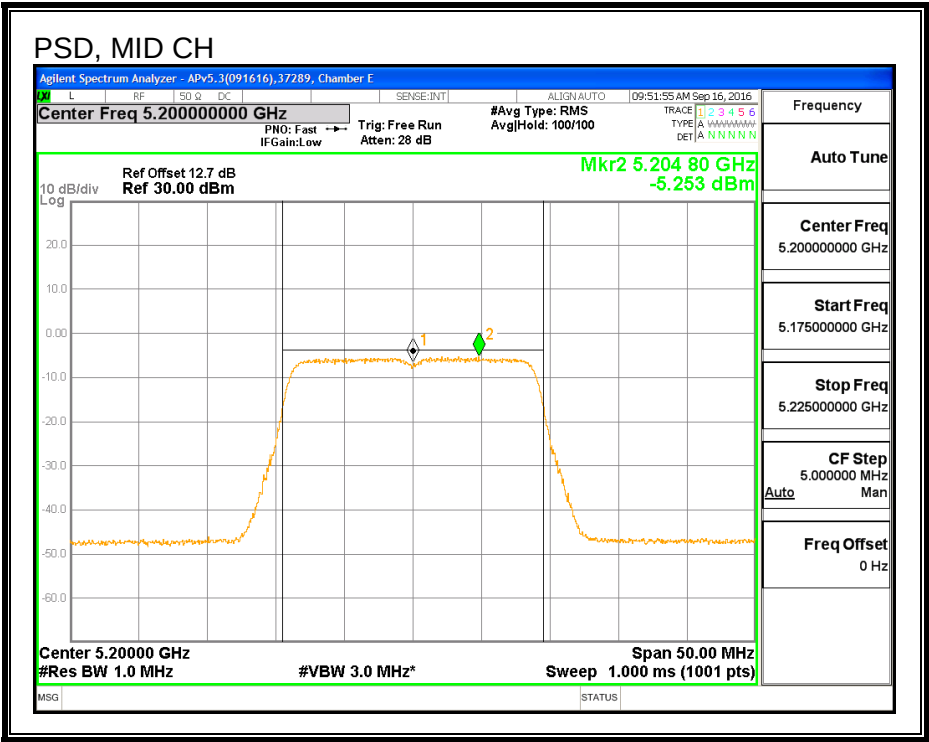
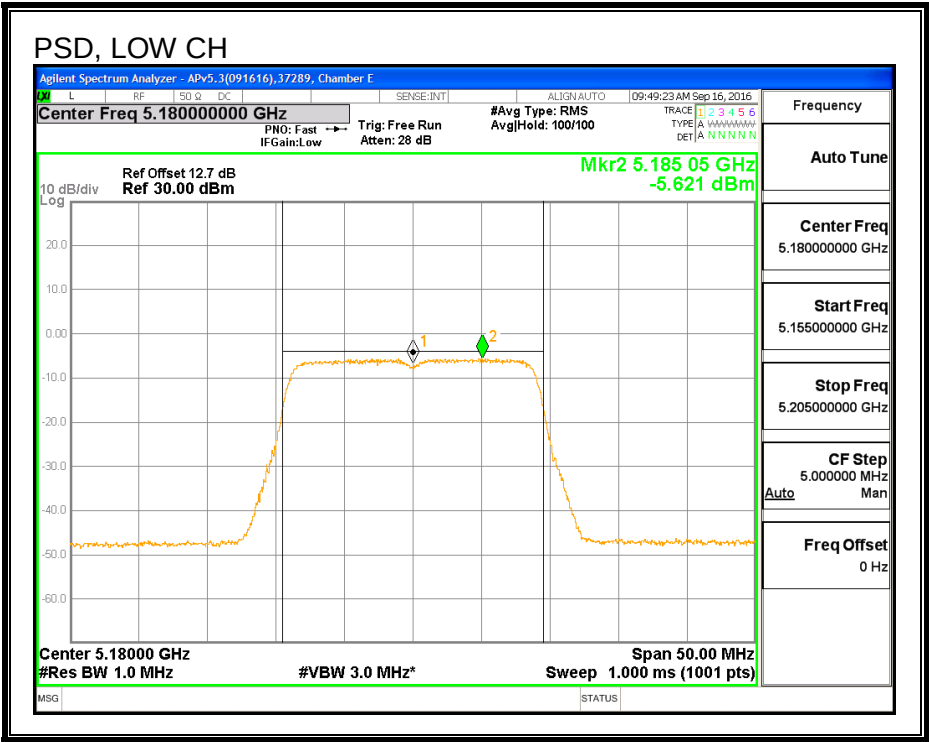
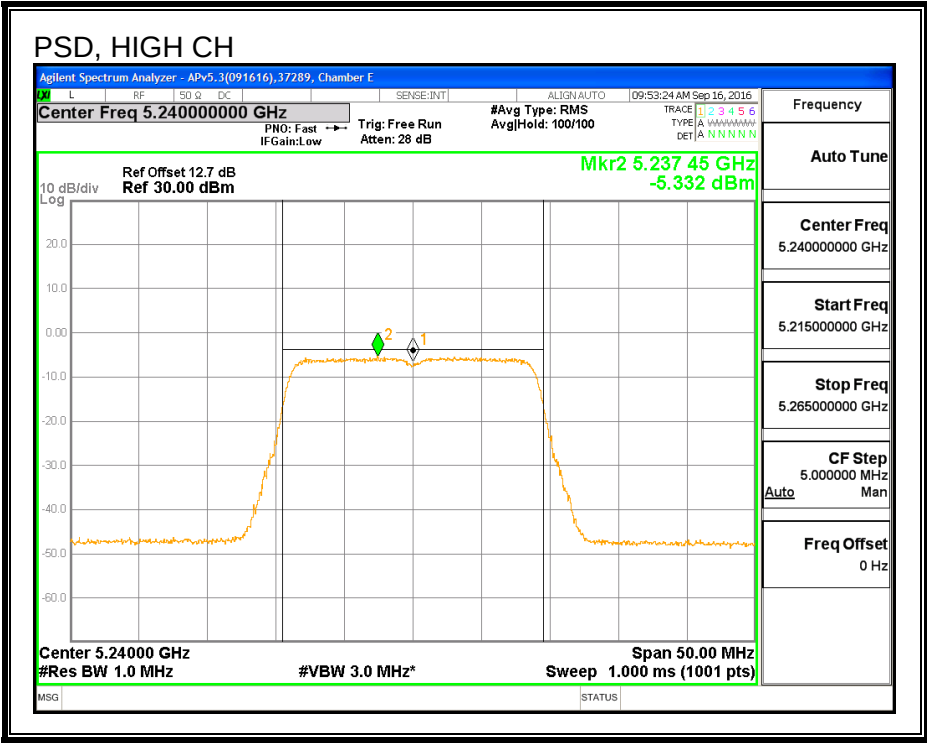
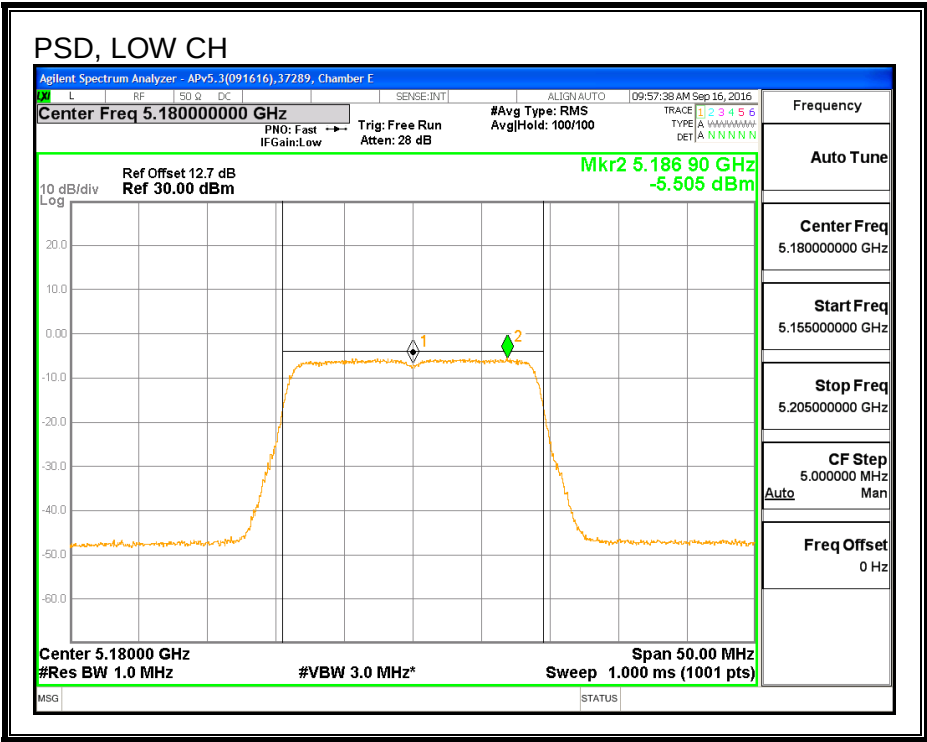


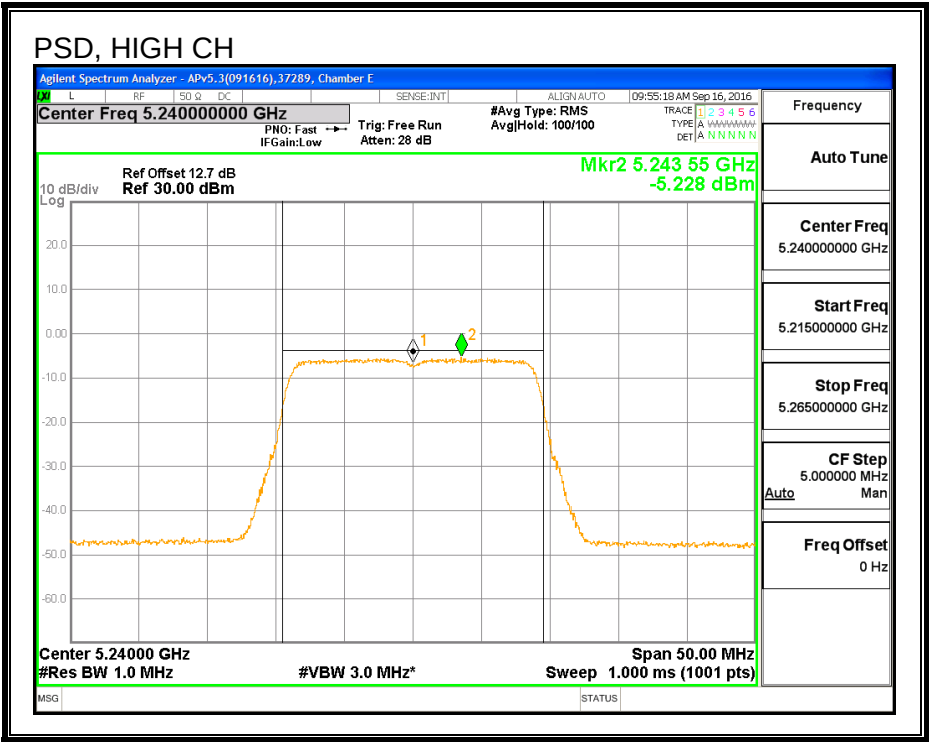
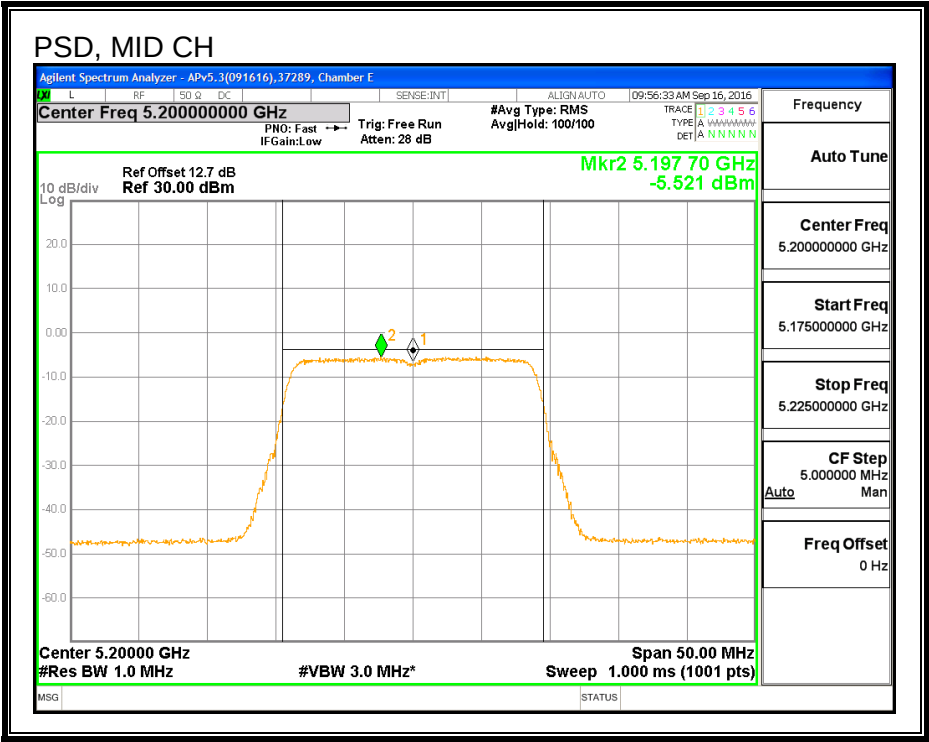
PSD, CHAIN 0





PSD, CHAIN 1





8.5. 802.11n HT20 2Tx (CHAIN 0 + CHAIN 2) CDD MODE IN THE 5.2 GHz BAND

8.5.1. 26 dB BANDWIDTH

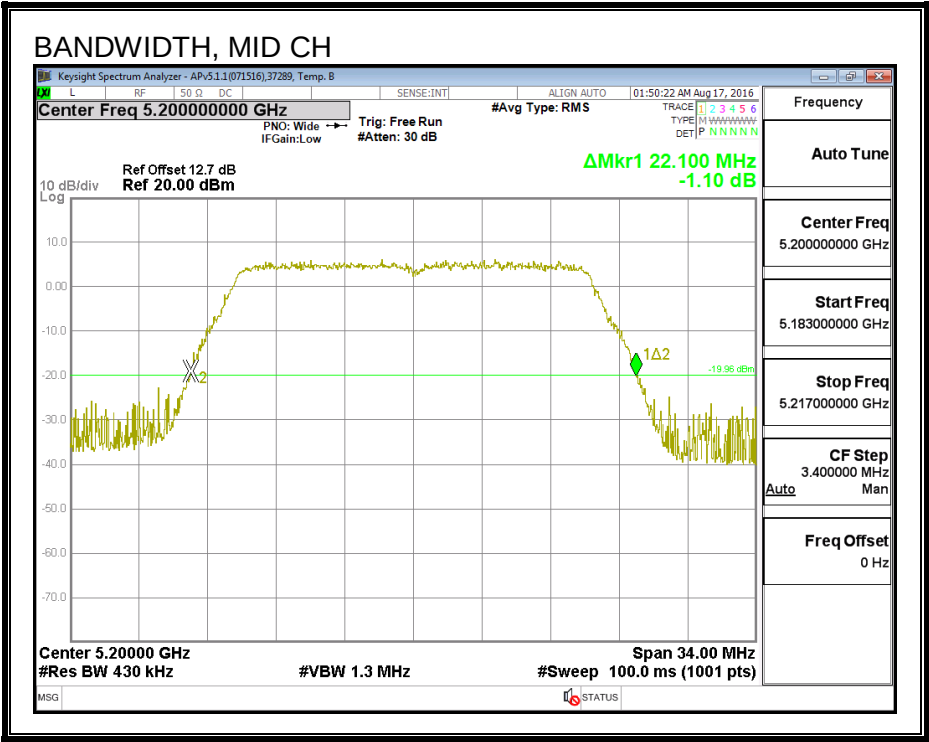
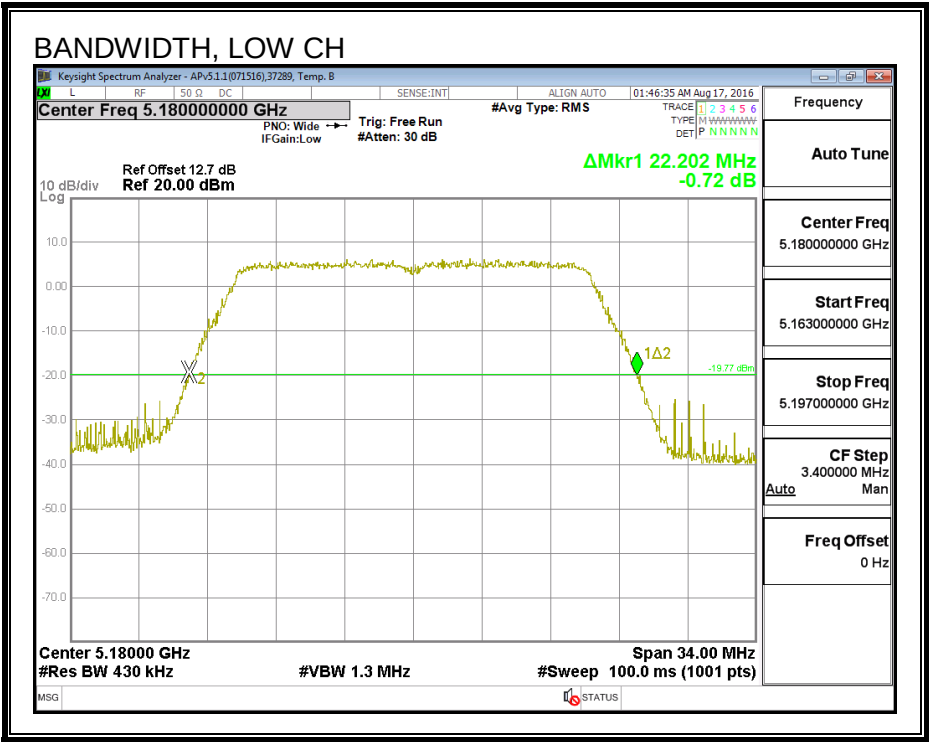
LIMITS

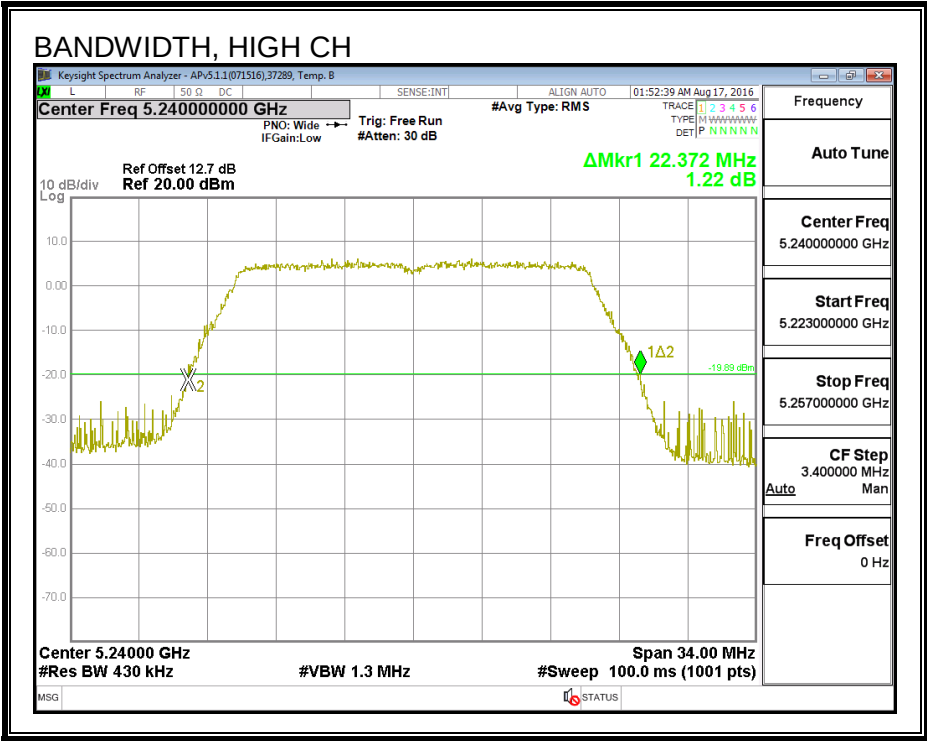
None; for reporting purposes only.

RESULTS

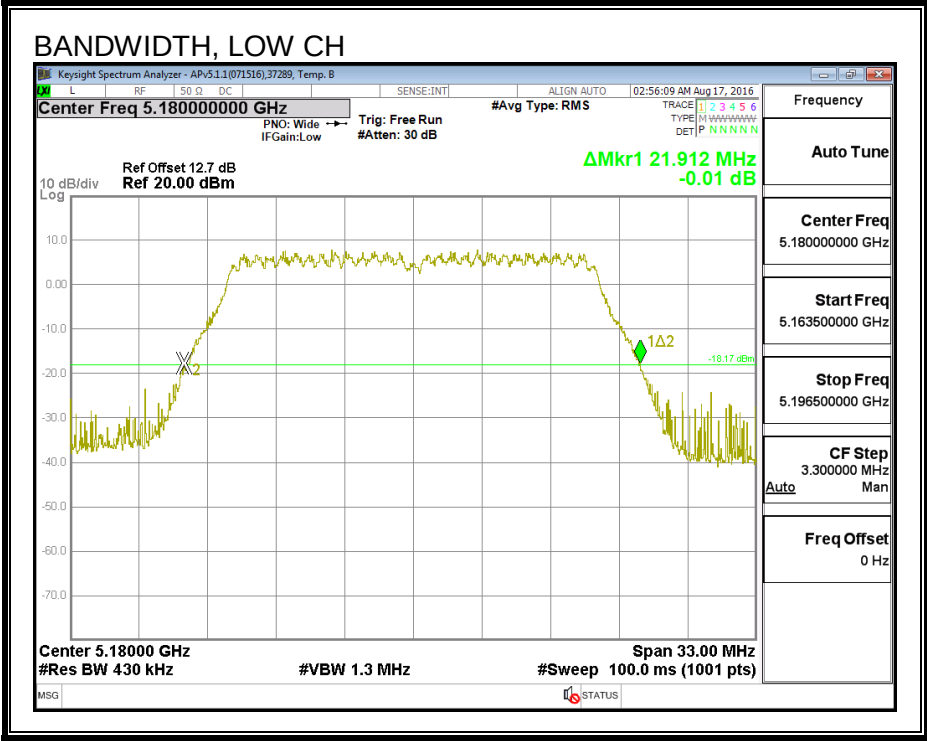
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 2 (MHz)
Low	5180	22.202	21.912
Mid	5200	22.100	21.681
High	5240	22.372	21.945

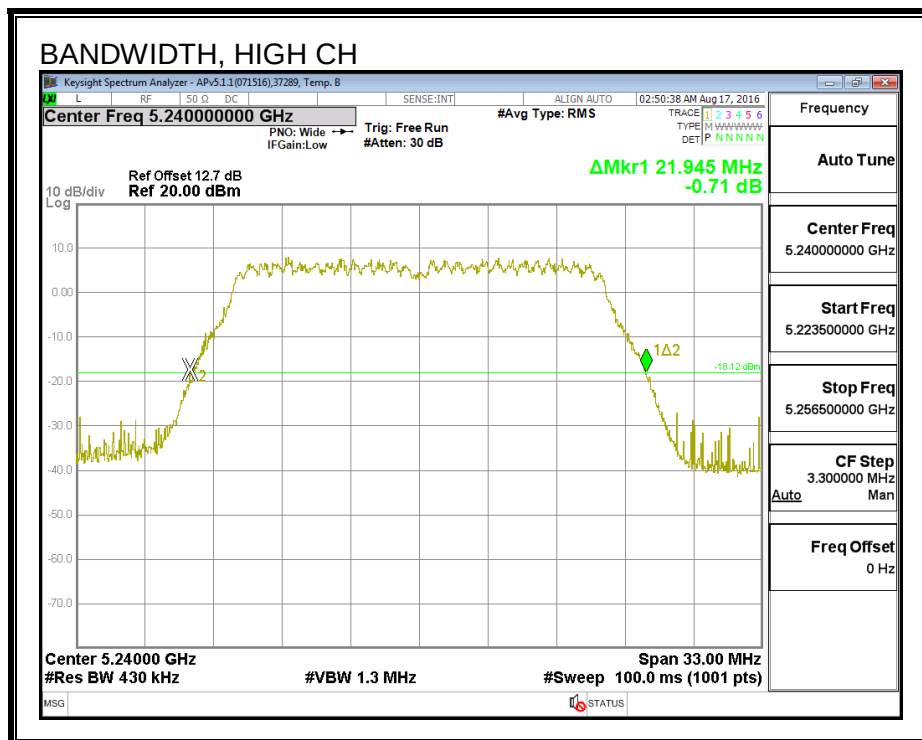
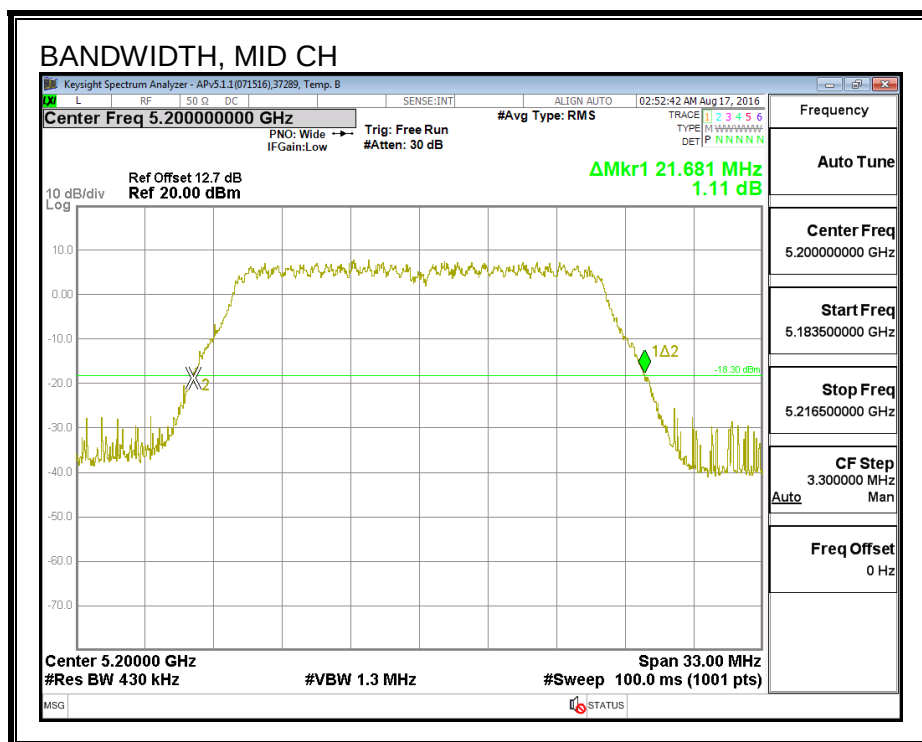
26 DB BANDWIDTH, CHAIN 0





26 DB BANDWIDTH, CHAIN 2





8.5.2. 99% BANDWIDTH

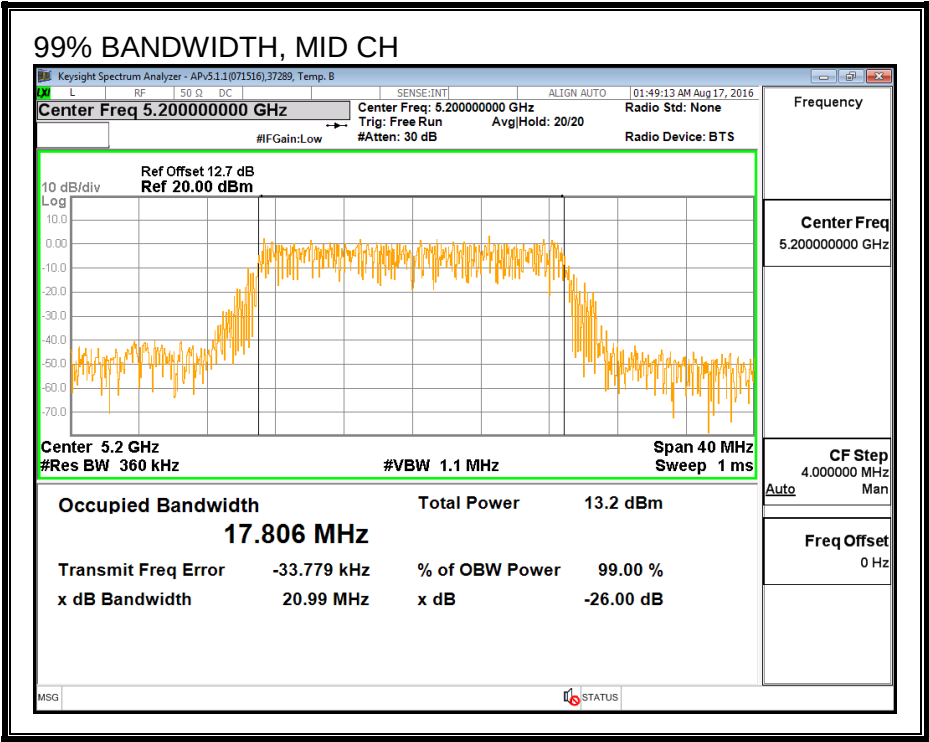
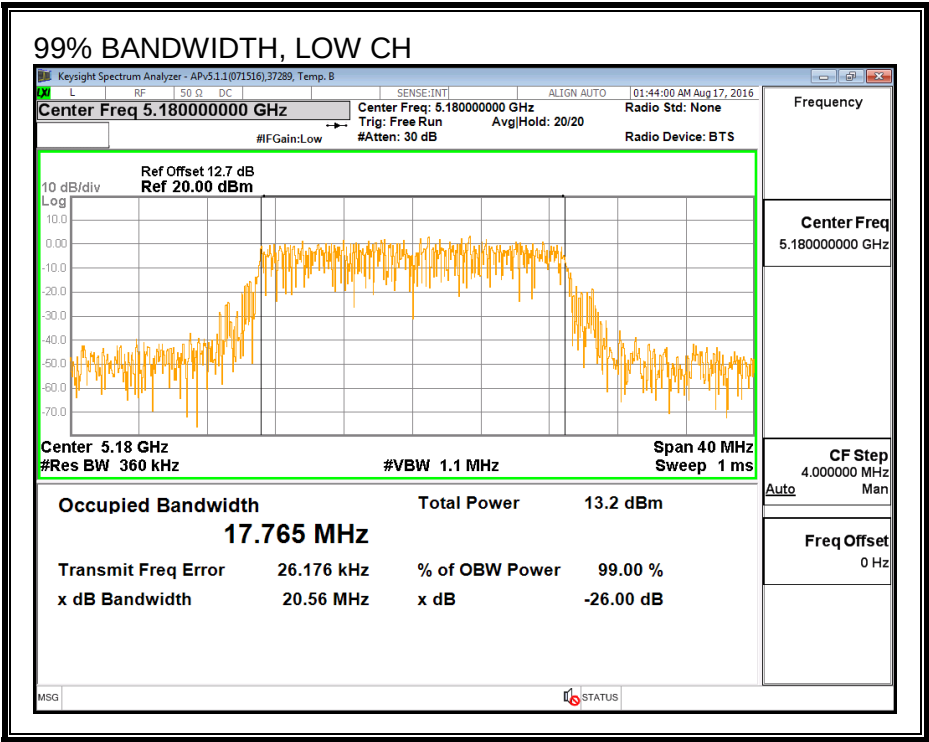
LIMITS

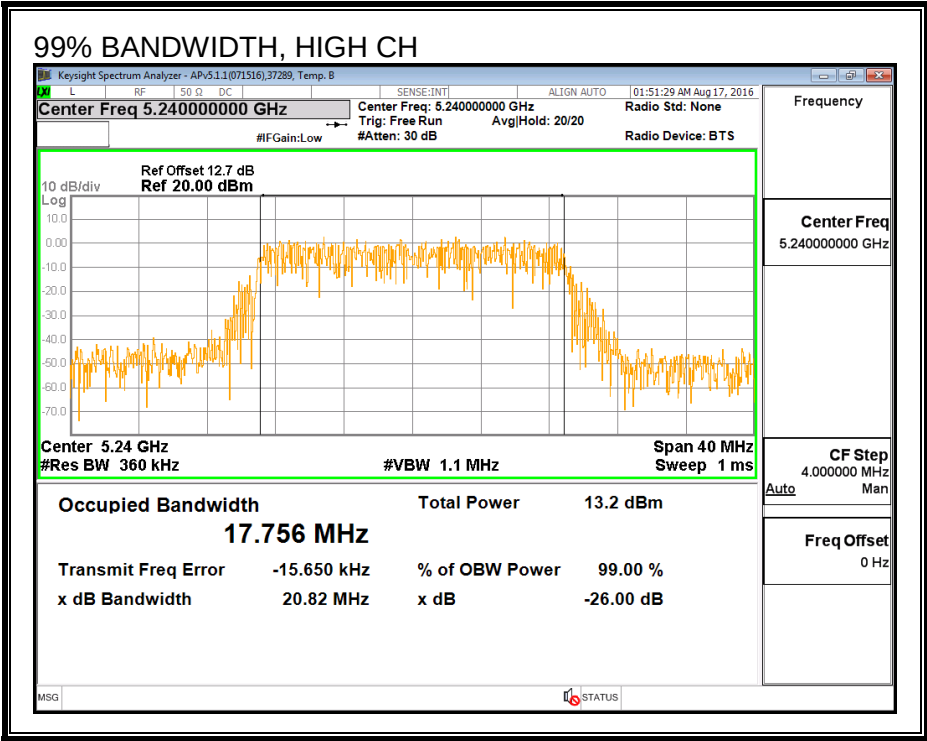
None; for reporting purposes only.

