

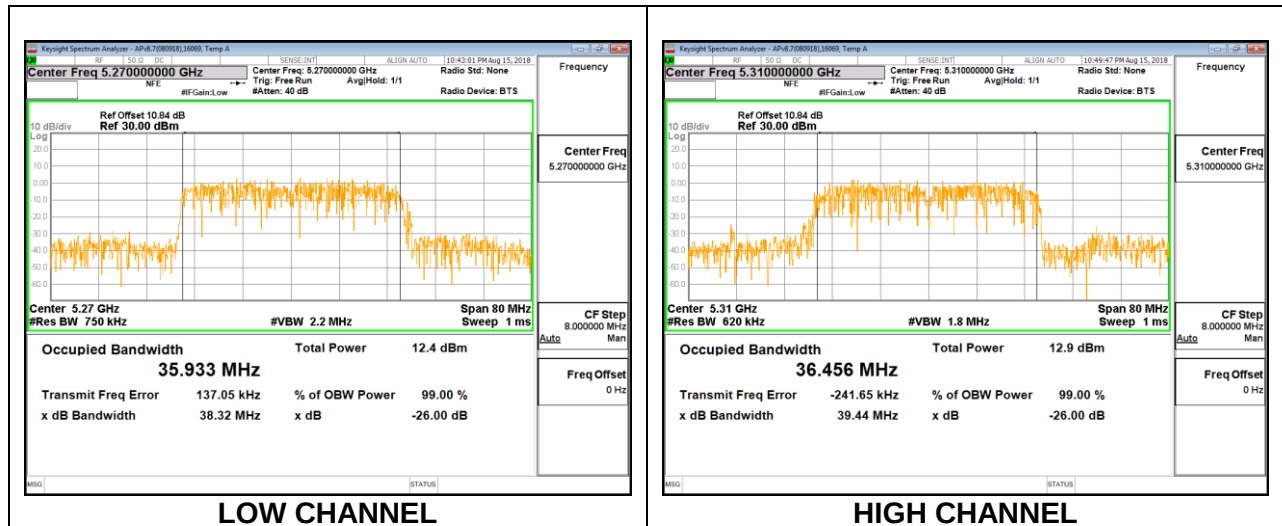
8.3.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5260	17.6950
Mid	5300	17.7580
High	5320	17.7170



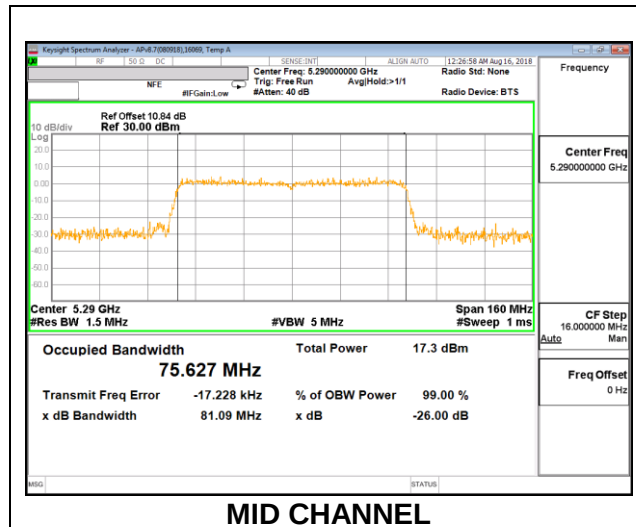
8.3.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5270	35.9330
High	5310	36.4560



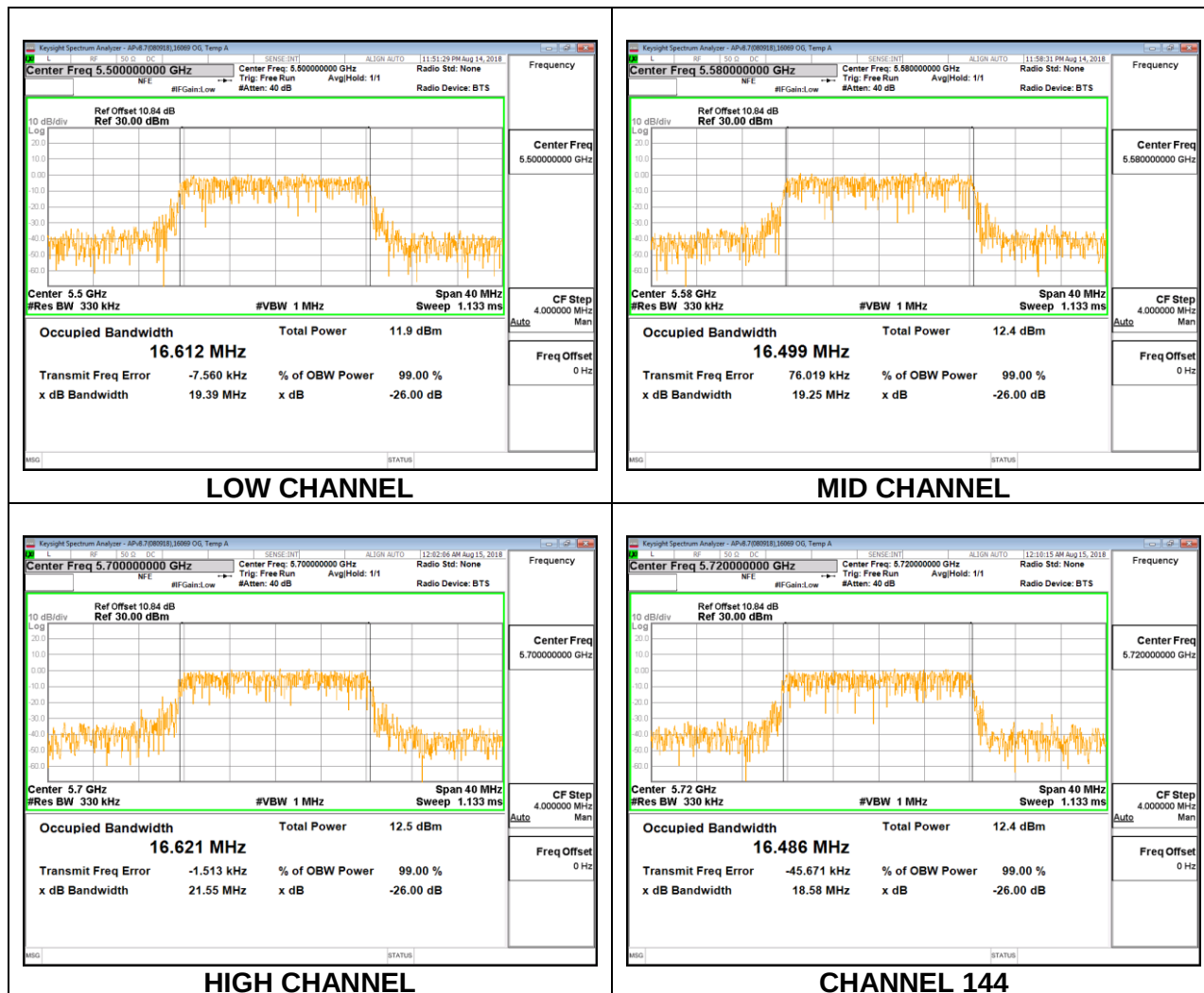
8.3.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5290	75.6590



