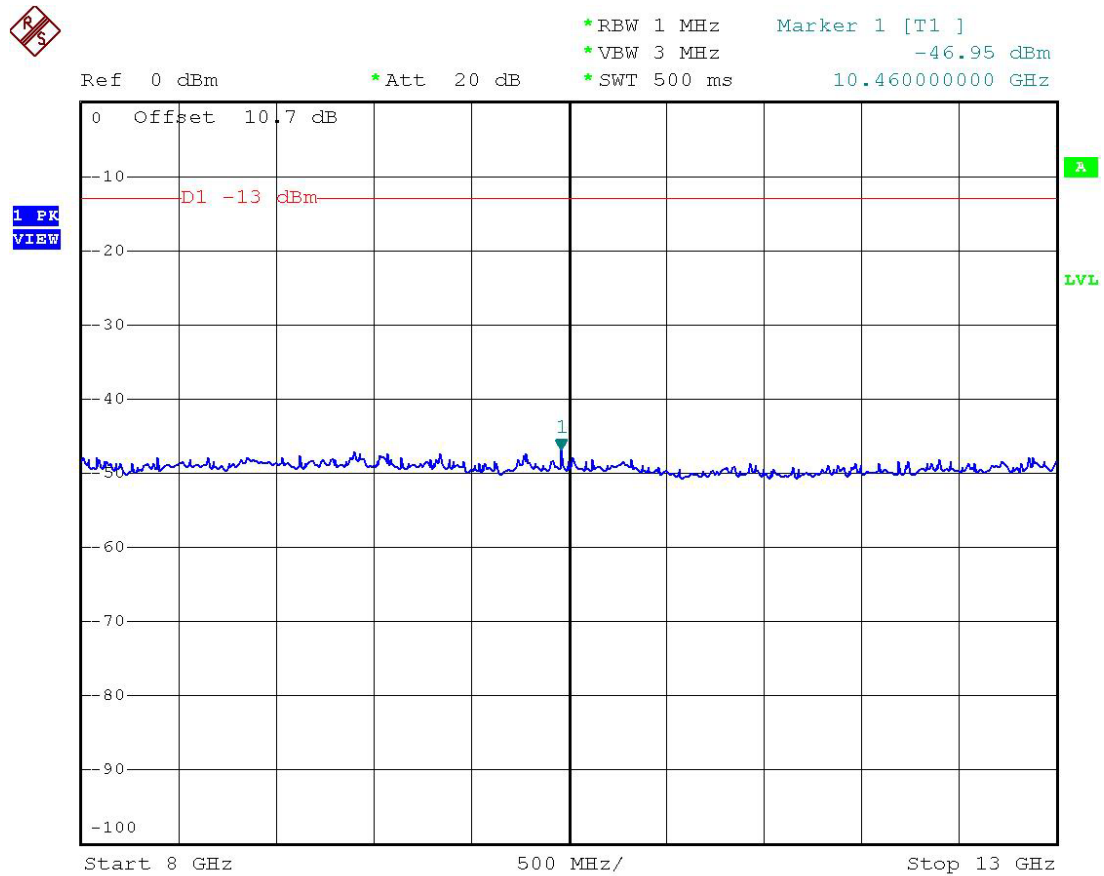


## FCC TEST REPORT

Report No. : F461002

**Name of Test:** Conducted Spurious Emission  
8G-13G



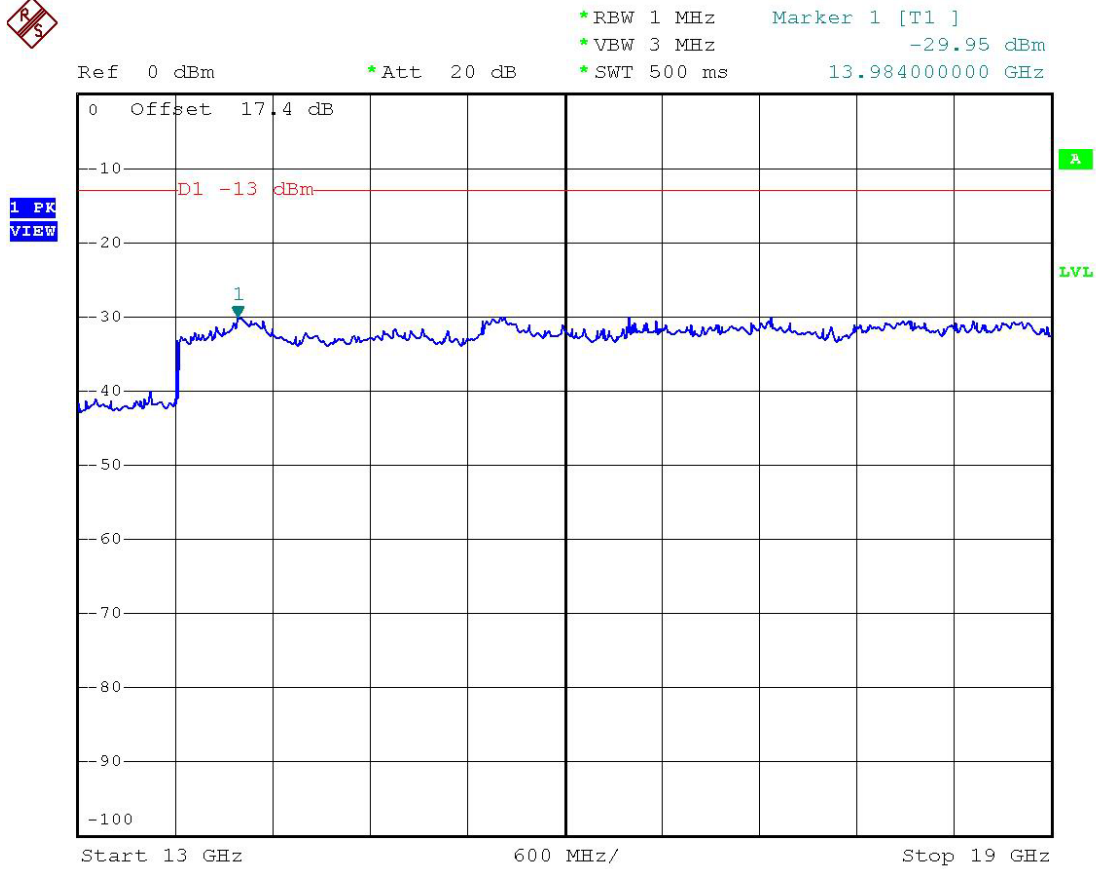
**SPORTON International Inc.**  
TEL : 886-2-2696-2468  
FAX : 886-2-2696-2255

