



TEST REPORT

Test Report No. : UL-RPT-RP11906202-1016A

Manufacturer : Dyson Technology Limited
Model No. : DBWIFIBLE01
FCC ID : QVHDBWIFIBLE01
Technology : WLAN
Test Standard(s) : FCC Parts 15.209(a) & 15.247

1. This test report shall not be reproduced in full or partial, without the written approval of UL VS LTD.
2. The results in this report apply only to the sample(s) tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 1.0

Date of Issue: 21 December 2017

Checked by:

Sarah Williams
Senior Test Engineer, Radio Laboratory

Company Signatory:

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Senior Test Engineer, Radio Laboratory
UL VS LTD



This laboratory is accredited by UKAS. The tests reported herein have been performed in accordance with its terms of accreditation.

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1. Customer Information








| | |
|----------------------|---|
| Company Name: | Dyson Technology Limited |
| Address: | Tetbury Hill Malmesbury Swindon SN16 0RP United Kingdom |

2. Summary of Testing

2.1. General Information

| | |
|---------------------------------|---|
| Specification Reference: | 47CFR15.247 |
| Specification Title: | Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.247 |
| Specification Reference: | 47CFR15.209 |
| Specification Title: | Code of Federal Regulations Volume 47 (Telecommunications): Part 15 Subpart C (Intentional Radiators) - Section 15.209 |
| Site Registration: | 209735 |
| Location of Testing: | UL VS LTD, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom |
| Test Dates: | 18 September 2017 to 02 November 2017 |

2.2. Summary of Test Results

| FCC Reference (47CFR) | Measurement | Result |
|---|--|---|
| Part 15.247(a)(2) | Transmitter Minimum 6 dB Bandwidth |  |
| Part 15.35(c) | Transmitter Duty Cycle | Note 1 |
| Part 15.247(e) | Transmitter Power Spectral Density |  |
| Part 15.247(b)(3) | Transmitter Maximum (Average) Output Power |  |
| Part 15.247(d) & 15.209(a) | Transmitter Radiated Emissions |  |
| Part 15.247(d) & 15.209(a) | Transmitter Band Edge Radiated Emissions |  |
| Key to Results | | |
|  = Complied  = Did not comply | | |

Note(s):

1. The measurement was performed to assist in the calculation of the level of maximum conducted output power, power spectral density and emissions. The EUT cannot transmit continuously and sweep triggering/signal gating cannot be implemented.

2.3. Methods and Procedures

| | |
|-------------------|--|
| Reference: | ANSI C63.10-2013 |
| Title: | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices |
| Reference: | KDB 558074 D01 DTS Meas Guidance v04 April 5, 2017 |
| Title: | Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under Section 15.247 |

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

| | |
|-----------------------------------|--------------------------------|
| Brand Name: | Dyson |
| Model Name or Number: | DBWIFIBLE01 |
| Test Sample Serial Number: | 26 (<i>Conducted sample</i>) |
| Hardware Version: | 259866-01/05 (EB2.2) |
| Software Version: | MFG SDK 442.1 |
| FCC ID: | QVHDBWIFIBLE01 |

| | |
|-----------------------------------|-------------------------------|
| Brand Name: | Dyson |
| Model Name or Number: | DBWIFIBLE01 |
| Test Sample Serial Number: | 44 (<i>Radiated sample</i>) |
| Hardware Version: | 259866-01/05 (EB2.2) |
| Software Version: | MFG SDK 442.1 |
| FCC ID: | QVHDBWIFIBLE01 |

3.2. Description of EUT

The Equipment Under Test was a *Bluetooth* Low Energy and WLAN module operating in the 2.4 & 5 GHz bands.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

| | | |
|--|---|------------------------------------|
| Technology Tested: | WLAN (IEEE 802.11b,g,n) / Digital Transmission System | |
| Type of Unit: | Transceiver | |
| Modulation Type: | DBPSK, DQPSK, BPSK, QPSK, 16QAM & 64QAM | |
| Data Rates: | 802.11b | 1, 2, 5.5 & 11 Mbps |
| | 802.11g | 6, 9, 12, 18, 24, 36, 48 & 54 Mbps |
| | 802.11n HT20 | MCS0 to MCS7 (SISO) |
| | 802.11n HT40 | MCS0 to MCS7 (SISO) |
| Power Supply Requirement(s): | Nominal | 3.3 VDC |
| Maximum Conducted Output Power: | 14.5 dBm | |
| Declared Antenna Gain: | 3.2 dBi | |
| Channel Spacing: | 20 MHz | |
| Transmit Frequency Range: | 2412 MHz to 2462 MHz | |
| Transmit Channels Tested: | Channel Number | Channel Frequency (MHz) |
| | 1 | 2412 |
| | 2 | 2417 |
| | 6 | 2437 |
| | 11 | 2462 |
| Channel Spacing: | 40 MHz | |
| Transmit Frequency Range: | 2422 MHz to 2452 MHz | |
| Transmit Channels Tested: | Channel Number | Channel Frequency (MHz) |
| | 3 | 2422 |
| | 4 | 2427 |
| | 8 | 2447 |
| | 9 | 2452 |

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

| | |
|------------------------------|-----------|
| Description: | Laptop PC |
| Brand Name: | Lenovo |
| Model Name or Number: | T420 |
| Serial Number: | R8-VM66D |

| | |
|------------------------------|--------------------------------------|
| Description: | USB Micro-B Cable. Length 1.5 metres |
| Brand Name: | Not stated or marked |
| Model Name or Number: | Not stated or marked |
| Serial Number: | Not stated or marked |

| | |
|------------------------------|----------------------|
| Description: | Test Jig |
| Brand Name: | Not stated or marked |
| Model Name or Number: | Not stated or marked |
| Serial Number: | Not stated or marked |

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Continuously transmitting with a modulated carrier at maximum power on the relevant channels as required using the supported data rates/modulation types.

4.2. Configuration and Peripherals

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

- Controlled using a bespoke application on the laptop PC supplied by the customer. The application was used to enable a continuous transmission mode and to select the test channels, data rates and modulation schemes as required.
- All supported modes and channel widths were initially investigated. The modes that produced the highest power and widest bandwidth were:
 - Highest power
 - 802.11b - DBPSK / 1 Mbps / SISO
 - 802.11g - QPSK / 18 Mbps / SISO
 - 802.11n HT20 - 64QAM / MCS5 (GI = 800 ns) / SISO
 - 802.11n HT40 - BPSK / MCS0 (GI = 800 ns) / SISO
 - Highest power spectral density
 - 802.11b - DBPSK / 1 Mbps / SISO
 - 802.11g – 64QAM / 54 Mbps / SISO
 - 802.11n HT20 - 64QAM / MCS7 (GI = 800 ns) / SISO
 - 802.11n HT40 – 64QAM / MCS6 (GI = 800 ns) / SISO
 - Widest bandwidth
 - 802.11b - DBPSK / 1 Mbps / SISO
 - 802.11g - 64QAM / 48 Mbps / SISO
 - 802.11n HT20 - 16QAM / MCS4 (GI = 800 ns) / SISO
 - 802.11n HT40 - 16QAM / MCS4 (GI = 800 ns) / SISO
- Testing was performed using the customer declared power settings.
- Transmitter spurious emissions were performed with the EUT transmitting with a data rate of 18 Mbps (802.11g). This was found to be the worst case modulation scheme with regards to emissions after preliminary investigations and as this mode emits the highest output power level, it was deemed to be the worst case.
- For radiated emissions tests pre-scans were initially checked in X,Y& Z orientations. The worst case orientations were:
 - Below 1 GHz: Z Axis with the EUT back against the table
 - Above 1 GHz: X Axis with the EUT and test jig on its side
 - Radiated band edge: Y Axis with the EUT in the vertical position and the test jig on its back

Configuration and Peripherals (continued)

- The test setup instructions were supplied in a file "*Radio Test Mode Instructions.pdf*" -08/18/2017. This is archived on the UL VS LTD IT network and is available for inspection if required.
- The EUT was powered by a DC bench power supply. The voltage was monitored throughout testing with a calibrated multimeter. For radiated emission tests the DC bench power supply was placed outside the anechoic chamber.
- The conducted sample with serial number 26 was used for minimum 6 dB bandwidth, duty cycle, maximum output power and power spectral density tests
- The radiated sample with serial number 44 was used for all other tests.
- Additional testing on channels further in band from the band edges were performed due to differing power settings across the channels.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

In accordance with UKAS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

5.2. Test Results

5.2.1. Transmitter Minimum 6 dB Bandwidth

Test Summary:

| | | | |
|-----------------------------------|-----------|-------------------|-------------------|
| Test Engineer: | Stefan Ho | Test Date: | 18 September 2017 |
| Test Sample Serial Number: | 26 | | |

| | |
|--------------------------|----------------------------|
| FCC Reference: | Part 15.247(a)(2) |
| Test Method Used: | FCC KDB 558074 Section 8.1 |

Environmental Conditions:

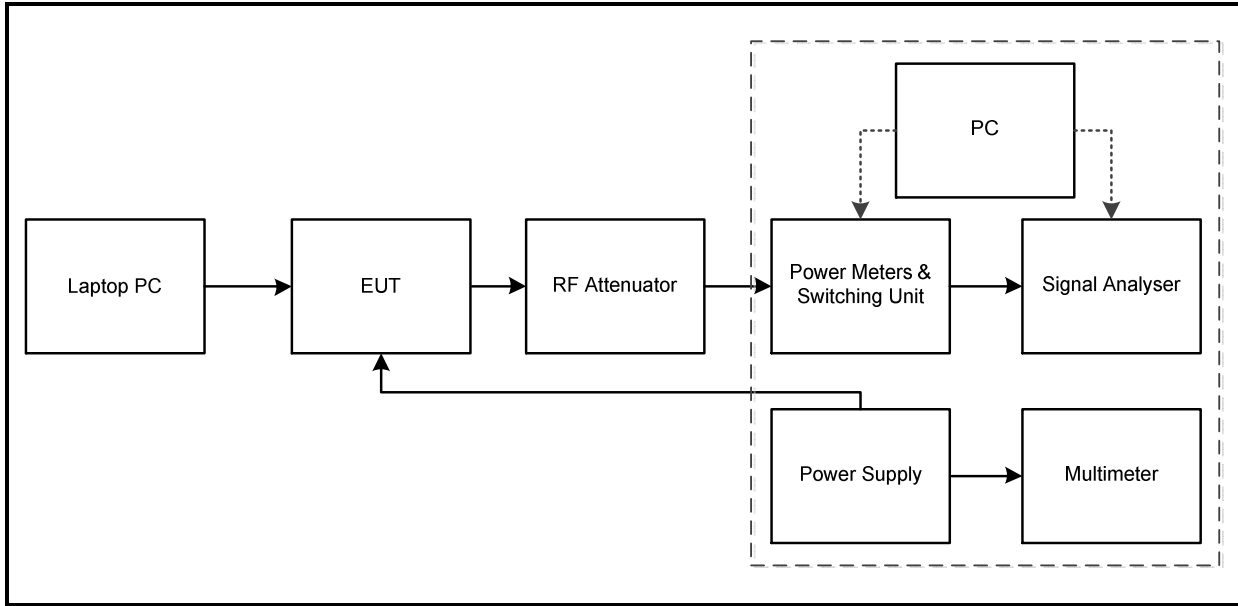
| | |
|-------------------------------|----|
| Temperature (°C): | 23 |
| Relative Humidity (%): | 46 |

Note(s):

- All configurations supported by the EUT were investigated on one channel in accordance with KDB 558074 Section 8.1 Option 1 measurement procedure. The signal analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and the trace mode was Max Hold. The span was set to 30 MHz for 20 MHz channel bandwidths and 60 MHz for 40 MHz channel bandwidths. The DTS bandwidth was measured at 6 dB down from the peak of the signal. The data rates that produced the narrowest bandwidth and therefore deemed worst case were:
 - 802.11b – DQPSK / 2 Mbps
 - 802.11g – BPSK / 6 Mbps
 - 802.11n HT20 – BPSK / MCS0
 - 802.11n HT40 – BPSK / MCS0
- Final measurements were performed using the above configurations on the bottom, middle and top channels in accordance with KDB 558074 Section 8.1 Option 1 measurement procedure.
- Plots for all data rates are archived on the Company server and available for inspection upon request.
- The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Minimum 6 dB Bandwidth (continued)

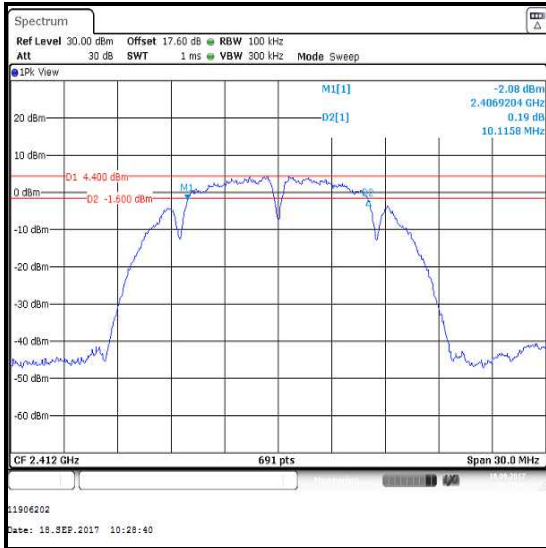
Test setup:



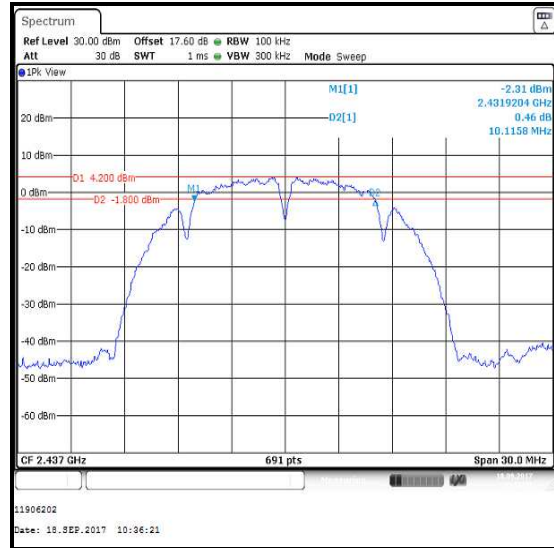
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11b / 20 MHz / DQPSK / 2 Mbps

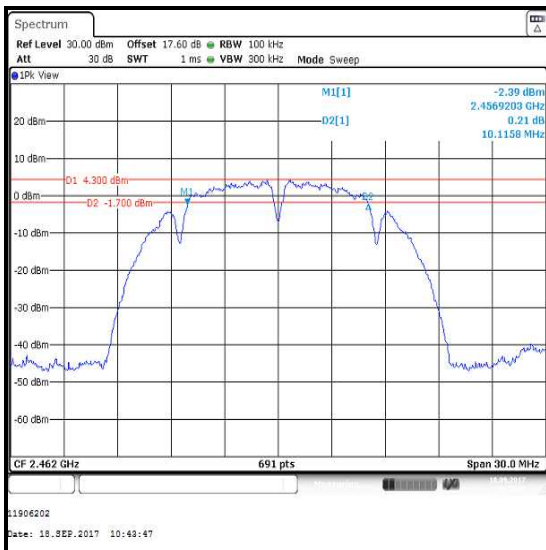
| Channel | 6 dB Bandwidth (kHz) | Limit (kHz) | Margin (kHz) | Result |
|---------|----------------------|-------------|--------------|----------|
| 1 | 10116 | ≥500 | 9616 | Complied |
| 6 | 10116 | ≥500 | 9616 | Complied |
| 11 | 10116 | ≥500 | 9616 | Complied |



Channel 1



Channel 6

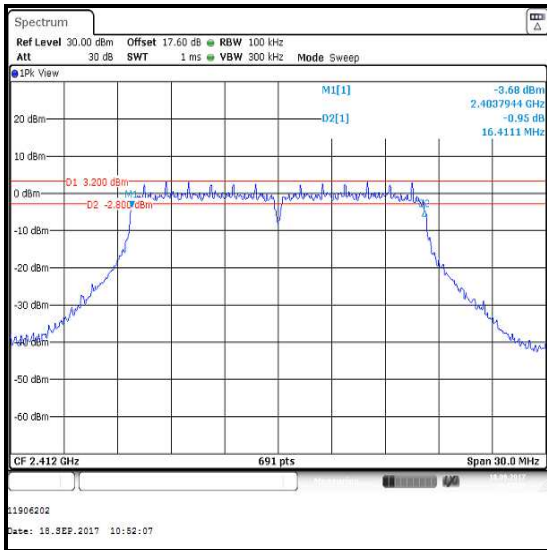


Channel 11

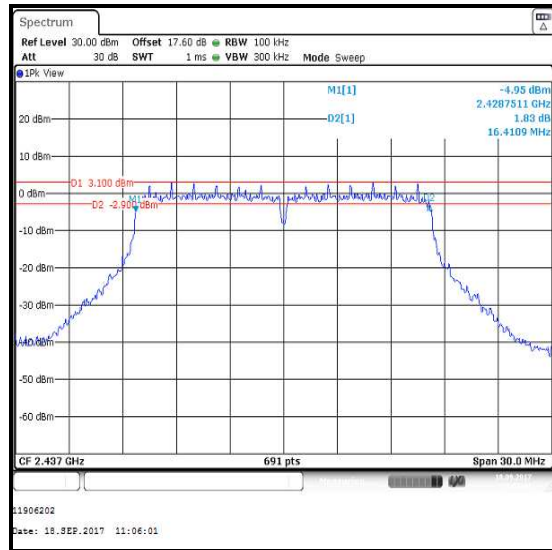
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11g / 20 MHz / BPSK / 6 Mbps