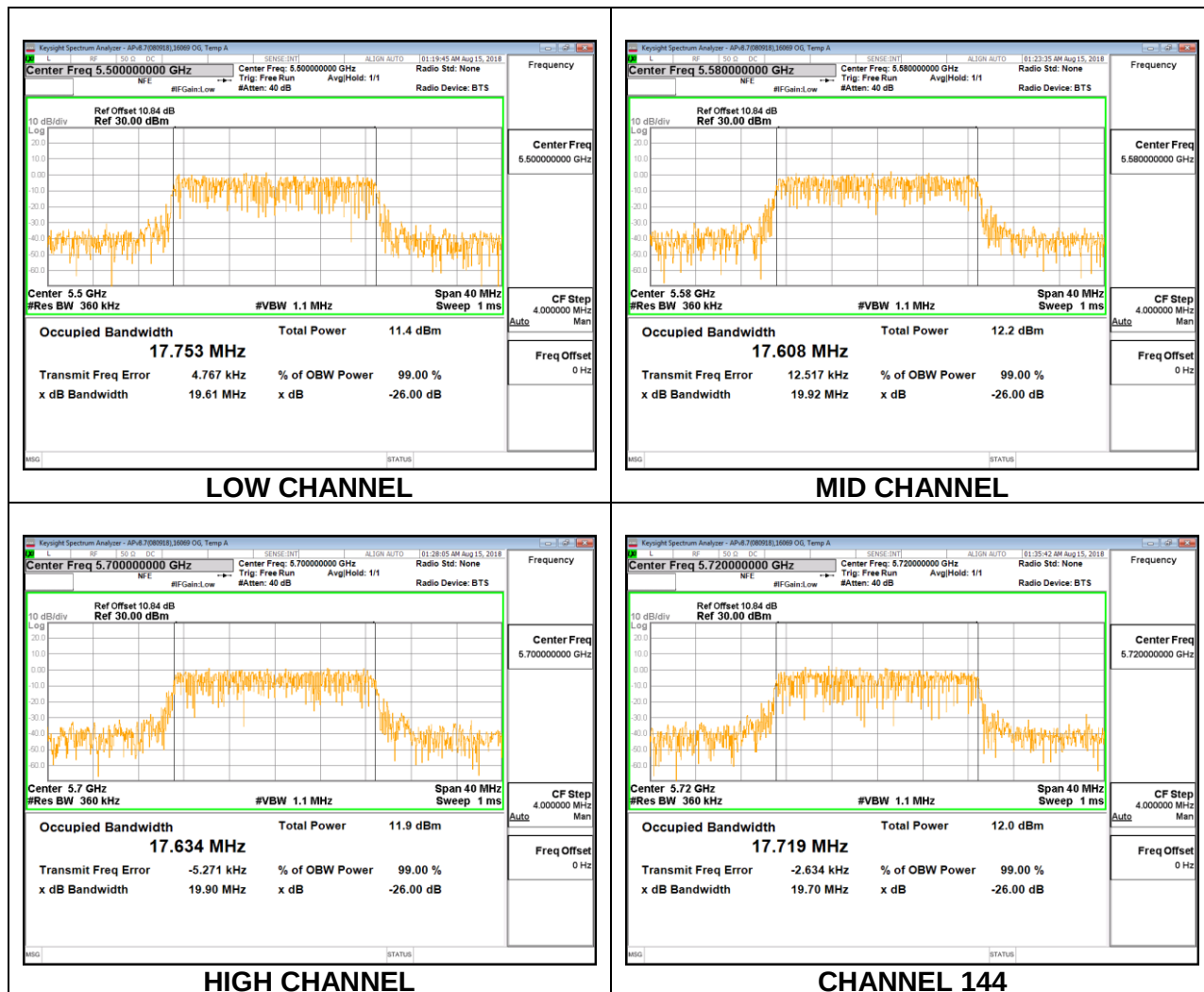
8.3.9. 802.11a MODE IN THE 5.6 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	16.6120
Mid	5580	16.4990
High	5700	16.6210
144	5720	16.4860



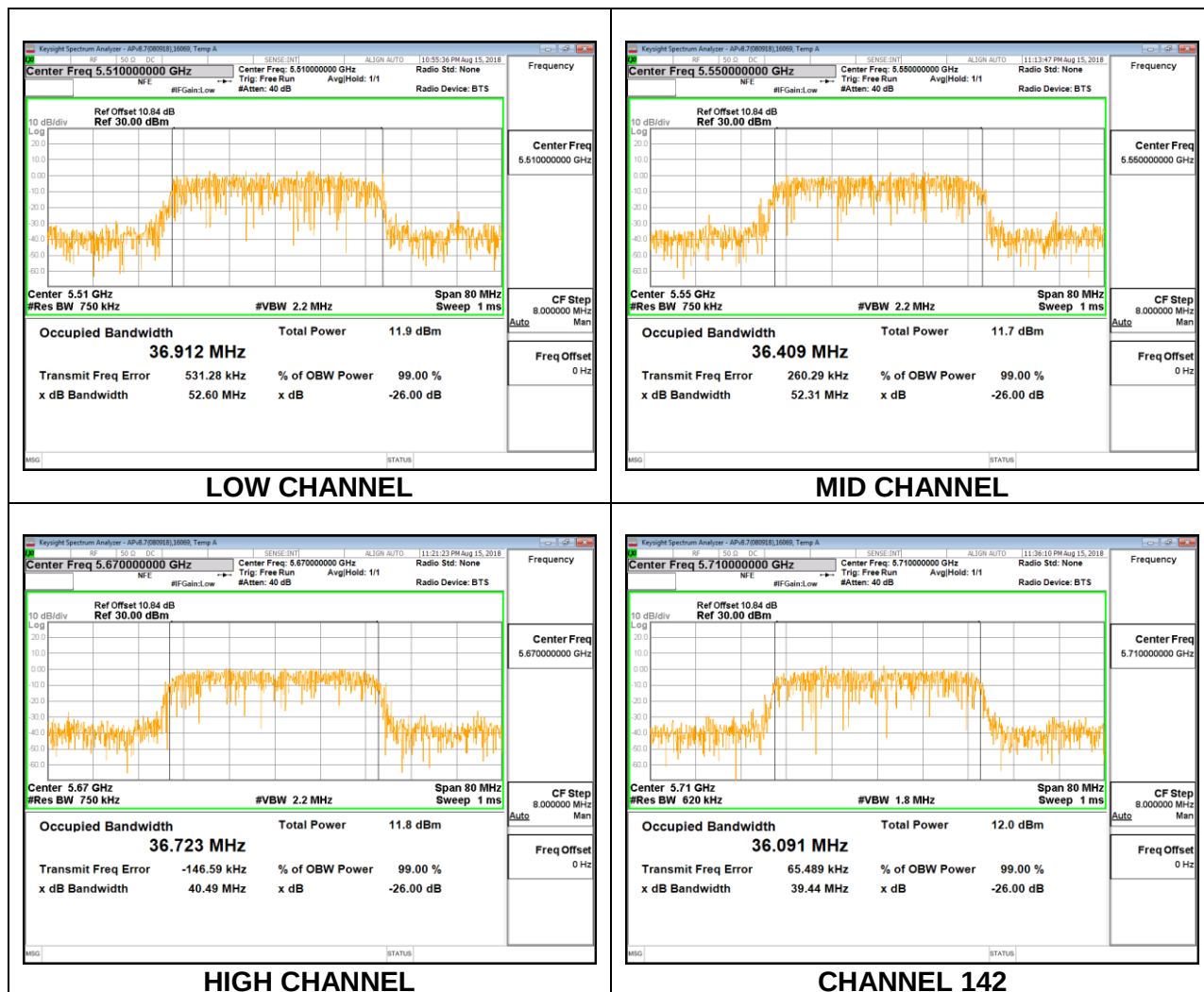
8.3.10. 802.11n HT20 MODE IN THE 5.6 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5500	17.7530
Mid	5580	17.6080
High	5700	17.6340
144	5720	17.7190