RESULTS

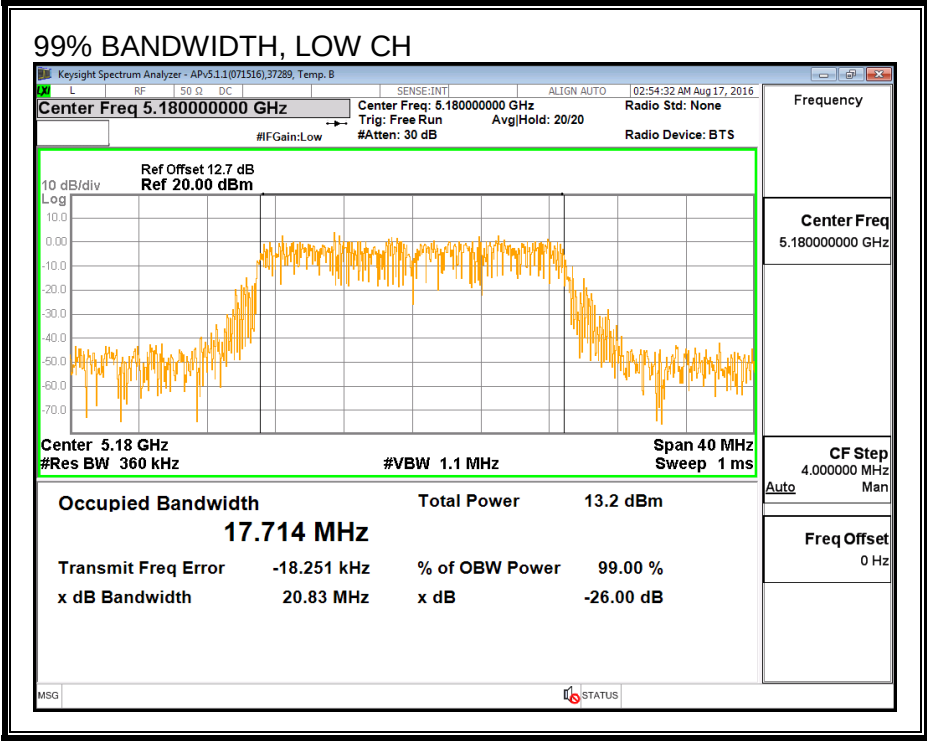
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 2 (MHz)
Low	5180	17.765	17.714
Mid	5200	17.806	17.860
High	5240	17.756	17.926

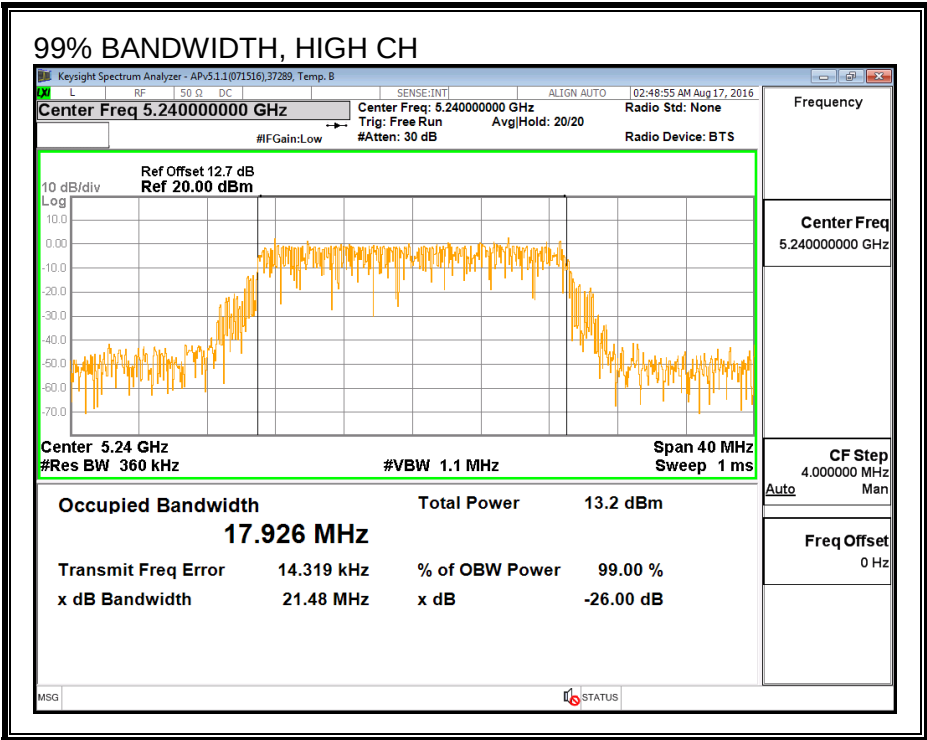
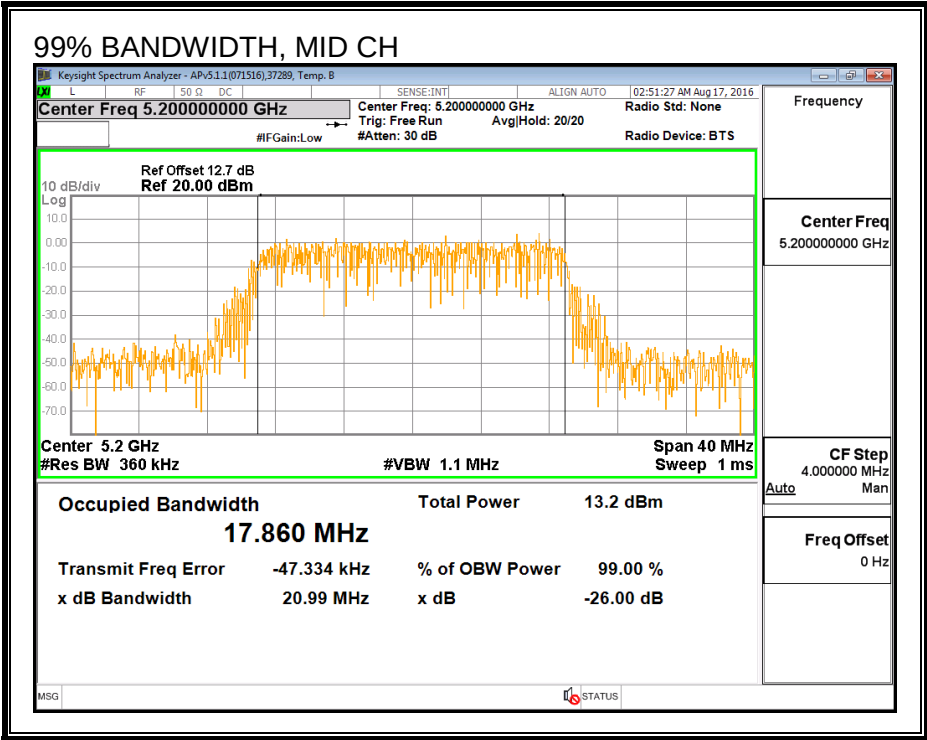
99% BANDWIDTH, CHAIN 0





99% BANDWIDTH, CHAIN 2





8.5.3. AVERAGE POWER (FCC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43573	Date:	9/7/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	12.90	12.88	15.90
Mid	5200	12.95	12.78	15.88
High	5240	12.92	12.98	15.96

8.5.4. OUTPUT POWER AND PSD (FCC)

LIMITS

FCC §15.407 (a) (1)

(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. 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. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.80	4.90	4.38

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.80	4.90	7.38

RESULTS

ID:	43573	Date:	9/7/16
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Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	4.38	7.38	24.00	9.62
Mid	5200	4.38	7.38	24.00	9.62
High	5240	4.38	7.38	24.00	9.62

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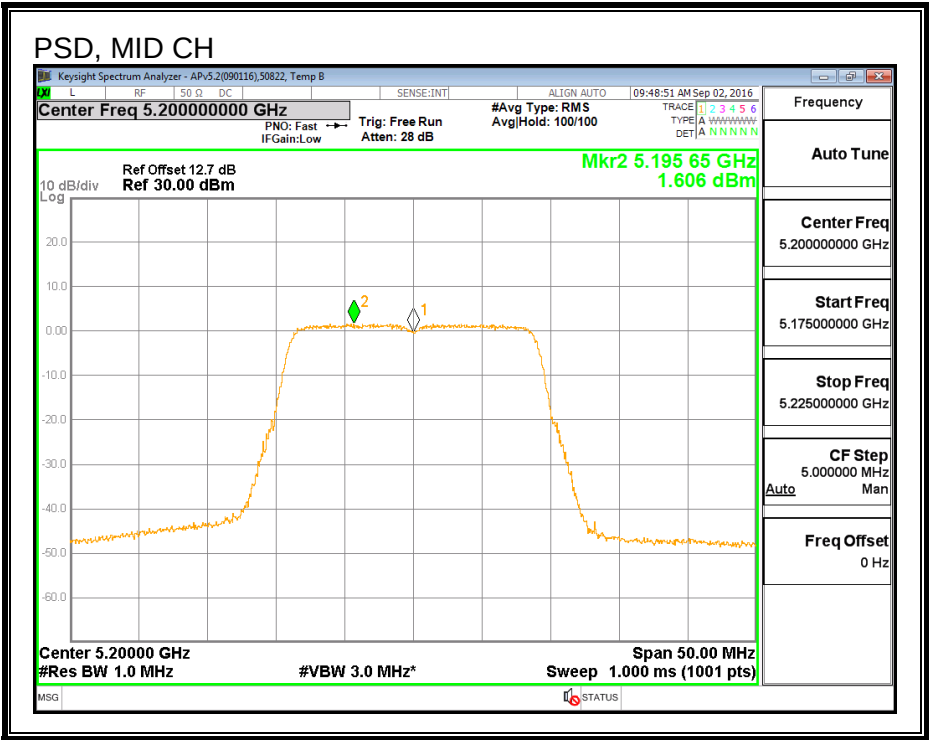
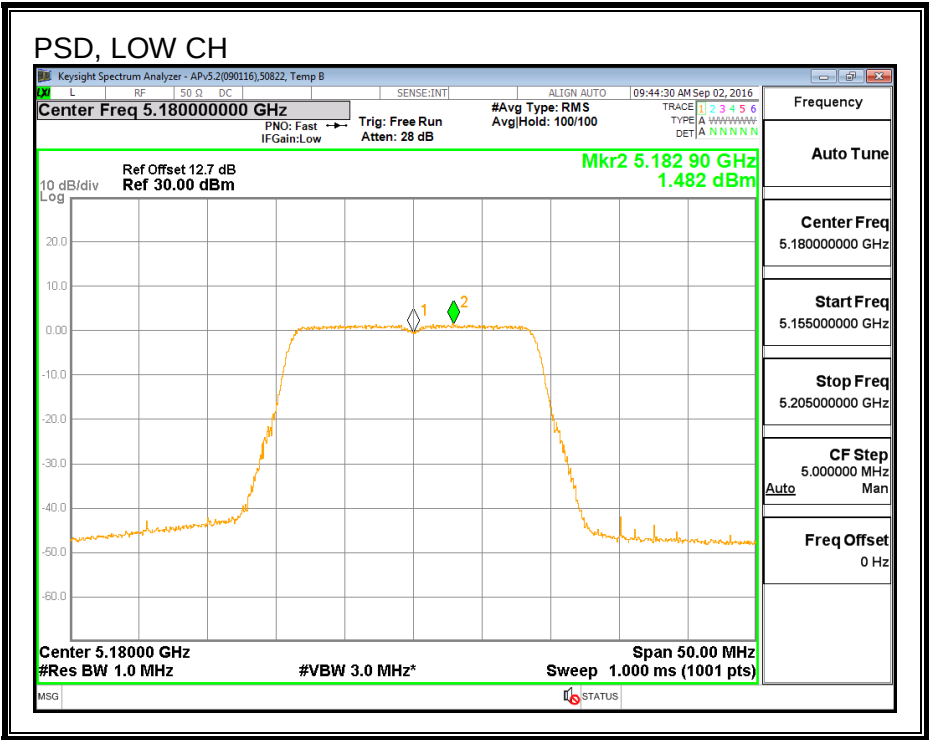
Output Power Results

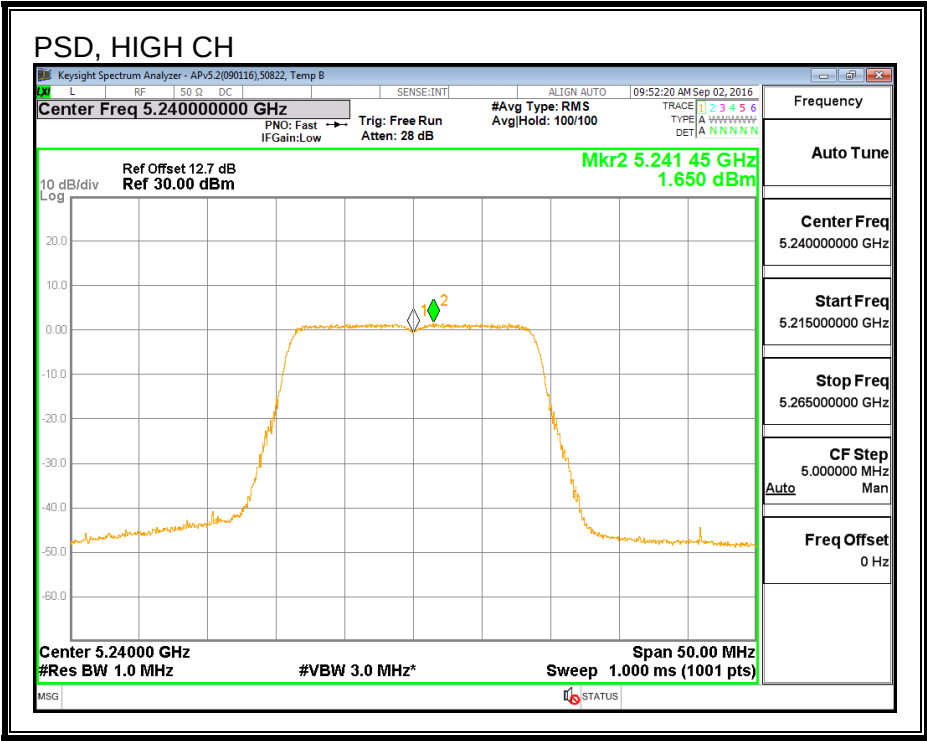
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.90	12.88	15.90	24.00	-8.10
Mid	5200	12.95	12.78	15.88	24.00	-8.12
High	5240	12.92	12.98	15.96	24.00	-8.04

PSD Results

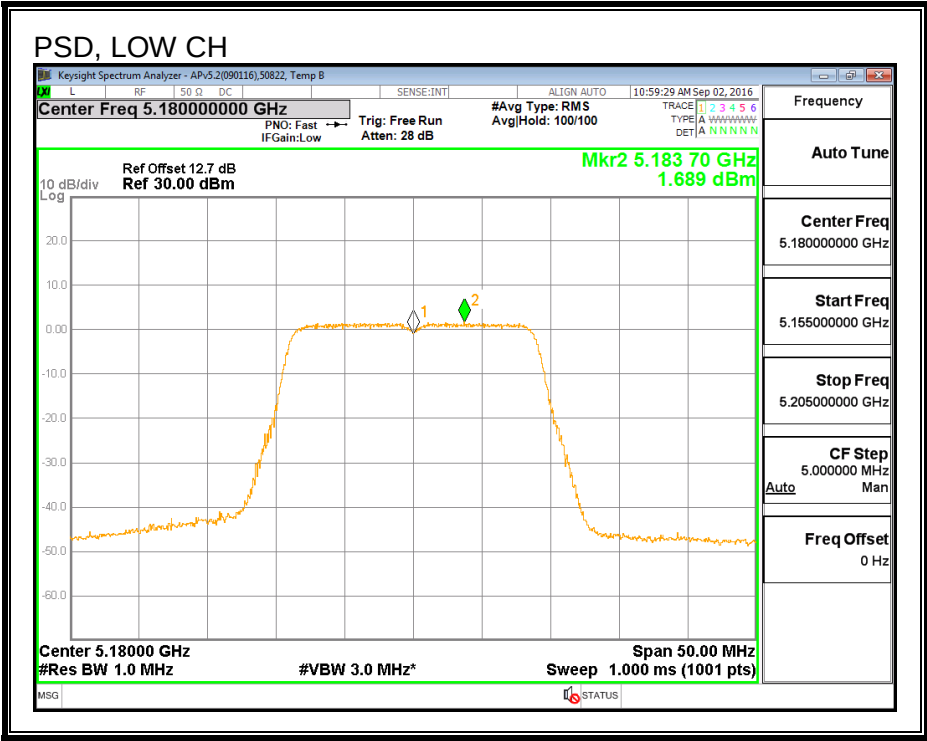
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	1.48	1.69	4.60	9.62	-5.02
Mid	5200	1.61	1.33	4.48	9.62	-5.14
High	5240	1.65	1.48	4.58	9.62	-5.04

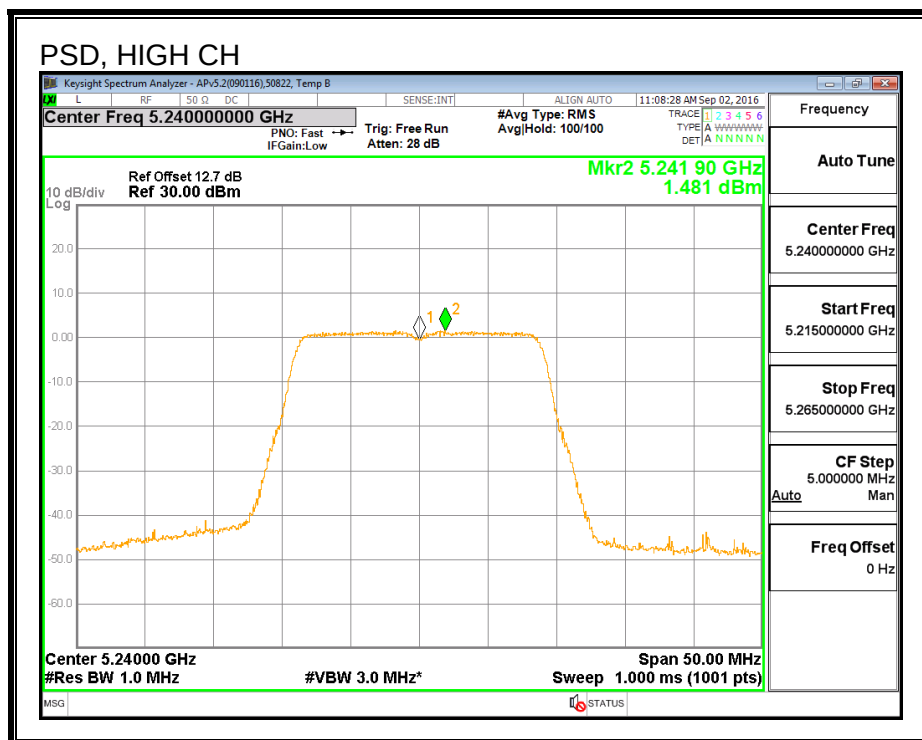
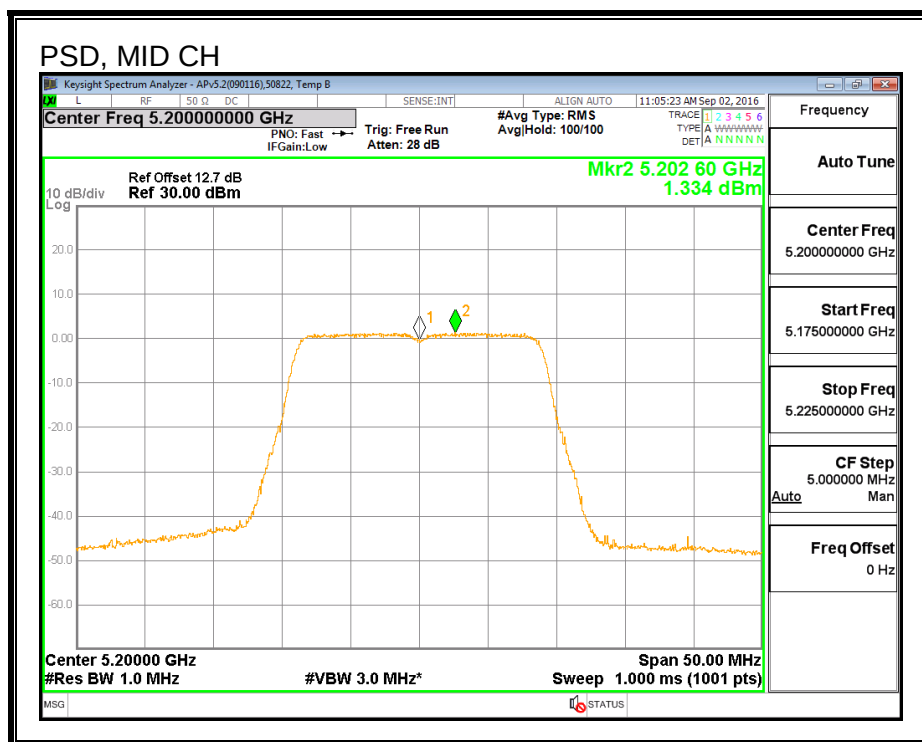
PSD, CHAIN 0





PSD, CHAIN 2





8.5.5. AVERAGE POWER (IC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	37289	Date:	9/16/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	5.94	5.89	8.93
Mid	5200	5.99	6.00	9.01
High	5240	5.95	6.00	8.99

8.5.6. OUTPUT POWER AND PSD (IC)

LIMITS

IC RSS-247 (6.2.1) (1)

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 MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.80	4.90	4.38

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
3.80	4.90	7.38

RESULTS

ID:	37289	Date:	9/16/16
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Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.714	4.38	7.38
Mid	5200	17.806	4.38	7.38
High	5240	17.756	4.38	7.38

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	Max IC Power (dBm)	IC eirp PSD Limit (dBm)	Max IC PSD (dBm)
Low	5180	22.48	18.10	10.00	2.62
Mid	5200	22.51	18.13	10.00	2.62
High	5240	22.49	18.11	10.00	2.62

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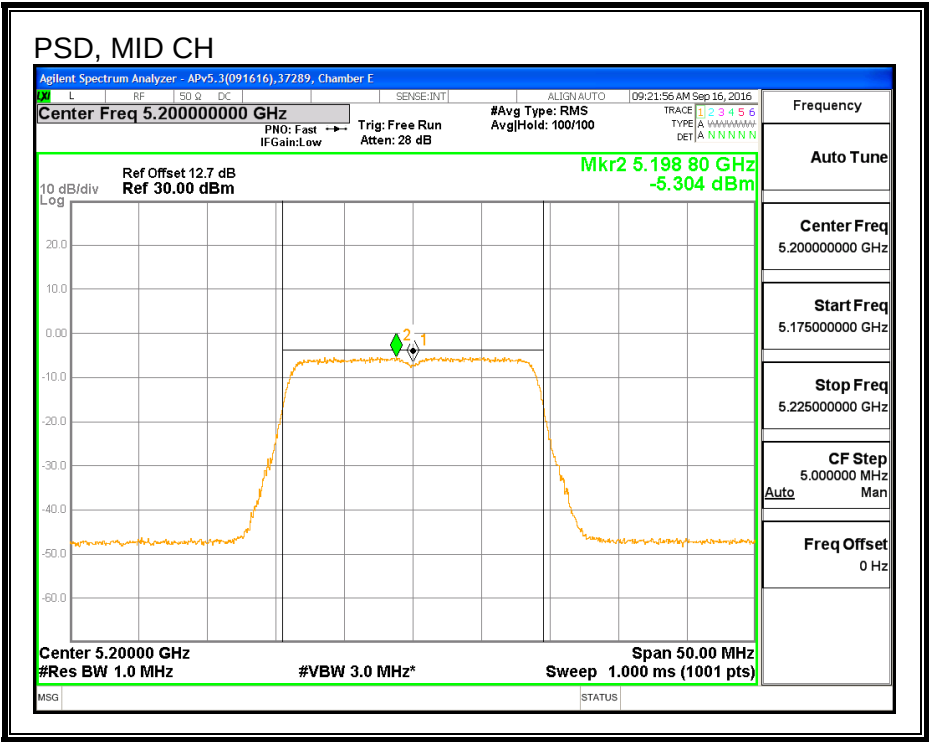
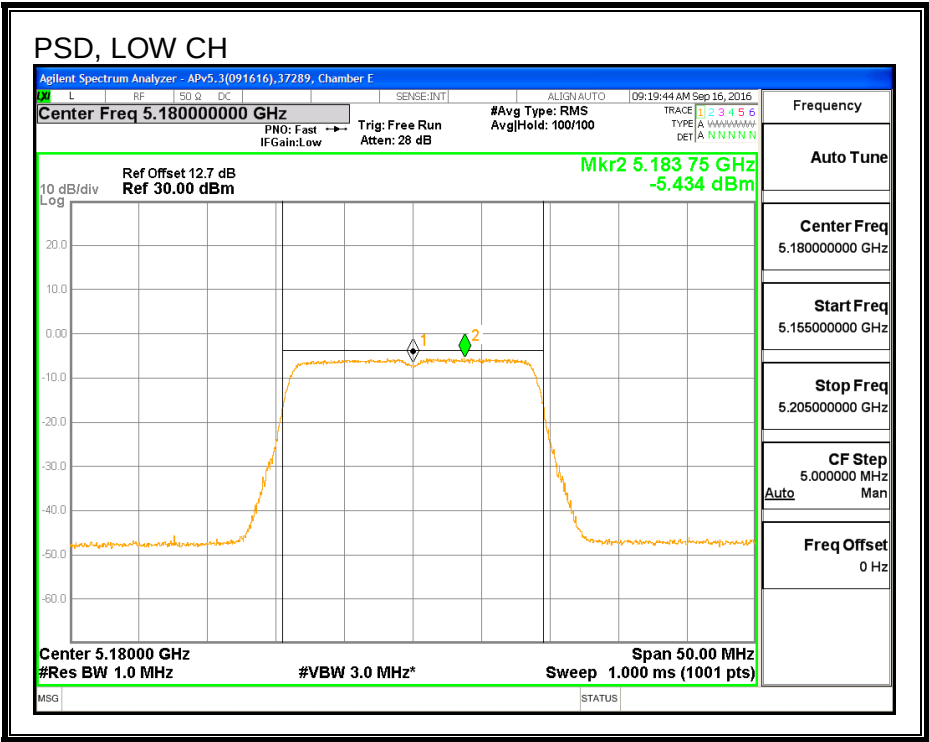
Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	5.94	5.89	8.93	18.10	-9.18
Mid	5200	5.99	6.00	9.01	18.13	-9.12
High	5240	5.95	6.00	8.99	18.11	-9.13

PSD Results

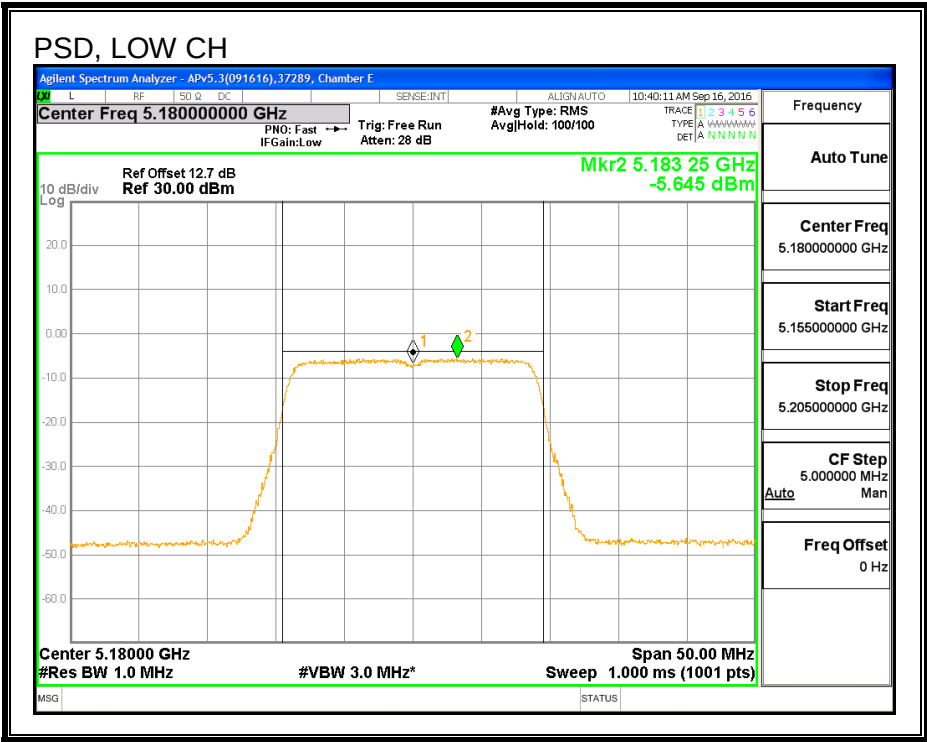
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-5.43	-5.65	-2.53	2.62	-5.15
Mid	5200	-5.30	-5.43	-2.36	2.62	-4.98
High	5240	-5.49	-5.37	-2.42	2.62	-5.04

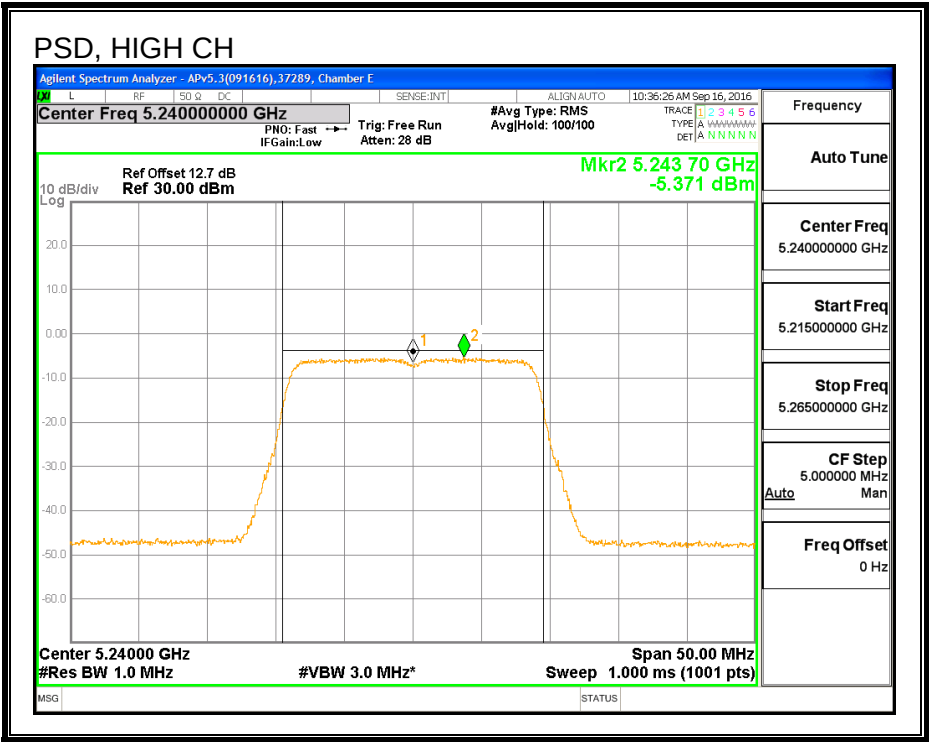
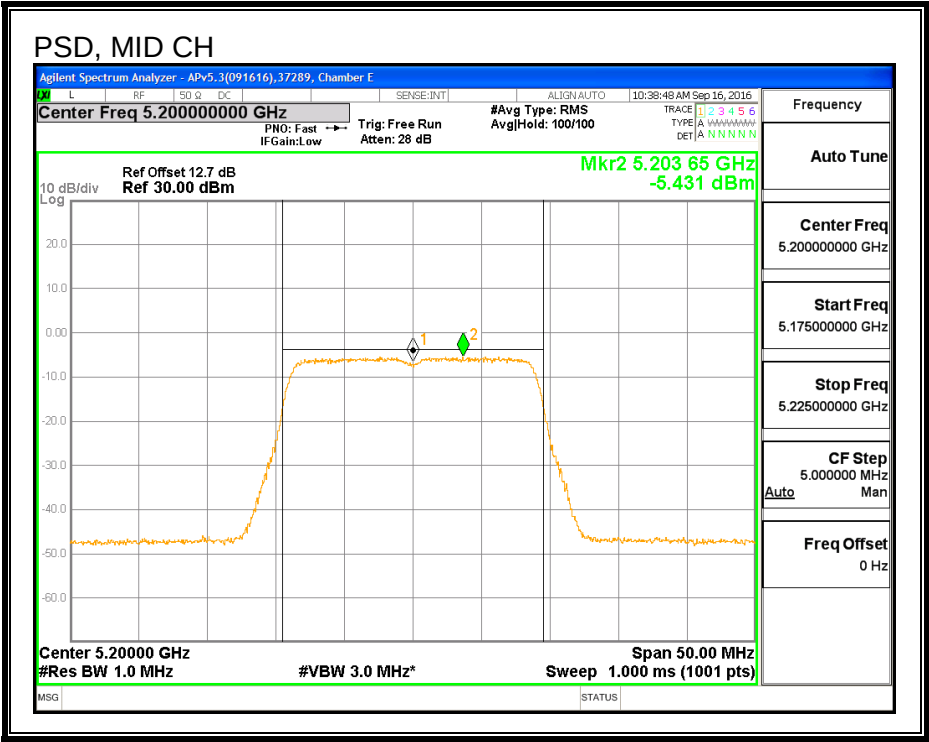
PSD, CHAIN 0





PSD, CHAIN 2





8.6. 802.11n HT20 2Tx (CHAIN 1 + CHAIN 2) CDD MODE IN THE 5.2 GHz BAND

8.6.1. 26 dB BANDWIDTH

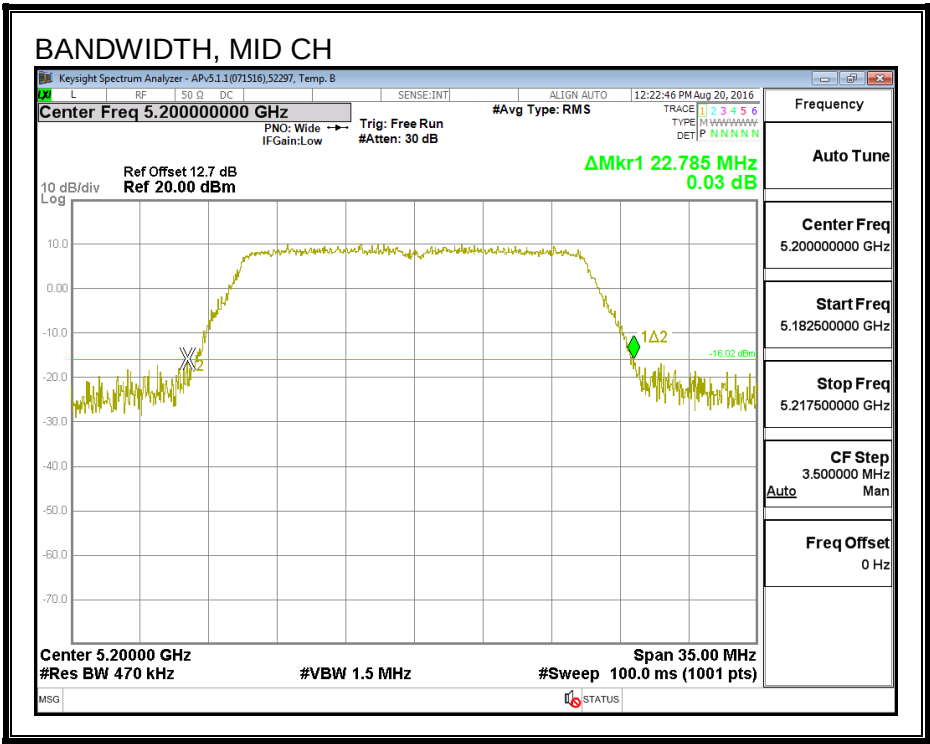
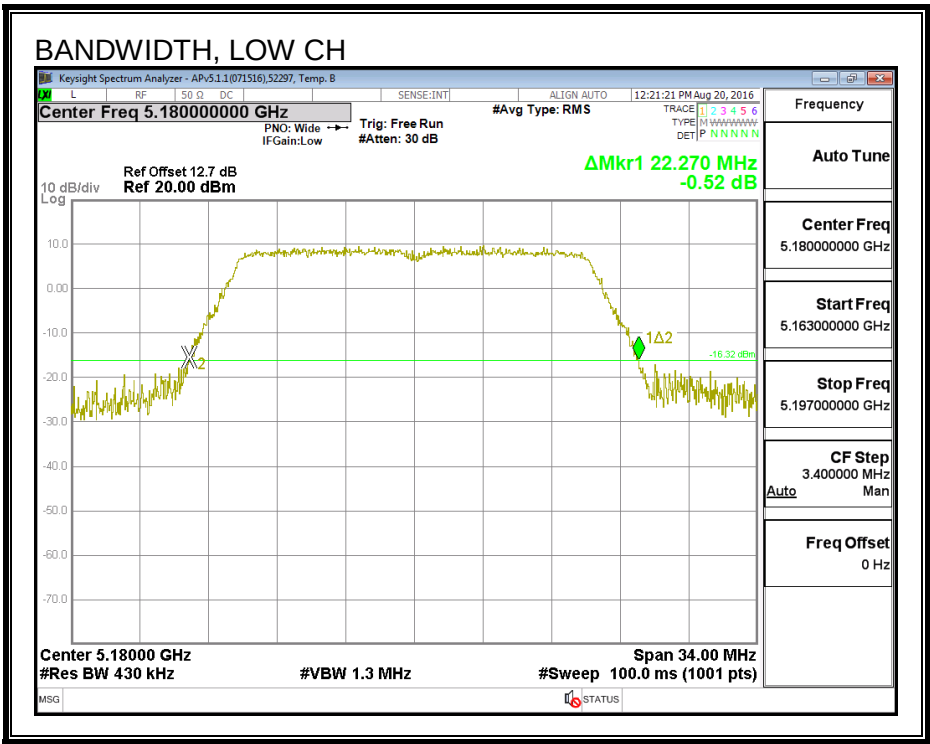
LIMITS

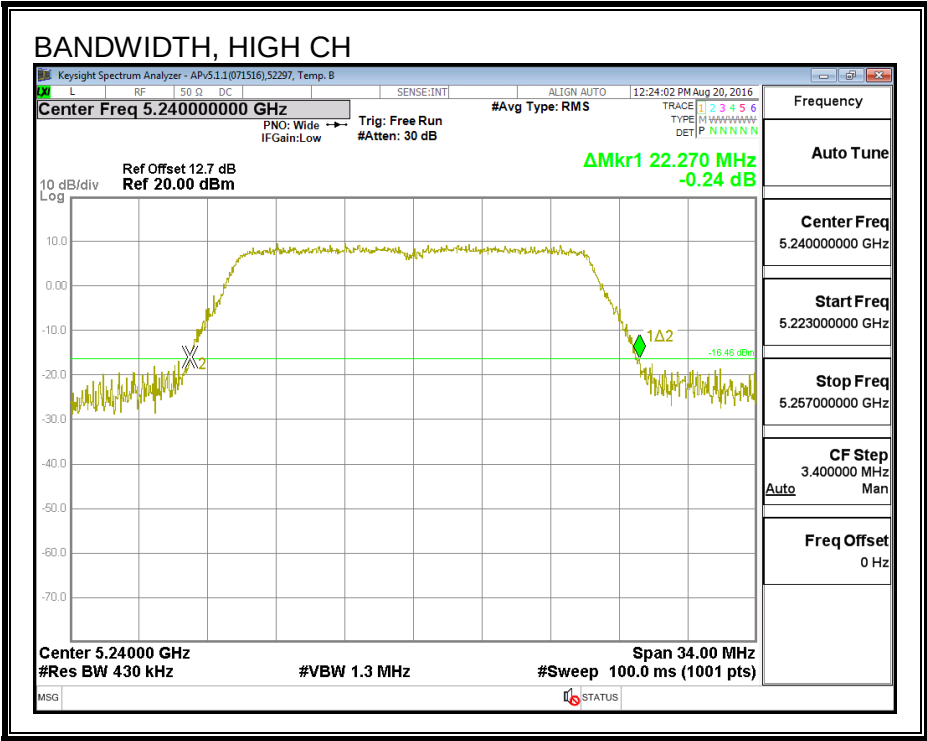
None; for reporting purposes only.

