

FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment : MelodyWing SP
Model No. : SST18SC03
Brand Name : SST
Filing Type : New Application
Applicant : **Silicon Storage Technology, Inc.**
: 16F-6, No. 75, Sec. 1, Sintai 5th Rd., Sijhih City, Taipei County
22101
FCC ID : VN8SST18SC03
Manufacturer : **Silicon Storage Technology, Inc.**
: 16F-6, No. 75, Sec. 1, Sintai 5th Rd., Sijhih City, Taipei County
22101
Received Date : Sep. 17, 2007
Final Test Date : Mar. 11, 2008

Statement

Test result included is only for the 2.4G band part and 5.8G band (5725 ~ 5850MHz) of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

Table of Contents

1. SUMMARY OF THE TEST RESULT	2
2. GENERAL INFORMATION.....	3
2.1. Product Details	3
2.2. Table for Filed Antenna	3
2.3. Table for Carrier Frequencies	3
2.4. Table for Test Modes	4
2.5. Table for Testing Locations	4
2.6. Table for Supporting Units.....	4
2.7. Table for Parameters of Test Software Setting	5
2.8. EUT Operation during Test	5
2.9. Test Configurations	6
3. TEST RESULT	7
3.1. AC Power Line Conducted Emissions Measurement.....	7
3.2. Maximum Peak Output Power Measurement.....	11
3.3. Power Spectral Density Measurement.....	13
3.4. 6dB Spectrum Bandwidth Measurement.....	19
3.5. Radiated Emissions Measurement.....	25
3.6. Band Edge Emissions Measurement.....	43
3.7. Antenna Requirements.....	48
4. LIST OF MEASURING EQUIPMENTS	49
5. TEST LOCATION	51
6. TAF CERTIFICATE OF ACCREDITATION	52
APPENDIX A. MAXIMUM PERMISSIBLE EXPOSURE.....	A1 ~ A3
APPENDIX B. TEST PHOTOS	B1 ~ B7
APPENDIX C. PHOTOGRAPHS OF EUT	C1 ~ C5

History of This Test Report

Original Issue Date: Mar. 28, 2008

Report No.: FR790710AB

No additional attachment.

Additional attachment were issued as following record:

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.247

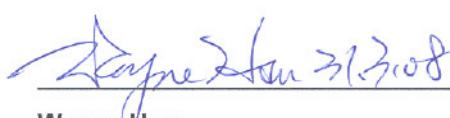
Equipment : MelodyWing SP

Model No. : SST18SC03

Brand Name : SST

Applicant : Silicon Storage Technology, Inc.
16F-6, No.75, Sec.1, Sintai 5th Rd., Sijhih City, Taipei County
22101

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 17, 2007 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.



Wayne Hsu

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	Rule Section	Description of Test	Result	Under Limit
3.1	15.207	AC Power Line Conducted Emissions	Complies	7.85 dB
3.2	15.247(b)(3)	Maximum Peak Conducted Output Power	Complies	18.80 dB
3.3	15.247(e)	Power Spectral Density	Complies	4.81 dB
3.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
3.5	15.247(d)	Radiated Emissions	Complies	1.32 dB
3.6	15.247(d)	Band Edge Emissions	Complies	1.46 dB
3.7	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	±8.5×10 ⁻⁸	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

2. GENERAL INFORMATION

2.1. Product Details

EUT is a MelodyWing SP with DSSS radio functions.

Items	Description
Power Type	4~6V form Adapter
Data Modulation	DSSS (BPSK / QPSK / CCK)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11)
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	2.4G band : 11 ; 5.8G band : 5
Channel Band Width (99%)	2.4G band : 13.48 MHz ; 5.8G band : 13.52 MHz
Conducted Output Power	2.4G band : 19.00 dBm ; 5.8G band : 22.50 dBm

2.2. Table for Filed Antenna

For 2.4GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	W600-150-I200	Tri-Band Omni Directional Antenna	I-PEX	3.00

For 5.8GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	W600-150-R200	Tri-Band Omni Directional Antenna	I-PEX	3.50

2.3. Table for Carrier Frequencies

For 2.4GHz Band

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2417 MHz	7	2435 MHz
	2	2419 MHz	8	2443 MHz
	3	2421 MHz	9	2451 MHz
	4	2423 MHz	10	2459 MHz
	5	2425 MHz	11	2467 MHz
	6	2427 MHz		

Note: A carrier frequency is 2 MHz per a channel use Channel 1~Channel 6 and Channel 6~Channel 11 carrier frequency is 8 MHz.

For 5.8GHz Band

Frequency Band	Channel No.	Frequency
5725~5850 MHz (USA/Canada/Taiwan)	1	5745 MHz
	2	5765 MHz
	3	5785 MHz
	4	5805 MHz
	5	5825 MHz

2.4. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel
AC Power Line Conducted Emissions	Normal Link	11 Mbps	6
Max. Peak Conducted Output Power Power Spectral Density 6dB Spectrum Bandwidth	2.4G band/CCK	11 Mbps	1/6/11
	5.8G band/CCK	11 Mbps	1/3/5
Radiated Emissions Below 1GHz	Normal Link	11 Mbps	-
Radiated Emissions Above 1GHz Band Edge Emissions	2.4G band/CCK	11 Mbps	1/6/11
	5.8G band/CCK	11 Mbps	1/3/5
Band Edge Emissions	2.4G band/CCK	11 Mbps	1/6/11
	5.8G band/CCK	11 Mbps	1/3/5

2.5. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	101377	IC 4086B-1	-
CO04-HY	Conduction	Hwa Ya	-	-	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

2.6. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	D505	DoC

2.7. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters of 2.4G band

Test Software Version	Termial v1.9b		
Frequency	2417 MHz	2427 MHz	2467 MHz
2.4G band	DEFAULT	DEFAULT	DEFAULT

Power Parameters of 5.8G band

Test Software Version	Termial v1.9b		
Frequency	5745 MHz	5785 MHz	5825 MHz
5.8G band	DEFAULT	DEFAULT	DEFAULT

2.8. EUT Operation during Test

<Conduction>

During the test, the following programs under WIN XP were executed:

Executed "Terminal" to link with the EUT to receive and transmit data by WLAN.

<Radiation>

An executive program, EMCTEST.EXE under WIN XP, which generates a complete line of continuously repeating "H" pattern was used as the test software.

The program was executed as follows :

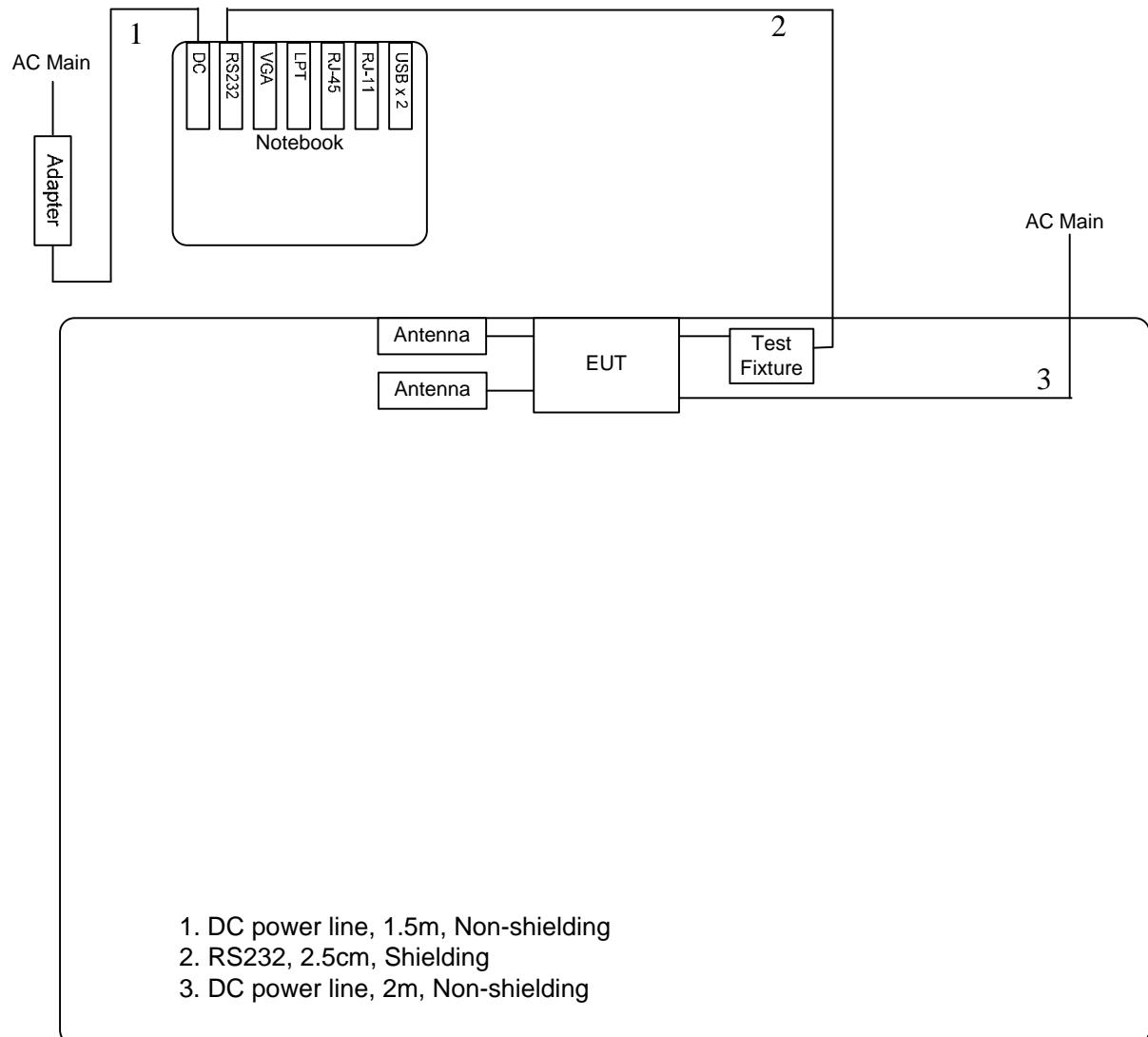
The NB sends "H" messages to the panel, and the panel displays "H" patterns on the screen.

<RF>

At the same time, "Terminal" was executed to link with the EUT to receive and transmit data by WLAN.

2.9. Test Configurations

2.9.1. Radiation Emissions Test Configuration



3. TEST RESULT

3.1. AC Power Line Conducted Emissions Measurement

3.1.1. Limit

For this product which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2. Measuring Instruments and Setting

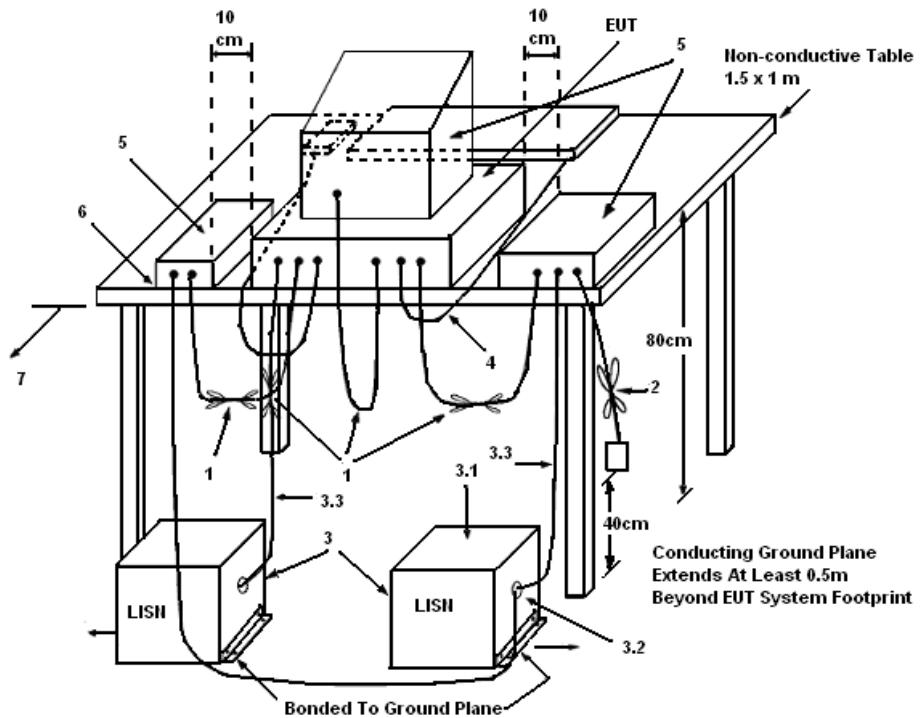
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

3.1.4. Test Setup Layout



LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 . LISN can be placed on top of, or immediately beneath, reference ground plane.
 - (3.1) All other equipment powered from additional LISN(s).
 - (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
 - (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5. Test Deviation

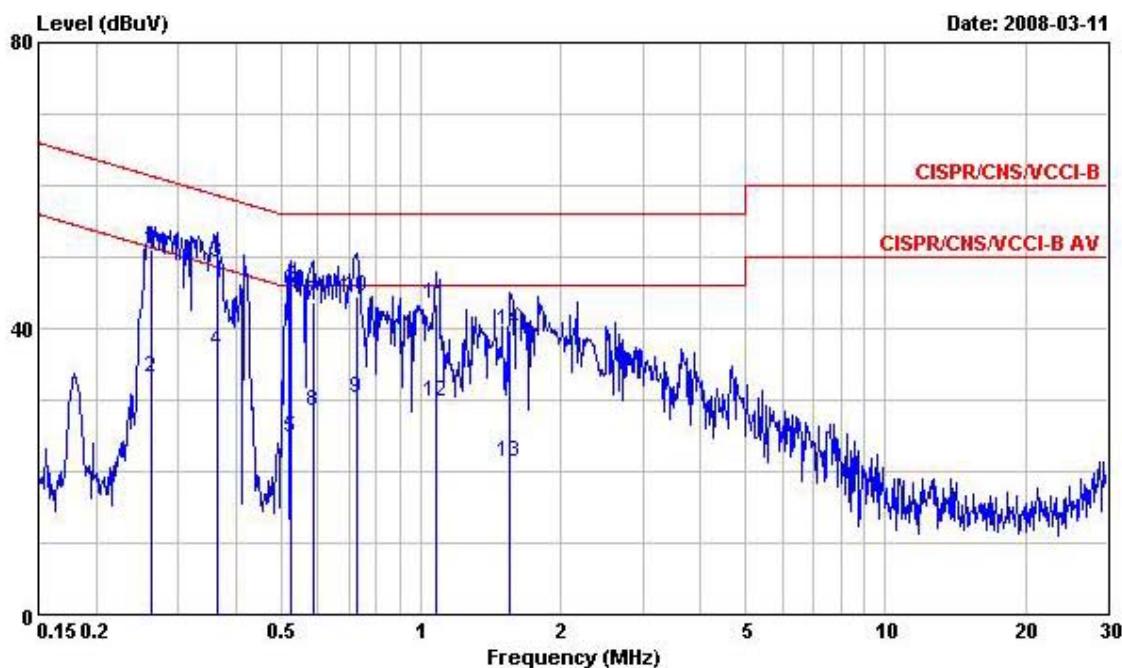
There is no deviation with the original standard.

