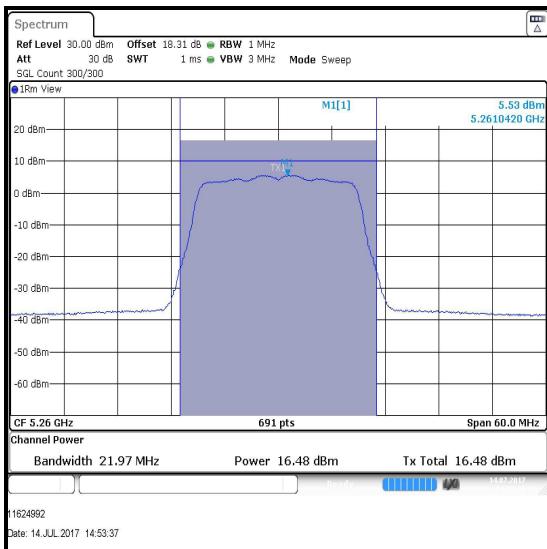
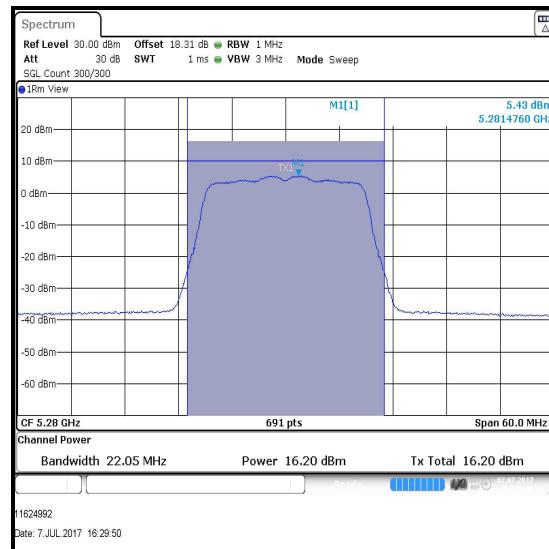
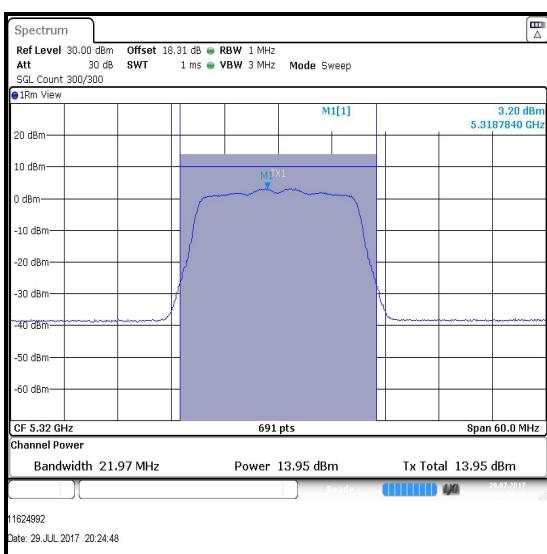
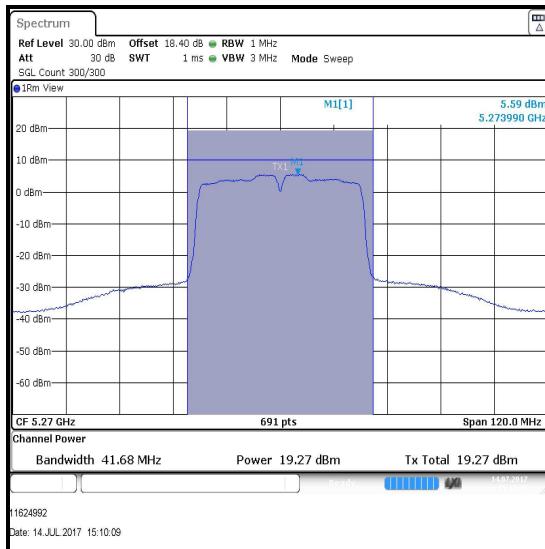
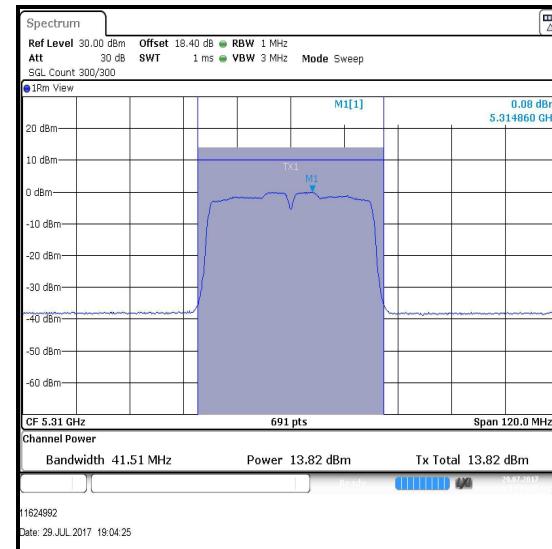