RESULTS

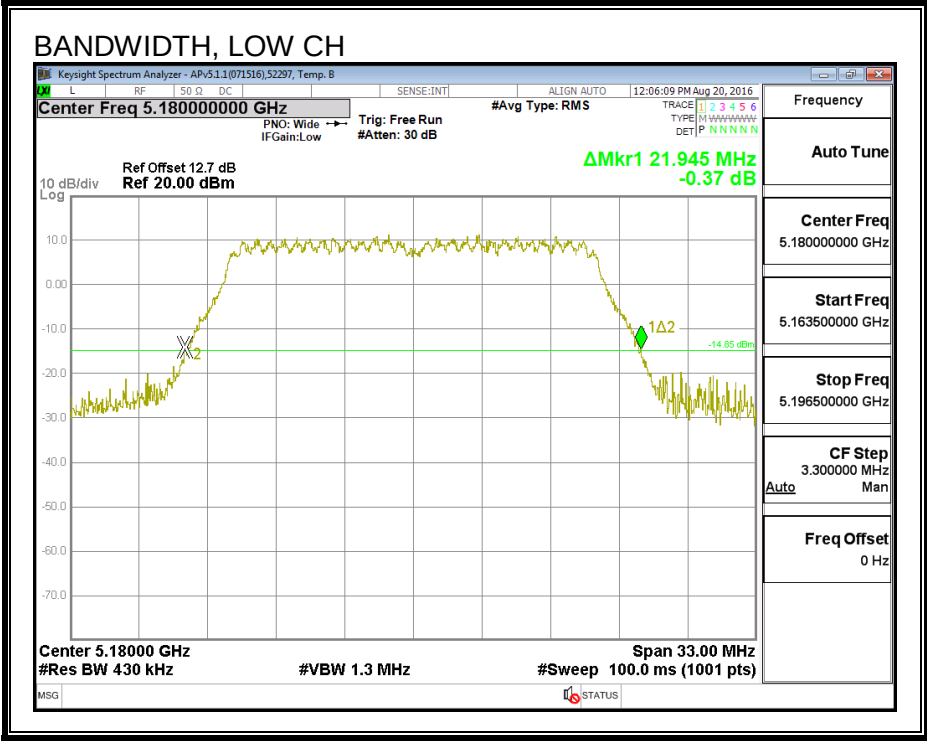
Channel	Frequency (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5180	22.270	21.945
Mid	5200	22.785	21.879
High	5240	22.270	21.648

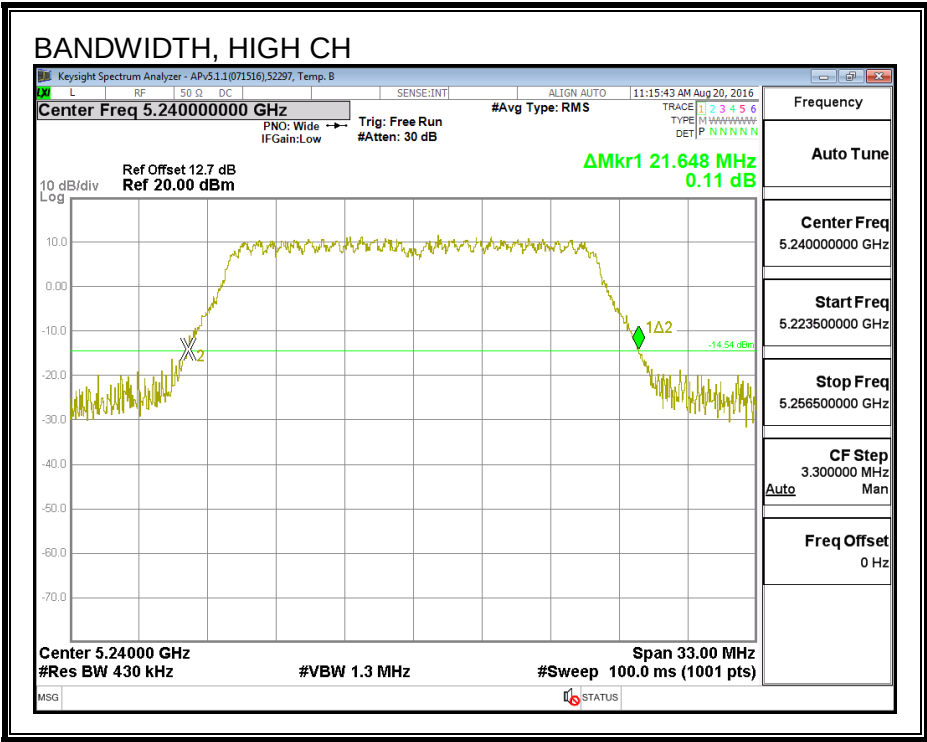
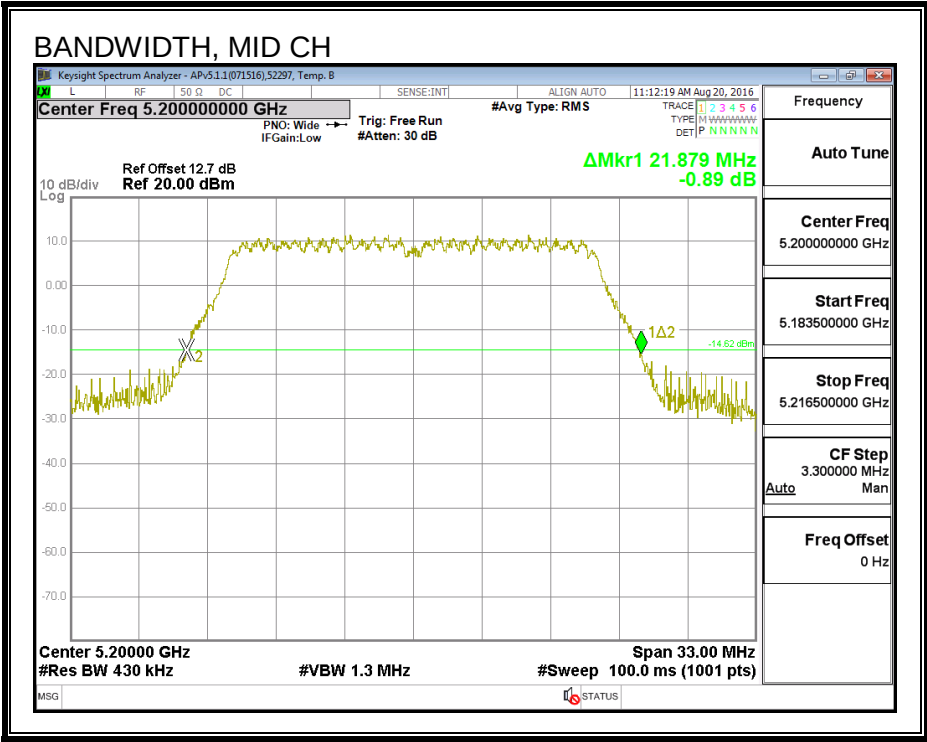
26 DB BANDWIDTH, CHAIN 1





26 DB BANDWIDTH, CHAIN 2





8.6.2. 99% BANDWIDTH

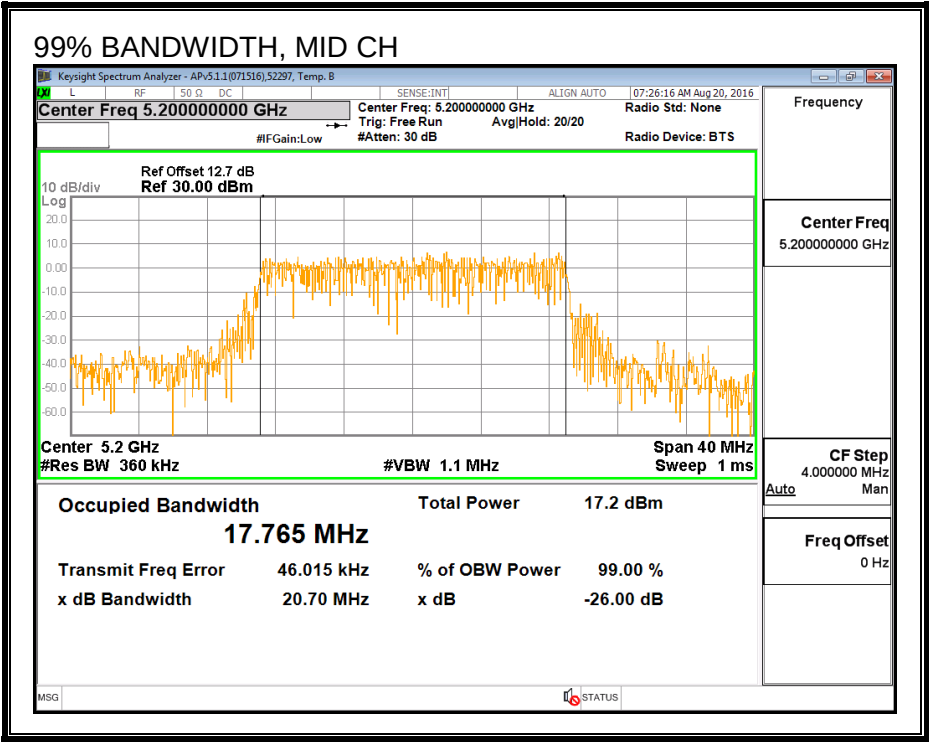
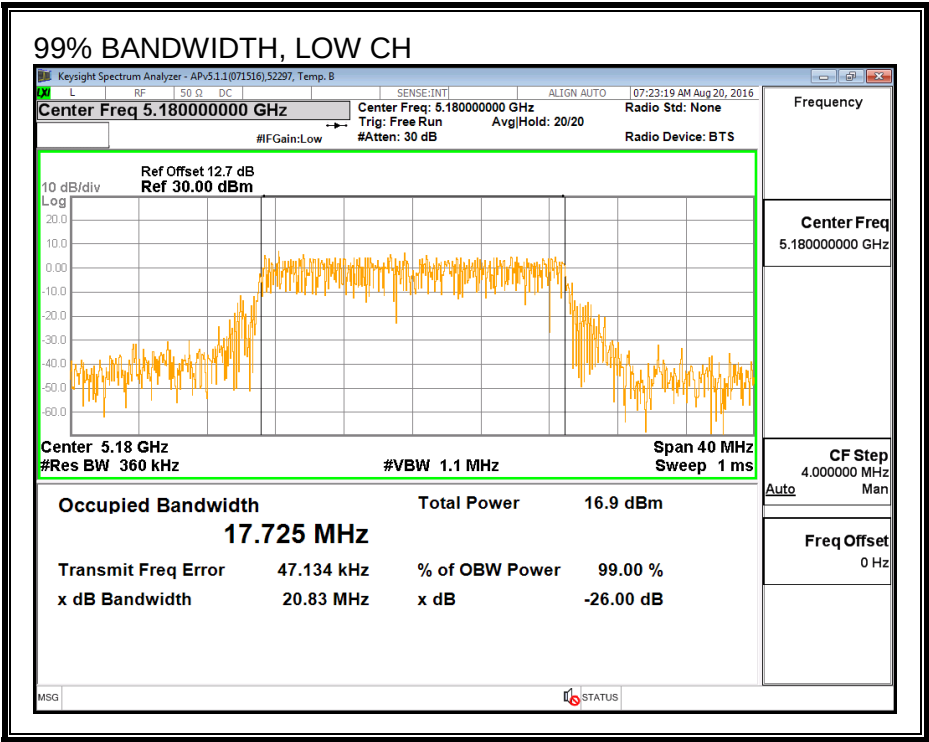
LIMITS

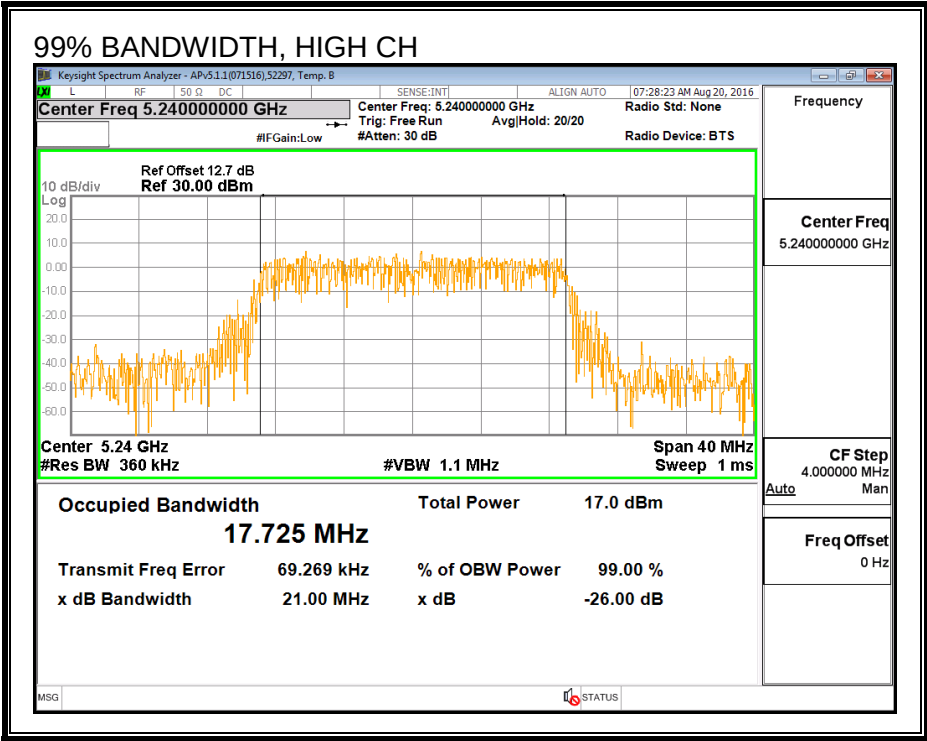
None; for reporting purposes only.

RESULTS

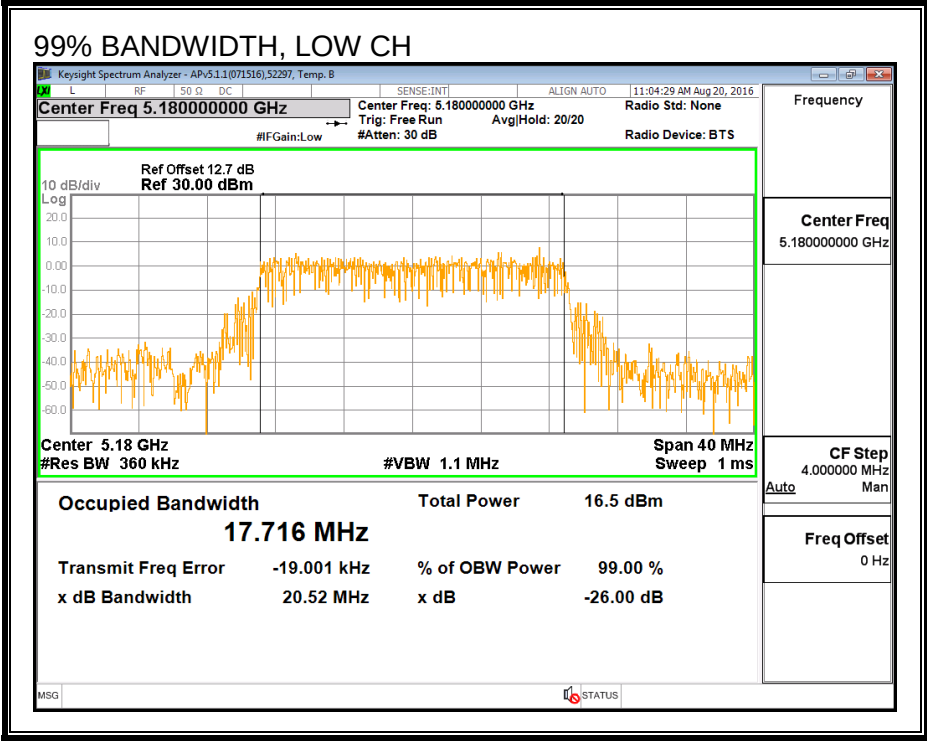
Channel	Frequency (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5180	17.725	17.716
Mid	5200	17.765	17.681
High	5240	17.725	17.827

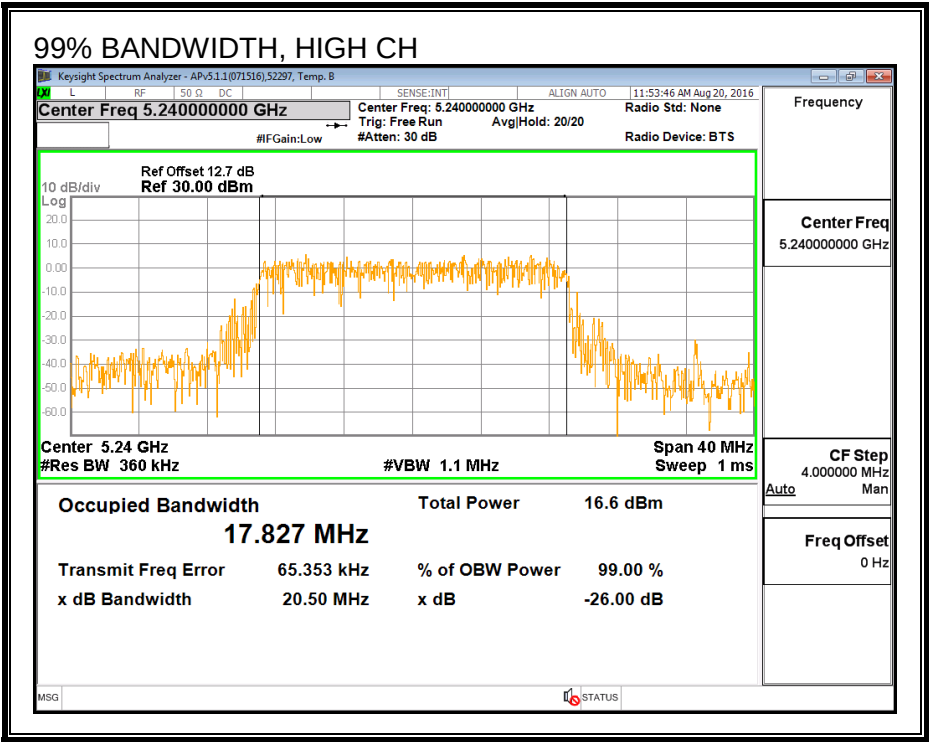
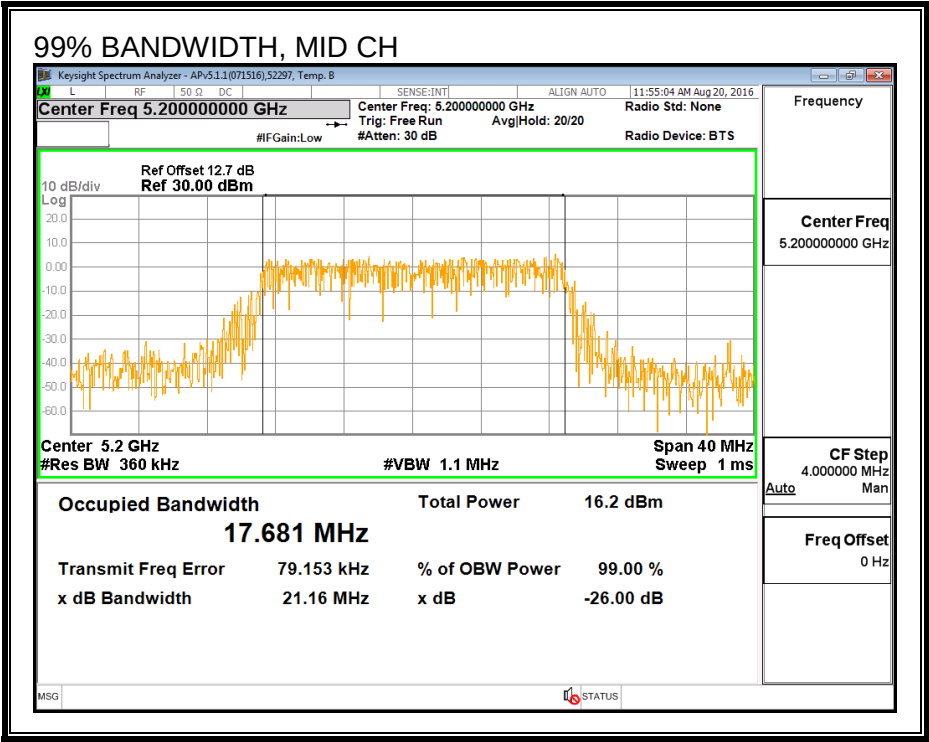
99% BANDWIDTH, CHAIN 1





99% BANDWIDTH, CHAIN 2





8.6.3. AVERAGE POWER (FCC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43573	Date:	9/7/16
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Average Power Results

Channel	Frequency (MHz)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	12.75	12.90	15.84
Mid	5200	12.98	12.91	15.96
High	5240	12.99	12.82	15.92

8.6.4. OUTPUT POWER AND PSD (FCC)

LIMITS

FCC §15.407 (a) (1)

(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. 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 collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
6.70	4.90	5.89

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
6.70	4.90	8.86

RESULTS

ID:	43573	Date:	9/7/16
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Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	5.89	8.86	24.00	8.14
Mid	5200	5.89	8.86	24.00	8.14
High	5240	5.89	8.86	24.00	8.14

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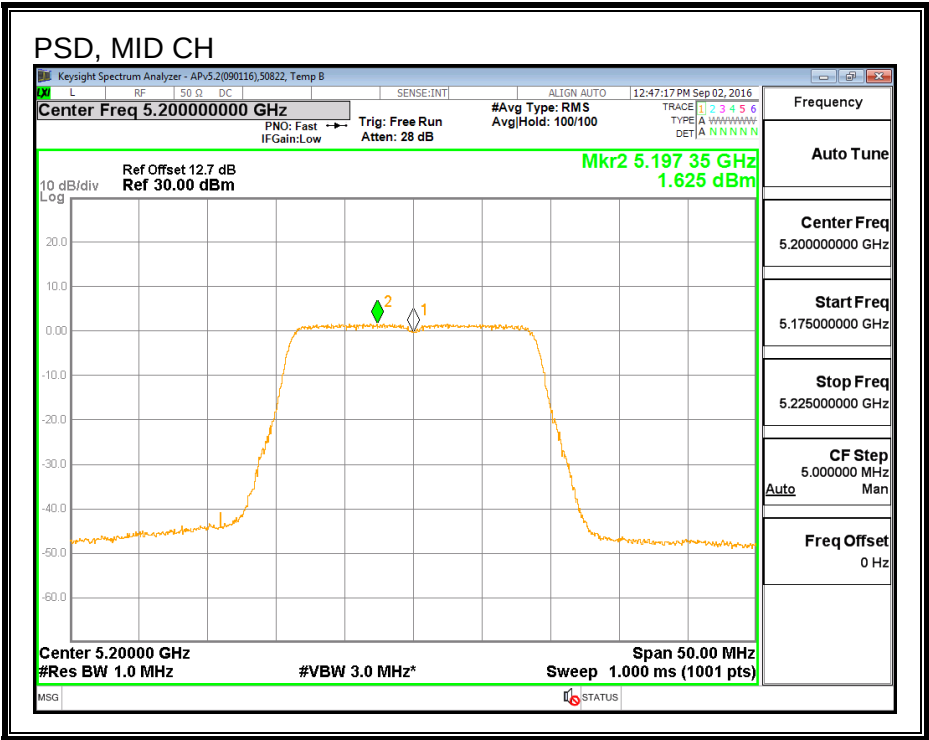
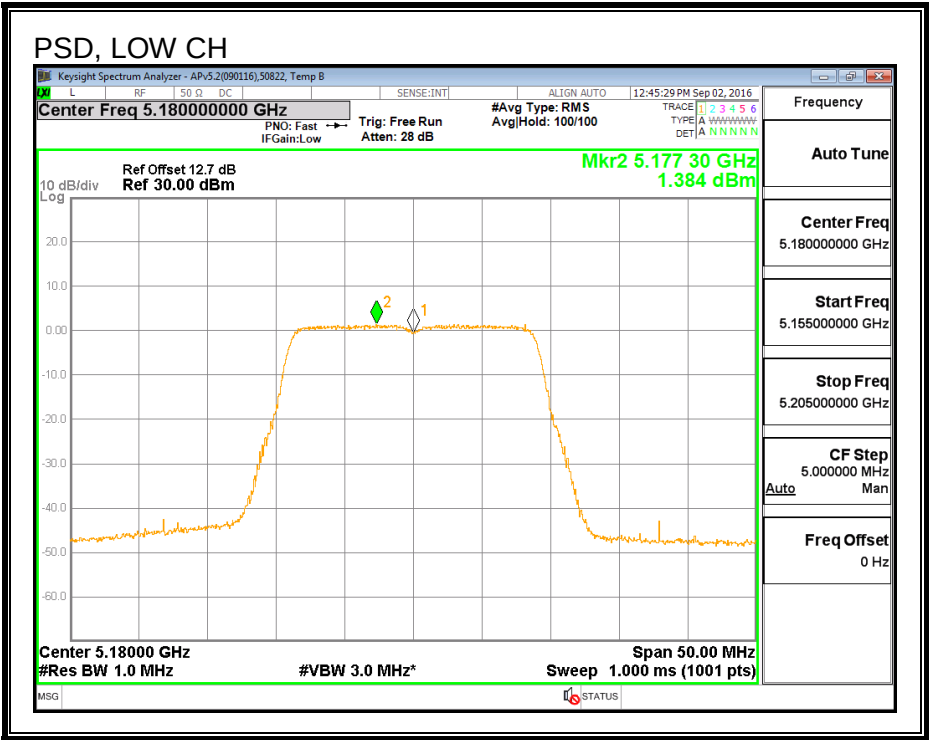
Output Power Results

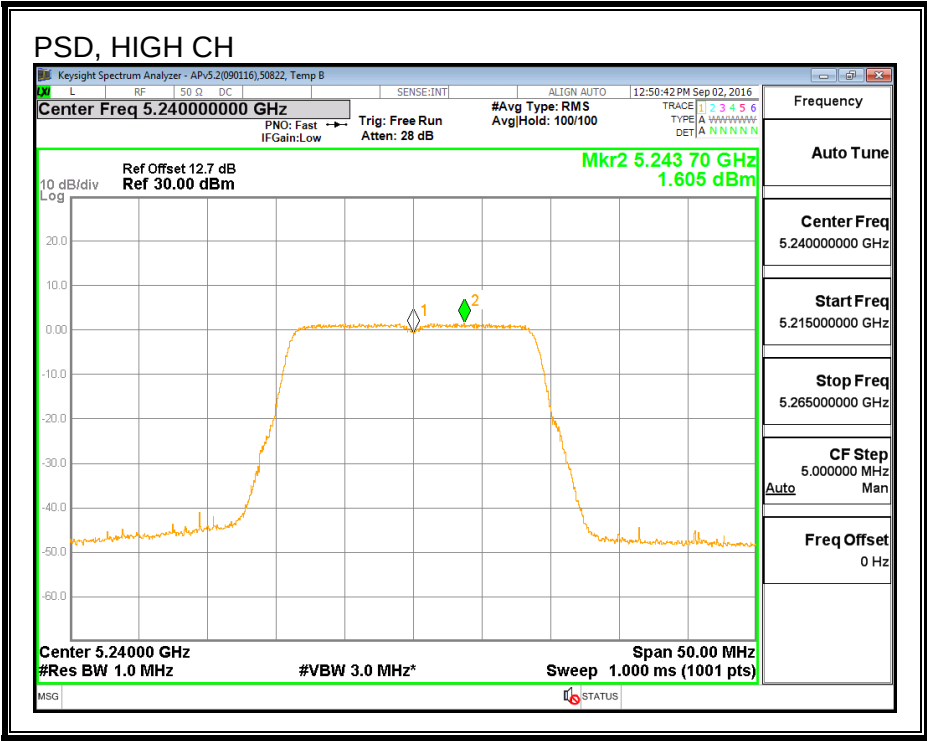
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.75	12.90	15.84	24.00	-8.16
Mid	5200	12.98	12.91	15.96	24.00	-8.04
High	5240	12.99	12.82	15.92	24.00	-8.08

PSD Results

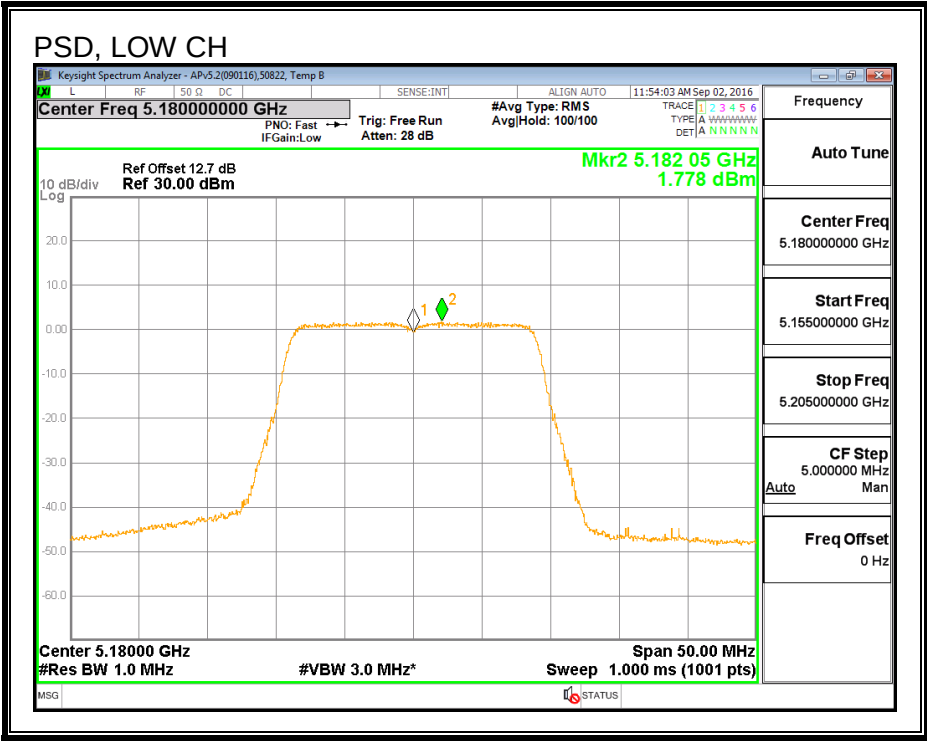
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	1.38	1.78	4.60	8.14	-3.54
Mid	5200	1.63	1.59	4.62	8.14	-3.52
High	5240	1.61	1.54	4.58	8.14	-3.56

