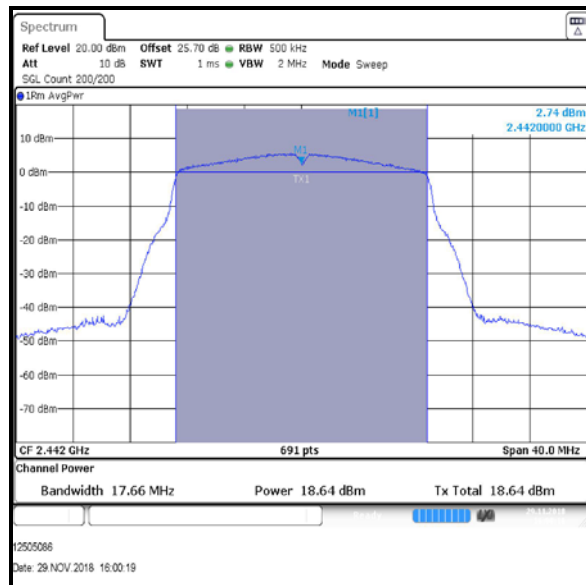
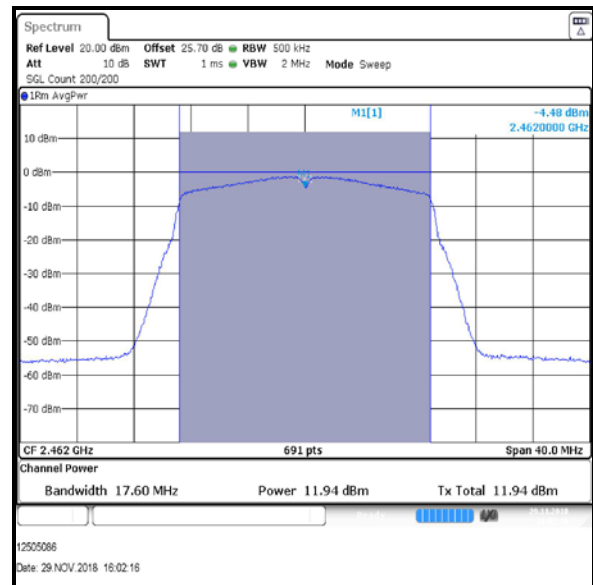
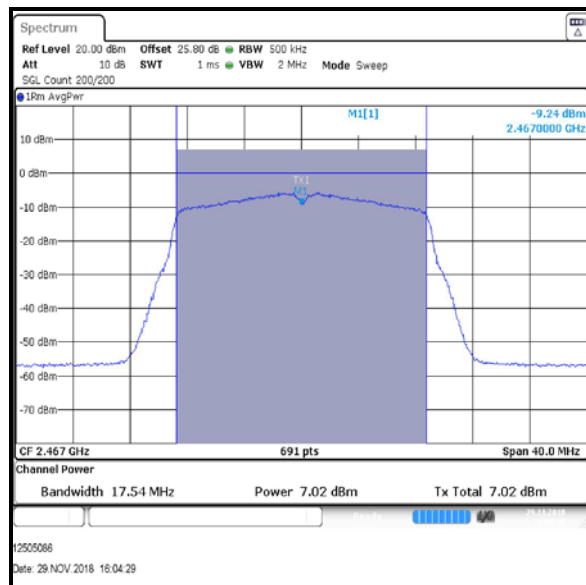
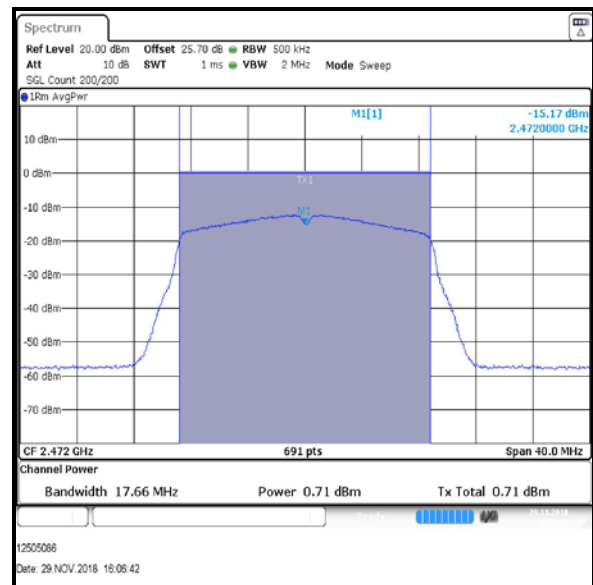


Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 2Tx TxBF / BPSK / MCS0 / Core 2****Channel 7****Channel 11****Channel 12****Channel 13**

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0****Conducted Peak Limit Comparison**

Channel	Core 0			Core 1		
	Conducted Peak Power Core 0 (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Peak Power Core 0 (dBm)	Conducted Peak Power Core 1 (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Peak Power Core 1 (dBm)
1	11.9	0.1	12.0	12.2	0.1	12.3
2	14.7	0.1	14.8	14.3	0.1	14.4
3	16.7	0.1	16.8	16.2	0.1	16.3
6	19.0	0.1	19.1	18.3	0.1	18.4
7	18.7	0.1	18.8	18.4	0.1	18.5
11	11.5	0.1	11.6	11.5	0.1	11.6
12	8.5	0.1	8.6	8.6	0.1	8.7
13	1.4	0.1	1.5	1.4	0.1	1.5

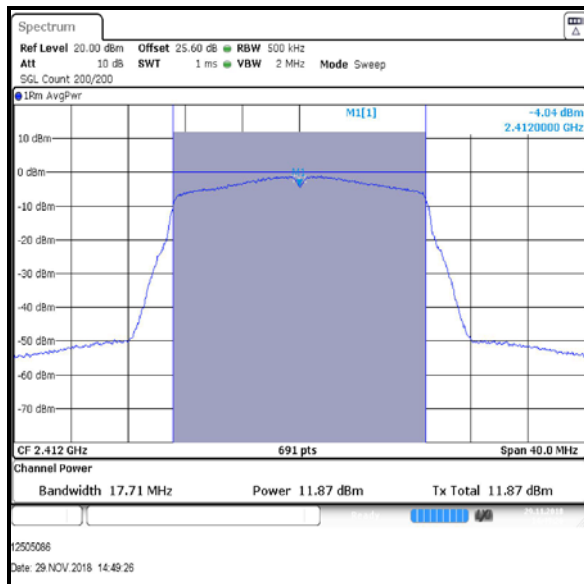
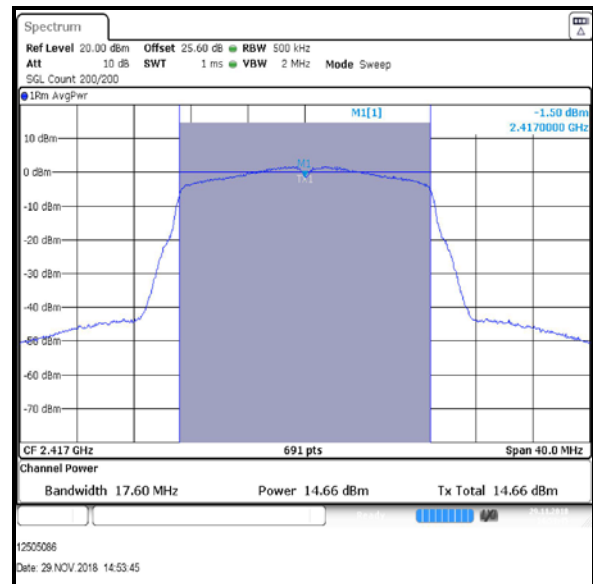
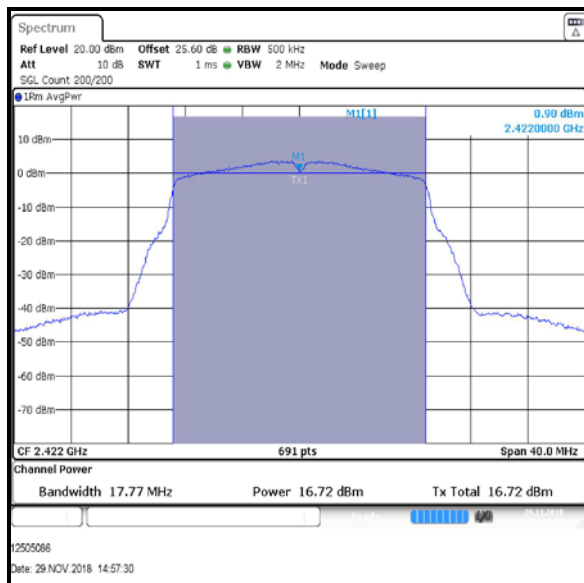
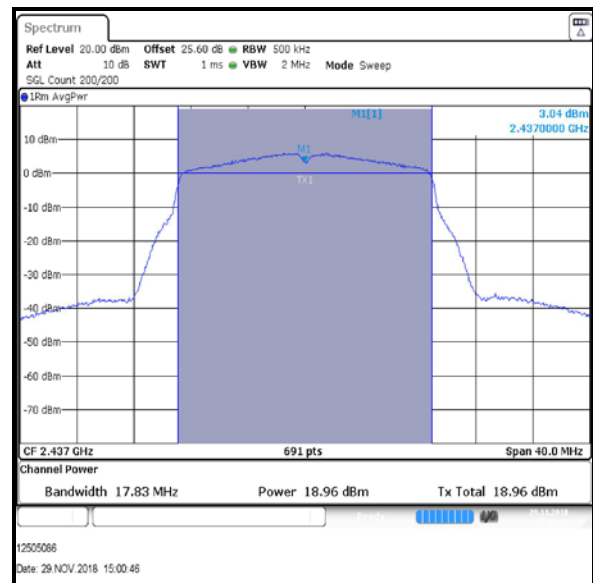
Channel	Core 2			Core 0, 1 & 2		
	Conducted Peak Power Core 2 (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Peak Power Core 2 (dBm)	Corrected Conducted Peak Power Core 0 (dBm)	Corrected Conducted Peak Power Core 1 (dBm)	Corrected Conducted Peak Power Core 2 (dBm)
1	11.5	0.1	11.6	12.0	12.3	11.6
2	14.4	0.1	14.5	14.8	14.4	14.5
3	16.1	0.1	16.2	16.8	16.3	16.2
6	17.8	0.1	17.9	19.1	18.4	17.9
7	17.9	0.1	18.0	18.8	18.5	18.0
11	10.7	0.1	10.8	11.6	11.6	10.8
12	7.9	0.1	8.0	8.6	8.7	8.0
13	0.5	0.1	0.6	1.5	1.5	0.6

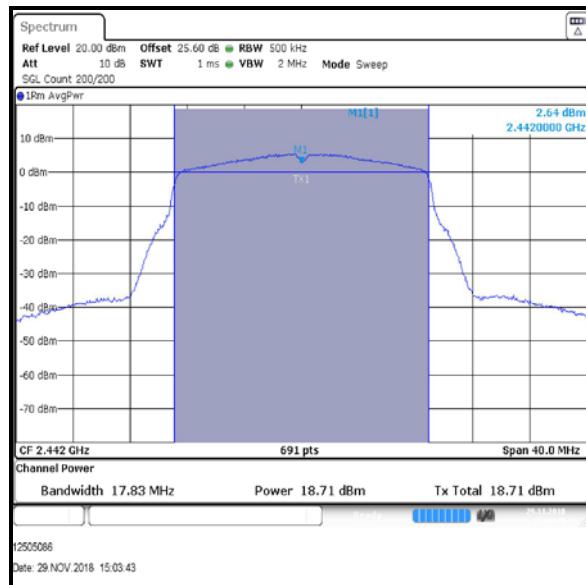
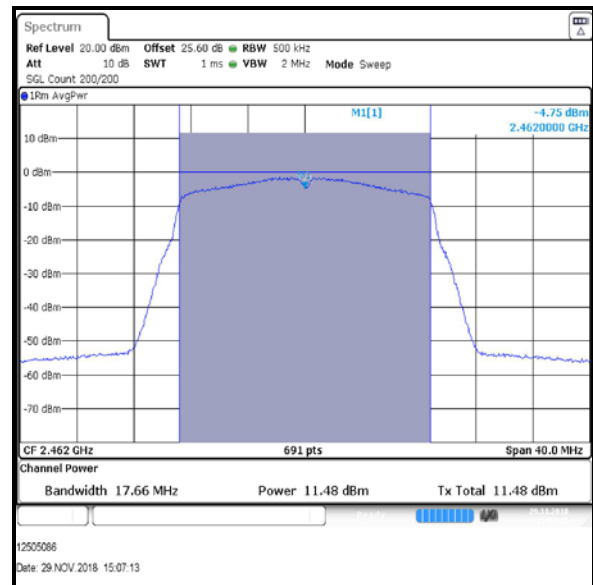
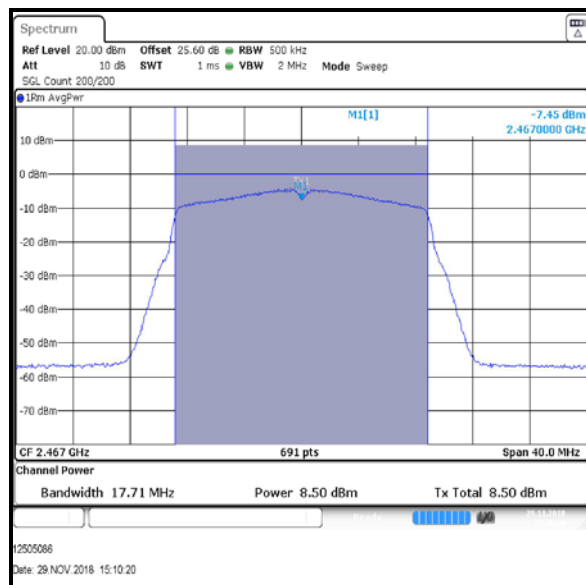
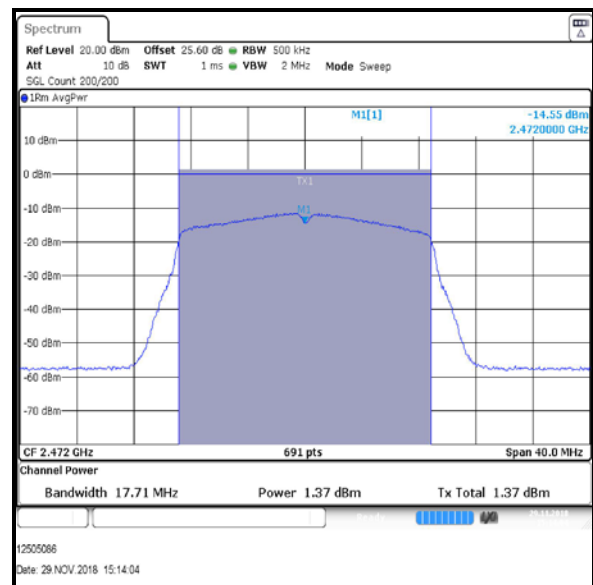
Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0****Conducted Peak Limit Comparison**

