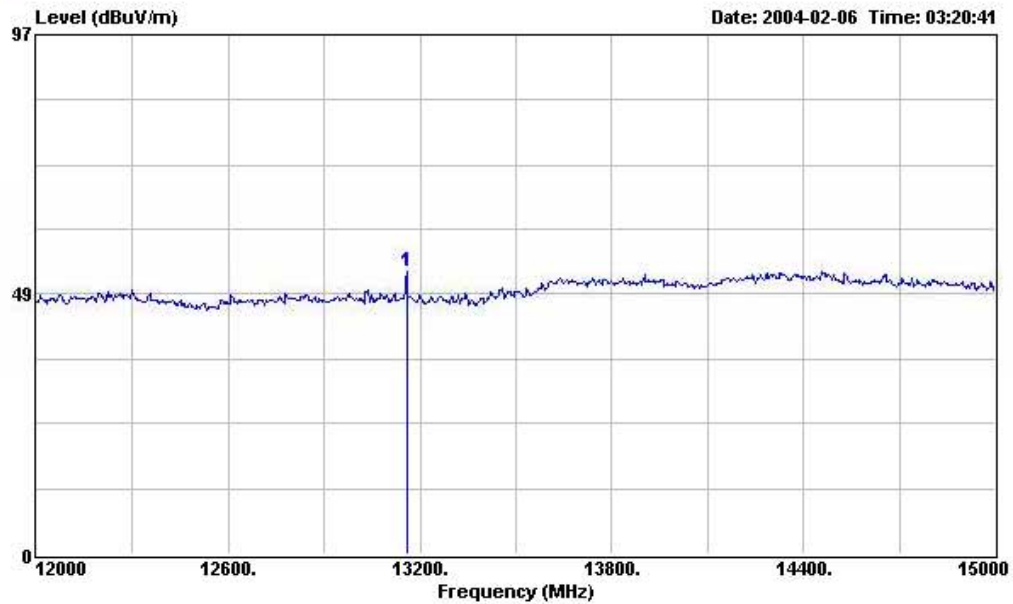
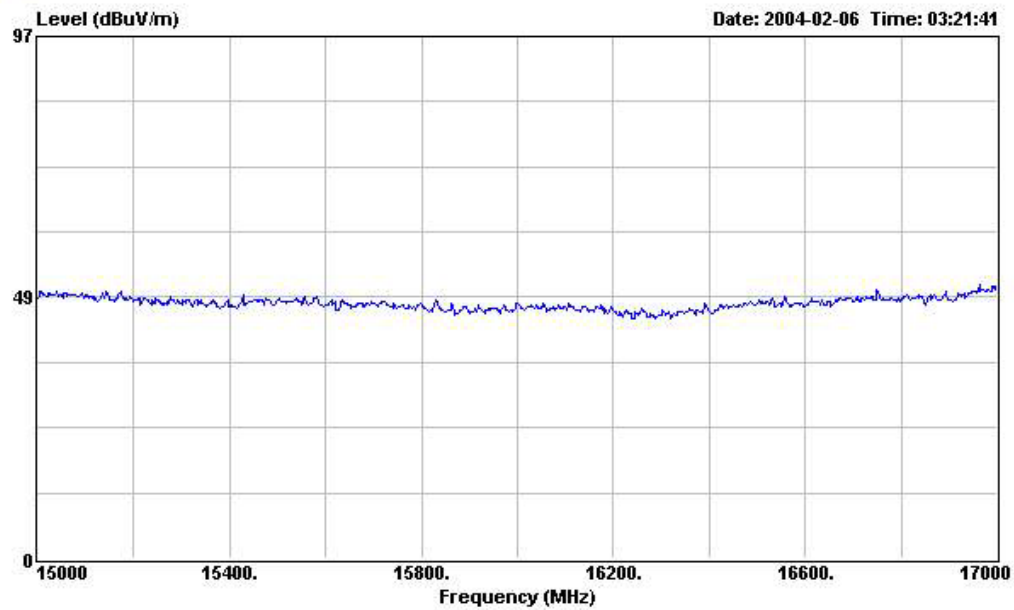




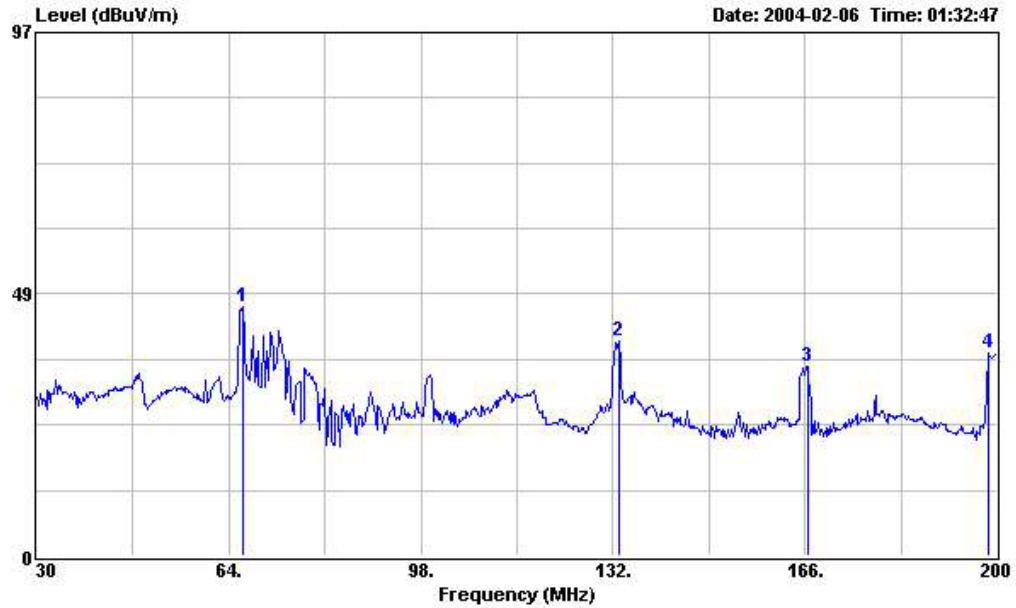
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

