

Product Name	Powerline Wireless N Extender
Model No	PWQ-5101
FCC ID.	YG7-PWQ51N00

Applicant	ZINWELL CORPORATION
Address	7F., No.512, Yuanshan Rd., Zhonghe Dist., New
	Taipei City 235, Taiwan (R.O.C.)

Date of Receipt	Aug. 17, 2012
Issue Date	Sep. 11, 2012
Report No.	128380R-RFUSP42V01
Report Version	V1.0



The test results relate only to the samples tested.

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# Test Report Certification

Issue Date: Sep. 11, 2012 Report No.: 128380R-RFUSP42V01



Product Name	Powerline Wireless N Extender		
Applicant	ZINWELL CORPORATION		
Address	7F., No.512, Yuanshan Rd., Zhonghe Dist., New Taipei City 235, Taiwan		
	(R.O.C.)		
Manufacturer	ZINWELL CORPORATION		
Model No.	PWQ-5101		
FCC ID.	YG7-PWQ51N00		
EUT Rated Voltage	AC 100-240V, 50-60Hz		
EUT Test Voltage	AC 120V/60Hz		
Trade Name	ZINWELL®		
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010		
	ANSI C63.4: 2003		
Test Result	Complied		

The test results relate only to the samples tested.

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Tested By

(Engineer / Jack Hsu)

Approved By

(Manager / Vincent Lin)

# TABLE OF CONTENTS

De	scription	Page
1.	GENERAL INFORMATION	5
1.1.	EUT Description	5
1.2.	Operational Description	
13	Tested System Details	8
1.5.	Configuration of Tested System	8
1.4.	EUT Exercise Software	
1.5.	Test Facility	0 0
1.0.		
2.	Conducted Emission	10
2.1.	Test Equipment	
2.2.	Test Setup	
2.3.	Limits	
2.4.	Test Procedure	
2.5.	Uncertainty	
2.6.	Test Result of Conducted Emission	
3.	Peak Power Output	14
3.1.	Test Equipment	
3.2	Test Setun	14
33	Limits	14
3.7	Test Procedure	17 1 <i>1</i>
Э. <del>т</del> . 25	Lincortainty	14 1 <i>1</i>
3.5.	Test Result of Peak Power Output	
4.	Radiated Emission	
41	Test Equipment	19
1.1.	Test Satur	20
4.2.	Limita	21
4.3.	Linnis	
4.4.	I la santa inte	
4.5.	Uncertainty	
4.6.	Test Result of Radiated Emission	
5.	RF antenna conducted test	
5.1.	Test Equipment	
5.2.	Test Setup	
5.3.	Limits	
5.4.	Test Procedure	
5.5	Uncertainty	40
5.6.	Test Result of RF antenna conducted test	
6.	Band Edge	65
6.1.	Test Equipment	
6.2	Test Setun	65
63	Limits	
6.J	Test Procedure	
0. <del>4</del> . 6.5	Itst Flottuit	0/ 67
0.3.	Uncertainty	
0.0.	Test Result of Band Edge	

# 

7.	Occupied Bandwidth		
7.1.	Test Equipment		
7.2.	Test Setup		
7.3.	Limits		
7.4.	Test Procedure		
7.5.	Uncertainty		
7.6.	Test Result of Occupied Bandwidth		
8.	Power Density	97	
8.1.	Test Equipment		
8.2.	Test Setup		
8.3.	Limits		
8.4.	Test Procedure		
8.5.	Uncertainty		
8.6.	Test Result of Power Density		
9.	EMI Reduction Method During Compliance Testing		

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

## 1.1. EUT Description

Product Name	Powerline Wireless N Extender		
Trade Name	ZINWELL®		
Model No.	PWQ-5101		
FCC ID.	YG7-PWQ51N00		
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW		
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7		
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 150Mbps		
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK)		
	802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)		
Antenna Type	Print on PCB Antenna		
Antenna Gain	Refer to the table "Antenna List"		
Channel Control	Auto		
Power Adapter	MFR: ZINWELL, M/N: PWQ-5101		
	Input: AC 100-240V, 50-60Hz		

### Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ZINWELL	N/A(Ant_0)	Print on PCB	4.58dBi for 2.4 GHz
		N/A(Ant_1)		

Note: The antenna of EUT is conform to FCC 15.203.

802.11b/g/n-20MHz Center Frequency of Each Channel:

U		1 2					
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		
802.11n-40M	Hz Center Fre	equency of Ead	ch Channel:				
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

- 1. The EUT is a Powerline Wireless N Extender with a built-in 2.4GHz WLAN transceiver
- 2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
- 3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps \$\$802.11g is 6Mbps \$\$802.11n(20M-BW) is 7.2Mbps and \$\$802.11n(40M-BW) is 15Mbps)
- 4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
- 5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

### **1.3.** Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	DELL	РРТ	N/A	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
А	LAN Cable	Non-Shielded, 1.15m

### 1.4. Configuration of Tested System



## **1.5. EUT Exercise Software**

- (1) Setup the EUT and peripherals as shown in Section 1.4
- (2) Execute software "ART2 V2.3" on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press "OK" to start the continuous Transmit.
- (5) Verify that the EUT works properly.

### **1.6.** Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from

QuieTek Corporation's Web Site: <u>http://www.quietek.com/tw/ctg/cts/accreditations.htm</u> The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site: <u>http://www.quietek.com/</u>

Site Description:	File on						
	Federal Communications Commission						
	FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046						
	Registration Number: 92195						
	Accreditation on NVLAP						
	NVLAP Lab Code: 200533-0						
Site Name:	Quietek Corporation						
Site Address:	No.5-22, Ruishukeng,						
	Linkou Dist. New Taipei City 24451,						
	Taiwan, R.O.C.						
	TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789						
	E-Mail : <u>service@quietek.com</u>						

FCC Accreditation Number: TW1014

### 2. Conducted Emission

### 2.1. Test Equipment

	Equipment Manufacturer		Model No. / Serial No.	Last Cal.	Remark
Х	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
Х	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2012	Peripherals
Х	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2012	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2012	EUT
Х	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2012	
	No.1 Shielded Room				

Note:

- 1. All equipments are calibrated every one year.
- 2. The test instruments marked by "X" are used to measure the final test results.

### 2.2. Test Setup



### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit								
Frequency	Limits							
MHz	QP	AVG						
0.15 - 0.50	66-56	56-46						
0.50-5.0	56	46						
5.0 - 30	60	50						

### 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

### 2.5. Uncertainty

± 2.26 dB

### 2.6. Test Result of Conducted Emission

Product	:	Powerline Wireless N Extender
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.162	9.712	24.130	33.842	-31.815	65.657
0.330	9.640	22.420	32.060	-28.797	60.857
0.470	9.640	21.270	30.910	-25.947	56.857
2.795	9.690	16.890	26.580	-29.420	56.000
14.451	9.840	13.050	22.890	-37.110	60.000
22.572	9.940	24.790	34.730	-25.270	60.000
Average					
0.162	9.712	22.540	32.252	-23.405	55.657
0.330	9.640	20.350	29.990	-20.867	50.857
0.470	9.640	16.100	25.740	-21.117	46.857
2.795	9.690	10.340	20.030	-25.970	46.000
14.451	9.840	6.090	15.930	-34.070	50.000
22.572	9.940	19.050	28.990	-21.010	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.

2. " " means the worst emission level.

