

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Peak Excursion

Temperature	26°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	Draft n

Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.16	13	Complies
60	5300 MHz	10.19	13	Complies
64	5320 MHz	11.86	13	Complies
100	5500 MHz	11.43	13	Complies
116	5580 MHz	10.94	13	Complies
140	5700 MHz	10.32	13	Complies

Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3

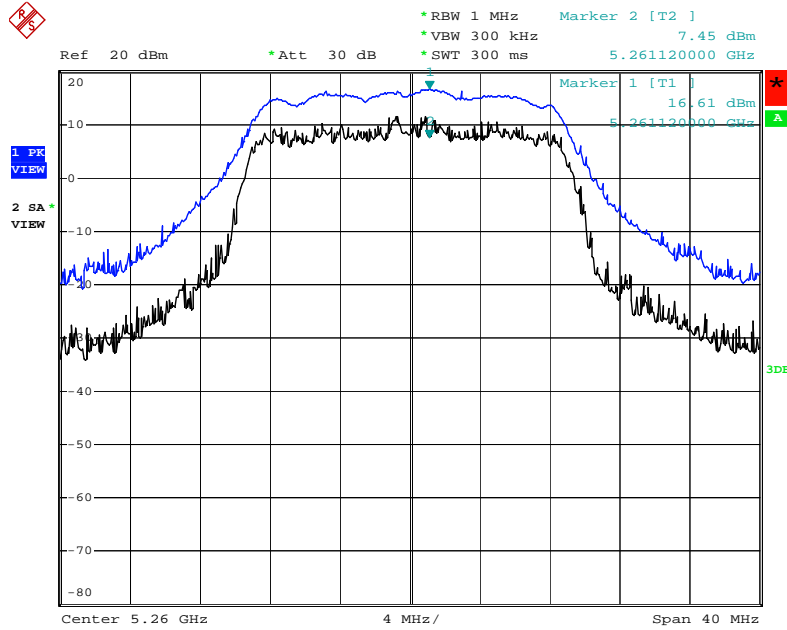
Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	10.08	13	Complies
62	5310 MHz	10.65	13	Complies
102	5510MHz	10.62	13	Complies
110	5550 MHz	8.92	13	Complies
134	5670 MHz	8.87	13	Complies

Temperature	26°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a

Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3

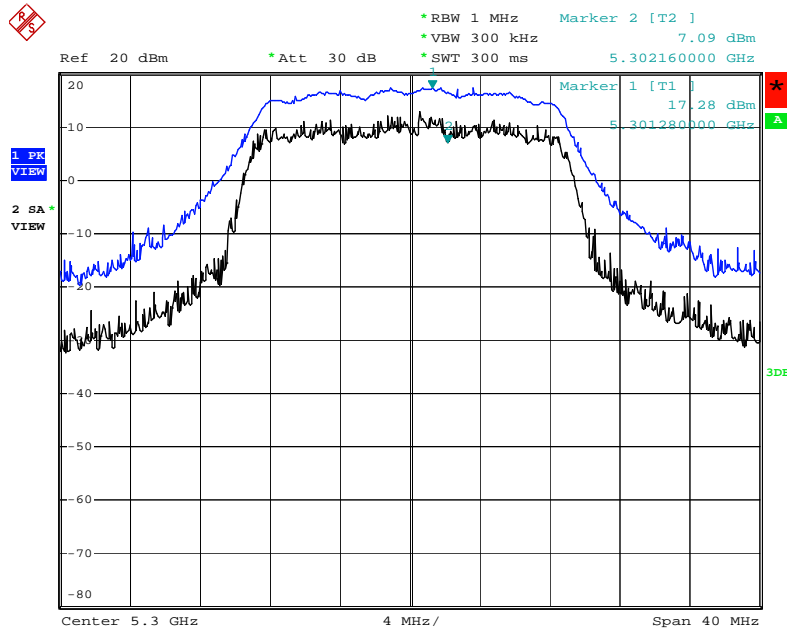
Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.07	13	Complies
60	5300 MHz	9.43	13	Complies
64	5320 MHz	9.65	13	Complies
100	5500 MHz	9.76	13	Complies
116	5580 MHz	9.34	13	Complies
140	5700 MHz	9.36	13	Complies

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



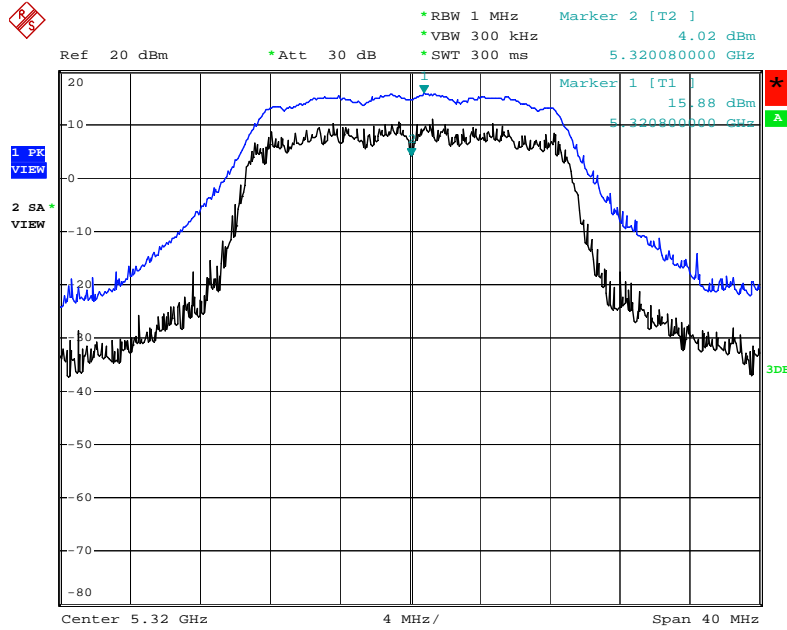
Date: 8.OCT.2008 20:01:32

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



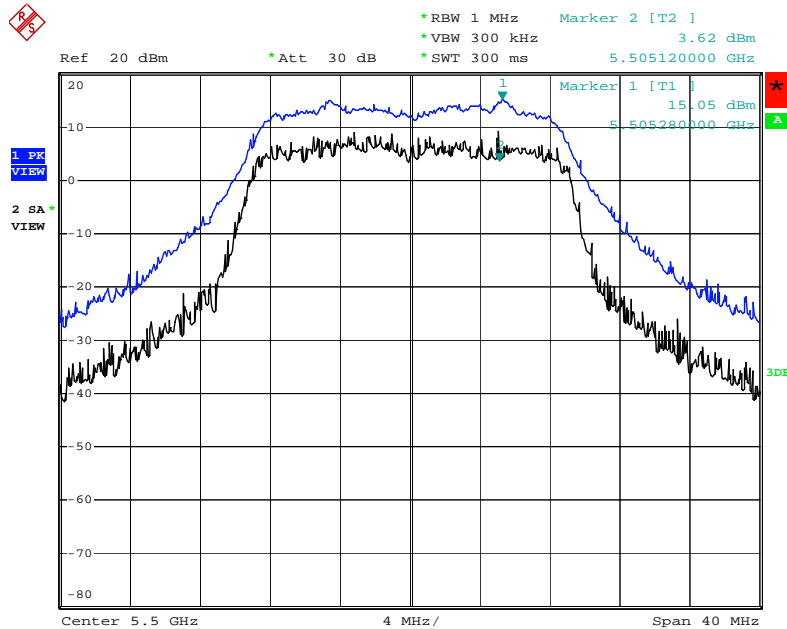
Date: 8.OCT.2008 19:59:23

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



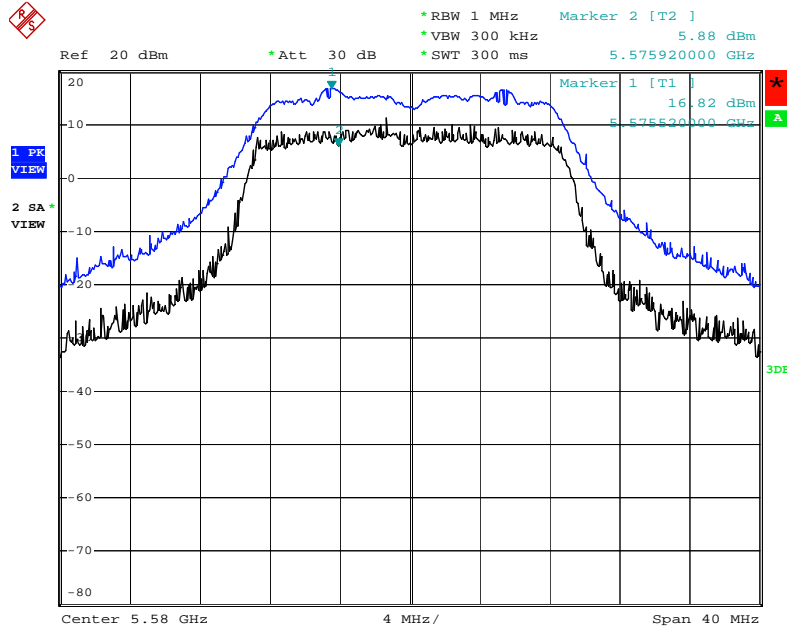
Date: 8.OCT.2008 19:57:23

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



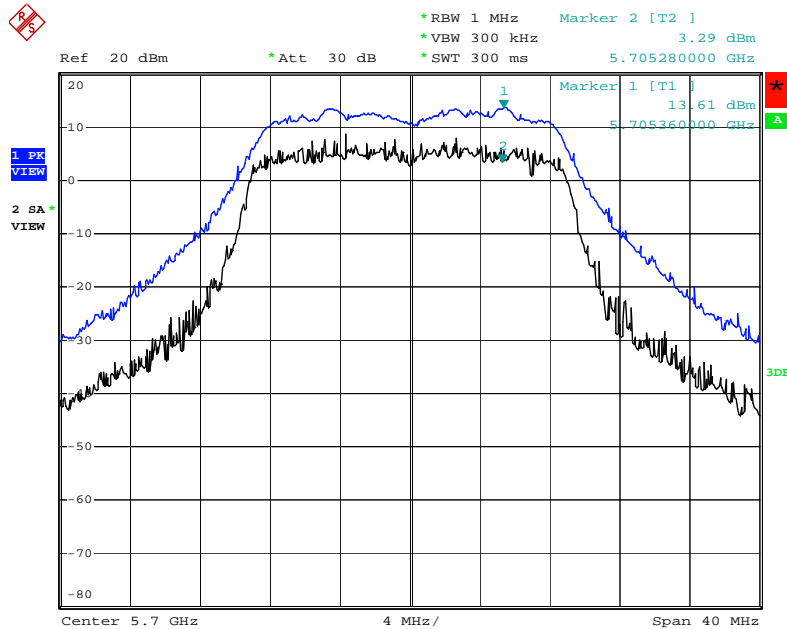
Date: 8.OCT.2008 19:54:21

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



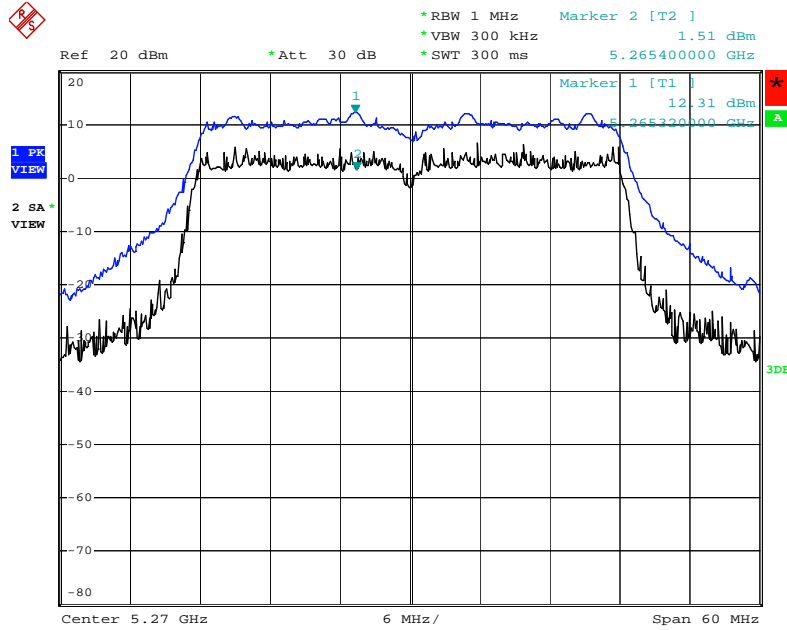
Date: 8.OCT.2008 19:52:11

Peak Excursion Plot on Configuration Drafft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



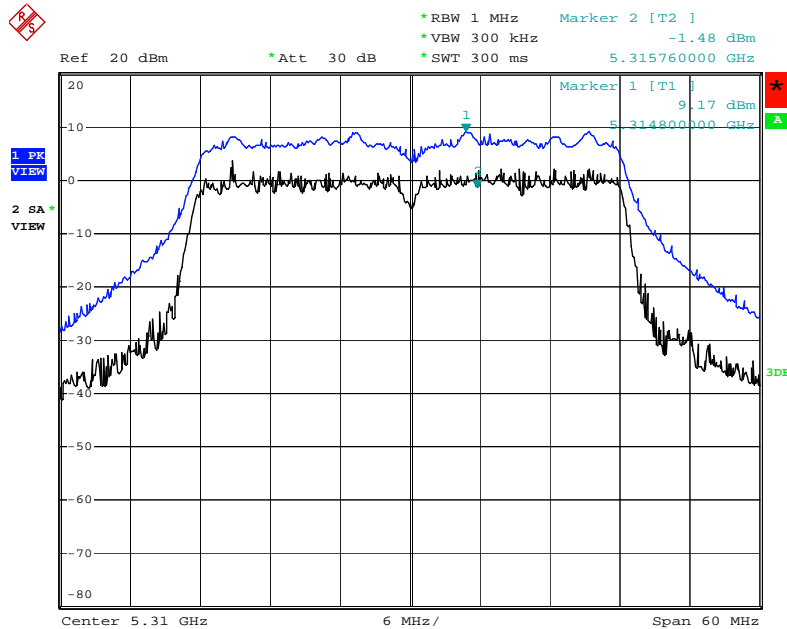
Date: 8.OCT.2008 19:50:18

Peak Excursion Plot on Configuration Drafft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5270 MHz



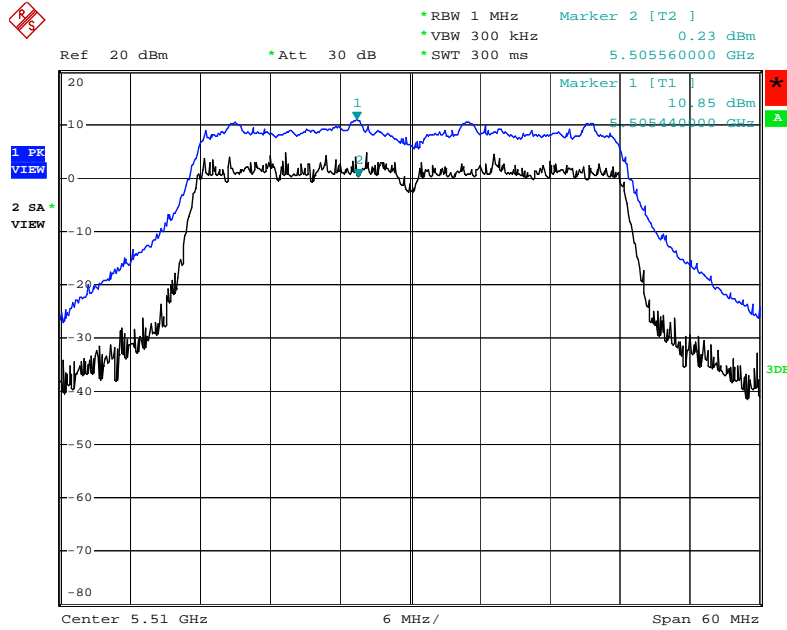
Date: 8.OCT.2008 20:08:33

Peak Excursion Plot on Configuration Drafft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5310 MHz



