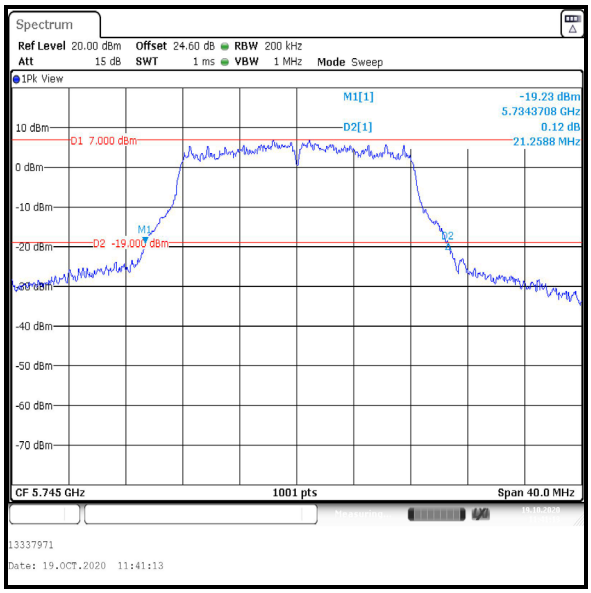
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

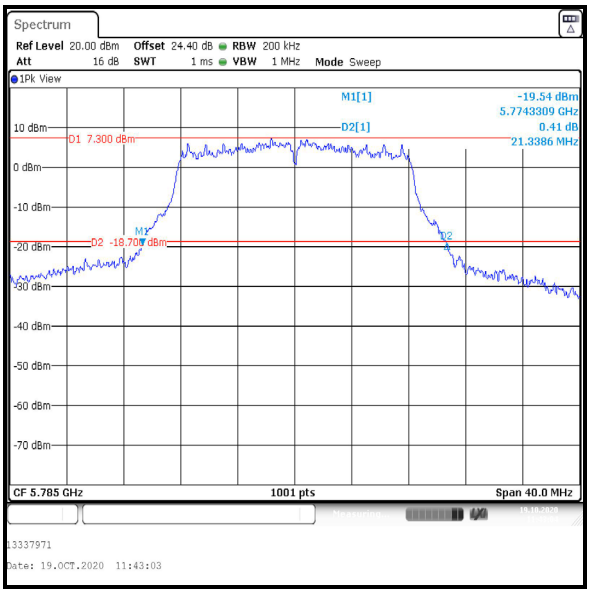
4.2.4. 5.725-5.85 GHz band

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

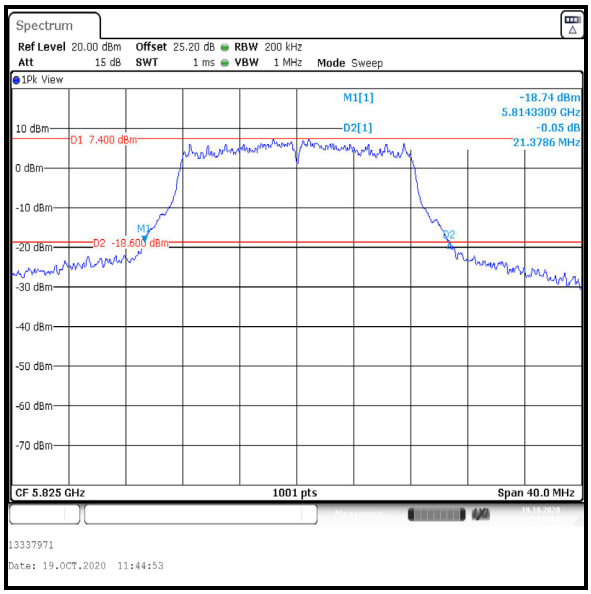
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5745	21.259
Middle	5785	21.339
Top	5825	21.379



Bottom Channel



Middle Channel

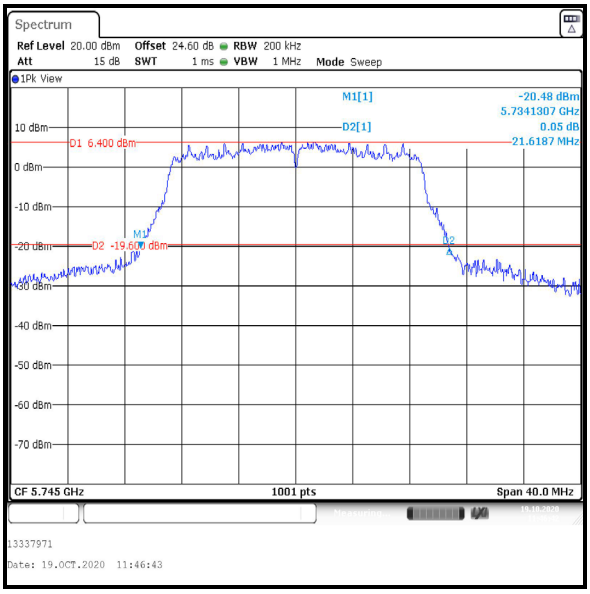


Top Channel

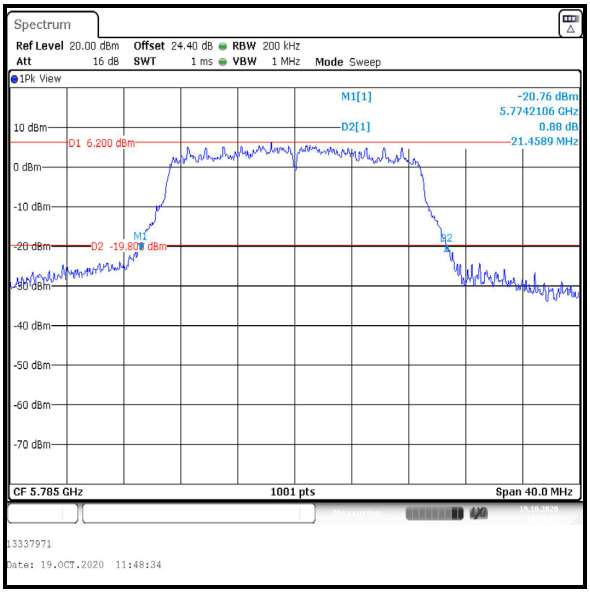
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