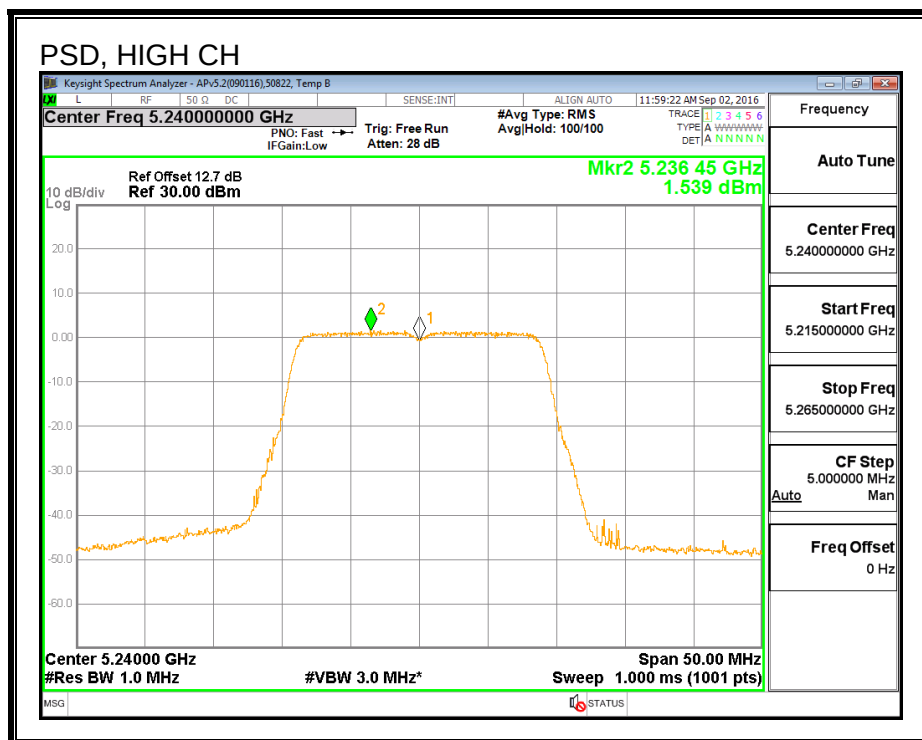
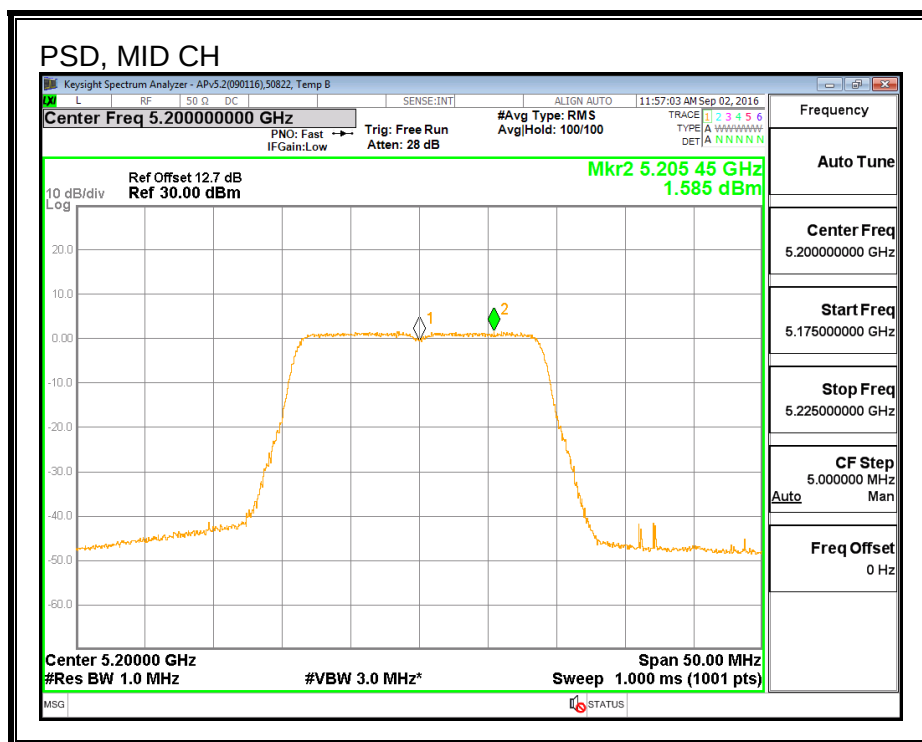
PSD, CHAIN 1





PSD, CHAIN 2





8.6.5. AVERAGE POWER (IC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	37289	Date:	9/16/16
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Average Power Results

Channel	Frequency (MHz)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	6.00	6.00	9.01
Mid	5200	5.99	5.94	8.98
High	5240	5.98	6.00	9.00

8.6.6. OUTPUT POWER AND PSD (IC)

LIMITS

IC RSS-247 (6.2.1) (1)

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 MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
6.70	4.90	5.89

The TX chains are correlated and the antenna gain is unequal among the chains. The directional gain is:

Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Correlated Chains Directional Gain (dBi)
6.70	4.90	8.86

RESULTS

ID:	37289	Date:	9/16/16
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Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.716	5.89	8.86
Mid	5200	17.681	5.89	8.86
High	5240	17.725	5.89	8.86

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	Max IC Power (dBm)	IC eirp PSD Limit (dBm)	Max IC PSD (dBm)
Low	5180	22.48	16.59	10.00	1.14
Mid	5200	22.48	16.59	10.00	1.14
High	5240	22.49	16.60	10.00	1.14

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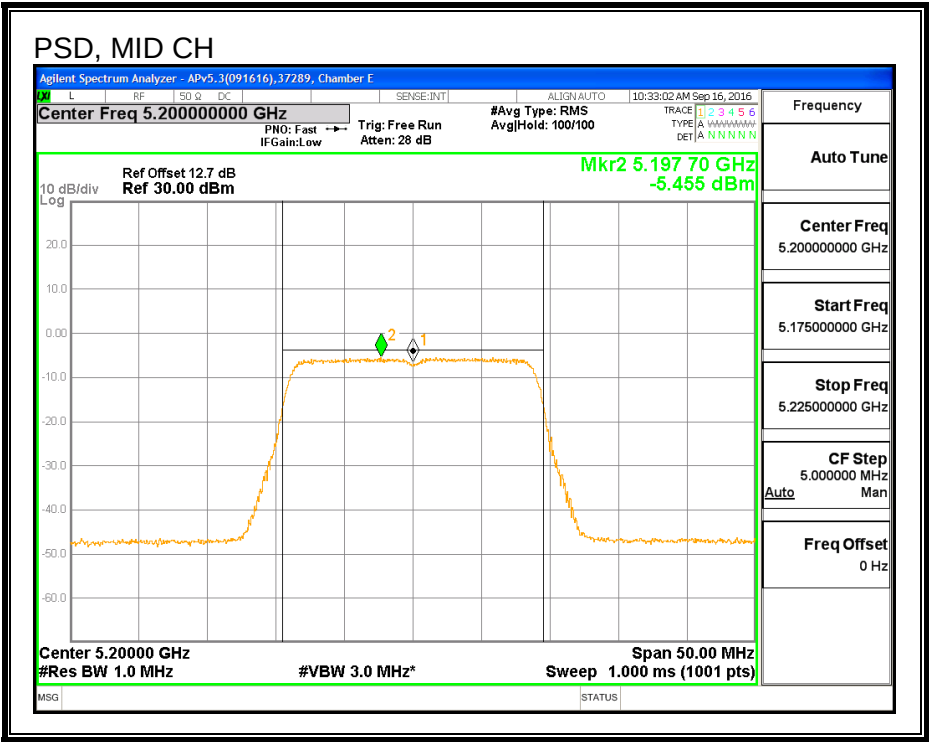
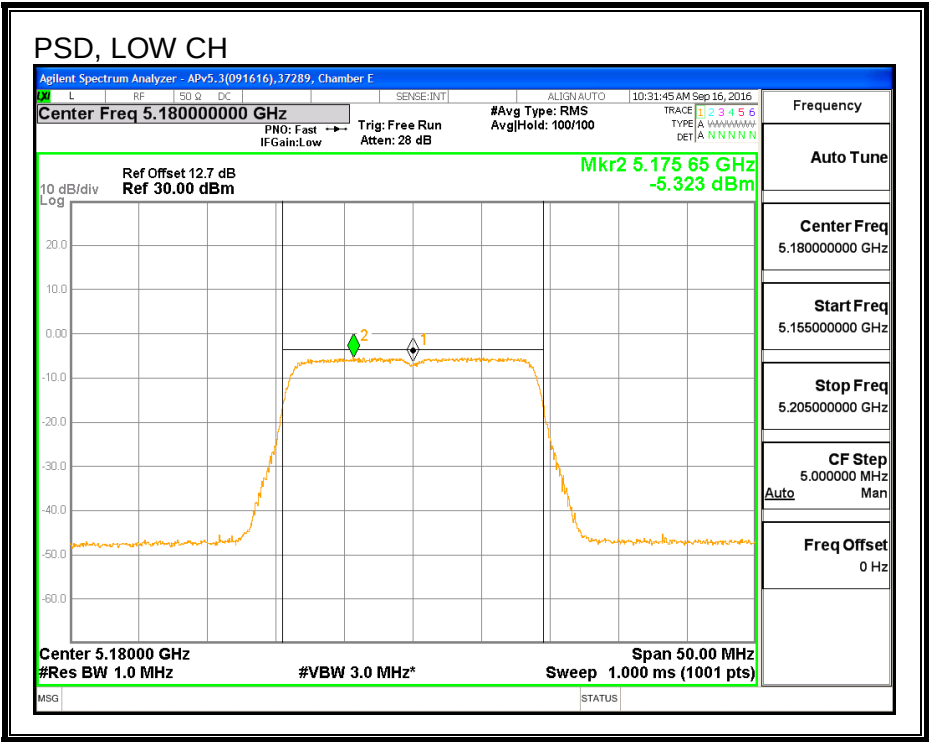
Output Power Results

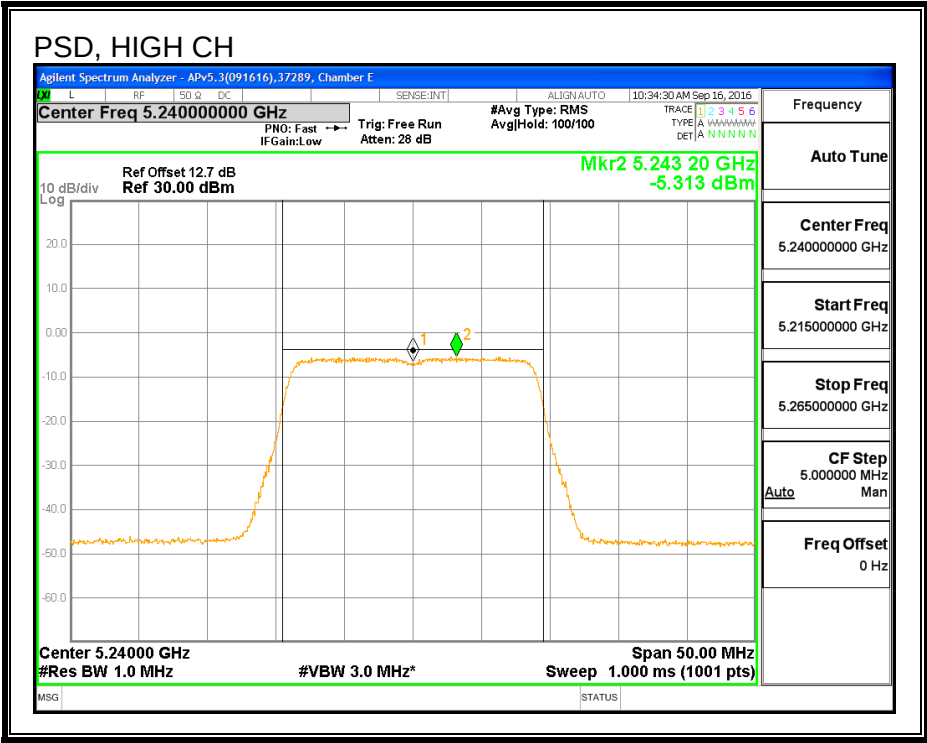
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	6.00	6.00	9.01	16.59	-7.58
Mid	5200	5.99	5.94	8.98	16.59	-7.61
High	5240	5.98	6.00	9.00	16.60	-7.59

PSD Results

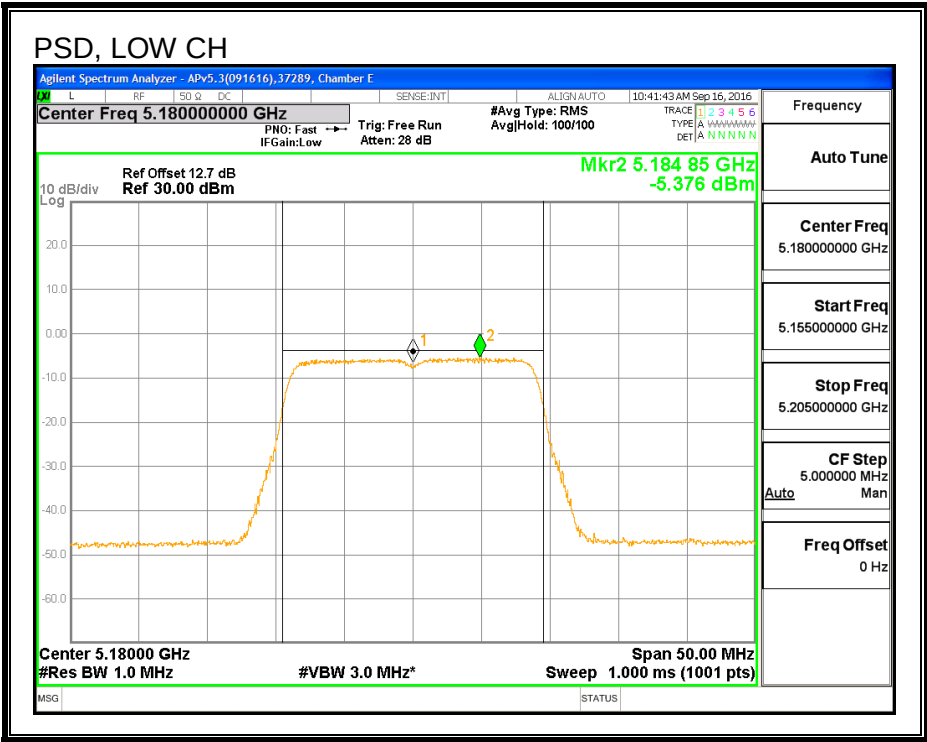
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-5.32	-5.38	-2.34	1.14	-3.48
Mid	5200	-5.46	-5.50	-2.47	1.14	-3.61
High	5240	-5.31	-5.50	-2.40	1.14	-3.54

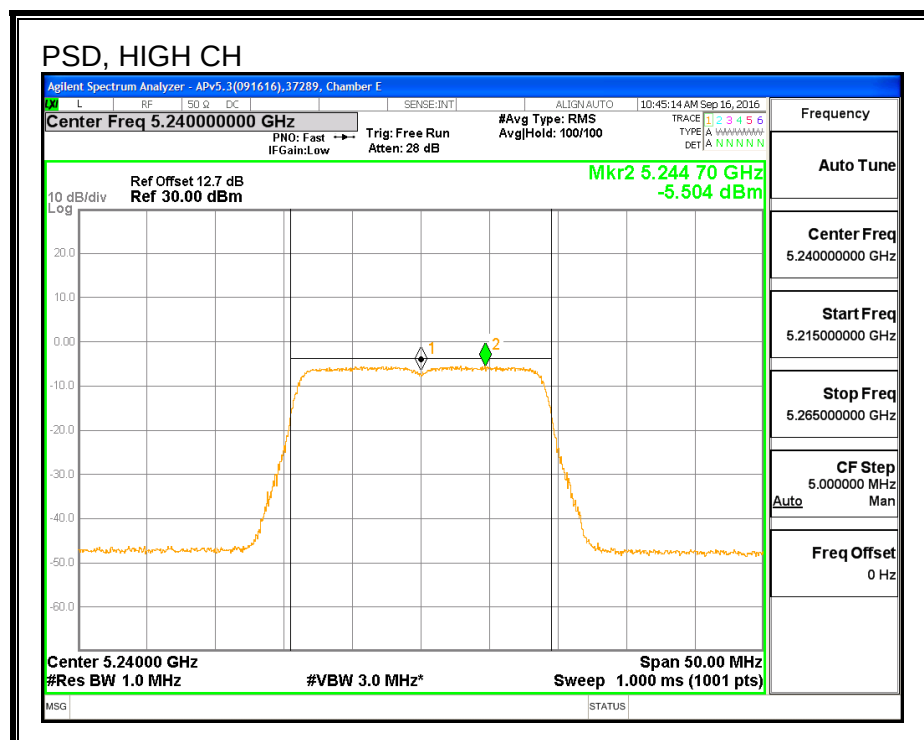
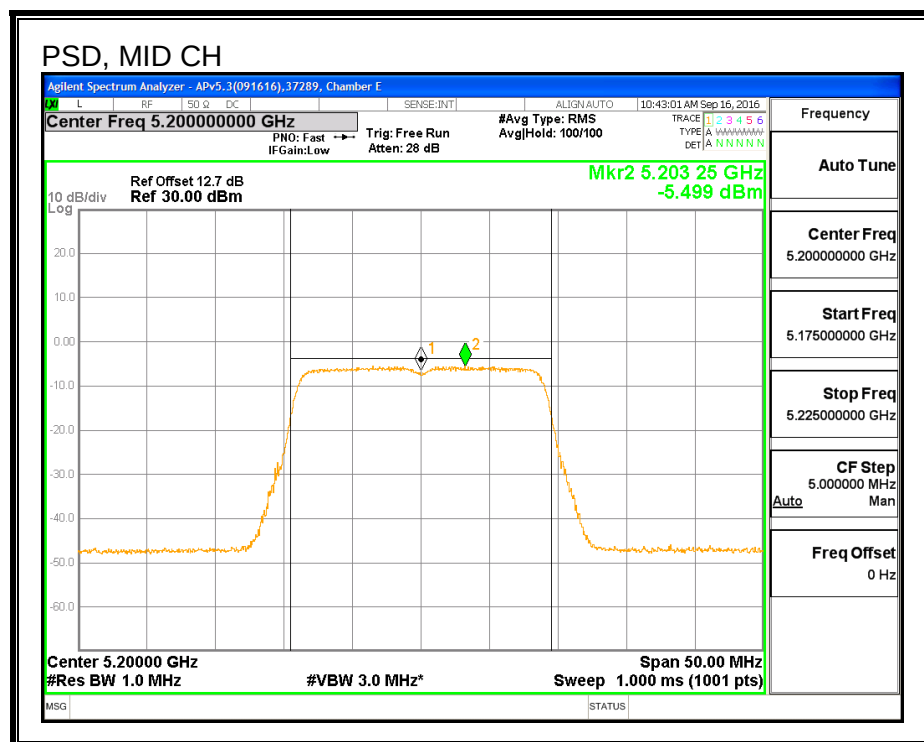
PSD, CHAIN 1





PSD, CHAIN 2





8.7. 802.11n HT20 2Tx (CHAIN 0 + CHAIN 1) STBC MODE IN THE 5.2 GHz BAND

8.7.1. 26 dB BANDWIDTH

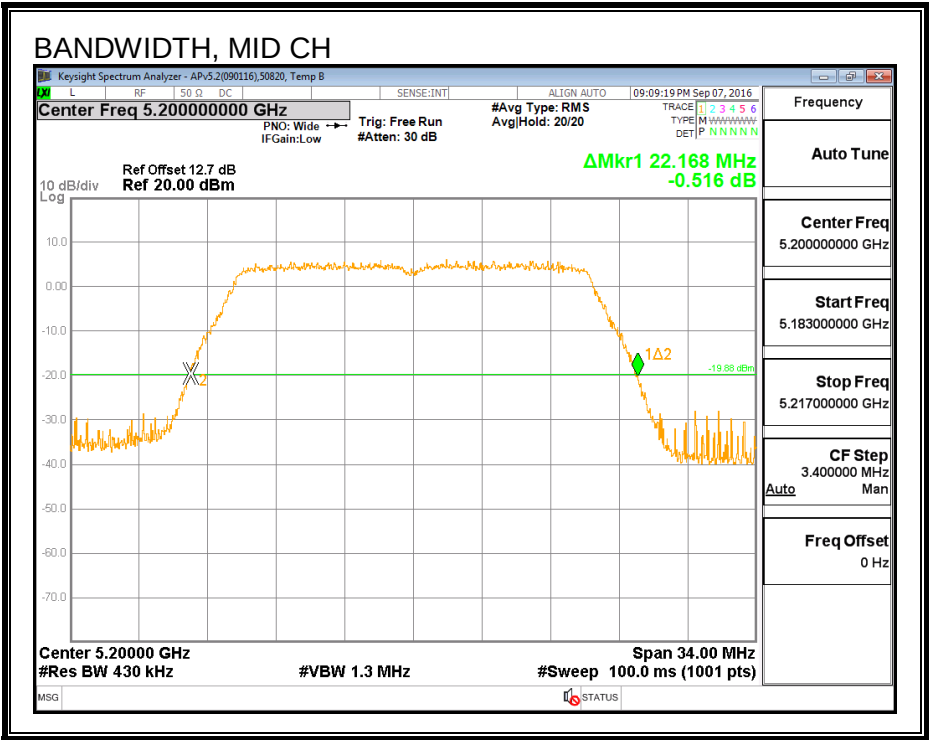
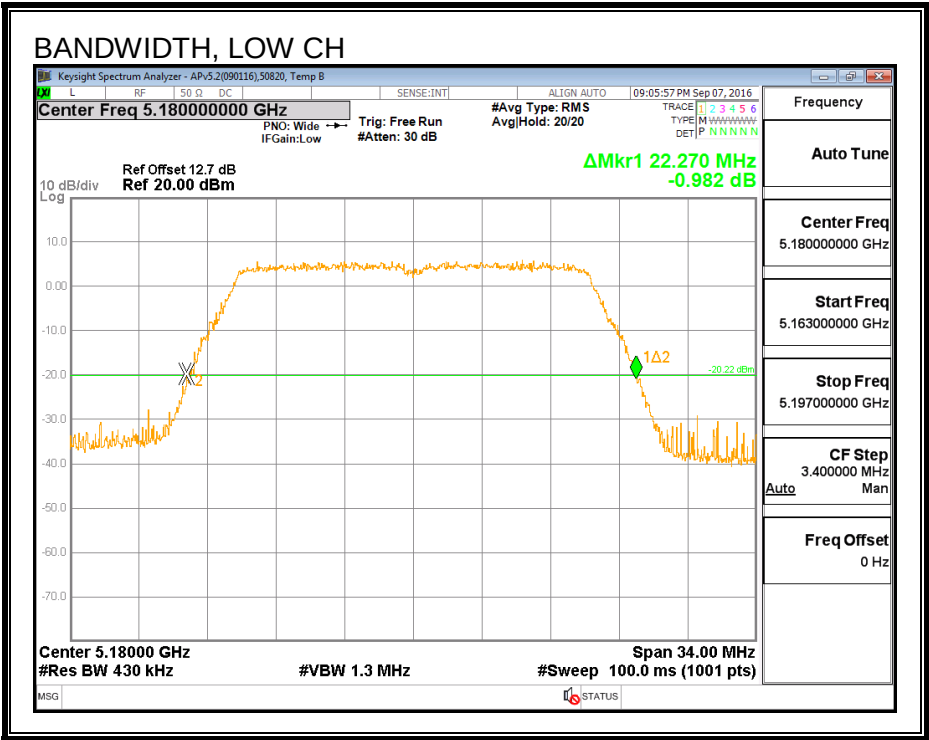
LIMITS

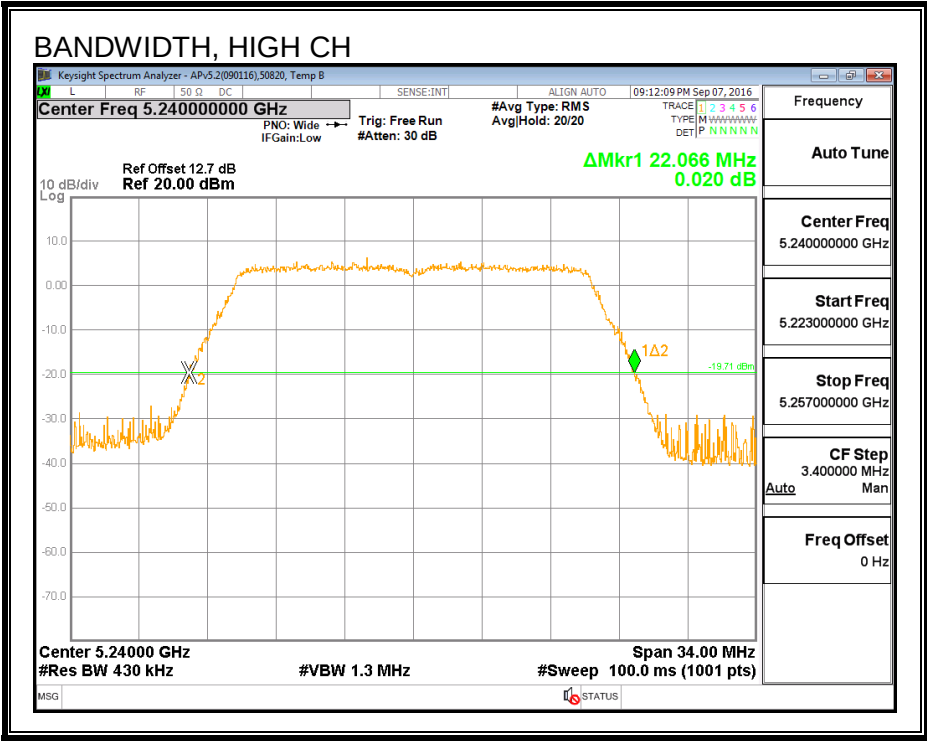
None; for reporting purposes only.

RESULTS

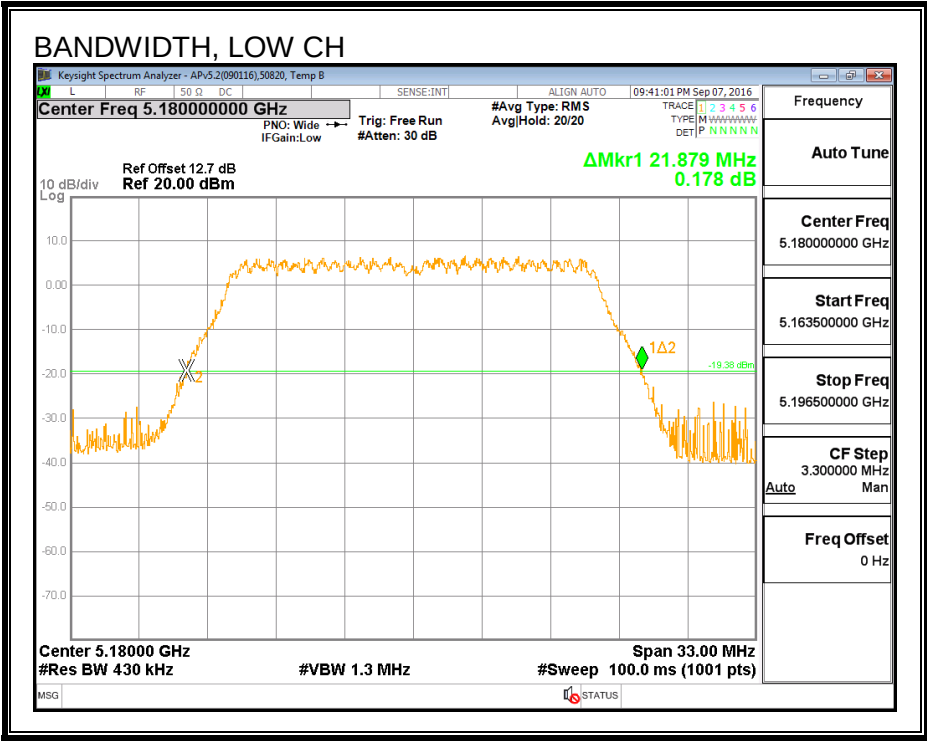
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5180	22.270	21.879
Mid	5200	22.168	21.780
High	5240	22.066	21.912

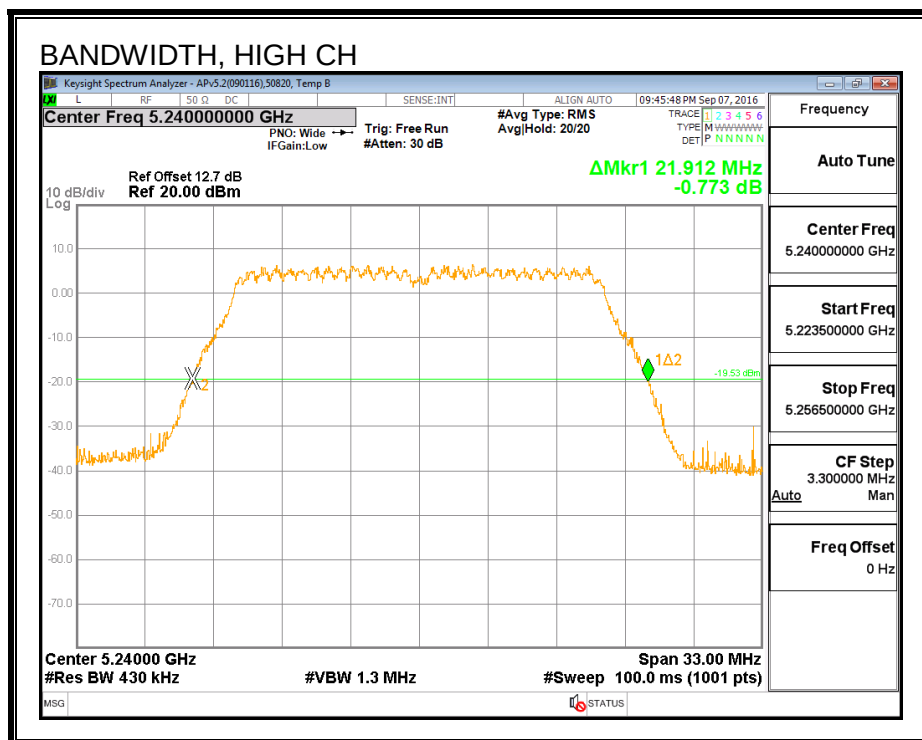
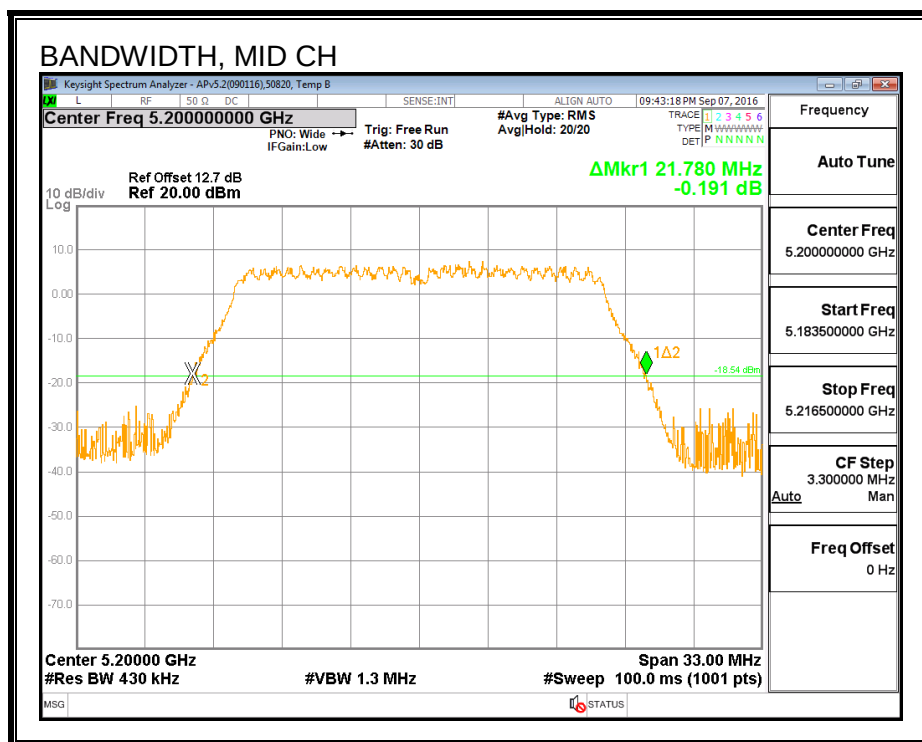
26 DB BANDWIDTH, CHAIN 0





26 DB BANDWIDTH, CHAIN 1





8.7.2. 99% BANDWIDTH

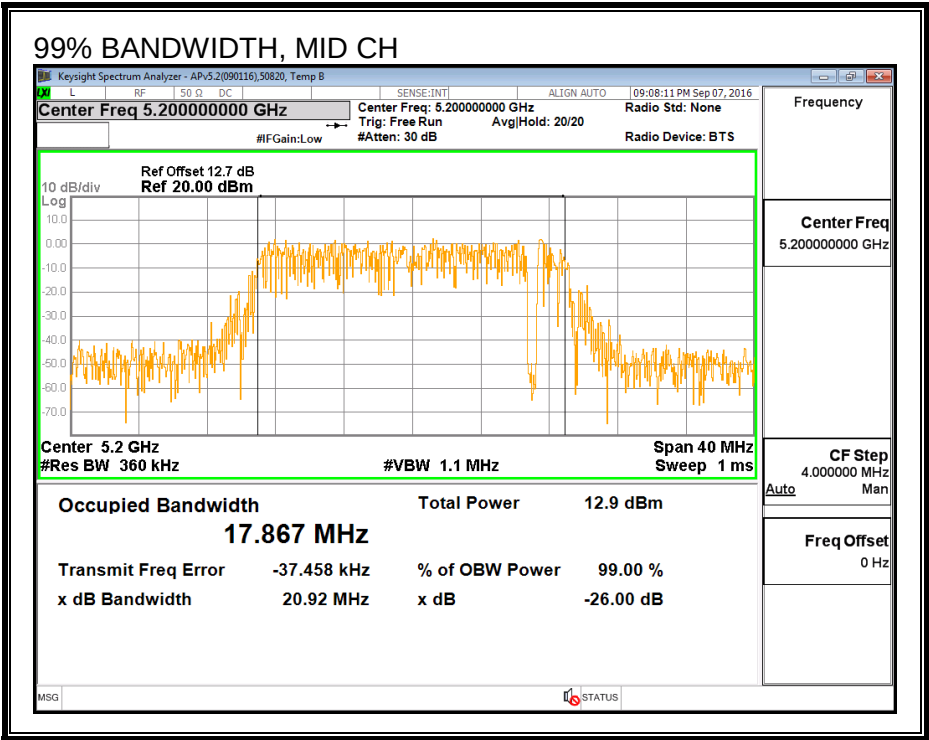
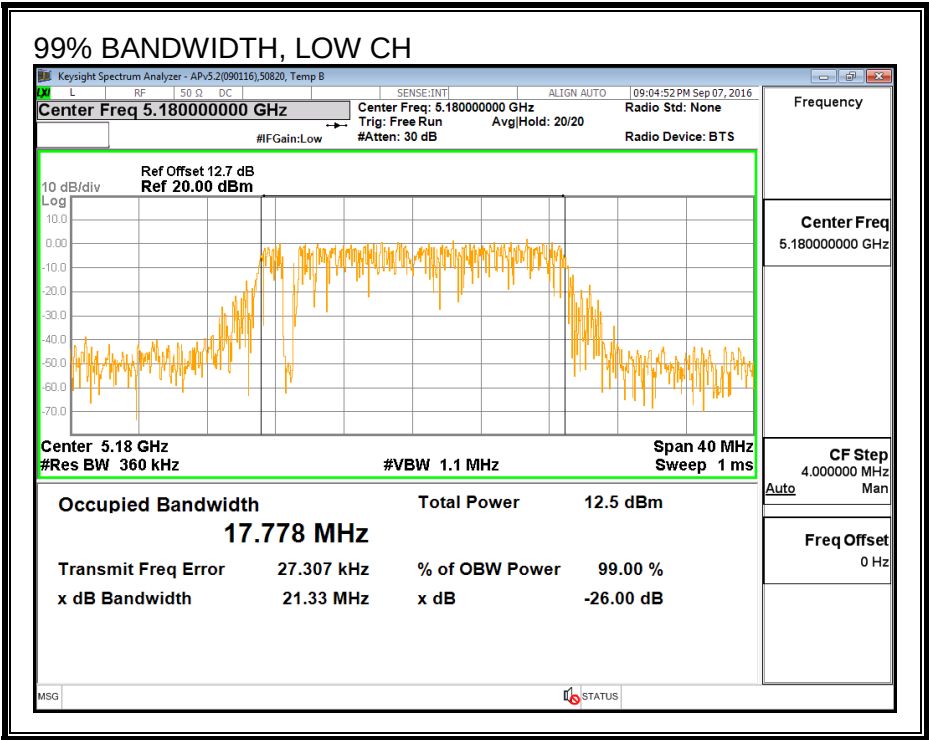
LIMITS

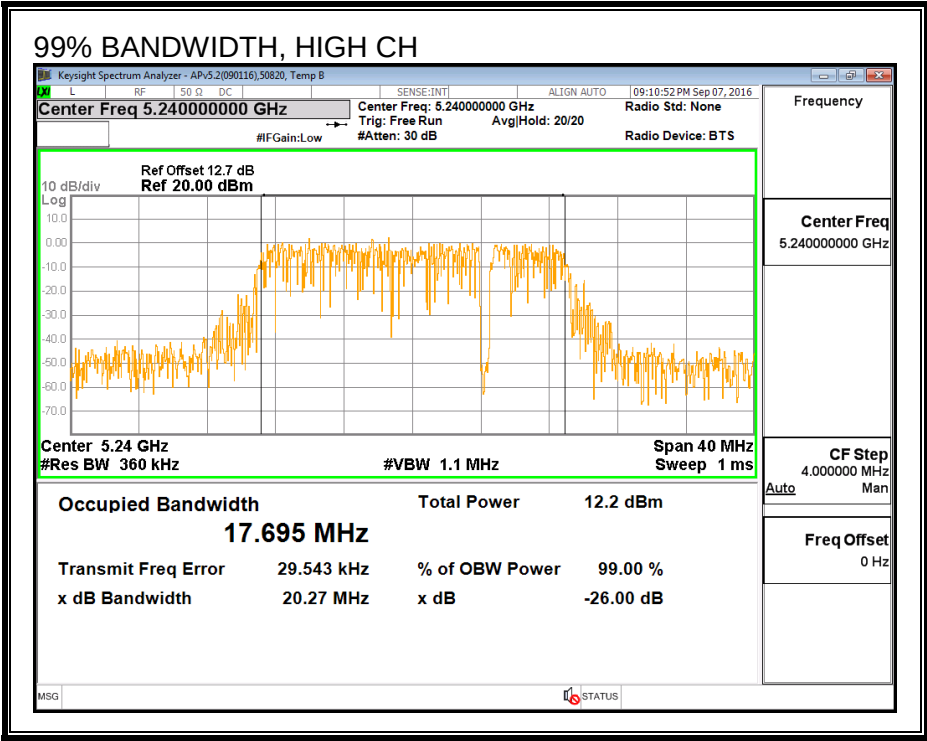
None; for reporting purposes only.

