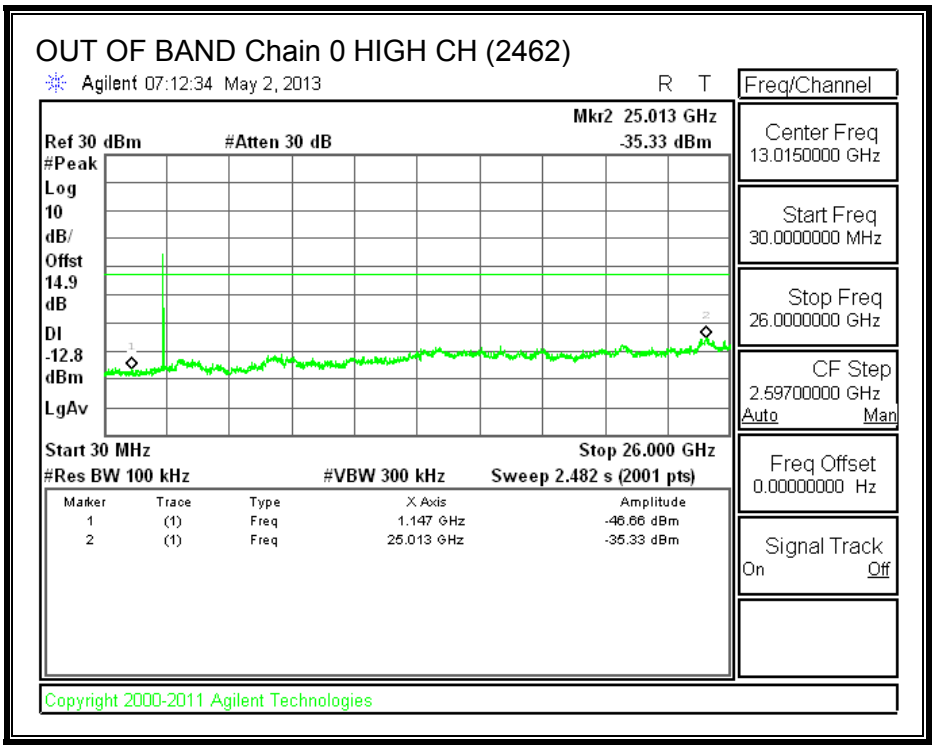
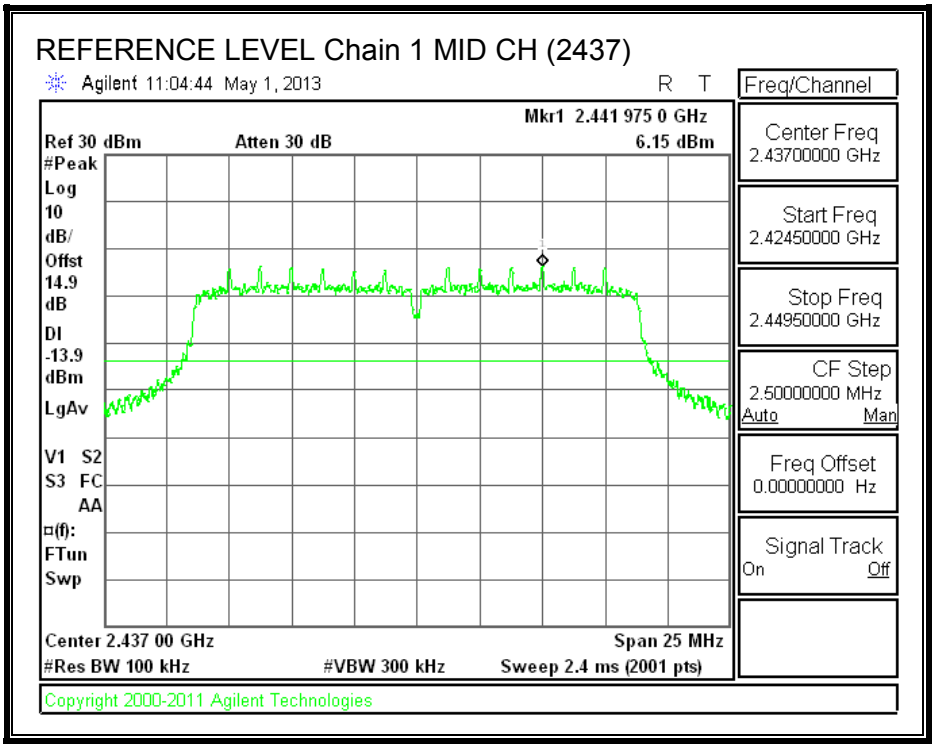
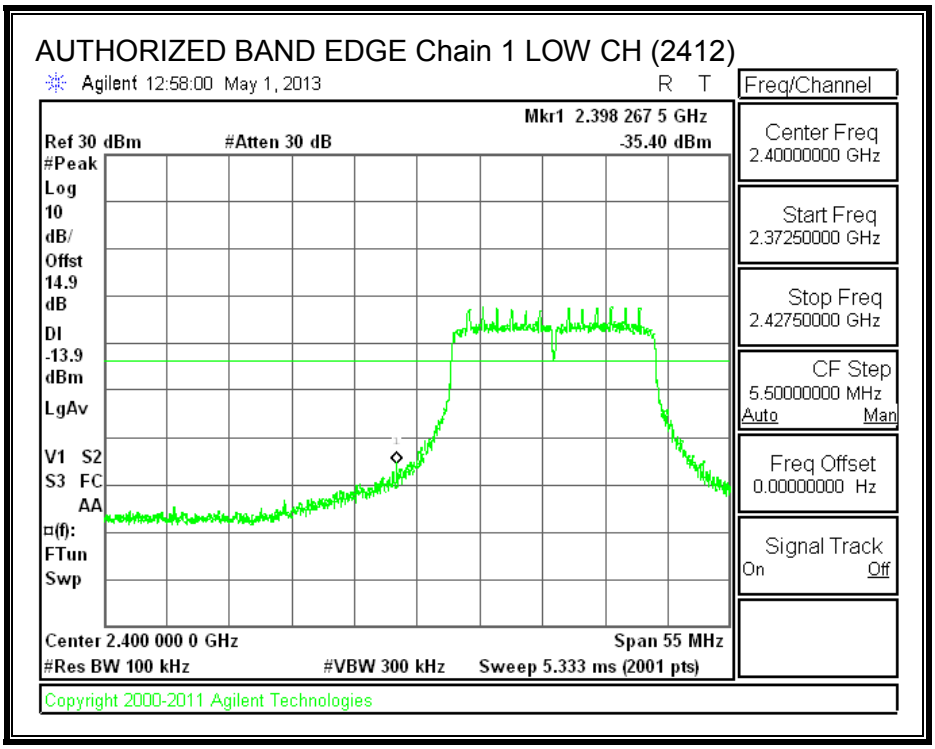
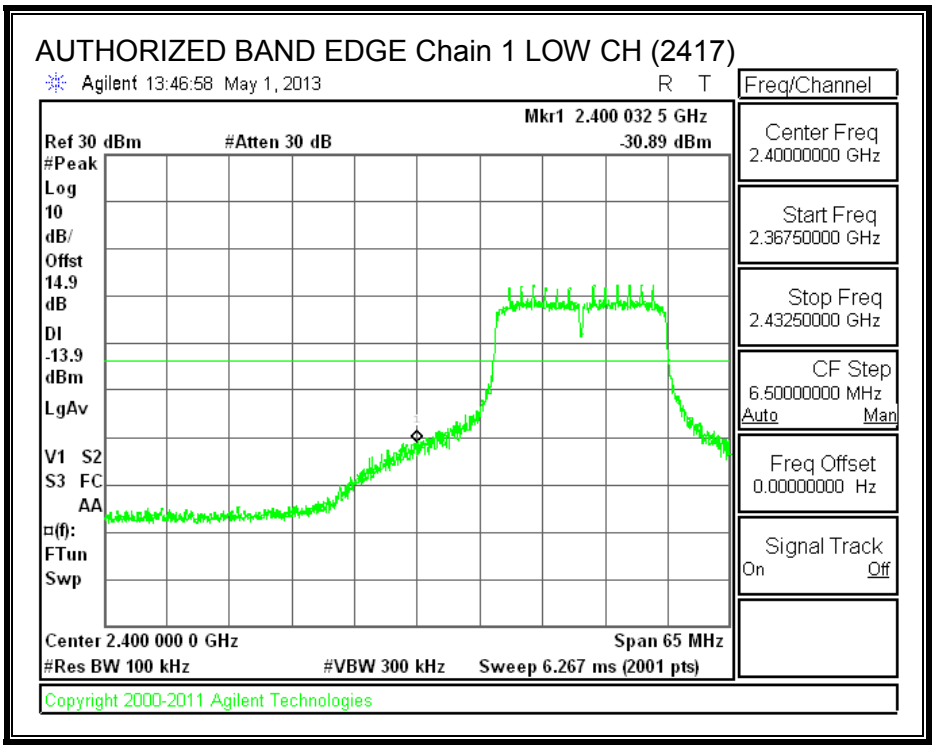


IN-BAND REFERENCE LEVEL, Chain 1

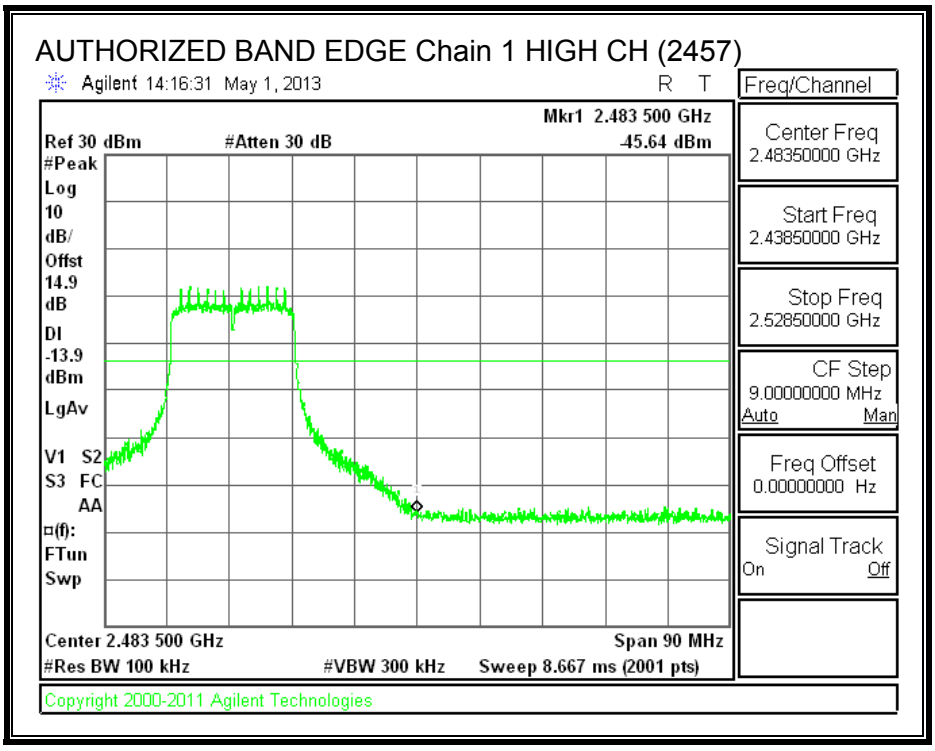


LOW CHANNEL BANDEDGE, Chain 1

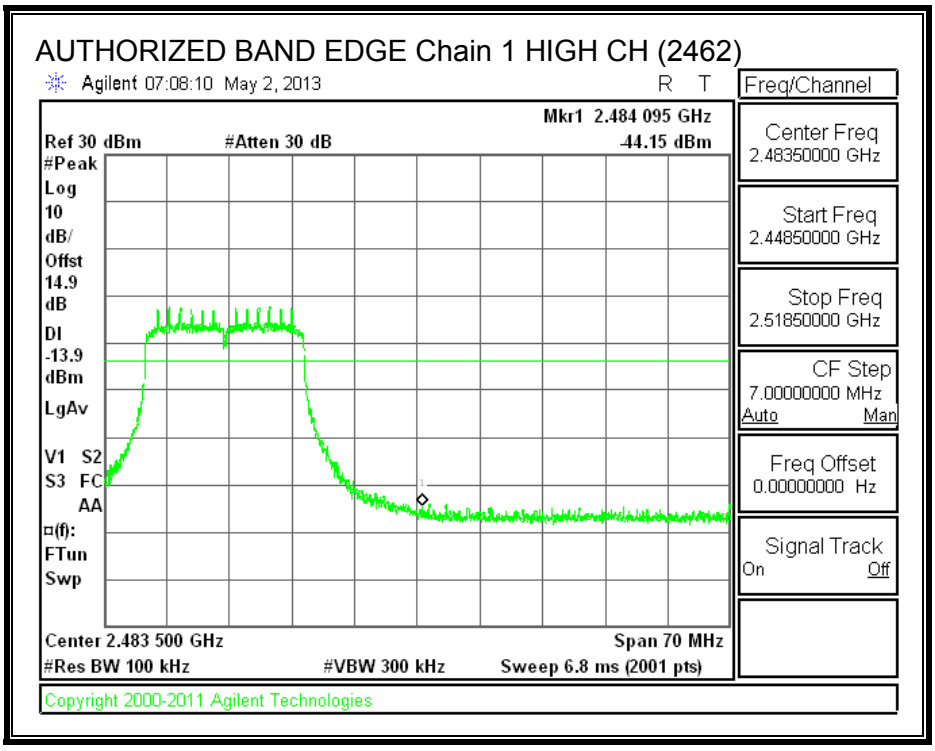




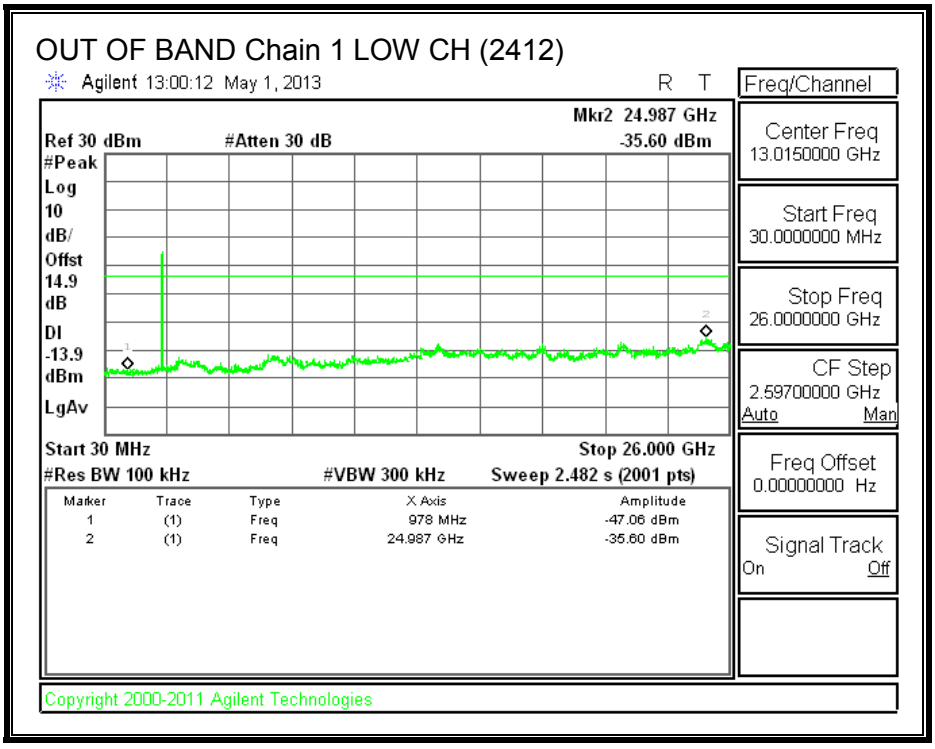
HIGH CHANNEL BANDEDGE, Chain 1



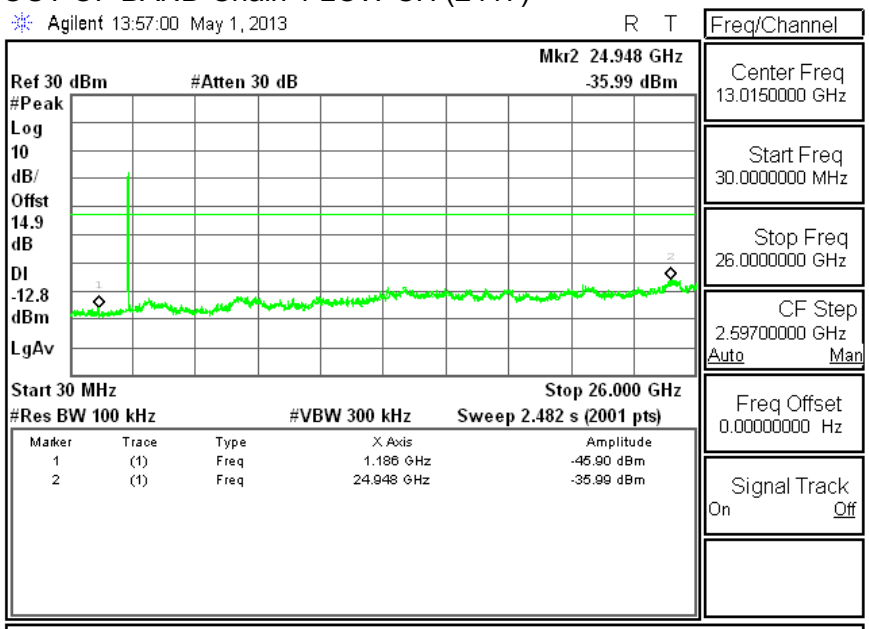
AUTHORIZED BAND EDGE Chain 1 HIGH CH (2462)



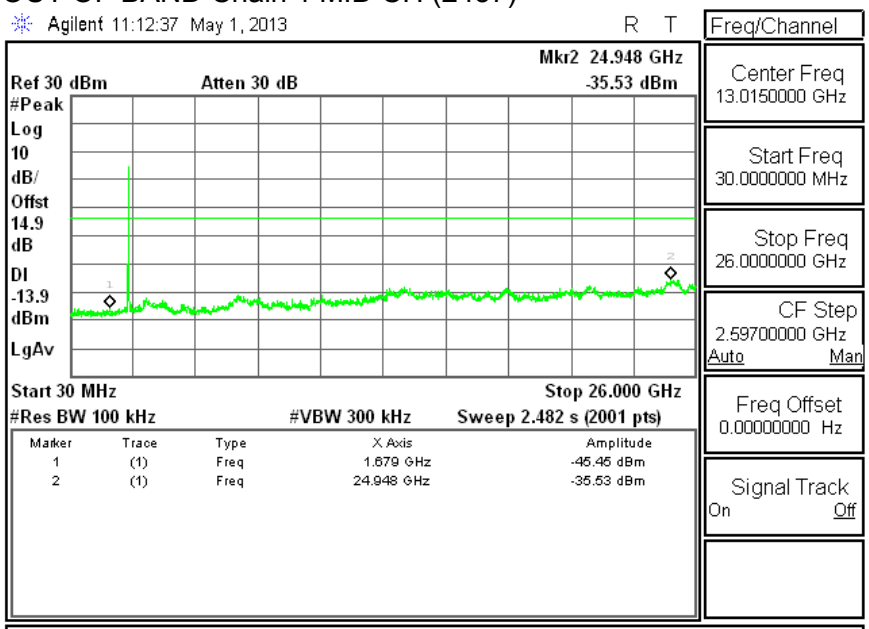
OUT OF BAND Chain 1 LOW CH (2412)



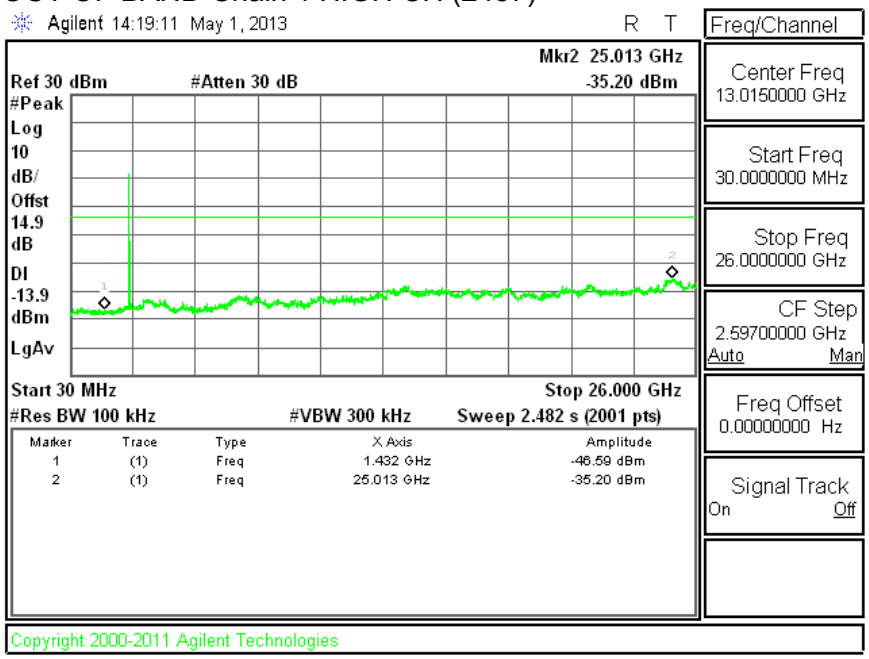
OUT OF BAND Chain 1 LOW CH (2417)



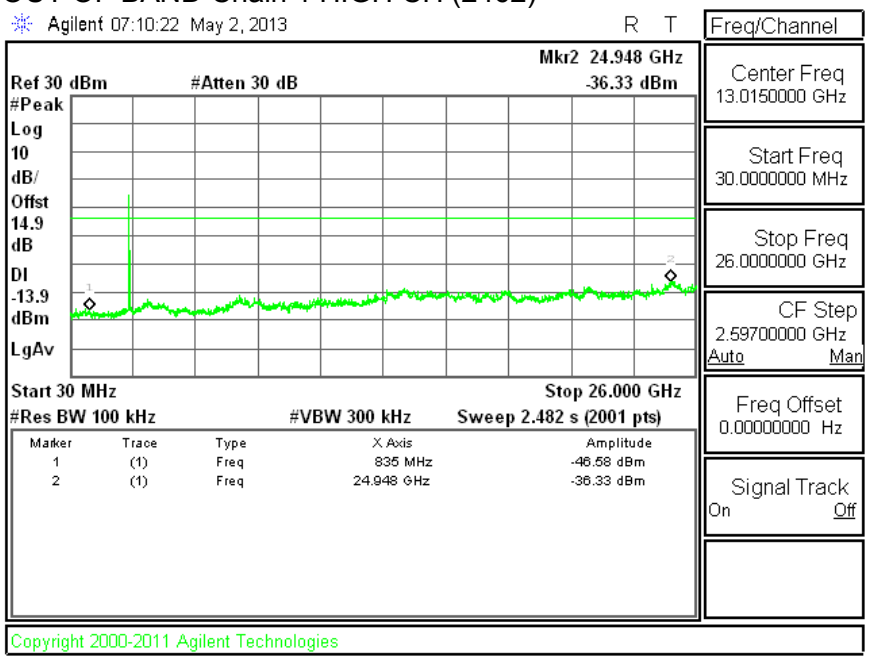
OUT OF BAND Chain 1 MID CH (2437)



OUT OF BAND Chain 1 HIGH CH (2457)

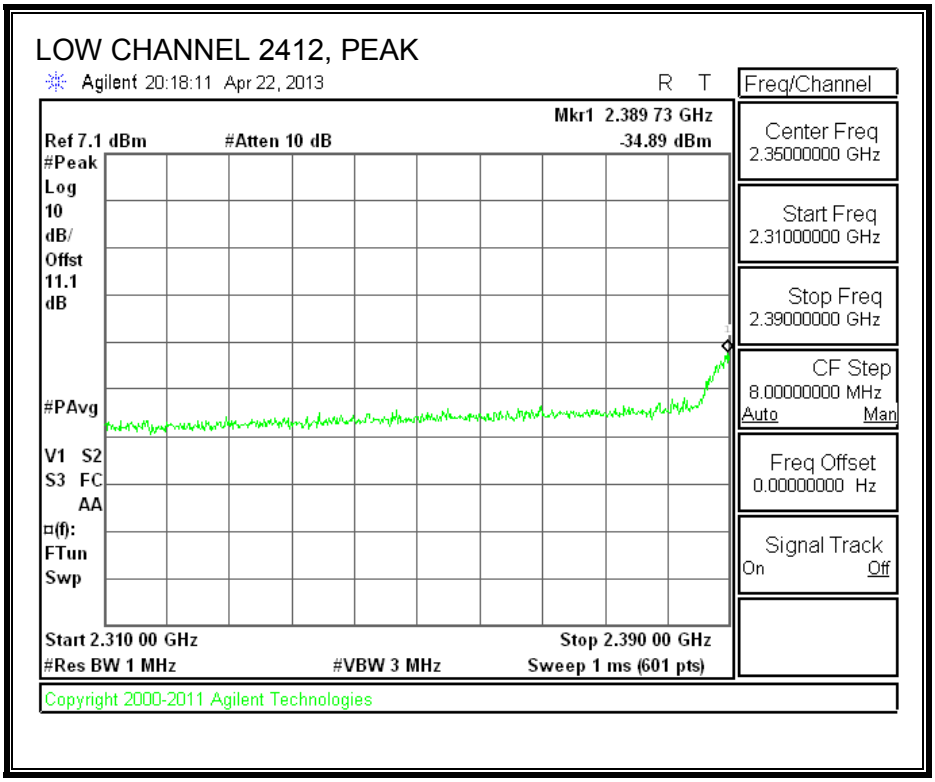


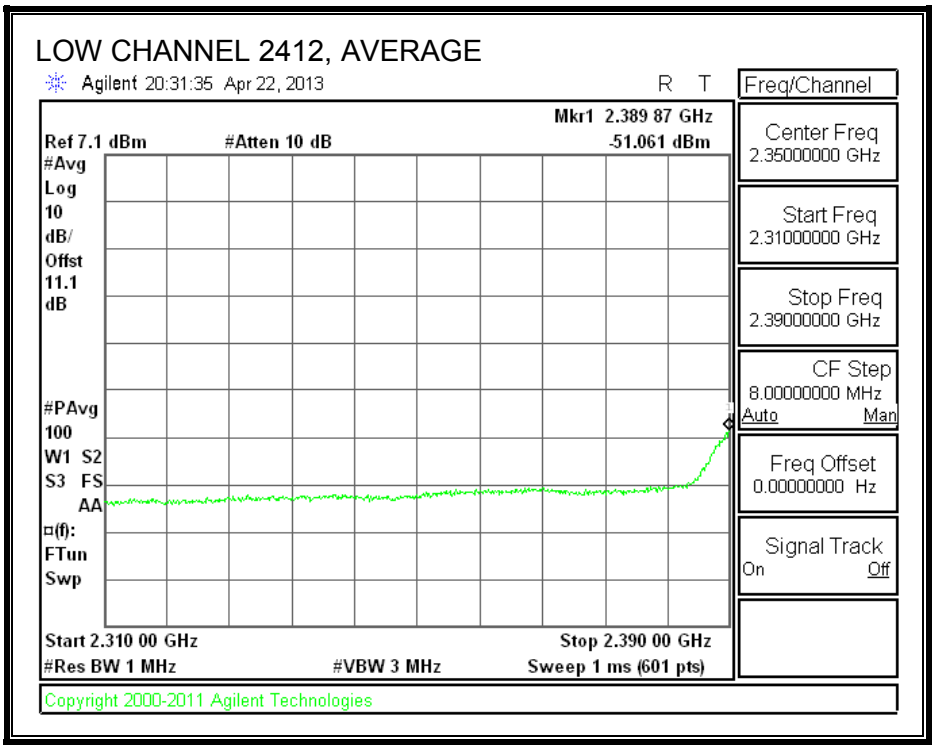
OUT OF BAND Chain 1 HIGH CH (2462)



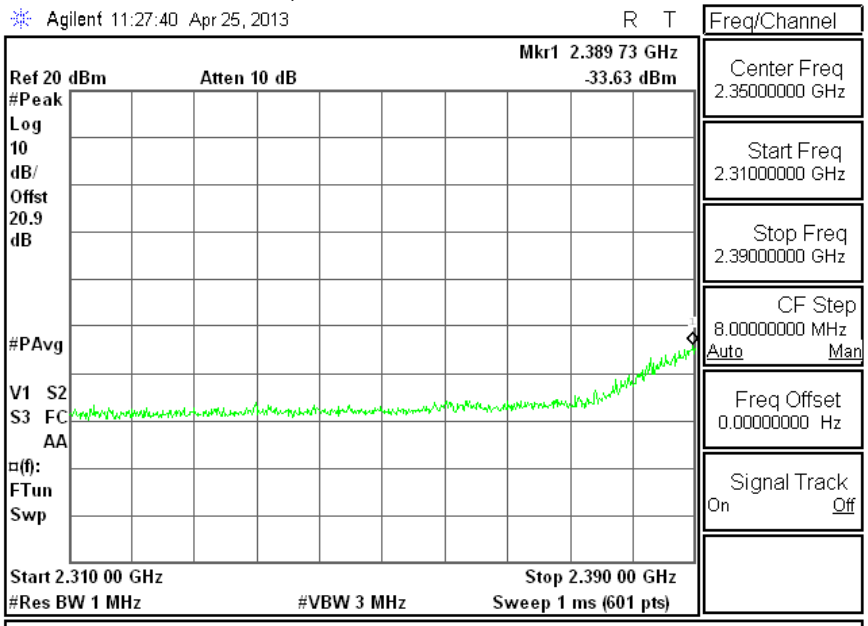
8.3.7. CONDUCTED BE AND SPURIOUS IN RESTRICTED BANDS (no filter unit)

