Variant FCC / IC Test Report

EQUIPMENT	:	**802.11b/g Wireless LAN CF card**
BRAND NAME	:	**WORKABOUT PRO**
MODEL NAME	:	**RA2041**
FCC ID	:	**GM37527RA2041**
IC ID	:	**2739D-BGRADA**
STANDARD	:	**FCC Part 15 Subpart C §15.247** **IC RSS-210 Issue 7**
CLASSIFICATION	:	**Digital Transmission System (DTS)**
APPLICANT	:	**Psion Teklogix Inc.** 2100 Meadowvale Blvd., Mississauga, Ontario, L5N 7J9, Canada

This is a variant report which is only valid together with the original test report.
The product sample received on Aug. 27, 2008 and completely tested on Jan. 04, 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

Testing Laboratory 1190

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
FR710210-02	Rev. 01	Update Sporton Report No. FR710210-01 by retesting conducted power and radiated emission for LCM and H/W of the Siemens MC75 change.	Jan. 12, 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	≥ 0.5MHz	Not Applicable	-
3.2	15.247(b)	A8.4	Output Power	≤ 30dBm	Pass	-
3.3	15.247(d)	A8.5	Frequency Band Edges	≤ 20dBc	Not Applicable	-
3.4	15.247(e)	A8.2(b)	Power Spectral Density	≤ 8dBm	Not Applicable	-
3.5	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Not Applicable	-
3.6	15.247(d)	A8.5	Transmitter Radiated Emission	15.209(a) & 15.247(d)	Pass	Under limit 2.06 dB at 7242.00 MHz
3.7	15.203 & 15.247(b)	A8.4	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Psion Teklogix Inc.
2100 Meadowvale Blvd., Mississauga, Ontario, L5N 7J9, Canada

1.2 Manufacturer

ASKEY COMPUTER CORP.
10F, No. 119, Chienkang Rd., Chung-Ho, Taipei, R.O.C.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	802.11b/g Wireless LAN CF card
Brand Name	WORKABOUT PRO
Model Name	RA2041
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Number of Channels	11
Carrier Frequency of Each Channel	2412+(n-1)*5 MHz; n=1~11
Channel Spacing	5 MHz
Maximum Output Power to Antenna	802.11b : 20.81 dBm 802.11g : 22.94 dBm
Antenna Type	PCB Antenna
Antenna Gain	-2.66 dBi for 7527C -2.48 dBi for 7527S
Type of Antenna Connector	N/A
Type of Modulation	802.11b : DSSS (BPSK / QPSK / CCK) 802.11g : OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

Remark:

1. The EUT is embedded in the specific Host 7527C / 7527S Series. It can be co-transmitted with Bluetooth (FCC ID: GM37525BTB) and GSM (FCC ID: GM375273RADA) on the Host.
2. The 7527S is the shorter version of model 7527C. They have the same modules and antenna. The only difference between the two models is the keypad.

Accessories List:

Accessories Specification		
Module	**Brand Name**	Siemens
	Model Name	MC75
	H/W version	B2.12
	S/W version	04.001(SVN 19)
LCD Panel	**Brand Name**	Sharp
	Model Name	LS037V7DW01

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. For accessories equipped with this EUT, please refer to the appendix of the external photo.

Details of the Accessories

Terminal Options

		Model Number	Part Number	Remark
GSM	Quad-band MC75 GSM Radio with Stubby antenna	RA3030-G2	N/A	
Kit	Blackroc Endcap Kit 3-Port (RS232,TTL,IRDA); kit	BR1000-G1	1050812	Endcap 7
802.11g	802.11g CF Radio	RA2041	N/A	
Endcap with GSM	Imager, 2D HHP 5180 Endcap with GSM antenna	WA8110-G1	1050830	Endcap 5
	Imager, 1D EV15 Endcap, with GSM antenna	WA9113-G1	1050778	Endcap 1
	Scanner, 1D SE955 Endcap, with GSM antenna	WA9112-G1	1050491	Endcap 2
Endcap	Imager, 2D HHP 5180 Endcap	WA8010-G1	1050890	Endcap 6
	Imager, 1D Intermec EV15 Endcap	WA9103-G1	1050777	Endcap 3
	Scanner, 1D SE955 Endcap	WA9102-G1	1050492	Endcap 4
POD	Imager, 1D Intermec EV15 Pod	WA9003-G1	1050462	POD 1
	Scanner, 1D SE955 Pod	WA9002-G1	1050230	POD 2
	Scanner, 1D SE1223HP Pod	WA9000-G1	1050229	POD 3
	Scanner, 1D SE1223LR Pod	WA9005-G1	1051025	POD 4
	Imager, 2D HHP 5180 Pod	WA9012-G1	1050865	POD 6

Docks and Connectivity Options

Docking	Desktop Docking Station	WA4003-G2	1050955	Docking 1
	USB Cable	N/A	N/A	USB 1
	Vehicle Cradle - Powered 12V with Port Replicator	WA4005-G1 (port replicator)	1080224 (port replicator)	
	Cigarette light adaptor	WA3113-G2	1050463-001	
	Standalone Power Supply	PS1050-G1	1050465	
USB	USB to Ethernet adaptor module	WA4010-G1	1050236	USB 2
	USB to RS232 adaptor module	WA4015-G1	1050067-300	USB 3
Tether	Tether to Ethernet adaptor module	WA4025	1050255	USB 5
	Tether adaptor cable (for connecting keyboards)	WA1001	1050551	USB 4

Others

Battery	3000mAh	WA3006		B2
	4000mAh	WA3010	1050192	B3
Holster	Soft Shell Holster	WA6050	1030227	C1
Pistol Grips	Pistol Grip Symbol SE1223 Scanner	WA6001-G1	1050460	C2

Remark:

1. USB Cable comes in the box as part of the Docking StationWA4003-G2.
2. The Endcap and POD use different type of scanner and imager components inside, please find the clause 7.3 of user manual.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st 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.**
	03CH07-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.