3.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

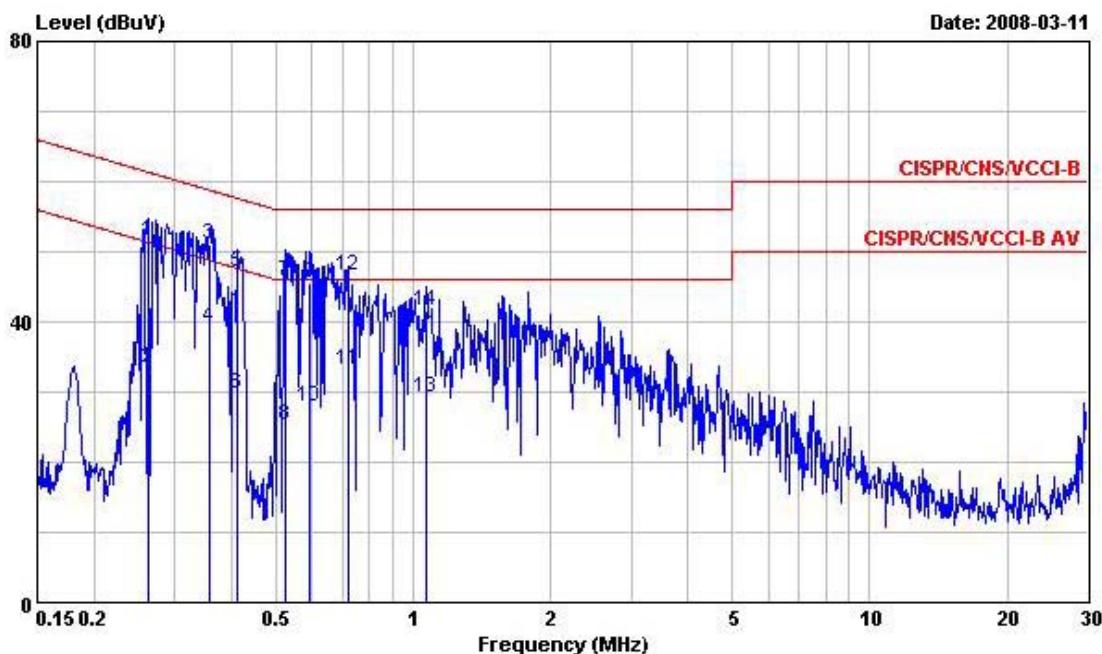
3.1.7. Results of AC Power Line Conducted Emissions Measurement

Test date	Mar. 11, 2008	Test Site No.	CO04-HY
Temperature	25	Humidity	55%
Test Engineer	Chris	Phase	Line
Configuration	Adapter Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.2629470	50.95	-10.39	61.34	50.48	0.10	0.37	QP
2	0.2629470	33.05	-18.29	51.34	32.58	0.10	0.37	Average
3	0.3633820	49.22	-9.43	58.65	48.47	0.10	0.65	QP
4	0.3633820	36.82	-11.83	48.65	36.07	0.10	0.65	Average
5	0.5237620	24.82	-21.18	46.00	24.07	0.10	0.65	Average
6	0.5237620	45.15	-10.85	56.00	44.40	0.10	0.65	QP
7	0.5854040	43.66	-12.34	56.00	42.95	0.10	0.61	QP
8	0.5854040	28.43	-17.57	46.00	27.72	0.10	0.61	Average
9	0.7274420	30.28	-15.72	46.00	29.64	0.10	0.54	Average
10	0.7274420	44.34	-11.66	56.00	43.70	0.10	0.54	QP
11	1.080	43.30	-12.70	56.00	42.76	0.10	0.44	QP
12	1.080	29.79	-16.21	46.00	29.25	0.10	0.44	Average
13	1.550	21.34	-24.66	46.00	20.81	0.10	0.43	Average
14	1.550	39.77	-16.23	56.00	39.24	0.10	0.43	QP

Test date	Mar. 11, 2008	Test Site No.	CO04-HY
Temperature	25	Humidity	55%
Test Engineer	Chris	Phase	Neutral
Configuration	Adapter Mode		



Freq	Level	Over	Limit	Read	LISN	Cable
		Line	dBuV	Level	Factor	Loss
MHz	dBuV	dB	dBuV	dBuV	dB	dB
1 0.2616370	51.61	-9.77	61.38	51.14	0.10	0.37 QP
2 0.2616370	33.41	-17.97	51.38	32.94	0.10	0.37 Average
3 0.3576520	50.93	-7.85	58.78	50.20	0.10	0.63 QP
4 0.3576520	39.20	-9.58	48.78	38.47	0.10	0.63 Average
5 0.4126560	47.10	-10.49	57.59	46.28	0.10	0.72 QP
6 0.4126560	29.78	-17.81	47.59	28.96	0.10	0.72 Average
7 0.5237620	45.67	-10.33	56.00	44.92	0.10	0.65 QP
8 0.5237620	25.36	-20.64	46.00	24.61	0.10	0.65 Average
9 0.5947840	45.40	-10.60	56.00	44.70	0.10	0.60 QP
10 0.5947840	27.84	-18.16	46.00	27.14	0.10	0.60 Average
11 0.7197740	33.12	-12.88	46.00	32.47	0.10	0.55 Average
12 0.7197740	46.66	-9.34	56.00	46.01	0.10	0.55 QP
13 1.070	29.15	-16.85	46.00	28.61	0.10	0.44 Average
14 1.070	41.61	-14.39	56.00	41.07	0.10	0.44 QP

Note:

Level = Read Level + LISN Factor + Cable Loss

3.2. Maximum Peak Output Power Measurement

3.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limit has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

3.2.2. Measuring Instruments and Setting

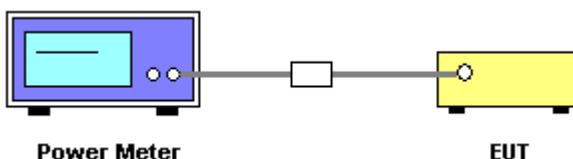
Please refer to section 4 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Used Peak Sensor	NRV-Z32 (model 04)

3.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Turn on the EUT and power meter and then record the peak power value.
3. Repeat above procedures on all channels needed to be tested.

3.2.4. Test Setup Layout



3.2.5. Test Deviation

There is no deviation with the original standard.

3.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7. Test Result of Maximum Peak Output Power

Test date	Feb. 22, 2008	Test Site No.	TH01-HY
Temperature	28	Humidity	58%
Test Engineer	Nan	Configurations	5.8G band

Configuration 2.4G band

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2417 MHz	19.00	30.00	Complies
6	2427 MHz	18.89	30.00	Complies
11	2467 MHz	18.80	30.00	Complies

Configuration 5.8G band

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	5745 MHz	22.50	30.00	Complies
3	5785 MHz	21.89	30.00	Complies
5	5825 MHz	19.26	30.00	Complies

3.3. Power Spectral Density Measurement

3.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

3.3.2. Measuring Instruments and Setting

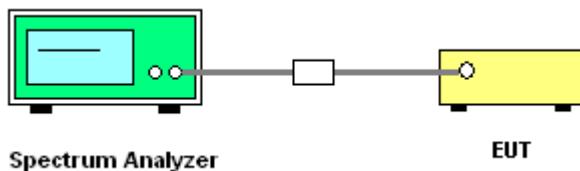
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	1.5MHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	500s

3.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz. Set Detector to Peak, Trace to Max Hold.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.

3.3.4. Test Setup Layout



3.3.5. Test Deviation

There is no deviation with the original standard.

3.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.3.7. Test Result of Power Spectral Density

Test date	Feb. 22, 2008	Test Site No.	TH01-HY
Temperature	28	Humidity	58%
Test Engineer	Nan	Configurations	5.8G band

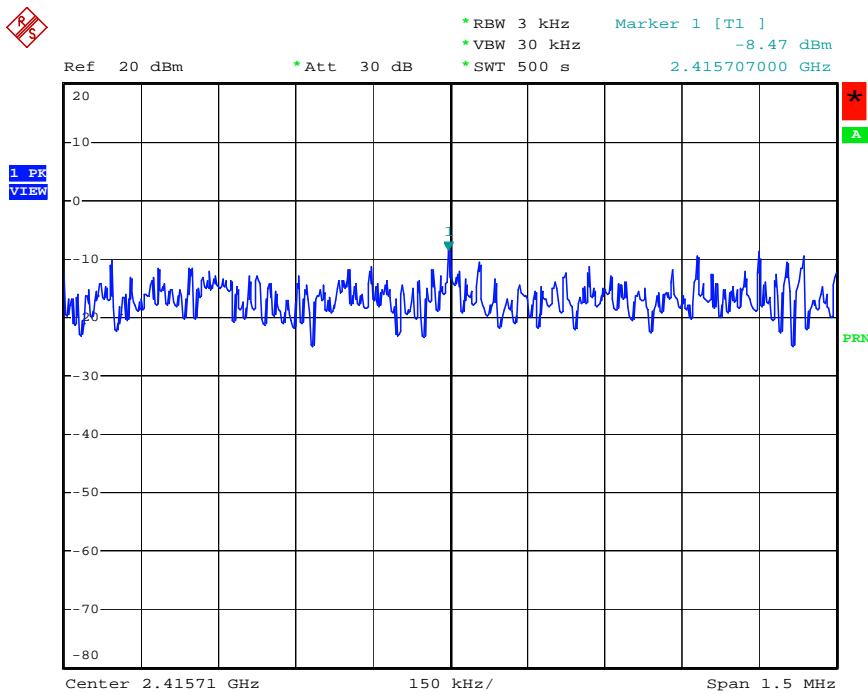
Configuration 2.4G band

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2417 MHz	-8.47	8.00	Complies
6	2427 MHz	-7.96	8.00	Complies
11	2467 MHz	-8.19	8.00	Complies

Configuration 5.8G band

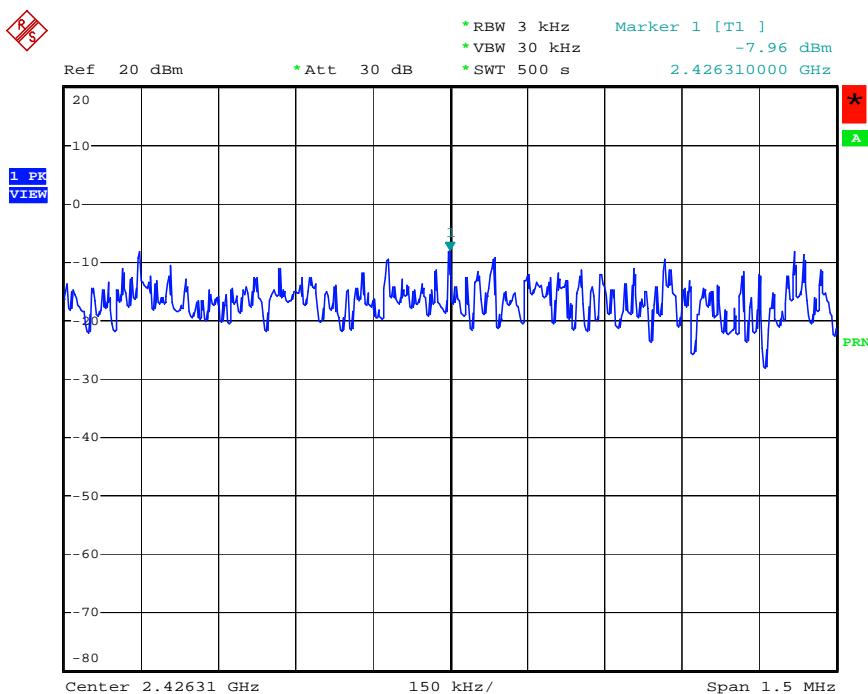
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	5745 MHz	-4.81	8.00	Complies
3	5785 MHz	-5.42	8.00	Complies
5	5825 MHz	-8.32	8.00	Complies