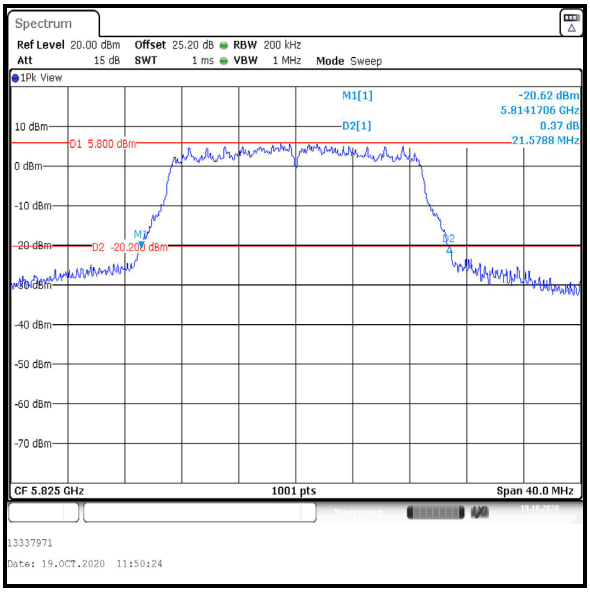
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5745	21.619
Middle	5785	21.459
Top	5825	21.579



Bottom Channel



Middle Channel

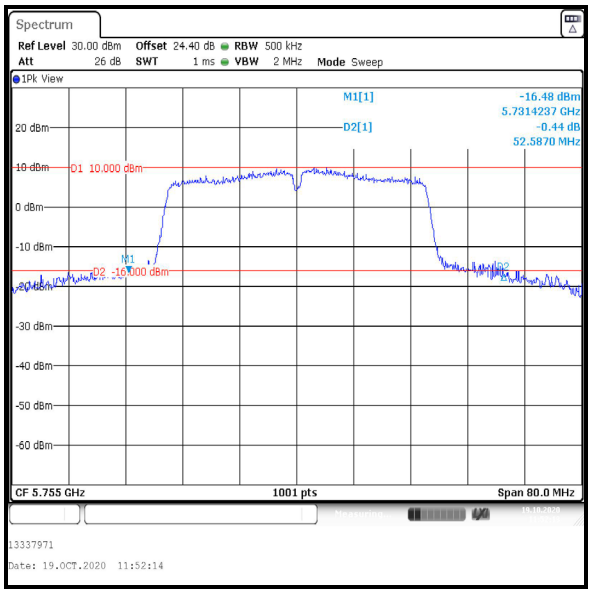


Top Channel

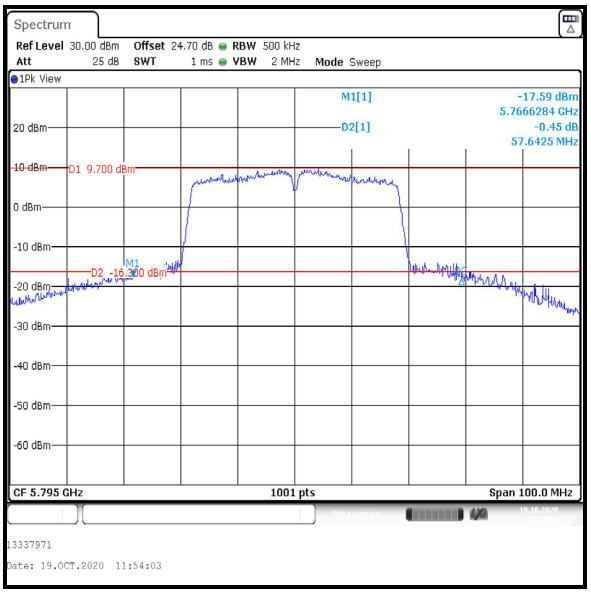
Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5755	52.587
Top	5795	57.643



Bottom Channel

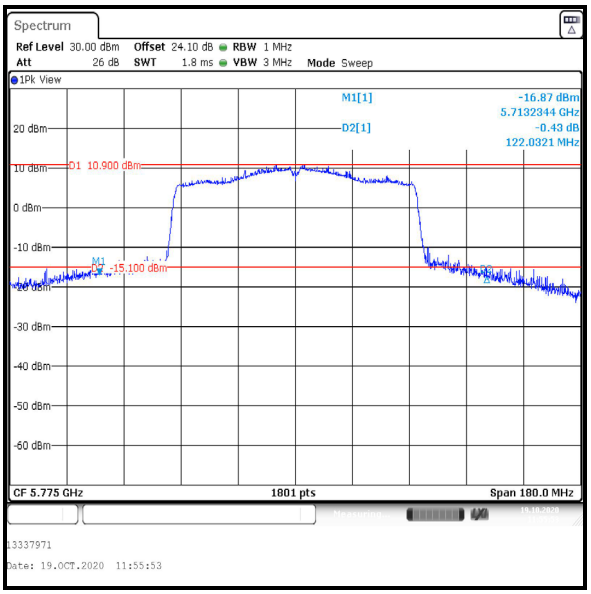


Top Channel

Transmitter 26 dB Emission Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802. 11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5775	122.032



Single Channel

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

Test Summary:

Test Engineer:	Max Passell	**Test Date:**	19 October 2020
Test Sample Serial Number:	3157589		

FCC Reference:	Part 15.407(e)
Test Method Used:	KDB 789033 D02 Section II.C.2.