2 Test Configuration of Equipment Under Test

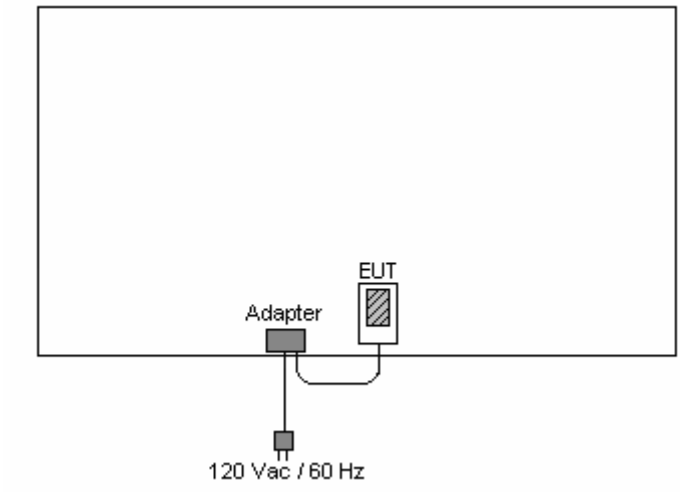
2.1 Test Mode

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: 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	**Modulation**	
	802.11b DSSS	**802.11g 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 for 7527C ■ Mode 2: CH01_2412 MHz for 7527S	■ Mode 3: CH01_2412 MHz for 7527C ■ Mode 4: CH01_2412 MHz for 7527S

Note: The test mode of RE was based on the worst case of original report shown in appendix C.

2.2 Connection Diagram of Test System



2.3 RF Utility

The WLAN function can continuous transmitting and receiving signal by programmed RF utility “sdcfcc”.

3 Test Result

3.1 Output Power Measurement

3.1.1 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.

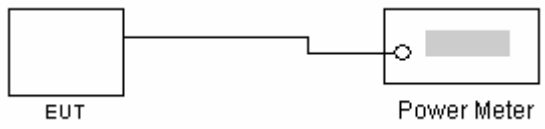
3.1.2 Measuring Instruments

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 antenna port（RF output） of the EUT was connected to the input（RF input）of a power meter for WLAN measurement. The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.

3.1.4 Test Setup



3.1.5 Test Result of Output Power

Test Mode :	Mode 1, 2, 3	Temperature :	24~25℃
Test Engineer :	Ken Hsu	Relative Humidity :	52~53%

Channel	Frequency (MHz)	Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	20.67	30	Pass
06	2437	20.61	30	Pass
11	2462	20.81	30	Pass

Test Mode :	Mode 4, 5, 6	Temperature :	24~25℃
Test Engineer :	Ken Hsu	Relative Humidity :	52~53%

Channel	Frequency (MHz)	Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
01	2412	22.75	30	Pass
06	2437	22.91	30	Pass
11	2462	22.94	30	Pass

3.2 Radiated Emission Measurement

3.2.1 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

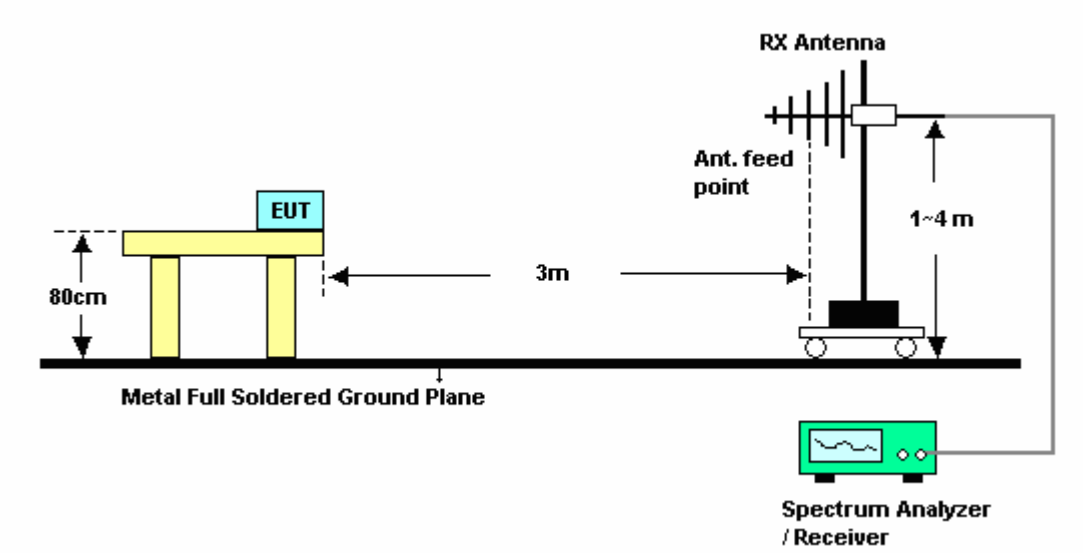
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

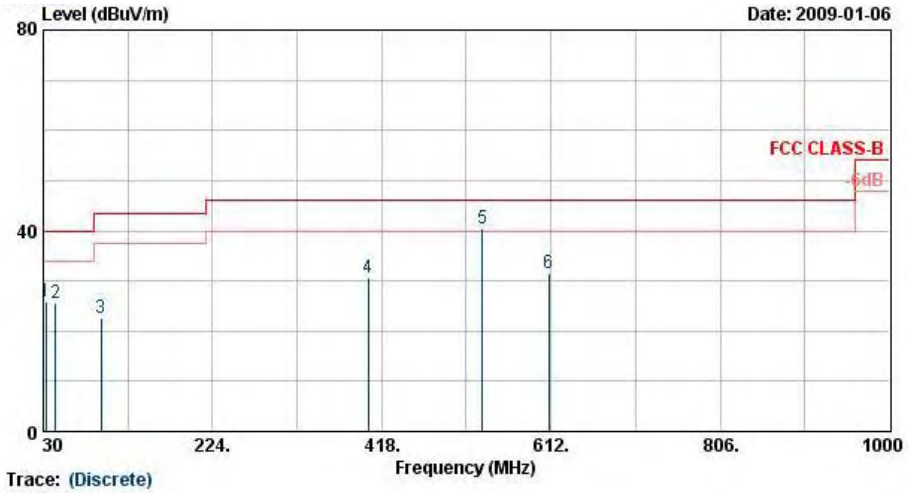
1. The testing follows the guidelines in FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. Use the following spectrum analyzer settings:
   Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector 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.