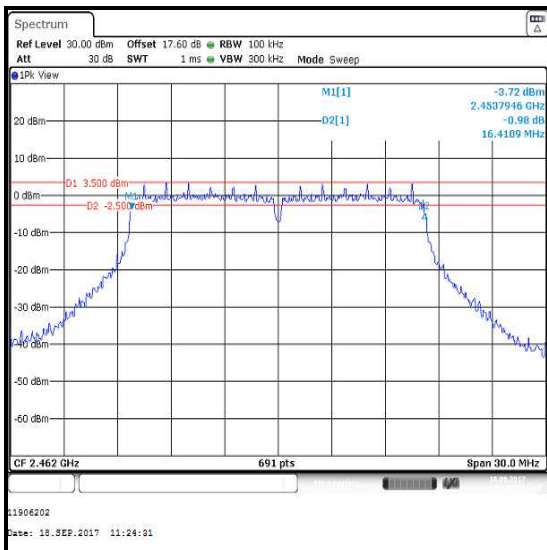
| Channel | 6 dB Bandwidth (kHz) | Limit (kHz) | Margin (kHz) | Result |
|---------|----------------------|-------------|--------------|----------|
| 1 | 16411 | ≥500 | 15911 | Complied |
| 6 | 16411 | ≥500 | 15911 | Complied |
| 11 | 16411 | ≥500 | 15911 | Complied |



Channel 1



Channel 6

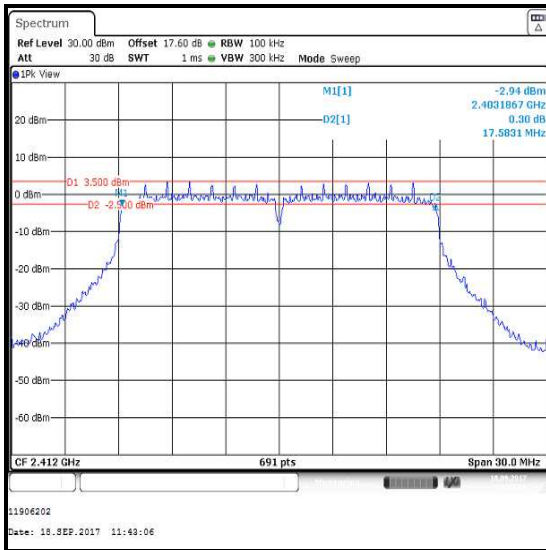


Channel 11

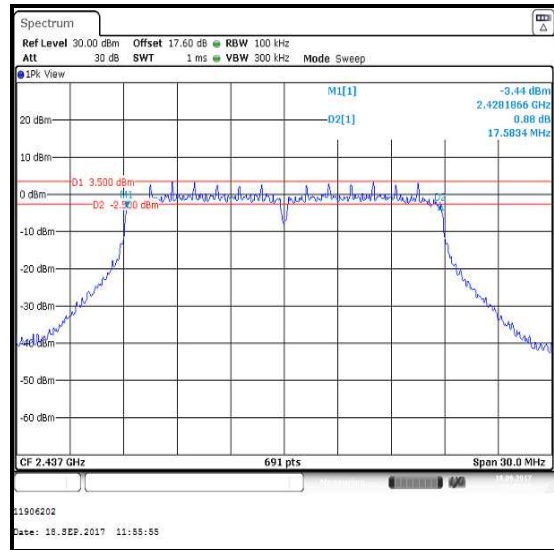
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

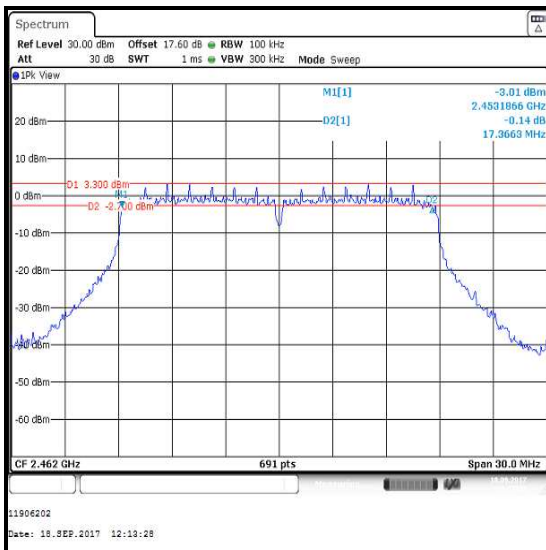
| Channel | 6 dB Bandwidth (kHz) | Limit (kHz) | Margin (kHz) | Result |
|---------|----------------------|-------------|--------------|----------|
| 1 | 17583 | ≥500 | 17083 | Complied |
| 6 | 17583 | ≥500 | 17083 | Complied |
| 11 | 17366 | ≥500 | 16866 | Complied |



Channel 1



Channel 6



Channel 11

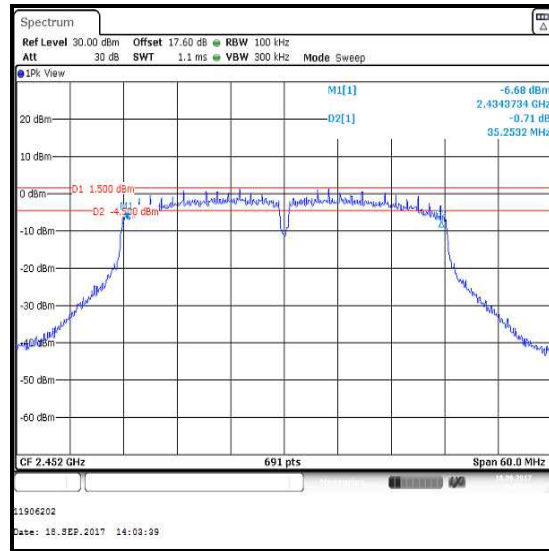
Transmitter Minimum 6 dB Bandwidth (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

| Channel | 6 dB Bandwidth (kHz) | Limit (kHz) | Margin (kHz) | Result |
|---------|----------------------|-------------|--------------|----------|
| 3 | 35254 | ≥500 | 34754 | Complied |
| 9 | 35253 | ≥500 | 34753 | Complied |



Channel 3



Channel 9

Test Equipment Used:

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|-------------------|----------------------|------------|------------|-----------------------|------------------------|
| M2004 | Thermohygrometer | Testo | 608-H1 | 45046425 | 22 Feb 2018 | 12 |
| A3004 | RF Switch | Pickering Interfaces | 64-102-002 | XZ363230 | Calibrated before use | - |
| A2523 | Attenuator | AtlanTechRF | AN18W5-10 | 832827#1 | Calibrated before use | - |
| M2019 | Power Sensor | Boonton | 55006 | 10078 | 23 Mar 2018 | 12 |
| M2018 | Signal Analyser | Rohde & Schwarz | FSV7 | 102699 | 23 Mar 2018 | 12 |
| G0614 | Signal Generator | Rohde & Schwarz | SMB100A | 177687 | 08 May 2020 | 36 |
| S0568 | Power Supply Unit | Keithley | 2303 | 4310413 | Calibrated before use | - |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 04 May 2018 | 12 |

5.2.2. Transmitter Duty Cycle**Test Summary:**

| | | | |
|-----------------------------------|-----------|-------------------|-------------------|
| Test Engineer: | Stefan Ho | Test Date: | 18 September 2017 |
| Test Sample Serial Number: | 26 | | |

| | |
|--------------------------|----------------------------|
| FCC Reference: | Part 15.35(c) |
| Test Method Used: | FCC KDB 558074 Section 6.0 |

Environmental Conditions:

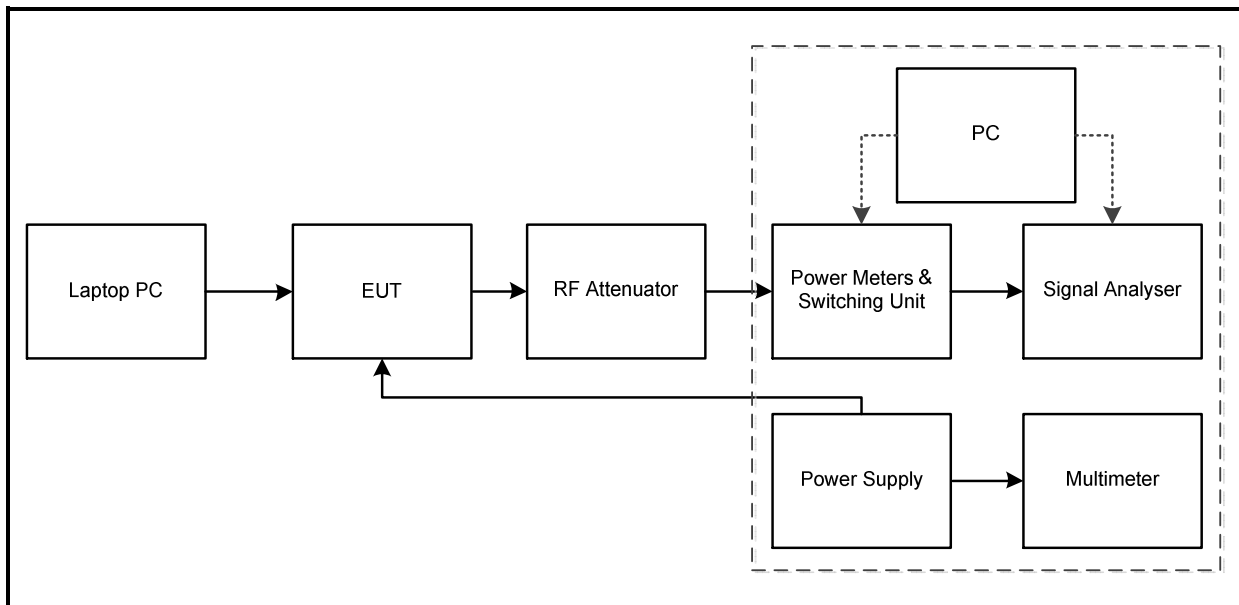
| | |
|-------------------------------|----|
| Temperature (°C): | 23 |
| Relative Humidity (%): | 46 |

Note(s):

- In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

$$10 \log (1 / (\text{On Time} / [\text{Period or } 100 \text{ ms whichever is the lesser}])).$$

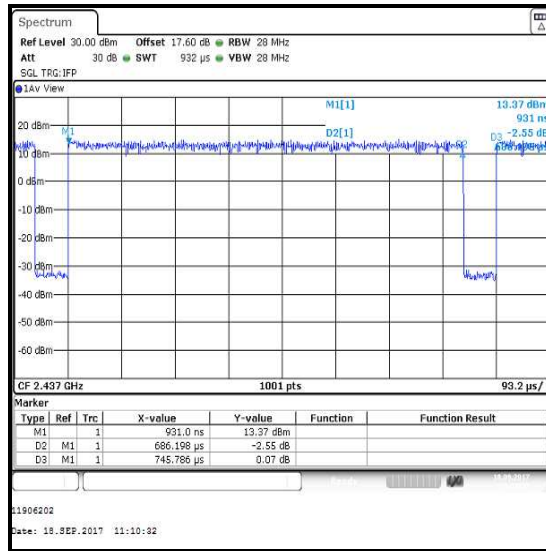
- For 802.11b, the duty cycle was measured to be greater than 98%.

Test setup:

Transmitter Duty Cycle (continued)

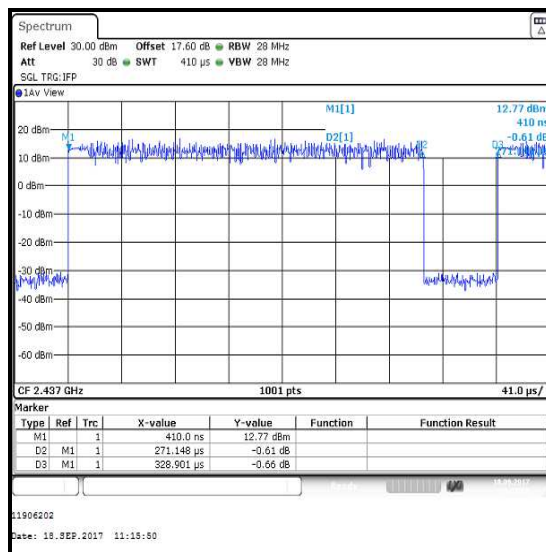
Results: 802.11g / 20 MHz / QPSK / 18 Mbps

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.6862 | 0.7458 | 92.0 | 0.4 |



Results: 802.11g / 20 MHz / 64QAM / 48 Mbps

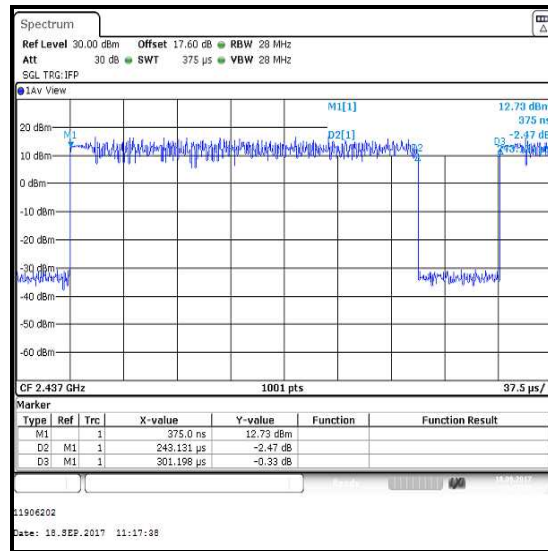
| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.2711 | 0.3289 | 82.4 | 0.8 |



Transmitter Duty Cycle (continued)

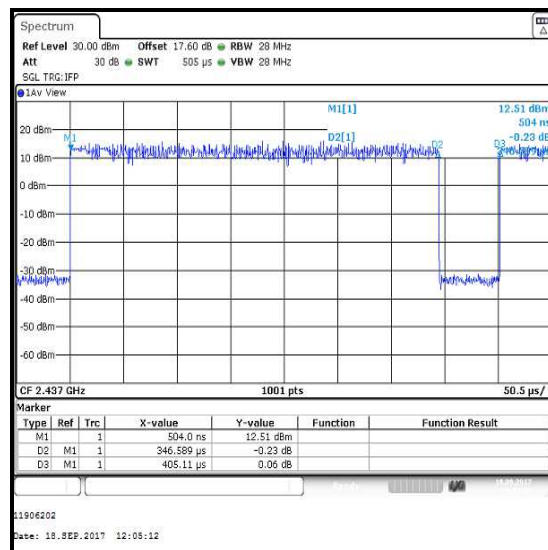
Results: 802.11g / 20 MHz / 64QAM / 54 Mbps

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.2431 | 0.3012 | 80.7 | 0.9 |



Results: 802.11n / 20 MHz / 16QAM / MCS4

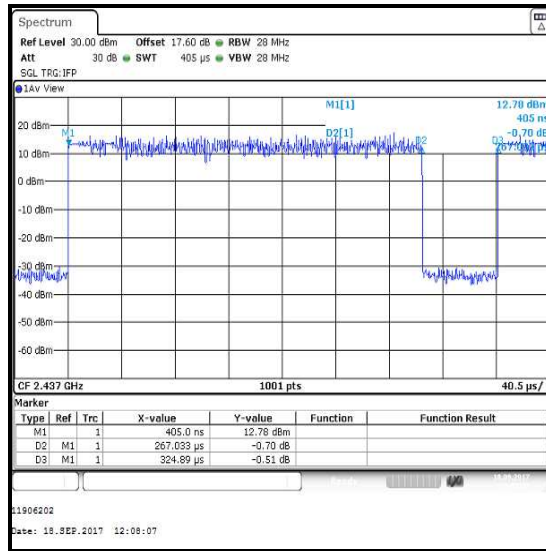
| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.3466 | 0.4051 | 85.6 | 0.7 |



Transmitter Duty Cycle (continued)

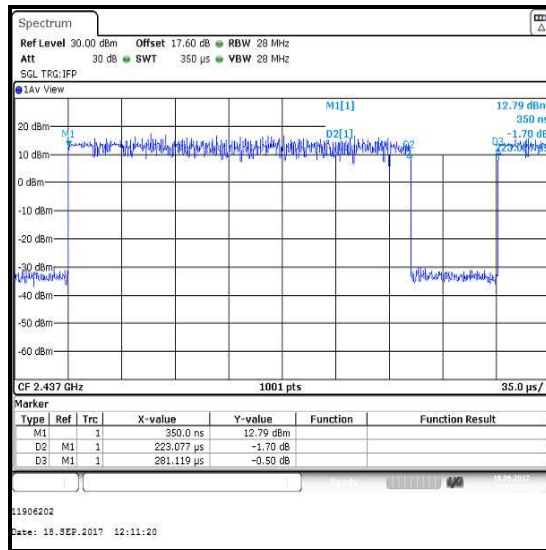
Results: 802.11n / 20 MHz / 64QAM / MCS5

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.2670 | 0.3249 | 82.2 | 0.9 |



Results: 802.11n / 20 MHz / 64QAM / MCS7

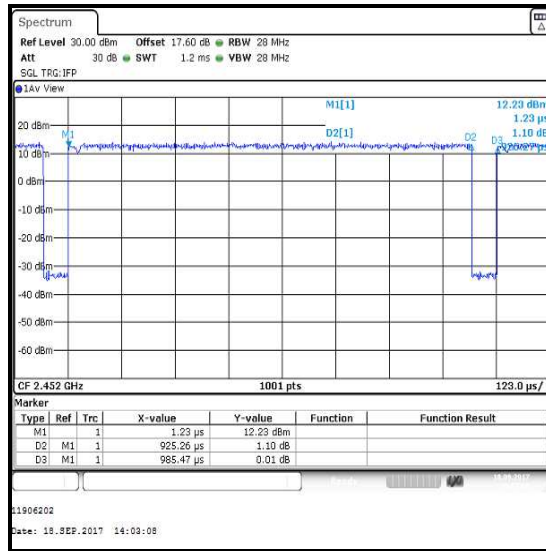
| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.2231 | 0.2811 | 79.4 | 1.0 |



