



Variant FCC / IC Test Report

EQUIPMENT : GSM Module
BRAND NAME : WORKABOUT PRO
MODEL NAME : RA3030-G2
FCC ID : GM375273RADA
IC ID : 2739D-7527RADA
STANDARD : 47 CFR Part 2, 22(H), 24(E)
 IC RSS-132 Issued 2, RSS-133 Issued 4
CLASSIFICATION : PCS Licensed transmitter (PCB)
Tx/Rx FREQUENCY RANGE : GSM850 : 824.2 ~ 848.8 MHz /
 869.2 ~ 893.8 MHz
 GSM1900 : 1850.2 ~ 1909.8 MHz /
 1930.2 ~ 1989.8 MHz
MAX. ERP/EIRP POWER : for 7527C
 GSM850(GSM) : 0.52 W
 GSM850(EDGE) : 0.05 W
 GSM1900(GSM) : 1.21 W
 GSM1900(EDGE) : 0.15 W
 for 7527S
 GSM850(GSM) : 0.72 W
 GSM850(EDGE) : 0.04 W
 GSM1900(GSM) : 0.90 W
 GSM1900(EDGE) : 0.07 W
EMISSION DESIGNATOR : GSM : 300KGXW
 EDGE : 300KG7W
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 Dec. 27, 2008. 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
 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.

Ray Wu

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.



TABLE OF CONTENTS

REVISION HISTORY..... 3

SUMMARY OF TEST RESULT 4

1 GENERAL DESCRIPTION 5

 1.1 Applicant..... 5

 1.2 Manufacturer 5

 1.3 Feature of Equipment Under Test..... 5

 1.4 Testing Site 8

 1.5 Applied Standards 8

 1.6 Ancillary Equipment List..... 8

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST 9

 2.1 Test Mode..... 9

 2.2 Connection Diagram of Test System 9

3 TEST RESULT 10

 3.1 Conducted Output Power Measurement..... 10

 3.2 Effective Radiated Power and Effective Isotropic Radiated Power Measurement 12

 3.3 Field Strength of Spurious Radiation Measurement 18

4 LIST OF MEASURING EQUIPMENTS 28

5 UNCERTAINTY OF EVALUATION 29

6 CERTIFICATION OF TAF ACCREDITATION 30

APPENDIX A. PHOTOGRAPHS OF EUT

APPENDIX B. SETUP PHOTOGRAPHS

APPENDIX C. ORIGINAL REPORT



SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result
3.1	§2.1046	N/A	Conducted Output Power	N/A	PASS
3.2	§22.913(a)(2)	RSS-132(4.4) SRSP-503(5.1.3)	Effective Radiated Power	< 7 Watts for FCC (<6.3 Watts for IC)	PASS
3.2	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS
3.3	§2.1049 §22.917(a) §24.238(a)	N/A	Occupied Bandwidth	N/A	Not Applicable
3.3	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	Not Applicable
3.4	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Conducted Emission	< 43+10log ₁₀ (P[Watts])	Not Applicable
3.5	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Field Strength of Spurious Radiation	< 43+10log ₁₀ (P[Watts])	PASS
3.6	§2.1055 §22.355 §24.235	RSS-132(4.3) RSS-133(6.3)	Frequency Stability for Temperature & Voltage	< 2.5 ppm	Not Applicable

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	GSM Module
Brand Name	WORKABOUT PRO
Model Name	RA3030-G2
Tx Frequency	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz
Rx Frequency	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz
Channel Spacing	200 kHz
Maximum Output Power to Antenna	GSM850(GSM) : 31.5 dBm GSM850(EDGE12) : 23.0 dBm GSM1900(GSM) : 28.9 dBm GSM1900(EDGE12) : 22.0 dBm
Maximum ERP/EIRP	for 7527C GSM850(GSM) : 0.52 W (27.15 dBm) GSM850(EDGE12) : 0.05 W (16.56 dBm) GSM1900(GSM) : 1.21 W (30.83 dBm) GSM1900(EDGE12) : 0.15 W (21.81 dBm) for 7527S GSM850(GSM) : 0.72 W (28.56 dBm) GSM850(EDGE12) : 0.04 W (16.35 dBm) GSM1900(GSM) : 0.90 W (29.54 dBm) GSM1900(EDGE12) : 0.07 W (18.21 dBm)
Antenna Type	PCB Antenna
Type of Modulation	GSM / GPRS : GMSK EDGE : 8PSK
Type of Emission	GSM : 300KGXW EDGE : 300KG7W
EUT Stage	Identical Prototype