3.2.4 Test Setup



3.2.5 Test Result of Radiated Emission < 1GHz

Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :			

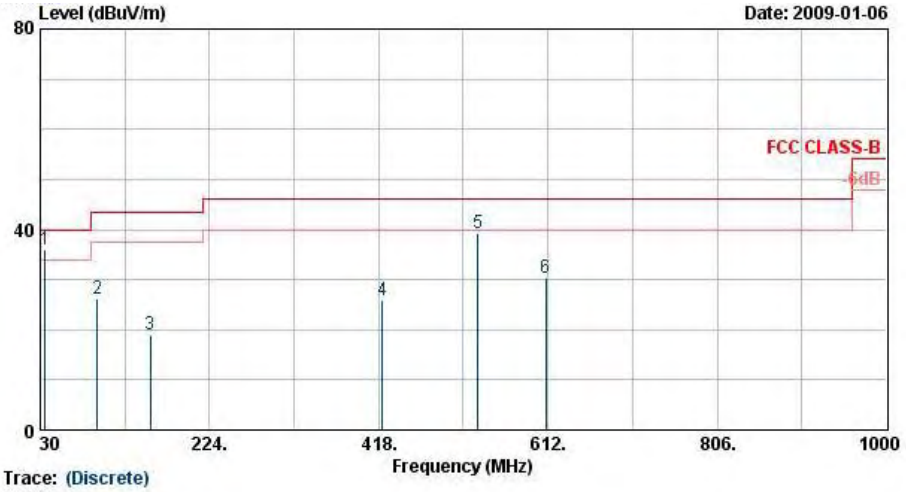


Site : 03CH07-HY
Condition : 3m LF-ANT(080228) HORIZONTAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	32.70	26.02	-13.98	40.00	39.82	16.76	0.66	31.23	---	---	Peak
2	43.77	25.52	-14.48	40.00	44.62	11.37	0.72	31.20	---	---	Peak
3	96.69	22.55	-20.95	43.50	43.35	9.46	1.15	31.40	---	---	Peak
4	402.90	30.78	-15.22	46.00	43.64	15.82	2.56	31.24	---	---	Peak
5 !	533.80	40.56	-5.44	46.00	50.04	18.54	3.04	31.05	100	85	Peak
6	609.40	31.47	-14.53	46.00	39.34	19.82	3.28	30.96	---	---	Peak

Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :			

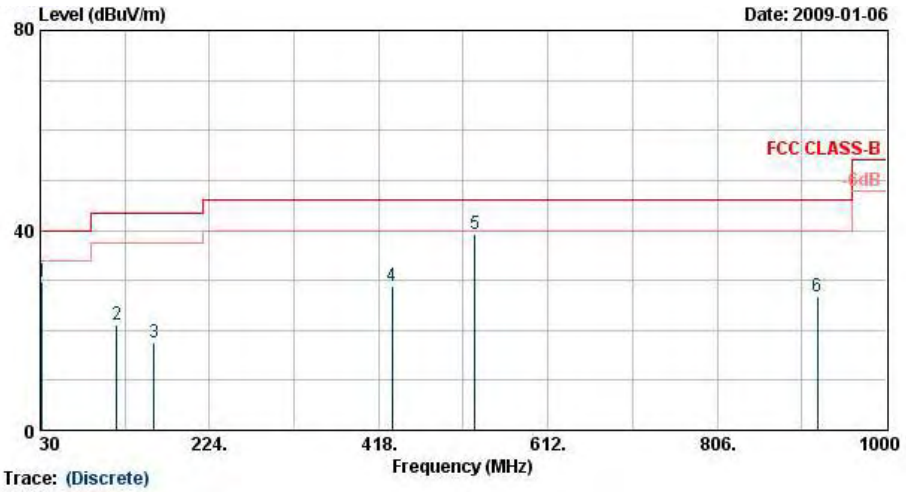


Site : 03CH07-HY
Condition : 3m LF-ANT(080228) VERTICAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	35.94	36.06	-3.94	40.00	51.40	15.14	0.69	31.17	100	57	Peak
2	95.34	26.25	-17.25	43.50	47.39	9.14	1.14	31.41	---	---	Peak
3	155.82	19.16	-24.34	43.50	38.63	10.38	1.49	31.33	---	---	Peak
4	422.50	25.74	-20.26	46.00	38.11	16.26	2.69	31.31	---	---	Peak
5	531.70	39.29	-6.71	46.00	48.81	18.50	3.03	31.06	---	---	Peak
6	609.40	30.46	-15.54	46.00	38.33	19.82	3.28	30.96	---	---	Peak

Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :			

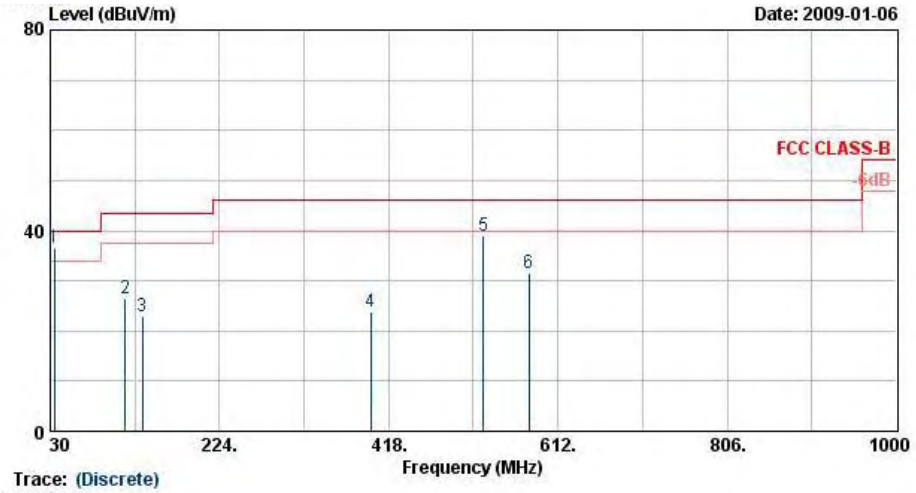


Site : 03CH07-HY
Condition : 3m LF-ANT(080228) HORIZONTAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	31.89	29.71	-10.29	40.00	42.93	17.38	0.66	31.26	---	---	Peak
2	118.02	21.10	-22.40	43.50	39.99	11.24	1.27	31.41	---	---	Peak
3	160.14	17.46	-26.04	43.50	37.13	10.13	1.51	31.31	---	---	Peak
4	433.70	28.86	-17.14	46.00	40.92	16.49	2.74	31.29	---	---	Peak
5	528.20	39.28	-6.72	46.00	48.87	18.45	3.03	31.06	100	147	Peak
6	920.90	26.75	-19.25	46.00	29.59	23.58	4.20	30.61	---	---	Peak

Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :			