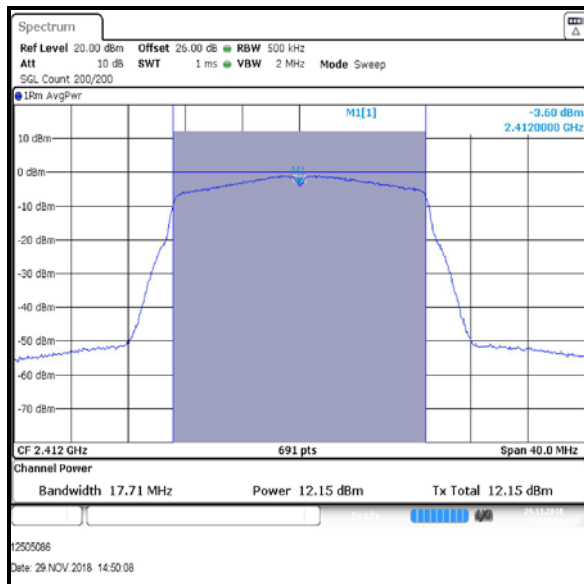
Channel	Combined Conducted Peak Power (dBm)	Conducted Peak Power Limit (dBm)	Margin (dB)	Result
1	16.7	27.0	10.3	Complied
2	19.3	27.0	7.7	Complied
3	21.2	27.0	5.8	Complied
6	23.3	27.0	3.7	Complied
7	23.2	27.0	3.8	Complied
11	16.1	27.0	10.9	Complied
12	13.2	27.0	13.8	Complied
13	6.0	27.0	21.0	Complied

EIRP Limit Comparison

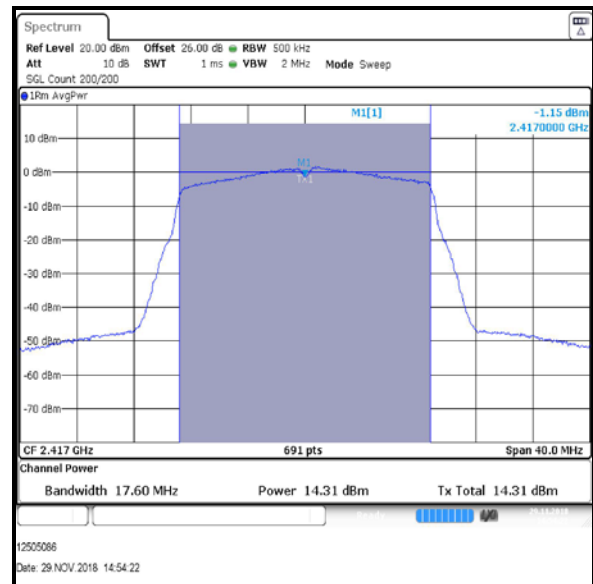
Channel	Combined Conducted Peak Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
1	16.7	9.0	25.7	36.0	10.3	Complied
2	19.3	9.0	28.3	36.0	7.7	Complied
3	21.2	9.0	30.2	36.0	5.8	Complied
6	23.3	9.0	32.3	36.0	3.7	Complied
7	23.2	9.0	32.2	36.0	3.8	Complied
11	16.1	9.0	25.1	36.0	10.9	Complied
12	13.2	9.0	22.2	36.0	13.8	Complied
13	6.0	9.0	15.0	36.0	21.0	Complied

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 0****Channel 1****Channel 2****Channel 3****Channel 6**

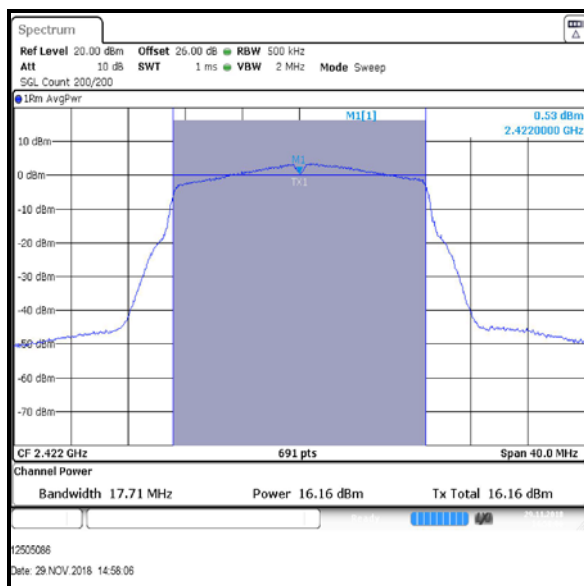
Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 0****Channel 7****Channel 11****Channel 12****Channel 13**