Power Density Plot on Configuration 2.4G band / 2417 MHz



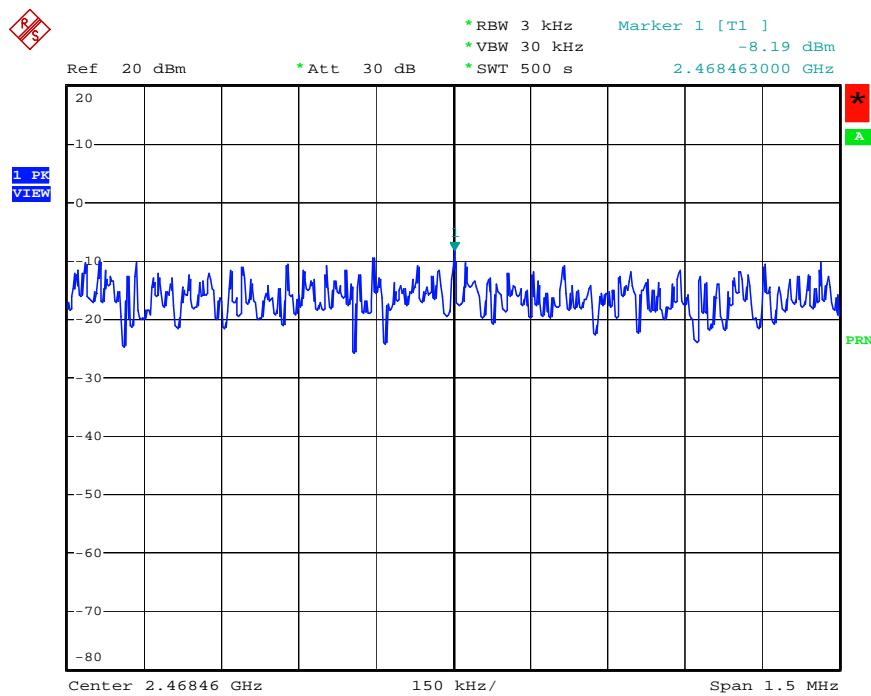
Date: 22.FEB.2008 16:26:51

Power Density Plot on Configuration 2.4G band / 2427 MHz



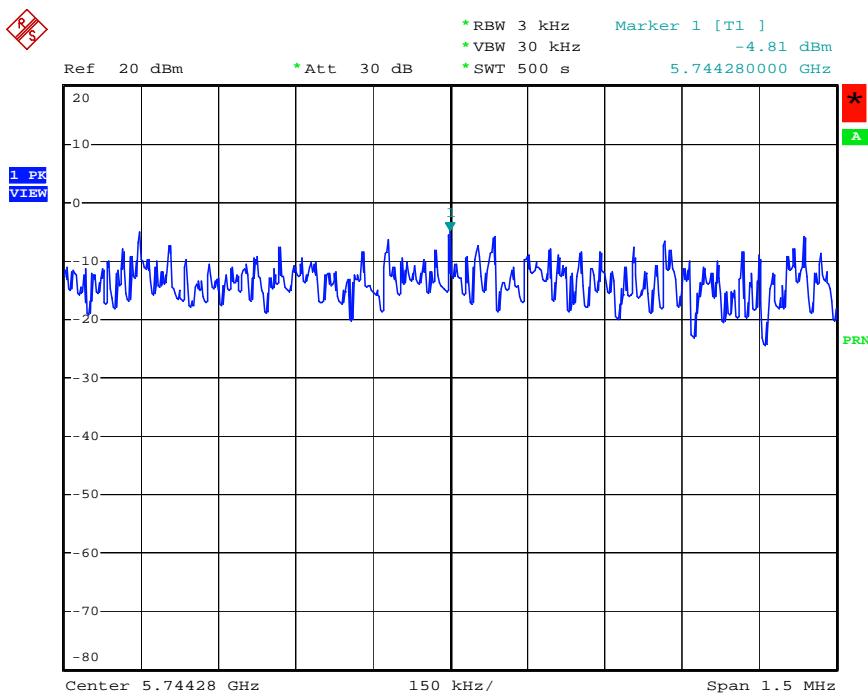
Date: 22.FEB.2008 16:28:16

Power Density Plot on Configuration 2.4G band / 2467 MHz



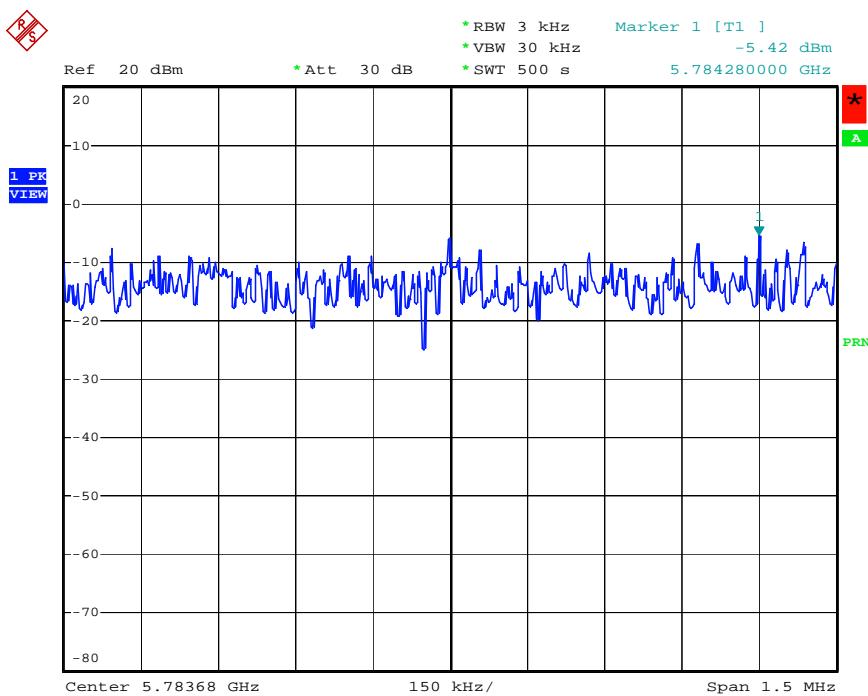
Date: 22.FEB.2008 16:36:43

Power Density Plot on Configuration 5.8G band / 5745 MHz



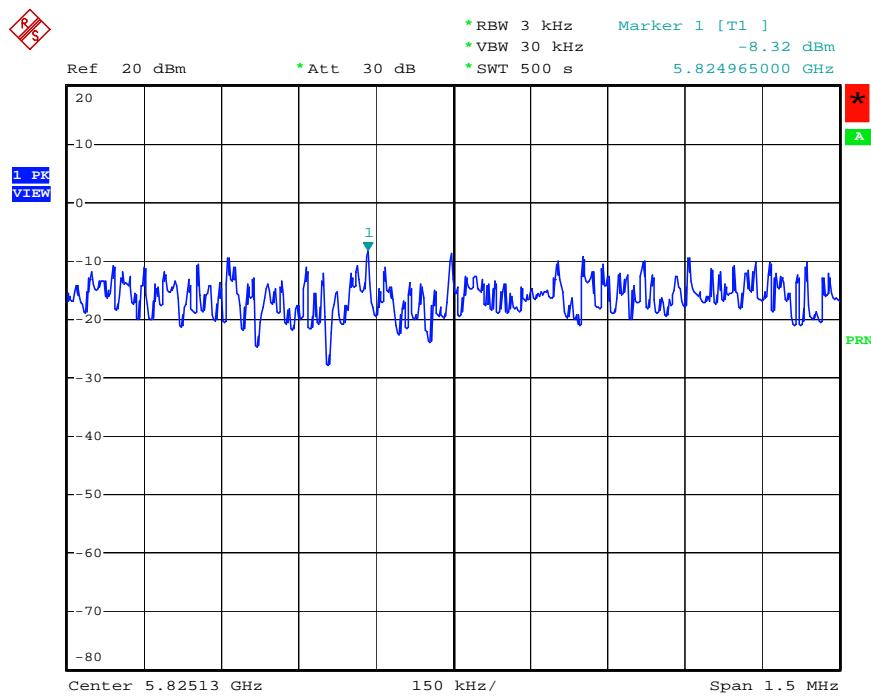
Date: 22.FEB.2008 16:55:02

Power Density Plot on Configuration 5.8G band / 5785 MHz



Date: 22.FEB.2008 16:56:01

Power Density Plot on Configuration 5.8G band / 5825 MHz



Date: 22.FEB.2008 17:03:33

3.4. 6dB Spectrum Bandwidth Measurement

3.4.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

3.4.2. Measuring Instruments and Setting

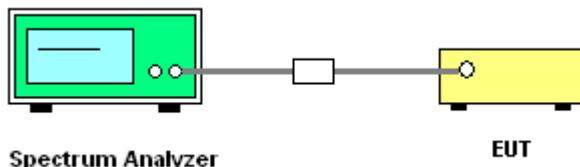
Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.

3.4.4. Test Setup Layout



3.4.5. Test Deviation

There is no deviation with the original standard.

3.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.4.7. Test Result of 6dB Spectrum Bandwidth

Test date	Feb. 22, 2008	Test Site No.	TH01-HY
Temperature	28	Humidity	58%
Test Engineer	Nan	Configurations	5.8G band

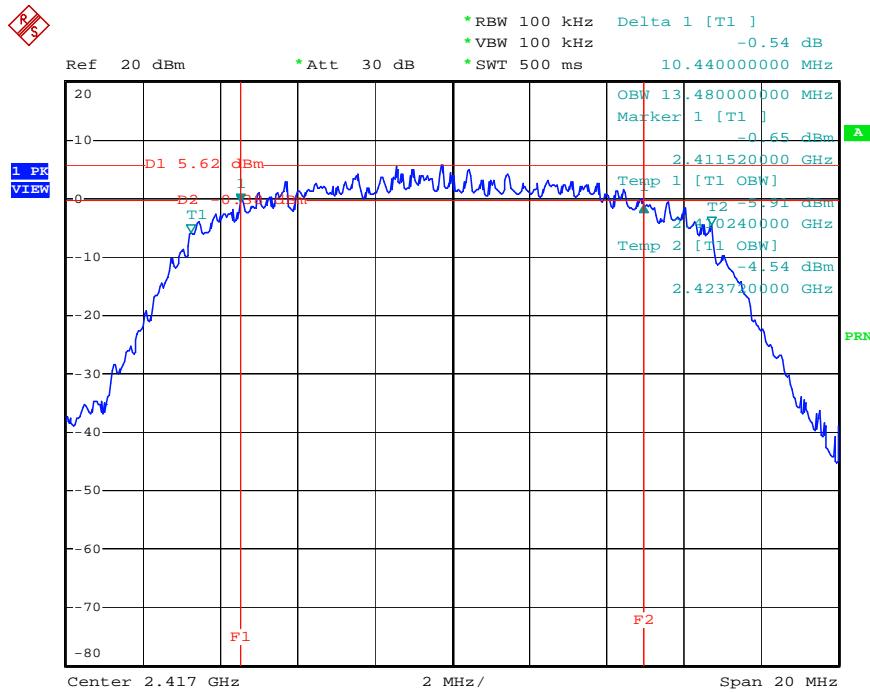
Configuration 2.4G band

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2417 MHz	10.44	13.48	500	Complies
6	2427 MHz	10.44	13.48	500	Complies
11	2467 MHz	10.44	13.44	500	Complies

Configuration 5.8G band

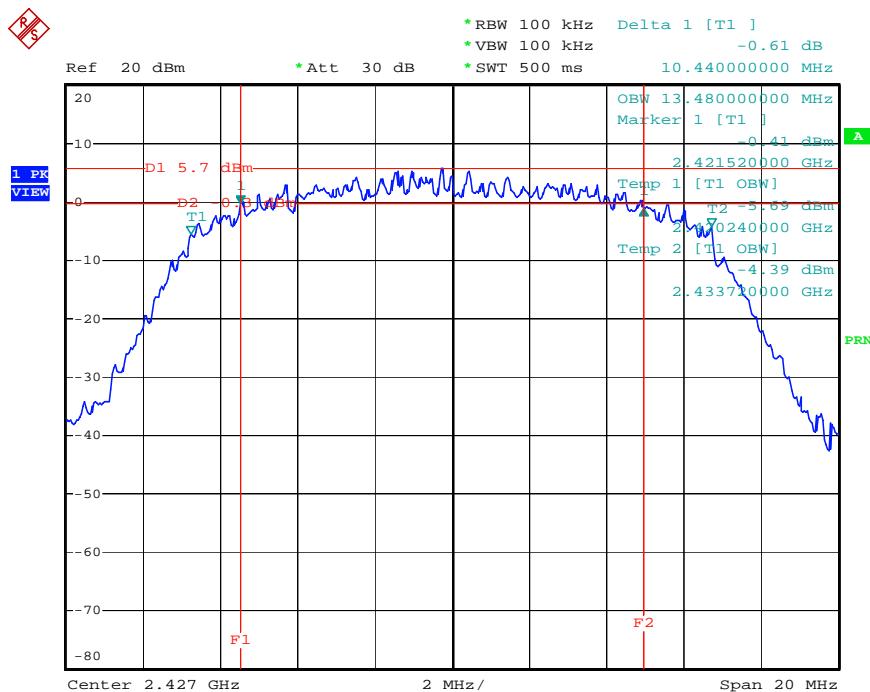
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	5745 MHz	10.04	13.52	500	Complies
3	5785 MHz	10.44	13.52	500	Complies
5	5825 MHz	10.44	13.48	500	Complies