FCC ID      HFS-A100  
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Issued Date      July 5, 2004

## FCC TEST REPORT

Report No. : F461002

**Name of Test:** Conducted Spurious Emission  
13G-19G



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**Name of Test:** Field Strength of Spurious Radiation

**Specification:** 47 CFR 2.1053(a)

**Guide:** ANSI/TIA/EIA-603-1992/2001, Paragraph 1.2.12 and Table 16

### **Measurement Procedure**

1.2.12.1 Definition: Radiated spurious emissions are emissions from the equipment when transmitting into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

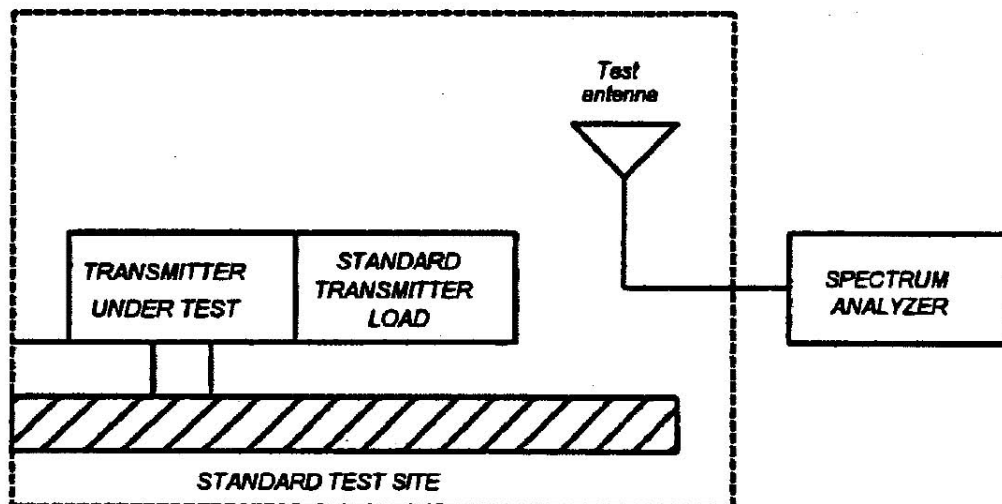
#### 1.2.12.2 Method of Measurement

A) Connect the equipment as illustrated

B) Adjust the spectrum analyzer for the following settings:

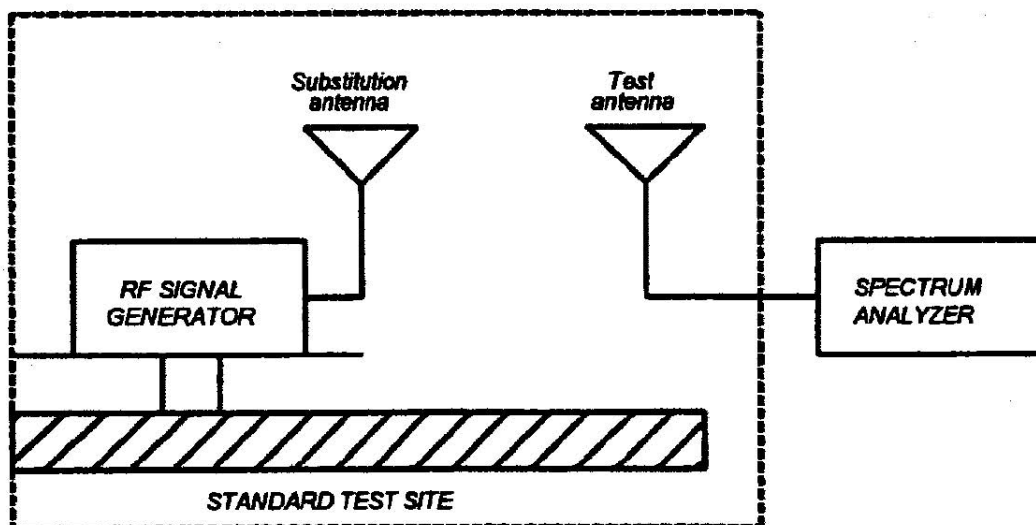
- 1) Resolution Bandwidth 100 kHz (<1 GHz), 1 MHz (> 1GHz).
- 2) Video Bandwidth  $\geq 3$  times Resolution Bandwidth
- 3) Sweep Speed  $\leq 2000$  Hz/second
- 4) Detector Mode = Mean or Average Power

C) Place the transmitter to be tested on the turntable in the standard test site. If the antenna is detachable, The transmitter is transmitting into a non-radiating load which is placed on the turntable. The RF cable to this load should be of minimum length.



**Name of Test:** Field Strength of Spurious Radiation (Cont.)

- D) For each spurious measurement the test antenna should cover the measured frequency. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier, except for the region close to the carrier equal to  $\pm$  the test bandwidth (see section 1.3.4.4).
- E) For each spurious frequency, raise and lower the test antenna from 1 m to 4 m to obtain a maximum reading on the spectrum analyzer with the test antenna at horizontal polarity. Repeat this procedure to obtain the highest possible reading. Record this maximum reading.
- F) Repeat step E) for each spurious frequency with the test antenna polarized vertically.



- G) Reconnect the equipment as illustrated.
- H) Keep the spectrum analyzer adjusted as in step B).
- I) Remove the transmitter and replace it with a substitution antenna. The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.

**Name of Test:** Field Strength of Spurious Radiation (Cont.)

- J) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
- K) Repeat step J) with both antennas vertically polarized for each spurious frequency.
- L) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps J) and K) by the power loss in the cable between the generator and the antenna and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna.

NOTE: It is permissible that other antennas provided can be referenced to a dipole.



