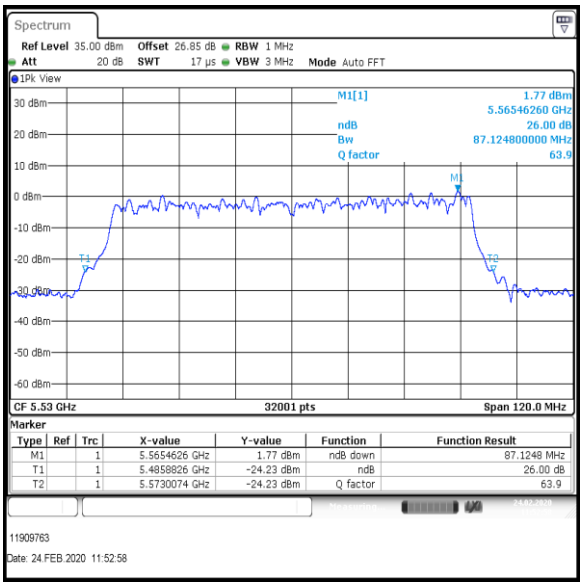
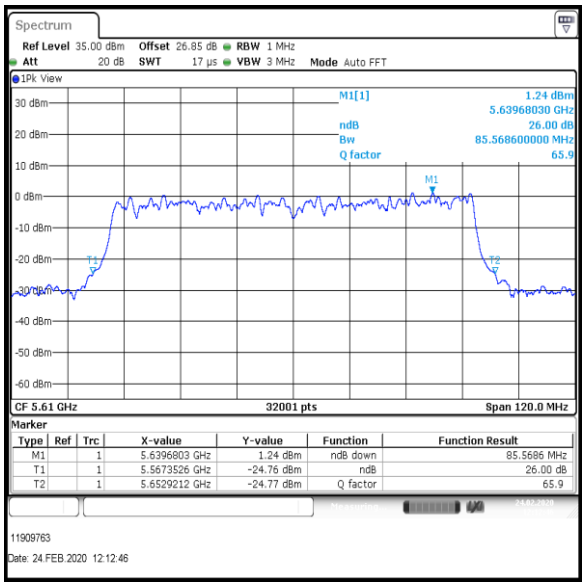
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS3 / MIMO / Port 1+2+3+4 / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	87.125
Top	5610	85.569



Bottom Channel



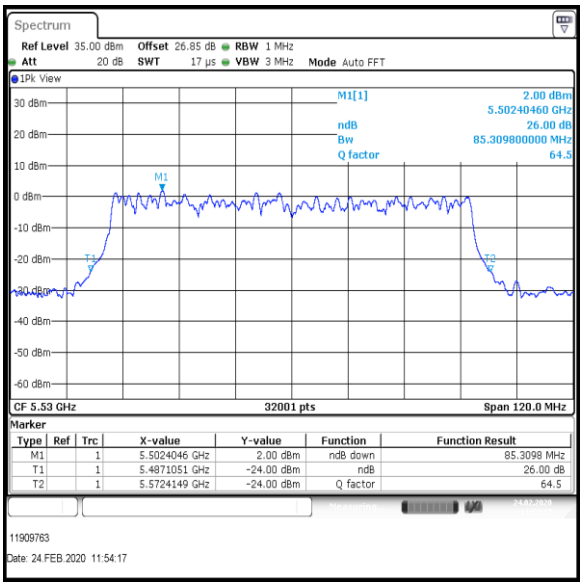
Top Channel

Result: Pass

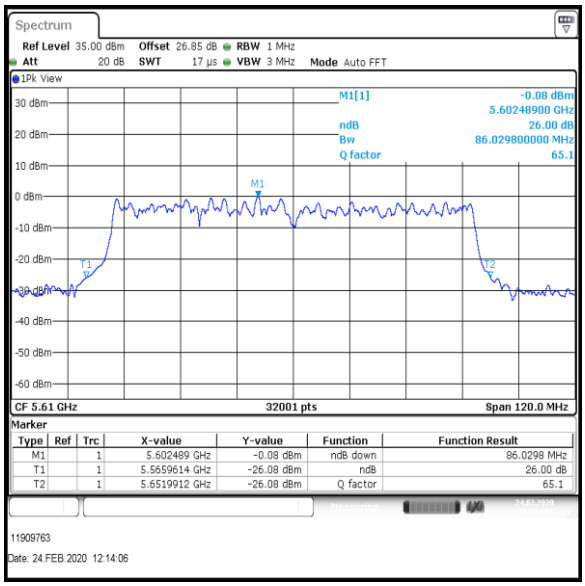
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS3 / MIMO / Port 1+2+3+4 / Port 2 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	85.309
Top	5610	86.029



Bottom Channel



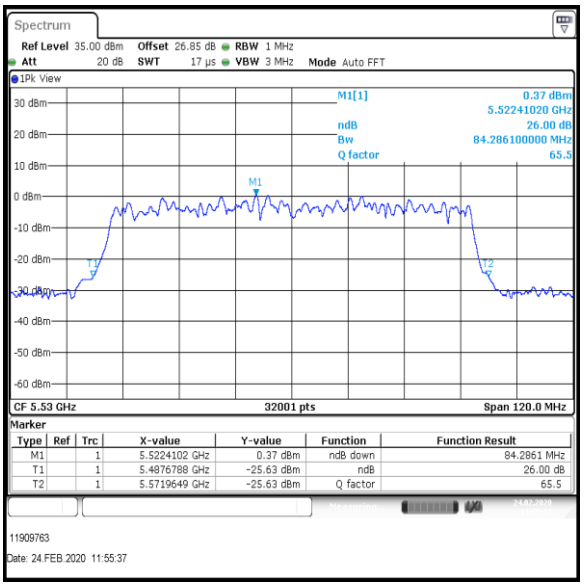
Top Channel

Result: Pass

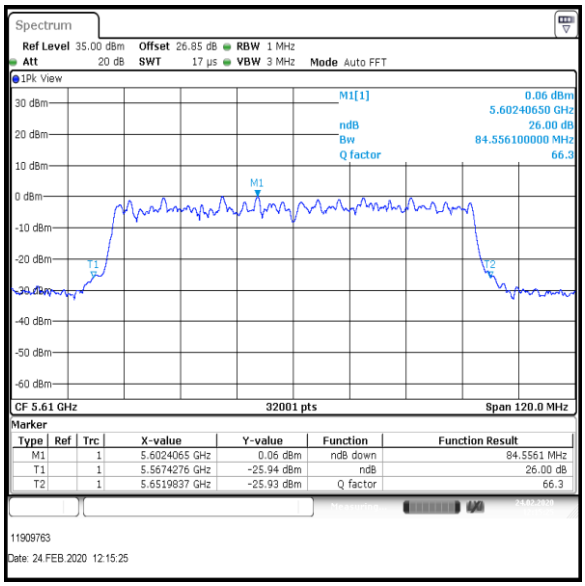
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS3 / MIMO / Port 1+2+3+4 / Port 3 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	84.286
Top	5610	84.556



Bottom Channel



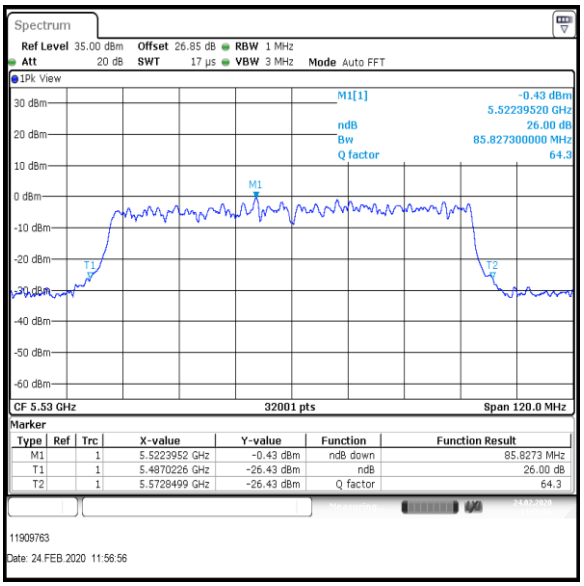
Top Channel

Result: Pass

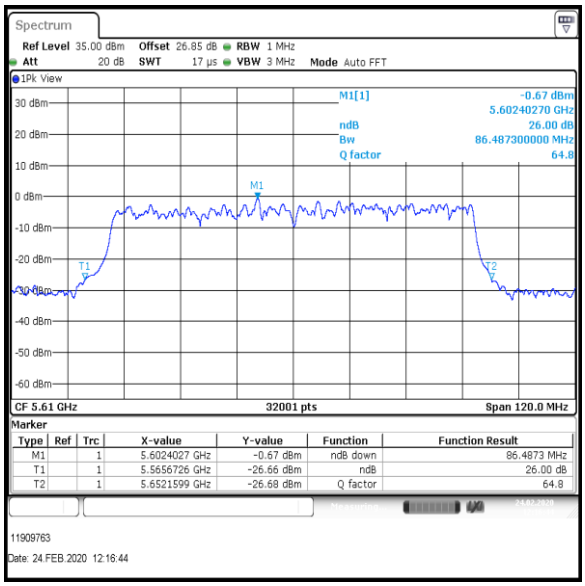
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS3 / MIMO / Port 1+2+3+4 / Port 4 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	85.827
Top	5610	86.487



Bottom Channel



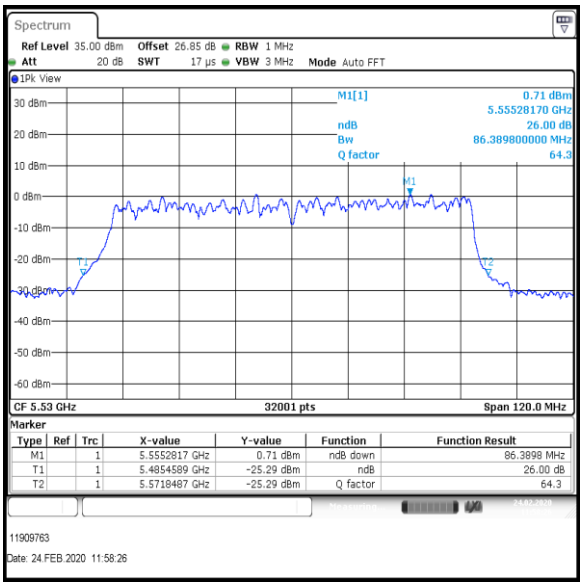
Top Channel

Result: Pass

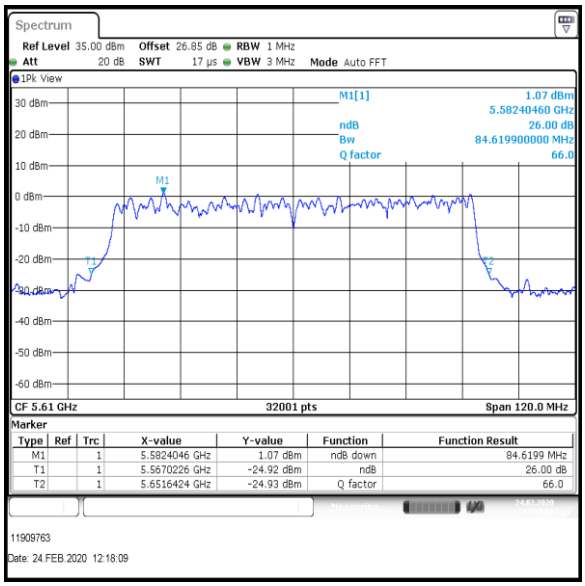
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS6 / MIMO / Port 1+2+3+4 / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	86.389
Top	5610	84.619



Bottom Channel



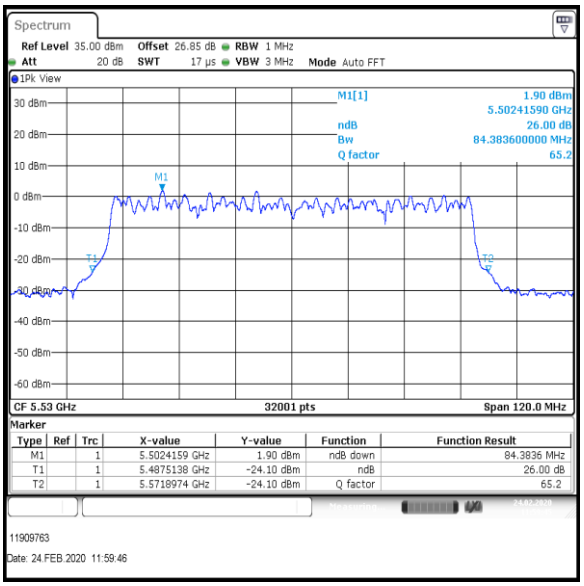
Top Channel

Result: Pass

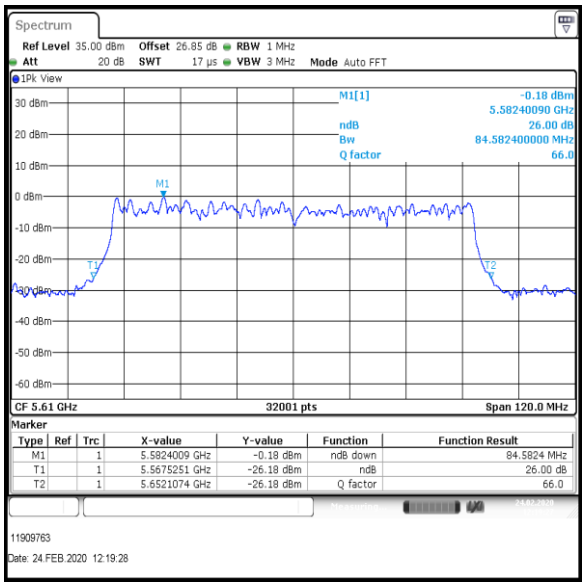
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS6 / MIMO / Port 1+2+3+4 / Port 2 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	84.384
Top	5610	84.582



Bottom Channel



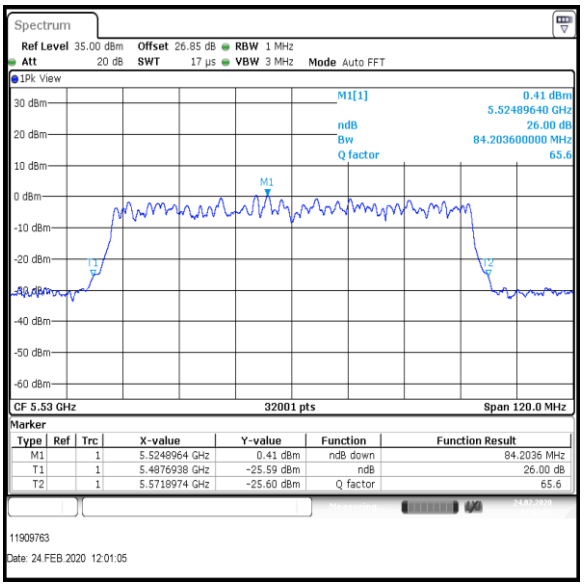
Top Channel

Result: Pass

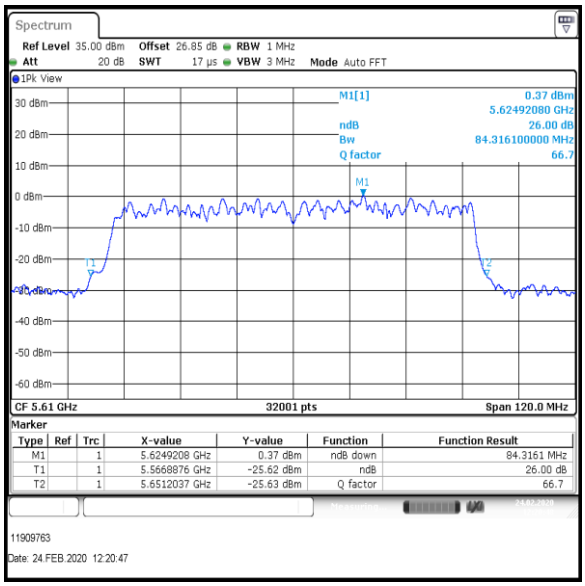
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS6 / MIMO / Port 1+2+3+4 / Port 3 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	84.204
Top	5610	84.316