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 1**

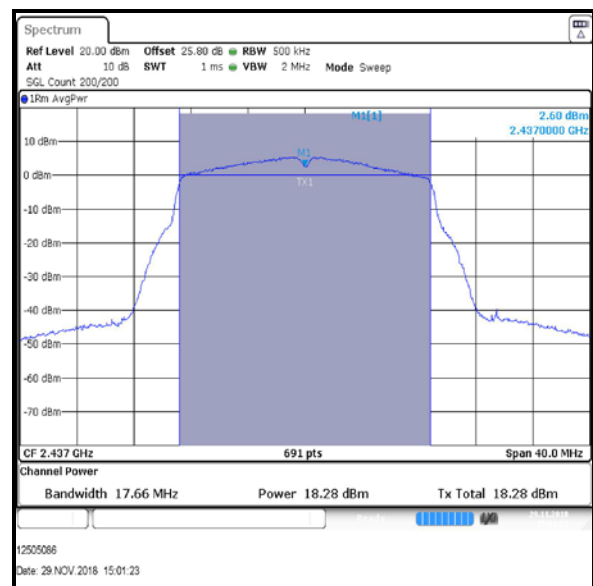
Channel 1



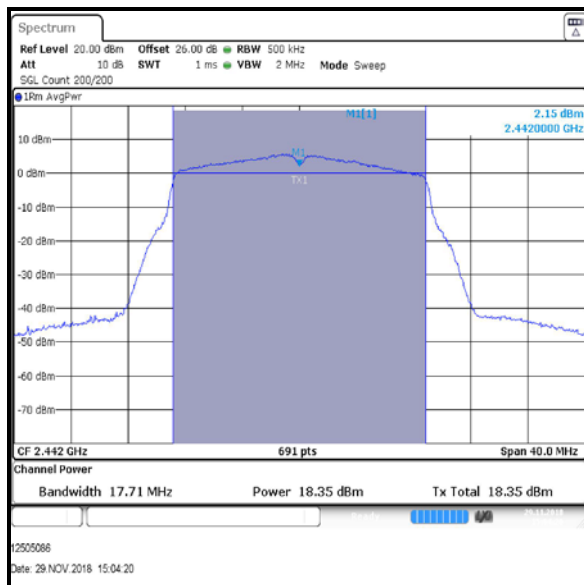
Channel 2



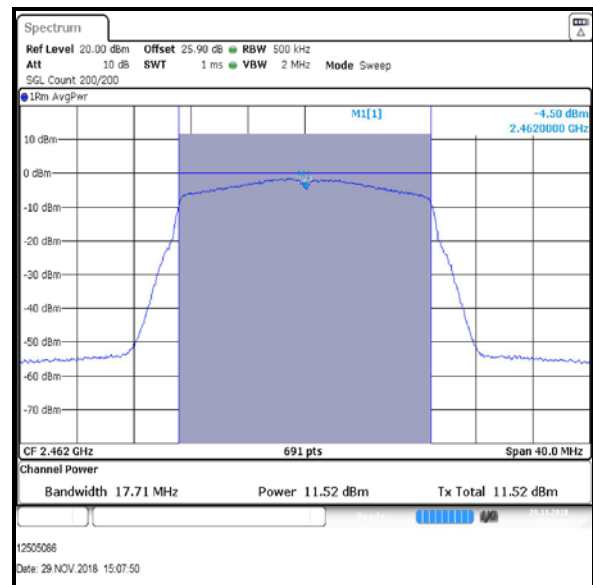
Channel 3



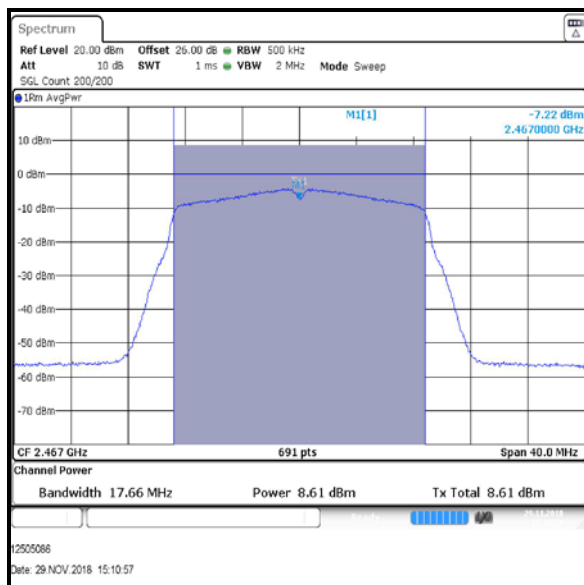
Channel 6

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 1**

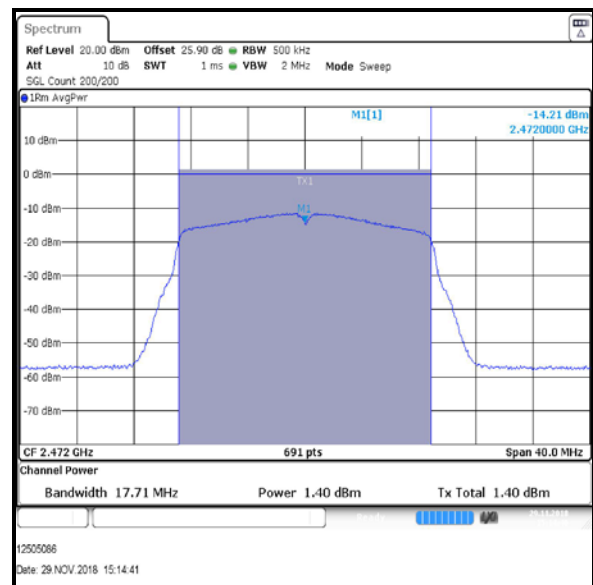
Channel 7



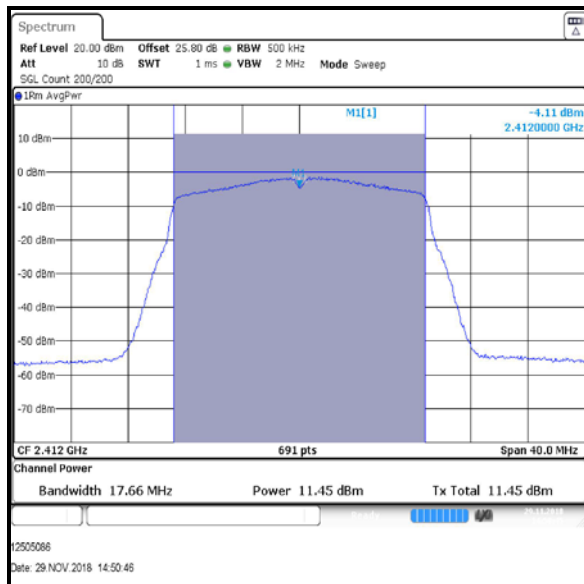
Channel 11



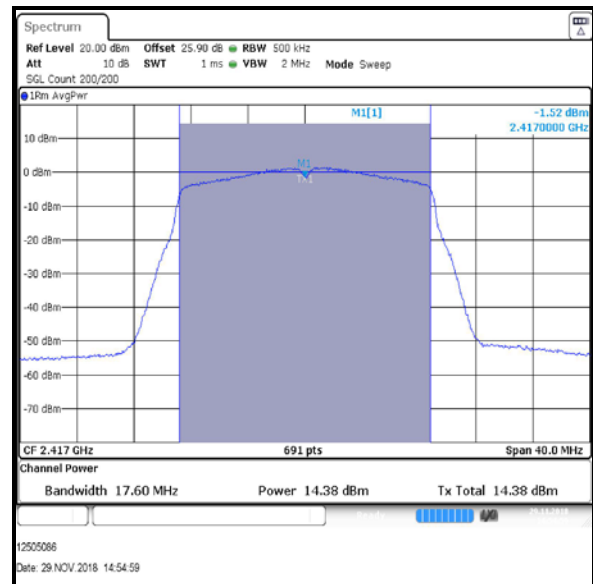
Channel 12



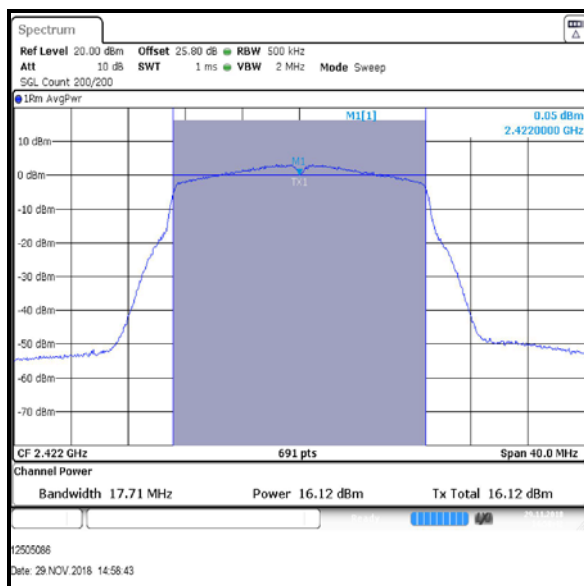
Channel 13

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 2**

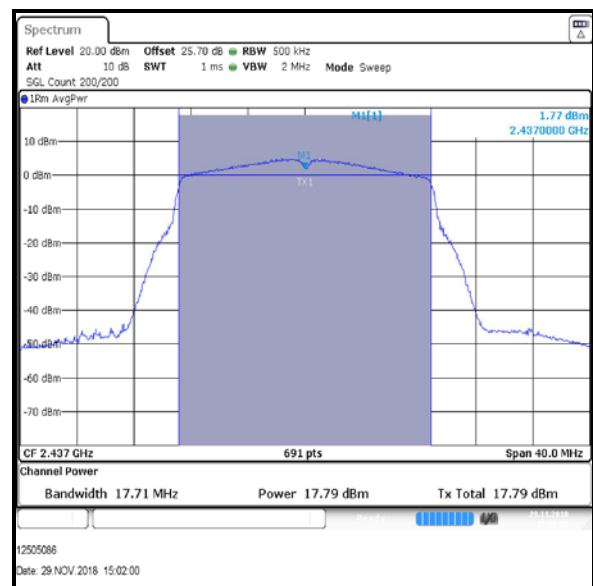
Channel 1



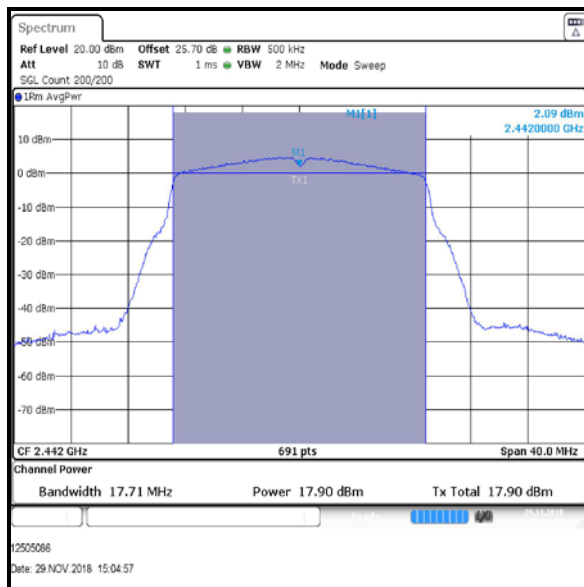
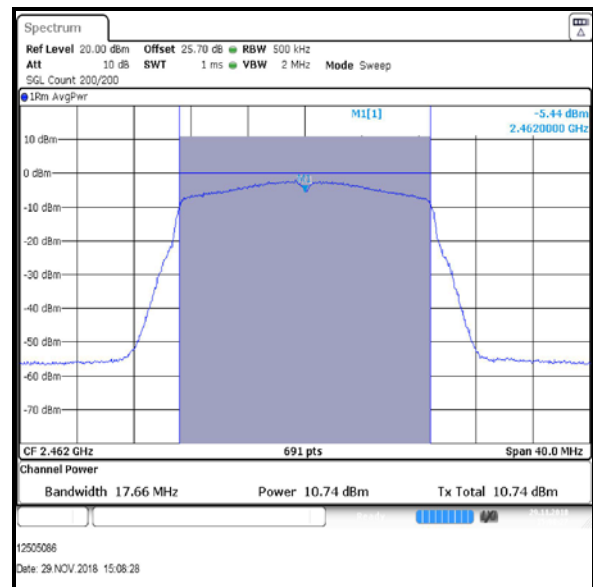
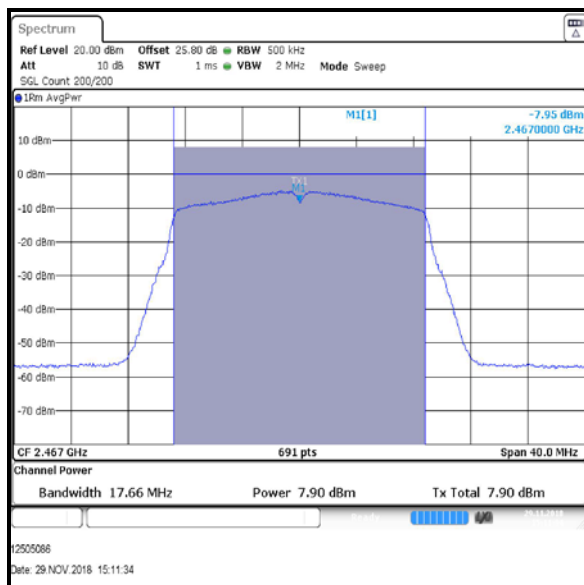
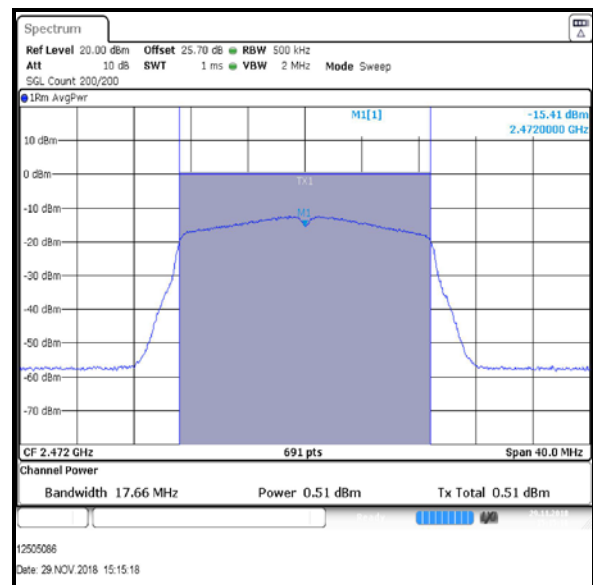
Channel 2



Channel 3



Channel 6

Transmitter Maximum (Average) Output Power (continued)**Results: 802.11n / HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 2****Channel 7****Channel 11****Channel 12****Channel 13**

5. Radiated Test Results

5.1. Transmitter Radiated Emissions <1 GHz

Test Summary:

Test Engineers:	Mohamed Toubella & Andrew Edwards	Test Dates:	20 November 2018 & 26 November 2018
Test Sample Serial Number:	C02X200XKFLX		

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:

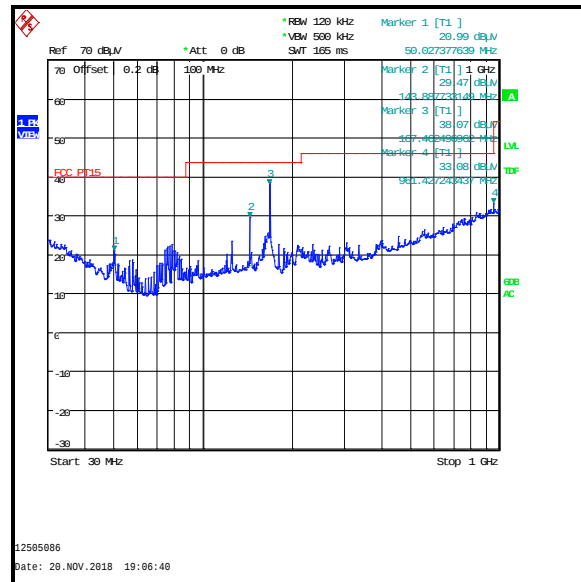
Temperature (°C):	20 to 23
Relative Humidity (%):	36 to 38

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. All other emissions shown on the pre-scan plots were investigated and found to be ambient, or >20 dB below the applicable limit or below the measurement system noise floor.
4. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) 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.
5. 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.
6. 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 wide enough to see the whole emission.

Transmitter Radiated Emissions (continued)**Results: Middle Channel / 802.11b / 1 Mbps / MIMO / 3Tx CDD**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
168.807	Horizontal	29.7	43.5	13.8	Complied



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

5.2. Transmitter Radiated Emissions >1 GHz**Test Summary:**

Test Engineers:	Mark Perry, John Ferdinand, Andrew Edwards & Andrew Harding	Test Dates:	03 December 2018 to 10 December 2018
Test Sample Serial Number:	C02X200XKFLX		

FCC Reference:	Parts 15.247(d) & 15.209(a)
Test Method Used:	FCC KDB 558074 Sections 8.5 & 8.6 referencing ANSI C63.10 Sections 6.3, 6.6, 11.11, 11.12.2.4 & 11.12.2.5.2
Frequency Range	1 GHz to 25 GHz

Environmental Conditions:

Temperature (°C):	21 to 24
Relative Humidity (%):	39 to 48

Note(s):

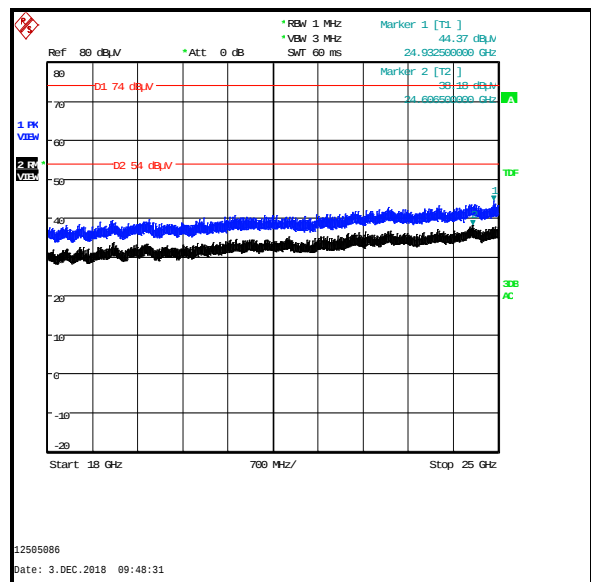
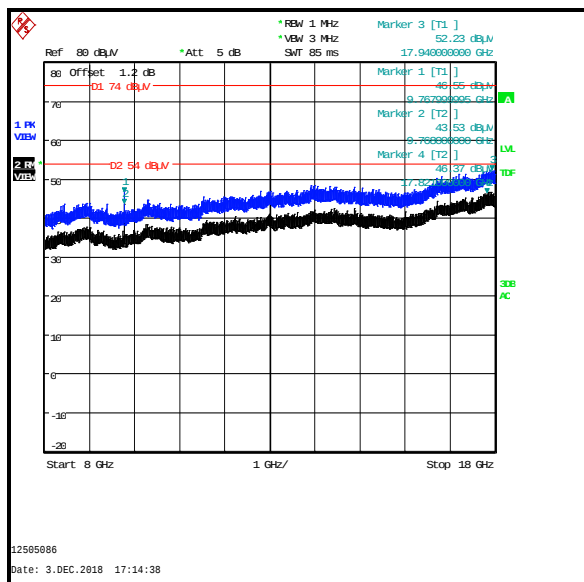
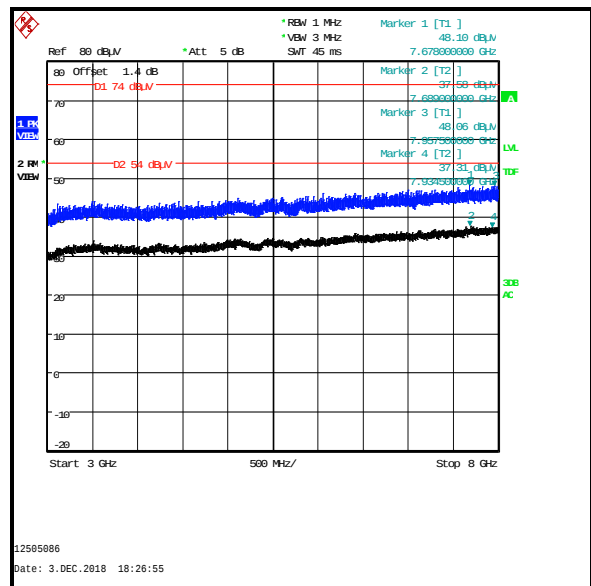
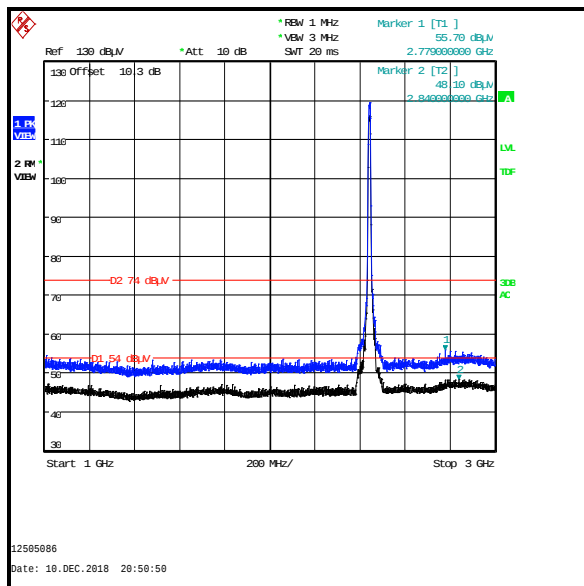
1. The final measured value, for the given emission, in the table below incorporates the calibrated antenna factor and cable loss.
2. All emissions shown on the pre-scan plots were investigated and found to be ambient, or >20 dB below the applicable limit or below the measurement system noise floor. 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 2442 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
2779.000	Vertical	55.7	74.0	18.3	Complied

