

Product : Notebook
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5230MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10460.000	24.700	38.490	63.190	-10.810	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average Detector:					
10460.000	24.700	25.730	50.430	-3.570	54.000
15690.000	*	*	*	*	54.000
20920.000	*	*	*	*	54.000
26150.000	*	*	*	*	54.000
31380.000	*	*	*	*	54.000
36610.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is the too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

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Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Vertical					
Peak Detector:					
10460.000	19.441	38.880	58.321	-15.679	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
31380.000	*	*	*	*	74.000
36610.000	*	*	*	*	74.000
Average Detector:					
10460.000	19.441	26.880	46.321	-7.679	54.000
15690.000	*	*	*	*	54.000
20920.000	*	*	*	*	54.000
26150.000	*	*	*	*	54.000
31380.000	*	*	*	*	54.000
36610.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5270MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10540.000	26.085	36.700	62.785	-11.215	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
31620.000	*	*	*	*	74.000
36890.000	*	*	*	*	74.000
Average Detector:					
10540.000	26.085	23.570	49.655	-4.345	54.000
15810.000	*	*	*	*	54.000
21080.000	*	*	*	*	54.000
26350.000	*	*	*	*	54.000
31620.000	*	*	*	*	54.000
36890.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5270MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Vertical					
Peak Detector:					
10540.000	19.006	37.290	56.296	-17.704	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
31620.000	*	*	*	*	74.000
36890.000	*	*	*	*	74.000
Average Detector:					
10540.000	19.006	24.620	43.626	-10.374	54.000
15810.000	*	*	*	*	54.000
21080.000	*	*	*	*	54.000
26350.000	*	*	*	*	54.000
31620.000	*	*	*	*	54.000
36890.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5310MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10620.000	27.305	36.190	63.495	-10.505	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
31860.000	*	*	*	*	74.000
37170.000	*	*	*	*	74.000
Average Detector:					
10620.000	27.305	23.140	50.445	-3.555	54.000
15930.000	*	*	*	*	54.000
21240.000	*	*	*	*	54.000
26550.000	*	*	*	*	54.000
31860.000	*	*	*	*	54.000
37170.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “*”, means this data is too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5310MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Vertical					
Peak Detector:					
10620.000	18.891	36.570	55.461	-18.539	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
31860.000	*	*	*	*	74.000
37170.000	*	*	*	*	74.000
Average Detector:					
10620.000	18.891	23.650	42.541	-11.459	54.000
15930.000	*	*	*	*	54.000
21240.000	*	*	*	*	54.000
26550.000	*	*	*	*	54.000
31860.000	*	*	*	*	54.000
37170.000	*	*	*	*	54.000

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 = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the too weak instrument of signal is unable to test.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
375.320	-1.779	32.890	31.111	-14.889	46.000
522.760	1.270	28.776	30.046	-15.954	46.000
598.420	3.466	27.127	30.593	-15.407	46.000
749.740	2.808	27.892	30.700	-15.300	46.000
796.300	4.783	31.269	36.052	-9.948	46.000
899.120	4.978	24.974	29.952	-16.048	46.000
Vertical					
Peak Detector					
299.660	-7.331	37.420	30.089	-15.911	46.000
375.320	-2.599	30.096	27.497	-18.503	46.000
524.700	-0.898	30.993	30.095	-15.905	46.000
749.740	1.998	30.176	32.174	-13.826	46.000
800.180	2.433	33.080	35.513	-10.487	46.000
899.120	2.608	27.519	30.127	-15.873	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	34.913	30.852	-15.148	46.000
375.320	-1.779	32.725	30.946	-15.054	46.000
524.700	1.282	28.565	29.847	-16.153	46.000
672.140	1.840	27.897	29.737	-16.263	46.000
796.300	4.783	31.577	36.360	-9.640	46.000
897.180	4.730	26.462	31.192	-14.808	46.000
Vertical					
Peak Detector					
299.660	-7.331	40.574	33.243	-12.757	46.000
375.320	-2.599	30.565	27.966	-18.034	46.000
524.700	-0.898	30.718	29.820	-16.180	46.000
749.740	1.998	30.735	32.733	-13.267	46.000
796.300	2.453	33.536	35.989	-10.011	46.000
899.120	2.608	29.038	31.646	-14.354	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5600MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-7.331	37.420	30.089	-15.911	46.000
375.320	-2.599	30.096	27.497	-18.503	46.000
524.700	-0.898	30.993	30.095	-15.905	46.000
749.740	1.998	30.176	32.174	-13.826	46.000
800.180	2.433	33.080	35.513	-10.487	46.000
899.120	2.608	27.519	30.127	-15.873	46.000
Vertical					
Peak Detector					
224.000	-9.076	33.740	24.664	-21.336	46.000
375.320	-2.599	31.503	28.904	-17.096	46.000
522.760	-0.850	32.325	31.475	-14.525	46.000
674.080	-0.947	38.759	37.812	-8.188	46.000
800.180	2.433	32.871	35.304	-10.696	46.000
965.080	7.397	28.899	36.296	-17.704	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	37.511	33.450	-12.550	46.000
375.320	-1.779	32.277	30.498	-15.502	46.000
522.760	1.270	28.975	30.245	-15.755	46.000
598.420	3.466	25.746	29.212	-16.788	46.000
796.300	4.783	31.890	36.673	-9.327	46.000
897.180	4.730	27.523	32.253	-13.747	46.000
Vertical					
Peak Detector					
299.660	-7.331	41.679	34.348	-11.652	46.000
373.380	-2.927	31.374	28.447	-17.553	46.000
522.760	-0.850	30.730	29.880	-16.120	46.000
749.740	1.998	31.432	33.430	-12.570	46.000
798.240	2.435	32.494	34.929	-11.071	46.000
932.100	5.660	28.346	34.006	-11.994	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	35.801	31.740	-14.260	46.000
373.380	-1.717	32.816	31.099	-14.901	46.000
522.760	1.270	28.653	29.923	-16.077	46.000
672.140	1.840	27.588	29.428	-16.572	46.000
749.740	2.808	27.254	30.062	-15.938	46.000
800.180	4.773	31.384	36.157	-9.843	46.000

Vertical					
Peak Detector					
299.660	-7.331	40.061	32.730	-13.270	46.000
373.380	-2.927	31.311	28.384	-17.616	46.000
522.760	-0.850	32.162	31.312	-14.688	46.000
749.740	1.998	31.412	33.410	-12.590	46.000
796.300	2.453	33.829	36.282	-9.718	46.000
897.180	1.880	27.965	29.845	-16.155	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) (5600MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	34.049	29.988	-16.012	46.000
375.320	-1.779	31.503	29.724	-16.276	46.000
522.760	1.270	32.325	33.595	-12.405	46.000
674.080	2.353	34.159	36.512	-9.488	46.000
800.180	4.773	32.871	37.644	-8.356	46.000
930.160	6.700	28.781	35.481	-10.519	46.000
Vertical					
Peak Detector					
227.880	-8.889	35.282	26.393	-19.607	46.000
375.320	-2.599	31.503	28.904	-17.096	46.000
522.760	-0.850	32.325	31.475	-14.525	46.000
674.080	-0.947	38.759	37.812	-8.188	46.000
800.180	2.433	32.871	35.304	-10.696	46.000
970.900	6.782	29.103	35.885	-18.115	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5190MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	38.174	34.113	-11.887	46.000
375.320	-1.779	32.322	30.543	-15.457	46.000
524.700	1.282	28.751	30.033	-15.967	46.000
598.420	3.466	26.007	29.473	-16.527	46.000
800.180	4.773	32.663	37.436	-8.564	46.000
899.120	4.978	26.496	31.474	-14.526	46.000
Vertical					
Peak Detector					
299.660	-7.331	38.609	31.278	-14.722	46.000
375.320	-2.599	32.052	29.453	-16.547	46.000
524.700	-0.898	31.655	30.757	-15.243	46.000
749.740	1.998	30.674	32.672	-13.328	46.000
800.180	2.433	33.428	35.861	-10.139	46.000
897.180	1.880	28.816	30.696	-15.304	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5270MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
297.720	-4.117	33.795	29.678	-16.322	46.000
375.320	-1.779	32.406	30.627	-15.373	46.000
522.760	1.270	27.980	29.250	-16.750	46.000
596.480	3.489	25.820	29.309	-16.691	46.000
796.300	4.783	31.490	36.273	-9.727	46.000
899.120	4.978	25.595	30.573	-15.427	46.000
Vertical					
Peak Detector					
299.660	-7.331	37.629	30.298	-15.702	46.000
375.320	-2.599	32.616	30.017	-15.983	46.000
524.700	-0.898	33.189	32.291	-13.709	46.000
749.740	1.998	30.402	32.400	-13.600	46.000
800.180	2.433	33.682	36.115	-9.885	46.000
901.060	2.874	30.156	33.030	-12.970	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Notebook
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5590MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector					
299.660	-4.061	34.049	29.988	-16.012	46.000
464.560	0.067	30.130	30.197	-15.803	46.000
598.420	3.466	30.450	33.916	-12.084	46.000
674.080	2.353	33.532	35.885	-10.115	46.000
825.400	5.945	31.409	37.353	-8.647	46.000
939.860	5.896	29.515	35.411	-10.589	46.000
Vertical					
Peak Detector					
227.880	-8.889	35.282	26.393	-19.607	46.000
375.320	-2.599	31.503	28.904	-17.096	46.000
522.760	-0.850	32.325	31.475	-14.525	46.000
674.080	-0.947	38.759	37.812	-8.188	46.000
825.400	3.125	31.409	34.533	-11.467	46.000
965.080	7.397	28.899	36.296	-17.704	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

