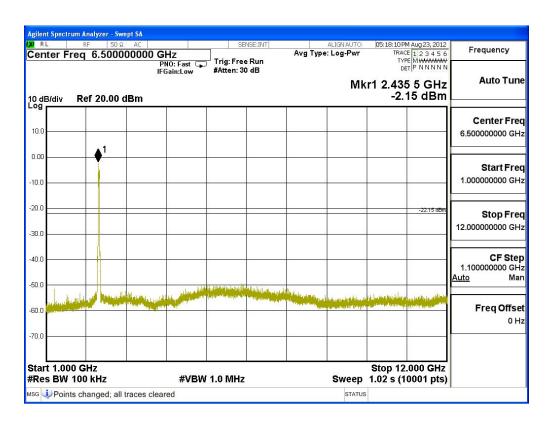


	AC	SENSE:INT	ALIGN AUTO	05:18:41 PM Aug 23, 2012	Frequency
enter Freq 515.000	DOO MHZ PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	requency
dB/div Ref 20.00 dE			Mkr	1 534.982 MHz -54.96 dBm	Auto Tun
-9					Center Fre
0.0					515.000000 MH
.00					Start Fre
0.0					30.000000 MH
5.0				-22,15 dBm	Stop Fr
0.0					1.000000000 G
0.0					CF Ste
0.0					97.000000 M <u>Auto</u> M
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	and a second stand process for a stability of the second state			and a second particular and a second particular day large	Freq Offs 0
0.0				k	
tart 30.0 MHz				Stop 1.0000 GHz	
Res BW 100 kHz	#VBW	1.0 MHz	Sweep 9	0.0 ms (10001 pts)	

Channel 07 (2452MHz)



KI RL		RF 50 Ω			SE	NSE:INT		ALIGNAUTO		M Aug 23, 2012	Frequency
Cent	er Freq	18.500		GHz NO: Fast 😱 Gain:Low	Trig: Free #Atten: 30		Avg Type	: Log-Pwr	TYF	2Е 1 2 3 4 5 6 РЕМ ЖИЖИМИ ЕТ Р N N N N N	Trequency
0 dB/	div Re	ef 20.00 (Mkr		8 8 GHz 02 dBm	Auto Tun
											Center Fre
10.0 -											18.500000000 GH
).00 -											Start Fre
10.0 -											12.000000000 GH
20.0			-							-22.15 dBm	Stop Fre
10.0											25.000000000 GI
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io.o			Acres and a summer	and design	Linemalit	Alinevingeneration	and a least	na kalendaria		and a station of the state of t	1.300000000 GI <u>Auto</u> Ma
	a Managara ang sa	ally the first strength	u - Kaliyeri fatisiya kina	needed and a starting	and a later of the second second	a transmission of the state of					F 05-
io.o 🗠	a, dit de léttic vit oet		-								Freq Offs 0 I
0.0			-								
tart	12.000	GHz							Stop 25	.000 GHz	
Res	BW 100) kHz		#VBW	1.0 MHz			Sweep	1.20 s (1	0001 pts)	

6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
\square Site # 3	Bilog Antenna		Schaffner Chase	CBL6112B/2673	Sep., 2012
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	Х	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2012
	Х	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	Х	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

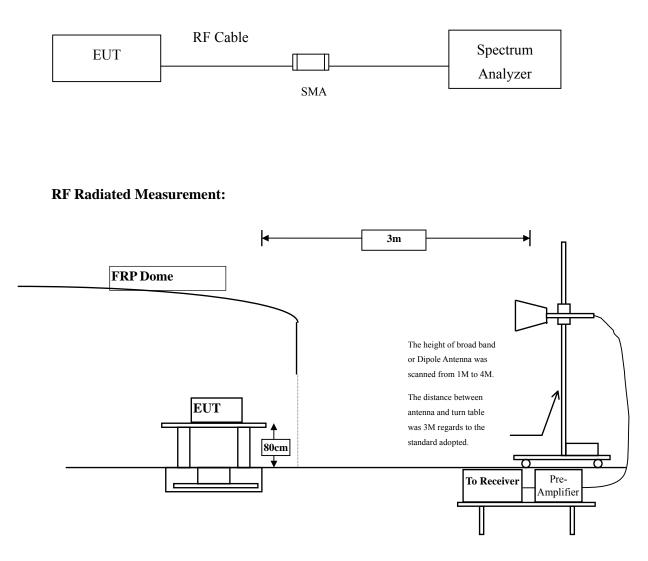
Note:

1. All instruments are calibrated every one year.

2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2003 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz

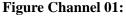
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

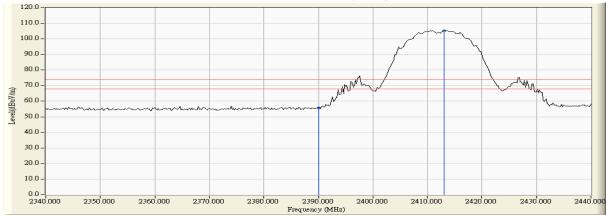
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

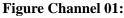
RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	24.229	55.738	74.00	54.00	Pass
01 (Peak)	2413.000	31.646	73.688	105.334			Pass
01 (Average)	2390.000	31.509	13.403	44.912	74.00	54.00	Pass
01 (Average)	2409.400	31.621	69.460	101.080			Pass

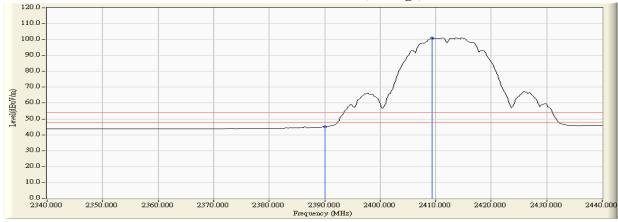


Horizontal (Peak)





Horizontal (Average)



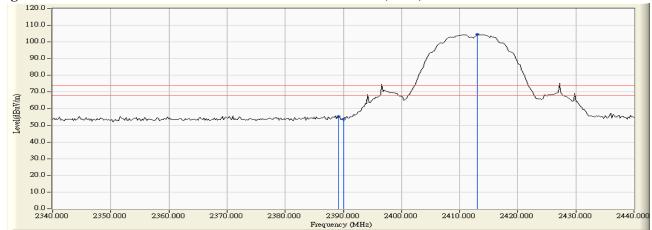
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2389.200	30.919	24.522	55.441	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	22.920	53.835	74.00	54.00	Pass
01 (Peak)	2413.000	30.956	73.489	104.445			Pass
01 (Average)	2390.000	30.915	13.573	44.488	74.00	54.00	Pass
01 (Average)	2411.200	30.944	69.560	100.504			Pass

