5. Peak Power Spectrum Density

5.1. Test Equipment

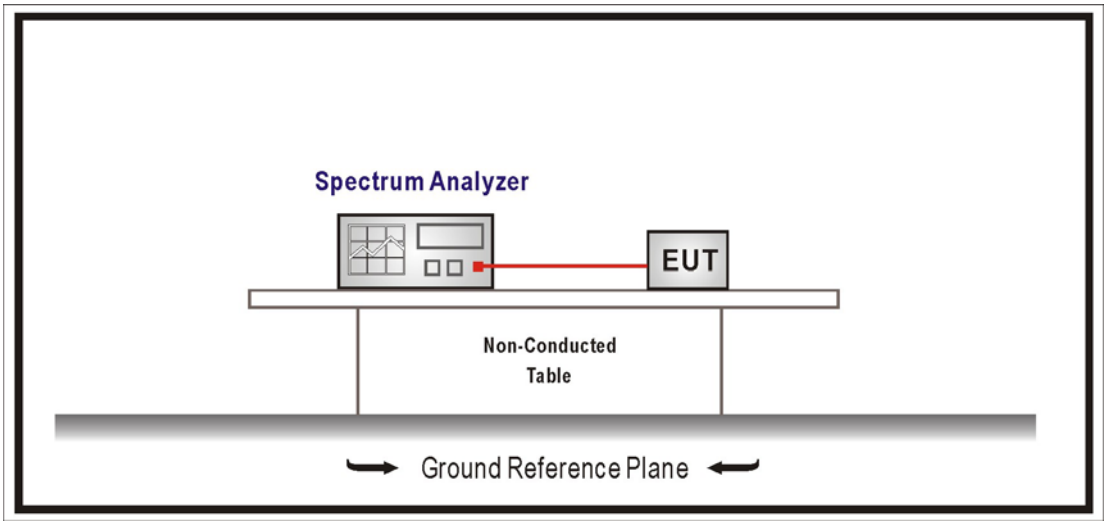
The following test equipments are used during the radiated emission tests:

Peak Power Spectrum Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup



5.3. Limits

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
2. For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

5.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to U-NII test procedure of March 2012 KDB 789033 for compliance to FCC 47CFR Subpart E requirements.

Set RBW=1MHz, VBW=3MHz with RMS detector. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging.

5.5. Uncertainty

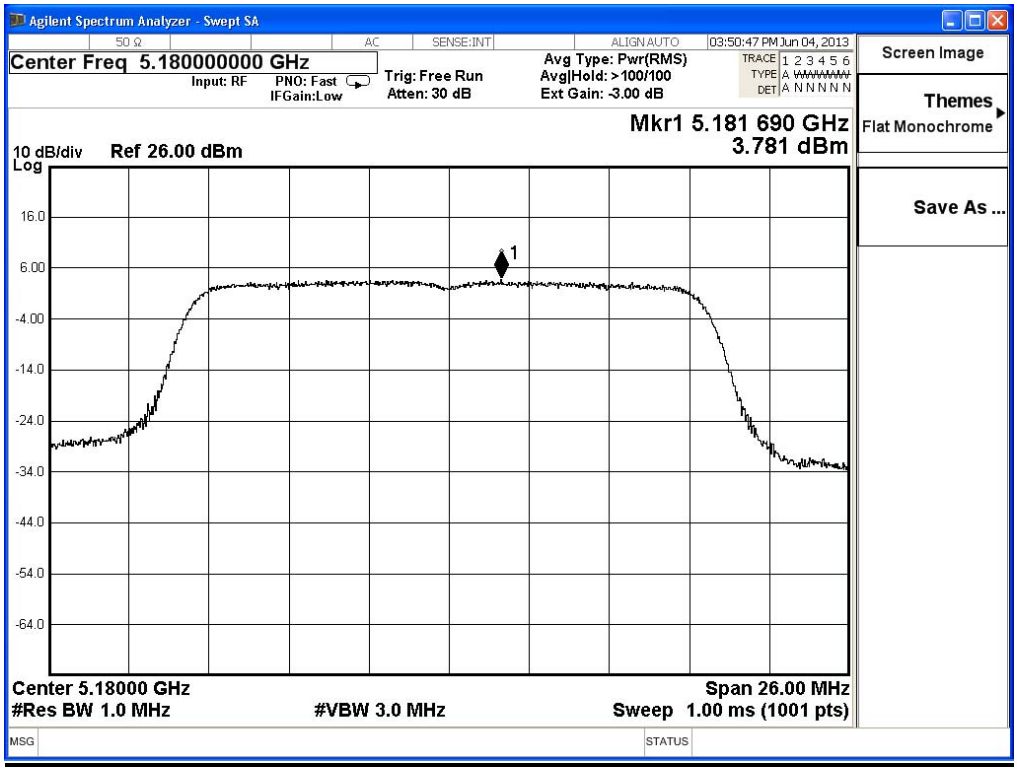
The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

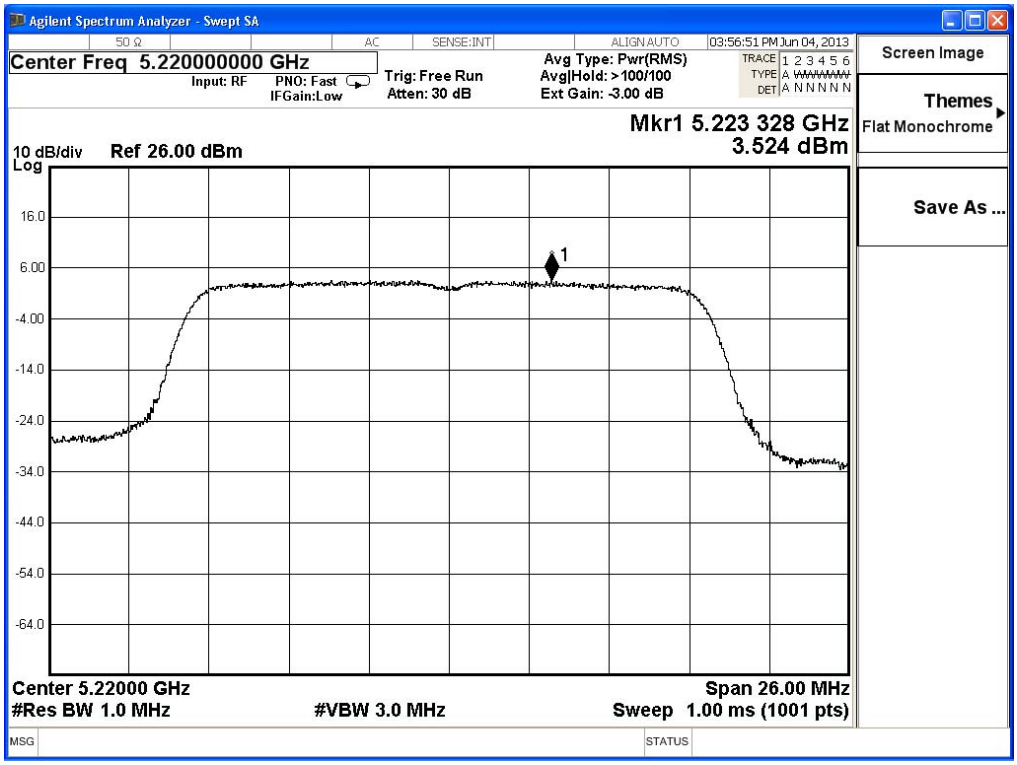
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

IEEE 802.11a				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	3.78	≦4.00	Pass
44	5220	3.52	≦4.00	Pass
48	5240	3.16	≦4.00	Pass

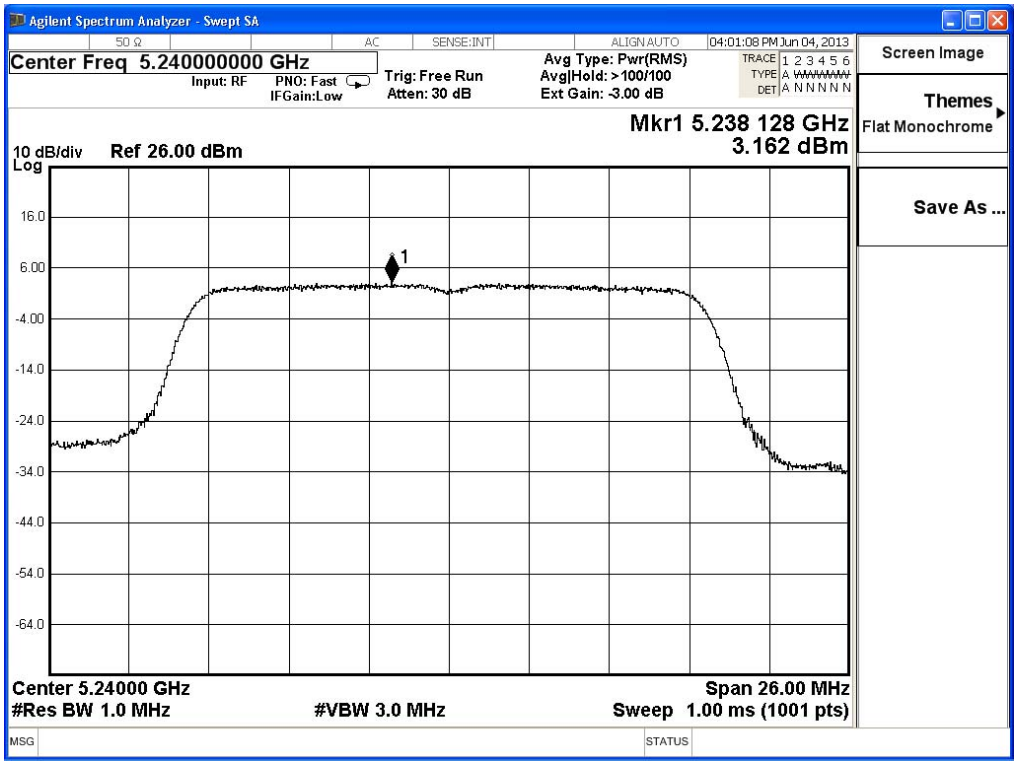
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

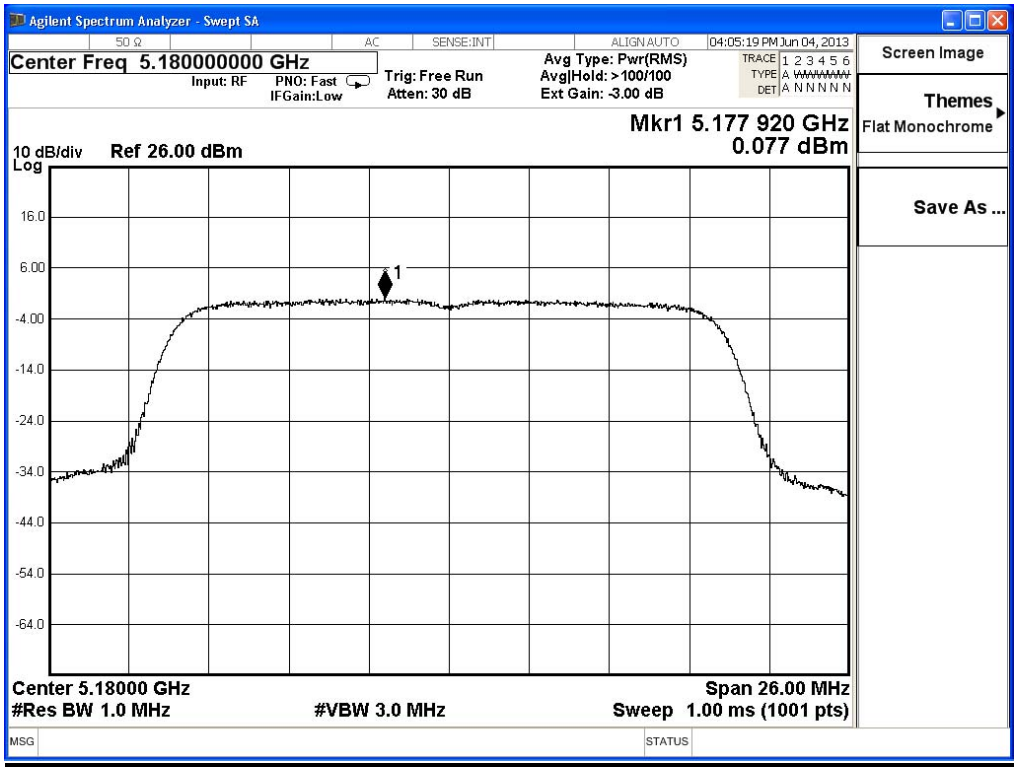


Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

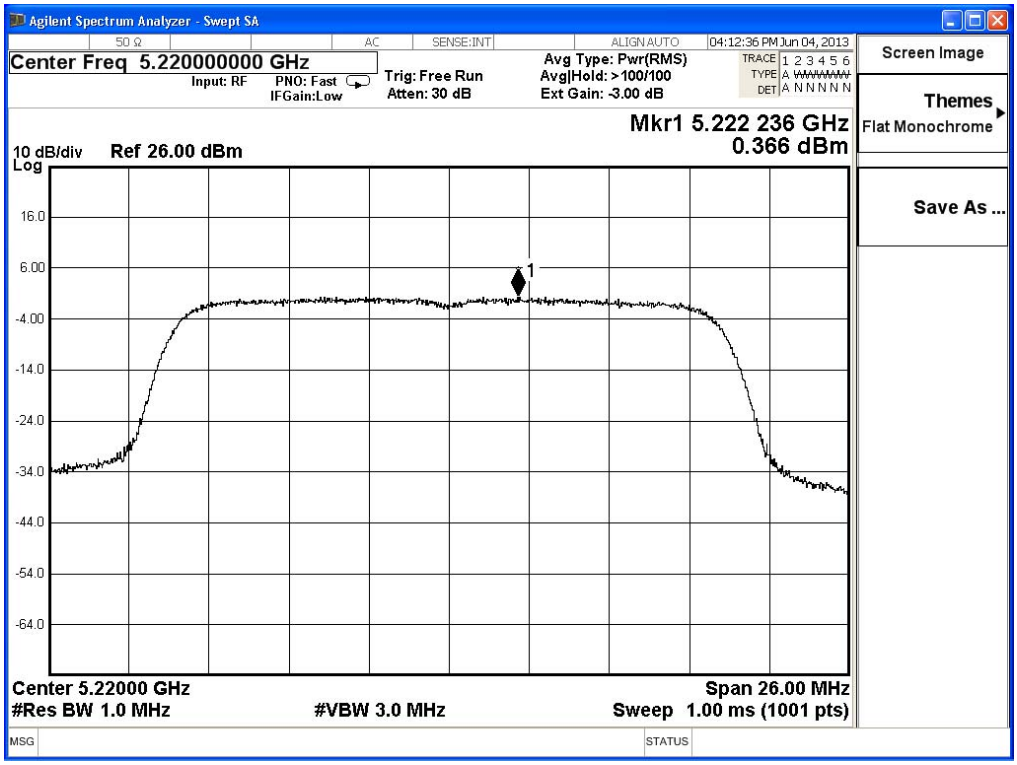
IEEE 802.11n_20M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	0.07	≦3.49	Pass
44	5220	0.36	≦3.49	Pass
48	5240	0.22	≦3.49	Pass

Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

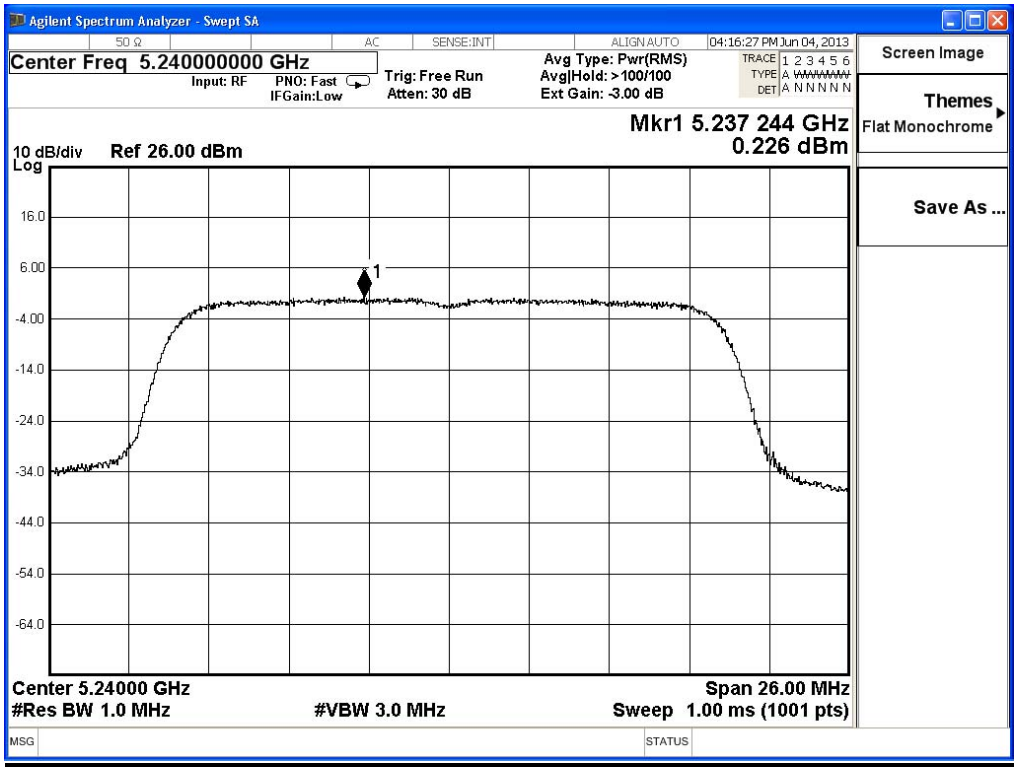
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48

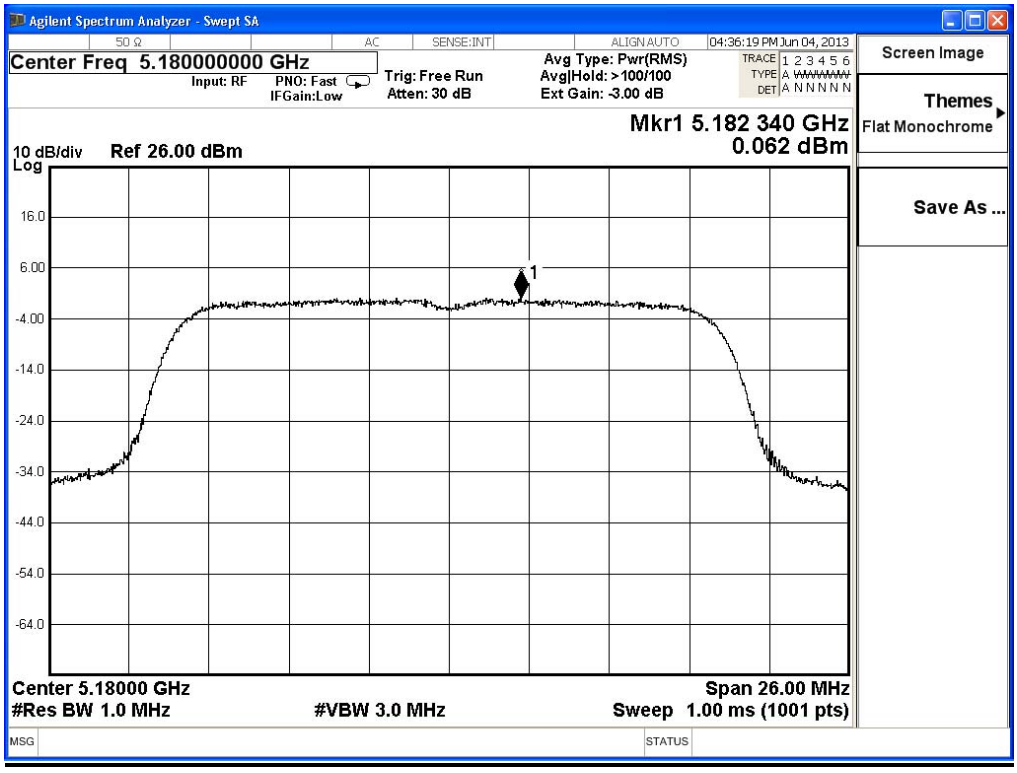


Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

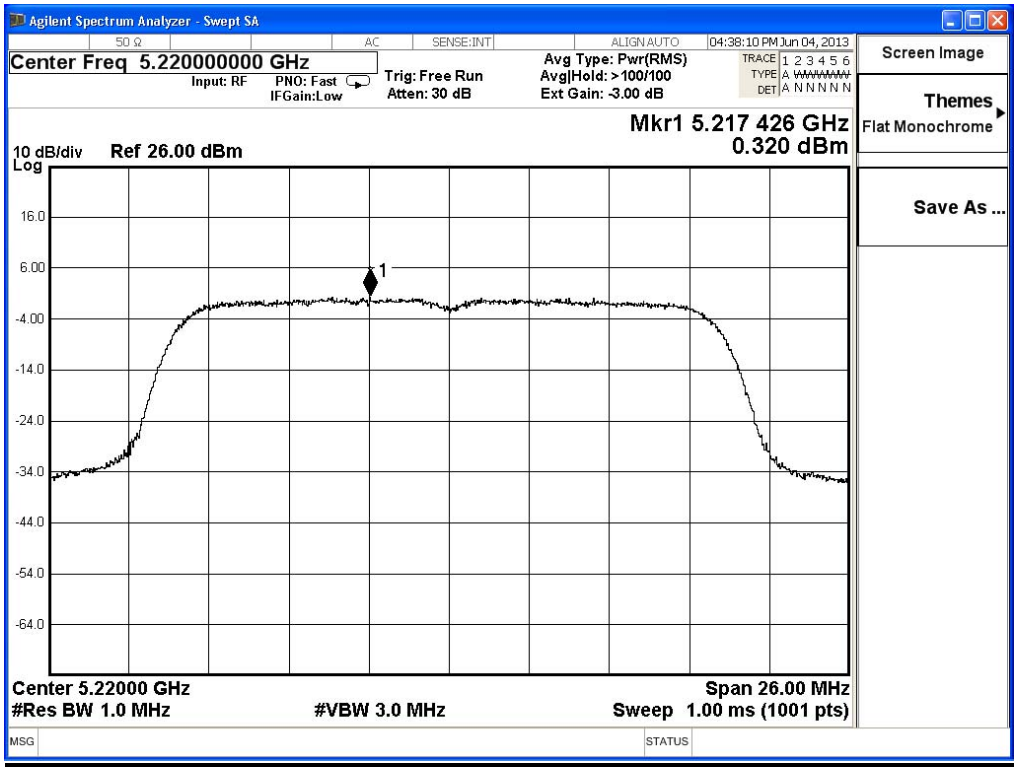
IEEE 802.11n_20M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	0.06	≦3.49	Pass
44	5220	0.32	≦3.49	Pass
48	5240	-0.08	≦3.49	Pass

Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

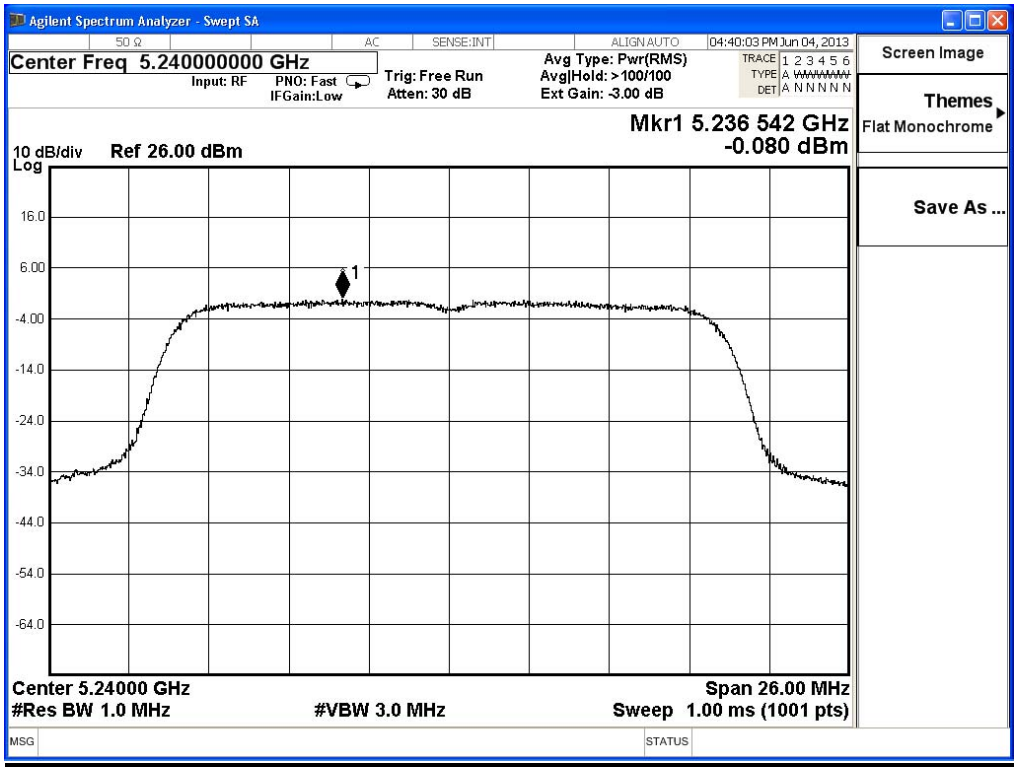
Peak Power Spectral Density – Channel 36