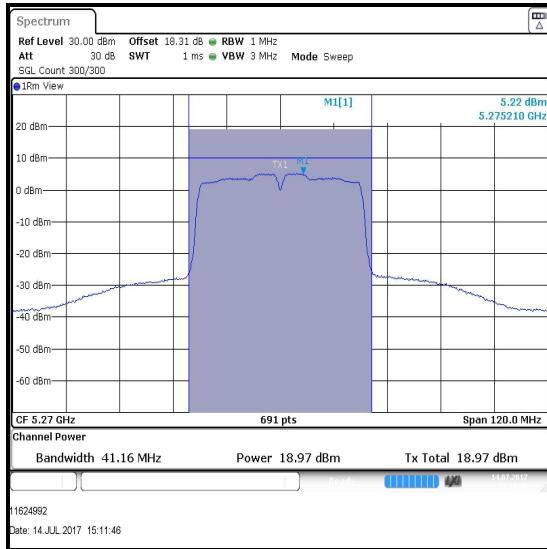
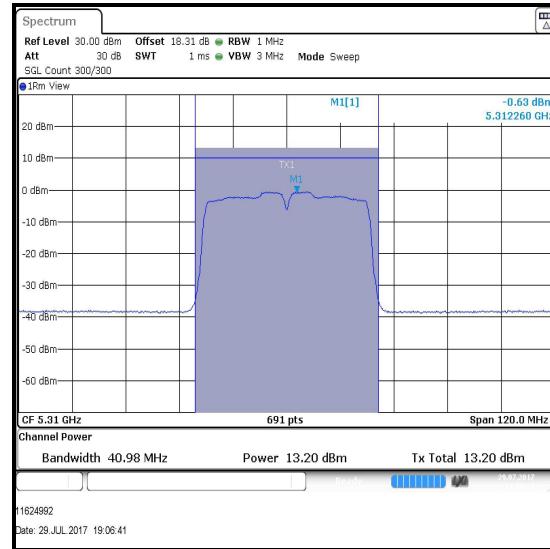
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)**Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 2****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)**Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0**

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)	Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)
Bottom	5270	19.3	0.1	19.4	19.0	0.1	19.1
Top	5310	13.8	0.1	13.9	13.2	0.1	13.3

Channel	Frequency (MHz)	Corrected Conducted Power Port 1 (dBm)	Corrected Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5270	19.4	19.1	22.3	24.0	1.7	Complied
Top	5310	13.9	13.3	16.6	24.0	7.4	Complied

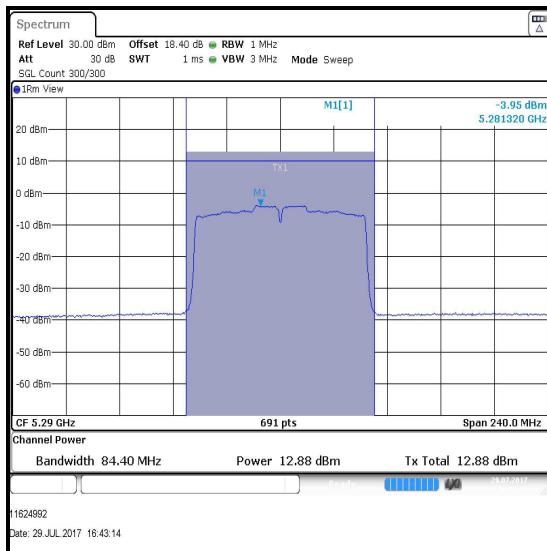
Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0 / Port 1**Bottom Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)**Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0 / Port 2****Bottom Channel****Top Channel**

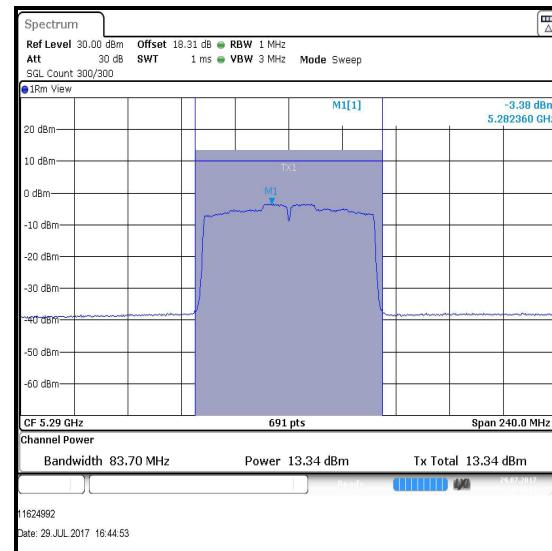
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)**Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1**

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)	Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)
Single	5290	12.9	0.2	13.1	13.3	0.2	13.5

Channel	Frequency (MHz)	Corrected Conducted Power Port 1 (dBm)	Corrected Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5290	13.1	13.5	16.3	24.0	7.7	Complied



Single Channel / Port 1



Single Channel / Port 2

Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band)**4.4.3 5.47-5.725 GHz band****Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	06 July 2017 to 29 July 2017
Test Sample Serial Number:	C07TK02MJ4C7		

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

Environmental Conditions:

Temperature (°C):	21 to 25
Relative Humidity (%):	42 to 49

Note(s):