Results: Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
2840.000	Vertical	48.1	54.0	5.9	Complied

Transmitter Radiated Emissions (continued)

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

Test Engineers:	John Ferdinand & Mohamed Toubella	Test Dates:	14 October 2018 to 03 December 2018
Test Sample Serial Number:	C02WW00PKFMM		

FCC Reference:	Parts 15.247(d) & 15.209(a)
Test Method Used:	KDB 558074 Section 8.7 referencing ANSI C63.10 Sections 6.10, 11.11, 11.12 & 11.13

Environmental Conditions:

Temperature (°C):	21 to 25
Relative Humidity (%):	39 to 56

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

1. The customer declared the following data rates to be used for all measurements as:

- o 802.11b – DBPSK / 1 Mbps / SISO / Core 2
- o 802.11g – BPSK / 6 Mbps / SISO / Core 2
- o 802.11n HT20 – BPSK / MCS0 / SISO / Core 2
- o 802.11b – MIMO / 2Tx CDD / DBPSK / 1 Mbps / Core 0 & Core 1
- o 802.11b – MIMO / 3Tx CDD / DBPSK / 1 Mbps / Core 0, Core 1 & Core 2
- o 802.11n HT20 / MIMO / 2Tx CDD / BPSK / MCS0 / Core 0 & Core 1
- o 802.11n HT20 / MIMO / 3Tx CDD / BPSK / MCS0 / Core 0, Core 1 & Core 2
- o 802.11n HT20 / MIMO / 2Tx TxBF / BPSK / MCS0 / Core 1 & Core 2
- o 802.11n HT20 / MIMO / 3Tx TxBF / BPSK / MCS0 / Core 0, Core 1 & Core 2

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 ANSI C63.10 Section 11.11.1(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 is adjacent to a non-restricted band, only peak measurements are required. In accordance with ANSI C63.10 Section 11.11.1, the test method in Section 11.11.3 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 ANSI C63.10 Section 11.9.2.2.2 or 11.9.2.2.4 an out-of-band limit line was placed 30 dB (ANSI C63.10 Section 11.11.1(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.
5. As the upper band edge is adjacent to 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.

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / DBPSK / 1 Mbps / Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	-30 dBc Limit (dB μ V/m)	Margin (dB)	Result
2398.478	Horizontal	56.6	79.3	22.7	Complied
2400	Horizontal	49.6	79.3	29.7	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	60.3	74.0	13.7	Complied
2484.173	Horizontal	62.5	74.0	11.5	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	46.5	54.0	7.5	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	55.1	74.0	18.9	Complied
2487.538	Horizontal	57.9	74.0	16.1	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	45.4	54.0	8.6	Complied
2484.173	Horizontal	45.5	54.0	8.5	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	57.0	74.0	17.0	Complied

Results: Upper Band Edge / Average / Channel 13

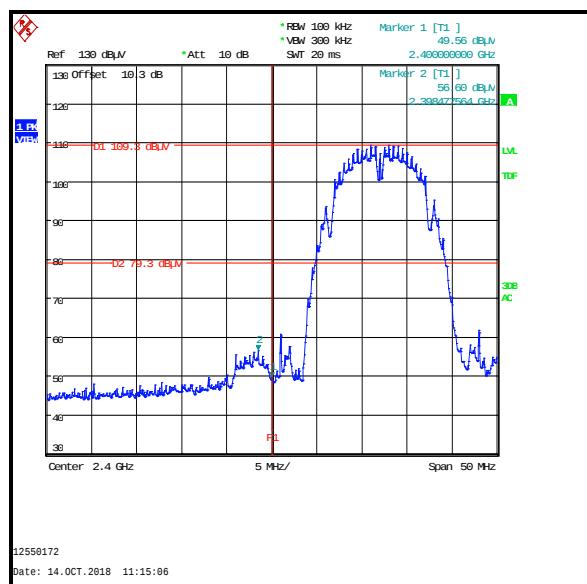
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	45.8	54.0	8.2	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / DBPSK / 1 Mbps / Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

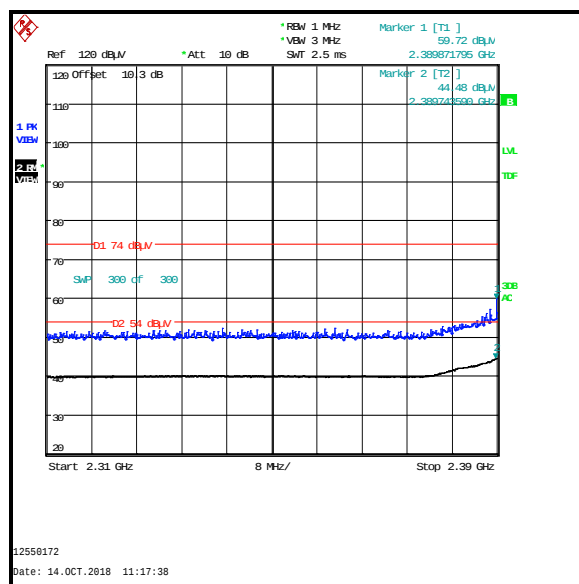
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.872	Horizontal	59.7	74.0	14.3	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

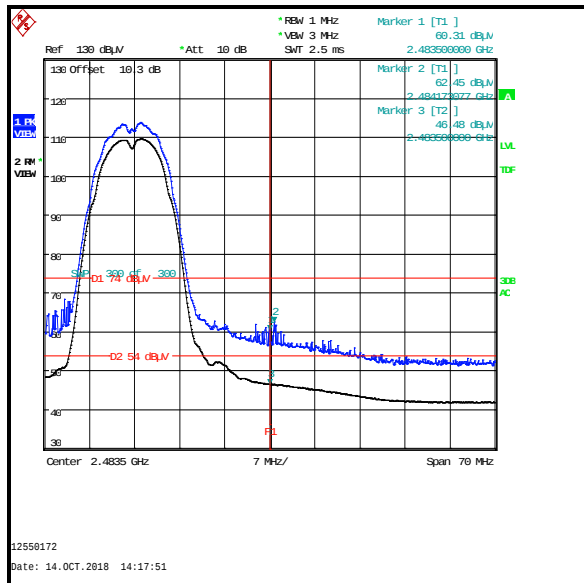
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.744	Horizontal	44.5	54.0	9.5	Complied



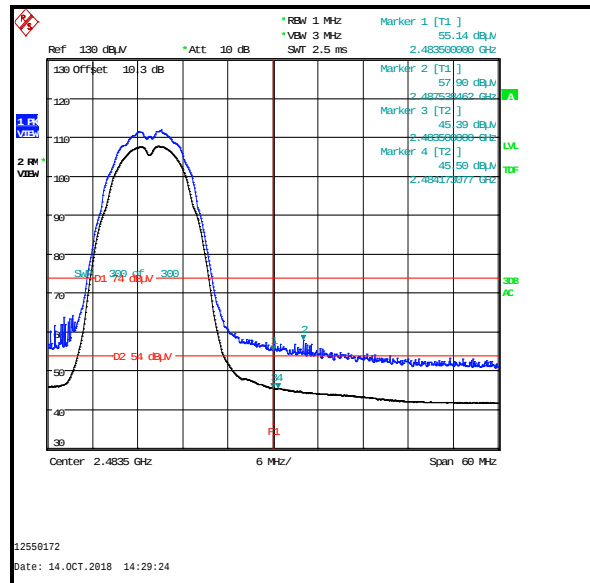
**Lower Band Edge
Channel 1**



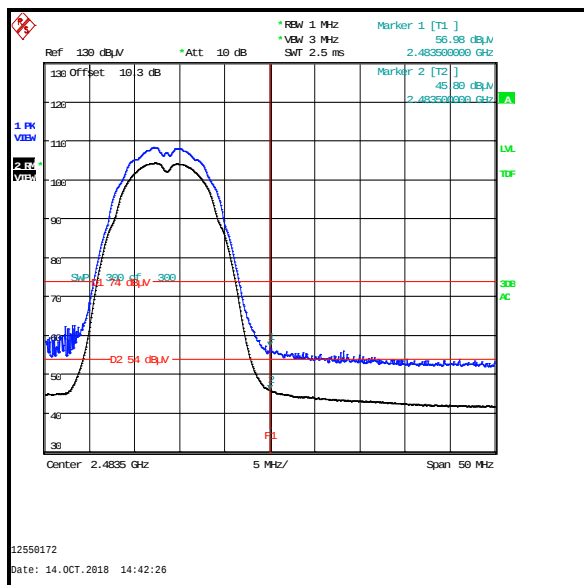
2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / DBPSK / 1 Mbps / Core 2**

Upper Band Edge
Channel 11



Upper Band Edge
Channel 12



Upper Band Edge
Channel 13

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11g / 20 MHz / BPSK / 6 Mbps / Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	-30 dBc Limit (dBμV/m)	Margin (dB)	Result
2398.237	Horizontal	51.9	72.7	20.8	Complied
2400	Horizontal	51.1	72.7	21.6	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	57.5	74.0	16.5	Complied
2483.724	Horizontal	58.3	74.0	15.7	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	44.2	54.0	9.8	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	55.9	74.0	18.1	Complied
2486.769	Horizontal	57.7	74.0	16.3	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	45.5	54.0	8.5	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	67.7	74.0	6.3	Complied

Results: Upper Band Edge / Average / Channel 13

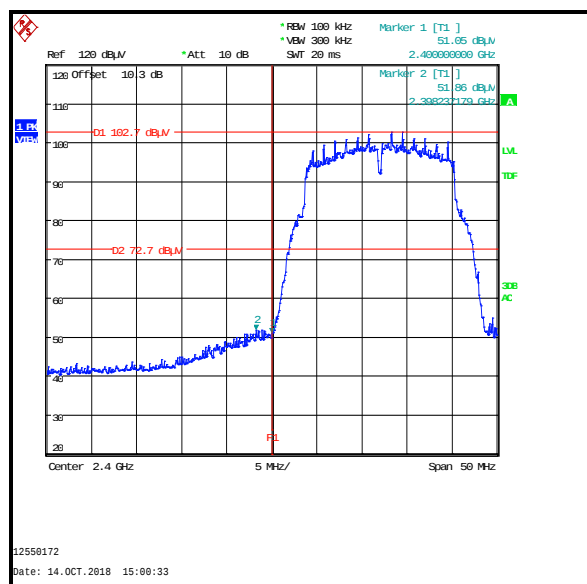
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	50.7	54.0	3.3	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11g / 20 MHz / BPSK / 6 Mbps / Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

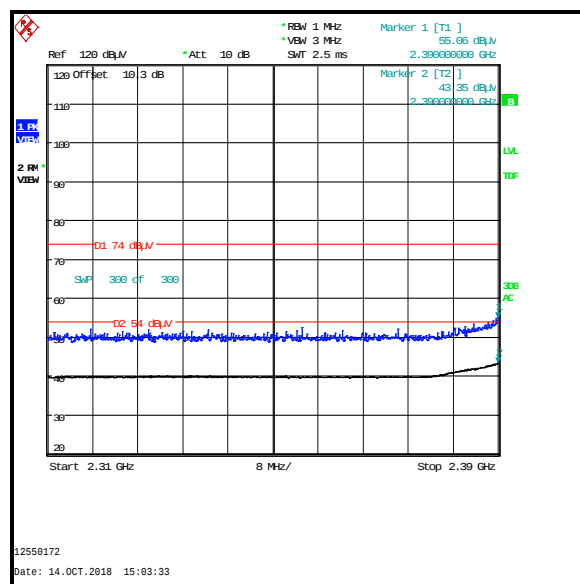
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	55.1	74.0	18.9	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

