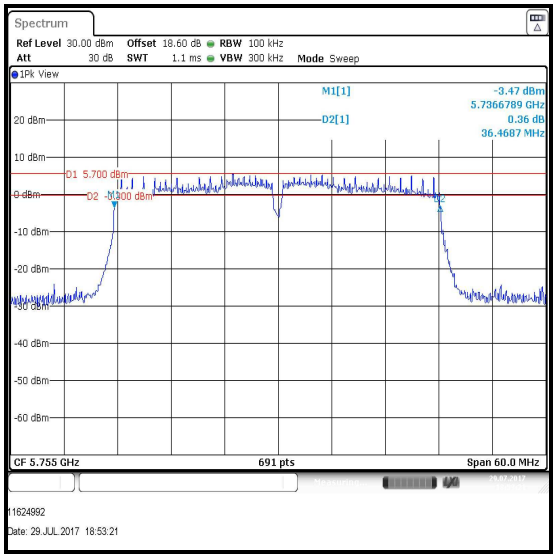
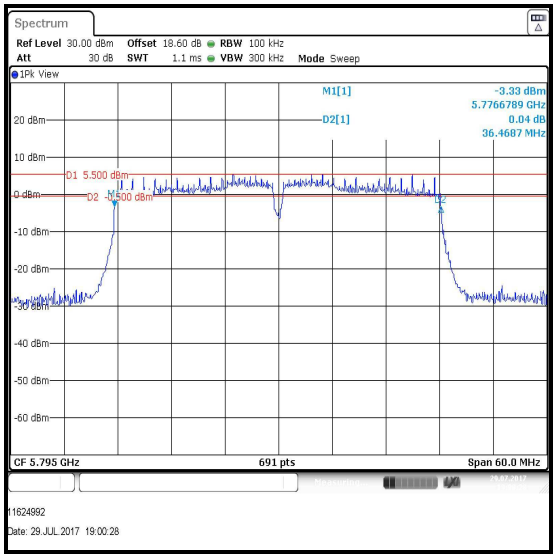
Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

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

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	36469	≥500	35969	Complied
Top	36469	≥500	35969	Complied



Bottom Channel

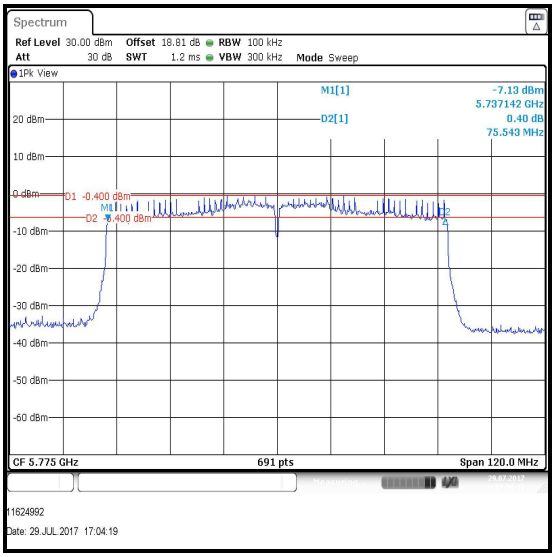


Top Channel

Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1 / Port 1

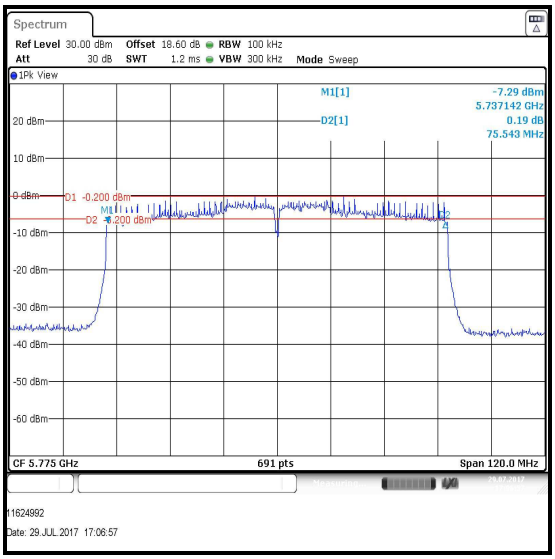
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Single	75543	≥500	75043	Complied



Single Channel

Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1 / Port 2

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Single	75543	≥500	75043	Complied



Single Channel

4.4. Transmitter Maximum Conducted Output Power

4.4.1 5.15-5.25 GHz band

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	07 July 2017 to 29 July 2017
Test Sample Serial Number:	C07TK02MJ4C7		

FCC Reference:	Part 15.407(a)(1)(iv)
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

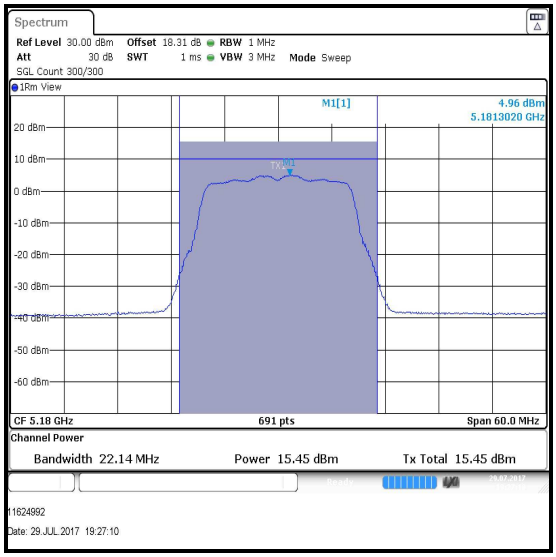
Note(s):

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 using configurations 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 E)1).
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.
8. The Part 15.407(a)(1)(iv) limit shall not exceed 250 mW (24.0 dBm).