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

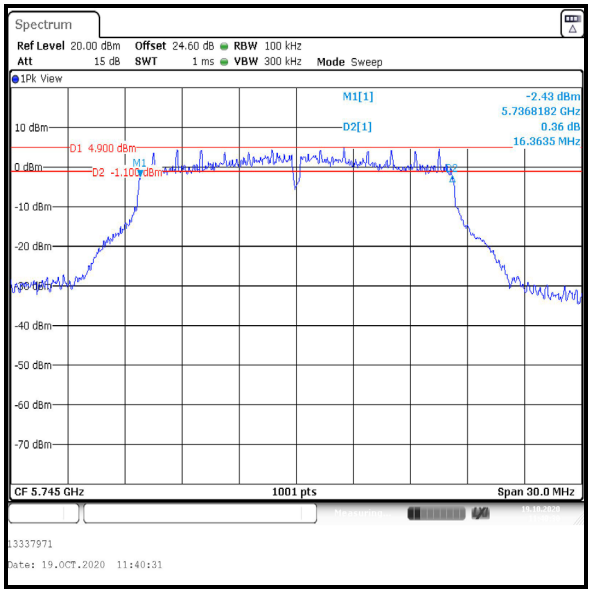
1. Measurements were performed in accordance with KDB 789033 Section II.C.2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz measurement procedure on the relevant channels in all supported operating bands.
2. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable 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.

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

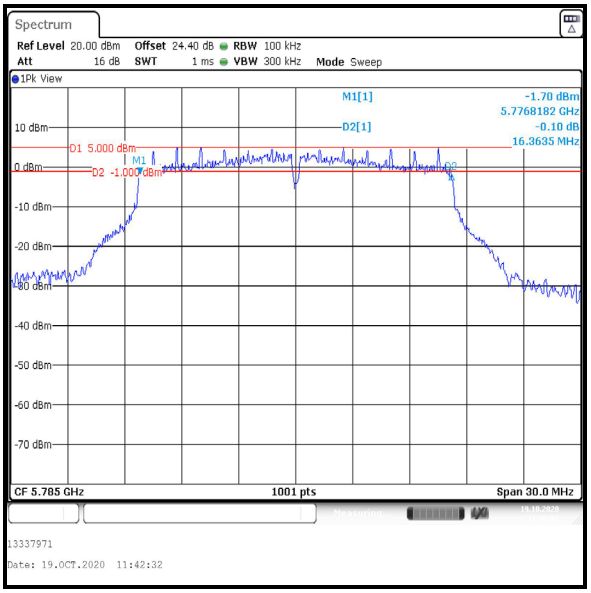
4.3.1. 5.725-5.85 GHz band

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

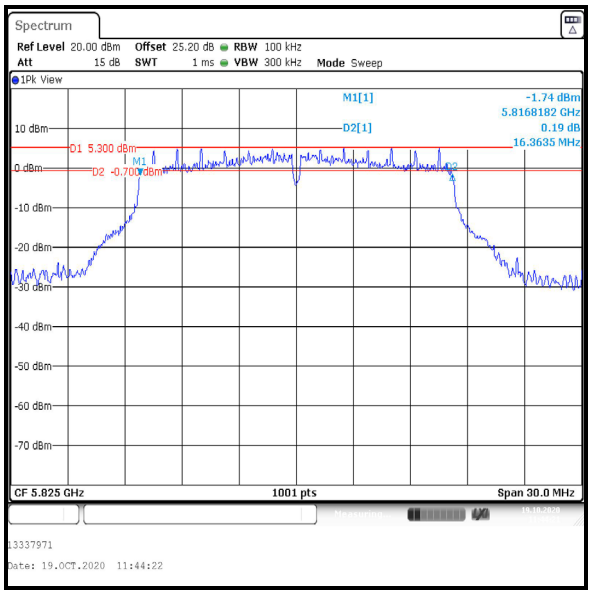
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	16364	≥500	15864	Complied
Middle	16364	≥500	15864	Complied
Top	16364	≥500	15864	Complied



Bottom Channel



Middle Channel

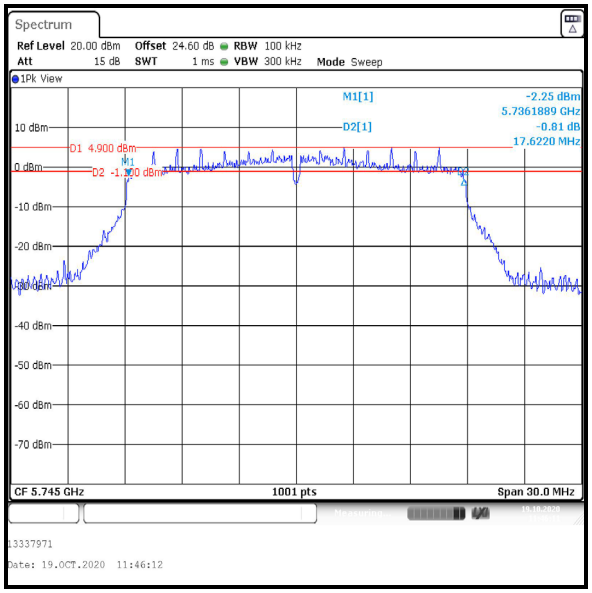


Top Channel

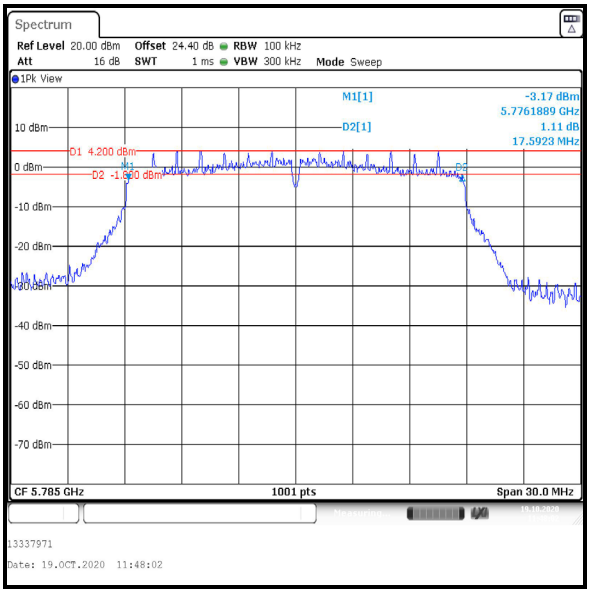
Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