6 dB Bandwidth Plot on Configuration 2.4G band / 2417 MHz



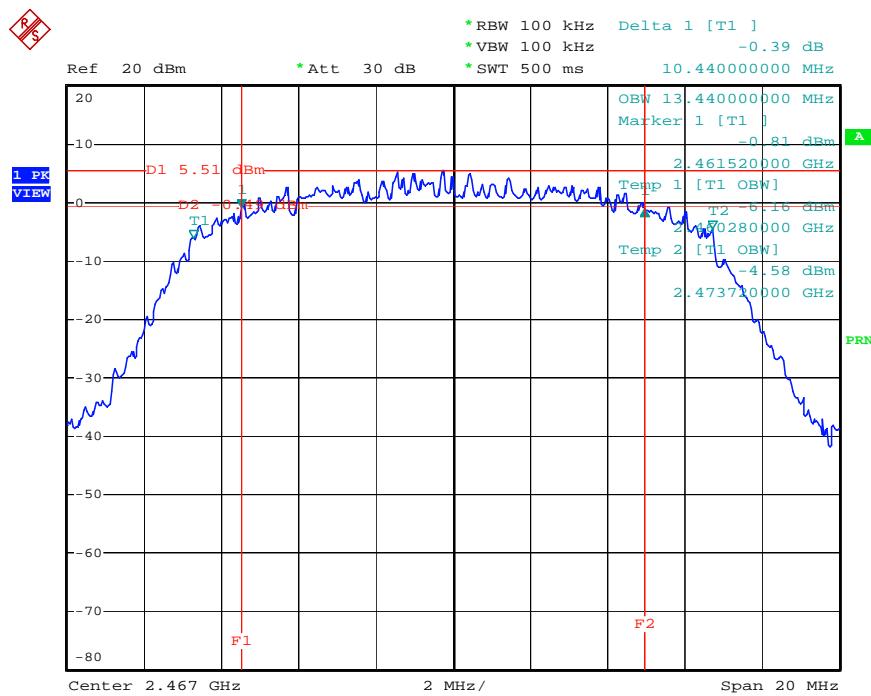
Date: 22.FEB.2008 16:25:00

6 dB Bandwidth Plot on Configuration 2.4G band / 2427 MHz



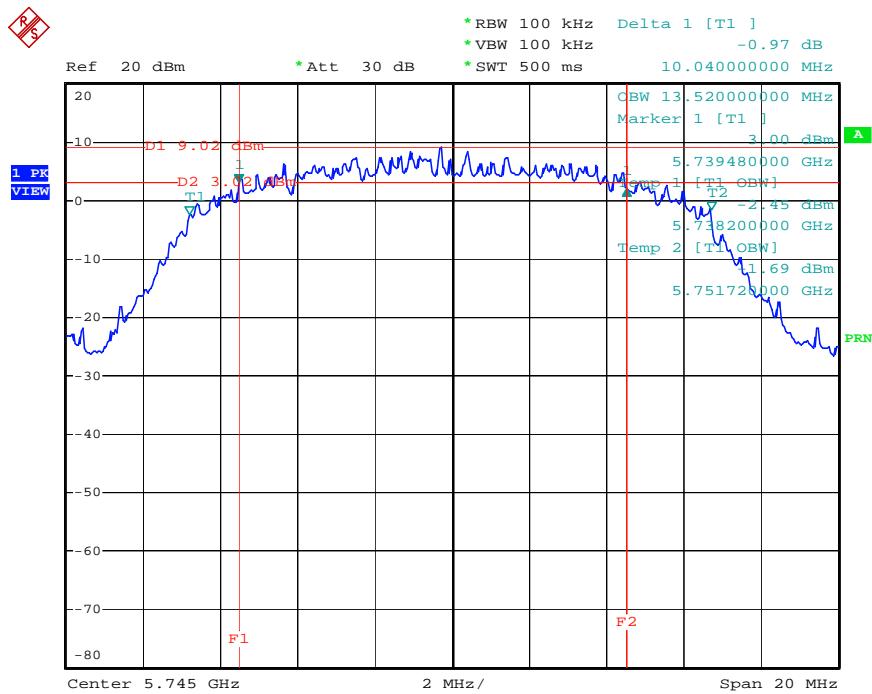
Date: 22.FEB.2008 16:29:34

6 dB Bandwidth Plot on Configuration 2.4G band / 2467 MHz



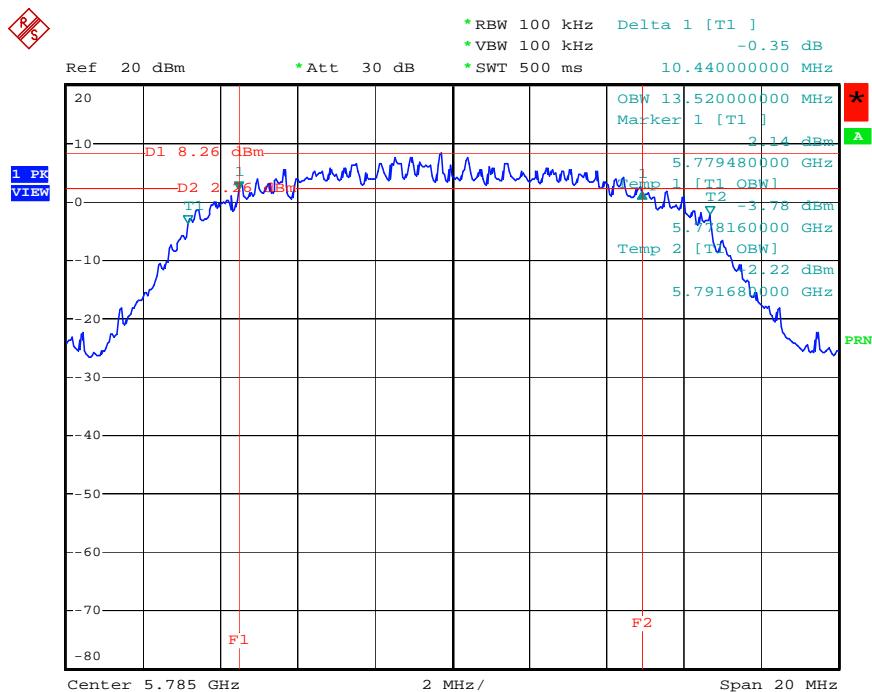
Date: 22.FEB.2008 16:34:26

6 dB Bandwidth Plot on Configuration 5.8G band / 5745 MHz



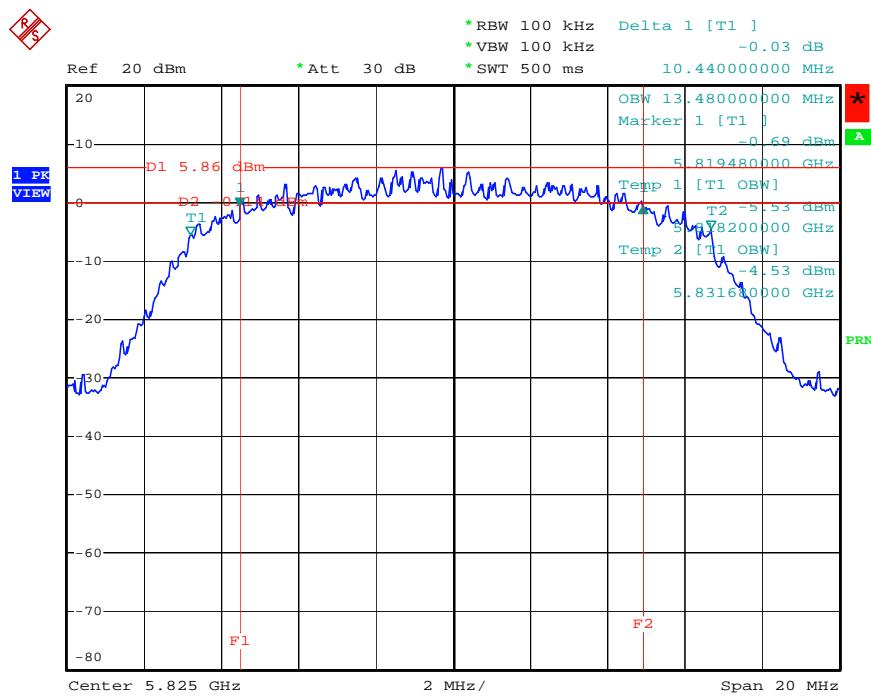
Date: 22.FEB.2008 16:52:43

6 dB Bandwidth Plot on Configuration 5.8G band / 5785 MHz



Date: 22.FEB.2008 16:57:23

6 dB Bandwidth Plot on Configuration 5.8G band / 5825 MHz



Date: 22.FEB.2008 17:00:54

3.5. Radiated Emissions Measurement

3.5.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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 (microvolt/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

3.5.2. Measuring Instruments and Setting

Please refer to section 4 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	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100KHz / 100KHz for peak

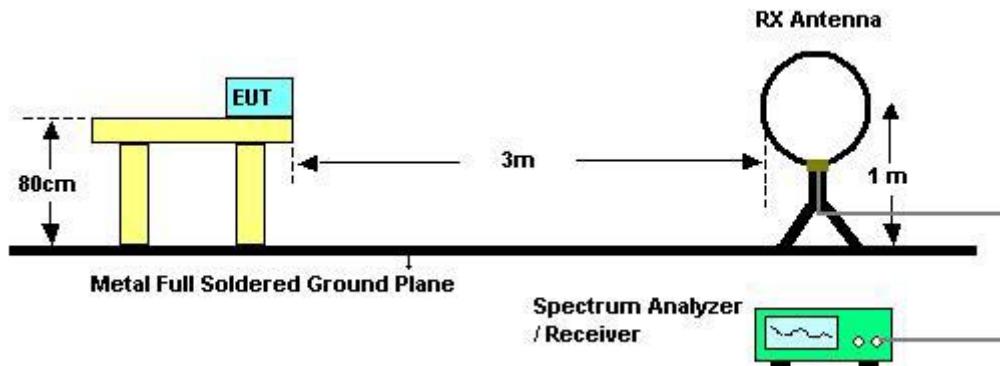
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.5.3. Test Procedures

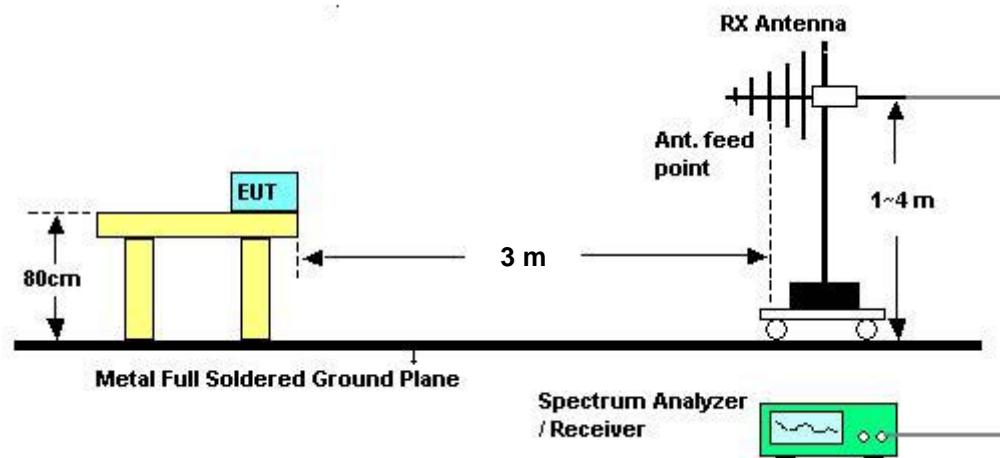
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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.

3.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1m.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

3.5.5. Test Deviation

There is no deviation with the original standard.

3.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Test date	Feb. 26, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie		

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

Note:

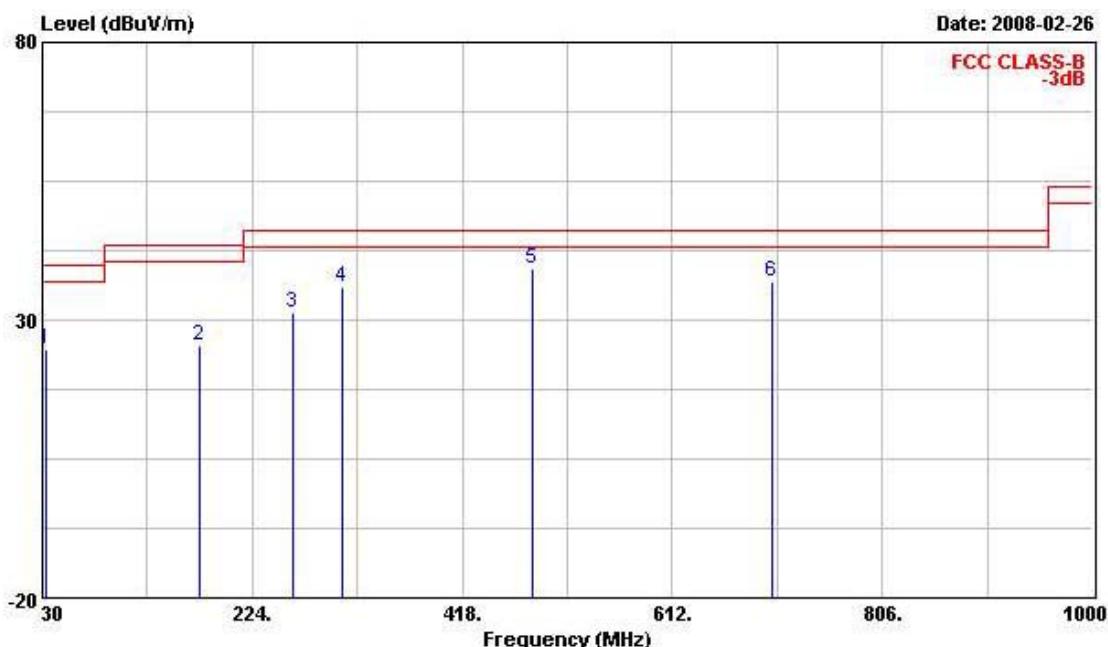
The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