RESULTS

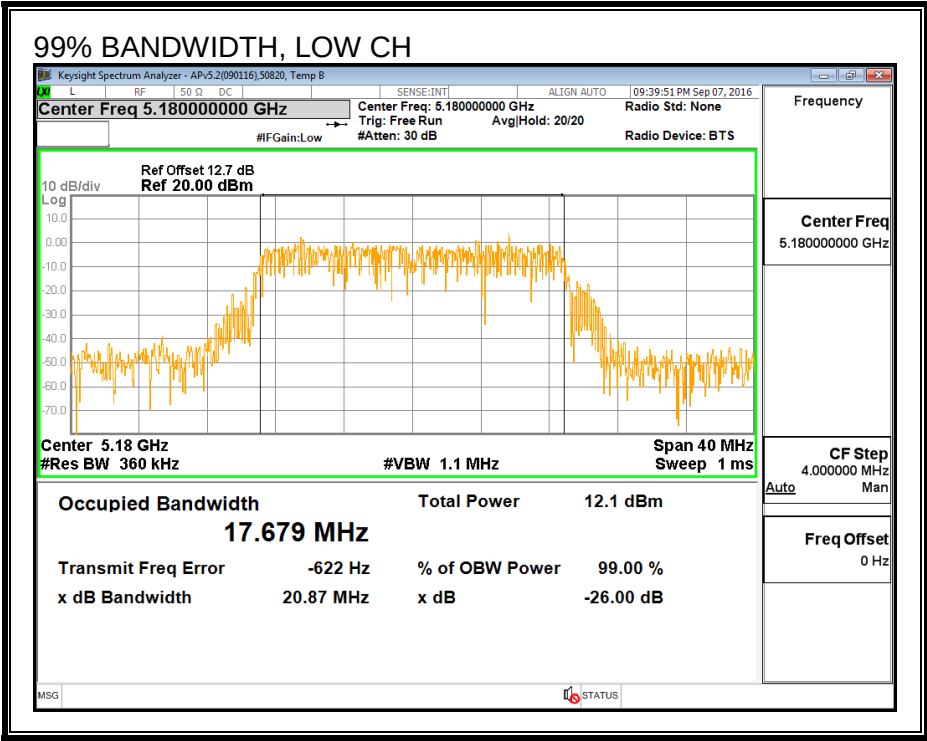
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5180	17.778	17.679
Mid	5200	17.867	17.895
High	5240	17.695	17.908

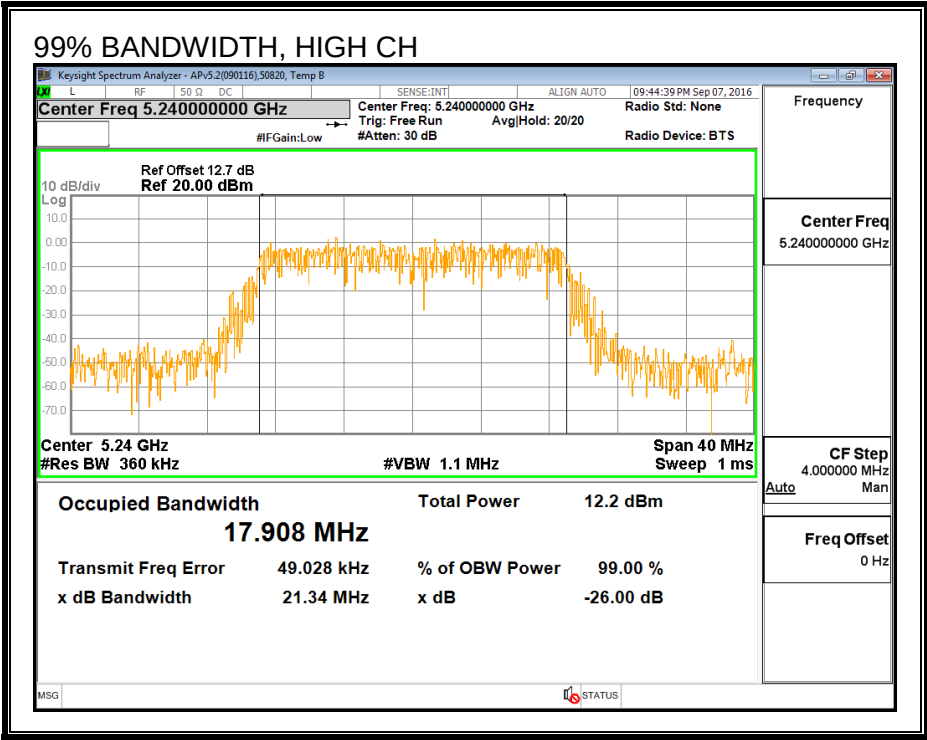
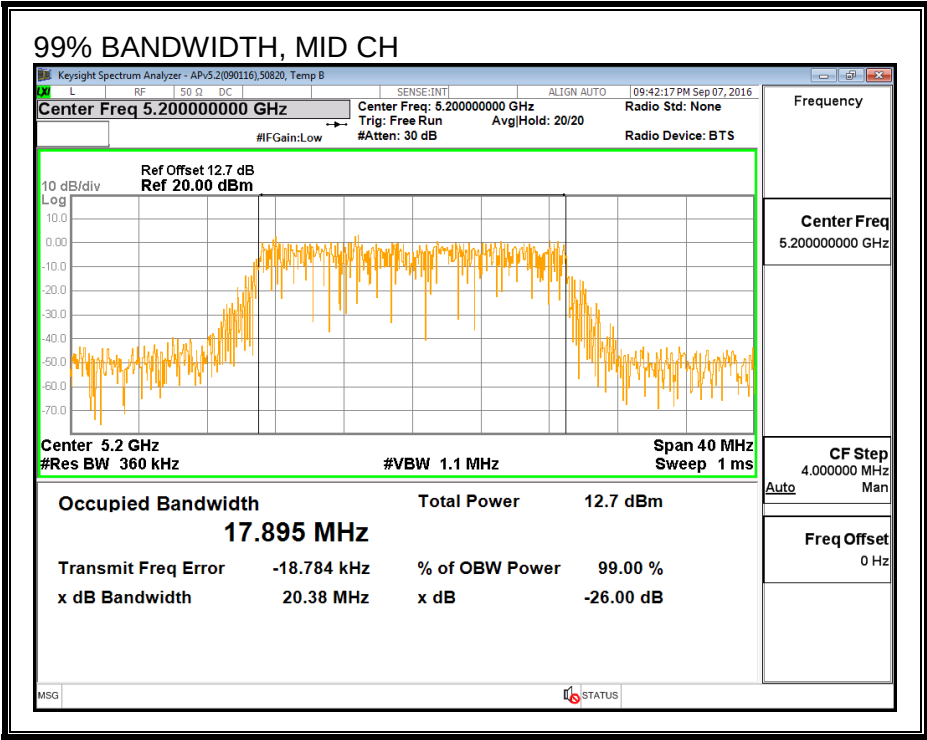
99% BANDWIDTH, CHAIN 0





99% BANDWIDTH, CHAIN 1





8.7.3. AVERAGE POWER (FCC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43573	Date:	9/7/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5180	13.22	13.13	16.19
Mid	5200	13.19	13.20	16.21
High	5240	13.20	13.23	16.23

8.7.4. OUTPUT POWER AND PSD (FCC)

LIMITS

FCC §15.407 (a) (1)

(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. 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 collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.80	6.70	5.49

RESULTS

ID:	43573	Date:	9/7/16
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Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	5.49	5.49	24.00	11.00
Mid	5200	5.49	5.49	24.00	11.00
High	5240	5.49	5.49	24.00	11.00

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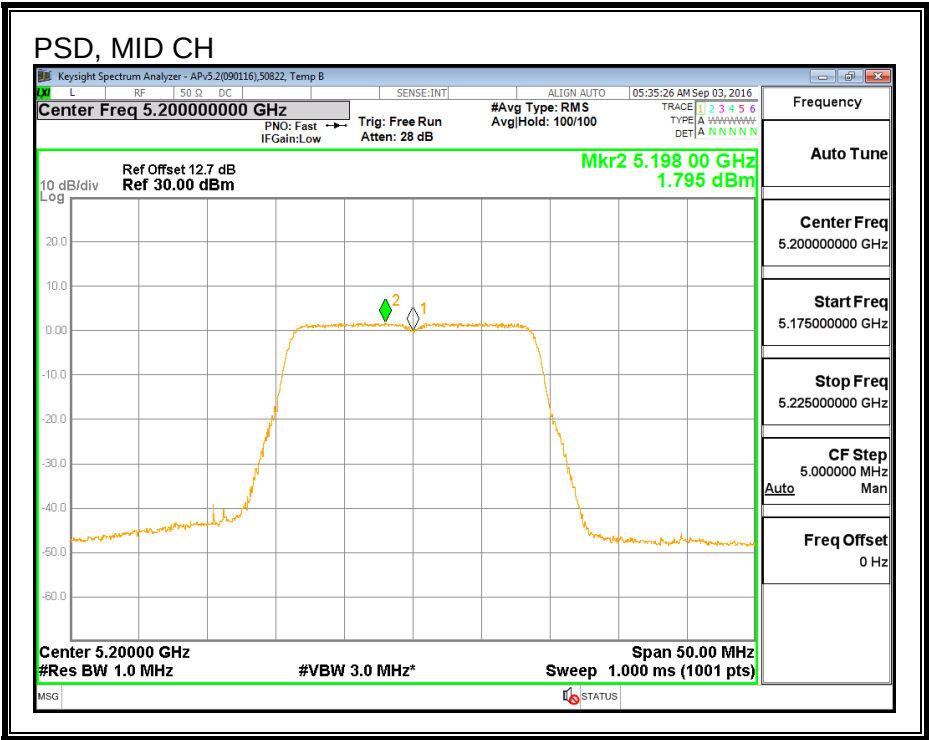
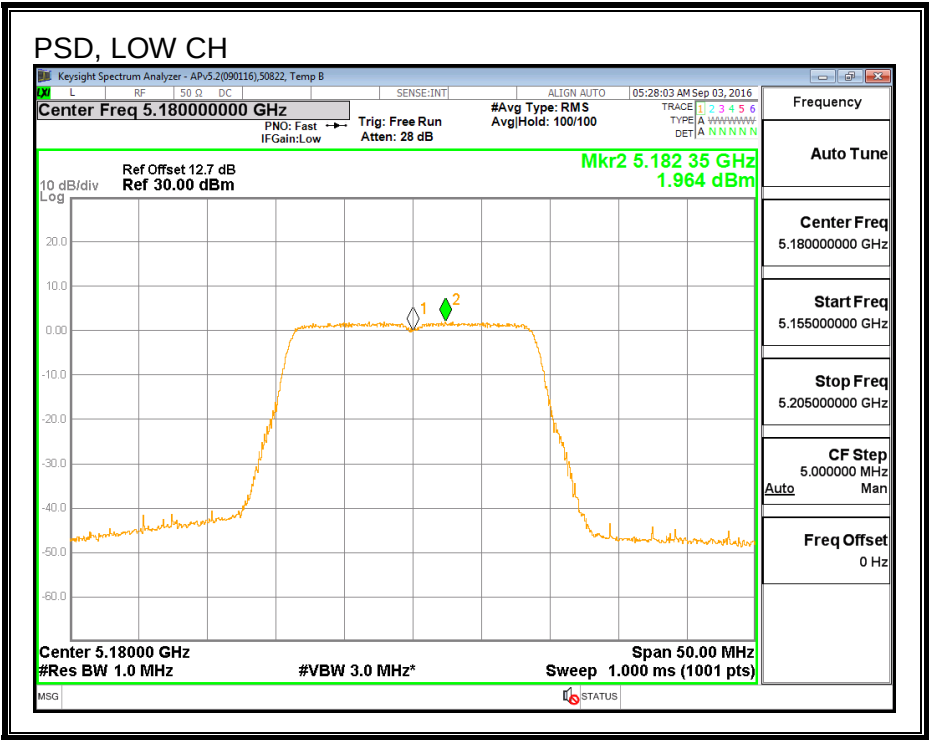
Output Power Results

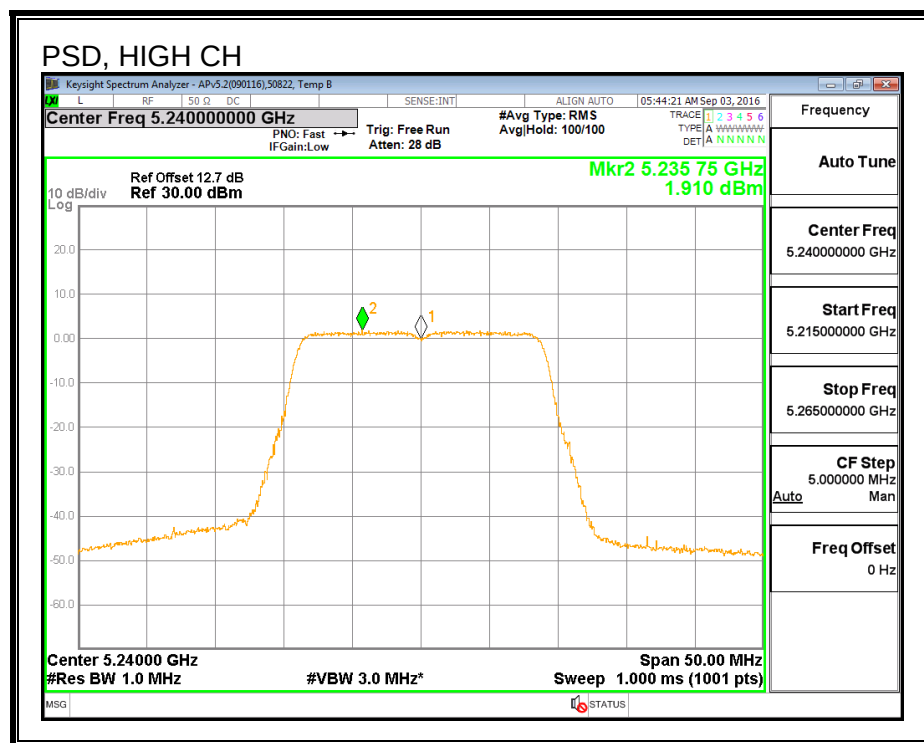
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.22	13.13	16.19	24.00	-7.81
Mid	5200	13.19	13.20	16.21	24.00	-7.79
High	5240	13.20	13.23	16.23	24.00	-7.77

PSD Results

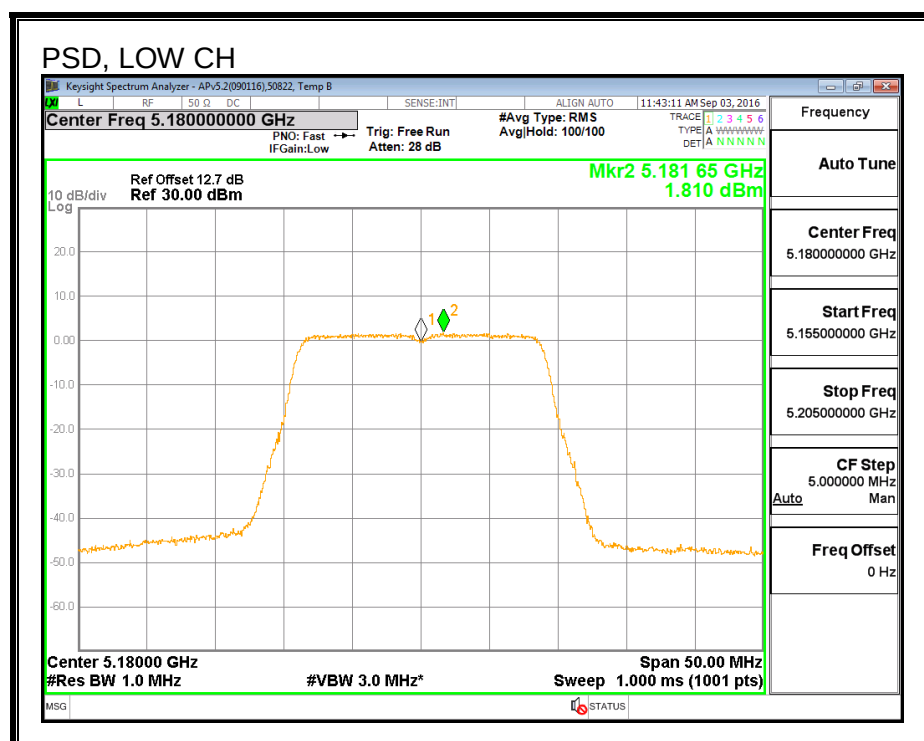
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	1.96	1.81	4.90	11.00	-6.10
Mid	5200	1.80	1.99	4.91	11.00	-6.09
High	5240	1.91	1.95	4.94	11.00	-6.06

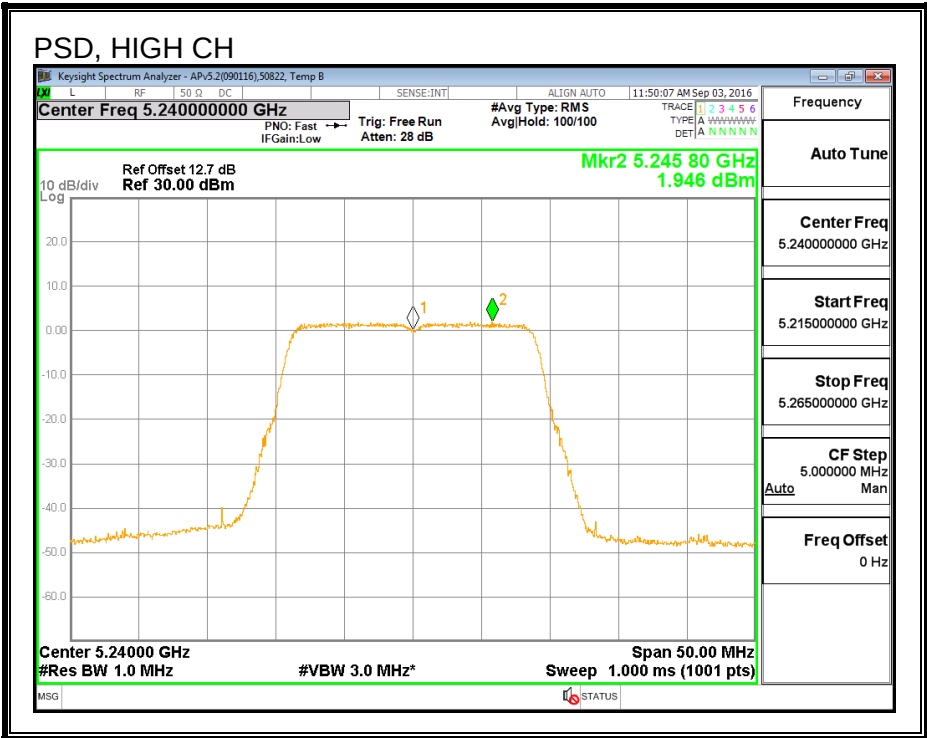
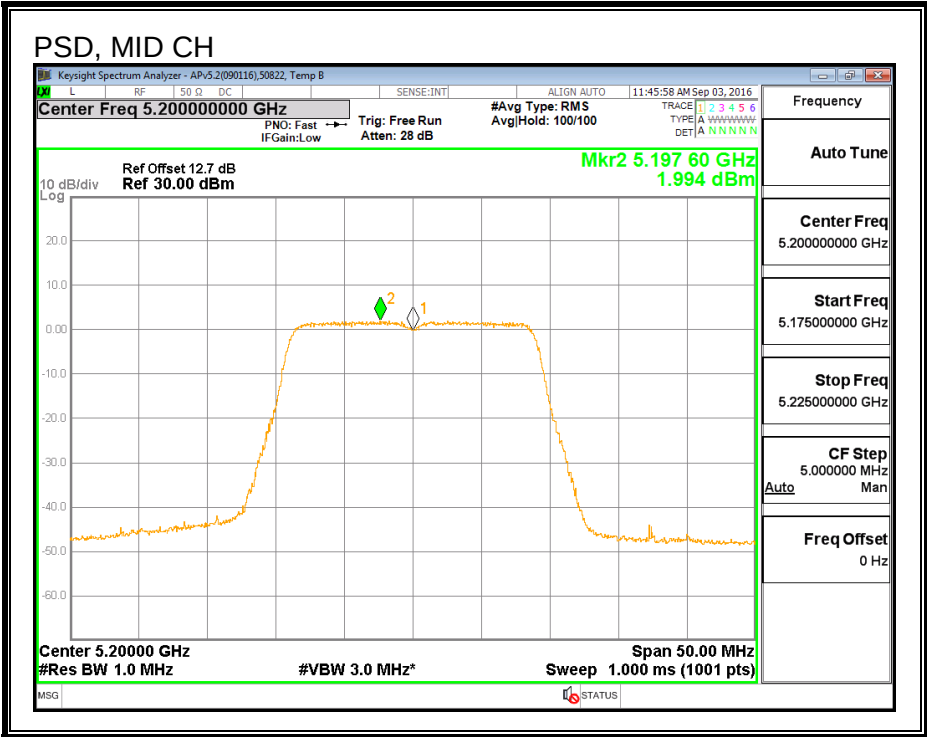
PSD, CHAIN 0





PSD, CHAIN 1





8.7.5. AVERAGE POWER (IC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	37289	Date:	9/16/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5180	8.00	7.98	11.00
Mid	5200	8.00	7.91	10.97
High	5240	7.97	7.89	10.94

8.7.6. OUTPUT POWER AND PSD (IC)

LIMITS

IC RSS-247 (6.2.1) (1)

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 MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0	Chain 1	Uncorrelated Chains
Gain (dBi)	Gain (dBi)	Directional Gain (dBi)
3.80	6.70	5.49

RESULTS

ID:	37289	Date:	9/16/16
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Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.679	5.49	5.49
Mid	5200	17.867	5.49	5.49
High	5240	17.695	5.49	5.49

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	Max IC Power (dBm)	IC eirp PSD Limit (dBm)	Max IC PSD (dBm)
Low	5180	22.47	16.98	10.00	4.51
Mid	5200	22.52	17.03	10.00	4.51
High	5240	22.48	16.99	10.00	4.51

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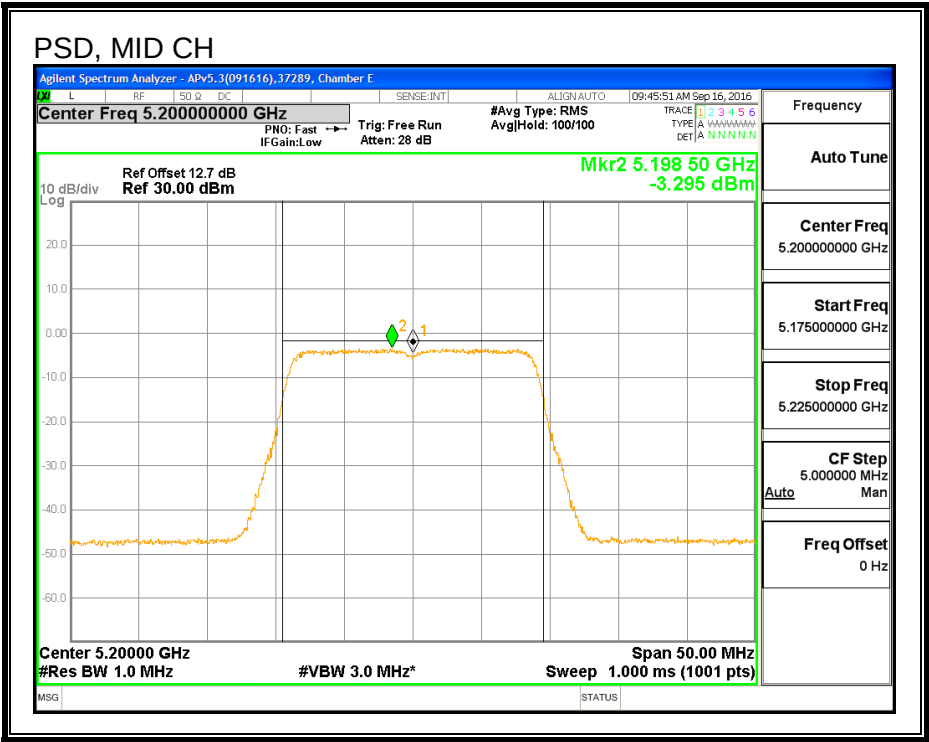
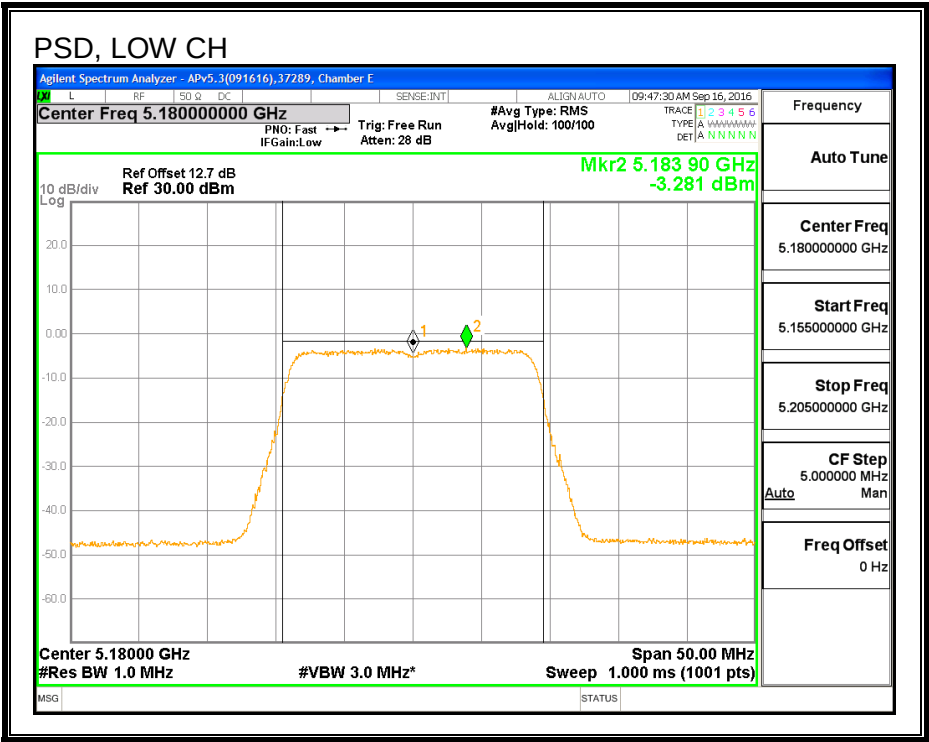
Output Power Results

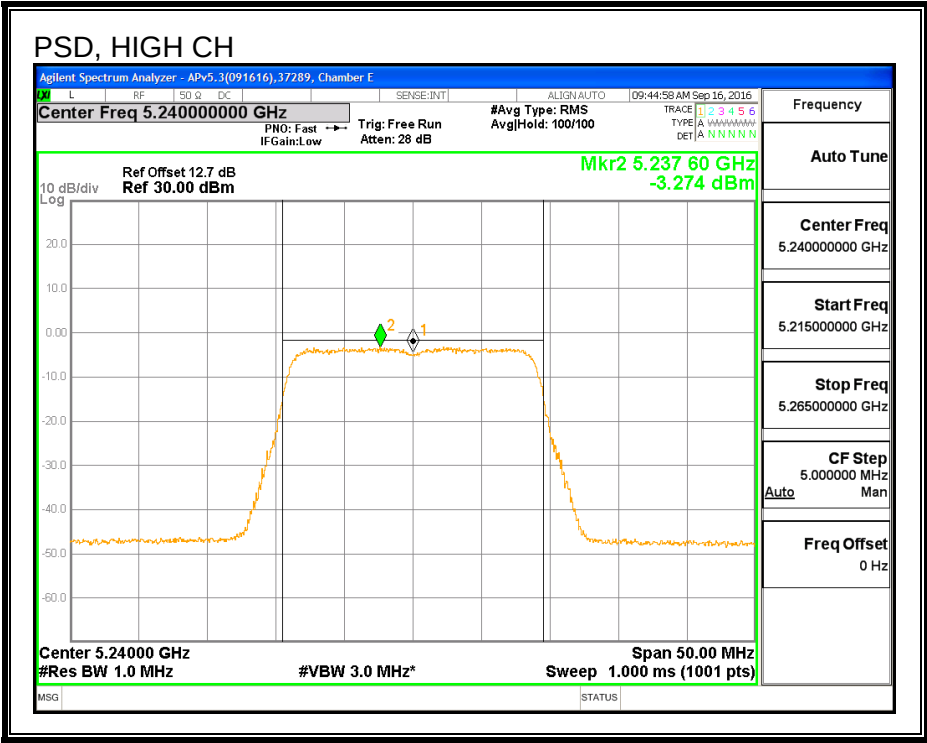
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	8.00	7.98	11.00	16.98	-5.98
Mid	5200	8.00	7.91	10.97	17.03	-6.06
High	5240	7.97	7.89	10.94	16.99	-6.05

PSD Results

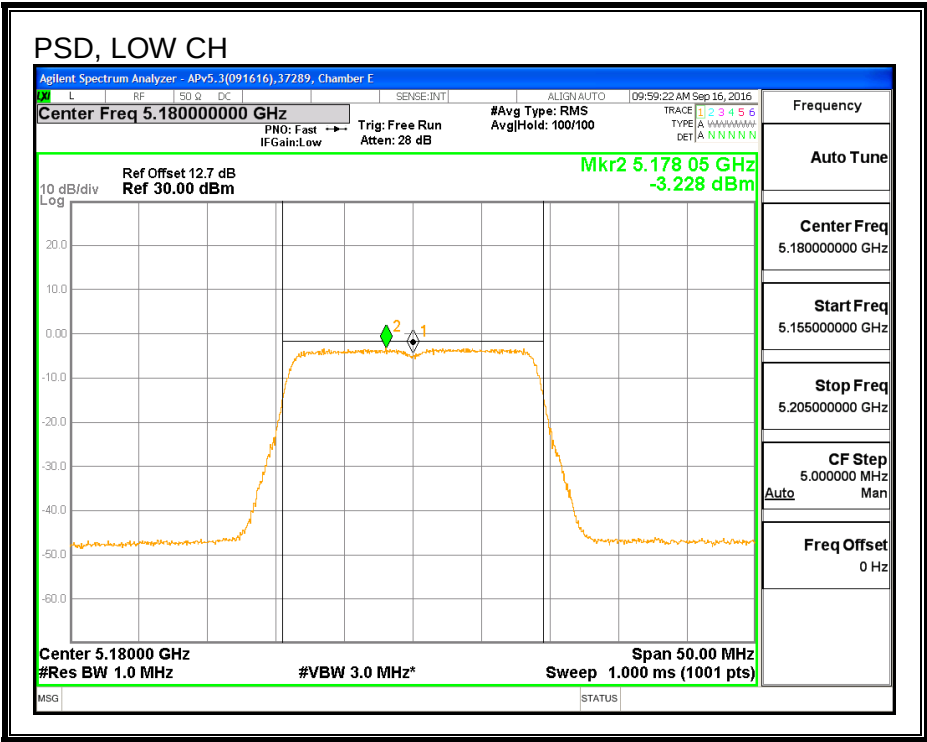
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 1 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-3.28	-3.23	-0.24	4.51	-4.75
Mid	5200	-3.30	-3.61	-0.44	4.51	-4.95
High	5240	-3.27	-3.61	-0.43	4.51	-4.94

