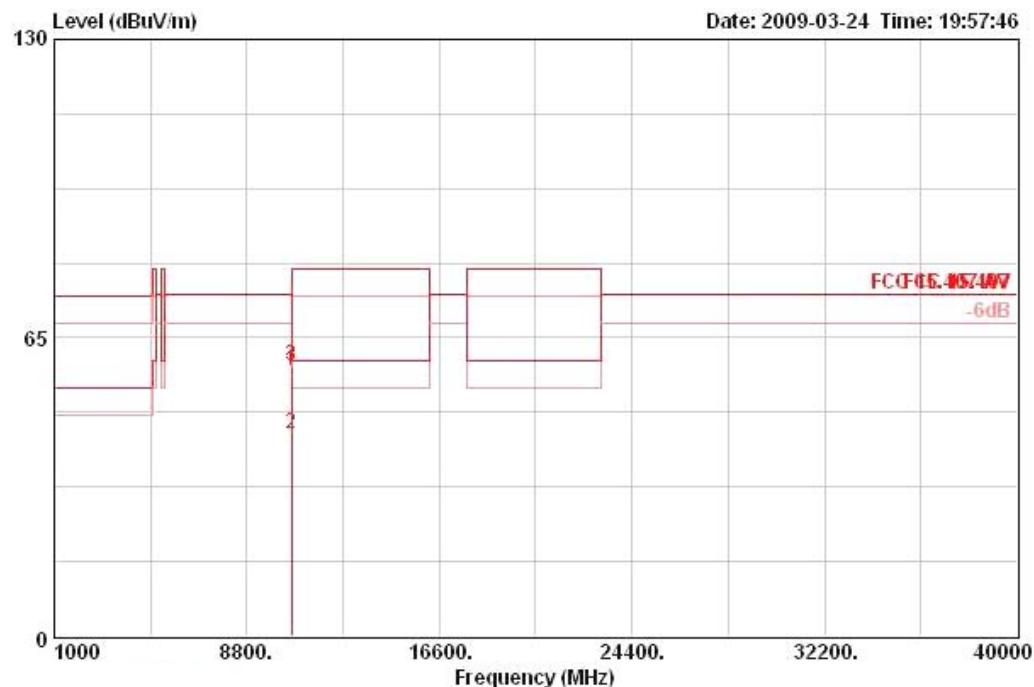
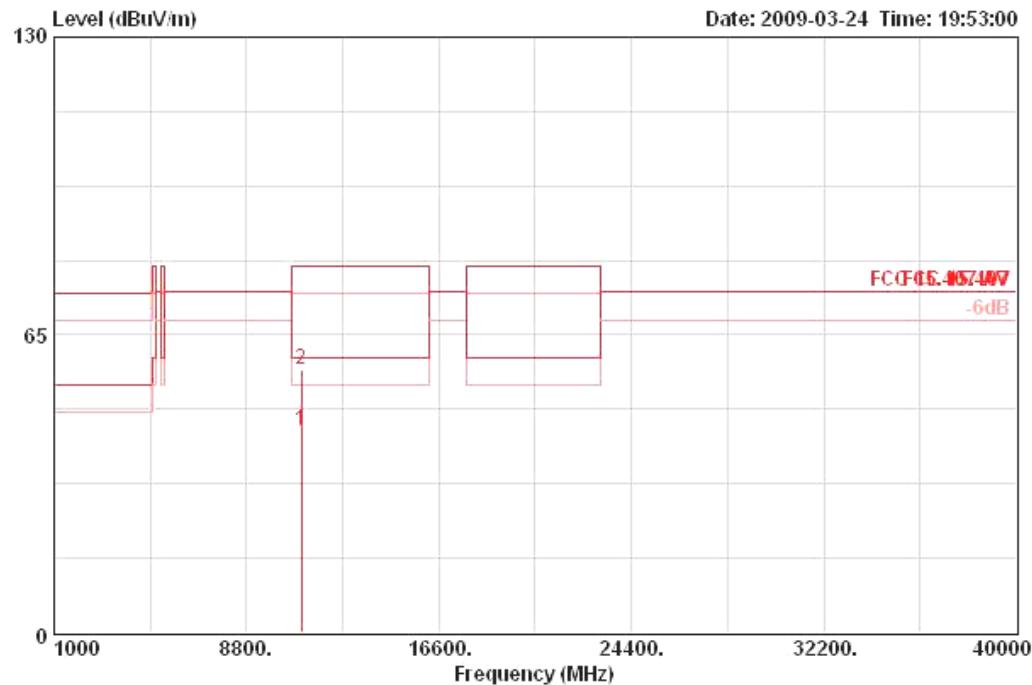


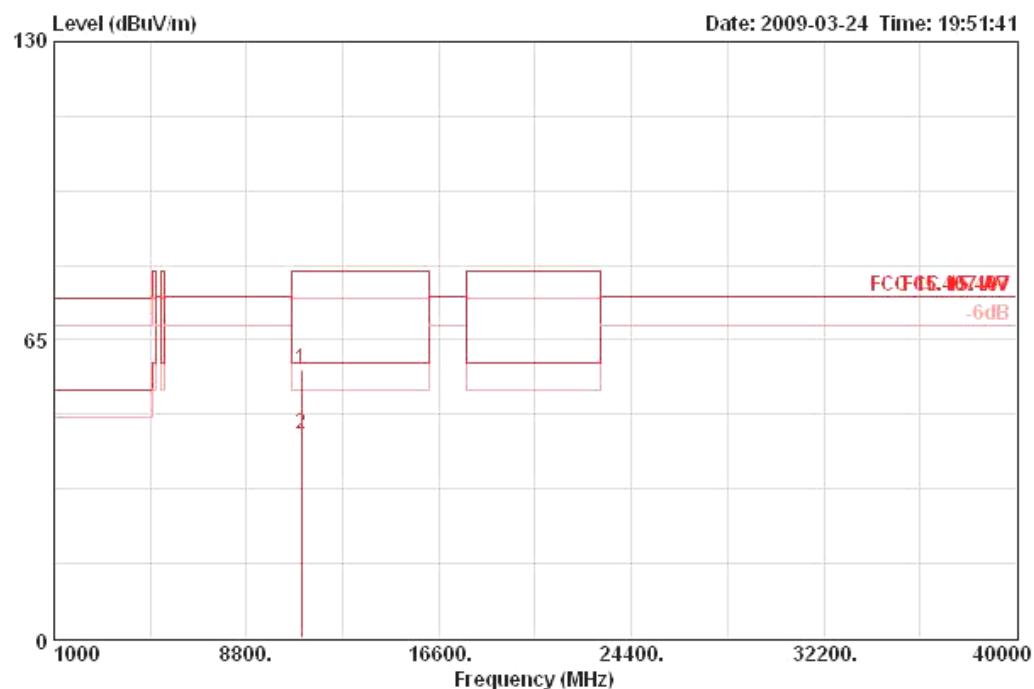
Vertical


Freq	Level	Over Limit	Limit Line	Read		Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		
1	10599.600	57.60	-16.70	74.30	42.47	39.90	35.12	10.36	PERK	VERTICAL	0	100	
2	10600.000	44.24	-15.76	60.00	29.11	39.90	35.12	10.36	AVERAGE	VERTICAL	0	100	
3	10616.800	58.80	-21.20	80.00	43.67	39.88	35.10	10.35	PERK	VERTICAL	0	100	

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 102 / Ant. A + Ant. B

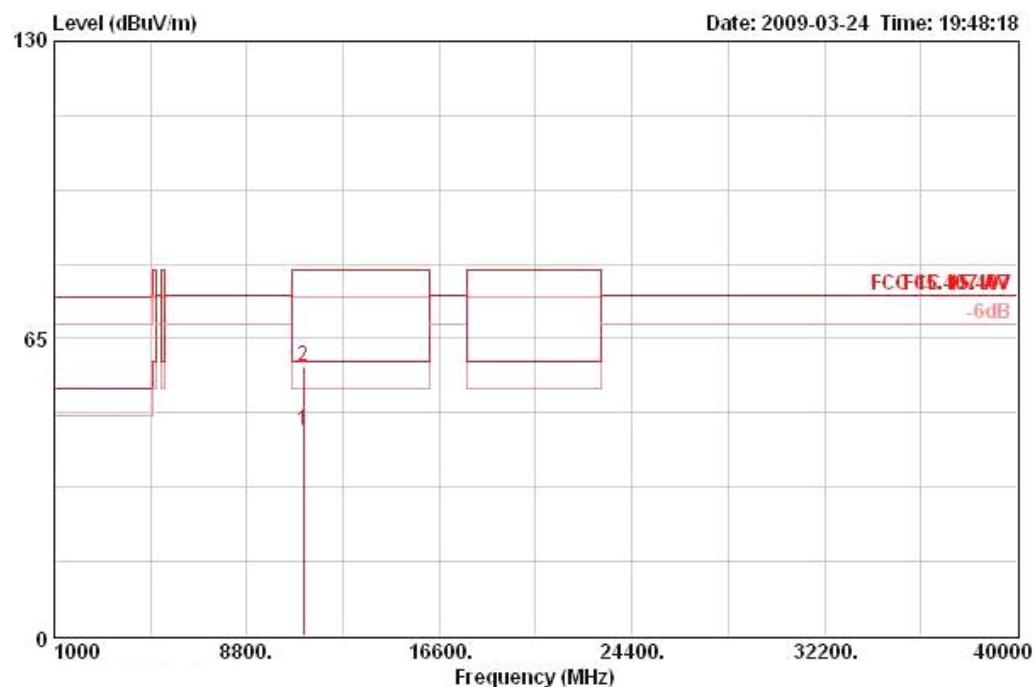
Horizontal


	Freq	Level	Over Limit	Read		Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
				MHz	dBuV/m			dB	dBuV/m	dBuV	dB/m	dB	dB
1	11017.540	44.06	-15.94	60.00	29.06	39.50	34.81	10.31	AVERAGE		HORIZONTAL	0	100
2	11019.920	57.56	-22.44	80.00	42.56	39.50	34.81	10.31	PEAK		HORIZONTAL	0	100

