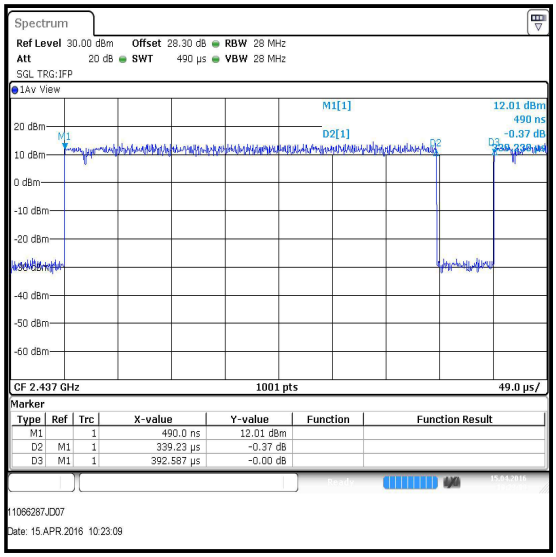
## Transmitter Duty Cycle (continued)

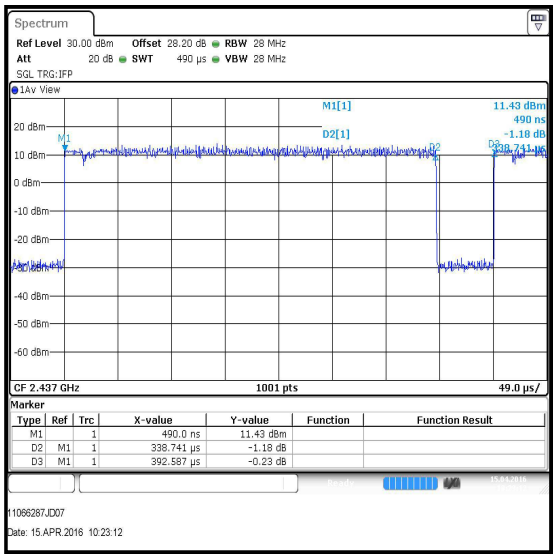
## Results: 802.11n / 40 MHz / MCS2 / Port 1

| Pulse Duration (µs) | Period (µs) | Duty Cycle (dB) |
|---|---|---|
| 339.230 | 392.587 | 0.6 |




## Results: 802.11n / 40 MHz / MCS2 / Port 2

| Pulse Duration (µs) | Period (µs) | Duty Cycle (dB) |
|---|---|---|
| 338.741 | 392.587 | 0.6 |



## Transmitter Duty Cycle (continued)

## Test Equipment Used:

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|---|---|---|---|---|---|---|
| M2002 | Thermohygrometer | Testo | 608-H1 | 45041825 | 02 Apr 2017 | 12 |
| M1873 | Signal Analyser | Rohde & Schwarz | FSV30 | 103074 | 03 Jul 2016 | 12 |
| M1867 | Attenuator | Huber + Suhner AG | 6820.17.B | 07101 | Calibrated before use | - |
| A2847 | Attenuator | Radiall | R411.820.121 | 24671450 | Calibrated before use | - |
| A2345 | Attenuator | Macom | 2082-6043-20 | None stated | Calibrated before use | - |
| 135878 | RF Switch | Pickering Interfaces | 64-102-002 & 40-881-001 | XZ340281 & X311198 | Calibrated before use | - |
| S0538 | DC Power Supply | TTi | PL154 | 250135 | Calibrated before use | - |
| M1251 | Multimeter | Fluke | 175 | 89170179 | 26 May 2016 | 12 |
| M1252 | Signal Generator | Hewlett Packard | 83640A | 3119A00489 | 26 Oct 2017 | 24 |

## 5.2.4. Transmitter Power Spectral Density

### Test Summary:

| | | | |
|---|---|---|---|
| **Test Engineer:** | Georgios Vrezas | **Test Date:** | 18 April 2016 |
| **Test Sample IMEI:** | 357232070003098 | | |

| | |
|---|---|
| **FCC Reference:** | Part 15.247(e) |
| **Test Method Used:** | FCC KDB 558074 Section10.5 and notes below |

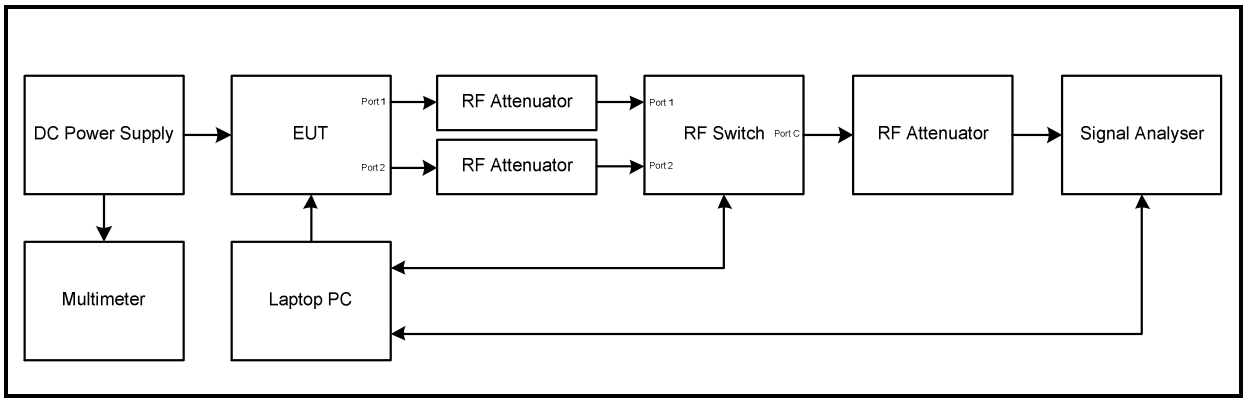
### Environmental Conditions:

| | |
|---|---|
| **Temperature (°C):** | 23 |
| **Relative Humidity (%):** | 28 |

### Note(s):

1. All supported modes and channel widths were initially investigated on one channel. The modes that produced the highest power spectral density were:
    - 802.11b – DQPSK / 11 Mbit/s
    - 802.11g – 16QAM / 24 Mbit/s
    - 802.11n / HT20 – 64QAM / 58.5 Mbit/s / MCS6 (GI = 800 ns)
    - 802.11n / HT40 – QPSK / 40.5 Mbit/s / MCS2 (GI = 800 ns)
2. Final measurements were performed using the above configurations on the bottom, middle and top channels.
3. 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 to at least 1.5 times the 99% occupied emission bandwidth. The highest peak of the measured signal was recorded. The calculated duty cycle shown in Section 5.2.3 of this test report was added to the measured average power spectral density in order to compute the average power spectral density during the actual transmission time.
4. PSD was measured on both ports and then combined using the *measure and sum spectral maxima across the outputs* technique, stated in FCC KDB 662911 D01 Section E)2)b).
5. The signal analyser was connected to the RF ports on the EUT via an RF switch, using suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the RF switch, attenuators and RF cables.