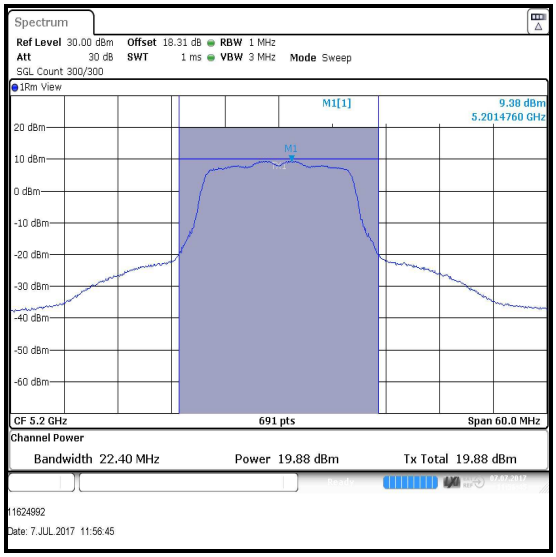
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

Results: 802.11a / 20 MHz / SISO / BPSK / 6 Mbit/s / Port 1

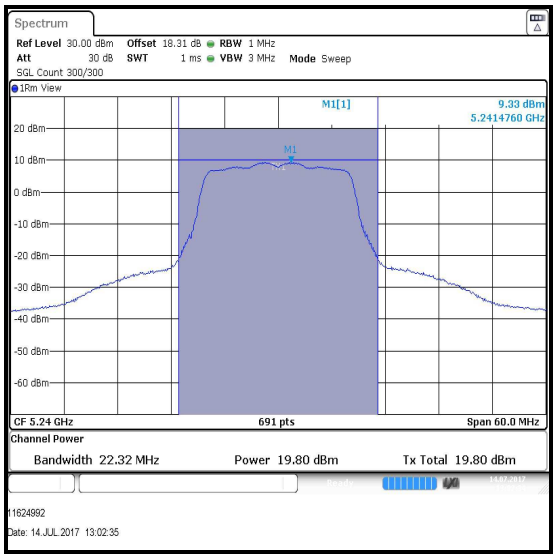
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	15.5	24.0	8.5	Complied
Middle	5200	19.9	24.0	4.1	Complied
Top	5240	19.8	24.0	4.2	Complied



Bottom Channel



Middle Channel

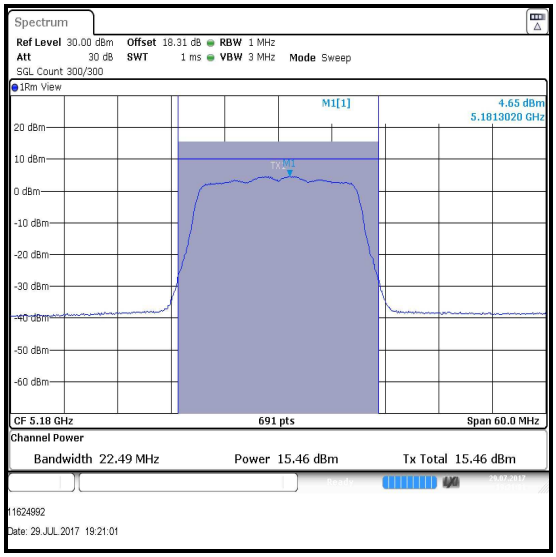


Top Channel

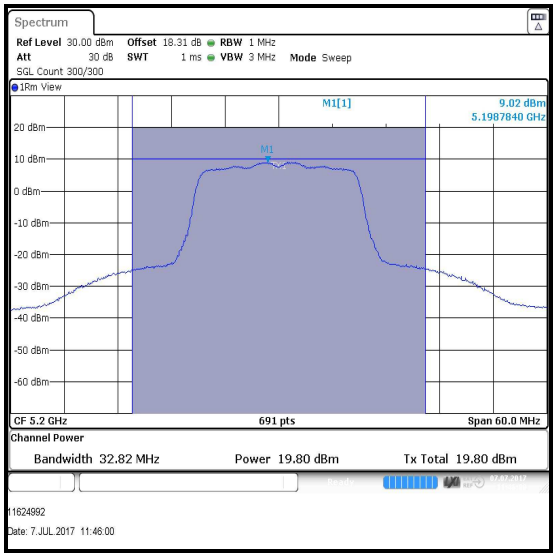
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