RESTRICTED BANDEDGE
Chain 0

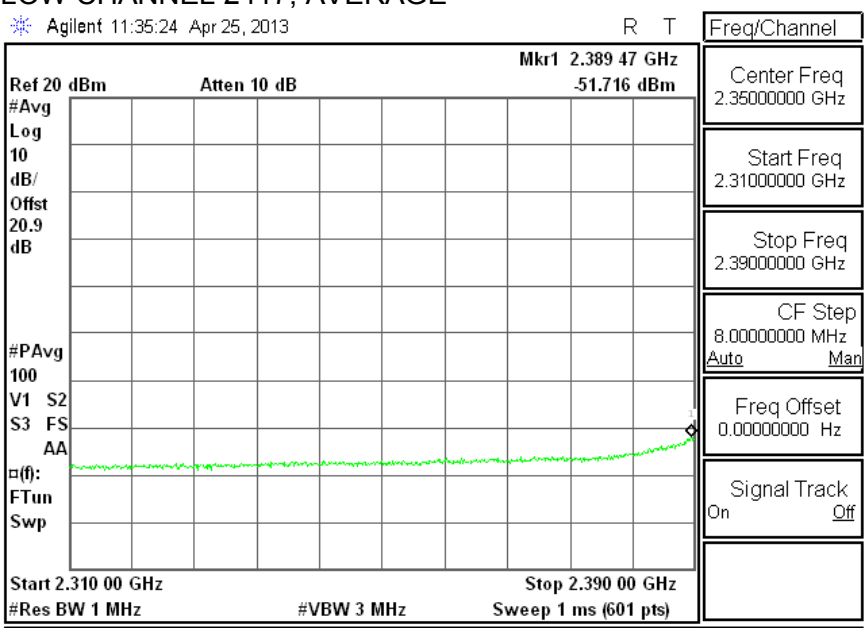




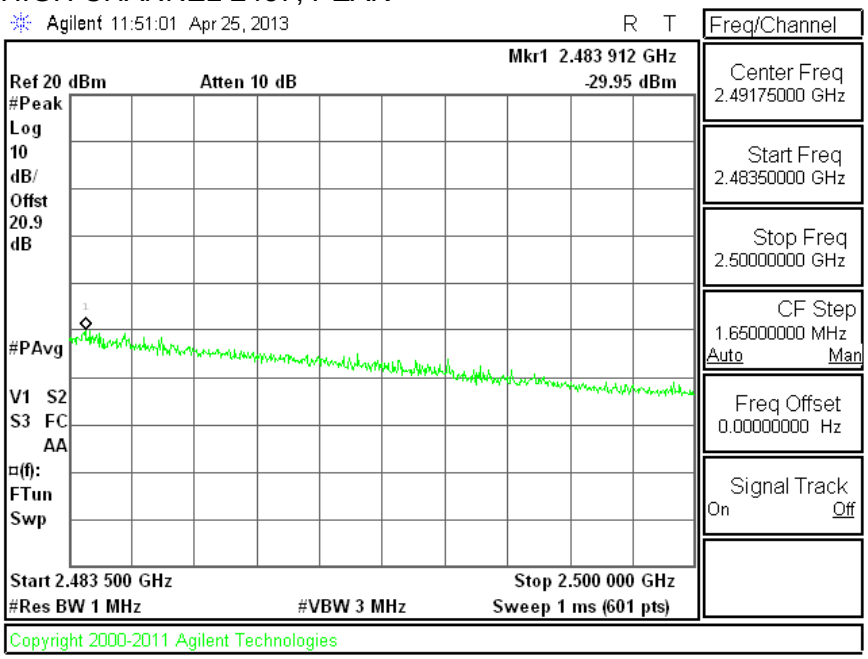
LOW CHANNEL 2417, PEAK



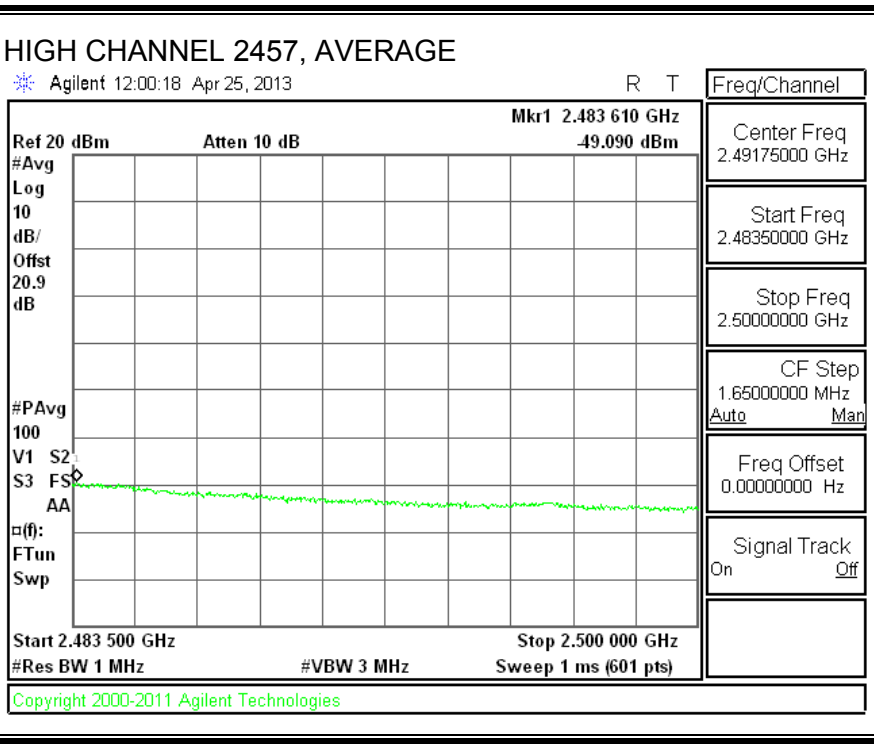
LOW CHANNEL 2417, AVERAGE



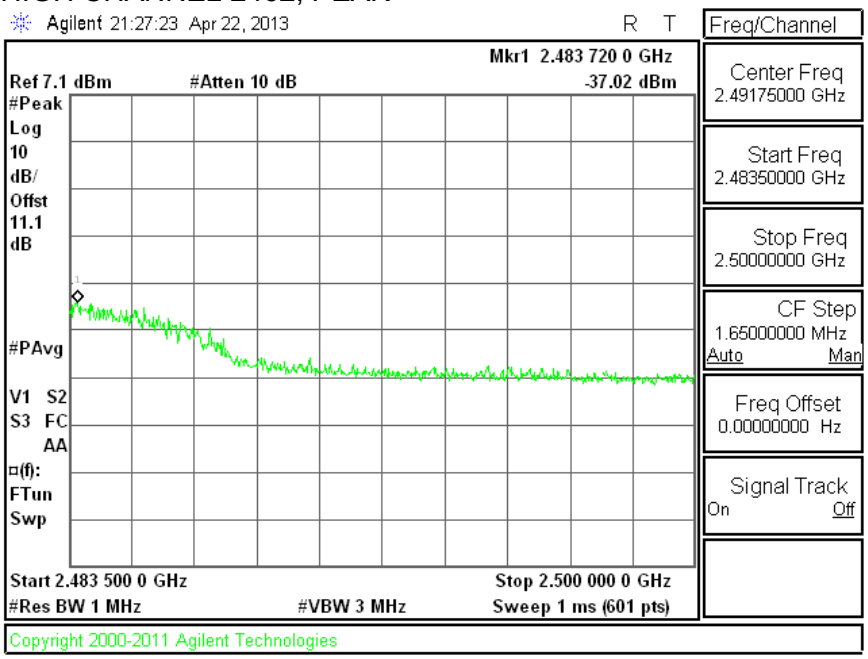
HIGH CHANNEL 2457, PEAK



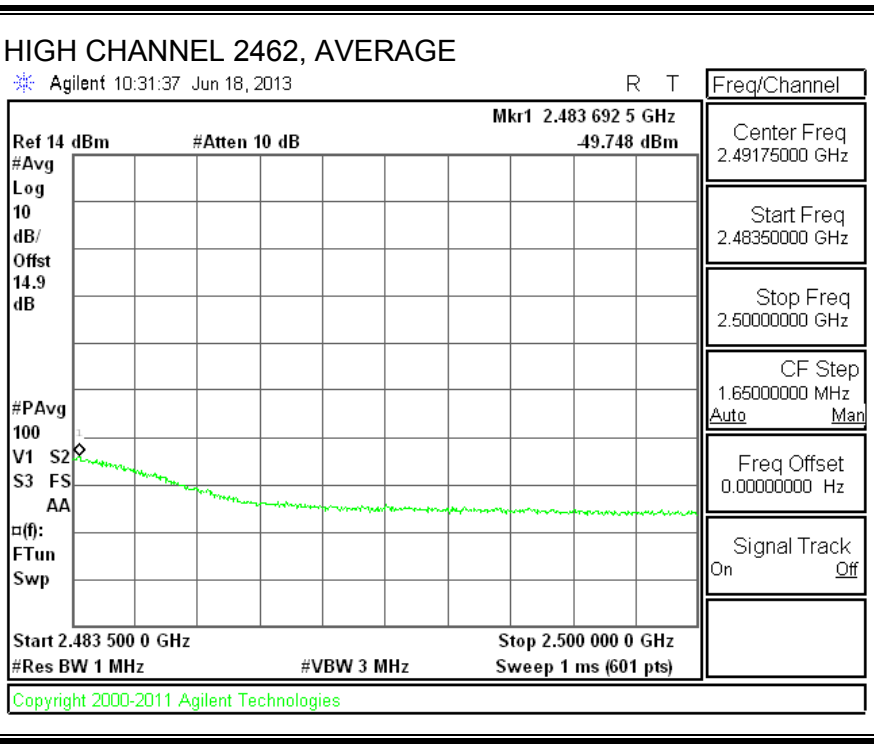
HIGH CHANNEL 2457, AVERAGE



HIGH CHANNEL 2462, PEAK

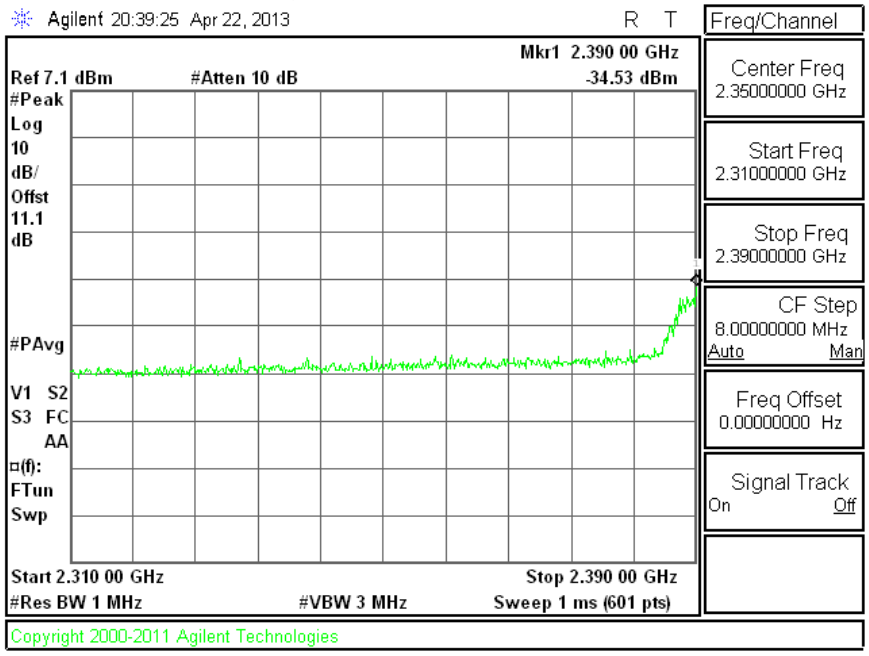


HIGH CHANNEL 2462, AVERAGE

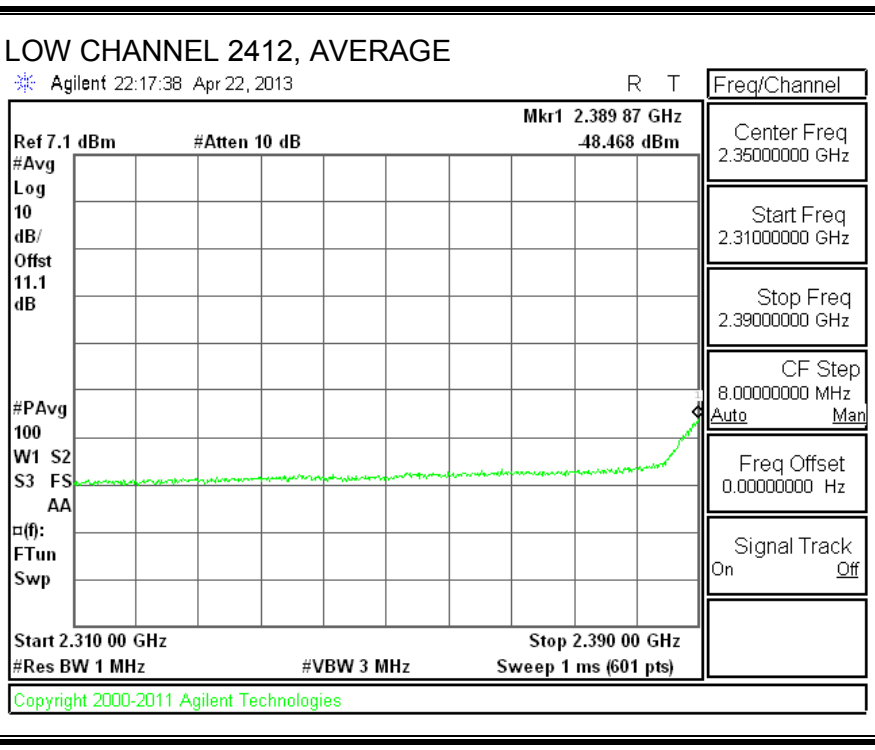


Chain 1

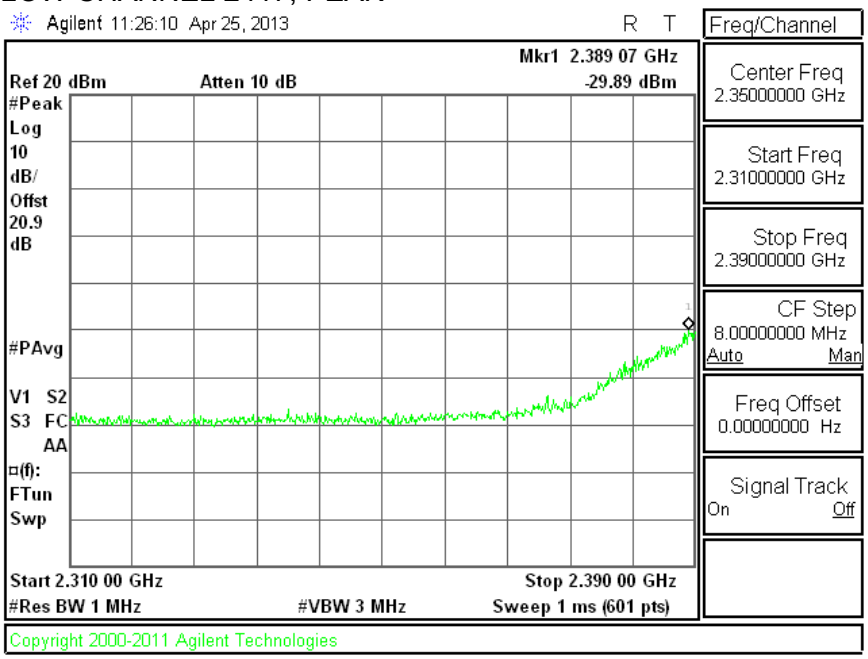
LOW CHANNEL 2412, PEAK



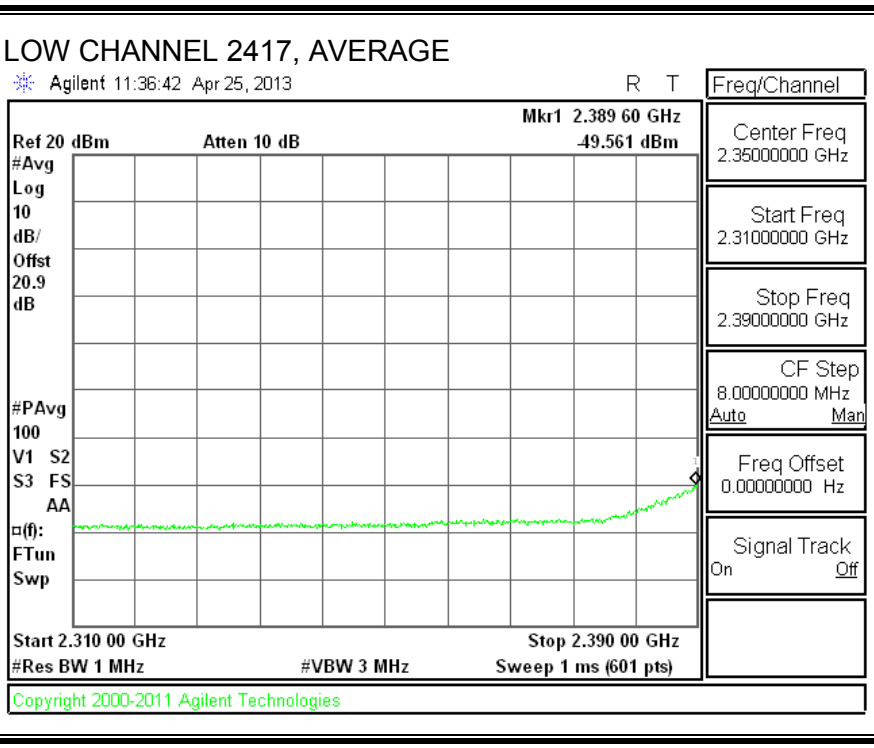
LOW CHANNEL 2412, AVERAGE



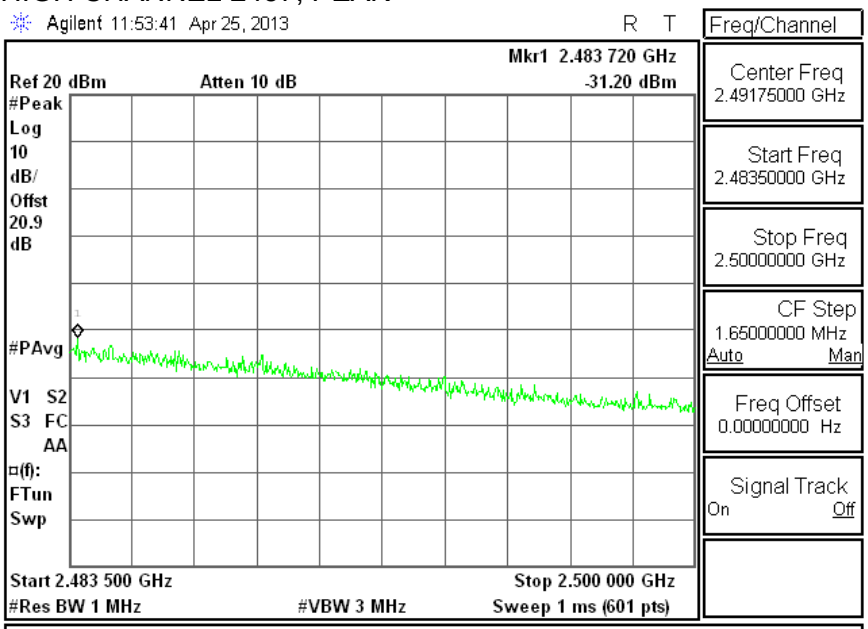
LOW CHANNEL 2417, PEAK



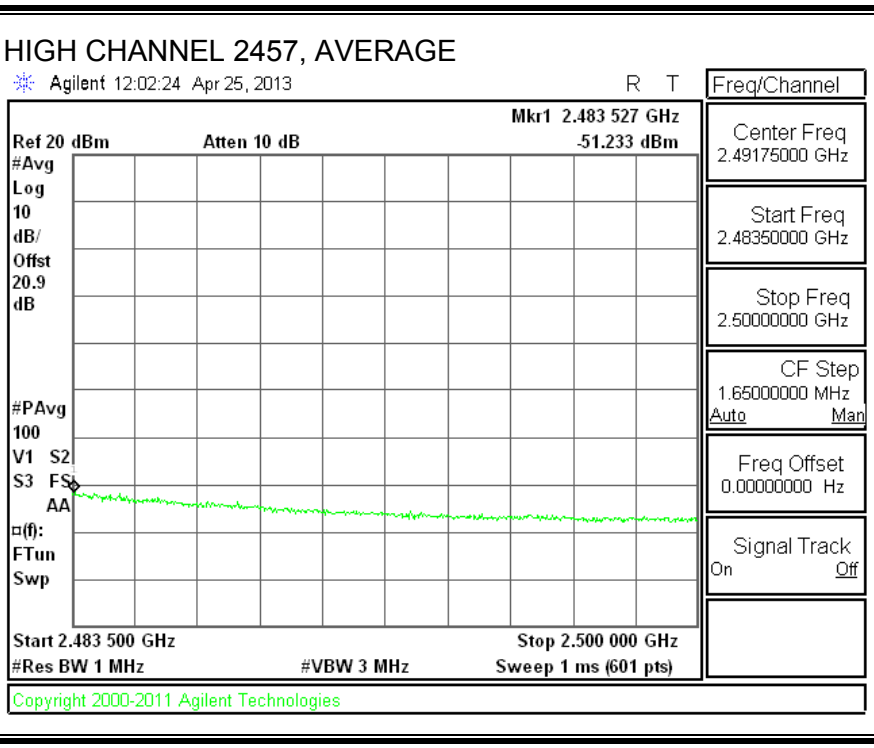
LOW CHANNEL 2417, AVERAGE



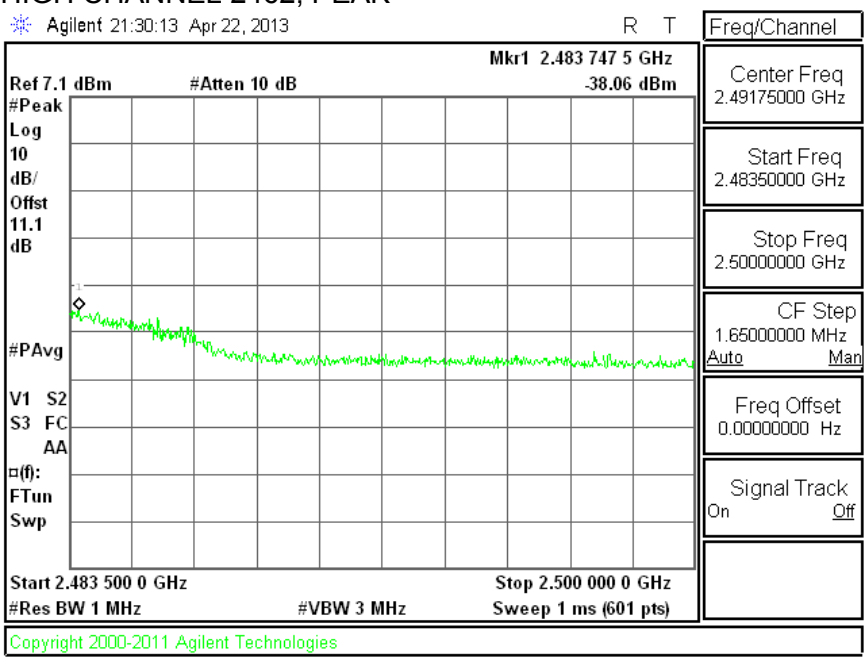
HIGH CHANNEL 2457, PEAK



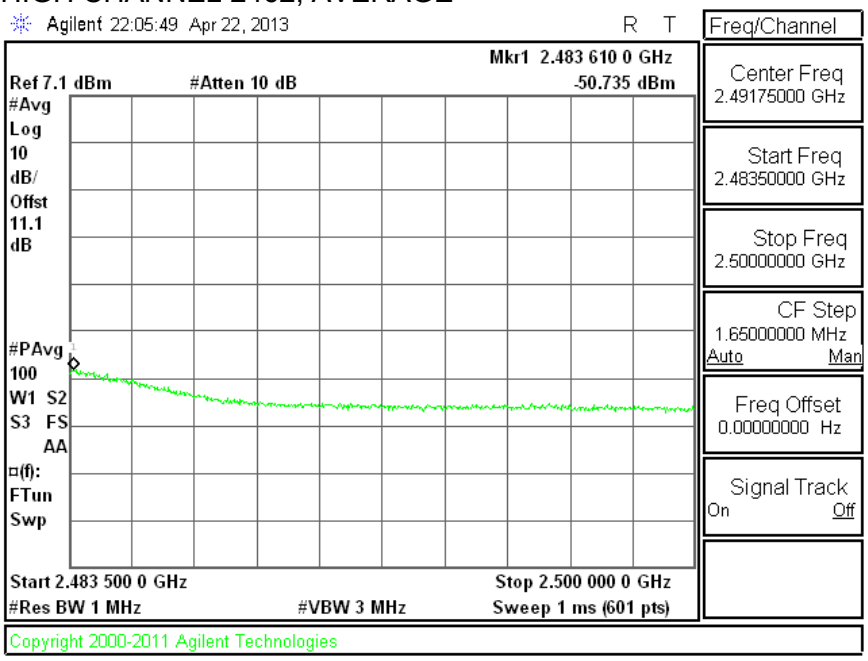
HIGH CHANNEL 2457, AVERAGE



HIGH CHANNEL 2462, PEAK

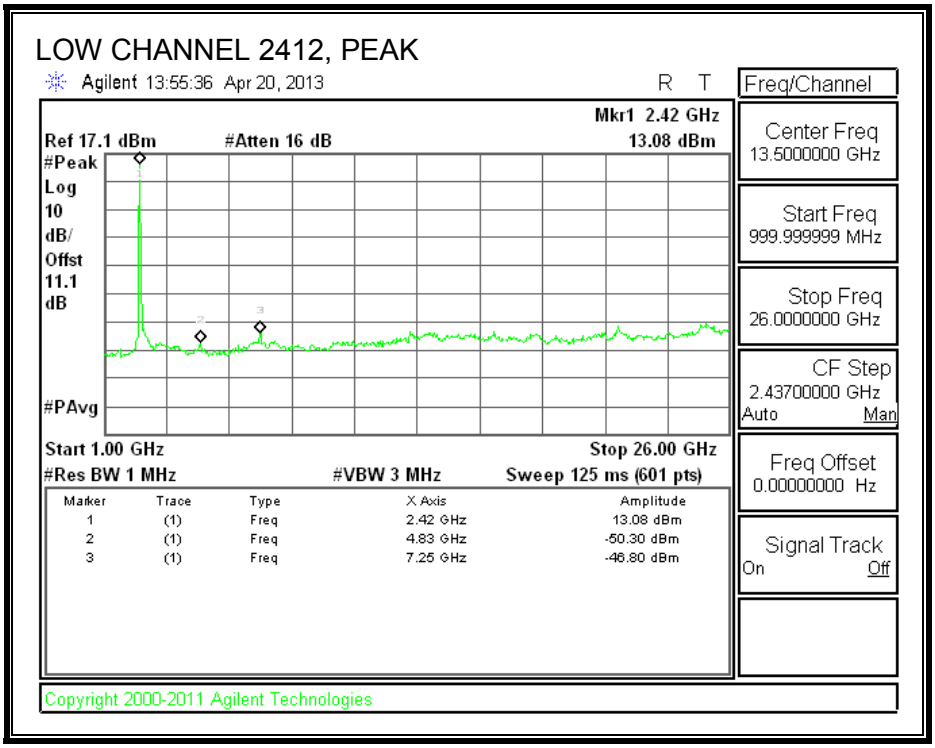


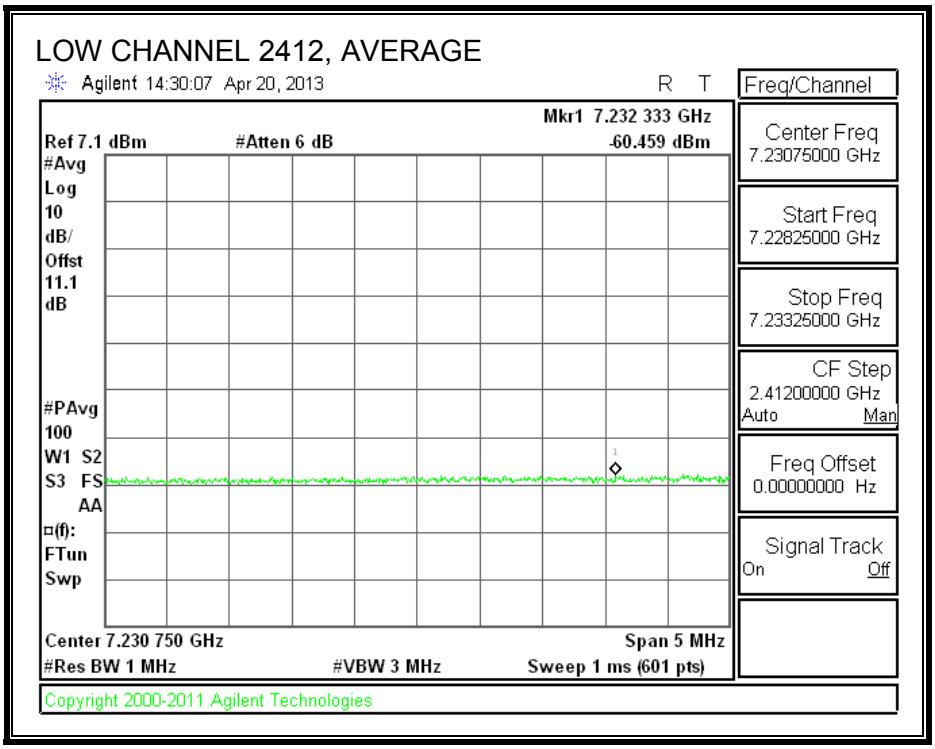
HIGH CHANNEL 2462, AVERAGE



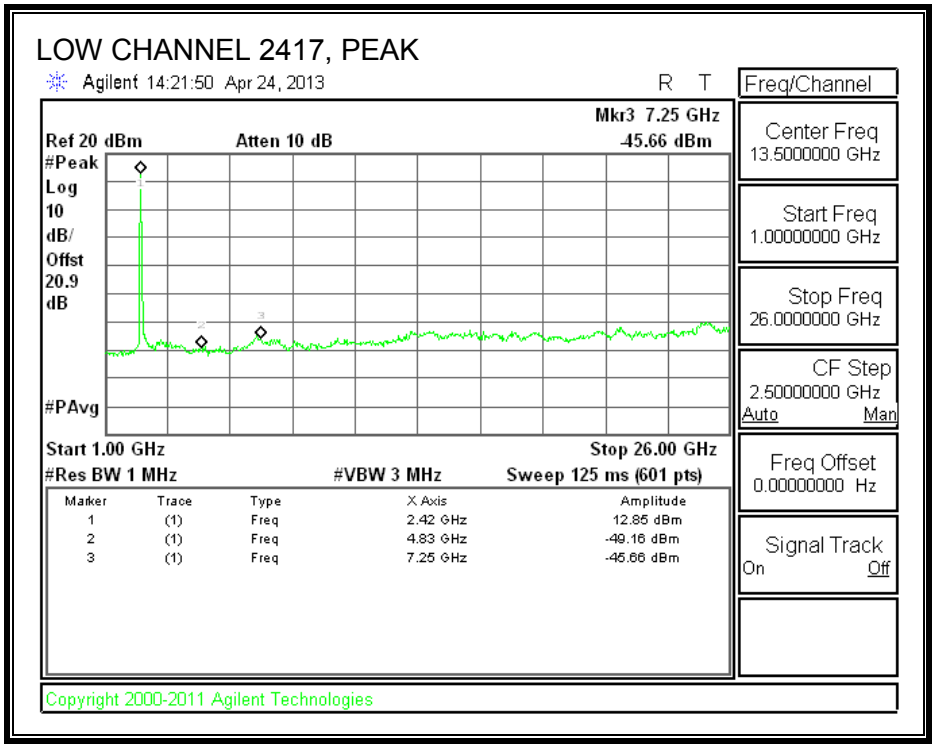
HARMONICS AND SPURIOUS

Chain 0

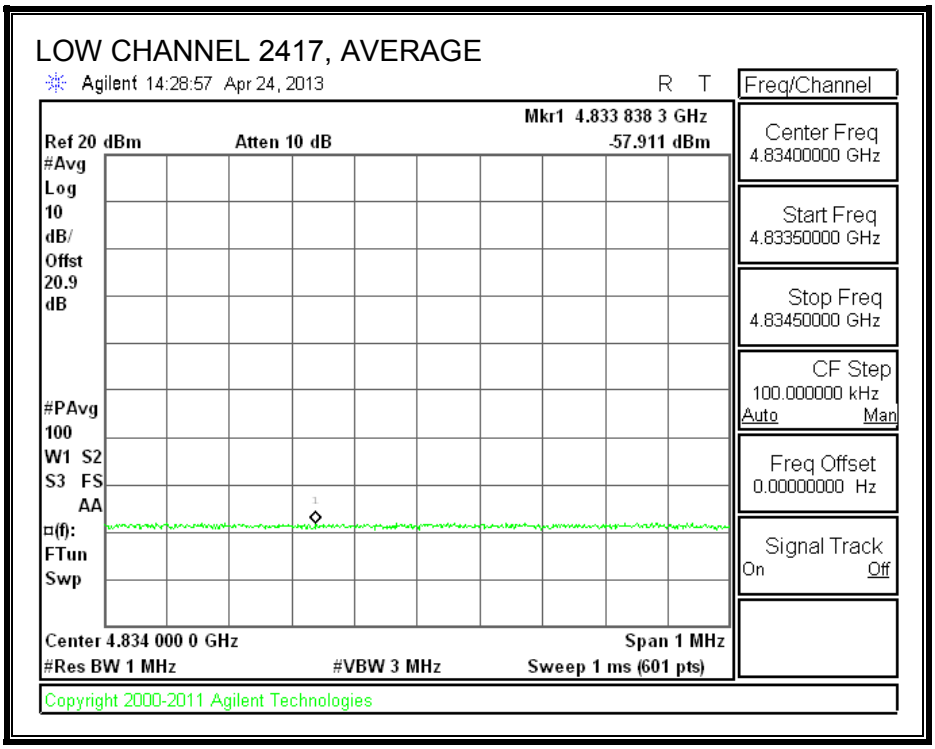


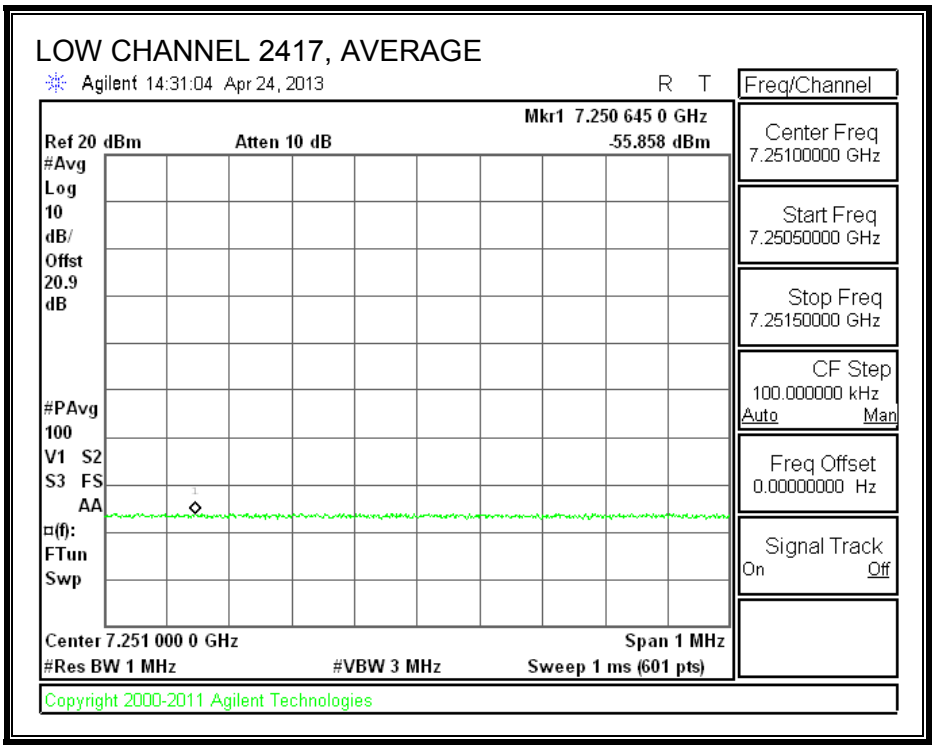


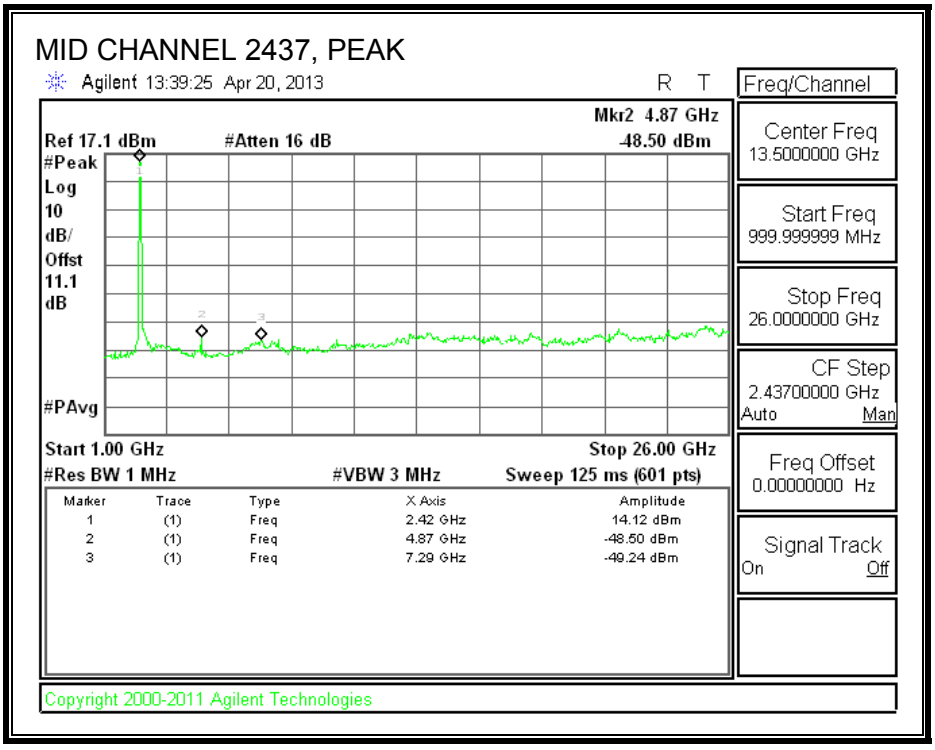
LOW CHANNEL 2417, PEAK



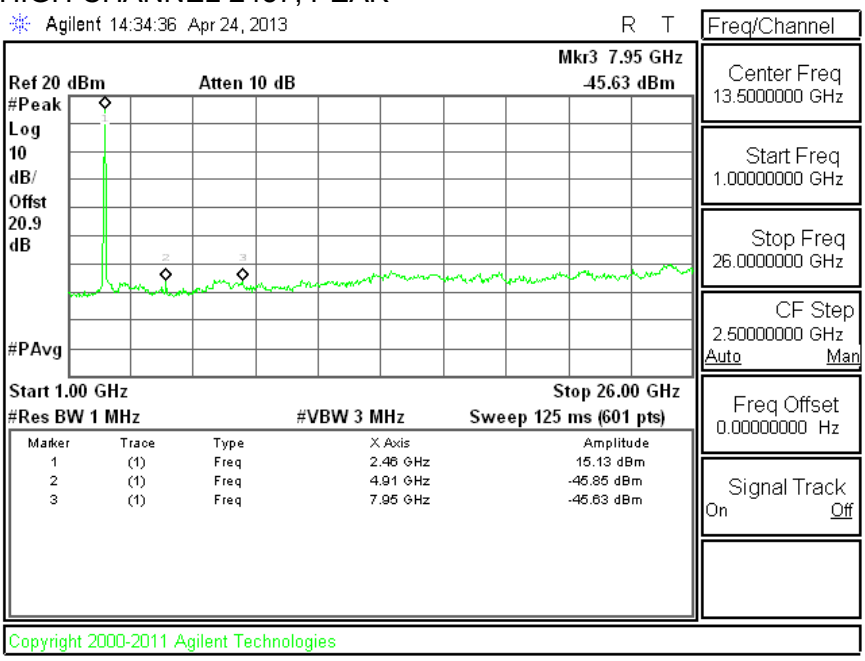
LOW CHANNEL 2417, AVERAGE



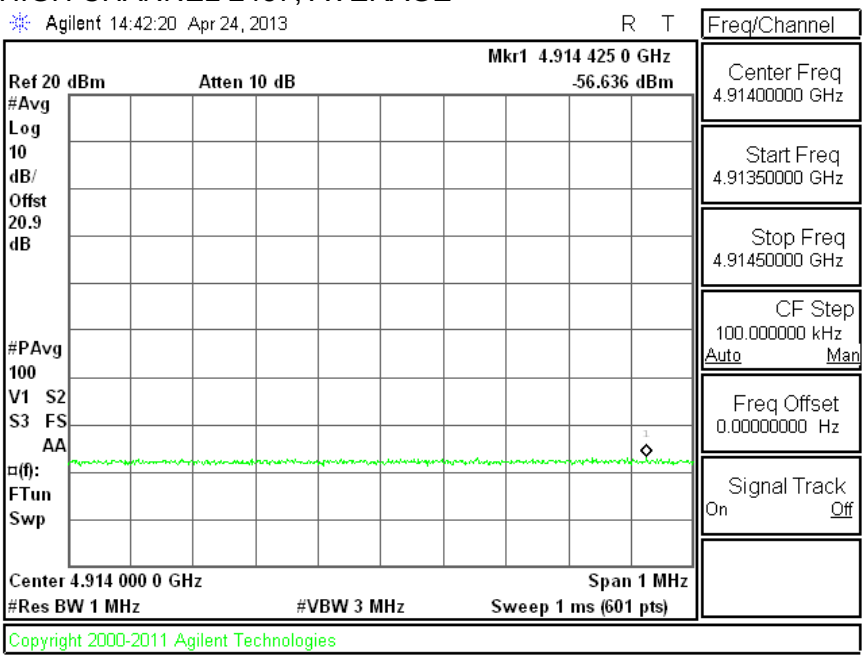




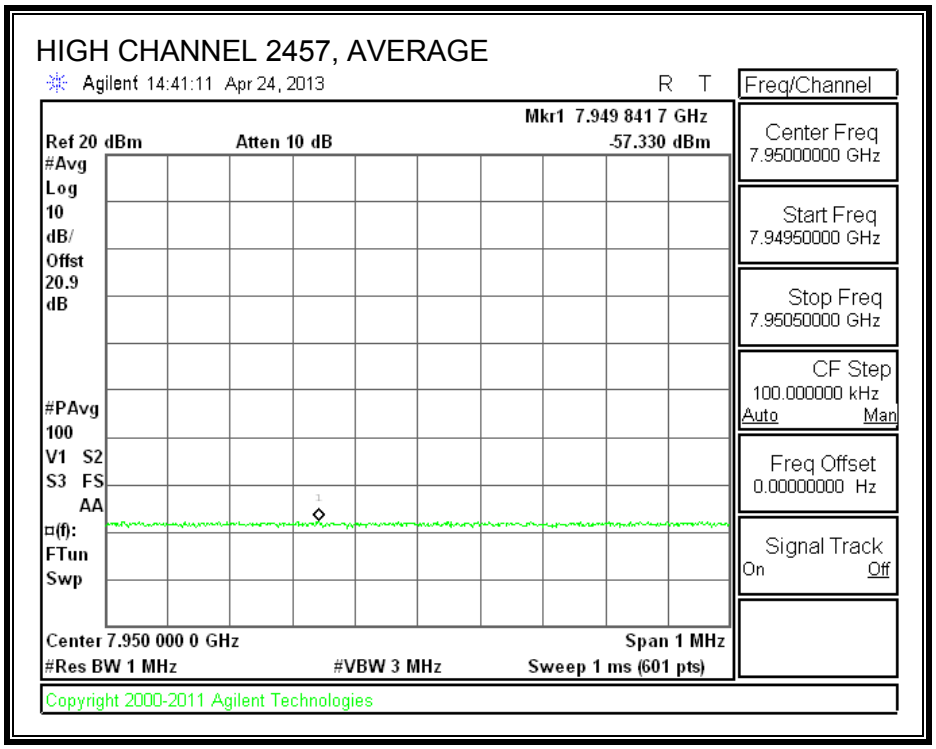
HIGH CHANNEL 2457, PEAK

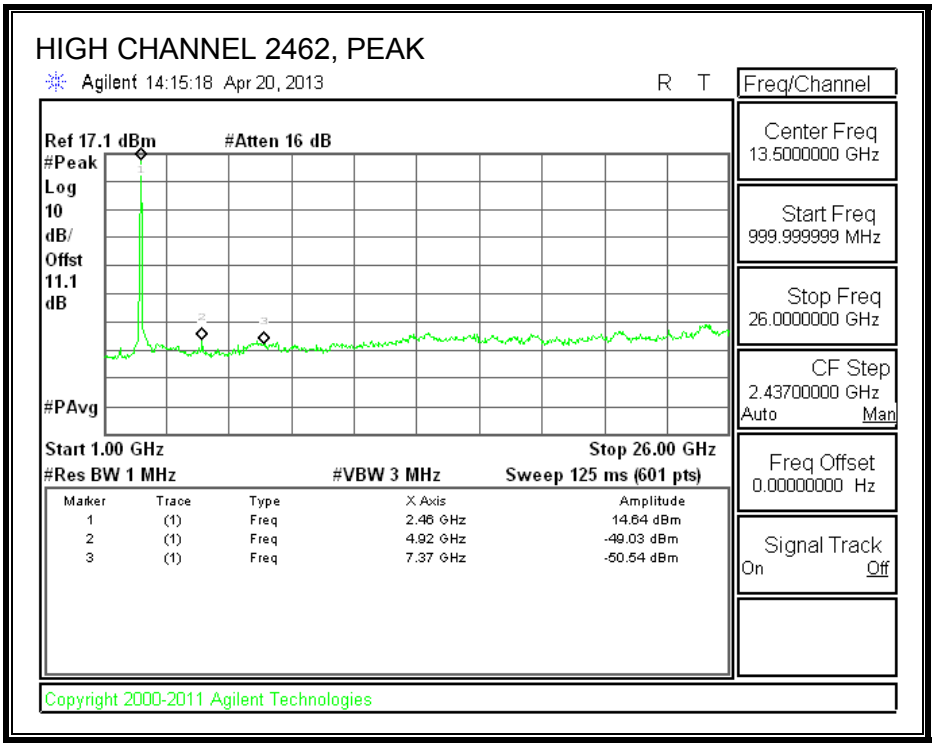


HIGH CHANNEL 2457, AVERAGE

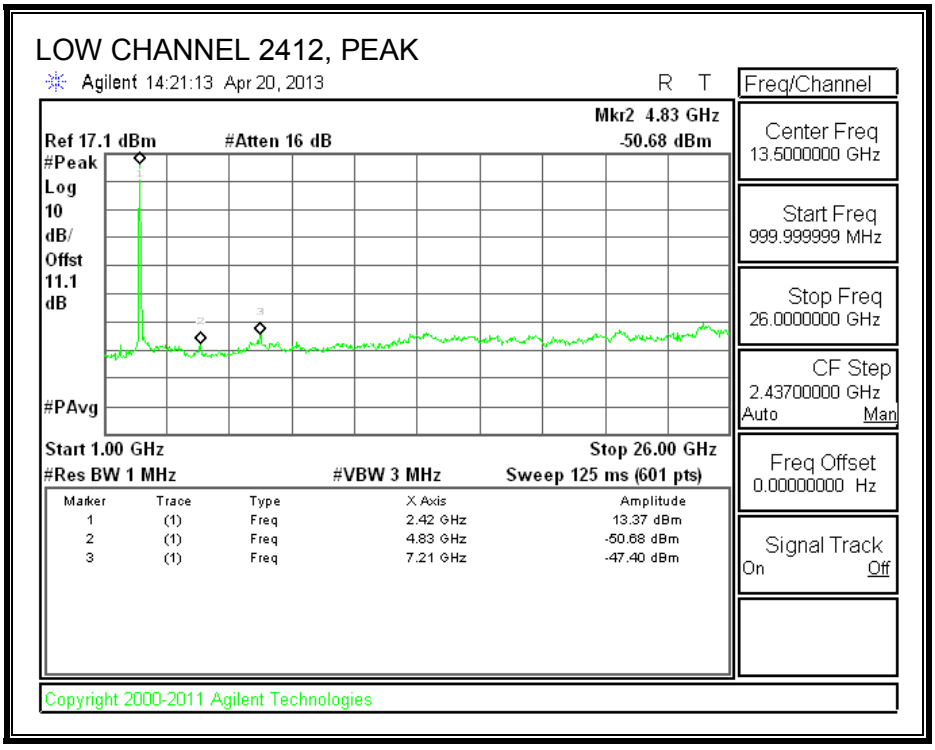


HIGH CHANNEL 2457, AVERAGE

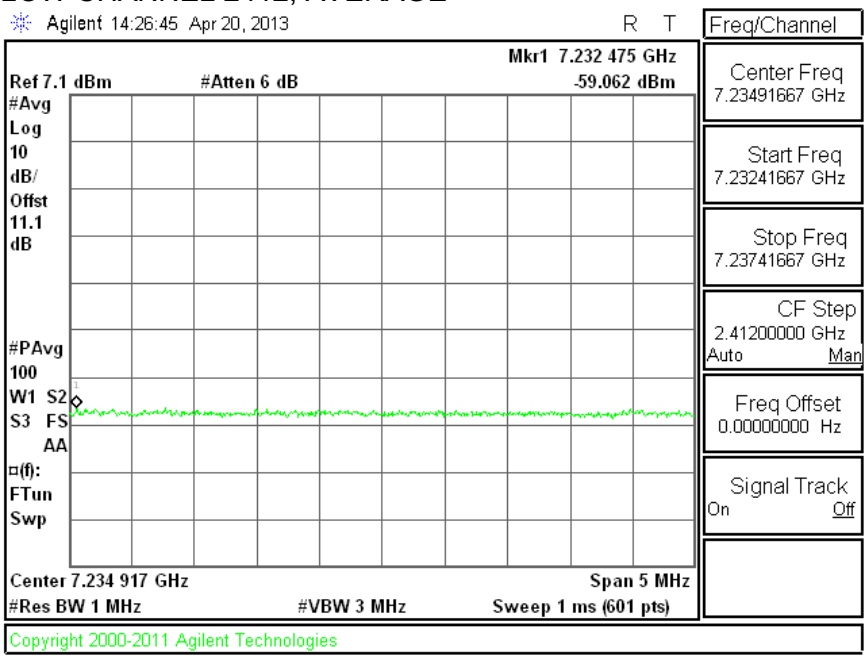




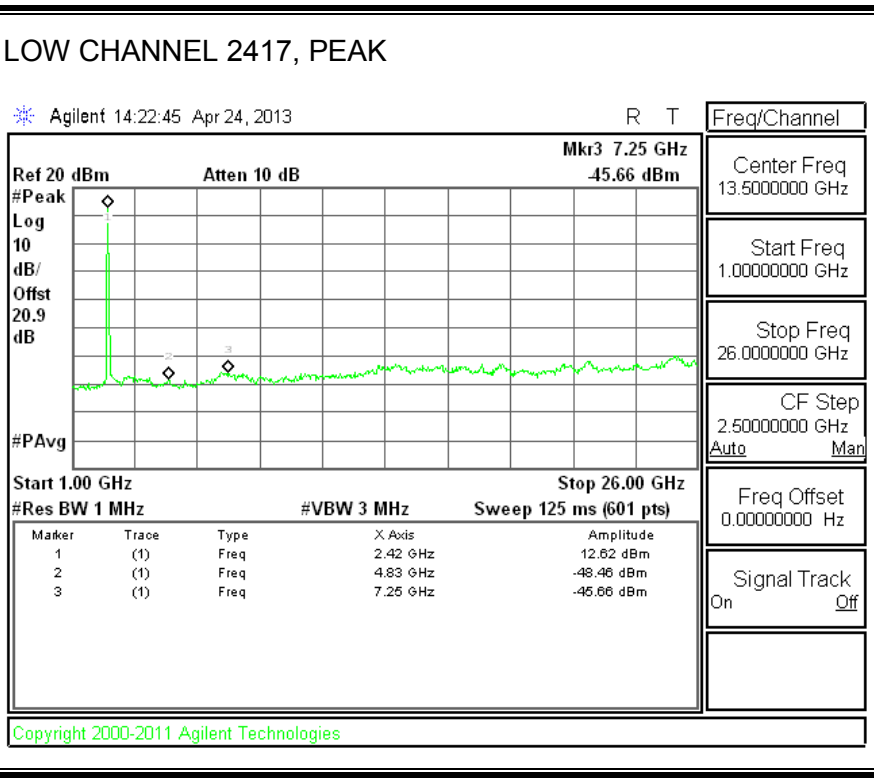
Chain 1

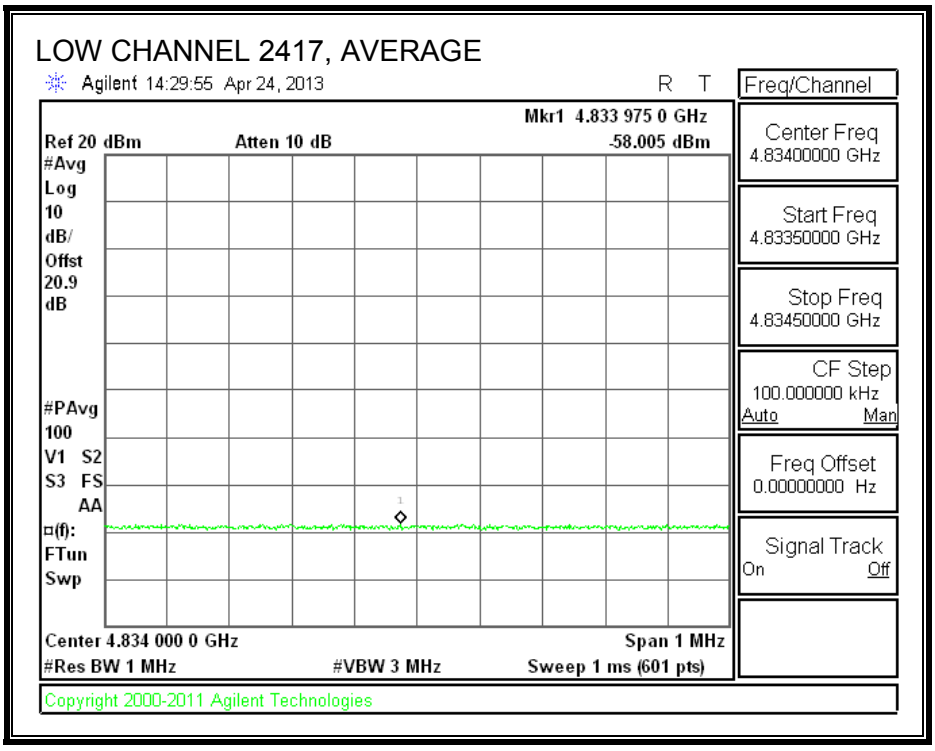


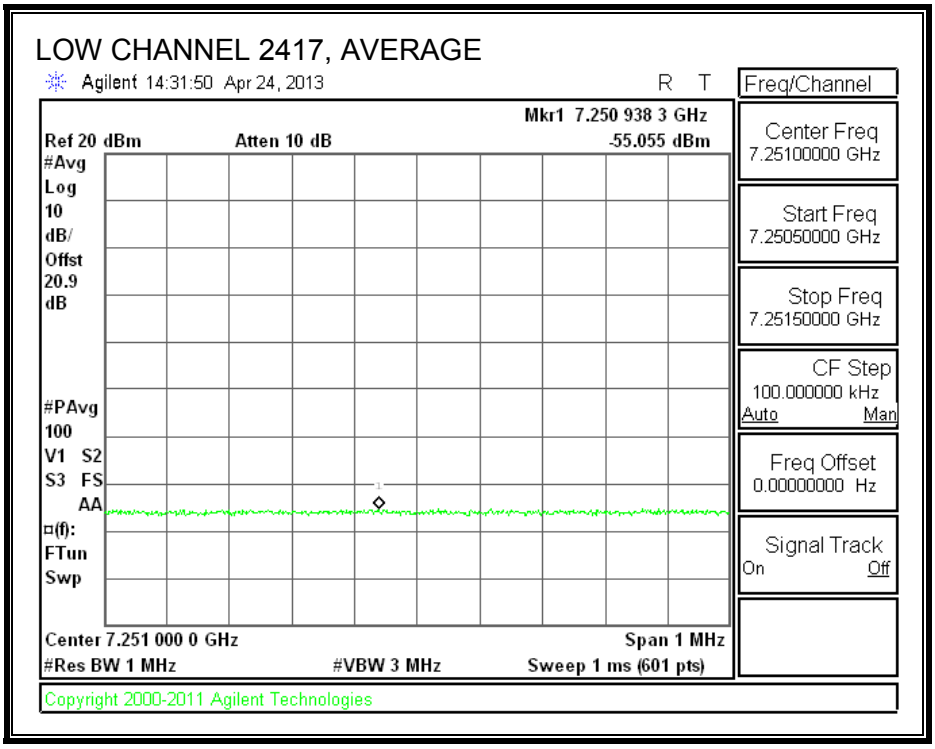
LOW CHANNEL 2412, AVERAGE



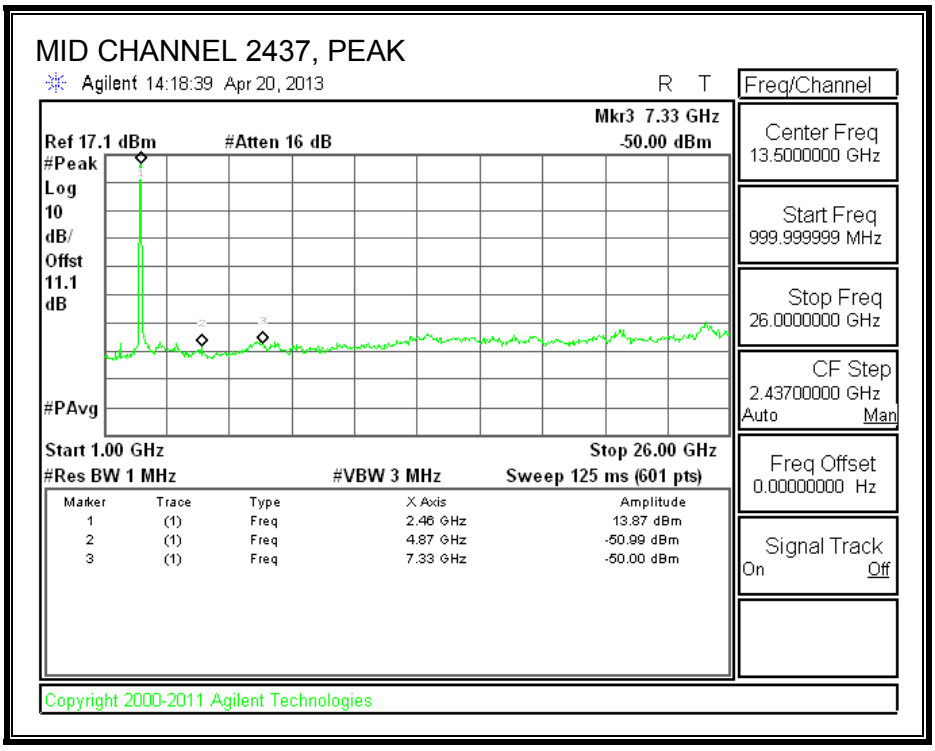
LOW CHANNEL 2417, PEAK



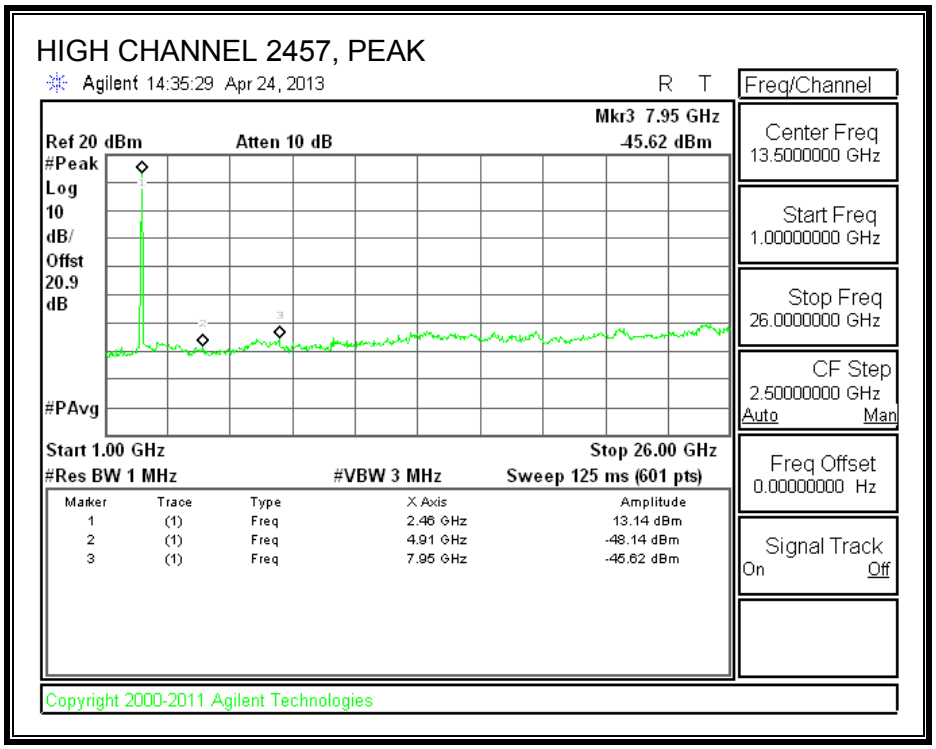


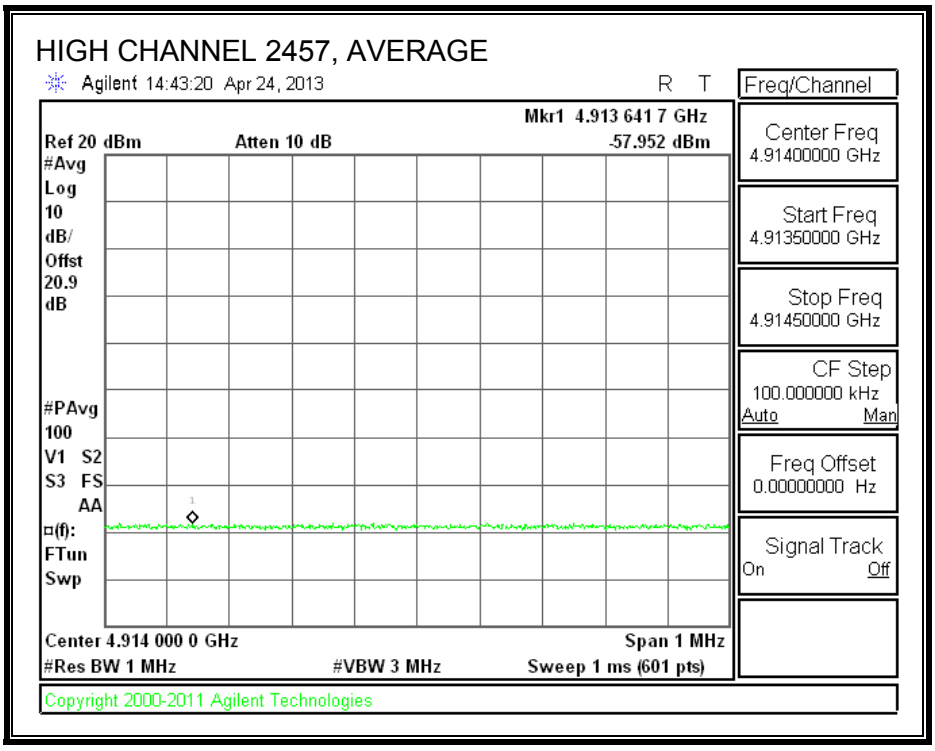


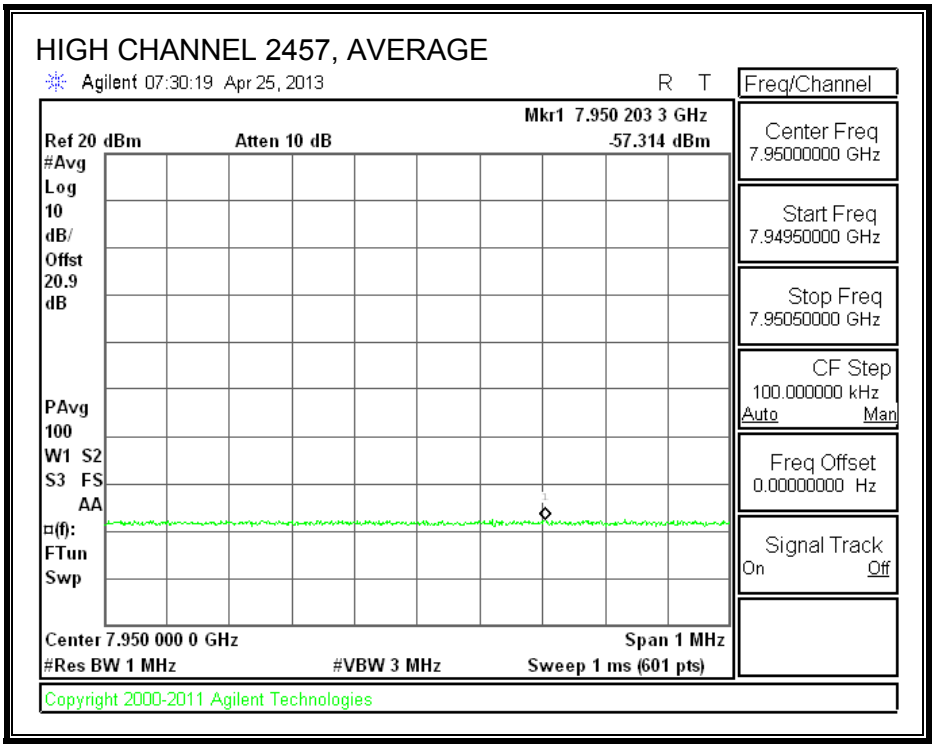
MID CHANNEL 2437, PEAK



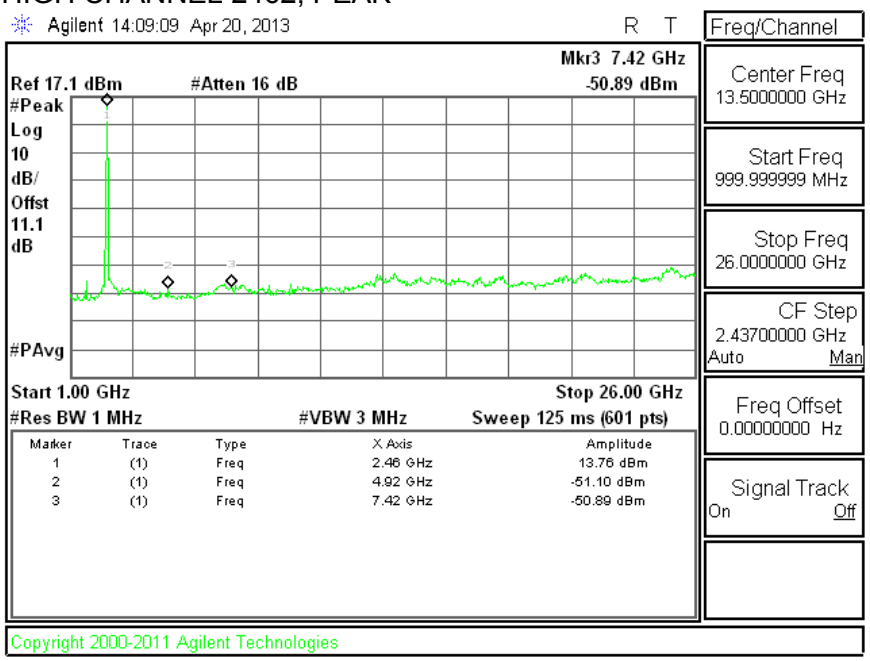
HIGH CHANNEL 2457, PEAK







HIGH CHANNEL 2462, PEAK



BANDEDGE DATA

2TX Conducted Spurious BE for FCC DTS (in the restricted bands)

Date:	4/25/2013
Test Engineer:	Oliver Su / T. Wagoner
Client:	Qualcomm Atheros
Project Number:	13U14995
Configuration:	Tx
Mode of operation:	11n HT20 2.4GHz

Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

Channel	Frequency (MHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
1 (2412)	2389	-34.89	-34.53	2	-26.69	-21.2	-5.49	10.00	9.2 / 9.2
2 (2417)	2390	-33.63	-29.89	2	-23.35	-21.2	-2.15	15.50	14.4 / 14.7
10 (2457)	2483	-29.95	-31.2	2	-22.51	-21.2	-1.31	15.50	15.8 / 14.35
11 (2462)	2483	-37.02	-38.06	2	-29.49	-21.2	-8.29	9.00	8.8 / 8.1

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
1 (2412)	2389	-50.925	-48.332	2	-41.42	-41.2	-0.22	9.00	7.6 / 8.3
2 (2417)	2389	-51.58	-49.425	2	-42.35	-41.2	-1.15	13.50	12.4 / 12.5
10 (2457)	2483	-48.954	-51.097	2	-41.87	-41.2	-0.67	13.50	14 / 12.25
11 (2462)	2483	-49.612	-50.599	2	-42.06	-41.2	-0.86	9.00	8.8 / 8.1

Note: Duty Cycle Correction Factor added. DCCF = 0.136 dB

Harmonics and Spurious Data

2TX Conducted Spurious for FCC DTS (in the restricted bands)

Date:	4/24/2013
Test Engineer:	Oliver Su / T. Wagoner
Client:	Qualcomm
Project Number:	13U14995
Configuration:	Tx
Mode of operation:	11n HT20 2.4GHz

Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

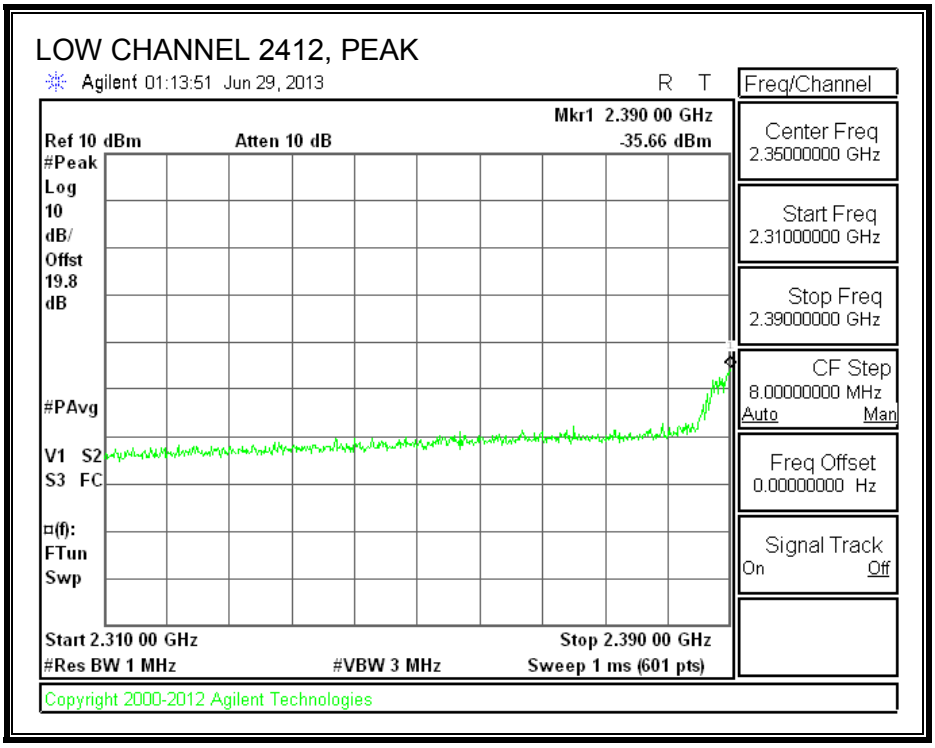
Channel	Frequency (MHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
1 (2412)	4824	-50.3	-50.68	2	-42.47	-21.2	-21.27	17.50	17.5 / 17.8
1 (2412)	7236	-46.8	-47.4	2	-39.07	-21.2	-17.87	17.50	17.5 / 17.8
2 (2417)	4834	-49.16	-48.46	2	-40.78	-21.2	-19.58	17.50	16.5 / 16.5
2 (2417)	7251	-45.66	-45.66	2	-37.64	-21.2	-16.44	17.50	16.5 / 16.5
6 (2437)	4874	-48.5	-50.99	2	-41.55	-21.2	-20.35	17.50	17.5 / 17.6
6 (2437)	7311	-49.24	-50	2	-41.58	-21.2	-20.38	17.50	17.5 / 17.6
10 (2457)	4914	-45.85	-48.14	2	-38.83	-21.2	-17.63	17.50	17.5 / 17.6
10 (2457)	7950	-45.63	-45.62	2	-37.60	-21.2	-16.40	17.50	17.5 / 17.6
11 (2462)	4924	-49.03	-51.1	2	-41.92	-21.2	-20.72	17.50	18.3 / 17.6
11 (2462)	7386	-50.54	-50.89	2	-42.69	-21.2	-21.49	17.50	18.3 / 17.6

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
1 (2412)	7236	-60.323	-58.926	2	-51.55	-41.2	-10.35	17.50	17.4 / 17.7
2 (2417)	4834	-57.775	-57.869	2	-49.80	-41.2	-8.60	17.50	16.5 / 16.5
2 (2417)	7251	-55.722	-54.919	2	-47.28	-41.2	-6.08	17.50	16.5 / 16.5
10(2457)	4914	-56.5	-57.816	2	-49.09	-41.2	-7.89	17.50	16.5 / 16.5
10 (2457)	7950	-57.194	-57.178	2	-49.17	-41.2	-7.97	17.50	16.5 / 16.5

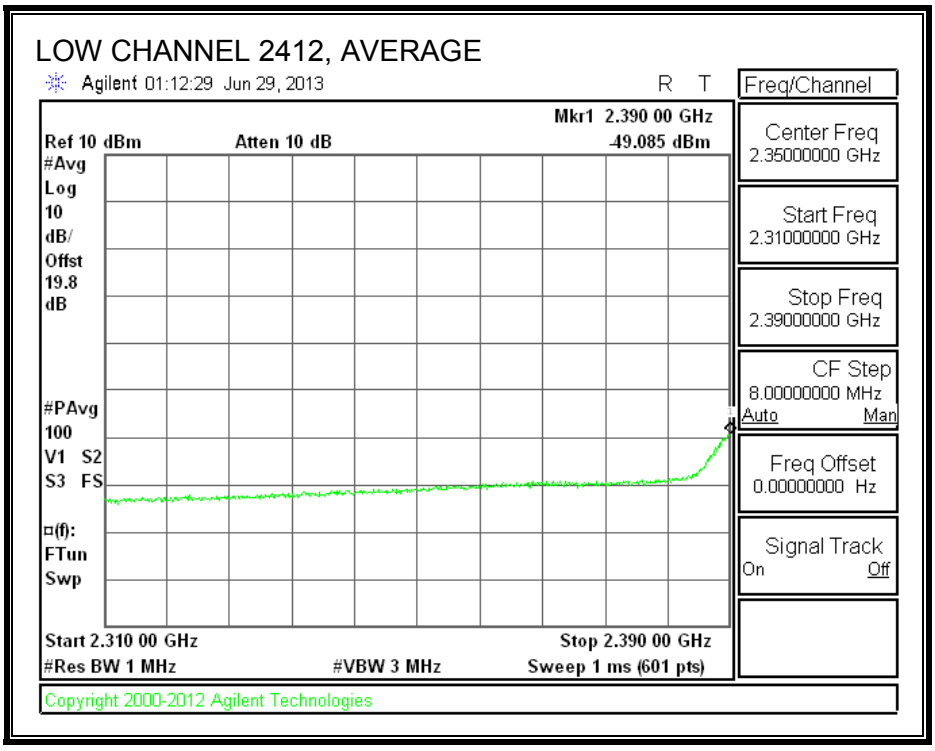
Note: Duty Cycle Correction Factor added. DCCF = 0.136 dB

8.3.8. CONDUCTED BE AND SPURIOUS IN RESTRICTED BANDS (3G filter unit)

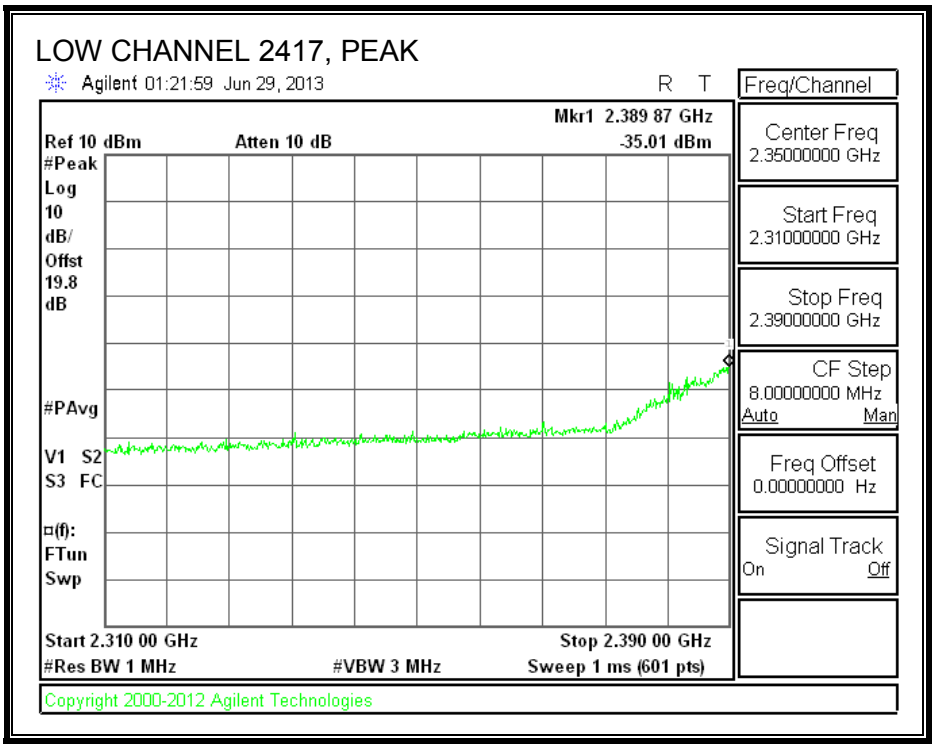
RESTRICTED BANDEDGE
Chain 0

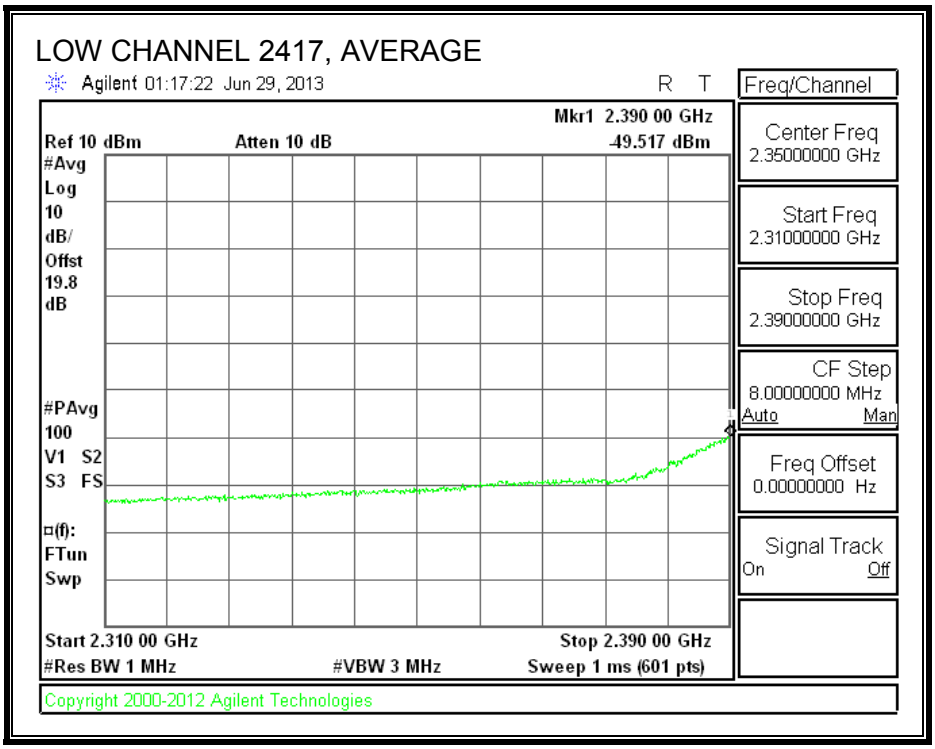


LOW CHANNEL 2412, AVERAGE

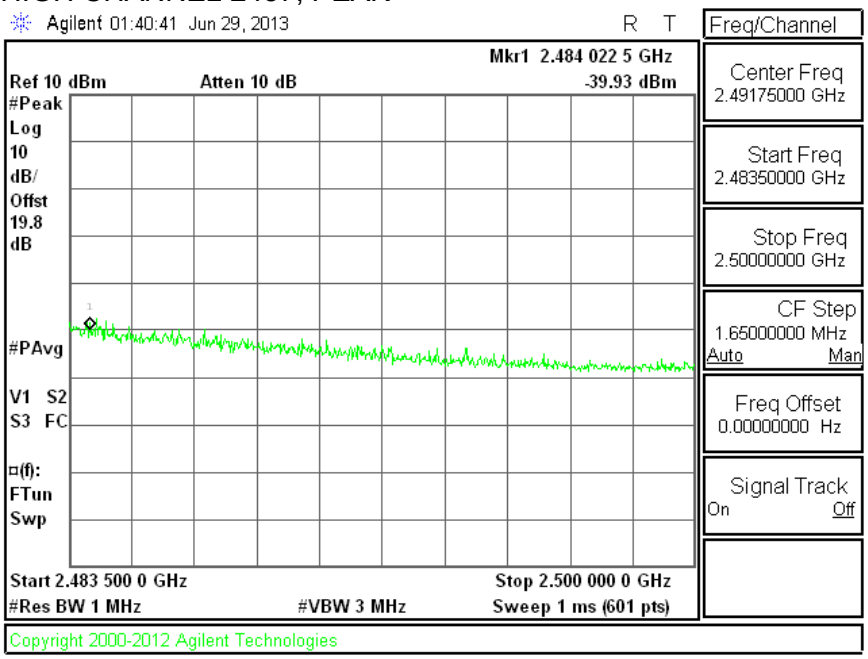


LOW CHANNEL 2417, PEAK

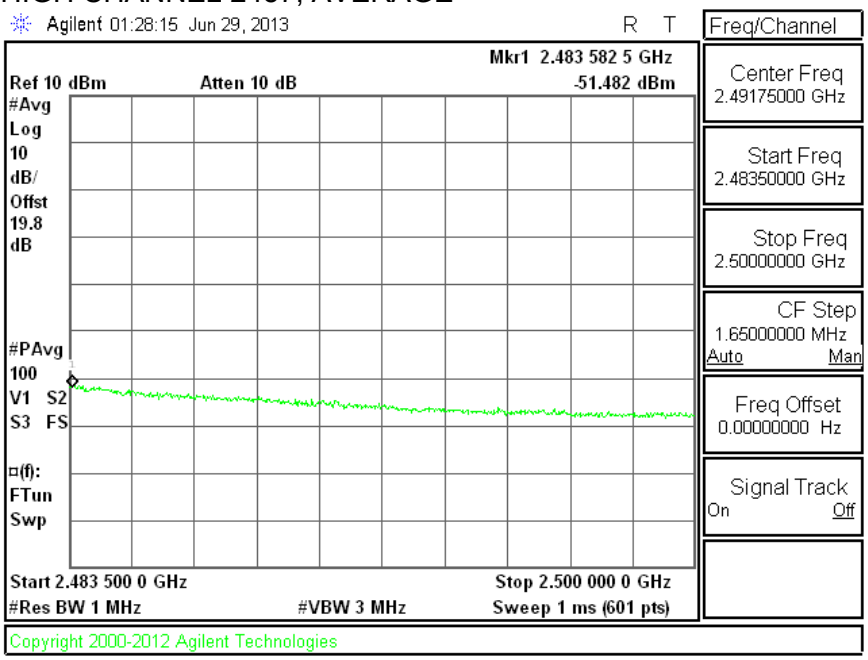




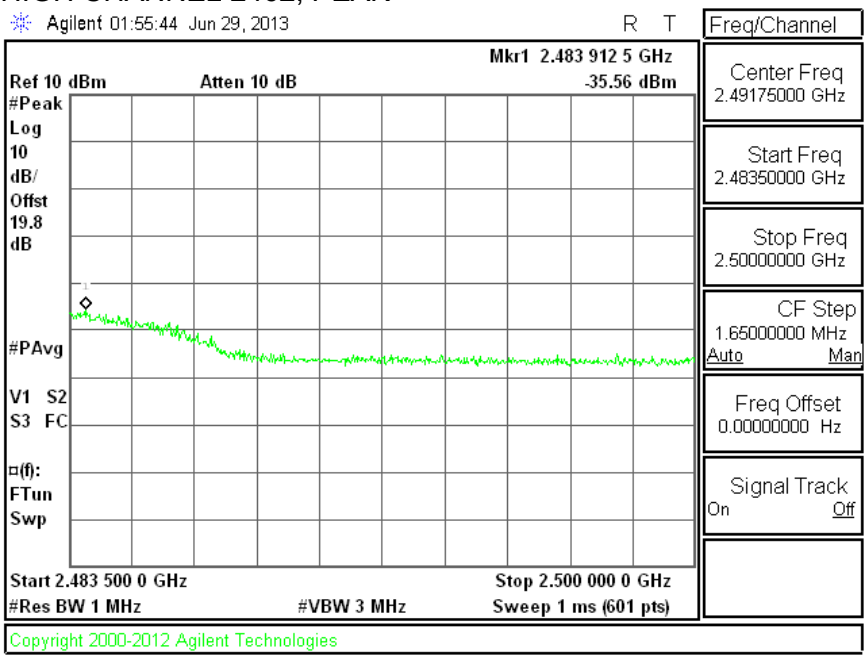
HIGH CHANNEL 2457, PEAK



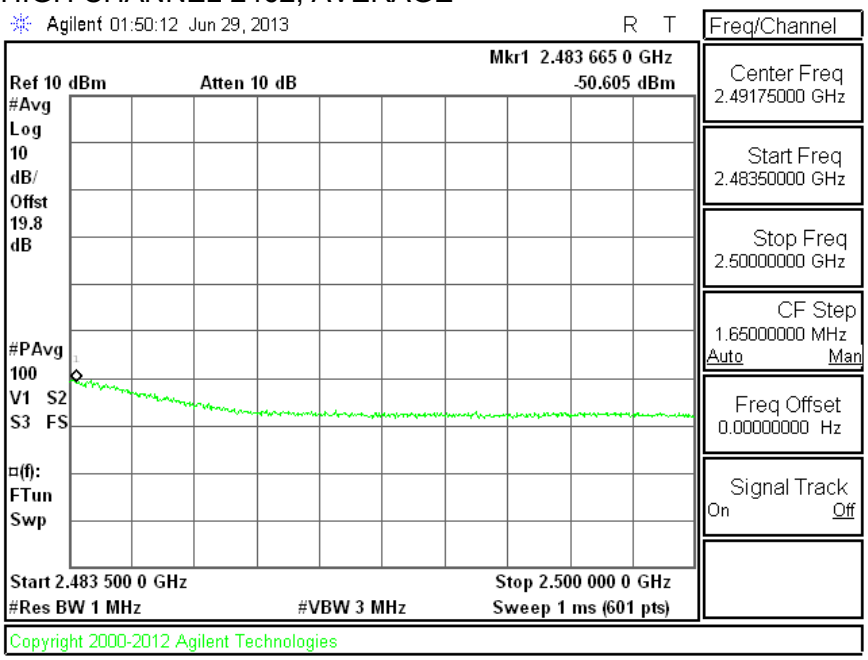
HIGH CHANNEL 2457, AVERAGE



HIGH CHANNEL 2462, PEAK

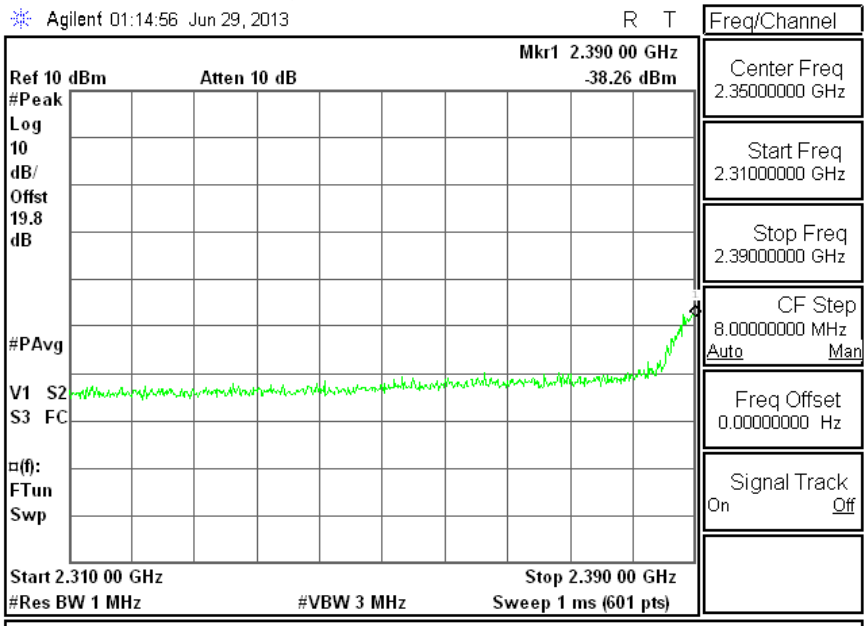


HIGH CHANNEL 2462, AVERAGE

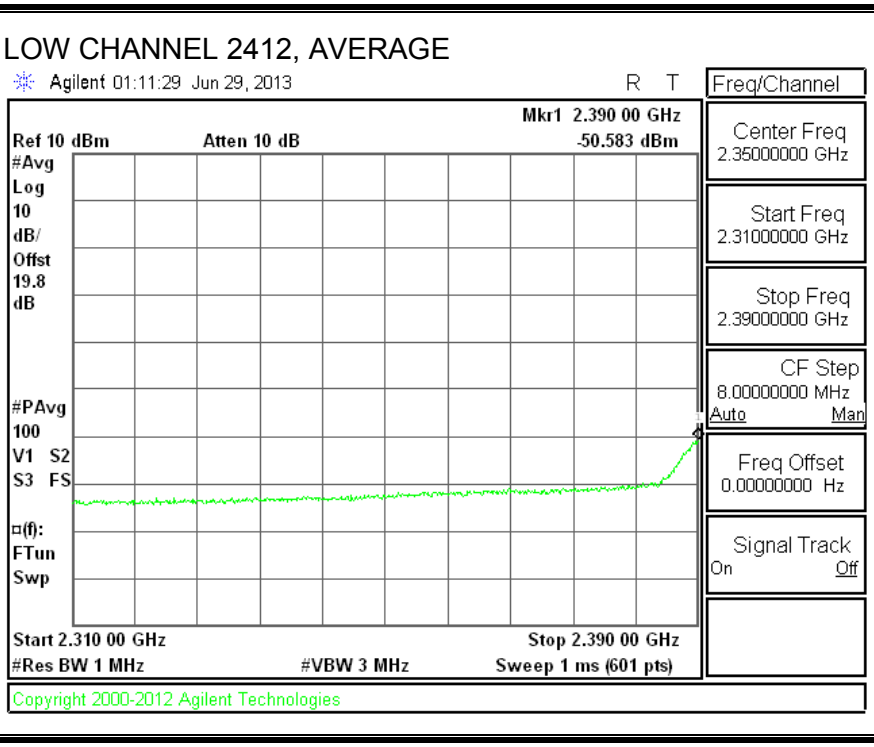


Chain 1

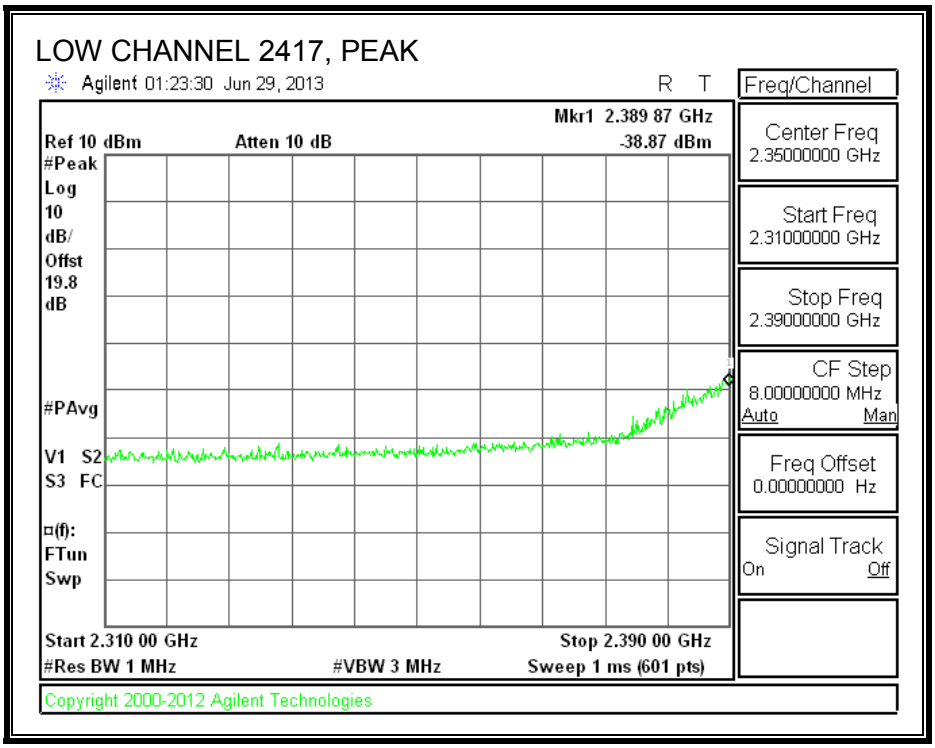
LOW CHANNEL 2412, PEAK



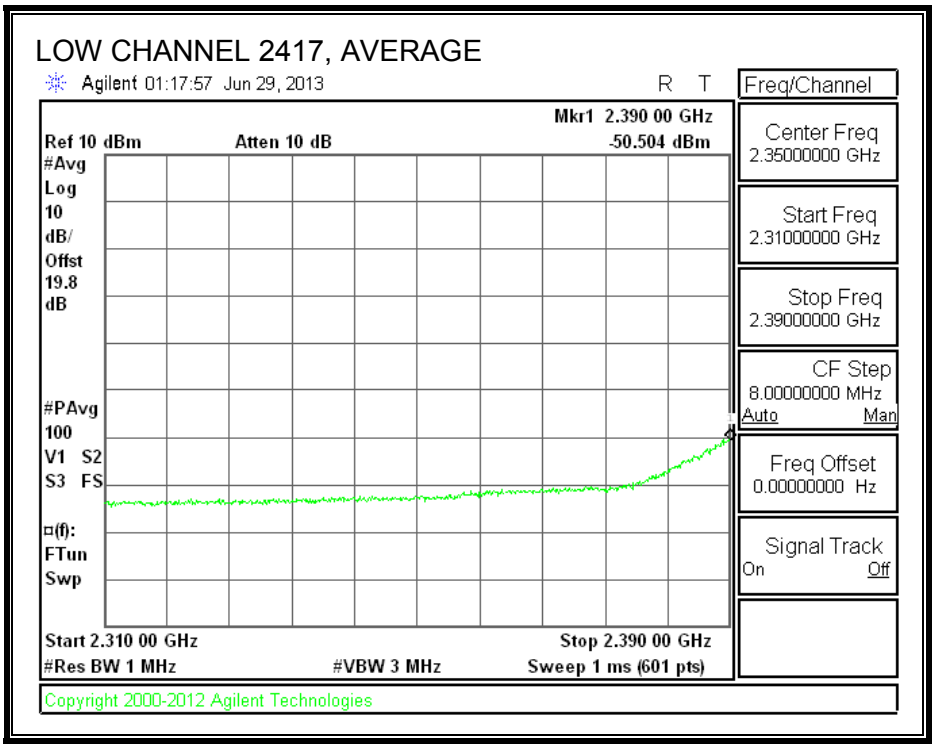
LOW CHANNEL 2412, AVERAGE



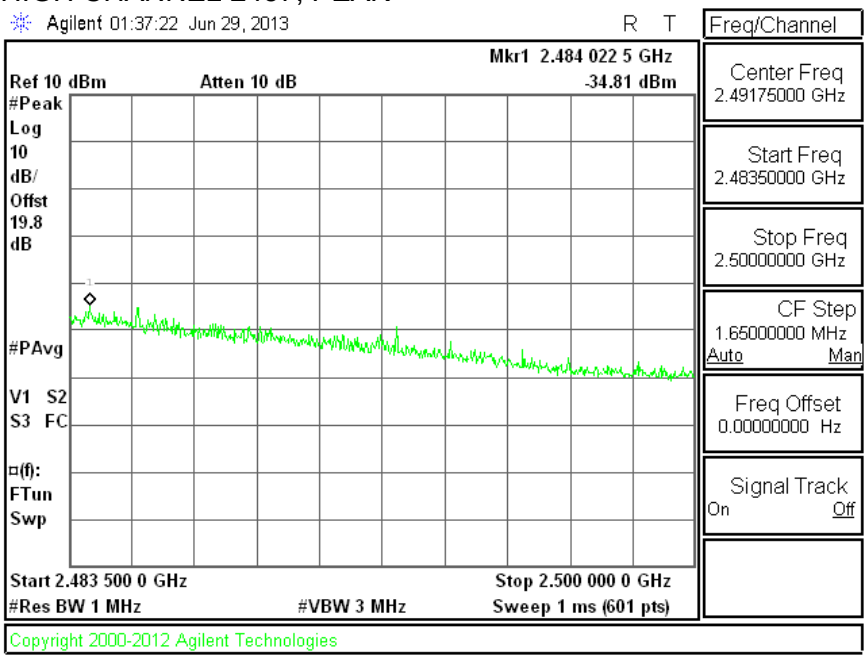
LOW CHANNEL 2417, PEAK



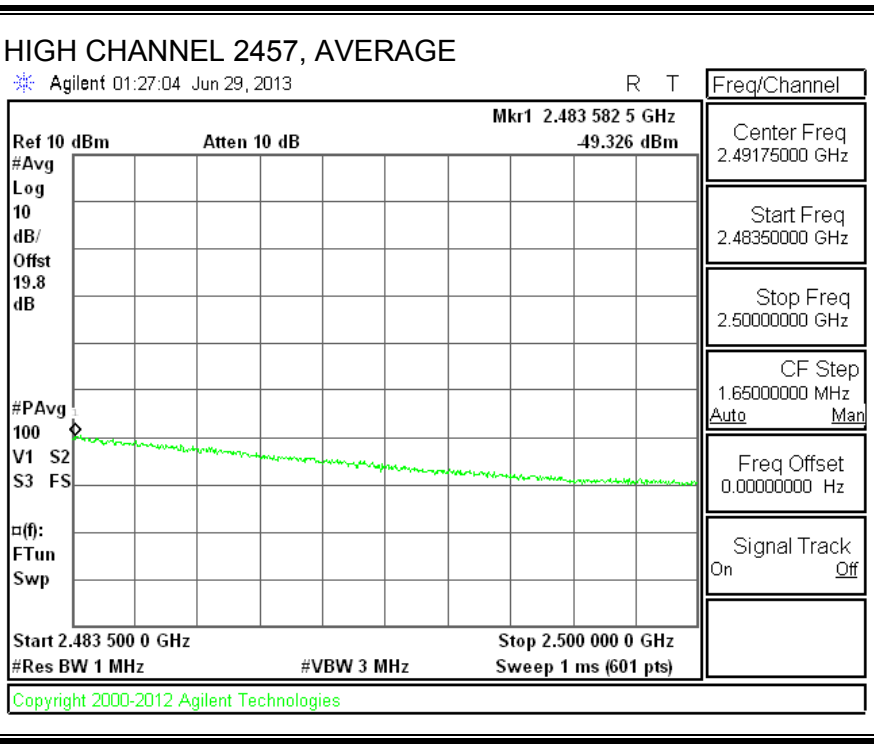
LOW CHANNEL 2417, AVERAGE



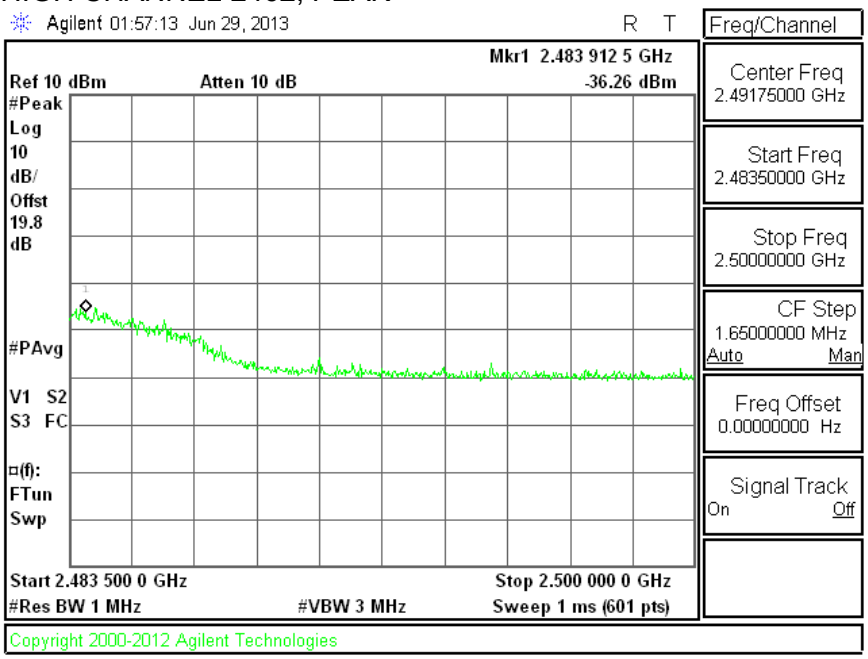
HIGH CHANNEL 2457, PEAK



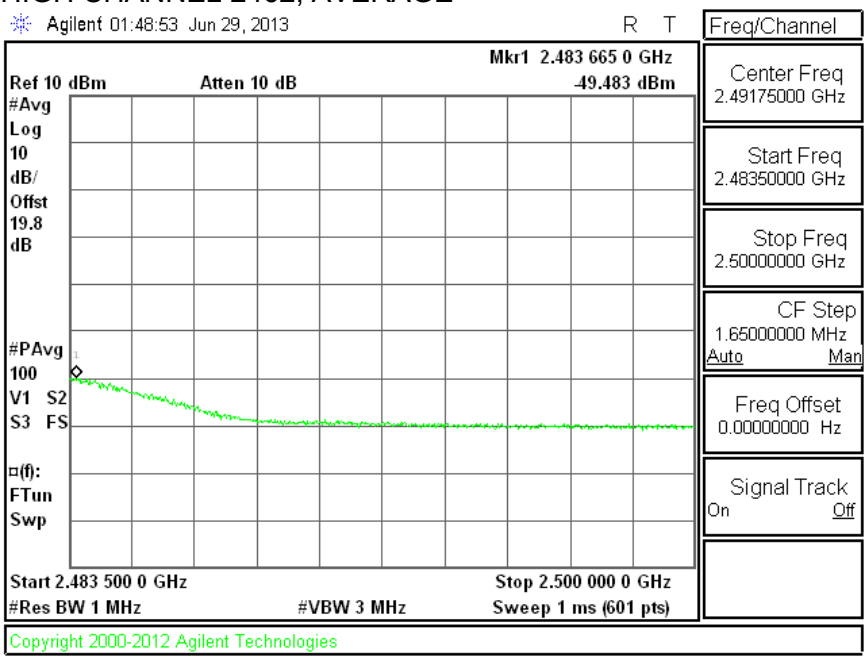
HIGH CHANNEL 2457, AVERAGE



HIGH CHANNEL 2462, PEAK



HIGH CHANNEL 2462, AVERAGE



BANDEDGE DATA

2TX Conducted BE for FCC DTS (in the restricted bands)

Date:	6/29/2013
Test Engineer:	Chris Xiong
Client:	Qualcomm Atheros
Project Number:	13U14995
Configuration:	TX
Mode of operation:	11n HT20

Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

Channel	Frequency (GHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting (dBm)	AVG Power Meter Reading - Chain 0 (dBm)	AVG Power Meter Reading - Chain 1 (dBm)
1	2.39	-35.66	-38.26	2	-28.75	-21.2	-7.55	10.50	6.86	6.73
2	2.38987	-35.01	-38.87	2	-28.50	-21.2	-7.30	15.00	11.36	10.77
10	2.4840225	-39.93	-34.81	2	-28.64	-21.2	-7.44	15.00	10.77	11.31
11	2.4839125	-35.56	-36.26	2	-27.88	-21.2	-6.68	11.00	6.77	6.99

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting (dBm)	AVG Power Meter Reading - Chain 0 (dBm)	AVG Power Meter Reading - Chain 1 (dBm)
1	2.39	-49.085	-50.583	2	-41.75	-41.2	-0.55	10.50	6.86	6.73
2	2.39	-49.517	-50.504	2	-41.96	-41.2	-0.76	15.00	11.36	10.77
10	2.4835825	-51.482	-49.326	2	-42.25	-41.2	-1.05	15.00	10.77	11.31
11	2.483665	-50.605	-49.483	2	-41.99	-41.2	-0.79	11.00	6.77	6.99

Note: Duty Cycle Correction Factor already added to PSA for average measurement.
DCCF= 0.136

8.4. 802.11a MODE IN THE 5.8 GHz BAND

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

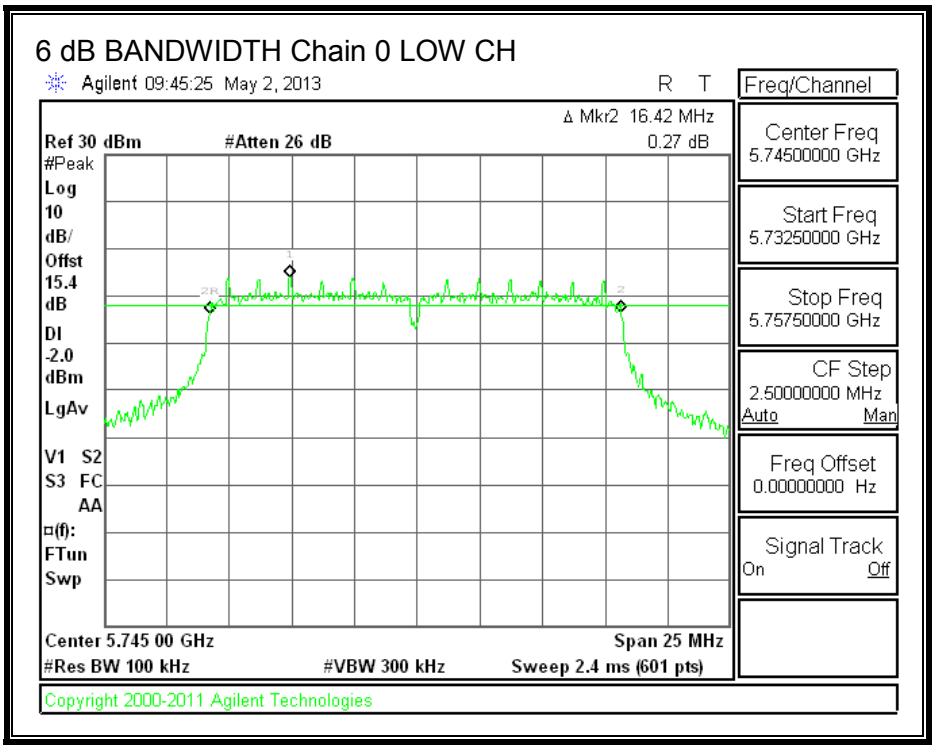
IC RSS-210 A8.2 (a)

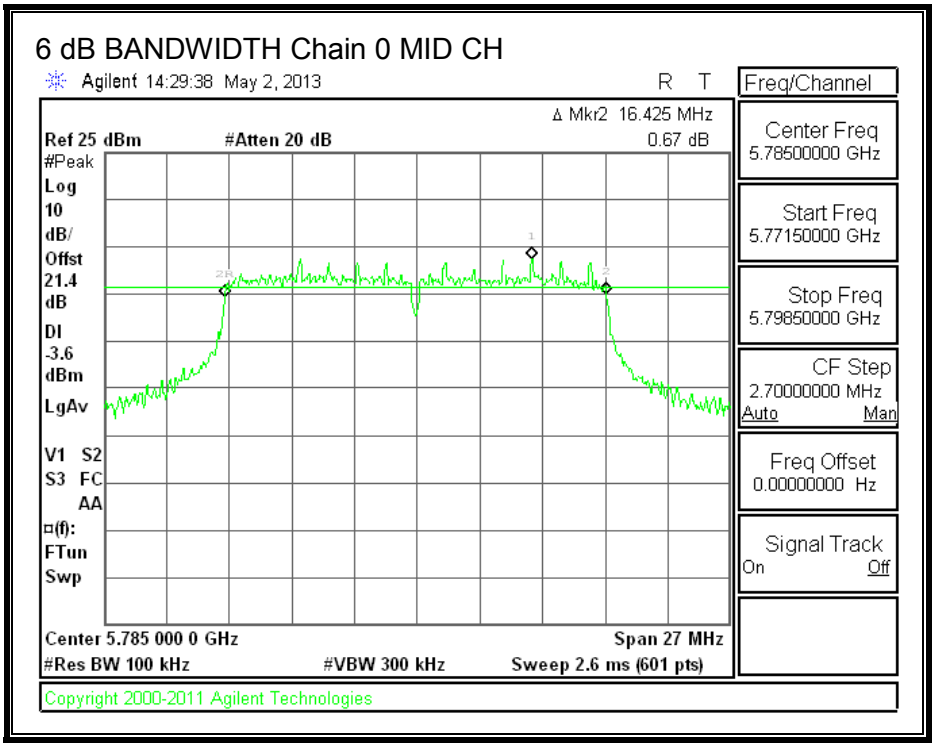
The minimum 6 dB bandwidth shall be at least 500 kHz.

