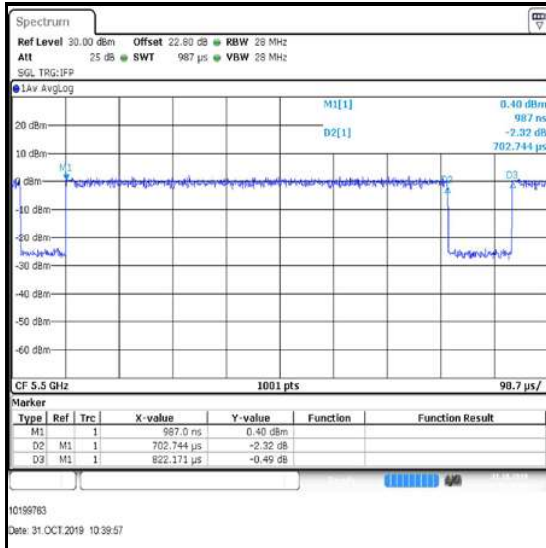


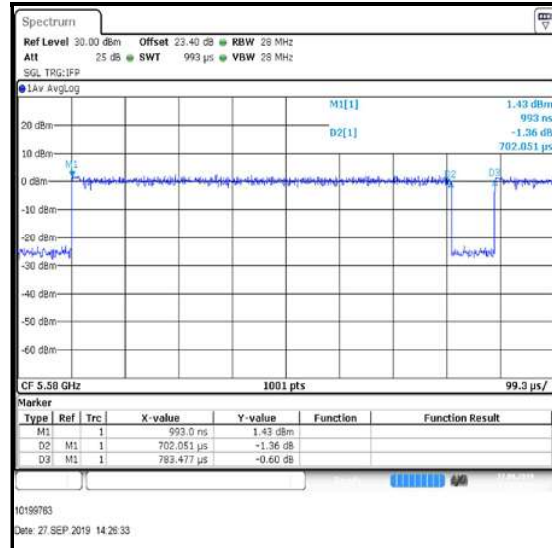
Transmitter Duty Cycle (continued)

Results: 802.11a / 20 MHz / MIMO / 4Tx CDD / QPSK / 12 Mbps / Port 1

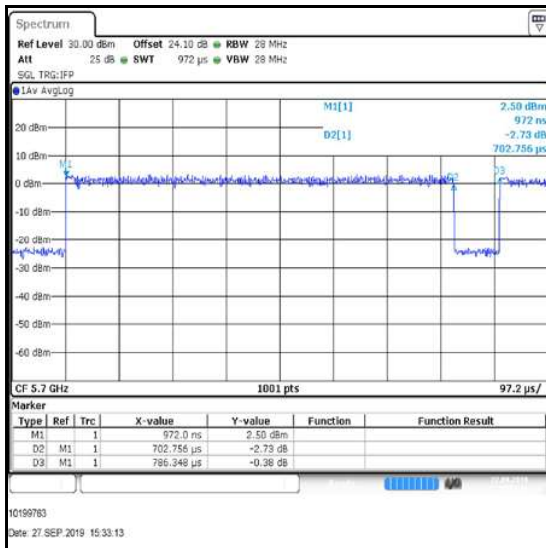
Channel	Frequency (MHz)	Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
Bottom	5500	0.7027	0.8222	0.7
Middle	5580	0.7021	0.7835	0.5
Top	5700	0.7028	0.7863	0.5



Bottom Channel



Middle Channel

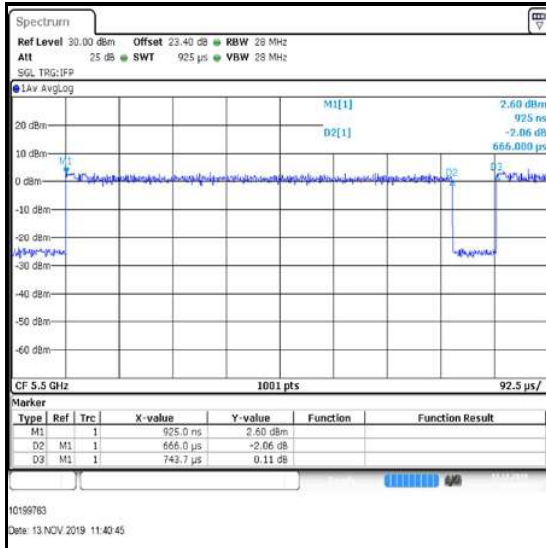


Top Channel

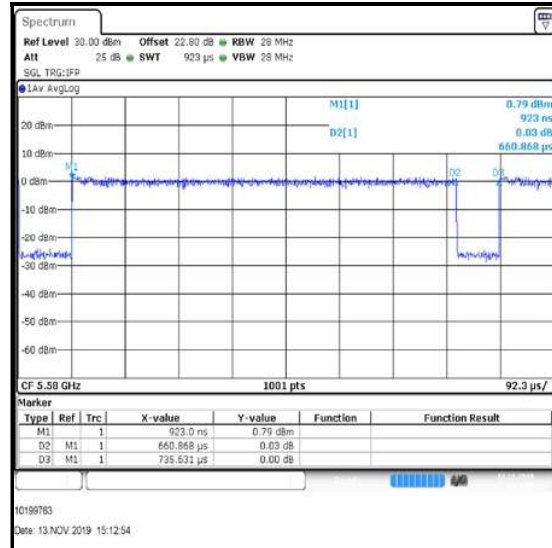
Transmitter Duty Cycle (continued)

Results: 802.11n / 20 MHz / MIMO / 4Tx CDD / QPSK / MCS1 / Port 1

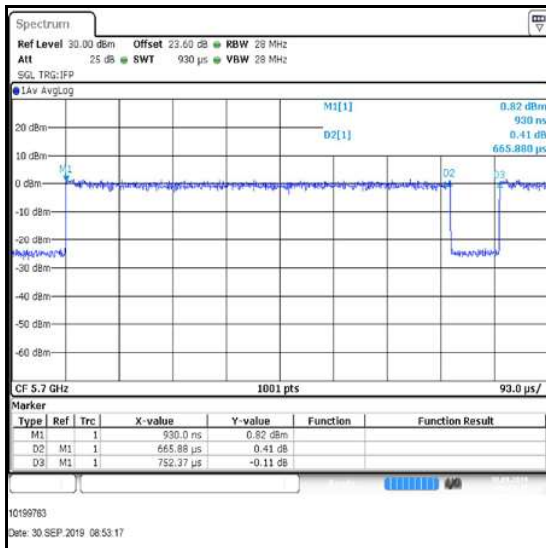
Channel	Frequency (MHz)	Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
Bottom	5500	0.6660	0.7437	0.5
Middle	5580	0.6609	0.7356	0.5
Top	5700	0.6659	0.7524	0.5



Bottom Channel



Middle Channel

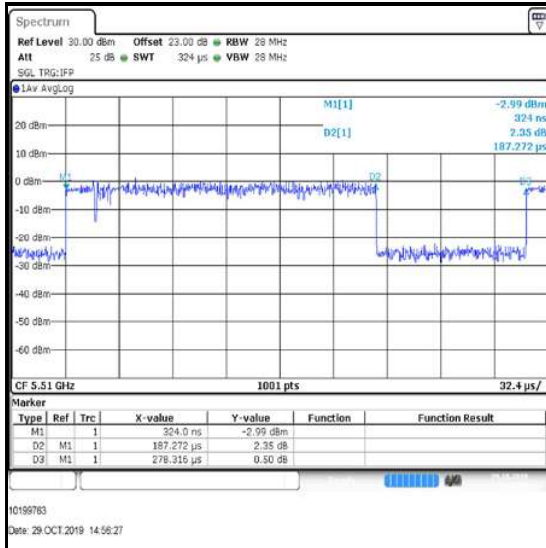


Top Channel

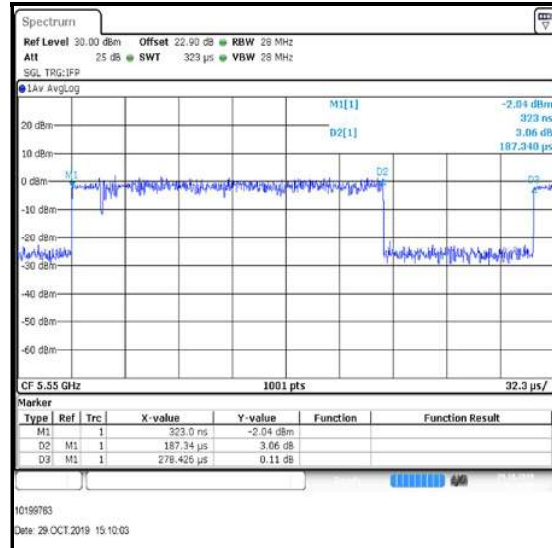
Transmitter Duty Cycle (continued)

Results: 802.11n / 40 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3 / Port 1

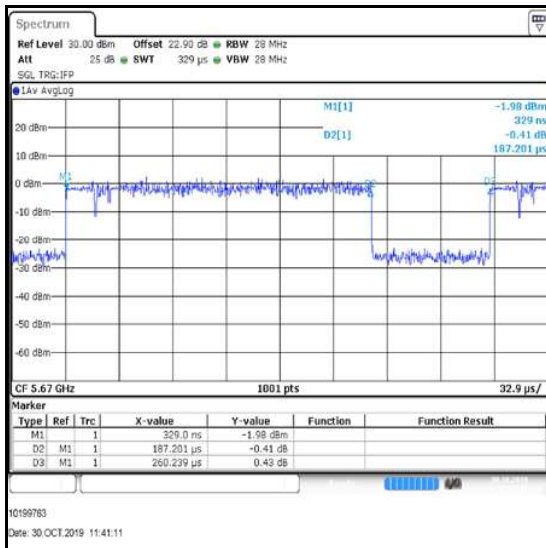
Channel	Frequency (MHz)	Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
Bottom	5510	0.1873	0.2783	1.7
Middle	5550	0.1873	0.2784	1.7
Top	5670	0.1872	0.2602	1.4