### Test setup:



## Transmitter Power Spectral Density (continued)

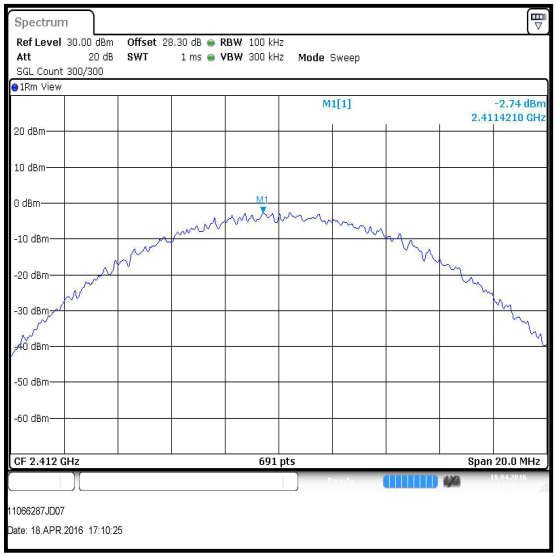
## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) |
| Bottom | -2.7 | 0.2 | -2.5 | -2.9 | 0.2 | -2.7 |
| Middle | -2.2 | 0.2 | -2.0 | -2.7 | 0.2 | -2.5 |
| Top | -2.7 | 0.2 | -2.5 | -2.2 | 0.2 | -2.0 |

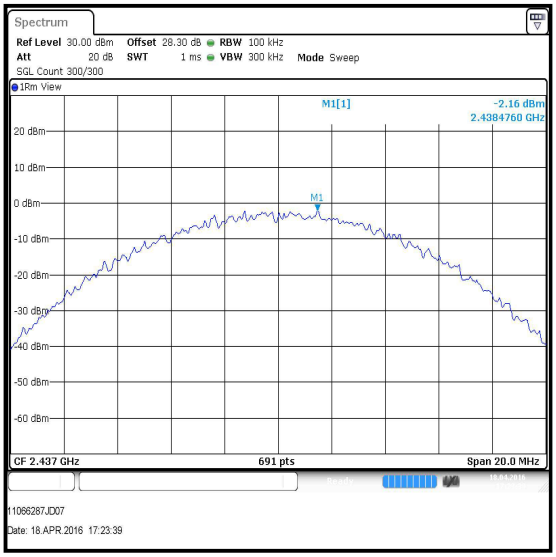
| Channel | Corrected PSD at Port 1 (dBm / 3 kHz) | Corrected PSD at Port 2 (dBm / 3 kHz) | Combined PSD (dBm / 3 kHz) | PSD Limit (dBm / 3 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | -2.5 | -2.7 | 0.4 | 8.0 | 7.6 | Complied |
| Middle | -2.0 | -2.5 | 0.8 | 8.0 | 7.2 | Complied |
| Top | -2.5 | -2.0 | 0.8 | 8.0 | 7.2 | Complied |

## Transmitter Power Spectral Density (continued)

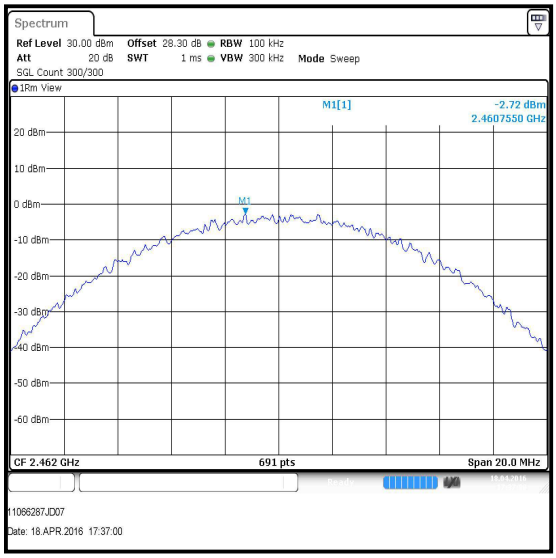
## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s / Port 1




**Bottom Channel**



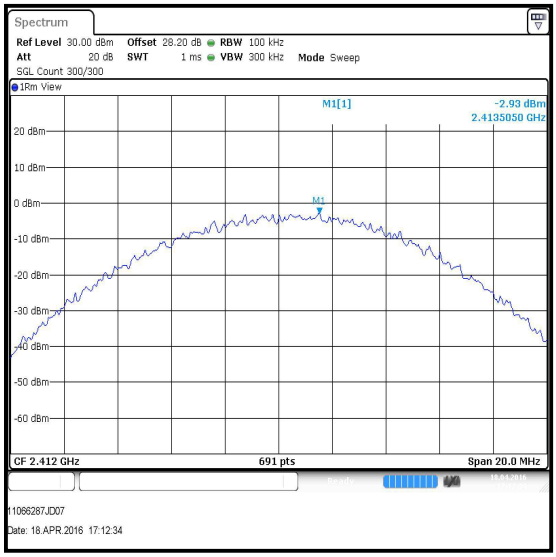

**Middle Channel**



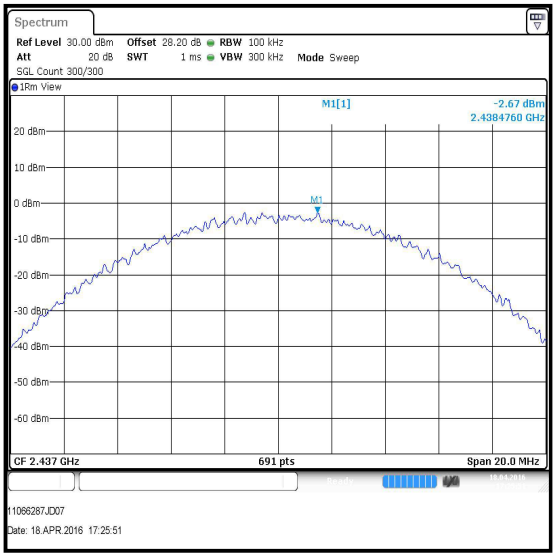

**Top Channel**

## Transmitter Power Spectral Density (continued)

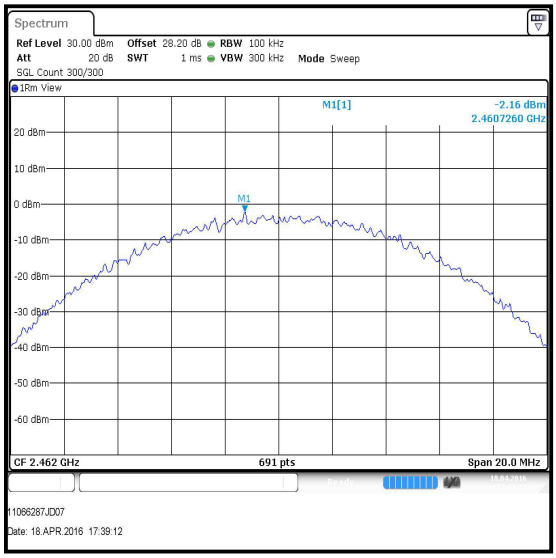
## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Power Spectral Density (continued)

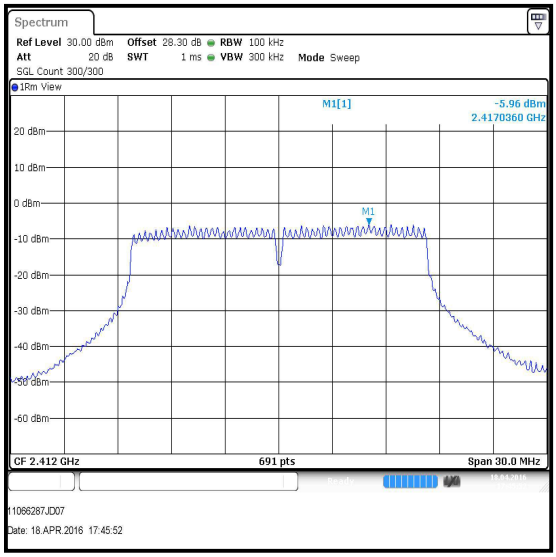
## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) |
| Bottom | -6.0 | 0.4 | -5.6 | -5.2 | 0.4 | -4.8 |
| Middle | -5.9 | 0.4 | -5.5 | -5.6 | 0.4 | -5.2 |
| Top | -6.3 | 0.4 | -5.9 | -6.2 | 0.4 | -5.8 |

