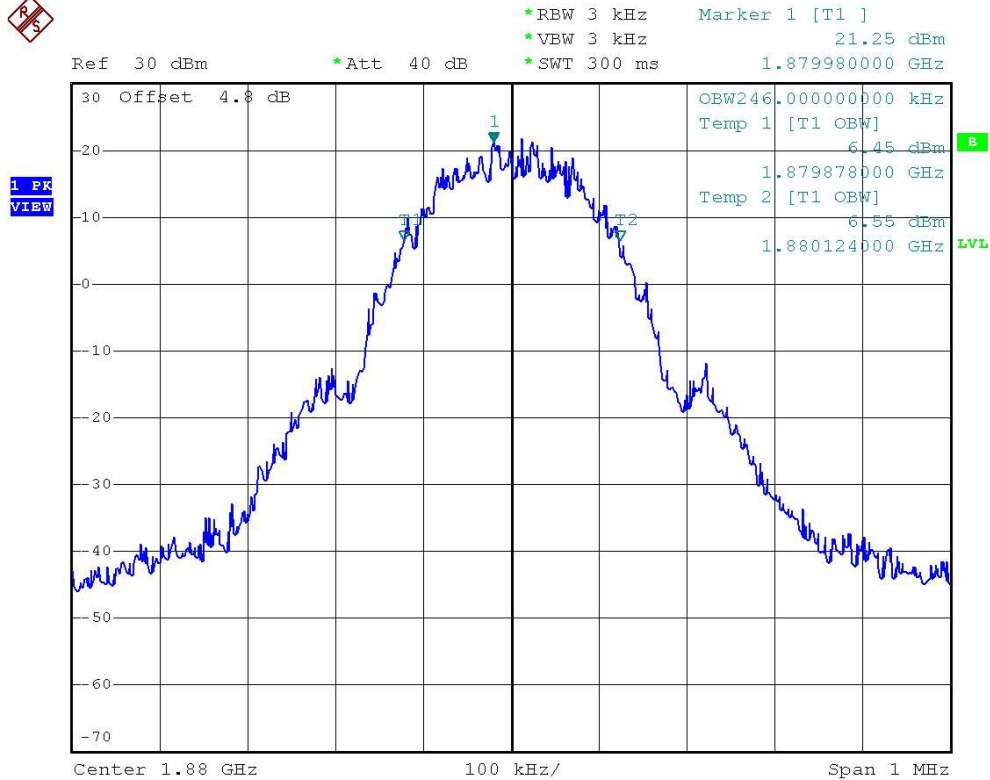


FCC TEST REPORT

Report No. : FG491608

Name of Test: Emission Masks (Occupied Bandwidth)

State 2:High Power



Power: HIGH
Modulation: PCS 1900
99% BANDWIDTH

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FAX : 886-2-2696-2255

FCC ID PJO2208

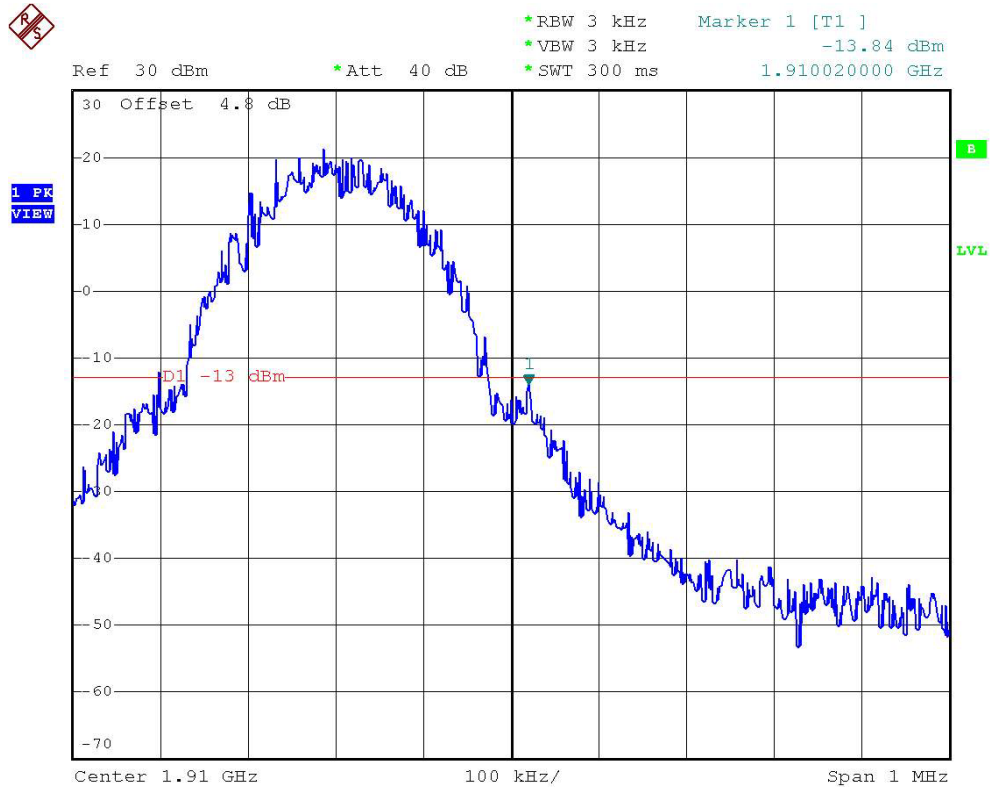
Page No. 31 of 84

Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Emission Masks (Occupied Bandwidth)
State 2:High Power