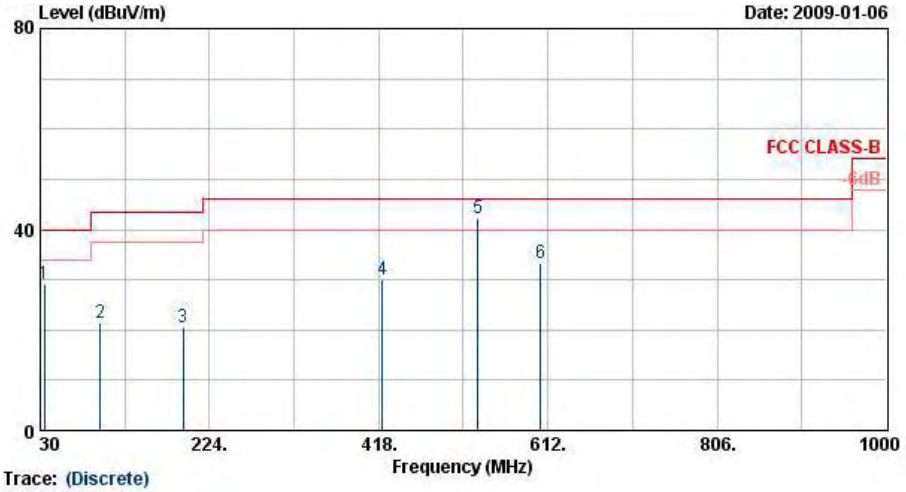


Site : 03CH07-HY
Condition : 3m LF-ANT(080228) VERTICAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	35.13	36.71	-3.29	40.00	51.68	15.53	0.68	31.18	100	96	Peak
2	116.13	26.42	-17.08	43.50	45.47	11.11	1.26	31.41	---	---	Peak
3	135.57	22.79	-20.71	43.50	41.27	11.45	1.39	31.32	---	---	Peak
4	397.30	23.74	-22.26	46.00	36.74	15.71	2.53	31.24	---	---	Peak
5	526.80	39.07	-6.93	46.00	48.70	18.41	3.02	31.06	---	---	Peak
6	578.60	31.67	-14.33	46.00	40.11	19.38	3.18	31.00	---	---	Peak

Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :			

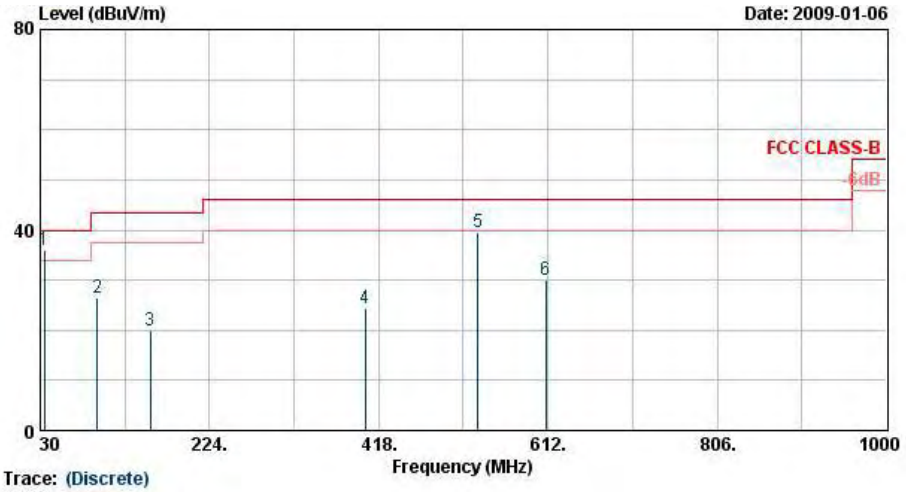


Site : 03CH07-HY
Condition : 3m LF-ANT(080228) HORIZONTAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	34.86	29.08	-10.92	40.00	44.05	15.53	0.68	31.18	---	---	Peak
2	98.85	21.30	-22.20	43.50	41.76	9.78	1.16	31.39	---	---	Peak
3	193.62	20.46	-23.04	43.50	41.33	8.77	1.68	31.32	---	---	Peak
4	421.80	30.13	-15.87	46.00	42.52	16.24	2.68	31.31	---	---	Peak
5 !	531.70	42.19	-3.81	46.00	51.71	18.50	3.03	31.06	100	49	Peak
6	603.80	33.32	-12.68	46.00	41.24	19.79	3.26	30.97	---	---	Peak

Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :			



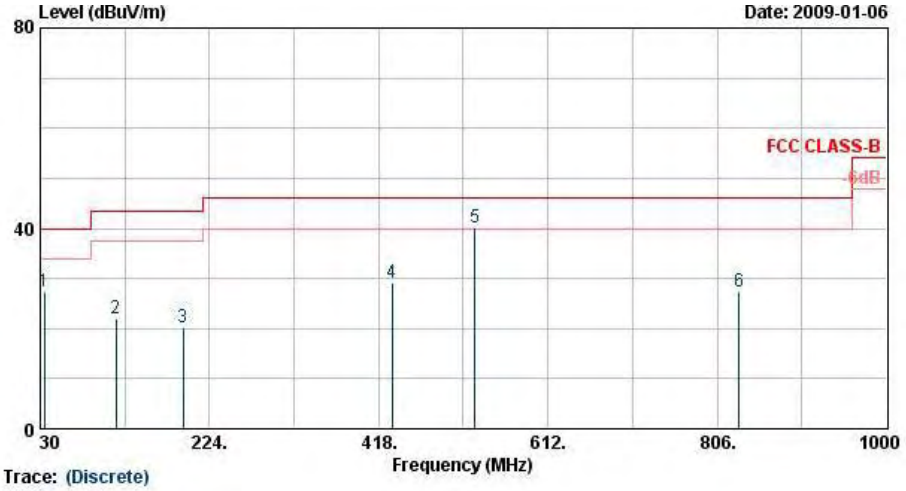
Trace: (Discrete)

Site : 03CH07-HY
Condition : 3m LF-ANT(080228) VERTICAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	35.13	35.90	-4.10	40.00	50.87	15.53	0.68	31.18	100	68	Peak
2	95.61	26.43	-17.07	43.50	47.40	9.30	1.14	31.41	---	---	Peak
3	155.82	19.99	-23.51	43.50	39.46	10.38	1.49	31.33	---	---	Peak
4	402.90	24.41	-21.59	46.00	37.27	15.82	2.56	31.24	---	---	Peak
5	531.70	39.45	-6.55	46.00	48.97	18.50	3.03	31.06	---	---	Peak
6	609.40	30.07	-15.93	46.00	37.93	19.82	3.28	30.96	---	---	Peak

Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :			