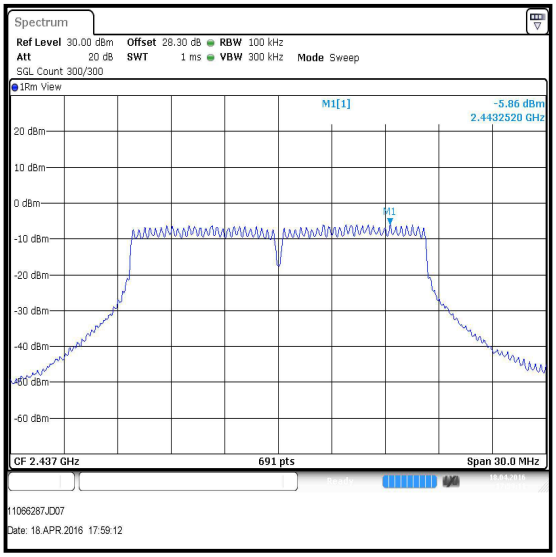
| Channel | Corrected PSD at Port 1 (dBm / 3 kHz) | Corrected PSD at Port 2 (dBm / 3 kHz) | Combined PSD (dBm / 3 kHz) | PSD Limit (dBm / 3 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | -5.6 | -4.8 | -2.2 | 8.0 | 10.2 | Complied |
| Middle | -5.5 | -5.2 | -2.3 | 8.0 | 10.3 | Complied |
| Top | -5.9 | -5.8 | -2.8 | 8.0 | 10.8 | Complied |

## Transmitter Power Spectral Density (continued)

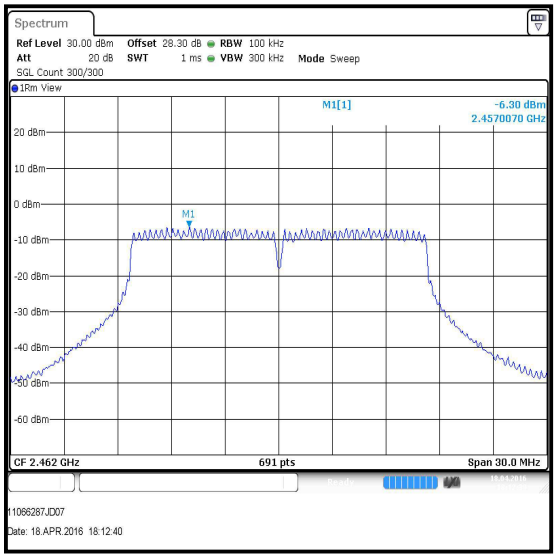
## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s / Port 1




**Bottom Channel**



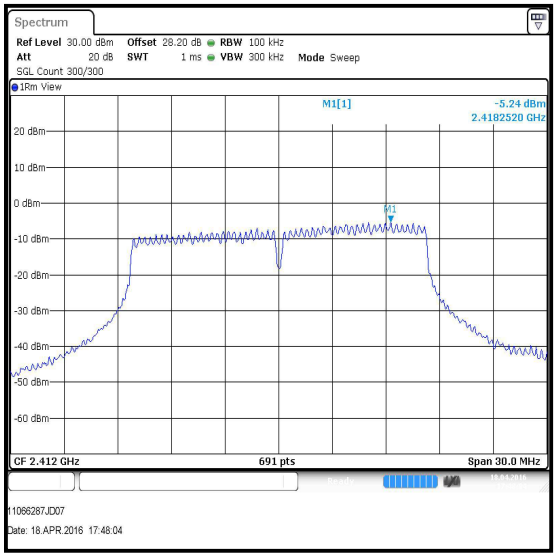

**Middle Channel**



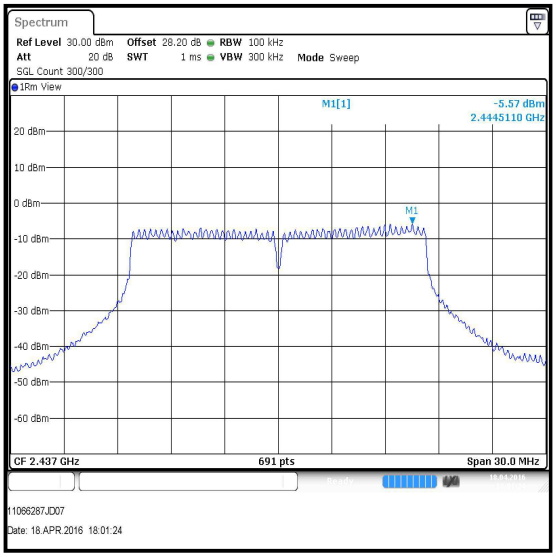

**Top Channel**

## Transmitter Power Spectral Density (continued)

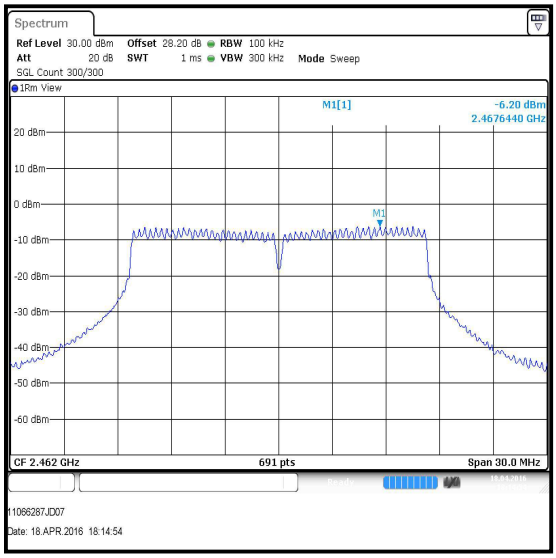
## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Power Spectral Density (continued)

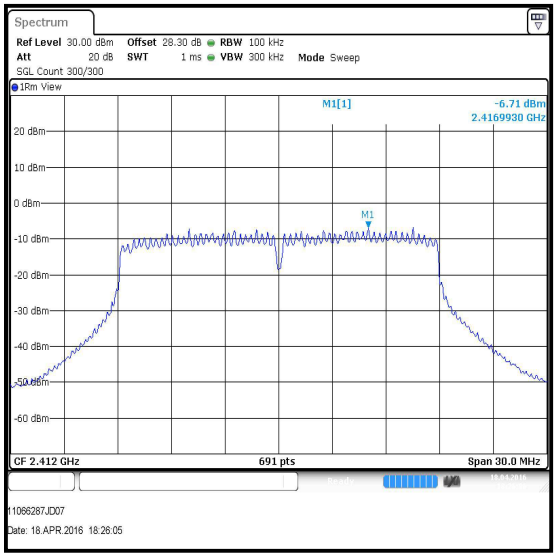
## Results: 802.11n / 20 MHz / 64QAM / MCS6

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) |
| Bottom | -6.7 | 0.8 | -5.9 | -6.2 | 0.9 | -5.3 |
| Middle | -6.3 | 0.8 | -5.5 | -6.6 | 0.9 | -5.7 |
| Top | -7.0 | 0.8 | -6.2 | -6.8 | 0.9 | -5.9 |

