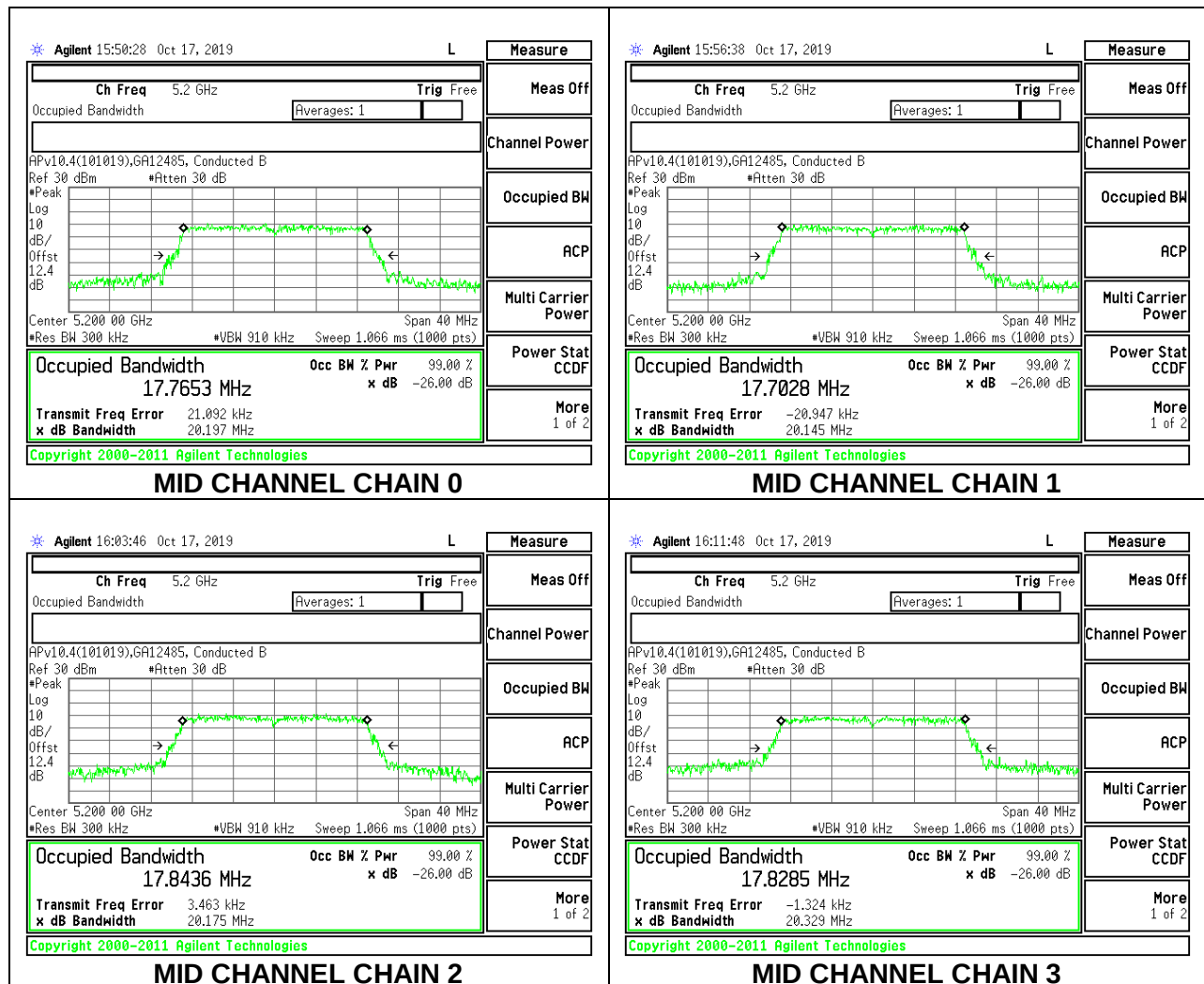
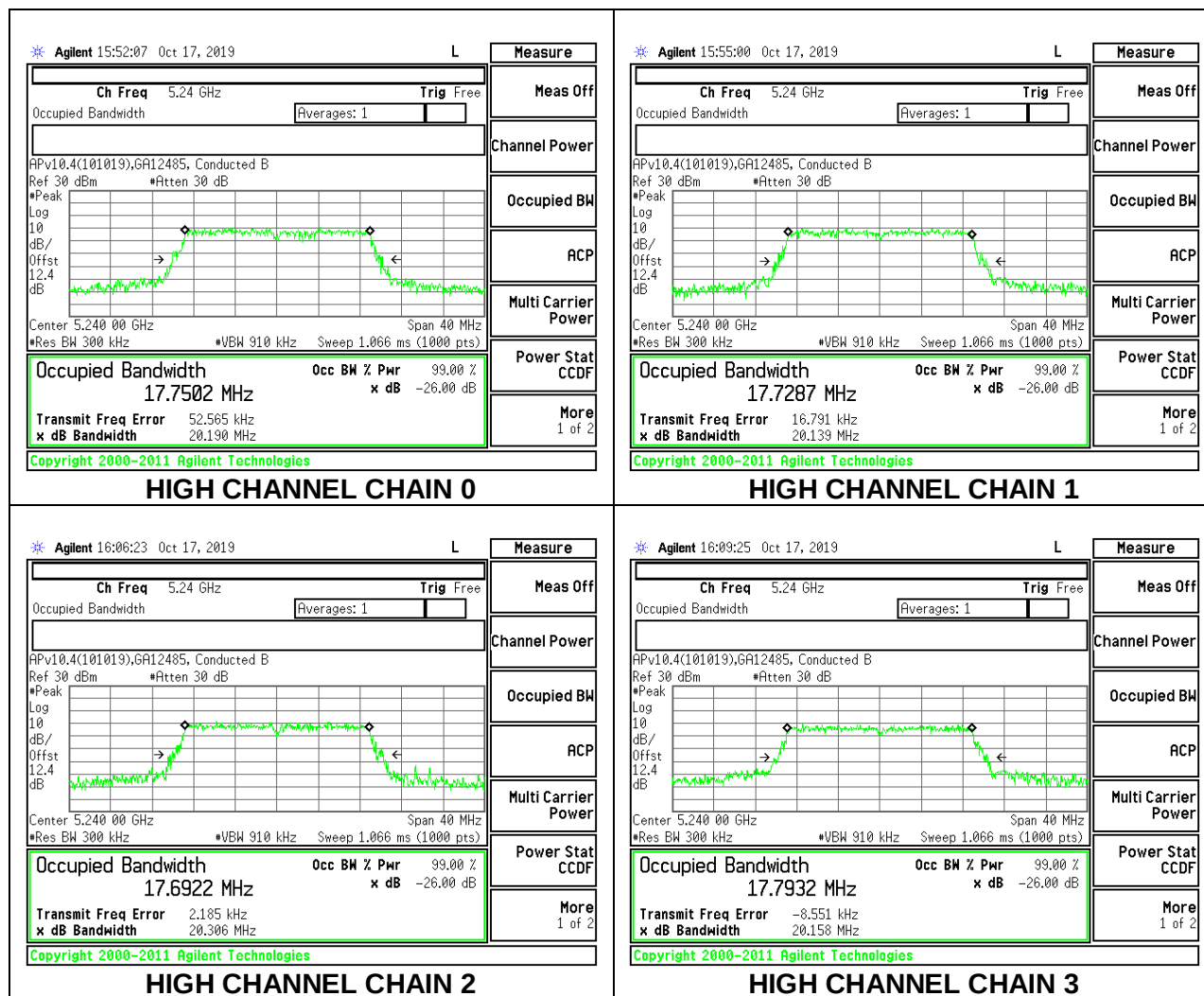


MID CHANNEL



HIGH CHANNEL

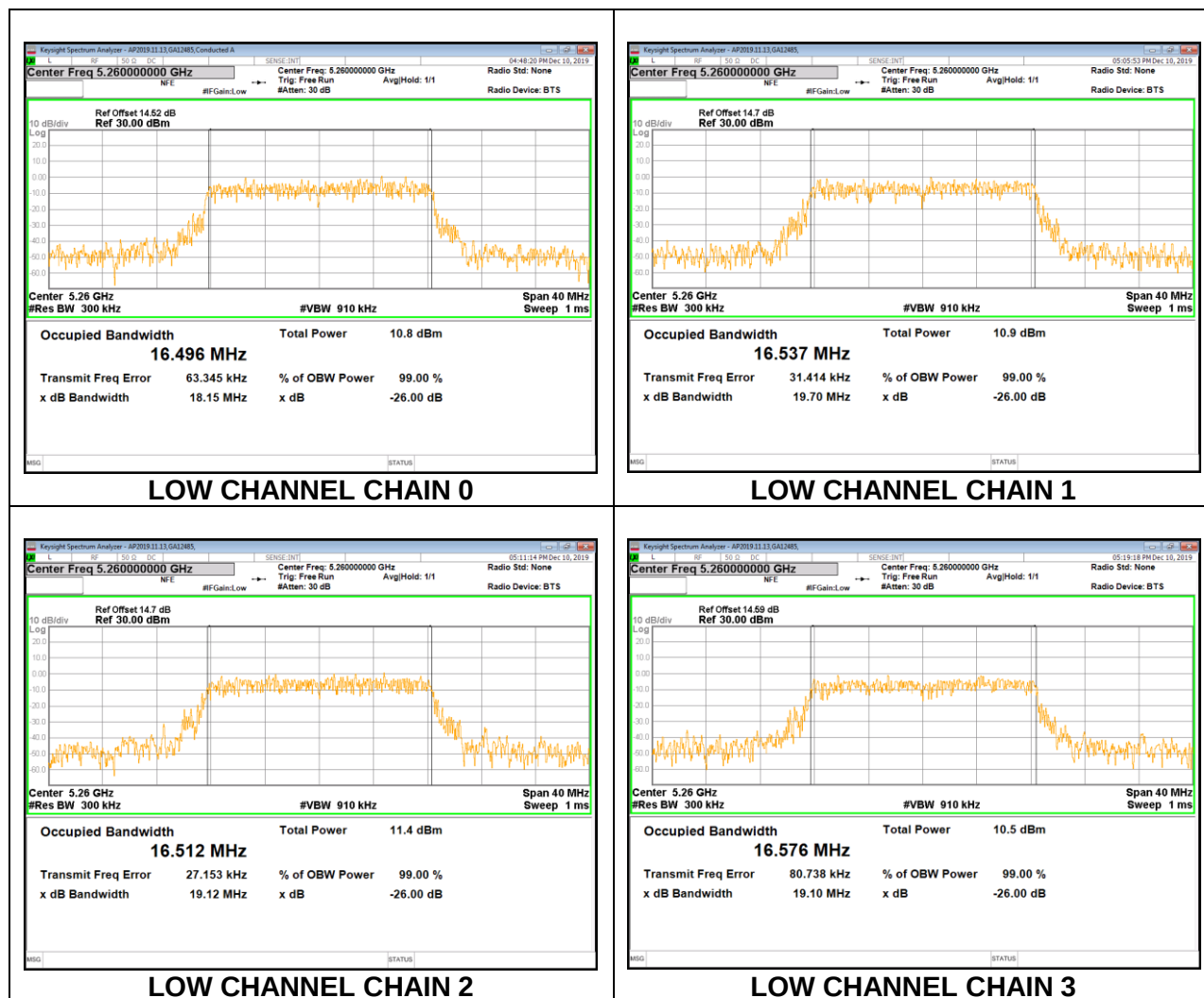


8.3.3. 802.11a MODE IN THE 5.3 GHz BAND

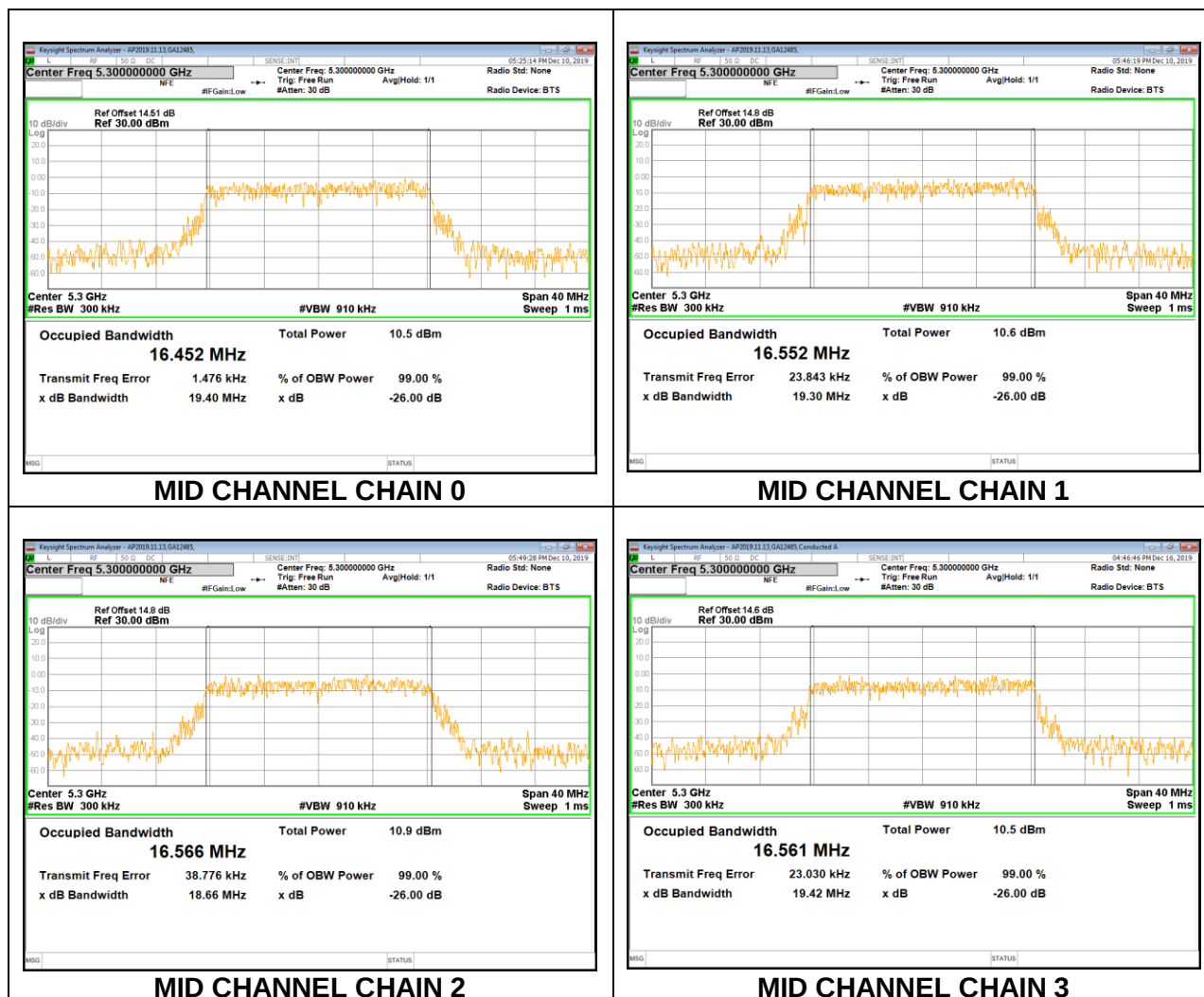
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	5260	16.496	16.537	16.512	16.576
Mid	5300	16.452	16.552	16.566	16.561
High	5320	16.606	16.606	16.494	16.564