Bottom Channel



Middle Channel

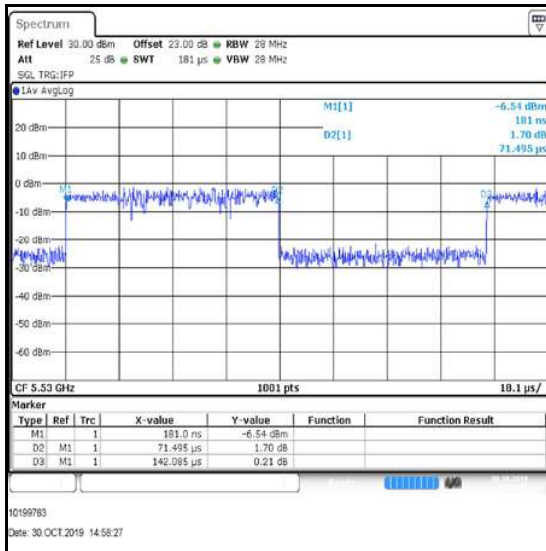


Top Channel

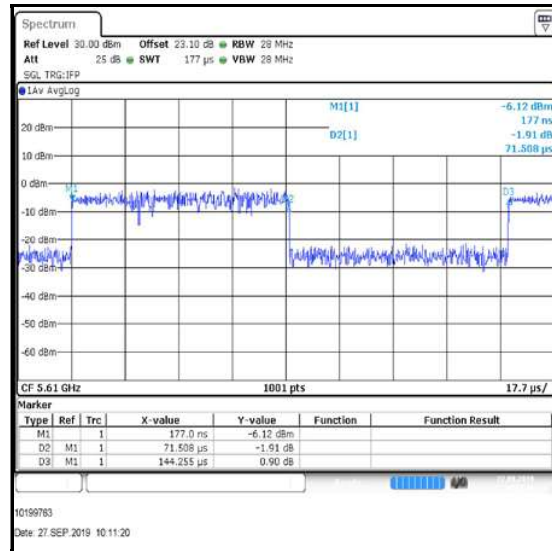
Transmitter Duty Cycle (continued)

Results: 802.11ac / 80 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3x1 / Port 1

Channel	Frequency (MHz)	Pulse Duration (ms)	Period (ms)	Duty Cycle (dB)
Bottom	5530	0.0715	0.1421	3.0
Top	5610	0.0715	0.1443	3.0



Bottom Channel



Top Channel

4.2. Transmitter 26 dB Emission Bandwidth

Test Summary:

Test Engineer:	Max Passell	Test Dates:	09 September 2019 to 25 November 2019
Test Sample Serial Number:	2405067		

FCC Reference:	Part 15.403(i)
Test Method Used:	KDB 789033 D02 Section II.C.1.

Environmental Conditions:

Temperatures (°C):	21 to 24
Relative Humidity (%):	35 to 44

Note(s):

1. All configurations supported by the EUT were investigated on one channel in accordance with KDB 789033 Section II.C.1. Emission Bandwidth (EBW) test procedure. The data rates that produced the widest bandwidth and therefore deemed worst case were:
 - 802.11a SISO – 64-QAM / 48 Mbps / Port 1
 - 802.11n HT20 SISO – 64-QAM / MCS6 / Port 1
 - 802.11n HT40 SISO – 16-QAM / MCS4 / Port 1
 - 802.11ac VHT80 SISO – 256-QAM / MCS8x1 / Port 1
 - 802.11a MIMO – 64-QAM / 54 Mbps / 2Tx CDD / Ports 1 & 2
 - 802.11n HT20 MIMO – BPSK / MCS0 / 2Tx CDD / Ports 1 & 2
 - 802.11n HT40 MIMO – 64-QAM / MCS7 / 2Tx CDD / Ports 1 & 2
 - 802.11ac VHT80 MIMO – 256-QAM / MCS9x1 / 2Tx CDD / Ports 1 & 2
 - 802.11a MIMO – BPSK / 9 Mbps / 3Tx CDD / Ports 1, 2 & 3
 - 802.11n HT20 MIMO – 64-QAM / MCS7 / 3Tx CDD / Ports 1, 2 & 3
 - 802.11n HT40 MIMO – 64-QAM / MCS5 / 3Tx CDD / Ports 1, 2 & 3
 - 802.11ac VHT80 MIMO – QPSK / MCS1x1 / 3Tx CDD / Ports 1, 2 & 3
 - 802.11a MIMO – QPSK / 12 Mbps / 4Tx CDD / Ports 1, 2, 3 & 4
 - 802.11n HT20 MIMO – QPSK / MCS1 / 4Tx CDD / Ports 1, 2, 3 & 4
 - 802.11n HT40 MIMO – 16-QAM / MCS3 / 4Tx CDD / Ports 1, 2, 3 & 4
 - 802.11ac VHT80 MIMO – 16-QAM / MCS3x1 / 4Tx CDD / Ports 1, 2, 3 & 4
2. Final measurements were performed in each supported operating band using the above configurations on the bottom, middle and top or single channels.
3. Plots for all data rates are archived on the Company server and available for inspection upon request.
4. The signal analyser's resolution bandwidth was set to approximately 1% of the measured 26 dB emission bandwidth.
5. The signal analyser was connected to the RF port on the EUT using an RF switch, suitable attenuation and RF cables. An RF level offset was entered on the signal analyser to compensate for the loss of the switch, attenuators and RF cables.
6. Reference plots are included at the end of each section for modes that produced the highest power.

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

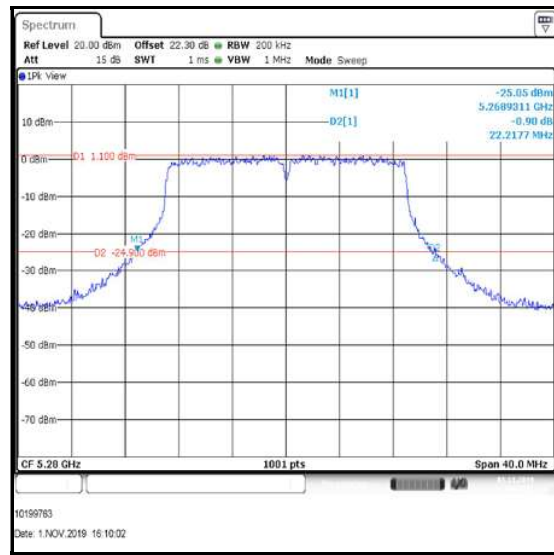
4.2.1. 5.25-5.35 GHz band

Results: 802.11a / 20 MHz / SISO / 64-QAM / 48 Mbps / Port 1

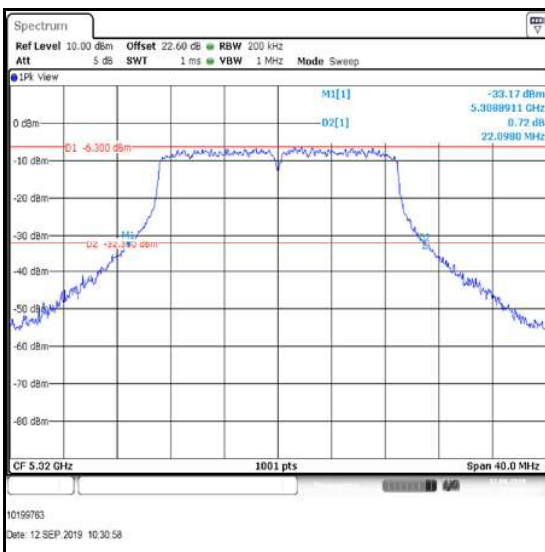
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.138
Middle	5280	22.218
Top	5320	22.098



Bottom Channel



Middle Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / SISO / 64-QAM / MCS6 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.018
Middle	5280	22.098
Top	5320	22.658



Bottom Channel



Middle Channel

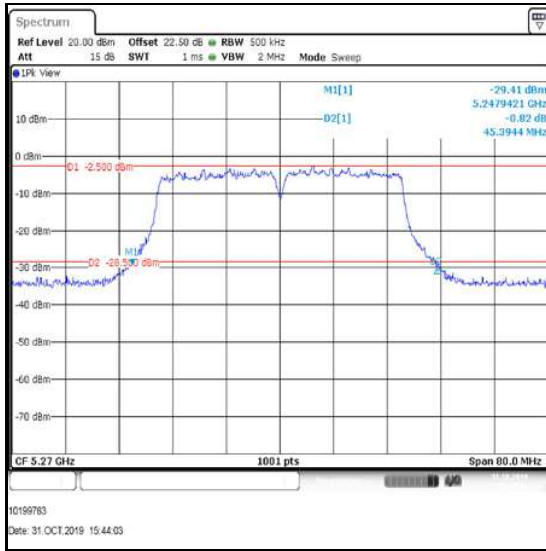


Top Channel

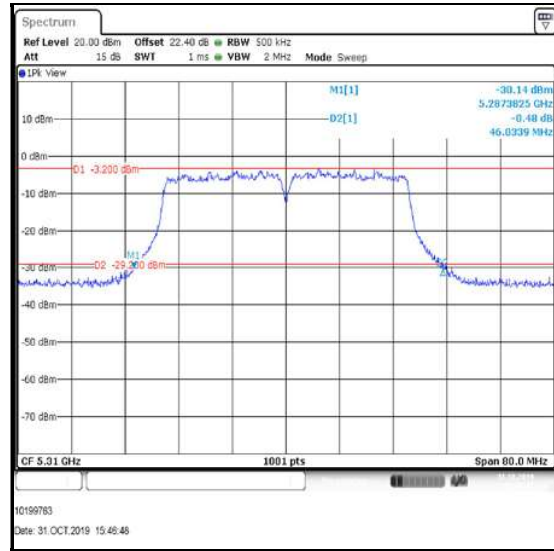
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / SISO / 16-QAM / MCS4 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	45.394
Top	5310	46.034



Bottom Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 2Tx CDD / 64-QAM / 54 Mbps / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.098
Middle	5280	22.218
Top	5320	22.497



