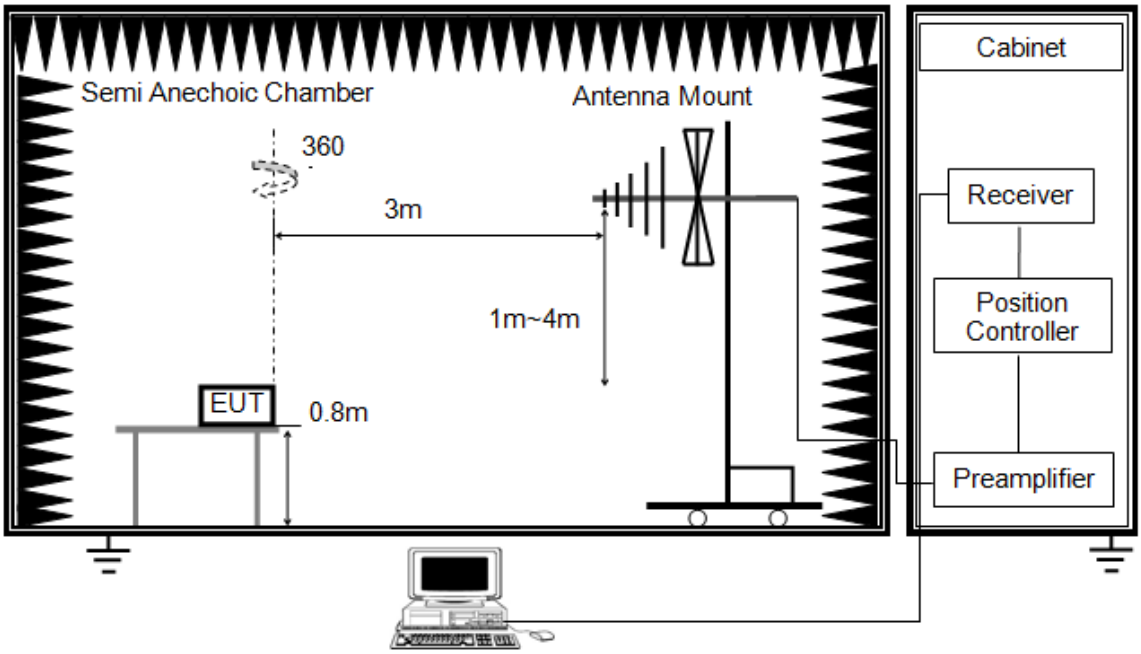
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The radiated emission limits are based on measurements employing a 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.

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

Below 1GHz and above 30MHz




The setting of the spectrum analyser

| | |
|---|---|
| RBW | 120kHz |
| VBW | 300kHz |
| Sweep | Auto |
| Detector | Peak/QP |
| Trace | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11.

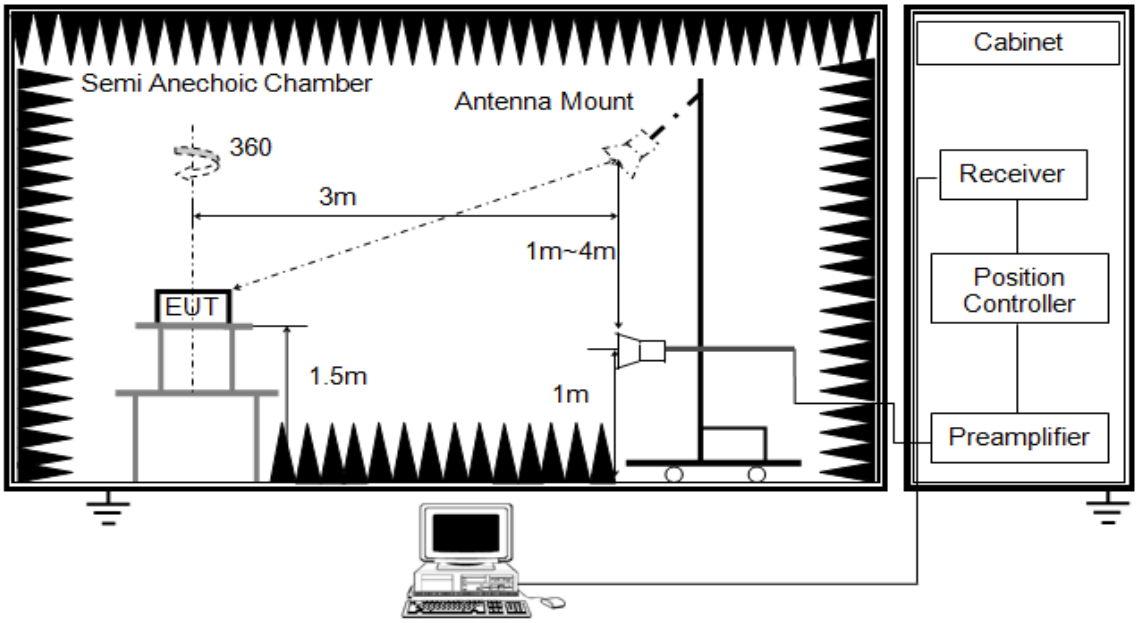
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1GHz




The setting of the spectrum analyser

| | |
|---|---|
| RBW | 1MHz |
| VBW | PEAK: 3MHz<br>AVG: see note 6 |
| Sweep | Auto |
| Detector | Peak |
| Trace | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11 and 11.12.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

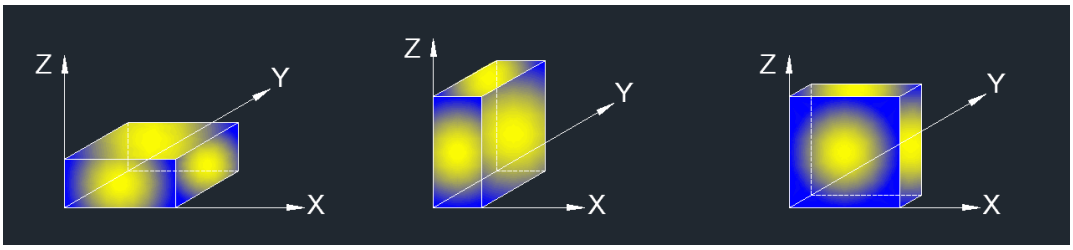
3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:




Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 22.7°C | Relative Humidity | 60% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

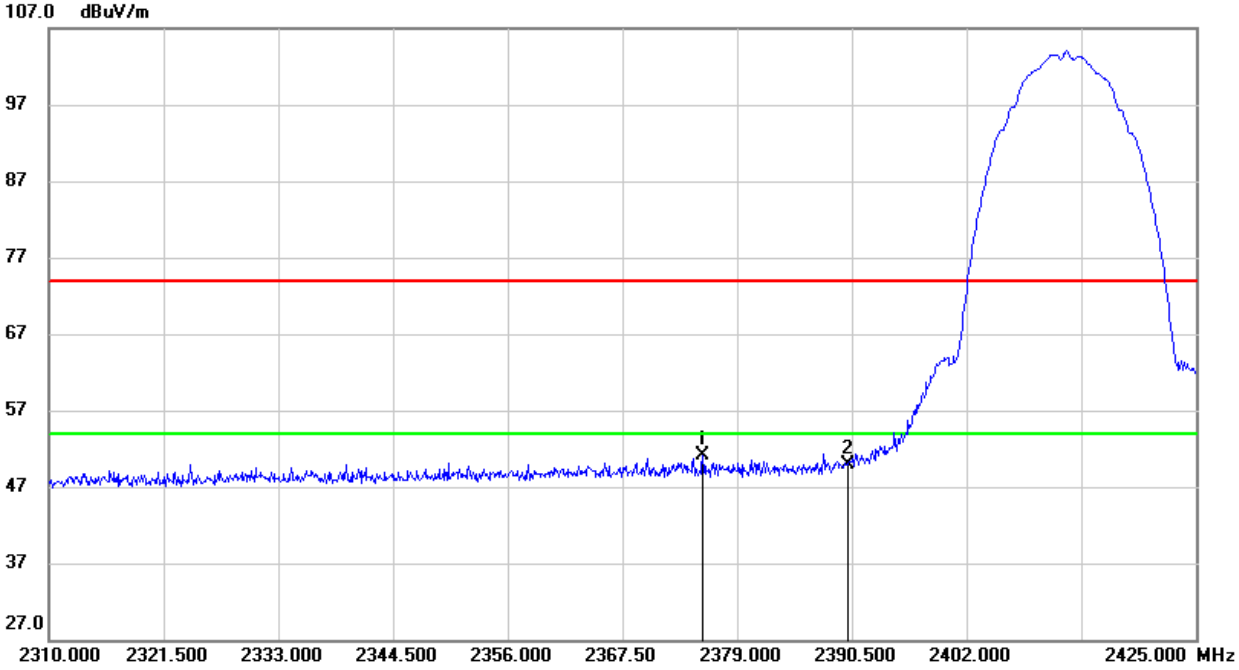
**RESULTS**

## 8.1. RESTRICTED BANDEDGE

### 8.1.1. 802.11b MODE

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

**PEAK**

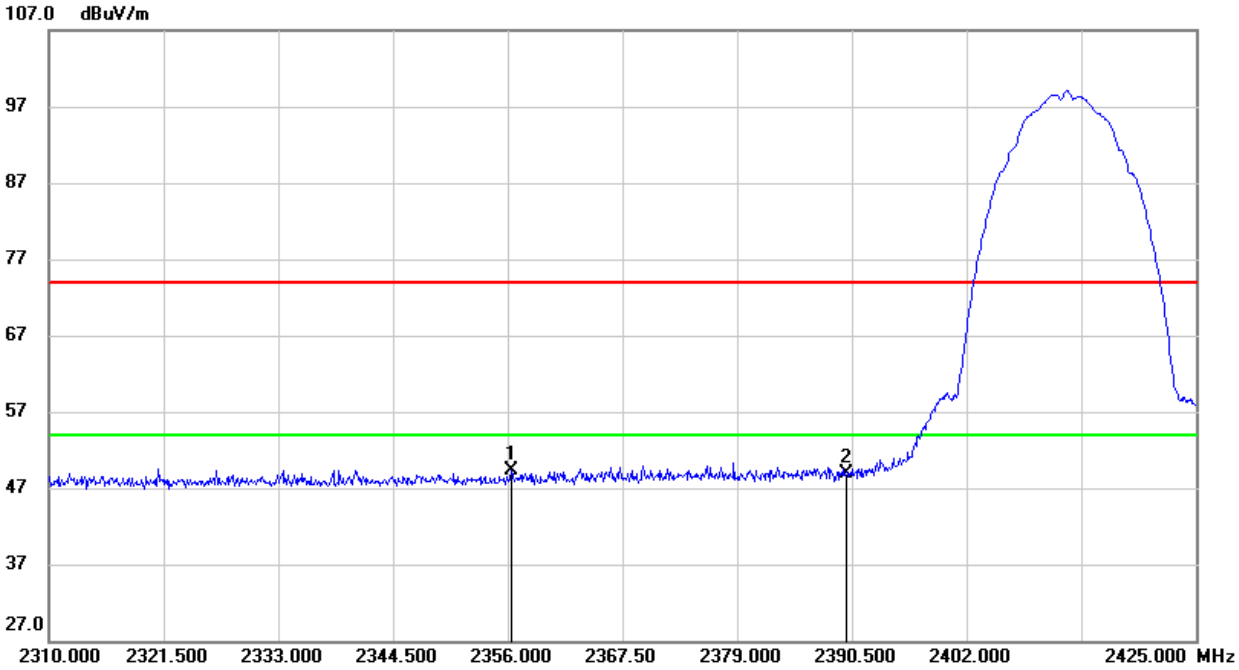



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2375.550 | 18.15 | 32.90 | 51.05 | 74.00 | -22.95 | peak |
| 2 | 2390.000 | 16.98 | 32.94 | 49.92 | 74.00 | -24.08 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

**PEAK**

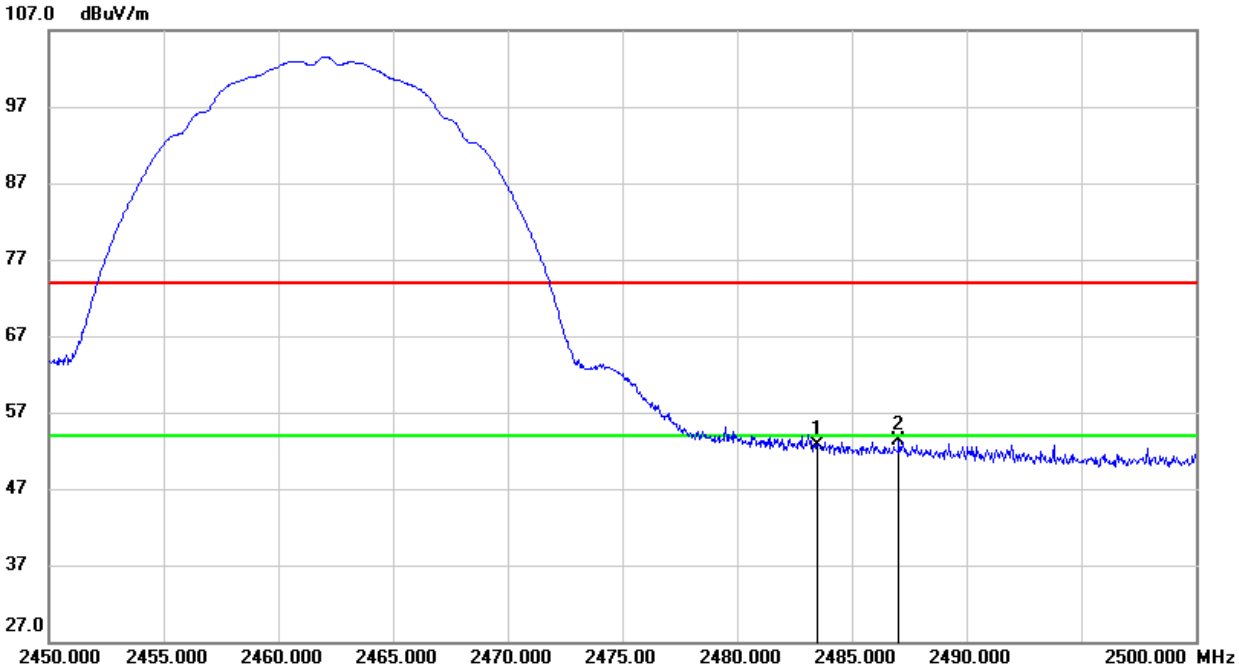



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2356.345 | 16.57 | 32.83 | 49.40 | 74.00 | -24.60 | peak |
| 2 | 2390.000 | 16.02 | 32.94 | 48.96 | 74.00 | -25.04 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

**PEAK**

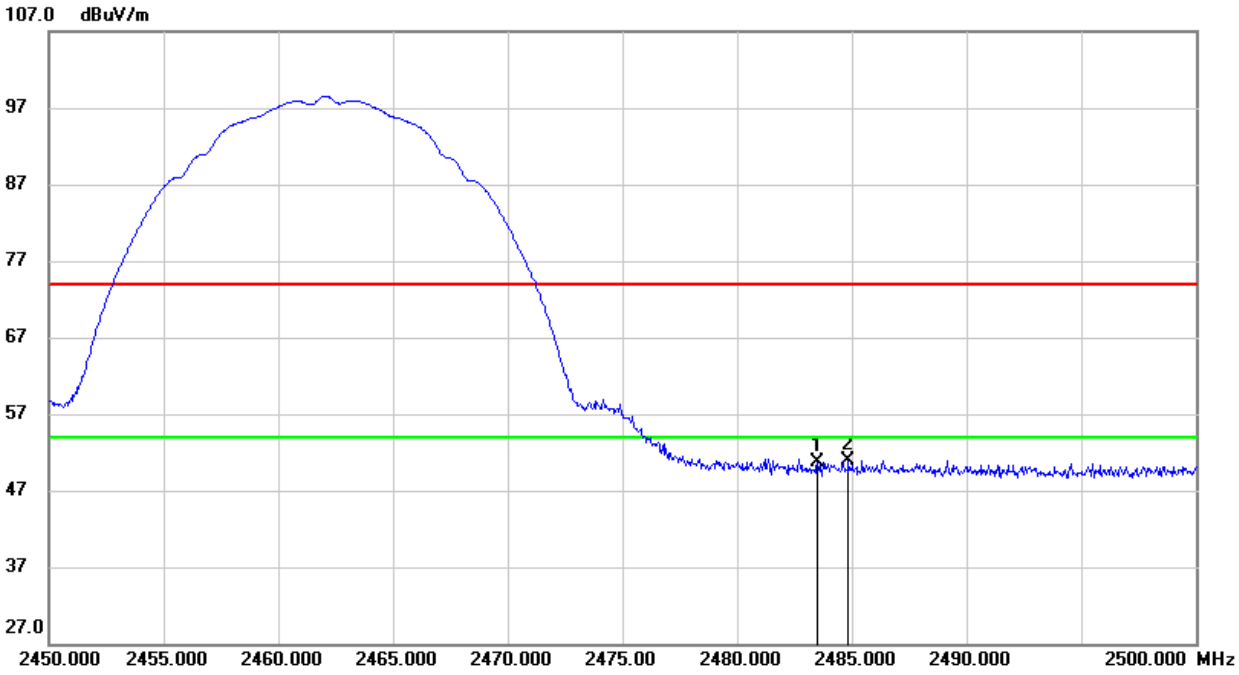



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 19.10 | 33.58 | 52.68 | 74.00 | -21.32 | peak |
| 2 | 2487.050 | 19.61 | 33.61 | 53.22 | 74.00 | -20.78 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

**PEAK**



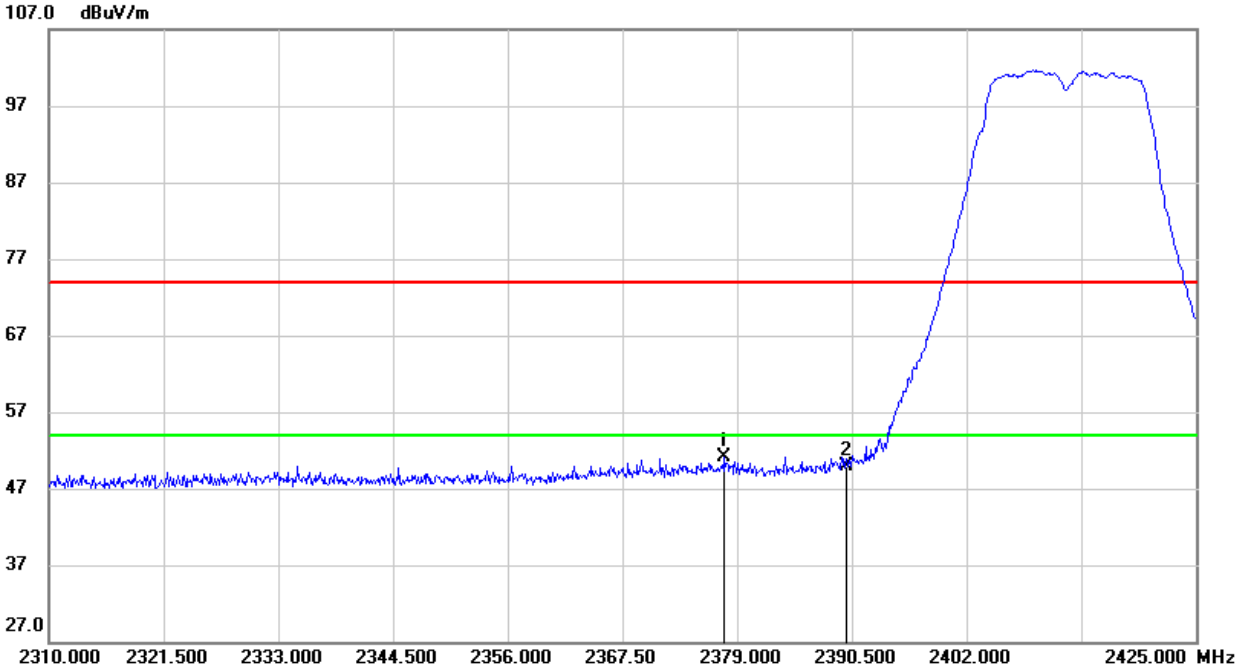

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 17.18 | 33.58 | 50.76 | 74.00 | -23.24 | peak |
| 2 | 2484.850 | 17.31 | 33.59 | 50.90 | 74.00 | -23.10 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

### 8.1.2. 802.11g MODE

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

**PEAK**

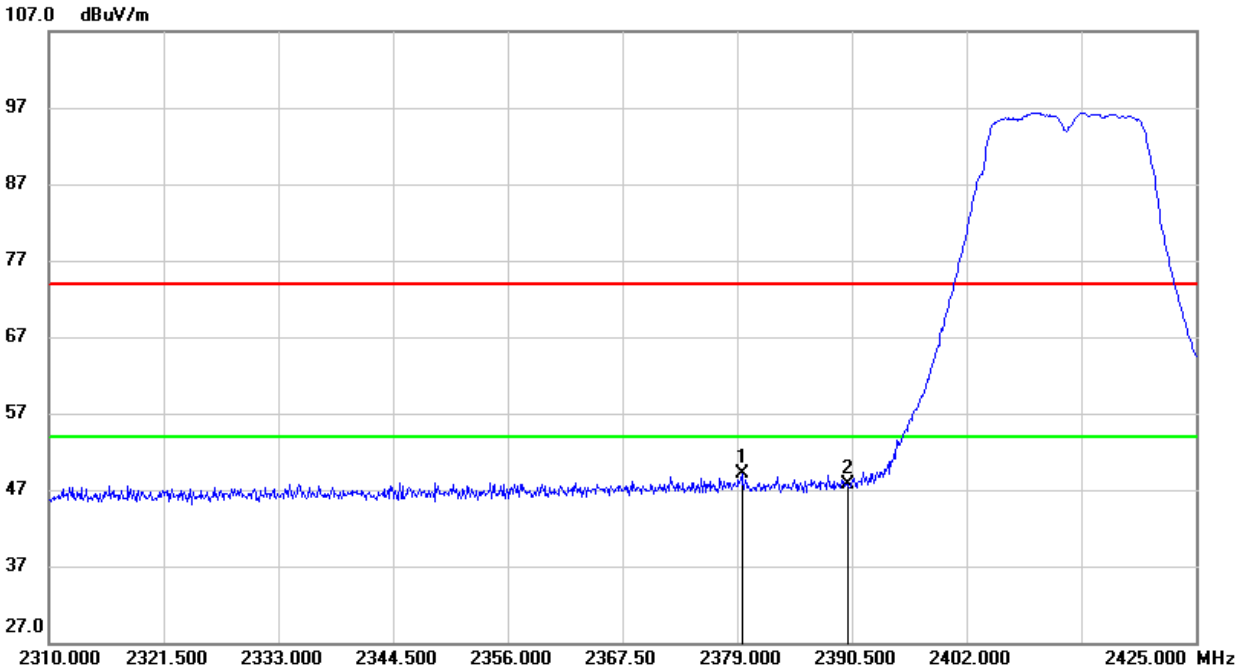



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2377.735 | 18.16 | 32.90 | 51.06 | 74.00 | -22.94 | peak |
| 2 | 2390.000 | 17.00 | 32.94 | 49.94 | 74.00 | -24.06 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

**PEAK**

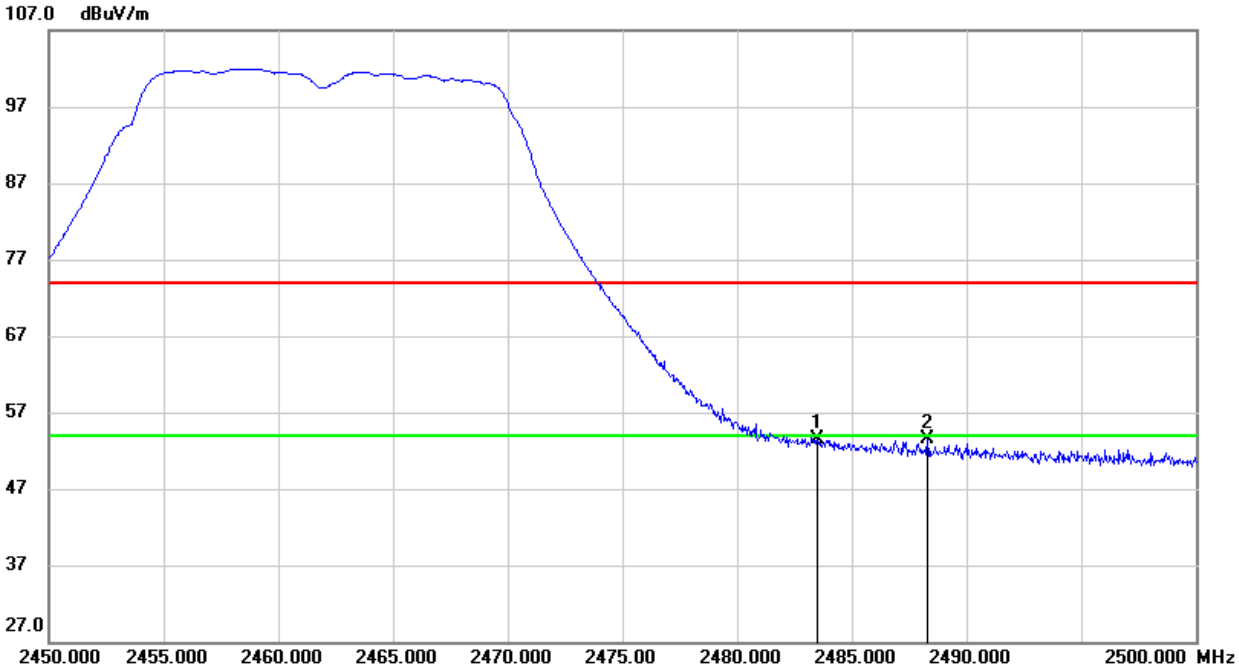



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2379.460 | 16.21 | 32.91 | 49.12 | 74.00 | -24.88 | peak |
| 2 | 2390.000 | 14.81 | 32.94 | 47.75 | 74.00 | -26.25 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