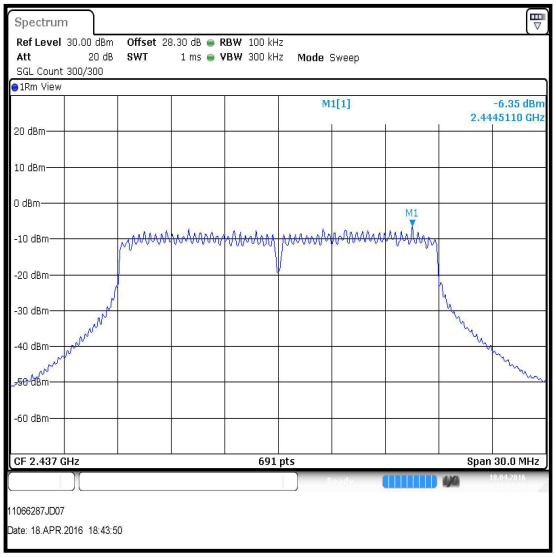
| Channel | Corrected PSD at Port 1 (dBm / 3 kHz) | Corrected PSD at Port 2 (dBm / 3 kHz) | Combined PSD (dBm / 3 kHz) | PSD Limit (dBm / 3 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | -5.9 | -5.3 | -2.6 | 8.0 | 10.6 | Complied |
| Middle | -5.5 | -5.7 | -2.6 | 8.0 | 10.6 | Complied |
| Top | -6.2 | -5.9 | -3.0 | 8.0 | 11.0 | Complied |

## Transmitter Power Spectral Density (continued)

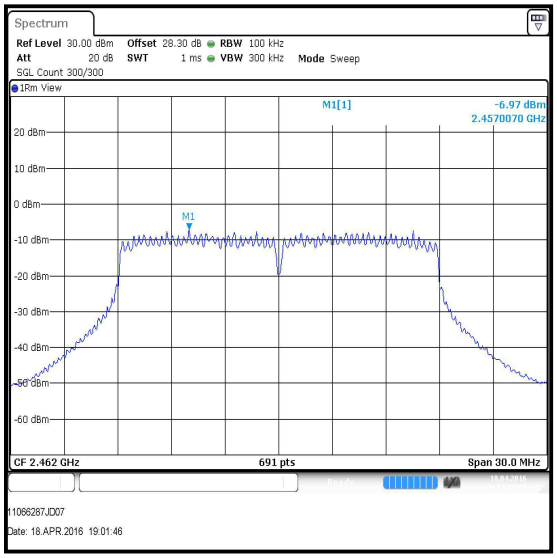
## Results: 802.11n / 20 MHz / 64QAM / MCS6 / Port 1




**Bottom Channel**



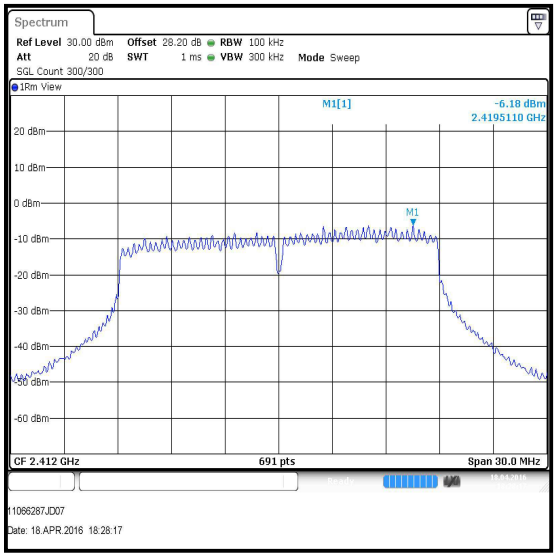

**Middle Channel**



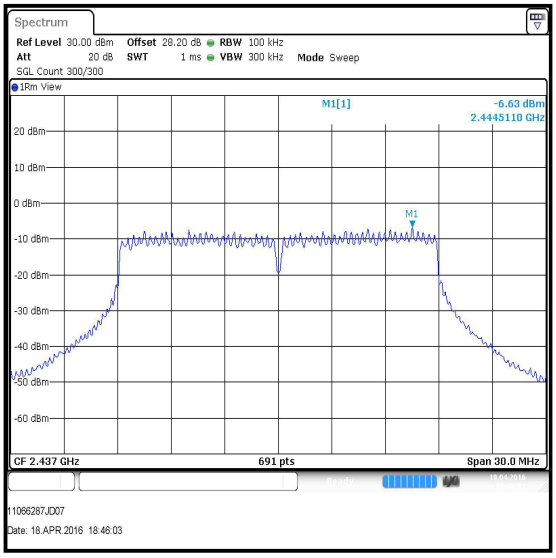

**Top Channel**

## Transmitter Power Spectral Density (continued)

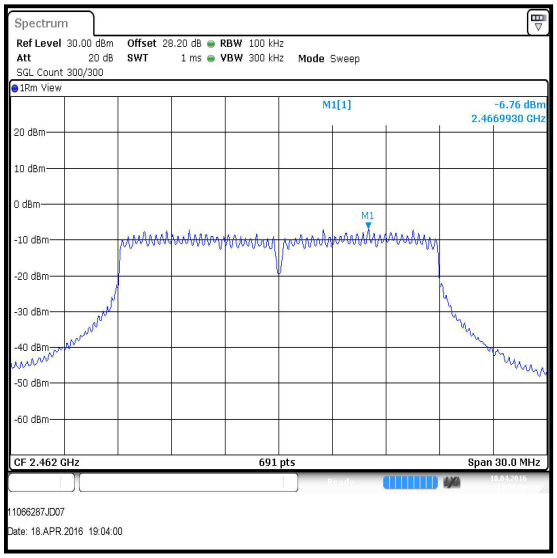
## Results: 802.11n / 20 MHz / 64QAM / MCS6 / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Power Spectral Density (continued)

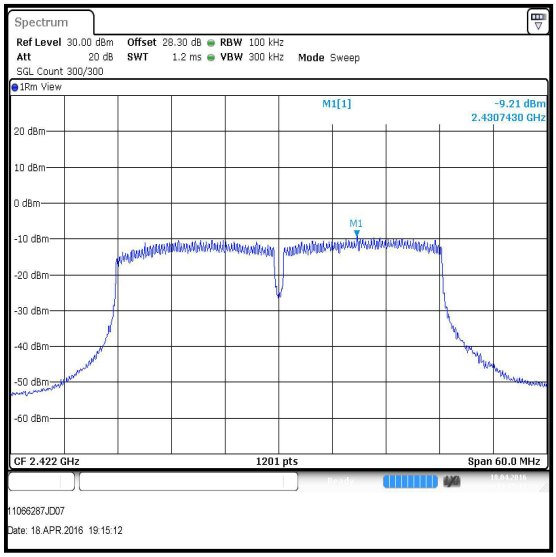
## Results: 802.11n / 40 MHz / QPSK / MCS2

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) | PSD (dBm / 3 kHz) | Duty Cycle Correction (dB) | Corrected PSD (dBm / 3 kHz) |
| Bottom | -9.2 | 0.6 | -8.6 | -9.5 | 0.6 | -8.9 |
| Middle | -9.3 | 0.6 | -8.7 | -9.6 | 0.6 | -9.0 |
| Top | -10.1 | 0.6 | -9.5 | -9.2 | 0.6 | -8.6 |