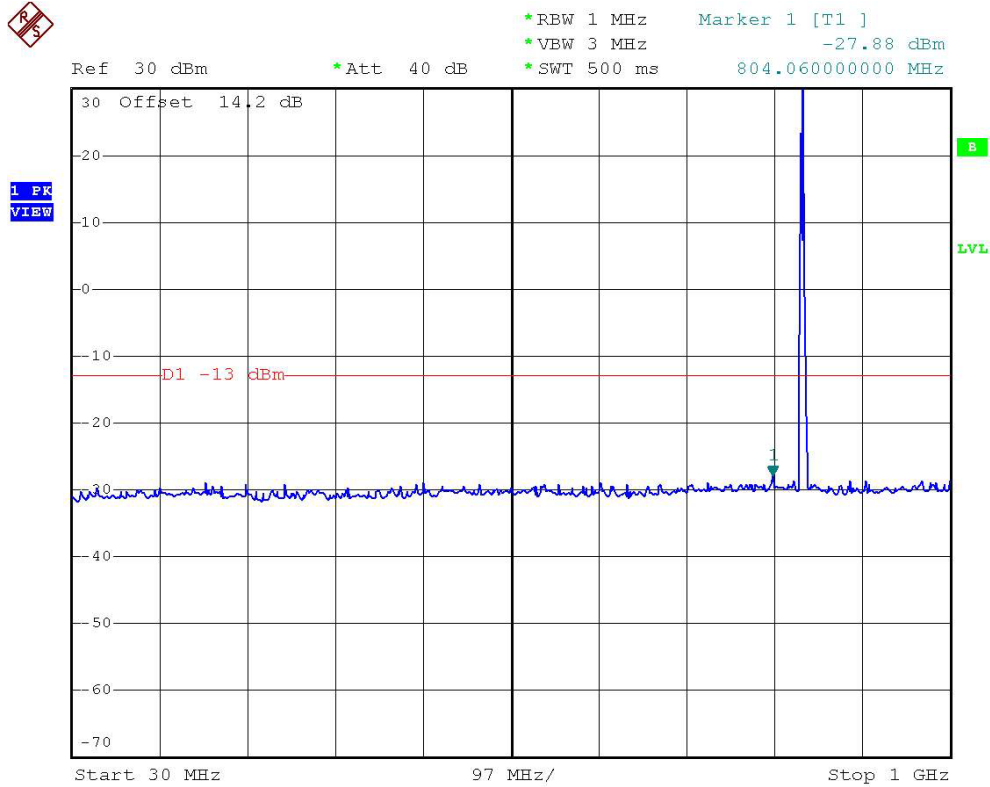


Power: HIGH
Modulation: PCS 1900
UPPER BAND EDGE

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
GSM850
30M-1G



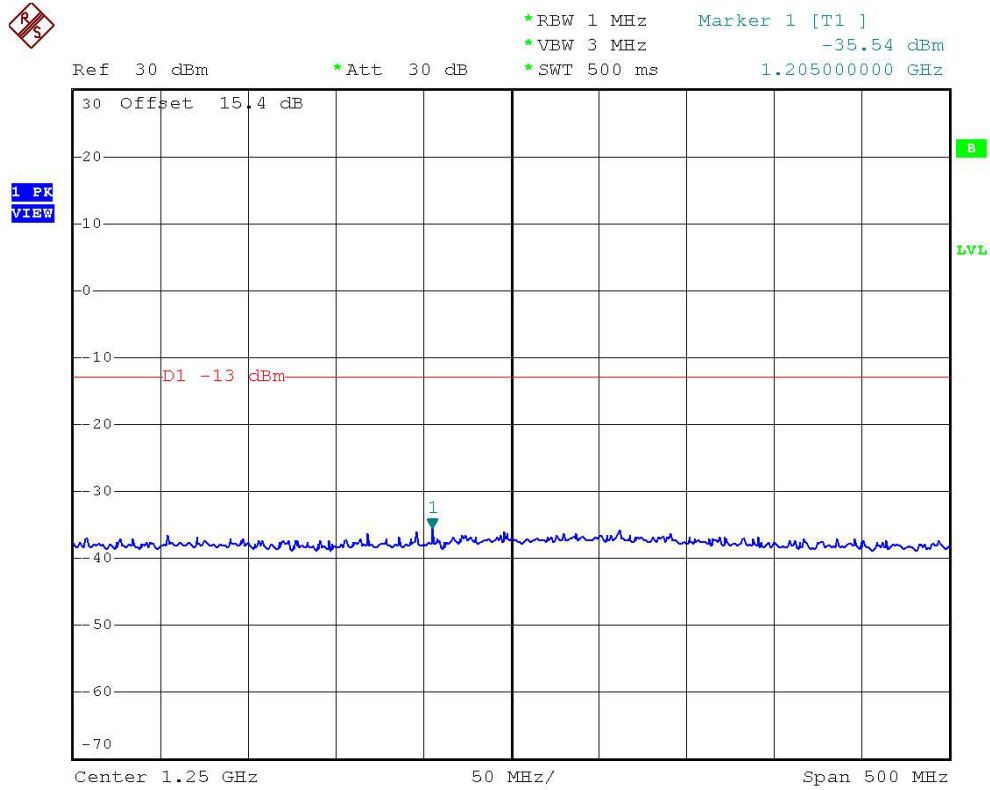
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FCC ID PJO2208
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
GSM850
1G-1.5G