3. Measurement Level = Reading Level + Correct Factor

Product	: Powerline Wireless N Extender											
Test Item	: Conducted Emission Test											
Power Line	: Line 2	: Line 2										
Test Mode	: Mode 4:	Transmit (802.11	n MCS0 15Mbps 40M	M-BW) (2437MH	[z)							
Frequency	Correct	Reading	Measurement	Margin	Limit							
	Factor	Level	Level									
MHz	dB	dBuV	dBuV	dB	dBuV							
Line 2												
Quasi-Peak												
0.224	9.670	23.860	33.530	-30.356	63.886							
0.447	9.650	27.720	37.370	-20.144	57.514							
1.568	9.700	13.200	22.900	-33.100	56.000							
2.060	9.700	11.590	21.290	-34.710	56.000							
5.939	9.740	11.420	21.160	-38.840	60.000							
18.326	10.057	17.100	27.157	-32.843	60.000							
Average												
0.224	9.670	23.850	33.520	-20.366	53.886							
0.447	9.650	19.620	29.270	-18.244	47.514							
1.568	9.700	8.950	18.650	-27.350	46.000							
2.060	9.700	5.200	14.900	-31.100	46.000							
5.939	9.740	3.350	13.090	-36.910	50.000							
18.326	10.057	10.680	20.737	-29.263	50.000							

- 1. All Reading Levels are Quasi-Peak and average value.
- 2. "means the worst emission level.
- 3. Measurement Level = Reading Level + Correct Factor

## **3.** Peak Power Output

### **3.1.** Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Х	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
Х	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
Note:				
1.	All equipments are	calibrated with trac	eable calibrations. Each calibr	ation is traceable to the
	national or internation	ional standards.		

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

### 3.2. Test Setup



### 3.3. Limits

The maximum peak power shall be less 1 Watt.

### **3.4.** Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

### 3.5. Uncertainty

 $\pm$  1.27 dB

# **3.6.** Test Result of Peak Power Output

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

Channel No	Frequency	For d	Average ifferent Da	e Power ata Rate (N	Peak Power	Required	Recult	
	(MHz)	1	2	5.5	11	1	Limit	Result
			Measur					
01	2412	16.95				20.5	<30dBm	Pass
06	2437	16.5	16.48	16.45	16.42	19.7	<30dBm	Pass
11	2462	16.94				20.14	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

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

			Average PowerPeakFor different Data Rate (Mbps)Power									
Channel No	Frequency (MHz)	6	9	12	18	24	36	48	54	6	Required Limit	Result
			Measurement Level (dBm)									
01	2412	13.9								21.35	<30dBm	Pass
06	2437	16.33	16.33	16.3	16.29	16.27	16.25	16.24	16.22	22.62	<30dBm	Pass
11	2462	13.81								21.24	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

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

		Average Power Peak							Peak			
	Frequency		For different Data Rate (Mbps) Power							Required		
Channel No	(MHz)	7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2	Limit	Result
				Ν	Aeasure	ement L	level (d	Bm)				
01	2412	13.91			-				-	21.4	<30dBm	Pass
06	2437	16.83	16.81	16.78	16.77	16.75	16.73	16.73	16.7	22.54	<30dBm	Pass
11	2462	13.65								21.31	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss

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

	Frequency -	Average Power     Peak       For different Data Pata (Mhna)     Power						Peak				
Channel No Fi		15	30		60		120	135	150	15	Required	Result
	(MHZ)	15	50	 N	лeasure	ement I	Level (d	lBm)	150	15	Limit	
03	2422	11.97								20.15	<30dBm	Pass
06	2437	11.9	11.88	11.88	11.85	11.84	11.84	11.82	11.81	20.07	<30dBm	Pass
09	2452	11.96								20.17	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

### 4. Radiated Emission

### 4.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
$\Box$ Site # 3	Х	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	Х	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	Х	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	Х	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	Х	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	Х	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
	Χ	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

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.

### 4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



### 4.3. 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.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits							
Frequency MHz	uV/m@3m	dBuV/m@3m					
30-88	100	40					
88-216	150	43.5					
216-960	200	46					
Above 960	500	54					

Remarks: E field strength  $(dBuV/m) = 20 \log E$  field strength (uV/m)

### 4.4. 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 between 1 meter and 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.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement. The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The worst radiated emission is measured in the Open Area Test Site on the Final Measurement. The frequency range from 30MHz to 10th harminics is checked.

### 4.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

### 4.6. Test Result of Radiated Emission

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	49.050	52.311	-21.689	74.000
7236.000	10.650	37.260	47.910	-26.090	74.000
9648.000	13.337	35.260	48.596	-25.404	74.000
Average Detector:					
Vertical					
<b>Peak Detector:</b>					
4824.000	6.421	45.260	51.681	-22.319	74.000
7236.000	11.495	35.260	46.755	-27.245	74.000
9648.000	13.807	36.590	50.396	-23.604	74.000

### **Average Detector:**

--

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	Powerline Wireless N Extender						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps) (2437 MH	z)			
-					<b>.</b>		
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
<b>Peak Detector:</b>							
4874.000	3.038	46.260	49.297	-24.703	74.000		
7311.000	11.795	36.260	48.054	-25.946	74.000		
9748.000	12.635	36.290	48.925	-25.075	74.000		
Average Detector:							
Vertical							
<b>Peak Detector:</b>							
4874.000	5.812	45.260	51.071	-22.929	74.000		
7311.000	12.630	36.590	49.219	-24.781	74.000		
9748.000	13.126	35.260	48.386	-25.614	74.000		

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps) (2462 MH	z)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
<b>Peak Detector:</b>							
4924.000	2.858	46.290	49.147	-24.853	74.000		
7386.000	12.127	36.590	48.718	-25.282	74.000		
9848.000	12.852	36.290	49.143	-24.857	74.000		
Average Detector:							
Vertical							
<b>Peak Detector:</b>							
4924.000	5.521	45.590	51.110	-22.890	74.000		
7386.000	13.254	36.590	49.844	-24.156	74.000		
9848.000	13.367	36.480	49.847	-24.153	74.000		

--

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OA	ATS						
Test Mode	: Mode 2:	Transmit (802.11	lg 6Mbps) (2412MHz	z)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
<b>Peak Detector:</b>								
4824.000	3.261	45.000	48.261	-25.739	74.000			
7236.000	10.650	35.590	46.240	-27.760	74.000			
9648.000	13.337	36.260	49.596	-24.404	74.000			
Average Detector:								
Vertical								
Peak Detector:								
4824.000	6.421	42.260	48.681	-25.319	74.000			
7236.000	11.495	36.590	48.085	-25.915	74.000			
9648.000	13.807	36.590	50.396	-23.604	74.000			

Note:

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- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	Powerline Wireless N Extender							
Test Item	: Harmonic Radiated Emission Data							
Test Site	st Site : No.3 OATS							
Test Mode	: Mode 2:	Transmit (802.11	g 6Mbps) (2437 MH	z)				
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
Peak Detector:								
4874.000	3.038	44.590	47.627	-26.373	74.000			
7311.000	11.795	35.590	47.384	-26.616	74.000			
9748.000	12.635	36.590	49.225	-24.775	74.000			
Average Detector:								
Peak Detector:								
4874.000	5.812	44.590	50.401	-23.599	74.000			
7311.000	12.630	36.590	49.219	-24.781	74.000			
9748.000	13.126	36.590	49.716	-24.284	74.000			

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender						
Test Item	: Harmonic Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 2:	Transmit (802.11	g 6Mbps) (2462 MH	z)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
<b>Peak Detector:</b>							
4924.000	2.858	45.590	48.447	-25.553	74.000		
7386.000	12.127	36.890	49.018	-24.982	74.000		
9848.000	12.852	36.230	49.083	-24.917	74.000		
Average Detector:							
Vertical							
<b>Peak Detector:</b>							
4924.000	5.521	45.590	51.110	-22.890	74.000		
7386.000	13.254	36.590	49.844	-24.156	74.000		
9648.000	13.807	36.590	50.396	-23.604	74.000		