Transmitter Duty Cycle (continued)

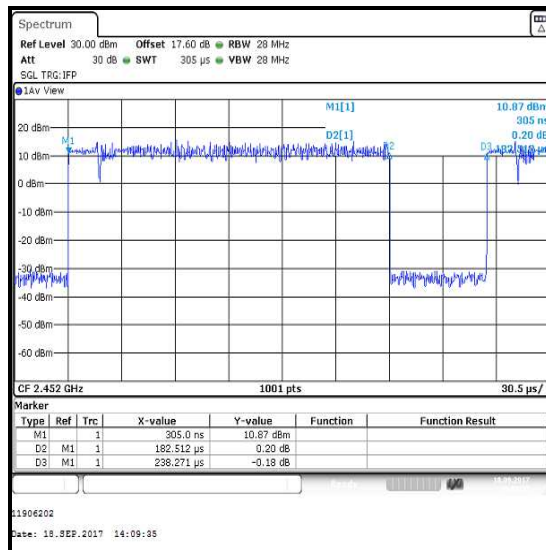
Results: 802.11n / 40 MHz / BPSK / MCS0

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.9253 | 0.9855 | 93.9 | 0.3 |



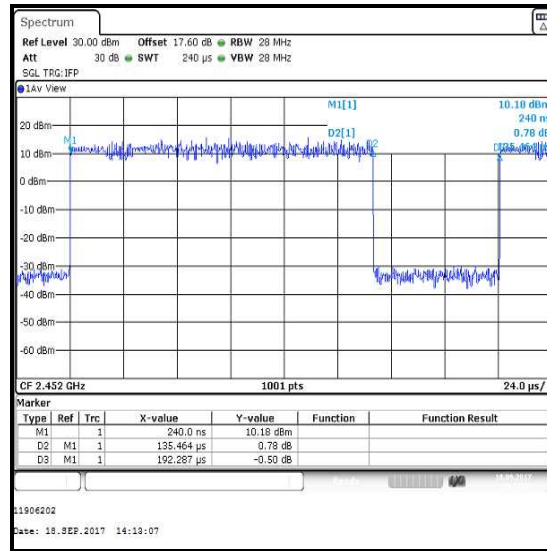
Results: 802.11n / 40 MHz / 16QAM / MCS4

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.1825 | 0.2383 | 76.6 | 1.2 |



Transmitter Duty Cycle (continued)**Results: 802.11n / 40 MHz / 64QAM / MCS6**

| Pulse Duration (ms) | Period (ms) | Duty Cycle % | Duty Cycle Correction factor (dB) |
|---------------------|-------------|--------------|-----------------------------------|
| 0.1355 | 0.1923 | 70.4 | 1.5 |

**Test Equipment Used:**

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|-------------------|----------------------|------------|------------|-----------------------|------------------------|
| M2004 | Thermohygrometer | Testo | 608-H1 | 45046425 | 22 Feb 2018 | 12 |
| A3004 | RF Switch | Pickering Interfaces | 64-102-002 | XZ363230 | Calibrated before use | - |
| A2523 | Attenuator | AtlanTechRF | AN18W5-10 | 832827#1 | Calibrated before use | - |
| M2019 | Power Sensor | Boonton | 55006 | 10078 | 23 Mar 2018 | 12 |
| M2018 | Signal Analyser | Rohde & Schwarz | FSV7 | 102699 | 23 Mar 2018 | 12 |
| G0614 | Signal Generator | Rohde & Schwarz | SMB100A | 177687 | 08 May 2020 | 36 |
| S0568 | Power Supply Unit | Keithley | 2303 | 4310413 | Calibrated before use | - |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 04 May 2018 | 12 |

5.2.3. Transmitter Power Spectral Density**Test Summary:**

| | | | |
|-----------------------------------|--------------------------------|-------------------|-----------------|
| Test Engineers: | Max Passell & Victor Carmon | Test Date: | 13 October 2017 |
| Test Sample Serial Number: | 26 | | |

| | |
|--------------------------|------------------------------------|
| FCC Reference: | Part 15.247(e) |
| Test Method Used: | FCC KDB 558074 Sections 10.3 &10.5 |

Environmental Conditions:

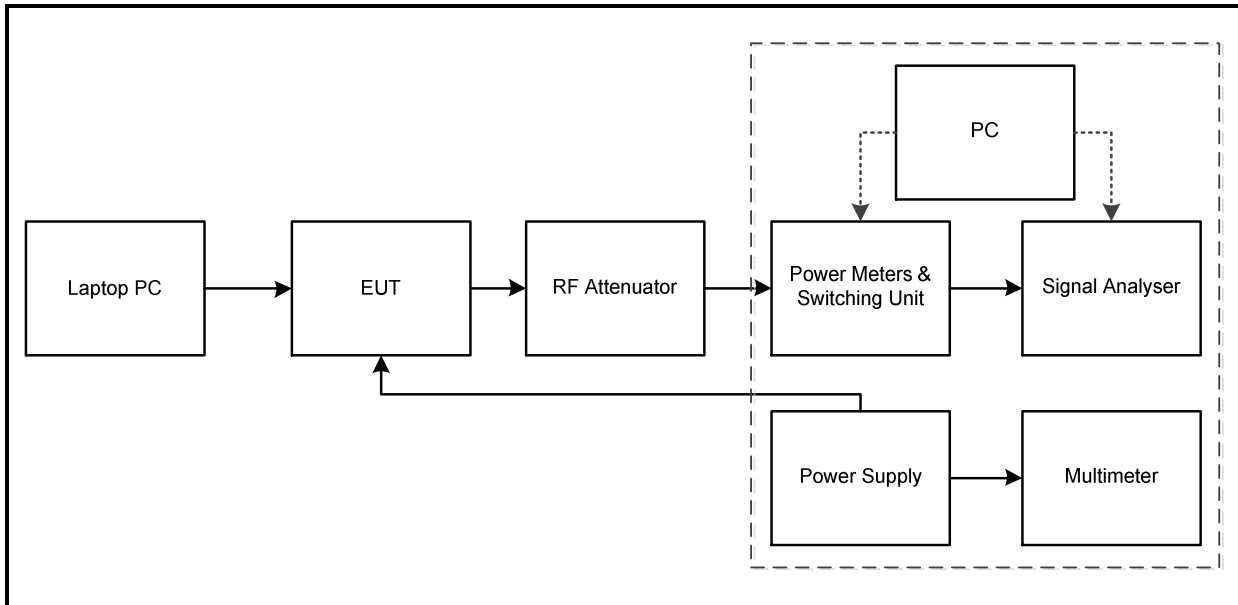
| | |
|-------------------------------|----|
| Temperature (°C): | 24 |
| Relative Humidity (%): | 45 |

Note(s):

- All configurations supported by the EUT were investigated and the following data rates were found to have the highest power spectral density:
 - 802.11b – DBPSK / 1 Mbps
 - 802.11g – 64QAM / 54 Mbps
 - 802.11n HT20 – 64QAM / MCS7
 - 802.11n HT40 – 64QAM / MCS6
- Final measurements were performed using the above configurations on the bottom, middle and top channels.
- For 802.11b, the EUT was transmitting at $\geq 98\%$ duty cycle and testing was performed in accordance with KDB 558074 Section 10.3 Method AVGPSD-1. The signal analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. An RMS detector was used and sweep time set manually to perform trace averaging over 300 traces. The span was set greater than 1.5 times the 99% occupied emission bandwidth. The highest peak of the measured signal was recorded.
- For 802.11g and 802.11n, the EUT was transmitting at $<98\%$ duty cycle and testing was performed in accordance with KDB 558074 Section 10.5 Method AVGPSD-2. The signal analyser resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. An RMS detector was used and sweep time set manually to perform trace averaging over 300 traces. The span was set greater than 1.5 times the 99% occupied emission bandwidth. The highest peak of the measured signal was recorded. The calculated duty cycle in section 5.2.2 was added to the measured average power spectral density in order to compute the average power spectral density during the actual transmission time.
- The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Power Spectral Density (continued)

Test setup:



Transmitter Power Spectral Density (continued)

Results: 802.11b / 20 MHz / DBPSK / 1 Mbps

| Channel | PSD (dBm/100 kHz) | Limit (dBm/3 kHz) | Margin (dB) | Result |
|---------|-------------------|-------------------|-------------|----------|
| 1 | -3.8 | 8.0 | 11.8 | Complied |
| 6 | -4.0 | 8.0 | 12.0 | Complied |
| 11 | -3.9 | 8.0 | 11.9 | Complied |



Channel 1



Channel 6

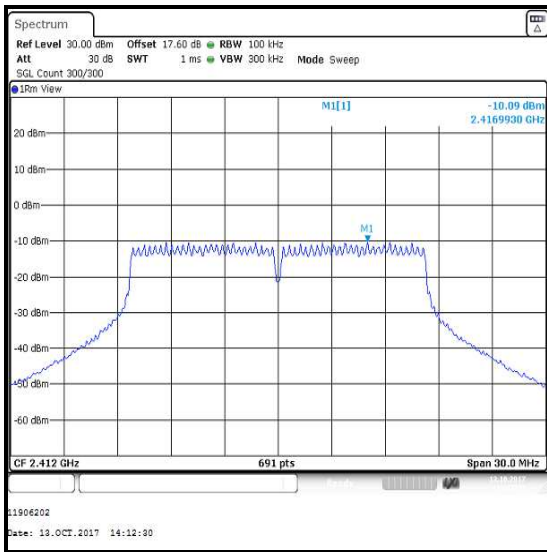


Channel 11

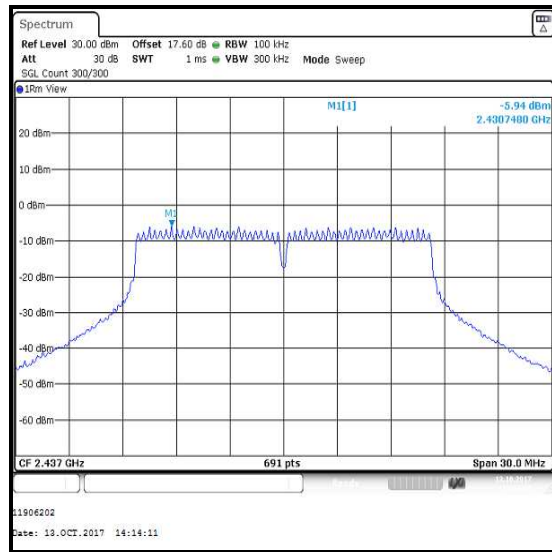
Transmitter Power Spectral Density (continued)

Results: 802.11g / 20 MHz / 64QAM / 54 Mbps

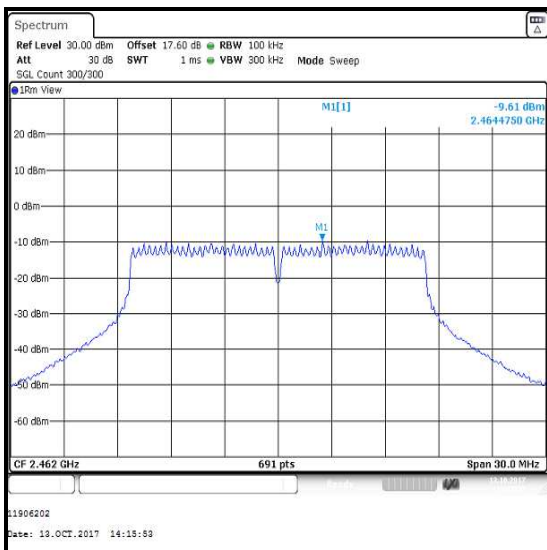
| Channel | PSD (dBm/100 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm/3 kHz) | Limit (dBm/3 kHz) | Margin (dB) | Result |
|---------|-------------------|----------------------------|---------------------------|-------------------|-------------|----------|
| 1 | -10.1 | 0.9 | -9.2 | 8.0 | 17.2 | Complied |
| 6 | -5.9 | 0.9 | -5.0 | 8.0 | 13.0 | Complied |
| 11 | -9.6 | 0.9 | -8.7 | 8.0 | 16.7 | Complied |



Channel 1



Channel 6

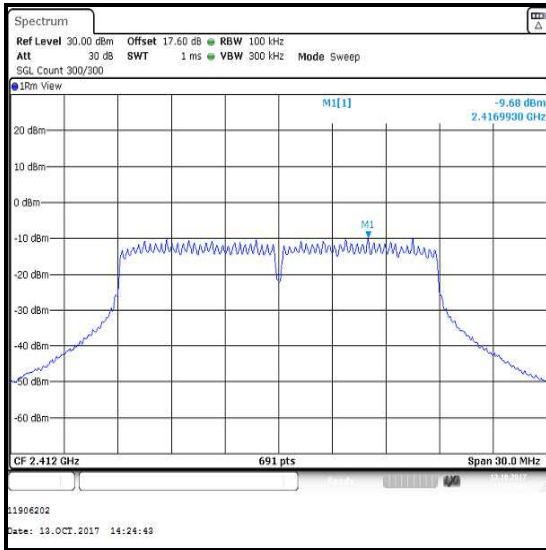


Channel 11

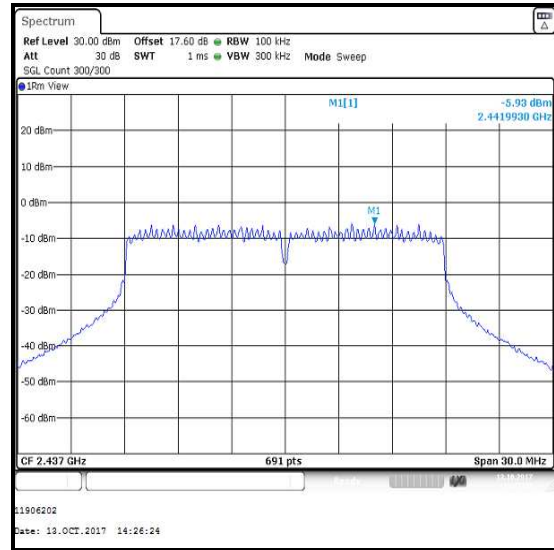
Transmitter Power Spectral Density (continued)

Results: 802.11n / 20 MHz / 64QAM / MCS7

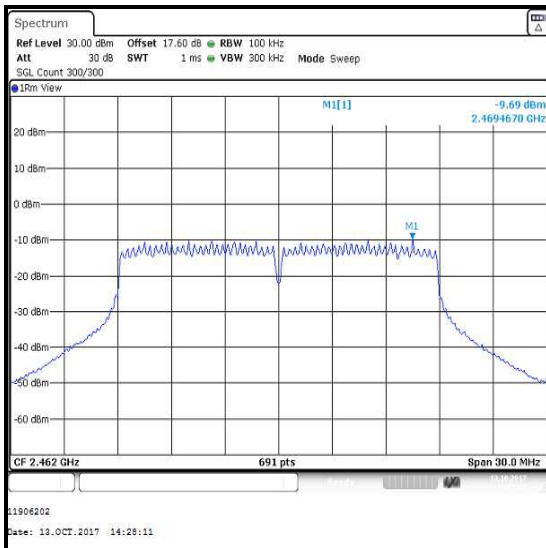
| Channel | PSD (dBm/100 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm/3 kHz) | Limit (dBm/3 kHz) | Margin (dB) | Result |
|---------|-------------------|----------------------------|---------------------------|-------------------|-------------|----------|
| 1 | -9.7 | 1.0 | -8.7 | 8.0 | 16.7 | Complied |
| 6 | -5.9 | 1.0 | -4.9 | 8.0 | 12.9 | Complied |
| 11 | -9.7 | 1.0 | -8.7 | 8.0 | 16.7 | Complied |



Channel 1



Channel 6

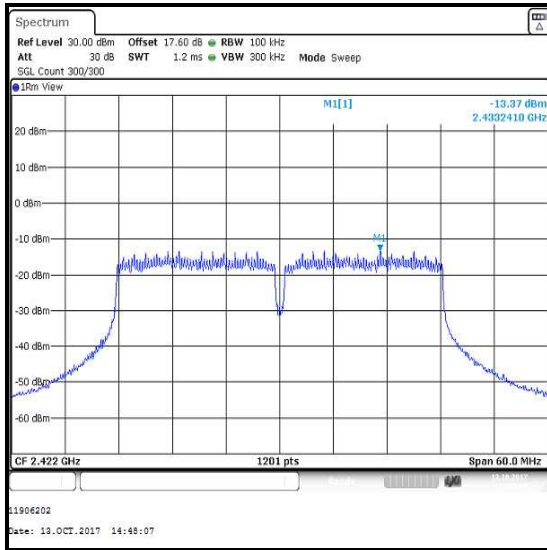


Channel 11

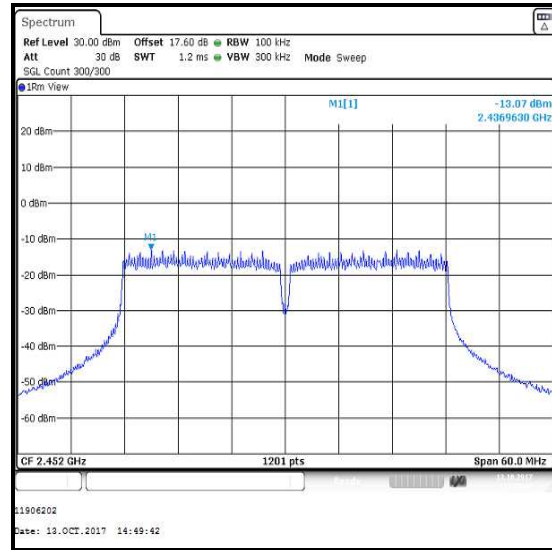
Transmitter Power Spectral Density (continued)

