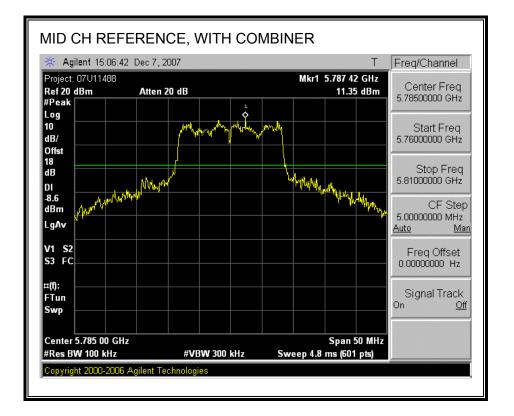
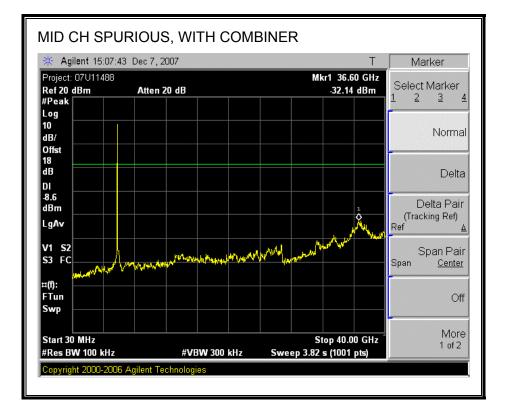


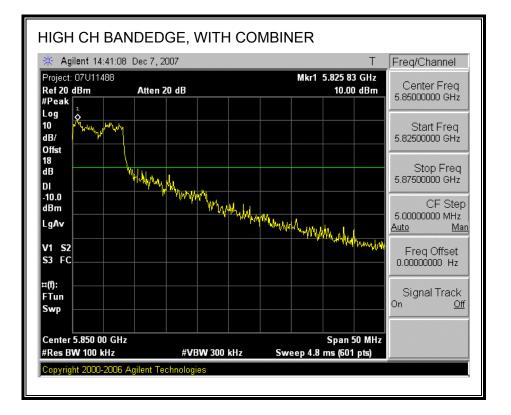
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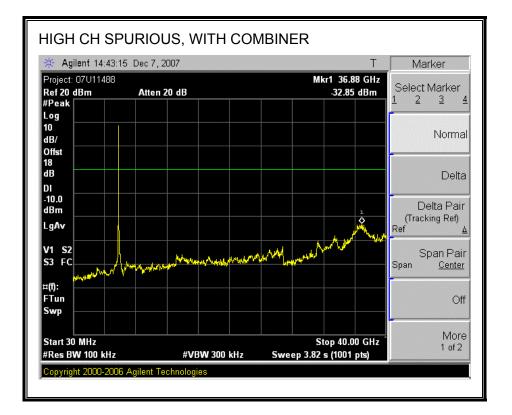
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7.6. 802.11n HT20 MODE IN THE 5.8 GHz BAND

7.6.1. 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.

TEST PROCEDURE

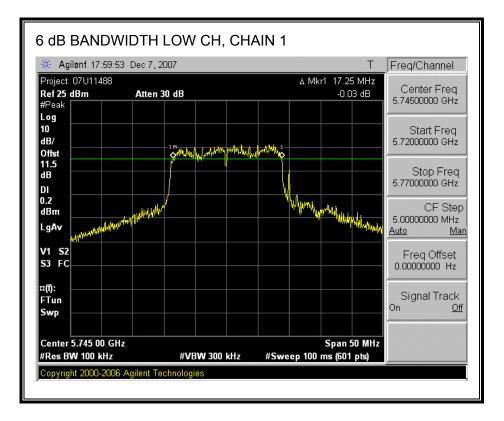
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

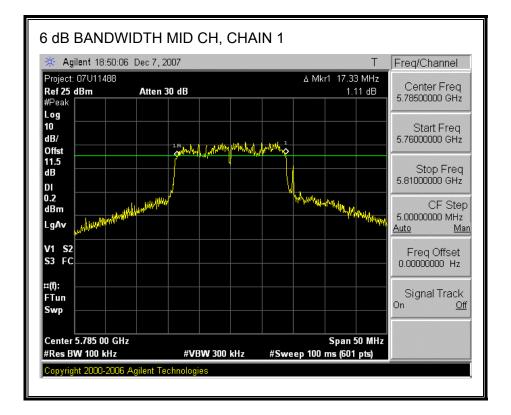
Channel	Frequency	Chain 1	Chain 2	Minimum Limit
		6 dB BW	6 dB BW	
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5745	17.25	17.08	0.5
Middle	5785	17.33	17.33	0.5
High	5825	17.33	17.33	0.5

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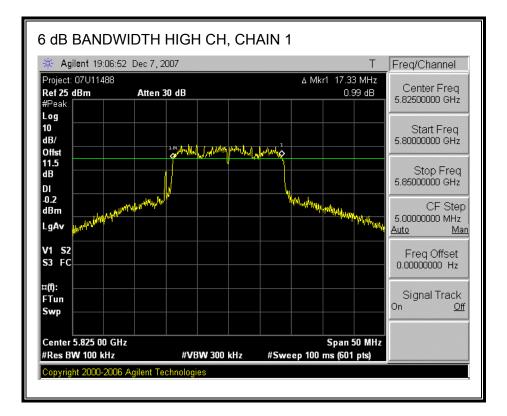
6 dB BANDWIDTH, CHAIN 1



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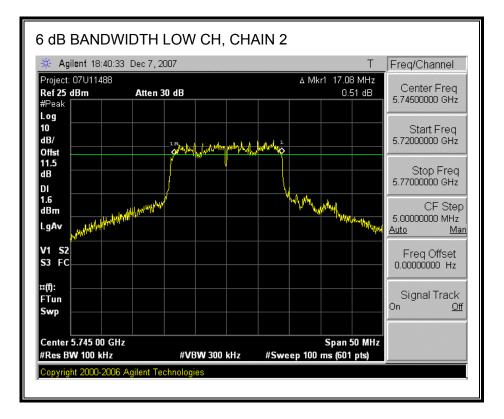


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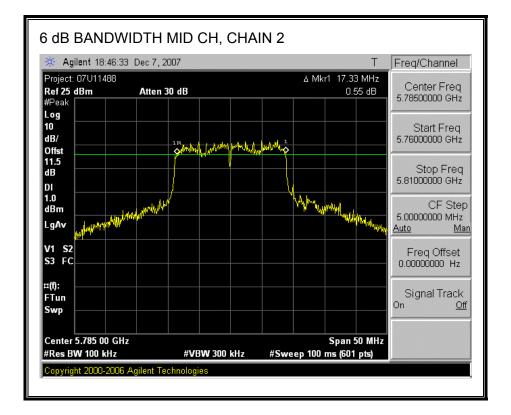


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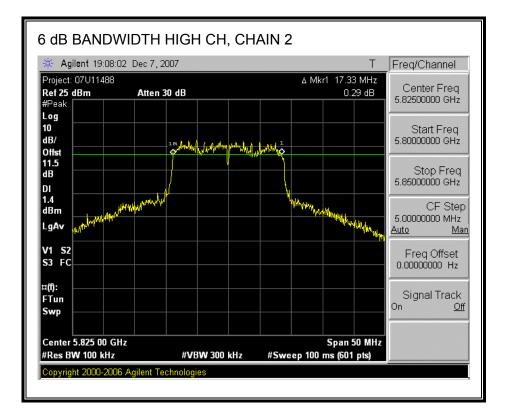
6 dB BANDWIDTH, CHAIN 2



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7.6.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

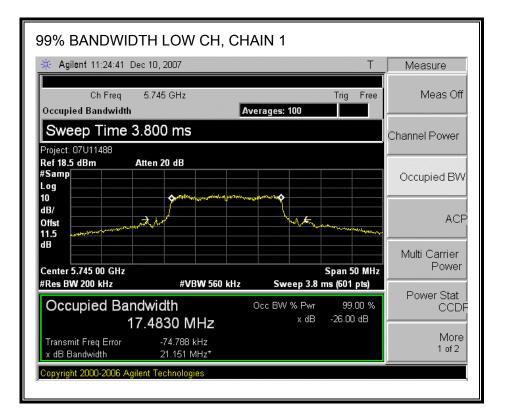
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

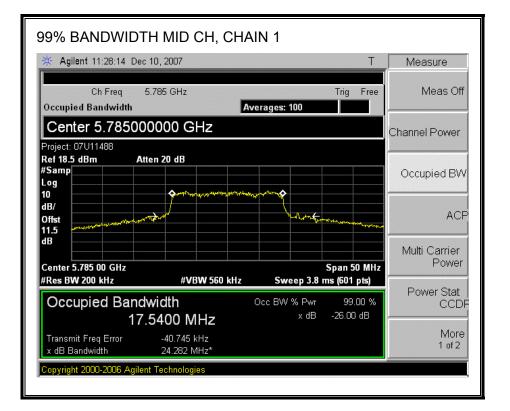
Channel	Frequency	Chain 1	Chain 2
		99% Bandwidth	99% Bandwidth
	(MHz)	(MHz)	(MHz)
Low	5745	17.4830	17.5658
Middle	5785	17.5400	17.4810
High	5825	17.5162	17.5238

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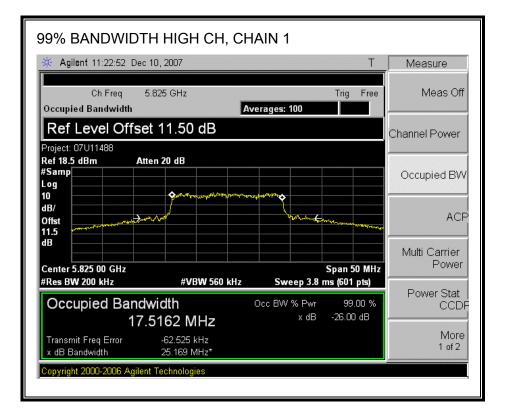
99% BANDWIDTH, CHAIN 1



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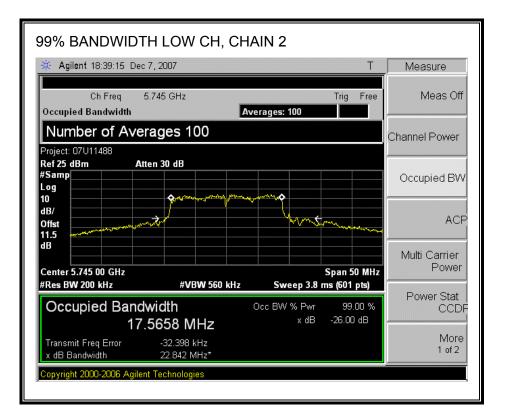


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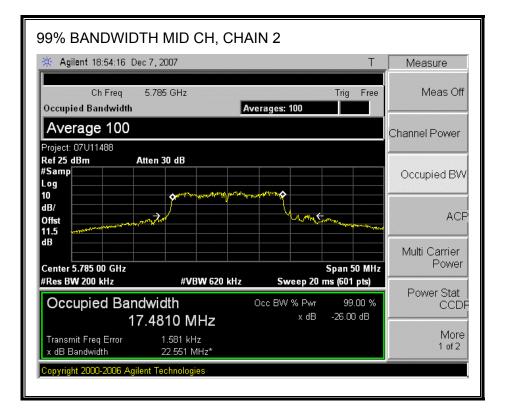


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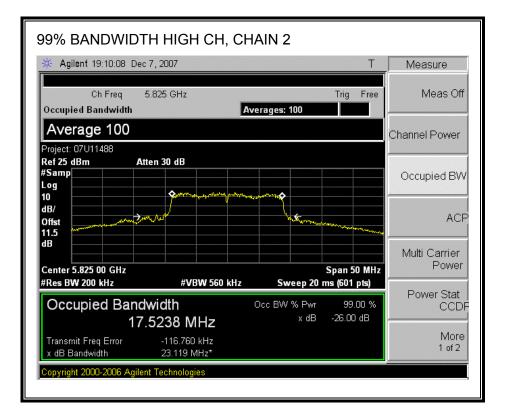
99% BANDWIDTH, CHAIN 2



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7.6.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

Peak power is measured using the spectrum analyzer's internal channel power integration function. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

RESULTS

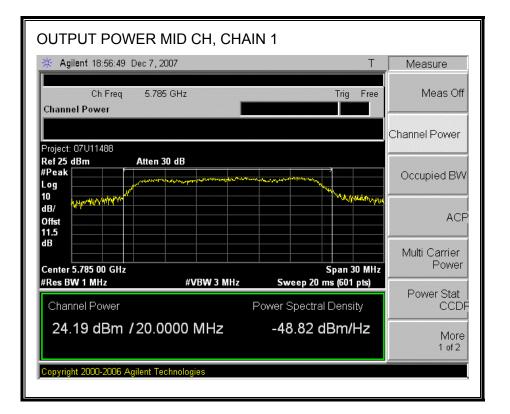
Channel	Frequency	Limit	Chain 1	Chain 2	Total	Margin
			Power	Power	Power	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5745	30.00	24.15	24.98	27.60	-2.40
Mid	5785	30.00	24.19	24.49	27.35	-2.65
High	5825	30.00	23.89	25.10	27.55	-2.45

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CHAIN 1 OUTPUT POWER

OUTPUT POWER L	OW CH, CH	AIN 1	
🔆 Agilent 18:05:25 Dec 7, 20	107	Т	Measure
Ch Freq 5.745 Channel Power	GHz	Trig Free	Meas Off
Project: 07U11488			Channel Power
10	D dB	And The Control of Con	Occupied BW
dB/			ACP
dB		Span 30 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
24.15 dBm / 20.00	000 MHz	-48.86 dBm/Hz	More 1 of 2
Copyright 2000-2006 Agilent Tec	hnologies		

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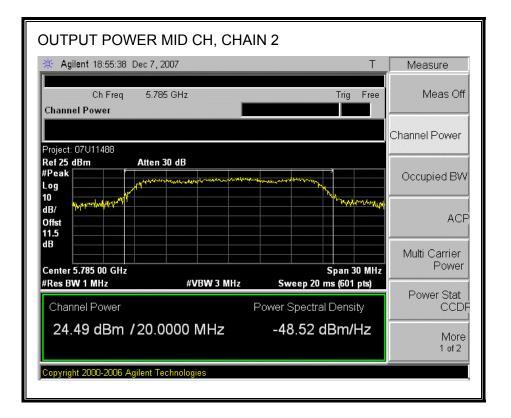
OUTPUT POWER	HIGH CH, CH	HAIN 1	
🔆 Agilent 19:12:48 Dec 7, 3	2007	T	Measure
Ch Freq 5.82 Channel Power	25 GHz	Trig Free	Meas Off
Project: 07U11488			Channel Power
#Peak	30 dB	man mark more than the	Occupied BW
10 dB/ Offst 11.5		Mule y gly by	ACP
dB Center 5.825 00 GHz		Span 30 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
23.89 dBm / 20.0	0000 MHz	-49.12 dBm/Hz	More 1 of 2
Copyright 2000-2006 Agilent To	echnologies		