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 13158.000	52.84	-----	-----	49.86	39.63	5.05	41.70	Peak	---	---



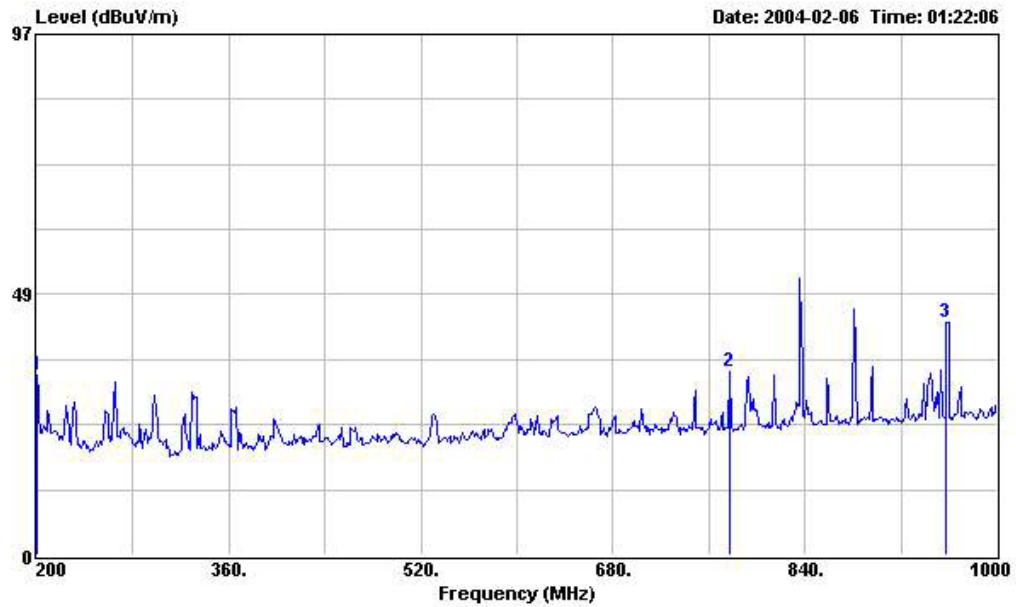
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

GPRS 850, Vertical Polarization



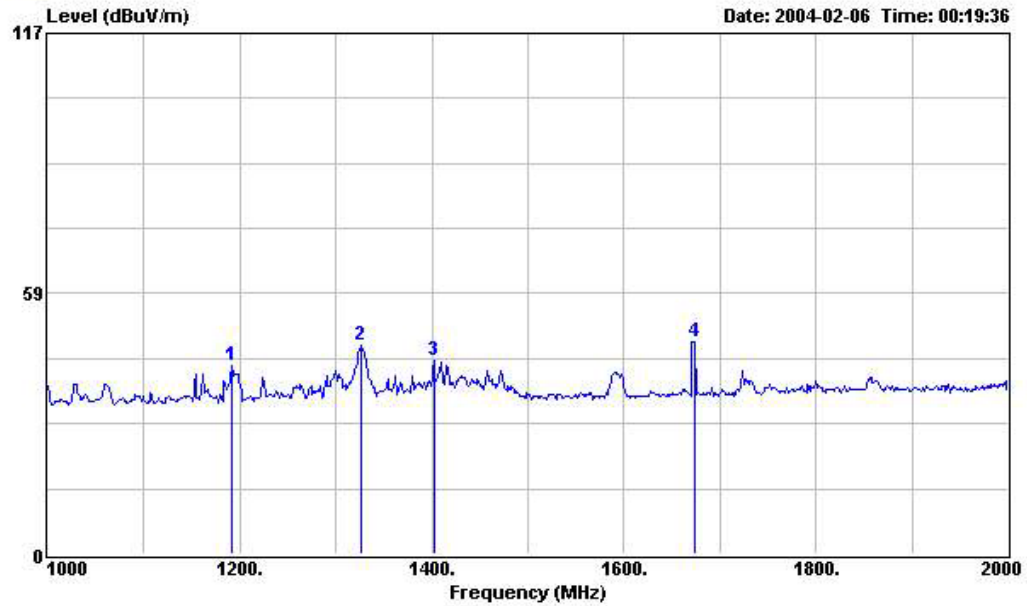
Site : 03CH03-HY
 Condition : 3m BIC-9124--301 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	66.380	46.18	-----	-----	64.68	9.17	0.30	27.97	Peak	---	---
2	133.020	39.66	-----	-----	55.35	11.48	0.66	27.83	Peak	---	---
3	166.510	35.14	-----	-----	49.13	13.06	0.72	27.77	Peak	---	---
4	198.470	37.71	-----	-----	49.82	14.76	0.83	27.70	Peak	---	---