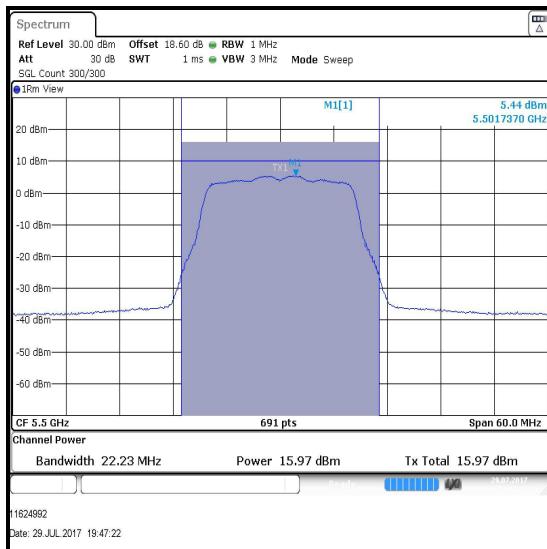
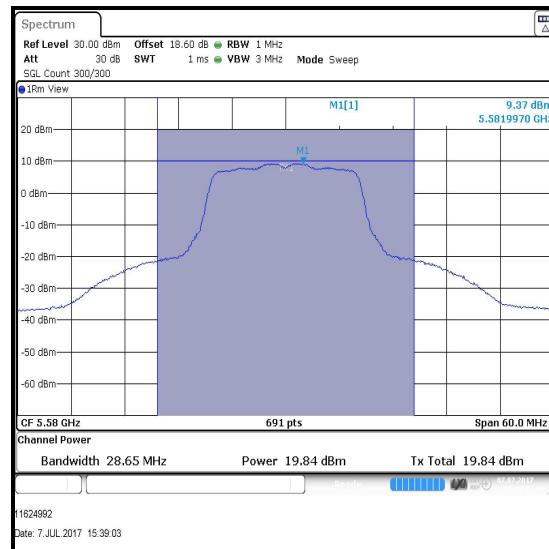
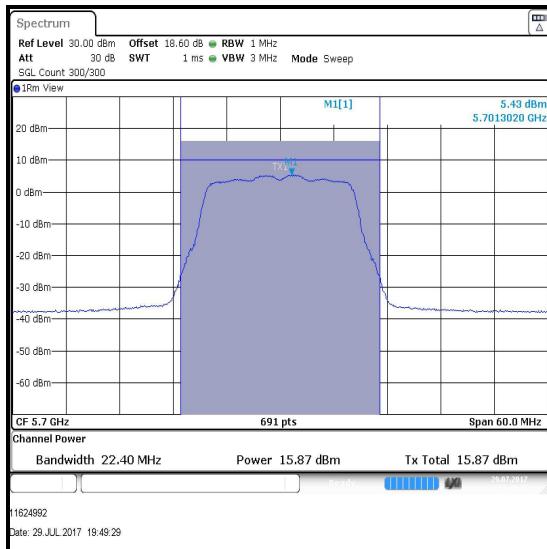
1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with FCC KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with FCC KDB 789033 II.E.2.d) Method SA-2.
2. Measurements were performed on data rates detailed in Section 3.5 of this test report on the relevant channels.
3. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in section 4.1 was added to the measured power in order to compute the average power during the actual transmission time.
4. For MIMO modes, power was measured on both ports and then combined using the measure-and-sum technique stated in FCC KDB 662911 D01 Section E1).
5. For all modes of operation, the antenna gain is < 6 dBi.
6. For details on antenna gains refer to Section 3.4 of this test report.
7. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable. The FCC Part 15.407(a)(2) limit is the lesser of 250 mW (24.0 dBm) or 11 dBm + 10 log₁₀ B, where B is the previously measured 26 dB emission bandwidth in MHz. For U-NII-2C band, the 26 dB EBW is greater than 20 MHz.

$$\begin{aligned}
 & \text{For } B > 20 \text{ MHz} \rightarrow \\
 & \rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\
 & \rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\
 & \rightarrow 11 + 10 \log_{10} B > 11 + 10 \log_{10} 20 \rightarrow \\
 & \rightarrow 11 + 10 \log_{10} B > 24.0 \text{ dBm}
 \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 250 mW (24.0 dBm). This was applied to the results.

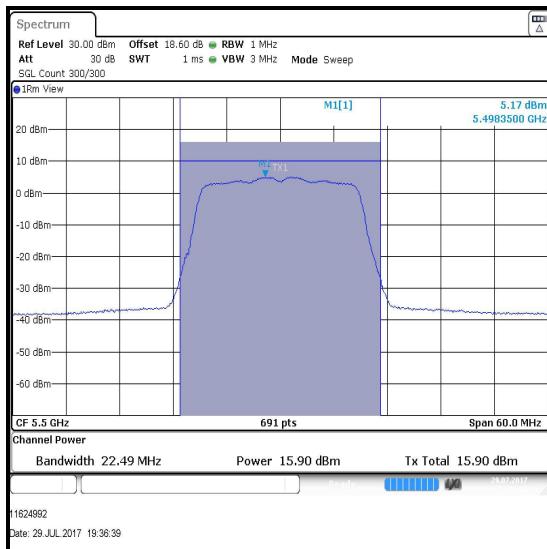
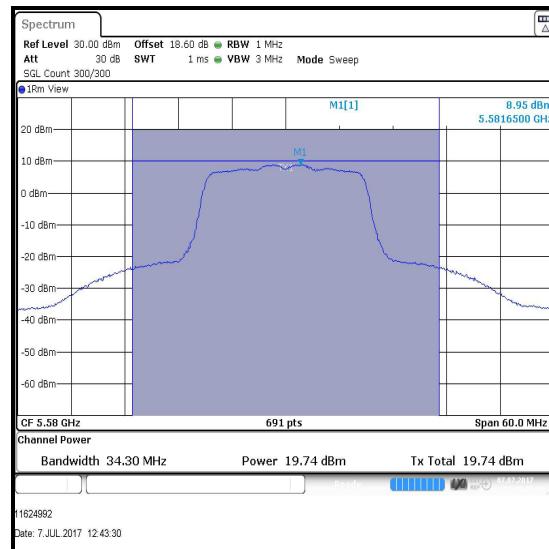
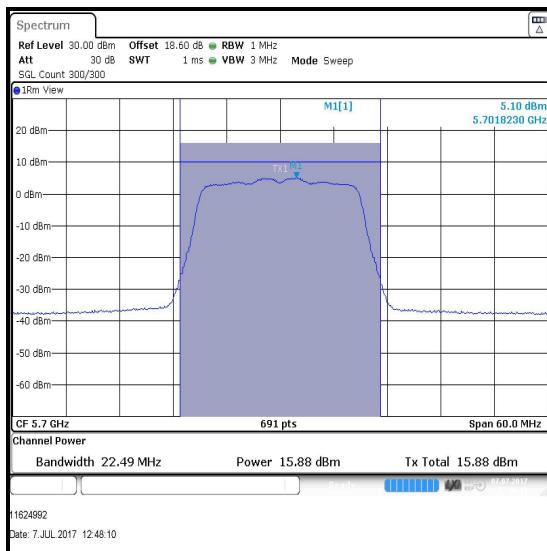
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11a / 20 MHz / SISO / BPSK / 6 Mbit/s / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	16.0	24.0	8.0	Complied
Middle	5580	19.8	24.0	4.2	Complied
Top	5700	15.9	24.0	8.1	Complied