8. Band Edge

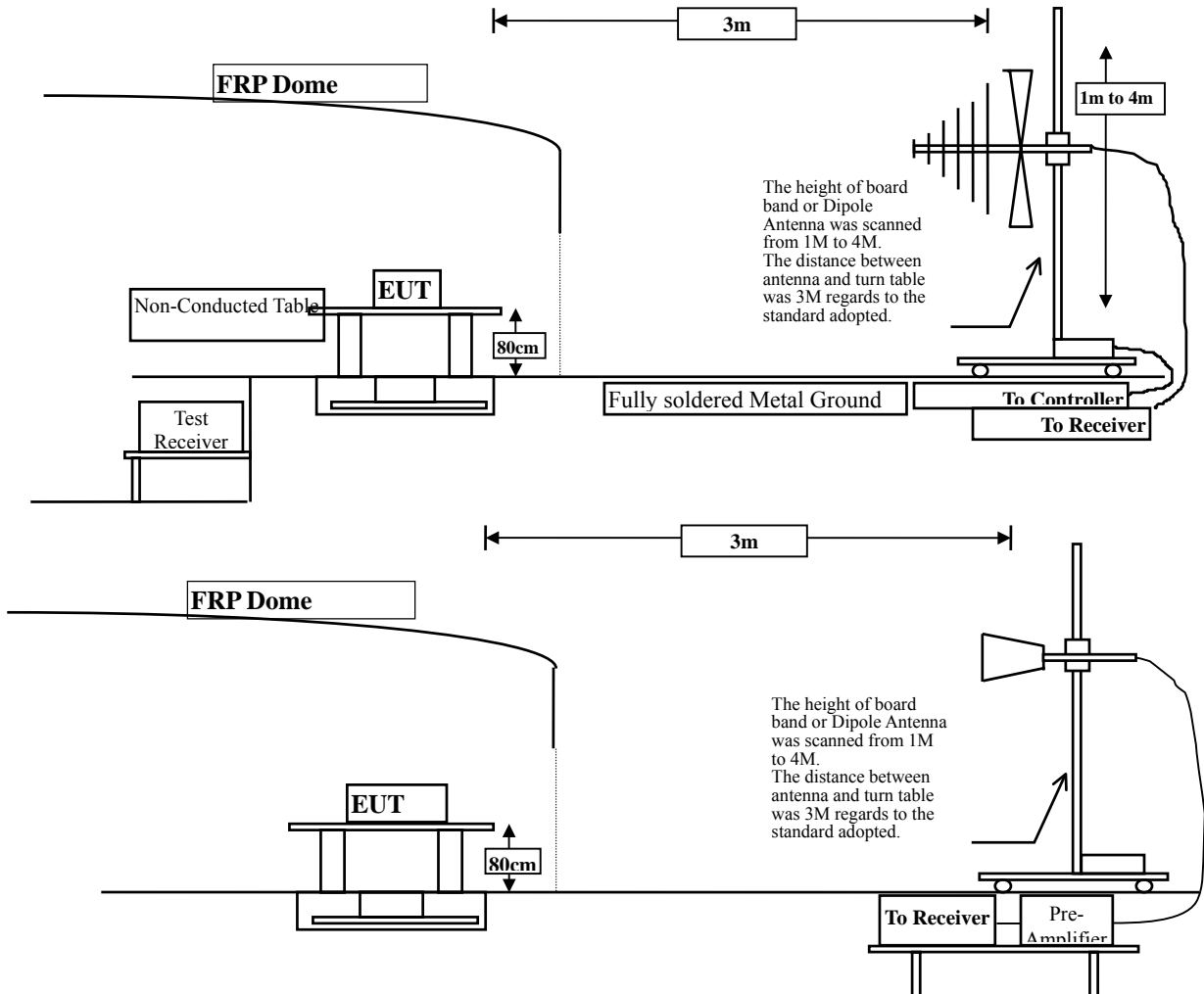
8.1. Test Equipment

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

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2008
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2008
	X	Pre-Amplifier	AGILENT	8447D/2944A09549	Sep., 2008
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2008
	X	Spectrum Analyzer	Advantest	R3162/91700283	Oct., 2008
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2009
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A
	X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009

8.2. Test Setup

RF Radiated Measurement:



8.3. 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

- Remarks :
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.

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 C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

8.5. Uncertainty

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

8.6. Test Result of Band Edge

Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)-Channel 36

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	5180	65.742	43.396	109.138	Peak
Horizontal	5180	56.148	43.417	99.565	Average
Vertical	5180	65.765	43.148	108.913	Peak
Vertical	5180	55.193	43.150	98.343	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5148.4	109.138	45.03	64.108	Peak
Horizontal	5150.0	99.565	55.12	44.445	Average
Vertical	5148.4	108.913	45.03	63.883	Peak
Vertical	5150.0	98.343	55.12	43.223	Average

Note:

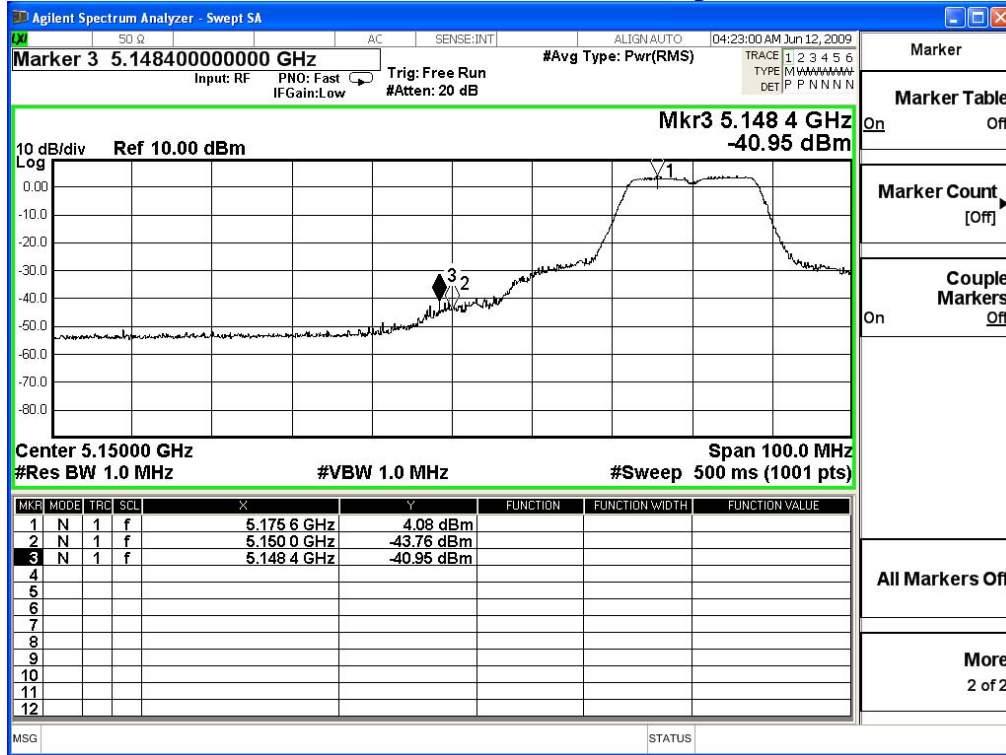
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

