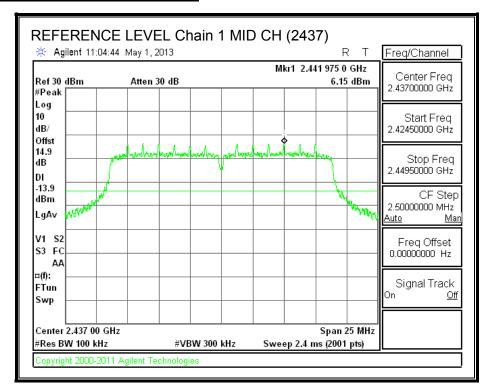
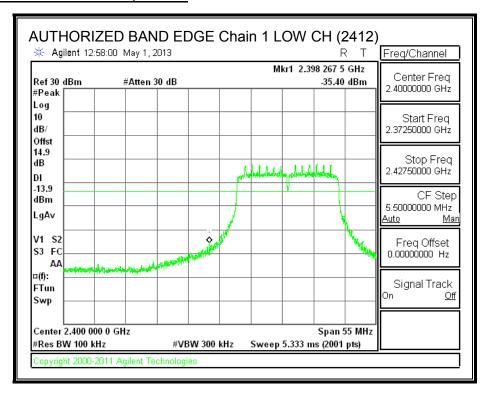


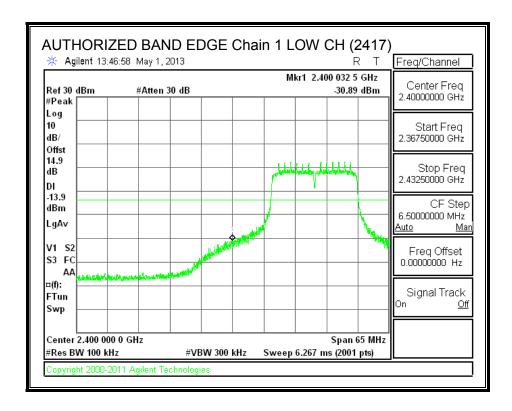
FAX: (510) 661-0888

IN-BAND REFERENCE LEVEL, Chain 1

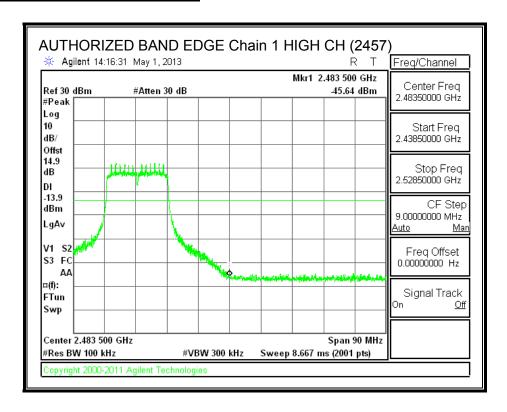


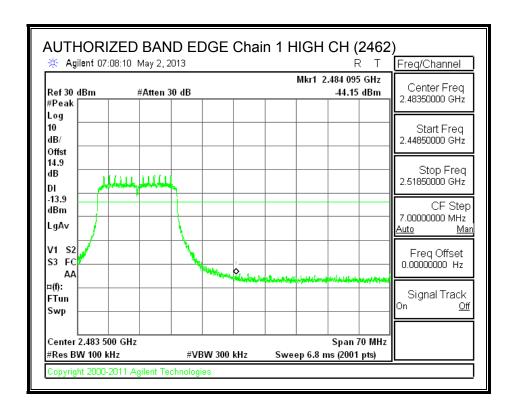
LOW CHANNEL BANDEDGE, Chain 1

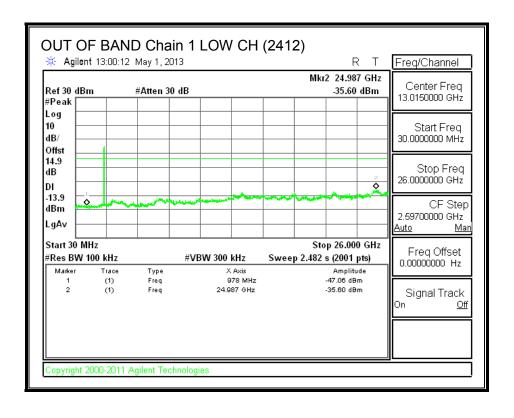


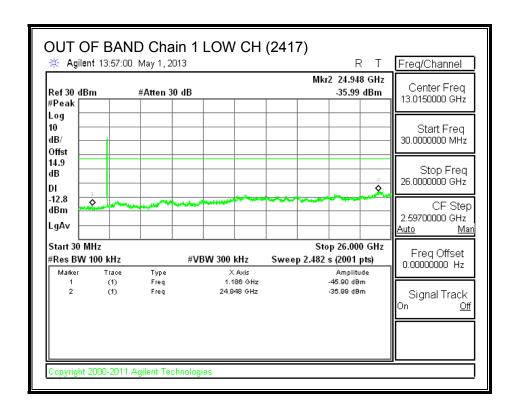


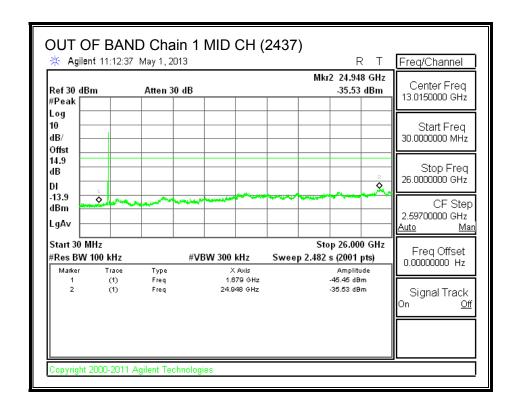
HIGH CHANNEL BANDEDGE, Chain 1

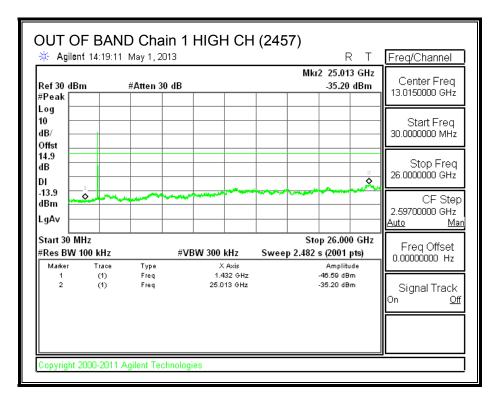


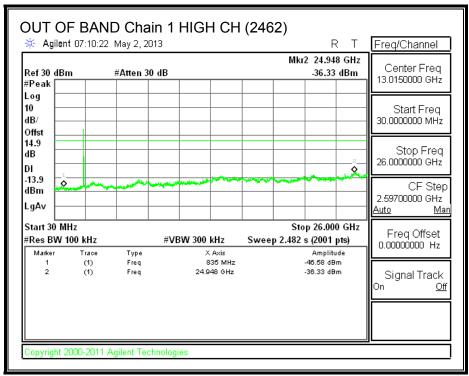






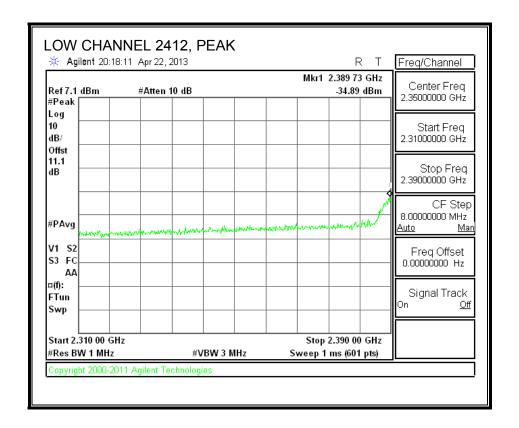


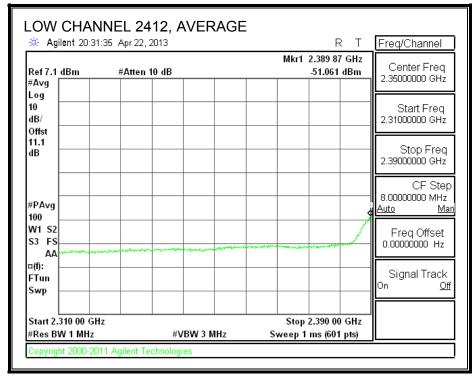


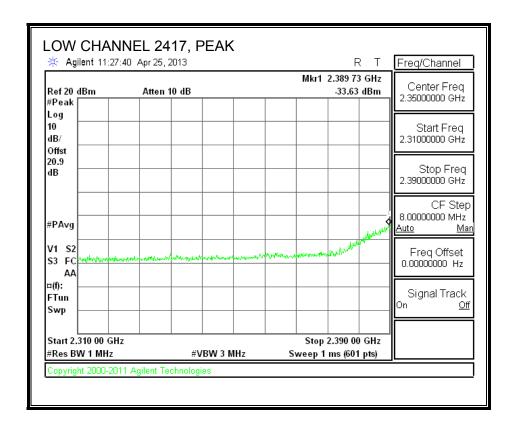


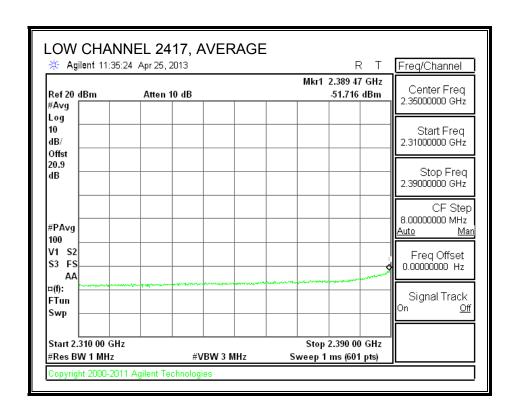
8.3.7. CONDUCTED BE AND SPURIOUS IN RESTRICTED BANDS (no filter unit)

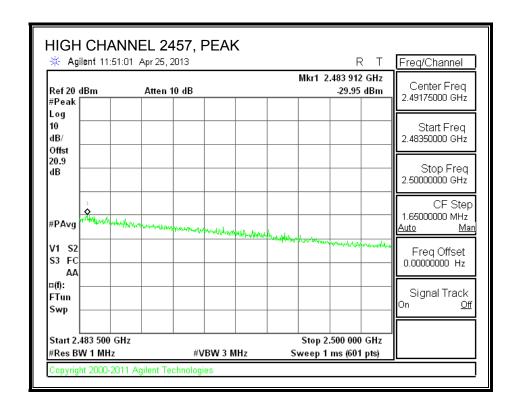
RESTRICTED BANDEDGE Chain 0

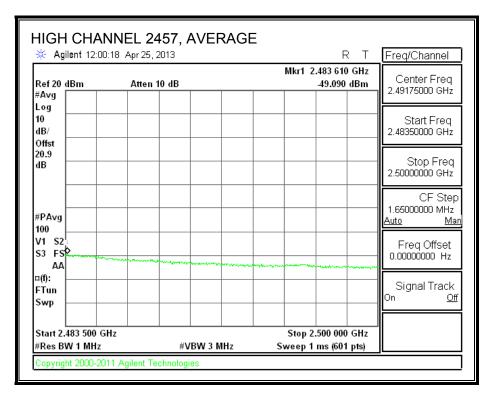


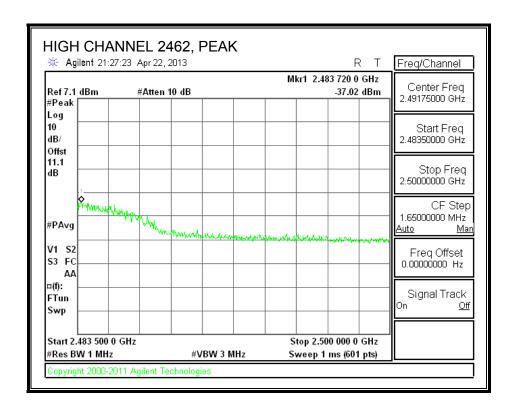


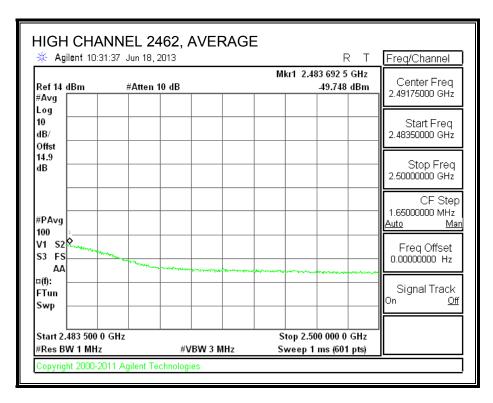


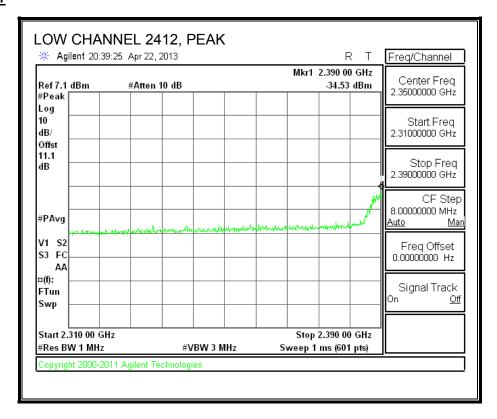


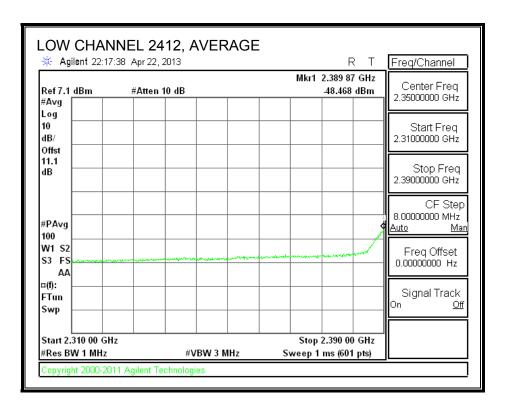


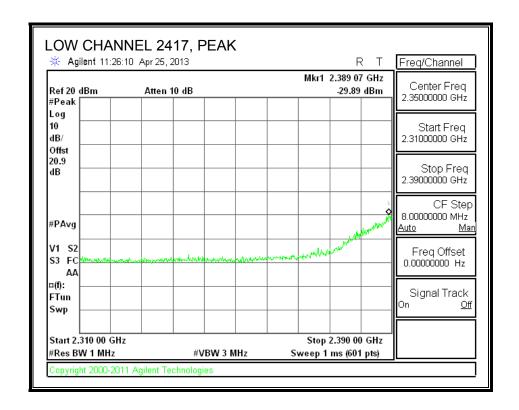


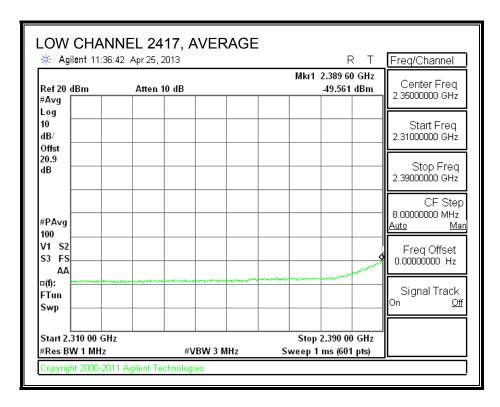


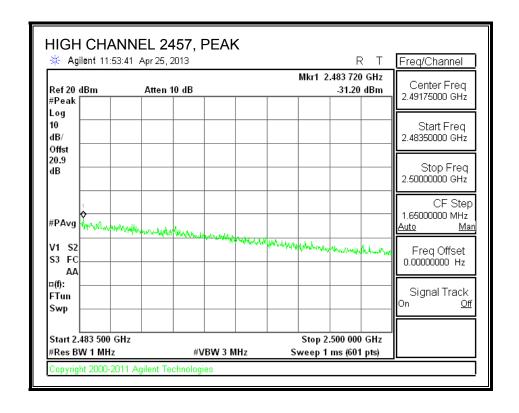


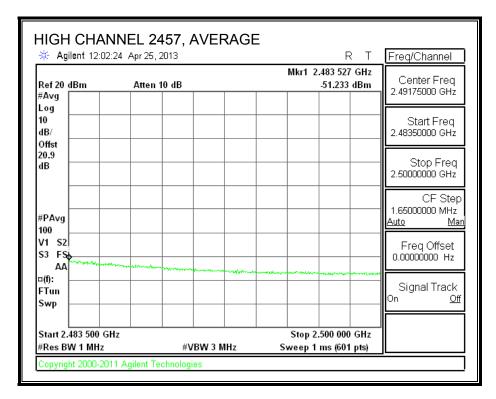


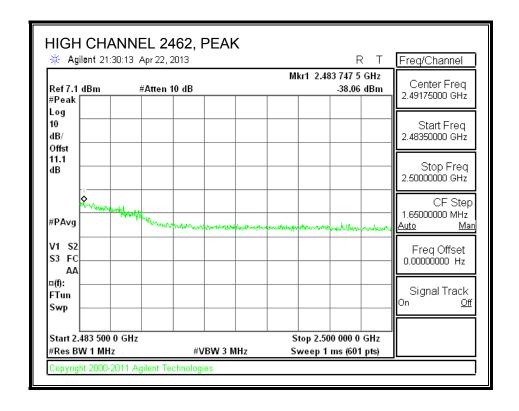


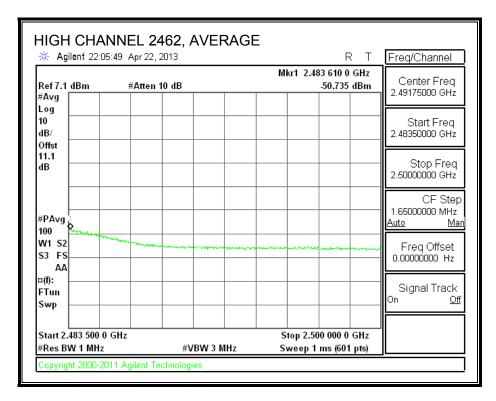




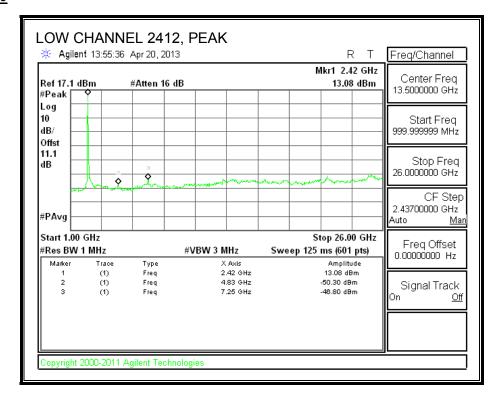


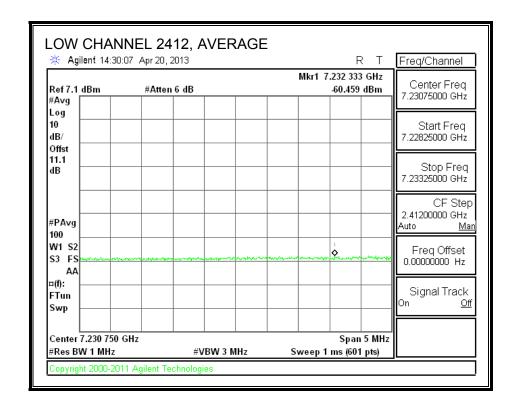


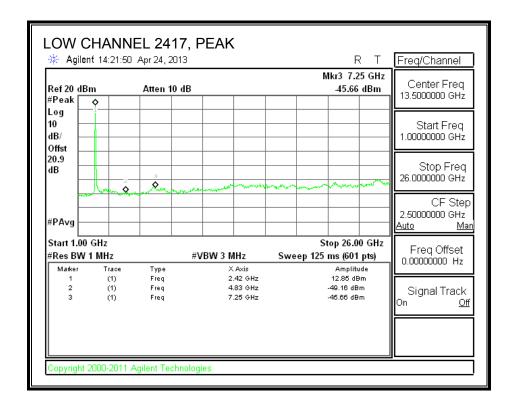


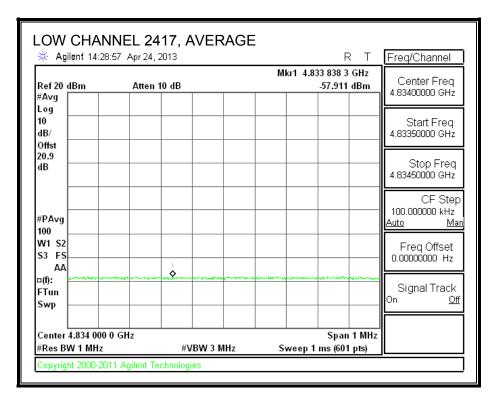


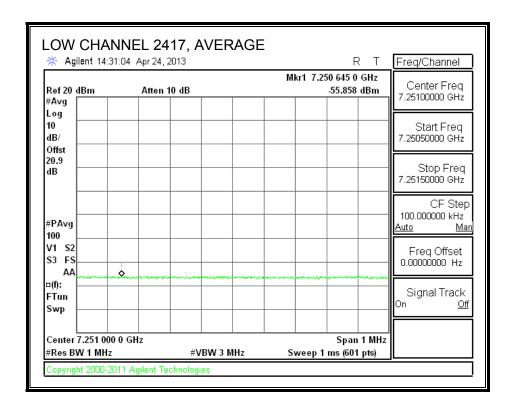
HARMONICS AND SPURIOUS

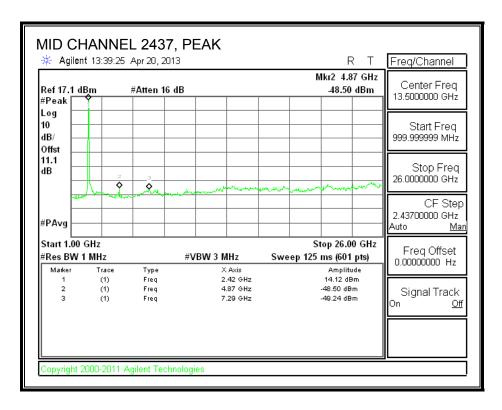


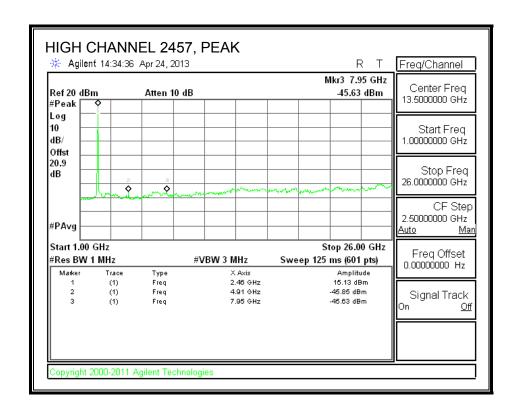


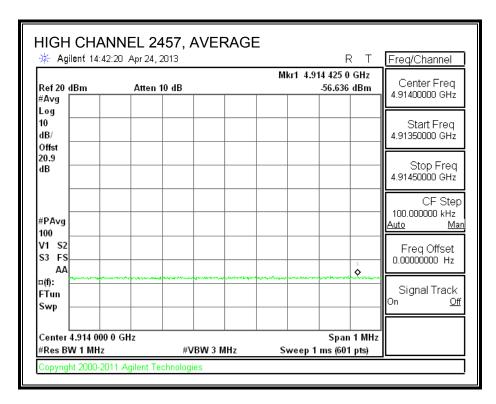


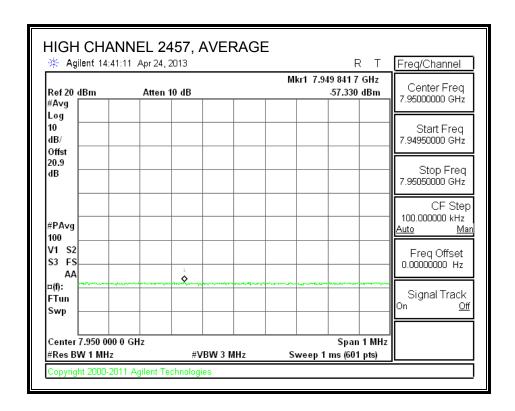


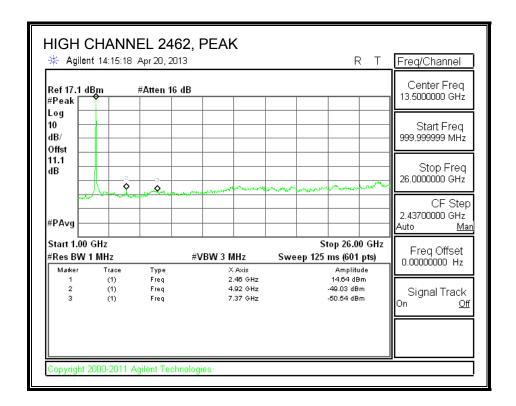


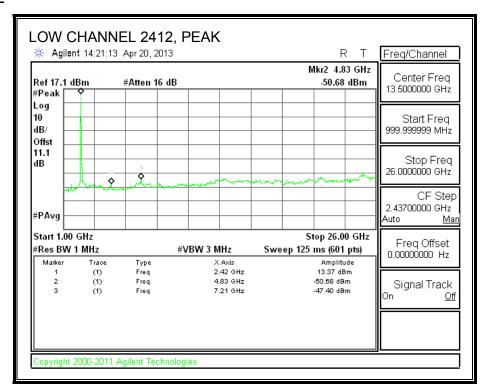


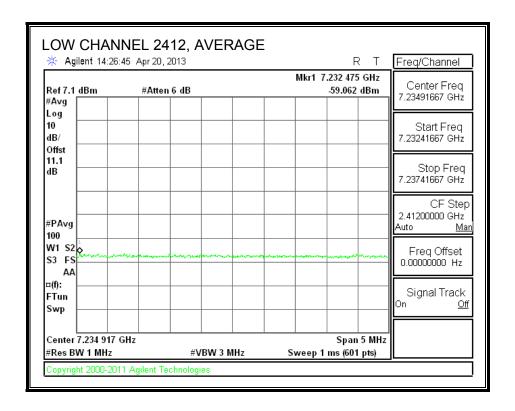


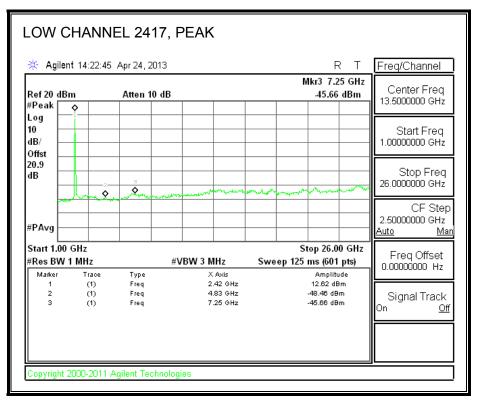


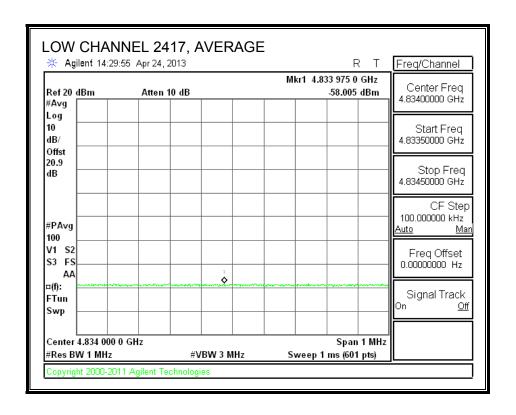


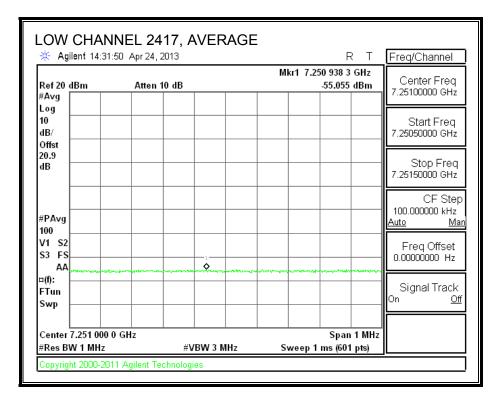


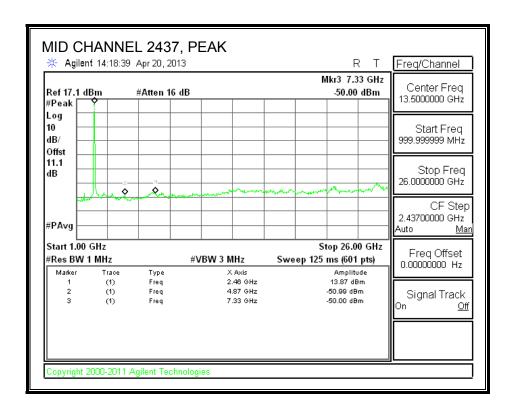


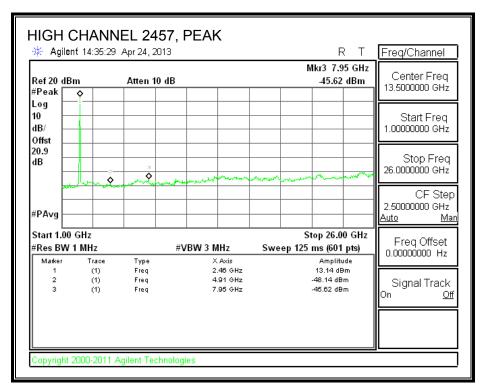


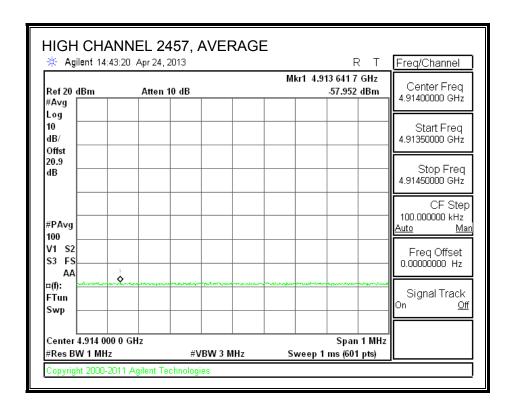


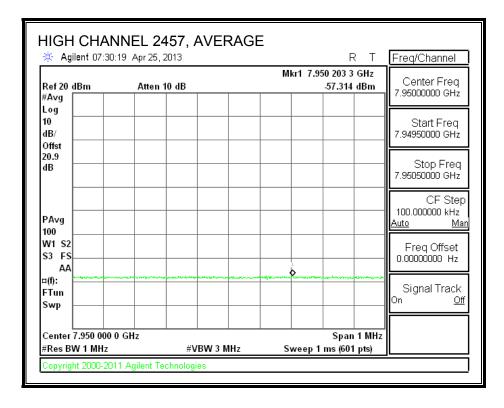


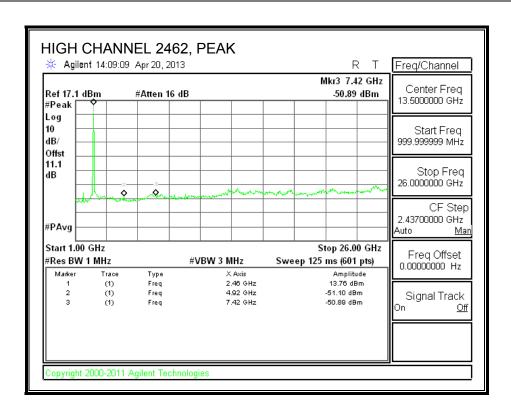












FAX: (510) 661-0888

BANDEDGE DATA

Date:		4/25/2013								
Test Engine		Oliver Su / T. Wa	/agoner							
Client:		Qualcomm Atheros								
Project Number:		13U14995								
Configurati	on:	Tx								
Mode of op	eration:	11n HT20 2.4GH	11n HT20 2.4GHz		Note: if the PK margin is greater than 20 dB, there is no need to get AVG read					
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	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

