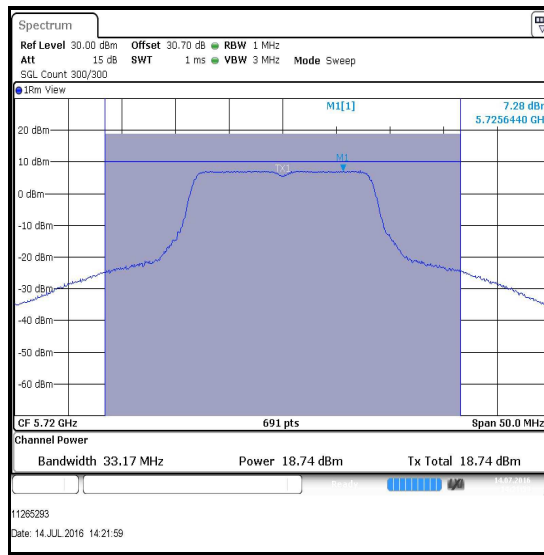


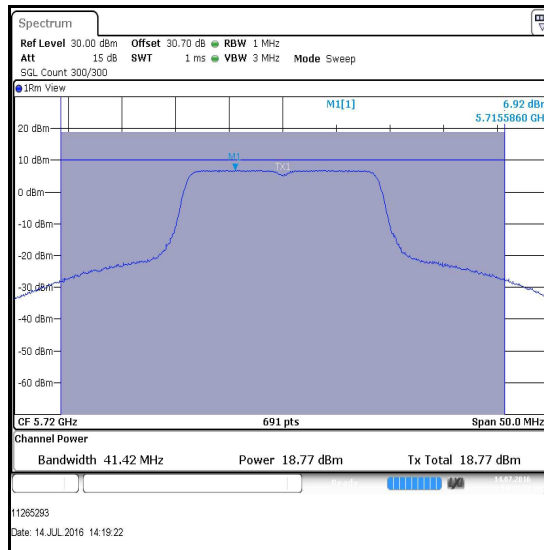
Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5720	18.7	24.0	5.3	Complied

**Single Channel**

Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO**

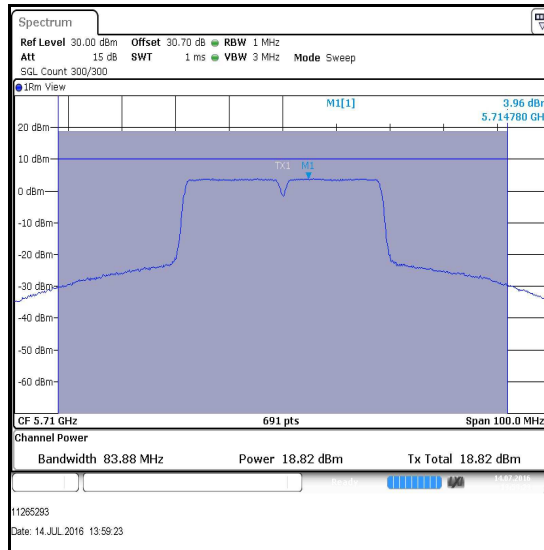
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5720	18.8	24.0	5.2	Complied

**Single Channel**

Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5710	18.8	0.1	18.9	24.0	5.1	Complied

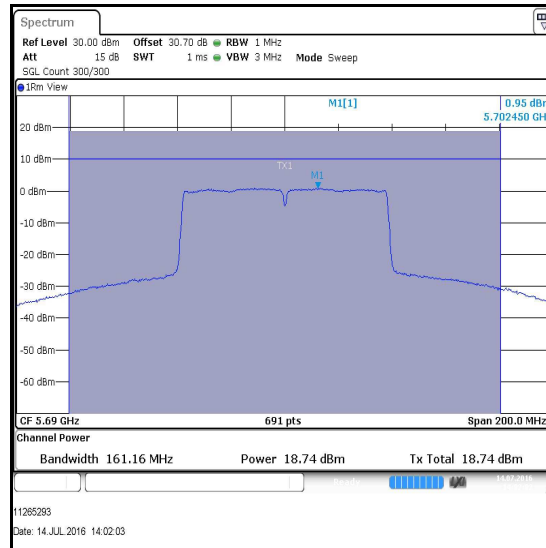


Single Channel

Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5690	18.7	0.2	18.9	24.0	5.1	Complied

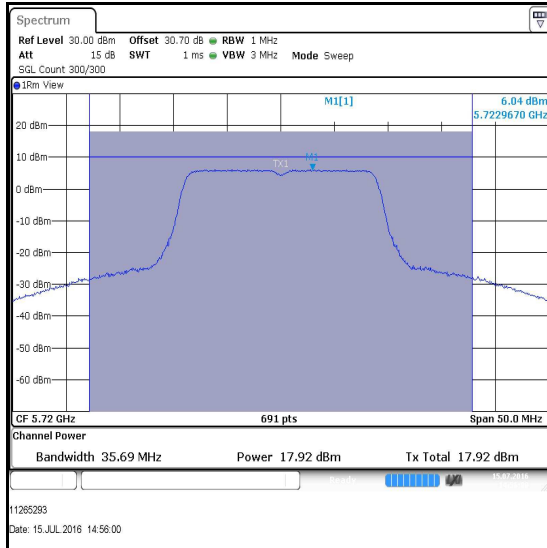


Single Channel

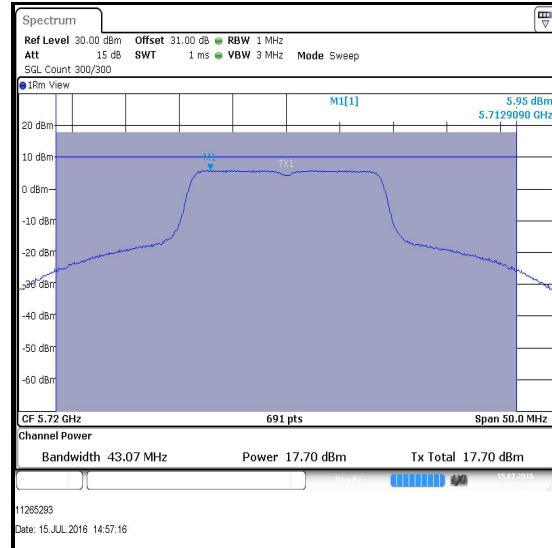
Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO

Channel	Frequency (MHz)	Conducted Peak Power Port 1 (dBm)	Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	5720	17.9	17.7	20.8	24.0	3.2	Complied



Single Channel / Port 1



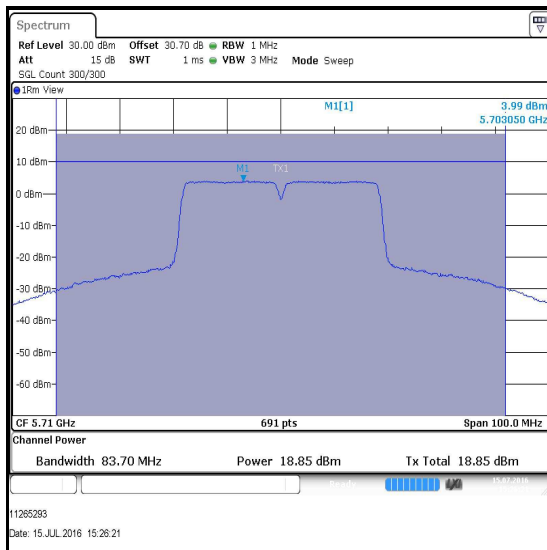
Single Channel / Port 2

Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

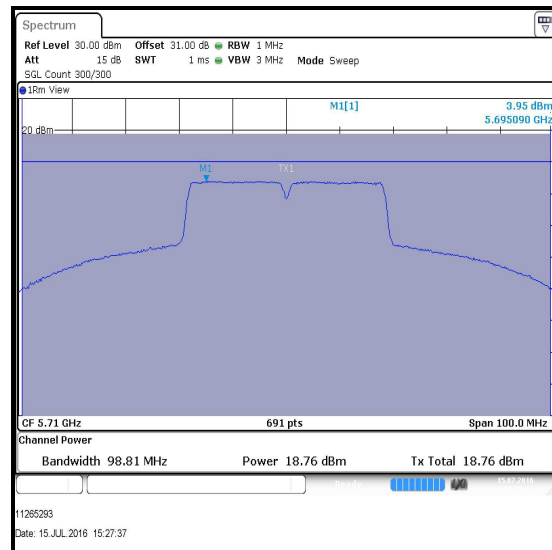
Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO

Channel	Frequency (MHz)	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)
Single	5710	18.9	0.1	19.0	18.8	0.1	18.9

Channel	Frequency (MHz)	Corrected Conducted Peak Power Port 1 (dBm)	Corrected Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5710	19.0	18.9	22.0	24.0	2.0	Complied



Single Channel / Port 1



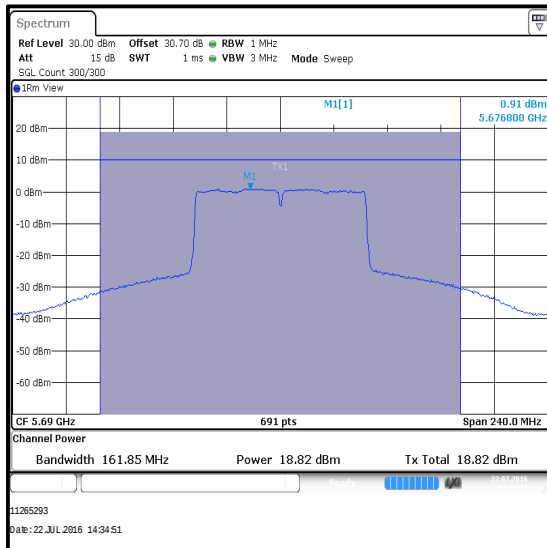
Single Channel / Port 2

Transmitter Maximum Conducted Output Power (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

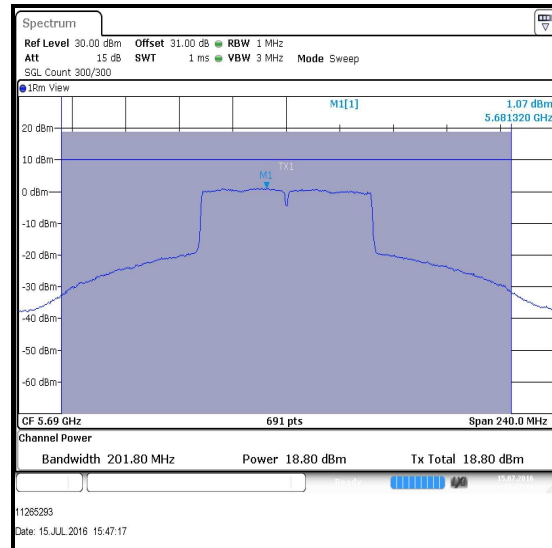
Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO

Channel	Frequency (MHz)	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)
Single	5690	18.8	0.2	19.0	18.8	0.2	19.0

Channel	Frequency (MHz)	Corrected Conducted Peak Power Port 1 (dBm)	Corrected Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5690	19.0	19.0	22.0	24.0	2.0	Complied



Single Channel / Port 1



Single Channel / Port 2

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	12 July 2016 to 25 July 2016
Test Sample Serial Number:	C39RW006HFML		

FCC Reference:	Part 15.407(a)(3)
Test Method Used:	KDB 789033 D02 Section II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	40 to 43

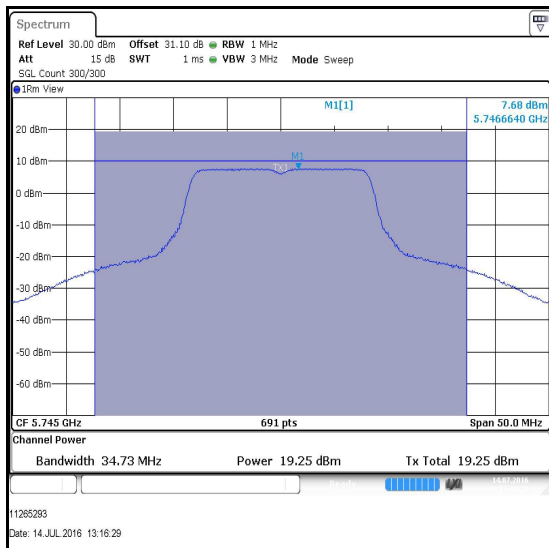
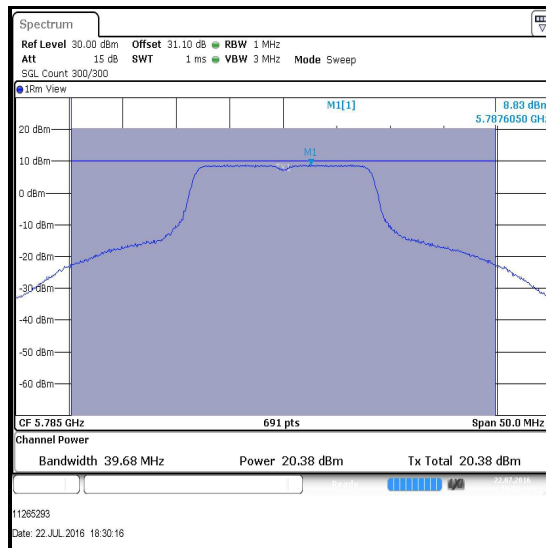
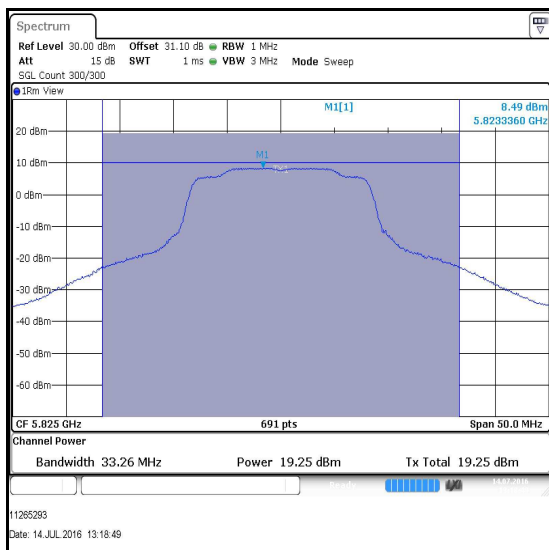
Note(s):

1. The FCC Part 15.407(a)(3) limit shall not exceed 1 W (30.0 dBm).
2. For SISO modes, the antenna gain is < 6 dBi.
3. For MIMO modes presented in this section of the test report, the data stream is correlated as it is single stream with CDD on. The directional antenna gain has been calculated in accordance with KDB 662911 D01 Section F)2)f)(ii). The EUT antenna has a gain of 0.0 dBi for port 1 and 0.1 dBi for port 2, in the frequency range 5.725 GHz to 5.85 GHz:

$$\begin{aligned}
 \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^2 g_{j,k} \right)^2}{2} \right] \\
 &= 10 \log \left[\frac{(g_{1,1} + g_{1,2})^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{0.0}{20}} + 10^{\frac{0.1}{20}} \right)^2}{2} \right] = 10 \log \left[\frac{\left(10^{\frac{0.0}{20}} + 10^{\frac{0.1}{20}} \right)^2}{2} \right] = 3.1 \text{ dBi}
 \end{aligned}$$

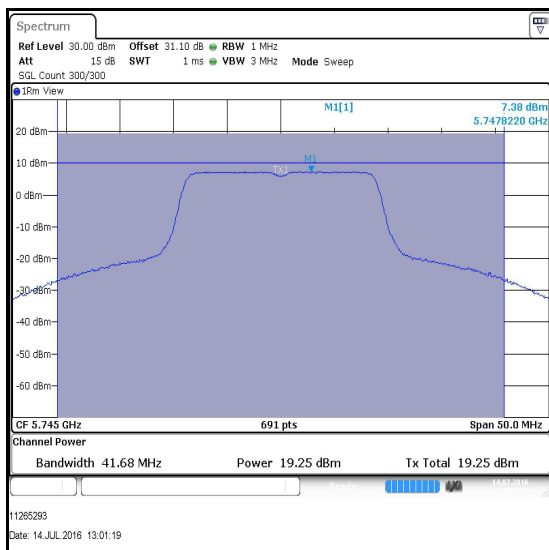
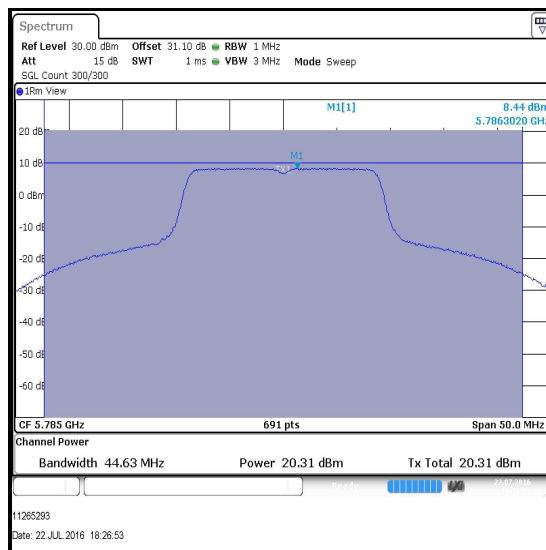
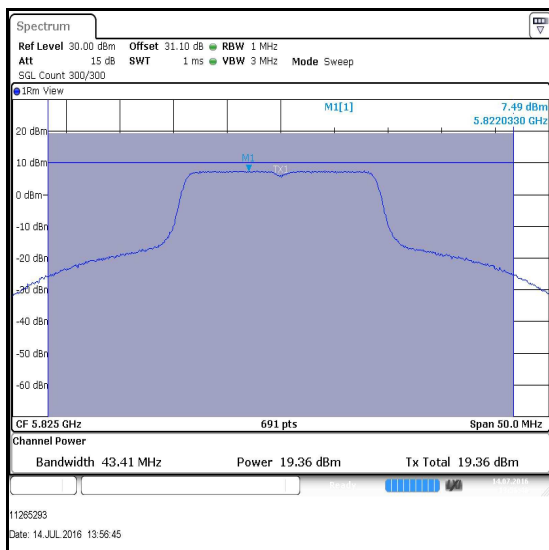
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5745	19.3	30.0	10.7	Complied
Middle	5785	20.4	30.0	9.6	Complied
Top	5825	19.3	30.0	10.7	Complied

**Bottom Channel****Middle Channel****Top Channel**

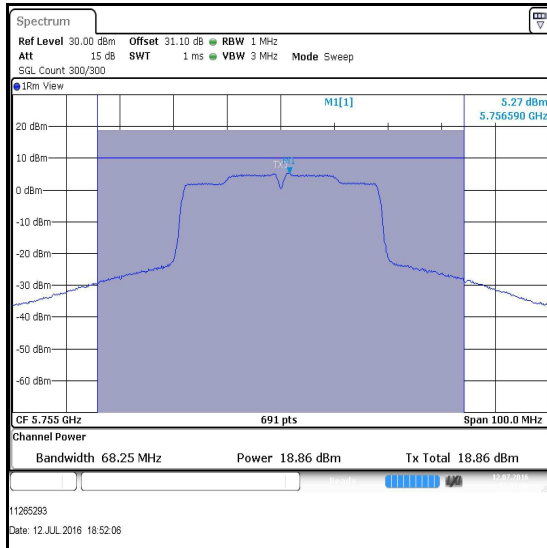
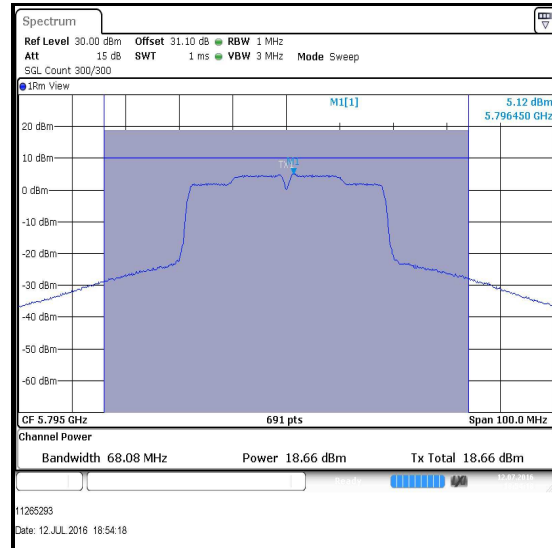
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5745	19.3	30.0	10.7	Complied
Middle	5785	20.3	30.0	9.7	Complied
Top	5825	19.4	30.0	10.6	Complied