Bottom Channel



Middle Channel

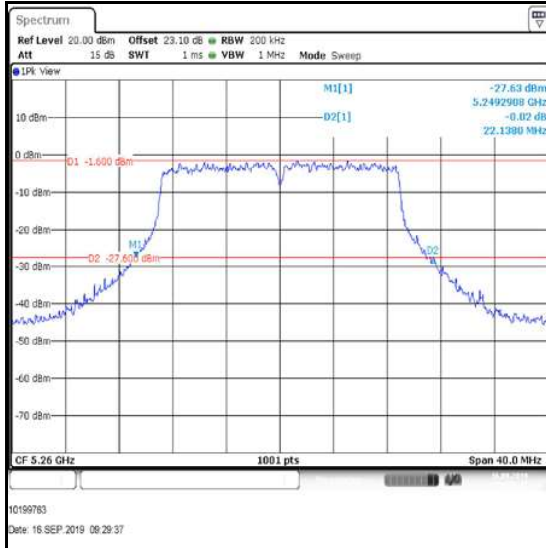


Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 2Tx CDD / 64-QAM / 54 Mbps / Port 2

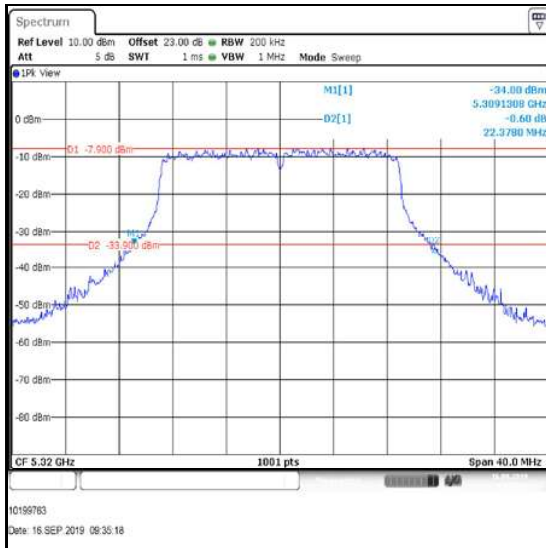
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.138
Middle	5280	21.938
Top	5320	22.378



Bottom Channel



Middle Channel

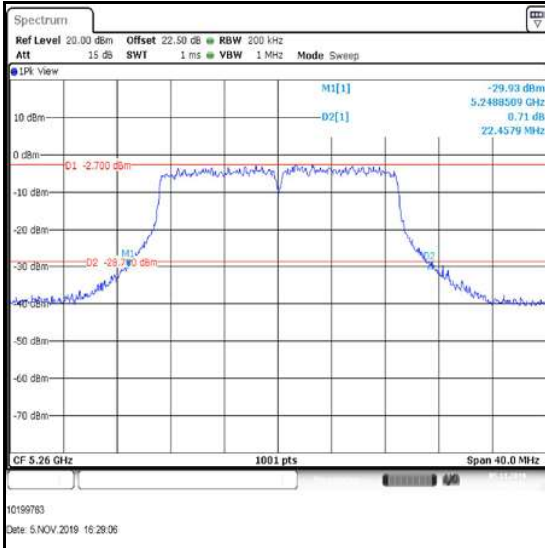


Top Channel

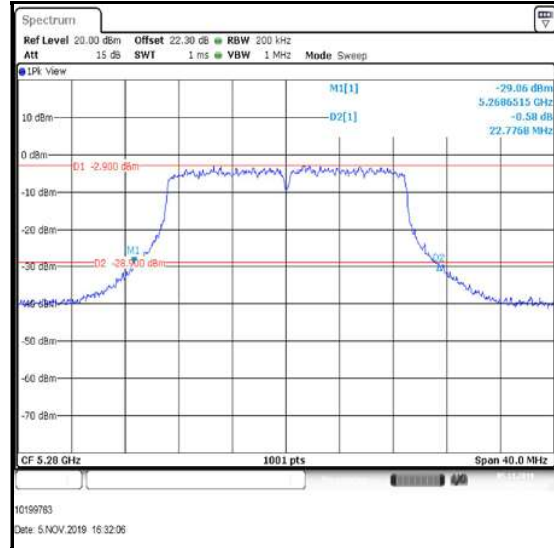
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 2Tx CDD / BPSK / MCS0 / Port 1

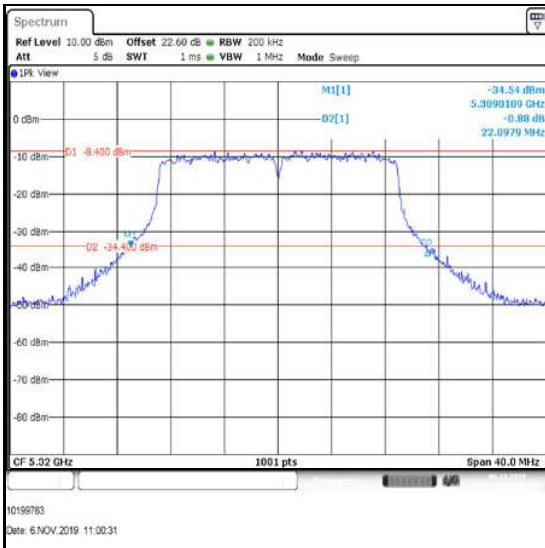
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.458
Middle	5280	22.777
Top	5320	22.098



Bottom Channel



Middle Channel



Top Channel

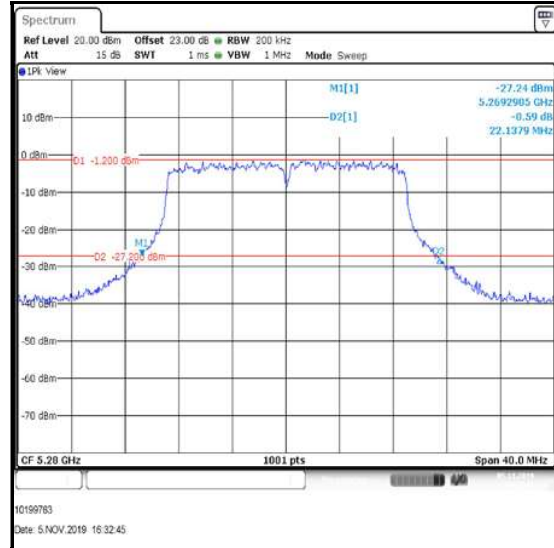
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

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

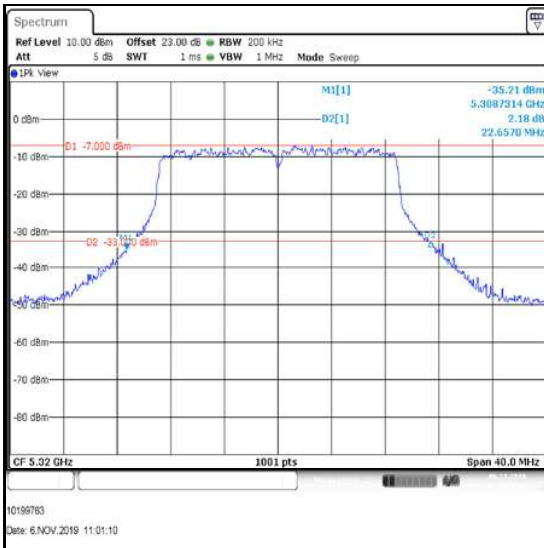
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	22.258
Middle	5280	22.138
Top	5320	22.657



Bottom Channel



Middle Channel

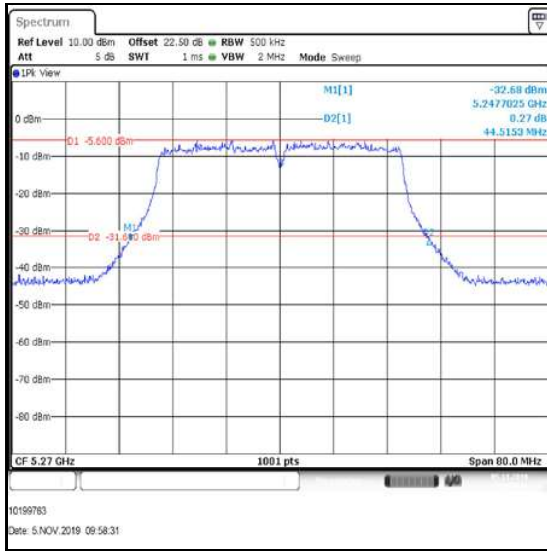


Top Channel

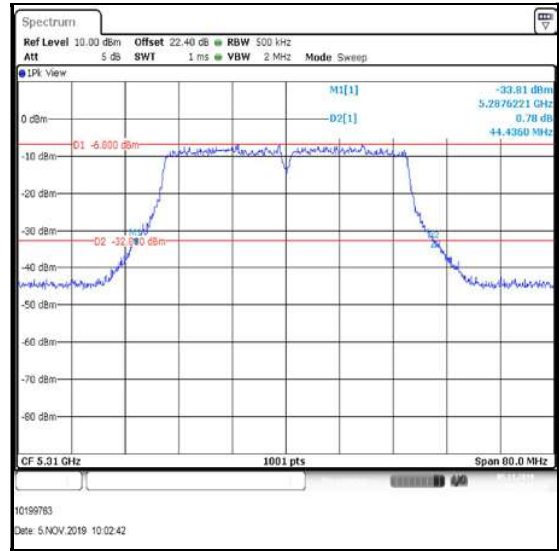
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 2Tx CDD / 64-QAM / MCS7 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.515
Top	5310	44.436



Bottom Channel



Top Channel

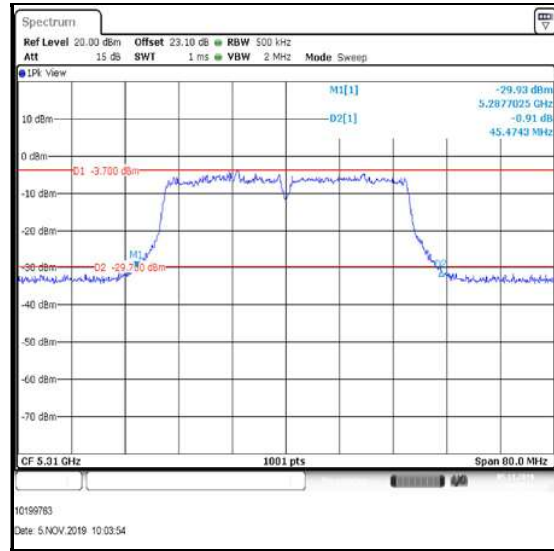
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 2Tx CDD / 64-QAM / MCS7 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	45.155
Top	5310	45.474