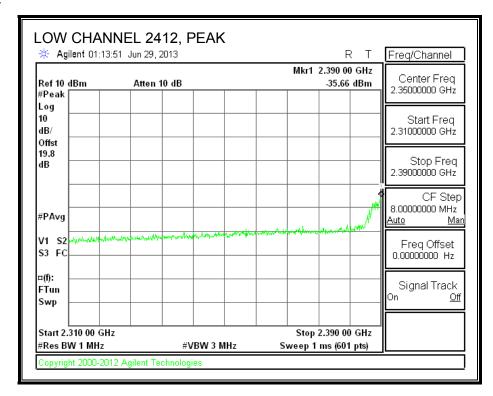
					\perp				
Date:		4/24/2013							
Test Engineer:		Oliver Su / T. Wagoner							
Client: Project Number: Configuration:		Qualcomm							
		13U14995							
		Tx							
Mode of op	eration:	11n HT20 2.4GHz	Note: if the PK margin is greater than 20 dB, there is no need to get AVG re						
Channel	Frequency (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

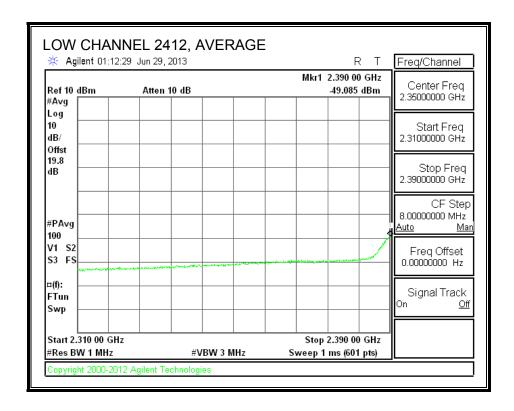
Note: Duty Cycle Correction Factor added. DCCF = 0.136 dB

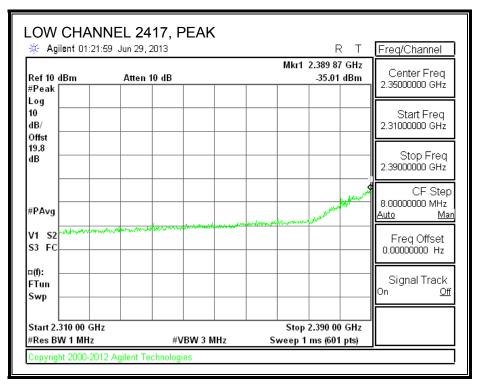
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 66 This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

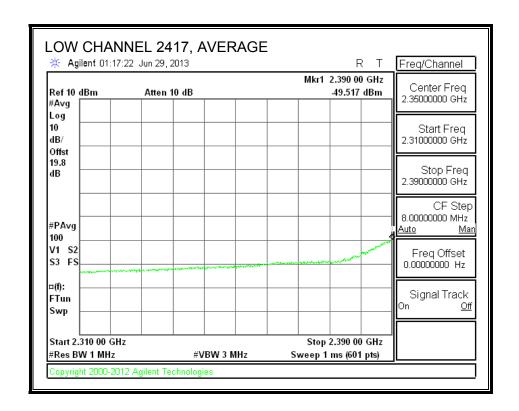
8.3.8. CONDUCTED BE AND SPURIOUS IN RESTRICTED BANDS (3G filter unit)

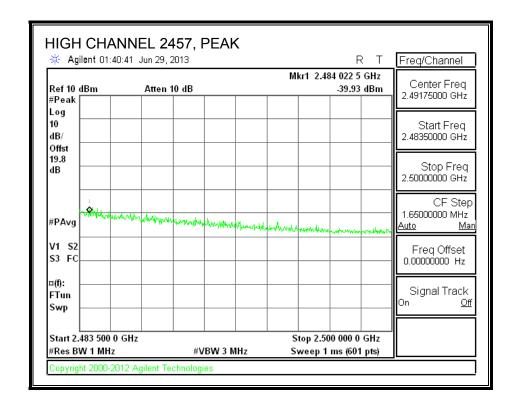
RESTRICTED BANDEDGE Chain 0

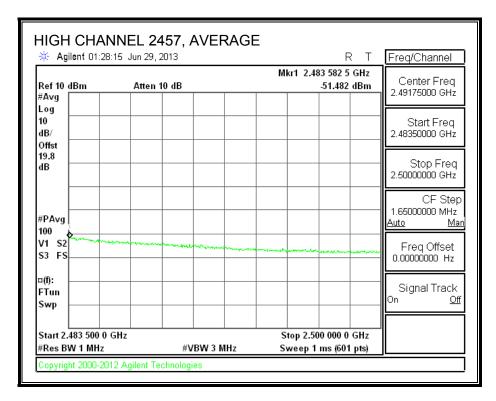


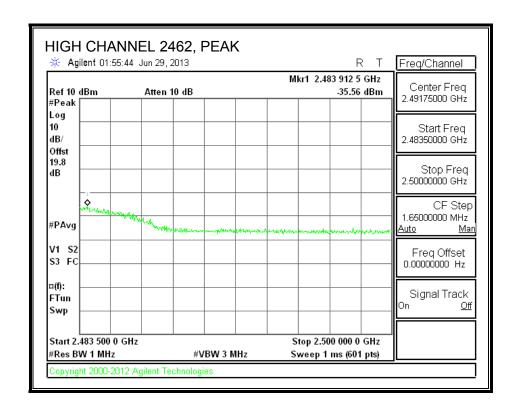


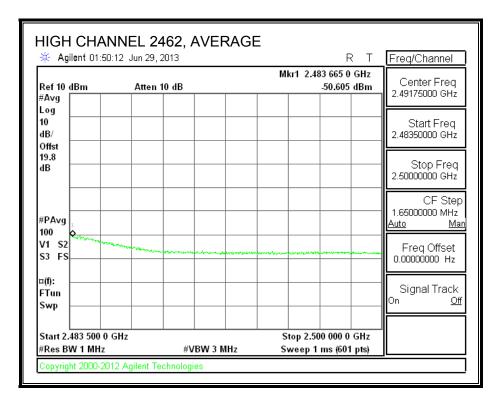


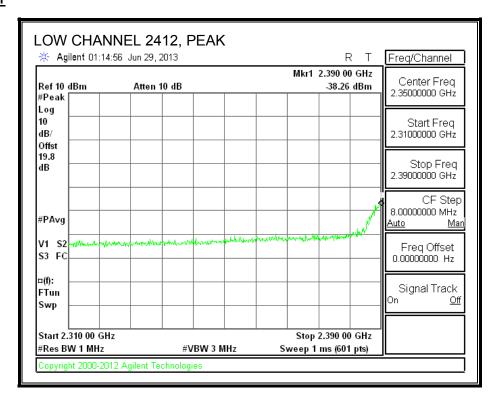


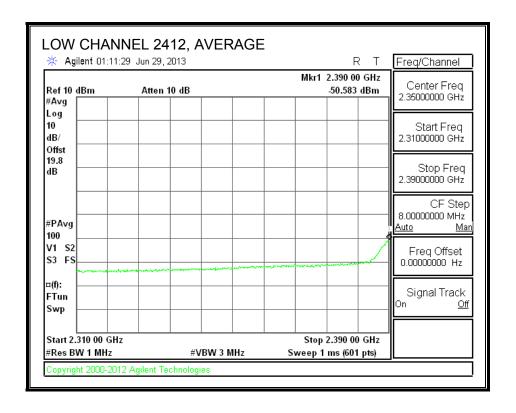


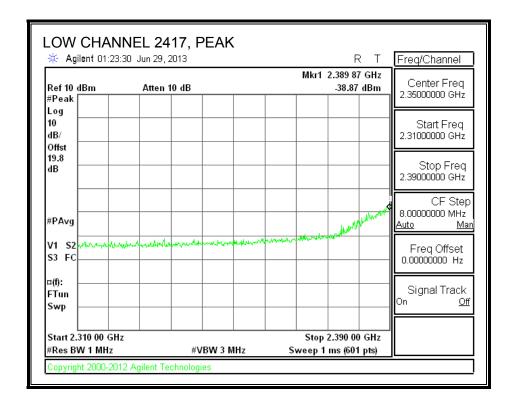


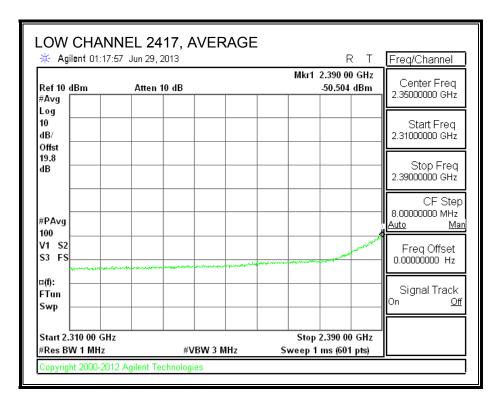


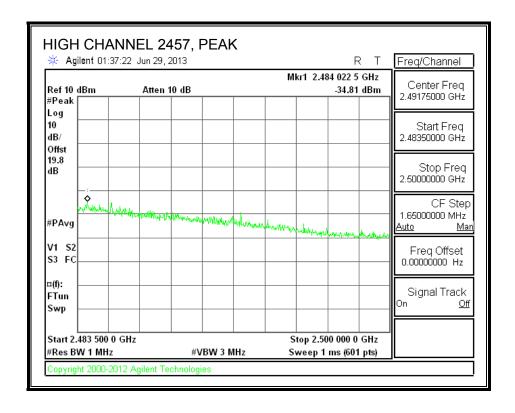


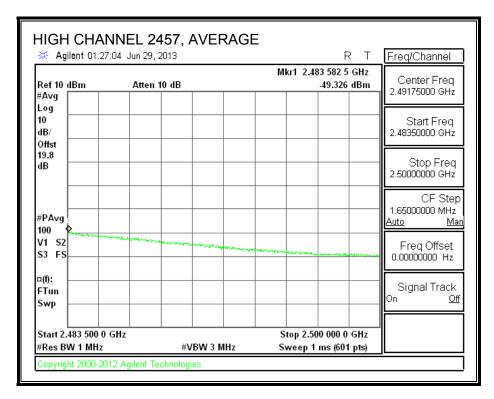


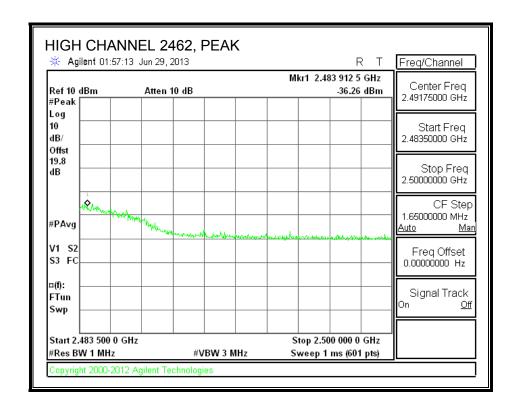


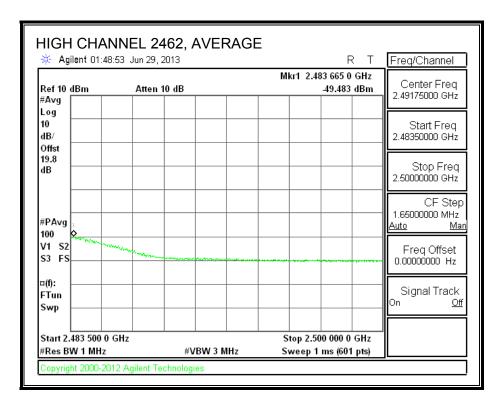












REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

BANDEDGE DATA

2TX Conduc	ted BE for FO	CC DTS (in the res	tricted bands)							
Date:		6/29/2013								
Test Engine	or	Chris Xiong								
Client:	ei.	Qualcomm Athe	roc							
Project Nu	nhori	13U14995	103							
		TX								
Configurati		11n HT20		Nata . : £ th	a DV		- 20 dD +b-	!	d to set 0)/C seed	i
Mode of op	eration:	11n H120		Note: if the PK margin is greater than 20 dB, there is no need to get AVG reading.					ing.	
Channel	Frequency	PSA PK Reading	PSA PK Reading	AG/Chain	PK EIRP	PK E-field	PK E-field	Software	AVG Power	AVG Power
	(GHz)	Chain 0 (dBm)	Chain 1 (dBm)	(dBi)	(dBm)	Limit	Margin	Setting	Meter Reading	Meter Reading
	,	,	,	,	,	(dBm)	(dB)	(dBm)	Chain 0 (dBm)	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	PSA AVG	PSA AVG	AG/Chain	AVG EIRP	AVG E-field	AVG E-field	Software	AVG Power	AVG Power
	(MHz)	Reading	Reading	(dBi)	(dBm)	Limit	Margin	Setting	Meter Reading -	Meter Reading
		Chain 0 (dBm)	Chain 1 (dBm)			(dBm)	(dB)	(dBm)	Chain 0 (dBm)	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

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

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.4. 802.11a **MODE IN THE 5.8 GHz BAND**

8.4.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

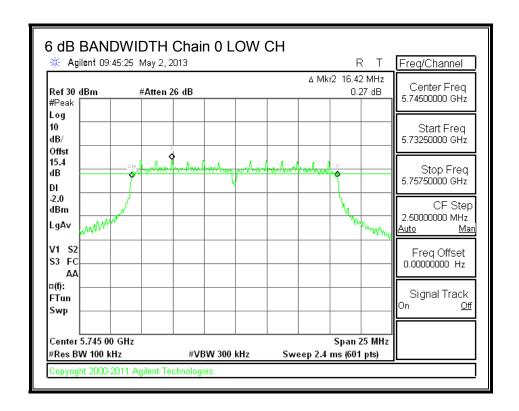
IC RSS-210 A8.2 (a)

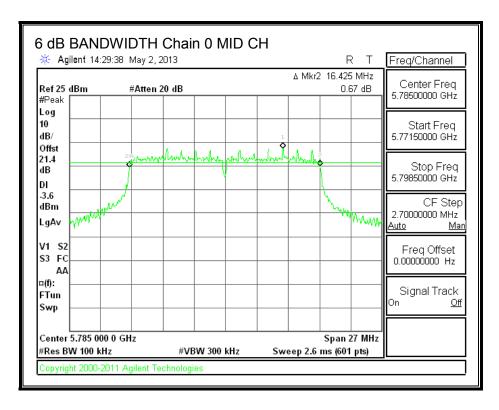
The minimum 6 dB bandwidth shall be at least 500 kHz.

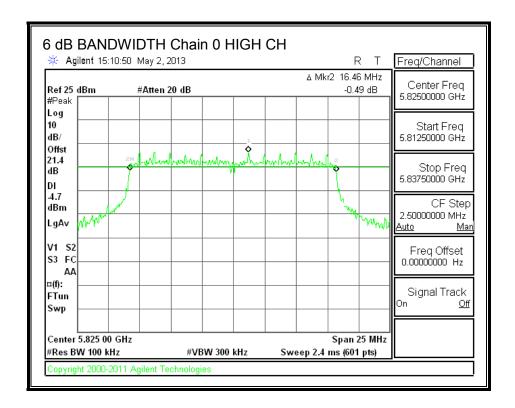
RESULTS

Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(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

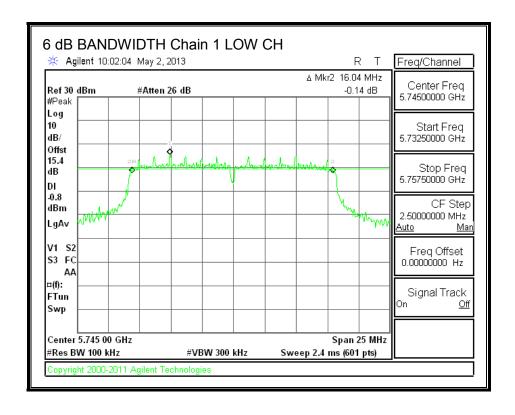
6 dB BANDWIDTH, Chain 0

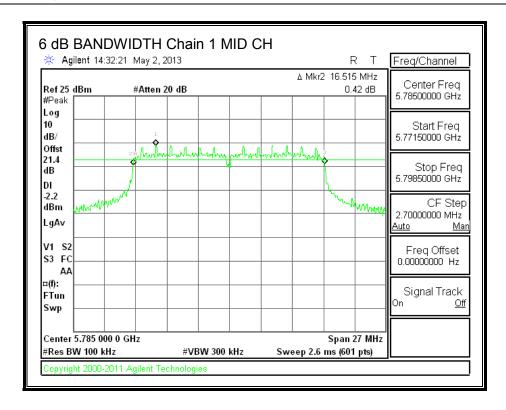


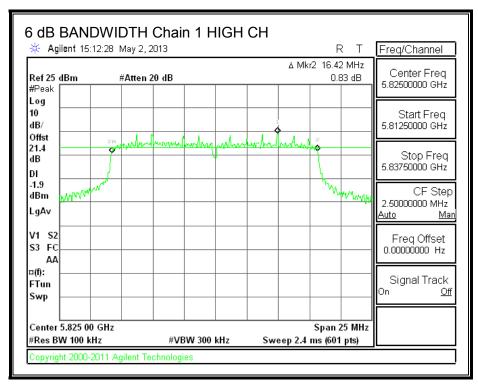




6 dB BANDWIDTH, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.4.2. 99% BANDWIDTH

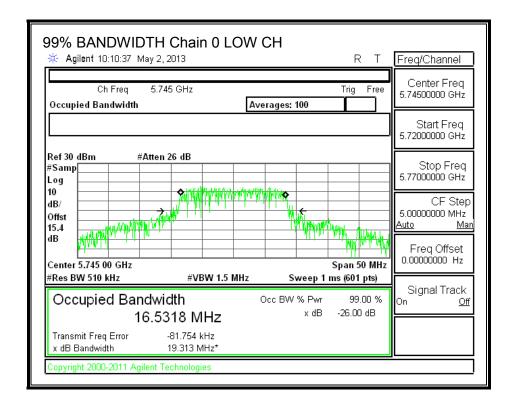
LIMITS

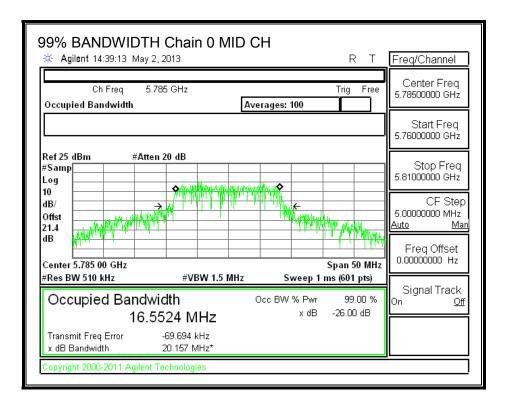
None; for reporting purposes only.

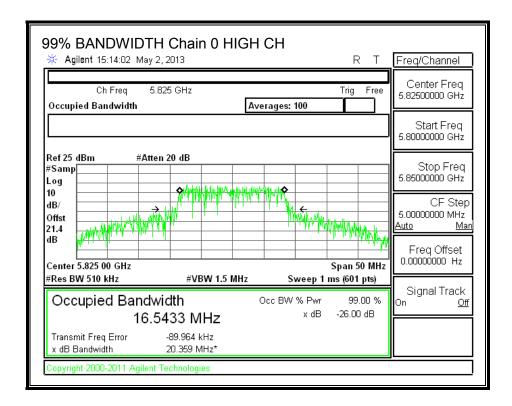
RESULTS

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

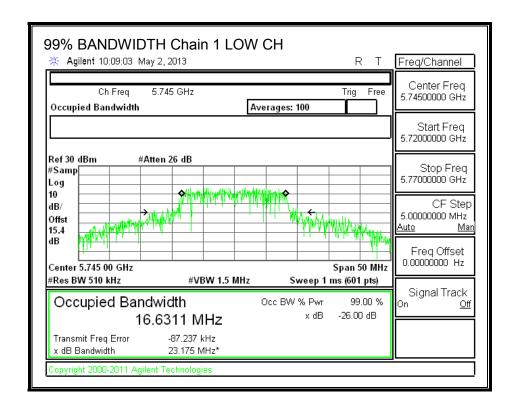
99% BANDWIDTH, Chain 0

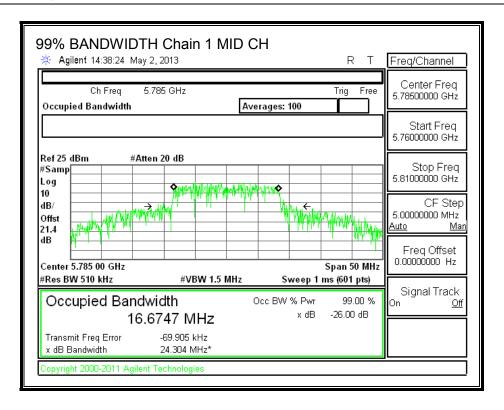


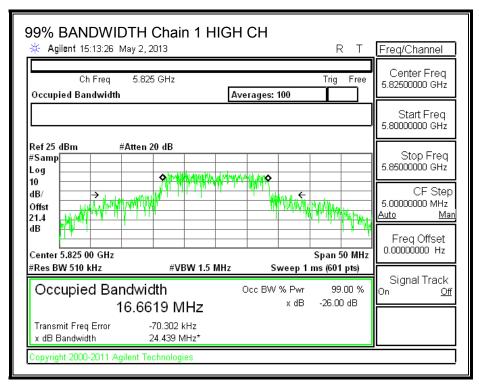




99% BANDWIDTH, Chain 1







REPORT NO: 13U14995-1 **DATE: JULY 1, 2013** FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(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

REPORT NO: 13U14995-1 FCC ID: PPD-QCA6234

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

DATE: JULY 1, 2013

IC: 4104A-QCA6234

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

RESULTS

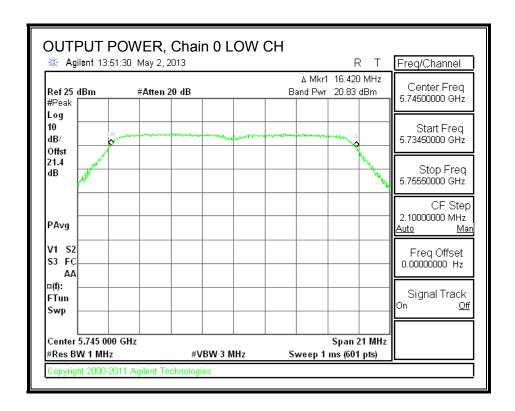
Limits

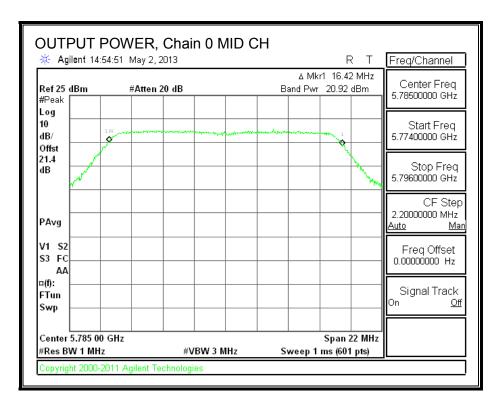
Channel	Frequency	Directional	FCC	IC	IC	Max
		Gain	Power	Power	EIRP	Power
			Limit	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5745	2.00	30.00	30	36	30.00
Mid	5785	2.00	30.00	30	36	30.00
High	5825	2.00	30.00	30	36	30.00

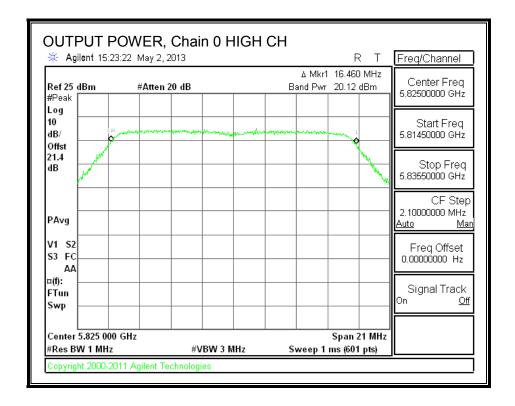
Results

Channel	Frequency	Chain 0	Chain 1	Total	Power	Margi
		Meas	Meas	Corr'd	Limit	
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(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