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- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Test Item	<ul> <li>Powerline Wireless N Extender</li> <li>Harmonic Radiated Emission Data</li> </ul>						
Test Site	<ul> <li>No.3 OATS</li> <li>Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)</li> </ul>						
Test Mode							
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
Peak Detector:							
4824.000	3.261	46.590	49.851	-24.149	74.000		
7336.000	11.904	36.590	48.494	-25.506	74.000		
9848.000	12.852	36.590	49.443	-24.557	74.000		
Average Detector:							
Vertical							
Peak Detector:							
4824.000	6.421	46.590	53.011	-20.989	74.000		
7386.000	13.254	35.260	48.514	-25.486	74.000		
9848.000	13.367	36.590	49.957	-24.043	74.000		

Note:

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- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	47.590	50.627	-23.373	74.000
7311.000	11.795	36.590	48.384	-25.616	74.000
9748.000	12.635	36.590	49.225	-24.775	74.000
Average Detector:					
Vertical					
Peak Detector:					
4874.000	5.812	46.590	52.401	-21.599	74.000
7311.000	12.630	36.260	48.889	-25.111	74.000
9748.000	13.126	36.590	49.716	-24.284	74.000

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

2 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
<b>Peak Detector:</b>					
4924.000	2.858	46.260	49.117	-24.883	74.000
7386.000	12.127	35.260	47.388	-26.612	74.000
9848.000	12.852	36.280	49.133	-24.867	74.000
Average Detector:					
Vertical					
<b>Peak Detector:</b>					
4924.000	5.521	47.260	52.780	-21.220	74.000
7386.000	13.254	36.590	49.844	-24.156	74.000
9848.000	13.367	36.590	49.957	-24.043	74.000

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- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

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

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4844.000	3.171	38.590	41.761	-32.239	74.000
7266.000	11.162	37.260	48.422	-25.578	74.000
9688.000	12.964	36.480	49.445	-24.555	74.000
Average Detector:					
Vertical					
Peak Detector:					
4844.000	6.178	36.590	42.768	-31.232	74.000
7266.000	11.982	36.180	48.162	-25.838	74.000
9688.000	13.507	36.260	49.768	-24.232	74.000

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	Powerline Wireless N Extender							
Test Item	: Harmonic Radiated Emission Data							
Test Site	: No.3 OATS							
Test Mode	: Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)							
Frequency	Correct	Reading	Measurement	Margin	Limit			
	Factor	Level	Level					
MHz	dB	dBuV	dBuV/m	dB	dBuV/m			
Horizontal								
<b>Peak Detector:</b>								
4874.000	3.038	36.590	39.627	-34.373	74.000			
7311.000	11.795	35.890	47.684	-26.316	74.000			
9748.000	12.635	35.890	48.525	-25.475	74.000			
Average Detector:								
Vertical								
Peak Detector:								
4874.000	5.812	36.590	42.401	-31.599	74.000			
7311.000	12.630	36.570	49.199	-24.801	74.000			
9748.000	13.126	35.480	48.606	-25.394	74.000			

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender					
Test Item	: Harmonic Radiated Emission Data					
Test Site	: No.3 OA	ATS				
Test Mode	de : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)					
Frequency	Correct	Reading	Measurement	Margin	I imit	
requeitey	Factor	Level	I evel	Margin		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
Peak Detector:						
4904.000	2.914	36.590	39.505	-34.495	74.000	
7356.000	11.995	35.890	47.884	-26.116	74.000	
9808.000	12.475	36.260	48.735	-25.265	74.000	
Average Detector:						
Vertical						
<b>Peak Detector:</b>						
4904.000	5.530	37.260	42.791	-31.209	74.000	
7356.000	13.005	36.480	49.484	-24.516	74.000	
9808.000	12.901	36.590	49.491	-24.509	74.000	

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- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender						
Test Item	: General Radiated Emission Data						
Test Site	: No.3 OATS						
Test Mode	: Mode 1:	Transmit (802.11	b 1Mbps)(2437 MHz	z)			
Frequency	Correct	Reading	Measurement	Margin	Limit		
	Factor	Level	Level				
MHz	dB	dBuV	dBuV/m	dB	dBuV/m		
Horizontal							
101.780	-7.141	39.859	32.718	-10.782	43.500		
247.280	-6.192	41.080	34.887	-11.113	46.000		
375.320	-1.209	35.687	34.478	-11.522	46.000		
565.440	1.611	32.145	33.756	-12.244	46.000		
710.940	3.596	29.947	33.543	-12.457	46.000		
852.560	6.342	28.556	34.898	-11.102	46.000		
Vertical							
101.780	-0.021	38.528	38.506	-4.994	43.500		
249.220	-7.634	43.947	36.313	-9.687	46.000		
499.480	-0.852	36.185	35.333	-10.667	46.000		
600.360	-2.833	38.370	35.537	-10.463	46.000		
875.840	1.621	32.266	33.887	-12.113	46.000		
963.140	7.604	27.571	35.175	-18.825	54.000		

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender					
Test Item	: General Radiated Emission Data					
Test Site	: No.3 OATS					
Test Mode	$\sim$ Mode 2: Transmit (802 11g 6Mbns)(2437 MHz)					
			8 ····· p.)(_ ·· · · · ····	-)		
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
105.660	-6.673	39.666	32.993	-10.507	43.500	
280.260	-5.507	40.155	34.648	-11.352	46.000	
449.040	-2.238	31.752	29.514	-16.486	46.000	
674.080	2.799	34.558	37.357	-8.643	46.000	
809.880	5.049	29.186	34.235	-11.765	46.000	
986.420	7.773	25.347	33.120	-20.880	54.000	
Vertical						
88.200	-3.516	36.002	32.486	-11.014	43.500	
276.380	-8.653	42.391	33.738	-12.262	46.000	
497.540	-1.393	36.403	35.010	-10.990	46.000	
674.080	-0.501	33.841	33.340	-12.660	46.000	
825.400	3.430	29.289	32.719	-13.281	46.000	
951.500	6.621	28.168	34.789	-11.211	46.000	

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender					
Test Item	: General Radiated Emission Data					
Test Site	: No.3 OATS					
Test Mode	: Mode 3	: Transmit (802.11	n MCS0 7.2Mbps 20	M-BW)(2437 MI	Hz)	
Frequency	Correct	Reading	Measurement	Margin	Limit	
	Factor	Level	Level			
MHz	dB	dBuV	dBuV/m	dB	dBuV/m	
Horizontal						
101.780	-7.141	39.403	32.262	-11.238	43.500	
253.100	-5.387	44.068	38.681	-7.319	46.000	
385.020	-1.350	36.865	35.515	-10.485	46.000	
532.460	1.957	31.243	33.200	-12.800	46.000	
674.080	2.799	35.311	38.110	-7.890	46.000	
827.340	6.302	28.870	35.172	-10.828	46.000	
Vertical						
109.540	-0.418	34.061	33.643	-9.857	43.500	
251.160	-7.505	44.195	36.690	-9.310	46.000	
449.040	-7.498	33.642	26.144	-19.856	46.000	
600.360	-2.833	38.133	35.300	-10.700	46.000	
749.740	2.510	36.051	38.561	-7.439	46.000	
875.840	1.621	34.206	35.827	-10.173	46.000	

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product	: Powerline Wireless N Extender										
Test Item	: General Radiated Emission Data										
Test Site	: No.3 OATS										
Test Mode	: Mode 4	Mode 4: Transmit (802 11n MCS0 15Mbps 40M-BW)(2437 MHz)									
				( )( )	)						
Frequency	Correct	Reading	Measurement	Margin	Limit						
	Factor	Level	Level								
MHz	dB	dBuV	dBuV/m	dB	dBuV/m						
Horizontal											
103.720	-6.751	39.143	32.391	-11.109	43.500						
272.500	-5.359	43.508	38.149	-7.851	46.000						
480.080	-0.329	33.185	32.856	-13.144	46.000						
674.080	2.799	35.161	37.960	-8.040	46.000						
807.940	5.006	32.718	37.723	-8.277	46.000						
901.060	5.591	30.409	36.000	-10.000	46.000						
Vertical											
107.600	-0.318	35.585	35.267	-8.233	43.500						
249.220	-7.634	44.171	36.537	-9.463	46.000						
390.840	-3.099	36.200	33.101	-12.899	46.000						
544.100	-0.688	34.489	33.801	-12.199	46.000						
674.080	-0.501	35.415	34.914	-11.086	46.000						
875.840	1.621	32.629	34.250	-11.750	46.000						

- 1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
- 5. Correct Factor = Antenna factor + Cable loss Amplifier gain.
- 6. The average measurement was not performed when the peak measured data under the limit of average detection.
- 7. The emission levels of other frequencies are very lower than the limit and not show in test report.