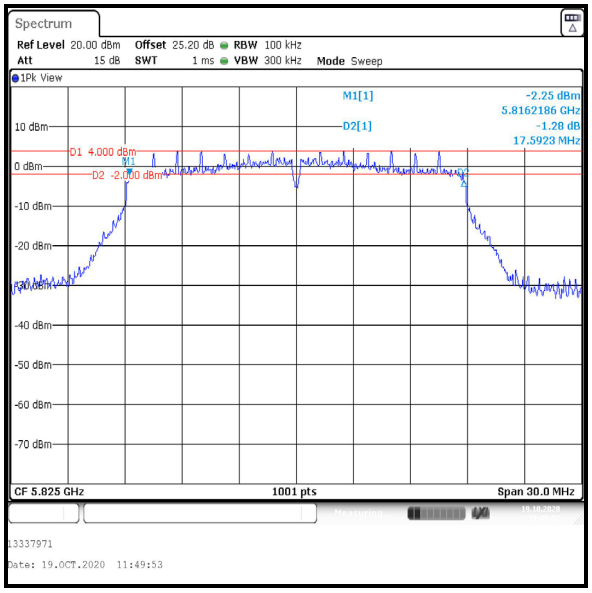
Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	17622	≥500	17122	Complied
Middle	17592	≥500	17092	Complied
Top	17592	≥500	17092	Complied



Bottom Channel



Middle Channel

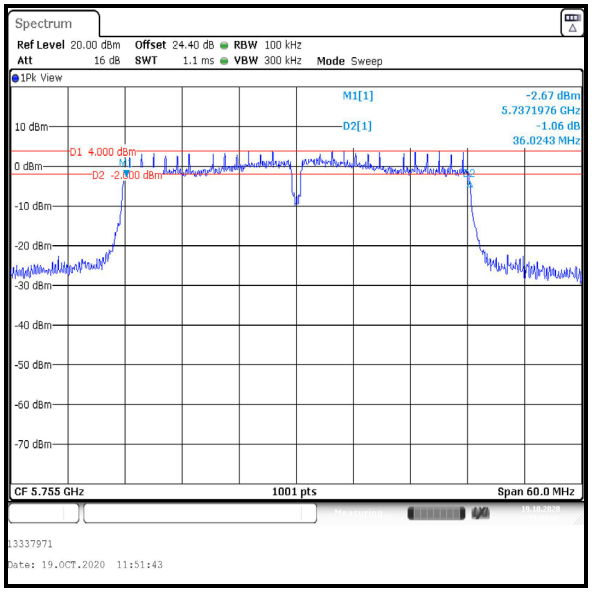


Top Channel

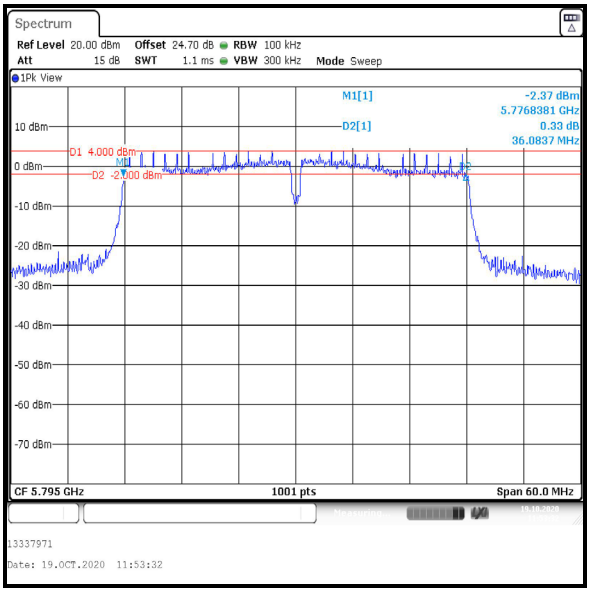
Transmitter Minimum 6 dB Bandwidth (5.725-5.85 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Bottom	36024	≥500	35524	Complied
Top	36084	≥500	35584	Complied



Bottom Channel

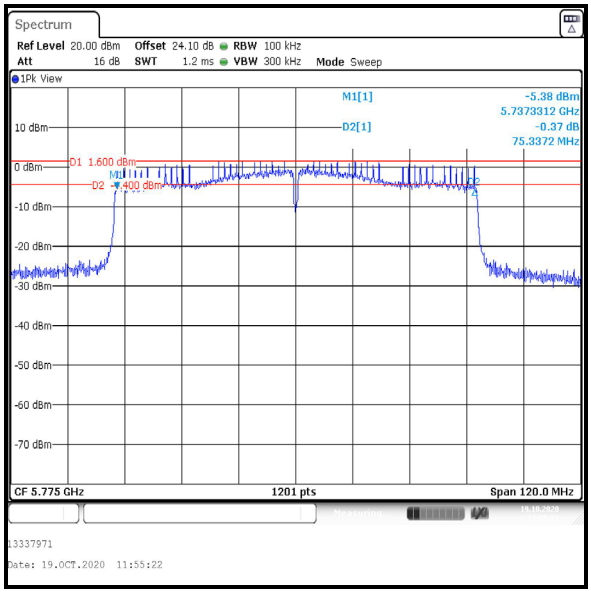


Top Channel

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

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	6 dB Bandwidth (kHz)	Limit (kHz)	Margin (kHz)	Result
Single	75337	≥500	74837	Complied



Single Channel

4.4. Transmitter Maximum Conducted Output Power

4.4.1. 5.15-5.25 GHz band

Test Summary:

Test Engineer:	Max Passell	**Test Date:**	19 October 2020
Test Sample Serial Number:	3157589		

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):	24
Relative Humidity (%):	42

