



Variant FCC Test Report

APPLICANT : Acer Inc.
EQUIPMENT : Notebook Computer
BRAND NAME : Acer
MODEL NAME : KAV60, AOD210, AOD250, KAV80, KAVA0
FCC ID : HLZUNDP-1Q
STANDARD : 47 CFR Part 2, 22(H), 24(E)
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
WCDMA Band V : 826.4 ~ 846.6 MHz / 871.4 ~ 891.6 MHz
WCDMA Band II : 1852.4 ~ 1907.6 MHz / 1932.4 ~ 1987.6 MHz
CDMA2000 Cellular : 824.70 ~ 848.31 MHz / 869.70 ~ 893.31 MHz
CDMA2000 PCS : 1851.25 ~ 1908.75 MHz / 1931.25 ~ 1988.75 MHz
MAX. ERP/EIRP POWER : GSM850 (GPRS 8) : 0.90 W
GSM850 (EDGE 8) : 0.25 W
GSM1900 (GPRS 8) : 0.17 W
GSM1900 (EDGE 8) : 0.08 W
WCDMA Band V (WCDMA) : 0.10 W
WCDMA Band II (WCDMA) : 0.05 W
CDMA2000 Cellular (1xEV-DO) : 0.14 W
CDMA2000 PCS (1xEV-DO) : 0.27 W

This is a variant report which is only valid combined with the Integrated WWAN Module (Qualcomm / model name: Gobi 1000, FCC ID: J9CUNDP-1) Report. The product sample received on Mar. 16, 2009 and completely tested on Apr. 23, 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 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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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	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Field Strength of Spurious Radiation	< $43+10\log_{10}(P[\text{Watts}])$	PASS



1 General Description

1.1 Applicant

Acer Inc.

8F, No. 88, Sec.1, Hsin Tai Wu Rd., Hsichih Taipei Hsien 221 Taiwan, R.O.C.

1.2 Manufacturer

1. Compal Electronics (China) Co., Ltd.

No. 988, Tong Feng East Rd., Kunshan Economics & Technical Development Zone, Kunshan, Jiangsu, P.R. China

2. Compal Information (Kunshan) Co., Ltd.

The Third Street, Kunshan Export Processing Zone, Jiangsu, P.R. China

3. Compal Information Technology (Kunshan) Co., Ltd.

No. 58, The 1st Street, Kunshan Export Processing Zone, Jiangsu, P.R. China

4. Compal Electronics Technology (Kunshan) Co., Ltd.

No. 25, The Third Street, Kunshan Export Processing Zone, Jiangsu, P.R. China

5. Kunshang Botai Electronics Co., Ltd.

No. 988, Tong Feng East Rd., Kunshan Economic & Technical Development Zone, Kunshan, Jiangsu, P.R. China



1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Notebook Computer
Brand Name	Acer
Model Name	KAV60, AOD210, AOD250, KAV80, KAVA0
FCC ID	HLZUNDP-1Q
Tx Frequency	GSM850 : 824 MHz ~ 849 MHz GSM1900 : 1850 MHz ~ 1910 MHz WCDMA Band V : 824 MHz ~ 849 MHz WCDMA Band II : 1850 MHz ~ 1910 MHz CDMA2000 Cellular : 824 MHz ~ 849 MHz CDMA2000 PCS : 1850 MHz ~1910 MHz
Rx Frequency	GSM850 : 869 MHz ~ 894 MHz GSM1900 : 1930 MHz ~ 1990 MHz WCDMA Band V : 869 MHz ~ 894 MHz WCDMA Band II : 1930 MHz ~ 1990 MHz CDMA2000 Cellular : 869 MHz ~ 894 MHz CDMA2000 PCS : 1930 MHz ~ 1990 MHz
Maximum ERP/EIRP	GSM850 (GPRS 8) : 0.90 W (29.53 dBm) GSM850 (EDGE 8) : 0.25 W (23.92 dBm) GSM1900 (GPRS 8) : 0.17 W (22.24 dBm) GSM1900 (EDGE 8) : 0.08 W (18.78 dBm) WCDMA Band V (WCDMA) : 0.10 W (19.87 dBm) WCDMA Band II (WCDMA) : 0.05 W (16.54 dBm) CDMA2000 Cellular (1xEV-DO) : 0.14 W (21.44 dBm) CDMA2000 PCS (1xEV-DO) : 0.27 W (24.25 dBm)
Antenna Type	PIFA Antenna
Type of Modulation	GSM / GPRS : GMSK EDGE : 8PSK CDMA / WCDMA : QPSK HSDPA : QPSK / 16QAM HSUPA : BPSK
EUT Stage	Production Unit



List of Accessory:

Specification of Accessory		
AC Adapter	Brand Name	HIPRO
	Model Name	HP-A0301R3
	Power Rating	I/P:100-240Vac, 50-60Hz, 1000mA; O/P: 19Vdc, 1.58A, 30W
	AC Power Cord Type	1.5 meter shielded cable without ferrite core
Battery	Brand Name	Panasonic
	Model Name	UM08A51
	Power Rating	10.8Vdc, 2200mAh, 24Wh
WWAN Module	Type	Li-ion
	Brand Name	Qualcomm
WLAN Module	Model Name	Gobi 1000
	Brand Name	Atheros
WLAN Module	Model Name	AR5BHB63

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.
3. For other wireless features of this EUT, the 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: +886-3-327-3456 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:

- ♦ Preliminary Guidance for Receiving Applications for Certification of 3G Device. May 09, 2006.
- ♦ 47 CFR Part 2, 22(H), 24(E)
- ♦ ANSI C63.4-2003
- ♦ ANSI / TIA / EIA-603-C-2004
- ♦ IC RSS-132 Issue 2
- ♦ IC RSS-133 Issue 5

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 Cord
1.	System Simulator	R&S	CMU200	N/A	N/A	Unshielded, 1.8 m

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, WCDMA Band V and CDMA2000 Cellular.
2. 30MHz to 19000 MHz for GSM1900, WCDMA Band II and CDMA2000 PCS.

Test Modes	
Band	Radiated TCs
GSM 850	<ul style="list-style-type: none"> ■ GPRS 8 Link Mode ■ EDGE 8 Link Mode ■ EDGE 8 Link + WLAN Link Mode
GSM 1900	<ul style="list-style-type: none"> ■ GPRS 8 Link Mode ■ EDGE 8 Link Mode
WCDMA Band V	<ul style="list-style-type: none"> ■ WCDMA Link Mode
WCDMA Band II	<ul style="list-style-type: none"> ■ WCDMA Link Mode
CDMA2000 Cellular	<ul style="list-style-type: none"> ■ 1xEV-DO Rev. A Link Mode
CDMA2000 PCS	<ul style="list-style-type: none"> ■ 1xEV-DO Rev. A Link Mode

Note:

1. The conducted test item can be referred to WWAN module (Qualcomm / model name: Gobi 1000, FCC ID: J9CUNDP-1) report.
2. The maximum power levels are GPRS multi-slot class 8 for GMSK link, EDGE multi-slot class 8 for 8PSK link, RMC 12.2K mode for WCDMA, and 1xEV-DO mode for CDMA2000, only these modes were used for all tests. The power tables are listed as follows:

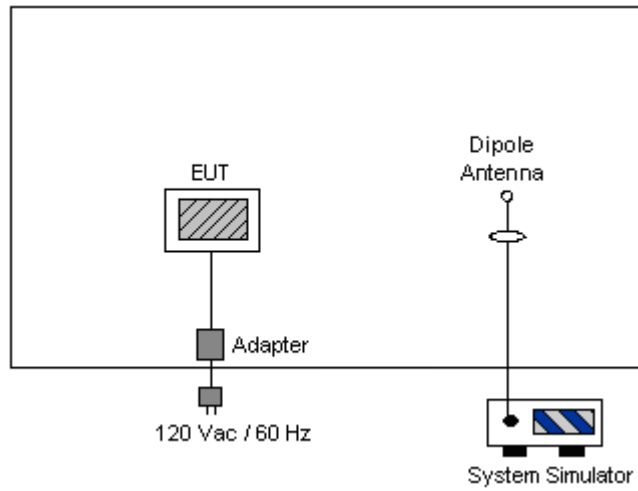
Conducted Power (dBm)							
Mode	Band Channel	GSM 850			GSM 1900		
		128	189	251	512	661	810
GPRS 8		32.10	32.23	32.42	29.22	29.28	29.14
GPRS 10		32.02	32.15	32.36	29.12	29.16	29.06
EGPRS 8		26.53	26.57	26.67	25.74	25.79	25.64
EGPRS 10		26.53	26.55	26.66	25.69	25.76	25.60