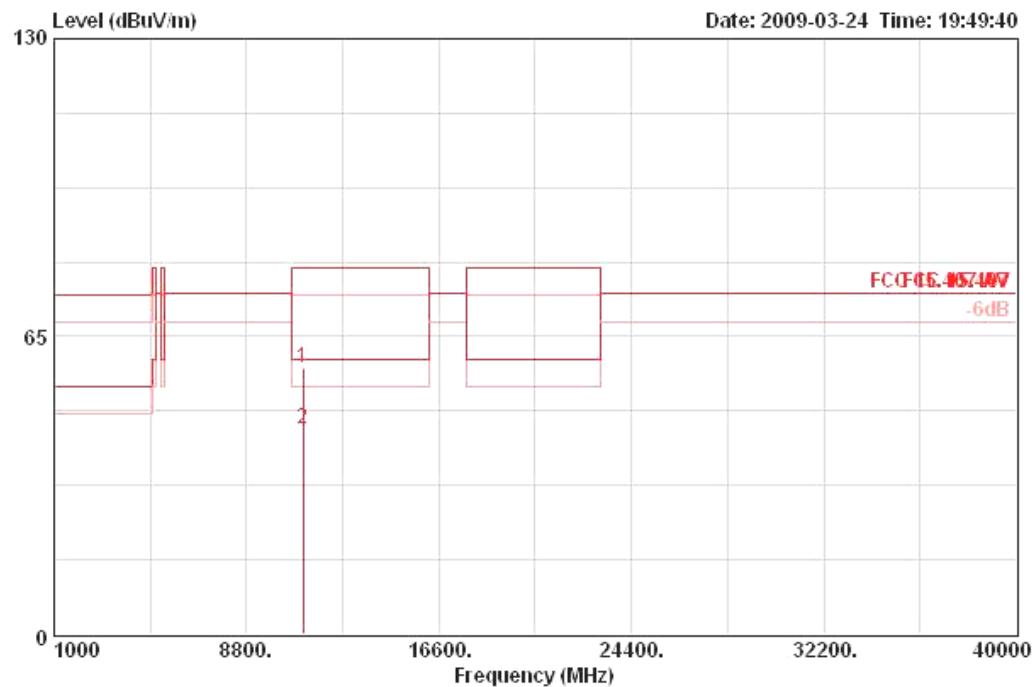
Vertical


Freq	Level	Over Limit		Read Line	Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB				
1	11018.550	58.54	-21.46	80.00	43.54	39.50	34.81	10.31	PERK	VERTICAL	360	100
2	11019.840	44.53	-15.47	60.00	29.52	39.50	34.81	10.31	AVERAGE	VERTICAL	360	100

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 110 / Ant. A + Ant. B

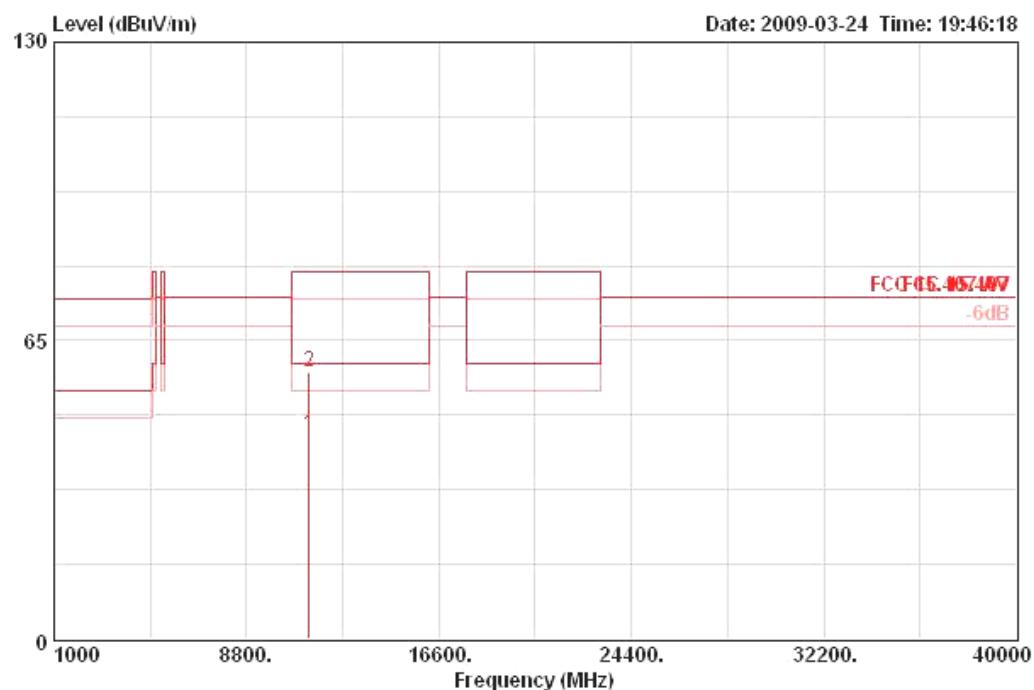
Horizontal


Freq	Level	Over Limit	Limit Line	Read		Antenna	Preamp	Cable	Table	Ant	
				Antenna	Preamp						
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm		
1	11099.030	44.92	-15.08	60.00	29.87	39.50	34.86	10.41	AVERAGE	HORIZONTAL	360
2	11099.430	58.96	-21.04	80.00	43.91	39.50	34.86	10.41	PERK	HORIZONTAL	360

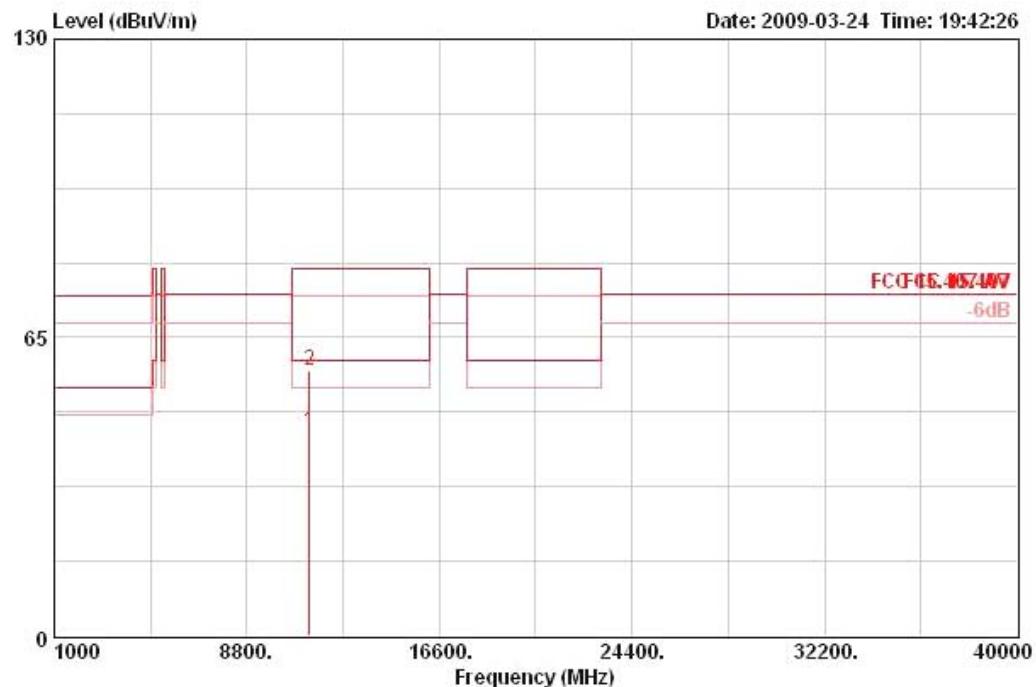
Vertical


Freq	Level	Over Limit		Read	Antenna	Preamp	Cable	Table	Ant		
		MHz	dBuV/m							Pos	Pos
										deg	cm
1	11097.640	58.11	-21.89	80.00	43.06	39.50	34.86	10.41	PERK	VERTICAL	0 100
2	11100.680	44.73	-15.27	60.00	29.68	39.50	34.86	10.41	AVERAGE	VERTICAL	0 100

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 134 / Ant. A + Ant. B

Horizontal


Freq	Level	Over Limit	Limit	Read		Antenna	Preamp	Cable	Loss	Remark	Pol/Phase	Table Pos	Ant Pos
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB			
1	11338.980	44.41	-15.59	60.00	29.21	39.50	35.00	10.70	AVERAGE	HORIZONTAL	0	100	
2	11339.190	58.02	-21.98	80.00	42.82	39.50	35.00	10.70	PERK	HORIZONTAL	0	100	

Vertical


Freq	Level	Over Limit		Read Line		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1	11339.300	44.58	-15.42	60.00	29.37	39.50	35.00	10.70	AVERAGE	VERTICAL	360	100	
2	11342.040	57.93	-22.07	80.00	42.69	39.50	35.00	10.74	PERK	VERTICAL	360	100	

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

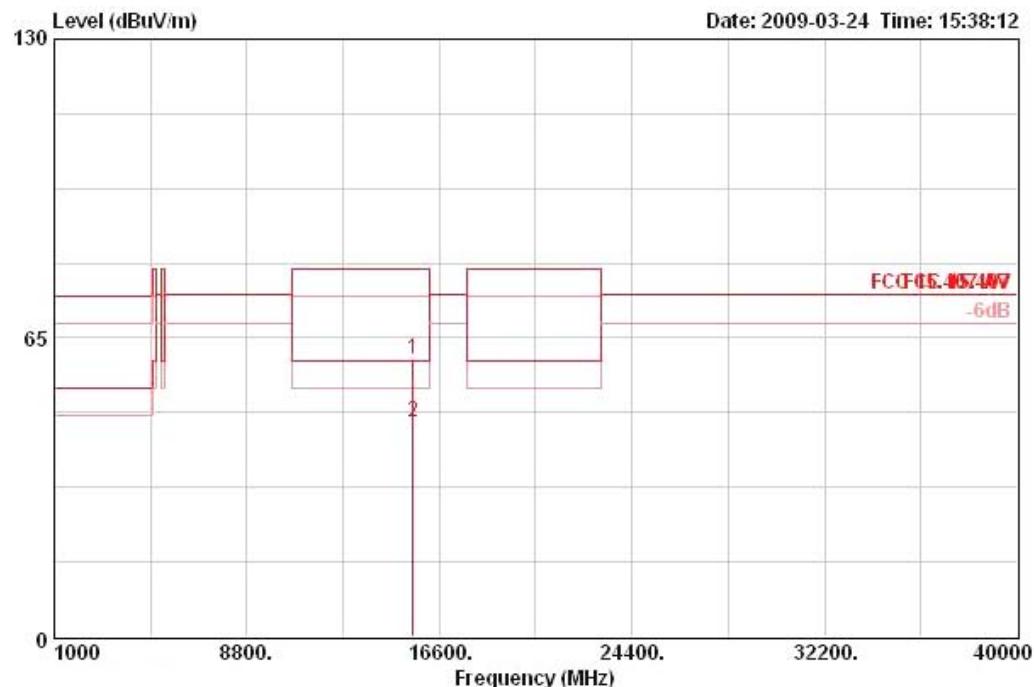
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

