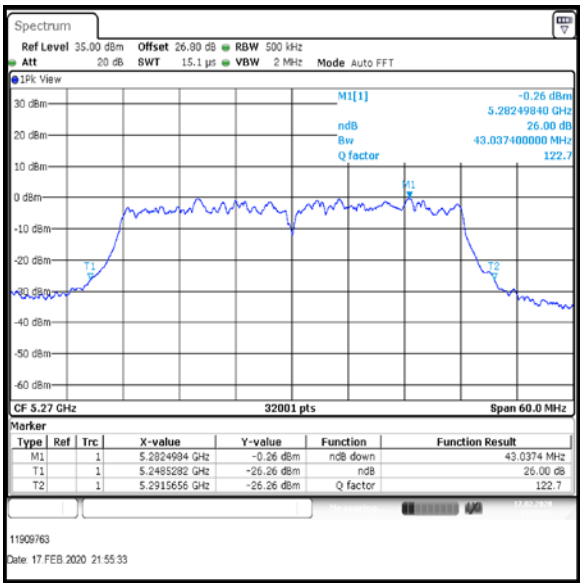
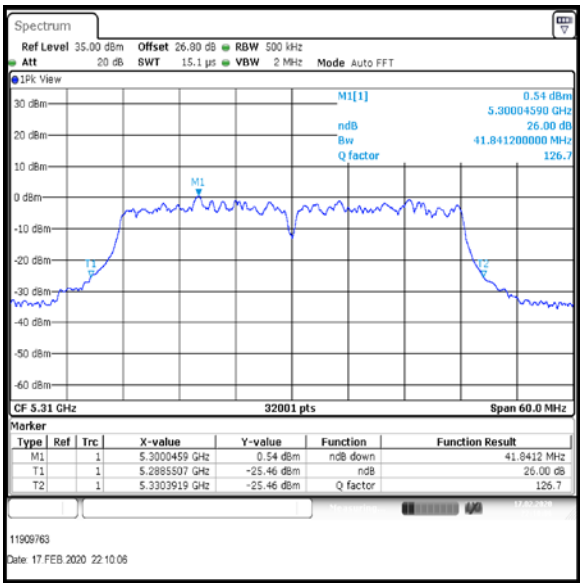
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS3 / MIMO / Port 1+2+3+4 / Port 3 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	43.037
Top	5310	41.841



Bottom Channel



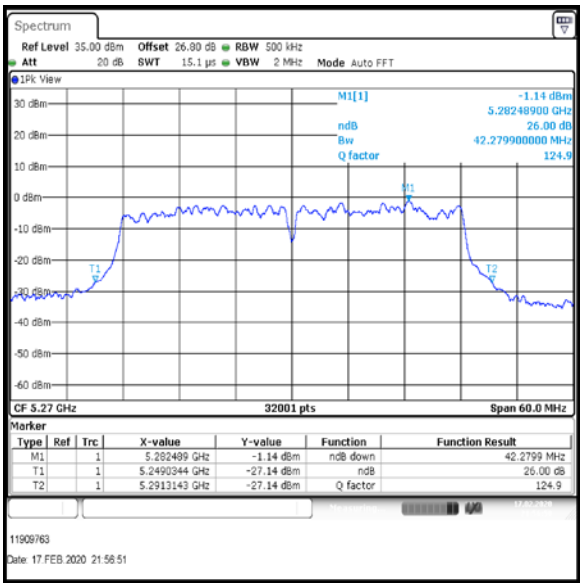
Top Channel

Result: **Pass**

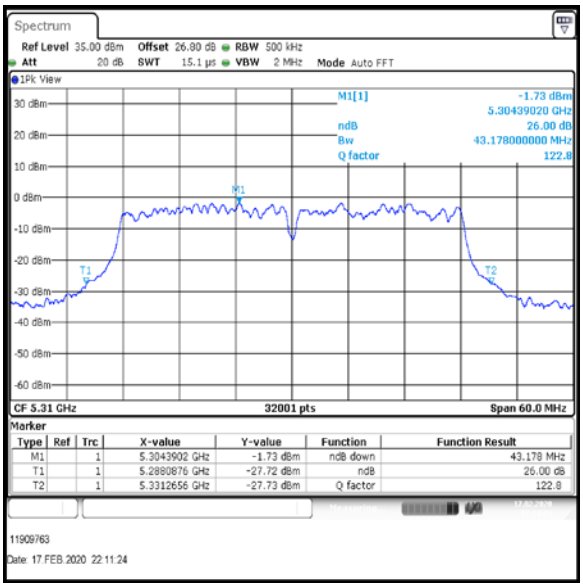
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS3 / MIMO / Port 1+2+3+4 / Port 4 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	42.28
Top	5310	43.178



Bottom Channel



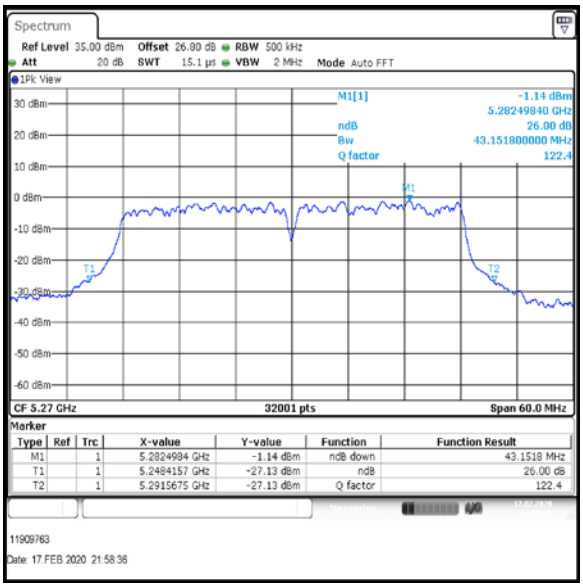
Top Channel

Result: Pass

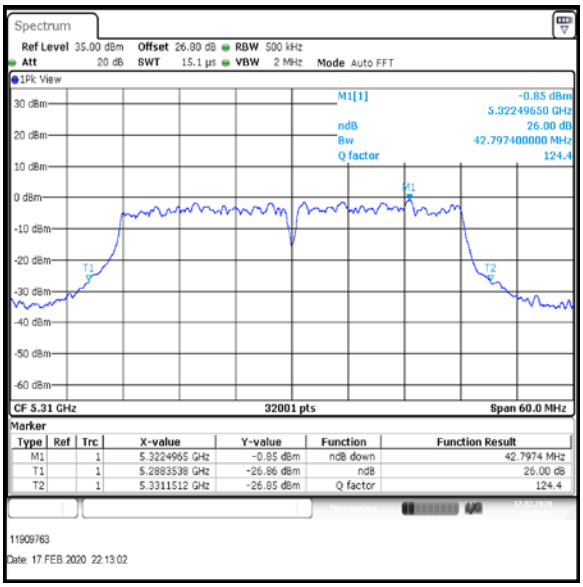
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS7 / MIMO / Port 1+2+3+4 / Port 1 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	43.152
Top	5310	42.797



Bottom Channel



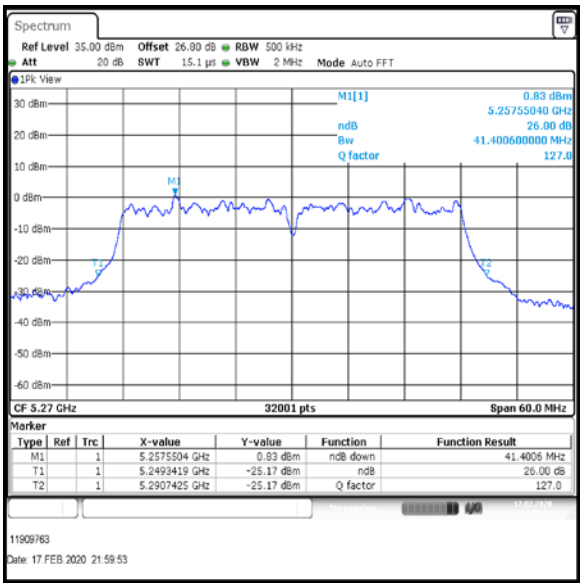
Top Channel

Result: Pass

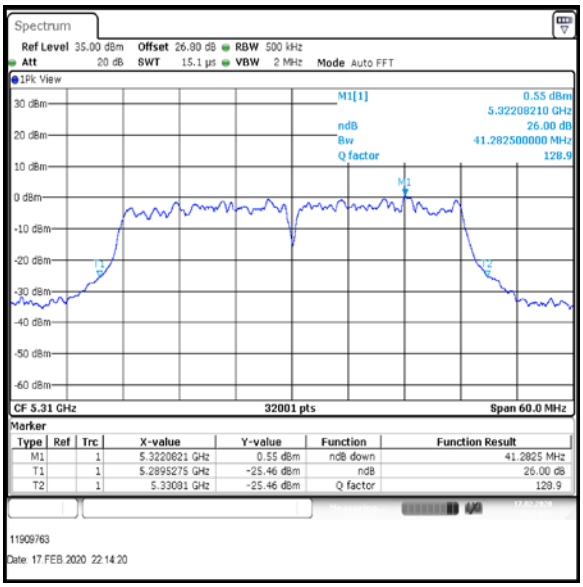
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS7 / MIMO / Port 1+2+3+4 / Port 2 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	41.401
Top	5310	41.283



Bottom Channel



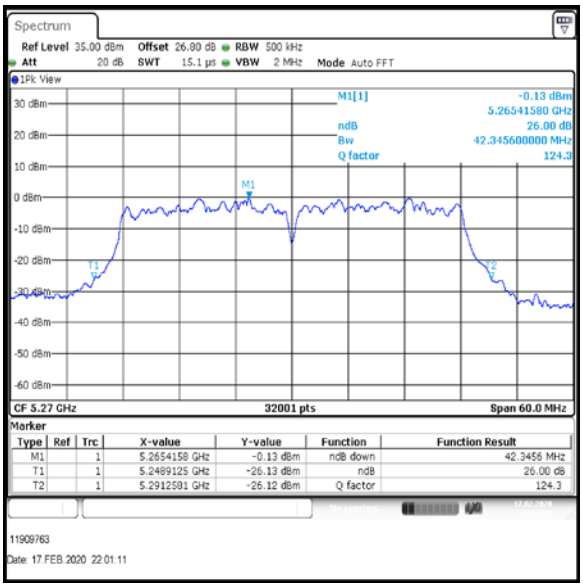
Top Channel

Result: Pass

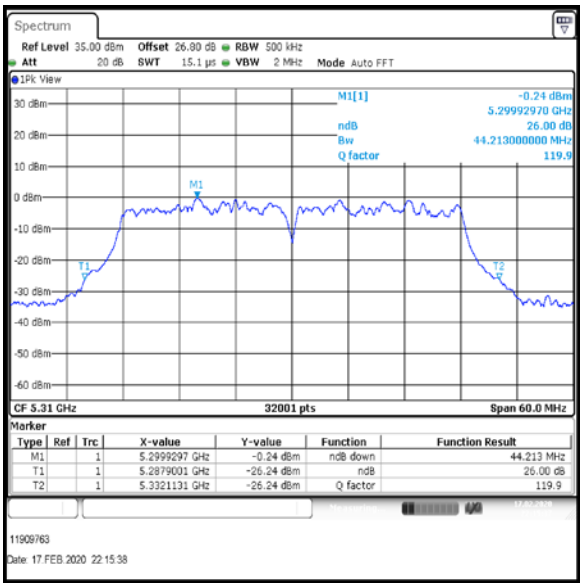
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS7 / MIMO / Port 1+2+3+4 / Port 3 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	42.346
Top	5310	44.213



Bottom Channel



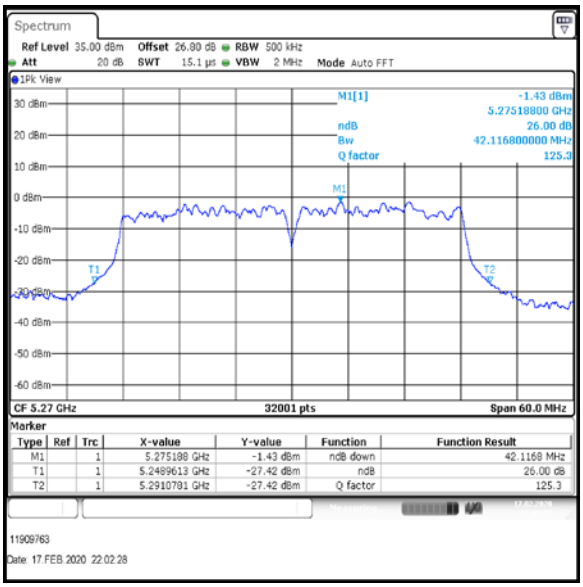
Top Channel

Result: Pass

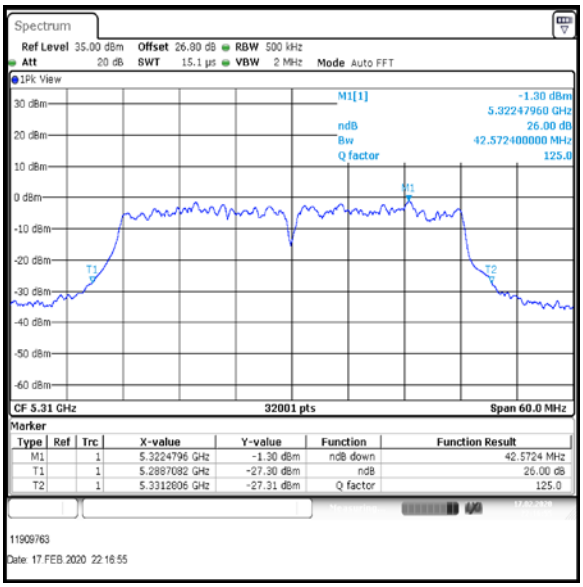
Transmitter 26 dB Emission Bandwidth (continued)

Results: 802.11ac / HT40 / MCS7 / MIMO / Port 1+2+3+4 / Port 4 / PWL 15 / 8 dBi Antenna

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	42.117
Top	5310	42.572



Bottom Channel



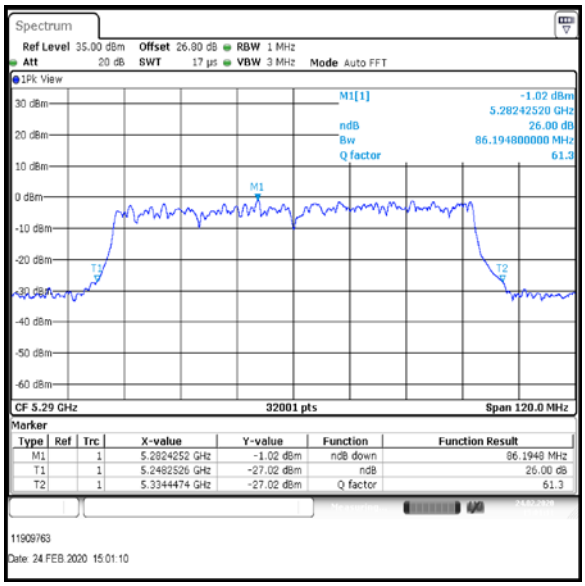
Top Channel

Result: Pass

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)	26 dB Emission Bandwidth (MHz)
Single	5290	86.195



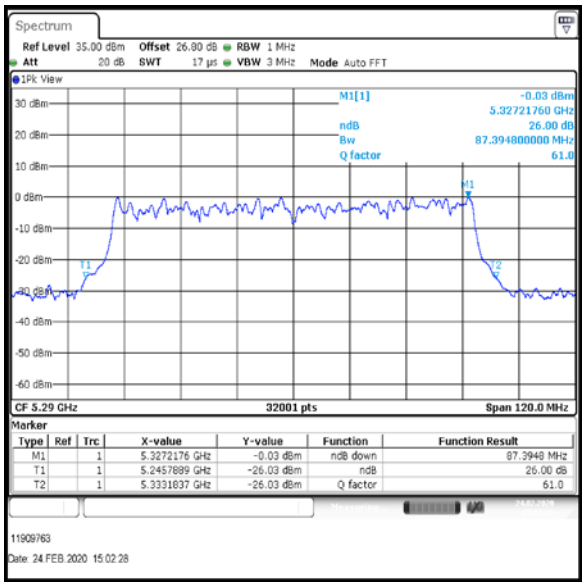
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	87.395