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

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

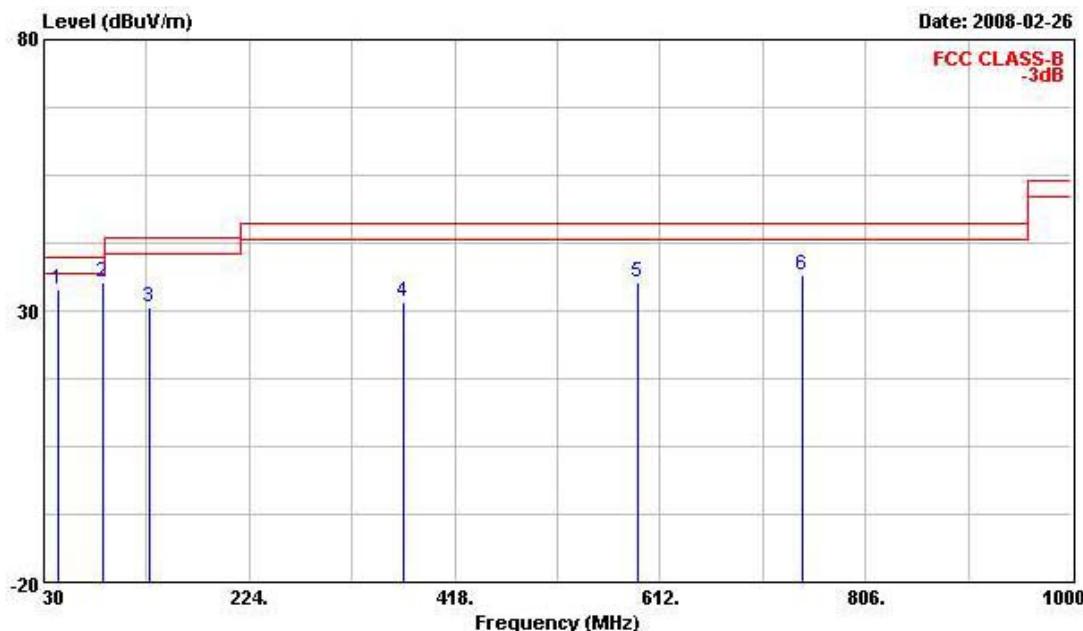
3.5.8. Results of Radiated Emissions (30MHz~1GHz)

Test date	Feb. 26, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	Normal Link

Horizontal

Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant		
		MHz	dB _{UV} /m	dB	dB _{UV} /m	dB _{UV}	dB/m				
1	32.910	24.76	-15.24	40.00	33.48	16.71	2.26	27.69	Peak	---	---
2	175.500	25.28	-18.22	43.50	40.58	9.38	3.15	27.83	Peak	---	---
3	261.830	31.29	-14.71	46.00	42.21	13.64	3.63	28.19	Peak	---	---
4	307.420	35.83	-10.17	46.00	46.70	13.87	3.82	28.57	Peak	---	---
5	482.990	39.21	-6.79	46.00	46.20	17.96	4.42	29.37	Peak	---	---
6	704.150	36.86	-9.14	46.00	41.32	20.03	5.24	29.73	Peak	---	---

Vertical



Freq	Level	Over Limit		Read Line	Antenna Factor	Cable Preamp		Remark	Table Pos	Ant Pos	
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm
1	43.580	33.90	-6.10	40.00	47.57	10.93	3.16	27.75	Peak	---	---
2	86.260	35.31	-4.69	40.00	51.93	8.65	2.38	27.65	Peak	---	---
3	129.910	30.75	-12.75	43.50	43.33	12.38	2.97	27.93	Peak	---	---
4	369.500	31.53	-14.47	46.00	40.59	15.49	4.25	28.80	Peak	---	---
5	590.660	35.27	-10.73	46.00	40.65	19.30	4.88	29.56	Peak	---	---
6	746.830	36.43	-9.57	46.00	40.30	20.66	5.12	29.65	Peak	---	---

Note:

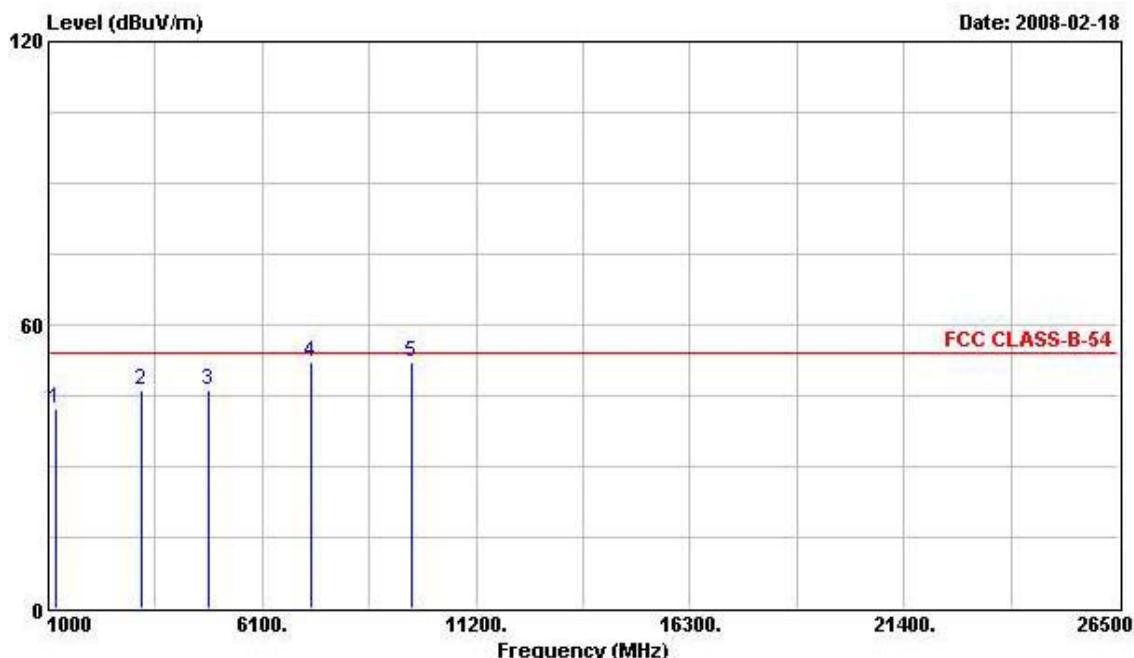
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

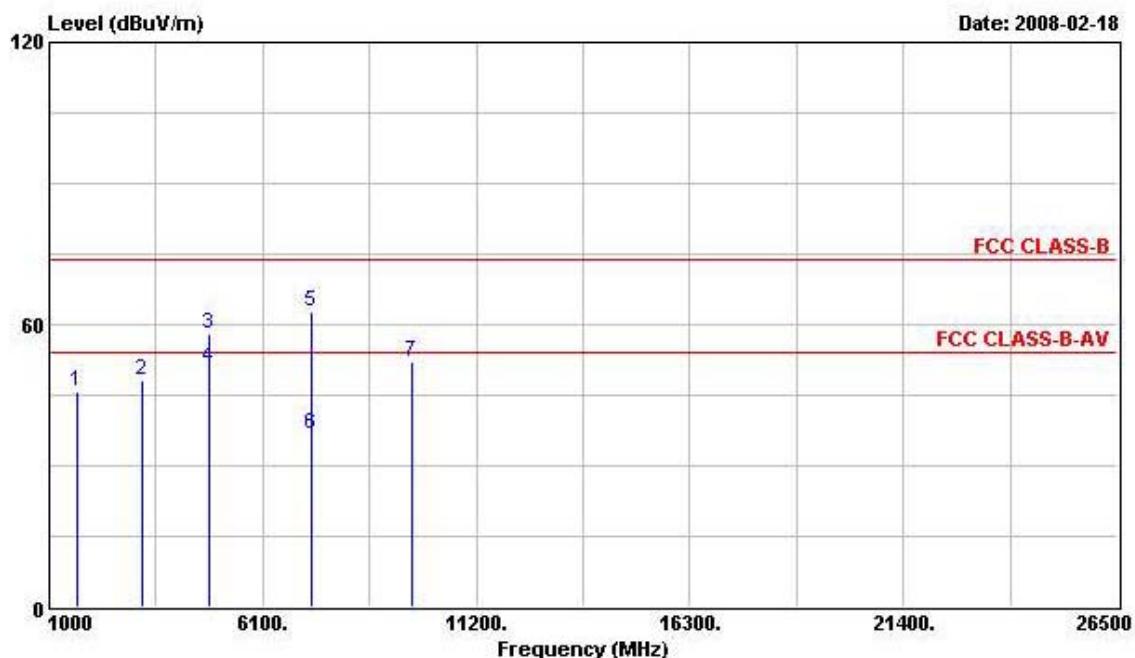
3.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	2.4G band CH 1

Horizontal

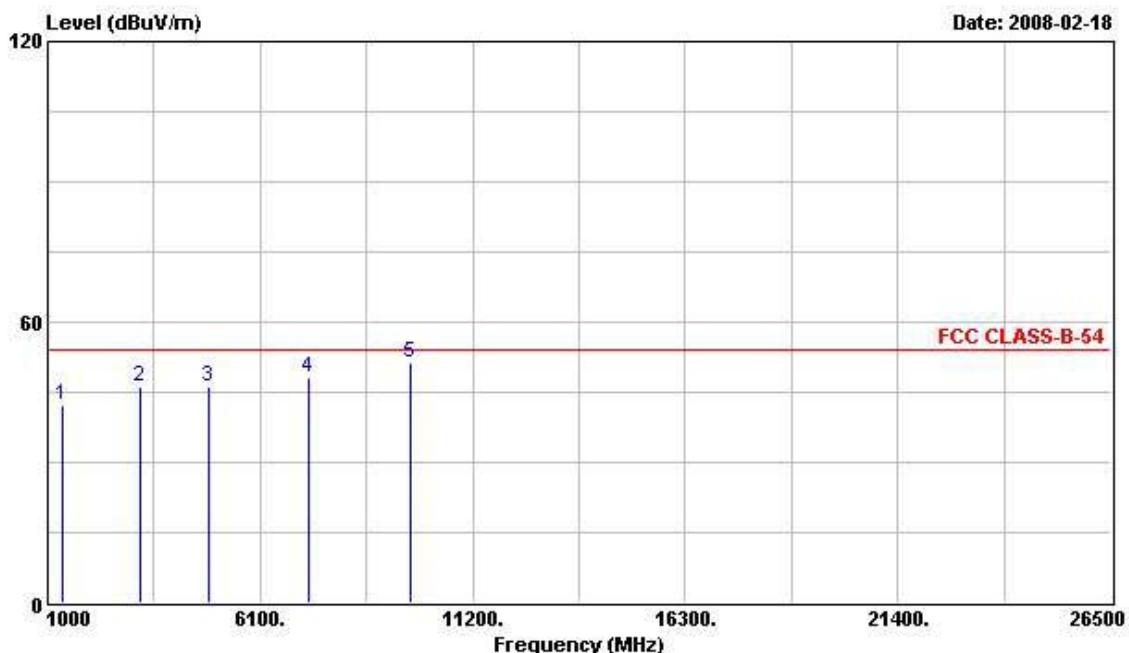
Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Table	Ant	
		Limit	Line	Level	Factor	Cable	Preamp		Pos	Pos	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm	
1	1164.000	42.08	-11.92	54.00	50.11	24.55	1.35	33.93	PEAK	360	100
2	3220.000	46.35	-7.65	54.00	46.26	30.55	2.39	32.86	PEAK	360	200
3	4834.000	46.18	-7.82	54.00	44.44	33.09	1.38	32.74	PEAK	360	200
4	7248.000	52.30	-1.70	54.00	45.28	35.82	4.14	32.95	PEAK	360	100
5	9668.000	52.28	-1.72	54.00	41.76	38.44	5.47	33.40	PEAK	0	100

Vertical



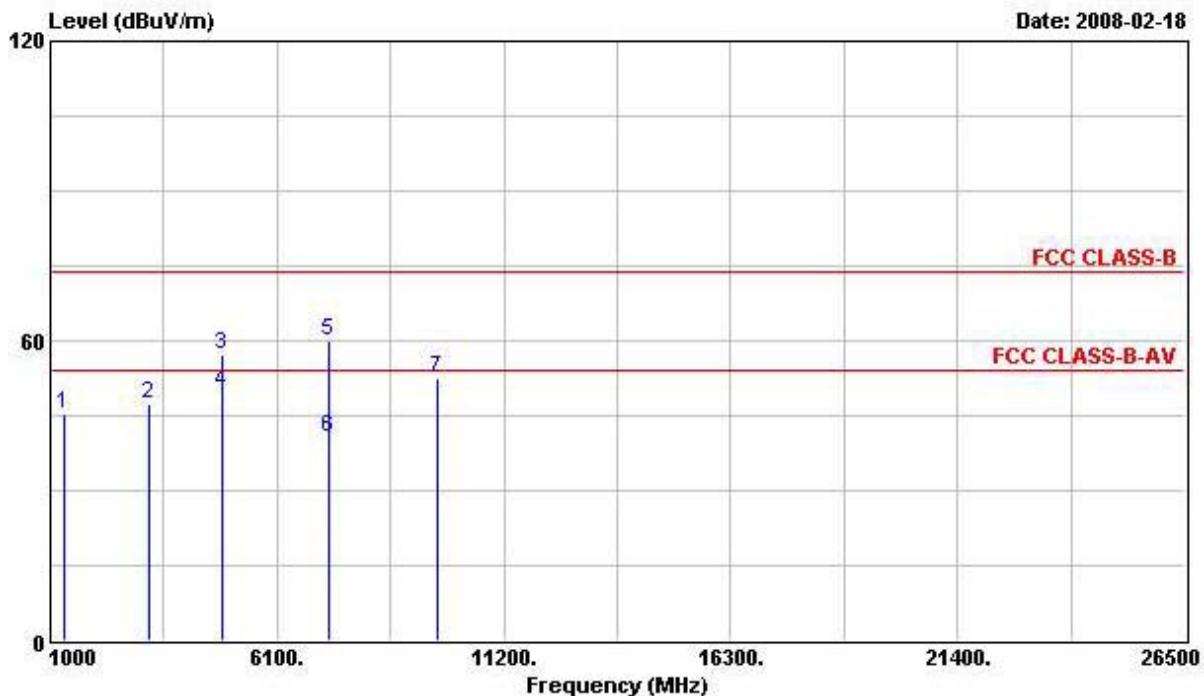
Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table Pos	Ant Pos
		Line	Level	Factor	Loss	Factor	Remark		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm
1	1664.000	45.66	-8.34	54.00	50.93	26.10	1.77	33.14	PEAK
2	3220.000	47.98	-6.02	54.00	47.90	30.55	2.39	32.86	PEAK
3	4836.000	58.07	-15.93	74.00	56.33	33.09	1.38	32.74	PEAK
4	4836.000	51.03	-2.97	54.00	49.29	33.09	1.38	32.74	Average
5	7252.000	62.86	-11.14	74.00	55.84	35.82	4.14	32.95	PEAK
6	7252.000	36.86	-17.14	54.00	29.85	35.82	4.14	32.95	Average
7	9668.000	52.24	-1.76	54.00	41.72	38.44	5.47	33.40	PEAK

Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	2.4G band CH 6

Horizontal

Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant
		Line	Limit	Level	Factor	Cable	Preamp		
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
								deg	cm
1	1376.000	42.24	-11.76	54.00	49.13	25.09	1.55	33.53 PEAK	0 200
2	3236.000	46.01	-7.99	54.00	45.88	30.58	2.39	32.85 PEAK	360 200
3	4856.000	46.21	-7.79	54.00	44.54	33.12	1.28	32.73 PEAK	360 200
4	7281.000	48.32	-5.68	54.00	41.21	35.86	4.20	32.96 PEAK	360 100
5	9712.000	51.18	-2.82	54.00	40.54	38.51	5.52	33.40 PEAK	0 100

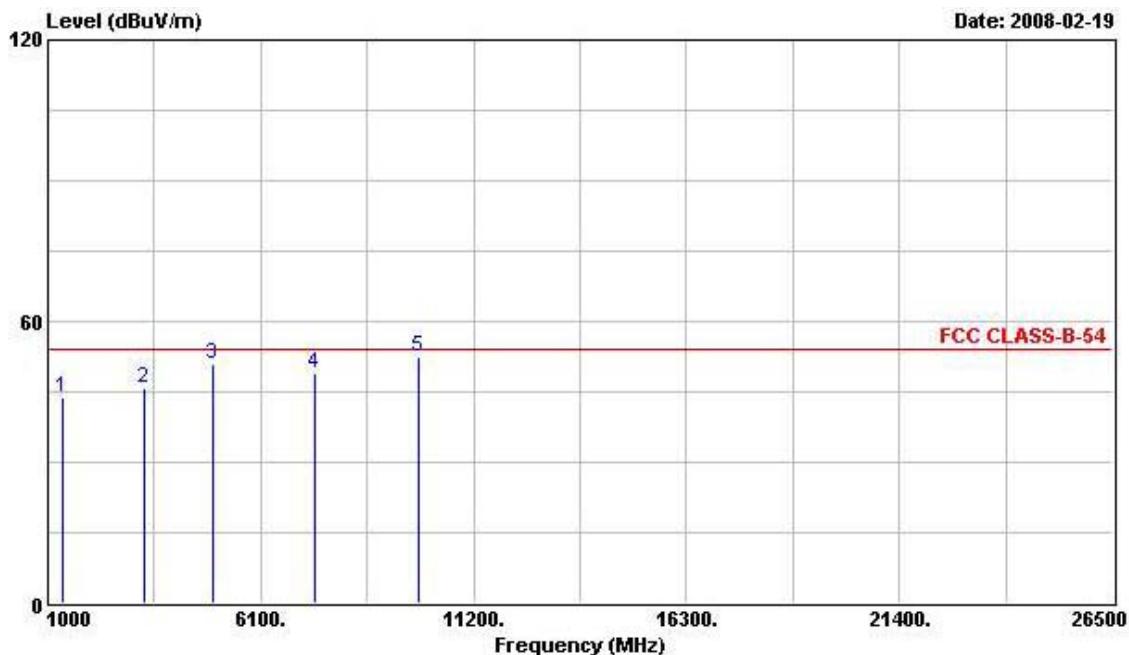
Vertical



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark
		Limit	Line	Level	Factor	Loss	Factor	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	
1	1328.000	45.39	-8.61	54.00	52.57	24.95	1.48	33.62 PEAK
2	3236.000	47.47			47.35	30.58	2.39	32.85 PEAK
3	4856.000	57.43	-16.57	74.00	55.76	33.12	1.28	32.73 PEAK
4	4856.000	49.56	-4.44	54.00	47.89	33.12	1.28	32.73 Average
5	7276.000	59.96	-14.04	74.00	52.85	35.86	4.20	32.96 PEAK
6	7276.000	40.48	-13.52	54.00	33.37	35.86	4.20	32.96 Average
7	9708.000	52.37	-1.63	54.00	41.74	38.51	5.52	33.40 PEAK

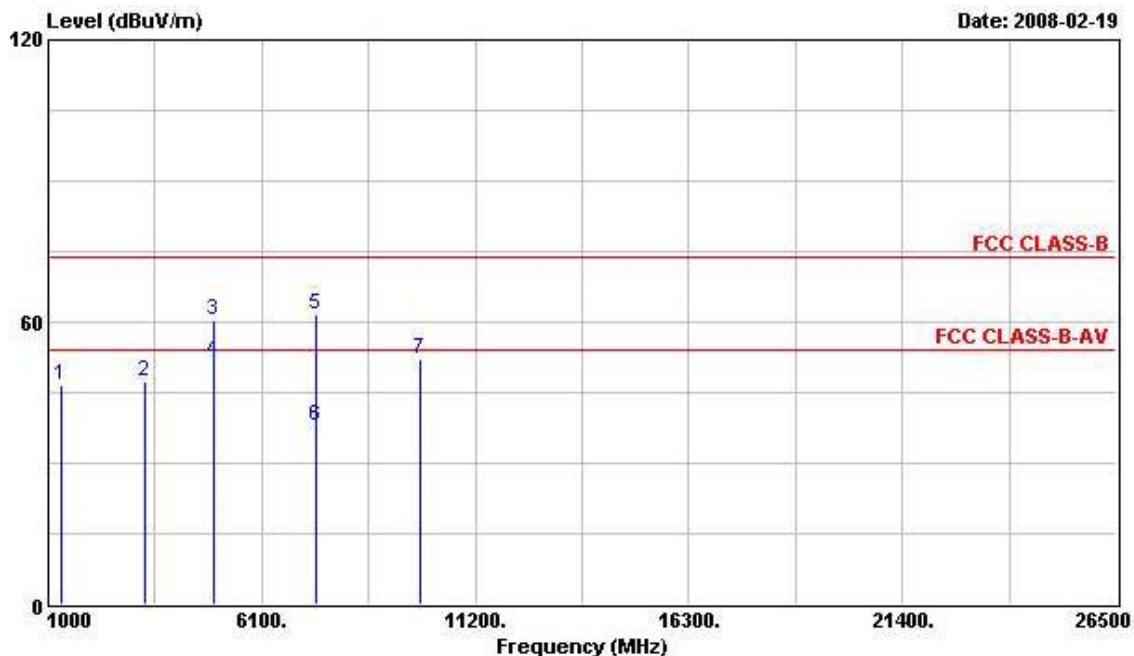
Note: Item 2 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

Test date	Feb. 19, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	2.4G band CH 11

Horizontal

Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Table	Ant
		Line	Limit	Level	Factor	Cable	Preamp		Pos	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm	
1	1376.000	43.76	-10.24	54.00	50.64	25.09	1.55	33.53 PEAK	0	100
2	3288.000	45.98	-8.02	54.00	45.73	30.69	2.40	32.84 PEAK	0	200
3	4936.000	50.96	-3.04	54.00	49.32	33.30	1.07	32.72 PEAK	0	200
4	7405.000	49.03	-4.97	54.00	41.44	36.19	4.38	32.98 PEAK	0	100
5	9868.000	52.68	-1.32	54.00	41.50	38.86	5.72	33.40 PEAK	360	100

Vertical



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant			
		Limit	Line	Level	Factor	Loss	Factor					
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm		
1	1328.000	46.41	-7.59	54.00	53.59	24.95	1.48	33.62	Average	0	100	
2	3288.000	47.51	-6.49	54.00	47.26	30.69	2.40	32.84	PEAK	-	360	100
3	4936.000	60.28	-13.72	74.00	58.64	33.30	1.07	32.72	PEAK	-	360	100
4	4936.000	51.90	-2.10	54.00	50.25	33.30	1.07	32.72	Average	360	100	
5	7400.000	61.41	-12.59	74.00	53.86	36.15	4.38	32.98	PEAK	-	0	200
6	7400.000	37.83	-16.17	54.00	30.28	36.15	4.38	32.98	Average	0	200	
7	9868.000	52.12	-1.88	54.00	40.94	38.86	5.72	33.40	PEAK	-	0	100

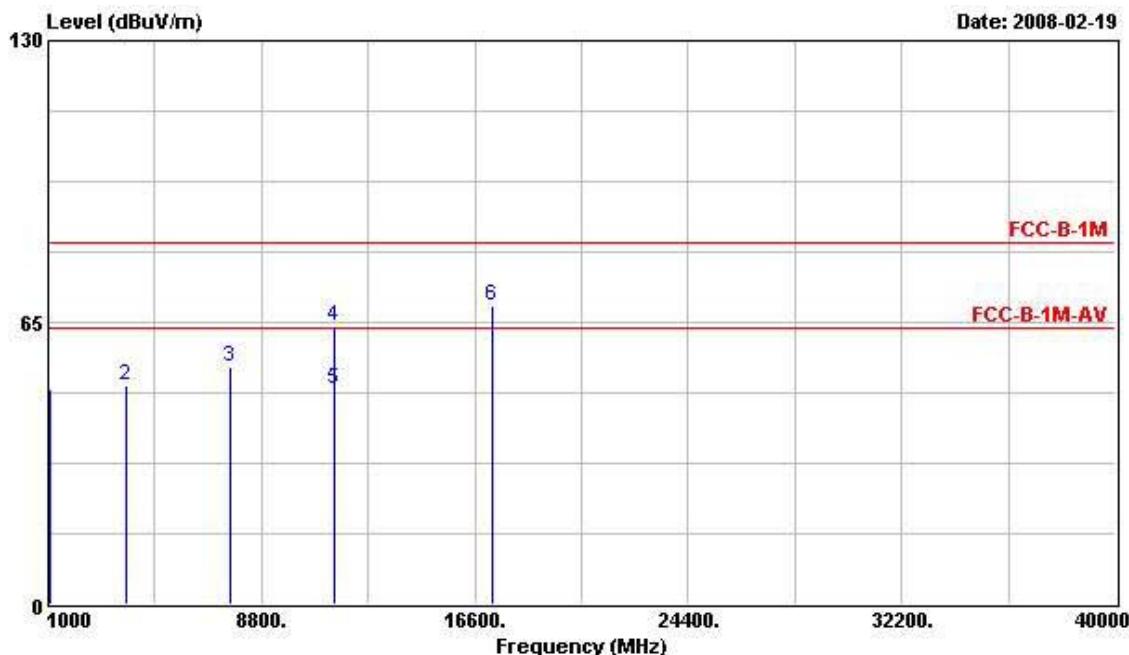
Note:

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).