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CHAIN 2 OUTPUT POWER

OUTPUT POWER L	OW CH, CH	AIN 2	
🔆 Agilent 18:37:02 Dec 7, 20)07	Т	Measure
Ch Freq 5.745 Channel Power	GHz	Trig Free	Meas Off
Project: 07U11488			Channel Power
Ref 25 dBm Atten 3 #Peak Log 10	0 dB		Occupied BW
dB/		Wijel drouger, w	ACP
dB		Span 30 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
24.98 dBm / 20.00	000 MHz	-48.03 dBm/Hz	More 1 of 2
Copyright 2000-2006 Agilent Teo	hnologies		

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OUTPUT POWER HIGH CH, CHAIN 2	
🔆 Agilent 19:14:26 Dec 7, 2007 T	Measure
Ch Freq 5.825 GHz Trig Free Channel Power	Meas Off
Project: 07U11488	Channel Power
Ref 25 dBm Atten 30 dB #Peak Log	Occupied BW
10 dB/ Offst 11.5	ACP
dB Center 5.825 00 GHz Span 30 MHz	Multi Carrier Power
#Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (601 pts) Channel Power Power Spectral Density	Power Stat CCDF
25.10 dBm / 20.0000 MHz -47.91 dBm/Hz	More 1 of 2
Copyright 2000-2006 Agilent Technologies	

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7.6.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 1 Power	Chain 2 Power	Total Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5745	16.98	17.69	20.36
Middle	5785	17.13	17.30	20.23
High	5825	17.15	17.80	20.50

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7.6.5. POWER SPECTRAL DENSITY

<u>LIMITS</u>

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

TEST PROCEDURE

Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS:

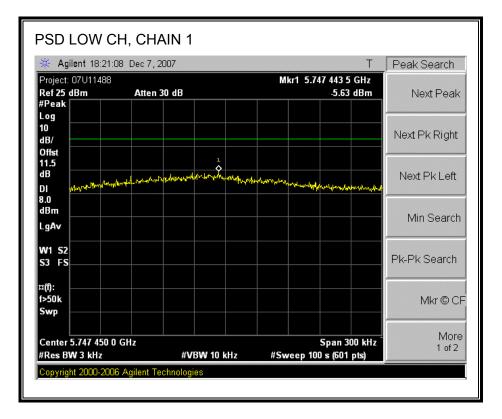
Middle and High channels were measured with the combiner only, since doing so results in the worst-case compared to measuring either chain alone.

Channel	Frequency	Chain 1	Chain 2	Total	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)

Channel	Frequency	PSD with Combiner	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	5745	0.23	8	-7.77
Middle	5785	0.07	8	-7.93
High	5825	-0.69	8	-8.69

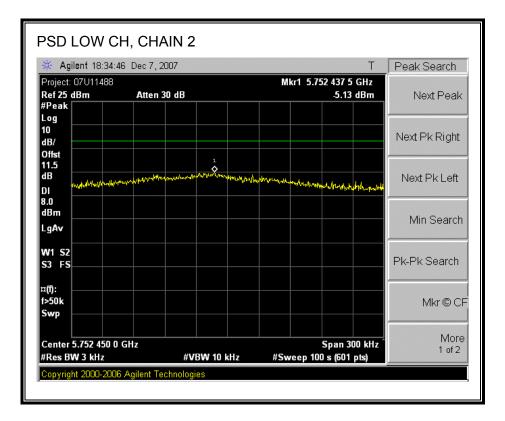
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POWER SPECTRAL DENSITY, CHAIN 1



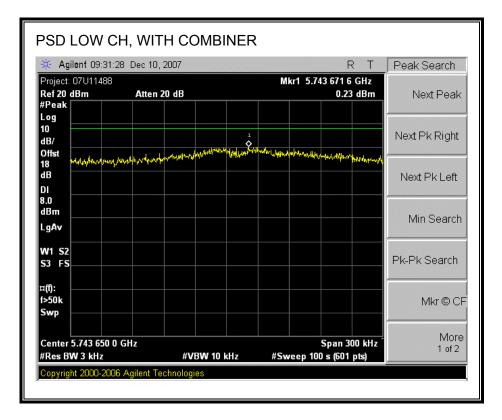
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POWER SPECTRAL DENSITY, CHAIN 2

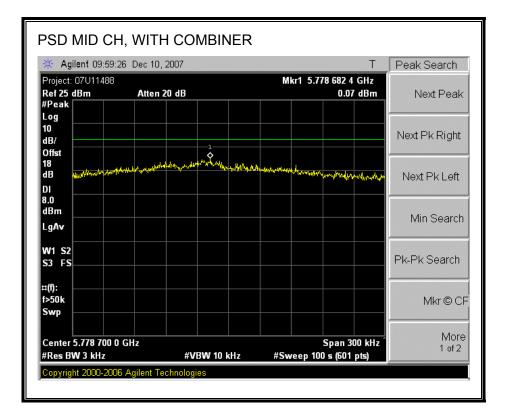


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POWER SPECTRAL DENSITY, WITH COMBINER



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🔆 Agilent 10:13	08 Dec 10, 2007		Т	Peak Search
Project: 07U11488 Ref 25 dBm #Peak	Atten 20 dB	Mk	r1 5.823 408 0 GHz -0.69 dBm	Next Peak
Log 10 dB/ Offst		1		Next Pk Right
	yzhodiwijezhiwezhyzewistrowijihiedok	La Marine Harrison and a second and a second and	s.Mahabart.in.colog.math.athyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.hthyto.j.ht	Next Pk Left
8.0 dBm				Min Search
W1 S2 S3 FS				Pk-Pk Search
¤(f): f>50k Swp				Mkr © Cf
Center 5.823 400 #Res BW 3 kHz		/BW 10 kHz #Sw	Span 300 kHz eep 100 s (601 pts)	More 1 of 2

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7.6.6. CONDUCTED SPURIOUS EMISSIONS

<u>LIMITS</u>

FCC §15.247 (d)

IC RSS-210 A8.5

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

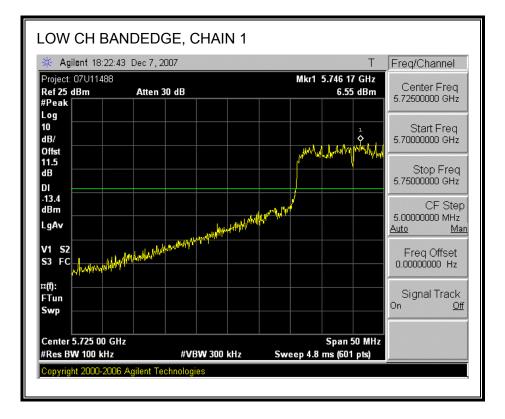
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

<u>RESULTS</u>

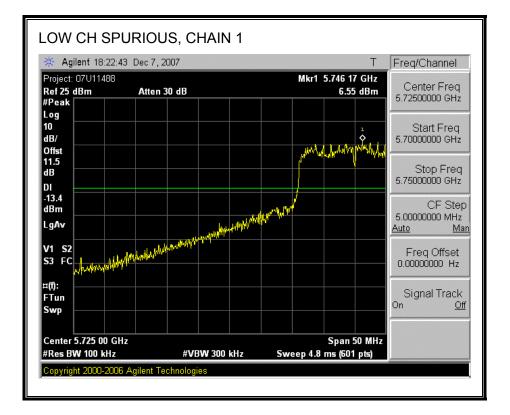
Middle and High channels were measured with the combiner only, since doing so results in the worst-case compared to measuring either chain alone.

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CHAIN 1 SPURIOUS EMISSIONS

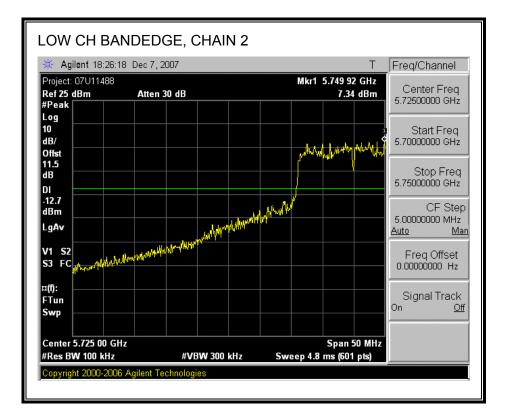


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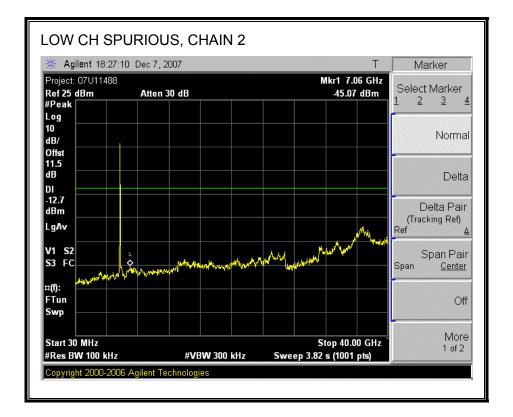


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CHAIN 2 SPURIOUS EMISSIONS

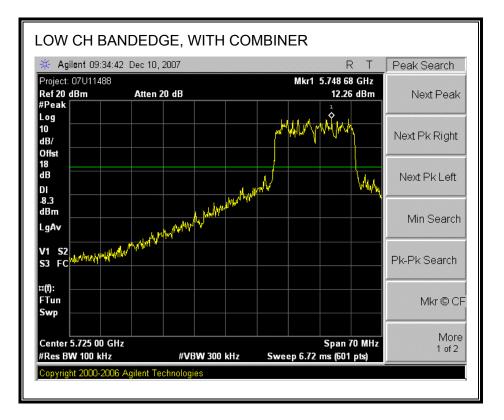


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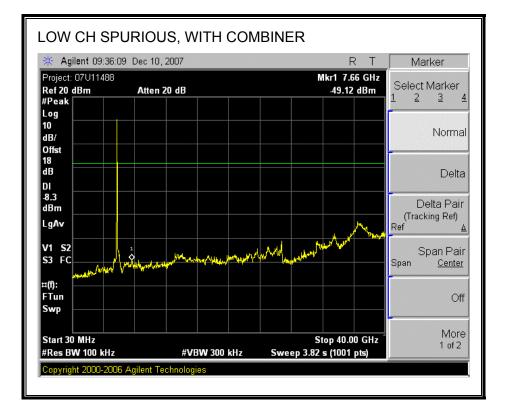


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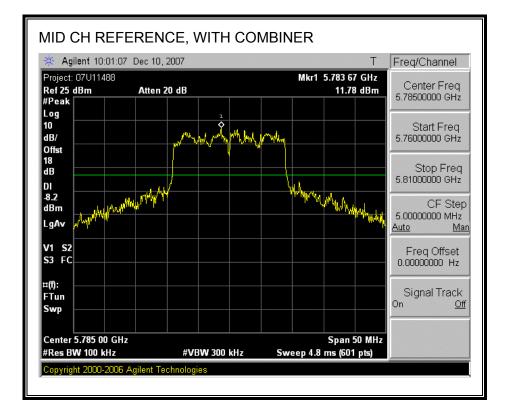
SPURIOUS EMISSIONS WITH COMBINER



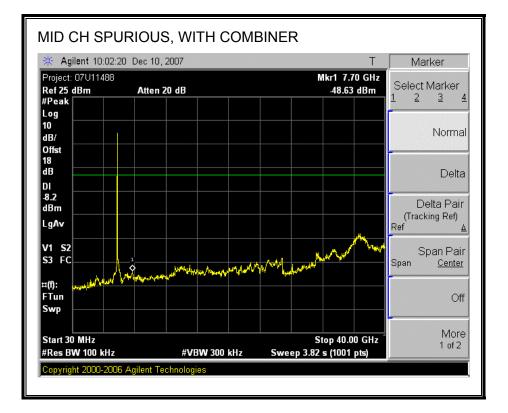
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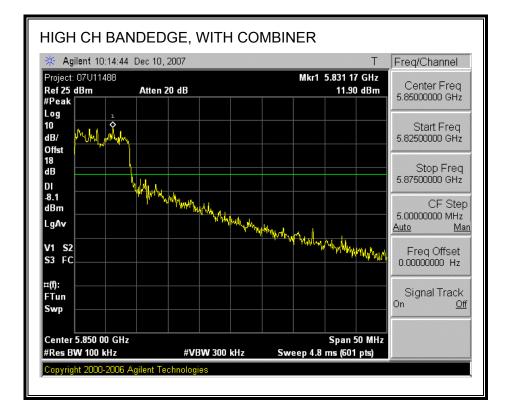
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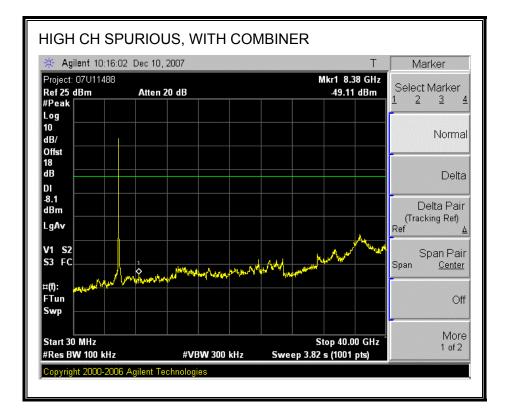
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7.7. 802.11n HT40 MODE IN THE 5.8 GHz BAND

7.7.1.6 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.