# QuieTer

### 5. **RF** antenna conducted test

### 5.1. 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.

### 5.2. Test Setup

#### **RF** antenna Conducted Measurement:



### 5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### 5.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

# 5.5. Uncertainty

The measurement uncertainty Conducted is defined as  $\pm$  1.27dB

## 5.6. Test Result of RF antenna conducted test

Product	:	Powerline Wireless N Extender
Test Item	:	RF antenna conducted test
Test Site	:	No.3 OATS
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps)

### Channel 01 (2412MHz)

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Cer	∟ nter Fr	eq 515.0	Ω AC 00000 MH	lz	SE	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	03:59:11P	M Aug 23, 2012	Frequency
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-10.0									1.000000000 GHz
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-20.0									
									Stop Freq
									12.000000000 GHz
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10.0									CE Sten
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-50.0					_				<u>Auto</u> Man
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a good and be		and a second		" dhe freshe her	distant section	and all the second stall of	and the second started	A, and the lage of the	
-60.0	Design of the second second	the second states			a la colonitation	In classification of the	August all provides that has	And a second second	Freq Offset
Sector sector									0 Hz
-70.0									
Start 1 000 (	GHz						Stop 12	000 GHz	
#Pes BM 10		#V/BIM	1.0 MHz			Sween	1 02 c (1	0001 nts)	
THE BAY IS	W KI12	# * D * *	1.0 10112			Oweep	1.02 3 (1	0001 pt3)	
MSG 🗼 Points o	changed; all trace	es cleared				STATUS			

Agilen	it Spectru	m Analyzer - Sv	wept SA								
Cen	L Iter Fr	eq 18.50	Ω AC	GHz	SEI		Avg Type	LIGNAUTO	03:59:41P TRAC	M Aug 23, 2012	Frequency
10 di Log	B/div	Ref 20.00	dBm	'NO: Fast () Gain:Low	#Atten: 30	) dB		Mkr	ة 1 24.25 -41.	1 2 GHz 32 dBm	Auto Tune
10.0											Center Freq 18.50000000 GHz
0.00 -10.0										-14.33 dBm	<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0											<b>Stop Freq</b> 25.00000000 GHz
-40.0 -50.0		adin		and the second second	a		tine of the state				CF Step 1.300000000 GHz <u>Auto</u> Man
-60.0											Freq Offset 0 Hz
-70.0 Star #Re:	t 12.00 s BW 1	0 GHz 100 kHz		#VBW	1.0 MHz			Sweep	Stop 25 1.20 s (1	.000 GHz 0001 pts)	
MSG 🤇	🎝 File <	lmage.png> :	saved					STATUS			



Agilen	it Spectru	m Analyzer - Sv	vept SA								
Cen	ter Fr	RF 50 S	2 AC	lz	SEI	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:08:26 P TRAC	M Aug 23, 2012	Frequency
10 di	3/div	Ref 20.00	P IF≀ dBm	NO: Fast 🖵 Gain:Low	#Atten: 30	) dB		Mk	(r1 775.4 -55.	45 MHz 10 dBm	Auto Tune
10.0											Center Freq 515.000000 MHz
0.00 -10.0										-14.87 dBm	Start Freq 30.000000 MHz
-20.0 -30.0											<b>Stop Freq</b> 1.000000000 GHz
-40.0 -50.0									1		CF Step 97.000000 MHz <u>Auto</u> Man
-60.0	din di Marani Antoni pinanga		19 Januar – Markinska Januar 19 Januar – Katalogo Paratalogo 19 Januar – Katalogo Paratalogo	a li des calenciant la de	n alas di Leven bitett provinsi principalitetti provinsi principalite	ng <sup>da</sup> n Sang Kapata di Kasa Karang Kapatan Kapata	a pi ka pitan. Manina		and the state of the	is a la familia da segui	Freq Offset 0 Hz
-70.0 Star #Re:	t 30.0 s BW 1	MHz 100 kHz		#VBW	1.0 MHz			Sweep	Stop 1.0 90.0 ms (1	0000 GHz 0001 pts)	
MSG 🤇	₽File <	Image.png> s	saved					STATU	JS		

### Channel 06 (2437MHz)

Agilen	t Spectrum A	nalyzer - Sw	rept SA								AN CONTRACTOR OF CONTRACTOR
LXI R	L R	F 50 Ω	AC AC		SEM	VSE:INT		ALIGN AUTO	04:07:55 Pf	4 Aug 23, 2012	-
Cen	ter Freq	6.5000	00000 G	Hz NO: Fast 😱	Trig: Free	Run	Avg Type	: Log-Pwr	TRAC TYP DE	E 1 2 3 4 5 6 E M WWWWW T P N N N N N	Frequency
10 di	3/div <b>R</b> e	ef 20.00 (	dBm "	Gain:Low	FALLEN. OU			Mk	r1 2.43	5 5 GHz 13 dBm	Auto Tune
10.0		• <sup>1</sup>									Center Freq 6.50000000 GHz
0.00 -10.0										-14.87 dBm	<b>Start Freq</b> 1.000000000 GHz
-20.0 -30.0											<b>Stop Freq</b> 12.00000000 GHz
-40.0				1							<b>CF Step</b> 1.100000000 GHz <u>Auto</u> Man
-60.0	Jackshi	A Normal New York			an an Anna Anna Anna Anna Anna Anna Anna			lin lin for line for the pro-	a part dalamente ser actività dalam		Freq Offset 0 Hz
-70.0 Star #Re	t 1.000 G s BW 100	Hz kHz		#VBW	1.0 MHz			Sween	Stop 12	.000 GHz	
MSG 🤇	Points ch	anged; all	traces clea	red				STATUS			

Agilen	it Spectru	m Analyzer - Sv	wept SA						20		
Cen	ter Fre	eq 18.500	Ω AC 00000000 P	GHz N0: Fast 😱	SEI	Run	Avg Type	LIGNAUTO	04:08:57 P TRAC TYI	M Aug 23, 2012 E 1 2 3 4 5 6 E M WWWWW	Frequency
10 di	3/div	Ref 20.00	dBm	Gain:Low	#Atten: 30	) dB		Mkr	1 23.72 -40.	8 6 GHz 83 dBm	Auto Tune
10.0											Center Freq 18.50000000 GHz
0.00 -10.0										-14.87 dBm	<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0											<b>Stop Freq</b> 25.00000000 GHz
-40.0				the local distance							CF Step 1.30000000 GHz <u>Auto</u> Man
-60.0	ng kati ka ja shi na			in bus bis a del side del secon							Freq Offset 0 Hz
-70.0 Star #Re:	t 12.00 s BW 1	0 GHz 00 kHz		#VBW	1.0 MHz			Sweep	Stop 25 1.20 s (1	.000 GHz 0001 pts)	
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Agiler	nt Spectrum	Analyzer - S	wept SA								
LXI R	L	RF 50	Ω AC		SEI	NSE:INT		ALIGN AUT	0 04:13:59 P	M Aug 23, 2012	Frequency
Cer	nter Fred	g 515.0	00000	MHz	Tuin Ens		Avg Type	: Log-Pw	r TRAC	E 1 2 3 4 5 6	riequency
				PNO: Fast	#Atten: 30	dB			D	PNNNN	
				IF Galli.LUW	With Colling of			1000			
								M	kr1 869.8	26 MHz	Autorune
10 d	B/div R	ef 20.00	dBm						-55.	41 dBm	
Log	<b></b>		- geous once	1		í l	1				
											Center Freq
10.0											515 000000 MH-
8.305											515.000000 IMH2
0.00			-				-				
											Start Freq
-10.0											30.000000 MHz
							-			-13.36 dBm	
-20.0											Stop Fred
											4 000000000 CU-
-30.0			-				-				1.00000000 GHz
10.0											CE Stop
-40.0											
											Auto Man
-50.0							-		<b>1</b>		Auto
								1	•		
	Line data alita da	a anni dallandad		والمتحديث والمحصيقي ألبته في	المالية فيلاقيه الم	all a life the sum day	and see the ball of the first of the	hadlighten	and a stady light for the	and the light have all	Fred Offset
-6U.U	control all instantions	the state of the s	and a state of the	and the second states in the second states of	and place of the sector sector	of the second second	Concession and the state	and the second s			i i cq onsec
											UHZ
-70.0											
Star	t 30.0 M	Hz							Stop 1.0	0000 GHz	
#Re	s BW 10	0 kHz		#VBW	1.0 MHz			Sweep	90.0 ms (1	0001 pts)	
								07.12			
MSG	<pre>→rile <im< pre=""></im<></pre>	age.png>	saved					STA	105		