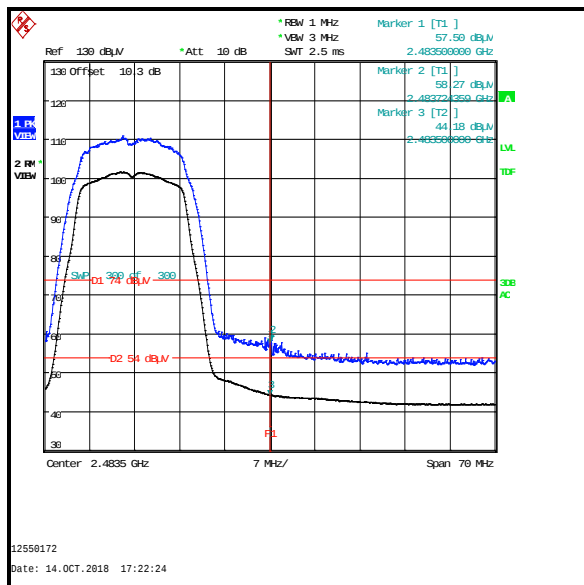
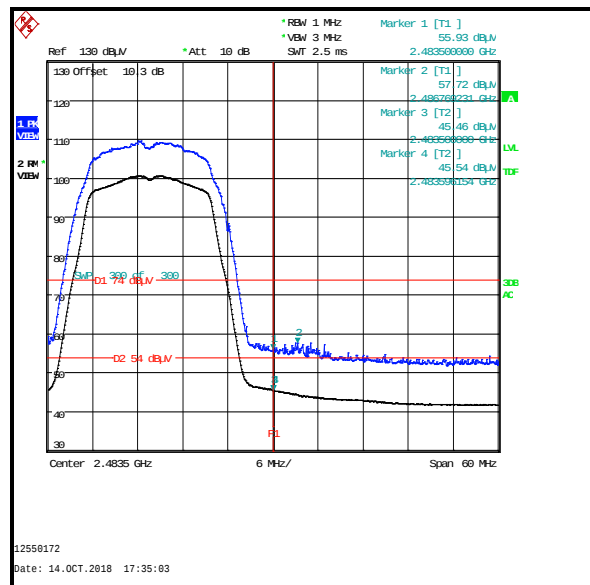
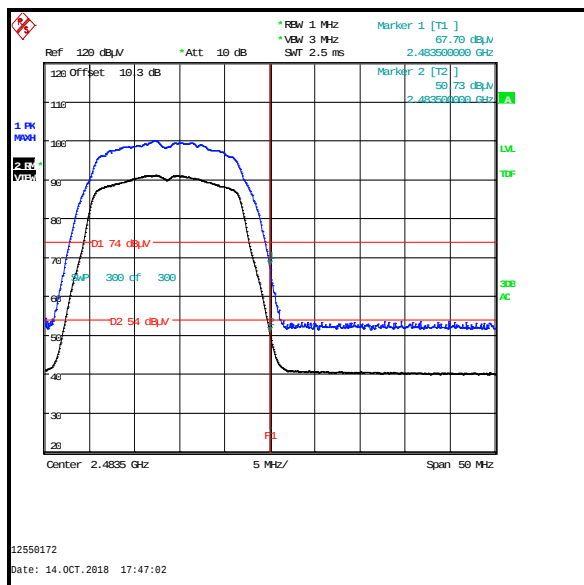
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	43.4	54.0	10.6	Complied



**Lower Band Edge
Channel 1**



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11g / 20 MHz / BPSK / 6 Mbps / Core 2****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / SISO / BPSK / MCS0 / Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	-30 dBc Limit (dB μ V/m)	Margin (dB)	Result
2399.119	Horizontal	52.5	73.1	20.6	Complied
2400	Horizontal	50.3	73.1	22.8	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.9	74.0	14.1	Complied
2483.612	Horizontal	60.7	74.0	13.3	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	49.1	54.0	4.9	Complied
2483.612	Horizontal	49.2	54.0	4.8	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.3	74.0	14.7	Complied
2483.692	Horizontal	60.5	74.0	13.5	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	48.9	54.0	5.1	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.7	74.0	14.3	Complied

Results: Upper Band Edge / Average / Channel 13

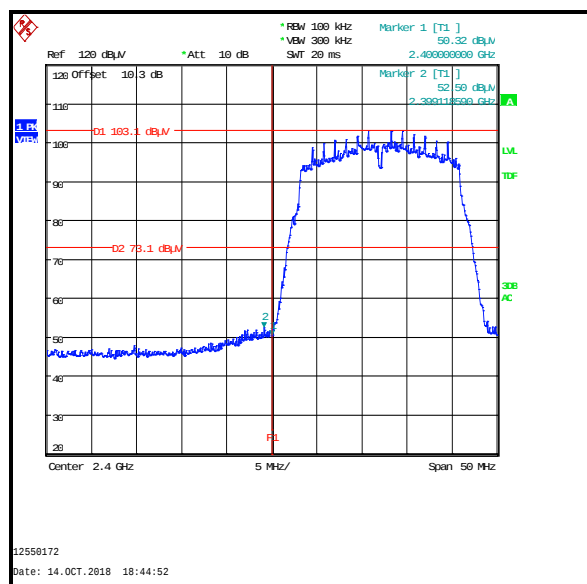
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	45.3	54.0	8.7	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / SISO / BPSK / MCS0 / Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

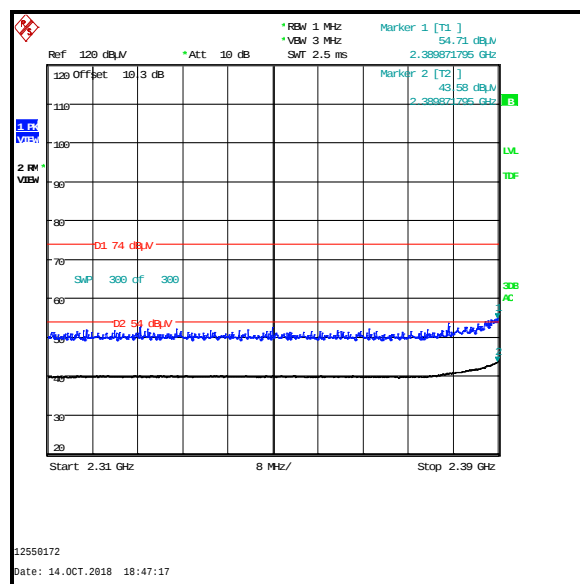
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.872	Horizontal	54.7	74.0	19.3	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.872	Horizontal	43.6	54.0	10.4	Complied



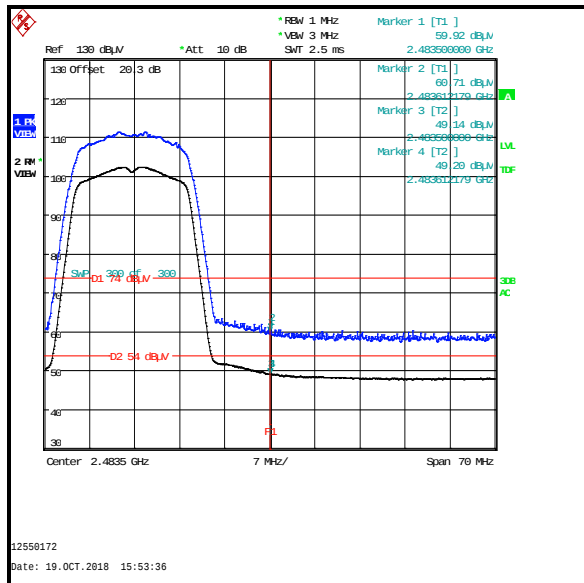
**Lower Band Edge
Channel 1**



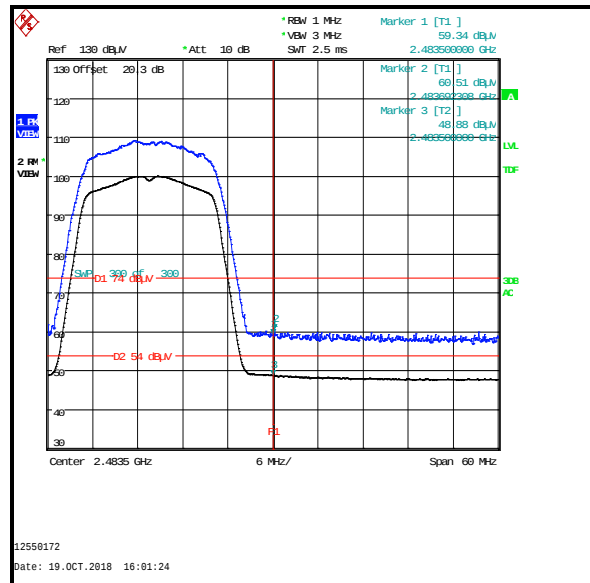
2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)

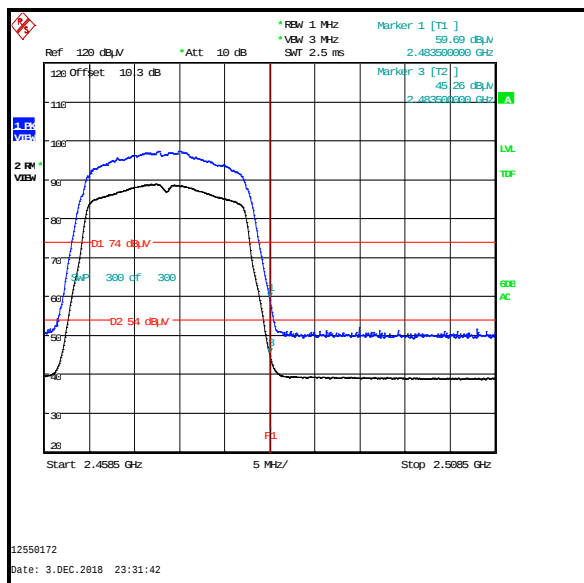
Results: 802.11n HT20 / SISO / BPSK / MCS0 / Core 2



Upper Band Edge Channel 11



Upper Band Edge
Channel 12

Upper Band Edge
Channel 13

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / MIMO / 2Tx CDD / 1 Mbps / Core 0 & Core 1****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	-30 dBc Limit (dBμV/m)	Margin (dB)	Result
2397.997	Horizontal	63.6	82.6	19.0	Complied
2400	Horizontal	63.2	82.6	19.4	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	58.8	74.0	15.2	Complied
2491.577	Horizontal	60.0	74.0	14.0	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	48.2	54.0	5.8	Complied
2484.846	Horizontal	48.5	54.0	5.5	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	59.8	74.0	14.2	Complied
2488.212	Horizontal	60.2	74.0	13.8	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	48.5	54.0	5.5	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	60.3	74.0	13.7	Complied
2484.061	Horizontal	61.5	74.0	12.5	Complied

Results: Upper Band Edge / Average / Channel 13

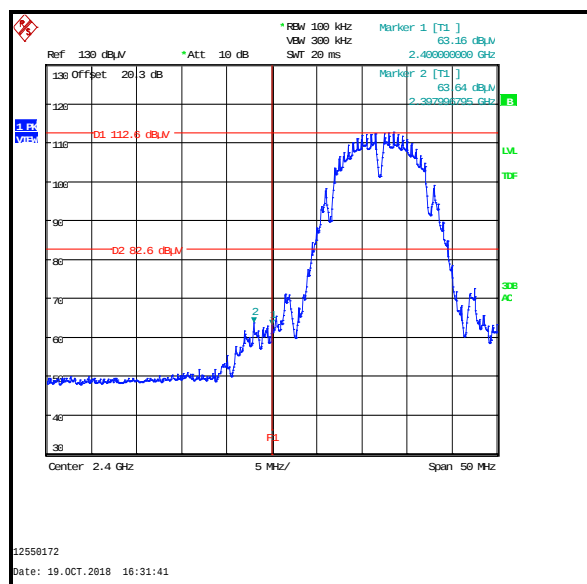
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	50.3	54.0	3.7	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / MIMO / 2Tx CDD / 1 Mbps / Core 0 & Core 1****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

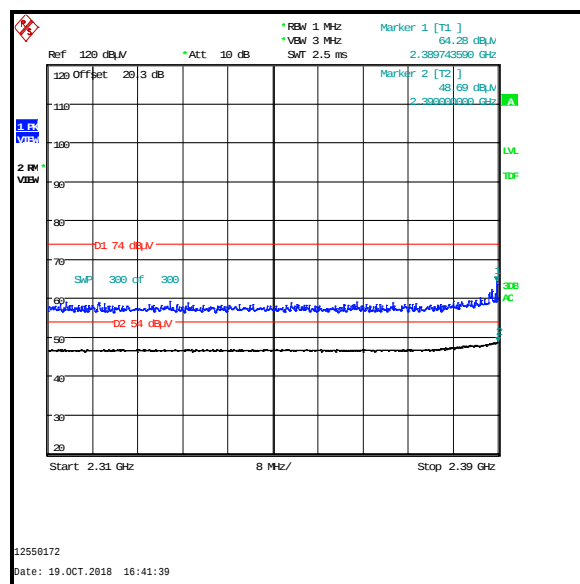
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.744	Horizontal	64.3	74.0	9.7	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	48.7	54.0	5.3	Complied