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

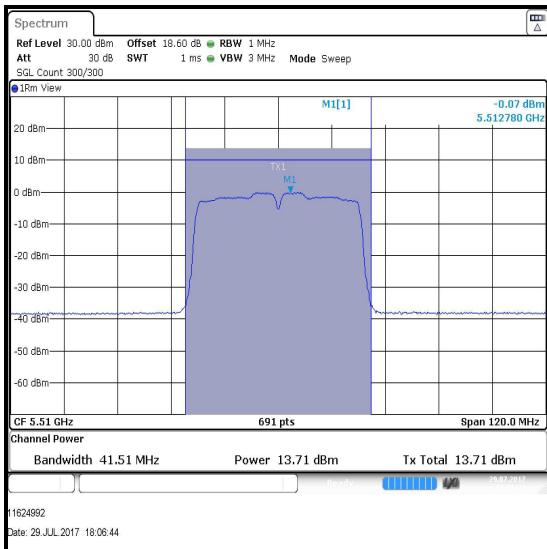
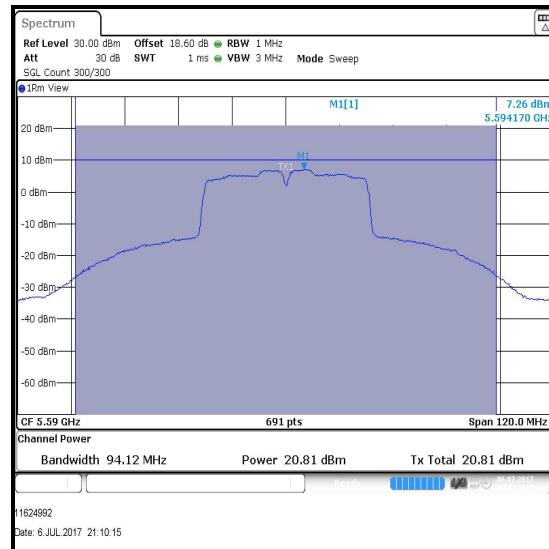
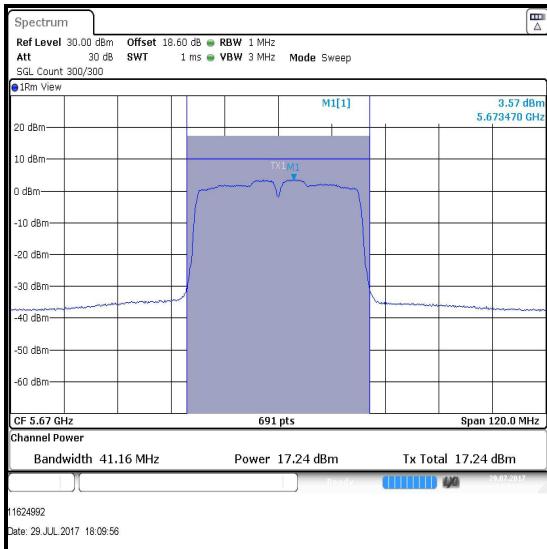
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 20 MHz / SISO / BPSK / MCS0 / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	15.9	24.0	8.1	Complied
Middle	5580	19.7	24.0	4.3	Complied
Top	5700	15.9	24.0	8.1	Complied

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

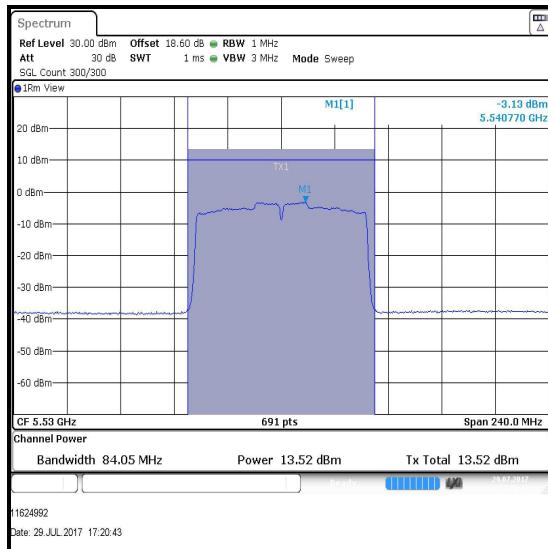
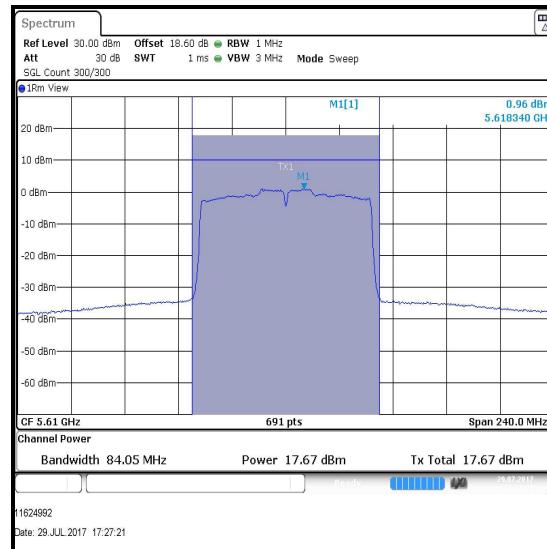
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 40 MHz / SISO / BPSK / MCS0 / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5510	13.7	0.1	13.8	24.0	10.2	Complied
Middle	5590	20.8	0.1	20.9	24.0	3.1	Complied
Top	5670	17.2	0.1	17.3	24.0	6.7	Complied