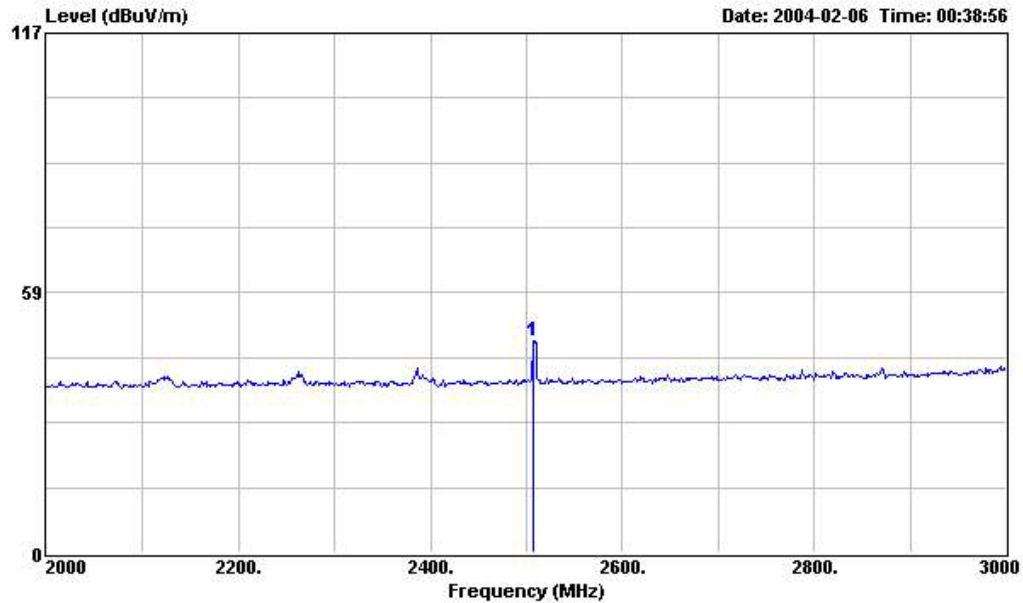
Site : 03CH03-HY
 Condition : 3m LOG-9111-221 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	200.000	33.35	-----	-----	44.63	15.39	1.03	27.70	Peak	---	---
2	777.600	34.21	-----	-----	41.29	20.21	1.49	28.78	Peak	---	---
3	957.600	43.33	-----	-----	48.08	21.90	1.59	28.24	Peak	---	---



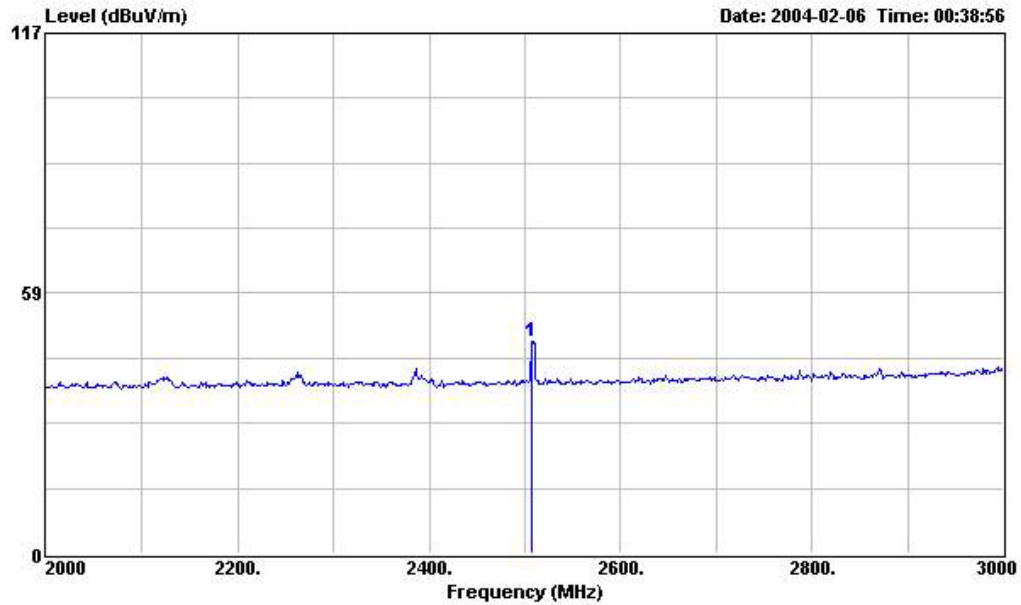
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	1191.000	42.33	-----	-----	56.83	24.58	1.22	40.30	Peak	---	---
2	1326.000	46.73	-----	-----	60.91	24.91	1.35	40.44	Peak	---	---
3	1402.000	43.27	-----	-----	57.24	25.10	1.44	40.51	Peak	---	---
4	1674.000	47.78	-----	-----	60.86	26.08	1.55	40.71	Peak	---	---



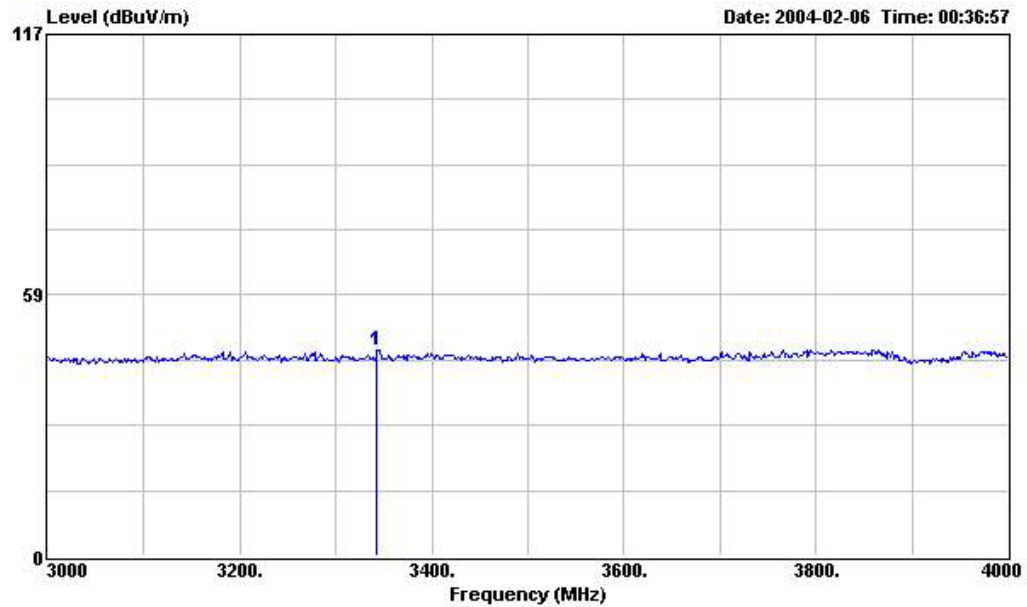
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

	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	2507.000	47.54	-----	-----	58.42	28.46	1.86	41.20	Peak	---	---