Results: 802.11n / 20 MHz / SISO / BPSK / MCS0 / Port 1

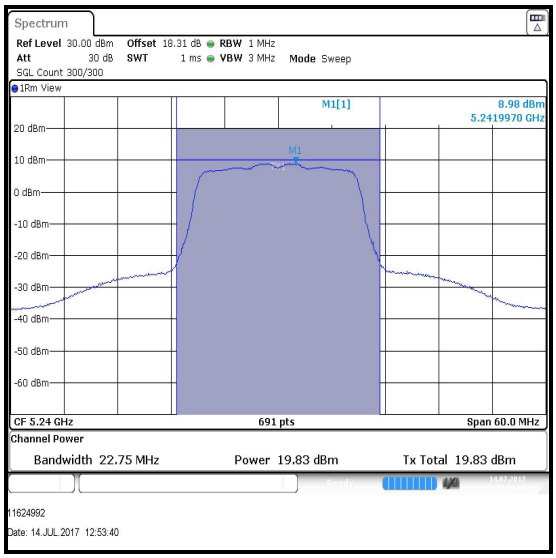
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	15.5	24.0	8.5	Complied
Middle	5200	19.8	24.0	4.2	Complied
Top	5240	19.8	24.0	4.2	Complied



Bottom Channel



Middle Channel

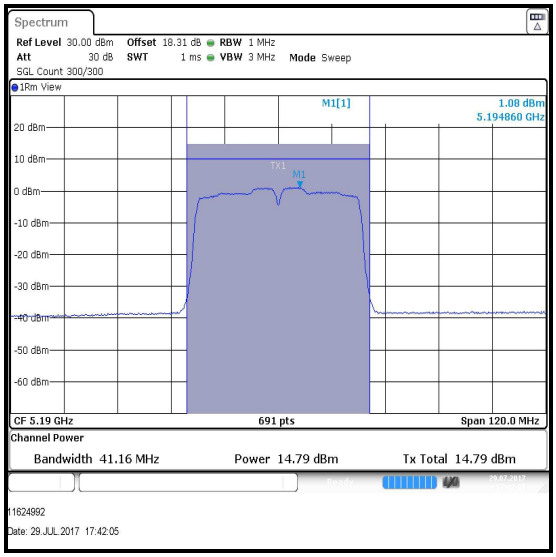


Top Channel

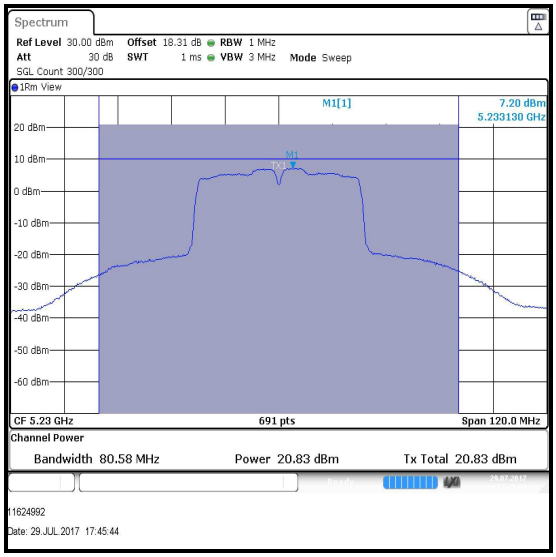
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

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

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5190	14.8	0.1	14.9	24.0	9.1	Complied
Top	5230	20.8	0.1	20.9	24.0	3.1	Complied



Bottom Channel

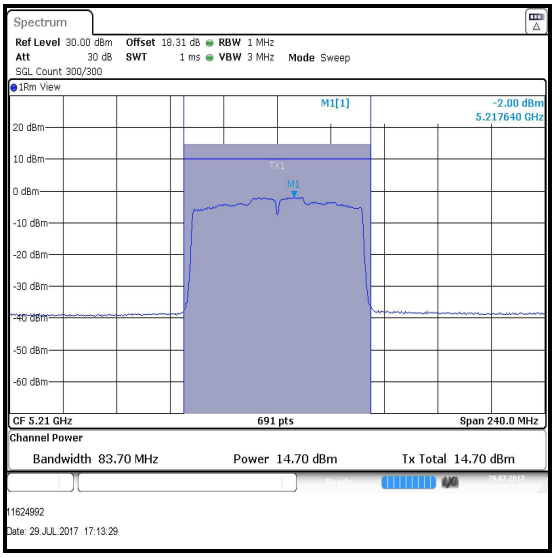


Top Channel

Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

Results: 802.11ac / 80 MHz / SISO / BPSK / MCS0x1 / Port 1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5210	14.7	0.2	14.9	24.0	9.1	Complied