### Channel 11 (2462MHz)



Agilent Spectrum Analyzer - Swept SA	
M         RL         RF         50 Ω         AC         SENSE:INT         ALIGN           Center Freq         18.500000000 GHz         Table Sense:INT         Avg Type: Log	VAUTO D4:14:29 PM Aug 23, 2012 J-Pwr TRACE [1 2 3 4 5 6 Frequency TYPE MINIMUM
PNO: Fast C Ing: rree kun IFGain:Low #Atten: 30 dB	Mkr1 23.615 5 GHz -41.06 dBm
10.0	Center Freq 18.50000000 GHz
-10.0	-13.36 dBm
-20.0	Stop Freq 25.00000000 GHz
-40.0 -50.0	1 CF Step 1.30000000 GHz <u>Auto</u> Man
	Freq Offset 0 Hz
Start 12.000 GHz #Res BW 100 kHz #VBW 1.0 MHz Sw	Stop 25.000 GHz veep 1.20 s (10001 pts)

Product	:	Powerline Wireless N Extender
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 2: Transmit (802.11g 6Mbps)

Agilent Spect	rum Analyzer - Sv	/ept SA								
Center F	req 515.00	2 AC 100000 MH	z	SEI		Avg Type	LIGNAUT	0 04:19:56F r TRA TV	M Aug 23, 2012 CE 1 2 3 4 5 6	Frequency
IFGain:Low #Atten: 30 dB DEFIF NNNN Mkr1 872.445 MHz 10 dB/div Ref 20.00 dBm -55.14 dBm										
10.0										Center Freq 515.000000 MHz
0.00 -10.0										Start Freq 30.000000 MHz
-20.0									-19.39 dBm	<b>Stop Freq</b> 1.000000000 GHz
-40.0								1		CF Step 97.000000 MHz <u>Auto</u> Man
-60.0		in ya kanyi ya Umaadi Muana dobio aabiyaa		nen bereiten er an	ne Fill Association and an	louides, (etcored) -	ikaya yanki ni yadi Maya manaki na sa		en tripetanon la	Freq Offset 0 Hz
-70.0 Start 30.0 #Res BW	MHz 100 kHz		#VBW	1.0 MHz			Sweep	Stop 1. 90.0 ms (1	0000 GHz 0001 pts)	
мsg 🔱 File	<lmage.png> s</lmage.png>	aved					STAT	rus		

### Channel 01 (2412MHz)

Agilent	t Spectrum Ai	nalyzer - Sw	ept SA								
Cent	ter Freq	= <u>50 Ω</u> 6.5000	AC 00000 G	Hz	SEM	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:19:26 Pf TRAC	Aug 23, 2012	Frequency
10 dE	8/div Re	f 20.00 (	PI IFC <b>JBm</b>	NO: Fast ( ) Gain:Low	#Atten: 30	dB		Mk	r1 2.410 0.0	) 2 GHz 61 dBm	Auto Tune
10.0											Center Freq 6.50000000 GHz
-10.0											Start Freq 1.000000000 GHz
-20.0		_								-19.39 dBm	<b>Stop Freq</b> 12.00000000 GHz
-40.0					and to all the set	1. 1					CF Step 1.100000000 GHz <u>Auto</u> Man
-60.0					and the second secon			a la consegue de la folgo da portes a subla dibliga das		nti di si perminin Aprovinsi perminin	Freq Offset 0 Hz
-70.0 Start #Res	t 1.000 Gi s BW 100	Hz kHz		#VBW	1.0 MHz			Sweep	Stop 12 1.02 s (1	.000 GHz 0001 pts)	
MSG 🤇	Points ch	anged; all	traces clear	ed				STATUS			

Agilen	it Spectrum	1 Analyzer - Sv	vept SA								
Cen	∟ Iter Fre	RF 50 s	2 AC	GHz	SEI		Avg Type	ALIGNAUTO	04:20:27 P TRAC TYL	M Aug 23, 2012 E 1 2 3 4 5 6 E M WWWWW	Frequency
10 di	B/div	Ref 20.00	dBm	Gain:Low	#Atten: 30	) dB		Mkr	ة 1 23.65 -40.	7 1 GHz 22 dBm	Auto Tune
10.0											Center Freq 18.50000000 GHz
0.00 -10.0											<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0										-19.39 dBm	<b>Stop Freq</b> 25.000000000 GHz
-40.0 -50.0		. Justin Star	Luine and a set			ne de la constance de la const	() - Lange ((ma)) - Specific (() - S				CF Step 1.30000000 GHz <u>Auto</u> Man
-60.0											Freq Offset 0 Hz
-70.0 Star #Re:	t 12.000 s BW 1	0 GHz 00 kHz		#VBW	1.0 MHz			Sweep	Stop 25 1.20 s (1	.000 GHz 0001 pts)	
MSG 🤇	₽File <lr< td=""><td>mage.png&gt; s</td><td>saved</td><td></td><td></td><td></td><td></td><td>STATUS</td><td></td><td></td><td></td></lr<>	mage.png> s	saved					STATUS			



Agilen	t Spectru	ım Analyzer - Sv	wept SA								
	ter Fr	ea 515.0	Ω AC   00000 MH	z	SEI	VSE:INT	Avg Type	LIGNAUTO	D (04:27:54 F • TRA	M Aug 23, 2012 CE 1 2 3 4 5 6	Frequency
10 dE	3/div	Ref 20.00	е IFO dBm	NO: Fast 😱 Gain:Low	┘ Trig: Free #Atten: 30	Run I dB		М	™ 1 kr1 971.4 -55.	B2 MHz 32 dBm	Auto Tune
10.0											Center Freq 515.000000 MHz
0.00 -10.0											Start Freq 30.000000 MHz
-20.0 -30.0										-18.32 dBm	<b>Stop Freq</b> 1.000000000 GHz
-40.0 -50.0										1	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
-60.0	ykenyddoda Generalego			later top constitution for a second		Tedeslatik at Lore Tedeslatik at Lore					Freq Offset 0 Hz
Star #Re:	t 30.0 s BW <sup>-</sup> File <	MHz 100 kHz Image.png> :	saved	#VBW	1.0 MHz		5	Sweep	Stop 1. 90.0 ms (1	0000 GHz 10001 pts)	