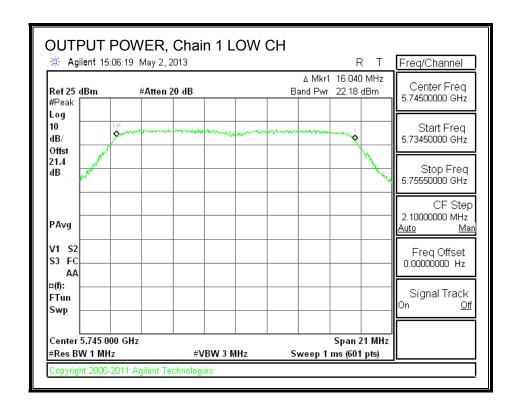
OUTPUT POWER, Chain 0

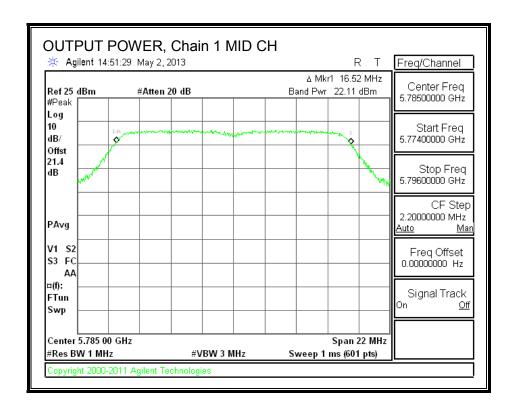


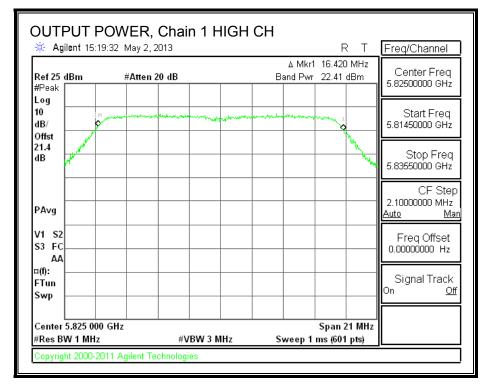




OUTPUT POWER, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.4.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

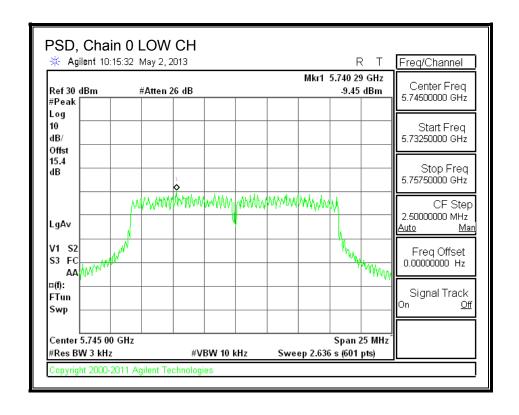
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

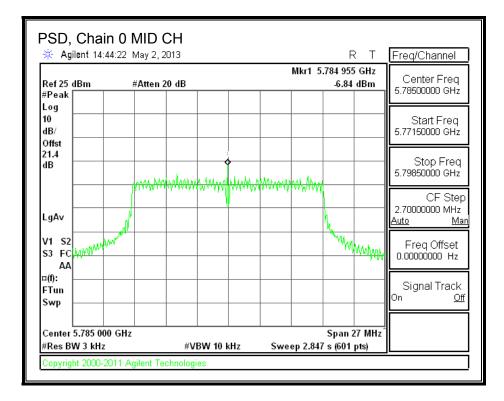
RESULTS

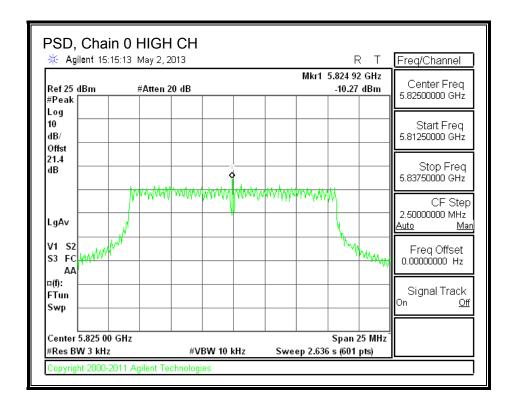
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Meas	Meas	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(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

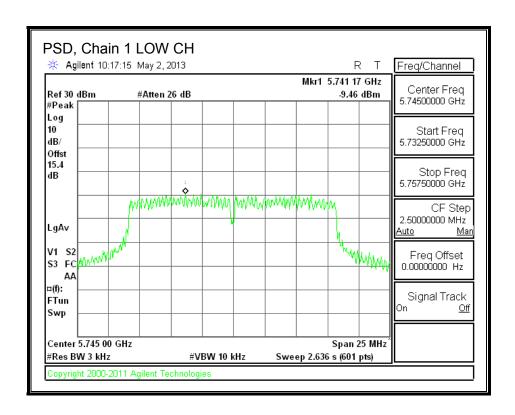
PSD, Chain 0

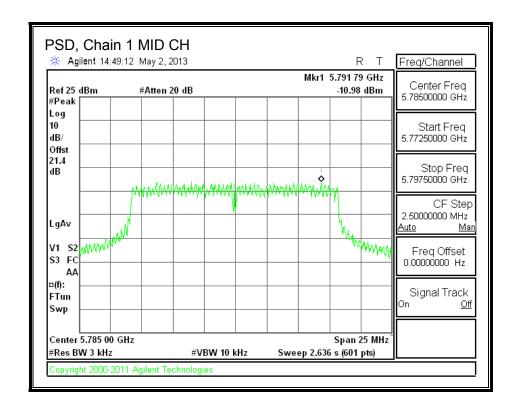


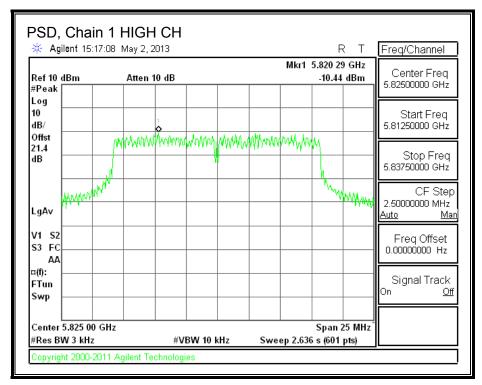




PSD, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.4.6. OUT-OF-BAND EMISSIONS

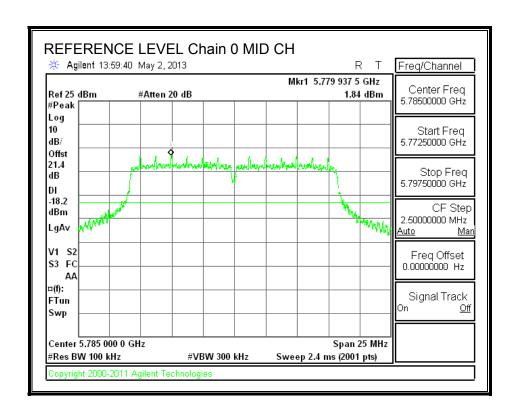
LIMITS

FCC §15.247 (d)

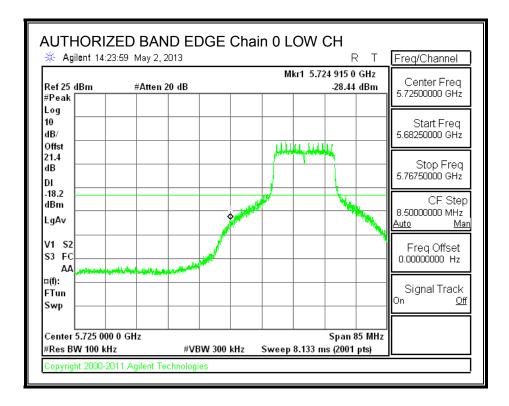
IC RSS-210 A8.5

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.

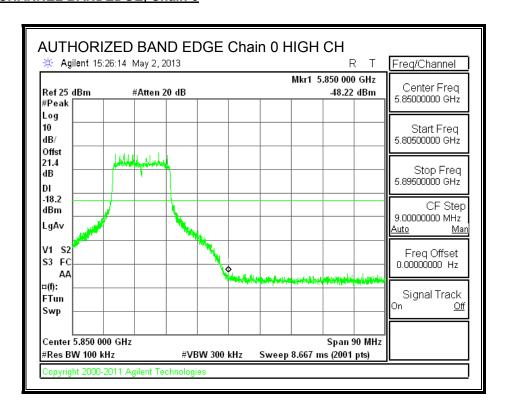
IN-BAND REFERENCE LEVEL, Chain 0



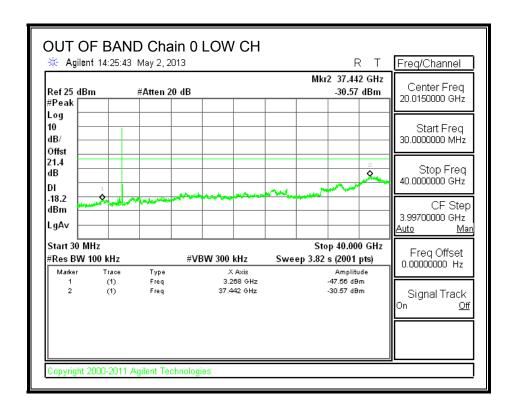
LOW CHANNEL BANDEDGE, Chain 0

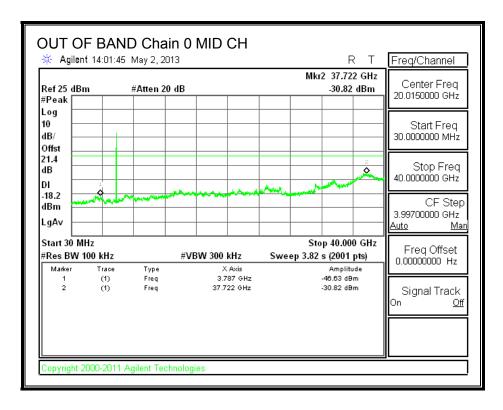


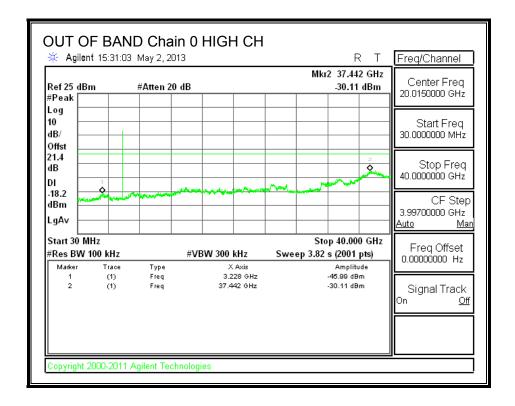
HIGH CHANNEL BANDEDGE, Chain 0



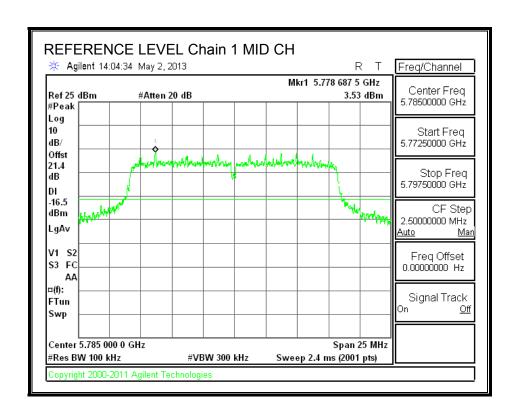
OUT-OF-BAND EMISSIONS, Chain 0



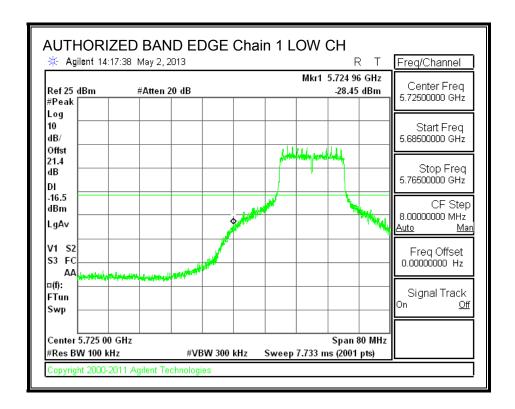




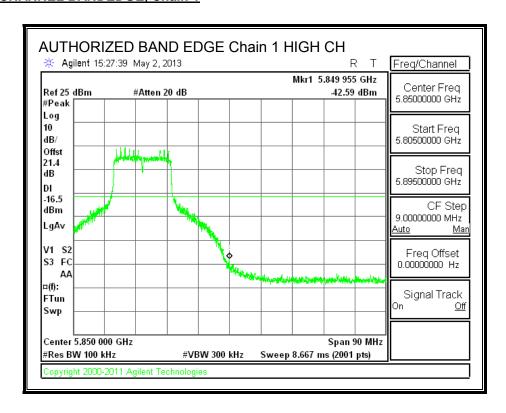
IN-BAND REFERENCE LEVEL, Chain 1



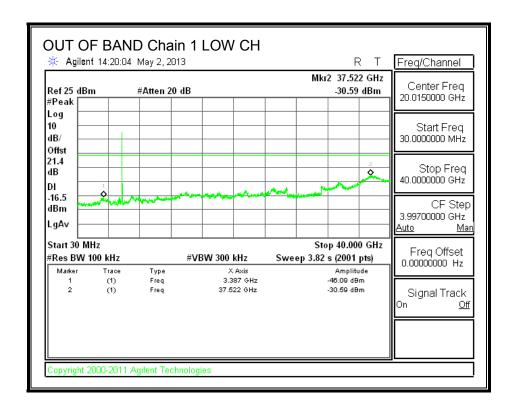
LOW CHANNEL BANDEDGE, Chain 1

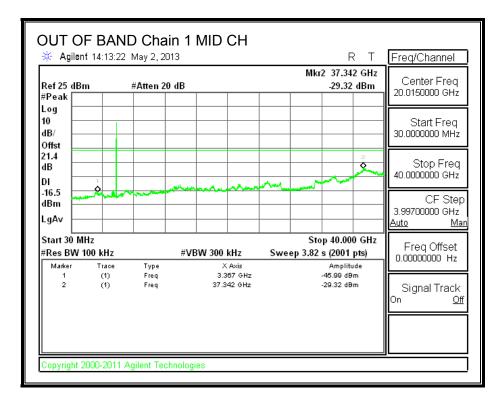


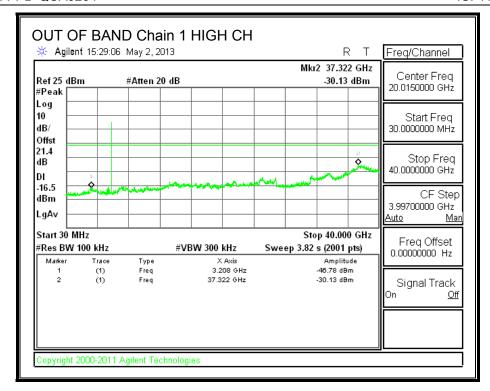
HIGH CHANNEL BANDEDGE, Chain 1



OUT-OF-BAND EMISSIONS, Chain 1



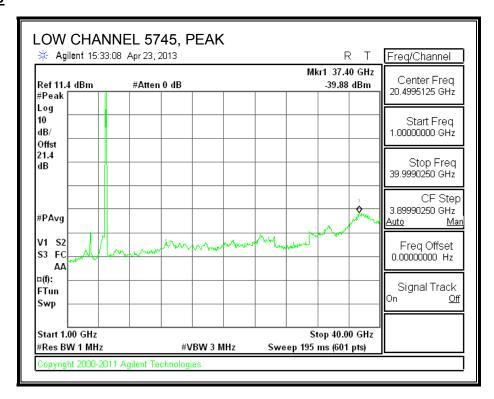


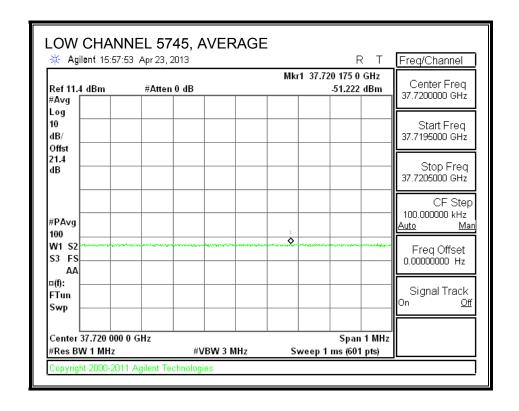


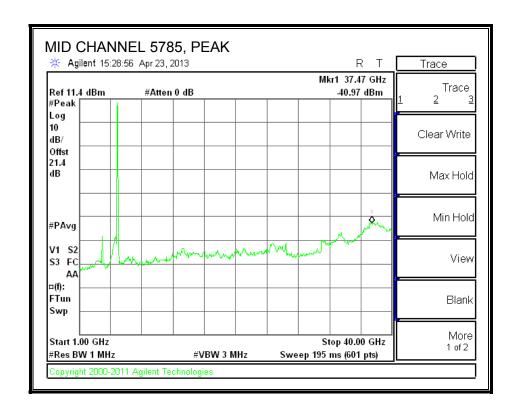
8.4.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter unit)

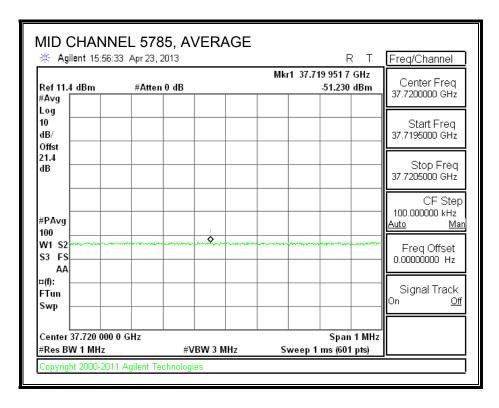
HARMONICS AND SPURIOUS

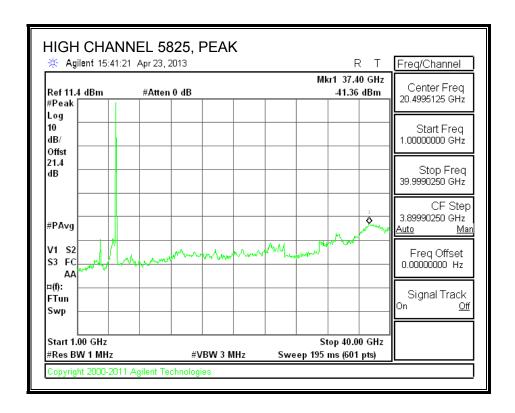
Chain 0

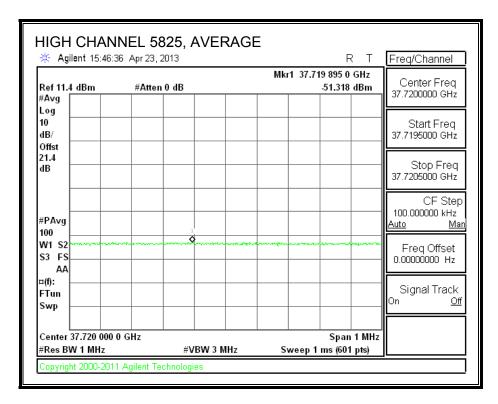




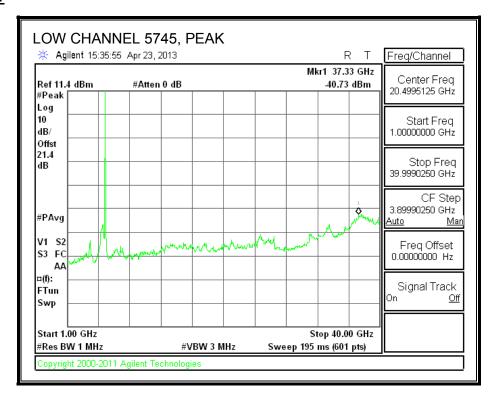


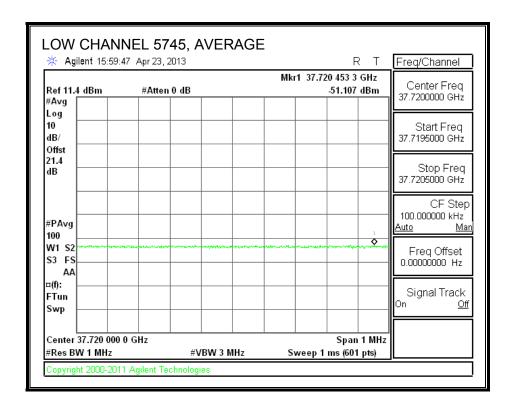


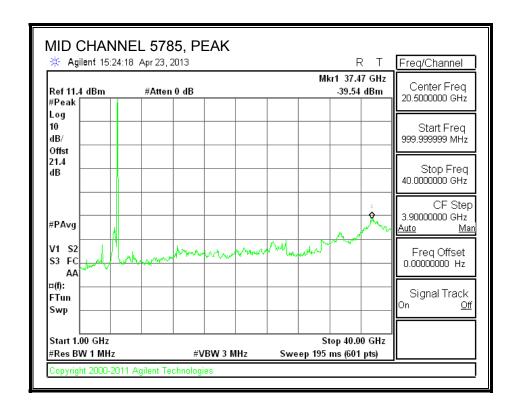


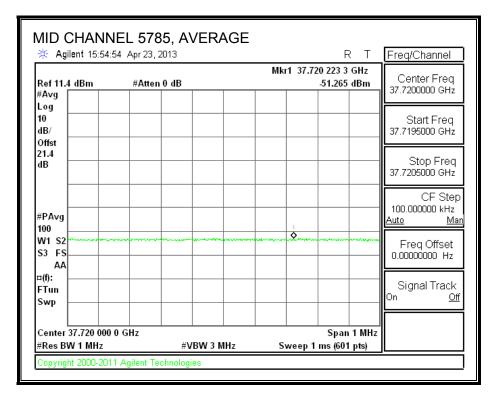


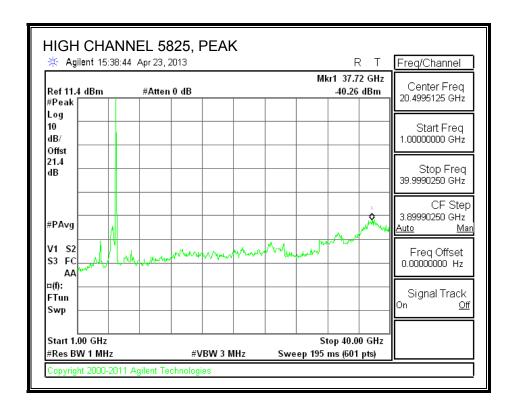
Chain 1

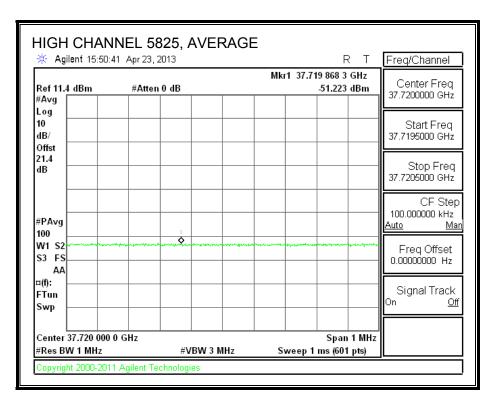












REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

HARMONIC SPURIOUS DATA

D-4		4/22/2012							
Date:		4/23/2013	•						
Test Engine	er:	T. Wagoner / O.							
Client:		Qualcomm Athe	ros						
Project Nur		13u14995							
Configurati	on:	5.8GHz 11a							
Mode of operation: Tx Note: if the PK margin is greater than 20 dB, there is no need to get AVG read									
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	PK E-field Margin	Software Setting	AVG Power Meter Reading
	(IVIIIZ)	Chain o (ubin)	Cilaili I (ubili)	(ubi)	(ubiii)	(dBm)	(dB)	Setting	(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	PSA AVG	PSA AVG	AG/Chain	AVG EIRP	AVG E-field	AVG E-field	Software	AVG Power
	(MHz)	Reading Chain 0 (dBm)	Reading Chain 1 (dBm)	(dBi)	(dBm)	Limit (dBm)	Margin (dB)	Setting	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

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.5. 802.11n HT20 MODE IN THE 5.8 GHz BAND

8.5.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

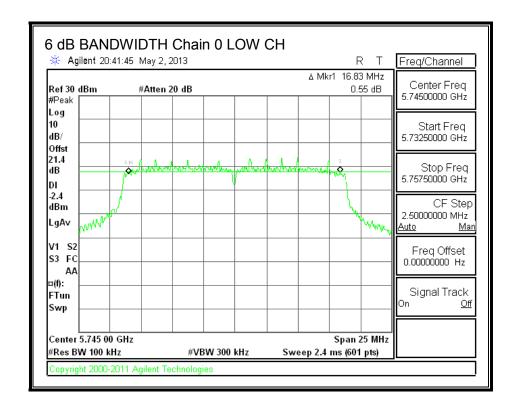
IC RSS-210 A8.2 (a)

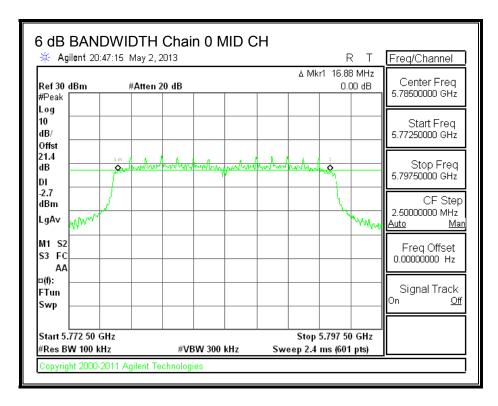
The minimum 6 dB bandwidth shall be at least 500 kHz.

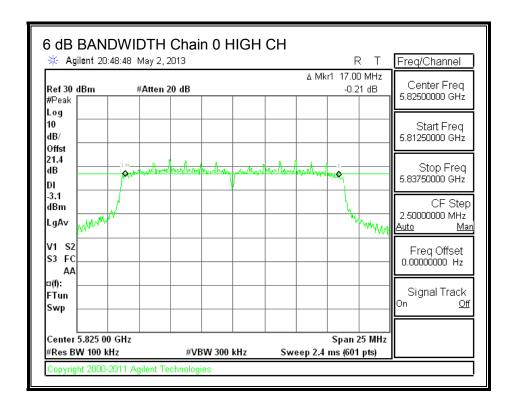
RESULTS

Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(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

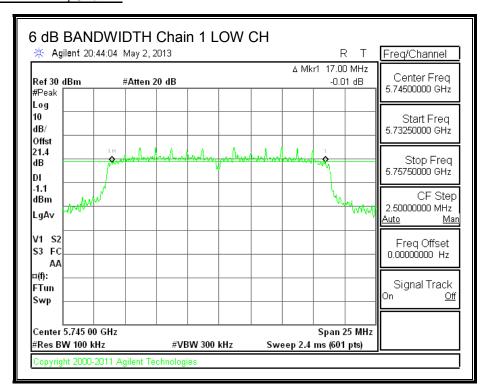
6 dB BANDWIDTH, Chain 0

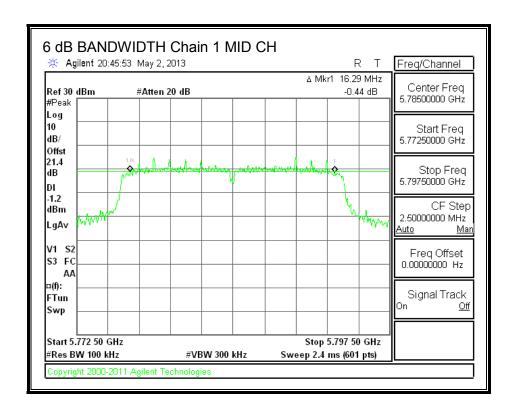


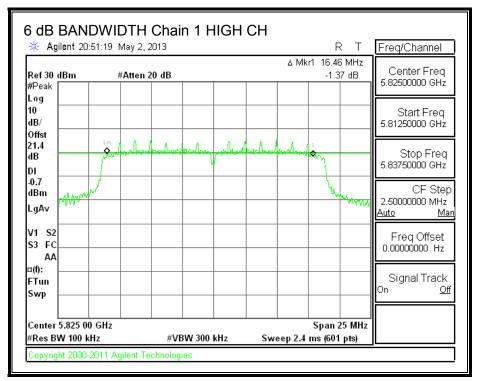




6 dB BANDWIDTH, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.5.2. 99% BANDWIDTH

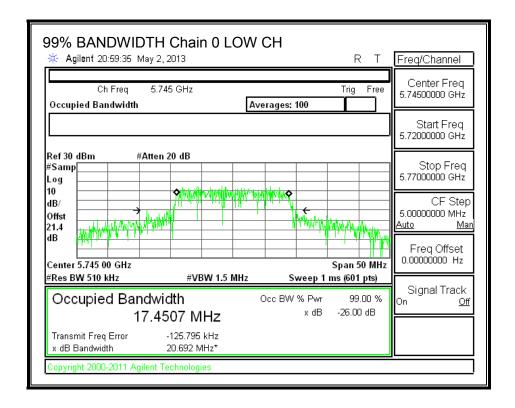
LIMITS

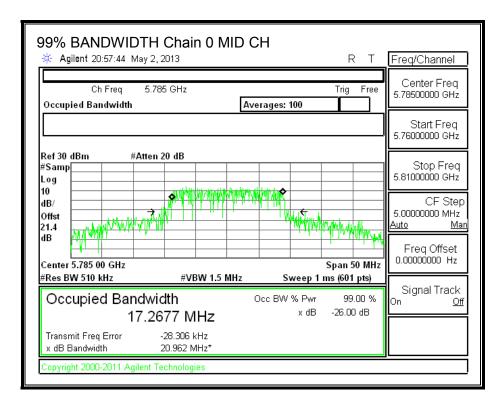
None; for reporting purposes only.