Peak Power Spectral Density – Channel 44



Peak Power Spectral Density – Channel 48



Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

IEEE 802.11n_20M(ANT 0+1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
36	5180	3.08	≦3.49	Pass
44	5220	3.35	≦3.49	Pass
48	5240	3.08	≦3.49	Pass

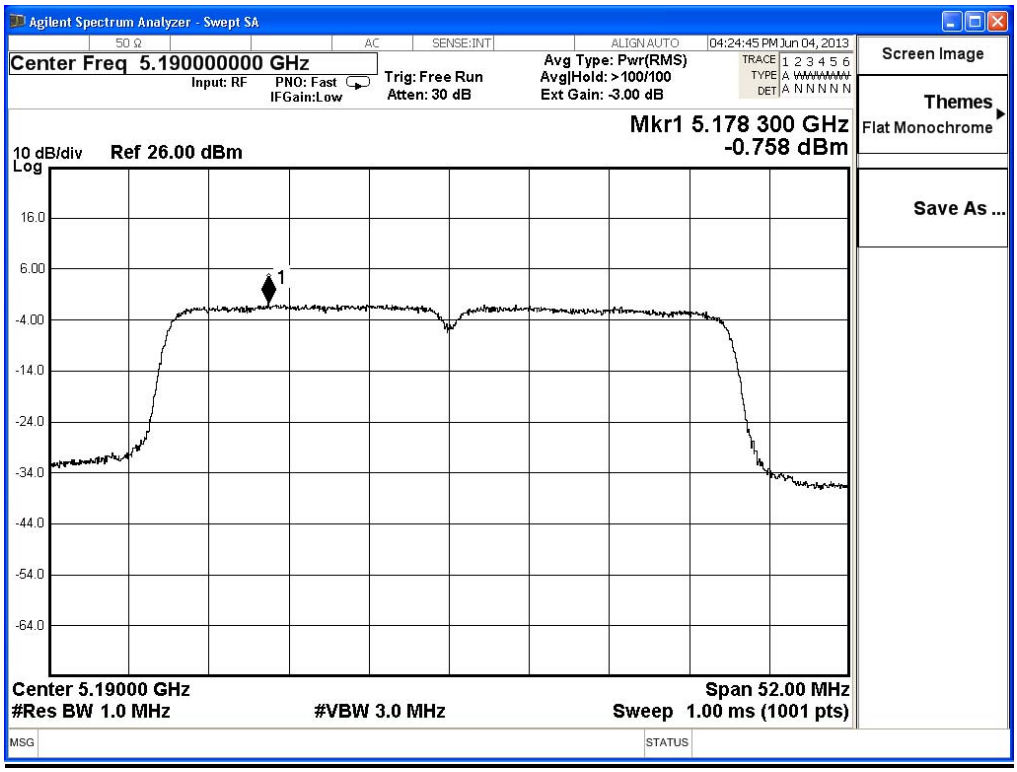
Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

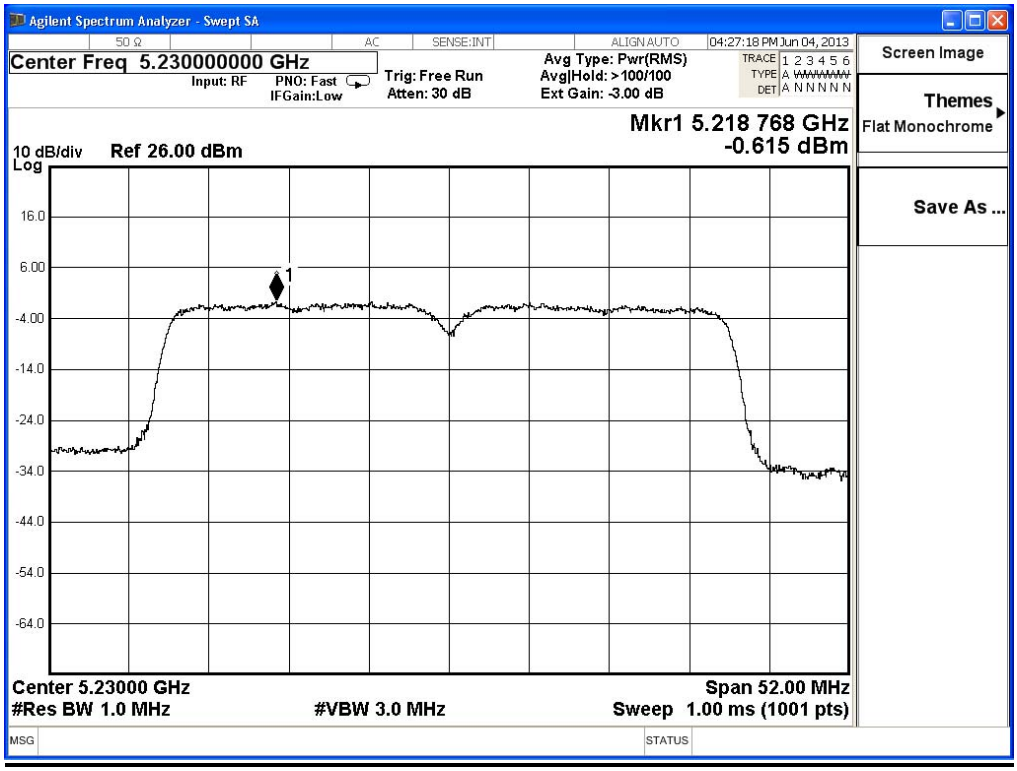
IEEE 802.11n_40M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-0.75	≦3.49	Pass
46	5230	-0.61	≦3.49	Pass

Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46

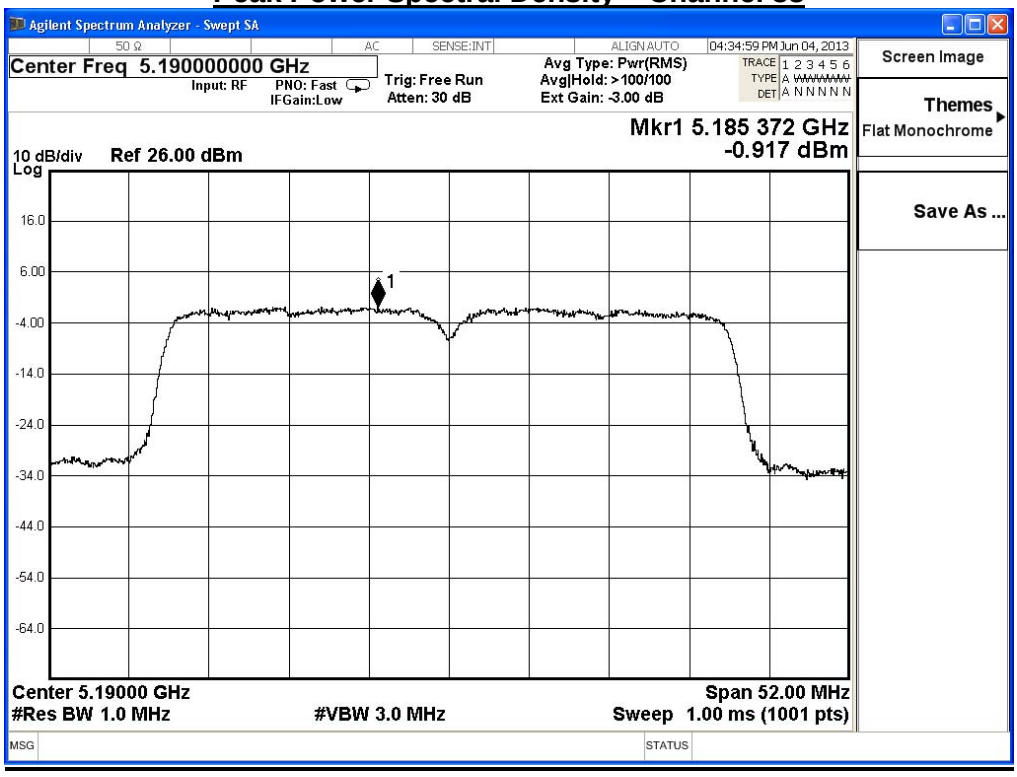


Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

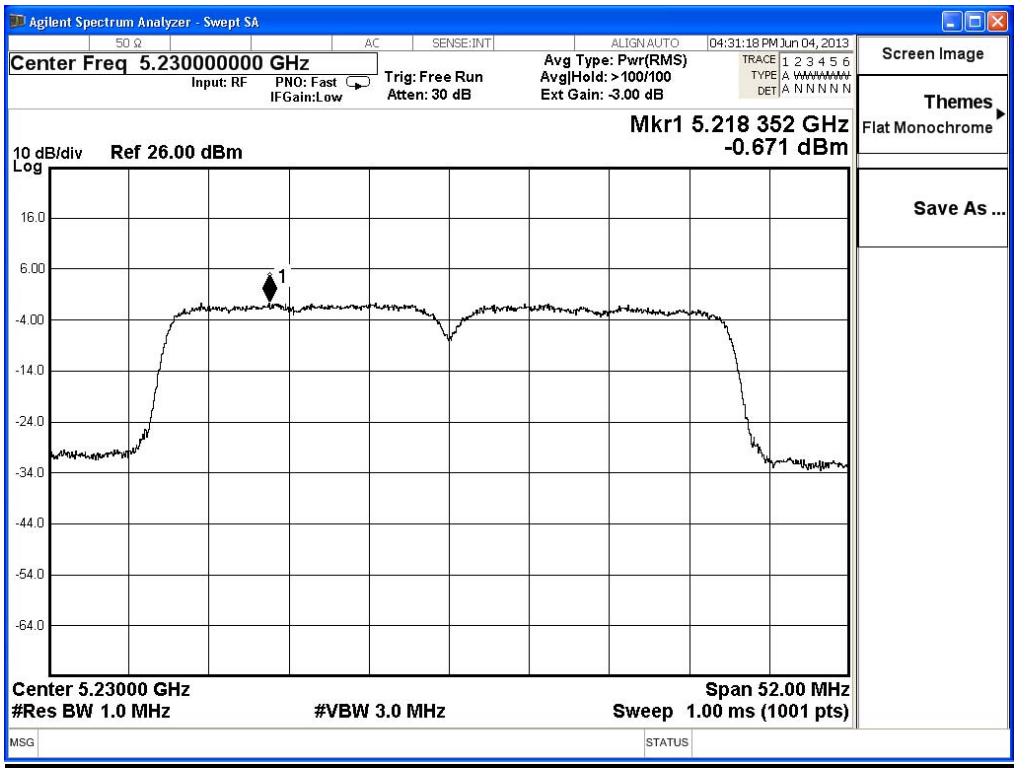
IEEE 802.11n_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	-0.91	≦3.49	Pass
46	5230	-0.67	≦3.49	Pass

Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

Peak Power Spectral Density – Channel 38



Peak Power Spectral Density – Channel 46



Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2013/06/04	Test Site	SR7

IEEE 802.11n_40M(ANT 0+1)				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Required Limit (dBm)	Result
38	5190	2.18	≦3.49	Pass
46	5230	2.37	≦3.49	Pass

Note:
10log(Ant N)+max Gain = 10log(2)+3.5 =6.51dBi
Required Limit = 4dBm - (6.51dBi – 6dBi) = 4 – 0.51 = 3.49 dBm

6. Peak Excursion

6.1. Test Equipment

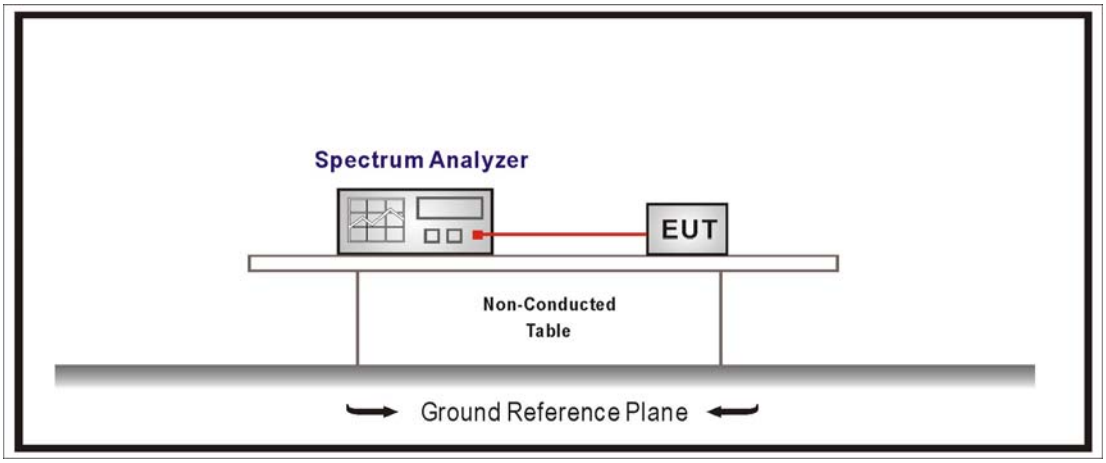
The following test equipments are used during the radiated emission tests:

Peak Excursion / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup



6.3. Limits

The ratio of the peak excursion of the modulation envelope (measured suing a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

6.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to U-NII test procedure of March 2012 KDB 789033 for compliance to FCC 47CFR Subpart E requirements.

1st Trace:

Set RBW = 1MHz, VBW = 3MHz with peak detector and max-hold settings.

2nd Trace:

Set RBW = 1MHz, VBW = 3MHz with RMS detector and trace average 100 traces in power averaging mode.

6.5. Uncertainty

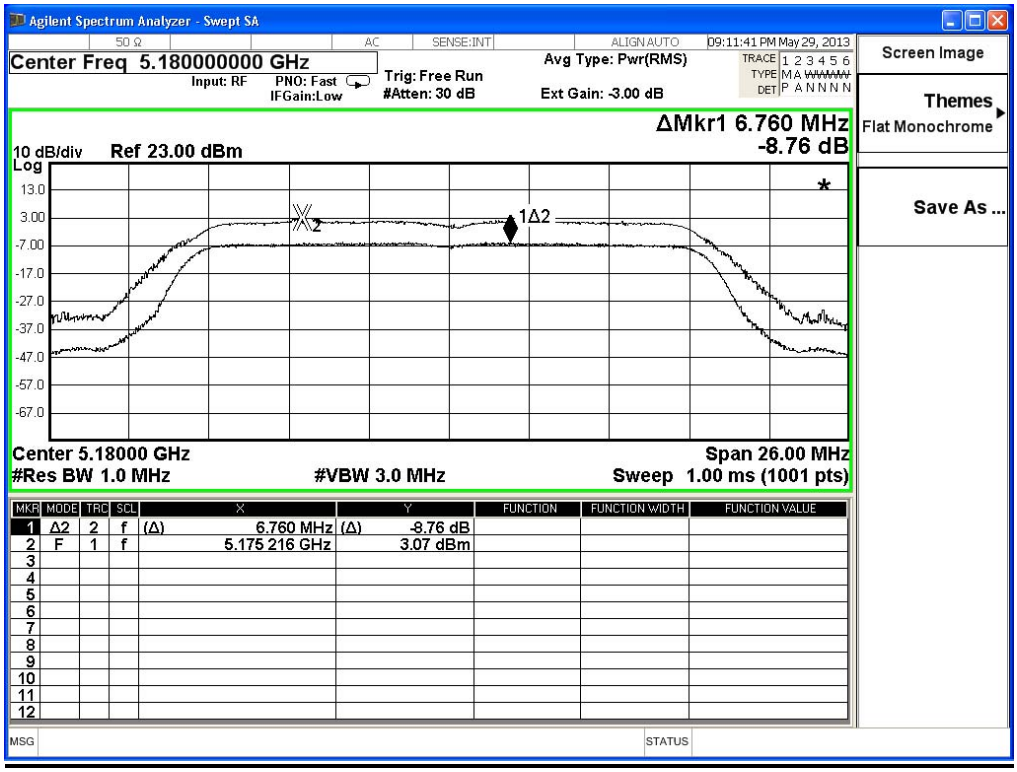
The measurement uncertainty is defined as ± 1.27 dB

6.6. Test Result

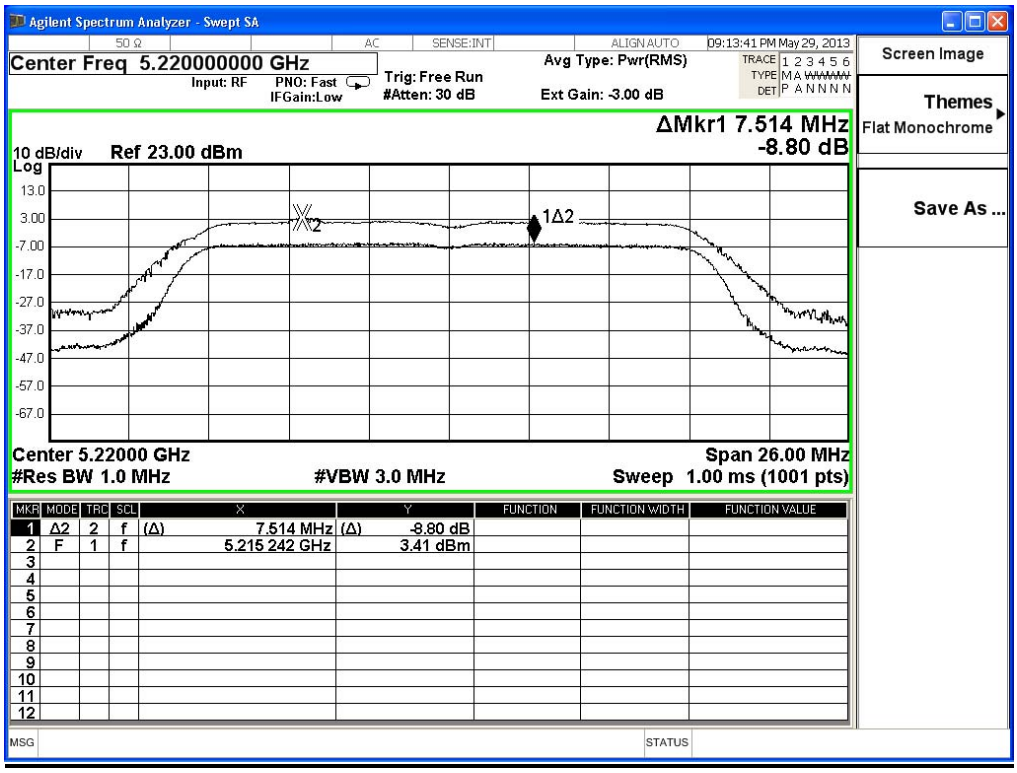
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Excursion		
Test Mode	Mode 1: Transmit		
Date of Test	2013/05/29	Test Site	SR7

IEEE 802.11a				
Channel No.	Frequency (MHz)	Measure Level (dB)	Required Limit (dB)	Result
36	5180	8.76	≦13	Pass
44	5220	8.80	≦13	Pass
48	5240	8.75	≦13	Pass

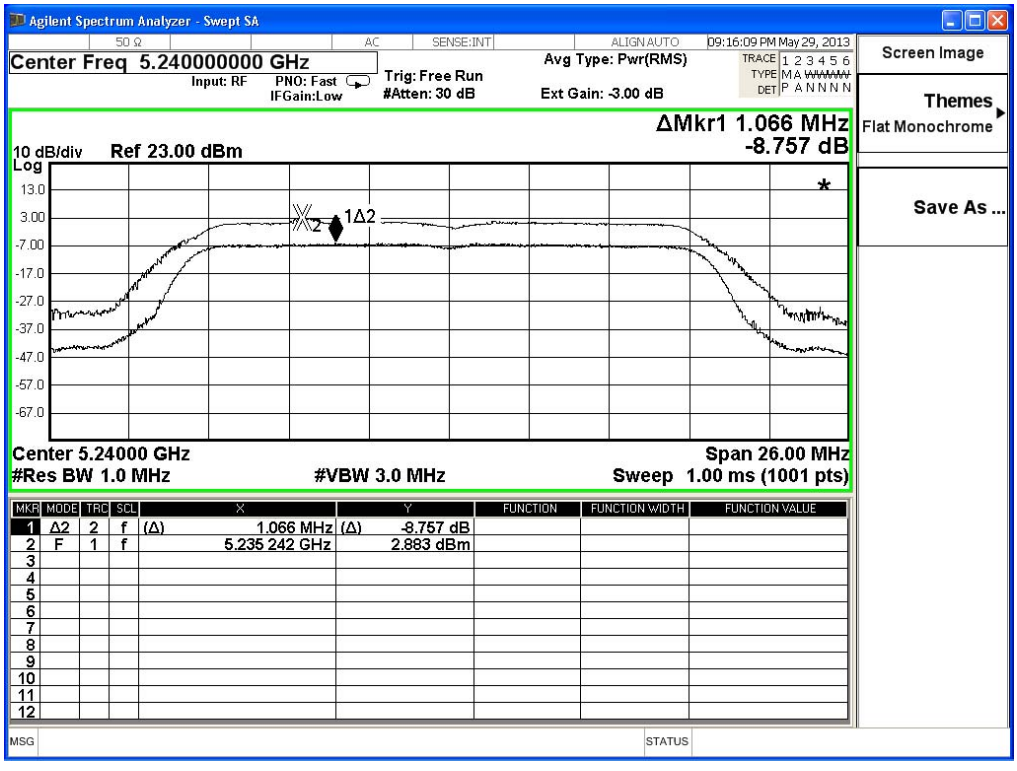
Power Excursion – Channel 36



Power Excursion – Channel 44



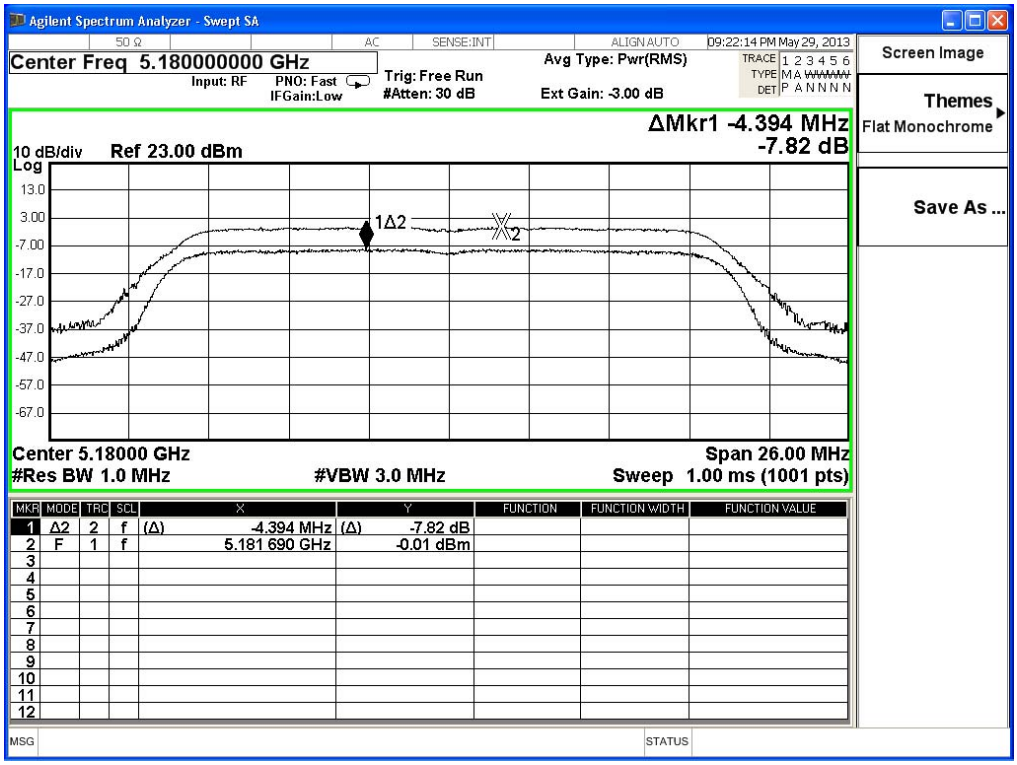
Power Excursion – Channel 48



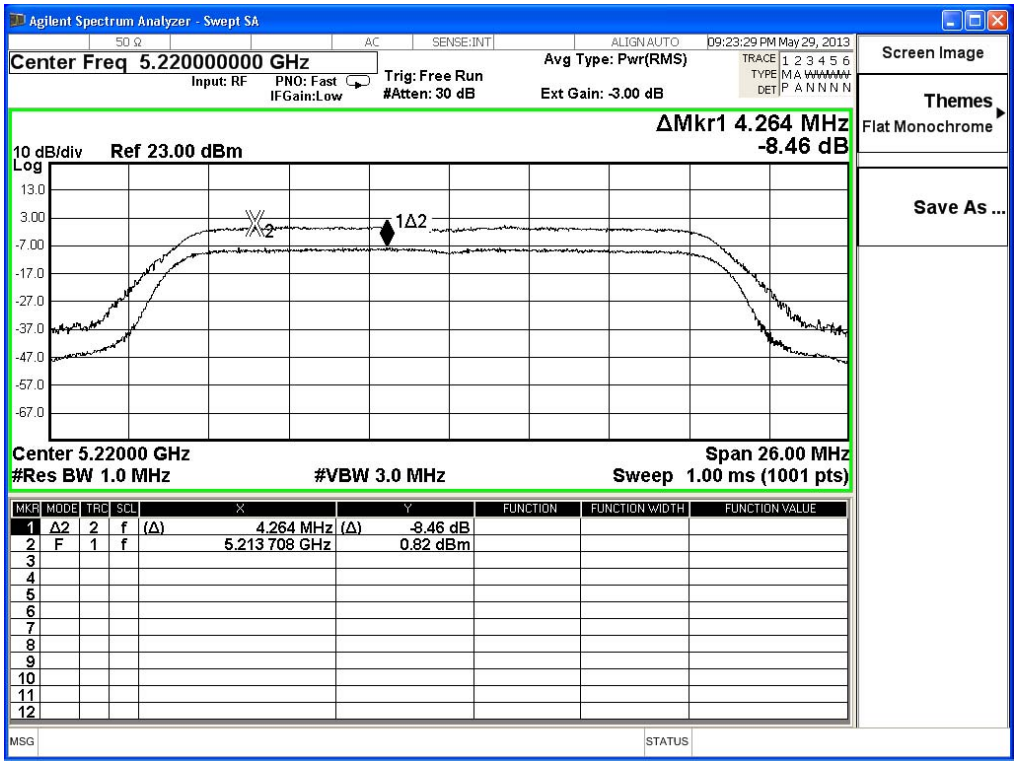
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Excursion		
Test Mode	Mode 1: Transmit		
Date of Test	2013/05/29	Test Site	SR7