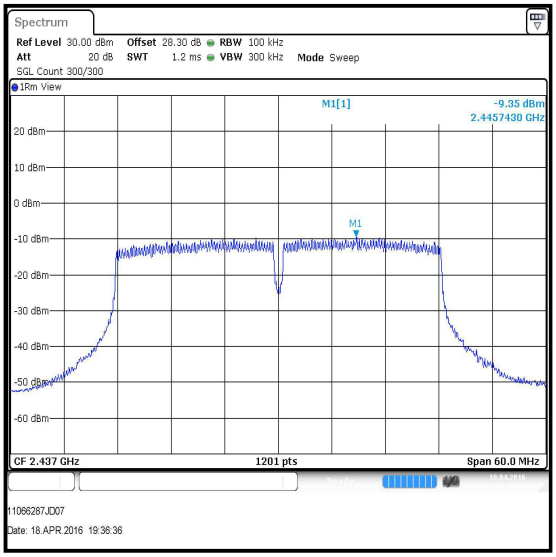
| Channel | Corrected PSD at Port 1 (dBm / 3 kHz) | Corrected PSD at Port 2 (dBm / 3 kHz) | Combined PSD (dBm / 3 kHz) | PSD Limit (dBm / 3 kHz) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | -8.6 | -8.9 | -5.7 | 8.0 | 13.7 | Complied |
| Middle | -8.7 | -9.0 | -5.8 | 8.0 | 13.8 | Complied |
| Top | -9.5 | -8.6 | -6.0 | 8.0 | 14.0 | Complied |

## Transmitter Power Spectral Density (continued)

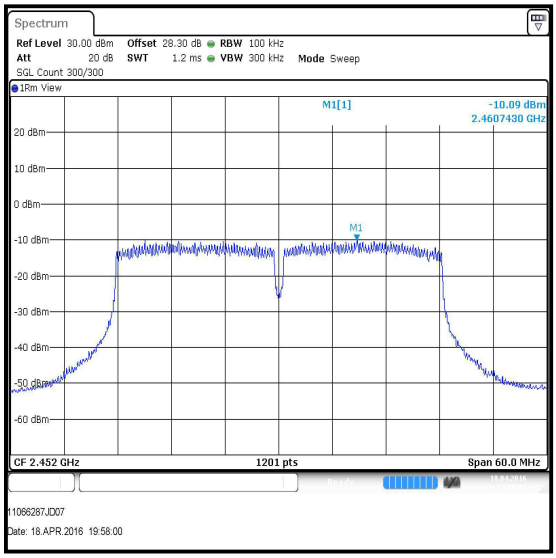
## Results: 802.11n / 40 MHz / QPSK / MCS2 / Port 1




**Bottom Channel**



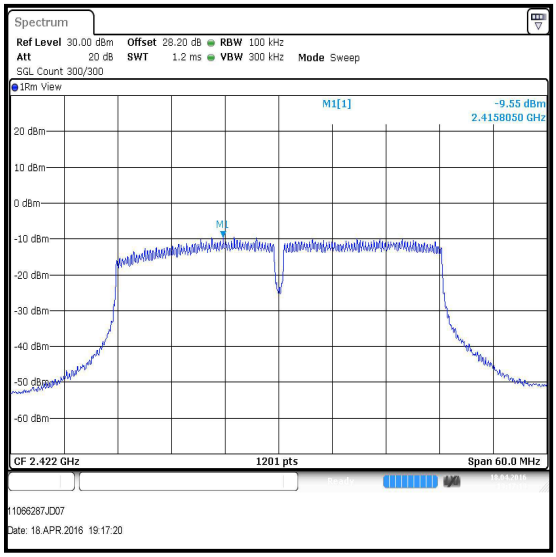

**Middle Channel**



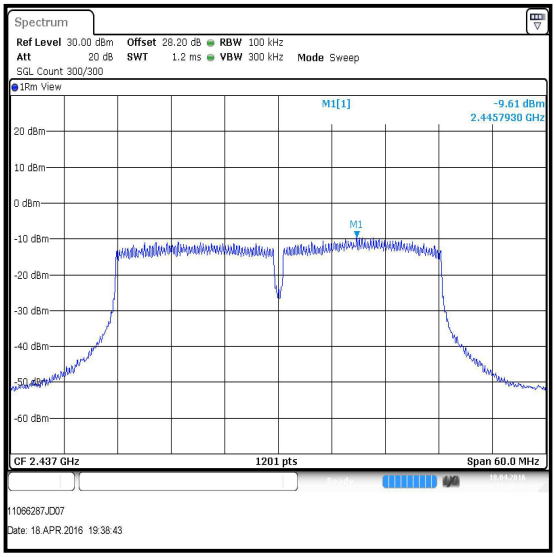

**Top Channel**

## Transmitter Power Spectral Density (continued)

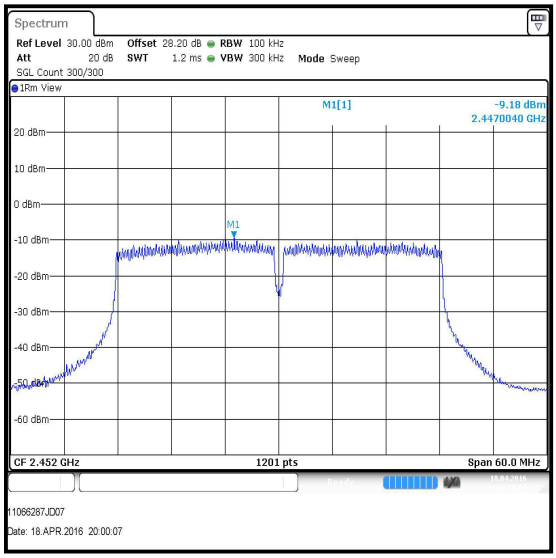
## Results: 802.11n / 40 MHz / QPSK / MCS2 / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Power Spectral Density (continued)

## Test Equipment Used:

| Asset No. | Instrument | Manufacturer | Type No. | Serial No. | Date Calibration Due | Cal. Interval (Months) |
|---|---|---|---|---|---|---|
| M2002 | Thermohygrometer | Testo | 608-H1 | 45041825 | 02 Apr 2017 | 12 |
| M1873 | Signal Analyser | Rohde & Schwarz | FSV30 | 103074 | 03 Jul 2016 | 12 |
| M1867 | Attenuator | Huber + Suhner AG | 6820.17.B | 07101 | Calibrated before use | - |
| A2847 | Attenuator | Radiall | R411.820.121 | 24671450 | Calibrated before use | - |
| A2345 | Attenuator | Macom | 2082-6043-20 | None stated | Calibrated before use | - |
| 135878 | RF Switch | Pickering Interfaces | 64-102-002 & 40-881-001 | XZ340281 & X311198 | Calibrated before use | - |
| S0538 | DC Power Supply | TTi | PL154 | 250135 | Calibrated before use | - |
| M1251 | Multimeter | Fluke | 175 | 89170179 | 26 May 2016 | 12 |
| M1252 | Signal Generator | Hewlett Packard | 83640A | 3119A00489 | 26 Oct 2017 | 24 |

## 5.2.5. Transmitter Maximum (Average) Output Power

### Test Summary:

| | | | |
|---|---|---|---|
| **Test Engineer:** | Georgios Vrezas | **Test Dates:** | 18 April 2016 to 22 April 2016 |
| **Test Sample IMEI:** | 357232070003098 | | |

| | |
|---|---|
| **FCC Reference:** | Part 15.247(b)(3) |
| **Test Method Used:** | FCC KDB 558074 Section 9.2.2.4 and notes below |