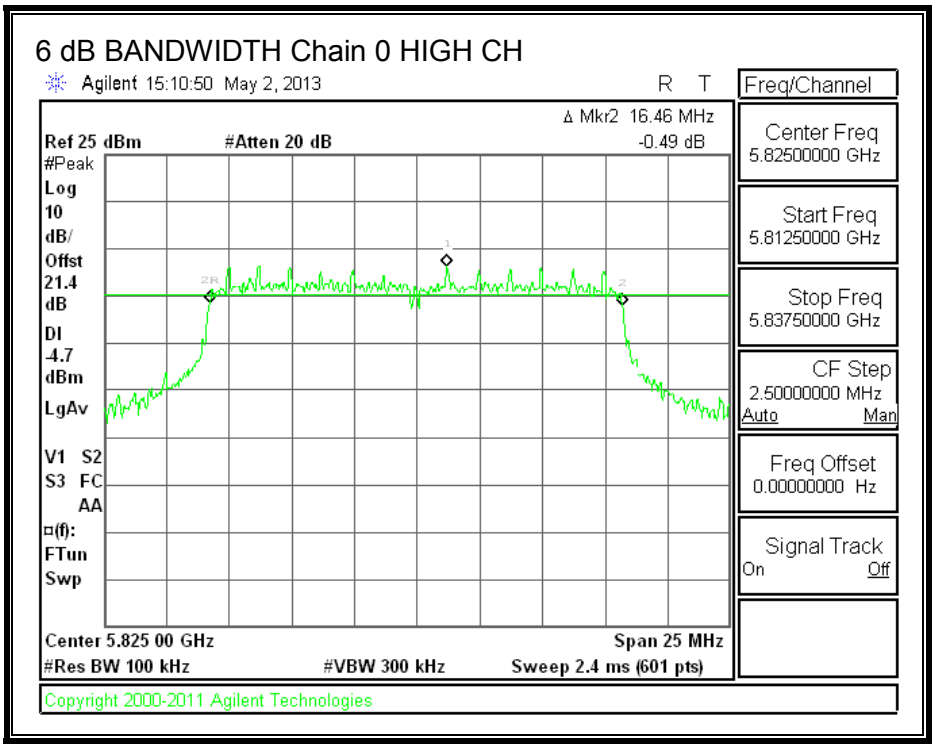
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.420	16.040	0.5
Mid	5785	16.425	16.515	0.5
High	5825	16.460	16.420	0.5

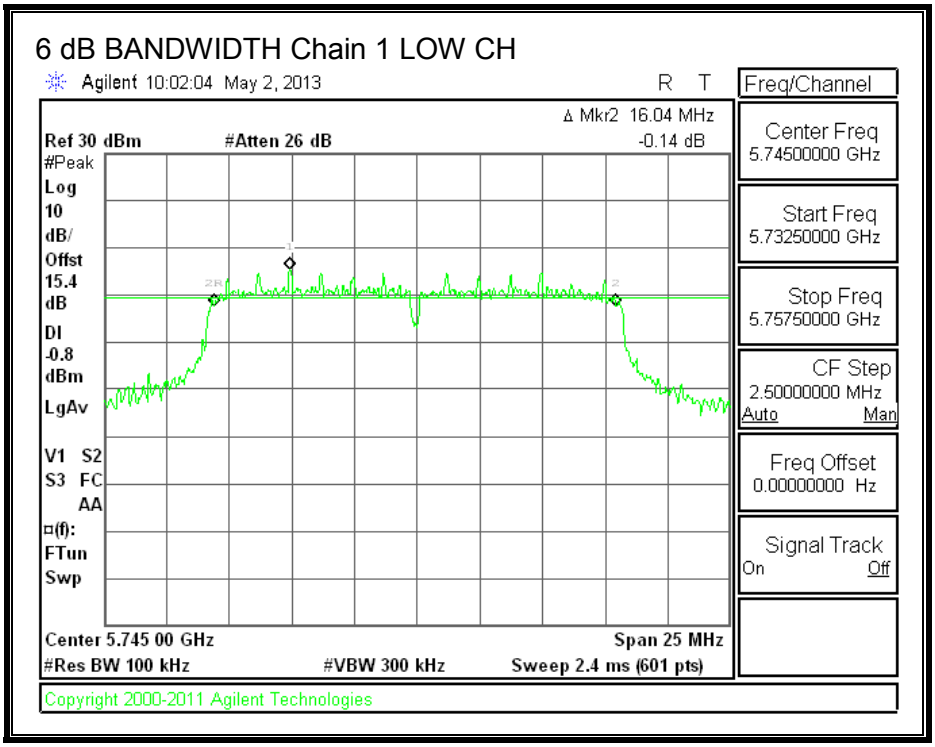
6 dB BANDWIDTH, Chain 0

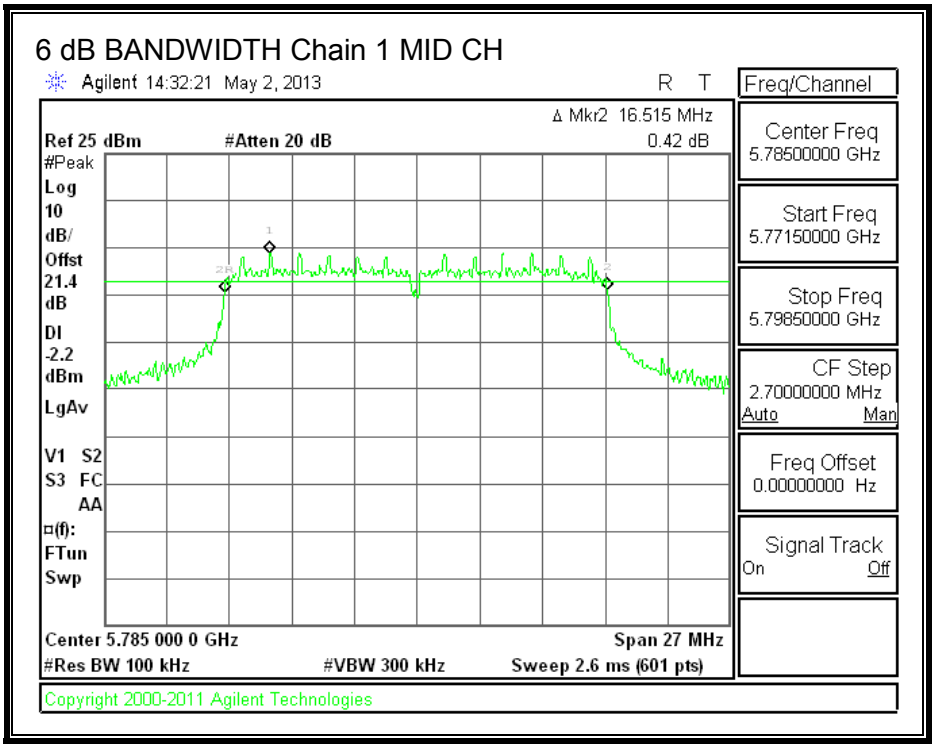


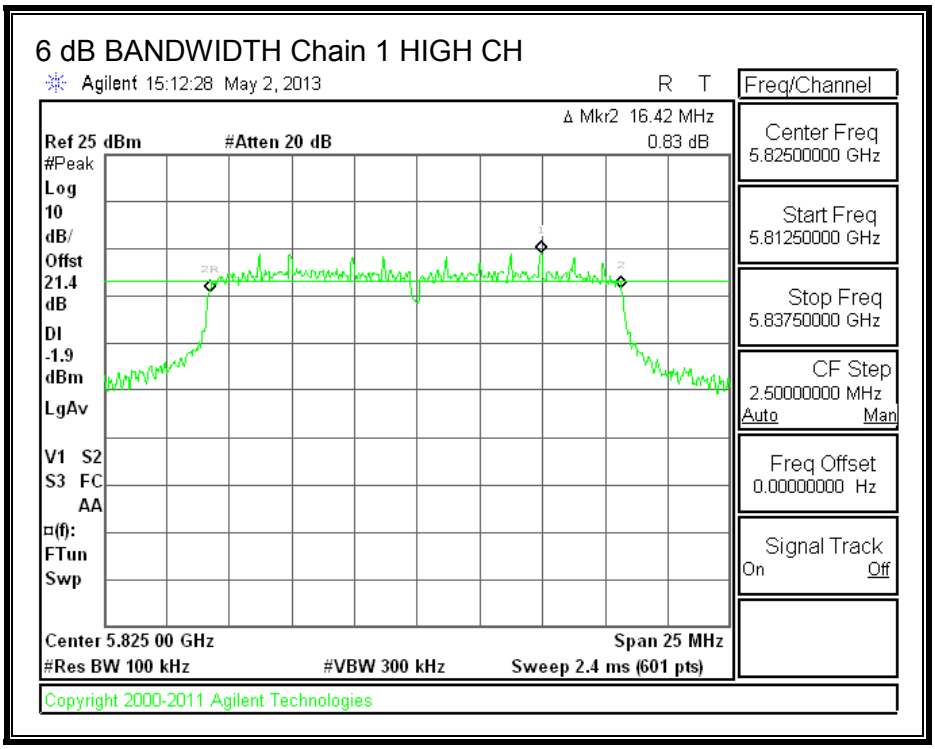




6 dB BANDWIDTH, Chain 1







8.4.2. 99% BANDWIDTH

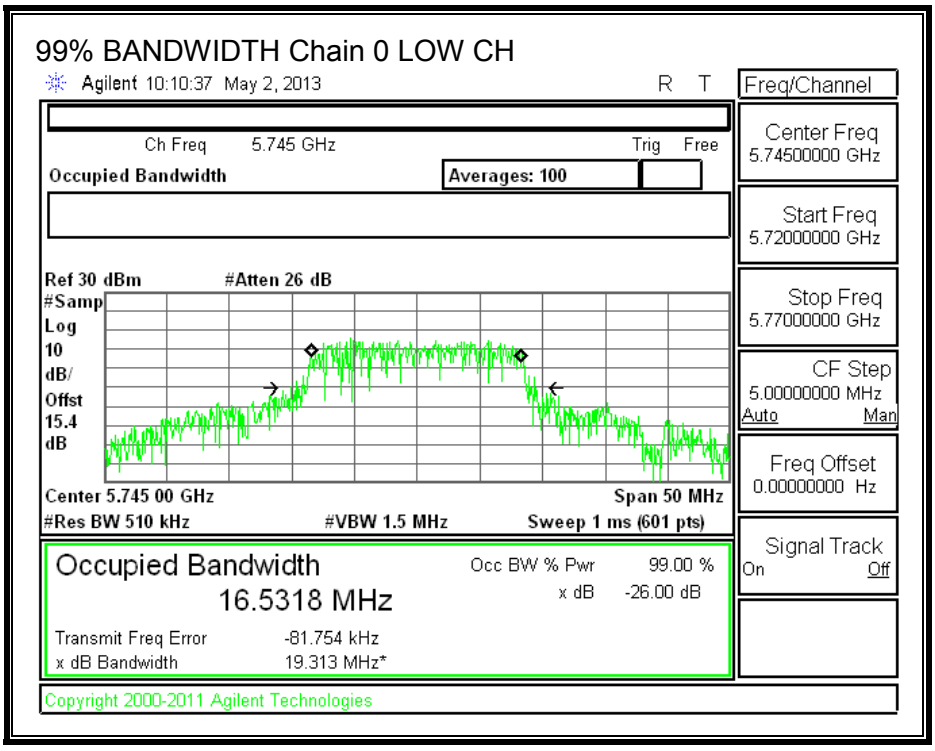
LIMITS

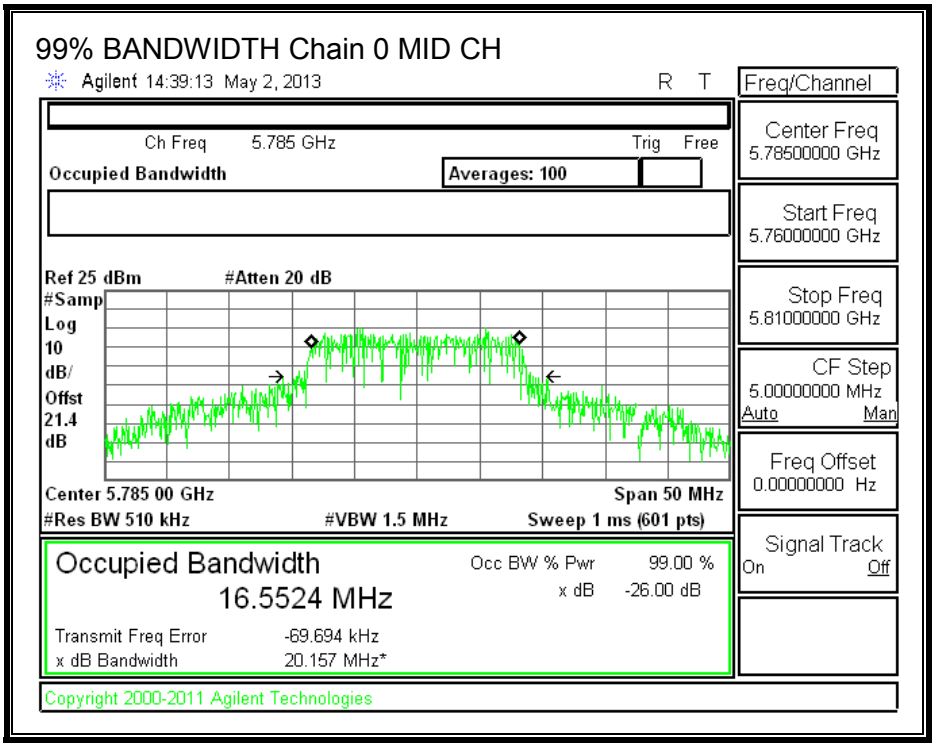
None; for reporting purposes only.

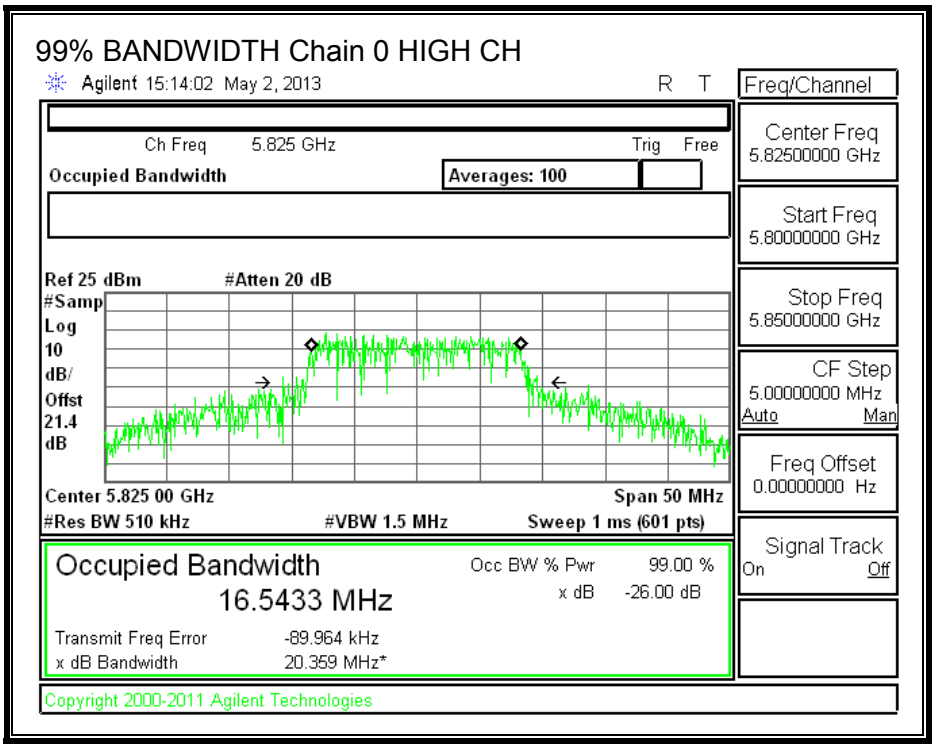
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	16.5318	16.6311
Mid	5785	16.5524	16.6747
High	5825	16.5433	16.6619

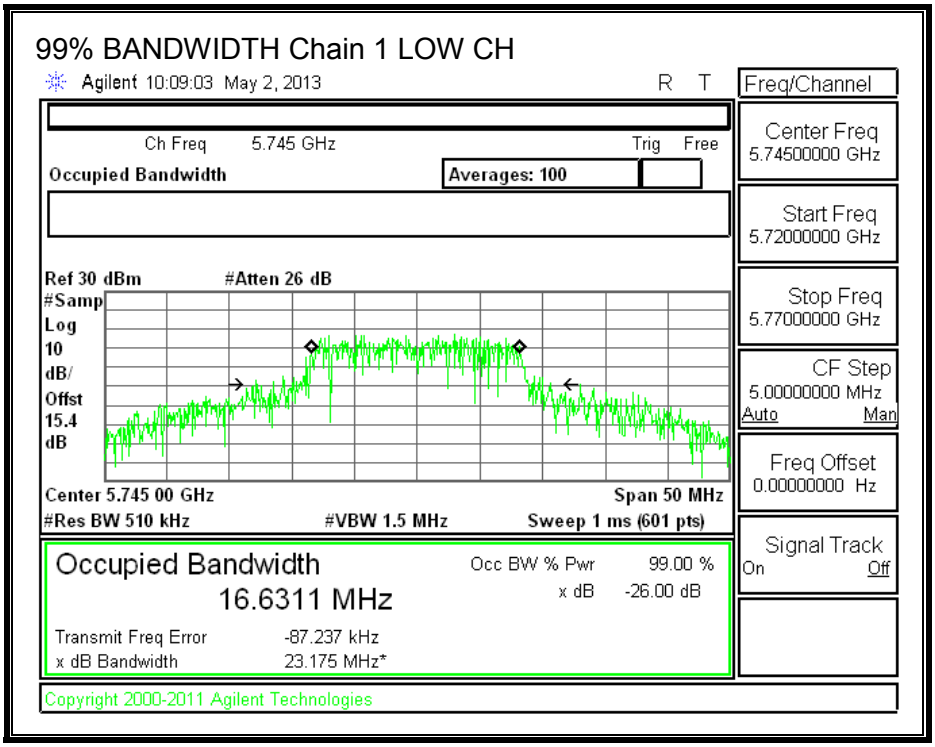
99% BANDWIDTH, Chain 0

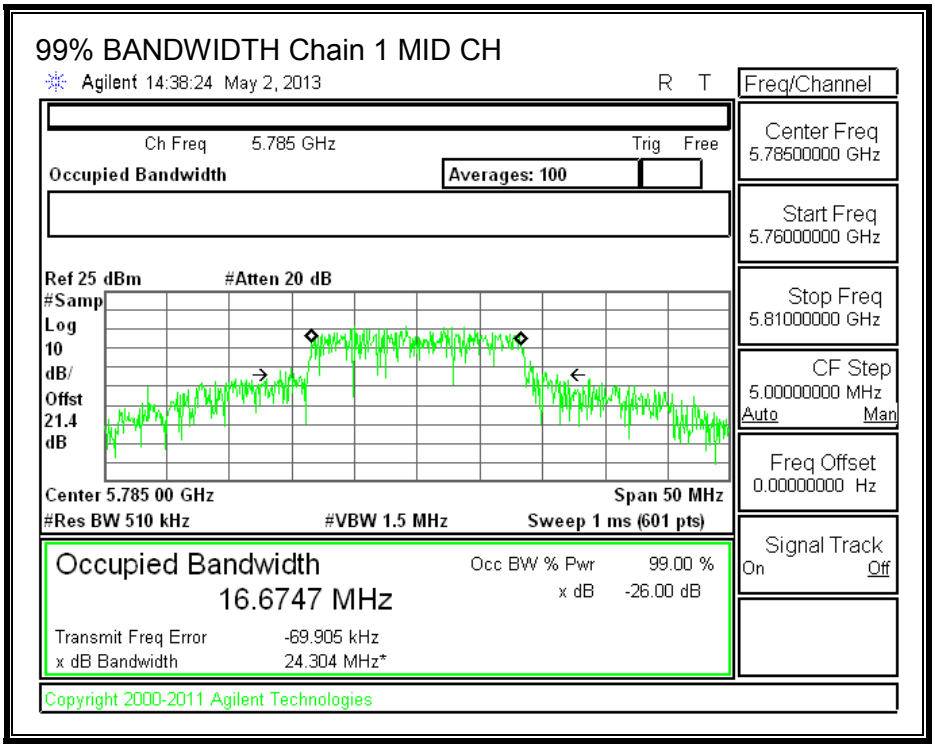


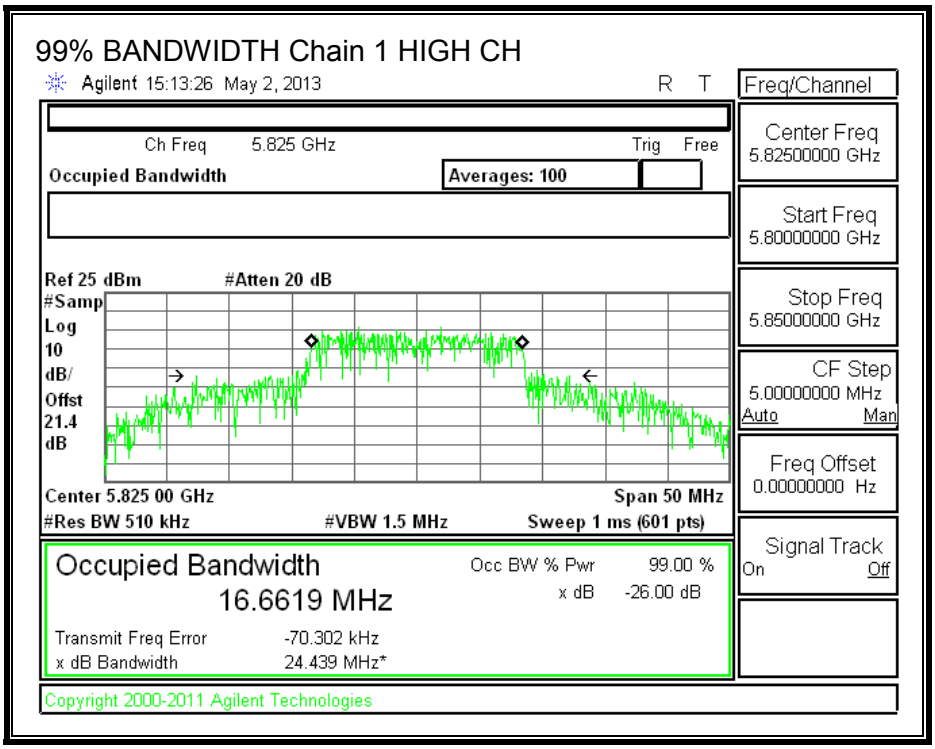




99% BANDWIDTH, Chain 1







8.4.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 25.4 dB (including two 10 dB pads, 2 dB cables, and 3.4 dB power splitter) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5745	14.40	15.90	18.22
Mid	5785	14.30	15.80	18.12
High	5825	14.30	16.20	18.36

8.4.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.00	2.00	2.00

RESULTS

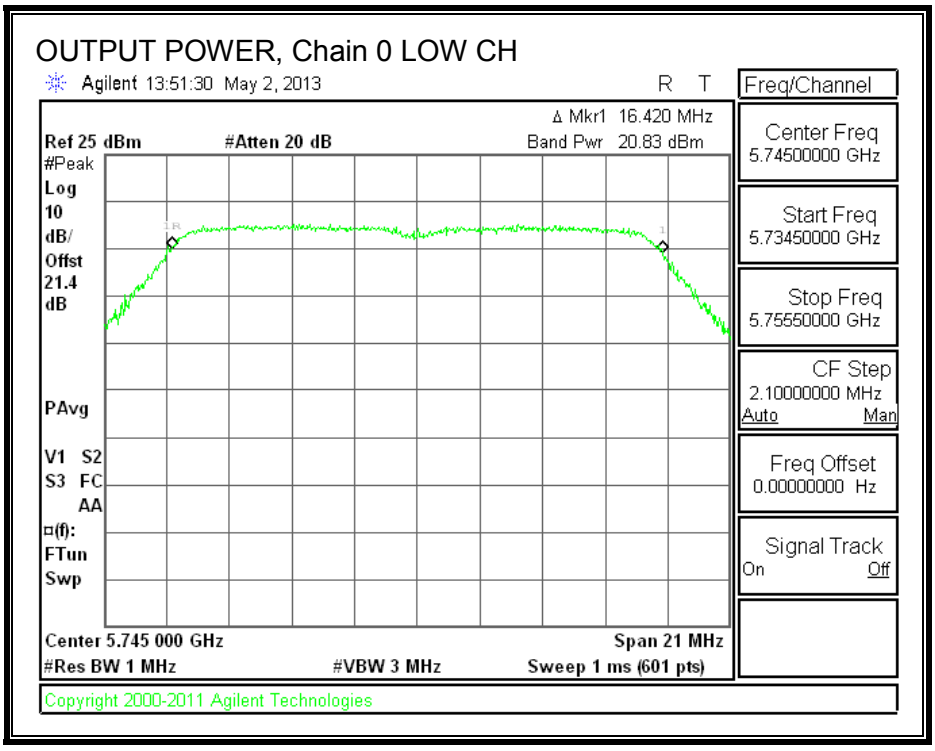
Limits

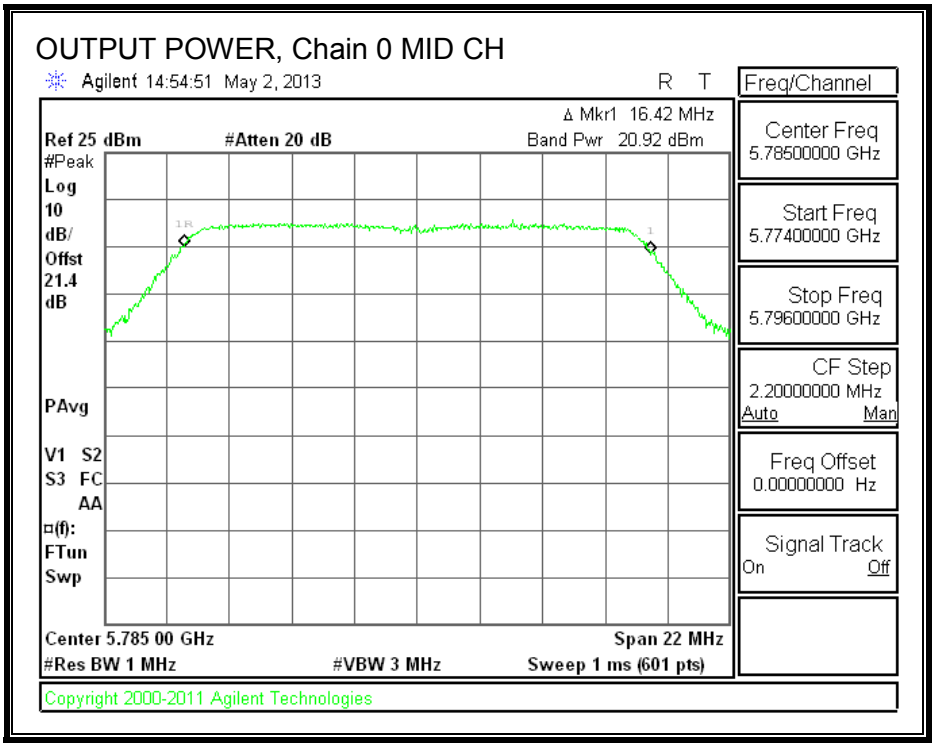
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	2.00	30.00	30	36	30.00
Mid	5785	2.00	30.00	30	36	30.00
High	5825	2.00	30.00	30	36	30.00

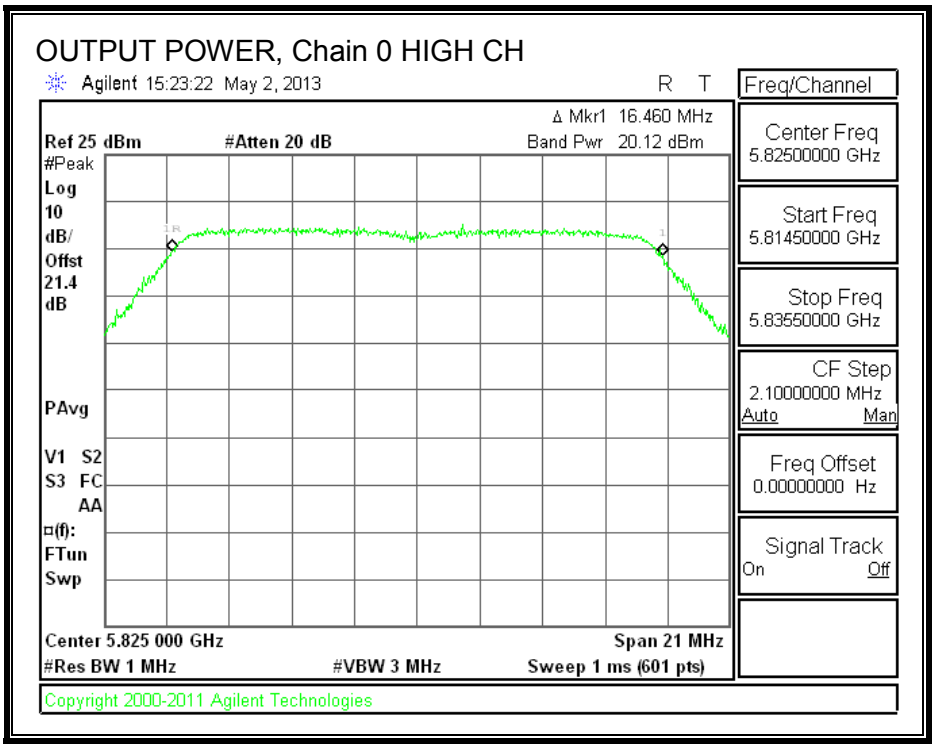
Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5745	20.83	22.18	24.57	30.00	-5.43
Mid	5785	20.92	22.11	24.57	30.00	-5.43
High	5825	20.12	22.41	24.42	30.00	-5.58

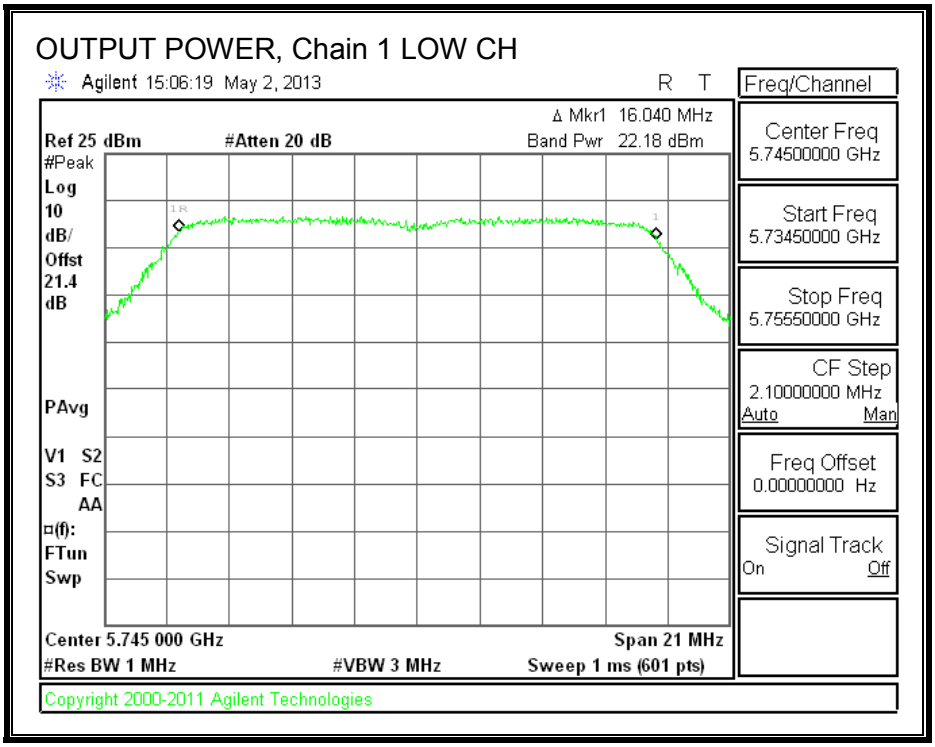
OUTPUT POWER, Chain 0

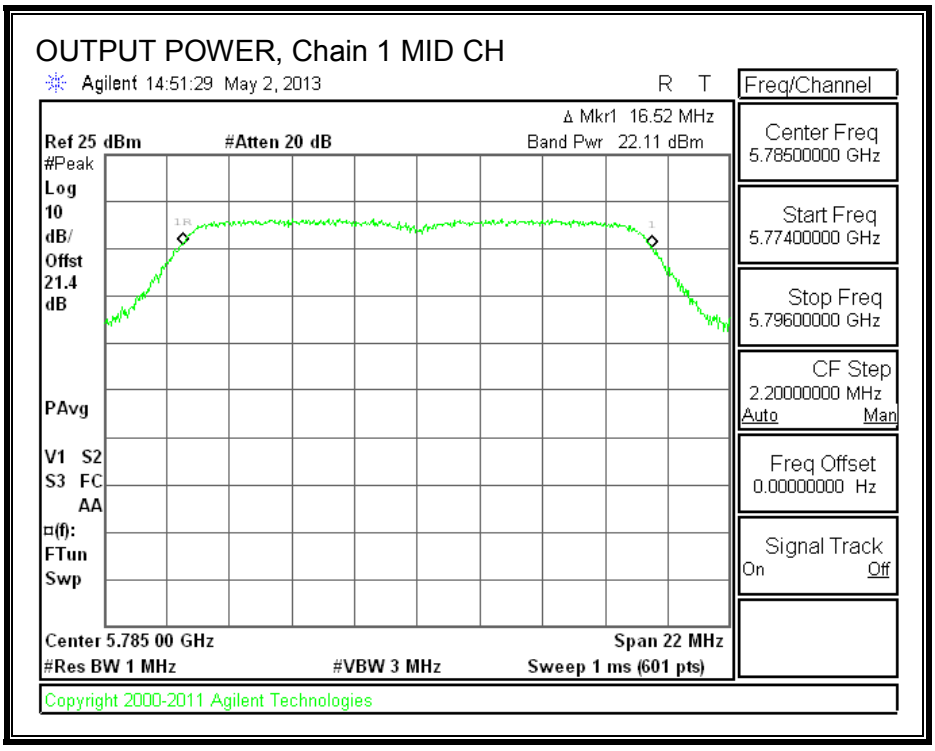


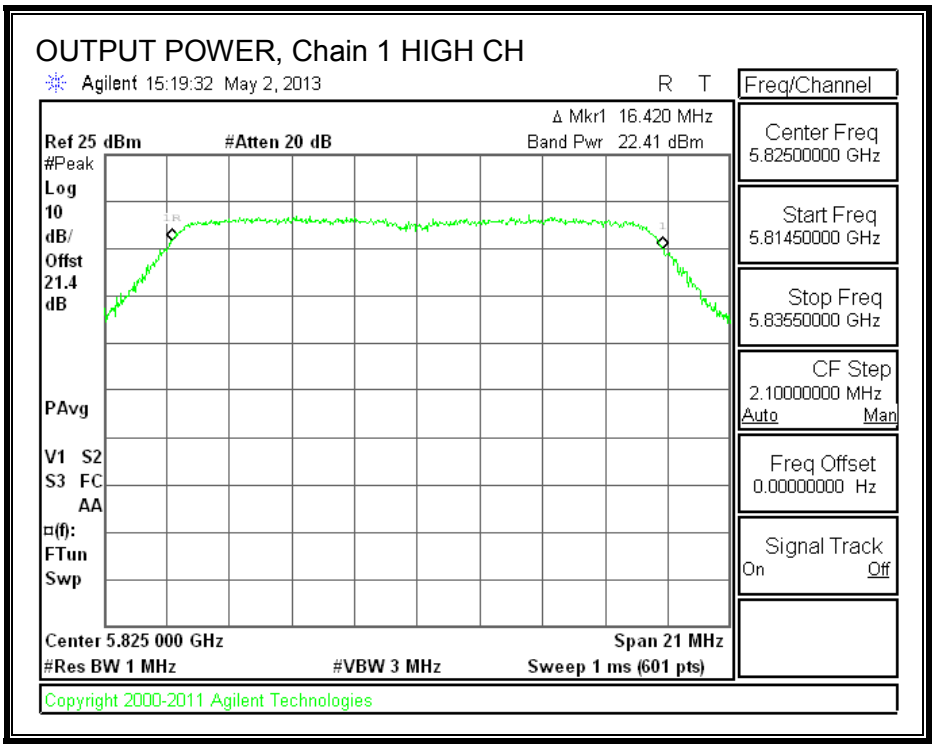




OUTPUT POWER, Chain 1







8.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

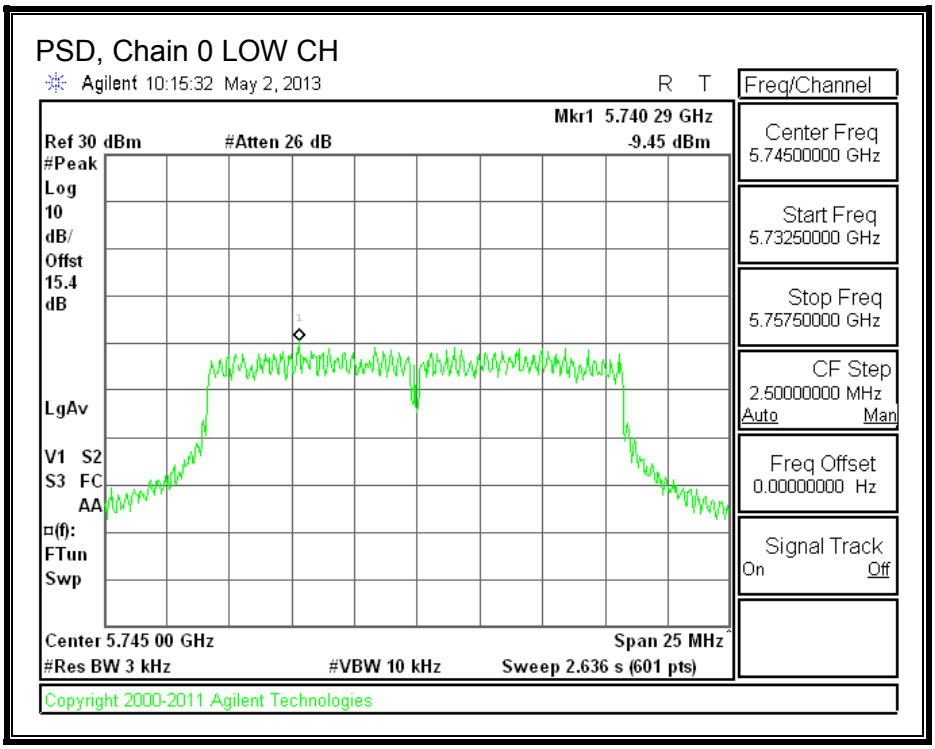
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

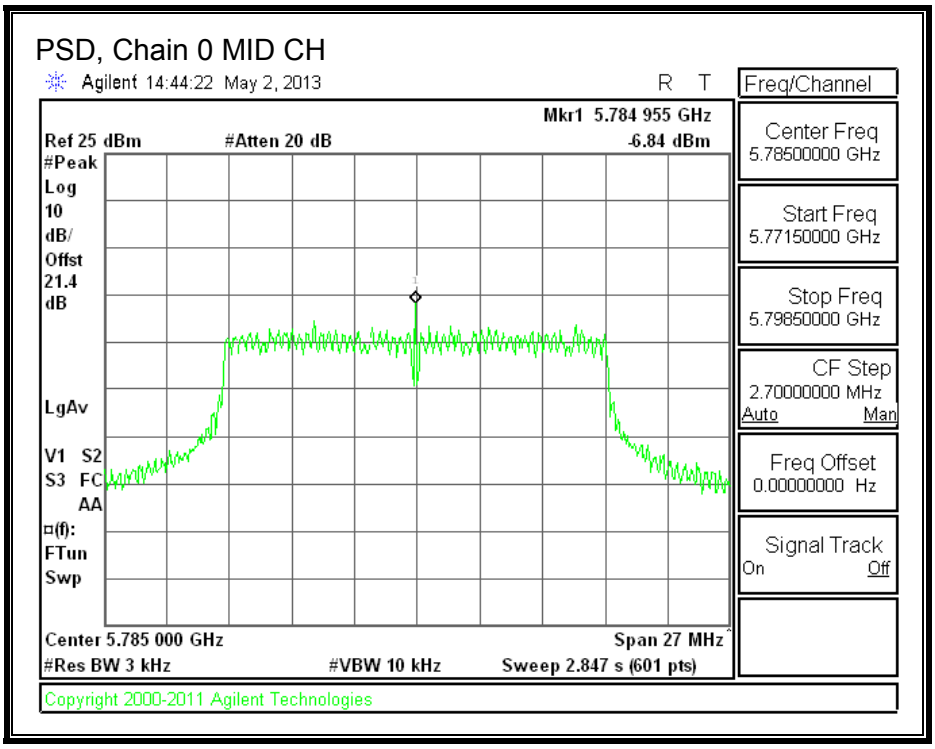
RESULTS

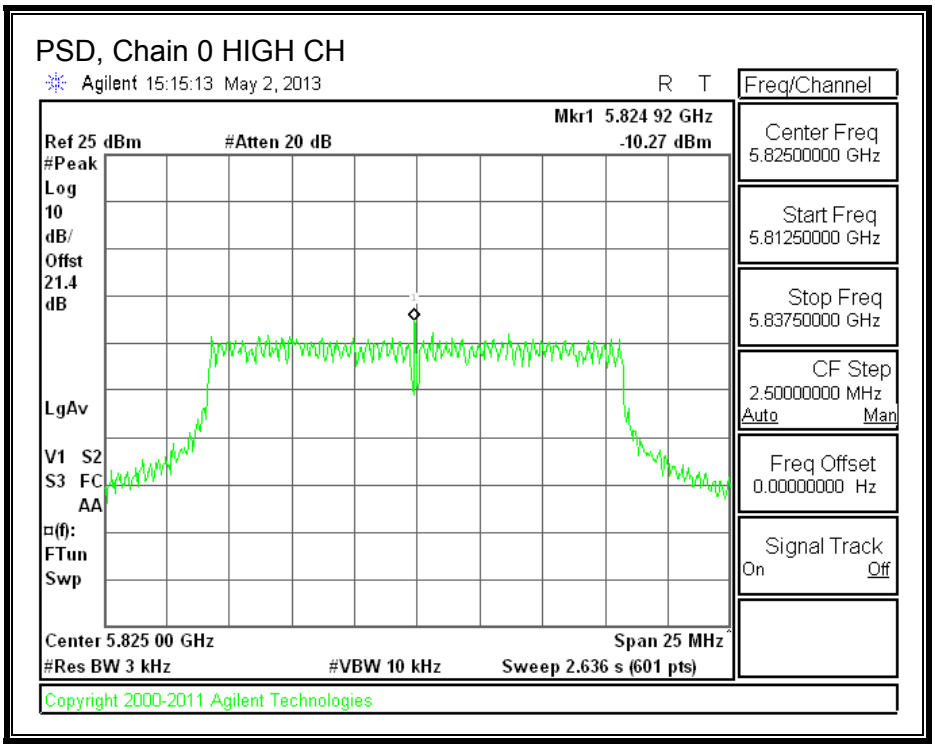
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-9.45	-9.46	-6.44	8.0	-14.4
Mid	5785	-6.84	-10.98	-5.42	8.0	-13.4
High	5825	-10.27	-10.44	-7.34	8.0	-15.3

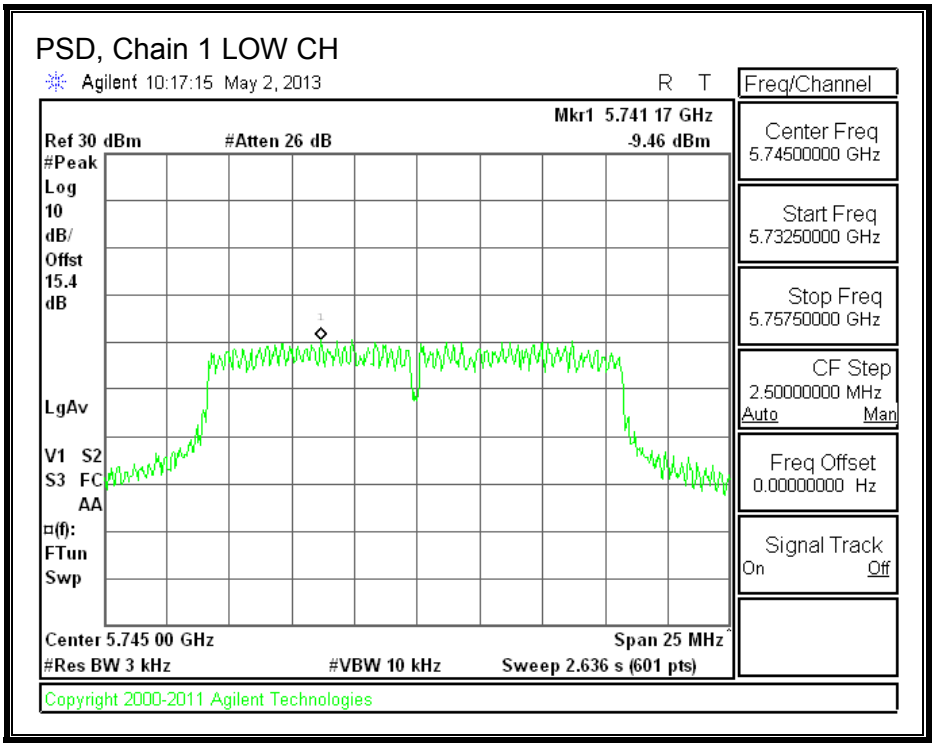
PSD, Chain 0

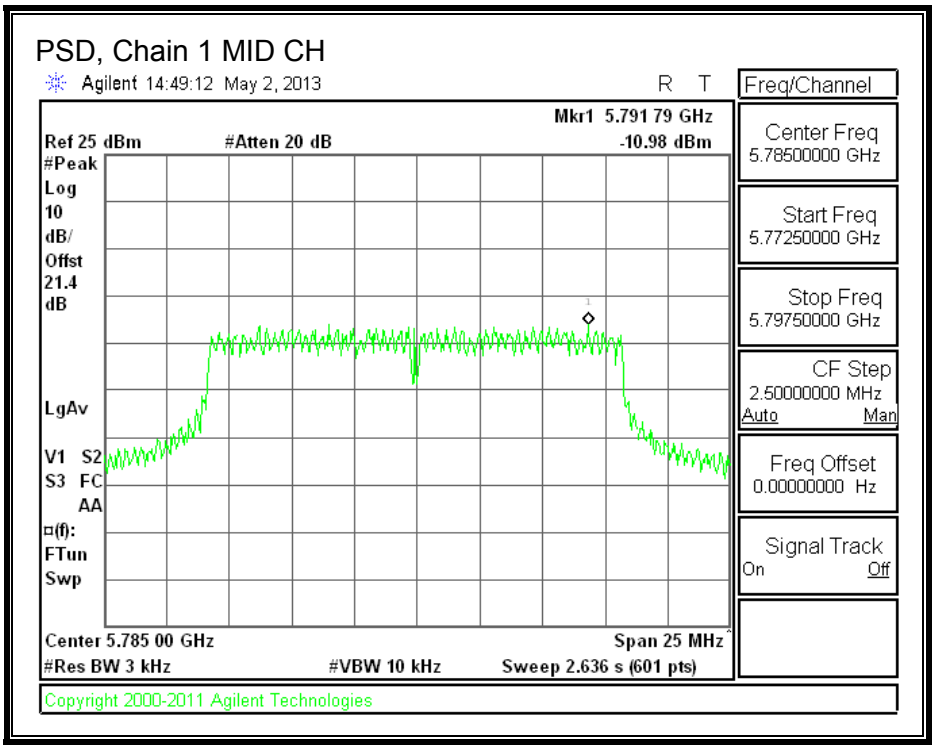


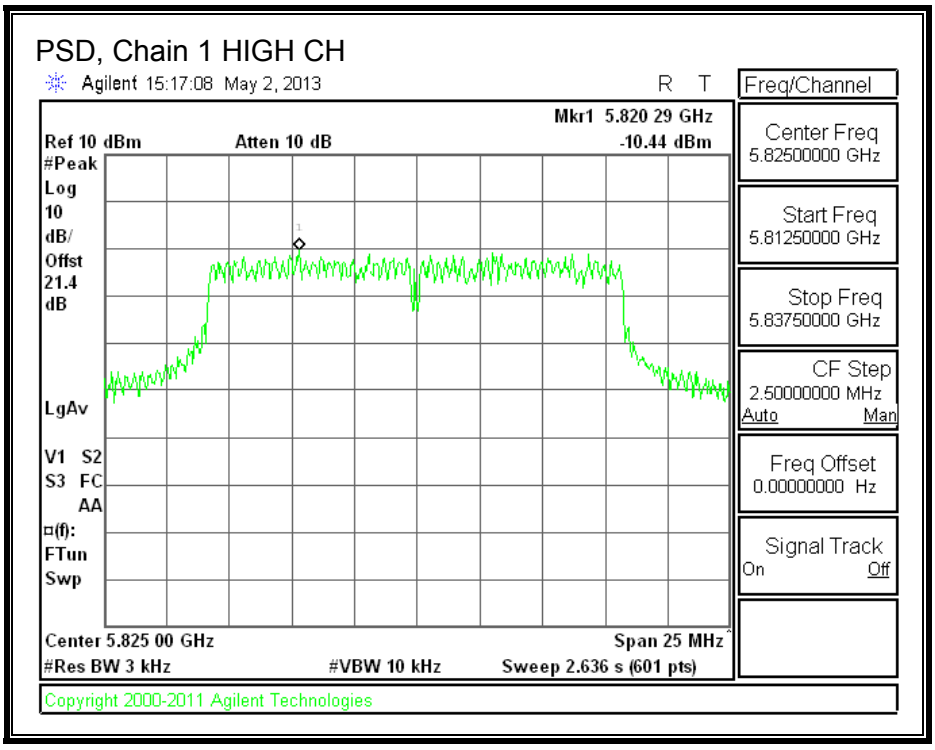




PSD, Chain 1







8.4.6. OUT-OF-BAND EMISSIONS

LIMITS

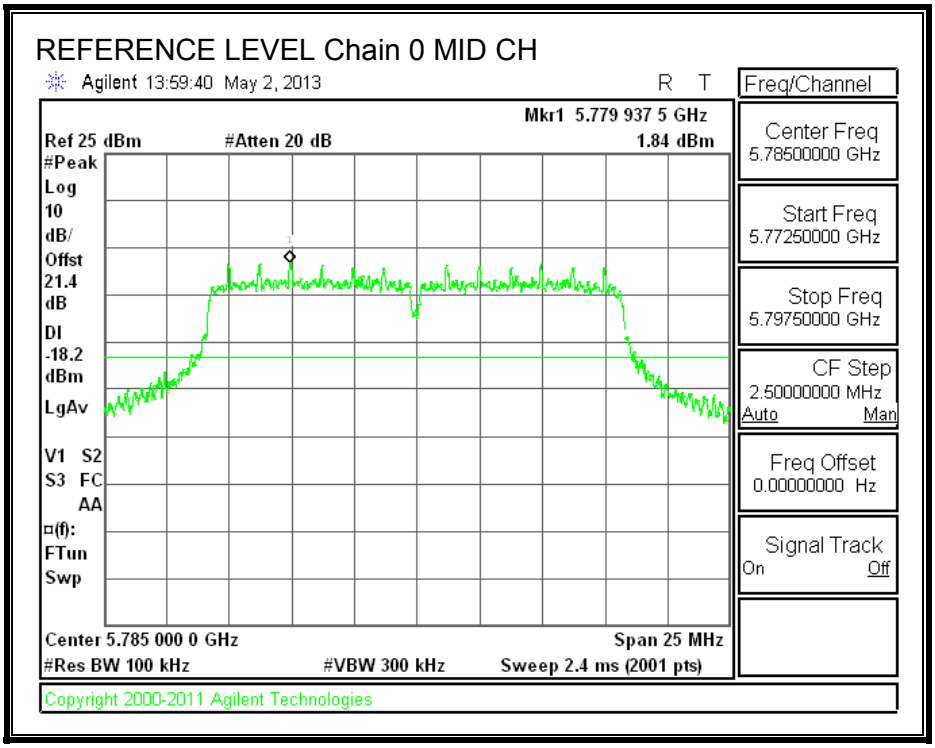
FCC §15.247 (d)

IC RSS-210 A8.5

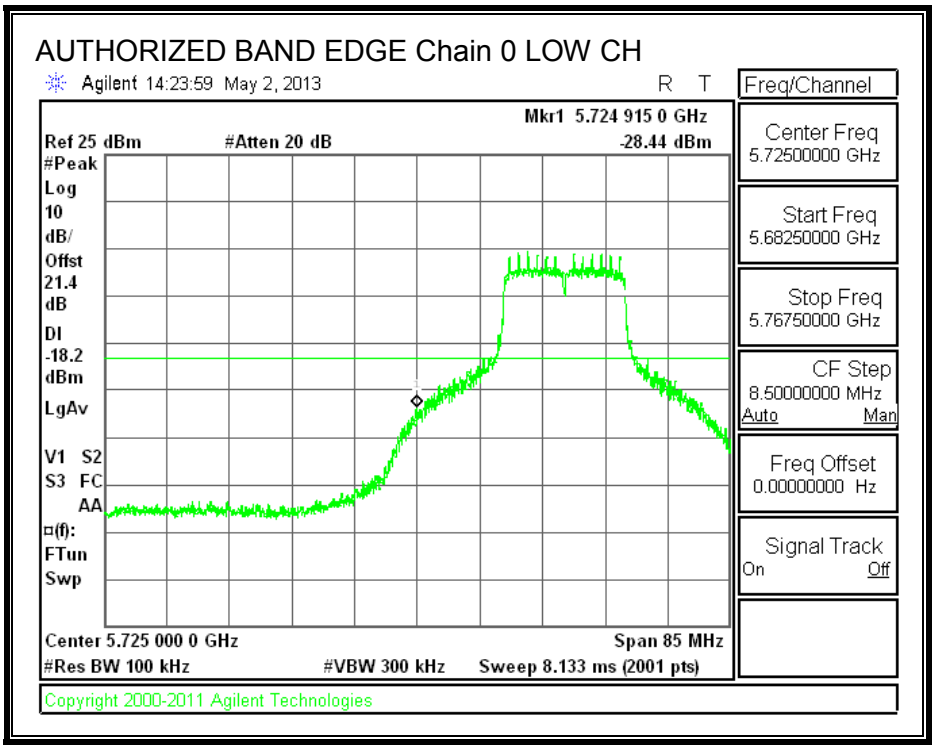
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

RESULTS

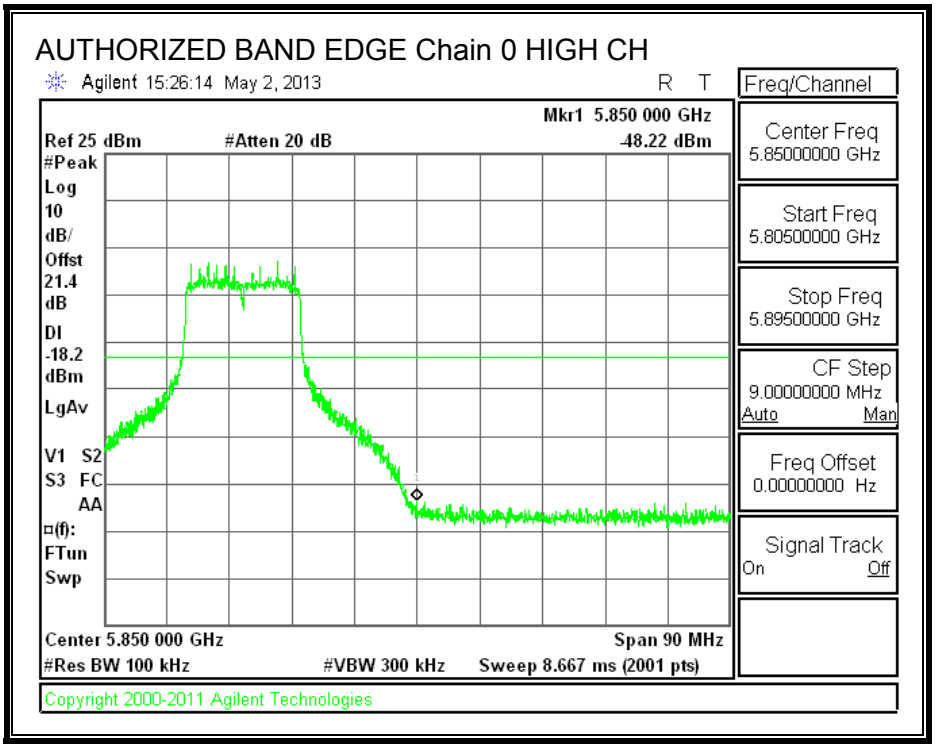
IN-BAND REFERENCE LEVEL, Chain 0



LOW CHANNEL BANDEDGE, Chain 0

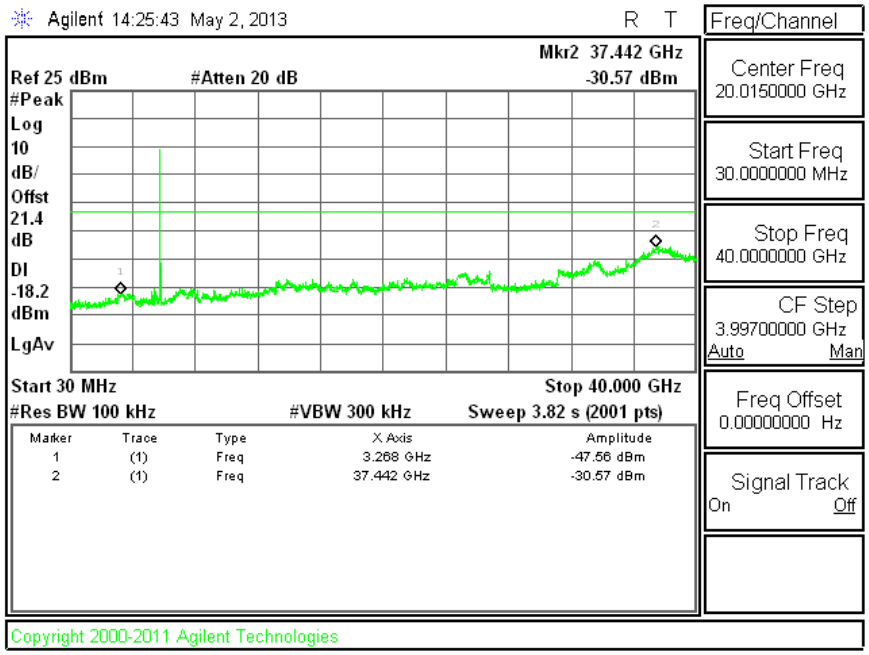


HIGH CHANNEL BANDEDGE, Chain 0

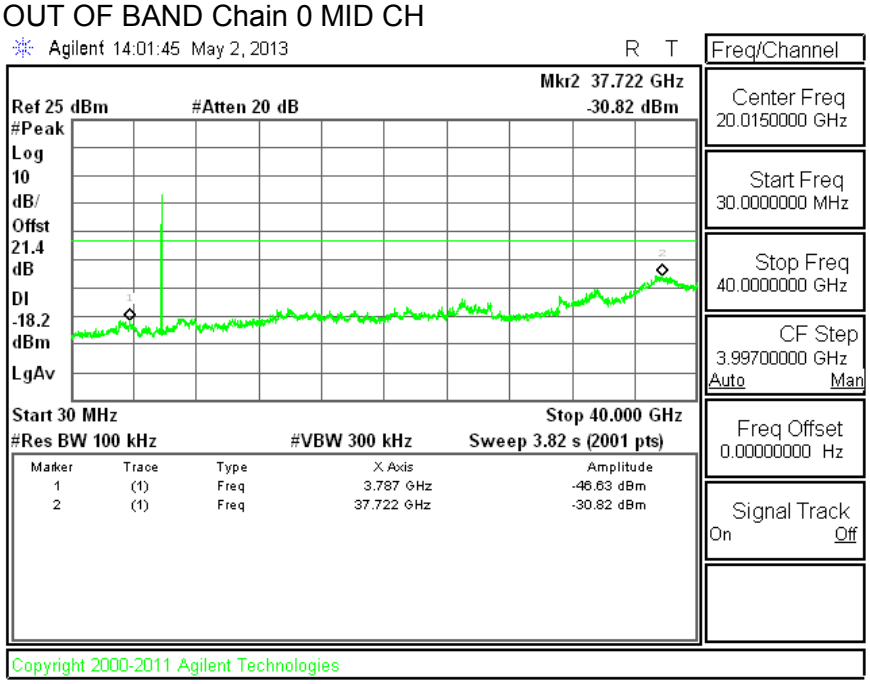


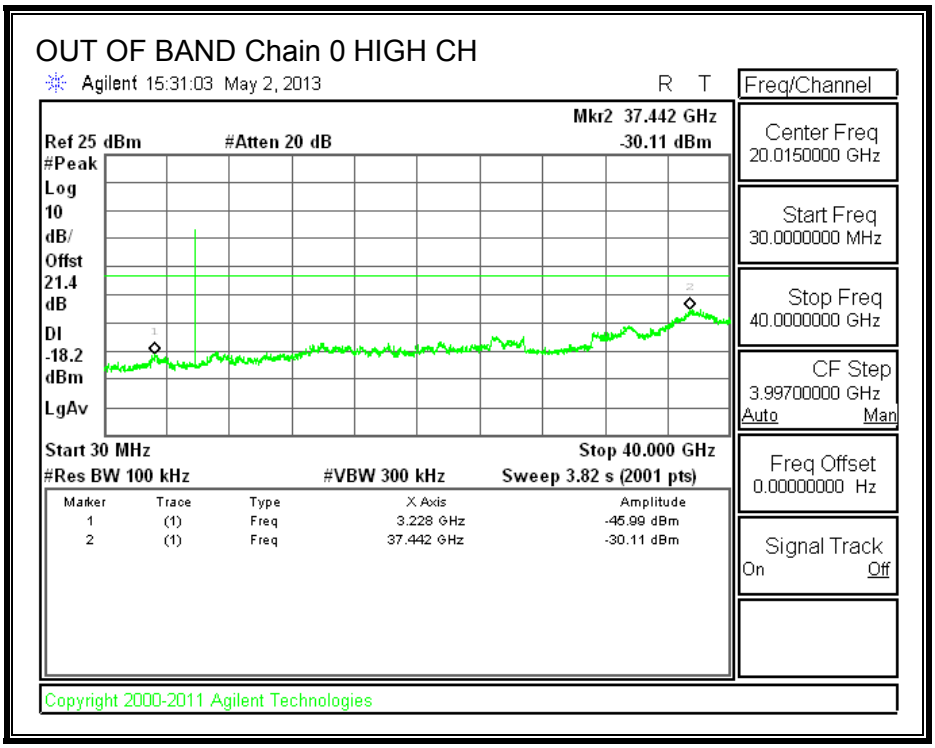
OUT-OF-BAND EMISSIONS, Chain 0

OUT OF BAND Chain 0 LOW CH

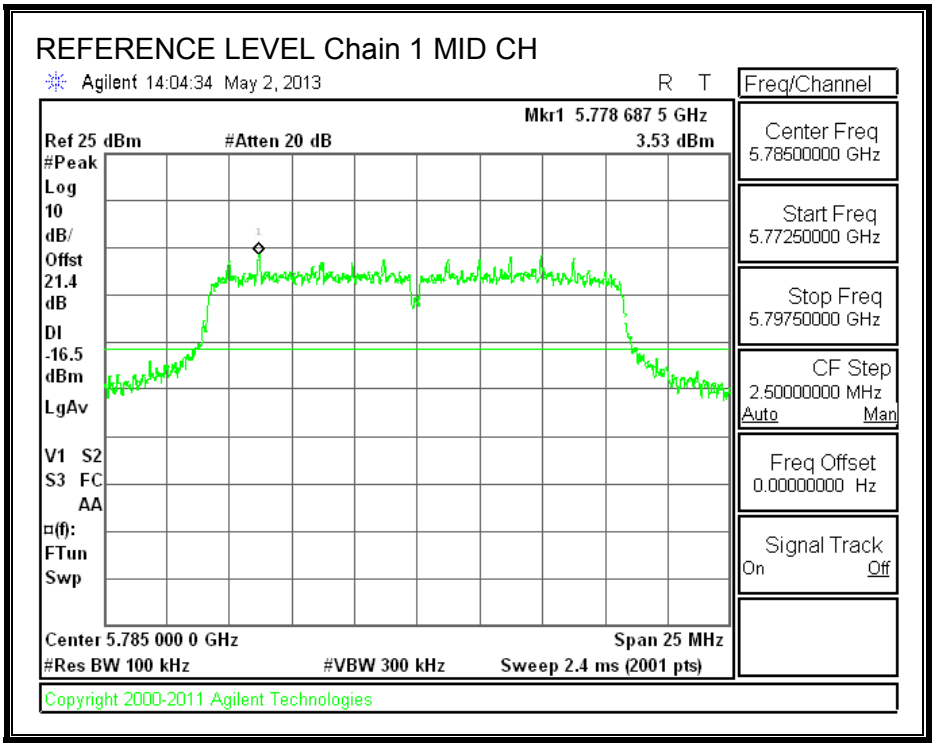


OUT OF BAND Chain 0 MID CH

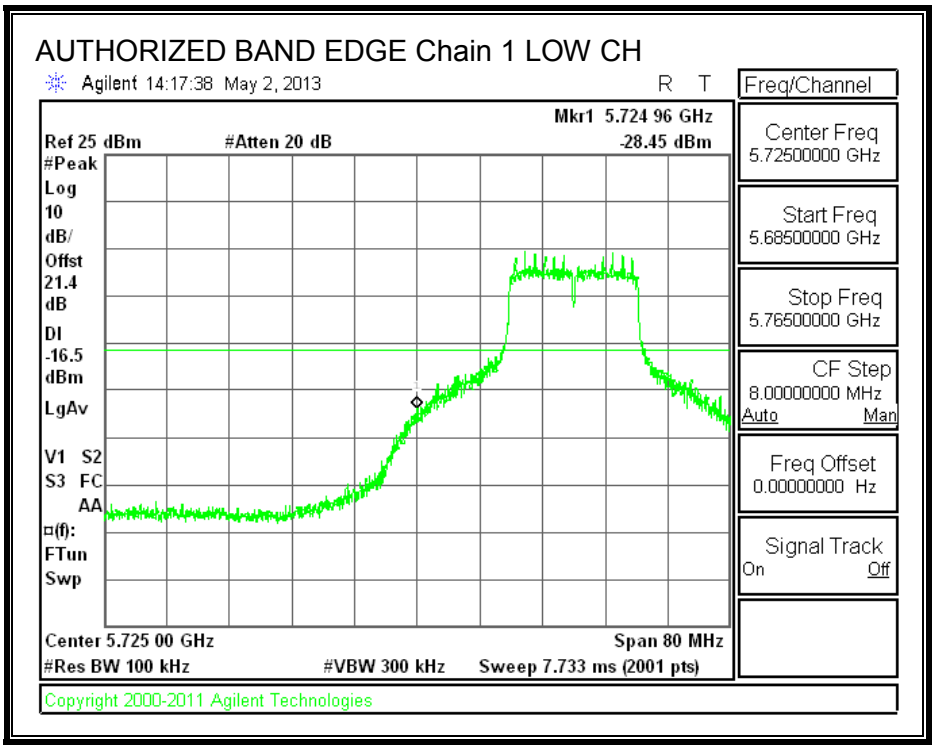




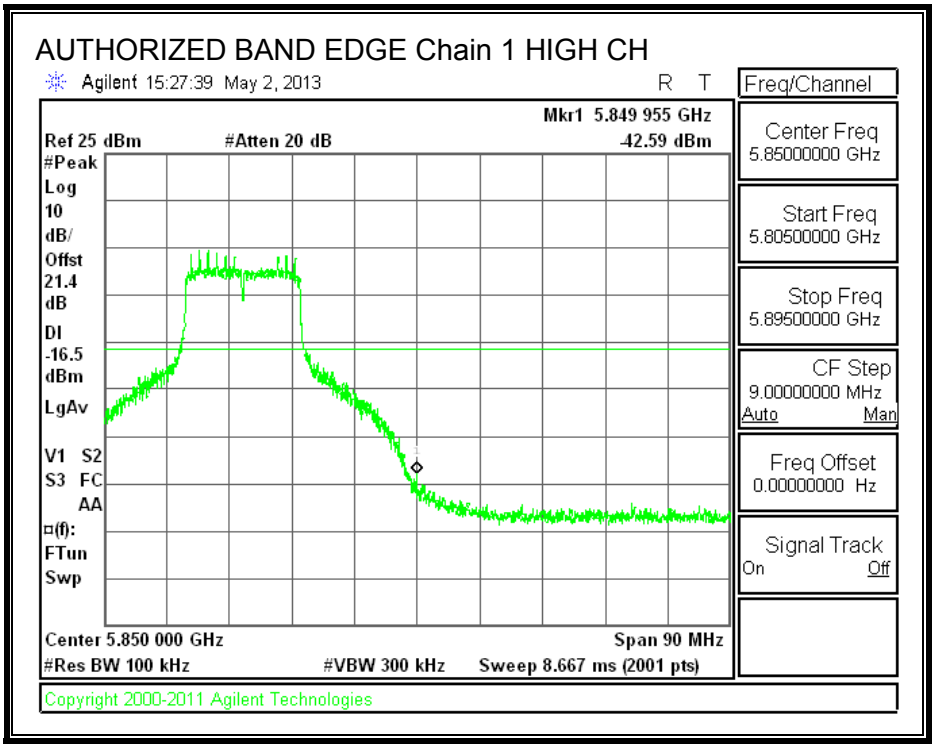
IN-BAND REFERENCE LEVEL, Chain 1



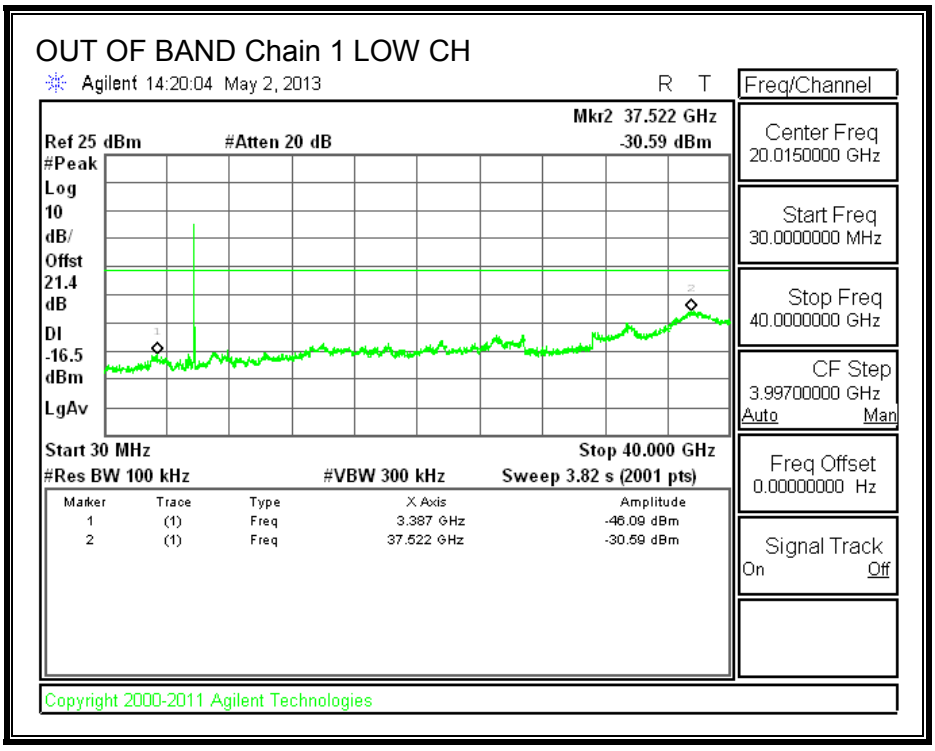
LOW CHANNEL BANDEDGE, Chain 1

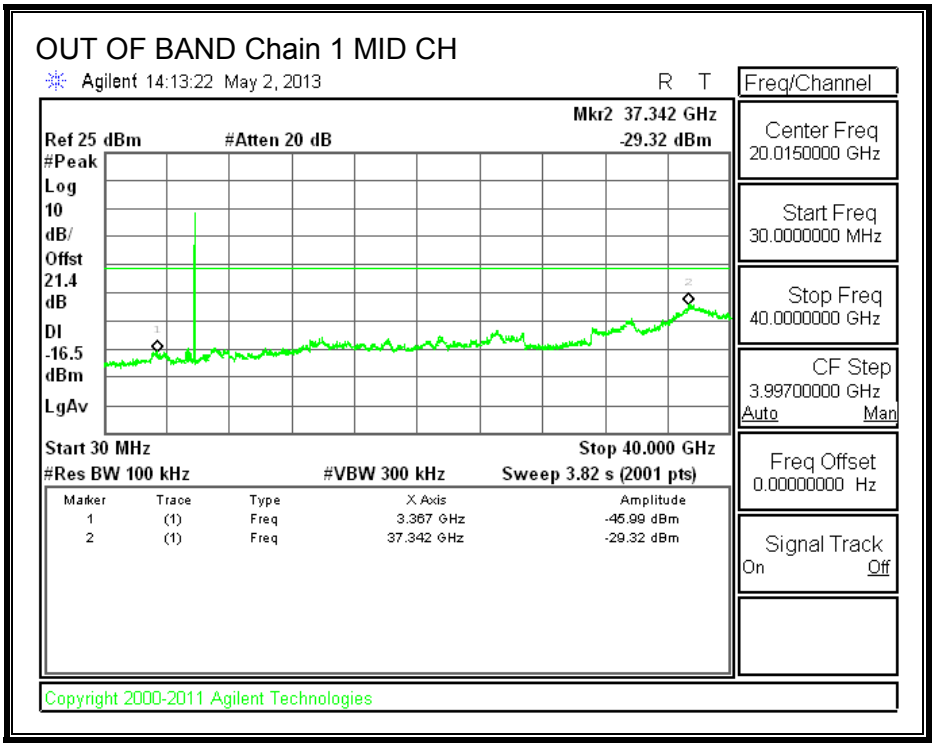


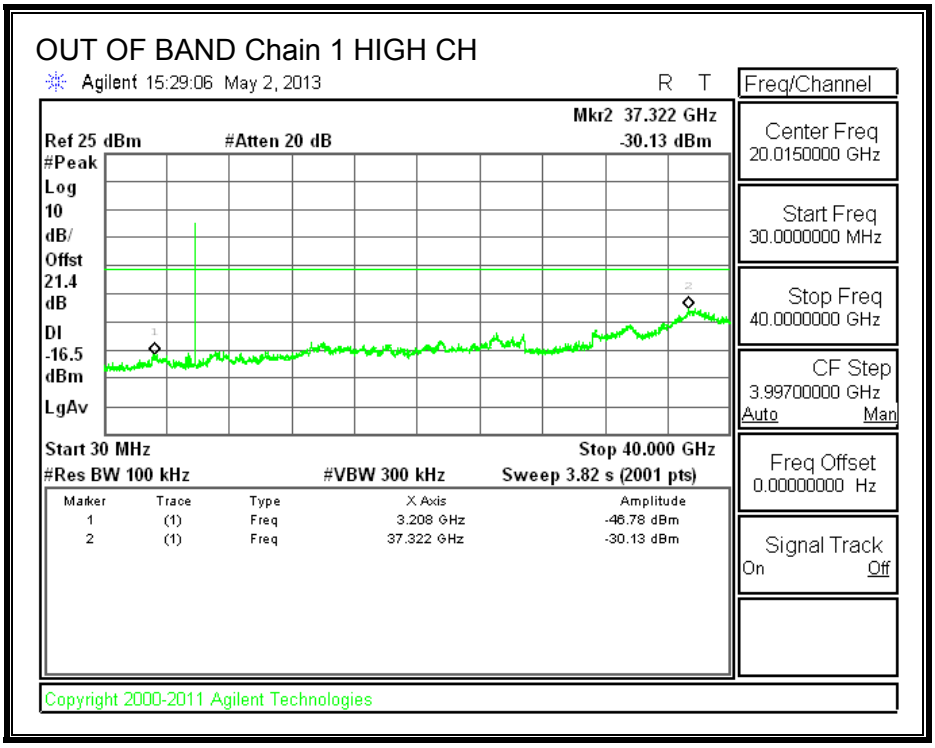
HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1