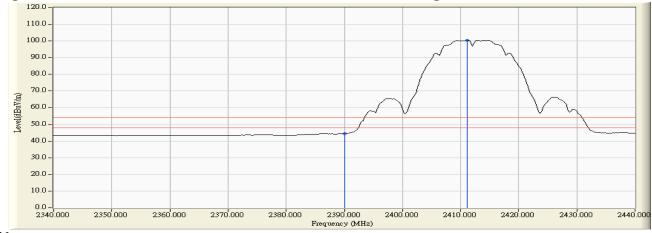
Figure Channel 01:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

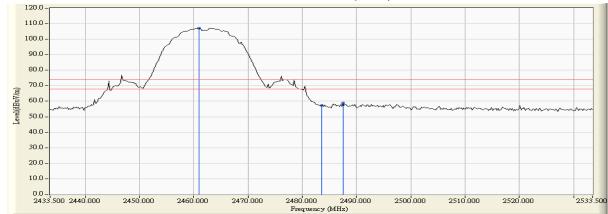
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2460.900	32.011	75.016	107.027			Pass
11 (Peak)	2483.500	32.182	25.100	57.282	74.00	54.00	Pass
11 (Peak)	2487.500	32.212	26.788	59.000	74.00	54.00	Pass
11 (Average)	2461.100	32.013	71.123	103.136			Pass
11 (Average)	2483.500	32.182	14.728	46.910	74.00	54.00	Pass

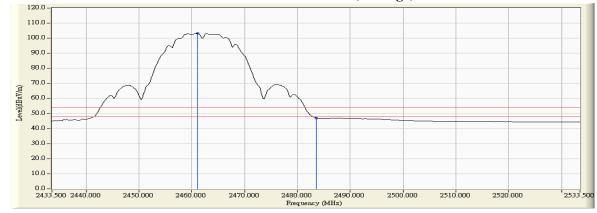
Figure Channel 11:

Horizontal (Peak)





Horizontal (Average)



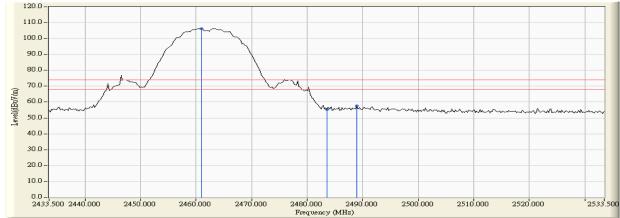
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

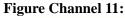
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2460.900	31.283	74.951	106.234			Pass
11 (Peak)	2483.500	31.435	23.890	55.325	74.00	54.00	Pass
11 (Peak)	2488.900	31.472	26.110	57.582	74.00	54.00	Pass
11 (Average)	2461.100	31.285	71.028	102.312			Pass
11 (Average)	2483.500	31.435	14.380	45.815	74.00	54.00	Pass

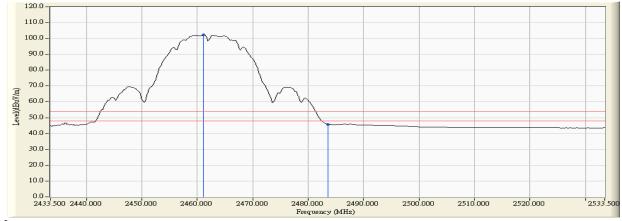
Figure Channel 11:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

....

RF Radiated Measurement (Horizontal):

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
01 (Peak)	2389.600	31.508	36.186	67.694	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	34.398	65.907	74.00	54.00	Pass
01 (Peak)	2418.400	31.687	72.721	104.408			Pass
01 (Average)	2390.000	31.509	17.777	49.286	74.00	54.00	Pass
01 (Average)	2407.000	31.605	61.185	92.790			Pass

Figure Channel 01:

Horizontal (Peak)

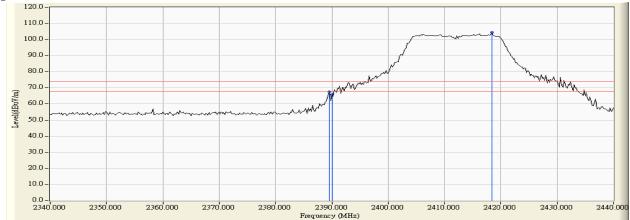


Figure Channel 01:

Horizontal (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
Channel No.	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Kesuit
01 (Peak)	2390.000	30.915	39.269	70.184	74.00	54.00	Pass
01 (Peak)	2416.000	30.977	73.143	104.119			Pass
01 (Average)	2390.000	30.915	19.098	50.013	74.00	54.00	Pass
01 (Average)	2406.600	30.930	62.095	93.025			Pass

Figure Channel 01:

VERTICAL (Peak)

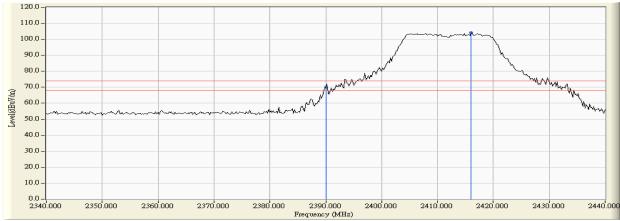
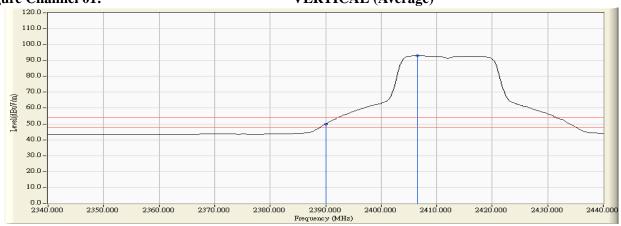


Figure Channel 01:

VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

RF Radiated Measurement (Horizontal):

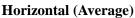
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2459.300	31.999	74.699	106.698			Pass
11 (Peak)	2483.500	32.182	41.132	73.314	74.00	54.00	Pass
11 (Average)	2467.500	32.061	62.192	94.253			Pass
11 (Average)	2483.500	32.182	21.244	53.426	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)



Figure Channel 11:





- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level		Ç	Result
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
11 (Peak)	2465.100	31.312	73.310	104.621			Pass
11 (Peak)	2483.500	31.435	36.160	67.595	74.00	54.00	Pass
11 (Average)	2466.700	31.322	61.963	93.285			Pass
11 (Average)	2483.500	31.435	20.515	51.950	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)