### Environmental Conditions:

| | |
|---|---|
| **Temperature (°C):** | 23 to 24 |
| **Relative Humidity (%):** | 28 to 30 |

### Note(s):

1. All supported modes and channel widths were initially investigated on one channel. The modes that produced the highest power were:
    - 802.11b – DQPSK / 11 Mbit/s
    - 802.11g – 16QAM / 24 Mbit/s
    - 802.11n / HT20 – 64QAM / 58.5 Mbit/s / MCS6 (GI = 800 ns)
    - 802.11n / HT40 – QPSK / 40.5 Mbit/s / MCS2 (GI = 800 ns)
2. Final measurements were performed using the above configurations on the bottom, middle and top channels. Power measurements were integrated over the 99% emission bandwidth. Plots for the occupied bandwidth are archived on the UL VS LTD IT server and available for inspection upon request.
3. 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. For the 20 MHz channel bandwidth, the signal analyser resolution bandwidth was set to 300 kHz and video bandwidth 1 MHz. For the 40 MHz channel 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 to at least 1.5 times the 99% occupied emission bandwidth. The duty cycle calculated in Section 5.2.3 of this test report was added to the measured power in order to compute the average power during the actual transmission time.
4. Power was measured on both ports and then combined using the measure-and-sum technique stated in FCC KDB 662911 D01 Section E)1).
5. As the data streams are correlated for 802.11b, 802.11g, 802.11n HT20 MCS0 to MCS7 and 802.11n HT40 MCS0 to MCS7, the directional antenna gain has been calculated in accordance with FCC KDB 662911 D01 Section F)2)f)(ii):

$$\text{Directional Gain} = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left(\sum_{k=1}^{N_{ANT}} g_{j,k}\right)^2}{N_{ANT}}\right] = 10\log\left[\frac{\sum_{j=1}^{1}\left(\sum_{k=1}^{2} g_{j,k}\right)^2}{2}\right] =$$

$$= 10\log\left[\frac{\left(g_{1,1}+g_{1,2}\right)^2}{2}\right] = 10\log\left[\frac{\left(10^{\frac{G_1}{20}}+10^{\frac{G_2}{20}}\right)^2}{2}\right] = 10\log\left[\frac{\left(10^{\frac{-1.66}{20}}+10^{\frac{-4.37}{20}}\right)^2}{2}\right] = 0.1\ \text{dBi}$$

## Transmitter Maximum (Average) Output Power (continued)

## Note(s):

6. For 802.11n HT20 MCS8 to MCS15 and 802.11n HT40 MCS8 to MCS15, the EUT uses spatial multiplexing, with unequal antenna gains and each transmit antenna driven by only one spatial stream. The directional antenna gain has been calculated in accordance with FCC KDB 662911 D01 Section F)2)e)(ii):

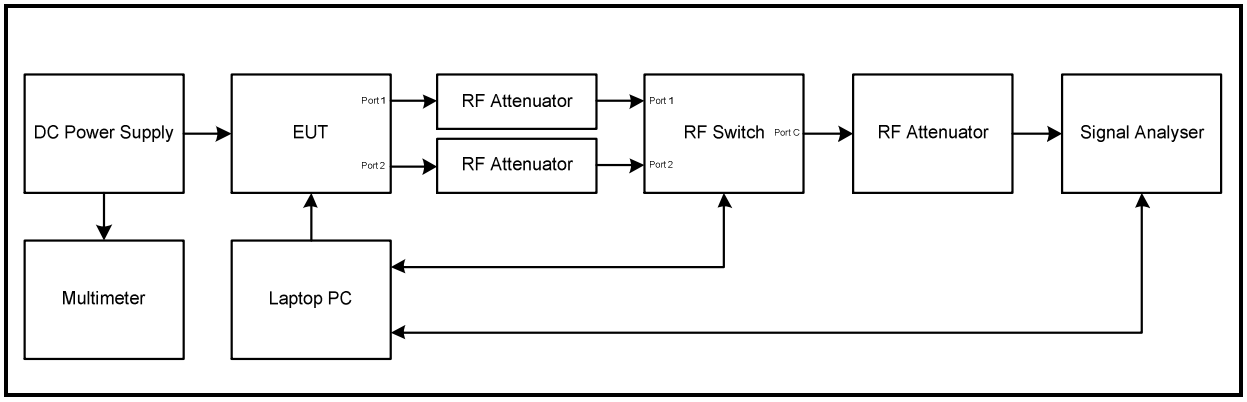
$$\text{Directional Gain} = 10\log\left[\frac{\sum_{j=1}^{N_{SS}}\left(\sum_{k=1}^{N_{ANT}} g_{j,k}\right)^2}{N_{ANT}}\right] = 10\log\left[\frac{\sum_{j=1}^{2}\left(\sum_{k=1}^{2} g_{j,k}\right)^2}{2}\right] =$$

$$= 10\log\left[\frac{\left(g_{1,1}+g_{1,2}\right)^2+\left(g_{2,1}+g_{2,2}\right)^2}{2}\right] = 10\log\left[\frac{\left(g_{1,1}\right)^2+\left(g_{2,2}\right)^2}{2}\right] =$$

$$= 10\log\left[\frac{\left(10^{\frac{G_1}{20}}\right)^2+\left(10^{\frac{G_2}{20}}\right)^2}{2}\right] = 10\log\left[\frac{\left(10^{\frac{-1.66}{20}}\right)^2+\left(10^{\frac{-4.37}{20}}\right)^2}{2}\right] = -2.8\ \text{dBi}$$

7. The signal analyser was connected to the RF ports on the EUT via an RF switch, using suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the RF switch, attenuators and RF cables.

## Test setup:



## Transmitter Maximum (Average) Output Power (continued)

## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s

### Conducted Peak Limit Comparison

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) |
| Bottom | 13.9 | 0.2 | 14.1 | 13.7 | 0.2 | 13.9 |
| Middle | 14.3 | 0.2 | 14.5 | 13.7 | 0.2 | 13.9 |
| Top | 13.7 | 0.2 | 13.9 | 13.9 | 0.2 | 14.1 |

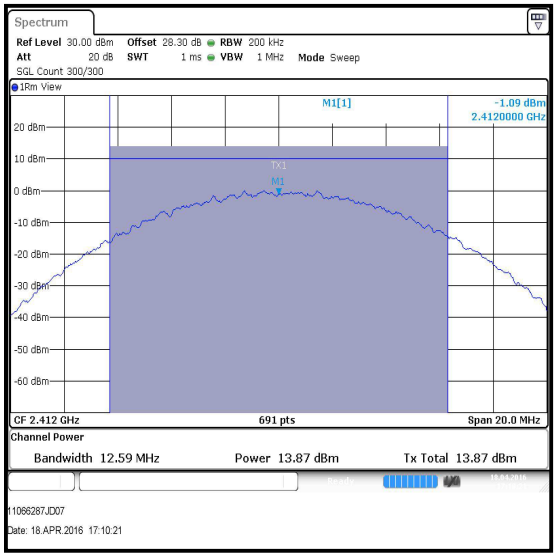
| Channel | Corrected Conducted Peak Power Port 1 (dBm) | Corrected Conducted Peak Power Port 2 (dBm) | Combined Conducted Peak Power (dBm) | Conducted Peak Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 14.1 | 13.9 | 17.0 | 30.0 | 13.0 | Complied |
| Middle | 14.5 | 13.9 | 17.2 | 30.0 | 12.8 | Complied |
| Top | 13.9 | 14.1 | 17.0 | 30.0 | 13.0 | Complied |