		Conducted Power (dBm)					
Mode	Band Channel	WCDMA Band V (dBm)			WCDMA Band II (dBm)		
		4132	4182	4233	9262	9400	9538
RMC 12.2K		24.53	24.35	24.29	23.99	24.15	23.96
HSDPA	Subtest-1	24.37	24.25	24.14	23.94	24.09	23.95
	Subtest-2	23.85	23.68	23.56	23.38	23.13	23.06
	Subtest-3	23.79	23.72	23.61	23.45	23.55	23.61
	Subtest-4	23.37	23.38	23.21	22.96	22.77	22.69
HSUPA	Subtest-1	23.56	23.79	23.56	23.77	23.88	23.45
	Subtest-2	21.96	21.84	21.52	21.54	21.70	21.45
	Subtest-3	22.95	22.83	22.62	22.73	22.76	22.47
	Subtest-4	22.50	22.21	22.16	22.09	22.09	21.86
	Subtest-5	23.56	23.73	23.51	23.68	23.85	23.42

		Conducted Power (dBm)					
Mode	Band Channel	CDMA2000 Cellular			CDMA2000 PCS		
		1013	384	777	25	600	1175
1xRTT RC1+SO55		24.06	23.99	23.80	24.18	24.29	24.19
1xRTT RC3+SO55		24.59	24.54	24.08	24.20	24.41	24.65
1xRTT RC3+SO32		23.51	23.76	23.31	23.62	23.64	23.42
1xEV-DO RTAP 9.6K		24.56	24.40	24.30	24.14	24.46	24.15
1xEV-DO RTAP 38.4K		24.63	24.47	24.27	24.24	24.49	24.23
1xEV-DO RTAP 153.6K		24.59	24.36	24.22	24.39	24.53	24.33
1xEV-DO RETAP 128K		24.75	24.55	24.46	24.34	24.62	24.35
1xEV-DO RETAP 2048K		25.00	24.72	24.59	24.64	24.88	24.73
1xEV-DO RETAP 12288K		23.01	22.66	20.21	19.03	19.54	18.86

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.

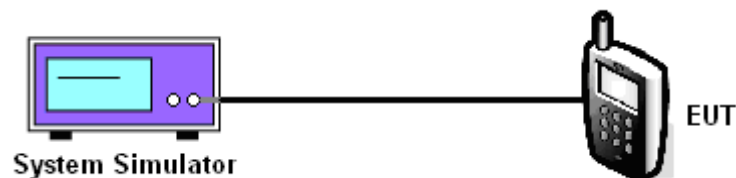
3.1.2 Measuring Instruments

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 Band					
Modes	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	
GPRS 8	128 (Low)	824.2	32.10	1.62	
	189 (Mid)	836.4	32.23	1.67	
	251 (High)	848.8	32.42	1.75	
EDGE 8	128 (Low)	824.2	26.53	0.45	
	189 (Mid)	836.4	26.57	0.45	
	251 (High)	848.8	26.67	0.47	
WCDMA Band V	12.2k bps	4132 (Low)	826.4	24.53	0.28
		4182 (Mid)	836.4	24.35	0.27
		4233 (High)	846.6	24.29	0.27
	HSDPA Subtest-1	4132 (Low)	826.4	24.37	0.27
		4182 (Mid)	836.4	24.25	0.27
		4233 (High)	846.6	24.14	0.26
	HSDPA Subtest-2	4132 (Low)	826.4	23.85	0.24
		4182 (Mid)	836.4	23.68	0.23
		4233 (High)	846.6	23.56	0.23
	HSDPA Subtest-3	4132 (Low)	826.4	23.79	0.24
		4182 (Mid)	836.4	23.72	0.24
		4233 (High)	846.6	23.61	0.23
	HSDPA Subtest-4	4132 (Low)	826.4	23.37	0.22
		4182 (Mid)	836.4	23.38	0.22
		4233 (High)	846.6	23.21	0.21
	HSUPA Subtest-1	4132 (Low)	826.4	23.56	0.23
		4182 (Mid)	836.4	23.79	0.24
		4233 (High)	846.6	23.56	0.23
	HSUPA Subtest-2	4132 (Low)	826.4	21.96	0.16
		4182 (Mid)	836.4	21.84	0.15
		4233 (High)	846.6	21.52	0.14
	HSUPA Subtest-3	4132 (Low)	826.4	22.95	0.20
		4182 (Mid)	836.4	22.83	0.19
		4233 (High)	846.6	22.62	0.18
	HSUPA Subtest-4	4132 (Low)	826.4	22.50	0.18
		4182 (Mid)	836.4	22.21	0.17
		4233 (High)	846.6	22.16	0.16
	HSUPA Subtest-5	4132 (Low)	826.4	23.56	0.23
		4182 (Mid)	836.4	23.73	0.24
		4233 (High)	846.6	23.51	0.22



Cellular Band					
Test Mode	Test Status	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
CDMA 2000 1xRTT	FCH_RC1	1013 (Low)	824.70	24.06	0.25
		384 (Mid)	836.52	23.99	0.25
		777 (High)	848.31	23.80	0.24
	FCH_RC3	1013 (Low)	824.70	24.59	0.29
		384 (Mid)	836.52	24.54	0.28
		777 (High)	848.31	24.08	0.26
	FCH+SCH_RC3	1013 (Low)	824.70	23.51	0.22
		384 (Mid)	836.52	23.76	0.24
		777 (High)	848.31	23.31	0.21
CDMA 2000 1xEV-DO (Rev. 0)	RTAP_9.6Kbps	1013 (Low)	824.70	24.56	0.29
		384 (Mid)	836.52	24.40	0.28
		777 (High)	848.31	24.30	0.27
	RTAP_38.4Kbps	1013 (Low)	824.70	24.63	0.29
		384 (Mid)	836.52	24.47	0.28
		777 (High)	848.31	24.27	0.27
	RTAP_153.6Kbps	1013 (Low)	824.70	24.59	0.29
		384 (Mid)	836.52	24.36	0.27
		777 (High)	848.31	24.22	0.26
CDMA 2000 1xEV-DO (Rev. A)	RETAP_128Kbps	1013 (Low)	824.70	24.75	0.30
		384 (Mid)	836.52	24.55	0.29
		777 (High)	848.31	24.46	0.28
	RETAP_2048Kbps	1013 (Low)	824.70	25.00	0.32
		384 (Mid)	836.52	24.72	0.30
		777 (High)	848.31	24.59	0.29
	RETAP_12288Kbps	1013 (Low)	824.70	23.01	0.20
		384 (Mid)	836.52	22.66	0.18
		777 (High)	848.31	20.21	0.10