**Bottom Channel****Middle Channel****Top Channel**

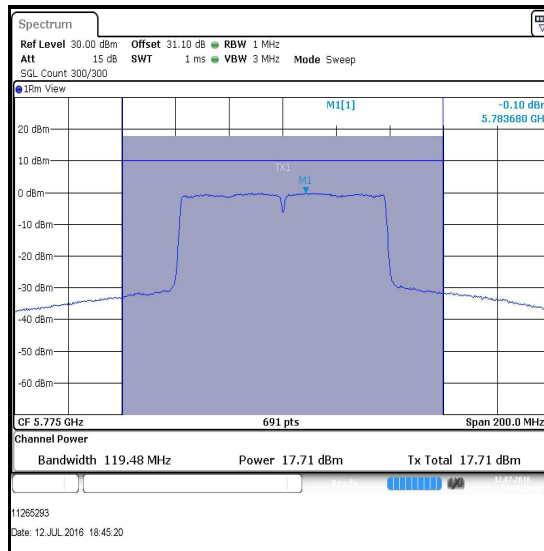
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO**

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5755	18.9	0.1	19.0	30.0	11.0	Complied
Top	5795	18.7	0.1	18.8	30.0	11.2	Complied

**Bottom Channel****Top Channel**

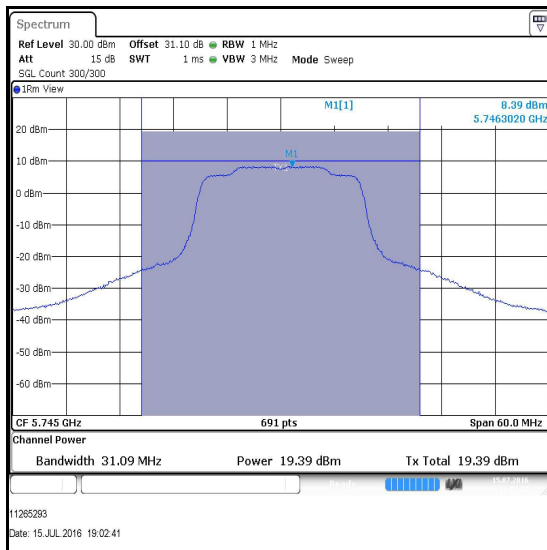
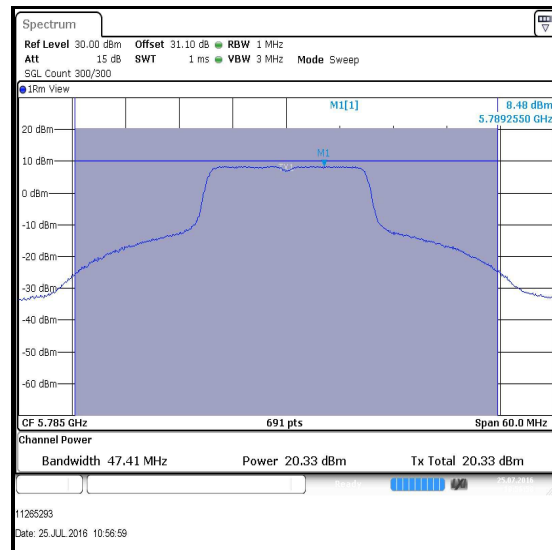
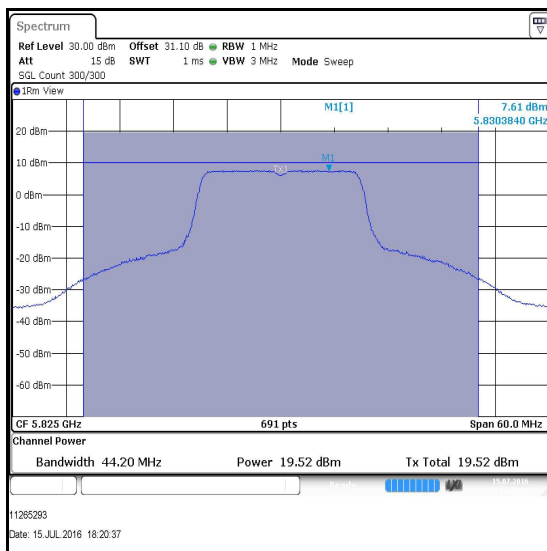
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO**

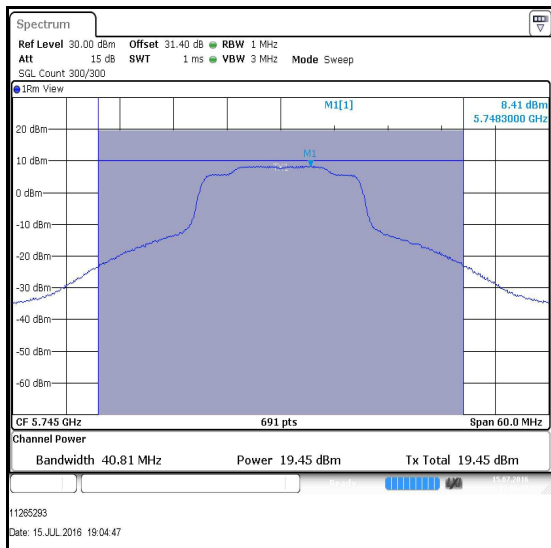
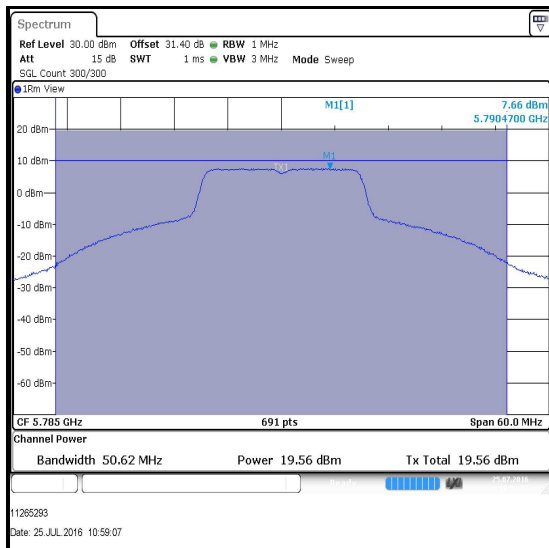
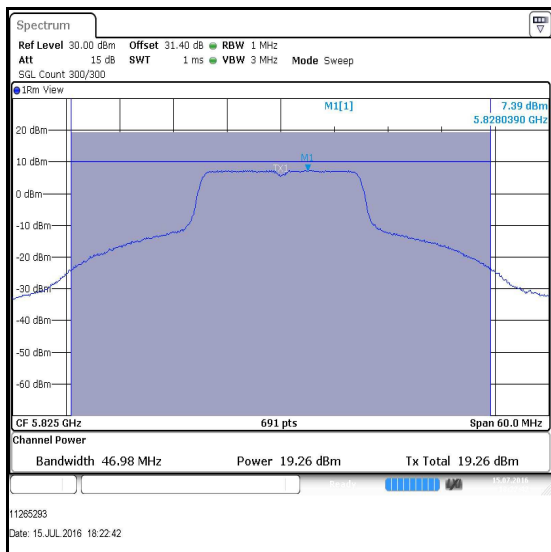
Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5775	17.7	0.2	17.9	30.0	12.1	Complied

**Single Channel**

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO**

Channel	Frequency (MHz)	Conducted Peak Power Port 1 (dBm)	Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5745	19.4	19.5	22.5	30.0	7.5	Complied
Middle	5785	20.3	19.6	23.0	30.0	7.0	Complied
Top	5825	19.5	19.3	22.4	30.0	7.6	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Port 1**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Port 2****Bottom Channel****Middle Channel****Top Channel**

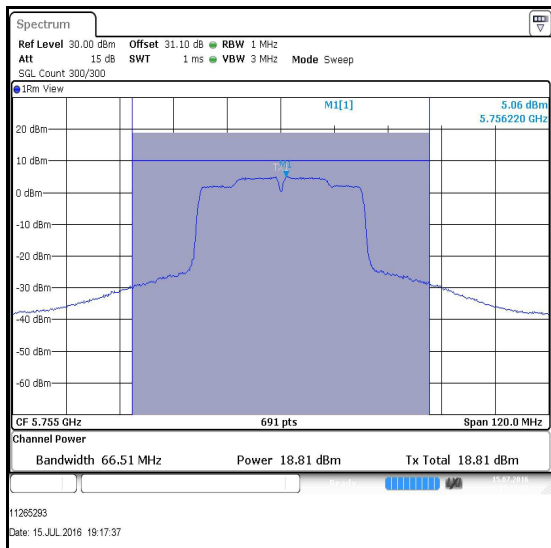
Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO**

Channel	Frequency (MHz)	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	5755	18.8	0.1	18.9	18.5	0.1	18.6
Top	5795	18.6	0.1	18.7	18.9	0.1	19.0

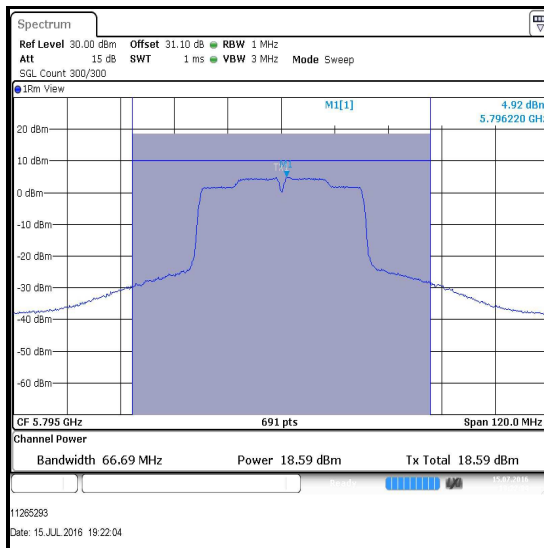
Channel	Frequency (MHz)	Corrected Conducted Peak Power Port 1 (dBm)	Corrected Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5755	18.9	18.6	21.8	30.0	8.2	Complied
Top	5795	18.7	19.0	21.9	30.0	8.1	Complied

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Port 1

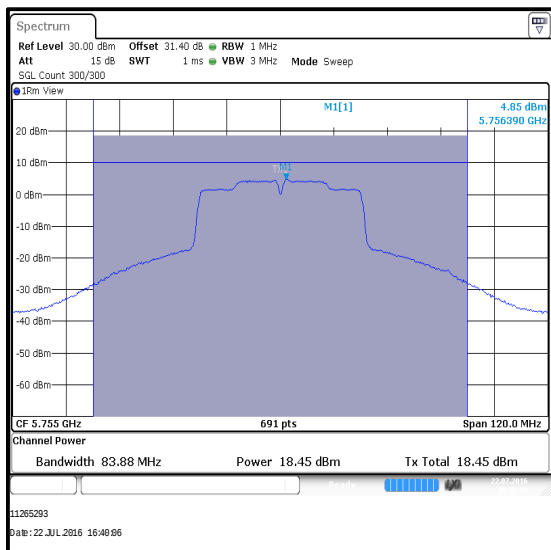


Bottom Channel

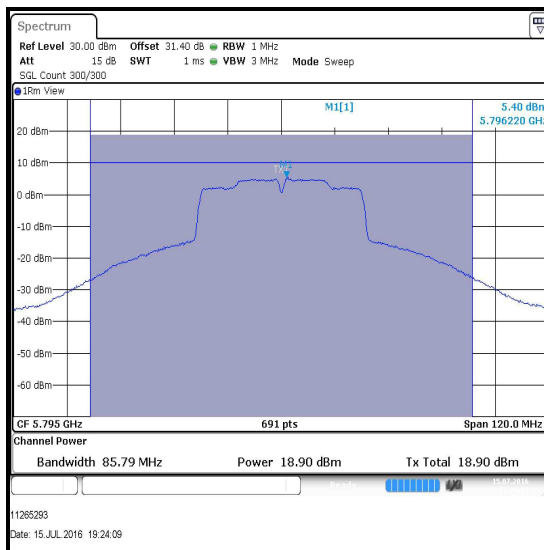


Top Channel

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Port 2



Bottom Channel

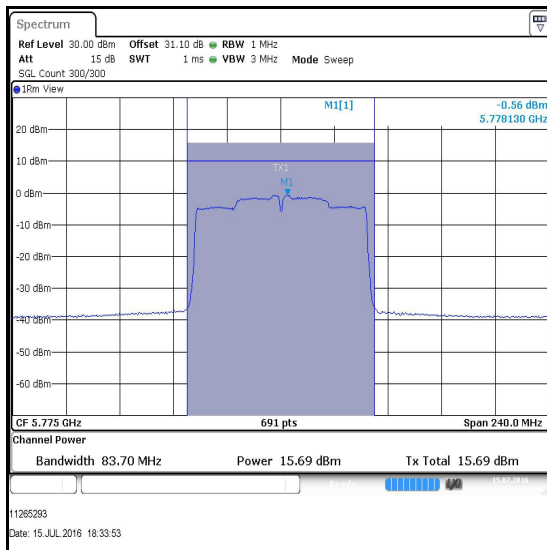
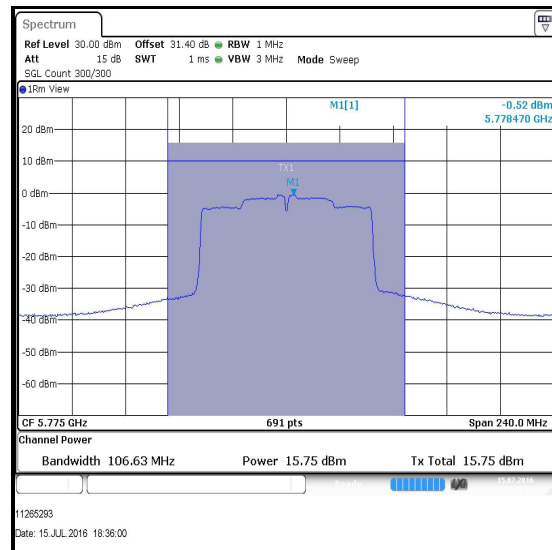


Top Channel

Transmitter Maximum Conducted Output Power (5.725-5.85 GHz band) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO**

Channel	Frequency (MHz)	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)
Single	5775	15.7	0.2	15.9	15.8	0.2	16.0

Channel	Frequency (MHz)	Corrected Conducted Peak Power Port 1 (dBm)	Corrected Conducted Peak Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5775	15.9	16.0	19.0	30.0	11.0	Complied

**Single Channel / Port 1****Single Channel / Port 2****Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	02 Apr 2017	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	27 Feb 2017	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	-
A2952	RF Switch	Pickering Interfaces	64-102-002 & 40-881-001	XZ361012 & X361507	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24

5.2.5. Transmitter Maximum Power Spectral Density**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	12 July 2016 to 22 July 2016
Test Sample Serial Number:	C39RW006HFML		

FCC Reference:	Part 15.407(a)(1)(iv)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	40 to 43

Note(s):

- Transmitter Maximum Power Spectral Density tests in all bands were performed using a signal analyser in accordance with KDB 789033 D02 II. F referencing II.E.2.b) Method SA-1 and II.E.2.d) Method SA-2.
- The customer declared the following data rates to be used for all measurements as:

On U-NII bands 1 and 2A:

- o 802.11a – BPSK / 6 Mbps / Port 2
- o 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 2
- o 802.11n HT40 SISO – BPSK / 13.5 Mbps / MCS0 / Port 2
- o 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 2
- o 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
- o 802.11n HT40 MIMO – BPSK / 13.5 Mbps / MCS0
- o 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1

On U-NII bands 2C and 3:

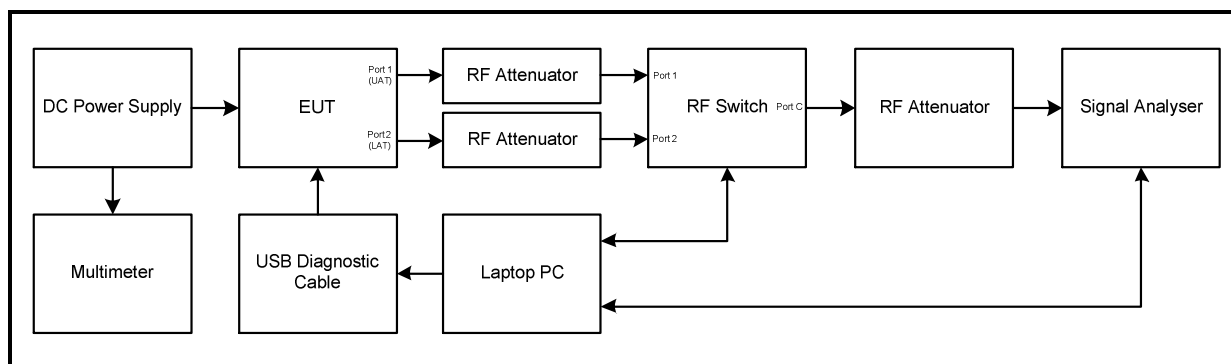
- o 802.11a – BPSK / 6 Mbps / Port 1
- o 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 1
- o 802.11n HT40 SISO – BPSK / 13.5 Mbps / MCS0 / Port 1
- o 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 1
- o 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
- o 802.11n HT40 MIMO – BPSK / 13.5 Mbps / MCS0
- o 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1

Measurements were then performed in these modes on all relevant channels in all operating bands.

- For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in section 5.2.3 was added to the measured maximum power spectral density in order to compute the average maximum power spectral density during the actual transmission time.
- 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).
- For all operating modes in each supported operating band, the EUT has a directional antenna gain of <6 dBi. Refer to section 5.2.4 of this test report for directional antenna gain calculations.