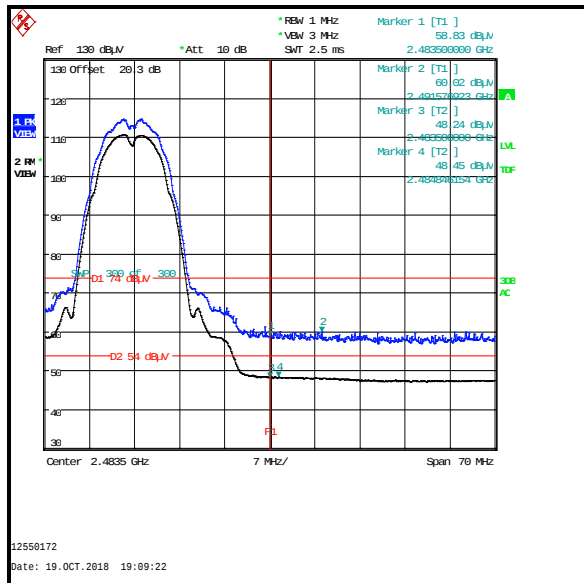
**Lower Band Edge
Channel 1**



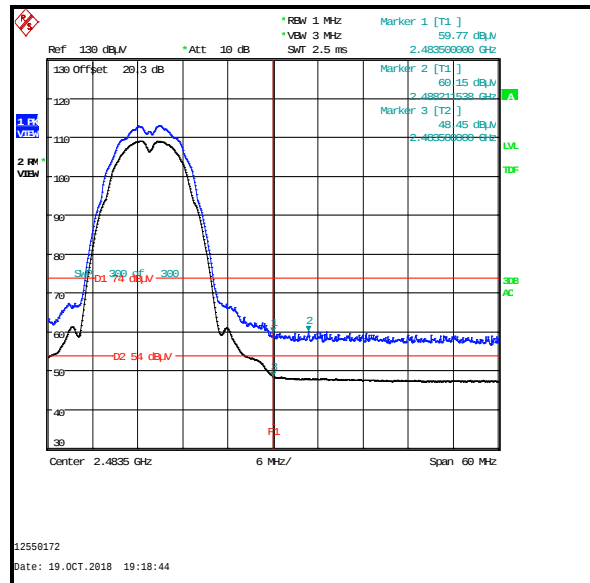
2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)

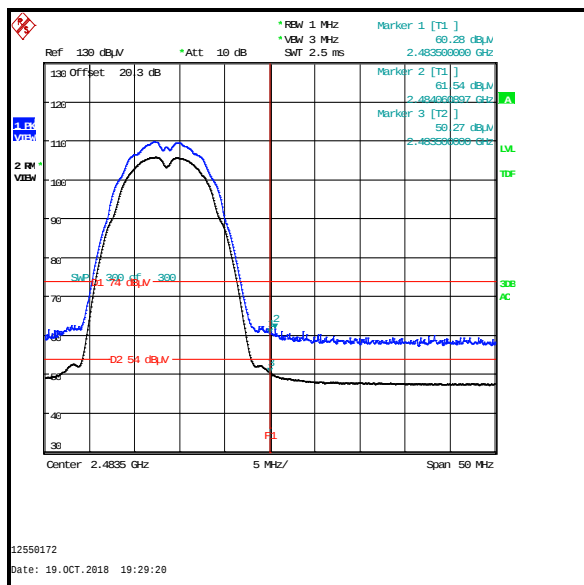
Results: 802.11b / 20 MHz / MIMO / 2Tx CDD / 1 Mbps / Core 0 & Core 1



Upper Band Edge Channel 11



Upper Band Edge
Channel 12

Upper Band Edge
Channel 13

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / MIMO / 3Tx CDD / 1 Mbps / Core 0, Core 1 & Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	-30 dBc Limit (dBμV/m)	Margin (dB)	Result
2397.997	Horizontal	59.8	81.0	21.2	Complied
2400	Horizontal	57.8	81.0	23.2	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	58.3	74.0	15.7	Complied
2486.978	Horizontal	60.0	74.0	14.0	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	48.0	54.0	6.0	Complied
2485.071	Horizontal	48.1	54.0	5.9	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	60.2	74.0	13.8	Complied
2484.942	Horizontal	60.5	74.0	13.5	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	48.9	54.0	5.1	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	60.1	74.0	13.9	Complied
2484.862	Horizontal	61.8	74.0	12.2	Complied

Results: Upper Band Edge / Average / Channel 13

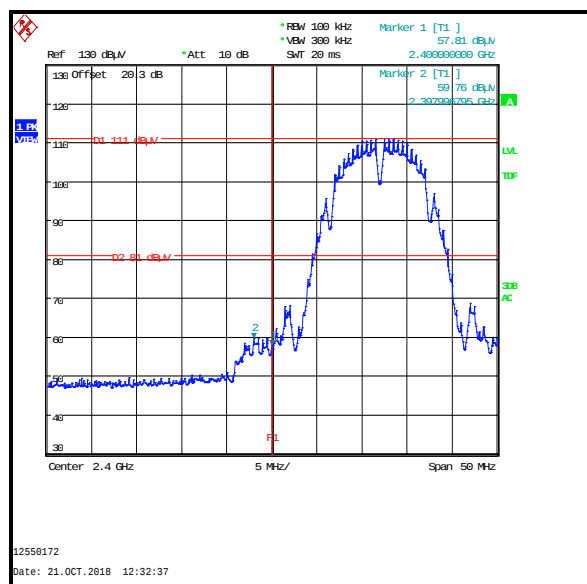
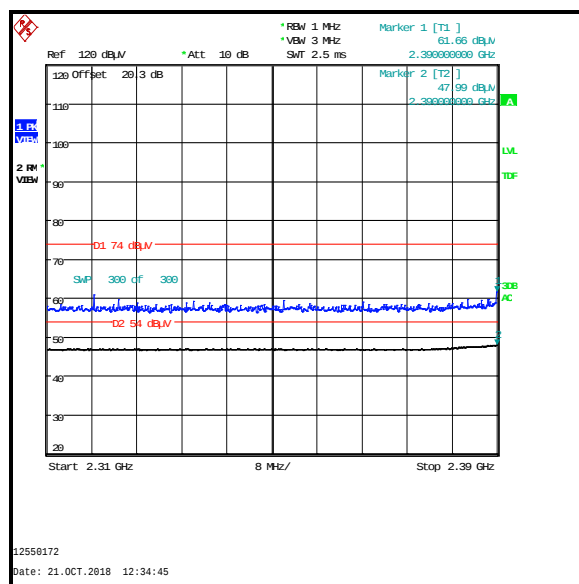
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	51.0	54.0	3.0	Complied

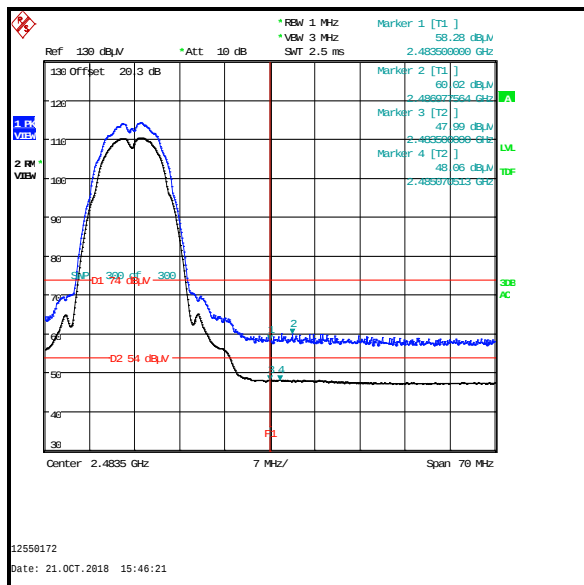
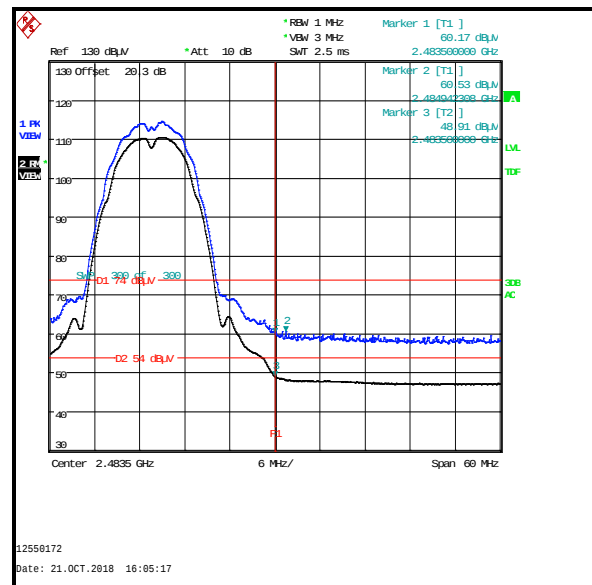
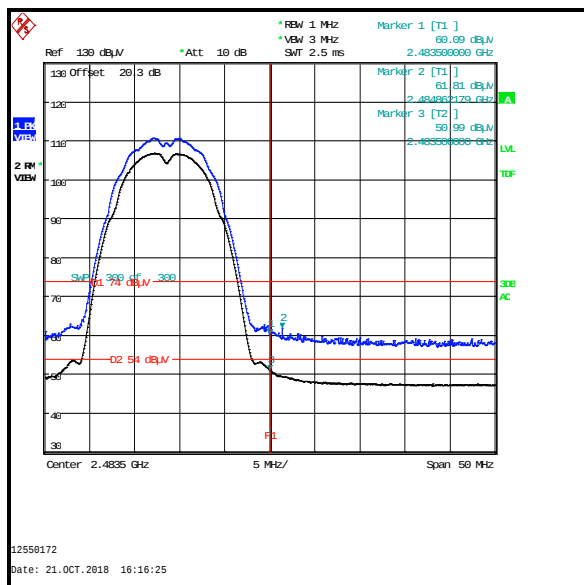
Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / MIMO / 3Tx CDD / 1 Mbps / Core 0, Core 1 & Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	61.7	74.0	12.3	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	48.0	54.0	6.0	Complied

**Lower Band Edge
Channel 1****2310 MHz to 2390 MHz Restricted Band**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11b / 20 MHz / MIMO / 3Tx CDD / 1 Mbps / Core 0, Core 1 & Core 2****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx CDD / MCS0 / Core 0 & Core 1****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	-30 dBc Limit (dBμV/m)	Margin (dB)	Result
2399.840	Horizontal	58.0	77.2	19.2	Complied
2400	Horizontal	56.2	77.2	21.0	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	62.9	74.0	11.1	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	49.6	54.0	4.4	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	59.8	74.0	14.2	Complied
2488.500	Horizontal	60.8	74.0	13.2	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	48.6	54.0	5.4	Complied
2484.846	Horizontal	48.7	54.0	5.3	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	54.3	74.0	19.7	Complied

Results: Upper Band Edge / Average / Channel 13

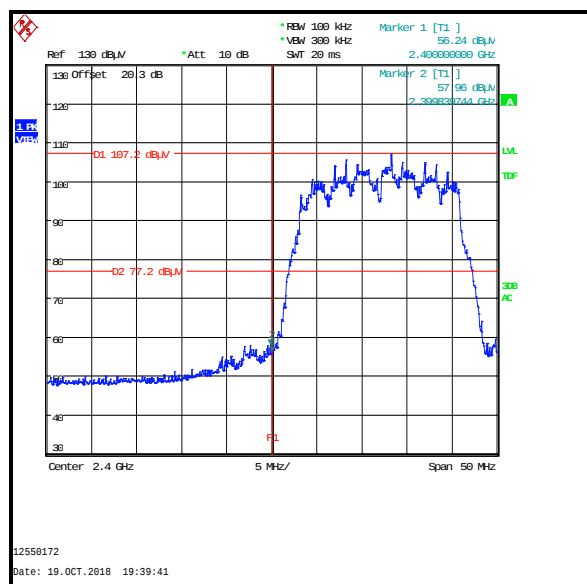
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	40.9	54.0	13.1	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx CDD / MCS0 / Core 0 & Core 1****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

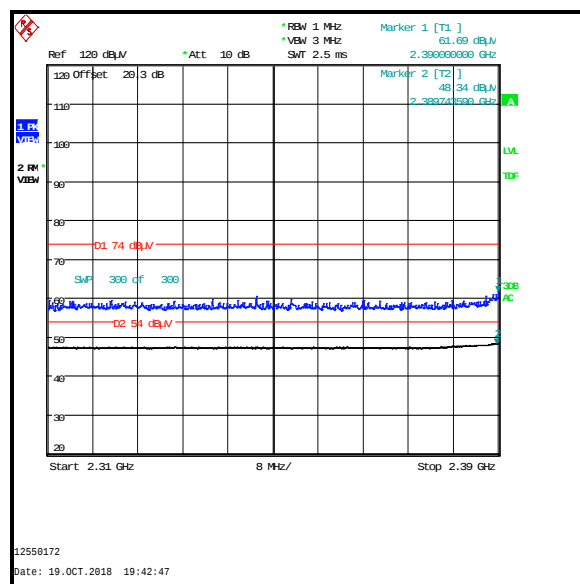
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	61.7	74.0	12.3	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