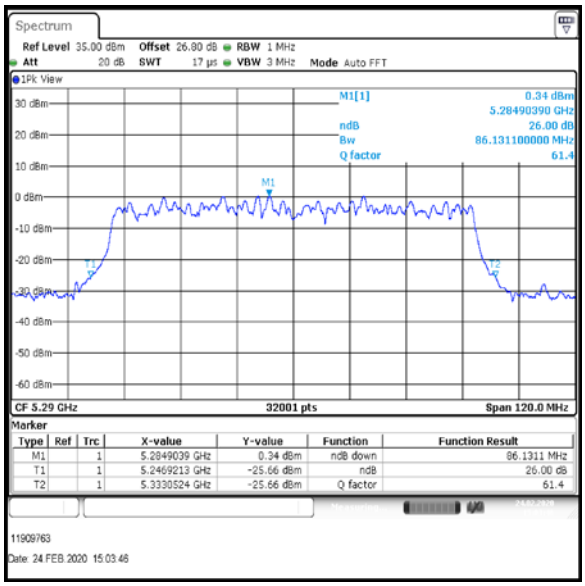
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	86.131



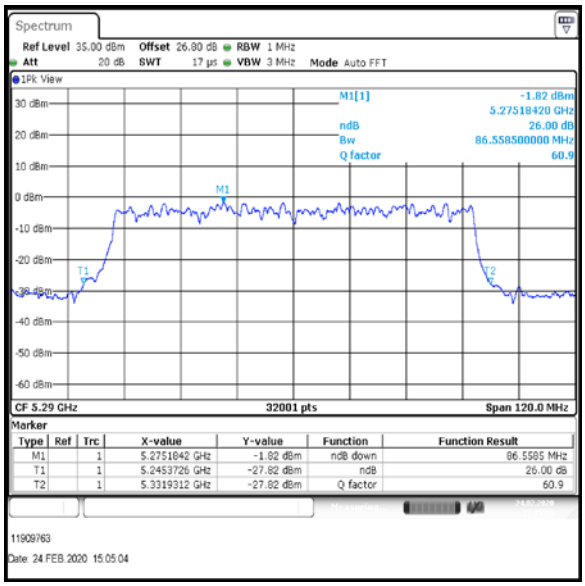
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	86.559



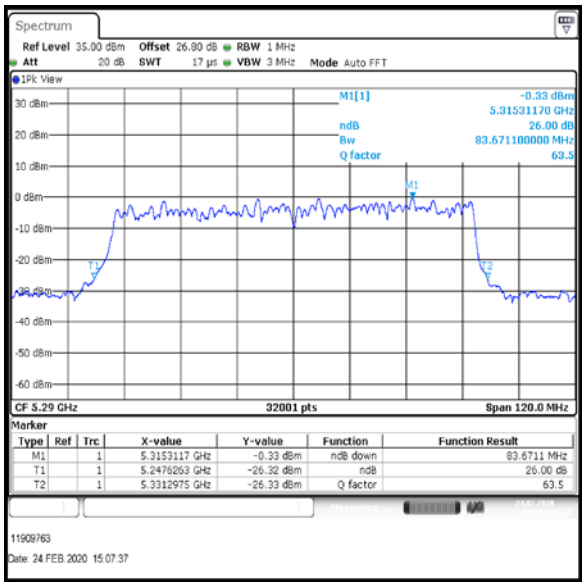
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	83.671



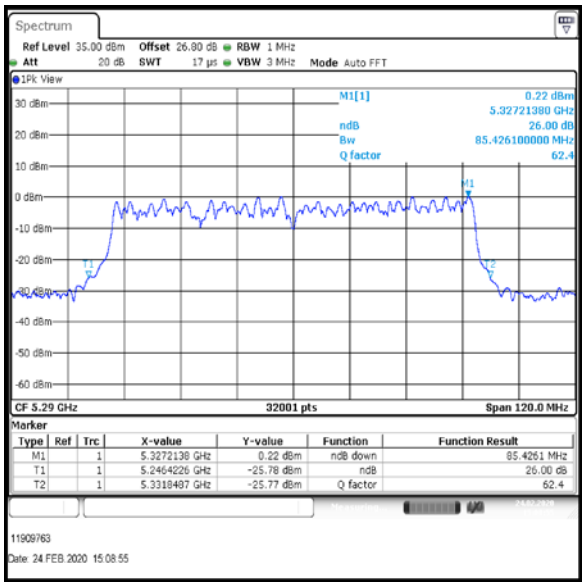
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	85.426



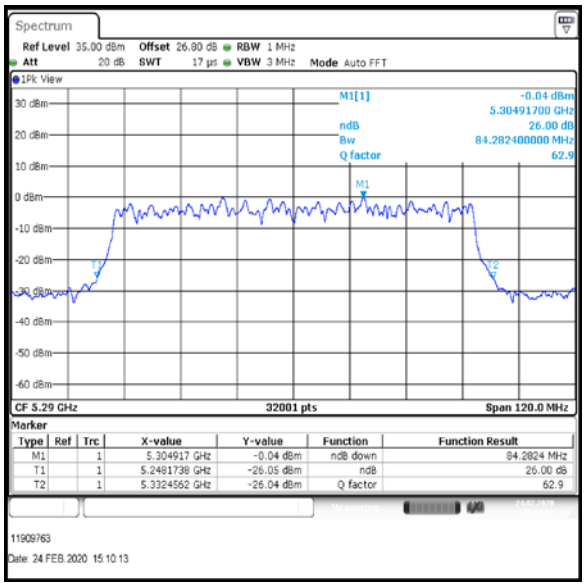
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	84.282



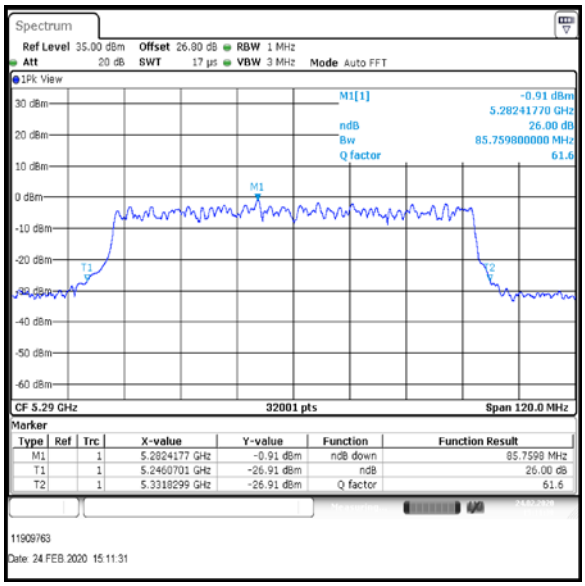
Single Channel

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)	26 dB Emission Bandwidth (MHz)
Single	5290	85.76



Single Channel

Result: Pass

5.2.3. Transmitter Duty Cycle

Test Summary:

Test Engineer:	Sercan Usta	**Test Date:**	24 February 2020 & 9 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):	22
Relative Humidity (%):	36

Note:

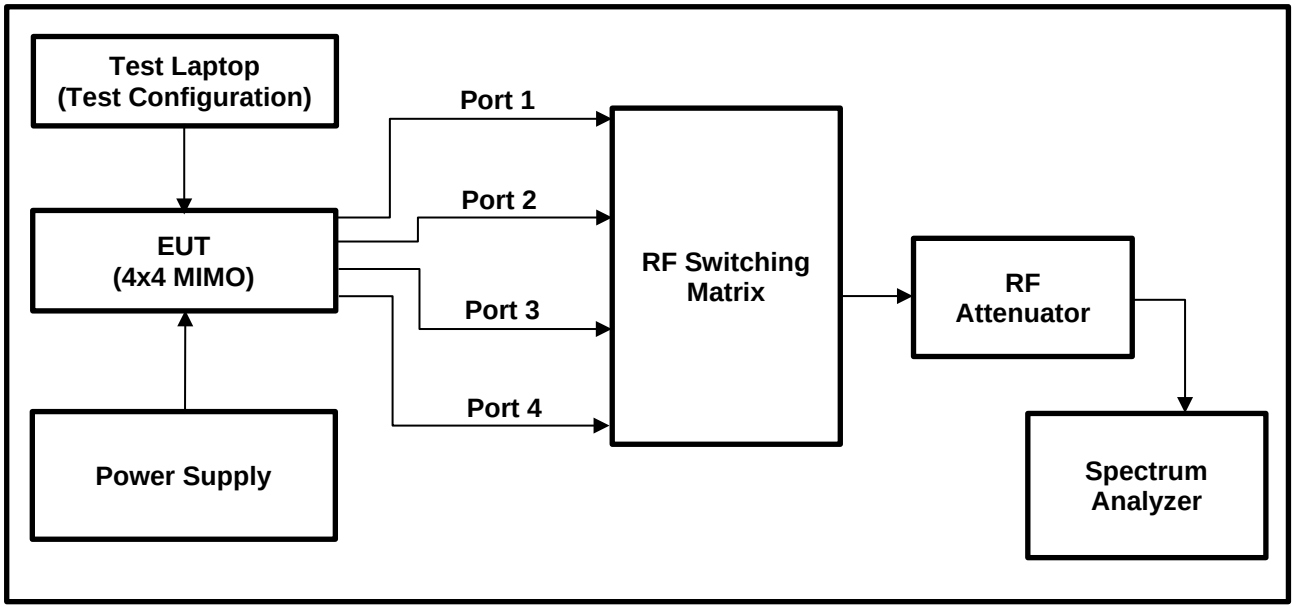
1. During initial investigations it is found that EUT was transmitting with Duty Cycle < 98 %.
2. In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent 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 26.80 dB@ 5.25-5.35 GHz to each of the conducted plots.

Transmitter Duty Cycle (continued)

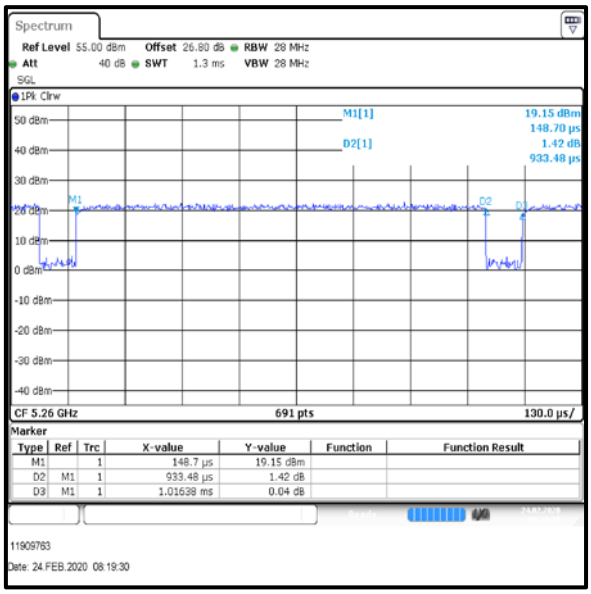
Test setup:



Transmitter Duty Cycle (continued)

Results: 802.11a / 20MHz / 9Mbit

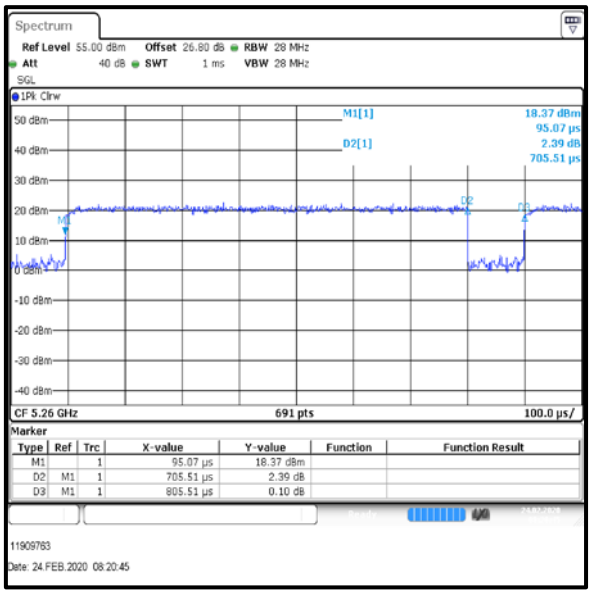
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
933.48	1016.38	91.844	0.4



Transmitter Duty Cycle (continued)

Results: 802.11a / 20MHz / 12Mbit

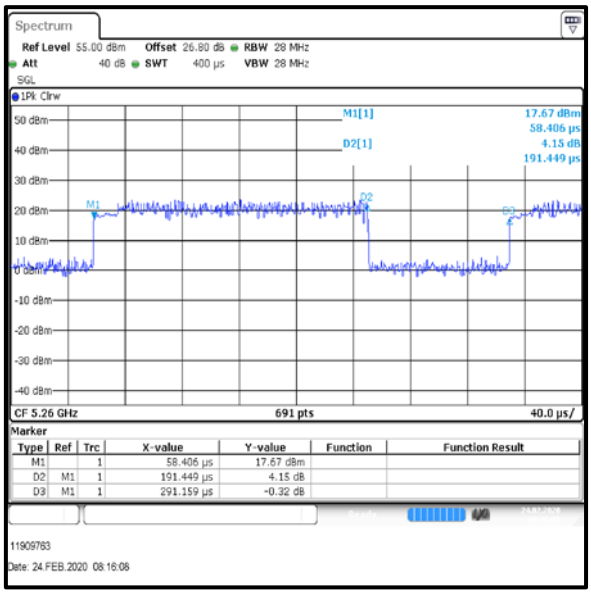
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
705.51	805.51	87.586	0.6



Transmitter Duty Cycle (continued)

Results: 802.11a / 20MHz / 48Mbit

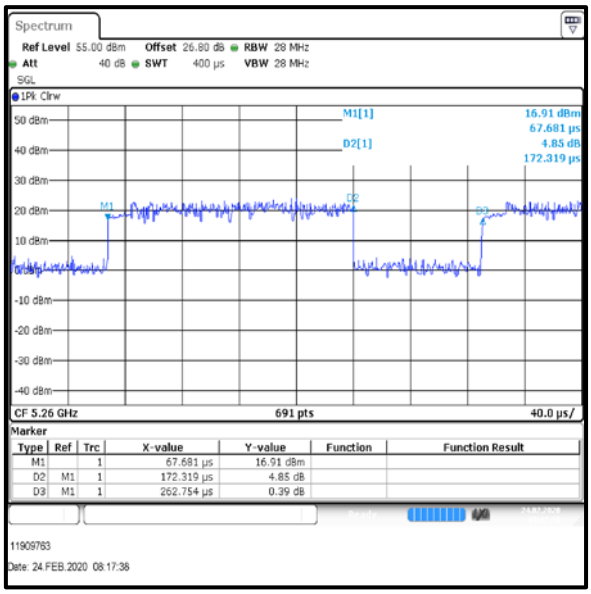
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
191.449	291.159	65.754	1.8



Transmitter Duty Cycle (continued)

Results: 802.11a / 20MHz / 54Mbit

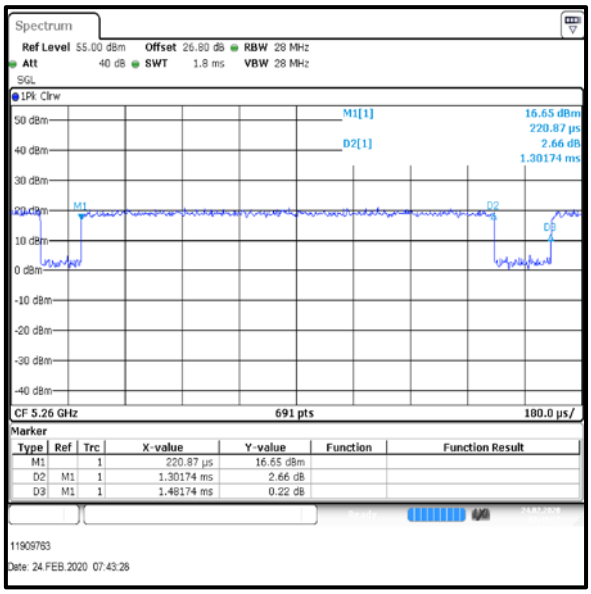
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
172.319	262.754	65.582	1.8



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS0

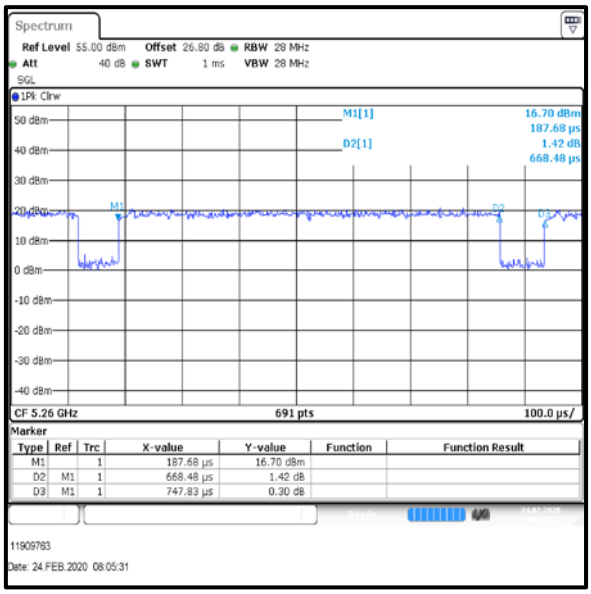
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
1301.74	1481.74	87.852	0.6