Transmitter Maximum Power Spectral Density (continued)**Note(s):**

6. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the switch, attenuators and RF cables.
7. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.4 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Test setup:

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	5.9	11.0	5.1	Complied
Middle	5220	9.4	11.0	1.6	Complied
Top	5240	7.9	11.0	3.1	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	5.6	11.0	5.4	Complied
Middle	5220	9.2	11.0	1.8	Complied
Top	5240	7.6	11.0	3.4	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5190	0.5	0.1	0.6	11.0	10.4	Complied
Top	5230	4.1	0.1	4.2	11.0	6.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5210	-2.9	0.2	-2.7	11.0	13.7	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO

Channel	Frequency (MHz)	PPSD Port 1 (dBm /MHz)	PPSD Port 2 (dBm /MHz)	Combined PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5180	5.0	4.9	8.0	11.0	3.0	Complied
Middle	5220	5.9	5.8	8.9	11.0	2.1	Complied
Top	5240	6.1	6.1	9.1	11.0	1.9	Complied

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO**

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Bottom	5190	-1.2	0.1	-1.1	-1.5	0.1	-1.4
Top	5230	3.1	0.1	3.2	3.1	0.1	3.2

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5190	-1.1	-1.4	1.8	11.0	9.2	Complied
Top	5230	3.2	3.2	6.2	11.0	4.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Single	5210	-5.0	0.2	-4.8	-5.1	0.2	-4.9

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5210	-4.8	-4.9	-1.8	11.0	12.8	Complied

Transmitter Maximum Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	12 July 2016 to 22 July 2016
Test Sample Serial Number:	C39RW006HFML		

FCC Reference:	Part 15.407(a)(2)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	40 to 43

Note(s):

1. FCC Part 15.407(a)(2) limit for PPSD in the 5.25-5.35 GHz and 5.47-5.725 GHz operating bands is <11 dBm/MHz.
2. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.4 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Peak Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)
(continued)

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / 5.25-5.35 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	7.8	11.0	3.2	Complied
Middle	5280	8.9	11.0	2.1	Complied
Top	5320	4.7	11.0	6.3	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	7.6	11.0	1.5	Complied
Middle	5280	8.5	11.0	2.5	Complied
Top	5320	4.4	11.0	6.6	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5270	3.9	0.1	4.0	11.0	7.0	Complied
Top	5310	-1.4	0.1	-1.3	11.0	12.3	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5290	-4.4	0.2	-4.2	11.0	15.2	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	PPSD Port 1 (dBm /MHz)	PPSD Port 2 (dBm /MHz)	Combined PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5260	6.1	6.2	9.2	11.0	1.8	Complied
Middle	5280	6.2	6.1	9.2	11.0	1.8	Complied
Top	5320	4.8	4.6	7.7	11.0	3.3	Complied

Transmitter Peak Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)
(continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Bottom	5270	3.2	0.1	3.3	3.1	0.1	3.2
Top	5310	-1.7	0.1	-1.6	-2.2	0.1	-2.1

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5270	3.3	3.2	6.3	11.0	4.7	Complied
Top	5310	-1.6	-2.1	1.2	11.0	9.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / 5.25-5.35 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Single	5290	-4.8	0.2	-4.6	-5.1	0.2	-4.9

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5290	-4.6	-4.9	-1.7	11.0	12.7	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / 5.47-5.725 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	3.5	11.0	7.5	Complied
Middle	5580	8.7	11.0	2.3	Complied
Top	5700	3.2	11.0	7.8	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	3.3	11.0	7.7	Complied
Middle	5580	8.6	11.0	2.4	Complied
Top	5700	3.1	11.0	7.9	Complied

Transmitter Peak Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)
(continued)

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5510	-1.1	0.1	-1.0	11.0	12.0	Complied
Middle	5590	4.4	0.1	4.5	11.0	6.5	Complied
Top	5670	1.1	0.1	1.2	11.0	9.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSP (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5530	-5.0	0.2	-4.8	11.0	15.8	Complied
Top	5610	1.0	0.2	1.2	11.0	9.8	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	PPSD Port 1 (dBm /MHz)	PPSD Port 2 (dBm /MHz)	Combined PPSP (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5500	2.8	2.8	5.8	11.0	5.2	Complied
Middle	5580	6.2	6.3	9.3	11.0	1.7	Complied
Top	5700	2.2	2.2	5.2	11.0	5.8	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSP (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSP (dBm /MHz)
Bottom	5510	-1.8	0.1	-1.7	-2.1	0.1	-2.0
Middle	5590	4.4	0.1	4.5	4.2	0.1	4.3
Top	5670	-0.6	0.1	-0.5	-0.8	0.1	-0.7

Channel	Frequency (MHz)	Corrected PPSP Port 1 (dBm /MHz)	Corrected PPSP Port 2 (dBm /MHz)	Combined PPSP (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5510	-1.7	-2.0	1.2	11.0	9.8	Complied
Middle	5590	4.5	4.3	7.4	11.0	3.6	Complied
Top	5670	-0.5	-0.7	2.4	11.0	8.6	Complied

Transmitter Peak Power Spectral Density (5.25-5.35 GHz & 5.47-5.725 GHz bands)
(continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Bottom	5530	-5.4	0.2	-5.2	-5.1	0.2	-4.9
Top	5610	0.9	0.2	1.1	0.7	0.2	0.9

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Bottom	5530	-5.2	-4.9	-2.0	11.0	13.0	Complied
Top	5610	1.1	0.9	4.0	11.0	7.0	Complied

Transmitter Maximum Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	12 July 2016 to 22 July 2016
Test Sample Serial Number:	C39RW006HFML		

FCC Reference:	Part 15.407(a)(2)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	40 to 43

Note(s):

1. Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz, need to meet requirements of both U-NII bands. Due to maximum power spectral density limit being more stringent on U-NII-2C, compliance is shown against the limits of U-NII-2C. By default the EUT also complies on U-NII-3.
2. FCC Part 15.407(a)(2) limit for PPSD in the 5.47-5.725 GHz operating band is <11 dBm/MHz.
3. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.4 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Peak Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

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

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5720	7.3	11.0	3.7	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5720	6.9	11.0	4.1	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5710	4.0	0.1	4.1	11.0	6.9	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5690	1.0	0.2	1.2	11.0	9.8	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO

Channel	Frequency (MHz)	PPSD Port 1 (dBm /MHz)	PPSD Port 2 (dBm /MHz)	Combined PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5720	6.0	6.0	9.0	11.0	2.0	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PSD (dBm /MHz)
Single	5710	4.0	0.1	4.1	4.0	0.1	4.1

Channel	Frequency (MHz)	Corrected PSD Port 1 (dBm /MHz)	Corrected PSD Port 2 (dBm /MHz)	Combined PSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5710	4.1	4.1	7.1	11.0	3.9	Complied

Transmitter Peak Power Spectral Density (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / 5.47-5.725 GHz band

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)	PPSD (dBm /MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm /MHz)
Single	5690	0.9	0.2	1.1	1.1	0.2	1.3

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm /MHz)	Corrected PPSD Port 2 (dBm /MHz)	Combined PPSD (dBm /MHz)	Limit (dBm /MHz)	Margin (dB)	Result
Single	5690	1.1	1.3	4.2	11.0	6.8	Complied

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	12 July 2016 to 25 July 2016
Test Sample Serial Number:	C39RW006HFML		

FCC Reference:	Part 15.407(a)(3)
Test Method Used:	KDB 789033 D02 Section II.F. referencing II.E.2.b) and II.E.2.d)

Environmental Conditions:

Temperature (°C):	24 to 25
Relative Humidity (%):	40 to 43

Note(s):

1. FCC Part 15.407(a)(3) limit for PPSD in the 5.725-5.85 GHz operating band is <30 dBm/500 kHz.
2. In accordance with ANSI C63.10 Section 4.1.4.1, use of bandwidths greater than those specified can produce higher readings. Compliance against the applicable limits is shown using a 1 MHz resolution bandwidth. This was deemed worst case.
3. As the power spectral density test uses the same test method as the output power test, before the power is integrated across the 26 dB bandwidth, the conducted power spectral density plots are located in the conducted output power section 5.2.4 of this test report. The peak spectral density was measured by placing a marker on the peak of the signal and the results entered in the tables below.

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps**

Channel	Frequency (MHz)	PPSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	7.7	30.0	22.3	Complied
Middle	5785	8.8	30.0	21.2	Complied
Top	5825	8.5	30.0	21.5	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	7.4	30.0	22.6	Complied
Middle	5785	8.4	30.0	21.6	Complied
Top	5825	7.5	30.0	22.5	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm / 1 MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5755	5.3	0.1	5.4	30.0	24.6	Complied
Top	5795	5.1	0.1	5.2	30.0	24.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / SISO

Channel	Frequency (MHz)	PPSD (dBm / 1 MHz)	Duty cycle correction factor (dB)	Corrected PSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Single	5775	-0.1	0.2	0.1	30.0	29.9	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO

Channel	Frequency (MHz)	PPSD Port 1 (dBm / 1 MHz)	PPSD Port 2 (dBm / 1 MHz)	Combined PSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5745	8.4	8.4	11.4	30.0	18.6	Complied
Middle	5785	8.5	7.7	11.1	30.0	18.9	Complied
Top	5825	7.6	7.4	10.5	30.0	19.5	Complied

Transmitter Maximum Power Spectral Density (5.725-5.85 GHz band) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO**

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm / 1 MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm / 1 MHz)	Conducted PPSD (dBm / 1 MHz)	Duty Cycle PPSD (dBm / 1 MHz)	Corrected PPSD (dBm / 1 MHz)
Bottom	5755	5.1	0.1	5.2	5.3	0.1	5.4
Top	5795	4.9	0.1	5.0	5.4	0.1	5.5

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm / 1 MHz)	Corrected PPSD Port 2 (dBm / 1 MHz)	Combined PPSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Bottom	5755	5.2	5.4	8.3	30.0	21.7	Complied
Top	5795	5.0	5.5	8.3	30.0	21.7	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO

Channel	Frequency (MHz)	Port 1			Port 2		
		PPSD (dBm / 1 MHz)	Duty Cycle Correction (dB)	Corrected PPSD (dBm / 1 MHz)	Conducted PPSD (dBm / 1 MHz)	Duty Cycle PPSD (dBm / 1 MHz)	Corrected PPSD (dBm / 1 MHz)
Single	5775	-0.6	0.2	-0.4	-0.5	0.2	-0.3

Channel	Frequency (MHz)	Corrected PPSD Port 1 (dBm / 1 MHz)	Corrected PPSD Port 2 (dBm / 1 MHz)	Combined PPSD (dBm / 1 MHz)	Limit (dBm / 500 kHz)	Margin (dB)	Result
Single	5775	-0.4	-0.3	2.7	30.0	27.3	Complied

Transmitter Maximum Power Spectral Density (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	02 Apr 2017	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	27 Feb 2017	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	-
A2952	RF Switch	Pickering Interfaces	64-102-002 & 40-881-001	XZ361012 & X361507	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24

5.2.6. Transmitter Out of Band Radiated Emissions**Test Summary:**

Test Engineer:	Nick Steele	Test Date:	22 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

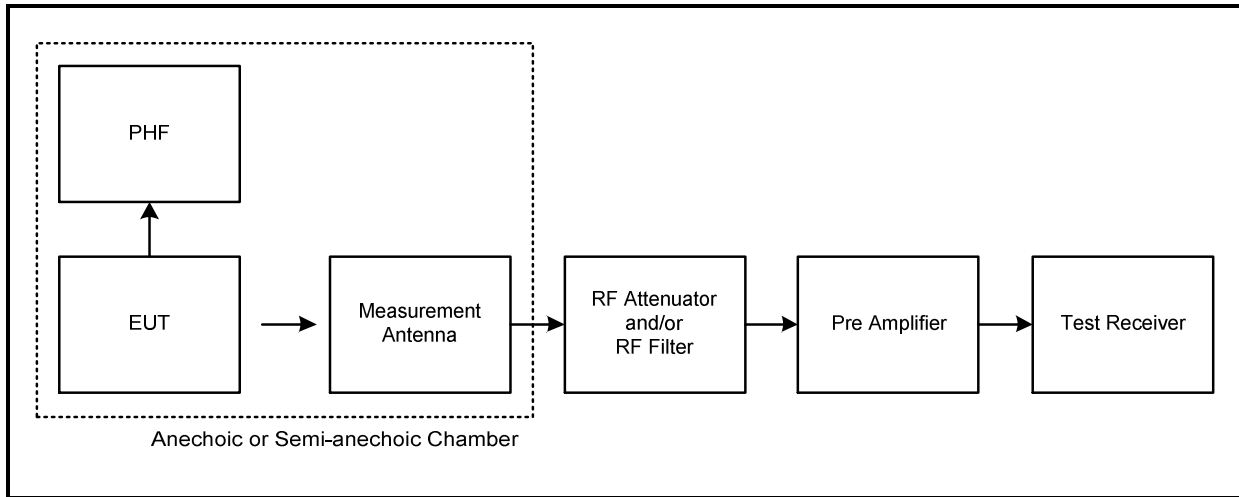
FCC Reference:	Parts 15.407(b)(4),(6),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

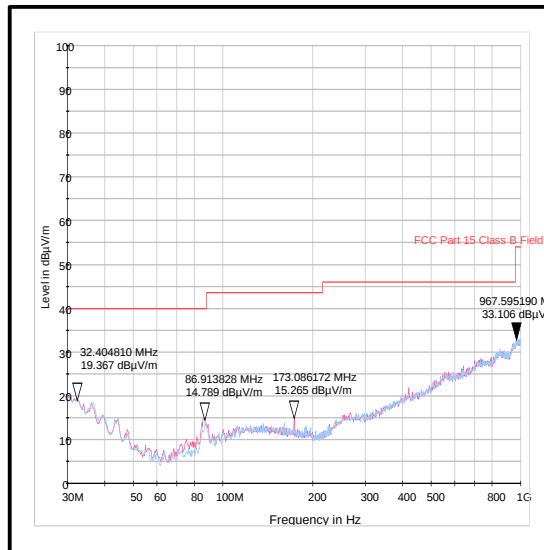
Temperature (°C):	24
Relative Humidity (%):	43

Note(s):

1. Measurements below 1 GHz were limited to the 5.725-5.85 GHz band, the EUT was transmitting with a data rate of MCS0 (802.11n HT20 / MIMO) as it produced the highest conducted output power and was therefore deemed worst case.
2. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
3. 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.
4. No emissions were shown on the pre-scan plot; therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
5. 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.
6. Pre-scans were performed and markers placed on the highest measured levels. The test receiver resolution bandwidth was set to 100 kHz and video bandwidth 300 kHz. The sweep time was set to auto. A peak detector was used, sweep time was set to auto and trace mode was Max Hold.

Transmitter Out of Band Radiated Emissions (continued)**Test setup for radiated measurements:****Results: Middle Channel / Field Strength**

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
967.595	Vertical	33.1	54.0	27.1	Complied



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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2014	Thermohygrometer	Testo	608-H1	45046246	10 Jun 2017	12
K0001	3m RSE Chamber	Rainford EMC	N/A	N/A	12 Jan 2017	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	11 Apr 2017	12
A2959	Antenna	Schwarzbeck	VULB 9163	9163-967	22 Apr 2017	12
G0543	Pre Amplifier	Sonoma Instrument Co.	310N	230801	09 Dec 2016	12
A1834	Attenuator	Hewlett Packard	8491B	10444	30 Mar 2017	12

Transmitter Out of Band Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Date:	17 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Part 15.407(b)(1),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	46

Note(s):

1. FCC Part 15.407(b)(1) states for transmitters operating in the band 5.15 to 5.25 GHz: all emissions outside of the 5.15 to 5.35 GHz band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. The second harmonic can be seen on the pre-scan plot 8 to 12.75 GHz, when the EUT is transmitting on middle channel in the 5.725 to 5.85 band. This harmonic was investigated for this band on bottom, middle and top channels and was found to be more than 20 dB below the limit. In accordance with ANSI C63.10-2013 Section 6.5.4, emissions more than 20 dB below the limit do not need to be reported.
3. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
4. Final measurements above 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 1.5 m 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.

Transmitter Out of Band Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Date:	17 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Part 15.407(b)(2),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	46

Note(s):

1. FCC Part 15.407(b)(2) states for transmitters operating in the band 5.25 to 5.35 GHz: all emissions outside of the 5.15-5.35 GHz band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. The second harmonic can be seen on the pre-scan plot 8 to 12.75 GHz, when the EUT is transmitting on middle channel in the 5.725 to 5.85 band. This harmonic was investigated for this band on bottom, middle and top channels and was found to be more than 20 dB below the limit. In accordance with ANSI C63.10-2013 Section 6.5.4, emissions more than 20 dB below the limit do not need to be reported.
3. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
4. Final measurements above 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 1.5 m 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.

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Date:	17 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Part 15.407(b)(3),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	46

Note(s):

1. FCC Part 15.407(b)(3) states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. The second harmonic can be seen on the pre-scan plot 8 to 12.75 GHz, when the EUT is transmitting on middle channel in the 5.725 to 5.85 band. This harmonic was investigated for this band on bottom, middle and top channels.
3. In accordance with ANSI C63.10-2013 Section 6.5.4, emissions more than 20 dB below the limit do not need to be reported.
4. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
5. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
6. Final measurements above 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 1.5 m 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.

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Bottom Channel / Field Strength / Peak**

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 3					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Bottom Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
See note 3					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Middle Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
11158.237	Horizontal	56.0	74.0	18.0	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Middle Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
11159.679	Horizontal	40.6	54.0	13.4	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Top Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 3					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Top Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
See note 3					

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Bottom Channel / Field Strength / Peak**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
See note 3					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Bottom Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
See note 3					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Middle Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
See note 3					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Middle Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
11160.321	Horizontal	36.6	54.0	17.4	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Top Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
See note 3					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Top Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
See note 3					

Transmitter Out of Band Radiated Emissions (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Date:	17 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Part 15.407(b)(3),(4)(i),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	46

Note(s):

1. FCC Part 15.407(b)(3) states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. FCC Part 15.407(b)(4)(i) states for transmitters operating in the band 5.725 to 5.85 GHz: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
3. The second harmonic can be seen on the pre-scan plot 8 to 12.75 GHz, when the EUT is transmitting on middle channel in the 5.725 to 5.85 band. This harmonic was investigated for this band on single channel.
4. In accordance with ANSI C63.10-2013 Section 6.5.4, emissions more than 20 dB below the limit do not need to be reported.
5. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
6. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
7. Final measurements above 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 1.5 m 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.

Transmitter Out of Band Radiated Emissions (Channels that straddle the U-NII-2C and U-NII-3 bands at 5725 MHz) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Single Channel / Field Strength / Peak**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
See note 4					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Single Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
See note 4					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Single Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
See note 4					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Single Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
11440.962	Horizontal	35.3	54.0	18.7	Complied

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	17 July 2016 & 26 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Part 15.407(b)(4)(i),(7) & 15.209(a)
Test Method Used:	KDB 789033 II.G. & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	23 to 24
Relative Humidity (%):	43 to 46

Note(s):

1. FCC Part 15.407(b)(4)(i) states for transmitters operating in the band 5.725 to 5.85 GHz: all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. Pre-scans were performed with the EUT transmitting with a data rate of 802.11n / HT20 / MCS0 / MIMO on middle channel in this band as it produced the highest EIRP and was therefore deemed worst case. An inquiry was made to the FCC and the response was pre-scans could be performed in the band with the highest conducted output power and all final measurements should be performed on any emissions seen in each band.
3. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
4. In accordance with ANSI C63.10-2013 Section 6.5.4, emissions more than 20 dB below the limit do not need to be reported.
5. Tests were performed as field strength measurements. As the highest noise floor reading occurred in a restricted band, the maximum peak field strength was compared to the peak limit (74 dBµV/m) and the average field strength was compared to the average limit (54 dBµV/m).
6. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
7. The emission shown on the 1 GHz to 8 GHz plot is the EUT fundamental.
8. Measurements were performed across the two restricted bands closest to the bands of operation with the EUT transmitting on the middle channel in the 5.725 to 5.85 GHz band. Plots are included in this section of the test report. Peak and average measurements were made.
9. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0002) 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. Final measurements above 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 1.5 m 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.