Tested By:

Tim Kao

**FCC TEST REPORT**

Report No. : F461002

**Name of Test:** Field Strength of Spurious Radiation  
GSM 1900 (Channel 661)

Freq MHz	Pol	Substitution Antenna Input Power (dBm)	Substitution Antenna Gain (dBi)	Et (dBuV/m)	Es (dBuV/m)	Et - Es (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
45.98	H	-0.65	0.27	32.77	75.19	-42.42	-42.80	-13.0	-29.80
142.54	H	-1.07	1.31	22.83	91.93	-69.10	-68.86	-13.0	-55.86
151.55	H	-1.06	1.79	27.28	91.68	-64.40	-63.66	-13.0	-50.66
272.00	H	-1.39	1.75	19.72	92.43	-72.71	-72.34	-13.0	-59.34
957.60	H	-2.58	0.67	32.08	93.29	-61.21	-63.12	-13.0	-50.12
1000.00	H	-2.68	0.41	38.58	93.31	-54.73	-57.00	-13.0	-44.00
1484.00	H	-3.41	6.43	42.58	102.25	-59.67	-56.65	-13.0	-43.65
2276.00	H	-4.32	7.14	40.09	99.43	-59.34	-56.51	-13.0	-43.51
3441.00	H	-4.87	7.49	44.70	99.61	-54.91	-52.28	-13.0	-39.28
3753.00	H	-5.24	7.45	52.51	99.08	-46.57	-44.36	-13.0	-31.36
5637.00	H	-6.67	8.44	53.60	98.78	-45.18	-43.42	-13.0	-30.42
7518.00	H	-8.44	8.52	54.83	94.67	-39.84	-39.76	-13.0	-26.76
9393.00	H	-9.78	8.94	56.63	95.76	-39.13	-39.97	-13.0	-26.97
34.59	V	-0.63	0.58	25.65	68.59	-42.94	-43.00	-13.0	-30.00
45.98	V	-0.65	0.27	32.03	75.19	-43.16	-43.54	-13.0	-30.54
179.43	V	-1.09	1.72	24.34	90.30	-65.96	-65.34	-13.0	-52.34
957.60	V	-2.58	0.67	32.04	93.29	-61.25	-63.16	-13.0	-50.16
1484.00	V	-3.41	6.43	44.89	102.25	-57.36	-54.34	-13.0	-41.34
2276.00	V	-4.32	7.14	44.51	99.43	-54.92	-52.09	-13.0	-39.09
3753.00	V	-5.24	7.45	46.40	99.08	-52.68	-50.47	-13.0	-37.47
5637.00	V	-6.67	8.44	52.03	98.78	-46.75	-44.99	-13.0	-31.99
7518.00	V	-8.44	8.52	57.14	94.67	-37.53	-37.45	-13.0	-24.45
9393.00	V	-9.78	8.94	55.21	95.76	-40.55	-41.39	-13.0	-28.39

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FCC ID HFS-A100

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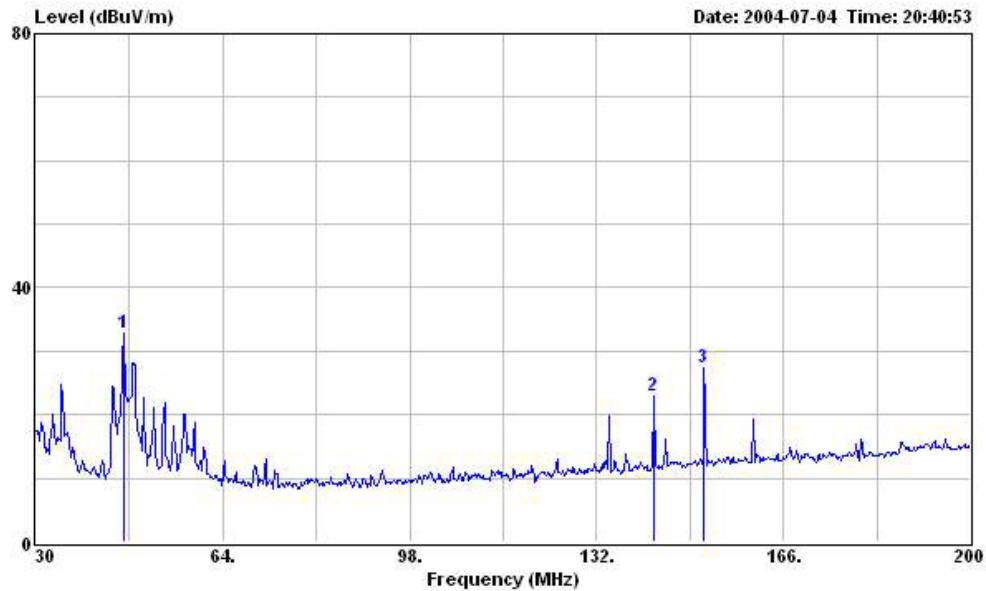
Issued Date July 5, 2004

## FCC TEST REPORT

Report No. : F461002

Radiated Scanned Data

GSM1900, Horizontal Polarization



Site : 03CH03-HY  
Condition : 3m BIC-9124--301 HORIZONTAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
			Limit	Line							
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	45.980	32.77	-----	-----	49.12	10.50	1.16	28.01	Peak	---	---
2	142.540	22.83	-----	-----	36.64	11.91	2.09	27.81	Peak	---	---
3	151.550	27.28	-----	-----	40.39	12.43	2.26	27.80	Peak	---	---

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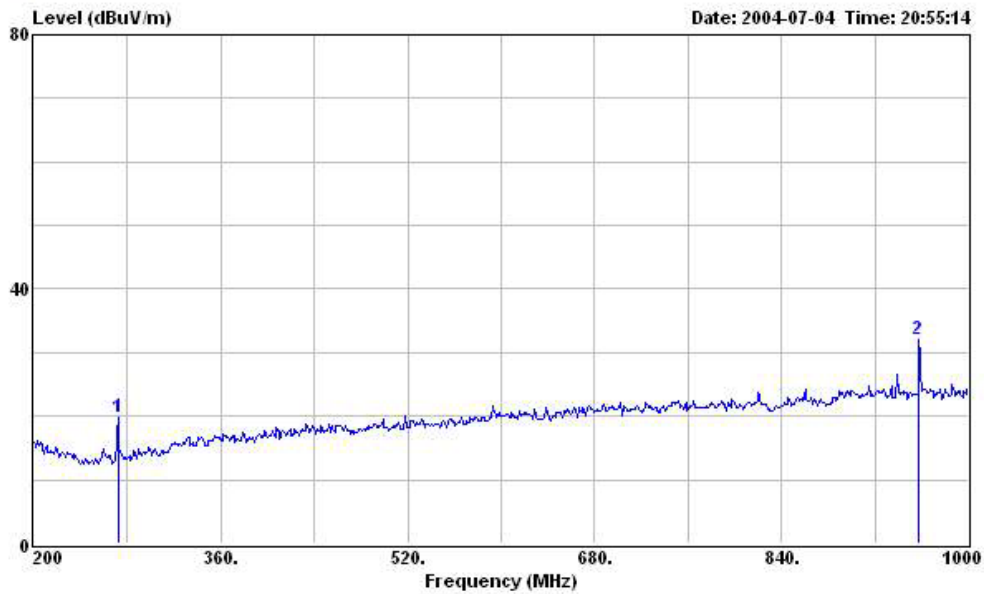
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Issued Date July 5, 2004