TEST PROCEDURE

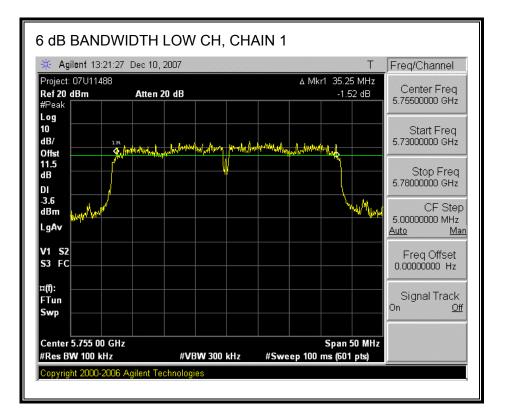
The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

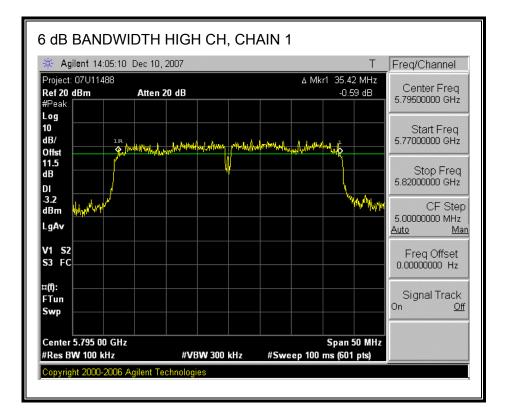
Channel	Frequency	Chain 1	Chain 2	Minimum Limit
		6 dB BW	6 dB BW	
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5755	35.25	35.25	0.5
High	5795	35.42	35.42	0.5

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6 dB BANDWIDTH, CHAIN 1

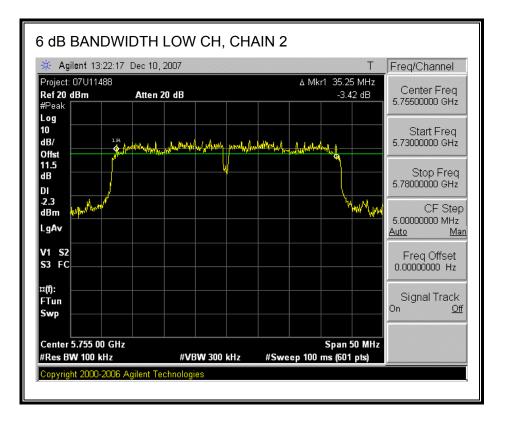


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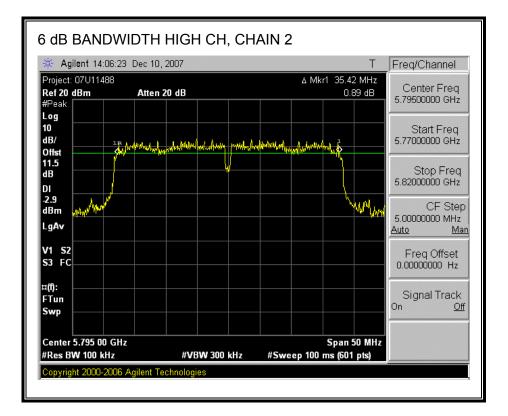


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6 dB BANDWIDTH, CHAIN 2



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7.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

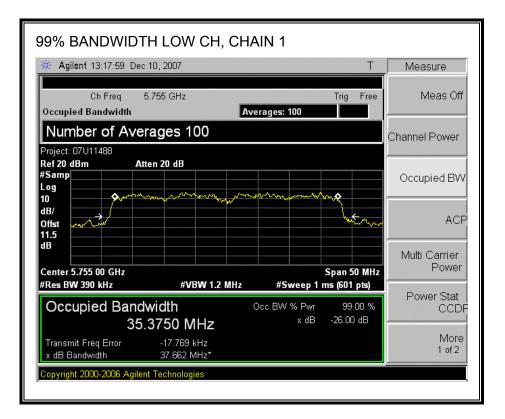
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Channel	Frequency	Chain 1	Chain 2
		99% Bandwidth	99% Bandwidth
	(MHz)	(MHz)	(MHz)
Low	5755	35.3750	35.3239
High	5795	35.6341	35.6187

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99% BANDWIDTH, CHAIN 1



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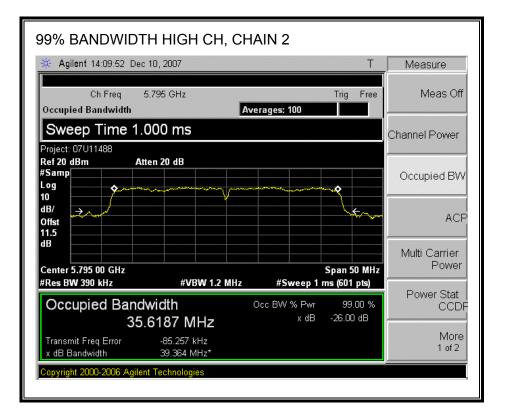
🔆 Agilent 14:13:23 Dec 1	10, 2007		Т	Measure
Ch Freq 5 Occupied Bandwidth	795 GHz	verages: 100	Trig Free	Meas Off
Sweep Time 1.0 Project: 07U11488	000 ms			Channel Power
Ref 20 dBm Atte #Samp Log 10	en 20 dB		~	Occupied BW
dB/ offst 11.5			hunt	ACF
dB Center 5.795 00 GHz			Span 50 MHz	Multi Carrier Power
#Res BW 390 kHz Occupied Bandy	#vвw 1.2 мнz vidth 6341 MHz	#Sweep 1 Occ BW % Pwr x dB	99.00 %	Power Stat CCDI
Transmit Freq Error x dB Bandwidth				More 1 of 2

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99% BANDWIDTH, CHAIN 2

99% BANDWIDTH	LOW CH, CH	IAIN 2		
🔆 Agilent 13:17:08 Dec 10	I, 2007		Т	Measure
Ch Freq 5.7 Occupied Bandwidth	55 GHz	verages: 100	Trig Free	Meas Off
Number of Avera	ges 100			Channel Power
Ref 20 dBm Atter #Samp	20 dB	www.	∧.⊘	Occupied BW
dB/ Offst 11.5			terra	ACP
dB Center 5.755 00 GHz #Res BW 390 kHz	#VBW 1.2 MHz	#Sweep 1	Span 50 MHz	Multi Carrier Power
Occupied Bandw			99.00 %	Power Stat CCDF
	-283.233 kHz 38.542 MHz*			More 1 of 2
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7.7.3. OUTPUT POWER

LIMITS

FCC §15.247 (b)

IC RSS-210 A8.4

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

Peak power is measured using the spectrum analyzer's internal channel power integration function. Power is integrated over a bandwidth greater than or equal to the 99% bandwidth.

RESULTS

Channel	Frequency	Limit	Chain 1	Chain 2	Total	Margin
			Power	Power	Power	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5755	30.00	23.22	23.96	26.62	-3.38
High	5795	30.00	23.24	23.67	26.47	-3.53

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CHAIN 1 OUTPUT POWER

OUTPUT POWER I	_OW CH, CH	AIN 1	
🔆 Agilent 13:31:30 Dec 10,	2007	Т	Measure
Ch Freq 5.75 Channel Power	5 GHz	Trig Free	Meas Off
Sweep Time 20.00 Project: 07U11488	 0 ms		Channel Power
Ref 20 dBm Atten 7 #Peak Log	20 dB		Occupied BW
dB/ http://www.du.us// Offst			ACP
dB Center 5.755 00 GHz		Span 60 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
23.22 dBm /40.0	000 MHz	-52.80 dBm/Hz	More 1 of 2
Copyright 2000-2006 Agilent Te	chnologies		р -

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OUTPUT POWER H	HIGH CH, CH	AIN 1	
🔆 Agilent 14:16:38 Dec 10, 3	2007	Т	Measure
Ch Freq 5.795 Channel Power	5 GHz	Trig Free	Meas Off
Sweep Time 20.00 Project: 07U11488) ms		Channel Power
Ref 20 dBm Atten 2 #Peak Log	0 dB		Occupied BW
dB/ 0ffst 11.5			ACP
dB Center 5.795 00 GHz		Span 60 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
23.24 dBm / 40.0	000 MHz	-52.78 dBm/Hz	More 1 of 2
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CHAIN 2 OUTPUT POWER

OUTPUT POWER	LOW CH, CHA	AIN 2	
🔆 Agilent 13:33:20 Dec 10,	2007	Т	Measure
Ch Freq 5.75 Channel Power	5 GHz	Trig Free	Meas Off
Sweep Time 20.0 Project: 07U11488	0 ms		Channel Power
Ref 20 dBm Atten #Peak Log	20 dB 	and the second sec	Occupied BW
10 dB/ ///////////////////////////////////		ng the state of th	ACP
dB		Span 60 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
23.96 dBm /40.0	000 MHz	-52.06 dBm/Hz	More 1 of 2
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OUTPUT POWER	HIGH CH, CH	IAIN 2	
🔆 Agilent 14:19:31 Dec 10	, 2007	Т	Measure
Ch Freq 5.79 Channel Power	95 GHz	Trig Free	Meas Off
Sweep Time 20.0 Project: 07U11488	0 ms		Channel Power
Ref 20 dBm Atten #Peak Log	20 dB		Occupied BW
10 dB/ Offst 11.5		When he yellowide	ACP
dB Center 5.795 00 GHz		Span 60 MHz	Multi Carrier Power
#Res BW 1 MHz Channel Power	#VBW 3 MHz	Sweep 20 ms (601 pts) Power Spectral Density	Power Stat CCDF
23.67 dBm / 40.0	000 MHz	-52.35 dBm/Hz	More 1 of 2
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7.7.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

The cable assembly insertion loss of11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 1 Power	Chain 2 Power	Total Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5755	17.73	17.82	20.79
High	5795	17.46	17.63	20.56

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7.7.5. POWER SPECTRAL DENSITY

<u>LIMITS</u>

FCC §15.247 (e)

IC RSS-210 A8.2 (b)

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.

TEST PROCEDURE

Output power was measured based on the use of a peak measurement, therefore the power spectral density was measured using PSD Option 1 in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005.

RESULTS:

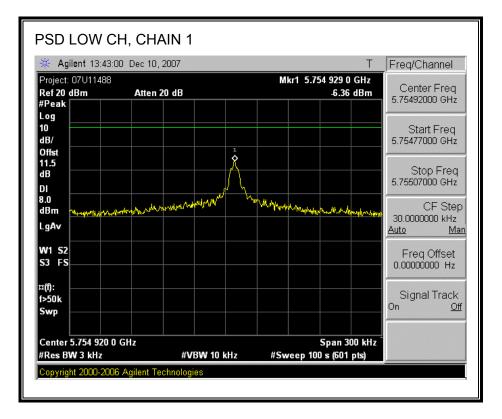
High channel was measured with the combiner only, since doing so results in the worst-case compared to measuring either chain alone.

Channel	Frequency	Chain 1	Chain 2	Total	Limit	Margin
		PSD	PSD	PSD		
	(8411-)	(dDm)	(dDm)	(dBm)	(dBm)	(dB)
	(MHz)	(dBm)	(dBm)	(авш)	(авш)	(UD)

Channel	Frequency (MHz)	PSD with Combiner (dBm)	Limit (dBm)	Margin (dB)
Low	5755	-4.48	8	-12.48
High	5795	-5.37	8	-13.37

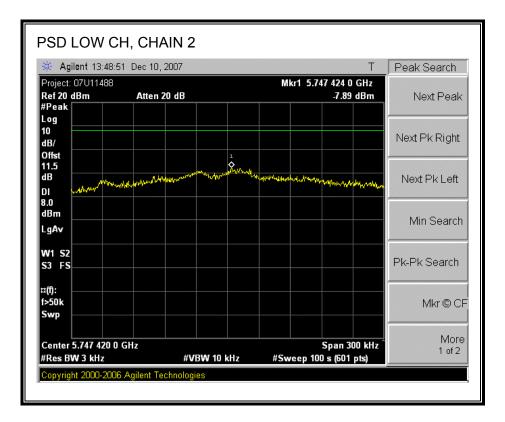
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POWER SPECTRAL DENSITY, CHAIN 1



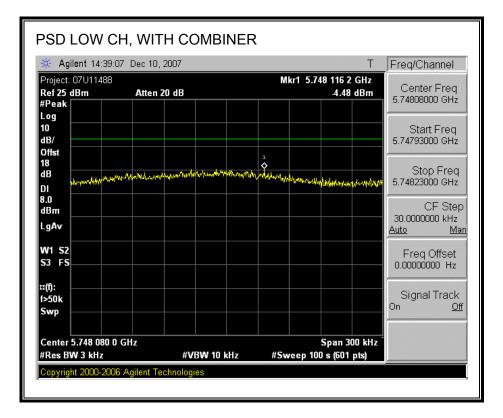
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POWER SPECTRAL DENSITY, CHAIN 2



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POWER SPECTRAL DENSITY, WITH COMBINER



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🔆 Agilent 14:57	7:22 Dec 10, 2007			Т	Peak Search
Project: 07U11488 Ref 25 dBm #Peak	Atten 20 dB		Mkr1 5.797 46 -5	48 GHz .37 dBm	Next Peak
Log 10 dB/ Offst					Next Pk Right
18 dB DI	sthathridge of a strand	TANK MUMMUMMM	where the way and the second state of the	water	Next Pk Left
8.0 dBm LgAv					Min Search
W1 S2 S3 FS					Pk-Pk Search
¤(f): f>50k Swp					Mkr © Cl
Center 5.797 500 #Res BW 3 kHz		/BW 10 kHz	Spai #Sweep 100 s (6	n 300 kHz ^	More 1 of 2

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7.7.6. CONDUCTED SPURIOUS EMISSIONS

<u>LIMITS</u>

FCC §15.247 (d)

IC RSS-210 A8.5

Output power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

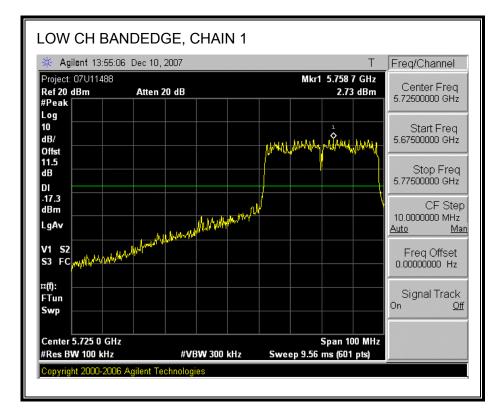
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest and highest channels.

<u>RESULTS</u>

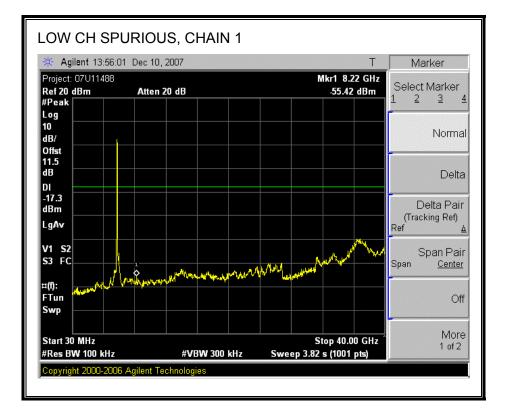
High channel was measured only with the combiner, since doing so results in the worst-case compared to measuring either chain alone.