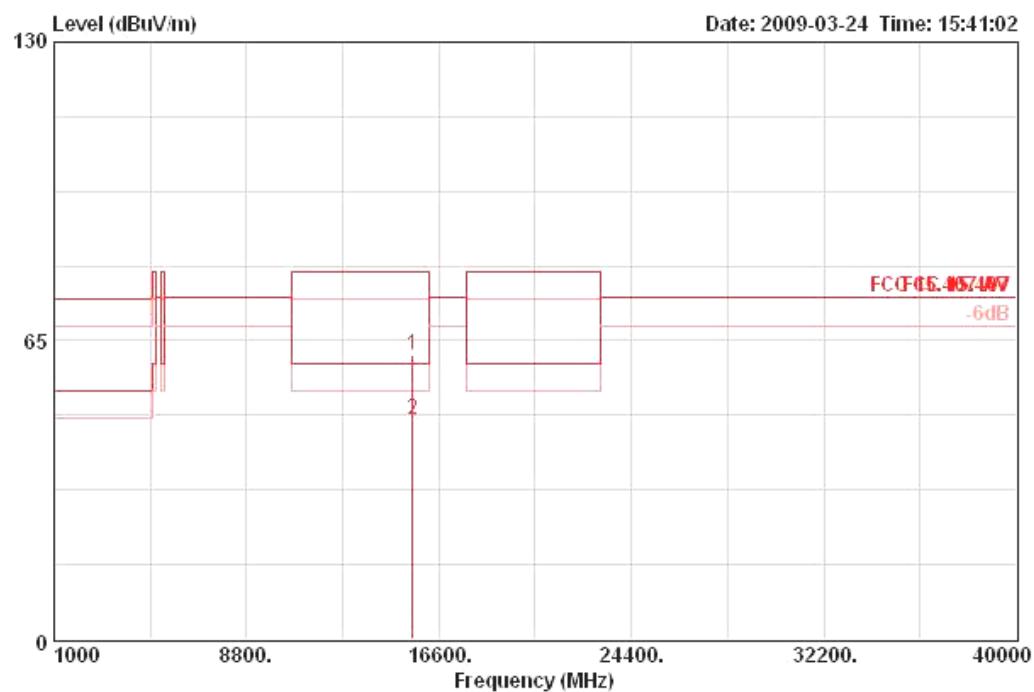
Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 36 / Ant. A + Ant. B

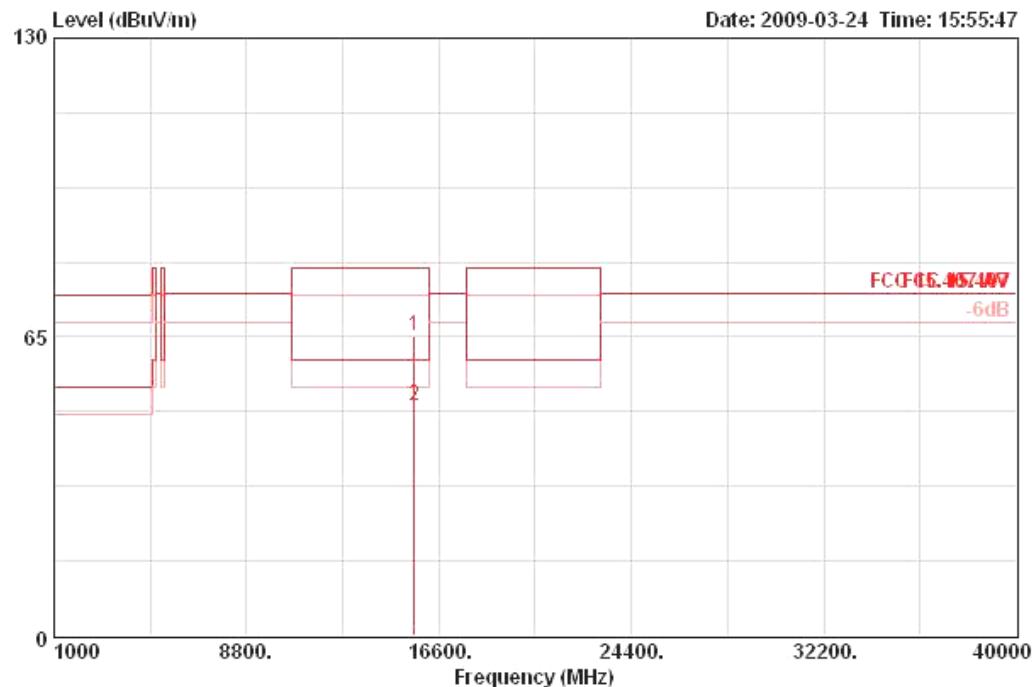
Horizontal


Freq	Level	Over Limit		Read	Antenna	Preamp	Cable		Remark	Pol/Phase	Table	Ant
		Line	Limit				Level	Factor				
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB/m	dB			
1	15530.000	60.40	-19.60	80.00	46.16	38.14	35.59	11.69	PERK	HORIZONTAL	360	100
2	15543.600	46.60	-13.40	60.00	32.38	38.12	35.59	11.69	AVERAGE	HORIZONTAL	360	100

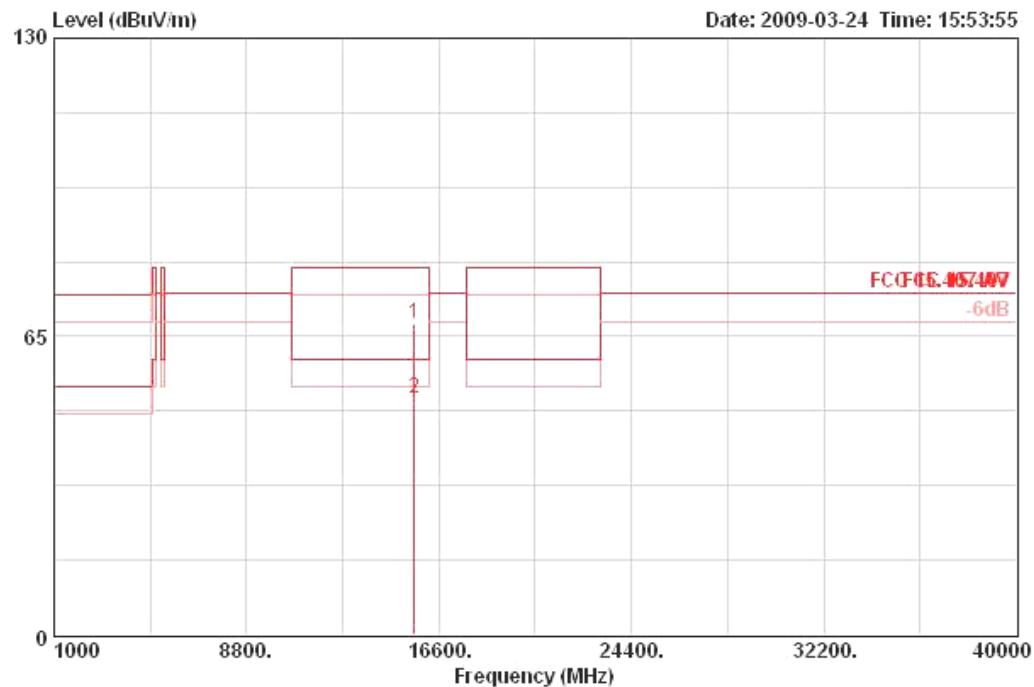
Vertical


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1	15531.200	61.79	-18.21	80.00	47.55	38.14	35.59	11.69	PERK	VERTICAL	0	150	
2	15541.600	47.80	-12.20	60.00	33.56	38.14	35.59	11.69	AVERAGE	VERTICAL	0	150	

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 40 / Ant. A + Ant. B

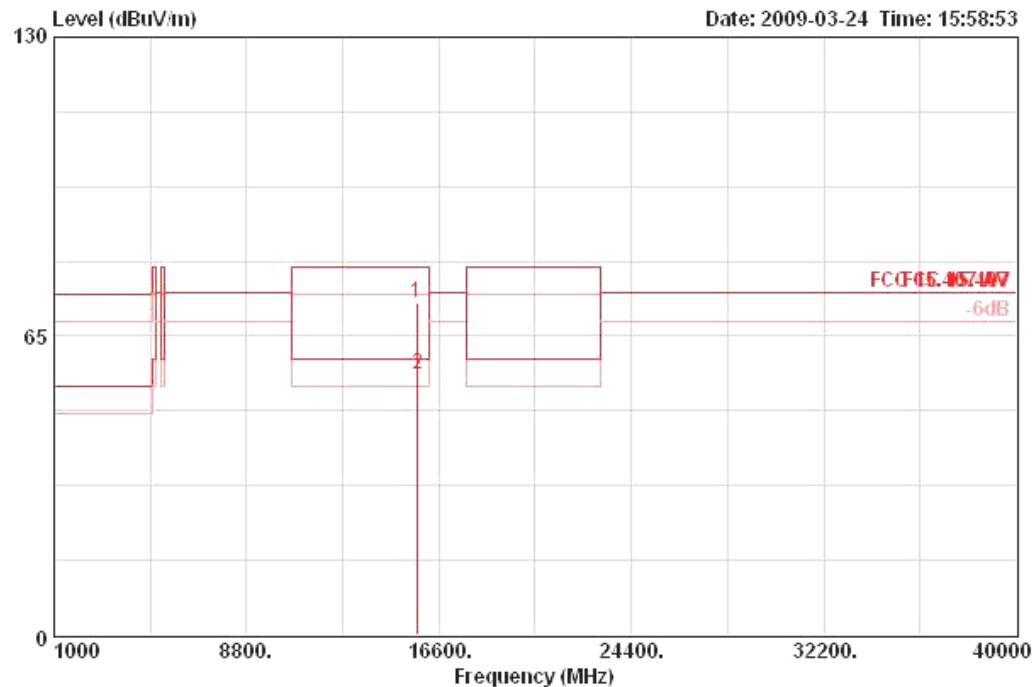
Horizontal


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1	15601.370	65.32	-14.68	80.00	51.12	38.03	35.58	11.75	PERK	HORIZONTAL	268	100	
2	15601.800	49.90	-10.10	60.00	35.69	38.03	35.58	11.75	AVERAGE	HORIZONTAL	268	100	