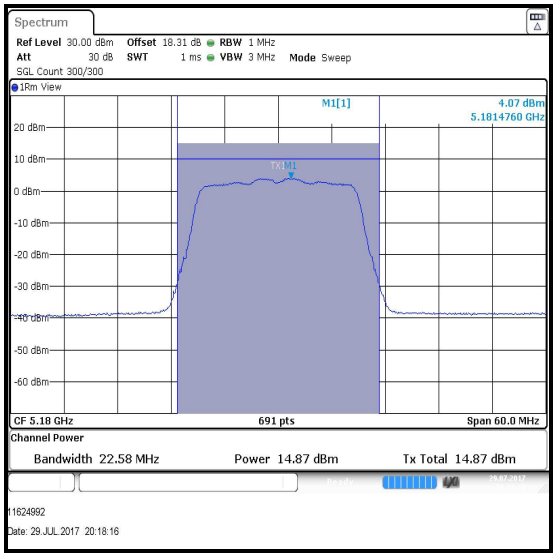
Single Channel

Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

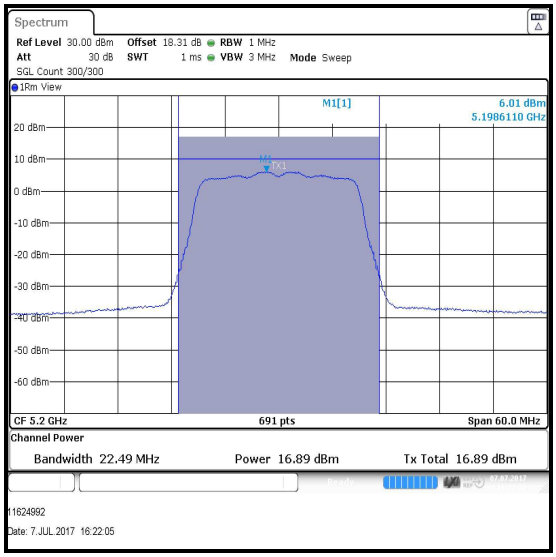
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power Port 1 (dBm)	Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	14.9	14.6	17.8	24.0	6.2	Complied
Middle	5200	16.9	16.7	19.8	24.0	4.2	Complied
Top	5240	17.0	16.5	19.8	24.0	4.2	Complied

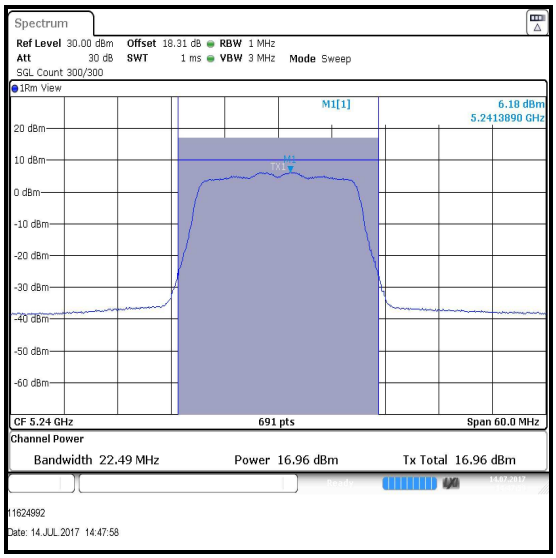
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 1



Bottom Channel



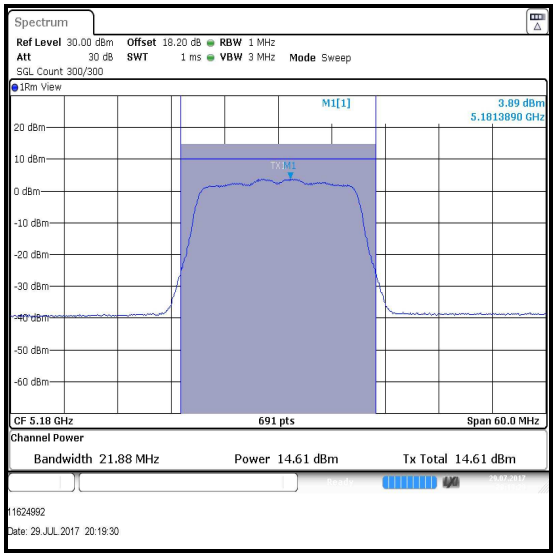
Middle Channel



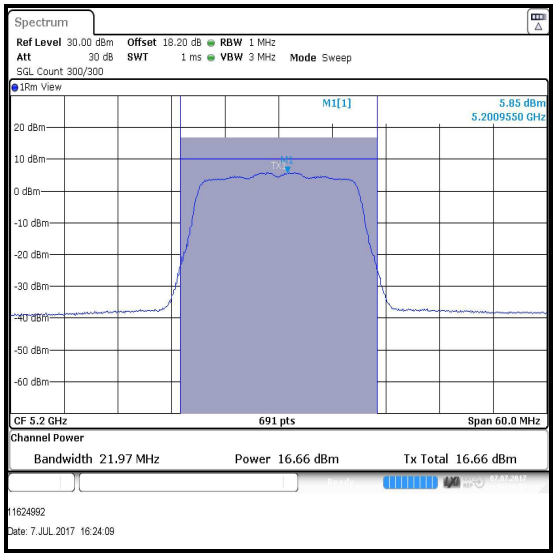
Top Channel

Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

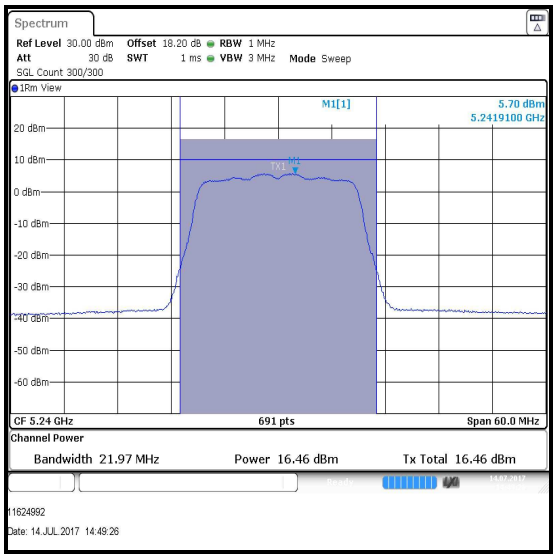
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 2