**FCC TEST REPORT**

Report No. : F461002



Site : 03CH03-HY  
Condition : 3m LOG-9111-221 HORIZONTAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
			dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	272.000	19.72	-----	-----	31.56	12.60	2.97	27.41	Peak	---	---
2	957.600	32.08	-----	-----	32.77	21.90	5.65	28.24	Peak	---	---

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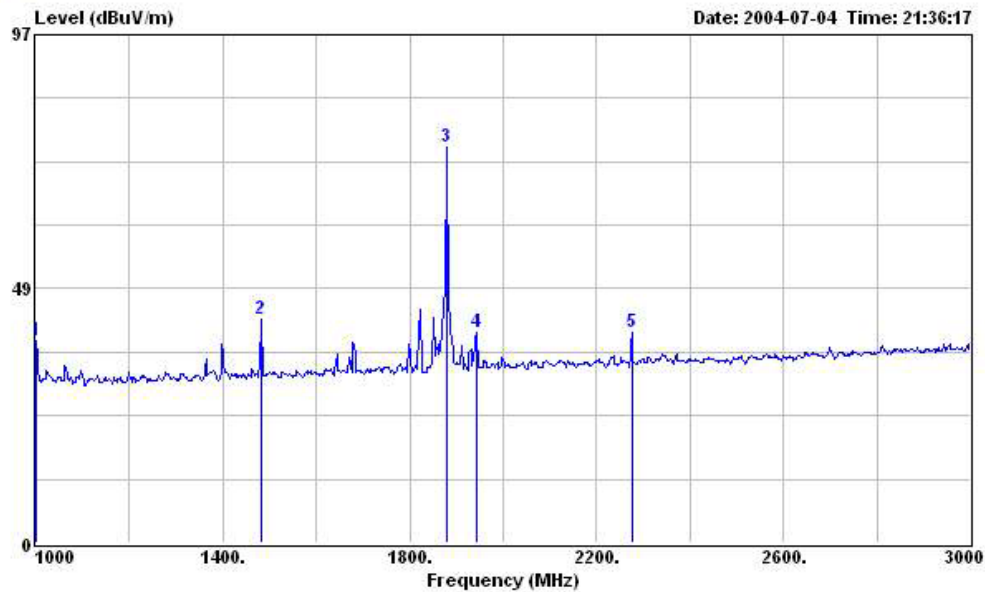
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Issued Date July 5, 2004





Site : 03CH03-HY  
 Condition : 3m HORN-ANT-6821 HORIZONTAL  
 EUT : GSM/GPRS handset 900/1800/1900 MHz  
 Power : 120Vac/60Hz  
 Model : A102  
 Memo : PCS Link Mode

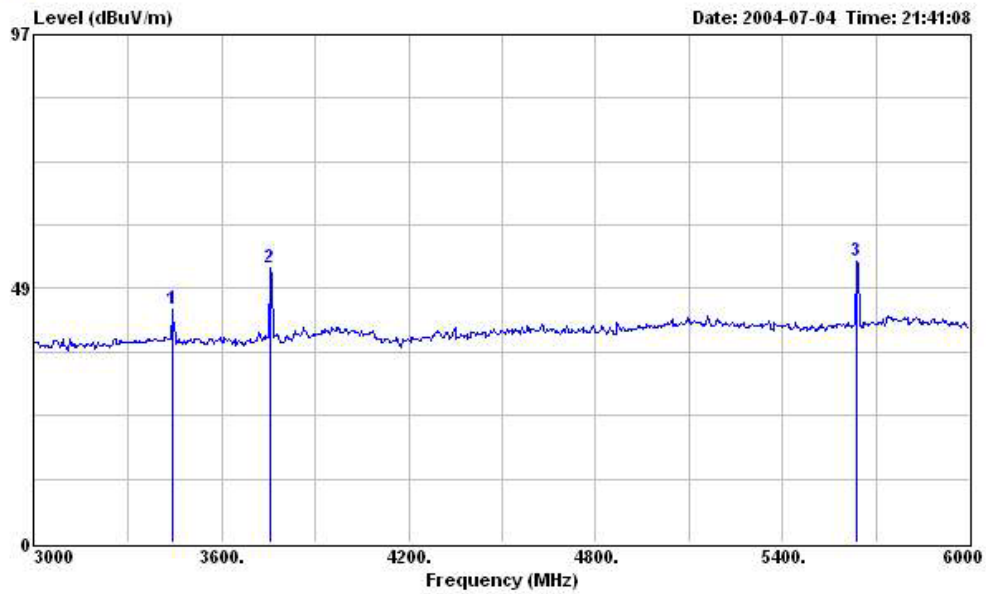
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1000.000	38.58	-----	-----	53.77	23.80	1.11	40.10	Peak	---	---
2	1484.000	42.58	-----	-----	56.53	25.19	1.46	40.60	Peak	---	---
3	1878.000	75.46	-----	-----	88.13	26.66	1.50	40.83	Peak	---	---
4	1942.000	40.18	-----	-----	52.65	26.90	1.50	40.87	Peak	---	---
5	2276.000	40.09	-----	-----	51.64	27.84	1.68	41.07	Peak	---	---

Mark:

1. #3 : Fundamental Signal
2. #4 : BCCH Signal

# FCC TEST REPORT

Report No. : F461002



Site : 03CH03-HY  
 Condition : 3m HORN-ANT-6821 HORIZONTAL  
 EUT : GSM/GPRS handset 900/1800/1900 MHz  
 Power : 120Vac/60Hz  
 Model : A102  
 Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	3441.000	44.70	-----	-----	52.85	31.19	1.95	41.29	Peak	---	---
2	3753.000	52.51	-----	-----	60.11	32.04	1.77	41.41	Peak	---	---
3	5637.000	53.60	-----	-----	59.72	34.46	2.58	43.16	Peak	---	---