Remark: The host 7527S is the shorter version of model 7527C. They have the same module 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 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	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:

- ♦ 47 CFR Part 2, 22(H), 24(E)
- ♦ ANSI C63.4-2003
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ IC RSS-132, RSS-133

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 No.	FCC ID	Data Cable	Power Code
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8m

2 Test Configuration of Equipment Under Test

2.1 Test Mode

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

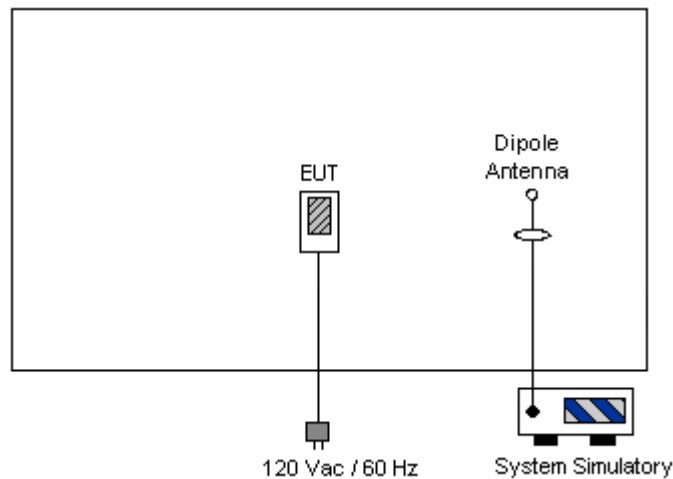
Frequency range investigated for radiated emission is as follows:

1. 30 MHz to 9000 MHz for GSM850.
2. 30MHz to 19000 MHz for GSM1900.

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	<ul style="list-style-type: none"> ■ GSM Link for 7527C ■ EDGE 12 Link for 7527S 	<ul style="list-style-type: none"> ■ GSM Link ■ EDGE 12 Link
GSM 1900	<ul style="list-style-type: none"> ■ GSM Link for 7527C ■ EDGE 12 Link for 7527S 	<ul style="list-style-type: none"> ■ GSM Link ■ EDGE 12 Link

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



3 Test Result

3.1 Conducted Output Power Measurement

3.1.1 Description of the Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

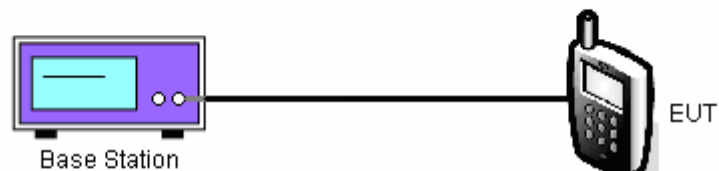
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The transmitter output port was connected to base station.
2. Set EUT at maximum power through base station.
3. Select lowest, middle, and highest channels for each band and different modulation.

3.1.4 Test Setup





3.1.5 Test Result of Conducted Output Power

Cellular				
Modes	Channel	Frequency (MHz)	Conducted Power	
			(dBm)	(Watts)
GSM	128 (Low)	824.2	31.5	1.41
	189 (Mid)	836.4	31.4	1.38
	251 (High)	848.8	31.5	1.41
EDGE Multi-slot Class 12	128 (Low)	824.2	23.0	0.20
	189 (Mid)	836.4	23.0	0.20
	251 (High)	848.8	22.9	0.19

PCS				
Modes	Channel	Frequency (MHz)	Conducted Power	
			(dBm)	(Watts)
GSM	512 (Low)	1850.2	28.7	0.74
	661 (Mid)	1880.0	28.7	0.74
	810 (High)	1909.8	28.9	0.78
EDGE Multi-slot Class 12	512 (Low)	1850.2	22.0	0.16
	661 (Mid)	1880.0	22.0	0.16
	810 (High)	1909.8	21.9	0.15