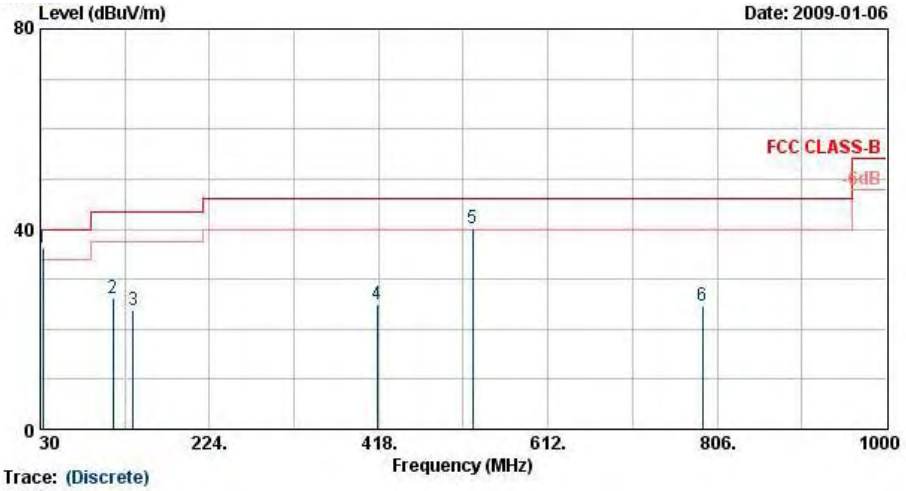
Trace: (Discrete)

Site : 03CH07-HY
Condition : 3m LF-ANT(080228) HORIZONTAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	34.86	27.22	-12.78	40.00	42.19	15.53	0.68	31.18	---	---	Peak
2	117.21	22.11	-21.39	43.50	41.08	11.17	1.26	31.41	---	---	Peak
3	193.62	20.27	-23.23	43.50	41.14	8.77	1.68	31.32	---	---	Peak
4	433.70	29.23	-16.77	46.00	41.29	16.49	2.74	31.29	---	---	Peak
5 !	528.20	40.02	-5.98	46.00	49.61	18.45	3.03	31.06	100	254	Peak
6	831.30	27.42	-18.58	46.00	31.70	22.48	3.92	30.68	---	---	Peak

Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :			



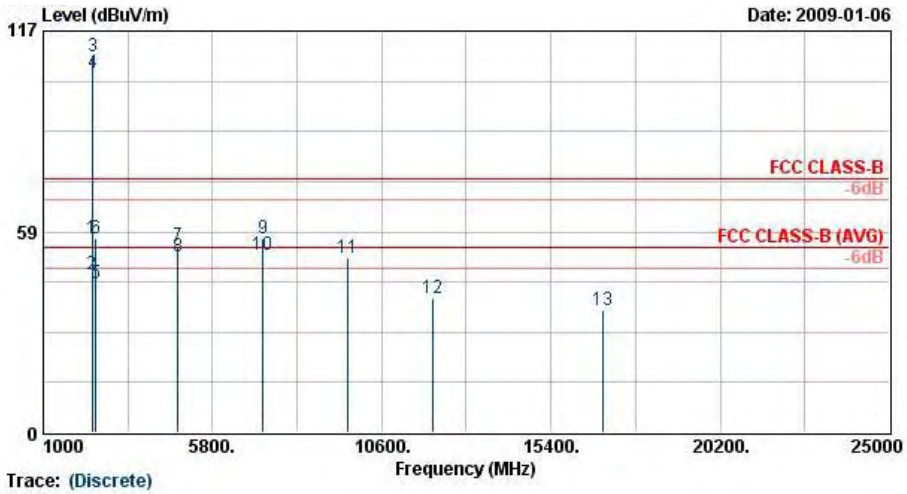
Site : 03CH07-HY
Condition : 3m LF-ANT(080228) VERTICAL
Model : FR 710210-02

Plane : E1

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 !	32.97	36.17	-3.83	40.00	49.97	16.76	0.66	31.23	100	85	Peak
2	113.70	26.30	-17.20	43.50	45.56	10.90	1.24	31.40	---	---	Peak
3	136.65	23.76	-19.74	43.50	42.19	11.50	1.39	31.32	---	---	Peak
4	416.20	24.87	-21.13	46.00	37.40	16.11	2.64	31.29	---	---	Peak
5 !	526.10	40.17	-5.83	46.00	49.83	18.39	3.02	31.06	---	---	Peak
6	789.30	24.68	-21.32	46.00	29.70	21.93	3.82	30.76	---	---	Peak

3.2.6 Test Result of Radiated Emission ≥ 1GHz

Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

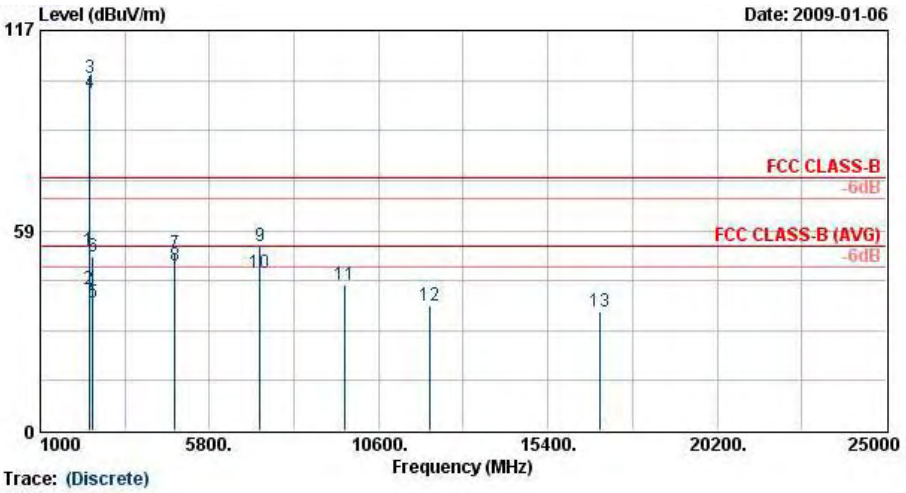


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN HORIZONTAL

Mode : Mode 1
Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2387.14	56.53	-17.47	74.00	54.43	32.32	5.46	35.68	100	0	Peak
2		2387.14	46.27	-7.73	54.00	44.17	32.32	5.46	35.68	169	32	Average
3	X	2412.00	109.63			107.55	32.32	5.44	35.68	100	0	Peak
4	@	2412.00	104.76			102.68	32.32	5.44	35.68	169	32	Average
5		2484.00	43.31	-10.69	54.00	41.32	32.30	5.38	35.70	169	32	Average
6		2484.00	56.47	-17.53	74.00	54.48	32.30	5.38	35.70	100	0	Peak
7		4821.00	54.26	-19.74	74.00	46.53	35.59	7.81	35.67	100	0	Peak
8	!	4821.00	51.20	-2.80	54.00	43.47	35.59	7.81	35.67	126	34	Average
9		7242.00	56.69	-17.31	74.00	44.96	37.94	9.88	36.10	100	0	Peak
10	!	7242.00	51.54	-2.46	54.00	39.82	37.94	9.88	36.10	101	325	Average
11		9645.00	50.69	-23.31	74.00	86.77	-10.09	10.74	36.73	100	0	Peak
12		12054.00	39.19	-34.81	74.00	73.16	-9.77	12.07	36.27	100	0	Peak
13		16881.00	35.81	-38.19	74.00	67.55	-10.10	14.29	35.93	100	0	Peak