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

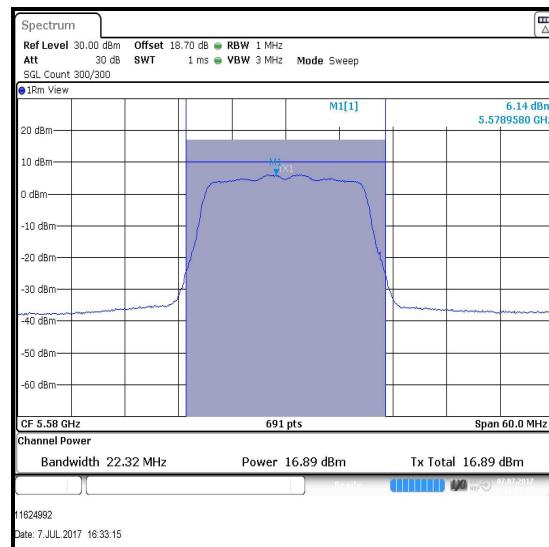
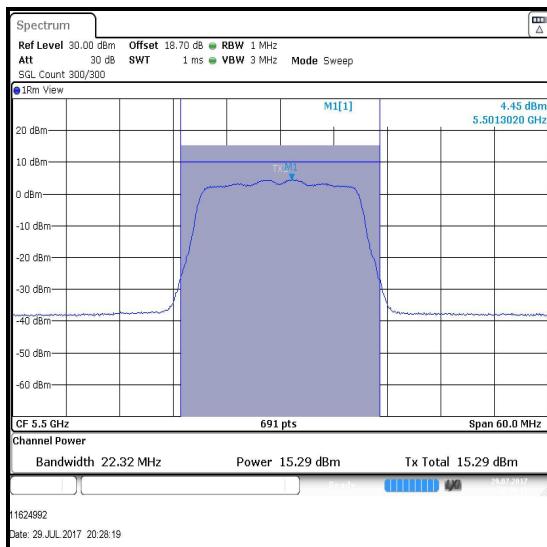
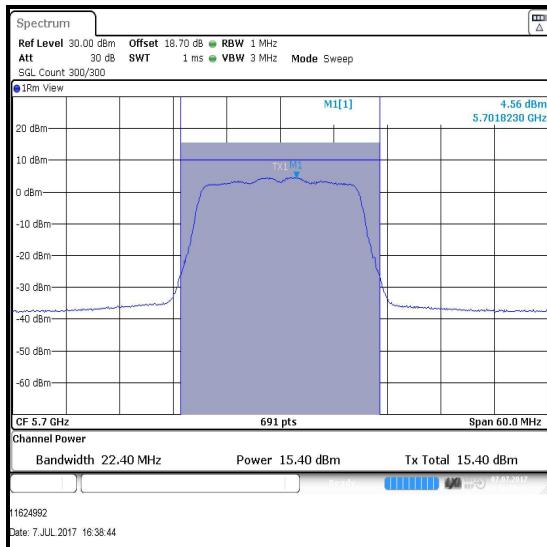
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11ac / 80 MHz / SISO / BPSK / MCS0x1 / Port 2**

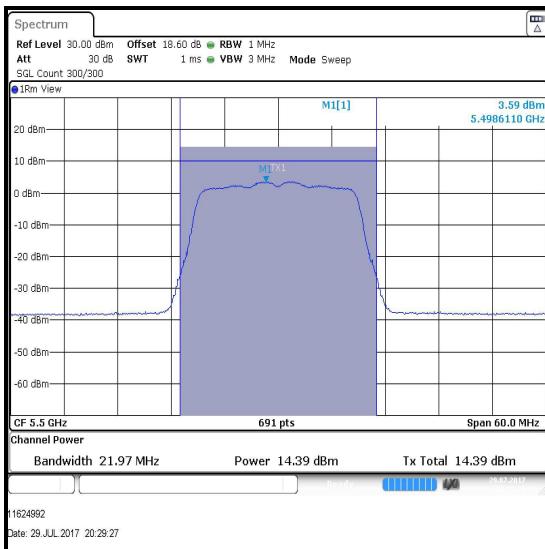
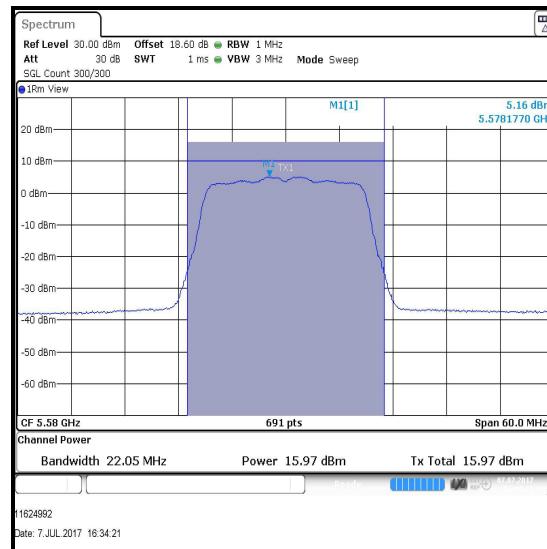
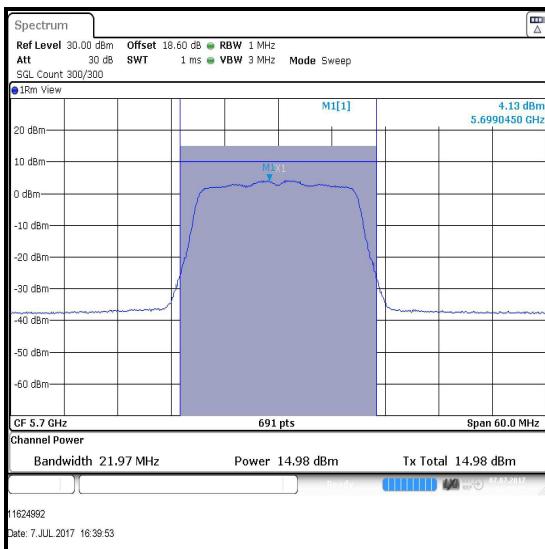
Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5530	13.5	0.2	13.7	24.0	10.3	Complied
Top	5610	17.7	0.2	17.9	24.0	6.1	Complied