3.2 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

3.2.1 Description of the ERP/EIRP Measurement

ERP/EIRP is measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

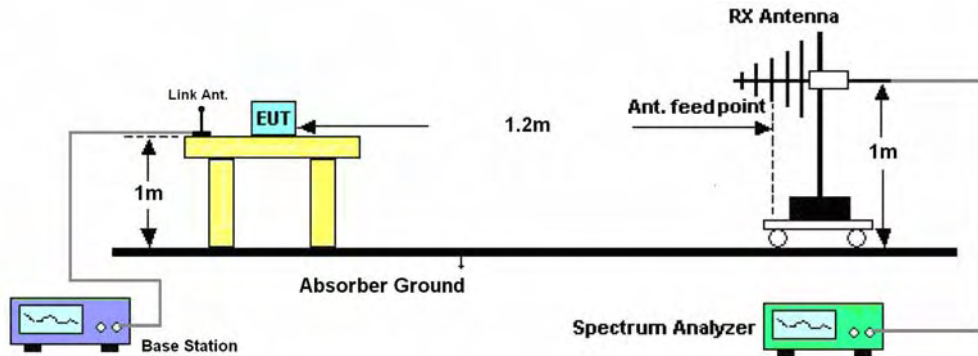
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The EUT was placed on a turntable with 1.0 meter height in a fully anechoic chamber.
2. The EUT was set at 1.2 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiated power.
4. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
5. Taking the record of maximum ERP/EIRP.
6. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
7. The conducted power at the terminal of the dipole antenna is measured.
8. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
9. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$
Ps (dBm) : Input power to substitution antenna.
Gs (dBi or dBd) : Substitution antenna Gain.
 $E_t = R_t + AF$
 $E_s = R_s + AF$
AF (dB/m) : Receive antenna factor
Rt : The highest received signal in spectrum analyzer for EUT.
Rs : The highest received signal in spectrum analyzer for substitution antenna.

3.2.4 Test Setup





3.2.5 Test Result of ERP

GSM850 (GSM) Radiated Power ERP for 7527C						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-21.77	-48.12	0.00	-1.08	25.27	0.34
836.40	-21.15	-48.28	0.00	-0.93	26.20	0.42
848.80	-20.44	-48.35	0.00	-0.76	27.15	0.52
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-22.01	-47.97	0.00	-1.08	24.88	0.31
836.40	-22.02	-48.01	0.00	-0.93	25.06	0.32
848.80	-21.83	-48.05	0.00	-0.76	25.46	0.35

GSM850 (GSM) Radiated Power ERP for 7527S						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-22.53	-48.12	0.00	-1.08	24.51	0.28
836.40	-19.20	-48.28	0.00	-0.93	28.15	0.65
848.80	-20.50	-48.35	0.00	-0.76	27.09	0.51
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-19.34	-47.97	0.00	-1.08	27.55	0.57
836.40	-21.40	-48.01	0.00	-0.93	25.68	0.37
848.80	-18.73	-48.05	0.00	-0.76	28.56	0.72



GSM850 (EDGE 12) Radiated Power ERP for 7527C						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-31.23	-48.12	0.00	-1.08	15.81	0.04
836.40	-30.79	-48.28	0.00	-0.93	16.56	0.05
848.80	-31.36	-48.35	0.00	-0.76	16.23	0.04
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-33.04	-47.97	0.00	-1.08	13.85	0.02
836.40	-33.28	-48.01	0.00	-0.93	13.80	0.02
848.80	-33.42	-48.05	0.00	-0.76	13.87	0.02

GSM850 (EDGE 12) Radiated Power ERP for 7527S						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-31.99	-48.12	0.00	-1.08	15.05	0.03
836.40	-31.61	-48.28	0.00	-0.93	15.74	0.04
848.80	-31.24	-48.35	0.00	-0.76	16.35	0.04
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-34.73	-47.97	0.00	-1.08	12.16	0.02
836.40	-34.41	-48.01	0.00	-0.93	12.67	0.02
848.80	-34.26	-48.05	0.00	-0.76	13.03	0.02



3.2.6 Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP for 7527C						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-25.45	-51.88	0.00	1.96	28.39	0.69
1880.00	-27.37	-52.99	0.00	2.00	27.62	0.58
1909.80	-30.16	-54.28	0.00	1.98	26.10	0.41
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-23.26	-52.13	0.00	1.96	30.83	1.21
1880.00	-24.89	-53.17	0.00	2.00	30.28	1.07
1909.80	-26.96	-54.13	0.00	1.98	29.15	0.82

GSM1900 (GSM) Radiated Power EIRP for 7527S						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-24.37	-51.88	0.00	1.96	29.47	0.89
1880.00	-26.09	-52.99	0.00	2.00	28.90	0.78
1909.80	-29.40	-54.28	0.00	1.98	26.86	0.49
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-24.52	-52.13	0.00	1.96	29.54	0.90
1880.00	-25.76	-53.17	0.00	2.00	29.41	0.87
1909.80	-27.68	-54.13	0.00	1.98	28.43	0.70



GSM1900 (EDGE) Radiated Power EIRP for 7527C						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-32.03	-51.88	0.00	1.96	21.81	0.15
1880.00	-33.42	-52.99	0.00	2.00	21.57	0.14
1909.80	-35.79	-54.28	0.00	1.98	20.47	0.11
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-32.83	-52.13	0.00	1.96	21.26	0.13
1880.00	-34.18	-53.17	0.00	2.00	20.99	0.13
1909.80	-35.24	-54.13	0.00	1.98	20.87	0.12