Results: 802.11n / 40 MHz / 64QAM / MCS6

| Channel | PSD (dBm/100 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm/3 kHz) | Limit (dBm/3 kHz) | Margin (dB) | Result |
|---------|-------------------|----------------------------|---------------------------|-------------------|-------------|----------|
| 3 | -13.4 | 1.5 | -11.9 | 8.0 | 19.9 | Complied |
| 9 | -13.1 | 1.5 | -11.6 | 8.0 | 19.6 | Complied |



Channel 3



Channel 9

Test Equipment Used:

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|-------------------|----------------------|------------|------------|-----------------------|------------------------|
| M2004 | Thermohygrometer | Testo | 608-H1 | 45046425 | 22 Feb 2018 | 12 |
| A3004 | RF Switch | Pickering Interfaces | 64-102-002 | XZ363230 | Calibrated before use | - |
| A2523 | Attenuator | AtlanTechRF | AN18W5-10 | 832827#1 | Calibrated before use | - |
| M2019 | Power Sensor | Boonton | 55006 | 10078 | 23 Mar 2018 | 12 |
| M2018 | Signal Analyser | Rohde & Schwarz | FSV7 | 102699 | 23 Mar 2018 | 12 |
| G0614 | Signal Generator | Rohde & Schwarz | SMB100A | 177687 | 08 May 2020 | 36 |
| S0568 | Power Supply Unit | Keithley | 2303 | 4310413 | Calibrated before use | - |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 04 May 2018 | 12 |

5.2.4. Transmitter Maximum (Average) Output Power**Test Summary:**

| | | | |
|-----------------------------------|--------------------------------|-------------------|-----------------|
| Test Engineers: | Max Passell & Victor Carmon | Test Date: | 13 October 2017 |
| Test Sample Serial Number: | 26 | | |

| | |
|--------------------------|---|
| FCC Reference: | Part 15.247(b)(3) |
| Test Method Used: | FCC KDB 558074 Sections 9.2.2.2 & 9.2.2.4 |

Environmental Conditions:

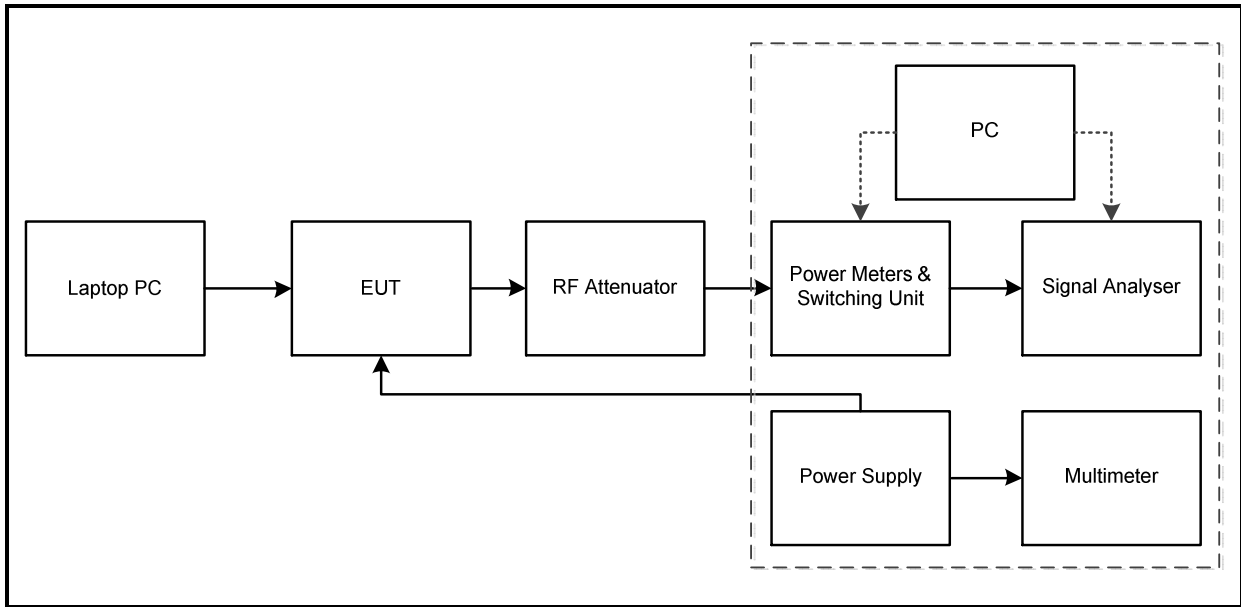
| | |
|-------------------------------|----|
| Temperature (°C): | 24 |
| Relative Humidity (%): | 45 |

Note(s):

- All configurations supported by the EUT were investigated and the following data rates were found to have the highest power:
 - 802.11b – DBPSK / 1 Mbps
 - 802.11g – QPSK / 18 Mbps
 - 802.11n HT20 – 64QAM / MCS5
 - 802.11n HT40 – BPSK / MCS0
- Final measurements were performed using the above configurations on the bottom, middle and top channels. The power has been integrated over the 99% emission bandwidth. Plots for the occupied bandwidth are archived on the company server and available for inspection upon request.
- For 802.11b, the EUT was transmitting at $\geq 98\%$ duty cycle and testing was performed in accordance with KDB 558074 Section 9.2.2.2 Method AVGSA-1. The signal analyser's integration function was used to integrate across the 99% occupied bandwidth. The signal analyser resolution bandwidth was set to 200 kHz and video bandwidth 1 MHz. An RMS detector was used and sweep time set manually to perform trace averaging over 300 traces. The span was set greater than 1.5 times the 99% occupied emission bandwidth.
- For 802.11g and 802.11n HT20, the EUT was transmitting at $<98\%$ duty cycle and testing was performed in accordance with KDB 558074 Section 9.2.2.4 Method AVGSA-2. The signal analyser's integration function was used to integrate across the 99% occupied bandwidth. The signal analyser resolution bandwidth was set to 200 kHz and video bandwidth 1 MHz. An RMS detector was used and sweep time set manually to perform trace averaging over 300 traces. The span was set greater than 1.5 times the 99% occupied emission bandwidth. The calculated duty cycle in section 5.2.2 was added to the measured power in order to compute the average power during the actual transmission time.
- For 802.11n HT40, the EUT was transmitting at $<98\%$ duty cycle and testing was performed in accordance with KDB 558074 Section 9.2.2.4 Method AVGSA-2. The signal analyser's integration function was used to integrate across the 99% occupied bandwidth. The signal analyser resolution bandwidth was set to 500 kHz and video bandwidth 2 MHz. An RMS detector was used and sweep time set manually to perform trace averaging over 300 traces. The span was set greater than 1.5 times the 99% occupied emission bandwidth. The calculated duty cycle in section 5.2.2 was added to the measured power in order to compute the average power during the actual transmission time.
- The signal analyser was connected to the RF port on the EUT using suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Maximum (Average) Output Power (continued)

Test setup:



Transmitter Maximum (Average) Output Power (continued)**Results: 802.11b / 20 MHz / DBPSK / 1 Mbps****Conducted Peak Limit Comparison**

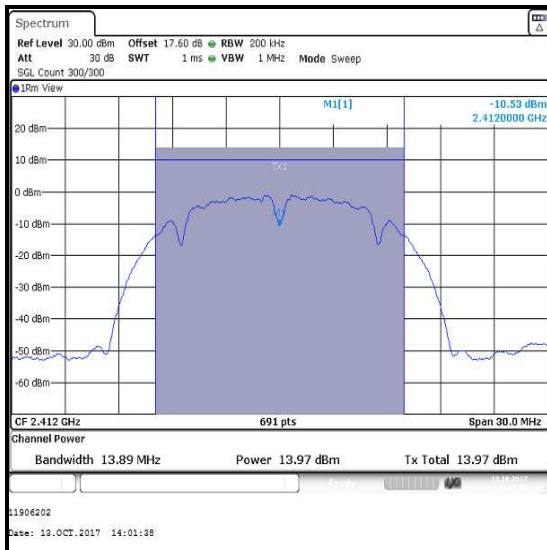
| Channel | Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---------|-----------------------|-----------------------------|-------------|----------|
| 1 | 14.0 | 30.0 | 16.0 | Complied |
| 6 | 13.8 | 30.0 | 16.2 | Complied |
| 11 | 14.0 | 30.0 | 16.0 | Complied |

De Facto EIRP Limit Comparison

| Channel | Conducted Power (dBm) | Declared Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---------|-----------------------|-----------------------------|------------|---------------------------|-------------|----------|
| 1 | 14.0 | 3.2 | 17.2 | 36.0 | 18.8 | Complied |
| 6 | 13.8 | 3.2 | 17.0 | 36.0 | 19.0 | Complied |
| 11 | 14.0 | 3.2 | 17.2 | 36.0 | 18.8 | Complied |

Transmitter Maximum (Average) Output Power (continued)

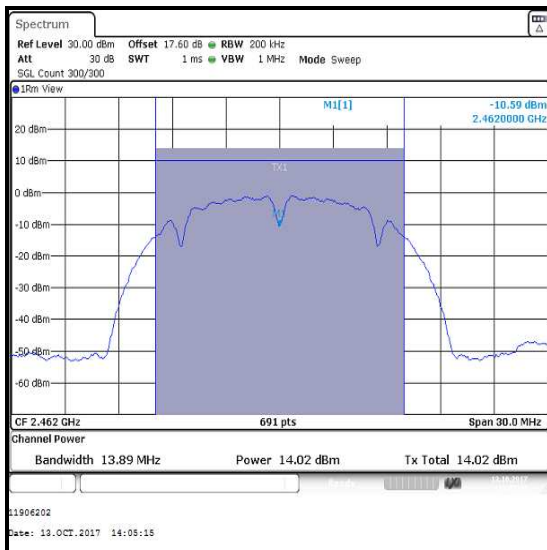
Results: 802.11b / 20 MHz / DBPSK / 1 Mbps



Channel 1



Channel 6



Channel 11

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11g / 20 MHz / QPSK / 18 Mbps****Conducted Peak Limit Comparison**

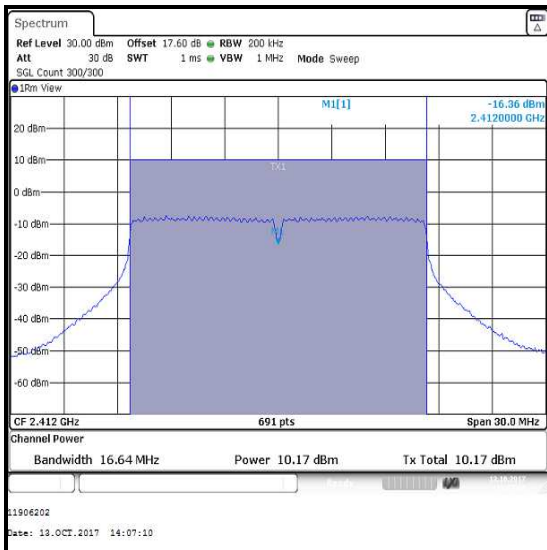
| Channel | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---------|-----------------------|----------------------------|---------------------------------|-----------------------------|-------------|----------|
| 1 | 10.2 | 0.4 | 10.6 | 30.0 | 19.4 | Complied |
| 6 | 14.1 | 0.4 | 14.5 | 30.0 | 15.5 | Complied |
| 11 | 10.3 | 0.4 | 10.7 | 30.0 | 19.3 | Complied |

De Facto EIRP Limit Comparison

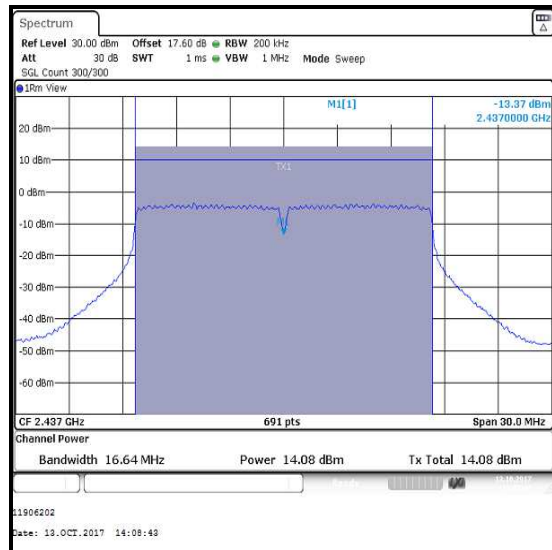
| Channel | Corrected Conducted Power (dBm) | Declared Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---------|---------------------------------|-----------------------------|------------|---------------------------|-------------|----------|
| 1 | 10.6 | 3.2 | 13.8 | 36.0 | 22.2 | Complied |
| 6 | 14.5 | 3.2 | 17.7 | 36.0 | 18.3 | Complied |
| 11 | 10.7 | 3.2 | 13.9 | 36.0 | 22.1 | Complied |

Transmitter Maximum (Average) Output Power (continued)

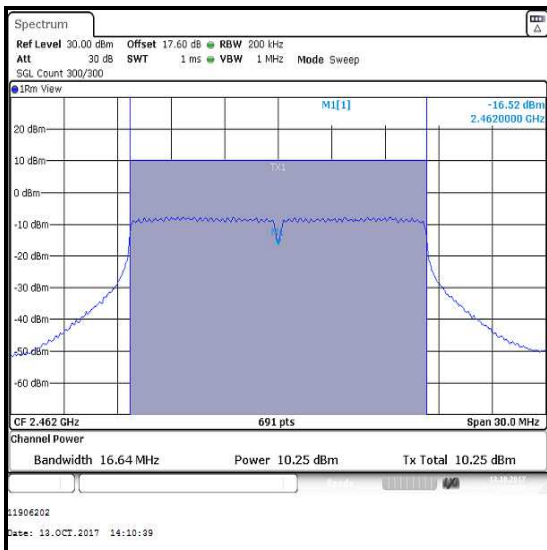
Results: 802.11g / 20 MHz / QPSK / 18 Mbps



Channel 1



Channel 6



Channel 11

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / 20 MHz / 64QAM / MCS5****Conducted Peak Limit Comparison**

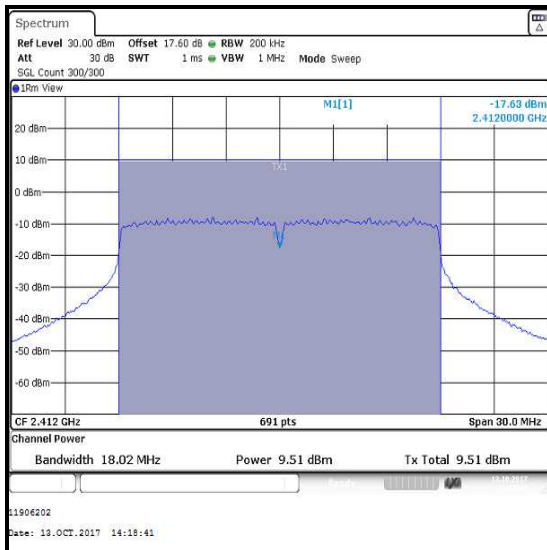
| Channel | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---------|-----------------------|----------------------------|---------------------------------|-----------------------------|-------------|----------|
| 1 | 9.5 | 0.9 | 10.4 | 30.0 | 19.6 | Complied |
| 6 | 13.6 | 0.9 | 14.5 | 30.0 | 15.5 | Complied |
| 11 | 9.5 | 0.9 | 10.4 | 30.0 | 19.6 | Complied |

De Facto EIRP Limit Comparison

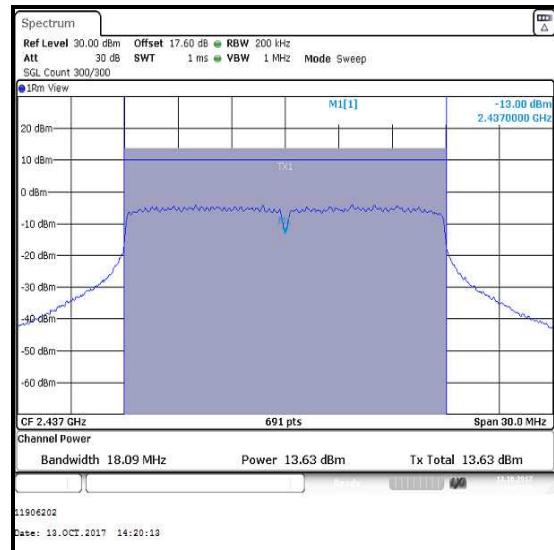
| Channel | Corrected Conducted Power (dBm) | Declared Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---------|---------------------------------|-----------------------------|------------|---------------------------|-------------|----------|
| 1 | 10.4 | 3.2 | 13.6 | 36.0 | 22.4 | Complied |
| 6 | 14.5 | 3.2 | 17.7 | 36.0 | 18.3 | Complied |
| 11 | 10.4 | 3.2 | 13.6 | 36.0 | 22.4 | Complied |

Transmitter Maximum (Average) Output Power (continued)

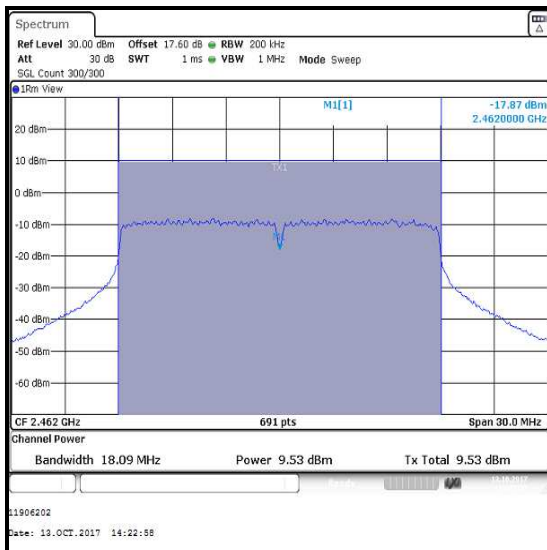
Results: 802.11n / 20 MHz / 64QAM / MCS5