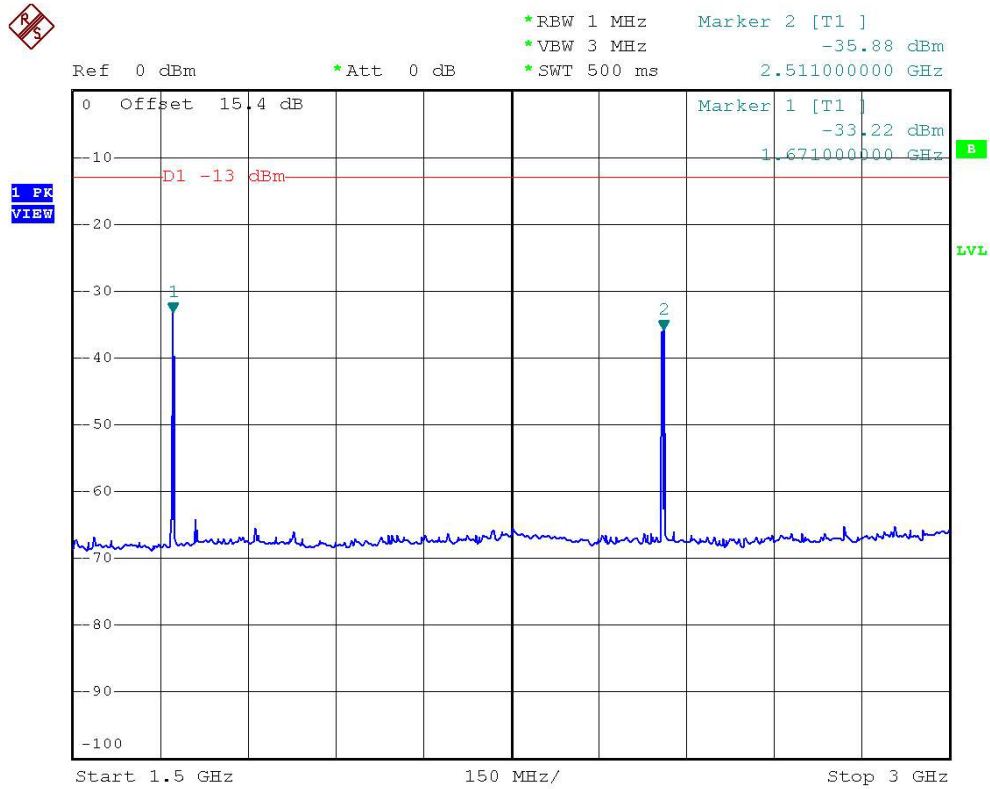
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
GSM850
1.5G-3G



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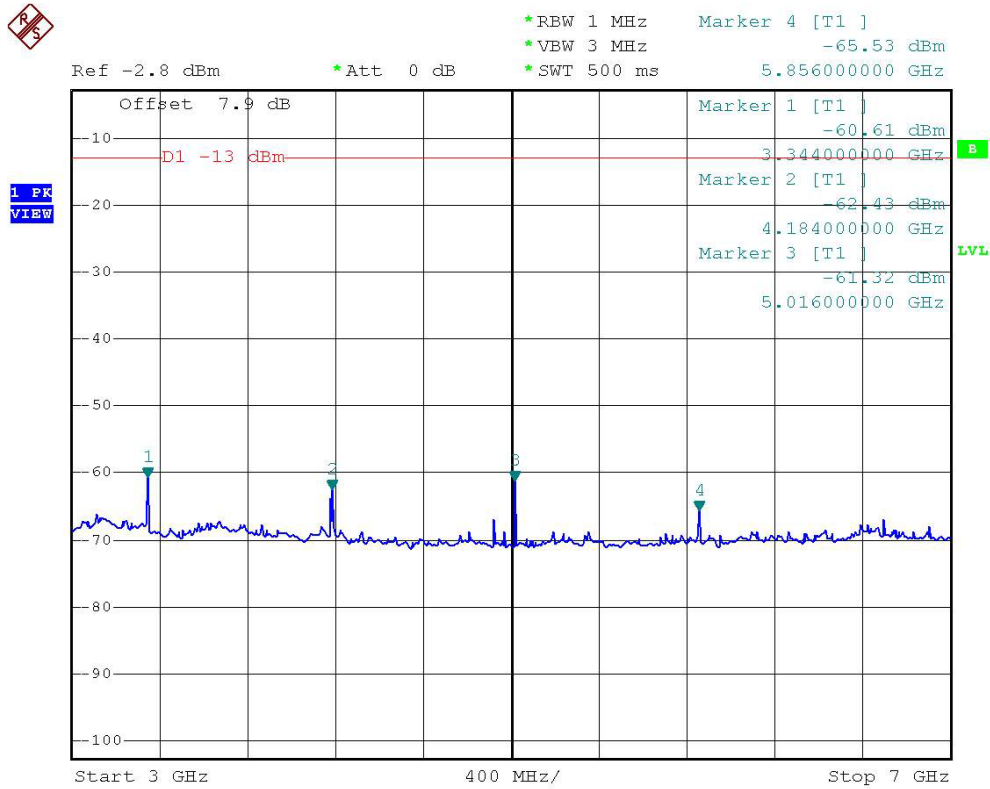
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
GSM850
3G-7G



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FCC ID PJO2208
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Issued Date Sep. 24, 2004

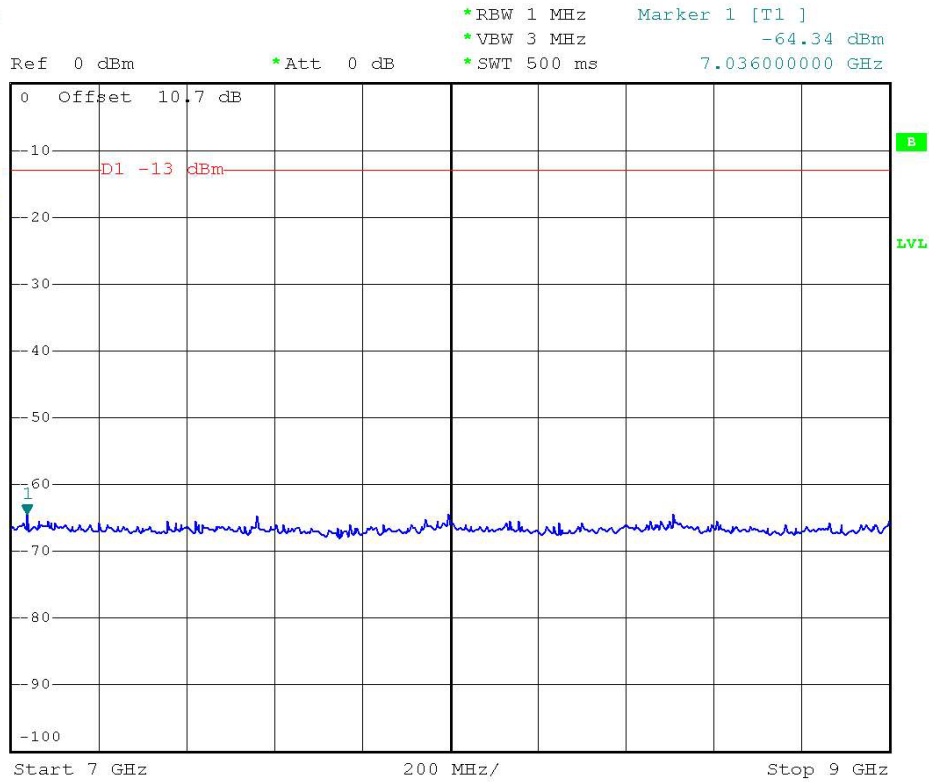
FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
GSM850
7G-9G