Test Mode :	Mode 1	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

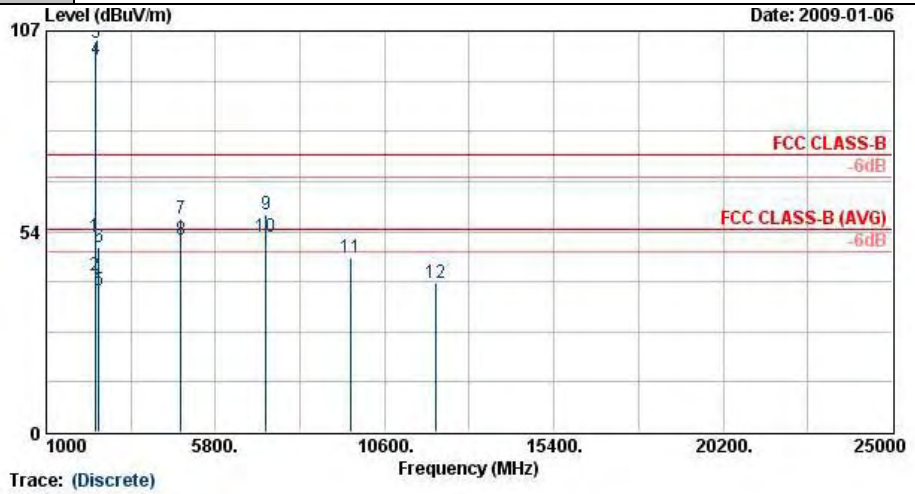


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN VERTICAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2387.14	52.47	-21.53	74.00	50.39	32.30	5.46	35.68	100	0	Peak
2		2387.14	41.14	-12.86	54.00	39.06	32.30	5.46	35.68	100	342	Average
3	X	2412.00	103.13			101.07	32.30	5.44	35.68	100	0	Peak
4	@	2412.00	98.89			96.83	32.30	5.44	35.68	100	342	Average
5		2484.00	37.58	-16.42	54.00	35.59	32.30	5.38	35.70	100	342	Average
6		2484.00	50.68	-23.32	74.00	48.69	32.30	5.38	35.70	100	0	Peak
7		4821.00	51.84	-22.16	74.00	44.74	34.97	7.81	35.67	100	0	Peak
8	!	4821.00	48.31	-5.69	54.00	41.21	34.97	7.81	35.67	114	65	Average
9		7233.00	53.90	-20.10	74.00	43.42	36.70	9.88	36.09	100	0	Peak
10		7233.00	46.19	-7.81	54.00	35.71	36.70	9.88	36.09	111	50	Average
11		9645.00	42.82	-31.18	74.00	78.90	-10.09	10.74	36.73	100	0	Peak
12		12054.00	36.69	-37.31	74.00	70.67	-9.77	12.07	36.27	100	0	Peak
13		16890.00	34.61	-39.39	74.00	66.31	-10.10	14.32	35.93	100	0	Peak

Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

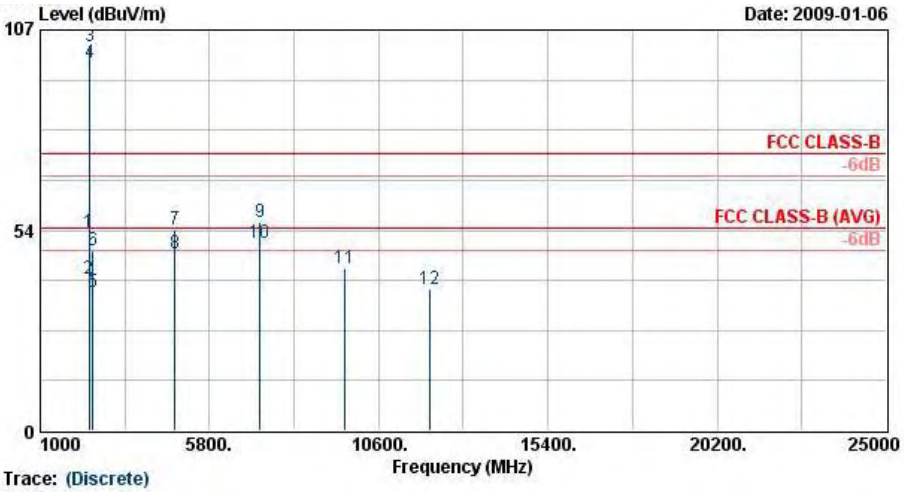


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN HORIZONTAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2389.99	52.12	-21.88	74.00	50.02	32.32	5.46	35.68	100	0	Peak
2		2389.99	41.93	-12.07	54.00	39.83	32.32	5.46	35.68	101	72	Average
3	X	2412.00	103.62			101.54	32.32	5.44	35.68	100	0	Peak
4	@	2412.00	99.49			97.41	32.32	5.44	35.68	101	72	Average
5		2500.00	37.91	-16.09	54.00	35.94	32.30	5.37	35.70	101	72	Average
6		2500.00	49.48	-24.52	74.00	47.51	32.30	5.37	35.70	100	0	Peak
7		4821.00	56.74	-17.26	74.00	49.00	35.59	7.81	35.67	100	0	Peak
8	!	4821.00	51.48	-2.52	54.00	43.75	35.59	7.81	35.67	148	125	Average
9		7242.00	58.27	-15.73	74.00	46.55	37.94	9.88	36.10	100	0	Peak
10	!	7242.00	51.94	-2.06	54.00	40.22	37.94	9.88	36.10	100	331	Average
11		9645.00	46.39	-27.61	74.00	82.47	-10.09	10.74	36.73	100	0	Peak
12		12057.00	39.82	-34.18	74.00	73.81	-9.80	12.07	36.26	100	0	Peak