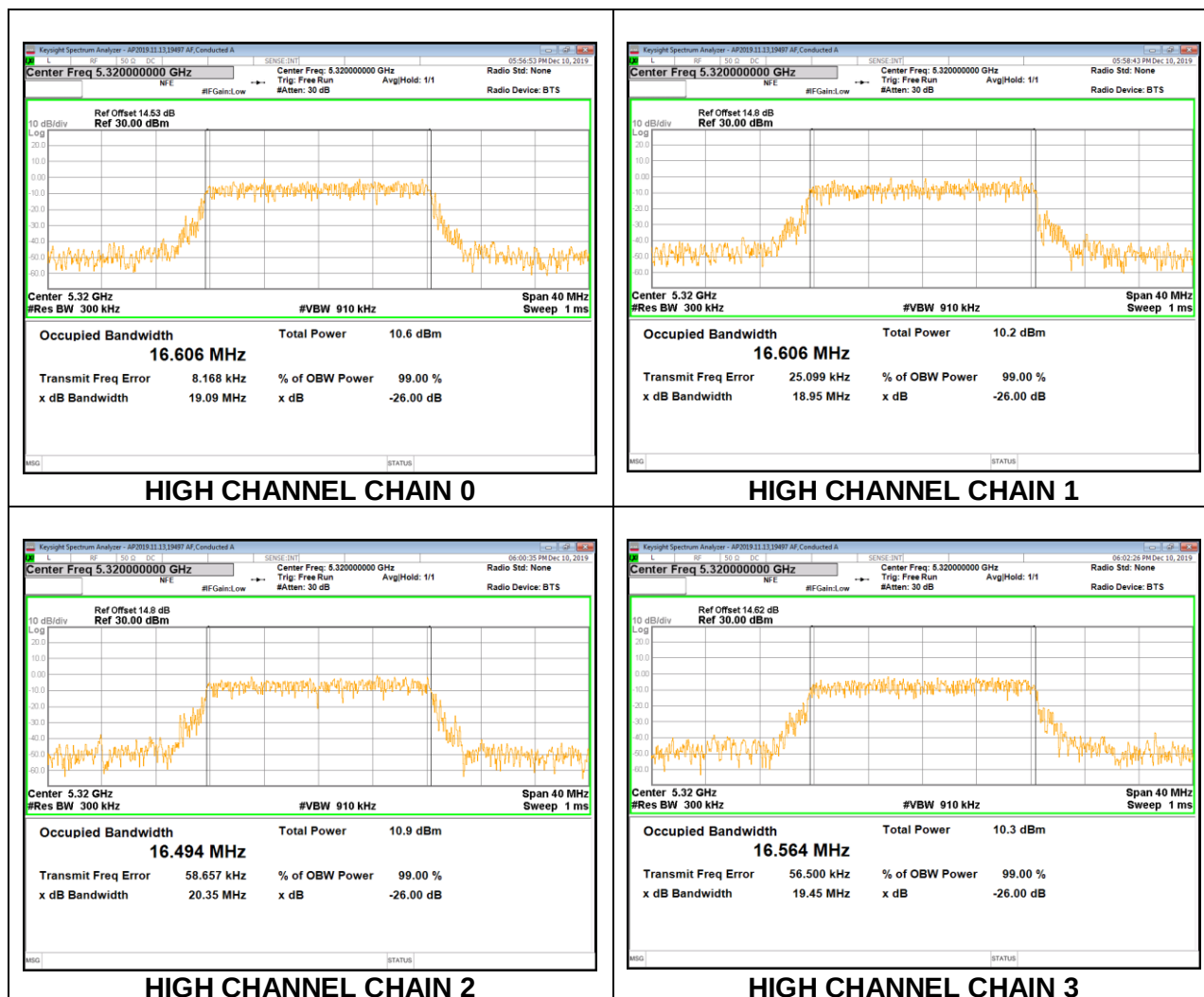
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

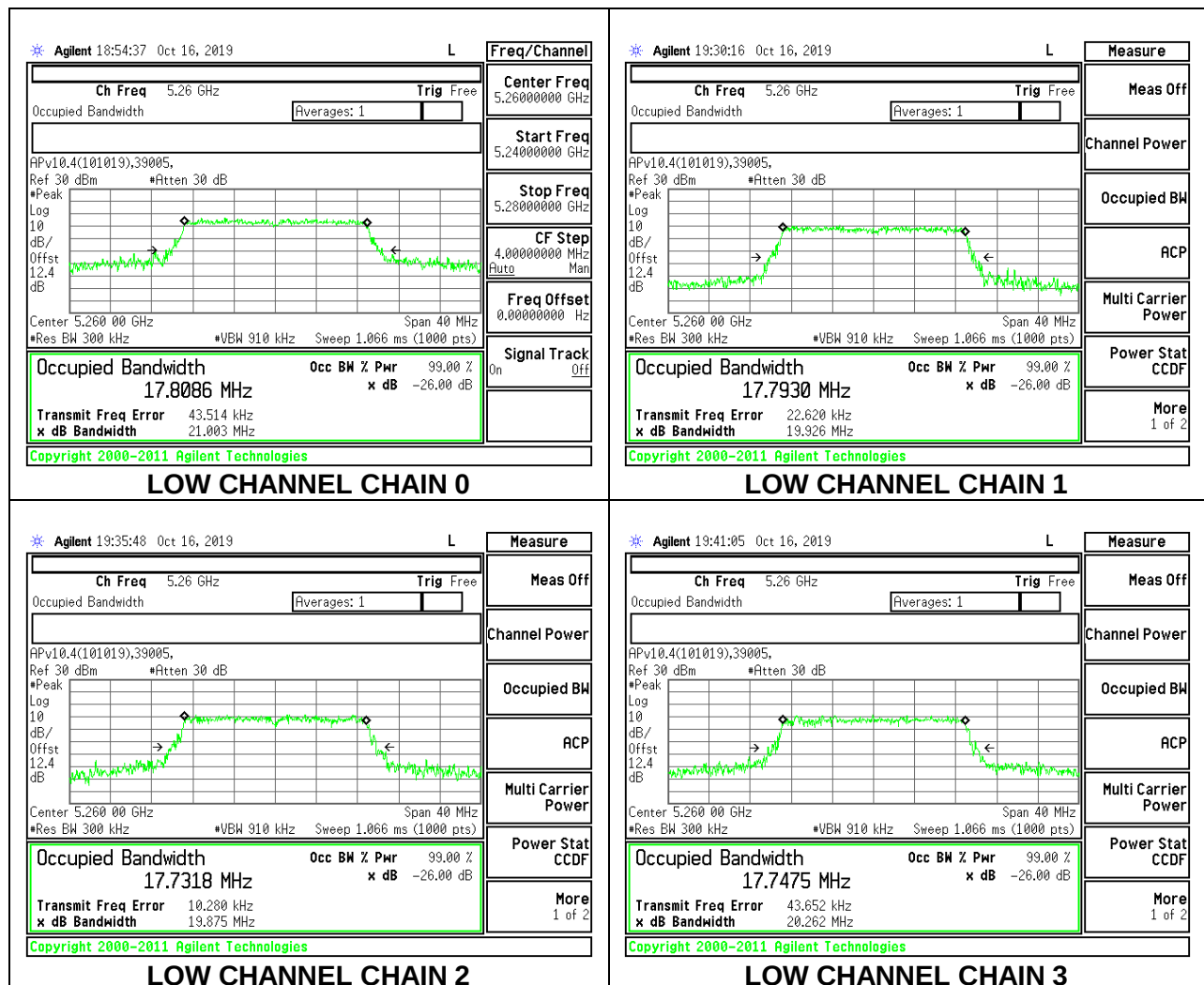


8.3.4. 802.11n HT20 MODE IN THE 5.3 GHz BAND

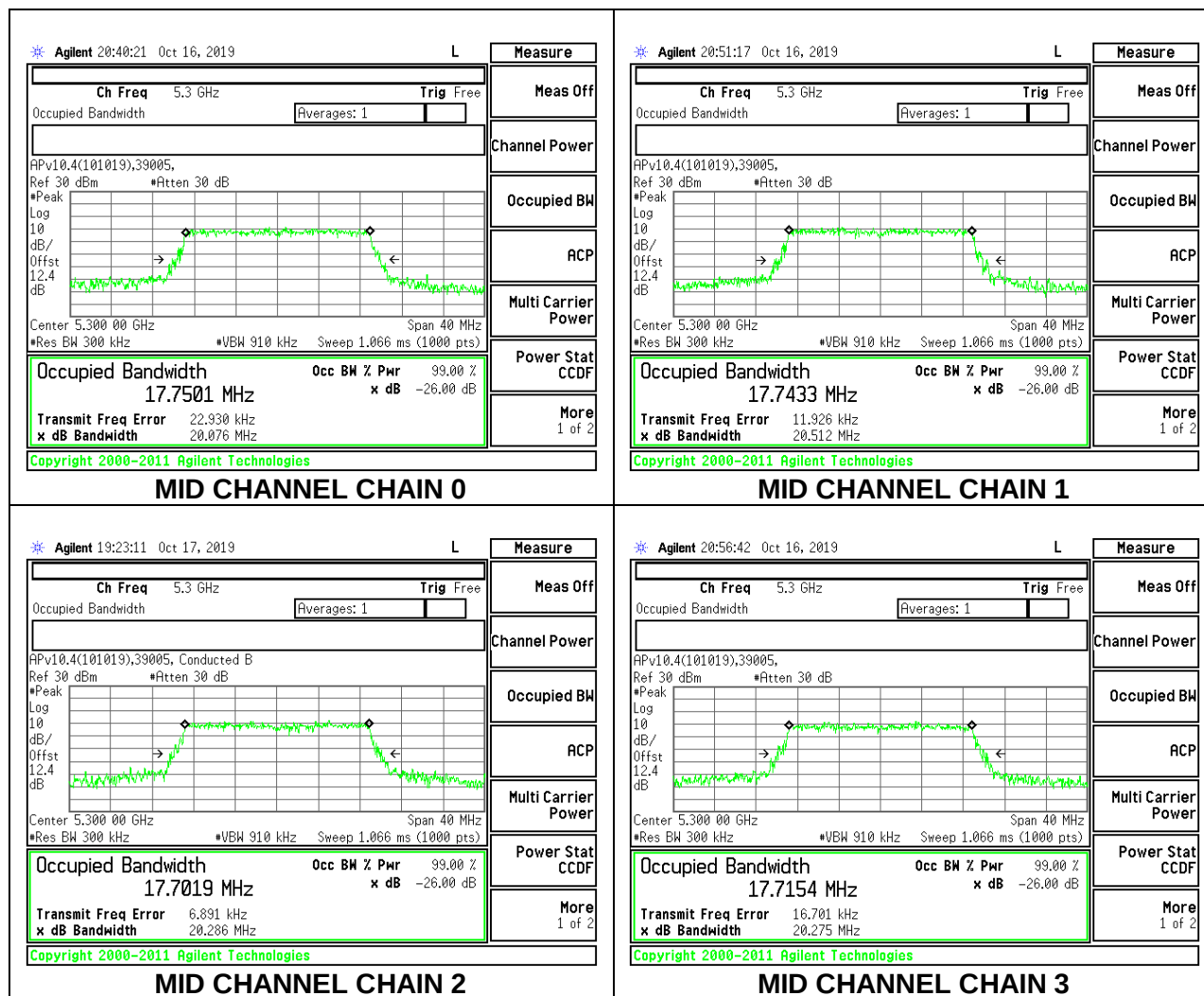
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Channel	Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
Low	5260	17.8086	17.7930	17.7318	17.7475
Mid	5300	17.7501	17.7433	17.7019	17.7154
High	5320	17.5354	17.5283	17.5293	17.5406

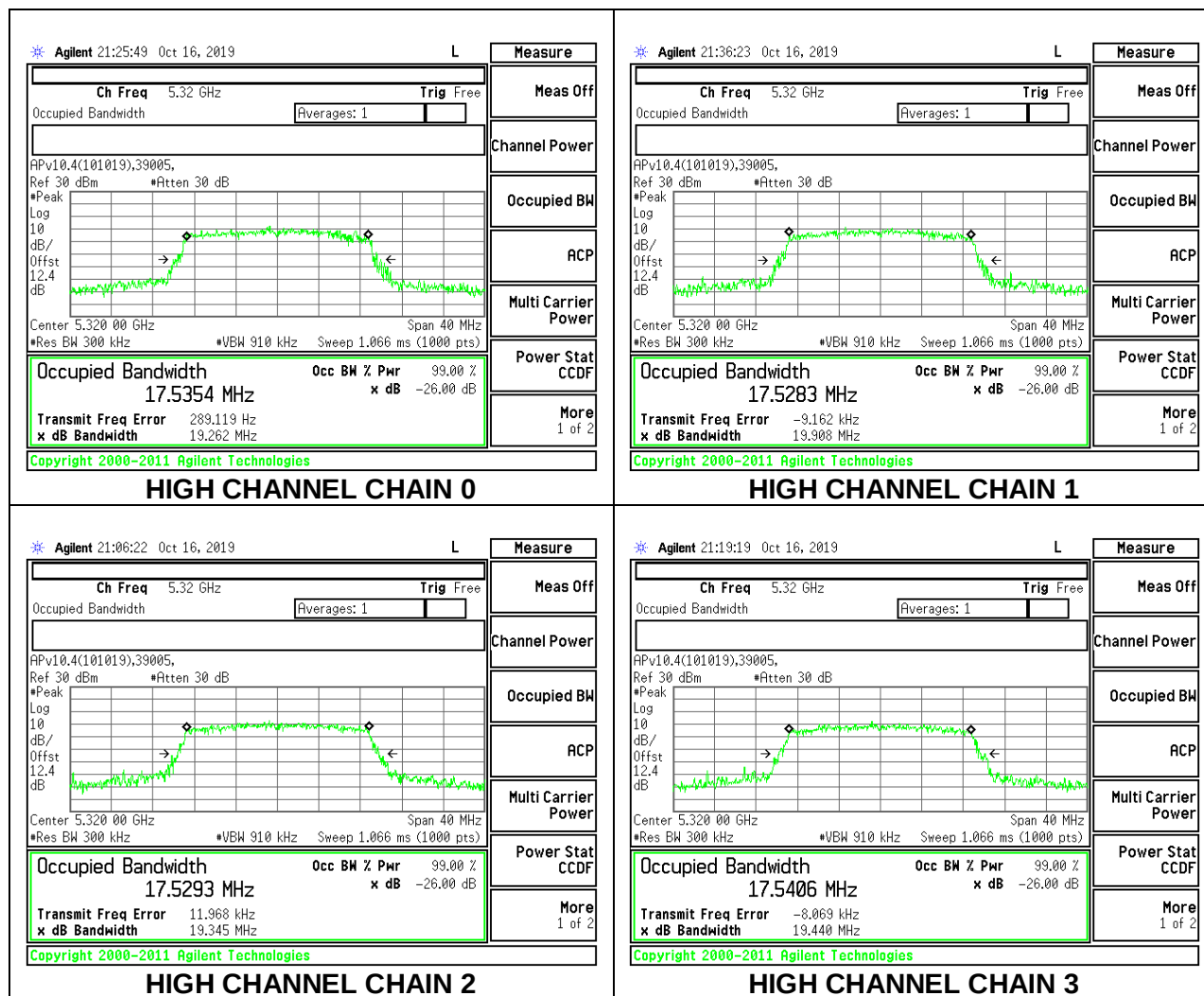
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