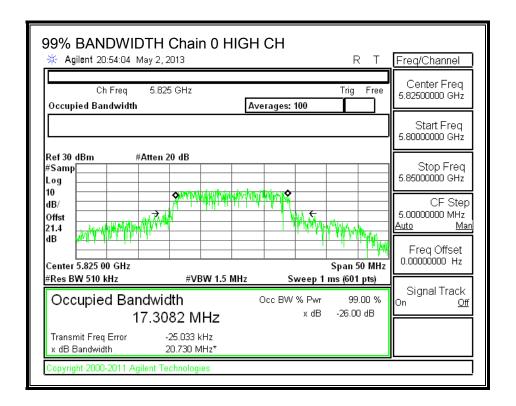
RESULTS

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

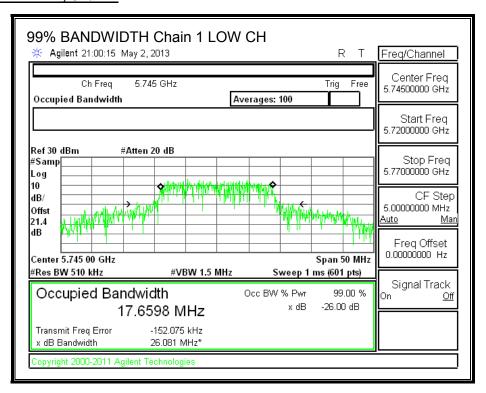
99% BANDWIDTH, Chain 0

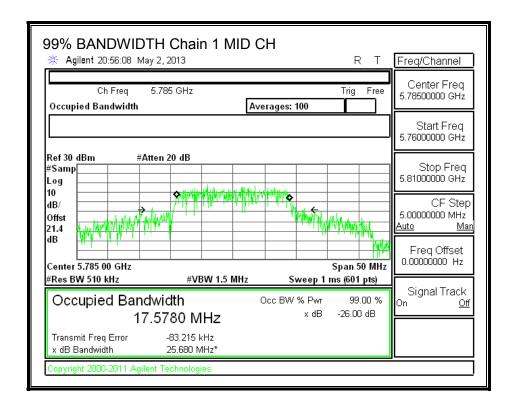


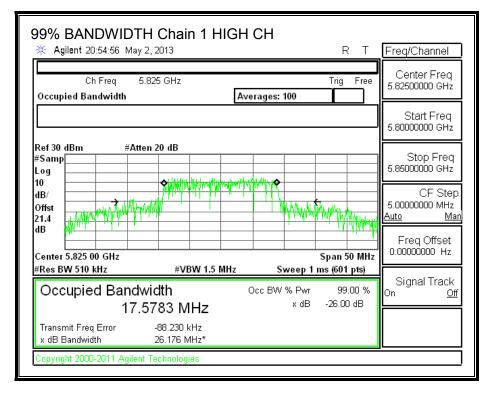




99% BANDWIDTH, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(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

REPORT NO: 13U14995-1 FCC ID: PPD-QCA6234

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

DATE: JULY 1, 2013

IC: 4104A-QCA6234

RESULTS

Limits

Channel	Frequency	Directional	FCC	IC	IC	Max
		Gain	Power	Power	EIRP	Power
			Limit	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	(dBm)	(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	Chain 0	Chain 1	Total	Power	Margi
		Meas	Meas	Corr'd	Limit	
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(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

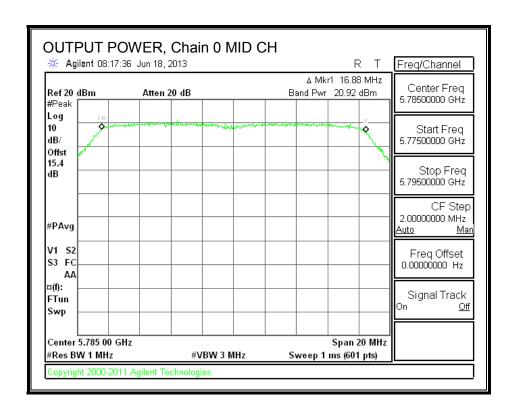
#Res BW 1 MHz

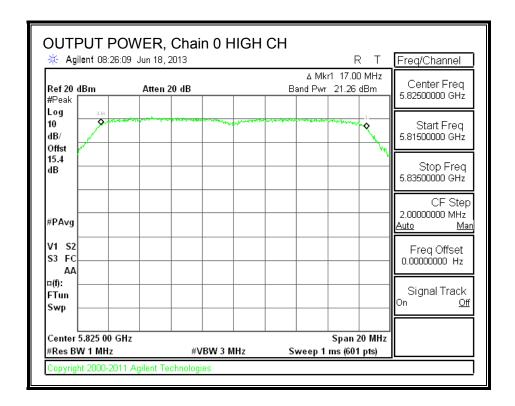
opyright 2000-2011 Agilent Technologies

OUTPUT POWER, Chain 0 LOW CH * Agilent 08:34:13 Jun 18, 2013 Freg/Channel Δ Mkr1 16.83 MHz Center Freq Ref 20 dBm Atten 20 dB Band Pwr 22.43 dBm 5.74500000 GHz #Peak Log 10 Start Freq dB/ 5.73500000 GHz Offst 15.4 Stop Freq dΒ 5.75500000 GHz CF Step 2.00000000 MHz #PAvg V1 S2 Freq Offset S3 FC 0.000000000 Hz АΑ □(f): Signal Track FTun <u>Off</u> Swp Center 5.745 00 GHz Span 20 MHz

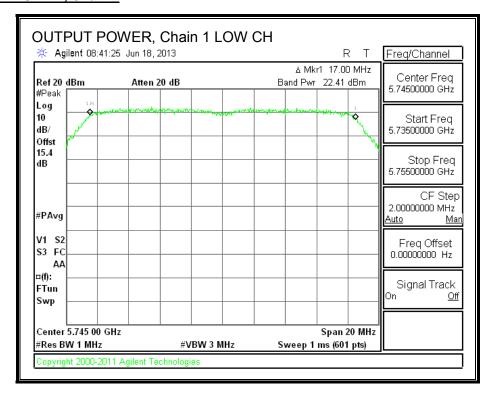
#VBW 3 MHz

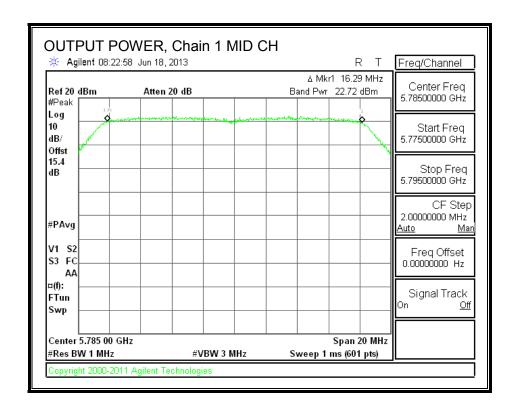
Sweep 1 ms (601 pts)

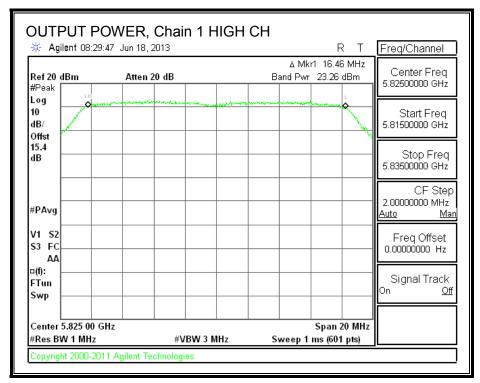




OUTPUT POWER, Chain 1







REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.5.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

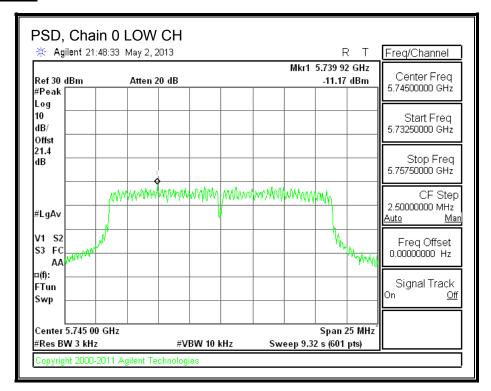
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

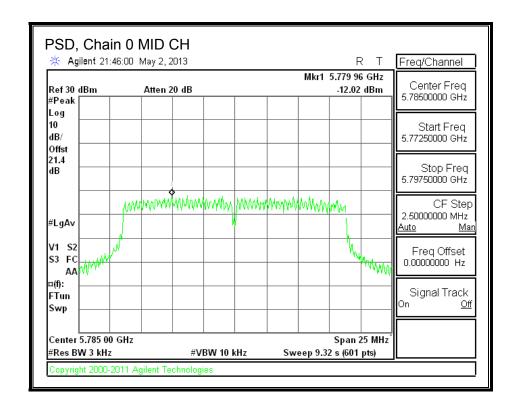
RESULTS

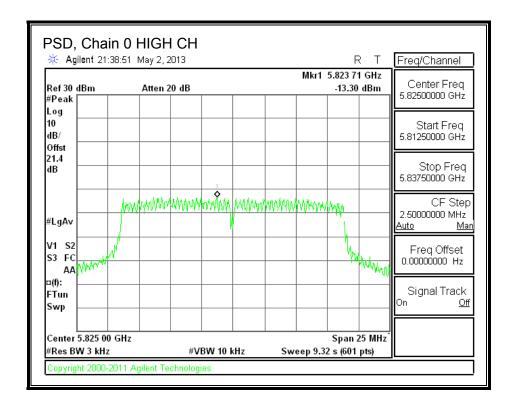
PSD Results

Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Meas	Meas	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(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

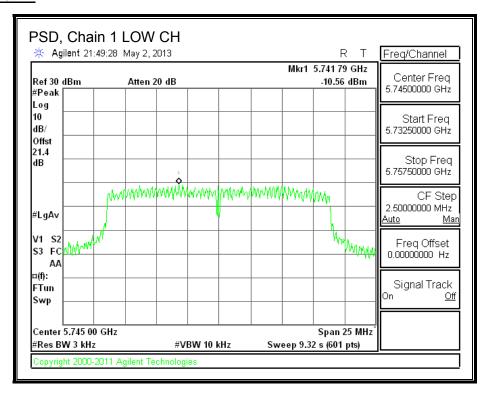
PSD, Chain 0

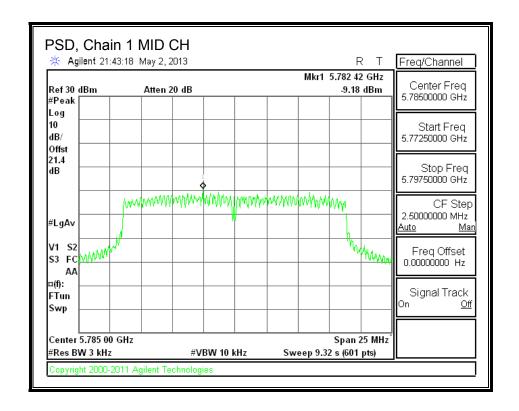


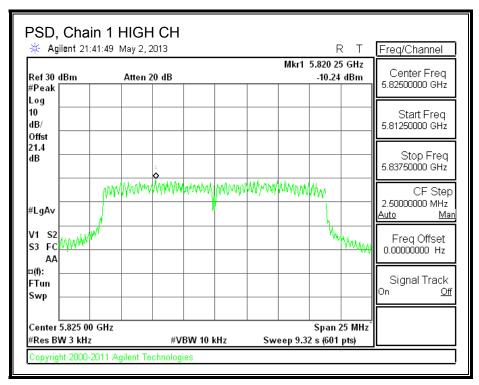




PSD, Chain 1







REPORT NO: 13U14995-1 FCC ID: PPD-QCA6234

8.5.6. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-210 A8.5

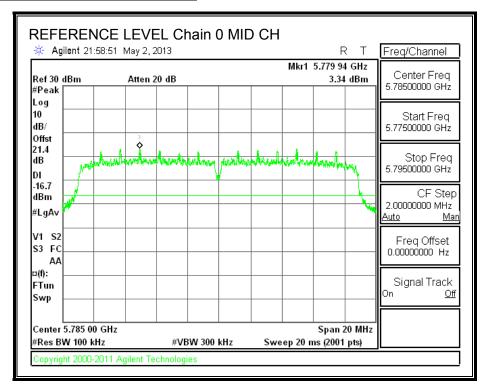
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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.

DATE: JULY 1, 2013

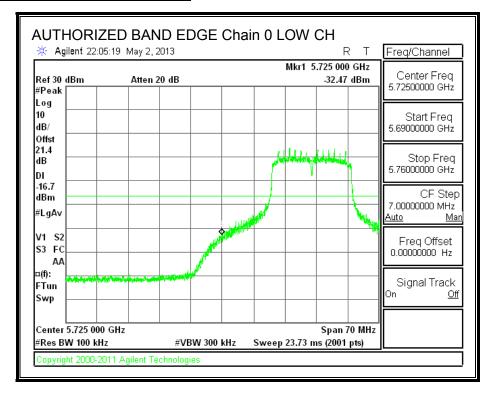
IC: 4104A-QCA6234

RESULTS

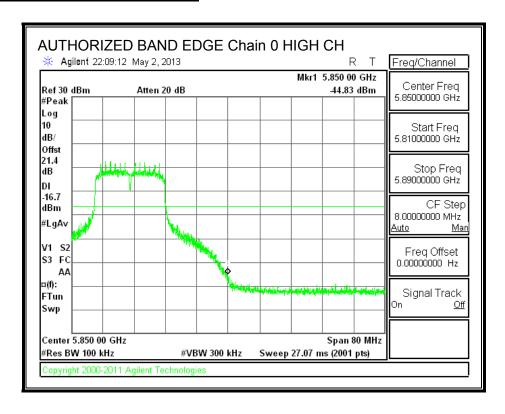
IN-BAND REFERENCE LEVEL, Chain 0



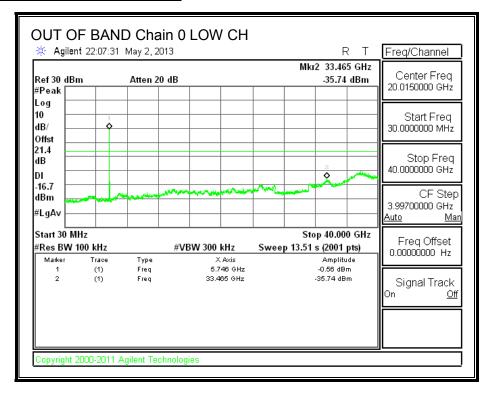
LOW CHANNEL BANDEDGE, Chain 0

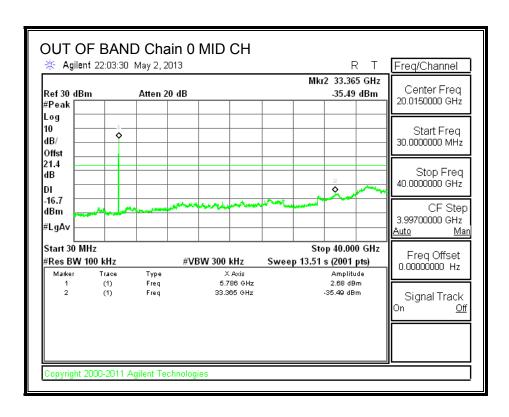


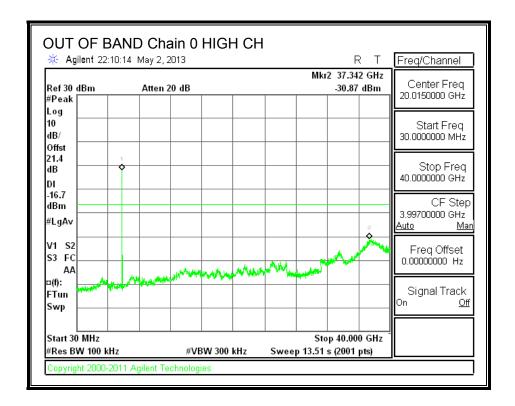
HIGH CHANNEL BANDEDGE, Chain 0



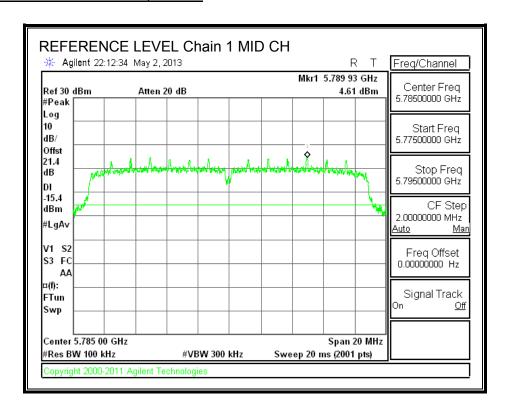
OUT-OF-BAND EMISSIONS, Chain 0



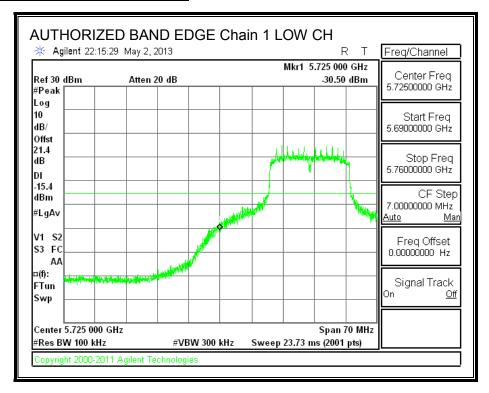




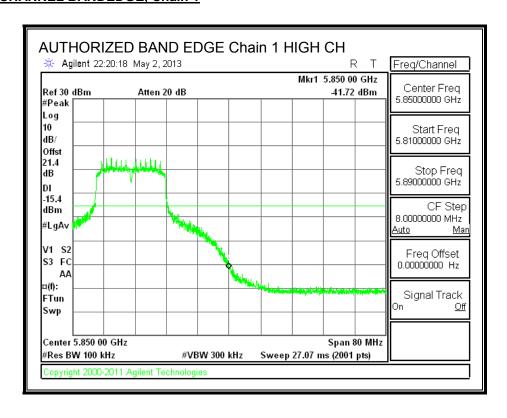
IN-BAND REFERENCE LEVEL, Chain 1



LOW CHANNEL BANDEDGE, Chain 1

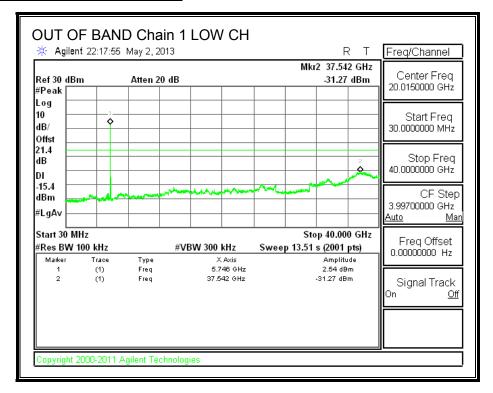


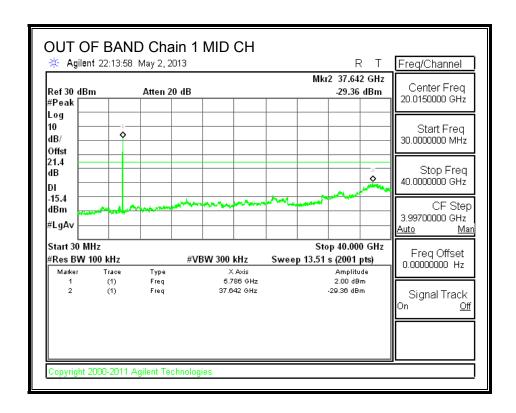
HIGH CHANNEL BANDEDGE, Chain 1

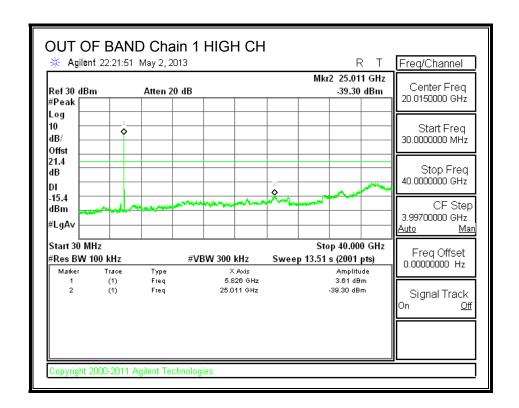


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OUT-OF-BAND EMISSIONS, Chain 1



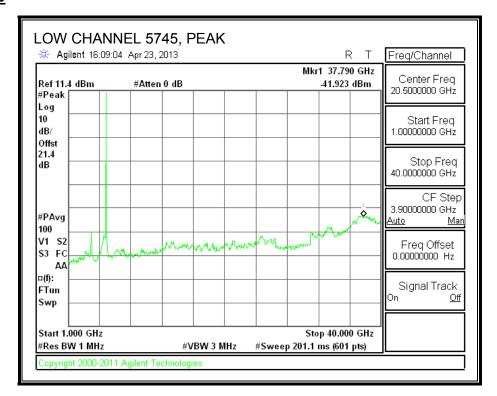


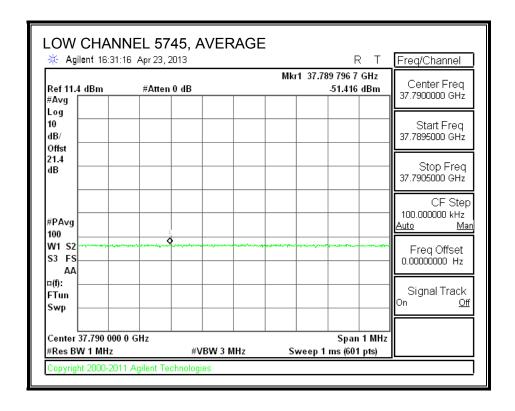


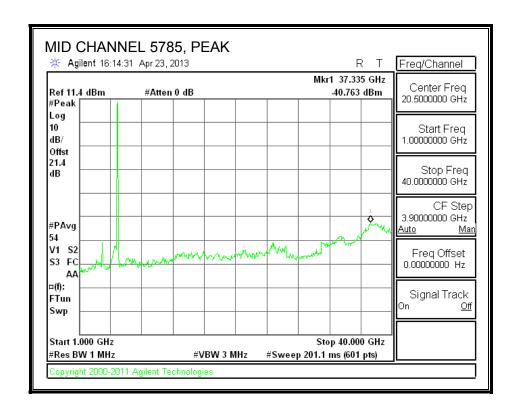
8.5.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter units)

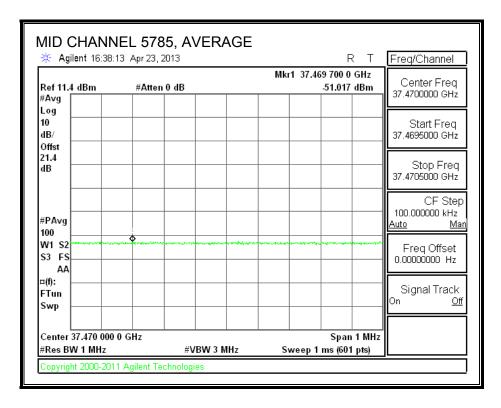
HARMONICS AND SPURIOUS

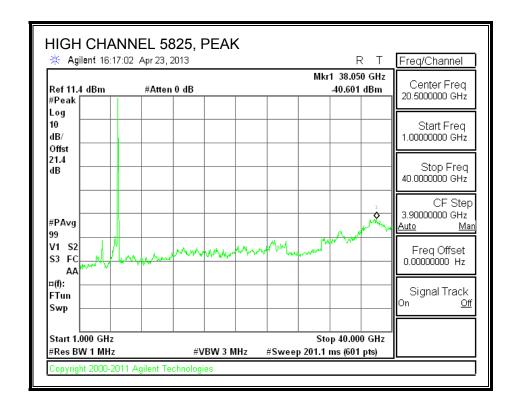
Chain 0

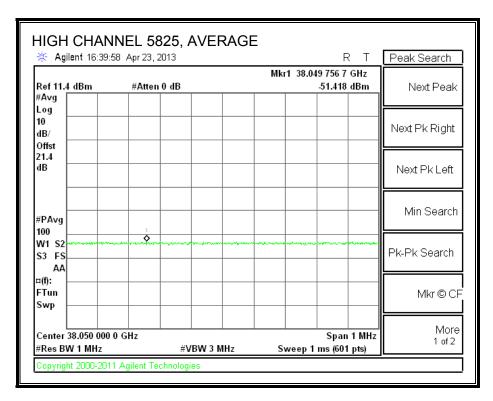




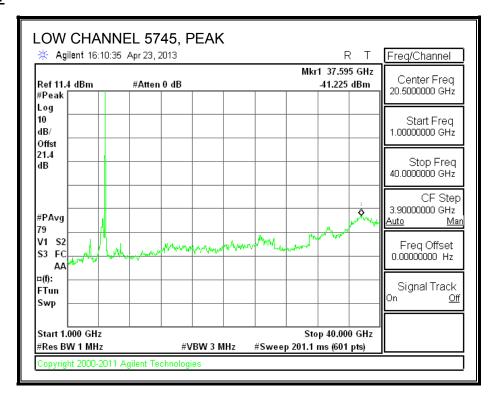


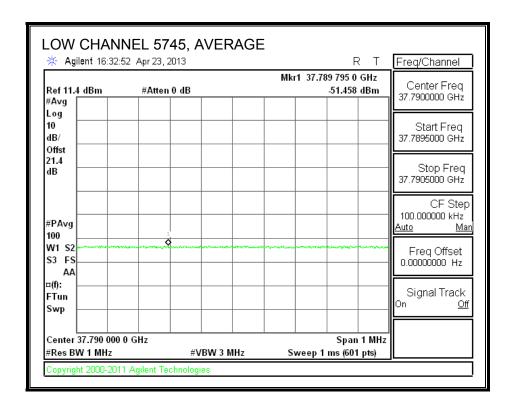


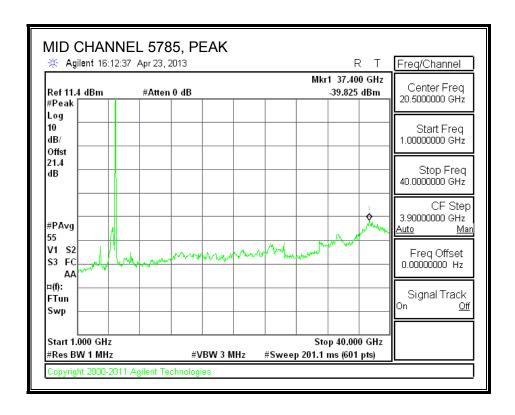


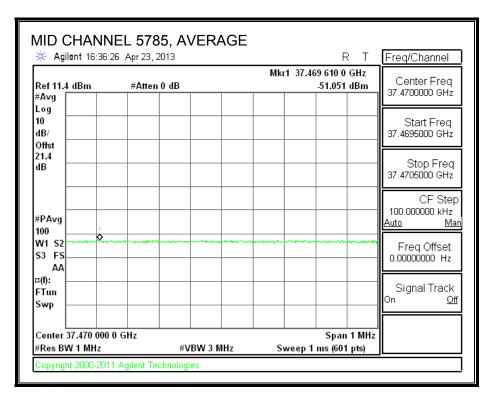


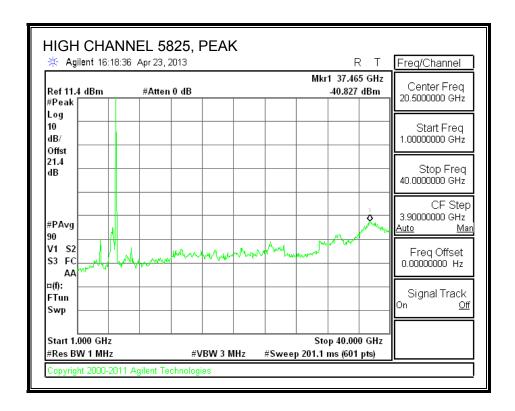
Chain 1

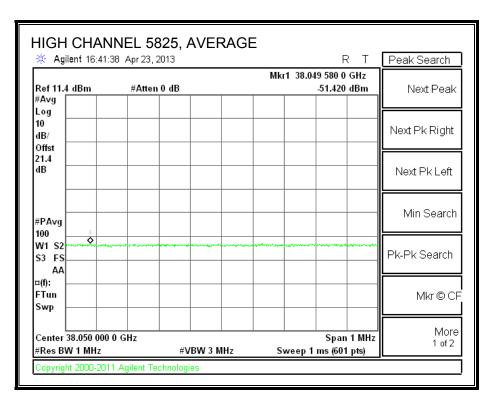












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HARMONIC SPURIOUS DATA

Date:		4/23/2013							
Test Engine	er:	O. Su							
Client:		Qualcomm Athe	ros						
Project Nur	mber:	13u14995							
Configurati	on:	5.8GHz 11n HT20	1						
Mode of op	eration:	Tx		Note: if the PK margin is greater than 20 dB, there is no need to get AVG readi					
Channel		PSA PK Reading	J	•		PK E-field	PK E-field	Software	AVG Power
	(MHz)	Chain 0 (dBm)	Chain 1 (dBm)	(dBi)	(dBm)	Limit	Margin	Setting	Meter Reading
						(dBm)	(dB)		(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
<u> </u>	-	201 11/0	201 11/2	10/01	****		N/0 T (1 1 1	0 (1)	
Channel	Frequency			AG/Chain		AVG E-field	AVG E-field	Software	AVG Power
	(MHz)	Reading	Reading	(dBi)	(dBm)	Limit	Margin	Setting	Meter Reading
		Chain 0 (dBm)	Chain 1 (dBm)			(dBm)	(dB)		(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
เขเน ว/ชว									