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

Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0**

Channel	Frequency (MHz)	Conducted Power Port 1 (dBm)	Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5500	15.3	14.4	17.9	24.0	6.1	Complied
Middle	5580	16.9	16.0	19.5	24.0	4.5	Complied
Top	5700	15.4	15.0	18.2	24.0	5.8	Complied

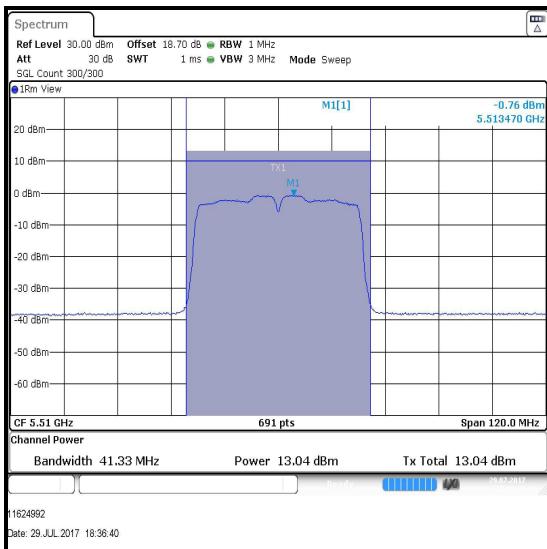
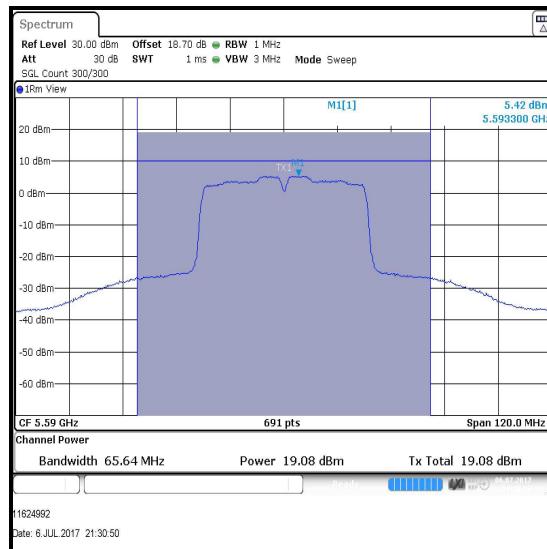
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 1**Bottom Channel****Middle Channel****Top Channel**

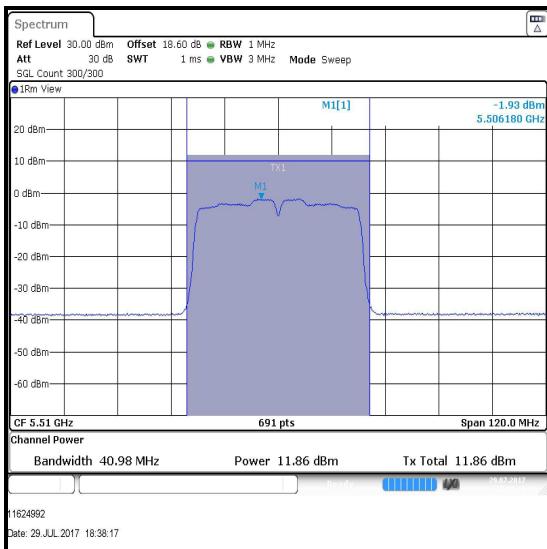
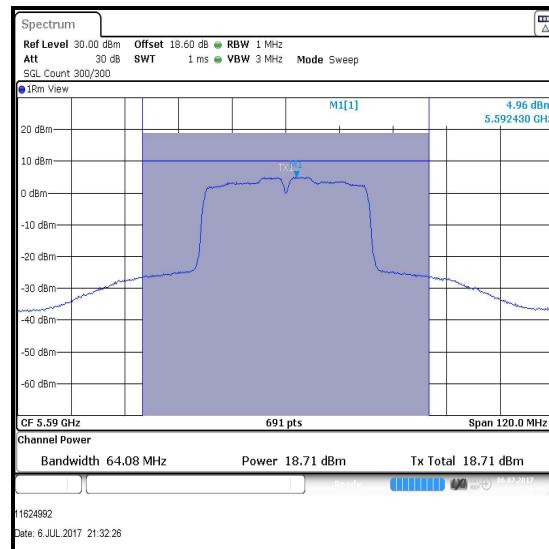
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 2****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0**