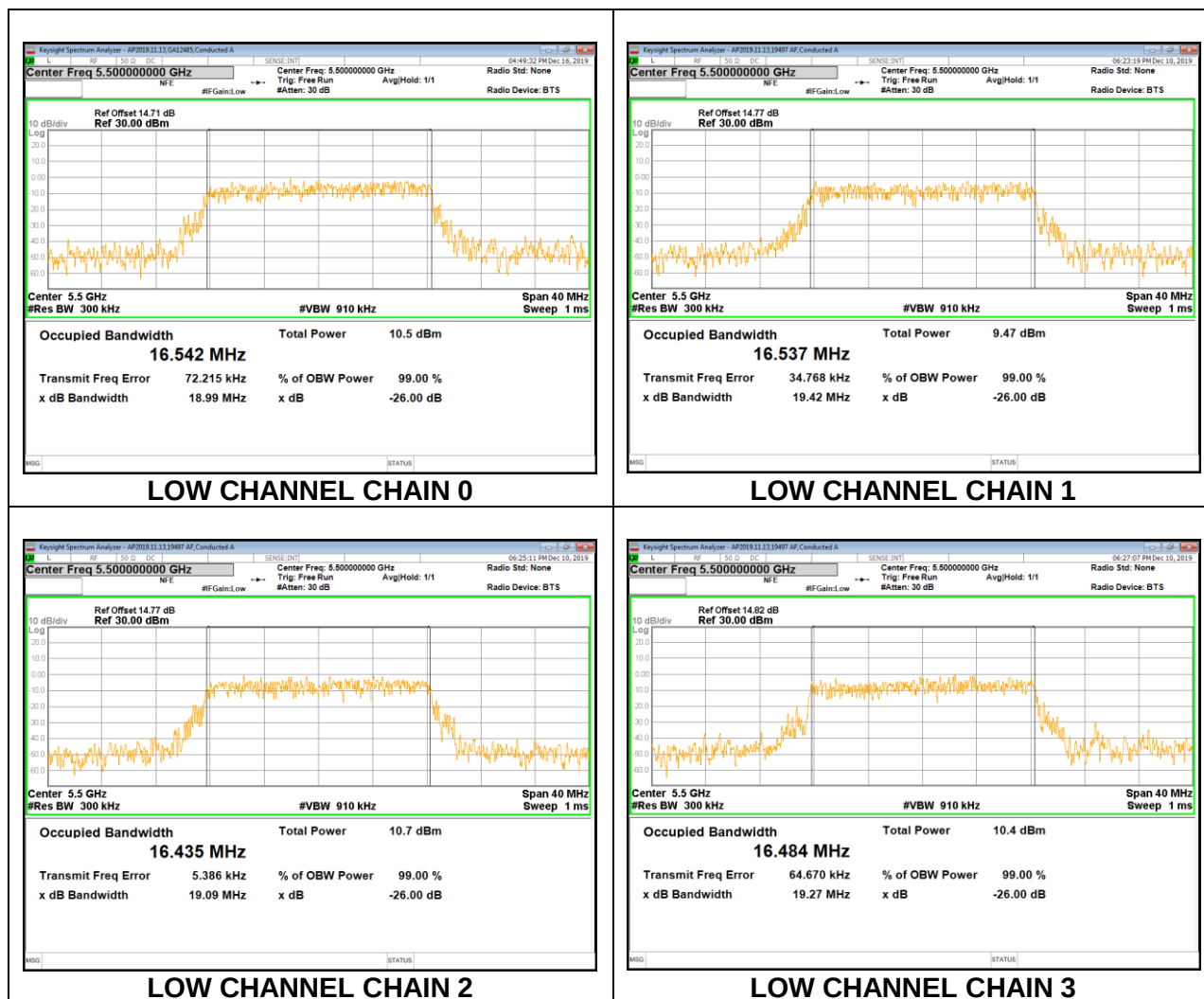


8.3.5. 802.11a MODE IN THE 5.6 GHz BAND

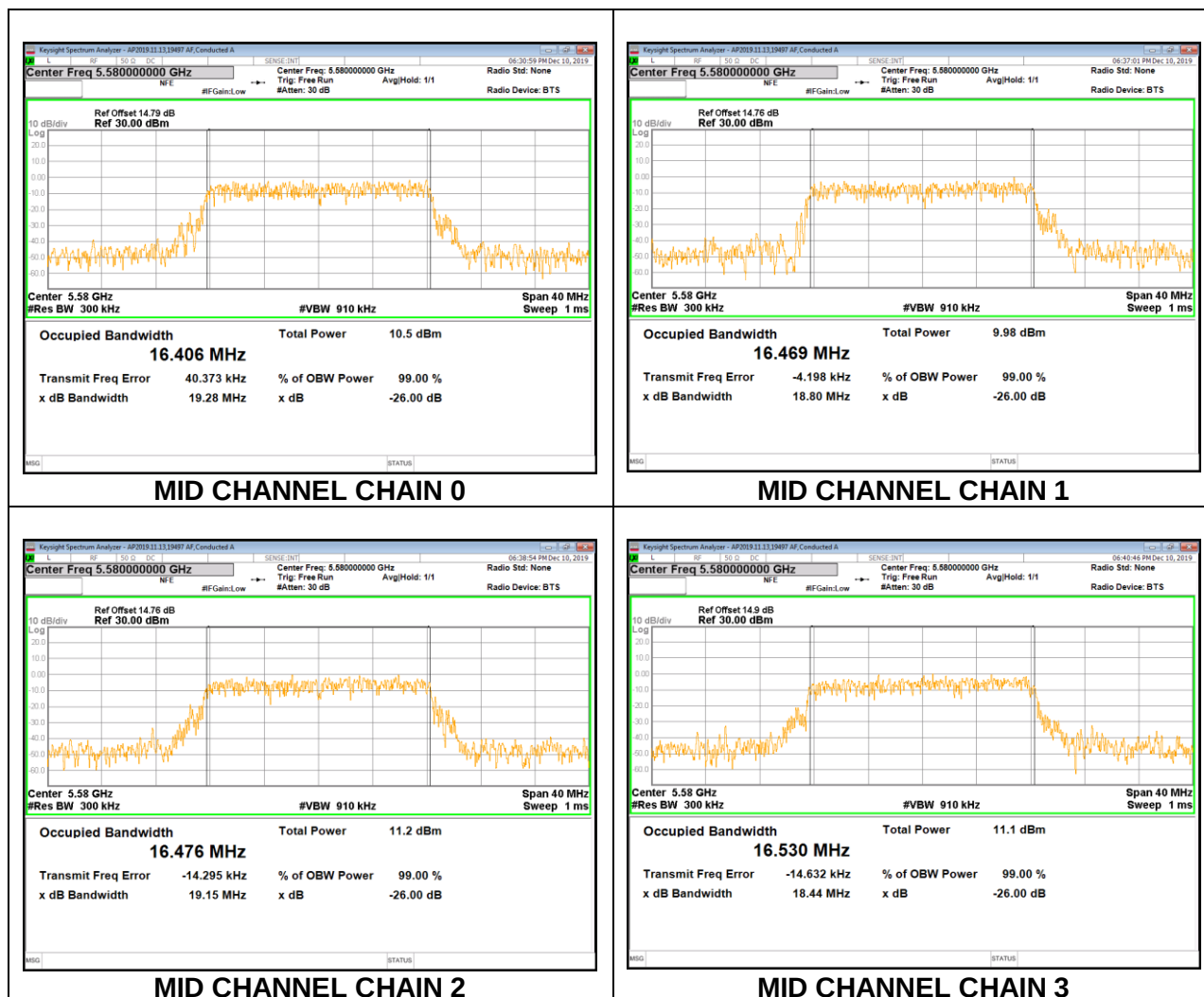
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
5500	16.542	16.537	16.435	16.484
5580	16.406	16.469	16.476	16.530
5700	16.484	16.560	16.545	16.508

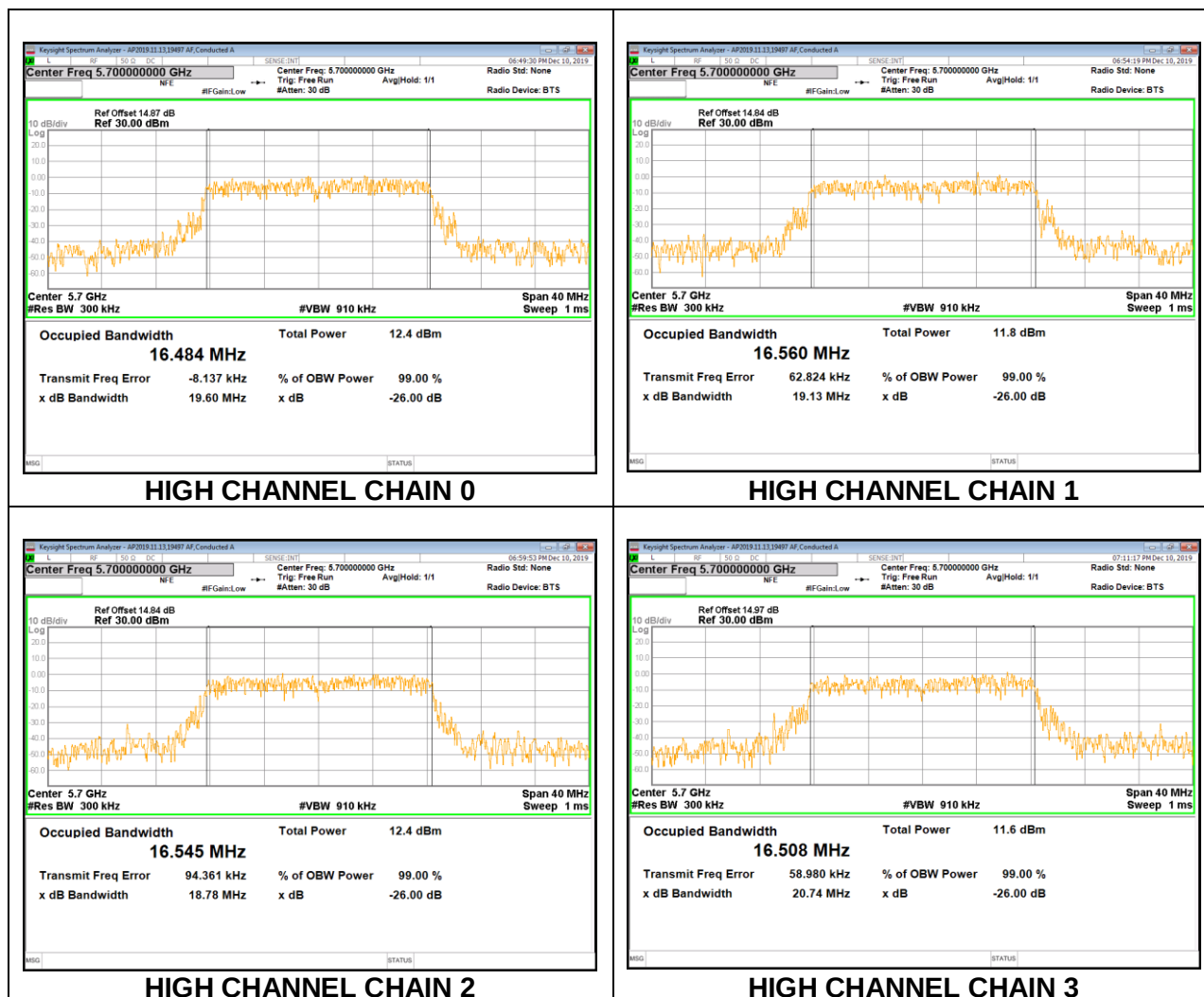
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