IEEE 802.11n_20M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dB)	Required Limit (dB)	Result
36	5180	7.82	≦13	Pass
44	5220	8.46	≦13	Pass
48	5240	8.17	≦13	Pass

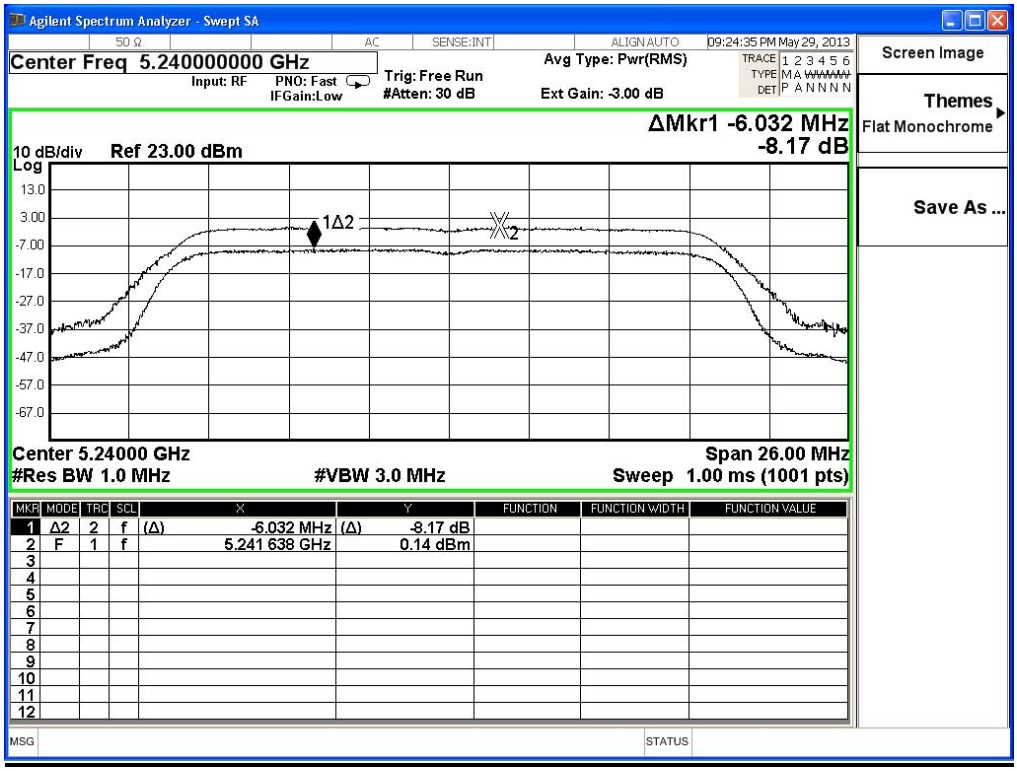
Power Excursion – Channel 36



Power Excursion – Channel 44



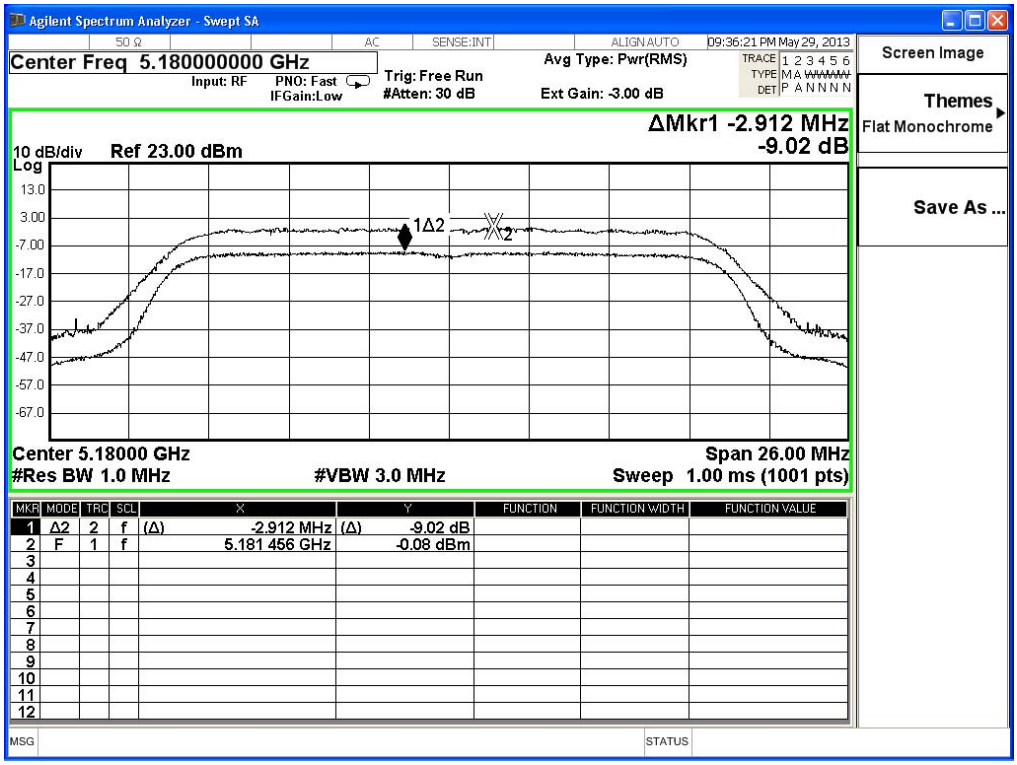
Power Excursion – Channel 48



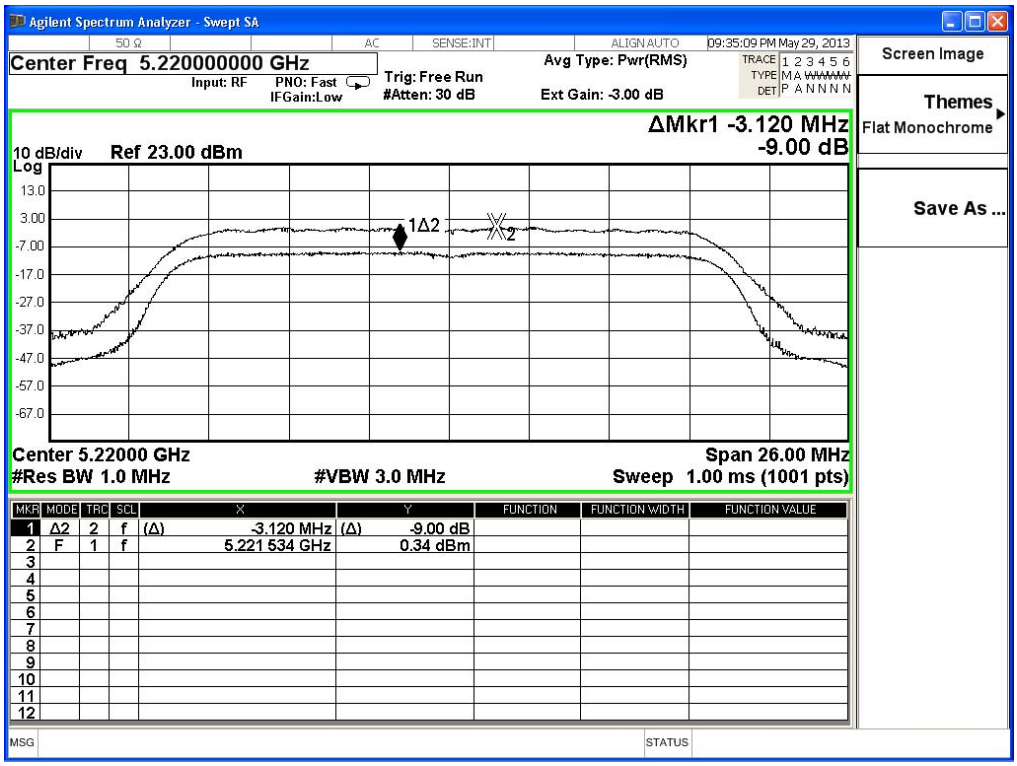
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Excursion		
Test Mode	Mode 1: Transmit		
Date of Test	2013/05/29	Test Site	SR7

IEEE 802.11n_20M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dB)	Required Limit (dB)	Result
36	5180	9.02	≦13	Pass
44	5220	9.00	≦13	Pass
48	5240	9.06	≦13	Pass

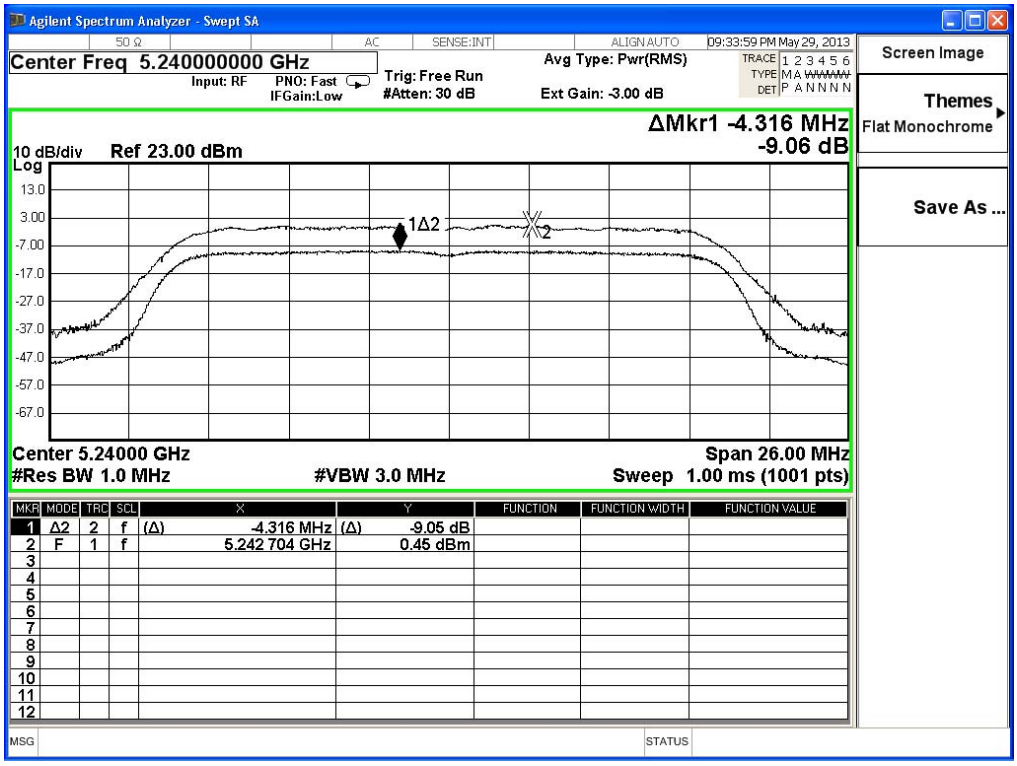
Power Excursion – Channel 36



Power Excursion – Channel 44



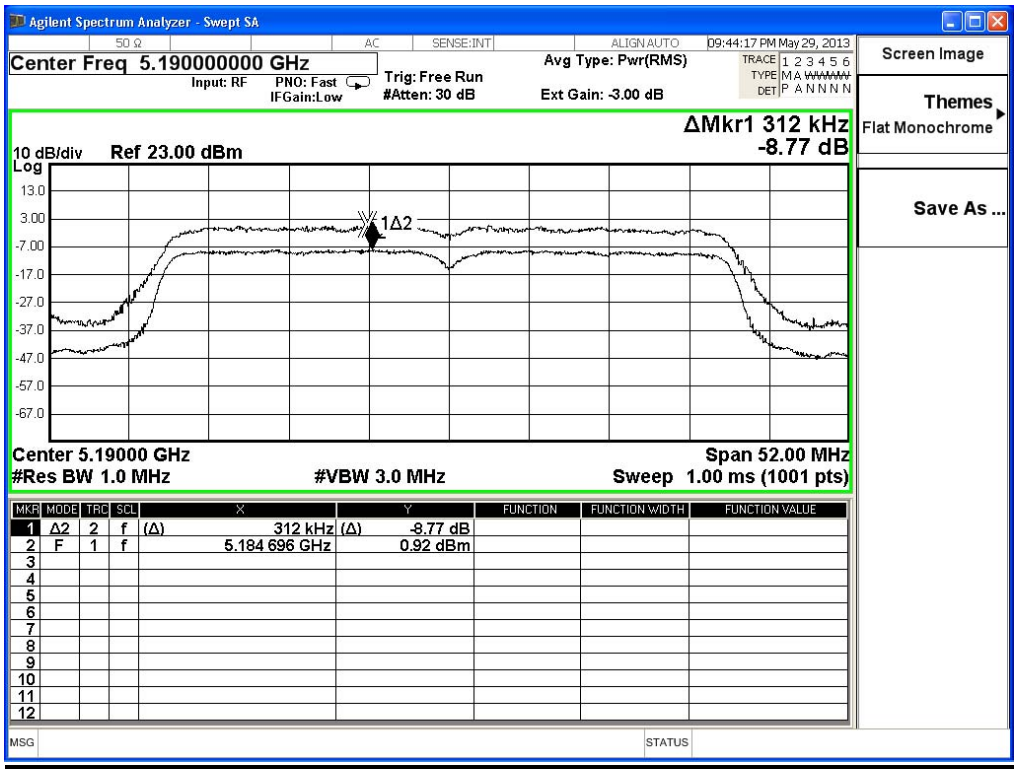
Power Excursion – Channel 48



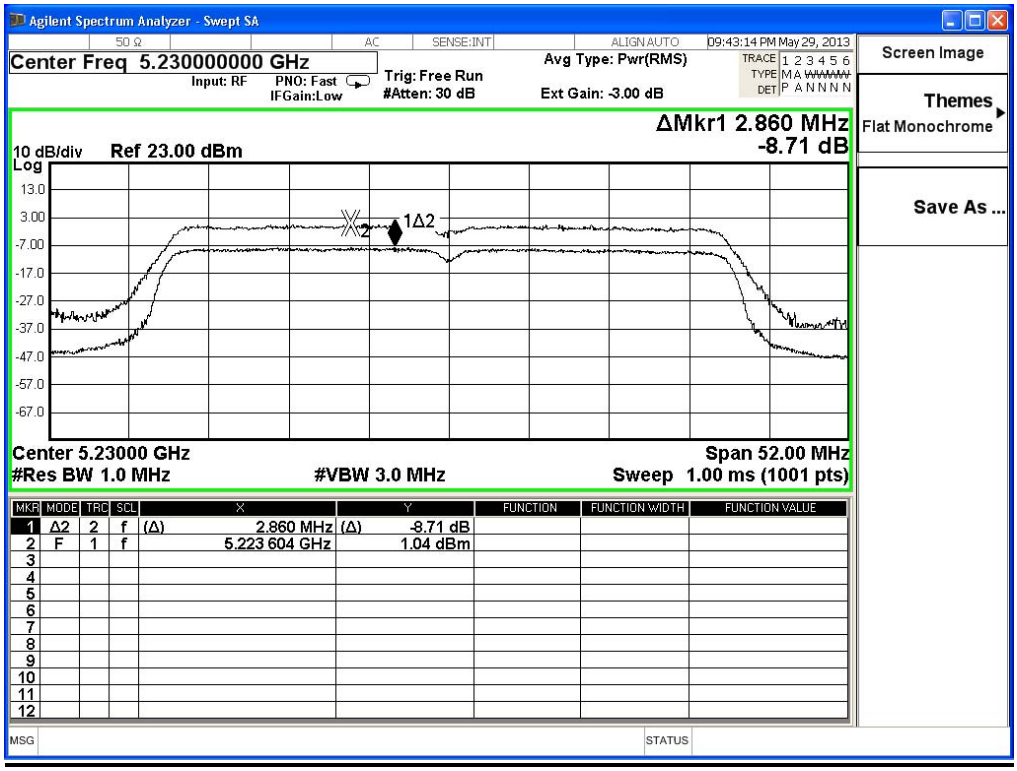
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Excursion		
Test Mode	Mode 1: Transmit		
Date of Test	2013/05/29	Test Site	SR7

IEEE 802.11n_40M(ANT 0)				
Channel No.	Frequency (MHz)	Measure Level (dB)	Required Limit (dB)	Result
38	5190	8.77	≦13	Pass
46	5230	8.71	≦13	Pass

Power Excursion – Channel 38



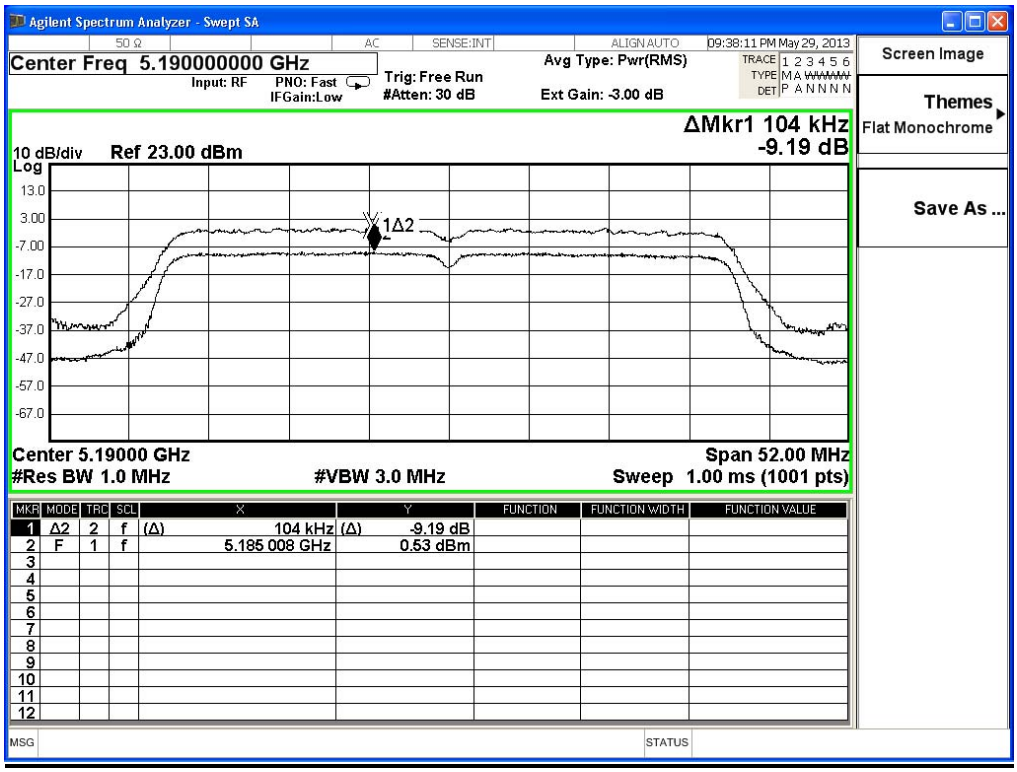
Power Excursion – Channel 46



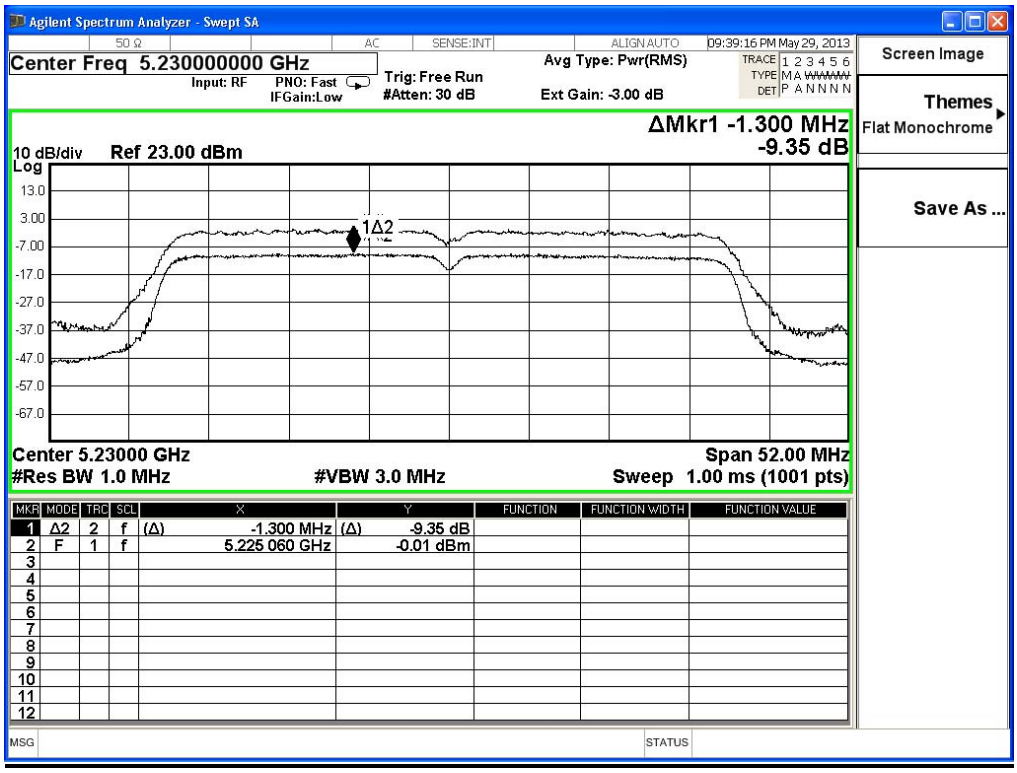
Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Peak Excursion		
Test Mode	Mode 1: Transmit		
Date of Test	2013/05/29	Test Site	SR7

IEEE 802.11n_40M(ANT 1)				
Channel No.	Frequency (MHz)	Measure Level (dB)	Required Limit (dB)	Result
38	5190	9.19	≦13	Pass
46	5230	9.35	≦13	Pass