Bottom Channel



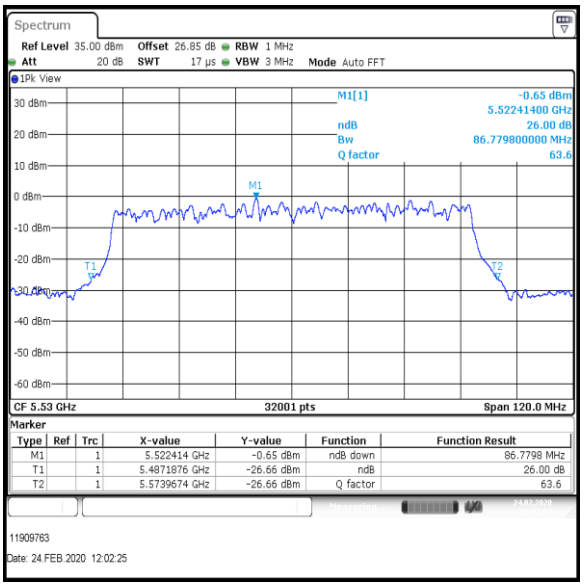
Top Channel

Result: Pass

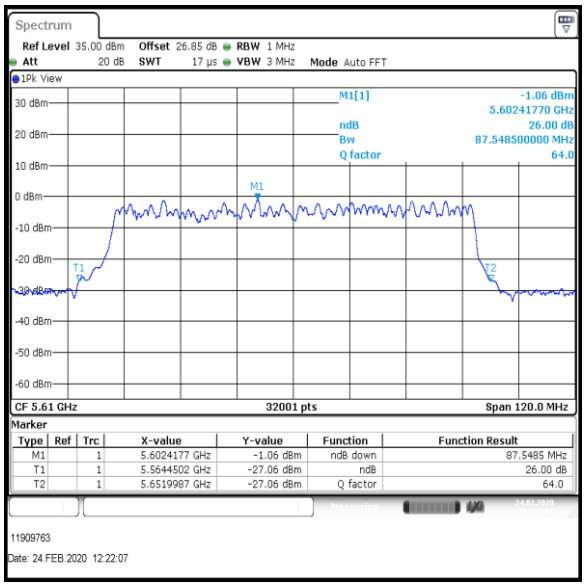
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT80 / MCS6 / MIMO / Port 1+2+3+4 / Port 4 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26dB Emission Bandwidth (MHz)
Bottom	5530	86.780
Top	5610	87.549



Bottom Channel



Top Channel

Result: Pass

5.2.3. Transmitter Duty Cycle

Test Summary:

Test Engineer:	Sercan Usta	**Test Date:**	24 February 2020 - 10 March 2020
Test Sample Serial Number:	192.168.0.65		
Test Site Identification	SR 9		

FCC Reference:	Part 15.35(c)
Test Method Used:	KDB 789033 D02 Section II.B.2.b)

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	38

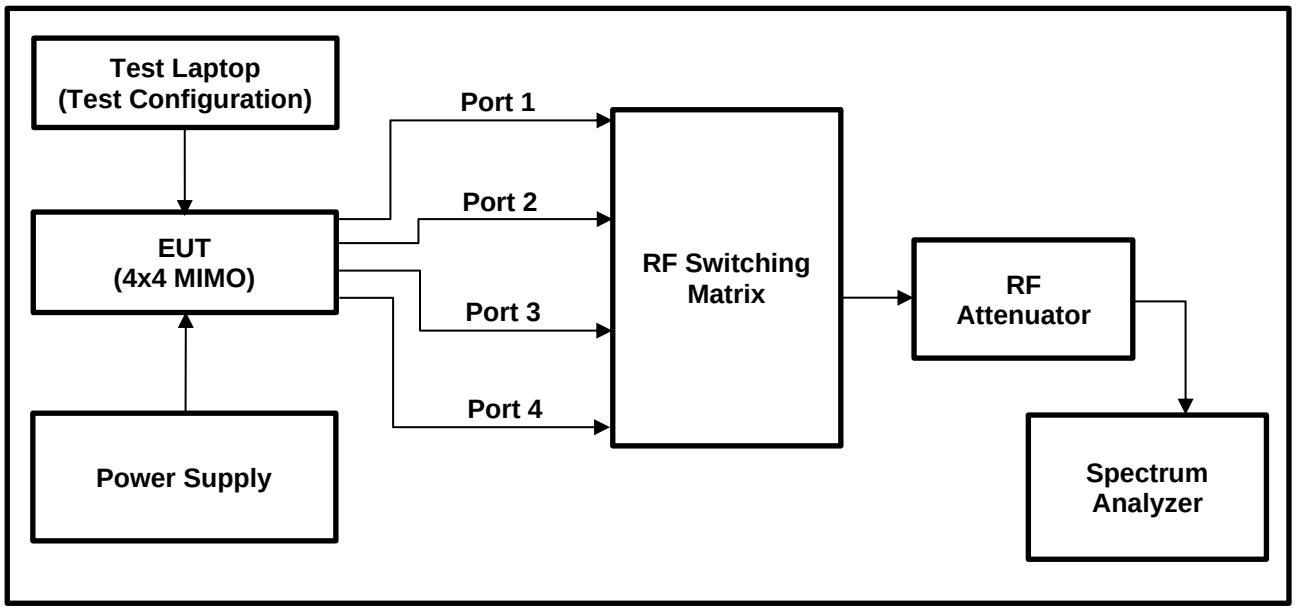
Note:

1. During initial investigations it is found that EUT was transmitting with Duty Cycle < 98 %.
2. In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

   Duty Cycle (%) = 100 X [On Time (T_{ON})] / [Period(T_{ON}+ T_{OFF}) or 100ms whichever is the lesser]

   Duty Cycle Correction Factor= 10 log 1 / [On Time (T_{ON})] / [Period(T_{ON}+ T_{OFF}) or 100ms whichever is the lesser]
3. Duty cycles were measured with worst case SISO mode; as they found to be same independent of number of transmitter chains used.
4. These results are valid for all supported SISO & MIMO modes as well as for listed Antennas.
5. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values takes into consideration the external attenuation correction factors which is compensated by adding reference level offset of 26.85 dB@ 5.47-5.725 GHz to each of the conducted plots.

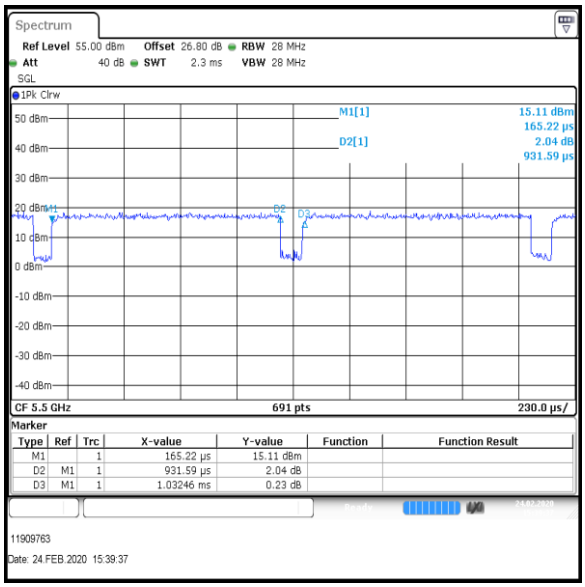
Test setup:



Transmitter Duty Cycle (continued)

Results: 802.11a / 20 MHz / 9Mbit

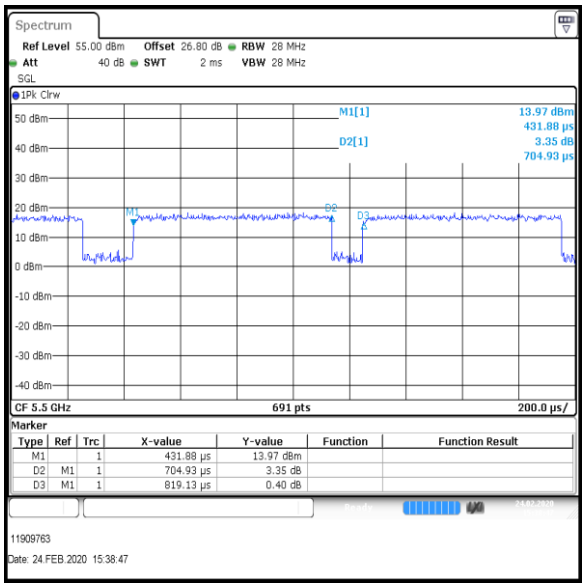
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
931.59	1032.46	90.23	0.4



Transmitter Duty Cycle (continued)

Results: 802.11a / 20 MHz / 12Mbit

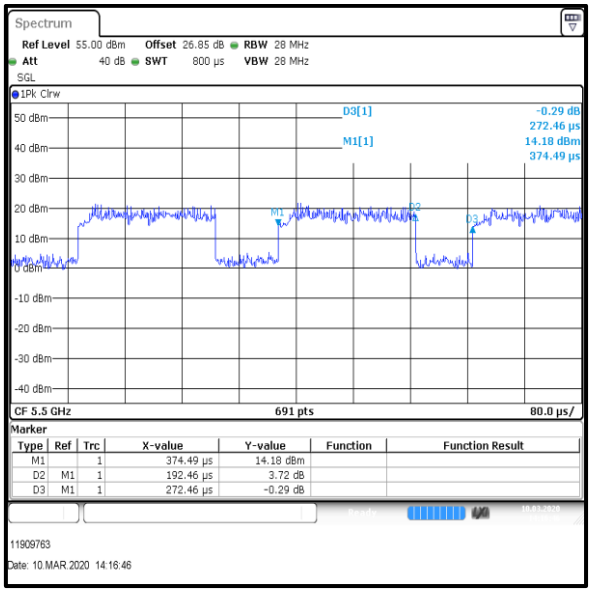
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
704.93	819.13	86.058	0.7



Transmitter Duty Cycle (continued)

Results: 802.11a / 20 MHz / 48Mbit

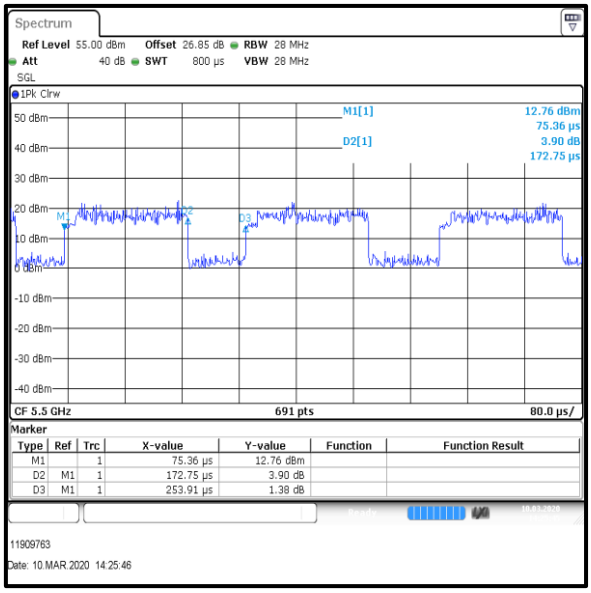
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
192.46	272.46	70.637	1.5



Transmitter Duty Cycle (continued)

Results: 802.11a / 20 MHz / 54Mbit

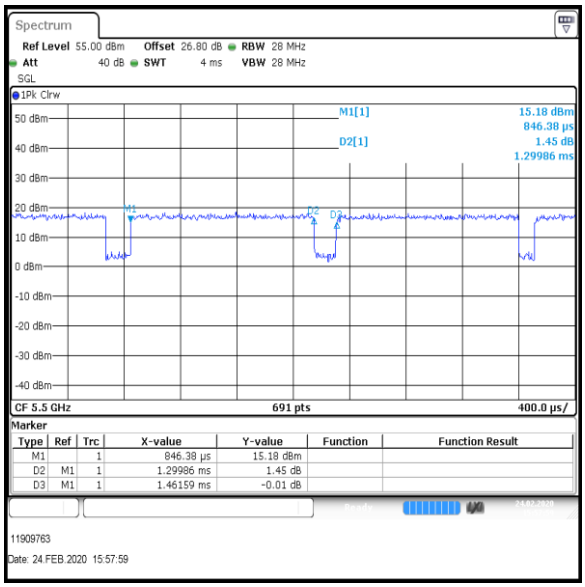
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
172.75	253.91	68.036	1.7



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS0

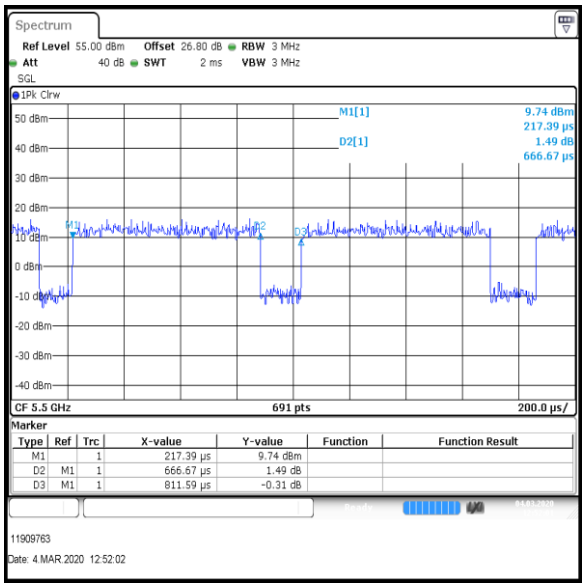
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
1299.86	1461.59	88.935	0.5



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS1

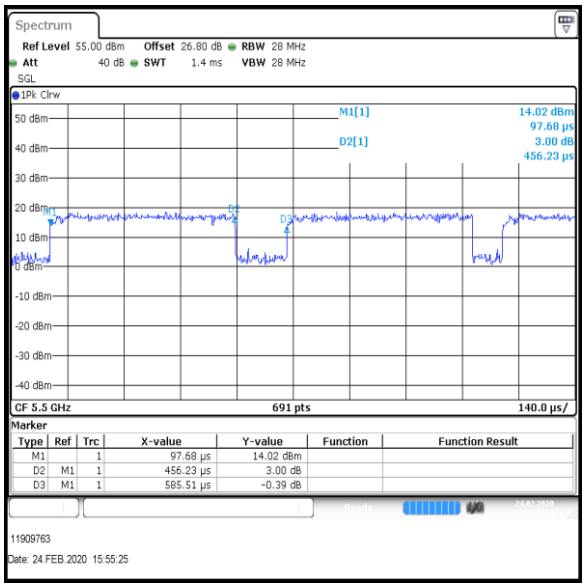
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
666.67	811.59	82.144	0.9



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS2

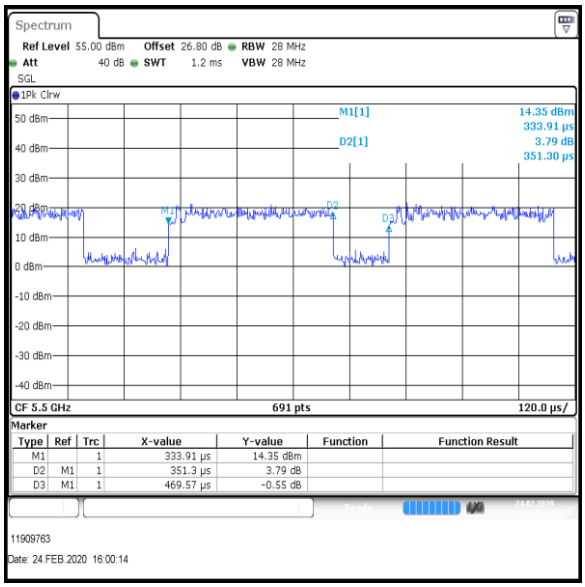
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
456.23	585.51	77.92	1.1