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.6. 802.11n HT40 MODE IN THE 5.8 GHz BAND

8.6.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

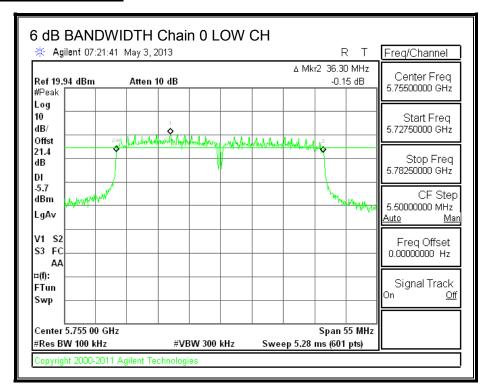
IC RSS-210 A8.2 (a)

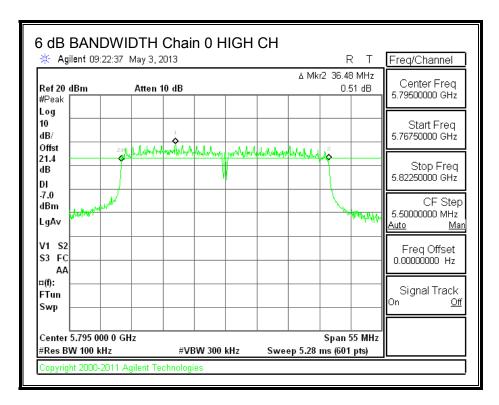
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

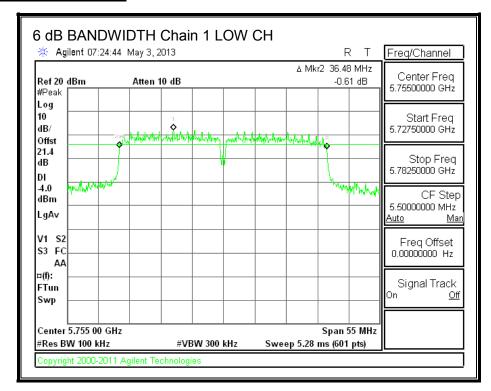
Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Chain 0	Chain 1	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5755	36.30	36.48	0.5
High	5795	36.48	36.48	0.5

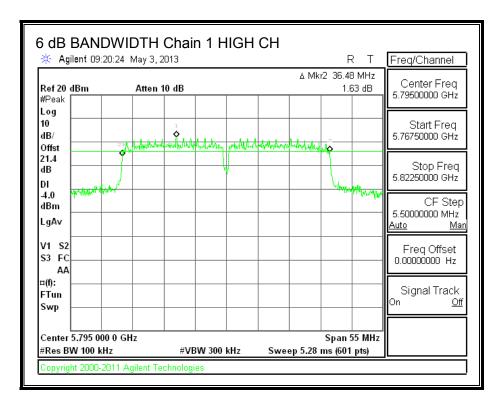
6 dB BANDWIDTH, Chain 0





6 dB BANDWIDTH, Chain 1





REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.6.2. 99% BANDWIDTH

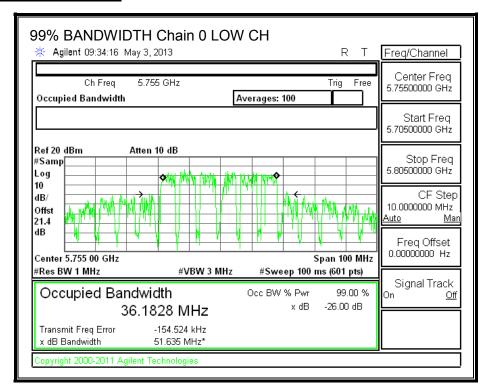
LIMITS

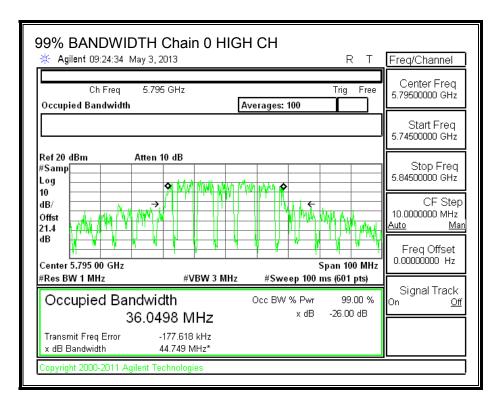
None; for reporting purposes only.

RESULTS

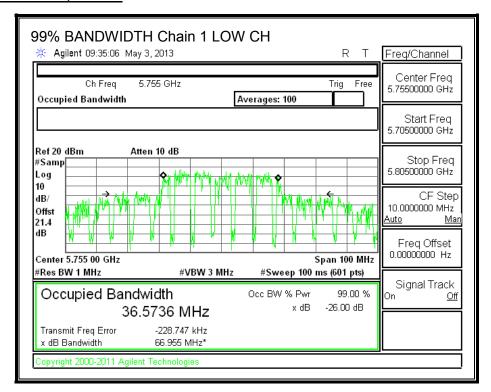
Channel	Frequency	99% BW	99% BW
		Chain 0	Chain 1
	(MHz)	(MHz)	(MHz)
Low	5755	36.1828	36.5736
High	5795	36.0498	36.8427

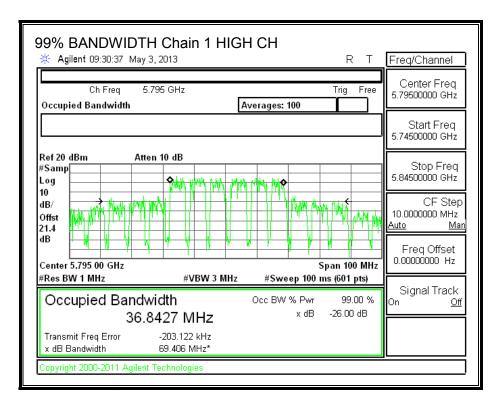
99% BANDWIDTH, Chain 0





99% BANDWIDTH, Chain 1





REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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

REPORT NO: 13U14995-1 FCC ID: PPD-QCA6234

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

DATE: JULY 1, 2013

IC: 4104A-QCA6234

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

RESULTS

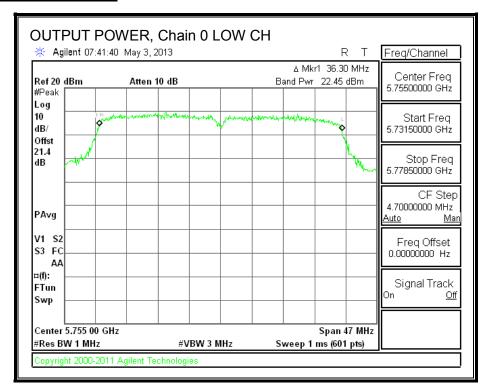
Limits

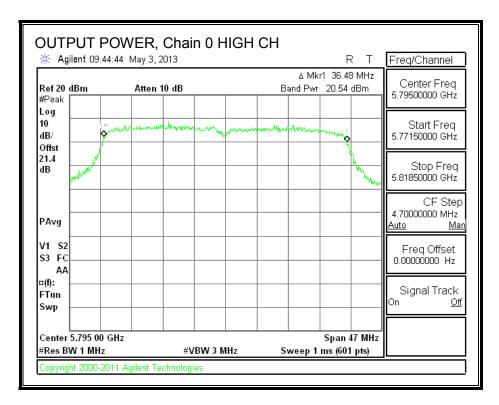
Channel	Frequency	Directional	FCC	IC	IC	Max
		Gain	Power	Power	EIRP	Power
			Limit	Limit	Limit	
	(MHz)	(dBi)	(dBm)	(dBm)	(dBm)	(dBm)
Low	5755	2.00	30.00	30	36	30.00
High	5795	2.00	30.00	30	36	30.00

Results

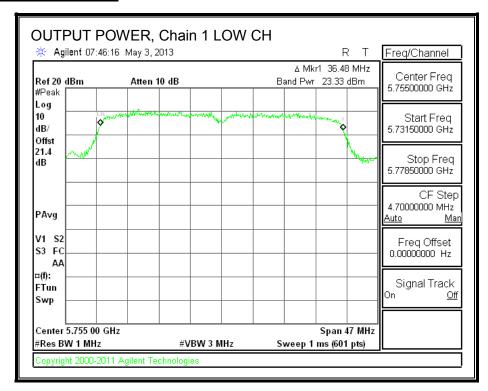
Channel	Frequency	Chain 0	Chain 1	Total	Power	Margi
		Meas	Meas	Corr'd	Limit	
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	22.45	23.33	25.92	30.00	-4.08
High	5795	20.54	23.54	25.30	30.00	-4.70

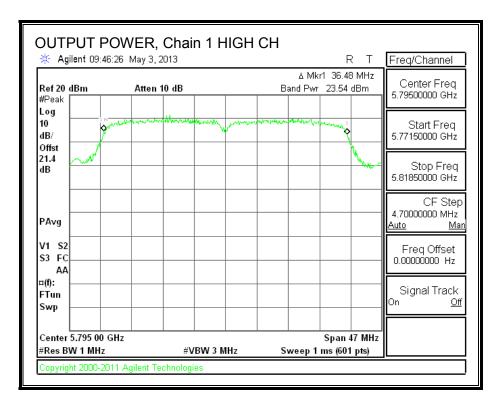
OUTPUT POWER, Chain 0





OUTPUT POWER, Chain 1





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8.6.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247

IC RSS-210 A8.2

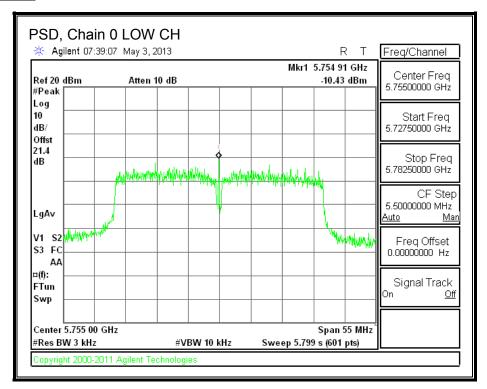
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

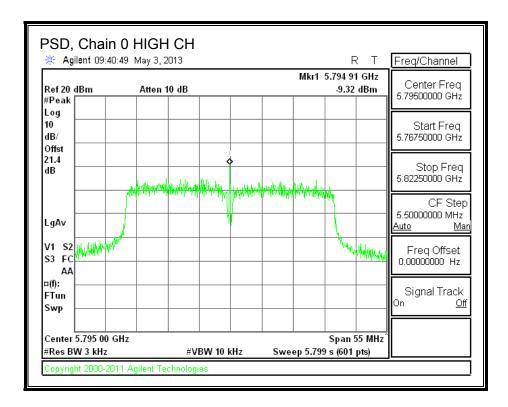
RESULTS

PSD Results

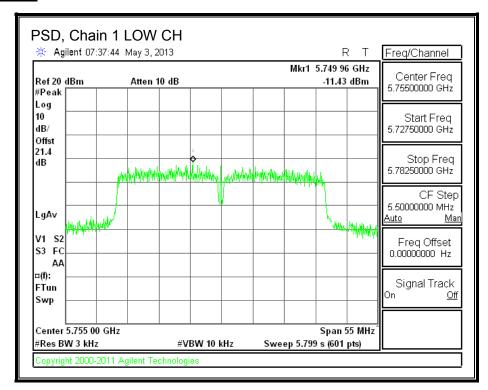
Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Meas	Meas	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	-10.43	-11.43	-7.89	8.0	-15.9
High	5795	-9.32	-12.23	-7.53	8.0	-15.5

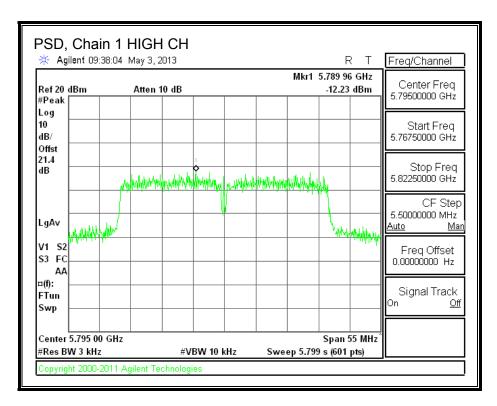
PSD, Chain 0





PSD, Chain 1





REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.6.6. OUT-OF-BAND EMISSIONS

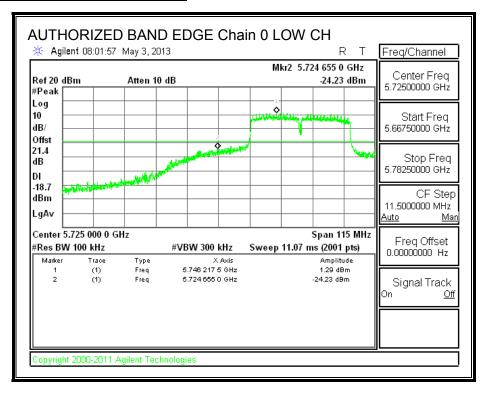
LIMITS

FCC §15.247 (d)

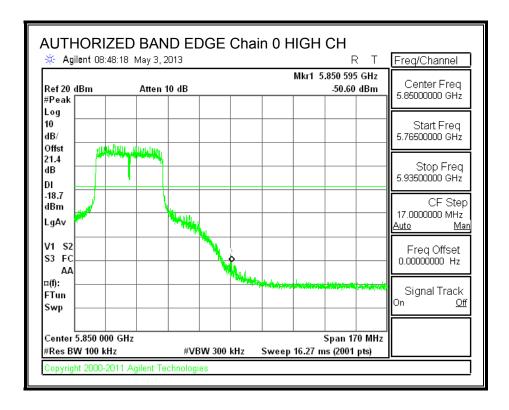
IC RSS-210 A8.5

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.

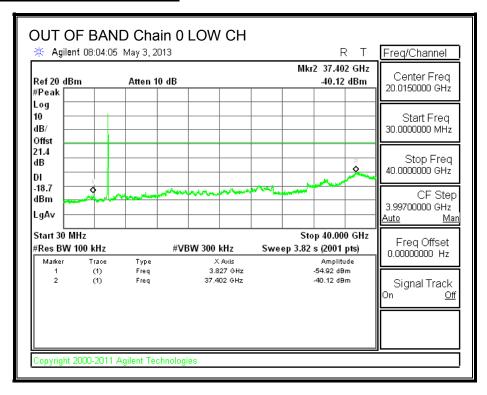
LOW CHANNEL BANDEDGE, Chain 0

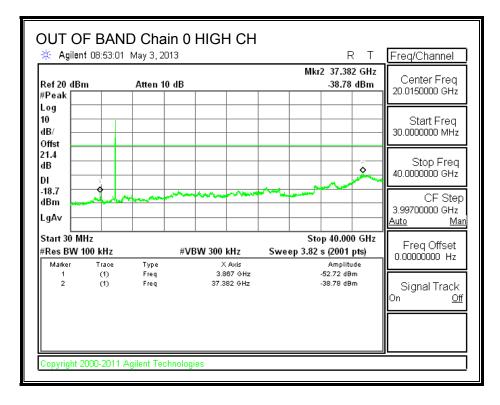


HIGH CHANNEL BANDEDGE, Chain 0

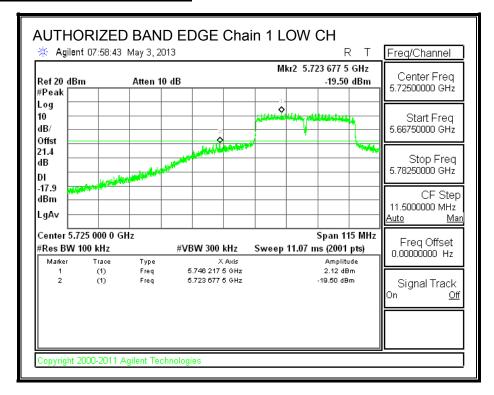


OUT-OF-BAND EMISSIONS, Chain 0

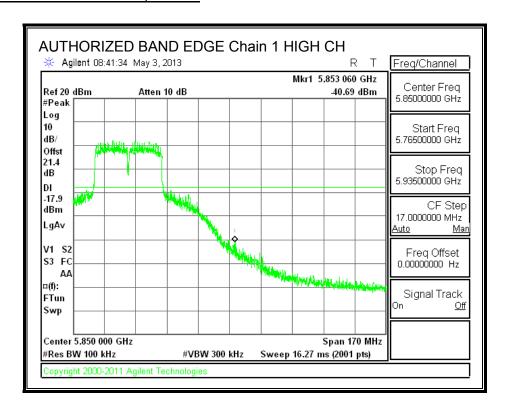




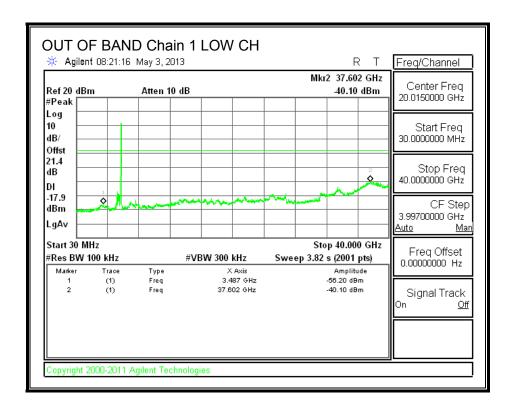
LOW CHANNEL BANDEDGE, Chain 1

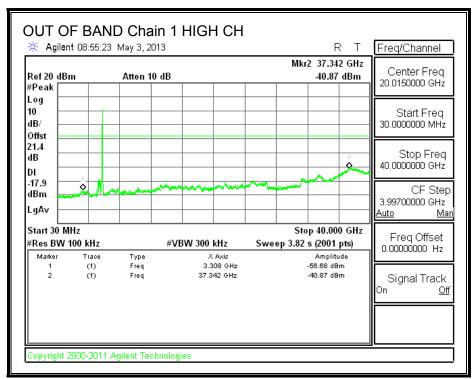


HIGH CHANNEL BANDEDGE, Chain 1



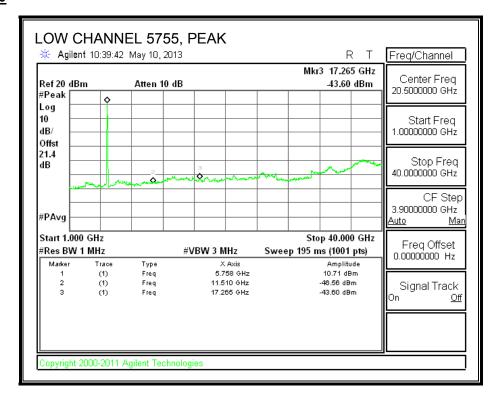
OUT-OF-BAND EMISSIONS, Chain 1

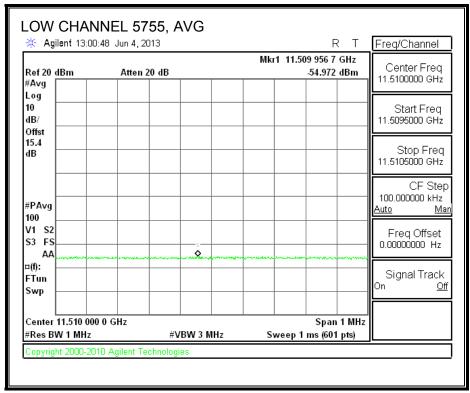


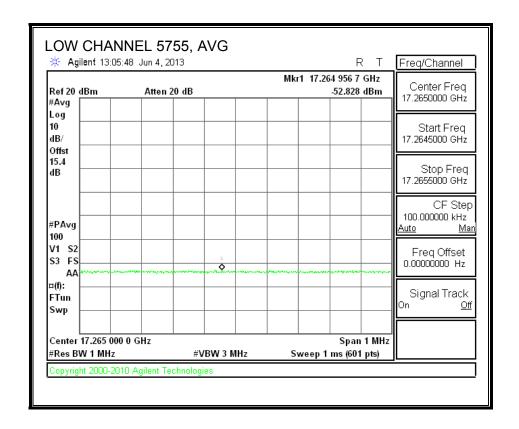


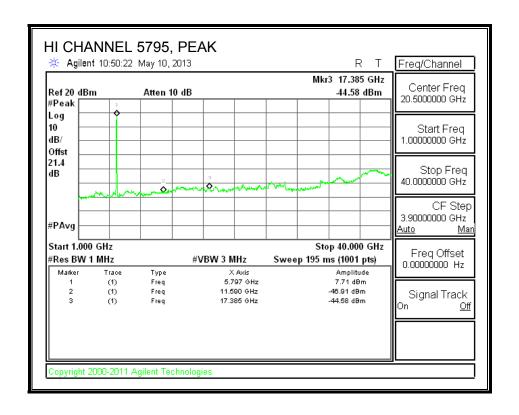
8.6.7. CONDUCTED SPURIOUS IN RESTRICTED BANDS (no filter units)

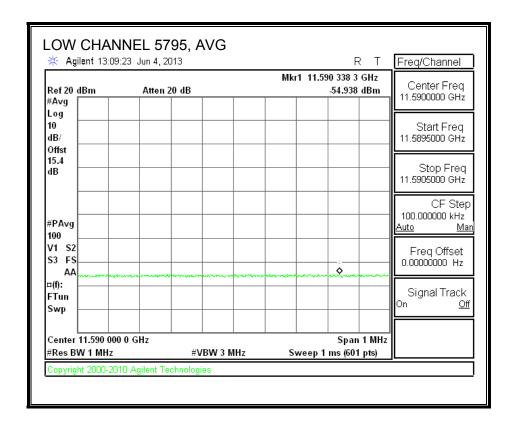
HARMONICS AND SPURIOUS Chain 0

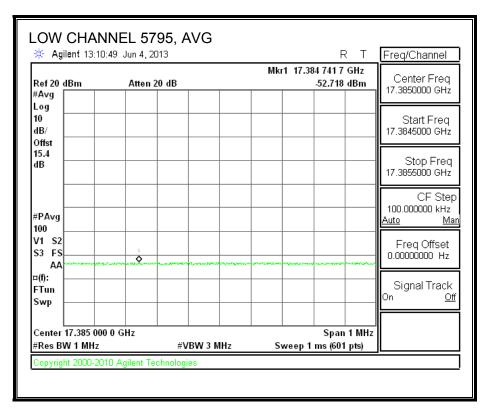




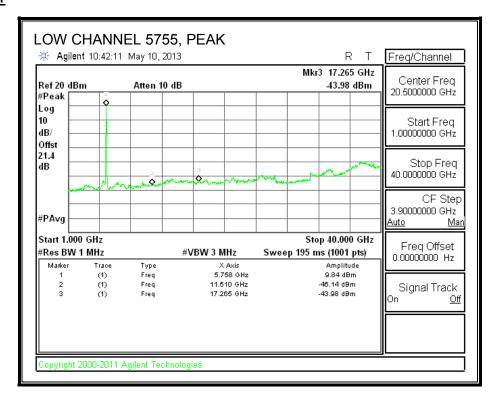


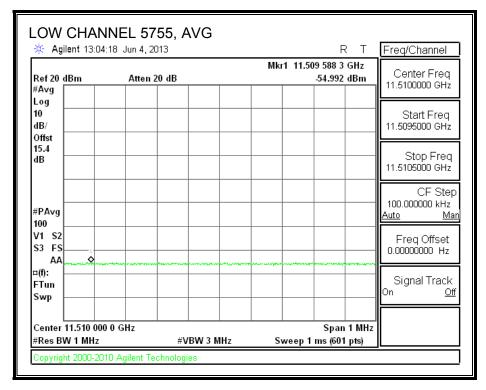


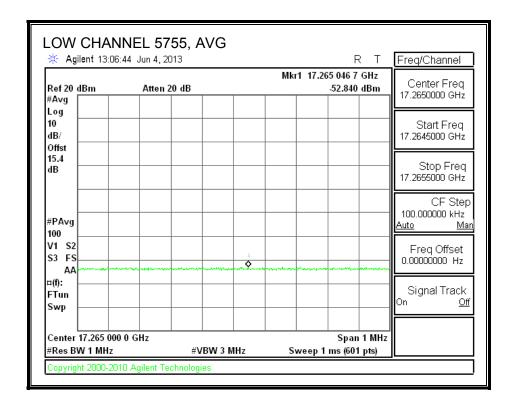


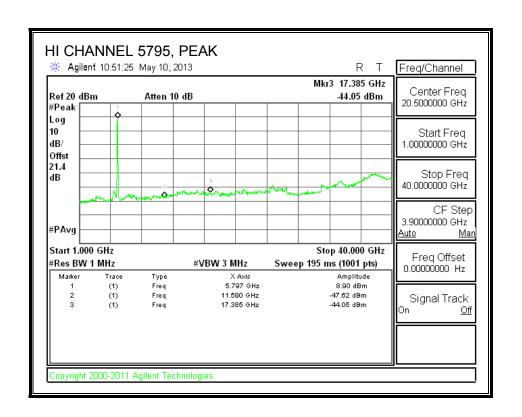


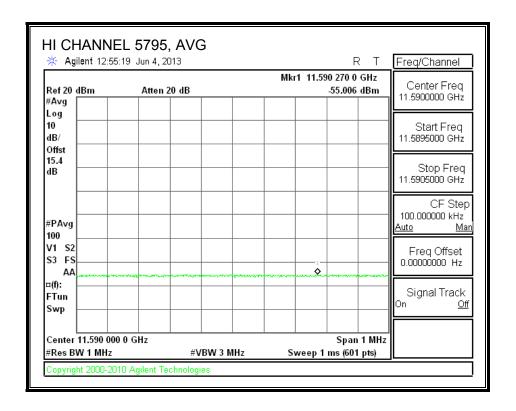
Chain 1

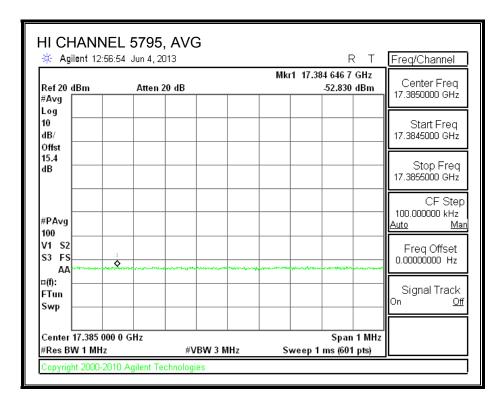












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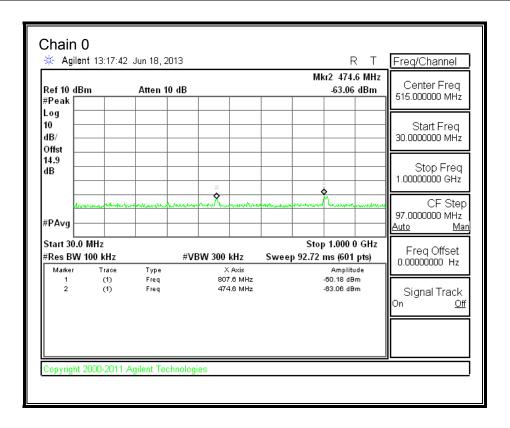
HARMONIC SPURIOUS DATA

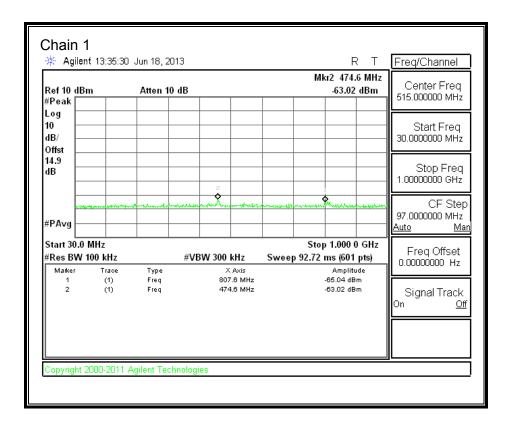
ZIA CONGGE	ieu spunous	s for FCC DTS (in t	THE TESTITION DE	iliusj					
Date:		5/9/2013							
Test Engine	er:	Tony Wagoner							
Client:		Qualcomm Athe	eros						
Project Nur	nber:	13U14995							
Configurati	on:	5.8 GHz 11n HT4	۰0						
Mode of op	eration:	Tx		Note: if th	e PK margi	n is greater th	ıan 20 dB, the	re is no nee	d to get AVG rea
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

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

8.7. WORST-CASE BELOW 1 GHz

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





Page 320 of 389

2TX Conducted Sp	urious for FCC DTS	5 (in the restricte	ed bands)		<u> </u>		
Date:		6/18/2013					
Test Engineer:		Tony Wagoner					
Client:		Qualcomm					
Project Number:		13u14995					
Configuration:		30-1000MHz					
Mode of operation	1:	Worst Case					
Frequency (MHz)	Meter PK	Meter PK	AG Chain 0	AG Chain 1	PK EIRP	QP E-field	QP E-field
	Reading Chain 0 (dBm)	Reading Chain 1 (dBm)	Chain 0 (dBi)	Chain 1 (dBi)	(dBm)	Limit (dBm)	Margin (dB)
474.6	-63.06	-63.02	2 2	(ubi) 2	-50.32	-49.18	-1.14
807.6	-63.06	-65.04	2	2	-50.32 -49.24	-49.18 -49.18	-0.06
007.0	-00.10	-03.04			-43.24	-43.10	-0.00
Note: if the QP ma	argin is nassing th	ere is no need to	oget OP r	neasurem	ent		
Note: If the Qr ma	Igili is passing an	ere is no need to) get Qi ii	leasarcing	2110.		
QP Limit Start Freq (MHz)	Stop Freq (MHz)	Limit (dBm)					
30	88	-55.20					
88	216	-51.68					
216	960	-49.18					
	1000	-41.22	,				

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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.