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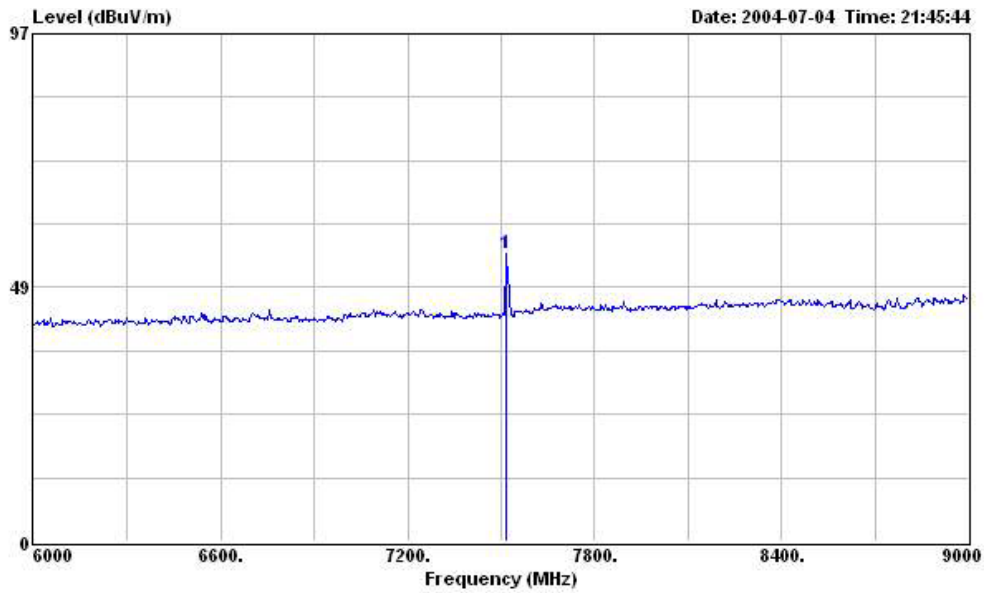
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Issued Date July 5, 2004

# FCC TEST REPORT

Report No. : F461002



Site : 03CH03-HY  
Condition : 3m HORN-ANT-6821 HORIZONTAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	7518.000	54.83	-----	-----	57.80	36.72	2.69	42.38	Peak	---	---

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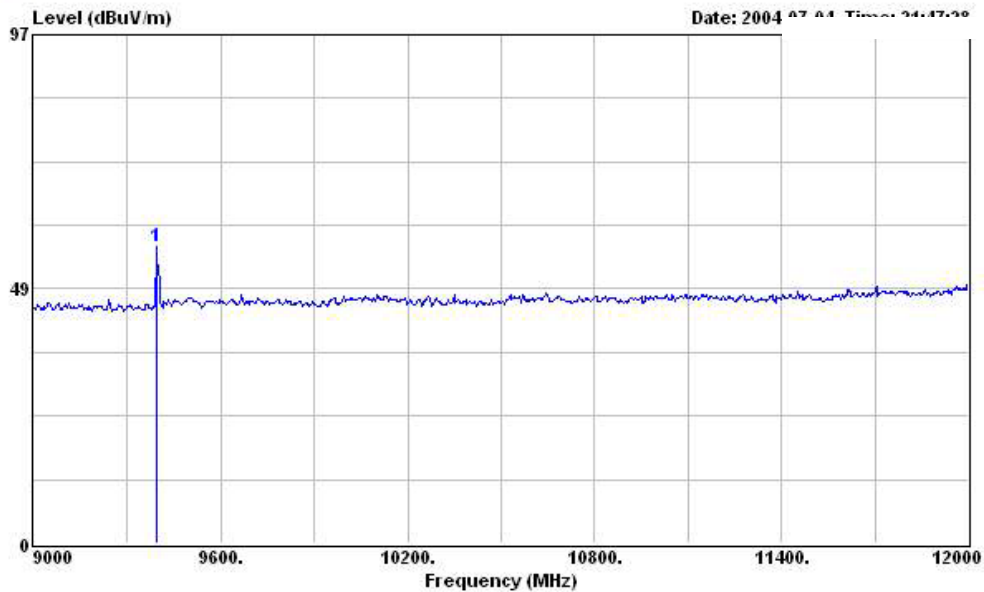
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Issued Date July 5, 2004



Site : 03CH03-HY  
Condition : 3m HORN-ANT-6821 HORIZONTAL  
EUT : GSM/GPRS 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

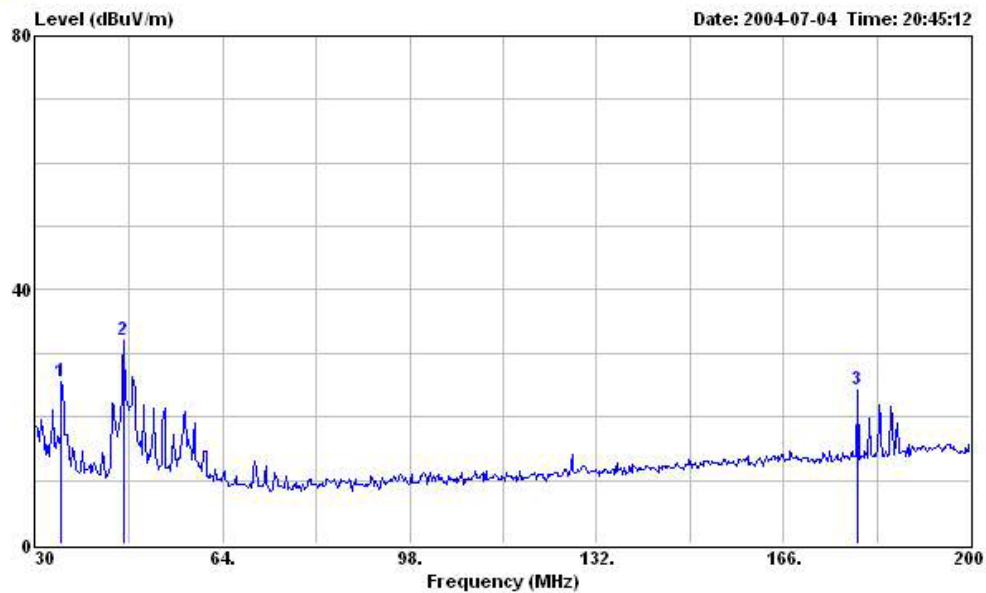
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	9393.000	56.63	-----	-----	54.66	38.20	3.94	40.17	Peak	---	---

- Mark:  
Frequency from 12000MHz to 18000MHz, the emission emitted by the EUT is too low to be measured.

