

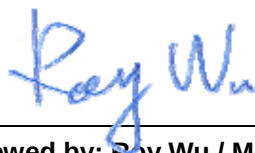
FCC Test Report

EQUIPMENT : Montblance 338
BRAND NAME : Traveler 137
MODEL NAME : Montblance 338
FCC ID : DGIBC0338AAA000
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : Digital Transmission System (DTS)
APPLICANT : Inventec Corporation

No. 166, Sec. 4, Chengde Rd., Shihlin District, Taipei 11167, Taiwan

The product sample received on Mar. 03, 2009 and completely tested on Mar. 10, 2009. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Roy Wu / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR930301A	Rev. 01	Initial issue of report	Mar. 19, 2009

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	A8.2(a)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	Gen 4.4.1	99% Bandwidth	-	Pass	-
3.2	15.247(b)	A8.4	Power Output	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	$\leq 20\text{dBc}$	Pass	-
3.4	15.247(d)	A8.5	Spurious Emission	$< 20\text{ dBc}$	Pass	-
3.5	15.247(e)	A8.2(b)	Power Spectral Density	$\leq 8\text{dBm}$	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 19.0 dB at 0.422 MHz
3.7	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.99 dB at 2483.5 MHz
3.8	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Inventec Corporation

No. 166, Sec. 4, Chengde Rd., Shihlin District, Taipei 11167, Taiwan

1.2 Manufacturer

Inventec Corporation

No. 166, Sec. 4, Chengde Rd., Shihlin District, Taipei 11167, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Montblance 338
Brand Name	Traveler 137
Model Name	Montblance 338
FCC ID	DGIBC0338AAA000
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	$2412+(n-1)*5$ MHz; $n=1\sim11$
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 8.56 dBm (7.18 mW) 802.11g : 8.31 dBm (6.78 mW)
Antenna Type	PIFA Antenna
Type of Antenna Connector	N/A
HW Version	V0.2
SW Version	DBL.PHAROS.09.086
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

List of Accessory:

Accessories Specification		
AC Adapter	Brand Name	PI ELECTRONICS
	Model Name	AD7112B (Type : 02LF)
	Power Rating	I/P:100-240Vac, 50-60Hz, 0.25A; O/P: 5Vdc, 1A
	AC Power Cord Type	1.65 meter shielded cable without ferrite core
Battery	Brand Name	SMP Technology CO., LTD.
	Model Name	P3-01
	Power Rating	3.7Vdc, 1380mAh, 5.106Wh
	Type	Li-ion
Earphone	Brand Name	Kingstate electronics CO., LTD.
	Signal Line Type	1.6 meter non-shielded cable without ferrite core
USB Cable	Brand Name	WIESON electronics CO., LTD.
	Model Name	G9904HT0220-002
	Signal Line Type	1.0 meter shielded cable without ferrite core
LCD Panel	Brand Name	LG
	Model Name	LH350WV1 VD02
Camera 1	Brand Name	Nano Focus
	Model Name	AFL-3M-D85-4P
Camera 2	Brand Name	Sertek
	Model Name	SM-JZ02-MI03

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This test report recorded only product characteristics and test results of Digital Transmission System (DTS).
3. For accessories equipped with this EUT, please refer to the appendix of the external photo.
4. For other wireless features of this EUT, test report will be issued separately.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH06-HY	TW1022/4086B-1

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 (Measurement Guidelines of DTS)
- ANSI C63.4-2003
- IC RSS-210 Issue 7

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B (DoC), recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KADIR628A2	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Nokia	BH-100	PYA1YH	N/A	N/A

2 Test Configuration of Equipment Under Test

2.1 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and recorded the RF power output in the following table:

802.11b

2.4GHz 802.11b RF Power (dBm)					
Channel	Frequency (MHz)	Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	8.68	8.65	8.61	8.72
CH 06	2437 MHz	8.56	8.65	8.67	8.67
CH 11	2462 MHz	8.95	8.91	8.79	8.74

802.11g

2.4GHz 802.11g RF Power (dBm)									
Channel	Frequency (MHz)	Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 01	2412 MHz	7.27	7.24	7.17	7.26	7.12	7.11	7.16	7.21
CH 06	2437 MHz	7.12	7.13	6.92	7.13	7.07	7.00	7.17	7.07
CH 11	2462 MHz	7.15	7.15	6.99	7.06	7.13	7.05	7.16	7.21

Remark:

1. For WLAN RF power, the pre-scanned RF power was measured by power meter.
2. The 802.11b data rates were set in 1 Mbps and 802.11g data rates were set in 6 Mbps for all the test cases, due to the highest RF output power.
3. The EUT is programmed to transmit signal continuously for all testing.

2.2 Test Mode

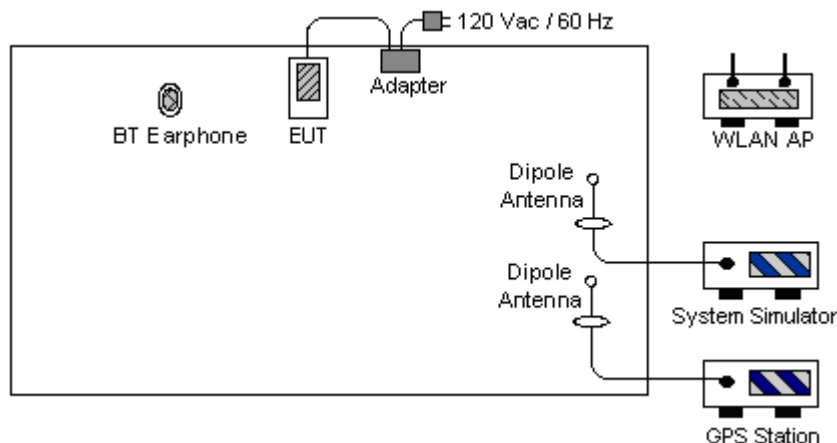
The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz), radiated emission (30 MHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

The following tables are showing the test modes as the worst cases and recorded in this report.

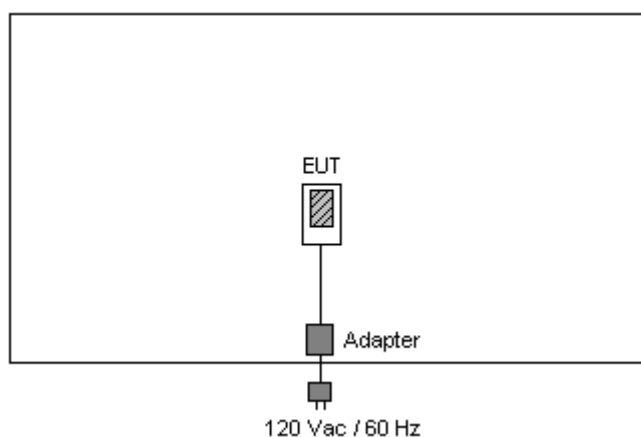
Test Cases		
Test Item	802.11b Modulation : DSSS	802.11g Modulation : OFDM
Conducted TCs	■ Mode 1: CH01_2412 MHz ■ Mode 2: CH06_2437 MHz ■ Mode 3: CH11_2462 MHz	■ Mode 4: CH01_2412 MHz ■ Mode 5: CH06_2437 MHz ■ Mode 6: CH11_2462 MHz
Radiated TCs	■ Mode 1: CH01_2412 MHz ■ Mode 2: CH06_2437 MHz ■ Mode 3: CH11_2462 MHz	■ Mode 4: CH01_2412 MHz ■ Mode 5: CH06_2437 MHz ■ Mode 6: CH11_2462 MHz
AC Conducted Emission	■ Mode 1 : GSM850 Idle + BT Link + WLAN Link + GPS Rx + Adapter	

2.3 Connection Diagram of Test System

<Conducted Emission>



<Radiated Emission>



2.4 RF Utility

The programmed RF Utility, "PDA UniTest.exe", is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. 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.

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

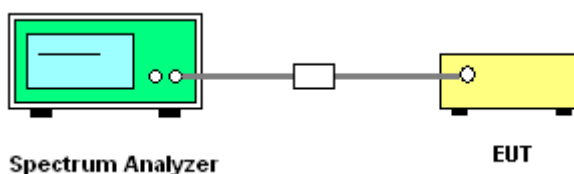
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz.
In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Test Mode :	Mode 1, 2, 3	Temperature :	21~23
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11b 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	11.08	0.5	Pass
06	2437	11.04	0.5	Pass
11	2462	11.04	0.5	Pass

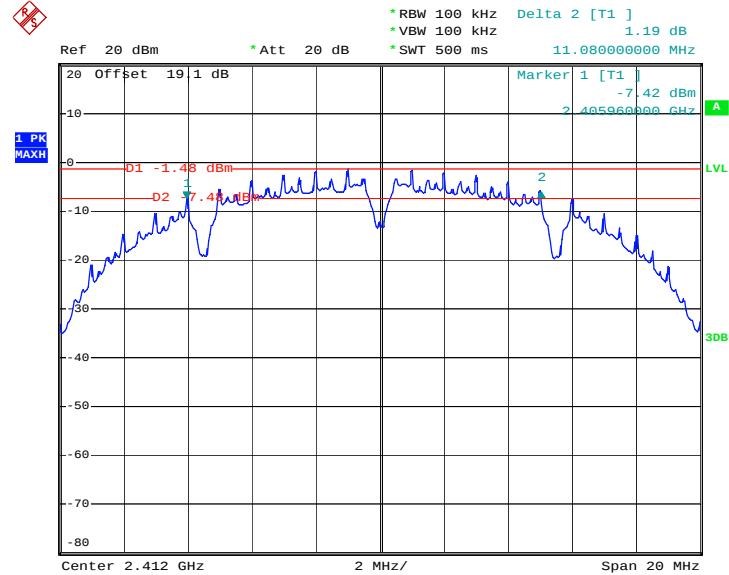
Test Mode :	Mode 4, 5, 6	Temperature :	21~23
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11g 6dB Bandwidth (MHz)	6dB Bandwidth Min. Limit (MHz)	Pass/Fail
01	2412	16.36	0.5	Pass
06	2437	16.40	0.5	Pass
11	2462	16.40	0.5	Pass



3.1.6 Test Result of 6dB Bandwidth Plots

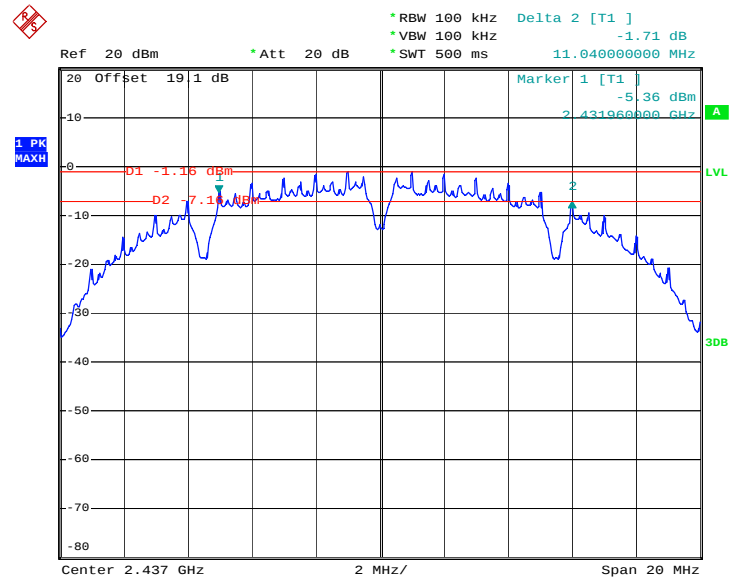
Mode 1 : 6 dB Bandwidth Plot on 802.11b Channel 01



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Date: 6.MAR.2009 16:09:58

Mode 2 : 6 dB Bandwidth Plot on 802.11b Channel 06

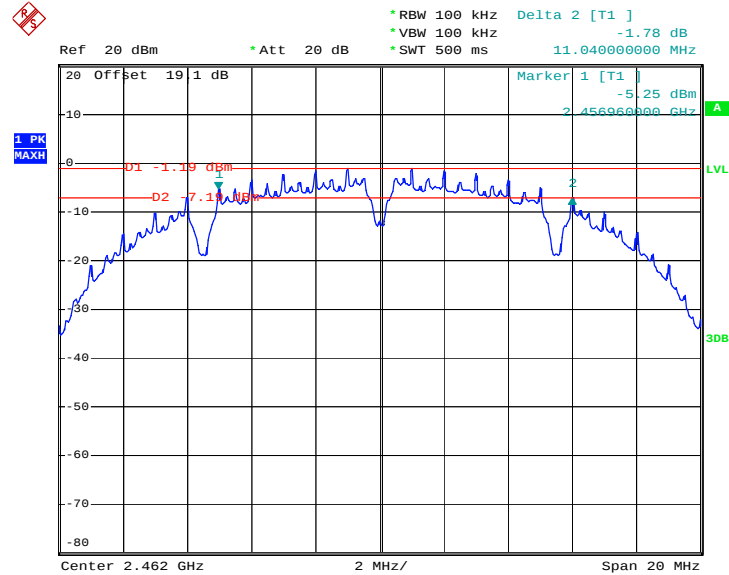


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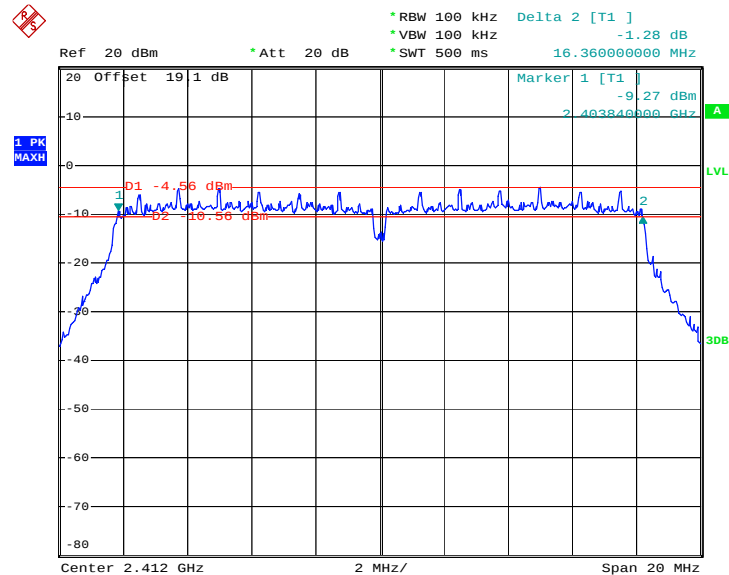
Mode 3 : 6 dB Bandwidth Plot on 802.11b Channel 11