Bottom Channel



Middle Channel



Top Channel

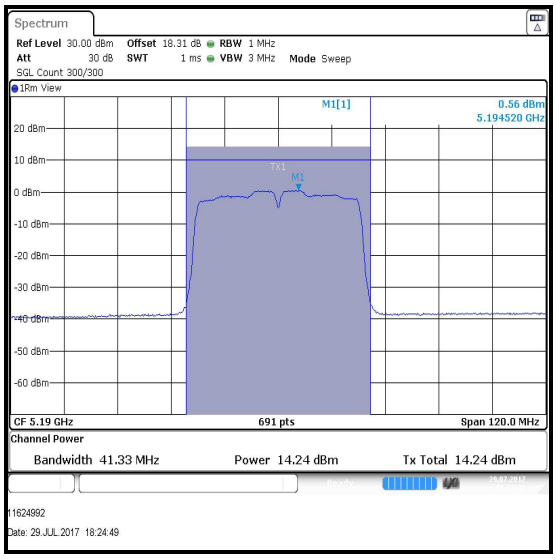
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

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

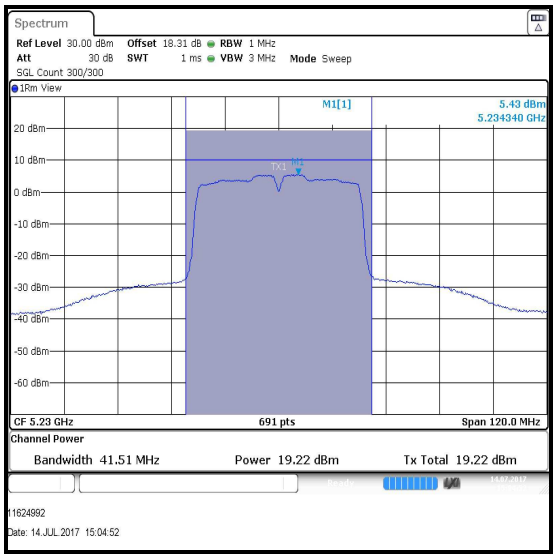
Channel	Frequency (MHz)	Port 1			Port 2		
		Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)	Conducted Power (dBm)	Duty Cycle correction (dB)	Corrected Conducted Power (dBm)
Bottom	5190	14.2	0.1	14.3	14.3	0.1	14.4
Top	5230	19.2	0.1	19.3	19.1	0.1	19.2

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	5190	14.3	14.4	17.4	24.0	6.6	Complied
Top	5230	19.3	19.2	22.3	24.0	1.7	Complied