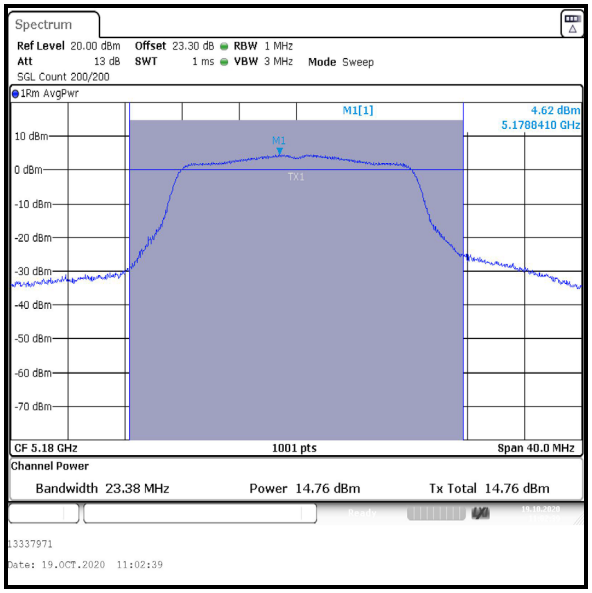
Note(s):

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 26 dB emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 200 traces performed. The span was set to encompass the entire 26 dB emission bandwidth. The channel power results are recorded in the tables below.
2. 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.
3. The Part 15.407(a)(1)(iv) limit shall not exceed 250 mW (24.0 dBm).
4. For all modes of operation, the antenna gain is < 6 dBi.
5. 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.

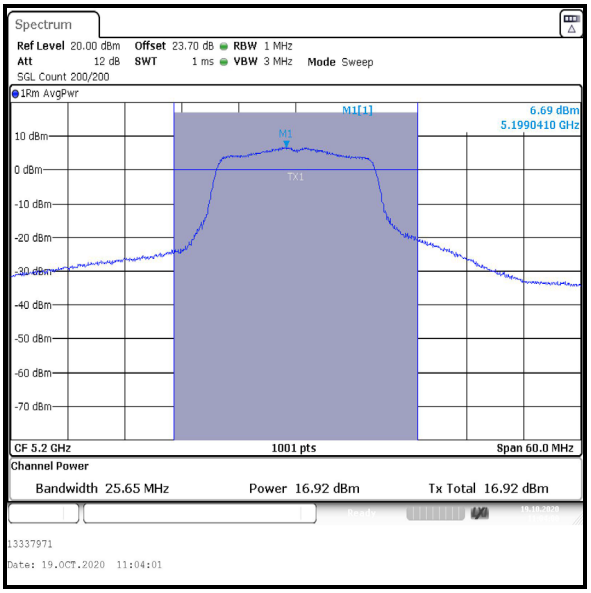
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

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

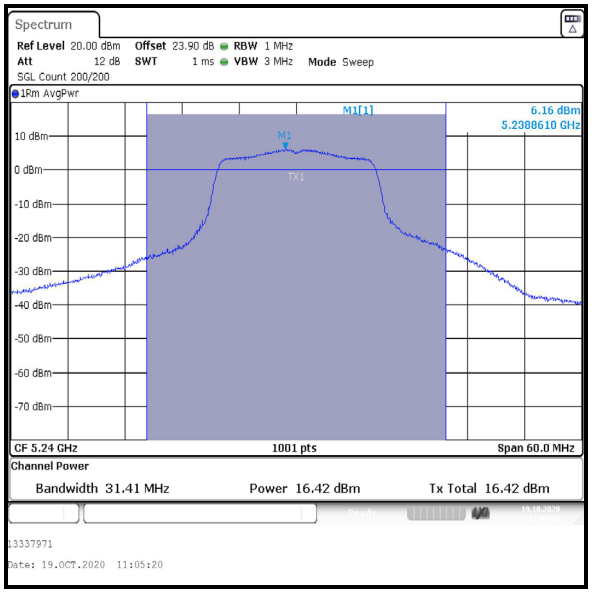
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	14.8	24.0	9.2	Complied
Middle	5200	16.9	24.0	7.1	Complied
Top	5240	16.4	24.0	7.6	Complied



Bottom Channel



Middle Channel

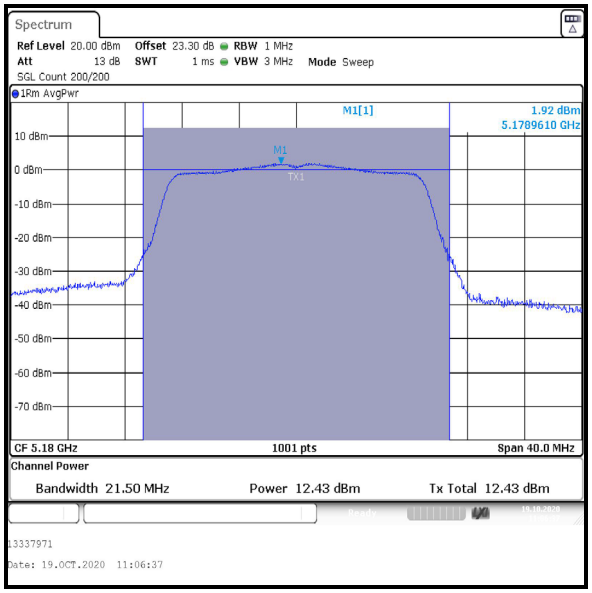


Top Channel

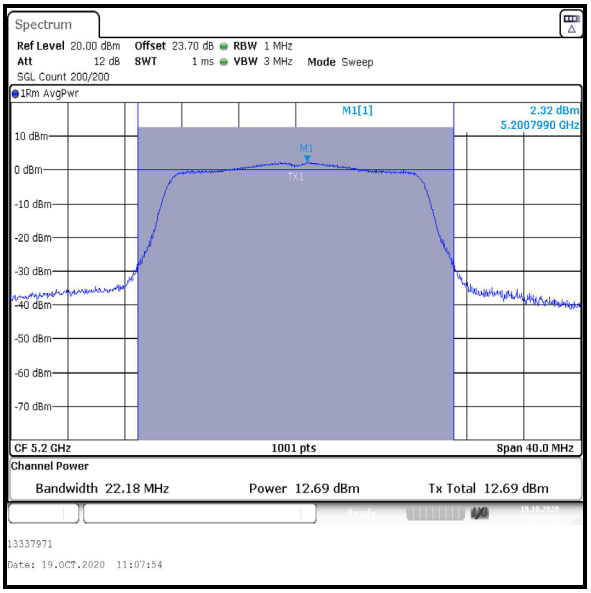
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