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Bottom Channel / Field Strength / Peak**

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Bottom Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Middle Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Middle Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
11571.923	Horizontal	39.6	54.0	14.4	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Top Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Top Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Bottom Channel / Field Strength / Peak**

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
See note 4					

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Bottom Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
11491.442	Horizontal	37.3	54.0	16.7	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Middle Channel / Field Strength / Peak

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
11571.442	Horizontal	56.1	74.0	17.9	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Middle Channel / Field Strength / Average

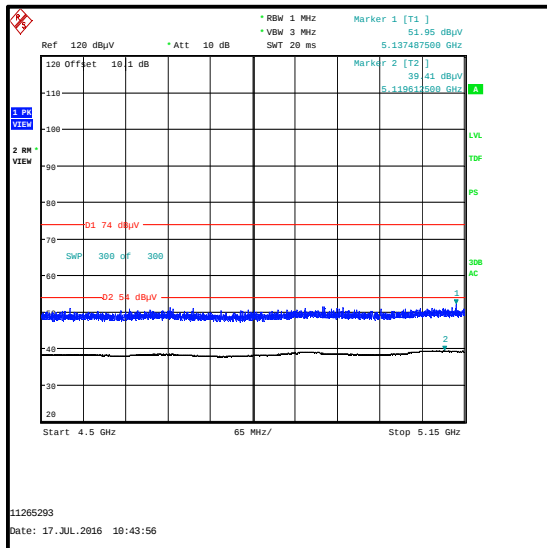
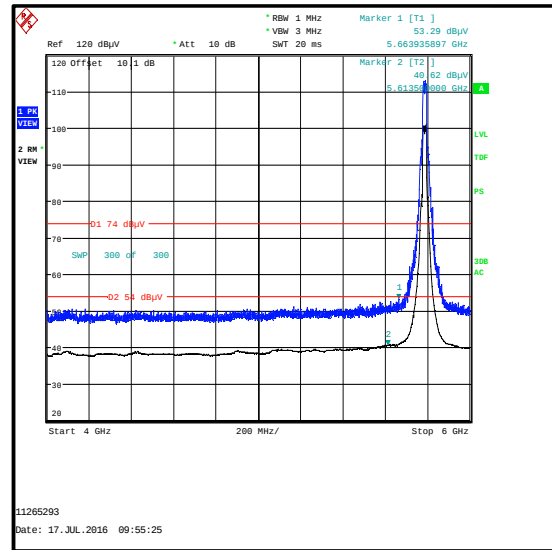
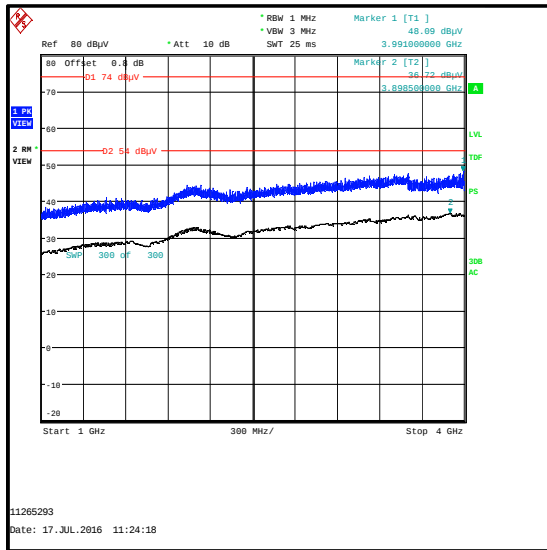
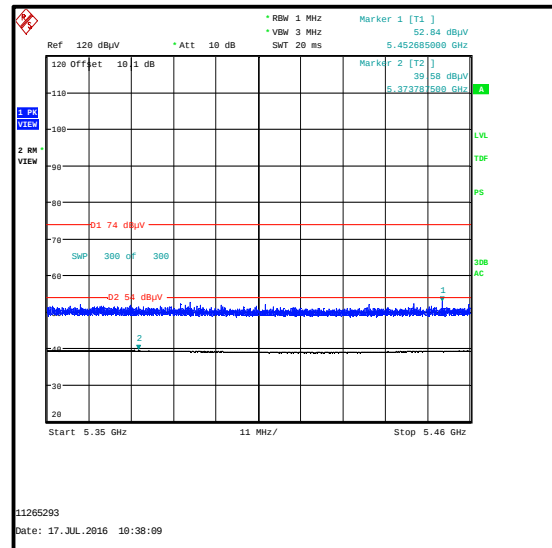
Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
11571.442	Horizontal	42.5	54.0	11.5	Complied

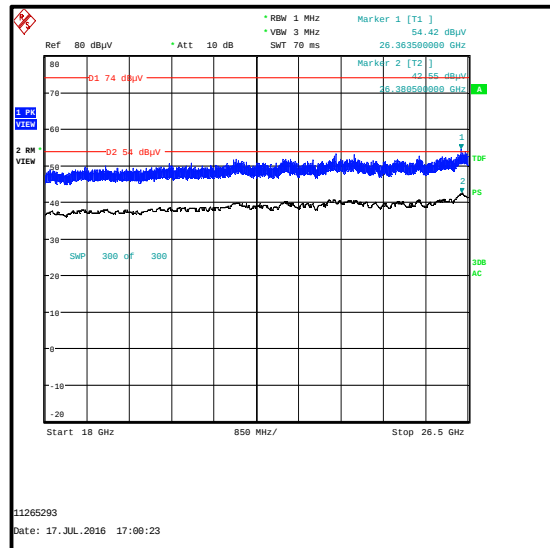
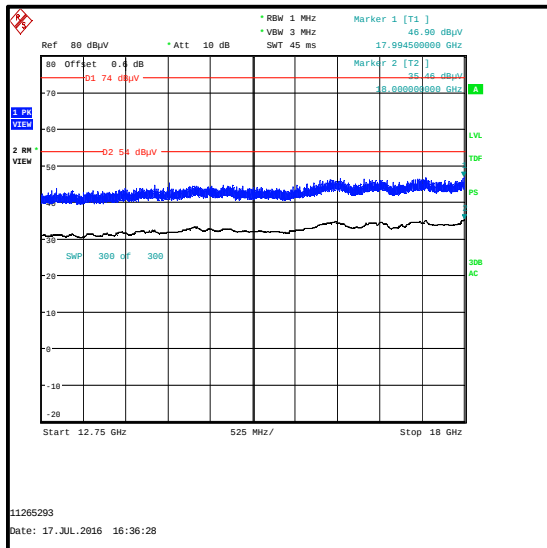
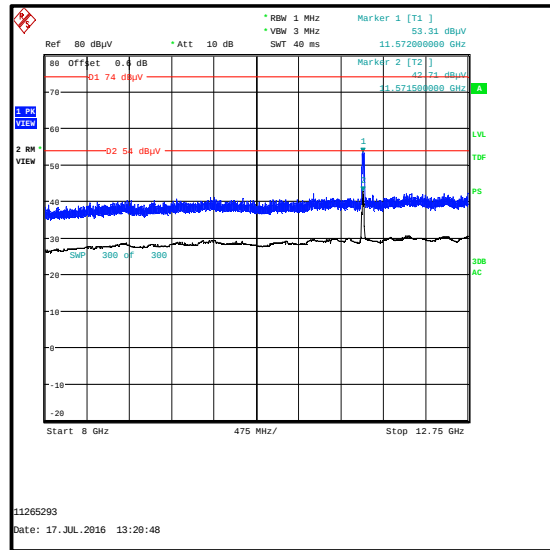
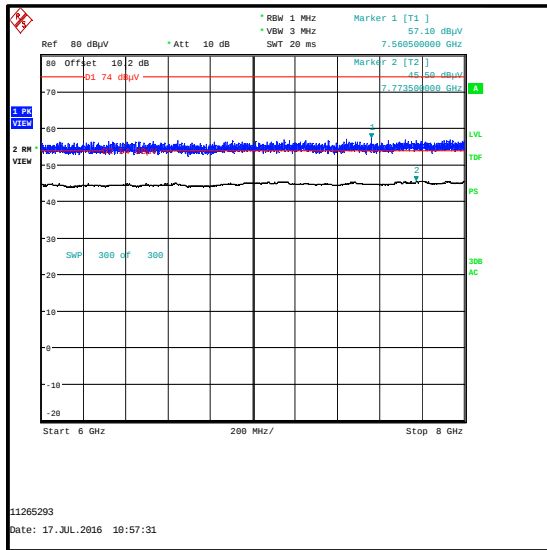
Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Top Channel / Field Strength / Peak

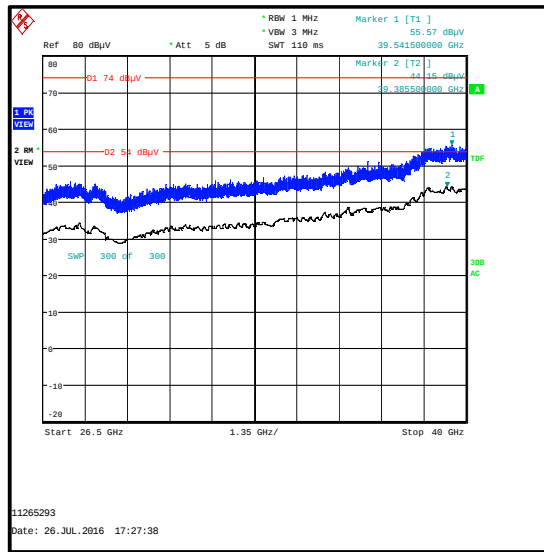
Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Margin (dB)	Result
11648.718	Horizontal	54.5	74.0	19.5	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Top Channel / Field Strength / Average

Frequency (MHz)	Antenna Polarity	Average Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
11651.282	Horizontal	40.8	54.0	13.2	Complied

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Restricted Band 4.5 GHz to 5.15 GHz****Restricted Band 5.35 GHz to 5.46 GHz**

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (continued)

Transmitter Out of Band Radiated Emissions (5.725-5.85 GHz band operation) (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 Apr 2017	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	17 May 2017	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	21 Mar 2017	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	06 May 2017	12
A2892	Antenna	Schwarzbeck	BBHA 9170	9170-727	07 Apr 2017	12
A2891	Pre Amplifier	Schwarzbeck	BBV 9718	9718-306	07 Apr 2017	12
A2893	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-021	07 Apr 2017	12
M1656	Thermohygrometer	JM Handelpunkt	30.5015.13	Not stated	07 Apr 2017	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	21 Dec 2016	12
M1886	Test Receiver	Rohde & Schwarz	ESU26	100554	21 Mar 2017	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	19 Dec 2016	12
A1818	Antenna	EMCO	3115	00075692	17 Dec 2016	12
A253	Antenna	Flann Microwave	12240-20	128	17 Dec 2016	12
A254	Antenna	Flann Microwave	14240-20	139	17 Dec 2016	12
A255	Antenna	Flann Microwave	16240-20	519	17 Dec 2016	12
A256	Antenna	Flann Microwave	18240-20	400	17 Dec 2016	12
A436	Antenna	Flann Microwave	20240-20	330	19 Dec 2016	12
A2176	High Pass Filter	AtlanTecRF	AFH-07000	800980	26 Apr 2017	12
A2133	Low Pass Filter	AtlanTecRF	AFL-04000	JFB1006-002	26 Apr 2017	12
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	26 Apr 2017	12

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

Test Engineers:	Nick Steele, Gareth Gerrard & Georgios Vrezas	Test Dates:	07 July 2016 to 01 August 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Parts 15.407(b)(1),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 II.G.

Environmental Conditions:

Temperature (°C):	24 to 27
Relative Humidity (%):	41 to 46

Note(s):

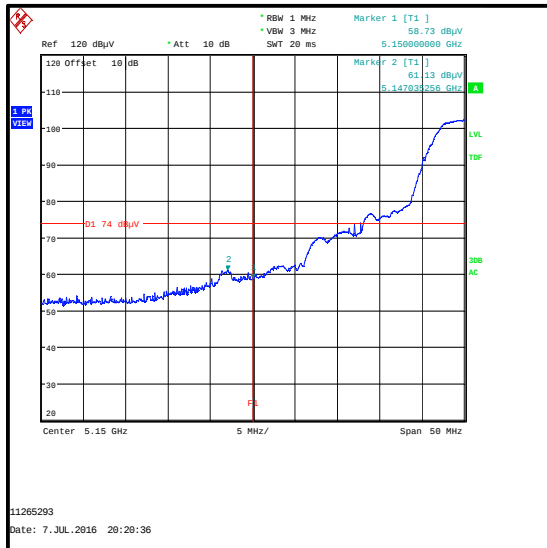
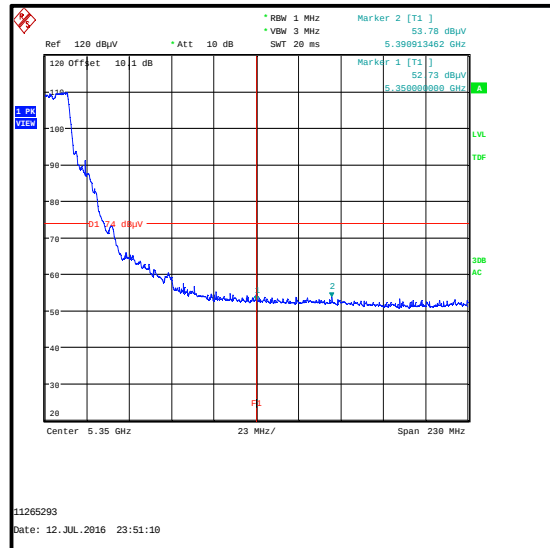
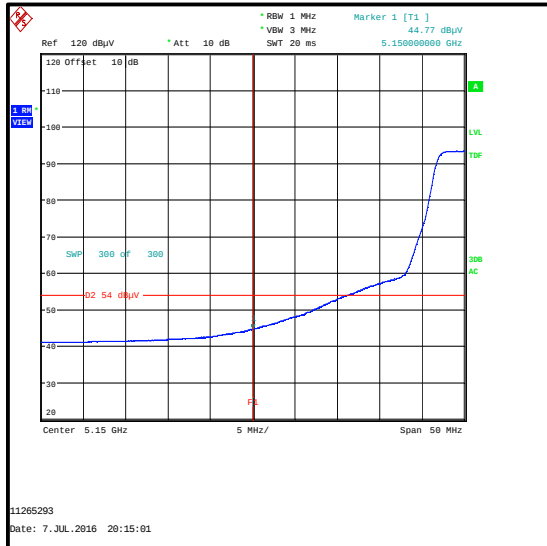
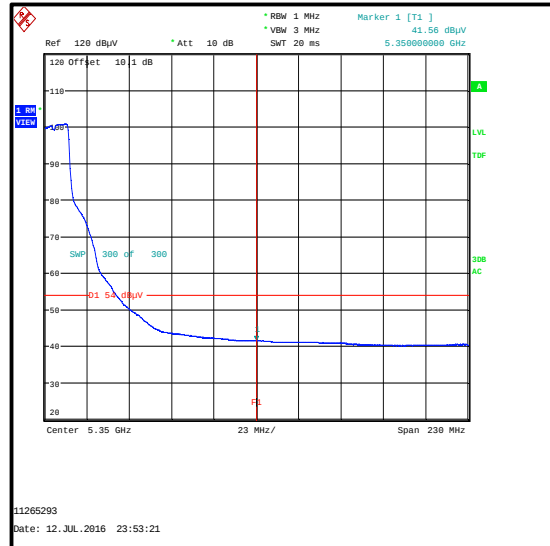
- The customer declared the following data rates to be used for all measurements as:
 - 802.11a – BPSK / 6 Mbps / Port 2
 - 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 2
 - 802.11n HT40 SISO – BPSK / 13.5 Mbps / MCS0 / Port 2
 - 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 2
 - 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
 - 802.11n HT40 MIMO – BPSK / 13.5 Mbps / MCS0
 - 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1
- Lower band edge measurements were performed with the EUT transmitting on the bottom or single channel. Upper band edge measurements were performed with the EUT transmitting on the top or single channel.
- For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply.
- Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
- In accordance with KDB 789033 D02 Section II.G.1.c) if the peak measurement is below the average limit, it is not necessary to perform a separate average measurement.
- For all average measurements of this section, 300 sweeps were used. This satisfies the requirement for the minimum number of sweeps, as stated in ANSI C63.10 Section 12.7.7.2 Method AD f). Power averaging was used.
- In accordance with KDB 789033 D02 Section II.G.6.c) Method AD (vii), for average measurements, data rates where the EUT was transmitting <98% duty cycle, the duty cycle correction factor calculated in section 5.2.3 was added to the measured result.

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2 / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5147.035	61.1	74.0	12.9	Complied
5150	58.7	74.0	15.3	Complied
5350	52.7	74.0	21.3	Complied
5390.913	53.8	74.0	20.2	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2 / Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	44.8	54.0	9.2	Complied
5350	41.6	54.0	12.4	Complied

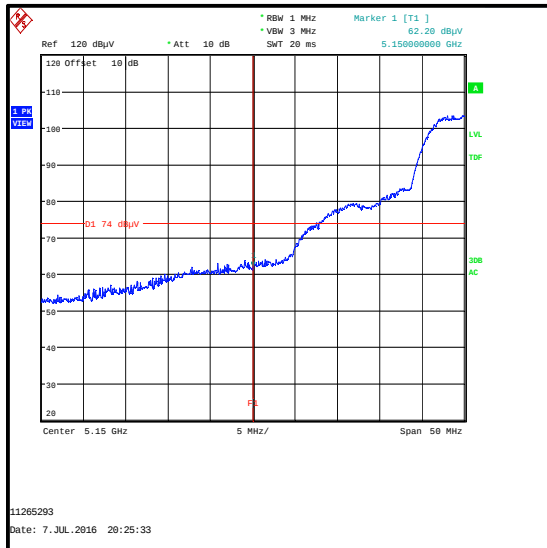
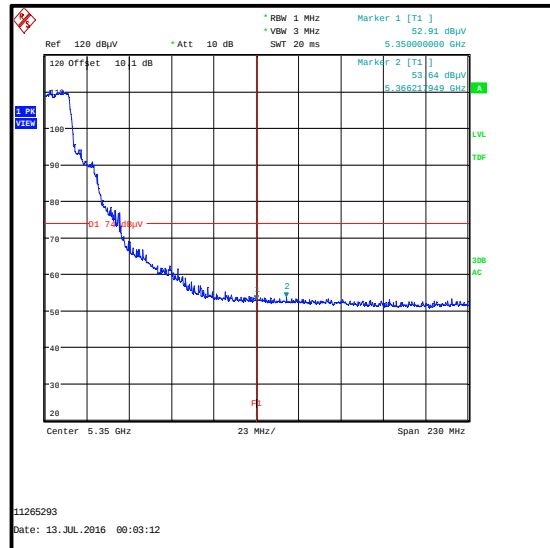
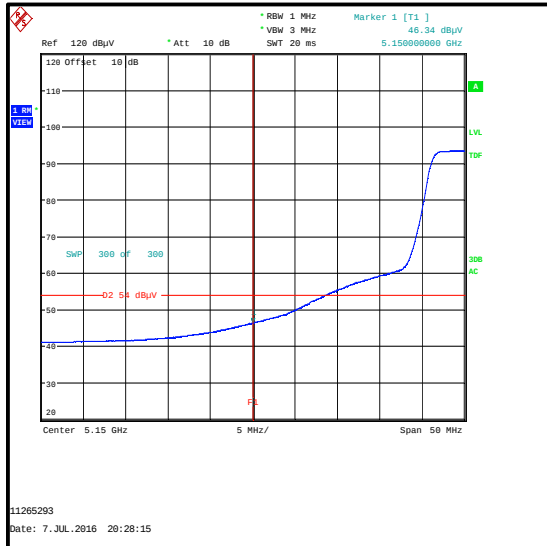
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	62.2	74.0	11.8	Complied
5350	52.9	74.0	21.1	Complied
5366.218	53.6	74.0	20.4	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	46.3	54.0	7.7	Complied
5350	41.5	54.0	12.5	Complied

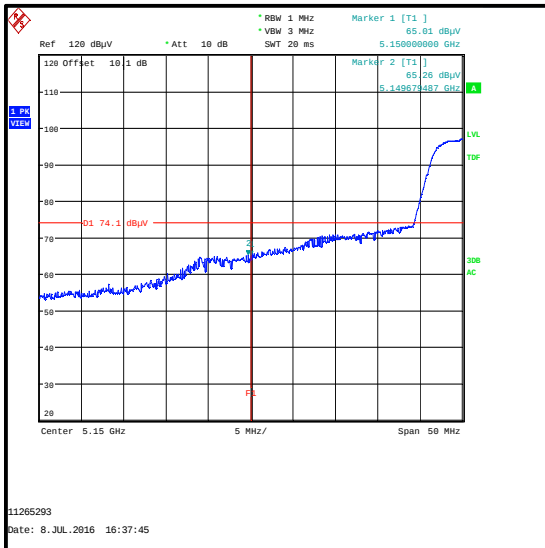
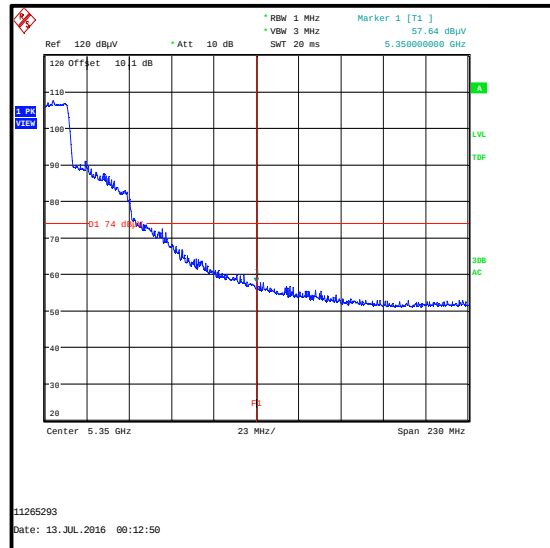
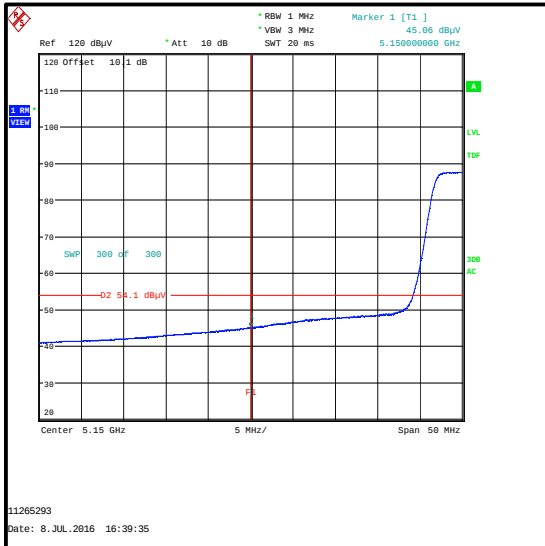
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5149.679	65.3	74.0	8.7	Complied
5150	65.0	74.0	9.0	Complied
5350	57.6	74.0	16.4	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO / Average

Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	45.1	0.1	45.2	54.0	8.8	Complied
5350	43.1	0.1	43.2	54.0	10.8	Complied

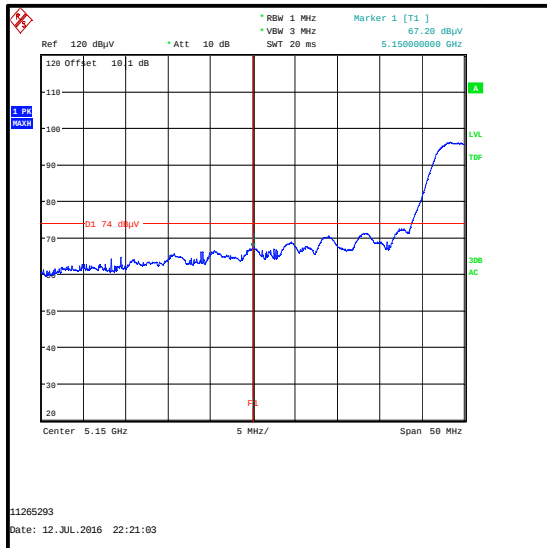
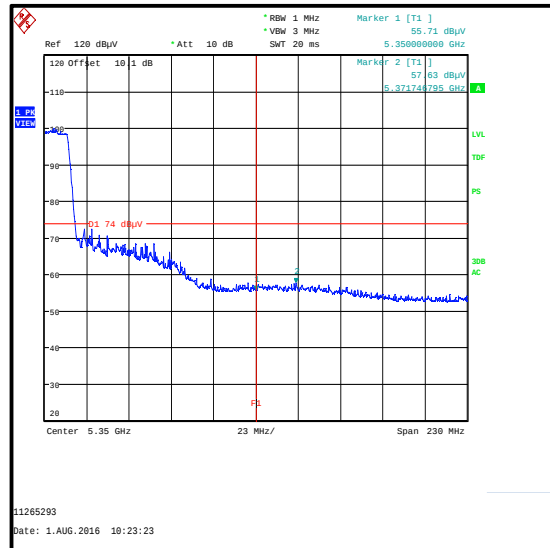
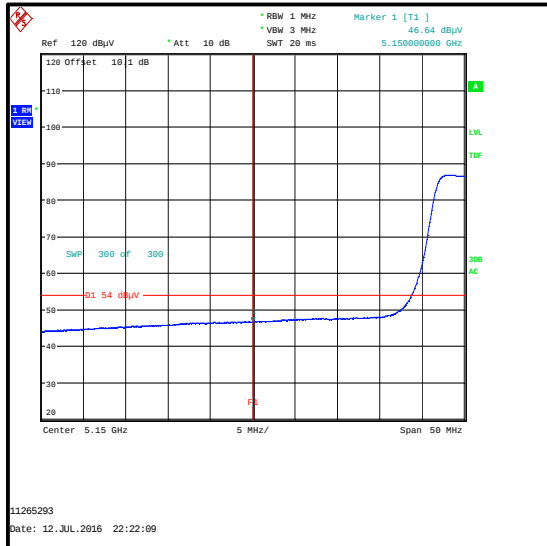
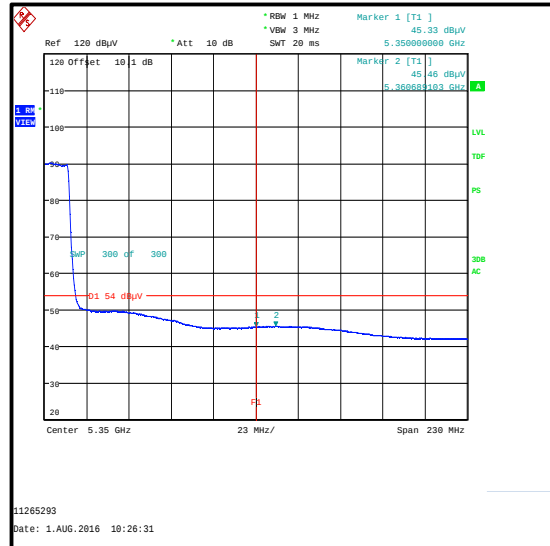
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	67.2	74.0	6.8	Complied
5350	55.7	74.0	18.3	Complied
5371.747	57.6	74.0	16.4	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO / Average

Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	46.6	0.2	46.8	54.0	7.2	Complied
5350	45.3	0.2	45.5	54.0	8.5	Complied
5360.689	45.5	0.2	45.7	54.0	8.3	Complied

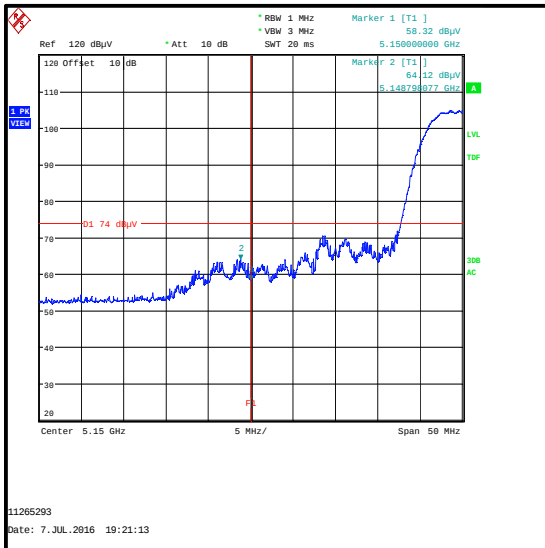
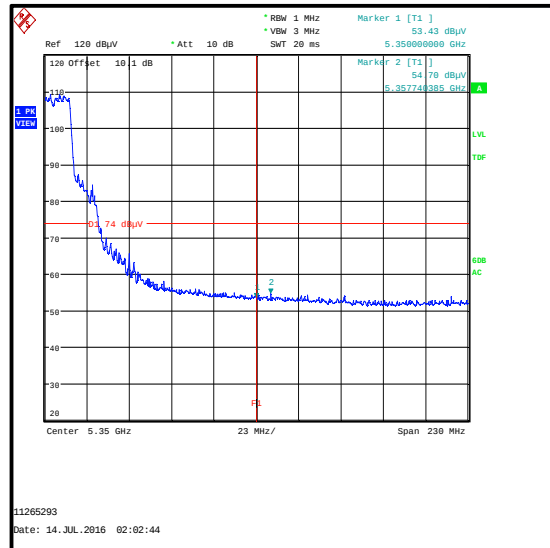
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5148.798	64.1	74.0	9.9	Complied
5150	58.3	74.0	15.7	Complied
5350	53.4	74.0	20.6	Complied
5357.740	54.7	74.0	19.3	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	43.5	54.0	10.5	Complied
5350	42.3	54.0	11.7	Complied

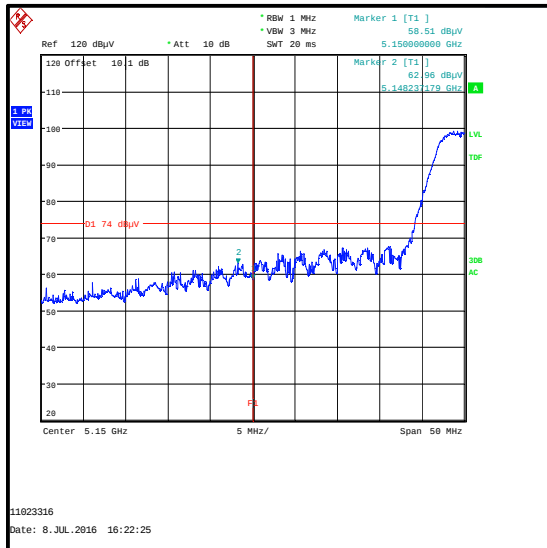
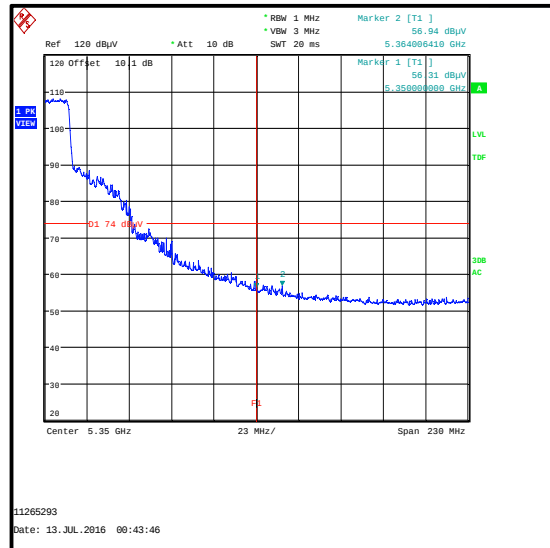
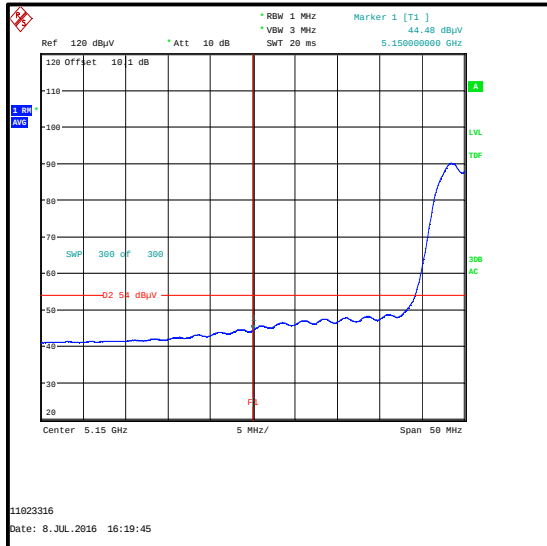
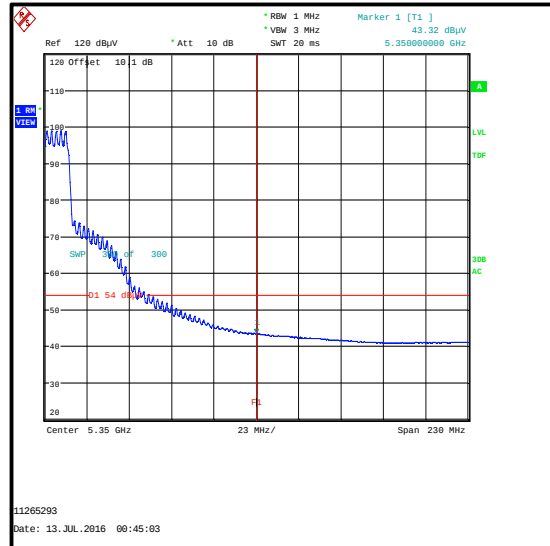
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5148.237	63.0	74.0	11.0	Complied
5150	58.5	74.0	15.5	Complied
5350	56.3	74.0	17.7	Complied
5364.006	56.9	74.0	17.1	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Average

Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	44.5	0.1	44.6	54.0	9.4	Complied
5350	43.3	0.1	43.4	54.0	10.6	Complied

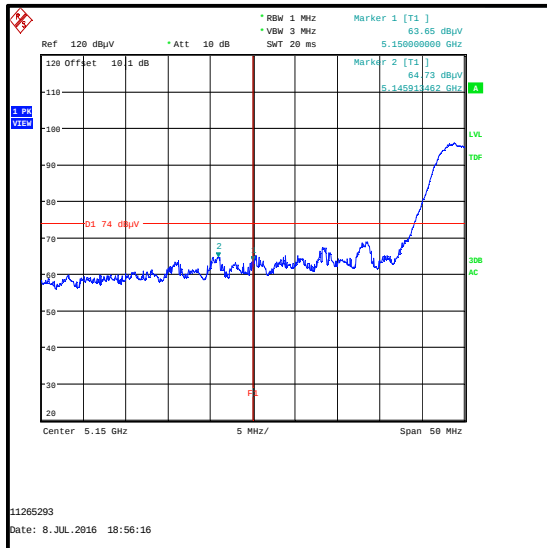
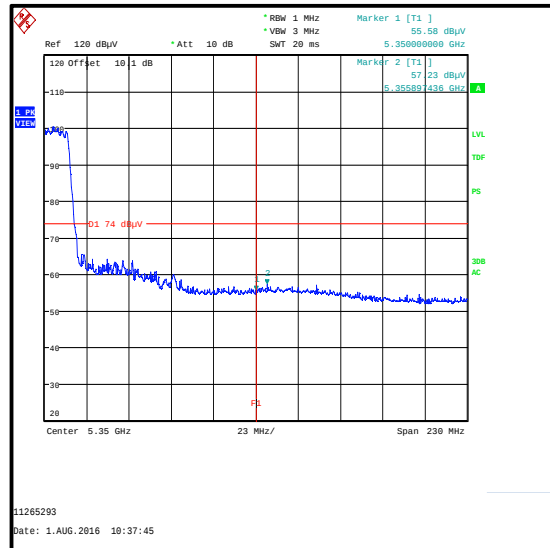
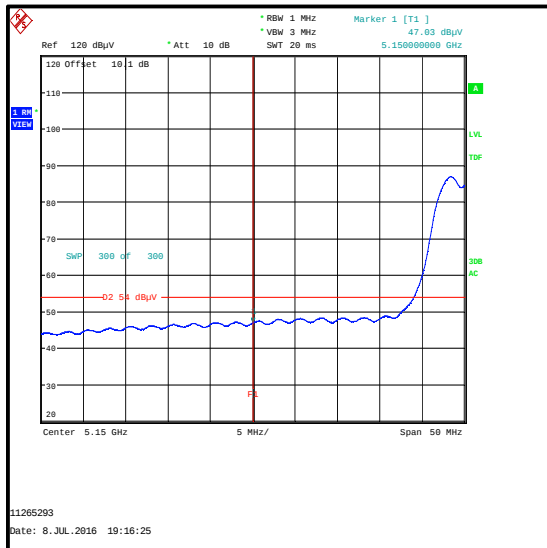
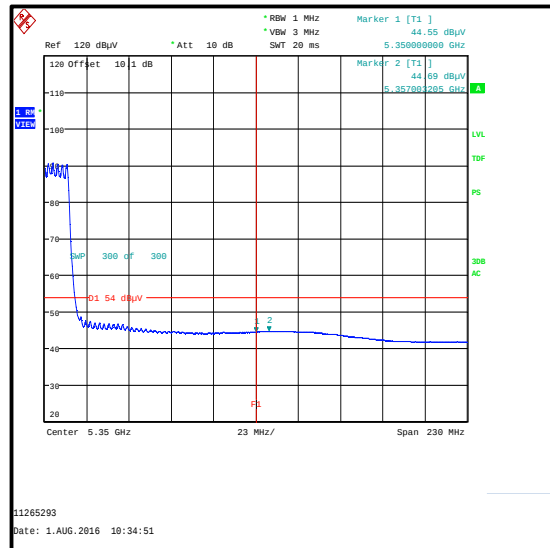
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / MCS0****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5145.913	64.7	74.0	9.3	Complied
5150	63.7	74.0	10.3	Complied
5350	55.6	74.0	18.4	Complied
5355.897	57.2	74.0	16.8	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / 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
5150	47.0	0.2	47.2	54.0	6.8	Complied
5350	44.6	0.2	44.8	54.0	9.2	Complied
5357.003	44.7	0.2	44.9	54.0	9.1	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band)**Test Summary:**

Test Engineers:	Nick Steele, Gareth Gerrard & Georgios Vrezas	Test Dates:	07 July 2016 to 01 August 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Parts 15.407(b)(2),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 II.G.

Environmental Conditions:

Temperature (°C):	24 to 27
Relative Humidity (%):	41 to 46

Note(s):

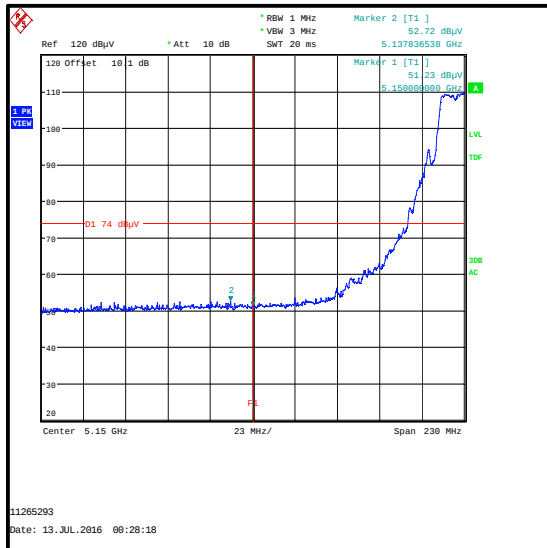
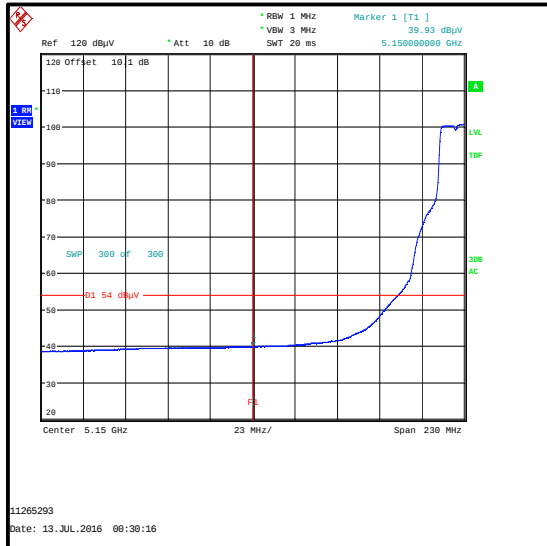
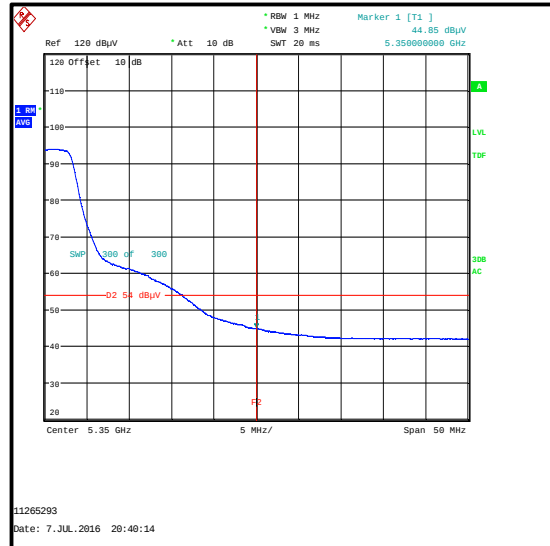
- The customer declared the following data rates to be used for all measurements as:
 - 802.11a – BPSK / 6 Mbps / Port 2
 - 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 2
 - 802.11n HT40 SISO – BPSK / 13.5 Mbps / MCS0 / Port 2
 - 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 2
 - 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
 - 802.11n HT40 MIMO – BPSK / 13.5 Mbps / MCS0
 - 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1
- Lower band edge measurements were performed with the EUT transmitting on the bottom or single channel. Upper band edge measurements were performed with the EUT transmitting on the top or single channel.
- For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply. Tests were performed in these restricted bands of operation with the EUT transmitting on the bottom and top channels within 5.25-5.35 GHz band, the results are included in the transmitter 5.25-5.35 GHz band radiated spurious emissions section of this test report.
- Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
- For all average measurements of this section, 300 sweeps were used. This satisfies the requirement for the minimum number of sweeps, as stated in ANSI C63.10 Section 12.7.7.2 Method AD f). Power averaging was used.
- In accordance with KDB 789033 D02 Section II.G.6.c) Method AD (vii), for average measurements, data rates where the EUT was transmitting <98% duty cycle, the duty cycle correction factor calculated in section 5.2.3 was added to the measured result.