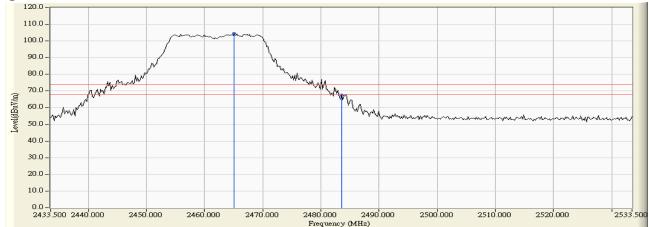


Figure Channel 11:

VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

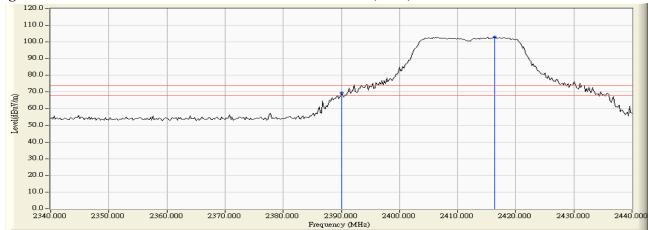
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	37.852	69.361	74.00	54.00	Pass
01 (Peak)	2416.400	31.672	71.409	103.081			Pass
01 (Average)	2390.000	31.509	20.233	51.742	74.00	54.00	Pass
01 (Average)	2406.000	31.598	60.660	92.259			Pass

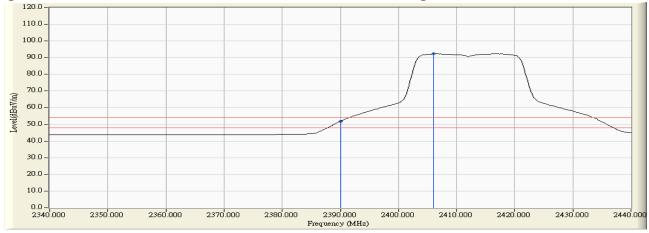
Figure Channel 01:

Horizontal (Peak)









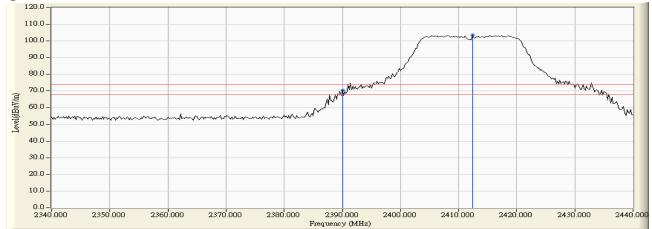
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.915	39.527	70.442	74.00	54.00	Pass
01 (Peak)	2412.400	30.952	72.596	103.548			Pass
01 (Average)	2390.000	30.915	21.135	52.050	74.00	54.00	Pass
01 (Average)	2406.400	30.930	61.701	92.631			Pass

Figure Channel 01:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

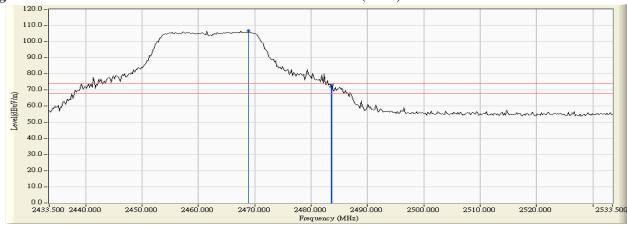
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

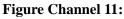
RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
11 (Peak)	2468.900	32.072	74.674	106.746			Pass
11 (Peak)	2483.500	32.182	39.971	72.153	74.00	54.00	Pass
11 (Peak)	2483.700	32.183	41.040	73.224	74.00	54.00	Pass
11 (Average)	2468.100	32.065	58.717	90.782			Pass
11 (Average)	2483.500	32.182	20.992	53.174	74.00	54.00	Pass

Figure Channel 11:

Horizontal (Peak)





Horizontal (Average)



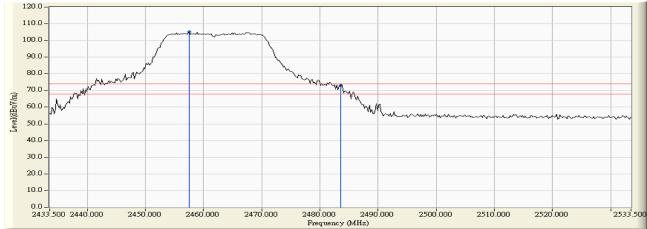
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

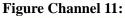
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level		Ç	Result
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
11 (Peak)	2457.500	31.260	74.084	105.344			Pass
11 (Peak)	2483.500	31.435	41.544	72.979	74.00	54.00	Pass
11 (Average)	2467.100	31.325	60.568	91.893			Pass
11 (Average)	2483.500	31.435	22.121	53.556	74.00	54.00	Pass

Figure Channel 11:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

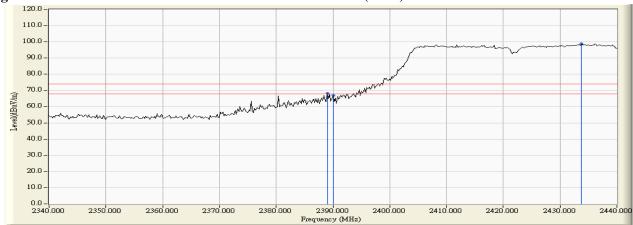
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422 MHz)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
03 (Peak)	2389.000	31.505	36.727	68.232	74.00	54.00	Pass
03 (Peak)	2390.000	31.509	35.257	66.766	74.00	54.00	Pass
03 (Peak)	2433.800	31.805	67.015	98.820			Pass
03 (Average)	2390.000	31.509	20.041	51.550	74.00	54.00	Pass
03 (Average)	2433.600	31.803	55.847	87.651			Pass

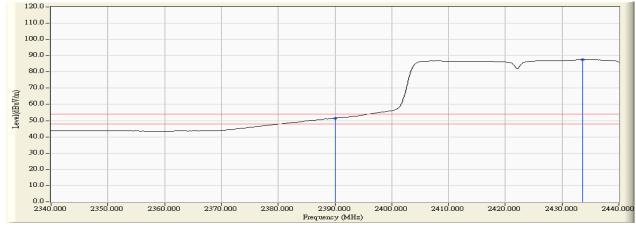
Figure Channel 03:

Horizontal (Peak)





Horizontal (Average)



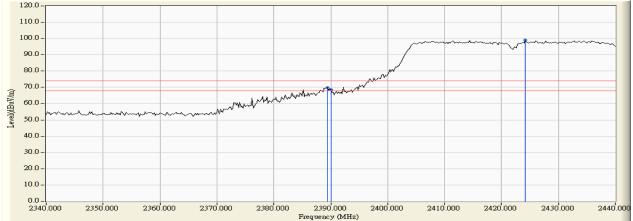
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422 MHz)