Test Mode :	Mode 2	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

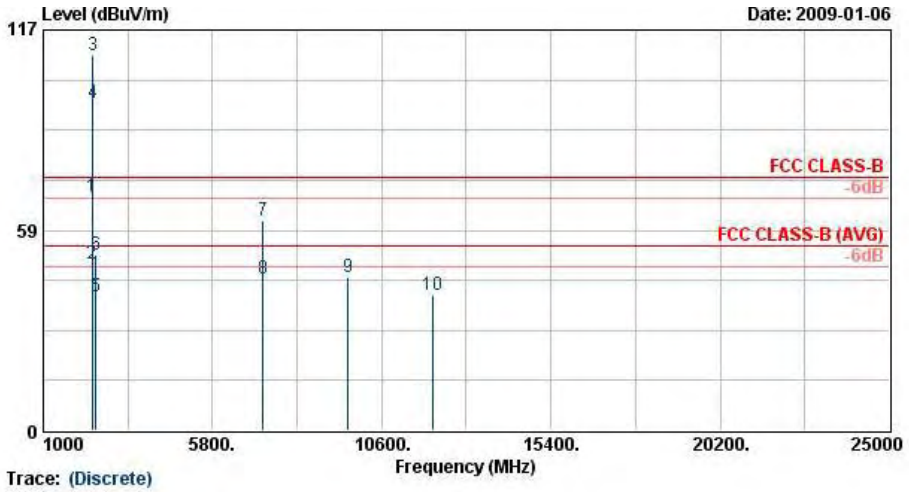


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN VERTICAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2386.38	52.99	-21.01	74.00	50.90	32.30	5.46	35.68	100	0	Peak
2		2386.38	40.76	-13.24	54.00	38.68	32.30	5.46	35.68	100	243	Average
3	X	2412.00	102.56			100.49	32.30	5.44	35.68	100	0	Peak
4	@	2412.00	98.40			96.34	32.30	5.44	35.68	100	243	Average
5		2486.00	37.14	-16.86	54.00	35.15	32.30	5.38	35.70	100	243	Average
6		2486.00	48.22	-25.78	74.00	46.23	32.30	5.38	35.70	100	0	Peak
7		4821.00	53.80	-20.20	74.00	46.69	34.97	7.81	35.67	100	0	Peak
8		4821.00	47.22	-6.78	54.00	40.12	34.97	7.81	35.67	128	358	Average
9		7233.00	55.78	-18.22	74.00	45.30	36.70	9.88	36.09	100	0	Peak
10	!	7233.00	50.31	-3.69	54.00	39.83	36.70	9.88	36.09	155	42	Average
11		9645.00	43.47	-30.53	74.00	79.55	-10.09	10.74	36.73	100	0	Peak
12		12057.00	37.67	-36.33	74.00	71.66	-9.80	12.07	36.26	100	0	Peak

Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		

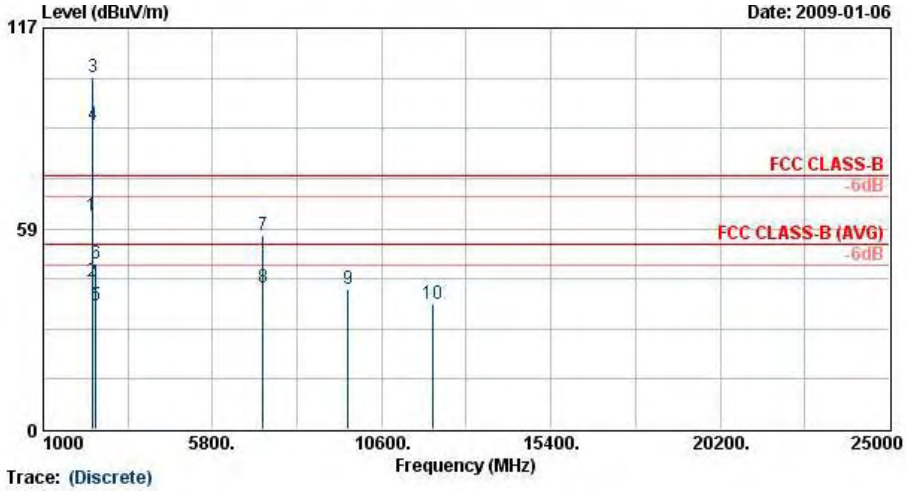


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN HORIZONTAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	!	2389.99	68.08	-5.92	74.00	65.98	32.32	5.46	35.68	100	0	Peak
2	!	2389.99	48.68	-5.32	54.00	46.58	32.32	5.46	35.68	144	31	Average
3	@	2412.00	109.76			107.69	32.32	5.44	35.68	100	0	Peak
4	@	2412.00	95.58			93.50	32.32	5.44	35.68	144	31	Average
5		2486.00	38.95	-15.05	54.00	36.96	32.30	5.38	35.70	144	31	Average
6		2486.00	51.47	-22.53	74.00	49.48	32.30	5.38	35.70	100	0	Peak
7		7233.00	61.12	-12.88	74.00	49.39	37.94	9.88	36.09	100	0	Peak
8		7233.00	44.48	-9.52	54.00	32.75	37.94	9.88	36.09	111	325	Average
9		9645.00	44.96	-29.04	74.00	81.04	-10.09	10.74	36.73	100	0	Peak
10		12054.00	39.66	-34.34	74.00	73.64	-9.77	12.07	36.27	100	0	Peak