Power Excursion – Channel 38



Power Excursion – Channel 46



7. Radiated Emission

7.1. Test Equipment

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

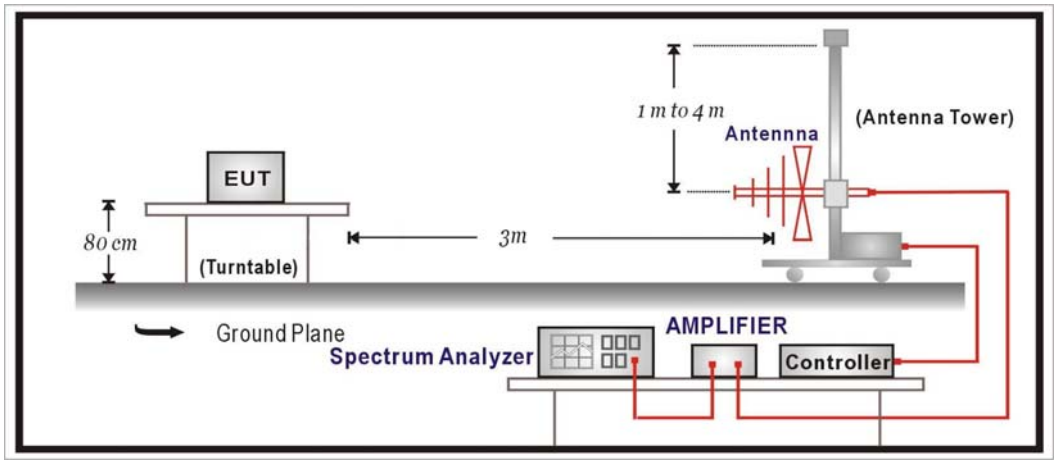
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Bilog Antenna	SCHAFFNER	CBL6112B	2895	2013/08/14
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Pre-Amplifier	MITEQ	AMF-4D-005180-24-10P	888003	2013/12/02
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2014/02/19
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

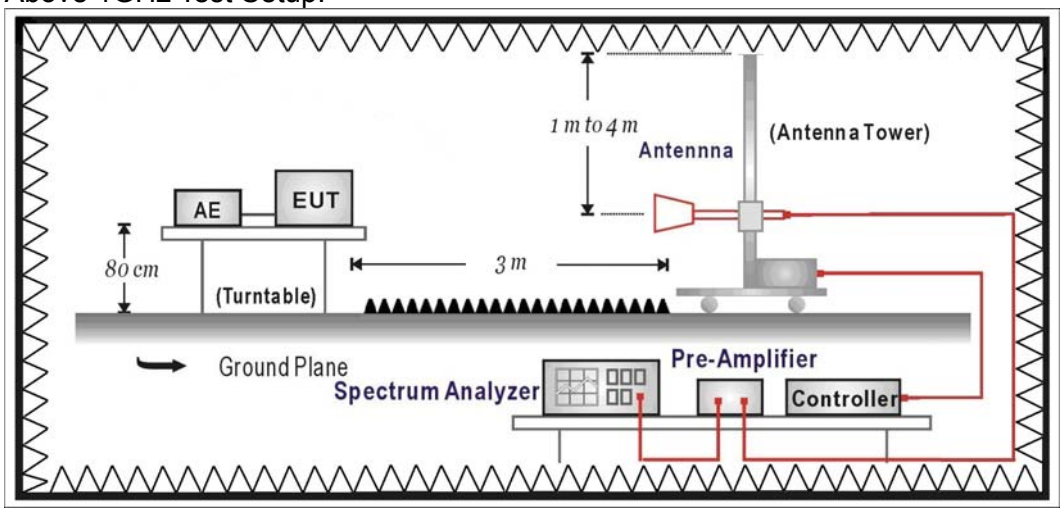
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



7.3. Limits

➢ General Radiated Emission Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section. Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 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

Remark:

1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

➢ Unwanted Emission out of the restricted bands Limits

FCC Part 15 Subpart C Paragraph 15.407(b) Limits		
Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (dBuV/m@3m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27 (Note1)	68.3
	-17 (Note2)	78.3

Remark:

1. For frequencies more than 10 MHz above or below the band edges.
2. For frequency range from the band edges to 10 MHz above or below the band edges.
3. uV/m = $\frac{1000000\sqrt{30 \times EIRP}}{3}$, RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated measurement.
The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field dtrength of harmonics measurement.
The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30)is 120 KHz, above 1GHz are 1 MHz.
The frequency range from 30MHz to 10th harminics is checked.

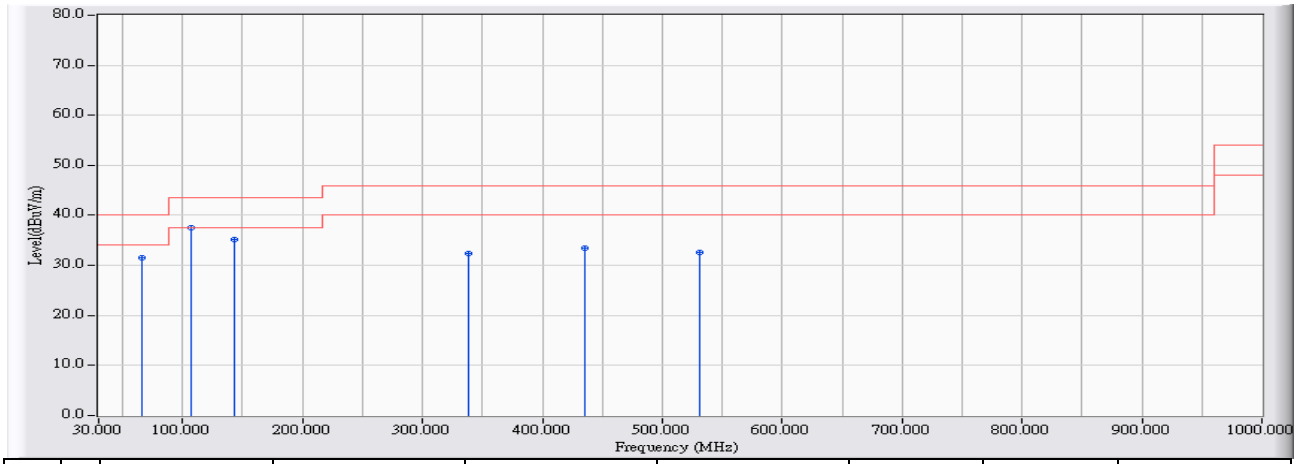
7.5. Uncertainty

The measurement uncertainty
30MHz～1GHz as ±3.43dB
1GHz～26.5Ghz as ±3.65dB

7.6. Test Result

30MHz-1GHz Spurious

Site : CB1	**Time : 2013/05/18 - 14:31**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

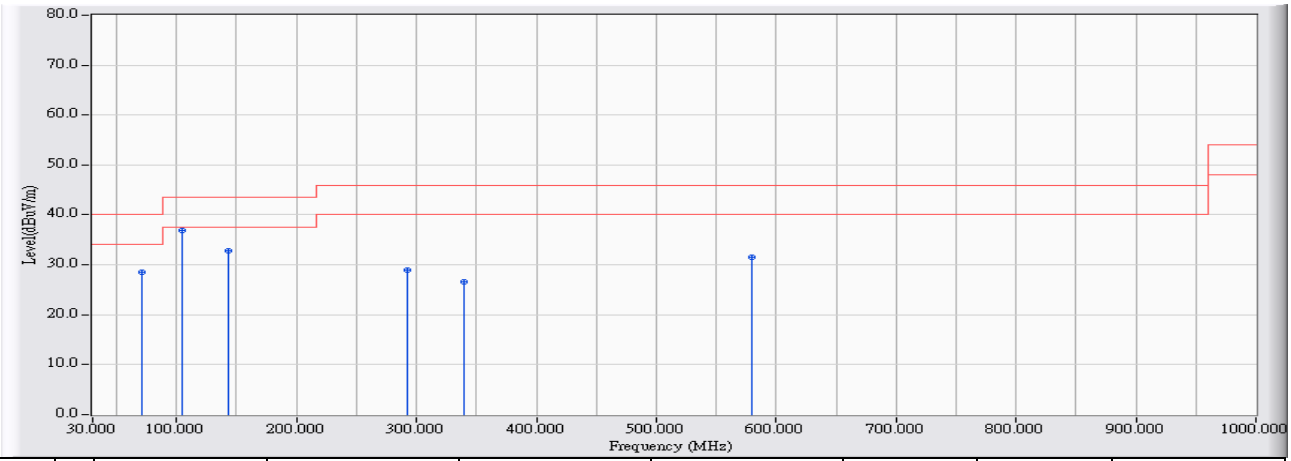


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		65.890	-16.931	48.436	31.505	-8.495	40.000	QUASIPEAK
2	*	106.630	-12.446	50.061	37.615	-5.885	43.500	QUASIPEAK
3		143.490	-12.730	47.853	35.123	-8.377	43.500	QUASIPEAK
4		338.460	-8.980	41.365	32.385	-13.615	46.000	QUASIPEAK
5		435.460	-6.615	40.042	33.428	-12.572	46.000	QUASIPEAK
6		531.490	-5.012	37.621	32.609	-13.391	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/05/18 - 14:31**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

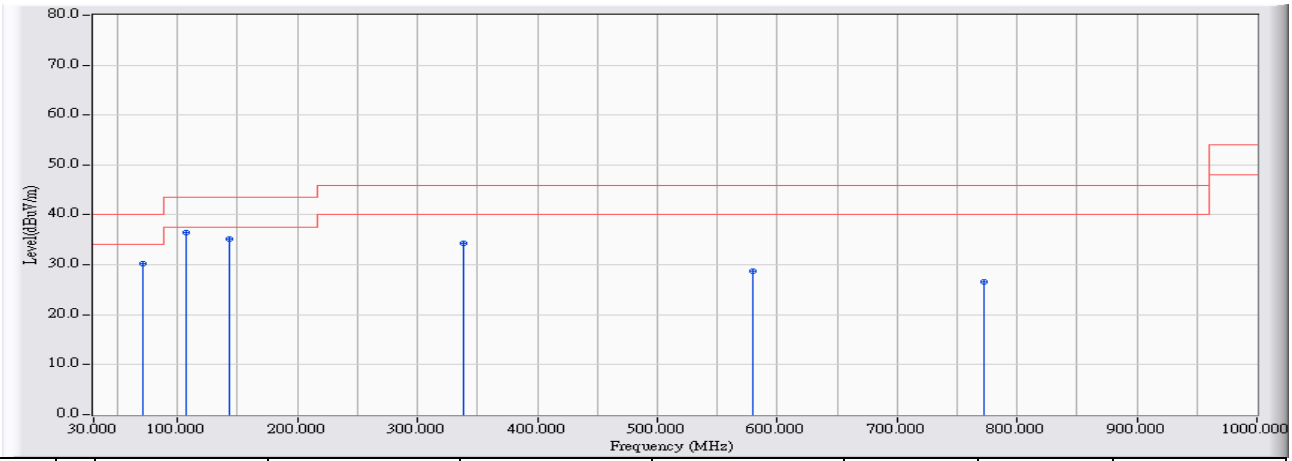


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		70.740	-16.953	45.493	28.540	-11.460	40.000	QUASIPEAK
2	*	104.690	-12.537	49.391	36.854	-6.646	43.500	QUASIPEAK
3		143.490	-12.730	45.618	32.888	-10.612	43.500	QUASIPEAK
4		292.870	-10.069	38.936	28.867	-17.133	46.000	QUASIPEAK
5		339.430	-8.956	35.573	26.617	-19.383	46.000	QUASIPEAK
6		579.990	-4.916	36.459	31.543	-14.457	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/05/18 - 14:32**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20MHz)_5220MHz**

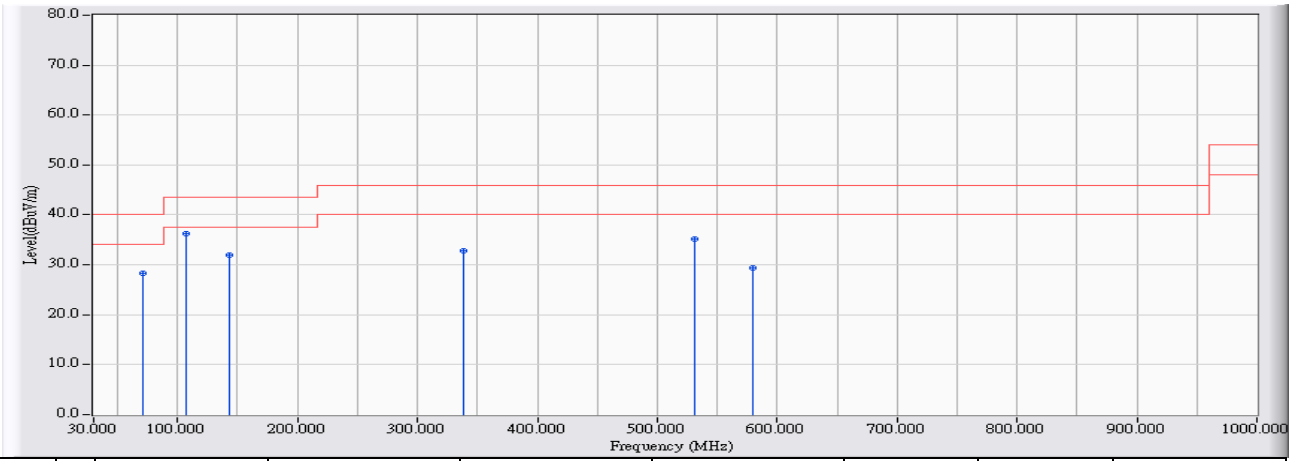


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		70.740	-16.953	47.246	30.293	-9.707	40.000	QUASIPEAK
2	*	106.630	-12.446	49.009	36.563	-6.937	43.500	QUASIPEAK
3		143.490	-12.730	47.854	35.124	-8.376	43.500	QUASIPEAK
4		338.460	-8.980	43.191	34.211	-11.789	46.000	QUASIPEAK
5		579.990	-4.916	33.667	28.751	-17.249	46.000	QUASIPEAK
6		773.020	-3.311	29.960	26.649	-19.351	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/05/18 - 14:32**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20MHz)_5220MHz**

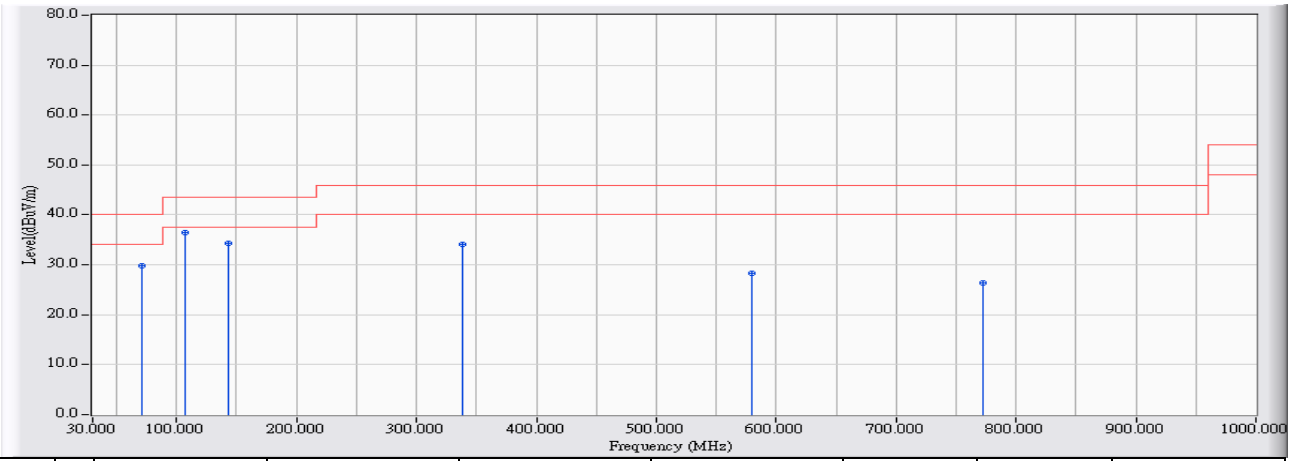


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		70.740	-16.953	45.351	28.398	-11.602	40.000	QUASIPEAK
2	*	106.630	-12.446	48.734	36.288	-7.212	43.500	QUASIPEAK
3		143.490	-12.730	44.600	31.870	-11.630	43.500	QUASIPEAK
4		338.460	-8.980	41.696	32.716	-13.284	46.000	QUASIPEAK
5		531.490	-5.012	40.184	35.172	-10.828	46.000	QUASIPEAK
6		579.990	-4.916	34.216	29.300	-16.700	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/05/18 - 14:34**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40MHz)_5220MHz**

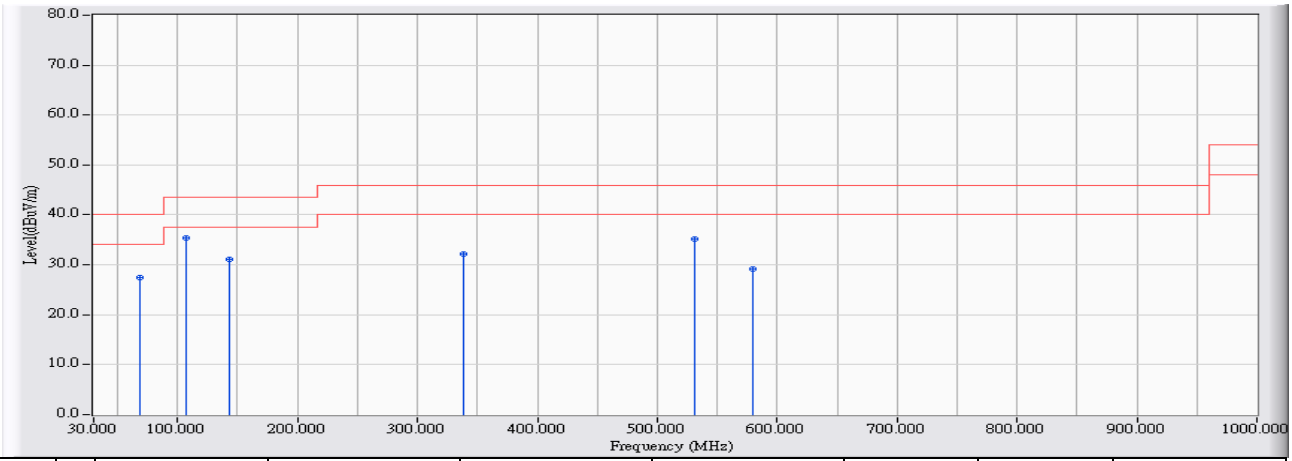


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		70.740	-16.953	46.747	29.794	-10.206	40.000	QUASIPEAK
2	*	106.630	-12.446	48.909	36.463	-7.037	43.500	QUASIPEAK
3		143.490	-12.730	46.983	34.253	-9.247	43.500	QUASIPEAK
4		338.460	-8.980	42.989	34.009	-11.991	46.000	QUASIPEAK
5		579.990	-4.916	33.137	28.221	-17.779	46.000	QUASIPEAK
6		773.020	-3.311	29.712	26.401	-19.599	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : CB1	**Time : 2013/05/18 - 14:35**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : AC 120V /60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40MHz)_5220MHz**



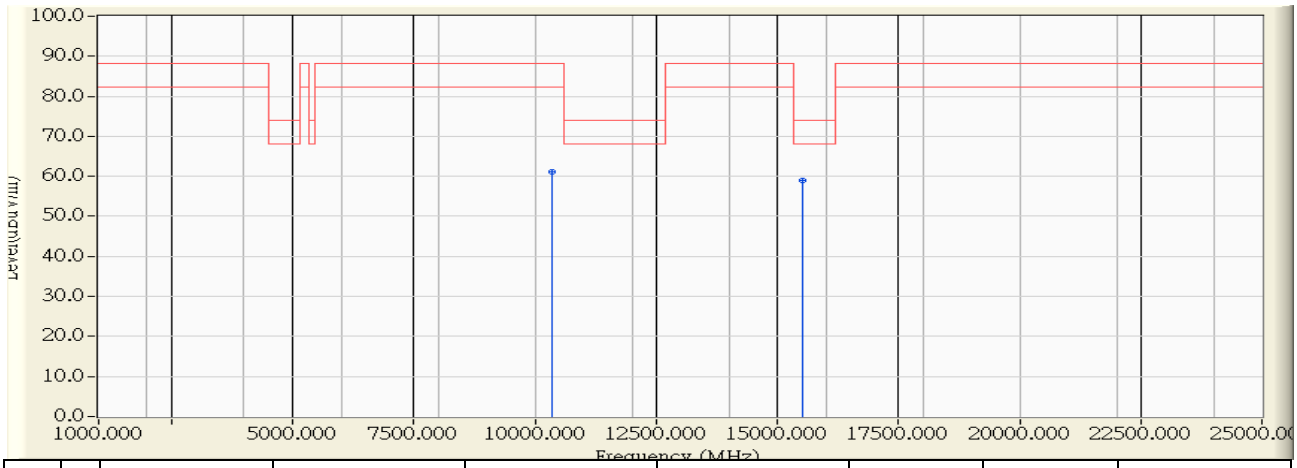
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		68.800	-16.985	44.431	27.446	-12.554	40.000	QUASIPEAK
2	*	106.630	-12.446	47.860	35.414	-8.086	43.500	QUASIPEAK
3		143.490	-12.730	43.899	31.169	-12.331	43.500	QUASIPEAK
4		338.460	-8.980	41.105	32.125	-13.875	46.000	QUASIPEAK
5		531.490	-5.012	40.149	35.137	-10.863	46.000	QUASIPEAK
6		579.990	-4.916	34.170	29.254	-16.746	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ * ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Harmonic & Spurious:

Site : CB1	**Time : 2013/06/04 - 20:04**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

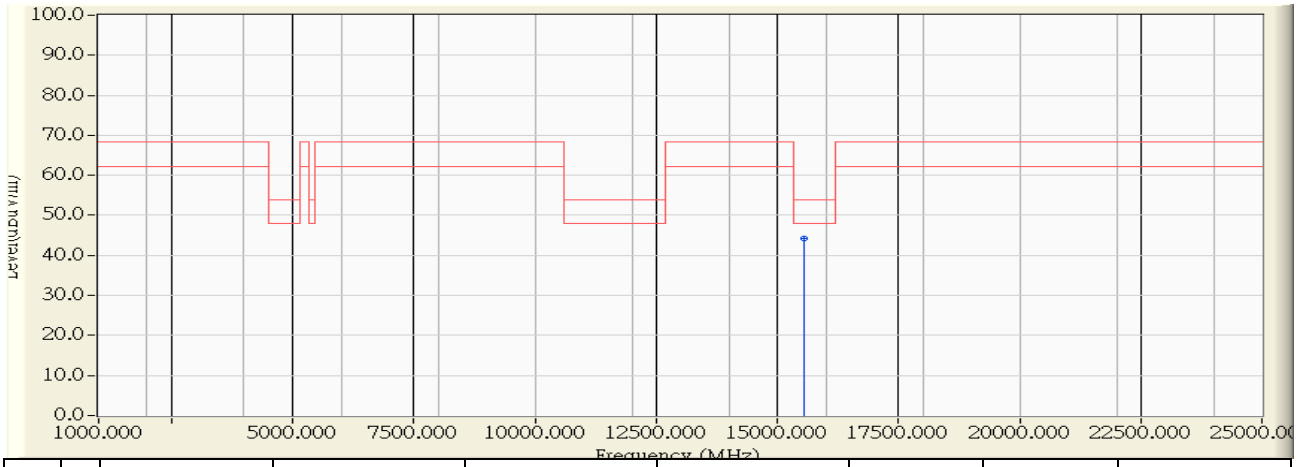


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10361.600	10.789	50.273	61.062	-27.238	88.300	PEAK
2	*	15534.600	11.408	47.530	58.937	-15.063	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:16**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