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Date: 6.MAR.2009 15:34:28

Mode 4 : 6 dB Bandwidth Plot on 802.11g Channel 01

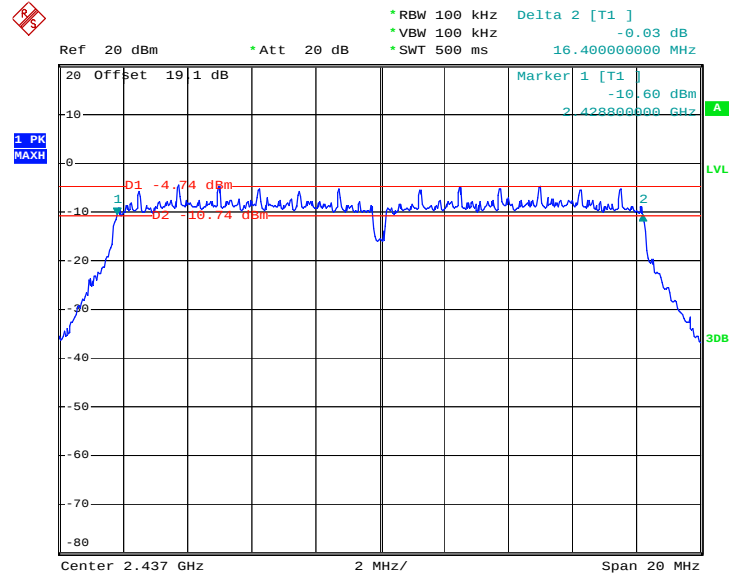


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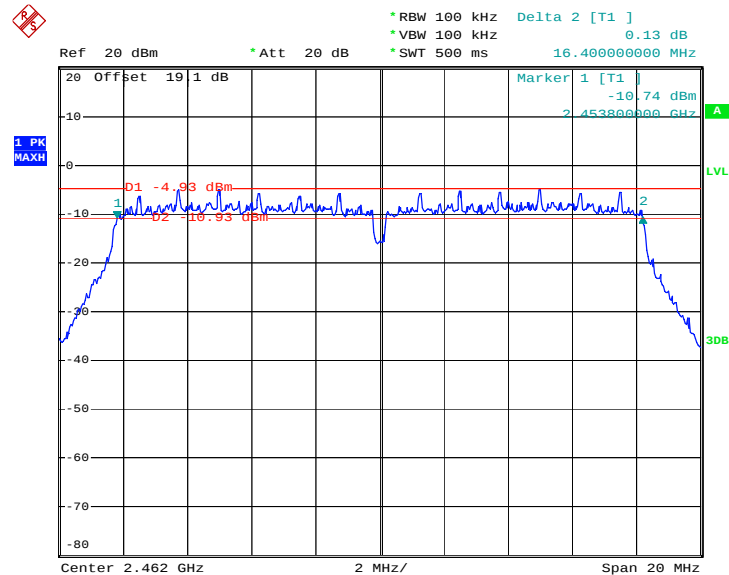
Mode 5 : 6 dB Bandwidth Plot on 802.11g Channel 06



HAC-189-E

Date: 6.MAR.2009 17:26:59

Mode 6 : 6 dB Bandwidth Plot on 802.11g Channel 11



HAC-189-E

Date: 6.MAR.2009 17:28:06

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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.

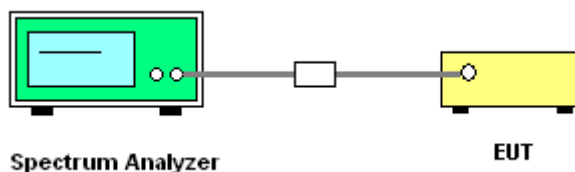
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Measure the power by spectrum analyzer.

3.2.4 Test Setup



3.2.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	21~23°C
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11b Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	8.49	30	Pass
06	2437	8.48	30	Pass
11	2462	8.56	30	Pass

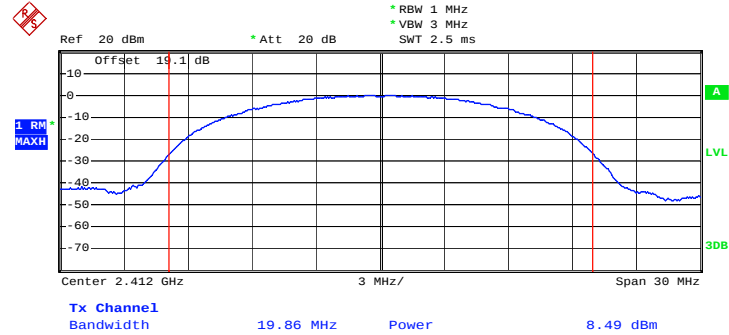
Test Mode :	Mode 4, 5, 6	Temperature :	21~23°C
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11g Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	8.31	30	Pass
06	2437	8.12	30	Pass
11	2462	8.23	30	Pass



3.2.6 Test Result of Output Power Plots

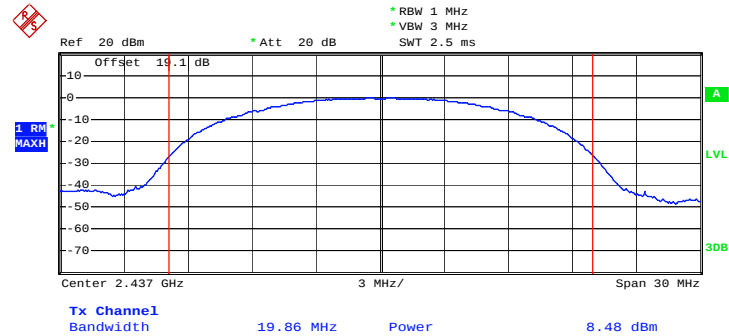
Mode 1 : Output Power Plot on 802.11b Channel 01



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Date: 6.MAR.2009 15:28:46

Mode 2 : Output Power Plot on 802.11b Channel 06

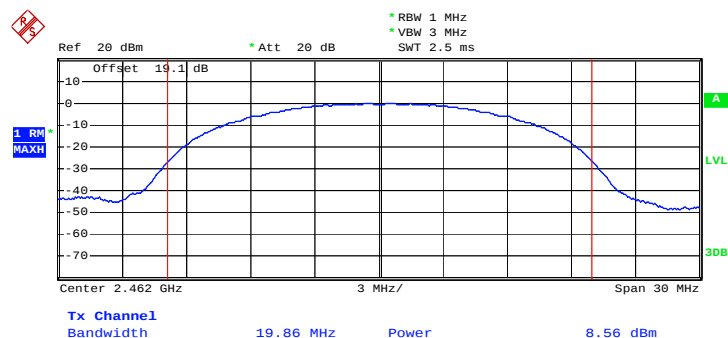


HAC-189-E

Date: 6.MAR.2009 15:28:17



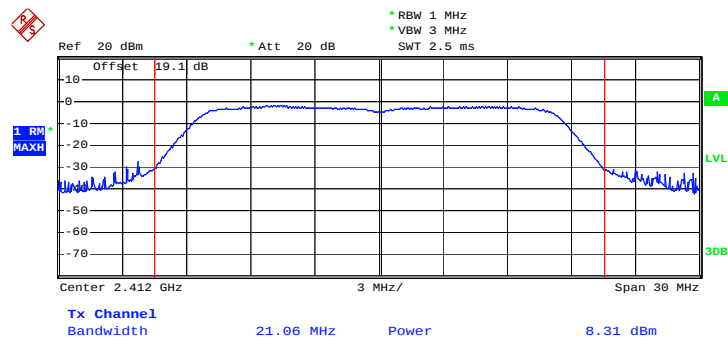
Mode 3 : Output Power Plot on 802.11b Channel 11



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Date: 6.MAR.2009 15:27:45

Mode 4 : Output Power Plot on 802.11g Channel 01

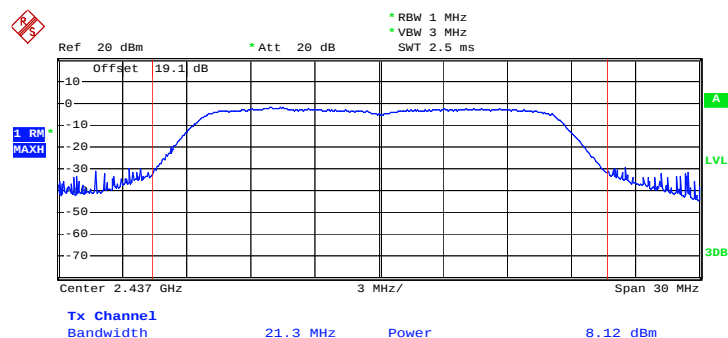


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Date: 6.MAR.2009 15:25:33



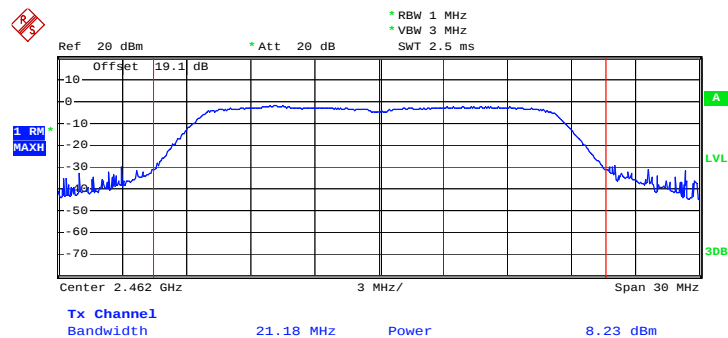
Mode 5 : Output Power Plot on 802.11g Channel 06



HAC-189-E

Date: 6.MAR.2009 15:26:22

Mode 6 : Output Power Plot on 802.11g Channel 11



HAC-189-E

Date: 6.MAR.2009 15:27:08

3.3 Band Edges Measurement

3.3.1 Limit of Band Edges

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB.

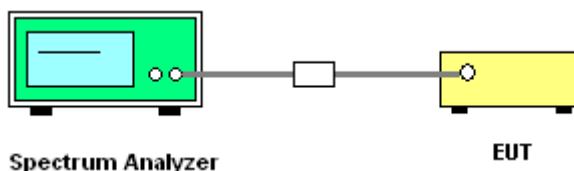
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Conducted emission test: Set RBW = 100 kHz, Video bandwidth (VBW) > RBW, scan up through 10th harmonic. Band edge emissions must be at least 20 dB below the highest emission level within the authorized band as measured with a 100 kHz RBW. Note: If the output power of this device was measured by power meter, the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Apply to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep=Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation as in FCC Section 15.35(b) and (c).

3.3.4 Test Setup



3.3.5 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~23C
Test Band :	802.11b	Relative Humidity :	42~46%
Test Channel :	01	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.9	52.65	-21.35	74	53.03	31.98	3.92	36.28	100	4	Peak
2387.9	40.21	-13.79	54	40.59	31.98	3.92	36.28	100	4	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2385.62	45.88	-28.12	74	46.26	31.98	3.92	36.28	102	294	Peak
2385.62	32.70	-21.3	54	33.08	31.98	3.92	36.28	102	294	Average

Test Mode :	Mode 3	Temperature :	21~23C
Test Band :	802.11b	Relative Humidity :	42~46%
Test Channel :	11	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.66	51.52	-22.48	74	51.68	32.08	4.05	36.29	100	349	Peak
2483.66	37.67	-16.33	54	37.83	32.08	4.05	36.29	100	349	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2490.5	45.66	-28.34	74	45.81	32.1	4.05	36.3	100	324	Peak
2490.5	32.39	-21.61	54	32.53	32.1	4.05	36.29	100	324	Average



Test Mode :	Mode 4	Temperature :	21~23C
Test Band :	802.11g	Relative Humidity :	42~46%
Test Channel :	01	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2386.57	68.30	-5.7	74	68.68	31.98	3.92	36.28	100	353	Peak
2386.57	40.24	-13.76	54	40.62	31.98	3.92	36.28	100	353	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.29	60.96	-13.04	74	61.36	31.96	3.92	36.28	100	335	Peak
2384.29	33.99	-20.01	54	34.39	31.96	3.92	36.28	100	335	Average

Test Mode :	Mode 6	Temperature :	21~23C
Test Band :	802.11g	Relative Humidity :	42~46%
Test Channel :	11	Test Engineer :	Kai Wang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	70.01	-3.99	74	70.17	32.08	4.05	36.29	100	20	Peak
2483.5	43.72	-10.28	54	43.88	32.08	4.05	36.29	100	20	Average

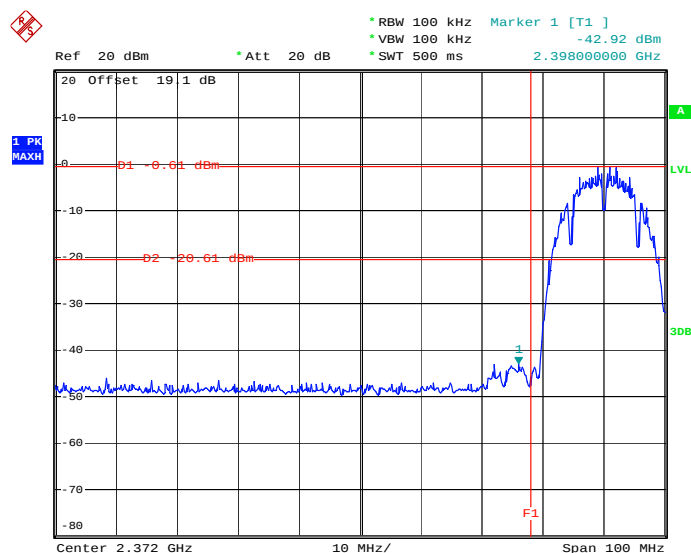
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	61.30	-12.7	74	61.46	32.08	4.05	36.29	100	144	Peak
2483.5	33.13	-20.87	54	33.29	32.08	4.05	36.29	100	144	Average



3.3.6 Test Result of Conducted Band Edges

Test Mode :	Mode 1 and 3	Temperature :	21~23
Test Band :	802.11b	Relative Humidity :	42~46%
Test Channel :	01 and 11	Test Engineer :	Ken Hsu