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CHAIN 1 SPURIOUS EMISSIONS

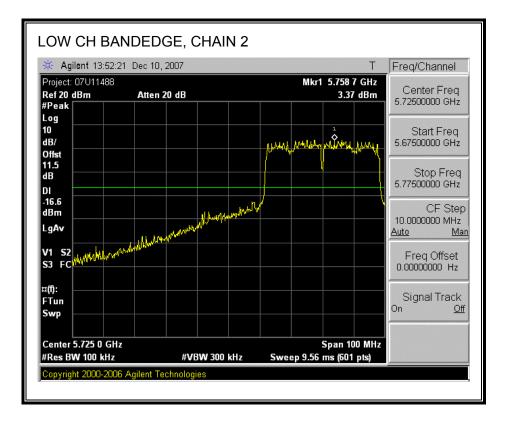


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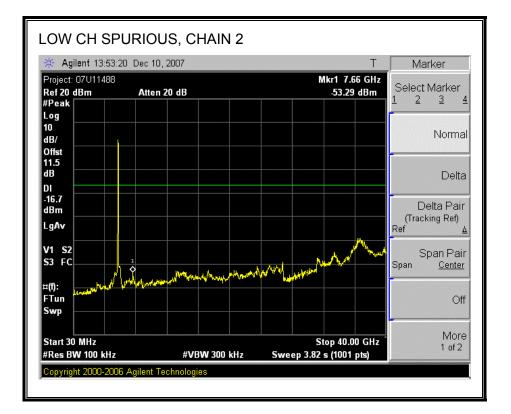


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CHAIN 2 SPURIOUS EMISSIONS

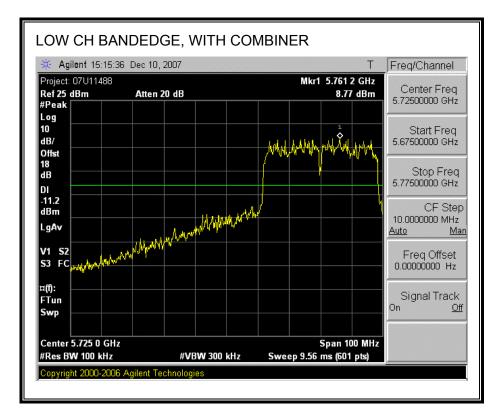


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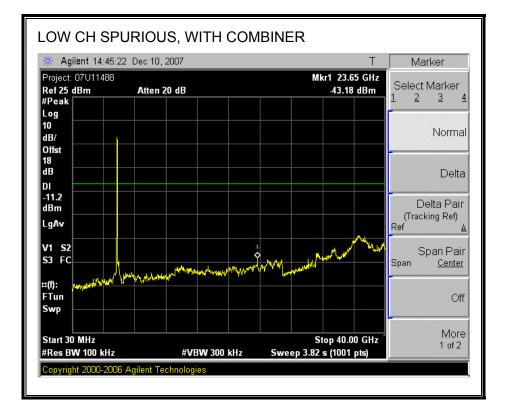


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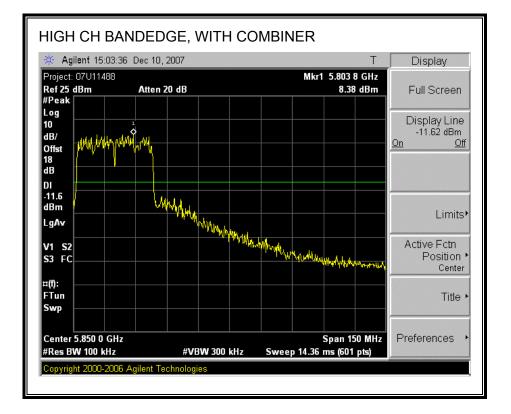
SPURIOUS EMISSIONS WITH COMBINER



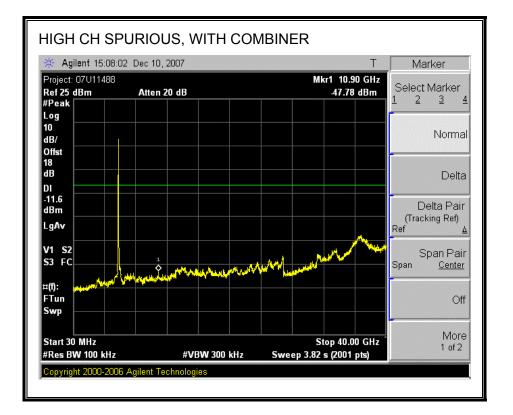
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7.8. RADIATED EMISSIONS

7.8.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

<u>LIMITS</u>

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At

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frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

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. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

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The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

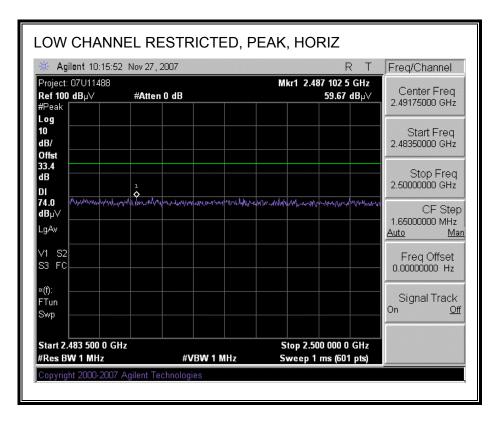
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

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.

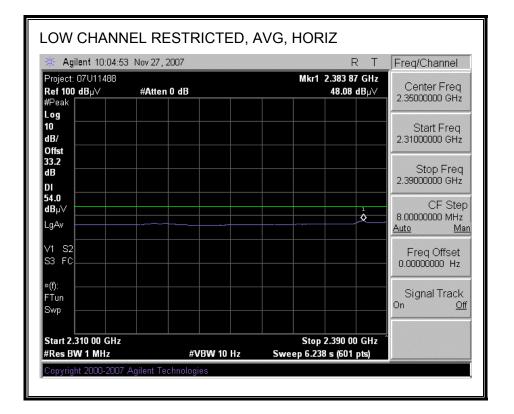
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7.8.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b DUAL CHAIN LEGACY MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

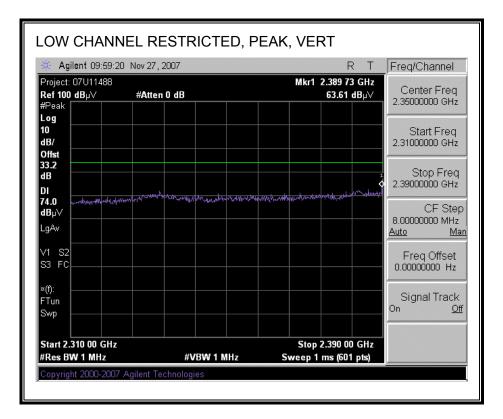


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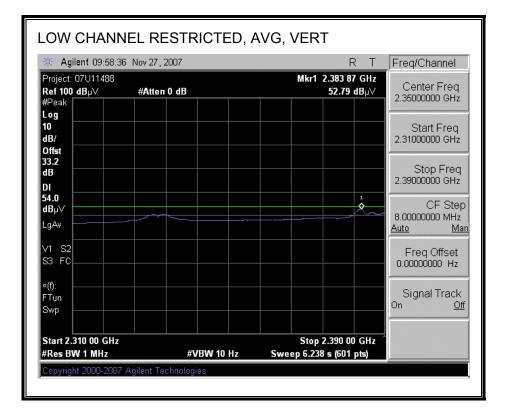


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RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

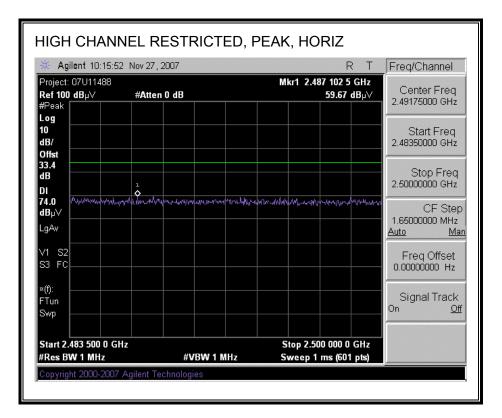


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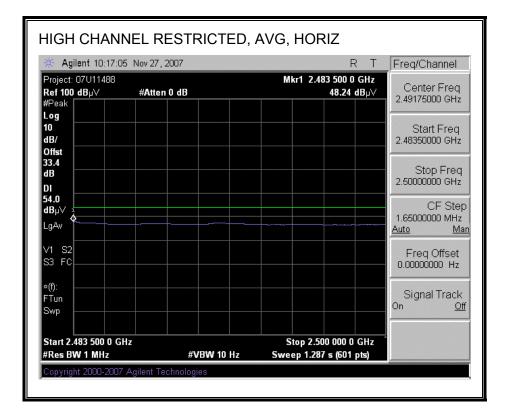


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RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

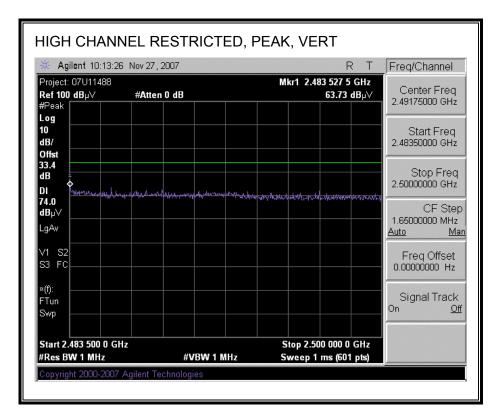


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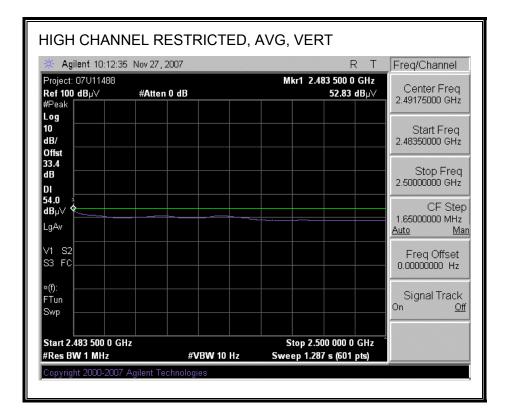


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RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



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HARMONICS AND SPURIOUS EMISSIONS

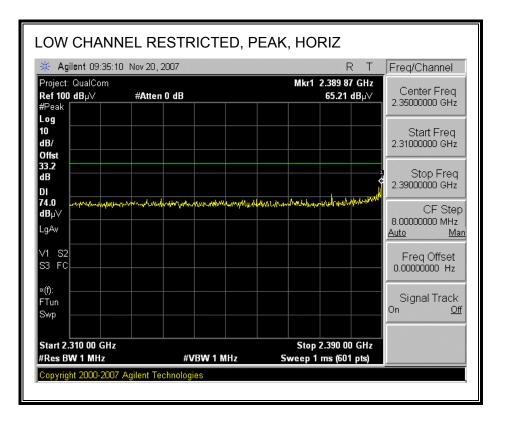
complia			/ Measurem			_									
	ance Ce	ertification	Services, Fr	emont	5m Ch	amber									
	ıy: Qual #: 07U	lCom Inc. 11488													
	#: 070 1-27-20														
		Thanh Ng													
			card, Laptop 19.5dBm po												
'est Eq	uipmen	<u>.t:</u>													
н	orn 1-	18GHz	Pre-ar	nplifer	1-260	GHz	Pre-am	plifer	26-40GH	z	н	orn > 180	GHz		Limit
T73; \$	S/N: 671	7 @3m	▼ T144 M	/liteq 30	08A009	31 🗸				-				•	FCC 15.209 🗸
- Hi Fred	quency Ca	bles													
	2 foot	cable	3	foot c	able		12	foot c	able		HPF	Re	ject Filte		<u>k Measurements</u> W=VBW=1MHz
			•			•	A-5m C	hamb	er 🗸			• R_	Avera	nge Measurements MHz ; VBW=10Hz	
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
GHz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
	uicsemi 412MHz														
.824	3.0	44.2	38.3	33.3	6.9	-36.5	0.0	0.0	48.0	42.0	74	54	-26.0	-12,0	v
.236 .648	3.0 3.0	41.9 38.2	33.4 26.3	34.9 36.7	8.4 9.7	-36.2 -37.0	0.0 0.0	0.0 0.0	49.1 47.6	40.5 35.7	74 74	54 54	-24.9 -26.4	-13.5 -18.3	V Noise Floor
.824	3.0	41.4	28.6	33.3	6.9	-36.5	0.0	0.0	45.1	32 <i>.</i> 3	74	54	- 28.9	- 21. 7	Н
.236 54 CL 2	3.0 427MU~	38.0 (set 21dBm)	25.9	34.9	8.4	-36.2	0.0	0.0	45.1	33.0	74	54	-28.9	-21,0	Noise Floor
па сн 2- 874	3.0	(set 21dBm) 39.8	26.6	33.4	6.9	-36.5	0.0	0.0	43.6	30.4	74	54	-30.4	-23.6	Н
311	3.0	38.1	26.0	35.0	8.4	-36.2	0.0	0.0	45.3	33.1	74	54	-28.7	-20.9	H
.748 .874	3.0 3.0	37.9 44.1	25.2 39.2	36.8 33.4	9.8 6.9	-37.0 -36.5	0.0 0.0	0.0 0.0	47.4 47.9	34.8 43.0	74 74	54 54	-26.6 -26.1	-19.2 -11.0	Noise Floor V
311	3.0	44.5	39.1	35.0	8.4	-36.2	0.0	0.0	51.7	46.3	74	54	-22.3	-7.7	v
.748	3.0	39.A	32.6	36.8	9.8 12.2	-37.0	0.0	0.0 0.0	48.9	42.2	74	54	-25.1	-11.8	v v
2.185 4.622	3.0 3.0	38.0 24.0	27.5 27.5	37.6 38.7	12.2 12.5	-35.4 -35.3	0.0 0.0	U.U 0.0	52.3 39.9	41.9 43.3	74 74	54 54	-21.7 -34.1	-12.1 -10.7	V Noise Floor
ligh Ch 2	2462MH	ξ		1	•••••										
924 386	3.0 3.0	43.4 41.4	36.4 33.1	33.4 35.0	7.0 8.4	-36.5 -36.2	0.0 0.0	0.0 0.0	47.3 48.6	40.3 40.4	74 74	54 54	-26.7 -25.4	-13.7 -13.6	v
.360 .848	3.0	41.4 38.8	26.8	36.8	9.9	-30.2 -37.0	0.0	0.0	48.5	36.4	74	54	-25.5	-17.6	v
2.310	3.0	36.6	25.5	37.6	12.2	-35.4	0.0	0.0	50.9	39.8	74	54	-23.1	-14.2	<u>v</u>
4.722 7.234	3.0 3.0	38.0 35.5	28.2 24.0	38.9 41.7	12.5 13.3	-35.3 -33.8	0.0 0.0	0.0 0.0	54.1 56.7	44.2 45.2	74 74	54 54	-19.9 -17.3	-9.8 -8.8	V Noise Floor
924	3.0	40.2	28.7	33.4	7.0	-36.5	0.0	0.0	44.1	32.6	74	54	- 29.9	- 21.4	Н
.386	3.0	38.2	26.1	35.0	8.4	-36.2	0.0	0.0	45.5	33.3	74	54	- 28.5	- 20. 7	Noise Floor
o other (emission	s were detect	ed above noise :	1100r											
		l	L	<u>i</u>		L	1	I	J						
ev. 4.12.	.7														
	f) (_		A	Duranti	a				A T in:	A	5-14 Char	A. T. inclu
	r Dist	Distance to	ent Frequency Antenna	у		Amp D.Corr	Preamp (ct to 3 mete			-	-	ield Strengt I Strength L	
		Distance to Analyzer R				D Corr Avg			ct to 3 mete Strength @					1 Strength L . Average L	
	AF	Antenna Fa	0			Avg Peak	-		k Field Stre					. Average L . Peak Limit	
	CL	Cable Loss				HPF	High Pas							Olde Laith	