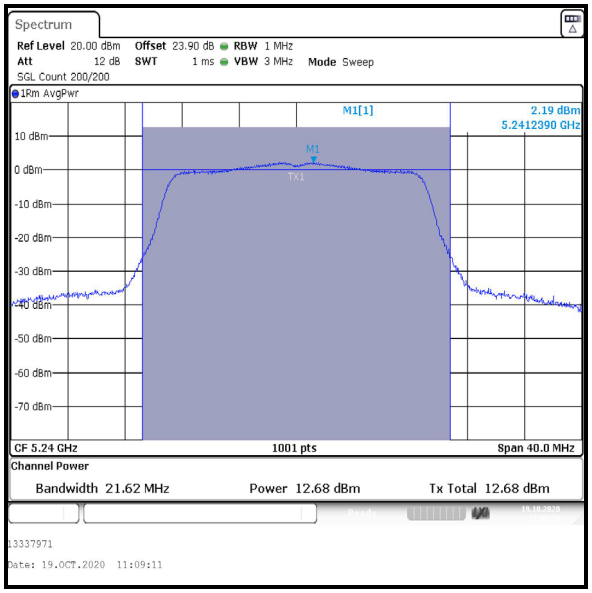
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5180	12.4	24.0	11.6	Complied
Middle	5200	12.7	24.0	11.3	Complied
Top	5240	12.7	24.0	11.3	Complied



Bottom Channel



Middle Channel

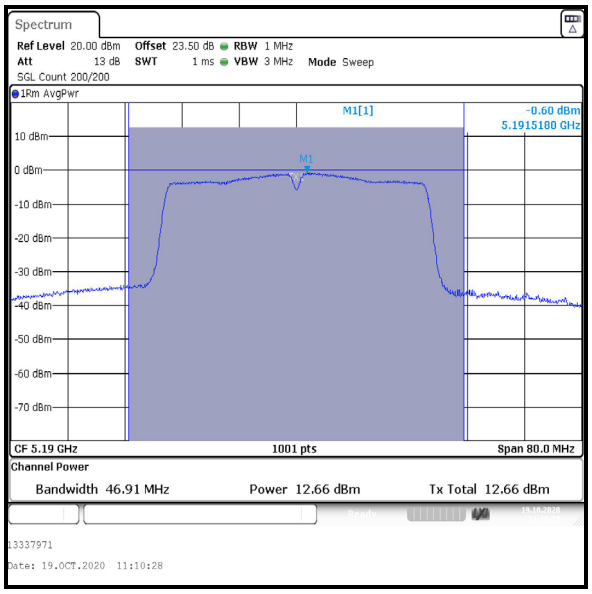


Top Channel

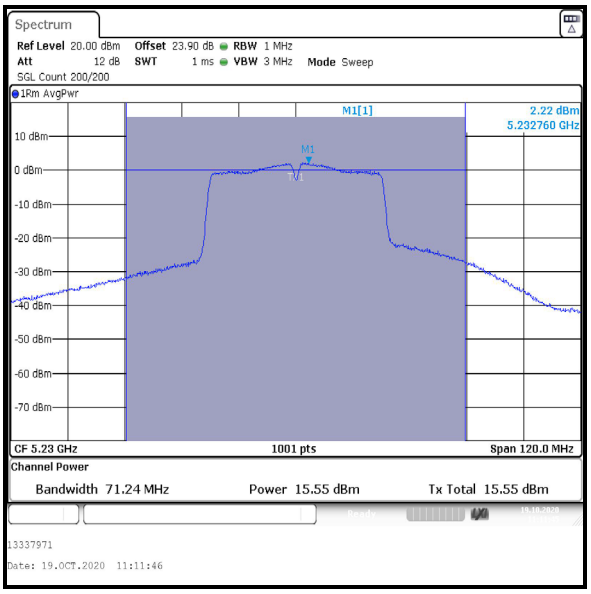
Transmitter Maximum Conducted Output Power (5.15-5.25 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5190	12.7	0.1	12.8	24.0	11.2	Complied
Top	5230	15.6	0.1	15.7	24.0	8.3	Complied



Bottom Channel

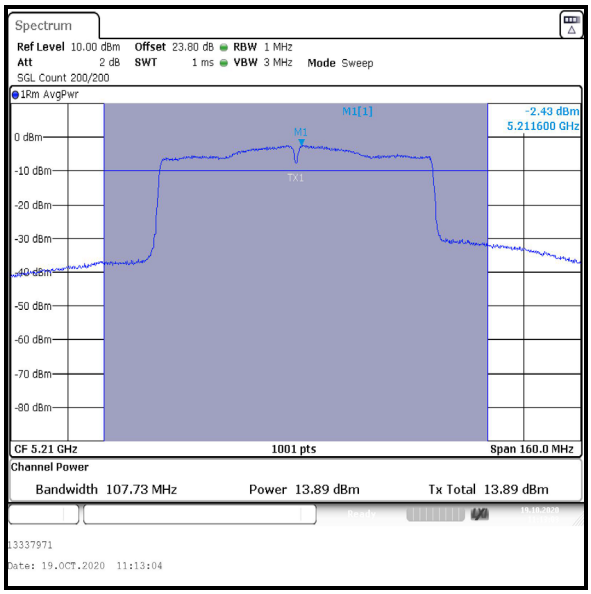


Top Channel

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

Results: 802.11ac / 80 MHz / BPSK / MCS0x1

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Single	5210	13.9	0.2	14.1	24.0	9.9	Complied



Single Channel

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

4.4.2. 5.25-5.35 GHz band

Test Summary:

Test Engineer:	Max Passell	**Test Date:**	19 October 2020
Test Sample Serial Number:	3157589		

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):	24
Relative Humidity (%):	42

Note(s):

1. For conducted power tests where the duty cycle is >98%, the measurements were performed using a signal analyser in accordance with KDB 789033 II.E.2.b) Method SA-1. Where the duty cycle is <98%, the measurements were performed in accordance with KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 26 dB emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 200 traces performed. The span was set to encompass the entire 26 dB emission bandwidth. The channel power results are recorded in the tables below.
2. 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.
3. 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.