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS1

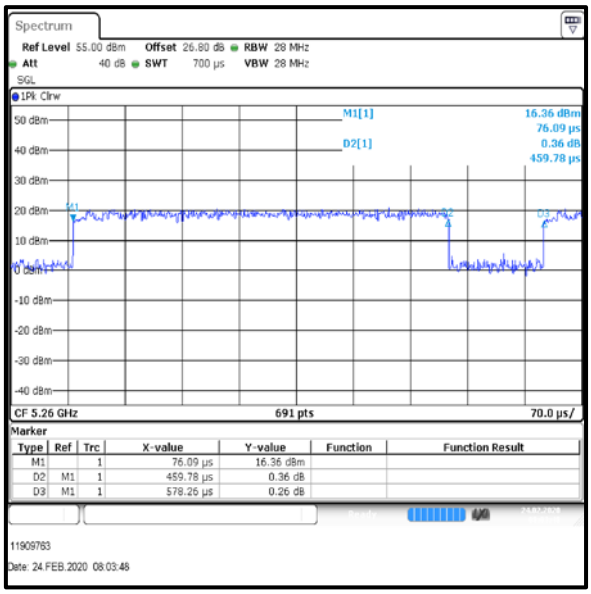
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
668.48	747.83	89.389	0.5



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS2

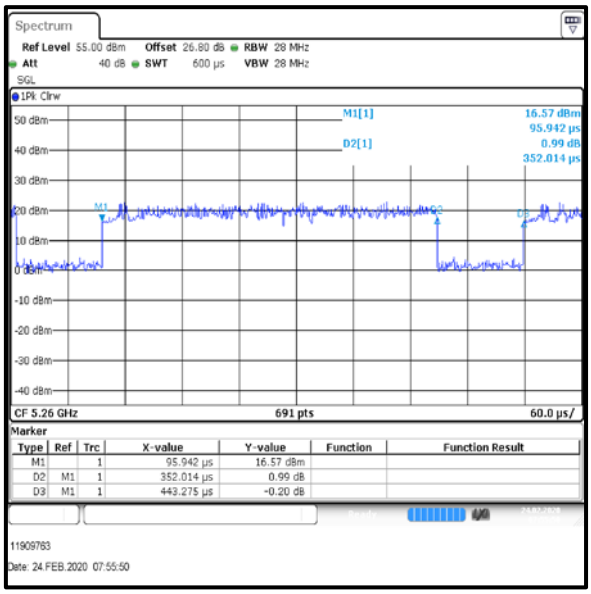
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
459.78	578.26	79.511	1.0



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS3

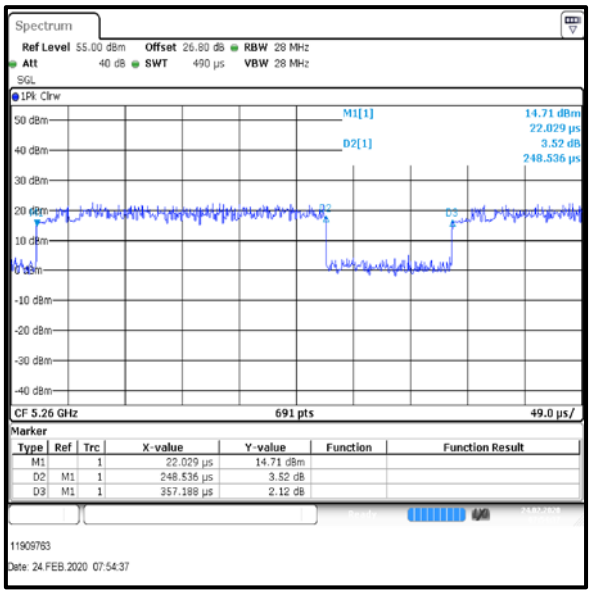
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
352.014	443.275	79.421	1.0



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS4

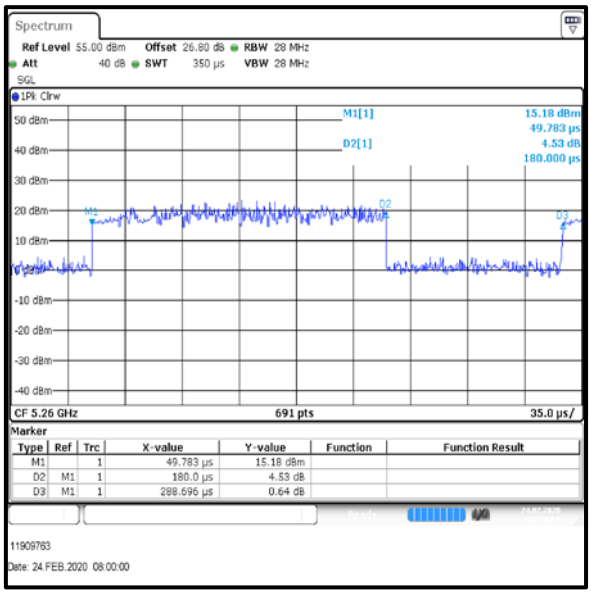
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
248.536	357.188	69.581	1.6



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS6

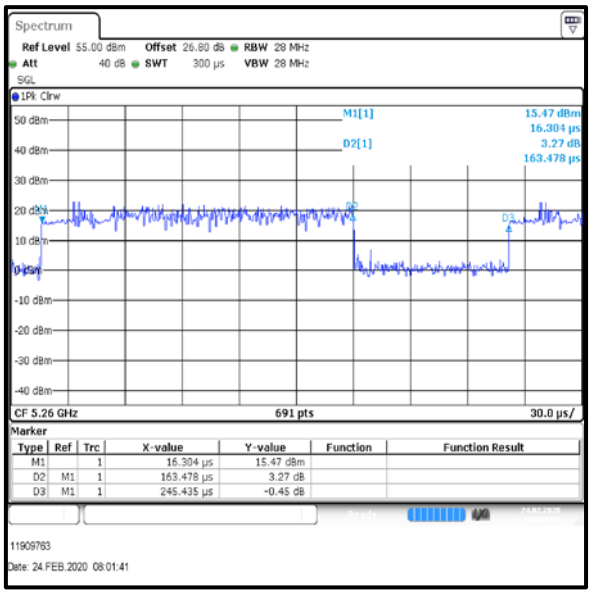
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
180.0	288.696	62.349	2.1



Transmitter Duty Cycle (continued)

Results: 802.11n / HT20 / MCS7

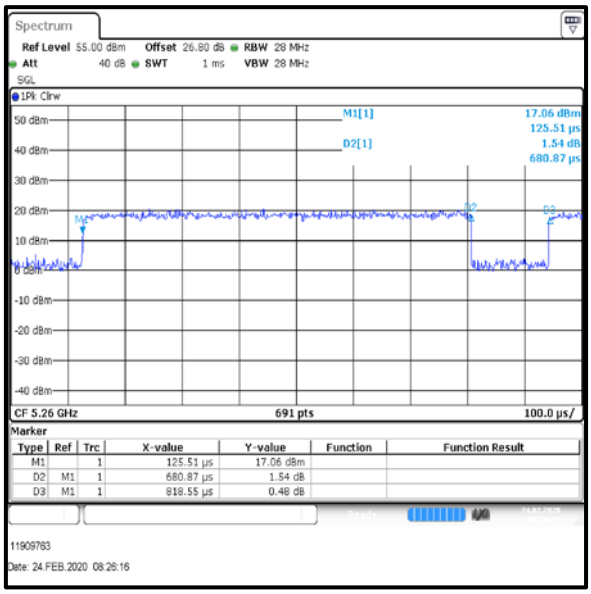
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
163.478	245.435	66.607	1.8



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS0

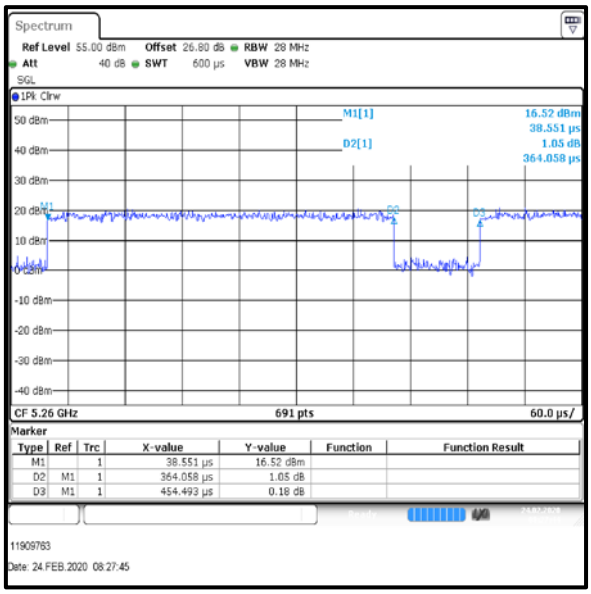
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
680.87	818.55	83.18	0.8



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS1

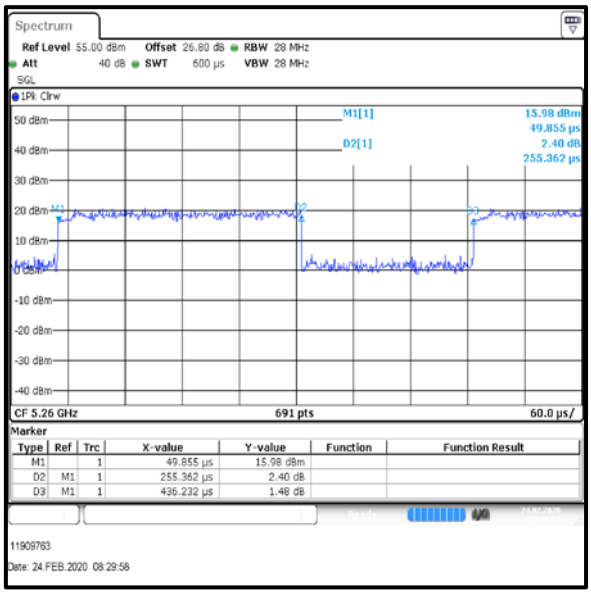
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
364.058	454.493	80.102	1.0



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS2

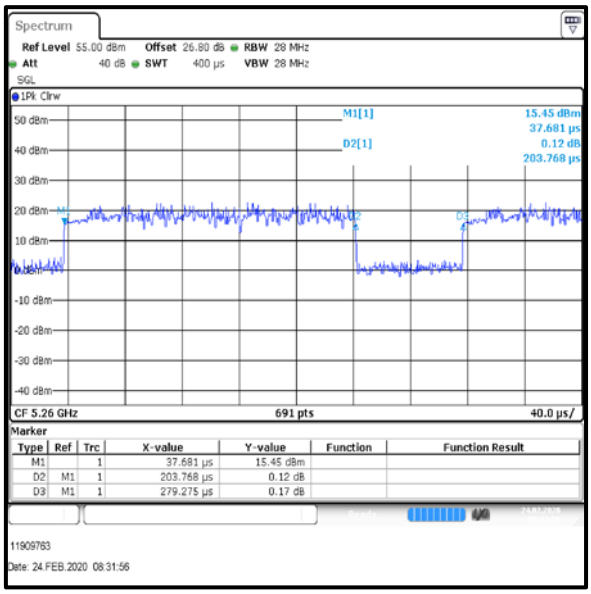
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
255.362	436.232	58.538	2.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS3

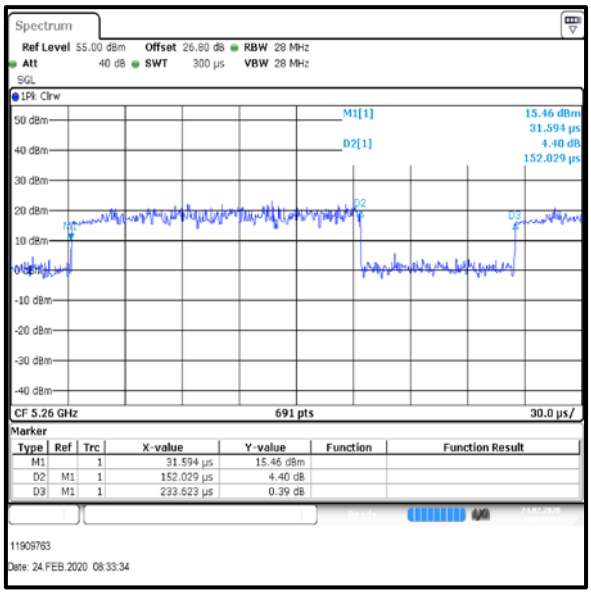
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
203.768	279.275	72.963	1.4



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS4

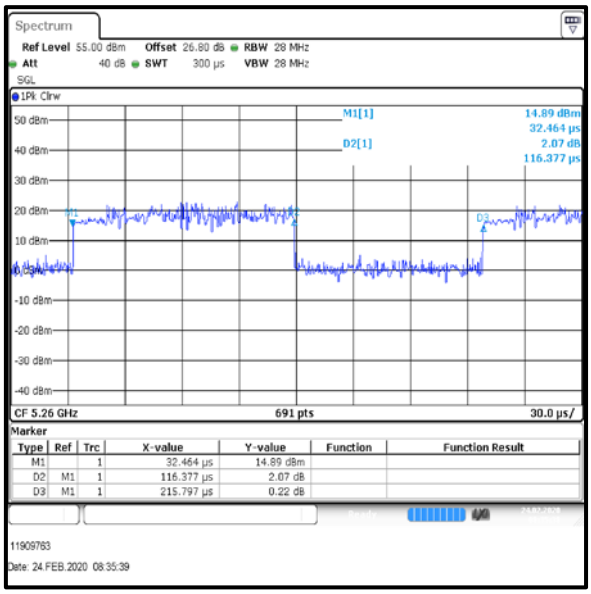
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
152.029	233.623	65.075	1.9



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS6

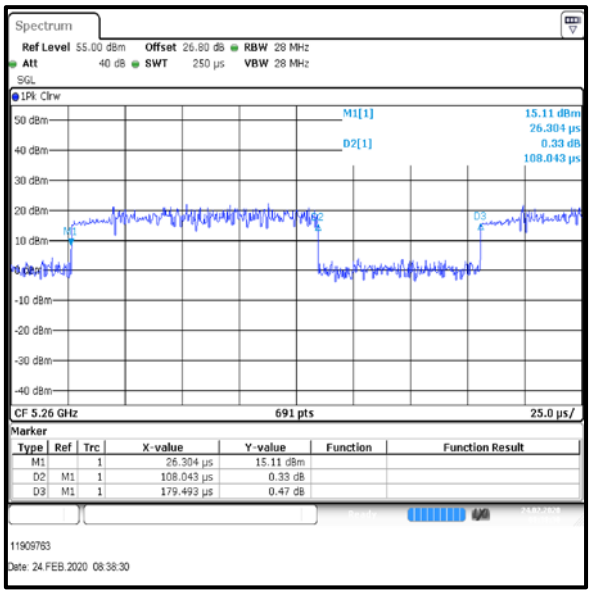
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
116.377	215.797	53.929	2.7



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT20 / MCS7

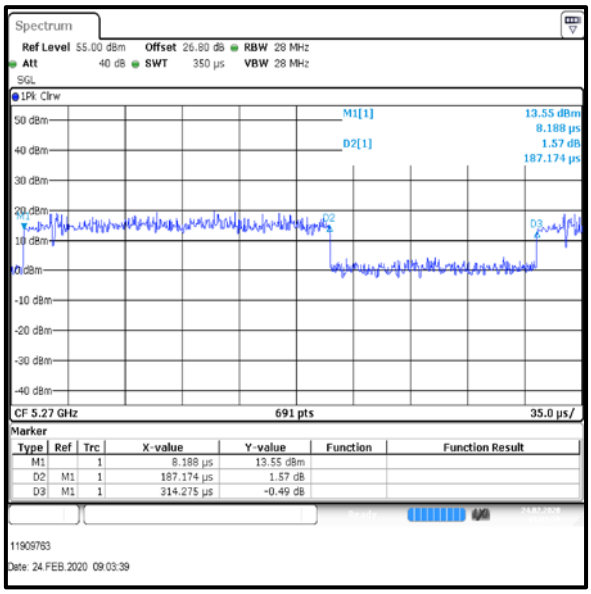
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
108.043	179.493	60.193	2.2