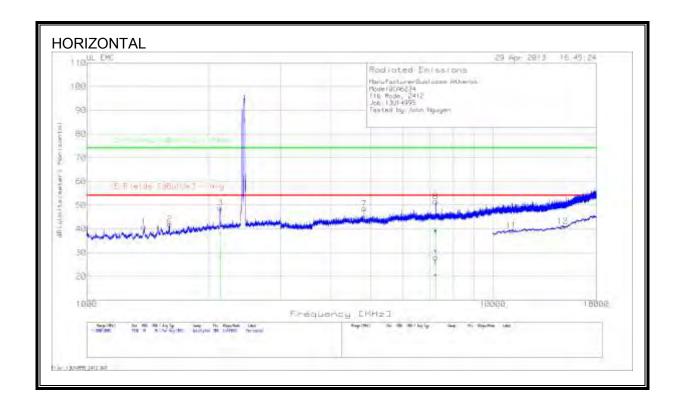
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

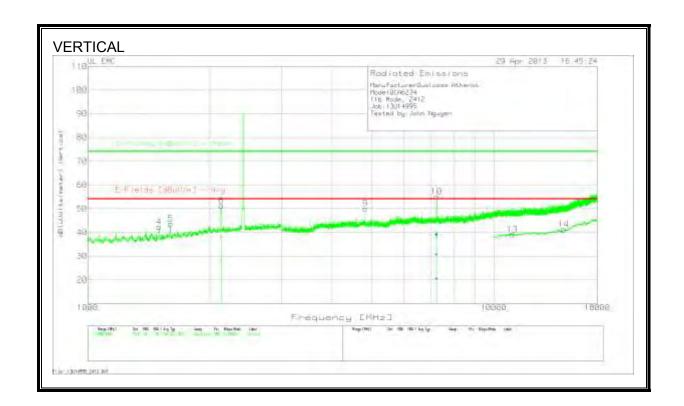
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

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

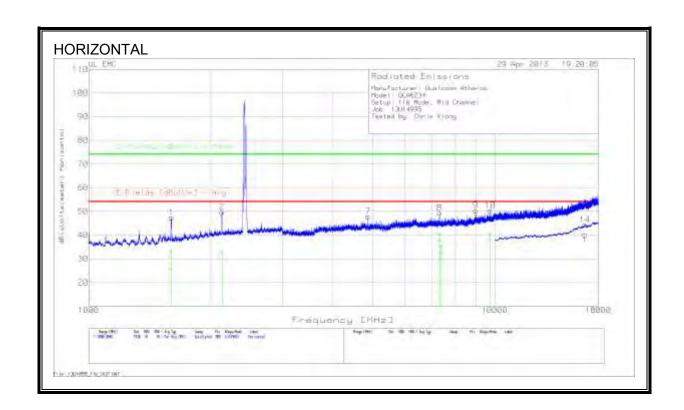
SPURIOUS EMISSIONS WITH 50 OHM LOAD

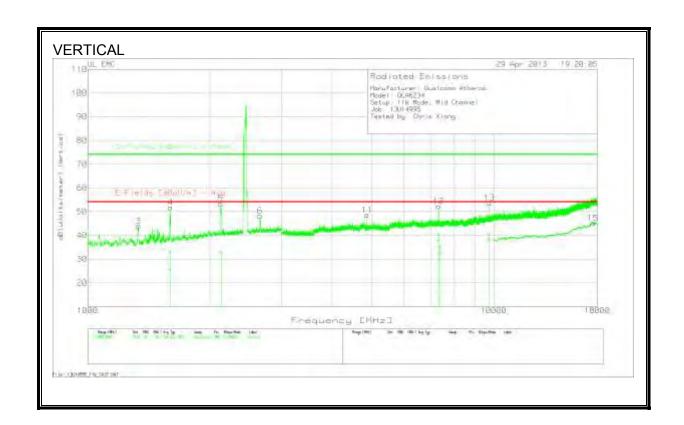
11b Mode, 2412 MHz





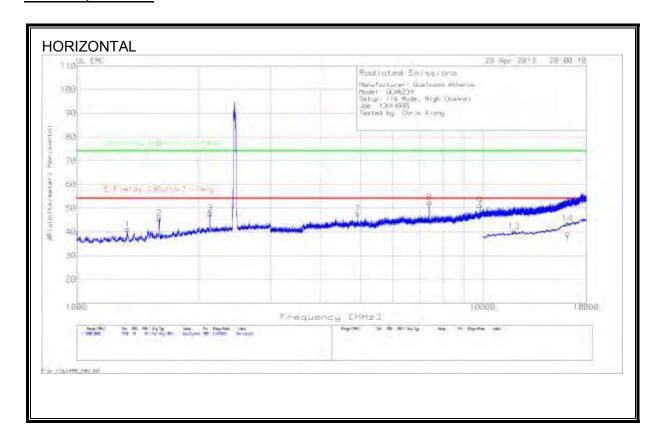
Manufacti	urerQualcom	m Athero	5									
ModelQC												
11b Mode	, 2412											
ob:13U14	1995											
rested by	:John Nguye	n										
Horizonta	1000 - 30001	MHz										
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarit
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 10	000 - 3000MH	z										1
Marker	Test Frequency	Meter Reading		T346 Ant Factor	Preamp/	dB(uVolt	E-Fields [dBuV/m]	Margin	E-Fields [dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[cm]	Polarit
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
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [d8/m]	Preamp/ Cable dB	dB(uVoit	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarit
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
	000 - 18000M		1.11				75071					11000
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt	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
Horizonta	10000 - 1800	OMHz	7/1						1			
Marker No.	Test Frequency MHz 11115.442	Meter Reading dBuv 26.04	Detector	T346 Ant Factor [dB/m] 38.5	Preamp/ Cable dB -25.3	dB(uVolt s/meter) 39.24	E-Fields [dBuV/m] - Avg 53,97	Margin (dB) -14,73	E-Fields [dBuV/m] - Peak 74	Margin (dB)	Height [cm]	Polarit
12	*14861.569	27.26	PK	39.8	-26	41.06	53.97	-12.91	74	-32.94	300	Horz
	0000 - 18000N										- 4.0	
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolt	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height [cm]	Polarit
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
	he restricted 000 - 18000M				and the last		Ulleri		, 10.1 (0.1)	111111	100	
vertical 30	Test Frequency	Meter Reading	14.5	T346 Ant Factor	Preamp/	dB(uVolt	E-Fields [dBuV/m]	Margin	E-Fields [dBuV/m]	Margin	Height	
	MHz	dBuv	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[cm]	Polarit
	4824.0339	40,13	RMS	34,4	-31,8	42.73	53.97	-11,24	74	-31,27	349	Vert

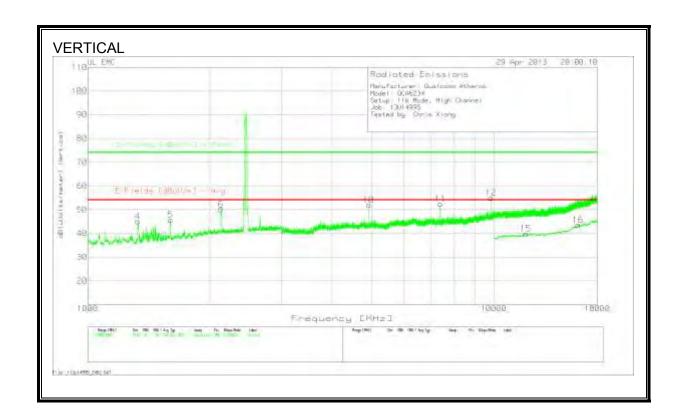




lanufacti	urer: Qualco	mm Ather	os									
Aodel: Q		701012-17112-1	1 10									
	Mode, Mid	Channel										
lob: 13U1												
Tested by	Chris Xiong											
7.577.54	7272											
Horizonta	1000 - 3000			T345 4-4			F F1-14-		E 51-14-			
	Test	Meter		T346 Ant		distantate la	E-Fields	named a	E-Fields	and the	training.	
Marker No.	Frequency MHz	dBuv	Detector	[dB/m]	Preamp/ Cable dB	dB(uVolt s/meter)	[dBuV/m]	Margin (dB)	[dBuV/m] - Peak	(dB)	Height	Polarity
1	1599.333	52.83	PK	29.5	-34.9	47.43	- Avg 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
	000 - 3000MH			22.0	2712	13.73	22.27	-4.20		27122	400	11012
V CITTICAL 2	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading	-	Factor	Preamp/	dB(uVolt		Margin	[dBuV/m]	Margin	Height	. ", 9".
No.	MHz	dBuy	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[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
Horizonta	3000 - 1800				-							
Carrier .	Test	Meter		T346 Ant	GE A TRATE	A COST	E-Fields	Administra	E-Fields	66000	William .	
Marker	Frequency	Reading	BULLET !	Factor	Preamp/	dB(uVolt	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	40.00
No.	MHz	dBuv	Detector	[d8/m]	Cable dB	s/meter)	- Avg	(dn)	- Peak	(dB)	[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 30	000 - 18000M Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading	. 1	Factor	Preamp/	dB(uVolt	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	(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
	10000 - 1800											
14012100	Test	Meter		T346 Ant			E-Fields	E TE	E-Fields	14.4		
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolt	the second of the second of the	Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[cm]	Polarity
14	16688.656	24,23	PK	41.4	-21.3	44.33	53,97	-9.64	74	-29.67	100	Horz
Vertical 1	0000 - 1800QN		7 1	100	111111111111111111111111111111111111111	. Y- 71 -	C22/66			111111	1 × 41 × 1	1 21 17 2
1	Test	Meter		T346 Ant	Admin T	named at the state	E-Fields	10.00	E-Fields	1715 A.J.	1000	
Marker	Frequency	Reading	Water County	Factor	Preamp/	dB(uVolt	The state of the s	Margin	[dBuV/m]	Margin	Height	BOOK AND
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[cm]	Polarity
15	17544.228	23,93	PK	41.9	-20.7	45.13	53.97	-8,84	74	-28,87	400	Vert
Vertical 1	000 - 3000MH	A SHAREST PROPERTY.		TIAC AND			F. F1-1-4-		E E1-14-			
	Test	Meter		T346 Ant	Drawn /	dotarete	E-Fleids	Marria	E-Fleids	Dancolo	Malata	
	Frequency	Reading	Detector	Factor [dn/m]	Preamp/	dB(uVolt	Control of the Control	Margin	[dBuV/m]	Margin	Height	Dolasto
	MHz 1594.72	34.11	Detector RMS	[dB/m] 29.4	Cable dB	s/meter) 28.51	- Avg 53.97	(dB) -25.46	- Peak 74	(dB) -45,49	[cm] 327	Polarity
	2651.7663	32.81	RMS	33	-35	32.31	53.97	-25.46	74	-45,49	164	Vert
Horizonta	Horizontal 3	The second secon	The state of the s	3,3	-55,5	52.51	33.97	-21.00	./4	-41,09	104	vert
HOTIZOIITA	Test	Meter	DIVINE	T346 Ant			E-Fields		E-Fields			
	Frequency	Reading	100	Factor	Preamp/	dB(uVolt	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
	MHz	dBuy	Detector	[dB/m]	Cable dB	s/meter)	- Avg	(dB)	- Peak	(dB)	[cm]	Polarity
	7309.8873	34.54		36		A SHALL SHAL	53.97	-12.13	74	-32.16		Vert.
Vertical 30	Vertical 300					7///					- 187	****
	Test	Meter		T346 Ant		7-11-4	E-Fields	11000	E-Fields	153.5	(Cuntil)	
	Frequency	Reading	1.77771	Factor	Preamp/	dB(uVolt	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	Letters.
	MHz	dBuv	Detector	[dB/m]	Cable dB		- Avg	(dB)	- Peak	(dB)	[cm]	Polarity
	4874,0579	33,77		34,4	-31,6		53,97	-17.4	74	-37.43		Vert
	7311,7822		RM5	36	-28,7	41,8	53,97	-12,17	74	-32,2	109	Vert
2	*=Not in the	restricted	band									
PK - Peak												
	-Peak detec											
	ear Average											
gAv - Log	Average det	tector										
	age detector											

DATE: JULY 1, 2013 IC: 4104A-QCA6234





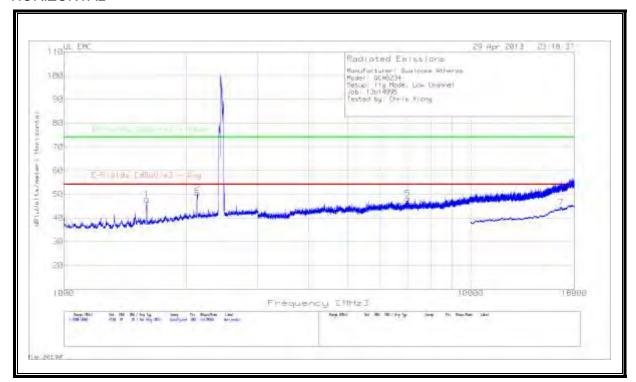
DATA Manufacturer: Qualcomm Atheros Model: QCA6234 Setup: 11b Mode, High Channel Job: 13U14995 Tested by: Chris Xiong Meter E-Fields Reading Factor dB(uVolts [dBuV/m] Margin [d8uV/m] Margin Height Preamp/ **Polarity** [d8/m] Marker No. Frequency dBuy Detector Cable di /meter) AVE (dB) Peak (dB) [cm] Horizontal 1000 - 3000MHz 1598,667 51.15 PK 29,5 -14.9 45.75 53,97 8.22 74 -28,25 Hors 2 2126,667 51.09 DW 32.3 34.7 49.19 53.97 4.78 74 -24.61 400 HOTZ Vertical 1000 - 3000MHz 1328.667 51.19 PK 29.1 -15.2 45.09 53,97 -8.88 74 -28.91100 Vert 1599.333 51.1 Dy 45.7 53.97 4 29.5 34.9 8.27 74 -28.3300 Vert 2193,338 53.04 PK 32,3 34,3 51.04 53,97 2,93 74 22,96 48.16 DK: 33.6 47.56 53.97 74 -26,44 6 2659.333 13 5.41 300 Vert. 1346 Ant Test. Meter dB(uVolts [dBuV/m] Height Margin Frequency Reading Eactor HPF IdBuV/ml Margin Marker No. MHz Detector [dB/m] Preamp/ /meter) Aug (da) Peak (dB) [cm] Polarity Horizontal 3000 - 18000MHz 47.74 7 2974 893 44 84 78 55.2 -31.553:97 -5.2374 -26.26 600 Michigan P. 1/4 7385.59 44.73 PK 35.1 23.4 52.43 53.97 1.54 21.57 400 Horz 10 9847,953 39,34 PK 37.8 - 26 51.14 53,97 -2.8374 -22.85400 Horz Vertical 3000 - 18000MHz 10 4924.893 49.07 PK 34.4 -31.5 51,97 53.97 -2 74 -22.03 299 Vert Dw 44.69 53.97 74 -21.61 11 7385.59 35.1 -28.4 52.39 1.58 299 Vert 9848,786 Py, 37,8 55.04 53.97 1.07 74 18.96 200 Horizontal 1000 - 18000MHz T160 BRF dB(uVolts [dBuV/m Margin (dBuV/m Margin Height Frequency Reading Factor Preamp Factor MHZ dBuv Detector [dB/m] Gain (dB) [dB] (dB) /meter) 1-Avg (Bb) |-Peak (dB) [cm] Polarity 7386.79 26.8 RM5 35.9 35 8.3 0.2 36.8 53.97 -17.17148 Horz Vertical 1000 - 18000MHz 4923.92 33,36 RMS 34.6 -34.940,36 53,97 -13.61162 Vert 7384.NS 32.87 RM5 35.3 35 8.9 0.3 42.97 53.97 -11 127 Vert PK - Peak detector QP - Quasi-Peak detector LhAv - Linear Average detector LgAv - Log Average detector Av - Average detector

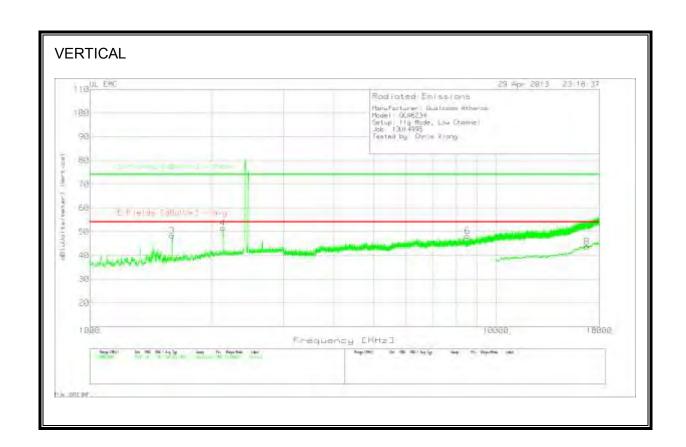
9.3. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

SPURIOUS EMISSIONS WITH 50 OHM LOAD

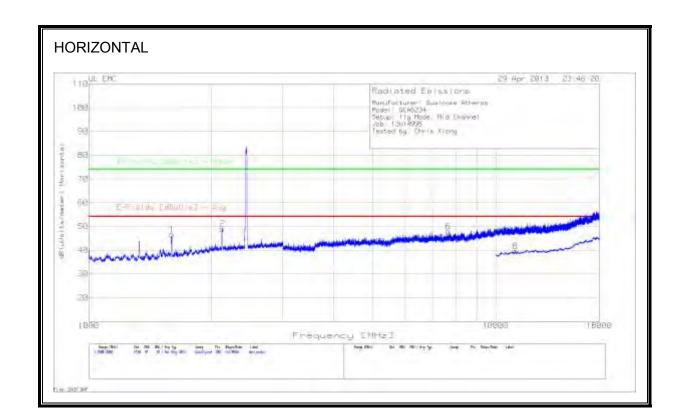
11g Mode, 2412 MHz

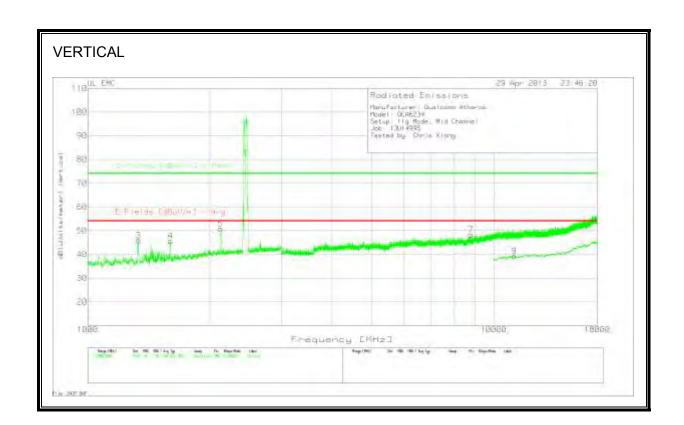
HORIZONTAL



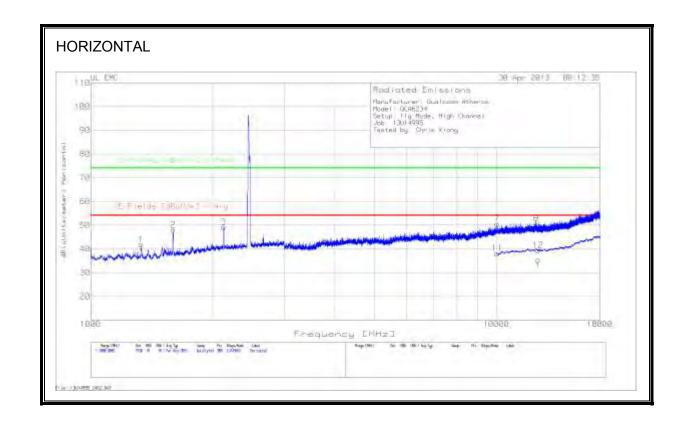


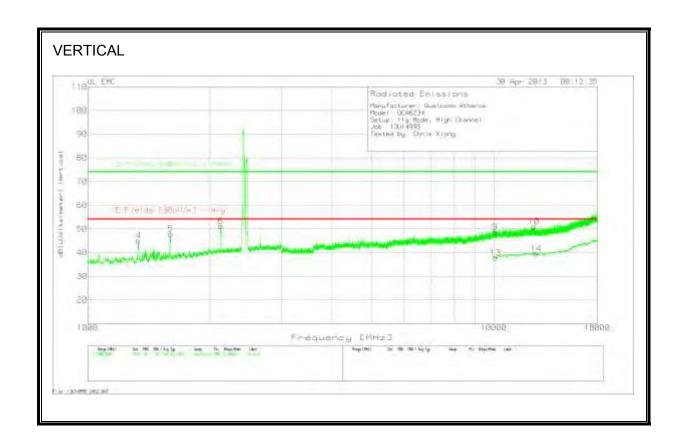
DATA												
Manufac	turer: Qualo	omm Athe	ros									
Model: 0												
	g Mode, Lov	w Channel										
Job: 13U	-											
Tested b	y: Chris Xion	g										
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolts	[dBuV/m] -	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizont	al 1000 - 300	0MHz										
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 1	1000 - 3000N	lHz										
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 th		d band									
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolts	[dBuV/m] -	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizont	al 1000 - 300	0MHz										
5	7011.444	40.65	PK	36	-28.5	48.15	53.97	-5.82	74	-25.85	200	Horz
Vertical 3	3000 - 18000	MHz										
6	8508.027	39.88	PK	36.2	-27.9	48.18	53.97	-5.79	74	-25.82	300	Vert
	Test	Meter		T346 Ant			E-Fields		E-Fields			
	Frequency	Reading		Factor	Preamp/	dB(uVolts		Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	al 1000 - 300											
7	16708.646	23.95	PK	41.4	-21	44.35	53.97	-9.62	74	-29.65	100	Horz
	18000 - 18000											
8	16760.62	23.72	PK	41.4	-21.4	43.72	53.97	-10.25	74	-30.28	400	Vert
	detector											
	si-Peak dete											
LnAv - Lir	near Average											
LgAv - Lo	g Average di rage detecto											





Manufact	urer: Qualco	omm Athe	ros									
Model: Q	-	Allin Acirc										
	g Mode, Mid	d Channel										
Job: 13U1												
Tested by	: Chris Xion	Į.										
•												
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolts	[dBuV/m]	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarit
Horizonta	l 1000 - 3000	MHz										
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 1	000 - 3000M	Hz										
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 th	e restricte	d band									
				T346 Ant			E-Fields		E-Fields			
Marker	Test	Meter		Factor	Preamp/		[dBuV/m]	Margin	[dBuV/m] -	Margin	Height	
No.	Frequency	Reading	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarit
Horizonta	l 1000 - 3000	MHz										
6	7653.075	39.56	PK	36.2	-27.9	47.86	53.97	-6.11	74	-26.14	400	Horz
Vertical 3	000 - 18000N	ИHz										
7	8789.678	39.43	PK	36.6	-27.8	48.23	53.97	-5.74	74	-25.77	300	Vert
				T245 A .			: II		: II			
				T346 Ant	,	In/ 1/ II	E-Fields		E-Fields			
Marker	Test	Meter		Factor	Preamp/	•	[dBuV/m]	Margin	[dBuV/m]		Height	n - 1 - 1
No.	Frequency		Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarit
	11000 - 3000		B**	20.5	24.5	20.54	F0.07	14.55	7.	24.40	100	.,
8	11183.408	25.21	PK	38.6	-24.3	39.51	53.97	-14.46	74	-34.49	100	Horz
	0000 - 18000		DV.	20.0	24.4	20.27	E2 07	14.7	74	24.72	100	1/
9	11231.384	24.77	PK	38.6	-24.1	39.27	53.97	-14.7	74	-34.73	100	Vert
PK - Peak	dotostar											
	detector i-Peak dete	etor										
	ear Average											
	Average de	tector										



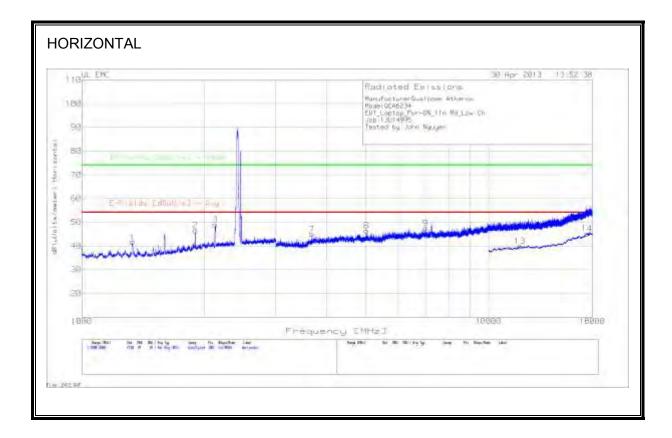


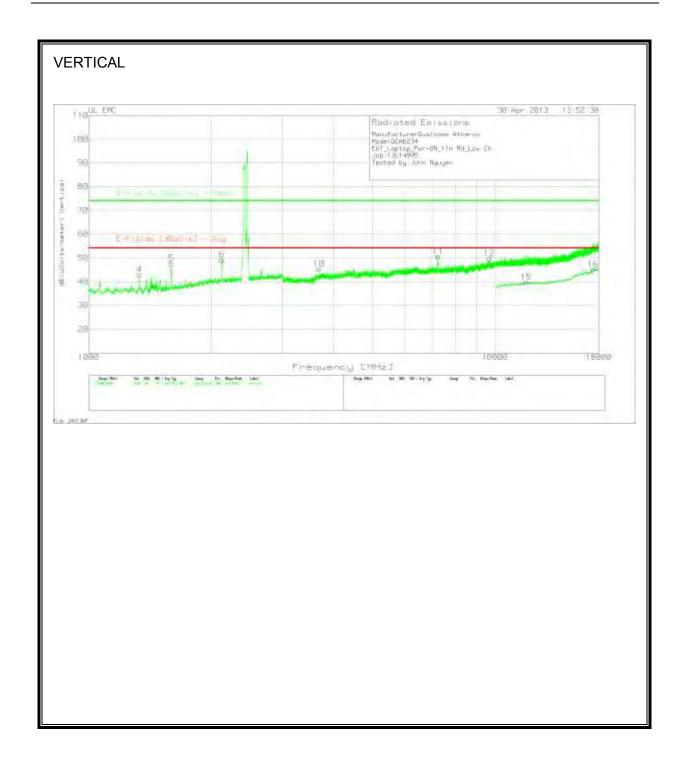
DATA												
Manufactu	rer: Qualcon	ım Athero	s									
Model: Q0	A6234											
Setup: 11g	Mode, High	Channel										
Job: 13U14	1995											
Tested by:	Chris Xiong											
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/C	dB(uVolts	[dBuV/m] -	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	able dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizontal	1000 - 3000N	1Hz										
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 10	00 - 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	e restricte	d band									
	Test	Meter		T346 Ant	3.6GHz		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	HPF	dB(uVolts	[dBuV/m] -	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Preamp/C	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizontal	3000 - 18000	MHz										
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 30	00 - 18000MF	z										
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
Horizontal	10000 - 1800											
	Test	Meter		T346 Ant	3.6GHz		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	HPF		[dBuV/m] -	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector		Preamp/C	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
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
	000 - 18000M											
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