**PEAK**

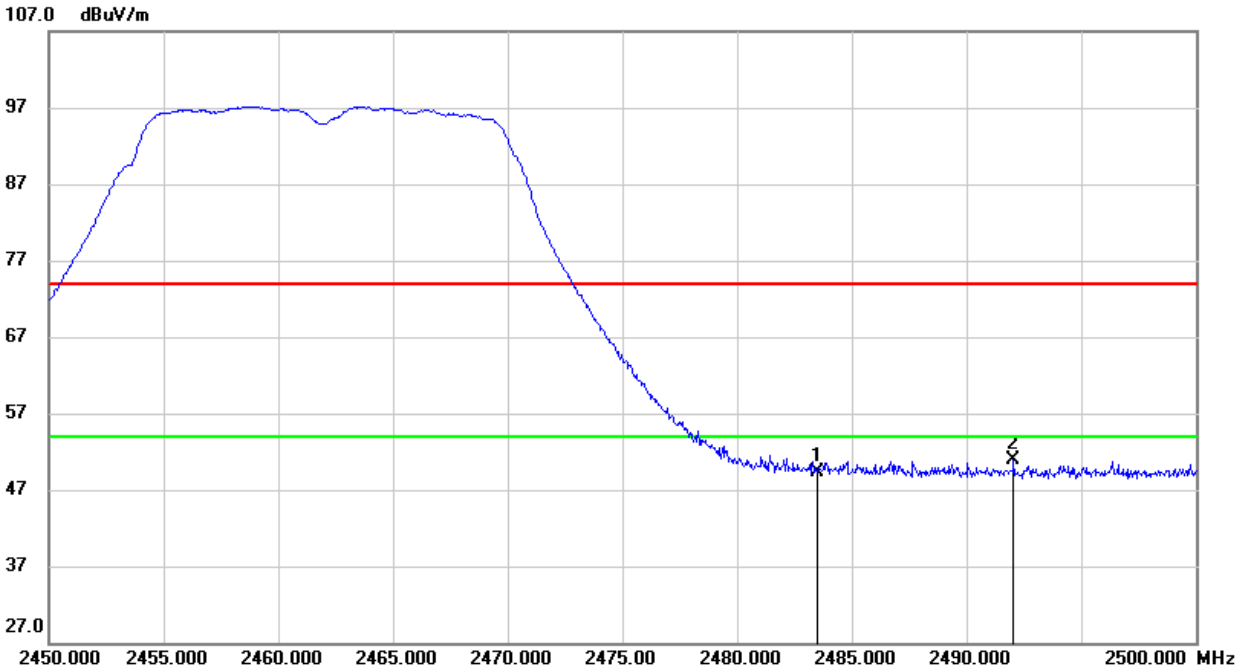



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 19.89 | 33.58 | 53.47 | 74.00 | -20.53 | peak |
| 2 | 2488.300 | 19.95 | 33.62 | 53.57 | 74.00 | -20.43 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

**PEAK**



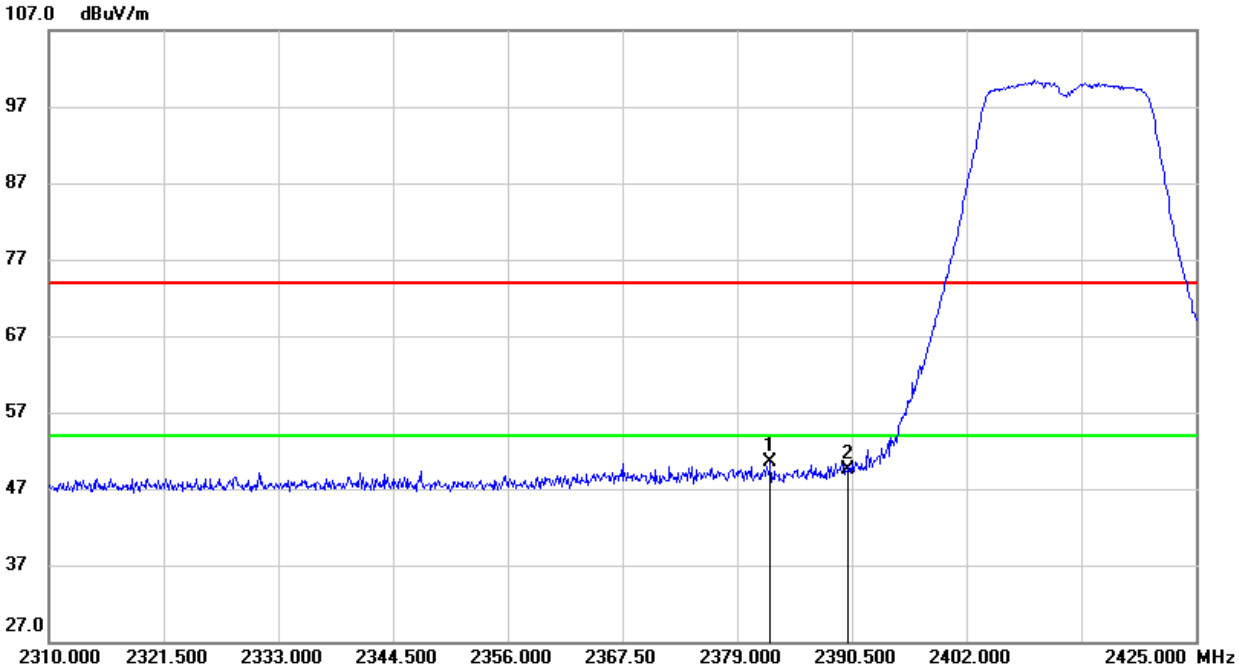

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 15.82 | 33.58 | 49.40 | 74.00 | -24.60 | peak |
| 2 | 2492.050 | 17.25 | 33.65 | 50.90 | 74.00 | -23.10 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

### 8.1.3. 802.11n HT20 MODE

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

**PEAK**

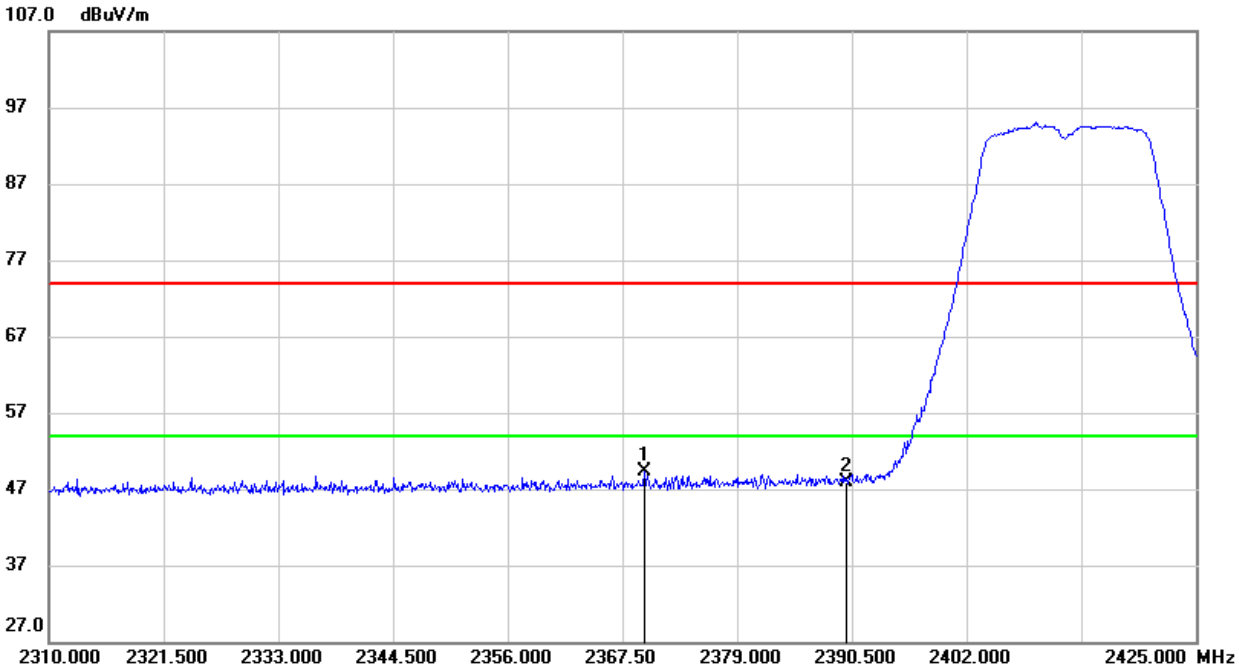



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2382.335 | 17.53 | 32.92 | 50.45 | 74.00 | -23.55 | peak |
| 2 | 2390.000 | 16.59 | 32.94 | 49.53 | 74.00 | -24.47 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

**PEAK**

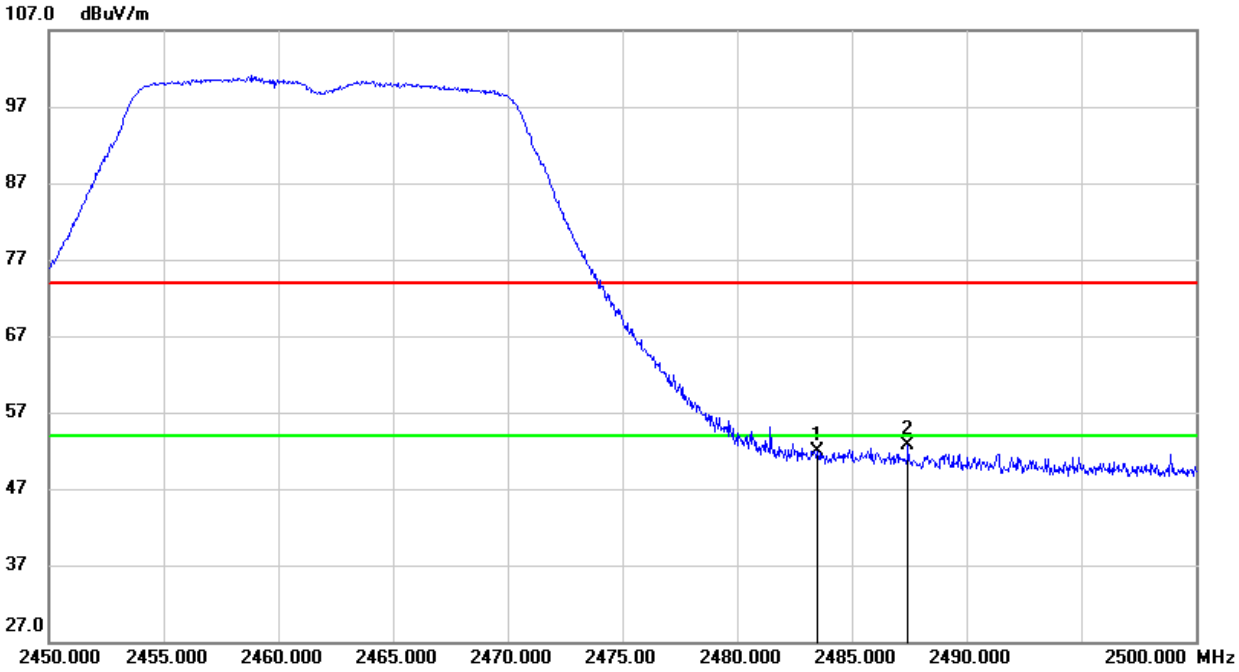



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2369.685 | 16.37 | 32.88 | 49.25 | 74.00 | -24.75 | peak |
| 2 | 2390.000 | 14.99 | 32.94 | 47.93 | 74.00 | -26.07 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

**PEAK**

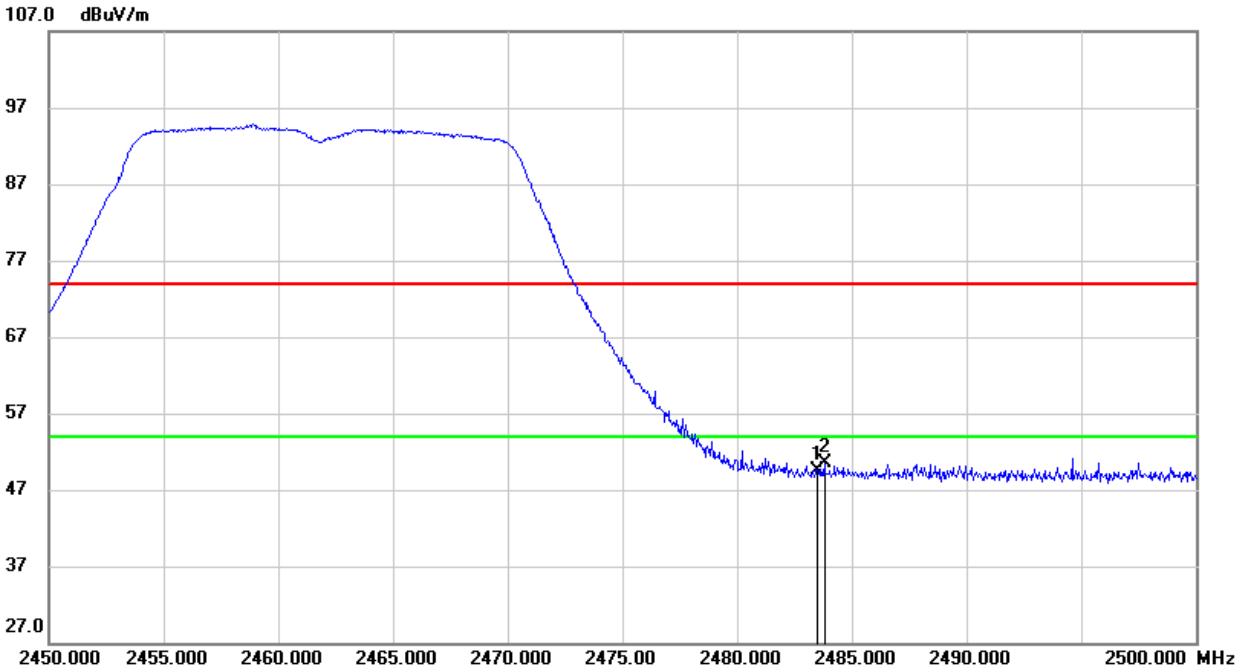



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 18.37 | 33.58 | 51.95 | 74.00 | -22.05 | peak |
| 2 | 2487.450 | 19.10 | 33.61 | 52.71 | 74.00 | -21.29 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

**PEAK**



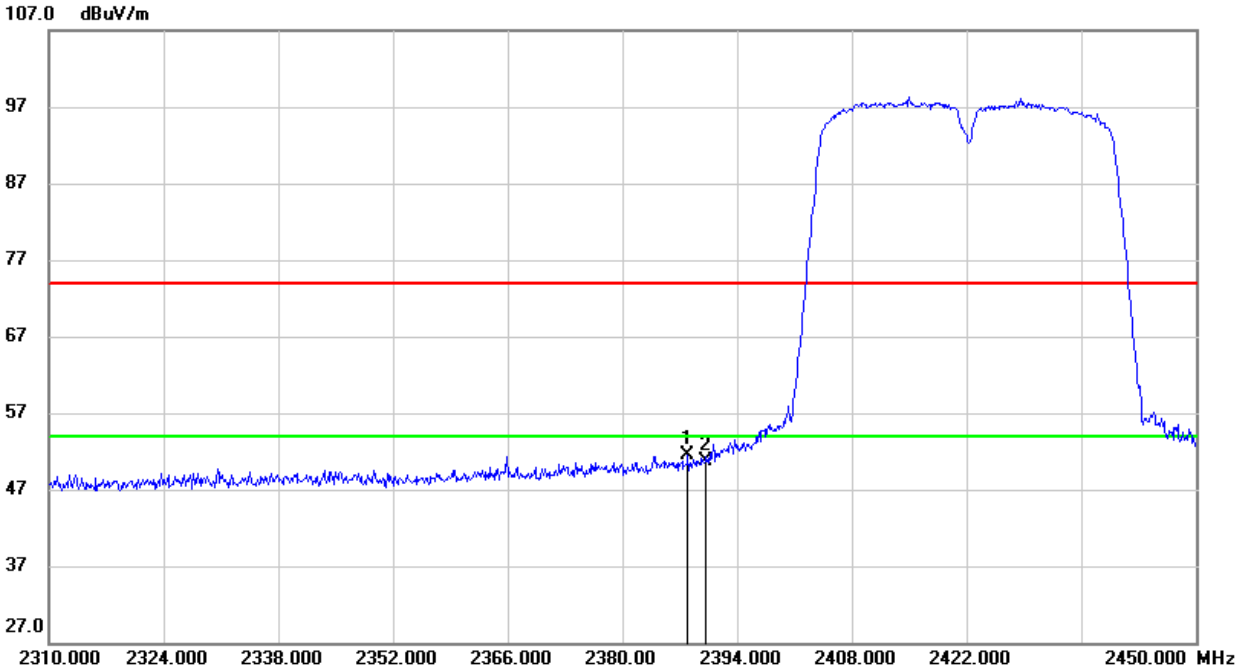

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 15.97 | 33.58 | 49.55 | 74.00 | -24.45 | peak |
| 2 | 2483.800 | 16.83 | 33.58 | 50.41 | 74.00 | -23.59 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

### 8.1.4. 802.11n HT40 MODE

**RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)**

**PEAK**

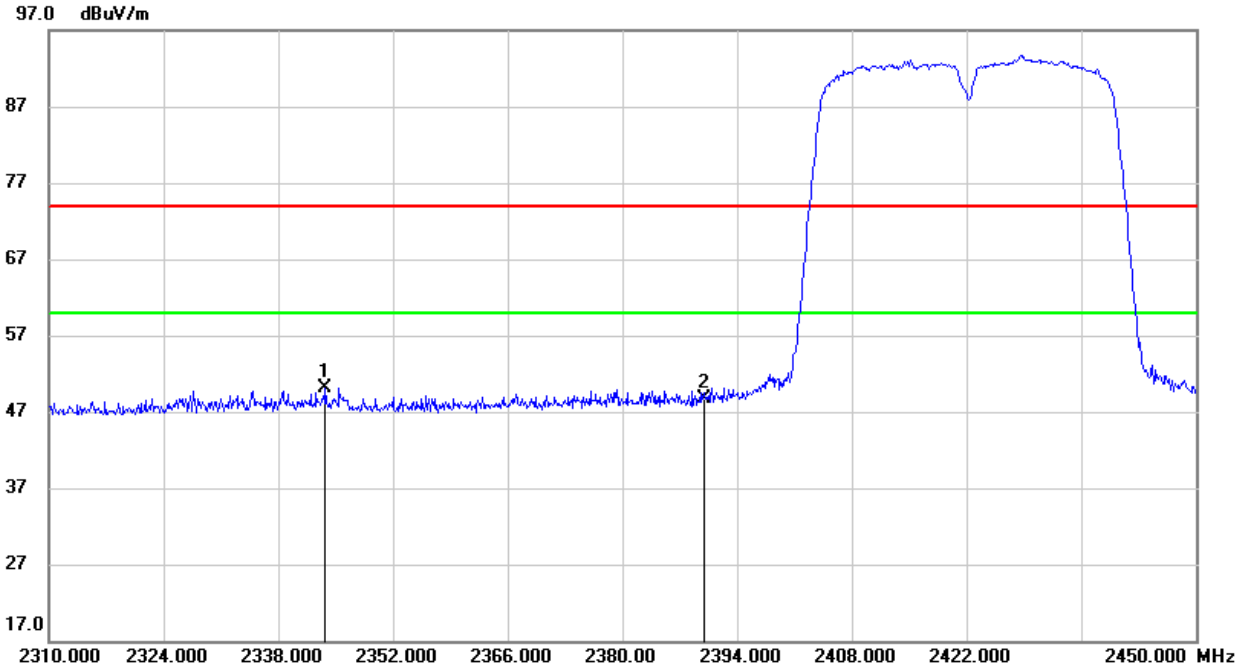



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2387.980 | 18.54 | 32.94 | 51.48 | 74.00 | -22.52 | peak |
| 2 | 2390.000 | 17.85 | 32.94 | 50.79 | 74.00 | -23.21 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

**PEAK**

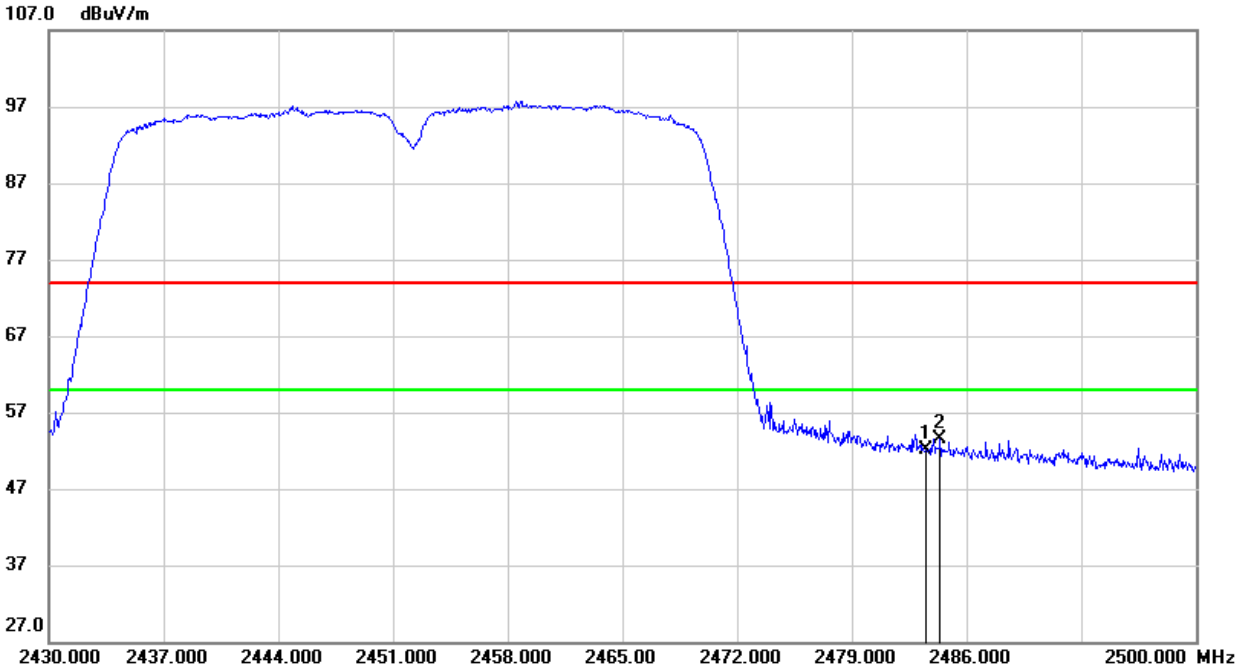



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2343.740 | 17.36 | 32.79 | 50.15 | 74.00 | -23.85 | peak |
| 2 | 2390.000 | 15.75 | 32.94 | 48.69 | 74.00 | -25.31 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

**PEAK**

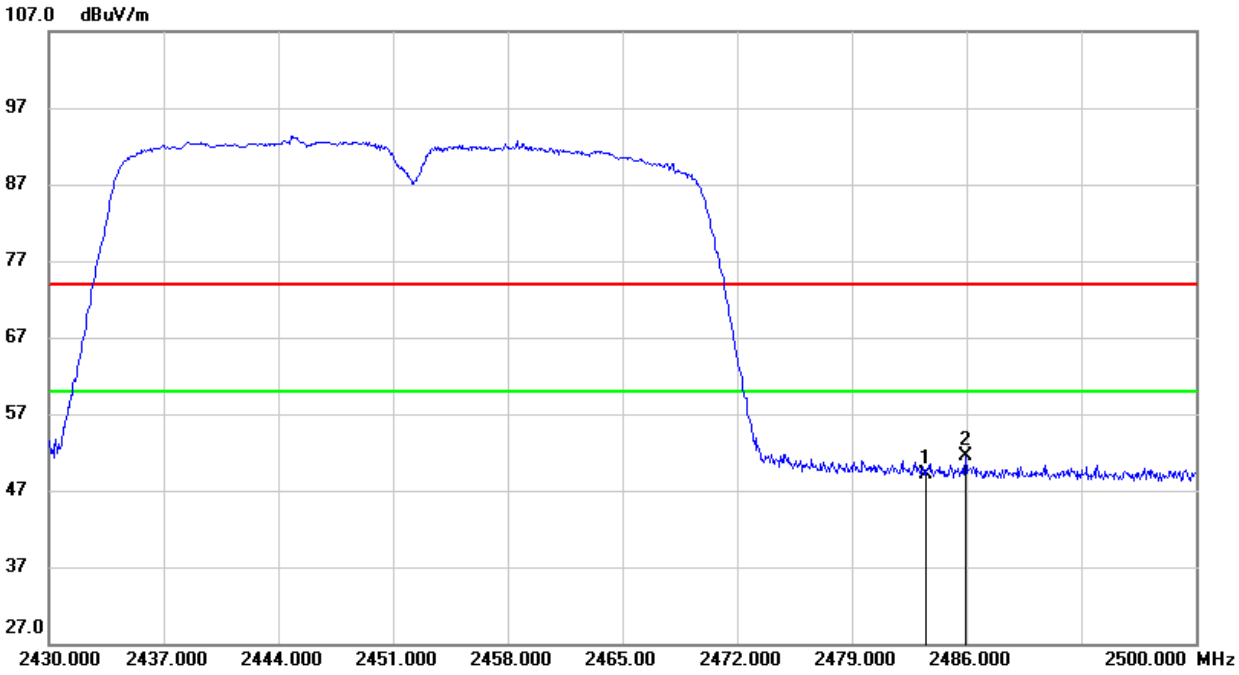



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 18.55 | 33.58 | 52.13 | 74.00 | -21.87 | peak |
| 2 | 2484.390 | 19.83 | 33.59 | 53.42 | 74.00 | -20.58 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

**PEAK**



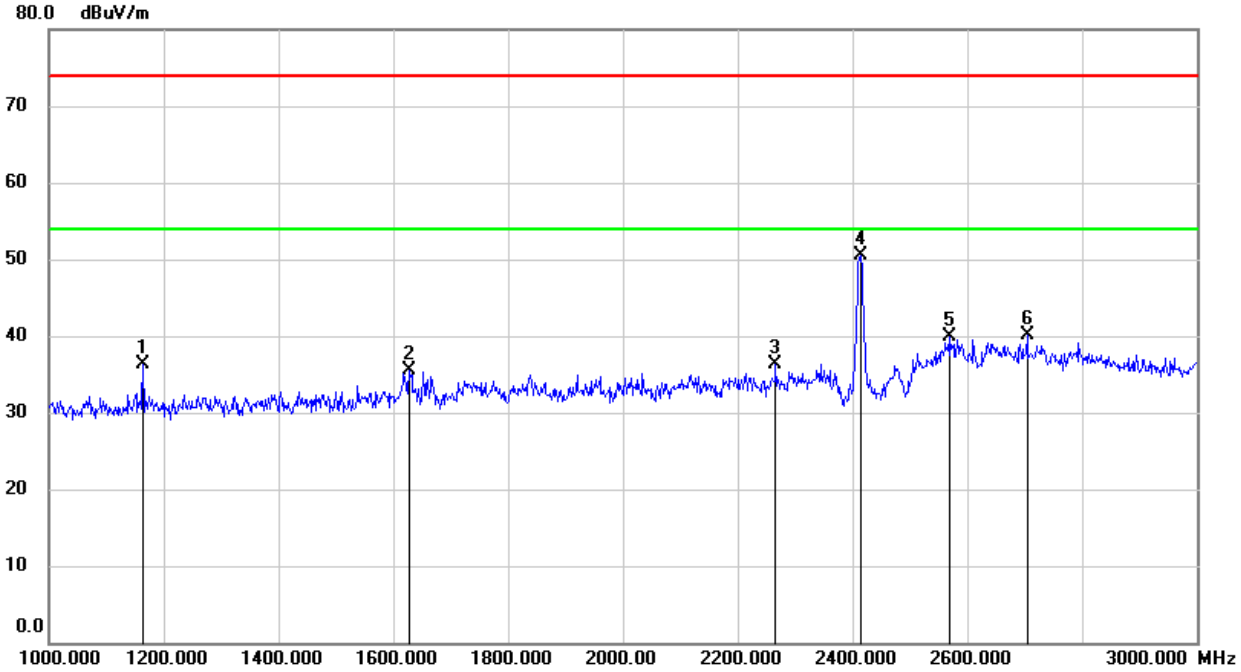

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 15.50 | 33.58 | 49.08 | 74.00 | -24.92 | peak |
| 2 | 2485.930 | 18.00 | 33.59 | 51.59 | 74.00 | -22.41 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