GSM1900 (EDGE) Radiated Power EIRP for 7527S						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-38.90	-51.88	0.00	1.96	14.94	0.03
1880.00	-40.93	-52.99	0.00	2.00	14.06	0.03
1909.80	-40.68	-54.28	0.00	1.98	15.58	0.04
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-35.88	-52.13	0.00	1.96	18.21	0.07
1880.00	-37.02	-53.17	0.00	2.00	18.15	0.07
1909.80	-38.70	-54.13	0.00	1.98	17.41	0.06



3.3 Field Strength of Spurious Radiation Measurement

3.3.1 Description of Field Strength of Spurious Radiated Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA / EIA-603-C-2004. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

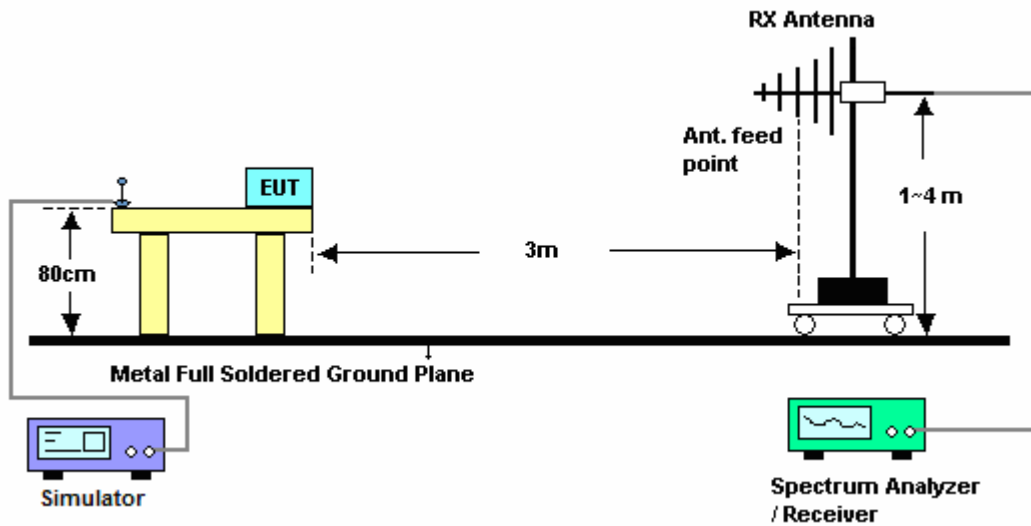
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The EUT was placed on a rotatable wooden table with 0.8 meter about ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. Emission level (dBm) = output power + substitution Gain.

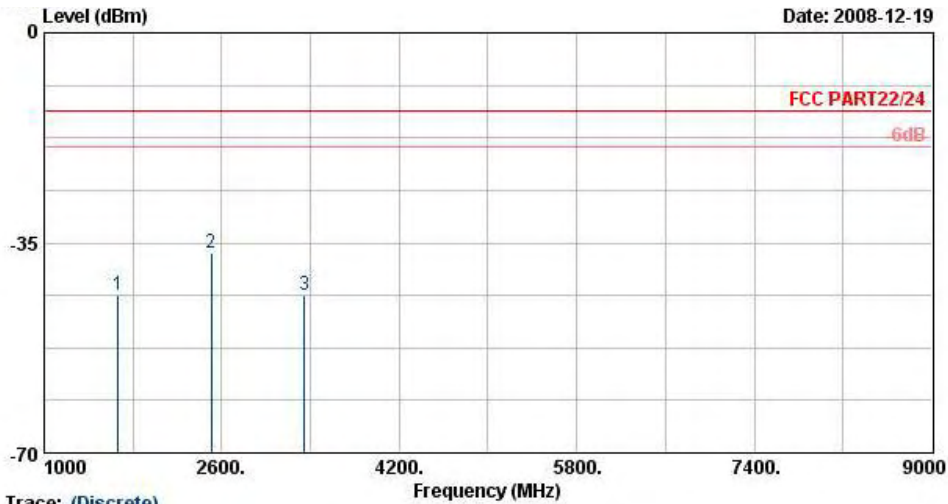
3.3.4 Test Setup





3.3.5 Test Result of Field Strength of Spurious Radiated

Band :	GSM850	Temperature :	27~29°C
Test Mode :	GSM Link for 7527C	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