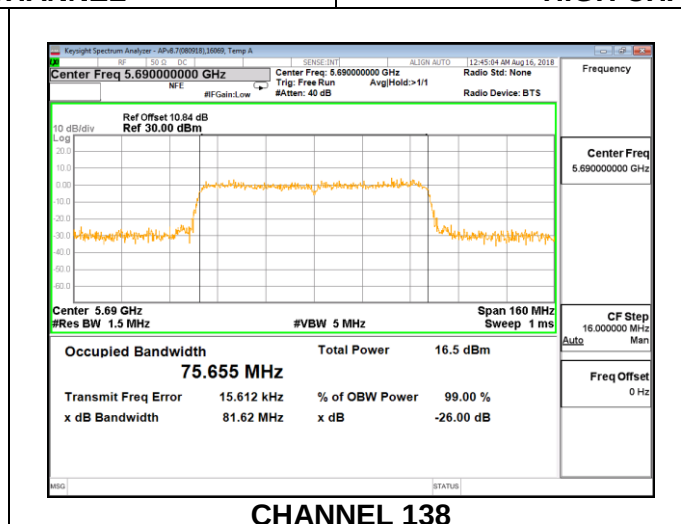
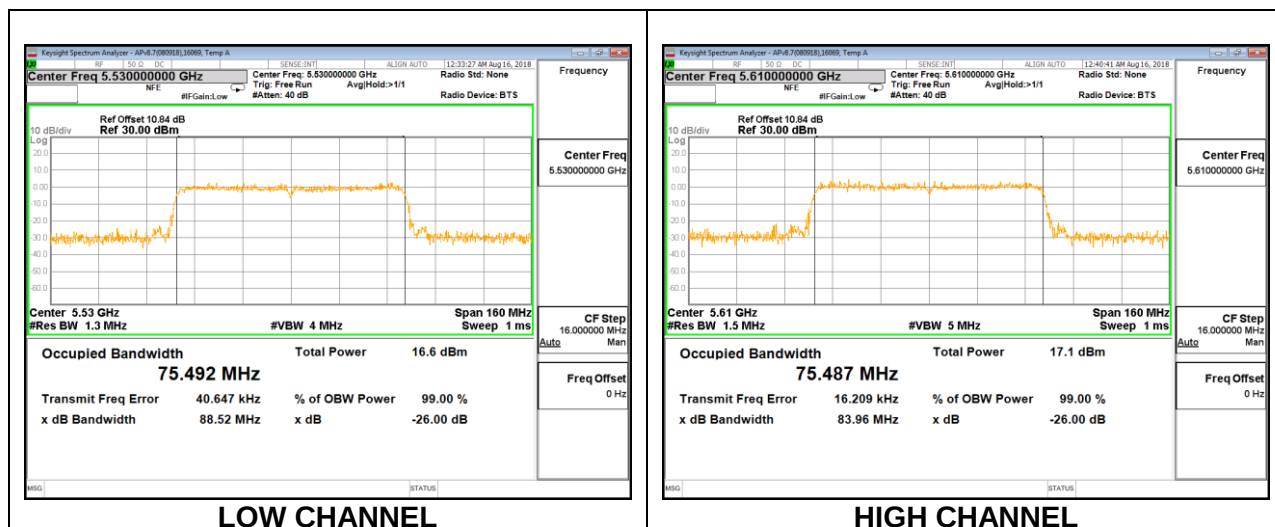
8.3.11. 802.11n HT40 MODE IN THE 5.6 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	36.9120
Mid	5550	36.4090
High	5670	36.7230
142	5710	36.0910



8.3.12. 802.11ac VHT80 MODE IN THE 5.6 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5530	75.4920
High	5610	75.4870
138	5690	75.6550



8.3.13. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	16.5920
Mid	5785	16.5500
High	5825	16.5430



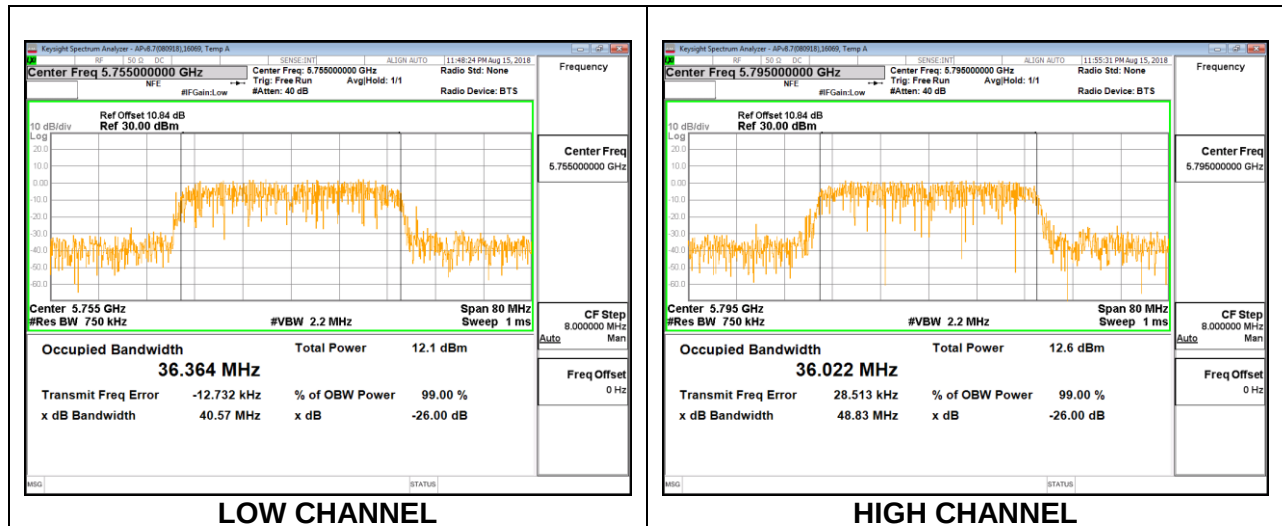
8.3.14. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5745	17.7100
Mid	5785	17.7040
High	5825	17.7500