### De Facto EIRP Limit Comparison

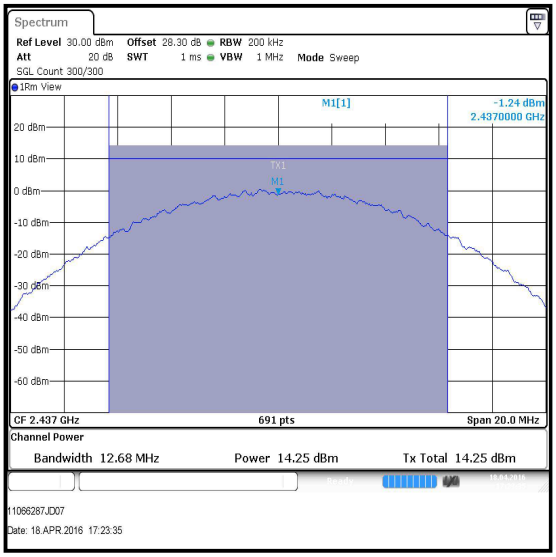
| Channel | Combined Conducted Peak Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 17.0 | 0.1 | 17.1 | 36.0 | 18.9 | Complied |
| Middle | 17.2 | 0.1 | 17.3 | 36.0 | 18.7 | Complied |
| Top | 17.0 | 0.1 | 17.1 | 36.0 | 18.9 | Complied |

## Transmitter Maximum (Average) Output Power (continued)

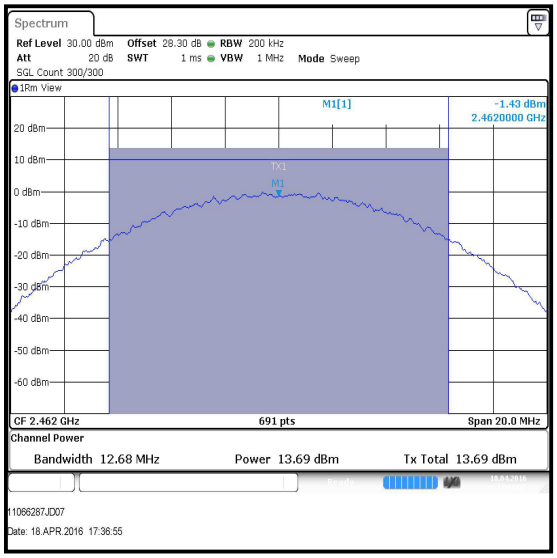
## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s / Port 1




**Bottom Channel**



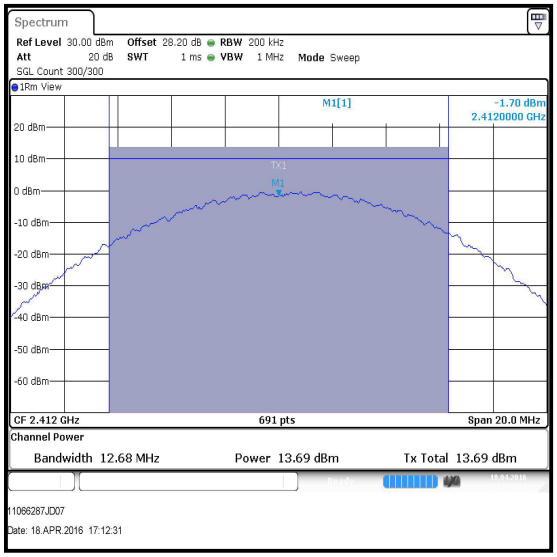

**Middle Channel**



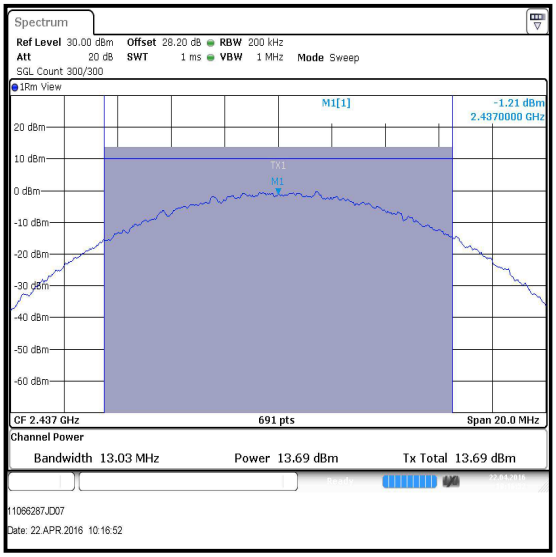

**Top Channel**

## Transmitter Maximum (Average) Output Power (continued)

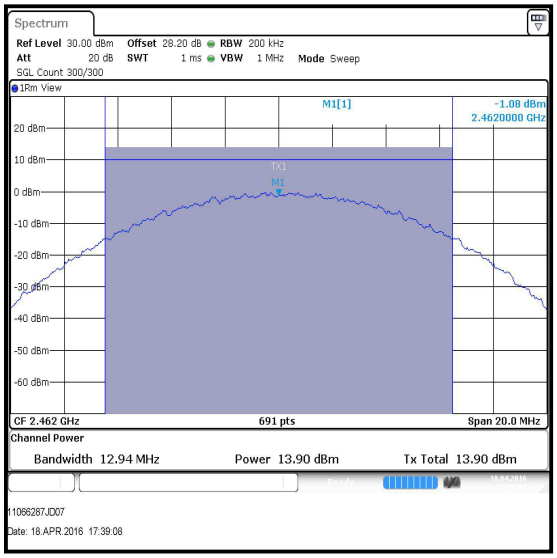
## Results: 802.11b / 20 MHz / DQPSK / 11 Mbit/s / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Maximum (Average) Output Power (continued)

## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s

### Conducted Peak Limit Comparison

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) |
| Bottom | 13.7 | 0.4 | 14.1 | 13.5 | 0.4 | 13.9 |
| Middle | 13.9 | 0.4 | 14.3 | 13.5 | 0.4 | 13.9 |
| Top | 13.4 | 0.4 | 13.8 | 13.6 | 0.4 | 14.0 |

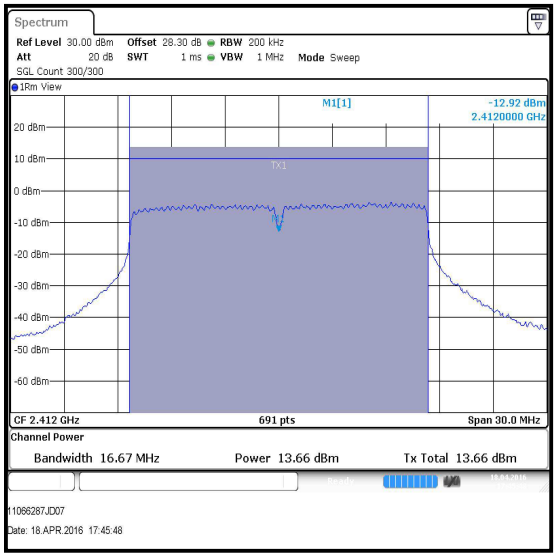
| Channel | Corrected Conducted Peak Power Port 1 (dBm) | Corrected Conducted Peak Power Port 2 (dBm) | Combined Conducted Peak Power (dBm) | Conducted Peak Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 14.1 | 13.9 | 17.0 | 30.0 | 13.0 | Complied |
| Middle | 14.3 | 13.9 | 17.1 | 30.0 | 12.9 | Complied |
| Top | 13.8 | 14.0 | 16.9 | 30.0 | 13.1 | Complied |