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)	Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)
Bottom	5510	13.0	0.1	13.1	11.9	0.1	12.0
Middle	5590	19.1	0.1	19.2	18.7	0.1	18.8
Top	5670	15.9	0.1	16.0	15.4	0.1	15.5

Channel	Frequency (MHz)	Corrected Conducted Power Port 1 (dBm)	Corrected Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5510	13.1	12.0	15.6	24.0	8.4	Complied
Middle	5590	19.2	18.8	22.0	24.0	2.0	Complied
Top	5670	16.0	15.5	18.8	24.0	5.2	Complied

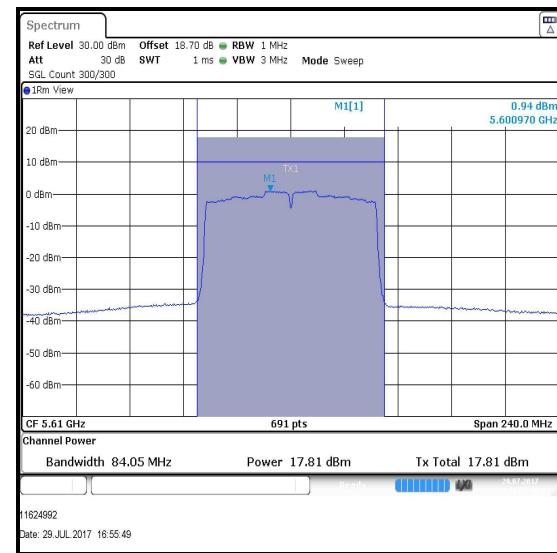
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0 / Port 1****Bottom Channel****Middle Channel****Top Channel**

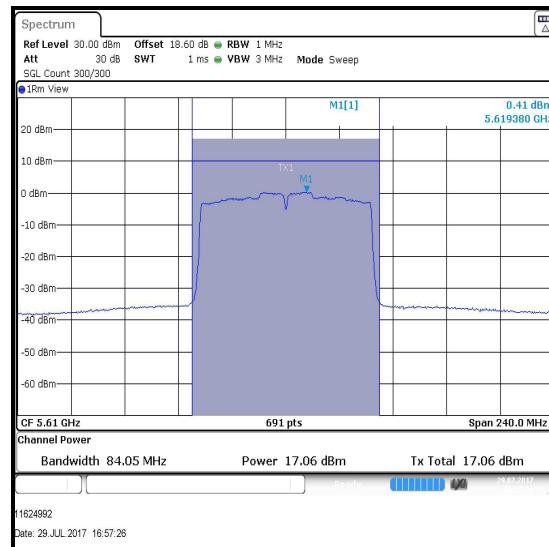
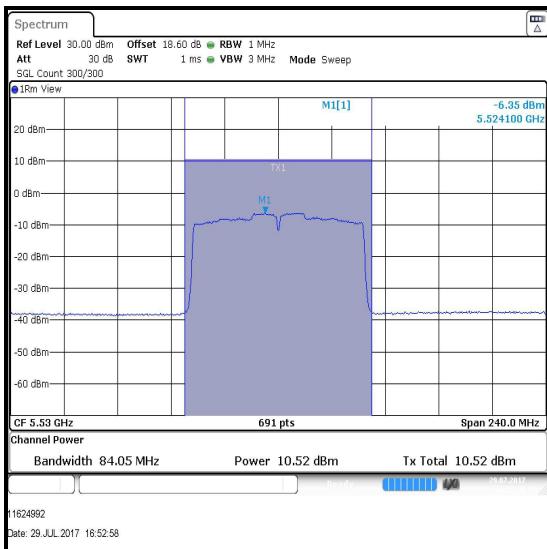
Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11n / 40 MHz / MIMO / BPSK / MCS0 / Port 2****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1**

Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)	Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)
Bottom	5530	11.7	0.2	11.9	10.5	0.2	10.7
Top	5610	17.8	0.2	18.0	17.1	0.2	17.3

Channel	Frequency (MHz)	Corrected Conducted Power Port 1 (dBm)	Corrected Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5530	11.9	10.7	14.4	24.0	9.6	Complied
Top	5610	18.0	17.3	20.7	24.0	3.3	Complied

Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1 / Port 1**Bottom Channel****Top Channel**

Transmitter Maximum Conducted Output Power (5.47-5.725 GHz band) (continued)**Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1 / Port 2**

Transmitter Maximum Conducted Output Power (Straddle Channels)**4.4.4 Channels that straddle the U-NII-2C and U-NII-3 bands****Test Summary:**

Test Engineer:	Georgios Vrezas	Test Dates:	06 July 2017 & 07 July 2017
Test Sample Serial Number:	C07TK02MJ4C7		

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

Environmental Conditions:

Temperature (°C):	21 to 23
Relative Humidity (%):	47 to 49

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 conducted power 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. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with FCC KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with FCC KDB 789033 II.E.2.d) Method SA-2.
3. Measurements were performed on data rates detailed in Section 3.5 on the relevant channels.
4. For data rates where the EUT was transmitting at <98% duty cycle, the calculated duty cycle in Section 4.1 of this report was added to the measured power in order to compute the average power during the actual transmission time.
5. For MIMO modes, power was measured on both ports and then combined using the measure-and-sum technique stated in FCC KDB 662911 D01 Section E)1).
6. For all modes of operation, the antenna gain is < 6 dBi.
7. For details on antenna gains refer to Section 3.4 of this test report.
8. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cable. An RF level offset was entered on the signal analyser to compensate for the loss of the attenuator and RF cable.