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



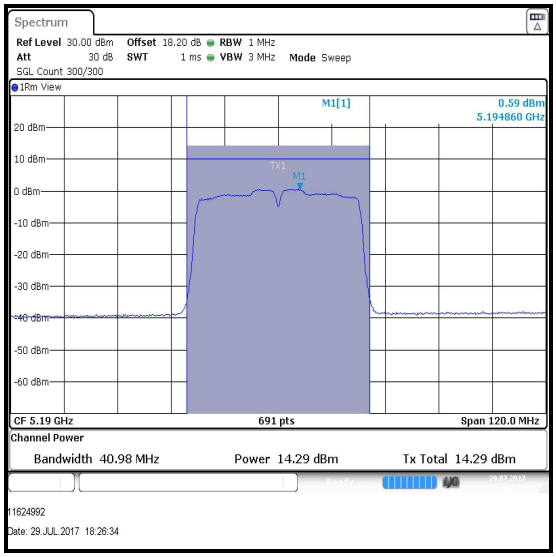
Bottom Channel



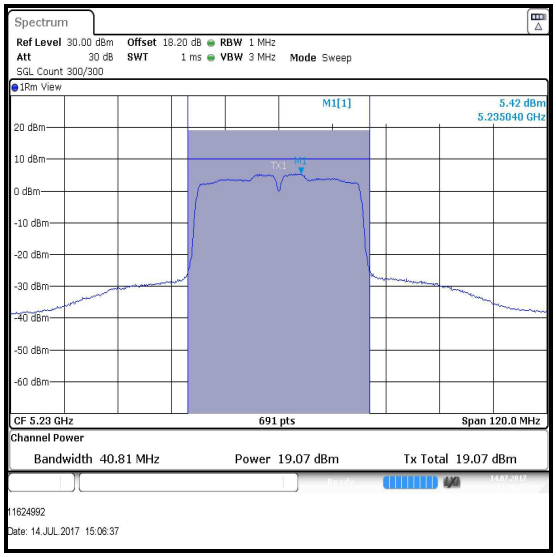
Top Channel

Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

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



Bottom Channel



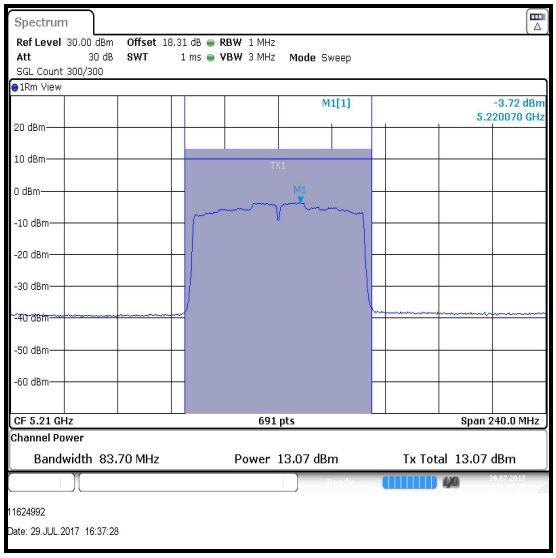
Top Channel

Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

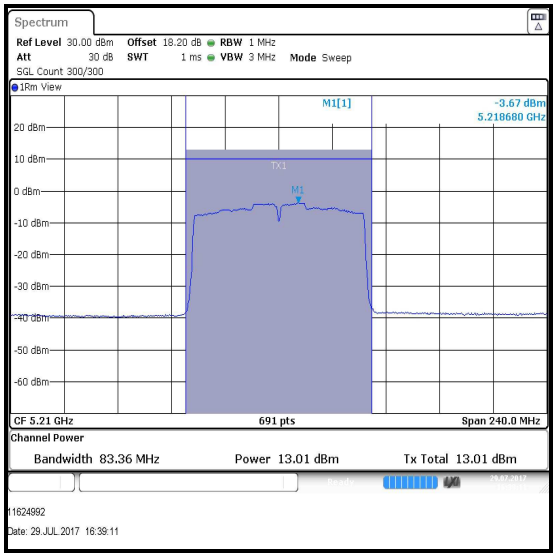
Results: 802.11ac / 80 MHz / MIMO / BPSK / MCS0x1

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	5210	13.1	0.2	13.3	13.0	0.2	13.2

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	5210	13.3	13.2	16.3	24.0	7.7	Complied



Single Channel / Port 1



Single Channel / Port 2

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band)

4.4.2 5.25-5.35 GHz band

Test Summary:

Test Engineer:	Georgios Vrezas	**Test Dates:**	07 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 E)1).
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.
8. The Part 15.407(a)(1)(iv) 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 dBm + 10 $\log_{10}$ B, where B is the previously measured 26 dB emission bandwidth in MHz. For U-NII-2A band, the 26 dB EBW is greater than 20 MHz.

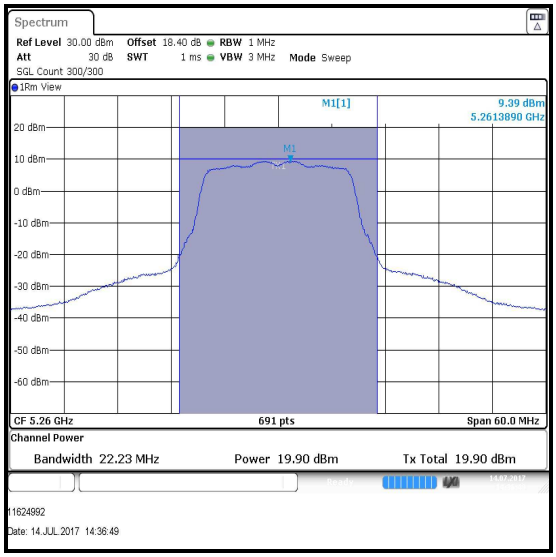
$$\text{For } B \geq 20 \text{ MHz} \rightarrow$$
$$\rightarrow \log_{10} B \geq \log_{10} 20 \rightarrow$$
$$\rightarrow 10 \log_{10} B \geq 10 \log_{10} 20 \rightarrow$$
$$\rightarrow 11 + 10 \log_{10} B \geq 11 + 10 \log_{10} 20 \rightarrow$$
$$\rightarrow 11 + 10 \log_{10} B \geq 24.0 \text{ dBm}$$

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.

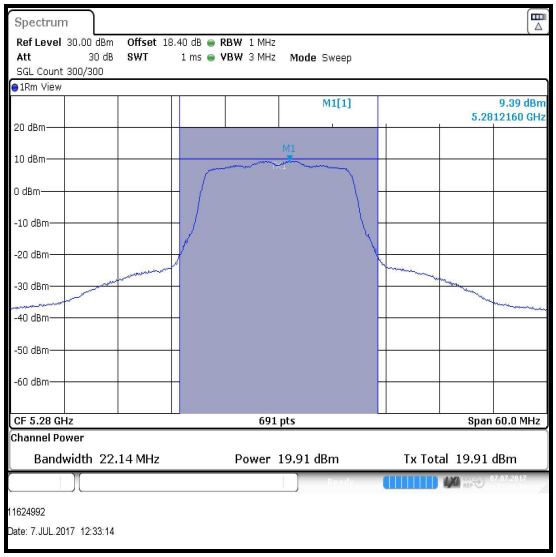
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / SISO / BPSK / 6 Mbit/s / Port 1

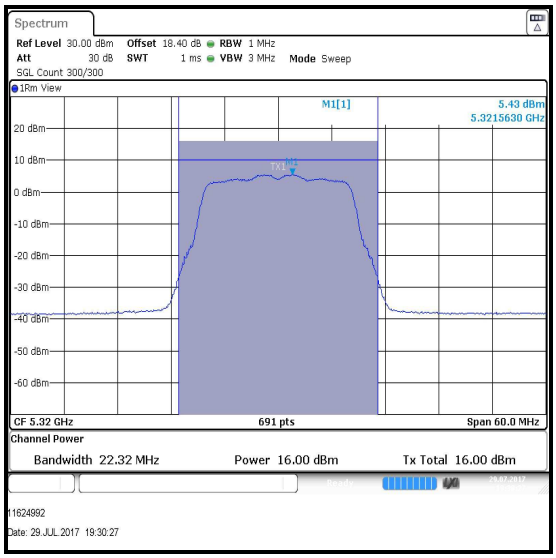
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	19.9	24.0	4.1	Complied
Middle	5280	19.9	24.0	4.1	Complied
Top	5320	16.0	24.0	8.0	Complied