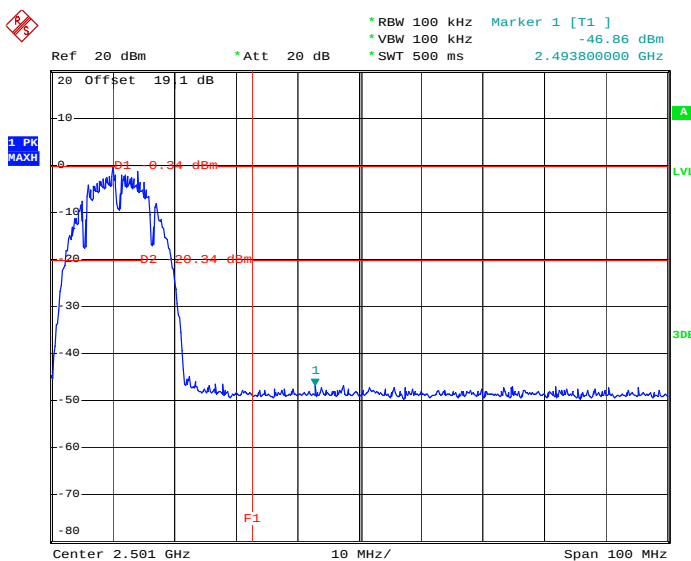
Low Band Edge Plot on 802.11b Channel 01



HAC-189-E

Date: 6.MAR.2009 17:32:33

High Band Edge Plot on 802.11b Channel 11

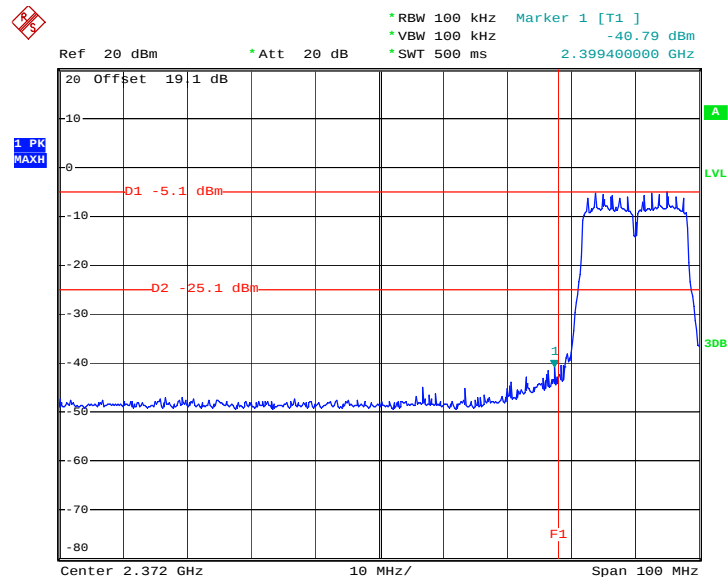


HAC-189-E

Date: 6.MAR.2009 17:31:22

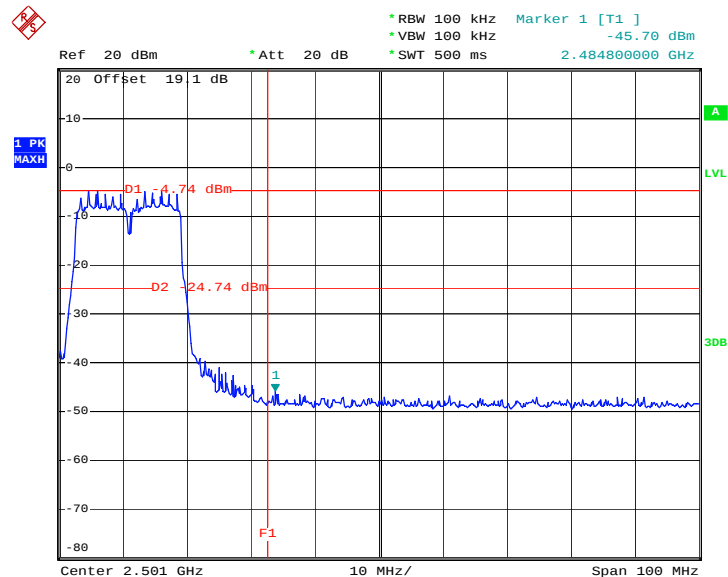


Test Mode :	Mode 4 and 6	Temperature :	21~23
Test Band :	802.11g	Relative Humidity :	42~46%
Test Channel :	01 and 11	Test Engineer :	Ken Hsu

Low Band Edge Plot on 802.11g Channel 01

HAC-189-E

Date: 6.MAR.2009 17:33:23

High Band Edge Plot on 802.11g Channel 11

HAC-189-E

Date: 6.MAR.2009 17:30:28

3.4 Spurious Emission Measurement

3.4.1 Limit of Spurious Emission Measurement

All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band.

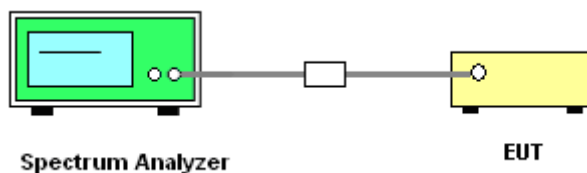
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = 100 kHz, Video bandwidth (VBW) $\geq$ RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.

3.4.4 Test Setup

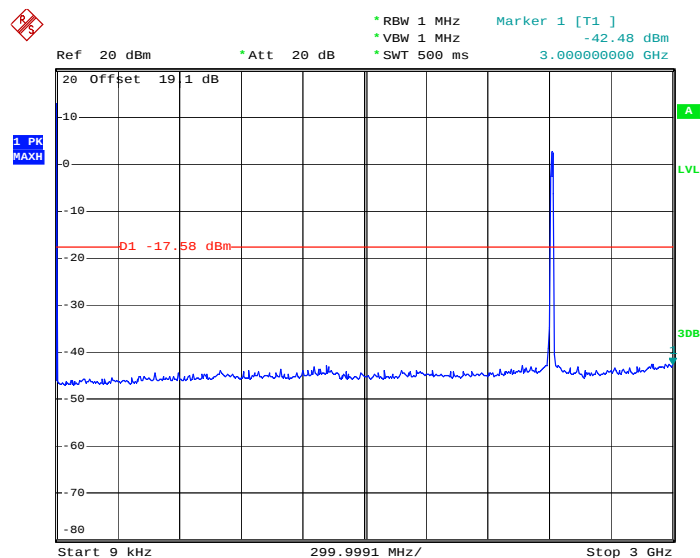




3.4.5 Test Result

Test Mode :	Mode 1	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

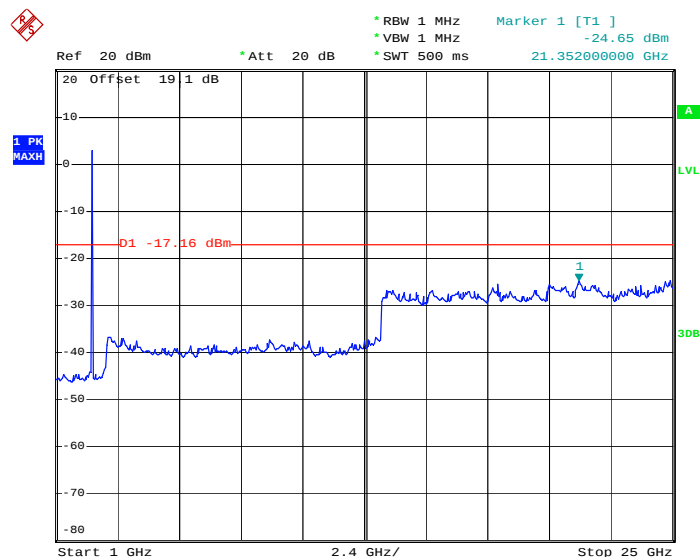
Conducted Spurious Emission Plot between 9K-3G



HAC-189-E

Date: 6.MAR.2009 19:21:33

Conducted Spurious Emission Plot between 1G-25G

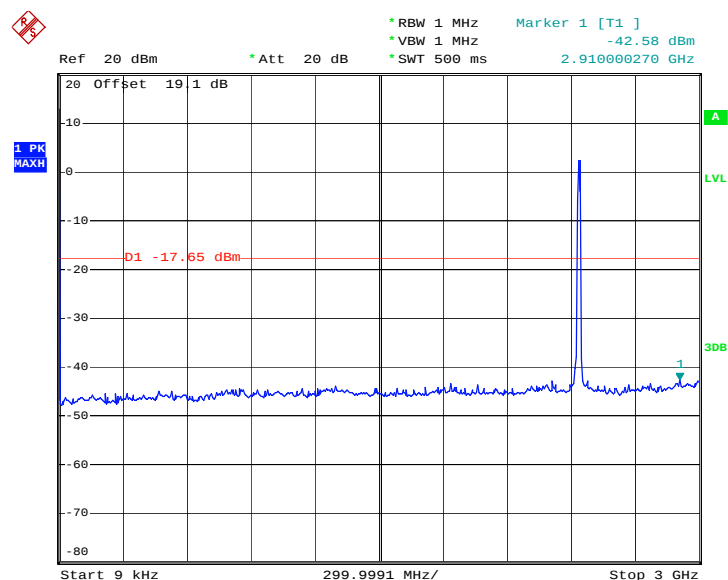


HAC-189-E

Date: 6.MAR.2009 19:30:22

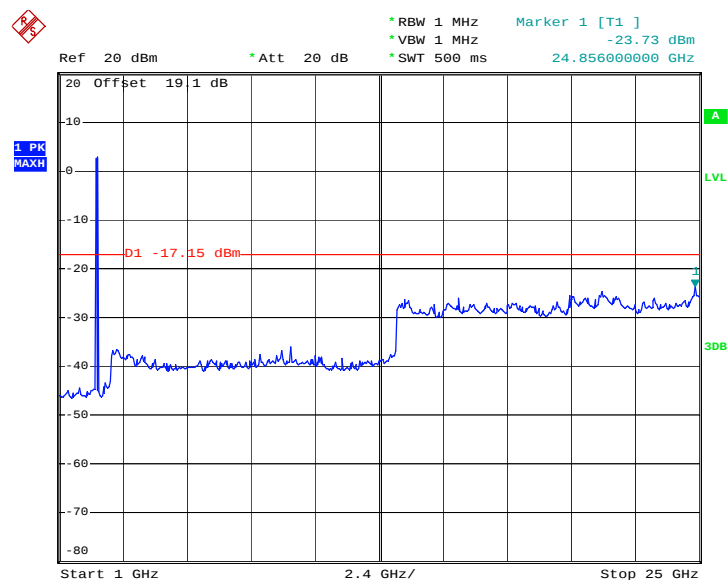


Test Mode :	Mode 2	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

Conducted Spurious Emission Plot between 9K-3G

HAC-189-E

Date: 6.MAR.2009 19:22:17

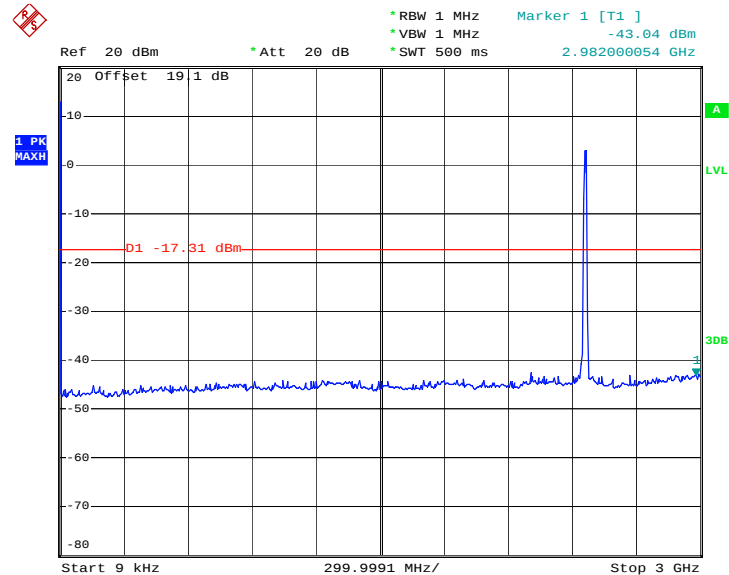
Conducted Spurious Emission Plot between 1G-25G

HAC-189-E

Date: 6.MAR.2009 19:30:59

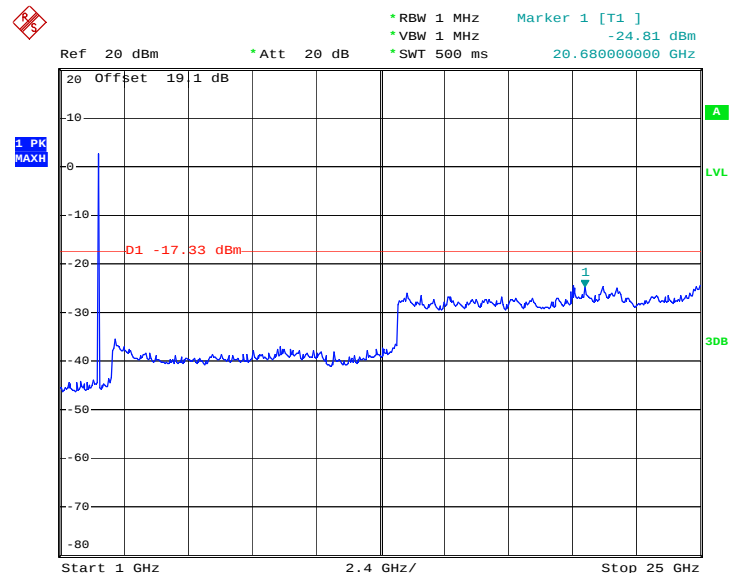


Test Mode :	Mode 3	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

Conducted Spurious Emission Plot between 9K-3G

HAC-189-E

Date: 6.MAR.2009 19:24:11

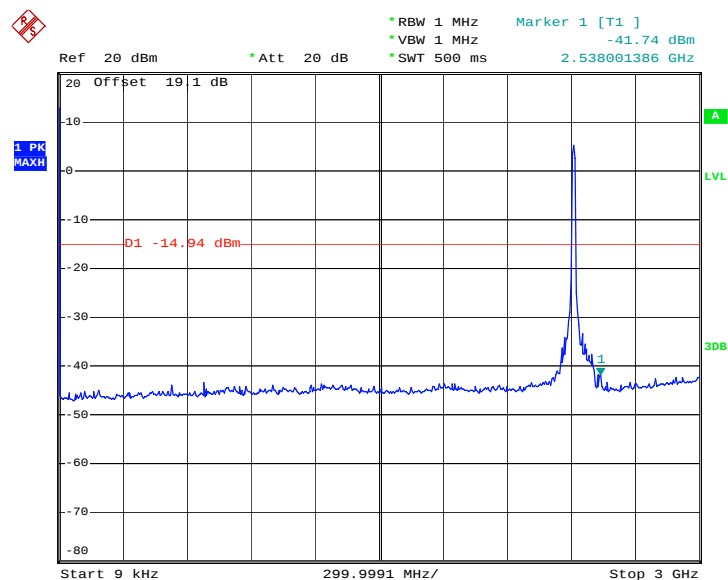
Conducted Spurious Emission Plot between 1G-25G