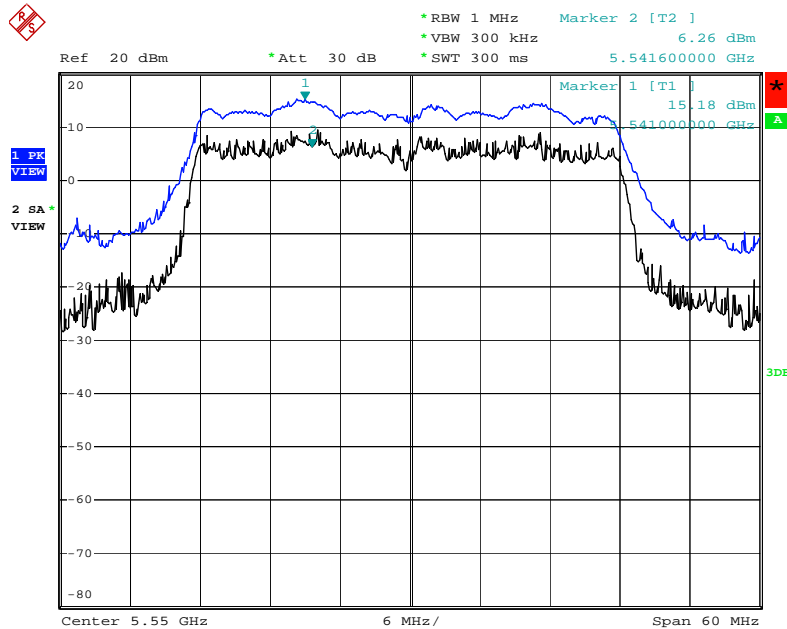
Date: 8.OCT.2008 20:10:26

Peak Excursion Plot on Configuration Drafft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5510MHz



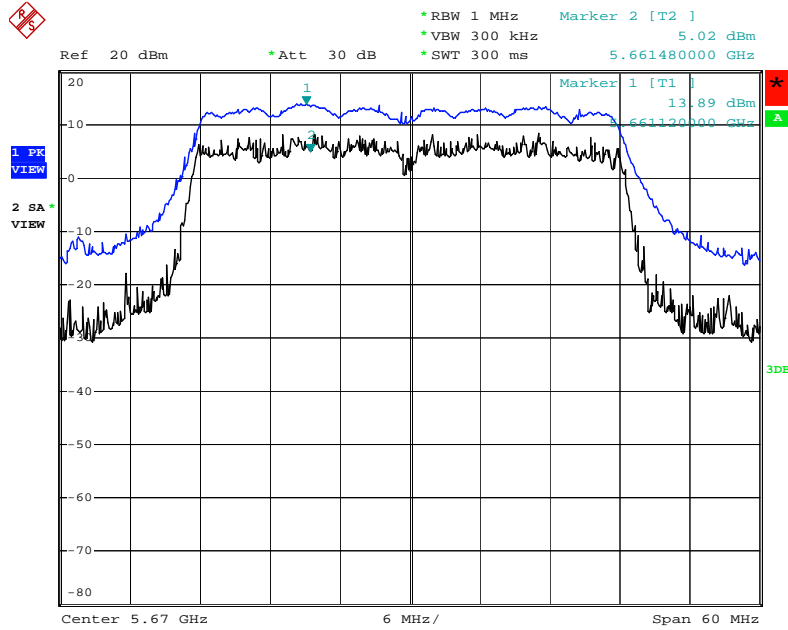
Date: 8.OCT.2008 20:12:43

Peak Excursion Plot on Configuration Drafft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5550 MHz



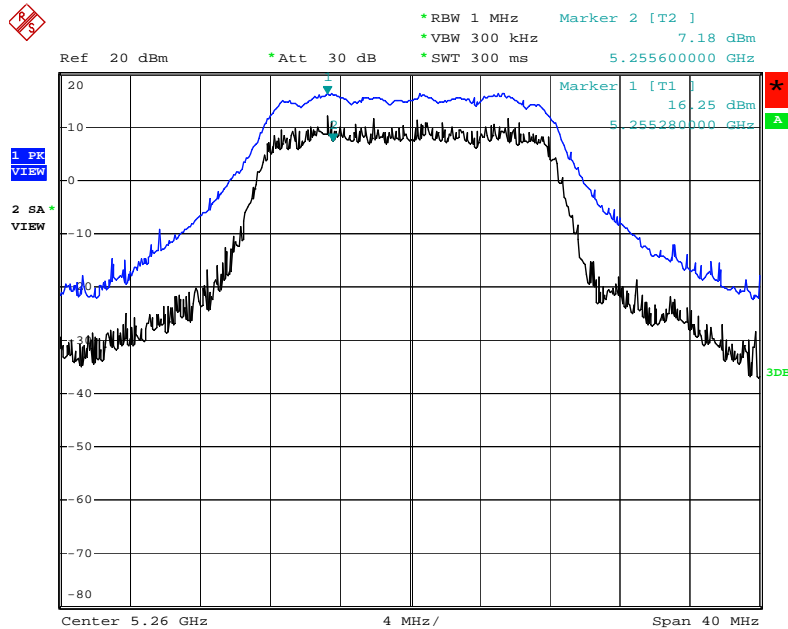
Date: 8.OCT.2008 20:17:56

Peak Excursion Plot on Configuration Drafft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5670 MHz



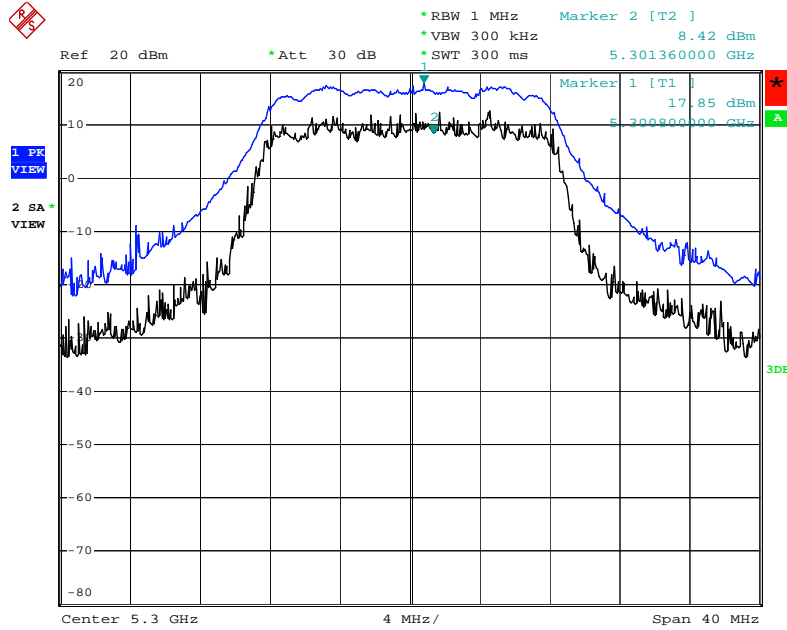
Date: 8.OCT.2008 20:19:35

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



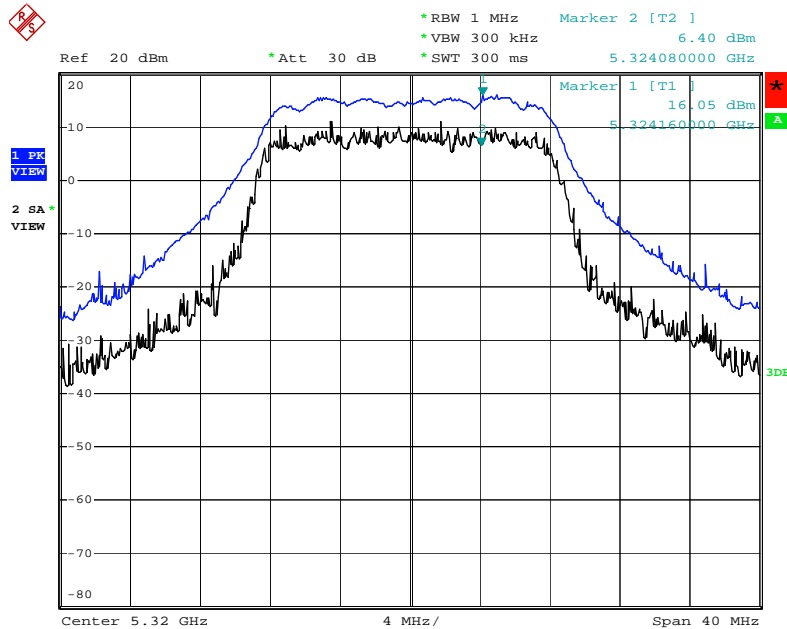
Date: 8.OCT.2008 19:33:29

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



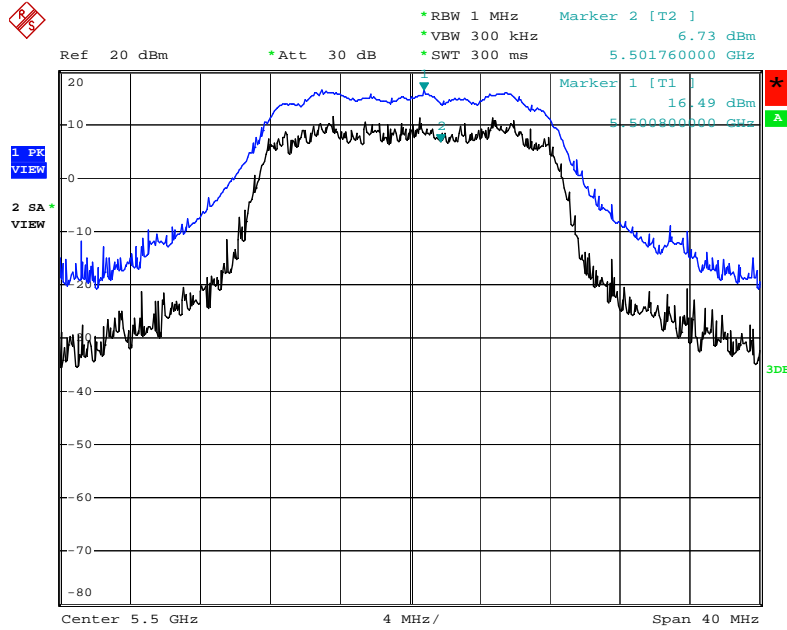
Date: 8.OCT.2008 19:38:19

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



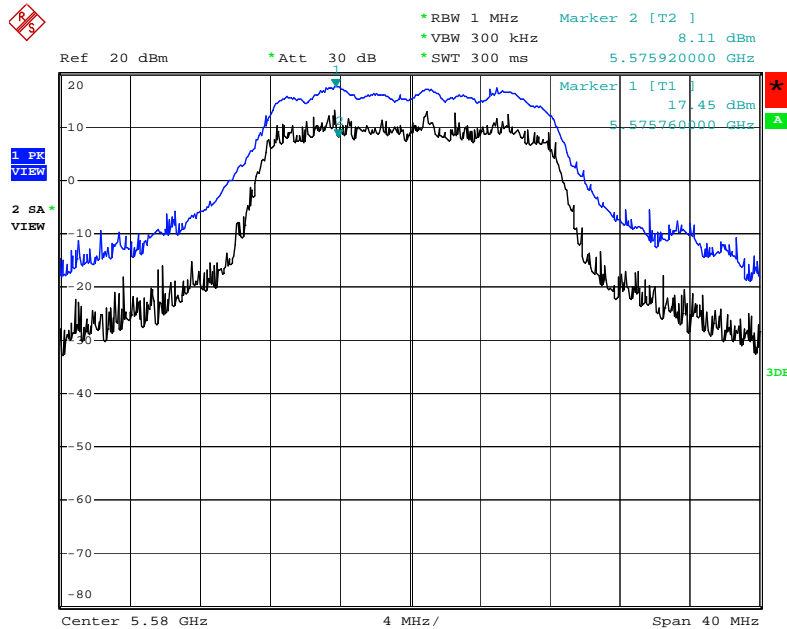
Date: 8.OCT.2008 19:41:40

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



Date: 8.OCT.2008 19:44:26

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



Date: 8.OCT.2008 19:46:10

4.6. Radiated Emissions Measurement

4.6.1. 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 falls 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 (microrvolts/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

4.6.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1000KHz / 1000KHz for peak

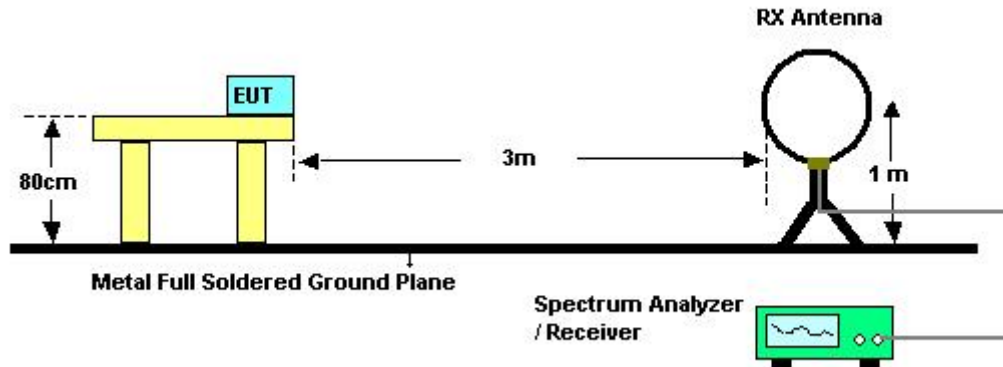
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.6.3. Test Procedures

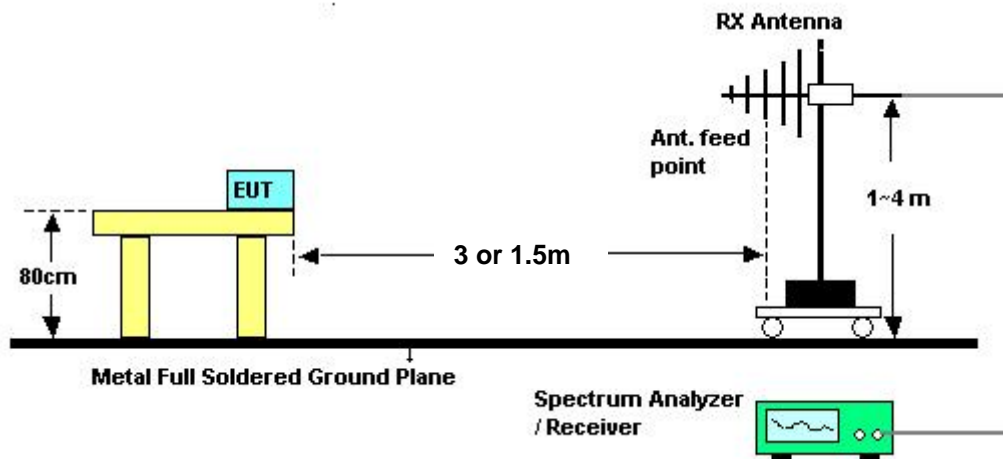
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.6.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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 = $20 \log (\text{specific distance [3m]} / \text{test distance [1.5m]})$ (dB);

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	24°C	Humidity	56%
Test Engineer	Roy Huang	Configurations	Normal Link

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

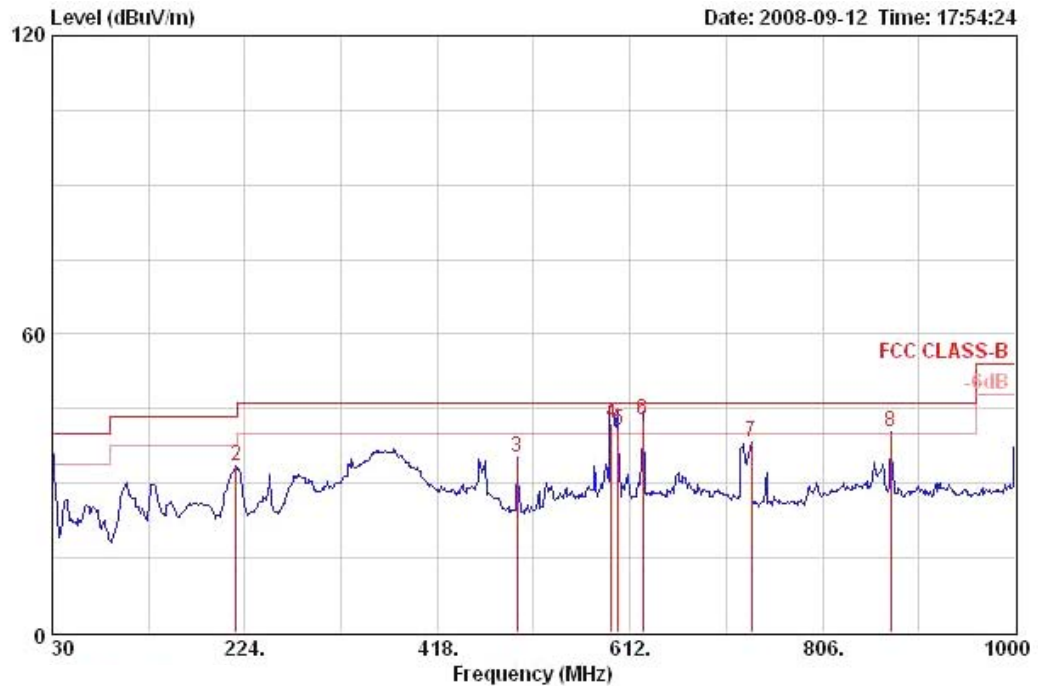
Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6.8. Results of Radiated Emissions (30MHz~1GHz)