# FCC TEST REPORT

Report No. : F461002

GSM1900, Vertical Polarization



Site : 03CH03-HY  
Condition : 3m BIC-9124--301 VERTICAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	34.590	25.65	-----	-----	39.54	13.14	1.01	28.04	Peak	---	---
2	45.980	32.03	-----	-----	48.38	10.50	1.16	28.01	Peak	---	---
3	179.430	24.34	-----	-----	36.11	13.54	2.43	27.74	Peak	---	---

**SPORTON International Inc.**

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

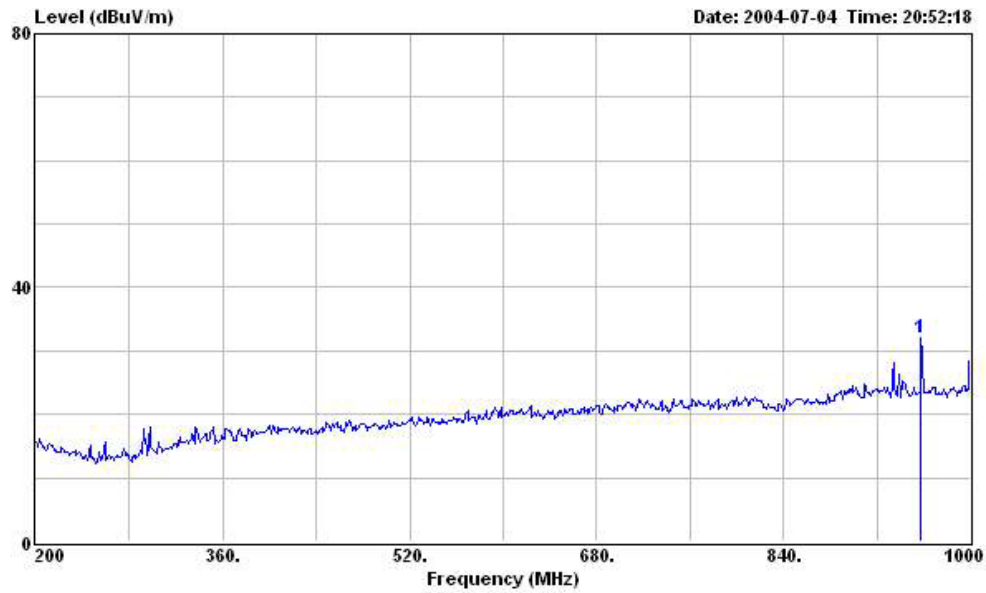
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Issued Date July 5, 2004

# FCC TEST REPORT

Report No. : F461002



Site : 03CH03-HY  
 Condition : 3m LOG-9111-221 VERTICAL  
 EUT : GSM/GPRS handset 900/1800/1900 MHz  
 Power : 120Vac/60Hz  
 Model : A102  
 Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	957.600	32.04	-----	-----	32.73	21.90	5.65	28.24	Peak	---	---

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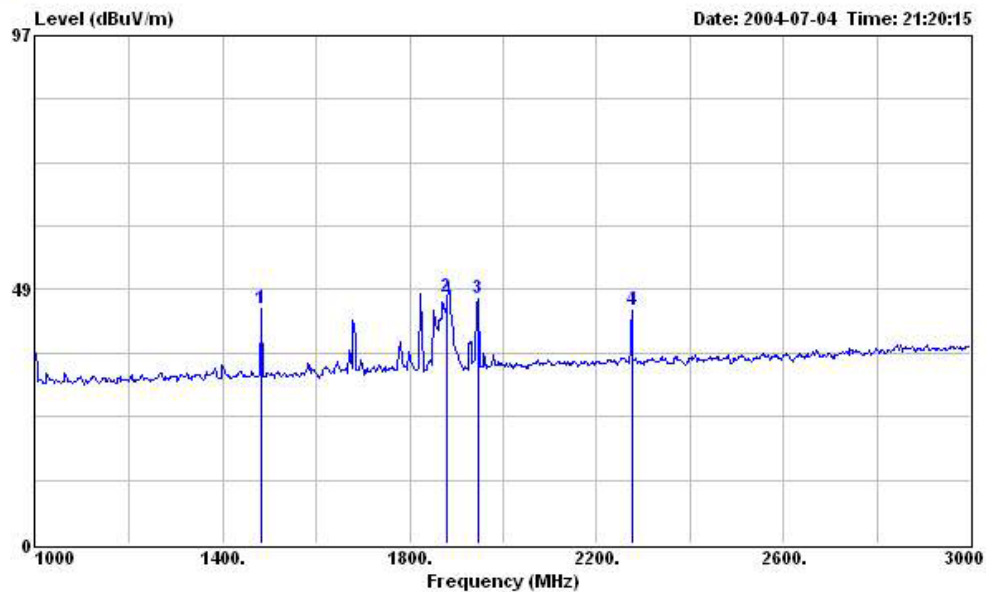
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Issued Date July 5, 2004

**FCC TEST REPORT**

Report No. : F461002



Site : 03CH03-HY  
Condition : 3m HORN-ANT-6821 VERTICAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1484.000	44.89	-----	-----	58.84	25.19	1.46	40.60	Peak	---	---
2	1880.000	47.08	-----	-----	59.74	26.67	1.50	40.83	Peak	---	---
3	1948.000	46.87	-----	-----	59.32	26.92	1.51	40.88	Peak	---	---
4	2276.000	44.51	-----	-----	56.06	27.84	1.68	41.07	Peak	---	---

Mark:

1. #2: Fundamental Signal
2. #3: BCCH Signal

**SPORTON International Inc.**

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

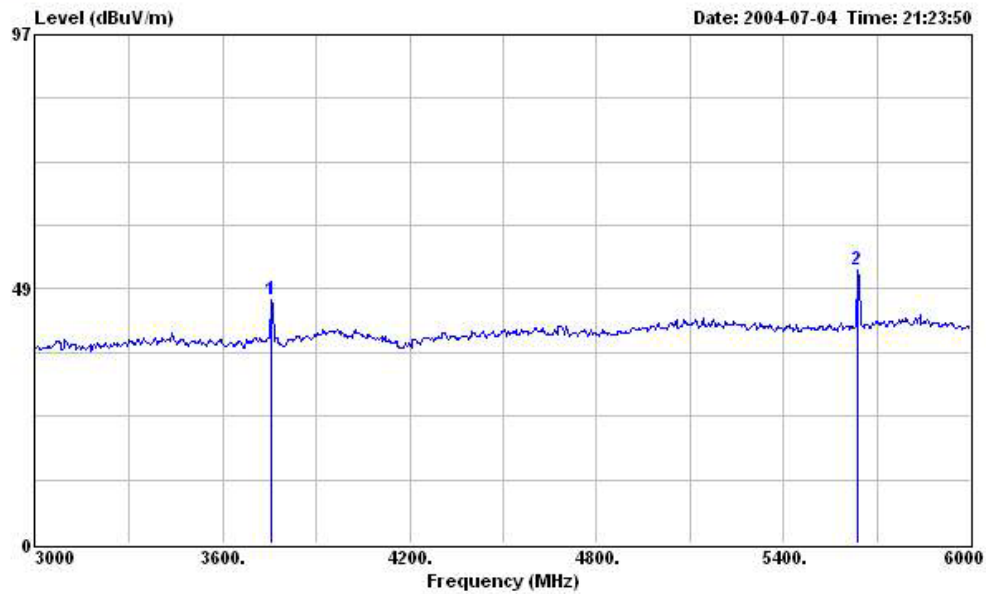
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Issued Date July 5, 2004