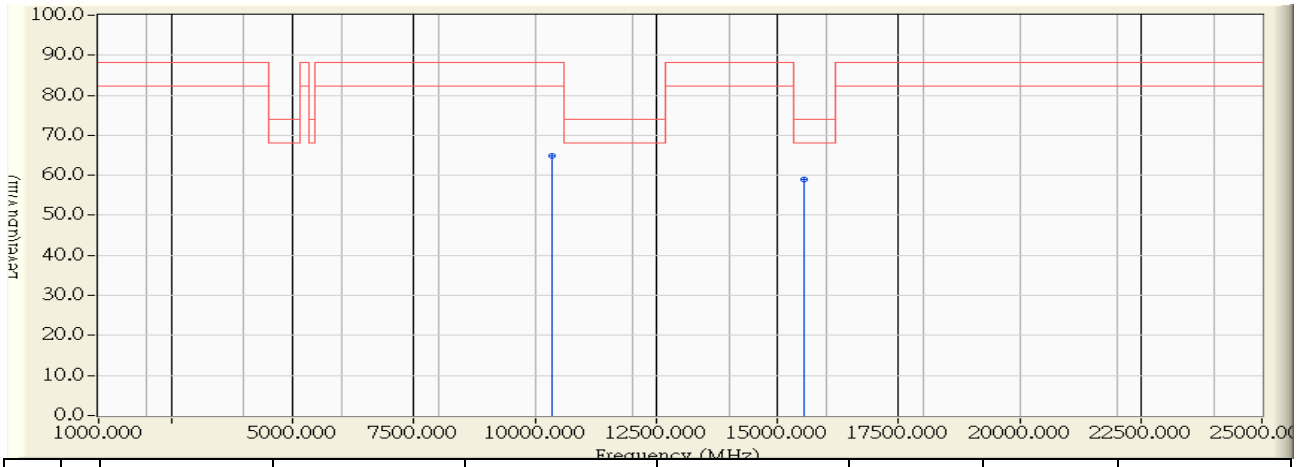


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15539.750	11.405	32.710	44.114	-9.886	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:19**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

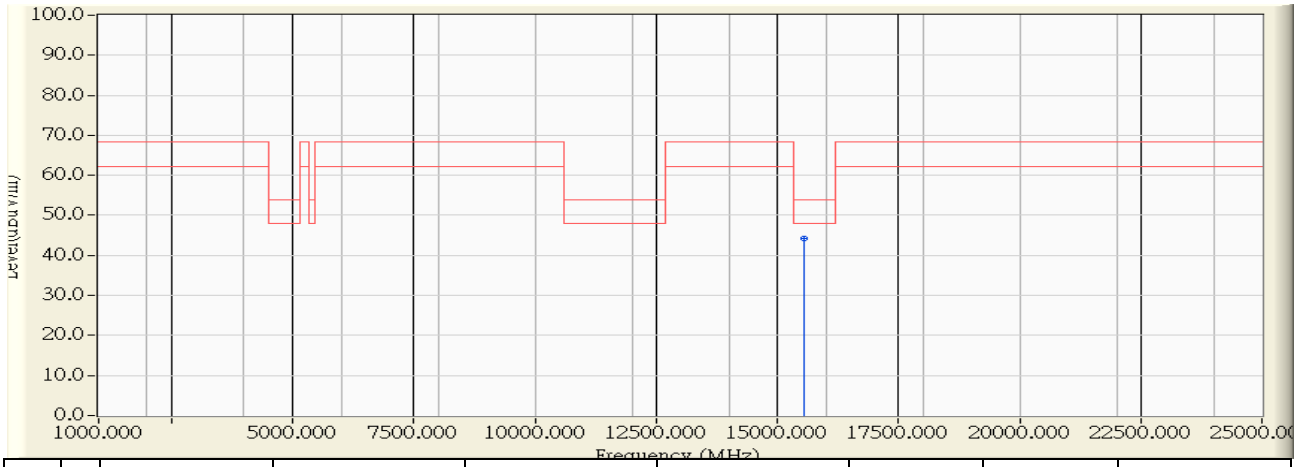


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10361.850	10.788	54.100	64.889	-23.411	88.300	PEAK
2	*	15543.350	11.402	47.570	58.972	-15.028	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:22**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

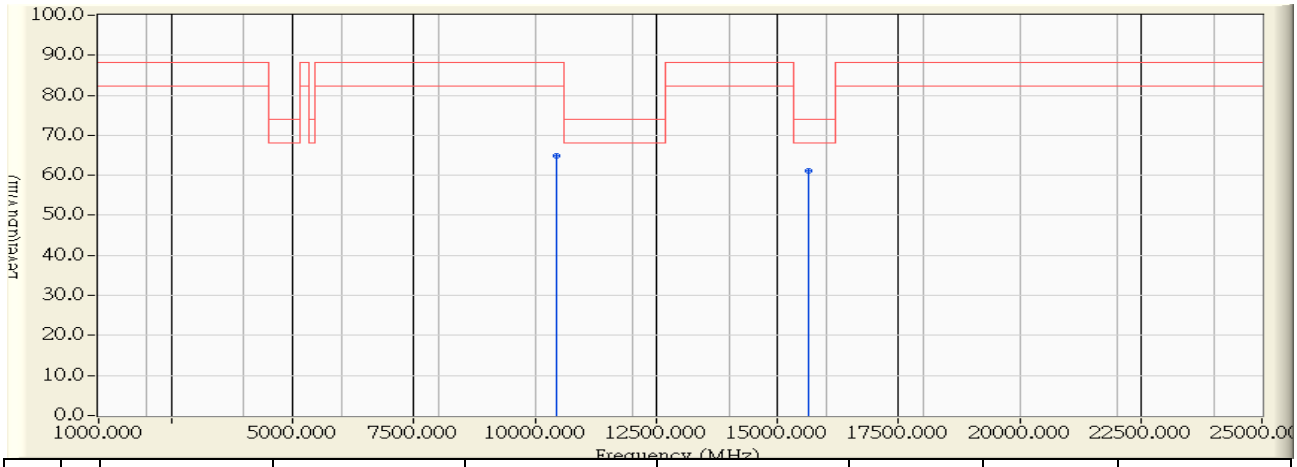


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15539.700	11.405	32.890	44.294	-9.706	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:27**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

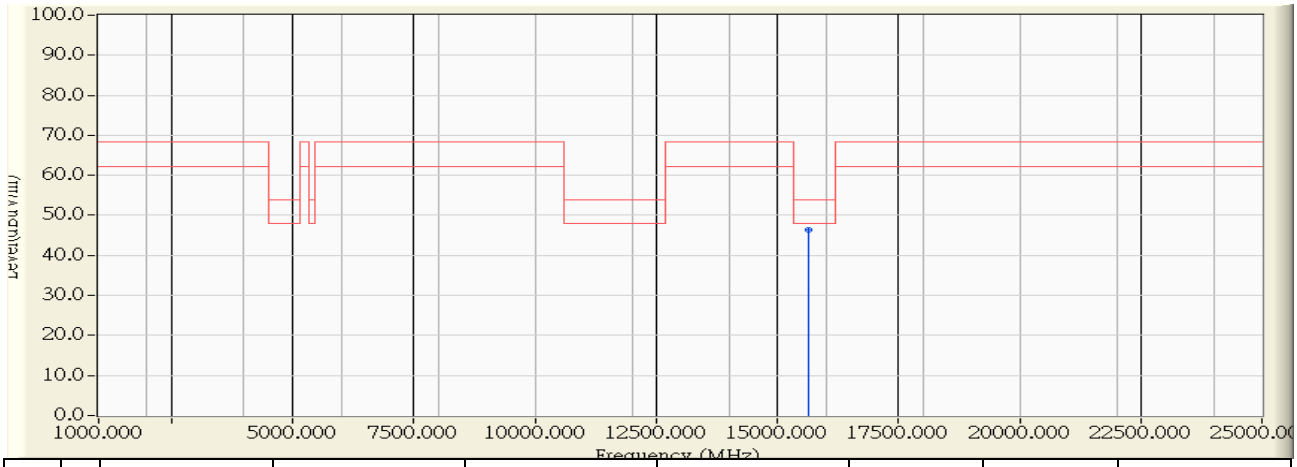


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10441.800	10.568	54.385	64.953	-23.347	88.300	PEAK
2	*	15654.700	11.326	49.700	61.025	-12.975	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:29**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

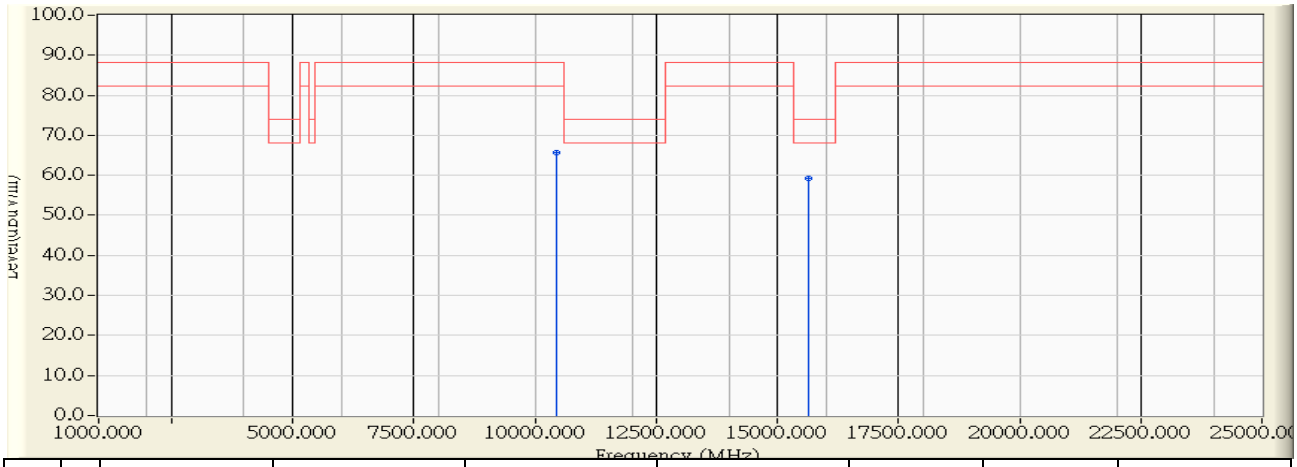


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15658.150	11.323	35.130	46.453	-7.547	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:33**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

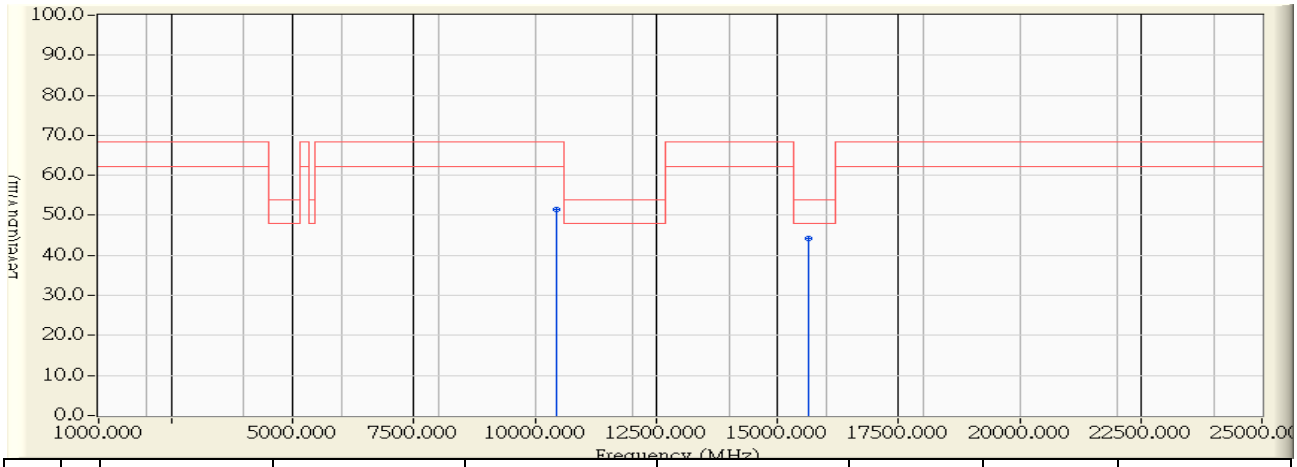


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10441.800	10.568	55.051	65.619	-22.681	88.300	PEAK
2	*	15657.700	11.323	47.828	59.151	-14.849	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:33**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5220MHz**

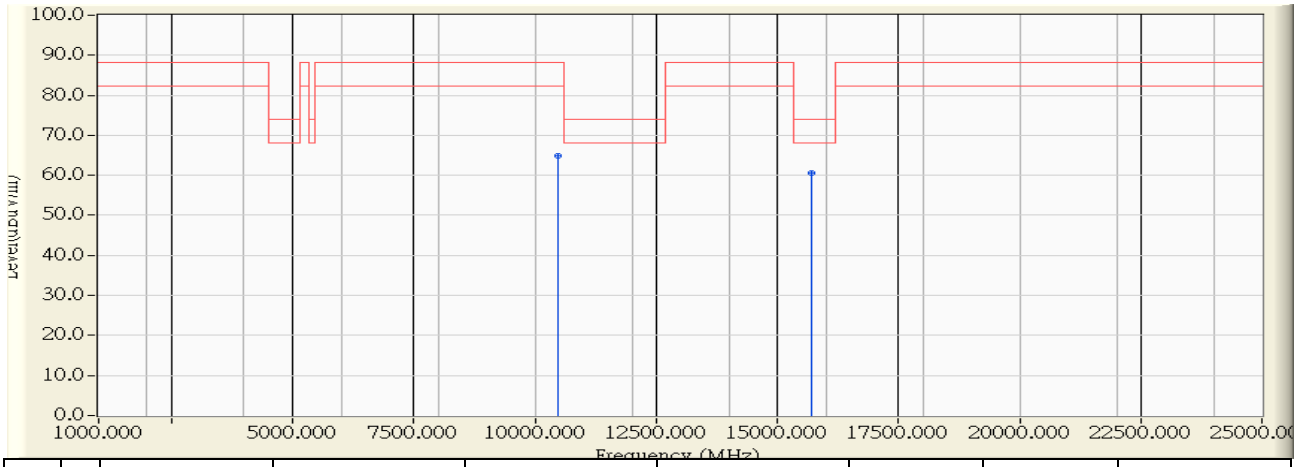


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10441.900	10.567	40.970	51.538	-16.762	68.300	AVERAGE
2	*	15659.650	11.322	33.016	44.338	-9.662	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:40**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5240MHz**

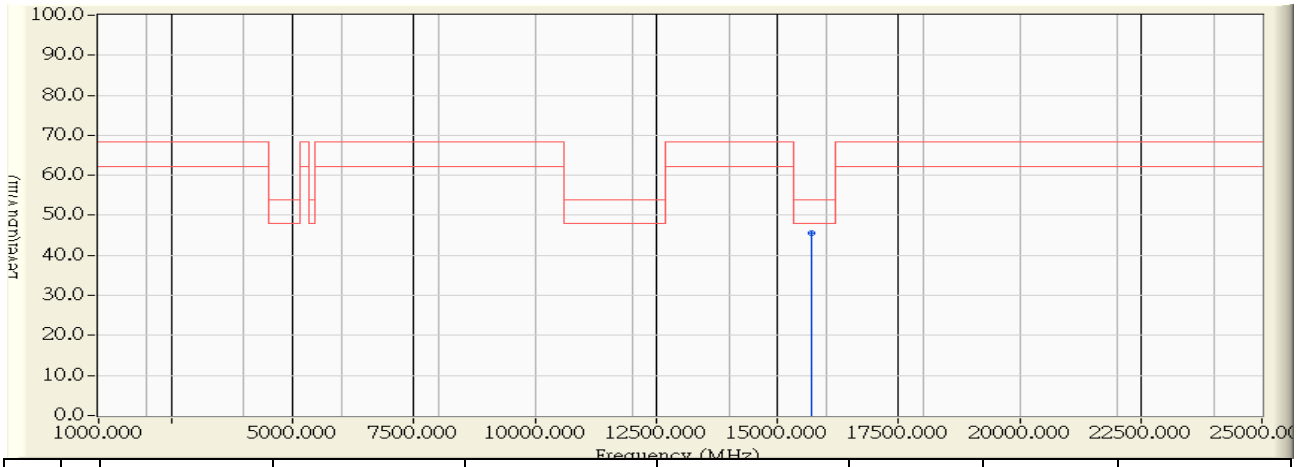


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10481.900	10.457	54.381	64.838	-23.462	88.300	PEAK
2	*	15714.900	11.284	49.257	60.541	-13.459	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:44**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5240MHz**

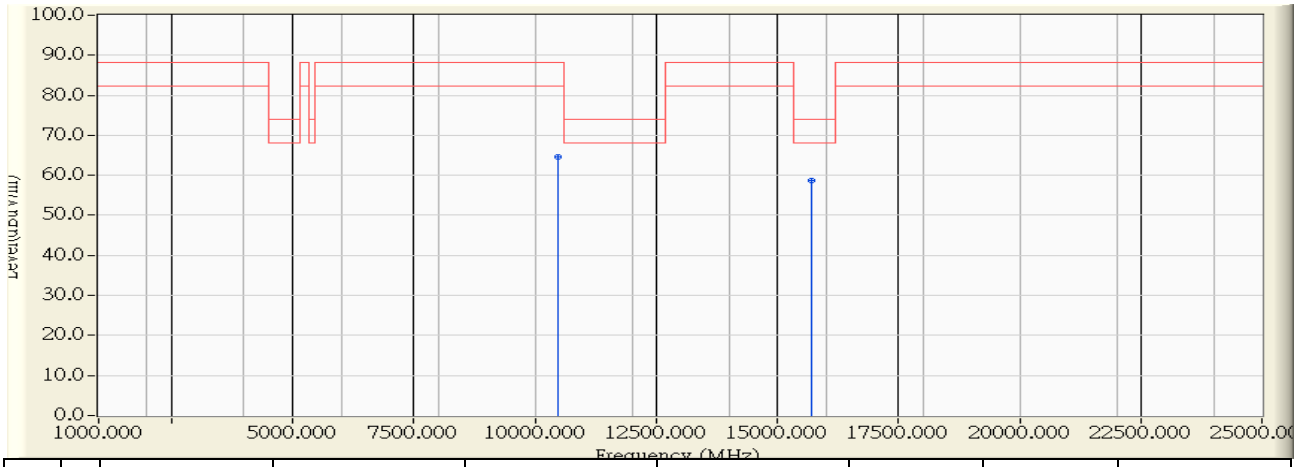


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15722.300	11.279	34.356	45.635	-8.365	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:46**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5240MHz**

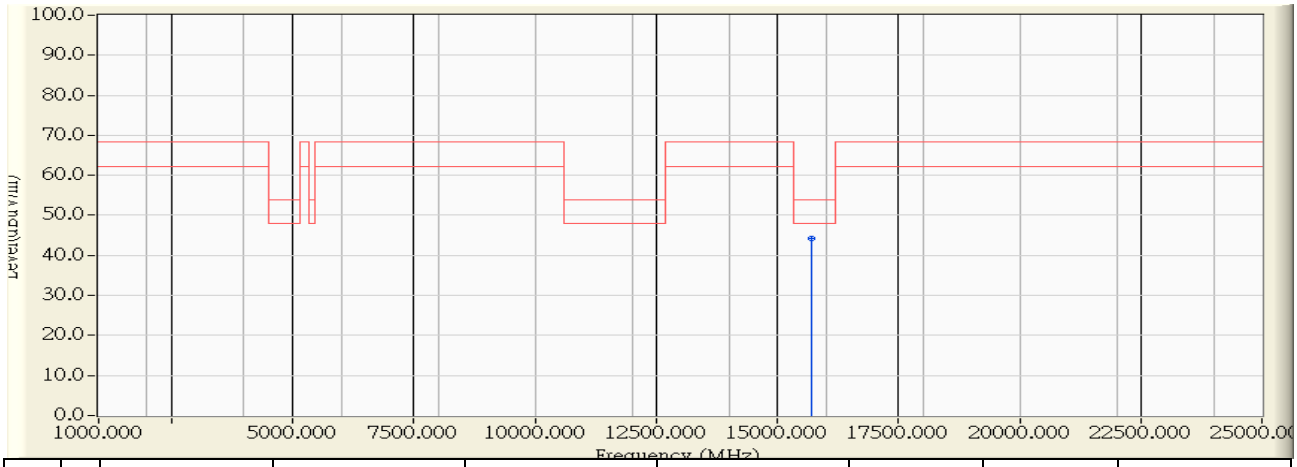


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10481.650	10.458	54.262	64.720	-23.580	88.300	PEAK
2	*	15721.650	11.279	47.434	58.713	-15.287	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:49**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5240MHz**

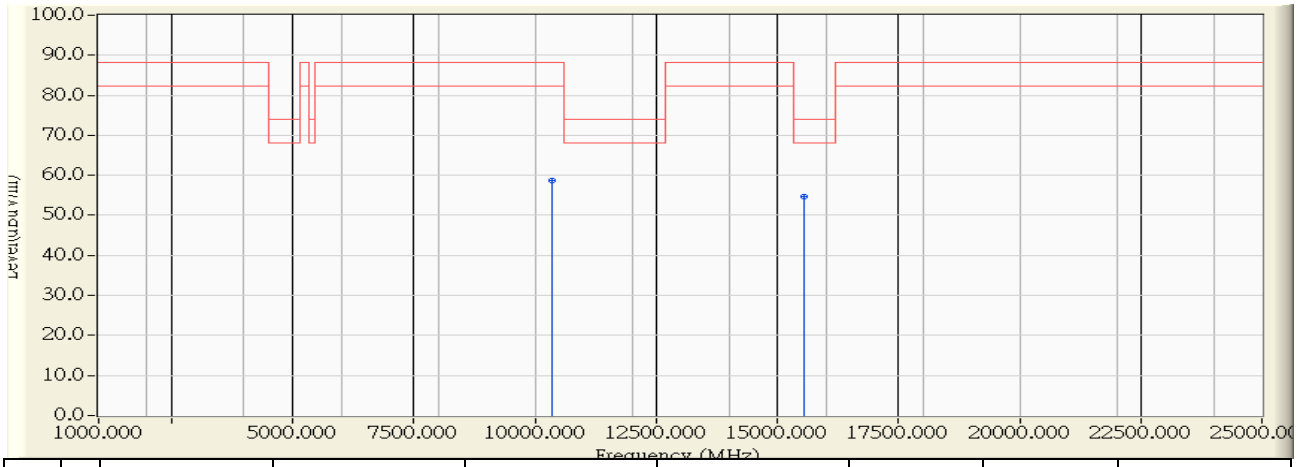


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15719.950	11.281	32.950	44.231	-9.769	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:53**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

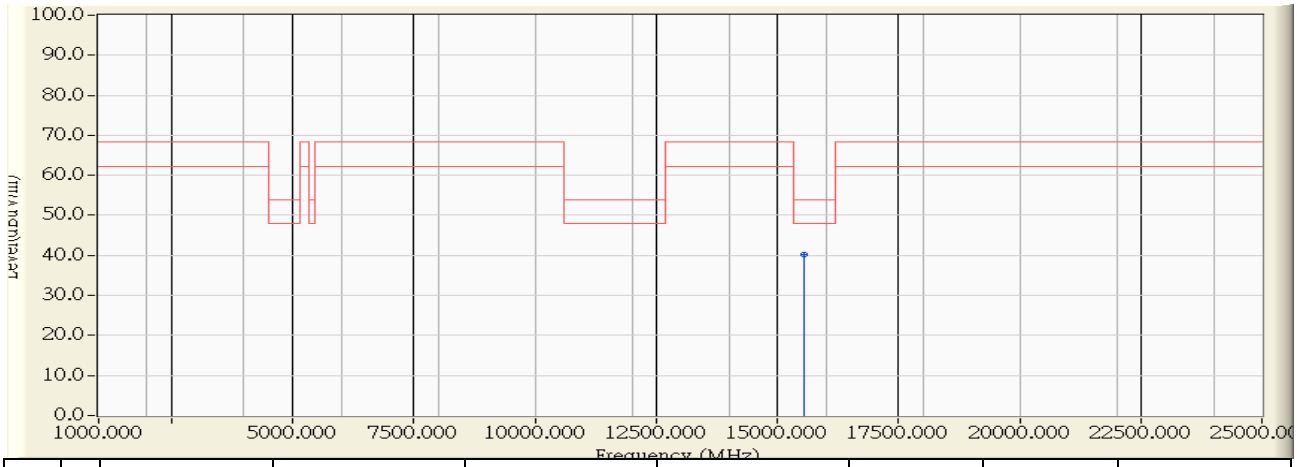


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10359.100	10.796	47.974	58.770	-29.530	88.300	PEAK
2	*	15539.950	11.404	43.370	54.774	-19.226	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 20:58**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