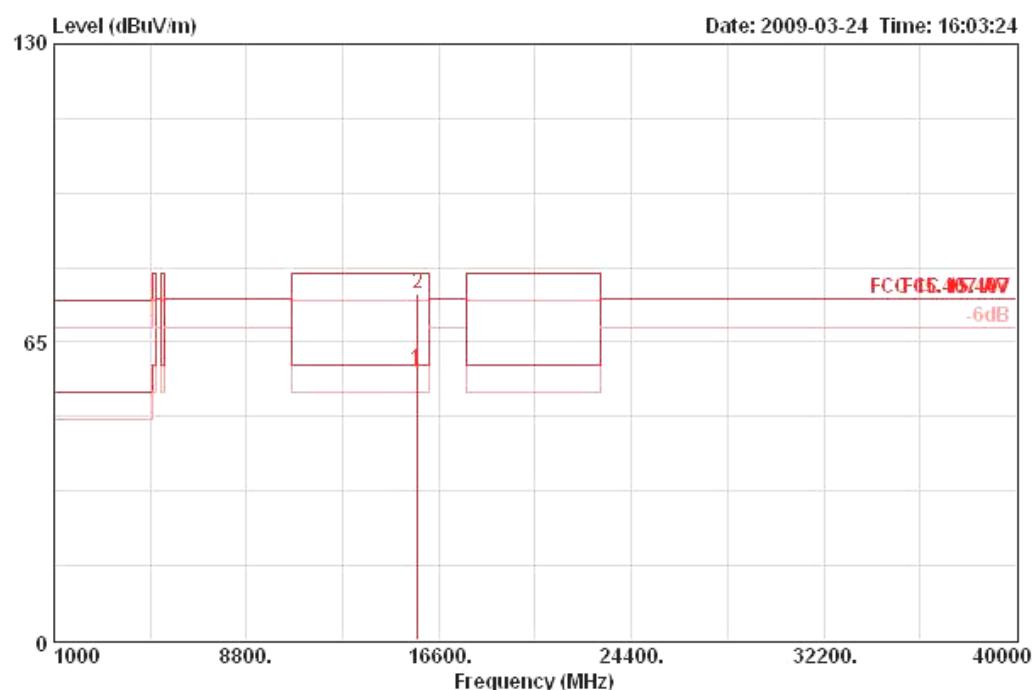
Vertical


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB	dB
1	15601.110	67.71	-12.29	80.00	53.51	38.03	35.58	11.75	PERK	VERTICAL	0 150
2	15601.490	51.46	-8.54	60.00	37.26	38.03	35.58	11.75	AVERAGE	VERTICAL	0 150

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 48 / Ant. A + Ant. B

Horizontal


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1	15717.790	72.18	-7.82	80.00	58.07	37.84	35.56	11.83	PERK	HORIZONTAL	269	100	
2 @	15722.020	56.80	-3.20	60.00	42.68	37.84	35.56	11.83	AVERAGE	HORIZONTAL	269	100	

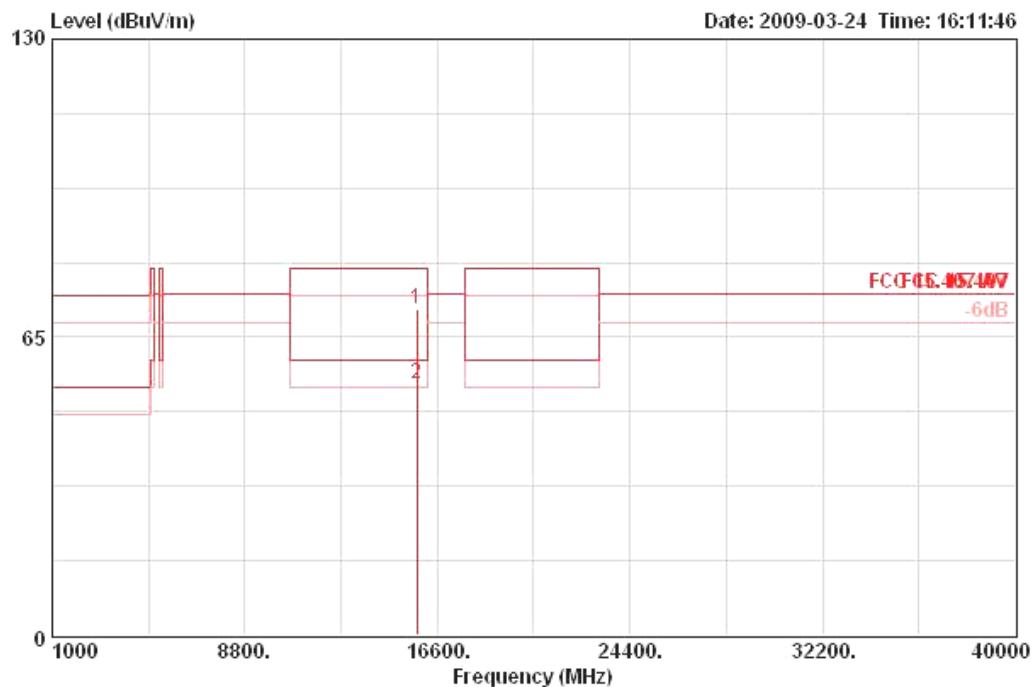
Vertical


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Table Pos	Ant Pos
		MHz	dBuV/m	dB	Line			dBuV	dB/m	dB		
1 @	15719.280	59.02	-0.98	60.00	44.90	37.84	35.56	11.83	AVERAGE	VERTICAL	20	117
2 !	15719.900	75.37	-4.63	80.00	61.26	37.84	35.56	11.83	PERK	VERTICAL	20	117

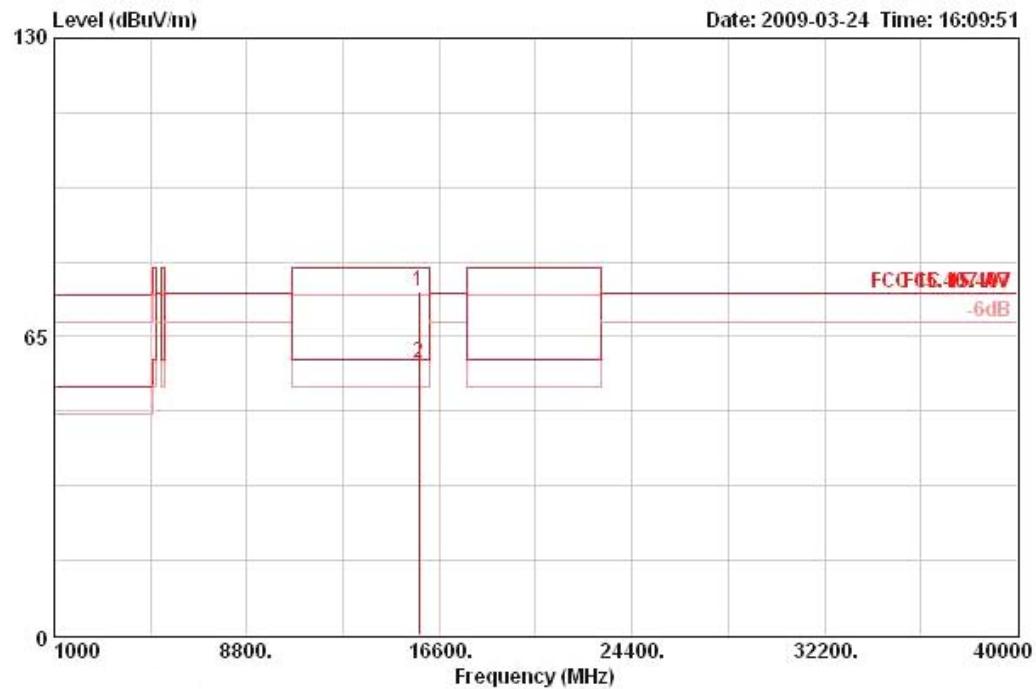


Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 52 / Ant. A + Ant. B

Horizontal

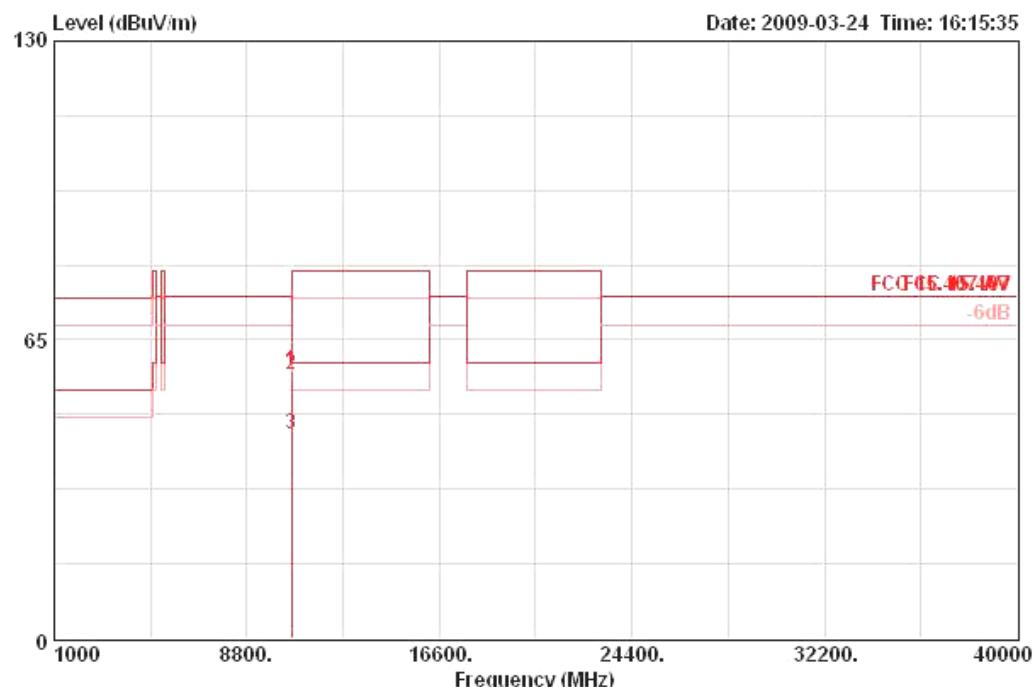


Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Table	Ant		
		Limit	Line	Level	Factor	Factor	Loss				
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm		
1	15779.920	71.14	-8.86	80.00	57.03	37.76	35.54	11.89 PEAK	HORIZONTAL	269	100
2 !	15782.050	54.92	-5.08	60.00	40.84	37.73	35.54	11.89 AVERAGE	HORIZONTAL	269	100