Bottom Channel

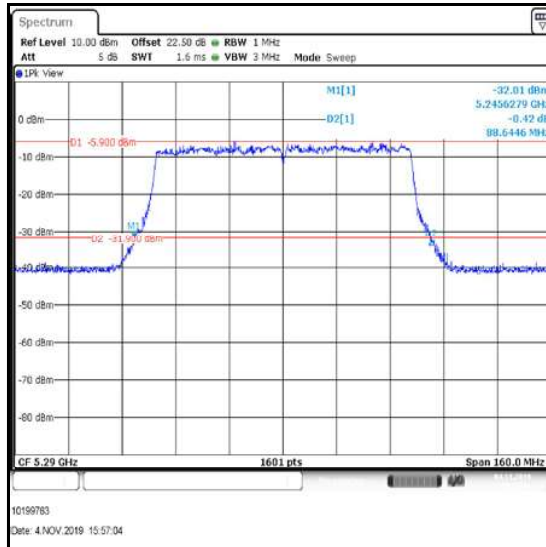


Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / 2Tx CDD / 256-QAM / MCS9x1 / Port 1

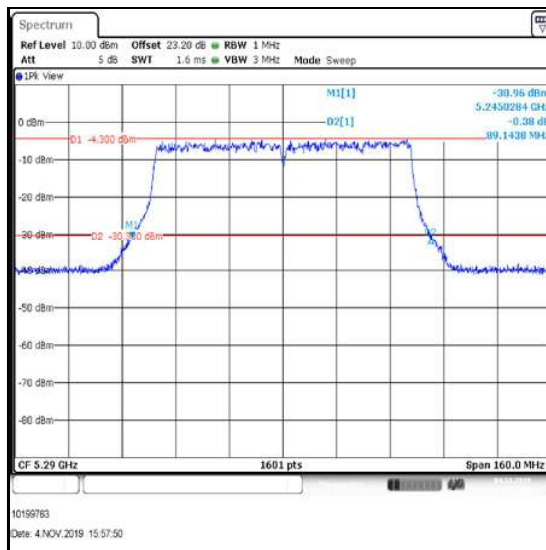
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	88.645



Single Channel

Results: 802.11ac / 80 MHz / MIMO / 2Tx CDD / 256-QAM / MCS9x1 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	89.144



Single Channel

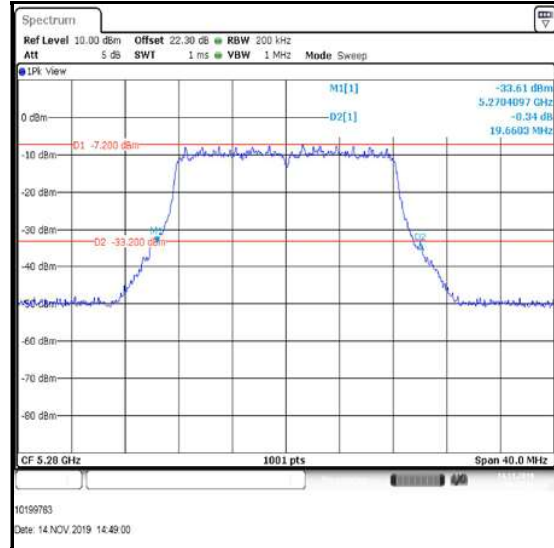
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 3Tx CDD / BPSK / 9 Mbps / Port 1

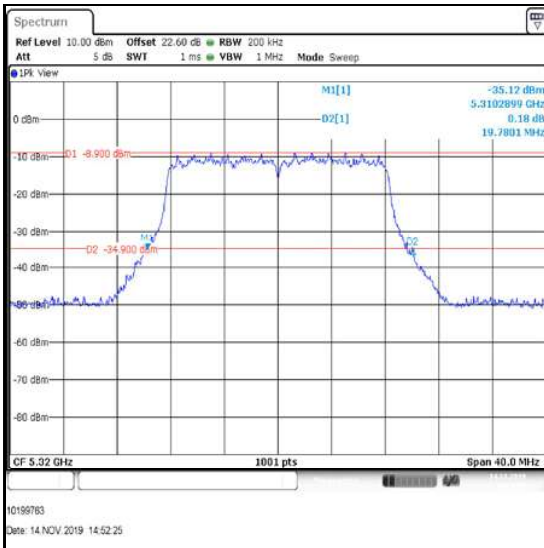
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.620
Middle	5280	19.660
Top	5320	19.780



Bottom Channel



Middle Channel

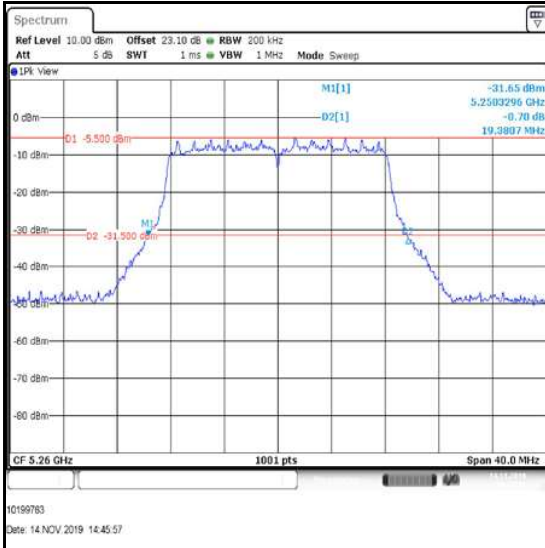


Top Channel

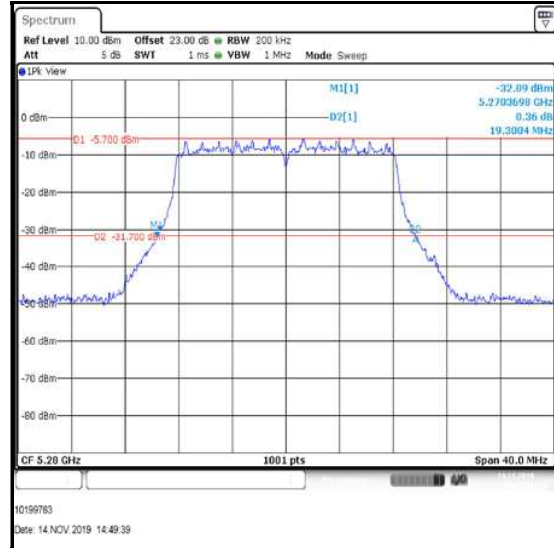
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 3Tx CDD / BPSK / 9 Mbps / Port 2

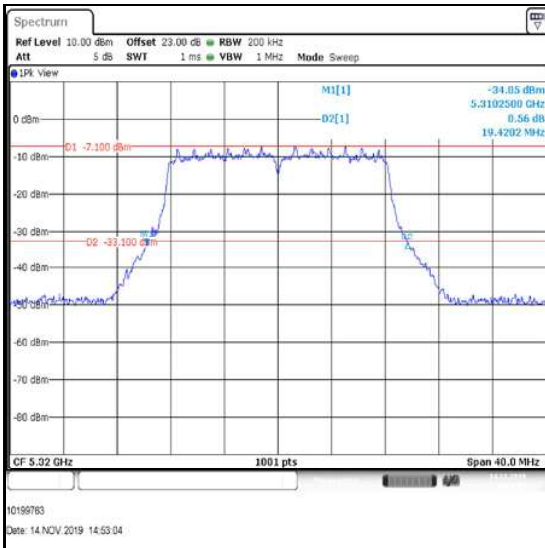
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.381
Middle	5280	19.300
Top	5320	19.420



Bottom Channel



Middle Channel

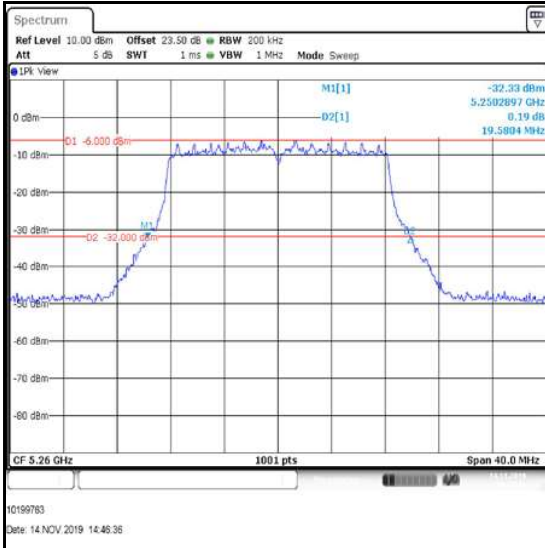


Top Channel

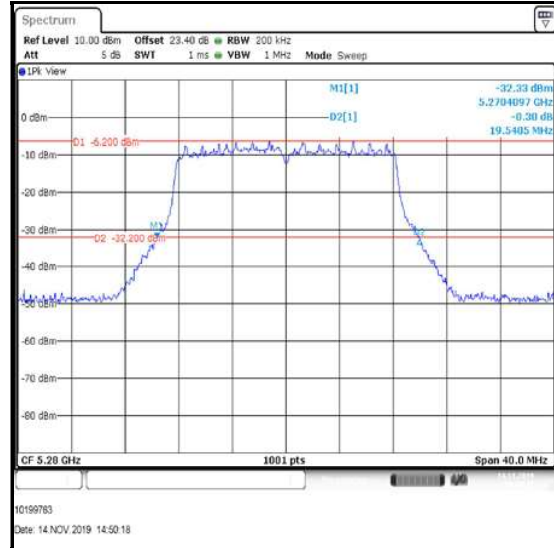
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 3Tx CDD / BPSK / 9 Mbps / Port 3

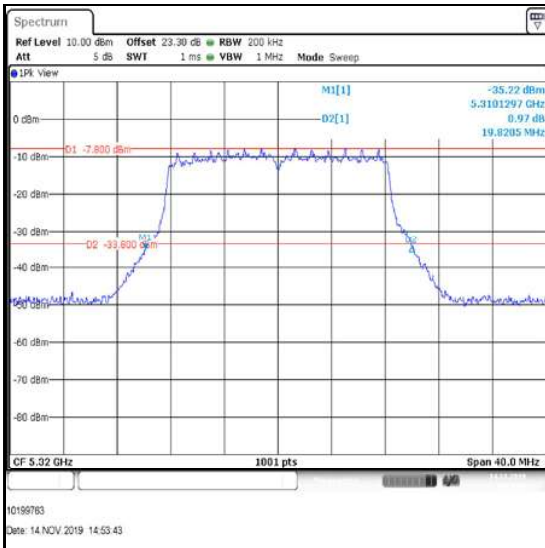
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.580
Middle	5280	19.540
Top	5320	19.821