Channel 1



Channel 6



Channel 11

Transmitter Maximum (Average) Output Power (continued)

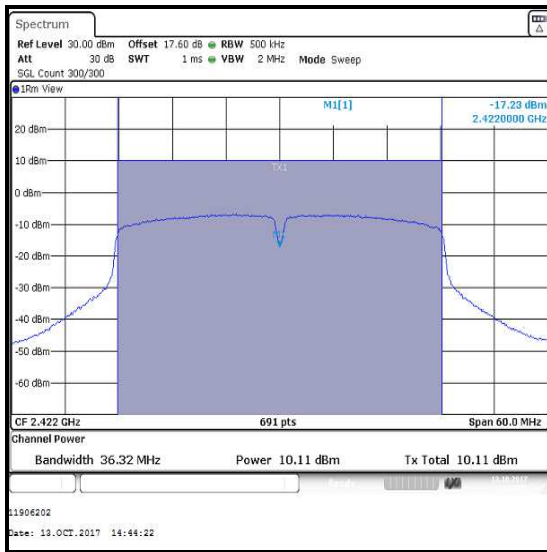
Results: 802.11n / 40 MHz / BPSK / MCS0

Conducted Peak Limit Comparison

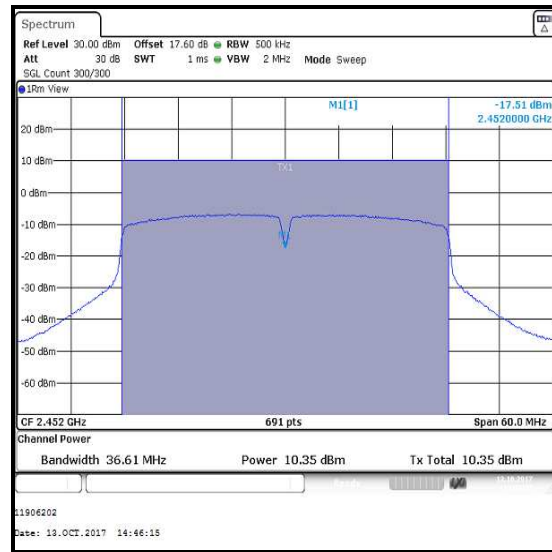
| Channel | Conducted Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Power (dBm) | Conducted Power Limit (dBm) | Margin (dB) | Result |
|---------|-----------------------|----------------------------|---------------------------------|-----------------------------|-------------|----------|
| 3 | 10.1 | 0.3 | 10.4 | 30.0 | 19.6 | Complied |
| 9 | 10.4 | 0.3 | 10.7 | 30.0 | 19.3 | Complied |

De Facto EIRP Limit Comparison

| Channel | Corrected Conducted Power (dBm) | Declared Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---------|---------------------------------|-----------------------------|------------|---------------------------|-------------|----------|
| 3 | 10.4 | 3.2 | 13.6 | 36.0 | 22.4 | Complied |
| 9 | 10.7 | 3.2 | 13.9 | 36.0 | 22.1 | Complied |



Channel 3



Channel 9

Transmitter Maximum (Average) Output Power (continued)**Test Equipment Used:**

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|-------------------|----------------------|------------|------------|-----------------------|------------------------|
| M2004 | Thermohygrometer | Testo | 608-H1 | 45046425 | 22 Feb 2018 | 12 |
| A3004 | RF Switch | Pickering Interfaces | 64-102-002 | XZ363230 | Calibrated before use | - |
| A2523 | Attenuator | AtlanTechRF | AN18W5-10 | 832827#1 | Calibrated before use | - |
| M2019 | Power Sensor | Boonton | 55006 | 10078 | 23 Mar 2018 | 12 |
| M2018 | Signal Analyser | Rohde & Schwarz | FSV7 | 102699 | 23 Mar 2018 | 12 |
| G0614 | Signal Generator | Rohde & Schwarz | SMB100A | 177687 | 08 May 2020 | 36 |
| S0568 | Power Supply Unit | Keithley | 2303 | 4310413 | Calibrated before use | - |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 04 May 2018 | 12 |

5.2.5. Transmitter Radiated Emissions**Test Summary:**

| | | | |
|-----------------------------------|----------------|-------------------|-----------------|
| Test Engineer: | John Ferdinand | Test Date: | 12 October 2017 |
| Test Sample Serial Number: | 44 | | |

| | |
|--------------------------|----------------------------------|
| FCC Reference: | Parts 15.247(d) & 15.209(a) |
| Test Method Used: | ANSI C63.10 Sections 6.3 and 6.5 |
| Frequency Range | 30 MHz to 1000 MHz |

Environmental Conditions:

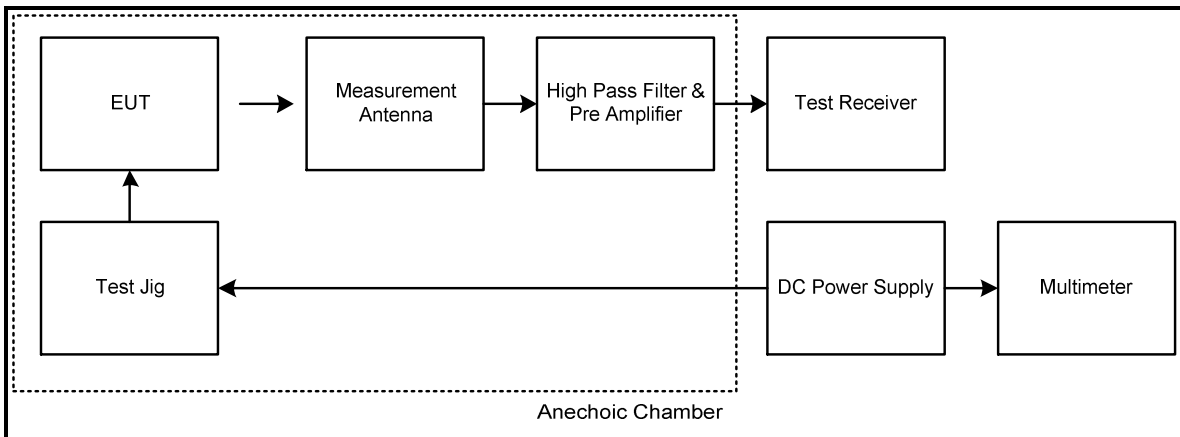
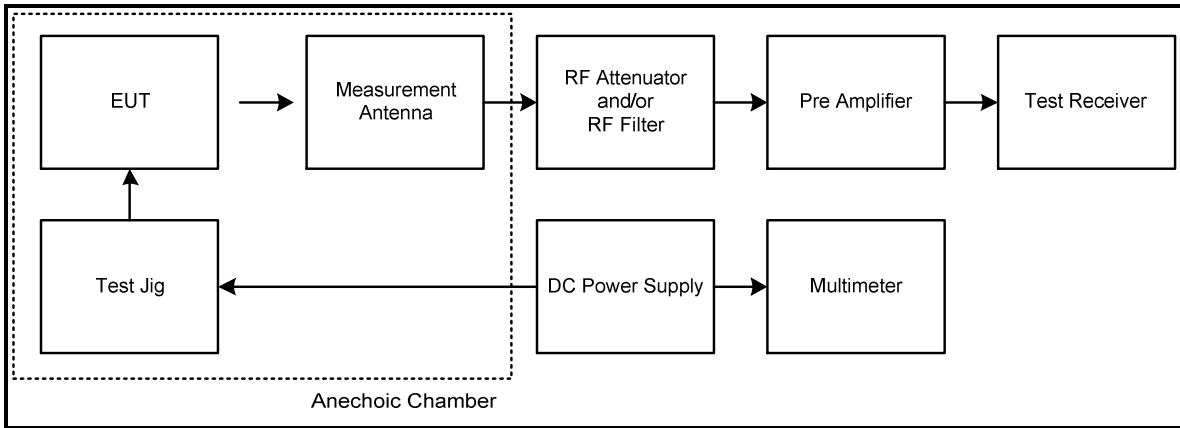
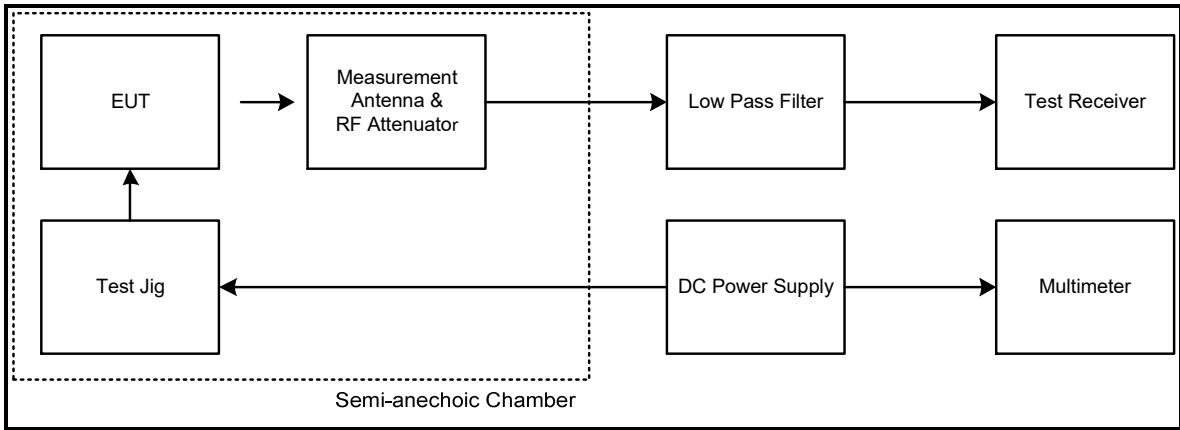
| | |
|-------------------------------|----|
| Temperature (°C): | 22 |
| Relative Humidity (%): | 50 |

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the middle channel only.
3. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
4. Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 120 kHz and video bandwidth 500 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.
5. Final measurements were performed on the marker frequencies and the results entered into the table below. The test receiver resolution bandwidth was set to 120 kHz, using a CISPR quasi-peak detector and span big enough to see the whole emission.

Transmitter Radiated Emissions (continued)

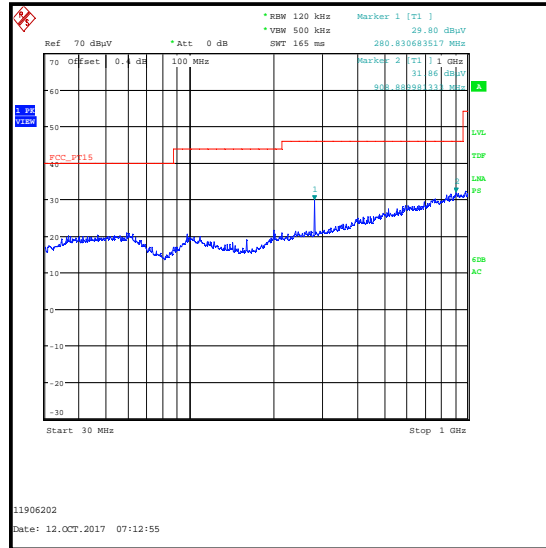
Test setup for radiated measurements:



Transmitter Radiated Emissions (continued)

Results: Quasi Peak / Middle Channel / 802.11g / 18Mbps

| Frequency (MHz) | Antenna Polarity | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|------------------|----------------------|----------------------|-------------|----------|
| 279.999 | Horizontal | 28.8 | 46.0 | 17.2 | Complied |



Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Test Equipment Used:

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|------------------|-----------------|-----------|-------------|-----------------------|------------------------|
| M2003 | Thermohygrometer | Testo | 608-H1 | 45046641 | 22 Feb 2018 | 12 |
| K0017 | 5m RSE Chamber | Rainford EMC | N/A | N/A | 14 Apr 2018 | 12 |
| M1995 | Test Receiver | Rohde & Schwarz | ESU40 | 100428 | 13 Apr 2018 | 12 |
| A2888 | Antenna | Schwarzbeck | VULB 9163 | 9163-941 | 25 Apr 2018 | 12 |
| A2147 | Attenuator | AtlanTecRF | AN18-06 | 09020206-06 | 25 Apr 2018 | 12 |
| A2131 | Low Pass Filter | AtlanTecRF | AFL-02000 | JFB1004-002 | 27 Feb 2018 | 12 |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 02 May 2018 | 12 |
| S0538 | Power Supply | TTI | PL154 | 250135 | Calibrated before use | - |

Transmitter Radiated Emissions (continued)**Test Summary:**

| | | | |
|-----------------------------------|----------------|--------------------|--------------------------------------|
| Test Engineer: | Andrew Edwards | Test Dates: | 03 October 2017 & 05 October 2017 |
| Test Sample Serial Number: | 44 | | |

| | |
|--------------------------|----------------------------------|
| FCC Reference: | Parts 15.247(d) & 15.209(a) |
| Test Method Used: | ANSI C63.10 Sections 6.3 and 6.6 |
| Frequency Range | 1 GHz to 25 GHz |

Environmental Conditions:

| | |
|-------------------------------|----------|
| Temperature (°C): | 24 |
| Relative Humidity (%): | 48 to 54 |

Note(s):

1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak and average noise floor readings of the measuring receiver were recorded as shown in the tables below.
3. The emission shown approximately at 2437 MHz on the 1 GHz to 3 GHz plot is the EUT fundamental.
4. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0017) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT.
5. Pre-scans were performed and a marker placed on the highest measured level of the appropriate plot. The test receiver resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. The sweep time was set to auto.

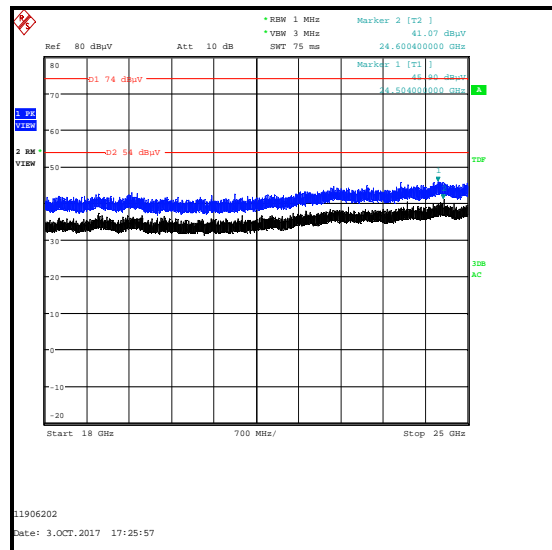
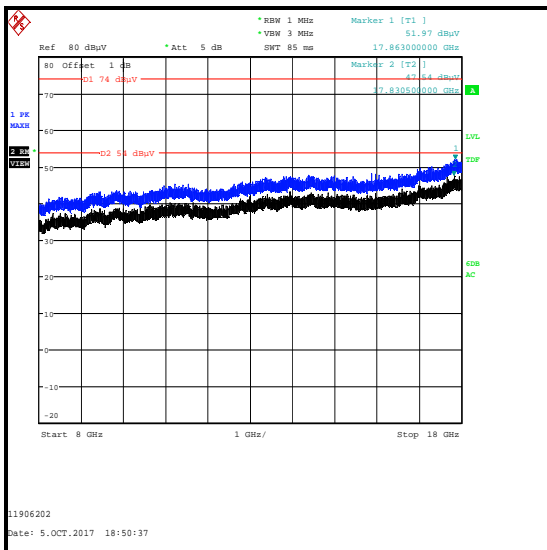
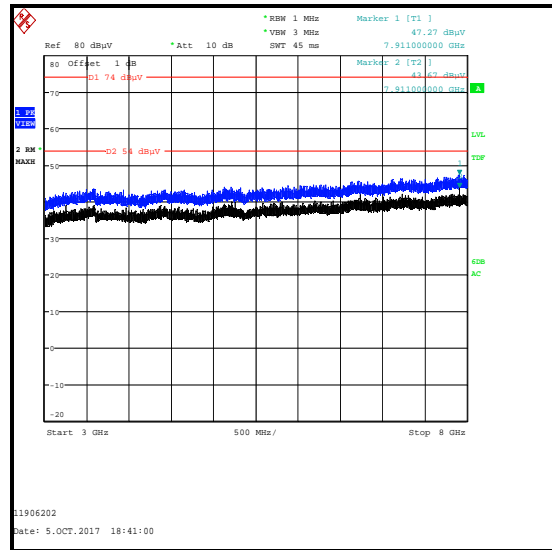
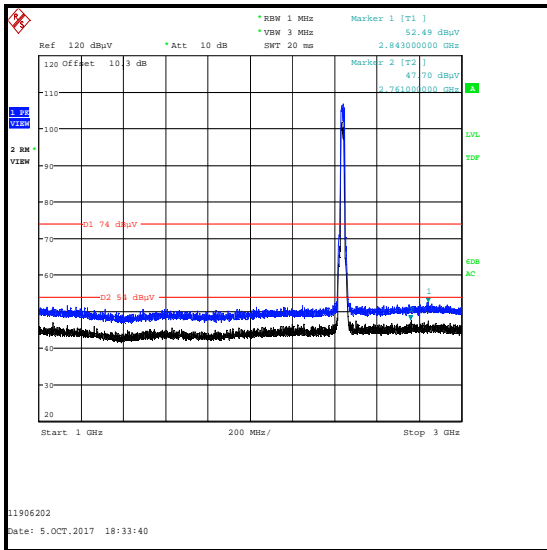
Results: Peak

| Frequency (MHz) | Antenna Polarity | Peak Level (dB μ V/m) | Peak Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|------------------|---------------------------|---------------------------|-------------|----------|
| 2483.000 | Vertical | 52.5 | 74.0 | 21.5 | Complied |