Test Mode :	Mode 3	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		

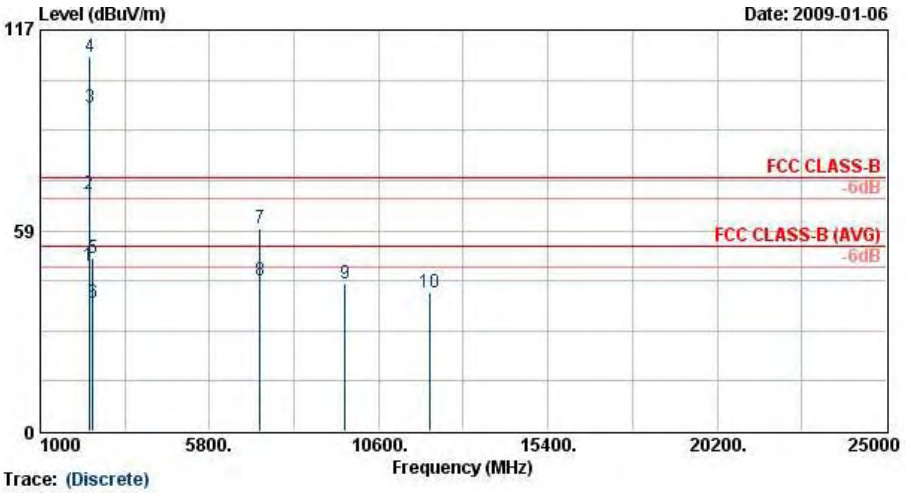


Site : 03CH07-HY
Condition : 3m SHF-EHF HORN VERTICAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2389.99	62.20	-11.80	74.00	60.13	32.30	5.46	35.68	100	0	Peak
2		2389.99	43.00	-11.00	54.00	40.92	32.30	5.46	35.68	100	356	Average
3	X	2412.00	102.76			100.70	32.30	5.44	35.68	100	0	Peak
4	@	2412.00	88.86			86.80	32.30	5.44	35.68	100	356	Average
5		2492.00	36.24	-17.76	54.00	34.27	32.30	5.37	35.70	100	356	Average
6		2492.00	48.21	-25.79	74.00	46.24	32.30	5.37	35.70	100	0	Peak
7		7230.00	56.60	-17.40	74.00	46.10	36.69	9.89	36.09	100	0	Peak
8		7230.00	41.53	-12.47	54.00	31.04	36.69	9.89	36.09	114	50	Average
9		9645.00	40.86	-33.14	74.00	76.94	-10.09	10.74	36.73	100	0	Peak
10		12054.00	36.46	-37.54	74.00	70.43	-9.77	12.07	36.27	100	0	Peak

Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Horizontal
Remark :	#3 and #4 are Fundamental Signals		



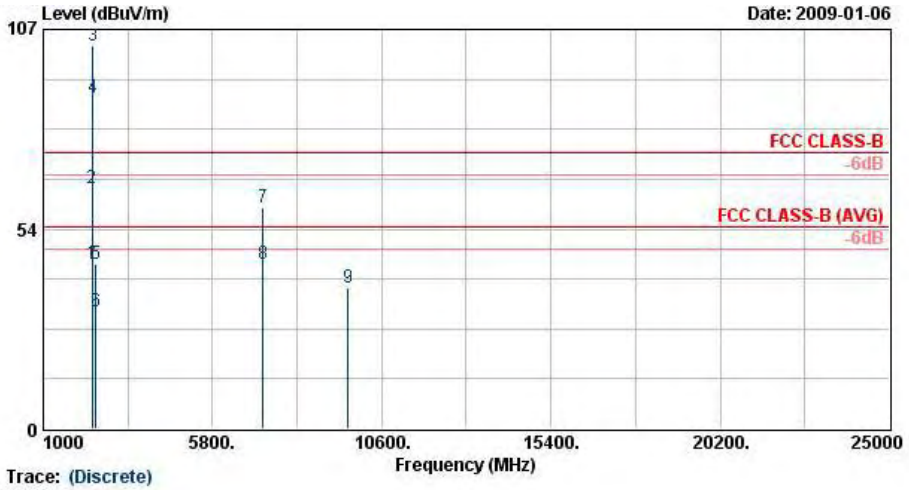
Trace: (Discrete)

Site : 03CH07-HY
Condition : 3m SHF-EHF HORN HORIZONTAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	!	2389.99	48.22	-5.78	54.00	46.12	32.32	5.46	35.68	197	132	Average
2	!	2389.99	69.07	-4.93	74.00	66.97	32.32	5.46	35.68	100	0	Peak
3	@	2412.00	94.55			92.47	32.32	5.44	35.68	197	132	Average
4	@	2412.00	109.01			106.93	32.32	5.44	35.68	100	0	Peak
5		2484.00	50.51	-23.49	74.00	48.52	32.30	5.38	35.70	100	0	Peak
6		2484.00	37.42	-16.58	54.00	35.43	32.30	5.38	35.70	197	132	Average
7		7233.00	58.97	-15.03	74.00	47.24	37.94	9.88	36.09	100	0	Peak
8		7233.00	43.93	-10.07	54.00	32.20	37.94	9.88	36.09	100	42	Average
9		9645.00	43.09	-30.91	74.00	79.17	-10.09	10.74	36.73	100	0	Peak
10		12054.00	40.61	-33.39	74.00	74.58	-9.77	12.07	36.27	100	0	Peak

Test Mode :	Mode 4	Temperature :	24~25°C
Test Channel :	01	Relative Humidity :	52~53%
Test Engineer :	Elvis Chen	Polarization :	Vertical
Remark :	#3 and #4 are Fundamental Signals		



Site : 03CH07-HY
Condition : 3m SHF-EHF HORN VERTICAL
Model : FR 710210-02

Plane : E1

		Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
		MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		2389.61	44.01	-9.99	54.00	41.93	32.30	5.46	35.68	100	171	Average
2		2389.61	64.47	-9.53	74.00	62.39	32.30	5.46	35.68	100	0	Peak
3	X	2412.00	102.79			100.73	32.30	5.44	35.68	100	0	Peak
4	@	2412.00	88.78			86.72	32.30	5.44	35.68	100	171	Average
5		2484.00	44.09	-29.91	74.00	42.10	32.30	5.38	35.70	100	0	Peak
6		2484.00	31.58	-22.42	54.00	29.59	32.30	5.38	35.70	100	171	Average
7		7233.00	59.15	-14.85	74.00	48.67	36.70	9.88	36.09	100	0	Peak
8		7233.00	44.15	-9.85	54.00	33.67	36.70	9.88	36.09	128	117	Average
9		9645.00	37.70	-36.30	74.00	73.78	-10.09	10.74	36.73	100	0	Peak

3.3 Antenna Requirements

3.3.1 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.

3.3.2 Antenna Connected Construction

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

3.3.3 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 Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 21, 2008	Feb. 20, 2009	Conducted (TH02-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz~1GHz	Nov. 20, 2008	Nov. 19, 2009	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9kHz~30GHz	Dec. 02, 2008	Dec. 01, 2009	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	75962	1G~18GHz	Aug. 13, 2008	Aug. 12. 2009	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G~26.5GHz	Dec. 17, 2008	Dec. 16, 2009	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10~1000MHz. 32dB.GAIN	Mar. 31, 2008	Mar. 30, 2009	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	66584	1G~18GHz	Aug. 06, 2008	Aug. 05. 2009	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

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 (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	Ci	$Ci*u(x_i)$
	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 Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	**2.36**				
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	**4.72**				

6 Certification of TAF Accreditation

TAF

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

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