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2 / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5137.837	52.7	74.0	21.3	Complied
5150	51.2	74.0	22.8	Complied
5350	58.3	74.0	15.7	Complied
5352.083	60.3	74.0	13.7	Complied

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2 / Average

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	39.9	54.0	14.1	Complied
5350	44.9	54.0	9.1	Complied

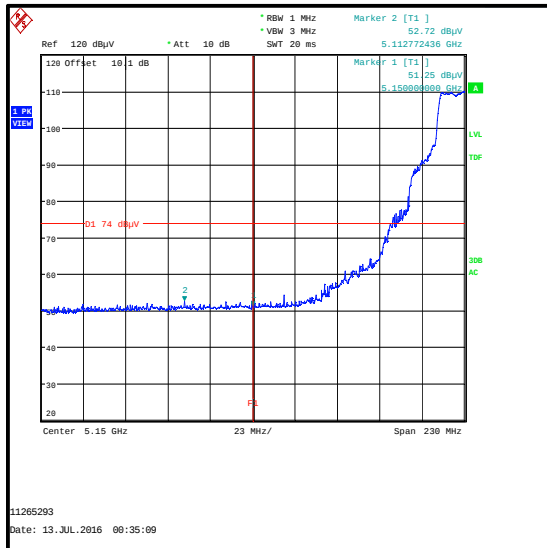
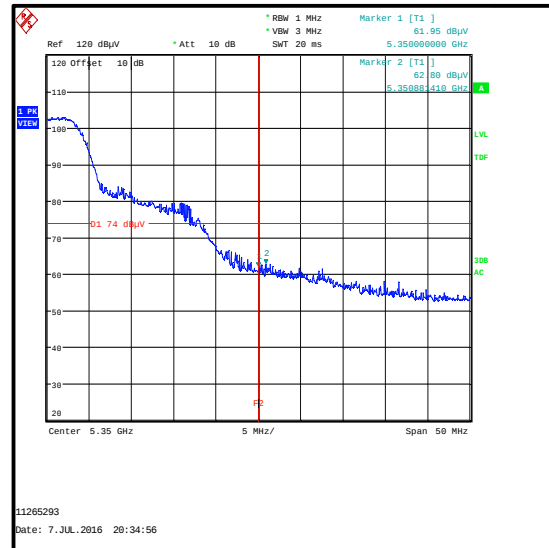
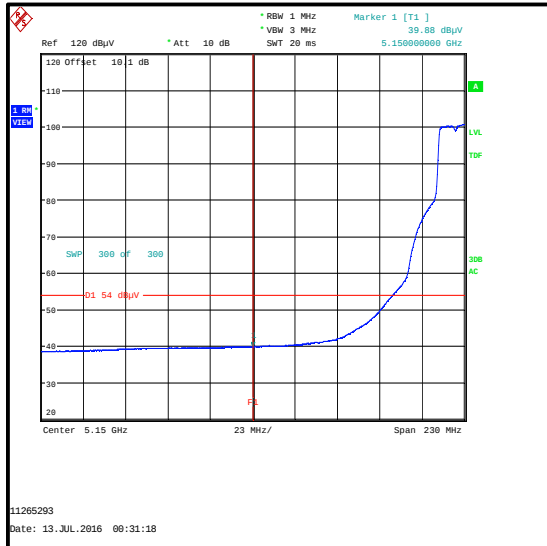
Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 2****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5112.772	52.7	74.0	21.3	Complied
5150	51.3	74.0	22.7	Complied
5350	62.0	74.0	12.0	Complied
5350.881	62.8	74.0	11.2	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	39.9	54.0	14.1	Complied
5350	45.9	54.0	8.1	Complied

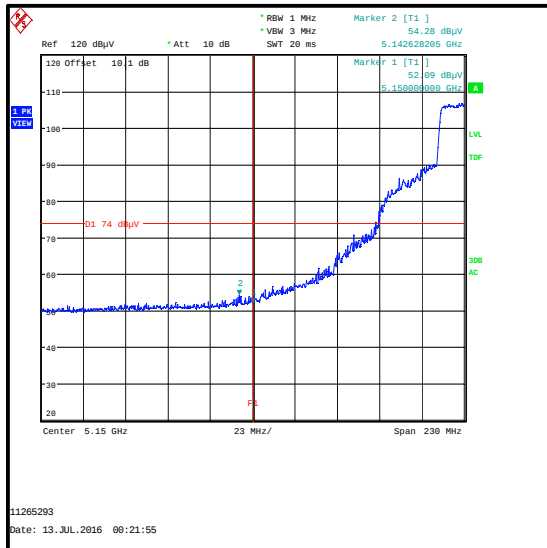
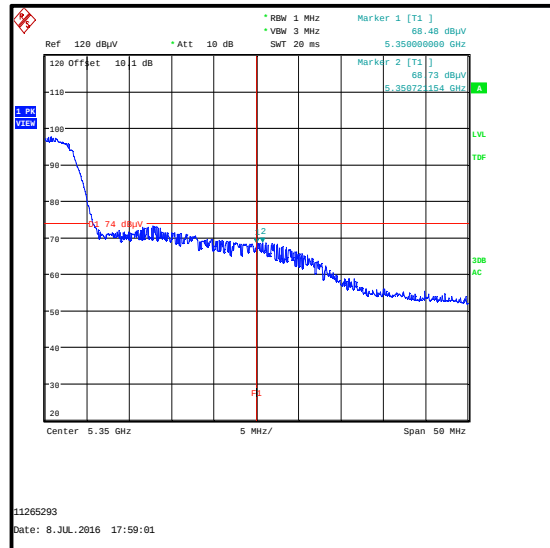
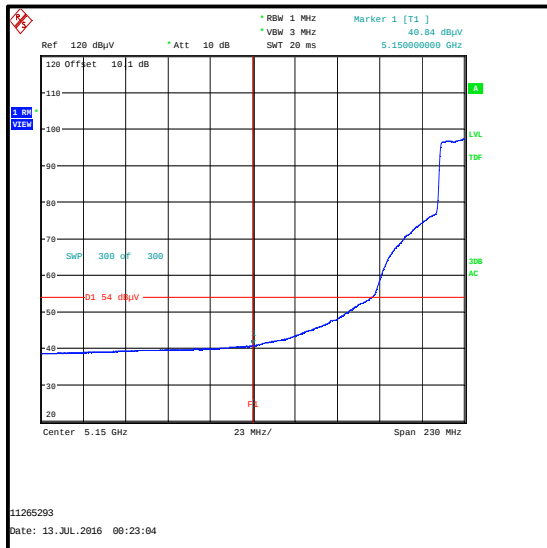
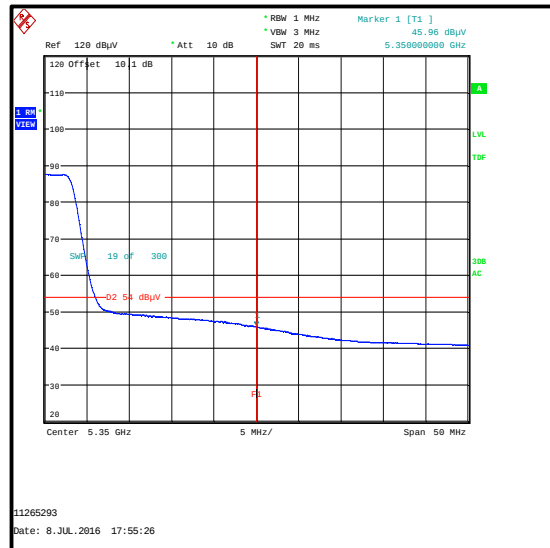
Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 2 / SISO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5142.628	54.3	74.0	19.7	Complied
5150	52.1	74.0	21.9	Complied
5350	68.5	74.0	5.5	Complied
5350.721	68.7	74.0	5.3	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO / 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
5150	40.8	0.1	40.9	54.0	13.1	Complied
5350	46.0	0.1	46.1	54.0	7.9	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 2 / SISO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO / Peak**

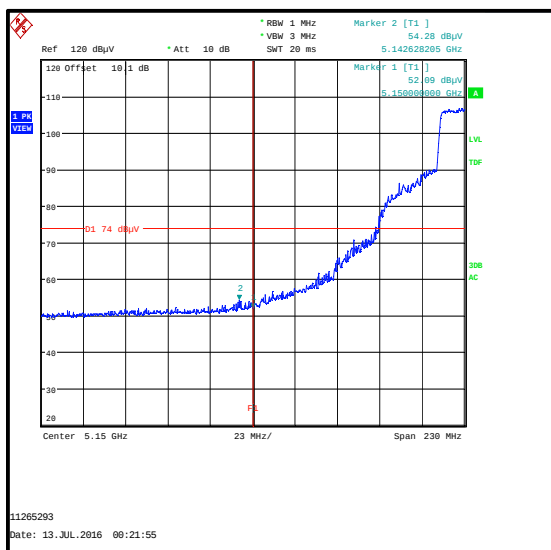
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5142.628	54.3	74.0	19.7	Complied
5150	52.1	74.0	21.9	Complied
5350	68.1	74.0	5.9	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO / Average

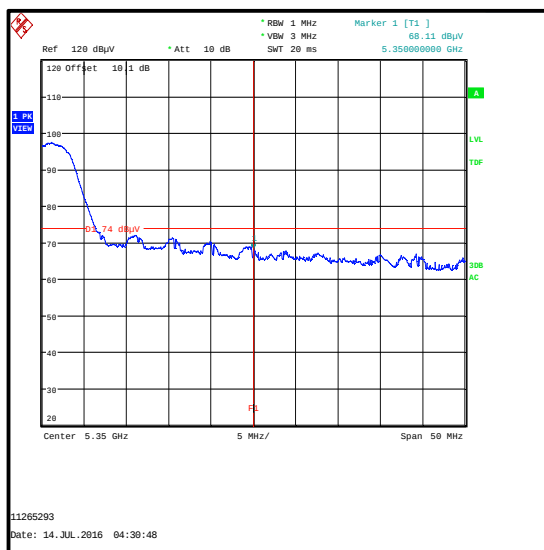
Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	40.8	0.2	41.0	54.0	13.0	Complied
5350	47.9	0.2	48.1	54.0	5.9	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

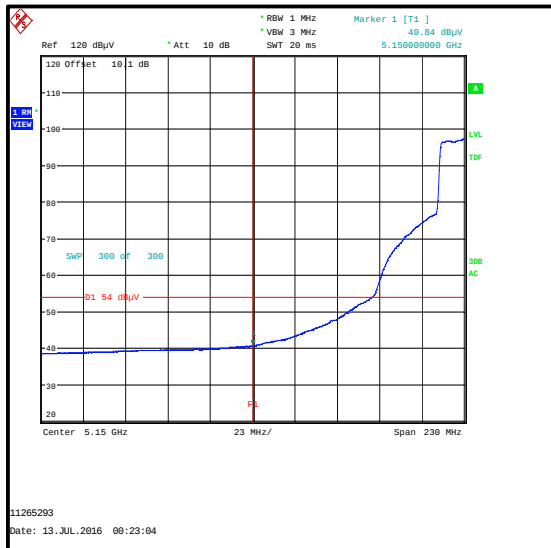
Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 2 / SISO



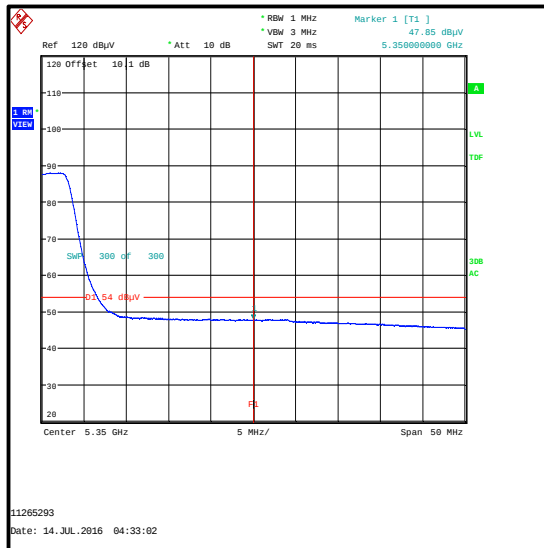
Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement



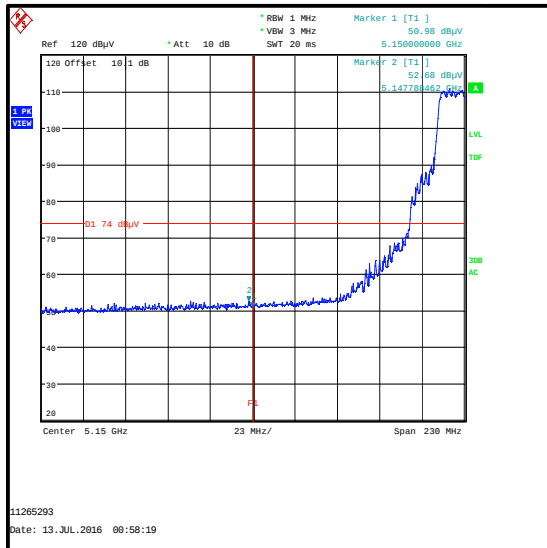
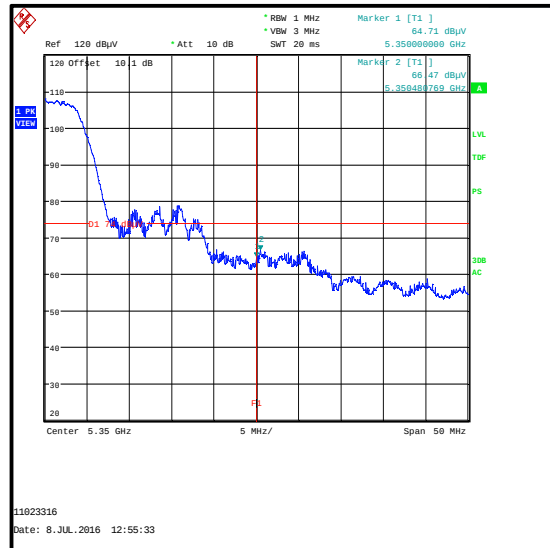
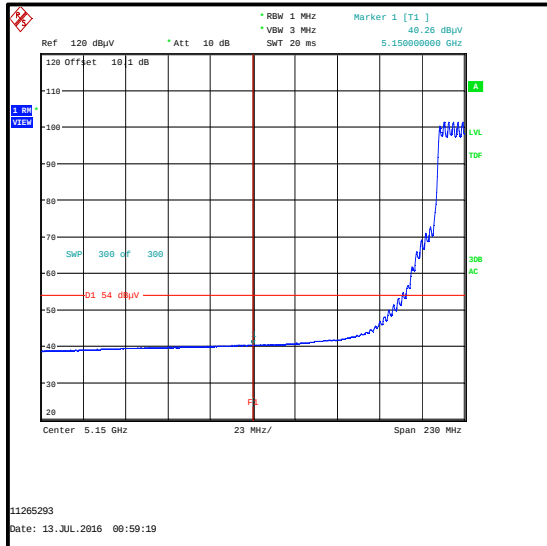
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5147.788	52.7	74.0	21.3	Complied
5150	51.0	74.0	23.0	Complied
5350	64.7	74.0	9.3	Complied
5350.481	66.5	74.0	7.5	Complied

Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Average

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	40.3	54.0	13.7	Complied
5350	45.9	54.0	8.1	Complied
5350.481	46.4	54.0	7.6	Complied

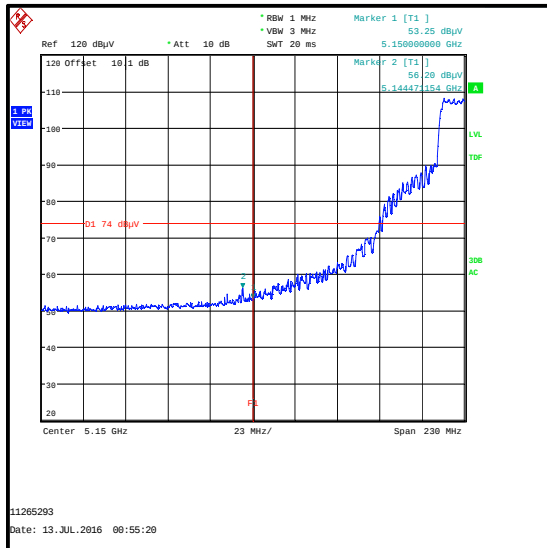
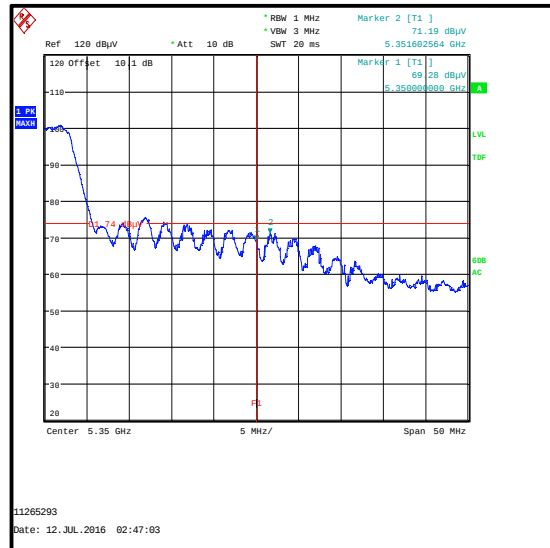
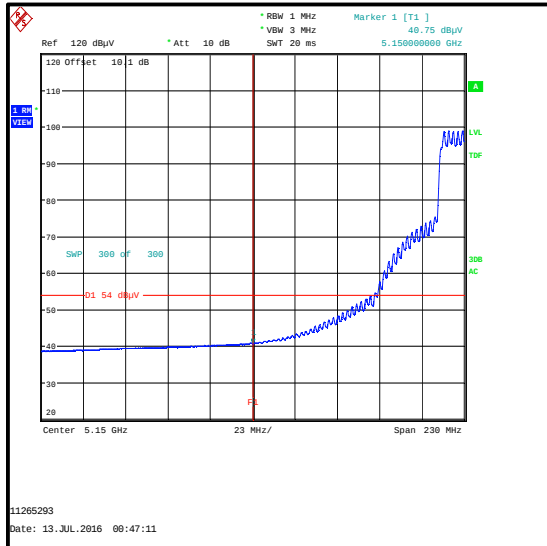
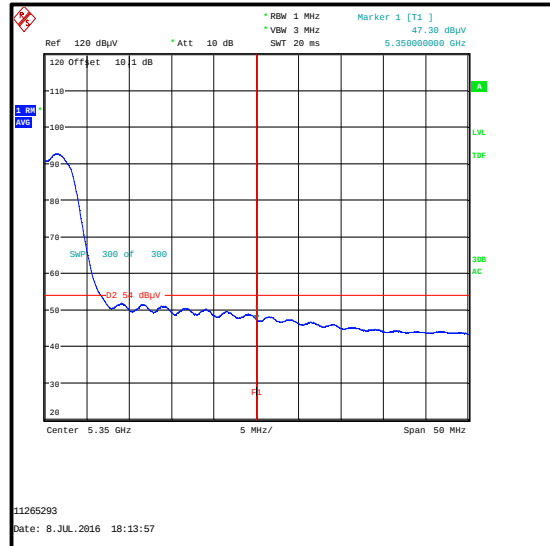
Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5144.471	56.2	74.0	17.8	Complied
5150	53.3	74.0	20.7	Complied
5350	69.3	74.0	4.7	Complied
5351.603	71.2	74.0	2.8	Complied

Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Average

Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	40.8	0.1	40.9	54.0	13.1	Complied
5350	47.3	0.1	47.4	54.0	6.6	Complied