PCS Band					
Modes	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)	
GPRS 8	512 (Low)	1850.2	29.22	0.84	
	661 (Mid)	1880.0	29.28	0.85	
	810 (High)	1909.8	29.14	0.82	
EDGE 8	512 (Low)	1850.2	25.74	0.38	
	661 (Mid)	1880.0	25.79	0.38	
	810 (High)	1909.8	25.64	0.37	
WCDMA Band II	12.2k bps	9262 (Low)	1852.4	23.99	0.25
		9400 (Mid)	1880.0	24.15	0.26
		9538 (High)	1907.6	23.96	0.25
	HSDPA Subtest-1	9262 (Low)	1852.4	23.94	0.25
		9400 (Mid)	1880.0	24.09	0.26
		9538 (High)	1907.6	23.95	0.25
	HSDPA Subtest-2	9262 (Low)	1852.4	23.38	0.22
		9400 (Mid)	1880.0	23.13	0.21
		9538 (High)	1907.6	23.06	0.20
	HSDPA Subtest-3	9262 (Low)	1852.4	23.45	0.22
		9400 (Mid)	1880.0	23.55	0.23
		9538 (High)	1907.6	23.61	0.23
	HSDPA Subtest-4	9262 (Low)	1852.4	22.96	0.20
		9400 (Mid)	1880.0	22.77	0.19
		9538 (High)	1907.6	22.69	0.19
	HSUPA Subtest-1	9262 (Low)	1852.4	23.77	0.24
		9400 (Mid)	1880.0	23.88	0.24
		9538 (High)	1907.6	23.45	0.22
	HSUPA Subtest-2	9262 (Low)	1852.4	21.54	0.14
		9400 (Mid)	1880.0	21.70	0.15
		9538 (High)	1907.6	21.45	0.14
	HSUPA Subtest-3	9262 (Low)	1852.4	22.73	0.19
		9400 (Mid)	1880.0	22.76	0.19
		9538 (High)	1907.6	22.47	0.18
	HSUPA Subtest-4	9262 (Low)	1852.4	22.09	0.16
		9400 (Mid)	1880.0	22.09	0.16
		9538 (High)	1907.6	21.86	0.15
	HSUPA Subtest-5	9262 (Low)	1852.4	23.68	0.23
		9400 (Mid)	1880.0	23.85	0.24
		9538 (High)	1907.6	23.42	0.22



PCS Band					
Test Mode	Test Status	Channel	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (Watts)
CDMA 2000 1xRTT	FCH_RC1	25 (Low)	1851.25	24.18	0.26
		600 (Mid)	1880.00	24.29	0.27
		1175 (High)	1908.75	24.19	0.26
	FCH_RC3	25 (Low)	1851.25	24.20	0.26
		600 (Mid)	1880.00	24.41	0.28
		1175 (High)	1908.75	24.65	0.29
	FCH+SCH_RC3	25 (Low)	1851.25	23.62	0.23
		600 (Mid)	1880.00	23.64	0.23
		1175 (High)	1908.75	23.42	0.22
CDMA 2000 1xEV-DO (Rev. 0)	RTAP_9.6Kbps	25 (Low)	1851.25	24.14	0.26
		600 (Mid)	1880.00	24.46	0.28
		1175 (High)	1908.75	24.15	0.26
	RTAP_38.4Kbps	25 (Low)	1851.25	24.24	0.27
		600 (Mid)	1880.00	24.49	0.28
		1175 (High)	1908.75	24.23	0.26
	RTAP_153.6Kbps	25 (Low)	1851.25	24.39	0.27
		600 (Mid)	1880.00	24.53	0.28
		1175 (High)	1908.75	24.33	0.27
CDMA 2000 1xEV-DO (Rev. A)	RETAP_128Kbps	25 (Low)	1851.25	24.34	0.27
		600 (Mid)	1880.00	24.62	0.29
		1175 (High)	1908.75	24.35	0.27
	RETAP_2048Kbps	25 (Low)	1851.25	24.64	0.29
		600 (Mid)	1880.00	24.88	0.31
		1175 (High)	1908.75	24.73	0.30
	RETAP_12288Kbps	25 (Low)	1851.25	19.03	0.08
		600 (Mid)	1880.00	19.54	0.09
		1175 (High)	1908.75	18.86	0.08

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. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$

P_s (dBm) : Input power to substitution antenna.

G_s (dBi or dBd) : Substitution antenna Gain.

$E_t = R_t + AF$

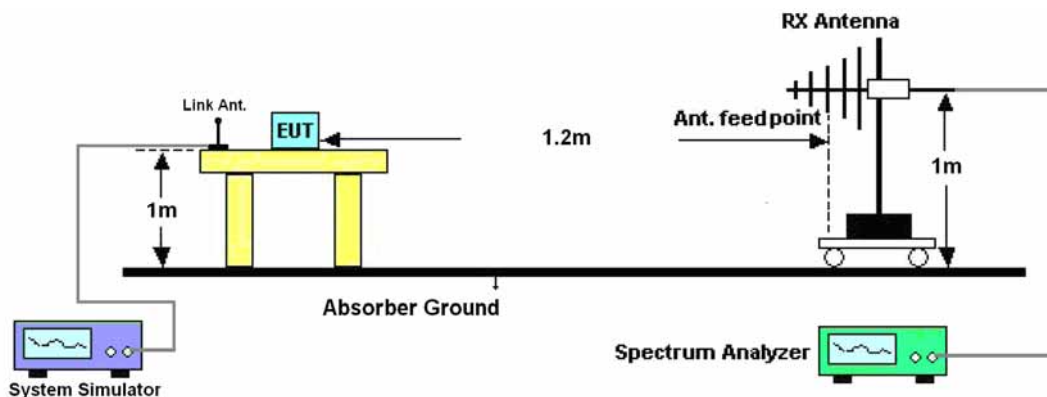
$E_s = R_s + AF$

AF (dB/m) : Receive antenna factor

R_t : The highest received signal in spectrum analyzer for EUT.

R_s : The highest received signal in spectrum analyzer for substitution antenna.

3.2.4 Test Setup





3.2.5 Test Result of ERP

GSM850 (GPRS 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-20.77	-48.12	0.00	-1.08	26.27	0.42
836.40	-19.15	-48.28	0.00	-0.93	28.20	0.66
848.80	-18.06	-48.35	0.00	-0.76	29.53	0.90
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-22.26	-47.97	0.00	-1.08	24.63	0.29
836.40	-20.33	-48.01	0.00	-0.93	26.75	0.47
848.80	-19.00	-48.05	0.00	-0.76	28.29	0.67

GSM850 (EDGE 8) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-26.26	-48.12	0.00	-1.08	20.78	0.12
836.40	-24.75	-48.28	0.00	-0.93	22.60	0.18
848.80	-23.67	-48.35	0.00	-0.76	23.92	0.25
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.20	-27.75	-47.97	0.00	-1.08	19.14	0.08
836.40	-26.01	-48.01	0.00	-0.93	21.07	0.13
848.80	-24.59	-48.05	0.00	-0.76	22.70	0.19



WCDMA Band V (WCDMA) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-28.78	-48.12	0.00	-1.08	18.26	0.07
836.40	-28.45	-48.28	0.00	-0.93	18.90	0.08
846.60	-27.72	-48.35	0.00	-0.76	19.87	0.10
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
826.40	-30.12	-47.97	0.00	-1.08	16.77	0.05
836.40	-29.78	-48.01	0.00	-0.93	17.30	0.05
846.60	-28.86	-48.05	0.00	-0.76	18.43	0.07

CDMA2000 Cellular (1xEV-DO Rev. A) Radiated Power ERP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.70	-26.07	-48.12	0.00	-1.08	20.97	0.13
836.52	-25.91	-48.28	0.00	-0.93	21.44	0.14
848.31	-26.56	-48.35	0.00	-0.76	21.03	0.13
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	ERP (W)
824.70	-26.99	-47.97	0.00	-1.08	19.90	0.10
836.52	-26.96	-48.01	0.00	-0.93	20.12	0.10
848.31	-27.32	-48.05	0.00	-0.76	19.97	0.10



3.2.6 Test Result of EIRP

GSM1900 (GPRS 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-31.60	-51.88	0.00	1.96	22.24	0.17
1880.00	-34.28	-52.99	0.00	2.00	20.71	0.12
1909.80	-37.63	-54.28	0.00	1.98	18.63	0.07
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-32.21	-52.13	0.00	1.96	21.88	0.15
1880.00	-34.25	-53.17	0.00	2.00	20.92	0.12
1909.80	-37.03	-54.13	0.00	1.98	19.08	0.08