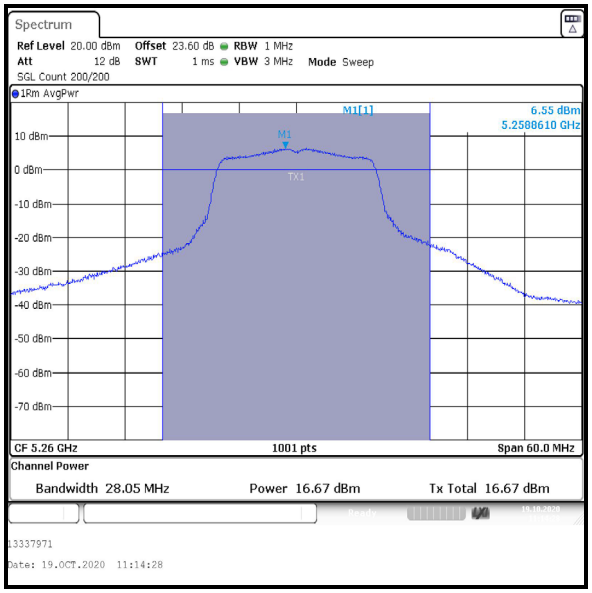
$$\text{For B} > 20\ \text{MHz} \rightarrow$$
$$\rightarrow \log_{10} \text{B} > \log_{10} 20 \rightarrow$$
$$\rightarrow 10 \log_{10} \text{B} > 10 \log_{10} 20 \rightarrow$$
$$\rightarrow 11 + 10 \log_{10} \text{B} > 11 + 10 \log_{10} 20 \rightarrow$$
$$\rightarrow 11 + 10 \log_{10} \text{B} > 24.0\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

   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.
4. For all modes of operation, the antenna gain is < 6 dBi.
5. 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.

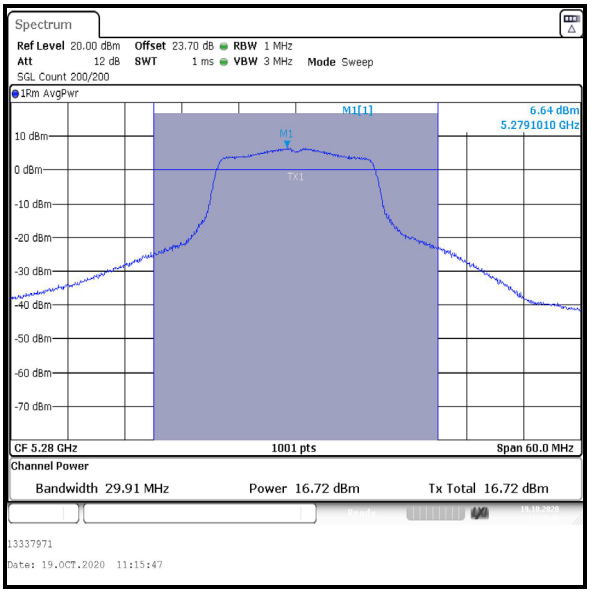
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

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

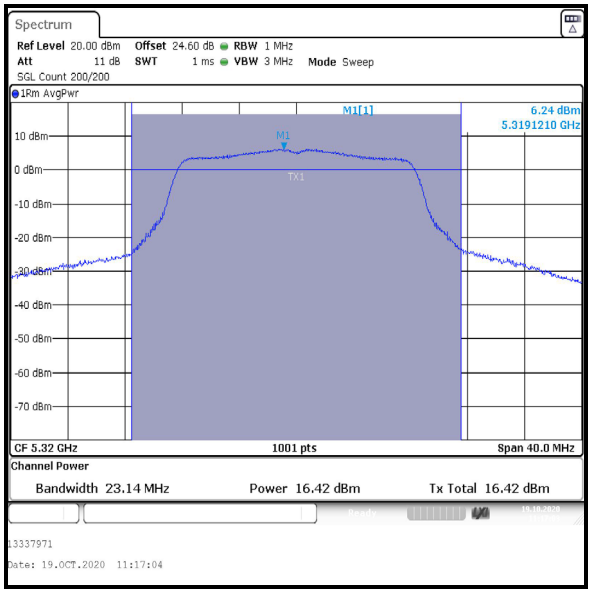
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	16.7	24.0	7.3	Complied
Middle	5280	16.7	24.0	7.3	Complied
Top	5320	16.4	24.0	7.6	Complied