HAC-189-E

Date: 6.MAR.2009 19:33:06

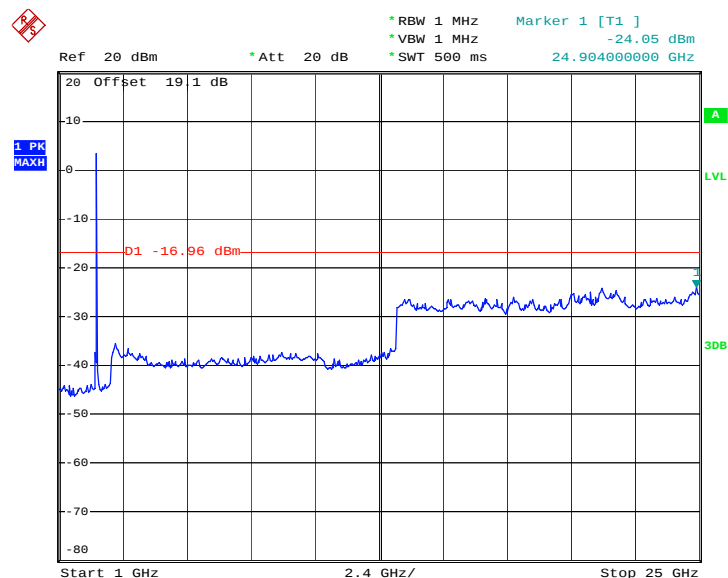


Test Mode :	Mode 4	Temperature :	21~23°C
Test Channel :	01	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

Conducted Spurious Emission Plot between 9K-3G

HAC-189-E

Date: 6.MAR.2009 19:28:16

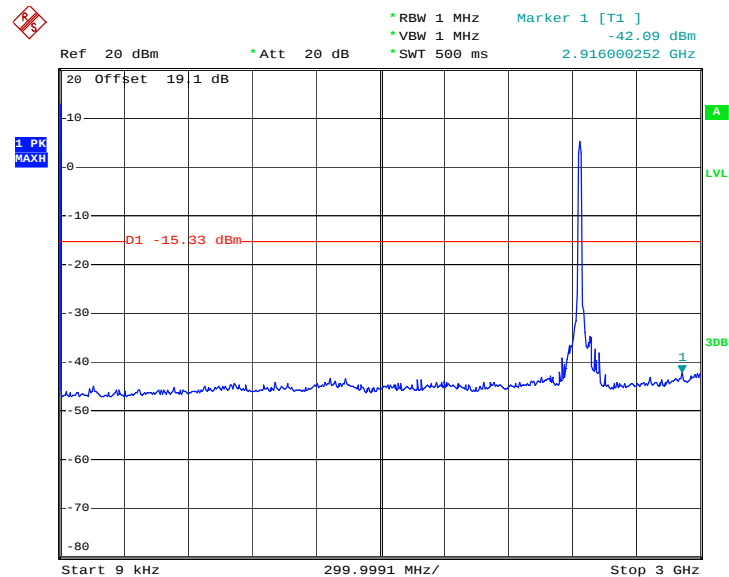
Conducted Spurious Emission Plot between 1G-25G

HAC-189-E

Date: 6.MAR.2009 19:29:45

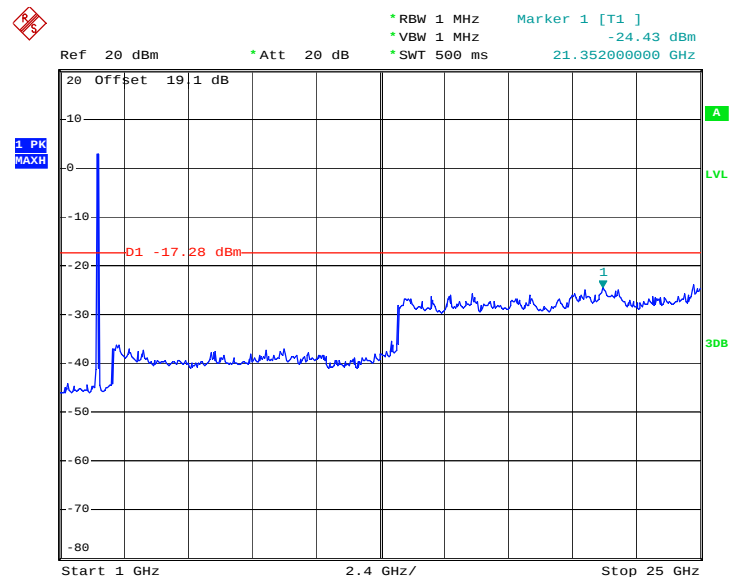


Test Mode :	Mode 5	Temperature :	21~23°C
Test Channel :	06	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

Conducted Spurious Emission Plot between 9K-3G

HAC-189-E

Date: 6.MAR.2009 19:26:40

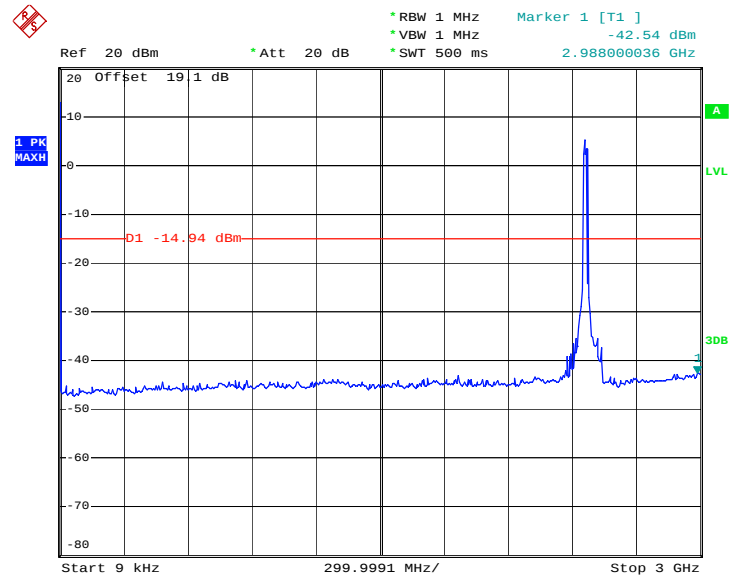
Conducted Spurious Emission Plot between 1G-25G

HAC-189-E

Date: 6.MAR.2009 19:31:36

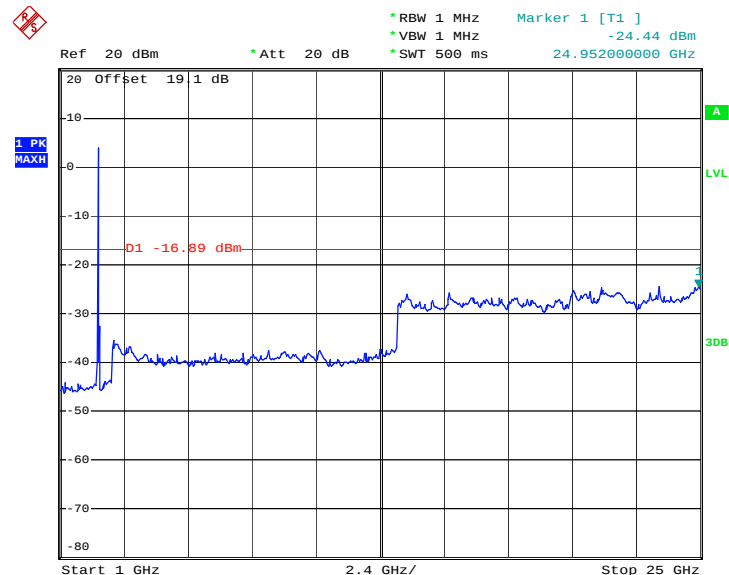


Test Mode :	Mode 6	Temperature :	21~23°C
Test Channel :	11	Relative Humidity :	42~46%
		Test Engineer :	Ken Hsu

Conducted Spurious Emission Plot between 9K-3G

HAC-189-E

Date: 6.MAR.2009 19:25:53

Conducted Spurious Emission Plot between 1G-25G

HAC-189-E

Date: 6.MAR.2009 19:32:28

3.5 Power Spectral Density Measurement

3.5.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

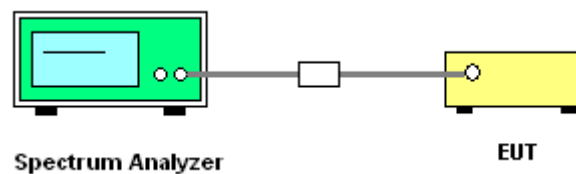
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The test follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Take the measured data from spectrum analyzer.

3.5.4 Test Setup



3.5.5 Test Result of Power Spectral Density

Test Mode :	Mode 1, 2, 3	Temperature :	21~23°C
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11b Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-7.64	8	Pass
06	2437	-4.63	8	Pass
11	2462	-9.09	8	Pass

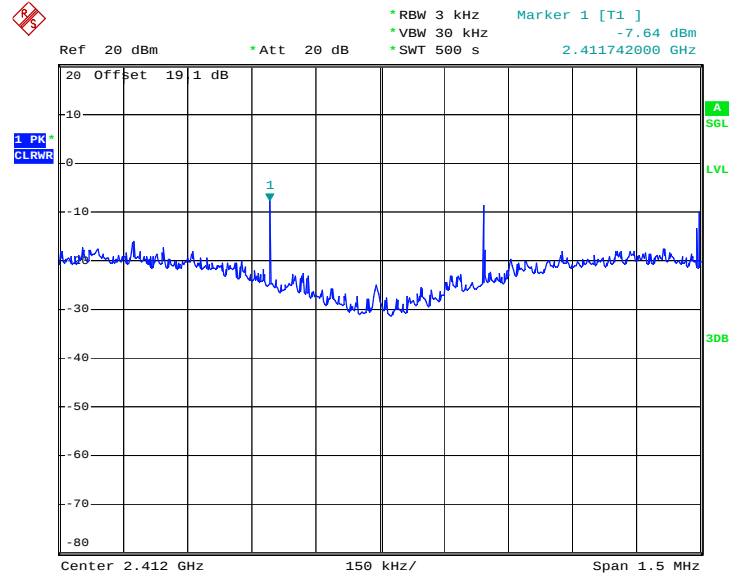
Test Mode :	Mode 4, 5, 6	Temperature :	21~23
Test Engineer :	Ken Hsu	Relative Humidity :	42~46%

Channel	Frequency (MHz)	802.11g Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	-21.16	8	Pass
06	2437	-20.51	8	Pass
11	2462	-20.24	8	Pass