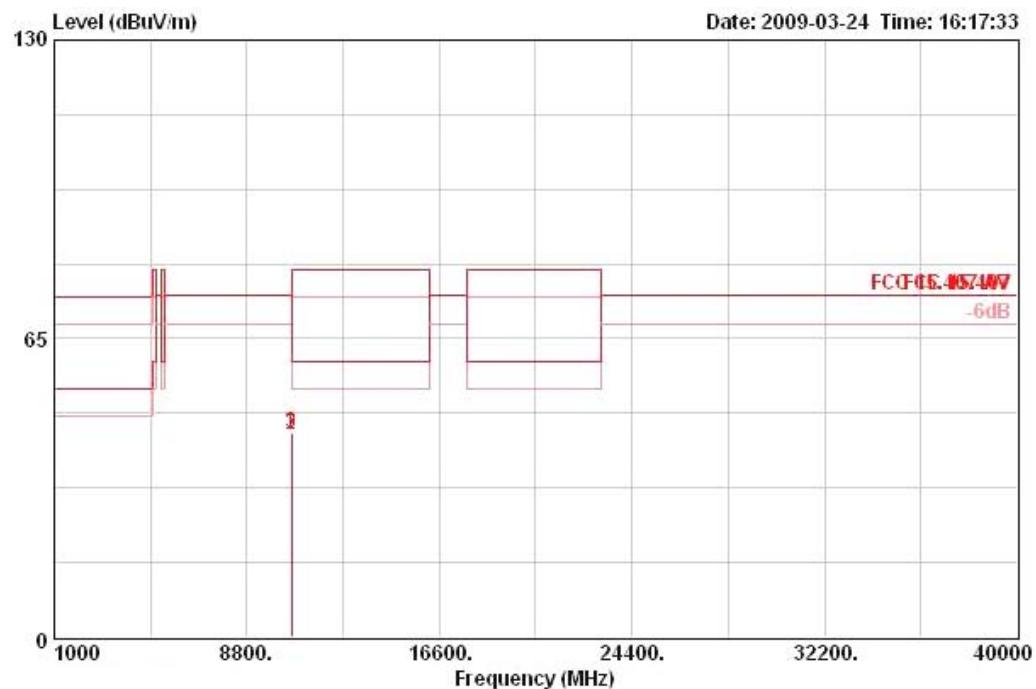
Vertical


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 !	15779.880	74.71	-5.29	80.00	60.60	37.76	35.54	11.89	PERK	VERTICAL	19	117	
2 @	15783.930	59.10	-0.90	60.00	45.02	37.73	35.54	11.89	AVERAGE	VERTICAL	19	117	

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 60 / Ant. A + Ant. B

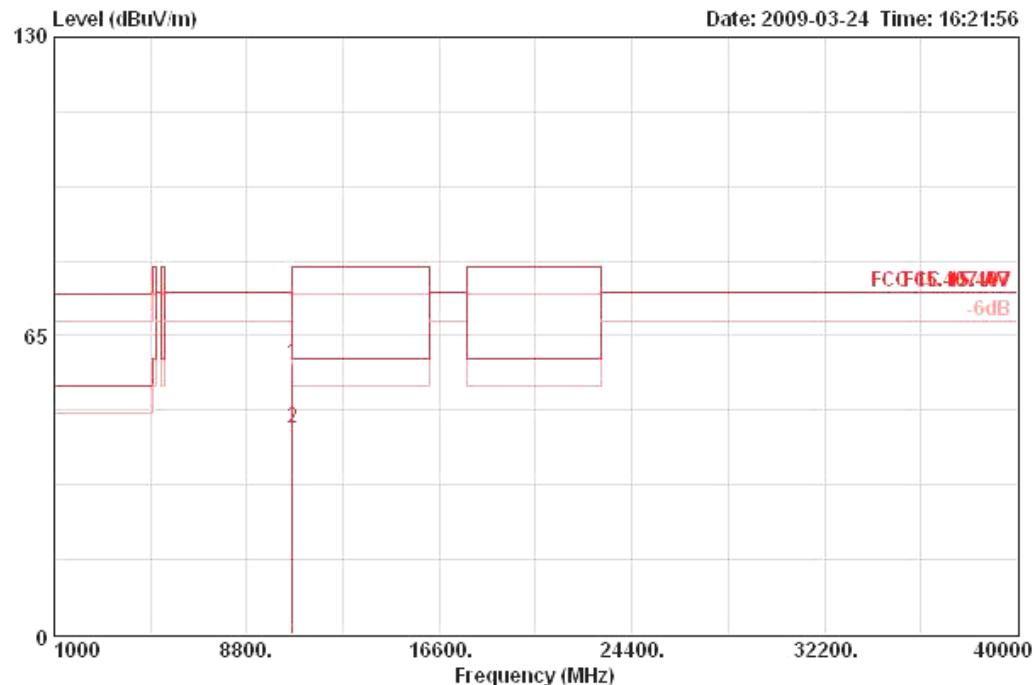
Horizontal


Freq	Level	Over Limit	Limit Line	Read		Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
				MHz	dBuV/m			dB	dBuV/m	dBuV	dB/m	dB	
1	10598.220	58.16	-16.14	74.30	43.02	39.90	35.12	10.36	PERK		HORIZONTAL	269	100
2	10600.020	57.51	-22.49	80.00	42.37	39.90	35.12	10.36	PERK		HORIZONTAL	269	100
3	10601.550	44.32	-15.68	60.00	29.19	39.90	35.12	10.35	AVERAGE		HORIZONTAL	269	100

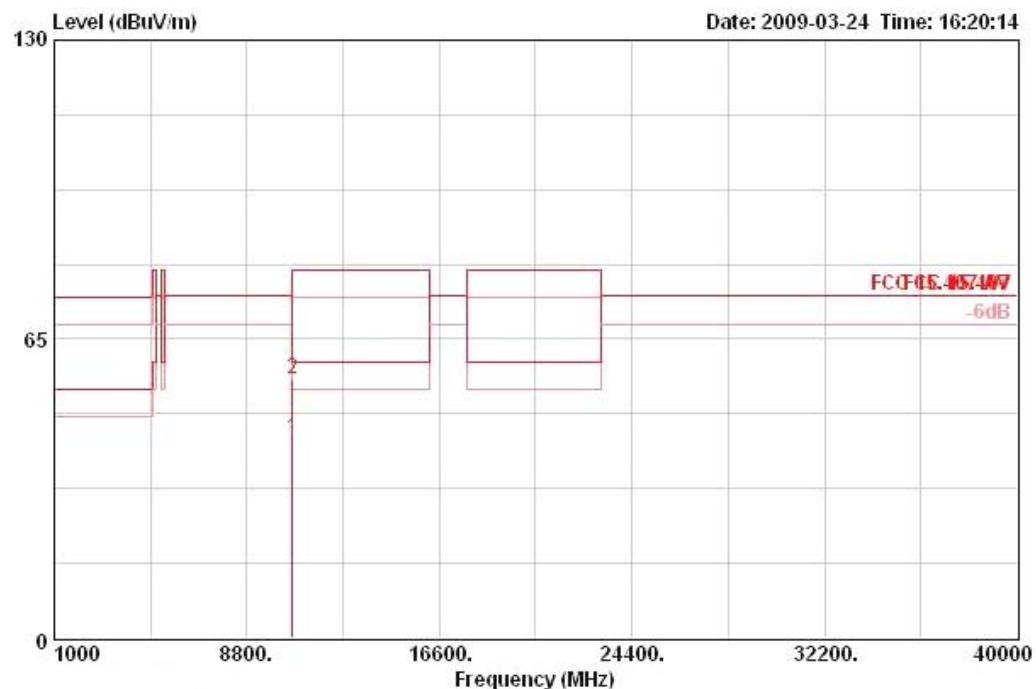
Vertical


Freq	Level	Over Limit		Read Line	Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB				
1	10599.900	44.28	-30.02	74.30	29.14	39.90	35.12	10.36	PERK	VERTICAL	17	117
2	10600.000	44.26	-15.74	60.00	29.12	39.90	35.12	10.36	AVERAGE	VERTICAL	17	117
3	10600.870	44.42	-35.58	80.00	29.29	39.90	35.12	10.35	PERK	VERTICAL	17	117

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 64 / Ant. A + Ant. B

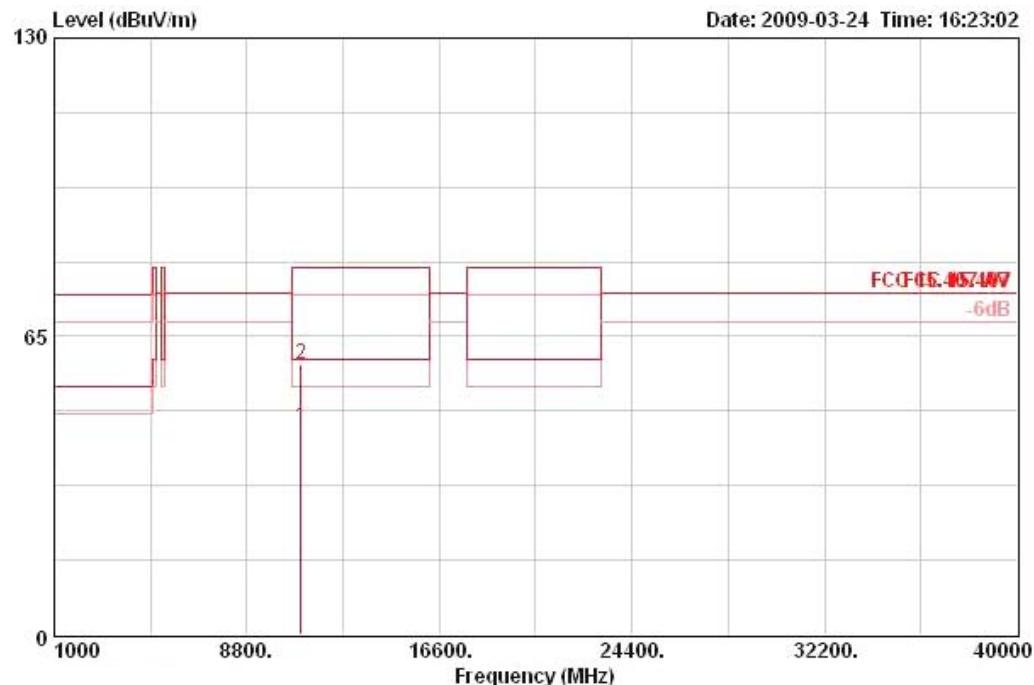
Horizontal


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1	10636.000	58.82	-21.18	80.00	43.70	39.86	35.09	10.35	PERK	HORIZONTAL	270	100	
2	10636.900	44.93	-15.07	60.00	29.82	39.86	35.09	10.35	AVERAGE	HORIZONTAL	270	100	