GSM1900 (EDGE 8) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-35.06	-51.88	0.00	1.96	18.78	0.08
1880.00	-37.73	-52.99	0.00	2.00	17.26	0.05
1909.80	-40.94	-54.28	0.00	1.98	15.32	0.03
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1850.20	-35.60	-52.13	0.00	1.96	18.49	0.07
1880.00	-37.70	-53.17	0.00	2.00	17.47	0.06
1909.80	-40.21	-54.13	0.00	1.98	15.90	0.04



WCDMA Band II (WCDMA) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-37.30	-51.88	0.00	1.96	16.54	0.05
1880.00	-39.91	-52.99	0.00	2.00	15.08	0.03
1907.60	-41.26	-54.28	0.00	1.98	15.00	0.03
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1852.40	-37.64	-52.13	0.00	1.96	16.45	0.04
1880.00	-40.48	-53.17	0.00	2.00	14.69	0.03
1907.60	-42.15	-54.13	0.00	1.98	13.96	0.02

CDMA2000 PCS (1xEV-DO Rev. A) Radiated Power EIRP						
Horizontal Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1851.25	-30.10	-51.88	0.00	1.96	23.74	0.24
1880.00	-30.74	-52.99	0.00	2.00	24.25	0.27
1908.75	-32.02	-54.28	0.00	1.98	24.24	0.27
Vertical Polarization						
Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	EIRP (W)
1851.25	-31.39	-52.13	0.00	1.96	22.70	0.19
1880.00	-31.40	-53.17	0.00	2.00	23.77	0.24
1908.75	-32.67	-54.13	0.00	1.98	23.44	0.22

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.

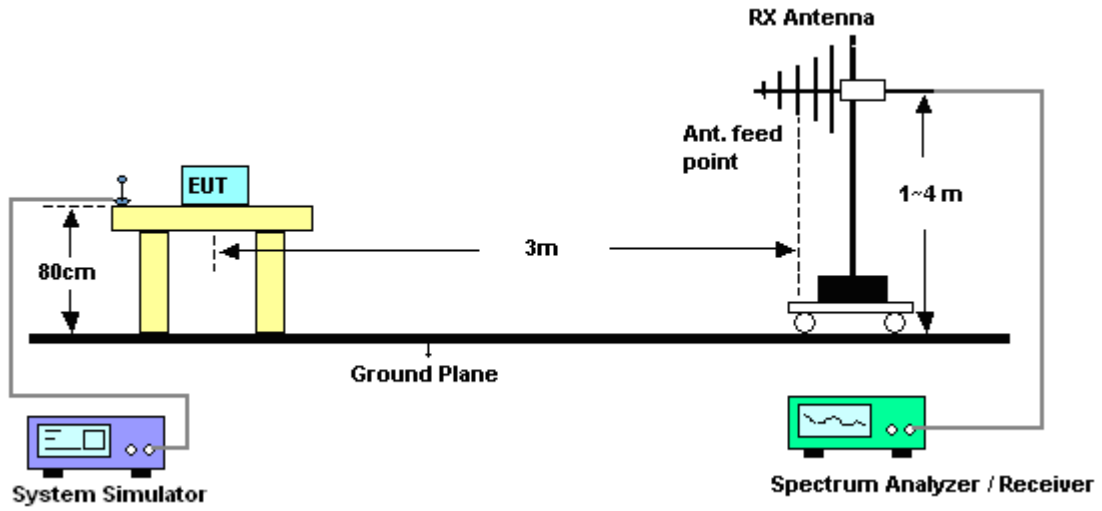
3.3.2 Measuring Instruments

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.

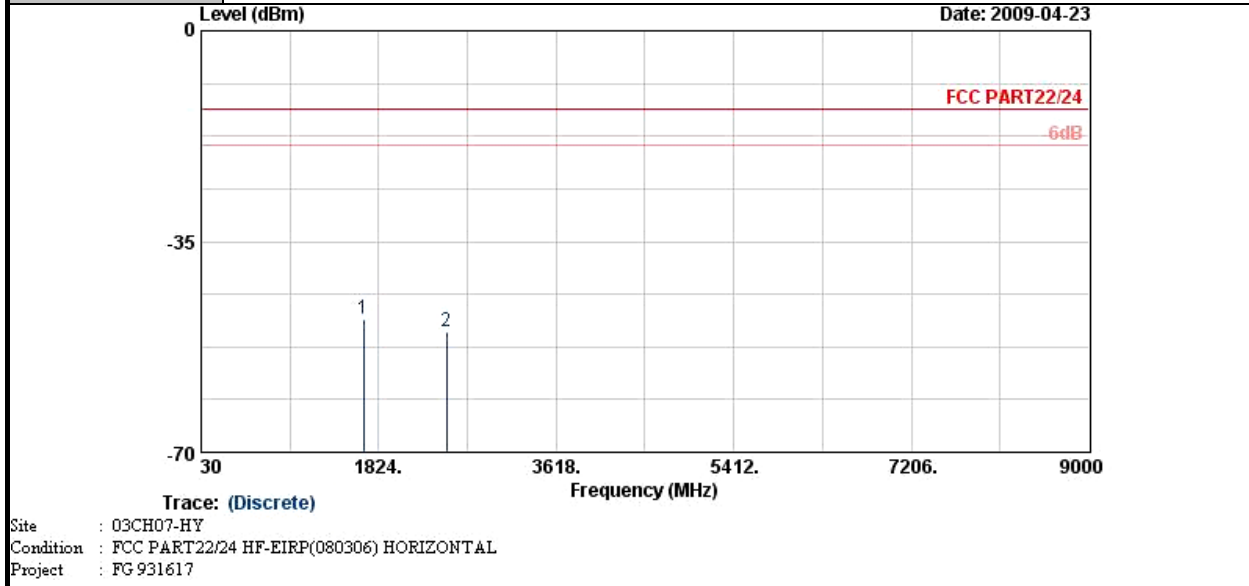
3.3.4 Test Setup





3.3.5 Test Result of Field Strength of Spurious Radiated

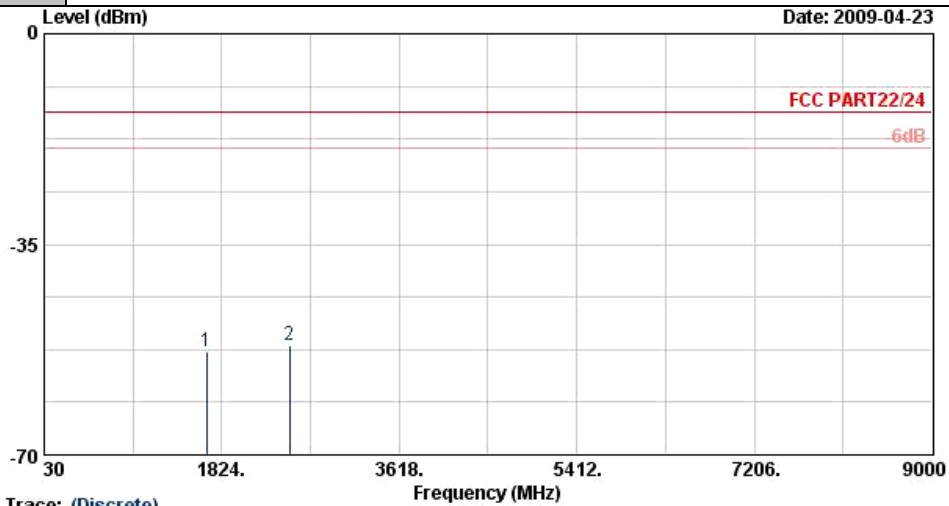
Band :	GSM850	Temperature :	22~24°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



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	-47.97	-13	-34.97	-55.27	-47.82	3.39	5.39	H	Pass
2509	-50.02	-13	-37.02	-56.83	-50.28	3.71	6.12	H	Pass