Results: Average

| Frequency (MHz) | Antenna Polarity | Average Level (dB μ V/m) | Average Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|------------------|------------------------------|------------------------------|-------------|----------|
| 2761.000 | Vertical | 47.7 | 54.0 | 6.3 | Complied |

Transmitter Radiated Emissions (continued)



Transmitter Radiated Emissions (continued)**Test Equipment Used:**

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|------------------|-----------------|-----------|------------|-----------------------|------------------------|
| M2003 | Thermohygrometer | Testo | 608-H1 | 45046641 | 22 Feb 2018 | 12 |
| K0017 | 5m RSE Chamber | Rainford EMC | N/A | N/A | 14 Apr 2018 | 12 |
| M1995 | Test Receiver | Rohde & Schwarz | ESU40 | 100428 | 13 Apr 2018 | 12 |
| A2863 | Pre Amplifier | Agilent | 8449B | 3008A02100 | 11 Apr 2018 | 12 |
| A2891 | Pre Amplifier | Schwarzbeck | BBV 9718 | 9718-306 | 11 Apr 2018 | 12 |
| A2893 | Pre Amplifier | Schwarzbeck | BBV 9721 | 9721-021 | 11 Apr 2018 | 12 |
| A2889 | Antenna | Schwarzbeck | BBHA 9120 | 9120 B 653 | 11 Apr 2018 | 12 |
| A2890 | Antenna | Schwarzbeck | HWRD 750 | 014 | 11 Apr 2018 | 12 |
| A2892 | Antenna | Schwarzbeck | BBHA 9170 | 9170-727 | 11 Apr 2018 | 12 |
| A2916 | Attenuator | AtlanTecRF | AN18W510 | 832827#1 | 03 Mar 2018 | 12 |
| A2914 | High Pass Filter | AtlanTecRF | AFH-03000 | 2155 | 06 Mar 2018 | 12 |
| A2947 | High Pass Filter | AtlanTecRF | AFH-07000 | 1601900001 | 18 May 2018 | 12 |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 02 May 2018 | 12 |
| S0538 | Power Supply | TTI | PL154 | 250135 | Calibrated before use | - |

5.2.6. Transmitter Band Edge Radiated Emissions**Test Summary:**

| | | | |
|-----------------------------------|------------------------------------|--------------------|--|
| Test Engineers: | Andrew Edwards & John Ferdinand | Test Dates: | 26 September 2017 to 02 November 2017 |
| Test Sample Serial Number: | 44 | | |

| | |
|--------------------------|--|
| FCC Reference: | Parts 15.247(d) & 15.209(a) |
| Test Method Used: | ANSI C63.10 Section 6.10 & FCC KDB 558074 Sections 11 & 12 |

Environmental Conditions:

| | |
|-------------------------------|----------|
| Temperature (°C): | 24 to 25 |
| Relative Humidity (%): | 48 to 53 |

Note(s):

1. Radiated band edge was tested on the modes which produced the highest power and widest bandwidth. These were:
 - 802.11b - DBPSK / 1 Mbps
 - 802.11g - QPSK / 18 Mbps
 - 802.11g - 64QAM / 48 Mbps
 - 802.11n HT20 - 16QAM / MCS4
 - 802.11n HT20 - 64QAM / MCS5
 - 802.11n HT40 - BPSK / MCS0
 - 802.11n HT40 - 16QAM / MCS4

Final measurements were performed with the above configurations.

2. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
3. The maximum conducted (average) output power was previously measured. In accordance with FCC KDB 558074 Section 11.1(b), the lower band edge measurement should be performed with a peak detector and the -30 dBc limit applied.
4. As the lower band edge falls within a non-restricted band, only peak measurements are required. In accordance with FCC KDB 558074 Section 11.1, the test method in Section 11.3 was followed: the test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. The test receiver was left to sweep for a sufficient length of time in order to maximise the carrier level and out-of-band emissions. A marker and corresponding reference level line were placed on the peak of the carrier. As the maximum conducted (average) output power was measured using an RMS detector in accordance with FCC KDB 558074 Section 9.2.2.4 an out-of-band limit line was placed 30 dB (FCC KDB 558074 Section 11.1(b)) below the peak level. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent non-restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.

Transmitter Band Edge Radiated Emissions (continued)**Note(s):**

5. As the upper band edge falls within a restricted band both peak and average measurements were recorded by placing a marker at the edge of the band. For peak measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. A peak detector was used, sweep time was set to auto and trace mode was Max Hold. For average measurements the test receiver resolution bandwidth was set to 1 MHz and the video bandwidth 3 MHz. An RMS detector was used, sweep time was set to auto and trace mode was trace averaging over 300 sweeps. A marker was placed on the band edge spot frequencies and a second marker placed on the highest emission level in the adjacent restricted band of operation (where a higher level emission was present). Marker frequencies and levels were recorded.
6. There is a restricted band 10 MHz below the lower band edge. The test receiver was set up as follows: the RBW set to 1 MHz, the VBW set to 3 MHz, with the sweep time set to auto couple. Peak and average measurements were performed with their respective detectors. Markers were placed on the highest point on each trace.
7. For 802.11g and 802.11n the EUT was transmitting at <98% duty cycle, in accordance with KDB 558074 Section 12.2.5.2, the calculated duty cycle in section 5.2.2 was added to the measured result for average measurements.
8. *For 802.11n HT40 modes, the integration method was used in accordance with FCC KDB 558074 Section 13.3.2, in order to meet the average limit. As the EUT had a duty cycle < 98% the duty cycle correction factor has been added to the band edge result.

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / DBPSK / 1 Mbps****Results: Lower Band Edge / Channel 1**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2397.516 | 56.8 | 68.6 | 11.8 | Complied |
| 2400 | 45.2 | 68.6 | 23.4 | Complied |

Results: Upper Band Edge / Peak / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 54.1 | 74.0 | 19.9 | Complied |
| 2487.763 | 55.4 | 74.0 | 18.6 | Complied |

Results: Upper Band Edge / Average / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 43.8 | 54.0 | 10.2 | Complied |
| 2487.987 | 45.0 | 54.0 | 9.0 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

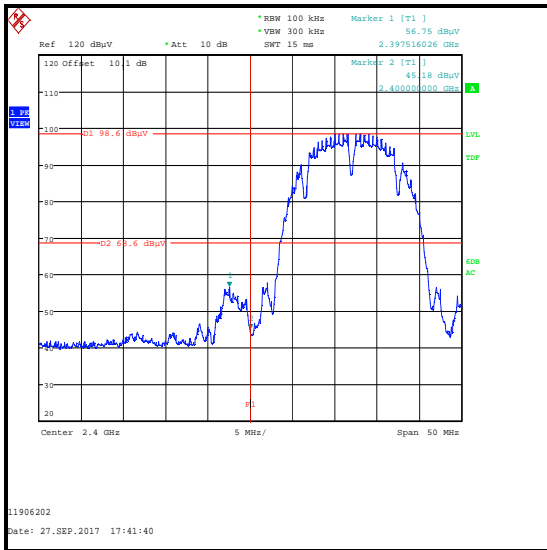
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2385.769 | 52.6 | 74.0 | 21.4 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

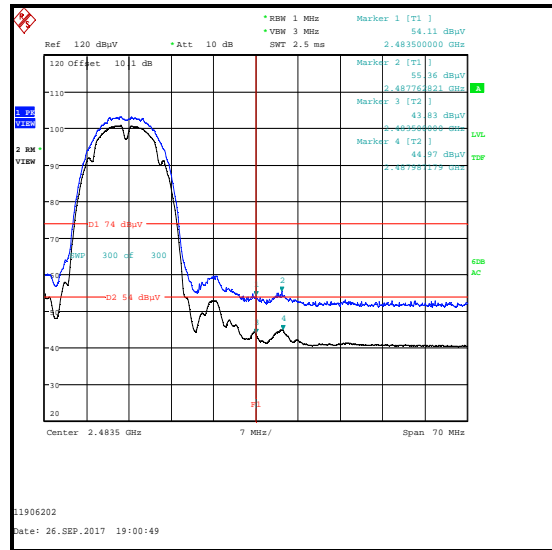
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2386.026 | 43.0 | 54.0 | 11.0 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

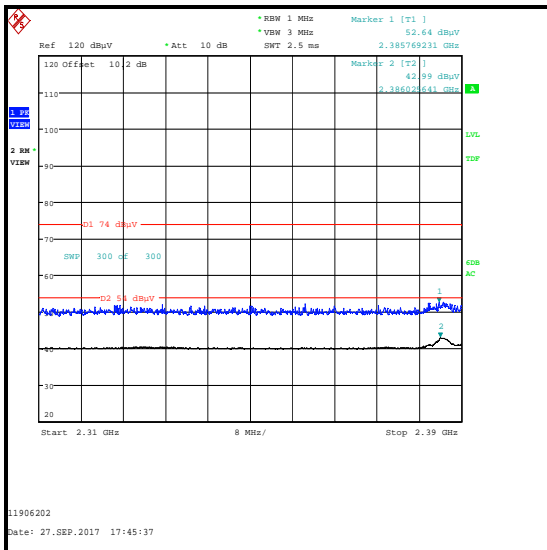
Results: 802.11b / 20 MHz / DBPSK / 1 Mbps



**Lower Band Edge
Channel 1**



**Upper Band Edge
Channel 11**



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11g / 20 MHz / QPSK / 18 Mbps****Results: Lower Band Edge / Channel 1**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.840 | 62.6 | 66.9 | 4.3 | Complied |
| 2400 | 59.9 | 66.9 | 7.0 | Complied |

Results: Upper Band Edge / Peak / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 62.8 | 74.0 | 11.2 | Complied |

Results: Upper Band Edge / Average / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 49.8 | 0.4 | 50.2 | 54.0 | 3.8 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

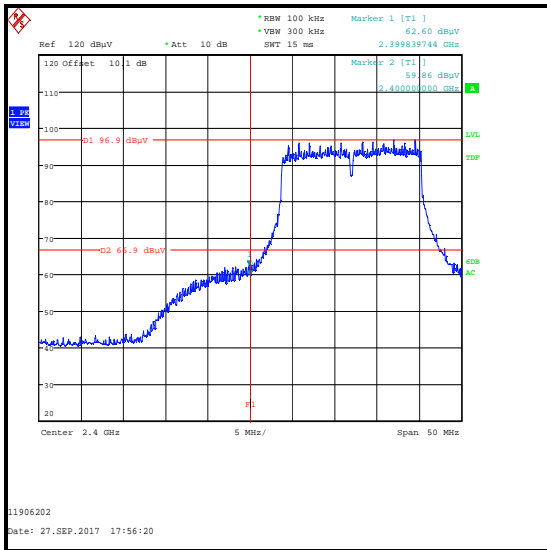
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2390.000 | 62.8 | 74.0 | 11.2 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

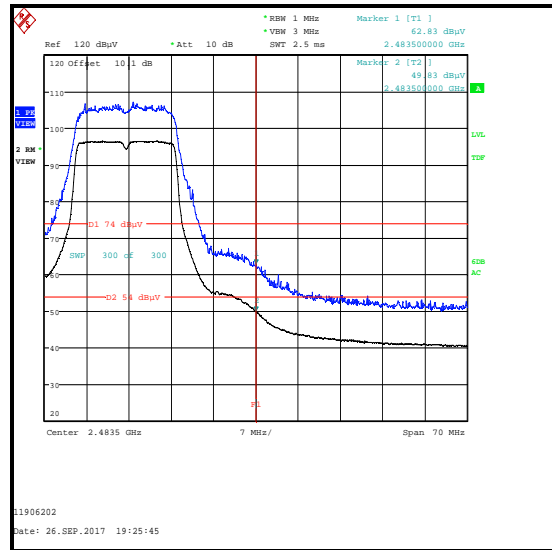
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390.000 | 50.5 | 0.4 | 50.9 | 54.0 | 3.1 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

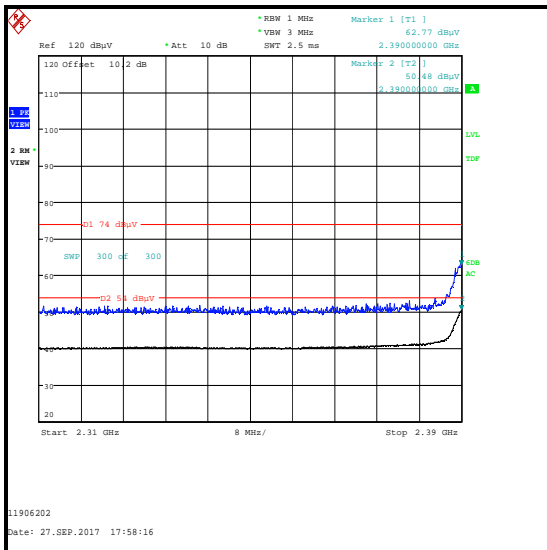
Results: 802.11g / 20 MHz / QPSK / 18 Mbps



Lower Band Edge
Channel 1



Upper Band Edge
Channel 11



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11g / 20 MHz / 64QAM / 48 Mbps****Results: Lower Band Edge / Channel 1**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.760 | 64.5 | 65.2 | 0.7 | Complied |
| 2400 | 64.0 | 65.2 | 1.2 | Complied |

Results: Upper Band Edge / Peak / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 66.5 | 74.0 | 7.5 | Complied |
| 2483.612 | 67.9 | 74.0 | 6.1 | Complied |

Results: Upper Band Edge / Average / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 51.6 | 0.8 | 52.4 | 54.0 | 1.6 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

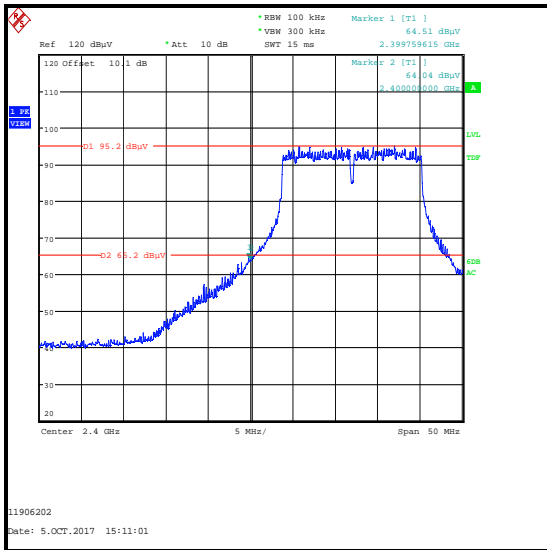
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2390.000 | 62.6 | 74.0 | 11.4 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

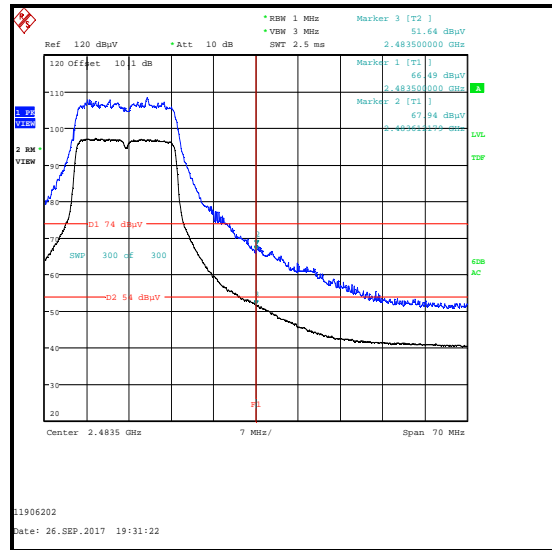
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390.000 | 44.4 | 0.8 | 45.2 | 54.0 | 8.8 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

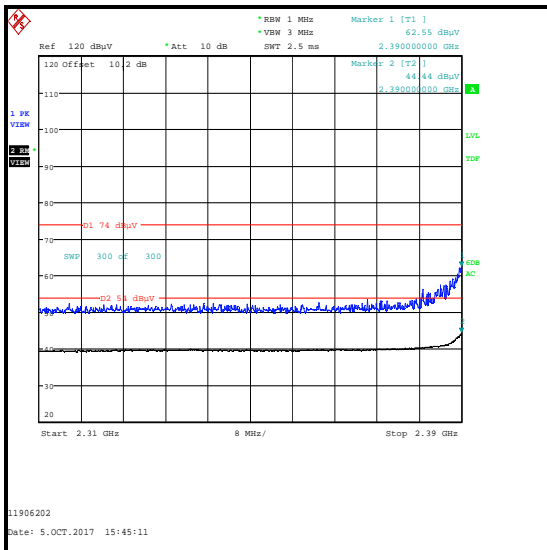
Results: 802.11g / 20 MHz / 64QAM / 48 Mbps



Lower Band Edge Channel 1



Upper Band Edge Channel 11



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11g / 20 MHz / 64QAM / 48 Mbps

Results: Lower Band Edge / Channel 2

| Frequency (MHz) | Level (dBµV/m) | -30 dBc Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|------------------------|-------------|----------|
| 2399.519 | 61.7 | 69.4 | 7.7 | Complied |
| 2400 | 60.3 | 69.4 | 9.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