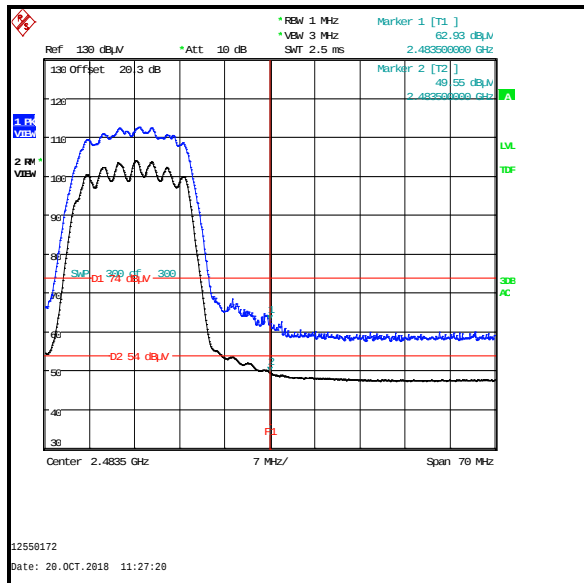
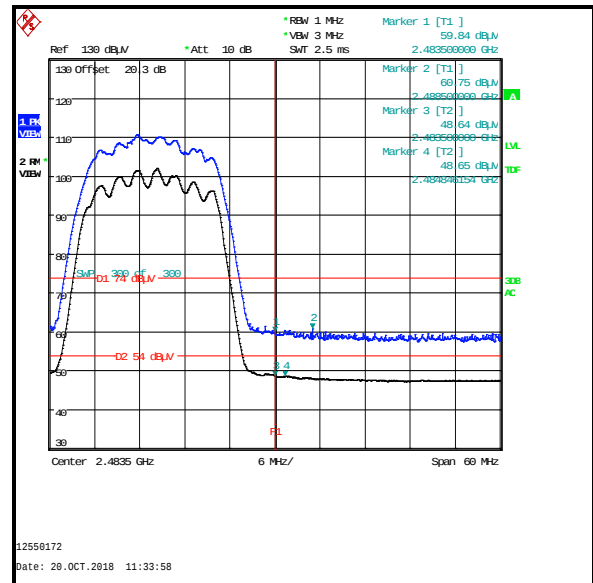
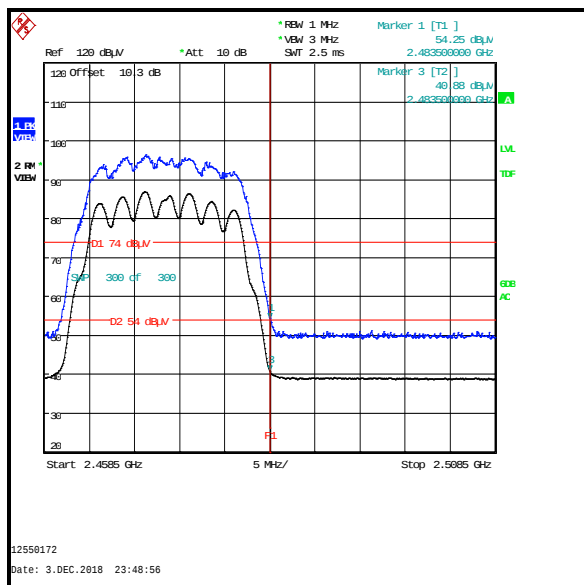
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.744	Horizontal	48.3	54.0	5.7	Complied



**Lower Band Edge
Channel 1**



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx CDD / MCS0 / Core 0 & Core 1****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx CDD / MCS0 / Core 0, Core 1 & Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	-30 dBc Limit (dB μ V/m)	Margin (dB)	Result
2397.596	Horizontal	56.2	75.7	19.5	Complied
2400	Horizontal	55.1	75.7	20.6	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	60.4	74.0	13.6	Complied
2483.837	Horizontal	62.5	74.0	11.5	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	48.7	54.0	5.3	Complied
2484.846	Horizontal	49.0	54.0	5.0	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.8	74.0	14.2	Complied
2484.942	Horizontal	61.1	74.0	12.9	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	48.4	54.0	5.6	Complied
2484.269	Horizontal	49.1	54.0	4.9	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	66.3	74.0	7.7	Complied

Results: Upper Band Edge / Average / Channel 13

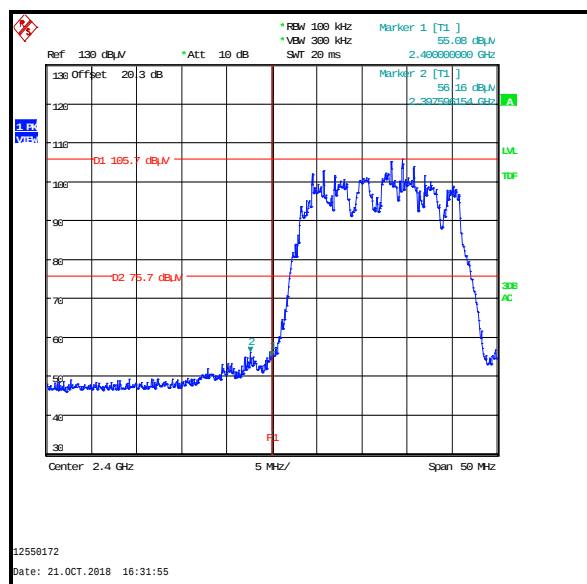
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	51.1	54.0	2.9	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx CDD / MCS0 / Core 0, Core 1 & Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

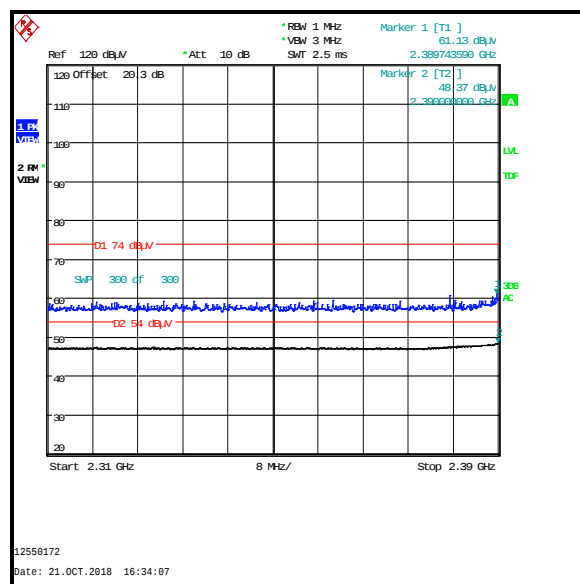
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2389.744	Horizontal	61.1	74.0	12.9	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

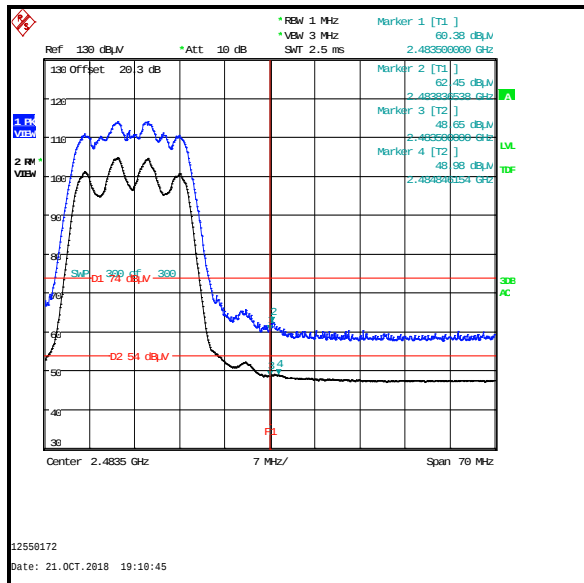
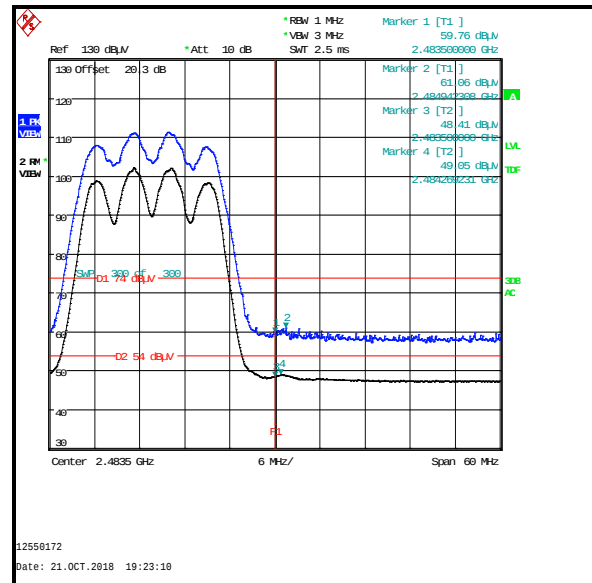
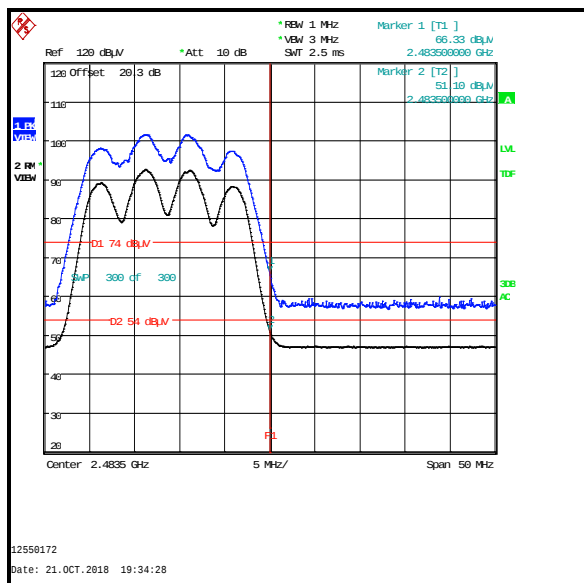
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2390.000	Horizontal	48.4	54.0	5.6	Complied



**Lower Band Edge
Channel 1**



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx CDD / MCS0 / Core 0, Core 1 & Core 2****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx TxBF / MCS0 / Core 1 & Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	-30 dBc Limit (dB μ V/m)	Margin (dB)	Result
2398.800	Horizontal	58.5	74.7	16.2	Complied
2400	Horizontal	55.9	74.7	18.8	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.8	74.0	14.2	Complied
2484.400	Horizontal	61.7	74.0	12.3	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	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	Horizontal	49.0	0.1	49.1	54.0	4.9	Complied
2483.600	Horizontal	49.1	0.1	49.2	54.0	4.8	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	59.1	74.0	14.9	Complied
2483.671	Horizontal	60.7	74.0	13.3	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	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	Horizontal	48.6	0.1	48.7	54.0	5.3	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	66.8	74.0	7.2	Complied

Results: Upper Band Edge / Average / Channel 13

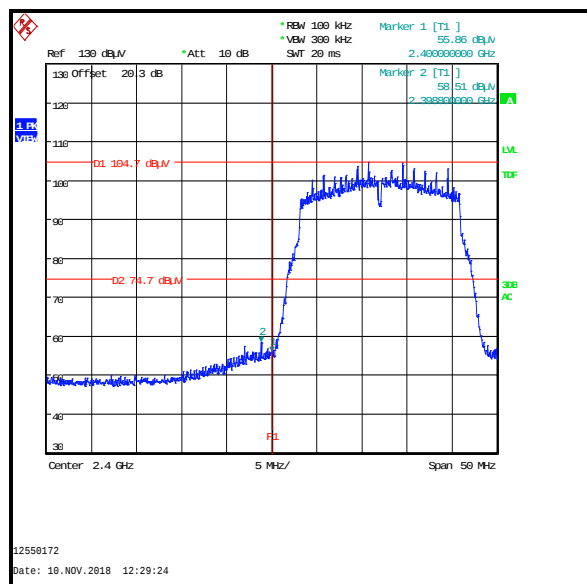
Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
2483.5	Horizontal	52.0	0.1	52.1	54.0	1.9	Complied

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx TxBF / MCS0 / Core 1 & Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

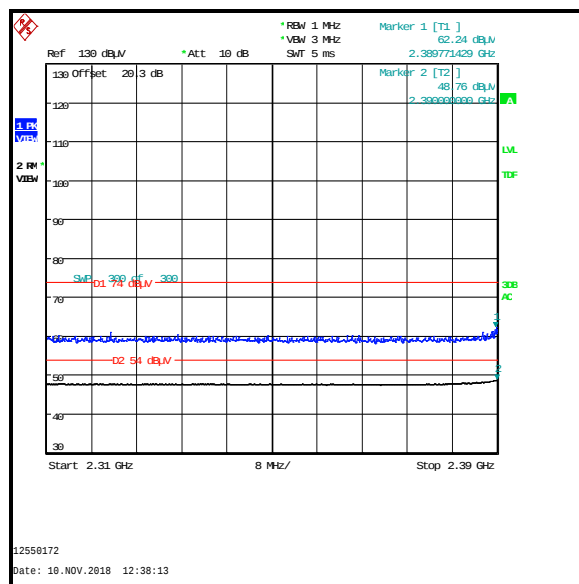
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2389.771	Horizontal	62.2	74.0	11.8	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