Bottom Channel



Middle Channel

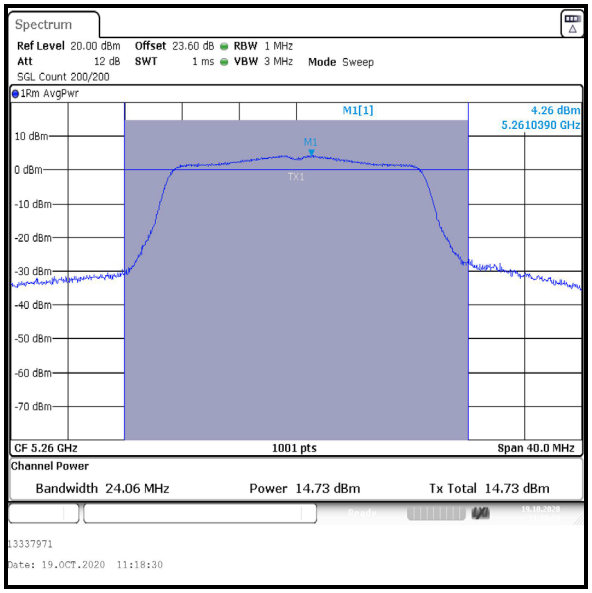


Top Channel

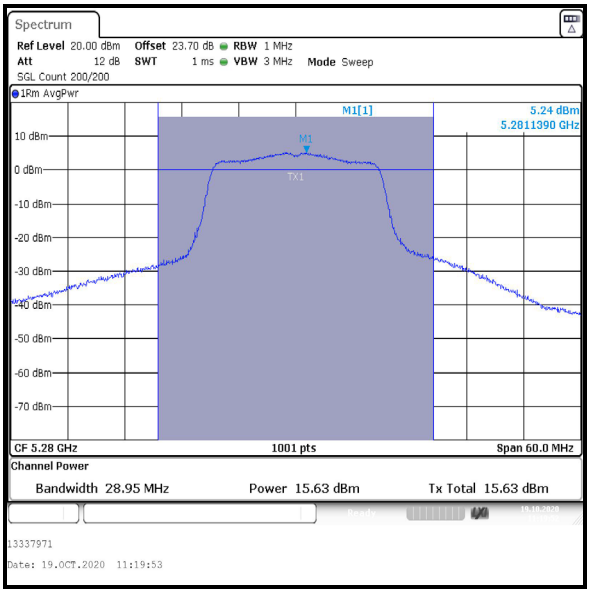
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / BPSK / MCS0

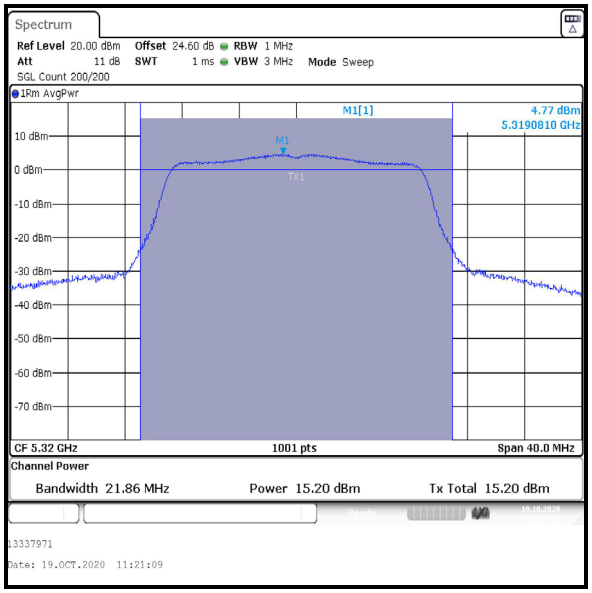
Channel	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5260	14.7	24.0	9.3	Complied
Middle	5280	15.6	24.0	8.4	Complied
Top	5320	15.2	24.0	8.8	Complied



Bottom Channel



Middle Channel

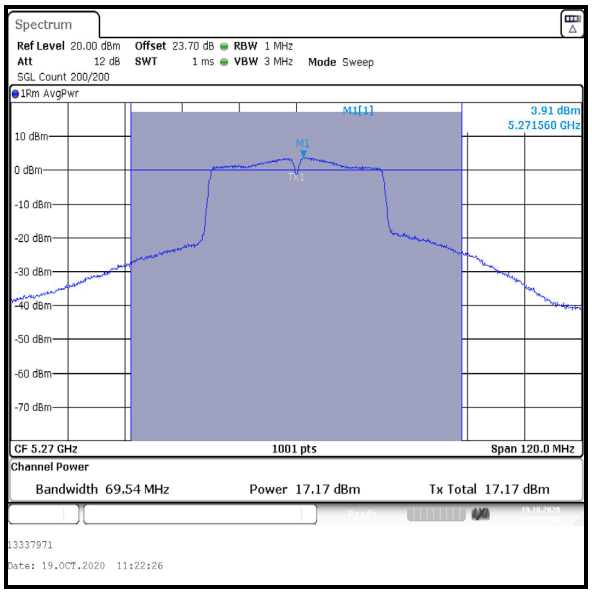


Top Channel

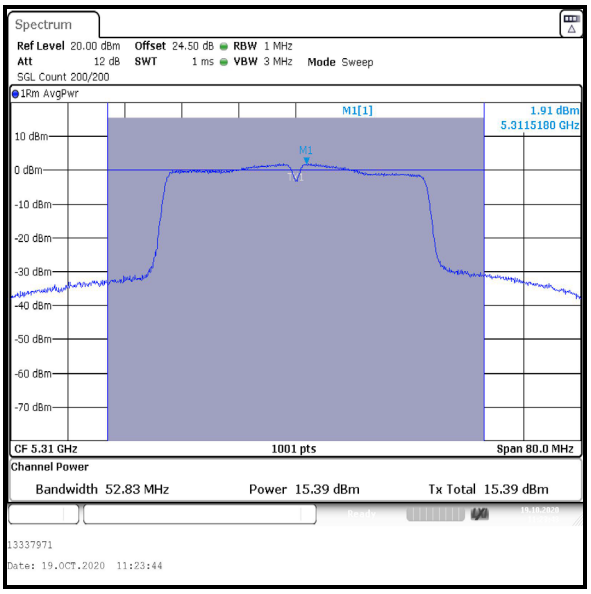
Transmitter Maximum Conducted Output Power (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / BPSK / MCS0

Channel	Frequency (MHz)	Conducted Power (dBm)	Duty cycle correction factor (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	5270	17.2	0.1	17.3	24.0	6.7	Complied
Top	5310	15.4	0.1	15.5	24.0	8.5	Complied



Bottom Channel



Top Channel