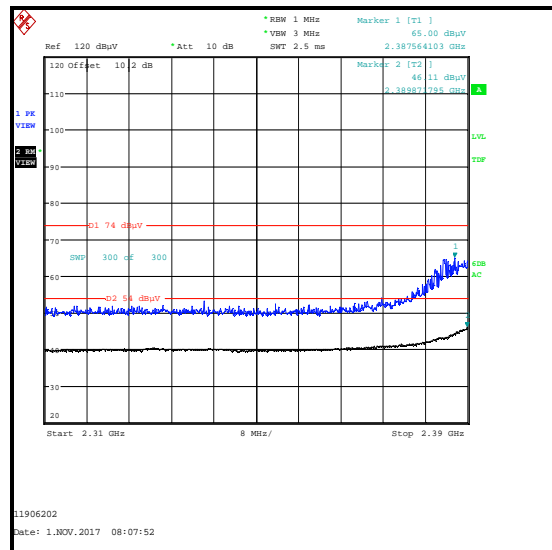
| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------|-------------|----------|
| 2387.564 | 65.0 | 74.0 | 9.0 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

| Frequency (MHz) | Level (dBµV/m) | Duty Cycle Correction (dB) | Corrected Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------------------|--------------------------|----------------|-------------|----------|
| 2389.872 | 46.1 | 0.8 | 46.9 | 54.0 | 7.1 | Complied |



Lower Band Edge Channel 2



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / 16QAM / MCS4****Results: Lower Band Edge / Channel 1**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.920 | 62.3 | 63.6 | 1.3 | Complied |
| 2400 | 62.1 | 63.6 | 1.5 | Complied |

Results: Upper Band Edge / Peak / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 68.5 | 74.0 | 5.5 | Complied |

Results: Upper Band Edge / Average / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 52.2 | 0.7 | 52.9 | 54.0 | 1.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

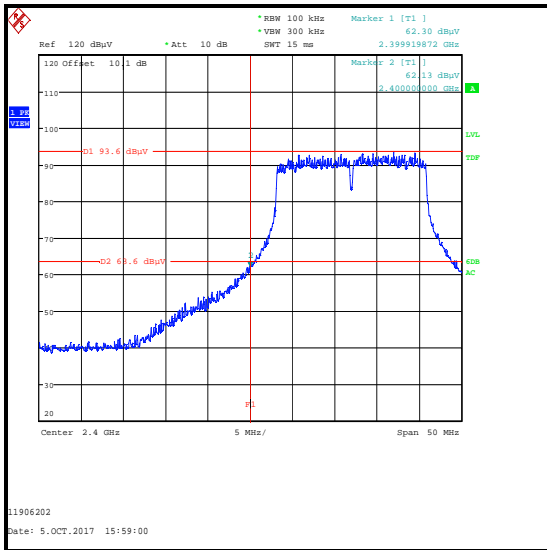
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2389.972 | 62.4 | 74.0 | 11.6 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

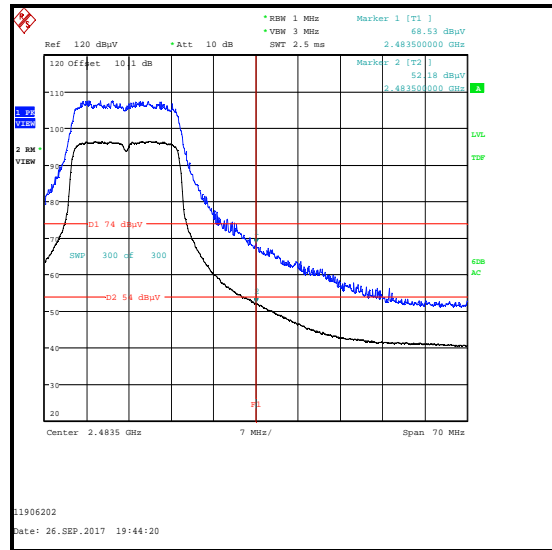
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390.000 | 46.1 | 0.7 | 46.8 | 54.0 | 7.2 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

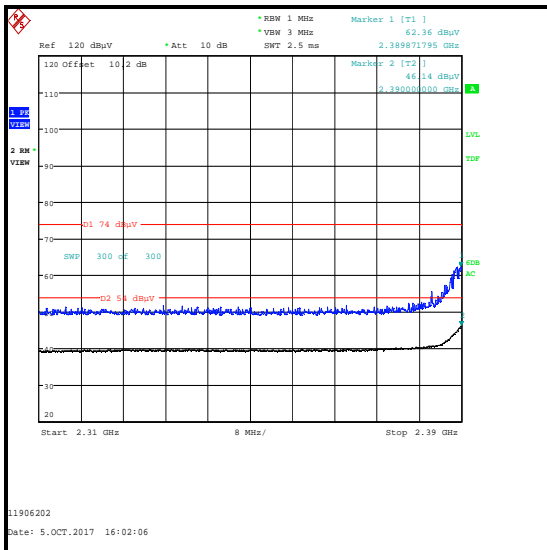
Results: 802.11n HT20 / 16QAM / MCS4



Lower Band Edge Channel 1



Upper Band Edge Channel 11



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11n HT20 / 16QAM / MCS4

Results: Lower Band Edge / Channel 2

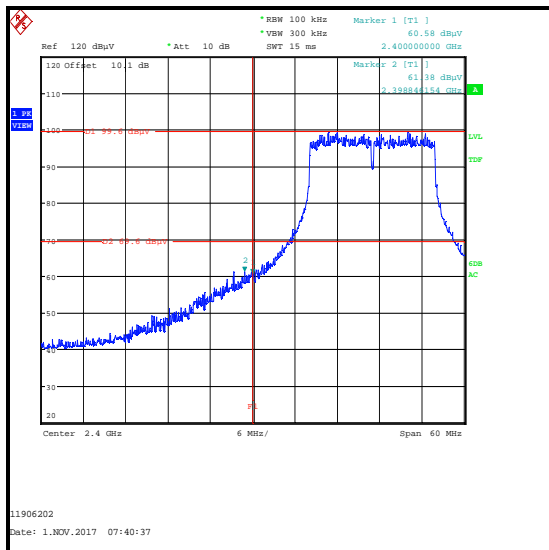
| Frequency (MHz) | Level (dBµV/m) | -30 dBc Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|------------------------|-------------|----------|
| 2398.846 | 61.4 | 69.6 | 8.2 | Complied |
| 2400 | 60.6 | 69.6 | 9.0 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

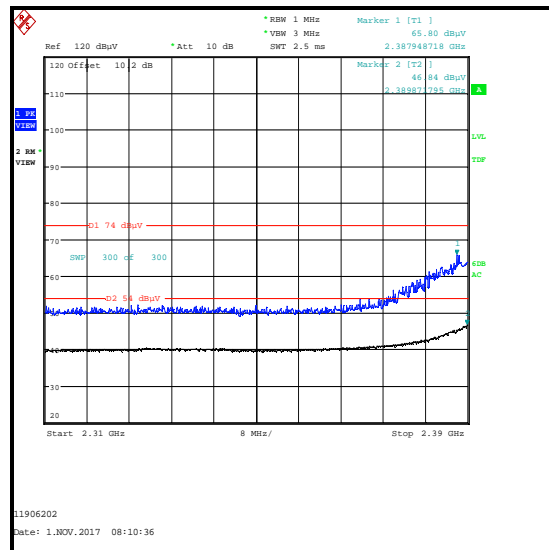
| Frequency (MHz) | Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------|-------------|----------|
| 2387.949 | 65.8 | 74.0 | 8.2 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

| Frequency (MHz) | Level (dBµV/m) | Duty Cycle Correction (dB) | Corrected Level (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------------------|--------------------------|----------------|-------------|----------|
| 2389.872 | 46.8 | 0.7 | 47.5 | 54.0 | 6.5 | Complied |



Lower Band Edge Peak Channel 2



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / 64QAM / MCS5****Results: Lower Band Edge / Channel 1**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.840 | 62.5 | 63.4 | 0.9 | Complied |
| 2400 | 60.7 | 63.4 | 2.7 | Complied |

Results: Upper Band Edge / Peak / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 70.5 | 74.0 | 3.5 | Complied |
| 2483.837 | 71.9 | 74.0 | 2.1 | Complied |

Results: Upper Band Edge / Average / Channel 11

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 52.3 | 0.9 | 53.2 | 54.0 | 0.8 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2389.872 | 62.2 | 74.0 | 11.8 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

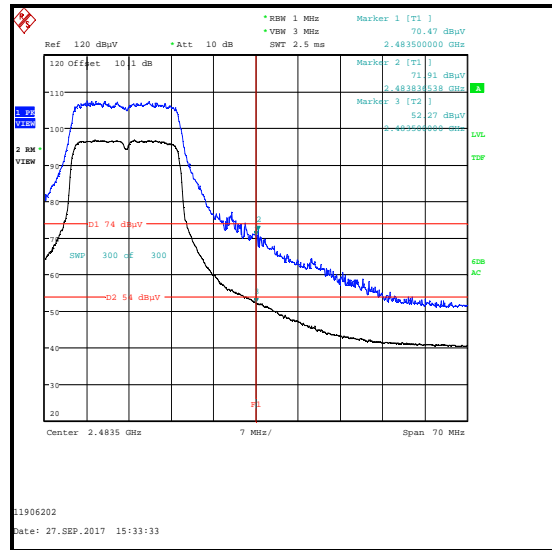
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390.000 | 44.5 | 0.9 | 45.4 | 54.0 | 8.6 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

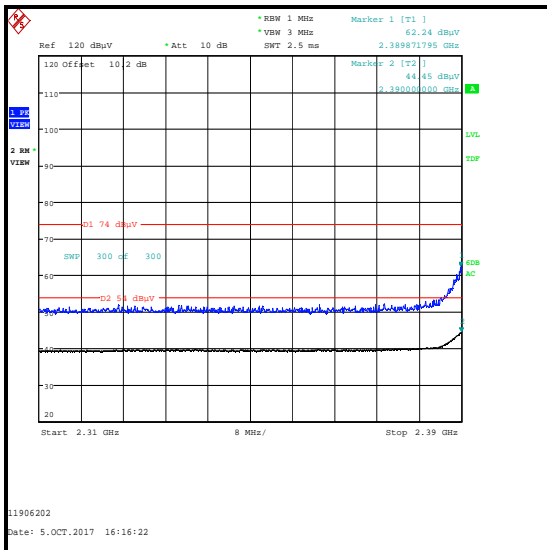
Results: 802.11n HT20 / 64QAM / MCS5



Lower Band Edge Channel 1



Upper Band Edge Channel 11



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11n HT20 / 64QAM / MCS5

Results: Lower Band Edge / Channel 2

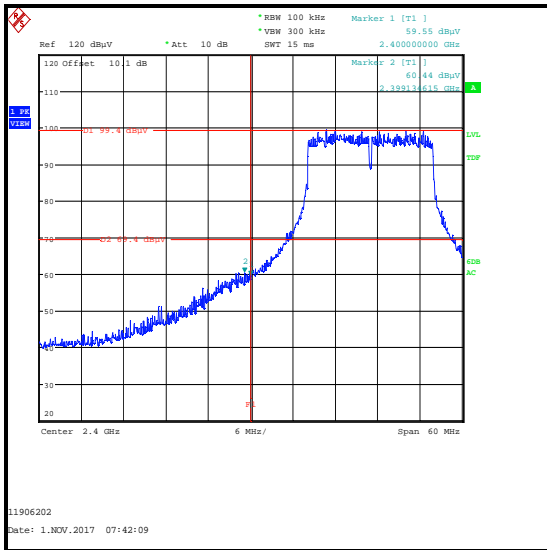
| Frequency (MHz) | Level (dBμV/m) | -30 dBc Limit (dBμV/m) | Margin (dB) | Result |
|-----------------|----------------|------------------------|-------------|----------|
| 2399.135 | 60.4 | 69.4 | 9.0 | Complied |
| 2400 | 59.6 | 69.4 | 9.8 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

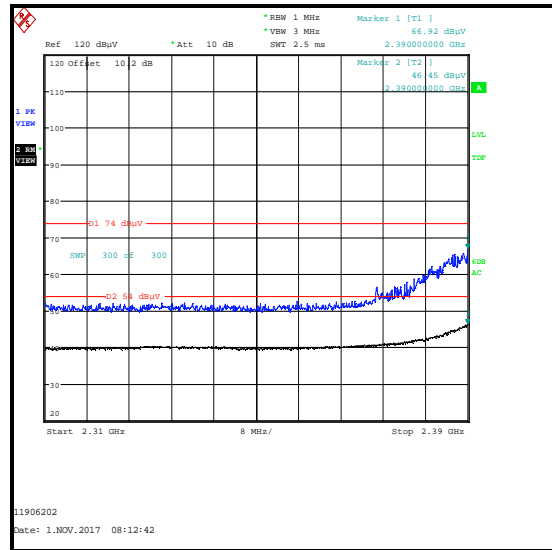
| Frequency (MHz) | Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------|-------------|----------|
| 2390 | 66.9 | 74.0 | 7.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

| Frequency (MHz) | Level (dBμV/m) | Duty Cycle Correction (dB) | Corrected Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Result |
|-----------------|----------------|----------------------------|--------------------------|----------------|-------------|----------|
| 2390 | 46.5 | 0.9 | 47.4 | 54.0 | 6.6 | Complied |



Lower Band Edge Channel 2



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT40 / BPSK / MCS0****Results: Lower Band Edge / Channel 3**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.856 | 63.1 | 65.1 | 2.0 | Complied |
| 2400 | 62.5 | 65.1 | 2.6 | Complied |

Results: Upper Band Edge / Peak / Channel 9

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 64.9 | 74.0 | 9.1 | Complied |
| 2486.673 | 66.1 | 74.0 | 7.9 | Complied |

Results: Upper Band Edge / Average / Channel 9

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 53.1 | 0.3 | 53.4* | 54.0 | 0.6 | Complied |
| 2484.734 | 53.2 | 0.3 | 53.5* | 54.0 | 0.5 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

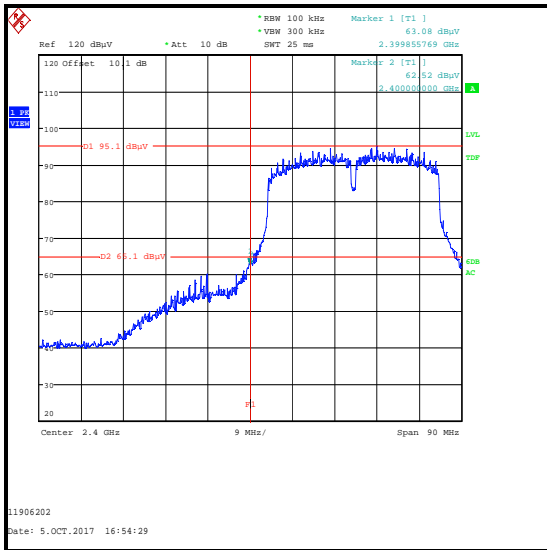
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2388.974 | 65.4 | 74.0 | 8.6 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390.000 | 53.0 | 0.3 | 53.3* | 54.0 | 0.7 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

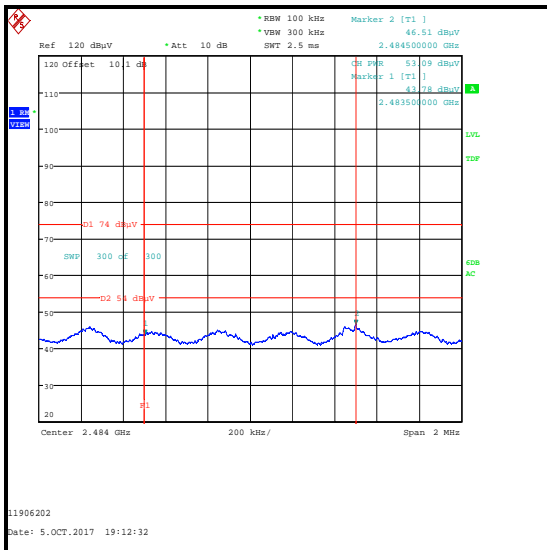
Results: 802.11n HT40 / BPSK / MCS0



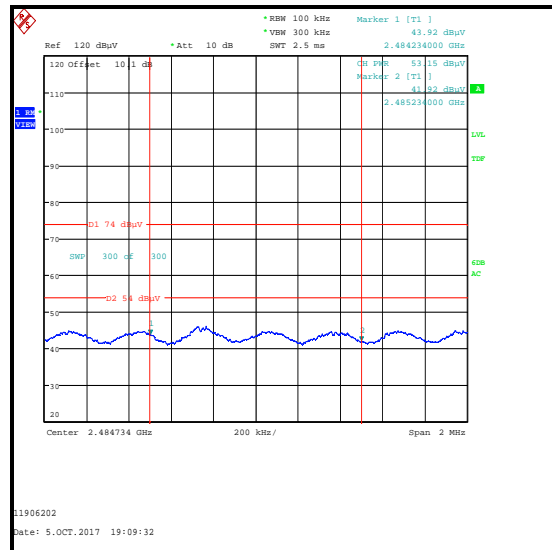
Lower Band Edge Channel 3



Upper Band Edge Channel 9



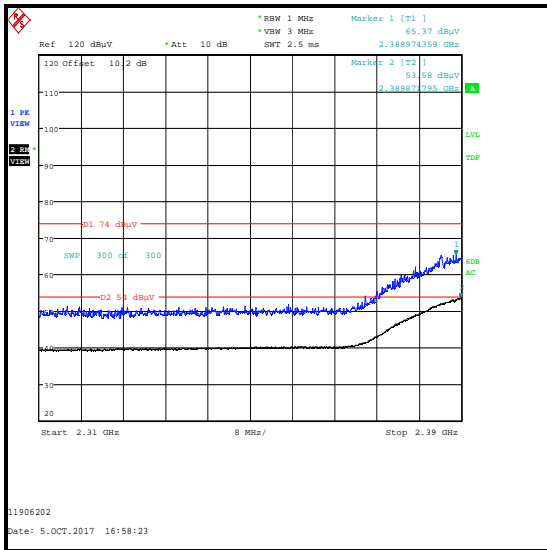
Upper Band Edge / Average / Channel 9 – Integration performed 0.5 MHz away from the 2483.5 MHz