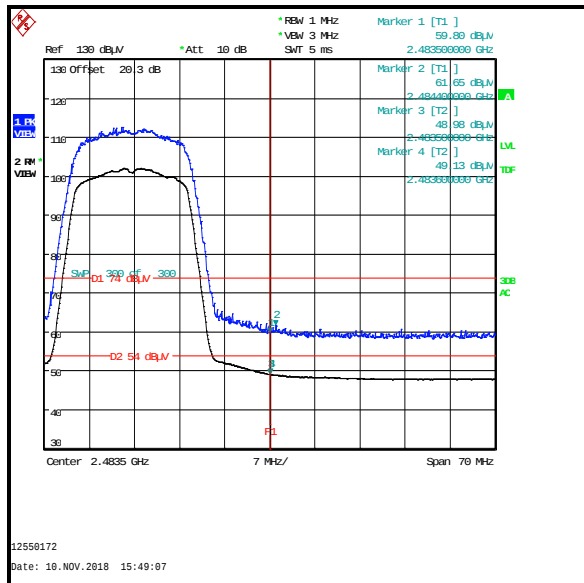
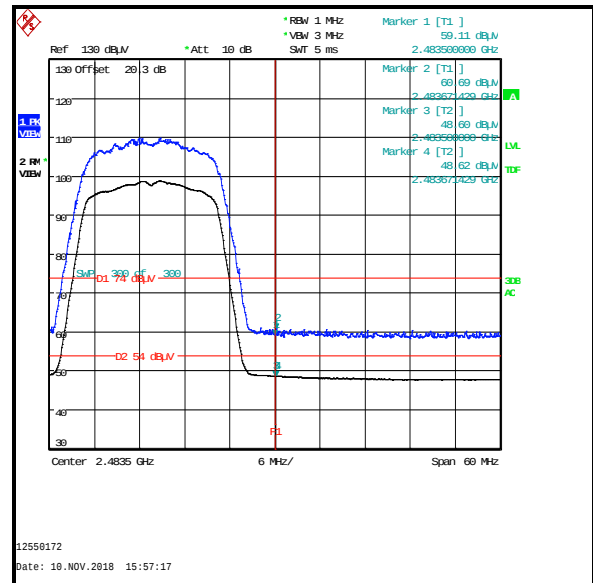
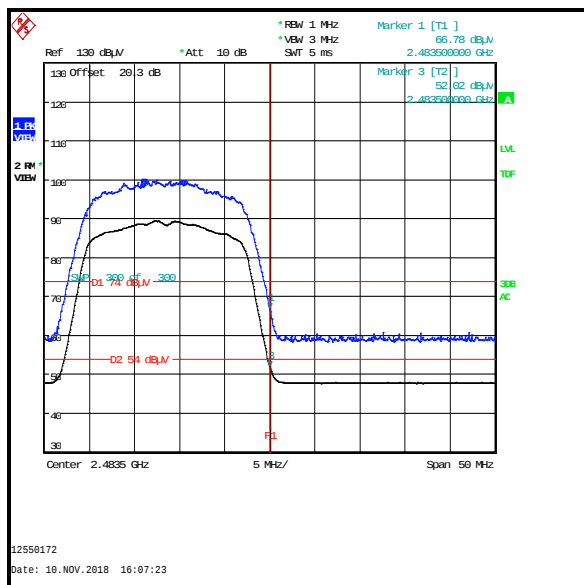
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2390.000	Horizontal	48.8	0.1	48.9	54.0	5.1	Complied



**Lower Band Edge
Channel 1**



2310 MHz to 2390 MHz Restricted Band

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 2Tx TxBF / MCS0 / Core 1 & Core 2****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx TxBF / MCS0 / Core 0, Core 1 & Core 2****Results: Lower Band Edge / Channel 1**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	-30 dBc Limit (dBμV/m)	Margin (dB)	Result
2399.150	Horizontal	60.2	76.6	16.4	Complied
2400	Horizontal	57.5	76.6	19.1	Complied

Results: Upper Band Edge / Peak / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	64.5	74.0	9.5	Complied
2483.900	Horizontal	64.9	74.0	9.1	Complied

Results: Upper Band Edge / Average / Channel 11

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	49.9	0.1	50.0	54.0	4.0	Complied

Results: Upper Band Edge / Peak / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	61.7	74.0	12.3	Complied
2483.757	Horizontal	61.9	74.0	12.1	Complied

Results: Upper Band Edge / Average / Channel 12

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	51.0	0.1	51.1	54.0	2.9	Complied

Results: Upper Band Edge / Peak / Channel 13

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	61.4	74.0	12.6	Complied

Results: Upper Band Edge / Average / Channel 13

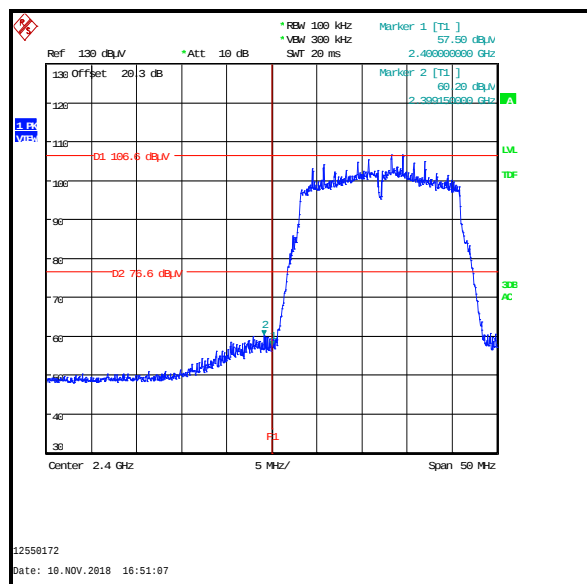
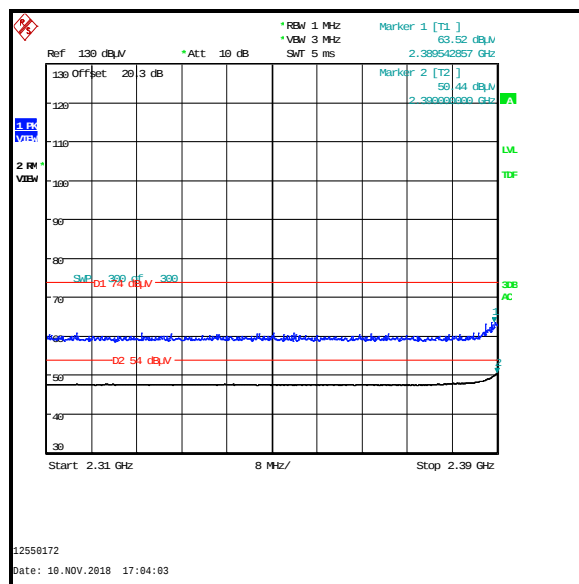
Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	49.0	0.1	49.1	54.0	4.9	Complied

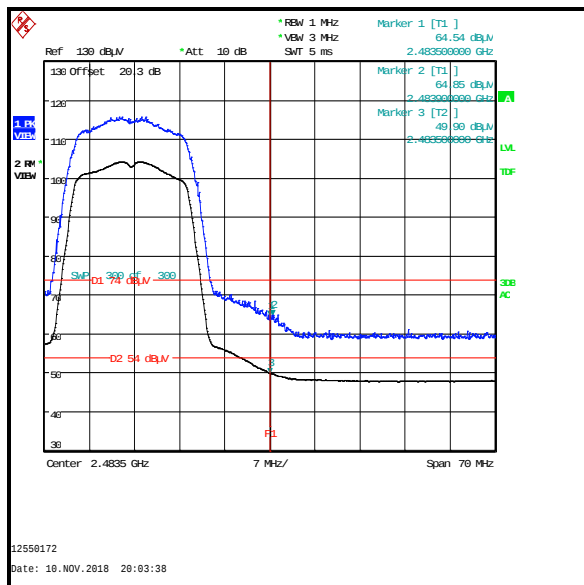
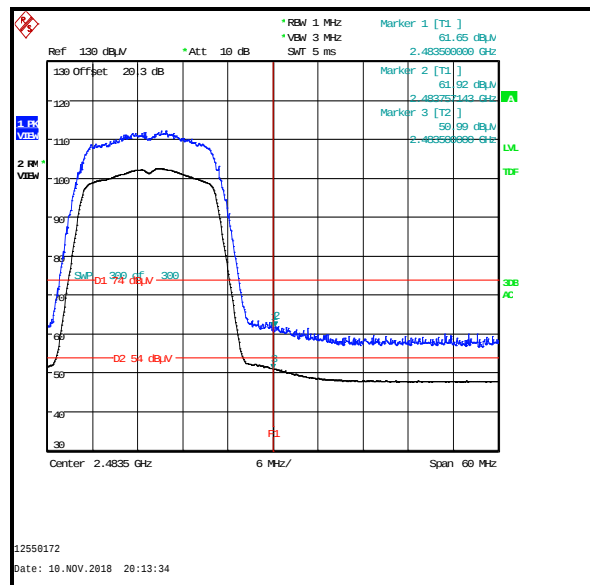
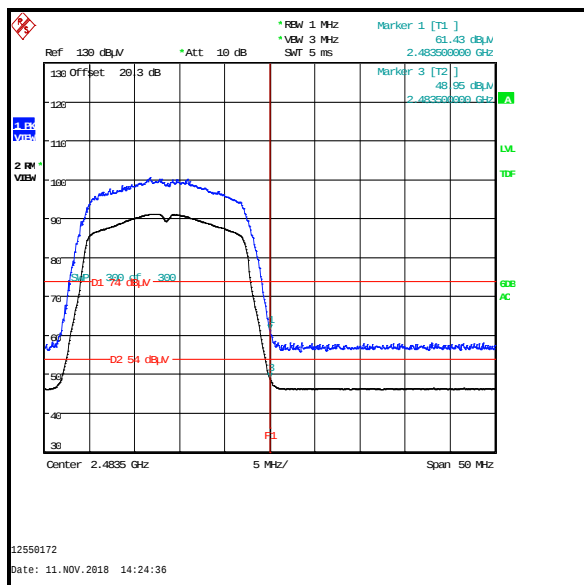
Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx TxBF / MCS0 / Core 0, Core 1 & Core 2****Results: 2310 MHz to 2390 MHz Restricted Band / Peak**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2389.543	Horizontal	63.5	74.0	10.5	Complied

Results: 2310 MHz to 2390 MHz Restricted Band / Average

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2390.000	Horizontal	50.4	0.1	50.5	54.0	3.5	Complied

**Lower Band Edge
Channel 1****2310 MHz to 2390 MHz Restricted Band**

Transmitter Band Edge Radiated Emissions (continued)**Results: 802.11n HT20 / MIMO / 3Tx TxBF / MCS0 / Core 0, Core 1 & Core 2****Upper Band Edge
Channel 11****Upper Band Edge
Channel 12****Upper Band Edge
Channel 13**

Appendix 1

Directional Antenna Gain Calculations for CDD MIMO

For 2Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

- $N_{SS} = 1, N_{ANT} = 2, G_{Core1} = 4.8 \text{ dBi}, G_{Core2} = 4.3 \text{ dBi}$

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^2 g_{j,k} \right)^2}{2} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2})^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{2} \right] = 7.6 \text{ dBi} \end{aligned}$$

For 3Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii), directional gain was calculated as:

- $N_{SS} = 1, N_{ANT} = 3, G_{Core0} = 3.7 \text{ dBi}, G_{Core1} = 4.8 \text{ dBi}, G_{Core2} = 4.3 \text{ dBi}$

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^3 g_{j,k} \right)^2}{3} \right] \\ &= 10 \log \left[\frac{(g_{1,1} + g_{1,2} + g_{1,3})^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{3.7}{20}} + 10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{3} \right] = 10 \log \left[\frac{\left(10^{\frac{3.7}{20}} + 10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{3} \right] = 9.0 \text{ dBi} \end{aligned}$$

Appendix 1 (continued)**Directional Antenna Gain Calculations for TxBF MIMO**

For 2Tx TxBF MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(i), directional gain was calculated as:

- $N_{ANT} = 2$, $G_{Core1} = 4.8$ dBi, $G_{Core2} = 4.3$ dBi

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} + \dots + 10^{\frac{G_N}{20}} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} \right)^2}{2} \right] \\ &= 10 \log \left[\frac{\left(10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{2} \right] = 7.6 \text{ dBi} \end{aligned}$$

For 3Tx TxBF MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)d)(i), directional gain was calculated as:

- $N_{ANT} = 3$, $G_{Core0} = 3.7$ dBi, $G_{Core1} = 4.8$ dBi, $G_{Core2} = 4.3$ dBi

$$\begin{aligned} \text{Directional Gain} &= 10 \log \left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} + \dots + 10^{\frac{G_N}{20}} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\left(10^{\frac{G_1}{20}} + 10^{\frac{G_2}{20}} + 10^{\frac{G_3}{20}} \right)^2}{3} \right] = \\ &= 10 \log \left[\frac{\left(10^{\frac{3.7}{20}} + 10^{\frac{4.8}{20}} + 10^{\frac{4.3}{20}} \right)^2}{3} \right] = 9.0 \text{ dBi} \end{aligned}$$

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