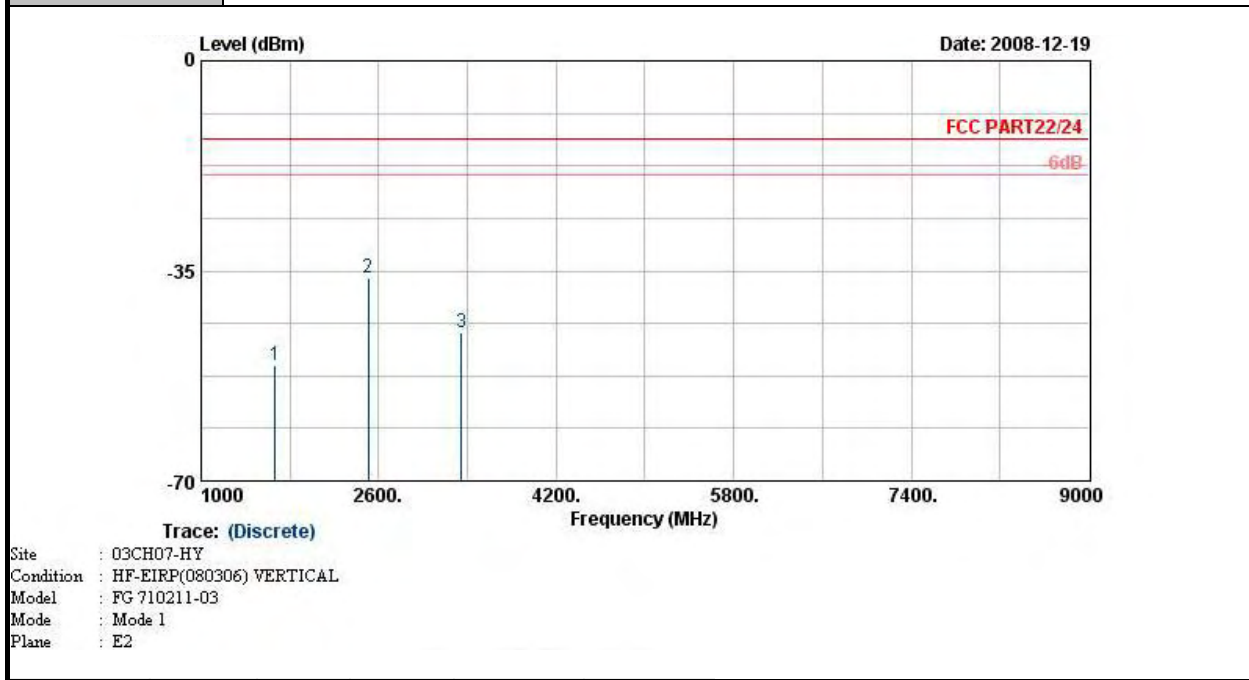


Site : 03CH07-HY
 Condition : HF-EIRP(080306) HORIZONTAL
 Model : FG 710211-03
 Mode : Mode 1
 Plane : E2

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-43.63	-13	-30.63	-51.12	-42.64	3.39	4.55	H	Pass
2509	-36.70	-13	-23.70	-47.74	-36.76	3.71	5.92	H	Pass
3346	-43.82	-13	-30.82	-52	-45.75	3.13	7.21	H	Pass



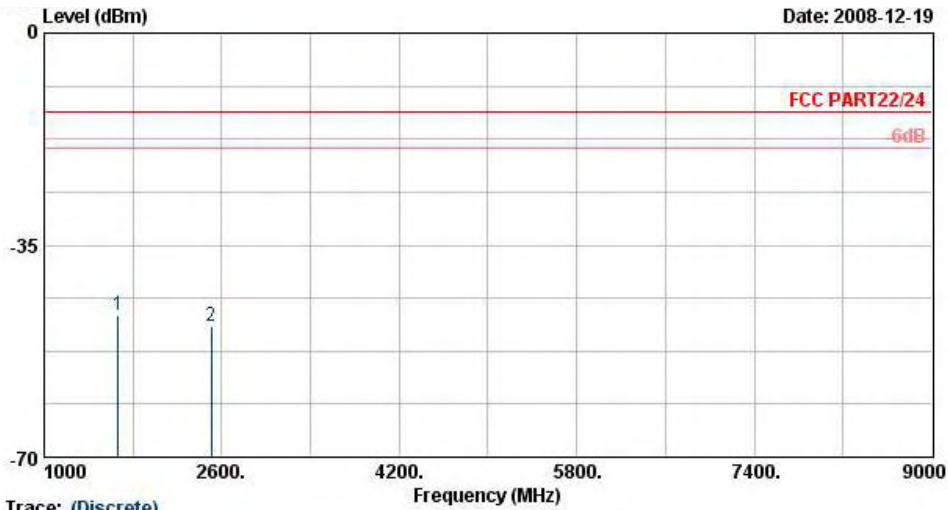
Band :	GSM850	Temperature :	27~29°C
Test Mode :	GSM Link for 7527C	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-50.82	-13	-37.82	-55.14	-49.44	3.39	4.16	V	Pass
2509	-36.25	-13	-23.25	-47.72	-36.11	3.71	5.72	V	Pass
3346	-45.21	-13	-32.21	-55.93	-47.41	3.13	7.48	V	Pass