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS3

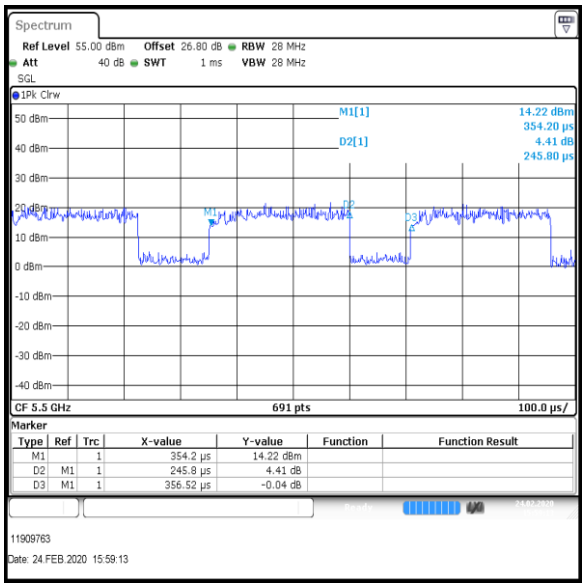
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
351.3	469.57	74.813	1.3



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS4

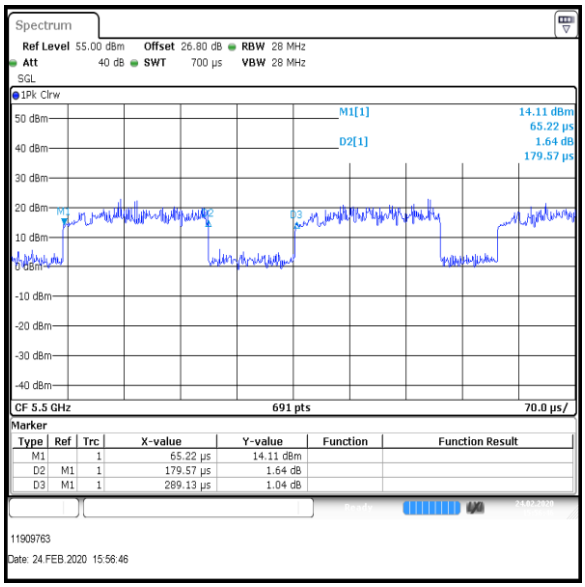
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
245.8	356.52	68.944	1.6



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS6

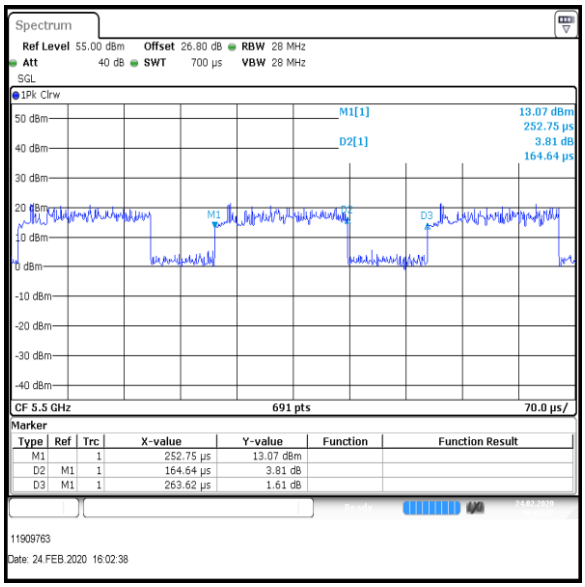
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
179.57	289.13	62.107	2.1



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS7

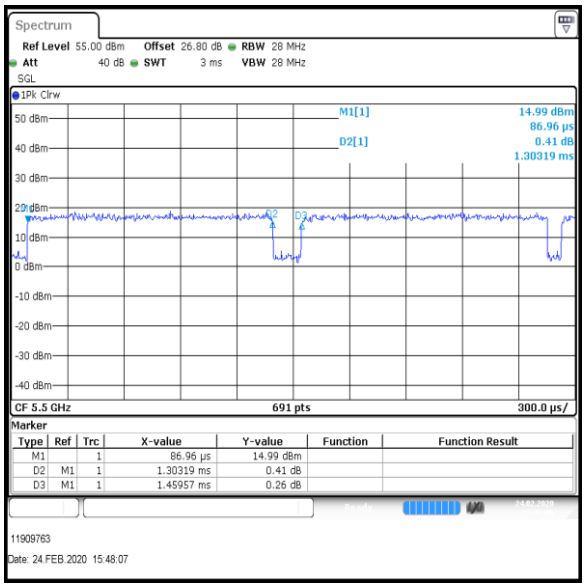
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
164.64	263.62	62.454	2.0



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS0

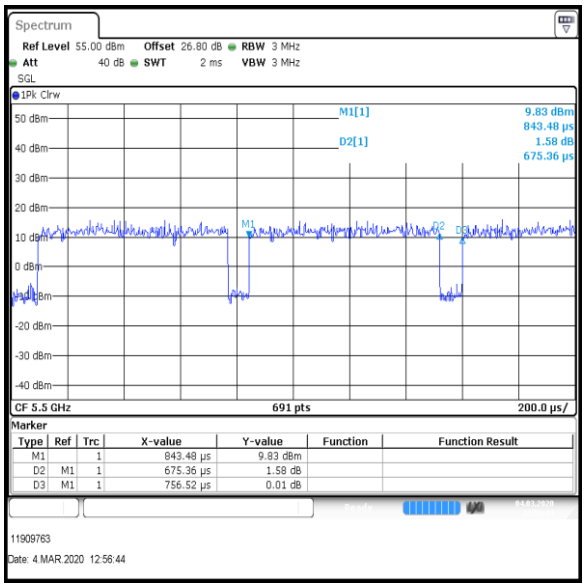
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
1303.19	1459.57	89.286	0.5



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS1

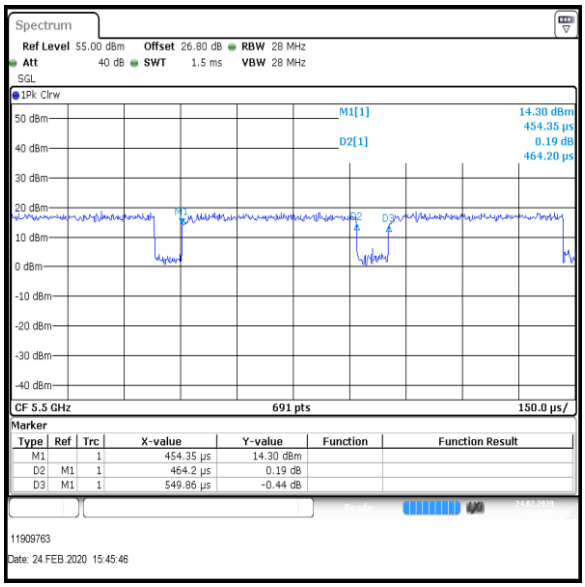
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
675.36	756.52	89.272	0.5



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS2

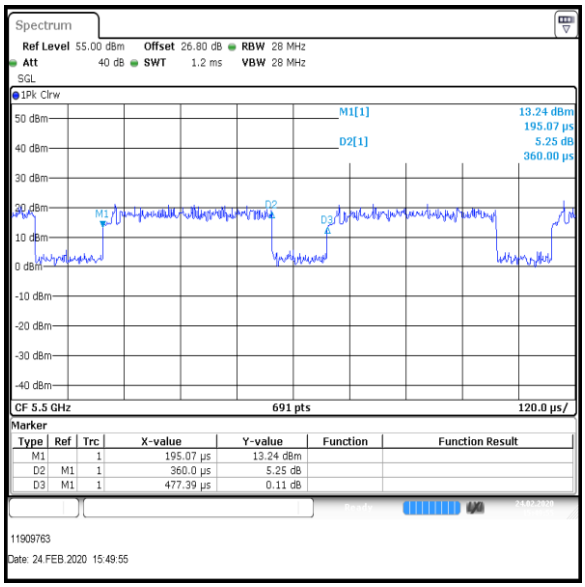
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
464.2	549.86	84.421	0.7



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS3

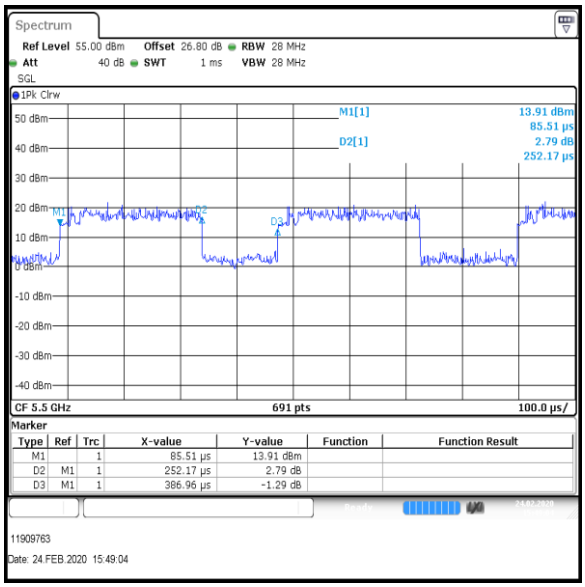
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
360.0	477.39	75.41	1.2



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS4

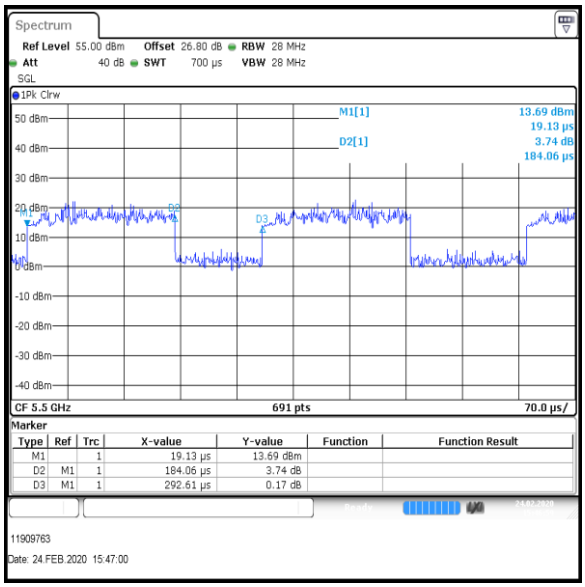
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
252.17	386.96	65.167	1.9



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS6

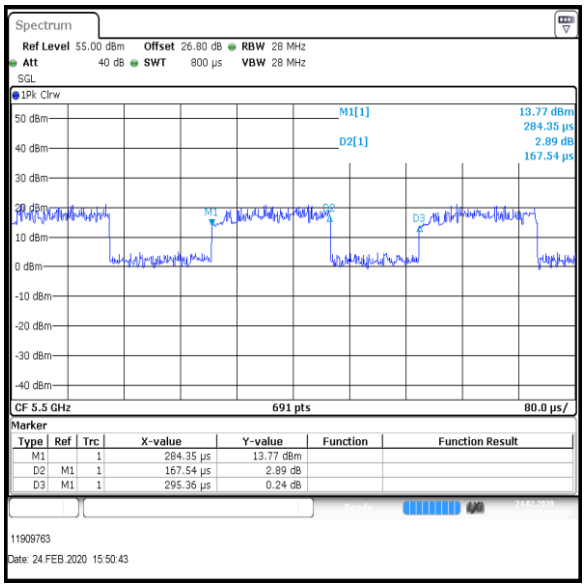
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
184.06	292.61	62.903	2.0



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS7

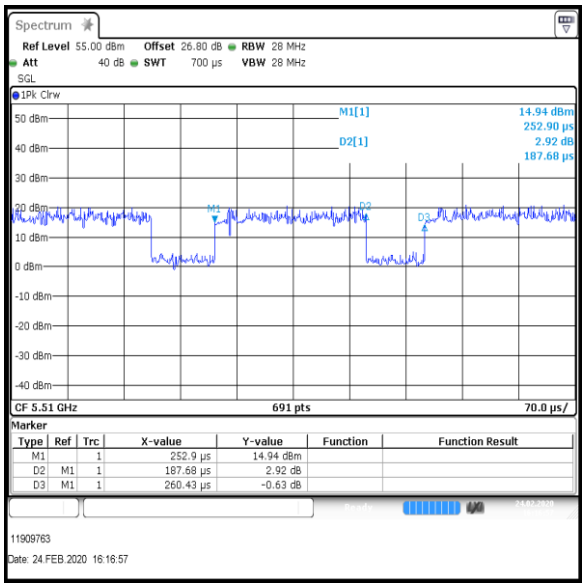
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
167.54	295.36	56.724	2.5



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS3

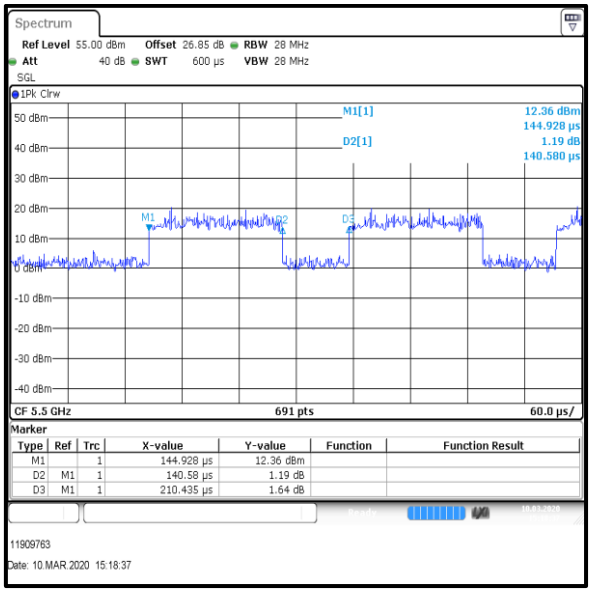
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
187.68	260.43	72.065	1.4



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS4

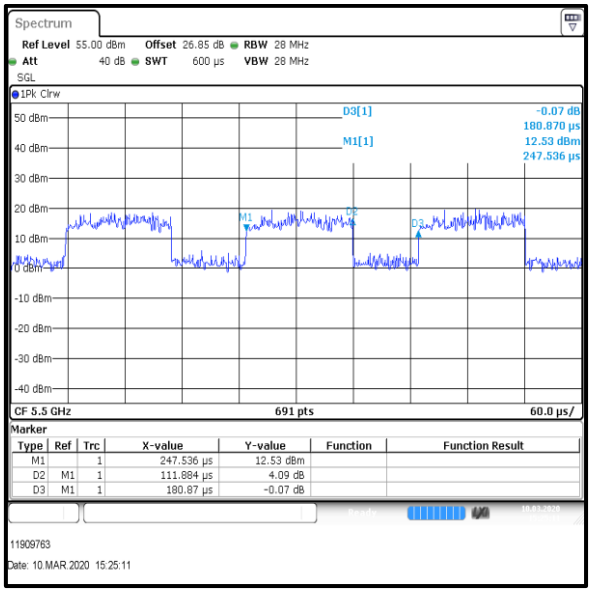
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
140.58	210.435	66.804	1.8