3.5.6 Test Result of Power Spectral Density Plots

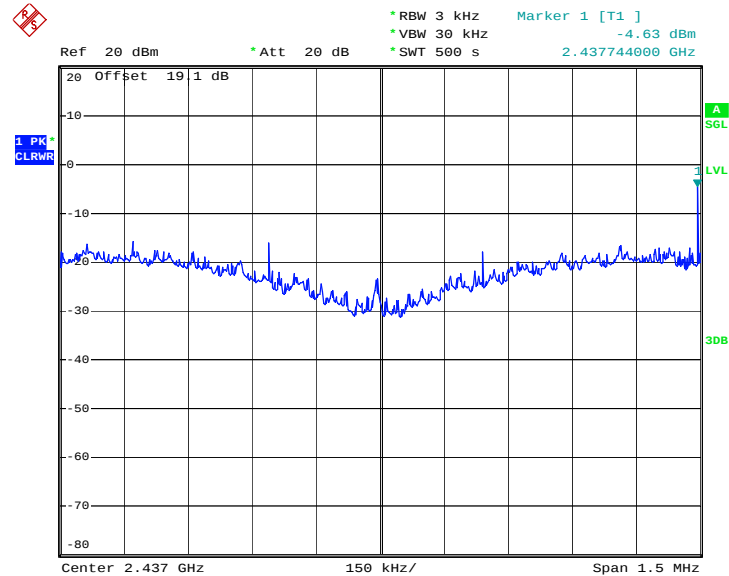
Mode 1 : PSD Plot on 802.11b Channel 01



HAC-189-E

Date: 6.MAR.2009 17:48:44

Mode 2 : PSD Plot on 802.11b Channel 06

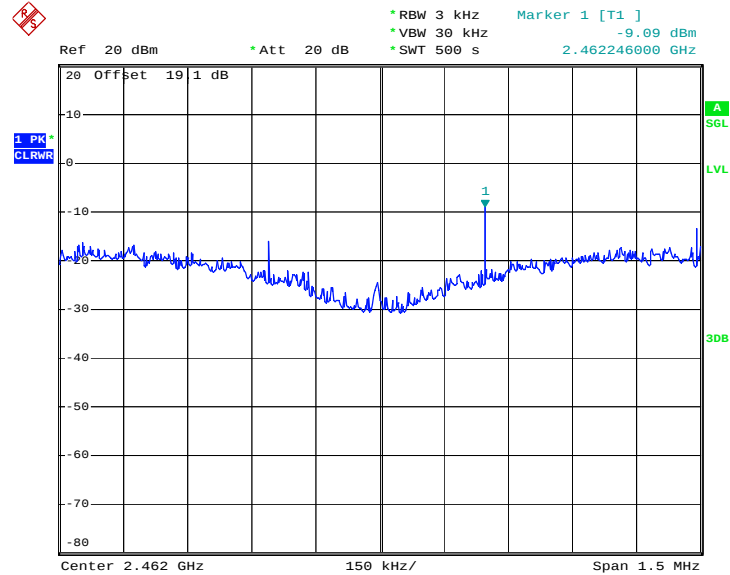


HAC-189-E

Date: 6.MAR.2009 19:15:01



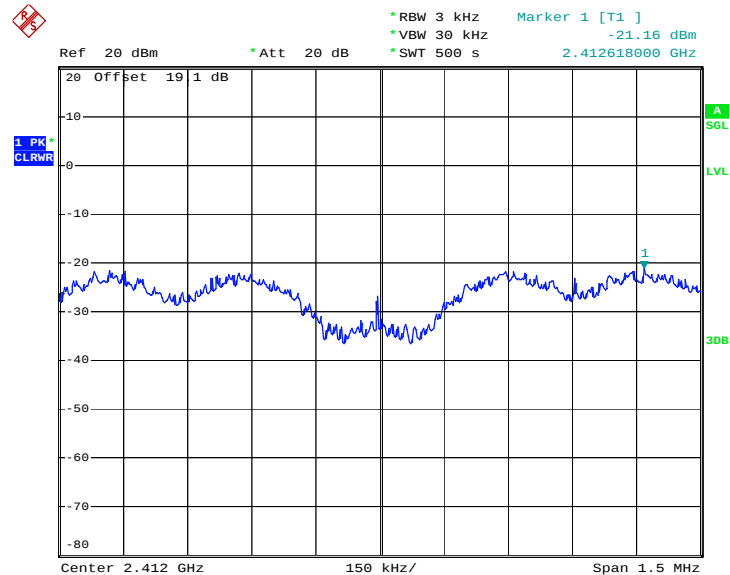
Mode 3 : PSD Plot on 802.11b Channel 11



HAC-189-E

Date: 6.MAR.2009 19:01:52

Mode 4 : PSD Plot on 802.11g Channel 01

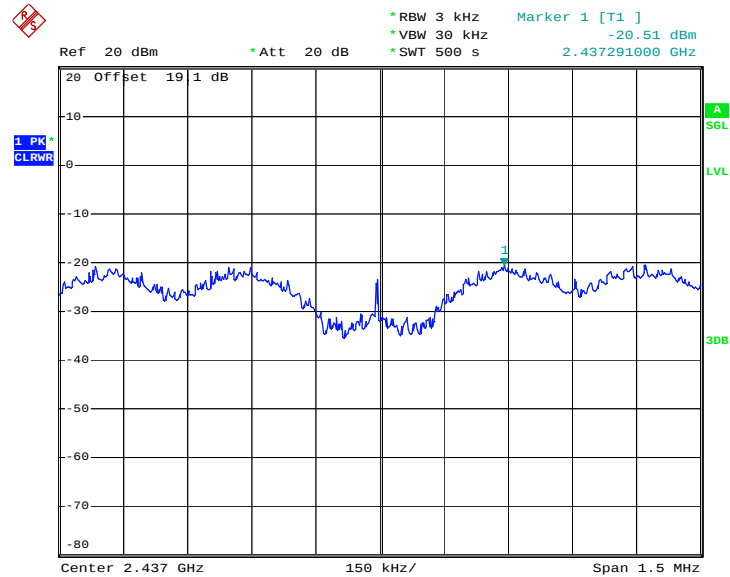


HAC-189-E

Date: 6.MAR.2009 18:50:19



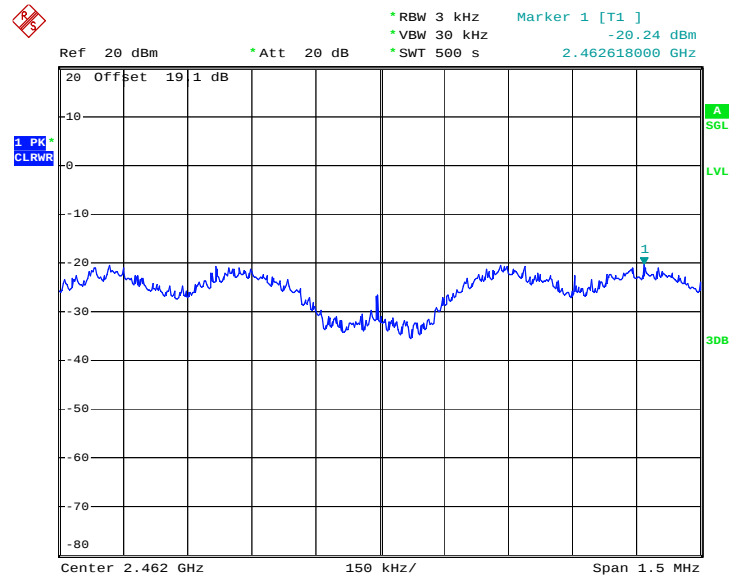
Mode 5 : PSD Plot on 802.11g Channel 06



HAC-189-E

Date: 6.MAR.2009 18:41:29

Mode 6 : PSD Plot on 802.11g Channel 11



HAC-189-E

Date: 6.MAR.2009 18:29:54

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (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 the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

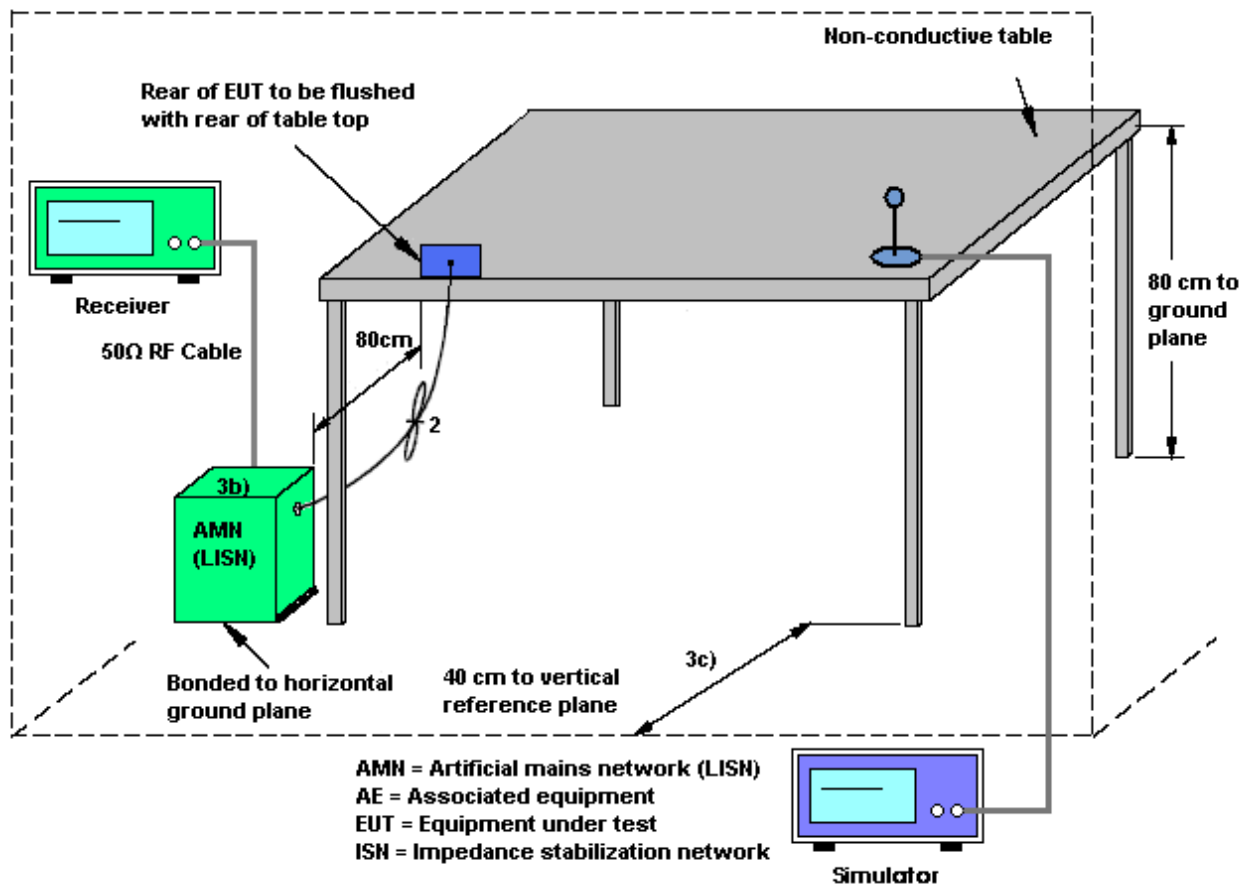
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

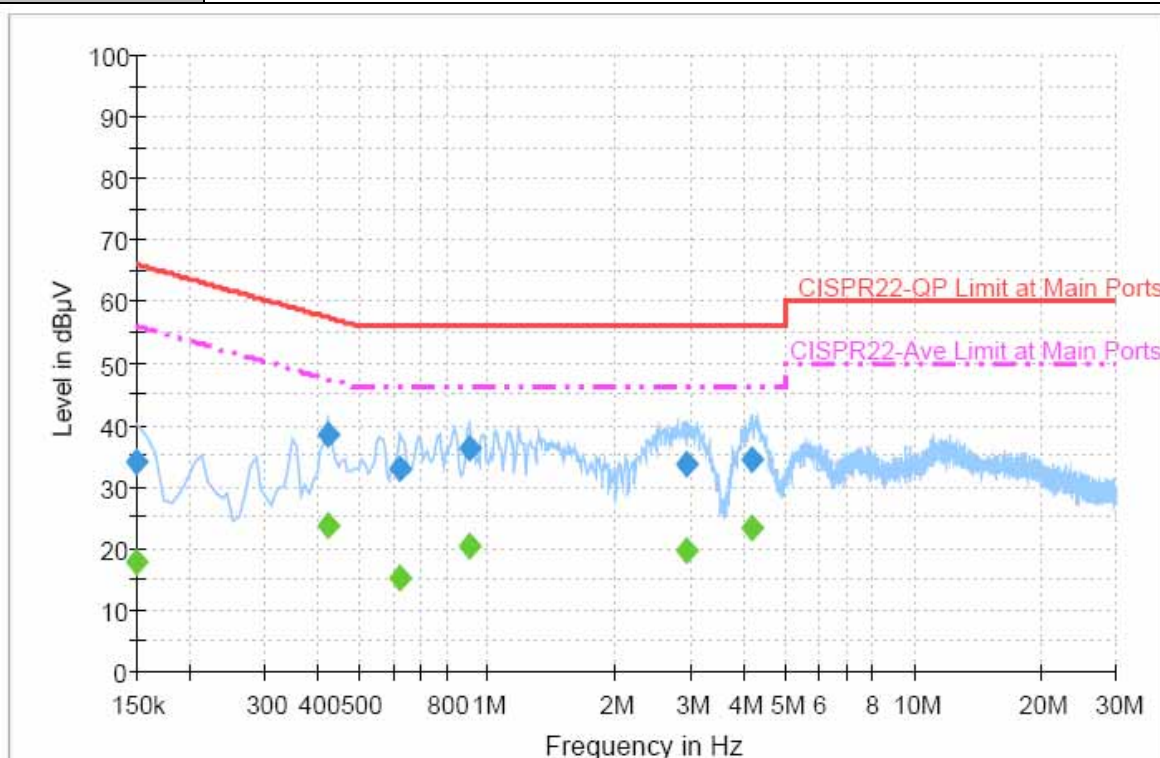
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	23~24
Test Engineer :	Cona Huang	Relative Humidity :	44~45%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + BT Link + WLAN Link + GPS Rx + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



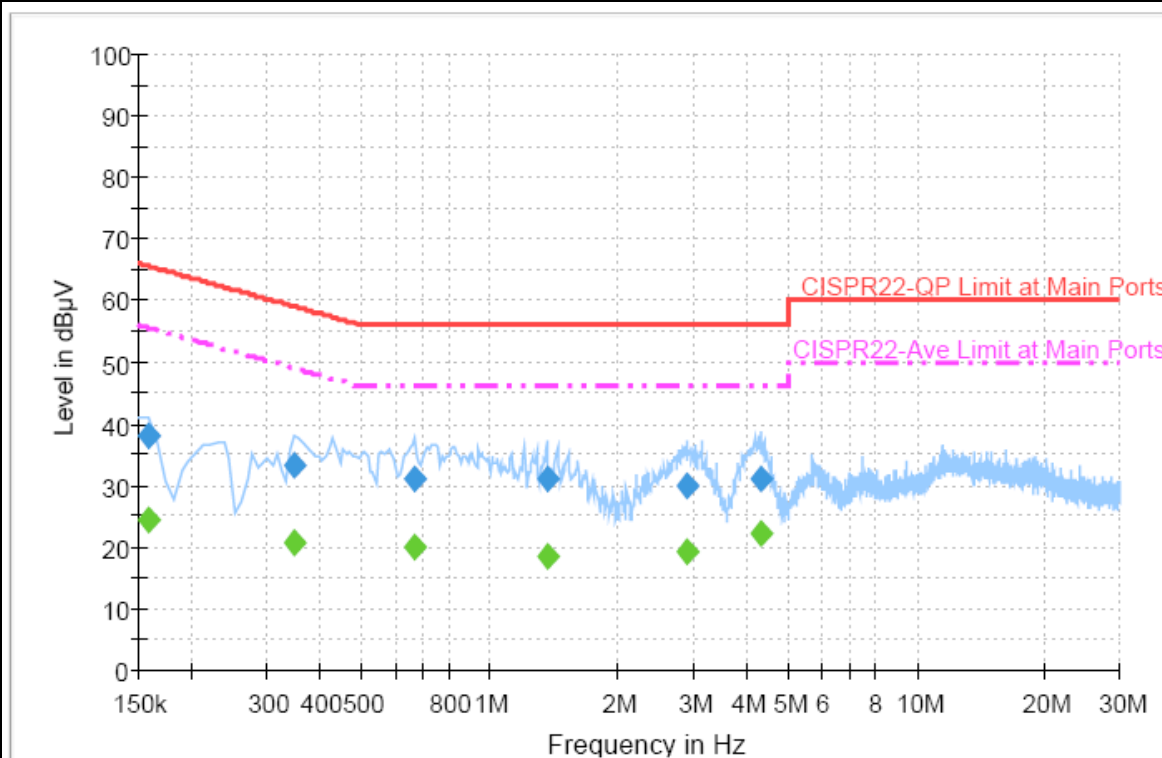
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	34.0	Off	L1	19.4	32.0	66.0
0.422000	38.4	Off	L1	19.4	19.0	57.4
0.622000	32.9	Off	L1	19.3	23.1	56.0
0.910000	36.3	Off	L1	19.4	19.7	56.0
2.926000	33.6	Off	L1	19.5	22.4	56.0
4.174000	34.4	Off	L1	19.5	21.6	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	17.8	Off	L1	19.4	38.2	56.0
0.422000	23.7	Off	L1	19.4	23.7	47.4
0.622000	15.2	Off	L1	19.3	30.8	46.0
0.910000	20.3	Off	L1	19.4	25.7	46.0
2.926000	19.6	Off	L1	19.5	26.4	46.0
4.174000	23.1	Off	L1	19.5	22.9	46.0