Band :	GSM850	Temperature :	27~29°C
Test Mode :	EDGE Link for 7527S	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

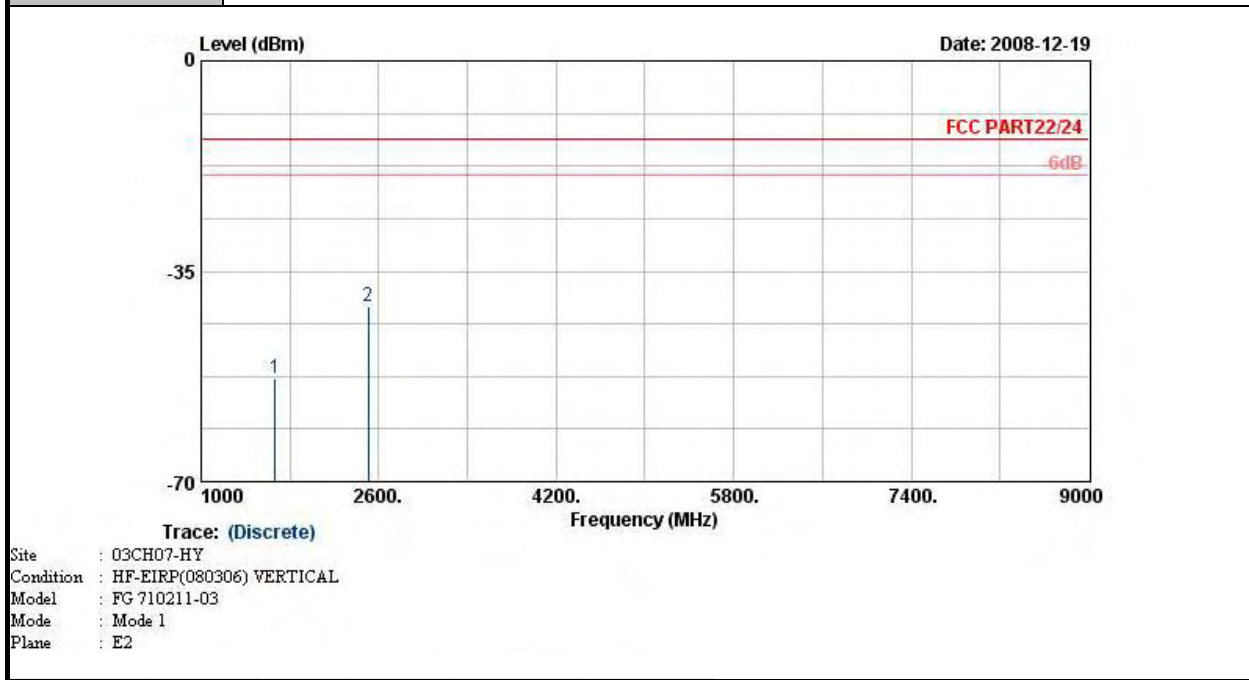


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : HF-EIRP(080306) HORIZONTAL
 Model : FG 710211-03
 Mode : Mode 1
 Plane : E2

Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-46.49	-13	-33.49	-53.36	-45.5	3.39	4.55	H	Pass
2509	-48.31	-13	-35.31	-55.39	-48.37	3.71	5.92	H	Pass