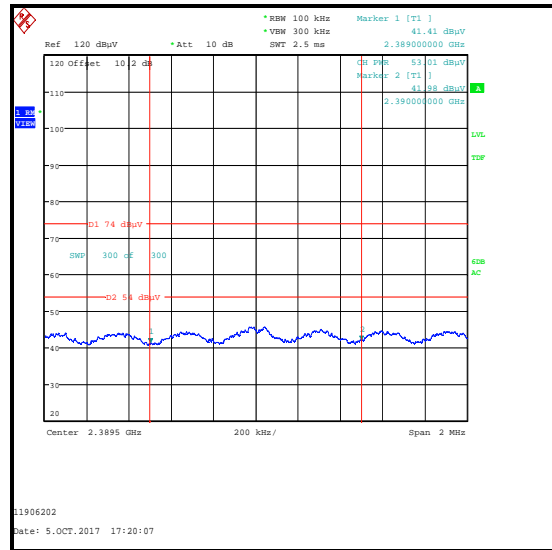
Upper Band Edge/ Channel 9 – Integration performed at 2484.558 MHz

Transmitter Band Edge Radiated Emissions (continued)

Results: 802.11n HT40 / BPSK / MCS0



2310 MHz to 2390 MHz Restricted Band



**2310 MHz to 2390 MHz Restricted Band / Average
– Integration performed 0.5 MHz away from the
2390 MHz**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT40 / BPSK / MCS0****Results: Lower Band Edge / Channel 4**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2395.673 | 63.2 | 68.4 | 5.2 | Complied |
| 2400 | 58.2 | 68.4 | 10.2 | Complied |

Results: Upper Band Edge / Peak / Channel 8

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 55.7 | 74.0 | 18.3 | Complied |
| 2483.692 | 56.6 | 74.0 | 17.4 | Complied |

Results: Upper Band Edge / Average / Channel 8

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 44.6 | 0.3 | 44.9 | 54.0 | 9.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

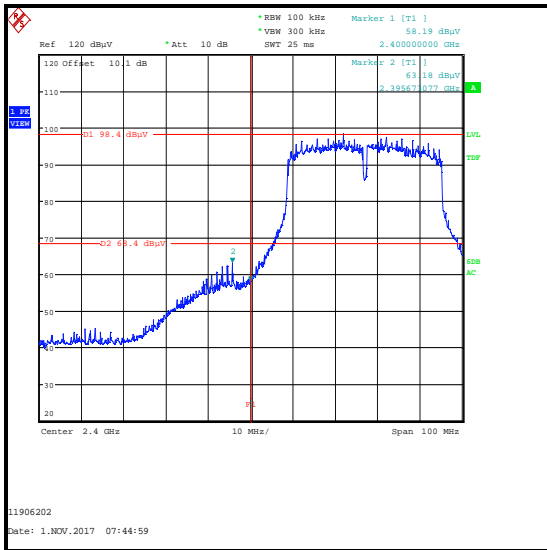
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2389.872 | 66.9 | 74.0 | 7.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

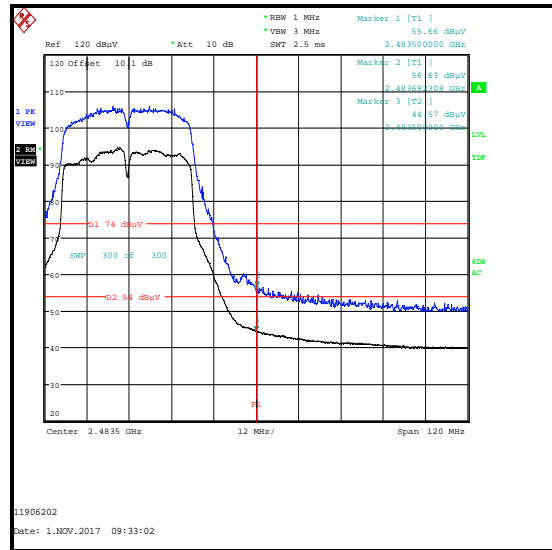
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390 | 51.5 | 0.3 | 51.8* | 54.0 | 2.2 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

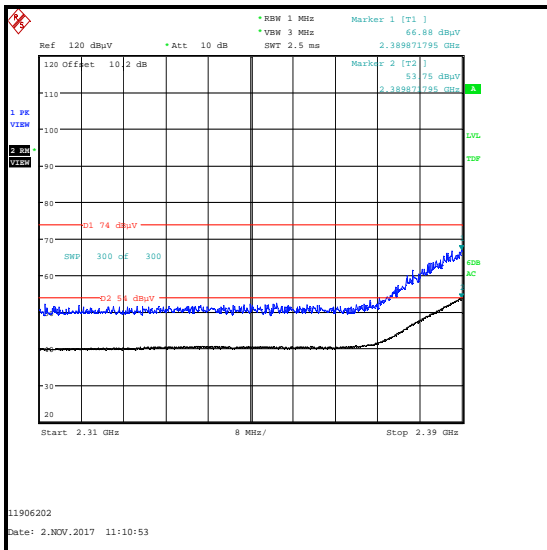
Results: 802.11n HT40 / BPSK / MCS0



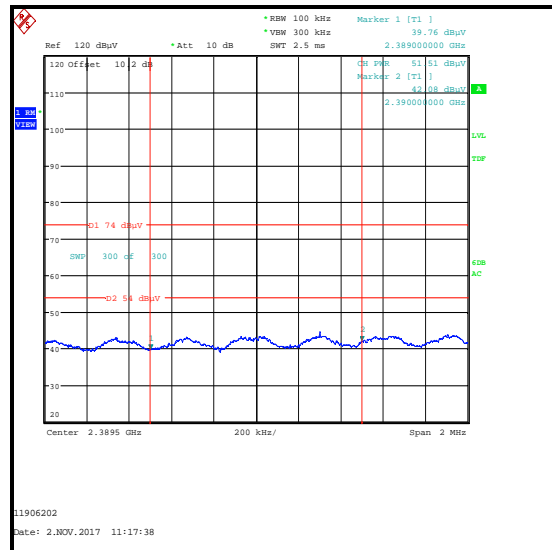
Lower Band Edge Channel 4



Upper Band Edge Channel 8



2310 MHz to 2390 MHz Restricted Band



2310 MHz to 2390 MHz Restricted Band / Average
– Integration performed 0.5 MHz away from the 2390 MHz

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT40 / 16QAM / MCS4****Results: Lower Band Edge / Channel 3**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2399.712 | 59.9 | 60.6 | 0.7 | Complied |
| 2400 | 59.4 | 60.6 | 1.2 | Complied |

Results: Upper Band Edge / Peak / Channel 9

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 65.2 | 74.0 | 8.8 | Complied |
| 2484.558 | 66.2 | 74.0 | 7.8 | Complied |

Results: Upper Band Edge / Average / Channel 9

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 51.3 | 1.2 | 52.5 | 54.0 | 1.5 | Complied |
| 2484.558 | 52.2 | 1.2 | 53.4 | 54.0 | 0.6 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

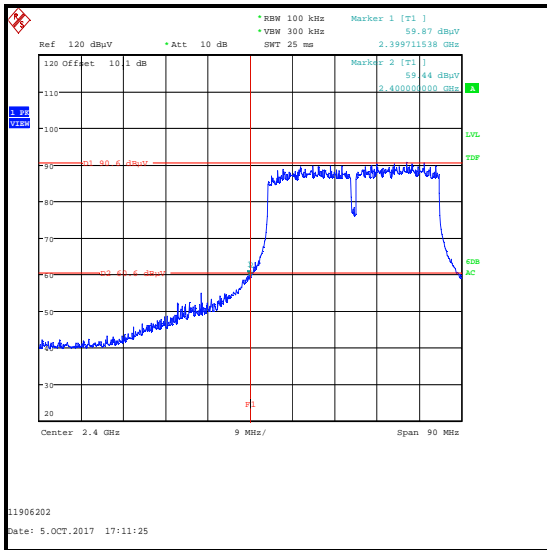
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2389.872 | 64.7 | 74.0 | 9.3 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

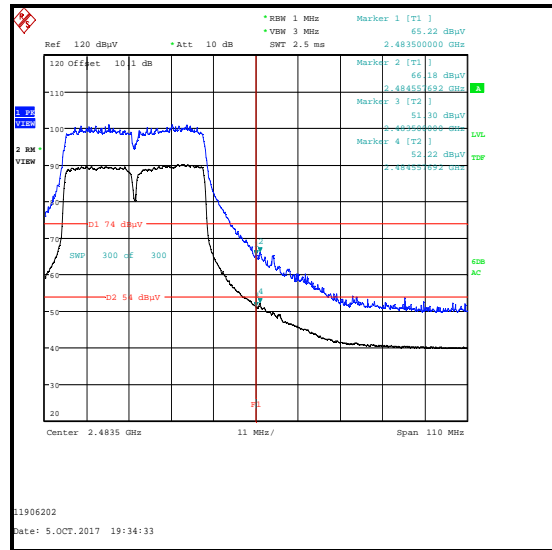
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2389.615 | 49.6 | 1.2 | 50.8 | 54.0 | 3.2 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

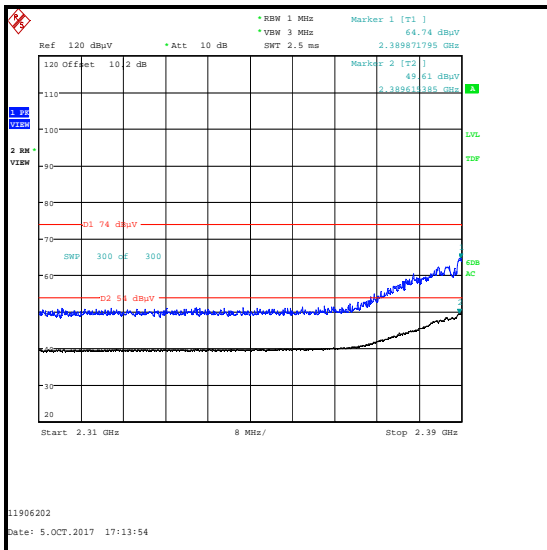
Results: 802.11n HT40 / 16QAM / MCS4



Lower Band Edge
Channel 3



Upper Band Edge
Channel 9



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT40 / 16QAM / MCS4****Results: Lower Band Edge / Channel 4**

| Frequency (MHz) | Level (dB μ V/m) | -30 dBc Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|------------------------------|-------------|----------|
| 2395.673 | 63.2 | 66.7 | 3.5 | Complied |
| 2400 | 61.7 | 66.7 | 5.0 | Complied |

Results: Upper Band Edge / Peak / Channel 8

| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2483.5 | 69.9 | 74.0 | 4.1 | Complied |

Results: Upper Band Edge / Average / Channel 8

| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2483.5 | 48.2 | 1.2 | 49.4 | 54.0 | 4.6 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Peak

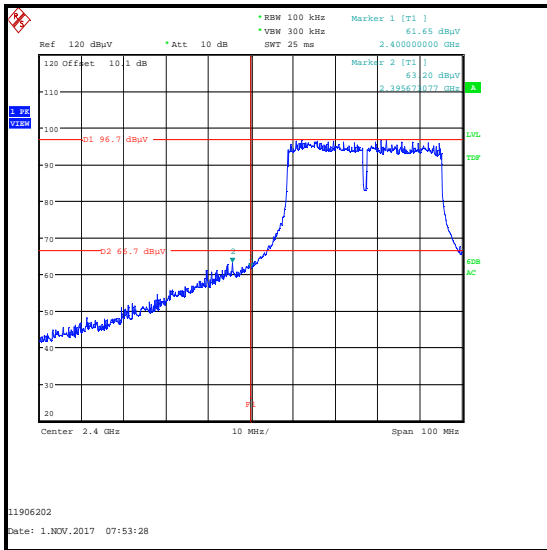
| Frequency (MHz) | Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------|-------------|----------|
| 2389.872 | 66.9 | 74.0 | 7.1 | Complied |

Results: 2310 MHz to 2390 MHz Restricted Band / Average

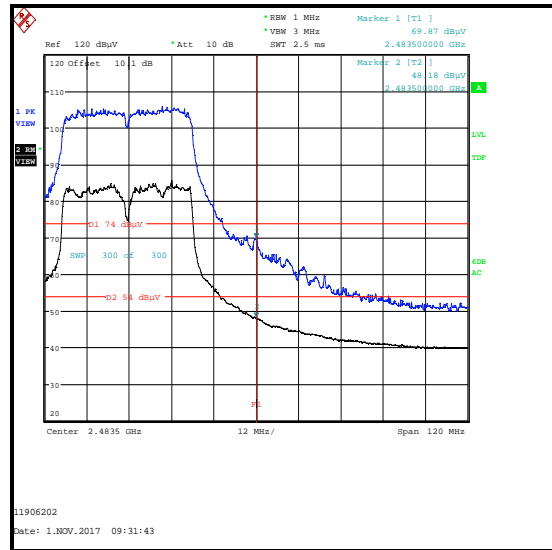
| Frequency (MHz) | Level (dB μ V/m) | Duty Cycle Correction (dB) | Corrected Level (dB μ V/m) | Limit (dB μ V/m) | Margin (dB) | Result |
|-----------------|----------------------|----------------------------|--------------------------------|----------------------|-------------|----------|
| 2390 | 52.3 | 1.2 | 53.5* | 54.0 | 0.5 | Complied |

Transmitter Band Edge Radiated Emissions (continued)

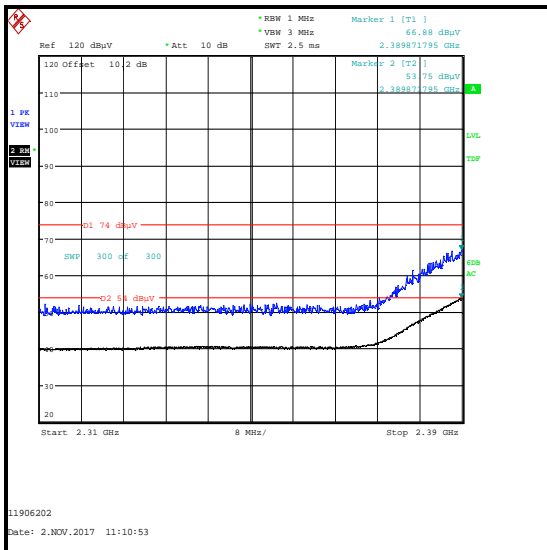
Results: 802.11n HT40 / 16QAM / MCS4



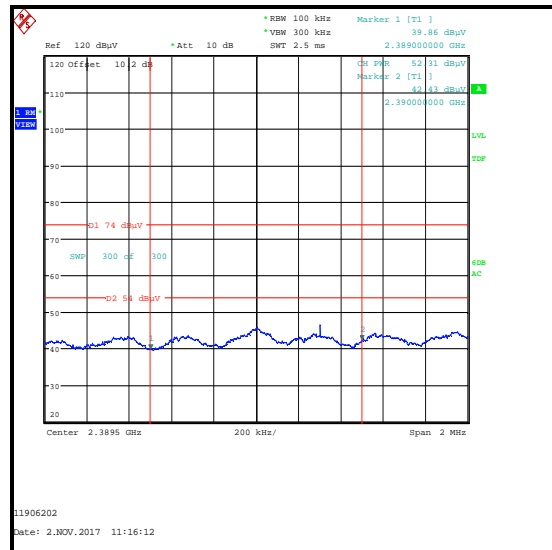
Lower Band Edge Channel 4



Upper Band Edge Channel 8



2310 MHz to 2390 MHz Restricted Band



2310 MHz to 2390 MHz Restricted Band / Average
– Integration performed 0.5 MHz away from the 2390 MHz

Transmitter Band Edge Radiated Emissions (continued)**Test Equipment Used:**

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|-----------|------------------|-----------------|-------------|------------|-----------------------|------------------------|
| M2003 | Thermohygrometer | Testo | 608-H1 | 45046641 | 22 Feb 2018 | 12 |
| K0017 | 5m RSE Chamber | Rainford EMC | N/A | N/A | 14 Apr 2018 | 12 |
| M1995 | Test Receiver | Rohde & Schwarz | ESU40 | 100428 | 13 Apr 2018 | 12 |
| A2863 | Pre Amplifier | Agilent | 8449B | 3008A02100 | 11 Apr 2018 | 12 |
| A2889 | Antenna | Schwarzbeck | BBHA 9120 B | 9120 B 653 | 11 Apr 2018 | 12 |
| A2916 | Attenuator | AtlanTecRF | AN18W5-10 | 832827#1 | 03 Mar 2018 | 12 |
| M1269 | Multimeter | Fluke | 179 | 90250210 | 02 May 2018 | 12 |
| S0538 | Power Supply | TTI | PL154 | 250135 | Calibrated before use | - |

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

| Measurement Type | Range | Confidence Level (%) | Calculated Uncertainty |
|--------------------------------|-----------------------|-----------------------------|-------------------------------|
| Minimum 6 dB Bandwidth | 2.4 GHz to 2.4835 GHz | 95% | ±4.59 % |
| Duty Cycle | 2.4 GHz to 2.4835 GHz | 95% | ±1.14 % |
| Spectral Power Density | 2.4 GHz to 2.4835 GHz | 95% | ±1.13 dB |
| Conducted Maximum Output Power | 2.4 GHz to 2.4835 GHz | 95% | ±1.13 dB |
| Radiated Spurious Emissions | 30 MHz to 1 GHz | 95% | ±5.65 dB |
| Radiated Spurious Emissions | 1 GHz to 25 GHz | 95% | ±2.94 dB |

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

7. Report Revision History

| Version Number | Revision Details | | |
|----------------|------------------|--------|-----------------|
| | Page No(s) | Clause | Details |
| 1.0 | - | - | Initial Version |

--- END OF REPORT ---