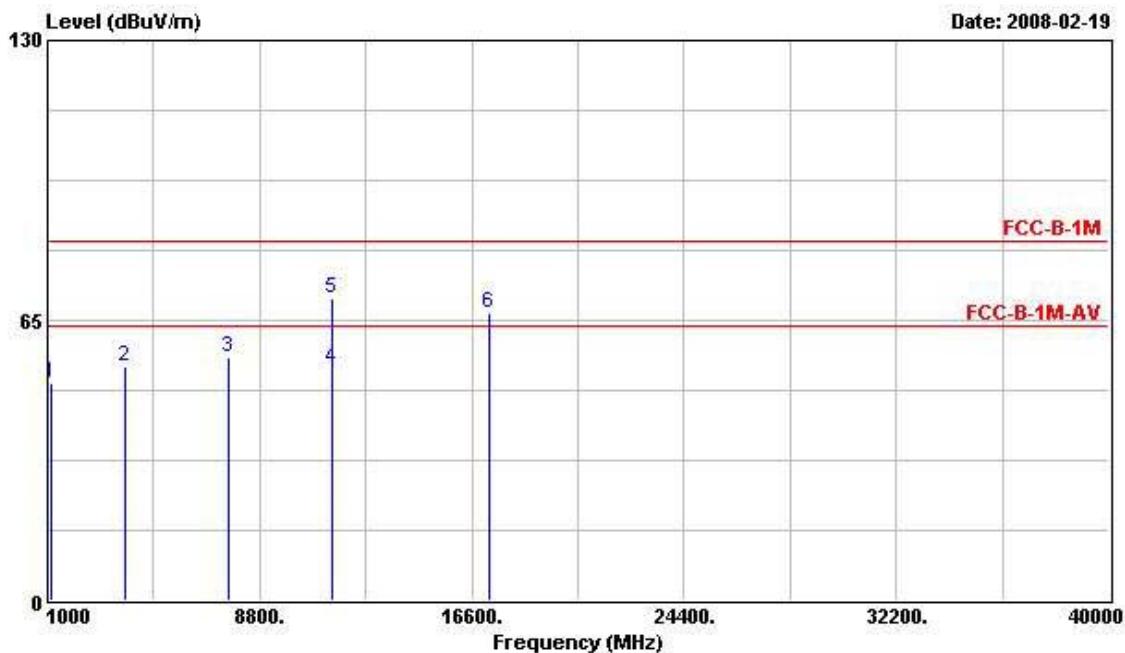
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test date	Feb. 19, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	5.8G band CH 1

Horizontal

Freq	Level	Over Limit		Read Line	Antenna Factor	Cable Loss	Preamp Factor	Remark	Table	Ant
		MHz	dBuV/m	Limit	Line	dB	dB/m	deg	Pos	Pos
									cm	
1	1052.000	49.78	-13.76	63.54	58.30	24.34	1.24	34.11 PEAK	360	100
2	3828.000	50.27	-13.27	63.54	47.68	32.59	2.80	32.80 PEAK	0	100
3	7660.000	54.84	-8.70	63.54	45.84	37.47	4.59	33.06 PEAK	360	100
4	11488.000	63.94	-19.60	83.54	51.08	39.68	5.97	32.80 PEAK	0	100
5	11488.000	49.79	-13.75	63.54	36.93	39.68	5.97	32.80 Average	0	100
6	17236.000			83.54	49.94	43.26	7.20	31.70 PEAK	0	100

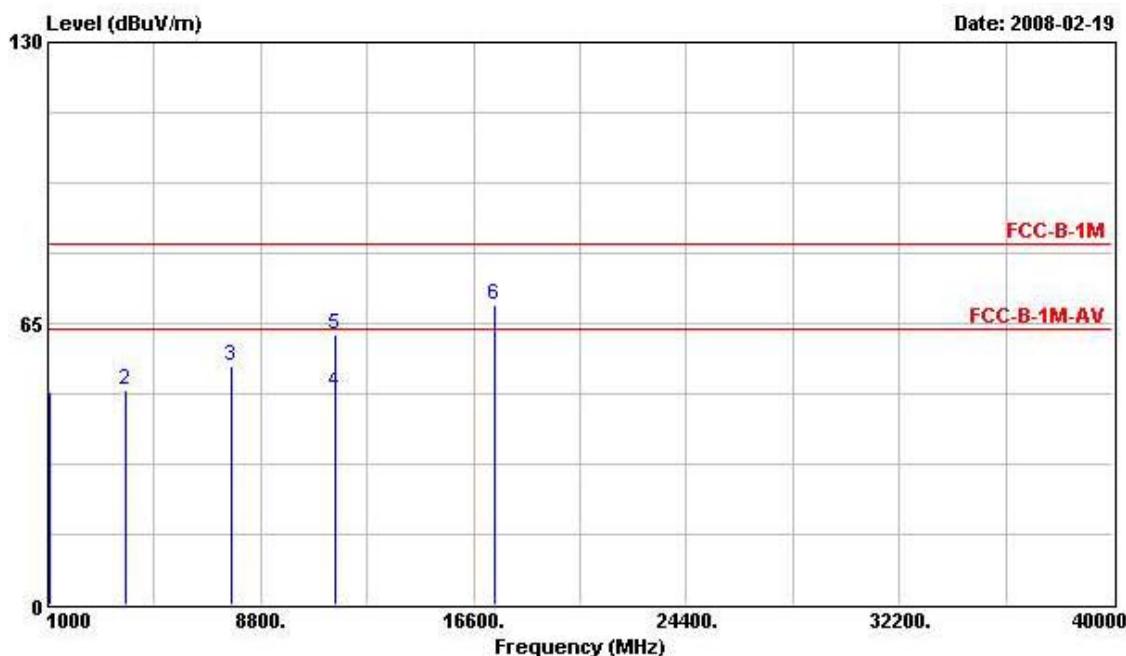
Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

Vertical

Freq	Level	Over Limit	Line	ReadAntenna		Cable Loss	Preamp Factor	Remark	Table Pos	Ant Pos	
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB
1	1164.000	50.32	-13.22	63.54	58.22	24.68	1.35	33.93	PEAK	360	100
2	3828.000	54.47	-9.07	63.54	51.88	32.59	2.80	32.80	PEAK	0	100
3	7660.000	56.39	-7.15	63.54	47.39	37.47	4.59	33.06	PEAK	360	100
4	11488.000	53.93	-9.61	63.54	41.07	39.68	5.97	32.80	Average	360	100
5	11488.000	70.09	-13.45	83.54	57.24	39.68	5.97	32.80	PEAK	360	100
6	17232.000			83.54	48.08	43.26	7.20	31.70	PEAK	319	100

Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

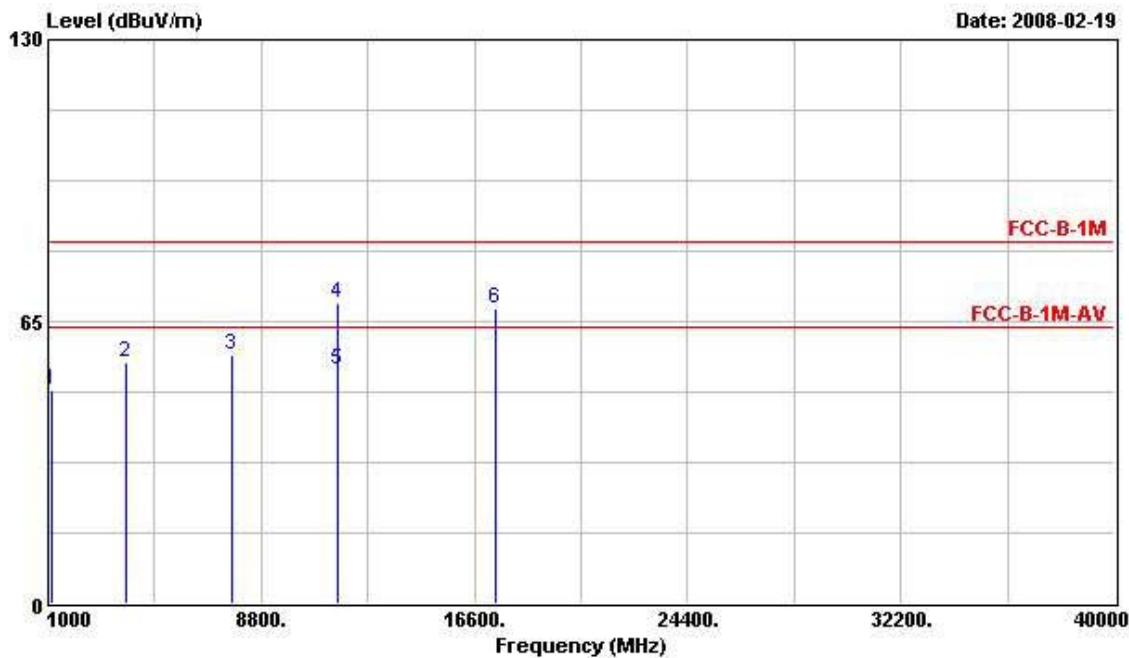
Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	5.8G band CH 3

Horizontal

Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table Pos	Ant Pos
		Line	Limit	Level	Factor	Cable	Preamp		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm
1	1076.000	49.21	-14.33	63.54	57.60	24.39	1.28	34.07 PEAK	0 100
2	3856.000	49.52	-14.02	63.54	46.85	32.67	2.80	32.80 PEAK	360 100
3	7712.000	55.00	-8.54	63.54	45.97	37.52	4.60	33.08 PEAK	0 100
4	11564.000	49.17	-14.37	63.54	36.32	39.65	6.00	32.79 Average	360 100
5	11564.000	62.26	-21.28	83.54	49.41	39.65	6.00	32.79 PEAK	360 100
6	17352.000			83.54	49.45	44.24	7.19	31.70 PEAK	360 100

Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

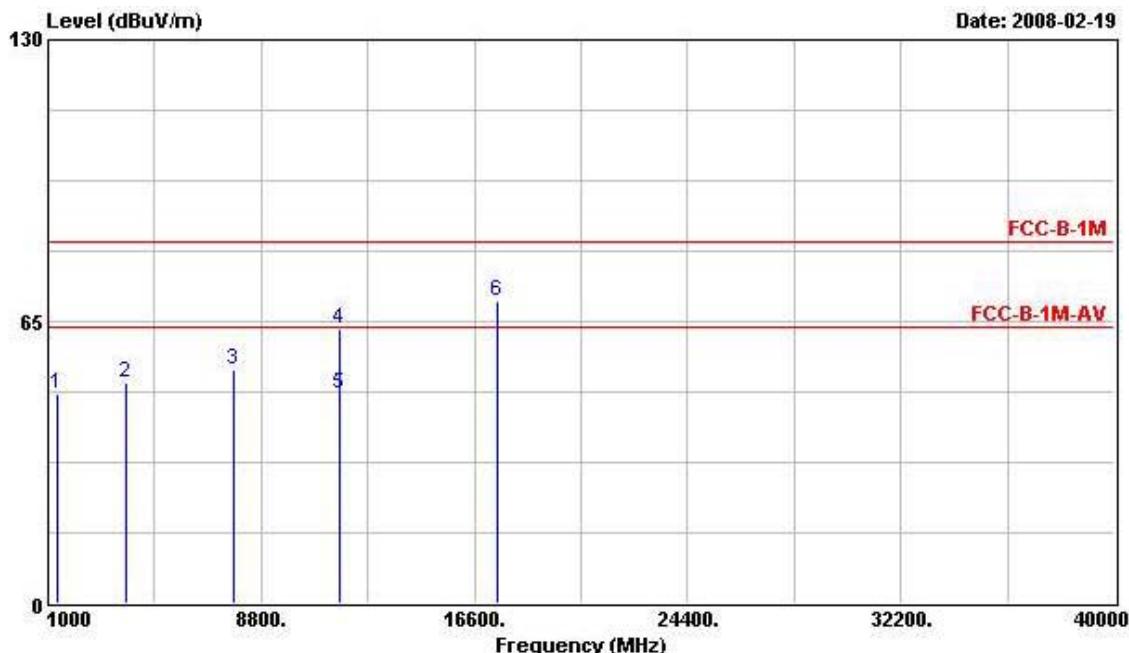
Vertical



Freq	Level	Over Limit	Limit Line	ReadAntenna		Cable Preamp		Remark	Table Pos	Ant Pos	
				MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	deg	cm
1	1164.000	49.37	-14.17	63.54	57.27	24.68	1.35	33.93	PEAK	360	100
2	3856.000	55.77	-7.77	63.54	53.10	32.67	2.80	32.80	PEAK	0	100
3	7712.000	57.11	-6.43	63.54	48.07	37.52	4.60	33.08	PEAK	360	100
4	11568.000	69.18	-14.36	83.54	56.34	39.63	6.00	32.79	PEAK	360	100
5	11568.000	54.00	-9.54	63.54	41.16	39.63	6.00	32.79	Average	360	100
6	17352.000	67.90			48.17	44.24	7.19	31.70	PEAK	360	100

Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

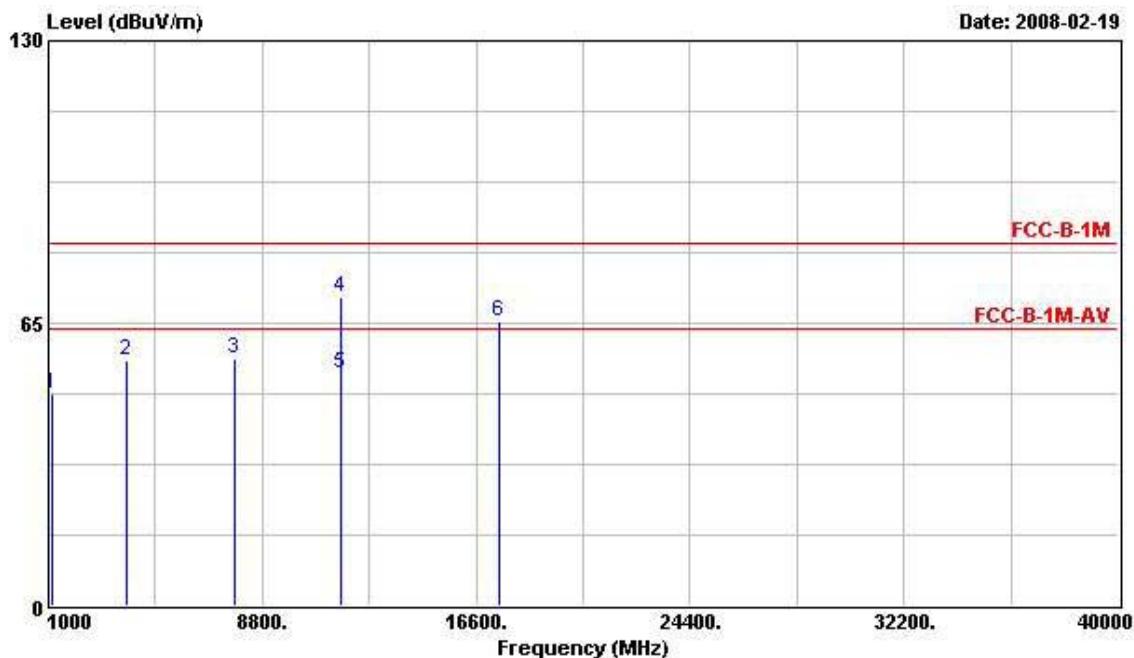
Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	5.8G band CH 5

Horizontal

Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table Pos	Ant Pos
		Line	Limit	Level	Factor	Loss	Factor		
1328.000	48.30	-15.24	63.54	55.32	25.12	1.48	33.62 PERK	360	100
3884.000	50.71	-12.83	63.54	47.91	32.75	2.84	32.80 PERK	0	100
7764.000	54.01	-9.53	63.54	44.94	37.57	4.61	33.10 PERK	360	100
11648.000	63.13	-20.41	83.54	50.32	39.56	6.02	32.77 PERK	360	100
11648.000	48.40	-15.14	63.54	35.59	39.56	6.02	32.77 Average	360	100
17472.000	69.61			48.92	45.22	7.17	31.70 PERK	0	100

Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

Vertical



Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant
		Line	Level	Factor	Loss	Factor	Remark		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	deg	cm
1 1164.000	48.71	-14.83	63.54	56.61	24.68	1.35	33.93 PEAK	0	100
2 3884.000	56.58	-6.96	63.54	53.79	32.75	2.84	32.80 PEAK	360	100
3 7768.000	56.72	-6.82	63.54	47.63	37.57	4.62	33.10 PEAK	0	100
4 11648.000	70.90	-12.64	83.54	58.09	39.56	6.02	32.77 PEAK	0	100
5 11648.000	53.59	-9.95	63.54	40.78	39.56	6.02	32.77 Average	0	100
6 17475.000	65.54			44.85	45.22	7.17	31.70 PEAK	360	100

Note: Item 6 is on un-restricted band, so the limit is -20dBc for the field strength of the fundamental emissions(see section 3.6.7).