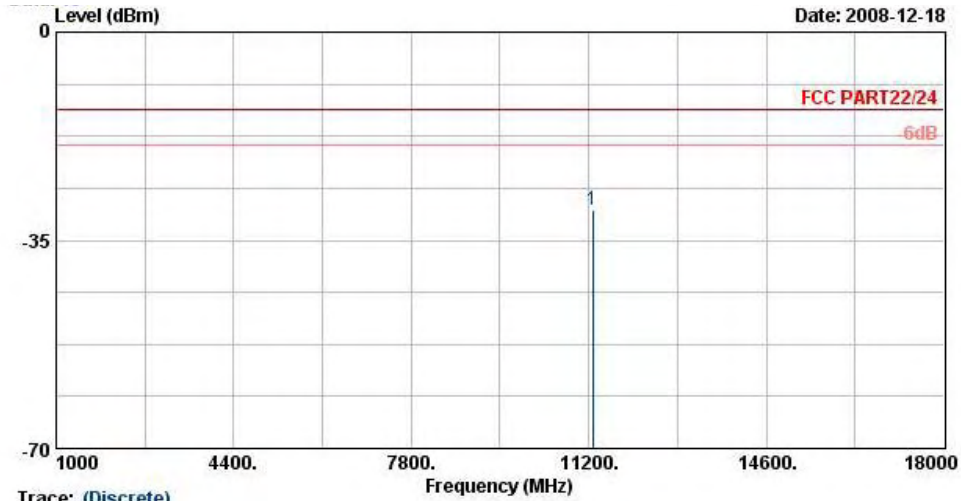
Band :	GSM850	Temperature :	27~29°C
Test Mode :	EDGE Link for 7527S	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
1669	-52.72	-13	-39.72	-59.56	-51.34	3.39	4.16	V	Pass
2509	-40.81	-13	-27.81	-51.78	-40.67	3.71	5.72	V	Pass



Band :	GSM1900	Temperature :	27~29°C
Test Mode :	GSM Link for 7527C	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

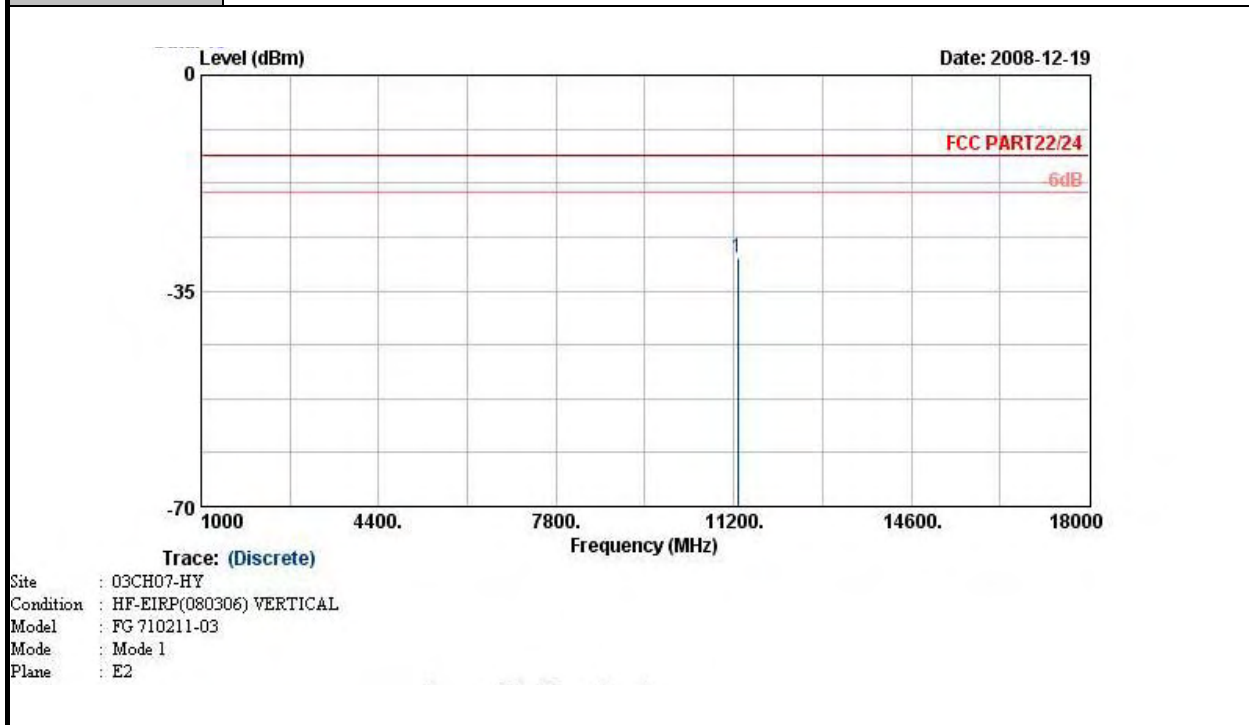


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : HF-EIRP(080306) HORIZONTAL
 Model : FG 710211-03
 Mode : Mode 1
 Plane : E2

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
11280	-29.80	-13	-16.80	-62.35	-32.08	8.48	10.76	H	Pass