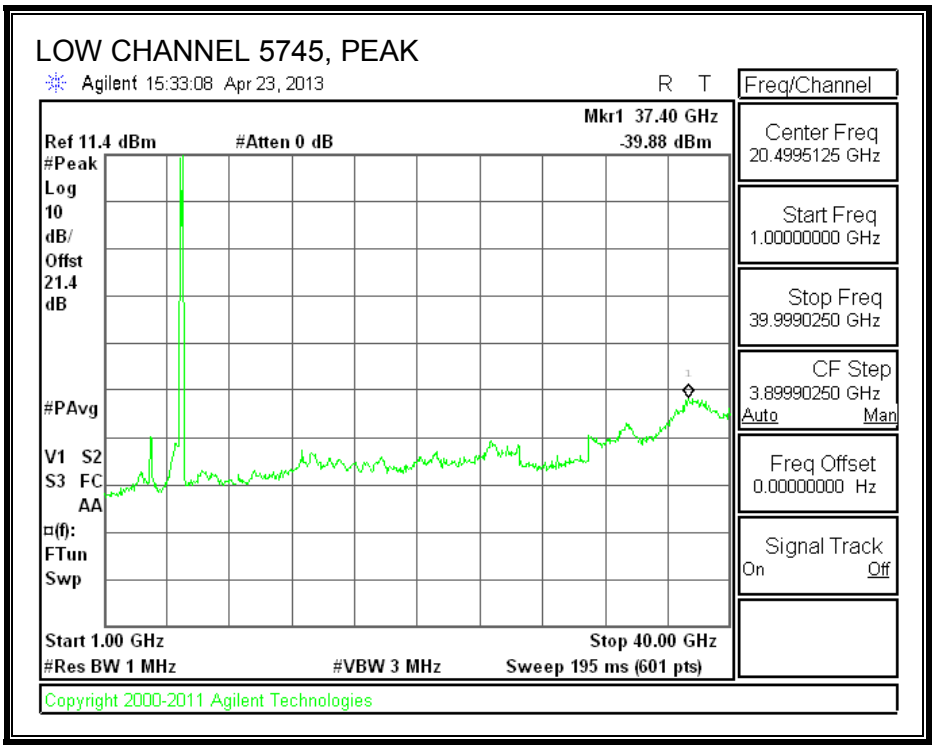


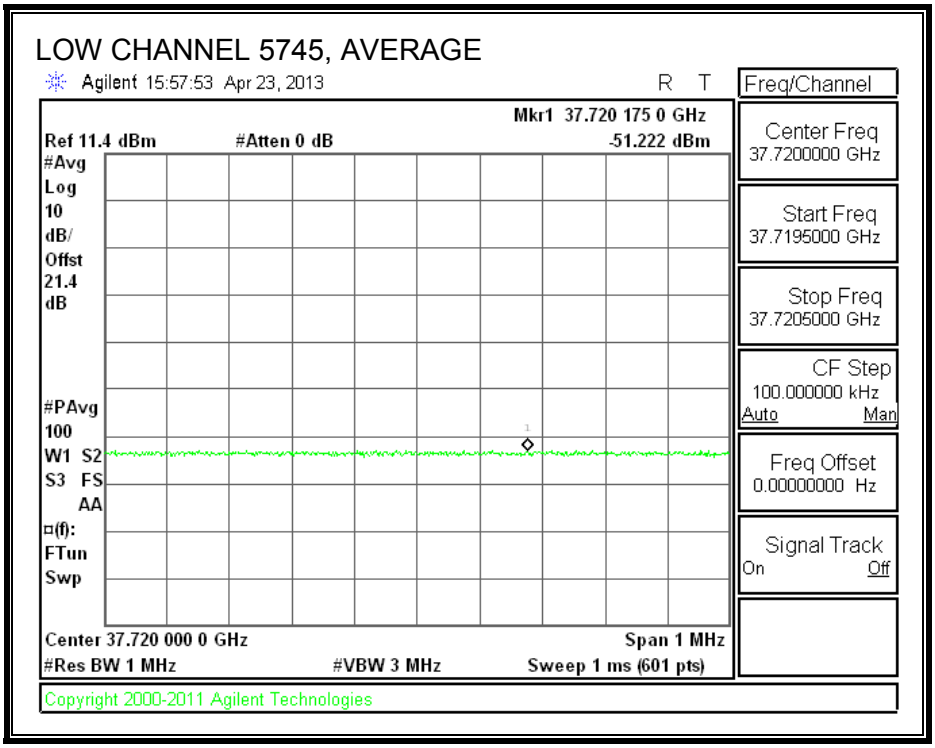


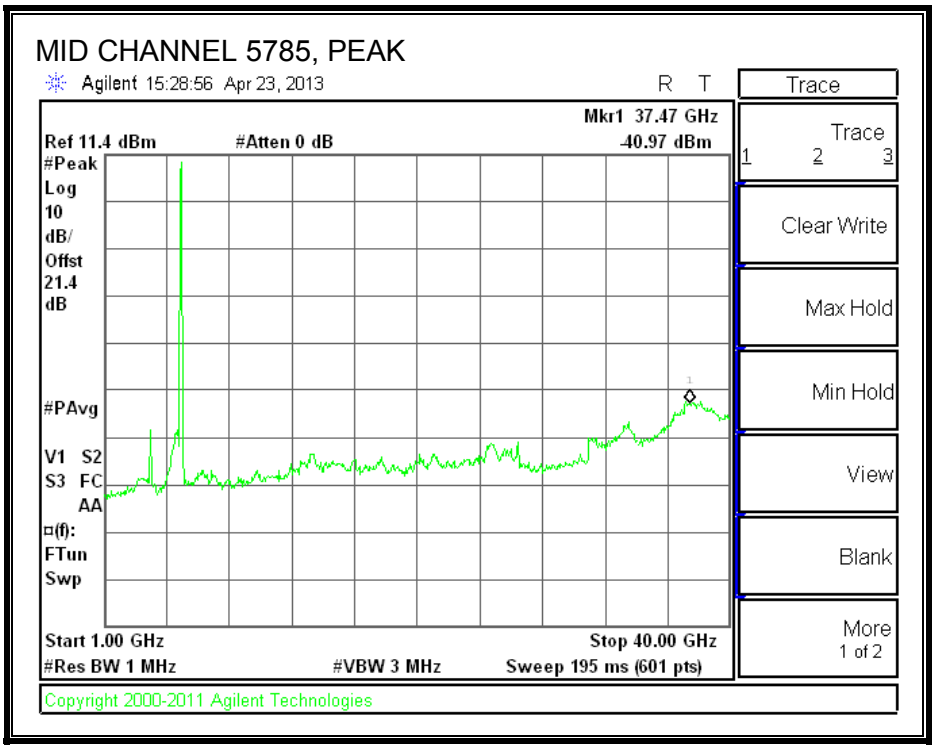
8.4.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter unit)

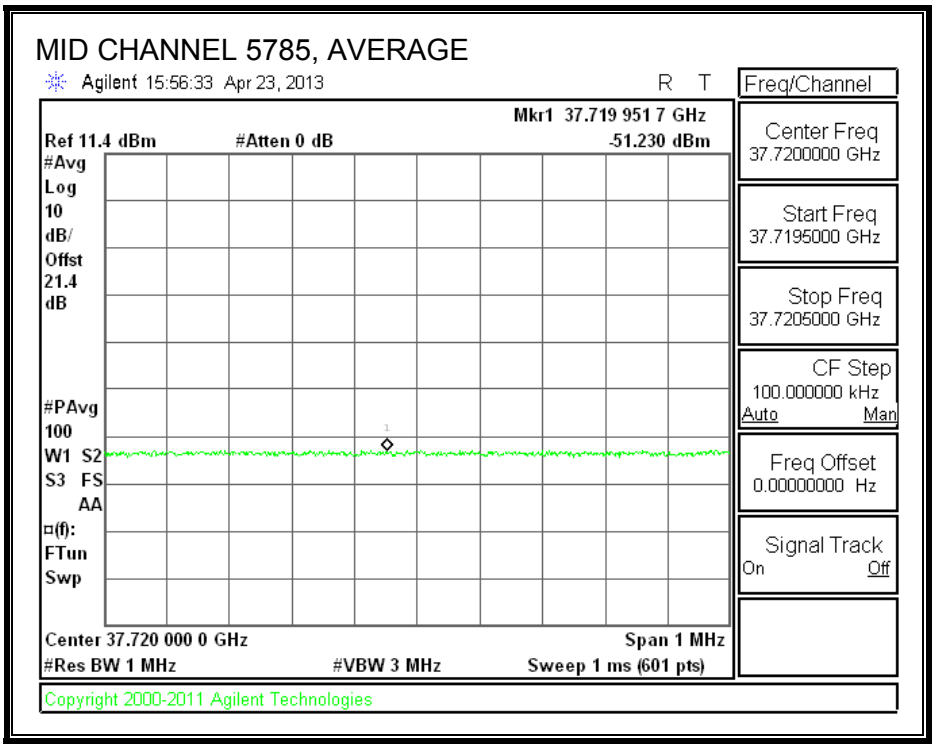
HARMONICS AND SPURIOUS

Chain 0

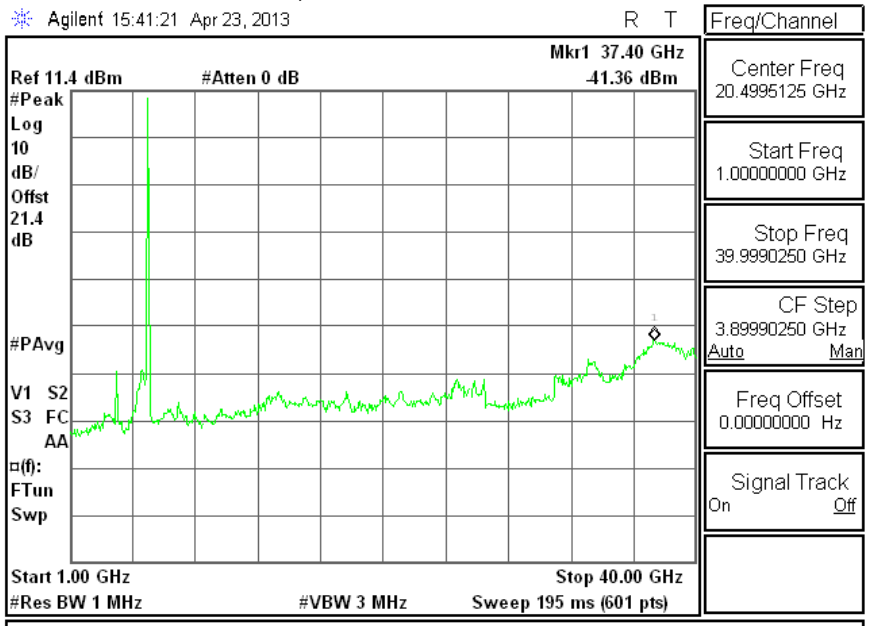




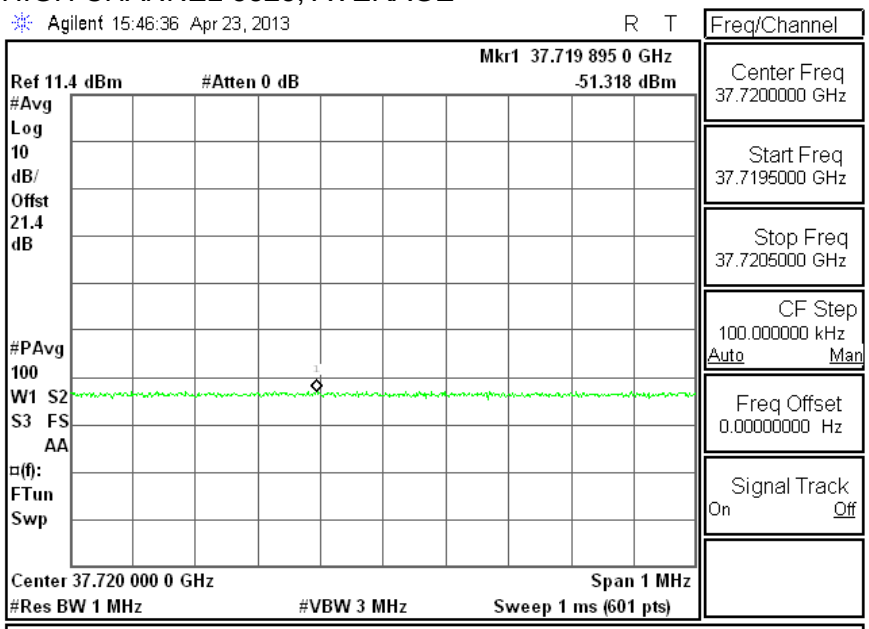




HIGH CHANNEL 5825, PEAK

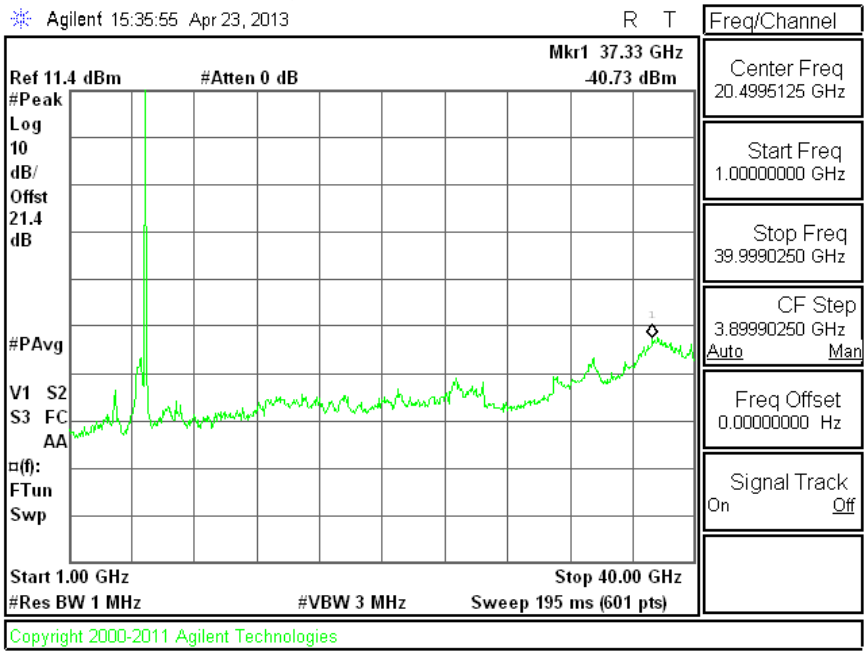


HIGH CHANNEL 5825, AVERAGE

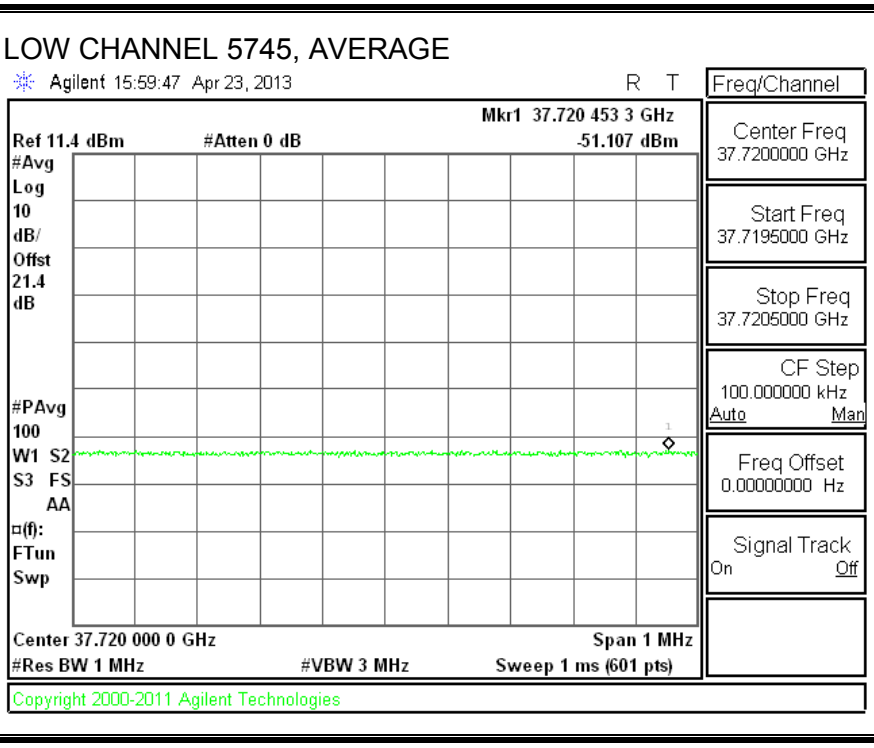


Chain 1

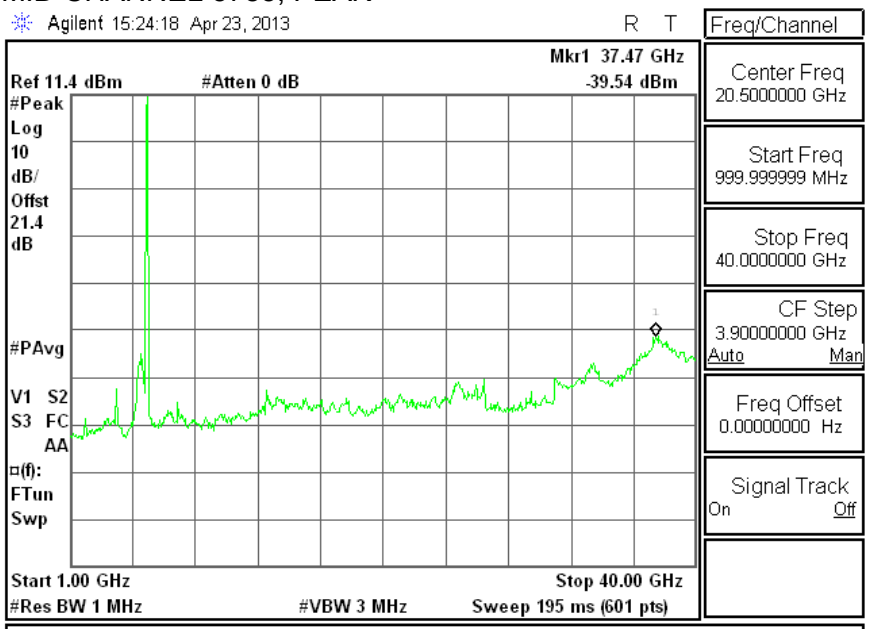
LOW CHANNEL 5745, PEAK



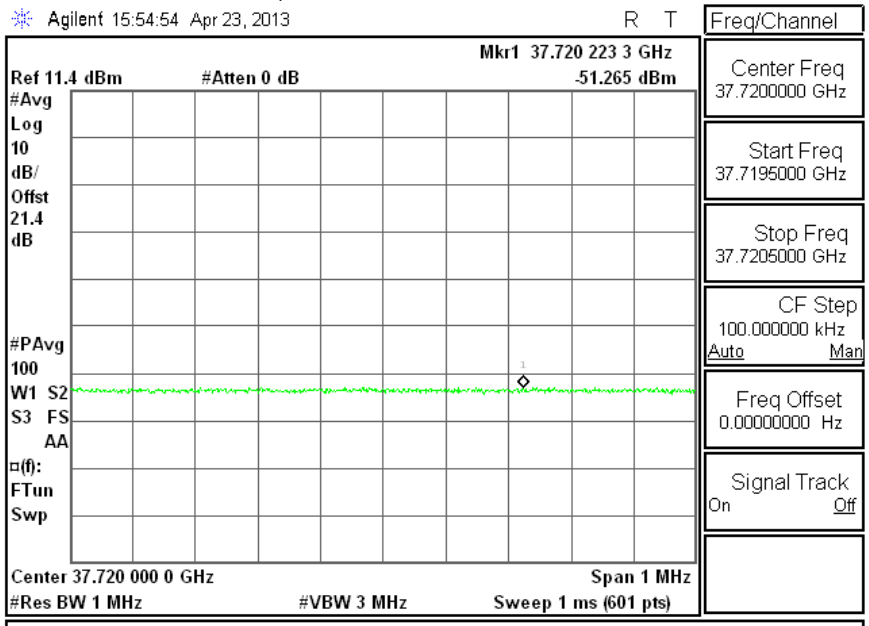
LOW CHANNEL 5745, AVERAGE



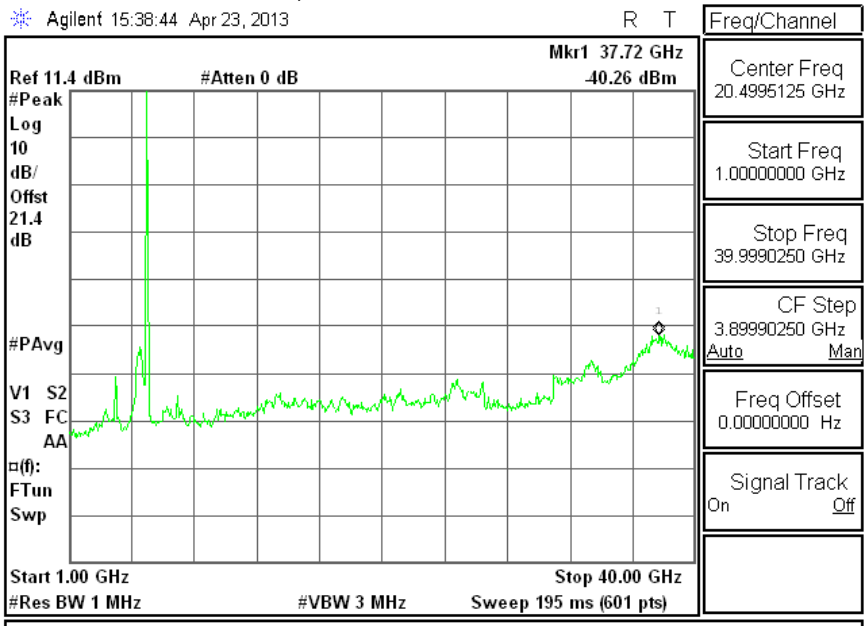
MID CHANNEL 5785, PEAK



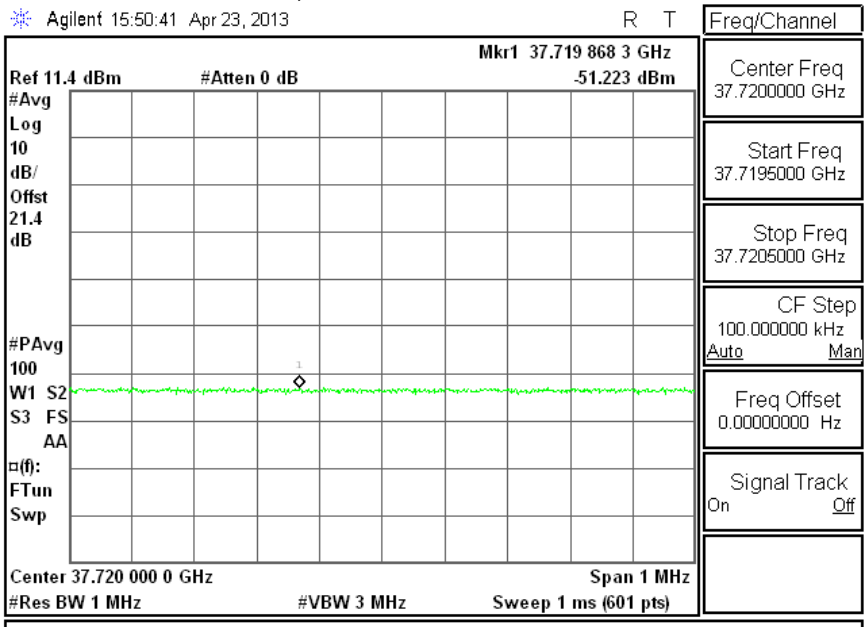
MID CHANNEL 5785, AVERAGE



HIGH CHANNEL 5825, PEAK



HIGH CHANNEL 5825, AVERAGE



HARMONIC SPURIOUS DATA

2TX Conducted Spurious for FCC DTS (in the restricted bands)

Date:	4/23/2013
Test Engineer:	T. Wagoner / O. Su
Client:	Qualcomm Atheros
Project Number:	13u14995
Configuration:	5.8GHz 11a
Mode of operation:	Tx

Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

Channel	Frequency (MHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
Low 5745	37.4	-39.88	-40.73	2	-32.26	-21.2	-11.06	17.00	14.4 / 15.9
Mid 5785	37.47	-40.97	-39.54	2	-32.18	-21.2	-10.98	17.00	14.3 / 15.8
High 5825	37.72	-41.36	-40.26	2	-32.75	-21.2	-11.55	17.00	14.3 / 16.2

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
Low 5745	37.72	-51.222	-51.107	2	-43.14	-41.2	-1.94	17.00	14.4 / 15.9
Mid 5785	37.72	-51.23	-51.265	2	-43.23	-41.2	-2.03	17.00	14.3 / 15.8
High 5825	37.72	-51.318	-51.223	2	-43.25	-41.2	-2.05	17.00	14.3 / 16.2

8.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

8.5.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

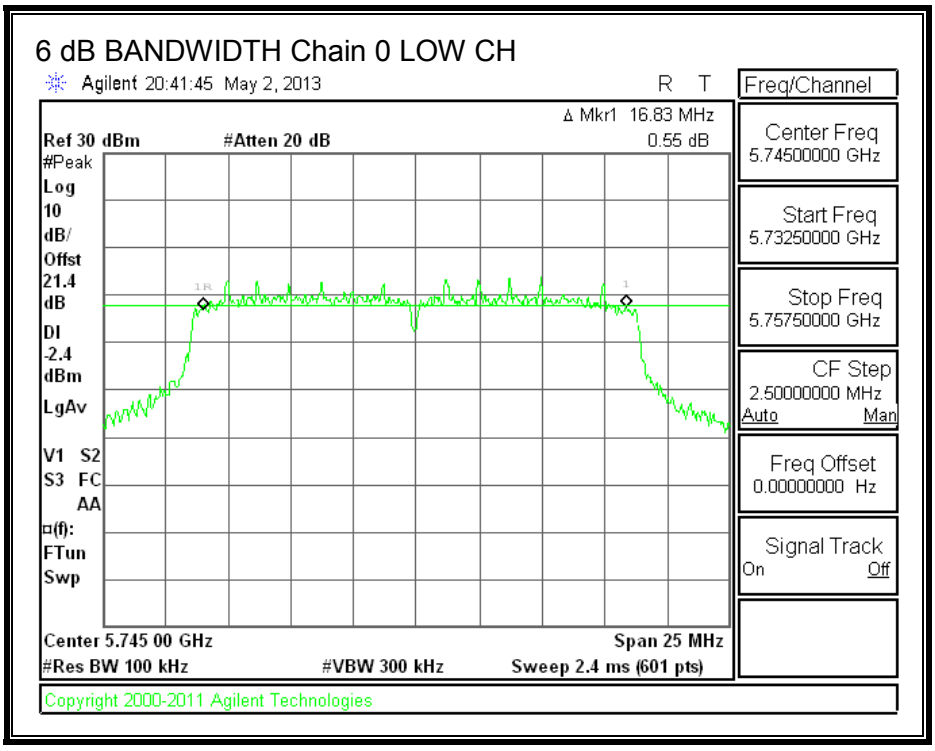
IC RSS-210 A8.2 (a)

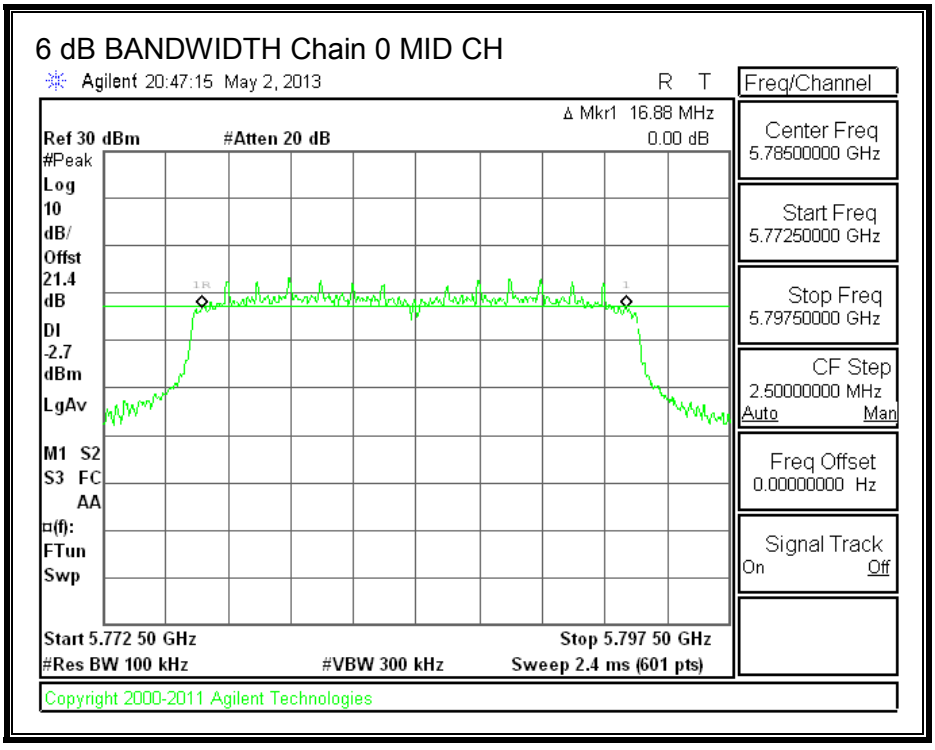
The minimum 6 dB bandwidth shall be at least 500 kHz.

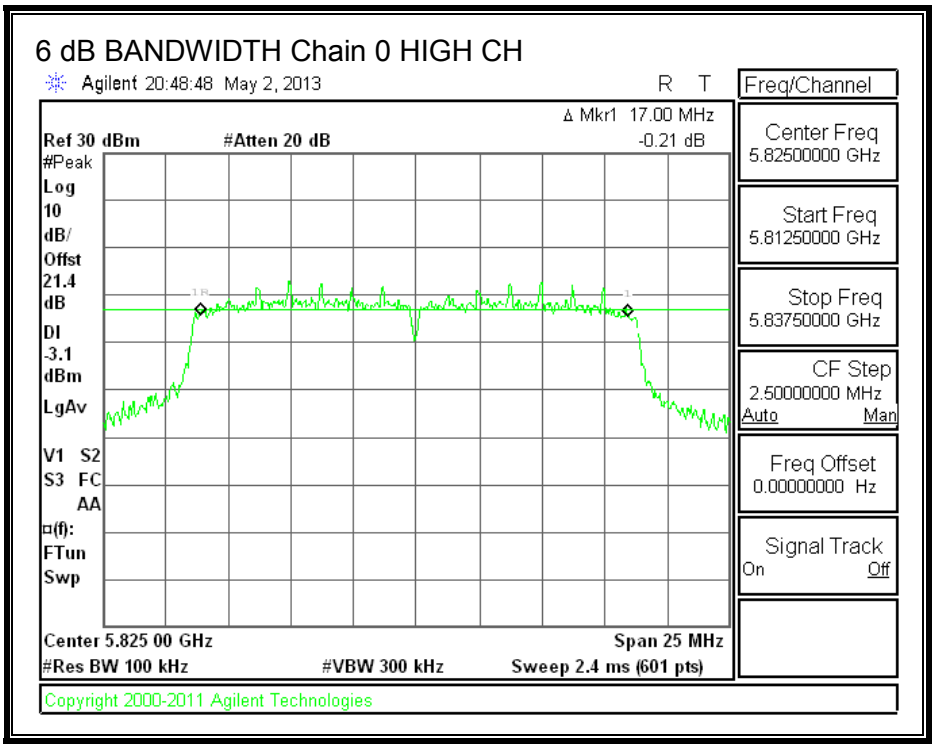
RESULTS

Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5745	16.83	17.00	0.5
Mid	5785	16.88	16.29	0.5
High	5825	17.00	16.46	0.5

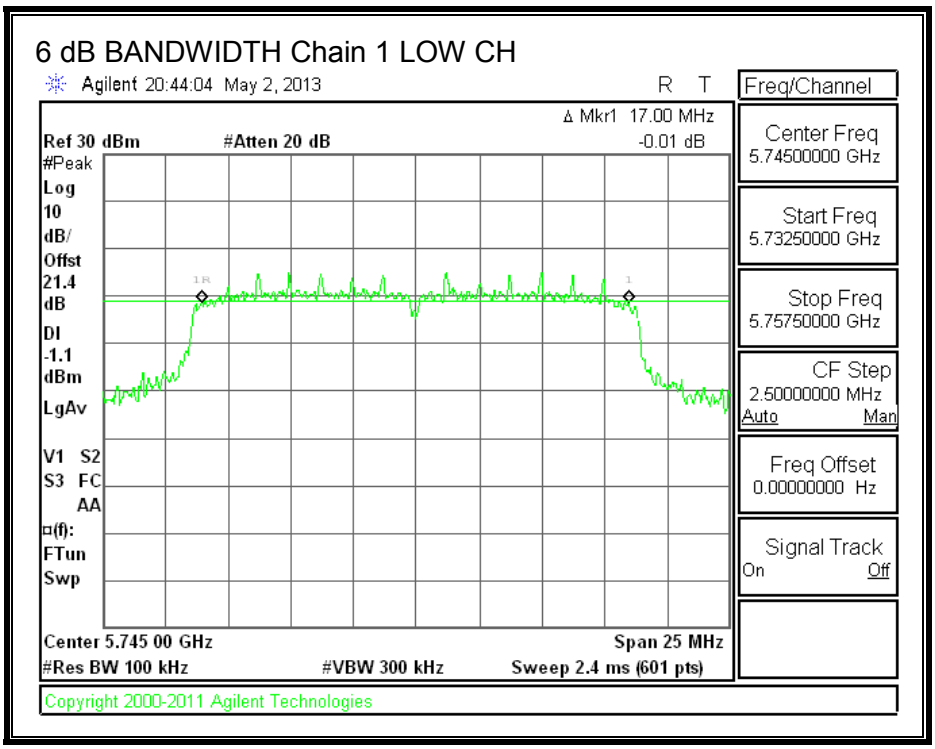
6 dB BANDWIDTH, Chain 0

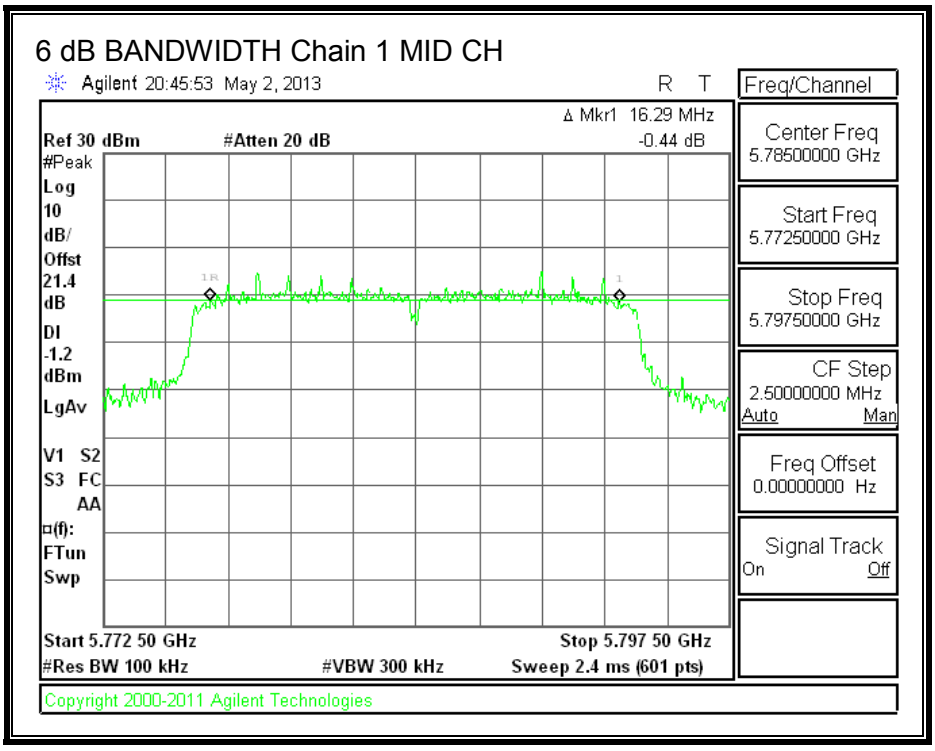


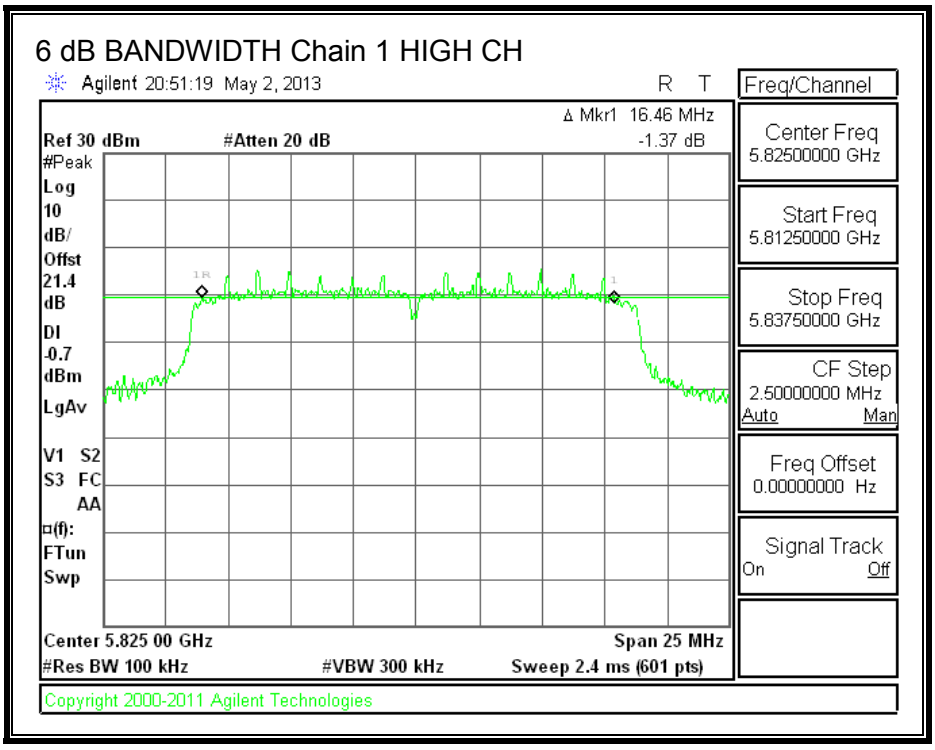




6 dB BANDWIDTH, Chain 1







8.5.2. 99% BANDWIDTH

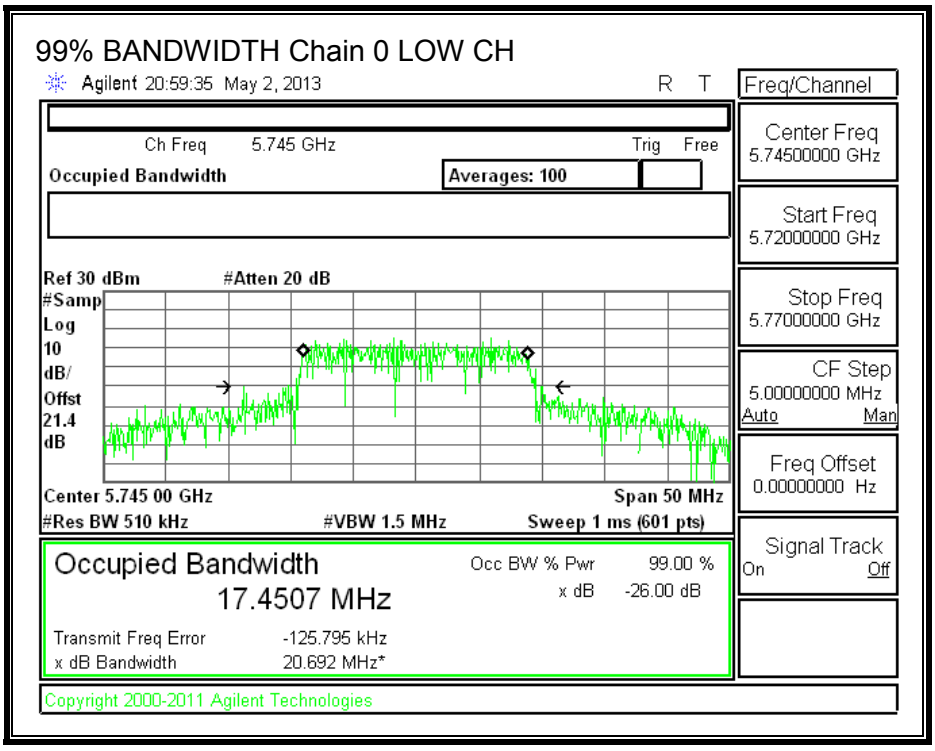
LIMITS

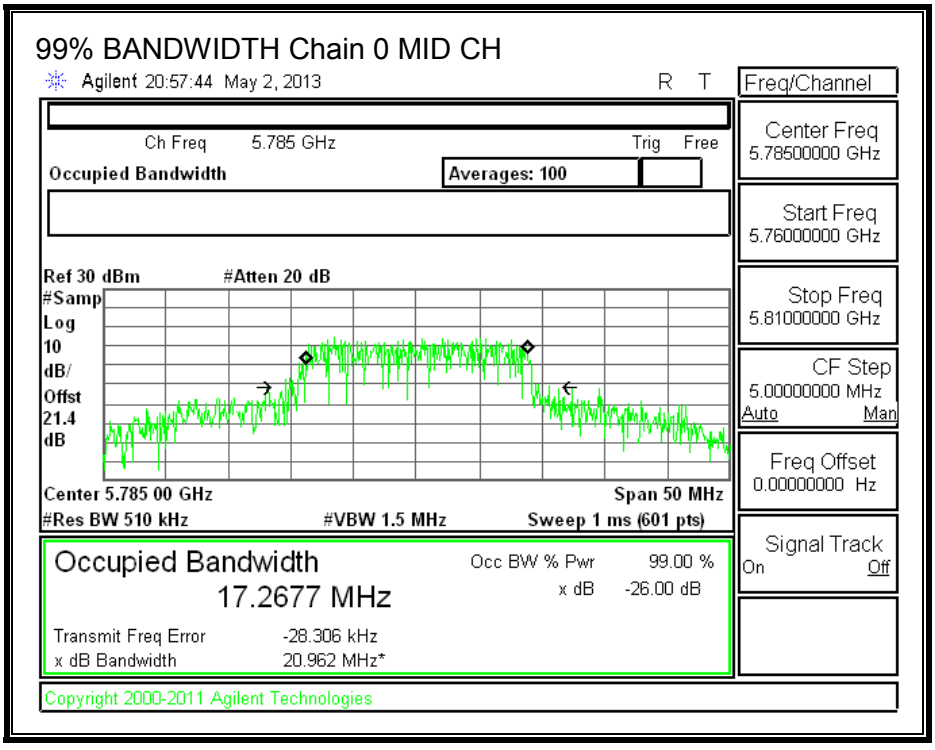
None; for reporting purposes only.

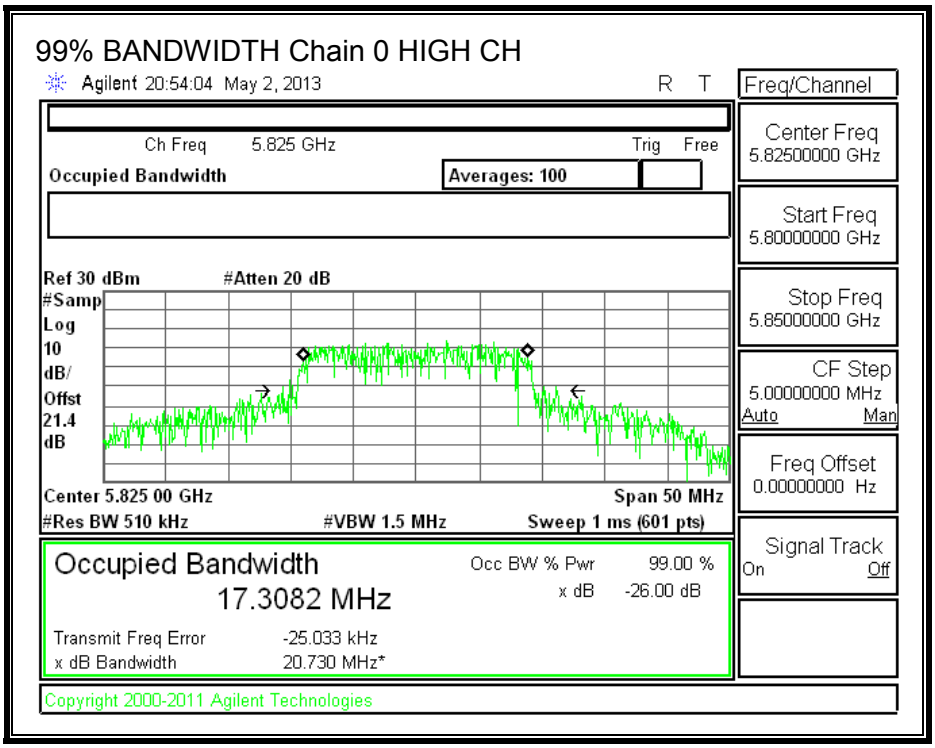
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5745	17.4507	17.6598
Mid	5785	17.2677	17.5780
High	5825	17.3082	17.5783

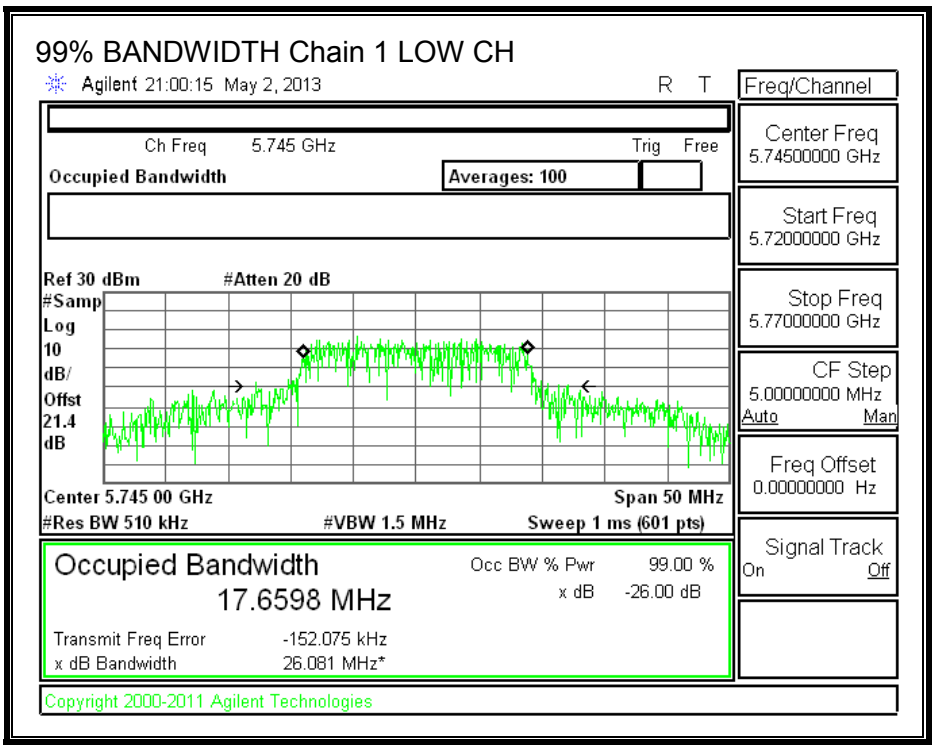
99% BANDWIDTH, Chain 0

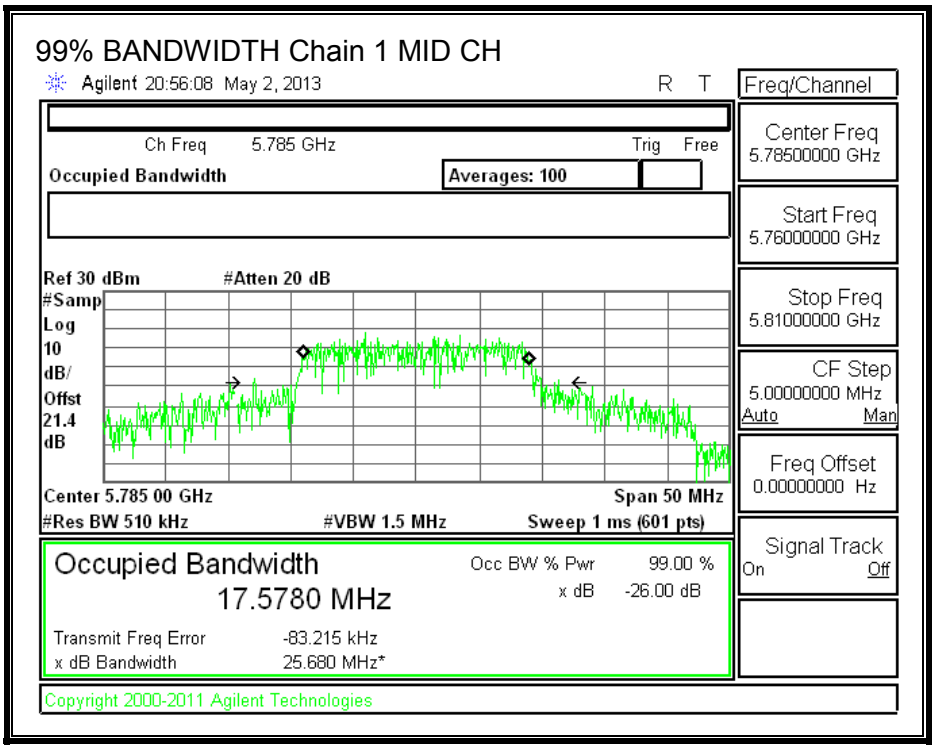


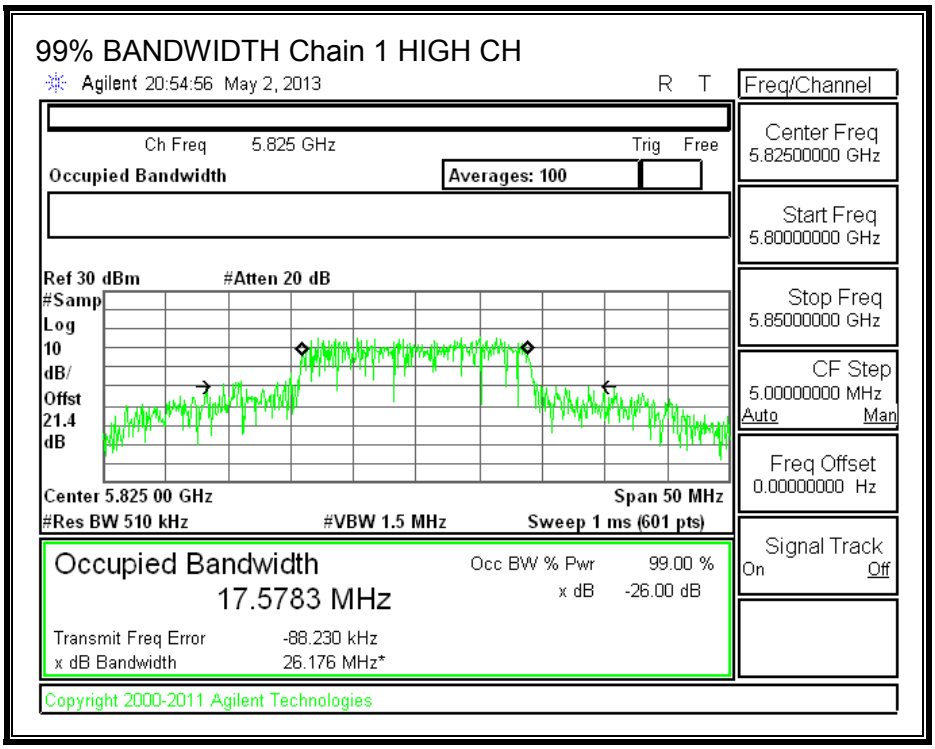




99% BANDWIDTH, Chain 1







8.5.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 25.4 dB (including two 10 dB pads, 2 dB cables, and 3.4 dB power splitter) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5745	15.00	16.30	18.71
Mid	5785	15.10	16.30	18.75
High	5825	15.10	16.70	18.98

8.5.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.00	2.00	2.00

RESULTS

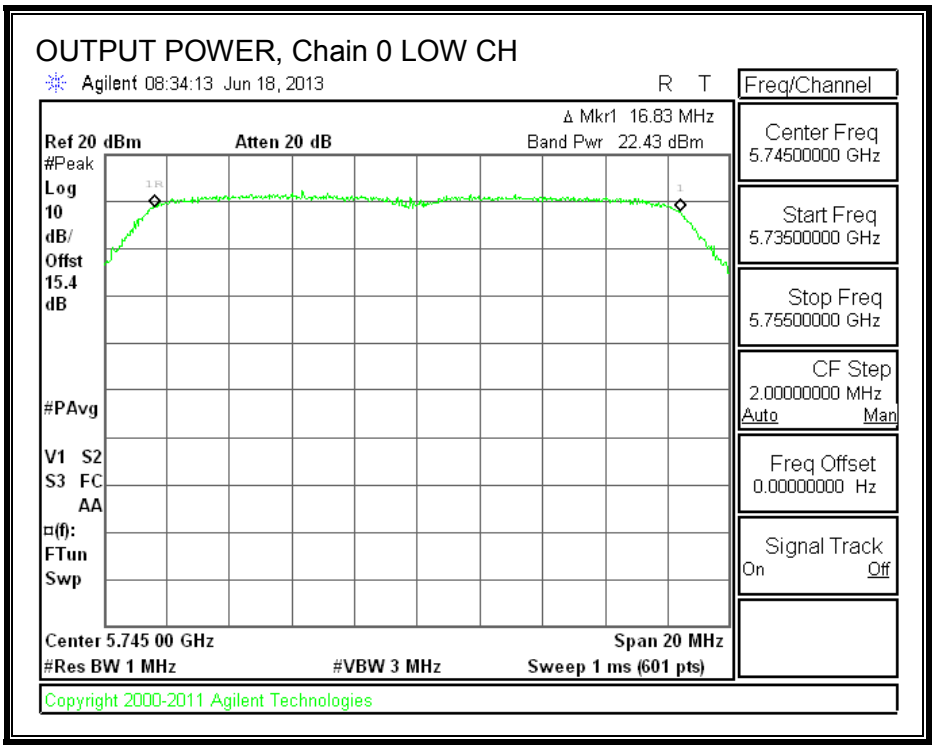
Limits

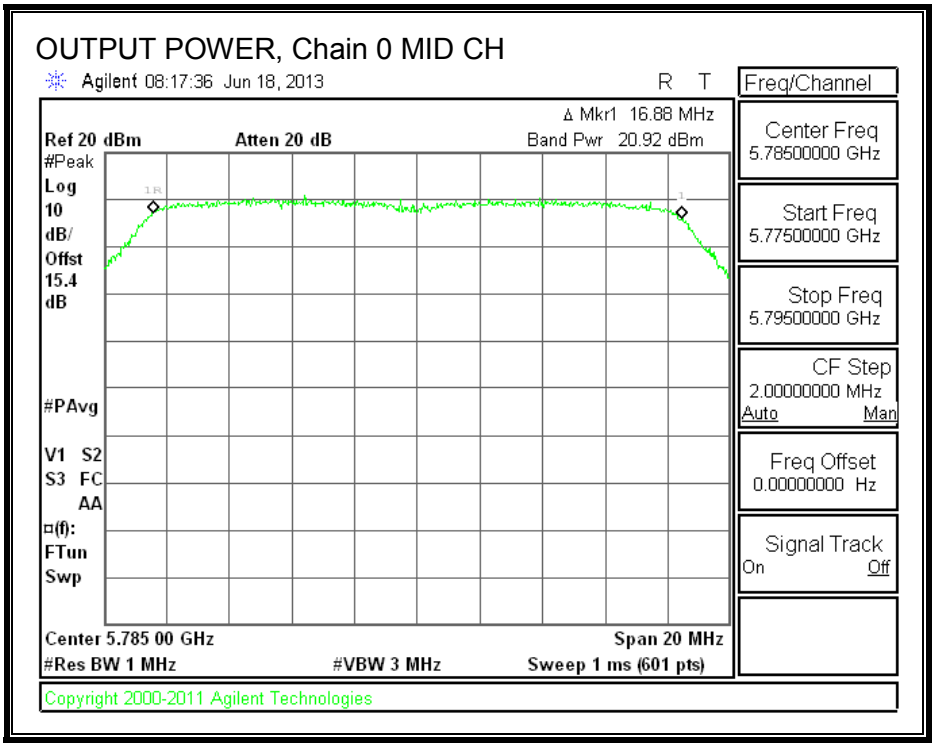
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5745	2.00	30.00	30	36	30.00
Mid	5785	2.00	30.00	30	36	30.00
High	5825	2.00	30.00	30	36	30.00

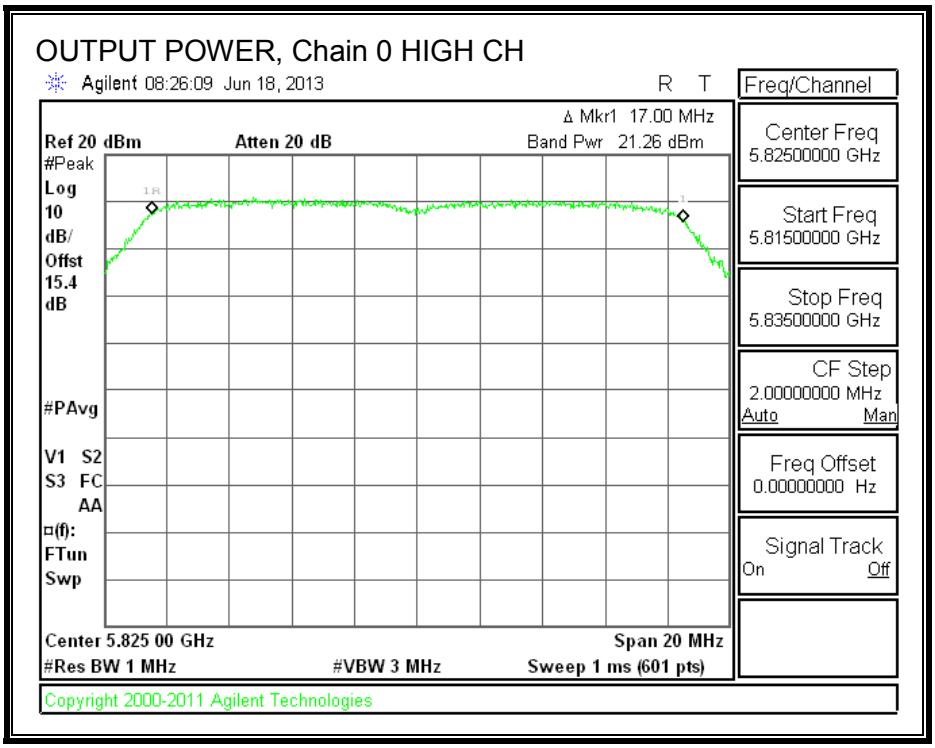
Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5745	22.43	22.41	25.43	30.00	-4.57
Mid	5785	20.92	22.72	24.92	30.00	-5.08
High	5825	21.26	23.26	25.38	30.00	-4.62

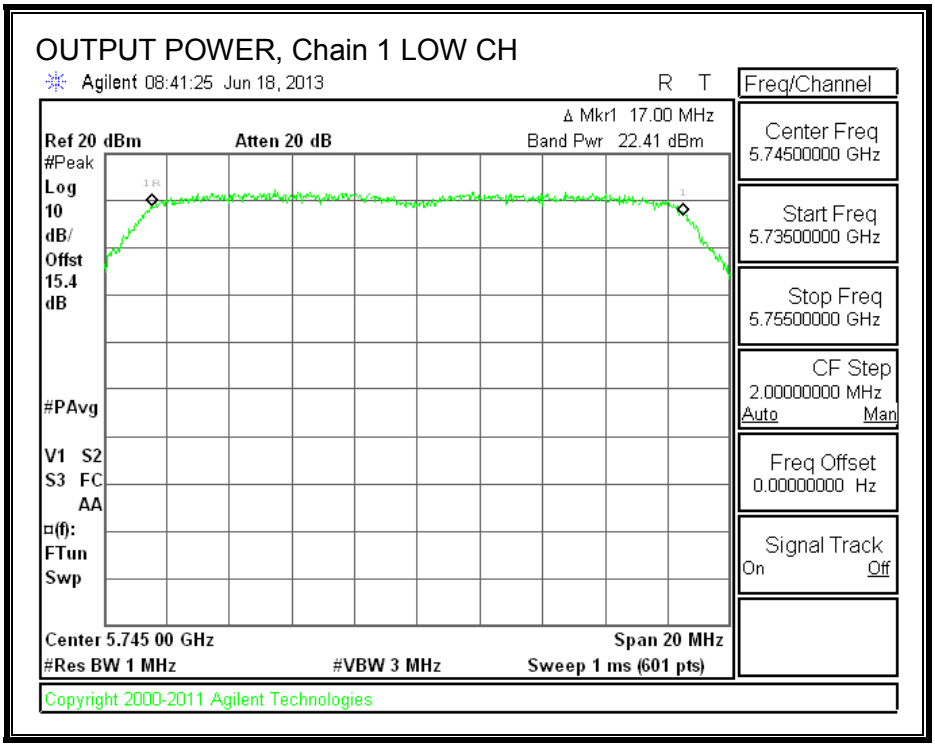
OUTPUT POWER, Chain 0



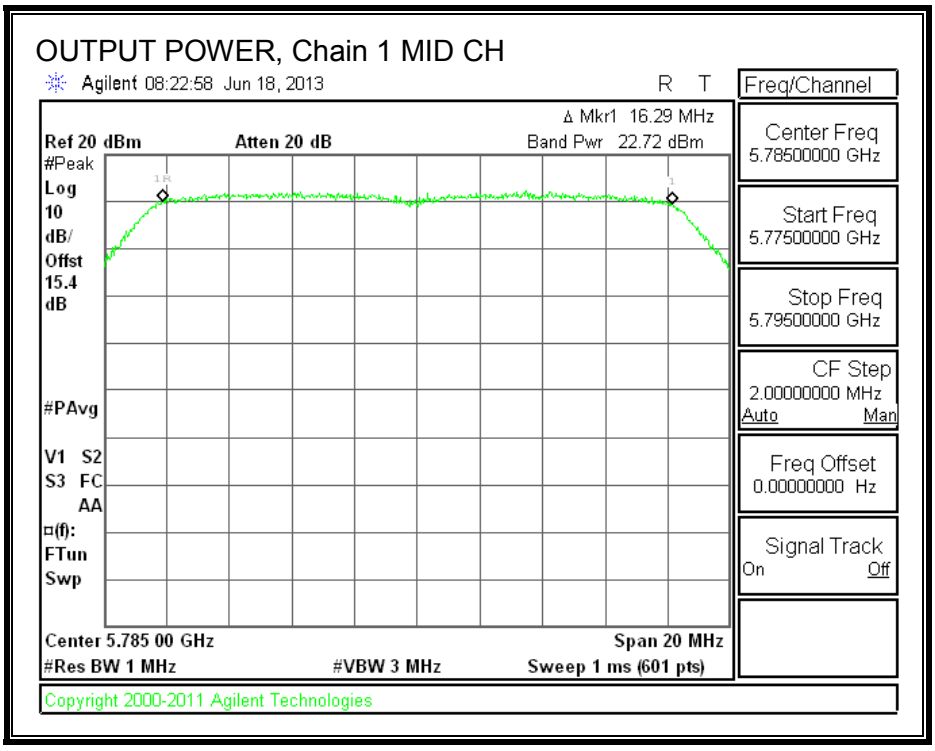




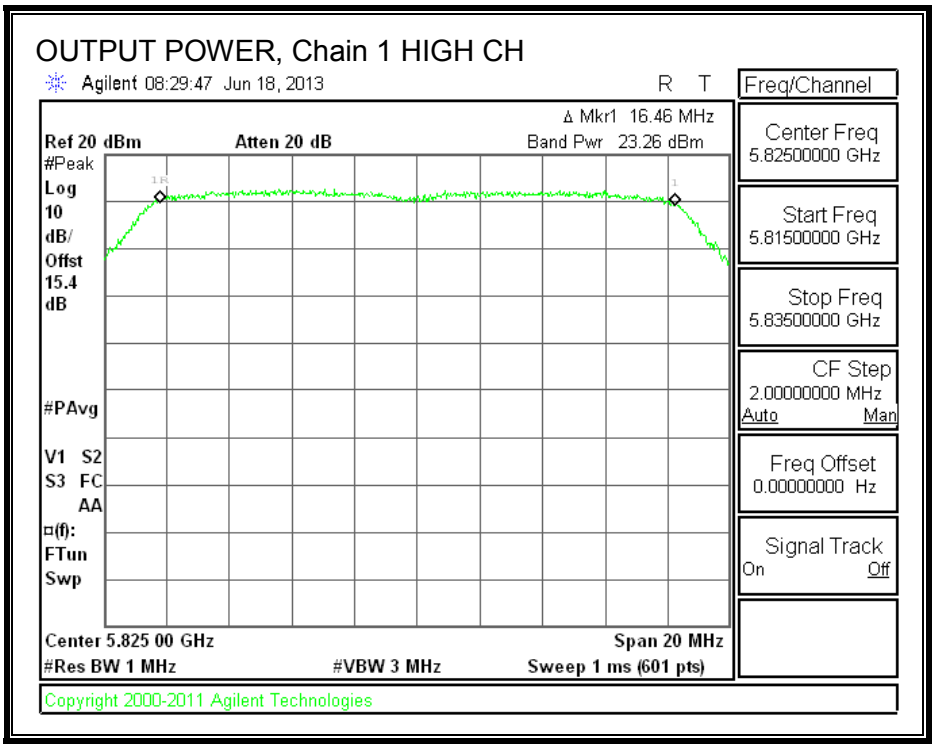
OUTPUT POWER, Chain 1



OUTPUT POWER, Chain 1 MID CH



OUTPUT POWER, Chain 1 HIGH CH



8.5.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

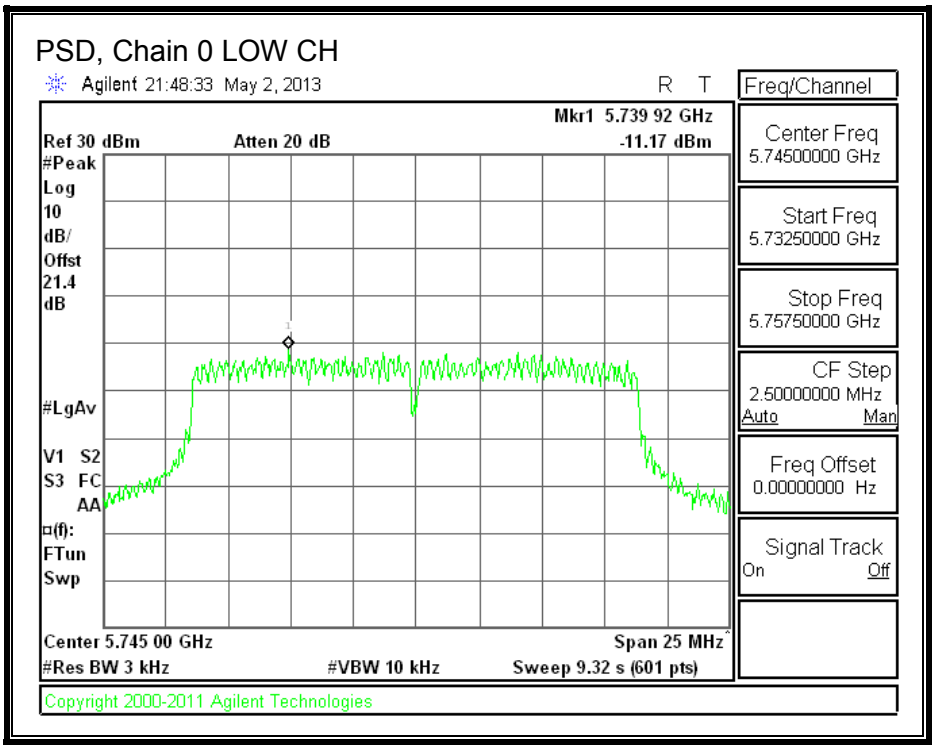
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

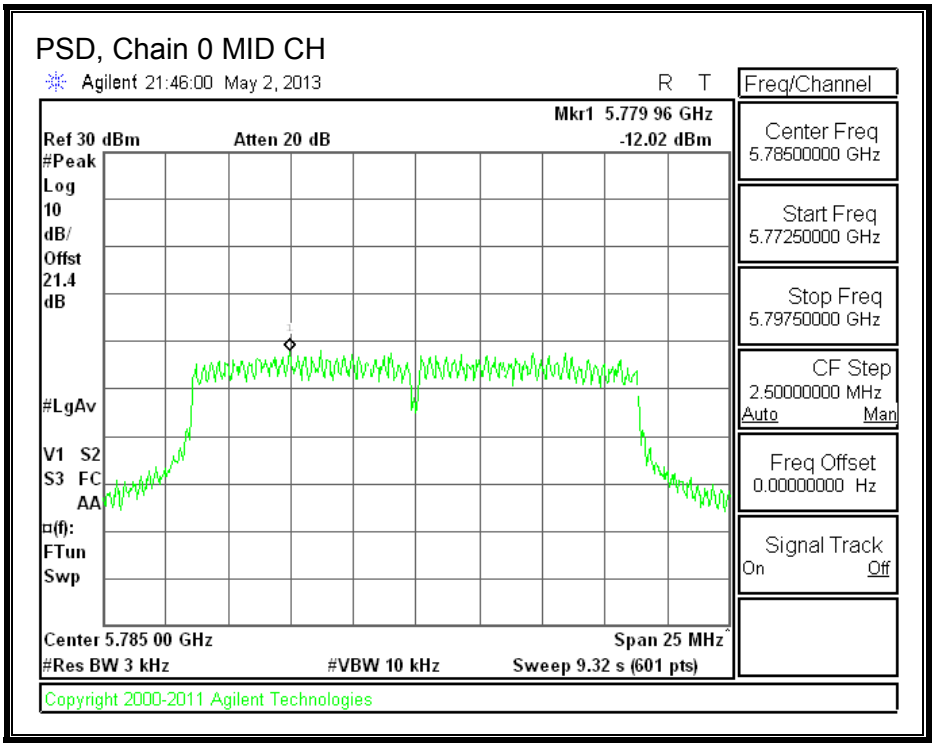
RESULTS

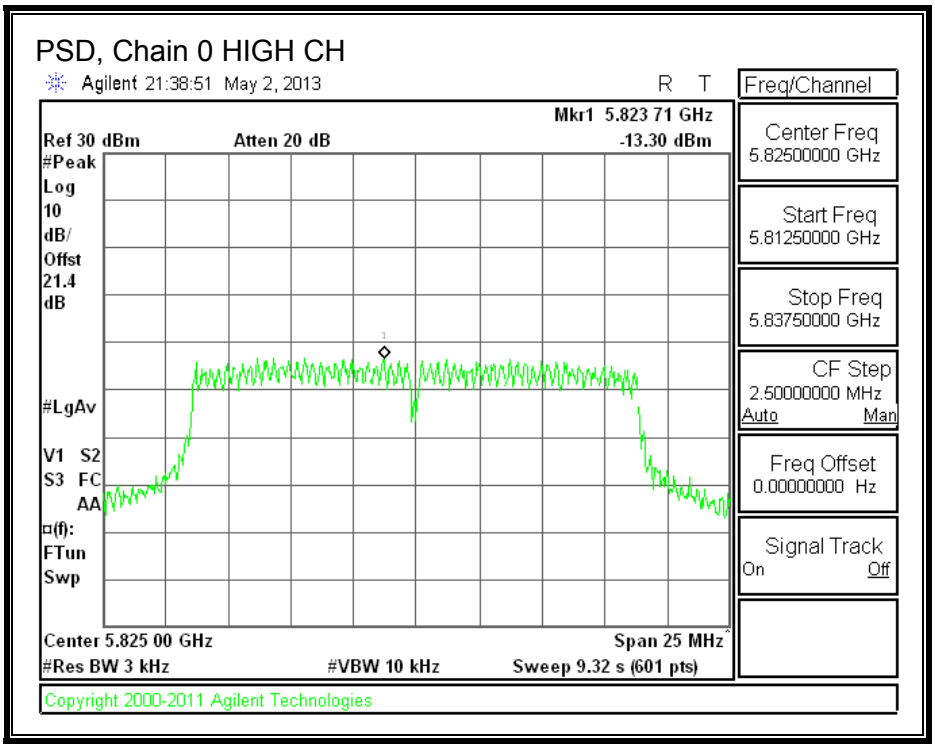
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-11.17	-10.56	-7.84	8.0	-15.8
Mid	5785	-12.02	-9.18	-7.36	8.0	-15.4
High	5825	-13.30	-10.24	-8.50	8.0	-16.5