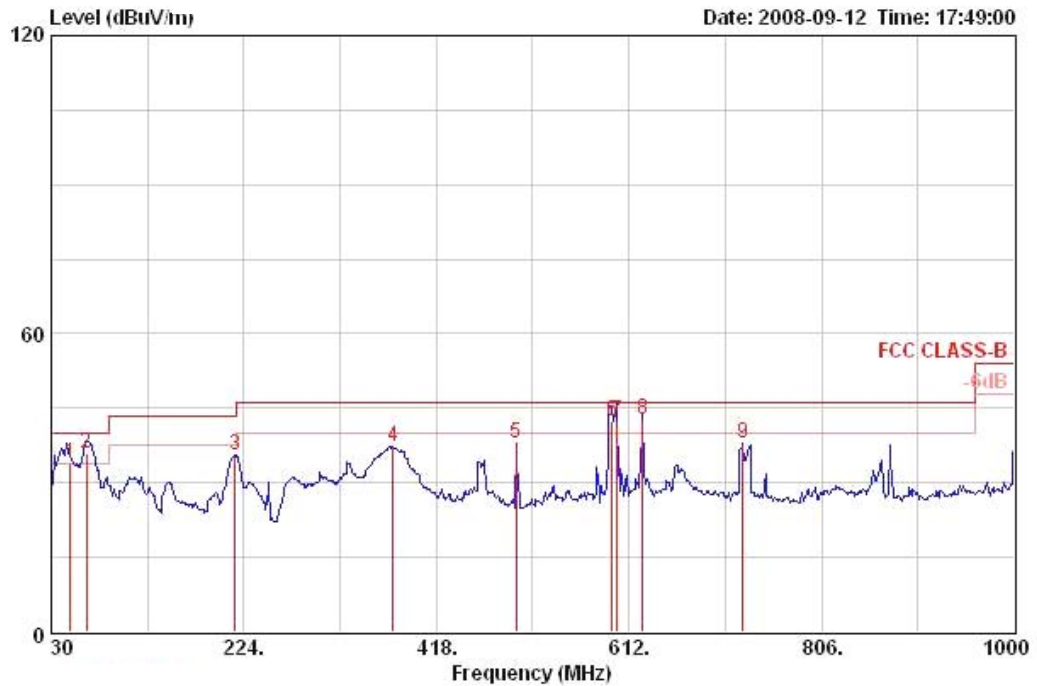
Temperature	24°C	Humidity	56%
Test Engineer	Roy Huang	Configurations	Mode 2

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	30.000	30.46	-9.54	40.00	39.00	18.76	27.80	0.50	QP	HORIZONTAL	0	100
2	215.270	33.37	-10.13	43.50	48.49	10.19	27.07	1.76	Peak	HORIZONTAL	0	100
3	498.510	35.06	-10.94	46.00	42.86	17.60	28.09	2.70	Peak	HORIZONTAL	0	100
4 !	593.360	42.18	-3.82	46.00	48.70	18.69	28.10	2.89	QP	HORIZONTAL	0	157
5 !	599.880	40.67	-5.33	46.00	47.10	18.77	28.10	2.90	QP	HORIZONTAL	12	165
6 Ⓟ	624.990	42.82	-3.18	46.00	49.00	18.85	28.07	3.05	QP	HORIZONTAL	163	141
7	734.220	38.12	-7.88	46.00	43.23	19.32	27.86	3.44	Peak	HORIZONTAL	0	100
8 !	874.870	40.48	-5.52	46.00	44.09	20.34	27.45	3.50	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	49.100	33.93	-6.07	40.00	52.20	8.83	27.80	0.70	QP	VERTICAL	346	100
2 !	65.740	35.93	-4.07	40.00	56.10	6.69	27.74	0.88	QP	VERTICAL	11	186
3	215.270	35.70	-7.80	43.50	50.81	10.19	27.07	1.76	Peak	VERTICAL	0	400
4	374.350	37.21	-8.79	46.00	47.00	15.38	27.42	2.25	Peak	VERTICAL	0	400
5	498.510	38.00	-8.00	46.00	45.79	17.60	28.09	2.70	Peak	VERTICAL	0	400
6 !	595.000	42.39	-3.61	46.00	48.90	18.70	28.10	2.89	QP	VERTICAL	56	100
7 !	600.200	42.47	-3.53	46.00	48.90	18.77	28.10	2.90	QP	VERTICAL	0	100
8 !	625.580	42.79	-3.21	46.00	48.96	18.85	28.07	3.05	QP	VERTICAL	0	400
9	726.460	37.92	-8.08	46.00	43.14	19.27	27.89	3.41	Peak	VERTICAL	0	400

Note:

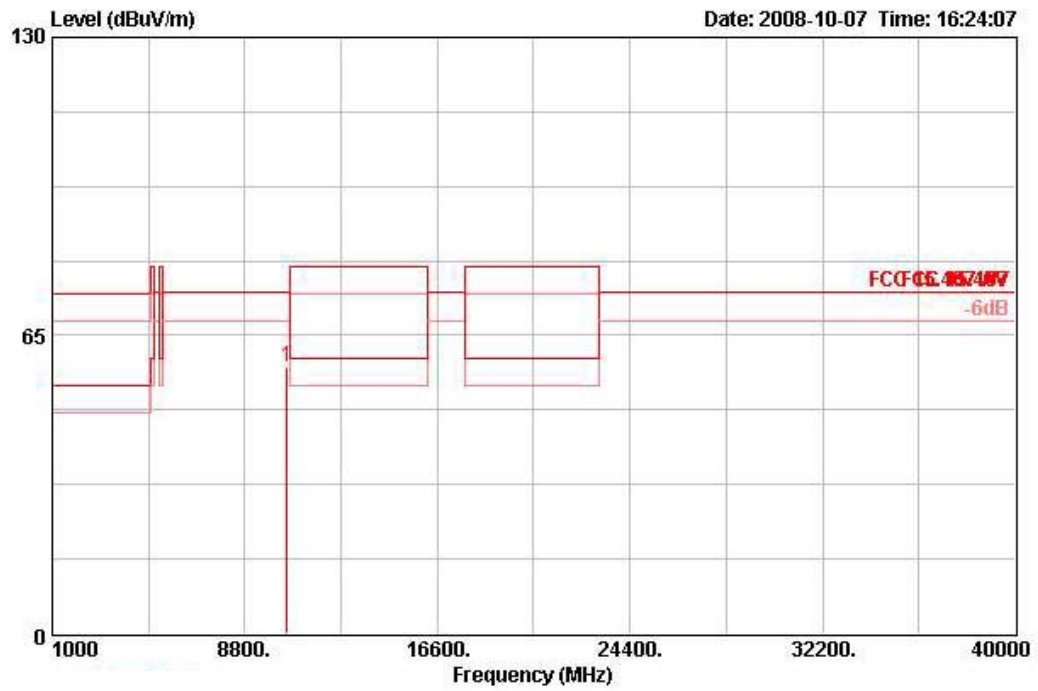
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

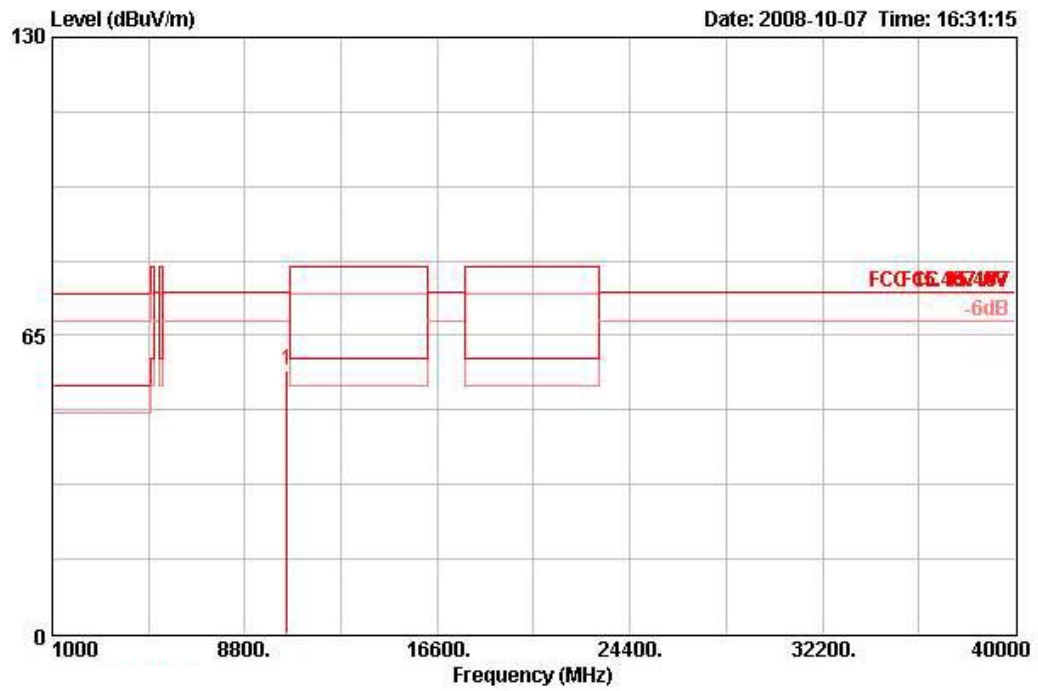
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 52 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10520.740	58.12	-16.18	74.30	48.17	38.40	6.48	34.93	PEAK	104	10	HORIZONTAL

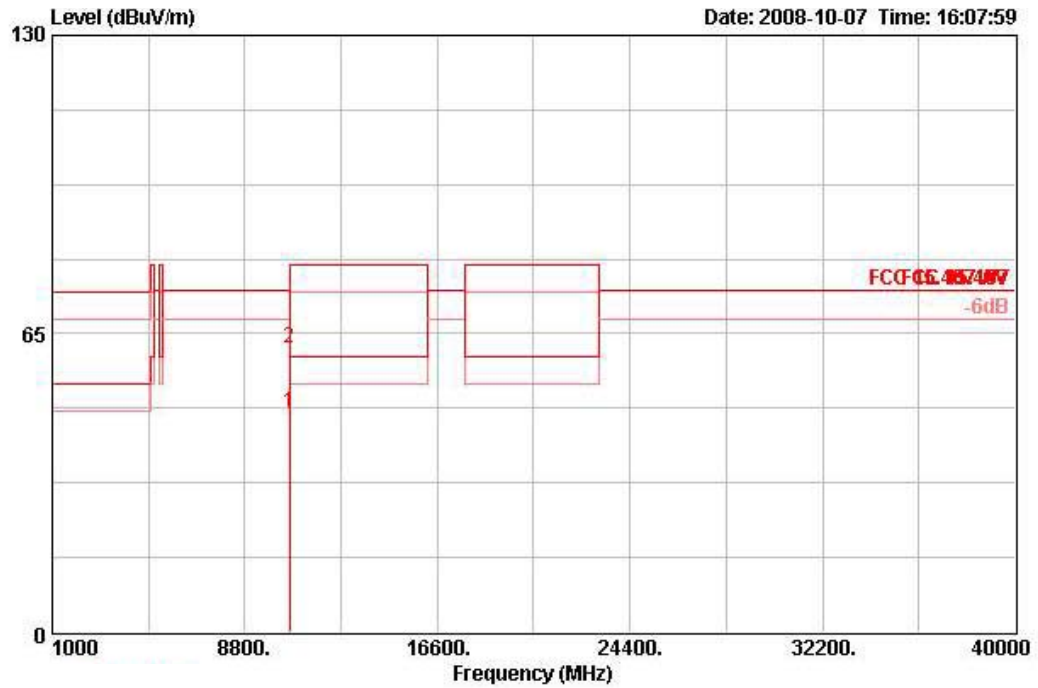
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Rnt Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10520.650	57.38	-16.92	74.30	47.44	38.39	6.48	34.93	PEAK	100	236	VERTICAL

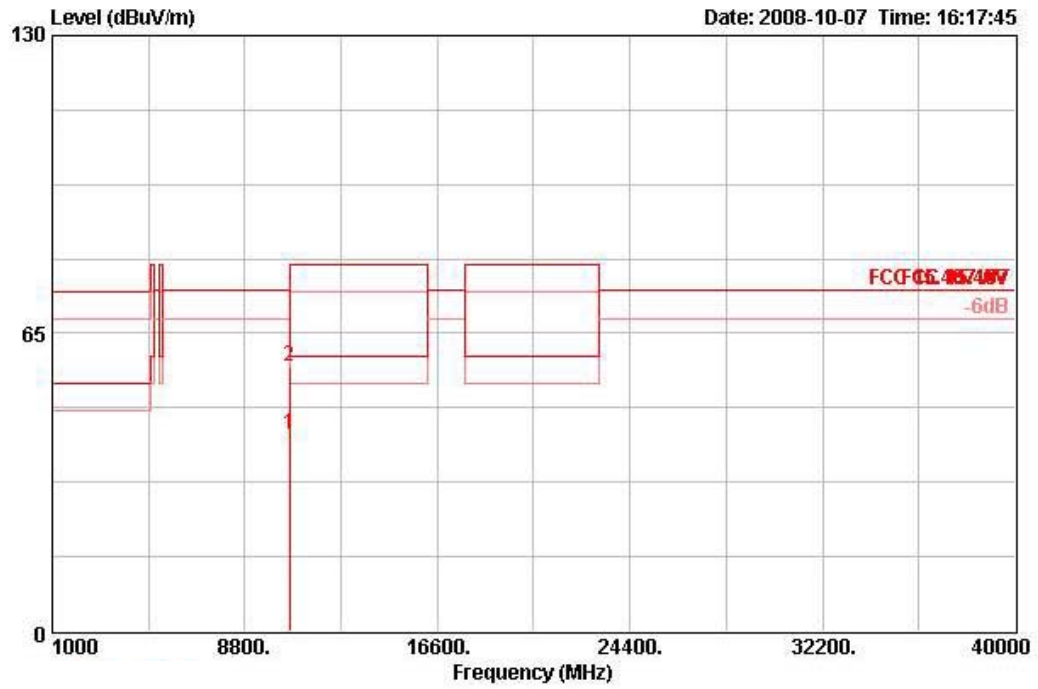
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 60 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10601.200	47.84	-12.16	60.00	37.84	38.38	6.51	34.90	AVERAGE	104	12	HORIZONTAL
2	10610.200	61.93	-18.07	80.00	51.92	38.38	6.52	34.89	PEAK	104	12	HORIZONTAL

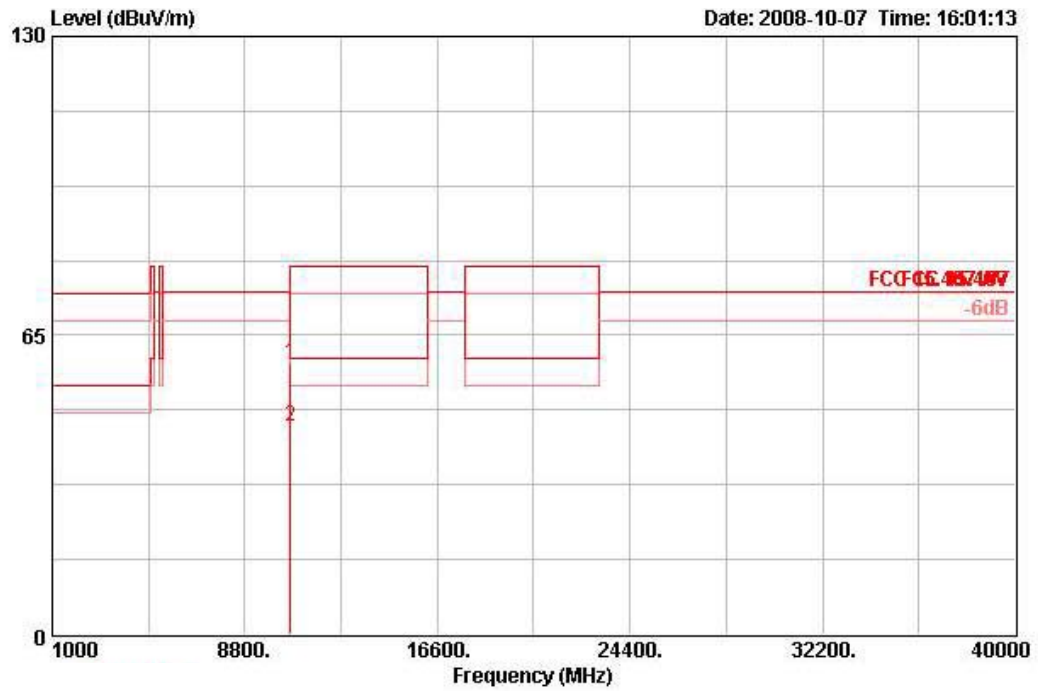
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10600.010	43.15	-16.85	60.00	33.15	38.38	6.51	34.90	AVERAGE	100	242	VERTICAL
2	10600.010	57.87	-22.13	80.00	47.88	38.38	6.51	34.90	PEAK	100	242	VERTICAL