IF
VIEW



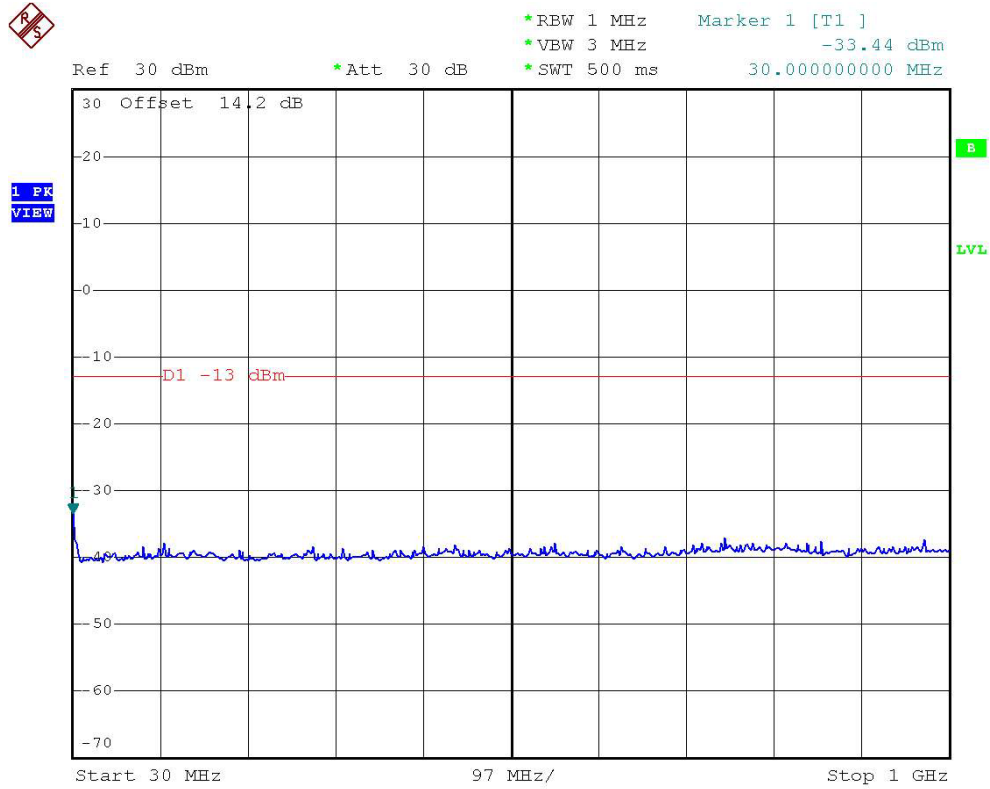
SPORTON International Inc.
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FAX : 886-2-2696-2255

FCC ID PJO2208
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
PCS1900
30M-1G



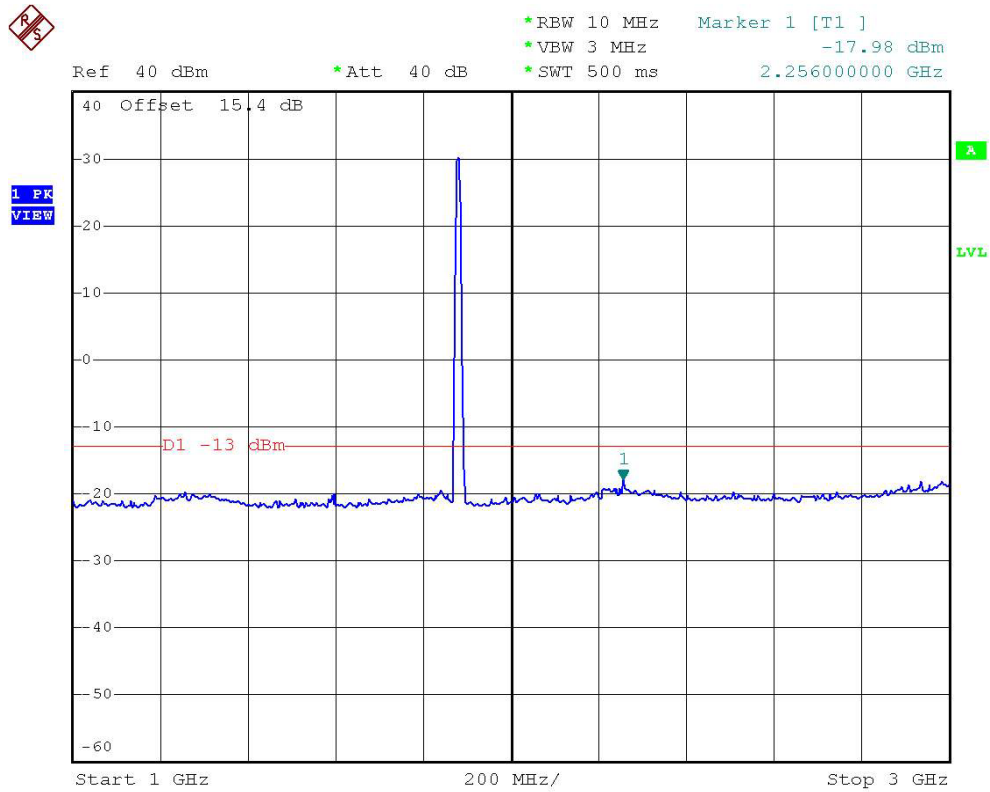
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FCC ID PJO2208
Page No. 38 of 84
Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
PCS1900
1G-3G