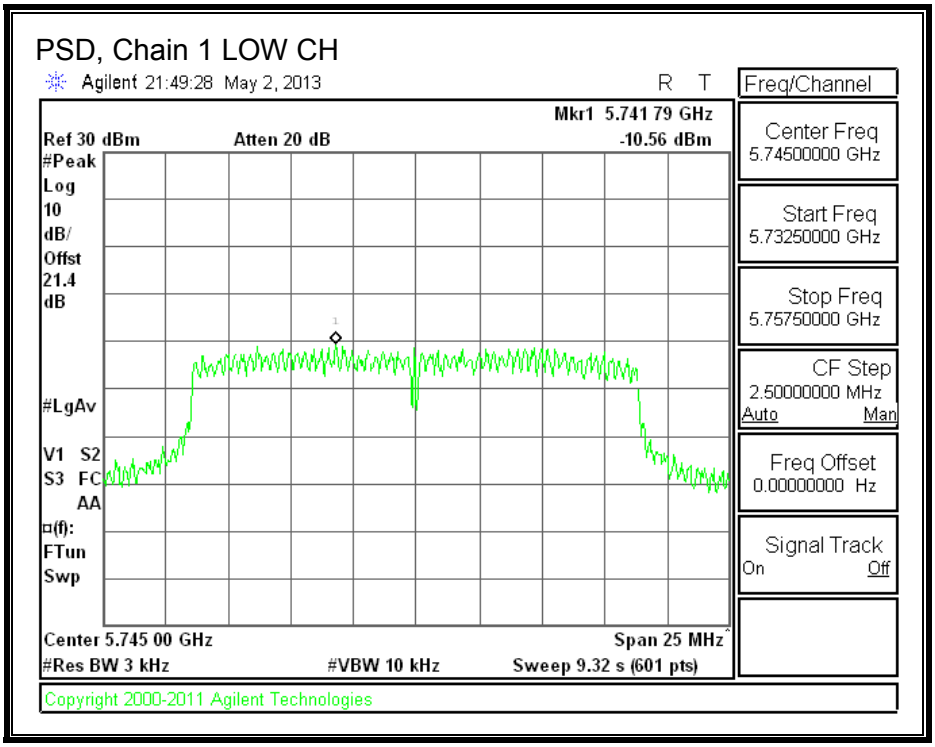
PSD, Chain 0

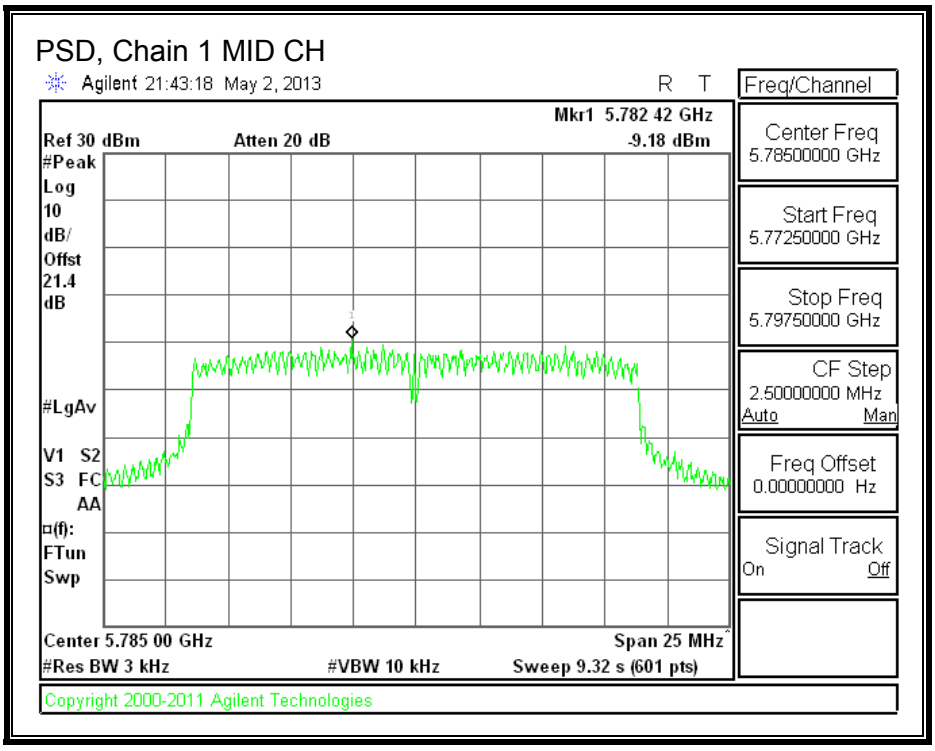


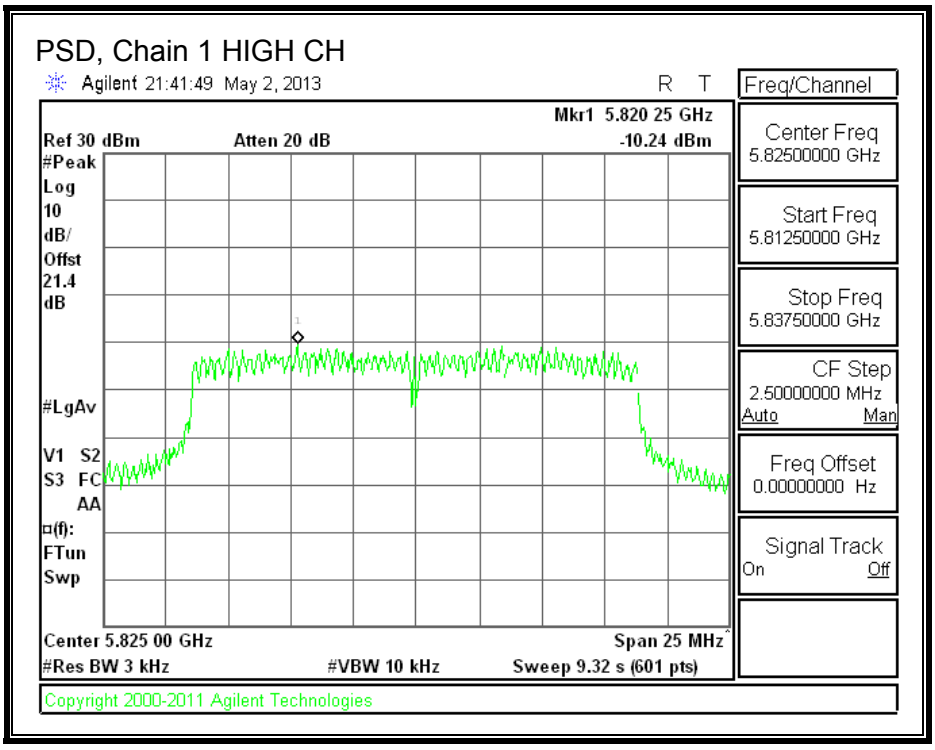




PSD, Chain 1







8.5.6. OUT-OF-BAND EMISSIONS

LIMITS

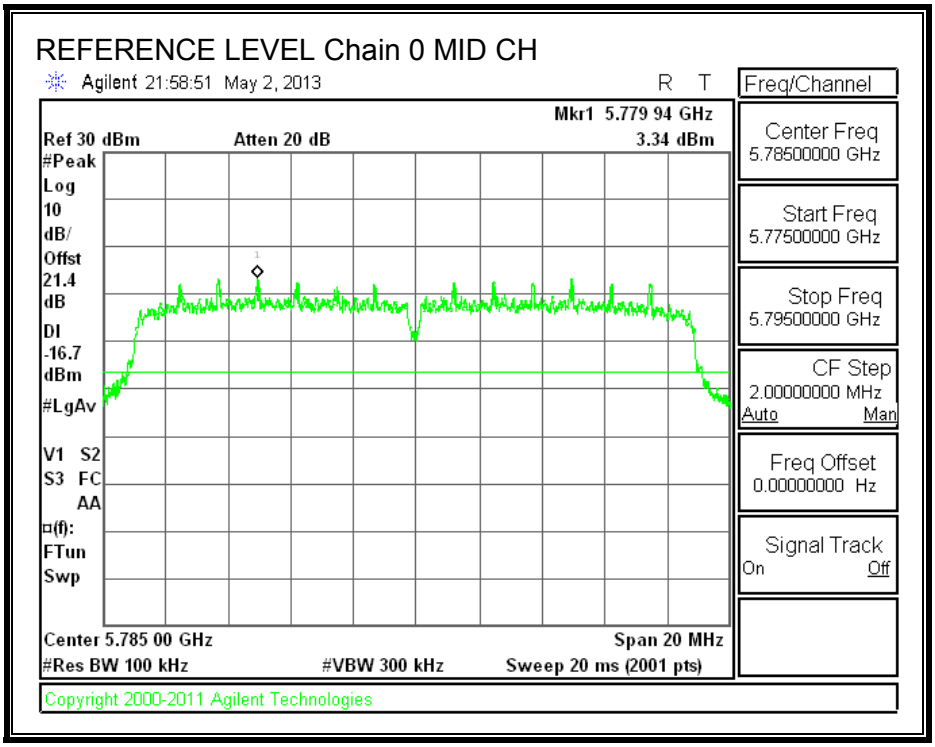
FCC §15.247 (d)

IC RSS-210 A8.5

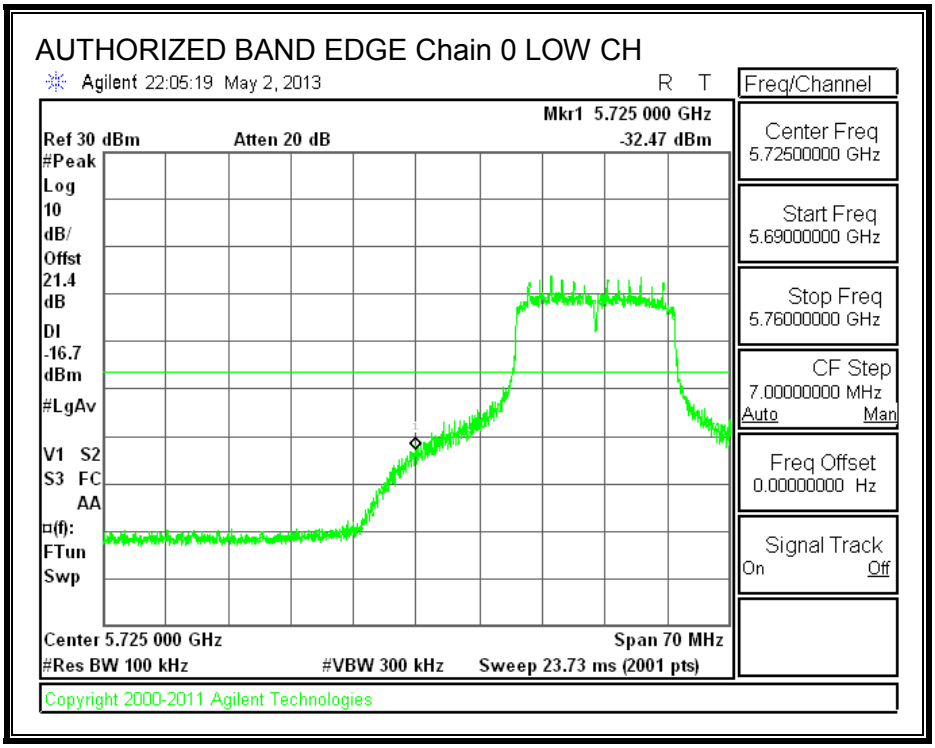
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

RESULTS

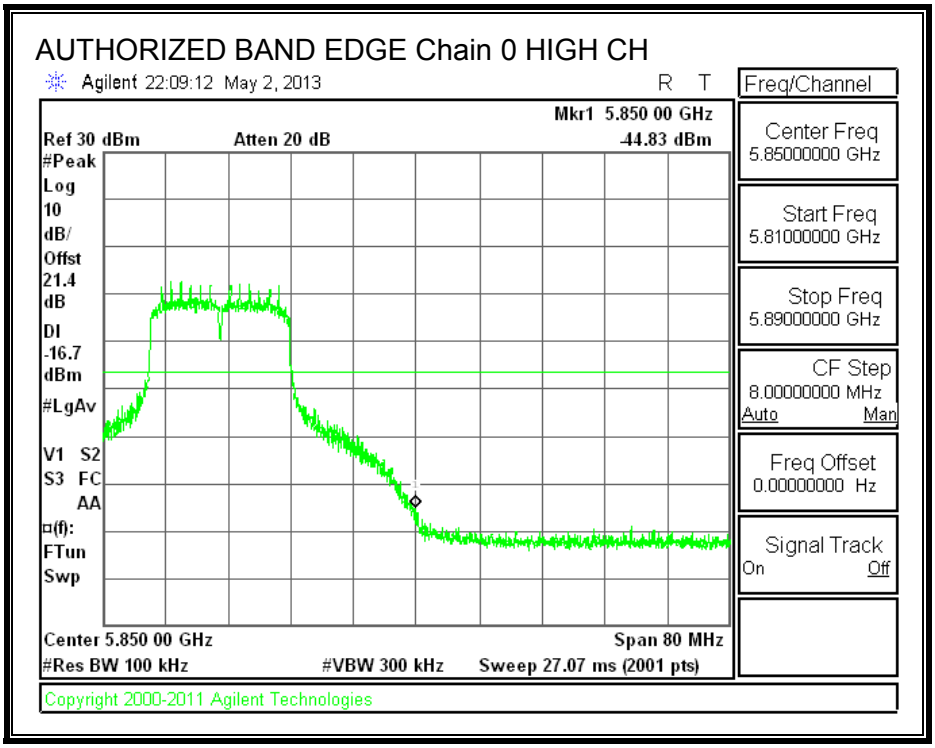
IN-BAND REFERENCE LEVEL, Chain 0



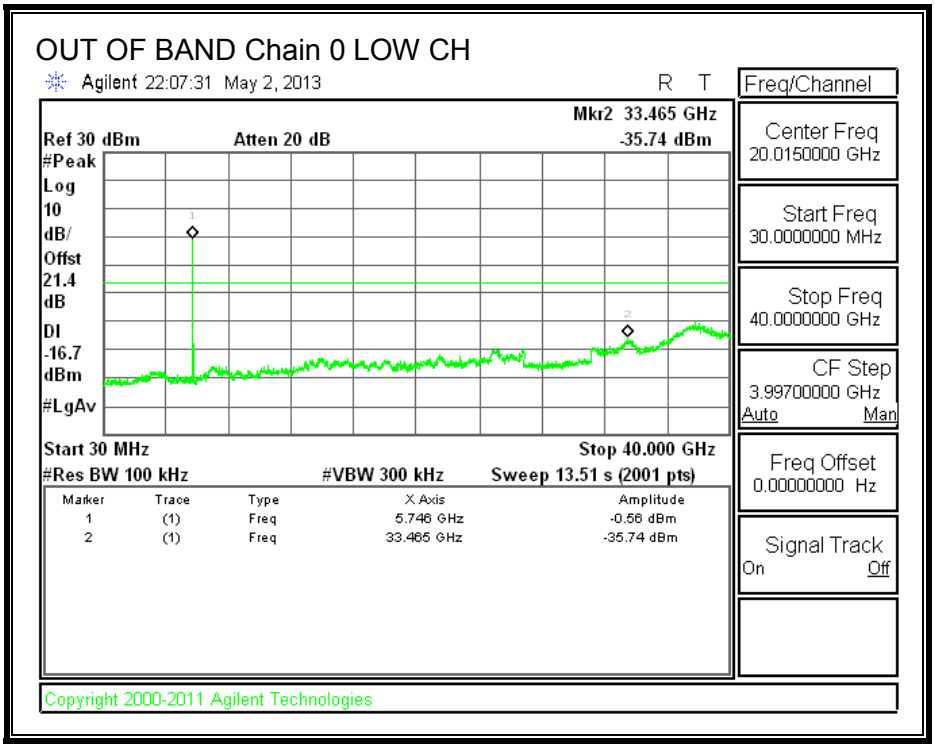
LOW CHANNEL BANDEDGE, Chain 0

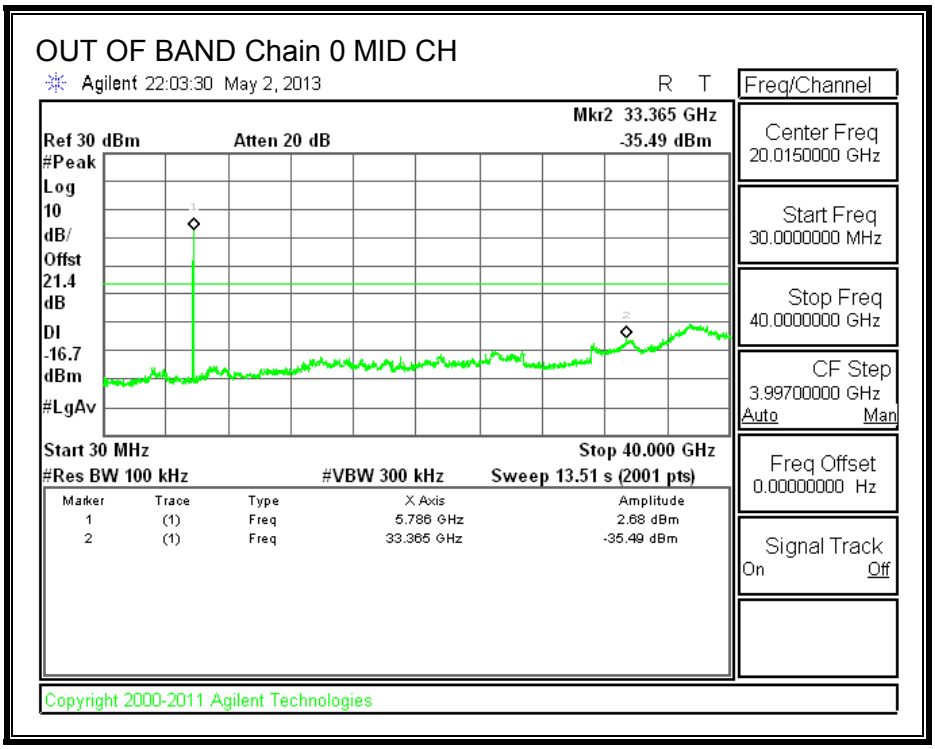


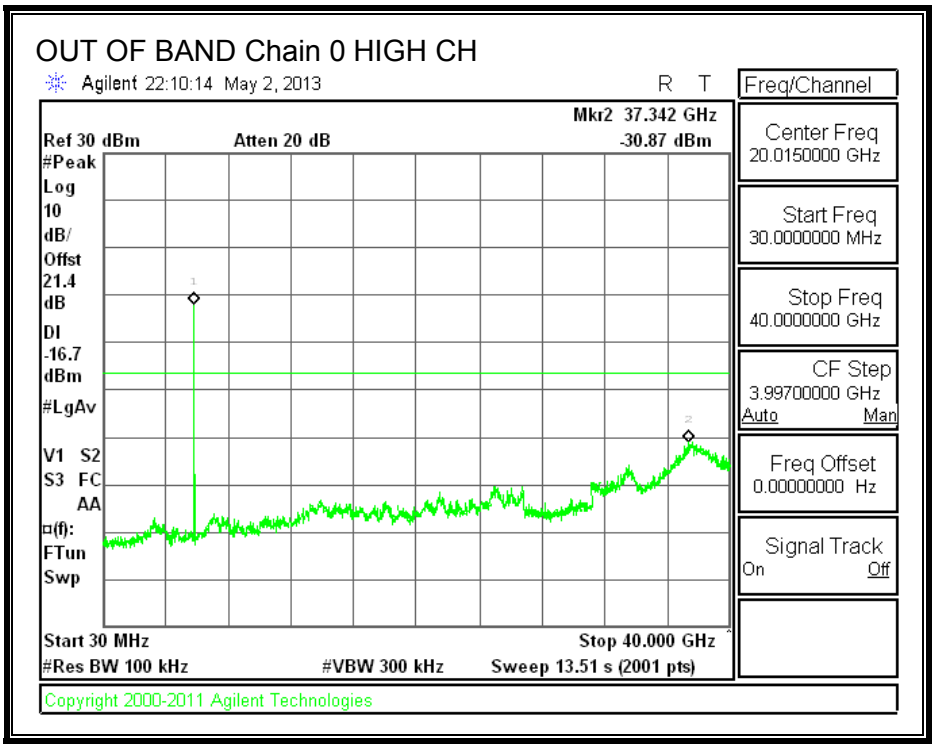
HIGH CHANNEL BANDEDGE, Chain 0



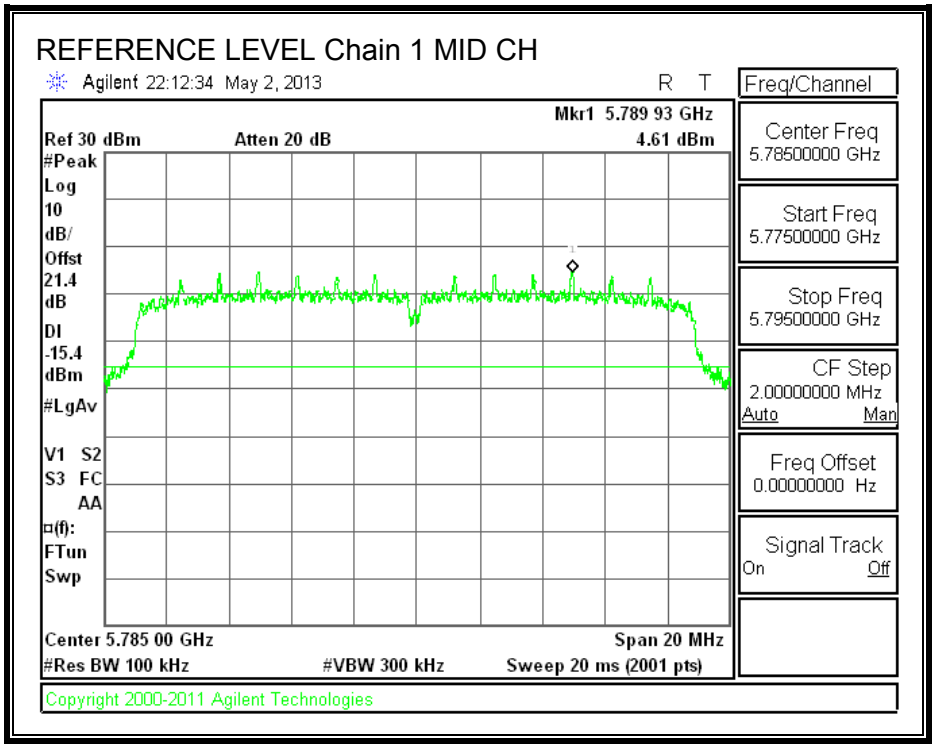
OUT-OF-BAND EMISSIONS, Chain 0



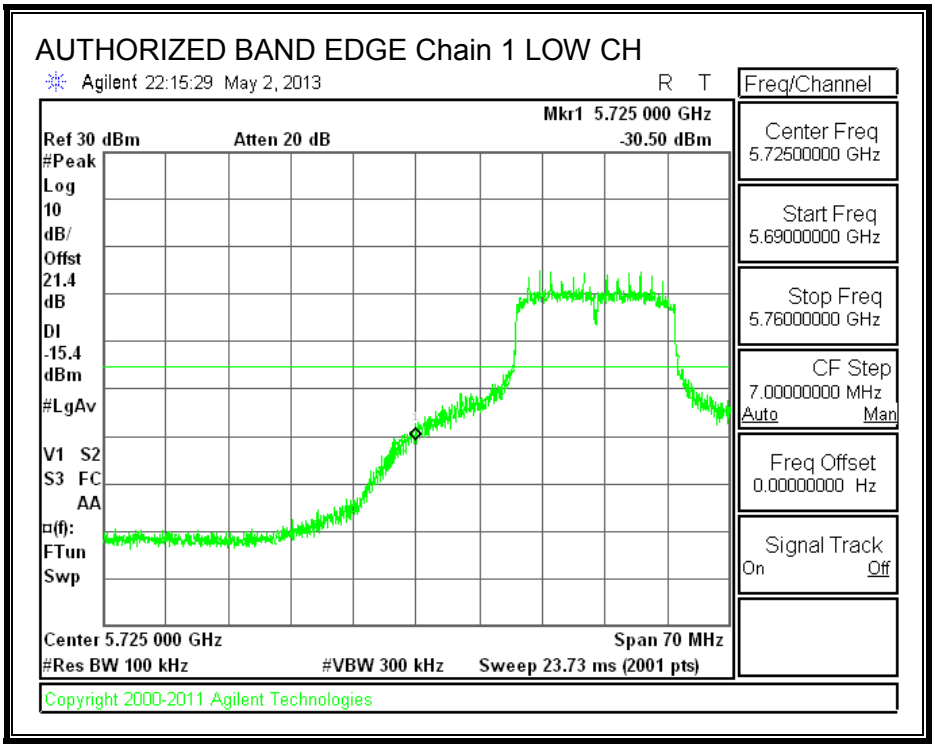




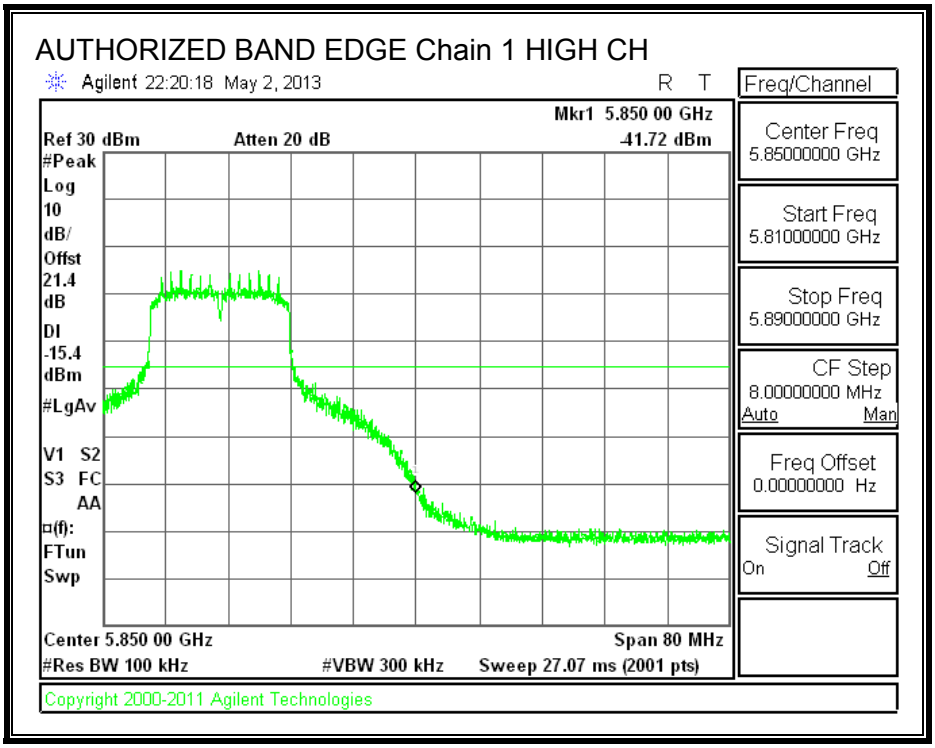
IN-BAND REFERENCE LEVEL, Chain 1



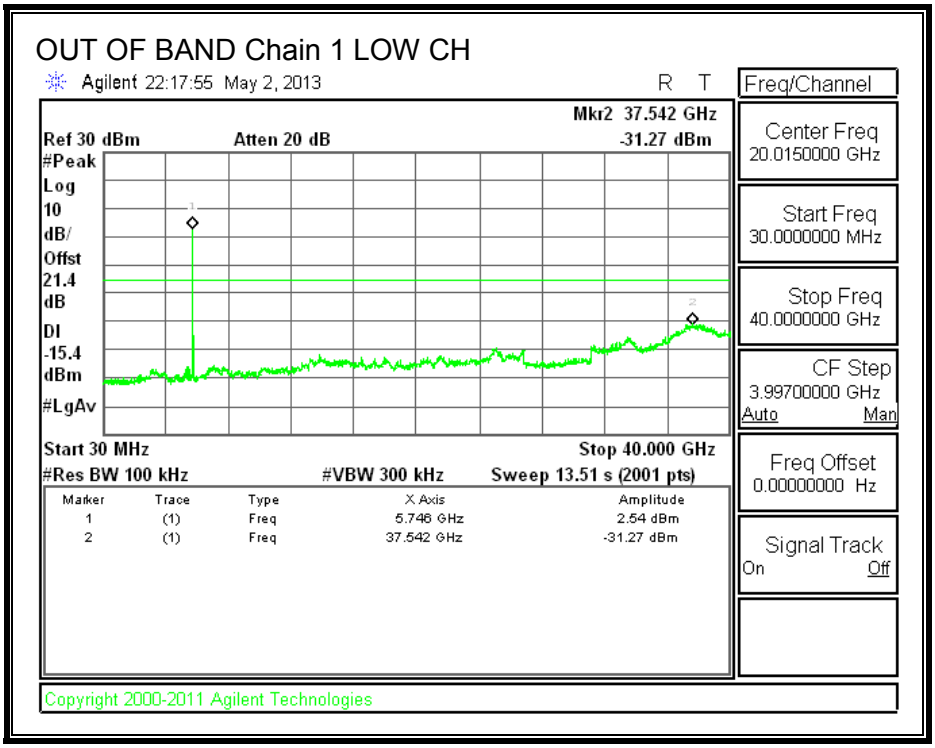
LOW CHANNEL BANDEDGE, Chain 1

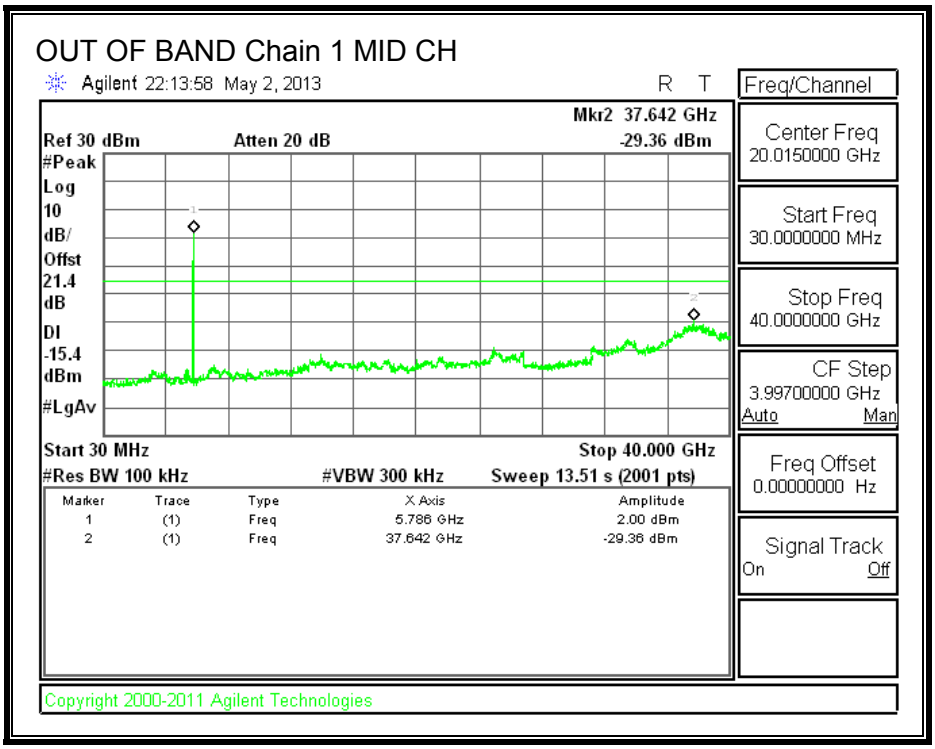


HIGH CHANNEL BANDEDGE, Chain 1

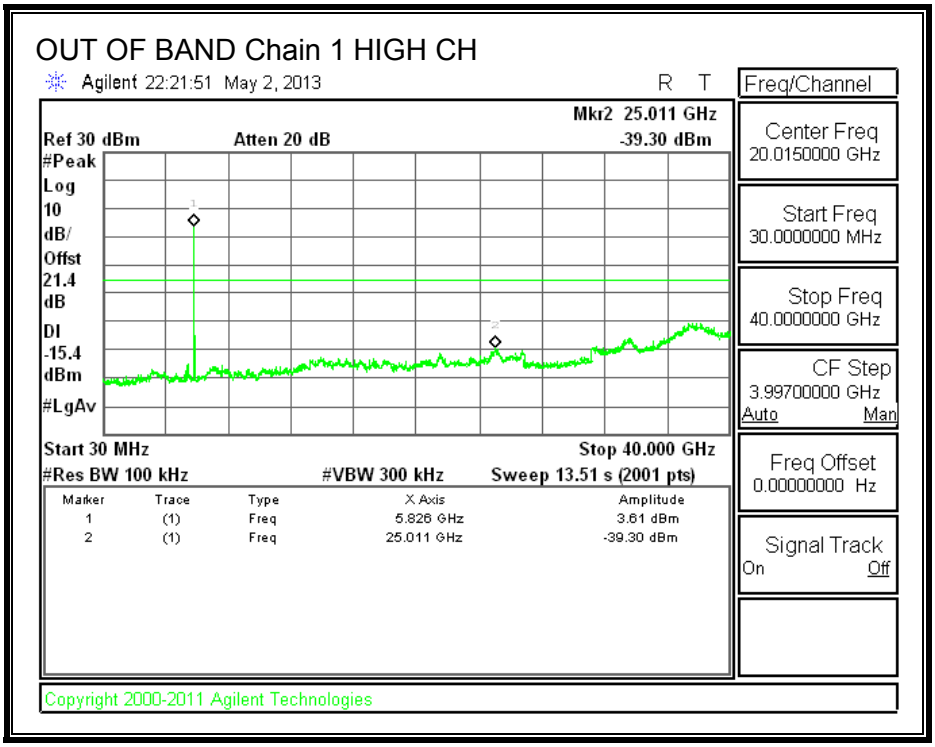


OUT-OF-BAND EMISSIONS, Chain 1





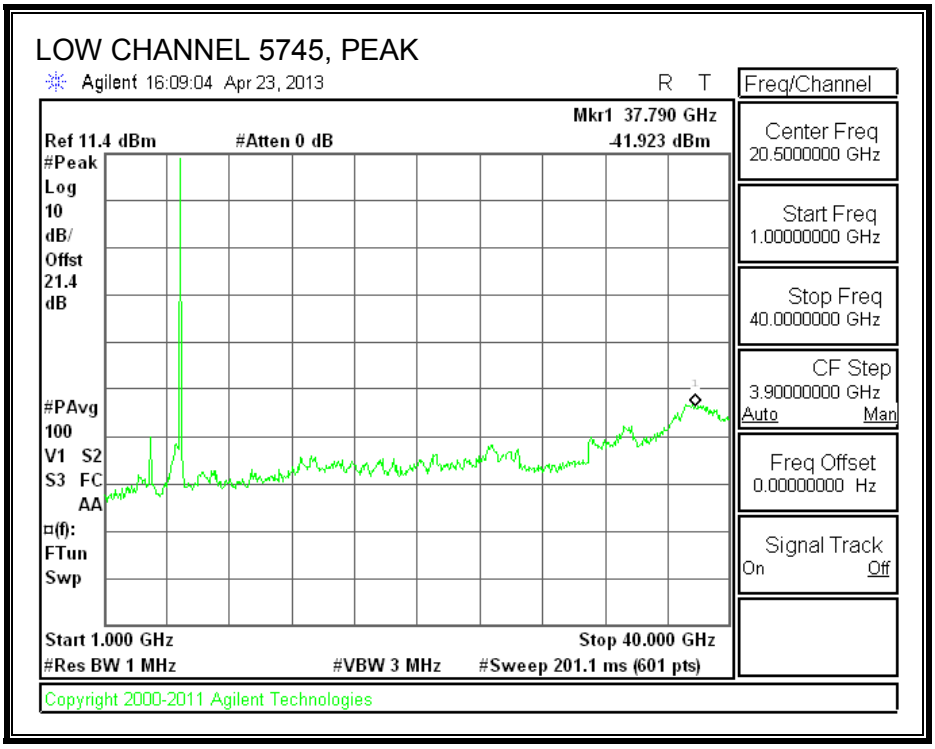
OUT OF BAND Chain 1 HIGH CH

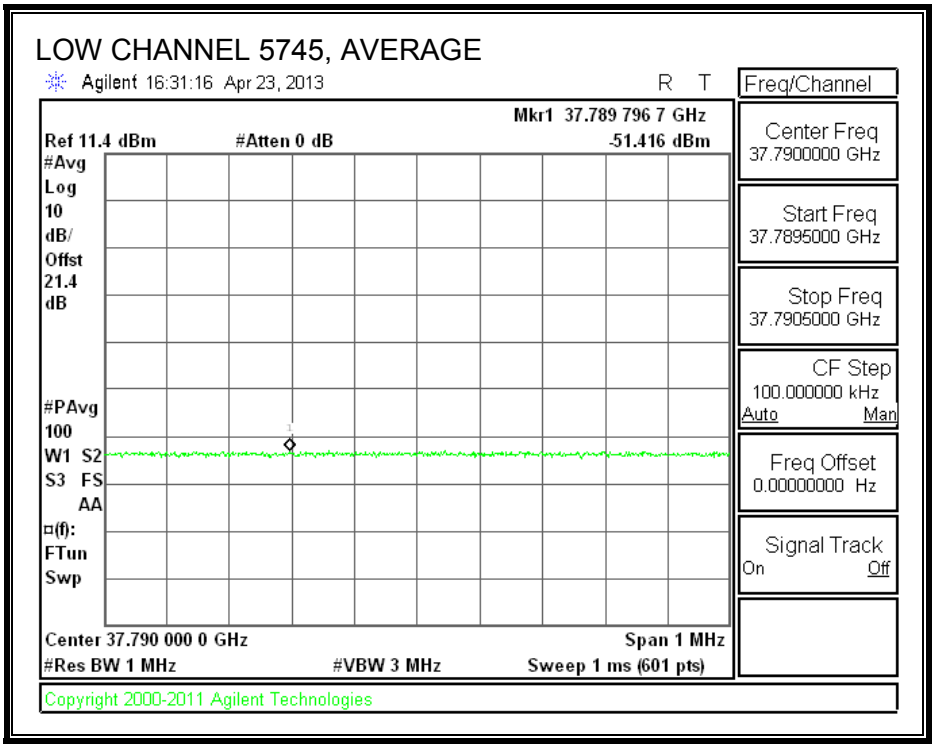


8.5.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter units)

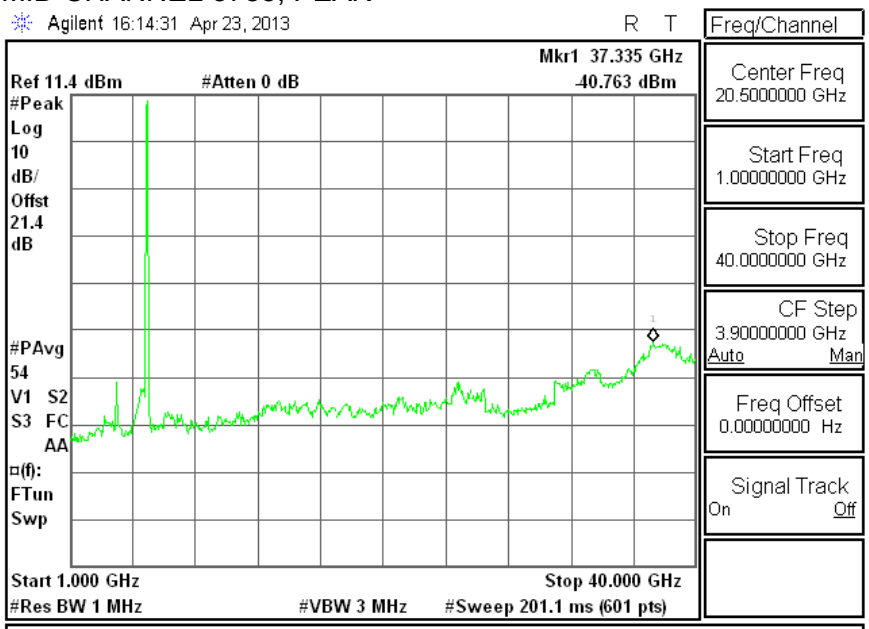
HARMONICS AND SPURIOUS

Chain 0

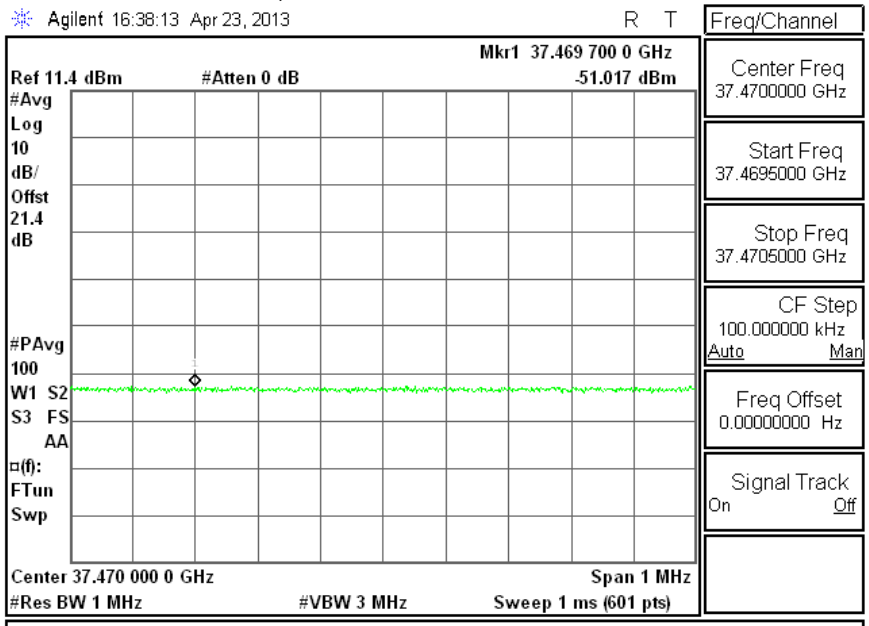




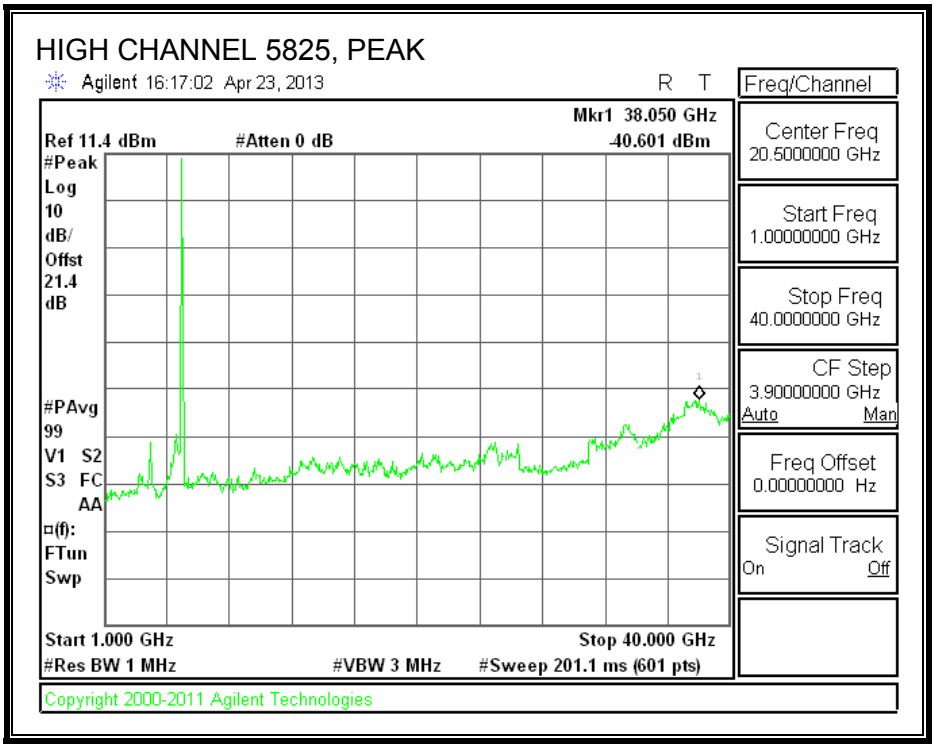
MID CHANNEL 5785, PEAK



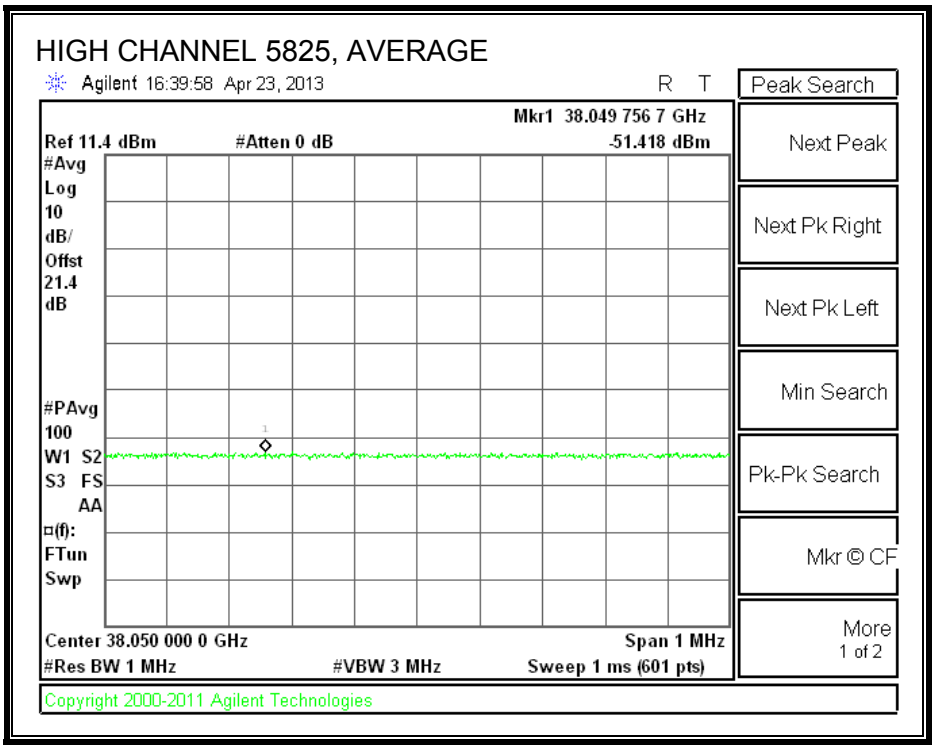
MID CHANNEL 5785, AVERAGE



HIGH CHANNEL 5825, PEAK

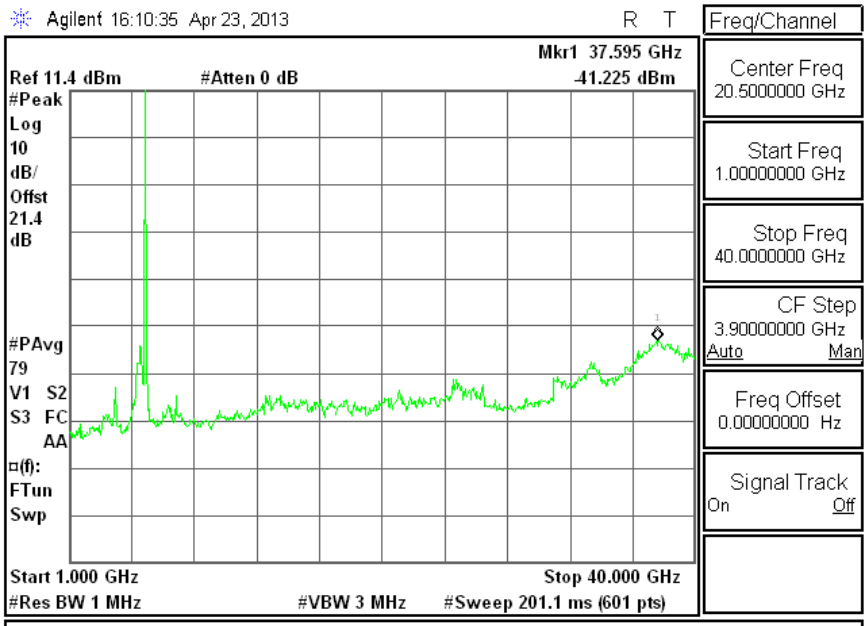


HIGH CHANNEL 5825, AVERAGE

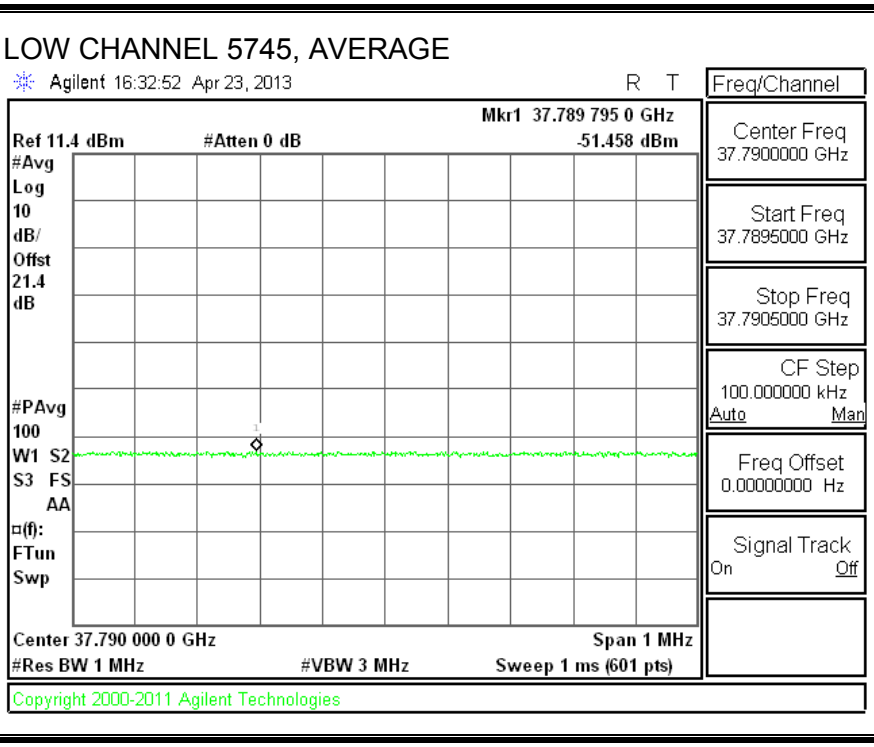


Chain 1

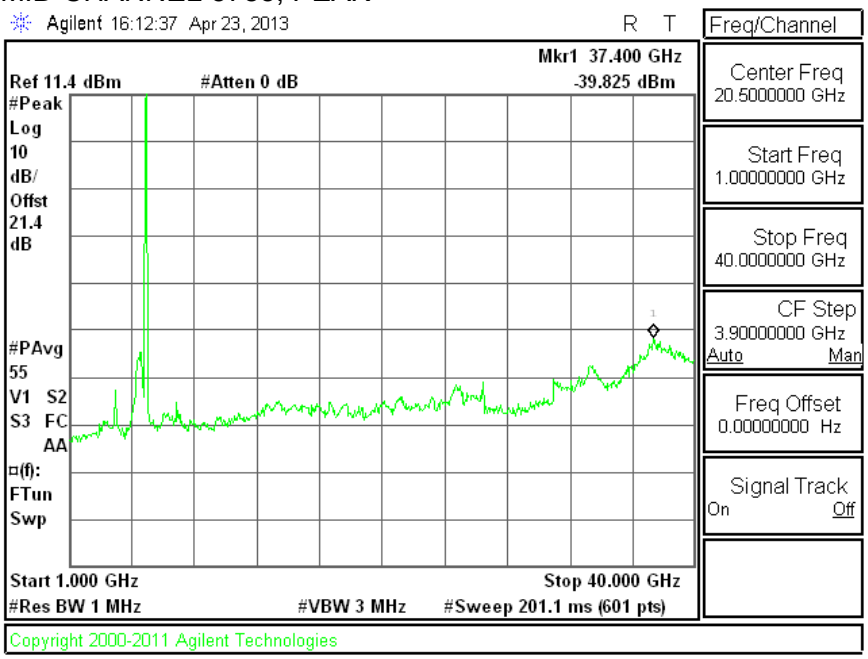
LOW CHANNEL 5745, PEAK



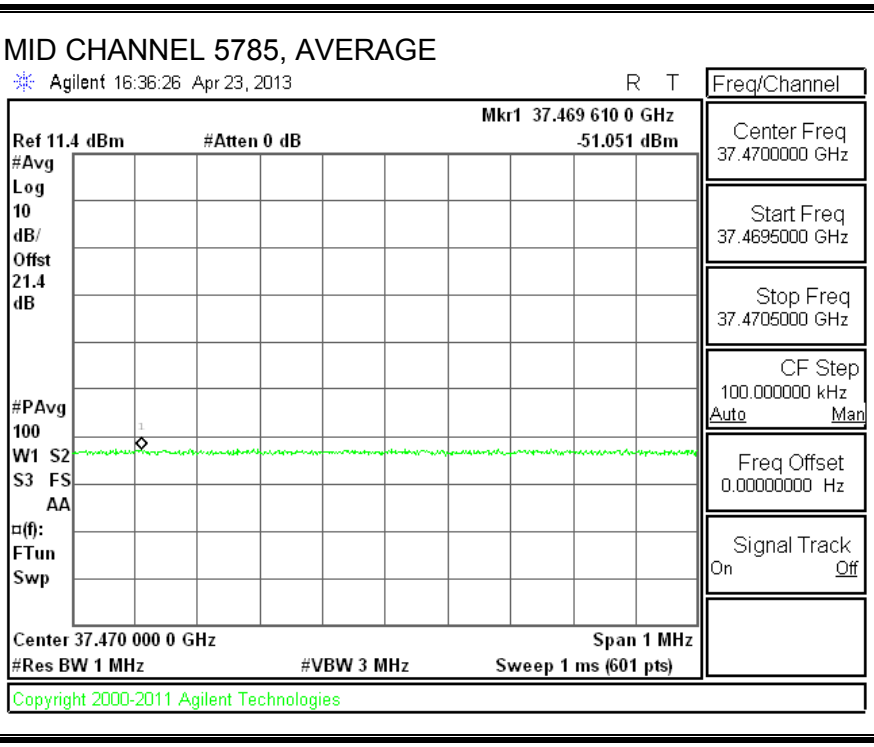
LOW CHANNEL 5745, AVERAGE



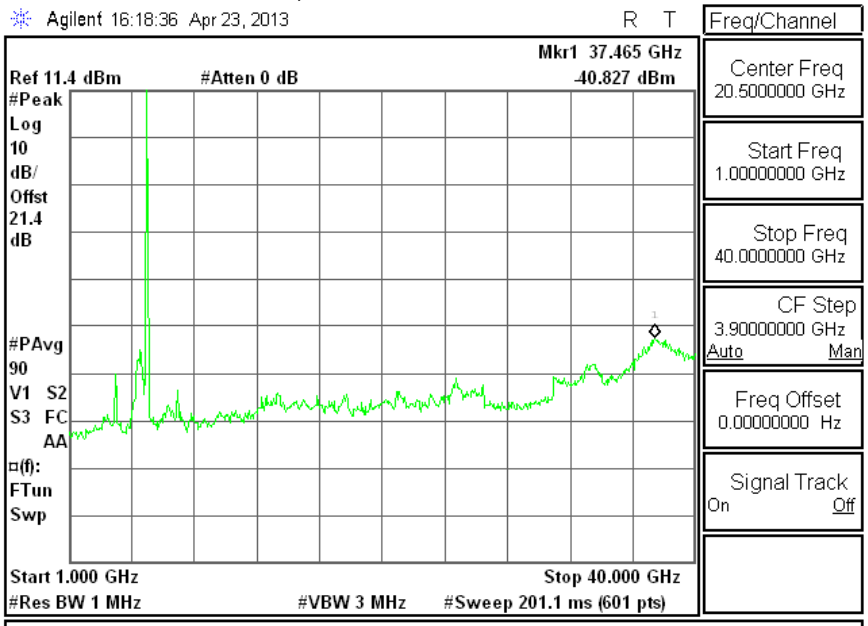
MID CHANNEL 5785, PEAK



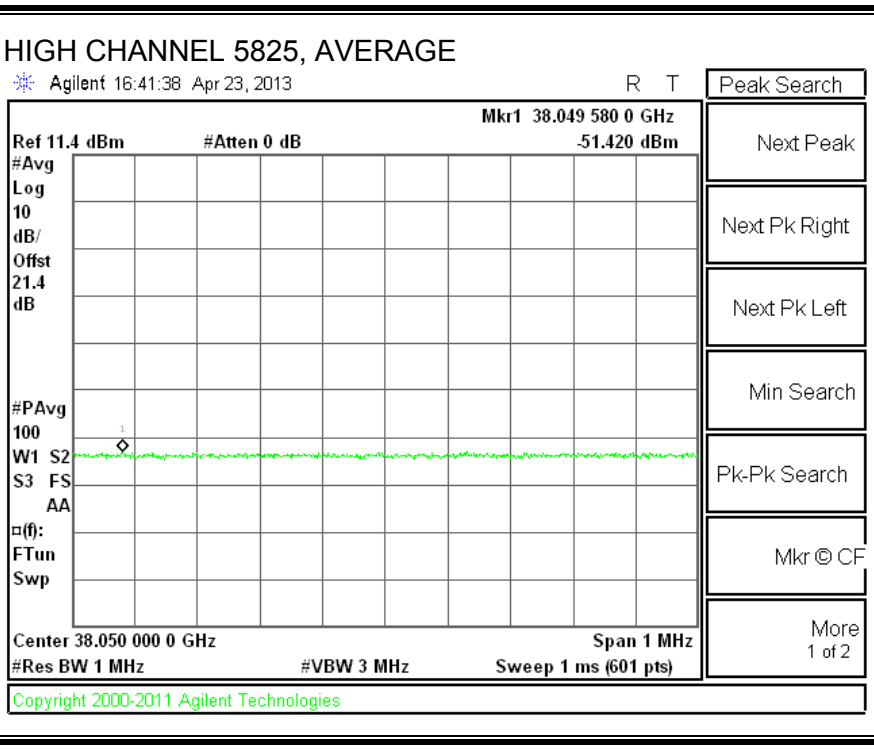
MID CHANNEL 5785, AVERAGE



HIGH CHANNEL 5825, PEAK



HIGH CHANNEL 5825, AVERAGE



HARMONIC SPURIOUS DATA

2TX Conducted Spurious for FCC DTS (in the restricted bands)

Date:	4/23/2013
Test Engineer:	O. Su
Client:	Qualcomm Atheros
Project Number:	13u14995
Configuration:	5.8GHz 11n HT20
Mode of operation:	Tx

Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

Channel	Frequency (MHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
Low 5745	37.79	-41.923	-41.225	2	-33.54	-21.2	-12.34	18.00	15.0 / 16.3
Mid 5785	37.47	-40.763	-39.825	2	-32.25	-21.2	-11.05	18.00	15.1 / 16.3
High 5825	38.05	-40.601	-40.827	2	-32.69	-21.2	-11.49	18.00	15.1 / 16.7

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
Low 5745	37.79	-51.416	-51.458	2	-43.42	-41.2	-2.22	18.00	15.0 / 16.3
Mid 5785	37.47	-51.017	-51.051	2	-43.01	-41.2	-1.81	18.00	14.8 / 16.2
High 5825	38.05	-51.418	-51.42	2	-43.40	-41.2	-2.20	18.00	14.9 / 16.6

8.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

8.6.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

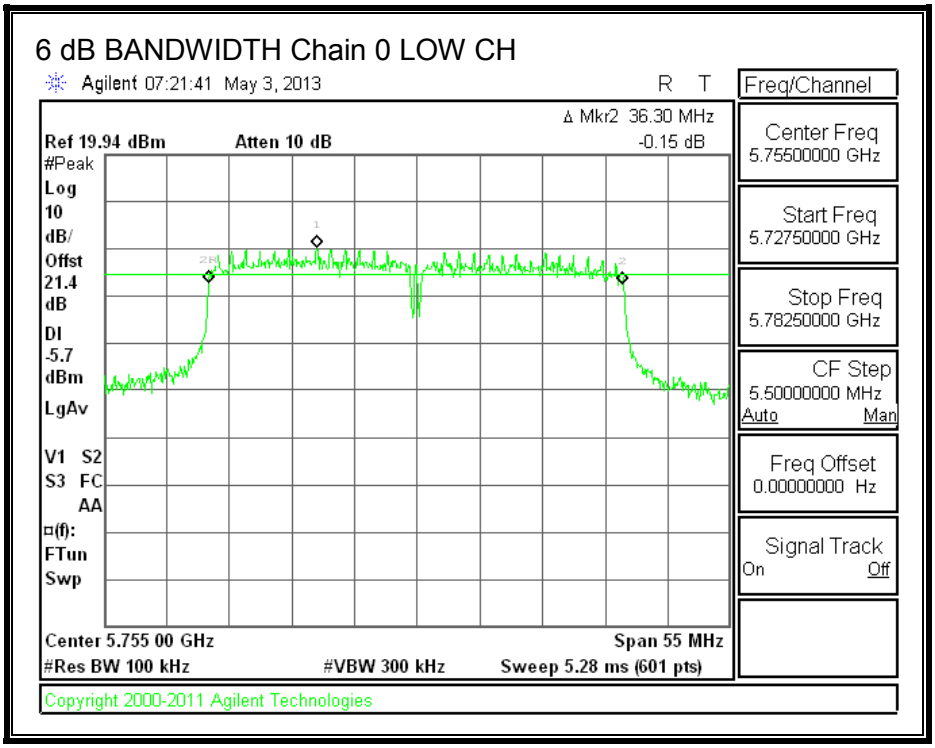
IC RSS-210 A8.2 (a)

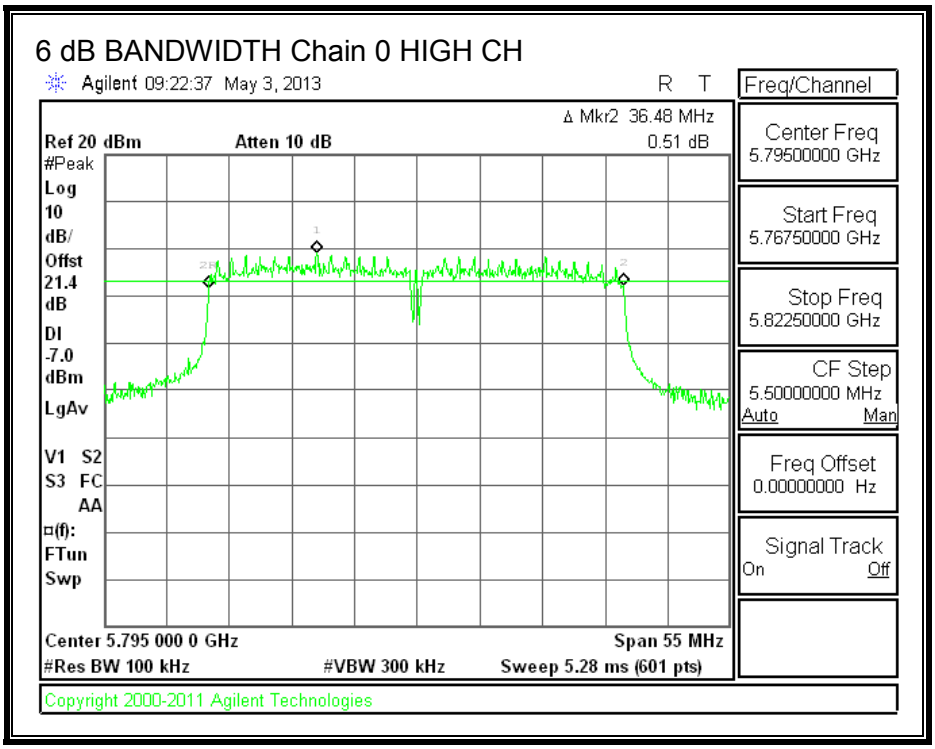
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

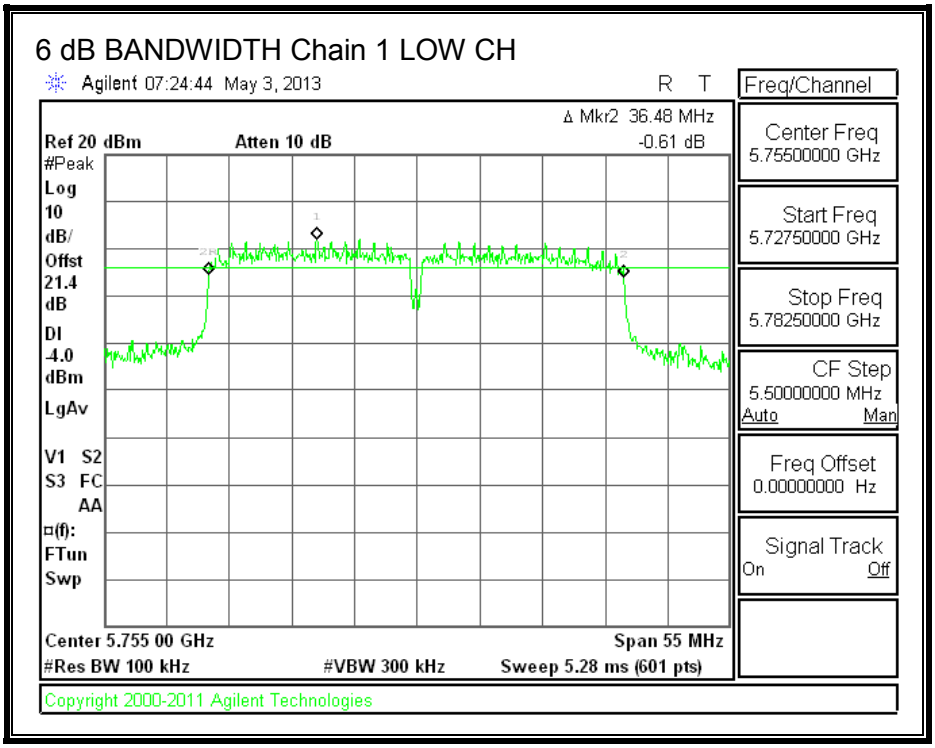
Channel	Frequency (MHz)	6 dB BW Chain 0 (MHz)	6 dB BW Chain 1 (MHz)	Minimum Limit (MHz)
Low	5755	36.30	36.48	0.5
High	5795	36.48	36.48	0.5

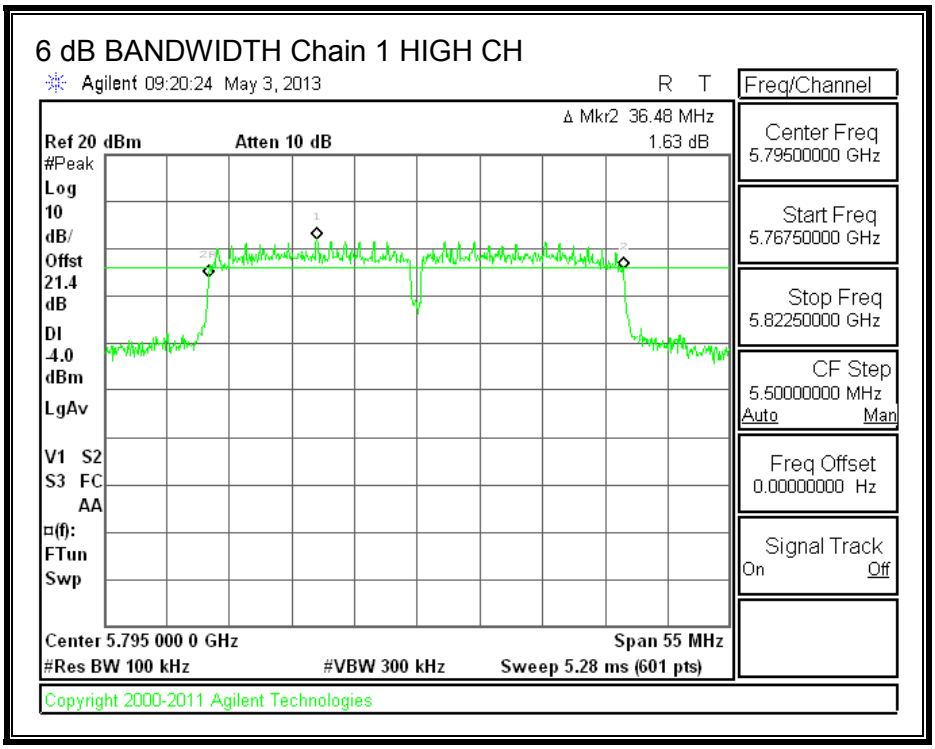
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





8.6.2. 99% BANDWIDTH

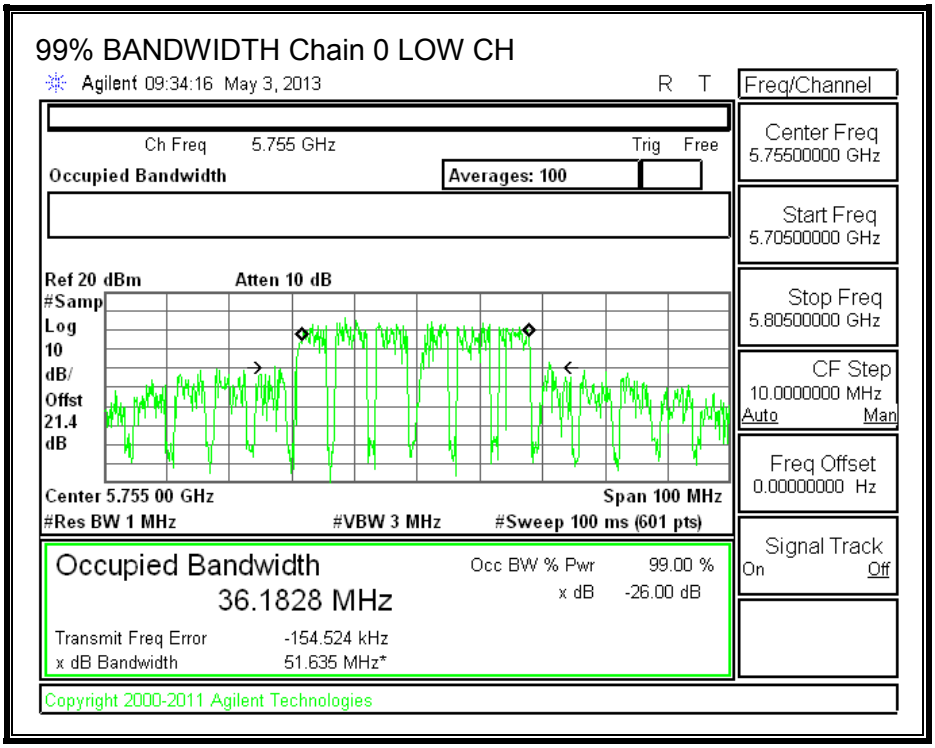
LIMITS

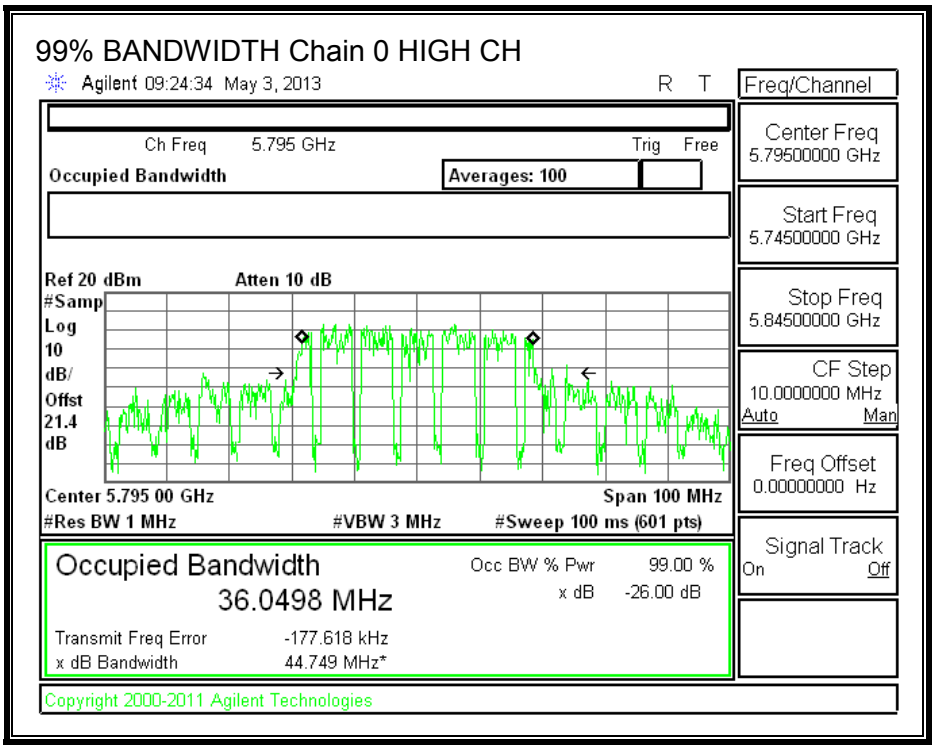
None; for reporting purposes only.