### Channel 06 (2437MHz)

Agile	nt Spectrum Ai	nalyzer - Sw	rept SA								an c
LXI R	L RI	F 50 S	AC AC		SEI	VSE:INT		ALIGN AUTO	04:27:23P	M Aug 23, 2012	Frequency
Cer	nter Freq	6.5000	00000	GHz PNO: Fast 😱 IFGain:Low	Trig: Free #Atten: 30	Run dB	Avg Type	DET P NNNN		Trequency	
10 d	B/div <b>Re</b>	f 20.00	dBm					Mk	r1 2.43: 1.	2 2 GHz 68 dBm	Auto Tune
3											Center Freq
10.0											6 50000000 GHz
		<b>♦</b> <sup>1</sup>									0.00000000000
0.00				-							Start From
-10.0											1.000000000 GHz
-10.0										10.00 10	
-20.0		-								-18.32 dBm	
											Stop Freq
-30.0											12.000000000 GHz
											CE Stop
-40.0											1.100000000 GHz
50.0											<u>Auto</u> Man
-50.0	Leastres	. A here a second		A State of the second sec	AND A CONTRACT OF A CONTRACT O	here and the state of the	Allow and the state	er tale sheri e	ويساور الالارد والالارد	and the stand	
.60.0	and the second	a seaso	and the second second	and the second	349 J. O. O. BRAN	and the second s	Salar particulty and re	the ball the shift of the sec		and the second sec	Freg Offset
-00.0											0 Hz
-70.0											
Star	rt 1.000 GI	Hz	1				I	1	Stop 12	.000 GHz	
#Re	s BW 100	kHz		#VBW	1.0 MHz			Sweep	1.02 s (1	0001 pts)	
MSG	Points character	anged; all	traces cle	ared				STATUS			

Agilent Spectrum Analyzer	- Swept SA				
Center Freq 18.5	50 Ω AC 00000000 GHz	SENSE:INT	ALIGN AU Avg Type: Log-P	TO 04:28:25 PM Aug 23, 2012 Vr TRACE 1 2 3 4 5 6 TOPE MALAN	Frequency
10 dB/div Ref 20.0	PNO: Fast G IFGain:Low	#Atten: 30 dB	м	kr1 23.611 6 GHz -41.28 dBm	Auto Tune
10.0					Center Freq 18.50000000 GHz
-10.0					<b>Start Freq</b> 12.000000000 GHz
-20.0				-18.32 dBm	<b>Stop Freq</b> 25.00000000 GHz
-40.0					<b>CF Step</b> 1.300000000 GHz <u>Auto</u> Man
-60.0					Freq Offset 0 Hz
Start 12.000 GHz #Res BW 100 kHz	#VBW	1.0 MHz	Swee	Stop 25.000 GHz pp 1.20 s (10001 pts)	



Agilent Spectrum Analyzer - Swept SA									
Center Freq 515.000000	) MHz	SENSE:INT	g Type: Log-Pwr	04:34:14 PM Aug 23, 2012 TRACE 1 2 3 4 5 6	Frequency				
10 dB/div Ref 20.00 dBm	PN0: Fast         Jist         Der IP NNNN           JFGain:Low         #Atten: 30 dB         Mkr1 925.310 MHz           10 dB/div         Ref 20.00 dBm         -54.51 dBm								
10.0					Center Freq 515.000000 MHz				
-10.0					Start Freq 30.000000 MHz				
-20.0					<b>Stop Freq</b> 1.000000000 GHz				
-40.0				1	<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man				
-60.0 Controller for the product of the second	nan kan jula kan kan beratan di Kangatan sa kan kan Kangangan pangan kan kan kan kana kan kan kan kan kan	an Ardenik dan general at dar	terning of the territor of the t	le les aplays a resolution de la service pour p	Freq Offset 0 Hz				
Start 30.0 MHz #Res BW 100 kHz	#VBW 1.0 MH	z	Sweep 9	Stop 1.0000 GHz 0.0 ms (10001 pts)					

### Channel 11 (2462MHz)

Agilent Spectrum Analyzer - Swept	SA				
RL         RF         50 Ω         A           Center Freq         6.500000	000 GHz	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	04:33:43 PM Aug 23, 2012 TRACE 1 2 3 4 5 6	Frequency
10 dB/div Ref 20.00 dBi	PNO: Fast 🖵 IFGain:Low	Trig: Free Run #Atten: 30 dB	Mk	r1 2.465 2 GHz -1.55 dBm	Auto Tune
10.0					Center Freq 6.50000000 GHz
-10.0					<b>Start Freq</b> 1.000000000 GHz
-20.0				-21.55 dBm	<b>Stop Freq</b> 12.000000000 GHz
-40.0		yklainiski angesigin an an an an			CF Step 1.100000000 GHz <u>Auto</u> Man
-60.0		and the desired interpret of the second s			Freq Offset 0 Hz
-70.0				Stop 12 000 GHz	
#Res BW 100 kHz	#VBW 1	1.0 MHz	Sweep	1.02 s (10001 pts)	

Agilen	t Spectru	m Analyzer - Sv	vept SA								
Cen	ter Fr	eq 18.50	2 AC	GHz	SEI	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:34:45 PI TRAC	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dE	3/div	Ref 20.00	P IF	NO: Fast 😱 Gain:Low	#Atten: 30	dB		Mkr	1 23.78′ -40.5	1 9 GHz 90 dBm	Auto Tune
10.0											<b>Center Freq</b> 18.50000000 GHz
0.00 -10.0											<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0										-21.65 dBm	<b>Stop Freq</b> 25.000000000 GHz
-40.0					an and a start when		and the second second second				<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man
-60.0	en jjerde for general na se offense starten.				vkti umomet ja tata allum	i dag plaintean stabio					Freq Offset 0 Hz
-70.0 Star	t 12.00	0 GHz		#VBW	1.0 MHz			Sween	Stop 25	.000 GHz	
MSG	File <	mage.png> s	saved		1.0 1012			STATUS		•••• pt3)	

Product	:	Powerline Wireless N Extender
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

# Channel 01 (2412MHz)

Agilent Spectrum A	nalyzer - Swept SA								
LXIRL R	F 50 Ω AC		SEM	VSE:INT		ALIGN AUTC	04:42:24 P	M Aug 23, 2012	Frequency
Center Freq	515.000000	MHz		_	Avg Type	: Log-Pwr	TRAC	E123456	Frequency
10 dB/div Re	ef 20.00 dBm	PNO: Fast 😱 IFGain:Low	#Atten: 30	dB		Mł	(r1 918.6 -54.	17 MHz 91 dBm	Auto Tune
10.0									Center Freq 515.000000 MHz
-10.0									Start Freq 30.000000 MHz
-20.0								-18.81 dBm	<b>Stop Freq</b> 1.000000000 GHz
-40.0								1	CF Step 97.000000 MHz <u>Auto</u> Man
-60.0 <b>110 100 100 100 100 100 100 100 100 1</b>	ingereget til det stål beiste kan at provid stålare Senare som stål stålare som	finit og den ster ster ster ster ster ster ster ster	ne) i i na sula sula sula Na sula sula sula sula sula sula sula sul	n la faite ann an tha an th	aniberdui <mark>ba</mark> rten	gantel (minist			Freq Offset 0 Hz
Start 30.0 MH	lz kHz	#VBW	1.0 MHz			Sweep	Stop 1.0	0000 GHz	
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### Page : 53 of 112

Agilent Spectrum Ana	alyzer - Swept SA								
Center Freq	50 Ω AC	GHz	SEI	NSE:INT	Avg Typ	ALIGNAUTO e: Log-Pwr	04:41:54 P	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dB/div Ref	20.00 dBm	PNO: Fast 🍙 IFGain:Low	#Atten: 30	dB		Mk	r1 2.41( 1.	6 8 GHz 19 dBm	Auto Tune
10.0	↓1								Center Freq 6.50000000 GHz
-10.0									Start Freq 1.000000000 GHz
-20.0								-18.81 dBm	Stop Freq 12.000000000 GHz
-40.0			ور الله ، وأو بالأسالي م	adda a ann b					<b>CF Step</b> 1.100000000 GHz <u>Auto</u> Man
-60.0						an the population of the popul		la sina di parti di la si	Freq Offset 0 Hz
Start 1.000 GH #Res BW 100	iz kHz	#VBW	1.0 MHz			Sweep	Stop 12 1.02 s (1	.000 GHz 0001 pts)	