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS5

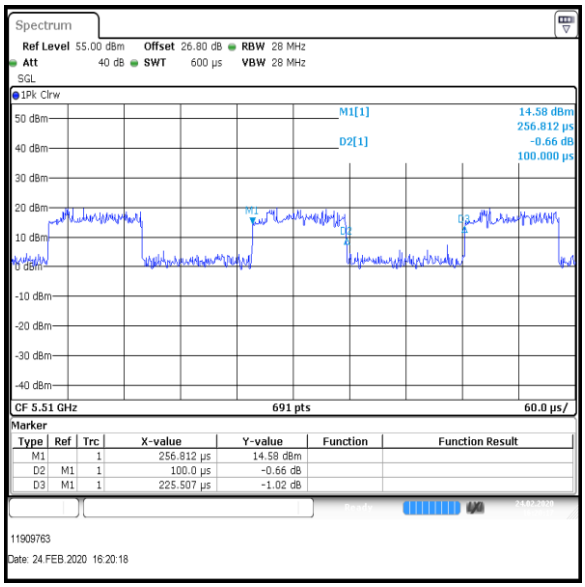
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
111.884	180.87	61.858	2.1



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS7

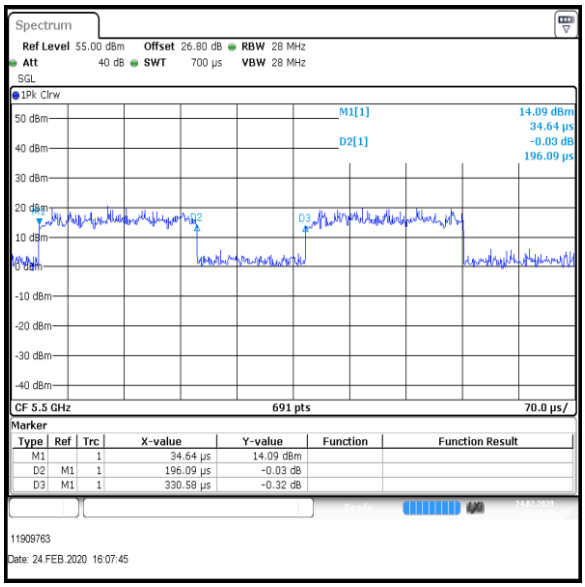
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
100.0	225.507	44.345	3.5



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS3

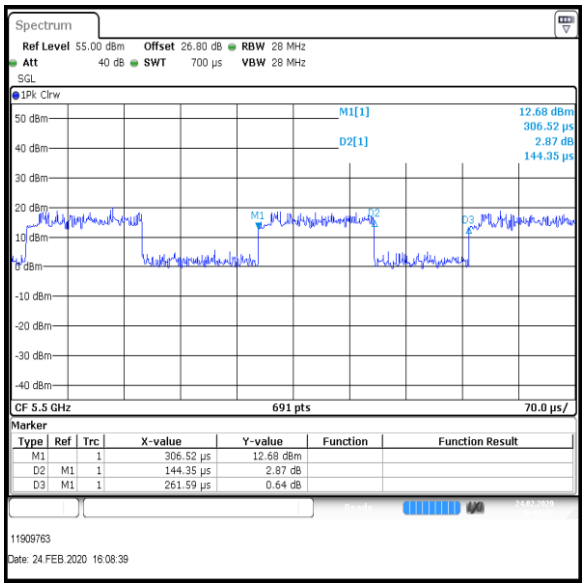
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
196.09	330.58	59.317	2.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS4

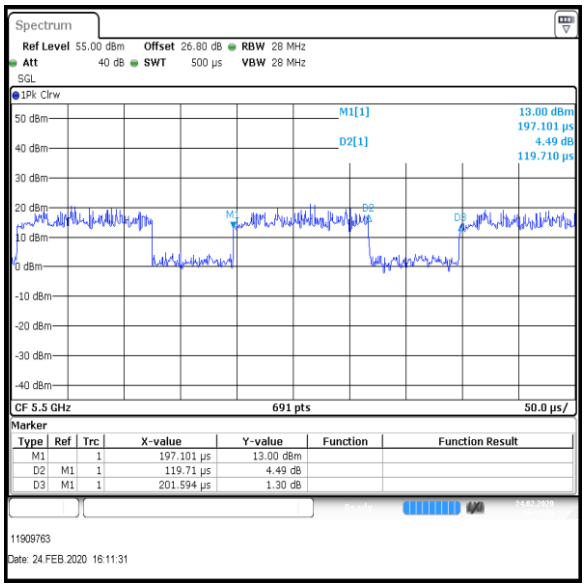
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
144.35	261.59	55.182	2.6



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS5

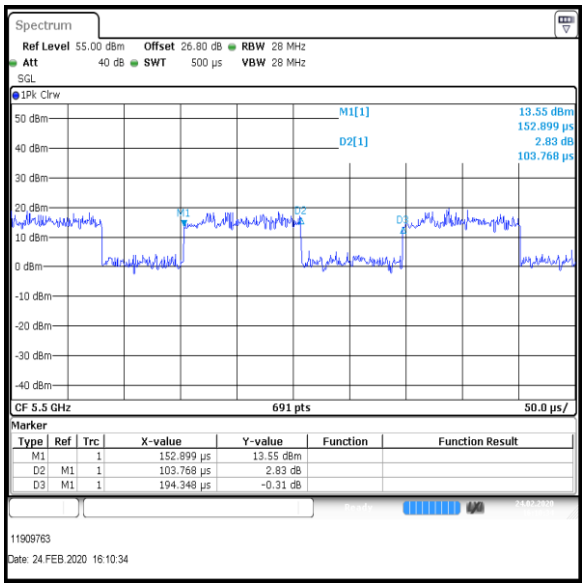
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
119.71	201.594	59.382	2.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS7

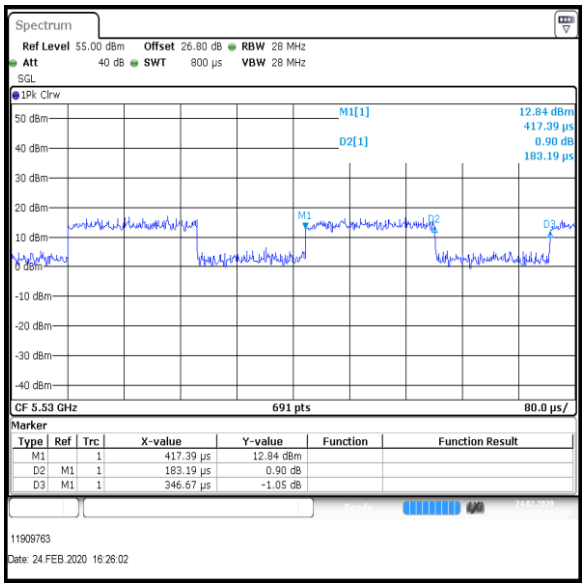
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
103.768	194.348	53.393	2.7



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS1

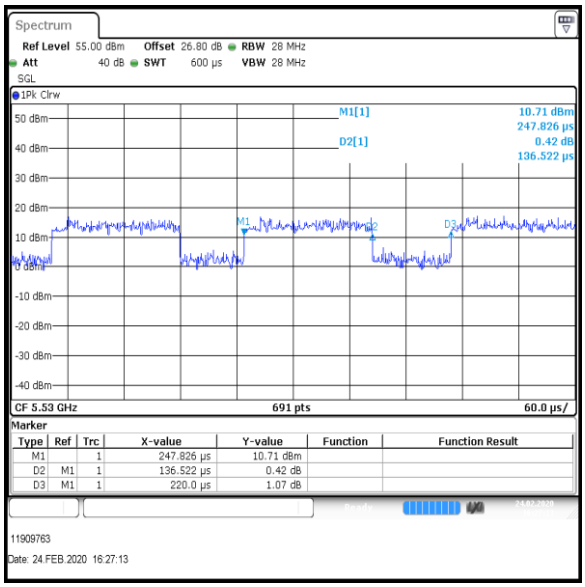
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
183.19	346.67	52.843	2.8



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS2

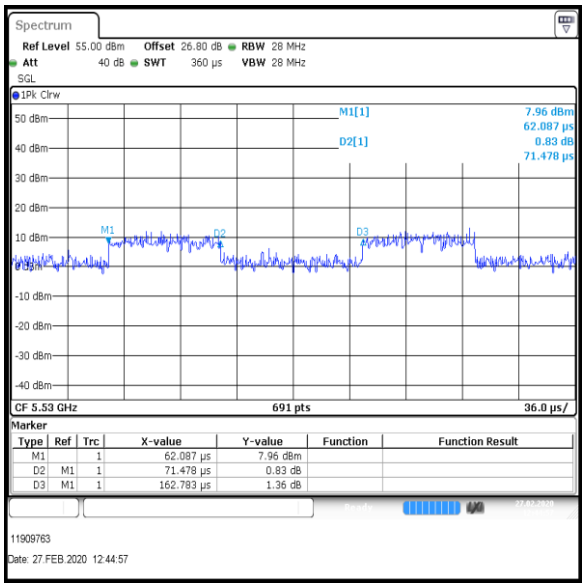
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
136.522	220.0	62.055	2.1



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS3

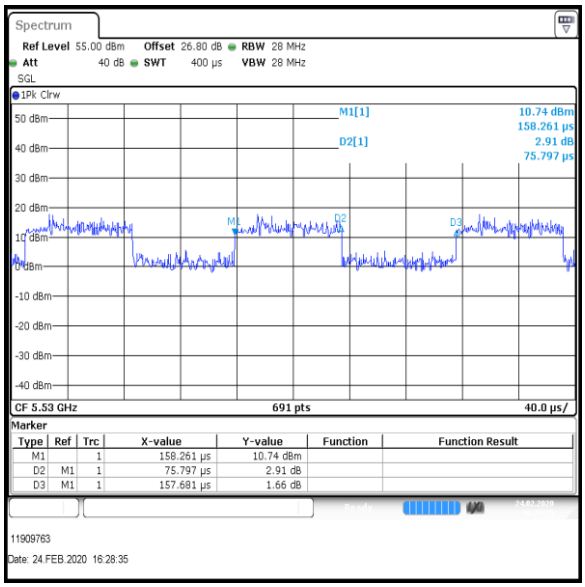
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
71.478	162.783	43.91	3.6



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS5

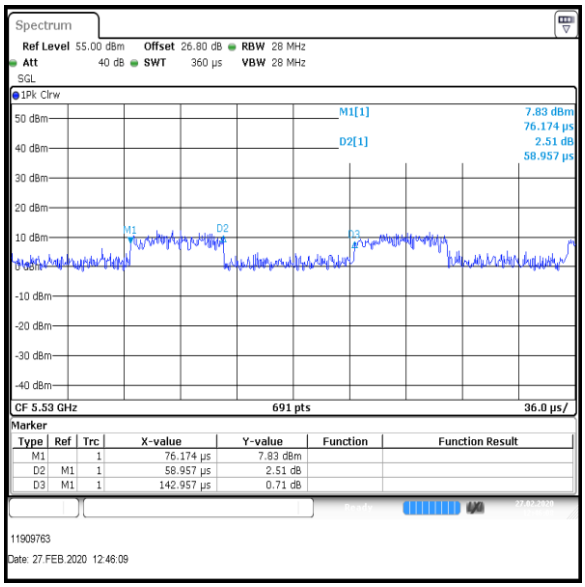
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
75.797	157.681	48.07	3.2



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS6

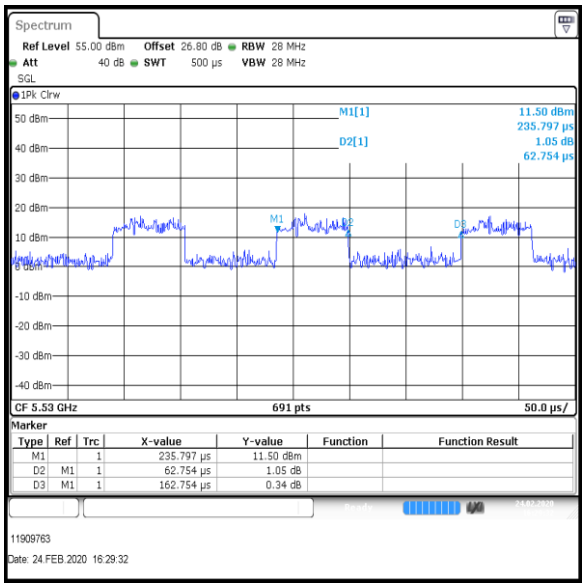
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
58.957	142.957	41.241	3.8



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS8

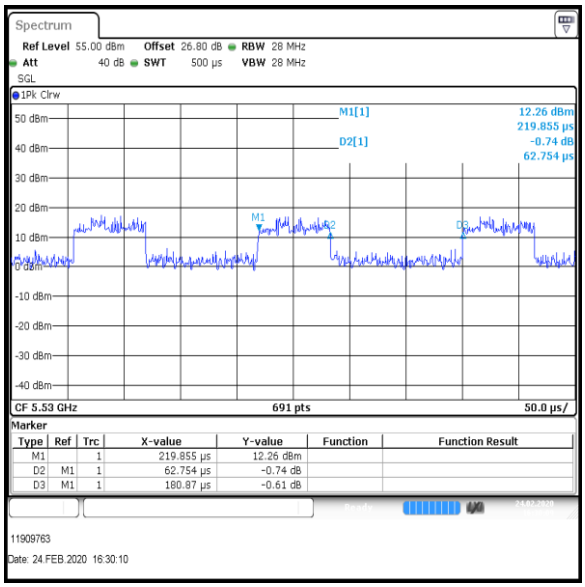
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
62.754	162.754	38.558	4.1



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS9

Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
62.754	180.87	34.696	4.6



5.2.4. Transmitter Maximum Conducted Output Power

Test Summary:

Test Engineer:	Krume Ivanov & Sercan Usta	**Test Dates:**	21 February 2020 to 24 February 2020
Test Sample Serial Number:	192.168.0.65		
Test Site Identification	SR 9		

FCC Reference:	Part 15.407(a)(2)
Test Method Used:	KDB 789033 D02 Section II.E.2.d) KDB 662911 D01 Section E) 1)

Environmental Conditions:

Temperature (°C):	20 to 29
Relative Humidity (%):	23 to 40

Notes:

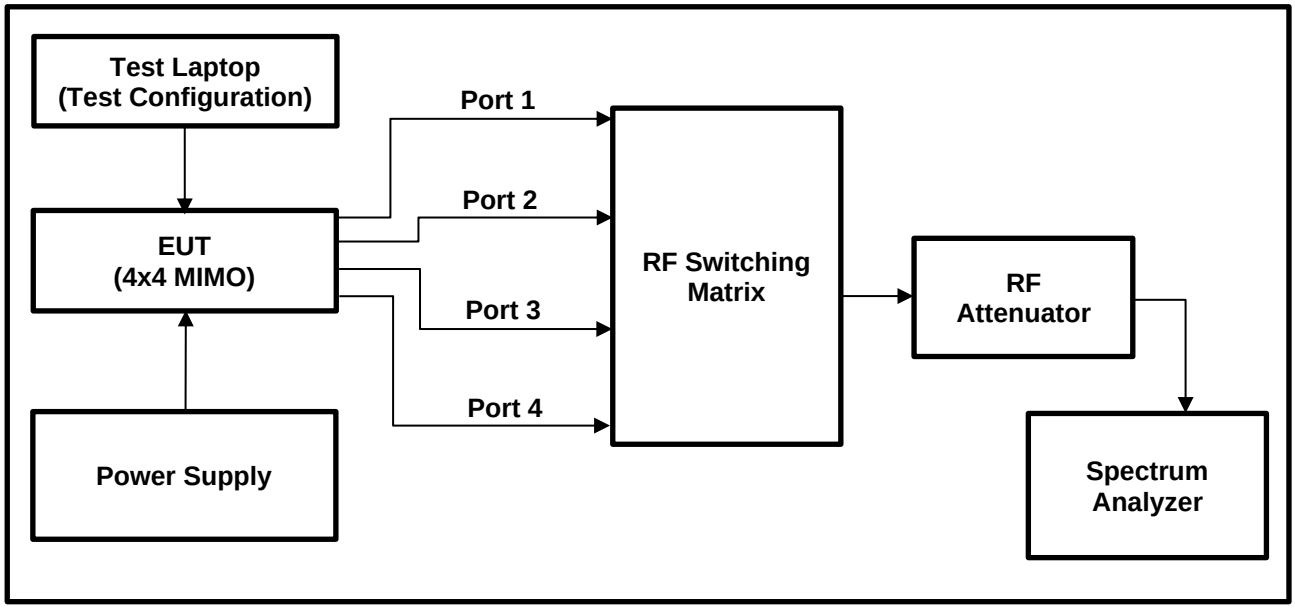
1. For conducted power tests where the duty cycle is <98%, the measurements were performed in accordance with FCC KDB 789033 II.E.2.d) Method SA-2. The signal analyser's integration function was used to integrate across the 99% emission bandwidth. The resolution bandwidth was set to 1 MHz and video bandwidth 3 MHz. An RMS detector was used and sweep time was set to auto and 300 traces performed. The span was set to encompass the entire 99% occupied bandwidth. The channel power results are recorded in the tables below.
2. The RF port on the EUT was connected to the spectrum analyser using suitable attenuation and RF cable. The measured values takes into consideration the external attenuation correction factors which is compensated by adding reference level offset of 26.80 dB@ 5.25-5.35 GHz to each of the conducted plots.
3. For MIMO, power was measured across relevant ports and then combined using the measure-and-sum technique stated in FCC KDB 662911 D01 Section E)1).
4. In accordance with 15.407(a)(2) maximum conducted output power shall not exceed shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth (MHz) .
5. In accordance with KDB 789033 D02 Section II.E.2.d) (x) alternative method, power is computed by integrating the spectrum across the entire 99% occupied bandwidth.
6. Relevant 99% occupied bandwidth results for all tested modes are achieved on the company server and available for inspection if required.
7. For all data rates the EUT was transmitting at <98% duty cycle, the calculated duty cycle in section 5.2.3 was added to the measured power in order to compute the average power during the actual transmission time.
8. The EUT antennas have a directional gain of > 6 dBi.
9. In accordance with 15.407(a)(2), transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power limits shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
10. In accordance with FCC KDB 662911 F)2)f)(i), the array gain for 802.11 devices with NANT ≤4 is 0 dB. No array gain has been to the measurements in this section.
11. Therefore for 8 dBi Antenna, reduced maximum conducted output power limits are as follows:
    - the limit of 250 mW ≈ 24 dBm has been reduced by 2 dB to 22 dBm

    or

    - the limit of 11 dBm + 10 log B has been reduced by 2 dB to 9 dBm + 10 log B
12. Therefore for 8 dBi Antenna the lesser of above limits has been applied.

Transmitter Maximum Conducted Output Power (continued)

Test setup:



Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.6	1.5	11.1	22	10.9	Complied

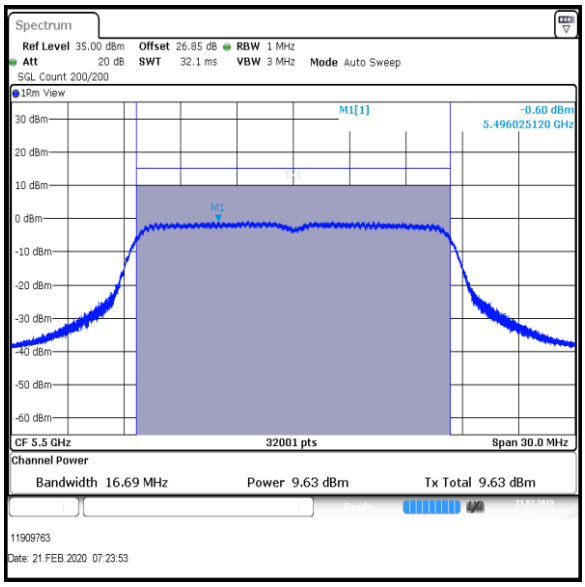
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.1	8	19.1	30	10.9	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	14.3	1.5	15.8	22	6.2	Complied
Middle	14.5	1.5	16.0	22	6.0	Complied
Top-1	14.4	1.5	15.9	22	6.1	Complied

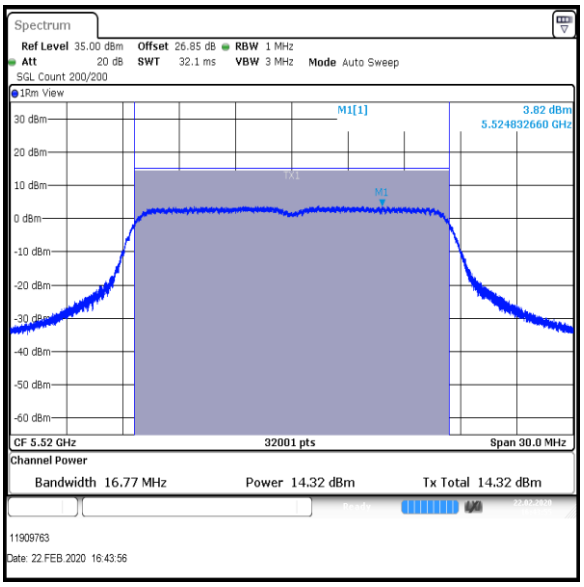
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	15.8	8	23.8	30	6.2	Complied
Middle	16.0	8	24.0	30	6.0	Complied
Top-1	15.9	8	23.9	30	6.1	Complied

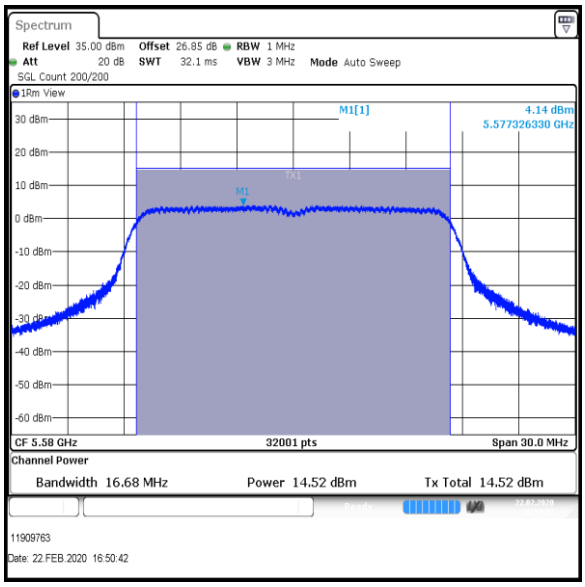
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

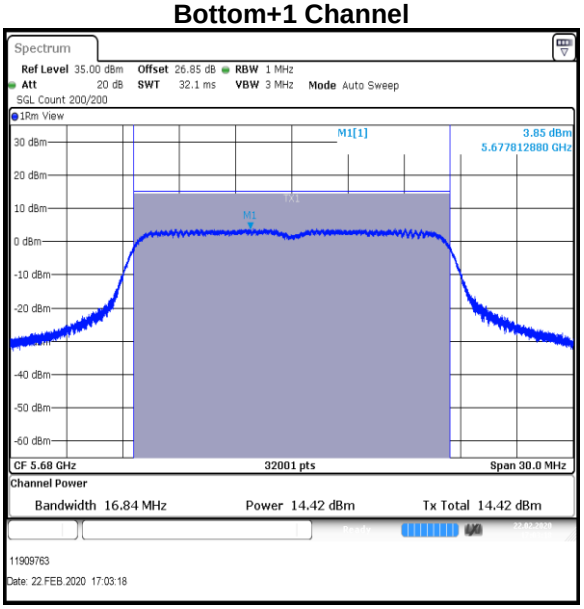
Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	10.4	1.5	11.9	22	10.1	Complied

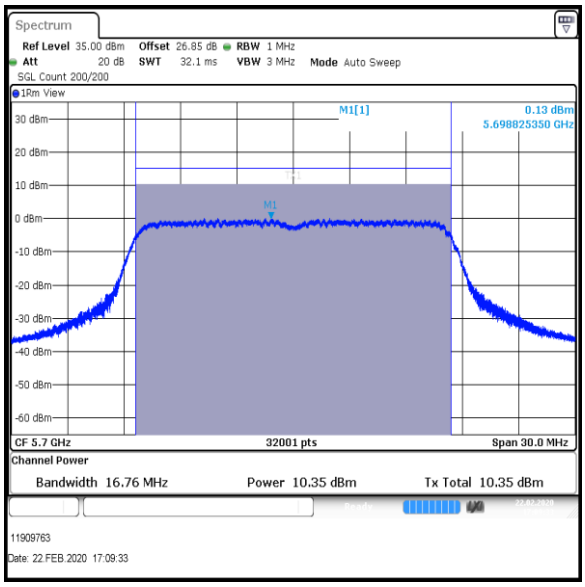
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	11.9	8	19.9	30	10.1	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.4	1.7	11.1	22	10.9	Complied

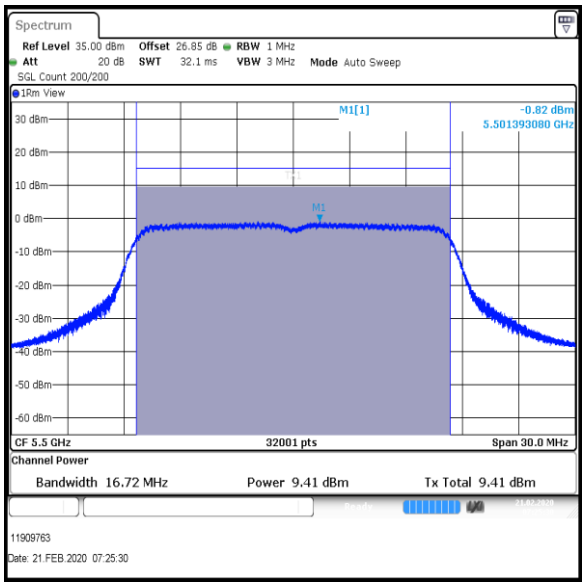
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.1	8	19.1	30	10.9	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	14.1	1.7	15.8	22	6.2	Complied
Middle	14.3	1.7	16.0	22	6.0	Complied
Top-1	14.2	1.7	15.9	22	6.1	Complied

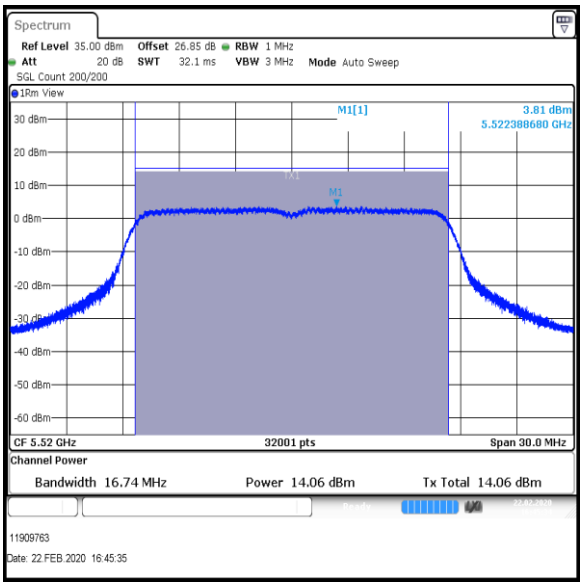
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	15.8	8	23.8	30	6.2	Complied
Middle	16.0	8	24.0	30	6.0	Complied
Top-1	15.9	8	23.9	30	6.1	Complied

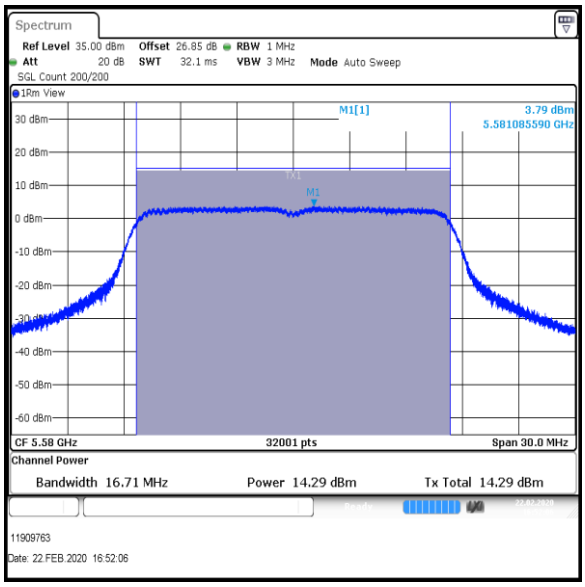
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

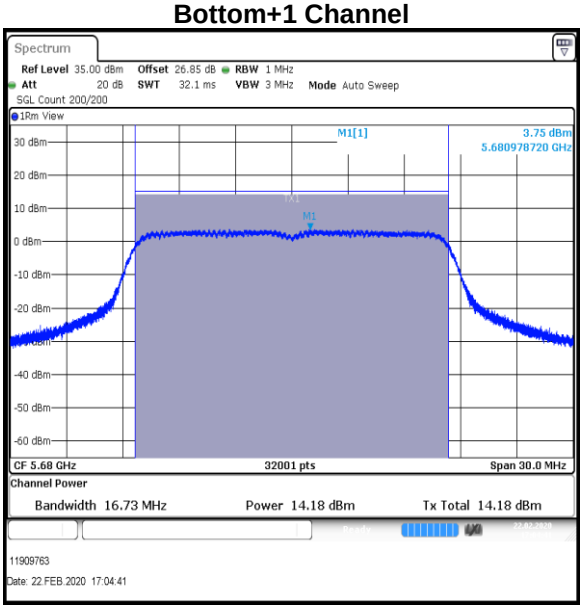
Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	10.1	1.7	11.8	22	10.2	Complied

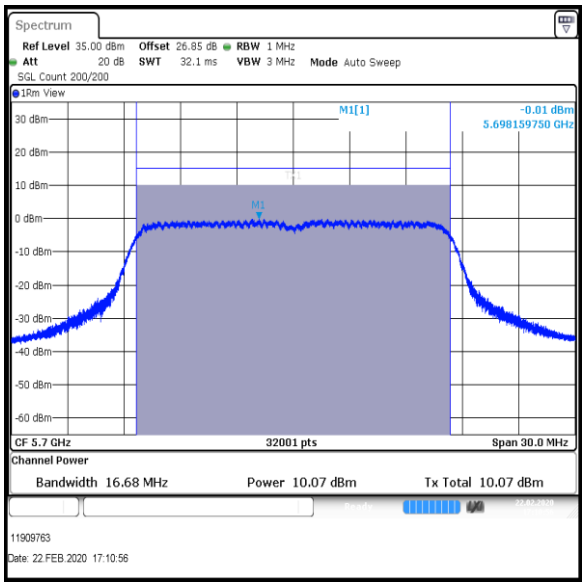
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	11.8	8	19.8	30	10.2	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	10.5	1.1	11.6	22	10.4	Complied

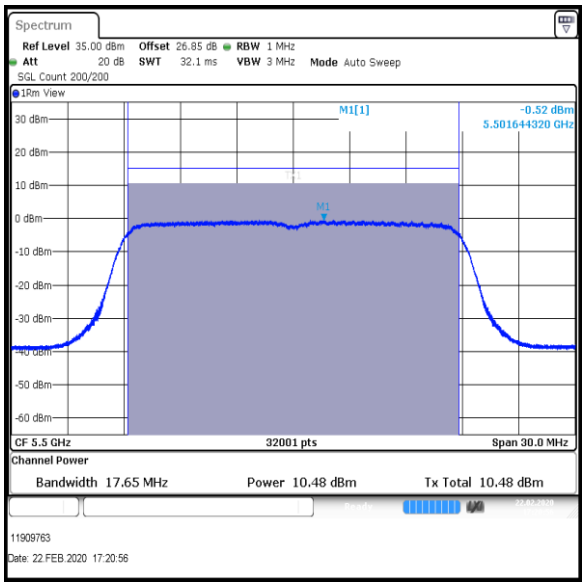
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.6	8	19.6	30	10.4	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	15.4	1.1	16.5	22	5.5	Complied
Middle	15.6	1.1	16.7	22	5.3	Complied
Top-1	15.6	1.1	16.7	22	5.3	Complied