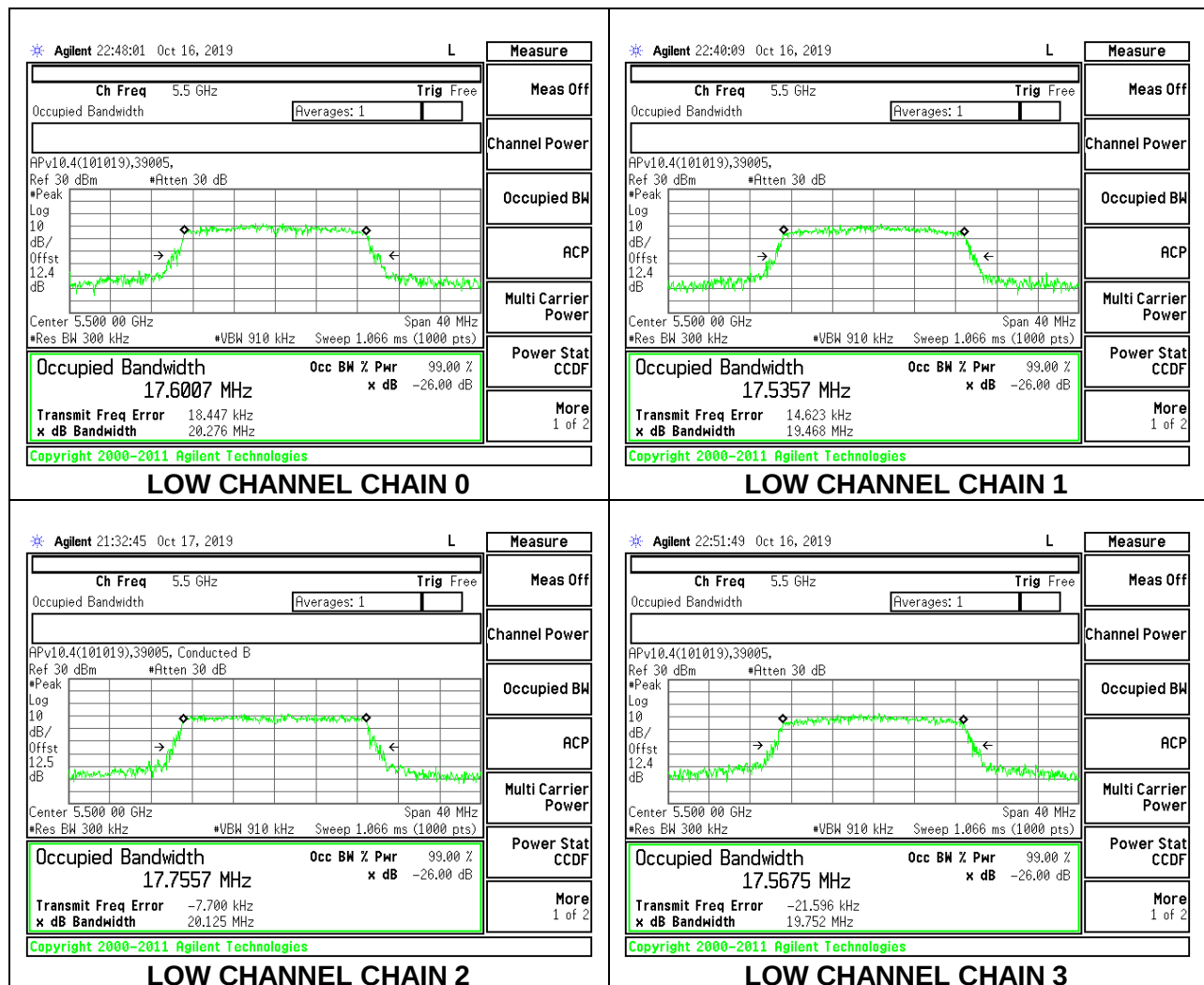


8.3.6. 802.11n HT20 MODE IN THE 5.6 GHz BAND

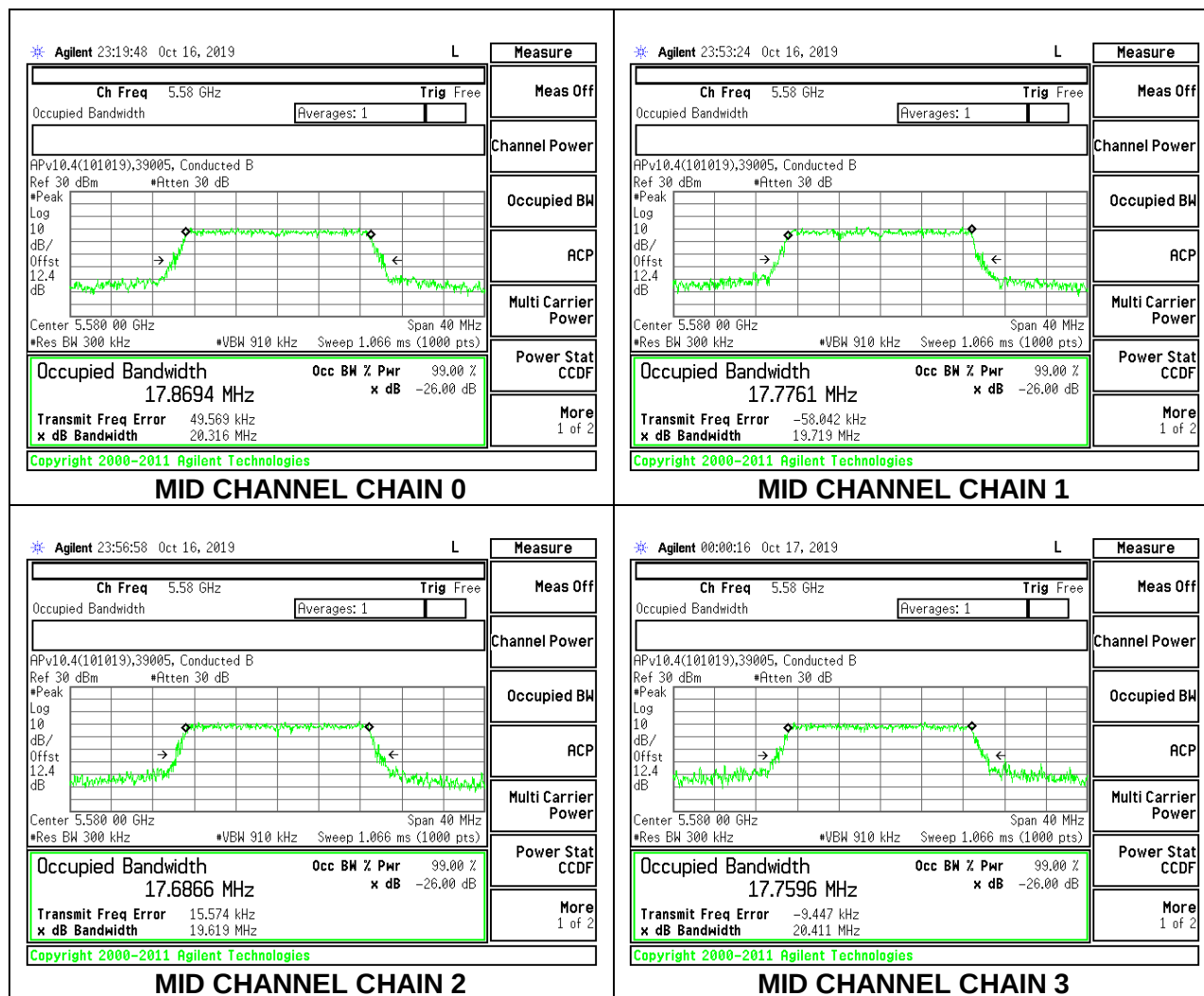
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
5500	17.6007	17.5357	17.7557	17.5675
5580	17.8694	17.7761	17.6866	17.7596
5700	17.4753	17.5056	17.5025	17.5293

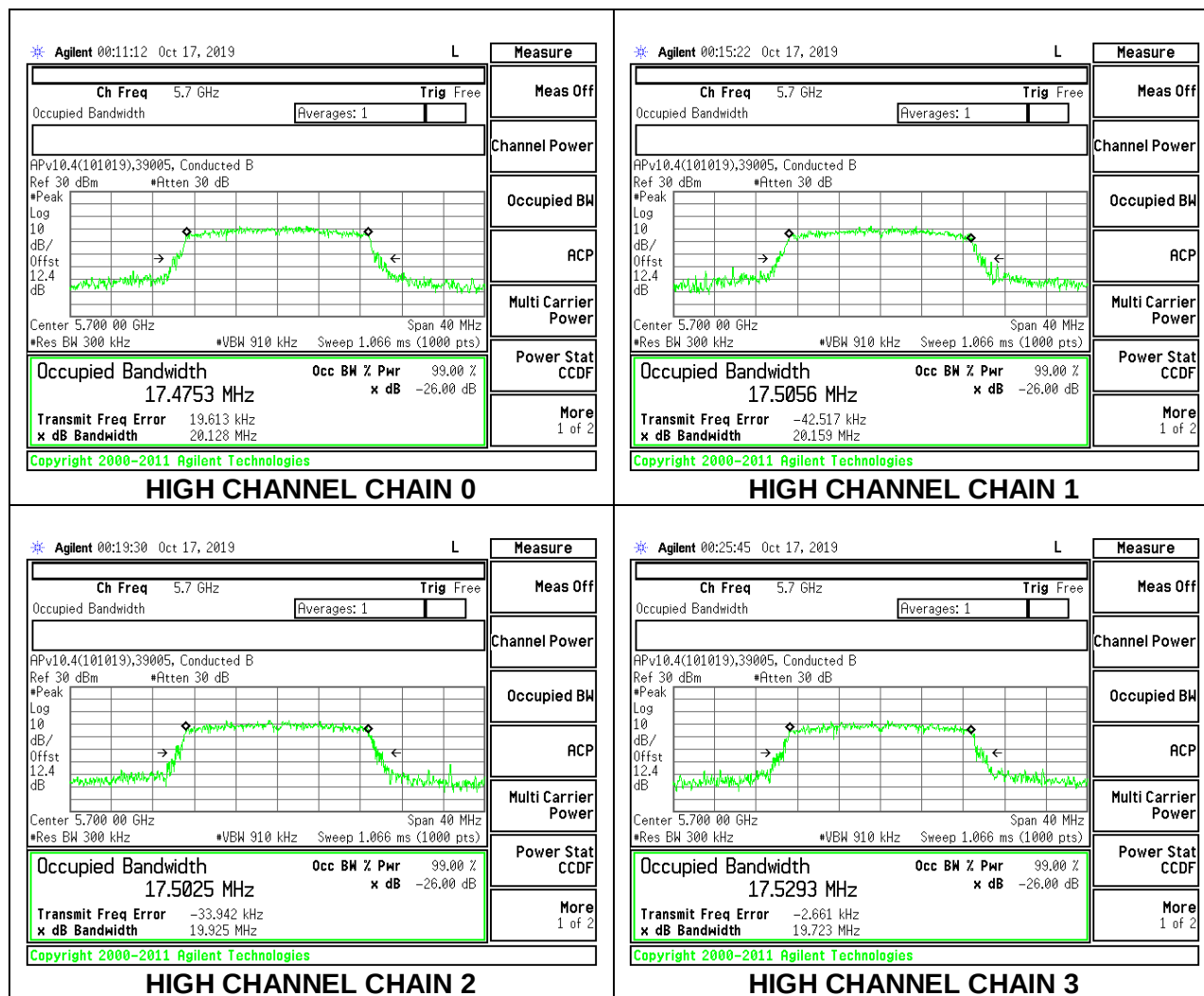
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