Transmitter Maximum Conducted Output Power (Straddle Channels) (continued)**Note(s) continued:**

9. The Part 15.407(a)(2) limit shall not exceed 250 mW (24.0 dBm). The FCC Part 15.407(a)(2) limit is the lesser of 250 mW (24.0 dBm) or $11 \text{ dBm} + 10 \log_{10} B$, where B is the previously measured 26 dB emission bandwidth in MHz.

$$\begin{aligned} & \text{For } B > 20 \text{ MHz} \rightarrow \\ & \rightarrow \log_{10} B > \log_{10} 20 \rightarrow \\ & \rightarrow 10 \log_{10} B > 10 \log_{10} 20 \rightarrow \\ & \rightarrow 11 + 10 \log_{10} B > 11 + 10 \log_{10} 20 \rightarrow \\ & \rightarrow 11 + 10 \log_{10} B > 24.0 \text{ dBm} \end{aligned}$$

Therefore for measured emission bandwidths greater than 20 MHz, the lesser of the two limits is the fixed limit of 250 mW (24.0 dBm). This was applied to the results.

For measured emission bandwidths of less than 20 MHz, the limit for each channel was calculated as below:

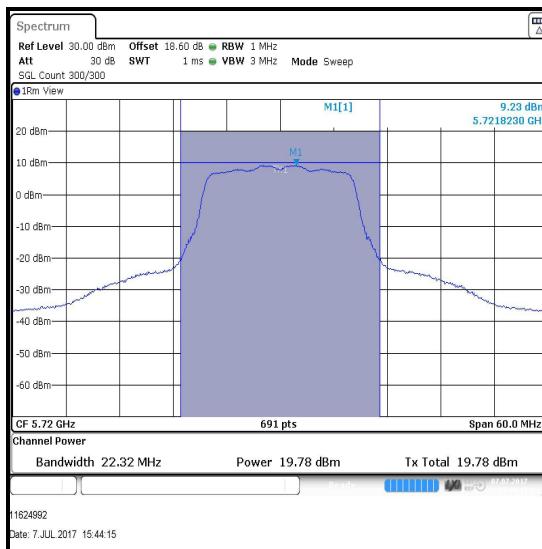
$$802.11a / 20 \text{ MHz} / \text{SISO} / \text{Single channel} = 11 \text{ dBm} + 10 \log_{10} 16.201 = 23.1 \text{ dBm}$$

$$802.11n / 20 \text{ MHz} / \text{SISO} / \text{Single channel} = 11 \text{ dBm} + 10 \log_{10} 16.462 = 23.2 \text{ dBm}$$

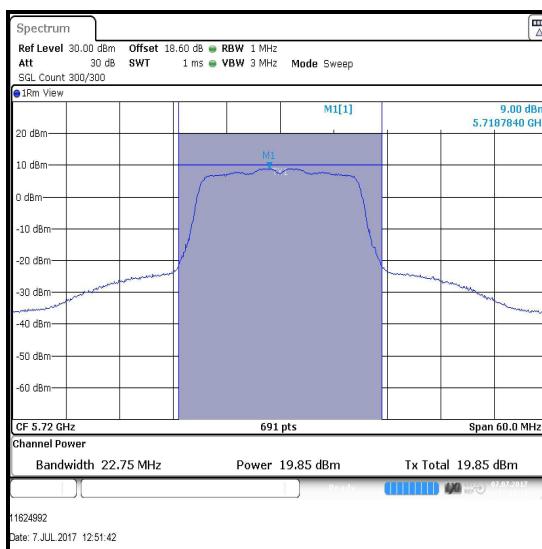
$$802.11a / 20 \text{ MHz} / \text{MIMO} / \text{Single channel} = 11 \text{ dBm} + 10 \log_{10} 16.201 = 23.1 \text{ dBm}$$

Transmitter Maximum Conducted Output Power (Straddle Channels) (continued)**Results: 802.11a / 20 MHz / SISO / BPSK / 6 Mbit/s / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5720	19.8	23.1	3.3	Complied

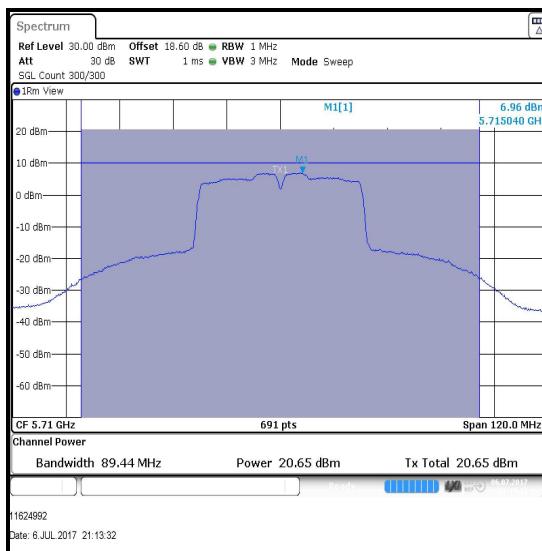
**Single Channel****Results: 802.11n / 20 MHz / SISO / BPSK / MCS0 / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5720	19.9	23.2	3.3	Complied

**Single Channel**

Transmitter Maximum Conducted Output Power (Straddle Channels) (continued)**Results: 802.11n / 40 MHz / SISO / BPSK / MCS0 / Port 2**

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5710	20.7	0.1	20.8	24.0	3.2	Complied

**Single Channel**