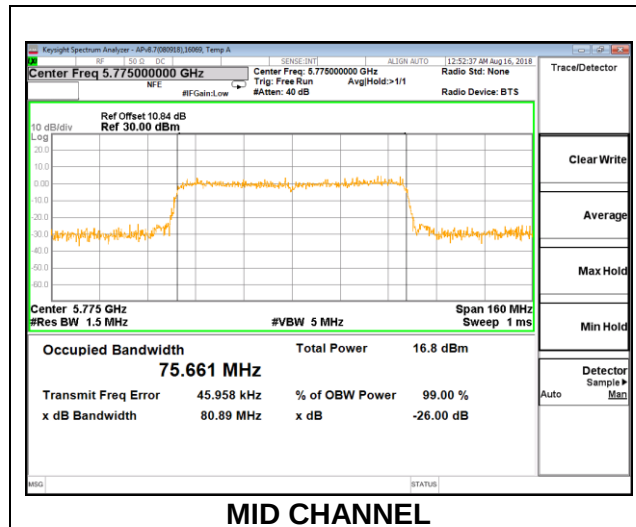
8.3.15. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low	5755	36.3640
High	5795	36.0220



8.3.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Mid	5775	75.6610



8.4. 6 dB BANDWIDTH

LIMITS

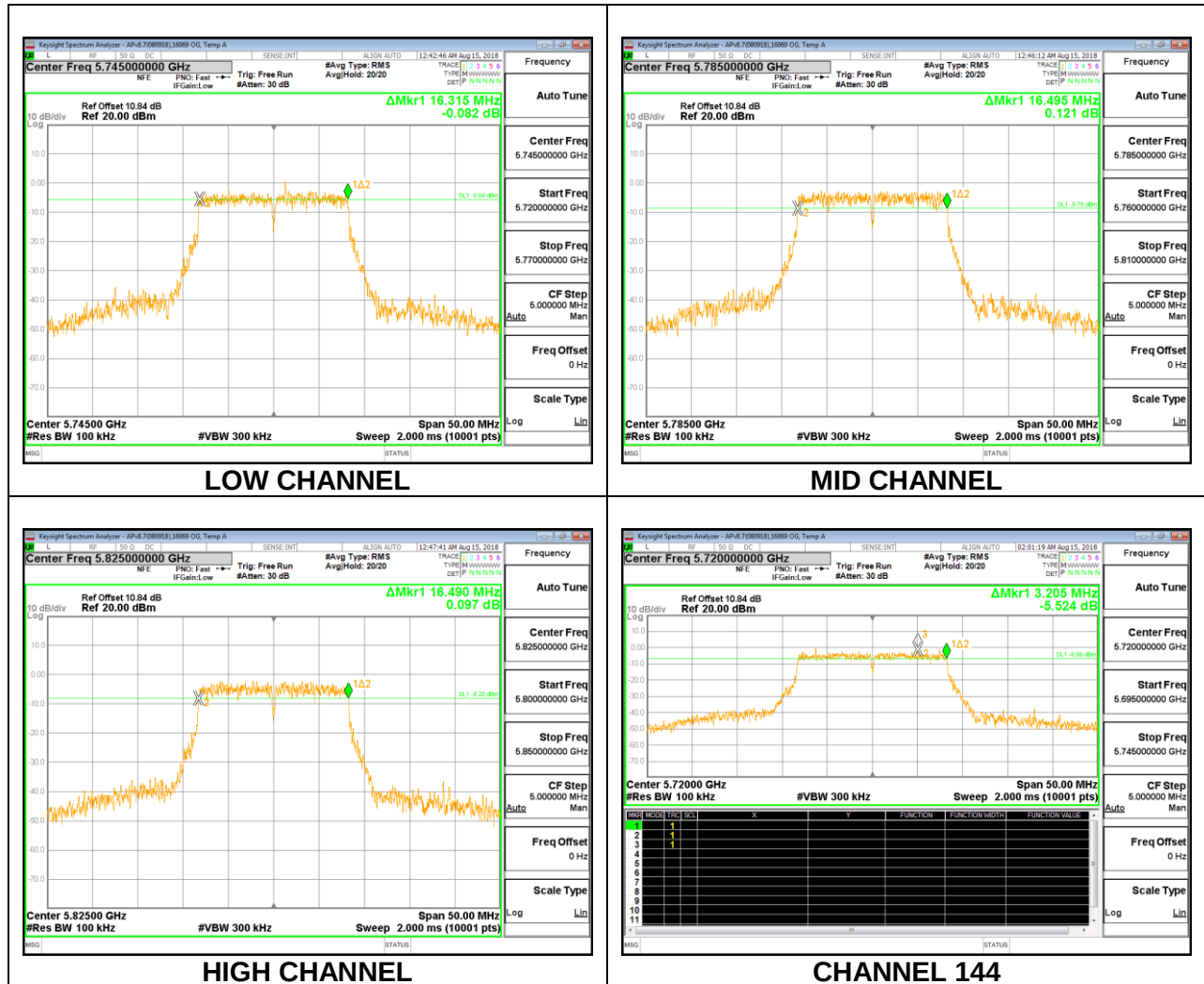
FCC §15.407 (e)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