# FCC TEST REPORT

Report No. : F461002



Site : 03CH03-HY  
 Condition : 3m HORN-ANT-6821 VERTICAL  
 EUT : GSM/GPRS handset 900/1800/1900 MHz  
 Power : 120Vac/60Hz  
 Model : A102  
 Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	3753.000	46.40	-----	-----	54.00	32.04	1.77	41.41	Peak	---	---
2	5637.000	52.03	-----	-----	58.15	34.46	2.58	43.16	Peak	---	---

**SPORTON International Inc.**

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FAX : 886-2-2696-2255

FCC ID HFS-A100

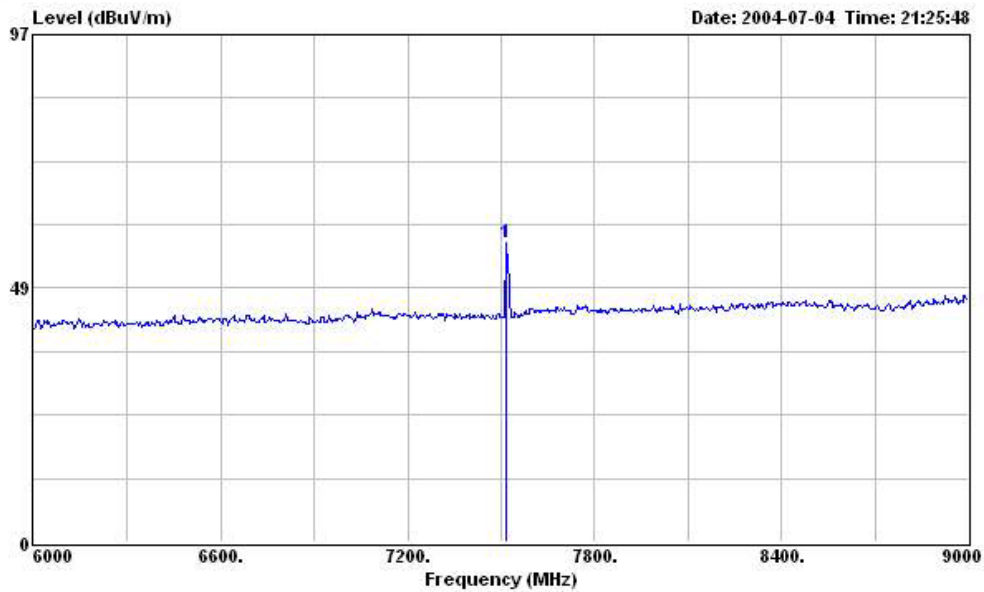
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Issued Date July 5, 2004



**FCC TEST REPORT**

Report No. : F461002



Site : 03CH03-HY  
Condition : 3m HORN-ANT-6821 VERTICAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/60Hz  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	7518.000	57.14	-----	-----	60.11	36.72	2.69	42.38	Peak	---	---

**SPORTON International Inc.**

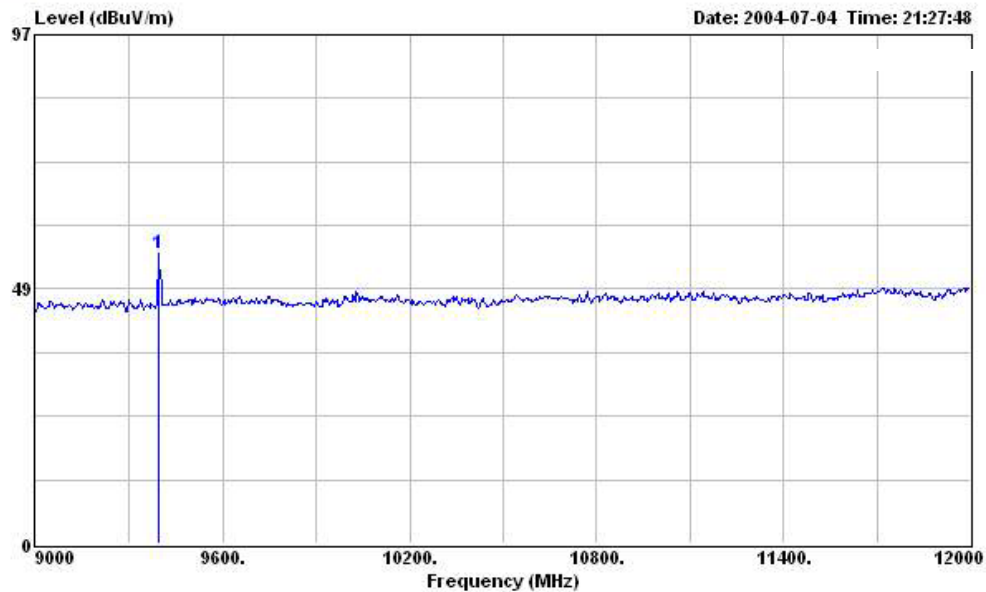
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Issued Date July 5, 2004



Site : 03CH03-HY  
Condition : 3m HORN-ANT-6821 VERTICAL  
EUT : GSM/GPRS handset 900/1800/1900 MHz  
Power : 120Vac/6\_\_\_\_  
Model : A102  
Memo : PCS Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Return Loss	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	9393.000	55.21	-----	-----	53.24	38.20	3.94	40.17	Peak	---	---

- Mark:  
Frequency from 12000MHz to 18000MHz, the emission emitted by the EUT is too low to be measured.