Bottom Channel



Middle Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 3Tx CDD / 64-QAM / MCS7 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	21.938
Middle	5280	21.778
Top	5320	21.738



Bottom Channel



Middle Channel

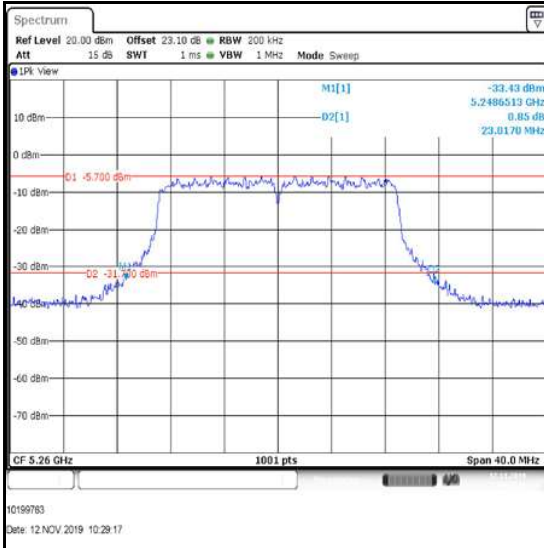


Top Channel

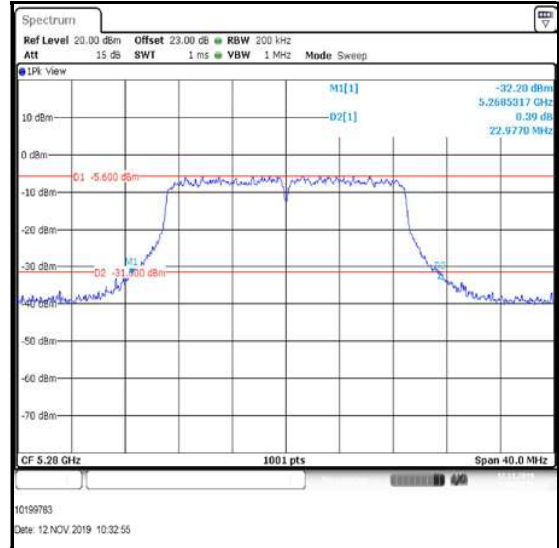
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 3Tx CDD / 64-QAM / MCS7 / Port 2

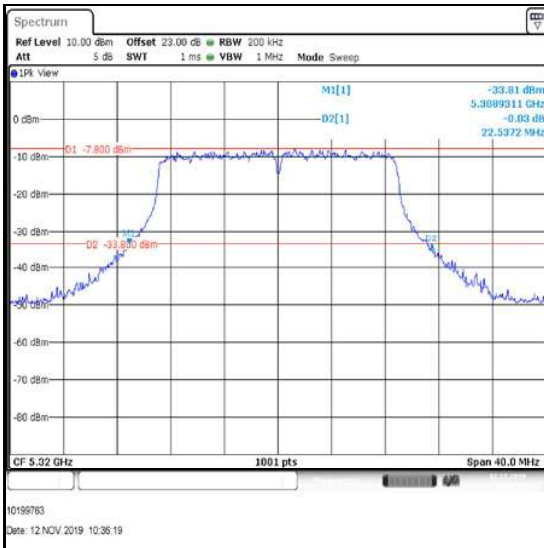
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	23.017
Middle	5280	22.977
Top	5320	22.537



Bottom Channel



Middle Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 3Tx CDD / 64-QAM / MCS7 / Port 3

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	21.978
Middle	5280	22.178
Top	5320	22.617



Bottom Channel



Middle Channel

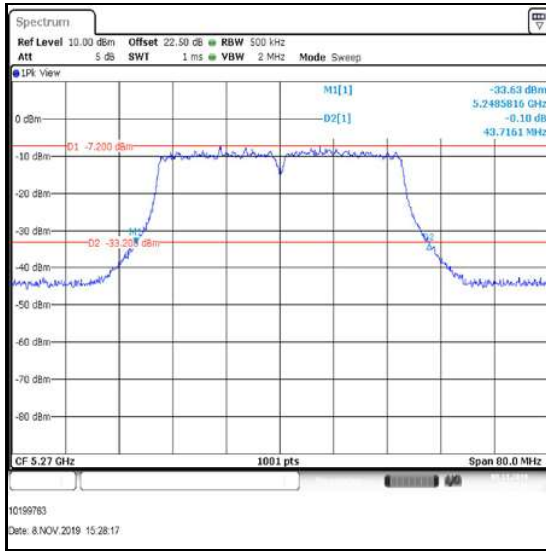


Top Channel

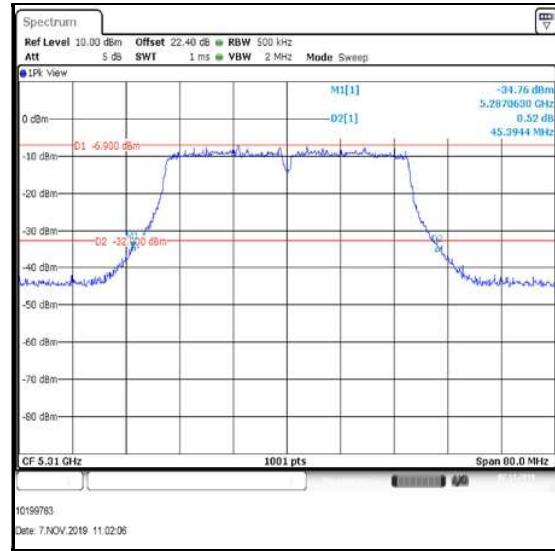
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 3Tx CDD / 64-QAM / MCS5 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	43.716
Top	5310	45.394



Bottom Channel

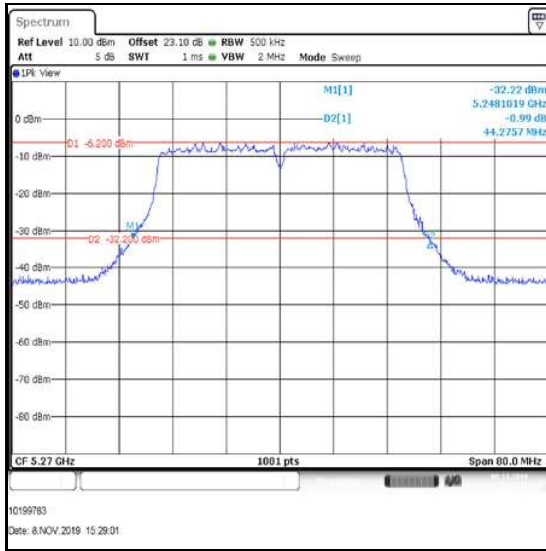


Top Channel

Tr3ansmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 3Tx CDD / 64-QAM / MCS5 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.276
Top	5310	43.876



Bottom Channel

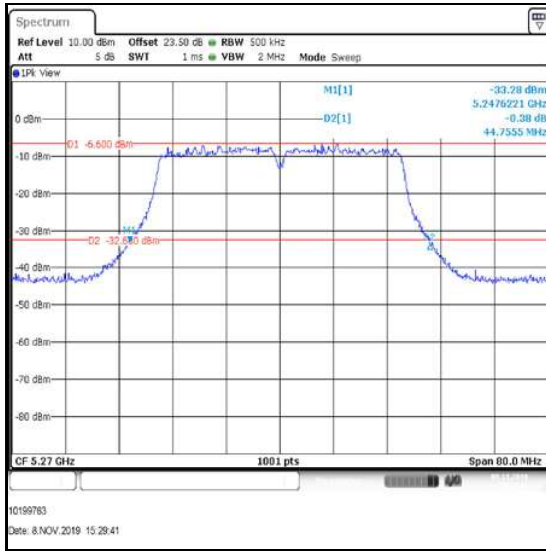


Top Channel

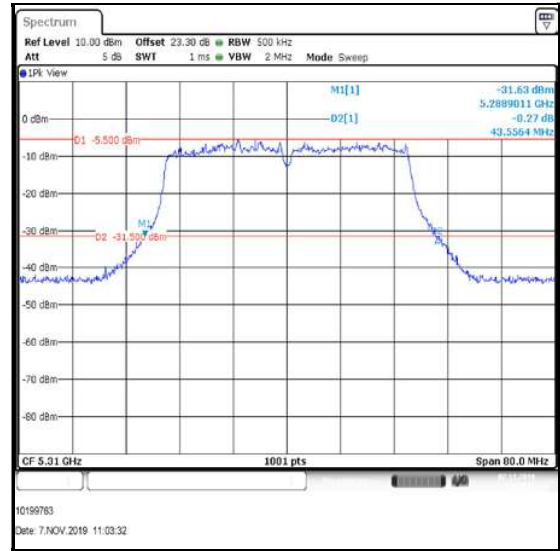
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 3Tx CDD / 64-QAM / MCS5 / Port 3

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.755
Top	5310	43.556



Bottom Channel

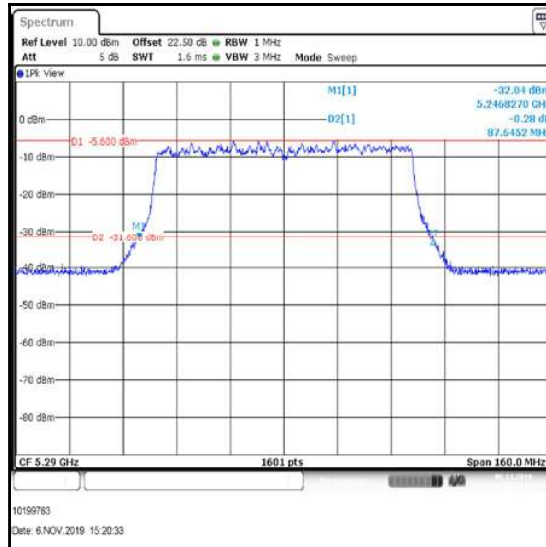


Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / 3Tx CDD / QPSK / MCS1x1 / Port 1