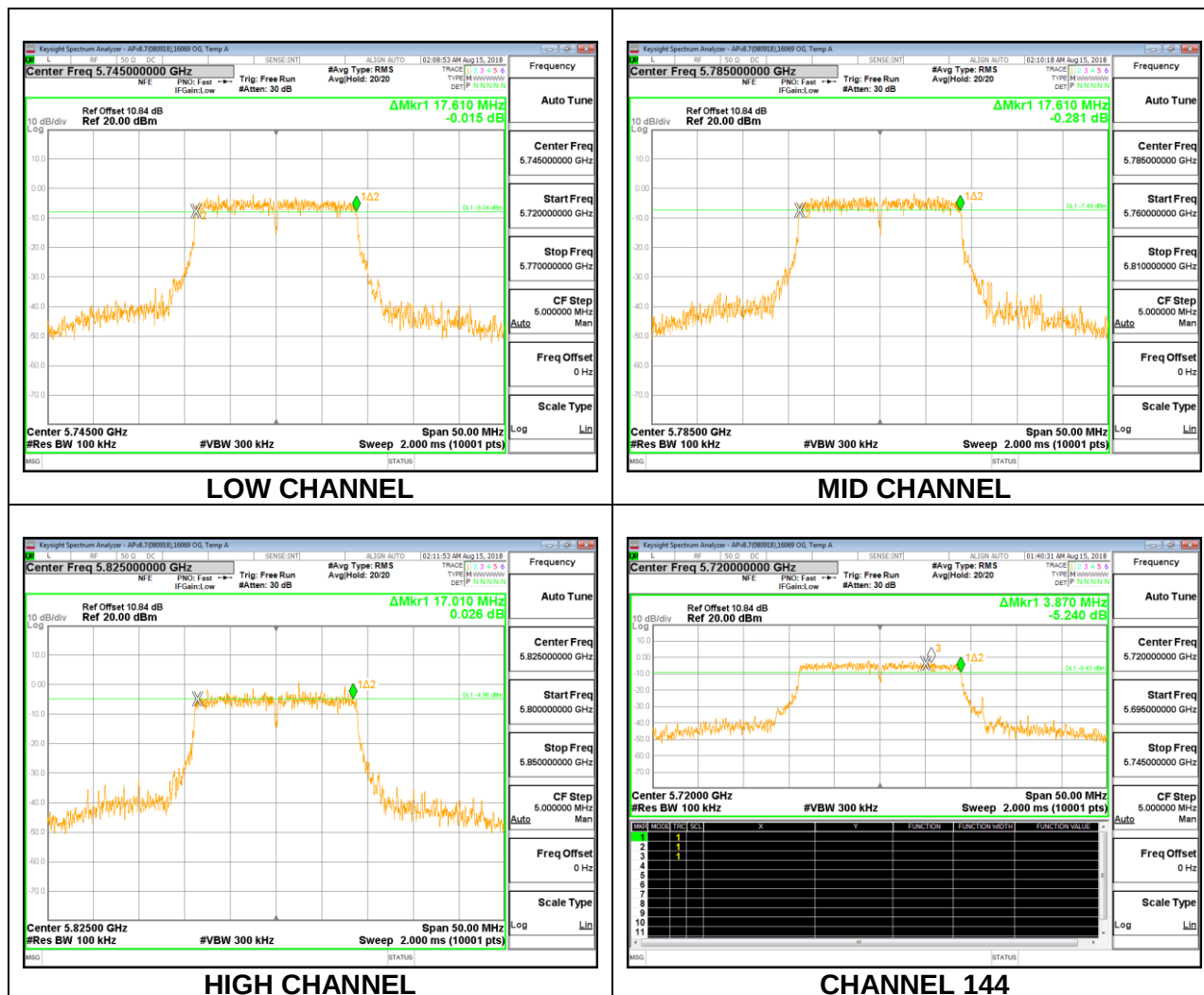
8.4.1. 802.11a MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	16.315	0.5
Mid	5785	16.495	0.5
High	5825	16.490	0.5
144	5720	3.205	0.5



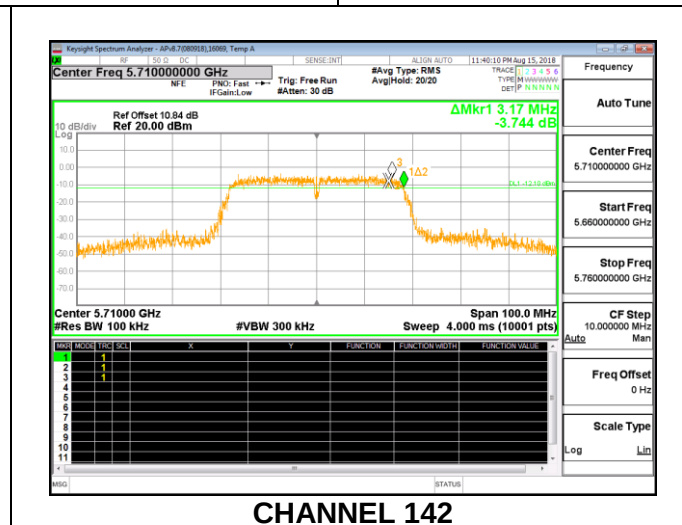
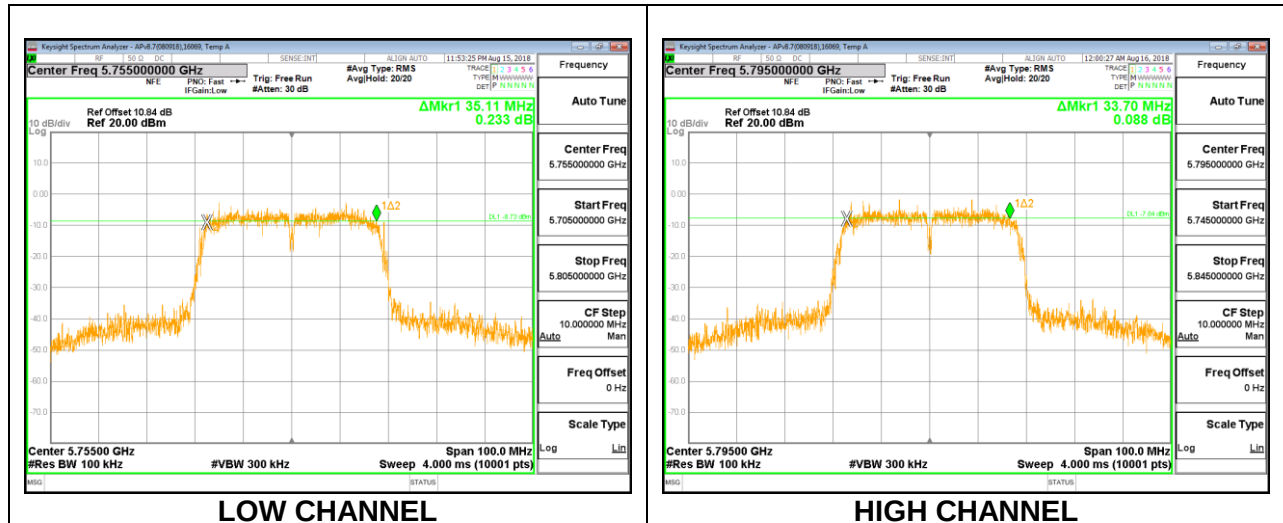
8.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5745	17.610	0.5
Mid	5785	17.610	0.5
High	5825	17.010	0.5
144	5720	3.870	0.5