Band :	GSM850	Temperature :	22~24°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

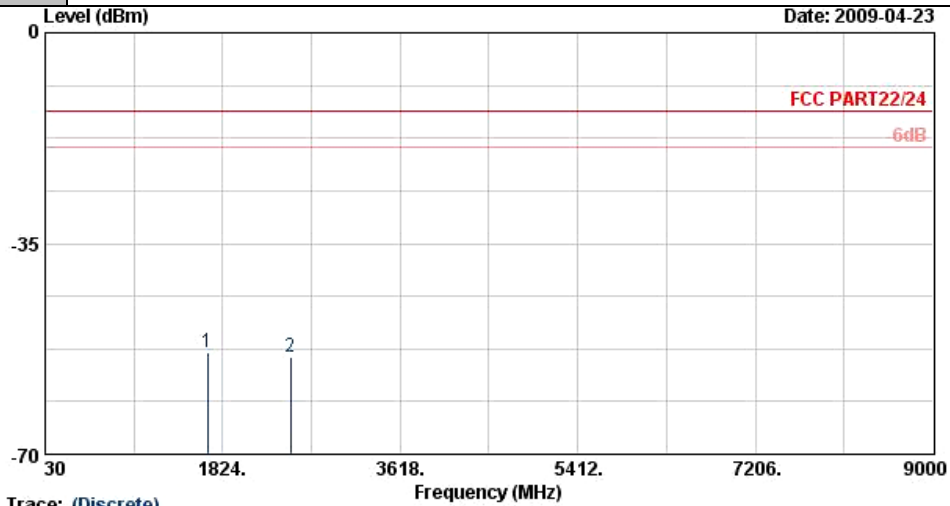


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-52.89	-13	-39.89	-57.85	-52.74	3.39	5.39	V	Pass
2509	-51.67	-13	-38.67	-60.88	-51.93	3.71	6.12	V	Pass



Band :	GSM850	Temperature :	22~24°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

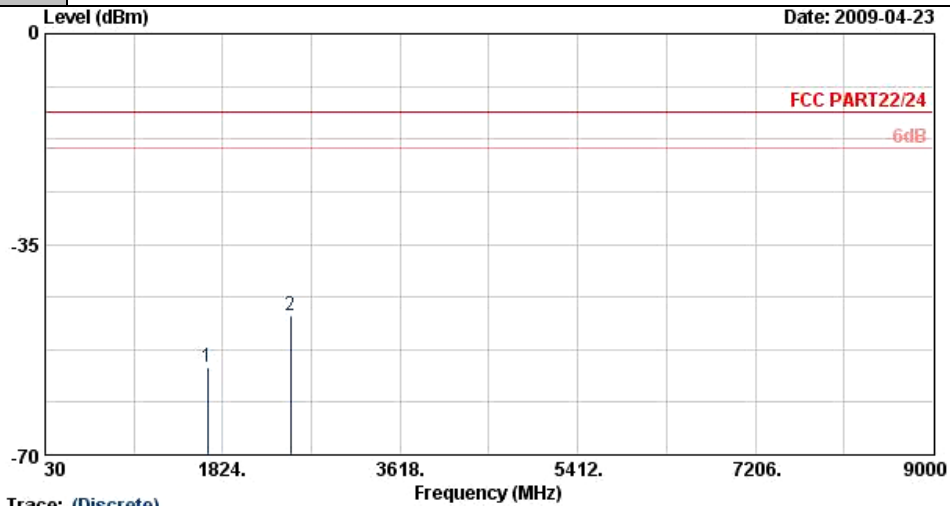


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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	-53.04	-13	-40.04	-58.89	-52.89	3.39	5.39	H	Pass
2509	-53.75	-13	-40.75	-60.44	-54.01	3.71	6.12	H	Pass



Band :	GSM850	Temperature :	22~24°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

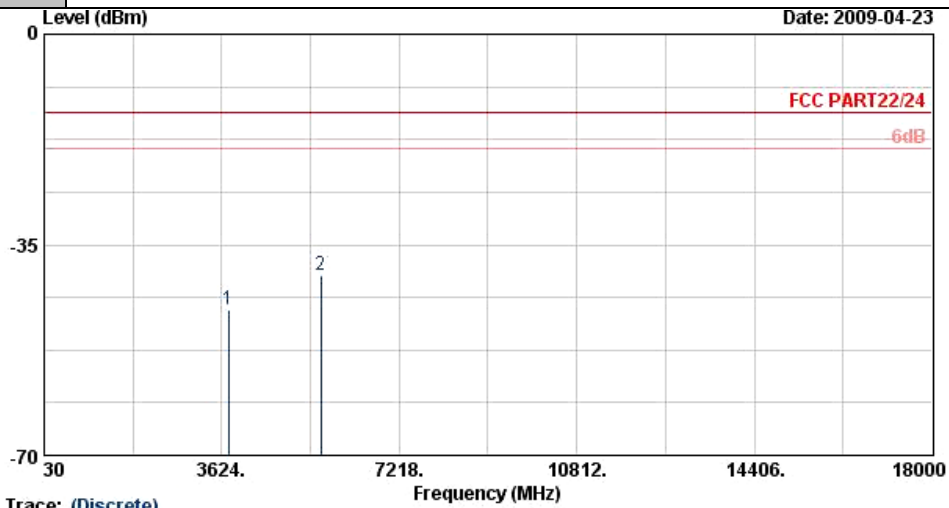


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-55.38	-13	-42.38	-59.31	-55.23	3.39	5.39	V	Pass
2509	-46.72	-13	-33.72	-56.96	-46.98	3.71	6.12	V	Pass



Band :	GSM1900	Temperature :	22~24°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

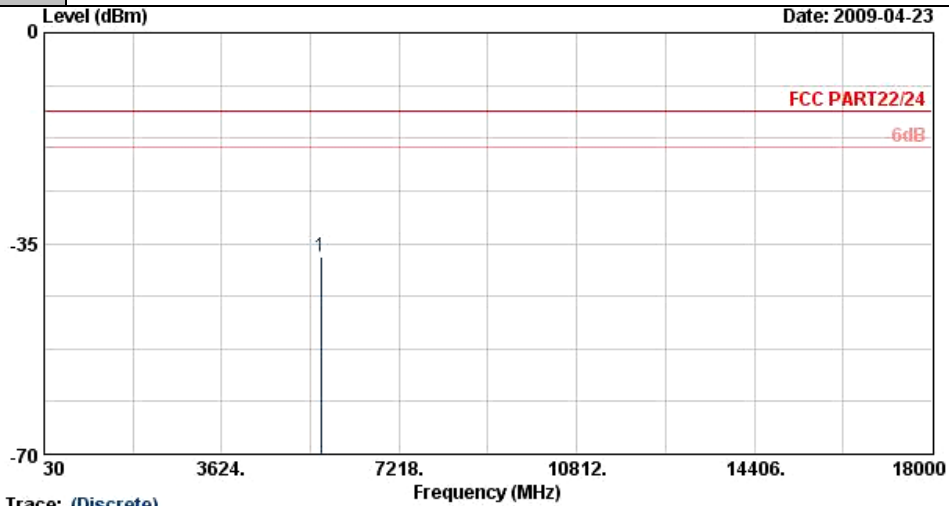


Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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
3760	-45.70	-13	-32.70	-60.97	-50.38	4.03	8.71	H	Pass
5636	-40.20	-13	-27.20	-61.75	-46.73	3.87	10.40	H	Pass



Band :	GSM1900	Temperature :	22~24°C
Test Mode :	GPRS 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