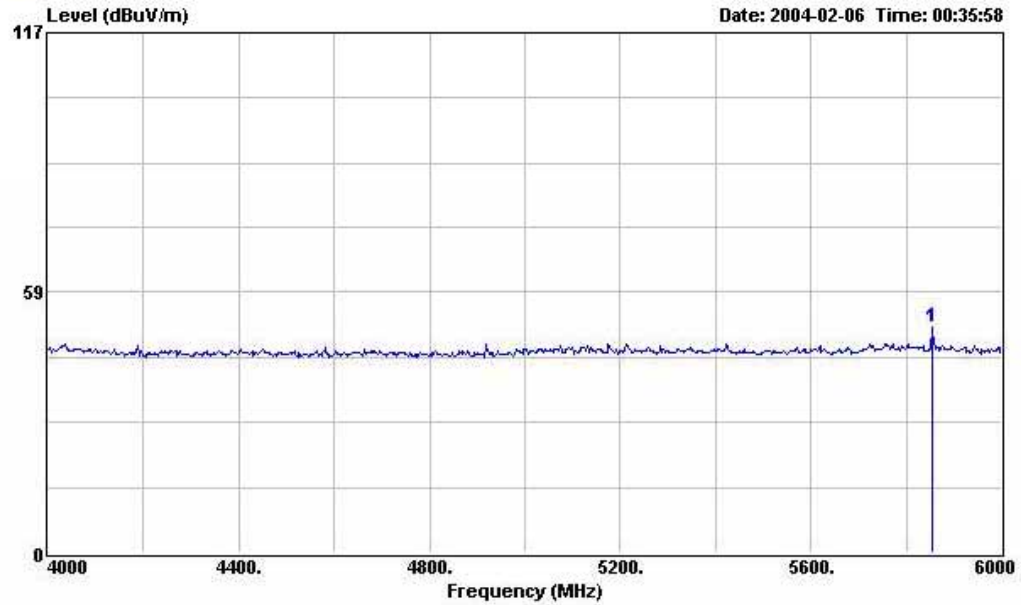
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	2507.000	47.54	-----	-----	58.42	28.46	1.86	41.20	Peak	---	---



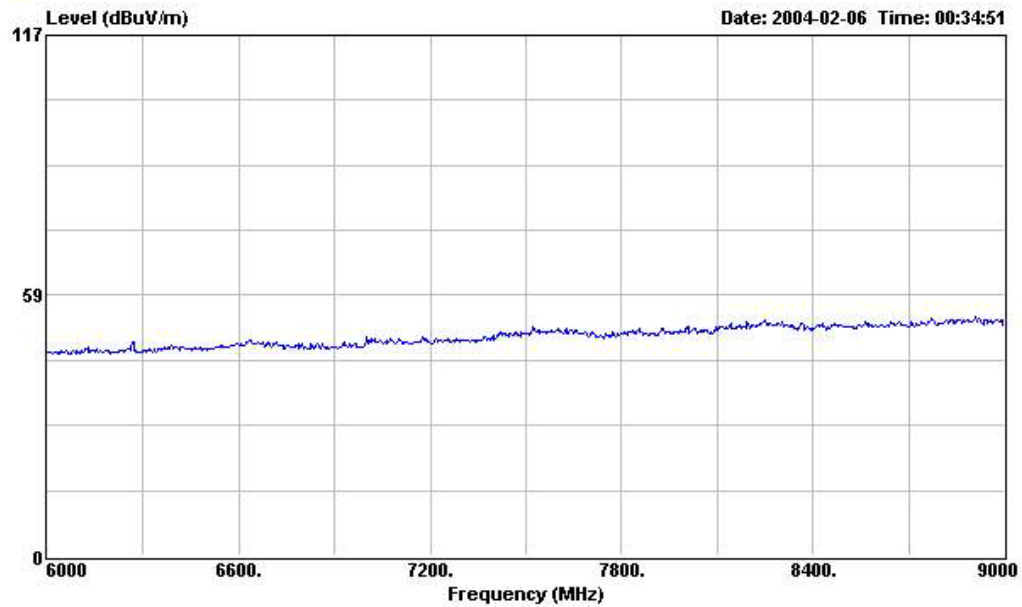
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

	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	3343.000	46.11	-----	-----	54.39	30.84	2.15	41.27	Peak	---	---



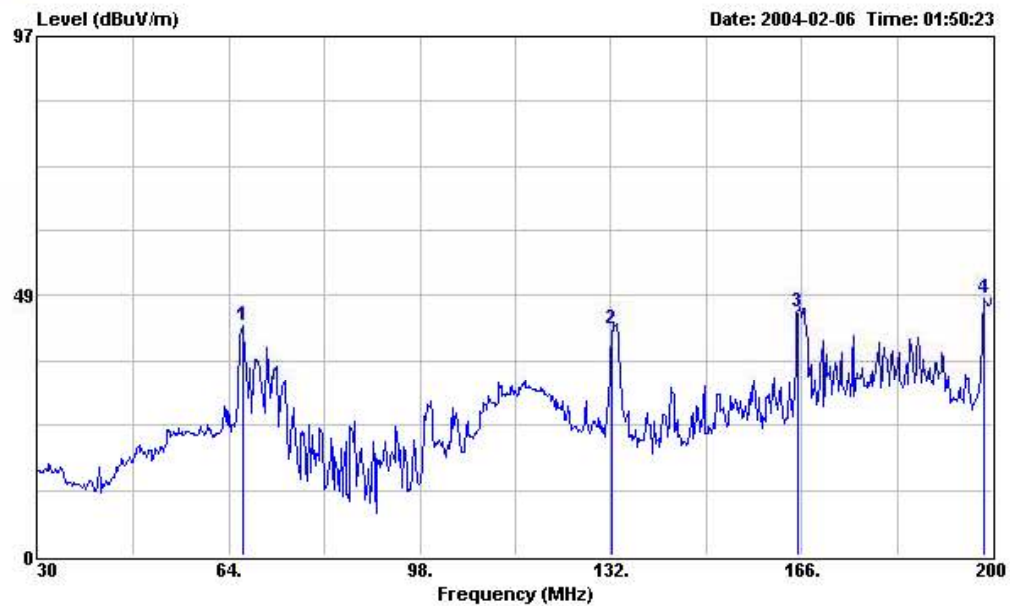
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	5854.000	50.76	-----	-----	57.16	34.14	2.71	43.25	Peak	---	---