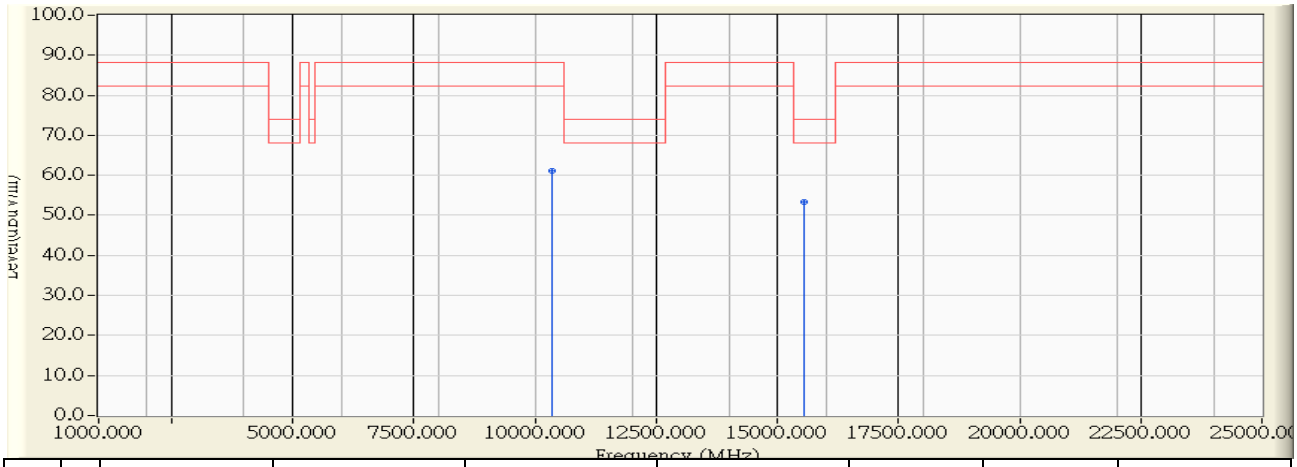


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15541.050	11.402	28.780	40.183	-13.817	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:01**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

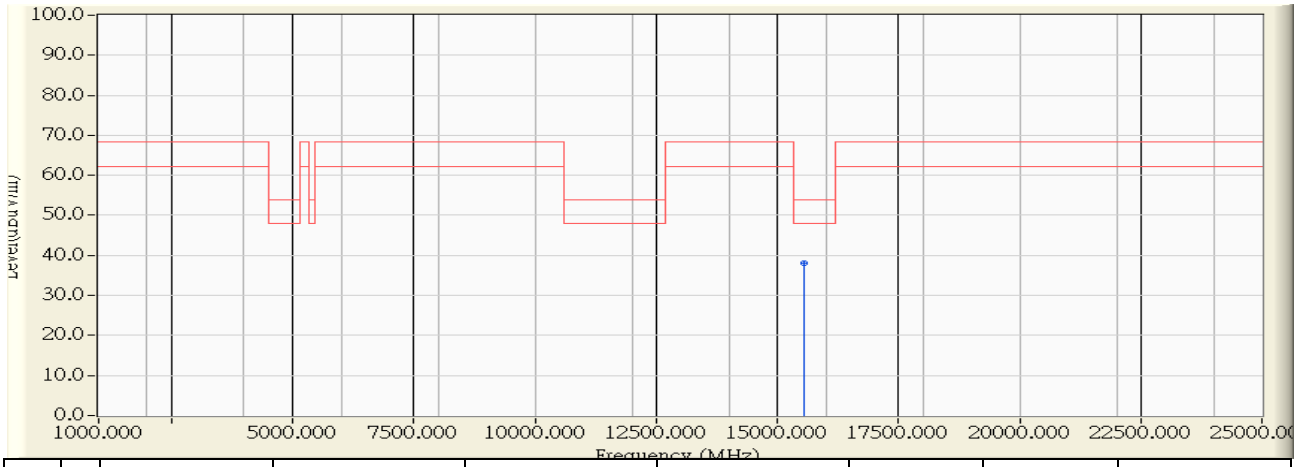


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10357.350	10.801	50.330	61.131	-27.169	88.300	PEAK
2	*	15540.900	11.403	41.822	53.225	-20.775	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:04**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

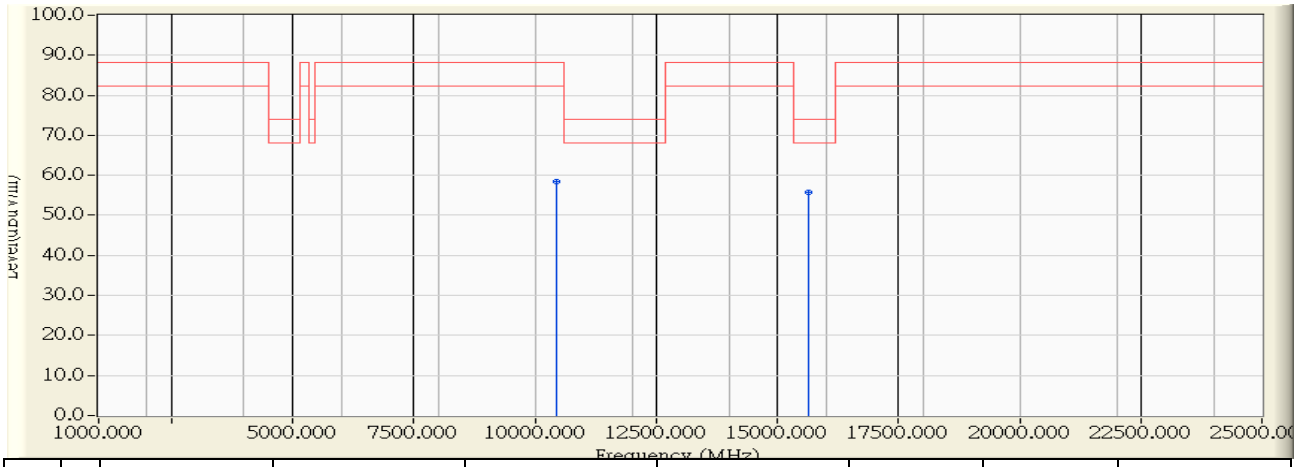


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15538.550	11.404	26.740	38.145	-15.855	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. “ # ”, means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:07**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5220MHz**

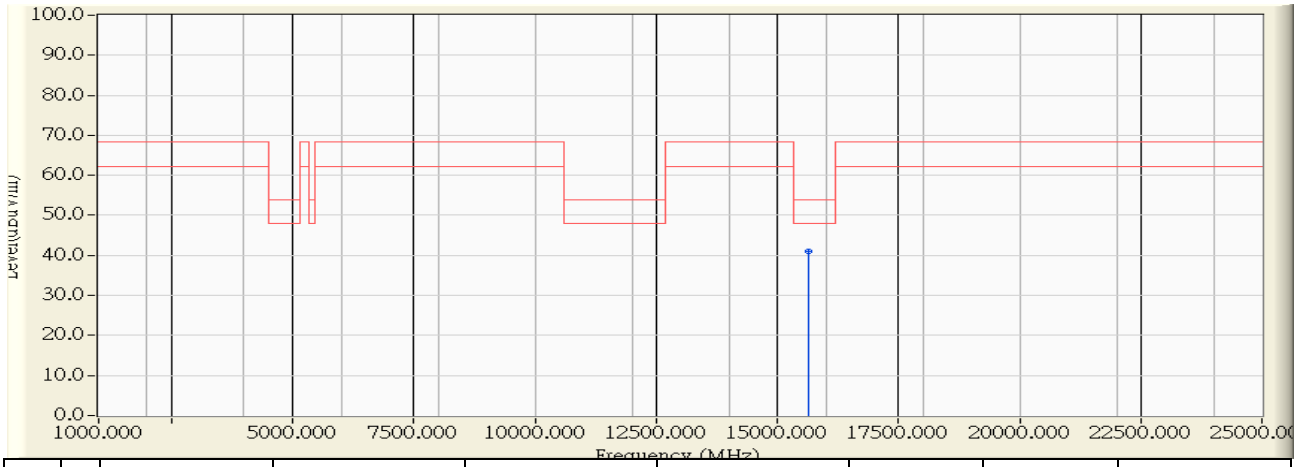


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10439.300	10.576	47.927	58.502	-29.798	88.300	PEAK
2	*	15653.100	11.327	44.383	55.709	-18.291	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:14**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5220MHz**

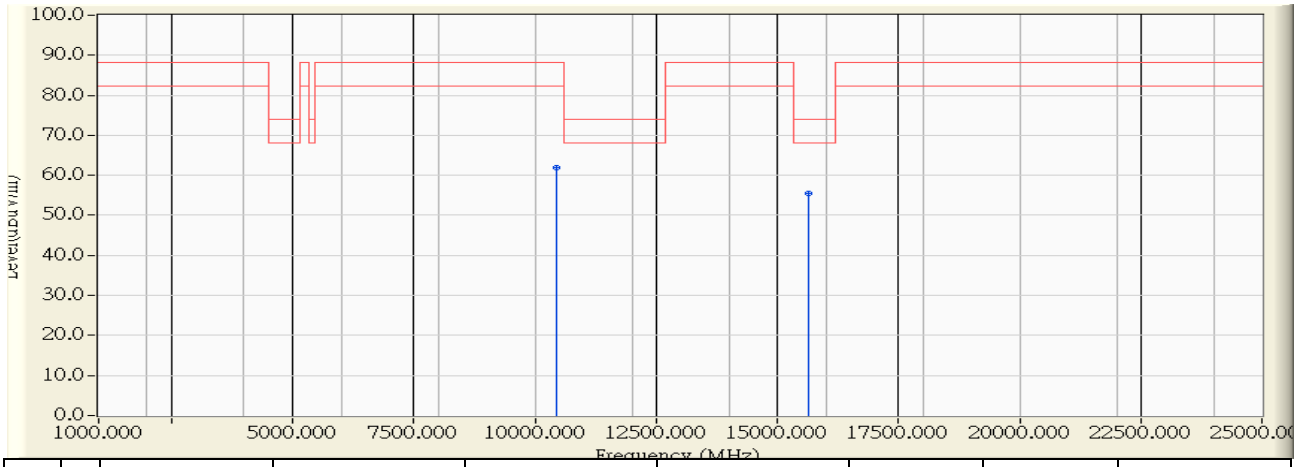


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15657.850	11.322	29.600	40.923	-13.077	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:16**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5220MHz**

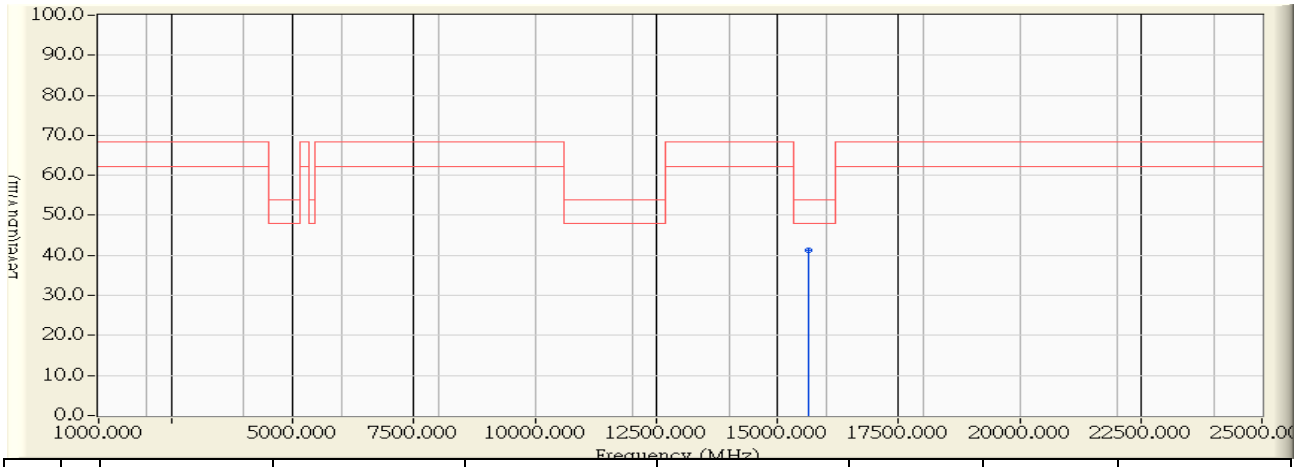


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10440.150	10.572	51.445	62.018	-26.282	88.300	PEAK
2	*	15652.650	11.327	44.278	55.605	-18.395	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:21**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5220MHz**

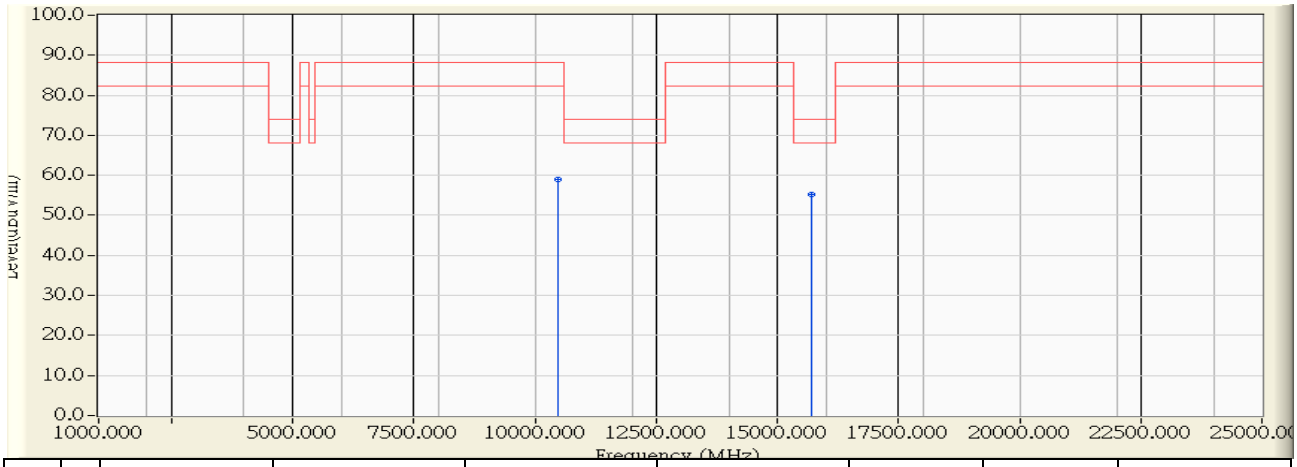


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15657.950	11.324	29.950	41.273	-12.727	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:25**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5240MHz**

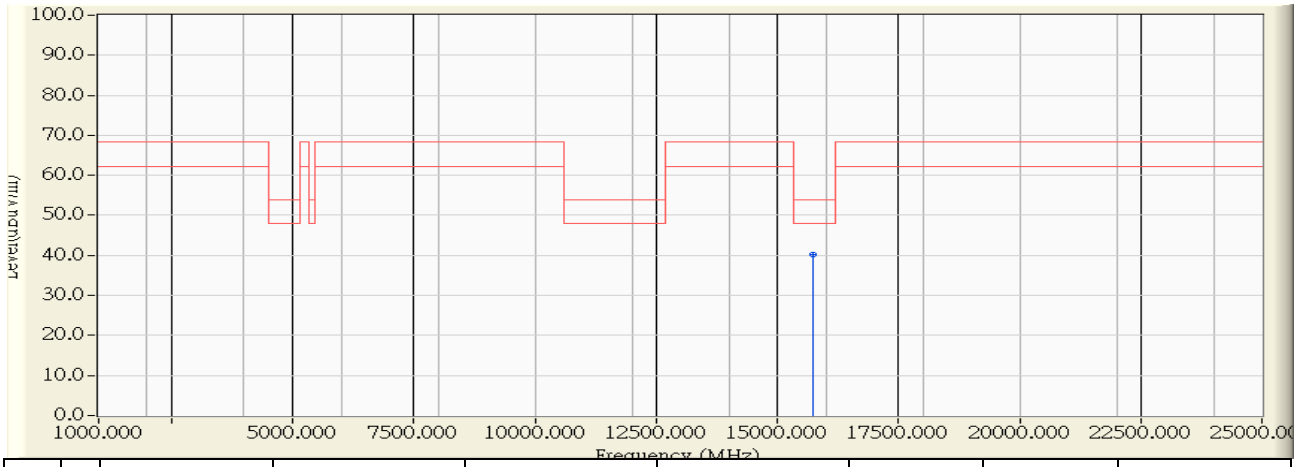


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10479.400	10.464	48.485	58.949	-29.351	88.300	PEAK
2	*	15712.750	11.285	43.910	55.196	-18.804	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:26**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5240MHz**

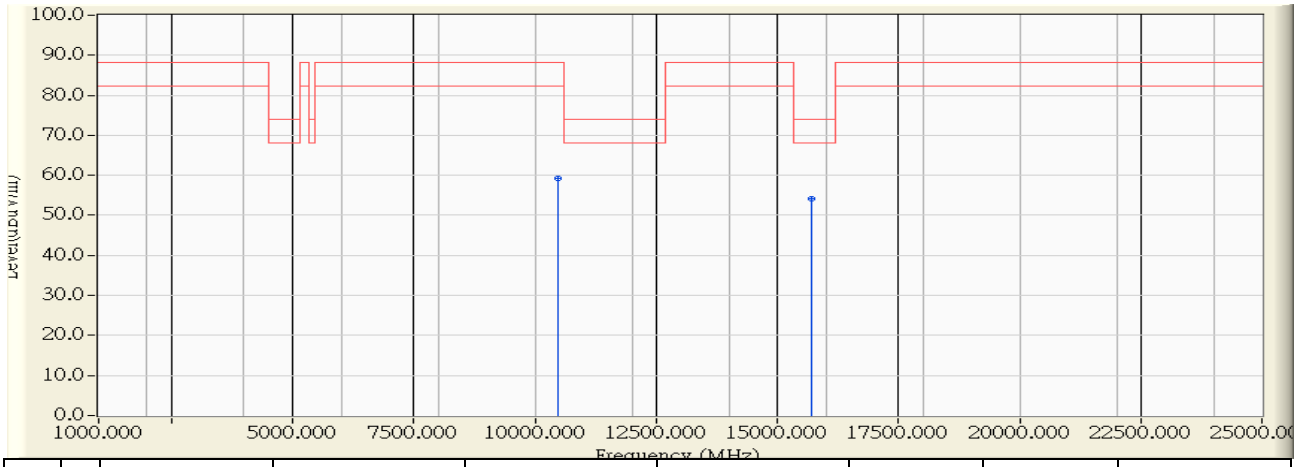


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15723.350	11.278	29.020	40.298	-13.702	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:28**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5240MHz**

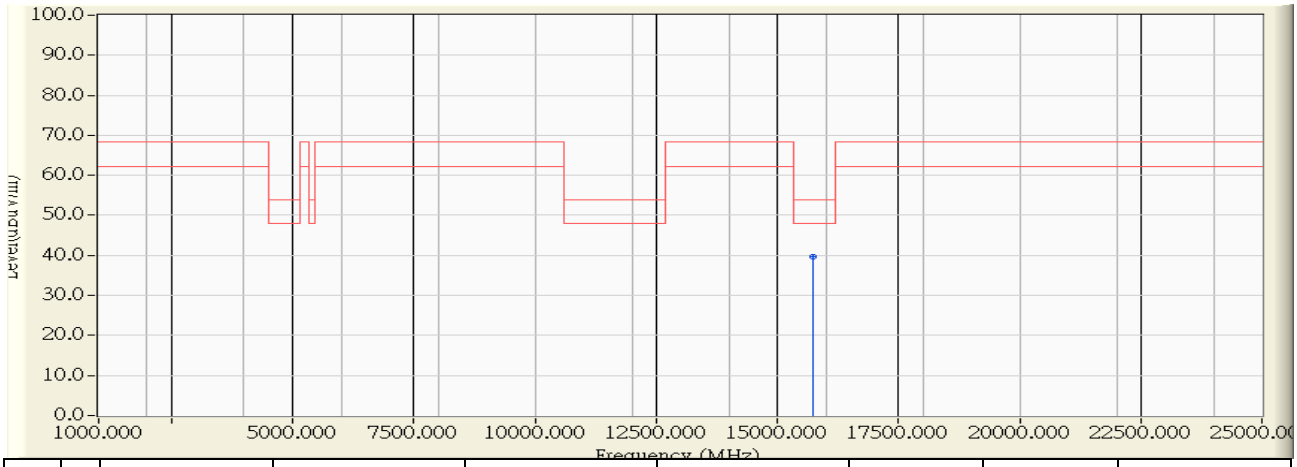


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10480.600	10.461	48.880	59.341	-28.959	88.300	PEAK
2	*	15712.700	11.286	42.770	54.056	-19.944	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:29**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5240MHz**

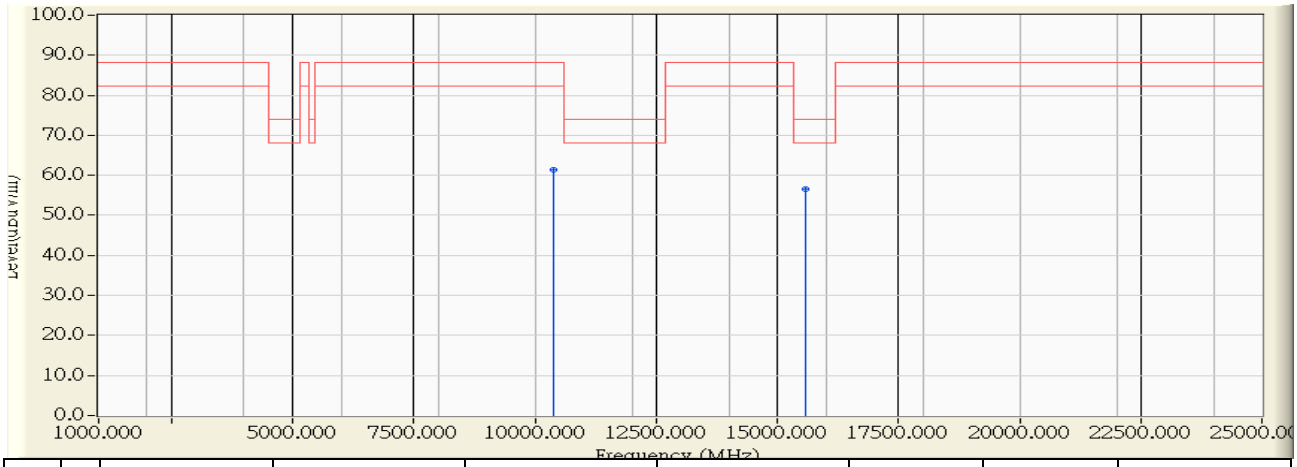


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15723.100	11.279	28.510	39.788	-14.212	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:38**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

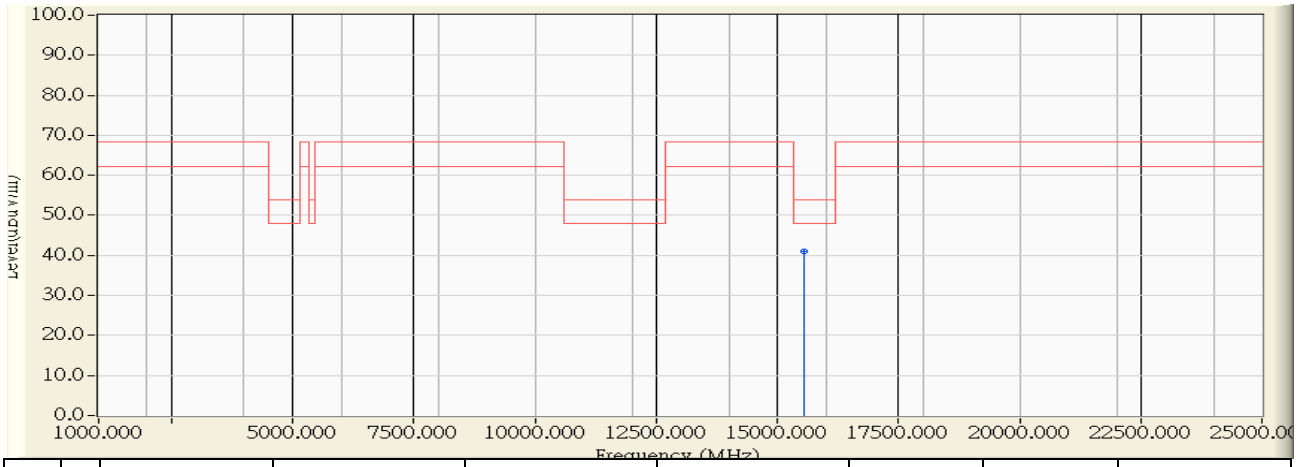


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10378.200	10.743	50.640	61.384	-26.916	88.300	PEAK
2	*	15576.600	11.379	45.150	56.529	-17.471	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:39**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