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS3

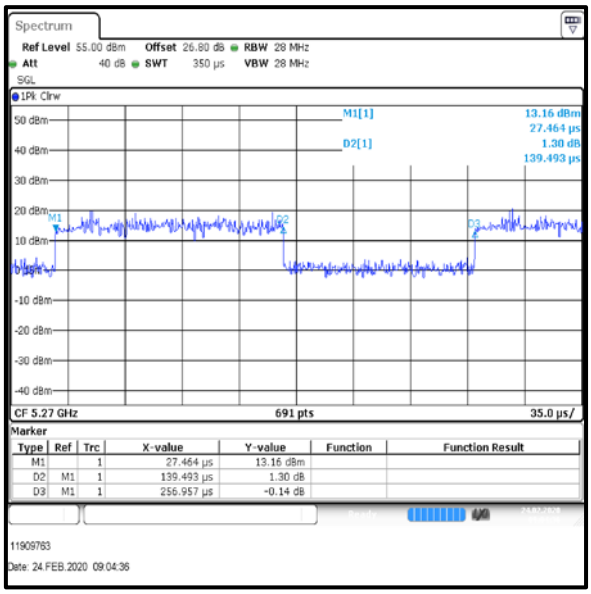
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
187.174	314.275	59.557	2.3



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS4

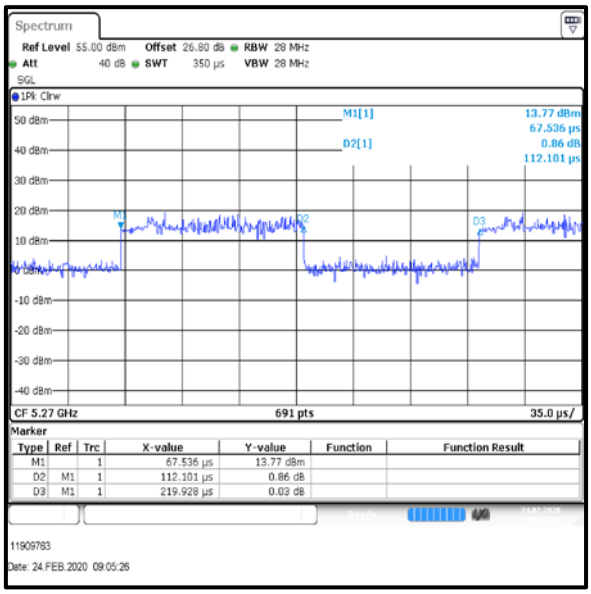
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
139.493	256.957	54.287	2.7



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS5

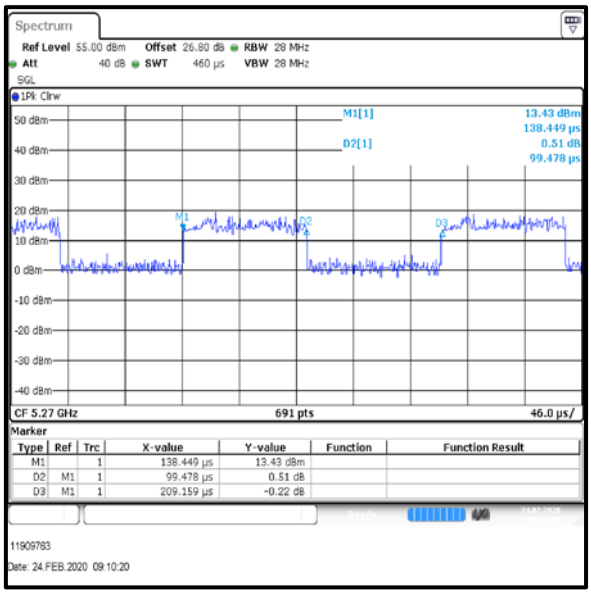
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
112.101	219.928	50.972	2.9



Transmitter Duty Cycle (continued)

Results: 802.11n / HT40 / MCS7

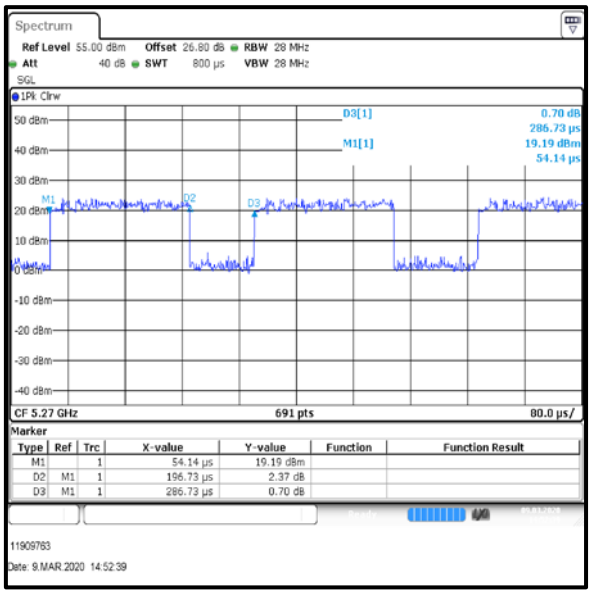
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
99.478	209.159	47.561	3.2



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS3

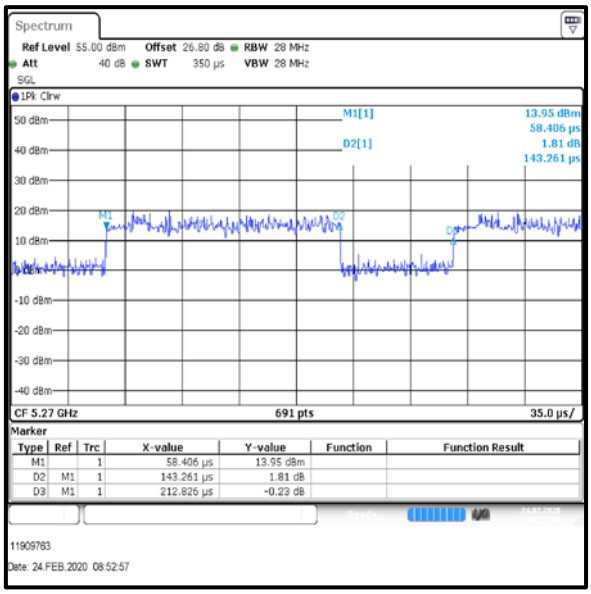
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
196.73	286.73	68.61	1.6



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS4

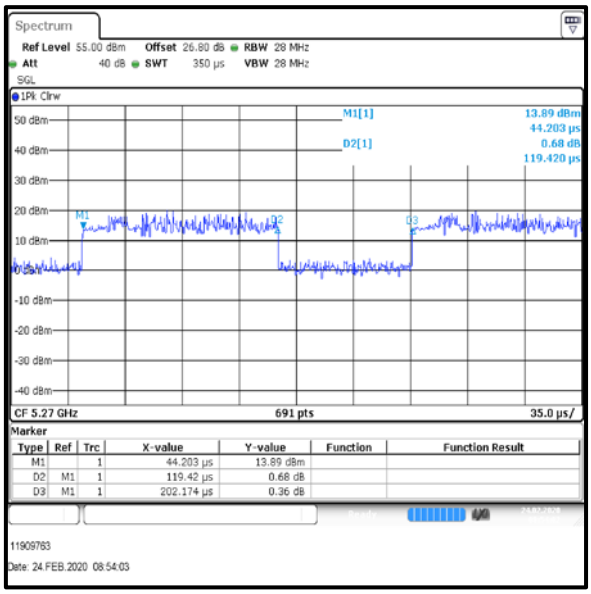
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
143.261	212.826	67.314	1.7



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS5

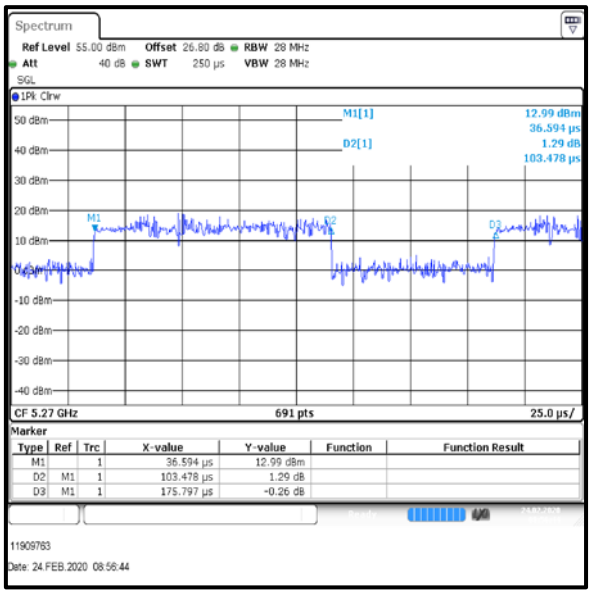
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
119.42	202.174	59.068	2.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT40 / MCS7

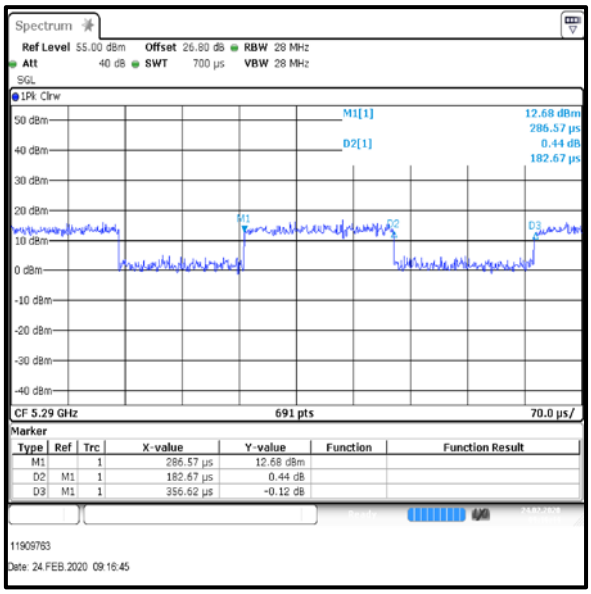
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
103.478	175.797	58.862	2.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS1

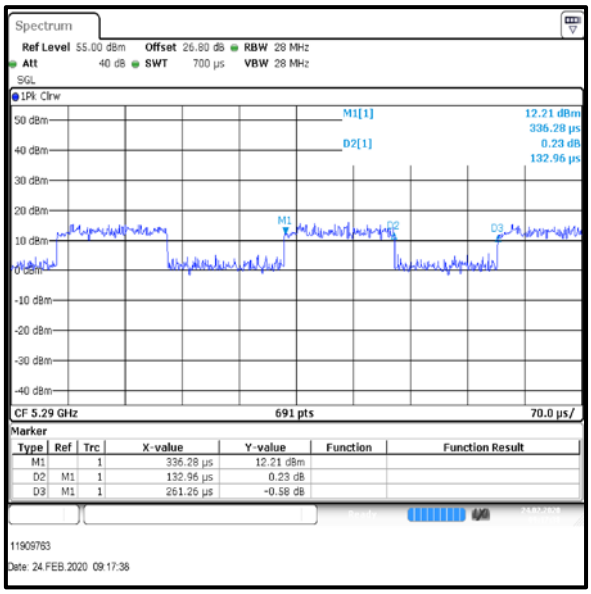
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
182.67	356.62	51.223	2.9



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS2

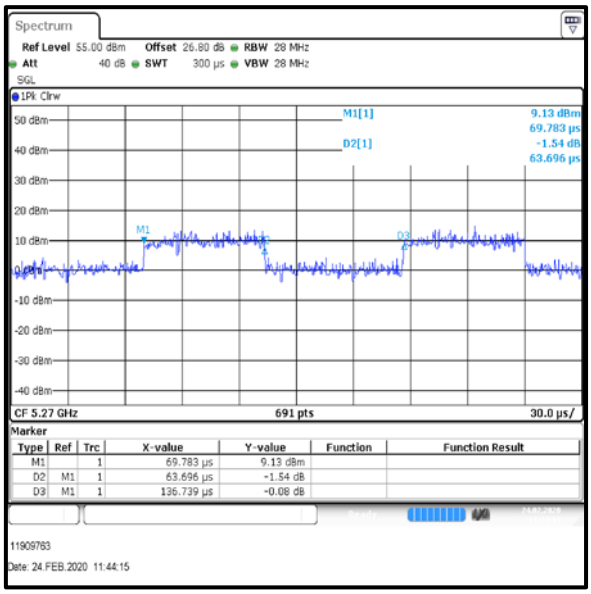
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
132.96	261.26	50.892	2.9



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS3

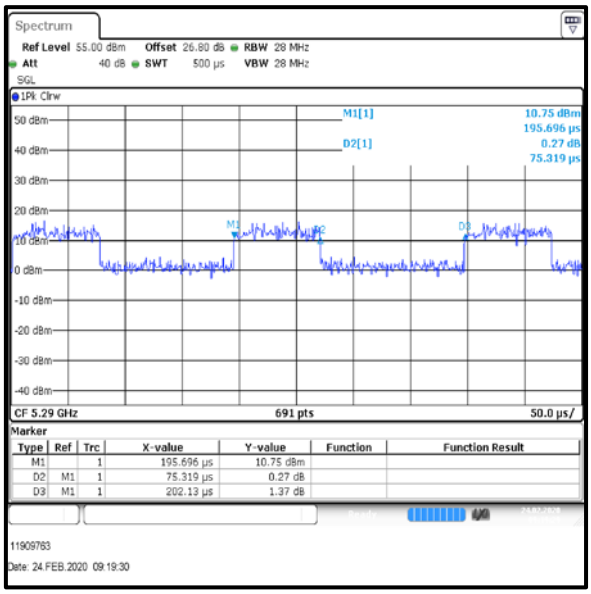
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
63.696	136.739	46.582	3.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS5

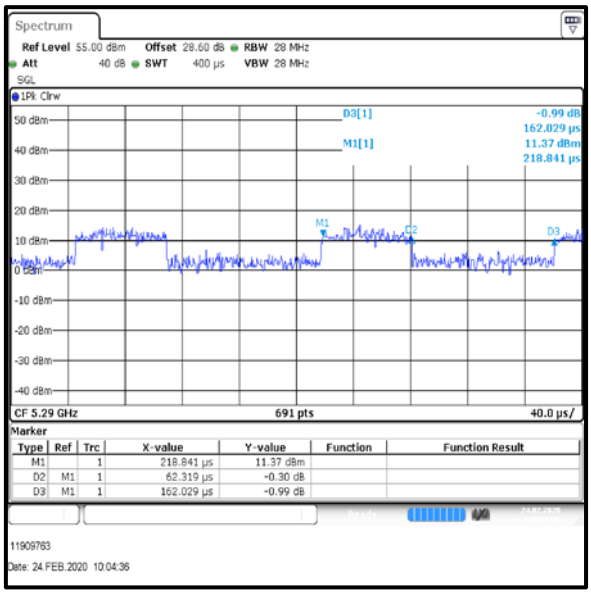
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
75.319	202.13	37.263	4.3



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS6

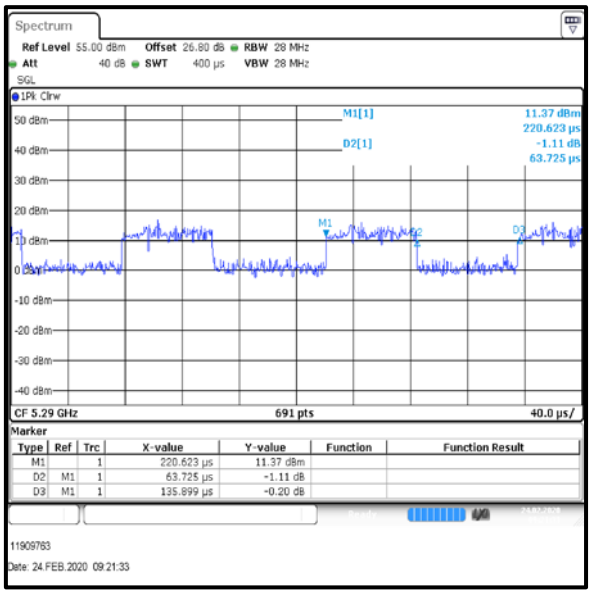
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
62.319	162.029	38.462	4.1



Transmitter Duty Cycle (continued)