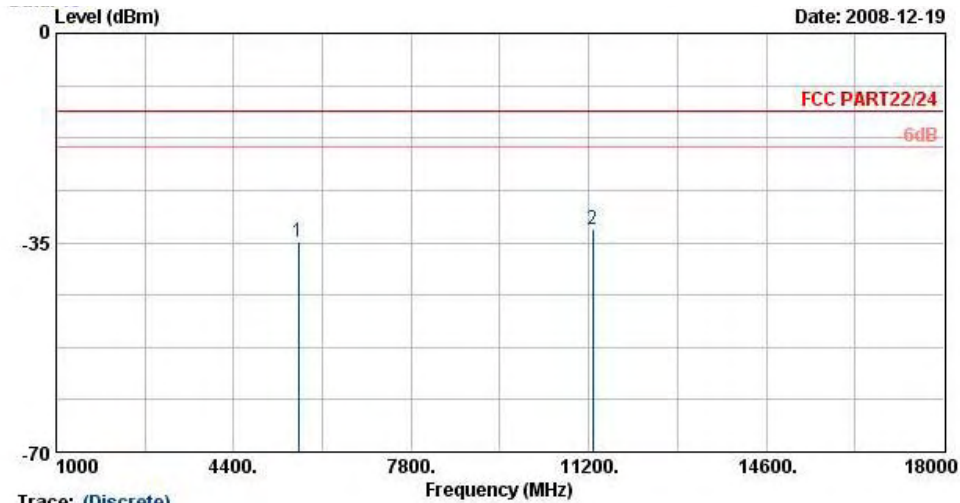
Band :	GSM1900	Temperature :	27~29°C
Test Mode :	GSM Link for 7527C	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
11280	-29.60	-13	-16.60	-62.63	-32.48	8.48	11.36	V	Pass



Band :	GSM1900	Temperature :	27~29°C
Test Mode :	EDGE Link for 7527S	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

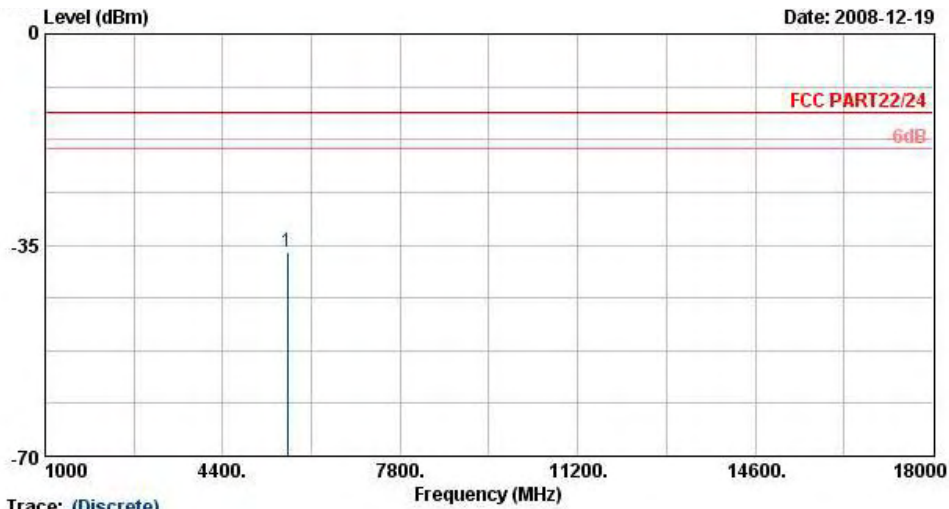


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : HF-EIRP(080306) HORIZONTAL
 Model : FG 710211-03
 Mode : Mode 1
 Plane : E2

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5636	-34.74	-13	-21.74	-56.43	-39.68	3.87	8.81	H	Pass
11280	-32.75	-13	-19.75	-62.49	-35.03	8.48	10.76	H	Pass



Band :	GSM1900	Temperature :	27~29°C
Test Mode :	EDGE Link for 7527S	Relative Humidity :	45~47%
Test Engineer :	Key Wu	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Trace: (Discrete)
 Site : 03CH07-HY
 Condition : HF-EIRP(080306) VERTICAL
 Model : FG 710211-03
 Mode : Mode 1
 Plane : E2

Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)	Result
5636	-36.22	-13	-23.22	-58.35	-42.12	3.87	9.77	V	Pass



4 List of Measuring Equipments

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)
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 (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 Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	4.72				

6 Certification of TAF 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 Accreditation Program for Designated Testing Laboratory
Specific Accreditation Program	: 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.