Test Mode :	Mode 1	Temperature :	23~24
Test Engineer :	Cona Huang	Relative Humidity :	44~45%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + BT Link + WLAN Link + GPS Rx + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	37.8	Off	N	19.4	27.8	65.6
0.350000	33.3	Off	N	19.3	25.7	59.0
0.670000	30.9	Off	N	19.4	25.1	56.0
1.366000	30.9	Off	N	19.5	25.1	56.0
2.894000	29.7	Off	N	19.5	26.3	56.0
4.334000	31.0	Off	N	19.5	25.0	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	24.3	Off	N	19.4	31.3	55.6
0.350000	20.8	Off	N	19.3	28.2	49.0
0.670000	19.9	Off	N	19.4	26.1	46.0
1.366000	18.5	Off	N	19.5	27.5	46.0
2.894000	19.0	Off	N	19.5	27.0	46.0
4.334000	22.0	Off	N	19.5	24.0	46.0

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/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

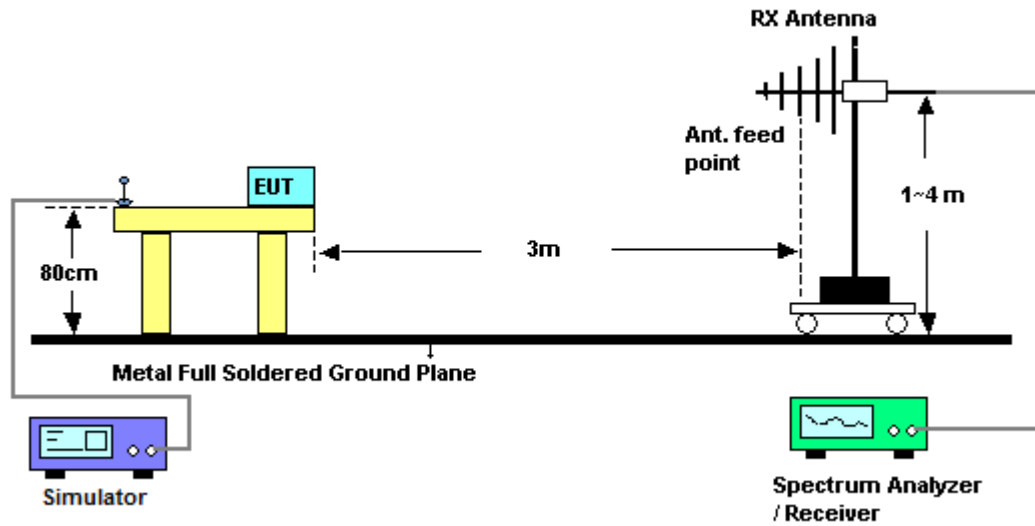
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

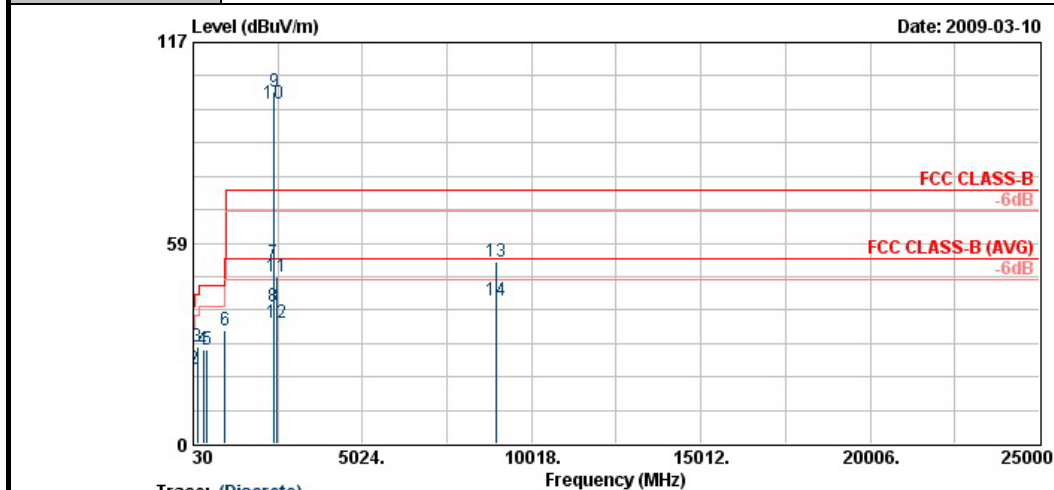
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
3. Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission for three EUT orthogonal planes, and adjusting the measurement antenna height and polarization. A pre-amp and a high pass filter are used for this test in order to get the good signal level.

3.7.4 Test Setup



3.7.5 Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	21~23C
Test Channel :	01	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



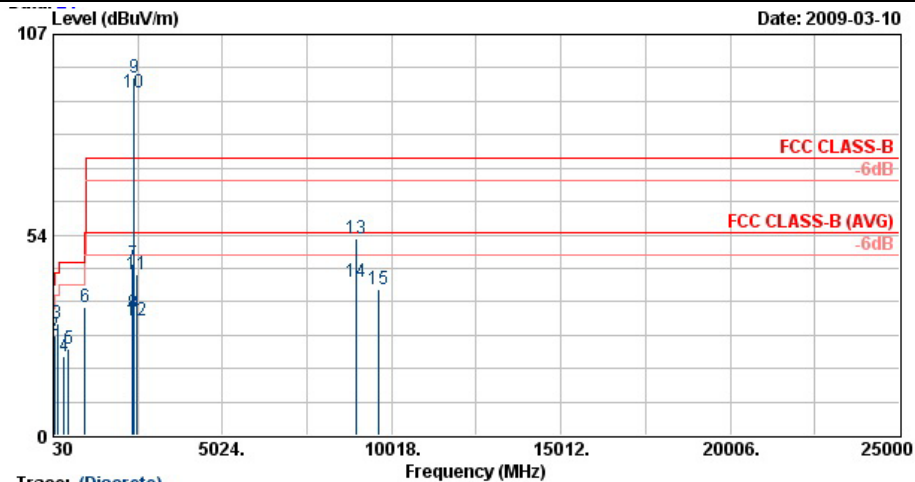
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.08	22.46	-17.54	40.00	34.47	19.30	0.30	31.61	---	---	Peak
2	36.48	21.86	-18.14	40.00	37.63	15.70	0.30	31.77	---	---	Peak
3	145.83	28.13	-15.37	43.50	47.80	11.47	0.55	31.70	---	---	Peak
4	316.80	27.39	-18.61	46.00	44.19	14.38	0.80	31.99	---	---	Peak
5	432.30	27.35	-18.65	46.00	41.55	16.96	0.83	31.99	---	---	Peak
6	959.40	33.17	-12.83	46.00	41.06	22.12	1.29	31.30	100	293	Peak
7	2387.90	52.65	-21.35	74.00	53.03	31.98	3.92	36.28	100	4	Peak
8	2387.90	40.21	-13.79	54.00	40.59	31.98	3.92	36.28	100	4	Average
9 X	2412.00	102.82			103.15	32.00	3.95	36.28	100	4	Peak
10 @	2412.00	99.11			99.44	32.00	3.95	36.28	100	4	Average
11	2484.00	48.77	-25.23	74.00	48.93	32.08	4.05	36.30	100	4	Peak
12	2484.00	35.36	-18.64	54.00	35.53	32.08	4.05	36.30	100	4	Average
13	8976.00	52.85	-21.15	74.00	45.80	36.17	7.77	36.89	100	192	Peak
14	8976.00	41.67	-12.33	54.00	34.62	36.17	7.77	36.89	100	192	Average



FCC Test Report

Report No. : FR930301A

Test Mode :	Mode 1	Temperature :	21~23C
Test Channel :	01	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		

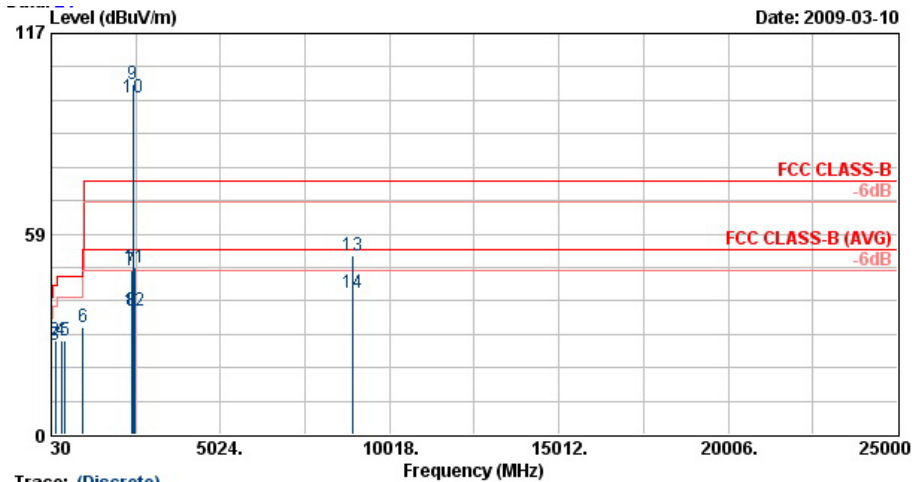


Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 930301

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	23.36	-16.64	40.00	34.72	19.90	0.30	31.56	---	---	Peak
2	54.03	26.74	-13.26	40.00	50.20	8.08	0.38	31.92	---	---	Peak
3	147.99	29.83	-13.67	43.50	49.63	11.31	0.58	31.69	---	---	Peak
4	344.80	21.01	-24.99	46.00	36.78	15.17	0.80	31.73	---	---	Peak
5	488.30	22.91	-23.09	46.00	36.33	17.73	0.92	32.06	---	---	Peak
6	959.40	34.08	-11.92	46.00	41.97	22.12	1.29	31.30	100	38	Peak
7	2385.62	45.88	-28.12	74.00	46.26	31.98	3.92	36.28	102	294	Peak
8	2385.62	32.70	-21.30	54.00	33.08	31.98	3.92	36.28	102	294	Average
9 X	2412.00	95.58			95.91	32.00	3.95	36.28	102	294	Peak
10 X	2412.00	91.68			92.01	32.00	3.95	36.28	102	294	Average
11	2494.00	42.81	-31.19	74.00	42.96	32.10	4.05	36.30	102	294	Peak
12	2494.00	30.63	-23.37	54.00	30.78	32.10	4.05	36.30	102	294	Average
13	8961.00	52.36	-21.64	74.00	45.32	36.15	7.77	36.88	100	106	Peak
14	8961.00	41.09	-12.91	54.00	34.05	36.15	7.77	36.88	100	106	Average
15	9648.00	39.13	-34.87	74.00	78.54	-10.29	7.94	37.06	100	0	Peak



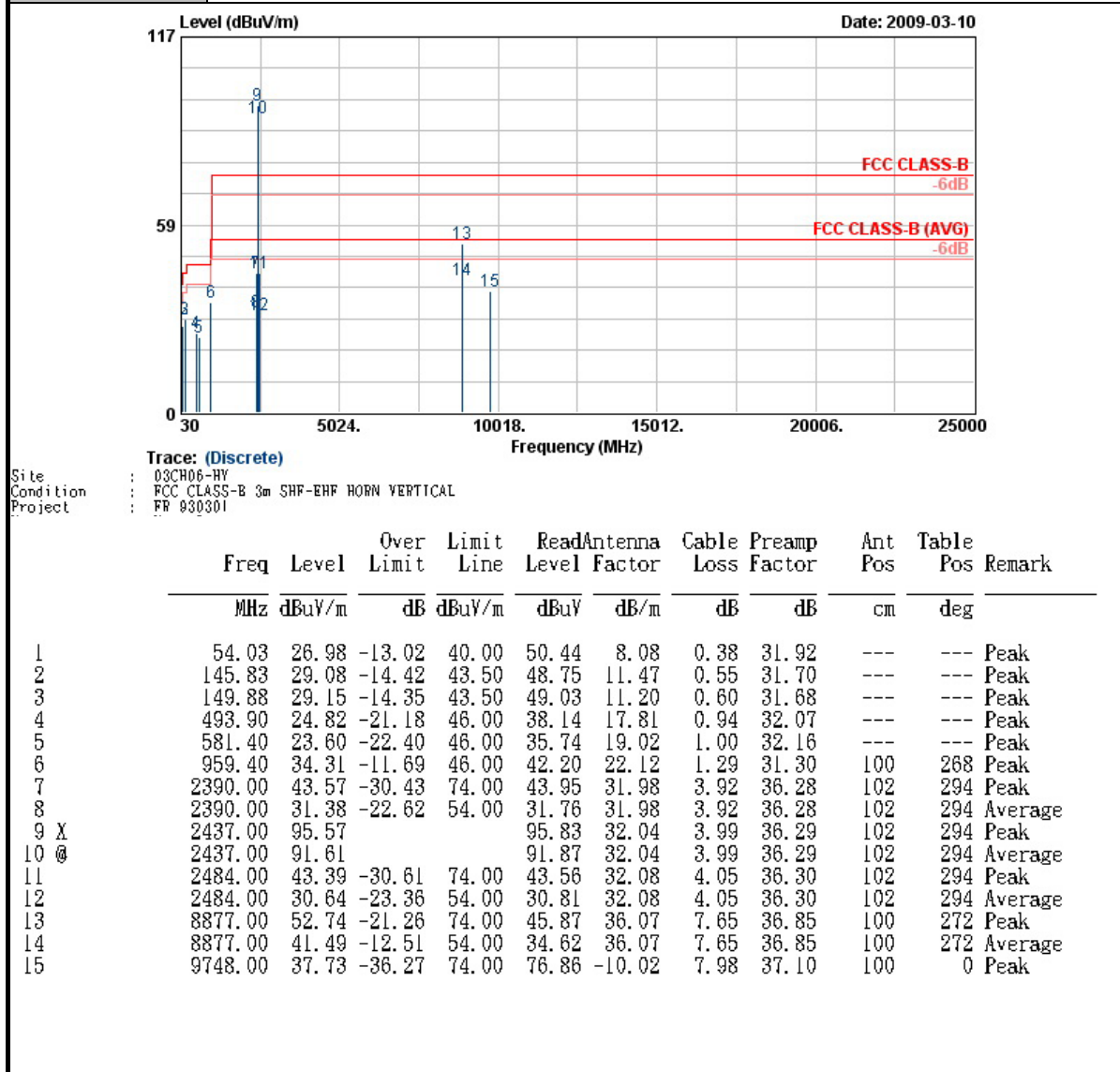
Test Mode :	Mode 2	Temperature :	21~23C
Test Channel :	06	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