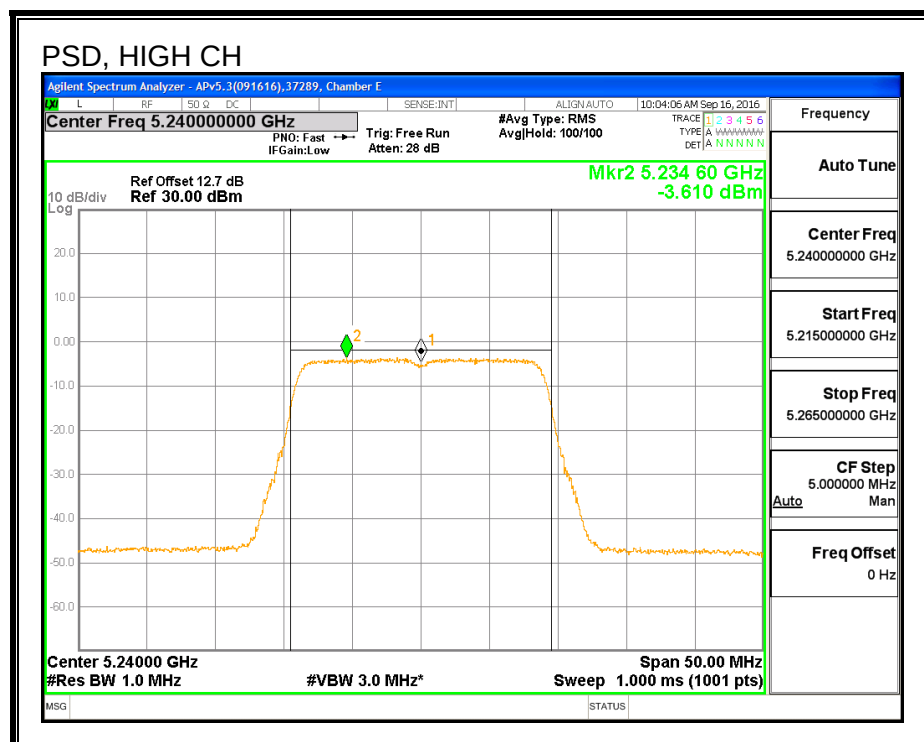
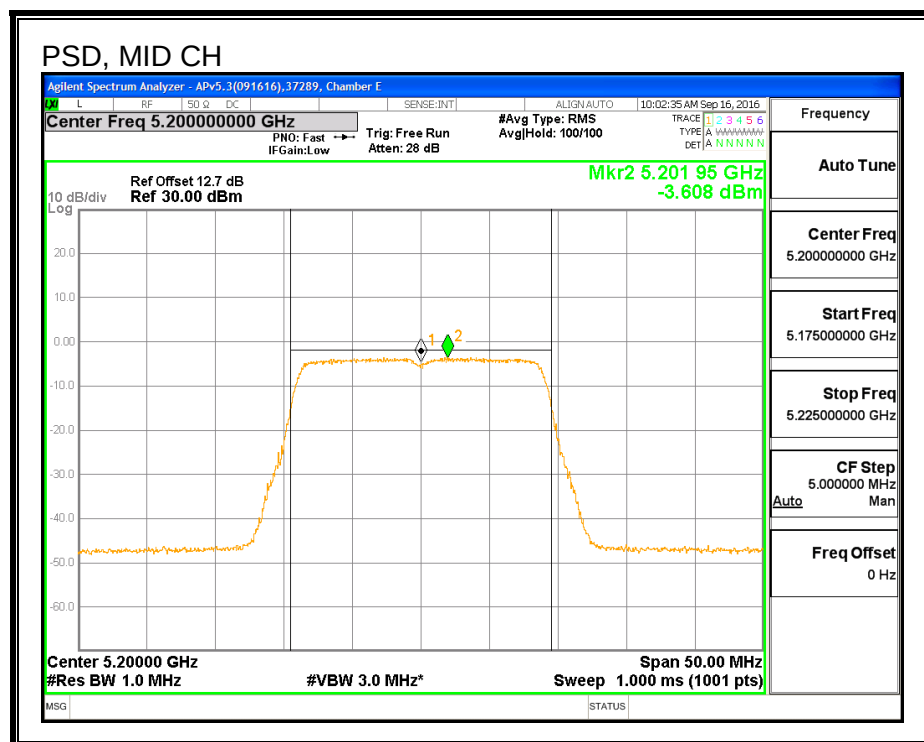
PSD, CHAIN 0





PSD, CHAIN 1





8.8. 802.11n HT20 2Tx (CHAIN 0 + CHAIN 2) STBC MODE IN THE 5.2 GHz BAND

8.8.1. 26 dB BANDWIDTH

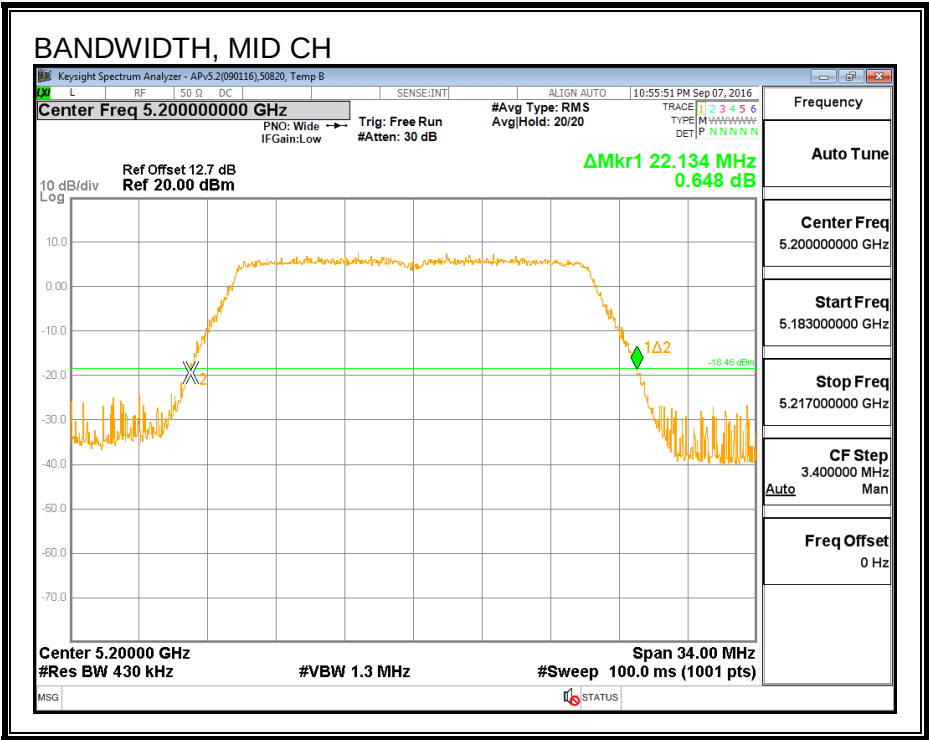
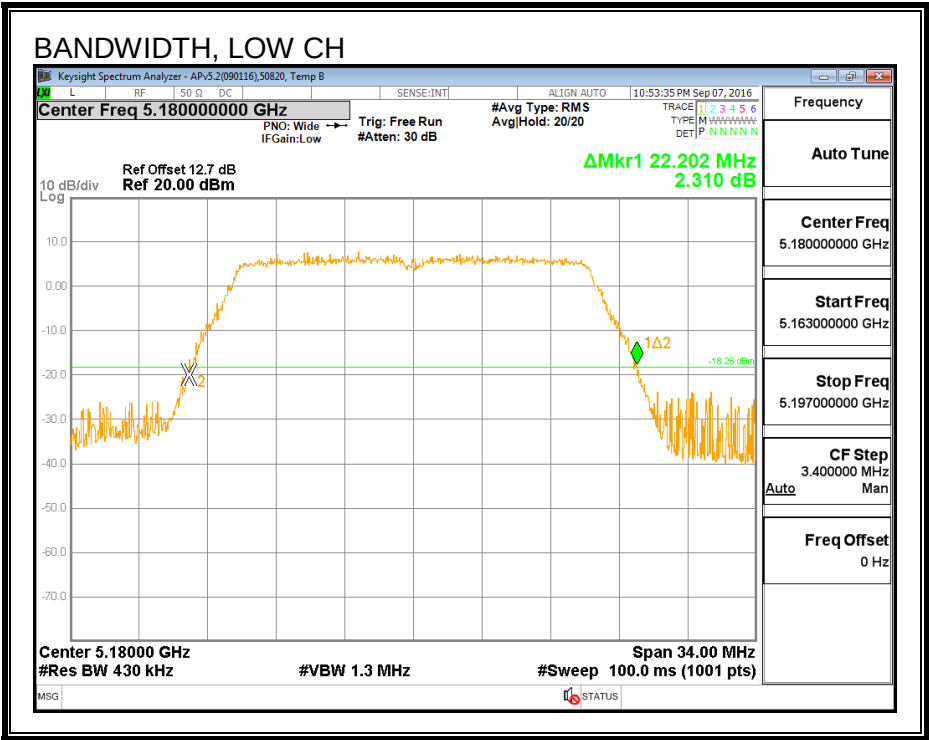
LIMITS

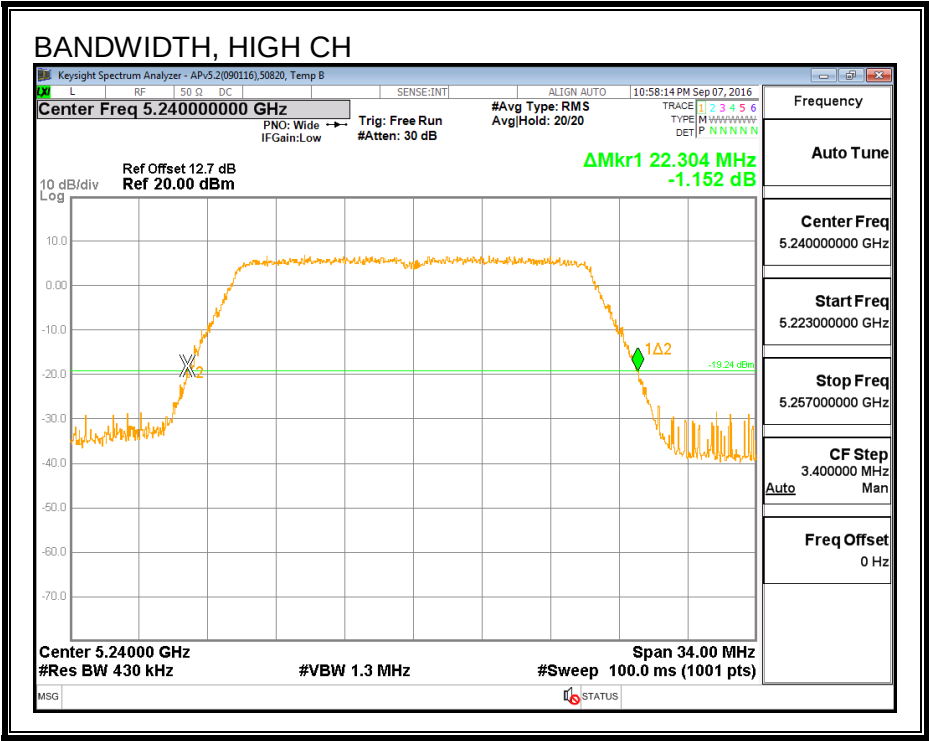
None; for reporting purposes only.

RESULTS

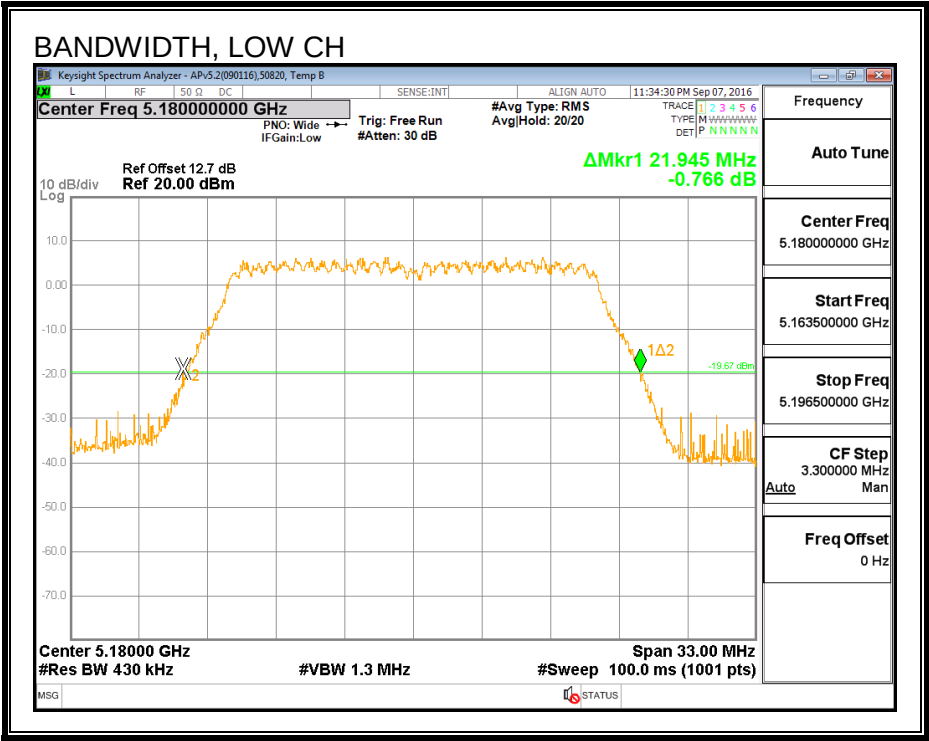
Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 2 (MHz)
Low	5180	22.202	21.945
Mid	5200	22.134	21.813
High	5240	22.304	21.912

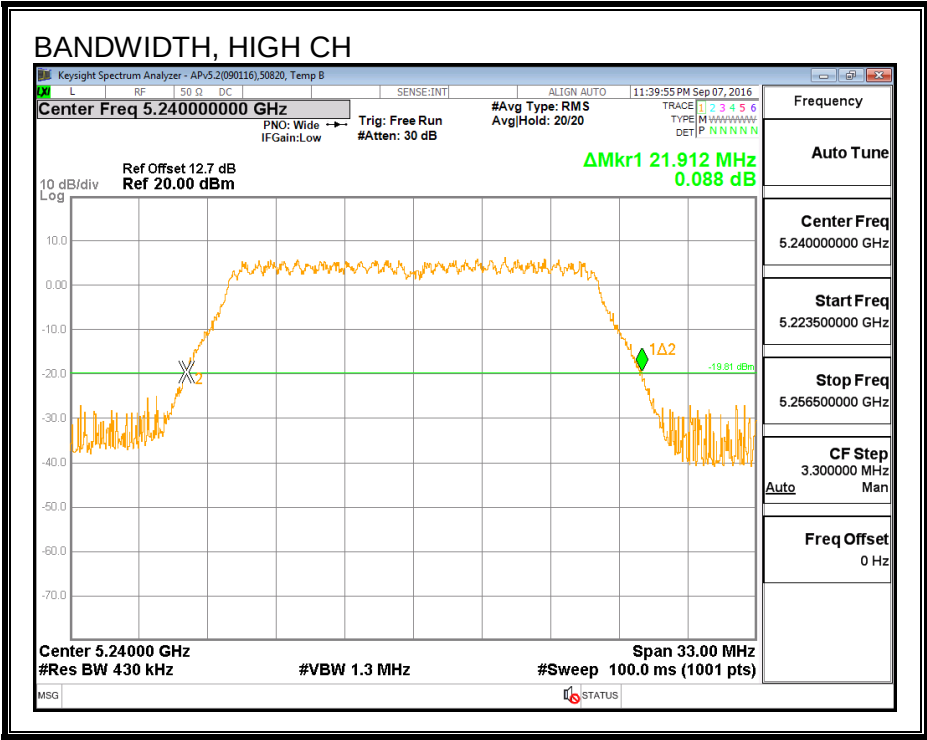
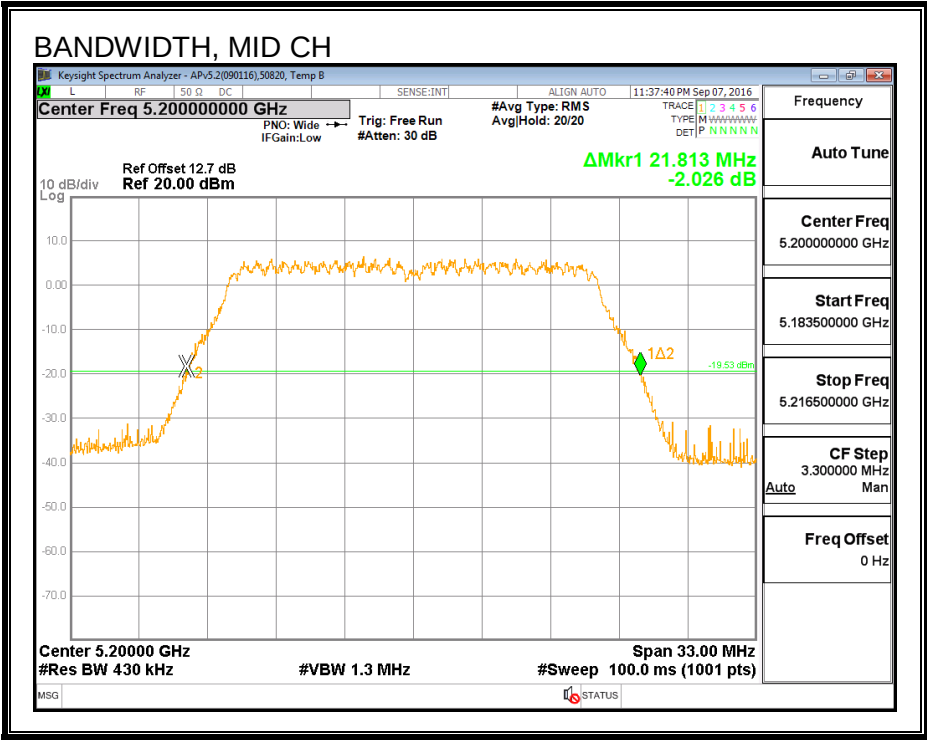
26 DB BANDWIDTH, CHAIN 0





26 DB BANDWIDTH, CHAIN 2





8.8.2. 99% BANDWIDTH

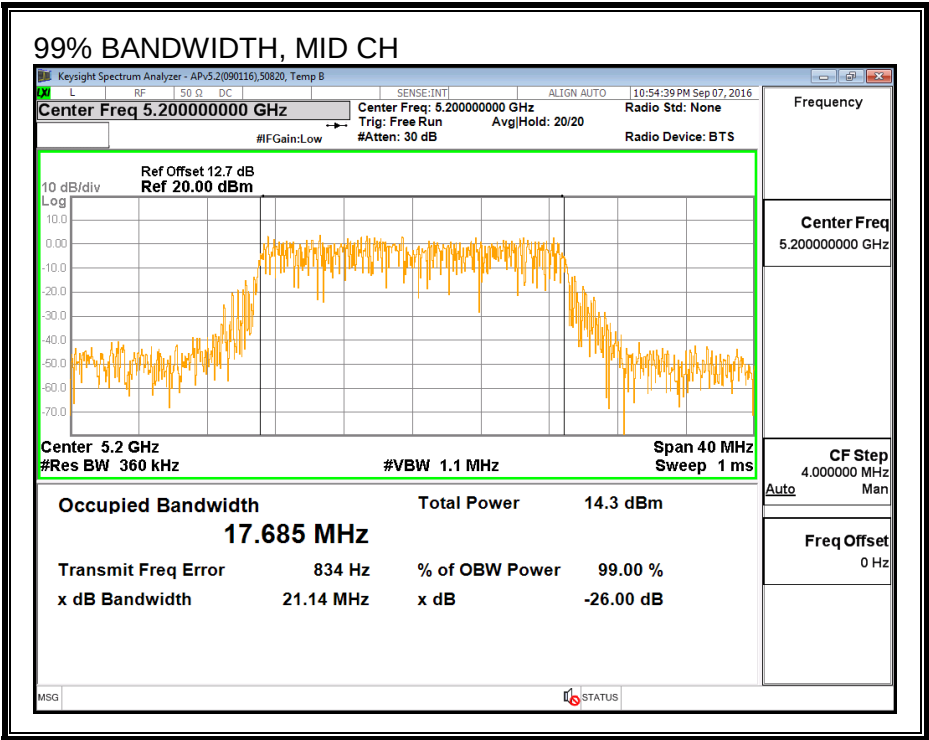
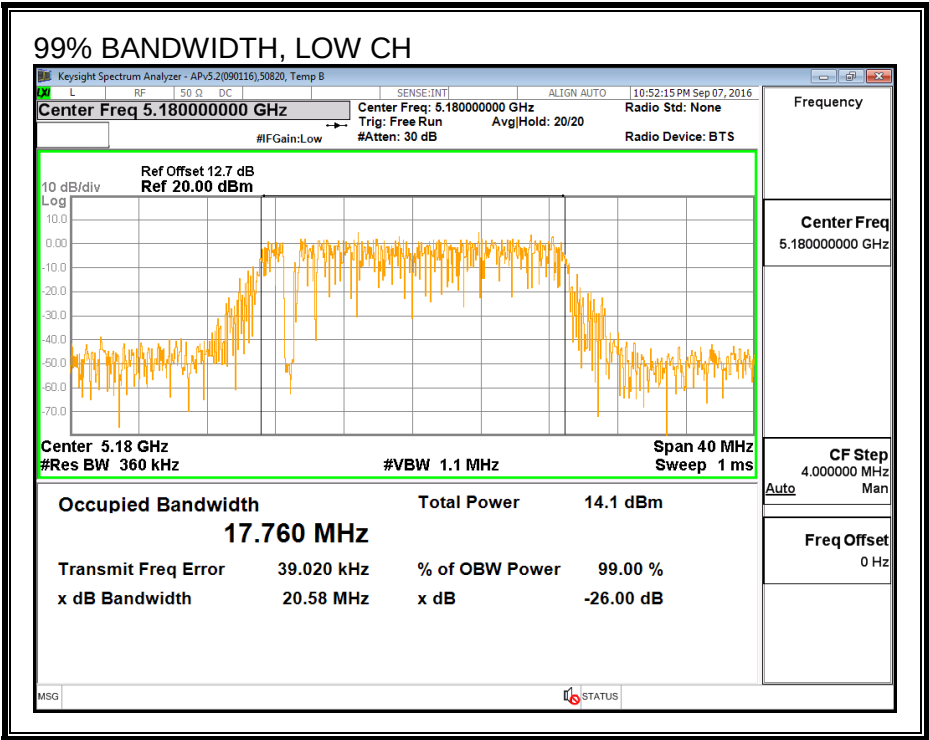
LIMITS

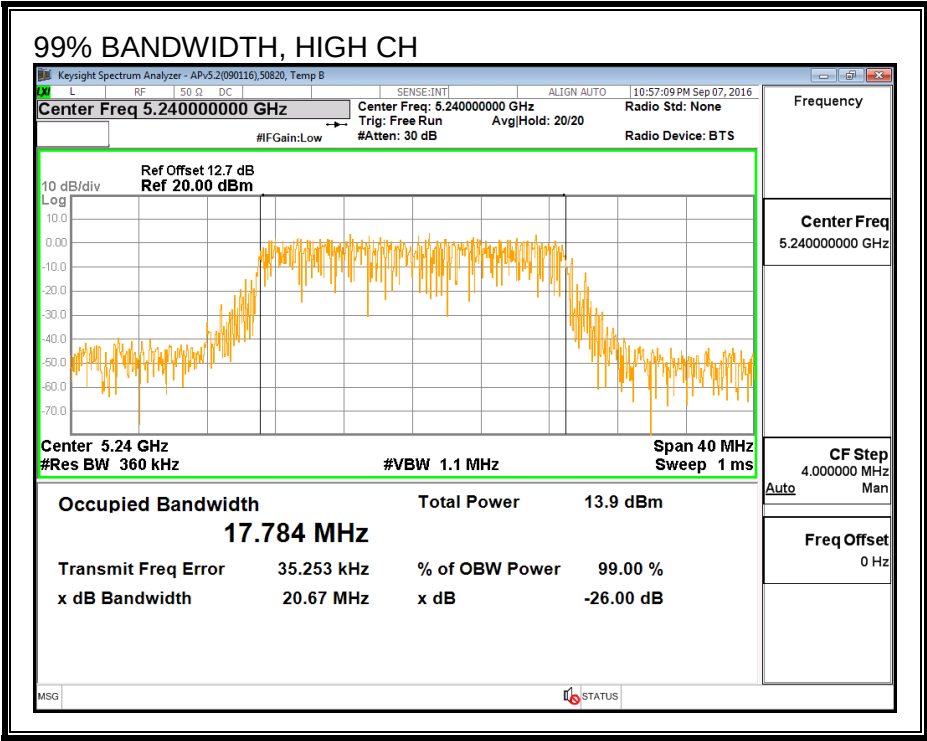
None; for reporting purposes only.

RESULTS

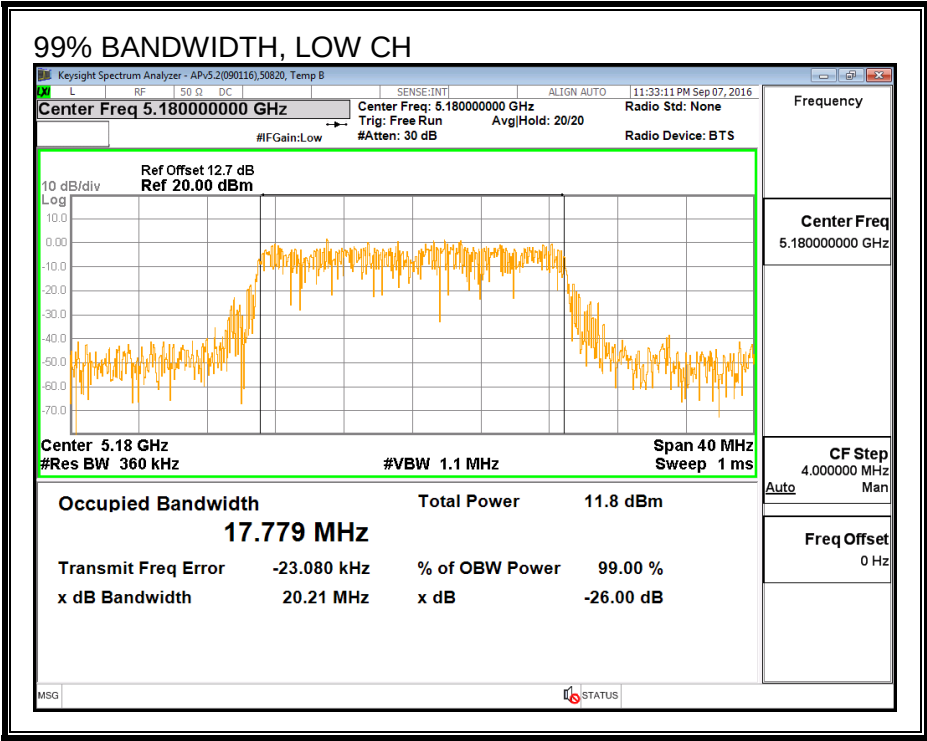
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 2 (MHz)
Low	5180	17.760	17.779
Mid	5200	17.685	17.761
High	5240	17.784	17.711

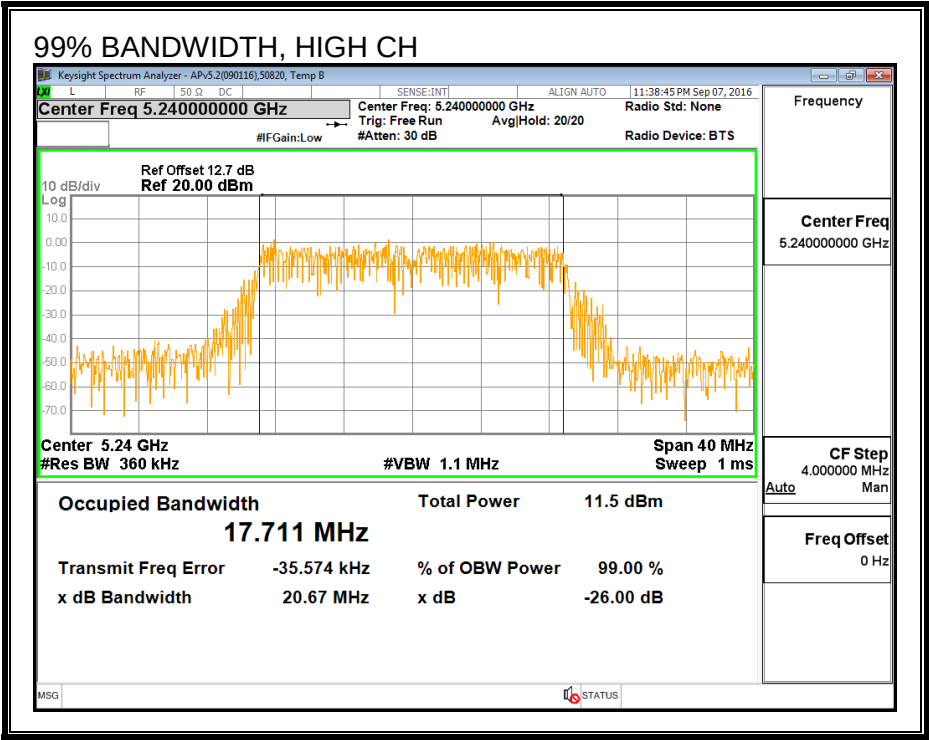
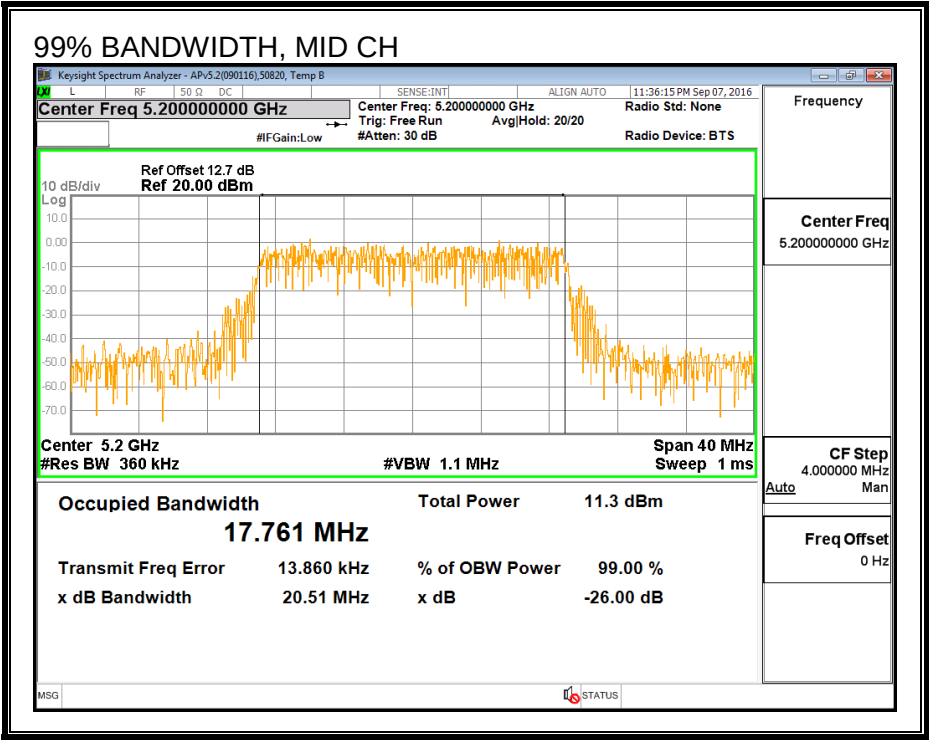
99% BANDWIDTH, CHAIN 0





99% BANDWIDTH, CHAIN 2





8.8.3. AVERAGE POWER (FCC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43573	Date:	9/7/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	13.18	13.20	16.20
Mid	5200	13.15	13.18	16.18
High	5240	13.23	13.16	16.21

8.8.4. OUTPUT POWER AND PSD (FCC)

LIMITS

FCC §15.407 (a) (1)

(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. 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. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.80	4.90	4.38

RESULTS

ID:	43573	Date:	9/7/16
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Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	4.38	4.38	24.00	11.00
Mid	5200	4.38	4.38	24.00	11.00
High	5240	4.38	4.38	24.00	11.00