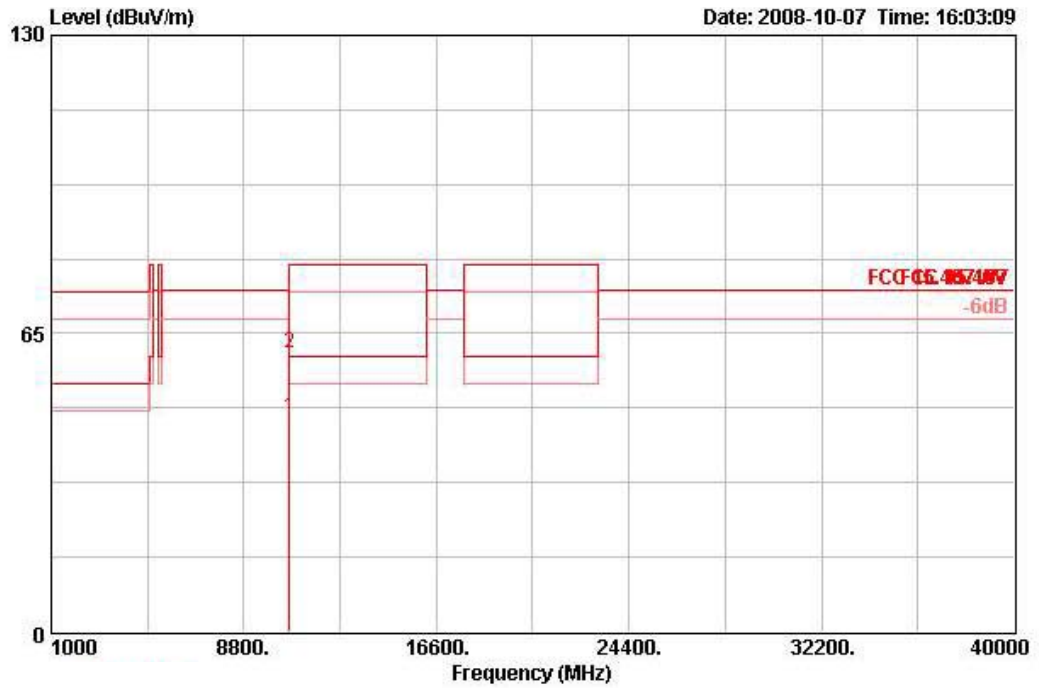
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 64 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10637.600	59.02	-20.98	80.00	49.01	38.37	6.53	34.88	PEAK	100	266	HORIZONTAL
2	10640.000	45.07	-14.93	60.00	35.05	38.37	6.53	34.88	AVERAGE	100	266	HORIZONTAL

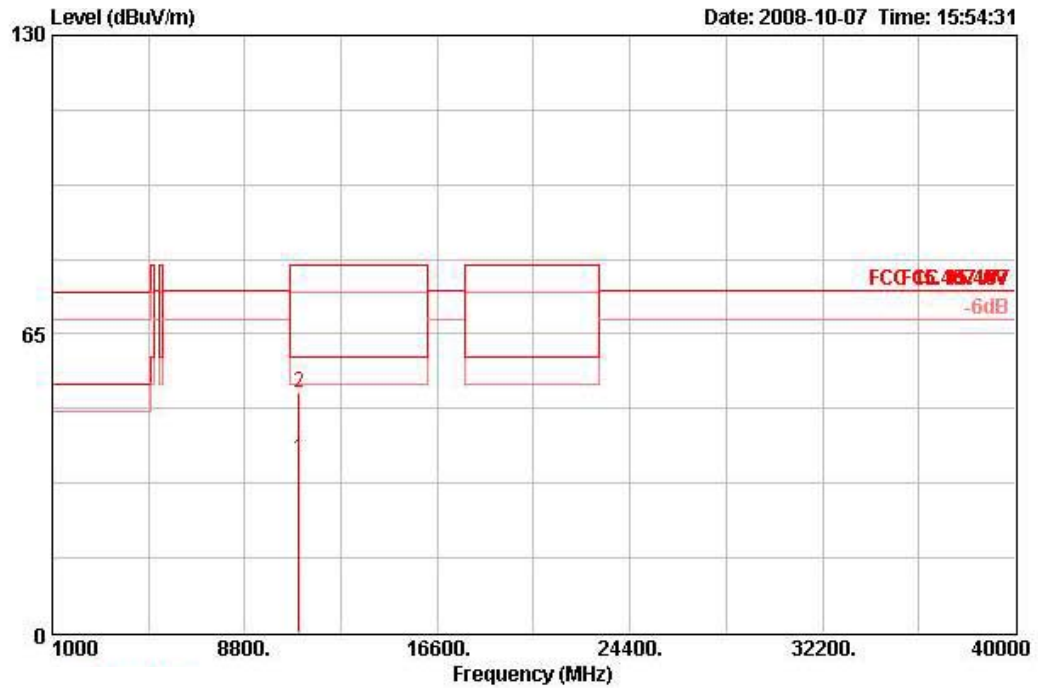
Vertical



	Freq	Level	Over Limit	Limit Line	Read Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10640.000	46.56	-13.44	60.00	36.55	38.37	6.53	34.88	AVERAGE	100	236	VERTICAL
2	10642.800	60.78	-19.22	80.00	50.77	38.37	6.53	34.88	PEAK	100	236	VERTICAL

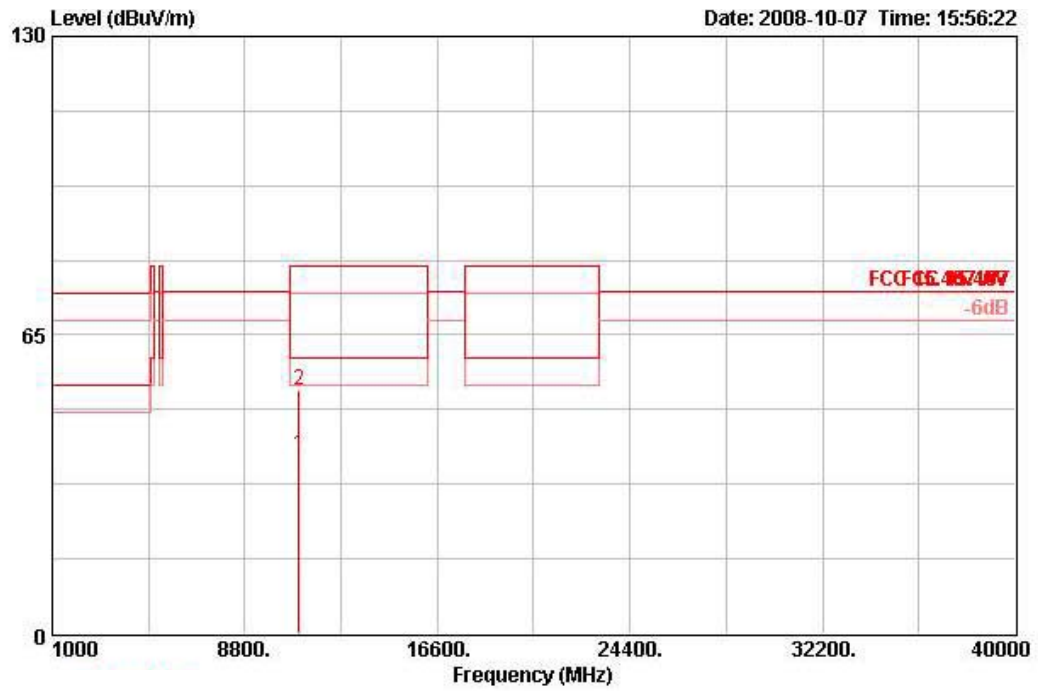
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 100 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



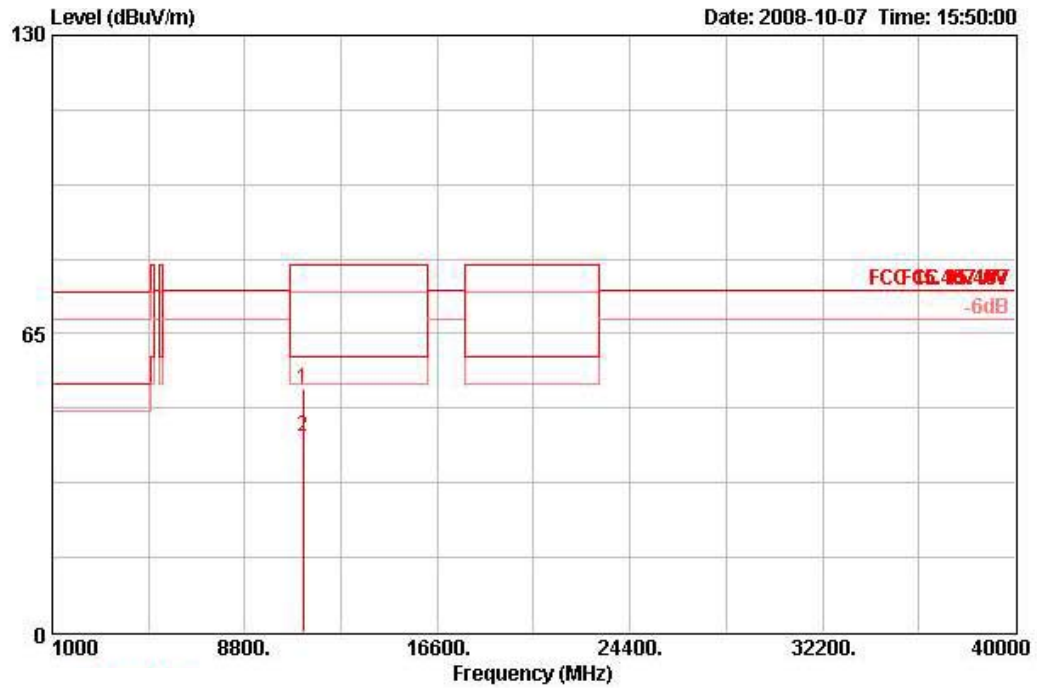
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10999.000	37.94	-22.06	60.00	27.75	38.32	6.63	34.76	AVERAGE	100	35	HORIZONTAL
2	10999.420	52.22	-27.78	80.00	42.03	38.32	6.63	34.76	PEAK	100	35	HORIZONTAL

Vertical



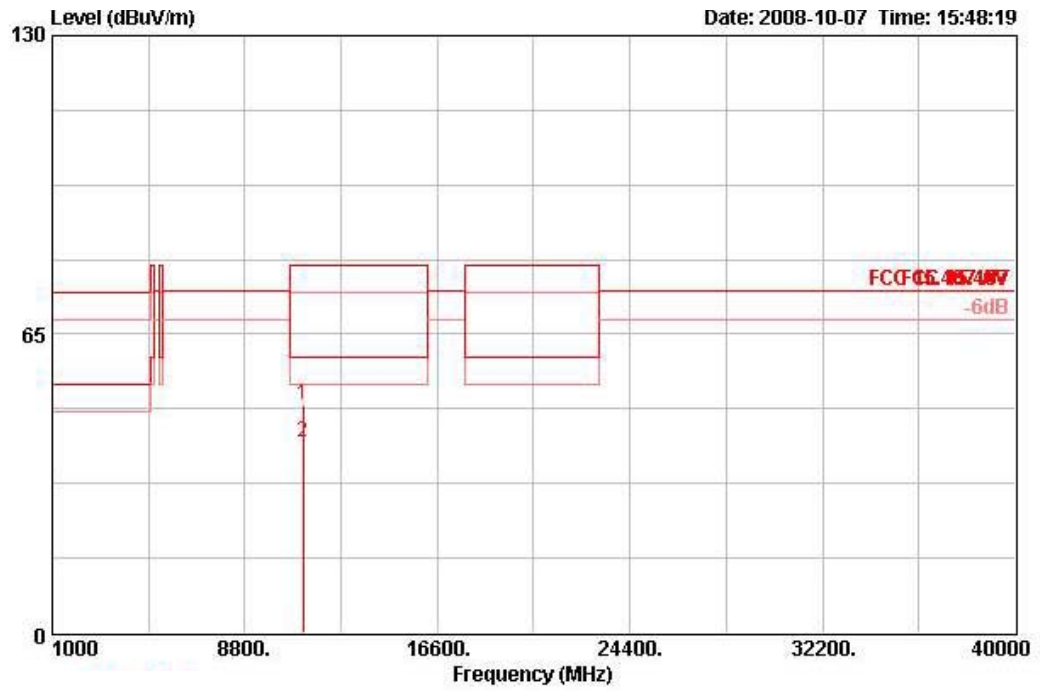
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10999.040	38.92	-21.08	60.00	28.75	38.30	6.63	34.76	AVERAGE	100	250	VERTICAL
2	11000.310	53.04	-26.96	80.00	42.87	38.30	6.63	34.76	PEAK	100	250	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 116 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11157.600	53.14	-26.86	80.00	42.87	38.45	6.65	34.83	PERK	100	360	HORIZONTAL
2	11159.000	42.48	-17.52	60.00	32.19	38.47	6.65	34.83	AVERAGE	100	360	HORIZONTAL

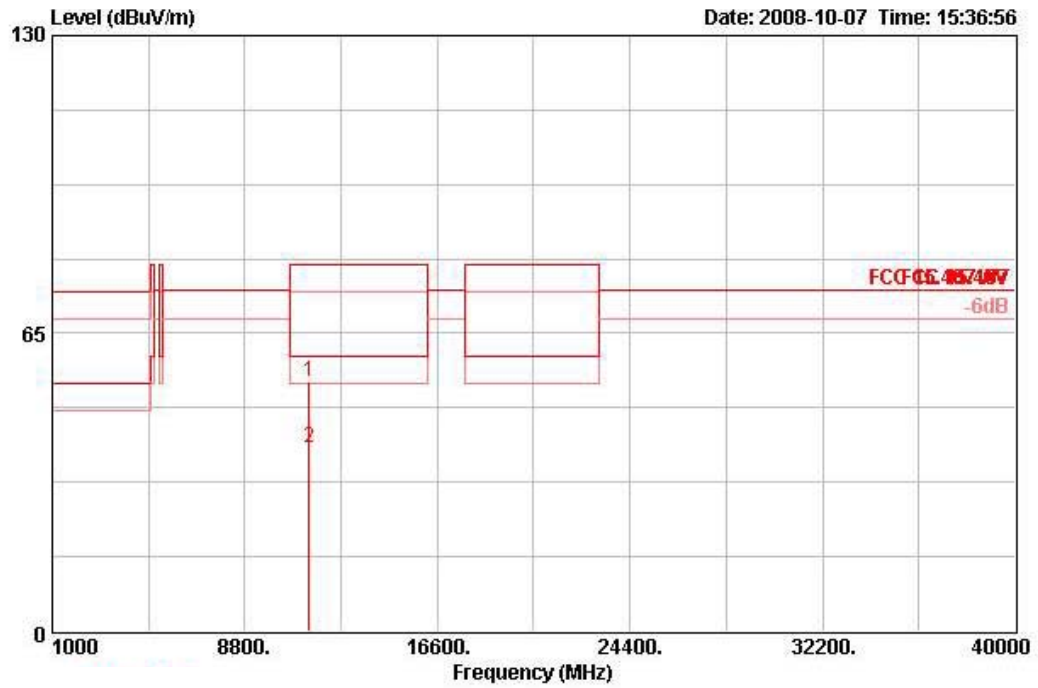
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11155.740	49.55	-30.45	80.00	39.28	38.45	6.65	34.83	PEAK	100	231	VERTICAL
2	11156.780	41.63	-18.37	60.00	31.36	38.45	6.65	34.83	AVERAGE	100	231	VERTICAL

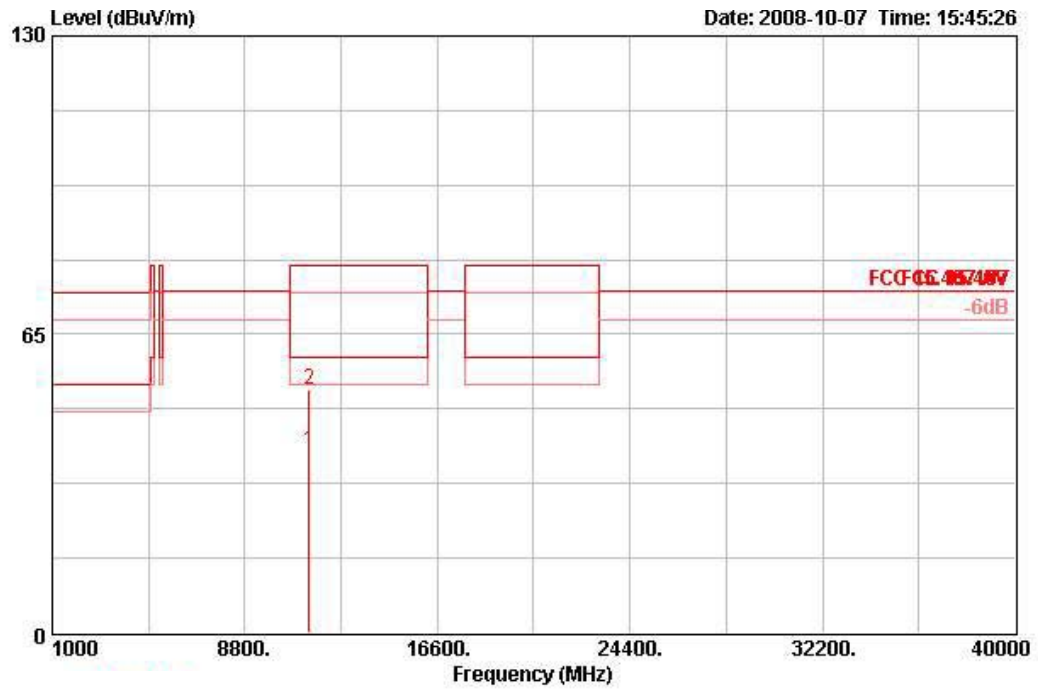
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 140 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11399.570	54.40	-25.60	80.00	43.98	38.70	6.67	34.95	PEAK	100	308	HORIZONTAL
2	11400.780	40.12	-19.88	60.00	29.70	38.70	6.67	34.95	AVERAGE	100	308	HORIZONTAL