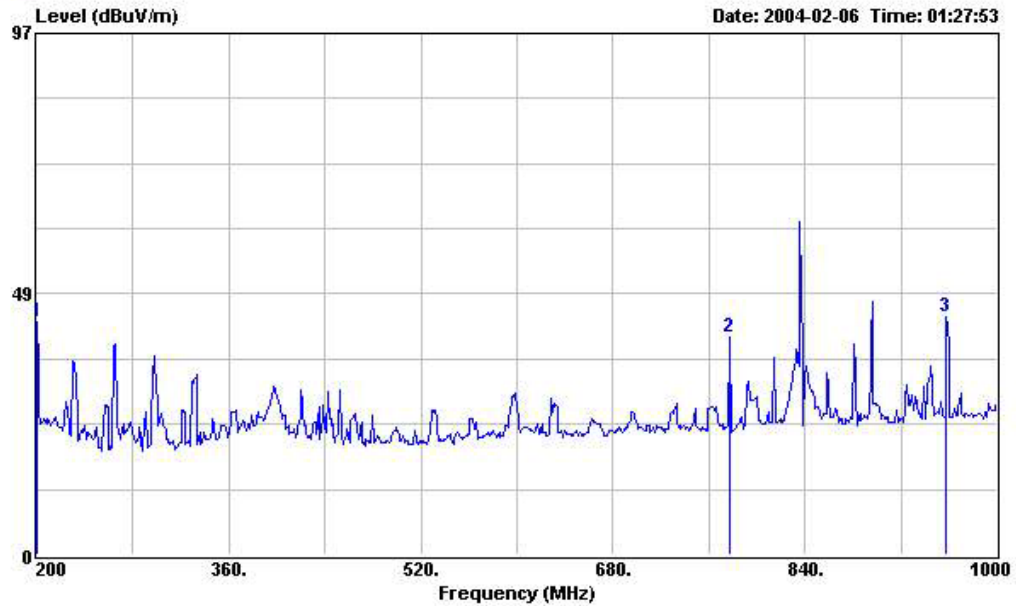
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

GPRS 850, Horizontal Polarization



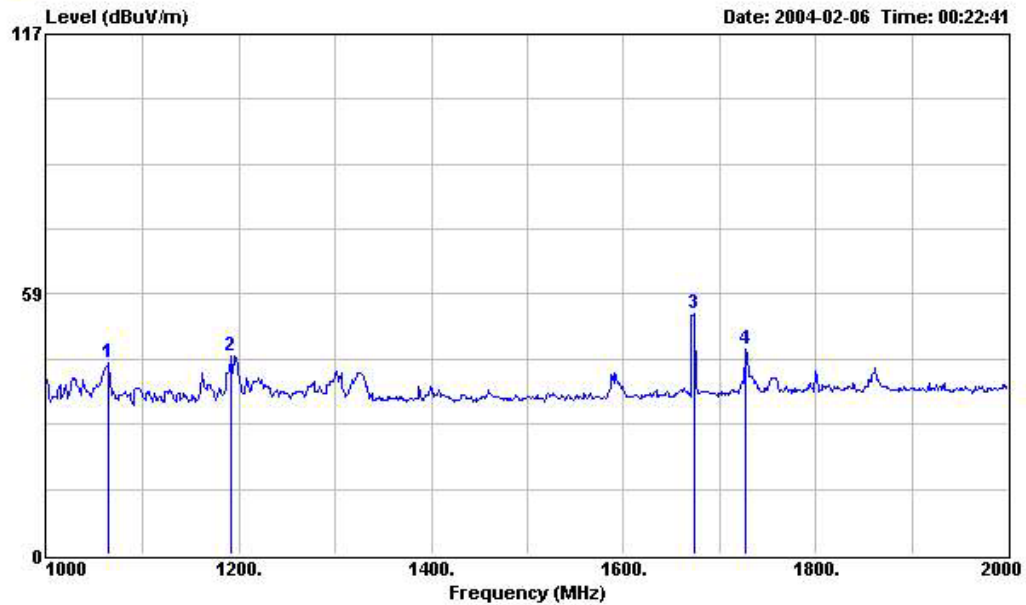
Site : 03CH03-HY
 Condition : 3m BIC-9124--301 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	66.380	43.12	-----	-----	61.62	9.17	0.30	27.97	Peak	---	---
2	132.320	42.32	-----	-----	58.15	11.45	0.55	27.83	Peak	---	---
3	165.320	45.45	-----	-----	59.52	12.99	0.71	27.77	Peak	---	---
4	198.430	48.12	-----	-----	60.23	14.76	0.83	27.70	Peak	---	---