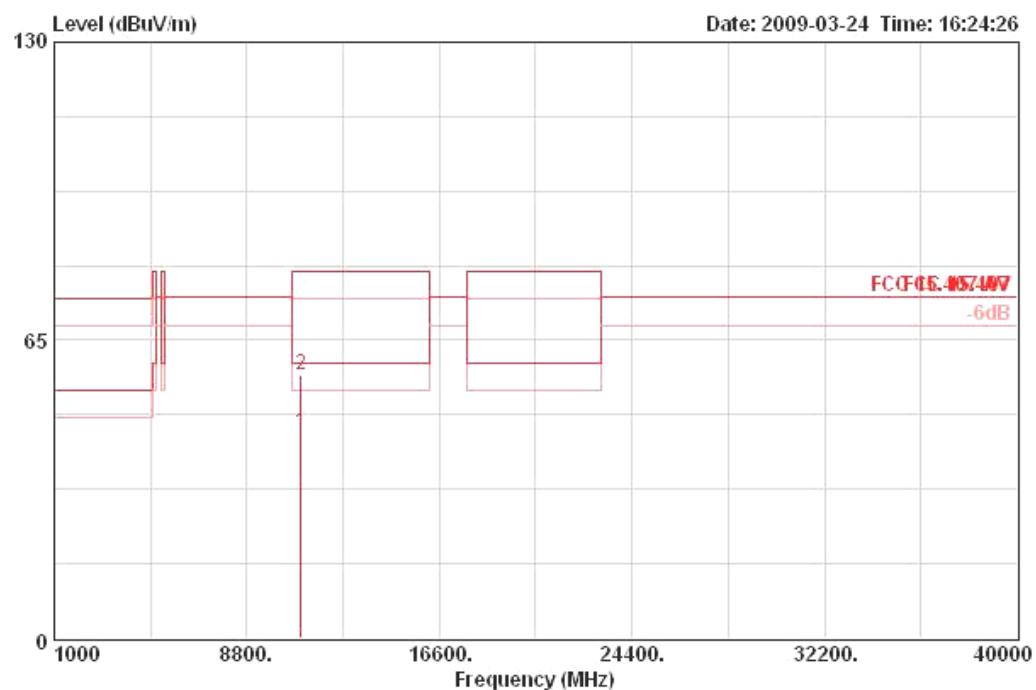
Vertical


Freq	Level	Over Limit	Limit	Read		Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
				Line	Level			Factor	Factor				
MHz	dBuV/m		dB	dBuV/m	dBuV	dB/m	dB	dB	dB			deg	cm
1	10638.180	43.41	-16.59	60.00	28.29	39.86	35.09	10.35	AVERAGE	VERTICAL	17	117	
2	10640.100	56.41	-23.59	80.00	41.29	39.86	35.09	10.35	PEAK	VERTICAL	17	117	

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 100 / Ant. A + Ant. B

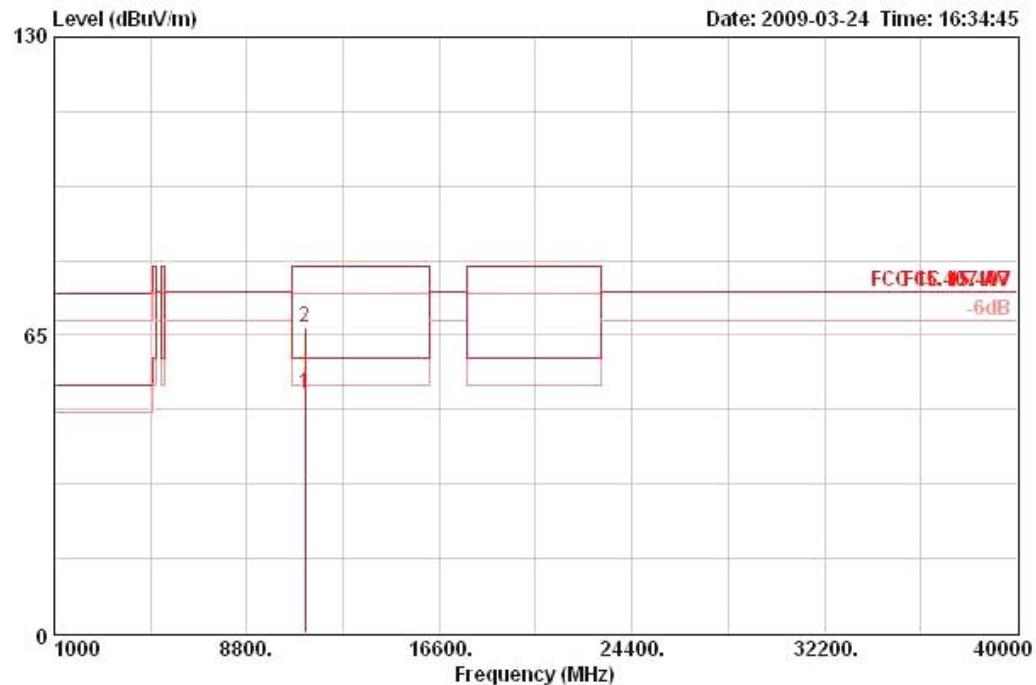
Horizontal


Freq	Level	Over Limit		Read Line	Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB				
1	10976.200	45.27	-14.73	60.00	30.28	39.52	34.81	10.28	AVERAGE	HORIZONTAL	268	100
2	10979.200	58.76	-21.24	80.00	43.77	39.52	34.81	10.28	PERK	HORIZONTAL	268	100

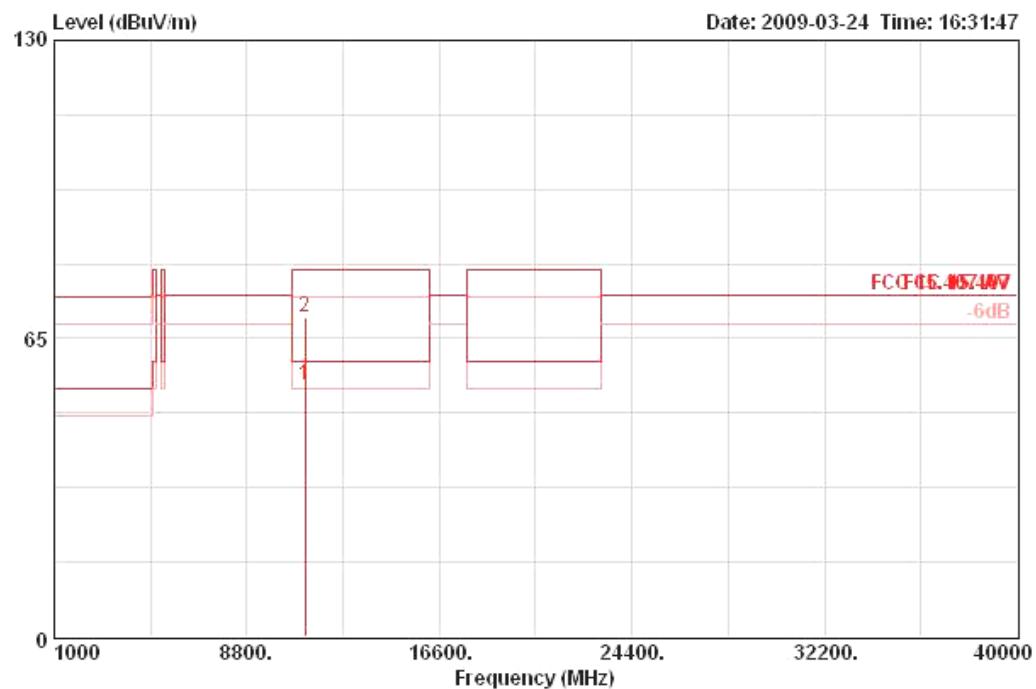
Vertical


Freq	Level	Over Limit	Limit	Read		Antenna	Preamp	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
				Line	Level			Factor	Factor				
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	dB	deg	cm			
10988.700	44.76	-15.24	60.00	29.78	39.50	34.80	10.28	AVERAGE			VERTICAL	17	117
10995.700	57.55	-22.45	80.00	42.57	39.50	34.80	10.28	PEAK			VERTICAL	17	117