## 8.2. SPURIOUS EMISSIONS (1GHz ~ 3GHz)

### 8.2.1. 802.11b MODE

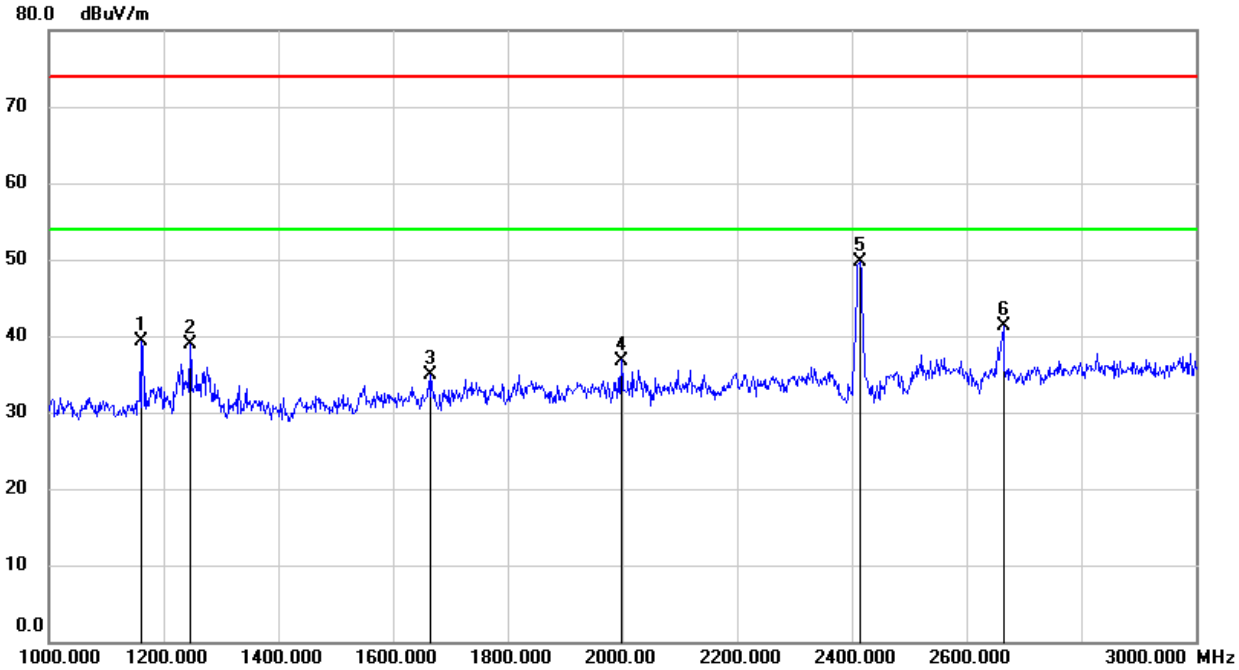
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1164.000 | 49.22 | -12.97 | 36.25 | 74.00 | -37.75 | peak |
| 2 | 1628.000 | 46.78 | -11.25 | 35.53 | 74.00 | -38.47 | peak |
| 3 | 2266.000 | 44.75 | -8.35 | 36.40 | 74.00 | -37.60 | peak |
| 4 | 2412.000 | 58.31 | -7.76 | 50.55 | / | / | fundamental |
| 5 | 2568.000 | 47.39 | -7.54 | 39.85 | 74.00 | -34.15 | peak |
| 6 | 2704.000 | 47.24 | -7.09 | 40.15 | 74.00 | -33.85 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

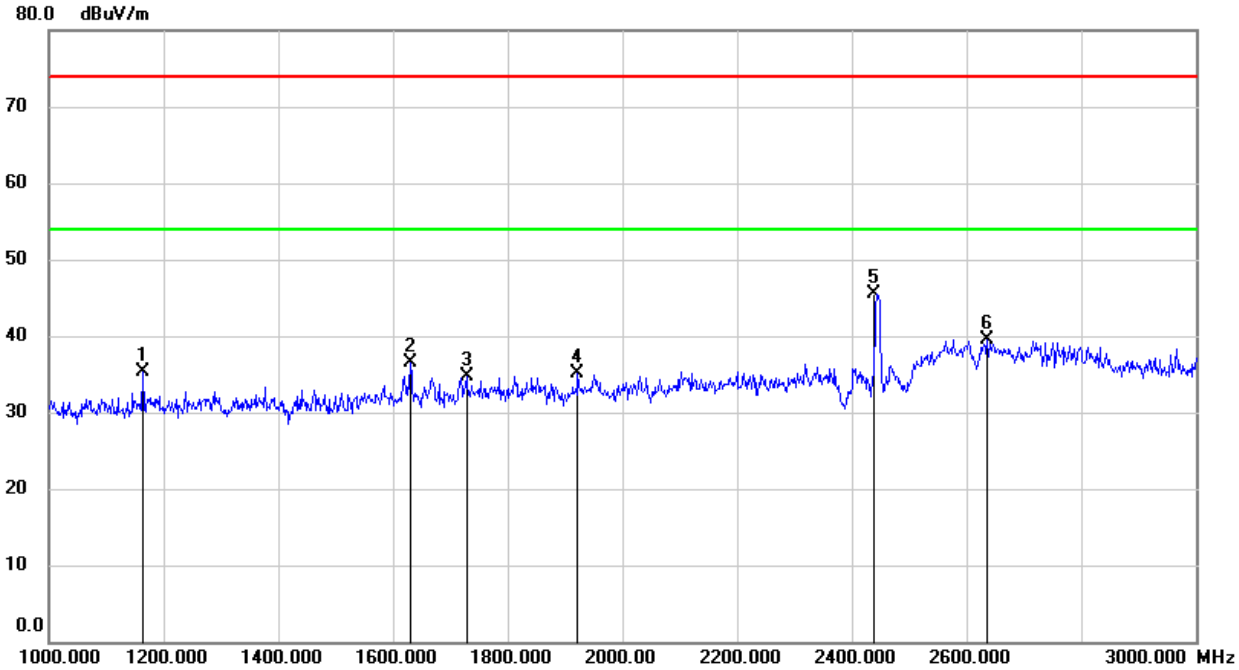
## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1160.000 | 52.28 | -13.01 | 39.27 | 74.00 | -34.73 | peak |
| 2 | 1246.000 | 51.39 | -12.52 | 38.87 | 74.00 | -35.13 | peak |
| 3 | 1666.000 | 45.88 | -11.07 | 34.81 | 74.00 | -39.19 | peak |
| 4 | 1998.000 | 46.63 | -9.83 | 36.80 | 74.00 | -37.20 | peak |
| 5 | 2412.000 | 57.50 | -7.76 | 49.74 | / | / | fundamental |
| 6 | 2664.000 | 48.59 | -7.34 | 41.25 | 74.00 | -32.75 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

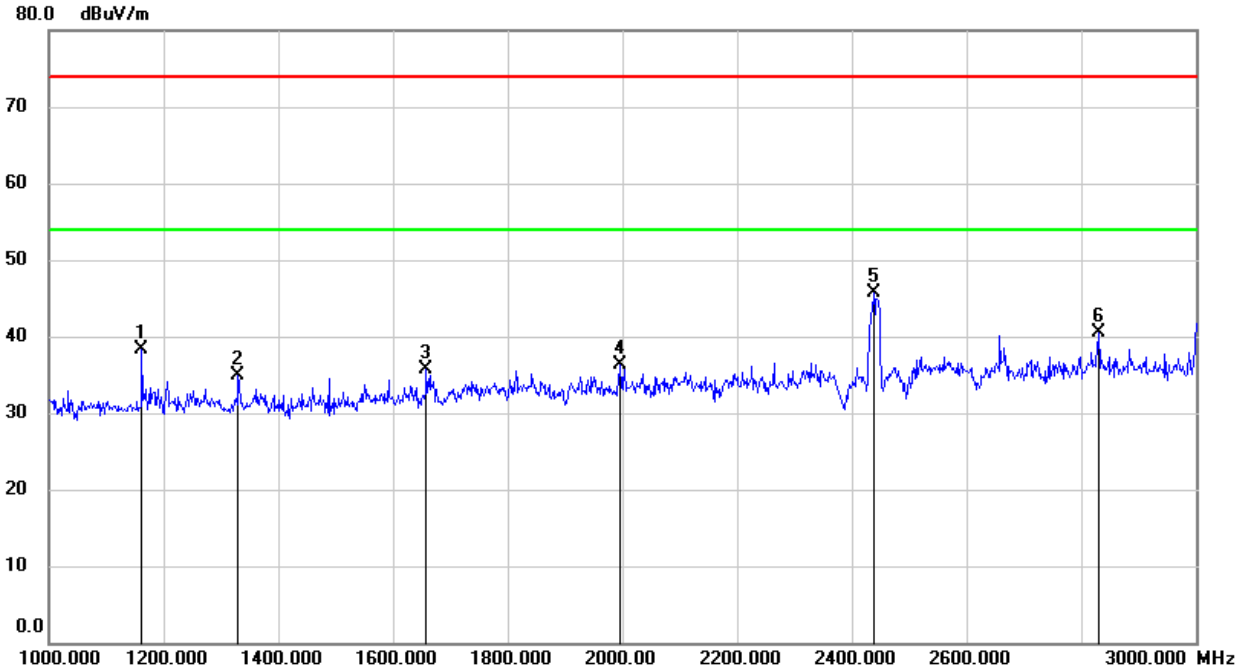
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1164.000 | 48.19 | -12.97 | 35.22 | 74.00 | -38.78 | peak |
| 2 | 1630.000 | 47.74 | -11.25 | 36.49 | 74.00 | -37.51 | peak |
| 3 | 1728.000 | 45.31 | -10.62 | 34.69 | 74.00 | -39.31 | peak |
| 4 | 1922.000 | 45.01 | -9.93 | 35.08 | 74.00 | -38.92 | peak |
| 5 | 2437.000 | 53.16 | -7.60 | 45.56 | / | / | fundamental |
| 6 | 2636.000 | 47.01 | -7.49 | 39.52 | 74.00 | -34.48 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

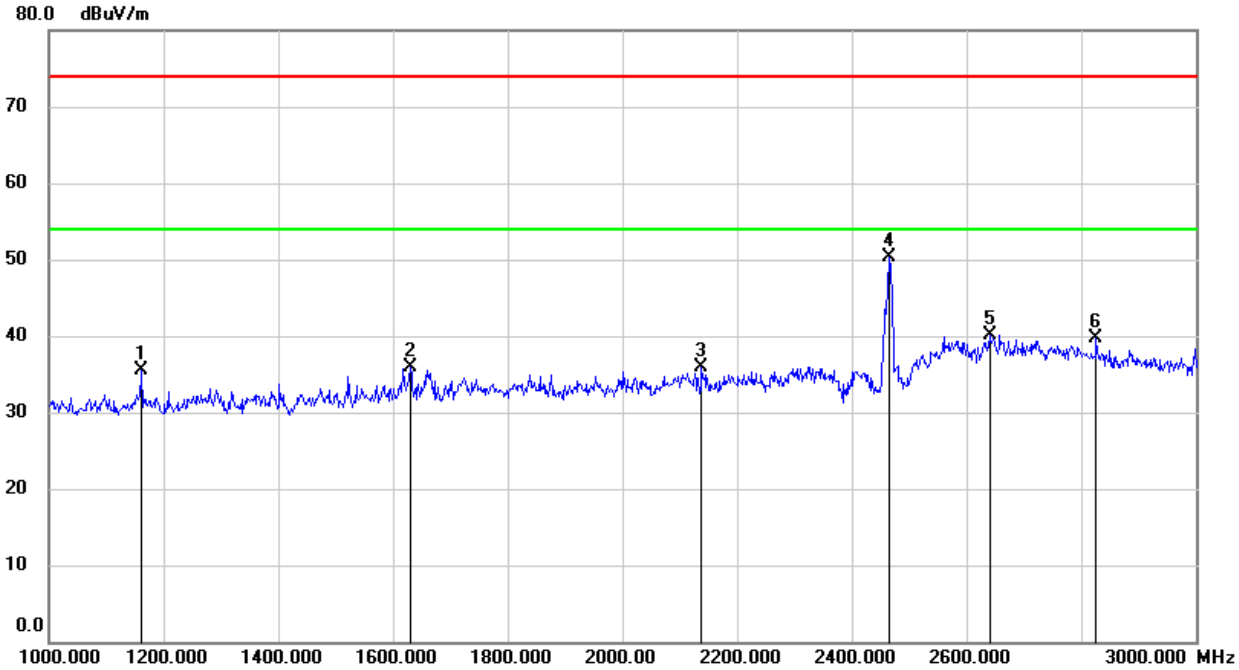
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1162.000 | 51.27 | -13.00 | 38.27 | 74.00 | -35.73 | peak |
| 2 | 1330.000 | 47.21 | -12.36 | 34.85 | 74.00 | -39.15 | peak |
| 3 | 1658.000 | 46.83 | -11.11 | 35.72 | 74.00 | -38.28 | peak |
| 4 | 1996.000 | 46.14 | -9.83 | 36.31 | 74.00 | -37.69 | peak |
| 5 | 2437.000 | 53.25 | -7.60 | 45.65 | / | / | fundamental |
| 6 | 2830.000 | 46.39 | -5.89 | 40.50 | 74.00 | -33.50 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

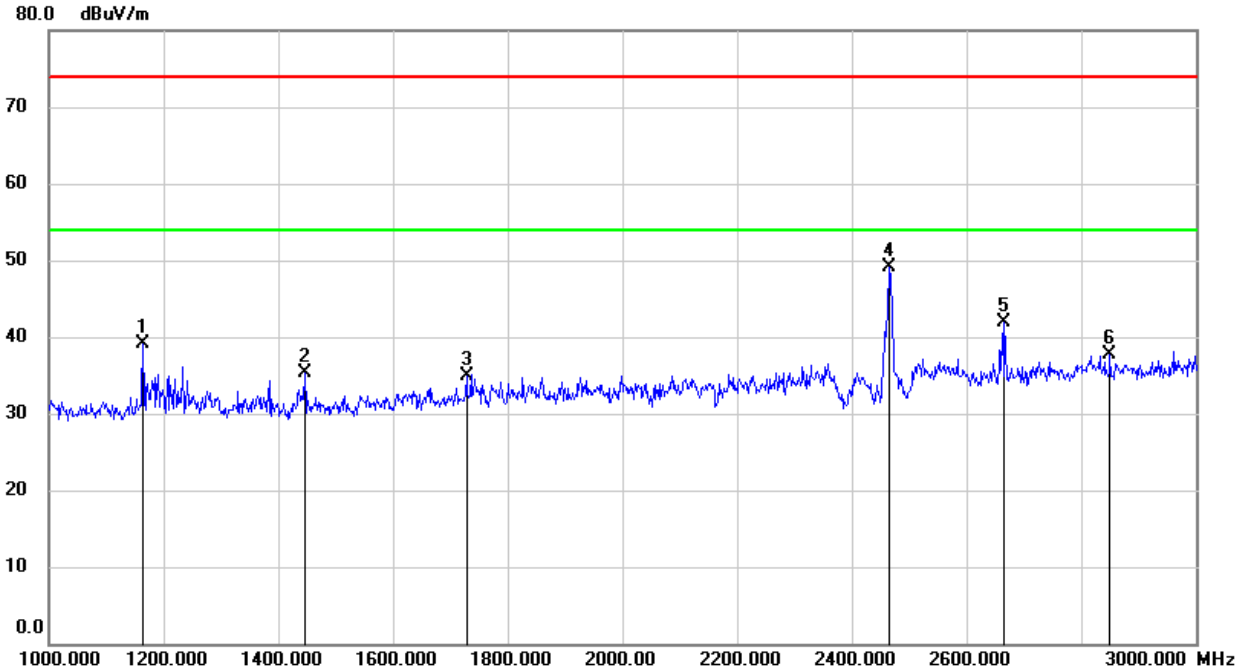
## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1162.000 | 48.45 | -13.00 | 35.45 | 74.00 | -38.55 | peak |
| 2 | 1630.000 | 47.15 | -11.25 | 35.90 | 74.00 | -38.10 | peak |
| 3 | 2138.000 | 44.94 | -8.97 | 35.97 | 74.00 | -38.03 | peak |
| 4 | 2462.000 | 57.65 | -7.40 | 50.25 | / | / | fundamental |
| 5 | 2640.000 | 47.61 | -7.48 | 40.13 | 74.00 | -33.87 | peak |
| 6 | 2826.000 | 45.66 | -5.92 | 39.74 | 74.00 | -34.26 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 1164.000 | 52.05 | -12.97 | 39.08 | 74.00 | -34.92 | peak |
| 2 | 1446.000 | 47.56 | -12.31 | 35.25 | 74.00 | -38.75 | peak |
| 3 | 1728.000 | 45.51 | -10.62 | 34.89 | 74.00 | -39.11 | peak |
| 4 | 2462.000 | 56.42 | -7.40 | 49.02 | / | / | fundamental |
| 5 | 2666.000 | 49.27 | -7.32 | 41.95 | 74.00 | -32.05 | peak |
| 6 | 2850.000 | 43.55 | -5.79 | 37.76 | 74.00 | -36.24 | peak |

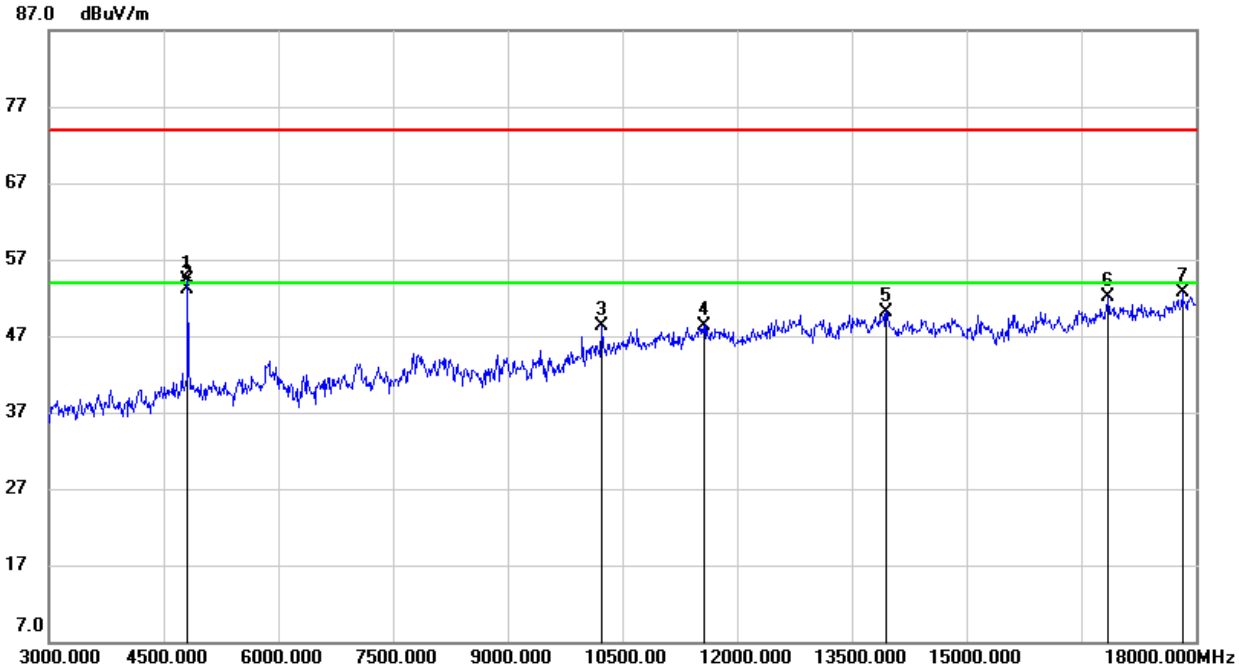
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

Note: All the modes had been tested, but only the worst data was recorded in the report.

## 8.3. SPURIOUS EMISSIONS (3GHz ~ 18GHz)

### 8.3.1. 802.11b MODE

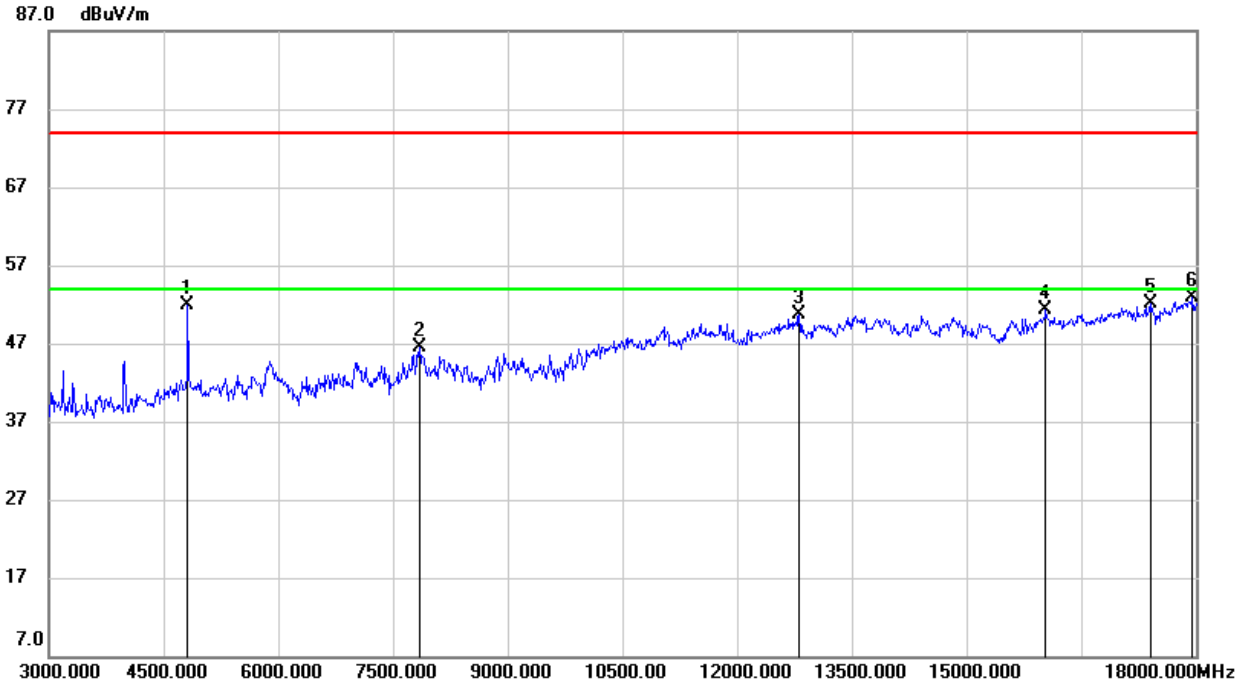
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4824.071 | 53.66 | 0.56 | 54.22 | 74.00 | -19.78 | peak |
| 2 | 4824.071 | 52.60 | 0.56 | 53.16 | 54.00 | -0.84 | AVG |
| 3 | 10230.000 | 37.84 | 10.43 | 48.27 | 74.00 | -25.73 | peak |
| 4 | 11565.000 | 35.06 | 13.26 | 48.32 | 74.00 | -25.68 | peak |
| 5 | 13950.000 | 34.09 | 16.11 | 50.20 | 74.00 | -23.80 | peak |
| 6 | 16845.000 | 32.21 | 19.96 | 52.17 | 74.00 | -21.83 | peak |
| 7 | 17820.000 | 29.44 | 23.30 | 52.74 | 74.00 | -21.26 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

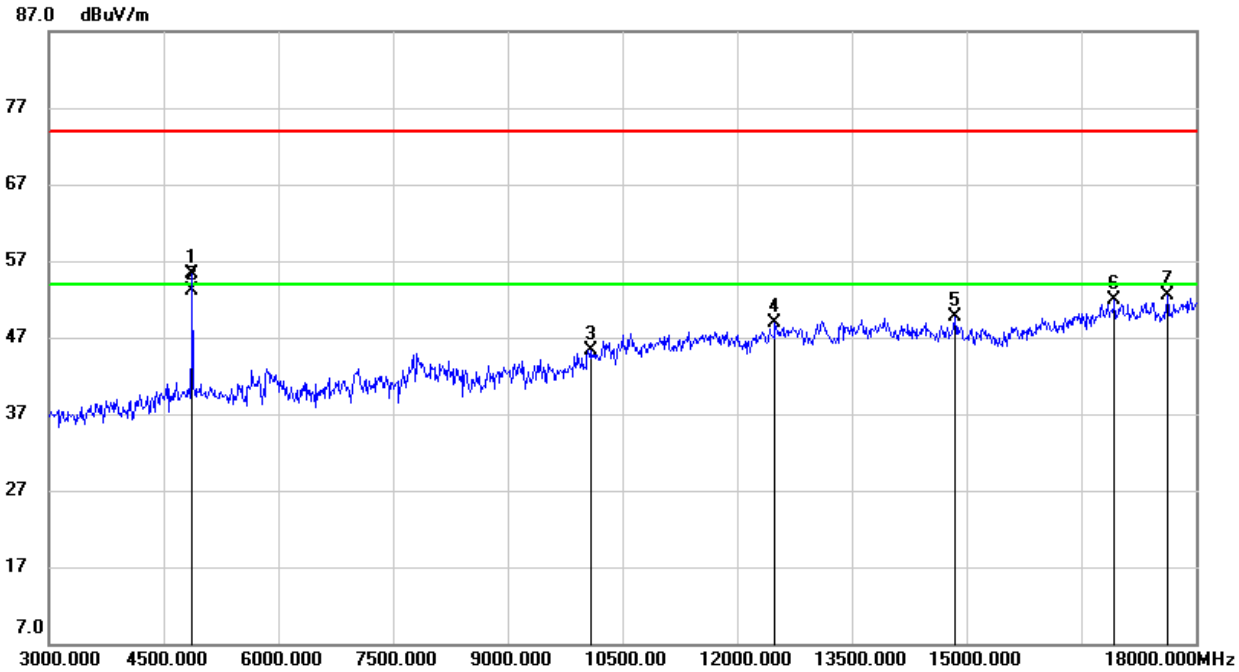
## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 4815.000 | 51.34 | 0.51 | 51.85 | 74.00 | -22.15 | peak |
| 2 | 7845.000 | 38.81 | 7.62 | 46.43 | 74.00 | -27.57 | peak |
| 3 | 12810.000 | 35.12 | 15.59 | 50.71 | 74.00 | -23.29 | peak |
| 4 | 16035.000 | 33.43 | 17.85 | 51.28 | 74.00 | -22.72 | peak |
| 5 | 17400.000 | 30.67 | 21.41 | 52.08 | 74.00 | -21.92 | peak |
| 6 | 17955.000 | 29.43 | 23.41 | 52.84 | 74.00 | -21.16 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