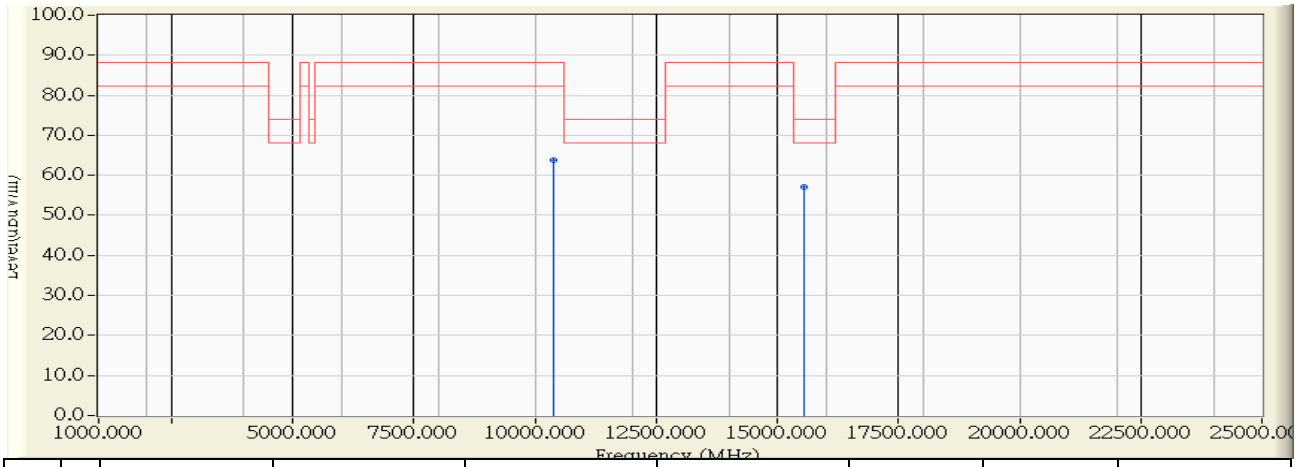


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15567.900	11.384	29.730	41.115	-12.885	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:41**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

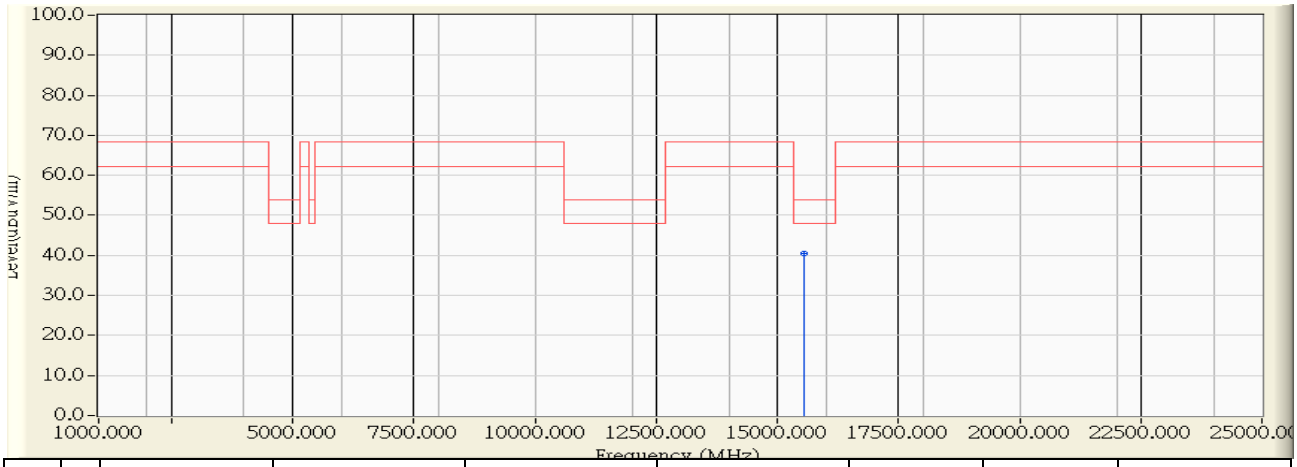


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10378.400	10.743	53.020	63.763	-24.537	88.300	PEAK
2	*	15554.300	11.394	45.607	57.001	-16.999	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:49**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

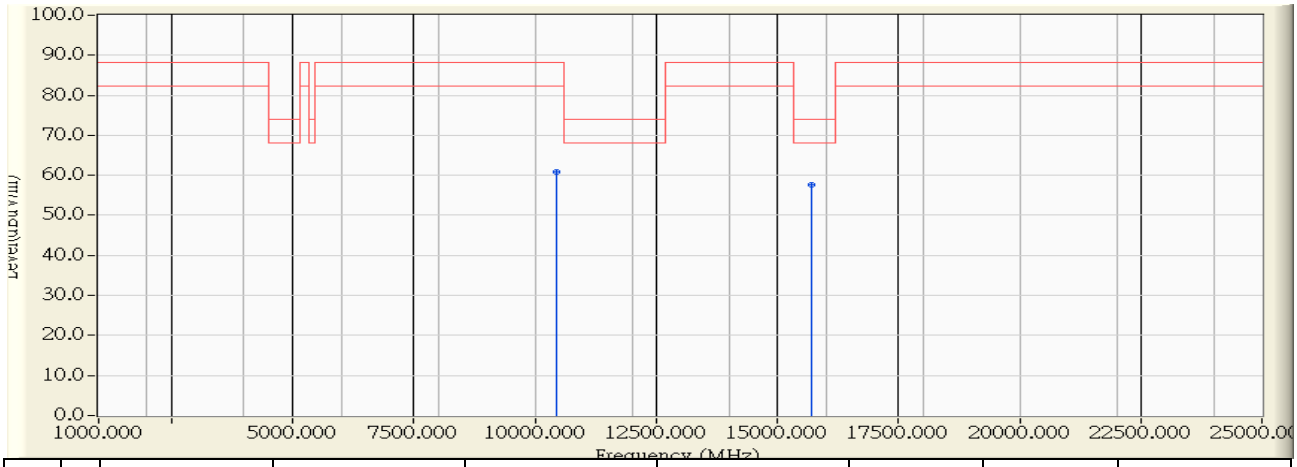


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15564.200	11.387	29.160	40.547	-13.453	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:52**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5230MHz**

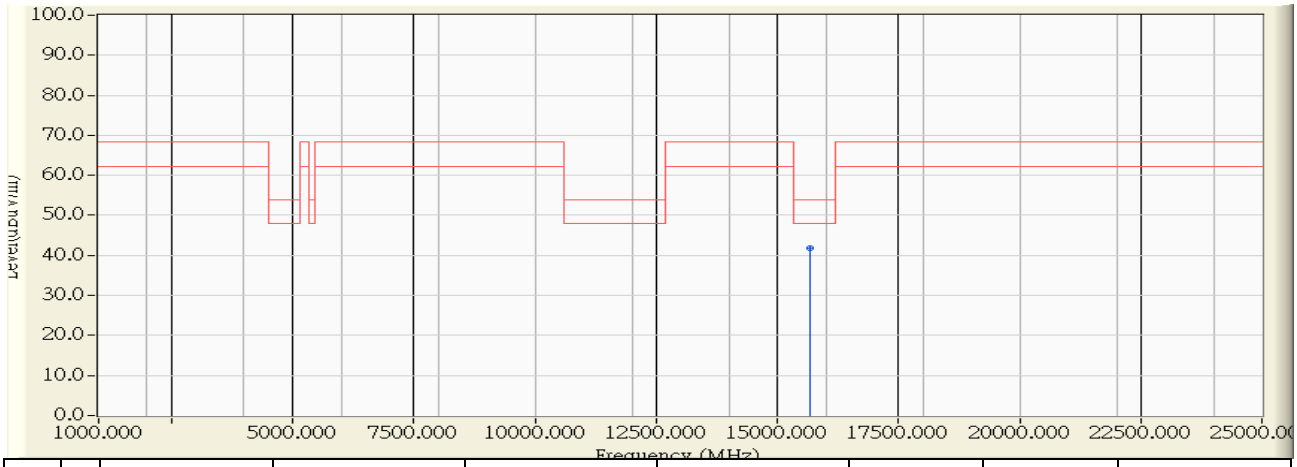


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10458.400	10.522	50.437	60.959	-27.341	88.300	PEAK
2	*	15696.600	11.297	46.445	57.742	-16.258	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:54**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5230MHz**

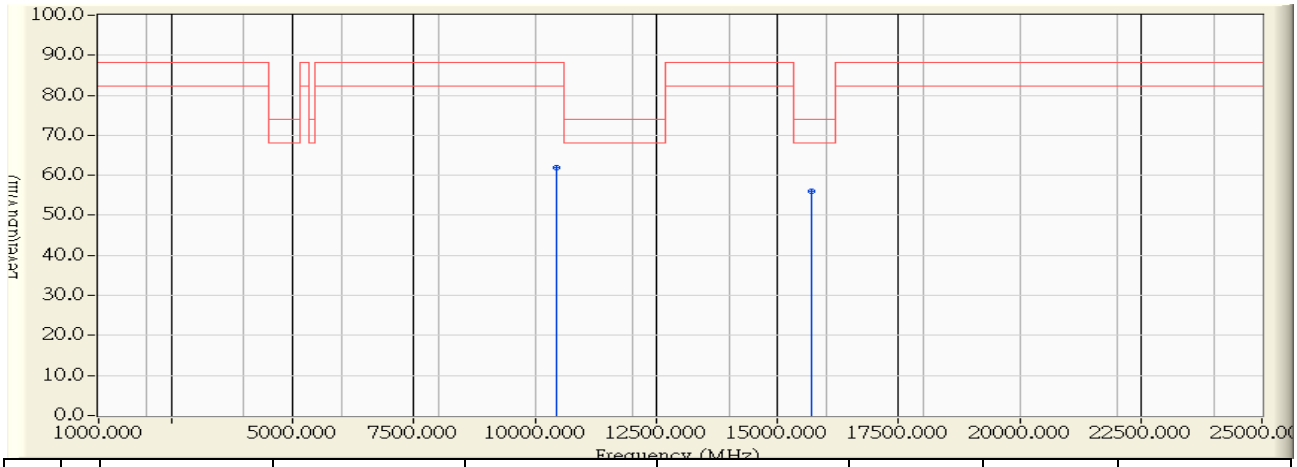


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15687.800	11.302	30.400	41.703	-12.297	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 21:56**
Limit : FCC_SpartE_15.407_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5230MHz**

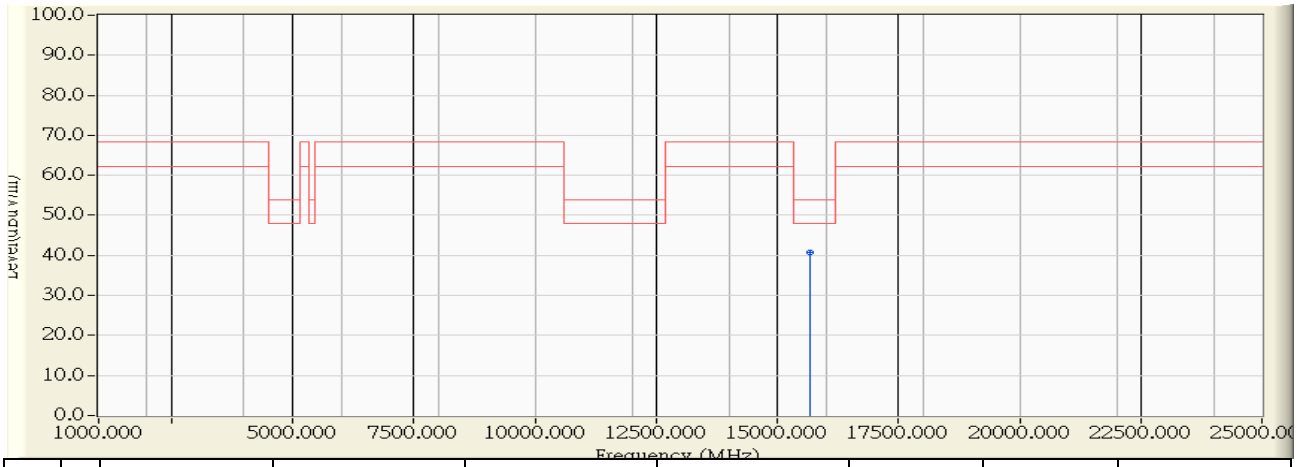


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		10458.500	10.521	51.392	61.914	-26.386	88.300	PEAK
2	*	15694.600	11.298	44.800	56.098	-17.902	74.000	PEAK

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

Site : CB1	**Time : 2013/06/04 - 22:01**
Limit : FCC_SpartE_15.407_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5230MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	15687.700	11.303	29.380	40.683	-13.317	54.000	AVERAGE

Note:

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 = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. " # ", means the frequency is out of the restricted band.
6. Measurement Level = Reading Level + Correct Factor.
7. The average measurement was not performed when the peak measured data under the limit of average detection.

8. Band Edge

8.1. Test Equipment

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

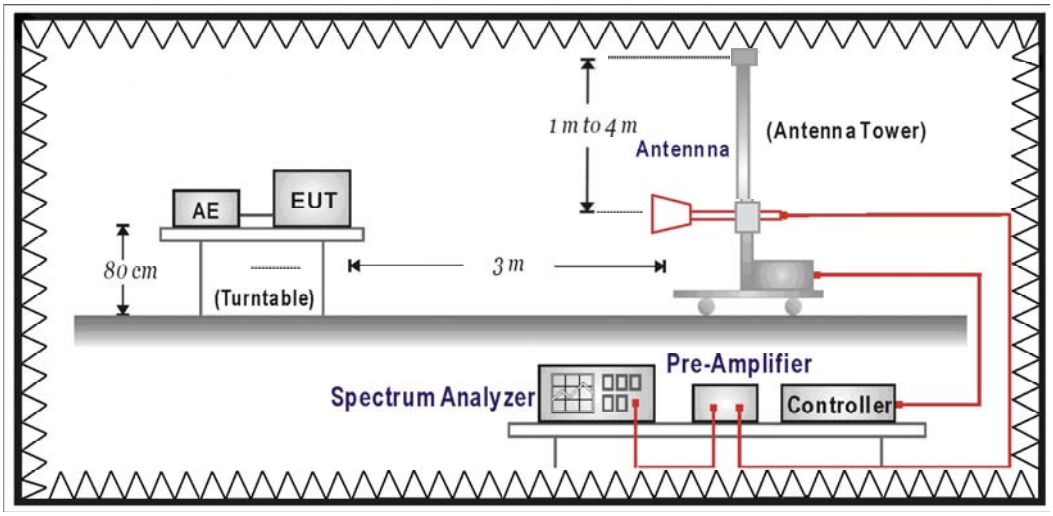
Radiated Emission Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup

RF Radiated Measurement:



8.3. Limits

➢ **General Radiated Emission Limits**

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section. Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 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

Remark:

4. RF Voltage (dBuV) = 20 log RF Voltage (uV)
5. In the Above Table, the tighter limit applies at the band edges.
6. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

➢ **Unwanted Emission out of the restricted bands Limits**

FCC Part 15 Subpart C Paragraph 15.407(b) Limits		
Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (dBuV/m@3m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27 (Note1)	68.3
	-17 (Note2)	78.3

Remark:

4. For frequencies more than 10 MHz above or below the band edges.
5. For frequency range from the band edges to 10 MHz above or below the band edges.
6. uV/m = $\frac{1000000\sqrt{30 \times EIRP}}{3}$, RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

8.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 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 can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4: 2009on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30)is 120 KHz, above 1GHz are 1 MHz.

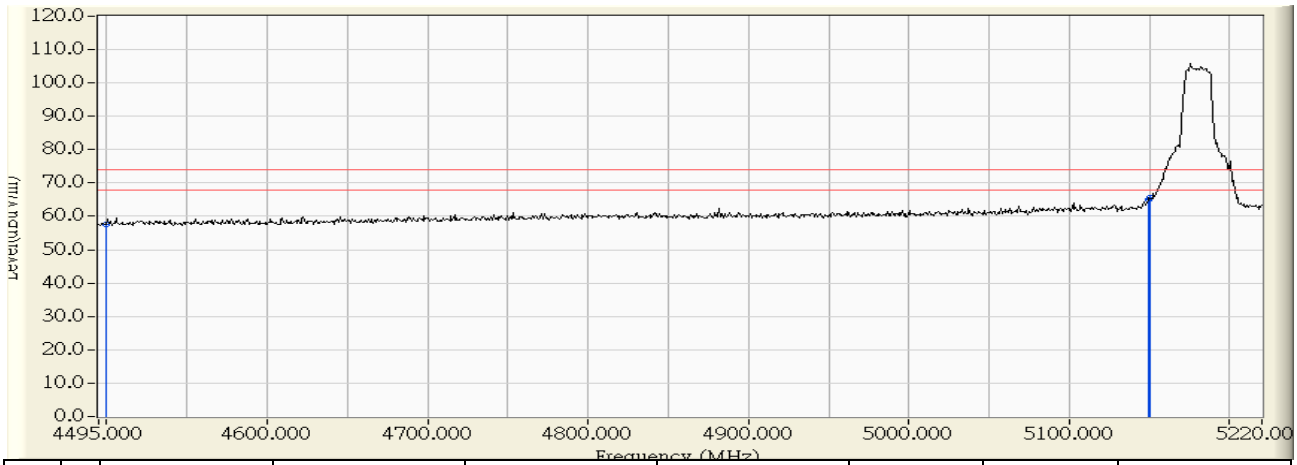
8.5. Uncertainty

The measurement uncertainty is defined as ± 3.65dB

8.6. Test Result

Radiated is defined as

Site : CB1	**Time : 2013/06/04 - 22:32**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

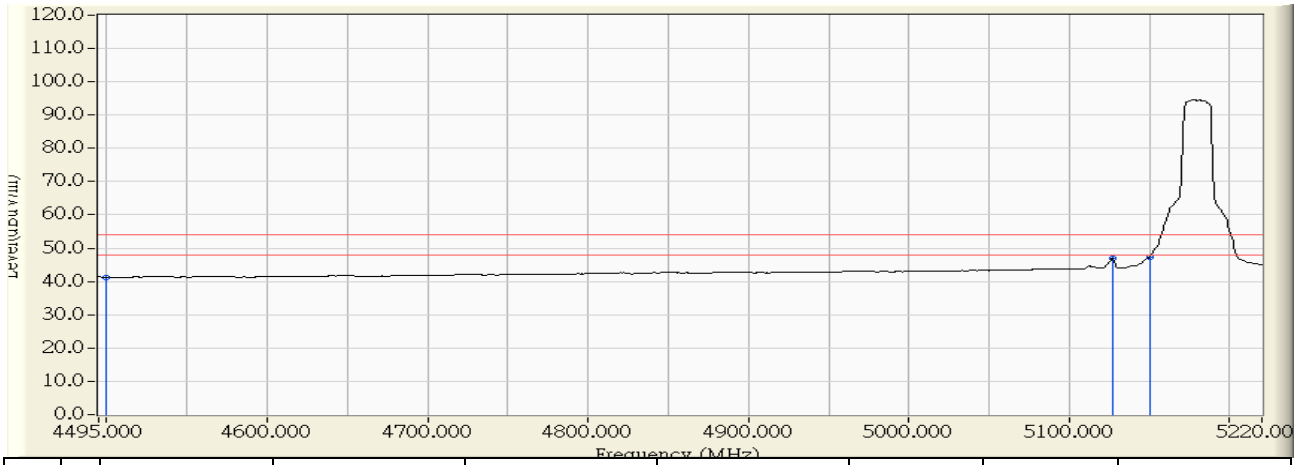


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	59.227	57.575	-16.425	74.000	PEAK
2		5148.950	0.822	64.032	64.855	-9.145	74.000	PEAK
3	*	5150.000	0.831	64.712	65.543	-8.457	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 22:37**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

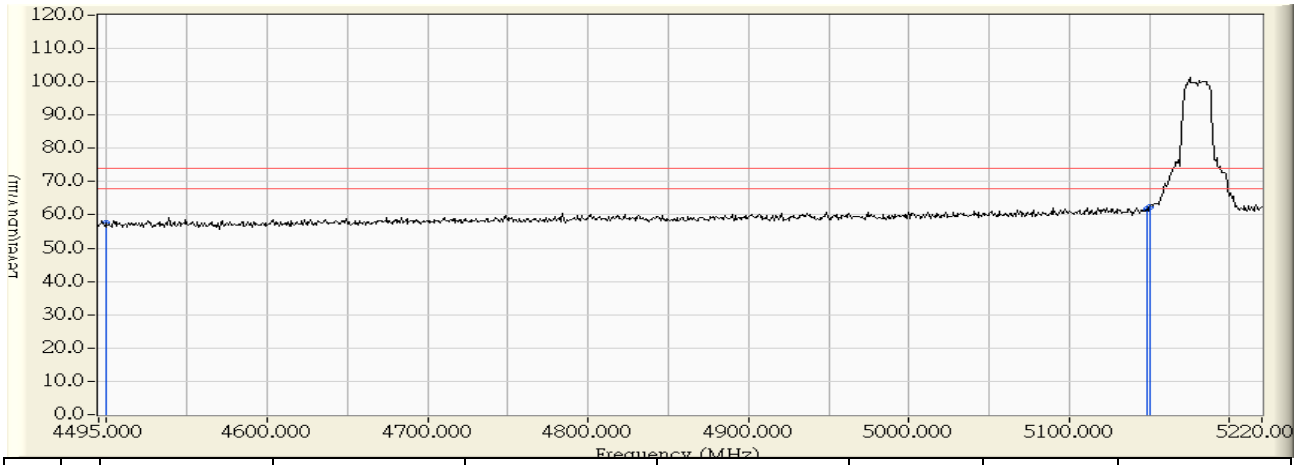


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	42.959	41.307	-12.693	54.000	AVERAGE
2		5127.200	0.653	46.298	46.951	-7.049	54.000	AVERAGE
3	*	5150.000	0.831	46.589	47.420	-6.580	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 22:42**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

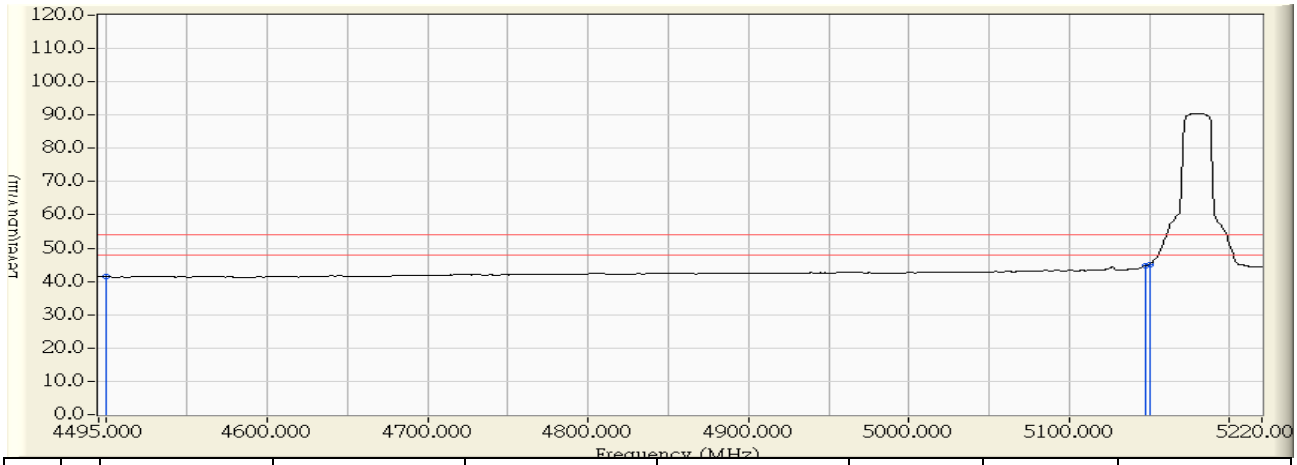


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	59.159	57.507	-16.493	74.000	PEAK
2		5148.225	0.817	61.070	61.887	-12.113	74.000	PEAK
3	*	5150.000	0.831	61.557	62.388	-11.612	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 22:47**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11a_5180MHz**