Agilent Spectrum Analyzer - Swept SA												
Cent	ter Fr	RF 50 9 eq 18.500	Ω AC	GHz	SEI		Avg Type	LIGNAUTO	04:42:55 P	M Aug 23, 2012	Frequency	
10 dE	3/div	Ref 20.00	⊮ IF dBm	NU: Fast L	#Atten: 30	) dB		Mkr	ں 1 23.63 -39.	ti <sup>p</sup> NNNNN 1 1 GHz 63 dBm	Auto Tune	
10.0											Center Freq 18.50000000 GHz	
0.00 -10.0											<b>Start Freq</b> 12.000000000 GHz	
-20.0										-18.81 dBm	<b>Stop Freq</b> 25.000000000 GHz	
-40.0					August Philipp	al manufacture pilon		a the still already g			<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man	
-60.0					n an aid gir filmaile aile aile aile aile aile aile aile						Freq Offset 0 Hz	
-70.0 Start	t 12.00	00 GHz		#VBW	1.0 MHz			Sweep	Stop 25	.000 GHz		
MSG 🤤	File <	Image.png> s	saved					STATUS				



Agilent Spec	trum Analyzer - Sw	ept SA								
Center I	req 515.00	AC 0000 MH	z	SEN	VSE:INT	Avg Type	LIGNAUTO	04:48:14 P	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref 20.00	PI IFC dBm	NO: Fast 😱 Gain:Low	Atten: 30	dB		MI	kr1 967.8 -55.	93 MHz 45 dBm	Auto Tune
10.0					·					Center Freq 515.000000 MHz
0.00										Start Freq 30.000000 MHz
-20.0									-18.67 dBm	<b>Stop Freq</b> 1.000000000 GHz
-40.0									<b>_</b> 1:	CF Step 97.000000 MHz <u>Auto</u> Man
-60.0		a forget field an out-fiel				lagada mila dapata Para mila dipata	and the second second	ate of land from brook	Contract and a second	Freq Offset 0 Hz
Start 30. #Res BW	0 MHz / 100 kHz	aved	#VBW	1.0 MHz		5	Sweep	Stop 1.0 90.0 ms (1	0000 GHz 0001 pts)	

### Channel 06 (2437MHz)

Agilent Spectrum A	nalyzer - Swept SA								
Center Freg	50 Ω AC	GHz	SEN	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:47:43 P TRAC	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dB/div Re	f 20.00 dBm	PNO: Fast 😱 IFGain:Low	<sup>-</sup> Trig: Free #Atten: 30	Run dB		Mk	r1 2.43 1.	1 1 GHz 33 dBm	Auto Tune
10.0	↓ <sup>1</sup>								Center Freq 6.50000000 GHz
-10.0									<b>Start Freq</b> 1.000000000 GHz
-20.0								-18.67 dBm	<b>Stop Freq</b> 12.000000000 GHz
-40.0			biline (secondaria)	Aller Sectors and A	here 1				<b>CF Step</b> 1.10000000 GHz <u>Auto</u> Man
-60.0						ang karang dang buta dapaté Pang panganang ang kalangan			Freq Offset 0 Hz
-70.0 Start 1.000 G	Hz		10 - 2017 - 2017			305	Stop 12	.000 GHz	
#Res BW 100	<b>kHz</b> anged; all traces c	#VBW	1.0 MHz			Sweep STATUS	1.02 s (1	0001 pts)	

Agilen	t Spectrum	Analyzer - S	wept SA								
Cen	ter Fre	rf 50 q 18.50	Ω AC 0000000	GHz PNO: Fast 😱	SEI Trig: Free	Run	Avg Type	ALIGN AUTO : Log-Pwr	04:48:44 PM TRAC TYP	Aug 23, 2012 E 1 2 3 4 5 6 E MWWWWW T P N N N N N	Frequency
10 dE	3/div F	Ref 20.00	dBm	FGain:Low	#Atten: 30	I dB		Mkr	1 23.618 -40.8	31 GHz 35 dBm	Auto Tune
10.0					c	-					Center Freq 18.50000000 GHz
0.00 -10.0											<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0										-18.67 dBm	<b>Stop Freq</b> 25.00000000 GHz
-40.0 -50.0		. It is a ballion	tere for the terest		alter de anter de	tel and a state of the					<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man
-60.0	a pografika na kongo Pografika pografika po										Freq Offset 0 Hz
Star #Res	t 12.000 8 BW 10 File <in< td=""><td>) GHz )0 KHz nage.png&gt;</td><td>saved</td><td>#VBW</td><td>1.0 MHz</td><td></td><td></td><td>Sweep</td><td>Stop 25. 1.20 s (1</td><td>.000 GHz 0001 pts)</td><td></td></in<>	) GHz )0 KHz nage.png>	saved	#VBW	1.0 MHz			Sweep	Stop 25. 1.20 s (1	.000 GHz 0001 pts)	



Agilen	it Spectrum A	nalyzer - Sw	rept SA			1 B.					
LXI R	L	RF 50 Ω	AC AC		SEI	VSE:INT		ALIGN AUT	) 04:55:15 P	M Aug 23, 2012	Frequency
Cen	iter Freq	515.00	00000 M	Hz	Tria: Free	Dun	Avg Type	: Log-Pwi	<ul> <li>TRAC</li> <li>TYPE</li> </ul>	E123456	Trequency
				PNO: Fast 🔔	#Atten: 30	) dB			DE	PNNNN	
				I Guilleon				5.41		45 MALL-	Auto Tune
								IVI	Kr1 814.2	45 WHZ	
10 di	B/div R	ef 20.00	dBm						-55.	15 aBm	
Log											
											Center Freq
10.0			4						-	-	515.000000 MHz
0.00											
0.00											Start Fred
											20 000000 MU-
-10.0											30.000000 MHz
										1010 0	
-20.0										-19.13 aBm	
											StopFreq
20.0											1.00000000 GHz
-30.0											
-40.0			-								CF Step
											97.000000 MHz
-50.0										-	<u>Auto</u> Man
103,903						•					
	القرياب وللع راسان ل	U. Undinstally	الدعلية المسلم الله	and on Holand Date Balandar	Inch harrite	month and the set	a state a deal and a deal	and the source of the second	shalls although the fit	a, the Phylohese Hel	Fred Offset
-6U.U	to Hole Hold An of Surviv	and a standing based	a should be a set	part day and device being added	a deservation of the second second	And the state party plaster	In the second		and the second se		i ieq oliset
											UHZ
-70.0			-								
Star	t 30.0 MI	lz							Stop 1.0	0000 GHz	
#Re	s BW 100	) kHz		#VBW	1.0 MHz			Sweep	90.0 ms (1	0001 pts)	
MSG	i)File <lms< td=""><td>ade nhas e</td><td>aved</td><td></td><td></td><td></td><td></td><td>STAT</td><td>us</td><td>-</td><td>UU</td></lms<>	ade nhas e	aved					STAT	us	-	UU
		ago.piig~ 5	aveu					U.A.			