Results: 802.11ac / HT80 / MCS8

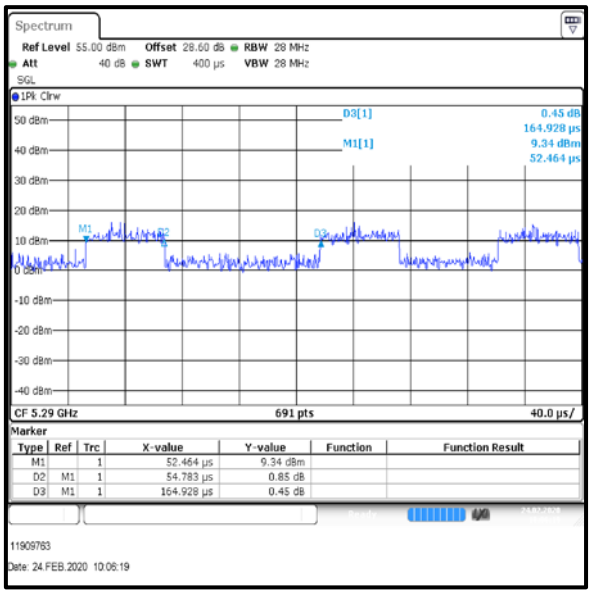
Pulse On Time (T_{ON}) (µs)	Pulse Period (T_{ON} +T_{OFF}) (µs)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
63.725	135.899	46.891	3.3



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)
54.783	164.928	33.216	4.8



5.2.4. Transmitter Maximum Conducted Output Power

Test Summary:

Test Engineer:	Krume Ivanov & Sercan Usta	**Test Dates:**	18 February 2020 to 27 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 27
Relative Humidity (%):	24 to 38

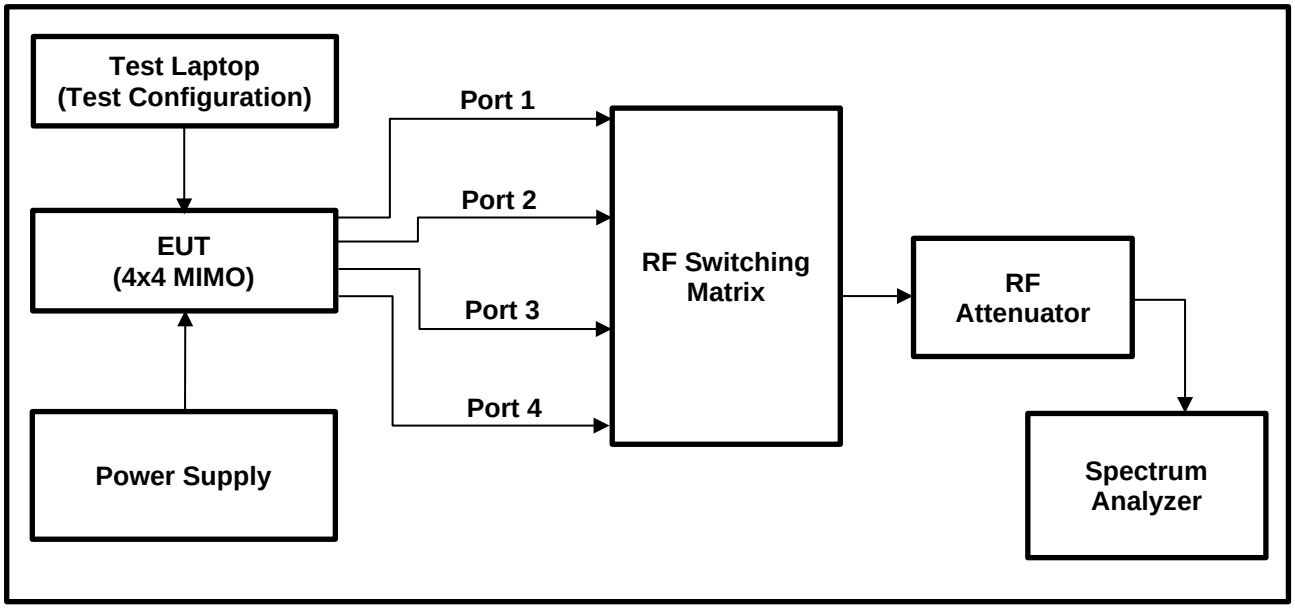
Notes:

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 take 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 FCC 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 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.
10. In accordance with FCC 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.
11. Therefore for 8 dBi Antenna, reduced maximum conducted output power limits are as follows:
    - the limit of 250 mW ≈ 24 dB 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 18 / 8 dBi Antenna

Channel	Conducted Power(dBm)	Duty Cycle Correction (dB)	Corrected Conducted Power (dBm)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	13.7	1.8	15.5	22.0	6.5	Complied
Middle	13.6	1.8	15.4	22.0	6.6	Complied
Top-1	13.4	1.8	15.2	22.0	6.8	Complied

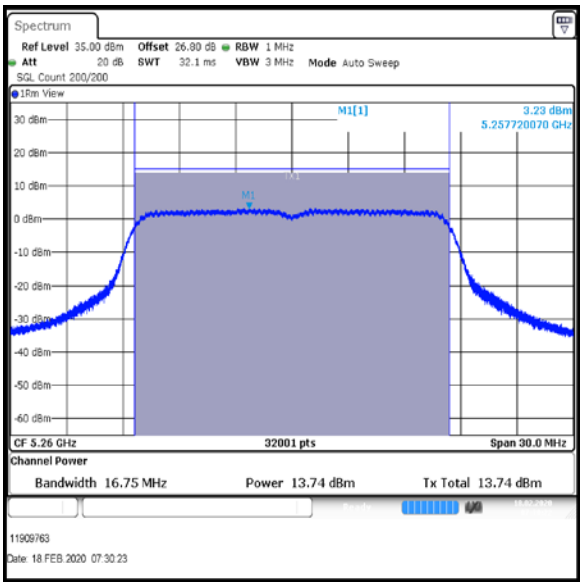
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.5	8	23.5	30.0	6.5	Complied
Middle	15.4	8	23.4	30.0	6.6	Complied
Top-1	15.2	8	23.2	29.2	6.0	Complied

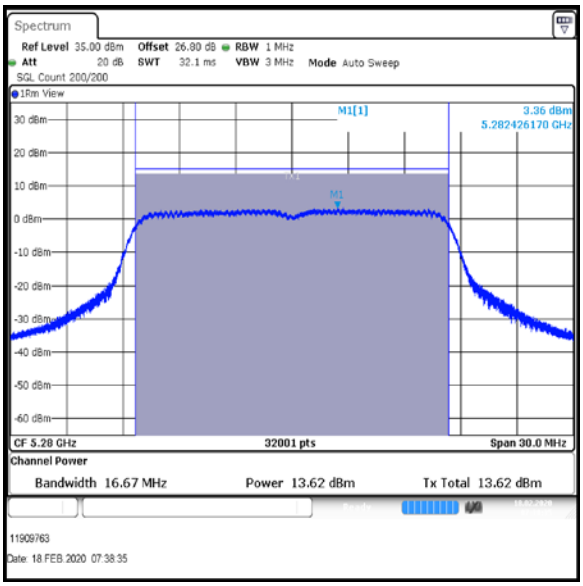
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

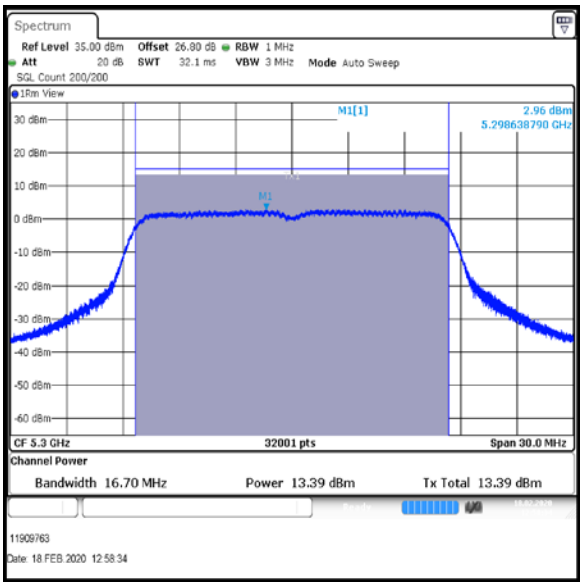
Results: 802.11a / 20 MHz / 48Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 Channel

Result: Pass

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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	8.7	1.8	10.5	22.0	11.5	Complied

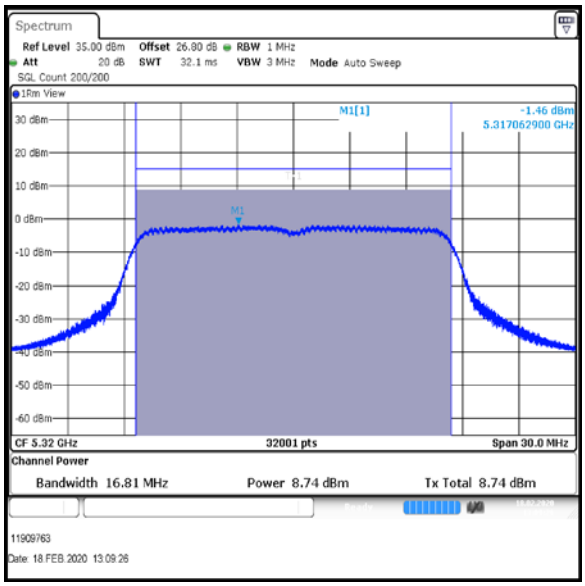
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	10.5	8	18.5	30.0	11.5	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



Top 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	13.5	1.8	15.3	22.0	6.7	Complied
Middle	13.4	1.8	15.2	22.0	6.8	Complied
Top-1	13.2	1.8	15.0	22.0	7.0	Complied

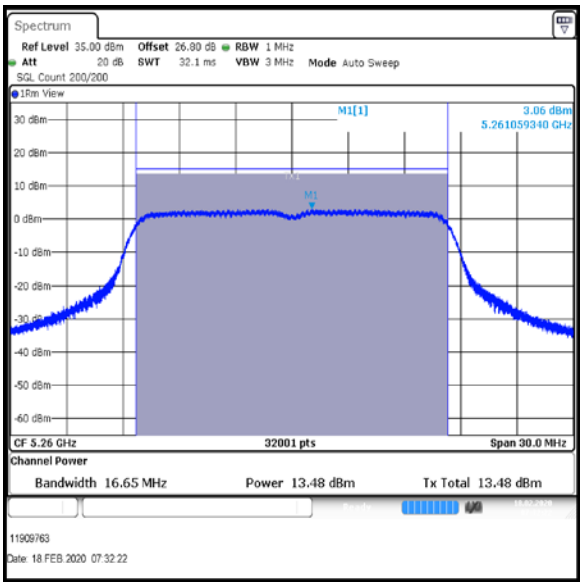
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.3	8	23.3	30.0	6.7	Complied
Middle	15.2	8	23.2	30.0	6.8	Complied
Top-1	15.0	8	23.0	30.0	7.0	Complied

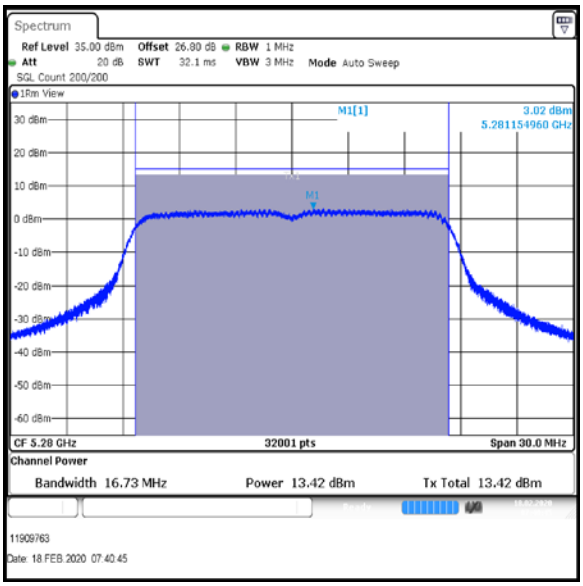
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

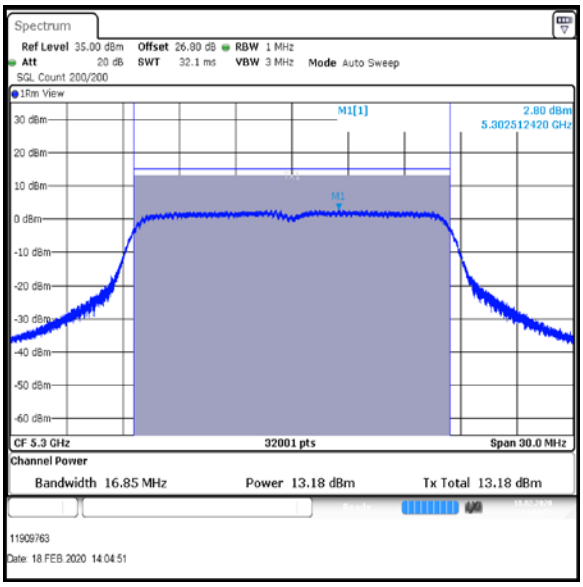
Results: 802.11a / 20 MHz / 54Mbit / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	8.5	1.8	10.3	22.0	11.7	Complied

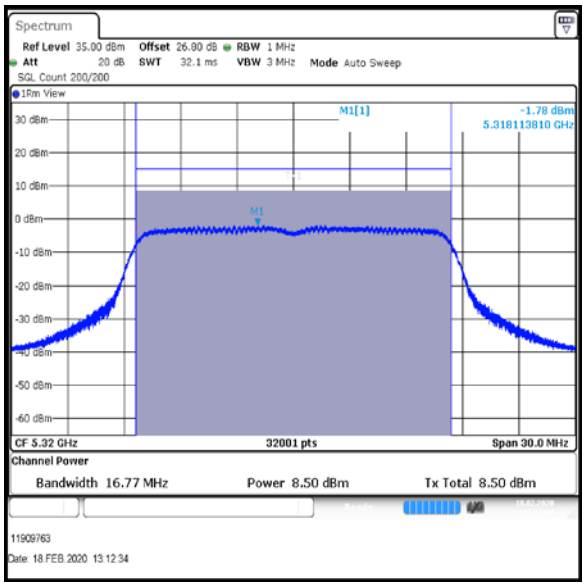
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	10.3	8	18.3	30.0	11.7	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



Top 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	14.6	1.0	15.6	22.0	6.4	Complied
Middle	14.5	1.0	15.5	22.0	6.5	Complied
Top-1	14.5	1.0	15.5	22.0	6.5	Complied

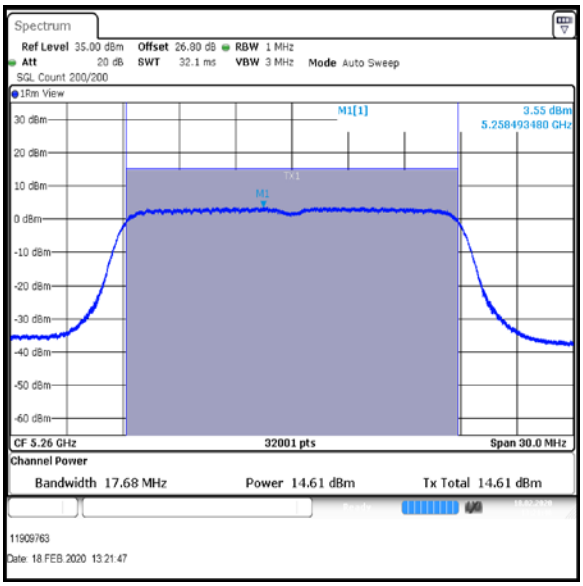
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.6	8	23.6	30.0	6.4	Complied
Middle	15.5	8	23.5	30.0	6.5	Complied
Top-1	15.5	8	23.5	30.0	6.5	Complied

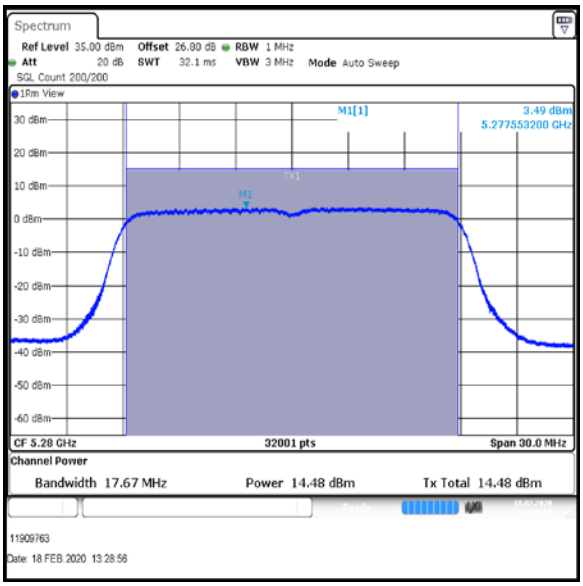
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