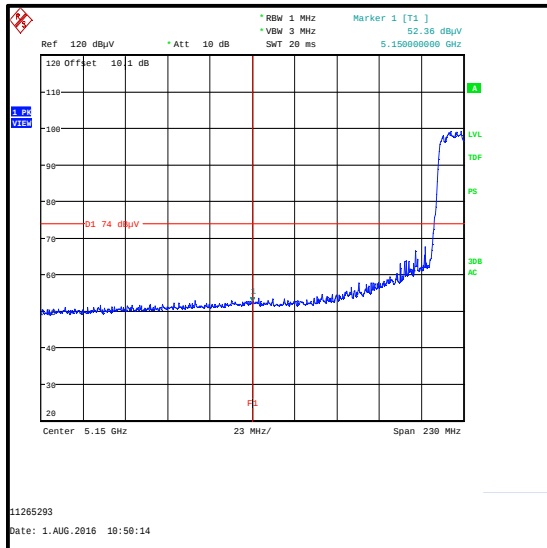
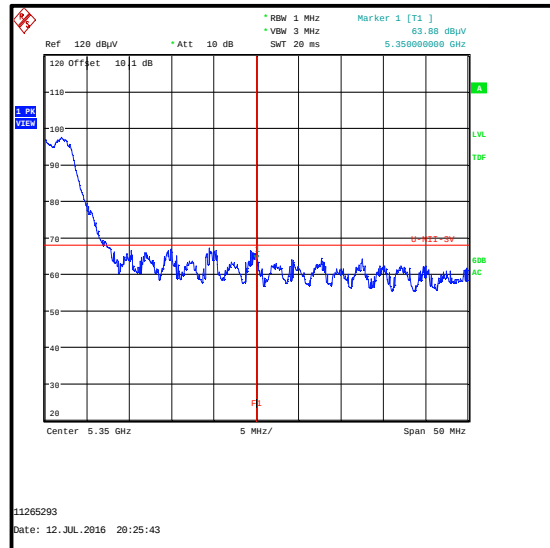
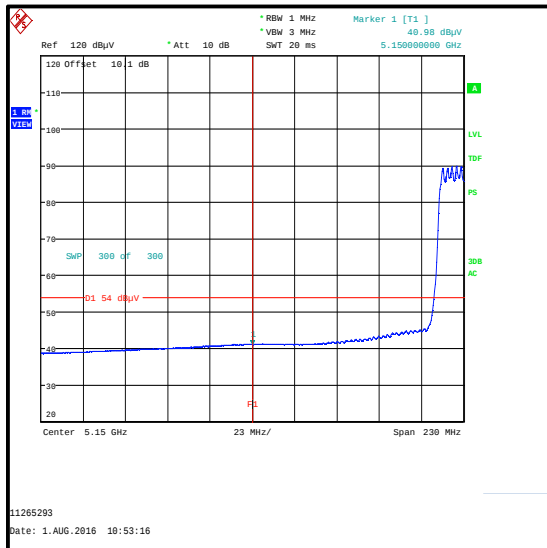
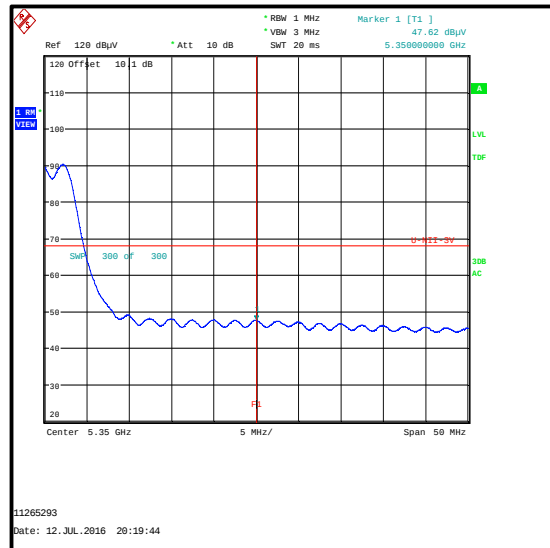
Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / Peak**

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	53.4	74.0	20.6	Complied
5350	63.9	74.0	10.1	Complied

Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / Average

Frequency (MHz)	Level (dBμV/m)	Duty Cycle correction (dB)	Corrected Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5150	41.0	0.2	41.2	54.0	12.8	Complied
5350	47.6	0.2	47.8	54.0	6.2	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO****Lower Band Edge Peak Measurement****Upper Band Edge Peak Measurement****Lower Band Edge Average Measurement****Upper Band Edge Average Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band)**Test Summary:**

Test Engineers:	Nick Steele, Gareth Gerrard & Georgios Vrezas	Test Dates:	12 July 2016 to 01 August 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Parts 15.407(b)(3),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 II.G.

Environmental Conditions:

Temperature (°C):	24 to 27
Relative Humidity (%):	41 to 46

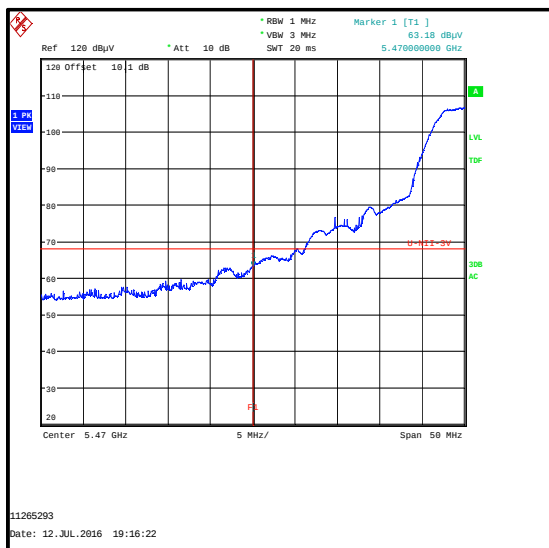
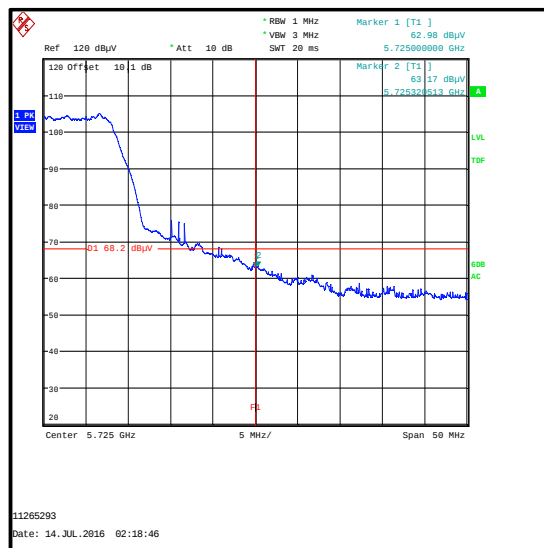
Note(s):

1. The customer declared the following data rates to be used for all measurements as:
 - o 802.11a – BPSK / 6 Mbps / Port 1
 - o 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 1
 - o 802.11n HT40 SISO - BPSK / 13.5 Mbps / MCS0 / Port 1
 - o 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 1
 - o 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
 - o 802.11n HT40 MIMO – BPSK / 29.3 Mbps / MCS0
 - o 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom or single channel. Upper band edge measurements were performed with the EUT transmitting on the top or single channel.
3. For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply. Tests were performed in these restricted bands of operation with the EUT transmitting on the bottom and top channels within 5.47-5.725 GHz band, the results are included in the transmitter 5.725-5.85 GHz band radiated spurious emissions section of this test report.
4. For completeness, results are also shown as EIRP in dBm and also as field strength in dBμV/m. Measured field strength was converted to EIRP in accordance with KDB 789033 D02 II.G.2.d.(iii) using a conversion factor of 95.2.
5. * In accordance with FCC KDB 789033 D02 Section II.G.3.d), the integration method was used in order to meet the average limit.

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-32.0	-27.0	5.0	Complied
5725	-32.2	-27.0	5.2	Complied
5725.321	-32.0	-27.0	5.0	Complied

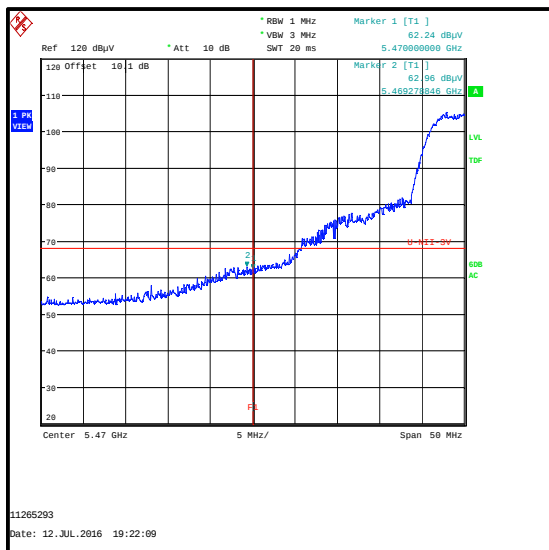
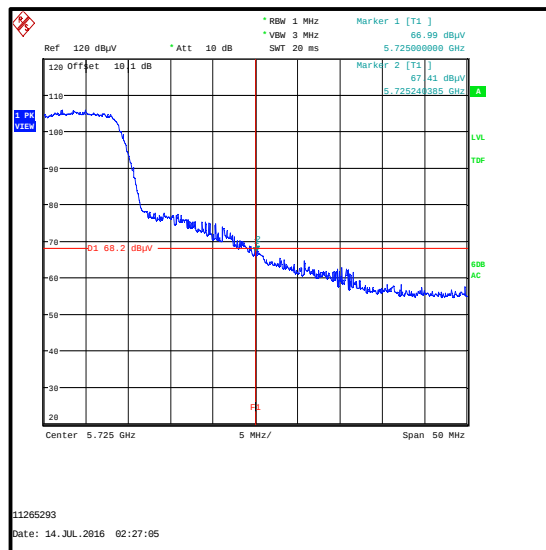
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5470	63.2	68.2	5.0	Complied
5725	63.0	68.2	5.2	Complied
5725.321	63.2	68.2	5.0	Complied

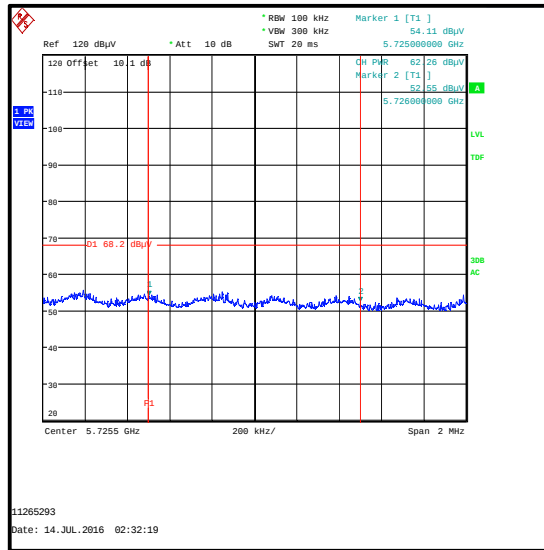
**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.279	-32.2	-27.0	5.2	Complied
5470	-33.0	-27.0	6.0	Complied
5725	-32.9*	-27.0	5.9	Complied
5725.240	-32.9*	-27.0	5.9	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5469.279	63.0	68.2	5.2	Complied
5470	62.2	68.2	6.0	Complied
5725	62.3*	68.2	5.9	Complied
5725.240	62.3*	68.2	5.9	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

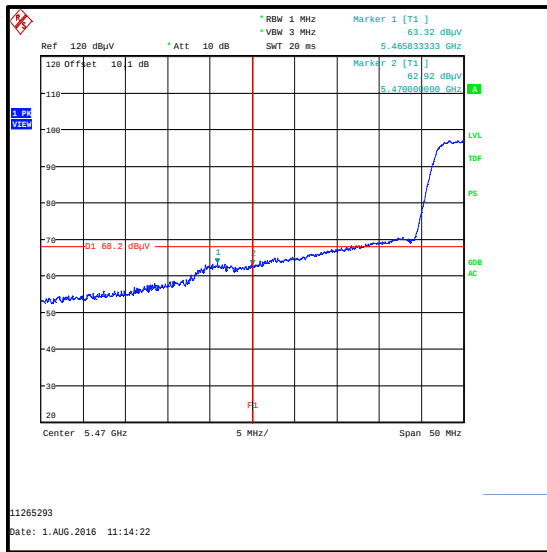
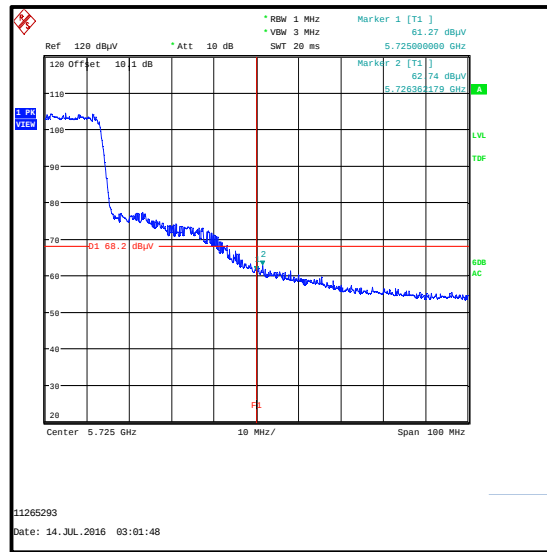
Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

**Upper Band Edge Measurement
Integration Method at 5725 MHz**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5465.833	-31.9	-27.0	4.9	Complied
5470	-32.3	-27.0	5.3	Complied
5725	-33.9	-27.0	6.9	Complied
5726.362	-32.5	-27.0	5.5	Complied

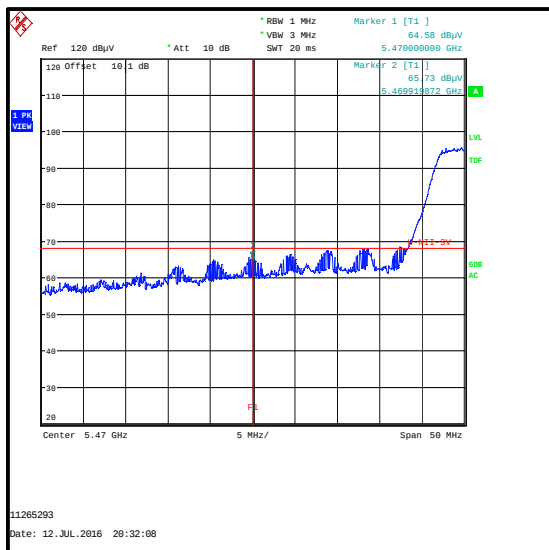
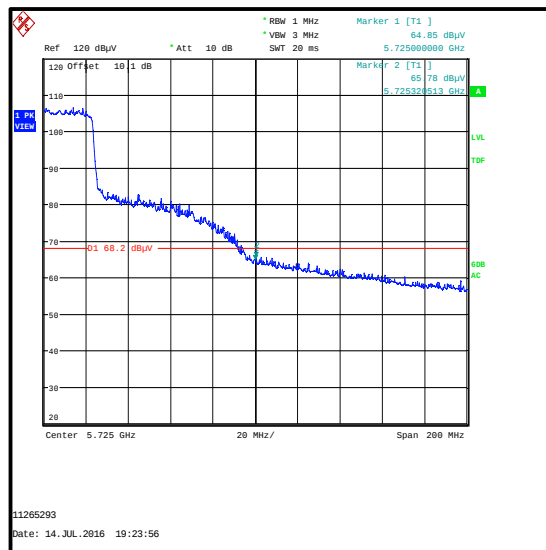
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5465.833	63.3	68.2	4.9	Complied
5470	62.9	68.2	5.3	Complied
5725	61.3	68.2	6.9	Complied
5726.362	62.7	68.2	5.5	Complied

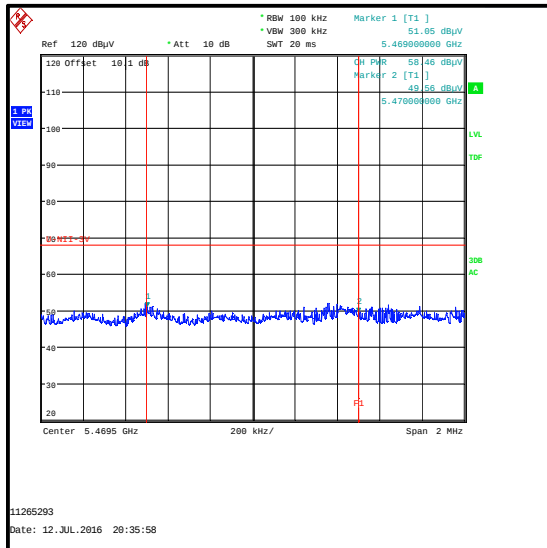
**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

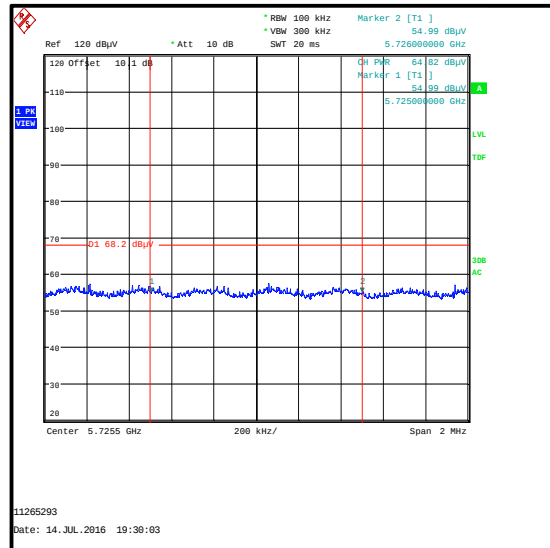
Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.920	-36.7*	-27.0	9.7	Complied
5470	-36.7*	-27.0	9.7	Complied
5725	-30.4*	-27.0	3.4	Complied
5725.321	-30.4*	-27.0	3.4	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5469.920	58.5*	68.2	9.7	Complied
5470	58.5*	68.2	9.7	Complied
5725	64.8*	68.2	3.4	Complied
5725.321	64.8*	68.2	3.4	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

**Lower Band Edge Measurement
Integration Method at 5470 MHz**

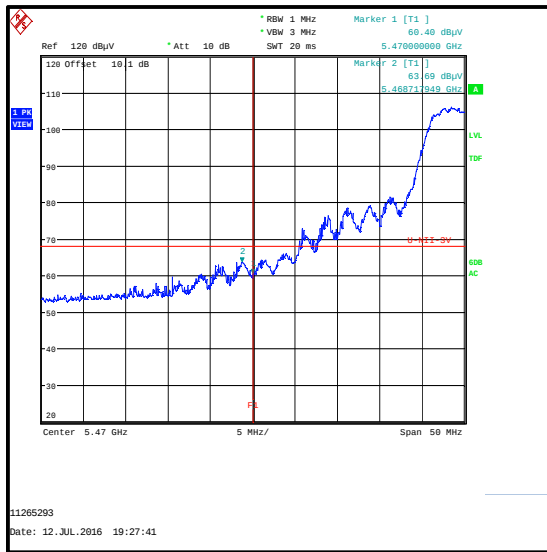
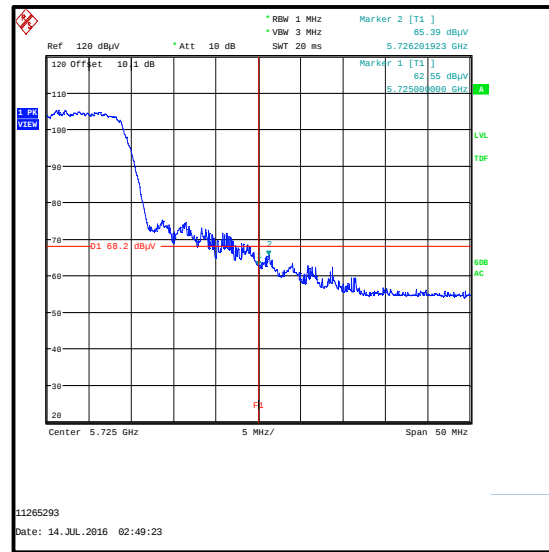


**Upper Band Edge Measurement
Integration Method at 5725 MHz**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5468.718	-31.5	-27.0	4.5	Complied
5470	-34.8	-27.0	7.8	Complied
5725	-32.6	-27.0	5.6	Complied
5726.202	-29.8	-27.0	2.8	Complied