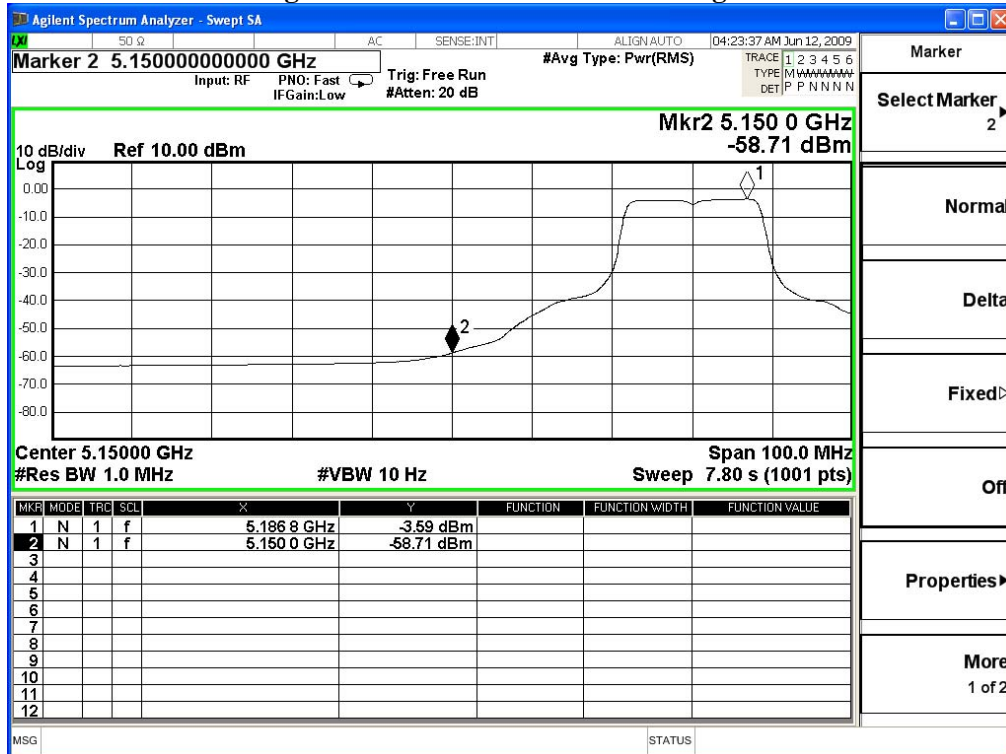
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) -Channel 64

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5320	63.520	46.657	107.177	Peak
Horizontal	5320	53.244	43.627	96.871	Average
Vertical	5320	61.218	43.484	104.701	Peak
Vertical	5320	50.942	43.499	94.441	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5351.5	107.177	47.17	60.007	Peak
Horizontal	5350.0	96.871	55.07	41.801	Average
Vertical	5351.5	104.701	47.17	57.531	Peak
Vertical	5350.0	94.441	55.07	39.371	Average

Note:

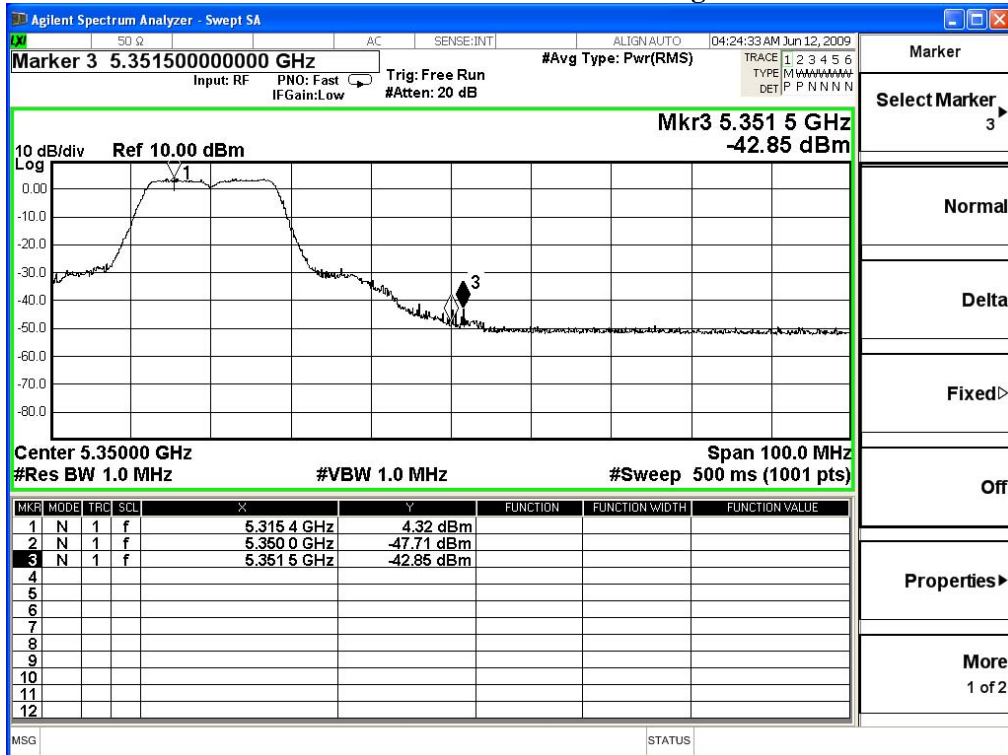
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

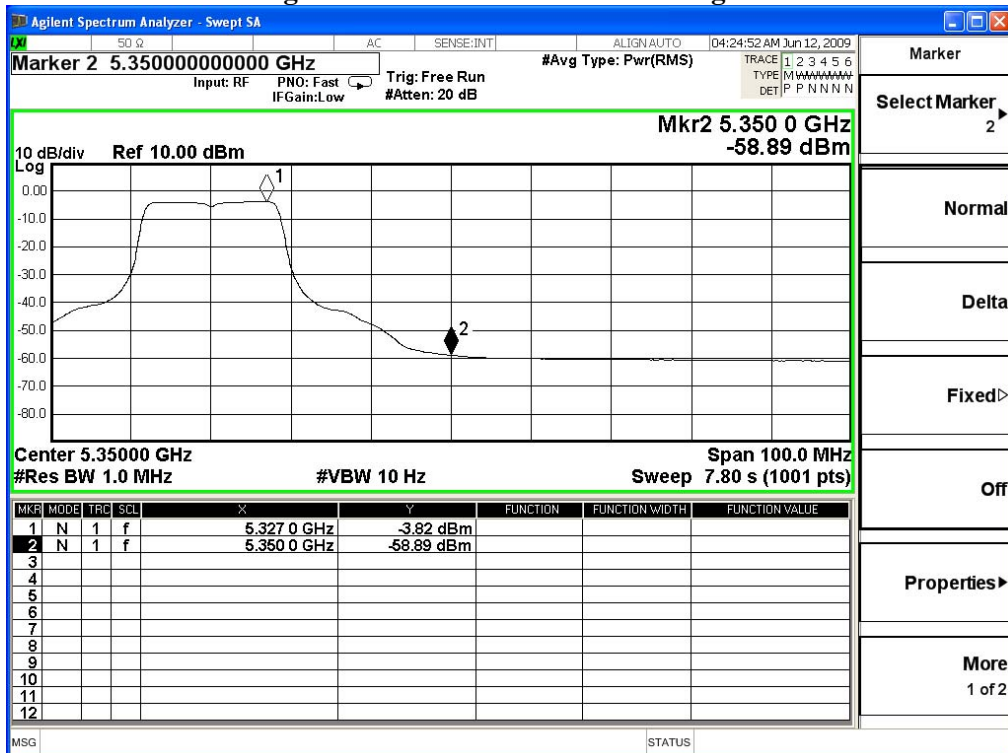
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) -Channel 100

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5500	67.056	44.221	111.277	Peak
Horizontal	5500	56.472	44.223	100.695	Average
Vertical	5500	65.196	43.929	109.125	Peak
Vertical	5500	53.348	43.924	97.272	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5459.7	111.277	55.44	55.837	Peak
Horizontal	5460.0	100.695	58.19	42.505	Average
Vertical	5459.7	109.125	55.44	53.685	Peak
Vertical	5460.0	97.272	58.19	39.082	Average

Note:

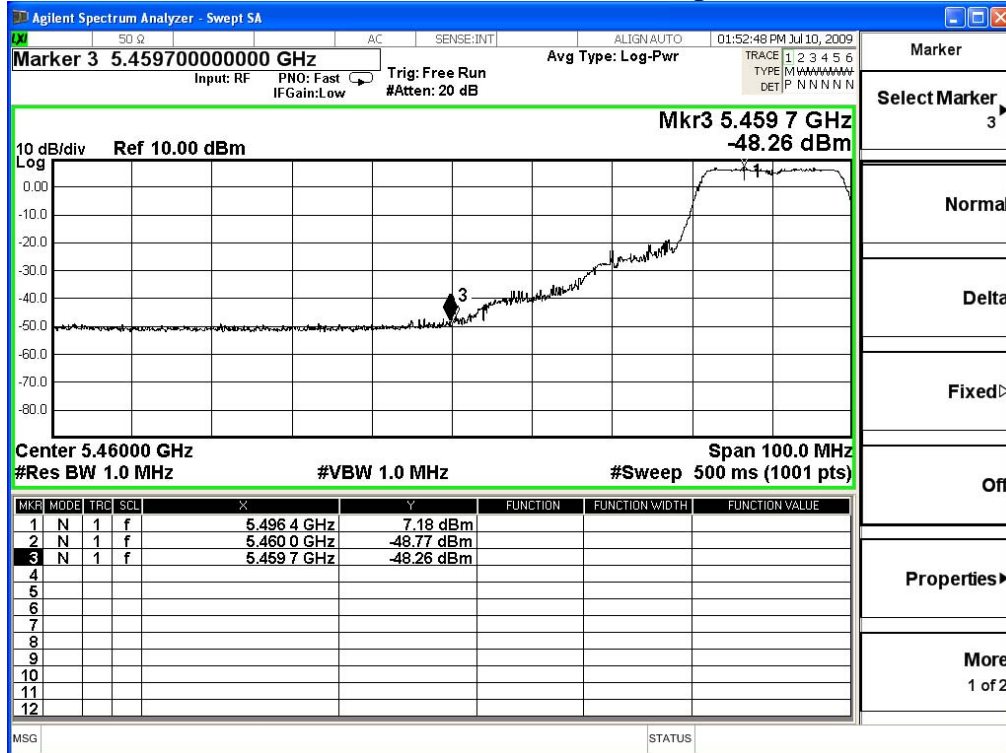
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

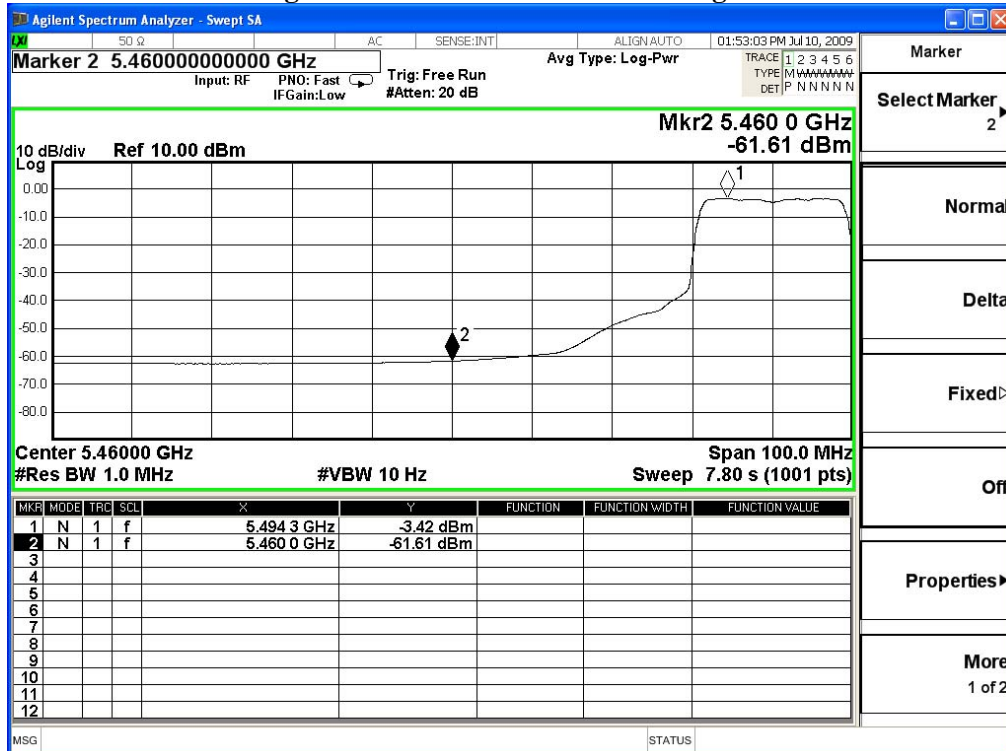
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) -Channel 36

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	5180	61.553	43.382	104.935	Peak
Horizontal	5180	51.429	43.410	94.840	Average
Vertical	5180	59.007	43.145	102.152	Peak
Vertical	5180	49.972	43.152	93.124	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5149.7	104.935	46.05	58.885	Peak
Horizontal	5150.0	94.840	52.58	42.26	Average
Vertical	5149.7	102.152	46.05	56.102	Peak
Vertical	5150.0	93.124	52.58	40.544	Average

Note:

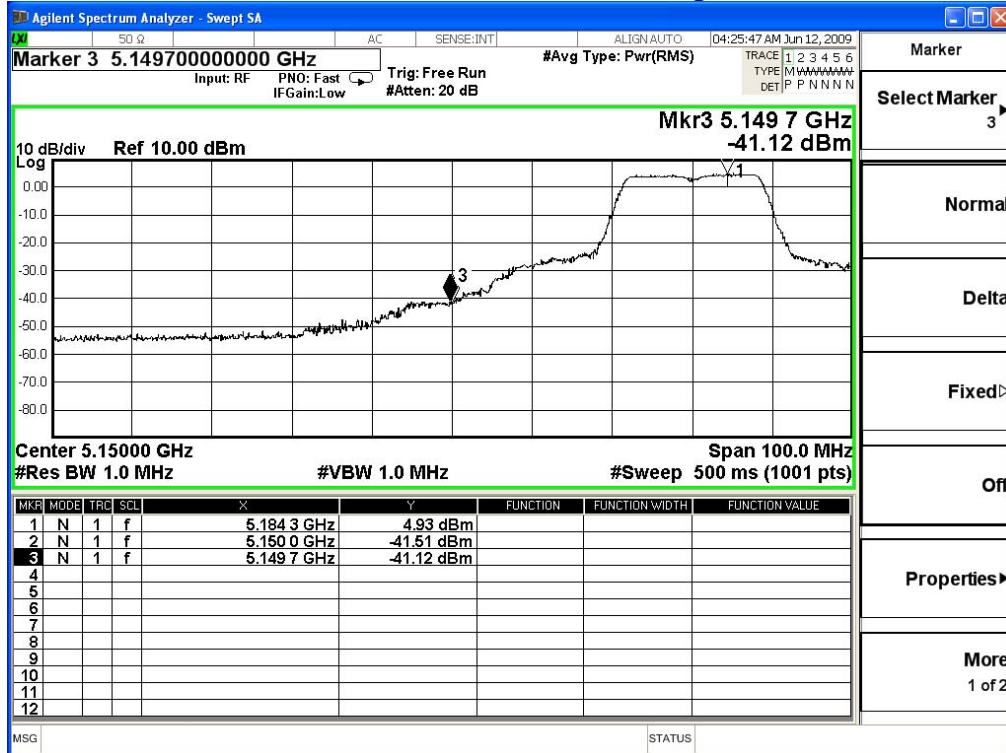
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