Bottom Channel



Middle Channel

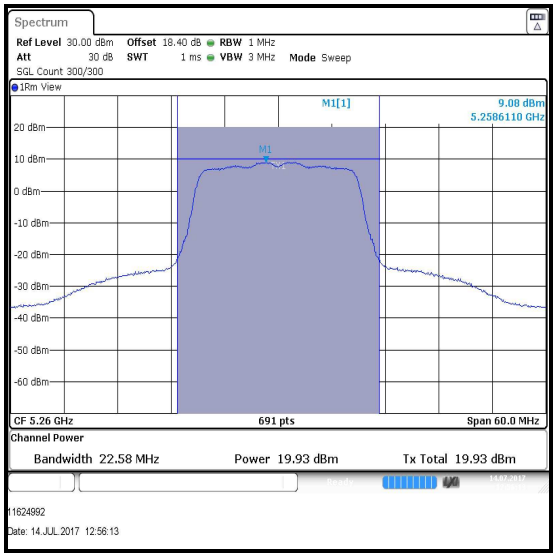


Top Channel

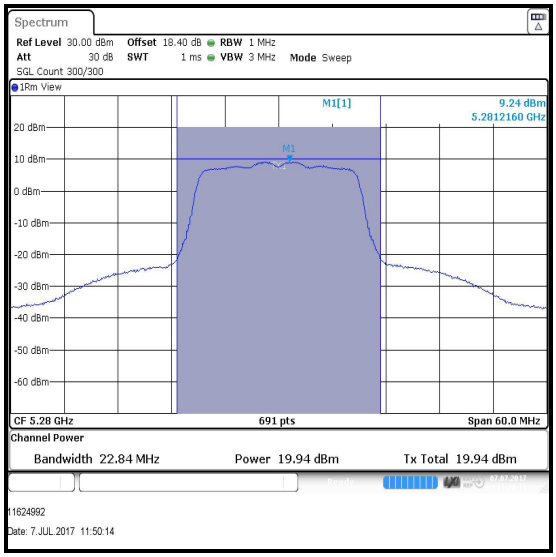
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / SISO / BPSK / MCS0 / Port 1

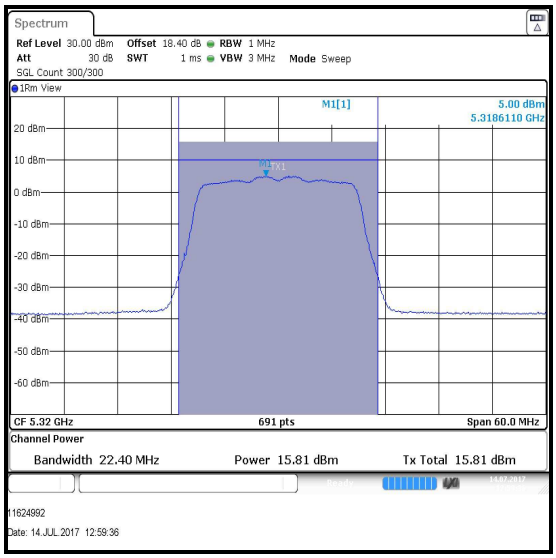
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	19.9	24.0	4.1	Complied
Middle	5280	19.9	24.0	4.1	Complied
Top	5320	15.8	24.0	8.2	Complied



Bottom Channel



Middle Channel

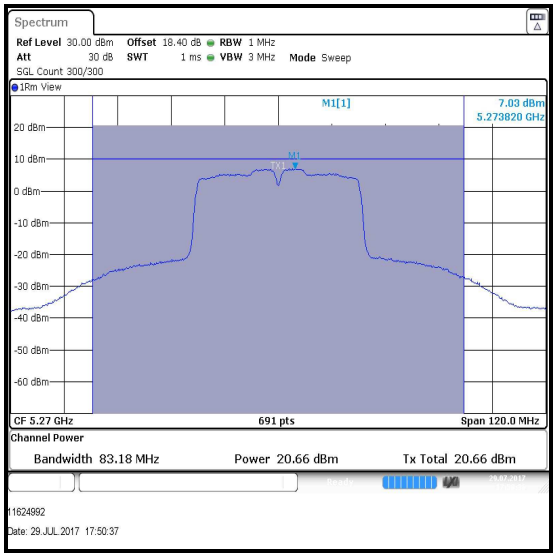


Top Channel

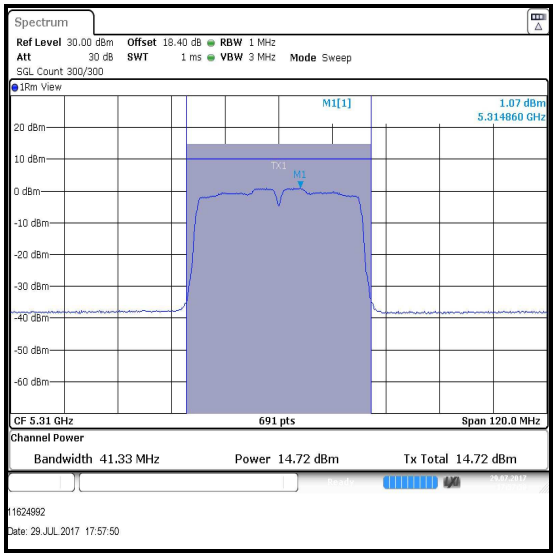
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