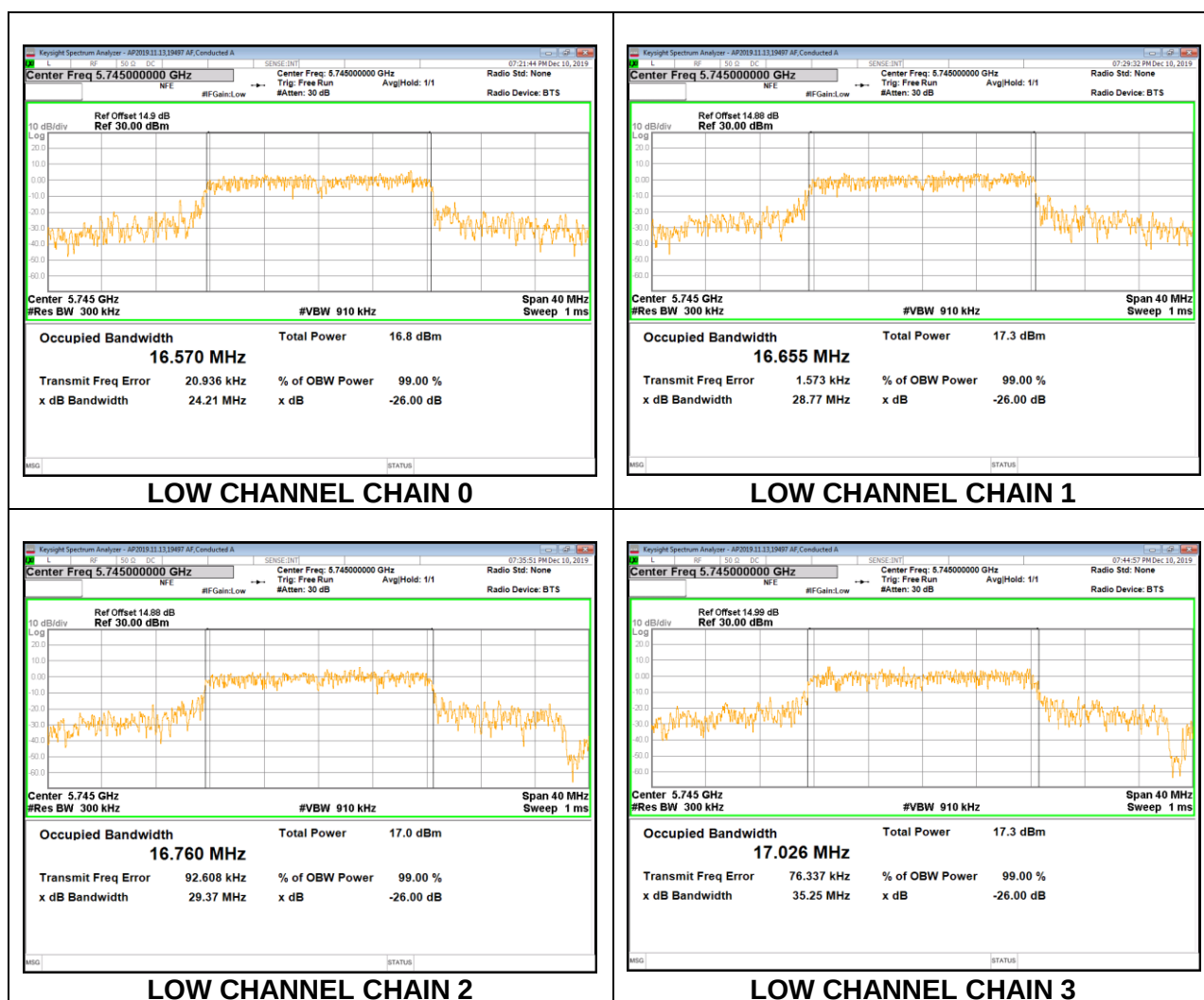


8.3.7. 802.11a MODE IN THE 5.8 GHz BAND

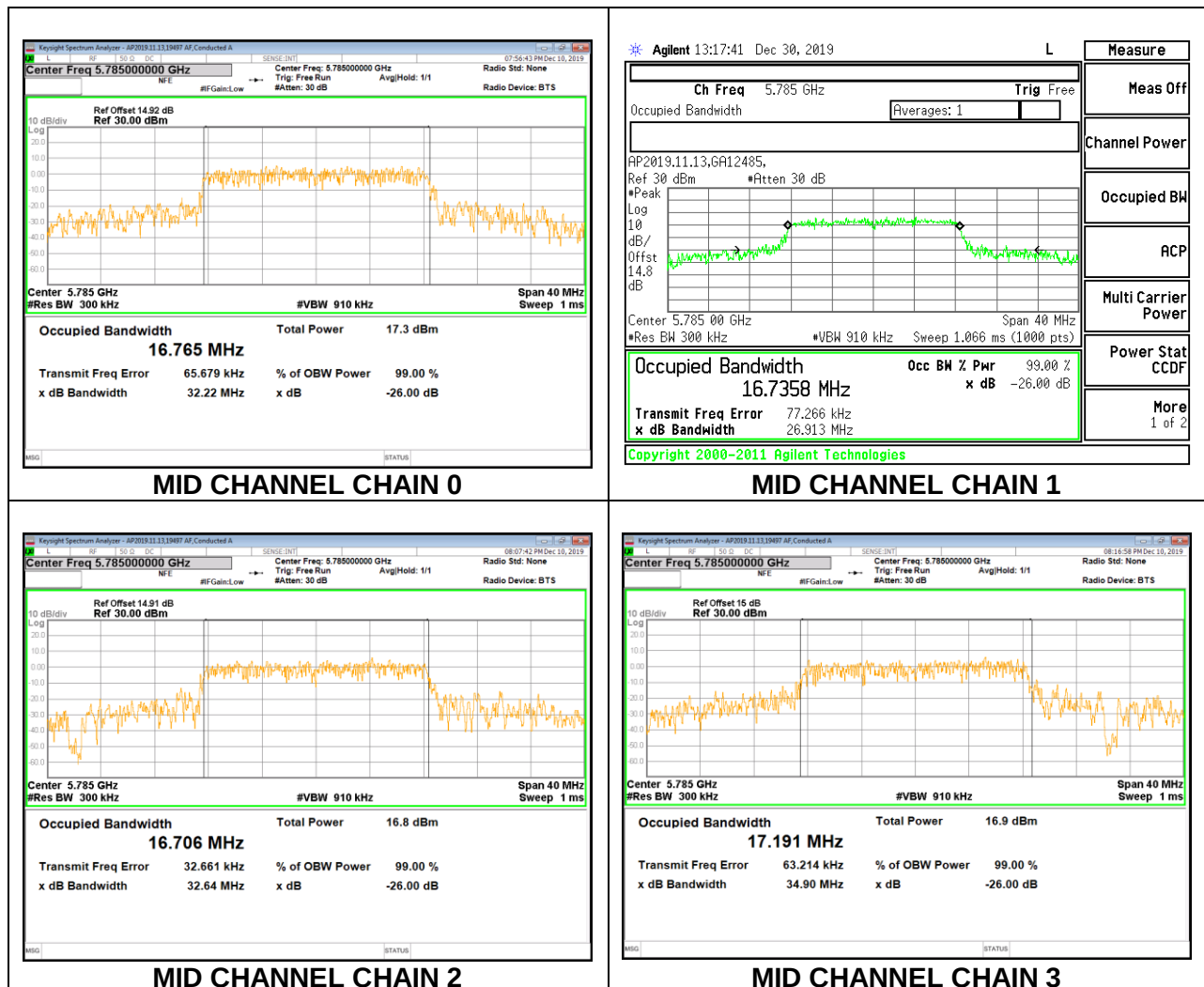
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
5745	16.570	16.655	16.760	17.026
5785	16.765	16.736	16.706	17.191
5825	16.740	17.119	16.740	16.739

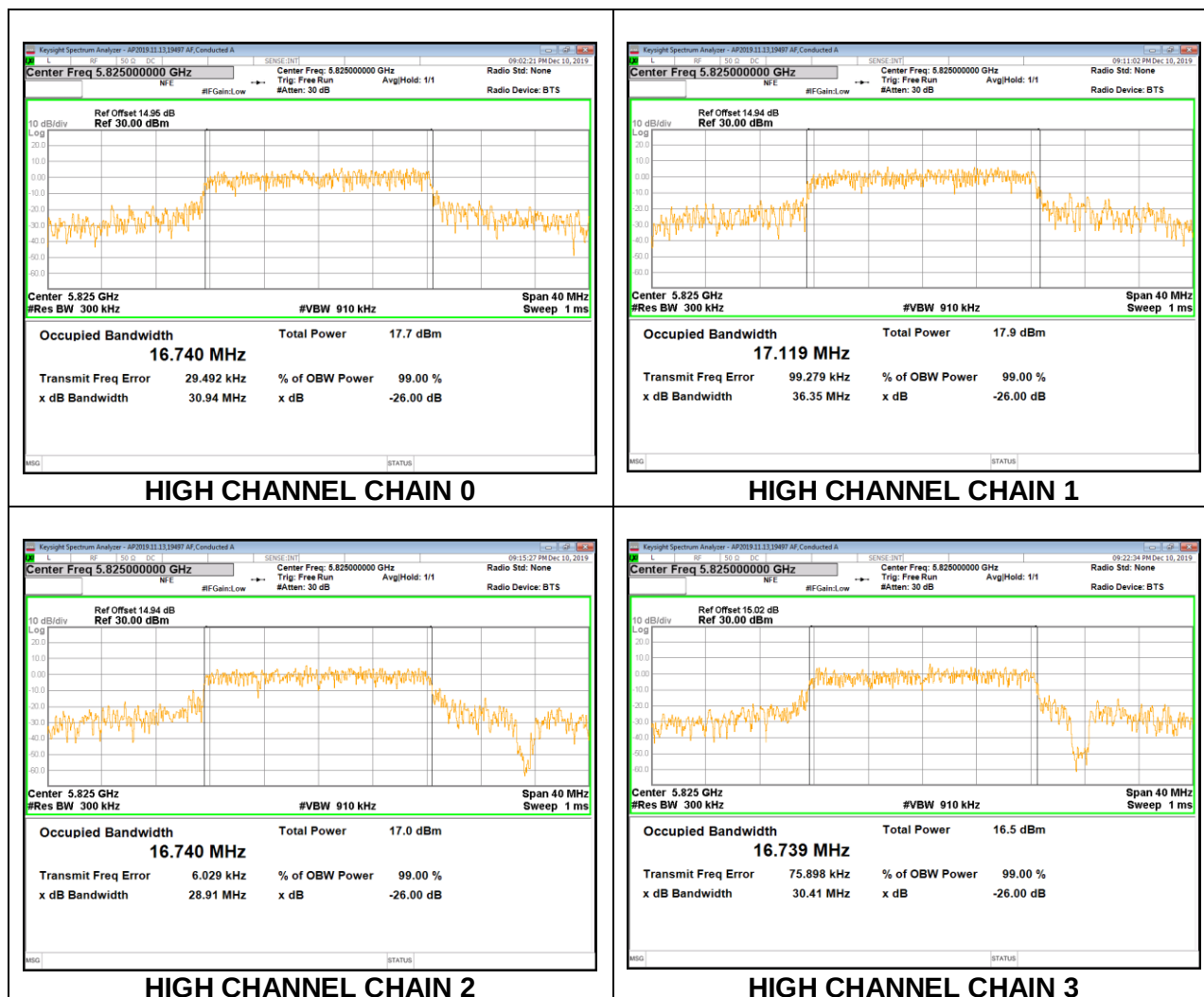
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

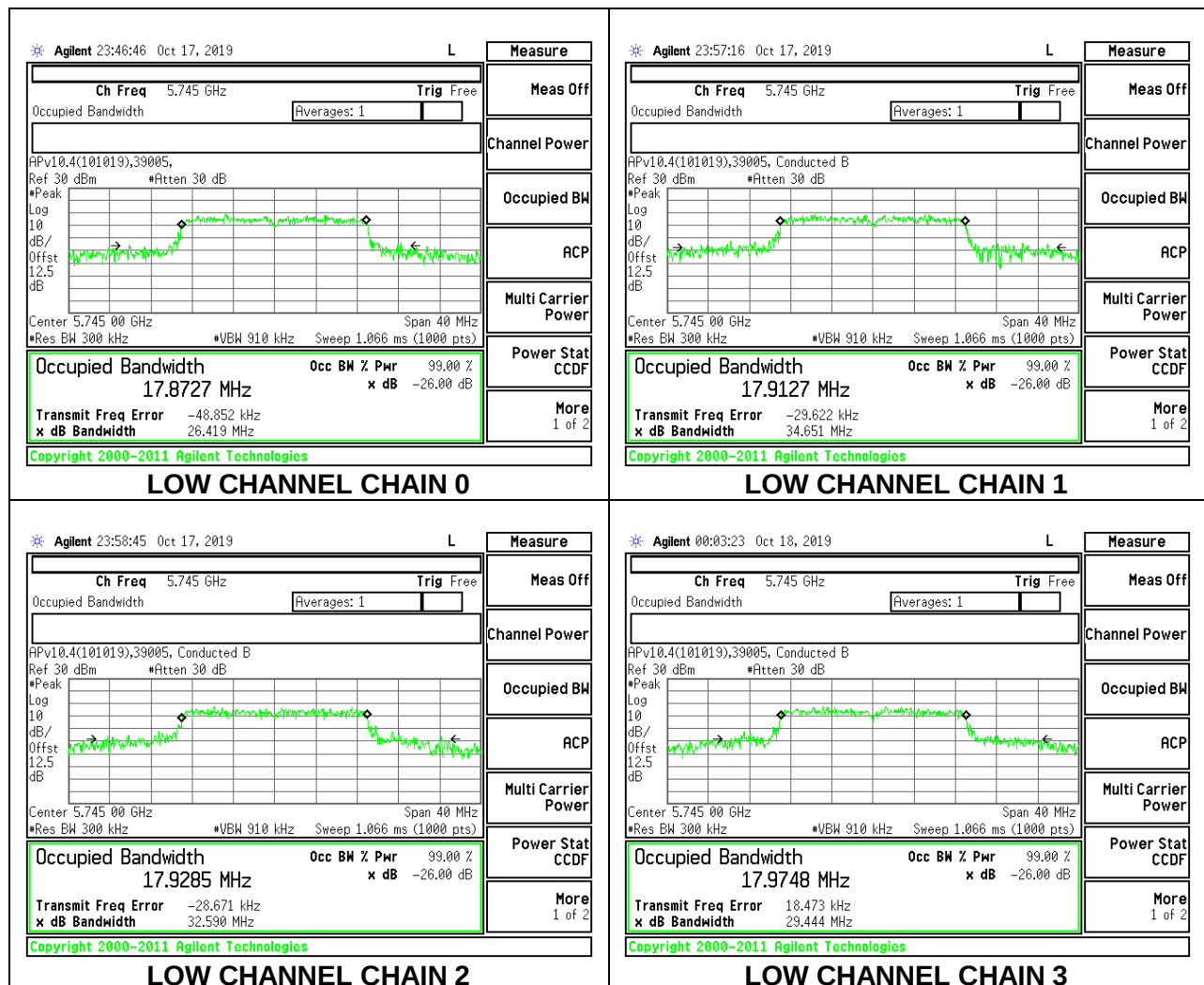


8.3.8. 802.11n HT20 MODE IN THE 5.8 GHz BAND

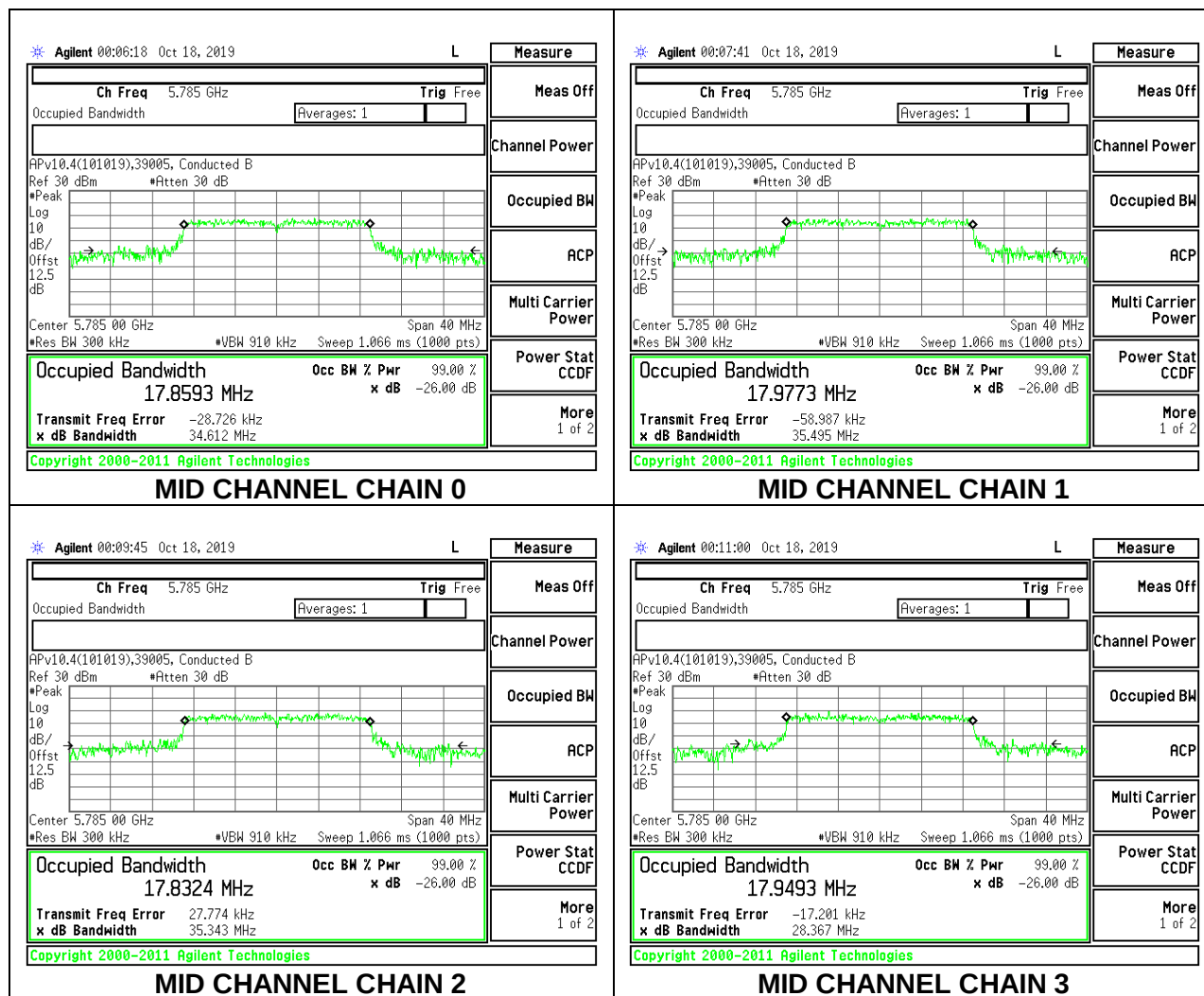
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Frequency (MHz)	99% Bandwidth Antenna 0 (MHz)	99% Bandwidth Antenna 1 (MHz)	99% Bandwidth Antenna 2 (MHz)	99% Bandwidth Antenna 3 (MHz)
5745	17.8727	17.9127	17.9285	17.9748
5785	17.8593	17.9773	17.8324	17.9493
5825	18.0302	18.0717	17.9867	17.9942