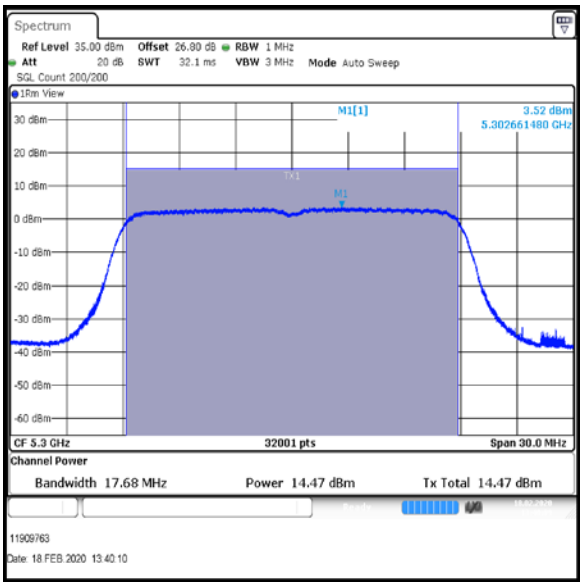
Results: 802.11n / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	9.6	1.0	10.6	22.0	11.4	Complied

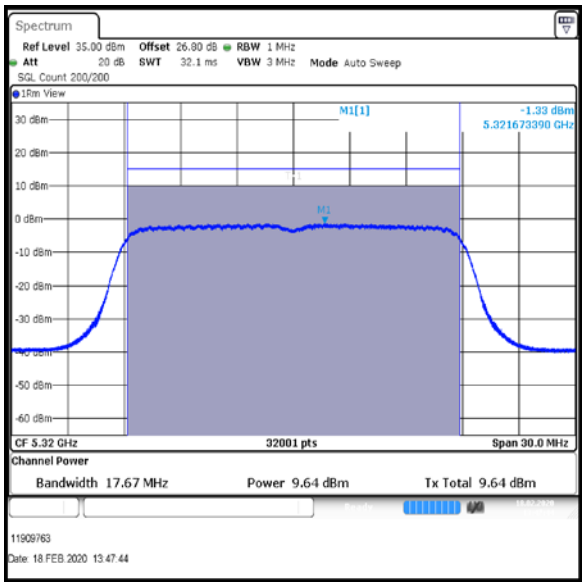
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	10.6	8	18.6	30.0	11.4	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Top 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	13.4	2.1	15.5	22.0	6.5	Complied
Middle	13.4	2.1	15.5	22.0	6.5	Complied
Top-1	13.4	2.1	15.5	22.0	6.5	Complied

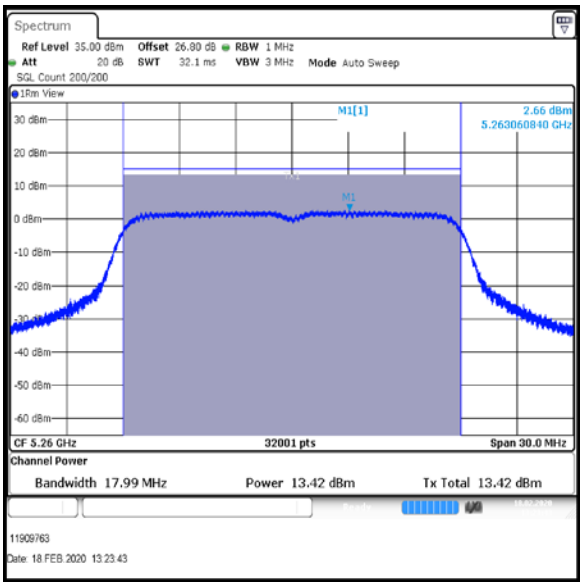
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	15.5	8	23.5	30.0	6.5	Complied
Middle	15.5	8	23.5	30.0	6.5	Complied
Top-1	15.5	8	23.5	30.0	6.5	Complied

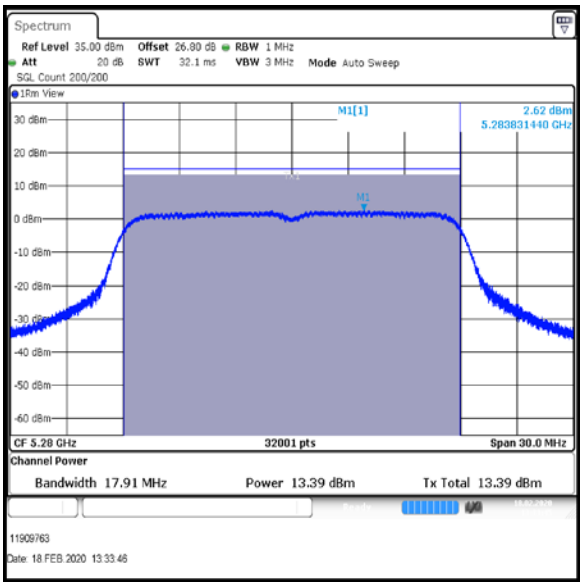
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

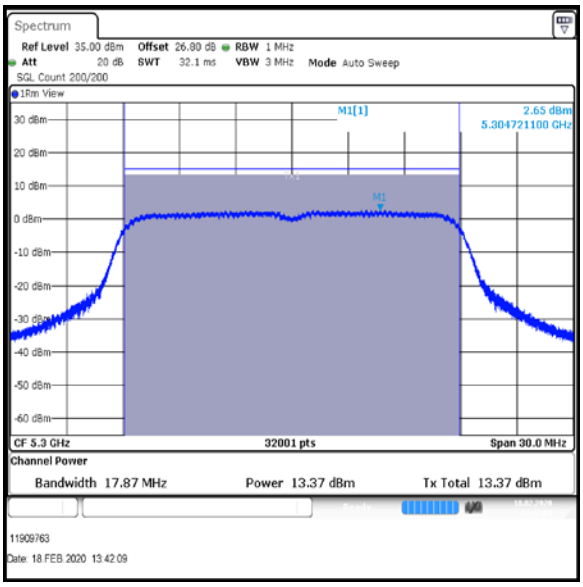
Results: 802.11n / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	8.7	2.1	10.8	22.0	11.2	Complied

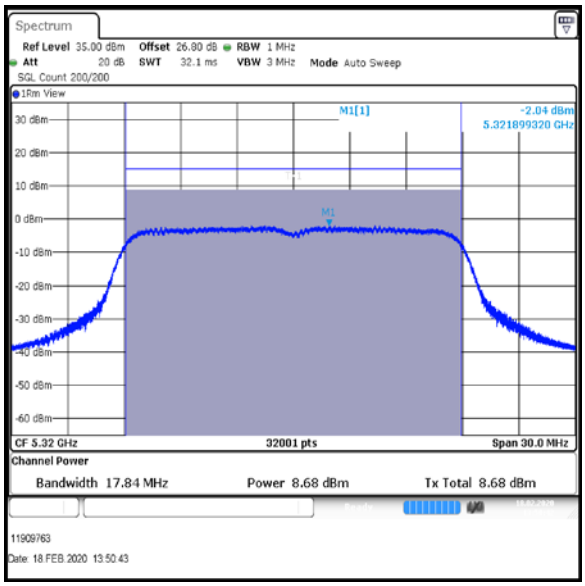
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	10.8	8	18.8	30.0	11.2	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Top 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	14.6	2.3	16.9	22.0	5.1	Complied
Middle	14.5	2.3	16.8	22.0	5.2	Complied
Top-1	14.5	2.3	16.8	22.0	5.2	Complied

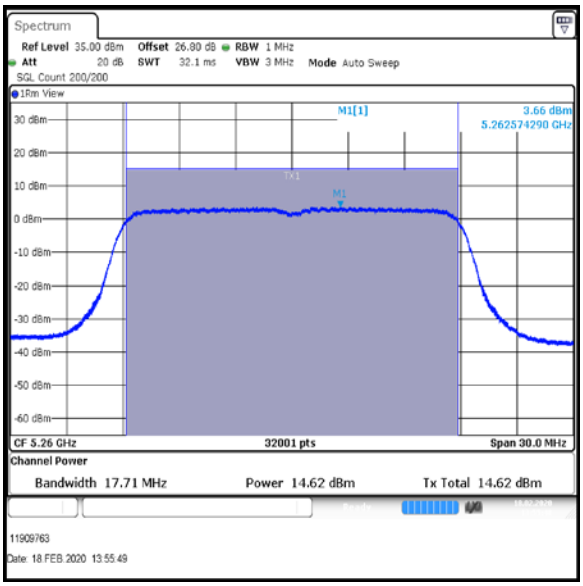
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.9	8	24.9	30.0	5.1	Complied
Middle	16.8	8	24.8	30.0	5.2	Complied
Top-1	16.8	8	24.8	30.0	5.2	Complied

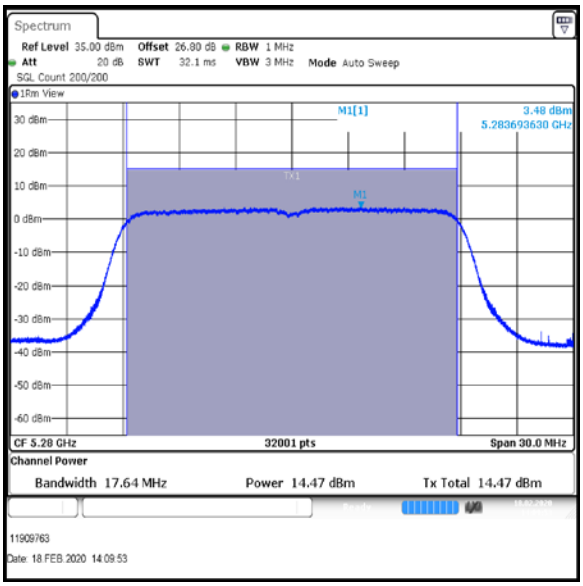
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

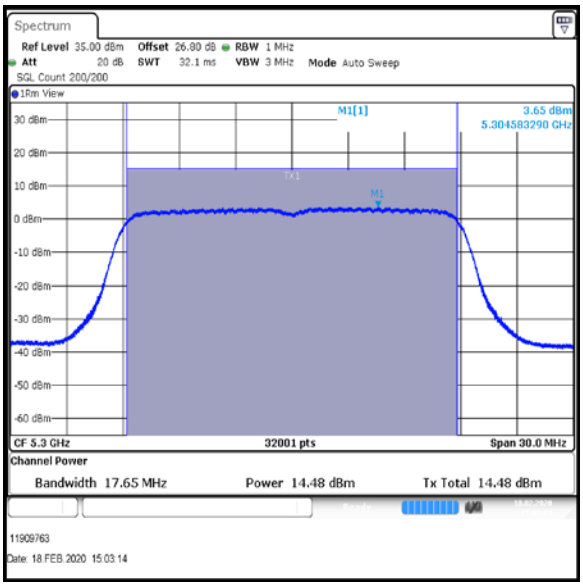
Results: 802.11ac / HT20 / MCS2 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	9.6	2.3	11.9	22.0	10.1	Complied

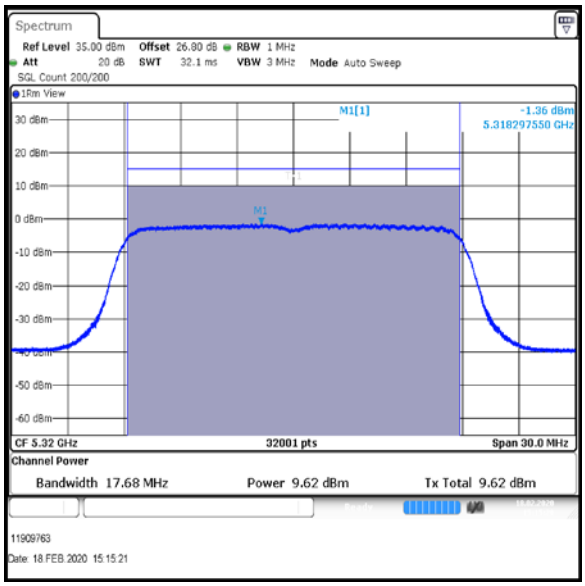
De Facto EIRP Limit Comparison

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	30.0	10.1	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Top 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	13.5	2.7	16.2	22.0	5.8	Complied
Middle	13.4	2.7	16.1	22.0	5.9	Complied
Top-1	13.4	2.7	16.1	22.0	5.9	Complied

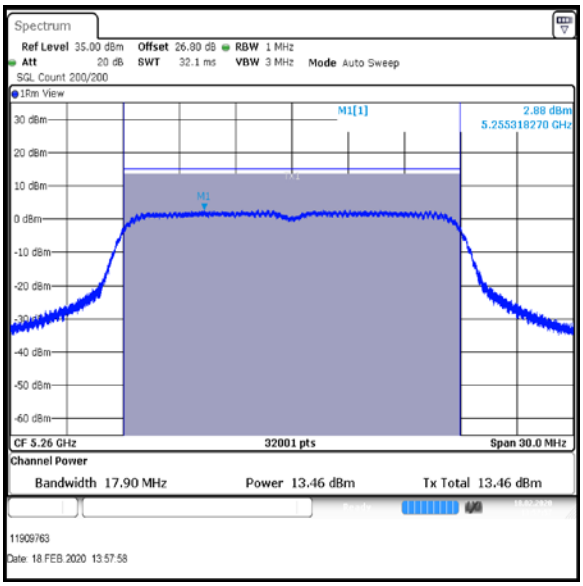
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.2	8	24.2	30.0	5.8	Complied
Middle	16.1	8	24.1	30.0	5.9	Complied
Top-1	16.1	8	24.1	30.0	5.9	Complied

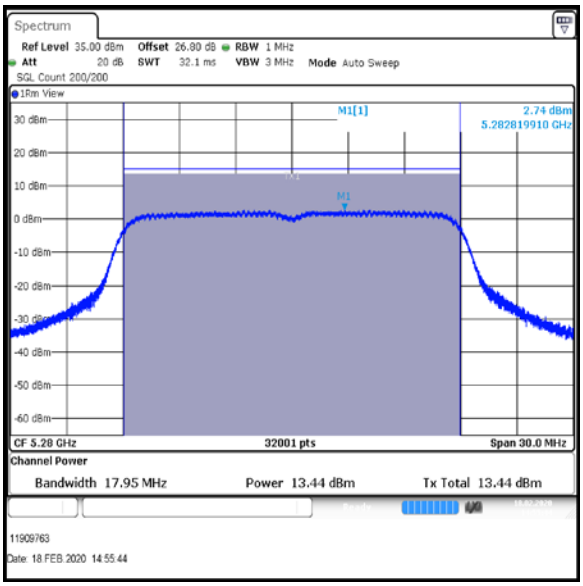
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

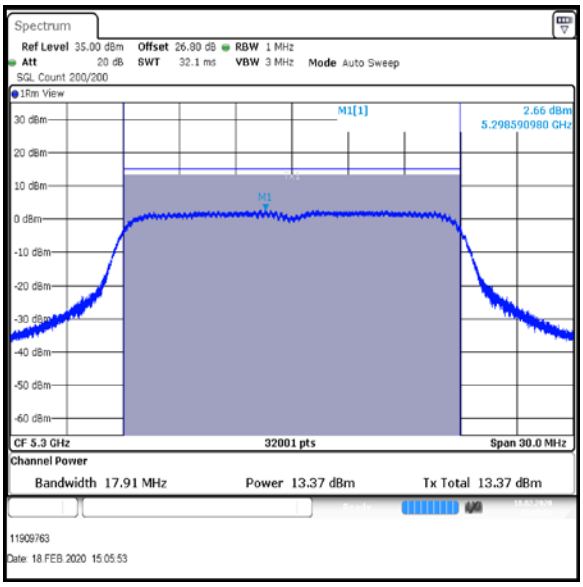
Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 18 / 8 dBi Antenna Port 1



Bottom Channel



Middle Channel



Top-1 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Top	8.7	2.7	11.4	22.0	10.6	Complied

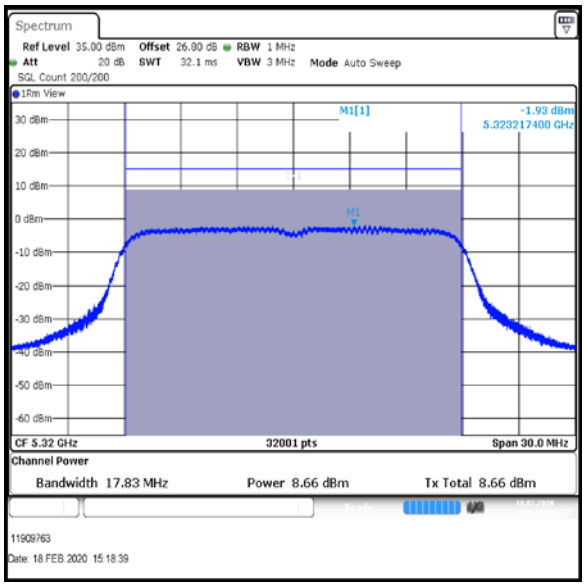
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	11.4	8	19.4	30.0	10.6	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11ac / HT20 / MCS6 / SISO / Port 1 / PWL 13 / 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	8.4	2.3	10.7	22.0	11.3	Complied
Top	7.4	2.3	9.7	22.0	12.3	Complied