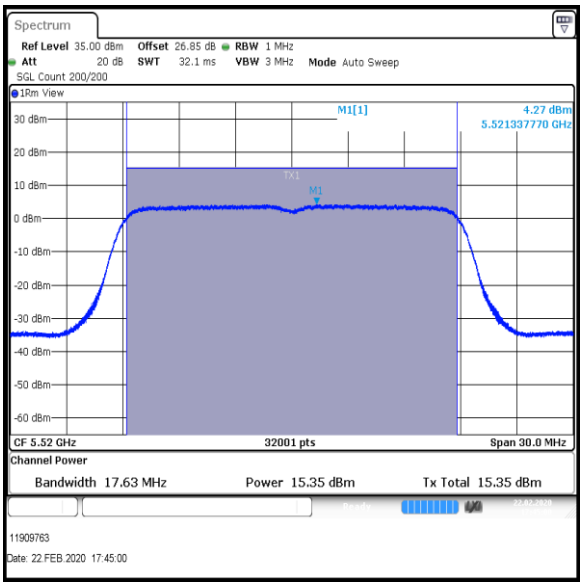
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	16.5	8	24.5	30	5.5	Complied
Middle	16.7	8	24.7	30	5.3	Complied
Top-1	16.7	8	24.7	30	5.3	Complied

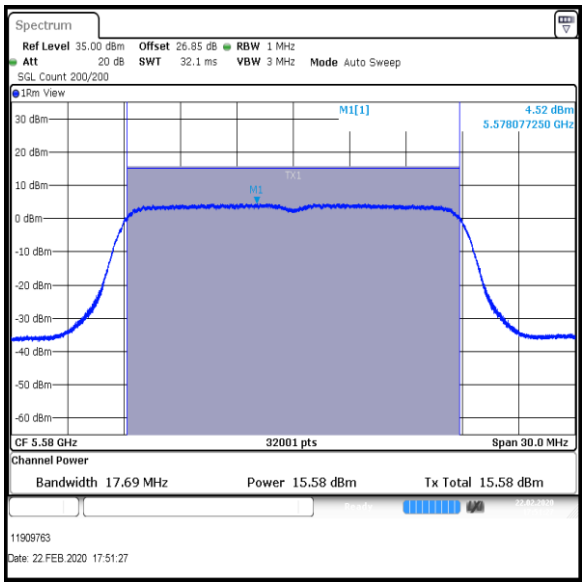
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

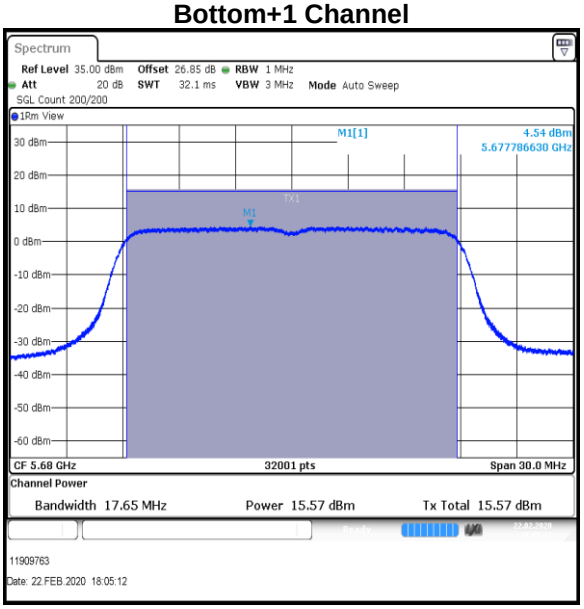
Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	12.3	1.1	13.4	22	8.6	Complied

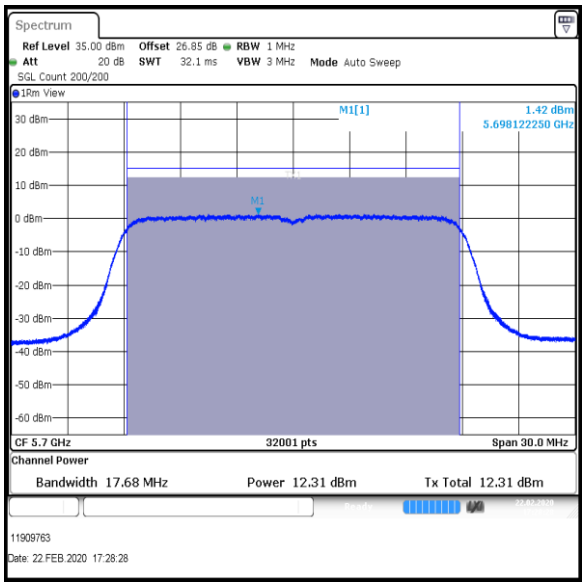
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	13.4	8	21.4	30	8.6	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.5	2.1	11.6	22	10.4	Complied

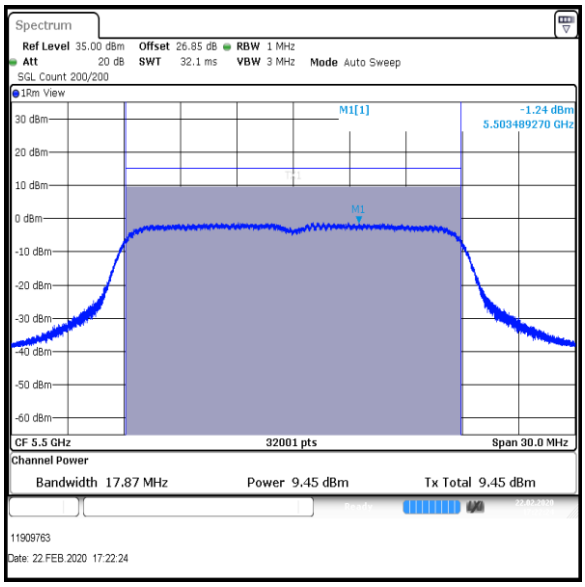
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.6	8	19.6	30	10.4	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	14.2	2.1	16.3	22	5.7	Complied
Middle	14.4	2.1	16.5	22	5.5	Complied
Top-1	14.4	2.1	16.5	22	5.5	Complied

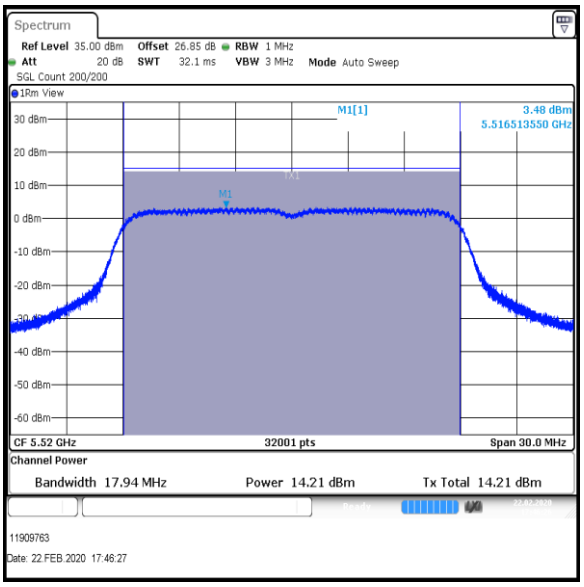
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	16.3	8	24.3	30	5.7	Complied
Middle	16.5	8	24.5	30	5.5	Complied
Top-1	16.5	8	24.5	30	5.5	Complied

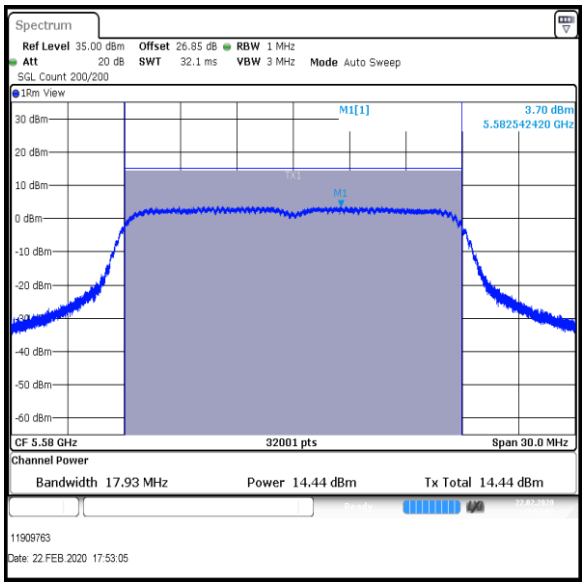
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

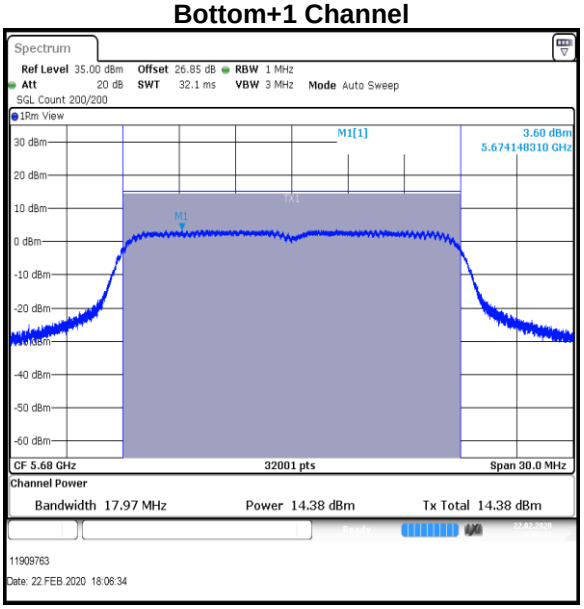
Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	11.2	2.1	13.3	22	8.7	Complied

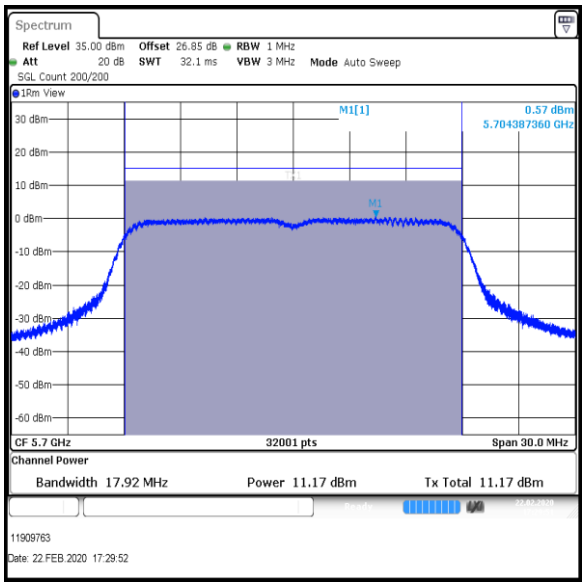
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	13.3	8	21.3	30	8.7	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	10.5	0.7	11.2	22	10.8	Complied

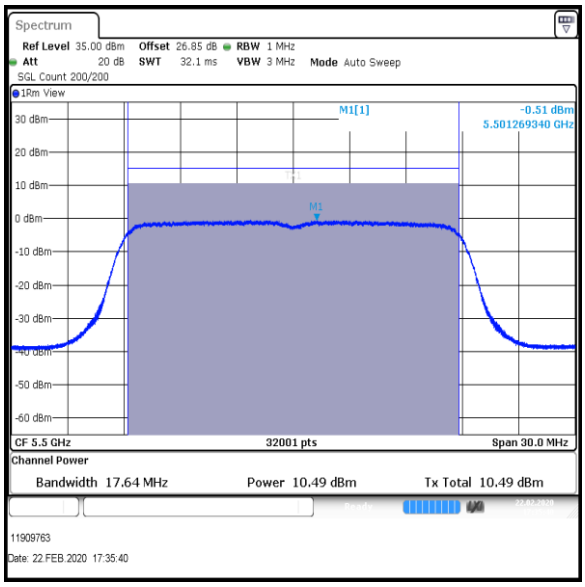
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.2	8	19.2	30	10.8	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	13.9	0.7	14.6	22	7.4	Complied
Middle	15.5	0.7	16.2	22	5.8	Complied
Top-1	15.4	0.7	16.1	22	5.9	Complied

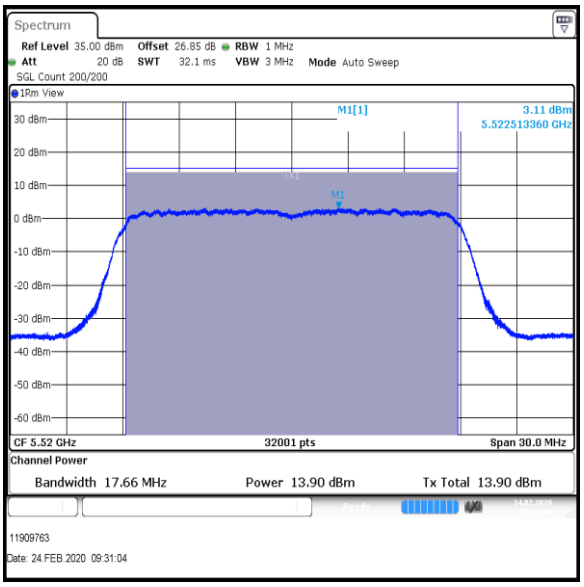
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	14.6	8	22.6	30	7.4	Complied
Middle	16.2	8	24.2	30	5.8	Complied
Top-1	16.1	8	24.1	30	5.9	Complied

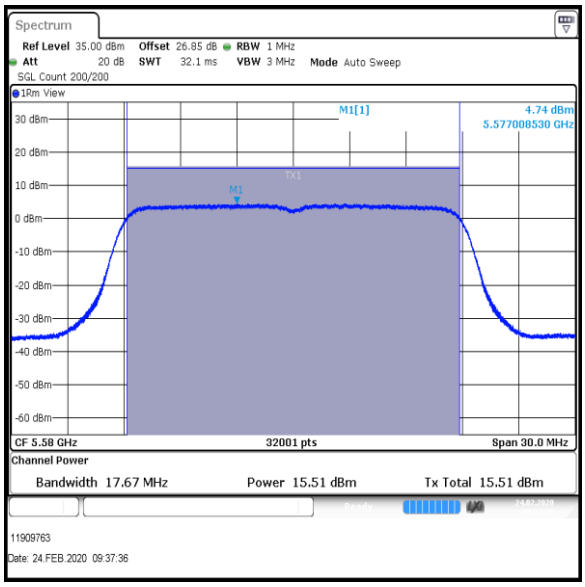
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

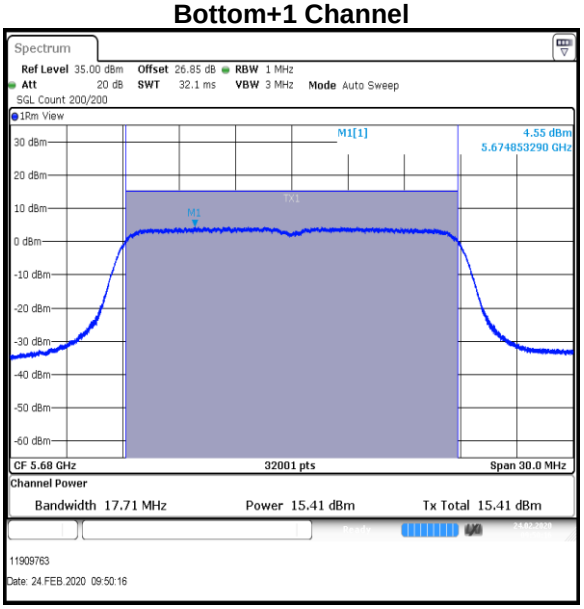
Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	12.1	0.7	12.8	22	9.2	Complied