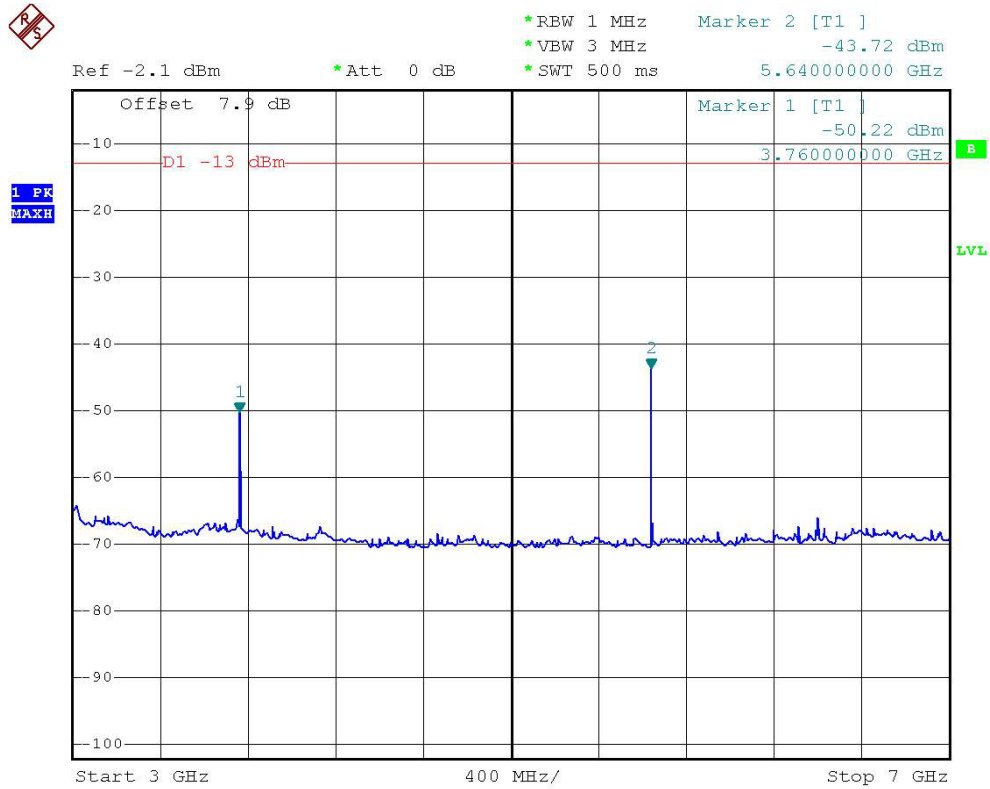
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FCC ID PJO2208
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
PCS1900
3G-7G



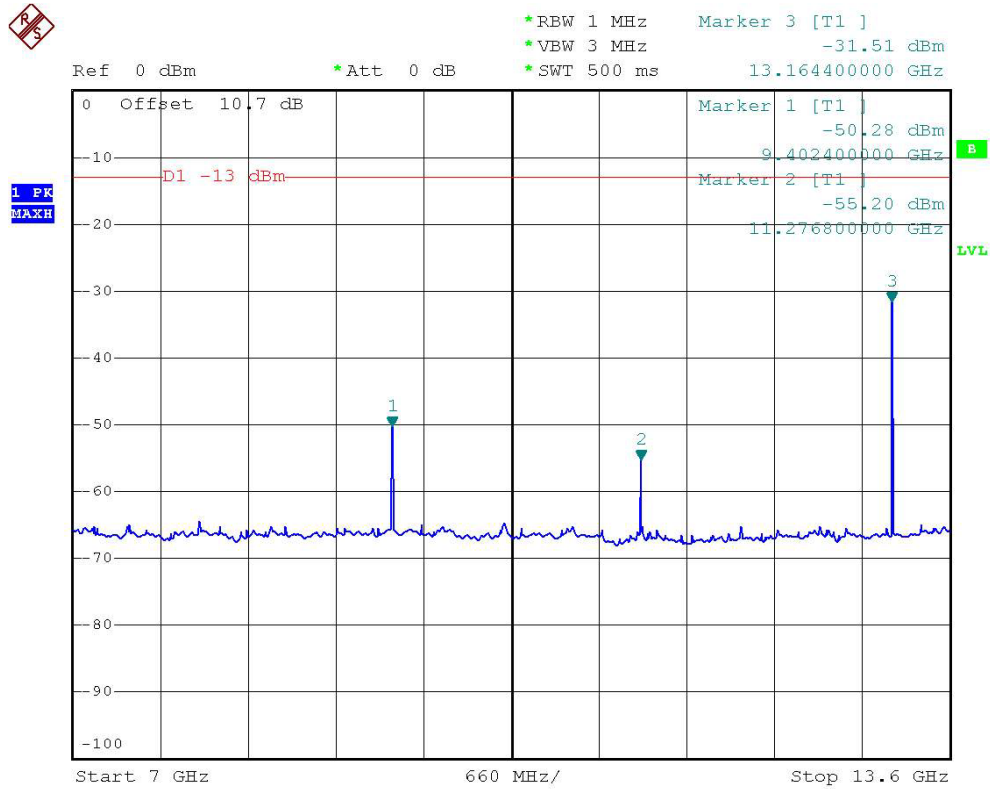
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FCC ID PJO2208
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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