Channel No.	Frequency	Correct Factor	Reading Level	Emission Level	Peak Limit	Arerage Limit	Result
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dBuV/m)	Result
03 (Peak)	2389.400	30.918	38.875	69.793	74.00	54.00	Pass
03 (Peak)	2390.000	30.915	37.565	68.480	74.00	54.00	Pass
03 (Peak)	2424.200	31.033	68.040	99.072			Pass
03 (Average)	2390.000	30.915	21.242	52.157	74.00	54.00	Pass
03 (Average)	2434.800	31.104	56.076	87.180			Pass

Figure Channel 03:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

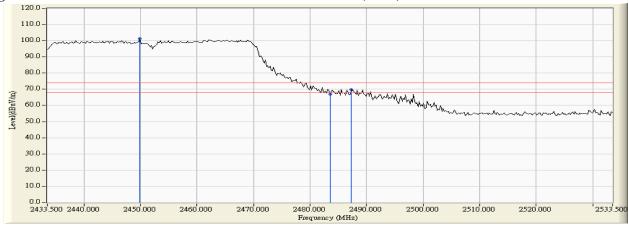
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

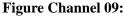
RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
09 (Peak)	2449.900	31.927	69.547	101.475			Pass
09 (Peak)	2483.500	32.182	34.690	66.872	74.00	54.00	Pass
09 (Peak)	2487.300	32.211	37.707	69.918	74.00	54.00	Pass
09 (Average)	2466.300	32.052	55.378	87.430			Pass
09 (Average)	2483.500	32.182	21.392	53.574	74.00	54.00	Pass

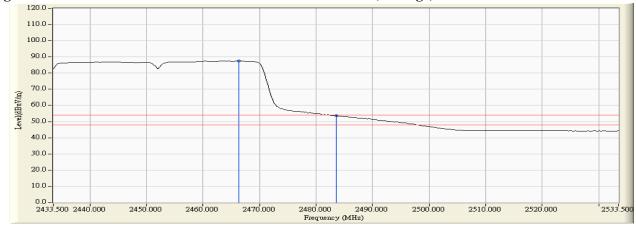
Figure Channel 09:

Horizontal (Peak)





Horizontal (Average)



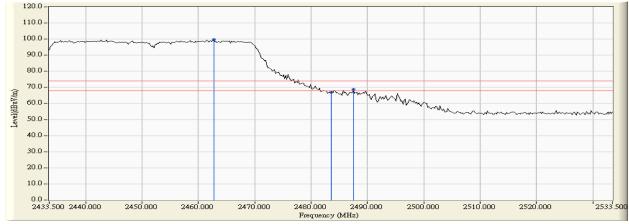
- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

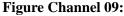
Product	:	Powerline Wireless N Extender
Test Item	:	Band Edge Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Arerage Limit (dBuV/m)	Result
09 (Peak)	2462.700	31.295	68.369	99.664			Pass
09 (Peak)	2483.500	31.435	35.528	66.963	74.00	54.00	Pass
09 (Peak)	2487.500	31.462	37.536	68.998	74.00	54.00	Pass
09 (Average)	2443.100	31.160	56.671	87.831			Pass
09 (Average)	2483.500	31.435	22.118	53.553	74.00	54.00	Pass

Figure Channel 09:

VERTICAL (Peak)





VERTICAL (Average)



- 1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
- 2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- 3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- 4. "*", means this data is the worst emission level.
- 5. Measurement Level = Reading Level + Correct Factor.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.

7. Occupied Bandwidth

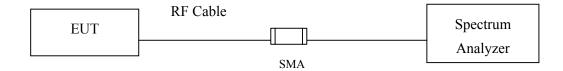
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2003; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW = 1-5% of the emission bandwidth, VBW \geq 3*RBW

7.5. Uncertainty

± 150Hz

7.6. Test Result of Occupied Bandwidth

Product	:	Powerline Wireless N Extender
Test Item	•	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	10350	>500	Pass

Figure Channel 1:

RL RF 50 Ω enter Freq 2.41200	AC 00000 GHz PNO: Fast C	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	03:56:22 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
	IFGain:Low	#Atten: 30 dB	Mkr	2 2.406 85 GHz 0.66 dBm	Auto Tu
dB/div Ref 20.00 d 9 	Bm 	21	200 3	1.12 dBm	Center Fr 2.412000000 G
.0 .0	mas and a start of the		Mar and a second	MyMy	Start Fr 2.387000000 G
.0				" Menonennon	Stop Fi 2.437000000 0
enter 2.41200 GHz les BW 300 kHz		1.0 MHz		Span 50.00 MHz 1.00 ms (1001 pts)	CF St 5.000000 M
R MODE TRC SCL N 1 f N 1 f (Δ) N 1 f (Δ)	× 2.410 50 GHz 2.406 85 GHz (Δ) 2.417 20 GHz (Δ)	7.12 dBm 0.66 dBm -0.48 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto M Freq Off
2	0				

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	10300	>500	Pass

Figure Channel 6:

RL	RF 50 ເ			SENSE		ALIGN AUTO		Aug 23, 2012	F
enter Fi	req 2.4370	PI	Hz NO: Fast 😱 Gain:Low	Trig: Free R #Atten: 30 dl	un	'ype: Log-Pwr	TYPE	123456 MWWWWW PNNNNN	Frequency
dB/div	Ref 20.00	dBm				Mkr	2 2.431 8 0.7	85 GHz '4 dBm	Auto Tu
9 .0					······3			1.16 dBm	Center Fi
.0			Jung	V W	M			1.10 0.011	2.437000000 0
0		mm ~	N ^S			The more	NA.		Start Fi
.0	Mullinner	1 Ju				w	"Jording and	Munane	2.412000000
.0								-Construction -	Stop Fr
.0									2.462000000
	3700 GHz 300 kHz		#VBW	1.0 MHz		Sweep	Span 50 1.00 ms (1	0.00 MHz 001 pts)	CF S1 5.000000 M
MODE TE	f	× 2.435 5		Y 7.16 dBm		FUNCTION WIDTH	FUNCTIO	N VALUE	Auto N
N 1 N 1	f (Δ) f (Δ)		5 GHz (Δ) 5 GHz (Δ)	0.74 dBm 0.99 dBm					Freq Off
	-								0
						STATUS			