Site : 03CH06-RY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 930301

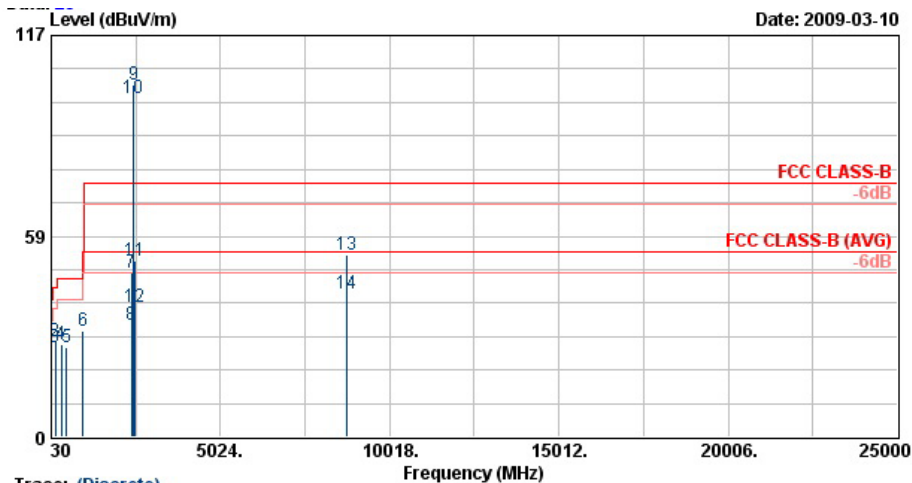
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	35.13	25.47	-14.53	40.00	40.10	16.90	0.30	31.83	100	225 Peak
2	146.64	27.32	-16.18	43.50	47.04	11.42	0.56	31.70	---	---
3	156.63	25.93	-17.57	43.50	46.33	10.85	0.60	31.86	---	---
4	320.30	27.46	-18.54	46.00	44.16	14.47	0.80	31.96	---	---
5	437.90	27.20	-18.80	46.00	41.29	17.04	0.88	32.01	---	---
6	959.40	31.32	-14.68	46.00	39.21	22.12	1.29	31.30	---	---
7	2388.00	48.01	-25.99	74.00	48.39	31.98	3.92	36.28	100	7 Peak
8	2388.00	36.28	-17.72	54.00	36.66	31.98	3.92	36.28	100	7 Average
9 X	2437.00	102.38			102.64	32.04	3.99	36.29	100	7 Peak
10 @	2437.00	98.49			98.75	32.04	3.99	36.29	100	7 Average
11	2484.00	48.56	-25.44	74.00	48.73	32.08	4.05	36.30	100	7 Peak
12	2484.00	36.01	-17.99	54.00	36.18	32.08	4.05	36.30	100	7 Average
13	8937.00	52.38	-21.62	74.00	45.37	36.13	7.74	36.87	100	162 Peak
14	8937.00	41.12	-12.88	54.00	34.12	36.13	7.74	36.87	100	162 Average

Test Mode :	Mode 2	Temperature :	21~23C
Test Channel :	06	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		





Test Mode :	Mode 3	Temperature :	21~23C
Test Channel :	11	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 930301

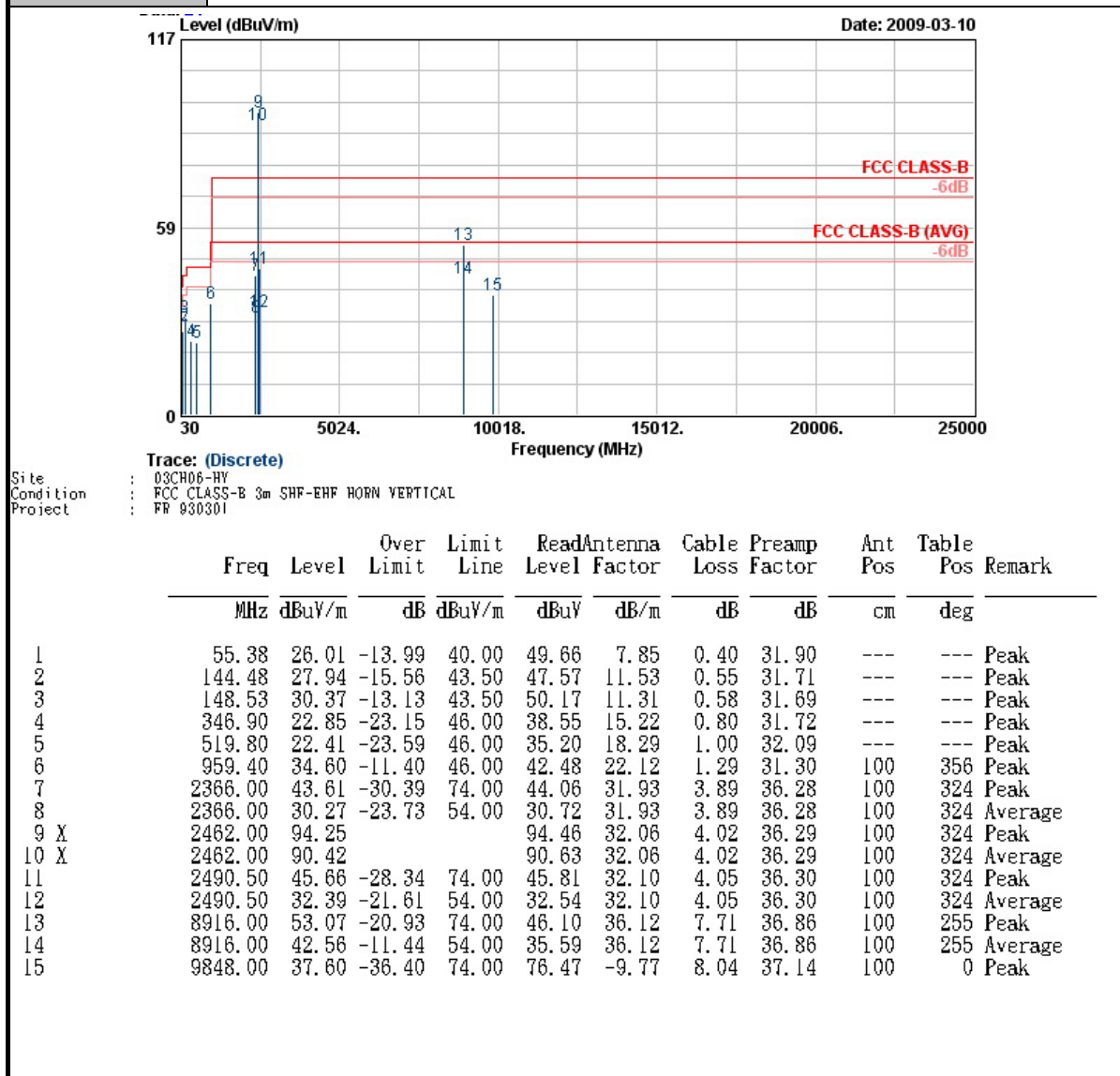
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	31.08	25.89	-14.11	40.00	37.90	19.30	0.30	31.61	100	36 Peak
2	148.53	27.84	-15.66	43.50	47.63	11.31	0.58	31.69	---	Peak
3	159.33	25.92	-17.58	43.50	46.48	10.75	0.60	31.91	---	Peak
4	318.90	26.98	-19.02	46.00	43.71	14.44	0.80	31.97	---	Peak
5	491.80	26.29	-19.71	46.00	39.66	17.78	0.92	32.06	---	Peak
6	959.40	31.01	-14.99	46.00	38.90	22.12	1.29	31.30	---	Peak
7	2390.00	47.91	-26.09	74.00	48.30	31.98	3.92	36.28	100	349 Peak
8	2390.00	32.82	-21.18	54.00	33.20	31.98	3.92	36.28	100	349 Average
9 X	2462.00	102.54			102.76	32.06	4.02	36.29	100	349 Peak
10 @	2462.00	98.75			98.96	32.06	4.02	36.29	100	349 Average
11	2483.66	51.52	-22.48	74.00	51.69	32.08	4.05	36.30	100	349 Peak
12	2483.66	37.67	-16.33	54.00	37.84	32.08	4.05	36.30	100	349 Average
13	8751.00	52.86	-21.14	74.00	46.21	35.95	7.50	36.80	100	293 Peak
14	8751.00	41.83	-12.17	54.00	35.18	35.95	7.50	36.80	100	293 Average



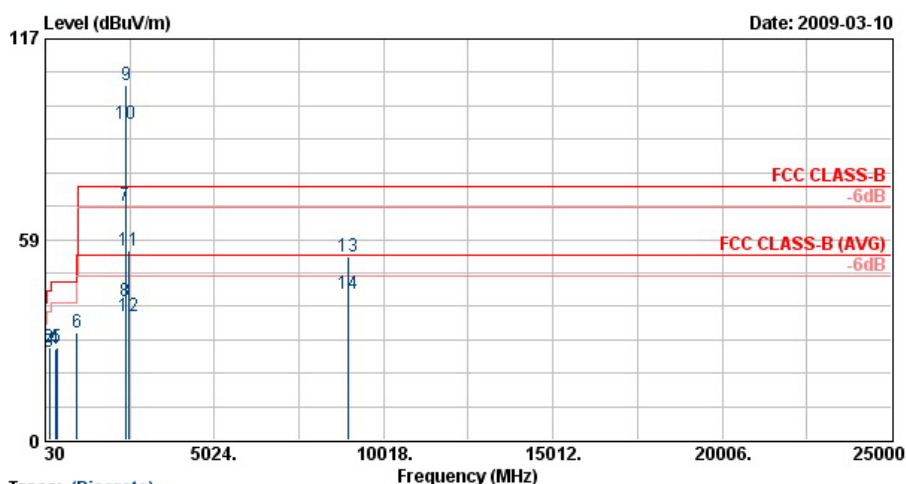
FCC Test Report

Report No. : FR930301A

Test Mode :	Mode 3	Temperature :	21~23C
Test Channel :	11	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



Test Mode :	Mode 4	Temperature :	21~23C
Test Channel :	01	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



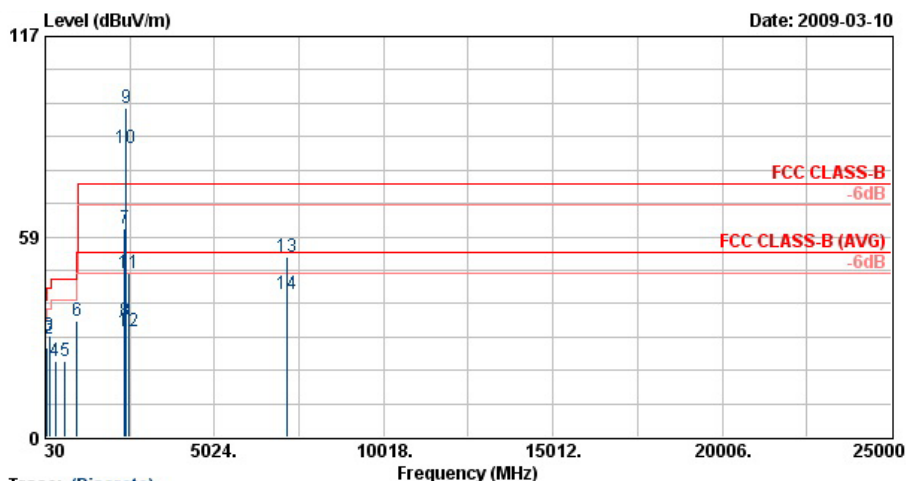
Trace: (Discrete)

Site : 03CH06-HV
 Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
 Project : FR 930301

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	31.08	21.20	-18.80	40.00	33.22	19.30	0.30	31.61	---	Peak
2	147.99	26.78	-16.72	43.50	46.58	11.31	0.58	31.69	---	Peak
3	158.79	25.80	-17.70	43.50	46.35	10.75	0.60	31.91	---	Peak
4	318.90	26.59	-19.41	46.00	43.32	14.44	0.80	31.97	---	Peak
5	376.30	27.00	-19.00	46.00	42.00	15.94	0.86	31.80	---	Peak
6	959.40	31.20	-14.80	46.00	39.08	22.12	1.29	31.30	100	360 Peak
7 !	2386.57	68.30	-5.70	74.00	68.68	31.98	3.92	36.28	100	353 Peak
8	2386.57	40.24	-13.76	54.00	40.62	31.98	3.92	36.28	100	353 Average
9 X	2412.00	103.65			103.98	32.00	3.95	36.28	100	353 Peak
10 @	2412.00	92.02			92.35	32.00	3.95	36.28	100	353 Average
11	2492.00	55.43	-18.57	74.00	55.58	32.10	4.05	36.30	100	353 Peak
12	2492.00	35.92	-18.08	54.00	36.07	32.10	4.05	36.30	100	353 Average
13	8952.00	53.53	-20.47	74.00	46.52	36.15	7.74	36.88	100	226 Peak
14	8952.00	42.43	-11.57	54.00	35.42	36.15	7.74	36.88	100	226 Average



Test Mode :	Mode 4	Temperature :	21~23C
Test Channel :	01	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



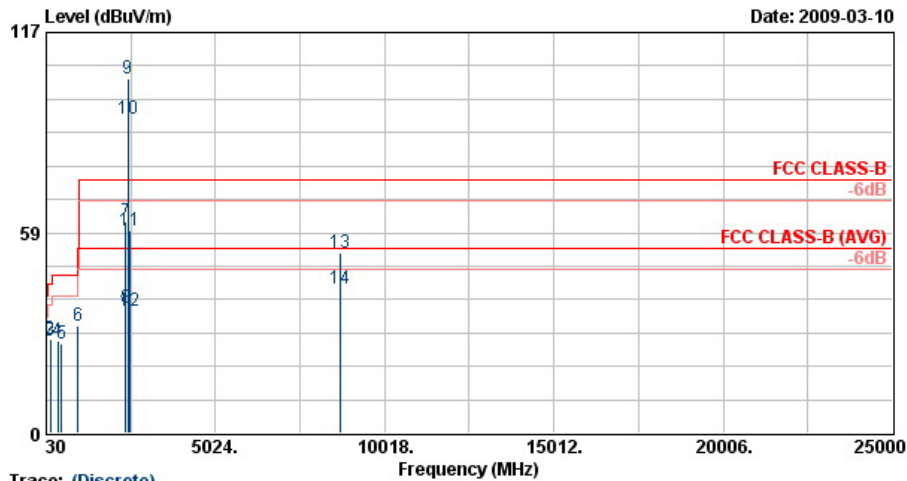
Trace: (Discrete)