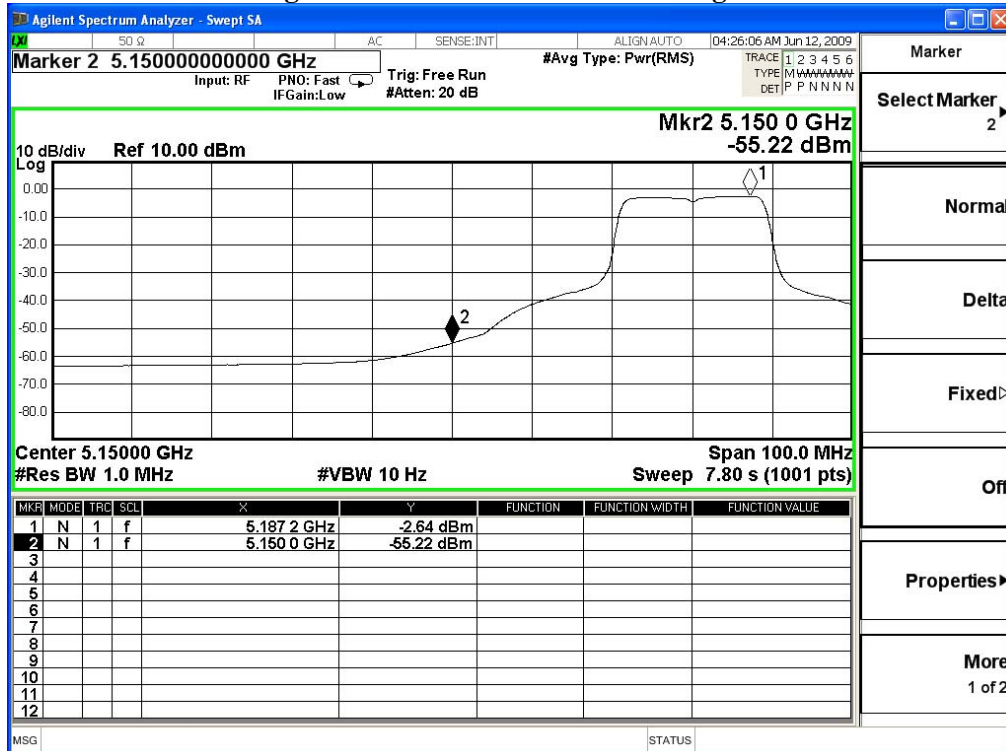
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) -Channel 64

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5320	64.074	43.651	107.725	Peak
Horizontal	5320	53.338	43.670	97.008	Average
Vertical	5320	60.586	43.441	104.027	Peak
Vertical	5320	51.194	43.441	94.635	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5350.4	107.725	47.35	60.375	Peak
Horizontal	5350.0	97.008	53.52	43.488	Average
Vertical	5350.4	104.027	47.35	56.677	Peak
Vertical	5350.0	94.635	53.52	41.115	Average

Note:

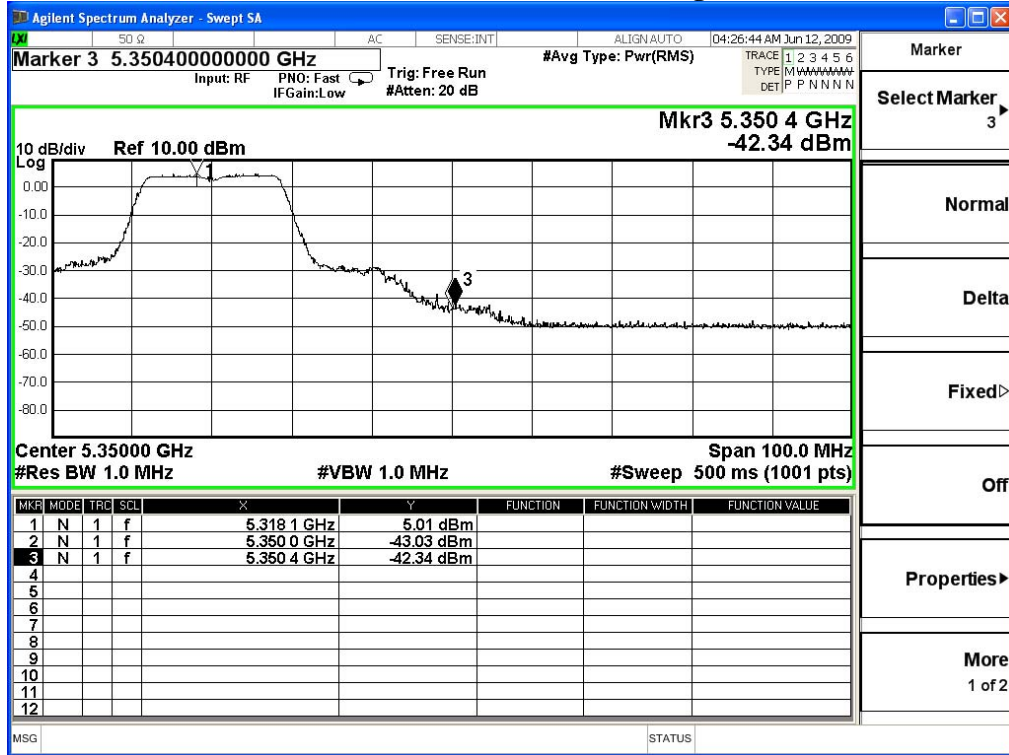
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

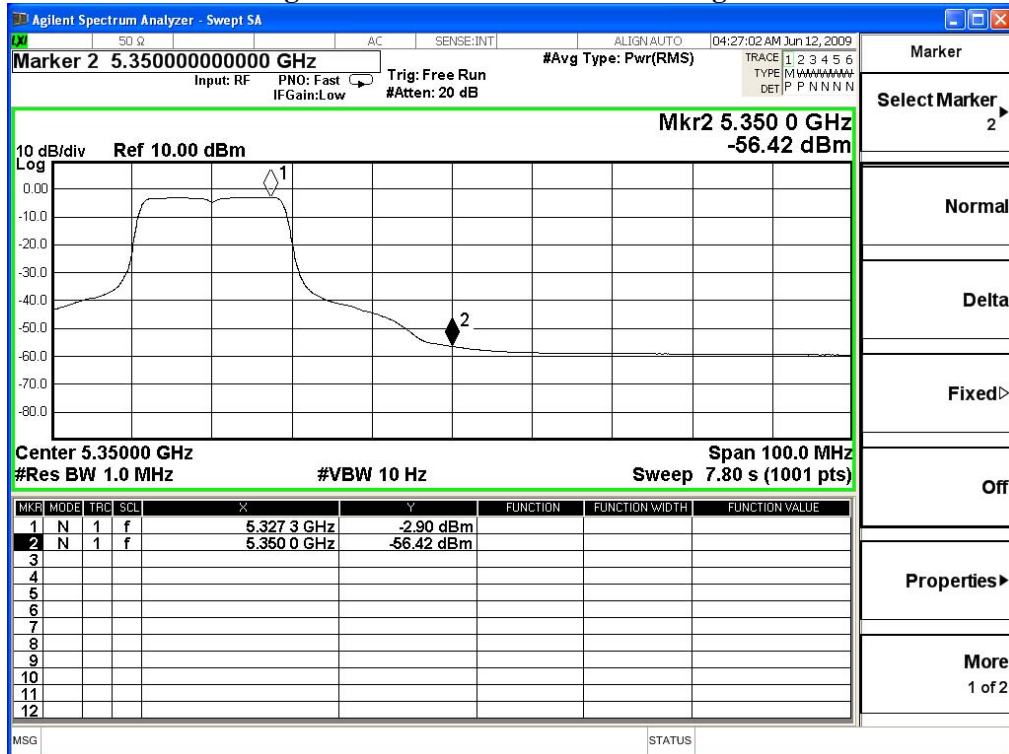
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps) -Channel 100

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5500	65.970	44.882	110.852	Peak
Horizontal	5500	54.144	44.889	99.033	Average
Vertical	5500	61.339	44.314	105.653	Peak
Vertical	5500	50.115	44.321	94.436	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5458.9	110.852	46.24	64.612	Peak
Horizontal	5460.0	99.033	52.36	46.673	Average
Vertical	5458.9	105.653	46.24	59.413	Peak
Vertical	5460.0	94.436	52.36	42.076	Average

Note:

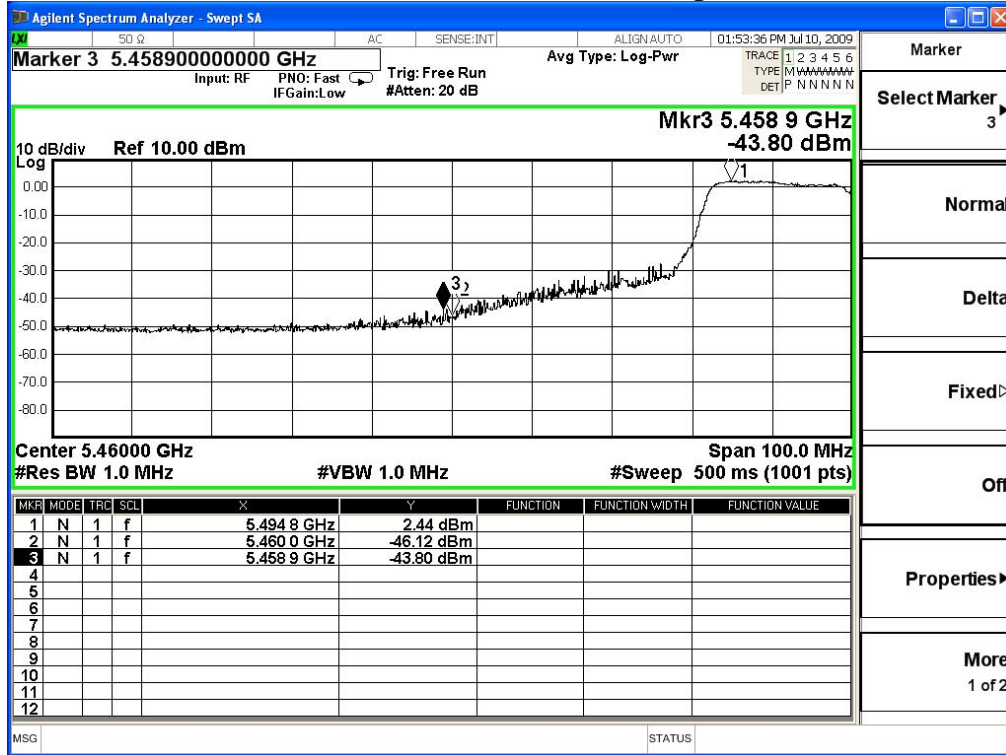
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