### De Facto EIRP Limit Comparison

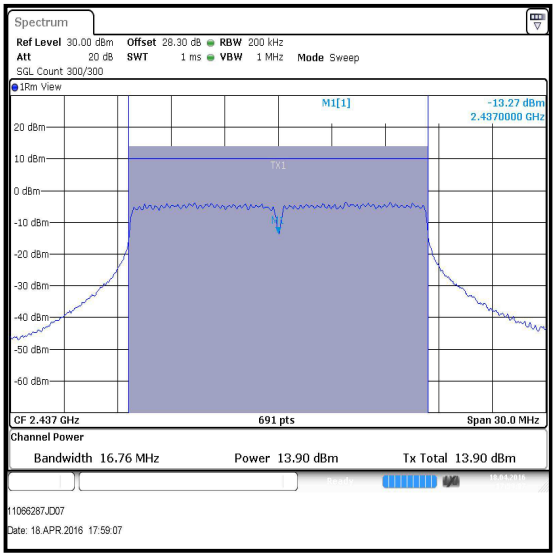
| Channel | Combined Conducted Peak Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 17.0 | 0.1 | 17.1 | 36.0 | 18.9 | Complied |
| Middle | 17.1 | 0.1 | 17.2 | 36.0 | 18.8 | Complied |
| Top | 16.9 | 0.1 | 17.0 | 36.0 | 19.0 | Complied |

## Transmitter Maximum (Average) Output Power (continued)

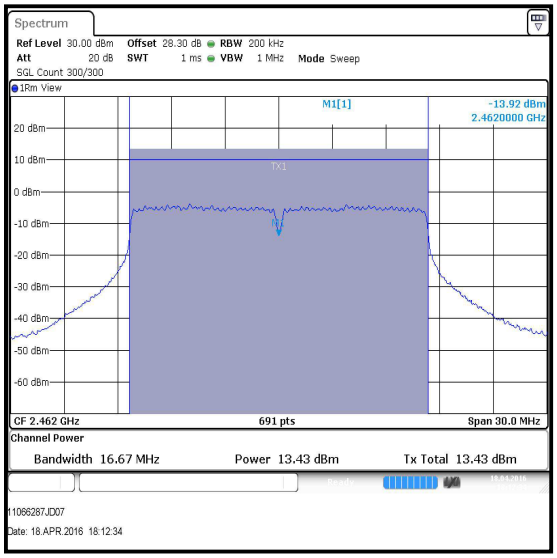
## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s / Port 1




**Bottom Channel**



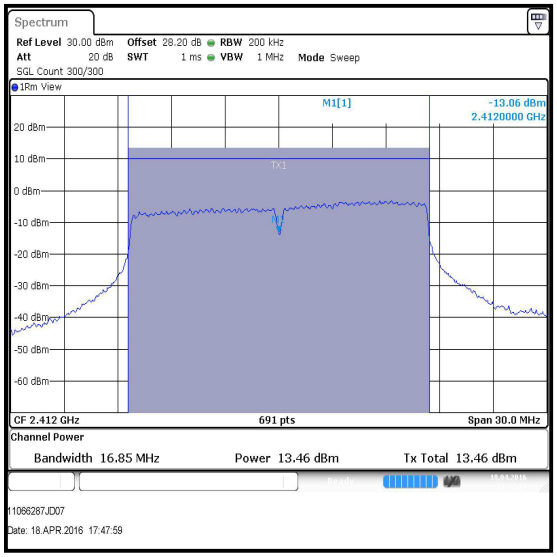

**Middle Channel**



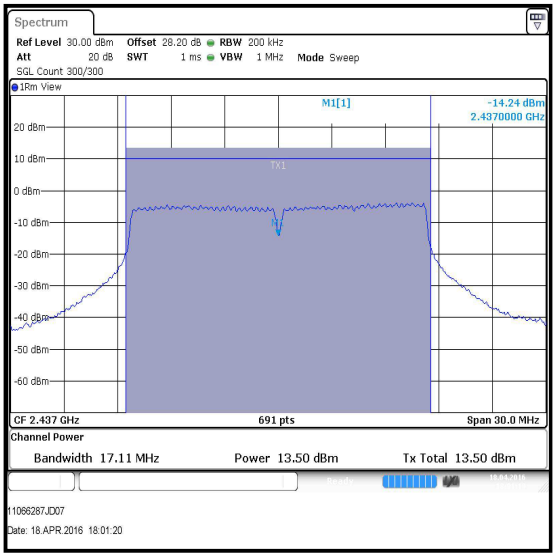

**Top Channel**

## Transmitter Maximum (Average) Output Power (continued)

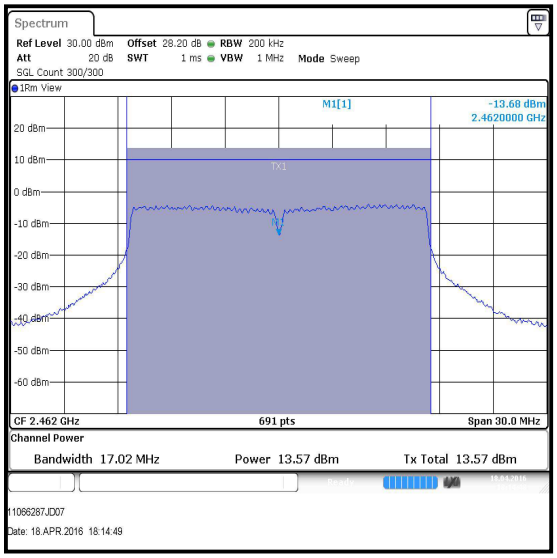
## Results: 802.11g / 20 MHz / 16QAM / 24 Mbit/s / Port 2




**Bottom Channel**




**Middle Channel**




**Top Channel**

## Transmitter Maximum (Average) Output Power (continued)

## Results: 802.11n / 20 MHz / 64QAM / MCS6

### Conducted Peak Limit Comparison

| Channel | Port 1 | | | Port 2 | | |
|---|---|---|---|---|---|---|
| | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) | Conducted Peak Power (dBm) | Duty Cycle Correction (dB) | Corrected Conducted Peak Power (dBm) |
| Bottom | 12.2 | 0.8 | 13.0 | 12.1 | 0.9 | 13.0 |
| Middle | 12.4 | 0.8 | 13.2 | 12.2 | 0.9 | 13.1 |
| Top | 12.1 | 0.8 | 12.9 | 12.2 | 0.9 | 13.1 |

| Channel | Corrected Conducted Peak Power Port 1 (dBm) | Corrected Conducted Peak Power Port 2 (dBm) | Combined Conducted Peak Power (dBm) | Conducted Peak Power Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 13.0 | 13.0 | 16.0 | 30.0 | 14.0 | Complied |
| Middle | 13.2 | 13.1 | 16.2 | 30.0 | 13.8 | Complied |
| Top | 12.9 | 13.1 | 16.0 | 30.0 | 14.0 | Complied |

### De Facto EIRP Limit Comparison

| Channel | Combined Conducted Peak Power (dBm) | Directional Antenna Gain (dBi) | EIRP (dBm) | De Facto EIRP Limit (dBm) | Margin (dB) | Result |
|---|---|---|---|---|---|---|
| Bottom | 16.0 | 0.1 | 16.1 | 36.0 | 19.9 | Complied |
| Middle | 16.2 | 0.1 | 16.3 | 36.0 | 19.7 | Complied |
| Top | 16.0 | 0.1 | 16.1 | 36.0 | 19.9 | Complied |