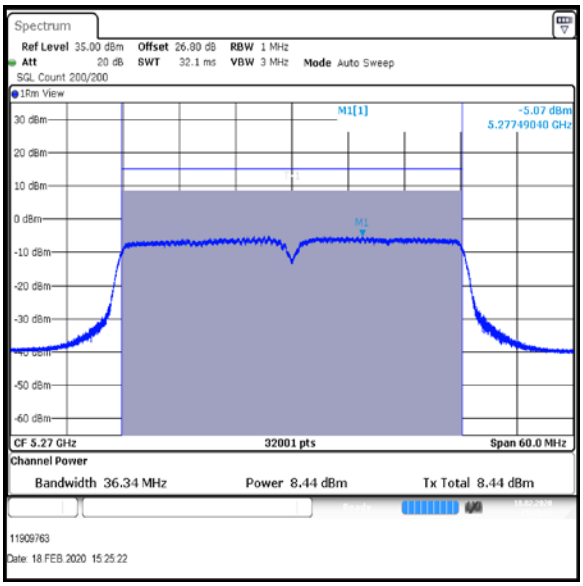
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	10.7	8	18.7	30.0	11.3	Complied
Top	9.7	8	17.7	30.0	12.3	Complied

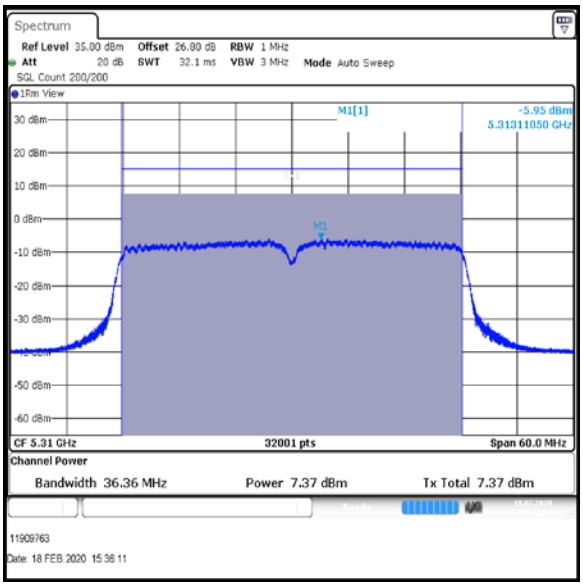
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Bottom Channel



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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	7.9	2.7	10.6	22.0	11.4	Complied
Top	6.7	2.7	9.4	22.0	12.6	Complied

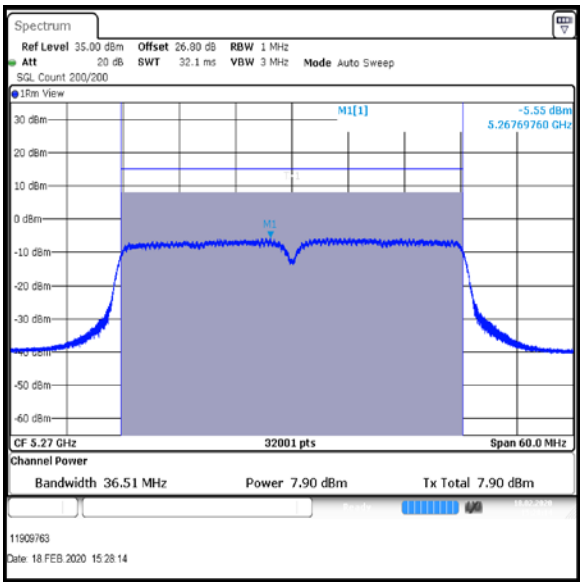
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	10.6	8	18.6	30.0	11.4	Complied
Top	9.4	8	17.4	30.0	12.6	Complied

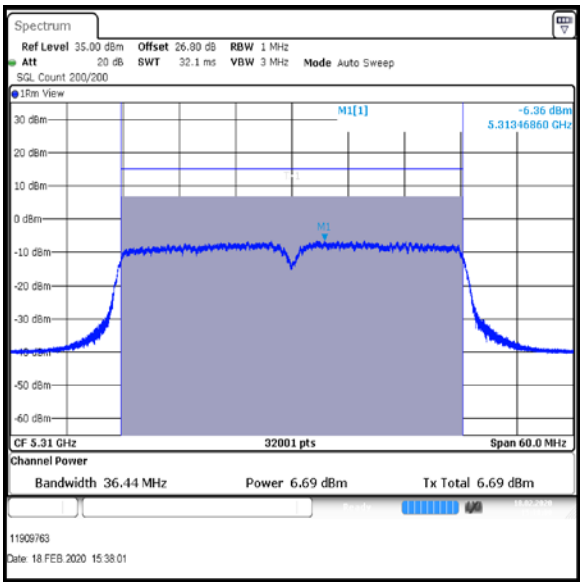
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Bottom Channel



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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	8.5	1.6	10.1	22.0	11.9	Complied
Top	8.3	1.6	9.9	22.0	12.1	Complied

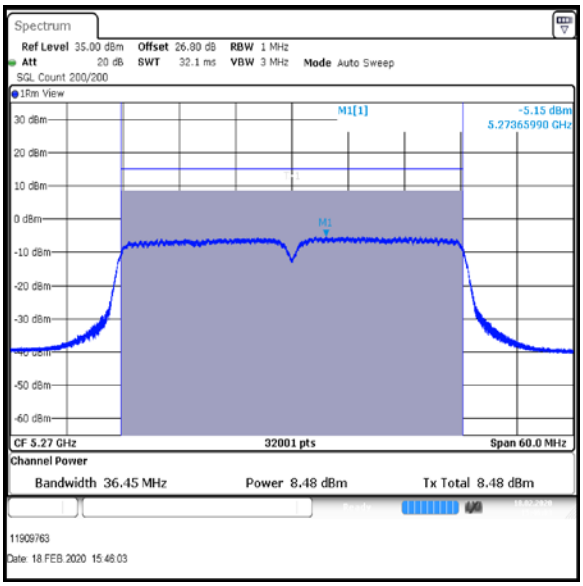
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	10.1	8	18.1	30.0	11.9	Complied
Top	9.9	8	17.9	30.0	12.1	Complied

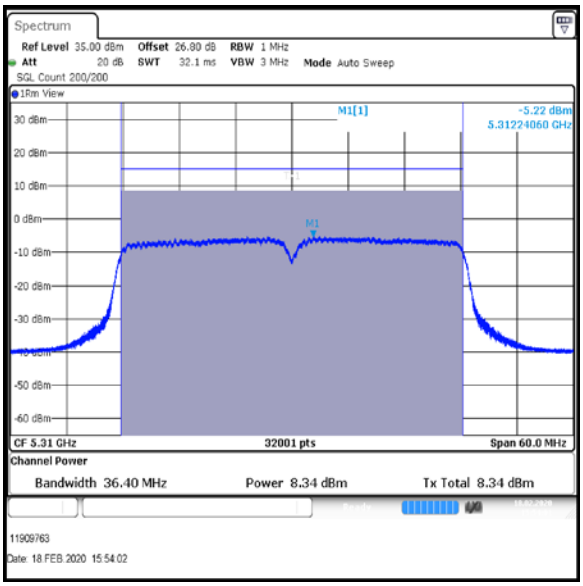
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Bottom Channel



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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Bottom	7.9	1.7	9.6	22.0	12.4	Complied
Top	7.8	1.7	9.5	22.0	12.5	Complied

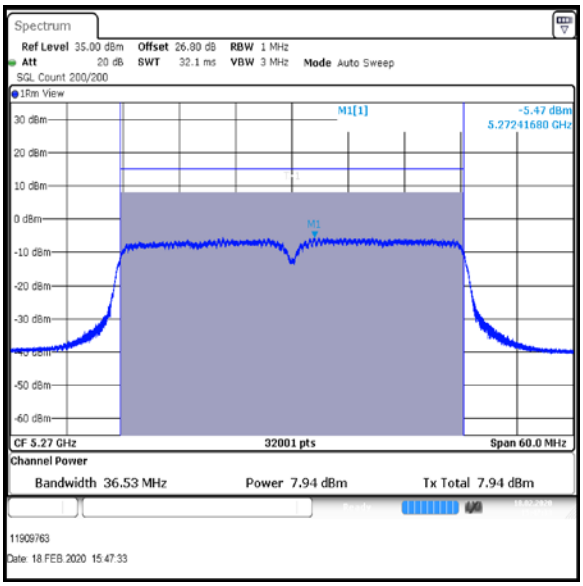
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	9.6	8	17.6	30.0	12.4	Complied
Top	9.5	8	17.5	30.0	12.5	Complied

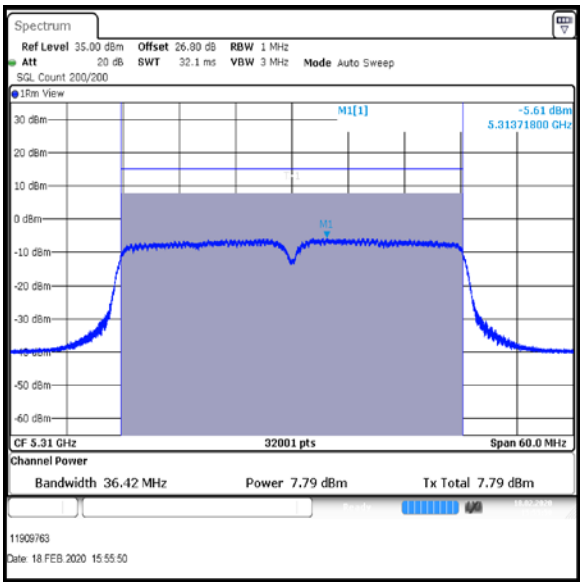
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Bottom Channel



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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Single	8.8	2.9	11.7	22.0	10.3	Complied

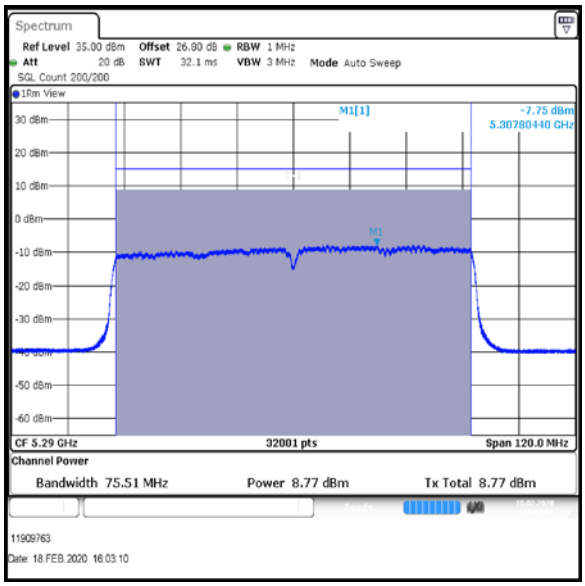
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Single	11.7	8	19.7	30.0	10.3	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Single 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)	Conducted Power Limit (dBm)	Margin (dB)	Result
Single	5.8	3.3	9.1	22.0	12.9	Complied

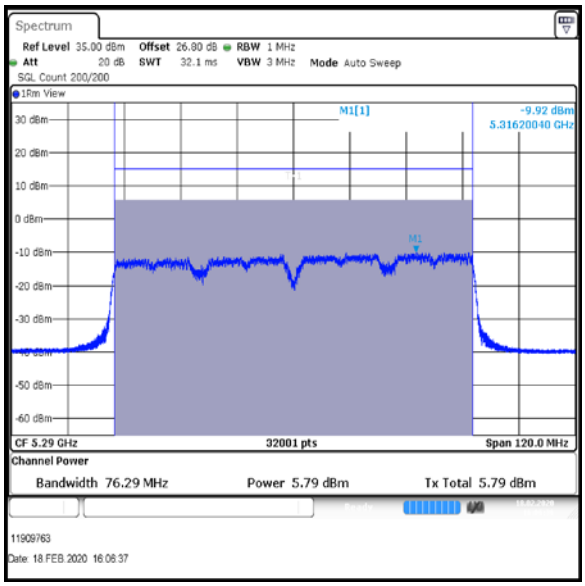
De Facto EIRP Limit Comparison

Channel	Corrected Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Single	9.1	8	17.1	30.0	12.9	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Single 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	11.5	1.8	13.3	11.7	1.8	13.5
Middle	11.4	1.8	13.2	11.7	1.8	13.5
Top-1	11.4	1.8	13.2	11.6	1.8	13.4

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	13.3	13.5	16.4	22	5.6	Complied
Middle	13.2	13.5	16.4	22	5.6	Complied
Top-1	13.2	13.4	16.3	22	5.7	Complied

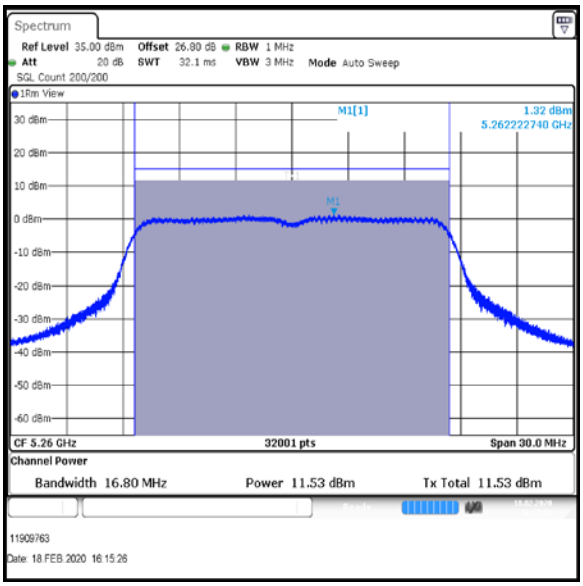
De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.4	8	24.4	30	5.6	Complied
Middle	16.4	8	24.4	30	5.6	Complied
Top-1	16.3	8	24.3	30	5.7	Complied

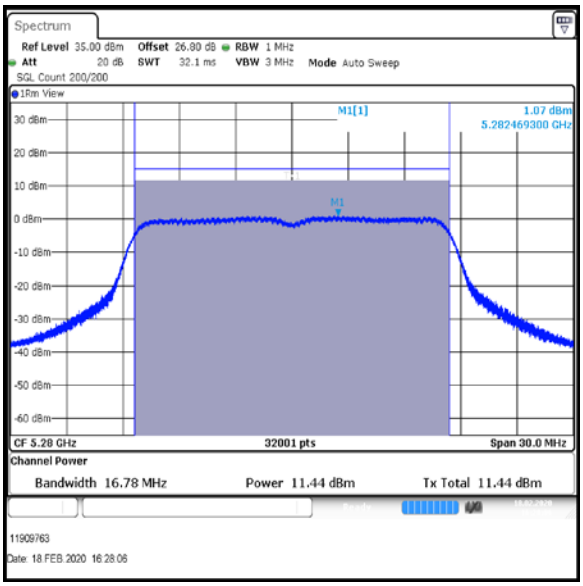
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

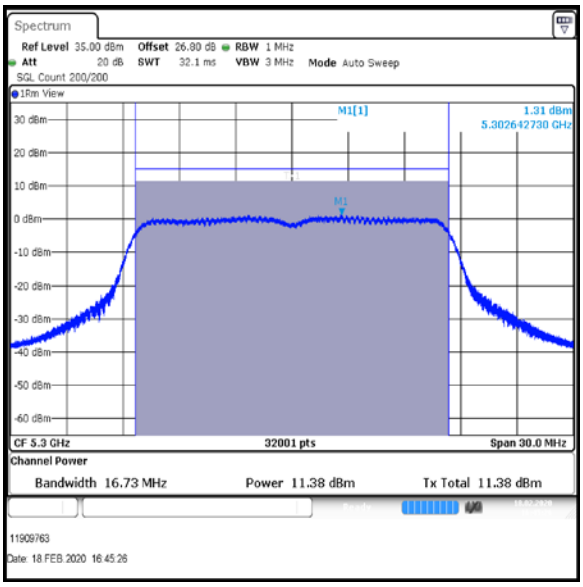
Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 19 / 8 dBi Antenna / Port 1