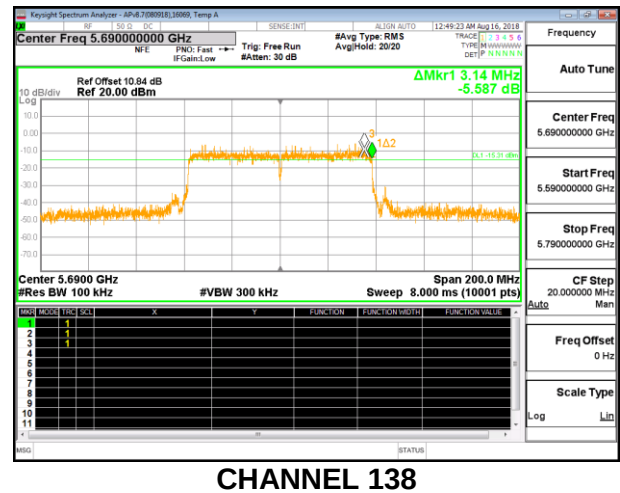
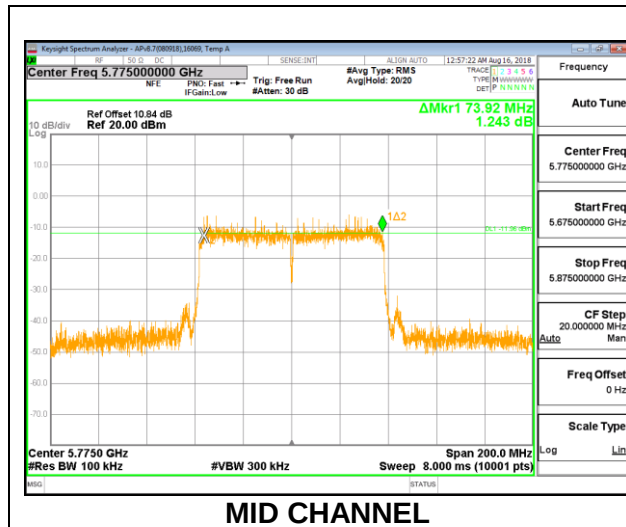
8.4.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.11	0.5
High	5795	33.70	0.5
142	5710	3.17	0.5



8.4.4. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

Channel	Frequency	6 dB Bandwidth	Minimum Limit
	(MHz)	(MHz)	(MHz)
Mid	5775	73.92	0.5
138	5690	3.14	0.5



8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz (pick the section that applies to your product)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple colocated transmitters transmitting the same information.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz

The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple colocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G) and for straddles channels KDB 789033 D02 v02r01, Section E.2.b (Method SA-1) was used.

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

8.5.1. 802.11a MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5180	4.86	24.00	11.00
Mid	5200	4.86	24.00	11.00
High	5240	4.86	24.00	11.00

Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.45	10.45	24.00	-13.55
Mid	5200	12.28	12.28	24.00	-11.72
High	5240	12.39	12.39	24.00	-11.61

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	1.849	2.08	11.00	-8.92
Mid	5200	1.984	2.21	11.00	-8.79
High	5240	1.692	1.92	11.00	-9.08



8.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5180	4.86	24.00	11.00
Mid	5200	4.86	24.00	11.00
High	5240	4.86	24.00	11.00

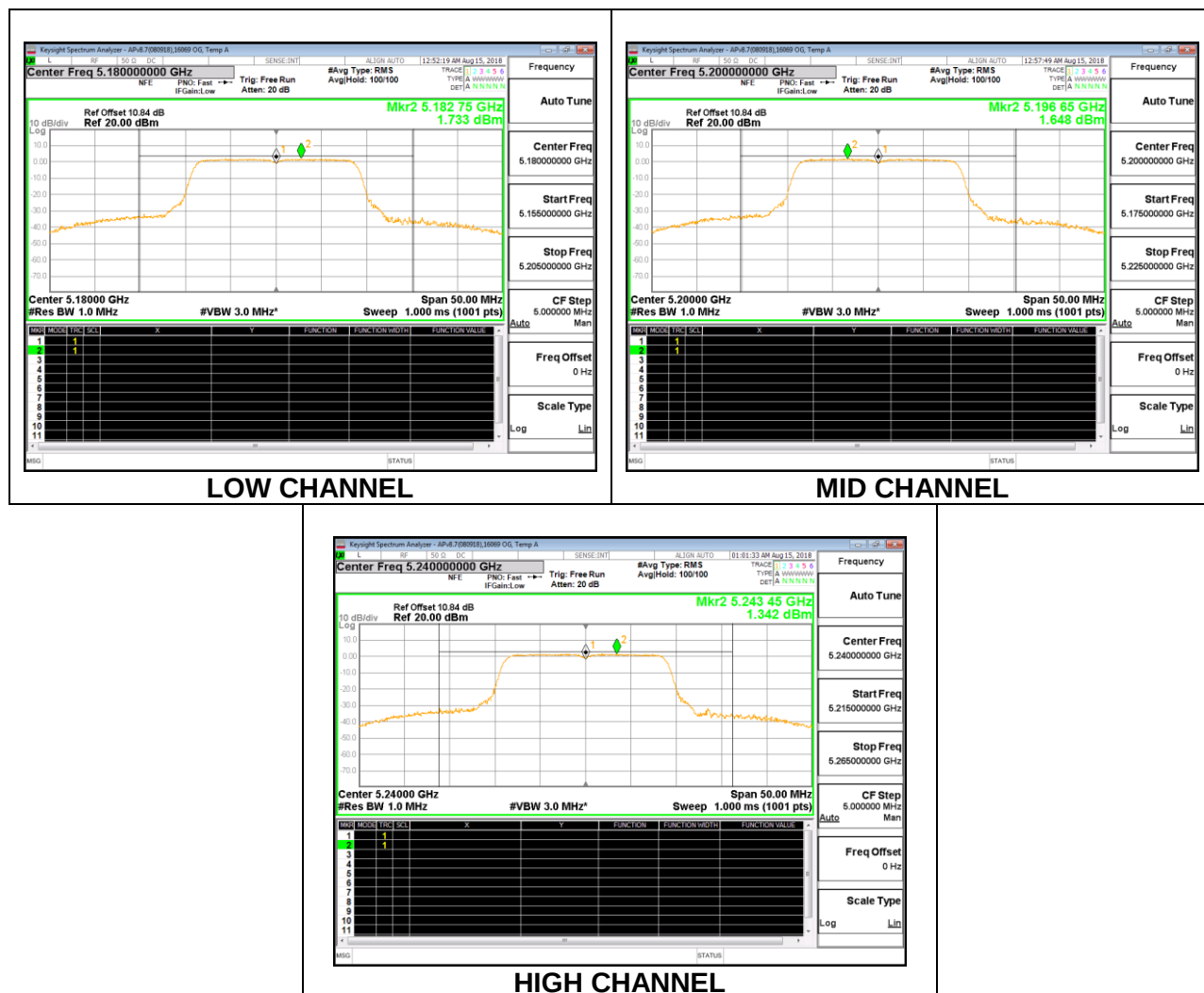
Duty Cycle CF (dB)	0.24	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	9.09	9.09	24.00	-14.91
Mid	5200	12.26	12.26	24.00	-11.74
High	5240	12.41	12.41	24.00	-11.59