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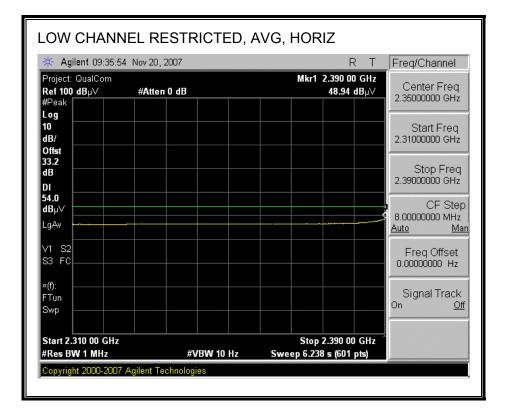
COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4031B 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

7.8.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g DUAL CHAIN LEGACY MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

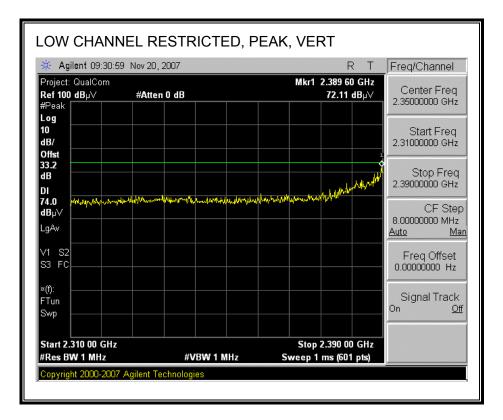


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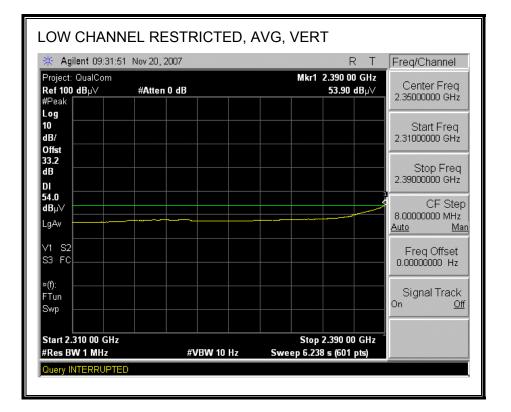


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RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

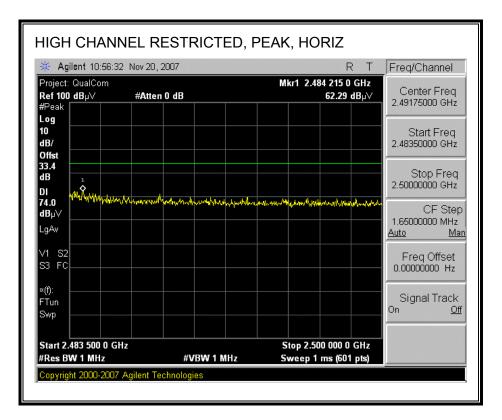


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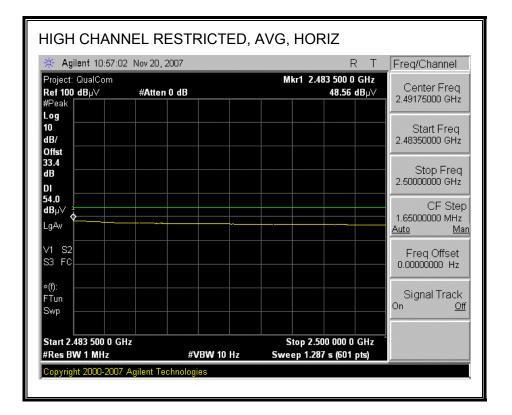


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RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

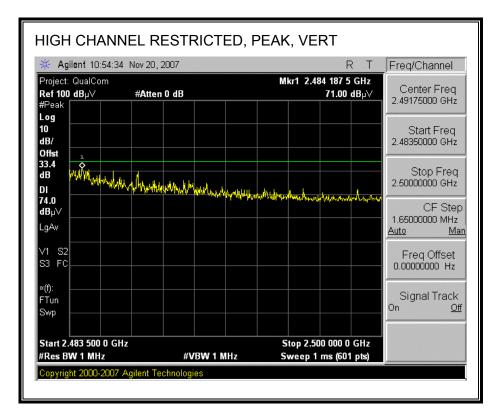


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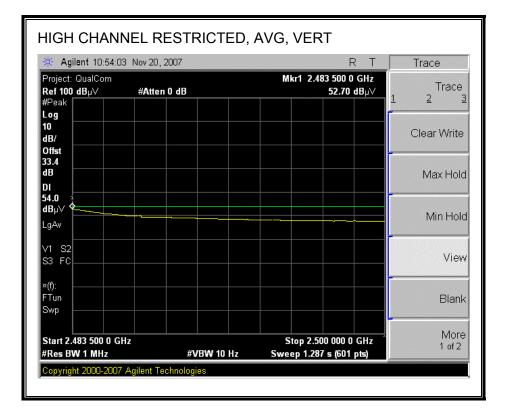


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RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



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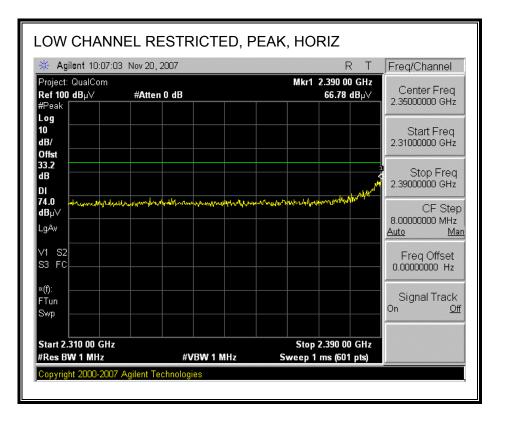
HARMONICS AND SPURIOUS EMISSIONS

Complia	-		y Measurem Services, Fr		5m Cł	ıamber									
Compar Project Date: 11 Test En Configu	ny: Qual #: 07U 1-27-200 ngineer: 1 ration: 1	Com Inc. 11488 D7 Thanh Ng EUT, Ext. 1		1											
<u>Test Eq</u>	uipmen	<u>t:</u>													
н	orn 1-	18GHz	Pre-ar	nplifer	1-26	GHz	Pre-am	plifer	26-40GH	z	н	orn > 18(GHz		Limit
173; 9	S/N: 6717	7 @3m	▼ T144 M	liteq 30	08A00	931 🗸				-				•	FCC 15.209
	quency Cal 2 foot		3	foot o	able			foot c			HPF	Re	eject Filte		<u>k Measurements</u> W=VBW=1MHz
			•			•	A-5m C	hamb	er 🔻			• R_	001		a <u>ge Measurements</u> =1MHz ; VBW=10Hz
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m		-	Pk Mar dB	Avg Mar dB	Notes (V/H)
Harmor Low Ch 2	uics emi														
4.824	3.0	39.2	26.3	33 <i>.</i> 3	6.9	-36.5	0.0	0.0	42.9	30,0	74	54	-31.1	-24.0	v
7.236 4.824	3.0 3.0	38.1 39.2	26.9 27.3	34.9 33.3	8.4 6.9	-36.2 -36.5	0.0 0.0	0.0 0.0	45.2 42.9	34.0 31.0	74 74	54 54	-28.8 -31.1	-20.0 -23.0	Noise Floor H
7.236	3.0	36.7	25.5	34.9	8.4	-36.2	0.0	0.0	43.8	32.6	74	54	-30.2	-21.4	Noise Floor
Mid Ch 2 1.874	437MHz(3.0	set 21dBm) 39.6	26.5	33.4	6.9	-36.5	0.0	0.0	43.4	30.3	74	54	-30.6	-23.7	Н
7.311	3.0	37.4	25.2	35.0	8.4	-36.2	0.0	0.0	44.6	32.4	74	54	- 29.4	- 21.6	Noise Floor
4.874 7.311	3.0 3.0	41.5 41.5	28.6 29.9	33.4 35.0	6.9 8.4	-36.5 -36.2	0.0 0.0	0.0 0.0	45.3 48.6	32.4 37.0	74 74	54 54	-28.7 -25.4	-21.6 -17.0	v
9.748	3.0	39.2	253 25A	36.8	9.8	-37.0	0.0	0.0	48.7	34.9	74	54 54	-25.3	-17.5	Noise Floor
	2462MH		27.4	22.4	7.0	26.5		0.0	40.0	21.2	74	<i></i>	20.0		v
1.924 7.386	3.0 3.0	39.3 37.0	27.4 25.3	33.4 35.0	7.0 8.4	-36.5 -36.2	0.0 0.0	0.0 0.0	43.2 44.3	31.3 32.6	74 74	54 54	-30.8 -29.7	-22.7 -21.4	Noise Floor
924	3.0	39.4	28.3	33.4	7.0	-36.5	0.0	0.0	43.3	32.2	74	54	-30.7	-21.8	Н
7.386 No otker i	3.0 emission	38.6 were detect	26.4 ed above noise	35.0 fleer	8.4	-36.2	0.0	0.0	45.9	33.7	74	54	-28.1	-20.3	Noise Floor
Rev. 4.12.					•	1		•							
	f Dist	Measurem Distance to	ent Frequency	y		Amp D.Corr	Preamp		ct to 3 mete			<u> </u>	<u> </u>	ield Streng I Strength I	
		Analyzer R				Avg			Strength @					Average I	
	AF CL	Antenna Fa Cable Los:	actor			Peak HPF		ed Peal	c Field Stre			-	-	Peak Limi	

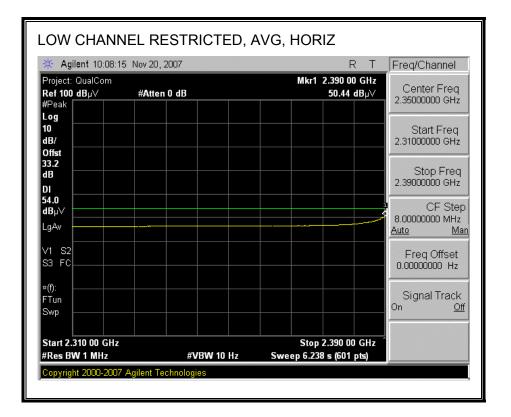
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7.8.4. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

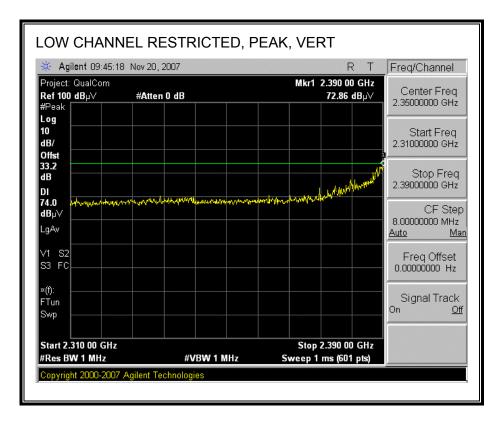


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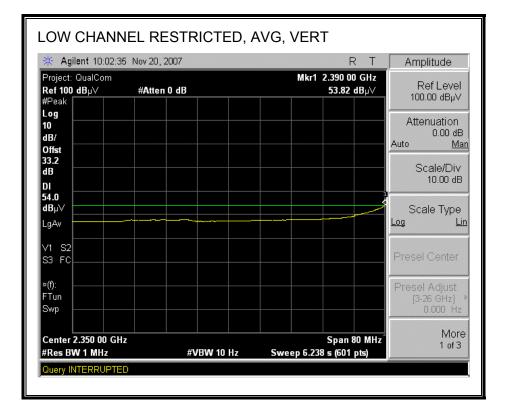


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RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

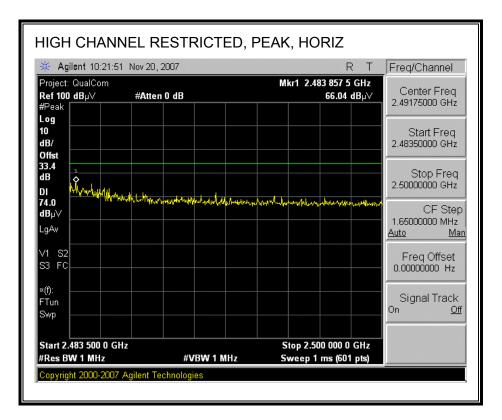


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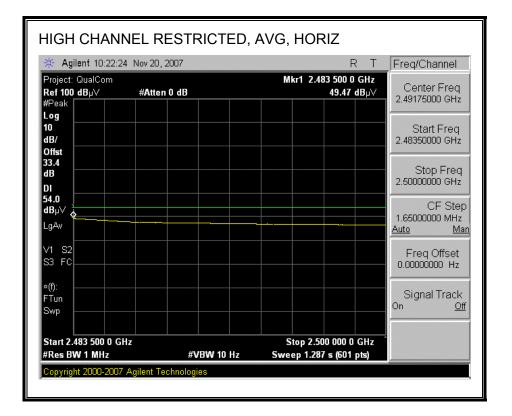


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RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