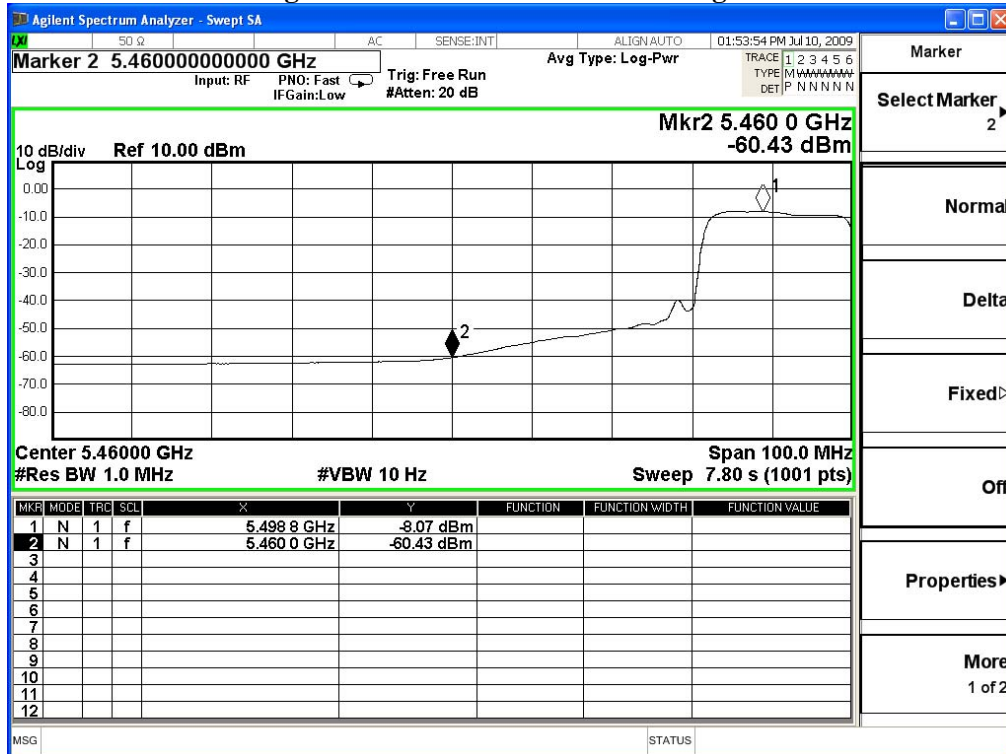
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) -Channel 38

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dBuV]	Correction Factor [dB/m]	Emission Level [dBuV/m]	Detector
Horizontal	5190	57.230	43.513	100.742	Peak
Horizontal	5190	47.532	43.506	91.038	Average
Vertical	5190	55.413	43.185	98.597	Peak
Vertical	5190	45.619	43.184	88.802	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5143.2	100.742	34.67	66.072	Peak
Horizontal	5150.0	91.038	38.37	52.668	Average
Vertical	5143.2	98.597	34.67	63.927	Peak
Vertical	5150.0	88.802	38.37	50.432	Average

Note:

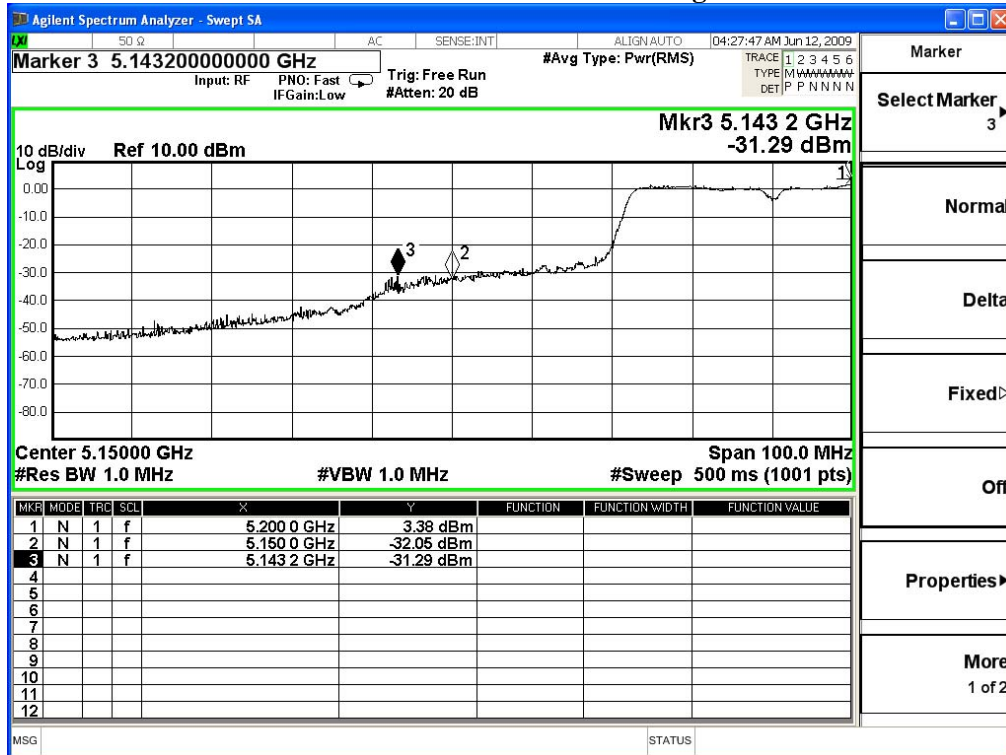
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

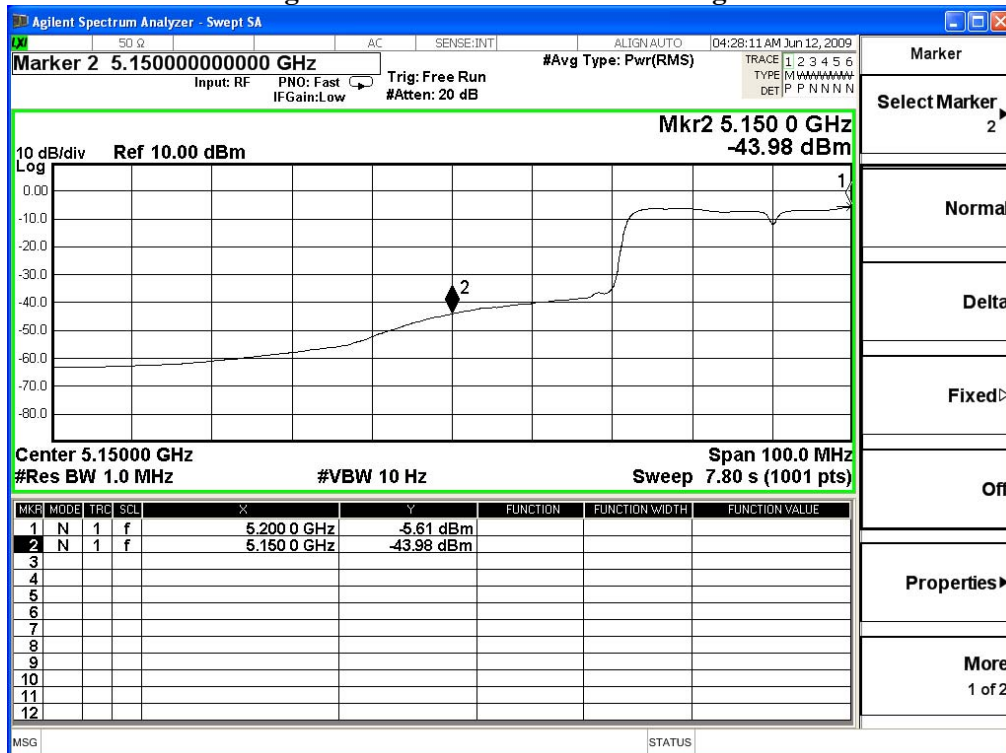
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) -Channel 62