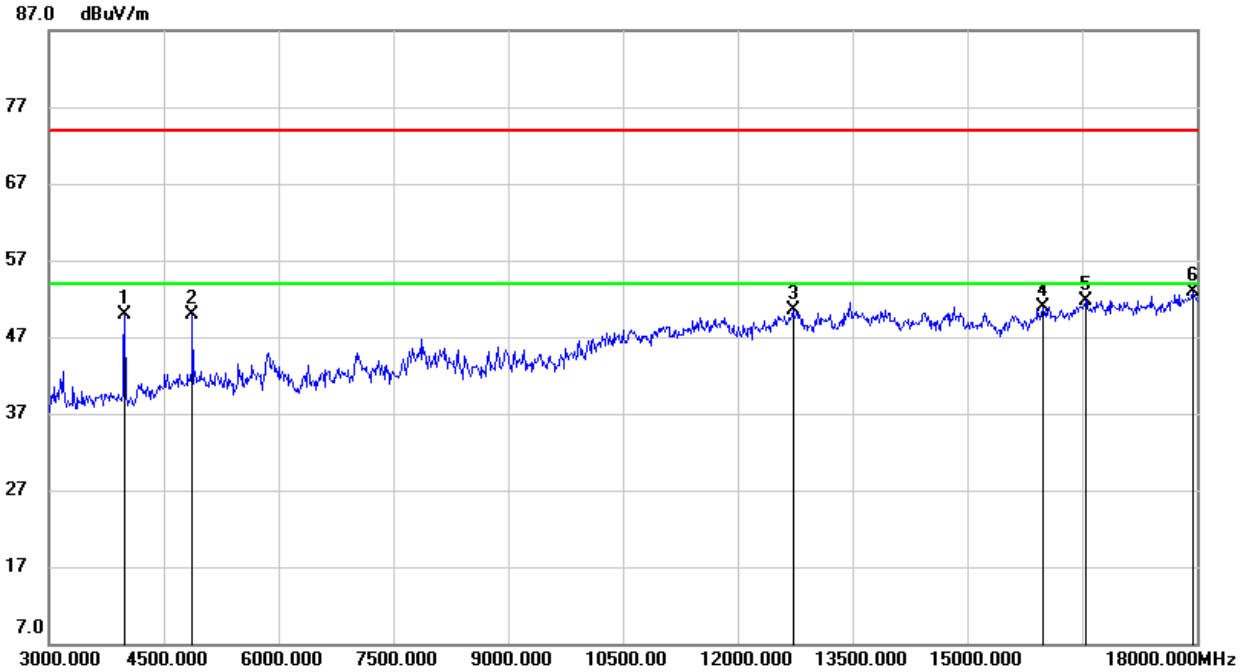
**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4874.041 | 54.54 | 0.75 | 55.29 | 74.00 | -18.71 | peak |
| 2 | 4874.041 | 52.45 | 0.75 | 53.20 | 54.00 | -0.80 | AVG |
| 3 | 10095.000 | 34.81 | 10.55 | 45.36 | 74.00 | -28.64 | peak |
| 4 | 12495.000 | 34.36 | 14.54 | 48.90 | 74.00 | -25.10 | peak |
| 5 | 14850.000 | 33.83 | 15.97 | 49.80 | 74.00 | -24.20 | peak |
| 6 | 16935.000 | 31.84 | 20.12 | 51.96 | 74.00 | -22.04 | peak |
| 7 | 17625.000 | 30.57 | 21.95 | 52.52 | 74.00 | -21.48 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

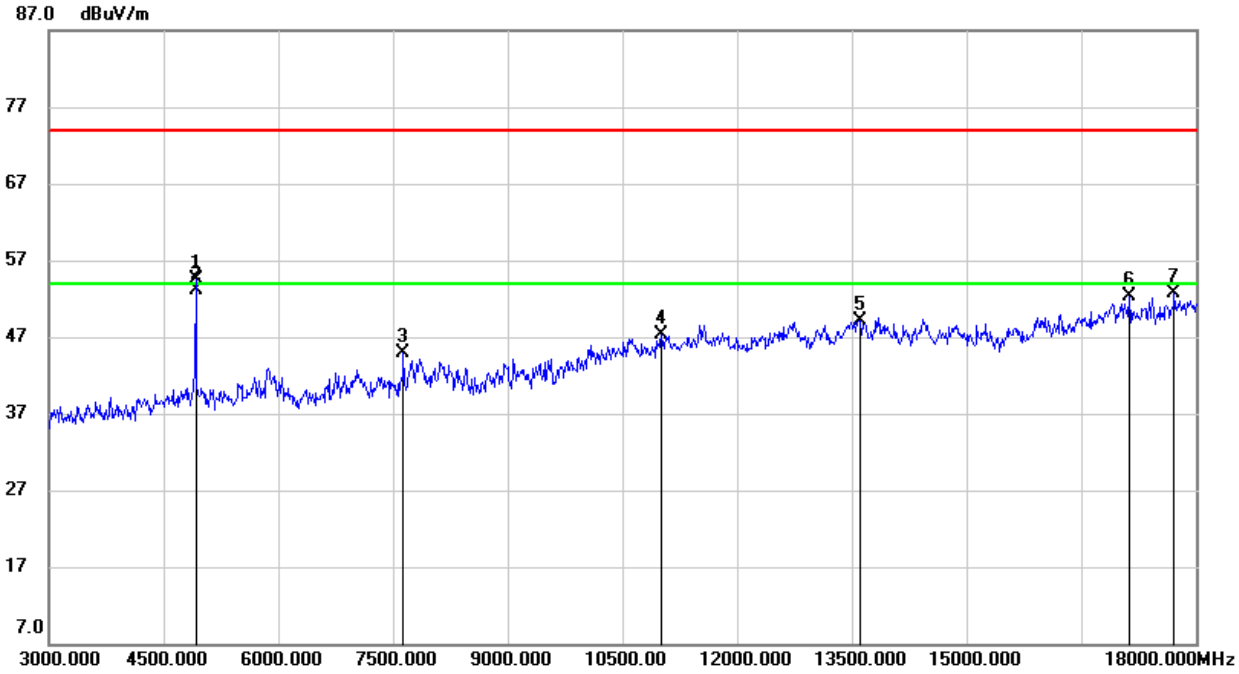
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 3990.000 | 52.84 | -2.89 | 49.95 | 74.00 | -24.05 | peak |
| 2 | 4875.000 | 49.11 | 0.76 | 49.87 | 74.00 | -24.13 | peak |
| 3 | 12720.000 | 35.93 | 14.57 | 50.50 | 74.00 | -23.50 | peak |
| 4 | 15990.000 | 33.24 | 17.68 | 50.92 | 74.00 | -23.08 | peak |
| 5 | 16545.000 | 32.47 | 19.31 | 51.78 | 74.00 | -22.22 | peak |
| 6 | 17940.000 | 29.42 | 23.39 | 52.81 | 74.00 | -21.19 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

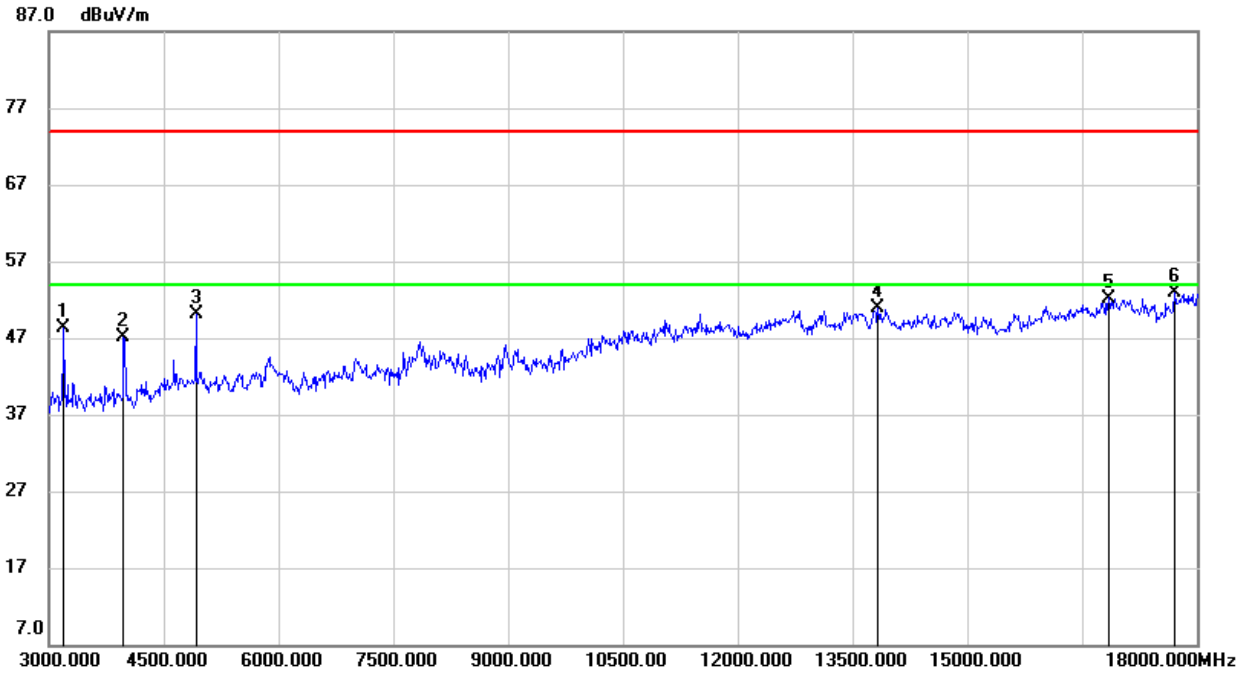
## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4923.976 | 53.58 | 0.98 | 54.56 | 74.00 | -19.44 | peak |
| 2 | 4923.976 | 52.15 | 0.98 | 53.13 | 54.00 | -0.87 | AVG |
| 3 | 7635.000 | 38.28 | 6.54 | 44.82 | 74.00 | -29.18 | peak |
| 4 | 11010.000 | 34.73 | 12.63 | 47.36 | 74.00 | -26.64 | peak |
| 5 | 13605.000 | 33.17 | 16.02 | 49.19 | 74.00 | -24.81 | peak |
| 6 | 17130.000 | 31.63 | 20.72 | 52.35 | 74.00 | -21.65 | peak |
| 7 | 17715.000 | 30.06 | 22.56 | 52.62 | 74.00 | -21.38 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

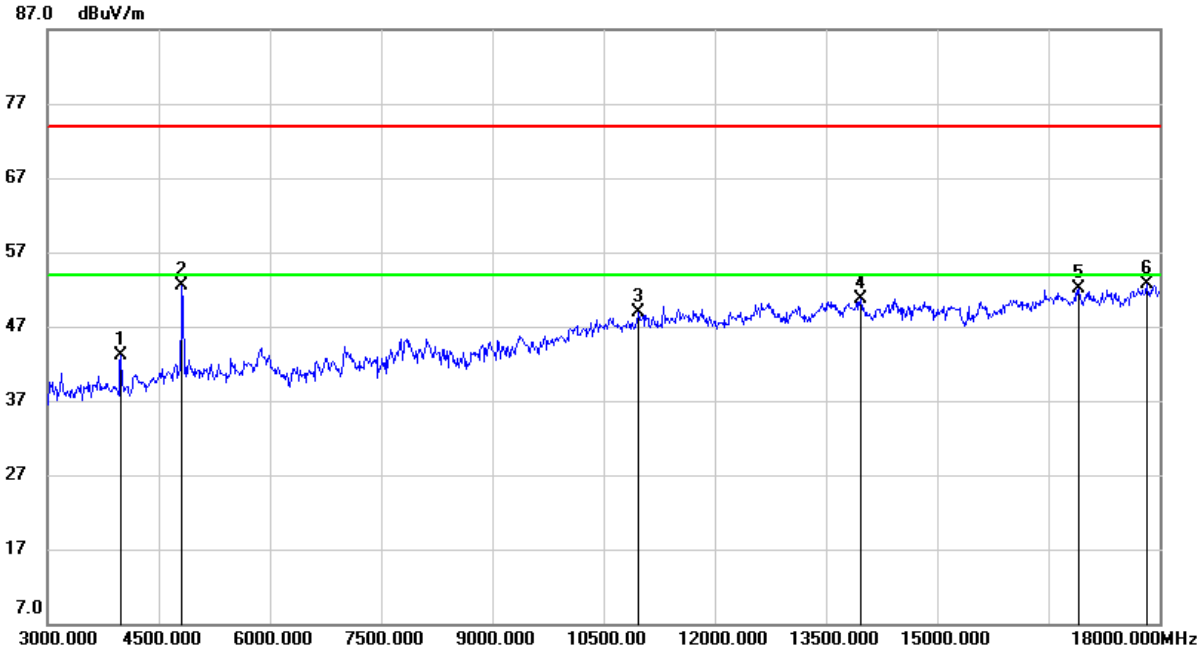



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3195.000 | 52.71 | -4.42 | 48.29 | 74.00 | -25.71 | peak |
| 2 | 3975.000 | 50.03 | -2.90 | 47.13 | 74.00 | -26.87 | peak |
| 3 | 4920.000 | 49.21 | 0.96 | 50.17 | 74.00 | -23.83 | peak |
| 4 | 13830.000 | 34.09 | 16.84 | 50.93 | 74.00 | -23.07 | peak |
| 5 | 16845.000 | 32.24 | 19.96 | 52.20 | 74.00 | -21.80 | peak |
| 6 | 17715.000 | 30.42 | 22.56 | 52.98 | 74.00 | -21.02 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

### 8.3.2. 802.11g MODE

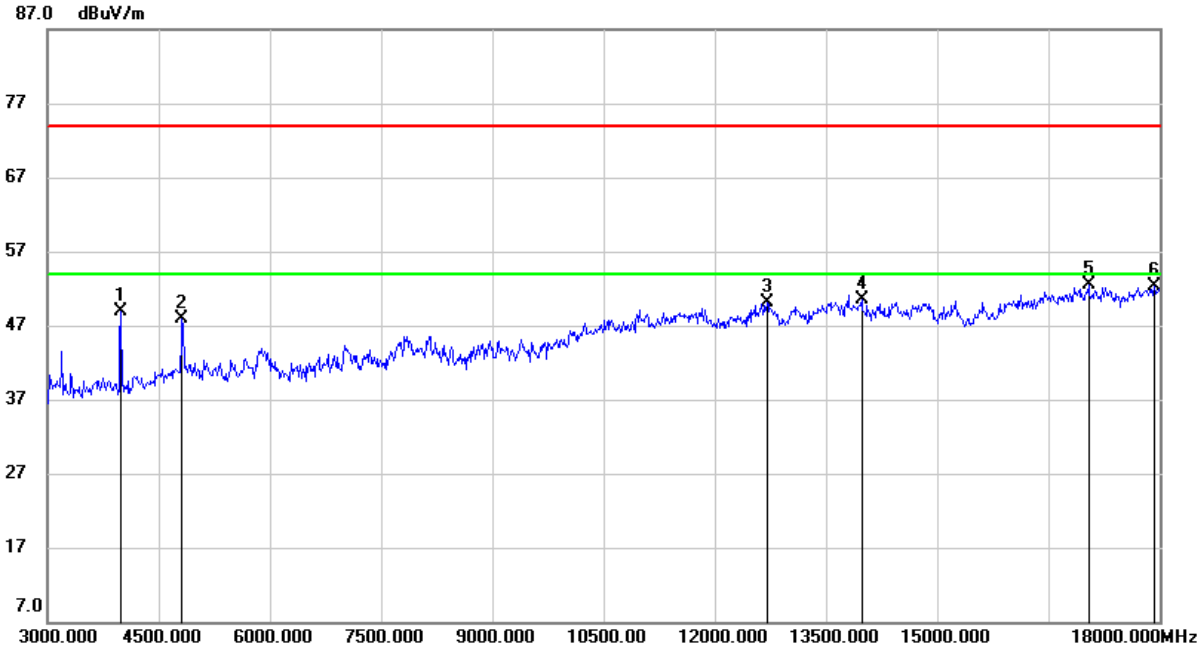
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3990.000 | 45.98 | -2.89 | 43.09 | 74.00 | -30.91 | peak |
| 2 | 4815.000 | 51.91 | 0.51 | 52.42 | 74.00 | -21.58 | peak |
| 3 | 10965.000 | 36.51 | 12.32 | 48.83 | 74.00 | -25.17 | peak |
| 4 | 13965.000 | 34.55 | 16.09 | 50.64 | 74.00 | -23.36 | peak |
| 5 | 16905.000 | 32.03 | 19.99 | 52.02 | 74.00 | -21.98 | peak |
| 6 | 17820.000 | 29.34 | 23.30 | 52.64 | 74.00 | -21.36 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

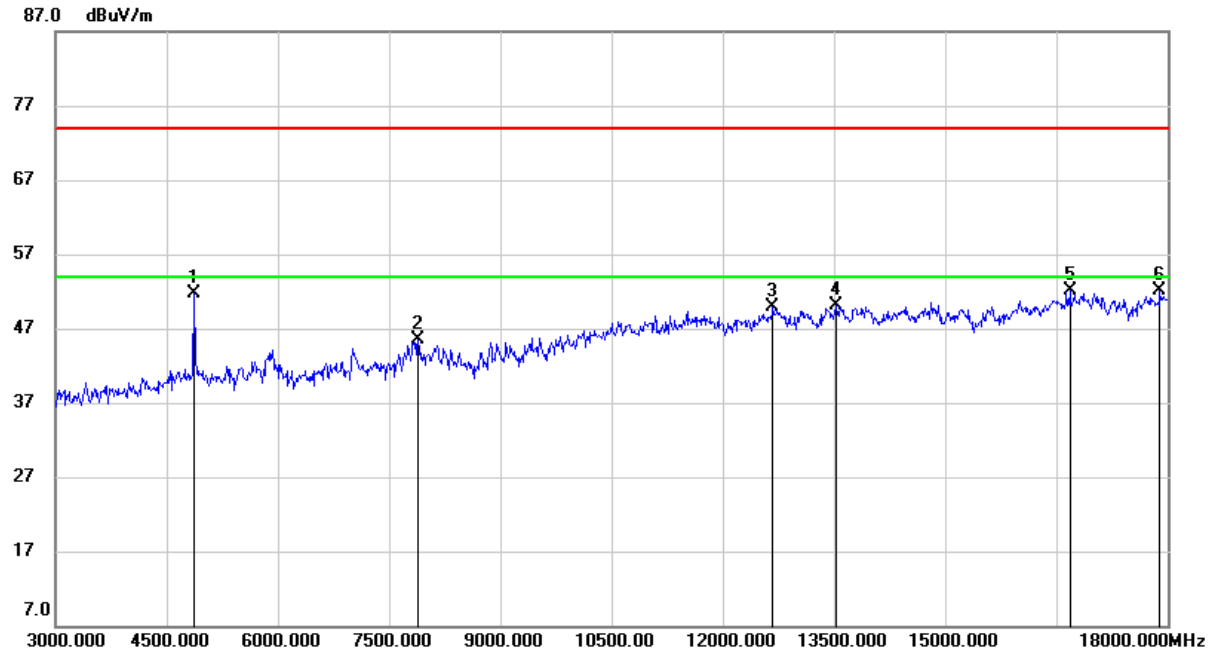
## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3990.000 | 51.74 | -2.89 | 48.85 | 74.00 | -25.15 | peak |
| 2 | 4815.000 | 47.40 | 0.51 | 47.91 | 74.00 | -26.09 | peak |
| 3 | 12705.000 | 35.85 | 14.35 | 50.20 | 74.00 | -23.80 | peak |
| 4 | 13980.000 | 34.35 | 16.07 | 50.42 | 74.00 | -23.58 | peak |
| 5 | 17040.000 | 32.01 | 20.49 | 52.50 | 74.00 | -21.50 | peak |
| 6 | 17925.000 | 28.90 | 23.37 | 52.27 | 74.00 | -21.73 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

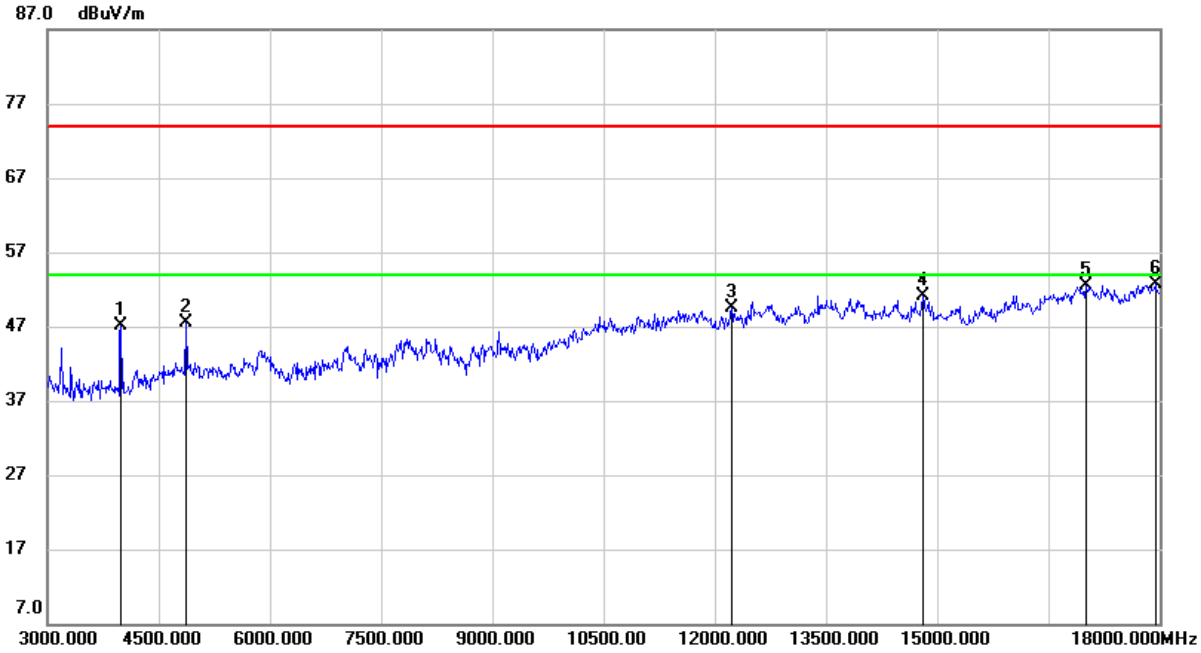
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4860.000 | 50.93 | 0.70 | 51.63 | 74.00 | -22.37 | peak |
| 2 | 7890.000 | 38.29 | 7.30 | 45.59 | 74.00 | -28.41 | peak |
| 3 | 12675.000 | 35.68 | 14.21 | 49.89 | 74.00 | -24.11 | peak |
| 4 | 13530.000 | 34.33 | 15.86 | 50.19 | 74.00 | -23.81 | peak |
| 5 | 16680.000 | 32.27 | 19.84 | 52.11 | 74.00 | -21.89 | peak |
| 6 | 17895.000 | 28.81 | 23.34 | 52.15 | 74.00 | -21.85 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

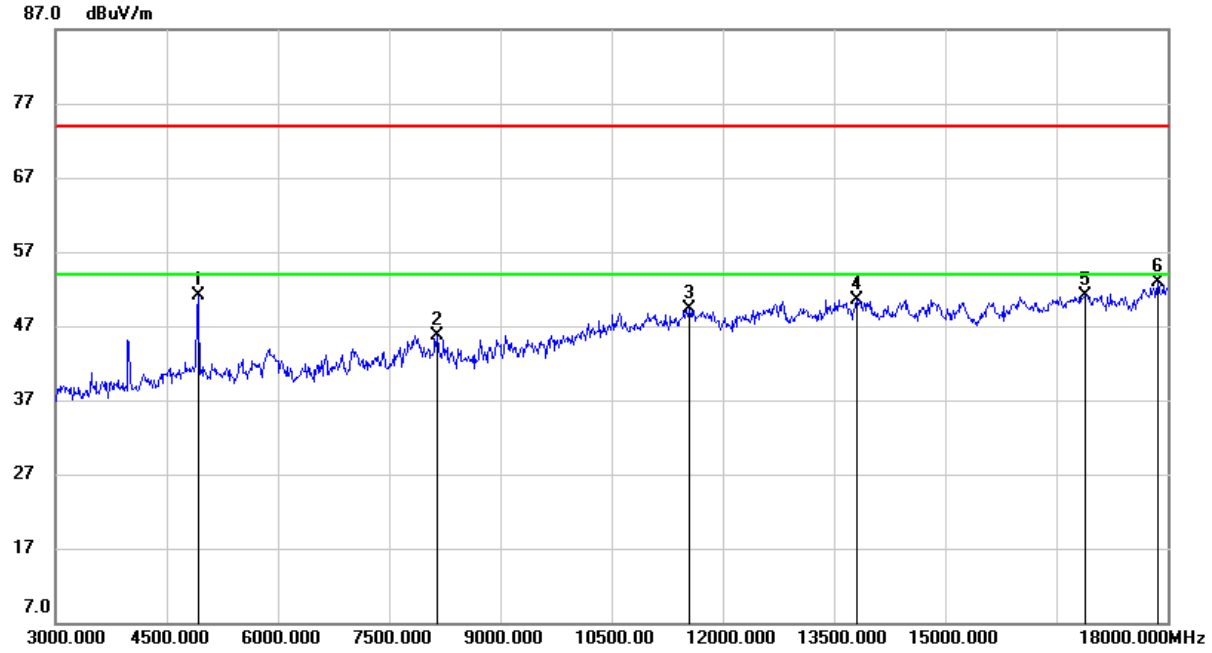
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3990.000 | 49.96 | -2.89 | 47.07 | 74.00 | -26.93 | peak |
| 2 | 4875.000 | 46.73 | 0.76 | 47.49 | 74.00 | -26.51 | peak |
| 3 | 12225.000 | 35.73 | 13.81 | 49.54 | 74.00 | -24.46 | peak |
| 4 | 14805.000 | 35.18 | 15.92 | 51.10 | 74.00 | -22.90 | peak |
| 5 | 17010.000 | 32.17 | 20.43 | 52.60 | 74.00 | -21.40 | peak |
| 6 | 17940.000 | 29.35 | 23.39 | 52.74 | 74.00 | -21.26 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

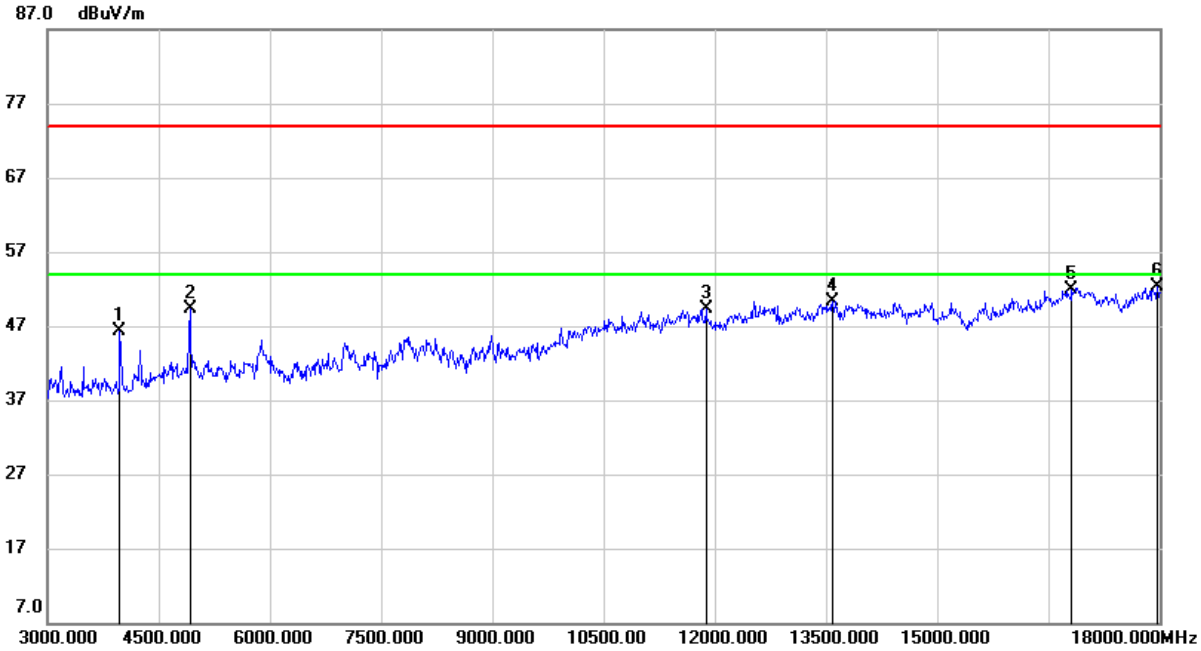
## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4920.000 | 50.24 | 0.96 | 51.20 | 74.00 | -22.80 | peak |
| 2 | 8145.000 | 37.64 | 8.08 | 45.72 | 74.00 | -28.28 | peak |
| 3 | 11550.000 | 36.00 | 13.30 | 49.30 | 74.00 | -24.70 | peak |
| 4 | 13800.000 | 33.46 | 17.10 | 50.56 | 74.00 | -23.44 | peak |
| 5 | 16890.000 | 31.13 | 19.97 | 51.10 | 74.00 | -22.90 | peak |
| 6 | 17865.000 | 29.63 | 23.33 | 52.96 | 74.00 | -21.04 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