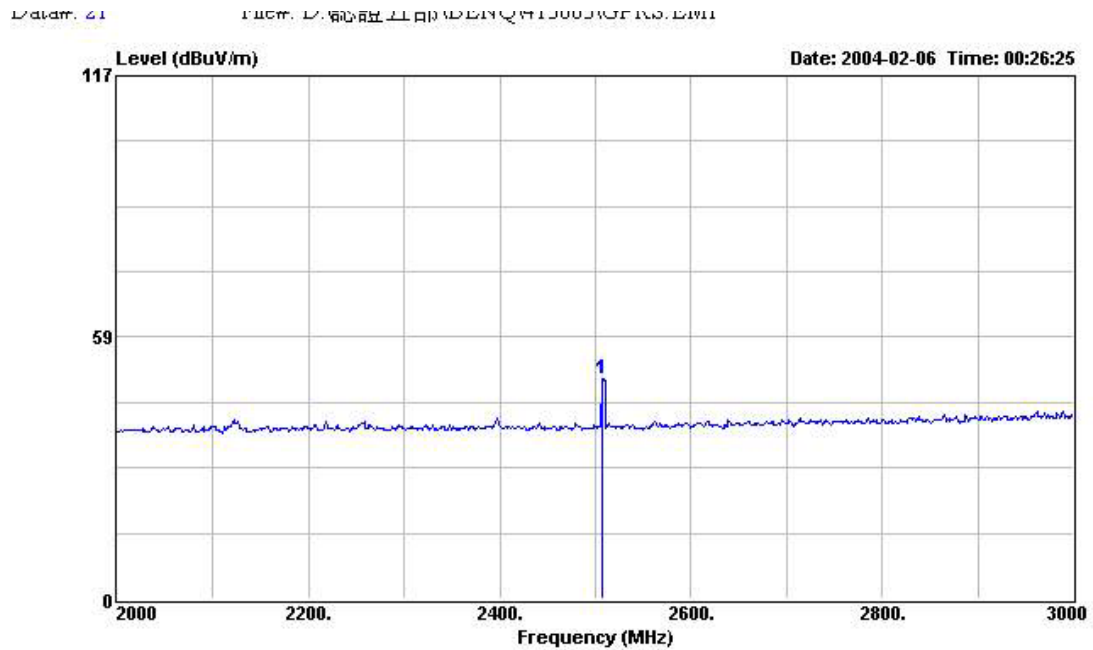
Site : 03CH03-HY
 Condition : 3m LOG-9111-221 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	200.000	43.33	-----	-----	54.61	15.39	1.03	27.70	Peak	---	---
2	777.600	40.40	-----	-----	47.48	20.21	1.49	28.78	Peak	---	---
3	957.600	44.10	-----	-----	48.85	21.90	1.59	28.24	Peak	---	---



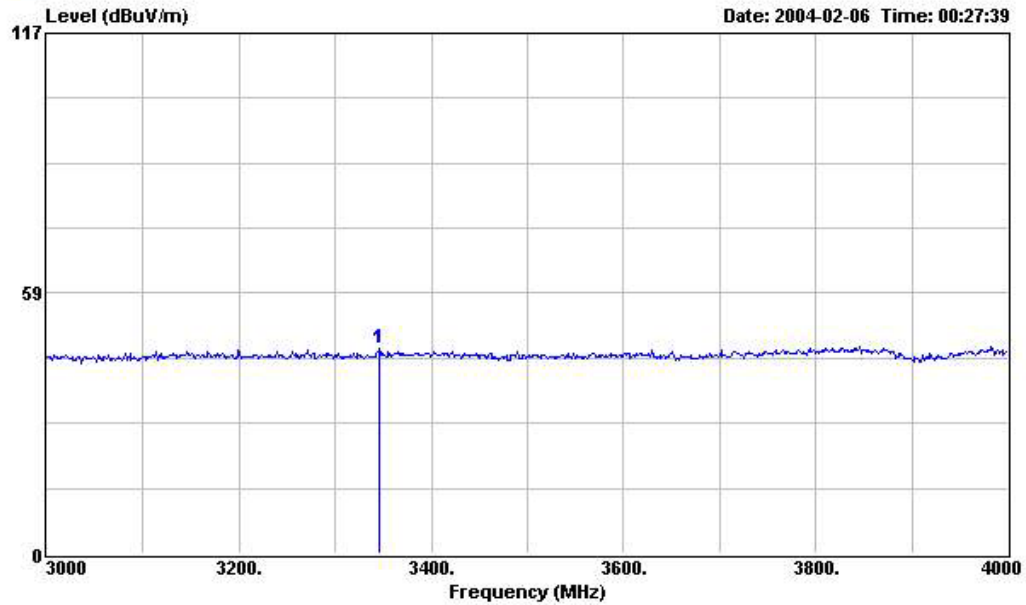
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	1063.000	42.96	-----	-----	57.67	24.27	1.19	40.17	Peak	---	---
2	1191.000	44.71	-----	-----	59.21	24.58	1.22	40.30	Peak	---	---
3	1674.000	54.06	-----	-----	67.14	26.08	1.55	40.71	Peak	---	---
4	1727.000	45.96	-----	-----	58.95	26.30	1.45	40.74	Peak	---	---



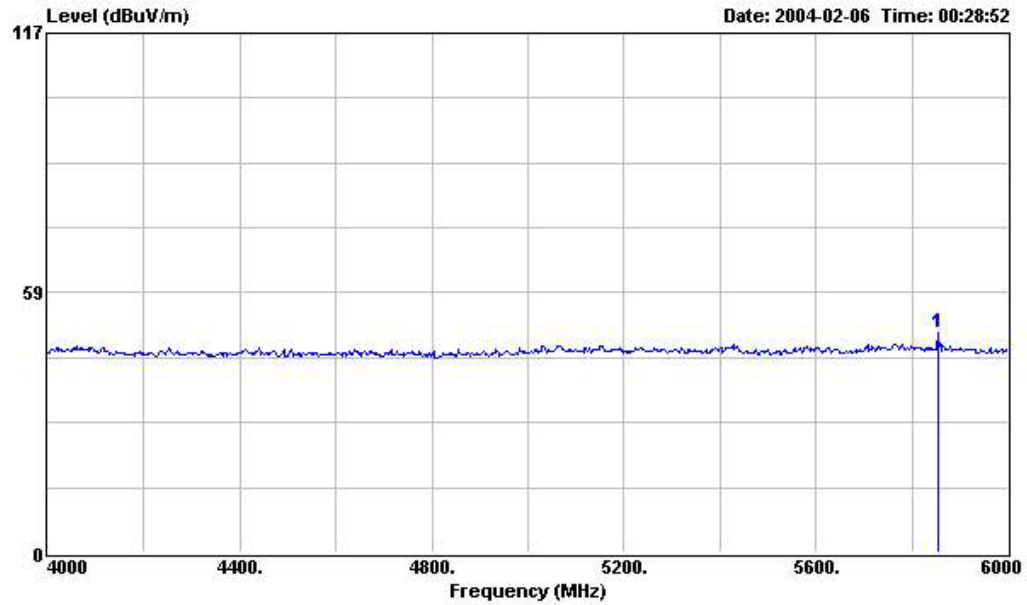
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