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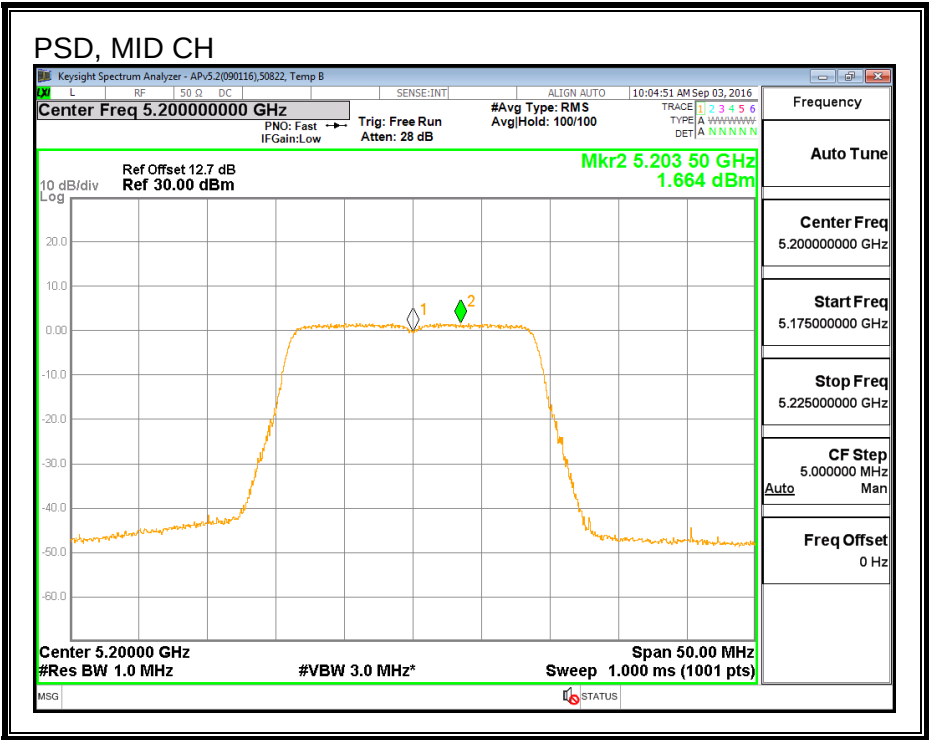
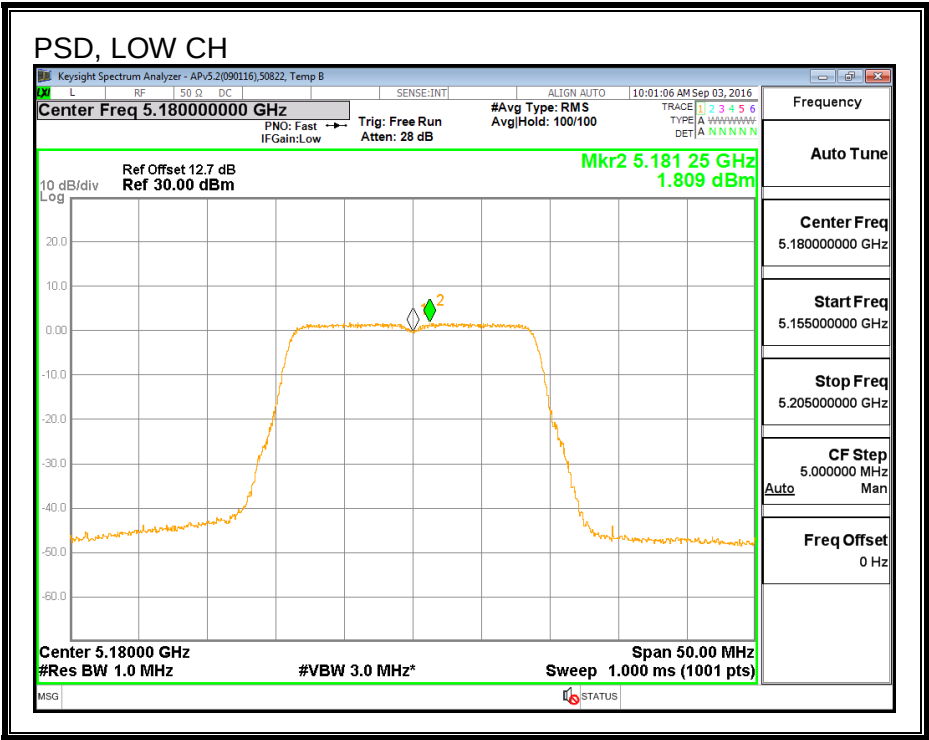
Output Power Results

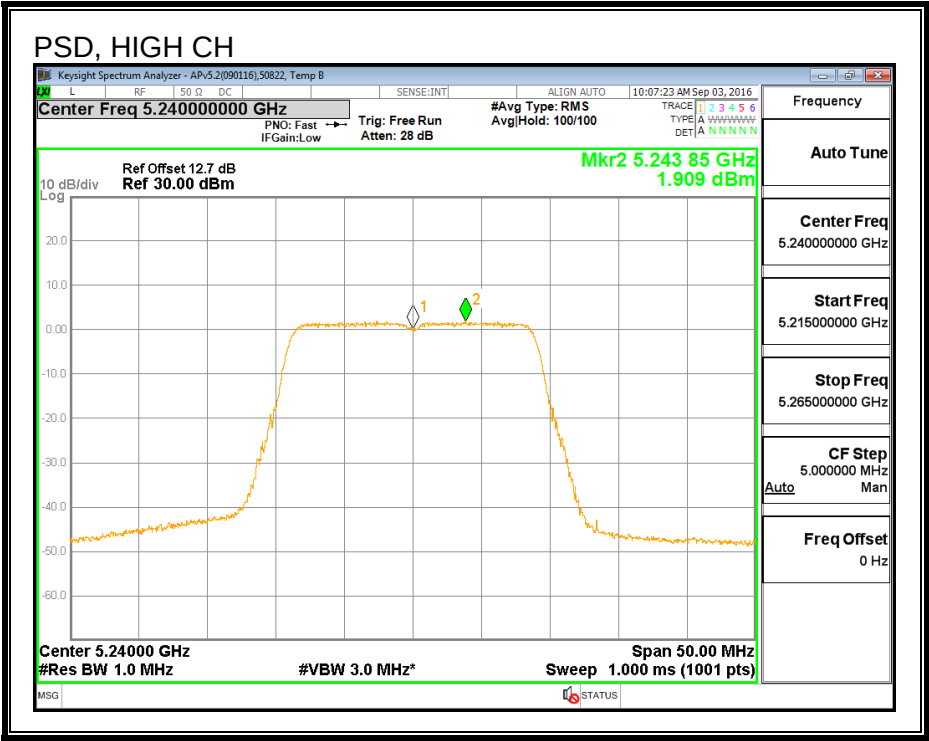
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.18	13.20	16.20	24.00	-7.80
Mid	5200	13.15	13.18	16.18	24.00	-7.82
High	5240	13.23	13.16	16.21	24.00	-7.79

PSD Results

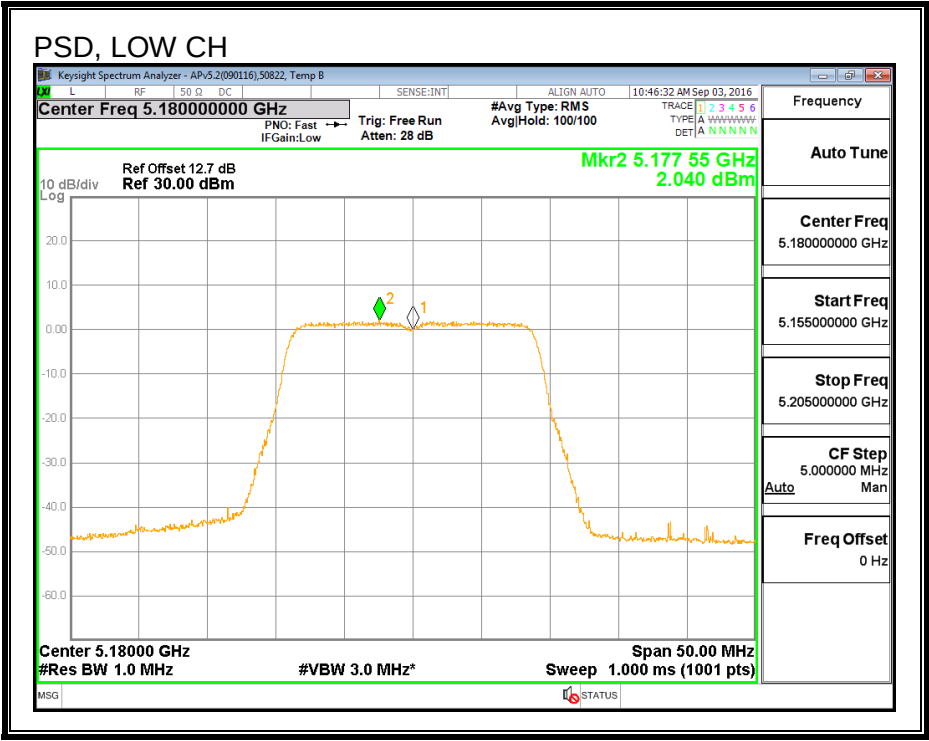
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	1.81	2.04	4.94	11.00	-6.06
Mid	5200	1.66	1.87	4.78	11.00	-6.22
High	5240	1.91	1.84	4.88	11.00	-6.12

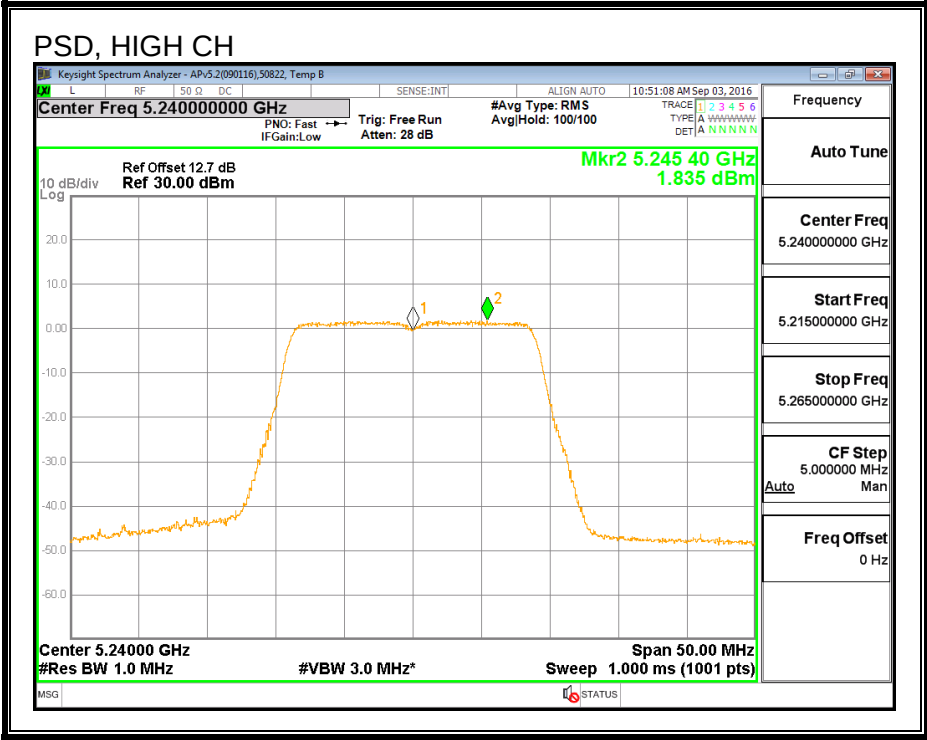
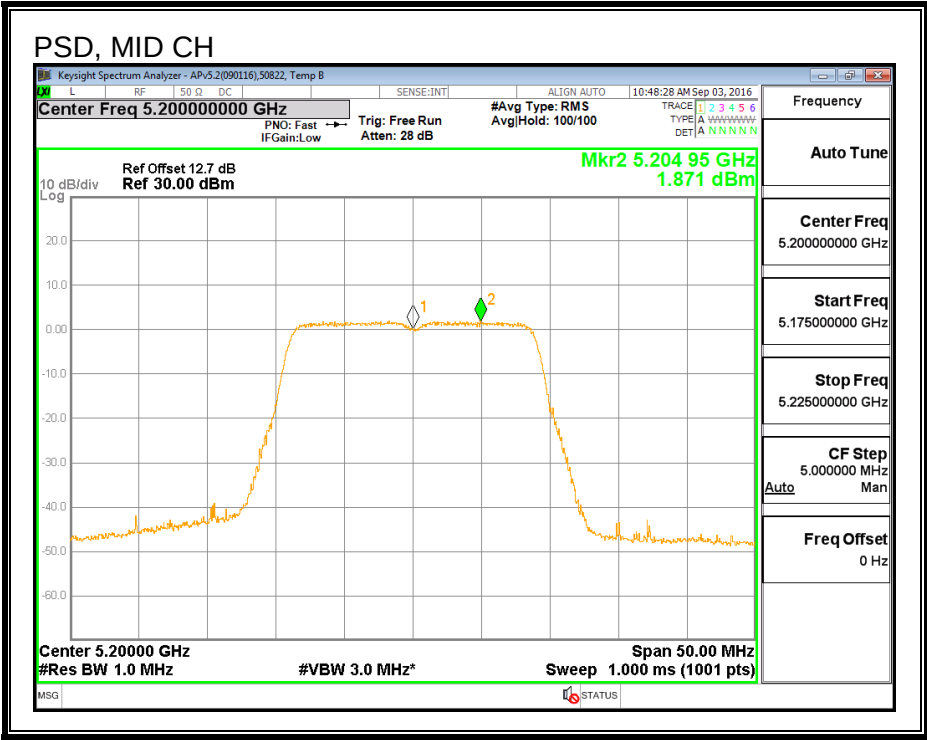
PSD, CHAIN 0





PSD, CHAIN 2





8.8.5. AVERAGE POWER (IC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	37289	Date:	9/16/16
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Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	7.80	7.95	10.89
Mid	5200	7.96	7.97	10.97
High	5240	7.98	7.89	10.94

8.8.6. OUTPUT POWER AND PSD (IC)

LIMITS

IC RSS-247 (6.2.1) (1)

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 MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.80	4.90	4.38

RESULTS

ID:	37289	Date:	9/16/16
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Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)
Low	5180	17.760	4.38	4.38
Mid	5200	17.685	4.38	4.38
High	5240	17.711	4.38	4.38

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	Max IC Power (dBm)	IC eirp PSD Limit (dBm)	Max IC PSD (dBm)
Low	5180	22.49	18.11	10.00	5.62
Mid	5200	22.48	18.10	10.00	5.62
High	5240	22.48	18.10	10.00	5.62

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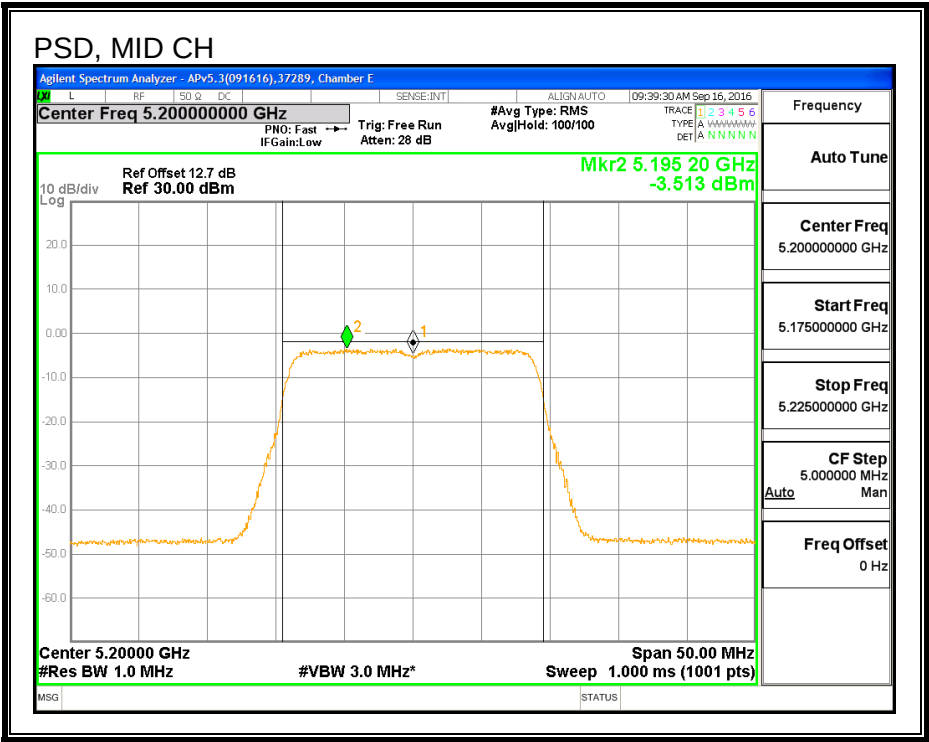
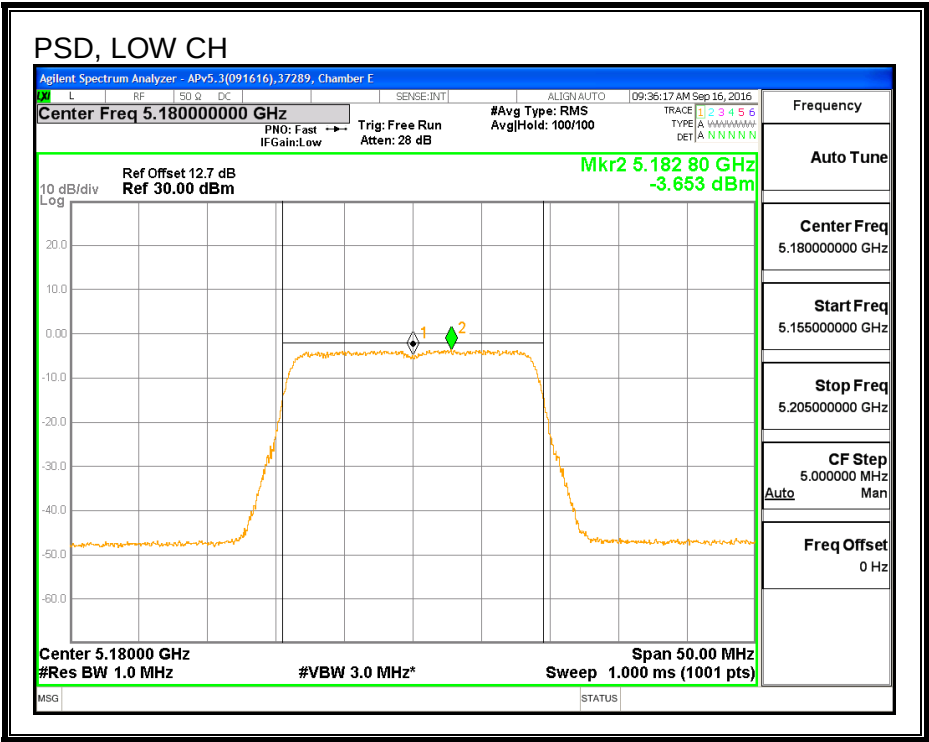
Output Power Results

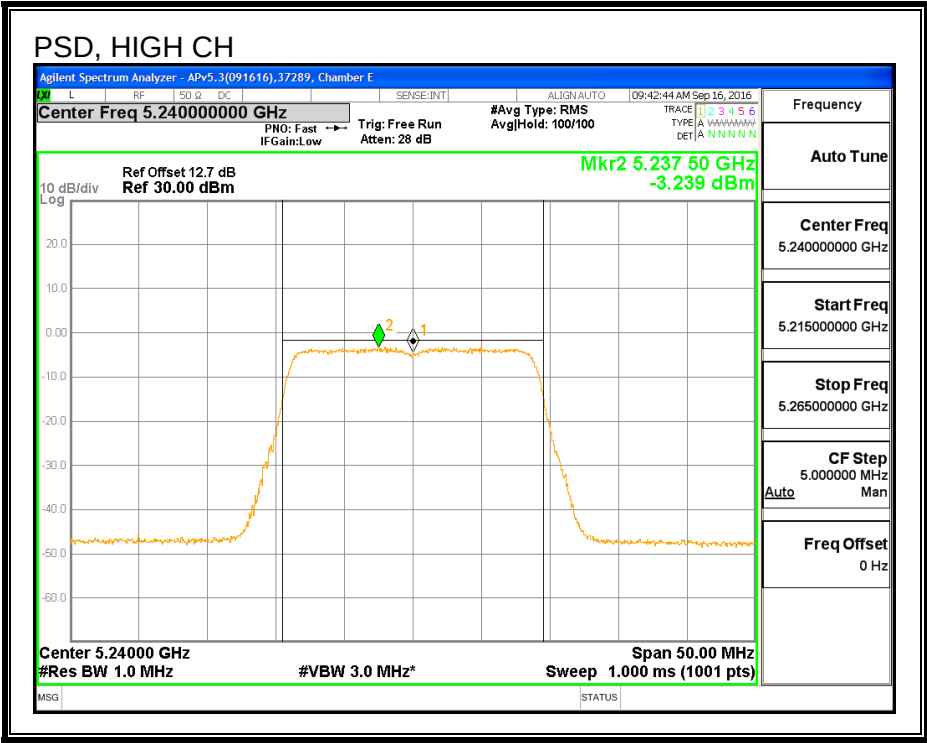
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	7.80	7.95	10.89	18.11	-7.23
Mid	5200	7.96	7.97	10.97	18.10	-7.12
High	5240	7.98	7.89	10.94	18.10	-7.16

PSD Results

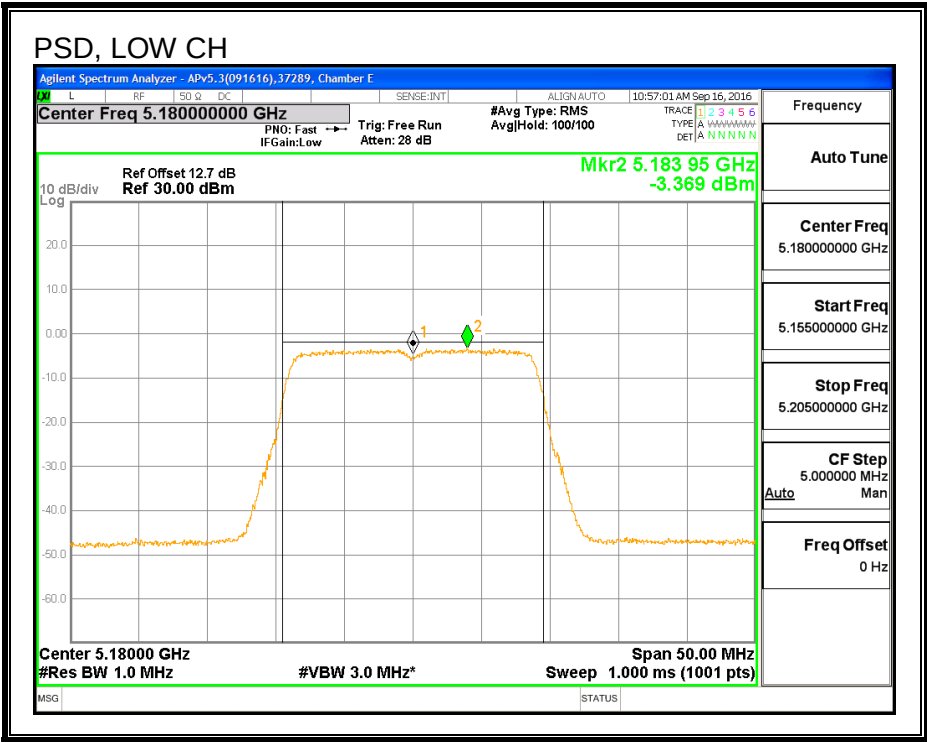
Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-3.65	-3.37	-0.50	5.62	-6.12
Mid	5200	-3.51	-3.40	-0.44	5.62	-6.06
High	5240	-3.24	-3.56	-0.39	5.62	-6.01

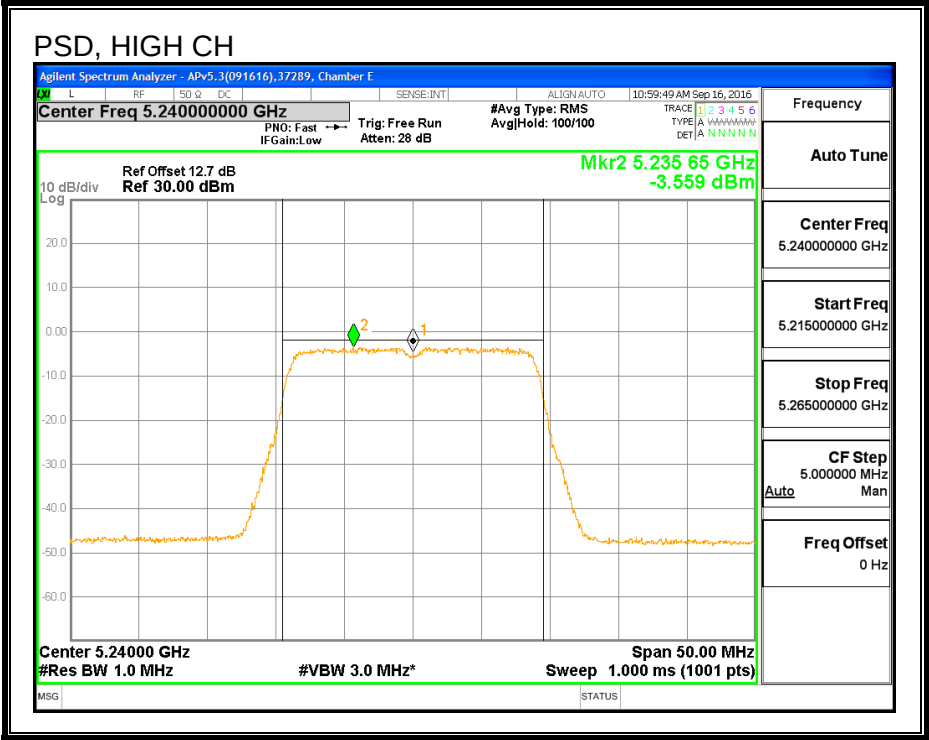
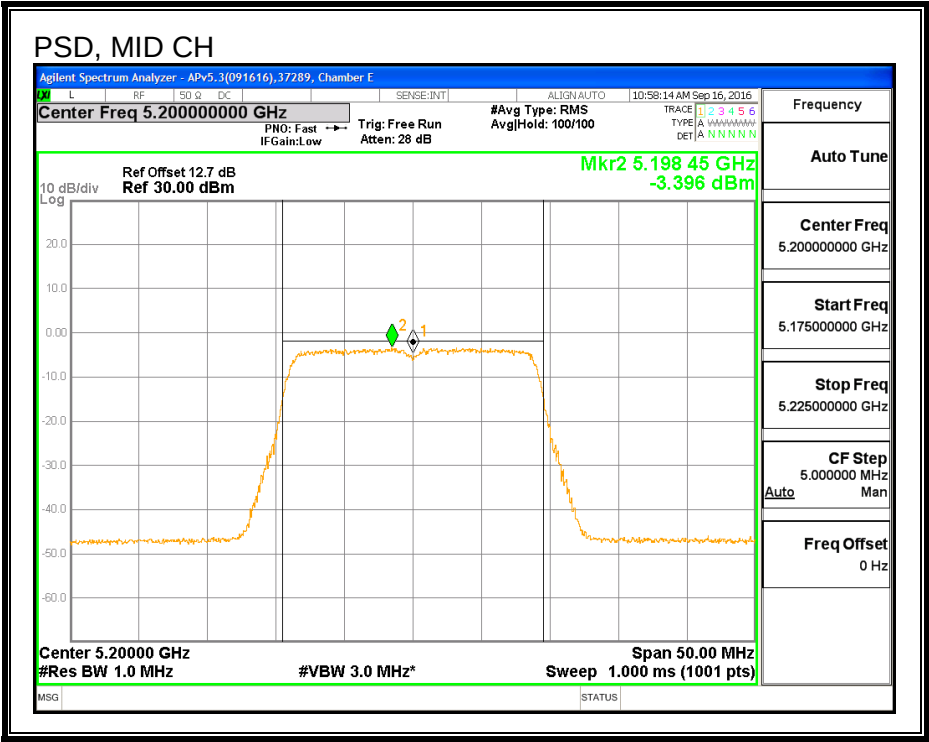
PSD, CHAIN 0





PSD, CHAIN 2





8.9. 802.11n HT20 2Tx (CHAIN 1 + CHAIN 2) STBC MODE IN THE 5.2 GHz BAND

8.9.1. 26 dB BANDWIDTH

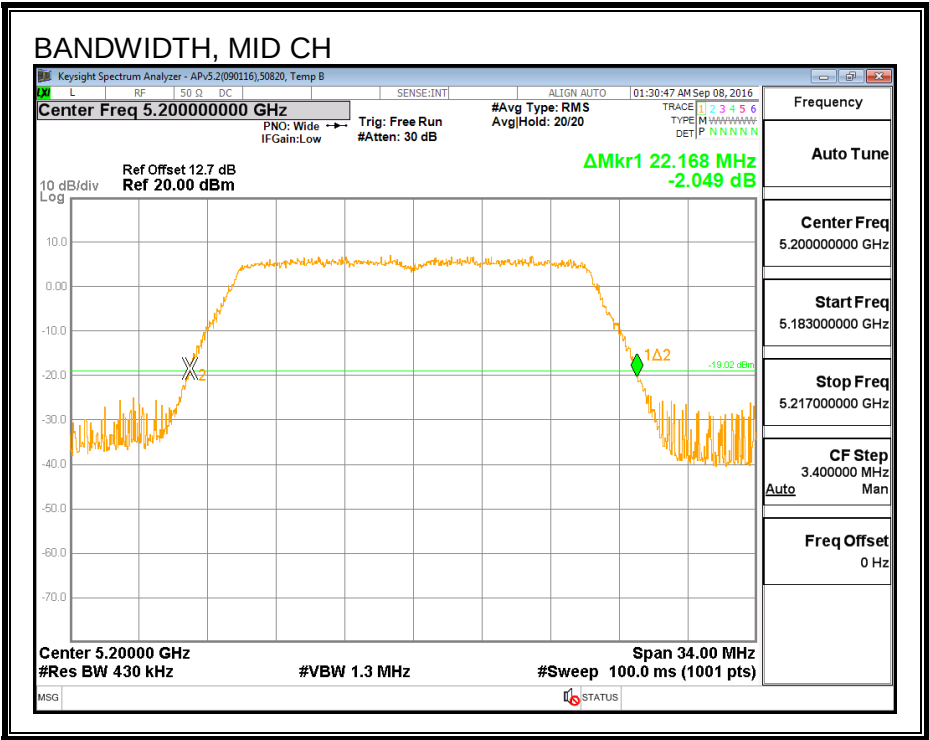
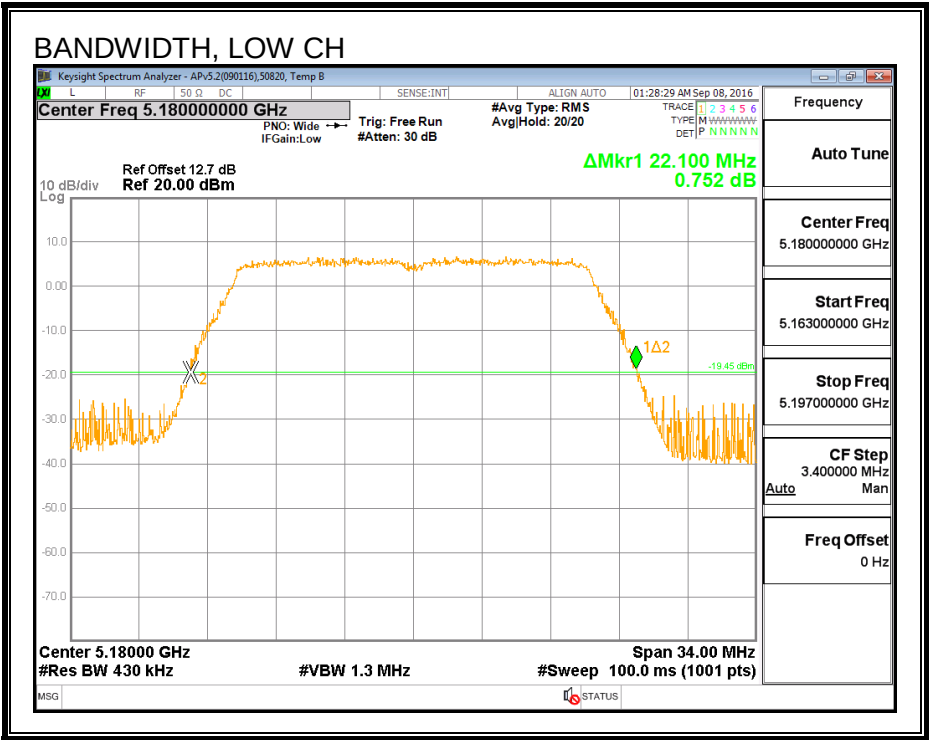
LIMITS

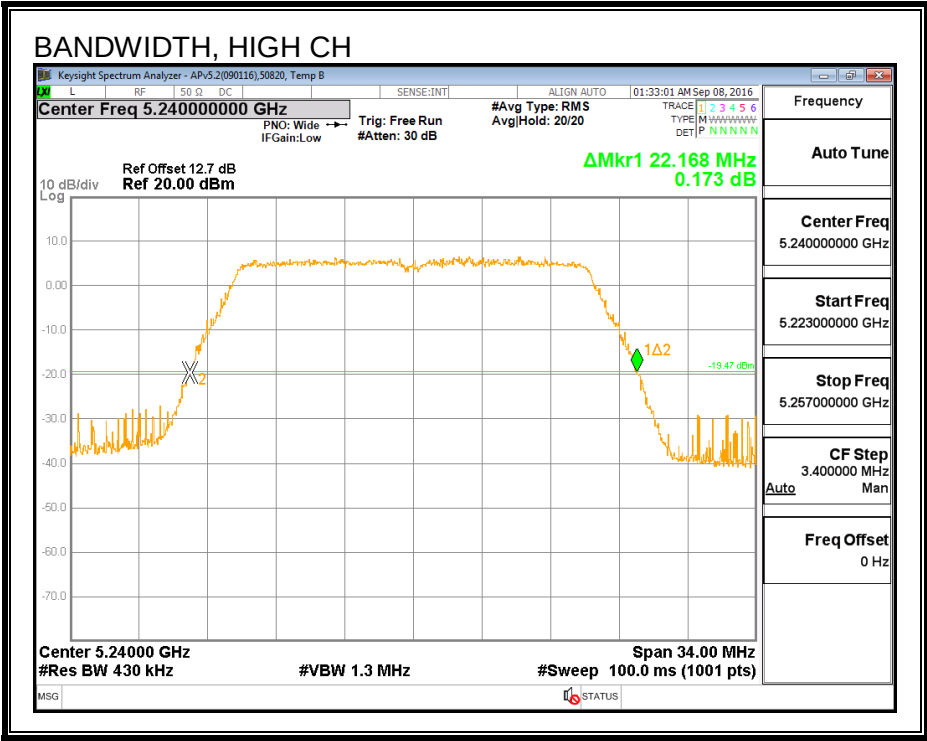
None; for reporting purposes only.