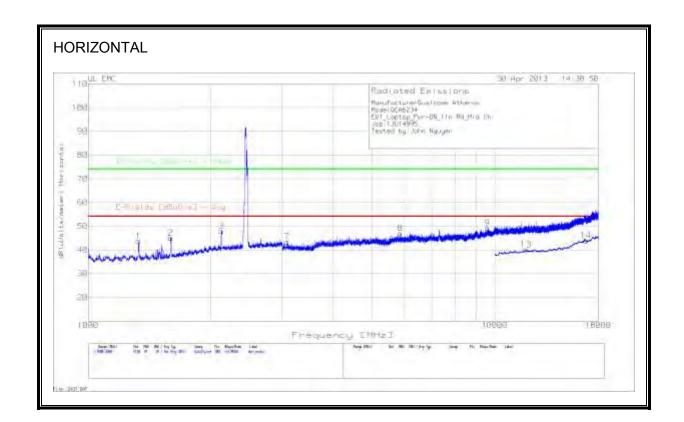
11n HT20 Mode, 2412 MHz

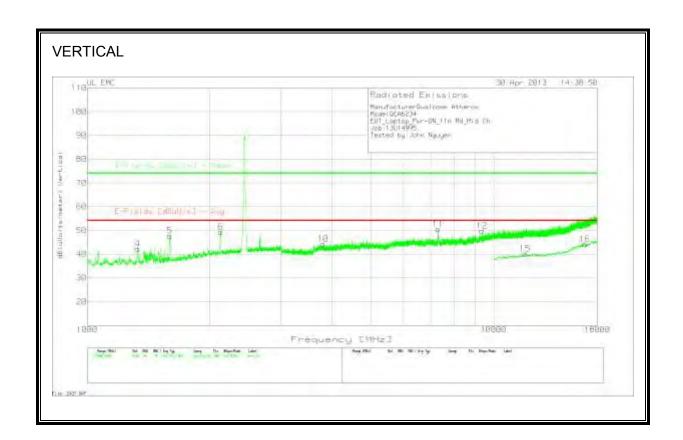




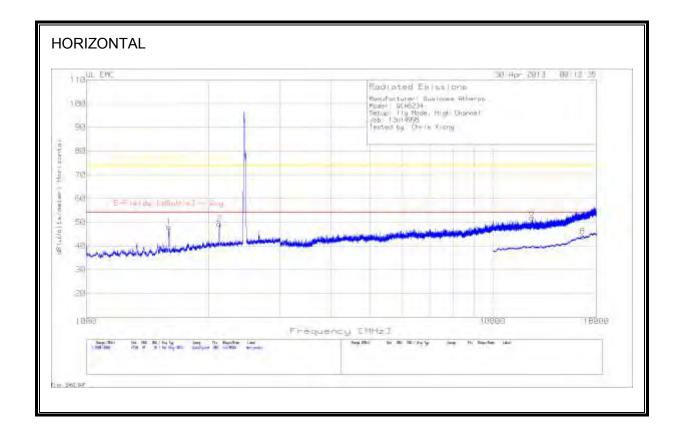
Manufact	urer: Qualco	mm Athe	ros									
Model: Q	CA6234											
EUT_Lapto	p_Pwr-ON_	_11n Md_L	ow Ch									
Job: 13U1	4995											
Tested by	: John Nguy	en										
Marker No.	Test Frequency MHz	Meter Reading dBuv	Detector	T346 Ant Factor [dB/m]	Preamp/ Cable dB	dB(uVolts /meter)	E-Fields [dBuV/m] Avg	Margin (dB)	E-Fields [dBuV/m] Peak	Margin (dB)	Height [cm]	Polarity
Horizonta	1000 - 3000	MHz										
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 10	000 - 3000MI	Hz										
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
	Test	Meter		T346 Ant			E-Fields		E-Fields			
	Frequency	Reading		Factor	Preamp/	. *	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	1000 - 3000	1										
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
	000 - 18000N		DIV.	22.5	21.0	4E 2C	E2 07	0.61	74	20.64	400	1/
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
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolte	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	1000 - 3000		Jetettol	[40/11]	Junic ub	,cci)	۰۰۰۰	(40)	. cun	(40)	temi	7 Sainty
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
	0000 - 18000				25.7		55.57			20.0	200	
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											
	i-Peak dete	ctor										
	ear Average											
LgAv - Log	Average de	tector										

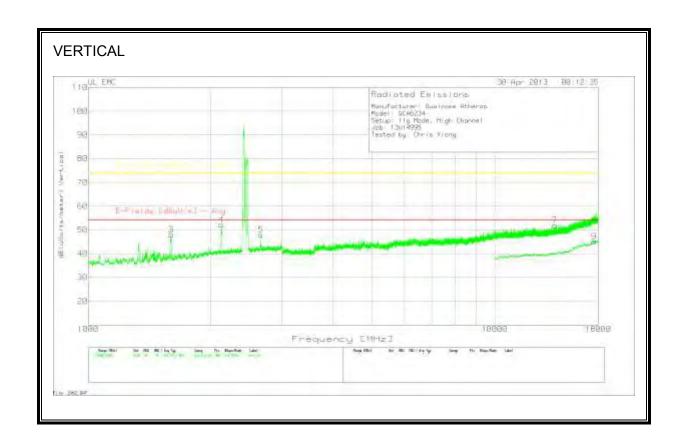
11n HT20 Mode, 2437 MHz





Manuf	hurari Ou-l-	omm A+L-	ros									
	turer: Qualo	omm Athe	105									
Model: Q		44 - N4d	Mid Ch									
LO1_Lapt Job: 13U1	op_Pwr-ON	_11U IVIQ_	iviia Cn									
	,: John Nguy	(OD										
resteu by	,. John Nguy	eli										
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolts		Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	al 1000 - 300			[,]		7		()		()	[]	
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
	.000 - 3000M					55		2.01			.50	
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
				-2.0								
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency			Factor	Preamp/	dB(uVolts		Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarit
Horizonta	al 1000 - 300			. , ,		. ,		. ,		, ,		
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 3	000 - 18000											
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
	Test	Meter		T346 Ant			E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Preamp/	dB(uVolts	[dBuV/m]	Margin	[dBuV/m] -	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizonta	al 1000 - 300	0MHz										
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 1	.0000 - 18000	OMHz										
15	11947.026	25.17	RMS	39	-24	40.17	53.97	-13.8	74	-33.83	200	Vert
	16756.622	24.1	RMS	41.4	-21.3	44.2	53.97	-9.77	74	-29.8	300	Vert
16												
16												
	detector											
PK - Peak	detector si-Peak dete	ector										
PK - Peak QP - Quas												
PK - Peak QP - Quas LnAv - Lin	si-Peak dete	e detector										



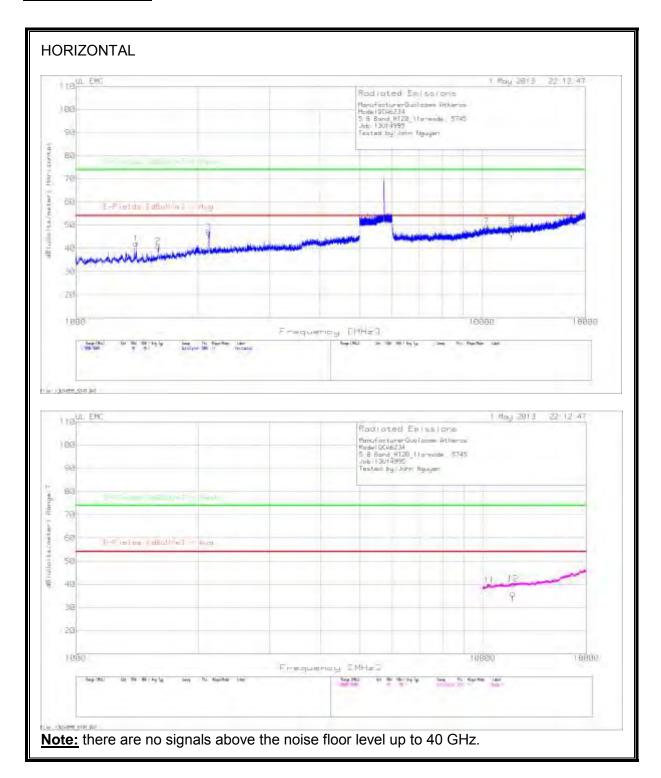


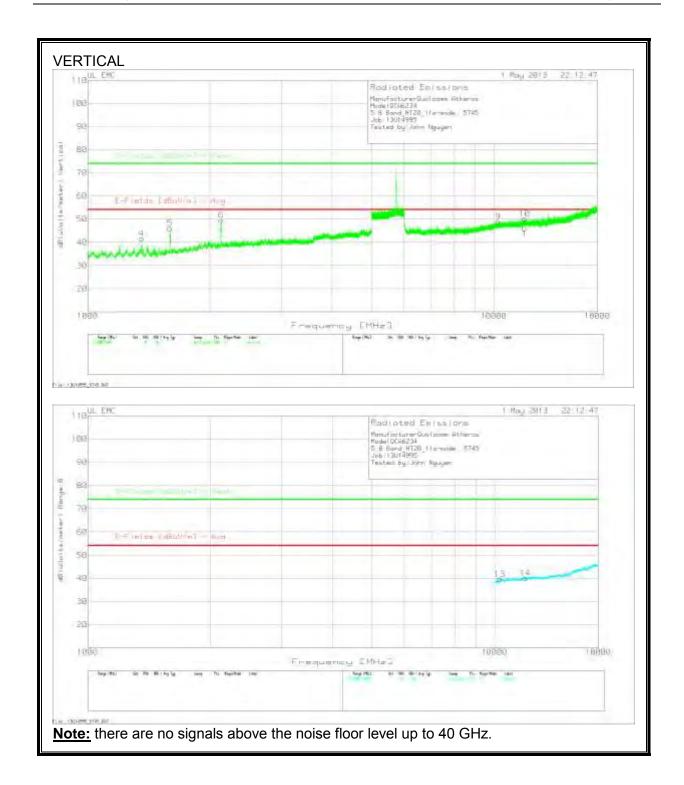
Setup: 11n HT20 Mode, High Channel 13U14995 13U	Manufactur	er:	Qualcomr	n Atheros									
Test Chris Xiong Tested by: Chris Xiong Chris Xi	Model:		QCA6234										
Test Marker Frequency (MHz) Margin (dB) Detector (dB/m)	Setup:		11n HT20	Mode, Hig	h Channel								
Marker No. Test Frequency (MHz) Margin (MBμV) Margin	Job:		13U14995										
Margin (MHz) Reading (MHz)	Tested by:		Chris Xion	ng									
1 1598 53.41 PK 29.5 -34.9 48.01 53.97 -5.96 74 -25.99 400 Horz		Frequency	Reading	Detector	Factor			[dBuV/m] -	_	[dBuV/m] -	-	_	Polarity
2	Horizontal :	1000 - 3000N	ИHz										
Vertical 1000 - 3000MHz 3 1599.333 53.38 PK 29.5 -34.9 47.98 53.97 -5.99 74 -26.02 300 Vert 2124.667 54.1 PK 32.2 -34.2 52.1 53.97 -1.87 74 -21.9 200 Vert 2659.333 48.59 PK 33 -33.6 47.99 53.97 -5.98 74 -26.01 300 Vert 73.60 No. Vert Vertical 3000 - 18000MHz 7 14066.885 38.7 PK 39.6 -26.4 51.9 53.97 -2.07 74 -22.1 100 Vert 7346 Ant Factor (dBμV) (dBμ	1	1598	53.41	PK	29.5	-34.9	48.01	53.97	-5.96	74	-25.99	400	Horz
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 Test Reading (MHz) Reading (2	*2126.667	51.13	PK	32.3	-34.2	49.23	53.97	-4.74	74	-24.77	400	Horz
4	Vertical 100	0 - 3000MH	Z										
S 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) Marker Predict (dBµV) Marker (dBµV) Marker (dBµV) Margin (dBµV) Marg				1						.		1	
Marker Frequency (MHz) Margin (MBμV) Detector Factor (MHz) Detector (MHz) Detector (MHz) Detector (MBμV) Detector (MBμ) D	5				33	-33.6	47.99	53.97	-5.98	74	-26.01	300	Vert
Marker No. Frequency (MHz) Reading (dBµV) Detector (MHz) Cable dB Marker (MHz) Cable dB Marker No. Margin (dB)				d band									
Horizontal 1000 - 3000MHz		Frequency	Reading	Detector	Factor		-	[dBuV/m] -	_	[dBuV/m] -	-	_	Polarity
6	Horizontal 1		· · ·		[ub/iii]			AVE		reak			
Vertical 3000 - 18000MHz				PK	39 1	-24 9	51 97	53 97	-2	74	-22.03	100	Horz
7					55.1	2.13	51.57	00.57		7.		100	
*=Not in the restricted band Marker No. Test Frequency (MHz) Meter (MHz) Detector (M				PK	39.6	-26.4	51.9	53.97	-2.07	74	-22.1	100	Vert
Marker No. Frequency (MHz) Reading (dBμV) Detector (dB/m)		*=Not in th	e restricte	d band									
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 Meter Frequency (MHz) (dBμV) Detector [dB/m] Gain [dB] Factor [dB] T160 BRF [dB] Margin (dB) Wargin (dB) Warg	No.	Frequency (MHz)	Reading (dBμV)	Detector	Factor			[dBuV/m] -	_	[dBuV/m] -	•	_	Polarit
Vertical 10000 - 18000MHz 9													
9 17548.226 23.85 PK 41.9 -20.7 45.05 53.97 -8.92 74 -28.95 300 Vert Test Frequency (MHz) Detector (dBμV) Detector [dB/m] Gain [dB] Factor [dB] T160 BRF [dB] Margin (dB) Margin (dB) Polarity Horizontal 1000 - 18000MHz				PK	41.4	-21.3	44.02	53.97	-9.95	74	-29.98	400	Horz
Test Meter Frequency (MHz) Detector (dBμV) Detector [dB/m] Gain [dB] T160 BRF [dB] Margin (dB) Margin (dB) Polarity (dB) Polarity (dB) Polarity (dB) Polarity				DV	41.0	20.7	4F.0F	F2 07	9.02	74	30.05	200	Vort
Frequency (MHz) Reading (dBμV) Detector [dB/m] Gain [dB] Factor [dB] Factor [dB] Factor [dB] Factor [dB] Factor [dB] Polarity [dB] Polarity [dB] Factor [dB] Fact	9	1/548.226	23.85	PK	41.9	-20.7	45.05	55.97	-8.92	/4	-28.95	300	vert
	Frequency	Reading	Detector	Factor	Preamp	Factor			[dBuV/m] -	_	_	Polarity	
12503.37 23.24 RMS 39.2 -32.5 11.8 0.4 42.14 53.97 -11.83 135 Horz	Horizontal 1	1000 - 18000	MHz										
	12503.37	23.24	RMS	39.2	-32.5	11.8	0.4	42.14	53.97	-11.83	135	Horz	

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

SPURIOUS EMISSIONS WITH 50 OHM LOAD

11a Mode, 5745 MHz

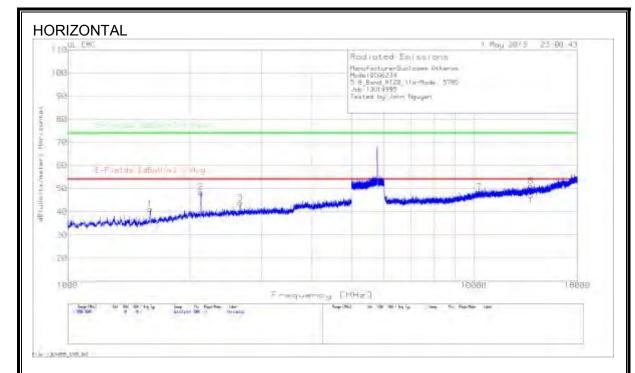


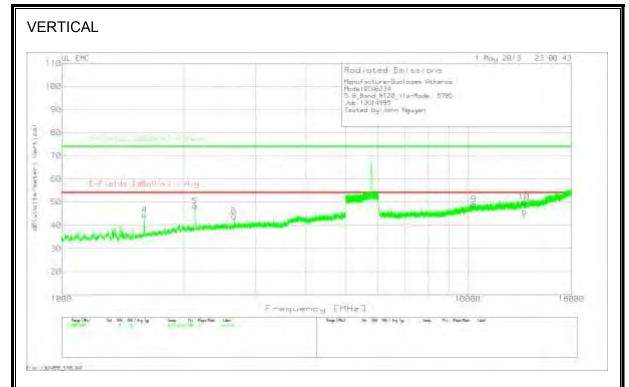


Av - Average detector

DATE: JULY 1, 2013

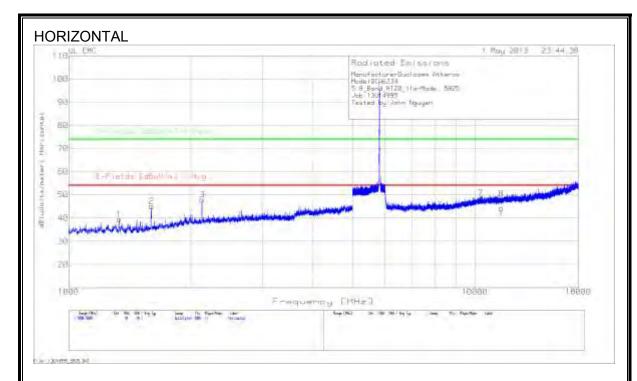
IC: 4104A-QCA6234

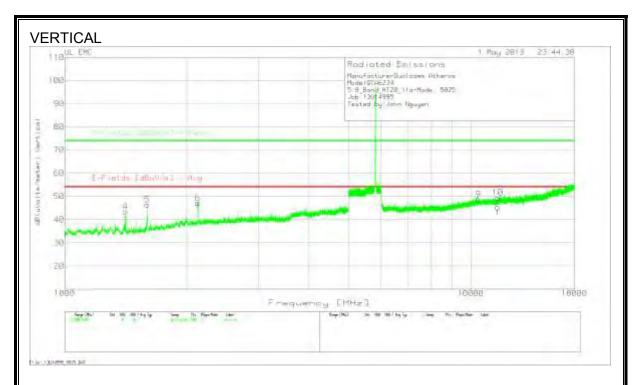




Model: 0	CA6234	mm Athe										
	_HT20_11a-N	/lode, 578 ⁰	5									
Job: 13U1												
	y: John Nguy	en										
resteu b	,											
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Cable	dB(uVolts	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	5GHz LPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polari
Horizonta	al 1000 - 5000	MH7				. ,		. ,		. ,		
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
	L000 - 5000M		FK	33	-33.0	43.33	33.37	10.04	/	-30.07	133	11012
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	-34.4	44.01	53.97	-9.96	74	-29.99	200	Vert
0	*=Not in the			33	-55.7	44.01	33.37	-5.50	74	-23.33	200	vert
	Test	Meter	Dallu	T346 Ant	Preamp/		E-Fields		E-Fields			
Marker				Factor		dB(uVolts		Margin	[dBuV/m]	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Hz HPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polari
			Detector	[ub/iii]	nz npr	/meter)	Avg	(ub)	Peak	(ub)	[CIII]	Polari
	al 6015 - 1800		514	20.0	25.0	40.55	50.07			25.44	400	
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
	5015 - 18000N		DI.	20.0	25.4	40.04	50.07	4.05	74	24.00	200	
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		band	T245 4 1			: II		: II			
	Test	Meter		T346 Ant	6GHz HPF		E-Fields		E-Fields			
Marker	Frequency	Reading	D-1-1-	Factor	Preamp/	. '	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	n-1
No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polari
	10000 - 18000											
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
	10000 - 18000											
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
	detector											
	si-Peak dete											
	near Average											
_	g Average de											
Av - Ave	rage detecto	r										

11a Mode, 5825 MHz



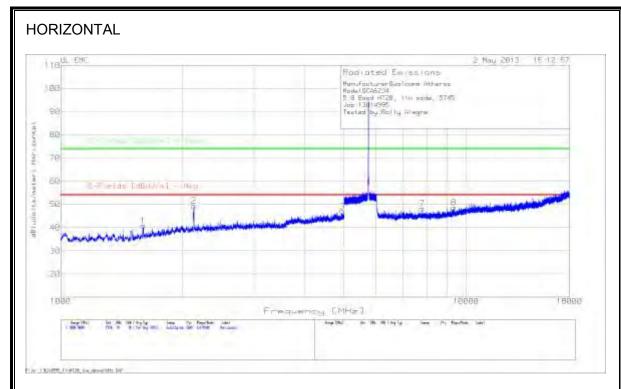


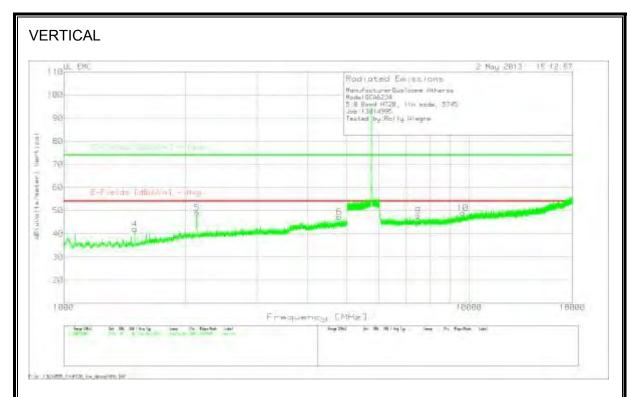
Model: QCA	6234											
5.8 Band H	T20_11a-Mo	de, 5825										
Job: 13U149		-										
Tested by: J		1										
•												
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
	Frequency	Reading		Factor	Cable	dB(uVolts	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
Marker No.	MHz	dBuv	Detector	[dB/m]	5GHz LPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
Horizontal 1	.000 - 5000M	Hz										
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
	0 - 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 th			UZIZ	54.4	47.123	33.37	0.70	, ,	20.01	300	vert
	Test	Meter	. Daira	T346 Ant	Preamp/		E-Fields		E-Fields			
	Frequency	Reading		Factor	cable/6G	dB(uVolts		Margin	[dBuV/m]	Margin	Height	
Marker No.	MHz	dBuv	Detector	[dB/m]	Hz HPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	015 - 18000		Detector	[40/111]		/ meter /	7118	(40)	. cun	(us)	[ciii]	. Glaric
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	
	5 - 18000MH		PK	30.7	-23.0	40.20	33.37	-3.03	74	-23.72	155	Horz
9	*10447.083	35.77	PK	38.4	-25.4	48.77	52.07	-5.2	74	25.22	200	Vert
							53.97			-25.23		
10	11651.475	36.49	PK	38.8	-25.8	49.49	53.97	-4.48	74	-24.51	300	Vert
	*=Not in the	Meter	a bana	T346 Ant	6GHz HPF		E-Fields		E-Fields		-	
						do()					11-1-64	
	Frequency	Reading	D-44	Factor	Preamp/	dB(uVolts	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	D-1in
Marker No.	MHz	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
	00 - 18000M											
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
	00 - 18000M		_									
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
	00 - 18000M	Hz										
Test	Meter		T119 Ant	T34			E-Fields		E-Fields			
Frequency	Reading		Factor		T193 HPF		[dBuV/m]	Margin	[dBuV/m]	Margin	Height	
MHz	dBuv	Detector	[dB/m]	Cable	[dB]	/meter)	Avg	(dB)	Peak	(dB)	[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 de	etector											
QP - Quasi-l	Peak detecto	or										
LnAv - Linea	r Average d	etector										
LgAv - Log A	verage dete	ctor										

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

SPURIOUS EMISSIONS WITH 50 OHM LOAD

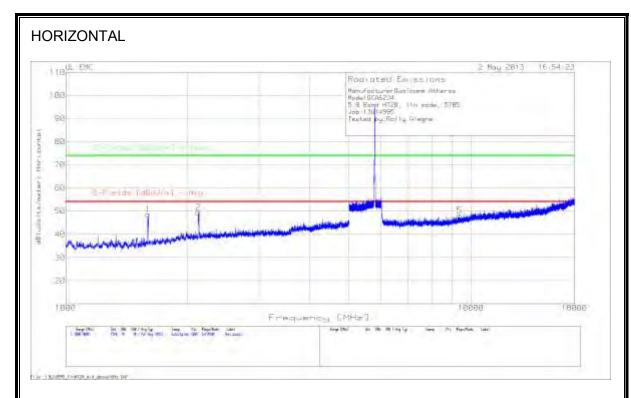
11n HT20 Mode, 5745 MHz

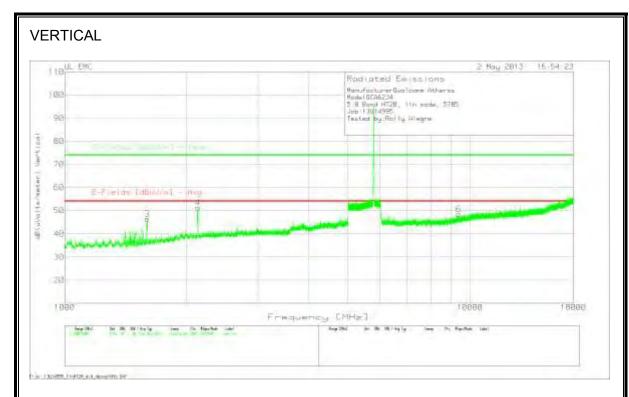




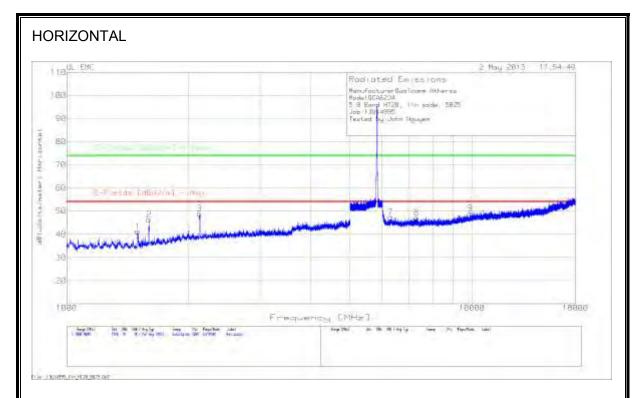
VERTICAL

Manufact	urer:	Qualcomr	n Atheros									
Model:		QCA6234										
Configura	tion:	5.8 Band H	T20, 11n n	node, 5745								
Job:		13U14995										
Tested by	':	Rolly Aleg	re									
1000 - 500	0MHz											
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Cable	dB(uVolt	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	5GHz LPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
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 - 180	000MHz											
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	cable/6G	dB(uVolt	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Hz HPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
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	e restricted	d band									
PK - Peak												
	i-Peak detec											
	ear Average											
	g Average de											
Av - Aver	age detector											