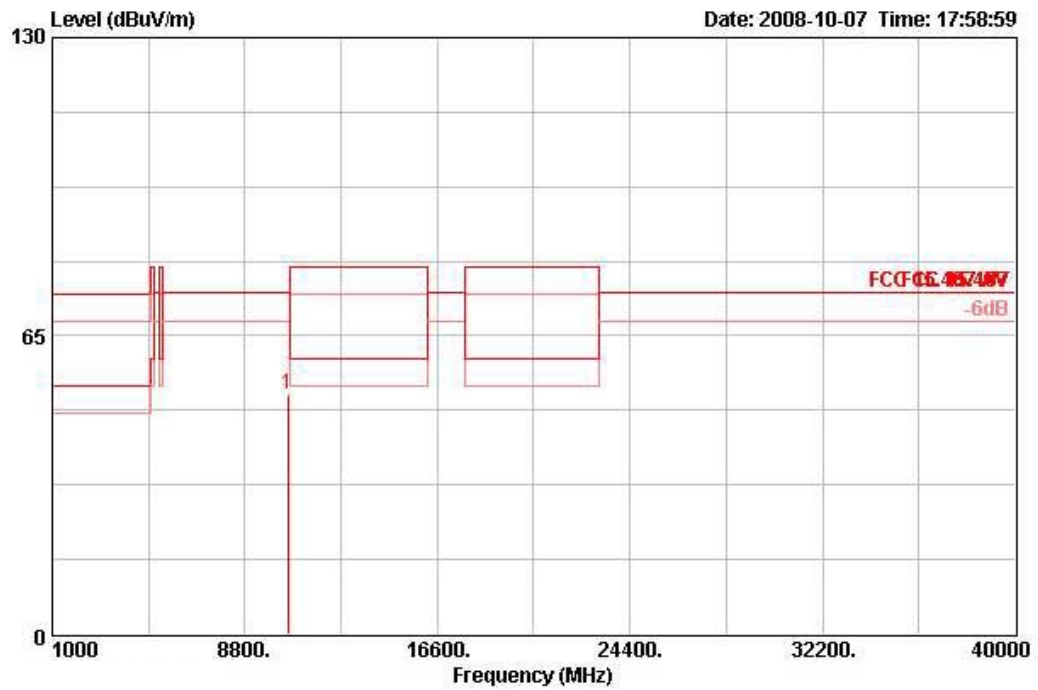
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11393.600	39.49	-20.51	60.00	29.09	38.68	6.67	34.95	AVERAGE	136	302	VERTICAL
2	11394.200	52.98	-7.02	60.00	42.57	38.68	6.67	34.95	AVERAGE	136	302	VERTICAL

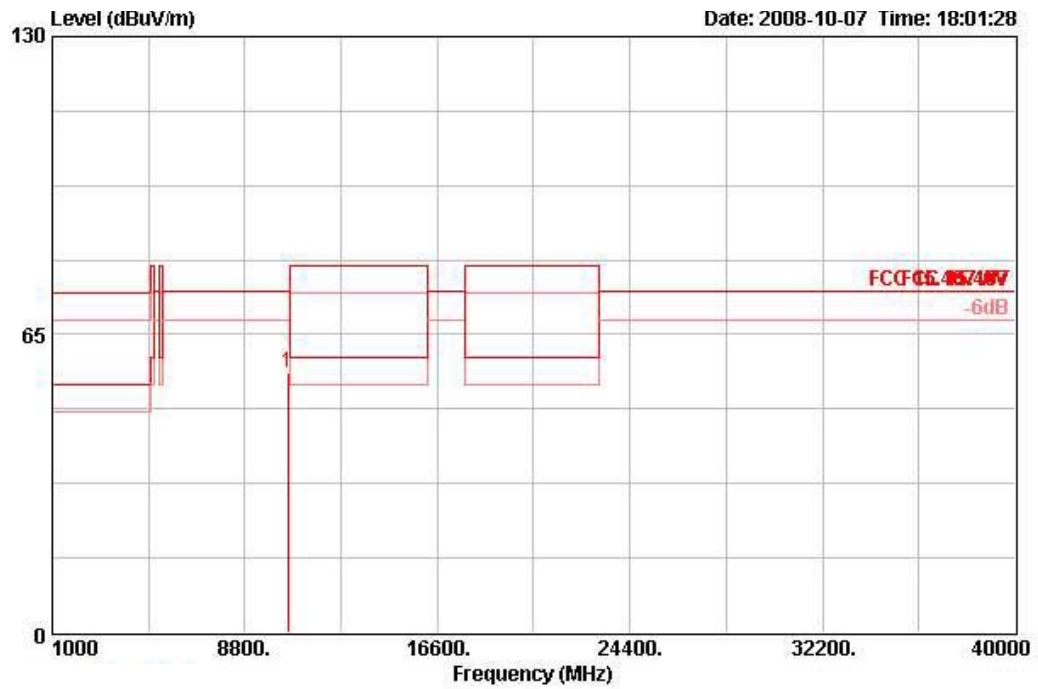
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 54 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10540.300	52.24	-22.06	74.30	42.26	38.39	6.50	34.92	PEAK	149	264	HORIZONTAL

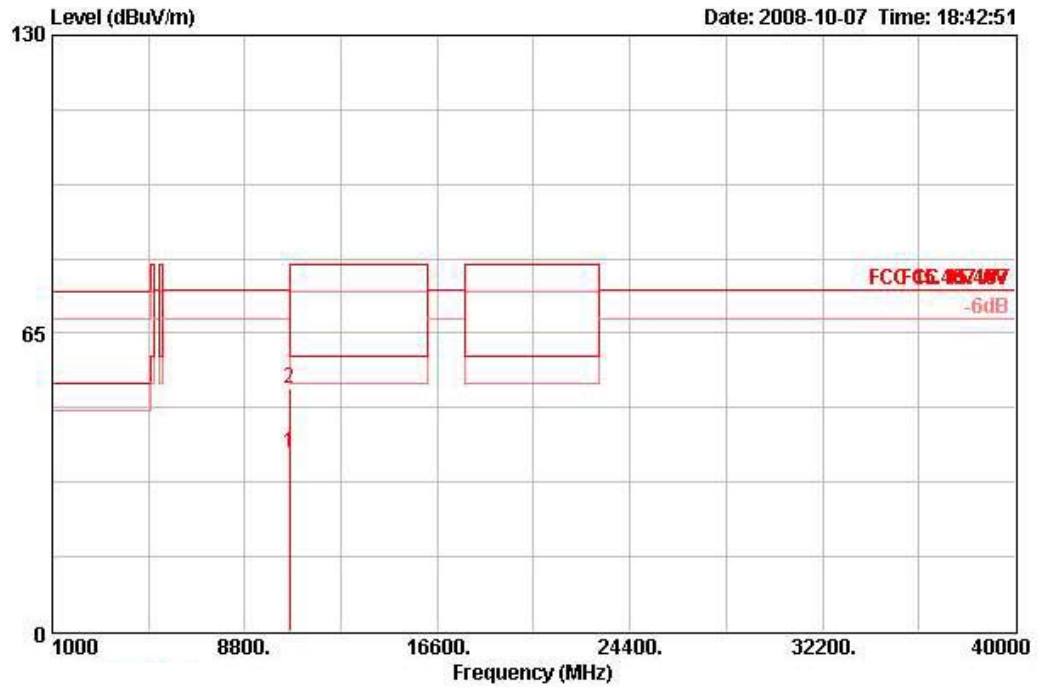
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10539.520	56.74	-17.56	74.30	46.77	38.39	6.50	34.92	PERK	100	233	VERTICAL

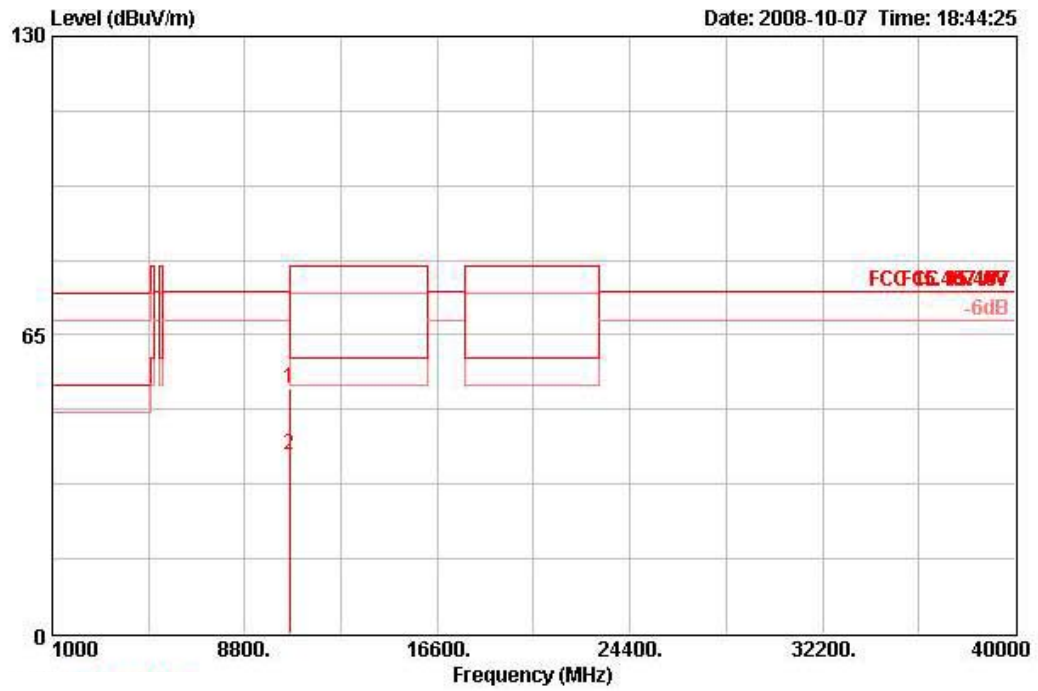
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 62 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10620.780	38.91	-21.09	60.00	28.90	38.38	6.52	34.89	AVERAGE	100	301	HORIZONTAL
2	10620.810	52.94	-27.06	80.00	42.94	38.38	6.52	34.89	PEAK	100	301	HORIZONTAL

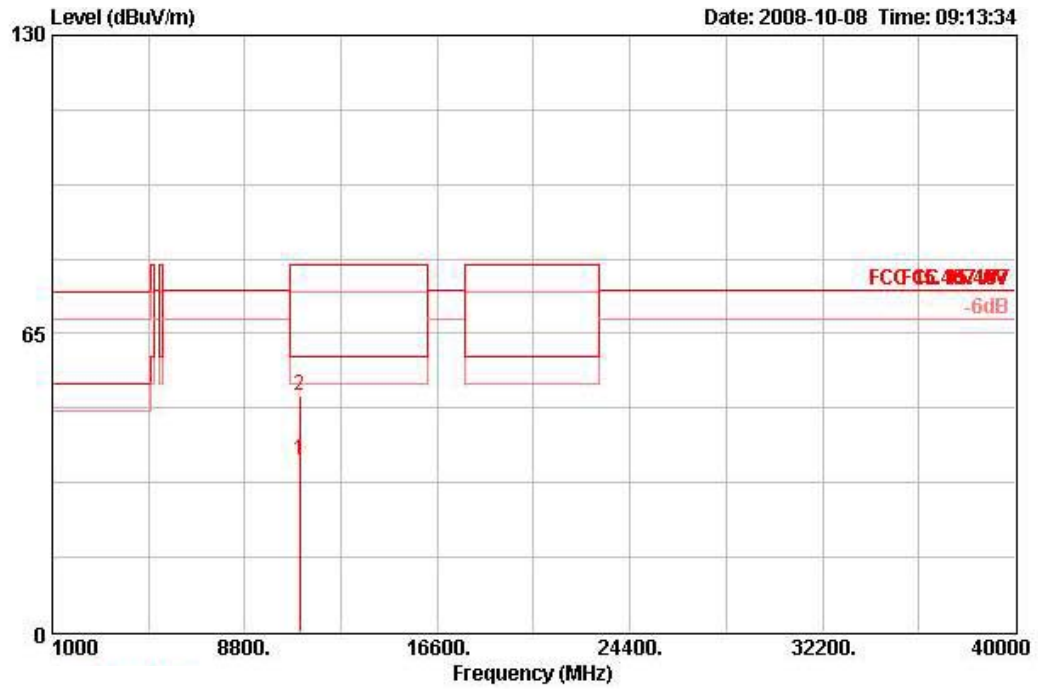
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10619.510	53.38	-26.62	80.00	43.38	38.38	6.52	34.89	PERK	100	82	VERTICAL
2	10620.760	38.85	-21.15	60.00	28.85	38.38	6.52	34.89	AVERAGE	100	82	VERTICAL

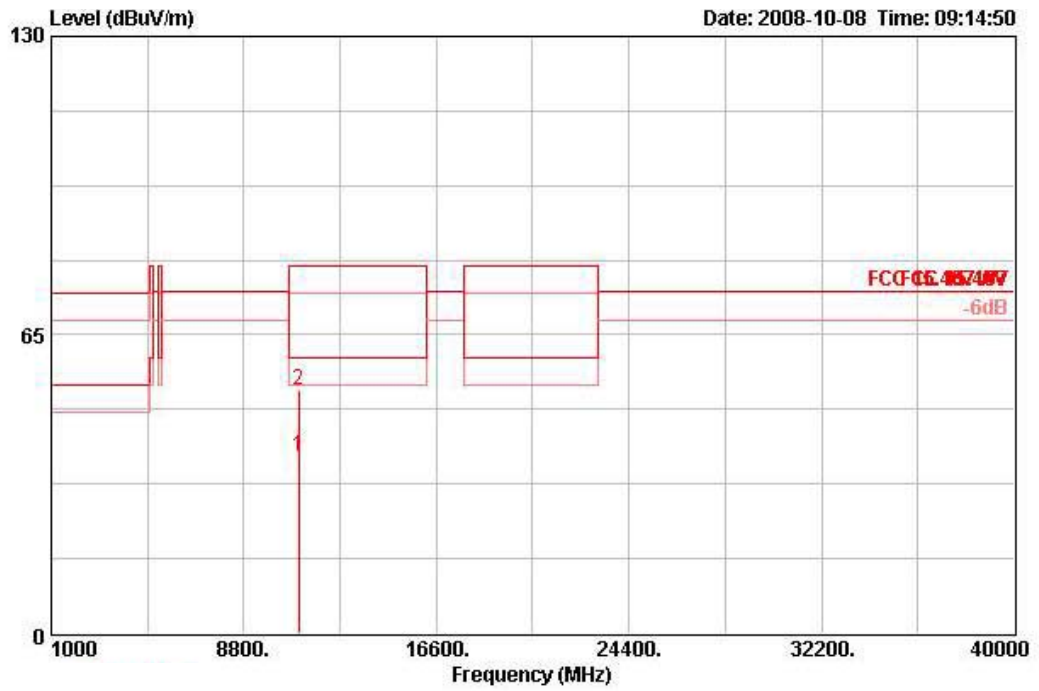
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 102 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11019.020	37.33	-22.67	60.00	27.13	38.33	6.63	34.77	AVERAGE	100	75	HORIZONTAL
2	11019.600	51.52	-28.48	80.00	41.33	38.33	6.63	34.77	PEAK	100	75	HORIZONTAL