RESULTS

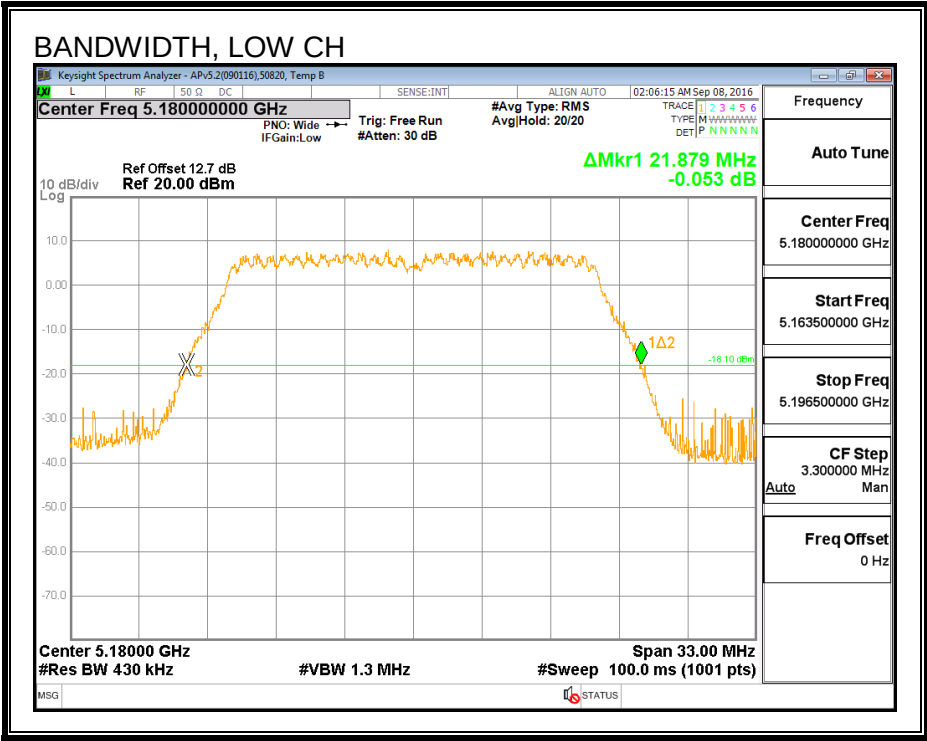
Channel	Frequency (MHz)	26 dB BW Chain 1 (MHz)	26 dB BW Chain 2 (MHz)
Low	5180	22.100	21.879
Mid	5200	22.168	21.714
High	5240	22.168	21.681

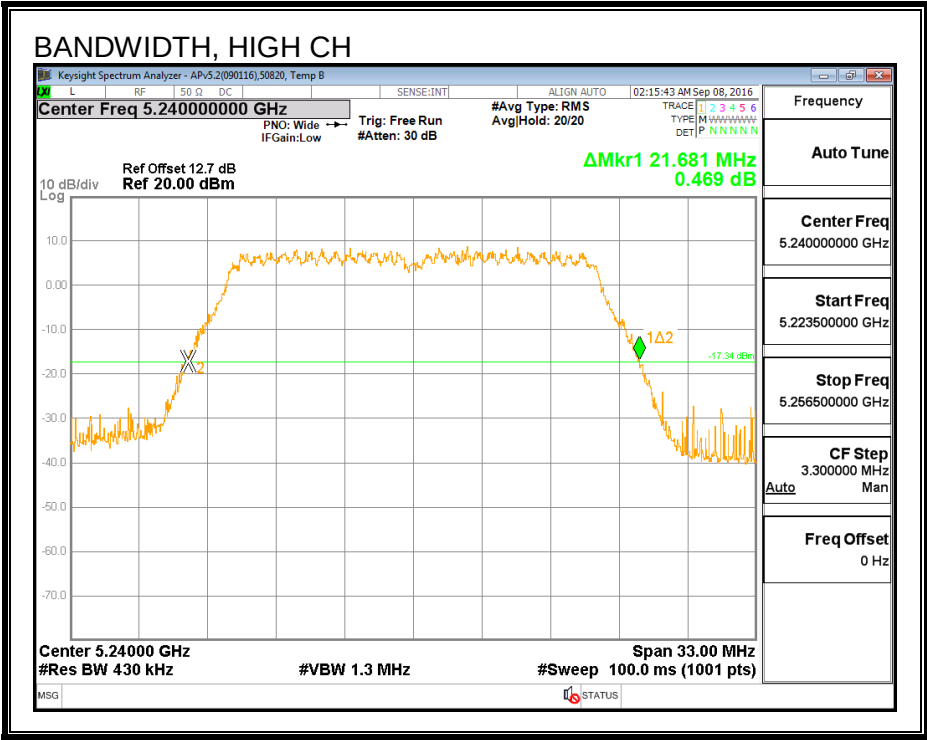
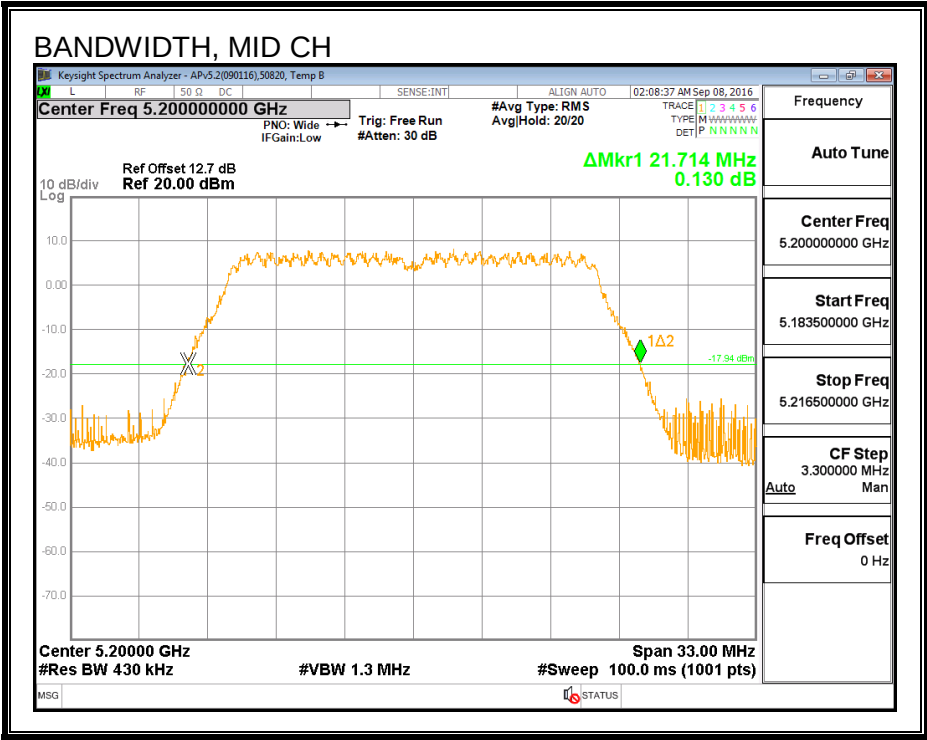
26 DB BANDWIDTH, CHAIN 1





26 DB BANDWIDTH, CHAIN 2





8.9.2. 99% BANDWIDTH

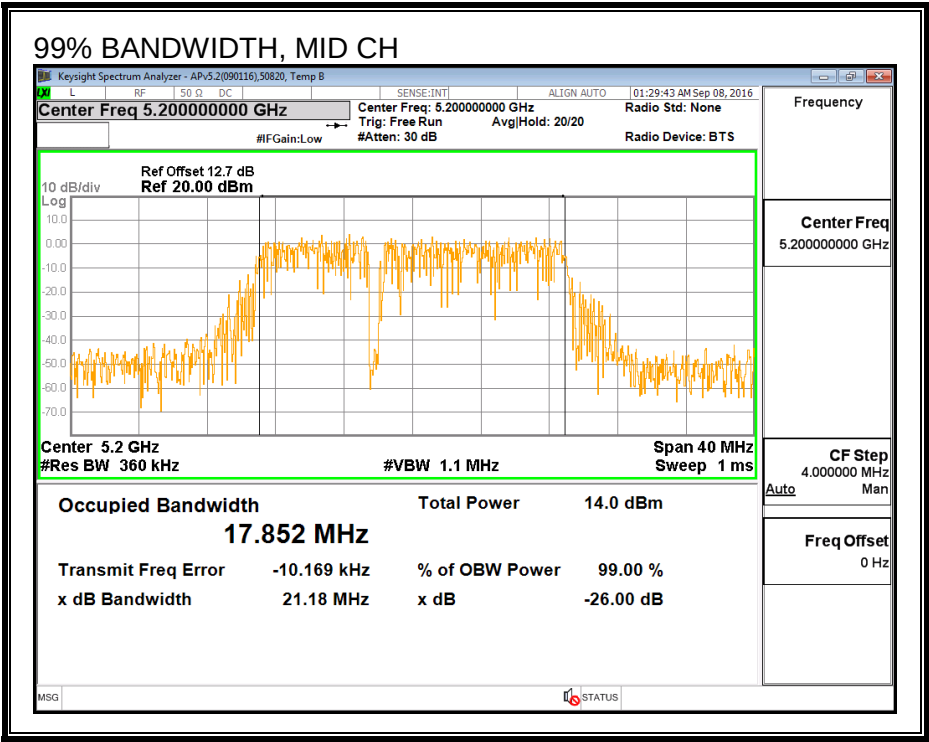
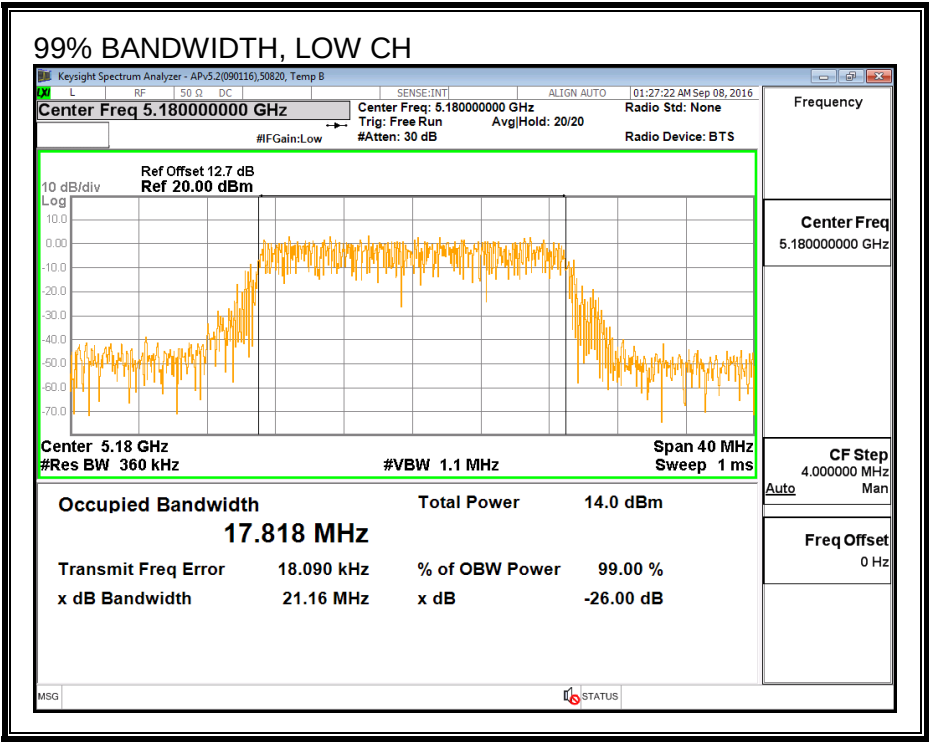
LIMITS

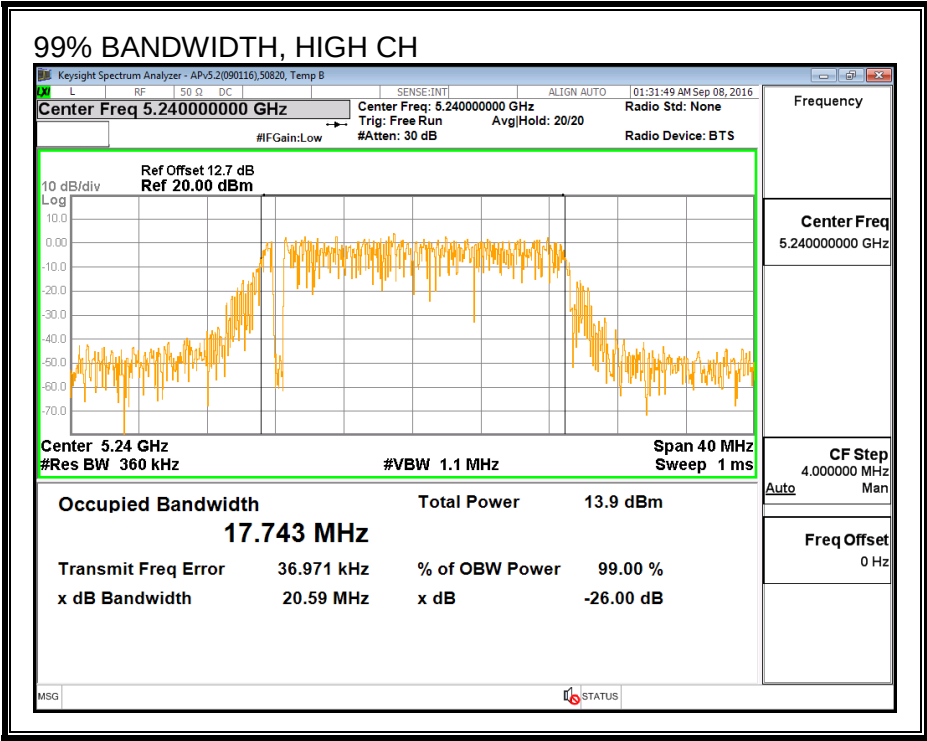
None; for reporting purposes only.

RESULTS

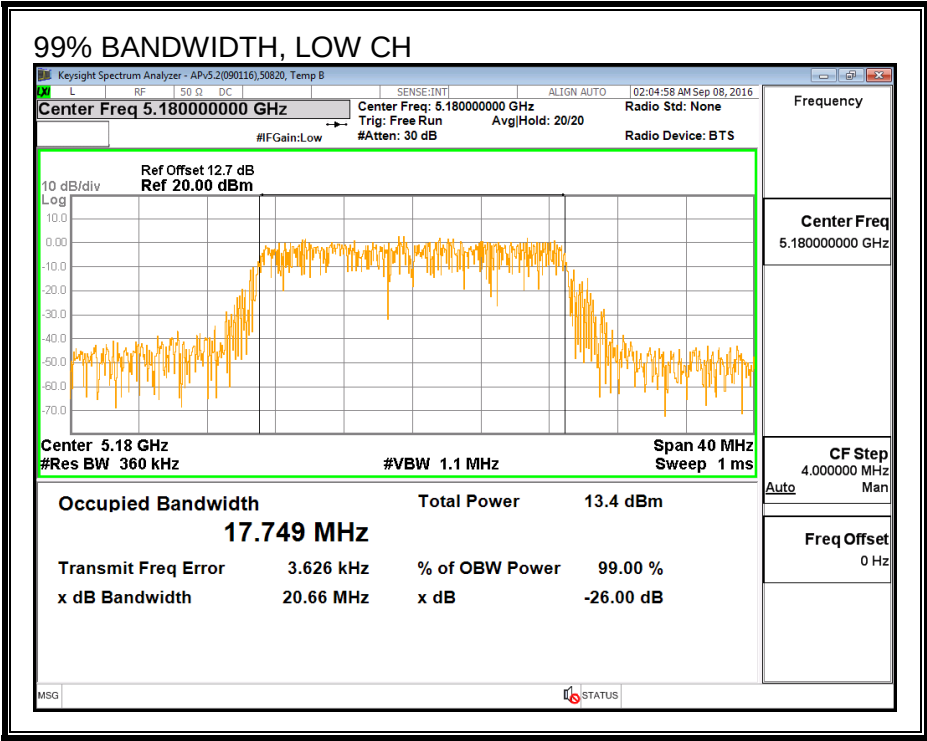
Channel	Frequency (MHz)	99% BW Chain 1 (MHz)	99% BW Chain 2 (MHz)
Low	5180	17.818	17.749
Mid	5200	17.852	17.952
High	5240	17.743	17.680

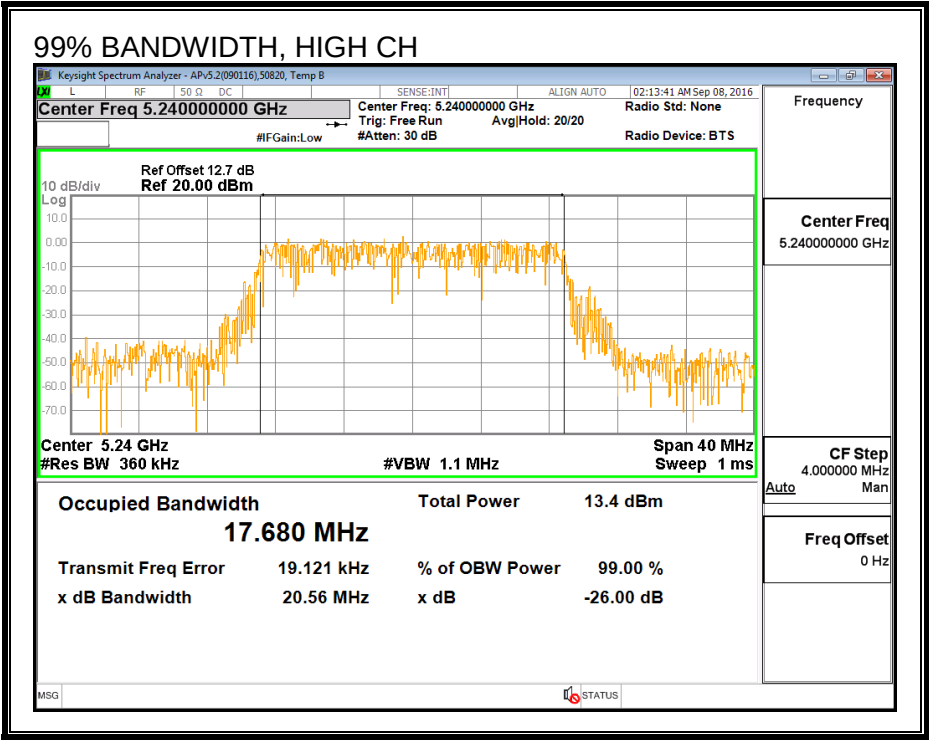
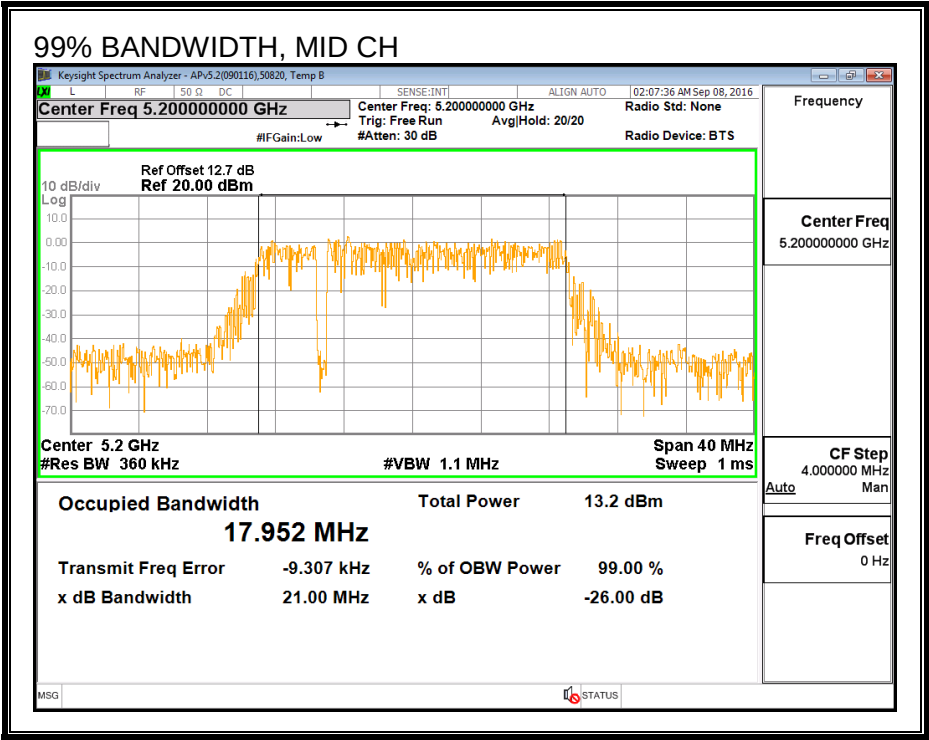
99% BANDWIDTH, CHAIN 1





99% BANDWIDTH, CHAIN 2





8.9.3. AVERAGE POWER (FCC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	43573	Date:	9/7/16
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Average Power Results

Channel	Frequency (MHz)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	13.25	13.25	16.26
Mid	5200	13.18	13.23	16.22
High	5240	13.19	13.21	16.21

8.9.4. OUTPUT POWER AND PSD (FCC)

LIMITS

FCC §15.407 (a) (1)

(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. 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 collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(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.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 1 Antenna Gain (dBi)	Chain 2 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
6.70	4.90	5.89

RESULTS

ID:	43573	Date:	9/7/16
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Antenna Gain and Limits

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	5.89	5.89	24.00	11.00
Mid	5200	5.89	5.89	24.00	11.00
High	5240	5.89	5.89	24.00	11.00

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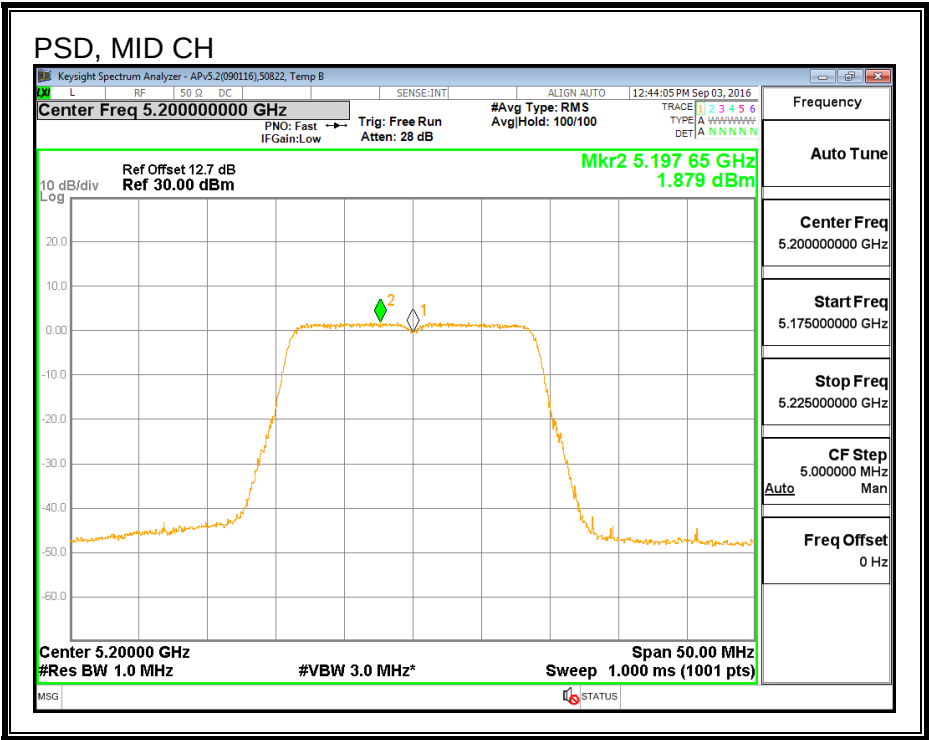
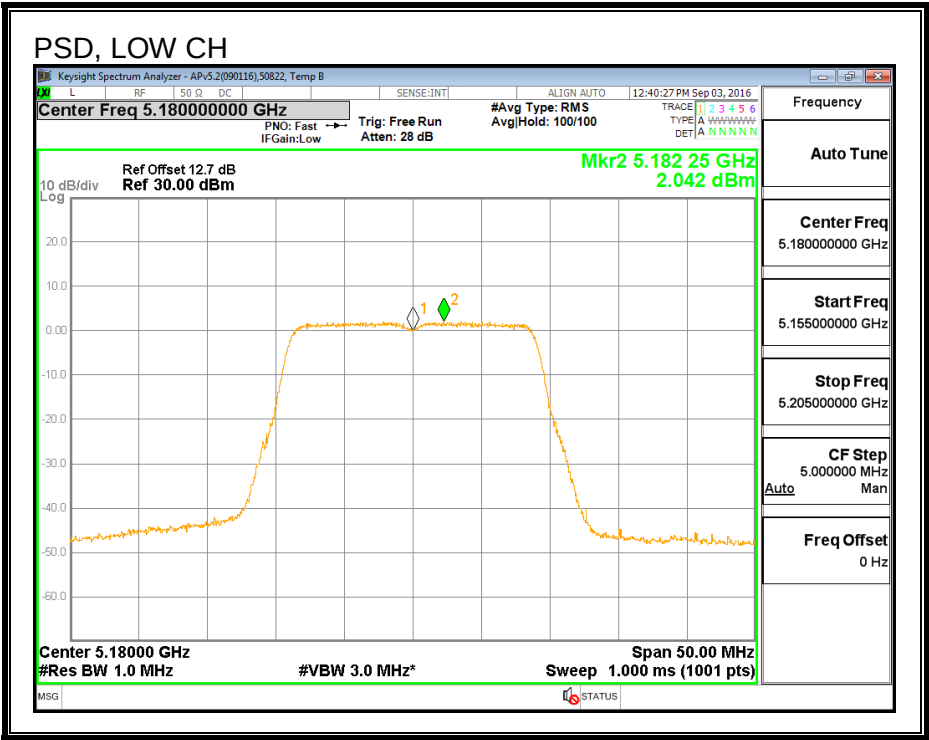
Output Power Results

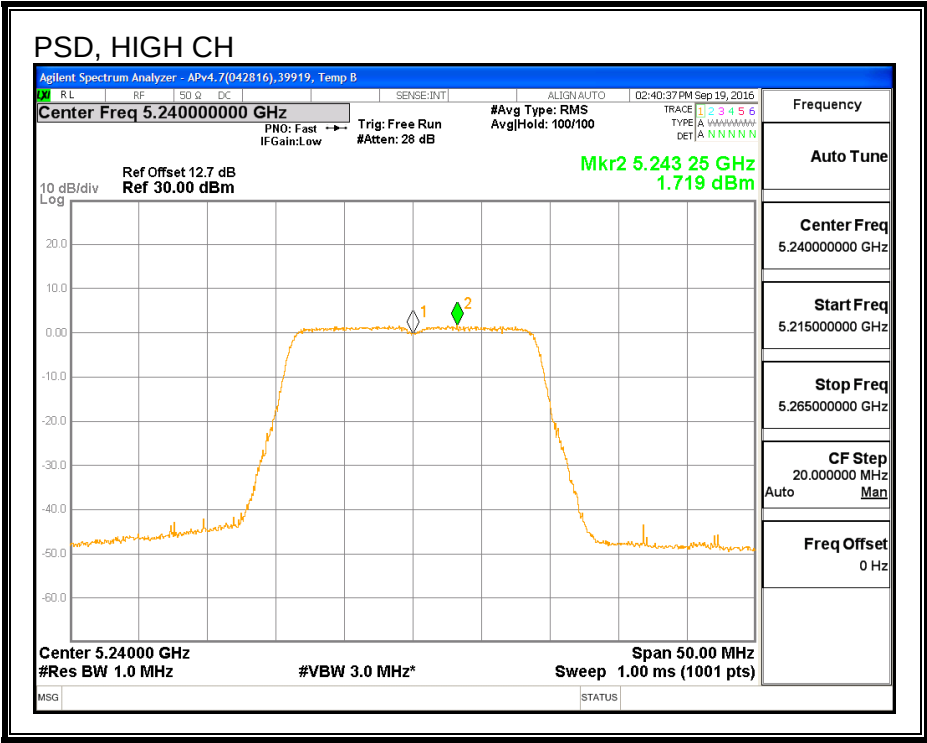
Channel	Frequency (MHz)	Chain 1 Meas Power (dBm)	Chain 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	13.25	13.25	16.26	24.00	-7.74
Mid	5200	13.18	13.23	16.22	24.00	-7.78
High	5240	13.19	13.21	16.21	24.00	-7.79

PSD Results

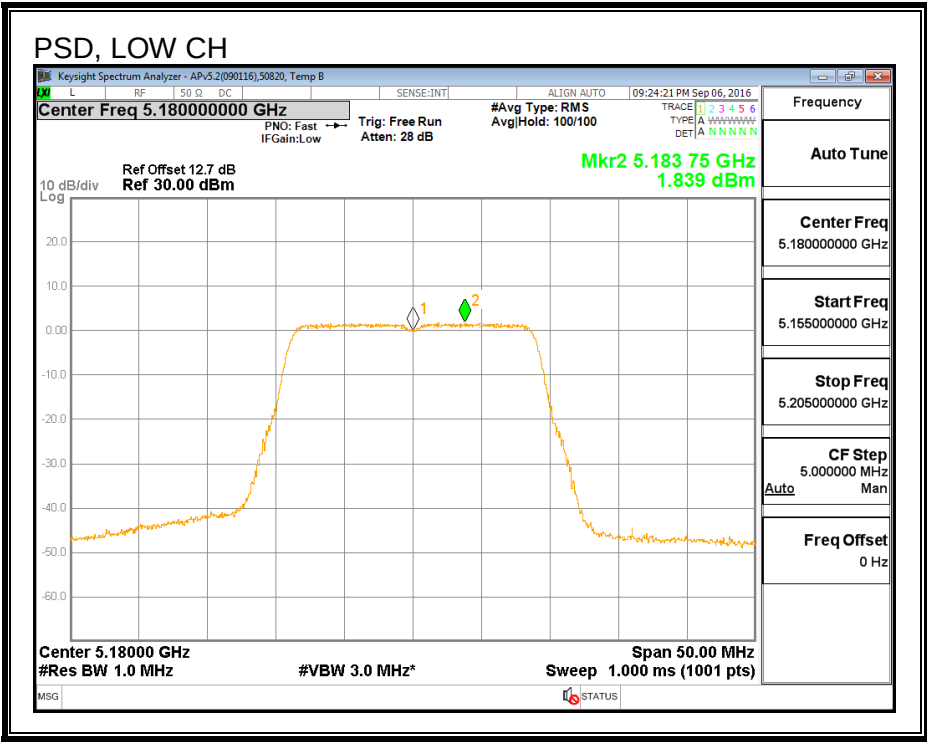
Channel	Frequency (MHz)	Chain 1 Meas PSD (dBm)	Chain 2 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	2.04	1.84	4.95	11.00	-6.05
Mid	5200	1.88	2.02	4.96	11.00	-6.04
High	5240	1.72	1.90	4.82	11.00	-6.18

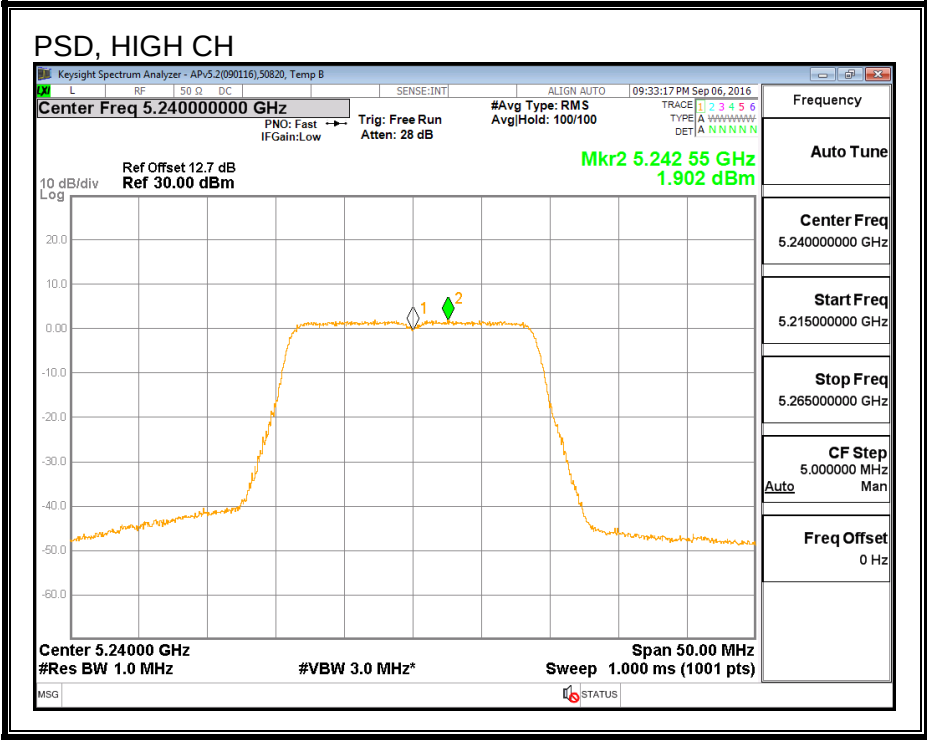
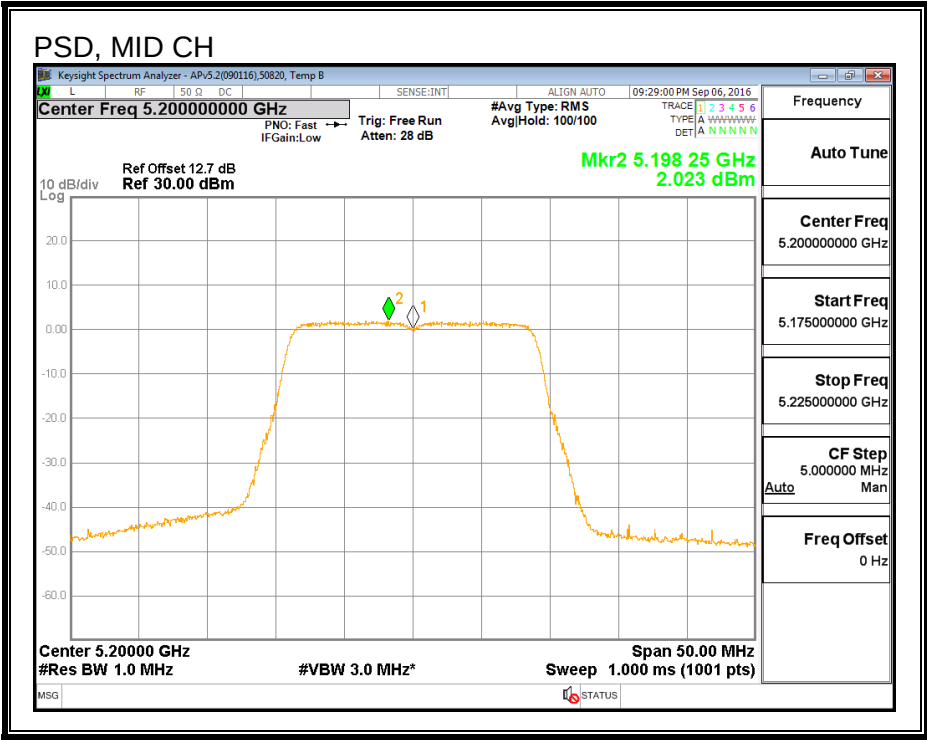
PSD, CHAIN 1





PSD, CHAIN 2





8.9.5. AVERAGE POWER (IC)

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

RESULTS

ID:	37289	Date:	9/16/16
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Average Power Results

Channel	Frequency (MHz)	Chain 1 Power (dBm)	Chain 2 Power (dBm)	Total Power (dBm)
Low	5180	8.00	7.95	10.98
Mid	5200	7.94	7.99	10.97
High	5240	7.85	8.00	10.94