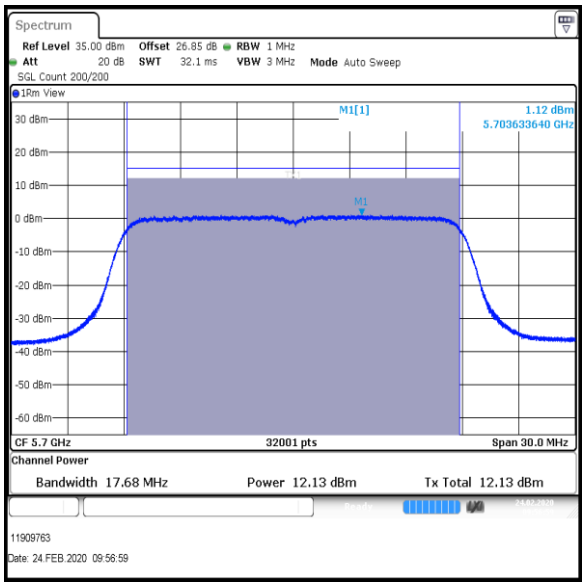
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	12.8	8	20.8	30	9.2	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.5	2.0	11.5	22	10.5	Complied

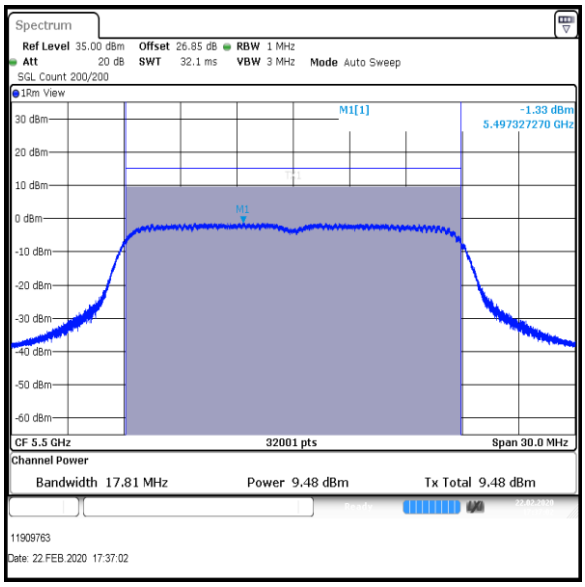
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.5	8	19.5	30	10.5	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom+1	11.9	2.0	13.9	22	8.1	Complied
Middle	14.4	2.0	16.4	22	5.6	Complied
Top-1	14.2	2.0	16.2	22	5.8	Complied

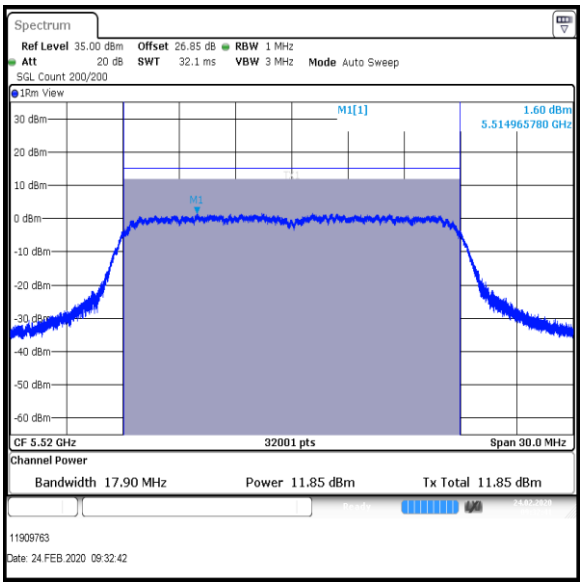
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	13.9	8	21.9	30	8.1	Complied
Middle	16.4	8	24.4	30	5.6	Complied
Top-1	16.2	8	24.2	30	5.8	Complied

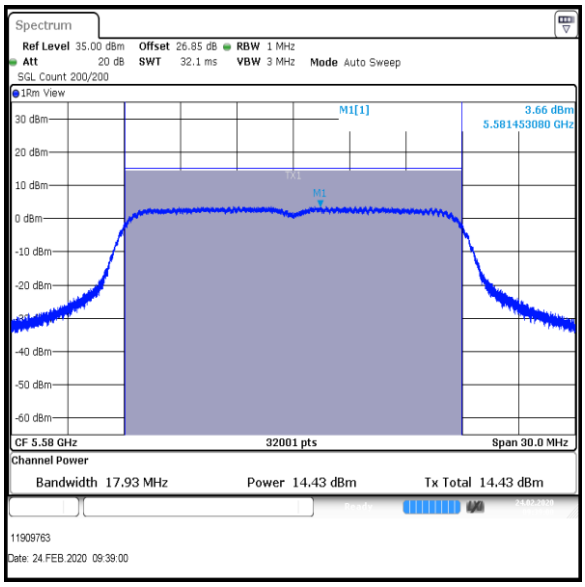
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

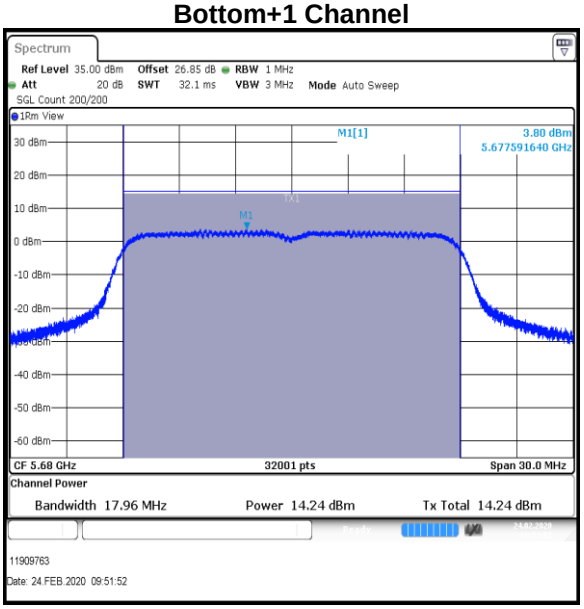
Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom+1 Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Top	11.0	2.0	13.0	22	9.0	Complied

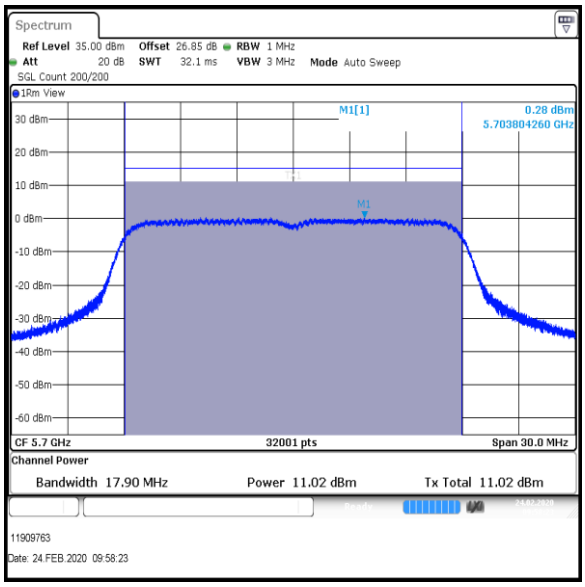
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	13.0	8	21.0	30	9.0	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 15 / 8 dBi Antenna Port 1



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT40 / MCS3 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.6	1.4	11.0	22	11.0	Complied
Middle	10.1	1.4	11.5	22	10.5	Complied
Top	10.2	1.4	11.6	22	10.4	Complied

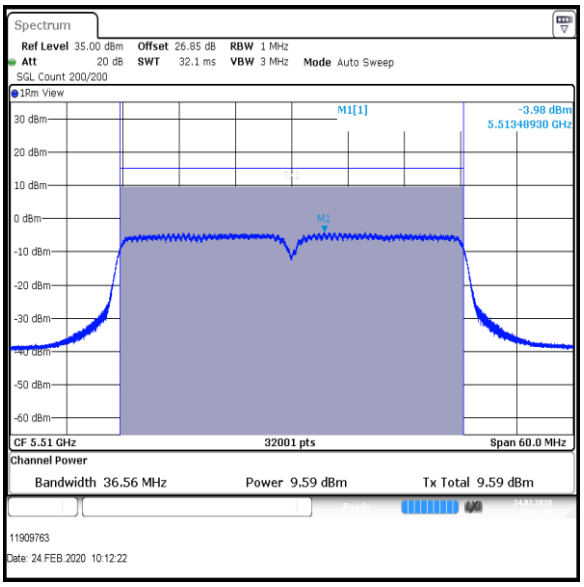
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.0	8	19.0	30	11.0	Complied
Middle	11.5	8	19.5	30	10.5	Complied
Top	11.6	8	19.6	30	10.4	Complied

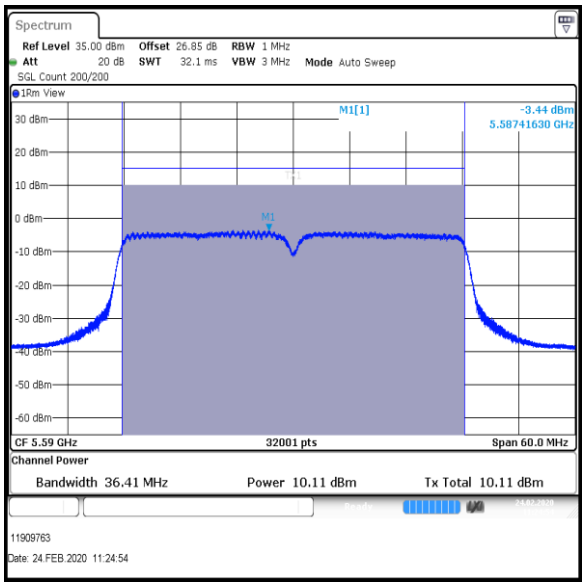
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

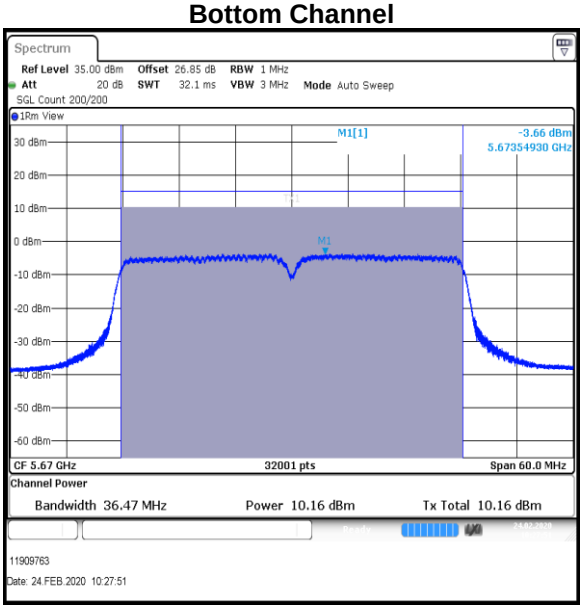
Results: 802.11n / HT40 / MCS3 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT40 / MCS4 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.0	1.8	10.8	22	11.2	Complied
Middle	9.6	1.8	11.4	22	10.6	Complied
Top	9.6	1.8	11.4	22	10.6	Complied

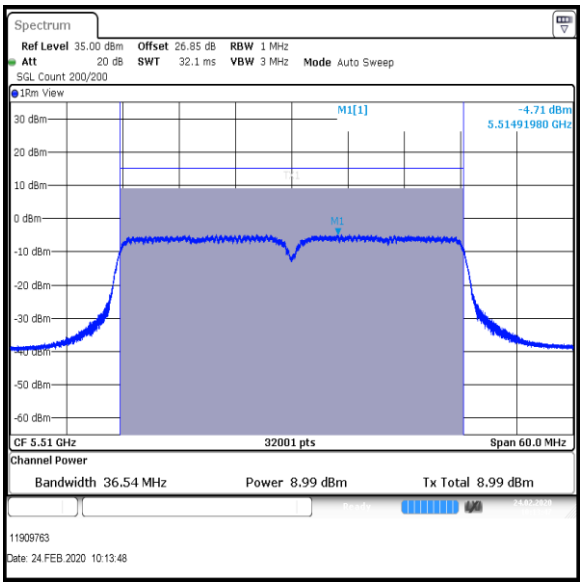
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	10.8	8	18.8	30	11.2	Complied
Middle	11.4	8	19.4	30	10.6	Complied
Top	11.4	8	19.4	30	10.6	Complied

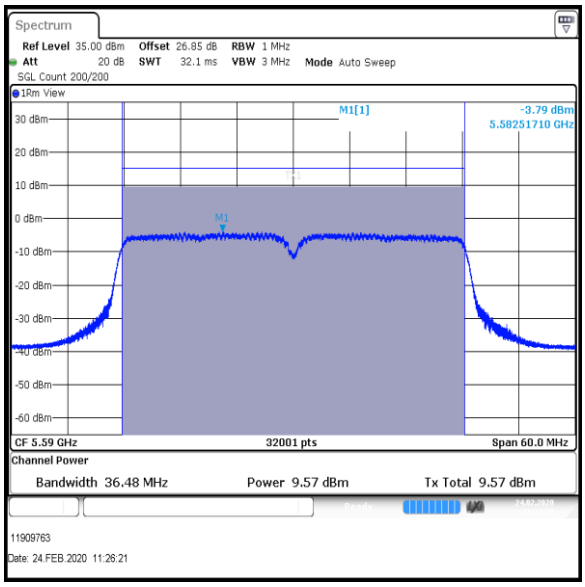
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

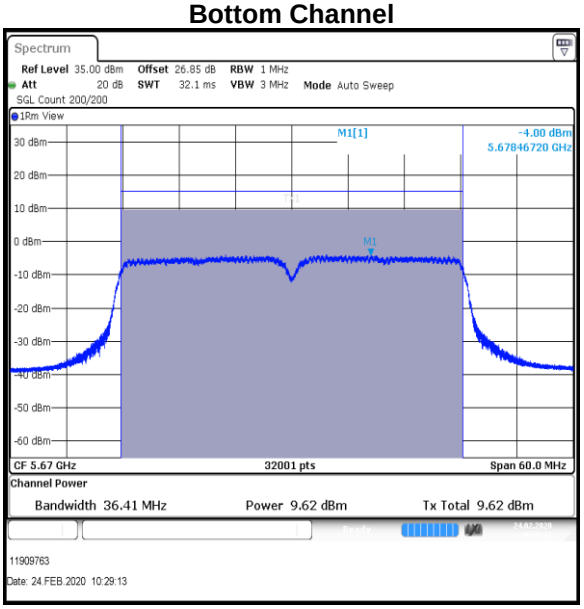
Results: 802.11n / HT40 / MCS4 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT40 / MCS3 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.7	2.3	12.0	22	10.0	Complied
Middle	10.2	2.3	12.5	22	9.5	Complied
Top	10.2	2.3	12.5	22	9.5	Complied