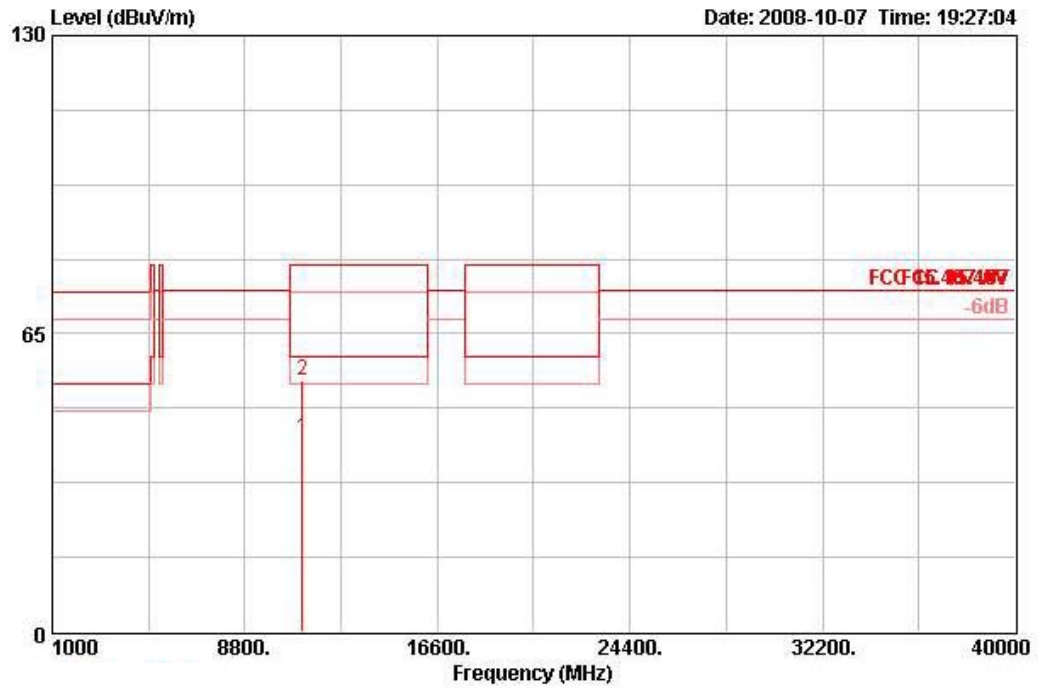
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11019.000	38.57	-21.43	60.00	28.38	38.32	6.63	34.77	AVERAGE	100	258	VERTICAL
2	11019.260	53.13	-26.87	80.00	42.95	38.32	6.63	34.77	PEAK	100	258	VERTICAL

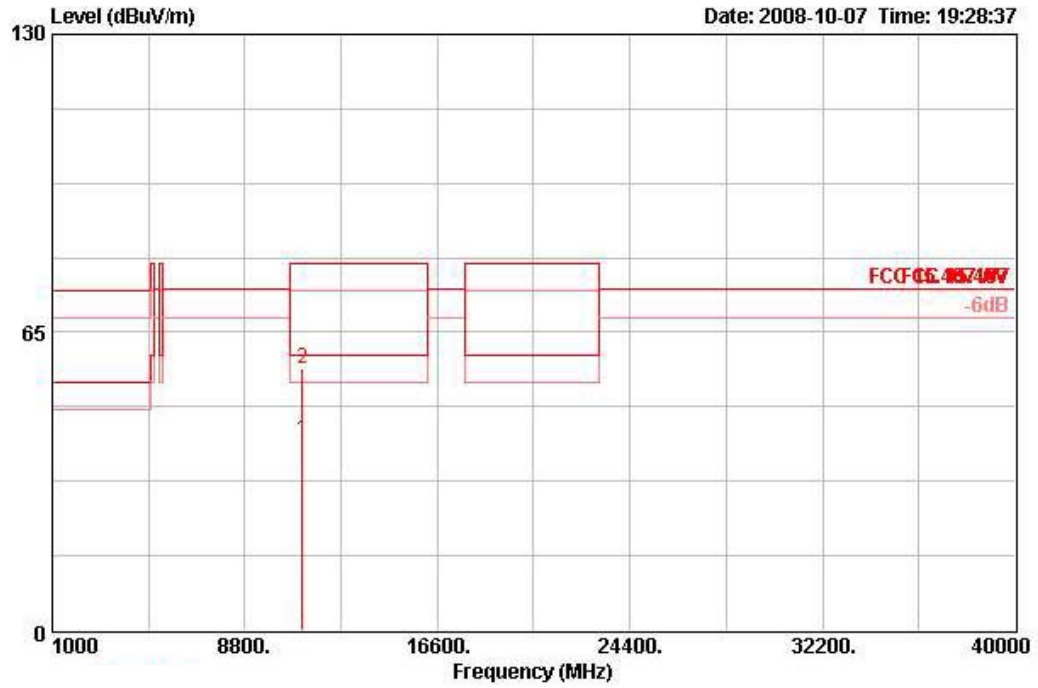
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 110 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11119.930	42.07	-17.93	60.00	31.83	38.42	6.64	34.82	AVERAGE	100	96	HORIZONTAL
2	11120.310	54.63	-25.37	80.00	44.39	38.42	6.64	34.82	PEAK	100	96	HORIZONTAL

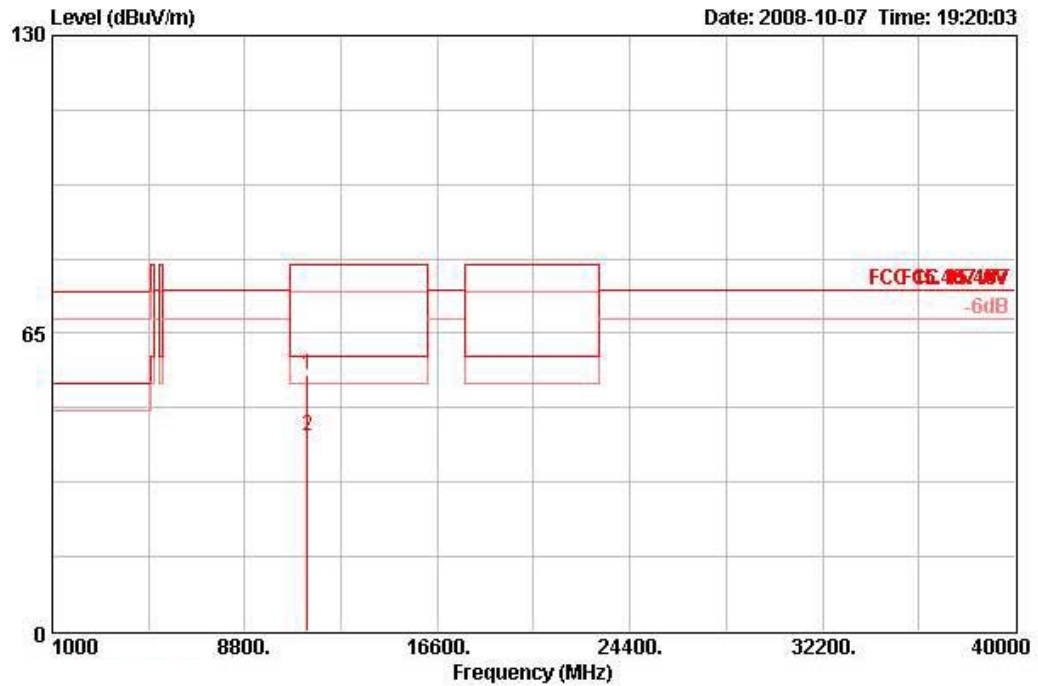
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11119.860	41.46	-18.54	60.00	31.22	38.42	6.64	34.82	AVERAGE	100	320	VERTICAL
2	11121.150	56.87	-23.13	80.00	46.63	38.42	6.64	34.82	PEAK	100	320	VERTICAL

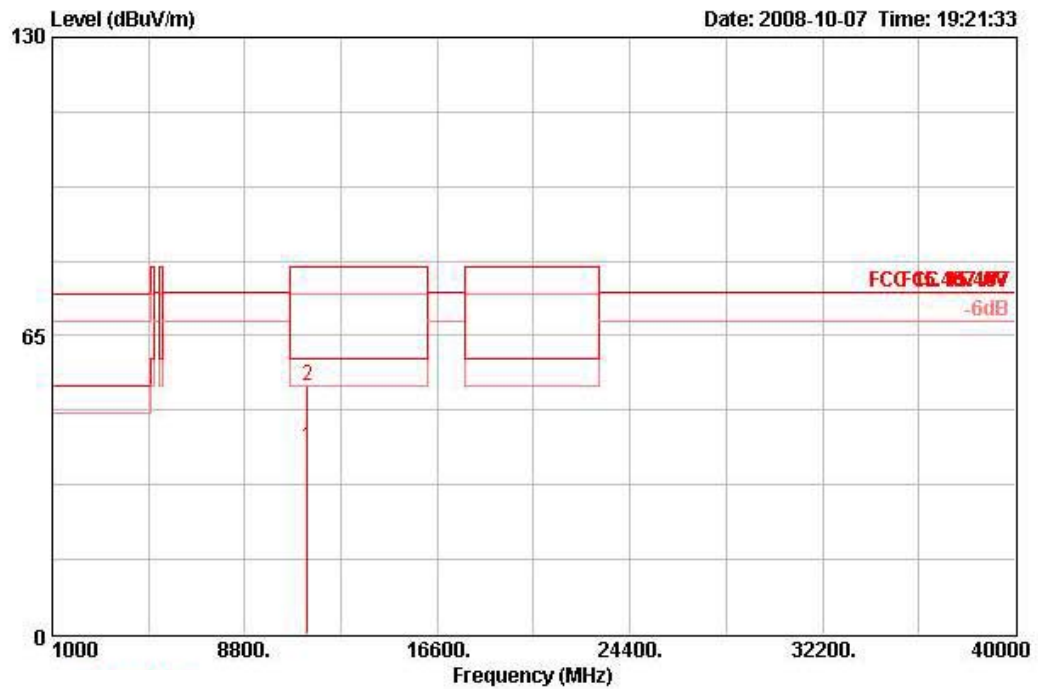
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 134 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11339.080	55.86	-24.14	80.00	45.48	38.63	6.66	34.91	PEAK	100	242	HORIZONTAL
2	11339.440	42.77	-17.23	60.00	32.39	38.63	6.66	34.91	AVERAGE	100	242	HORIZONTAL

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11339.520	40.82	-19.18	60.00	30.44	38.63	6.66	34.91	AVERAGE	100	0	VERTICAL
2	11340.140	54.24	-25.76	80.00	43.85	38.63	6.66	34.91	PEAK	100	0	VERTICAL

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.

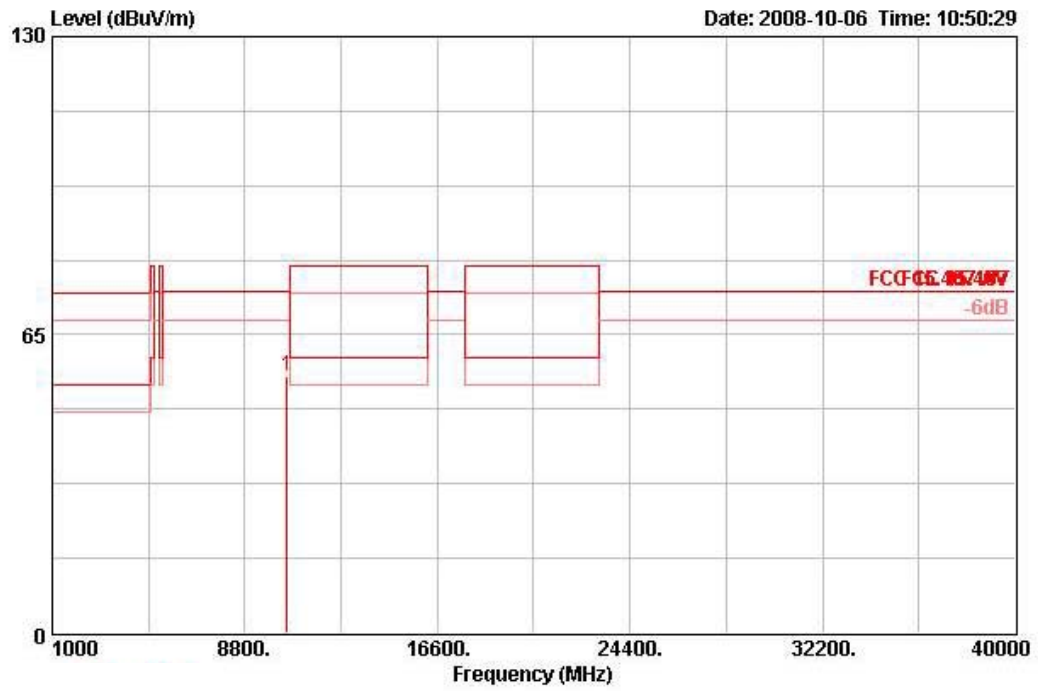
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

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

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

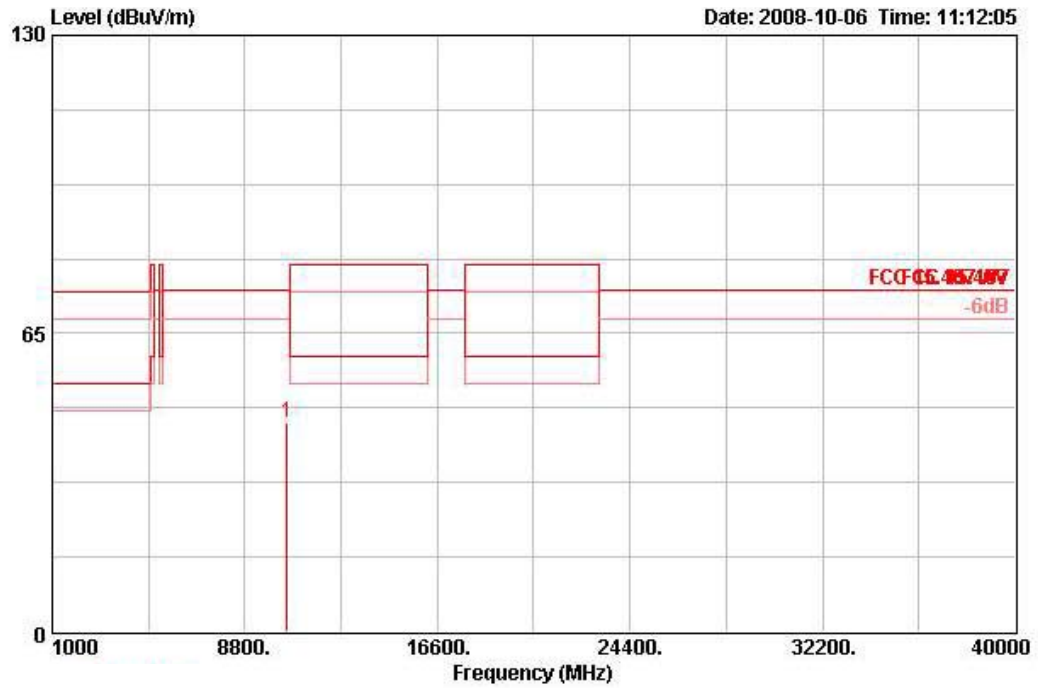
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 52 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10517.560	55.95	-18.35	74.30	46.00	38.40	6.48	34.93	PEAK	100	262	HORIZONTAL

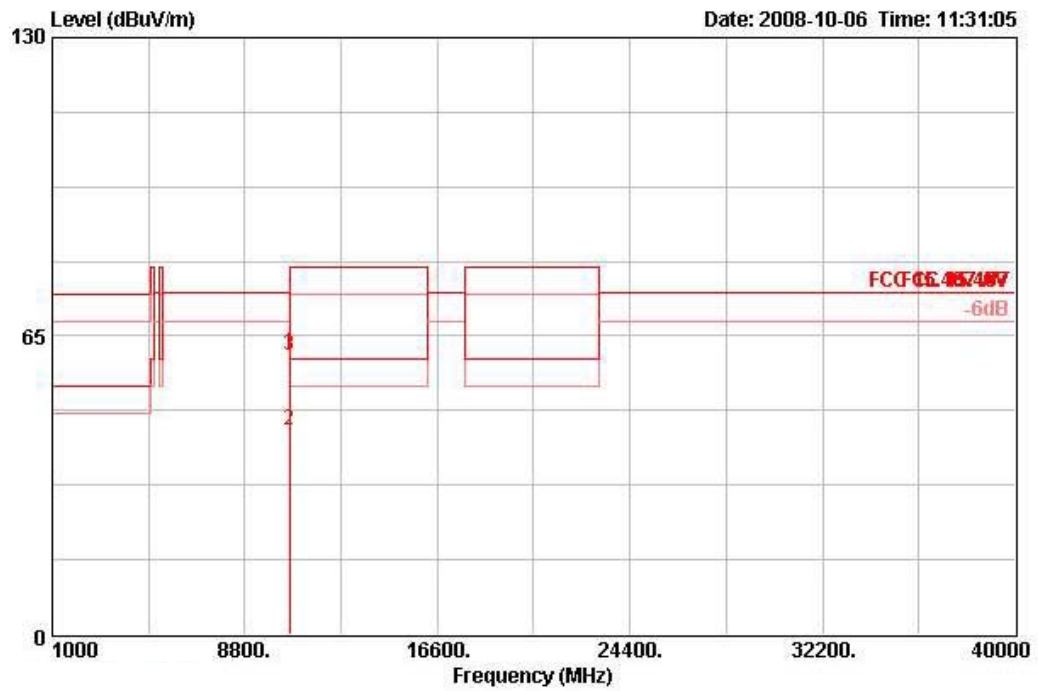
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10517.880	45.44	-28.86	74.30	35.49	38.39	6.48	34.93	PEAK	100	232	VERTICAL