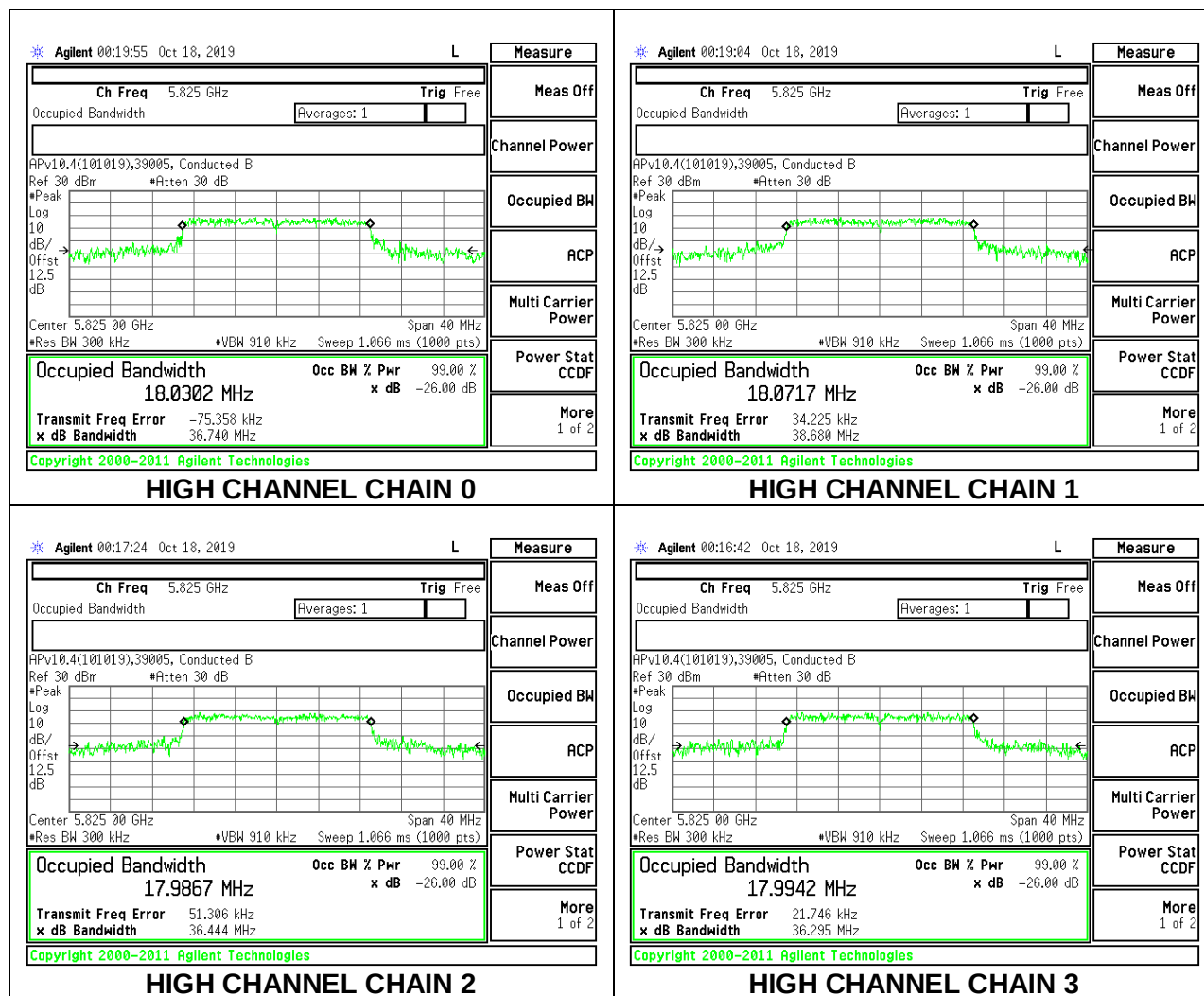
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.4. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 6.2.4.1

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

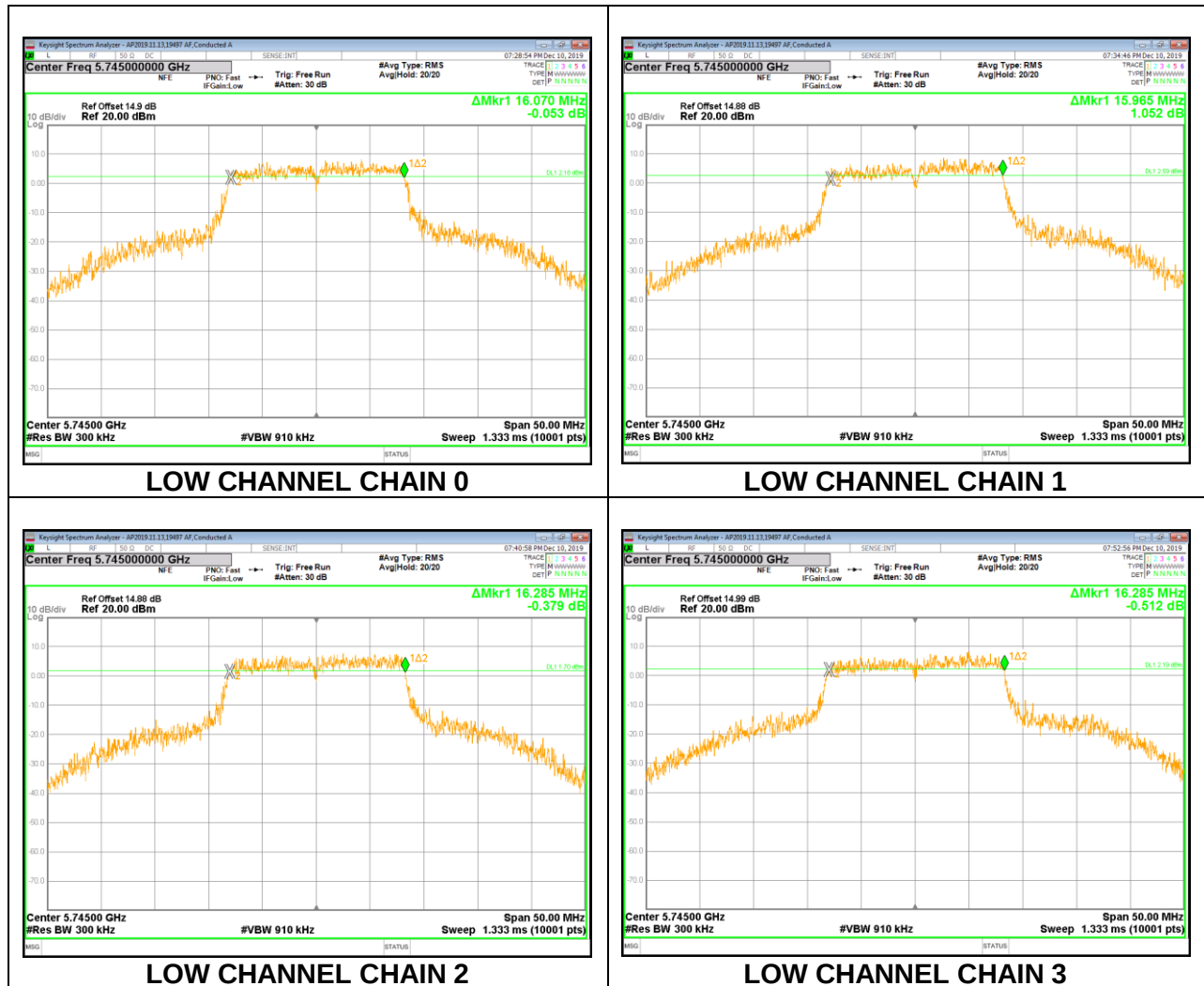
RESULTS

8.4.1. 802.11a MODE IN THE 5.8 GHz BAND

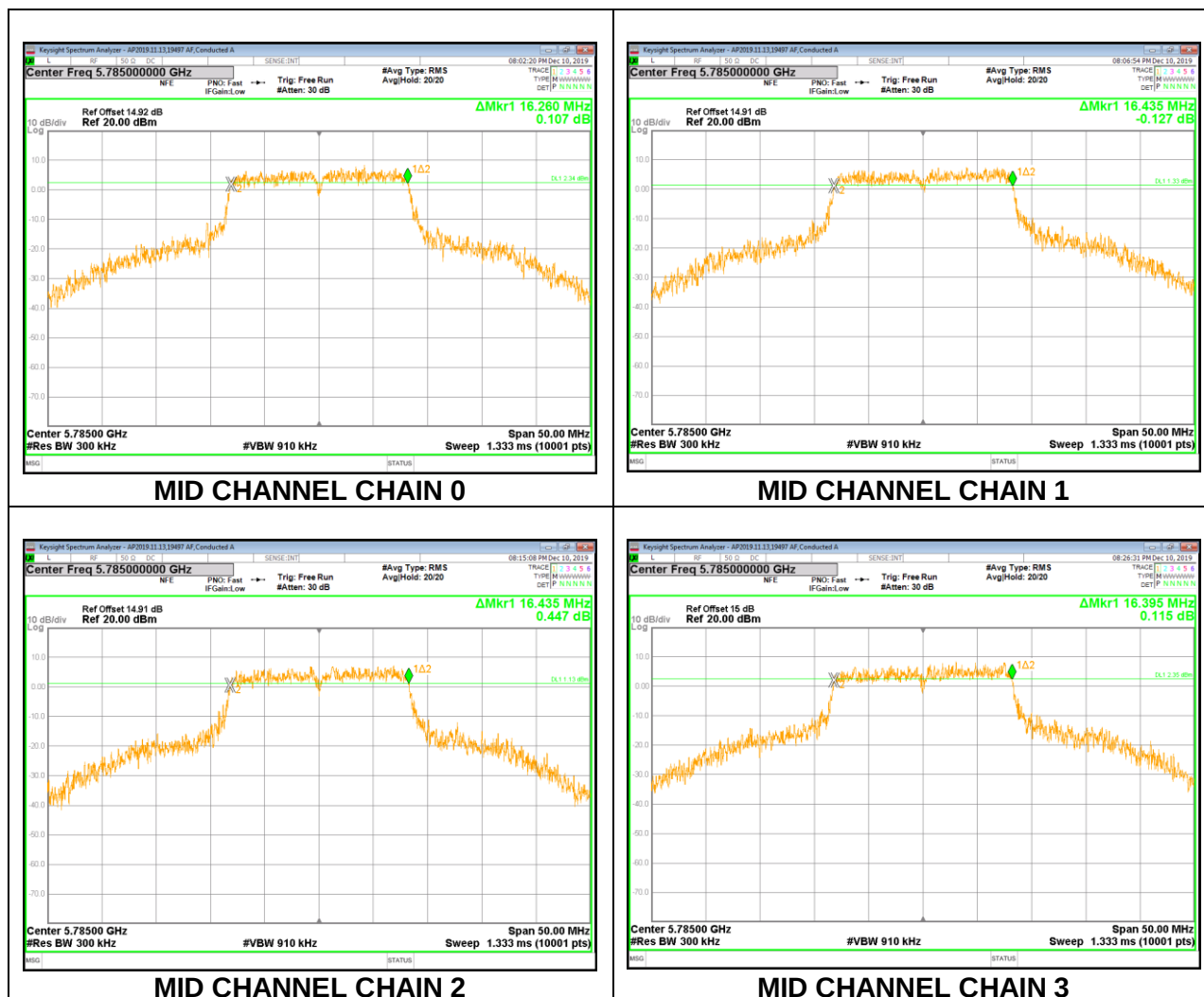
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Channel	Frequency (MHz)	6 dB BW Antenna 0 (MHz)	6 dB BW Antenna 1 (MHz)	6 dB BW Antenna 2 (MHz)	6 dB BW Antenna 3 (MHz)	Minimum Limit (MHz)
Low	5745	16.070	15.965	16.285	16.285	0.5
Mid	5785	16.260	16.435	16.435	16.395	0.5
High	5825	16.375	16.145	16.480	16.240	0.5