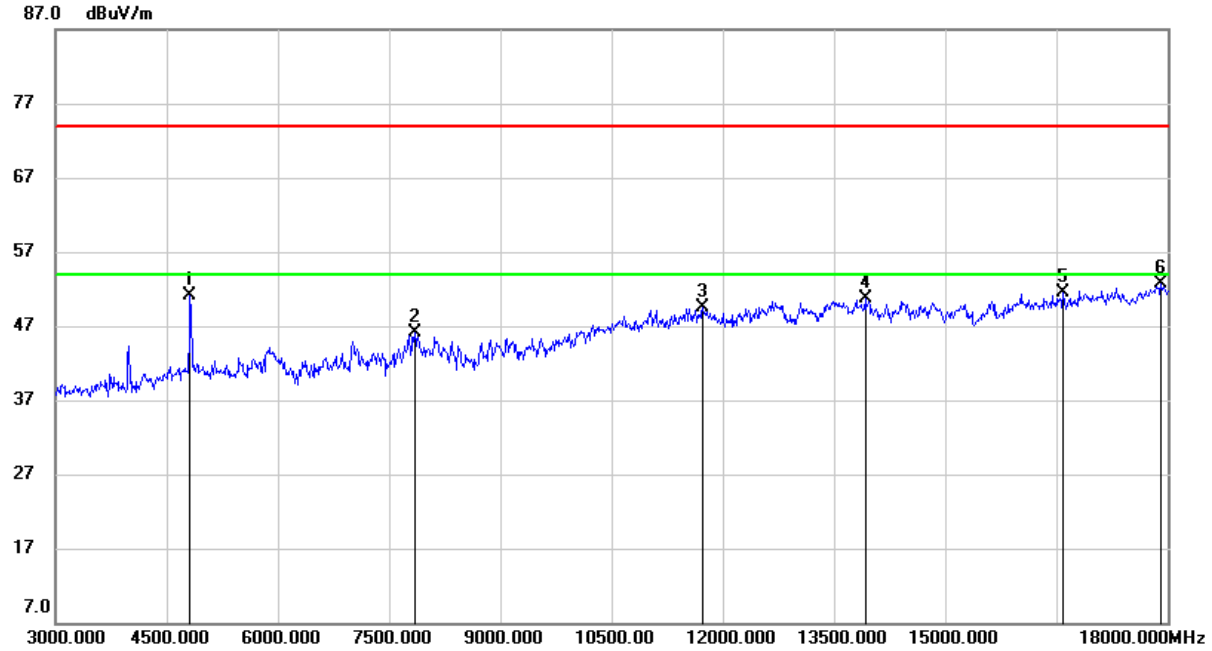



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3975.000 | 49.16 | -2.90 | 46.26 | 74.00 | -27.74 | peak |
| 2 | 4920.000 | 48.26 | 0.96 | 49.22 | 74.00 | -24.78 | peak |
| 3 | 11880.000 | 36.13 | 13.21 | 49.34 | 74.00 | -24.66 | peak |
| 4 | 13590.000 | 34.33 | 16.00 | 50.33 | 74.00 | -23.67 | peak |
| 5 | 16815.000 | 31.90 | 19.96 | 51.86 | 74.00 | -22.14 | peak |
| 6 | 17970.000 | 28.86 | 23.42 | 52.28 | 74.00 | -21.72 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

### 8.3.3. 802.11n HT20 MODE

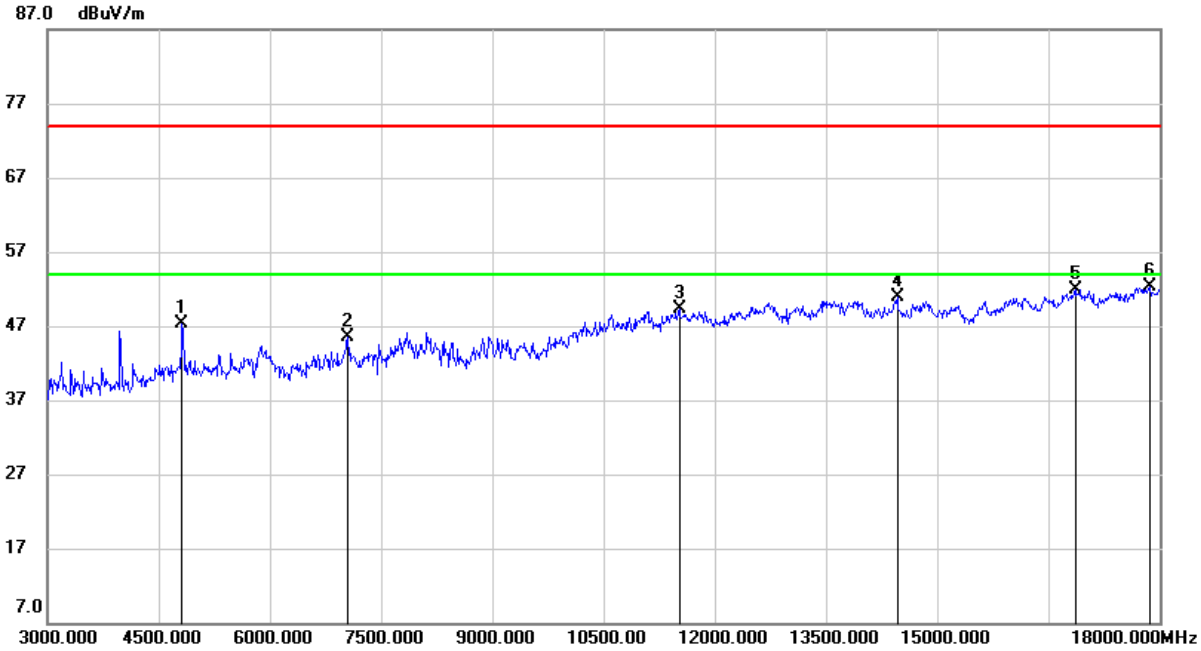
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4815.000 | 50.62 | 0.51 | 51.13 | 74.00 | -22.87 | peak |
| 2 | 7845.000 | 38.41 | 7.62 | 46.03 | 74.00 | -27.97 | peak |
| 3 | 11730.000 | 36.50 | 13.02 | 49.52 | 74.00 | -24.48 | peak |
| 4 | 13920.000 | 34.55 | 16.17 | 50.72 | 74.00 | -23.28 | peak |
| 5 | 16590.000 | 32.16 | 19.44 | 51.60 | 74.00 | -22.40 | peak |
| 6 | 17910.000 | 29.40 | 23.35 | 52.75 | 74.00 | -21.25 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

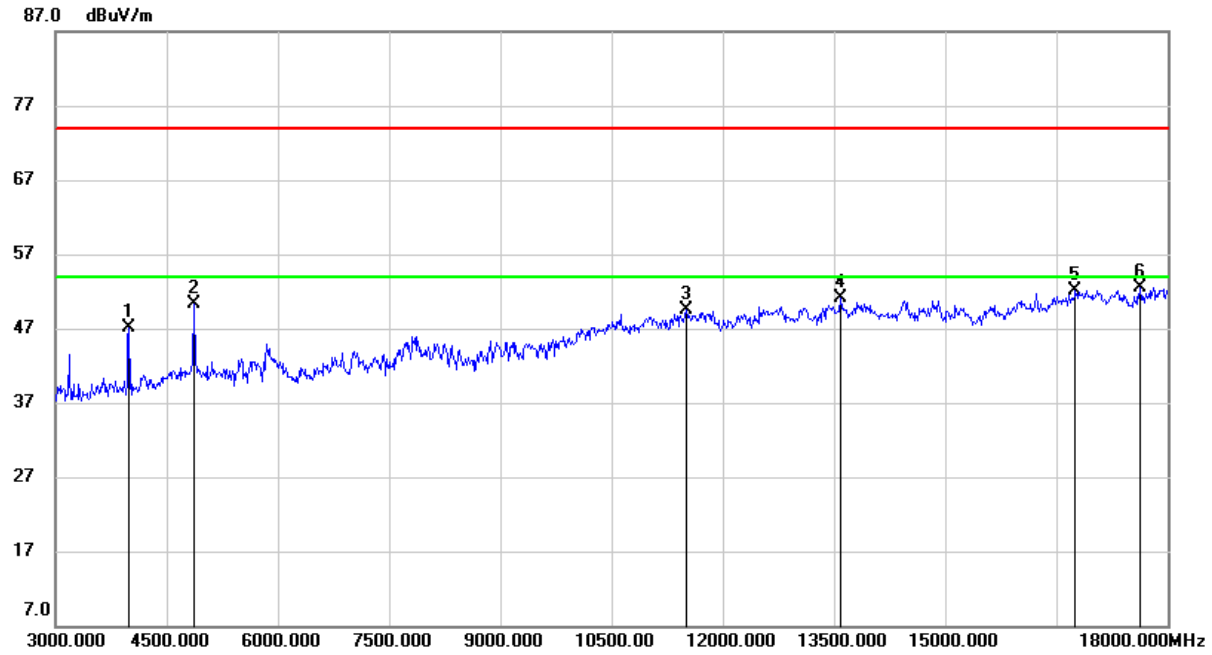
## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4815.000 | 46.78 | 0.51 | 47.29 | 74.00 | -26.71 | peak |
| 2 | 7050.000 | 39.60 | 5.84 | 45.44 | 74.00 | -28.56 | peak |
| 3 | 11520.000 | 35.86 | 13.38 | 49.24 | 74.00 | -24.76 | peak |
| 4 | 14460.000 | 34.63 | 16.36 | 50.99 | 74.00 | -23.01 | peak |
| 5 | 16860.000 | 31.99 | 19.95 | 51.94 | 74.00 | -22.06 | peak |
| 6 | 17865.000 | 29.03 | 23.33 | 52.36 | 74.00 | -21.64 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

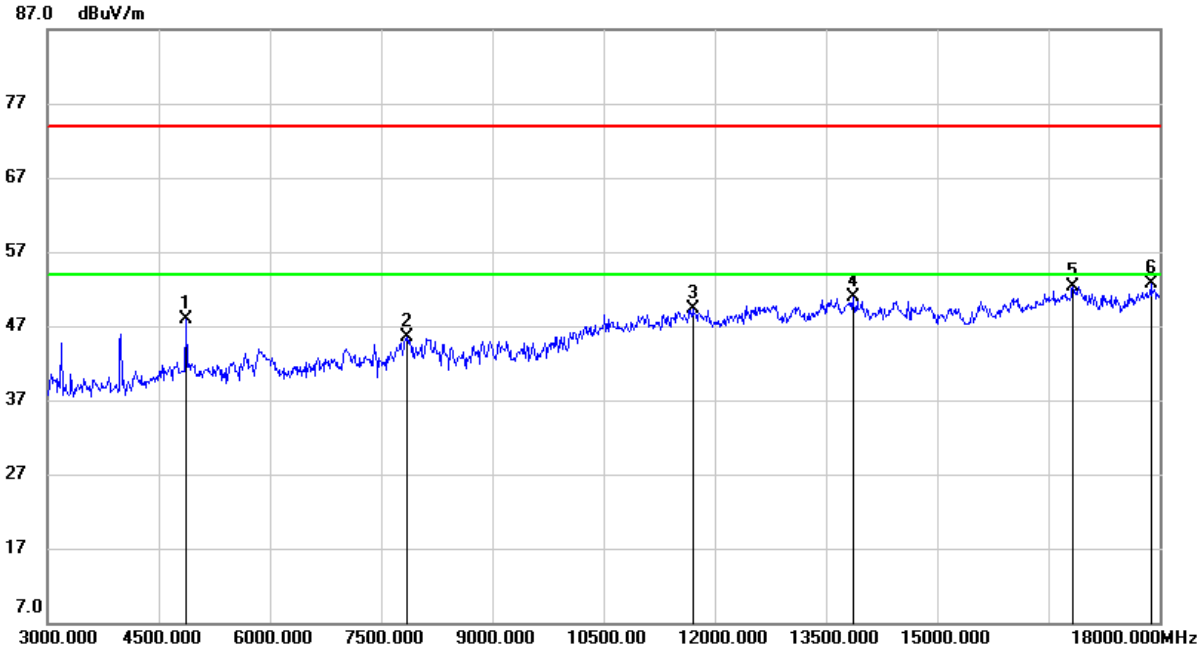
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3990.000 | 49.92 | -2.89 | 47.03 | 74.00 | -26.97 | peak |
| 2 | 4860.000 | 49.64 | 0.70 | 50.34 | 74.00 | -23.66 | peak |
| 3 | 11505.000 | 35.99 | 13.42 | 49.41 | 74.00 | -24.59 | peak |
| 4 | 13590.000 | 35.01 | 16.00 | 51.01 | 74.00 | -22.99 | peak |
| 5 | 16755.000 | 32.14 | 19.94 | 52.08 | 74.00 | -21.92 | peak |
| 6 | 17625.000 | 30.61 | 21.95 | 52.56 | 74.00 | -21.44 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

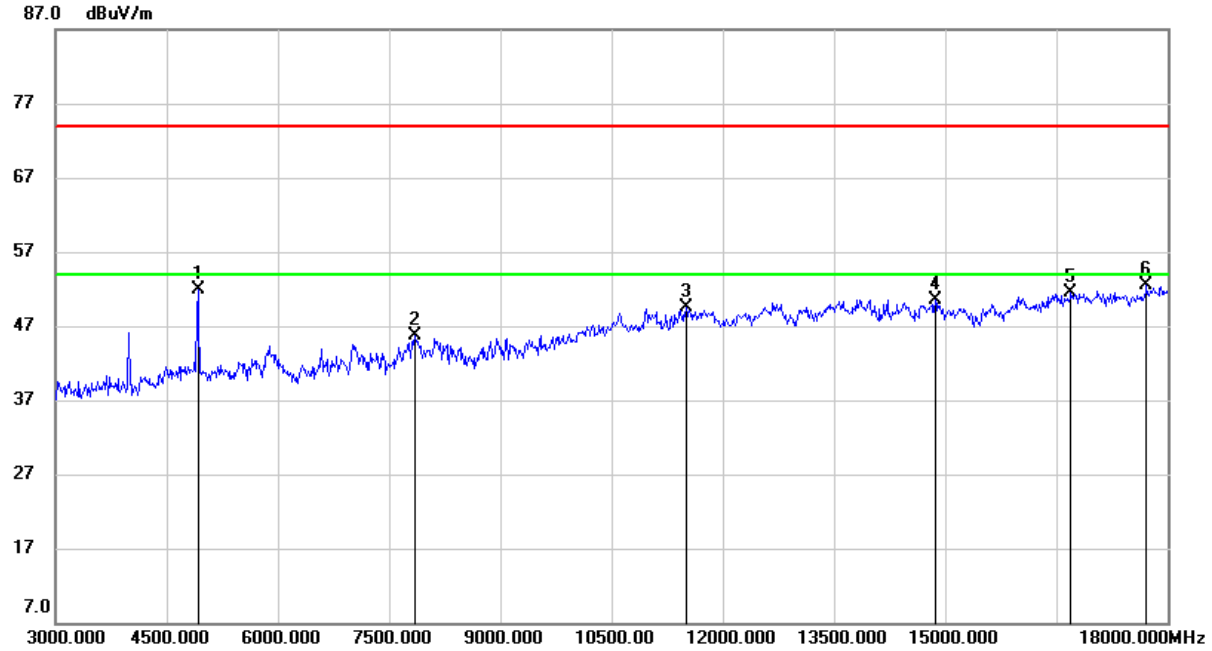
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4875.000 | 47.13 | 0.76 | 47.89 | 74.00 | -26.11 | peak |
| 2 | 7845.000 | 37.92 | 7.62 | 45.54 | 74.00 | -28.46 | peak |
| 3 | 11700.000 | 36.35 | 12.95 | 49.30 | 74.00 | -24.70 | peak |
| 4 | 13860.000 | 34.37 | 16.56 | 50.93 | 74.00 | -23.07 | peak |
| 5 | 16830.000 | 32.37 | 19.96 | 52.33 | 74.00 | -21.67 | peak |
| 6 | 17880.000 | 29.28 | 23.34 | 52.62 | 74.00 | -21.38 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

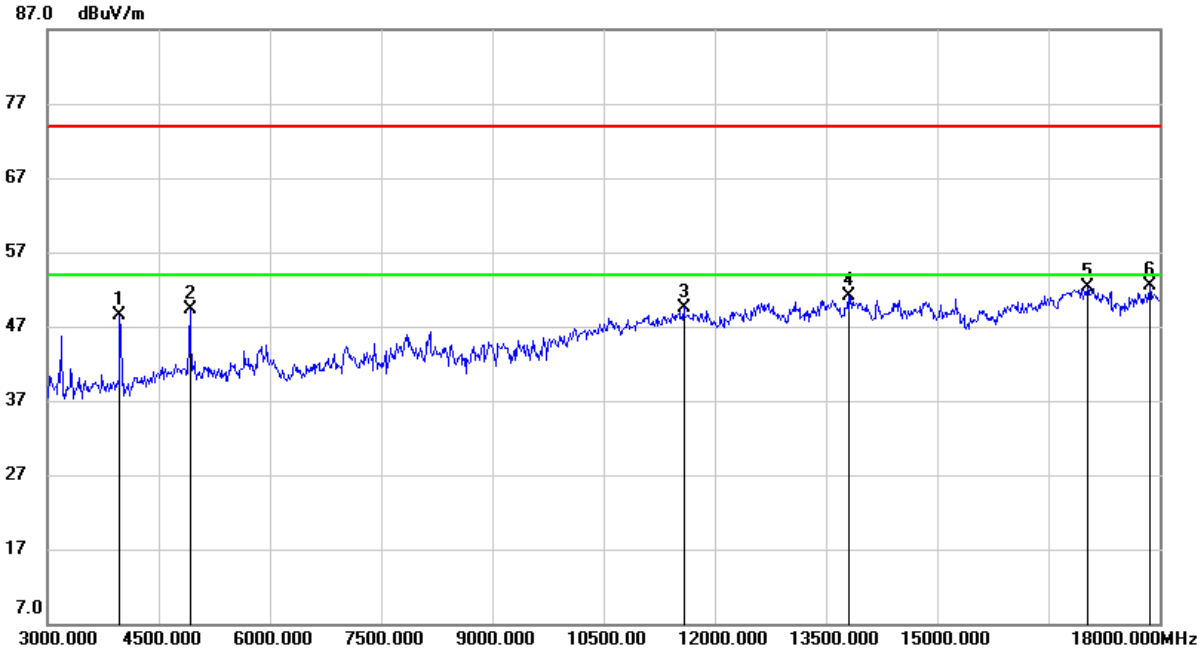
## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4920.000 | 50.88 | 0.96 | 51.84 | 74.00 | -22.16 | peak |
| 2 | 7845.000 | 38.12 | 7.62 | 45.74 | 74.00 | -28.26 | peak |
| 3 | 11505.000 | 36.00 | 13.42 | 49.42 | 74.00 | -24.58 | peak |
| 4 | 14865.000 | 34.47 | 15.98 | 50.45 | 74.00 | -23.55 | peak |
| 5 | 16695.000 | 31.61 | 19.92 | 51.53 | 74.00 | -22.47 | peak |
| 6 | 17715.000 | 29.98 | 22.56 | 52.54 | 74.00 | -21.46 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

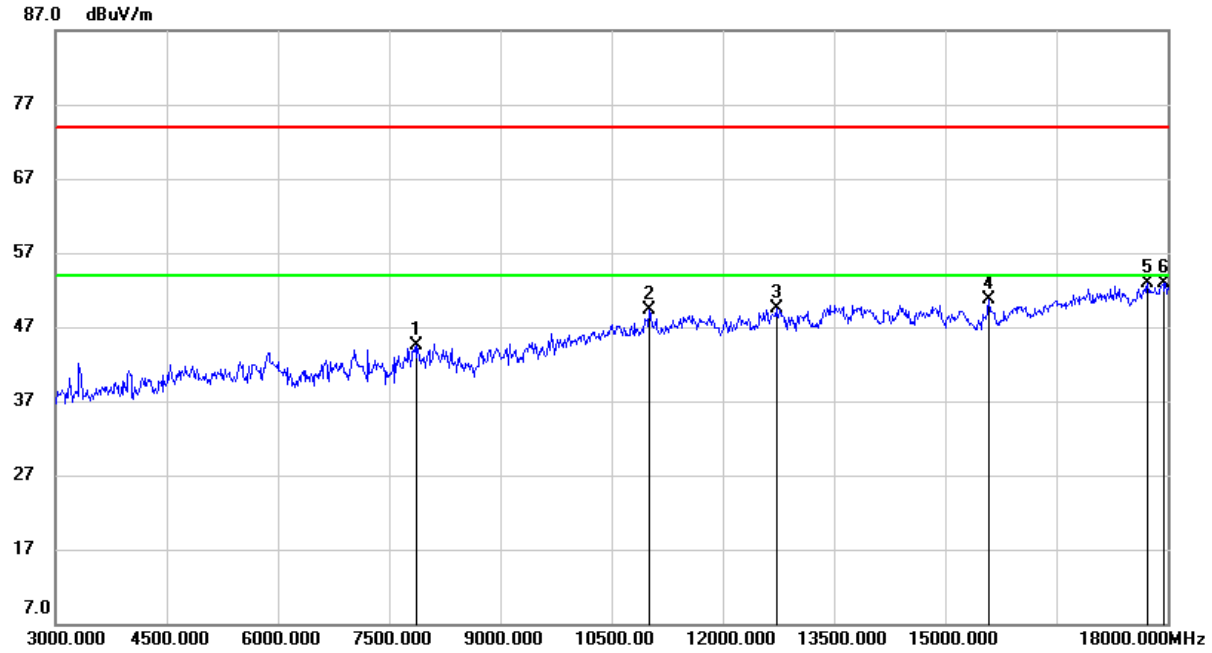



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3975.000 | 51.34 | -2.90 | 48.44 | 74.00 | -25.56 | peak |
| 2 | 4920.000 | 48.31 | 0.96 | 49.27 | 74.00 | -24.73 | peak |
| 3 | 11580.000 | 36.37 | 13.23 | 49.60 | 74.00 | -24.40 | peak |
| 4 | 13800.000 | 34.00 | 17.10 | 51.10 | 74.00 | -22.90 | peak |
| 5 | 17025.000 | 31.90 | 20.46 | 52.36 | 74.00 | -21.64 | peak |
| 6 | 17865.000 | 29.19 | 23.33 | 52.52 | 74.00 | -21.48 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

### 8.3.4. 802.11n HT40 MODE

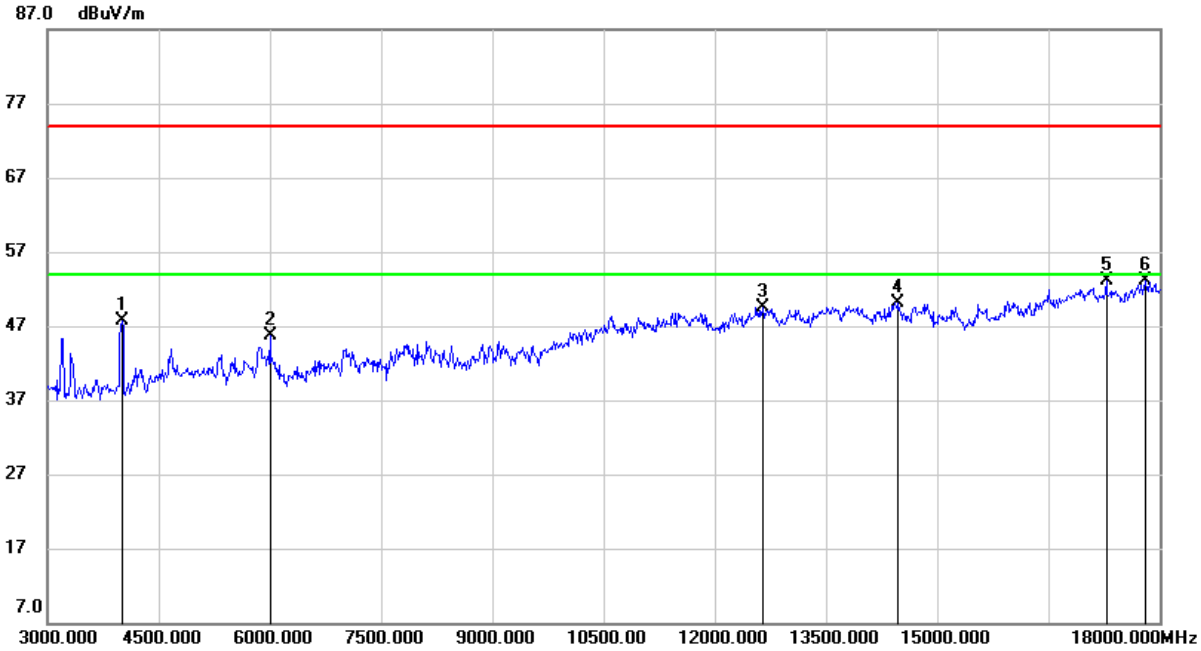
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 7875.000 | 37.14 | 7.40 | 44.54 | 74.00 | -29.46 | peak |
| 2 | 11010.000 | 36.64 | 12.63 | 49.27 | 74.00 | -24.73 | peak |
| 3 | 12720.000 | 34.99 | 14.57 | 49.56 | 74.00 | -24.44 | peak |
| 4 | 15585.000 | 33.83 | 16.88 | 50.71 | 74.00 | -23.29 | peak |
| 5 | 17730.000 | 30.21 | 22.70 | 52.91 | 74.00 | -21.09 | peak |
| 6 | 17940.000 | 29.56 | 23.39 | 52.95 | 74.00 | -21.05 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