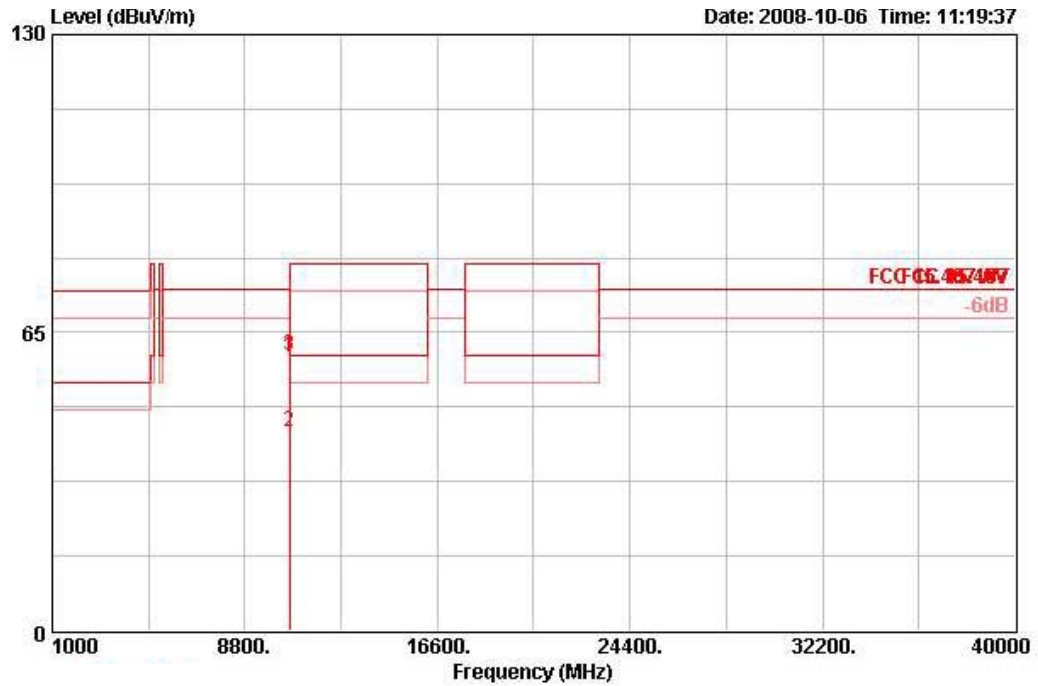
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 60 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10597.600	60.98	-13.32	74.30	50.99	38.38	6.51	34.90	PEAK	100	246	HORIZONTAL
2	10602.800	44.32	-15.68	60.00	34.31	38.38	6.52	34.89	AVERAGE	100	246	HORIZONTAL
3	10607.200	60.85	-19.15	80.00	50.84	38.38	6.52	34.89	PEAK	100	246	HORIZONTAL

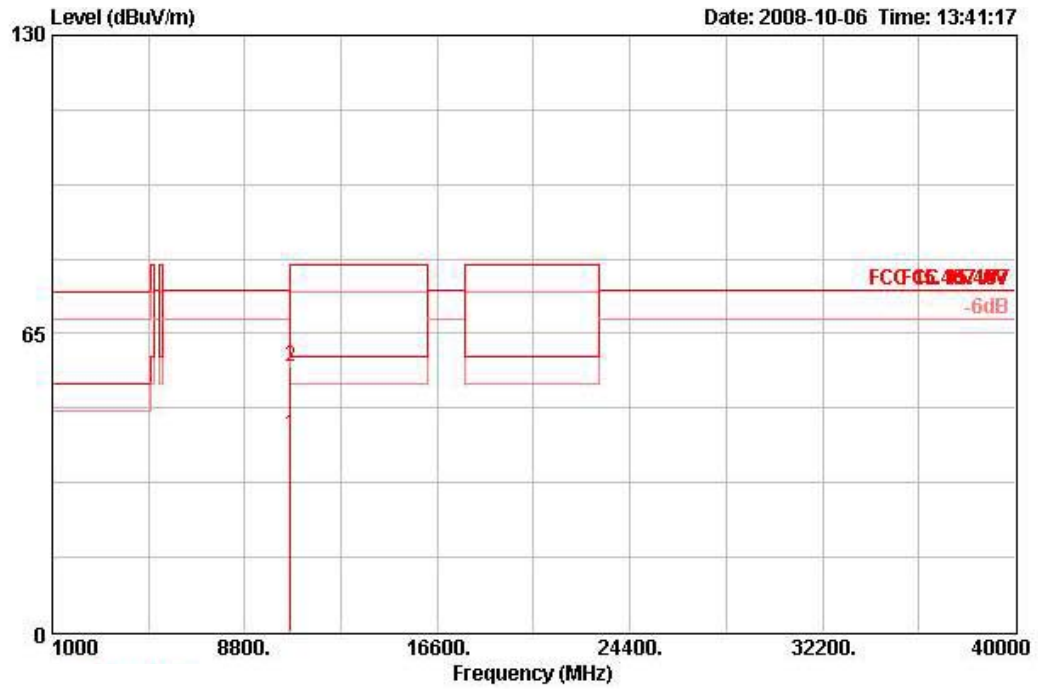
Vertical



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor		Pos	Pos	Pol/Phase
					Factor	Factor			cm	deg	
1	10597.800	59.64	-14.66	74.30	49.65	38.38	6.51	34.90 PEAK	100	233	VERTICAL
2	10602.900	43.45	-16.55	60.00	33.44	38.38	6.52	34.89 AVERAGE	100	233	VERTICAL
3	10606.400	60.04	-19.96	80.00	50.04	38.38	6.52	34.89 PEAK	100	233	VERTICAL

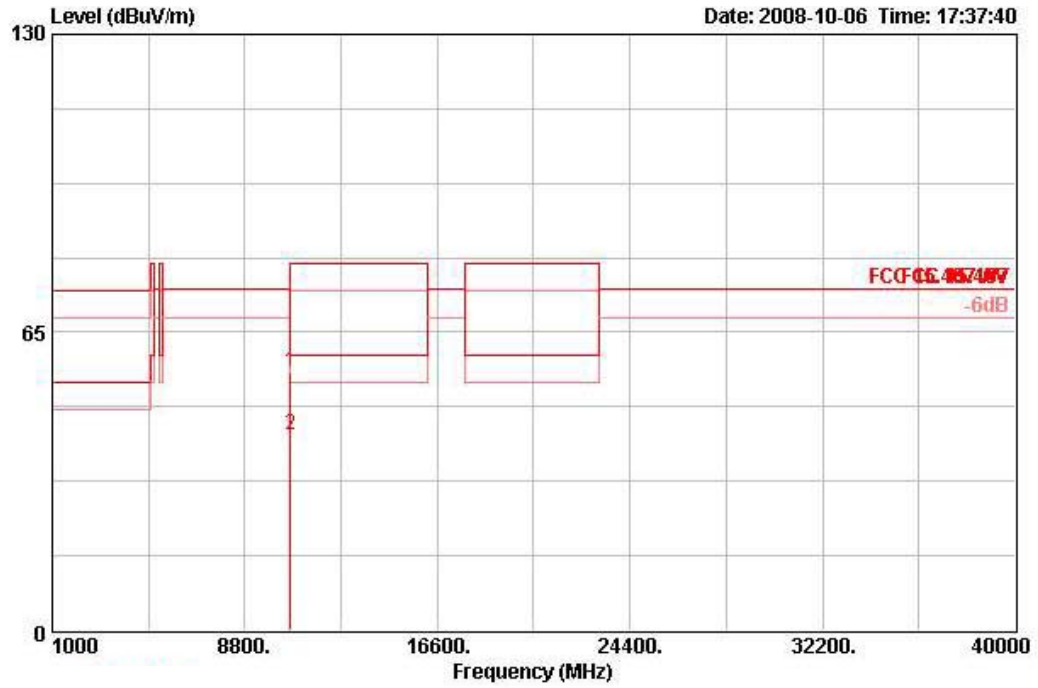
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 64 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10638.000	43.13	-16.87	60.00	33.12	38.37	6.53	34.88	AVERAGE	100	271	HORIZONTAL
2	10642.960	57.75	-22.25	80.00	47.73	38.37	6.53	34.88	PEAK	100	271	HORIZONTAL

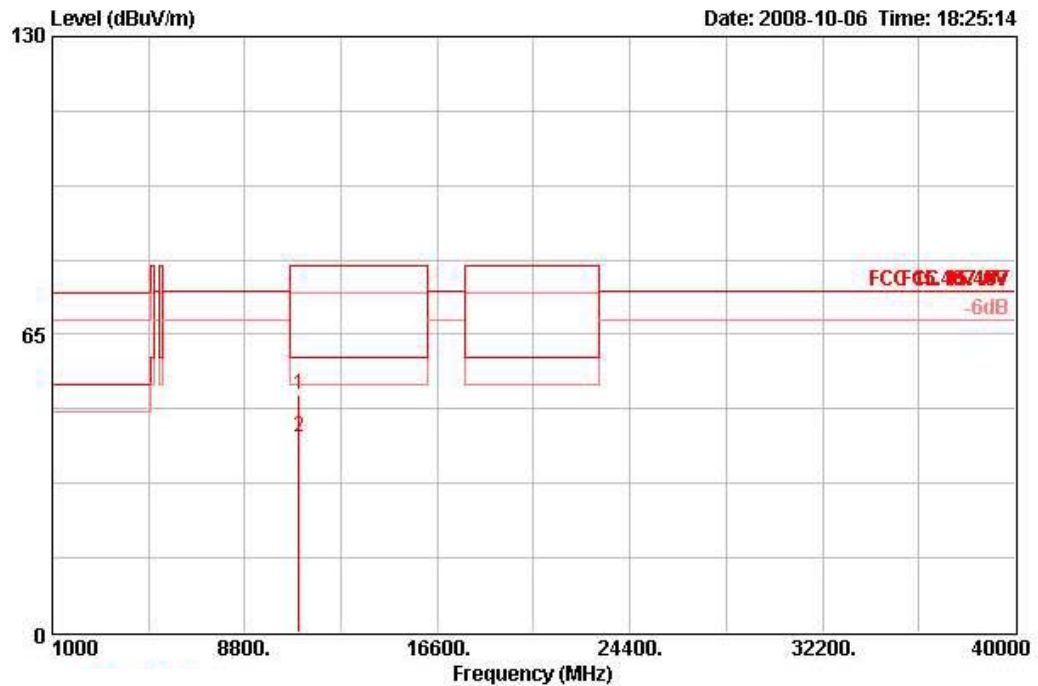
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10637.410	56.26	-23.74	80.00	46.24	38.37	6.53	34.88	PEAK	100	249	VERTICAL
2	10637.450	42.43	-17.57	60.00	32.41	38.37	6.53	34.88	AVERAGE	100	249	VERTICAL

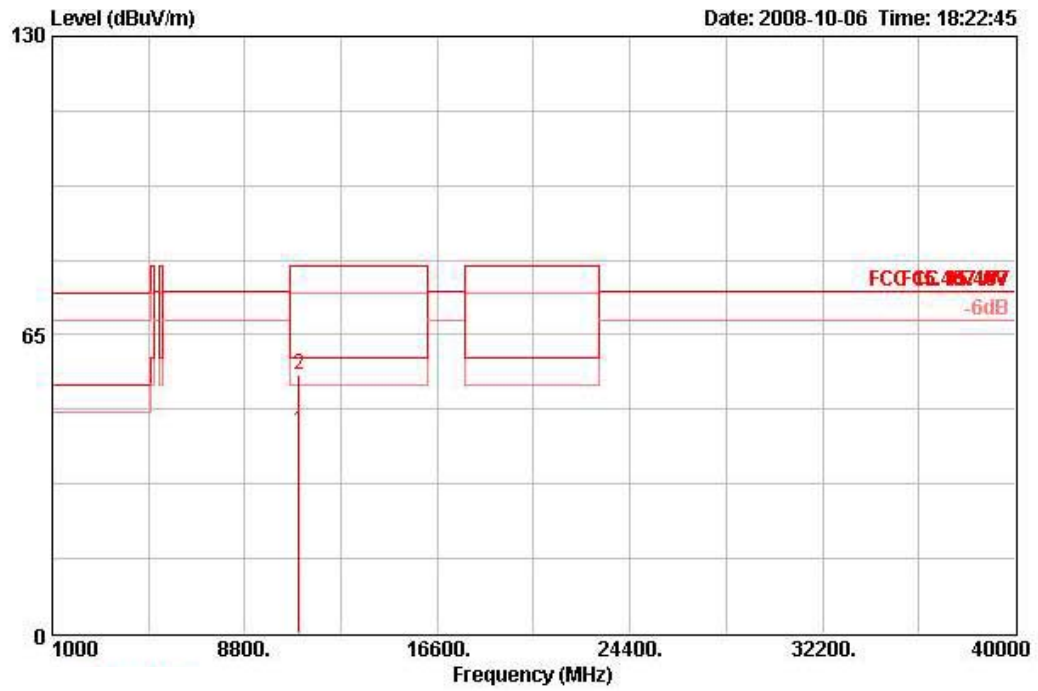
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 100 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10997.320	51.73	-28.27	80.00	41.54	38.32	6.63	34.76	PERK	100	272	HORIZONTAL
2	10997.470	42.42	-17.58	60.00	32.23	38.32	6.63	34.76	AVERAGE	100	272	HORIZONTAL

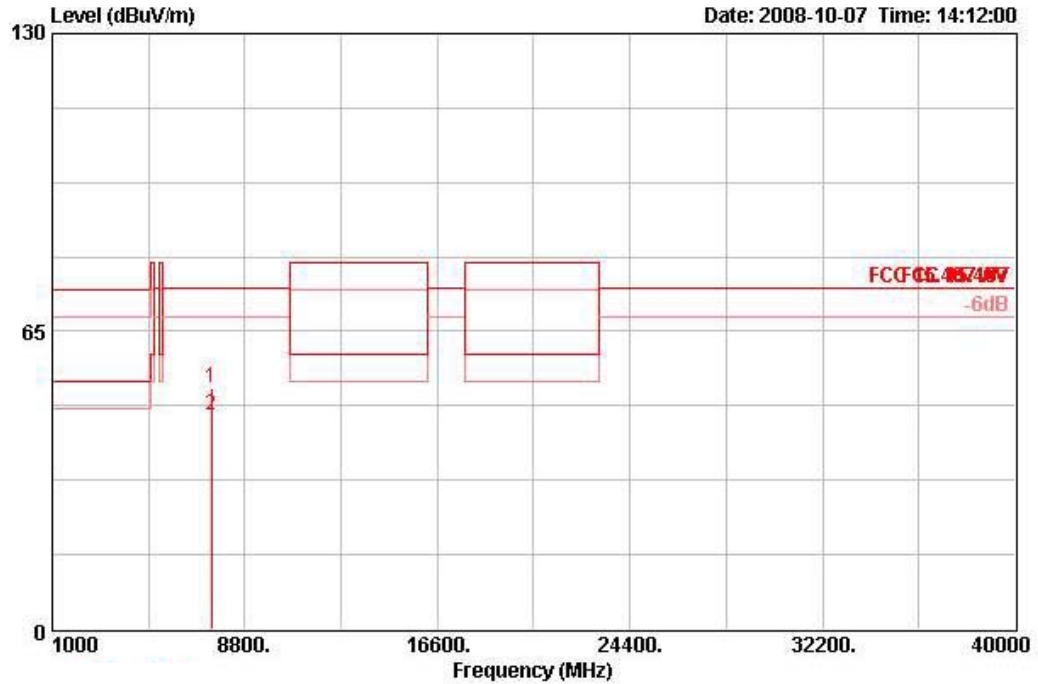
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	10997.530	44.13	-15.87	60.00	33.95	38.30	6.63	34.76	AVERAGE	102	262	VERTICAL
2	10998.170	56.20	-23.80	80.00	46.03	38.30	6.63	34.76	PEAK	102	262	VERTICAL