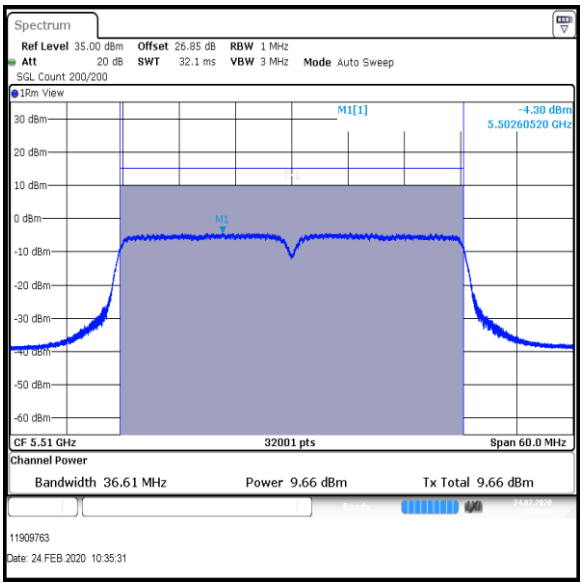
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	12.0	8	20.0	30	10.0	Complied
Middle	12.5	8	20.5	30	9.5	Complied
Top	12.5	8	20.5	30	9.5	Complied

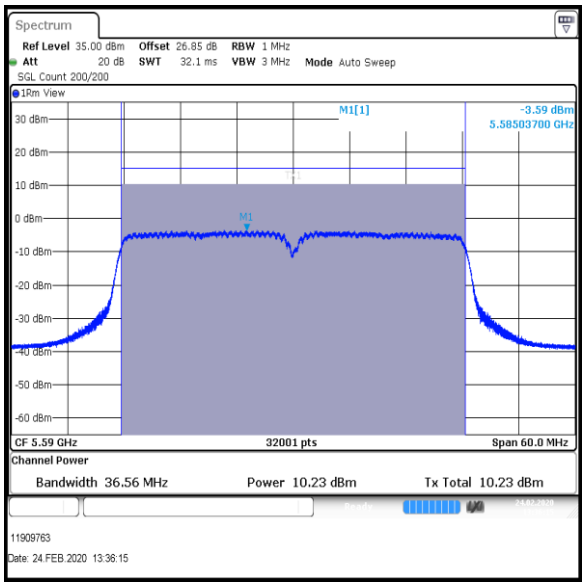
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

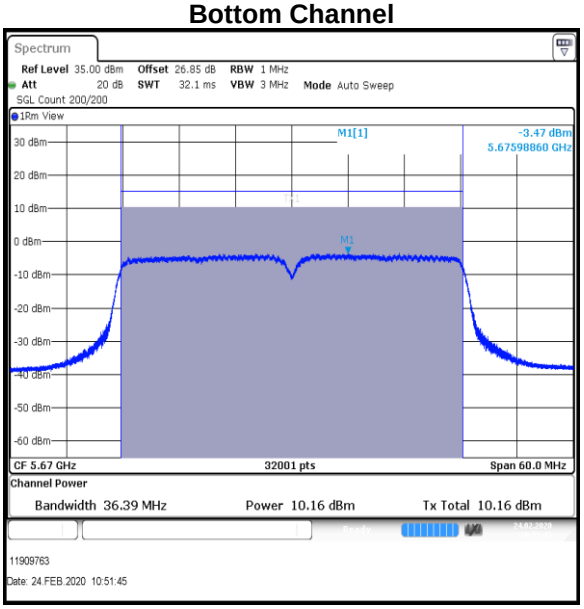
Results: 802.11ac / HT40 / MCS3 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT40 / MCS4 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	9.1	2.6	11.7	22	10.3	Complied
Middle	9.6	2.6	12.2	22	9.8	Complied
Top	9.6	2.6	12.2	22	9.8	Complied

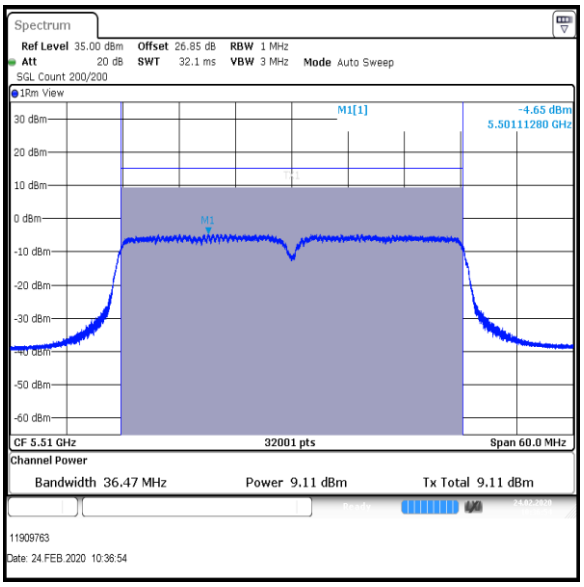
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.7	8	19.7	30	10.3	Complied
Middle	12.2	8	20.2	30	9.8	Complied
Top	12.2	8	20.2	30	9.8	Complied

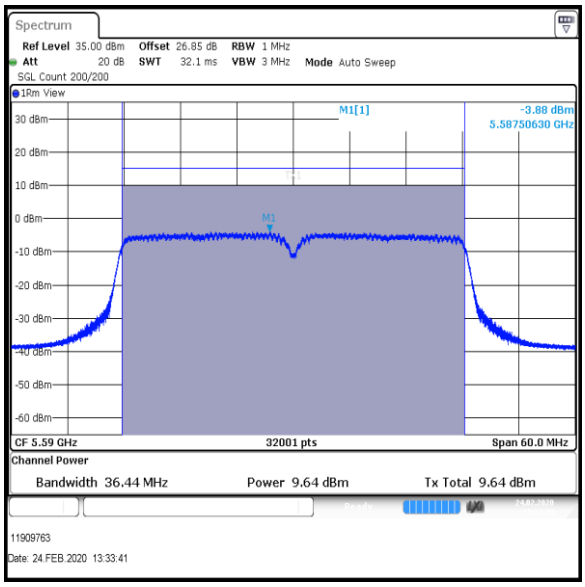
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

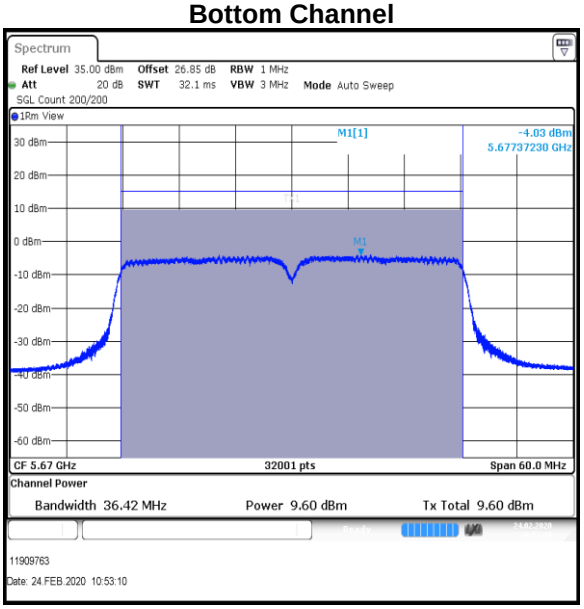
Results: 802.11ac / HT40 / MCS4 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT80 / MCS1 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	10.0	2.8	12.8	22	9.2	Complied
Top	10.4	2.8	13.2	22	8.8	Complied

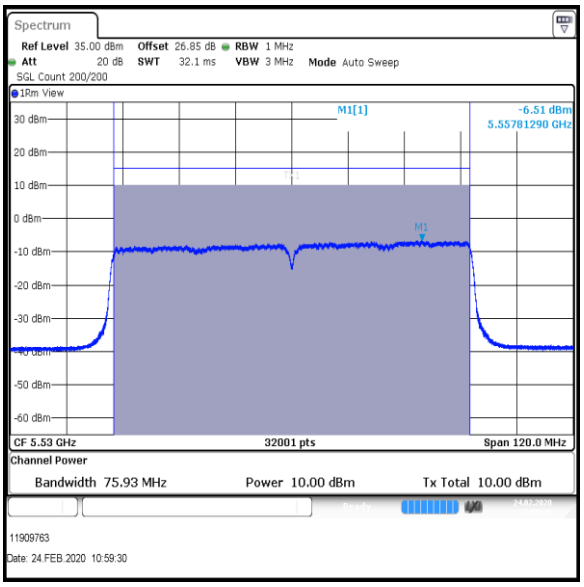
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	12.8	8	20.8	30	9.2	Complied
Top	13.2	8	21.2	30	8.8	Complied

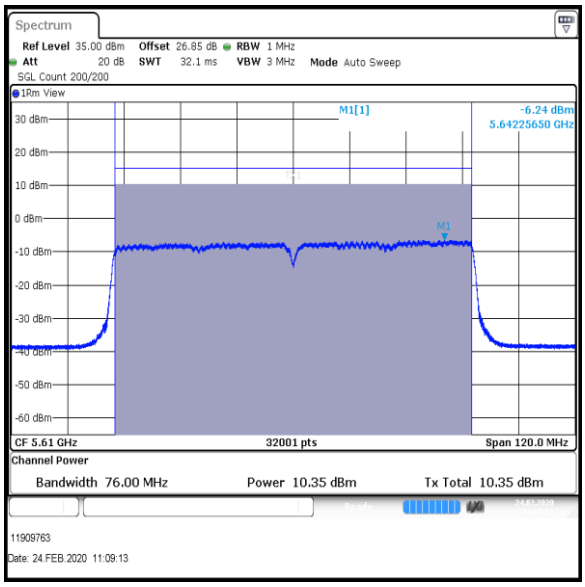
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT80 / MCS1 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT80 / MCS8 / SISO / Port 1 / PWL 13 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	7.2	4.1	11.3	22	10.7	Complied
Top	7.5	4.1	11.6	22	10.4	Complied

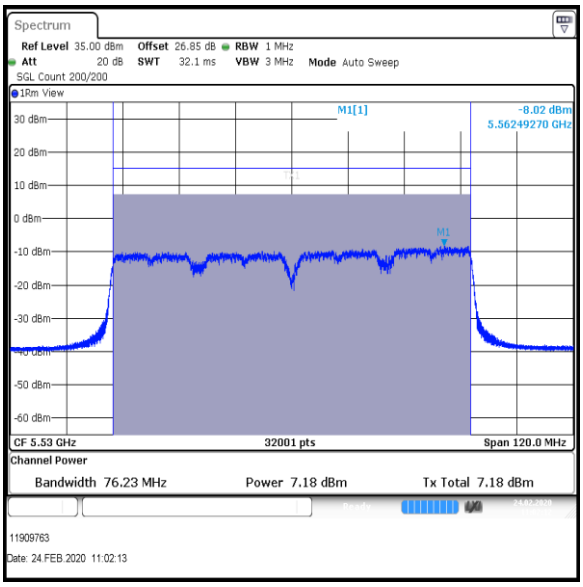
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.3	8	19.3	30	10.7	Complied
Top	11.6	8	19.6	30	10.4	Complied

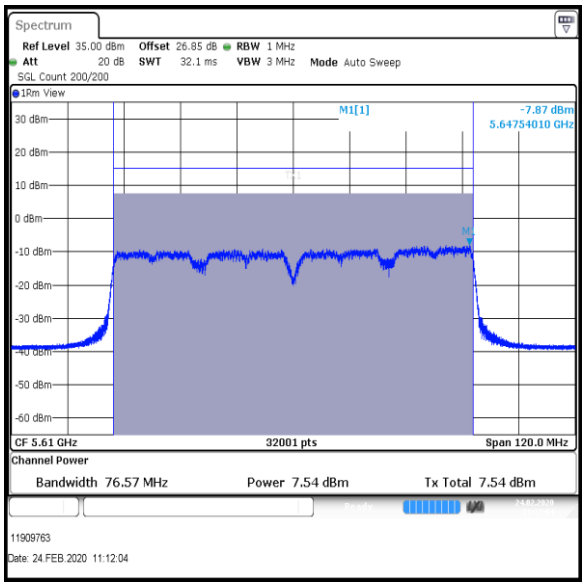
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT80 / MCS8 / SISO / Port 1 / PWL 13 / 8 dBi Antenna Port 1



Bottom Channel



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 13 / 8 dBi Antenna

Channel	Port 1 Conducted Power (dBm)	Duty Cycle Correction (dB)	Port 1 Corrected Conducted Power (dBm)	Port 2 Conducted Power (dBm)	Duty Cycle Correction (dB)	Port 2 Corrected Conducted Power (dBm)
Bottom	6.8	1.5	8.3	6.9	1.5	8.4

Channel	Corrected Conducted Power Port 1(dBm)	Corrected Conducted Power Port 2(dBm)	Port 1+2 Combined Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	8.3	8.4	11.4	22.0	10.6	Complied

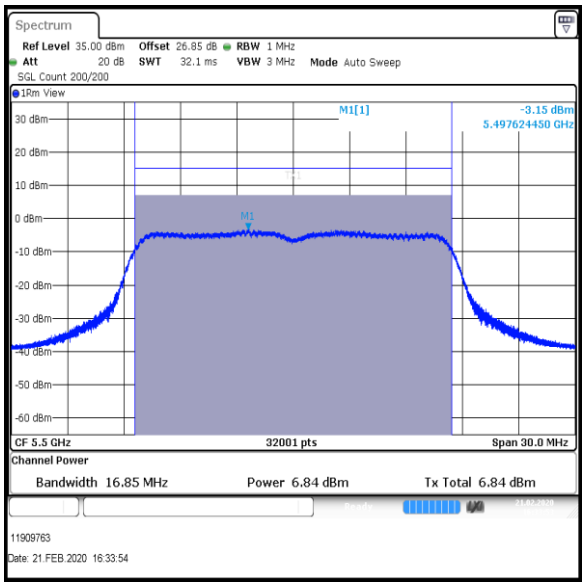
De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	11.4	8	19.4	30.0	10.6	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 13 / 8 dBi Antenna / Port 1

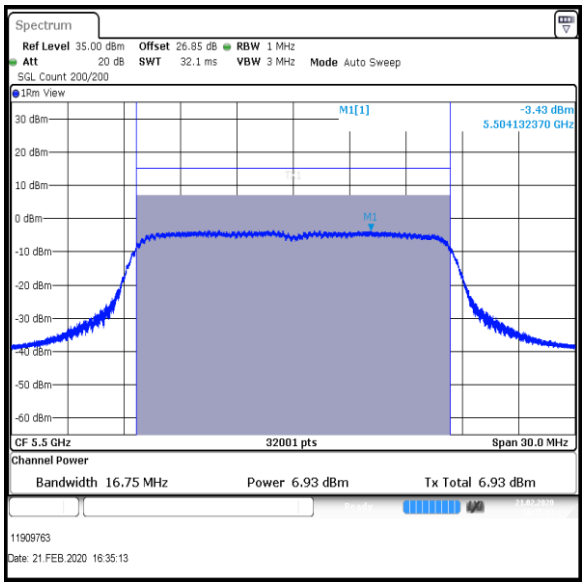


Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 13 / 8 dBi Antenna / Port 2



Bottom Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 19 / 8 dBi Antenna

Channel	Port 1 Conducted Power (dBm)	Duty Cycle Correction (dB)	Port 1 Corrected Conducted Power (dBm)	Port 2 Conducted Power (dBm)	Duty Cycle Correction (dB)	Port 2 Corrected Conducted Power (dBm)
Bottom+1	12.6	1.5	14.1	11.6	1.5	13.1
Middle	12.9	1.5	14.4	11.9	1.5	13.4
Top	12.2	1.5	13.7	11.5	1.5	13.0

Channel	Corrected Conducted Power Port 1(dBm)	Corrected Conducted Power Port 2(dBm)	Port 1+2 Combined Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom+1	14.1	13.1	16.6	22.0	5.4	Complied
Middle	14.4	13.4	16.9	22.0	5.1	Complied
Top	13.7	13.0	16.4	22.0	5.6	Complied

De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom+1	16.6	8	24.6	30.0	5.4	Complied
Middle	16.9	8	24.9	30.0	5.1	Complied
Top	16.4	8	24.4	30.0	5.6	Complied

Result: Pass