Bottom Channel



Middle Channel

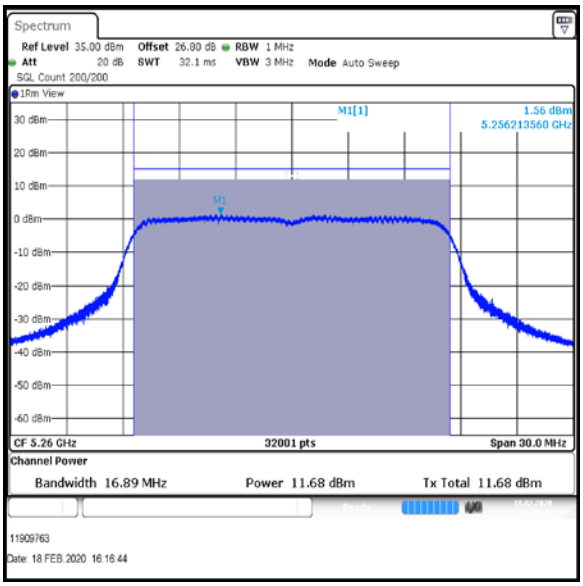


Top-1 Channel

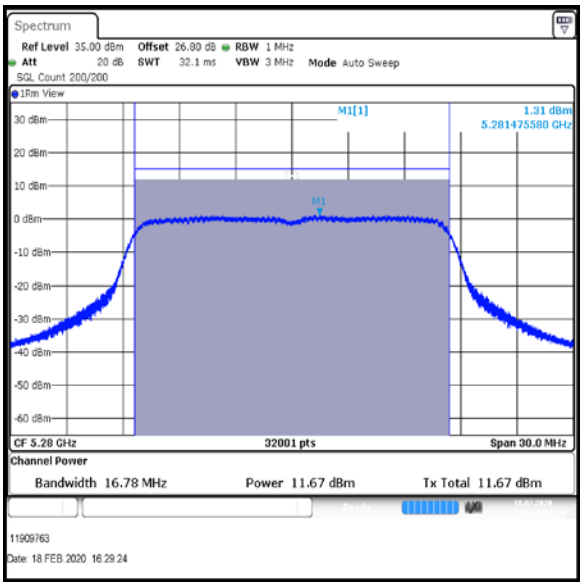
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

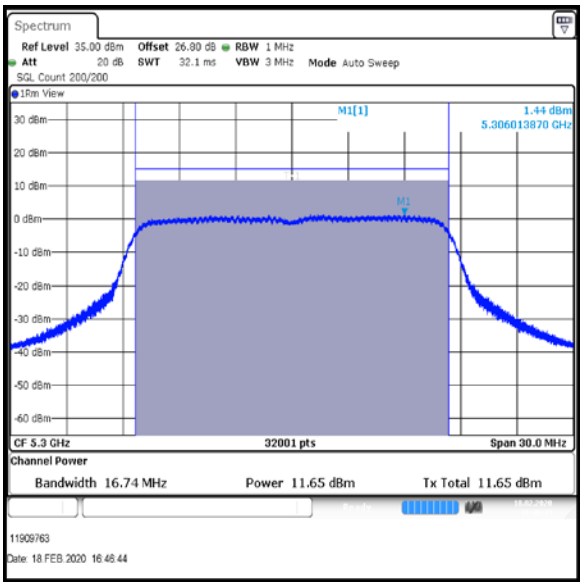
Results: 802.11a / 20 MHz / 48Mbit / MIMO / Port 1+2 / PWL 19 / 8 dBi Antenna / Port 2



Bottom Channel



Middle Channel



Top-1 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)
Top	6.7	1.8	8.5	6.6	1.8	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
Top	8.5	8.4	11.5	22	10.5	Complied

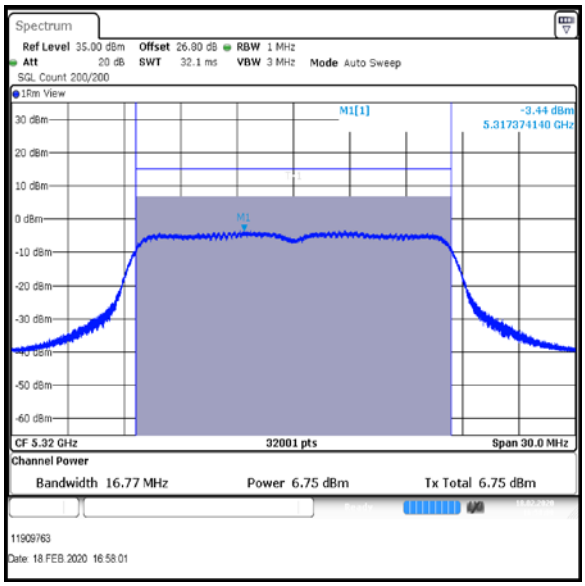
De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	11.5	8	19.5	30	10.5	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

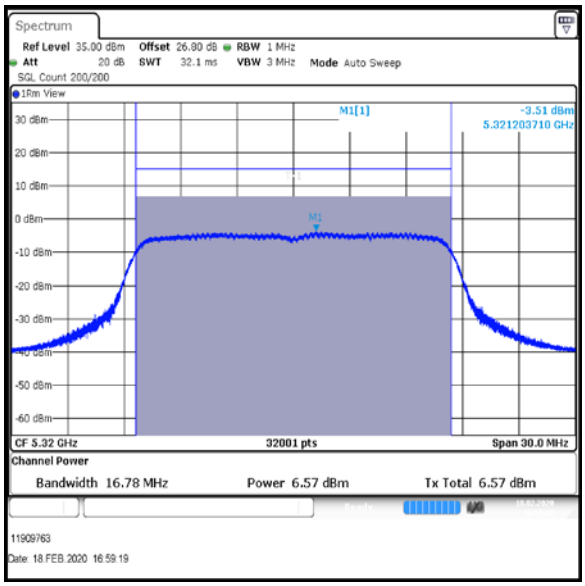


Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

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



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / 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	11.3	1.8	13.1	11.6	1.8	13.4
Middle	11.2	1.8	13.0	11.5	1.8	13.3
Top-1	11.2	1.8	13.0	11.5	1.8	13.3

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	13.1	13.4	16.3	22	5.7	Complied
Middle	13.0	13.3	16.2	22	5.8	Complied
Top-1	13.0	13.3	16.2	22	5.8	Complied

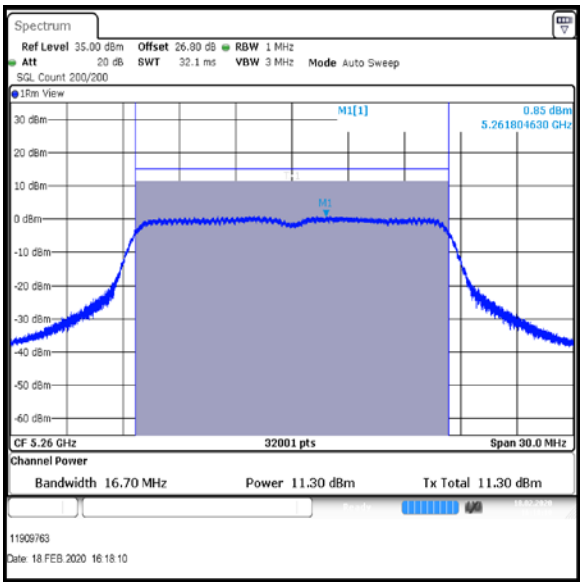
De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Bottom	16.3	8	24.3	30	5.7	Complied
Middle	16.2	8	24.2	30	5.8	Complied
Top-1	16.2	8	24.2	30	5.8	Complied

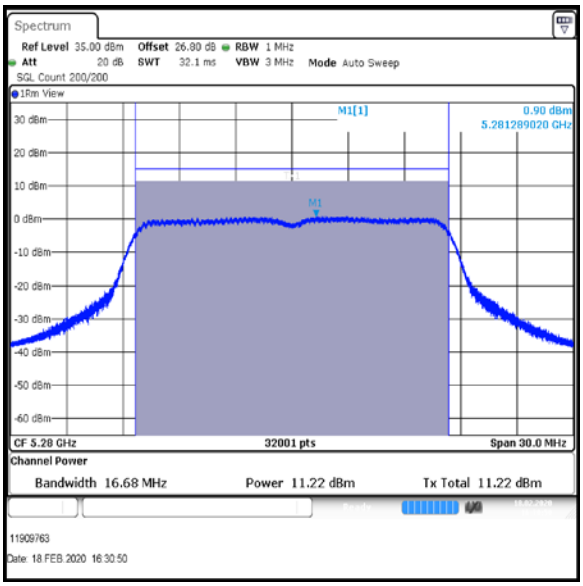
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

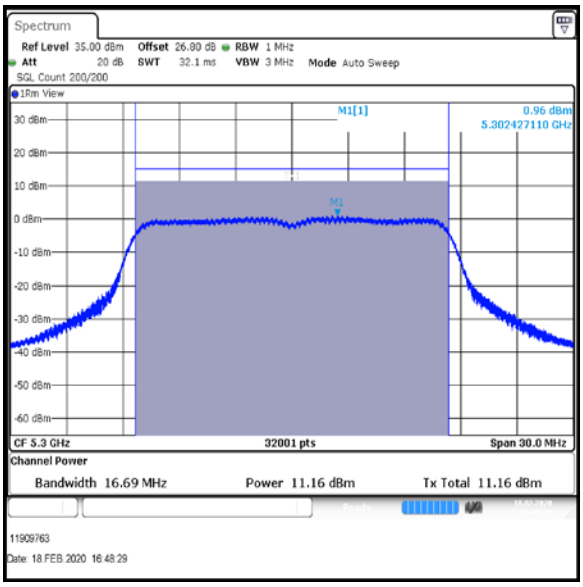
Results: 802.11a / 20 MHz / 54Mbit / MIMO / Port 1+2 / PWL 19 / 8 dBi Antenna / Port 1



Bottom Channel



Middle Channel

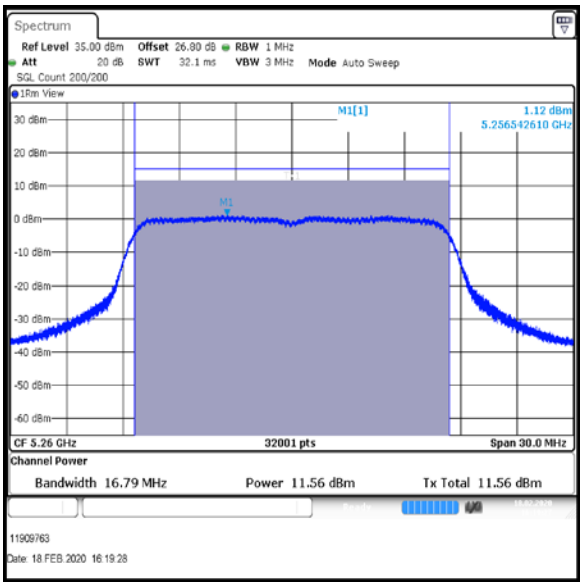


Top-1 Channel

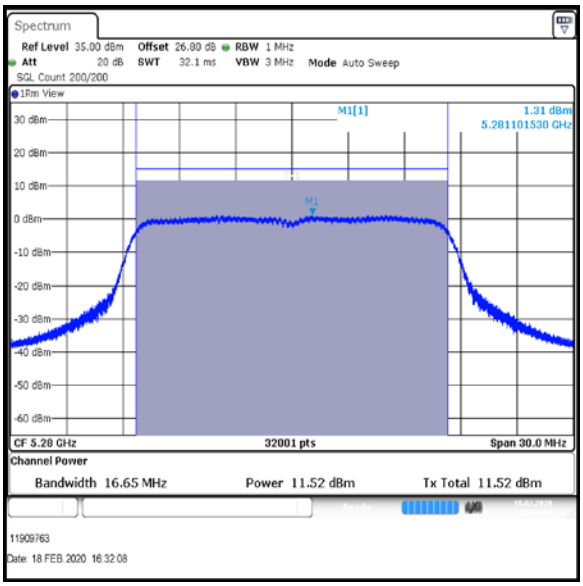
Result: Pass

Transmitter Maximum Conducted Output Power (continued)

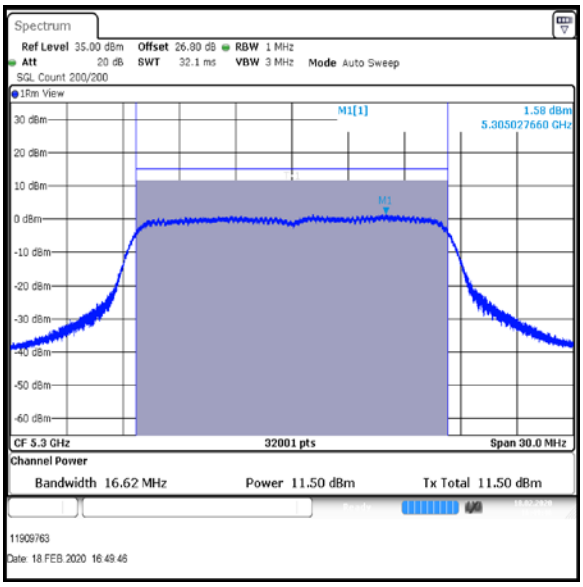
Results: 802.11a / 20 MHz / 54Mbit / MIMO / Port 1+2 / PWL 19 / 8 dBi Antenna / Port 2



Bottom Channel



Middle Channel



Top-1 Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / 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)
Top	6.5	1.8	8.3	6.5	1.8	8.3

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
Top	8.3	8.3	11.3	22	10.7	Complied

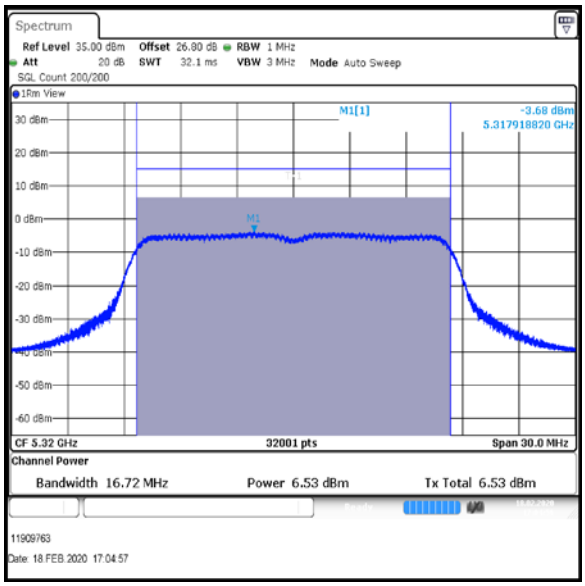
De Facto EIRP Limit Comparison

Channel	Port 1+2 Combined Conducted Power (dBm)	Directional Antenna Gain (dBi)	EIRP (dBm)	De Facto EIRP Limit (dBm)	Margin (dB)	Result
Top	11.3	8	19.3	30	10.7	Complied

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / MIMO / Port 1+2 / PWL 13 / 8 dBi Antenna / Port 1

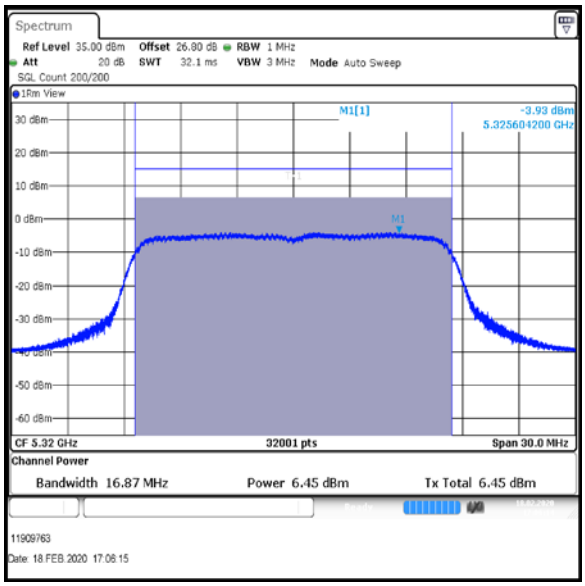


Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11a / 20 MHz / 54Mbit / MIMO / Port 1+2 / PWL 13 / 8 dBi Antenna / Port 2



Top Channel

Result: Pass

Transmitter Maximum Conducted Output Power (continued)

Results: 802.11n / HT20 / MCS0 / 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	13.2	0.6	13.8	13.5	0.6	14.1
Middle	13.1	0.6	13.7	13.4	0.6	14.0
Top-1	13.1	0.6	13.7	13.4	0.6	14.0

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	13.8	14.1	17.0	22	5.0	Complied
Middle	13.7	14.0	16.9	22	5.1	Complied
Top-1	13.7	14.0	16.9	22	5.1	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	17.0	8	25.0	30	5.0	Complied
Middle	16.9	8	24.9	30	5.1	Complied
Top-1	16.9	8	24.9	30	5.1	Complied

Result: Pass