	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	2507.000	49.31	-----	-----	60.19	28.46	1.86	41.20	Peak	---	---



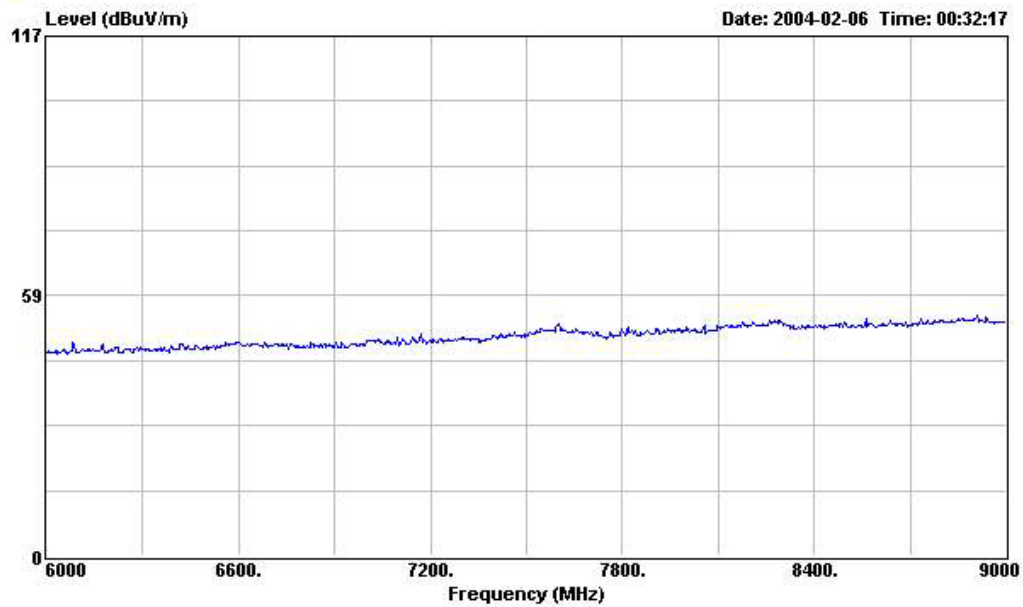
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

	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	3346.000	45.99	-----	-----	54.26	30.85	2.15	41.27	Peak	---	---



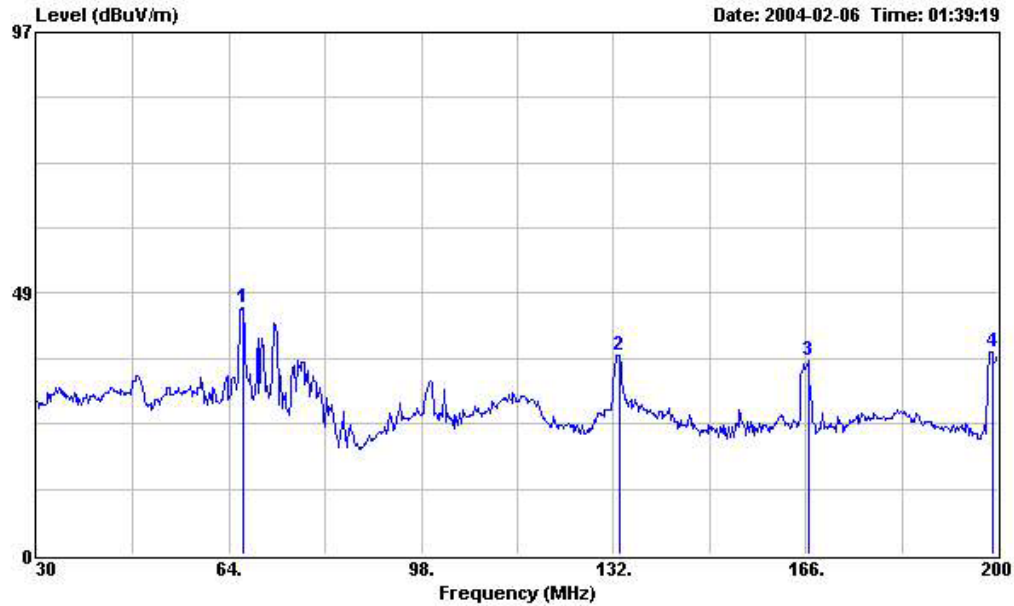
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM850 CH189

	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	5854.000	49.37	-----	-----	55.77	34.14	2.71	43.25	Peak	---	---



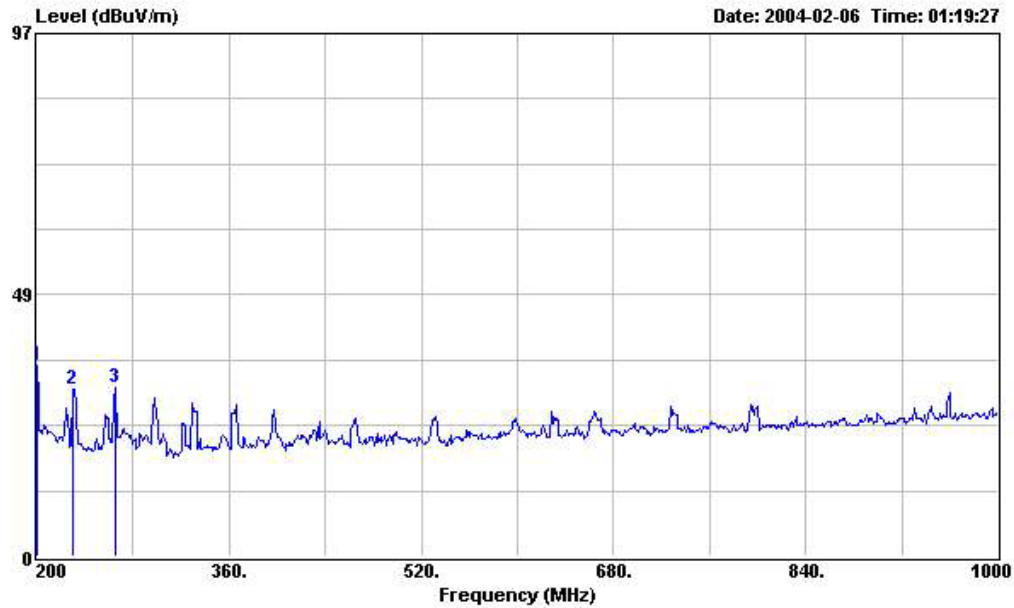
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM850 CH189