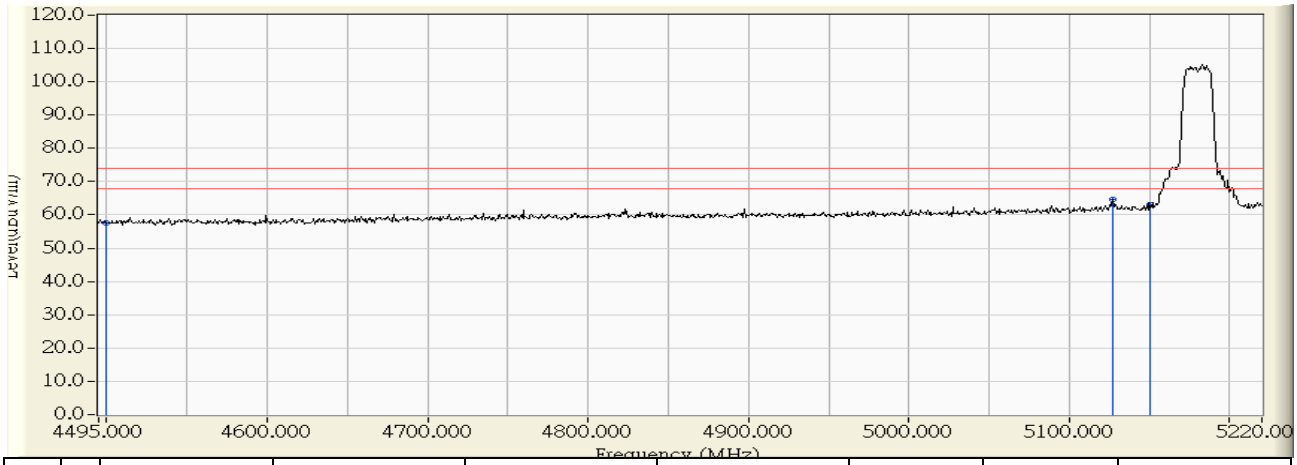


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	43.051	41.399	-12.601	54.000	AVERAGE
2		5147.500	0.812	43.886	44.697	-9.303	54.000	AVERAGE
3	*	5150.000	0.831	44.302	45.133	-8.867	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 22:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

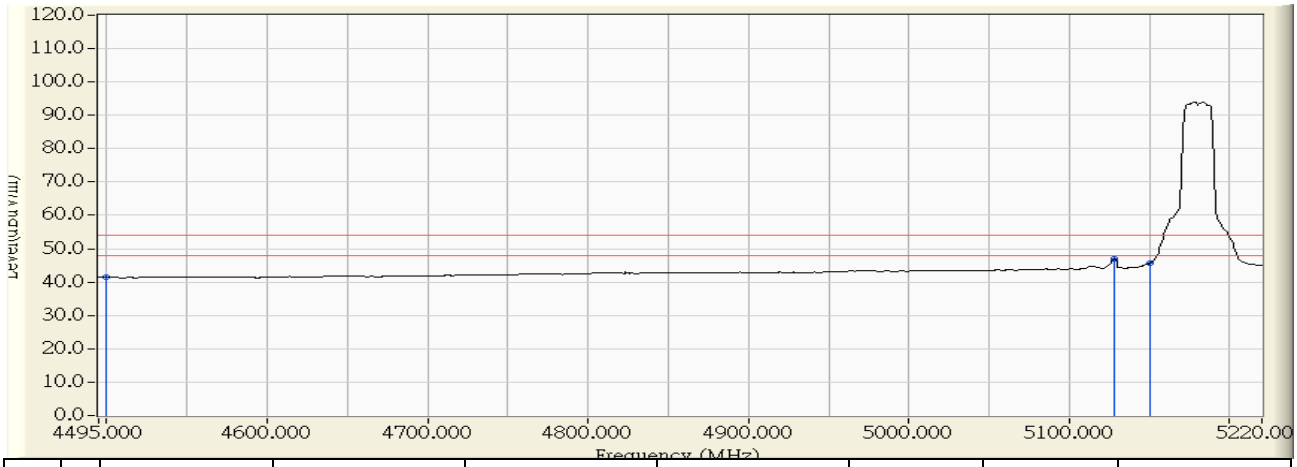


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	59.285	57.633	-16.367	74.000	PEAK
2	*	5127.200	0.653	63.880	64.533	-9.467	74.000	PEAK
3		5150.000	0.831	62.121	62.952	-11.048	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 22:58**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

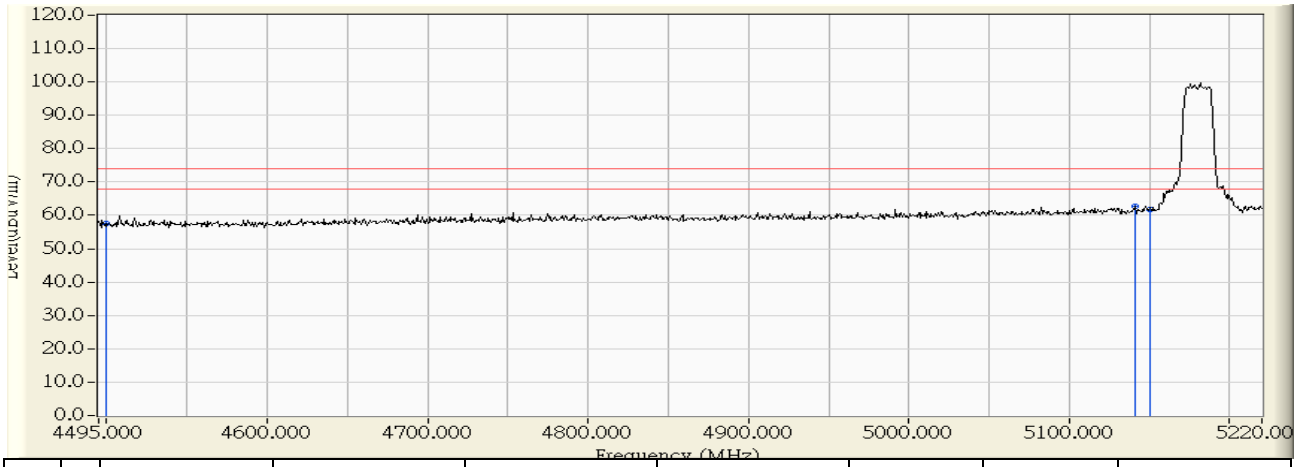


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	43.154	41.502	-12.498	54.000	AVERAGE
2	*	5127.925	0.658	46.313	46.971	-7.029	54.000	AVERAGE
3		5150.000	0.831	44.794	45.625	-8.375	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:04**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

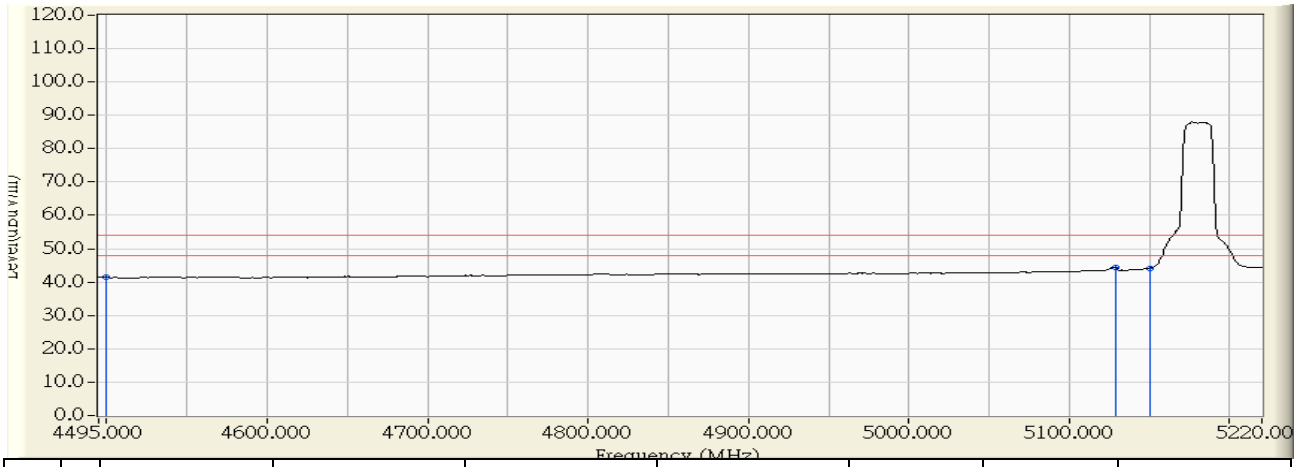


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	59.101	57.449	-16.551	74.000	PEAK
2	*	5140.975	0.760	62.096	62.856	-11.144	74.000	PEAK
3		5150.000	0.831	60.941	61.772	-12.228	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:09**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(20M)_5180MHz**

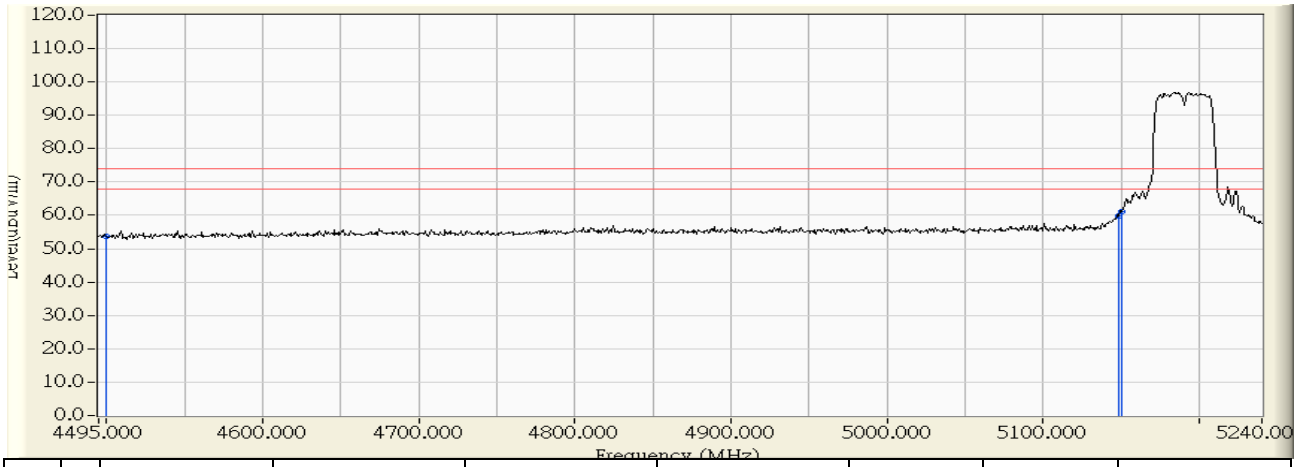


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	43.062	41.410	-12.590	54.000	AVERAGE
2	*	5128.650	0.664	43.822	44.486	-9.514	54.000	AVERAGE
3		5150.000	0.831	43.394	44.225	-9.775	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:14**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

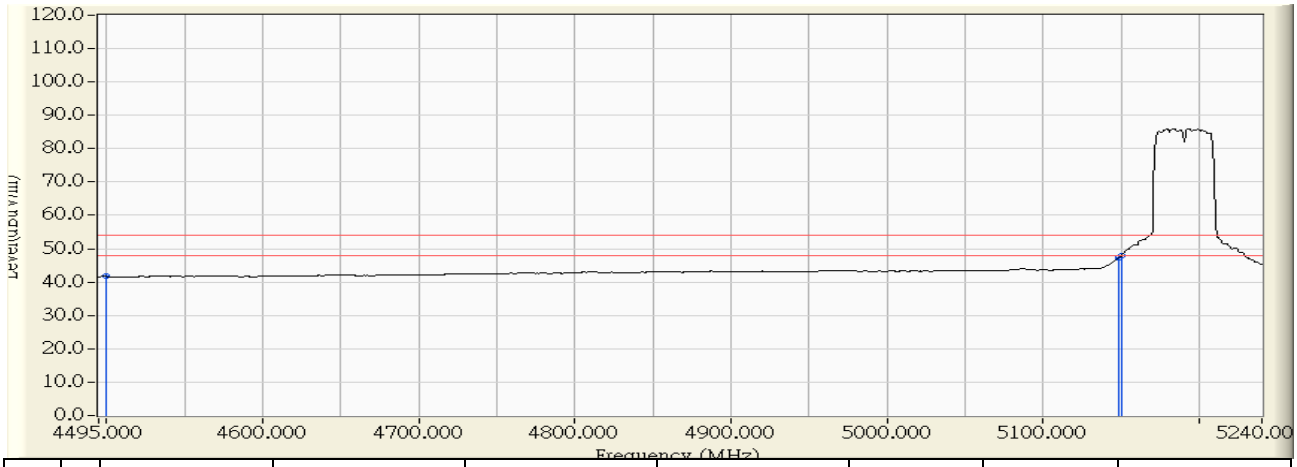


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	55.266	53.614	-20.386	74.000	PEAK
2		5148.365	0.818	59.121	59.939	-14.061	74.000	PEAK
3	*	5150.000	0.831	60.138	60.969	-13.031	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:21**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

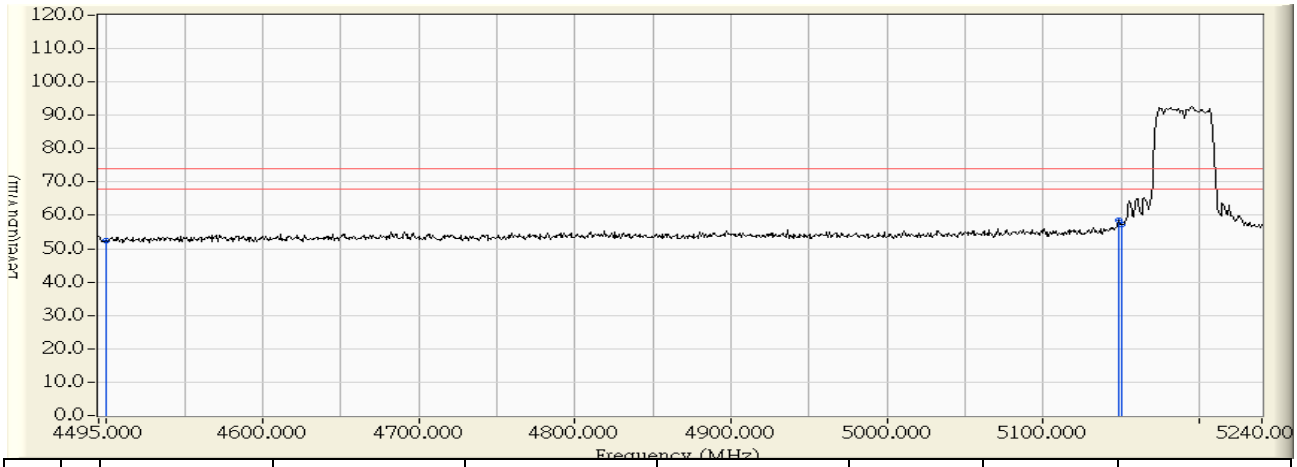


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	43.349	41.697	-12.303	54.000	AVERAGE
2		5148.365	0.818	46.507	47.325	-6.675	54.000	AVERAGE
3	*	5150.000	0.831	46.954	47.785	-6.215	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:26**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**

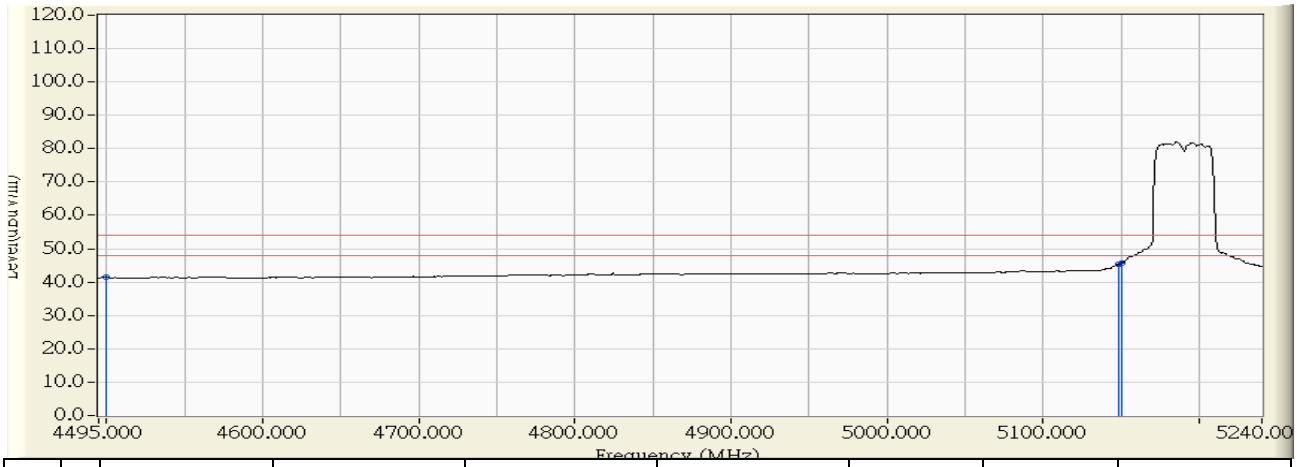


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	54.154	52.502	-21.498	74.000	PEAK
2	*	5148.365	0.818	57.696	58.514	-15.486	74.000	PEAK
3		5150.000	0.831	56.512	57.343	-16.657	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

Site : CB1	**Time : 2013/06/04 - 23:31**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	**Power : AC 120V / 60Hz**
EUT : RP-N53 Dual-Band Wireless N-600 Range Extender	**Note : Mode 1: Transmit_802.11n(40M)_5190MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4500.000	-1.652	43.019	41.367	-12.633	54.000	AVERAGE
2		5148.365	0.818	44.506	45.324	-8.676	54.000	AVERAGE
3	*	5150.000	0.831	44.907	45.738	-8.262	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, 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.

9. Frequency Stability

9.1. Test Equipment

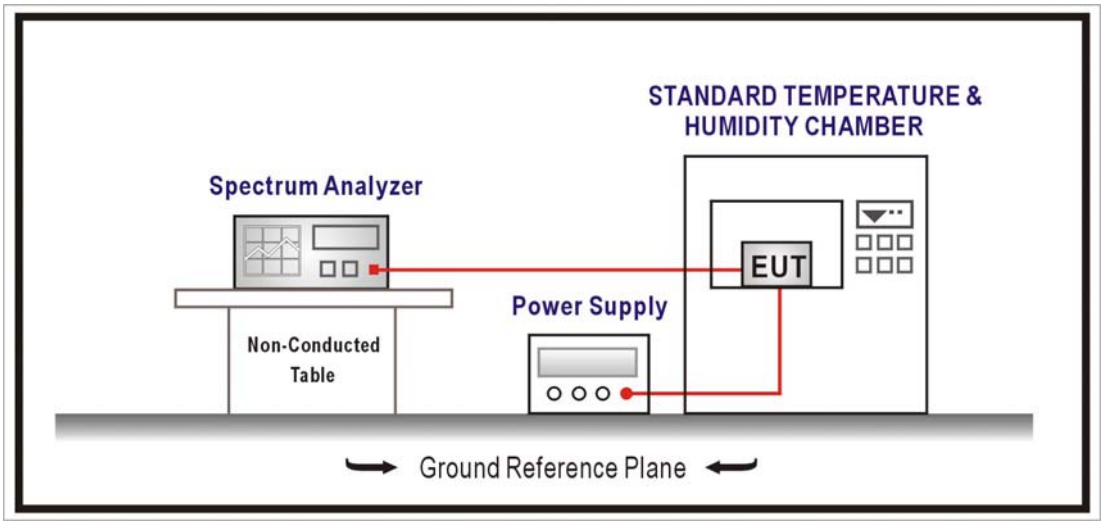
The following test equipments are used during the radiated emission tests:

Frequency Stability / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31
Standard Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2014/01/27

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

Manufactures of all devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

9.4. Test Procedure

The EUT was setup to ANSI C63.4, 2009; tested to U-NII test procedure of March 2012 KDB 789033 for compliance to FCC 47CFR Subpart E requirements.

9.5. Uncertainty

The measurement uncertainty is defined as ± 150 Hz

9.6. Test Result

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5180MHz		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.8515	164.3773	PASS
-10		5180.1500	28.9649	PASS
0		5180.4131	79.7514	PASS
10		5180.1681	32.4537	PASS
20		5180.6015	116.1249	PASS
30		5180.1891	36.5154	PASS
40		5180.2311	44.6110	PASS
50		5180.7774	150.0747	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5180.6192	119.5428	PASS
	120	5180.3966	76.5635	PASS
	138	5180.8888	171.5747	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5240MHz		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.3950	75.3738	PASS
-10		5240.8346	159.2807	PASS
0		5240.8022	153.0982	PASS
10		5240.3343	63.7884	PASS
20		5240.5727	109.2871	PASS
30		5240.2257	43.0679	PASS
40		5240.7499	143.1098	PASS
50		5240.2144	40.9226	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5240.2867	54.7084	PASS
	120	5240.2099	40.0540	PASS
	138	5240.4509	86.0459	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5180MHz(ANT 0)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.3521	67.9772	PASS
-10		5180.7978	154.0223	PASS
0		5180.3344	64.5519	PASS
10		5180.0243	4.6908	PASS
20		5180.3233	62.4165	PASS
30		5180.2888	55.7570	PASS
40		5180.8042	155.2569	PASS
50		5180.1404	27.1094	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5180.5773	111.4534	PASS
	120	5180.4247	81.9869	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5240MHz(ANT 0)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.5221	99.6282	PASS
-10		5240.2562	48.8855	PASS
0		5240.4377	83.5347	PASS
10		5240.6571	125.3956	PASS
20		5240.3013	57.5020	PASS
30		5240.1594	30.4269	PASS
40		5240.0200	3.8163	PASS
50		5240.3829	73.0793	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5240.8308	158.5583	PASS
	120	5240.5206	99.3427	PASS
	138	5240.5668	108.1621	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5180MHz(ANT 1)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5180.2417	46.6605	PASS
-10		5180.5022	96.9464	PASS
0		5180.1206	23.2787	PASS
10		5180.0429	8.2909	PASS
20		5180.7699	148.6388	PASS
30		5180.0614	11.8442	PASS
40		5180.6396	123.4797	PASS
50		5180.8480	163.7061	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5180.6395	123.4490	PASS
	120	5180.8637	166.7446	PASS
	138	5180.4501	86.8955	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5240MHz(ANT 1)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5240.5140	98.0970	PASS
-10		5240.3234	61.7139	PASS
0		5240.0117	2.2352	PASS
10		5240.0166	3.1768	PASS
20		5240.7740	147.7132	PASS
30		5240.4131	78.8443	PASS
40		5240.4794	91.4881	PASS
50		5240.4556	86.9417	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5240.7366	140.5798	PASS
	120	5240.3631	69.2910	PASS
	138	5240.2460	46.9501	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5190MHz(ANT 0)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5190.1219	23.4969	PASS
-10		5190.0690	13.2926	PASS
0		5190.0262	5.0531	PASS
10		5190.3528	67.9786	PASS
20		5190.1267	24.4164	PASS
30		5190.0178	3.4211	PASS
40		5190.8672	167.0871	PASS
50		5190.0850	16.3693	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5190.7482	144.1689	PASS
	120	5190.4479	86.3051	PASS
	138	5190.0457	8.8149	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5230MHz(ANT 0)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5230.1911	36.5460	PASS
-10		5230.4173	79.7974	PASS
0		5230.2909	55.6192	PASS
10		5230.4045	77.3376	PASS
20		5230.8475	162.0380	PASS
30		5230.7816	149.4433	PASS
40		5230.0729	13.9406	PASS
50		5230.7349	140.5070	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5230.2402	45.9253	PASS
	120	5230.2473	47.2814	PASS
	138	5230.5449	104.1871	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5190MHz(ANT 1)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5190.4815	92.7709	PASS
-10		5190.2034	39.1812	PASS
0		5190.1966	37.8782	PASS
10		5190.3810	73.4193	PASS
20		5190.2441	47.0412	PASS
30		5190.3291	63.4139	PASS
40		5190.5571	107.3372	PASS
50		5190.0159	3.0671	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5190.0668	12.8777	PASS
	120	5190.1500	28.9038	PASS
	138	5190.1464	28.2172	PASS

Product	RP-N53 Dual-Band Wireless N-600 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5230MHz(ANT 1)		
Date of Test	2013/05/30	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5230.3054	58.3868	PASS
-10		5230.6895	131.8347	PASS
0		5230.1236	23.6409	PASS
10		5230.3752	71.7332	PASS
20		5230.0802	15.3324	PASS
30		5230.2199	42.0382	PASS
40		5230.3329	63.6481	PASS
50		5230.6018	115.0615	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5230.5232	100.0357	PASS
	120	5230.0827	15.8128	PASS
	138	5230.5984	114.4080	PASS