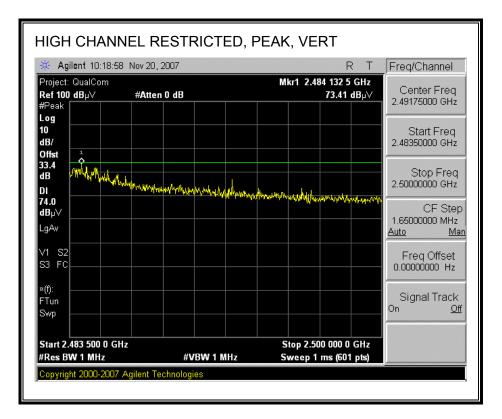


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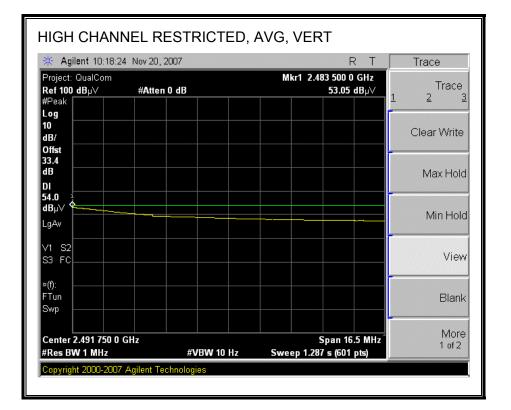


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RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



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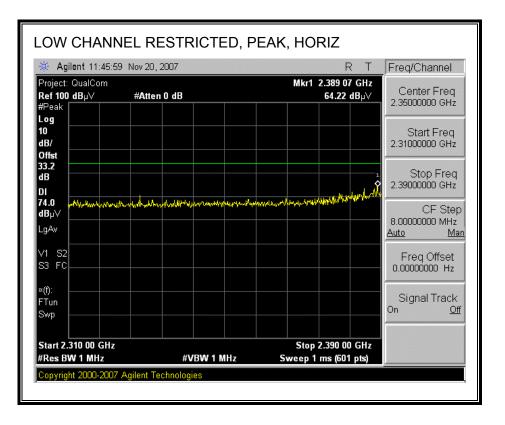
HARMONICS AND SPURIOUS EMISSIONS

Cor		gh Frequenc Certification	•			5m Ch	amber									
	-			1000, 11												
	npany: Qu ject#: 07	ualCom Inc. 7U11488														
	e: 11-27-2															
		er: Thanh Ng n: EUT, Ext.														
Мо	de: Trans	mit HT20 m	ode													
Tes	t Equipm	ent:														
	Horn	1-18GHz		Pre-an	nplifer	1-26	GHz	Pre-am	plifer	26-40GH	Iz	н	orn > 18	GHz		Limit
Т	73; S/N: 6	717 @3m	-	T144 N	liteq 30	08A00)31 🗸				-				-	FCC 15.209 🗸
	li Frequency	Cables														,
	2 fo	ot cable		3	footo	able		12	foot c	able		HPF	R	eject Filte		<u>k Measurements</u>
Шr							_	A-5m (hamh	ar.	¦			-	RE	3W=VBW=1MHz age Measurements
			•				•		aranno	•				_001		=1MHz; VBW=10Hz
	f Dis	st Read Pk	Re	ad Avo	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
	Hz (m		1	au Avg. BuV	dB/m	dB	dB	dB	dB	1	dBuV/m				dB	(V/H)
	monics e															
Lew 4.82	Ch 2412M 4 3.0			26.1	33 <i>.</i> 3	6.9	-36.5	0.0	0.0	42.8	29.8	74	54	-31.2	-24.2	v
7.23				25.9 26.6	34.9 33.3	8.4 6.9	-36.2 -36.5	0.0 0.0	0.0 0.0	45.4 42.1	33.0 30.3	74 74	54 54	-28.6 -31.9	-21.0 -23.7	Noise Floor H
7.23	6 3.0) 38.7		26.6	34.9	8.4	-36.2	0.0	0.0	45.8	33.7	74	54 54	-28.2	-20.3	Noise Floor
Mid 4.87		Hz(set 21dBm)) 40.4		28.6	33.4	6.9	-36.5	0.0	0.0	44.2	32.4	74	54	-29.8	-21.6	Н
7.31	1 3.0) 37.4		25.1 29.2	35.0	8.4	-36.2	0.0 0.0	0.0 0.0	44.6	32.3 33.0	74 74	54 54	-29.4	-21.7	Noise Floor V
4.87 7.31	1 3.0) 40.2		29.2 28.4	33.4 35.0	6.9 8.4	-36.5 -36.2	0.0 0.0	0.0	46.4 47.3	35.6	74	54	-27.6 -26.7	-21.0 -18.4	v
9.74 Higl	8 3.0 1 Ch 2462M			25.3	36.8	9.8	-37.0	0.0	0.0	48.3	34.8	74	54	-25.7	-19.2	Noise Floor
4.92	4 3.0) 39.5		27.5	33.4	7.0	-36.5	0.0	0.0	43.4	31.4	74	54	-30.6	-22.6	V
7.38 4.92				26.2 28.3	35.0 33.4	8.4 7.0	-36.2 -36.5	0.0 0.0	0.0 0.0	45.6 43.3	33.5 32.2	74 74	54 54	-28.4 -30.7	-20.5 -21.8	Noise Floor H
7.38 No.e) 38.7 ions were detec		26.8 we noise i	35.0	8.4	-36.2	0.0	0.0	45.9	34.0	74	54	-28.1	-20.0	Noise Floor
110 0				ove noise i												
Rev.	4.12.7															
	f	Measuren	nent F	requency	7		Amp	Preamp	Gain				Avg Lim	Average F	ield Streng	th Limit
	Dist									ct to 3 mete				Peak Field	-	
	Rea AF	d Analyzer I Antenna F		-			Avg Peak	-		Strength @ c Field Stre			-	Margin vs Margin vs	-	
	CL	Cable Lo:					HPF	High Pas					T D. TATOL	TATOL SILL A2	. i car. Laifill	

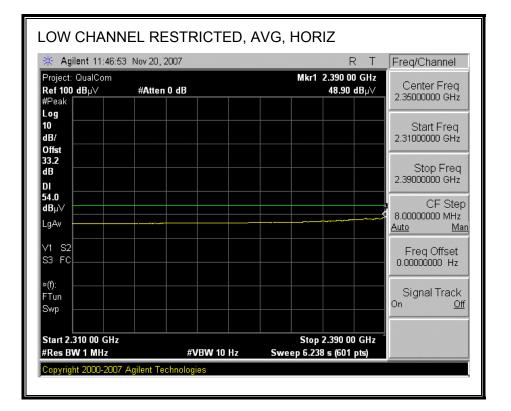
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7.8.5. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT40 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

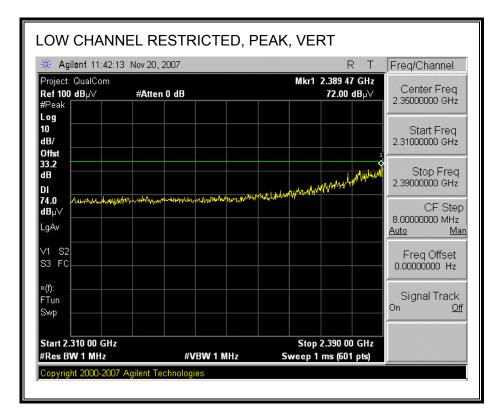


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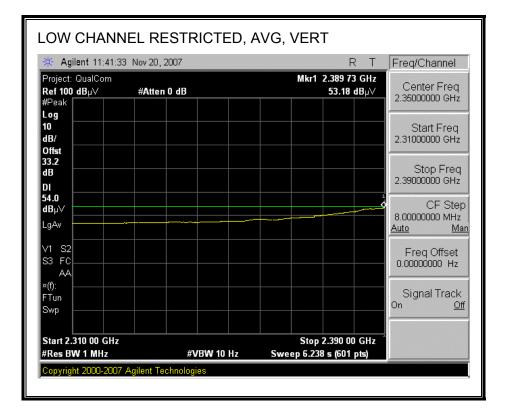


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RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

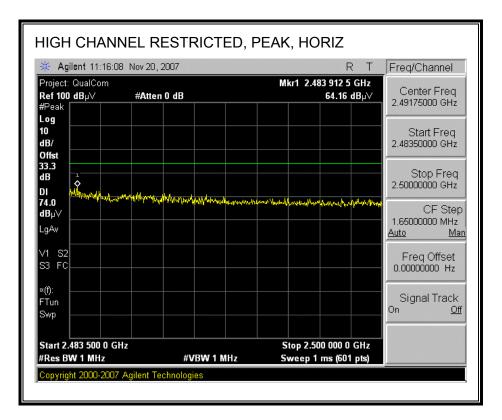


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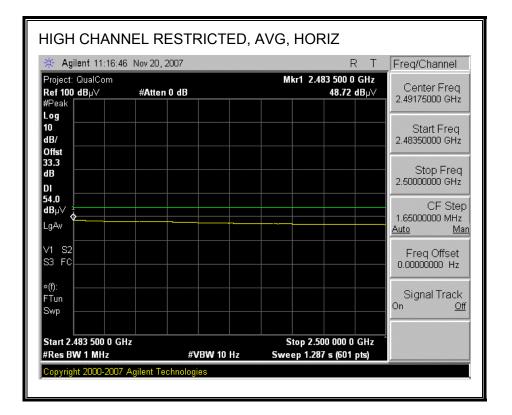


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RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

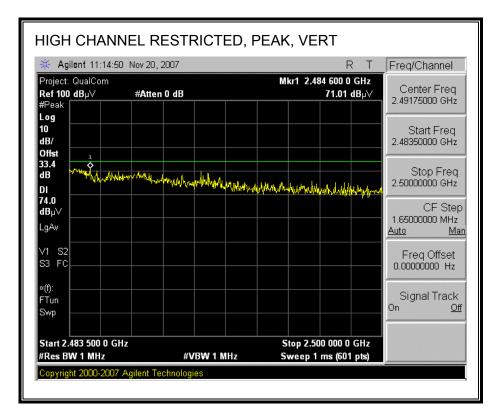


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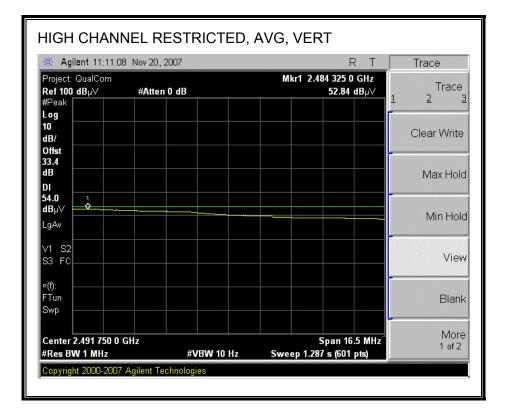


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RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



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HARMONICS AND SPURIOUS EMISSIONS

Compan Project : Date: 11 Test En Configu	ance Ce ny: Qual #: 07U 1-27-20 ngineer: ration: 1	ertification ICom Inc. 11488 07 Thanh Ngu EUT, Ext. (card, Laptop	emont	5m Ch	amber									
Mode: 1	Transmi	it HT40 mo	de												
<u>Test Eq</u>	uipmen	<u>t:</u>													
н	orn 1-	18GHz	Pre-ar	nplifer	1-260	GHz	Pre-am	plifer	26-40GH	z	н	orn > 18	GHz		Limit
173; 9	S/N: 671	7 @3m	▼ T144 N	Aliteq 30	08A00	931 🗸				-				•	FCC 15.209
Hi Free	quency Cai	bles													
	2 foot	cable	3	foot	able		12	foot c	able		HPF	Re	ject Filte	er	<u>k Measurements</u> W=VBW=1MHz
			•			•	A-5m C	hambe	er 🗸	HF	F_4.0GHz	•		Avera	nge Measurements =1MHz ; VBW=10Hz
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	AvgLim	Pk Mar	Avg Mar	Notes
GHz	(m)	dBuV	dBuV	dB/m		dB	dB	dB			dBuV/m		dB	dB	(V/H)
Harmor Low Ch 2															
1.844	3.0	39.3	26.3	33.3	6.9	-36.5	0.0	6.0	43.7	30.6	74	54	-30.3	-23.4	v
.266 .844	3.0 3.0	37.9 39.6	26.7 27.6	35.0 33.3	8.4 6.9	-36.2 -36.5	0.0 0.0	0.0 0.0	45.6 44.0	34 <i>5</i> 31 <i>9</i>	74 74	54 54	-28.4 -30.0	-19.5 -22.1	Noise Floor H
266	3.0	39.6	27.0	35.0	8.4	-36.2	0.0	0.0 0.0	44.0 45.4	319	74	54 54	-30.0	-22.1	n Noise Floor
Mid Ch 2	437MHz((set power 21		<u> </u>											
1.874 7.311	3.0 3.0	40.4 37.2	28.4 25.9	33.4 35.0	6.9 8.4	-36.5 -36.2	0.0 0.0	0.0 0.0	44.8 45.0	32.8 33.7	74 74	54 54	-29.2 -29.0	-21.2 -20.3	H Noise Floor
.874	3.0	43.6	23.3 30.3	33.4	6.4 6.9	-36.5	0.0	0.0	45.0	34.7	74	54 54	-29.0	-19.3	V
311	3.0	41.0	29.4	35.0	8.4	-36.2	0.0	6.0	48.8	37.3	74	54	-25.2	-16.7	v
9.728 Bah Ch	3.0 2452MH:	37.3	25.6	36.8	9.8	-37.0	0.0	0.8	47.6	35.9	74	54	-26.4	-18.1	Noise Floor
1904	3.0	39.1	27 <i>.</i> 4	33.4	7.0	-36.5	0.0	0.0	43.6	31.9	74	54	-30.4	-22.1	v
.386	3.0	36.9	25.2	35.0	8.4	-36.2	0.0	0.0	44.8	33.1	74	54	-29.2	-20.9	Noise Floor
1.904 7.386	3.0 3.0	39.6 38.6	28.4 26.4	33.4 35.0	7.0 8.4	-36.5 -36.2	0.0 0.0	0.6 0.0	44.1 46.5	32.9 34.3	74 74	54 54	-29.9 -27.5	-21.1 -19.7	H Noise Floor
			ed above noise		0.4	-30.2	0.0	0.0	40.5	342	/4		-47-0	-17./	TWISE T 1001
Rev. 4.12.	f Dist	Measurem Distance to Analyzer R		y		Amp D Corr Avg		Correc	ct to 3 mete Strength @			Pk Lim	Peak Fiel	Field Strengt d Strength L 3. Average L	imit
	AF	Antenna Fa	<u> </u>			Peak	0		c Field Stre					. Peak Limit	
	CL	Cable Loss	3			HPF	High Pas			-			-		

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7.8.6. TRANSMITTER ABOVE 1 GHz FOR 802.11a DUAL CHAIN LEGACY MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