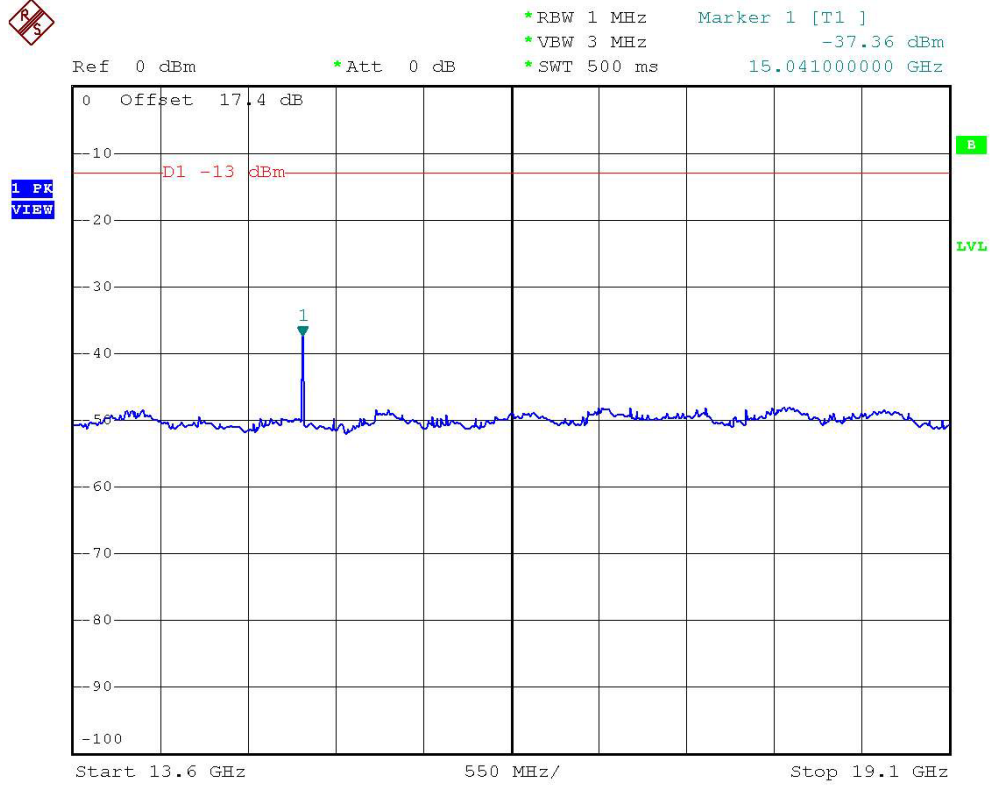
Name of Test: Conducted Spurious Emission
PCS1900
7G-13.6G



FCC TEST REPORT

Report No. : FG491608

Name of Test: Conducted Spurious Emission
PCS1900
13.6G-19.1G



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FCC ID PJO2208
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Issued Date Sep. 24, 2004

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.

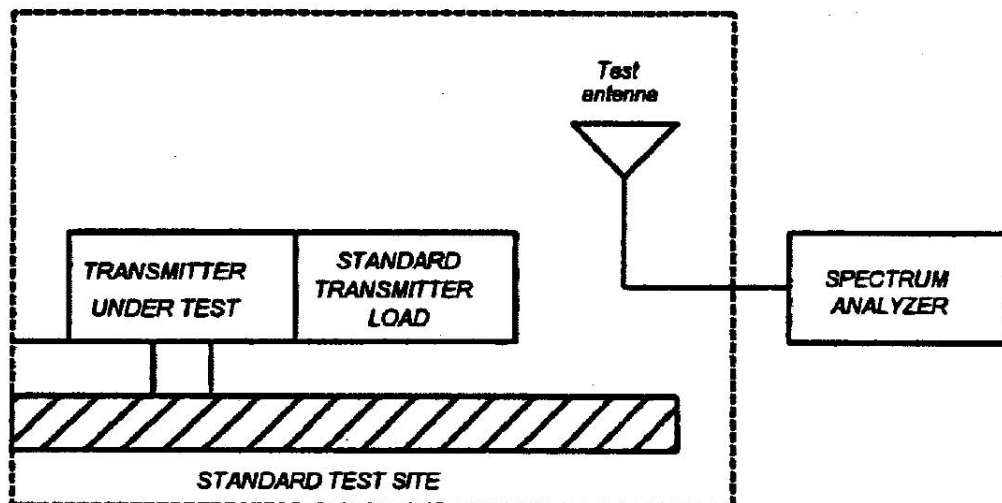
1.2.12.2 Method of Measurement

A) Connect the equipment as illustrated

B) Adjust the spectrum analyzer for the following settings:

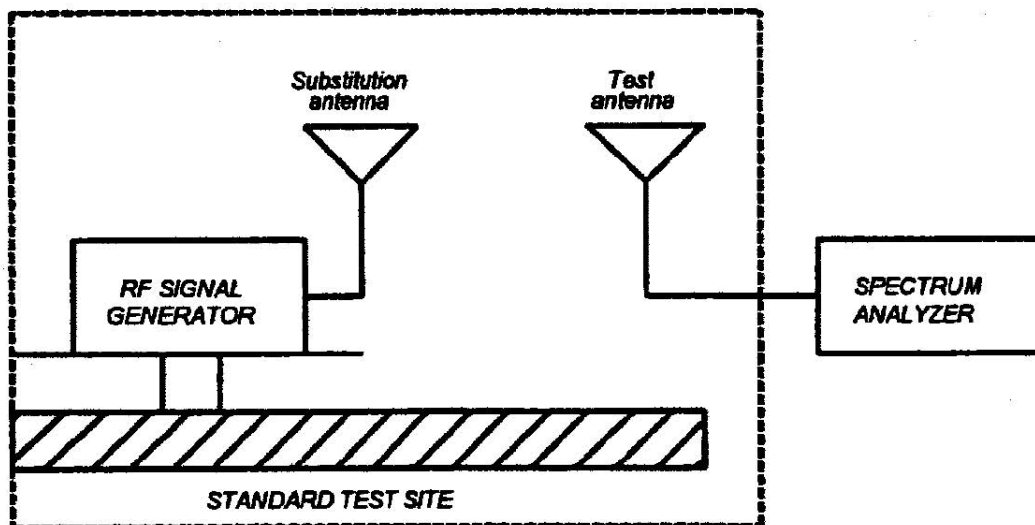
- 1) Resolution Bandwidth 100 kHz (<1 GHz), 1 MHz (> 1GHz).
- 2) Video Bandwidth ≥ 3 times Resolution Bandwidth
- 3) Sweep Speed ≤ 2000 Hz/second
- 4) Detector Mode = Mean or Average Power