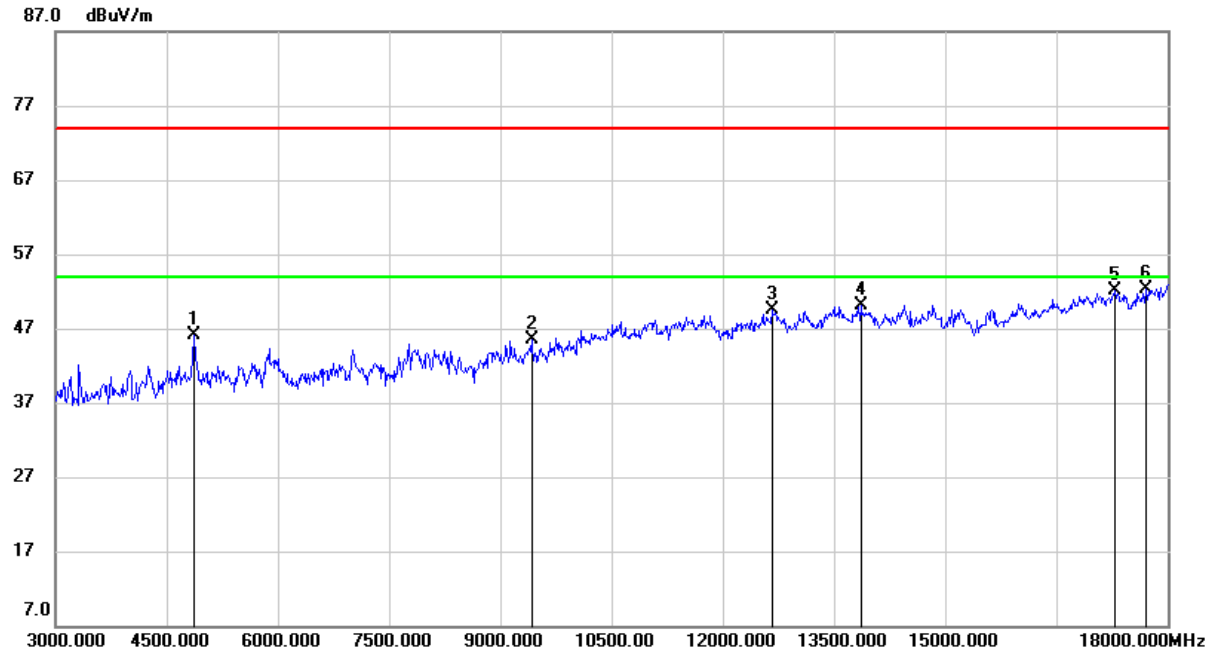
## HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4005.000 | 50.65 | -2.89 | 47.76 | 74.00 | -26.24 | peak |
| 2 | 6000.000 | 42.43 | 3.29 | 45.72 | 74.00 | -28.28 | peak |
| 3 | 12645.000 | 35.40 | 14.13 | 49.53 | 74.00 | -24.47 | peak |
| 4 | 14475.000 | 33.73 | 16.36 | 50.09 | 74.00 | -23.91 | peak |
| 5 | 17280.000 | 31.48 | 21.59 | 53.07 | 74.00 | -20.93 | peak |
| 6 | 17805.000 | 29.81 | 23.31 | 53.12 | 74.00 | -20.88 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

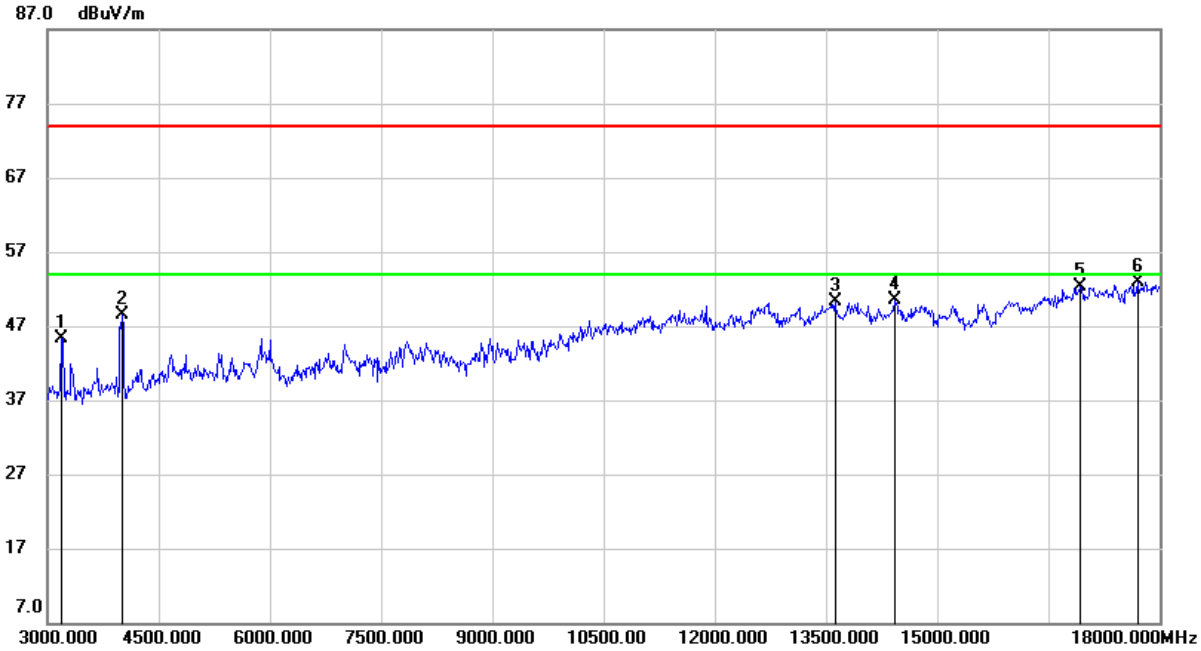
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4875.000 | 45.36 | 0.76 | 46.12 | 74.00 | -27.88 | peak |
| 2 | 9420.000 | 35.98 | 9.58 | 45.56 | 74.00 | -28.44 | peak |
| 3 | 12660.000 | 35.29 | 14.18 | 49.47 | 74.00 | -24.53 | peak |
| 4 | 13860.000 | 33.62 | 16.56 | 50.18 | 74.00 | -23.82 | peak |
| 5 | 17295.000 | 30.47 | 21.71 | 52.18 | 74.00 | -21.82 | peak |
| 6 | 17715.000 | 29.83 | 22.56 | 52.39 | 74.00 | -21.61 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

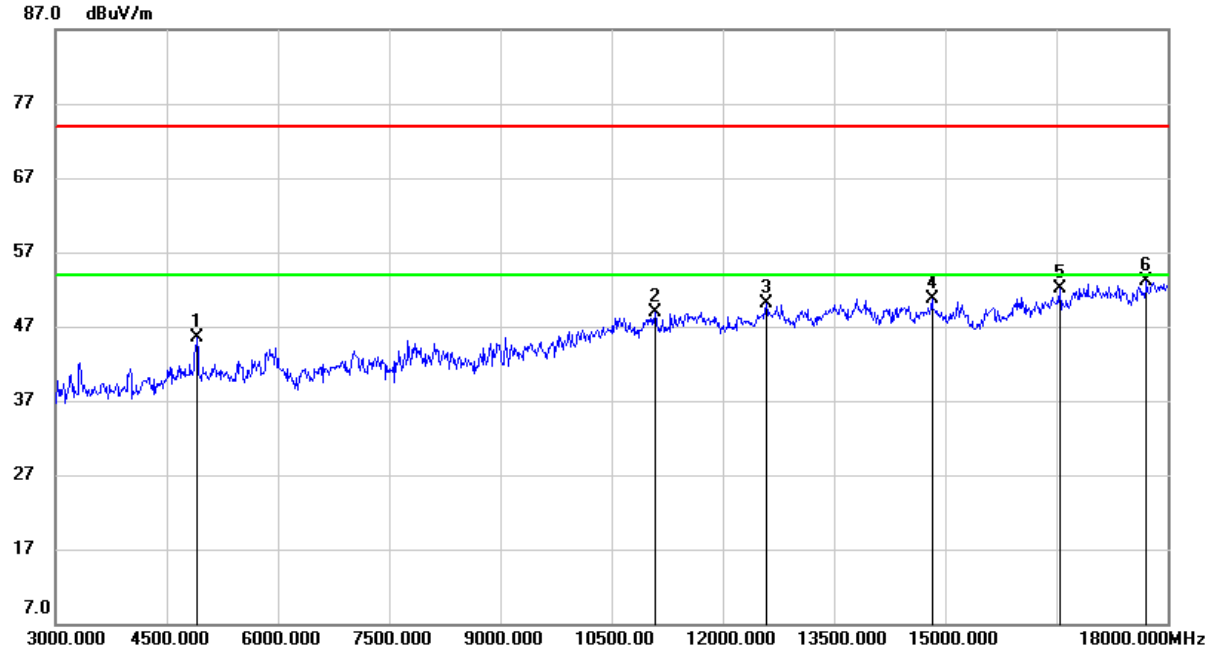
## HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 3180.000 | 49.62 | -4.33 | 45.29 | 74.00 | -28.71 | peak |
| 2 | 4005.000 | 51.33 | -2.89 | 48.44 | 74.00 | -25.56 | peak |
| 3 | 13620.000 | 34.33 | 15.99 | 50.32 | 74.00 | -23.68 | peak |
| 4 | 14430.000 | 34.14 | 16.35 | 50.49 | 74.00 | -23.51 | peak |
| 5 | 16935.000 | 32.09 | 20.12 | 52.21 | 74.00 | -21.79 | peak |
| 6 | 17700.000 | 30.54 | 22.43 | 52.97 | 74.00 | -21.03 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

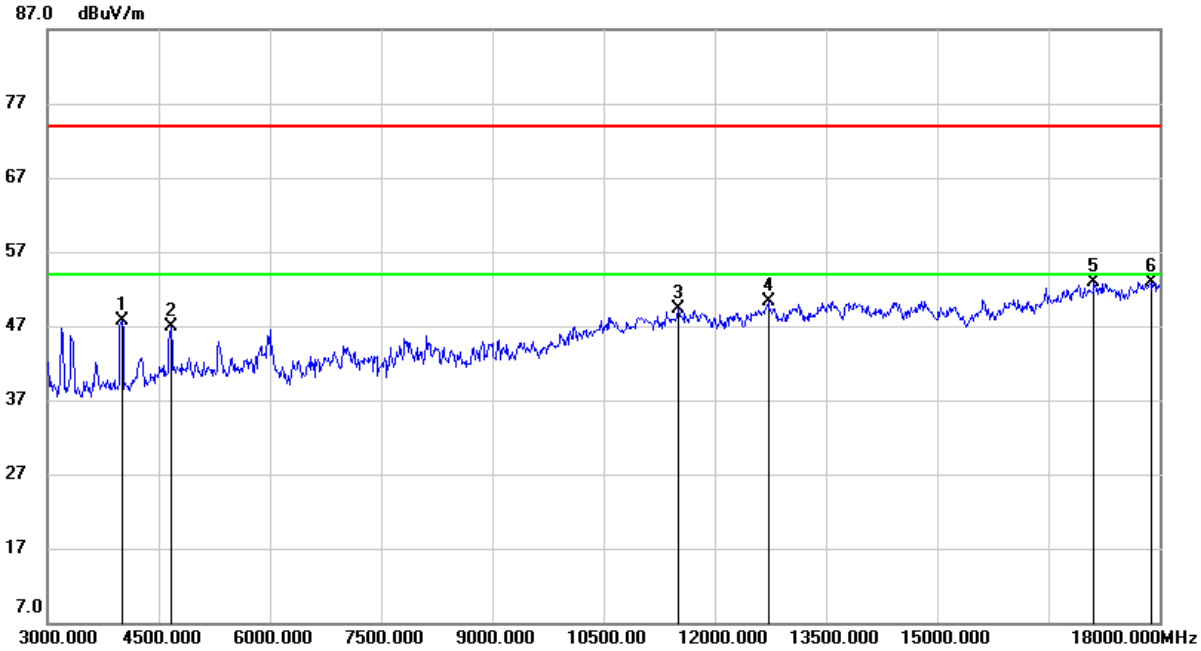
## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4905.000 | 44.62 | 0.88 | 45.50 | 74.00 | -28.50 | peak |
| 2 | 11085.000 | 36.42 | 12.57 | 48.99 | 74.00 | -25.01 | peak |
| 3 | 12585.000 | 36.03 | 14.08 | 50.11 | 74.00 | -23.89 | peak |
| 4 | 14820.000 | 34.73 | 15.94 | 50.67 | 74.00 | -23.33 | peak |
| 5 | 16545.000 | 32.77 | 19.31 | 52.08 | 74.00 | -21.92 | peak |
| 6 | 17715.000 | 30.55 | 22.56 | 53.11 | 74.00 | -20.89 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



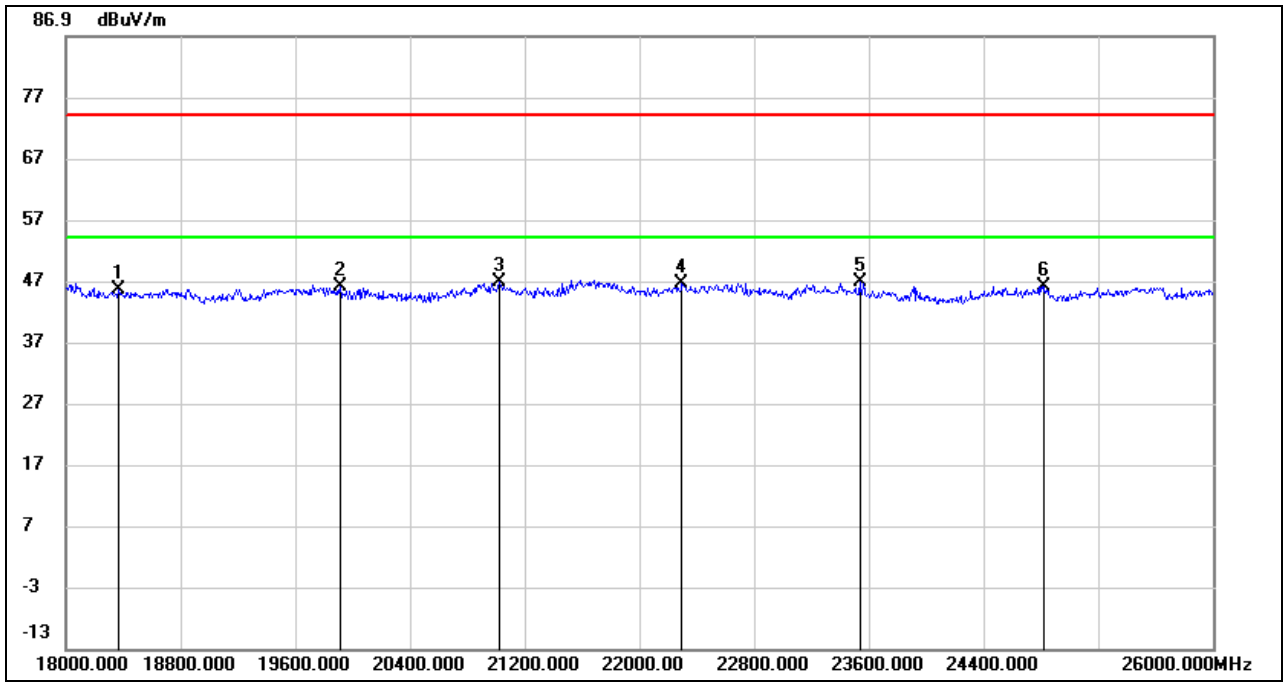

| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 4005.000 | 50.67 | -2.89 | 47.78 | 74.00 | -26.22 | peak |
| 2 | 4665.000 | 46.92 | -0.03 | 46.89 | 74.00 | -27.11 | peak |
| 3 | 11505.000 | 35.91 | 13.42 | 49.33 | 74.00 | -24.67 | peak |
| 4 | 12720.000 | 35.78 | 14.57 | 50.35 | 74.00 | -23.65 | peak |
| 5 | 17115.000 | 32.20 | 20.68 | 52.88 | 74.00 | -21.12 | peak |
| 6 | 17880.000 | 29.66 | 23.34 | 53.00 | 74.00 | -21.00 | peak |

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## 8.5. SPURIOUS EMISSIONS (18GHz ~ 26GHz)

### 8.5.1. 802.11n HT20 MODE

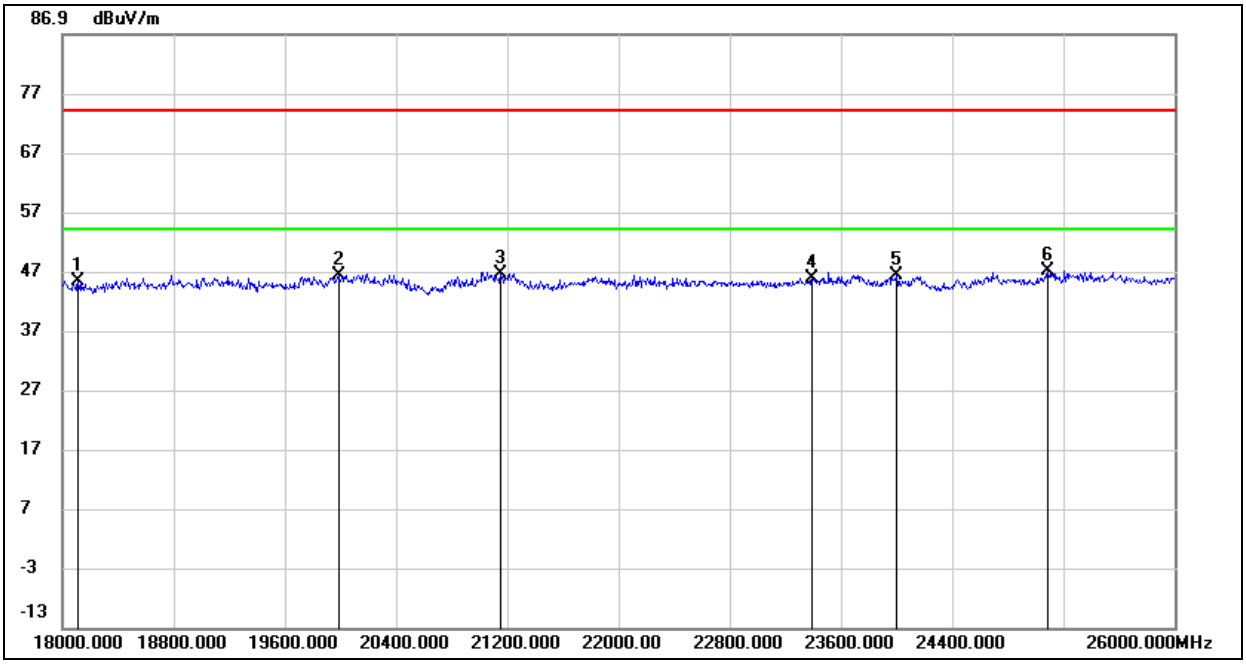
**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 18368.000 | 50.01 | -4.38 | 45.63 | 74.00 | -28.37 | peak |
| 2 | 19912.000 | 50.41 | -4.36 | 46.05 | 74.00 | -27.95 | peak |
| 3 | 21024.000 | 52.12 | -5.30 | 46.82 | 74.00 | -27.18 | peak |
| 4 | 22296.000 | 52.45 | -6.01 | 46.44 | 74.00 | -27.56 | peak |
| 5 | 23536.000 | 51.46 | -4.74 | 46.72 | 74.00 | -27.28 | peak |
| 6 | 24824.000 | 47.77 | -1.69 | 46.08 | 74.00 | -27.92 | peak |

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 18112.000 | 49.35 | -4.10 | 45.25 | 74.00 | -28.75 | peak |
| 2 | 19992.000 | 50.60 | -4.37 | 46.23 | 74.00 | -27.77 | peak |
| 3 | 21152.000 | 52.06 | -5.42 | 46.64 | 74.00 | -27.36 | peak |
| 4 | 23392.000 | 50.78 | -4.98 | 45.80 | 74.00 | -28.20 | peak |
| 5 | 24000.000 | 50.41 | -4.01 | 46.40 | 74.00 | -27.60 | peak |
| 6 | 25088.000 | 48.13 | -1.12 | 47.01 | 74.00 | -26.99 | peak |

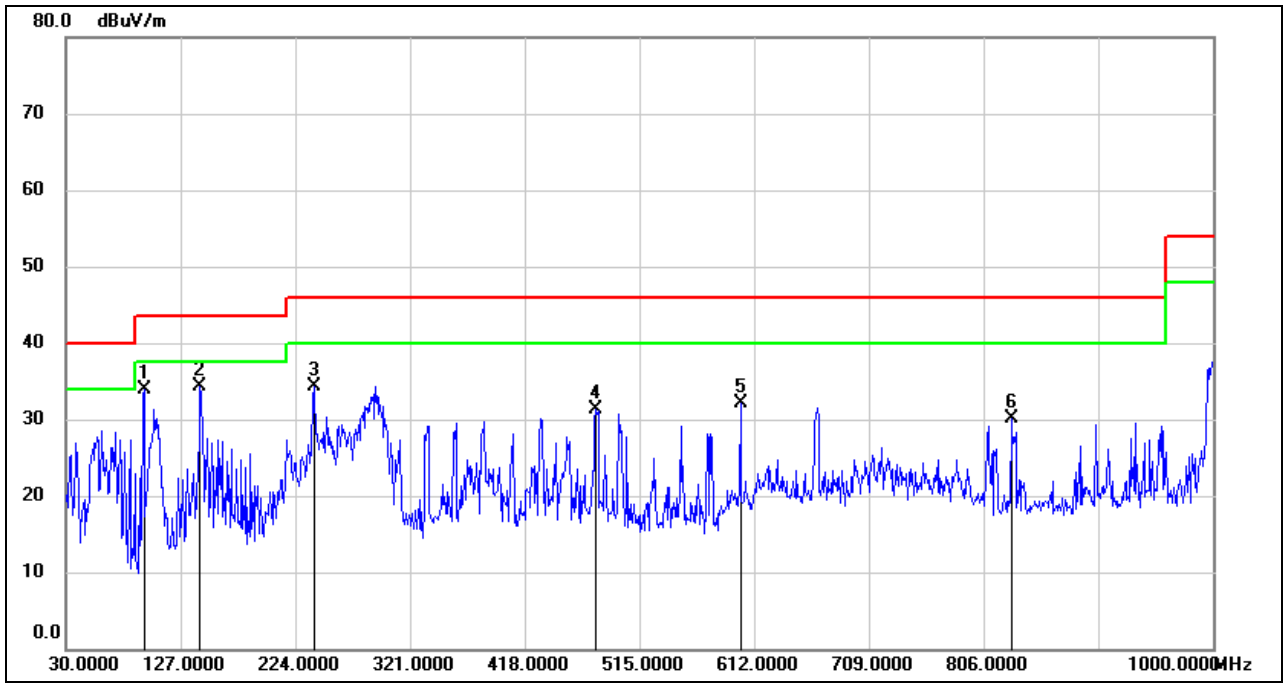
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

Note: All the modes had been tested, but only the worst data was recorded in the report.

## 8.6. SPURIOUS EMISSIONS (30MHz ~ 1 GHz)

### 8.6.1. 802.11n HT20 MODE

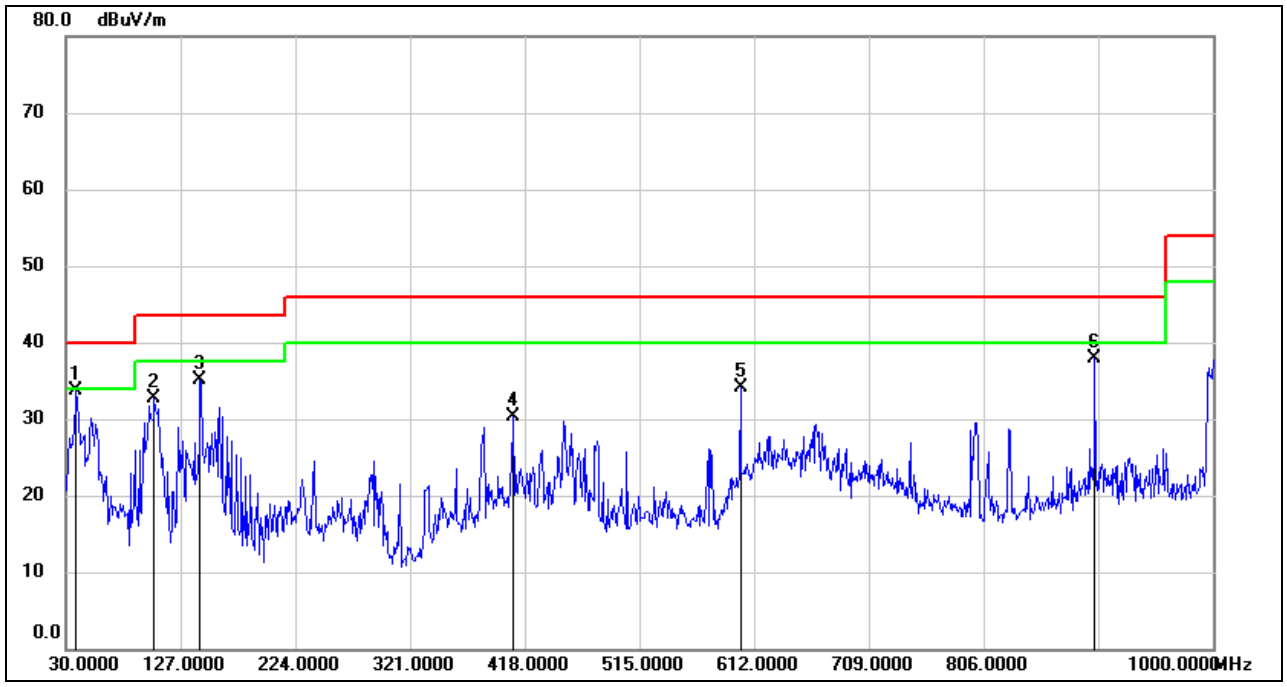
**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)**




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 95.9600 | 55.55 | -21.56 | 33.99 | 43.50 | -9.51 | QP |
| 2 | 143.4900 | 53.13 | -18.87 | 34.26 | 43.50 | -9.24 | QP |
| 3 | 239.5200 | 53.61 | -19.38 | 34.23 | 46.00 | -11.77 | QP |
| 4 | 478.1400 | 43.36 | -11.99 | 31.37 | 46.00 | -14.63 | QP |
| 5 | 600.3600 | 42.09 | -9.91 | 32.18 | 46.00 | -13.82 | QP |
| 6 | 829.2800 | 37.33 | -7.18 | 30.15 | 46.00 | -15.85 | QP |

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 38.7300 | 53.69 | -19.92 | 33.77 | 40.00 | -6.23 | QP |
| 2 | 104.6900 | 53.68 | -20.95 | 32.73 | 43.50 | -10.77 | QP |
| 3 | 143.4900 | 53.94 | -18.87 | 35.07 | 43.50 | -8.43 | QP |
| 4 | 408.3000 | 43.51 | -13.27 | 30.24 | 46.00 | -15.76 | QP |
| 5 | 600.3600 | 43.99 | -9.91 | 34.08 | 46.00 | -11.92 | QP |
| 6 | 900.0900 | 43.50 | -5.65 | 37.85 | 46.00 | -8.15 | QP |

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

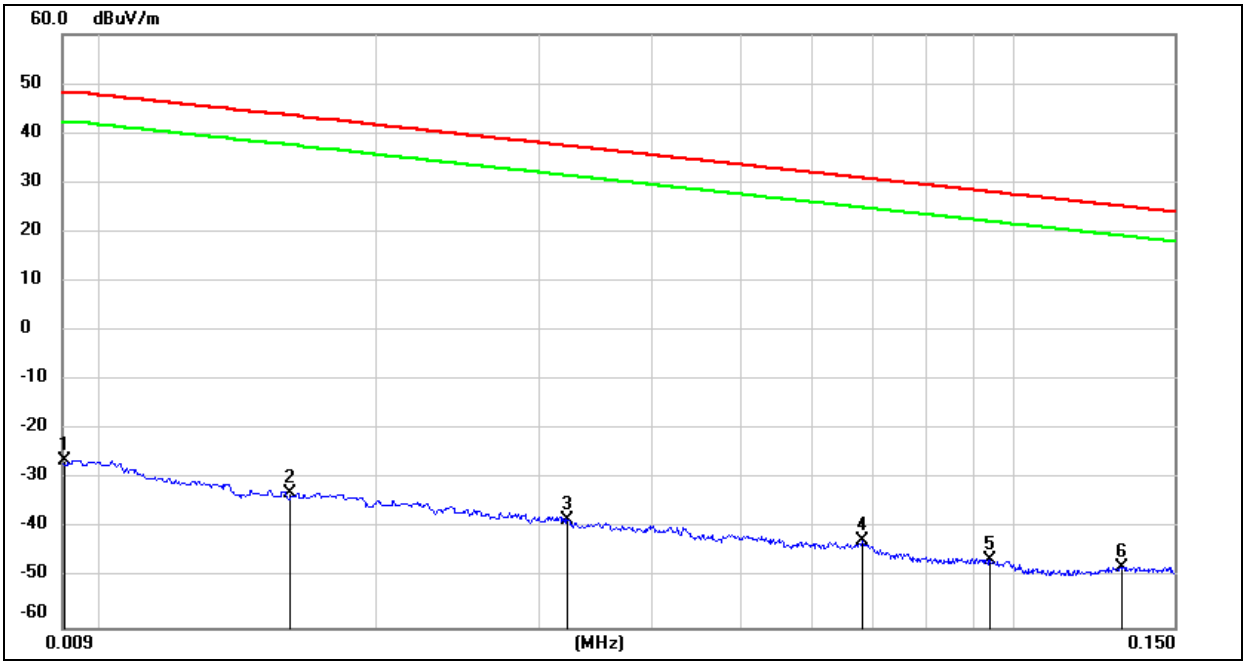
Note: All the modes had been tested, but only the worst data was recorded in the report.