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 116 / Ant. A + Ant. B

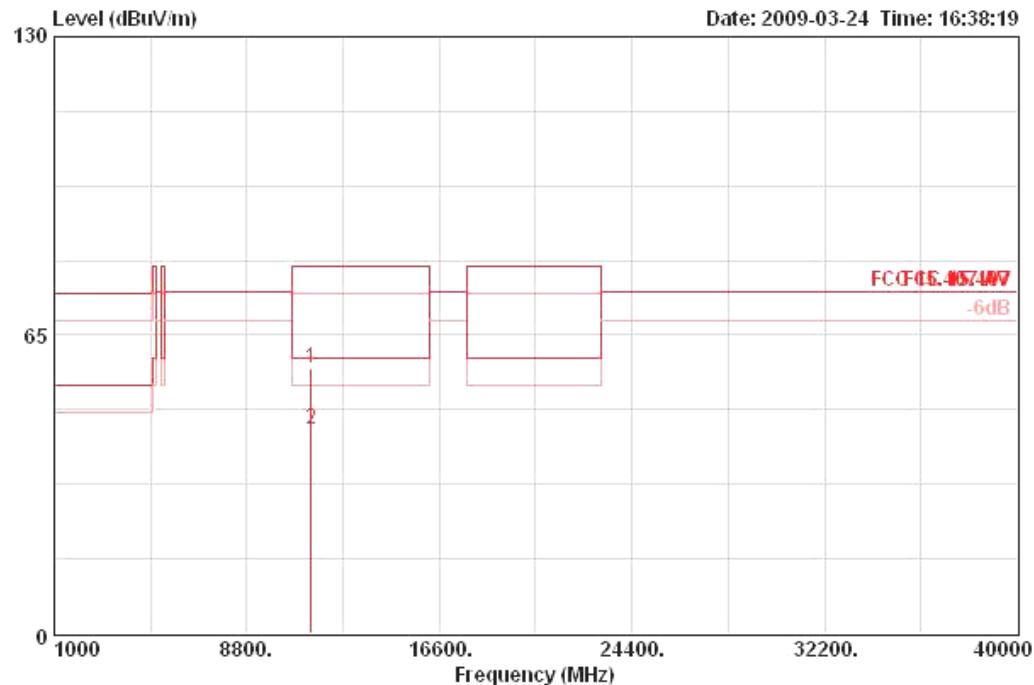
Horizontal


Freq	Level	Over Limit	Limit	Read		Antenna	Preamp	Cable	Loss	Remark	Table Pos	Ant Pos
				Line	Level							
11157.310	52.18	-7.82	60.00	37.09	39.50	34.89	10.48	AVERAGE		HORIZONTAL	316	119
11157.360	66.79	-13.21	80.00	51.71	39.50	34.89	10.48	PERK		HORIZONTAL	316	119

Vertical


Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 !	11157.610	54.80	-5.20	60.00	39.73	39.50	34.90	10.48	AVERAGE	VERTICAL	249	104	
2	11158.260	69.62	-10.38	80.00	54.54	39.50	34.90	10.48	PERK	VERTICAL	249	104	

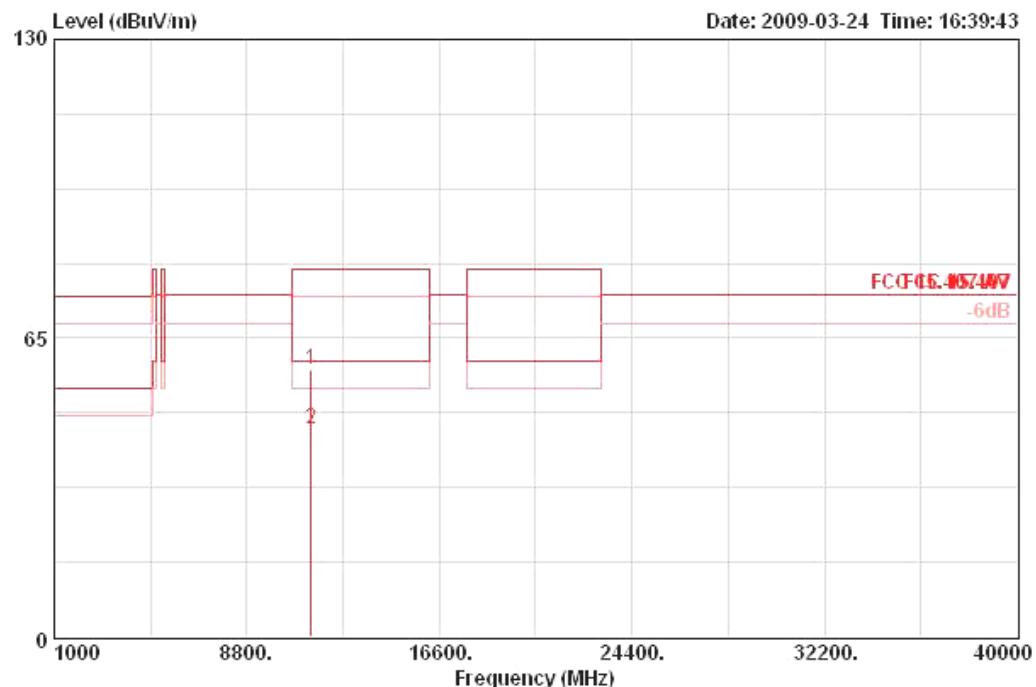
Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 140 / Ant. A + Ant. B

Horizontal


Freq	MHz	Over Limit		Read Line		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		Level	Limit	Level	Line			dB	dB/m				
1	11397.680	57.96	-22.04	80.00	42.70	39.50	35.04	10.80	PERK	HORIZONTAL	269	100	
2	11398.480	44.58	-15.42	60.00	29.32	39.50	35.04	10.80	AVERAGE	HORIZONTAL	269	100	



Vertical



Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Table	Ant		
		Limit	Line	Level	Factor	Factor	Loss				
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
11401.680	58.18	-21.82	80.00	42.92	39.50	35.04	10.80	PERK	VERTICAL	19	116
11402.390	45.09	-14.91	60.00	29.83	39.50	35.04	10.80	AVERAGE	VERTICAL	19	116

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dB_{uV}/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1.5m]) (dB):

Limit line = specific limits (dB) / V + distance extrapolation factor [6 dB]

4.7. Band Edge Emissions Measurement

4.7.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.7.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1 MHz / 1 MHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.6.3, only the frequency range investigated is limited to 100MHz around bandedges.
2. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

4.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.7.7. Test Result of Band Edge and Fundamental Emissions

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 36, 40 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 36

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Limit	Line	Level	Factor	Factor	Loss			deg	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB				
1 @	5146.000	79.35	-0.65	80.00	40.91	34.00	0.00	4.44	PERK	VERTICAL	223	100
2 @	5150.000	58.06	-1.94	60.00	19.61	34.00	0.00	4.44	AVERAGE	VERTICAL	223	100
3 @	5174.200	104.57			66.07	34.07	0.00	4.43	AVERAGE	VERTICAL	223	100
4 @	5177.800	118.72			80.22	34.07	0.00	4.43	PERK	VERTICAL	223	100

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Limit	Line	Level	Factor	Factor	Loss			deg	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB				
1 !	5149.600	75.29	-4.71	80.00	36.85	34.00	0.00	4.44	PERK	VERTICAL	223	100
2 @	5150.000	59.44	-0.56	60.00	21.00	34.00	0.00	4.44	AVERAGE	VERTICAL	223	100
3 @	5198.800	109.14			70.61	34.10	0.00	4.43	AVERAGE	VERTICAL	223	100
4 @	5205.200	122.27			83.75	34.10	0.00	4.43	PERK	VERTICAL	223	100

Item 3, 4 are the fundamental frequency at 5200 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 60, 64 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 60

Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 @	5304.800	122.65				83.95	34.30	0.00	4.40	PERK	VERTICAL	219	100
2 @	5307.200	109.94				71.24	34.30	0.00	4.40	AVERAGE	VERTICAL	219	100
3 @	5351.600	72.54	-7.46	80.00	33.76	34.40	0.00	4.38	PERK	VERTICAL	219	100	
4 @	5352.800	58.41	-1.59	60.00	19.63	34.40	0.00	4.38	AVERAGE	VERTICAL	219	100	

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 @	5326.000	108.04				69.32	34.33	0.00	4.39	AVERAGE	HORIZONTAL	70	110
2 @	5327.400	121.49				82.74	34.37	0.00	4.39	PERK	HORIZONTAL	70	110
3 @	5350.000	58.43	-1.57	60.00	19.65	34.40	0.00	4.38	AVERAGE	HORIZONTAL	70	110	
4 @	5351.400	79.37	-0.63	80.00	40.59	34.40	0.00	4.38	PERK	HORIZONTAL	70	110	

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 100, 140 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 100

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Table	Pos	Ant	
			Line	Limit	Level	Factor	Factor	Loss				
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1	5459.600	70.31	-9.69	80.00	31.36	34.60	0.00	4.35	PERK	HORIZONTAL	71	107
2 @	5460.000	56.88	-3.12	60.00	17.93	34.60	0.00	4.35	AVERAGE	HORIZONTAL	71	107
3 @	5468.800	74.16	-0.14	74.30	35.17	34.63	0.00	4.35	PERK	HORIZONTAL	71	107
4 @	5492.000	118.20			79.19	34.67	0.00	4.34	PERK	HORIZONTAL	71	107
5 @	5502.800	105.50			66.45	34.70	0.00	4.35	AVERAGE	HORIZONTAL	71	107

Item 4, 5 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Table	Pos	Ant	
			Line	Limit	Level	Factor	Factor	Loss				
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1 @	5701.400	118.12			78.86	34.87	0.00	4.39	PERK	HORIZONTAL	70	107
2 @	5701.800	105.84			66.58	34.87	0.00	4.39	AVERAGE	HORIZONTAL	70	107
3 @	5725.200	74.11	-0.19	74.30	34.83	34.88	0.00	4.40	PERK	HORIZONTAL	70	107

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 38, 46 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 38

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Limit	Line	Level	Factor	Factor	Loss			Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 @	5149.200	79.23	-0.77	80.00	40.79	34.00	0.00	4.44	PERK	HORIZONTAL	76	101
2 @	5150.000	59.20	-0.80	60.00	20.76	34.00	0.00	4.44	AVERAGE	HORIZONTAL	76	101
3 @	5188.000	113.15			74.65	34.07	0.00	4.43	PERK	HORIZONTAL	76	101
4 @	5199.600	99.06			60.53	34.10	0.00	4.43	AVERAGE	HORIZONTAL	76	101

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Limit	Line	Level	Factor	Factor	Loss			Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 @	5146.400	76.85	-3.15	80.00	38.41	34.00	0.00	4.44	PERK	HORIZONTAL	67	100
2 @	5150.000	59.52	-0.48	60.00	21.08	34.00	0.00	4.44	AVERAGE	HORIZONTAL	67	100
3 @	5244.800	107.25			68.63	34.20	0.00	4.42	AVERAGE	HORIZONTAL	67	100
4 @	5246.800	120.73			82.12	34.20	0.00	4.41	PERK	HORIZONTAL	67	100

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 54, 62 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 54

Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 @	5273.600	106.45			67.81	34.23	0.00	4.40	AVERAGE	HORIZONTAL	69	100	
2 @	5278.400	121.38			82.71	34.27	0.00	4.40	PERK	HORIZONTAL	69	100	
3 !	5351.200	76.06	-3.94	80.00	37.29	34.40	0.00	4.38	PERK	HORIZONTAL	69	100	
4 @	5355.200	59.88	-0.12	60.00	21.10	34.40	0.00	4.38	AVERAGE	HORIZONTAL	69	100	

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

Freq	Level	Over Limit		Read		Antenna Factor	Preamp Factor	Cable Loss		Remark	Pol/Phase	Table Pos	Ant Pos
		MHz	dBuV/m	dB	dBuV/m			dBuV	dB/m	dB			
1 @	5304.000	102.29			63.60	34.30	0.00	4.40	AVERAGE	HORIZONTAL	68	100	
2 @	5308.400	116.35			77.66	34.30	0.00	4.40	PERK	HORIZONTAL	68	100	
3 @	5350.000	59.66	-0.34	60.00	20.88	34.40	0.00	4.38	AVERAGE	HORIZONTAL	68	100	
4 @	5350.000	79.52	-0.48	80.00	40.74	34.40	0.00	4.38	PERK	HORIZONTAL	68	100	

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 102, 110, 134 / Ant. A + Ant. B
Test Date	Mar. 24, 2009		

Channel 102

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Line	Level	Factor	Factor	Loss	Pos			Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	5450.800	71.19	-8.81	80.00	32.24	34.60	0.00	4.35	PERK	VERTICAL	10	102
2 !	5460.000	56.52	-3.48	60.00	17.57	34.60	0.00	4.35	AVERAGE	VERTICAL	10	102
3 @	5468.000	72.87	-1.43	74.30	33.89	34.63	0.00	4.35	PERK	VERTICAL	10	102
4 @	5495.600	110.87			71.86	34.67	0.00	4.34	PERK	VERTICAL	10	102
5 @	5502.000	97.11			58.07	34.70	0.00	4.35	AVERAGE	VERTICAL	10	102

Item 4, 5 are the fundamental frequency at 5510MHz.

Channel 110

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Line	Level	Factor	Factor	Loss	Pos			Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 !	5458.400	74.22	-5.78	80.00	35.27	34.60	0.00	4.35	PERK	HORIZONTAL	264	100
2 @	5460.000	58.27	-1.73	60.00	19.32	34.60	0.00	4.35	AVERAGE	HORIZONTAL	264	100
3 @	5463.600	74.26	-0.04	74.30	35.28	34.63	0.00	4.35	PERK	HORIZONTAL	264	100
4 @	5535.200	117.45			78.37	34.73	0.00	4.35	PERK	HORIZONTAL	264	100
5 @	5540.400	103.52			64.44	34.73	0.00	4.35	AVERAGE	HORIZONTAL	264	100

Item 4, 5 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
			Line	Level	Factor	Factor	Loss	Pos			Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1 @	5655.600	114.89			75.68	34.82	0.00	4.39	PERK	HORIZONTAL	267	100
2 @	5684.400	100.12			60.88	34.85	0.00	4.39	AVERAGE	HORIZONTAL	267	100
3 @	5725.800	73.79	-0.51	74.30	34.52	34.88	0.00	4.40	PERK	HORIZONTAL	267	100

Item 1, 2 are the fundamental frequency at 5670 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 36, 40 / Ant. A
Test Date	Mar. 24, 2009		

Channel 36

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
			Limit	Line	Level	Factor	Loss	Factor			Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 !		5149.200	79.46	-0.54	80.00	40.03	33.07	6.36	0.00 PEAK	100	11 VERTICAL
2 !		5150.000	59.91	-0.09	60.00	20.48	33.07	6.36	0.00 AVERAGE	100	11 VERTICAL
3		5182.800	106.55			67.15	33.13	6.27	0.00 AVERAGE	100	11 VERTICAL
4 @		5185.200	118.07			78.66	33.13	6.27	0.00 PEAK	100	11 VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
			Limit	Line	Level	Factor	Loss	Factor			Pos
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1		5147.600	73.88	-6.12	80.00	34.44	33.07	6.36	0.00 PEAK	106	74 HORIZONTAL
2 !		5150.000	59.81	-0.19	60.00	20.38	33.07	6.36	0.00 AVERAGE	106	74 HORIZONTAL
3 @		5192.800	121.15			81.72	33.16	6.27	0.00 PEAK	106	74 HORIZONTAL
4		5204.400	109.78			70.43	33.16	6.18	0.00 AVERAGE	106	74 HORIZONTAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 60, 64 / Ant. A
Test Date	Mar. 23, 2009		

Channel 60

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Pos	Pos	Pol/Phase
			Limit	Line	Level	Factor	Loss	Factor		cm			
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB					
1 @	5303.200	121.40			82.23	33.34	5.83	0.00	PEAK		100	219	VERTICAL
2	5304.800	110.15			70.99	33.34	5.83	0.00	AVERAGE		100	219	VERTICAL
3 !	5350.000	59.16	-0.84	60.00	20.08	33.43	5.65	0.00	AVERAGE		100	219	VERTICAL
4	5350.800	73.19	-6.81	80.00	34.11	33.43	5.65	0.00	PEAK		100	219	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Pos	Pos	Pol/Phase
			Limit	Line	Level	Factor	Loss	Factor		cm			
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB					
1 @	5316.200	118.33			79.14	33.37	5.83	0.00	PEAK		100	257	VERTICAL
2	5320.800	107.37			68.18	33.37	5.83	0.00	AVERAGE		100	257	VERTICAL
3 !	5350.000	59.22	-0.78	60.00	20.14	33.43	5.65	0.00	AVERAGE		100	257	VERTICAL
4 !	5351.800	76.02	-3.98	80.00	36.94	33.43	5.65	0.00	PEAK		100	257	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a Ch 100, 140 / Ant. A
Test Date	Mar. 24, 2009		

Channel 100

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
			Line	Limit	Level	Factor	Loss	Factor			
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 !	5460.000	57.59	-2.41	60.00	18.69	33.61	5.29	0.00	AVERAGE	100	224 VERTICAL
2	5460.000	69.04	-10.96	80.00	30.14	33.61	5.29	0.00	PEAK	100	224 VERTICAL
3 !	5469.800	72.60	-1.70	74.30	33.68	33.64	5.29	0.00	PEAK	100	224 VERTICAL
4 @	5500.800	116.56			77.63	33.70	5.23	0.00	PEAK	100	224 VERTICAL
5	5501.400	104.78			65.85	33.70	5.23	0.00	AVERAGE	100	224 VERTICAL

Item 4, 5 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
			Line	Limit	Level	Factor	Loss	Factor			
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	5695.800	103.20			63.53	34.27	5.40	0.00	AVERAGE	100	225 VERTICAL
2 @	5697.000	115.22			75.55	34.27	5.40	0.00	PEAK	100	225 VERTICAL
3 !	5725.400	73.75	-0.55	74.30	33.94	34.37	5.43	0.00	PEAK	100	225 VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

4.8. Frequency Stability Measurement

4.8.1. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or $\pm 20\text{ppm}$ (Draft n specification).

4.8.2. Measuring Instruments and Setting

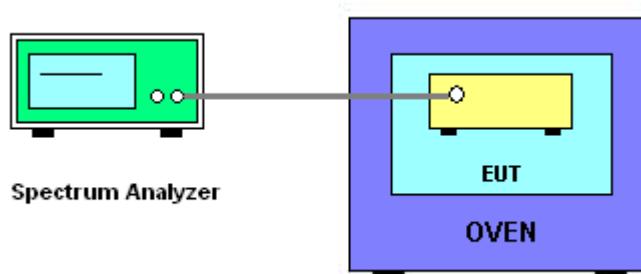
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is $(fc-f)/fc \times 10^6 \text{ ppm}$ and the limit is less than $\pm 20\text{ppm}$ (Draft n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature rule is $-30^\circ\text{C} \sim 50^\circ\text{C}$.
8. Measuring multiple antennas, the connector is required to link with Power Meter through a combiner.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.8.7. Test Result of Frequency Stability

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5300
126.50	5299.994600
110.00	5299.999400
93.50	5300.002400
Max. Deviation (MHz)	0.005400
Max. Deviation (ppm)	1.02

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5300
-30	5300.035400
-20	5300.033000
-10	5300.024600
0	5300.021600
10	5300.001200
20	5299.999800
30	5299.996800
40	5299.994600
50	5299.992300
Max. Deviation (MHz)	0.035400
Max. Deviation (ppm)	6.68

4.9. Antenna Requirements

4.9.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.9.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Mar. 03, 2009	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2009	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2009	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2008	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz – 30MHz	Mar. 27, 2009	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 14, 2008	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	COA9231A	18667	9 kHz - 2 GHz	Jan. 23, 2009	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Jul. 21, 2008	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5 GHz - 40 GHz	Jan. 22, 2009*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100004	9 kHz - 30 GHz	Oct. 06, 2008	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	Jul. 28, 2008*	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 12, 2008	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	Apr. 04, 2008	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jan. 16, 2009	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Jan. 05, 2009	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Jan. 05, 2009	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 – 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Jan. 09, 2009	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jul. 11, 2008	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jul. 11, 2008	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jul. 11, 2008	Conducted (TH01-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 30, 2008*	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 13, 2009	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-S	MAB0103-001	N/A	Jul. 18, 2008	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2008	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2008	Conducted (TH01-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Dec. 14, 2008	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 10, 2009	Conducted (TH01-HY)
Oscilloscope	Tektonix	TDS380	B016197	400MHz/ 2GS/s	Jun. 27, 2008	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

Note: *Calibration Interval of instruments listed above is two year.

6. TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 nd Rd., Taipei 114, Taiwan, R.O.C. TEL : 886-2-2794-8886 FAX : 886-2-2794-9777
JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

7. TAF CERTIFICATE OF ACCREDITATION



Certificate No. : L1190-070110

財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

This is to certify that

Sportun International Inc.
EMC & Wireless Communications Laboratory
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025:2005
Accreditation Number	:	1190
Originally Accredited	:	December 15, 2003
Effective Period	:	January 10, 2007 to January 09, 2010
Accredited Scope	:	Testing Field, see described in the Appendix
Specific Accreditation Program	:	Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : January 10, 2007

PI, total 9 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when used without the Appendix.