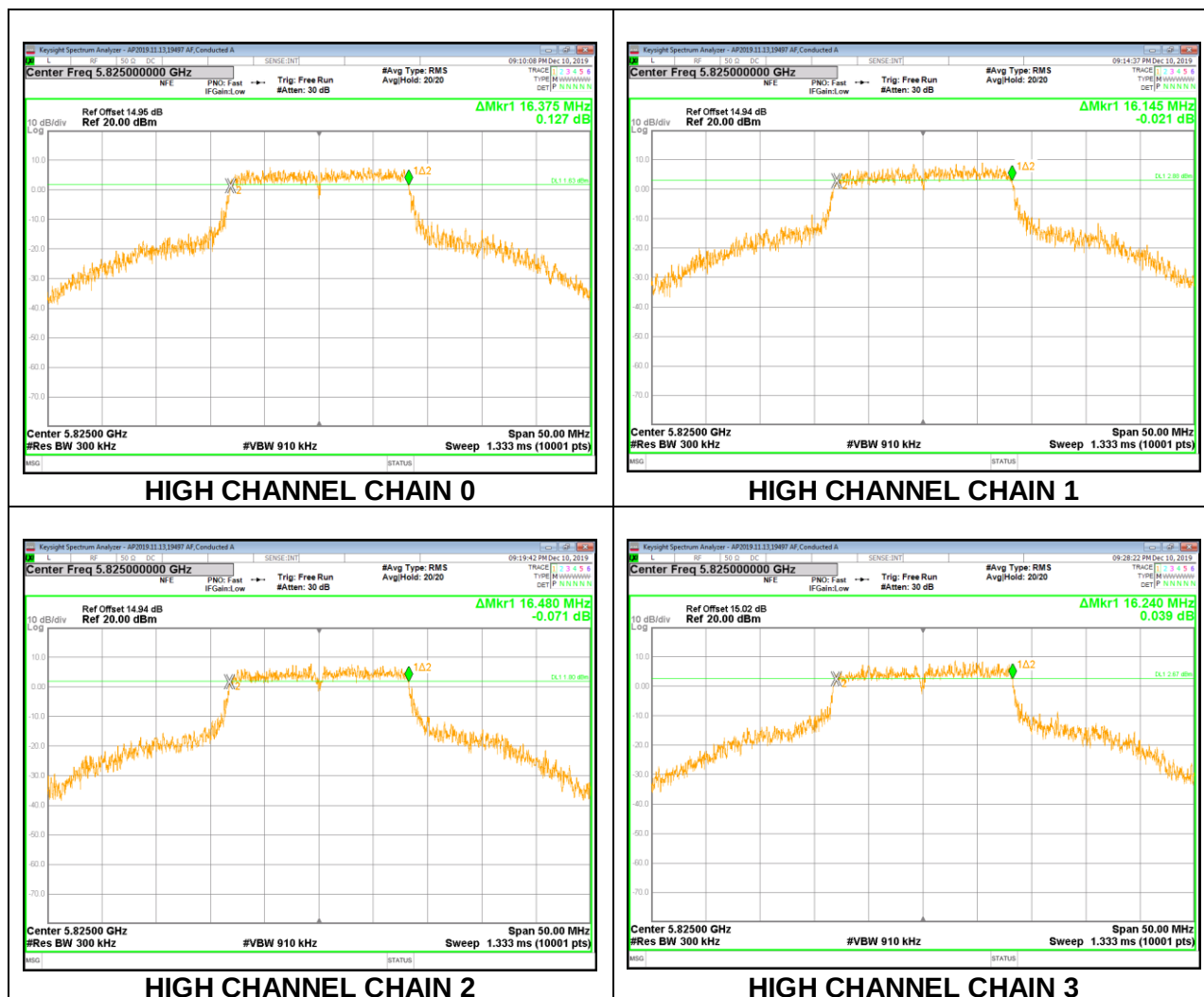
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

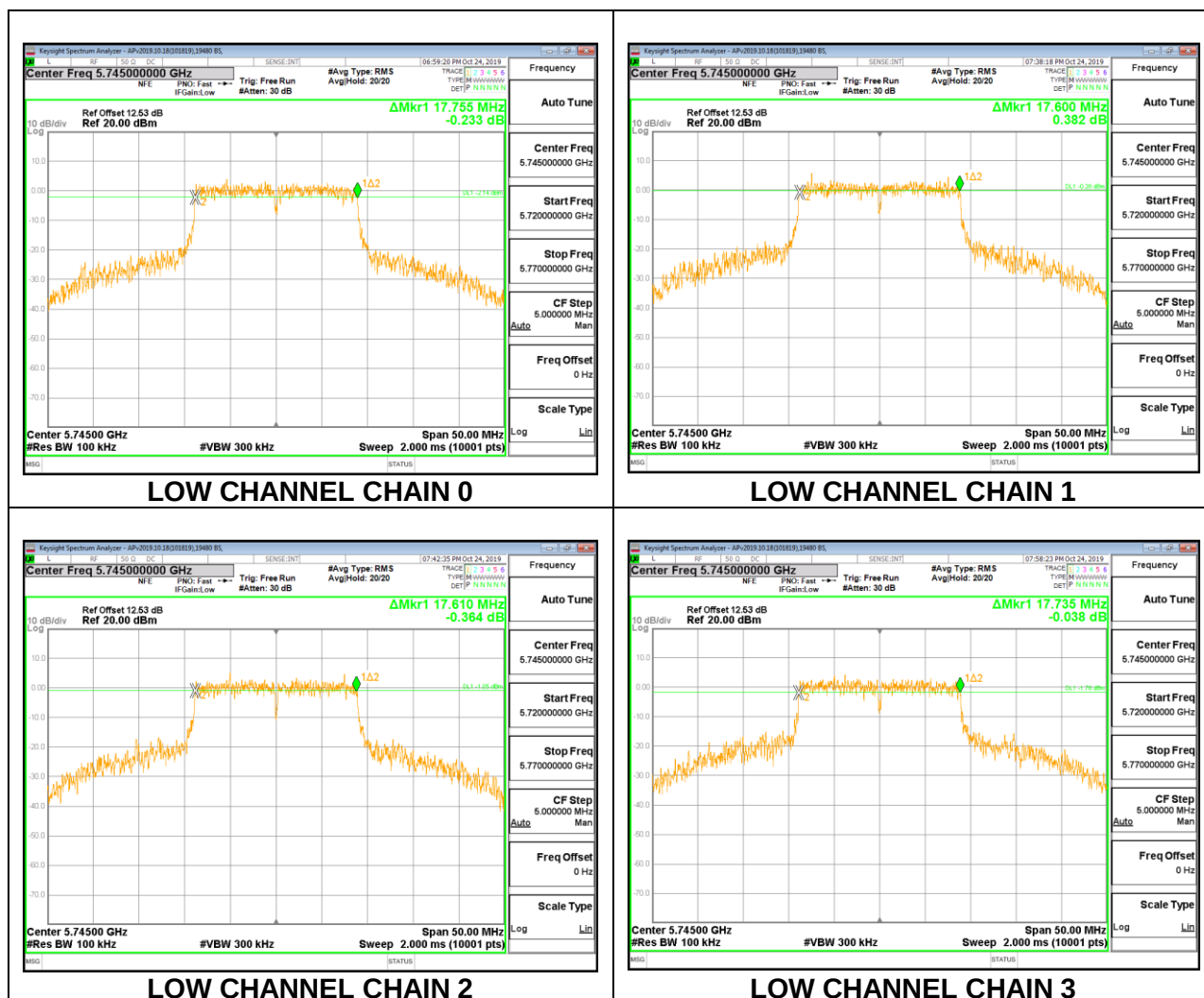


8.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

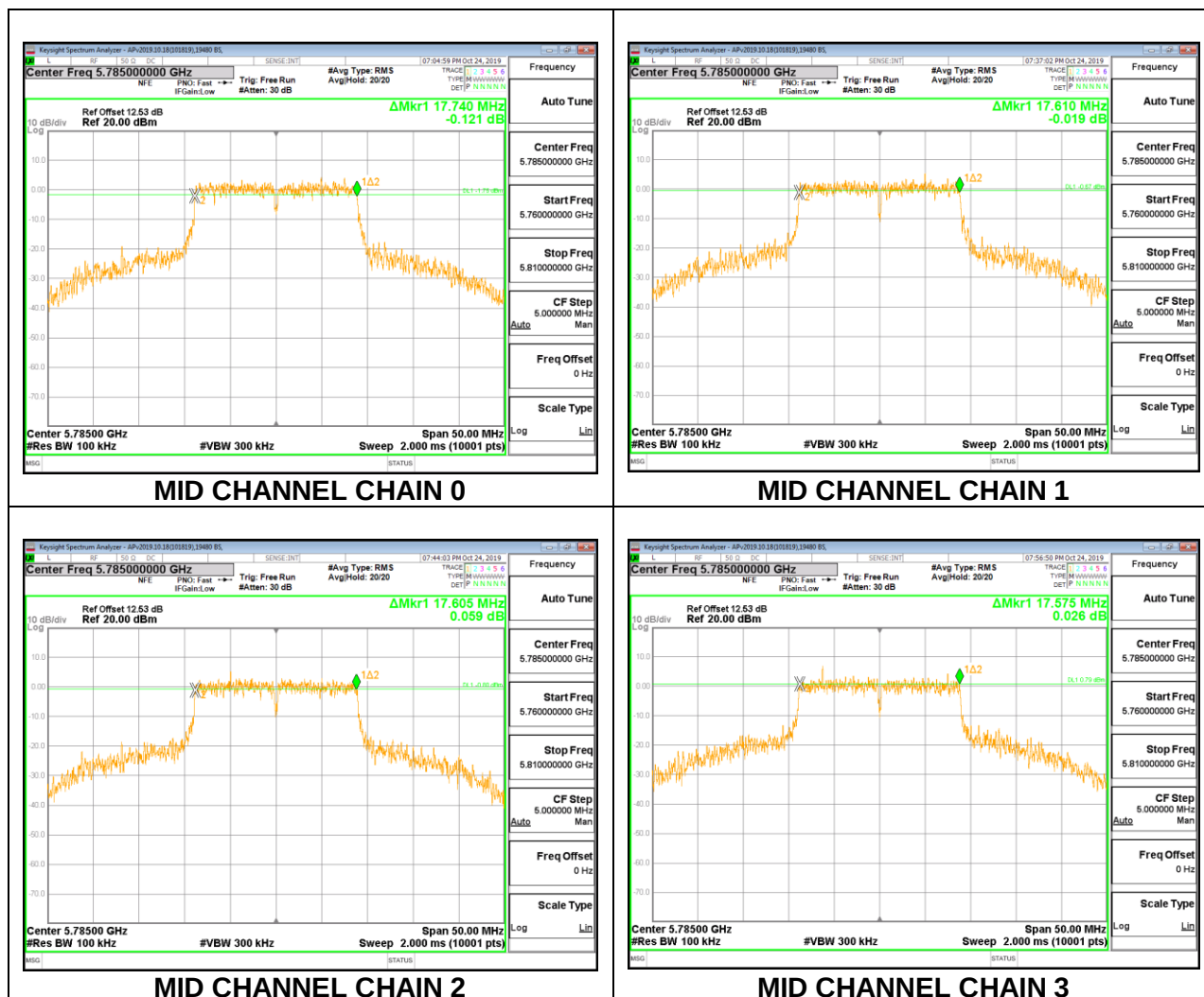
4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Channel	Frequency (MHz)	6 dB BW Antenna 0 (MHz)	6 dB BW Antenna 1 (MHz)	6 dB BW Antenna 2 (MHz)	6 dB BW Antenna 3 (MHz)	Minimum Limit (MHz)
Low	5745	17.755	17.600	17.610	17.735	0.5
Mid	5785	17.740	17.610	17.605	17.575	0.5
High	5825	17.590	17.590	17.610	17.560	0.5

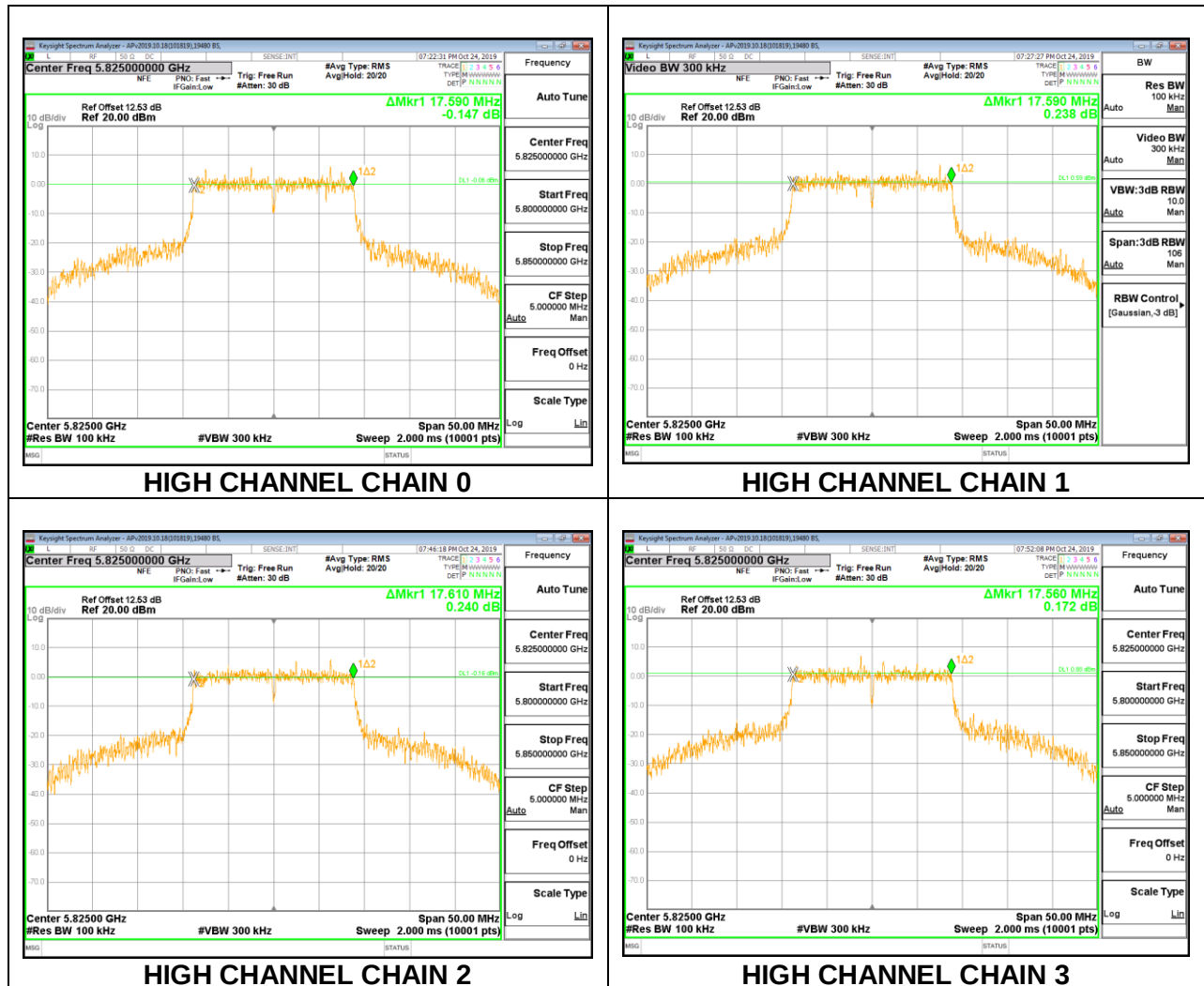
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



8.5. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

(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 collocated transmitters transmitting the same information.

RSS-247

Band 5.15-5.25 GHz

The maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

Band 5.25-5.35 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Bands 5.47-5.6 GHz and 5.65-5.725 GHz

The maximum conducted output power shall not exceed 250 mW or $11 + 10 \log_{10} B$, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

Band 5.725-5.85 GHz

The maximum conducted output power shall not exceed 1 W. The 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 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 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 collocated transmitters transmitting the same information.