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

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FCC ID PJO2208

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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608

Name of Test: Field Strength of Spurious Radiation

GSM 850 (Channel 189)

Freq MHz	Pol	Substitution Antenna Input Power (dBm)	Substitution Antenna Gain (dBd)	Et (dBuV/m)	Es (dBuV/m)	Et - Es (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
49.44	H	-0.67	-1.86	25.14	79.02	-53.88	-56.41	-13.0	-43.41
114.78	H	-1.11	-0.92	31.45	92.50	-61.05	-63.07	-13.0	-50.07
153.39	H	-1.06	-0.40	29.09	91.57	-62.48	-63.94	-13.0	-50.94
719.30	H	-2.27	-0.93	31.52	94.65	-63.13	-66.33	-13.0	-53.33
836.90	H	-2.49	-1.54	71.82	93.86	-22.04	-26.06	-13.0	-13.06
945.40	H	-2.61	-1.41	31.45	93.08	-61.63	-65.65	-13.0	-52.65
1674.00	H	-3.60	4.42	69.04	102.05	-33.01	-32.19	-13.0	-19.19
2508.00	H	-4.67	5.35	56.22	97.86	-41.64	-40.96	-13.0	-27.96
3344.00	H	-4.91	5.32	55.90	99.63	-43.73	-43.32	-13.0	-30.32
4184.00	H	-5.81	5.58	52.68	99.07	-46.39	-46.62	-13.0	-33.62
5018.00	H	-6.17	6.25	58.34	98.27	-39.93	-39.86	-13.0	-26.86
5854.00	H	-6.85	6.50	58.57	99.09	-40.52	-40.87	-13.0	-27.87
6688.00	H	-7.57	6.90	53.91	97.30	-43.39	-44.06	-13.0	-31.06
10034.00	H	-10.41	6.84	59.01	96.07	-37.06	-40.63	-13.0	-27.63
10874.00	H	-10.70	6.87	57.39	96.69	-39.30	-43.13	-13.0	-30.13
11708.00	H	-12.08	8.51	71.32	92.12	-20.80	-24.37	-13.0	-11.37
48.09	V	-0.66	-1.87	39.21	77.52	-38.31	-40.84	-13.0	-27.84
101.28	V	-1.07	0.16	30.92	92.61	-61.69	-62.60	-13.0	-49.60
118.83	V	-1.08	-1.26	31.42	92.36	-60.94	-63.28	-13.0	-50.28
726.30	V	-2.25	-1.00	32.76	94.53	-61.77	-65.02	-13.0	-52.02
836.90	V	-2.49	-1.54	73.84	93.86	-20.02	-24.04	-13.0	-11.04
945.40	V	-2.61	-1.41	36.73	93.08	-56.35	-60.37	-13.0	-47.37
1674.00	V	-3.60	4.42	70.31	102.05	-31.74	-30.92	-13.0	-17.92
2508.00	V	-4.67	5.35	54.30	97.86	-43.56	-42.88	-13.0	-29.88
3344.00	V	-4.91	5.32	55.62	99.63	-44.01	-43.60	-13.0	-30.60
4184.00	V	-5.81	5.58	50.64	99.07	-48.43	-48.66	-13.0	-35.66
5018.00	V	-6.17	6.25	58.06	98.27	-40.21	-40.14	-13.0	-27.14
5854.00	V	-6.85	6.50	57.53	99.09	-41.56	-41.91	-13.0	-28.91
6688.00	V	-7.57	6.90	52.77	97.30	-44.53	-45.20	-13.0	-32.20
10874.00	V	-10.70	6.87	62.47	96.69	-34.22	-38.05	-13.0	-25.05
11708.00	V	-12.08	8.51	64.81	92.12	-27.31	-30.88	-13.0	-17.88

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FCC TEST REPORT

Report No. : FG491608

PCS 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)
52.14	H	-0.71	0.31	22.15	80.70	-58.55	-58.96	-13.0	-45.96
125.58	H	-1.07	0.90	31.84	92.31	-60.47	-60.64	-13.0	-47.64
153.39	H	-1.06	1.75	30.31	91.57	-61.26	-60.57	-13.0	-47.57
302.80	H	-1.49	1.65	28.51	93.19	-64.68	-64.53	-13.0	-51.53
378.40	H	-1.59	1.37	25.49	94.06	-68.57	-68.79	-13.0	-55.79
425.30	H	-1.68	1.73	25.71	95.08	-69.37	-69.32	-13.0	-56.32
1724.00	H	-3.64	6.59	41.25	101.95	-60.70	-57.75	-13.0	-44.75
1884.00	H	-3.79	6.65	48.49	101.63	-53.14	-50.27	-13.0	-37.27
3758.00	H	-5.25	7.45	61.13	99.07	-37.94	-35.74	-13.0	-22.74
5638.00	H	-6.67	8.44	53.04	98.79	-45.75	-43.98	-13.0	-30.98
7518.00	H	-8.44	8.52	51.92	94.67	-42.75	-42.67	-13.0	-29.67
9398.00	H	-9.78	8.94	58.66	95.76	-37.10	-37.95	-13.0	-24.95
11278.00	H	-11.60	9.71	61.56	94.43	-32.87	-34.75	-13.0	-21.75
49.44	V	-0.67	0.29	41.33	79.02	-37.69	-38.07	-13.0	-25.07
101.28	V	-1.07	2.31	30.97	92.61	-61.64	-60.40	-13.0	-47.40
130.98	V	-1.07	1.00	31.40	92.27	-60.87	-60.94	-13.0	-47.94
329.40	V	-1.58	1.58	23.58	93.50	-69.92	-69.92	-13.0	-56.92
420.40	V	-1.67	1.70	24.51	94.94	-70.43	-70.41	-13.0	-57.41
498.80	V	-1.86	2.08	23.38	93.60	-70.22	-70.00	-13.0	-57.00
1728.00	V	-3.65	6.59	39.43	101.94	-62.51	-59.57	-13.0	-46.57
1874.00	V	-3.78	6.65	53.78	101.65	-47.87	-45.00	-13.0	-32.00
2034.00	V	-3.94	6.75	43.02	101.16	-58.14	-55.33	-13.0	-42.33
3758.00	V	-5.25	7.45	63.04	99.07	-36.03	-33.83	-13.0	-20.83
5638.00	V	-6.67	8.44	52.78	98.79	-46.01	-44.24	-13.0	-31.24
7518.00	V	-8.44	8.52	51.30	94.67	-43.37	-43.29	-13.0	-30.29
9398.00	V	-9.78	8.94	59.37	95.76	-36.39	-37.24	-13.0	-24.24
11278.00	V	-11.60	9.71	58.96	94.43	-35.47	-37.35	-13.0	-24.35