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5310	59.878	43.638	103.516	Peak
Horizontal	5310	49.082	43.644	92.726	Average
Vertical	5310	57.474	43.395	100.870	Peak
Vertical	5310	47.571	43.394	90.966	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5350.0	103.516	36.55	66.966	Peak
Horizontal	5350.0	92.726	40.35	52.376	Average
Vertical	5350.0	100.870	36.55	64.32	Peak
Vertical	5350.0	90.966	40.35	50.616	Average

Note:

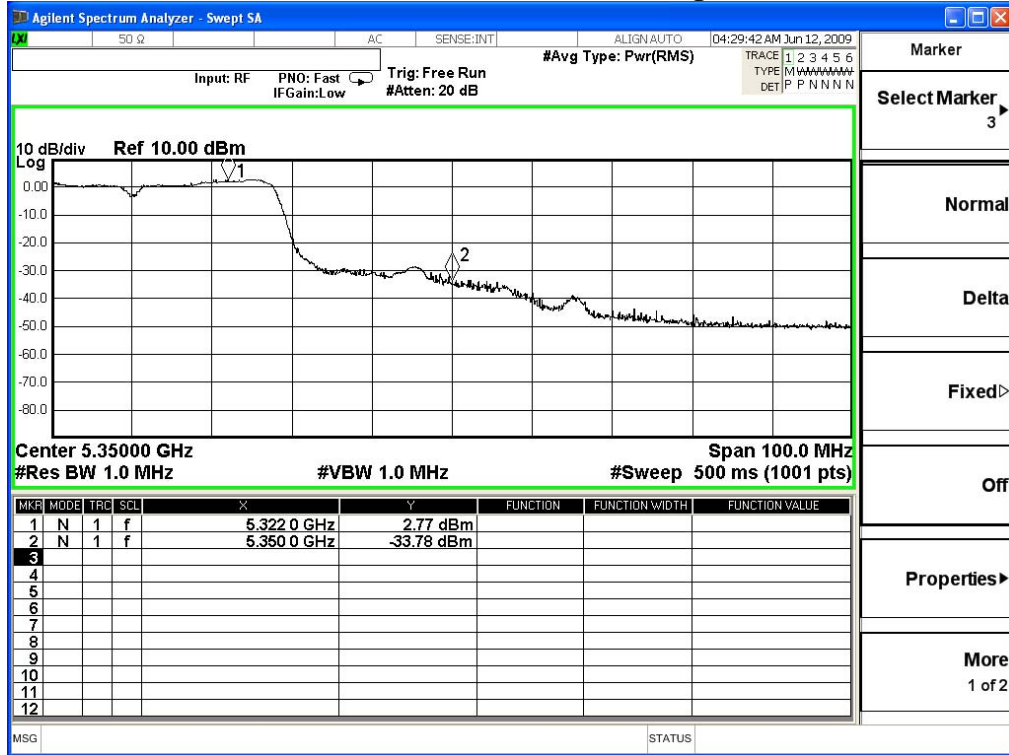
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

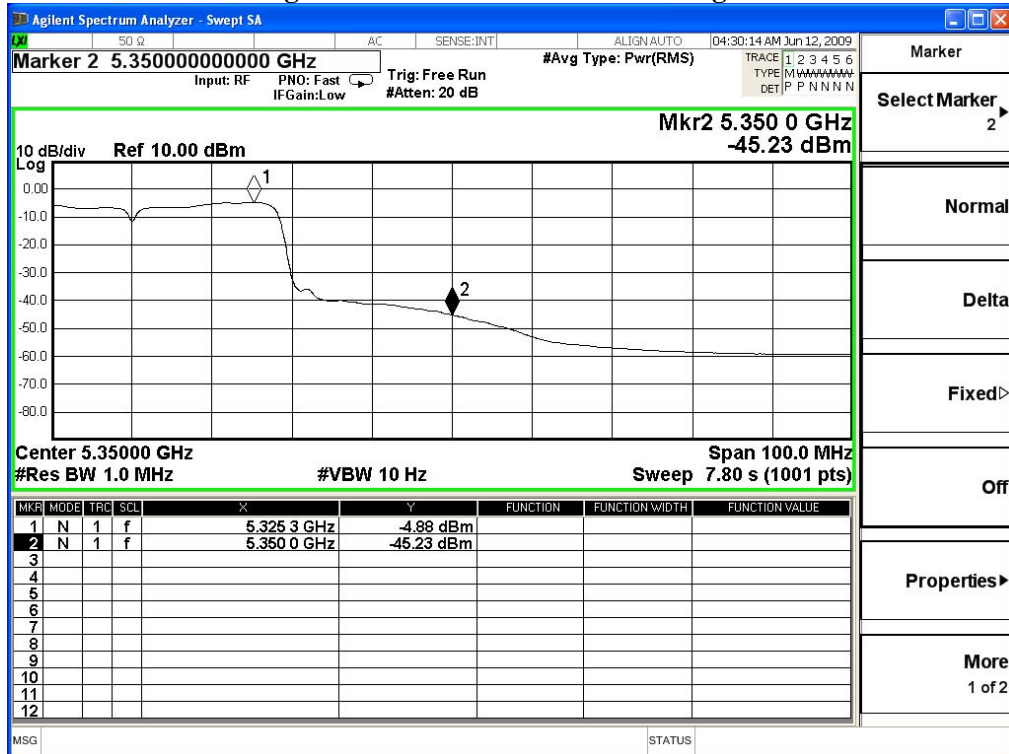
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : Notebook
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) -Channel 102

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Reading Level [dB(uV)]	Correction Factor [dB/m]	Emission Level [dB(uV/m)]	Detector
Horizontal	5510	63.370	44.286	107.656	Peak
Horizontal	5510	51.380	44.190	95.570	Average
Vertical	5510	59.494	43.969	103.463	Peak
Vertical	5510	48.5555	43.925	92.480	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=30Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	5457.7	107.656	46.601	61.055	Peak
Horizontal	5460.0	95.570	58.57	37	Average
Vertical	5457.7	103.463	46.601	56.862	Peak
Vertical	5460.0	92.480	58.57	33.91	Average

Note:

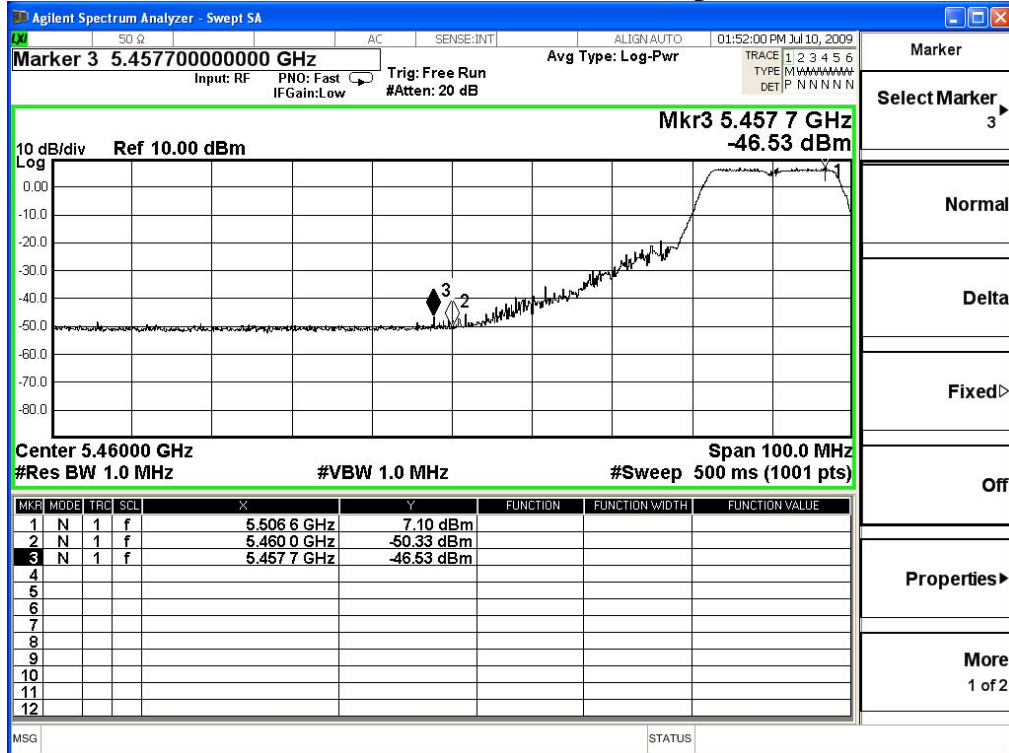
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