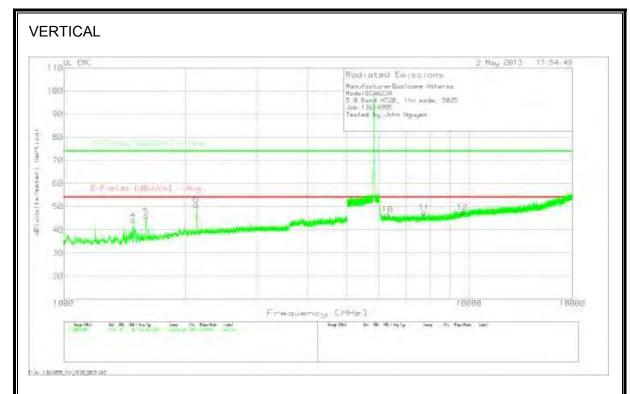




Manufact	urerQualcor	nm Athero	os									
ModelQC	A6234											
5.8 Band I	HT20, 11n mo	ode, 5785										
Job:13U14	1995											
Tested by	:Rolly Alegr	e										
Horizonta	l 1000 - 5000	MHz										
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Cable	dB(uVolt	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	5GHz LPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
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 1	000 - 5000MI	Hz										
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	Cable	dB(uVolt	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	5GHz LPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
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
Horizonta	l 6015 - 1800	0MHz										
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	cable/6G	dB(uVolt	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Hz HPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
5	9363.53	36.77	PK	37.3	-25.9	48.17	53.97	-5.8	74	-25.83	100	Horz
Vertical 6	015 - 18000N	ИHz										
	Test	Meter		T346 Ant	Preamp/		E-Fields		E-Fields			
Marker	Frequency	Reading		Factor	cable/6G	١,	[dBuV/m	Margin	[dBuV/m	Margin	Height	
No.	MHz	dBuv	Detector	[dB/m]	Hz HPF	s/meter)] - Avg	(dB)] - Peak	(dB)	[cm]	Polarit
6	9375.514	37.46	PK	37.3	-26.3	48.46	53.97	-5.51	74	-25.54	300	Vert
	*=Not in th	e restricte	d band									
PK - Peak												
QP - Quas	i-Peak dete	ctor										
	ear Average											
	g Average de											
Av - Aver	age detecto	r										



FAX: (510) 661-0888

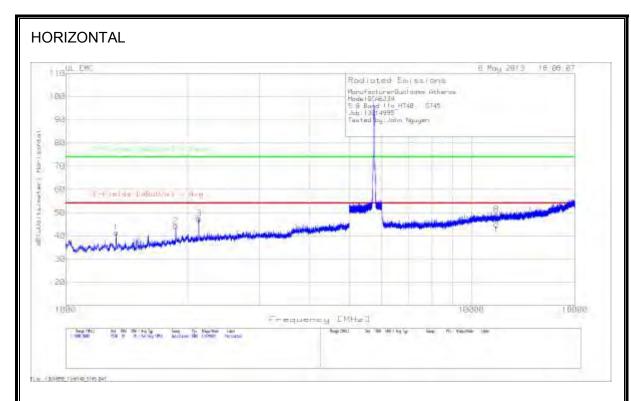


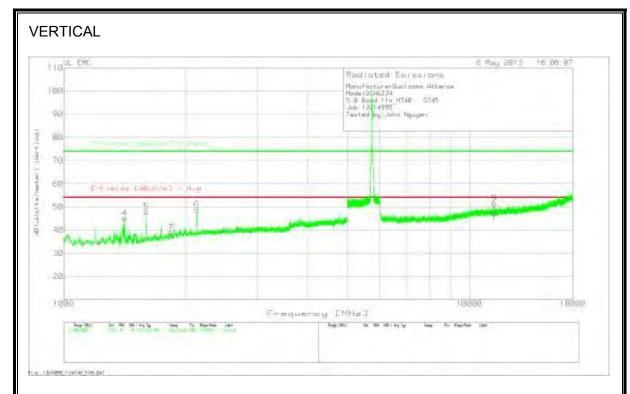
QCA6234											
HT20, 11n m	ode, 5825										
14995											
y: John Nguy	/en										
			- 15 A mA			~ ~! .!		~ ~! .!			
l I										-1-1-64	İ
	_	!			•		_		_	_	
		Detector	[dB/m]	5GHz LPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
1496	47.82	PK	28.8	-35.3	41.32	53.97	-12.65	74	-32.68	400	Horz
1597.333	51.34	PK	29.5	-34.5	46.34	53.97	-7.63	74	-27.66	199	Horz
2126.667	51.06	PK	32.3	-34.4	48.96	53.97	-5.01	74	-25.04	300	Horz
1483.333	50.58	PK	28.8	-35.3	44.08	53.97	-9.89	74	-29.92	300	Vert
1598.667	50.78	PK	29.5	-34.5	45.78	53.97	-8.19	74	-28.22	300	Vert
2125.333	52.95	PK	32.3	-34.4	50.85	53.97	-3.12	74	-23.15	200	Vert
Test	Meter		I .			E-Fields		E-Fields			
Frequency	Reading	'	Factor	cable/6G	dB(uVolts	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	İ
MHz	dBuv	Detector	[dB/m]	Hz HPF	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
al 6015 - 180	00MHz										
10625.845	37.67	PK	38.5	-25.7	50.47	53.97	-3.5	74	-23.53	399	Horz
13306.266	37.16	PK	39	-25.7	50.46	53.97	-3.51	74	-23.54	200	Horz
10652.809	36.41	PK	38.5	-25.8	49.11	53.97	-4.86	74	-24.89	200	Vert
13307.265	36.95	PK	39	-25.7	50.25	53.97	-3.72	74	-23.75	100	Vert
Test	Meter		T346 Ant	6GHz HPF		E-Fields		E-Fields			
Frequency	Reading	'	Factor	Preamp/	dB(uVolts	[dBuV/m]	Margin	[dBuV/m]	Margin	Height	İ
	dBuv	Detector	[dB/m]	Cable dB	/meter)	Avg	(dB)	Peak	(dB)	[cm]	Polarity
MHz	ubuv	4									
MHz 10000 - 18000											
		PK	38.4	-25.7	45.69	53.97	-8.28	74	-28.31	100	Horz
10000 - 18000	0MHz	PK PK	38.4 39	-25.7 -25.4	45.69 47.72	53.97 53.97	-8.28 -6.25	74 74	-28.31 -26.28	100 400	Horz Horz
10000 - 18000 10590.617	0MHz 32.99 34.12										
10000 - 18000 10590.617 13270.394	0MHz 32.99 34.12										
10000 - 18000 10590.617 13270.394 10000 - 18000	0MHz 32.99 34.12 0MHz	PK	39	-25.4	47.72	53.97	-6.25	74	-26.28	400	Horz
10000 - 18000 10590.617 13270.394 10000 - 18000 10566.619	0MHz 32.99 34.12 0MHz 33.72	PK PK	39 38.4	-25.4 -25.4	47.72 46.72	53.97	-6.25 -7.25	74 74	-26.28 -27.28	400 300	Horz Vert
10000 - 18000 10590.617 13270.394 10000 - 18000 10566.619	0MHz 32.99 34.12 0MHz 33.72	PK PK	39 38.4	-25.4 -25.4	47.72 46.72	53.97	-6.25 -7.25	74 74	-26.28 -27.28	400 300	Horz Vert
10000 - 18000 10590.617 13270.394 10000 - 18000 10566.619 13300.392	0MHz 32.99 34.12 0MHz 33.72 34.51	PK PK	39 38.4	-25.4 -25.4	47.72 46.72	53.97	-6.25 -7.25	74 74	-26.28 -27.28	400 300	Horz Vert
10000 - 18000 10590.617 13270.394 10000 - 18000 10566.619 13300.392 c detector si-Peak dete	0MHz 32.99 34.12 0MHz 33.72 34.51	PK PK PK	39 38.4	-25.4 -25.4	47.72 46.72	53.97	-6.25 -7.25	74 74	-26.28 -27.28	400 300	Horz Vert
10000 - 18000 10590.617 13270.394 10000 - 18000 10566.619 13300.392	32.99 34.12 0MHz 33.72 34.51	PK PK PK	39 38.4	-25.4 -25.4	47.72 46.72	53.97	-6.25 -7.25	74 74	-26.28 -27.28	400 300	Horz Vert
1	y: John Nguy Test Frequency MHz al 1000 - 5000 1496 1597.333 2126.667 1000 - 5000M 1483.333 1598.667 2125.333 Test Frequency MHz al 6015 - 18000 10625.845 13306.266 5015 - 180000 10652.809 13307.265	Test Reading dBuv al 1000 - 5000MHz 1496 47.82 1597.333 51.34 2126.667 51.06 1000 - 5000MHz 1483.333 50.58 1598.667 50.78 2125.333 52.95 Test Reading dBuv al 6015 - 18000MHz 10625.845 37.67 13306.266 37.16 5015 - 18000MHz 10652.809 36.41 13307.265 36.95	Test Reading MHz Detector al 1000 - 5000MHz 1496 47.82 PK 1597.333 51.34 PK 1000 - 5000MHz 1483.333 50.58 PK 1598.667 50.78 PK 12125.333 52.95 PK 1598.667 50.78 PK 1598.667 80.000 - 5000MHz 1483.333 50.58 PK 1598.667 50.78 PK 1598.667 50.78 PK 1598.667 50.78 PK 160525.333 52.95 PK 160525.333 52.95 PK 160525.333 52.95 PK 160525.333 52.95 PK 160525.345 37.67 PK 13306.266 37.16 PK 13307.265 36.95 PK 13307.265 36.95 PK	Test Reading Buy Detector [dB/m] T346 Ant Factor [dB/m] T346 Ant Fa	Test	Test	Test	Test	Test	Test Meter Frequency Margin GB Margin Margin GB Margin Test Meter Frequency Reading MHz Margin GBuv Detector [dB/m] SGHz LPF Meter MHz Margin GBuv Margin Mar	

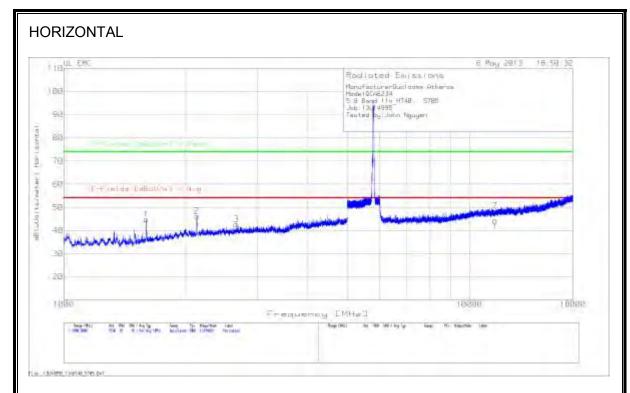
TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.8 GHz BAND 9.7.

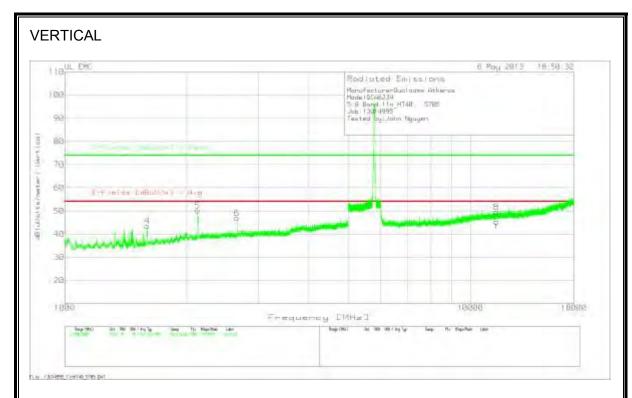
SPURIOUS EMISSIONS WITH 50 OHM LOAD

11n HT40 Mode, 5755 MHz









29,5 -34,5 44,76 53,97 -9,21 74 -29,24 300 Morz 32,3 -34,4 46,3 53,97 -7,67 74 17,7 300 Morz 33 -33,6 42,73 53,97 -11,24 74 -31,27 200 Horz 29,5 34,5 43,43 53,97 -10,54 74 30,57 100 Vert 32,3 -34,4 50,19 53,97 -3,78 74 -23,81 199 Vert 32,3 -34,4 50,19 53,97 -7,02 74 27,05 100 Vert 1346 Ant Preamp/ Factor Cable (BEUVoits [dBuV/m] Margin [dBuV/m] Margin [dBuV/m] Height [dBuV/m] Factor [dB/m] SGHz LPF /meter) Avg (dB) Peak (dB) [cm] Polarity	300 Horz 300 Horz 200 Horz 1/00 Vert 199 Vert 100 Vert	300 Ho 300 Ho 200 Ho 1/10 Ve 199 Ve 100 Ve	-29.26 -27.7 -31.27 -40.57 -23,81	74 74 74 74 74	-9,21 -7,67 -11,24 -10,54	53,97 53,97 53,97	44.76 46.3	-34,5 -34,4	29,5 32,3	PK PK	49.76 48.4	1598.667	Marker No. stal 1000 - 50
12.3 -34.4 46.3 53.97 -7.67 74 -37.7 300 Horz	300 Harz 200 Horz 1/00 Vert 1/00 Vert 1/00 Vert Height [on] Pelarity	300 Ho 200 Ho 190 Ve 199 Ve 100 Ve	-31.27 -31.27 -30.57 -23,81	74 74 74 74	-7.67 -11.24 -10,54	53.97 53.97	46.3	-34,4	32.3			1598.667	
12.3 -34.4 46.3 53.97 -7.67 74 -37.7 300 Horz	300 Harz 200 Horz 1/00 Vert 1/00 Vert 1/00 Vert Height [on] Pelarity	300 Ho 200 Ho 190 Ve 199 Ve 100 Ve	-31.27 -31.27 -30.57 -23,81	74 74 74 74	-7.67 -11.24 -10,54	53.97 53.97	46.3	-34,4	32.3				1
33 -33.6 42.73 53.97 -11.24 74 -31.27 200 Horz 29.5 -34.5 43.43 53.97 -10.54 74 -30.57 100 Vert 32.3 -34.4 50.19 53.97 -3.78 74 -23.81 199 Vert 33 -33.6 46.95 53.97 -7.02 74 27.05 100 Vert T346 Ant Preamp/ Factor Cable (IB[uVolts (IdBuV/m] - Margin (IdBuV/m] - Margin (IdBuV/m] - Margin (IdBuV/m] - Margin (IdBuV/m] - Margin (IdBuV/m] - Peak	200 Horz 200 Vert 200 Vert 200 Vert Reight [on] Pelarity	200 Ho 190 Ve 199 Ve 100 Ve	-31.27 -30.57 -23,81	74 74 74	-11.24 -10,54	53.97		-		PK.	48.4		
29.5 34.5 43.45 53.97 -10,54 74 -30.57 100 Vert 32.3 -34.4 50.19 53.97 -3.78 74 -23.81 199 Vert 33 -33.6 46.95 53.97 -7.02 74 27.05 100 Vert T346 Ant Preamp/ Factor Cable (Beuvoits (dBuv/m) - Margin (dBuv/m) - Margin (dB) Feak (dB) [cm] Pelarity	190 Vert 199 Vert 100 Vert Height [cm] Pelarity	1/90 Ve 199 Ve 100 Ve	-30.57 -23.81	74	-10,54		42.73	-33.6	3.3			*2130	2
32,3	199 Vert 100 Vert Height [cm] Pelarity	199 Ve 100 Ve Height	-23,81	74		53.97			202	PK:	43.33	2863.333	3
32,3	199 Vert 100 Vert Height [cm] Pelarity	199 Ve 100 Ve Height	-23,81	74		53.97							Venital 100
33 -33.6 46.95 53.97 -7.02 .74 .27.05 .200 Vert	Height [cm] Pelarity	100 Ve	-		-3.78		43.45	-34.5		PK.	48.43	1595.567	4
T346 Ant Preamp/ E-Fields E-Fields Factor Cable dB(uVolts [dBuV/m] - Margin [dBuV/m] - Margin Height (dB/m] 5GHz LPF /meter) Avg (dB) Peak (dB) [cm] Pelarity	Height [on] Pelarity	Height	-27.05	72.4	-0110	53,97	50.19	-34,4	32,3	PK	52,29	*2126,667	5
T346 Ant Preamp/ E-Fields E-Fields Factor Cable dB(uVolts [dBuV/m] - Margin [dBuV/m] - Margin Height for [dB/m] 5GHz LPF /meter) Avg (dB) Peak (dB) [cm] Pelarity	[cm] Palarity	100 miles		.74	-7.02	53.97	46.95	-33.6	33	PK-	47.55	2659.333	E
Factor Cable dB(uVolts [dBuV/m] Margin [dBuV/m] Margin Height (dB) Feak (dB) [cm] Pelarity	[cm] Palarity	100 miles								d band	-	*=Not in th	
		fout Loss		[dBuV/m]		[dBuV/m]	100000000000000000000000000000000000000	Cable	Factor	Detector	Meter Reading dbuy	Frequency MHz	Market No.
26.7 25.7 49.67 53.07 5.55 7A 25.58 300 Unit	\$00 Hore		(us)	PEak	(an)	Avg	/meter)	20HT CIS	[as/m]	Detector			1110-1411
	Sun Hore	1 808 1 450	50.00	77.6	2.00	47.67	40.40	60.70	20.7	I nu			Horizontal 6
36.7 46.42 35.37 3.33 14 45.36 300 76.66		SUU HO	-73.56	74	-3.33	24.91	48.42	-23.7	38.7	PK	35,42	11565.59	7
20 2 20 20 20 20 20 20 20 20 20 20 20 20	China Linea	cine Lo	74.55	74	2.00	52.02	10.55	ne.	20.2	na-			Vertical 601
38.7 -26 49.56 53.97 -4.41 74 -24.44 299 Vert	299 Veit	299 Ve	-24,44	14	-4,41	23.97	49,30	-20	38,7	PK	36,86	11596.549	B
T346 Ant 6GHz HPF E-Fields E-Fields E-Fields E-Fields Factor Preamp/ IB[uVolts IdBuV/m] Margin IdBuV/m] Margin Reight Reight Margin Reight	1.000000	100000	A CONTRACTOR OF THE PARTY OF TH	[dBuV/m]	100000	[dBuV/m]	The second second	Preamp/	Factor	Detector	dBuv	Frequency MHz	Marker No.
38.8 -25.5 42.47 53.97 11.5 74 31.53 300 Hpts	300 Untel	300 Ur	31.53	74	1115	57.07	42.87	35.6	20.0	CDW			
38.3 12.13 42.47 33.37 31.3 54 32.33 300 Filip	Sin Living	300 100	- Advisor		11.5	22.37	42.47	-230	30.3	170			
39.7 -25.9 44.21 53.97 9,76 74 -29.79 299 Vert	200 1/44	200 144	-96 70	24	9.76	53.97	44.21	35.9	39.7	De			_
36.7 -23.3 44.21 33.37 -3.70 14 -25.73 23 (61)	4-04 Wells	4-13 10	-43.72	74	-2,70	34.37	44.41	63,3	30,7		32,44	11394,202	40
											ALL:	enn Tennor	Marianatal 7
or Preamp Factor T192 HPF dB(uVolts/ [dBuV/m Margin [dBuV/m Margin Height		1	La Contract	100	[dBuV/m	7. 10. 45.0	0-3-4	Factor	Preamp	T345 Ant Factor Id8/m)		Meter Reading	Test Frequency
	Margin Height	Margin Hei	A CONTRACTOR	(dB)	- AMP			2-1-2		38.8	RMS.		
	Margin Height (dB) (cm) Po	Margin Help (dB) (cr	1-Peak			40.04	0.2	11.3	-33.6				-
9 -92/0 12/3 Vic 40/04 35/37 -12/33 /4 -53/30 12/4 OI	n Margin Height (dB) [cm] Po	Margin Help (dB) (cr	j-Peak	-13.93	53.97		0.2	11.3	-33.6	38.0		0 - 18000MH	Vertical 760
	Margin Height (dB) (cm) Po	Margin Hei (dB) (cr -33.36 11	j-Peak 74		53.97		0.2						
unt T145 Cable E-Fields E-Fields	Margin Height (dB) (cm) Po -33 36 114 8	Margin Heli (dB) (cr -33.96 11	1- Peak 74 E-Fields	-13.93	53.97 E-Fields	40.04		Cable	T145	T345 Ant		Meter	Vertical 760 Test Frequency
unt T145 Cable E-Fields E-Fields F-Fields Glev/m Margin (dBuv/m Margin Reight	Margin Height (dB) (cm) Po -33.96 114 8	Margin Hei (dB) (cr -33.96 11 Margin (te)	J-Peak 74 E-Fields (dBuV/m	-13.93 Margin	53.97 E-Fields [dBuV/m	40.04 d8(uVolts/	T192 HPF	Cable Factor	T145 Preamp				
38.8 -25.5 42.47 53.97 11.5 74 31.53 300 38.7 -25.9 44.21 53.97 -9.76 74 -29.79 299 Ant T145 Cable or Preamp Factor T192 HPF dB(uvolts/ [dBuv/m Margin [dBuv/m Margin H] Gain [dB] [dB] [dB] meter)] - Avg (dB) 1 - Peak (dB)	300	300	31.53 -29.79 E-Fields	74 74 Margin	9,76 E-fields [dBuV/m	53.97 53.97 dB(uVolts/	42.47 44.21 T192 HPF	-25.5 -25.9 Cable Factor	38.3 39.7 T145 Preamp Gain [dlt]	PK PK T345 Ant Factor [dB/m]	HZ 29:17 HZ 31:41 WHZ	00 - 18000M 11663.861 00 - 18000M 11591.202 600 - 18000 Meter	Range:7 100 9 Range:8 100 10 Horizontal 7 Test

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

WORST-CASE BELOW 1 GHz 9.8.

Manufact	urer: Qualco	omm Athe	ros								
Model: QCA6234											
2X2 MIMO 802.11 abgn+BT4.0											
Job: 13U14995											
Tested by	: John Nguy	en									
				T408 Ant	T285	Cable		E-Fields			
Marker	Test	Meter		Factor	Preamp	Factor	dB(uVolts	[dBuV/m] ·	Margin	Height	
No.	Frequency	Reading	Detector	[dB/m]	[dB]	[dB]	/meter)	QPk	(dB)	[cm]	Polarity
Horizonta	l 30 - 1000M	lHz									
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 3	0 - 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 Adap	ter noise										
PK - Peak											
QP - Quas	i-Peak dete	ctor									
LnAv - Linear Average detector											
LgAv - Log Average detector											
Av - Aver	age detecto	r									

REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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

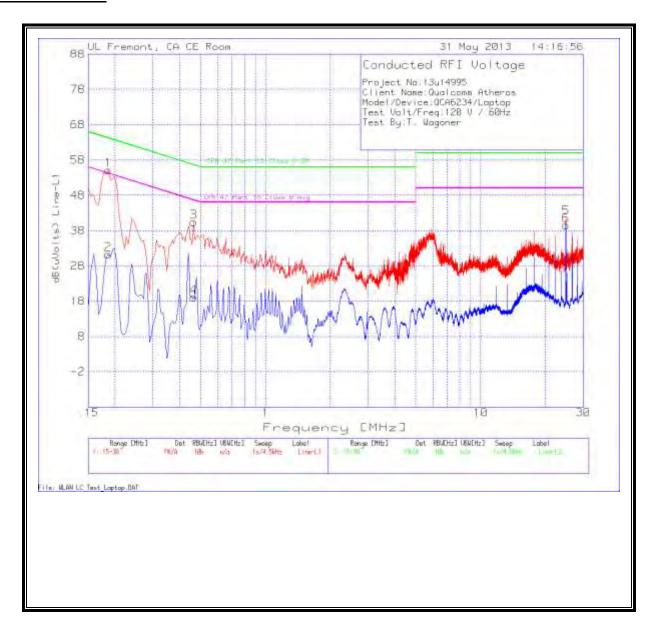
6 WORST EMISSIONS

Project No:	13u14995								
Client Nam	e:Qualcon	nm Atheros							
Model/Dev	rice:QCA62	34/Laptop							
Test Volt/F	req:120 V /	60Hz							
Test By:T. V	Vagoner								
Line-L1 .15	- 30MHz								
Test	Meter		T24 IL	LC Cables		CFR 47		CFR 47	
Frequency		Detector	L1.TXT (dB)		dB(uVolts)	Part 15	Margin	Part 15 Class B	Margin
(MHz)	(dBuV)	Detector				Class B			
(IVITIZ)	(ubuv)		(ub)	(ив)		QP		Avg	
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	Meter		T24 IL	LC Cables		CFR 47		CFR 47	
		D-44			1 1	Part 15		Part 15	Margin
Frequency		Detector	L2.TXT	1	dB(uVolts)	Class B	Margin	Class B	
(MHz)	(dBuV)		(dB)	(dB)		QP		Avg	
0.177	56.51	PK	0.1	0	56.61	64.6	-7.99	-	-
0.177	23.09	Av	0.1	0	23.19	1	-	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 d	etector								
QP - Quasi-		ctor							
Av - Averag									

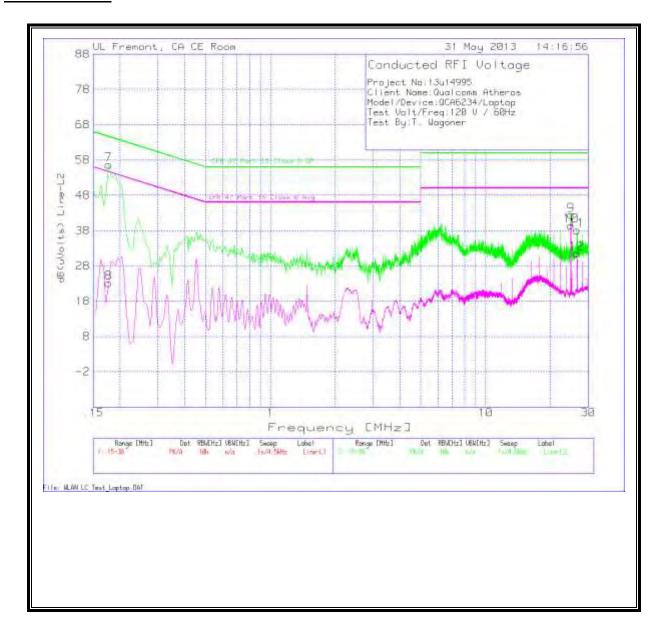
DATE: JULY 1, 2013

IC: 4104A-QCA6234

DATE: JULY 1, 2013 IC: 4104A-QCA6234



DATE: JULY 1, 2013 IC: 4104A-QCA6234



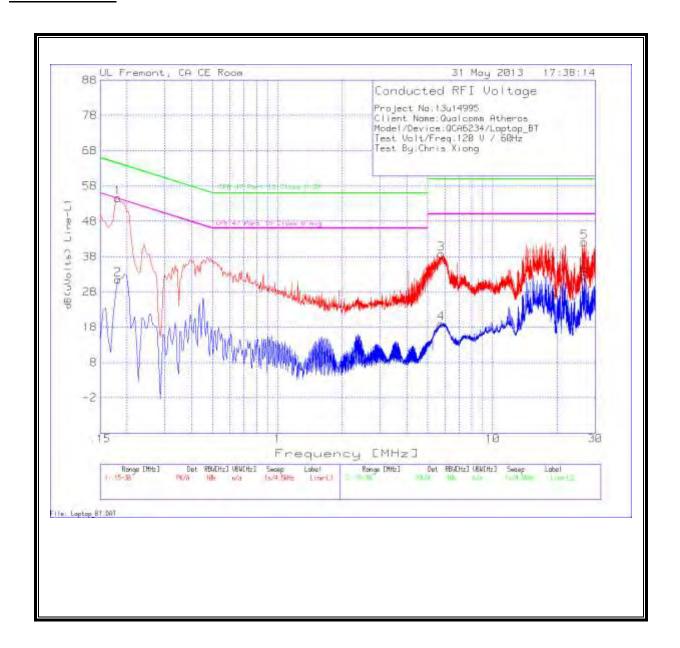
REPORT NO: 13U14995-1 DATE: JULY 1, 2013 FCC ID: PPD-QCA6234 IC: 4104A-QCA6234

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 w	ith USB cal	ole to Blue	tooth adap	ter board	
Line-L1 .15 -	30MHz								
						CFR 47		CFR 47	
Test	Meter		T24 IL	LC Cables		Part 15		Part 15	
Frequency	Reading		L1.TXT	1&3.TXT	dB(uVolt	Class B		Class B	
MHz	dBuv	Detector	(dB)	(dB)	s)	QP	Margin	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								
						CFR 47		CFR 47	
Test	Meter		T24 IL	LC Cables		Part 15		Part 15	
Frequency	Reading		L2.TXT	2&3.TXT	dB(uVolt	Class B		Class B	
MHz	dBuv	Detector	(dB)	(dB)	s)	QP	Margin	Avg	Margin
0.1815	53.36	PK	0.1	0	53.46	64.4	-10.94		-
0.1815			0.1	0	27.68		-	54.4	-26.72
0.4515			0.1	0	38.6	56.8	-18.2	-	-
0.4515			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 de	PK - Peak detector								
QP - Quasi-F	eak detec	tor							
Av - Averag	e detector								

LINE 1 RESULTS



DATE: JULY 1, 2013 IC: 4104A-QCA6234