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FCC TEST REPORT

Report No. : FG491608

Radiated Scanned Data
GSM 850, Horizontal Polarization



Site : 03CH06-HY
Condition : 3m BI LOG 2004 0629 HORIZONTAL 0cm 0deg
EUT : GSM Dual Band Handset
Power : 120Vac / 60Hz
Model : 2208
Memo : GSM850 Link mode
: CH189

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg
1	49.44	25.14	-----	-----	48.97	8.00	32.43	0.60	0
2	114.78	31.45	-----	-----	50.92	11.60	32.01	0.94	0
3	153.39	29.09	-----	-----	50.37	9.85	32.20	1.07	0

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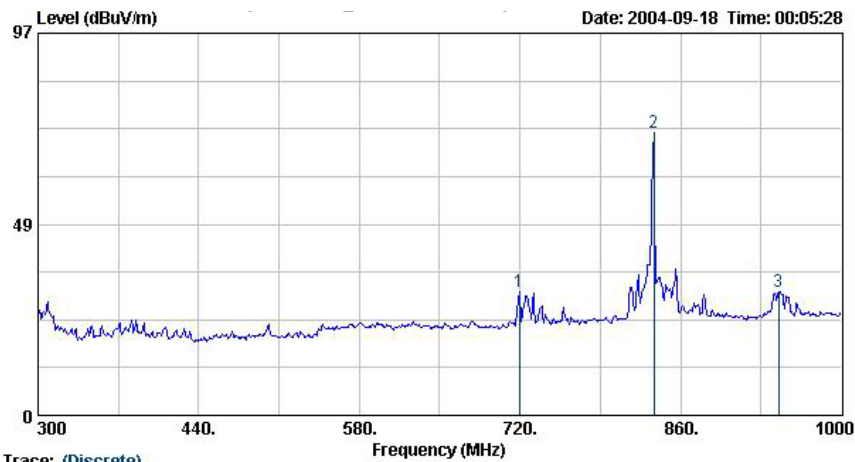
FCC ID PJO2208

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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608



Trace: (Discrete)

Site : 03CH06-HY
 Condition : 3m BI LOG 2004 0629 HORIZONTAL 0cm 0deg
 EUT : GSM Dual Band Handset
 Power : 120Vac / 60Hz
 Model : 2208
 Memo : GSM850 Link mode
 : CH189

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg
1	719.30	31.52	-----	-----	41.32	19.39	31.78	2.59	0
2 @	836.90	71.82	-----	-----	80.25	20.35	31.78	3.00	0
3	945.40	31.45	-----	-----	38.49	20.81	30.97	3.12	0

Remark:

1. #2: Fundamental Signal

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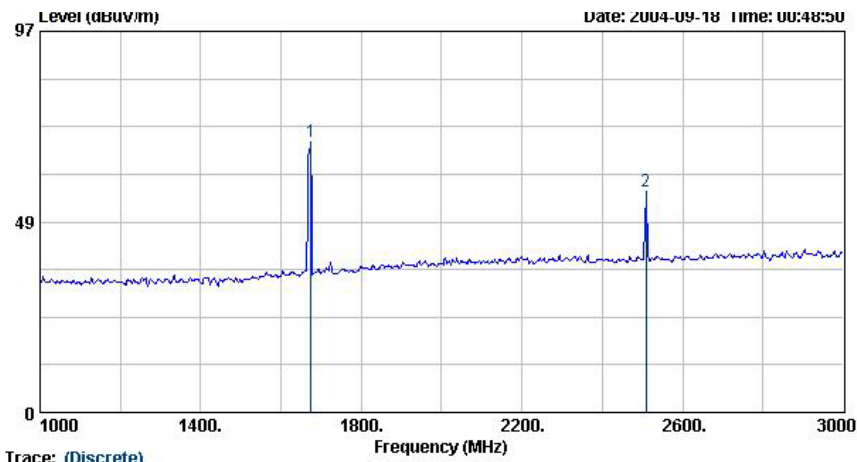
FCC ID PJO2208

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Issued Date Sep. 24, 2004

FCC TEST REPORT

Report No. : FG491608



Trace: (Discrete)

Site : 03CH06-HY
 Condition : 3m HF-HORN AH-118 HORIZONTAL 0cm 0deg
 EUT : GSM Dual Band Handset
 Power : 120Vac / 60Hz
 Model : 2208
 Memo : GSM850 Link mode
 : CH189

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg
1 @	1674.00	69.04	-----	-----	83.78	26.42	43.91	2.76	0
2	2508.00	56.22	-----	-----	67.14	28.55	42.86	3.39	0

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