**Name of Test:** Frequency Stability (Temperature Variation)

**Specification:** 47 CFR 2.1055(a)(1)

**Test Conditions:** As Indicated

**Test Equipment:** As per previous page

**Measurement Procedure**

1. The EUT and test equipment were set up as shown on the following page.
2. With all power removed, the temperature was decreased to  $-30^{\circ}\text{C}$  and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute.
3. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
4. The temperature tests were performed for the worst case.
5. Measurement Results: Attached



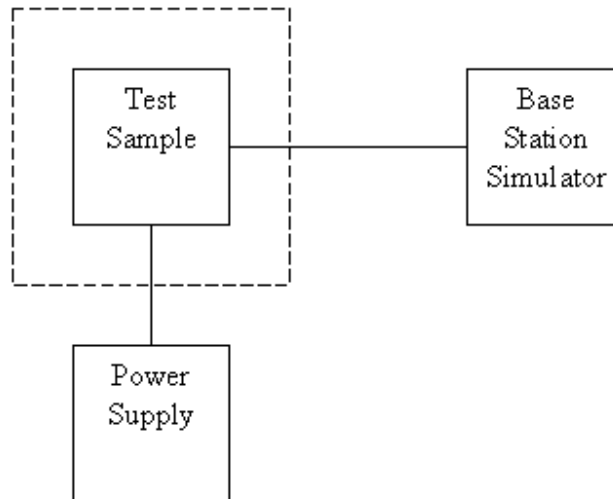
Tested By:

Tim Kao

**Transmitter Test Set-Up**

Frequency Stability: Temperature Variation

Frequency Stability: Voltage Variation



Asset	Model Name	S/N
Temperature & Humidity Controller	P-9000	612
AC/DC Power Source	HPA-500W	HPA0100024
Base Station Simulator	CMU200	102278
Base Station Simulator	E5515C	GB43460754

**Name of Test:** Frequency Stability (Temperature Variation)

GSM 1900 (Channel 661)

Temperature(°C)	Change, Hz	Change, ppm
-30	30	0.02
-20	42	0.02
-10	-38	-0.02
0	-30	-0.02
10	-35	-0.02
20	22	0.01
30	-39	-0.02
40	-34	-0.02
50	-29	-0.02

**Name of Test:** Frequency Stability (Voltage Variation)

**Specification:** 47 CFR 2.1055 (b)(1)

**Test Equipment:** As per previous page

**Measurement Procedure**

1. The EUT was placed in a temperature chamber at  $25\pm 5^{\circ}\text{C}$  and connected as for "Frequency Stability - Temperature Variation" test.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

**Results:** Frequency Stability (Voltage Variation)

GSM1900 (Channel 661)

Nominal Value (Voltage) = 3.6

Battery End Point (Voltage) = 3.25

Voltage(Volt)	Change, Hz	Change, ppm
3.7	22	0.01
BER	26	0.01
4.3	23	0.01

Limit: Must remain within authorized frequency block.



Tested By:

Tim Kao

**Antenna Factor & Cable Loss**

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)	Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	15.35	4.50	1000	24.10	3.92
35	13.63	1.13	2000	27.40	5.66
40	11.11	1.18	3000	30.00	7.20
45	10.59	1.26	4000	32.60	9.36
50	6.47	1.31	5000	33.40	9.16
55	5.83	1.34	6000	34.20	10.70
60	5.18	1.43	7000	35.30	12.16
65	4.81	1.52	8000	36.90	13.12
70	4.43	1.56	9000	38.10	13.81
75	5.10	1.57	10000	39.00	14.83
80	5.91	1.60	11000	38.60	15.83
85	7.33	1.66	12000	39.50	17.11
90	8.74	1.75	13000	39.30	17.62
95	9.05	1.76	14000	41.60	18.37
100	9.36	1.83	15000	40.60	19.10
110	9.65	1.86	16000	37.20	19.72
120	9.97	1.92	17000	40.20	21.98
130	10.51	2.00	18000	48.90	21.22
140	10.32	2.11	19000	37.60	23.90
150	9.42	2.18	20000	37.30	24.07
160	8.09	2.22	21000	37.00	25.49
170	7.43	2.26	22000	38.00	24.92
180	7.60	2.31	23000	38.70	25.60
190	7.43	2.37	24000	38.60	25.70
200	7.26	2.43	25000	24.10	3.92
220	9.11	2.56	14000	27.40	5.66
240	10.88	2.70	15000	30.00	7.20
260	11.75	2.83	16000	32.60	9.36
280	11.55	2.93	17000	33.40	9.16
300	11.36	3.03	18000	34.20	10.70
320	12.03	3.13	19000	35.30	12.16
340	12.69	3.23	20000	36.90	13.12
360	13.33	3.32	21000	38.10	13.81
380	14.00	3.41	22000	39.00	14.83
400	14.63	3.48	23000	38.60	15.83
450	15.33	3.71	24000	39.50	17.11
500	16.03	3.85	25000	39.30	17.62
550	16.65	4.03			
600	17.29	4.32			
650	17.64	4.51			
700	18.00	4.54			
750	18.39	4.90			
800	18.79	5.04			
850	19.10	5.04			
900	19.42	5.20			
950	19.58	5.28			
1000	19.75	5.58			

**List of Measuring Equipments**

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	Jun. 21, 2003	Radiation (03CH03-HY)
Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GHz	Aug. 23, 2003	Radiation (03CH03-HY)
Amplifier	HP	8447D	2944A09072	100KHz – 1.3GHz	Nov. 05, 2003	Radiation (03CH03-HY)
Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30MHz –200MHz	Jul. 24, 2003	Radiation (03CH03-HY)
Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz -1GHz	Jul. 24, 2003	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Dec. 03, 2003	Radiation (03CH03-HY)
Amplifier	MITEQ	AFS44	879981	100MHz~26.5GHz	Jul. 23, 2003	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6821	1GHz – 18GHz	Sep. 12, 2003	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
Horn Antenna	Schwarzbeck	BBHA9170	154	15GHz~40GHz	Jun. 02, 2003	Radiation (03CH03-HY)
RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Dec. 05, 2003	Radiation (03CH03-HY)

- ※ Calibration Interval of instruments listed above is one year, except for Horn Antenna, BBHA9170.  
※ Calibration Interval of Horn Antenna, BBHA9170, is three years.



**Uncertainty of Test Site**

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz) (03CH03)

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 Receiver VSWR $\Gamma_1 = 0.20$ Antenna VSWR $\Gamma_2 = 0.23$ Uncertainty = $20\log(1 - \Gamma_1 * \Gamma_2)$	+0.39/-0.41	U-shaped	0.28
<b>combined standard uncertainty Uc(y)</b>	<b>1.27</b>		
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>2.54</b>		

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

Contribution	Uncertainty of $x_i$		$u(x_i)$	$C_i$	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	$\pm 0.10$	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	$\pm 1.70$	Normal(k=2)	0.85	1	0.85
Cable loss calibration	$\pm 0.50$	Normal(k=2)	0.25	1	0.25
Receiver Correction	$\pm 2.00$	Rectangular	1.15	1	1.15
Antenna Factor Directional	$\pm 1.50$	Rectangular	0.87	1	0.87
Site imperfection	$\pm 2.80$	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
<b>Combined standard uncertainty Uc(y)</b>	<b>2.36</b>				
<b>Measuring uncertainty for a level of confidence of 95% U=2Uc(y)</b>	<b>4.72</b>				

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2 \quad \text{for 10m test distance}$$

$$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7 \quad \text{for 3m test distance}$$

END OF TEST REPORT