### Channel 11 (2462MHz)



Agilent Spectru	ım Analyzer - Sw	ept SA								
Center Fr	RF 50 Ω eq 18.500	AC 000000 GH	Ηz	SEM	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	04:55:47 PI TRAC	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dB/div	Ref 20.00 (	PNO IFGai d <b>Bm</b>	:Fast 😱 in:Low	* Trig: Free #Atten: 30	dB		Mkr	1 23.564 -41.0	4 8 GHz 03 dBm	Auto Tune
10.0										Center Freq 18.50000000 GHz
-10.0										<b>Start Freq</b> 12.000000000 GHz
-20.0									-19.13 dBm	<b>Stop Freq</b> 25.00000000 GHz
-40.0				and the second second			a figuri da se la secona da se			<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man
-60.0										Freq Offset 0 Hz
Start 12.00	)0 GHz 100 kHz		#VBW	1.0 MHz			Sweep	Stop 25 1.20 s (1	.000 GHz 0001 pts)	
MSG 🕹 File <	Image.png> sa	aved					STATUS			

Product	:	Powerline Wireless N Extender
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	No.3 OATS
Test Mode	:	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

# Channel 01 (2422MHz)

Agilent Spectrum A	nalyzer - Swept SA								
Center Freq	50 Ω AC	MHz	SEI	NSE:INT	Avg Type	ALIGNAUTO	05:01:39P TRAC	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency
10 dB/div Re	ef 20.00 dBm	PNO: Fast ၞ IFGain:Low	<sup>-</sup> Trig: Free #Atten: 30	e Run ) dB		Mk	r1 392.4 -55.	89 MHz 09 dBm	Auto Tune
10.0									Center Freq 515.000000 MHz
-10.0									Start Freq 30.000000 MHz
-20.0								-25.90 dBm	<b>Stop Freq</b> 1.000000000 GHz
-40.0		1							<b>CF Step</b> 97.000000 MHz <u>Auto</u> Man
-60.0	la y a chil deserre constanti dalla for i manana di banana dalla deserre constanti dalla dalla deserre deserva	Allergen Attentional Antin			lang pada dina lang basa Mangana karakaran	la here her		aas edul tees good	Freq Offset 0 Hz
Start 30.0 MH #Res BW 100	łz ) kHz	#VBW	1.0 MHz			Sweep	Stop 1.0 90.0 ms (1	)000 GHz 0001 pts)	
мsg 🔱 File <lma< td=""><td>age.png&gt; saved</td><td></td><td></td><td></td><td></td><td>STATU</td><td>JS</td><td></td><td></td></lma<>	age.png> saved					STATU	JS		

### Page : 59 of 112

Agilen	it Spectru	m Analyzer -	Swept SA								
Cen	∟ iter Fr	RF 50	50 Ω AC	GHz	SEI	NSE:INT	Avg Type	ALIGNAUTO : Log-Pwr	05:01:09P TRAC	M Aug 23, 2012	Frequency
10 de	B/div	Ref 20.0	0 dBm	PNO: Fast G	#Atten: 30	dB		Mk	r1 2.40 -5.	B 0 GHz 90 dBm	Auto Tune
10.0											Center Freq 6.50000000 GHz
0.00 -10.0		1-									Start Freq 1.000000000 GHz
-20.0 -30.0										-25.90 dBm	<b>Stop Freq</b> 12.00000000 GHz
-40.0 -50.0				and the second	rat kullt	and a l					CF Step 1.10000000 GHz <u>Auto</u> Man
-60.0		Adapted Marine						la tradica de la constitución Secondo de la constitución	ang parallatin Départing paganak distriction (no. 19		Freq Offset 0 Hz
Star #Res	t 1.000 s BW 1	) GHz 100 kHz	all traces of	#VBW	1.0 MHz			Sweep	Stop 12 1.02 s (1	.000 GHz 0001 pts)	

Agilen	Agilent Spectrum Analyzer - Swept SA												
Cen	ter Freq	F 50 Ω 18.500	AC 000000	GHz	SEI		Avg Type	ALIGNAUTO : Log-Pwr	05:02:10 P TRAC TY	M Aug 23, 2012 E 1 2 3 4 5 6	Frequency		
10 dE	3/div <b>R</b> e	f 20.00 (	IFC	NU: Fast 🖵 Gain:Low	#Atten: 30	) dB		Mkr	ة 1 23.59 -40.	2 1 GHz 92 dBm	Auto Tune		
10.0					S						Center Freq 18.50000000 GHz		
0.00 -10.0											<b>Start Freq</b> 12.00000000 GHz		
-20.0 -30.0										-25.90 dBm	<b>Stop Freq</b> 25.00000000 GHz		
-40.0 -50.0		a trainer of term						ng del të <sup>k</sup> anda navjes			<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man		
-60.0	and a second										Freq Offset 0 Hz		
-70.0 Star	t 12 000 (	2H7							Stop 25	000 GHz			
#Res	s BW 100	kHz		#VBW	1.0 MHz			Sweep	1.20 s (1	0001 pts)			
MSG 🤇	↓ File < Ima	ge.png> s	aved					STATUS					



Agilen	it Spectrum A	nalyzer - Swej	pt SA		12						
LXI R	L R	F 50 Ω	AC		SEI	VSE:INT	A	ALIGN AUT	0 05:08:39 F	M Aug 23, 2012	Frequency
Cen	ter Freq	515.000			Tria: Free	Run	Avg Type	: Log-Pwi	TY TY	PE MWWWWW	
			, IF	Gain:Low	#Atten: 30	dB			D	ET P N N N N N	
								MI	kr1 709.7	76 MHz	Auto Tune
10 di	Ridio De	f 20 00 d	Bm						-54.	57 dBm	
Log		1 20.00 u	BIII	T T		-	1		1		
											Center Freq
10.0											515 00000 MHz
											010.000000 11112
0.00											
0.00											Start Fred
10.0											30 000000 MHz
-10.0											00.000000 11112
-20.0										-23 94 dBm	Ston Fred
										20.0100	1 00000000 CH-
-30.0											1.00000000 GH2
-40.0						-			_		CF Step
											97.000000 MHz
50.0								1		_	<u>Auto</u> Man
-30.0		1.4									
	Station and a lange of	ومعرفينا والمرابع	antidocera das	والمراجع والمراجع والمراجع	and the store of	address and the	nin, lale astronote Alapita	and a participation of	the statistic business	With a production	Fred Offset
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-70.0											
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star #Do	C 30.0 IVIM			#\/B\M	10 MH-7			Swoon	Stop 1.	0001 off2	
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### Channel 04 (2437MHz)



Agilen	t Spectrum	Analyzer - Sv	vept SA								
Cen	ter Free	rf 50 s <b>18.500</b>	2 AC 10000000 P	GHz N0: Fast 😱	Trig: Free	Run	Avg Type	ALIGNAUTO : Log-Pwr	05:09:10 PM TRAC TYP	4 Aug 23, 2012 E 1 2 3 4 5 6 E M WWWWWW	Frequency
10 dE	3/div R	lef 20.00	dBm	Gain:Low	#Atten: 30	αB		Mkr	1 23.570 -40.0	65 GHz 67 dBm	Auto Tune
10.0											Center Freq 18.50000000 GHz
0.00 -10.0											<b>Start Freq</b> 12.000000000 GHz
-20.0 -30.0										-23.94 dBm	<b>Stop Freq</b> 25.000000000 GHz
-40.0					to and lader	والمعرور والمعالية	aparte a filialmi	and the second second second			<b>CF Step</b> 1.30000000 GHz <u>Auto</u> Man
-50.0	tan Jawa Ang Nasipat Ng Pelekan Penganang Pe	And Hill Contracts	a ter (na judi se di se di se di se di La ter (na judi se di se		de persona a la constitución		a pert l'ann				Freq Offset 0 Hz
-70.0 Star #Res	t 12.000 s BW 10	GHz 0 kHz		#VBW	1.0 MHz			Sweep	Stop 25	.000 GHz	
MSG 🤇	File <im< td=""><td>age.png&gt; s</td><td>aved</td><td></td><td></td><td></td><td></td><td>STATUS</td><td></td><td>Tablet Party</td><td>II</td></im<>	age.png> s	aved					STATUS		Tablet Party	II