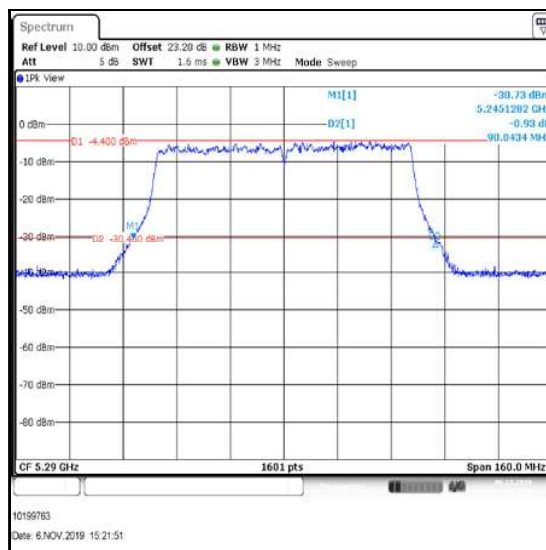
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	87.645



Single Channel

Results: 802.11ac / 80 MHz / MIMO / 3Tx CDD / QPSK / MCS1x1 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	90.043

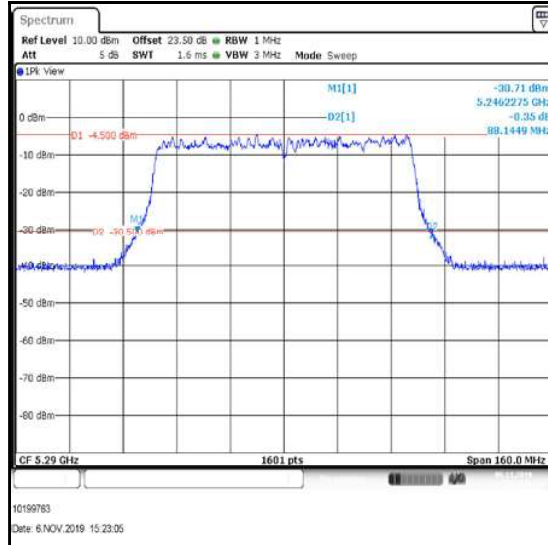


Single Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / 3Tx CDD / QPSK / MCS1x1 / Port 3

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	88.145



Single Channel

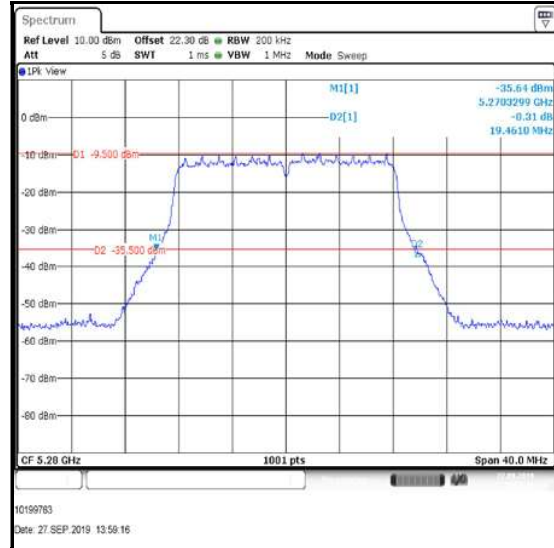
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 4Tx CDD / QPSK / 12 Mbps / Port 1

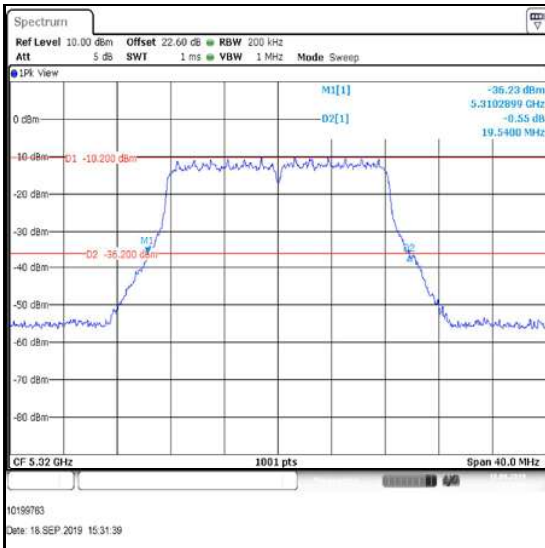
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.540
Middle	5280	19.461
Top	5320	19.540



Bottom Channel



Middle Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 4Tx CDD / QPSK / 12 Mbps / Port 2

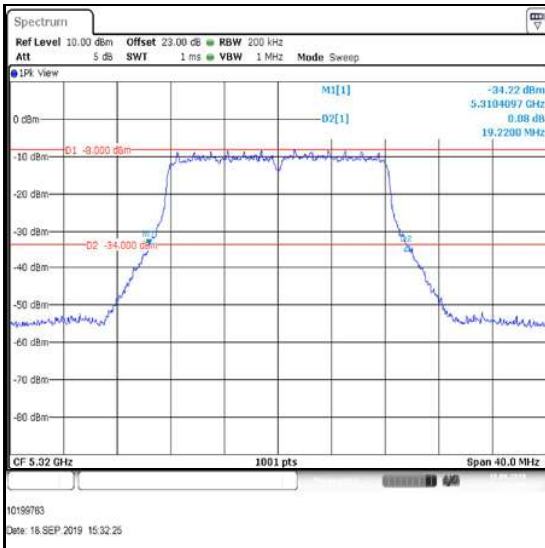
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.301
Middle	5280	19.220
Top	5320	19.220



Bottom Channel



Middle Channel

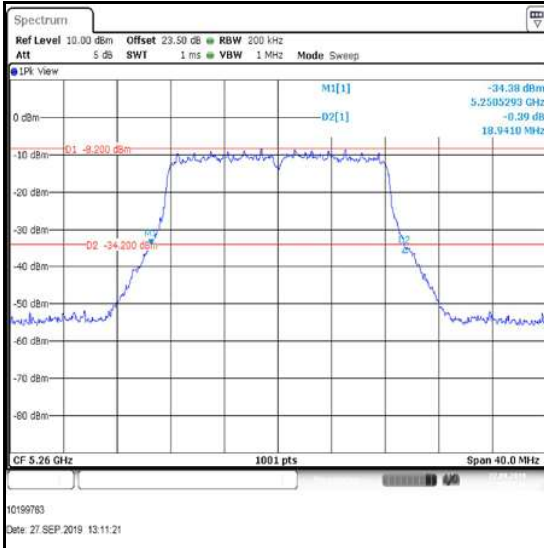


Top Channel

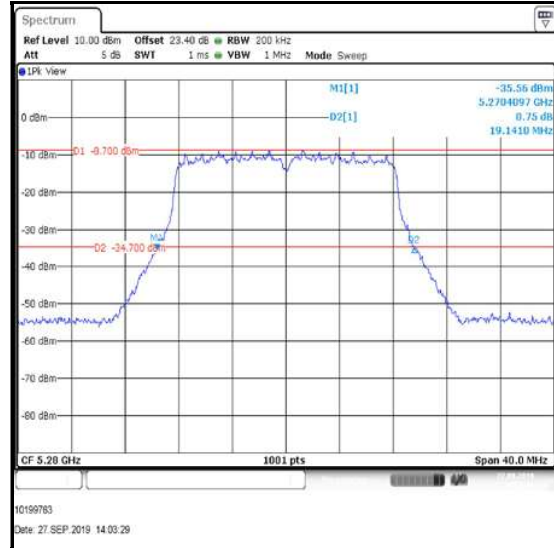
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 4Tx CDD / QPSK / 12 Mbps / Port 3

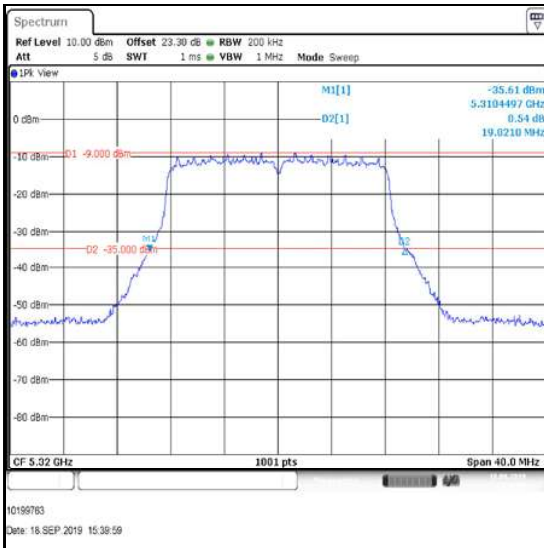
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	18.941
Middle	5280	19.141
Top	5320	19.021



Bottom Channel



Middle Channel



Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11a / 20 MHz / MIMO / 4Tx CDD / QPSK / 12 Mbps / Port 4

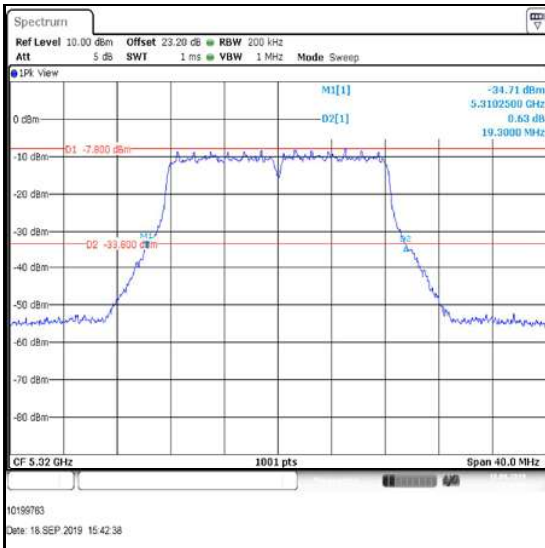
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	19.580
Middle	5280	19.620
Top	5320	19.300