Historic Cables 2 foot cable 3 foot cable 12 foot cable HPF Reject Filter Peak Mer	Limit C 15.209 v surements 3W=1MHz
Project #: 07U11488-1 Date: 11-19-2007 Cest Engineer: Thanh Nguyen Configuration: EUT, Ext. card, Laptop Mode: Transmit. Test Equipment: Horn 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz T73; S/N: 6717 @3m T144 Miteq 3008A00931 Image: Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn 1-18GHz T144 Miteq 3008A00931 Image: Pre-amplifer 1-26GHz Image: Pre-amplifer 26-40GHz Horn > 18GHz FC Image: Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz Image: Pre-amplifer 1-26GHz Image: Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz Image: Pre-amplifer 26-40GHz Image: Pre-amplifer 26-40GHz Horn > 18GHz Image: Pre-amplifer 26-40GHz Image: Pre-amplifer 26-40GHz Image: Pre-amplifer 26-40GHz Image: Pr	C 15.209 🗸
bare: 11-19-2007 Test Engineer: Thanh Nguyen Configuration: EUT, Ext. card, Laptop Mode: Transmit. Test Equipment: Horn 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz FC T73: S/N: 6717 @3m , T144 Miteq 3008A00931 , FC T144 Miteq 3008A00931 , FC T144 Miteq 3008A00931 , FC HPF Reject Filter Rewey: A-5m Chamber , Rewey	C 15.209 🗸
Configuration: EUT, Ext. card, Laptop Mode: Transmit. Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz FC T73; S/N: 6717 @3m T144 Miteq 3008A00931 T144 Miteq 3008A00931 FC FC Hifrequency Cables Image: Control of the state of	C 15.209 🗸
Mode: Transmit. Test Equipment: Horn 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz FC T73; S/N: 6717 @3m T144 Miteq 3008A00931 T144 Miteq 3008A00931 FC FC Hirequency Cables T144 Miteq 3008A00931 T12 foot cable HPF Reject Filter Peak Mer f Dist Read Avg. AF CL Amp D Corr Flt Peak Avg Pk Lim Avg Lim Pk Mar Avg Mar	C 15.209 🗸
Crest Equipment: Horn 1-18GHz Pre-amplifer 1-26GHz Horn > 18GHz FC T73; S/N: 6717 @3m T144 Miteq 3008A00931 T144 Miteq 3008A00931 FC FC FC Line group Colles Stort cable Stort cable Line Group Colles FC Reject Filter Peak Mer f Dist Read Avg. AF CL Amp D Corr Flt Peak Avg Pk Lim Avg Lim Pk Mar Avg Mar	C 15.209 🗸
Horn 1-18GHz Pre-amplifer 1-26GHz Pre-amplifer 26-40GHz Horn > 18GHz FC T73: S/N: 6717 @3m T144 Miteq 3008A00931 T144 Miteq 3008A00931 FC FC HiFrequency Cables T144 Miteq 3008A00931 T12 foot cable HPF Reject Filter Peak Mee Image: Comparison of the part	C 15.209 🗸
T73; S/N: 6717 @3m T144 Miteq 3008A00931 FC Liferequency Cables Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5" FC Liferequency Cables Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5" Colspan="5">Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC I	C 15.209 🗸
T73; S/N: 6717 @3m T144 Miteq 3008A00931 FC Liferequency Cables Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5">Image: Colspan="5" FC Liferequency Cables Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5">Image: Colspan="5" FC Image: Colspan="5" Colspan="5">Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" FC Image: Colspan="5" Colspan="5" FC Image: Colspan="5" FC I	C 15.209 🗸
Hi Frequency Cables 3 foot cable 12 foot cable HPF Reject Filter Peak Mer RBW=VI Image: Straight of the straight o	surements
2 foot cable 3 foot cable 12 foot cable HPF Reject Filter Peak Mer Image: Strain	
Image: Second and the second and t	
Image: Construction Image: Construct	3W=1MHz
f Dist Read Avg. AF CL Amp D Corr Fltr Peak Avg Pk Lim Avg Lim Pk Mar Avg Mar	
f Dist Read Avg. AF CL Amp D Corr Fltr Peak Avg Pk Lim Avg Lim Pk Mar Avg Mar	easurements VBW=10Hz
	, VDW-10112
GHz (m) dBuV dBuV dB/m dB dB dB dB dB dB dBuV/m dBuV/m dBuV/m dBuV/m dB dB dB	Notes
	(V/H)
Harmonics emissions	
1490 3.0 40.2 29.6 37.5 11.6 -35.9 0.0 0.0 53.5 42.8 74 54 -20.5 -11.2	v
7.235 3.0 36.8 23.8 41.7 13.3 .33.8 0.0 0.0 58.1 45.1 74 54 .15.9 .8.9	Noise Floor
1.490 3.0 37.0 24.0 37.5 11.6 -35.9 0.0 0.0 50.2 37.2 74 54 -23.8 -16.8 7.235 3.0 36.0 23.9 41.7 13.3 -33.8 0.0 0.0 57.3 45.1 74 54 -16.7 -89	H Noise Floor
1570 3.0 37.0 23.5 37.5 11.7 -35.8 0.0 0.0 50.4 37.0 74 54 -23.6 -17.0 7355 3.0 35.9 23.6 42.2 13.3 -33.8 0.0 0.0 57.7 45.4 74 54 -16.3 -8.6	H Noise Floor
1570 3.0 41.6 29.8 37.5 11.7 35.8 0.0 0.0 55.0 43.2 74 54 19.0 10.8	v
	Noise Floor
1650 3.0 42.0 30.9 37.5 11.8 -35.7 0.0 0.0 55.6 44.5 74 54 -18.4 -9.5	v
	Noise Floor H
7.475 3.0 35.4 23.1 42.7 13.4 -33.8 0.0 0.0 57.6 45.2 7.4 5.4 -16.4 -8.8	Noise Floor
	н
250 3.0 50.3 34.3 24.7 3.3 -39.1 0.0 0.0 39.1 23.2 74 54 -34.9 -30.8	H
	v
2500 30 45.7 510 250 45 53.7 00 00 35.7 27.0 74 54 543 -27.0 50 50 50 50 50 50 50 50 50 50 50 50 50	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	V Noise I H Noise I H H

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COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4031B 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

7.8.7. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

- Company: Project #: Date: 11/22 Fest Engin	e Cei		y Measuren												
roject #:)ate: 11/22 `est Engin		tification	Services, Fr	emont	5m Ch	amber									
ate: 11/2: est Engin	QUA	LCOM IN	1C.												
est Engin															
-			uyen												
			nder Card/ I												
			HT 20 Mode	,											
fest Equip		-					-					10			1.1.1
		18GHz		mplifer		GHZ	Pre-am	nplifer	26-40GH	z	н	orn > 18	GHZ		Limit
T119; S/I	N: 293	01 @3m	▼ T34 H	P 8449B		•				-				•	FCC 15.209
Hi Frequen	ncy Cab	les													
21	foot	cable	3	6 foot o	able		12	foot c	able		HPF	Re	eject Filte		k Measurements
							A-3m (hamb	er la		F_7.6GHz			RE	3W=VBW=1MHz age Measurements
			•			•			•	[1.00112				=1MHz; VBW=10Hz
fI	Dist	Read Di-	Read Avg	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	∆va Tir~	Pk Mar	Avg Mer	Notes
	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB		Avg dBuV/m		dBuV/m	тк маг dB	dB	(V/H)
Harmonics	s emis	sions													
ow Ch 5745 1.490	5MHz 1.0	49.8	36.5	37.2	7.1	-32.5	-9.5	0.7	52.7	39.3	74	54	-21.3	-14.7	v
7.235	1.0	52.8	38.5	40.2	8.1	-32.0	-9.5	0.6	60.3	46.0	74	54	-13.7	- <mark>8.0</mark>	v
	1.0 1.0	45.2 45.7	31.5 34.3	34.3 37.2	8.6 7.1	-32.9 -32.5	-9.5 -9.5	0.0	45.6 48.5	32.0 37.1	74 74	54 54	-28.4 -25.5	-22.0 -16.9	Noise Floor H
7.235	1.0	48.3	34.3	40.2	8.1	-32.0	-9.5	6.0	55.8	41.8	74	54	-18.2	-12.2	Н
2.980 Aid Ch 5785	1.0 MHz	44.3	31.5	34.3	8.6	-32.9	-9.5	0.0	44.8	32.0	74	54	-29.2	-22.0	Noise Floor
1.570	1.0	45.9	32.8	37.2	7.2	-32.5	-9.5	0.7	49.0	35.9	74	54	-25.0	-18.1	H
	1.0 1.0	46.8 45.8	33.8 31.2	40.3 34.3	8.3 8.6	-32.1 -32.9	-9.5 -9.5	0.6 0.0	54.4 46.3	41.4 31.7	74 74	54 54	-19.6 -27.7	-12.6 -22.3	H Noise Floor
1.570	1.0	48.5	36.0	37.2	7.2	-32.5	-9.5	0.7	51.5	39.0	74	54	-22.5	-15.0	v v
	1.0 1.0	50.2 45.7	36.3 31.3	40.3 34.3	8.3 8.6	-32.1 -32.9	-9.5 -9.5	0.6 0.0	57.8 46.2	43.9 31.8	74 74	54 54	-16.2 -27.8	-10.1 -22.2	V Noise Floor
ligh Ch 582	5MHz														v
	1.0 1.0	49.3 50.8	37.2 38.2	37.2 40.3	7.1 8.1	-32.5 -32.1	-9.5 -9.5	0.7 0.6	52.3 58.3	40.1 45.6	74 74	54 54	-21.7 -15.7	-13.9 -8.4	v v
	1.0	46.2	31.8	34.3 37.2	8.6	-32.8	-9.5 -9.5	0.6 0.7	47.3	33.0	74 74	54 54	-26.7	-21.0	Noise Floor
7.475	1.0 1.0	46.4 48.3	33.6 37.7	40.3	7.1 8.1	-32.5 -32.1	-9.5	0.0	49.4 55.8	36 <i>.</i> 5 45.1	74	54	-24.6 -18.2	-17 <i>5</i> -89	H H
	1.0	45.7	31.8 ted above noise	34.3	8.6	-32.8	-9.5	0.0	46.2	32.4	74	54	-27.8	-21.6	Noise Floor
							1								<u> </u>

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COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4031B 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

7.8.8. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT40 MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

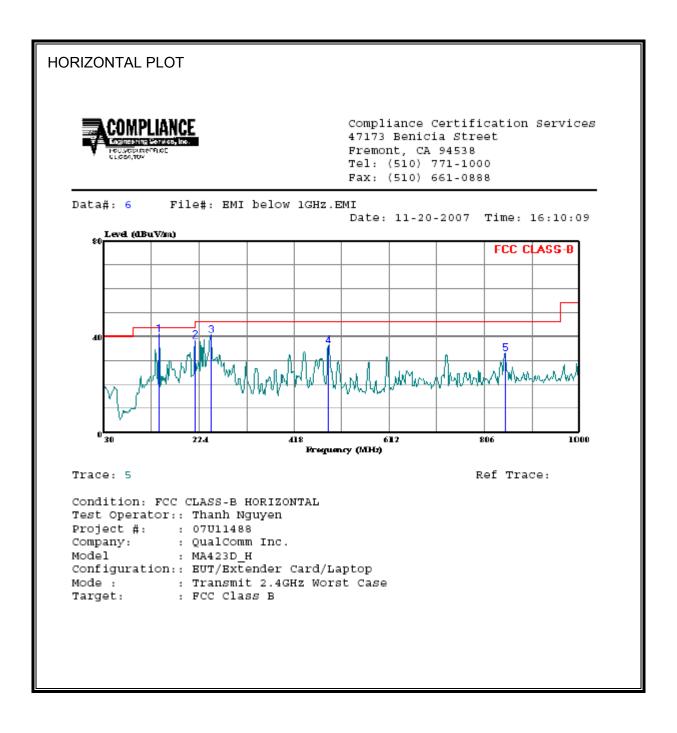
Cor Proj Dat Tes Cor	apany ject #: e: 11/2 t Engi ufigura	ce Ce : QUA : 07U 22/200 ineer: ition: 1	rtification S LCOM IN 11488 17 Thanh Ngu EUT, Exten		emont : aptop	5m Ch	amber									
		ipment														
			18GHz	Pre-ar	nplifer	1-260	247	Pre-am	nlifer	26-40GH	-	ц	orn > 180	247		Limit
Т			601@3m	_	P 8449B			T TC-am	piner	20-4001				5112	•	FCC 15.209
		ency Cab					•									
		foot		3	footo	able		12	foot c	able		HPF	Re	ject Filte		<u>: Measurements</u> W=VBW=1MHz
			•	· -			•	A-3m C	hambe	er 🔽	HP	F_7.6GHz	•		Avera	ge Measurements 1MHz ; VBW=10Hz
	f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
G	Hz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m		1	-	dB	dB	(V/H)
	monio Ch 575	s emi	ssions													
115	10	1.0	48.7	35.5	37.2	7.1	-32.5	-9.5	0.7	51.5	38.3	74	54	-22.5	-15.7	v
17.2		1.0	49.7	35.3	40.2	8.1	-32.0	-9.5	0.0	57.1	42.8	74	54	-16.9	-11.2	V
23.0 11.5		1.0 1.0	44.3 45.2	31.5 31.3	34.3 37.2	8.6 7.1	-32.9 -32.5	-9.5 -9.5	0.0 0.7	44.8 48.0	32.0 34.2	74 74	54 54	-29.2 -26.0	-22.0 -19.8	Noise Floor H
17.2	35	1.0	46.8	32.7	40.2	8.1	-32.0	-9.5	6.0	54 <i>3</i>	40.1	74	54	- 19.7	-13.9	H
23.0		1.0	44.4	31.5	34 <i>.</i> 3	6.8	-32.9	-9.5	0.0	44.9	32.0	74	54	-29.1	-22.0	Noise Floor
Mnd 11.5	Ch 579 90	5MHz 1.0	44.8	31.8	37.2	7.2	-32.5	-9.5	0.7	47.9	34.9	74	54	-26.1	-19.1	Н
17.3		1.0	45.8	32.2	40.3	8.3	-32.1	-9.5	0.6	53.4	39.8	74	54	-20.6	-14.2	Н
23.1		1.0	44.5	30.9	34.3	8.6	-32.9	-9.5	0.0	45.0	31.4	74	54	-29.0	-22.6	Noise Floor
11.5		1.0 1.0	46.3 49.7	34.8 35.2	37.2 40.3	7.2 8.3	-32.5 -32.1	-9.5 -9.5	0.7 0.6	49.4 57.3	37.8 42.8	74 74	54 54	-24.6 -16.7	-16.2 -11.2	v
23.1		1.0	44.7	30.3	34.3	8.6	-32.9	-9.5	0.0	45.2	30.8	74	54	-28.8	-23.2	Noise Floor
No o	ther en	nissions	were detecte	d above noise	floor											
Rev.	4.12.7							1		<u>.</u>						
	f	5	Measureme	nt Frequency	9		Amp	Preamp (Gain				Avg Lim	Average F	Field Strength	n Limit
]	Dist	Distance to	Antenna			D Corr	Distance	Correc	ct to 3 mete	ers		Pk Lim	Peak Field	d Strength Li	mit
			Analyzer Re	~			Avg	<u> </u>		Strength @			0	-	. Average Li	
		AF	Antenna Fa				Peak			c Field Stre	ngth		Pk Mar	Margin vs	. Peak Limit	
	(CL	Cable Loss				HPF	High Pas	s Filter							