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	10300	>500	Pass

Figure Channel 11:

ilent Spectrum Analyzer - S RL RF 50 enter Freq 2.462	Ω AC 000000 GHz PNO: Fast	SENS	Avg Ty Run	ALIGN AUTO pe: Log-Pwr	TRAC	HAUG 23, 2012 E 1 2 3 4 5 6 E MWWWWW T P N N N N N	Frequency
) dB/div Ref 20.00	IFGain:Low	#Atten: 30 c		Mkr	2 2.456	85 GHz 67 dBm	Auto Tur
0.0 0.00 0.00		2 1 mmmy	3 Mu			1.06 dBm	Center Fre 2.462000000 Gł
0.0 0.0 0.0	om war		\	www	M. Mary		Start Fr 2.437000000 G
0.0						menter and a second	Stop Fr 2.487000000 G
enter 2.46200 GHz Res BW 300 kHz R X009 TRC SOL	#VE	BW 1.0 MHz	FUNCTION	Sweep	1.00 ms (0.00 MHz 1001 pts)	CF St 5.000000 M Auto M
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	2.460 50 GHz 2.456 85 GHz(2.467 15 GHz(7.06 dBr ∆) 0.67 dBr	n n				Freq Offs 0
7							
g g				STATUS	;		

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	16550	>500	Pass

Figure Channel 1:

gilent Spectrum Analyzer - Swe					
RL RF 50 Ω Center Freq 2.41200	PNO: Fast 😱	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	04:17:09 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Frequency
0 dB/div Ref 20.00 d	IFGain:Low	#Atten: 30 dB	Mkr	2 2.403 75 GHz -1.42 dBm	Auto Tun
• og 10.0 0.00 10.0	2		1 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-0.85 dBm	Center Fre 2.412000000 GH
20.0 30.0 40.0	and the second of the			Same of the second second	Start Fre 2.387000000 GH
50.0 50.0 70.0					Stop Fr 2.437000000 GI
enter 2.41200 GHz Res BW 300 kHz		1.0 MHz	-	Span 50.00 MHz 1.00 ms (1001 pts)	CF Ste 5.000000 M
MODE Field SCI 1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 - - - - 5 - - - - 6 - - - - - 7 -	× 2.414 85 GHz 2.403 75 GHz (Δ) 2.420 30 GHz (Δ)	Y 5.15 dBm -1.42 dBm -2.51 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto M Freq Offs 01
g			STATUS	5	

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	16600	>500	Pass

Figure Channel 6:

R L	m Analyzer - Sw RF 50 Ω			SENSE:I	NT	ALIGN AUTO	04:25:11P	4 Aug 23, 2012	
enter Fr	eq 2.4370	00000 GHz]	Trig: Free Ru		e: Log-Pwr	TRAC	E 1 2 3 4 5 6	Frequency
		IFGain:	ast 😱 Low	#Atten: 30 dB	•		DE	PNNNNN	
	D-6 00 00					Mkr		70 GHz 46 dBm	Auto Tui
dB/div g	Ref 20.00	dBM		∆ 1	1		<u> </u>		
0.0			2	minun	manna 3			1.77 dBm	Center Fr
00	-	1							2.437000000 G
.0		wanter				- marthalan			
0 Anolow Martin	Mark Marker Mark						Mun wheels	Tenn Mar Alma	Start Fr
.0 Anolor	_					-		a non all the	2.412000000 G
.0									
.0						-			
.0									Stop Fr
.0	-	5				-			2.462000000 G
enter 24	3700 GHz		- C.	~			Snan 5	0.00 MHz	
es BW :		;	#VBW	1.0 MHz		Sweep		1001 pts)	CF St
R MODE TRO	SCL	×		Y	FUNCTION	JNCTION WIDTH	FUNCTIO	IN VALUE	5.000000 M Auto N
I N 1	f	2.433 00 GH		7.77 dBm					
N 1 N 1	f (Δ) f (Δ)	2.428 70 GH 2.445 30 GH	HZ (Δ) HZ (Δ)	0.46 dBm 1.38 dBm					Freq Offs
i									
5									•
7									
1									

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16500	>500	Pass

Figure Channel 11:

gilent Spectrum Analyzer - Swe					
RL RF 50 Ω Center Freq 2.4620	00000 GHz PNO: Fast 😱 Tri	g: Free Run	ALIGNAUTO Avg Type: Log-Pwr	04:31:31 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	Frequency
0 dB/div Ref 20.00 d	il Guineow	tten: 30 dB	Mk	2 2.453 75 GHz -1.54 dBm	Auto Tun
• 0 9 10.0 0.00 10.0	2 1 2 2 1	en hyperen selfer y	~~~{\ ³	-1.24 dBm	Center Fre 2.462000000 GH
20.0 30.0 10.0				contraction of the second way of the	Start Fr 2.437000000 G
0.0					Stop Fr 2.487000000 G
enter 2.46200 GHz Res BW 300 kHz	#VBW 1.0			Span 50.00 MHz 1.00 ms (1001 pts)	CF Sto 5.000000 M
GI MODE TRC SEL 1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 - - - - 5 - - - - 6 - - - - 7 - - - - 9 - - - -	2.453 75 GHz (Δ) -	Y FUN 4.76 dBm 1.54 dBm 1.64 dBm 			Auto Mi Freq Offs 0 I
			STATU	2	

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	17750	>500	Pass

Figure Channel 1:

gilent Spectrum Analyzer - Swe					8
a RL RF 50 Ω Center Freq 2.4120		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	04:39:38 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	Frequency
0 dB/div Ref 20.00 d	IFGain:Low	#Atten: 30 dB	Mkr	2 2.403 10 GHz -2.60 dBm	Auto Tun
-og 10.0 .00 10.0	2	www.	1 	-0.90 dBm	Center Fre 2.412000000 G⊦
20.0 30.0 40.0	and the state of t		Antone and services	Maril Matheman and Maril Maril Maril	Start Fre 2.387000000 Gi
50.0 50.0 70.0					Stop Fr 2.437000000 GI
enter 2.41200 GHz Res BW 300 kHz	#VBW	1.0 MHz	Sweep	Span 50.00 MHz 1.00 ms (1001 pts) FUNCTION VALUE	CF Ste 5.000000 M Auto M
1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 5 6 9 1	2,415 45 GHz 2,403 10 GHz (Δ) 2,420 85 GHz (Δ)	5.10 dBm -2.60 dBm -1.43 dBm			Freq Offs 01
2			STATUS]	

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	17750	>500	Pass

Figure Channel 6:

Agilent Spectrum Analyzer - Sw	ept SA			and the second sec	
M RL RF 50 Ω Center Freq 2.4370		SENSE:I	Avg Type: Log-Pw	/r TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast (IFGain:Low	Trig: Free Run #Atten: 30 dB		TYPE MWWWWW DET P NNNNN kr2 2.428 10 GHz 0.81 dBm	Auto Tun
10 dB/div Ref 20.00 (- 09 10.0 0.00 - 10.0	2	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		1.73 dBm	Center Fre 2.437000000 G⊦
10.0 20.0 40.0				And a man and and and and a start and a	Start Fre 2.412000000 G⊦
-50.0 					Stop Fre 2.462000000 GH
Center 2.43700 GHz Res BW 300 kHz		3W 1.0 MHz		Span 50.00 MHz 5 1.00 ms (1001 pts)	CF Ste 5.000000 MI
MKR MODE TFC SCL 1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 5 6	× 2.433 70 GHz 2.428 10 GHz 2.445 85 GHz (Υ 7.73 dBm Δ) 0.81 dBm Δ) 1.64 dBm	FUNCTION FUNCTION WIE	FUNCTION VALUE	Auto Ma Freq Offs 0 H
7 8 9 10 11 12					
MSG			STA	TUS	

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	17750	>500	Pass

Figure Channel 11:

Agilent Spectrum Analy						
RL RF Center Freq 2	50 Ω AC .462000000 GHz	ast 😱 Trig: Free		E: Log-Pwr TR/ T	PM Aug 23, 2012 ACE 1 2 3 4 5 6 YPE MWWWWW	Frequency
	IFGain: 20.00 dBm) dB	Mkr2 2.453	08 dBm	Auto Tun
-og 10.0 0.00		2 1	3			Center Fre 2.462000000 GH
20.0 30.0 40.0	walnesdart propagation			Mana Marilanse all halves	Adwarm white	Start Fre 2.437000000 Gł
50.0 50.0 70.0						Stop Fr 2.487000000 G
enter 2.46200 Res BW 300 kl	Hz	#VBW 1.0 MHz		Sweep 1.00 ms	<u> </u>	CF Sto 5.000000 M
KF MODE TRC SCL 1 N 1 f 2 N 1 f () 3 N 1 f () 4 - - - - 5 - - - - 6 - - - - 7 - - - -		Hz (Δ) -2.08 dl	Bm Bm	NCTION WIDTH FUNCT		Freq Offs
9 10 11 12 56				STATUS		

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	2422	36900	>500	Pass

Figure Channel 1:

Agilent Spectrum Analyzer - Swi					
X RL RF 50 Ω Center Freq 2.4220	00000 GHz	g: Free Run	ALIGNAUTO Avg Type: Log-Pwr	04:58:54 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	Frequency
10 dB/div Ref 20.00 d	IFGain:Low #A	tten: 30 dB	MI	r2 2.403 6 GHz -0.87 dBm	Auto Tune
10.0 0.00 -10.0	2 ↓1		3	-0.46 dBm	Center Fre 2.422000000 GH
-20.0 -30.0			North Andrews	low which all all with the second	Start Fre 2.372000000 GH
50.0 60.0 70.0					Stop Fre 2.472000000 G⊦
Center 2.42200 GHz Res BW 1.0 MHz	#VBW 3.0			Span 100.0 MHz 1.00 ms (1001 pts)	CF Ste 10.000000 MH
MKF MOD5 TEC SCI 1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 4 6 6 7 6 7 9 9 10 11 1 1 1 1	2.409 2 GHz 2.403 6 GHz (Δ)	5.54 dBm 0.87 dBm 0.55 dBm	FUNCTION WIDTH		<u>Auto</u> Ma FreqOffse 0⊢
sg			STATU	s	1

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	36500	>500	Pass

Figure Channel 4:

Agilent Spectrum Analyzer - Swi					
RL RF 50 Ω Center Freq 2.4370	00000 GHz	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	05:05:58 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
10 dB/div Ref 20.00 d	IFGain:Low	#Atten: 30 dB	Mki	^с 2 2.418 6 GHz 0.29 dBm	Auto Tun
-og 10.0 0.00 10.0	2 01			0.72 dBm	Center Fre 2.437000000 GH
20.0 30.0 Julineautoretyteronetro 40.0	And and a second s			worked working	Start Fre 2.387000000 GI
50.0 50.0 70.0					Stop Fr 2.487000000 G
enter 2.43700 GHz Res BW 1.0 MHz	#VBW 3			Span 100.0 MHz .00 ms (1001 pts)	CF Sto 10.000000 M
MODE TRC SCL 1 N 1 f 2 N 1 f (Δ) 3 N 1 f (Δ) 4 - - - 5 - - - 6 - - - 7 - - -	× 2.423 6 GHz 2.418 6 GHz (Δ) 2.455 1 GHz (Δ)	Y FUI 6.72 dBm 0.29 dBm 0.14 dBm	PUNCTION WIDTH	FUNCTION VALUE	Auto Mi Freq Offs 0 I
1 1 9 1 10 1 12 1 36 36			STATUS		

Product	:	Powerline Wireless N Extender
Test Item	:	Occupied Bandwidth Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
9	2452	37100	>500	Pass

Figure Channel 7:

gilent Spectrum Analyzer - Swept SA						
RL RF 50 Ω AC Center Freq 2.4520000	00 GHz PN0: Fast 😱	SENSE:INT	Avg Type:		5:15:59 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
0 dB/div Ref 20.00 dBm	IFGain:Low	#Atten: 30 dB		Mkr2	2.433 2 GHz -1.04 dBm	Auto Tur
og 10.0 0.00	• ²	1	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		-0.20 dBm	Center Fr 2.452000000 G
0.0 .0 yundyweby high www.work				and the second struct	Inch and all of the Age The	Start Fr 2.402000000 G
0.0 0.0 0.0						Stop Fr 2.502000000 G
enter 2.45200 GHz Res BW 1.0 MHz		3.0 MHz		Sweep 1.0	pan 100.0 MHz) ms (1001 pts)	CF Sto 10.000000 M
2 N 1 f (Δ) 3 N 1 f (Δ) 4 5 5 6	2.449 8 GHz 2.433 2 GHz (Δ) 2.470 3 GHz (Δ)	Y 5.80 dBm -1.04 dBm -0.81 dBm			FUNCTION VALUE	Auto M Freq Offs 0
7 8 9 9 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
G				STATUS		

8. **Power Density**

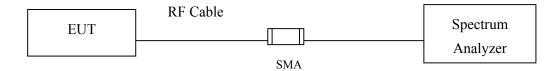
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
Х	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

- 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
- 2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. Set RBW= 100 kHz, VBW \geq 300KHz, SPAN to 5-30 % greater than the EBW, Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

8.5. Uncertainty

 \pm 1.27 dB

8.6. Test Result of Power Density

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-7.738	< 8dBm	Pass

Figure Channel 1:

Agilent Spectrum Analyzer					
Center Freg 2.41		SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	04:00:13 PM Aug 23, 2012 TRACE 1 2 3 4 5 6	Frequency
	PN0: Fast (IFGain:Low t -15.2 dB	→ Trig: Free Run #Atten: 30 dB	Avg Hold:>100/100	1 2.410 50 GHz -7.738 dBm	Auto Tun
-5.20	mm	1 Mm mr	handry		Center Fre 2.412000000 GH
15.2 25.2		\downarrow		Mr.	Start Fre 2.402000000 GH
35.2 X 45.2				- North	Stop Fre 2.422000000 GH
55.2					CF Ste 2.000000 Mi <u>Auto</u> Mi
75.2					Freq Offs
85.2	7			Span 20.00 MHz	
Res BW 100 kHz	the second se	W 300 kHz	Sweep	1.93 ms (1001 pts)	
ISG			STATU	5	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-8.428	< 8dBm	Pass

Figure Channel 6:

enter Freq 2.437		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100	04:09:29 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset - dB/div Ref 4.80 c	IFGain:Low 15.2 dB	#Atten: 30 dB	Mk	^{DET} ^{P NNNN™} 1 2.436 50 GHz -8.428 dBm	Auto Tun
20	man		A 0. 0		Center Fre 2.437000000 Gi
5.2 5.2	- Marian		hanny	May	Start Fro 2.427000000 G
5.2 V 5.2					Stop Fr 2.447000000 G
5.2					CF Sto 2.000000 M <u>Auto</u> M
5.2					Freq Offs 0
5.2					
enter 2.43700 GHz Res BW 100 kHz	#VB	W 300 kHz	Sweep	Span 20.00 MHz 1.93 ms (1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-8.391	< 8dBm	Pass

Figure Channel 11:

RL Center Fre	RF 50 Ω eq 2.462000	AC DOOD GHz PNO: Fast G IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold>		TRAC TYP	Aug 23, 2012 E 1 2 3 4 5 6 E MWWWWW T P N N N N N	Frequency
	Ref Offset -15.2 Ref 4.80 dBn	dB			Mkr1		50 GHz 91 dBm	Auto Tur
5.20		mann	n n	mmm				Center Fre 2.462000000 GI
5.2	www	W			V	May	<u> </u>	Start Fr 2.452000000 G
5.2 5.2 w							W W	Stop Fr 2.472000000 G
5.2								CF Sto 2.000000 M <u>Auto</u> M
5.2								Freq Offs 0
5.2								
enter 2.46 Res BW 1		#VBV	V 300 kHz		Sweep 1		0.00 MHz 1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-12.370	< 8dBm	Pass

Figure Channel 1:

RL enter F	RF 50 Ω AC		SENSE:INT		ALIGNAUTO : Log-Pwr	04:20:59 PM Aug 23, 2012 TRACE 1 2 3 4 5 6	
dB/div	Ref Offset -15.2 dB Ref 4.80 dBm	PNO: Fast 😱 IFGain:Low	┘ Trig: Free Run #Atten: 30 dB	Avg Hold:		2.405 74 GHz -12.370 dBm	Auto Tun
20	 ∳1						Center Fre 2.412000000 GF
5.2	water	minterio	monto	hand marinet	montro	\	Start Fro 2.402000000 G
5.2 <mark>/~^/^{//}</mark>							Stop Fr 2.422000000 G
5.2							CF Sto 2.000000 M <u>Auto</u> M
5.2							Freq Offs 0
5.2							
	41200 GHz 100 kHz	#VBW	300 kHz		Sweep 1	Span 20.00 MHz .93 ms (1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-9.607	< 8dBm	Pass

Figure Channel 6:

enter F	req 2.43700]	NSE:INT	Avg Type	ALIGNAUTO	TRAC	Aug 23, 2012 1 2 3 4 5 6 MWWWWW	Frequency
) dB/div	Ref Offset -15 Ref 4.80 dE	IF .2 dB	PNO: Fast 🍙 Gain:Low	┘ Trig: Free #Atten: 30		Avg Hold:		₀ 1 2.432	00 GHz 07 dBm	Auto Tur
5.20	Δ	1	mm	n	٨	mound	Δ	٥٥		Center Fre 2.437000000 GH
5.2 5.2	May Lawred b	<u>ጉ</u> ት የባለ የ		and man	from m	JUL GUNGAN D	hywr Wirwe	- handlan	- Lawrence of the second	Start Fr 2.427000000 G
5.2										Stop Fr 2.447000000 G
5.2										CF St 2.000000 M <u>Auto</u> M
5.2										Freq Offs 0
5.2										
	43700 GHz 100 kHz		#VBW	300 kHz			Sweep		0.00 MHz 1001 pts)	

Product	•	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-12.921	< 8dBm	Pass

Figure Channel 11:

enter Fr	RF 50 Ω AC req 2.46200000	0 GHz PNO: Fast 😱 IFGain:Low	SENSE: Trig: Free Ru #Atten: 30 dE	Avg Ty un Avg Ho	ALIGNAUTO /pe: Log-Pwr old:>100/100	04:35:16 PM Aug 23, 201 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N	6 Frequency
0 dB/div	Ref Offset -15.2 dB Ref 4.80 dBm				Mkr	1 2.455 74 GH: -12.921 dBn	
5.20	1						Center Fre 2.462000000 GH
5.2 5.2	phanna hund	mantin	mmm	man transmin	at mand have		Start Fre 2.452000000 Gi
5.2 Jour 10							5 Stop Fr 2.472000000 G
5.2							CF Ste 2.000000 M <u>Auto</u> M
5.2							Freq Offs
5.2							
enter 2.4 Res BW	6200 GHz 100 kHz	#VBW	300 kHz	I	Sweep	Span 20.00 MH 1.93 ms (1001 pts	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-12.416	< 8dBm	Pass

Figure Channel 1:

RL RF 50 Ω AC enter Freg 2.412000000	GHz	SENS		Avg Type		TRAC	Aug 23, 2012	Frequency
	PNO: Fast 😱 FGain:Low	¹ Trig: Free R #Atten: 30 d		Avg Hold:		DE 1 2.407	00 GHz 16 dBm	Auto Tun
.20 1								Center Fre 2.412000000 GF
5.2 Man Amar Amar Amar 5.2 M	mm	walnam f	walter.	᠕᠇ᠬᡳᠰ	www.tr.w	Ann	Non l	Start Fre 2.402000000 GH
5.2 and 5.2								Stop Fr 2.422000000 G
5.2								CF Sto 2.000000 M <u>Auto</u> M
5.2								Freq Offs 0
5.2								
enter 2.41200 GHz Res BW 100 kHz	#VBW	300 kHz	I		Sweep		0.00 MHz 1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)
Test Item Test Site	:	Power Density Data No.3OATS

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-9.503	< 8dBm	Pass

Figure Channel 6:

RL RF 50Ω AC enter Freq 2.437000000	GHz PNO: Fast 🖵 IFGain:Low	SENSE:INT Trig: Free Run #Atten: 30 dB	Avg Type Avg Hold:	ALIGNAUTO : Log-Pwr >100/100	04:49:16 PM Aug 23, 2012 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N	Frequency
Ref Offset -15.2 dB dB/div Ref 4.80 dBm	IFGain:Luw	Priten. ov dis		Mkr1	l 2.432 00 GHz -9.503 dBm	
20 0 0	0 0	0 0		A		Center Fre 2.437000000 GF
5.2 man line line line	m the many the	unter word in	anthornal	mound hourse	Insum have a	Start Fro 2.427000000 G
5.2						Stop Fr 2.447000000 G
5.2						CF Sto 2.000000 M <u>Auto</u> M
5.2						Freq Offs
5.2						-
enter 2.43700 GHz Res BW 100 kHz	#VBW	300 kHz		Sweep 1	Span 20.00 MHz 1.93 ms (1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-12.792	< 8dBm	Pass

Figure Channel 11:

RL RF enter Freq	50 Ω .AC 2.462000000	GHz PNO: Fast G	Trig: Free #Atten: 30			ALIGNAUTO : Log-Pwr >100/100	TRACE TYPE	Aug 23, 2012 1 2 3 4 5 6 MWWWWW P N N N N N	Frequency
	Offset -15.2 dB 4.80 dBm					Mkr	1 2.455 -12.79	74 GHz 12 dBm	Auto Tun
.20	● 1		<u>, , , , , , , , , , , , , , , , , , , </u>						Center Fre 2.462000000 GH
5.2 Mm/v 5.2 m	Amanhona	www.hundu	nortran	for the second s	mhorm	montion	Ansaha	r~~	Start Fre 2.452000000 GF
5.2 ^w ⁿ								~~~v	Stop Fr 2.472000000 Gi
5.2									CF Ste 2.000000 M <u>Auto</u> M
i.2									Freq Offs
5.2									<u> </u>
enter 2.4620 Res BW 100		#VBM	300 kHz			Sween	Span 20 1.93 ms (1	001 nts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	-17.486	< 8dBm	Pass

Figure Channel 1:

enter Freq	F 50 Ω A 2.422000	000 GHz PNO: Fast G	SENSE:	Avg Typ n Avg Hol	ALIGN AUTO e: Log-Pwr d:>100/100	05:02:42 PM Aug 23, 201 TRACE 1 2 3 4 5 TYPE M WAVAWA DET P N N N N	Frequency
0 dB/div Re	f Offset -15.2 d ef 4.80 dBm		#Atten: 30 dE		Mkr	1 2.405 76 GH -17.486 dBn	z Auto Tur
°g 5.20	1						Center Fr 2.422000000 G
5.2 5.2	, malenalization	understandersta	uthanturning pr	on harlesslander	hortownly	almolinder allowing	Start Fr 2.402000000 G
5.2 × ×			۱ _۲				Stop Fr 2.442000000 G
5.2							CF St 4.000000 M Auto M
5.2							Freq Offe
5.2							
enter 2.4220 Res BW 100		#VB	V 300 kHz		Sweep	Span 40.00 MH 3.87 ms (1001 pts	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-17.172	< 8dBm	Pass

Figure Channel 4:

Center Freq	50 Ω .AC 2.437000000	PNO: Fast	1			ALIGNAUTO :: Log-Pwr >100/100	TRAC	M Aug 23, 2012 E 1 2 3 4 5 6 E M WAWAWA T P N N N N N	Frequency
	Offset -15.2 dB 4.80 dBm					Mki	1 2.420 -17.1	76 GHz 72 dBm	Auto Tun
5.20							~		Center Fre 2.437000000 GH
5.2	Inubialization	mantrontre	lunder	powerhad	mlanhalu	al manual	whentwee	holy	Start Fr 2.417000000 GI
5.2 5.2 5.2			Ý	p ^r				L M	Stop Fr 2.457000000 Gi
5.2									CF Sto 4.000000 M <u>Auto</u> M
5.2									Freq Offs 0
35.2									
enter 2.43700 Res BW 100 I		#VBW	300 kHz		1	Sweep	Span 4 3.87 ms (0.00 MHz 1001 pts)	

Product	:	Powerline Wireless N Extender
Test Item	:	Power Density Data
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
9	2452	-17.343	< 8dBm	Pass

Figure Channel 7:

Ref Offset -15.2 dB Mkr1 2.437 00 GHz Auto -09 -17.343 dBm -17.343 dBm -17.343 dBm -09 -1 -1 -1 -1 -1 -15.2 -1 -1 -1 -1 -1 -1 -15.2 -1 <t< th=""><th>Center I</th><th>RF 50 Ω Freq 2.4520</th><th>00000 GH</th><th>HZ IO: Fast ⊊ Jain:Low</th><th>]</th><th></th><th></th><th>ALIGNAUTO e: Log-Pwr i>100/100</th><th>TRACE</th><th>Aug 23, 2012 1 2 3 4 5 6 MWWWWW P N N N N N</th><th>Frequency</th></t<>	Center I	RF 50 Ω Freq 2.4520	00000 GH	HZ IO: Fast ⊊ Jain:Low]			ALIGNAUTO e: Log-Pwr i>100/100	TRACE	Aug 23, 2012 1 2 3 4 5 6 MWWWWW P N N N N N	Frequency
5.20 1 Center 15.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 25.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 26.2 1 1 27.2 1 1 27.2 <th></th> <th></th> <th>5.2 dB</th> <th>am.cow</th> <th>in laten. et</th> <th></th> <th></th> <th>Mkr</th> <th></th> <th></th> <th>Auto Tun</th>			5.2 dB	am.cow	in laten. et			Mkr			Auto Tun
25.2 36.2 37.2 37.2 37.2 37.2 37.2 37.2											Center Fre 2.452000000 GH
16.2 1 1 1 1 1 1 2.47200000 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 16.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1 17.2 1 1 1 1 1 1 1		, hundred have	whenner	Manhartha	hunlowny	provention	and and from	โรงจูรในของจากเหราใน	mhalyaba	lynden	Start Fre 2.432000000 GF
6.2	- AV				۰.	¢,				h Nu	Stop Fr 2.472000000 GI
											CF Ste 4.000000 M <u>Auto</u> M
	5.2										Freq Offs
tenter 2.45200 GHz Span 40.00 MHz	35.2					<u></u>					
Res BW 100 kHz #VBW 300 kHz Sweep 3.87 ms (1001 pts)				#VBW	300 kHz		1	Sweep			

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.