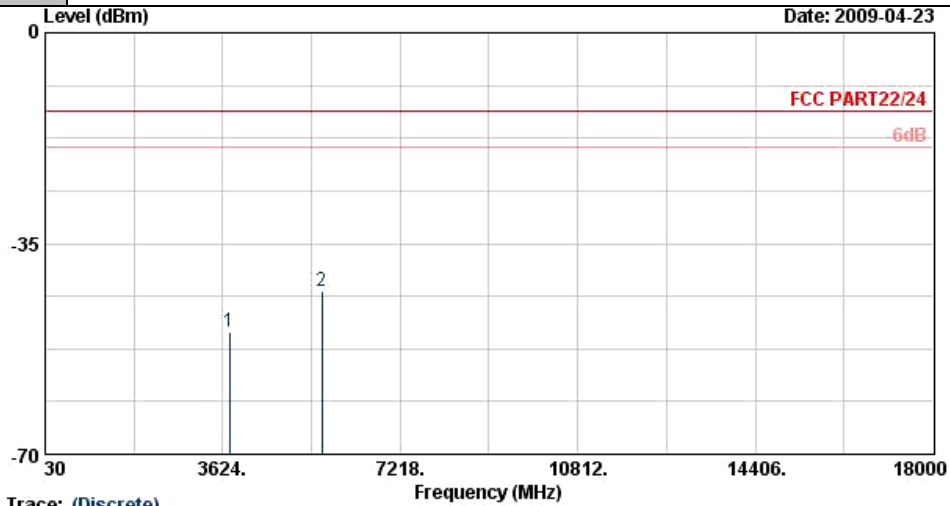


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-37.23	-13	-24.23	-59.75	-43.76	3.87	10.40	V	Pass



Band :	GSM1900	Temperature :	22~24°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

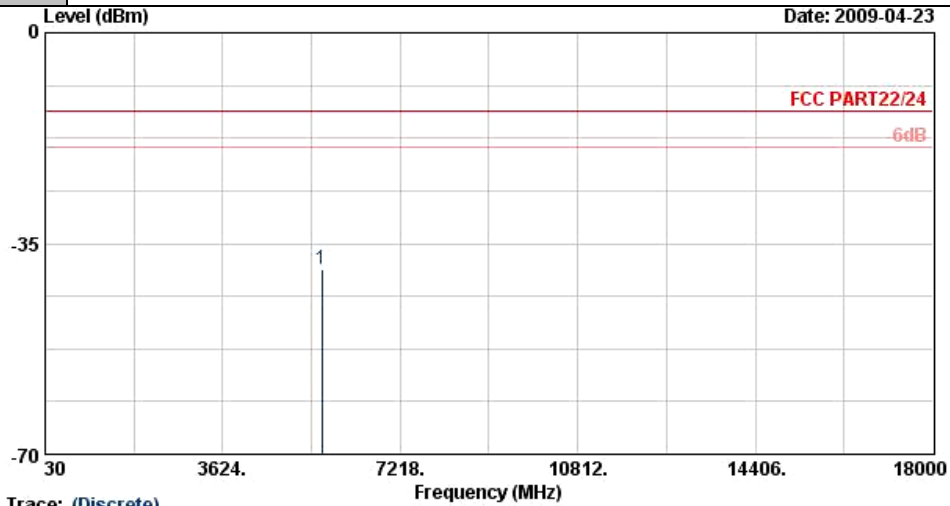


Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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
3760	-49.81	-13	-36.81	-62.64	-54.49	4.03	8.71	H	Pass
5636	-42.84	-13	-29.84	-63.65	-49.37	3.87	10.40	H	Pass



Band :	GSM1900	Temperature :	22~24°C
Test Mode :	EDGE 8 Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

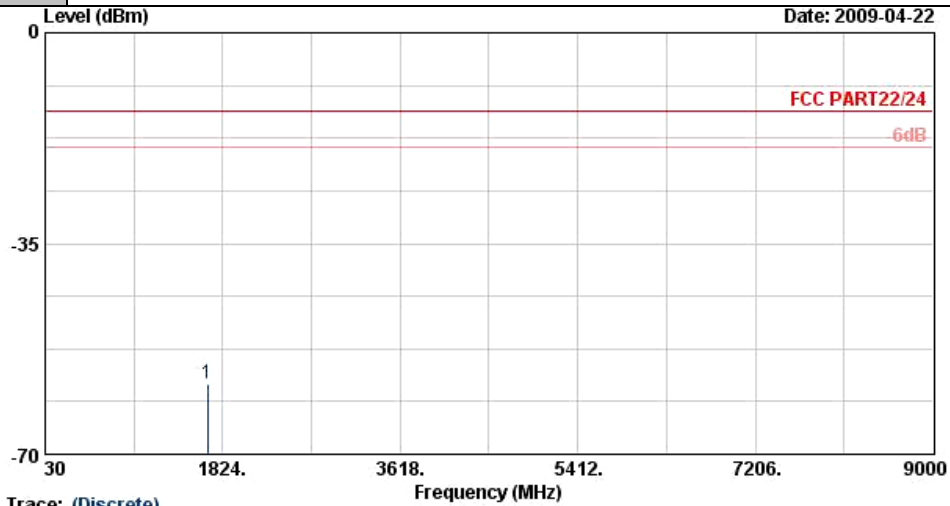


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-39.23	-13	-26.23	-61.11	-45.76	3.87	10.40	V	Pass



Band :	WCDMA Band V	Temperature :	22~24°C
Test Mode :	WCDMA Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

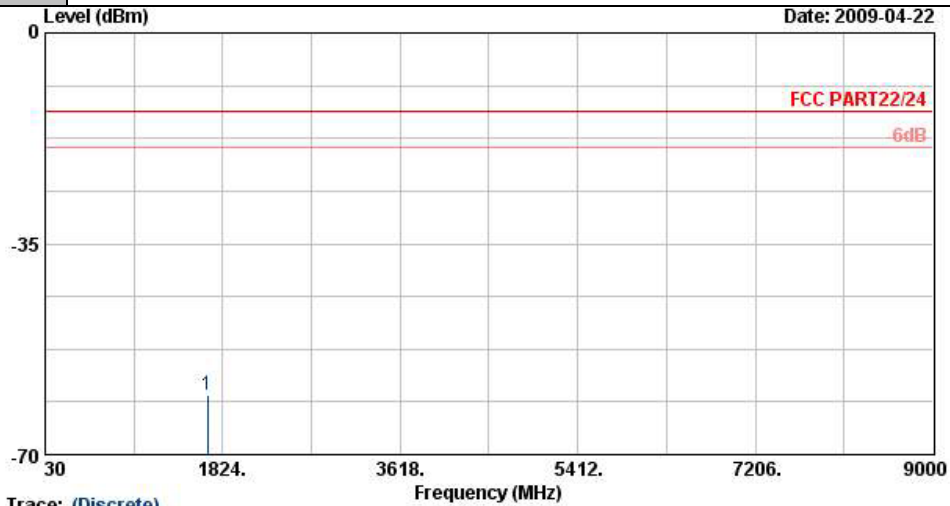


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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	-58.16	-13	-45.16	-61.74	-58.01	3.39	5.39	H	Pass



Band :	WCDMA Band V	Temperature :	22~24°C
Test Mode :	WCDMA Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

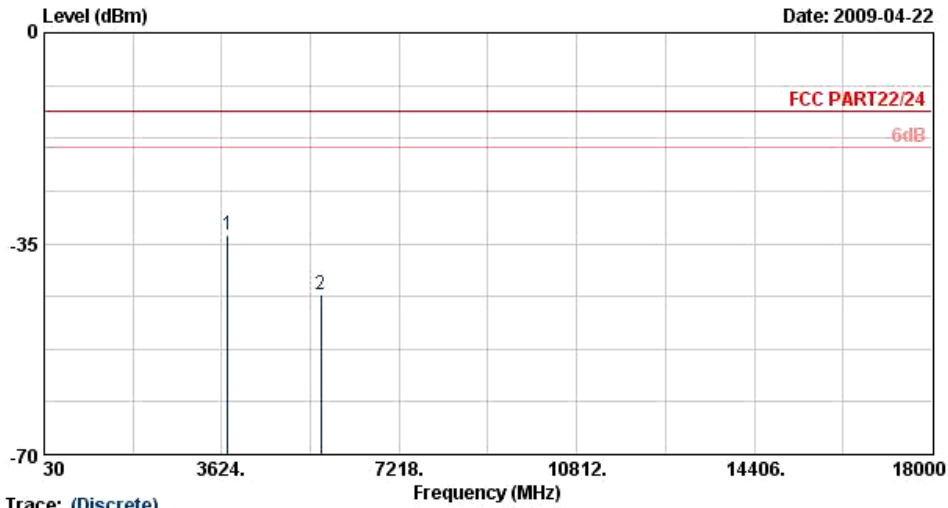


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-60.00	-13	-47.00	-62.42	-59.85	3.39	5.39	V	Pass