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.

3.6. Band Edge Emissions Measurement

3.6.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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 (microvolt/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

3.6.2. Measuring Instruments and Setting

Please refer to section 4 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)	100 KHz /100 KHz for Peak

3.6.3. Test Procedures

1. The test procedure is the same as section 3.5.3, 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.

3.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 3.5.4.

3.6.5. Test Deviation

There is no deviation with the original standard.

3.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.6.7. Test Result of Band Edge Emissions

Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	2.4G band CH 1, 11

Channel 1

Freq	Level	Over Limit		ReadAntenna		Cable Preamp		Remark	Table	Ant
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m		deg	cm
1	2369.660	63.83	-10.17	74.00	33.36	28.26	2.21	0.00 Peak	112	158
2 @	2416.780	107.62			77.06	28.33	2.23	0.00 Peak	112	158
1 @	2384.290	52.00	-2.00	54.00	21.53	28.26	2.21	0.00 Average	112	158
2 @	2415.450	95.79			65.23	28.33	2.23	0.00 Average	112	158

Channel 11

Freq	Level	Over Limit		ReadAntenna		Cable Preamp		Remark	Table	Ant
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m		deg	cm
1 @	2468.460	110.24			79.54	28.43	2.27	0.00 Peak	273	128
2	2483.660	65.25	-8.75	74.00	34.51	28.47	2.27	0.00 Peak	273	128
1 @	2466.370	88.60			57.90	28.43	2.27	0.00 Average	273	128
2 @	2483.500	52.54	-1.46	54.00	21.80	28.47	2.27	0.00 Average	273	128

Test date	Feb. 18, 2008	Test Site No.	03CH03-HY
Temperature	24.5	Humidity	45%
Test Engineer	Eddie	Configurations	5.8G band CH 1, 5

Channel 1

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant	
			MHz	dBuV/m	dB	Line	Level	Factor			
1	5724.200	71.61	-11.93	83.54	35.07	34.74	1.80	0.00	Peak	208	100
2 @	5746.200	122.86			86.28	34.75	1.83	0.00	Peak	208	100
1	5723.500	58.39	-5.15	63.54	21.85	34.74	1.80	0.00	Average	208	100
2 @	5745.000	100.53			63.95	34.75	1.83	0.00	Average	208	100

Channel 5

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Table	Ant	
			MHz	dBuV/m	dB	Line	Level	Factor			
1 @	5826.200	121.30			84.66	34.77	1.88	0.00	Peak	201	100
2	5851.000	68.63	-14.91	83.54	31.98	34.77	1.88	0.00	Peak	201	100
1 @	5825.000	98.44			61.80	34.77	1.88	0.00	Average	201	100
2	5850.000	55.99	-7.55	63.54	19.34	34.77	1.88	0.00	Average	201	100

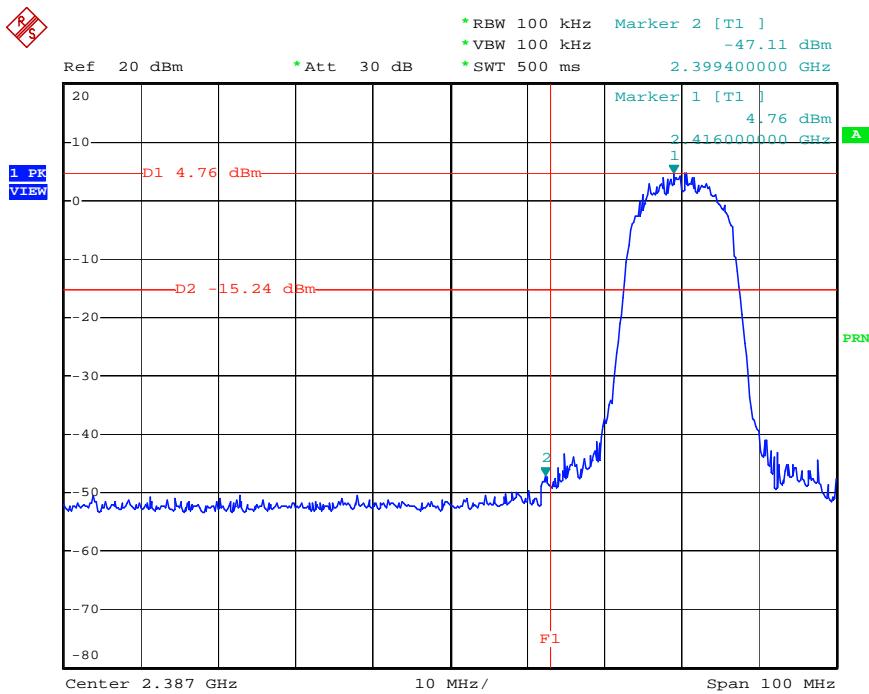
Note:

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

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

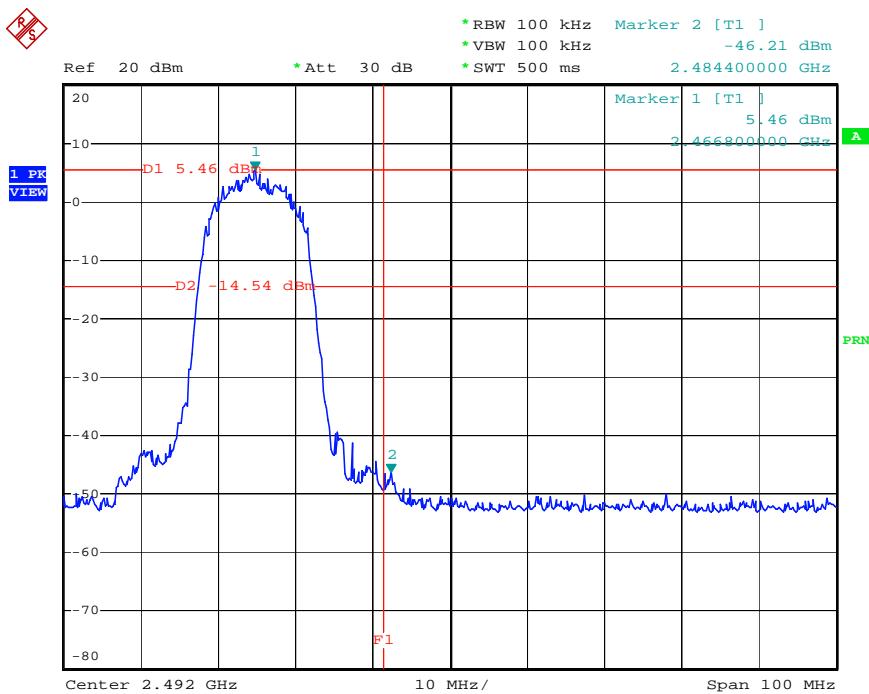
For Emission not in Restricted Band

Low Band Edge Plot on Configuration 2.4G band / 2417 MHz



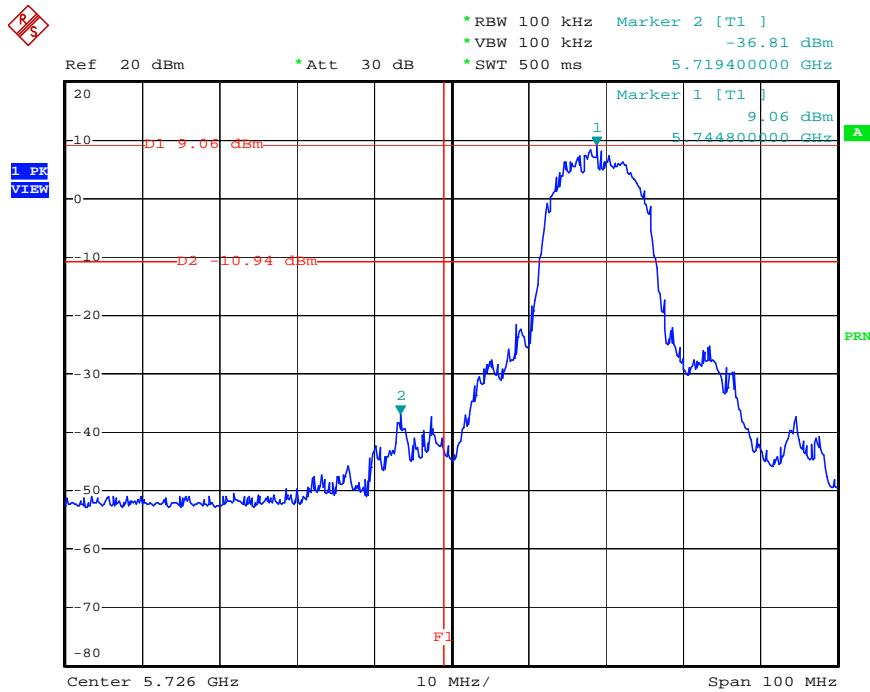
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High Band Edge Plot on Configuration 2.4G band / 2467 MHz



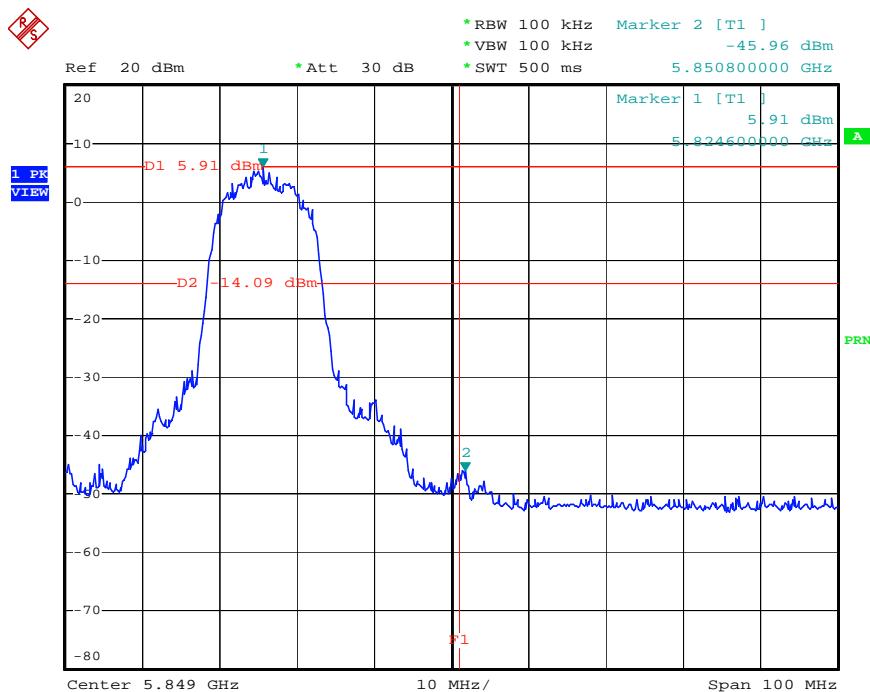
Date: 22.FEB.2008 16:35:22

Low Band Edge Plot on Configuration 5.8G band / 5745 MHz



Date: 22.FEB.2008 16:53:48

High Band Edge Plot on Configuration 5.8G band / 5825 MHz



Date: 22.FEB.2008 17:01:52

3.7. Antenna Requirements

3.7.1. 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.

3.7.2. Antenna Connector Construction

Please refer to section 2.3 in this test report; antenna connector complied with the requirements.

4. 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, 2008	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	253	9kHz – 30MHz	Mar. 27, 2007	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, 2007	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)
Spectrum Analyzer	R&S	FSP40	100305	9 kHz - 40 GHz	Sep. 27, 2007	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 21, 2007	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	May 04, 2007	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jan. 18, 2008	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	Jan. 10, 2008	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 27, 2007	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2007	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Jan. 14, 2008	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Jan. 04, 2008	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Jan. 04, 2008	Conducted (TH01-HY)

FCC TEST REPORT**Report No.: FR790710AB**

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Nov. 14, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year. NCR: Non-Calibration required.

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2006*	Radiation (03CH03-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 04, 2007*	Conducted (TH01-HY)

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

5. 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 728, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

6. 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.