TEST PROCEDURE

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

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

DIRECTIONAL ANTENNA GAIN

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Vertical Polarity (***Worst Case***)

Band (GHz)	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	7.40	5.13	6.41	9.35
5.3	7.08	6.19	6.66	9.66
5.6	6.57	5.30	5.98	8.97
5.8	5.41	4.69	5.06	8.07

Horizontal Polarity

Band (GHz)	Chain 2 Antenna Gain (dBi)	Chain 3 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	3.79	1.61	2.84	5.78
5.3	3.49	1.90	2.77	5.74
5.6	3.38	1.90	2.70	5.68
5.8	2.54	1.04	1.85	4.83

8.5.1. 802.11a MODE IN THE 5.2 GHz BAND

FCC

4TX Antenna 1 + Antenna 2 + Antenna 3 + Antenna 4 CDD MODE

Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm/ 1MHz)
Low	5180	6.41	9.35	23.59	7.65
Mid	5200	6.41	9.35	23.59	7.65
High	5240	6.41	9.35	23.59	7.65

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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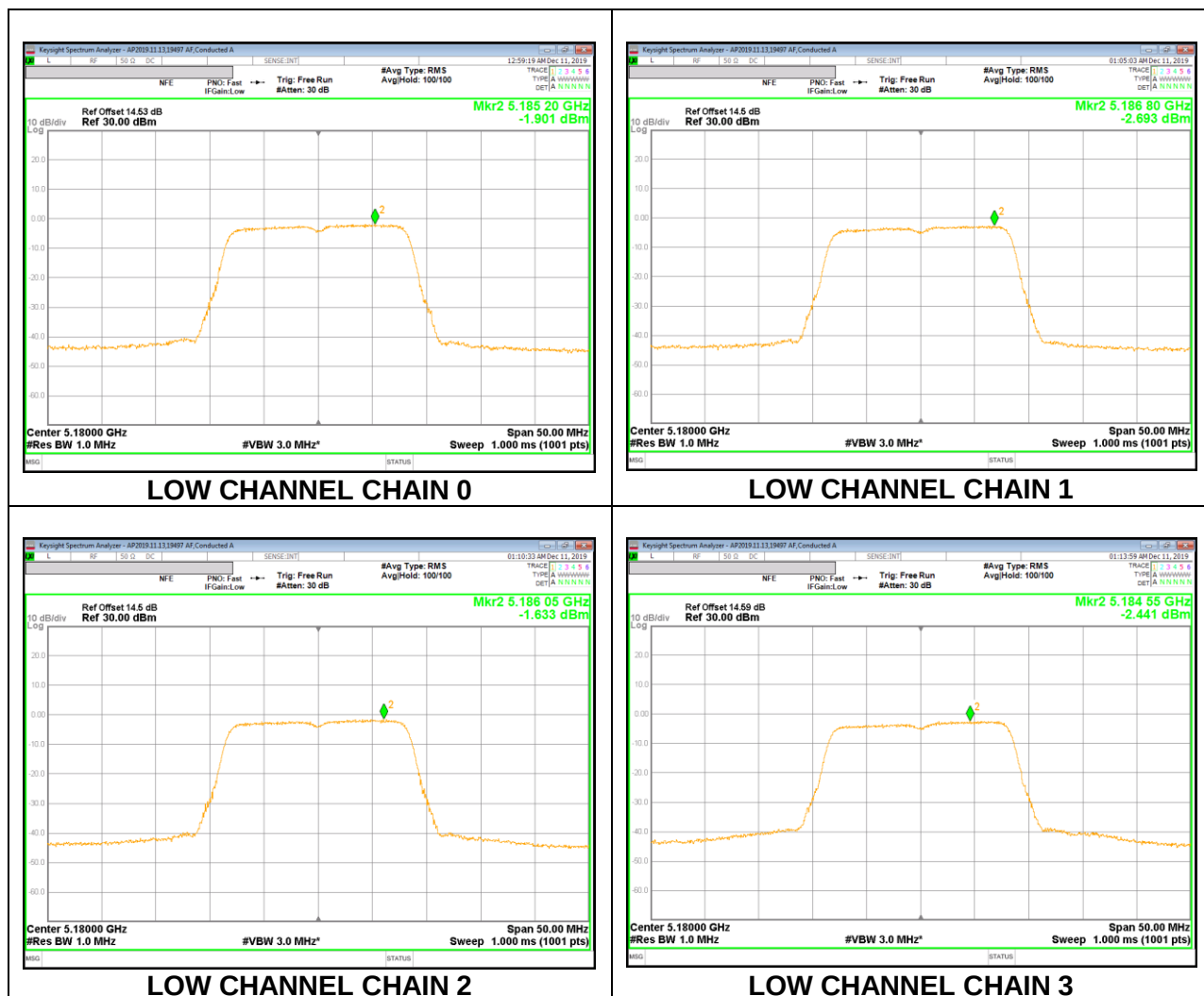
Output Power Results

Channel	Frequency (MHz)	Antenna 0 Meas Power (dBm)	Antenna 1 Meas Power (dBm)	Antenna 2 Meas Power (dBm)	Antenna 3 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	10.67	9.95	11.14	10.21	16.54	23.59	-7.05
Mid	5200	11.20	10.53	11.56	10.72	17.04	23.59	-6.55
High	5240	11.18	10.50	11.39	10.27	16.88	23.59	-6.71

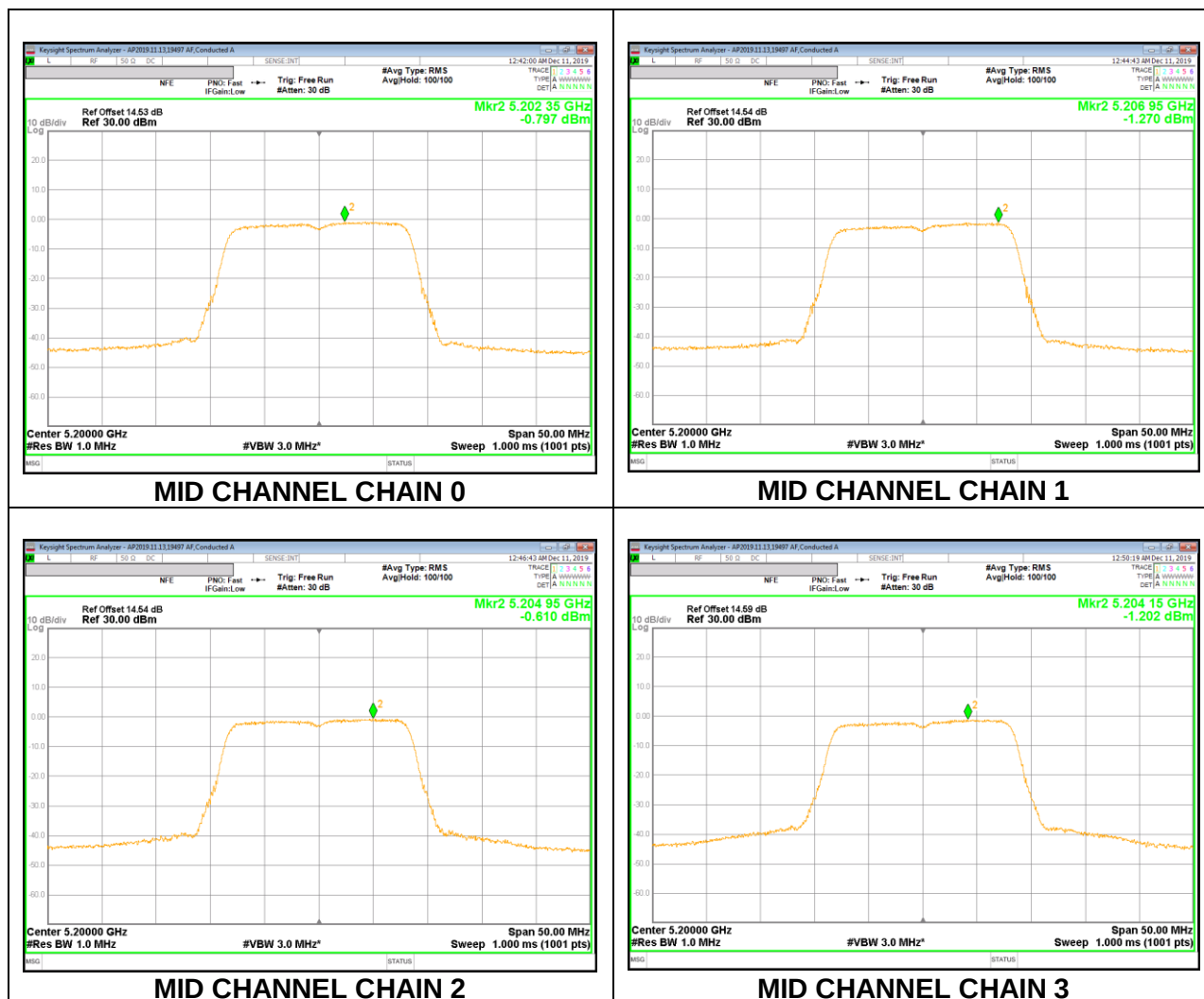
PSD Results

Channel	Frequency (MHz)	Antenna 0 Meas PSD (dBm/ 1MHz)	Antenna 1 Meas PSD (dBm/ 1MHz)	Antenna 2 Meas PSD (dBm/ 1MHz)	Antenna 3 Meas PSD (dBm/ 1MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	-1.901	-2.693	-1.633	-2.441	3.87	7.65	-3.78
Mid	5200	-0.797	-1.270	-0.610	-1.202	5.06	7.65	-2.59
High	5240	-1.080	-1.273	-0.567	-1.780	4.87	7.65	-2.78

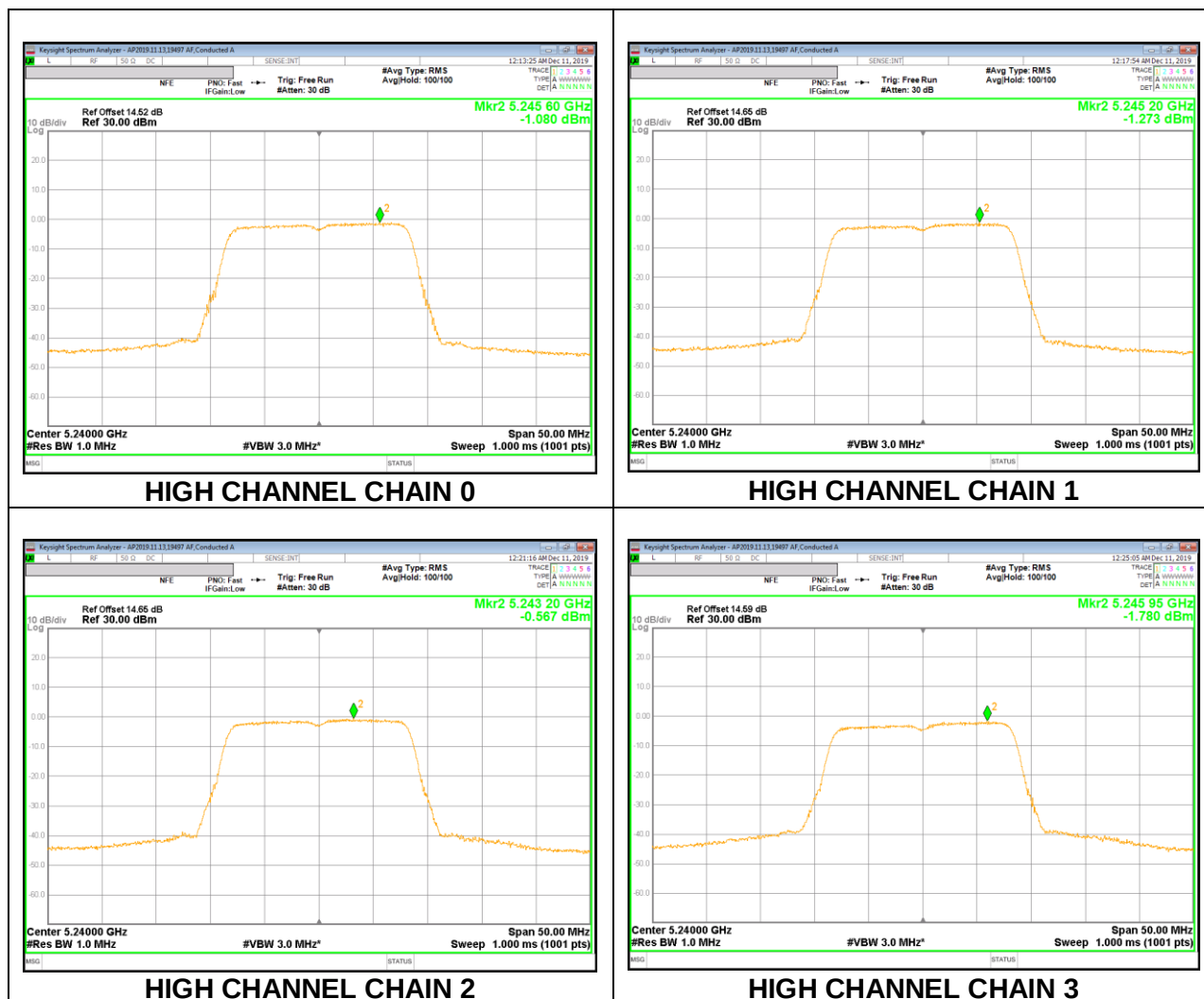
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



IC

(Note: IC PSD was tested by radiated method)

Test Engineer ID:	20756 CW
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Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)
Low	5180	16.470
Mid	5200	16.386
High	5240	16.480

Limits

Channel	Frequency (MHz)	ISED EIRP Limit (dBm)	ISED eirp PSD Limit (dBm/ 1MHz)
Low	5180	22.17	10.00
Mid	5200	22.14	10.00
High	5240	22.17	10.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
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Output Power Results

Channel	Frequency (MHz)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	17.73	22.17	-4.44
Mid	5200	18.84	22.14	-3.30
High	5240	17.30	22.17	-4.87

PSD Results

Channel	Frequency (MHz)	Total Corr'd PSD (dBm/ 1MHz)	PSD Limit (dBm/ 1MHz)	PSD Margin (dB)
Low	5180	6.45	10.00	-3.55
Mid	5200	7.42	10.00	-2.58
High	5240	6.99	10.00	-3.01