RESULTS

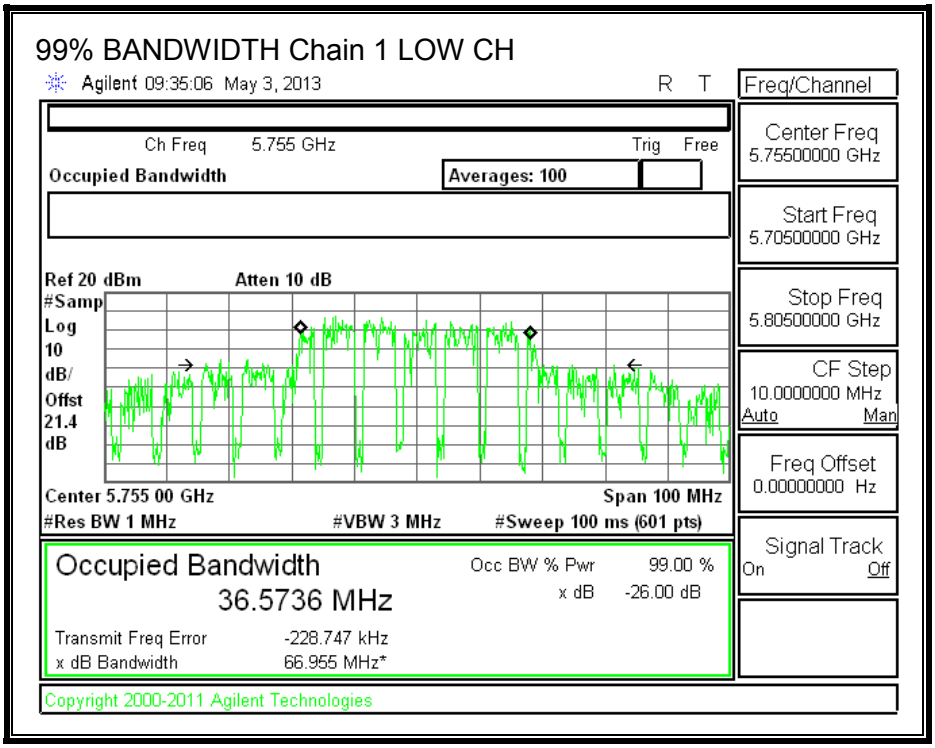
Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5755	36.1828	36.5736
High	5795	36.0498	36.8427

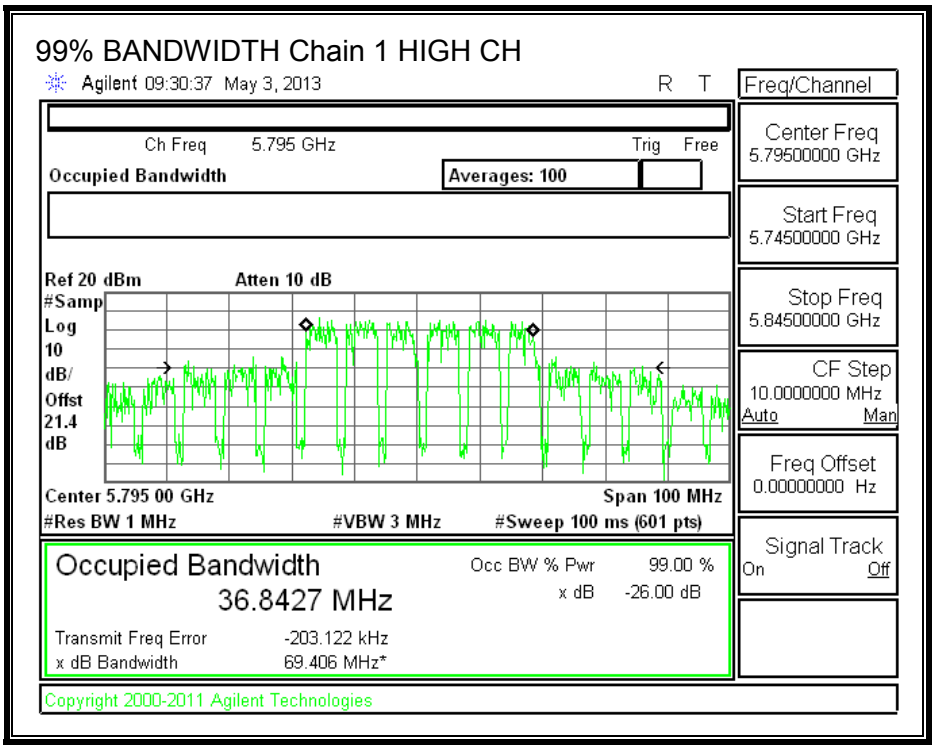
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





8.6.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 25.4 dB (including two 10 dB pads, 2 db cables, and 3.4 power splitter) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5755	14.70	16.20	18.52
High	5795	14.80	16.30	18.62

8.6.4. OUTPUT POWER

LIMITS

FCC §15.247

IC RSS-210 A8.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is the same for each chain. The directional gain is equal to the antenna gain.

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
2.00	2.00	2.00

RESULTS

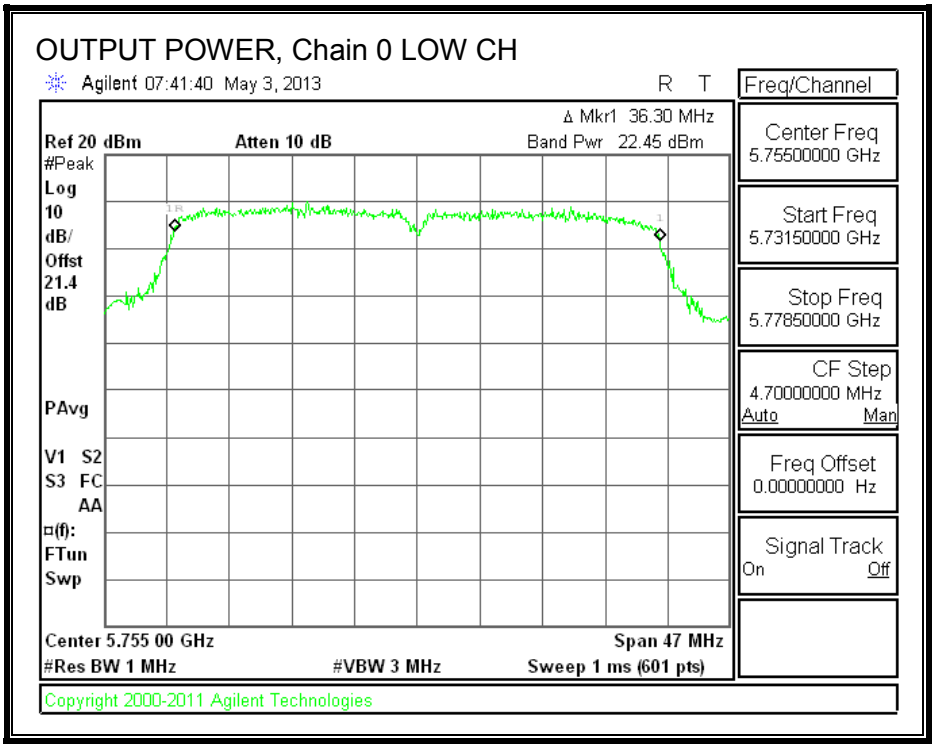
Limits

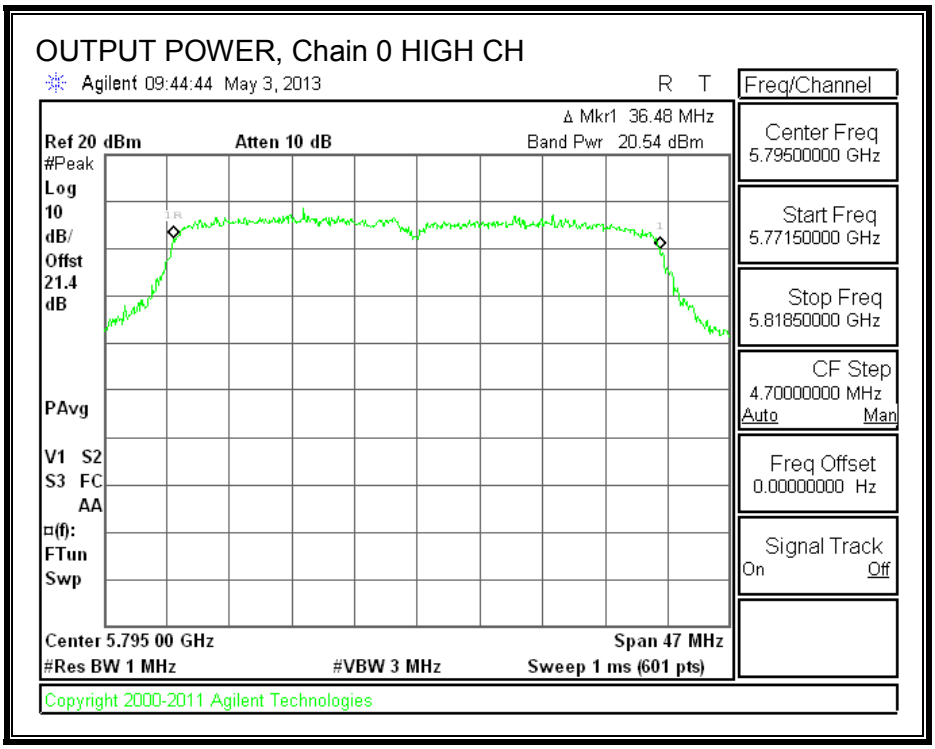
Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low	5755	2.00	30.00	30	36	30.00
High	5795	2.00	30.00	30	36	30.00

Results

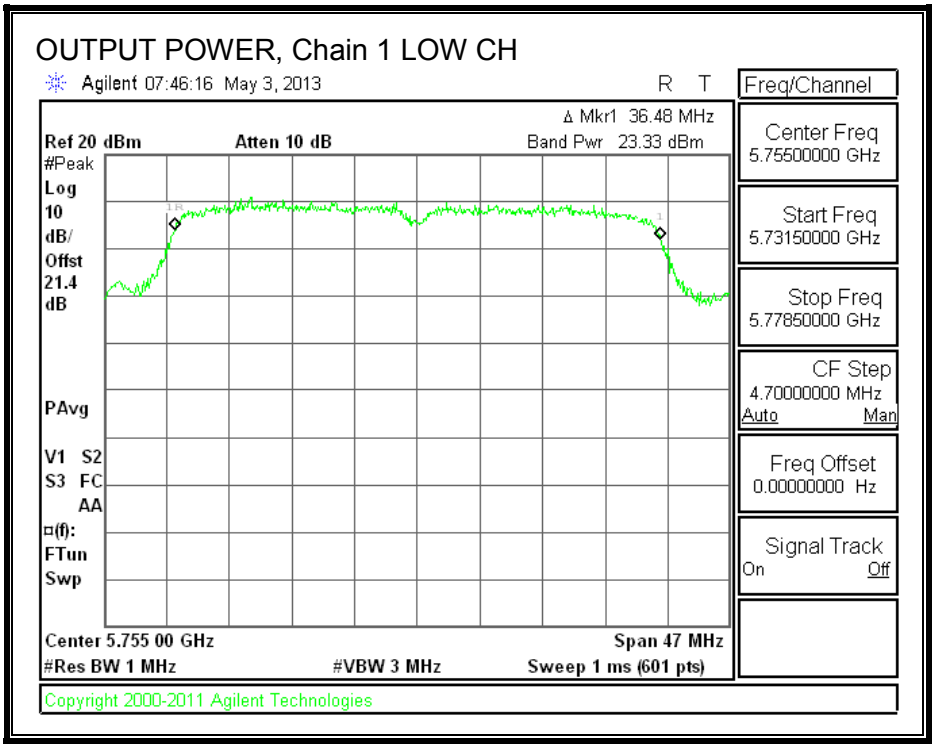
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margi (dB)
Low	5755	22.45	23.33	25.92	30.00	-4.08
High	5795	20.54	23.54	25.30	30.00	-4.70

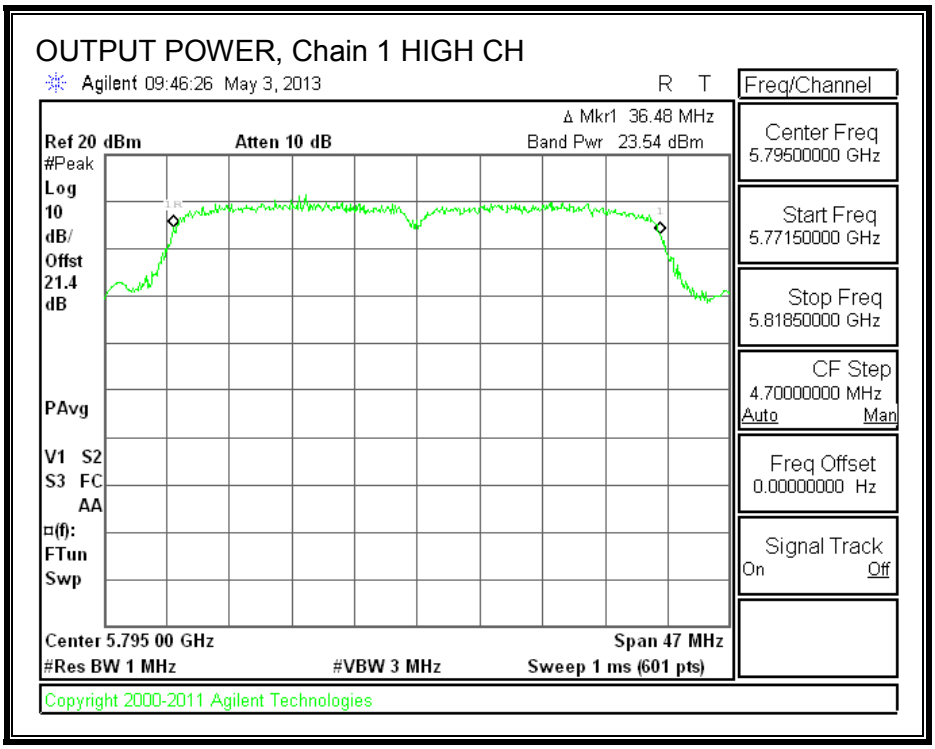
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





8.6.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

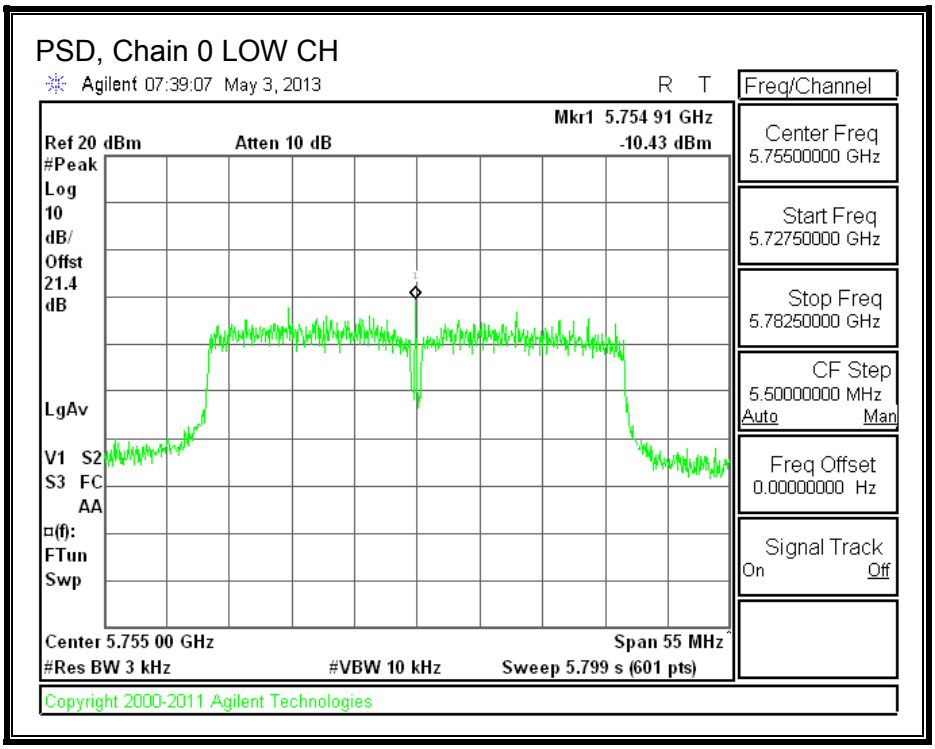
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

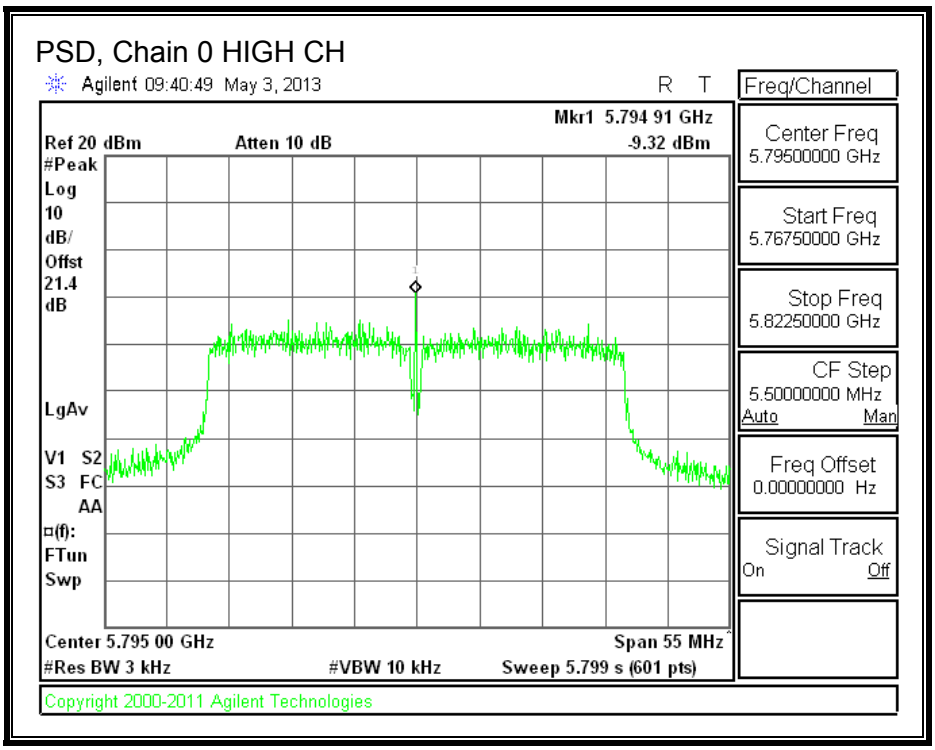
RESULTS

PSD Results

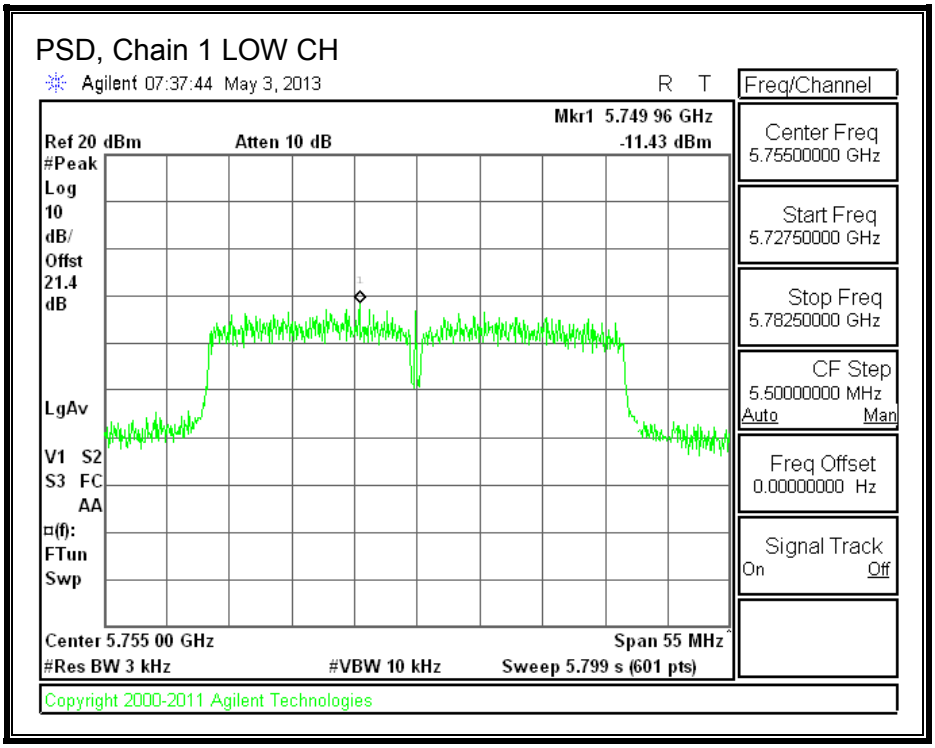
Channel	Frequency (MHz)	Chain 0 Meas (dBm)	Chain 1 Meas (dBm)	Total PSD (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-10.43	-11.43	-7.89	8.0	-15.9
High	5795	-9.32	-12.23	-7.53	8.0	-15.5

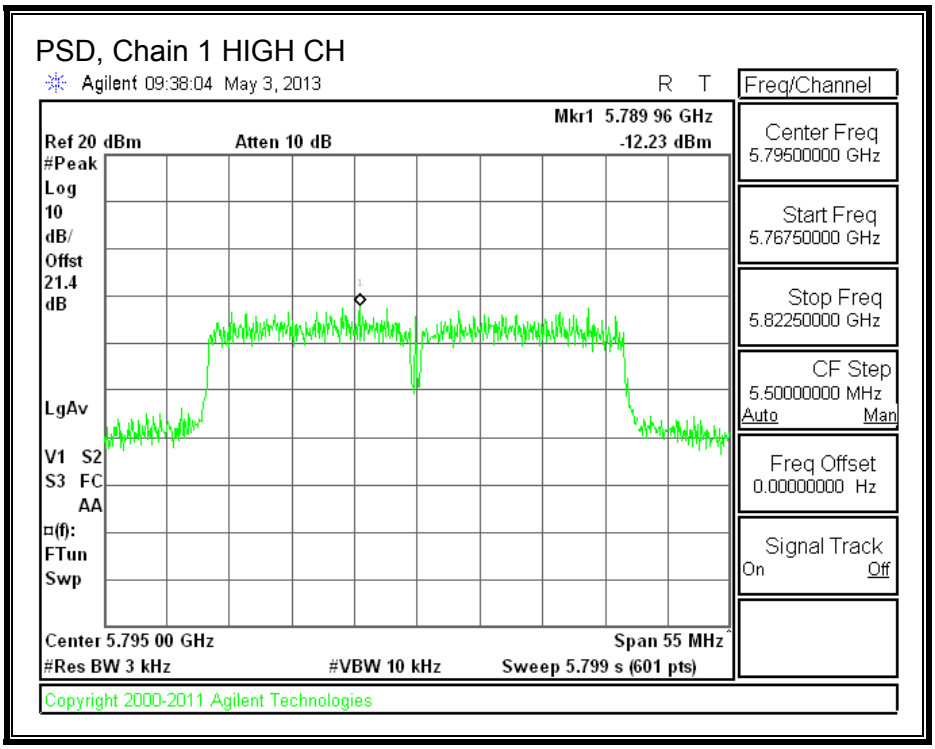
PSD, Chain 0





PSD, Chain 1





8.6.6. OUT-OF-BAND EMISSIONS

LIMITS

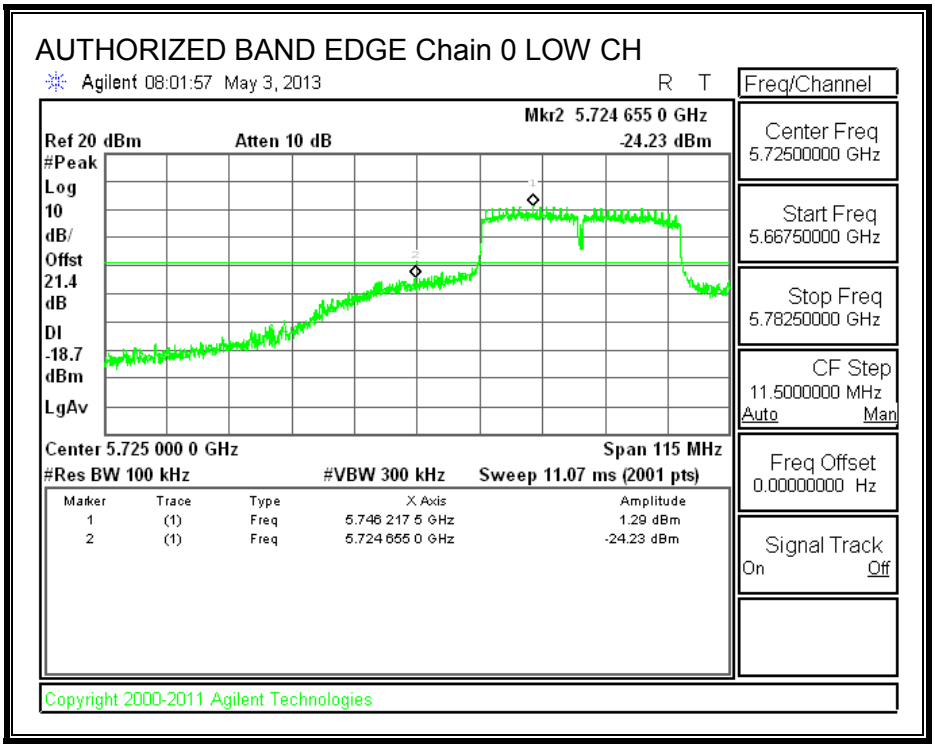
FCC §15.247 (d)

IC RSS-210 A8.5

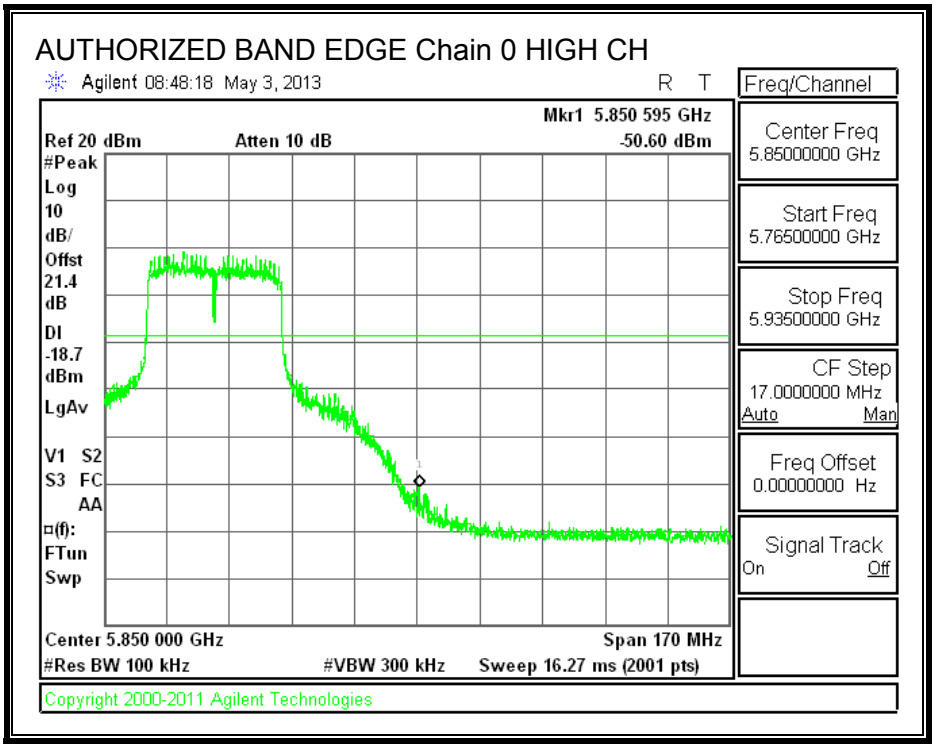
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

RESULTS

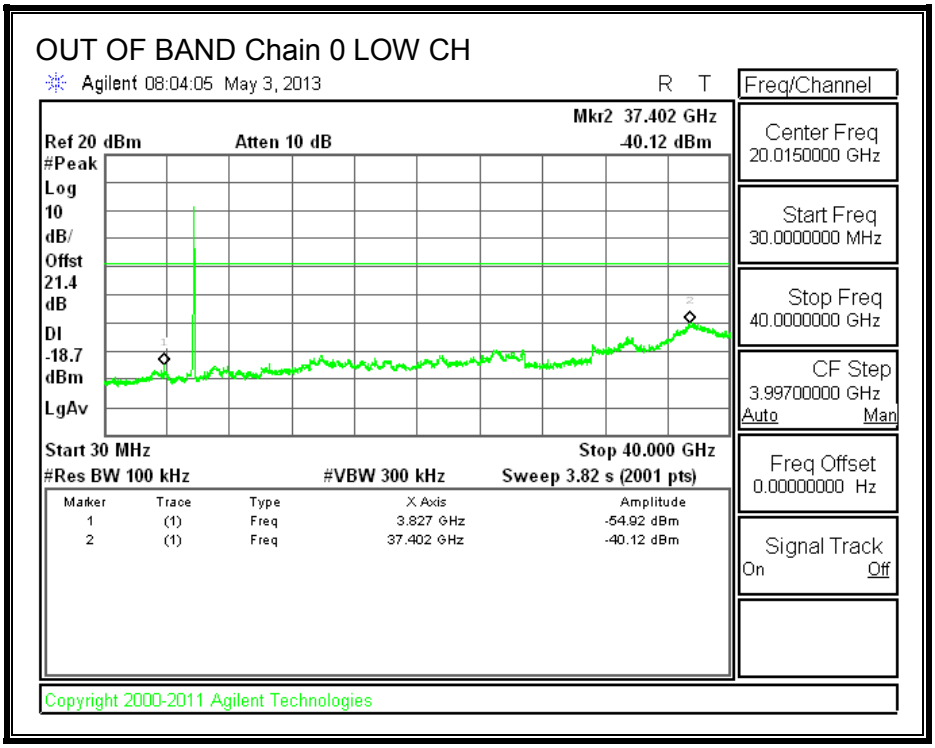
LOW CHANNEL BANDEDGE, Chain 0

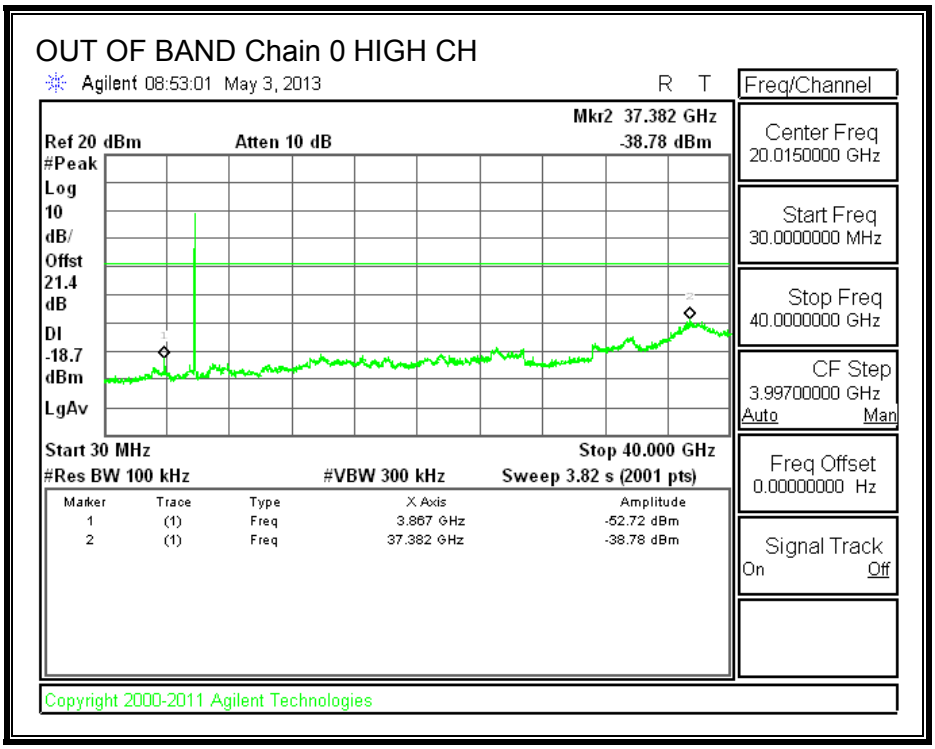


HIGH CHANNEL BANDEDGE, Chain 0

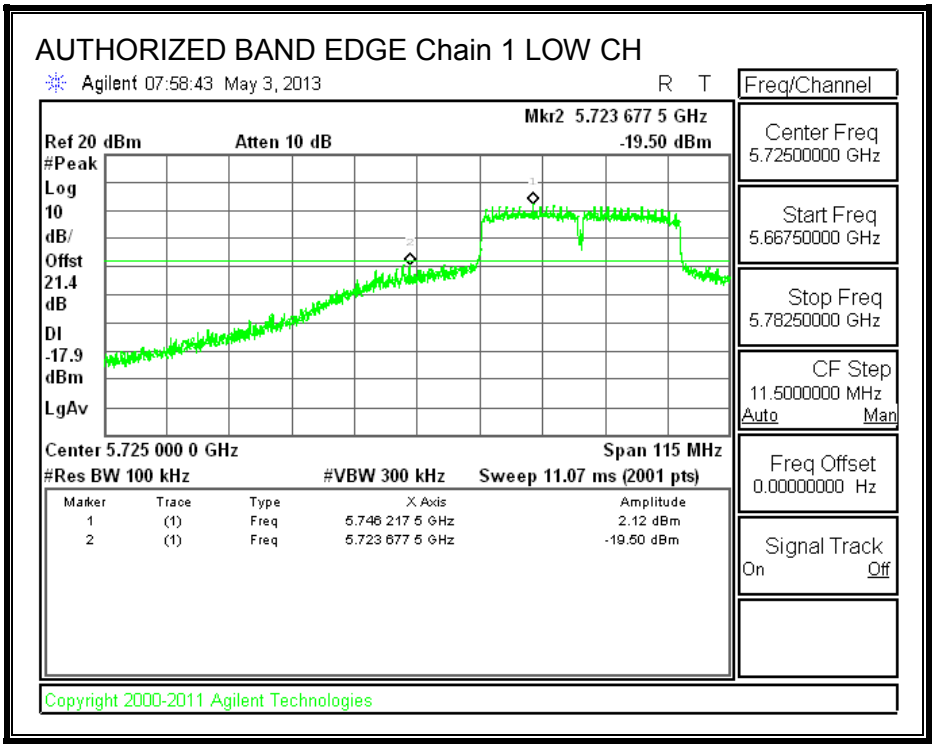


OUT-OF-BAND EMISSIONS, Chain 0

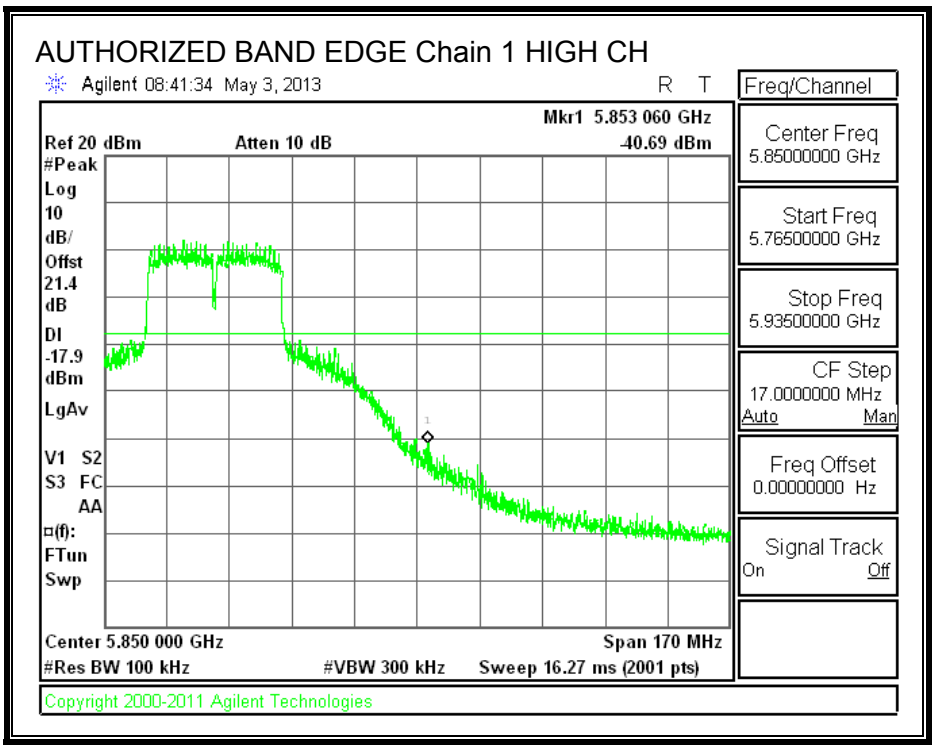




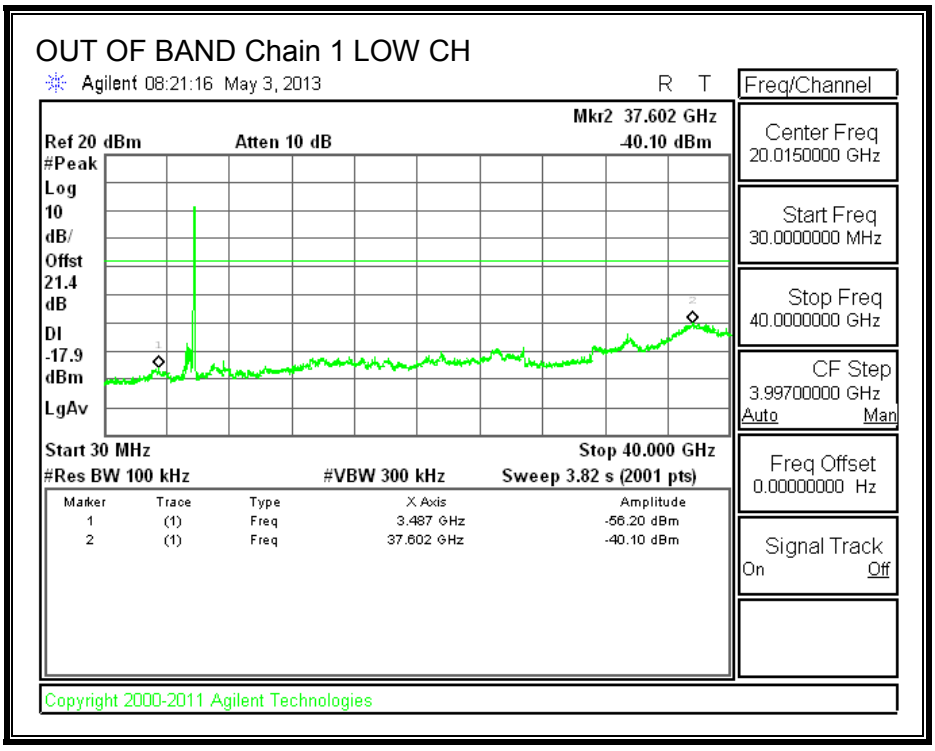
LOW CHANNEL BANDEDGE, Chain 1

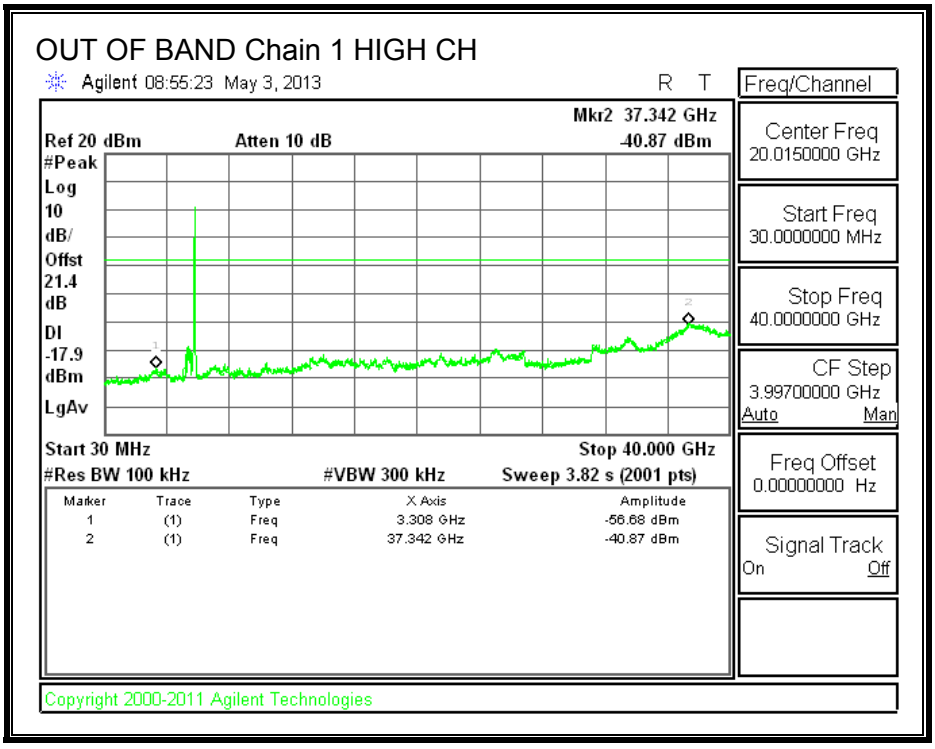


HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1

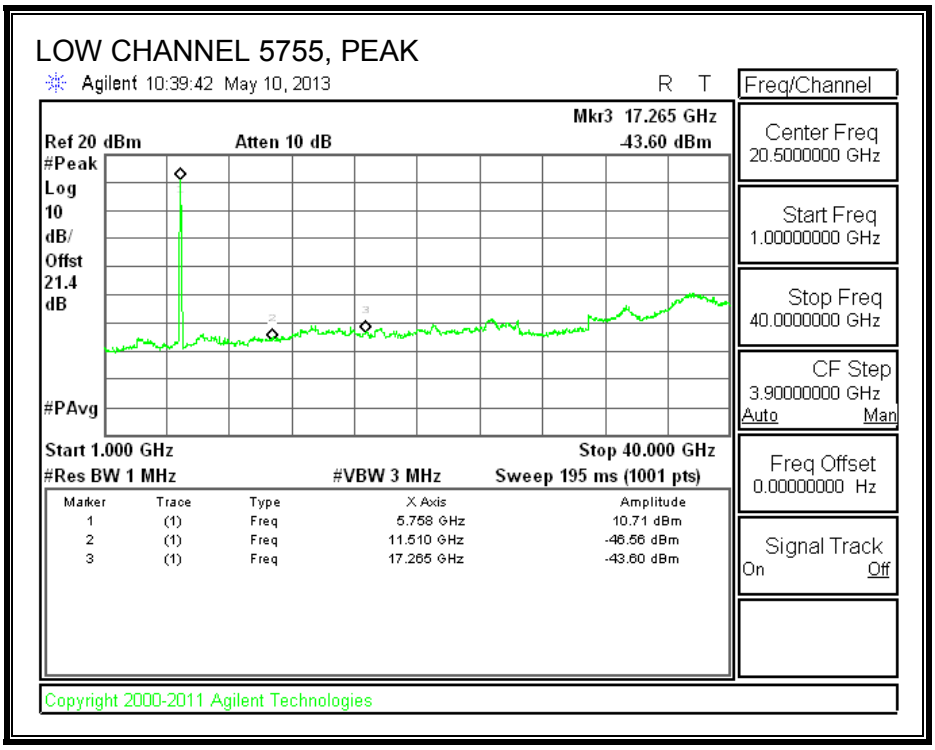


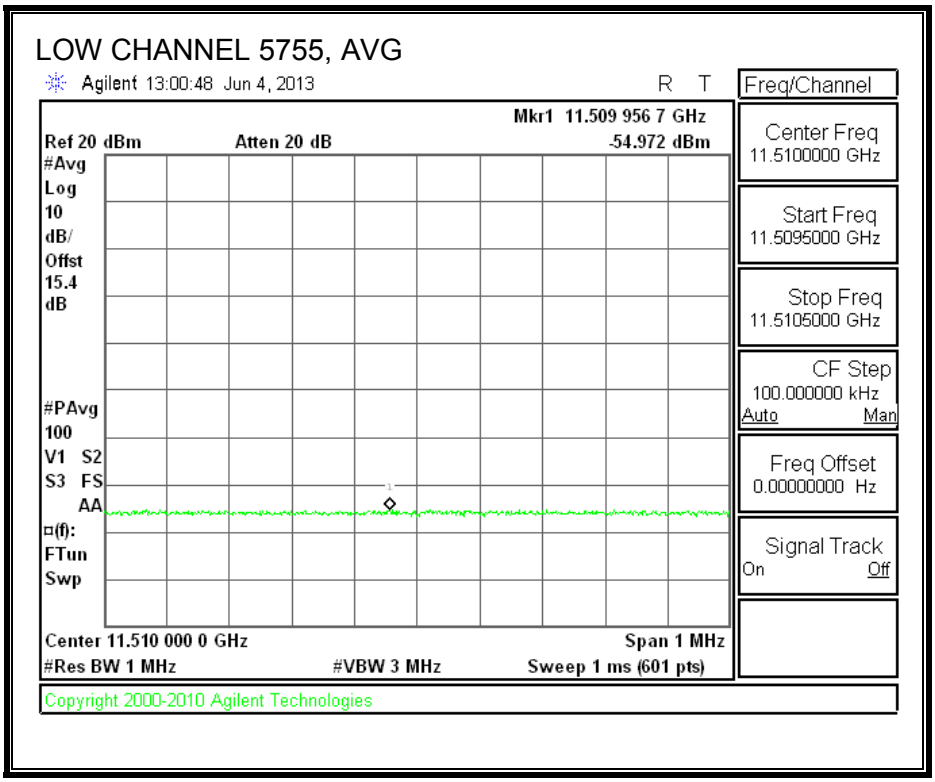


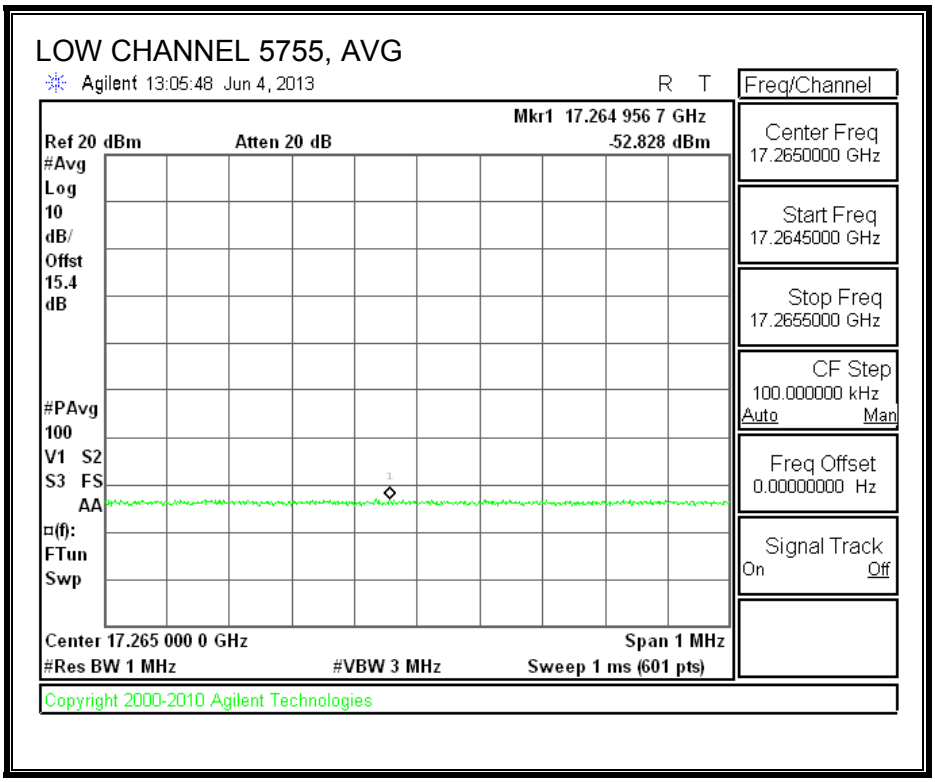
8.6.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter units)

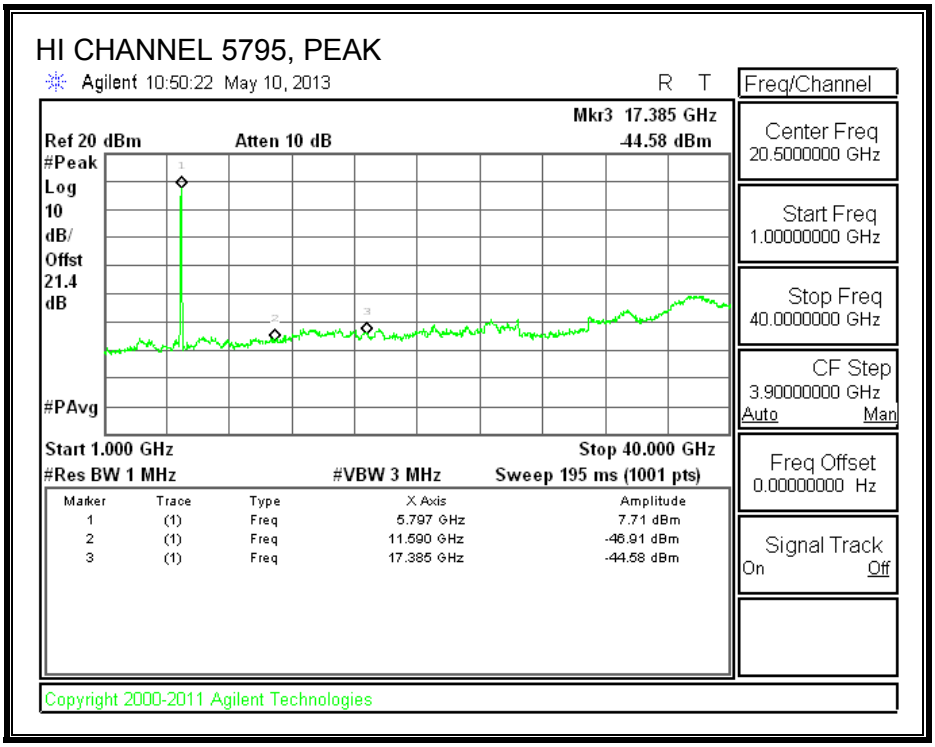
HARMONICS AND SPURIOUS

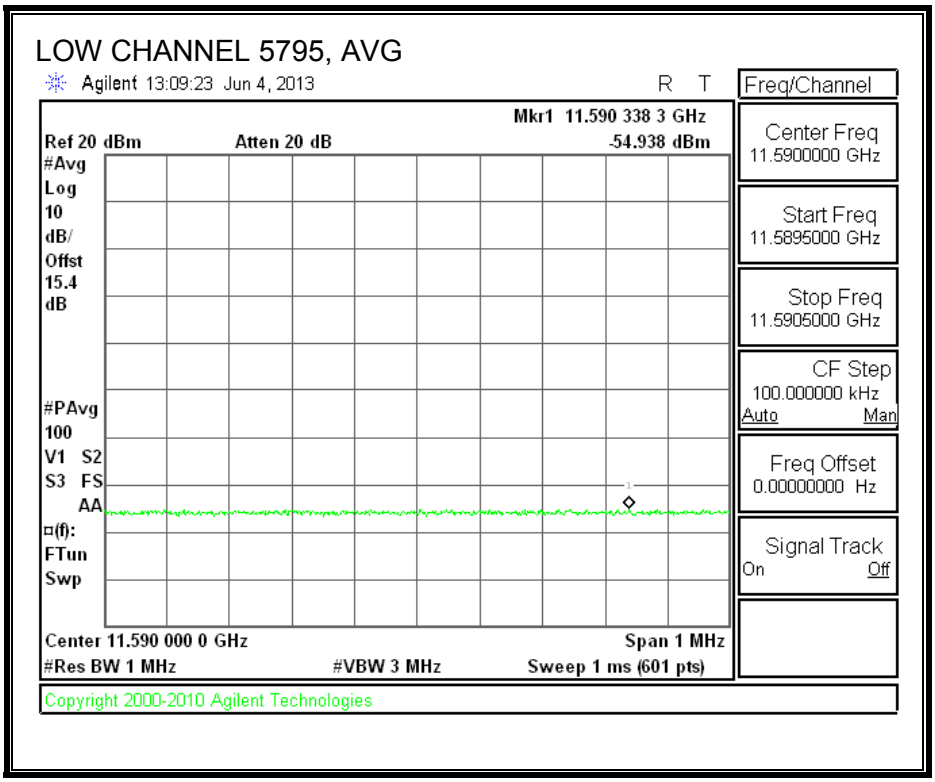
Chain 0

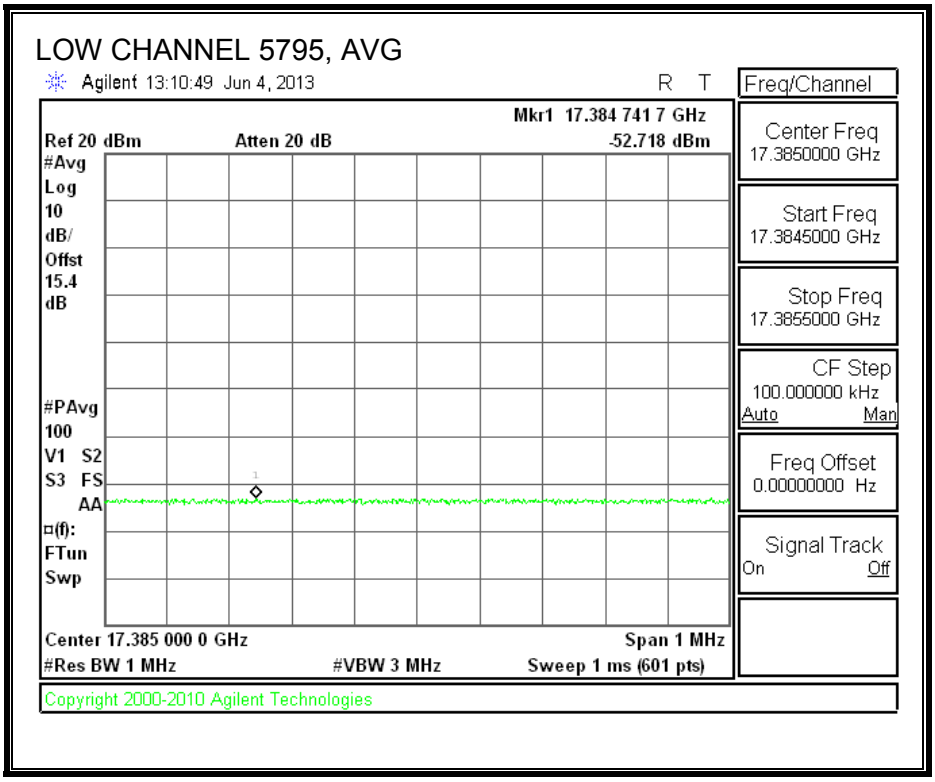




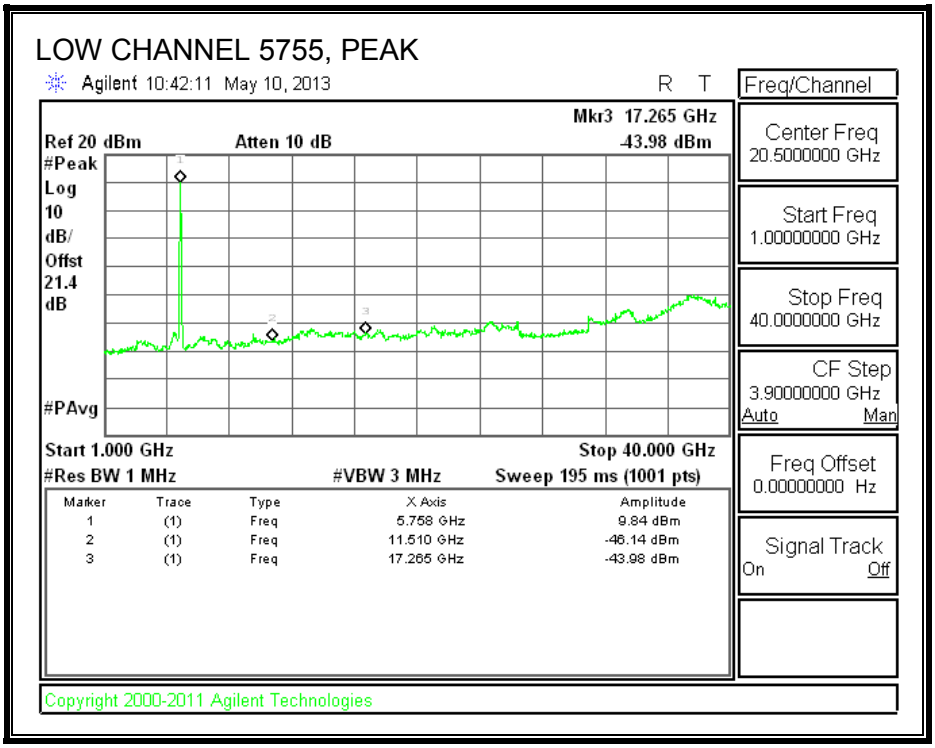


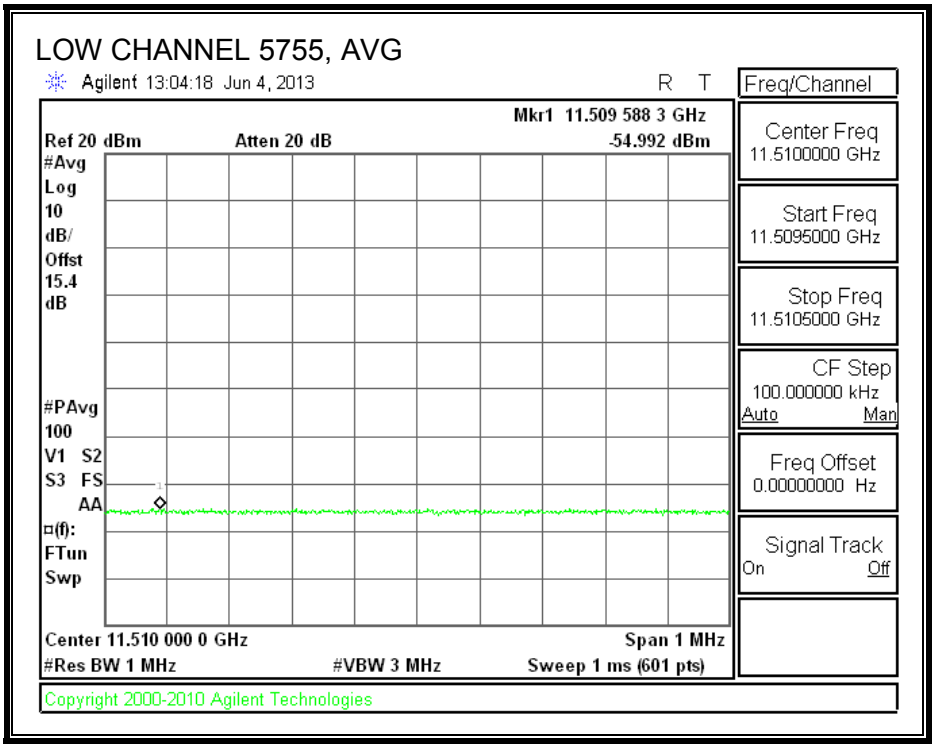




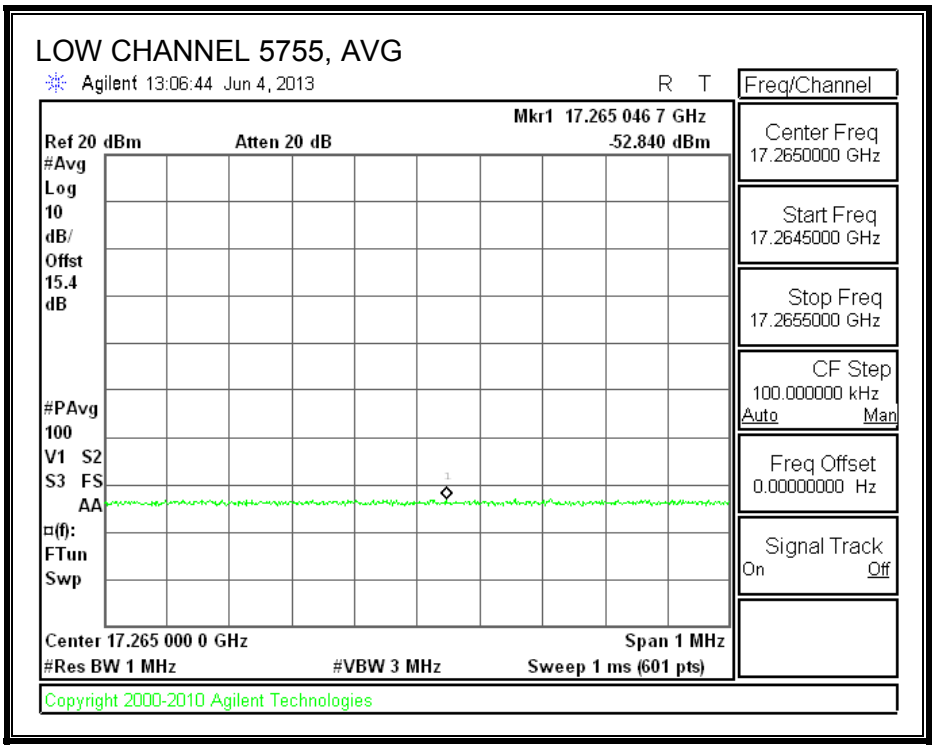


Chain 1

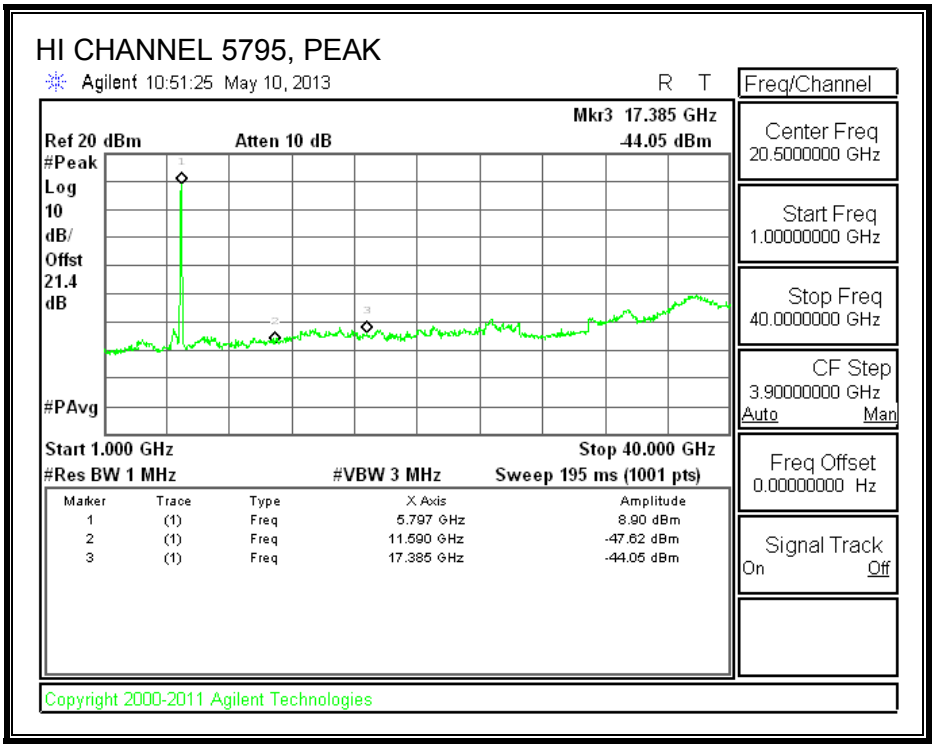


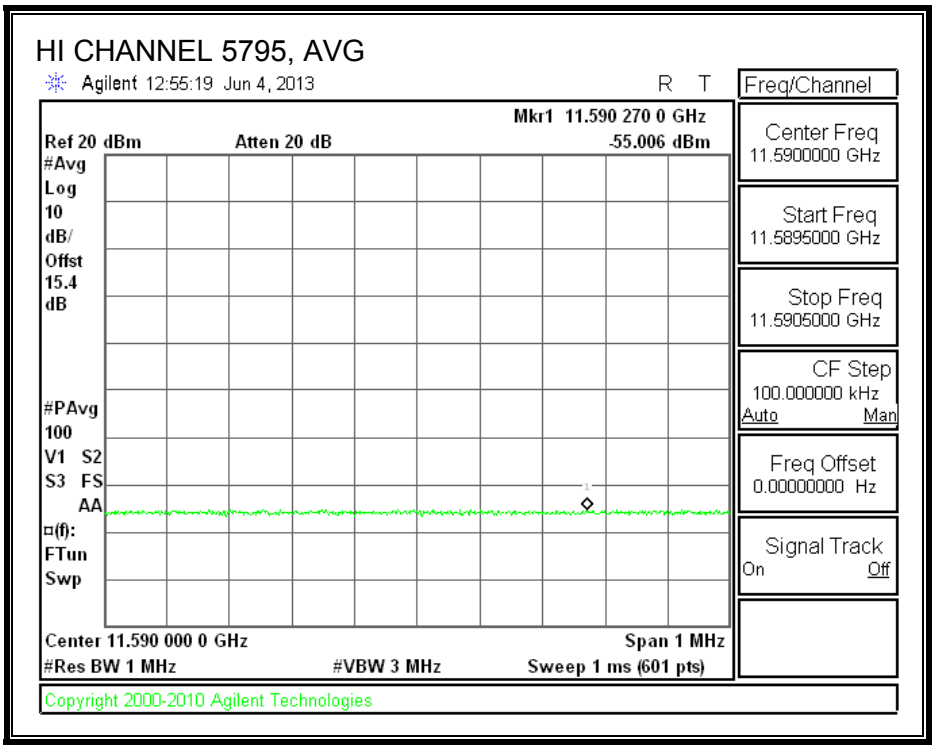


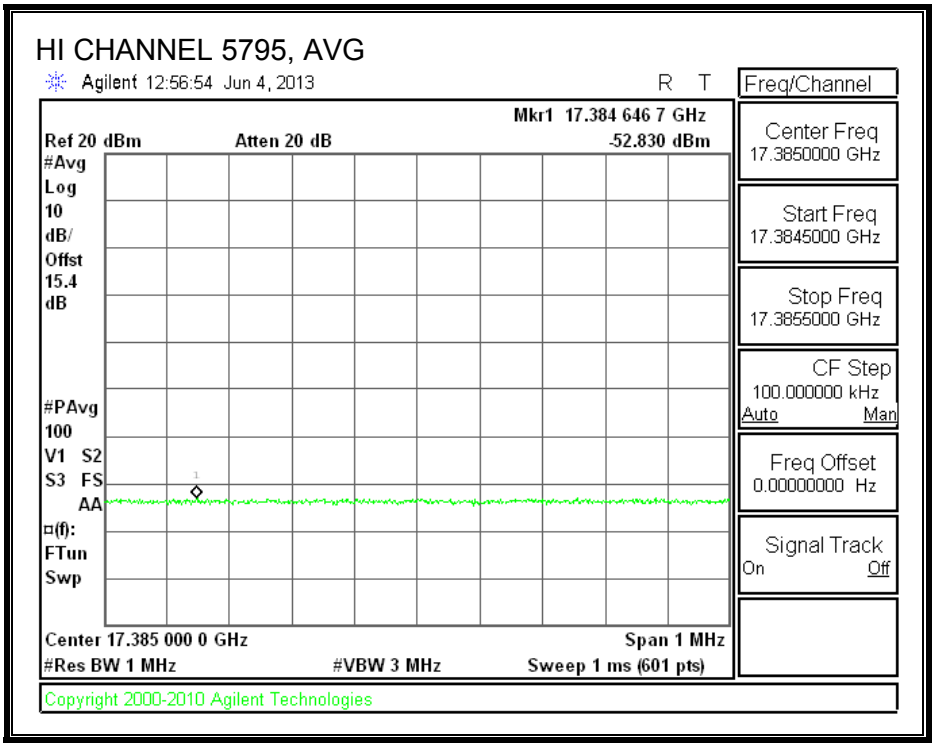
LOW CHANNEL 5755, AVG



HI CHANNEL 5795, PEAK







HARMONIC SPURIOUS DATA

Duty Cycle Correction Factor already added. DCCF = 1.07

2TX Conducted Spurious for FCC DTS (in the restricted bands)

Date:	5/9/2013
Test Engineer:	Tony Wagoner
Client:	Qualcomm Atheros
Project Number:	13U14995
Configuration:	5.8 GHz 11n HT40
Mode of operation:	Tx

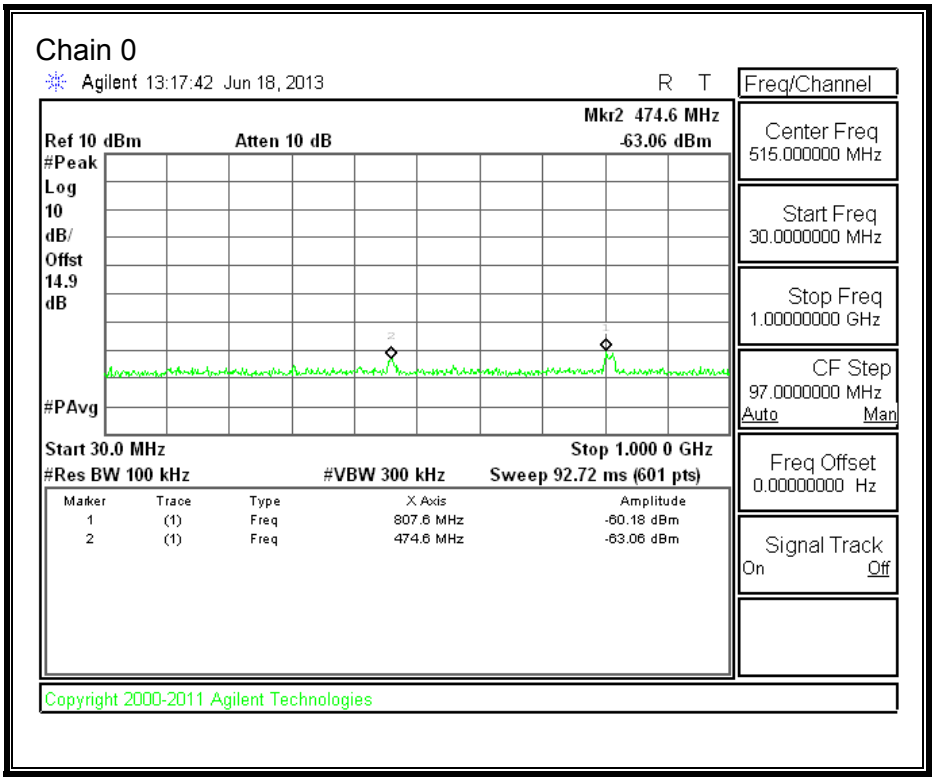
Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.