Band :	WCDMA Band II	Temperature :	22~24°C
Test Mode :	WCDMA Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

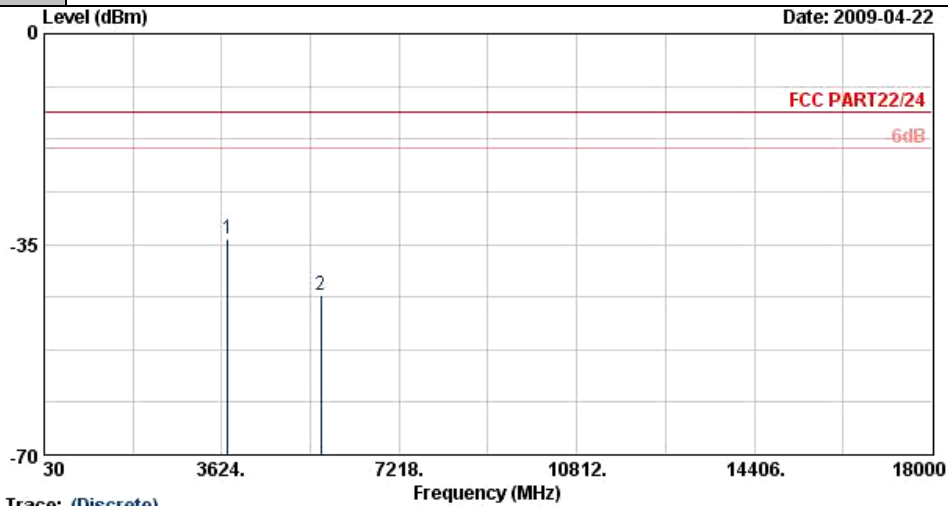


Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG931617

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
3748	-33.69	-13	-20.69	-50.17	-38.37	4.03	8.71	H	Pass
5636	-43.41	-13	-30.41	-64.04	-49.94	3.87	10.40	H	Pass



Band :	WCDMA Band II	Temperature :	22~24°C
Test Mode :	WCDMA Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

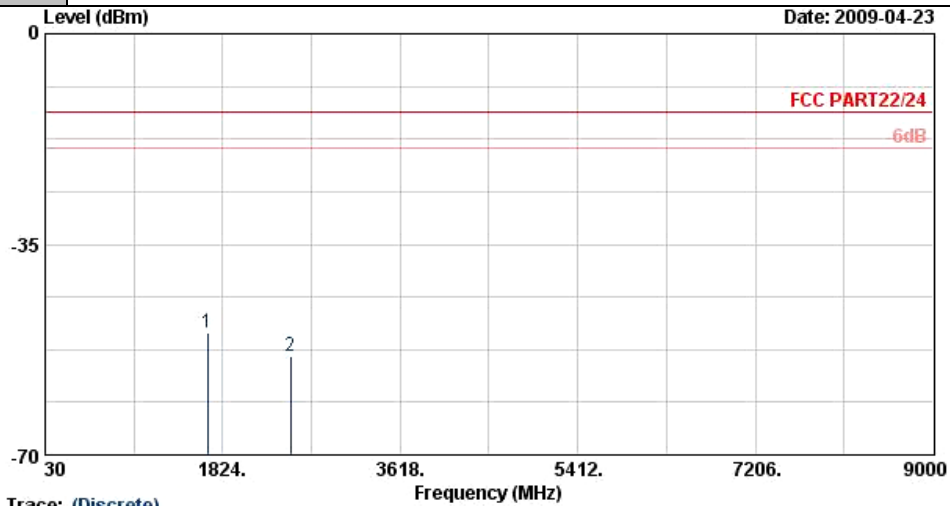


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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
3748	-34.20	-13	-21.20	-53.14	-38.88	4.03	8.71	V	Pass
5636	-43.37	-13	-30.37	-64.07	-49.90	3.87	10.40	V	Pass



Band :	CDMA2000 Cellular	Temperature :	22~24°C
Test Mode :	1xEV-DO Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

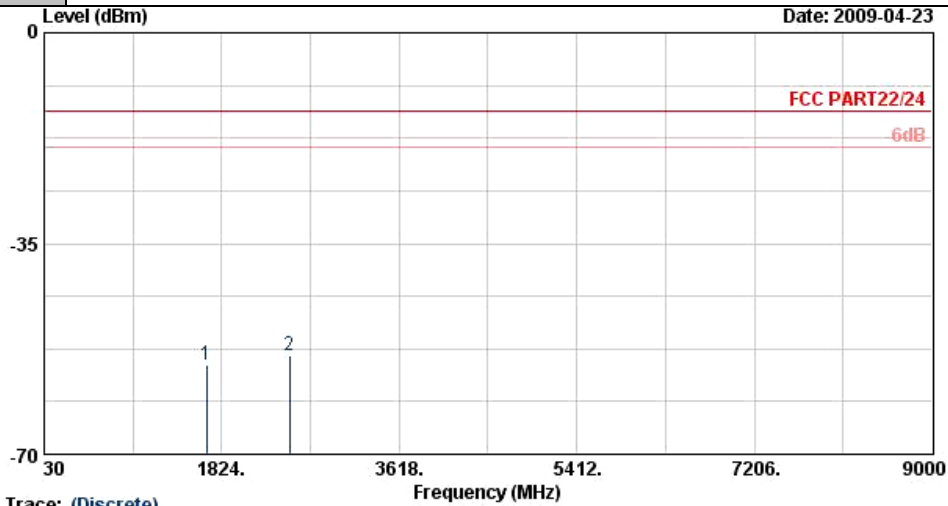


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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	-49.66	-13	-36.66	-56.81	-49.51	3.39	5.39	H	Pass
2509	-53.70	-13	-40.70	-60.32	-53.96	3.71	6.12	H	Pass



Band :	CDMA2000 Cellular	Temperature :	22~24°C
Test Mode :	1xEV-DO Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

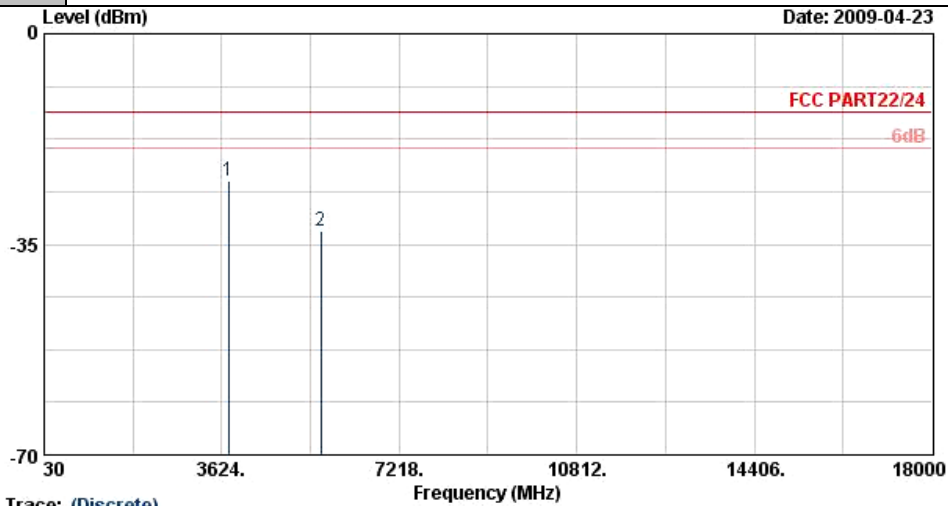


Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-55.24	-13	-42.24	-59	-55.09	3.39	5.39	V	Pass
2509	-53.70	-13	-40.70	-62.26	-53.96	3.71	6.12	V	Pass