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	1.733	1.97	11.00	-9.03
Mid	5200	1.648	1.89	11.00	-9.11
High	5240	1.342	1.58	11.00	-9.42



8.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5190	4.86	24.00	11.00
High	5230	4.86	24.00	11.00

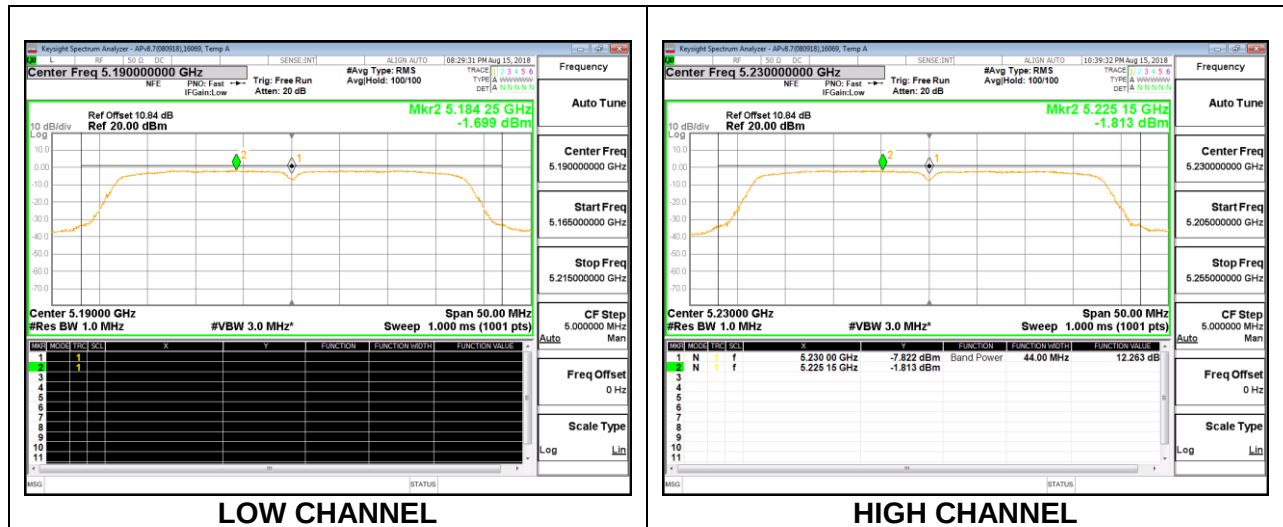
Duty Cycle CF (dB)	0.58	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	7.93	7.93	24.00	-16.07
High	5230	12.66	12.66	24.00	-11.34

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5190	-1.699	-1.12	11.00	-12.12
High	5230	-1.813	-1.23	11.00	-12.23



8.5.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Mid	5210	4.86	24.00	11.00

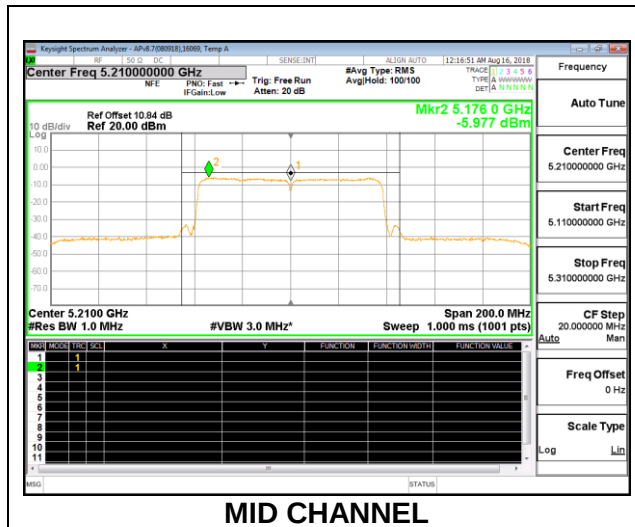
Duty Cycle CF (dB)	1.28	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5210	4.38	4.38	24.00	-19.62

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Mid	5210	-5.977	-4.70	11.00	-15.70



8.5.5. 802.11a MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	21.15	4.86	24.00	11.00
Mid	5300	21.05	4.86	24.00	11.00
High	5320	21.15	4.86	24.00	11.00

Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.77	12.77	24.00	-11.23
Mid	5300	12.75	12.75	24.00	-11.25
High	5320	11.01	11.01	24.00	-12.99

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	0.811	1.04	11.00	-9.96
Mid	5300	0.452	0.68	11.00	-10.32
High	5320	0.520	0.75	11.00	-10.25



8.5.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5260	30.15	4.86	24.00	11.00
Mid	5300	28.25	4.86	24.00	11.00
High	5320	24.00	4.86	24.00	11.00

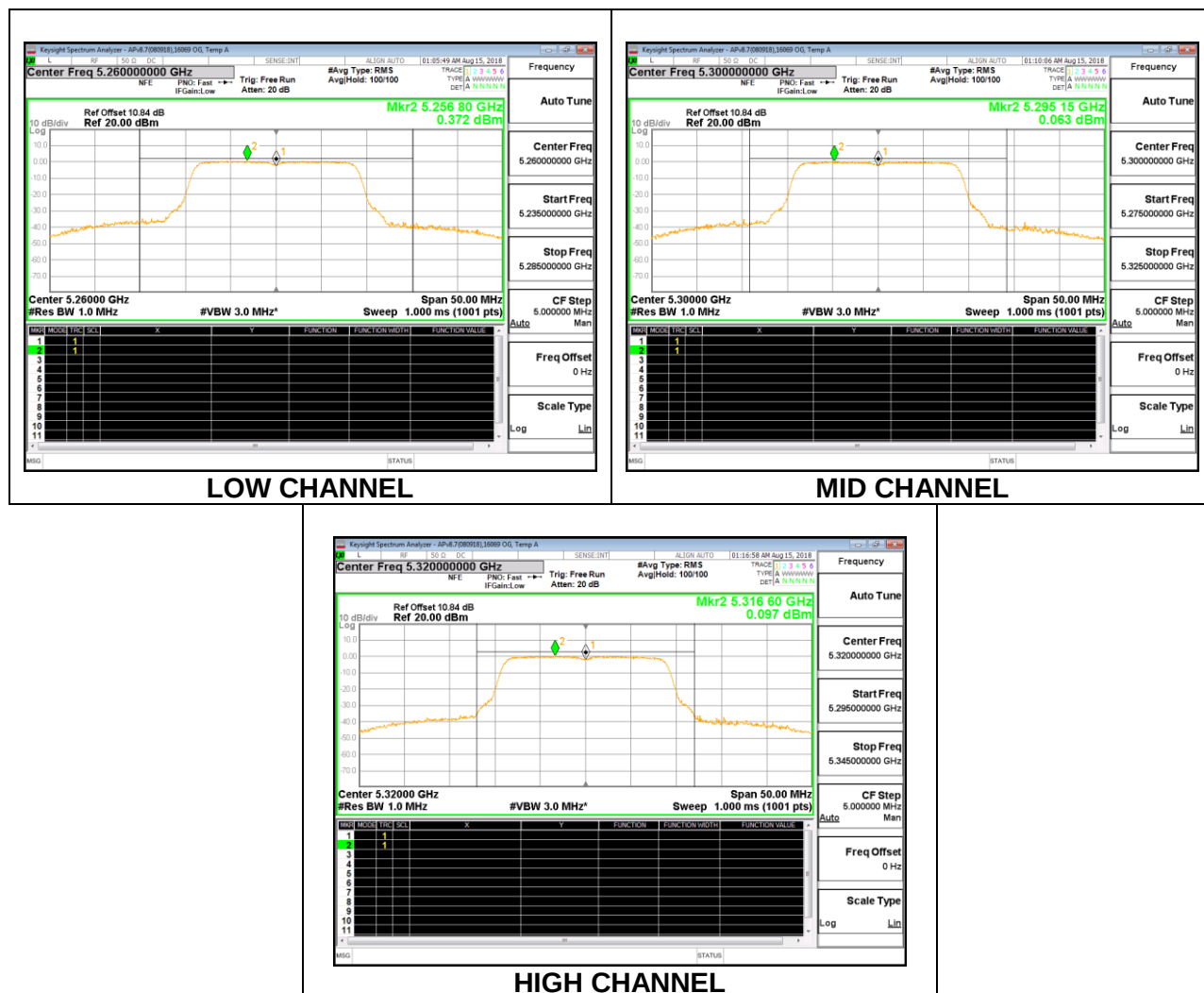
Duty Cycle CF (dB)	0.24	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	12.63	12.63	24.00	-11.37
Mid	5300	12.67	12.67	24.00	-11.33
High	5320	11.08	11.08	24.00	-12.92