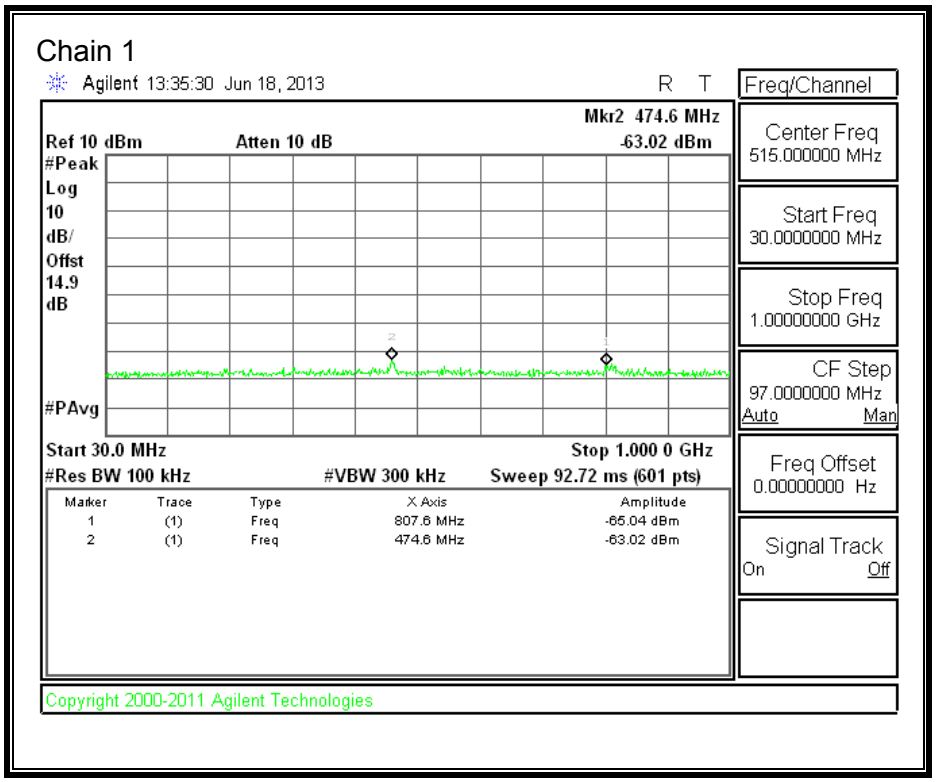
Channel	Frequency (GHz)	PSA PK Reading Chain 0 (dBm)	PSA PK Reading Chain 1 (dBm)	AG/Chain (dBi)	PK EIRP (dBm)	PK E-field Limit (dBm)	PK E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
151 (5755)	11.51	-45.39	-45.07	2	-37.21	-21.2	-16.01	18.00	12.5 / 14.2
151 (5755)	17.265	-42.53	-42.91	2	-34.70	-21.2	-13.50	18.00	12.5 / 14.2
159 (5795)	11.59	-45.84	-46.55	2	-38.16	-21.2	-16.96	18.00	11.7 / 14.3
159 (5795)	17.385	-43.51	-42.98	2	-35.22	-21.2	-14.02	18.00	11.7 / 14.3

Channel	Frequency (MHz)	PSA AVG Reading Chain 0 (dBm)	PSA AVG Reading Chain 1 (dBm)	AG/Chain (dBi)	AVG EIRP (dBm)	AVG E-field Limit (dBm)	AVG E-field Margin (dB)	Software Setting	AVG Power Meter Reading (dBm)
151 (5755)	11.51	-53.902	-53.922	2	-45.89	-21.2	-24.69	18.00	12.5 / 14.2
151 (5755)	17.265	-51.758	-51.77	2	-43.74	-21.2	-22.54	18.00	12.5 / 14.2
159 (5795)	11.59	-53.868	-53.936	2	-45.88	-21.2	-24.68	18.00	11.7 / 14.3
159 (5795)	17.385	-51.648	-51.76	2	-43.68	-21.2	-22.48	18.00	11.7 / 14.3

8.7. WORST-CASE BELOW 1 GHz

CONDUCTED SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)





DATA

2TX Conducted Spurious for FCC DTS (in the restricted bands)

Date:	6/18/2013
Test Engineer:	Tony Wagoner
Client:	Qualcomm
Project Number:	13u14995
Configuration:	30-1000MHz
Mode of operation:	Worst Case

Frequency (MHz)	Meter PK Reading Chain 0 (dBm)	Meter PK Reading Chain 1 (dBm)	AG Chain 0 (dBi)	AG Chain 1 (dBi)	PK EIRP (dBm)	QP E-field Limit (dBm)	QP E-field Margin (dB)
474.6	-63.06	-63.02	2	2	-50.32	-49.18	-1.14
807.6	-60.18	-65.04	2	2	-49.24	-49.18	-0.06

Note: if the QP margin is passing there is no need to get QP measurement.

QP Limit Start Freq (MHz)	Stop Freq (MHz)	Limit (dBm)
30	88	-55.20
88	216	-51.68
216	960	-49.18
960	1000	-41.22

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

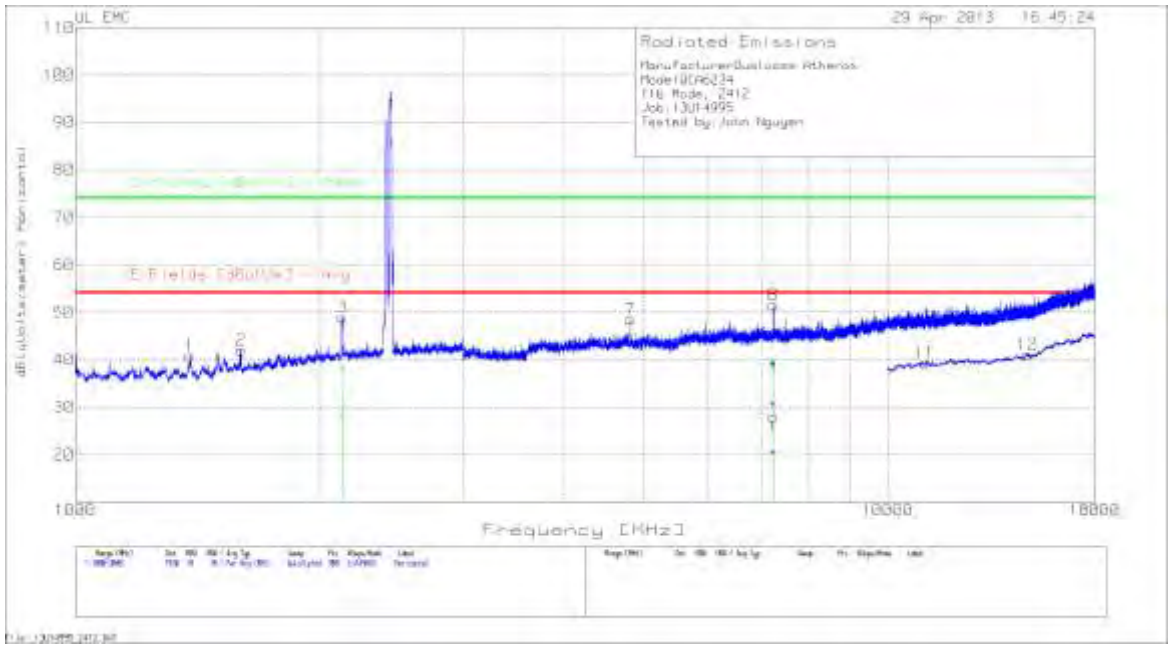
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

9.2. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

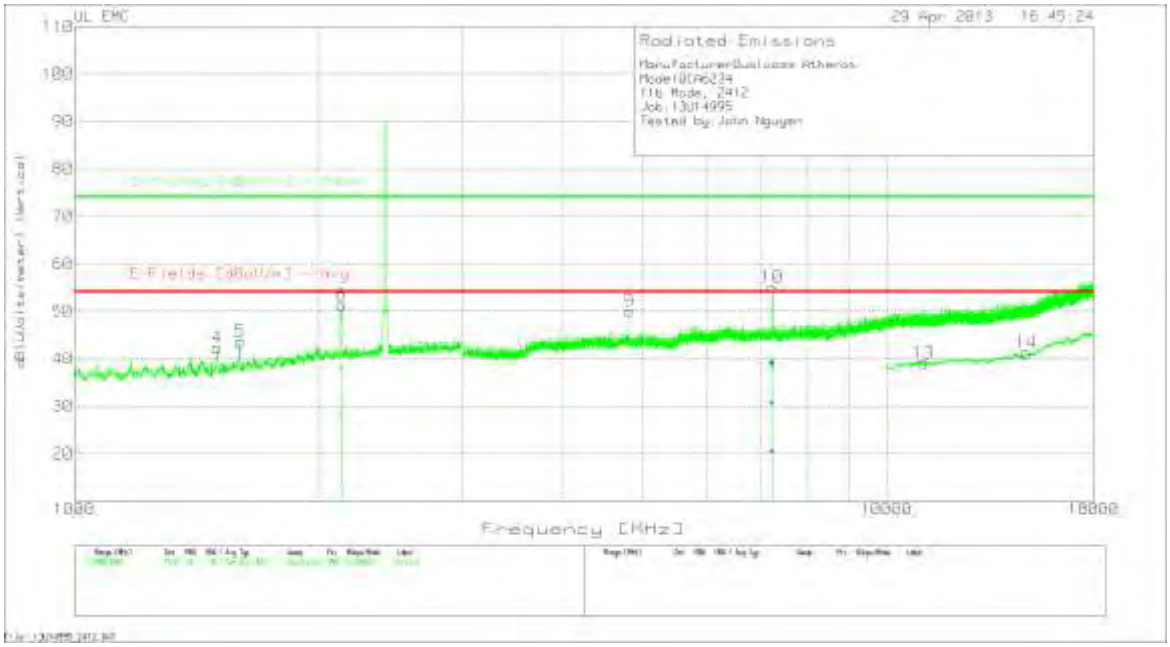
SPURIOUS EMISSIONS WITH 50 OHM LOAD

11b Mode, 2412 MHz

HORIZONTAL



VERTICAL



DATA

ManufacturerQualcomm Atheros
ModelQCA6234
11b Mode, 2412
Job:13U14995
Tested by:John Nguyen

Horizontal 1000 - 3000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	1383.333	46.89	PK	29	-35.1	40.79	53.97	-13.18	74	-33.21	100	Horz
2	1599.333	47.41	PK	29.5	-34.9	42.01	53.97	-11.96	74	-31.99	400	Horz
3	*2132.667	50.93	PK	32.3	-34.3	48.93	53.97	-5.04	74	-25.07	400	Horz

Vertical 1000 - 3000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
4	1500	48.61	PK	28.8	-35.1	42.31	53.97	-11.66	74	-31.69	200	Vert
5	1600.667	49.02	PK	29.5	-34.9	43.62	53.97	-10.35	74	-30.38	100	Vert
6	*2134	53.42	PK	32.3	-34.3	51.42	53.97	-2.55	74	-22.58	200	Vert

Horizontal 3000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	4824.899	45.92	PK	34.4	-31.8	48.52	53.97	-5.45	74	-25.48	399	Horz
8	*7235.598	44.92	PK	36	-29.4	51.52	53.97	-2.45	74	-22.48	199	Horz

Vertical 3000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
9	4824.065	47.49	PK	34.4	-31.8	50.09	53.97	-3.88	74	-23.91	100	Vert
10	*7236.431	48.47	PK	36	-29.4	55.07	53.97	1.1	74	-18.93	300	Vert

Horizontal 10000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11	11115.442	26.04	PK	38.5	-25.3	39.24	53.97	-14.73	74	-34.76	400	Horz
12	*14861.569	27.26	PK	39.8	-26	41.06	53.97	-12.91	74	-32.94	300	Horz

Vertical 10000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
13	11099.45	26.11	PK	38.5	-25.5	39.11	53.97	-14.86	74	-34.89	400	Vert
14	*14857.571	27.38	PK	39.8	-25.9	41.28	53.97	-12.69	74	-32.72	200	Vert

*=Not in the restricted band

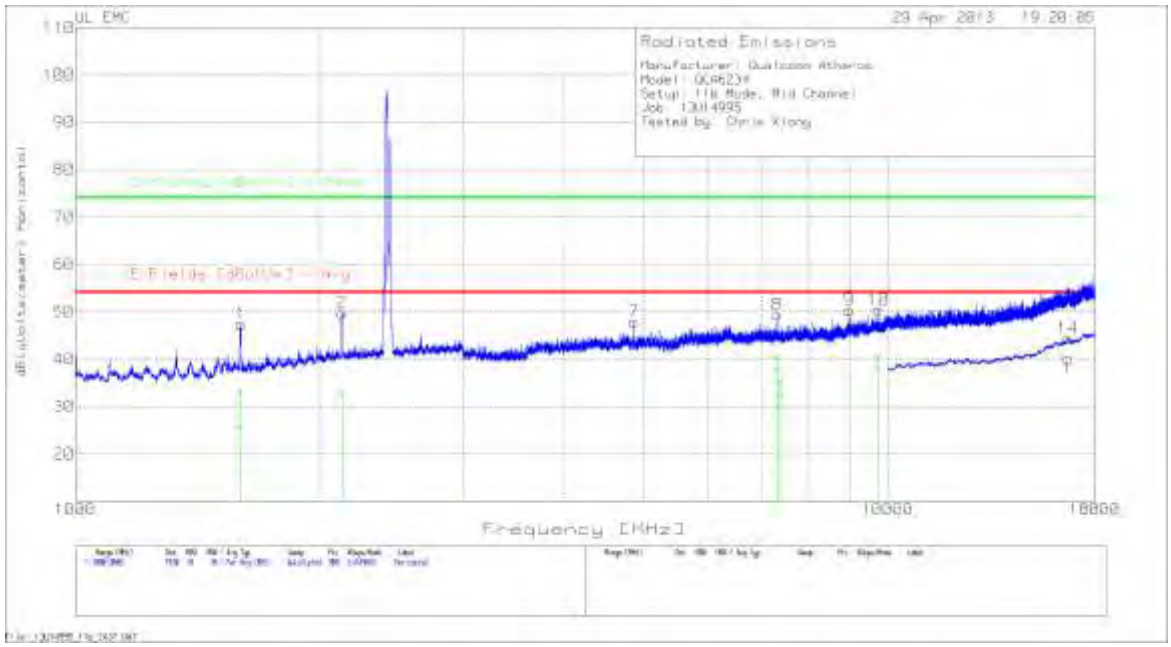
Vertical 3000 - 18000MHz

	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
	4824.0339	40.13	RMS	34.4	-31.8	42.73	53.97	-11.24	74	-31.27	349	Vert

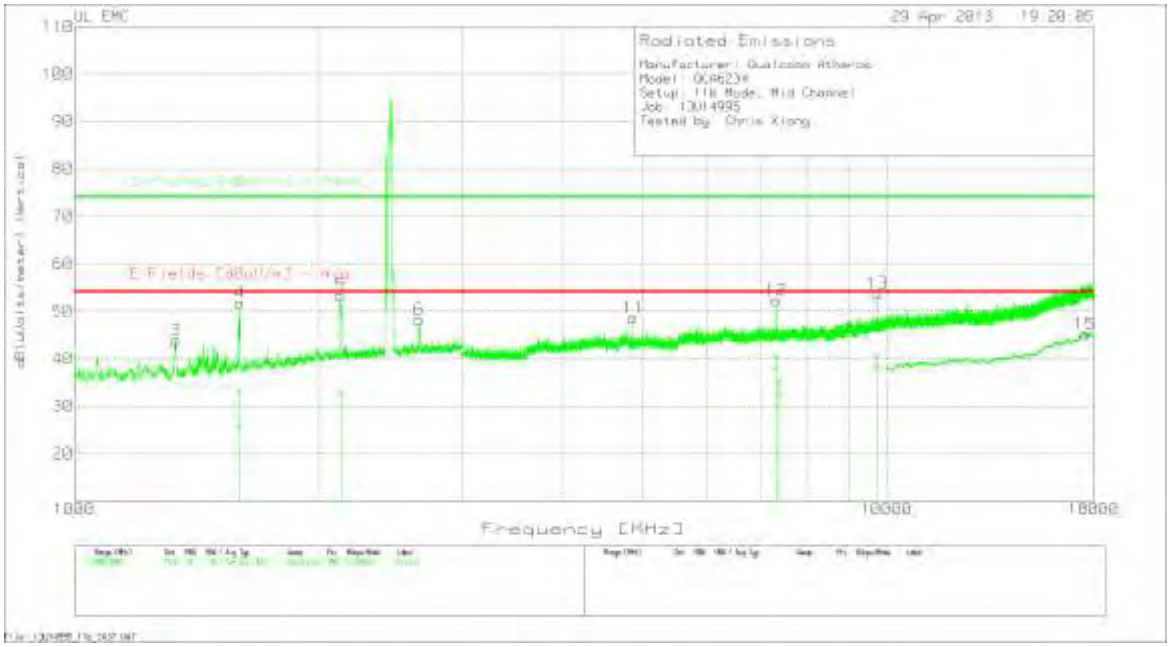
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

11b Mode, 2437 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
Setup: 11b Mode, Mid Channel
Job: 13U14995
Tested by: Chris Xiong

Horizontal 1000 - 3000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	1599.333	52.83	PK	29.5	-34.9	47.43	53.97	-6.54	74	-26.57	300	Horz
2	*2130.667	51.69	PK	32.3	-34.2	49.79	53.97	-4.18	74	-24.21	400	Horz

Vertical 1000 - 3000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
3	1334	49.99	PK	29.1	-35.2	43.89	53.97	-10.08	74	-30.11	199	Vert
4	1598	57.17	PK	29.5	-34.9	51.77	53.97	-2.2	74	-22.23	300	Vert
5	2125.333	55.25	PK	32.3	-34.2	53.35	53.97	-0.62	74	-20.65	199	Vert
6	2657.333	48.8	PK	33	-33.5	48.3	53.97	-5.67	74	-25.7	100	Vert

Horizontal 3000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	4874.896	45.06	PK	34.4	-31.6	47.86	53.97	-6.11	74	-26.14	400	Horz
8	7313.094	42.13	PK	36	-28.7	49.43	53.97	-4.54	74	-24.57	300	Horz
9	8968.002	39.79	PK	36.8	-26.2	50.39	53.97	-3.58	74	-23.61	300	Horz
10	9747.958	38.76	PK	37.6	-25.9	50.46	53.97	-3.51	74	-23.54	300	Horz

Vertical 3000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11	4875.729	45.83	PK	34.4	-31.6	48.63	53.97	-5.34	74	-25.37	100	Vert
12	7312.26	44.95	PK	36	-28.7	52.25	53.97	-1.72	74	-21.75	199	Vert
13	*9747.958	42.04	PK	37.6	-25.9	53.74	53.97	-0.23	74	-20.26	300	Vert

Horizontal 10000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
14	16688.656	24.23	PK	41.4	-21.3	44.33	53.97	-9.64	74	-29.67	100	Horz

Vertical 10000 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
15	17544.228	23.93	PK	41.9	-20.7	45.13	53.97	-8.84	74	-28.87	400	Vert

Vertical 1000 - 3000MHz

	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
	1594.72	34.11	RMS	29.4	-35	28.51	53.97	-25.46	74	-45.49	327	Vert
	2651.7663	32.81	RMS	33	-33.5	32.31	53.97	-21.66	74	-41.69	164	Vert

Horizonta Horizontal 3000 - 18000MHz

	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
	7309.8873	34.54	RMS	36	-28.7	41.84	53.97	-12.13	74	-32.16	161	Vert

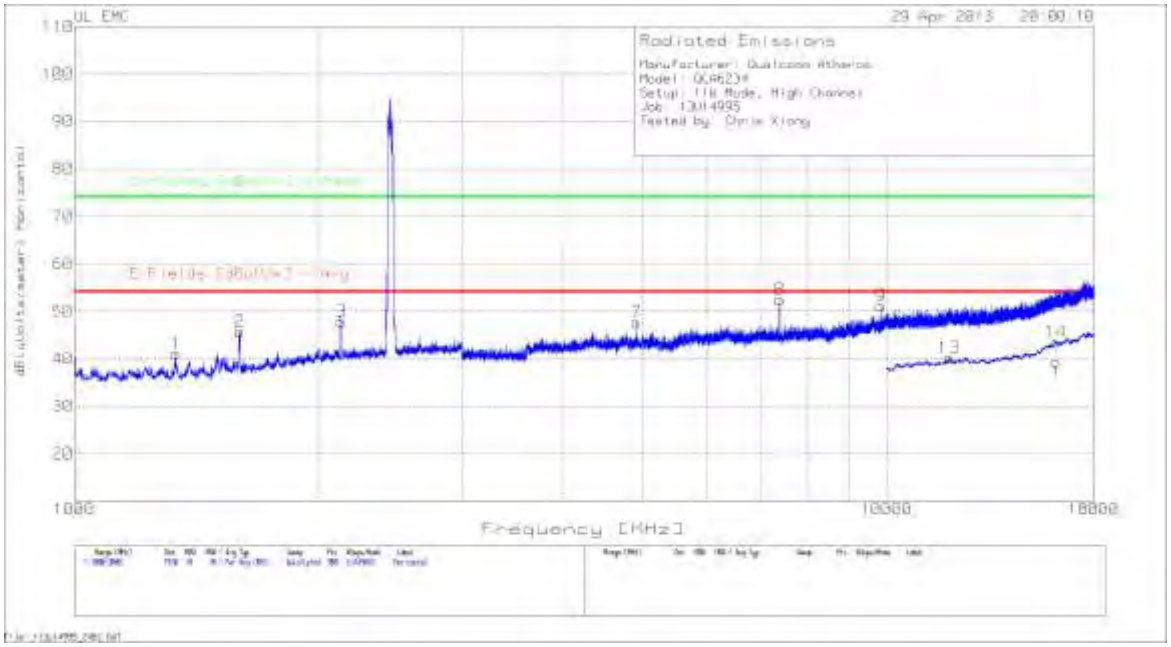
Vertical 3(Vertical 3000 - 18000MHz

	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
	4874.0579	33.77	RMS	34.4	-31.6	36.57	53.97	-17.4	74	-37.43	128	Vert
	7311.7822	34.5	RMS	36	-28.7	41.8	53.97	-12.17	74	-32.2	109	Vert

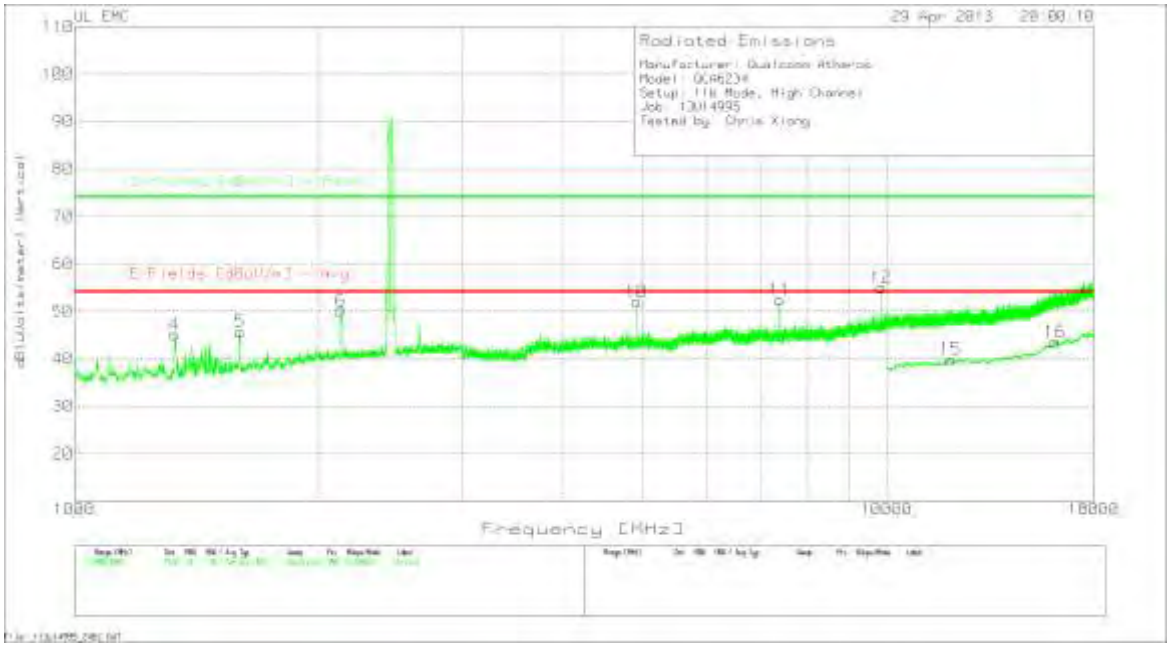
*=Not in the restricted band
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

11b Mode, 2462 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
Setup: 11b Mode, High Channel
Job: 13U14995
Tested by: Chris Xiong

Marker No.	Test Frequency	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1598.667	51.15	PK	29.5	-34.9	45.75	53.97	-8.22	74	-28.25	400	Horz
2	2126.667	51.09	PK	32.3	-34.2	49.19	53.97	-4.78	74	-24.81	400	Horz
Vertical 1000 - 3000MHz												
3	1328.667	51.19	PK	29.1	-35.2	45.09	53.97	-8.88	74	-28.91	100	Vert
4	1599.333	51.1	PK	29.5	-34.9	45.7	53.97	-8.27	74	-28.3	300	Vert
5	2133.333	53.04	PK	32.3	-34.3	51.04	53.97	-2.93	74	-22.96	200	Vert
6	2659.333	48.16	PK	33	-33.6	47.56	53.97	-6.41	74	-26.44	300	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	3.6GHz HPF Preamp/	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 3000 - 18000MHz												
7	4924.893	44.84	PK	34.4	-31.5	47.74	53.97	-6.23	74	-26.26	400	Horz
8	7385.59	44.73	PK	36.1	-28.4	52.43	53.97	-1.54	74	-21.57	400	Horz
9	9847.953	39.34	PK	37.8	-26	51.14	53.97	-2.83	74	-22.86	400	Horz
Vertical 3000 - 18000MHz												
10	4924.893	49.07	PK	34.4	-31.5	51.97	53.97	-2	74	-22.03	299	Vert
11	7385.59	44.69	PK	36.1	-28.4	52.39	53.97	-1.58	74	-21.61	299	Vert
12	9848.786	43.24	PK	37.8	-26	55.04	53.97	1.07	74	-18.96	200	Vert

Horizontal 1000 - 18000MHz													
Test Frequency MHz	Meter Reading dBuv	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields (dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7386.79	26.8	RMS	35.9	-35	8.9	0.2	36.8	53.97	-17.17	-	-	148	Horz
Vertical 1000 - 18000MHz													
4923.92	33.36	RMS	34.6	-34.9	7.1	0.2	40.36	53.97	-13.61	-	-	162	Vert
7384.88	32.87	RMS	35.9	-35	8.9	0.3	42.97	53.97	-11	-	-	127	Vert

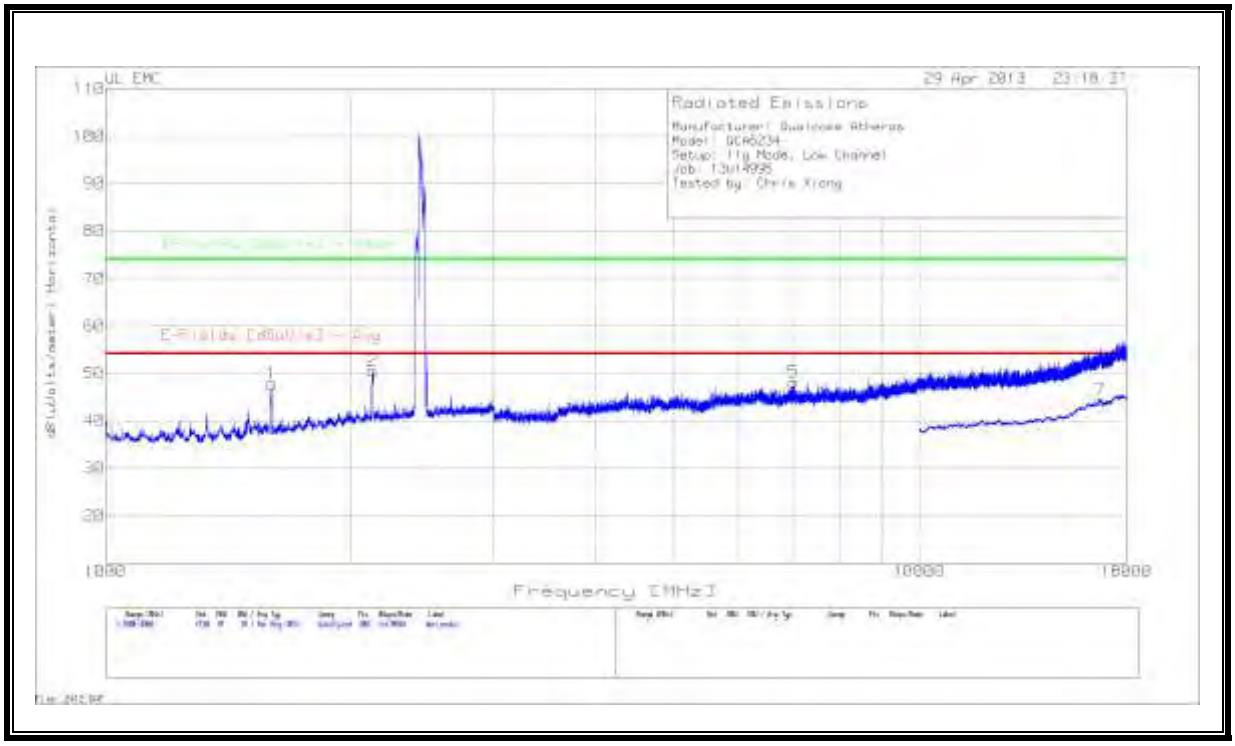
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

9.3. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

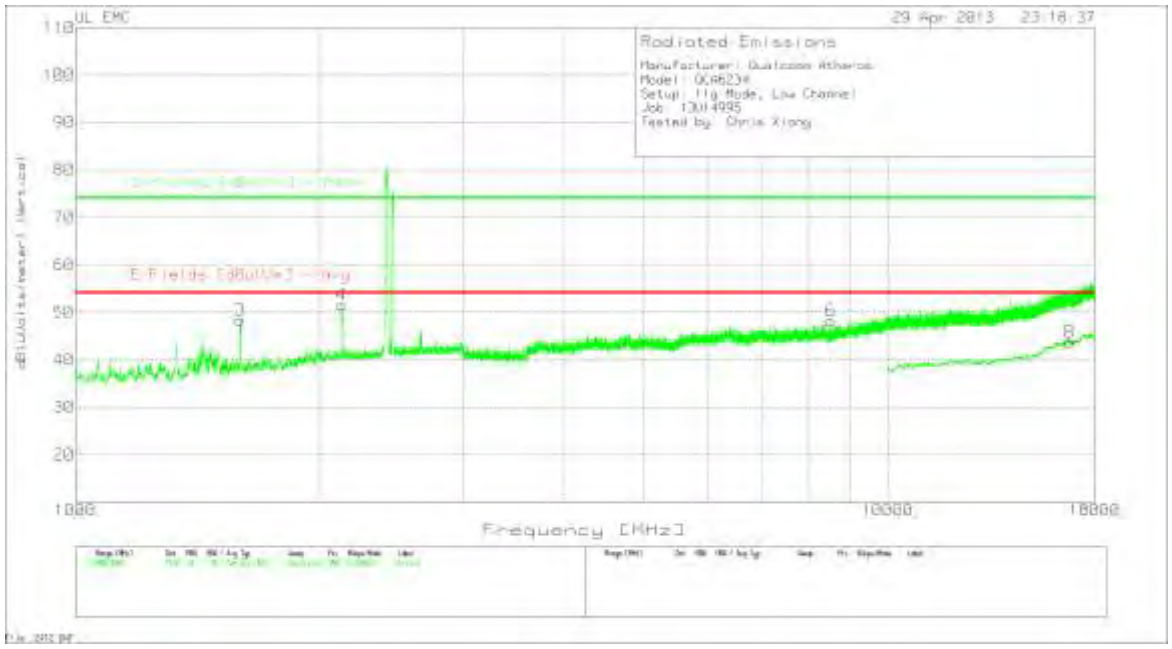
SPURIOUS EMISSIONS WITH 50 OHM LOAD

11g Mode, 2412 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
Setup: 11g Mode, Low Channel
Job: 13U14995
Tested by: Chris Xiong

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1599.333	53.25	PK	29.5	-34.9	47.85	53.97	-6.12	74	-26.15	400	Horz
2	*2132.667	52.53	PK	32.3	-34.3	50.53	53.97	-3.44	74	-23.47	400	Horz
Vertical 1000 - 3000MHz												
3	1597.333	53.8	PK	29.5	-34.9	48.4	53.97	-5.57	74	-25.6	100	Vert
4	*2127.333	53.46	PK	32.3	-34.2	51.56	53.97	-2.41	74	-22.44	199	Vert

*=Not in the restricted band

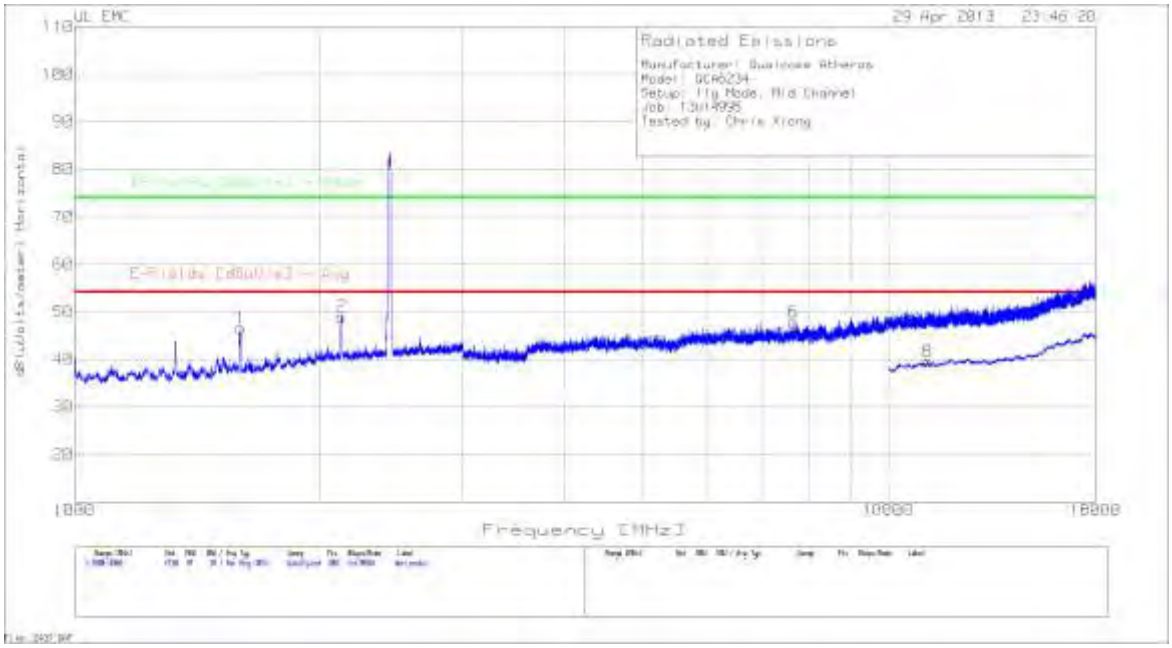
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
5	7011.444	40.65	PK	36	-28.5	48.15	53.97	-5.82	74	-25.85	200	Horz
Vertical 3000 - 18000MHz												
6	8508.027	39.88	PK	36.2	-27.9	48.18	53.97	-5.79	74	-25.82	300	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
7	16708.646	23.95	PK	41.4	-21	44.35	53.97	-9.62	74	-29.65	100	Horz
Vertical 10000 - 18000MHz												
8	16760.62	23.72	PK	41.4	-21.4	43.72	53.97	-10.25	74	-30.28	400	Vert

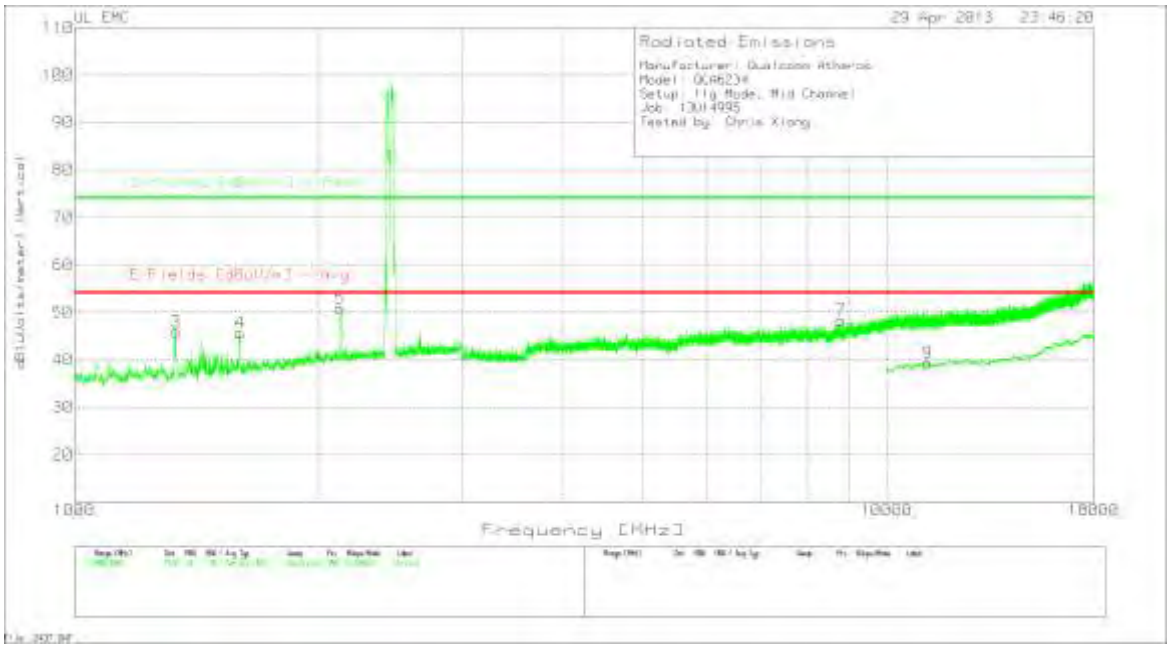
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

11g Mode, 2437 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
Setup: 11g Mode, Mid Channel
Job: 13U14995
Tested by: Chris Xiong

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1600	51.97	PK	29.5	-34.9	46.57	53.97	-7.4	74	-27.43	400	Horz
2	2131.333	50.91	PK	32.3	-34.2	49.01	53.97	-4.96	74	-24.99	400	Horz
Vertical 1000 - 3000MHz												
3	1334	52.01	PK	29.1	-35.2	45.91	53.97	-8.06	74	-28.09	199	Vert
4	1600	51.03	PK	29.5	-34.9	45.63	53.97	-8.34	74	-28.37	299	Vert
5	*2125.333	52.77	PK	32.3	-34.2	50.87	53.97	-3.1	74	-23.13	199	Vert

*=Not in the restricted band

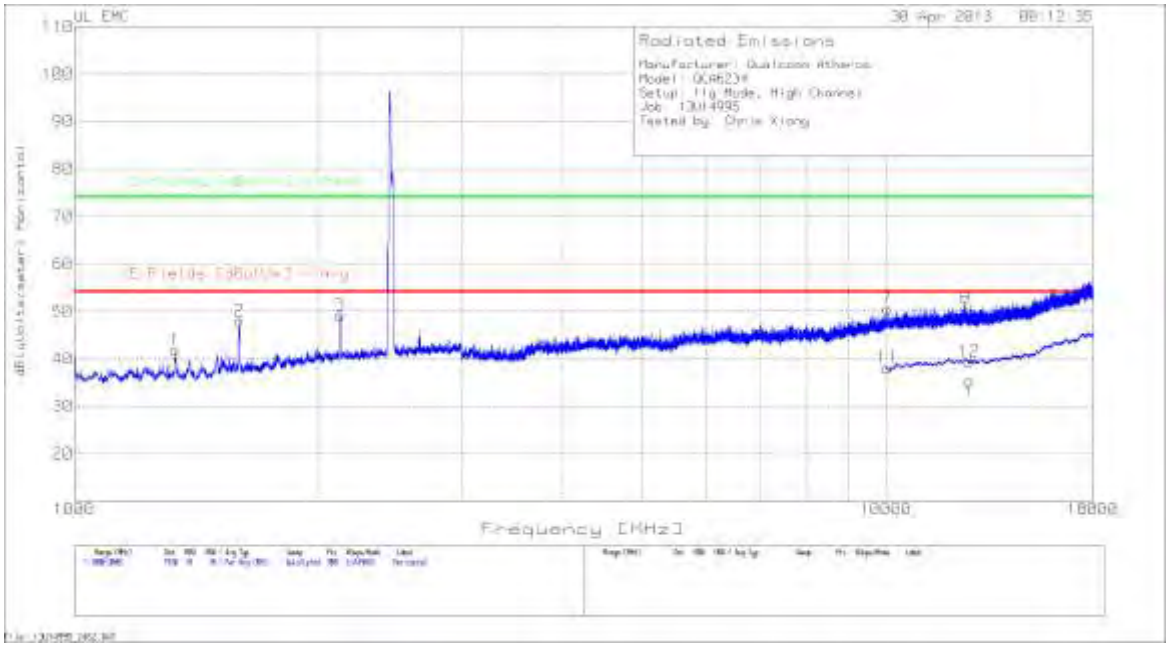
Marker No.	Test Frequency	Meter Reading	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
6	7653.075	39.56	PK	36.2	-27.9	47.86	53.97	-6.11	74	-26.14	400	Horz
Vertical 3000 - 18000MHz												
7	8789.678	39.43	PK	36.6	-27.8	48.23	53.97	-5.74	74	-25.77	300	Vert

Marker No.	Test Frequency	Meter Reading	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
8	11183.408	25.21	PK	38.6	-24.3	39.51	53.97	-14.46	74	-34.49	100	Horz
Vertical 10000 - 18000MHz												
9	11231.384	24.77	PK	38.6	-24.1	39.27	53.97	-14.7	74	-34.73	100	Vert

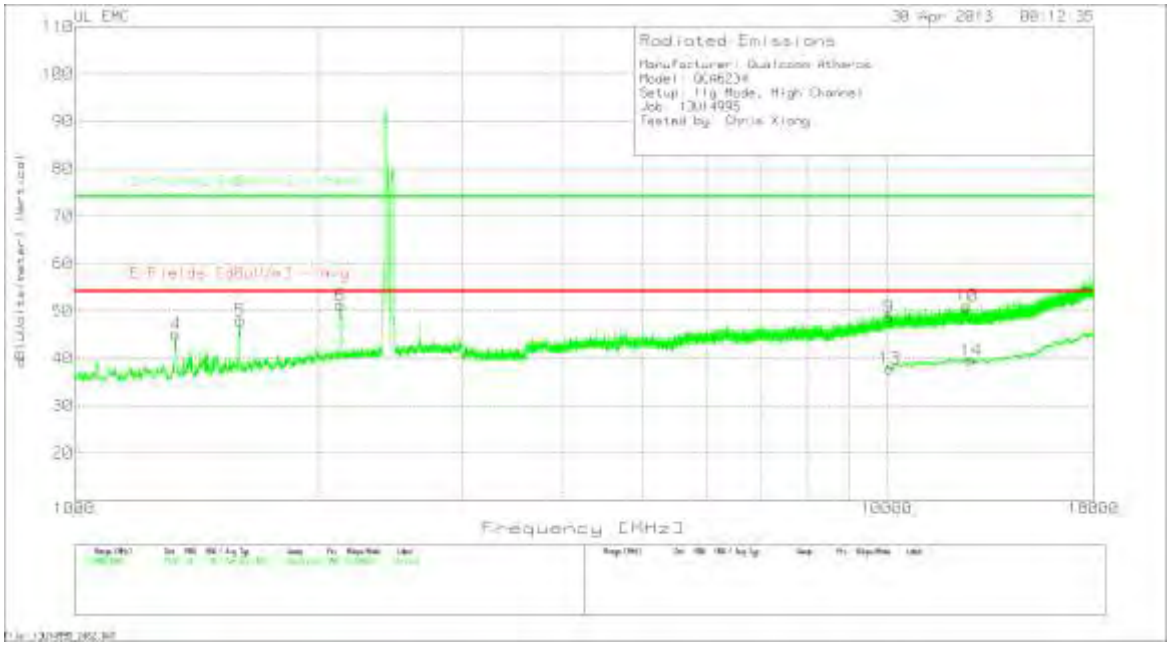
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

11g Mode, 2462 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
Setup: 11g Mode, High Channel
Job: 13U14995
Tested by: Chris Xiong

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/Cable dB	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1332.667	47.89	PK	29.1	-35.2	41.79	53.97	-12.18	74	-32.21	100	Horz
2	1598	53.41	PK	29.5	-34.9	48.01	53.97	-5.96	74	-25.99	400	Horz
3	*2126	51.16	PK	32.3	-34.2	49.26	53.97	-4.71	74	-24.74	400	Horz
Vertical 1000 - 3000MHz												
4	1334	51.19	PK	29.1	-35.2	45.09	53.97	-8.88	74	-28.91	100	Vert
5	1599.333	53.38	PK	29.5	-34.9	47.98	53.97	-5.99	74	-26.02	300	Vert
6	*2125.333	53.05	PK	32.3	-34.2	51.15	53.97	-2.82	74	-22.85	200	Vert
	*=Not in the restricted band											

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	3.6GHz HPF Preamp/C	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 3000 - 18000MHz												
7	10046.275	37.21	PK	38.1	-24.7	50.61	53.97	-3.36	74	-23.39	200	Horz
8	12538.637	36.13	PK	39.1	-24.6	50.63	53.97	-3.34	74	-23.37	200	Horz
Vertical 3000 - 18000MHz												
9	10073.774	35.84	PK	38.2	-25.4	48.64	53.97	-5.33	74	-25.36	300	Vert
10	12576.135	37.11	PK	39.1	-25.2	51.01	53.97	-2.96	74	-22.99	100	Vert

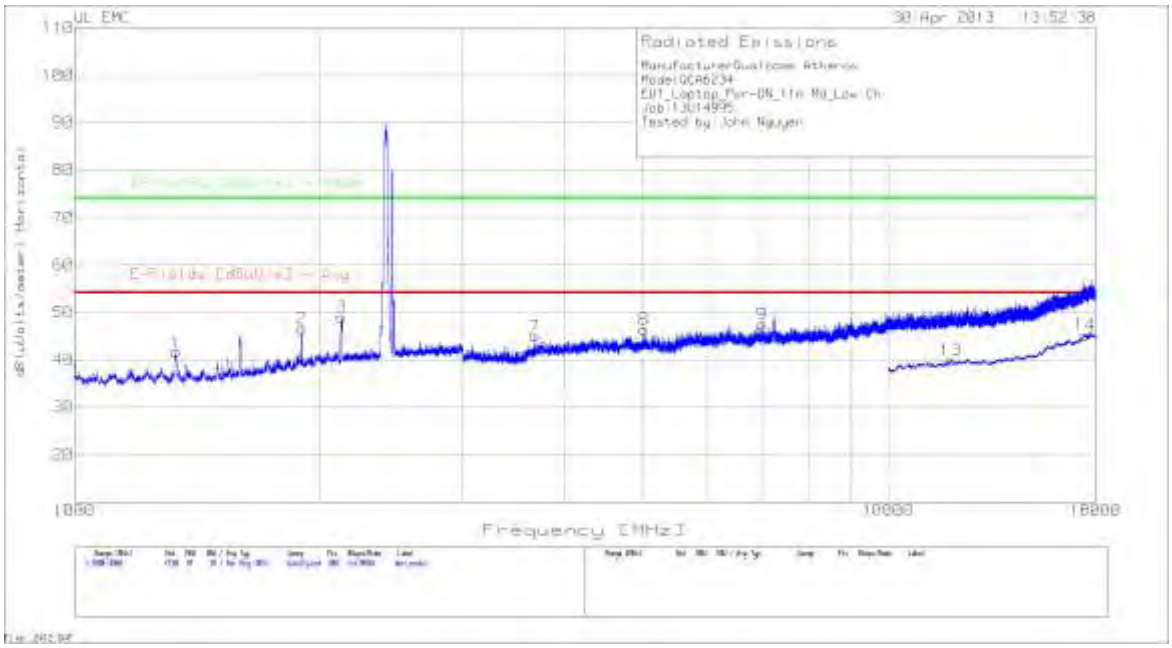
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	3.6GHz HPF Preamp/C	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 10000 - 18000MHz												
11	10047.976	24.67	RMS	38.1	-24.7	38.07	53.97	-15.9	74	-35.93	100	Horz
12	12658.671	26.23	RMS	39.2	-26	39.43	53.97	-14.54	74	-34.57	400	Horz
Vertical 10000 - 18000MHz												
13	10091.954	25.15	RMS	38.2	-25.5	37.85	53.97	-8.49	74	-36.15	100	Vert
14	12714.643	26.26	RMS	39.2	-25.9	39.56	53.97	-14.41	74	-34.44	400	Vert

9.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

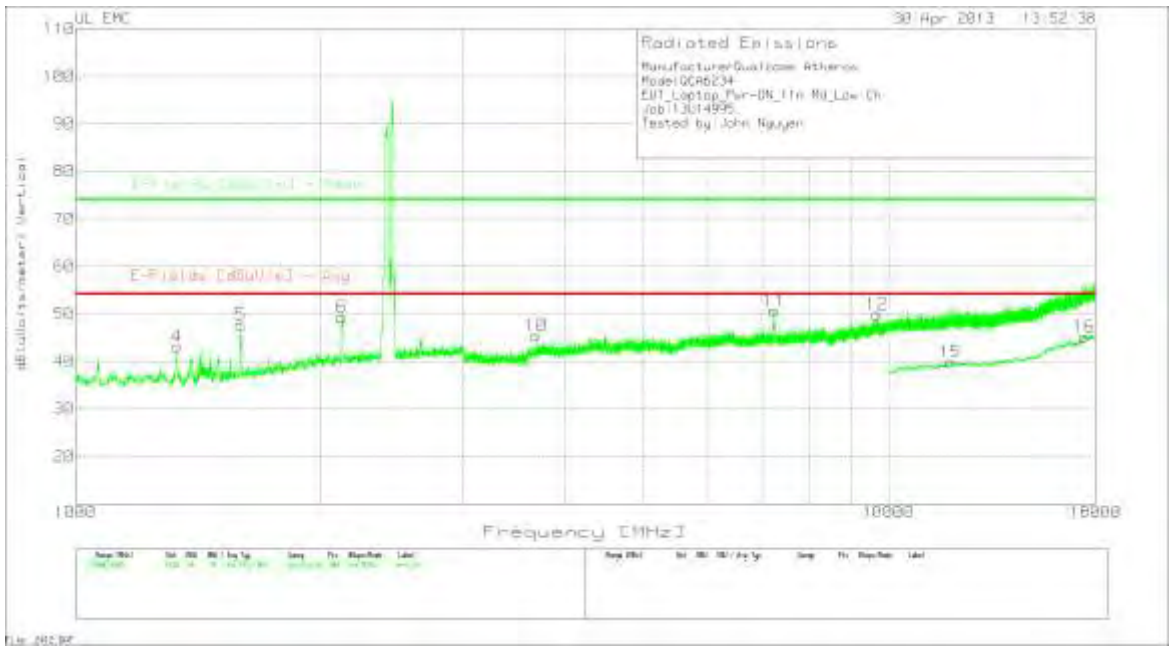
SPURIOUS EMISSIONS WITH 50 OHM LOAD

11n HT20 Mode, 2412 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
EUT_Laptop_Pwr-ON_11n Md_Low Ch
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1332.667	47.71	PK	29.1	-35.2	41.61	53.97	-12.36	74	-32.39	299	Horz
2	1904	49.46	PK	31.5	-34.4	46.56	53.97	-7.41	74	-27.44	100	Horz
3	2129.333	50.93	PK	32.3	-34.2	49.03	53.97	-4.94	74	-24.97	400	Horz
Vertical 1000 - 3000MHz												
4	1332.667	49.26	PK	29.1	-35.2	43.16	53.97	-10.81	74	-30.84	300	Vert
5	1596.667	53.06	PK	29.5	-34.9	47.66	53.97	-6.31	74	-26.34	300	Vert
6	2125.333	51.27	PK	32.3	-34.2	49.37	53.97	-4.6	74	-24.63	100	Vert

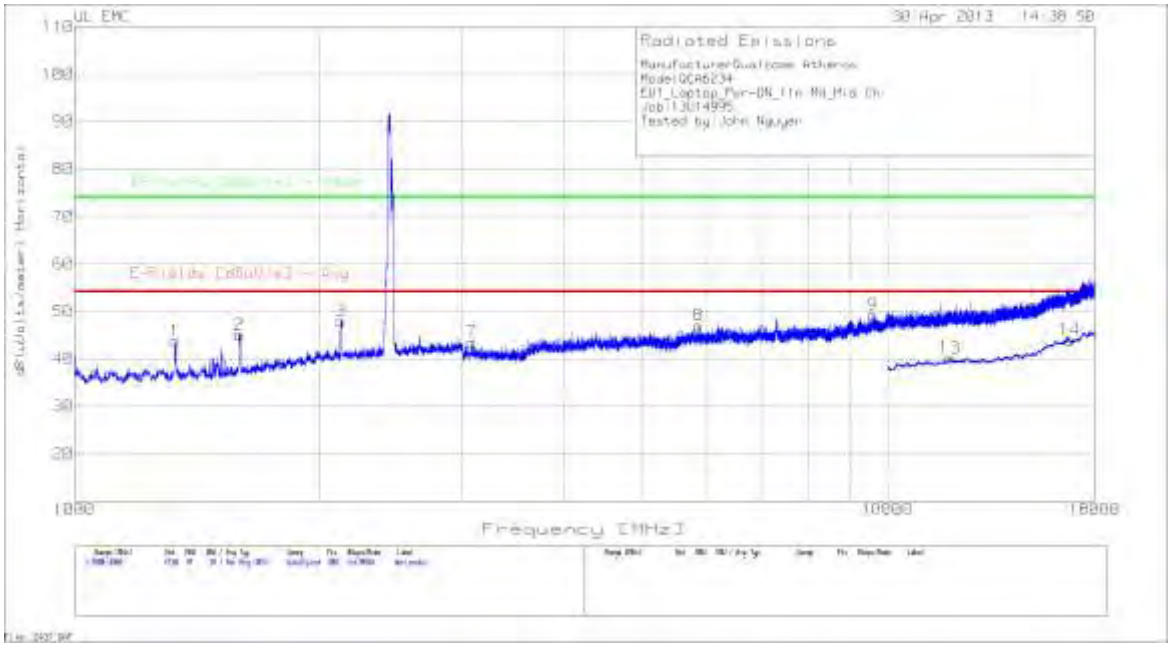
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
7	3679.962	43.45	PK	33.5	-32	44.95	53.97	-9.02	74	-29.05	300	Horz
8	5010.722	43.12	PK	34.4	-31.1	46.42	53.97	-7.55	74	-27.58	100	Horz
9	7005.611	40	PK	36	-28.5	47.5	53.97	-6.47	74	-26.5	199	Horz
Vertical 3000 - 18000MHz												
10	3687.462	43.76	PK	33.5	-31.9	45.36	53.97	-8.61	74	-28.64	400	Vert
11	7235.598	44.1	PK	36	-29.4	50.7	53.97	-3.27	74	-23.3	300	Vert
12	9684.629	37.49	PK	37.6	-25.2	49.89	53.97	-4.08	74	-24.11	200	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
13	11941.029	24.87	RMS	39	-24	39.87	53.97	-14.1	74	-34.13	300	Horz
14	17468.266	23.2	RMS	41.7	-19.7	45.2	53.97	-8.77	74	-28.8	100	Horz
Vertical 10000 - 18000MHz												
15	11919.04	25.16	RMS	39	-24.3	39.86	53.97	-14.11	74	-34.14	100	Vert
16	17420.29	23.44	RMS	41.7	-20	45.14	53.97	-8.83	74	-28.86	300	Vert

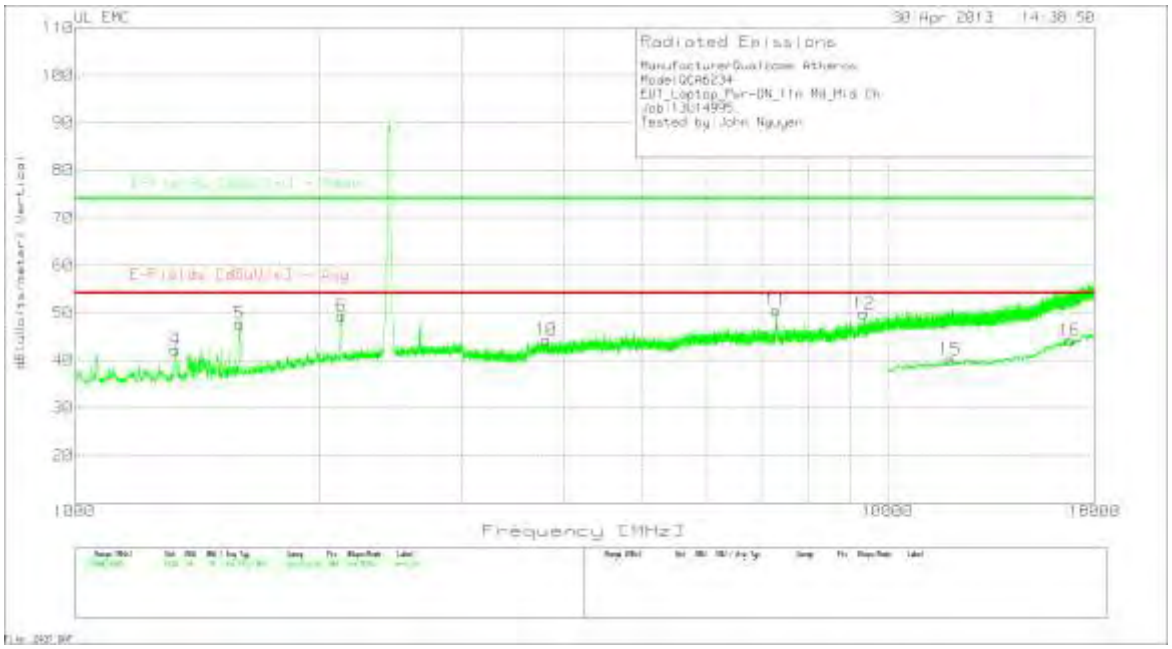
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

11n HT20 Mode, 2437 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
EUT_Laptop_Pwr-ON_11n Md_Mid Ch
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1330	49.84	PK	29.1	-35.2	43.74	53.97	-10.23	74	-30.26	400	Horz
2	1596	50.52	PK	29.5	-35	45.02	53.97	-8.95	74	-28.98	400	Horz
3	2127.333	49.83	PK	32.3	-34.2	47.93	53.97	-6.04	74	-26.07	400	Horz
Vertical 1000 - 3000MHz												
4	1330.667	48.4	PK	29.1	-35.2	42.3	53.97	-11.67	74	-31.7	200	Vert
5	1595.333	53.39	PK	29.4	-35	47.79	53.97	-6.18	74	-26.21	300	Vert
6	2130	51.32	PK	32.3	-34.2	49.42	53.97	-4.55	74	-24.58	100	Vert

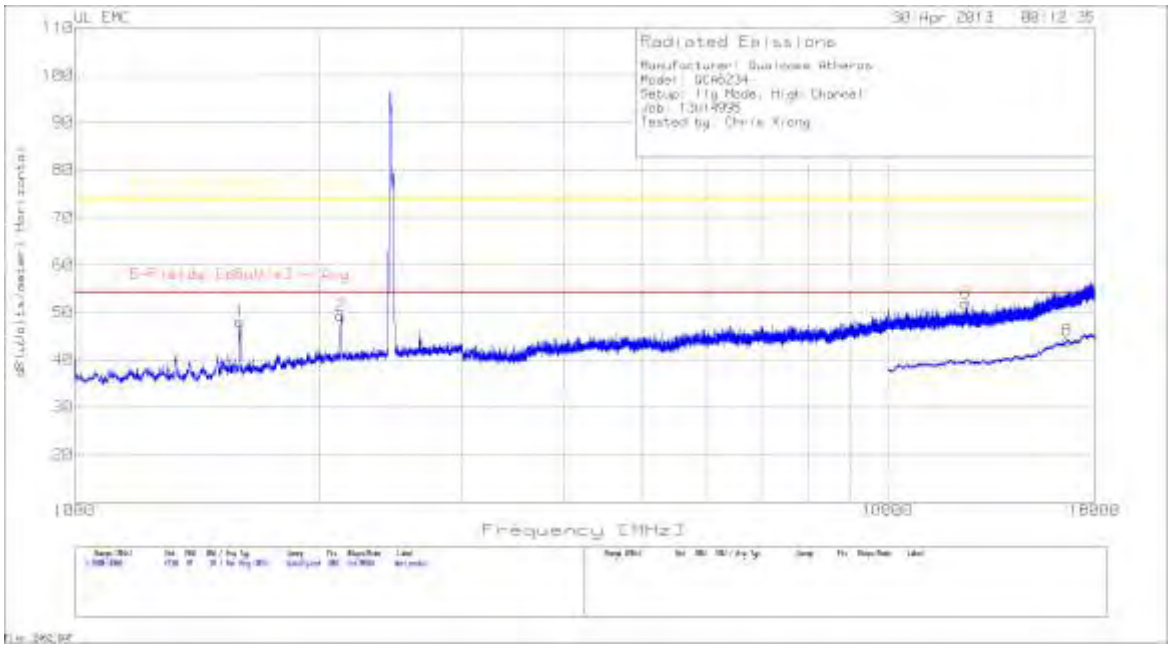
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
7	3079.996	41.68	PK	33.3	-31.5	43.48	53.97	-10.49	74	-30.52	299	Horz
8	5859.008	42.23	PK	35.6	-30.8	47.03	53.97	-6.94	74	-26.97	100	Horz
9	9606.3	36.95	PK	37.5	-25.2	49.25	53.97	-4.72	74	-24.75	299	Horz
Vertical 3000 - 18000MHz												
10	3805.789	42.55	PK	33.7	-32	44.25	53.97	-9.72	74	-29.75	100	Vert
11	7302.261	43.1	PK	36	-28.6	50.5	53.97	-3.47	74	-23.5	100	Vert
12	9362.98	38.4	PK	37.3	-25.9	49.8	53.97	-4.17	74	-24.2	400	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
13	11943.028	25.2	RMS	39	-24	40.2	53.97	-13.77	74	-33.8	100	Horz
14	16760.62	23.97	RMS	41.4	-21.4	43.97	53.97	-10	74	-30.03	200	Horz
Vertical 10000 - 18000MHz												
15	11947.026	25.17	RMS	39	-24	40.17	53.97	-13.8	74	-33.83	200	Vert
16	16756.622	24.1	RMS	41.4	-21.3	44.2	53.97	-9.77	74	-29.8	300	Vert

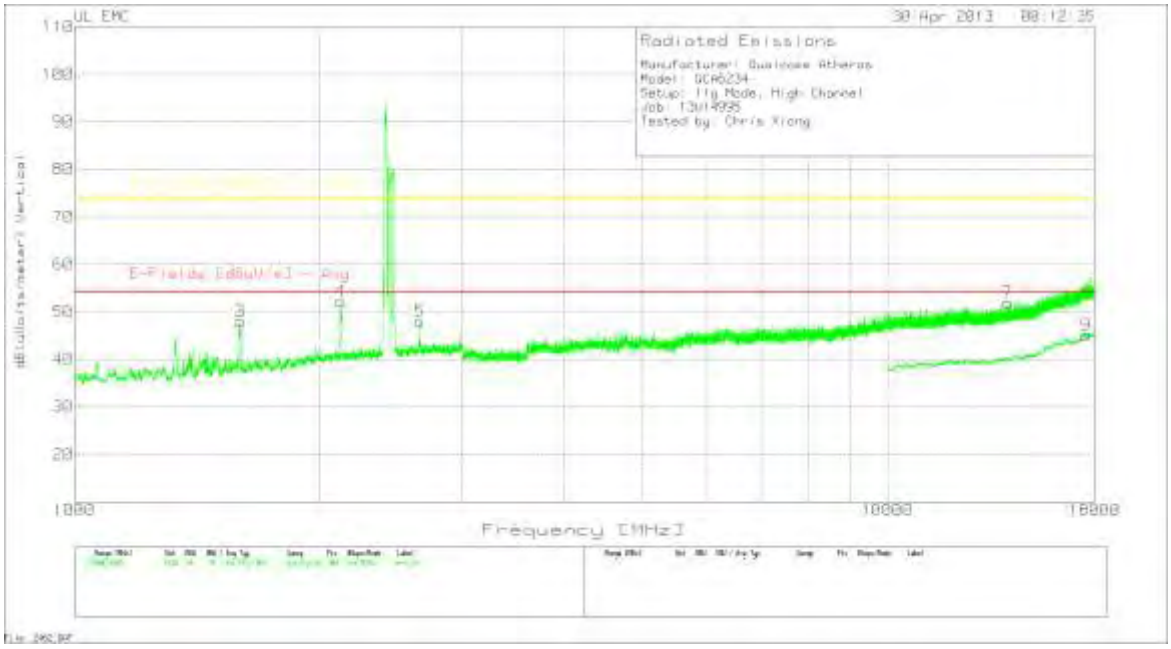
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector
CAV - CISPR Average detector

11n HT20 Mode, 2462 MHz

HORIZONTAL



VERTICAL



DATA

Manufacturer:	**Qualcomm Atheros**
Model:	**QCA6234**
Setup:	**11n HT20 Mode, High Channel**
Job:	**13U14995**
Tested by:	**Chris Xiong**

Marker No.	Test Frequency (MHz)	Meter Reading (dBµV)	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
1	1598	53.41	PK	29.5	-34.9	48.01	53.97	-5.96	74	-25.99	400	Horz
2	*2126.667	51.13	PK	32.3	-34.2	49.23	53.97	-4.74	74	-24.77	400	Horz
Vertical 1000 - 3000MHz												
3	1599.333	53.38	PK	29.5	-34.9	47.98	53.97	-5.99	74	-26.02	300	Vert
4	*2124.667	54.1	PK	32.2	-34.2	52.1	53.97	-1.87	74	-21.9	200	Vert
5	2659.333	48.59	PK	33	-33.6	47.99	53.97	-5.98	74	-26.01	300	Vert
	*=Not in the restricted band											

Marker No.	Test Frequency (MHz)	Meter Reading (dBµV)	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
6	12499.472	37.77	PK	39.1	-24.9	51.97	53.97	-2	74	-22.03	100	Horz
Vertical 3000 - 18000MHz												
7	*14066.885	38.7	PK	39.6	-26.4	51.9	53.97	-2.07	74	-22.1	100	Vert
	*=Not in the restricted band											

Marker No.	Test Frequency (MHz)	Meter Reading (dBµV)	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 3000MHz												
8	16646.677	23.92	PK	41.4	-21.3	44.02	53.97	-9.95	74	-29.98	400	Horz
Vertical 10000 - 18000MHz												
9	17548.226	23.85	PK	41.9	-20.7	45.05	53.97	-8.92	74	-28.95	300	Vert

Test Frequency (MHz)	Meter Reading (dBµV)	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 18000MHz											
12503.37	23.24	RMS	39.2	-32.5	11.8	0.4	42.14	53.97	-11.83	135	Horz

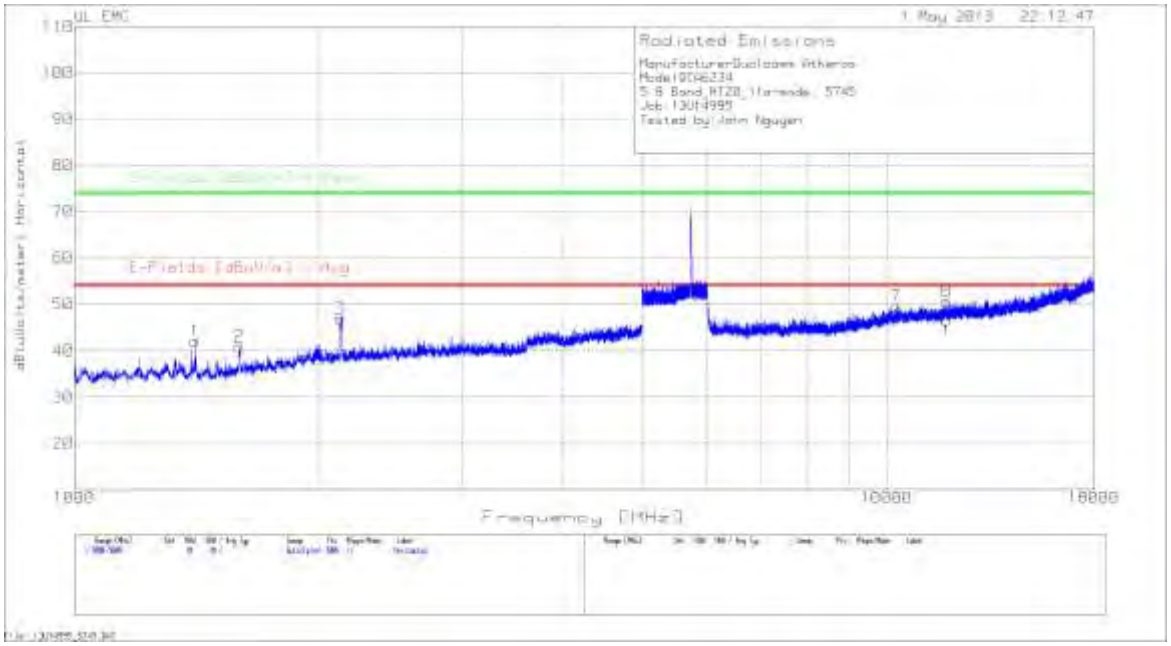
PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

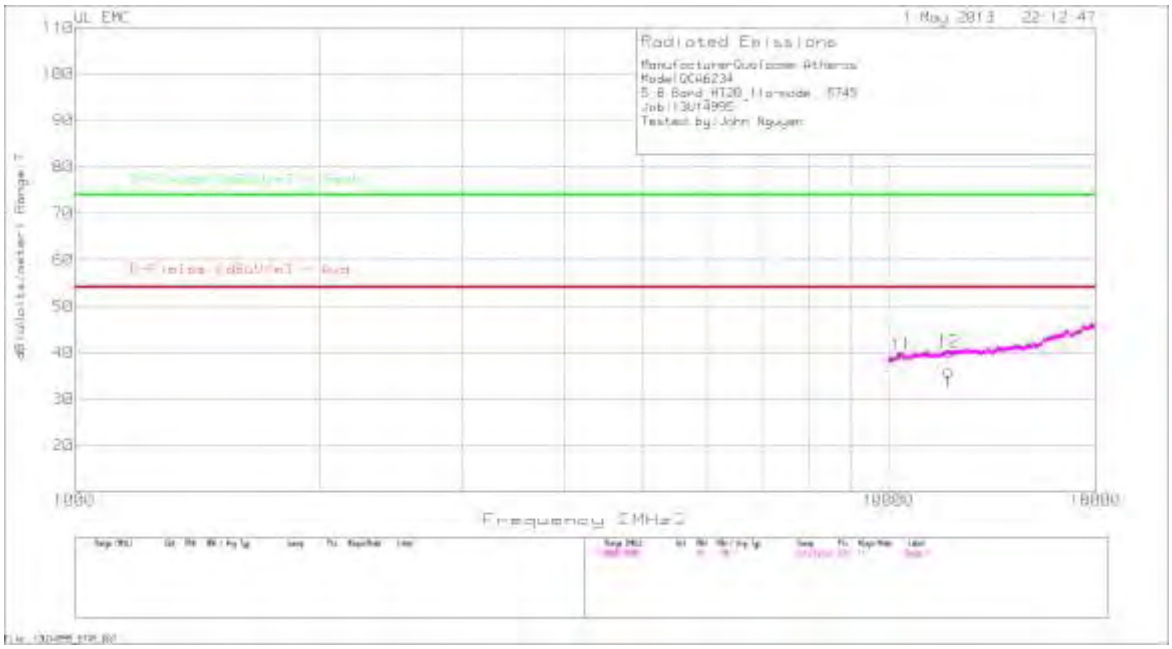
9.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.8 GHz BAND

SPURIOUS EMISSIONS WITH 50 OHM LOAD

11a Mode, 5745 MHz

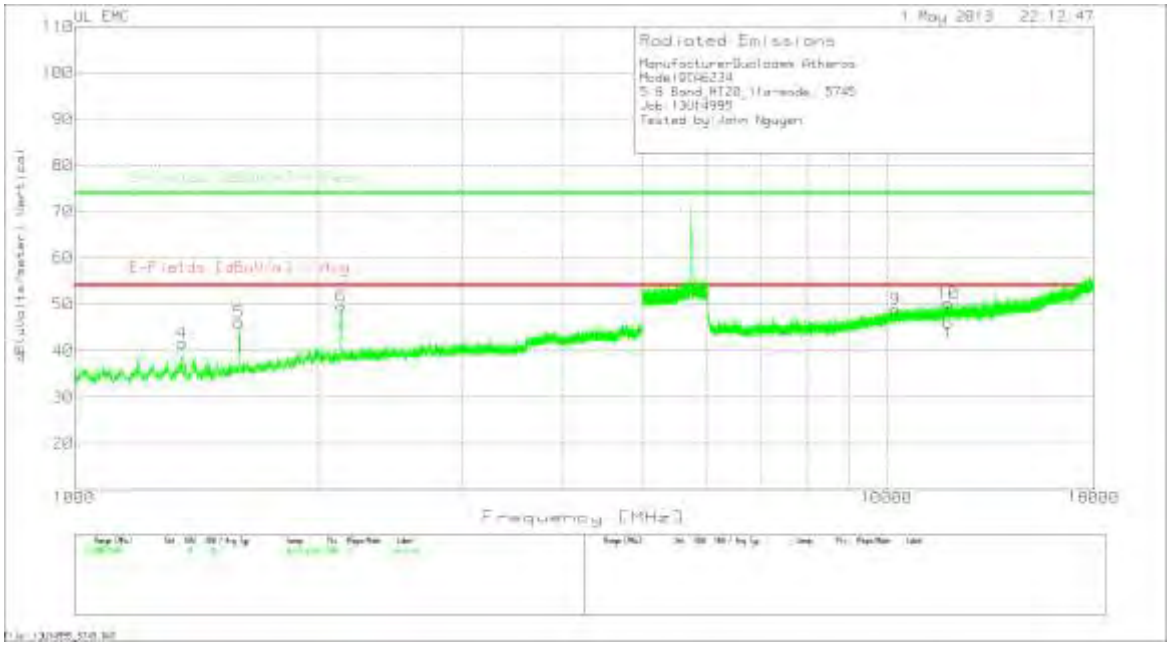
HORIZONTAL

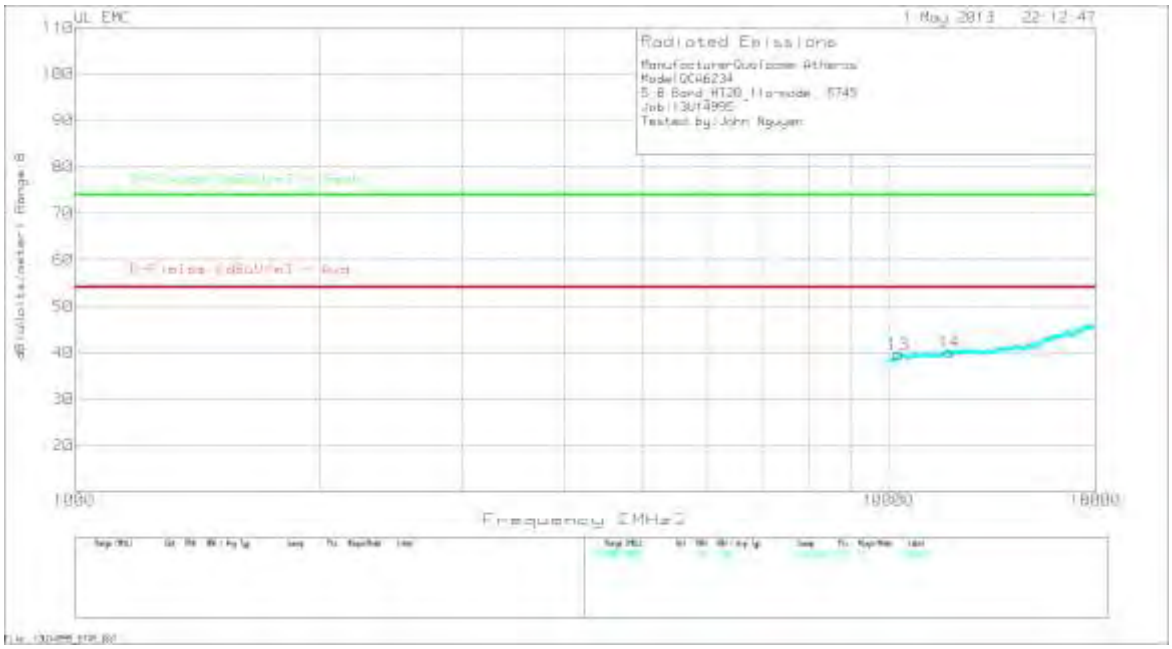




Note: there are no signals above the noise floor level up to 40 GHz.