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

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5270	20.7	0.1	20.8	24.0	3.2	Complied
Top	5310	14.7	0.1	14.8	24.0	9.2	Complied



Bottom Channel

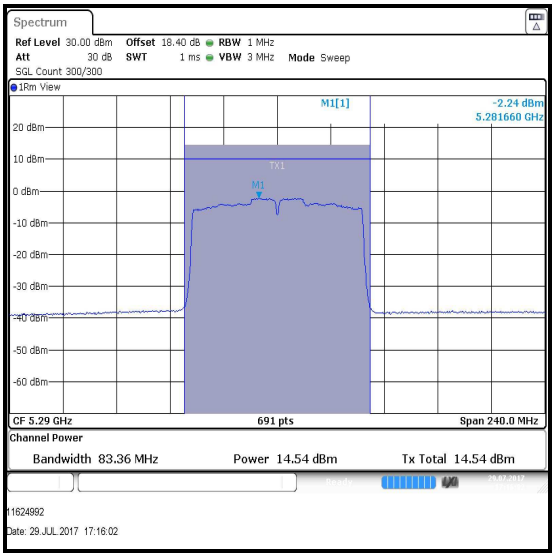


Top Channel

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / SISO / BPSK / MCS0x1 / Port 1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5290	14.5	0.2	14.7	24.0	9.3	Complied



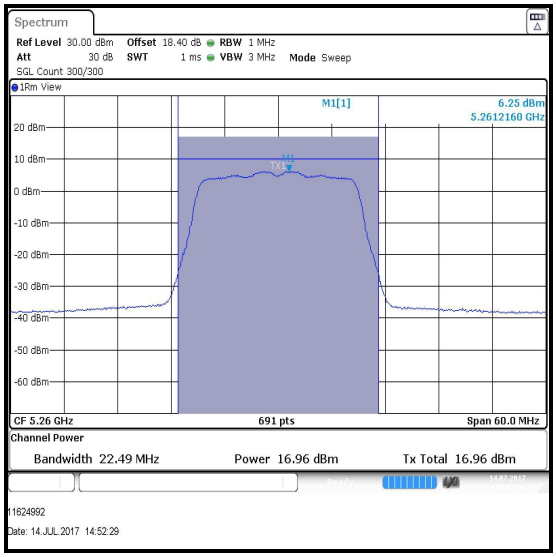
Single Channel

Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

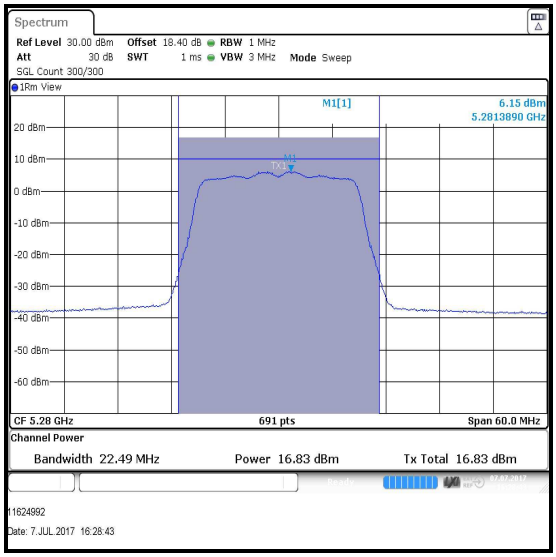
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power Port 1 (dBm)	Conducted Power Port 2 (dBm)	Combined Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	17.0	16.5	19.8	24.0	4.2	Complied
Middle	5280	16.8	16.2	19.5	24.0	4.5	Complied
Top	5320	14.5	14.0	17.3	24.0	6.7	Complied

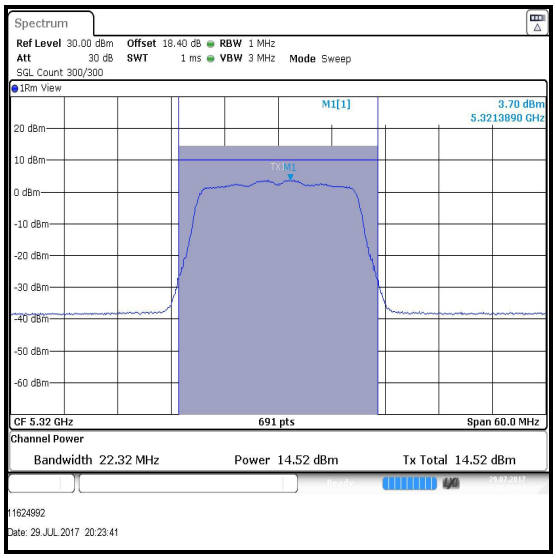
Results: 802.11n / 20 MHz / MIMO / BPSK / MCS0 / Port 1



Bottom Channel



Middle Channel



Top Channel