## 8.7. SPURIOUS EMISSIONS BELOW 30MHz

### 8.7.1. 802.11n HT20 MODE

**SPURIOUS EMISSIONS (LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)**

**9kHz~ 150kHz**



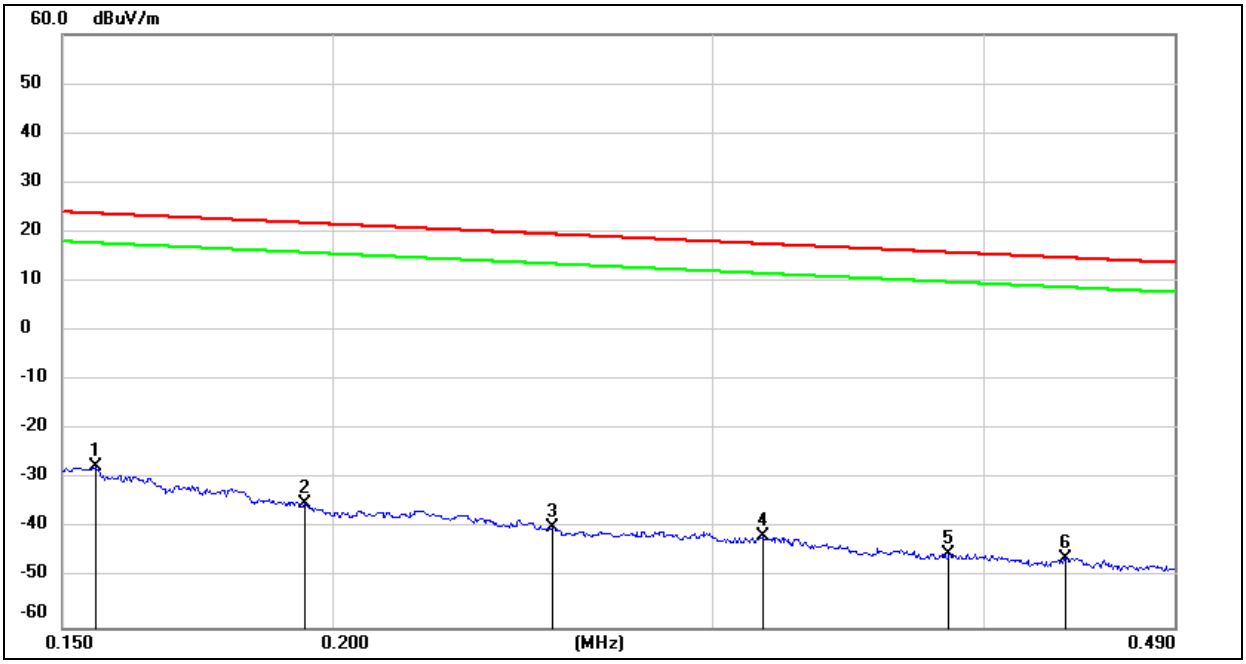

| No. | Frequency | Reading | Correct | FCC Result | FCC Limit | ISED Result | ISED Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dBuA/m) | (dBuA/m) | (dB) | |
| 1 | 0.0091 | 75.08 | -101.33 | -26.25 | 48.28 | -77.75 | -3.22 | -74.53 | peak |
| 2 | 0.0160 | 68.47 | -101.37 | -32.90 | 43.52 | -84.40 | -7.98 | -76.42 | peak |
| 3 | 0.0323 | 63.19 | -101.40 | -38.21 | 37.42 | -89.71 | -14.08 | -75.63 | peak |
| 4 | 0.0680 | 59.04 | -101.56 | -42.52 | 30.95 | -94.02 | -20.55 | -73.47 | peak |
| 5 | 0.0942 | 55.33 | -101.75 | -46.42 | 28.12 | -97.92 | -23.38 | -74.54 | peak |
| 6 | 0.1312 | 53.89 | -101.70 | -47.81 | 25.25 | -99.31 | -26.25 | -73.06 | peak |

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

**150kHz ~ 490kHz**



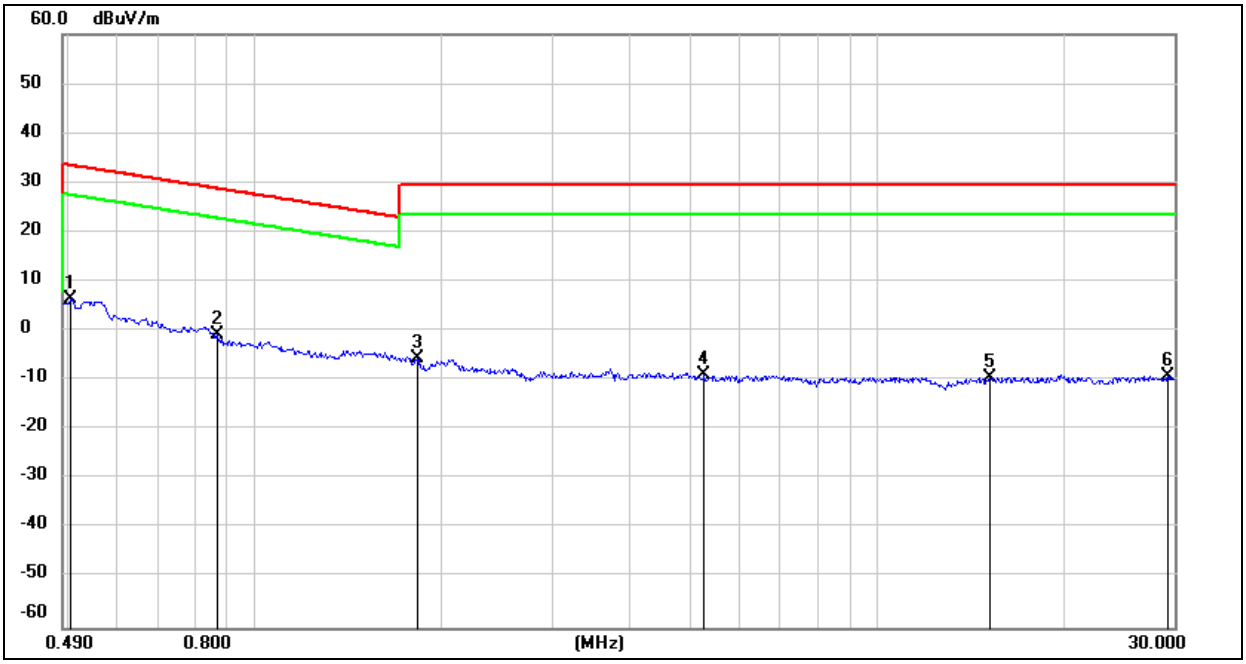

| No. | Frequency | Reading | Correct | FCC Result | FCC Limit | ISED Result | ISED Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dBuA/m) | (dBuA/m) | (dB) | |
| 1 | 0.1554 | 74.27 | -101.65 | -27.38 | 23.77 | -78.88 | -27.73 | -51.15 | peak |
| 2 | 0.1942 | 66.81 | -101.70 | -34.89 | 21.84 | -86.39 | -29.66 | -56.73 | peak |
| 3 | 0.2530 | 62.14 | -101.80 | -39.66 | 19.54 | -91.16 | -31.96 | -59.20 | peak |
| 4 | 0.3163 | 60.20 | -101.87 | -41.67 | 17.60 | -93.17 | -33.90 | -59.27 | peak |
| 5 | 0.3850 | 56.81 | -101.94 | -45.13 | 15.89 | -96.63 | -35.61 | -61.02 | peak |
| 6 | 0.4364 | 55.86 | -101.99 | -46.13 | 14.80 | -97.63 | -36.70 | -60.93 | peak |

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

**490kHz ~ 30MHz**




| No. | Frequency | Reading | Correct | FCC Result | FCC Limit | ISED Result | ISED Limit | Margin | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dB/m) | (dBuV/m) | (dBuV/m) | (dBuA/m) | (dBuA/m) | (dB) | |
| 1 | 0.5039 | 68.44 | -62.07 | 6.37 | 33.56 | -45.13 | -17.94 | -27.19 | peak |
| 2 | 0.8679 | 61.35 | -62.18 | -0.83 | 28.83 | -52.33 | -22.67 | -29.66 | peak |
| 3 | 1.8205 | 56.45 | -61.90 | -5.45 | 29.54 | -56.95 | -21.96 | -34.99 | peak |
| 4 | 5.2705 | 52.54 | -61.45 | -8.91 | 29.54 | -60.41 | -21.96 | -38.45 | peak |
| 5 | 15.1859 | 51.55 | -61.01 | -9.46 | 29.54 | -60.96 | -21.96 | -39.00 | peak |
| 6 | 29.3213 | 50.80 | -60.02 | -9.22 | 29.54 | -60.72 | -21.96 | -38.76 | peak |

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All the modes had been tested, but only the worst data was recorded in the report.

# 9. AC POWER LINE CONDUCTED EMISSIONS

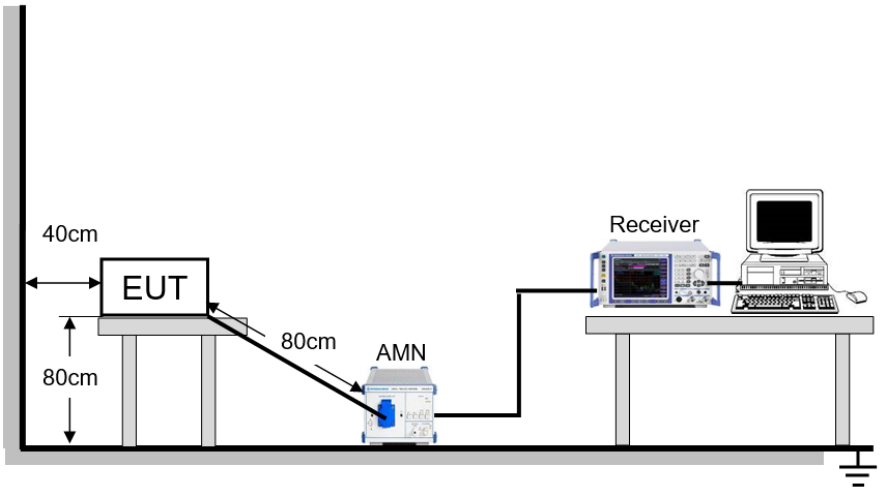
**LIMITS**

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

| FREQUENCY (MHz) | Quasi-peak | Average |
|---|---|---|
| 0.15 -0.5 | 66 - 56 * | 56 - 46 * |
| 0.50 -5.0 | 56.00 | 46.00 |
| 5.0 -30.0 | 60.00 | 50.00 |

**TEST SETUP AND PROCEDURE**

Refer to ANSI C63.10-2013 clause 6.2.




The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

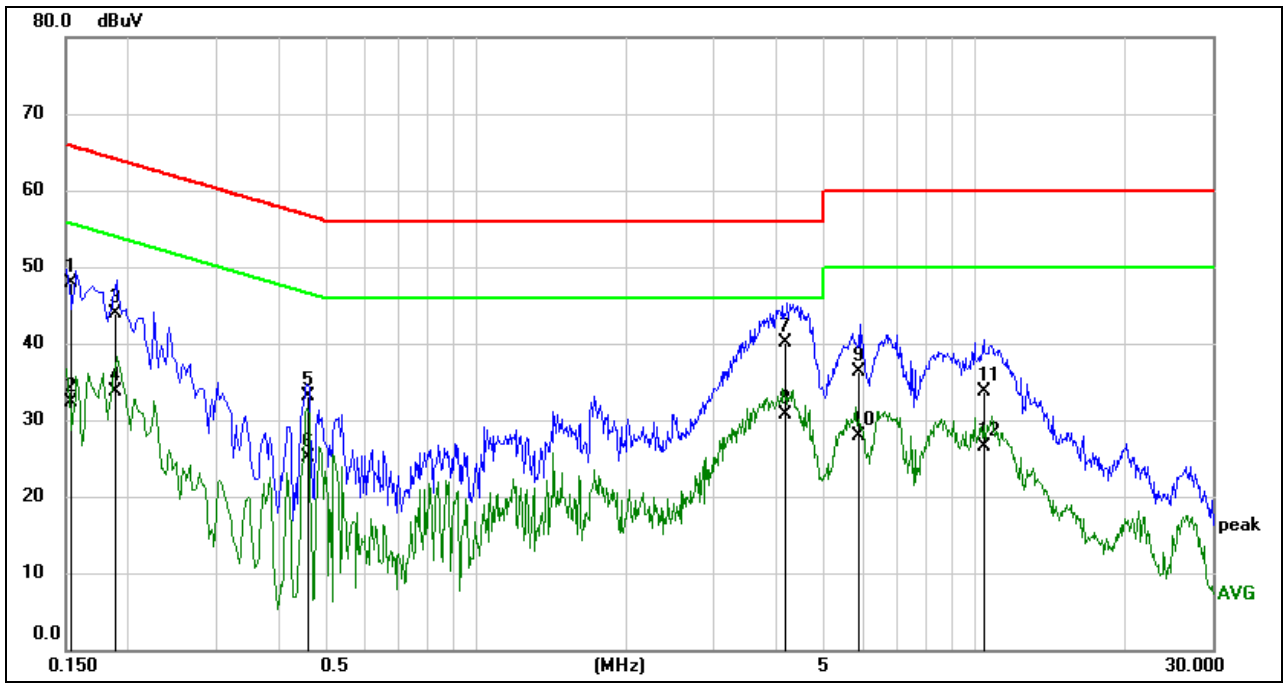
**TEST ENVIRONMENT**

| | | | |
|---|---|---|---|
| Temperature | 27.6°C | Relative Humidity | 71.4% |
| Atmosphere Pressure | 101kPa | Test Voltage | DC 3.3V |

**RESULTS**

## 9.1. 802.11n HT20 MODE

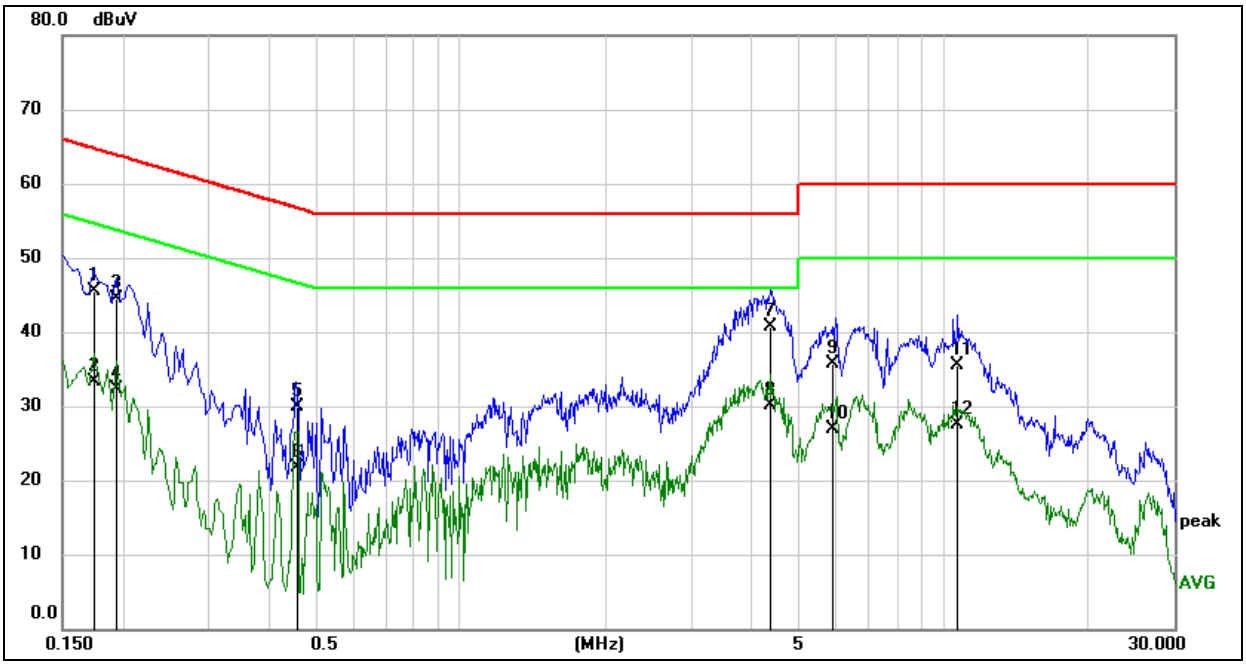
**LINE N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)**




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.1536 | 38.38 | 9.60 | 47.98 | 65.80 | -17.82 | QP |
| 2 | 0.1536 | 22.75 | 9.60 | 32.35 | 55.80 | -23.45 | AVG |
| 3 | 0.1880 | 34.39 | 9.60 | 43.99 | 64.12 | -20.13 | QP |
| 4 | 0.1880 | 24.17 | 9.60 | 33.77 | 54.12 | -20.35 | AVG |
| 5 | 0.4609 | 23.53 | 9.60 | 33.13 | 56.68 | -23.55 | QP |
| 6 | 0.4609 | 15.59 | 9.60 | 25.19 | 46.68 | -21.49 | AVG |
| 7 | 4.1574 | 30.43 | 9.66 | 40.09 | 56.00 | -15.91 | QP |
| 8 | 4.1574 | 21.10 | 9.66 | 30.76 | 46.00 | -15.24 | AVG |
| 9 | 5.8163 | 26.65 | 9.70 | 36.35 | 60.00 | -23.65 | QP |
| 10 | 5.8163 | 18.23 | 9.70 | 27.93 | 50.00 | -22.07 | AVG |
| 11 | 10.4345 | 24.02 | 9.77 | 33.79 | 60.00 | -26.21 | QP |
| 12 | 10.4345 | 16.78 | 9.77 | 26.55 | 50.00 | -23.45 | AVG |

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

## LINE L RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.1754 | 35.91 | 9.61 | 45.52 | 64.70 | -19.18 | QP |
| 2 | 0.1754 | 23.62 | 9.61 | 33.23 | 54.70 | -21.47 | AVG |
| 3 | 0.1932 | 34.96 | 9.60 | 44.56 | 63.90 | -19.34 | QP |
| 4 | 0.1932 | 22.79 | 9.60 | 32.39 | 53.90 | -21.51 | AVG |
| 5 | 0.4602 | 20.24 | 9.60 | 29.84 | 56.69 | -26.85 | QP |
| 6 | 0.4602 | 12.04 | 9.60 | 21.64 | 46.69 | -25.05 | AVG |
| 7 | 4.3758 | 31.05 | 9.66 | 40.71 | 56.00 | -15.29 | QP |
| 8 | 4.3758 | 20.35 | 9.66 | 30.01 | 46.00 | -15.99 | AVG |
| 9 | 5.9287 | 26.10 | 9.70 | 35.80 | 60.00 | -24.20 | QP |
| 10 | 5.9287 | 17.12 | 9.70 | 26.82 | 50.00 | -23.18 | AVG |
| 11 | 10.7319 | 25.81 | 9.75 | 35.56 | 60.00 | -24.44 | QP |
| 12 | 10.7319 | 17.67 | 9.75 | 27.42 | 50.00 | -22.58 | AVG |

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Note: All the modes had been tested, but only the worst data was recorded in the report.

# 10. ANTENNA REQUIREMENTS

**APPLICABLE REQUIREMENTS**

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**RESULTS**

Complies

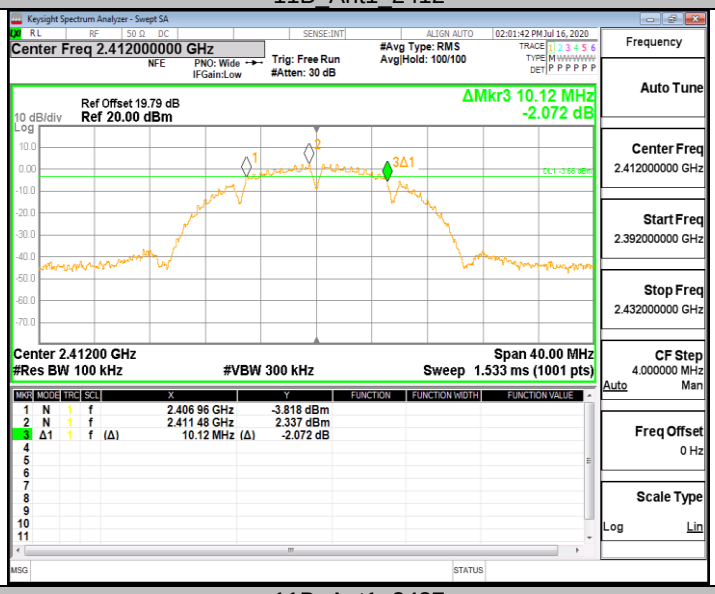
# 11. Appendix A: DTS Bandwidth

### 11.1.1. Test Result

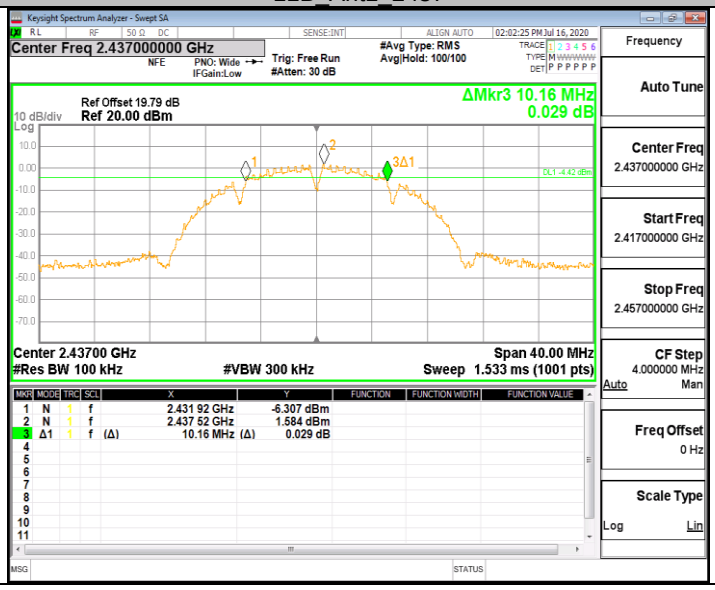
| Test Mode | Antenna | Channel | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 10.120 | 2406.960 | 2417.080 | 0.5 | PASS |
| | | 2437 | 10.160 | 2431.920 | 2442.080 | 0.5 | PASS |
| | | 2462 | 10.120 | 2456.960 | 2467.080 | 0.5 | PASS |
| 11G | Ant1 | 2412 | 16.520 | 2403.760 | 2420.280 | 0.5 | PASS |
| | | 2437 | 16.560 | 2428.720 | 2445.280 | 0.5 | PASS |
| | | 2462 | 16.640 | 2453.680 | 2470.320 | 0.5 | PASS |
| 11N20 | Ant1 | 2412 | 17.840 | 2403.080 | 2420.920 | 0.5 | PASS |
| | | 2437 | 17.720 | 2428.160 | 2445.880 | 0.5 | PASS |
| | | 2462 | 17.800 | 2453.080 | 2470.880 | 0.5 | PASS |
| 11N40 | Ant1 | 2422 | 36.480 | 2403.760 | 2440.240 | 0.5 | PASS |
| | | 2437 | 36.480 | 2418.760 | 2455.240 | 0.5 | PASS |
| | | 2452 | 36.480 | 2433.760 | 2470.240 | 0.5 | PASS |