Bottom Channel



Middle Channel

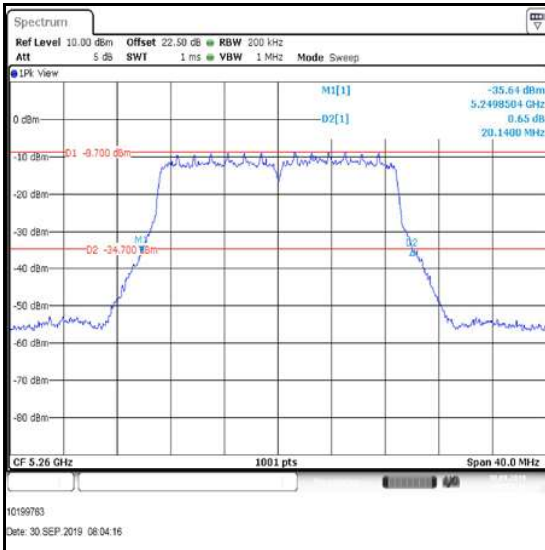


Top Channel

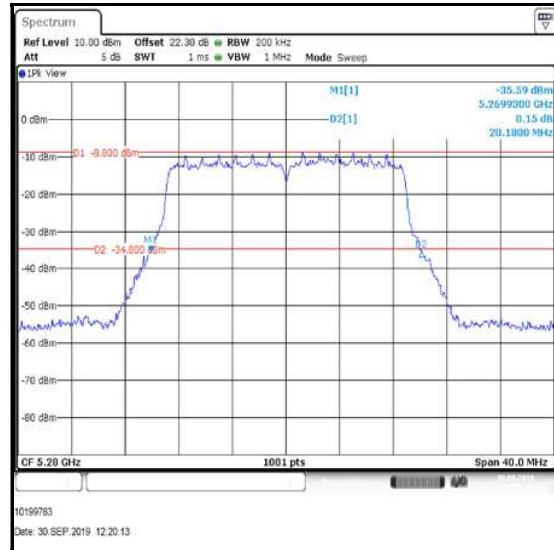
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 4Tx CDD / QPSK / MCS1 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	20.140
Middle	5280	20.180
Top	5320	20.300



Bottom Channel



Middle Channel

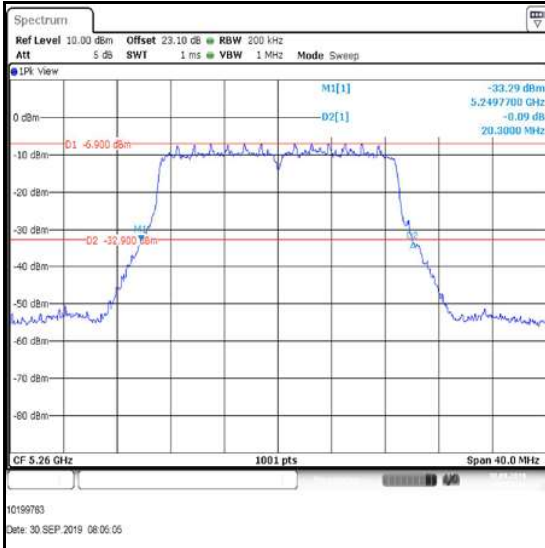


Top Channel

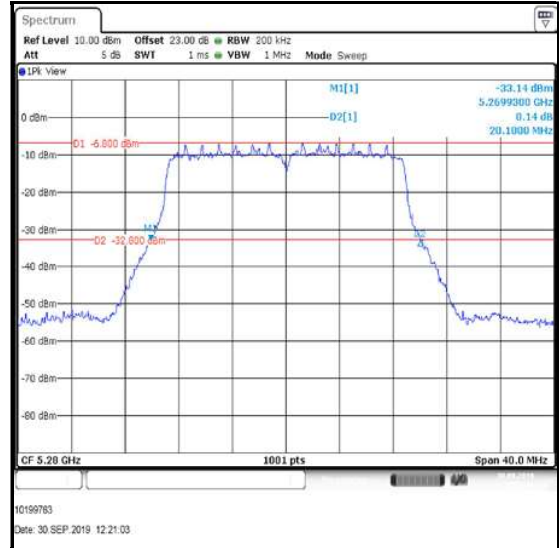
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 4Tx CDD / QPSK / MCS1 / Port 2

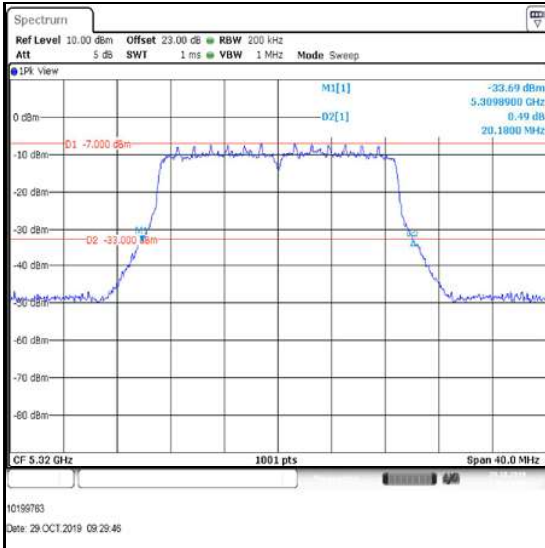
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	20.300
Middle	5280	20.100
Top	5320	20.180



Bottom Channel



Middle Channel

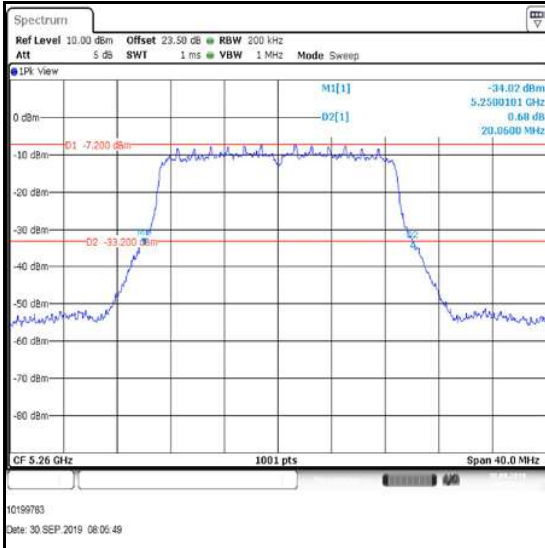


Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 4Tx CDD / QPSK / MCS1 / Port 3

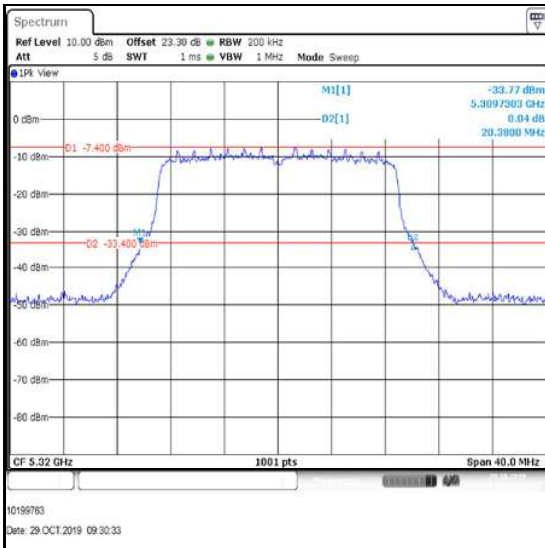
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	20.060
Middle	5280	20.260
Top	5320	20.380



Bottom Channel



Middle Channel



Top Channel

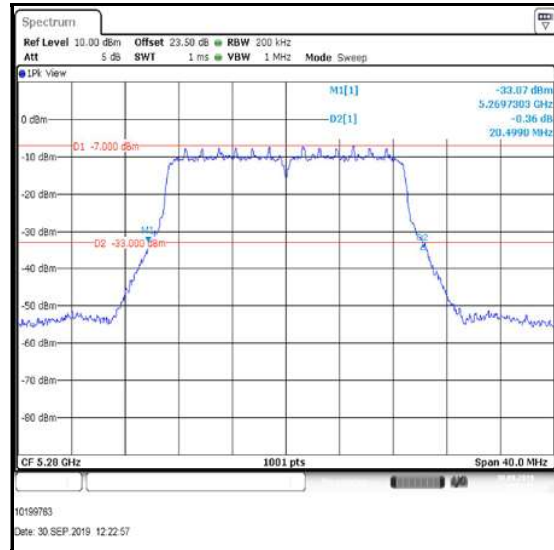
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 20 MHz / MIMO / 4Tx CDD / QPSK / MCS1 / Port 4

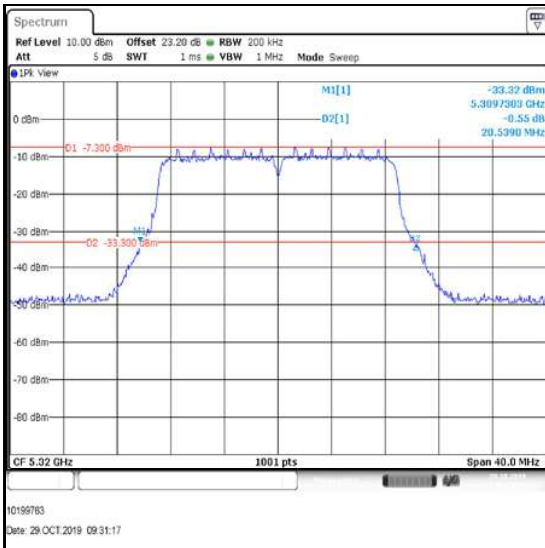
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5260	20.500
Middle	5280	20.499
Top	5320	20.539