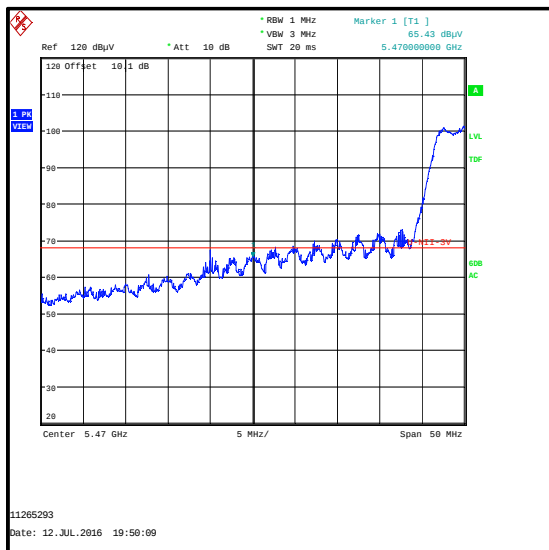
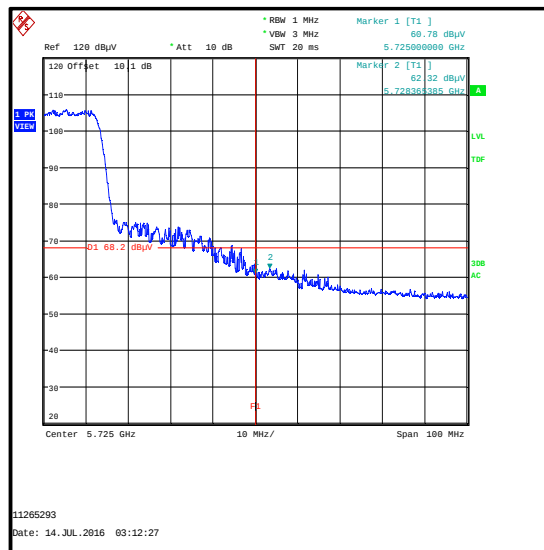
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5468.718	63.7	68.2	4.5	Complied
5470	60.4	68.2	7.8	Complied
5725	62.6	68.2	5.6	Complied
5726.202	65.4	68.2	2.8	Complied

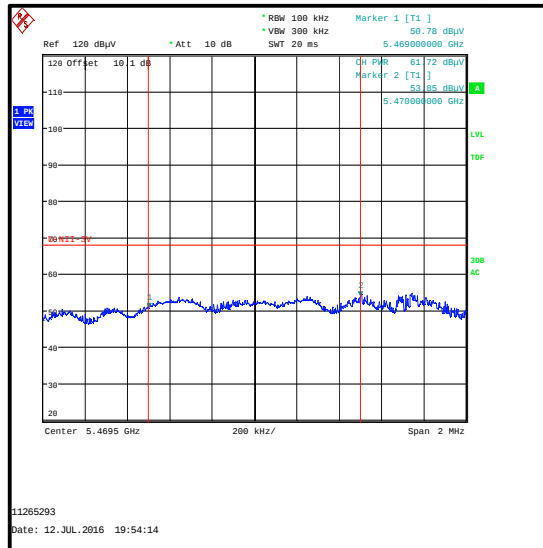
**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-33.5*	-27.0	6.5	Complied
5725	-34.4	-27.0	7.4	Complied
5728.365	-32.9	-27.0	5.9	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5470	61.7*	68.2	6.5	Complied
5725	60.8	68.2	7.4	Complied
5728.365	62.3	68.2	5.9	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

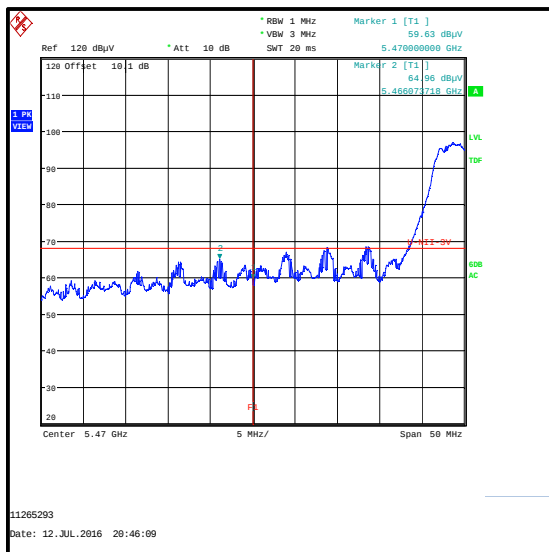
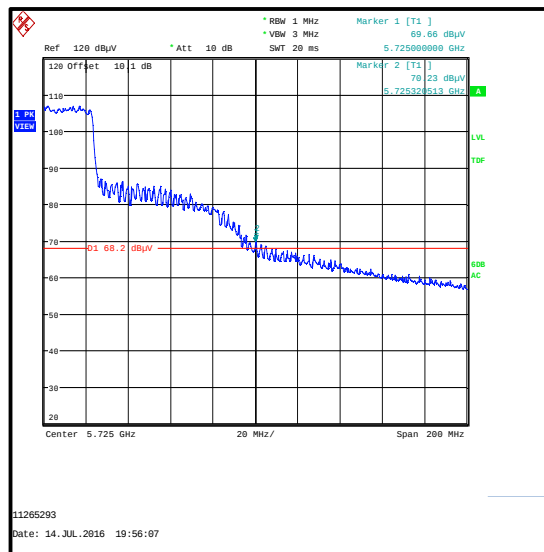
Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Peak**

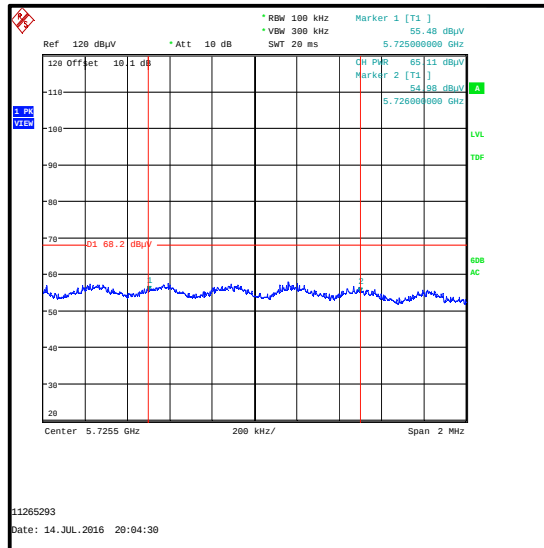
**Upper Band Edge Measurement
Integration Method at 5725 MHz**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5466.074	-30.2	-27.0	3.2	Complied
5470	-35.6	-27.0	8.6	Complied
5725	-30.1*	-27.0	3.1	Complied
5725.321	-30.1*	-27.0	3.1	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5466.074	65.0	68.2	3.2	Complied
5470	59.6	68.2	8.6	Complied
5725	65.1*	68.2	3.1	Complied
5725.321	65.1*	68.2	3.1	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0x1 / MIMO / Peak**

**Upper Band Edge Measurement
Integration Method at 5725 MHz**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band)**Test Summary:**

Test Engineer:	Nick Steele	Test Dates:	13 July 2016 & 14 July 2016
Test Sample Serial Number:	C39RV00CHFMP		

FCC Reference:	Parts 15.407(b)(4)(i),(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.10 & KDB 789033 D02 II.G.

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	43

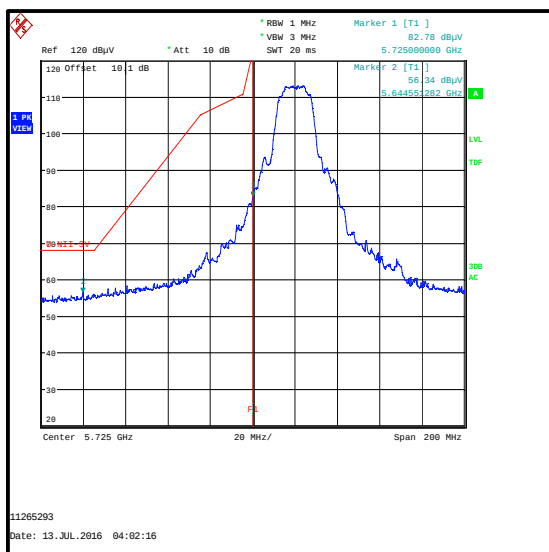
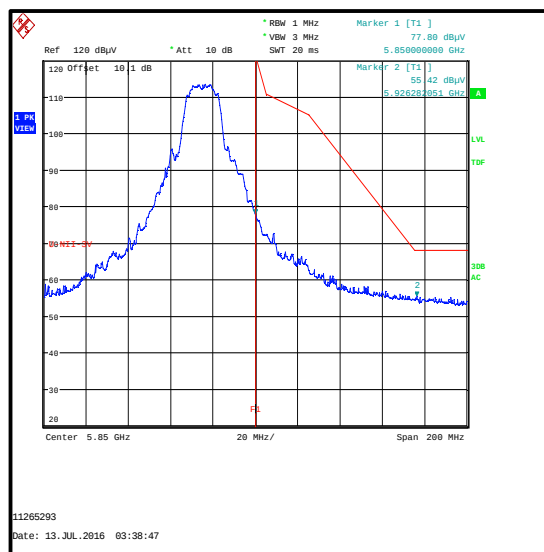
Note(s):

1. The customer declared the following data rates to be used for all measurements as:
 - o 802.11a – BPSK / 6 Mbps / Port 1
 - o 802.11n HT20 SISO – BPSK / 6.5 Mbps / MCS0 / Port 1
 - o 802.11n HT40 SISO - BPSK / 13.5 Mbps / MCS0 / Port 1
 - o 802.11ac VHT80 SISO – BPSK / 29.3 Mbps / MCS0 / Port 1
 - o 802.11n HT20 MIMO – BPSK / 6.5 Mbps / MCS0
 - o 802.11n HT40 MIMO – BPSK / 29.3 Mbps / MCS0
 - o 802.11ac VHT80 MIMO – BPSK / 29.3 Mbps / MCS0x1
2. Lower band edge measurements were performed with the EUT transmitting on the bottom or single channel. Upper band edge measurements were performed with the EUT transmitting on the top or single channel.
3. For completeness, results are also shown as EIRP in dBm and also as field strength in dBμV/m. Measured field strength was converted to EIRP in accordance with KDB 789033 D02 G.2.d)(iii) using a conversion factor of 95.2.

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Port 1 / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5644.551	-38.9	-27.0	11.9	Complied
5725	-12.4	27.0	39.4	Complied
5850	-17.4	27.0	44.4	Complied
5926.282	-39.8	-27.0	12.8	Complied

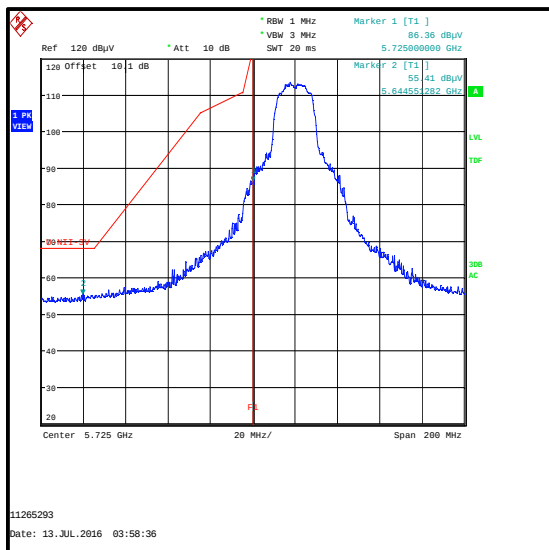
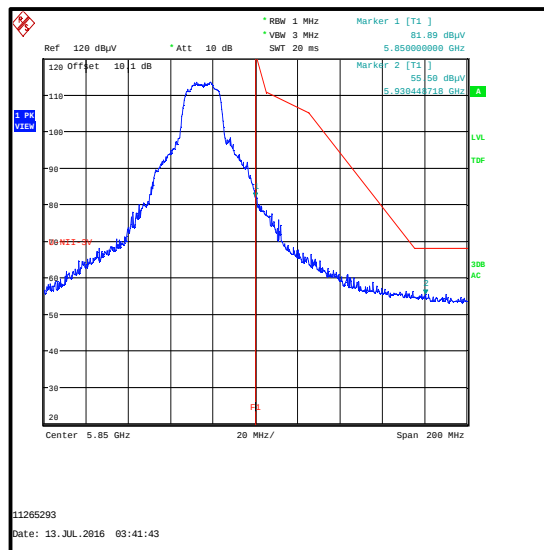
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5644.551	56.3	68.2	11.9	Complied
5725	82.8	122.2	39.4	Complied
5850	77.8	122.2	44.4	Complied
5926.282	55.4	68.2	12.8	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5644.551	-39.8	-27.0	12.8	Complied
5725	-8.8	27.0	35.8	Complied
5850	-13.3	27.0	40.3	Complied
5930.449	-39.7	-27.0	12.7	Complied

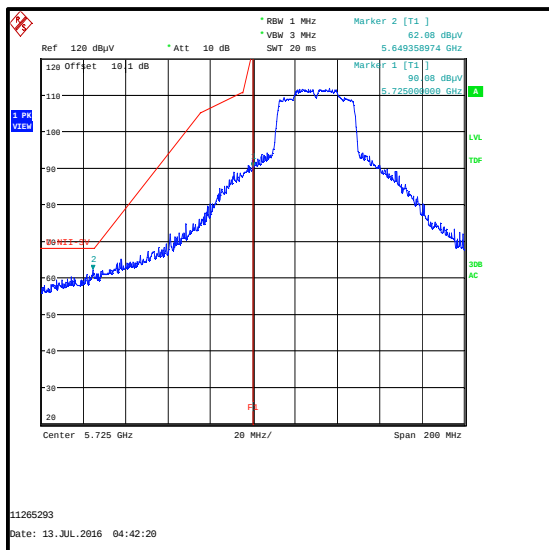
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5644.551	55.4	68.2	12.8	Complied
5725	86.4	122.2	35.8	Complied
5850	81.9	122.2	40.3	Complied
5930.449	55.5	68.2	12.7	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5649.359	-33.1	-27.0	6.1	Complied
5725	-5.1	27.0	32.1	Complied
5850	-21.4	27.0	48.4	Complied
5928.526	-38.3	-27.0	11.3	Complied

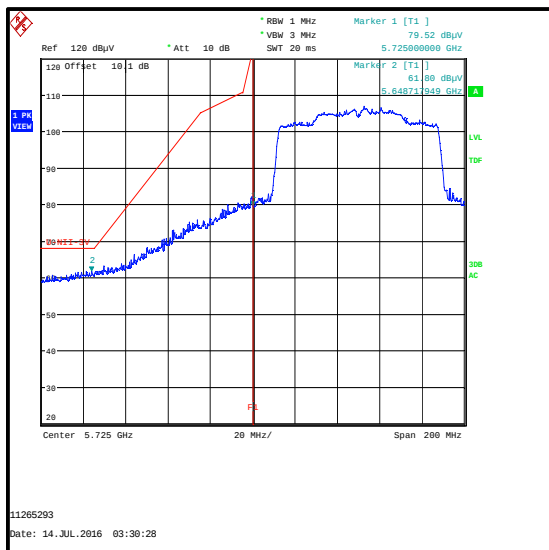
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5649.359	62.1	68.2	6.1	Complied
5725	90.1	122.2	32.1	Complied
5850	73.8	122.2	48.4	Complied
5928.526	56.9	68.2	11.3	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / MCS0 / Port 1 / SISO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5648.718	-33.4	-27.0	6.4	Complied
5725	-15.7	27.0	42.7	Complied
5850	-18.1	27.0	45.1	Complied
5929.167	-34.3	-27.0	7.3	Complied

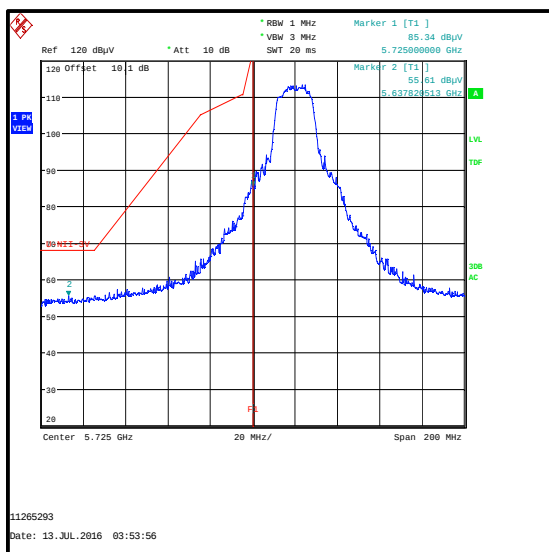
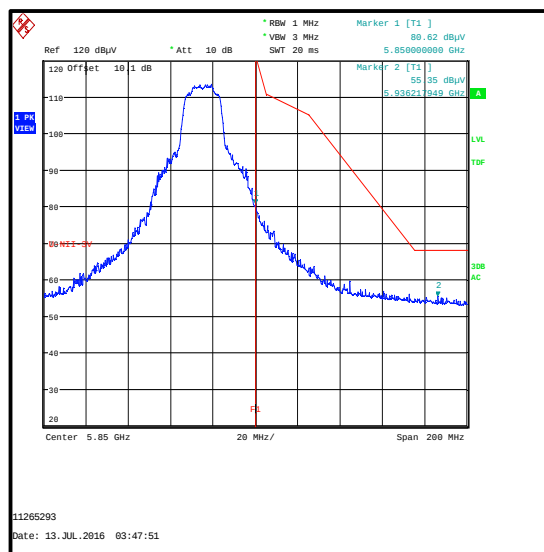
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5648.718	61.8	68.2	6.4	Complied
5725	79.5	122.2	42.7	Complied
5850	77.1	122.2	45.1	Complied
5929.167	60.9	68.2	7.3	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)**Results: 802.11n / 20 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5637.821	-39.6	-27.0	12.6	Complied
5725	-9.9	27.0	36.9	Complied
5850	-14.6	27.0	41.6	Complied
5936.218	-39.8	-27.0	12.8	Complied

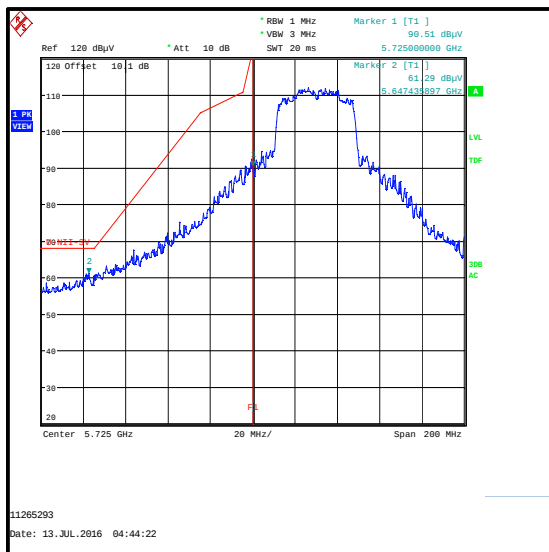
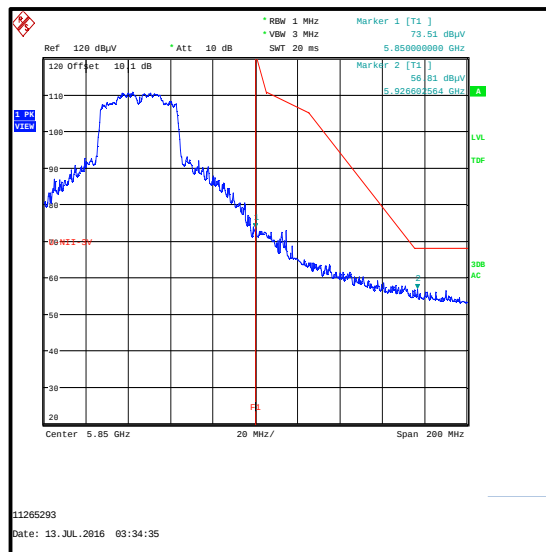
Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5637.821	55.6	68.2	12.6	Complied
5725	85.3	122.2	36.9	Complied
5850	80.6	122.2	41.6	Complied
5936.218	55.4	68.2	12.8	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz operation) (continued)**Results: 802.11n / 40 MHz / BPSK / MCS0 / MIMO / Peak**

Frequency (MHz)	Level (dBm)	Limit (dBm/MHz)	Margin (dB)	Result
5647.436	-33.9	-27.0	6.9	Complied
5725	-4.7	27.0	31.7	Complied
5850	-21.7	27.0	48.7	Complied
5926.603	-38.4	-27.0	11.4	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5647.436	61.3	68.2	6.9	Complied
5725	90.5	122.2	31.7	Complied
5850	73.5	122.2	48.7	Complied
5926.603	56.8	68.2	11.4	Complied

**Lower Band Edge Measurement****Upper Band Edge Measurement**