VERTICAL





Note: there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8 Band_HT20_11a-mode, 5745
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 5000MHz												
1	1408.667	48.18	PK	28.9	-35	42.08	53.97	-11.89	74	-31.92	300	Horz
2	1597.333	45.94	PK	29.5	-34.5	40.94	53.97	-13.03	74	-33.06	300	Horz
3	*2125.333	49.06	PK	32.3	-34.4	46.96	53.97	-7.01	74	-27.04	399	Horz
Vertical 1000 - 5000MHz												
4	1358.667	47.39	PK	29	-34.8	41.59	53.97	-12.38	74	-32.41	300	Horz
5	1594.667	51.33	PK	29.4	-34.6	46.13	53.97	-7.84	74	-27.87	300	Horz
6	*2130.667	51.72	PK	32.3	-34.4	49.62	53.97	-4.35	74	-24.38	300	Horz
	*= Not in Restricted Band											

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
7	*10287.296	37.13	PK	38.3	-25.8	49.63	53.97	-4.34	74	-24.37	300	Horz
8	11854.205	36.74	PK	38.9	-24.9	50.74	53.97	-3.23	74	-23.26	300	Horz
Vertical 6015 - 18000MHz												
9	*10254.34	36.84	PK	38.3	-26.2	48.94	53.97	-5.03	74	-25.06	400	Vert
10	11903.139	36.93	PK	39	-25.7	50.23	53.97	-3.74	74	-23.77	200	Vert
	*= Not in Restricted Band											

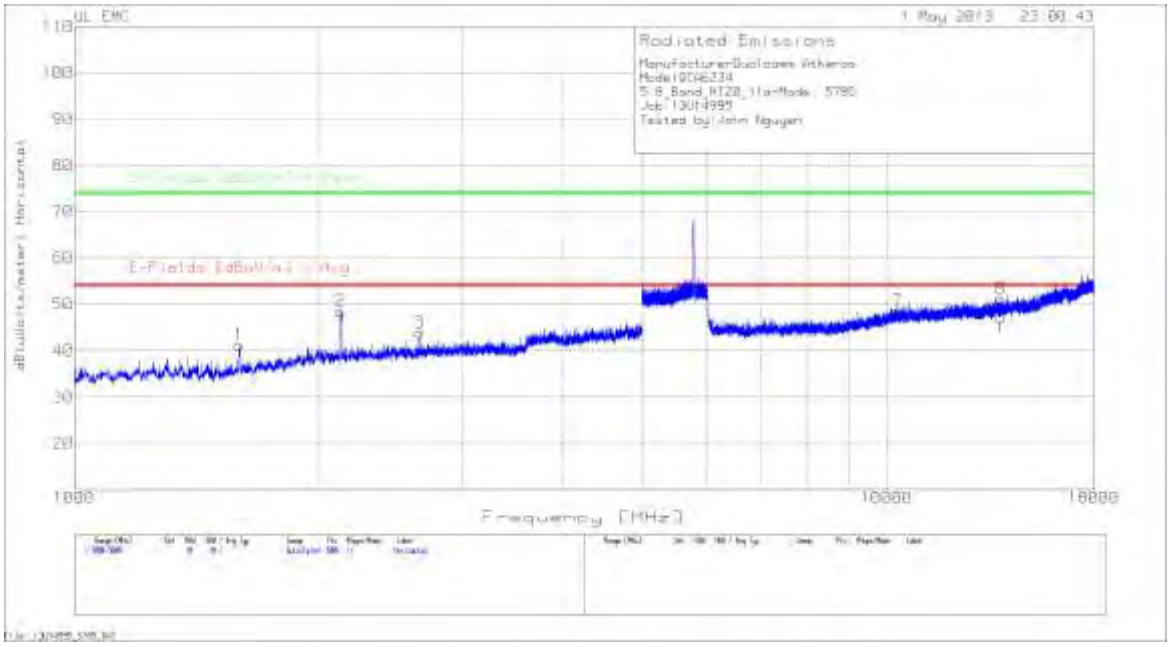
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
11	10383.968	26.39	PK	38.4	-25.3	39.49	53.97	-14.48	74	-34.51	100	Horz
12	11880.51	26.69	PK	39	-25.5	40.19	53.97	-13.78	74	-33.81	199	Horz
Range:8 10000 - 18000MHz												
13	10298.642	27.16	PK	38.3	-25.9	39.56	53.97	-14.41	74	-34.44	300	Vert
14	11900.508	26.81	PK	39	-25.7	40.11	53.97	-13.86	74	-33.89	200	Vert
Horizontal 7600 - 18000MHz												

Test Frequency MHz	Meter Reading dBuv	Detector	T119 Ant Factor [dB/m]	T34 Preamp/ Cable	T193 HPF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
11850.02	21.36	RMS	38.9	-19	0.3	41.56	53.97	-12.41	74	-32.44	338	Horz
Vertical 7600 - 18000MHz												
Test Frequency MHz	Meter Reading dBuv	Detector	T119 Ant Factor [dB/m]	T34 Preamp/ Cable	T193 HPF [dB]	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
11910.96	22.2	RMS	39	-19	0.2	42.4	53.97	-11.57	74	-31.6	289	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

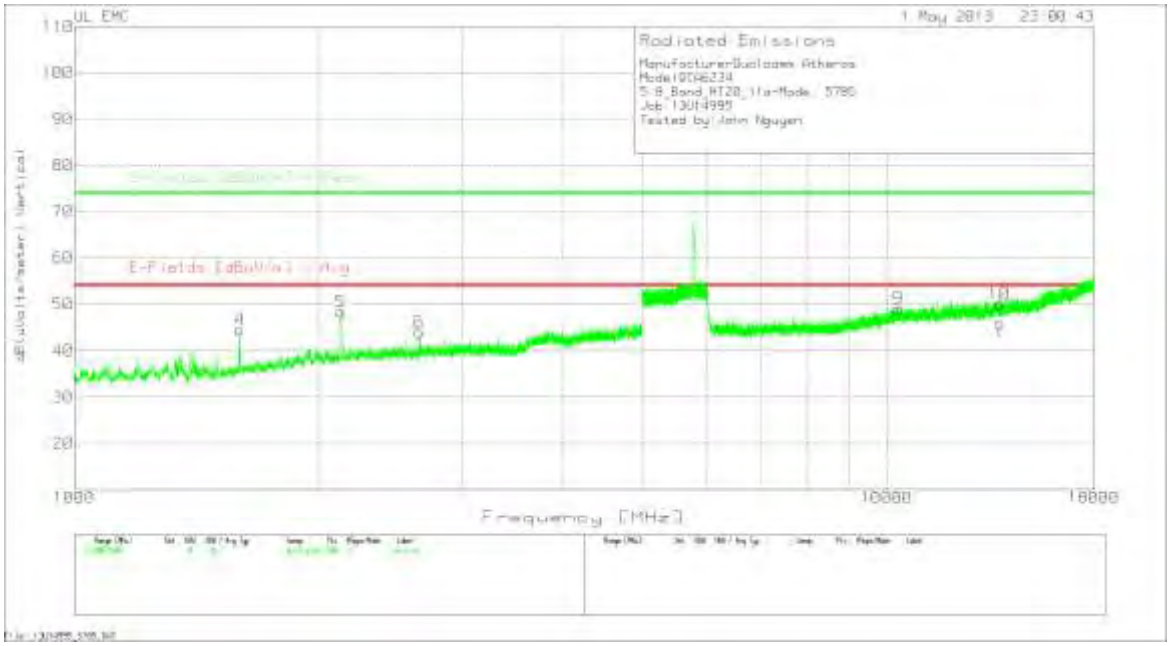
11a Mode, 5785 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8_Band_HT20_11a-Mode, 5785
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 5000MHz												
1	1595.333	46.38	PK	29.4	-34.6	41.18	53.97	-12.79	74	-32.82	400	Horz
2	*2125.333	50.66	PK	32.3	-34.4	48.56	53.97	-5.41	74	-25.44	300	Horz
3	2663.333	44.53	PK	33	-33.6	43.93	53.97	-10.04	74	-30.07	199	Horz
Vertical 1000 - 5000MHz												
4	1598	49.51	PK	29.5	-34.5	44.51	53.97	-9.46	74	-29.49	300	Vert
5	*2128.667	50.51	PK	32.3	-34.4	48.41	53.97	-5.56	74	-25.59	300	Vert
6	2658.667	44.71	PK	33	-33.7	44.01	53.97	-9.96	74	-29.99	200	Vert
	*=Not in the restricted band											

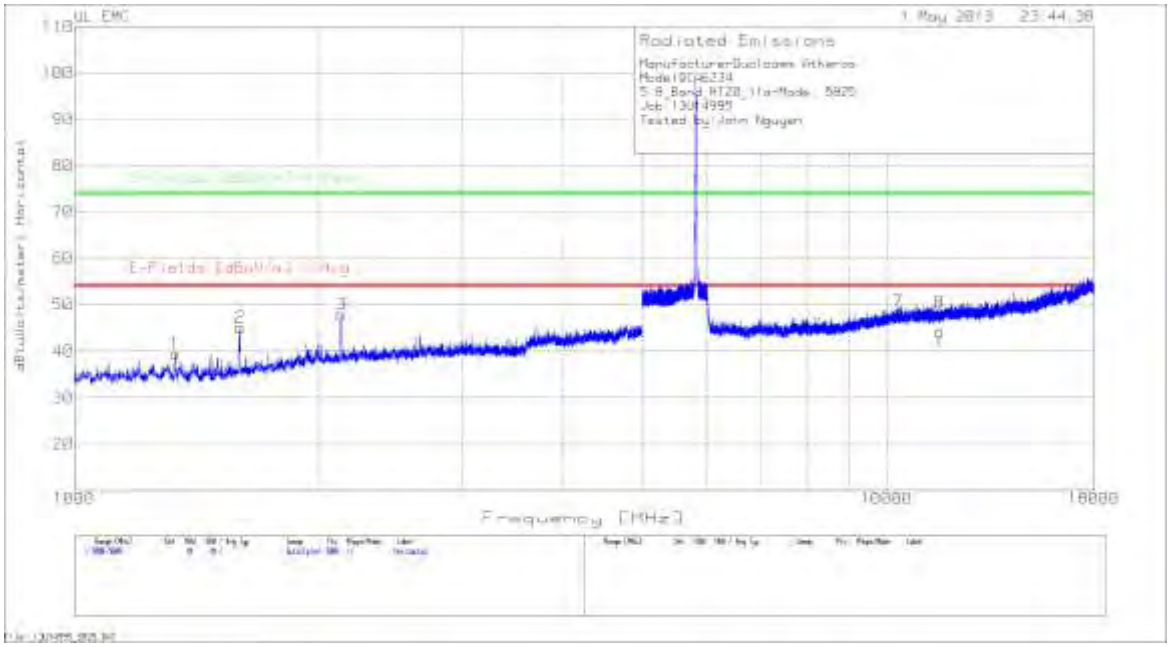
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
7	*10320.252	36.16	PK	38.3	-25.9	48.56	53.97	-5.41	74	-25.44	400	Horz
8	*13822.577	39.03	PK	39.4	-27.2	51.23	53.97	-2.74	74	-22.77	100	Horz
Vertical 6015 - 18000MHz												
9	*10329.24	36.11	PK	38.3	-25.4	49.01	53.97	-4.96	74	-24.99	200	Vert
10	*13782.63	37.75	PK	39.3	-27	50.05	53.97	-3.92	74	-23.95	300	Vert
	*=Not in the restricted band											

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
11	10335.972	26.93	PK	38.3	-25.4	39.83	53.97	-14.14	74	-34.17	100	Horz
12	13708.358	28.01	PK	39.3	-26.1	41.21	53.97	-12.76	74	-32.79	300	Horz
Range:8 10000 - 18000MHz												
13	10297.975	27.11	PK	38.3	-25.9	39.51	53.97	-14.46	74	-34.49	200	Vert
14	13633.697	28.23	PK	39.2	-26.3	41.13	53.97	-12.84	74	-32.87	400	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

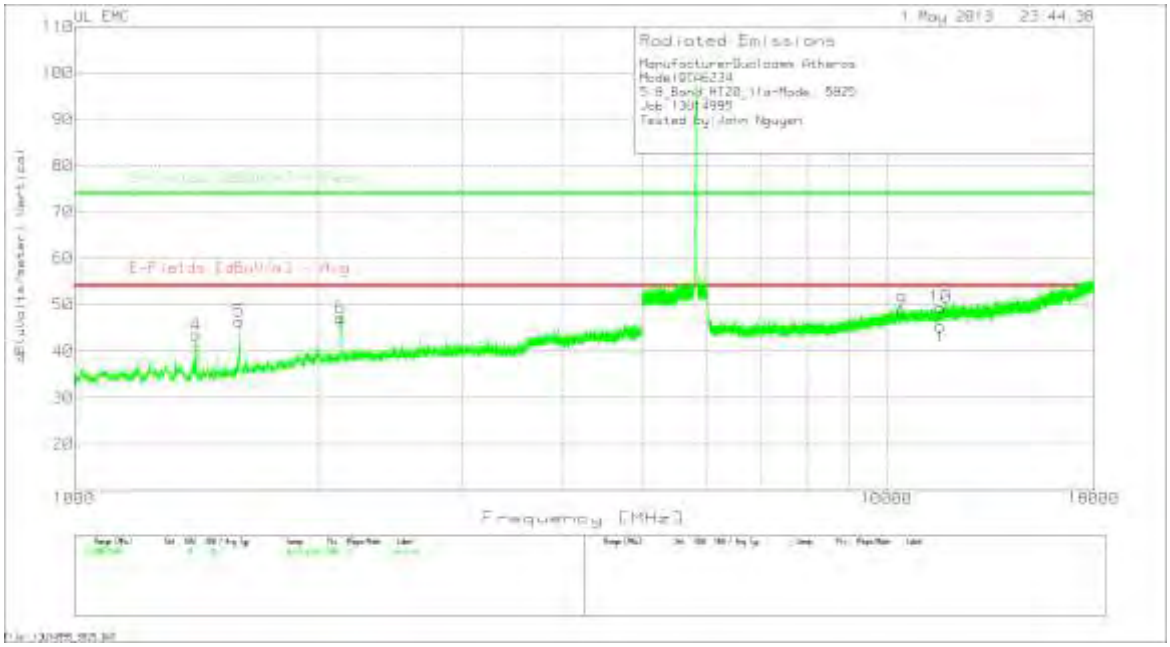
11a Mode, 5825 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8_Band_HT20_11a-Mode, 5825
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 5000MHz												
1	1331.333	45.06	PK	29.1	-34.7	39.46	53.97	-14.51	74	-34.54	300	Horz
2	1600	50	PK	29.5	-34.4	45.1	53.97	-8.87	74	-28.9	400	Horz
3	*2131.333	49.92	PK	32.3	-34.3	47.92	53.97	-6.05	74	-26.08	199	Horz
Vertical 1000 - 5000MHz												
4	1410	49.58	PK	28.9	-35	43.48	53.97	-10.49	74	-30.52	300	Vert
5	1597.333	51.47	PK	29.5	-34.5	46.47	53.97	-7.5	74	-27.53	400	Vert
6	*2124	49.39	PK	32.2	-34.4	47.19	53.97	-6.78	74	-26.81	300	Vert
*=Not in the restricted band												

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
7	*10338.228	35.56	PK	38.3	-25.3	48.56	53.97	-5.41	74	-25.44	199	Horz
8	11623.513	35.38	PK	38.7	-25.8	48.28	53.97	-5.69	74	-25.72	199	Horz
Vertical 6015 - 18000MHz												
9	*10447.083	35.77	PK	38.4	-25.4	48.77	53.97	-5.2	74	-25.23	200	Vert
10	11651.475	36.49	PK	38.8	-25.8	49.49	53.97	-4.48	74	-24.51	300	Vert
*=Not in the restricted band												

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
11	10405.3	26.6	PK	38.4	-25	40	53.97	-13.97	74	-34	399	Horz
12	11657.195	27.49	PK	38.8	-25.7	40.59	53.97	-13.38	74	-33.41	399	Horz
Range:8 10000 - 18000MHz												
13	10422.298	26.19	PK	38.4	-25.3	39.29	53.97	-14.68	74	-34.71	400	Vert
14	11643.863	31.56	PK	38.8	-25.8	44.56	53.97	-9.41	74	-29.44	300	Vert
Vertical 10000 - 18000MHz												

Test Frequency MHz	Meter Reading dBuv	Detector	T119 Ant Factor [dB/m]	T34 Preamp/ Cable	T193 HPF [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
11664.06	21.88	RMS	38.6	-19.3	0.2	41.38	53.97	-12.59	74	-32.62	76	Vert

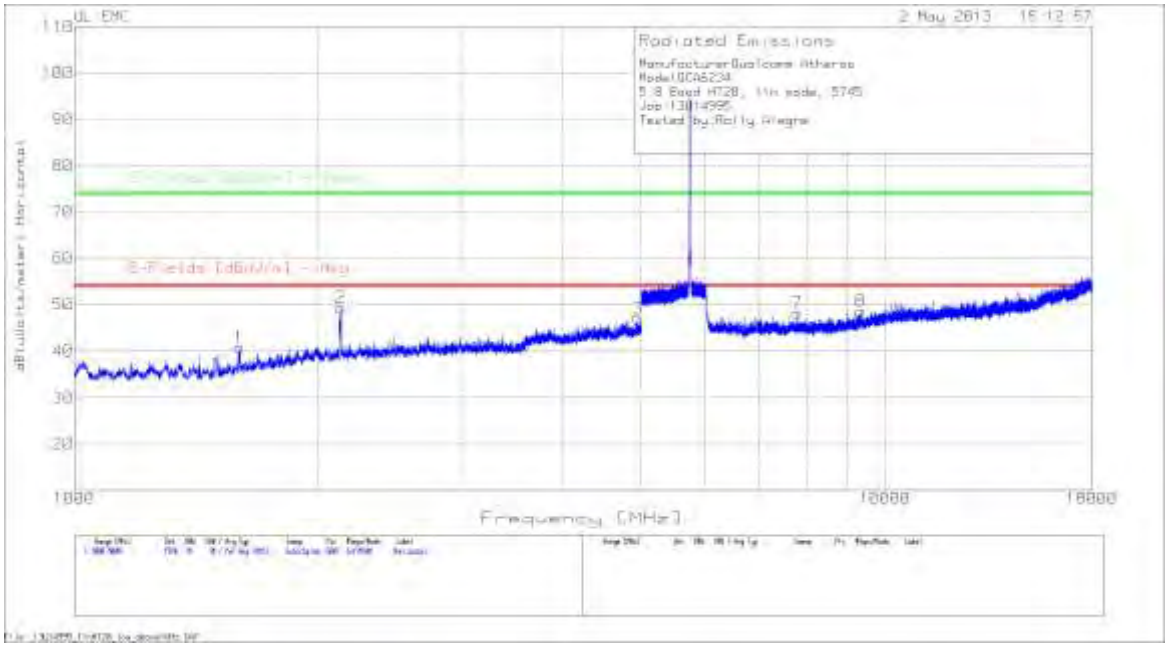
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

9.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.8 GHz BAND

SPURIOUS EMISSIONS WITH 50 OHM LOAD

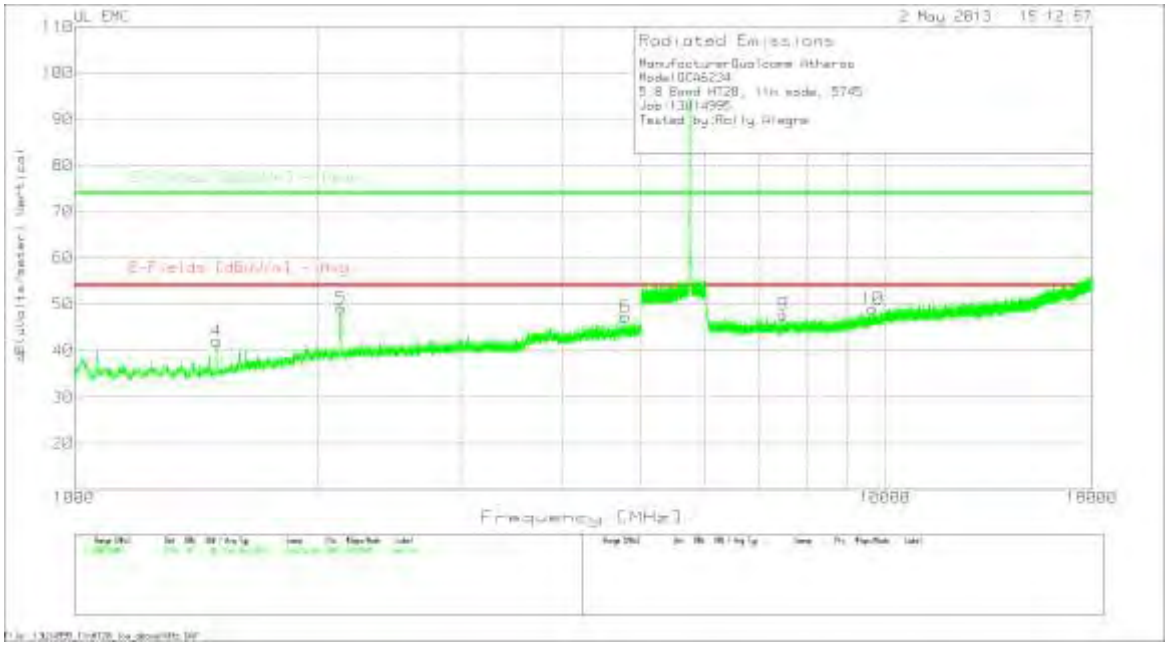
11n HT20 Mode, 5745 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL

Manufacturer:	Qualcomm Atheros
Model:	QCA6234
Configuration:	5.8 Band HT20, 11n mode, 5745
Job:	13U14995
Tested by:	Rolly Alegre

1000 - 5000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	1598.667	45.77	PK	29.5	-34.5	40.77	53.97	-13.2	74	-33.23	299	Horz
2	*2132	51.35	PK	32.3	-34.3	49.35	53.97	-4.62	74	-24.65	299	Horz
3	4950.667	43.41	PK	34.4	-30.8	47.01	53.97	-6.96	74	-26.99	400	Horz
4	1498.667	48.56	PK	28.8	-35.3	42.06	53.97	-11.91	74	-31.94	300	Vert
5	*2132.667	51.19	PK	32.3	-34.3	49.19	53.97	-4.78	74	-24.81	300	Vert
6	4786	43.64	PK	34.4	-30.7	47.34	53.97	-6.63	74	-26.66	100	Vert

6015 - 18000MHz

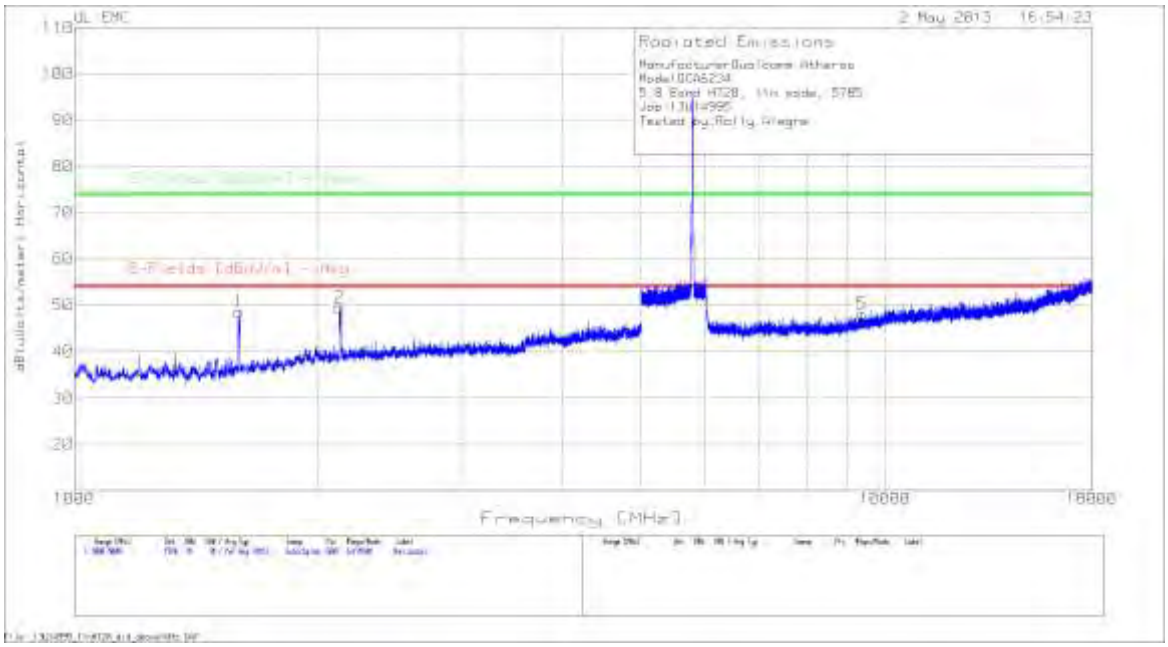
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
7	7794.624	40.96	PK	36.2	-28.9	48.26	53.97	-5.71	74	-25.74	200	Horz
8	9334.568	37.49	PK	37.2	-26	48.69	53.97	-5.28	74	-25.31	100	Horz
9	7490.031	41.08	PK	36.1	-29.4	47.78	53.97	-6.19	74	-26.22	100	Vert
10	*9650.147	37.55	PK	37.6	-26.1	49.05	53.97	-4.92	74	-24.95	100	Vert

*=Not in the restricted band

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

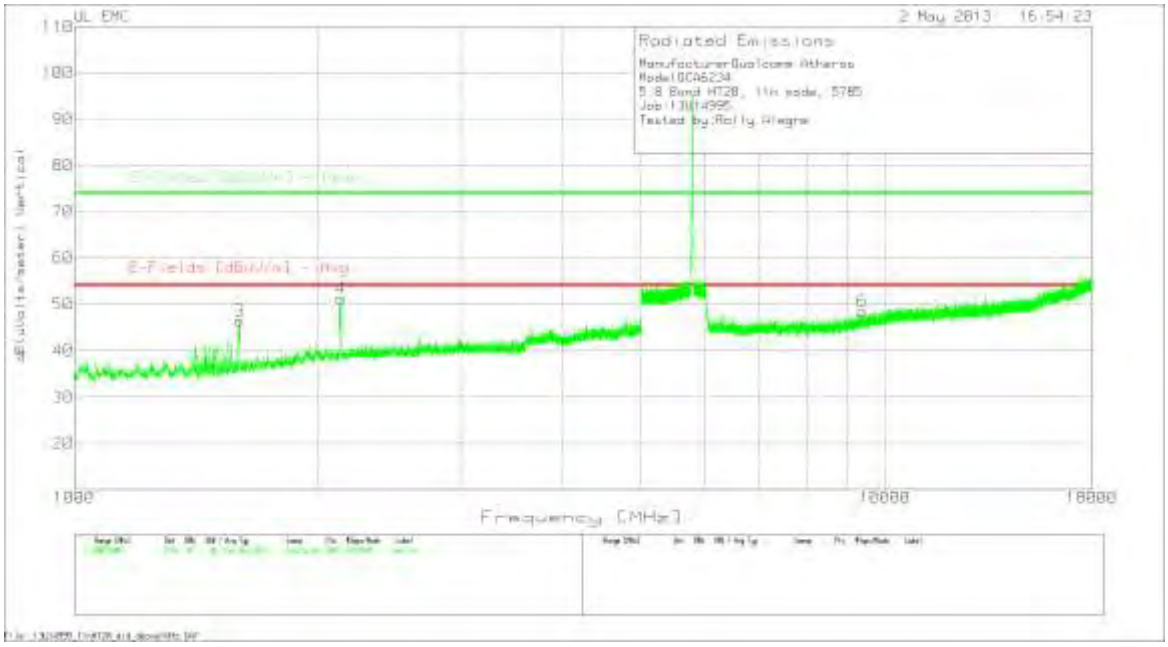
11n HT20 Mode, 5785 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

ManufacturerQualcomm Atheros
ModelQCA6234
5.8 Band HT20, 11n mode, 5785
Job:13U14995
Tested by:Rolly Alegre

Horizontal 1000 - 5000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
1	1596.667	53.6	PK	29.5	-34.5	48.6	53.97	-5.37	74	-25.4	400	Horz
2	*2124.667	51.72	PK	32.2	-34.4	49.52	53.97	-4.45	74	-24.48	299	Horz

Vertical 1000 - 5000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
3	1600.667	51.36	PK	29.5	-34.4	46.46	53.97	-7.51	74	-27.54	300	Vert
4	*2132.333	53.3	PK	32.3	-34.3	51.3	53.97	-2.67	74	-22.7	300	Vert

Horizontal 6015 - 18000MHz

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
5	9363.53	36.77	PK	37.3	-25.9	48.17	53.97	-5.8	74	-25.83	100	Horz

Vertical 6015 - 18000MHz

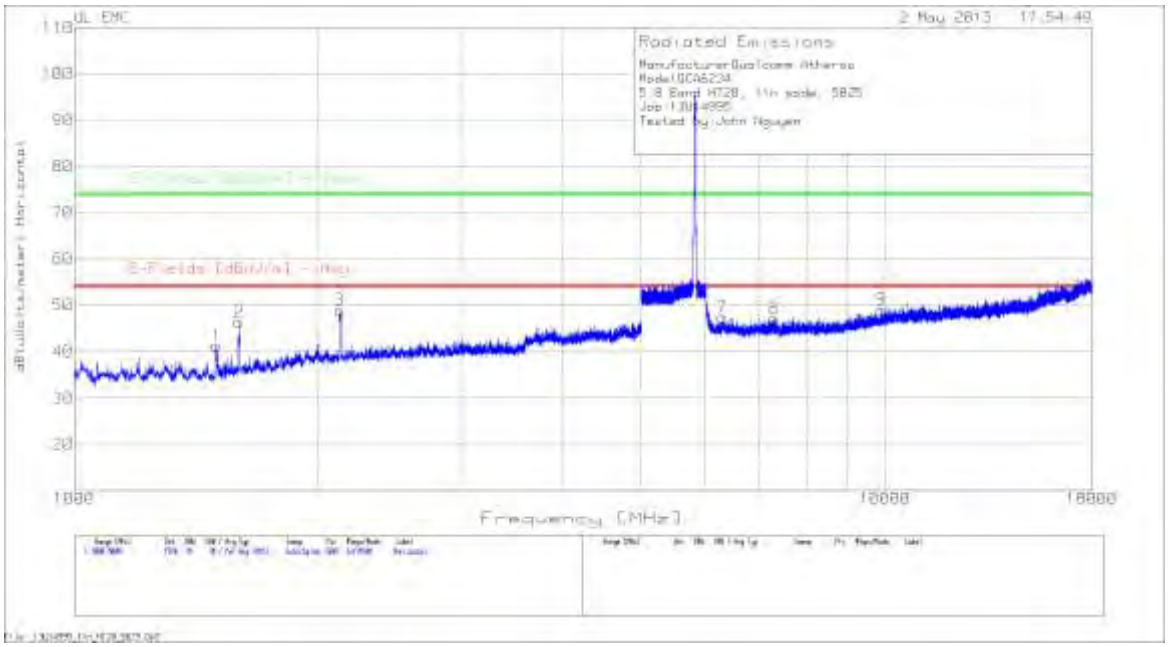
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolt s/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
6	9375.514	37.46	PK	37.3	-26.3	48.46	53.97	-5.51	74	-25.54	300	Vert

*=Not in the restricted band

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

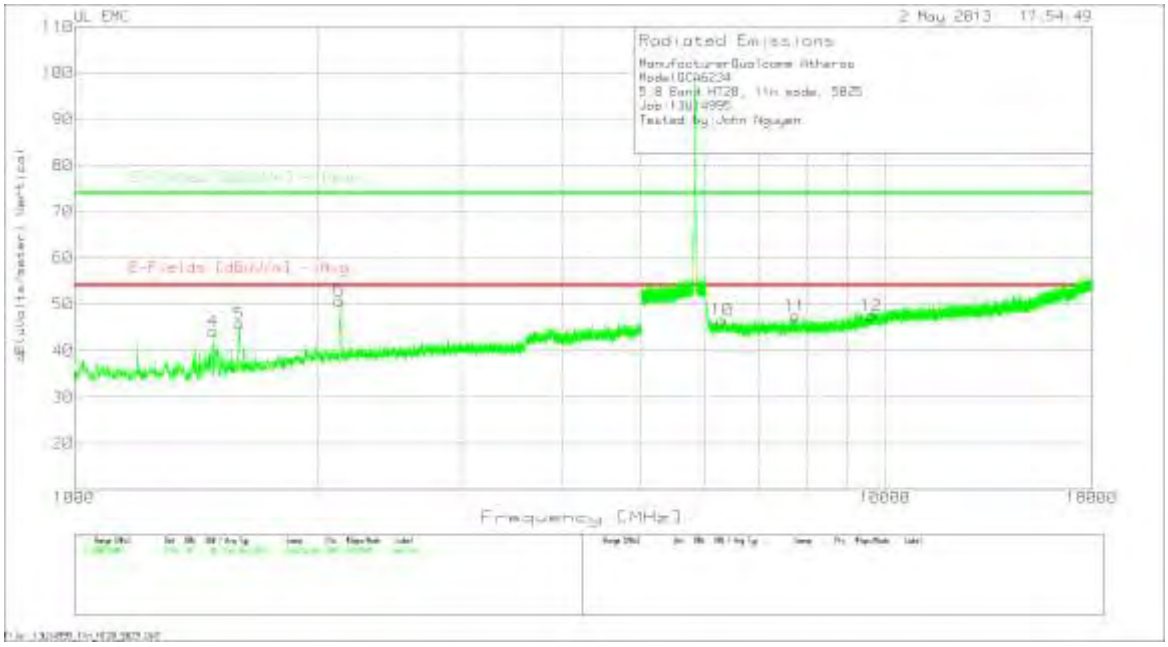
11n HT20 Mode, 5825 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8 Band HT20, 11n mode, 5825
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 1000 - 5000MHz												
1	1496	47.82	PK	28.8	-35.3	41.32	53.97	-12.65	74	-32.68	400	Horz
2	1597.333	51.34	PK	29.5	-34.5	46.34	53.97	-7.63	74	-27.66	199	Horz
3	2126.667	51.06	PK	32.3	-34.4	48.96	53.97	-5.01	74	-25.04	300	Horz
Vertical 1000 - 5000MHz												
4	1483.333	50.58	PK	28.8	-35.3	44.08	53.97	-9.89	74	-29.92	300	Vert
5	1598.667	50.78	PK	29.5	-34.5	45.78	53.97	-8.19	74	-28.22	300	Vert
6	2125.333	52.95	PK	32.3	-34.4	50.85	53.97	-3.12	74	-23.15	200	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ cable/6G Hz HPF	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
7	10625.845	37.67	PK	38.5	-25.7	50.47	53.97	-3.5	74	-23.53	399	Horz
8	13306.266	37.16	PK	39	-25.7	50.46	53.97	-3.51	74	-23.54	200	Horz
Vertical 6015 - 18000MHz												
9	10652.809	36.41	PK	38.5	-25.8	49.11	53.97	-4.86	74	-24.89	200	Vert
10	13307.265	36.95	PK	39	-25.7	50.25	53.97	-3.72	74	-23.75	100	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
11	10590.617	32.99	PK	38.4	-25.7	45.69	53.97	-8.28	74	-28.31	100	Horz
12	13270.394	34.12	PK	39	-25.4	47.72	53.97	-6.25	74	-26.28	400	Horz
Range:8 10000 - 18000MHz												
13	10566.619	33.72	PK	38.4	-25.4	46.72	53.97	-7.25	74	-27.28	300	Vert
14	13300.392	34.51	PK	39	-25.6	47.91	53.97	-6.06	74	-26.09	100	Vert

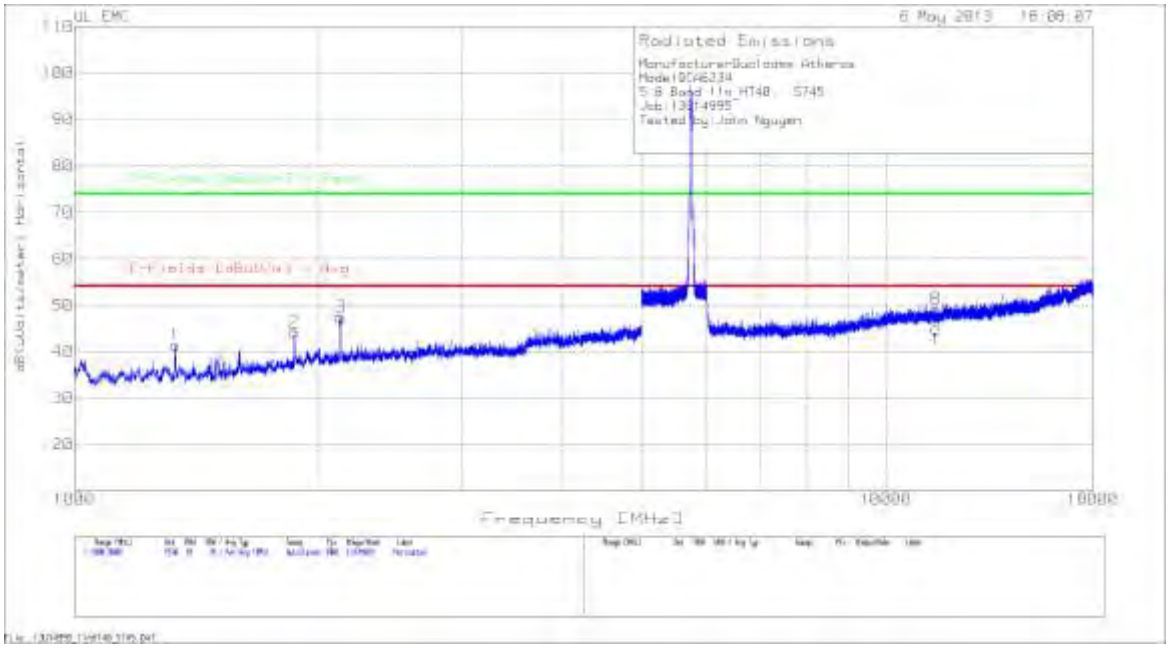
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

9.7. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND

SPURIOUS EMISSIONS WITH 50 OHM LOAD

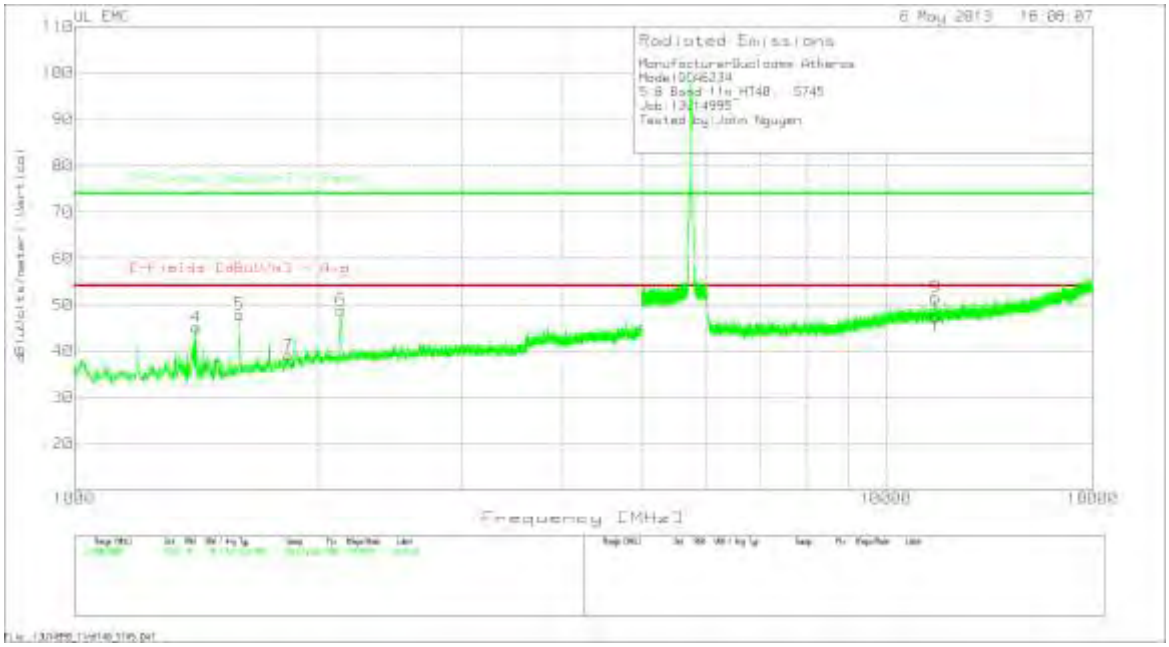
11n HT40 Mode, 5755 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8 Band 11n_HT40, 5745
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts/ meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
tal 1000 - 5000MHz												
1	1332	47.03	PK	29.1	-34.7	41.43	53.97	-12.54	74	-32.57	300	Horz
2	1868	47.1	PK	31.3	-34.2	44.2	53.97	-9.77	74	-29.8	100	Horz
3	*2129.333	49.65	PK	32.3	-34.4	47.55	53.97	-6.42	74	-26.45	100	Horz
Vertical 1000 - 5000MHz												
4	1412.667	51.14	PK	28.9	-34.9	45.14	53.97	-8.83	74	-28.86	300	Vert
5	1598	52.91	PK	29.5	-34.5	47.91	53.97	-6.06	74	-26.09	300	Vert
6	*2130.667	50.99	PK	32.3	-34.4	48.89	53.97	-5.08	74	-25.11	100	Vert

*=Not in the restricted band

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts/ meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
8	11531.635	36.2	PK	38.7	-25.7	49.2	53.97	-4.77	74	-24.8	300	Horz
Vertical 6015 - 18000MHz												
9	11510.663	38.53	PK	38.7	-25.6	51.63	53.97	-2.34	74	-22.37	400	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolts/ meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
10	11510.541	30.14	PK	38.7	-25.6	43.24	53.97	-10.73	74	-30.76	300	Horz
Range:8 10000 - 18000MHz												
11	11511.207	32.48	PK	38.7	-25.6	45.58	53.97	-8.39	74	-28.42	400	Vert

Horizontal 7600 - 18000MHz

Test Frequency MHz	Meter Reading dBuv	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T192 HPF [dB]	dB(uVolts /meter)	E-Fields [dBuV/ m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11526.38	23.39	RMS	38.7	-33.6	11.3	0.3	40.09	53.97	-13.88	74	-33.91	121	Horz

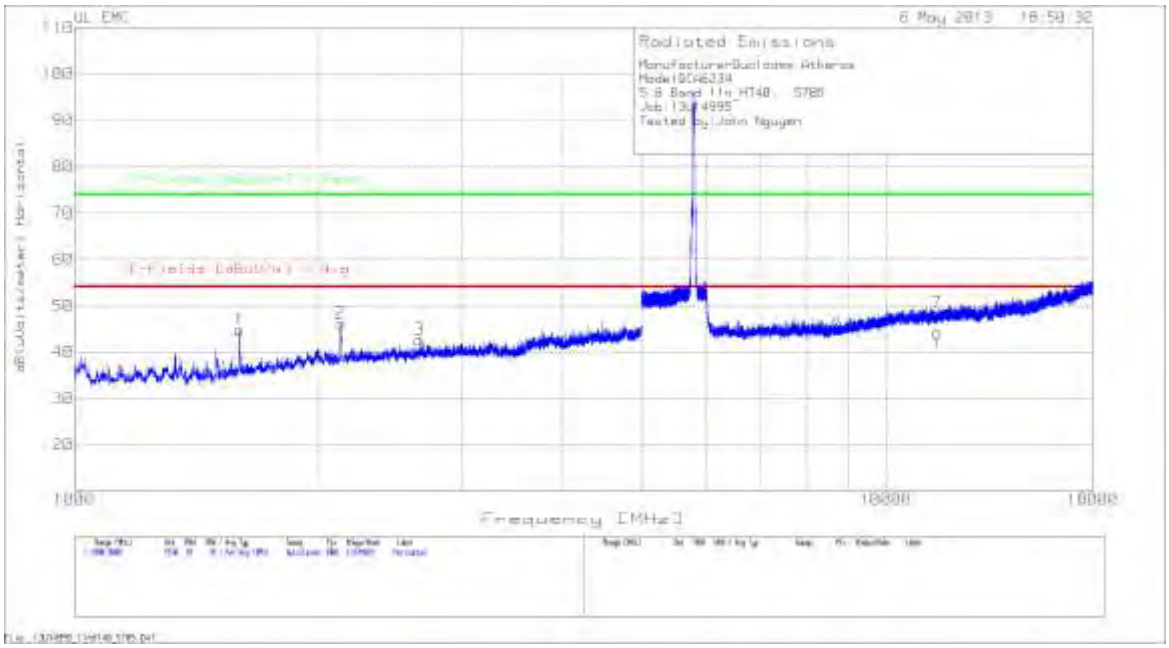
Vertical 7600 - 18000MHz

Test Frequency MHz	Meter Reading dBuv	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T192 HPF [dB]	dB(uVolts /meter)	E-Fields [dBuV/ m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11511.9	24.26	RMS	38.7	-33.6	11.3	0.3	40.96	53.97	-13.01	74	-33.04	101	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

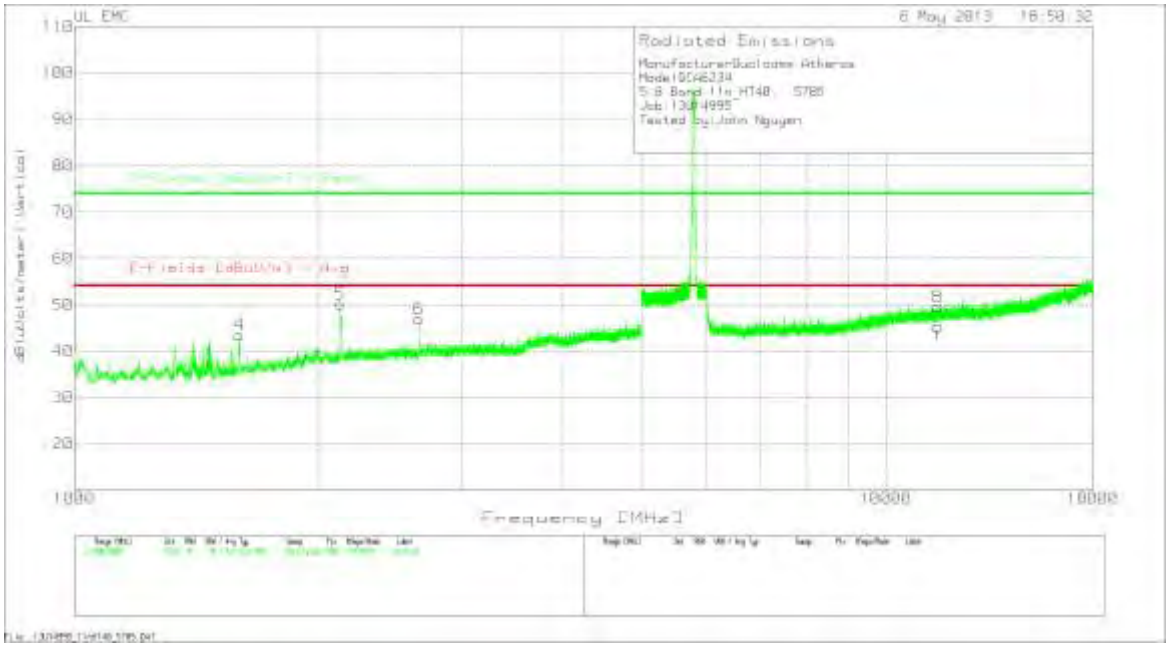
11n HT40 Mode, 5795 MHz

HORIZONTAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

VERTICAL



Note: based on the results of low channel in 11a mode, there are no signals above the noise floor level up to 40 GHz.

Manufacturer: Qualcomm Atheros
Model: QCA6234
5.8 Band 11n_HT40, 5785
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
ntal 1000 - 5000MHz												
1	1598.667	49.76	PK	29.5	-34.5	44.76	53.97	-9.21	74	-29.24	300	Horz
2	*2130	48.4	PK	32.3	-34.4	46.3	53.97	-7.67	74	-27.7	300	Horz
3	2663.333	43.33	PK	33	-33.6	42.73	53.97	-11.24	74	-31.27	200	Horz
Vertical 1000 - 5000MHz												
4	1598.667	48.43	PK	29.5	-34.5	43.43	53.97	-10.54	74	-30.57	100	Vert
5	*2126.667	52.29	PK	32.3	-34.4	50.19	53.97	-3.78	74	-23.81	199	Vert
6	2659.333	47.55	PK	33	-33.6	46.95	53.97	-7.02	74	-27.05	100	Vert

*=Not in the restricted band

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable 5GHz LPF	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Horizontal 6015 - 18000MHz												
7	11565.59	35.42	PK	38.7	-25.7	48.42	53.97	-5.55	74	-25.58	300	Horz
Vertical 6015 - 18000MHz												
8	11596.549	36.86	PK	38.7	-26	49.56	53.97	-4.41	74	-24.44	299	Vert

Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	6GHz HPF Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
Range:7 10000 - 18000MHz												
9	11663.861	29.17	PK	38.8	-25.5	42.47	53.97	11.5	74	31.53	300	Horz
Range:8 10000 - 18000MHz												
10	11581.202	31.41	PK	38.7	-25.9	44.21	53.97	-9.76	74	-29.79	299	Vert

Horizontal 7600 - 18000MHz

Test Frequency MHz	Meter Reading dBuv	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T192 HPF [dB]	dB(uVolts/ meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11571.81	23.34	RMS	38.8	-33.6	11.3	0.2	40.04	53.97	-13.93	74	-33.96	114	Horz

Vertical 7600 - 18000MHz

Test Frequency MHz	Meter Reading dBuv	Detector	T345 Ant Factor [dB/m]	T145 Preamp Gain [dB]	Cable Factor [dB]	T192 HPF [dB]	dB(uVolts/ meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarity
11582.15	24	RMS	38.8	-33.6	11.3	0.2	40.7	53.97	-13.27	74	-33.3	148	Vert

PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

9.8. WORST-CASE BELOW 1 GHz

DATA

Manufacturer: Qualcomm Atheros
Model: QCA6234
2X2 MIMO 802.11 abgn+BT4.0
Job: 13U14995
Tested by: John Nguyen

Marker No.	Test Frequency	Meter Reading	Detector	T408 Ant Factor [dB/m]	T285 Preamp [dB]	Cable Factor [dB]	dB(uVolts /meter)	E-Fields [dBuV/m] - QPk	Margin (dB)	Height [cm]	Polarity
Horizontal 30 - 1000MHz											
1	35.9405	42.35	PK	16.9	-27.9	0.5	31.85	40	-8.15	300	Horz
2	42.9721	44.66	PK	11.7	-28	0.6	28.96	40	-11.04	400	Horz
3	212.8221	51.86	PK	10.4	-28.8	1.2	34.66	43.52	-8.86	98	Horz
4	391.1586	48.9	PK	15.2	-29.4	1.7	36.4	46.02	-9.62	98	Horz
Vertical 30 - 1000MHz											
5*	35.698	48.54	PK	17.1	-28	0.5	38.14	40	-1.86	201	Vert
6	42.9721	49.1	PK	11.7	-28	0.6	33.4	40	-6.6	201	Vert
7	212.3372	46.65	PK	10.4	-28.8	1.2	29.45	43.52	-14.07	201	Vert

*AC Adapter noise
PK - Peak detector
QP - Quasi-Peak detector
LnAv - Linear Average detector
LgAv - Log Average detector
Av - Average detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

6 WORST EMISSIONS

Project No:13u14995
Client Name:Qualcomm Atheros
Model/Device:QCA6234/Laptop
Test Volt/Freq:120 V / 60Hz
Test By:T. Wagoner

Line-L1 .15 - 30MHz

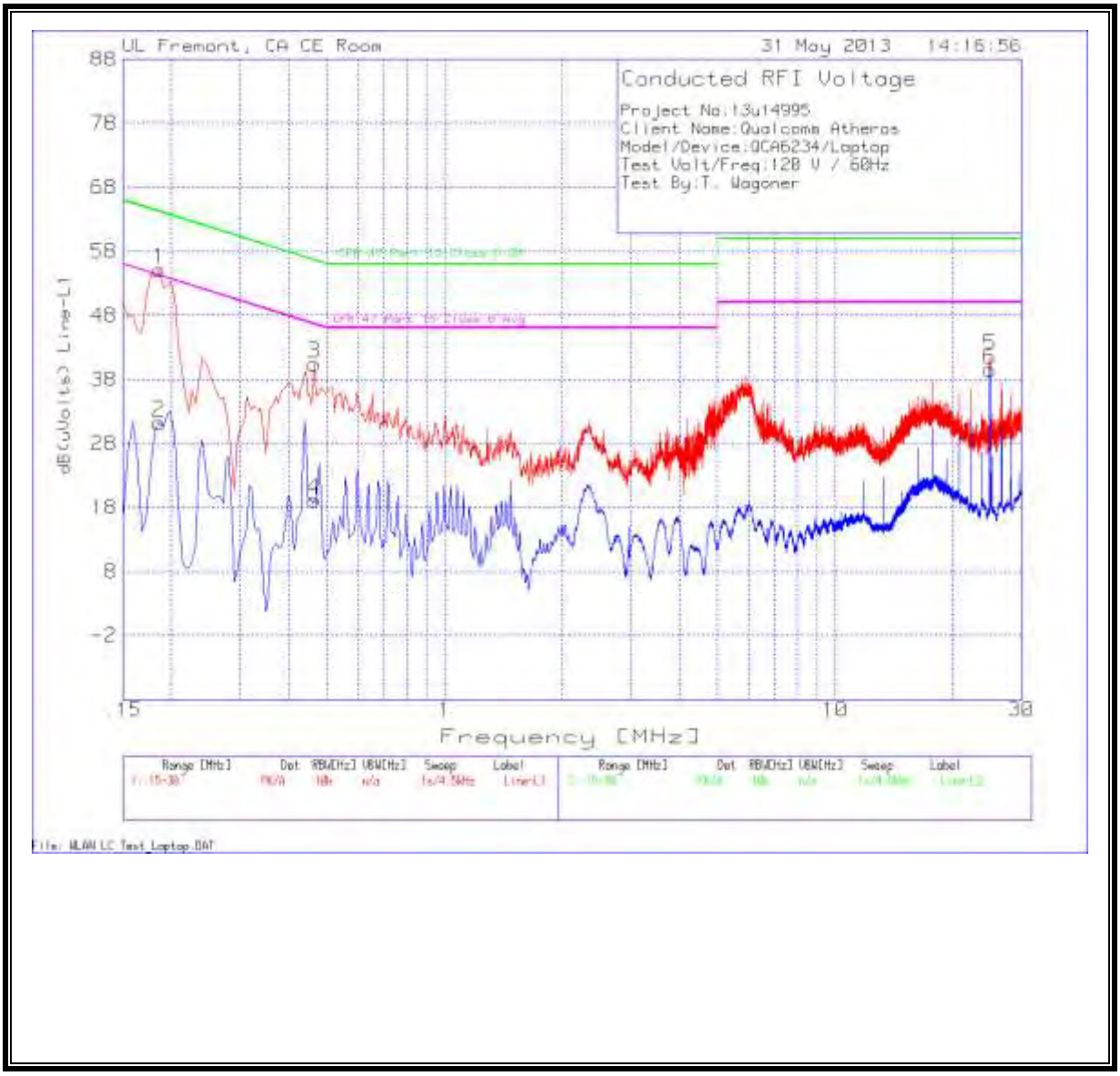
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.186	55.02	PK	0.1	0	55.12	64.2	-9.08	-	-
0.186	31.23	Av	0.1	0	31.33	-	-	54.2	-22.87
0.465	40.34	PK	0.1	0	40.44	56.6	-16.16	-	-
0.465	19.06	Av	0.1	0	19.16	-	-	46.6	-27.44
24.9675	40.83	PK	0.4	0.3	41.53	60	-18.47	-	-
24.9675	38.79	Av	0.4	0.3	39.49	-	-	50	-10.51

Line-L2 .15 - 30MHz

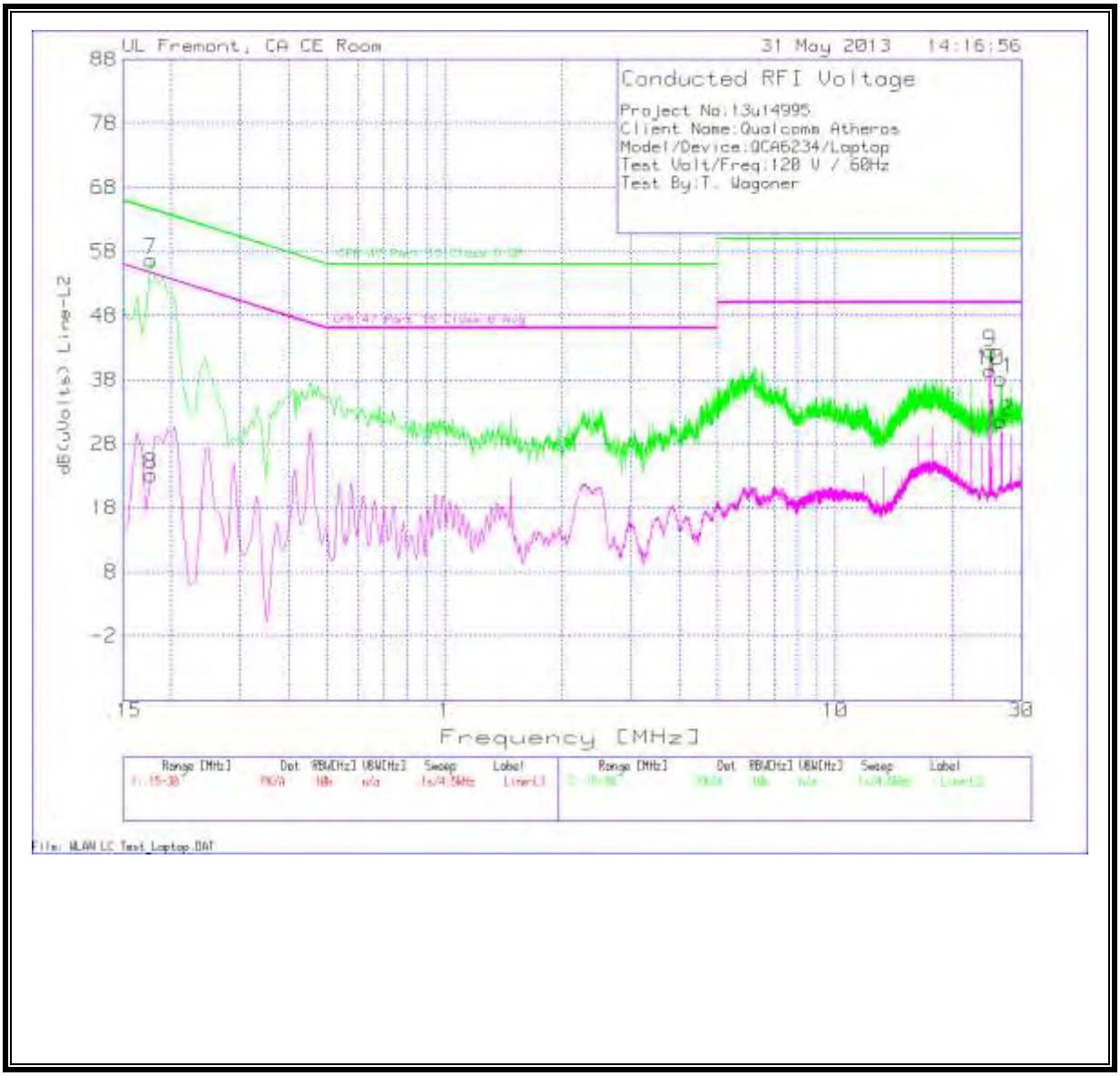
Test Frequency (MHz)	Meter Reading (dBuV)	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.177	56.51	PK	0.1	0	56.61	64.6	-7.99	-	-
0.177	23.09	Av	0.1	0	23.19	-	-	54.6	-31.41
24.936	41.62	PK	0.5	0.3	42.42	60	-17.58	-	-
24.936	38.61	Av	0.5	0.3	39.41	-	-	50	-10.59
26.6595	37.3	PK	0.5	0.3	38.1	60	-21.9	-	-
26.6595	30.71	Av	0.5	0.3	31.51	-	-	50	-18.49

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS



LINE 2 RESULTS

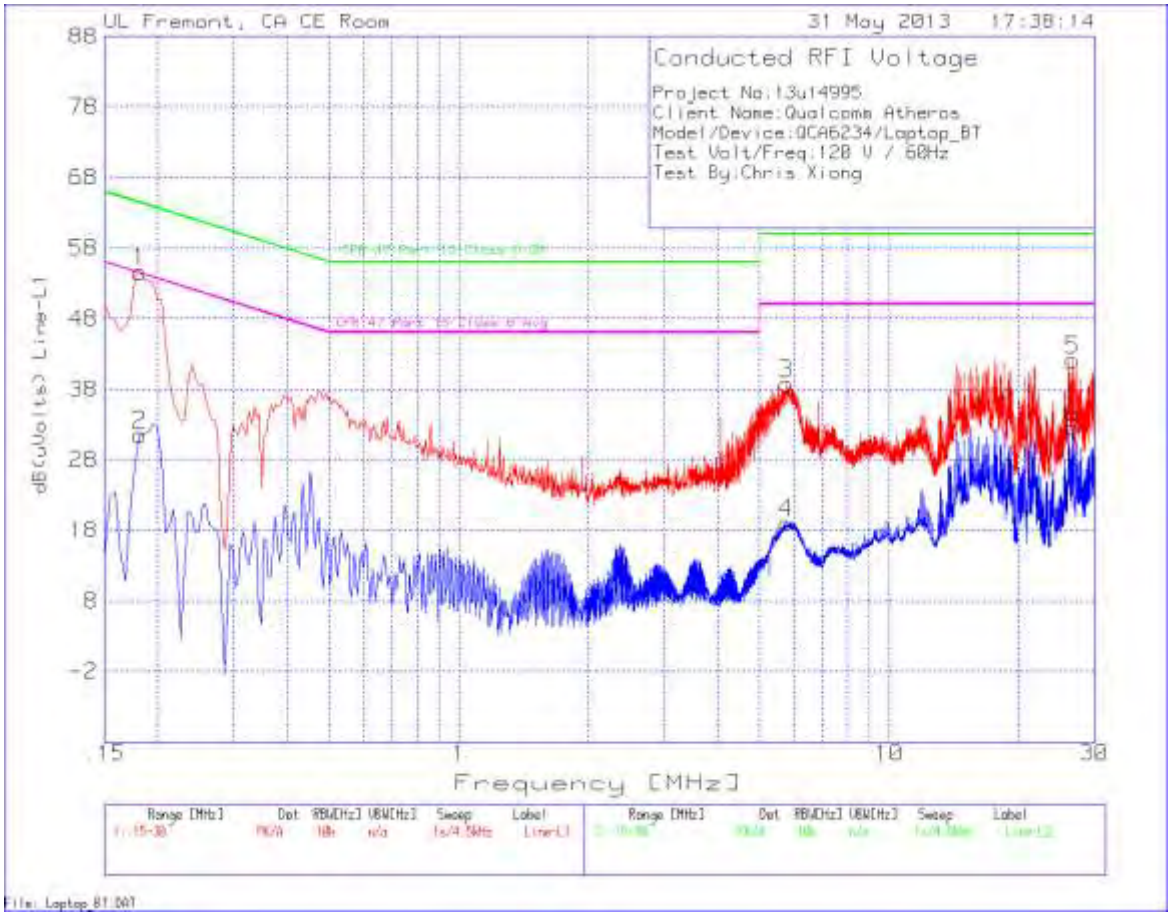


6 WORST EMISSIONS

Laptop with EUT connected

Project No:		13U14995							
Client Name:		Qualcomm Atheros							
Model/Device:		QCA6234							
Test Volt/Freq:		120VAC/60Hz							
Test By:		Chris Xiong							
Mode:		Blutooth Worst Case, Laptop with USB cable to Bluetooth adapter board							
Line-L1 .15 - 30MHz									
Test Frequency MHz	Meter Reading dBuv	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.1815	54.54	PK	0.1	0	54.64	64.4	-9.76	-	-
0.1815	31.46	Av	0.1	0	31.56	-	-	54.4	-22.84
5.775	38.51	PK	0.1	0.1	38.71	60	-21.29	-	-
5.775	18.79	Av	0.1	0.1	18.99	-	-	50	-31.01
26.7855	41.31	PK	0.5	0.3	42.11	60	-17.89	-	-
26.7855	31.74	Av	0.5	0.3	32.54	-	-	50	-17.46
Line-L2 .15 - 30MHz									
Test Frequency MHz	Meter Reading dBuv	Detector	T24 IL L2.TXT (dB)	LC Cables 2&3.TXT (dB)	dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.1815	53.36	PK	0.1	0	53.46	64.4	-10.94	-	-
0.1815	27.58	Av	0.1	0	27.68	-	-	54.4	-26.72
0.4515	38.5	PK	0.1	0	38.6	56.8	-18.2	-	-
0.4515	26.26	Av	0.1	0	26.36	-	-	46.8	-20.44
6.108	39.44	PK	0.1	0.1	39.64	60	-20.36	-	-
6.108	20.19	Av	0.1	0.1	20.39	-	-	50	-29.61
PK - Peak detector									
QP - Quasi-Peak detector									
Av - Average detector									

LINE 1 RESULTS



LINE 2 RESULTS