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 930301

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	55.38	25.95	-14.05	40.00	49.60	7.85	0.40	31.90	---	---	Peak
2	144.48	28.54	-14.96	43.50	48.17	11.53	0.55	31.71	---	---	Peak
3	148.53	29.72	-13.78	43.50	49.52	11.31	0.58	31.69	---	---	Peak
4	318.90	21.98	-24.02	46.00	38.72	14.44	0.80	31.97	---	---	Peak
5	607.30	22.25	-23.75	46.00	34.24	19.15	1.00	32.14	---	---	Peak
6	959.40	34.09	-11.91	46.00	41.98	22.12	1.29	31.30	100	225	Peak
7	2384.29	60.96	-13.04	74.00	61.36	31.96	3.92	36.28	100	335	Peak
8	2384.29	33.99	-20.01	54.00	34.39	31.96	3.92	36.28	100	335	Average
9 X	2412.00	95.98			96.31	32.00	3.95	36.28	100	335	Peak
10 X	2412.00	84.43			84.76	32.00	3.95	36.28	100	335	Average
11	2486.00	47.70	-26.30	74.00	47.87	32.08	4.05	36.30	100	335	Peak
12	2486.00	30.68	-23.32	54.00	30.85	32.08	4.05	36.30	100	335	Average
13	7182.00	52.83	-21.17	74.00	46.51	35.62	7.16	36.47	100	293	Peak
14	7182.00	41.73	-12.27	54.00	35.42	35.62	7.16	36.47	100	293	Average



Test Mode :	Mode 5	Temperature :	21~23C
Test Channel :	06	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		

**Trace: (Discrete)**

Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : FR 930301

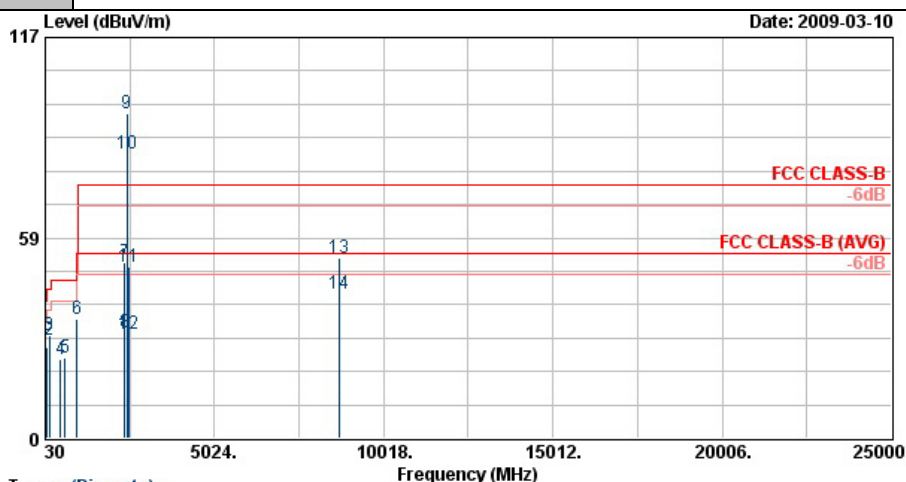
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	36.48	20.14	-19.86	40.00	35.92	15.70	0.30	31.77	---	---	Peak
2	148.53	27.36	-16.14	43.50	47.15	11.31	0.58	31.69	---	---	Peak
3	159.33	26.77	-16.73	43.50	47.33	10.75	0.60	31.91	---	---	Peak
4	376.30	26.84	-19.16	46.00	41.84	15.94	0.86	31.80	---	---	Peak
5	491.80	26.14	-19.86	46.00	39.50	17.78	0.92	32.06	---	---	Peak
6	959.40	31.14	-14.86	46.00	39.02	22.12	1.29	31.30	100	10	Peak
7	2382.00	61.93	-12.07	74.00	62.33	31.96	3.92	36.28	103	5	Peak
8	2382.00	36.66	-17.34	54.00	37.06	31.96	3.92	36.28	103	5	Average
9 @	2437.00	103.60			103.88	32.02	3.99	36.29	103	5	Peak
10 @	2437.00	91.86			92.12	32.04	3.99	36.29	103	5	Average
11	2486.00	59.14	-14.86	74.00	59.31	32.08	4.05	36.30	103	5	Peak
12	2486.00	35.54	-18.46	54.00	35.71	32.08	4.05	36.30	103	5	Average
13	8697.00	52.61	-21.39	74.00	46.04	35.90	7.45	36.78	100	208	Peak
14	8697.00	42.13	-11.87	54.00	35.56	35.90	7.45	36.78	100	208	Average



FCC Test Report

Report No. : FR930301A

Test Mode :	Mode 5	Temperature :	21~23C
Test Channel :	06	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		

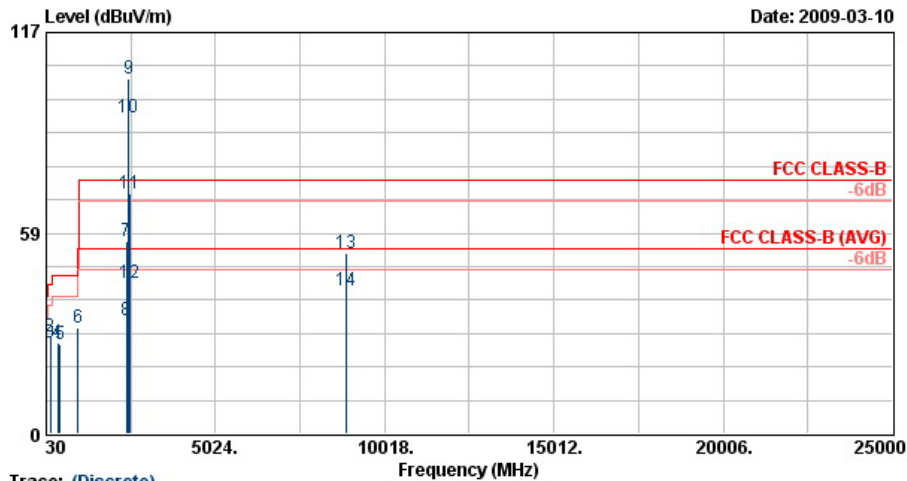


Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 930301
Memo : Mode 8

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	54.84	26.39	-13.61	40.00	50.04	7.85	0.40	31.90	---	---	Peak
2	144.48	28.85	-14.65	43.50	48.49	11.53	0.55	31.71	---	---	Peak
3	148.53	30.18	-13.32	43.50	49.97	11.31	0.58	31.69	---	---	Peak
4	491.80	23.09	-22.91	46.00	36.45	17.78	0.92	32.06	---	---	Peak
5	607.30	23.51	-22.49	46.00	35.49	19.15	1.00	32.14	---	---	Peak
6	959.40	34.75	-11.25	46.00	42.64	22.12	1.29	31.30	100	350	Peak
7	2374.00	51.22	-22.78	74.00	51.65	31.96	3.89	36.28	100	338	Peak
8	2374.00	31.04	-22.96	54.00	31.47	31.96	3.89	36.28	100	338	Average
9 X	2437.00	94.99			95.27	32.02	3.99	36.29	100	338	Peak
10 @	2437.00	83.21			83.47	32.04	3.99	36.29	100	338	Average
11	2486.00	50.21	-23.79	74.00	50.38	32.08	4.05	36.30	100	338	Peak
12	2486.00	30.34	-23.66	54.00	30.51	32.08	4.05	36.30	100	338	Average
13	8691.00	52.64	-21.36	74.00	46.12	35.88	7.42	36.78	100	308	Peak
14	8691.00	42.20	-11.80	54.00	35.68	35.88	7.42	36.78	100	308	Average



Test Mode :	Mode 6	Temperature :	21~23C
Test Channel :	11	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m SHF-EHF HORN HORIZONTAL
Project : 000001

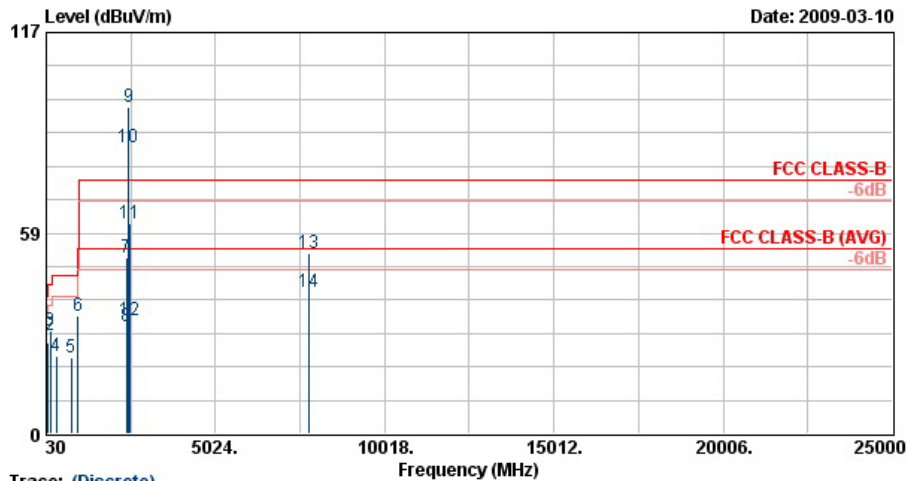
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	37.83	24.93	-15.07	40.00	41.28	15.10	0.30	31.75	---	Peak
2	148.53	28.09	-15.41	43.50	47.88	11.31	0.58	31.69	---	Peak
3	159.33	26.51	-16.99	43.50	47.06	10.75	0.60	31.91	---	Peak
4	376.30	26.34	-19.66	46.00	41.34	15.94	0.86	31.80	---	Peak
5	434.40	26.12	-19.88	46.00	40.28	16.98	0.85	31.99	---	Peak
6	959.40	31.02	-14.98	46.00	38.91	22.12	1.29	31.30	100	12 Peak
7	2390.00	55.95	-18.05	74.00	56.33	31.98	3.92	36.28	100	20 Peak
8	2390.00	32.89	-21.11	54.00	33.27	31.98	3.92	36.28	100	20 Average
9 X	2462.00	103.68			103.89	32.06	4.02	36.29	100	20 Peak
10 @	2462.00	92.18			92.39	32.06	4.02	36.29	100	20 Average
11 !	2483.50	70.01	-3.99	74.00	70.18	32.08	4.05	36.30	100	20 Peak
12	2483.50	43.72	-10.28	54.00	43.89	32.08	4.05	36.30	100	20 Average
13	8877.00	52.76	-21.24	74.00	45.89	36.07	7.65	36.85	100	304 Peak
14	8877.00	41.59	-12.41	54.00	34.72	36.07	7.65	36.85	100	304 Average



FCC Test Report

Report No. : FR930301A

Test Mode :	Mode 6	Temperature :	21~23C
Test Channel :	11	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	#9 and #10 are Mobile Station Signals which can be ignored.		



Trace: (Discrete)

Site : 03CH06-HV
Condition : FCC CLASS-B 3m SHF-EHF HORN VERTICAL
Project : FR 930301

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	54.03	26.53	-13.47	40.00	49.99	8.08	0.38	31.92	---	Peak
2	144.48	28.63	-14.87	43.50	48.26	11.53	0.55	31.71	---	Peak
3	148.53	29.93	-13.57	43.50	49.73	11.31	0.58	31.69	---	Peak
4	318.90	22.49	-23.51	46.00	39.23	14.44	0.80	31.97	---	Peak
5	759.90	22.26	-23.74	46.00	32.85	20.40	1.10	32.08	---	Peak
6	959.40	34.32	-11.68	46.00	42.21	22.12	1.29	31.30	100	352 Peak
7	2390.00	51.20	-22.80	74.00	51.59	31.98	3.92	36.28	100	144 Peak
8	2390.00	31.20	-22.80	54.00	31.58	31.98	3.92	36.28	100	144 Average
9 X	2462.00	95.19			95.41	32.06	4.02	36.29	100	144 Peak
10 X	2462.00	83.64			83.85	32.06	4.02	36.29	100	144 Average
11	2483.50	61.30	-12.70	74.00	61.47	32.08	4.05	36.30	100	144 Peak
12	2483.50	33.13	-20.87	54.00	33.30	32.08	4.05	36.30	100	144 Average
13	7797.00	52.72	-21.28	74.00	46.35	35.62	7.41	36.66	100	193 Peak
14	7797.00	41.49	-12.51	54.00	35.12	35.62	7.41	36.66	100	193 Average

3.8 Antenna Requirements

3.8.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

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 FCC rule.

3.8.2 Antenna Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement.

3.8.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
System Simulator	R&S	CMU200	105934	N/A	Nov. 08, 2008	Nov. 07, 2009	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 26, 2008	Jun. 25, 2009	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 19, 2009	Feb. 18, 2010	Conducted (TH02-HY)
Thermal Chamber	TEN BILLION	TTH-D35P	TBN-930701	N/A	Aug. 01, 2008	Jul. 31, 2009	Conducted (TH02-HY)
EMI Receiver	R&S	ESCS 30	100356	9kHz~2.75GHz	Aug. 01, 2008	Jul. 31, 2009	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9kHz~30MHz	Nov. 26, 2008	Nov. 25, 2009	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9kHz~30MHz	Nov. 26, 2008	Nov. 25, 2009	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz~26.5GHz	Oct. 24, 2008	Oct. 23, 2009	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP40	100057	9kHz~40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz~1000M Hz	Apr. 24, 2008	Apr. 23, 2009	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz~2GHz	Nov. 12, 2008	Nov. 11, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1G~18GHz	Aug. 18, 2008	Aug. 17, 2009	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Training Research	AF-0801	95119	8G~18G	Oct. 28, 2008	Oct. 27, 2009	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	BBHA9170251	15G - 40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G~26.5GHz	Nov. 11, 2008	Nov. 10, 2009	Radiation (03CH06-HY)
Pre Amplifier	Agilent	310N	186713	9kHz~1GHz	Apr. 21, 2008	Apr. 20, 2009	Radiation (03CH06-HY)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
Combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
Combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U = 2U_c(y)$	4.72				

6 Certification of TAF Accreditation



Certificate No. : L1190-081212

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 Accreditation Program for BSMI Mutual Recognition Arrangement with Foreign Authorities



Jay-San Chen
President, Taiwan Accreditation Foundation
Date : December 12, 2008

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



Appendix A. Photographs of EUT

Please refer to Sporton report number EP930301 as below.