Band :	CDMA2000 PCS	Temperature :	22~24°C
Test Mode :	1xEV-DO Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

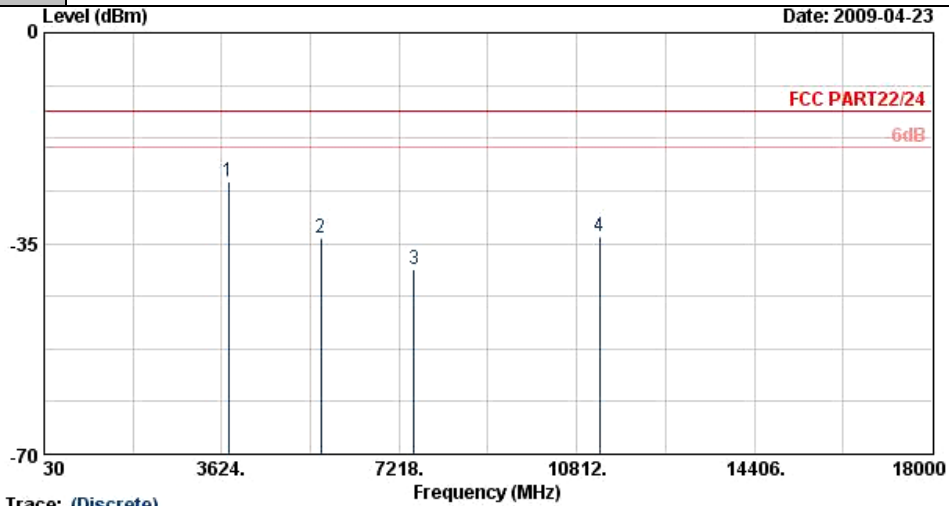


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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
3760	-24.40	-13	-11.40	-41.51	-29.08	4.03	8.71	H	Pass
5636	-32.79	-13	-19.79	-56.14	-39.32	3.87	10.40	H	Pass



Band :	CDMA2000 PCS	Temperature :	22~24°C
Test Mode :	1xEV-DO Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

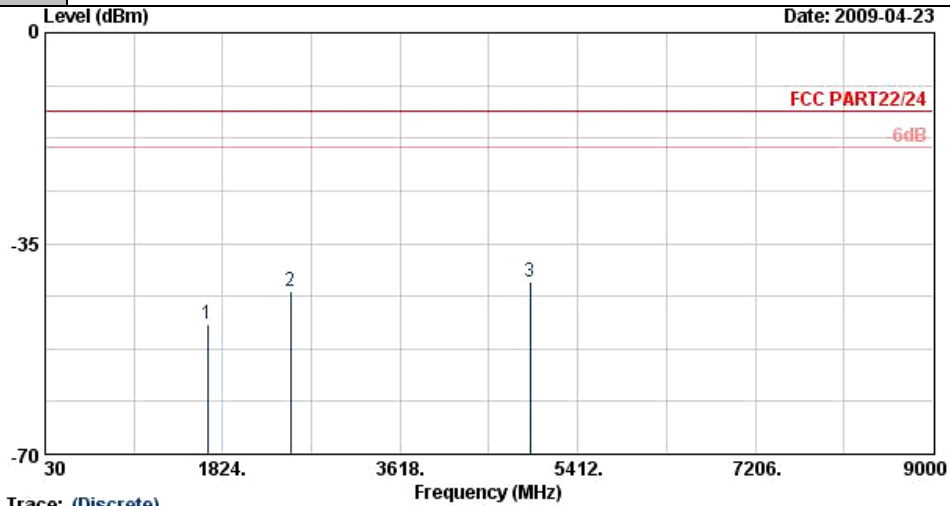


Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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
3760	-24.78	-13	-11.78	-44.56	-29.46	4.03	8.71	V	Pass
5636	-34.05	-13	-21.05	-57.16	-40.58	3.87	10.40	V	Pass
7520	-39.22	-13	-26.22	-63.27	-45.61	5.83	12.22	V	Pass
11280	-33.78	-13	-20.78	-67.38	-38.59	8.48	13.29	V	Pass



Band :	GSM850	Temperature :	22~24°C
Test Mode :	EDGE 8 Link + WLAN Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Horizontal
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		

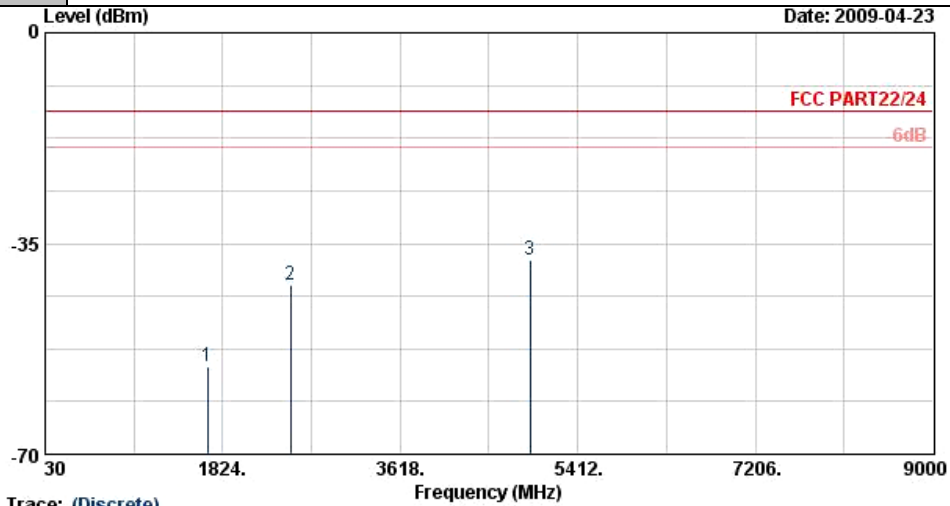


Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) HORIZONTAL
 Project : FG 931617

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	-48.42	-13	-35.42	-55.74	-48.27	3.39	5.39	H	Pass
2509	-42.98	-13	-29.98	-51.01	-43.24	3.71	6.12	H	Pass
4930	-41.33	-13	-28.33	-54.82	-43.72	5.09	9.63	H	Pass



Band :	GSM850	Temperature :	22~24°C
Test Mode :	EDGE 8 Link + WLAN Link	Relative Humidity :	42~46%
Test Engineer :	Kai Wang	Polarization :	Vertical
Remark :	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.		



Trace: (Discrete)
 Site : 03CH07-HY
 Condition : FCC PART22/24 HF-EIRP(080306) VERTICAL
 Project : FG 931617

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	-55.42	-13	-42.42	-59.31	-55.27	3.39	5.39	V	Pass
2509	-41.91	-13	-28.91	-52.99	-42.17	3.71	6.12	V	Pass
4930	-37.66	-13	-24.66	-51.98	-40.05	5.09	9.63	V	Pass



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)
Thermal Chamber	TEN BILLION	TTH-D35P	TBN-930701	N/A	Aug. 01, 2008	Jul. 31, 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	3008A02362	1G~26.5GHz	Dec. 17, 2008	Dec. 16, 2009	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10~1000MHz. 32dB.GAIN	Mar. 27, 2009	Mar. 26, 2010	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	66584	1G~18GHz	Aug. 06, 2008	Aug. 05, 2009	Radiation (03CH07-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	BBHA9170251	15G - 40GHz	Oct. 16, 2008	Oct. 15, 2009	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	May 22, 2008	May 21, 2010	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. : L1190-090318

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 : March 18, 2009

P1, total 19 pages

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 EP931617 as below.