### 11.1.2. Test Graphs

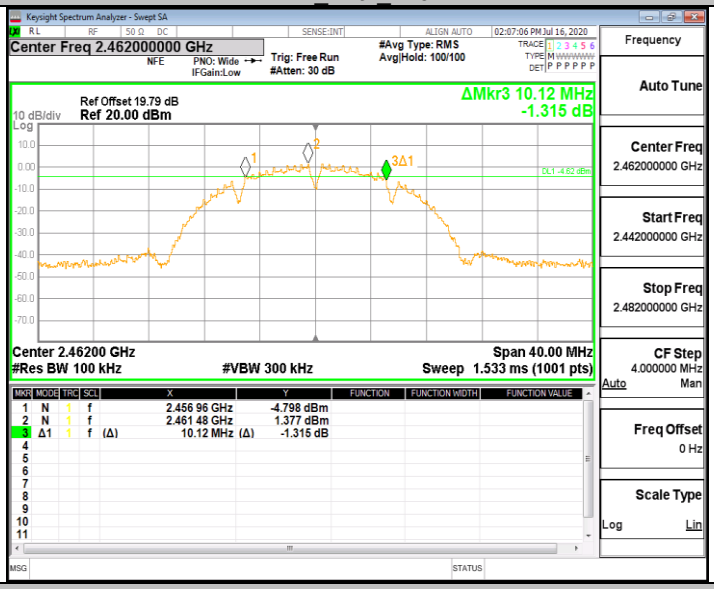
11B_Ant1_2412



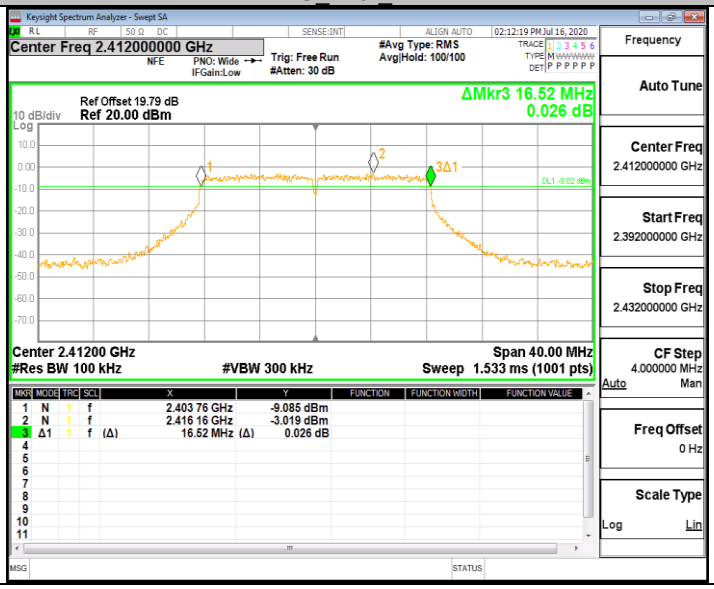

11B_Ant1_2437

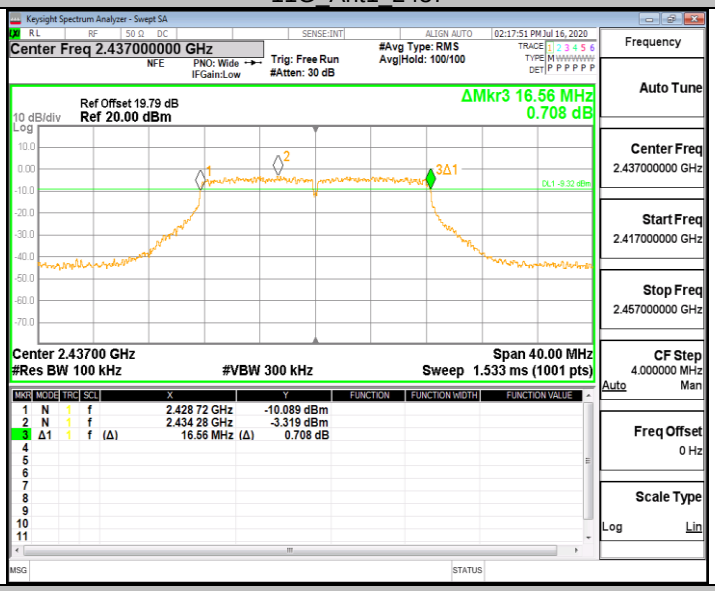
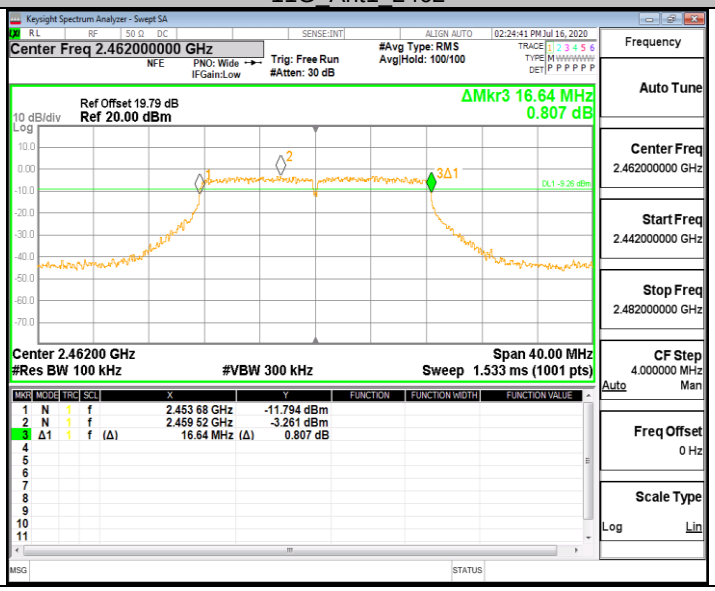


11B_Ant1_2462




11G_Ant1_2412



| 11G_Ant1_2437 |
| --- |
|  |
| 11G_Ant1_2462 |
|  |

| 11N20_Ant1_2412 |
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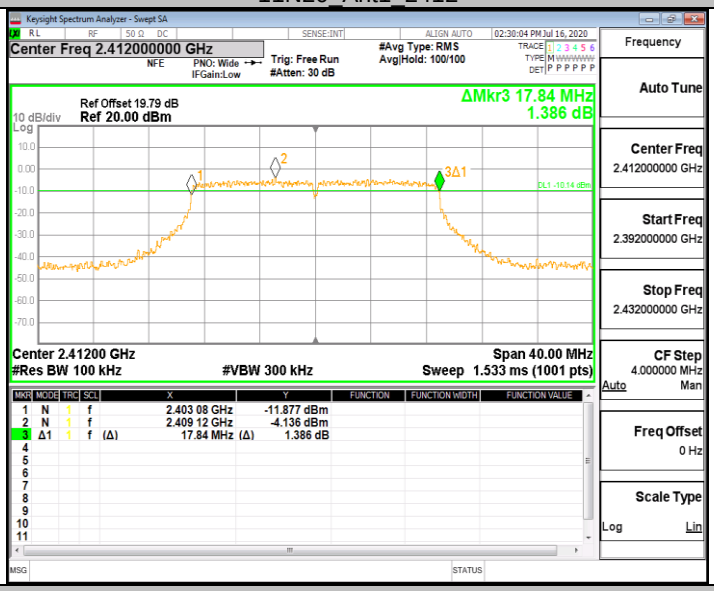
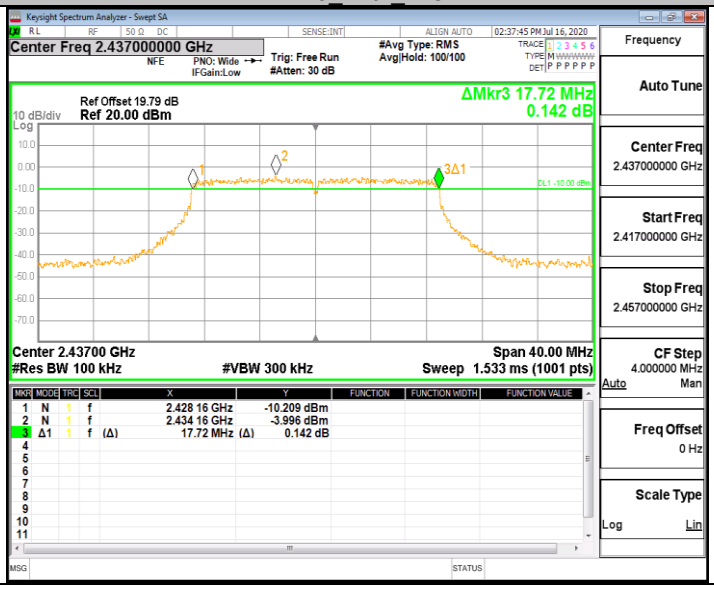
|  |
| 11N20_Ant1_2437 |
|  |

| 11N20_Ant1_2462 |
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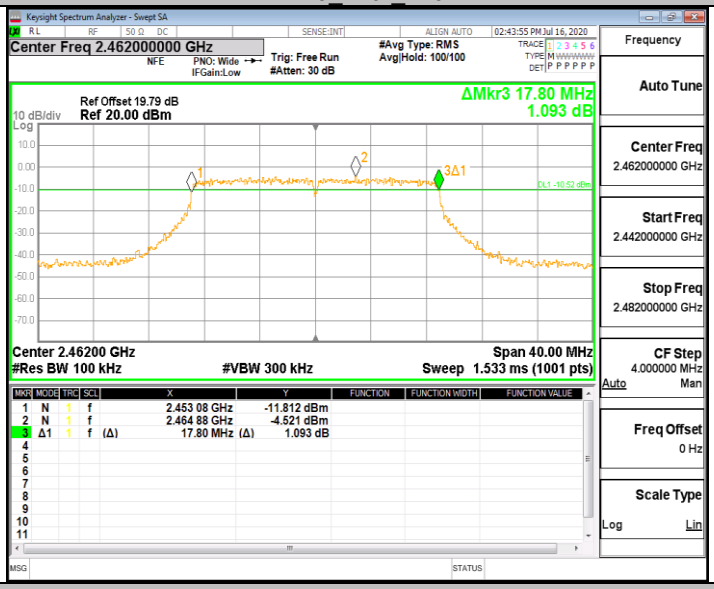
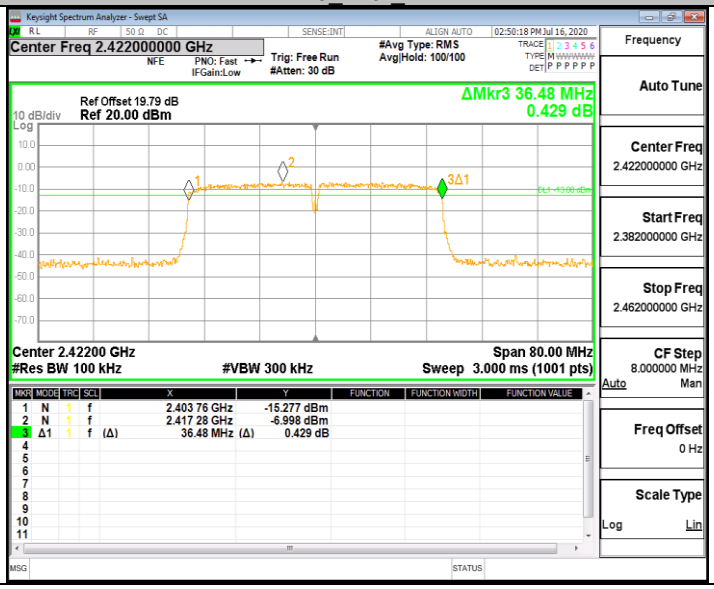
|  |
| 11N40_Ant1_2422 |
|  |

| 11N40_Ant1_2437 |
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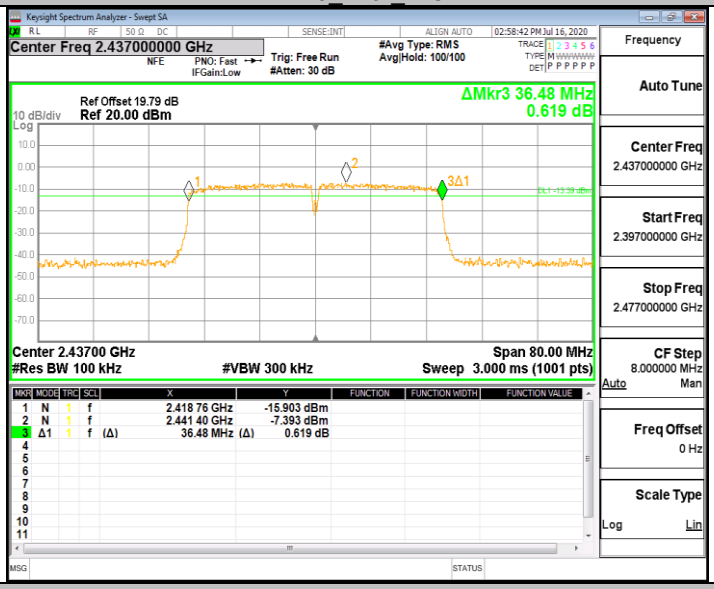
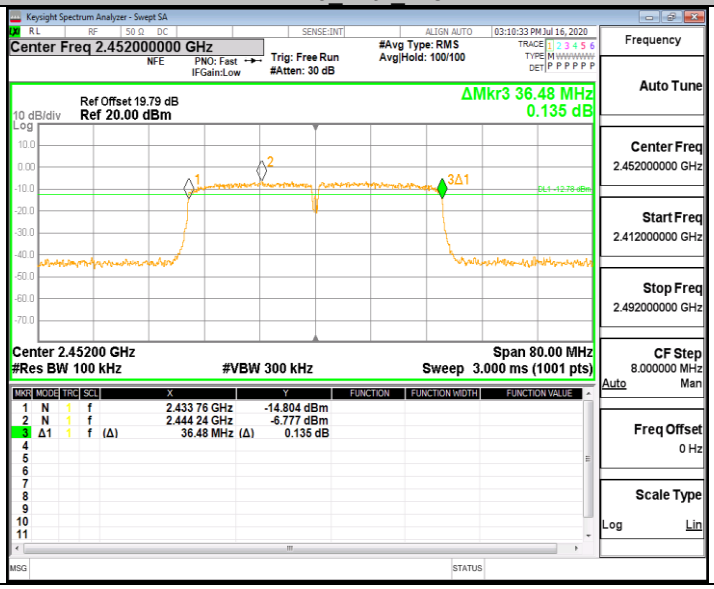
|  |
| 11N40_Ant1_2452 |
|  |

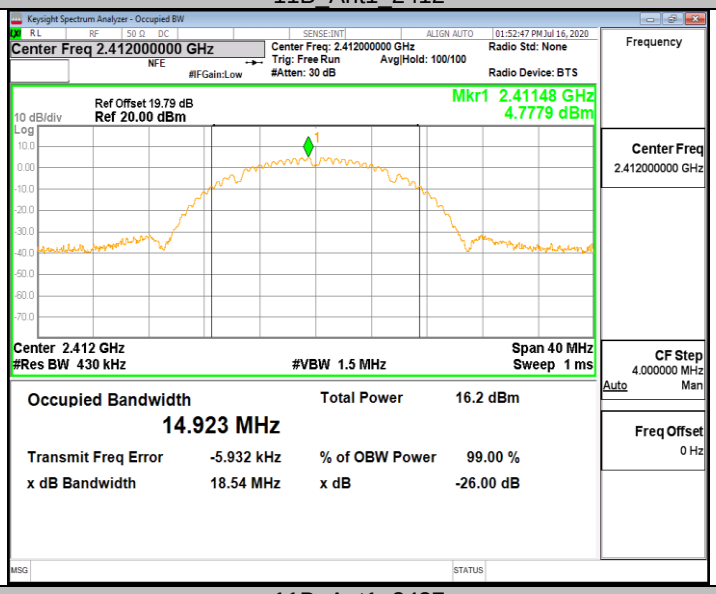
## 11.2. Appendix B: Occupied Channel Bandwidth

### 11.2.1. Test Result

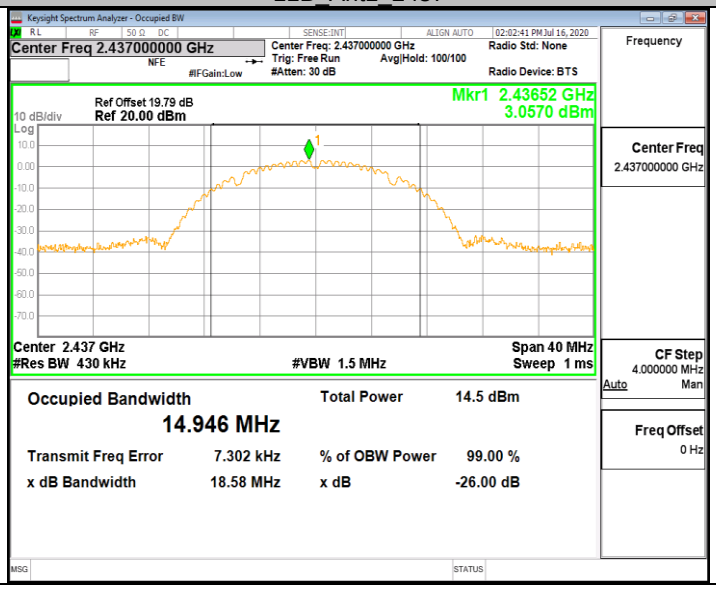
| Test Mode | Antenna | Channel | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| 11B | Ant1 | 2412 | 14.923 | 2404.533 | 2419.456 | --- | PASS |
| | | 2437 | 14.946 | 2429.534 | 2444.480 | --- | PASS |
| | | 2462 | 14.966 | 2454.513 | 2469.479 | --- | PASS |
| 11G | Ant1 | 2412 | 16.986 | 2403.431 | 2420.417 | --- | PASS |
| | | 2437 | 17.064 | 2428.372 | 2445.436 | --- | PASS |
| | | 2462 | 16.983 | 2453.435 | 2470.418 | --- | PASS |
| 11N20 | Ant1 | 2412 | 18.057 | 2402.985 | 2421.042 | --- | PASS |
| | | 2437 | 18.044 | 2427.977 | 2446.021 | --- | PASS |
| | | 2462 | 18.063 | 2452.960 | 2471.023 | --- | PASS |
| 11N40 | Ant1 | 2422 | 35.802 | 2404.111 | 2439.913 | --- | PASS |
| | | 2437 | 35.800 | 2419.114 | 2454.914 | --- | PASS |
| | | 2452 | 35.815 | 2434.088 | 2469.903 | --- | PASS |

### 11.2.2. Test Graphs

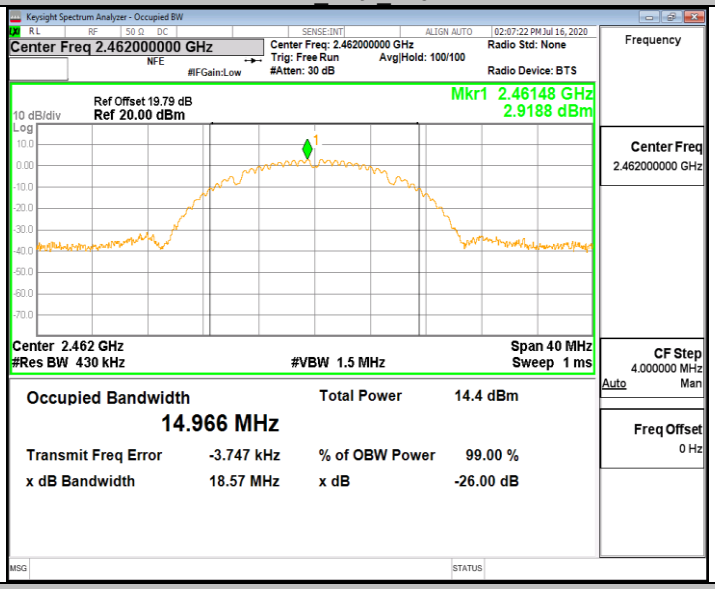
11B_Ant1_2412



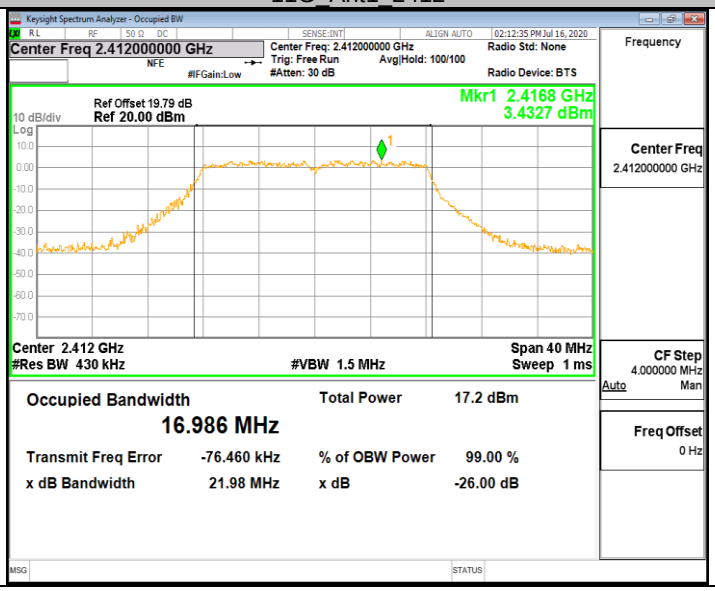

11B_Ant1_2437



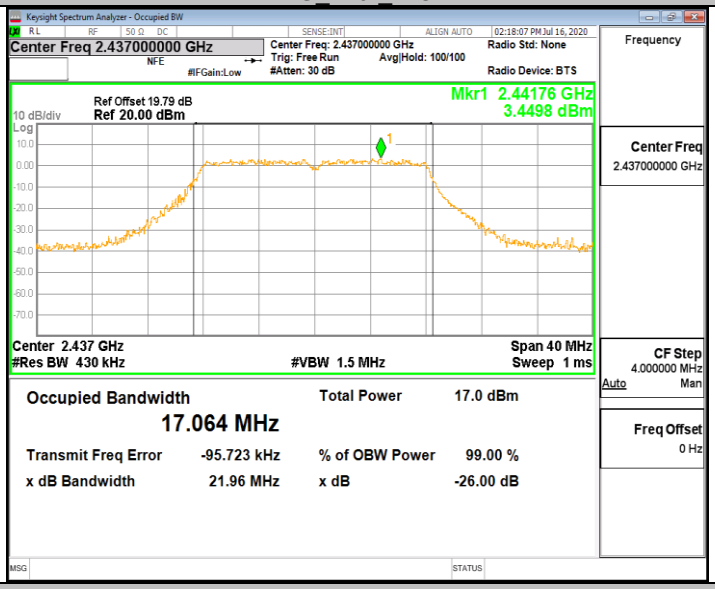
11B_Ant1_2462



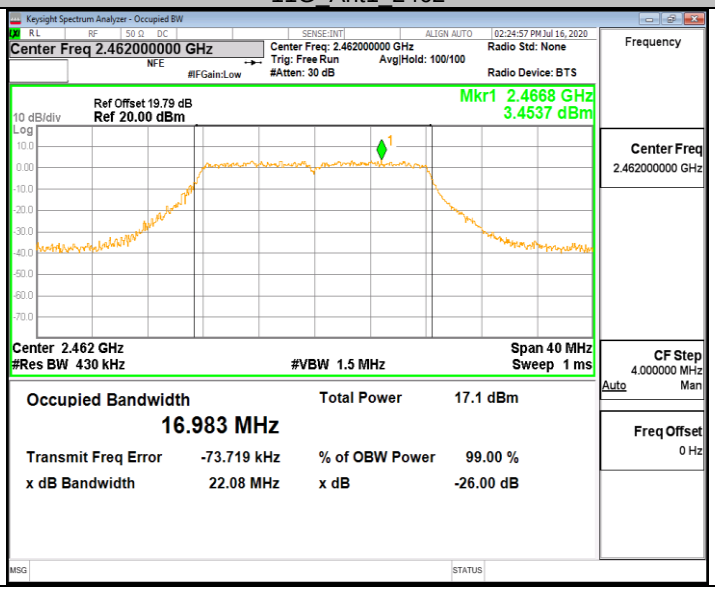

11G_Ant1_2412



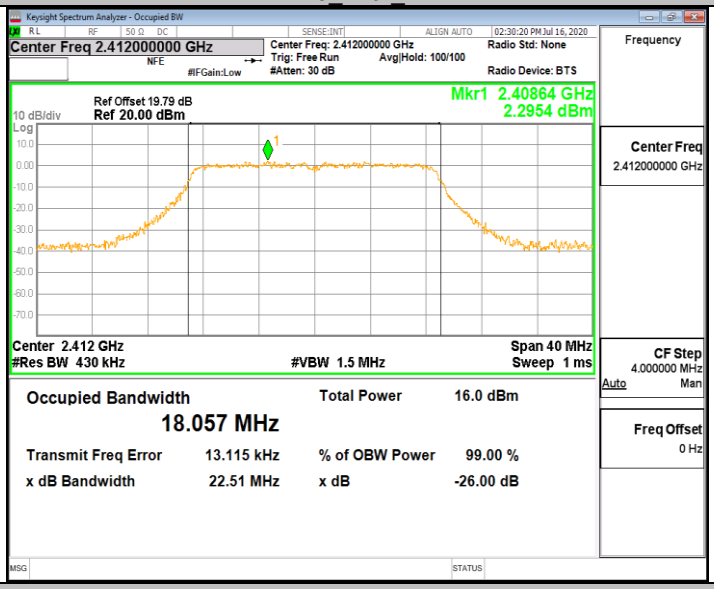
11G_Ant1_2437



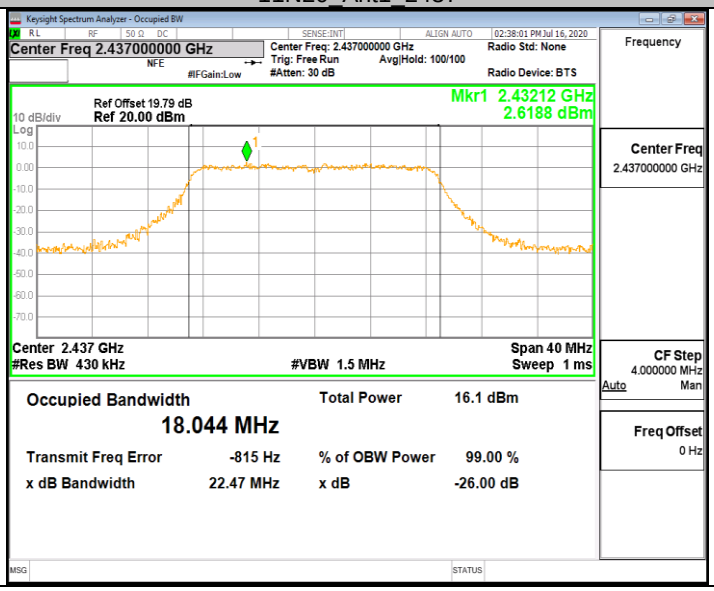

11G_Ant1_2462



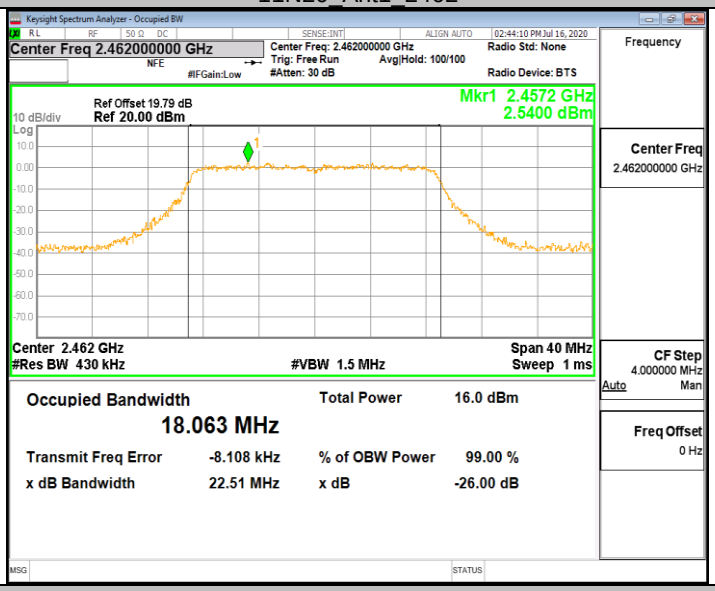
11N20_Ant1_2412




11N20_Ant1_2437



11N20_Ant1_2462




11N40_Ant1_2422