Bottom Channel



Middle Channel

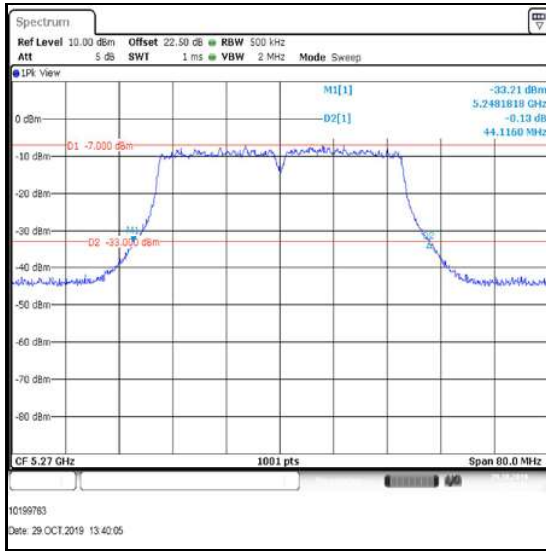


Top Channel

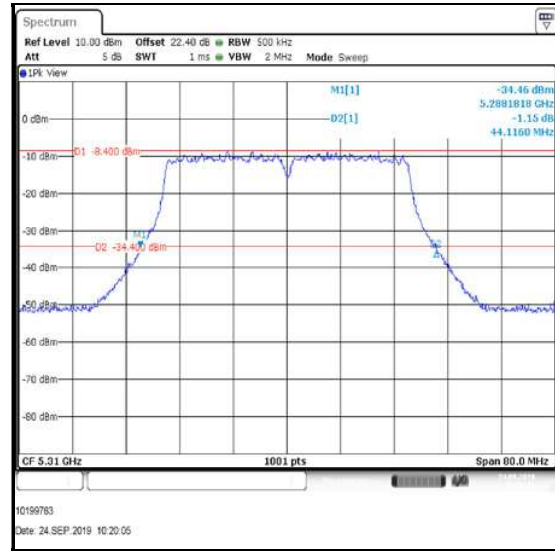
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3 / Port 1

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.116
Top	5310	44.116



Bottom Channel



Top Channel

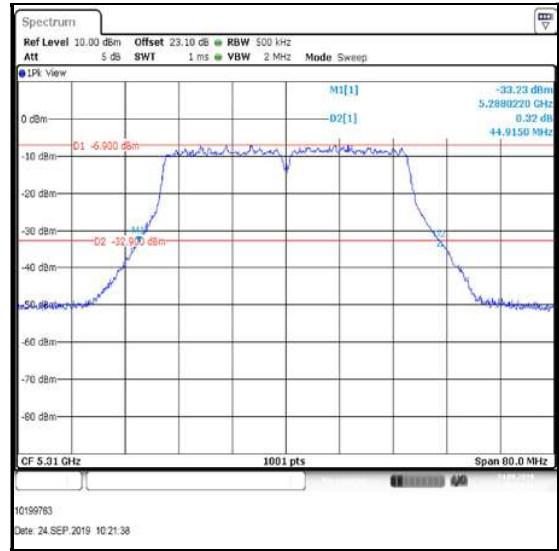
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	47.553
Top	5310	44.915



Bottom Channel

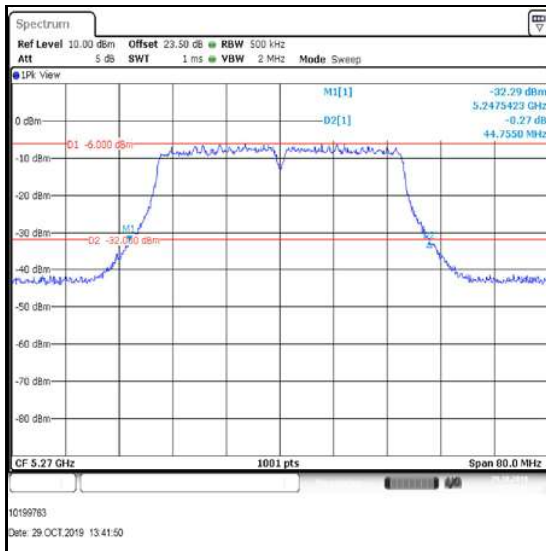


Top Channel

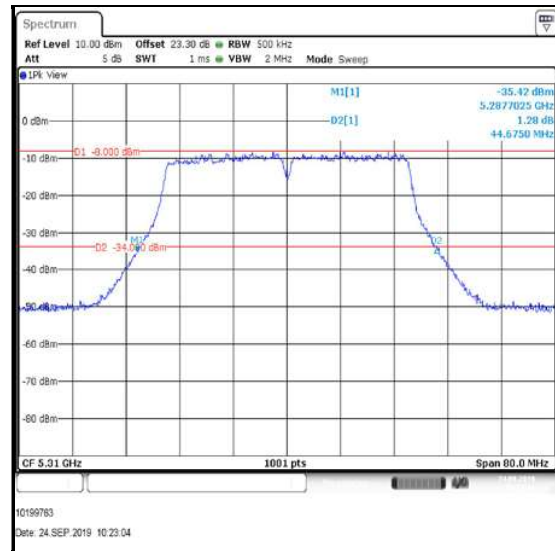
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3 / Port 3

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.755
Top	5310	44.675



Bottom Channel



Top Channel

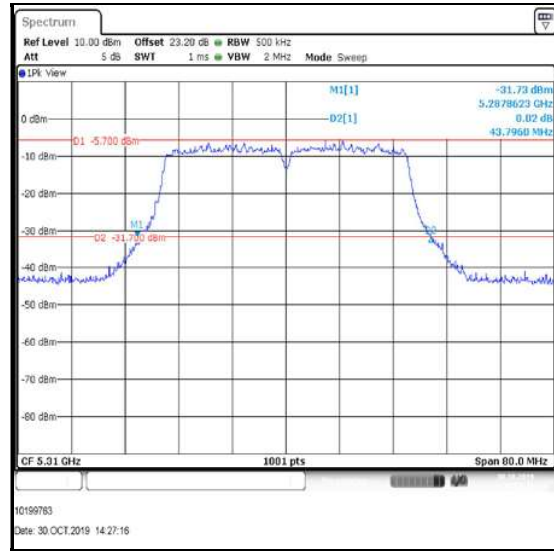
Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11n / 40 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3 / Port 4

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Bottom	5270	44.196
Top	5310	43.796



Bottom Channel

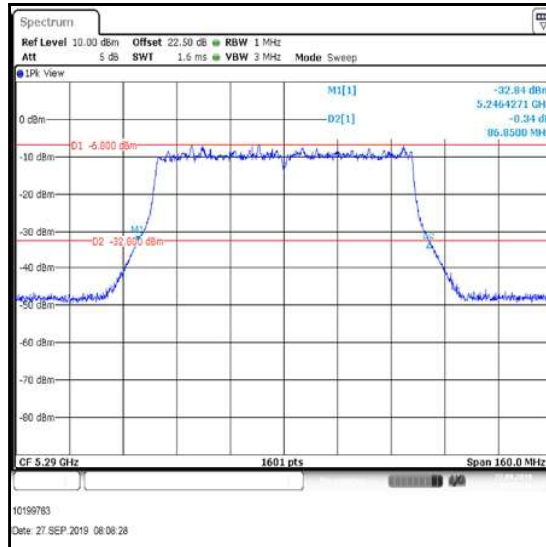


Top Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3x1 / Port 1

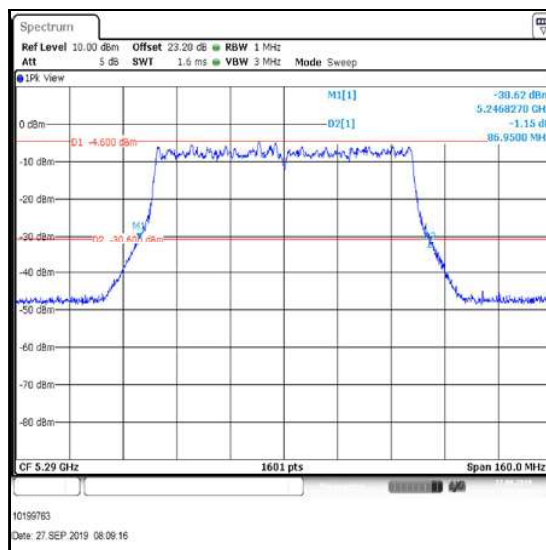
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	86.846



Single Channel

Results: 802.11ac / 80 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3x1 / Port 2

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	86.946

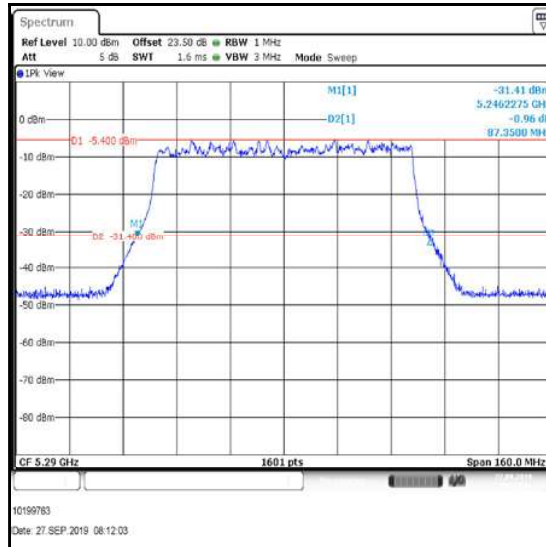


Single Channel

Transmitter 26 dB Emission Bandwidth (5.25-5.35 GHz band) (continued)

Results: 802.11ac / 80 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3x1 / Port 3

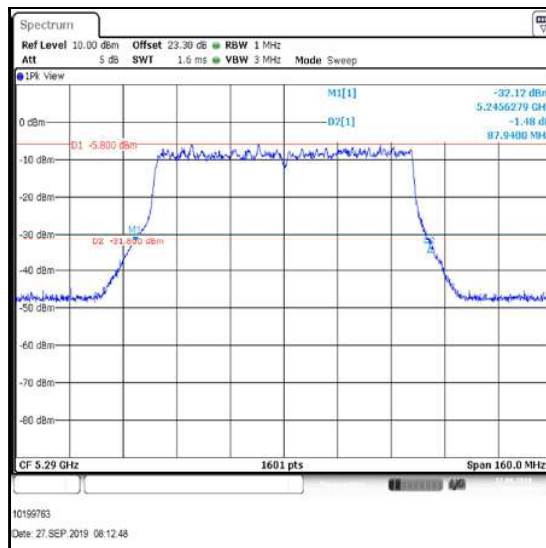
Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	87.345



Single Channel

Results: 802.11ac / 80 MHz / MIMO / 4Tx CDD / 16-QAM / MCS3x1 / Port 4

Channel	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
Single	5290	87.945



Single Channel