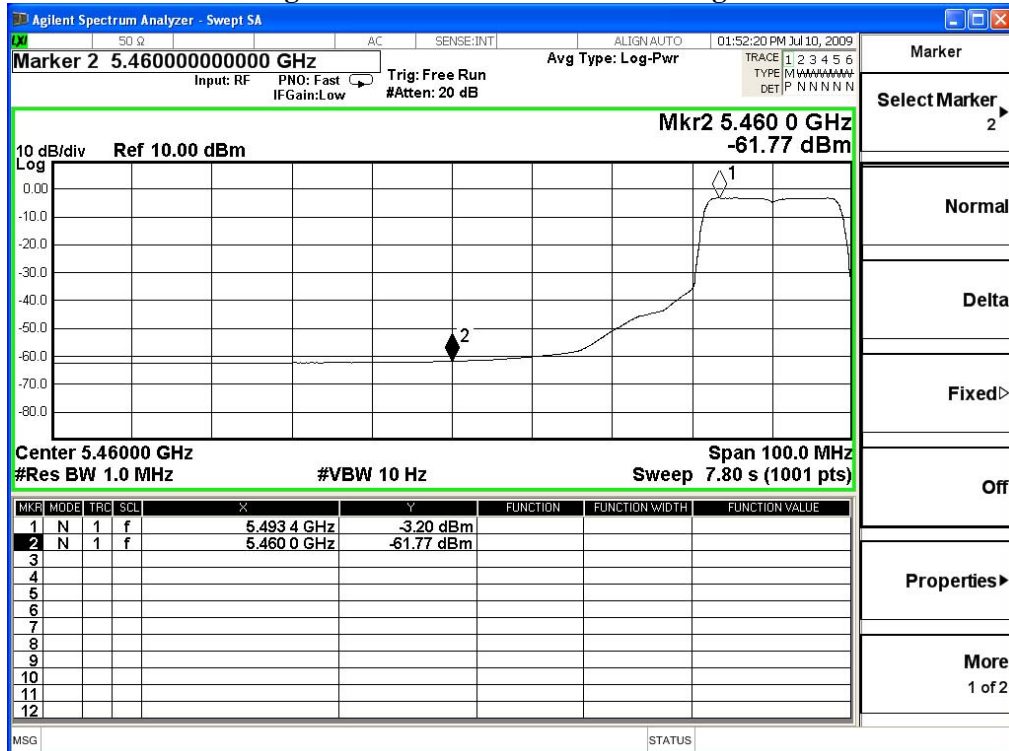
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



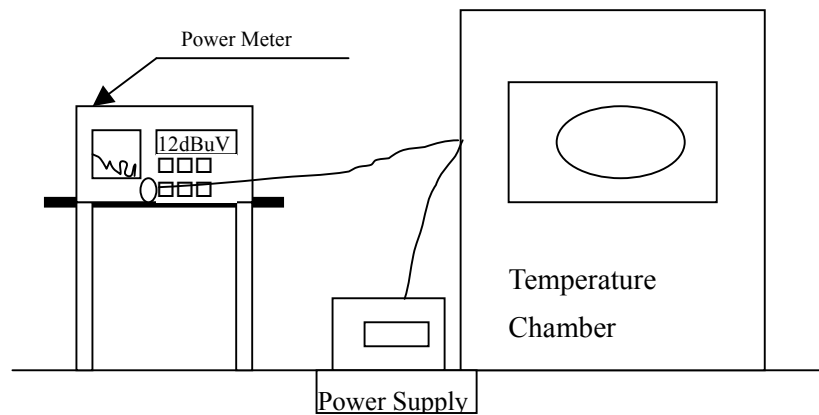
9. Frequency Stability

9.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.	Remark
Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2009	
Temperature Chamber	WIT GROUP	TH-1S-B / WIT-02121901	June, 2009	

Note: All equipments are calibrated every one year.

9.2. Test Setup



9.3. Limits

Manufactures of U-NII 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, 2003; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

9.5. Uncertainty

± 150 Hz

9.6. Test Result of Frequency Stability

Product : Notebook
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) °C	Vnom (110)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00
Tnom (50) °C	Vnom (126.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00
Tnom (50) °C	Vnom (93.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (0) °C	Vnom (126.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		Tnom (0) °C	Vnom (93.5)V	36	5180.00
44	5220.00			5220.0000	0.00
48	5240.00			5240.0000	0.00
52	5260.00			5260.0000	0.00
60	5300.00			5300.0000	0.00
64	5320.00			5320.0000	0.00
100	5500.00			5500.0000	0.00
120	5600.00			5600.0000	0.00
140	5700.00			5700.0000	0.00

Product : Notebook
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13.5Mbps)

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) °C	Vnom (110)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00
Tnom (50) °C	Vnom (126.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00
Tnom (50) °C	Vnom (93.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		140	5700.00	5700.0000	0.00

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (0) °C	Vnom (126.5)V	36	5180.00	5180.0000	0.00
		44	5220.00	5220.0000	0.00
		48	5240.00	5240.0000	0.00
		52	5260.00	5260.0000	0.00
		60	5300.00	5300.0000	0.00
		64	5320.00	5320.0000	0.00
		64	5320.00	5320.0000	0.00
		100	5500.00	5500.0000	0.00
		120	5600.00	5600.0000	0.00
		Tnom (0) °C	Vnom (93.5)V	36	5180.00
44	5220.00			5220.0000	0.00
48	5240.00			5240.0000	0.00
52	5260.00			5260.0000	0.00
60	5300.00			5300.0000	0.00
64	5320.00			5320.0000	0.00
100	5500.00			5500.0000	0.00
120	5600.00			5600.0000	0.00
140	5700.00			5700.0000	0.00

Product : Notebook
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps)

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) °C	Vnom (110)V	38	5190.00	5190.0000	0.00
		46	5230.00	5230.0000	0.00
		54	5270.00	5270.0000	0.00
		62	5310.00	5310.0000	0.00
		102	5510.00	5510.0000	0.00
		118	5590.00	5590.0000	0.00
		134	5670.00	5670.0000	0.00
		151	5755.00	5755.0000	0.00
		159	5795.00	5795.0000	0.00
Tnom (50) °C	Vnom (126.5)V	38	5190.00	5190.0000	0.00
		46	5230.00	5230.0000	0.00
		54	5270.00	5270.0000	0.00
		62	5310.00	5310.0000	0.00
		102	5510.00	5510.0000	0.00
		118	5590.00	5590.0000	0.00
		134	5670.00	5670.0000	0.00
		151	5755.00	5755.0000	0.00
		159	5795.00	5795.0000	0.00
Tnom (50) °C	Vnom (93.5)V	38	5190.00	5190.0000	0.00
		46	5230.00	5230.0000	0.00
		54	5270.00	5270.0000	0.00
		62	5310.00	5310.0000	0.00
		102	5510.00	5510.0000	0.00
		118	5590.00	5590.0000	0.00
		134	5670.00	5670.0000	0.00
		151	5755.00	5755.0000	0.00
		159	5795.00	5795.0000	0.00

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (0) °C	Vnom (126.5)V	38	5190.00	5190.0000	0.00
		46	5230.00	5230.0000	0.00
		54	5270.00	5270.0000	0.00
		62	5310.00	5310.0000	0.00
		102	5510.00	5510.0000	0.00
		118	5590.00	5590.0000	0.00
		134	5670.00	5670.0000	0.00
		151	5755.00	5755.0000	0.00
		159	5795.00	5795.0000	0.00
Tnom (0) °C	Vnom (93.5)V	38	5190.00	5190.0000	0.00
		46	5230.00	5230.0000	0.00
		54	5270.00	5270.0000	0.00
		62	5310.00	5310.0000	0.00
		102	5510.00	5510.0000	0.00
		118	5590.00	5590.0000	0.00
		134	5670.00	5670.0000	0.00
		151	5755.00	5755.0000	0.00
		159	5795.00	5795.0000	0.00

10. EMI Reduction Method During Compliance Testing

No modification was made during testing.