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5260	0.372	0.61	11.00	-10.39
Mid	5300	0.063	0.30	11.00	-10.70
High	5320	0.097	0.34	11.00	-10.66



8.5.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Low	5270	43.70	4.86	24.00	11.00
High	5310	61.00	4.86	24.00	11.00

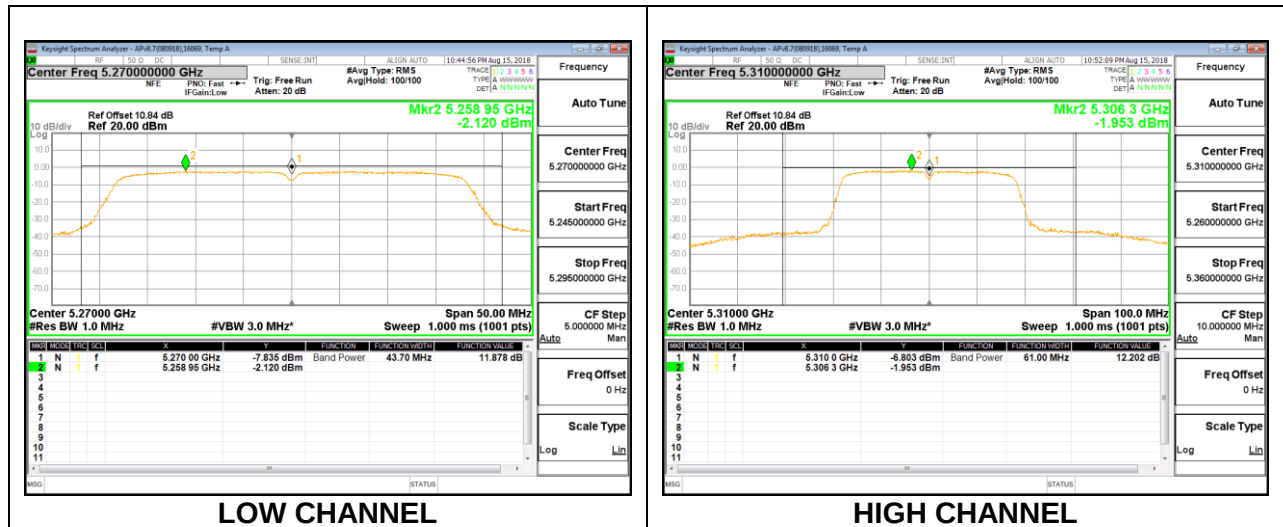
Duty Cycle CF (dB)	0.58	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	12.40	12.40	24.00	-11.60
High	5310	7.86	7.86	24.00	-16.14

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Low	5270	-2.120	-1.54	11.00	-12.54
High	5310	-1.953	-1.37	11.00	-12.37



8.5.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/1MHz)
Mid	5290	82.80	4.86	24.00	11.00

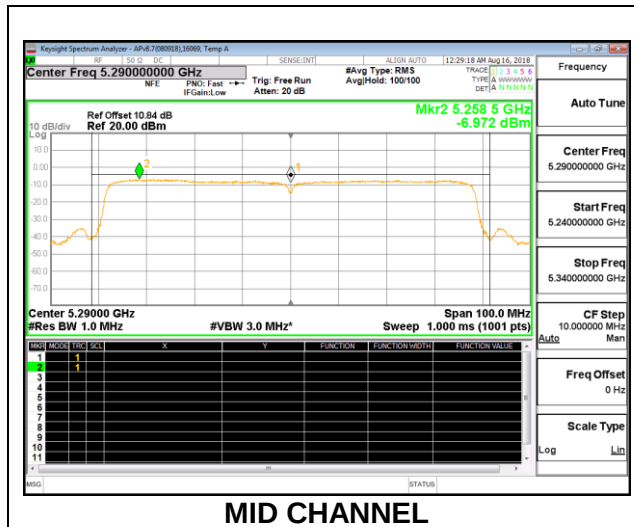
Duty Cycle CF (dB)	1.28	Included in Calculations of Corr'd PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5290	3.88	3.88	24.00	-20.12

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/1MHz)	Total Corr'd PSD (dBm/1MHz)	PSD Limit (dBm/1MHz)	PSD Margin (dB)
Mid	5290	-6.972	-5.69	11.00	-16.69



8.5.9. 802.11a MODE IN THE 5.6 GHz BAND

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5500	26.35	4.86	24.00	11.00
Mid	5580	25.80	4.86	24.00	11.00
High	5700	25.85	4.86	24.00	11.00
144	5720	24.35	4.86	24.00	11.00

Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd Power & PSD
--------------------	------	--

Output Power Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	12.60	12.60	24.00	-11.40
Mid	5580	12.35	12.35	24.00	-11.65
High	5700	11.65	11.65	24.00	-12.35
144	5720	12.31	12.31	24.00	-11.69

PSD Results

Channel	Frequency (MHz)	Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5500	0.147	0.38	11.00	-10.62
Mid	5580	0.451	0.68	11.00	-10.32
High	5700	0.282	0.51	11.00	-10.49
144	5720	-0.644	-0.41	11.00	-11.41