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COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4031B 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

7.8.9. WORST-CASE BELOW 1 GHz

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

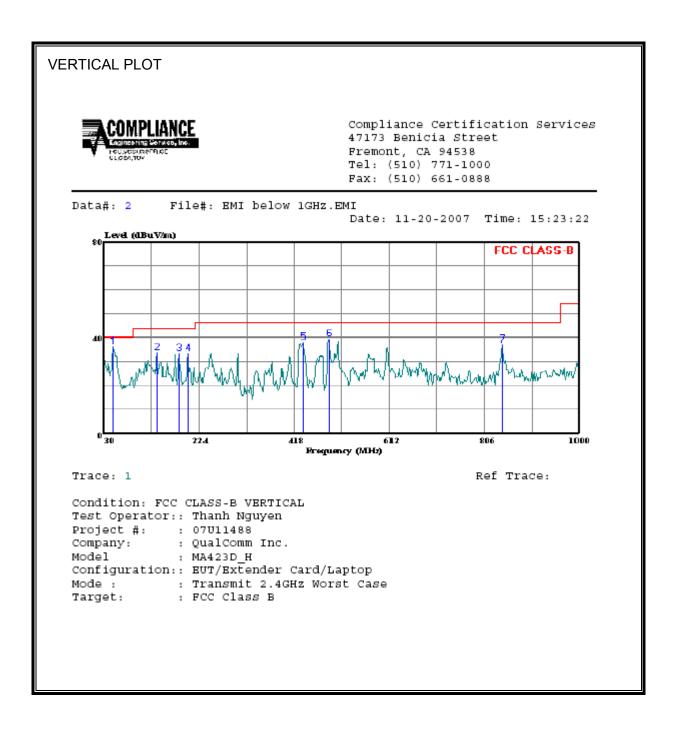


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HORIZ	ZONTAL DA	ТА						
	MHZ	dBuV	Level dBuV/m	db	Line dBuV/m	db	Remark 	
1	143.490							
2	216.240 247.280				46.00 46.00			
4	486.870							
5	848.680							

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

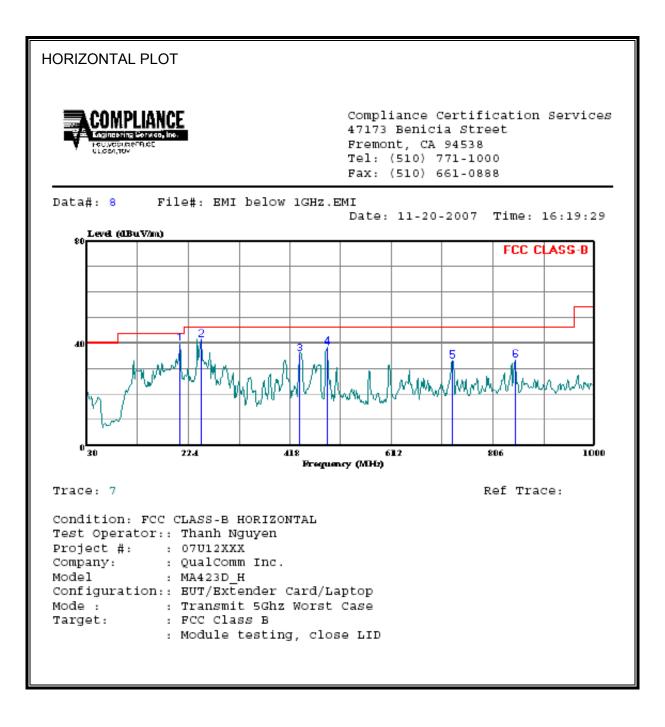


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ERTICAL DAT	A			
Free	Read I Level Level I	Limit Factor Line		
MH2	z dBuv dBuv/m	dB dBuV/m	db	
1 48.430				
	0 50.59 33.85 ·			
	0 52.18 33.68 ·			
	0 50.93 33.74 -			
	0 50.80 38.18 ·			
	0 50.85 39.42			
7 841.890	0 43.24 37.15	-6.09 46.00	-8.85 Peak	

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

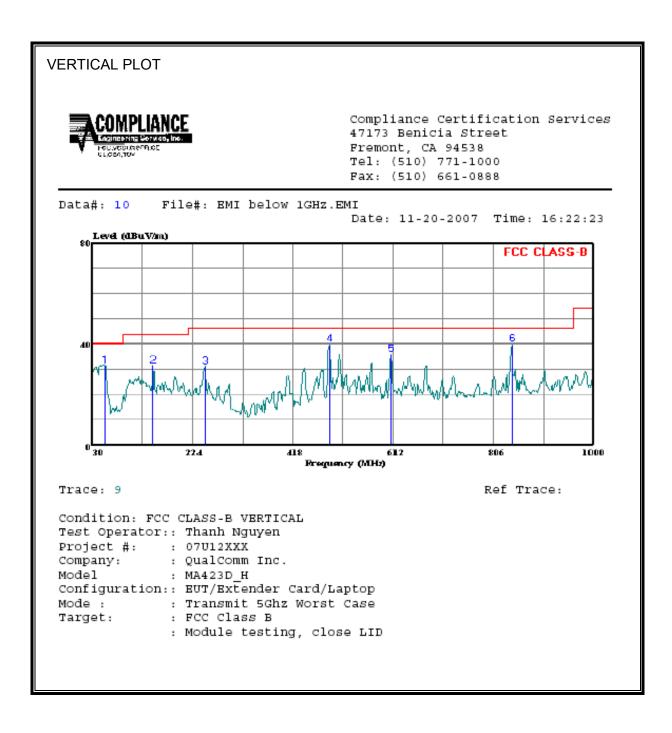


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HORIZ	ZONTAL DATA						
	Freq MHz				Limit Line dBuV/m		Remark ————
1 2 3 4 5 6	208.480 247.280 436.430 487.840 727.430 848.680	58.20 59.25 48.75 49.79 41.35	39.78 41.31 36.13 38.36 33.36	-18.42 -17.94 -12.62 -11.43 -8.00	43.50 46.00 46.00 46.00 46.00	-3.72 -4.69 -9.87 -7.64 -12.65	Peak Peak Peak Peak

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



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VERT	ICAL DATA						
	Freq	Read Level		Factor	Limit Line	Over Limit	Remark
	MHZ	dBuV	dBuV/m	dB	dBuV/m	dB	
1 2 3 4 5 6	247.280	48.91 48.98 51.13 45.82	31.68 31.04 39.70 36.07	-17.23 -17.94 -11.43 -9.75	43.50 46.00 46.00 46.00	-11.82 -14.96 -6.30 -9.93	Peak Peak Peak Peak

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8. 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

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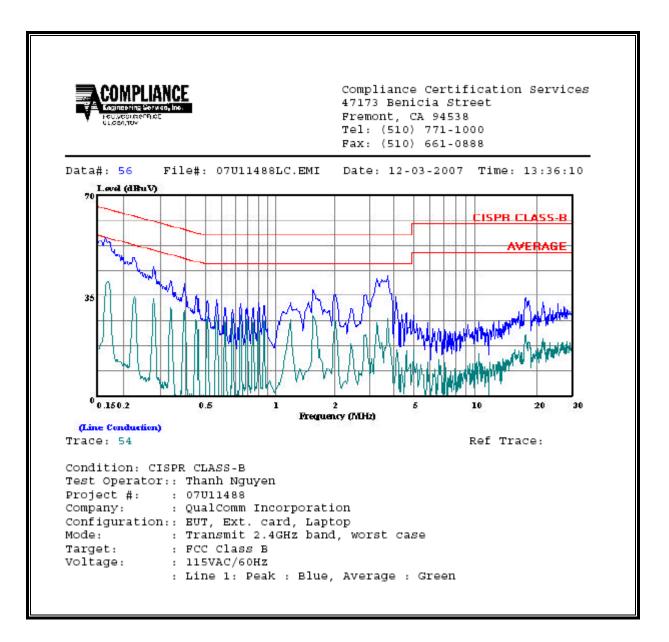
1

6 WORST EMISSIONS

	CONDUCTED EMISSIONS DATA (115VAC 60Hz)										
Freq.		Reading		Closs	Limit	EN_B	Marg	;in	Remark		
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV(dB)	L1/L2		
0.16	54.81		39.89	0.00	65.26	55.26	-10.45	-15.37	L1		
1.66	37.02		27.83	0.00	56.00	46.00	-18.98	-18.17	L1		
3.82	41.72		27.83	0.00	56.00	46.00	-14.28	-18.17	L1		
0.17	53.74		38.46	0.00	65.01	55.01	-11.27	-16.55	L2		
1.73	37.14		27.56	0.00	56.00	46.00	-18.86	-18.44	L2		
3.38	42.90		28.79	0.00	56.00	46.00	-13.10	-17.21	L2		
6 Worst I	Data										

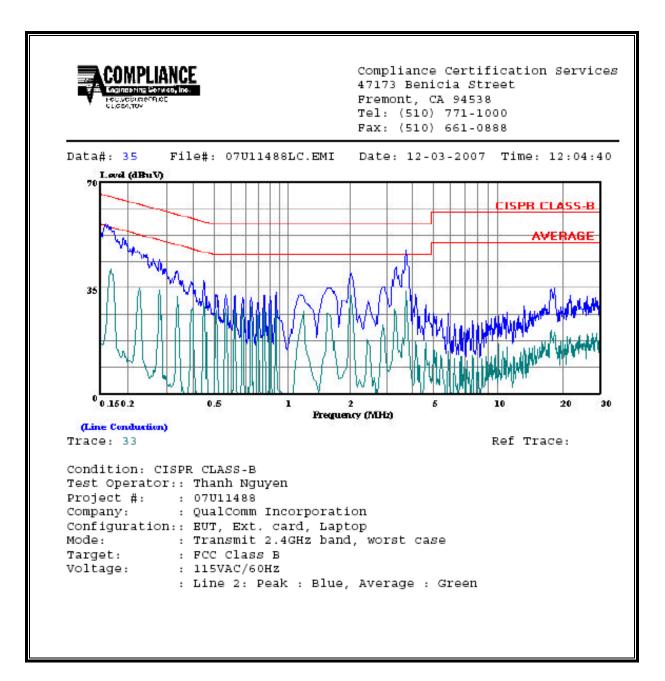
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LINE 1 RESULTS



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LINE 2 RESULTS



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9. MAXIMUM PERMISSIBLE EXPOSURE

FCC RULES

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)
(A) Lim	its for Occupational	I/Controlled Exposu	res	
0.3–3.0 3.0–30 30–300 300–1500 1500–100,000	614 1842/f 61.4	1.63 4.89/f 0.163	*(100) *(900/f²) 1.0 f/300 5	6 6 6 8
(B) Limits	for General Populati	ion/Uncontrolled Exp	posure	
0.3–1.34 1.34–30	614 824 <i>/</i> f	1.63 2.19/f	*(100) *(180/f ²)	30 30

TABLE 1-LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)
30–300 300–1500 1500–100,000	27.5	0.073	0.2 f/1500 1.0	30 30 30

f = frequency in MHz * = Plane-wave equivalent power density NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their motors into the persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure. NOTE 1 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

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IC RULES

IC Safety Code 6, Section 2.2.1 (a) A person other than an RF and microwave exposed worker shall not be exposed to electromagnetic radiation in a frequency band listed in Column 1 of Table 5, if the field strength exceeds the value given in Column 2 or 3 of Table 5, when averaged spatially and over time, or if the power density exceeds the value given in Column 4 of Table 5, when averaged spatially and over time.

Table 5 Exposure Limits for Persons Not Classed As RF and Microwave Exposed Workers (Including the General Public)

1 Frequency (MHz)	2 Electric Field Strength; rms (V/m)	3 Magnetic Field Strength; rms (A/m)	4 Power Density (W/m ²)	5 Averaging Time (min)
0.003–1	280	2.19		6
1–10	280/f	2.19/ <i>f</i>		6
10–30	28	2.19/ <i>f</i>		6
30–300	28	0.073	2*	6
300–1 500	1.585 <i>f</i> ^{0.5}	0.0042f ^{0.5}	f/150	6
1 500–15 000	61.4	0.163	10	6
15 000–150 000	61.4	0.163	10	616 000 /f ^{1.2}
150 000–300 000	0.158 <i>f</i> ^{0.5}	4.21 x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616 000 /f ^{1.2}

* Power density limit is applicable at frequencies greater than 100 MHz.

Notes: 1. Frequency, f, is in MHz.

2. A power density of 10 W/m^2 is equivalent to 1 mW/cm^2 .

 A magnetic field strength of 1 A/m corresponds to 1.257 microtesla (μT) or 12.57 milligauss (mG).

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CALCULATIONS

Given

 $E = \sqrt{(30 * P * G)} / d$

and

S = E ^ 2 / 3770

where

E = Field Strength in Volts/meter

- P = Power in Watts
- G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts/square centimeter

Combining equations, rearranging the terms to express the distance as a function of the remaining variables, changing to units of Power to mW and Distance to cm, and substituting the logarithmic form of power and gain yields:

$$d = 0.282 * 10 ^ ((P + G) / 20) / \sqrt{S}$$

where

d = MPE distance in cm P = Power in dBm

G = Antenna Gain in dBi

S = Power Density Limit in mW/cm^2

Rearranging terms to calculate the power density at a specific distance yields

S = 0.0795 * 10 ^ ((P + G) / 10) / (d^2)

The power density in units of mW/cm² is converted to units of W/m² by multiplying by a factor of 10.

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<u>LIMITS</u>

From FCC §1.1310 Table 1 (B), the maximum value of S = 1.0 mW/cm²

From IC Safety Code 6, Section 2.2 Table 5 Column 4, S = 10 W/m²

RESULTS

Mode	Band	MPE	Output	Antenna	FCC Power	IC Power
		Distance	Power	Gain	Density	Density
		(cm)	(dBm)	(dBi)	(mW/cm^2)	(W/m^2)
WLAN	2.4 GHz	20.0	28.96	2.00	0.25	2.48
WLAN	5 GHz	20.0	27.60	3.00	0.23	2.28

NOTE: For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.

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