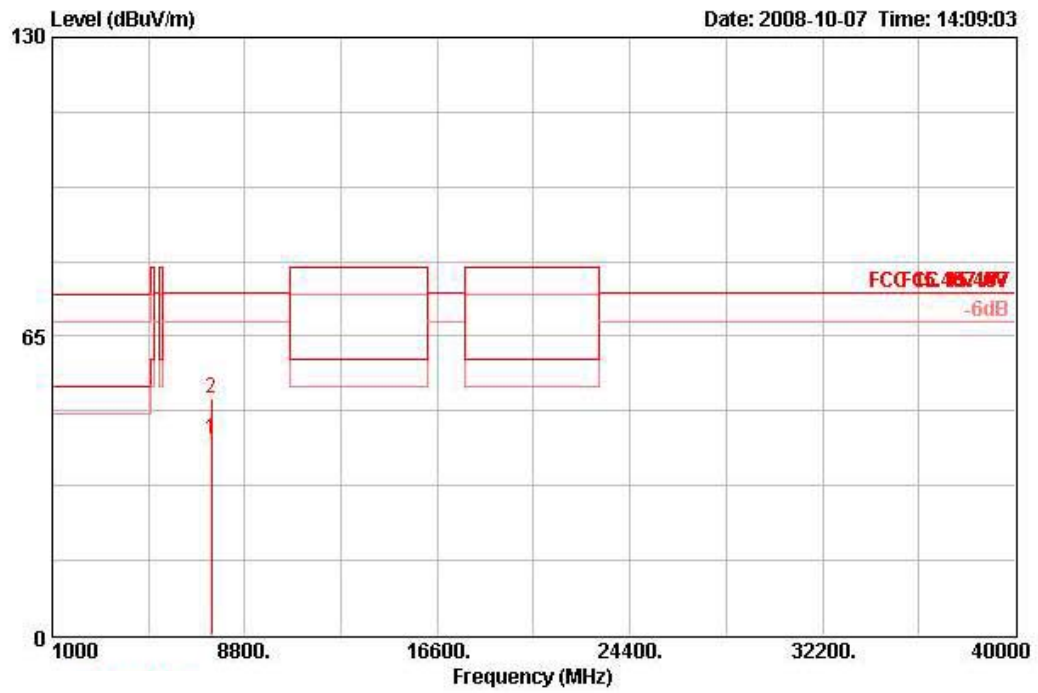
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 116 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	7440.000	52.77	-21.53	74.30	46.52	36.20	5.20	35.15	PEAK	104	342	HORIZONTAL
2	7440.060	46.67	-27.63	74.30	40.42	36.20	5.20	35.15	AVERAGE	104	342	HORIZONTAL

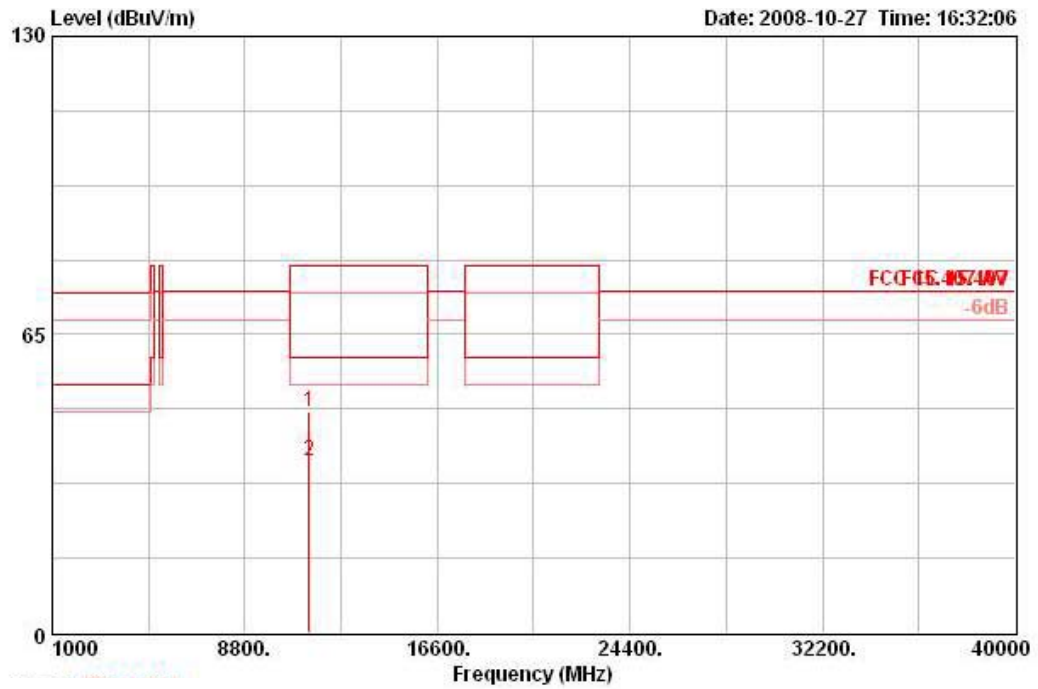
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	7440.040	42.48	-31.82	74.30	36.24	36.20	5.20	35.15	AVERAGE	100	245	VERTICAL
2	7440.180	51.61	-22.69	74.30	45.36	36.20	5.20	35.15	PEAK	100	245	VERTICAL

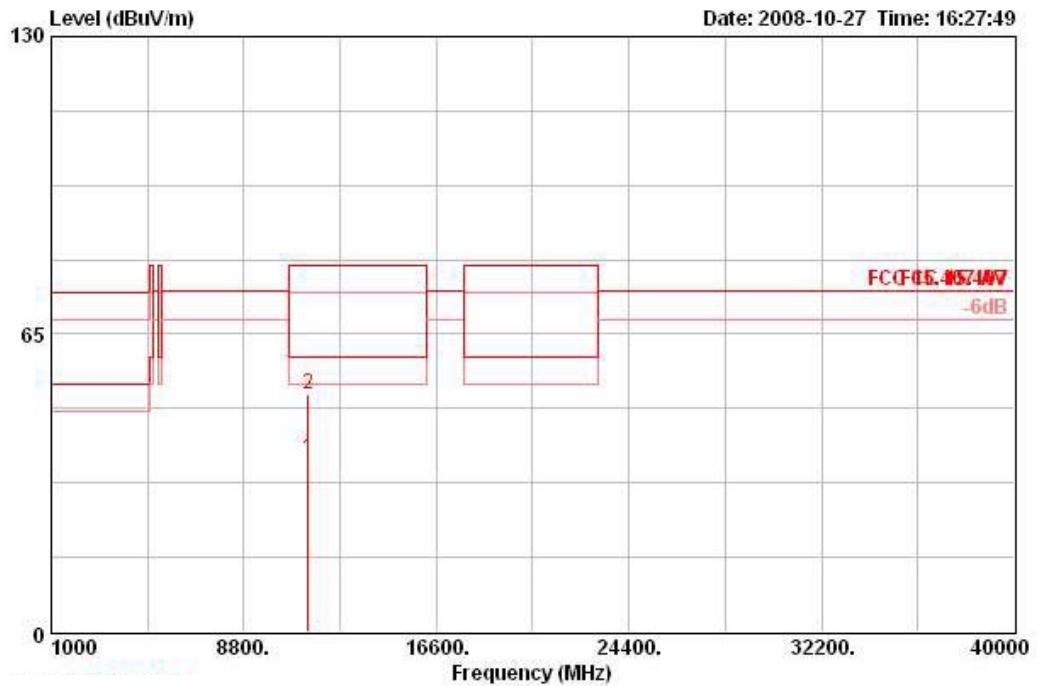
Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 140 / Ant. A1 + Ant. A2 + Ant. A3

Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11397.810	47.99	-32.01	80.00	44.24	38.70	0.00	34.95	PEAK	100	65	HORIZONTAL
2	11398.030	37.43	-22.57	60.00	33.68	38.70	0.00	34.95	AVERAGE	100	65	HORIZONTAL

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Rnt Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11398.170	37.82	-22.18	60.00	34.07	38.70	0.00	34.95	AVERAGE	100	117	VERTICAL
2	11398.990	51.98	-28.02	80.00	48.23	38.70	0.00	34.95	PEAK	100	117	VERTICAL

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 form 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].

4.7. 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 falls 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 (microrvolts/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	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Drafft n MCS8 20MHz Ch 60 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 60

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	5298.800	118.13			80.00	33.94	4.19	0.00	PEAK	100	267	HORIZONTAL
2	5301.600	104.97			66.84	33.94	4.19	0.00	AVERAGE	100	267	HORIZONTAL
3	5350.000	57.30	-2.70	60.00	19.05	34.03	4.22	0.00	AVERAGE	100	267	HORIZONTAL
4	5352.400	73.41	-6.59	80.00	35.16	34.03	4.22	0.00	PEAK	100	267	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Drafft n MCS8 20MHz Ch 64 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 64

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	5320.800	103.95			65.77	33.97	4.20	0.00	AVERAGE	100	269	HORIZONTAL
2	5321.200	119.60			81.43	33.97	4.20	0.00	PEAK	100	269	HORIZONTAL
3	5350.000	59.37	-0.63	60.00	21.12	34.03	4.22	0.00	AVERAGE	100	269	HORIZONTAL
4	5352.600	76.49	-3.51	80.00	38.24	34.03	4.22	0.00	PEAK	100	269	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 100 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 100

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	5460.000	56.15	-23.85	80.00	17.68	34.19	4.28	0.00	PEAK	142	360	HORIZONTAL
2	5460.000	68.82	-11.18	80.00	30.35	34.19	4.28	0.00	PEAK	142	360	HORIZONTAL
3 !	5470.000	72.94	-1.36	74.30	34.44	34.21	4.29	0.00	PEAK	142	360	HORIZONTAL
4 @	5502.200	124.57			86.02	34.25	4.30	0.00	PEAK	142	360	HORIZONTAL
5 over	5503.000	109.08			70.53	34.25	4.30	0.00	PEAK	142	360	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 20MHz Ch 140 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 27, 2008		

Channel 140

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5702.200	116.83			82.49	34.34	0.00	0.00	PEAK	100	198	HORIZONTAL
2 over	5704.200	102.93			68.59	34.34	0.00	0.00	AVERAGE	100	198	HORIZONTAL
3 !	5726.000	68.67	-5.63	74.30	34.32	34.34	0.00	0.00	PEAK	100	198	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 54 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 54

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 over	5282.400	115.76			77.67	33.91	4.18	0.00	PEAK	100	264	HORIZONTAL
2 over	5287.200	97.91			59.83	33.91	4.18	0.00	AVERAGE	100	264	HORIZONTAL
3 !	5350.000	57.46	-2.54	60.00	19.21	34.03	4.22	0.00	AVERAGE	100	264	HORIZONTAL
4	5357.600	73.99	-6.01	80.00	35.74	34.03	4.22	0.00	PEAK	100	264	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 62 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 62

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 B	5322.400	118.09			79.92	33.97	4.20	0.00	PEAK	115	222	HORIZONTAL
2 over	5326.000	98.69			60.51	33.97	4.20	0.00	AVERAGE	115	222	HORIZONTAL
3 !	5350.000	59.48	-0.52	60.00	21.23	34.03	4.22	0.00	AVERAGE	115	222	HORIZONTAL
4 !	5352.400	79.20	-0.80	80.00	40.95	34.03	4.22	0.00	PEAK	115	222	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 102 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 102

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	5456.800	78.58	-1.42	80.00	40.12	34.19	4.28	0.00	PEAK	144	360	HORIZONTAL
2 !	5460.000	58.02	-1.98	60.00	19.56	34.19	4.28	0.00	AVERAGE	144	360	HORIZONTAL
3 @	5502.400	120.76			82.21	34.25	4.30	0.00	PEAK	144	360	HORIZONTAL
4 over	5502.800	103.05			64.50	34.25	4.30	0.00	AVERAGE	144	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5510MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 110 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 07, 2008		

Channel 110

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	5458.000	73.93	-6.07	80.00	35.46	34.19	4.28	0.00	PEAK	115	360	HORIZONTAL
2 !	5460.000	57.53	-2.47	60.00	19.07	34.19	4.28	0.00	AVERAGE	115	360	HORIZONTAL
3 over	5540.400	105.86			67.26	34.29	4.31	0.00	AVERAGE	115	360	HORIZONTAL
4 @	5542.800	123.81			85.21	34.29	4.31	0.00	PEAK	115	360	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5550 MHz.

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	Draft n MCS8 40MHz Ch 134 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 27, 2008		

Channel 134

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5658.000	121.83			87.50	34.33	0.00	0.00	PEAK	100	195	HORIZONTAL
2 over	5666.000	102.76			68.43	34.33	0.00	0.00	AVERAGE	100	195	HORIZONTAL
3 !	5725.000	73.38	-0.92	74.30	39.04	34.34	0.00	0.00	PEAK	100	195	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 60 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 06, 2008		

Channel 60

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 over	5298.000	110.74			72.61	33.94	4.19	0.00	AVERAGE	142	226	HORIZONTAL
2 @	5302.400	116.49			78.36	33.94	4.19	0.00	PEAK	142	226	HORIZONTAL
3 !	5350.000	57.36	-2.64	60.00	19.11	34.03	4.22	0.00	AVERAGE	142	226	HORIZONTAL
4	5353.600	72.86	-7.14	80.00	34.61	34.03	4.22	0.00	PEAK	142	226	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 64 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 06, 2008		

Channel 64

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5317.600	124.20			86.03	33.97	4.20	0.00	PEAK	140	220	HORIZONTAL
2 over	5317.800	109.15			70.97	33.97	4.20	0.00	AVERAGE	140	220	HORIZONTAL
3 !	5350.000	77.73	-2.27	80.00	39.48	34.03	4.22	0.00	PEAK	140	220	HORIZONTAL
4 !	5350.000	59.18	-0.82	60.00	20.93	34.03	4.22	0.00	AVERAGE	140	220	HORIZONTAL

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



Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 100 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 06, 2008		

Channel 100

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	5456.200	68.86	-11.14	80.00	30.39	34.19	4.28	0.00	PEAK	100	341	HORIZONTAL
2 !	5460.000	55.65	-4.35	60.00	17.18	34.19	4.28	0.00	AVERAGE	100	341	HORIZONTAL
3 !	5469.200	72.56	-1.74	74.30	34.06	34.21	4.29	0.00	PEAK	100	341	HORIZONTAL
4 @	5499.400	120.24			81.71	34.23	4.30	0.00	PEAK	100	341	HORIZONTAL
5 over	5501.200	105.00			66.45	34.25	4.30	0.00	AVERAGE	100	341	HORIZONTAL

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

Temperature	24°C	Humidity	56%
Test Engineer	Alan Huang	Configurations	802.11a Ch 140 / Ant. A1 + Ant. A2 + Ant. A3
Test Date	Oct. 27, 2008		

Channel 140

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5701.800	122.17			87.84	34.34	0.00	0.00	PEAK	100	202	HORIZONTAL
2 over	5706.400	106.64			72.30	34.34	0.00	0.00	AVERAGE	100	202	HORIZONTAL
3 !	5725.000	72.07	-2.23	74.30	37.73	34.34	0.00	0.00	PEAK	100	202	HORIZONTAL

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 form 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

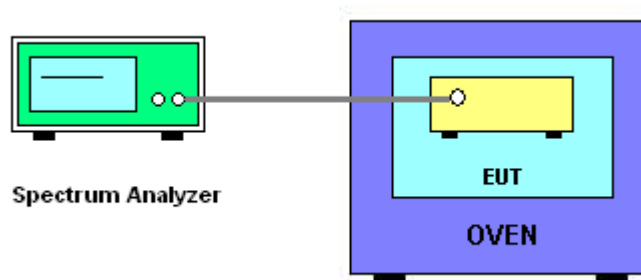
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ 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	5300.049500
110.00	5300.029600
93.50	5299.998100
Max. Deviation (MHz)	0.049500
Max. Deviation (ppm)	9.34

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5300
-30	5300.004200
-20	5300.019800
-10	5300.026400
0	5300.027600
10	5300.022800
20	5300.018000
30	5300.015000
40	5300.011400
50	5300.013200
Max. Deviation (MHz)	0.027600
Max. Deviation (ppm)	5.21

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	100132	9kHz – 2.75GHz	Jul. 14, 2007	Conduction (CO04-HY)
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Mar. 03, 2008	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2008	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2008	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	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	May 09, 2007	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz – 30MHz	Mar. 27, 2008	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	Conduction (CO04-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 14, 2007	Radiation (03CH03-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. 14, 2008	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Jun. 07, 2007	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	Jul. 21, 2008	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	923364	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100305	9 kHz - 40 GHz	Sep. 27, 2007	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100305	9 kHz - 40 GHz	Sep. 27, 2008	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2006*	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2008*	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 21, 2007	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	May 04, 2007	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	Apr. 04, 2008	Radiation (03CH03-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	NCR	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec. 03, 2007	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec. 03, 2007	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	Dec. 17, 2007	Conducted (TH01-HY)
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Jan. 10, 2008	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	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	Jun. 27, 2007	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	Jun. 27, 2007	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 04, 2007*	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. 03, 2007	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 13, 2008	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2007	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2008	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2007	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 10, 2008	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.

* Calibration Interval of instruments listed above is two year.

NCR means Non-Calibration required.

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

Sporton 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.