GPRS 1900, Vertical Polarization



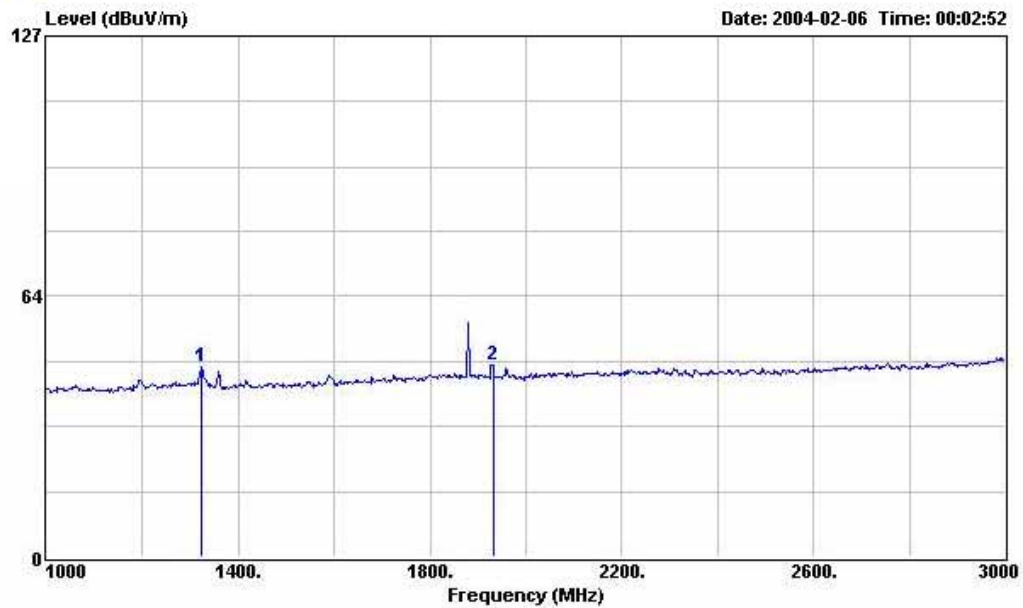
Site : 03CH03-HY
 Condition : 3m BIC-9124--301 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	66.380	45.87	-----	-----	64.37	9.17	0.30	27.97	Peak	---	---
2	133.190	37.03	-----	-----	52.71	11.49	0.66	27.83	Peak	---	---
3	166.510	36.05	-----	-----	50.04	13.06	0.72	27.77	Peak	---	---
4	198.980	37.64	-----	-----	49.58	14.78	0.98	27.70	Peak	---	---



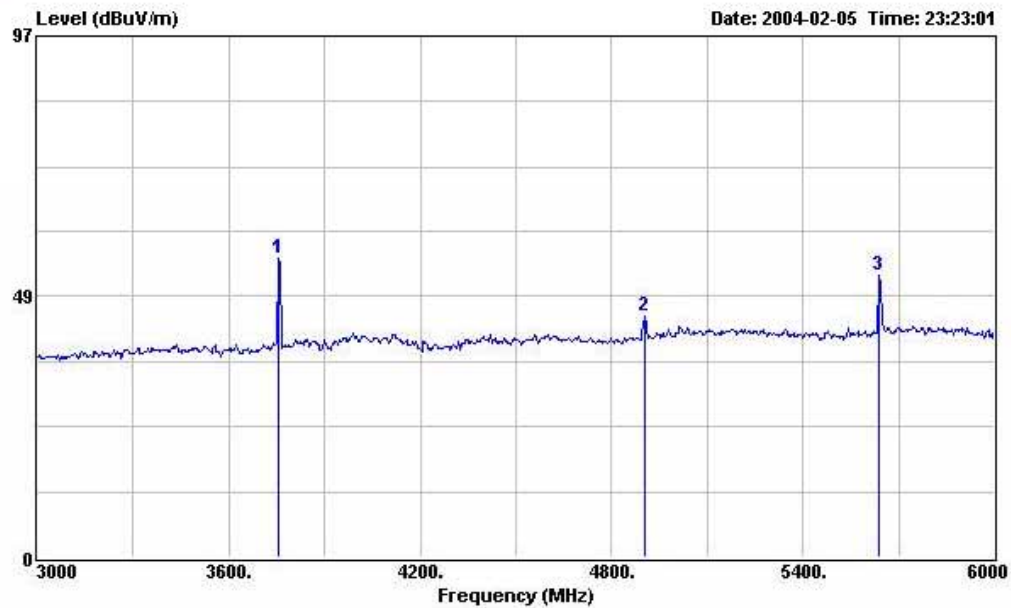
Site : 03CH03-HY
 Condition : 3m LOG-9111-221 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	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	200.000	35.50	-----	-----	46.78	15.39	1.03	27.70	Peak	---	---
2	230.400	30.96	-----	-----	44.15	13.45	0.94	27.58	Peak	---	---
3	265.600	31.14	-----	-----	45.07	12.50	1.01	27.44	Peak	---	---



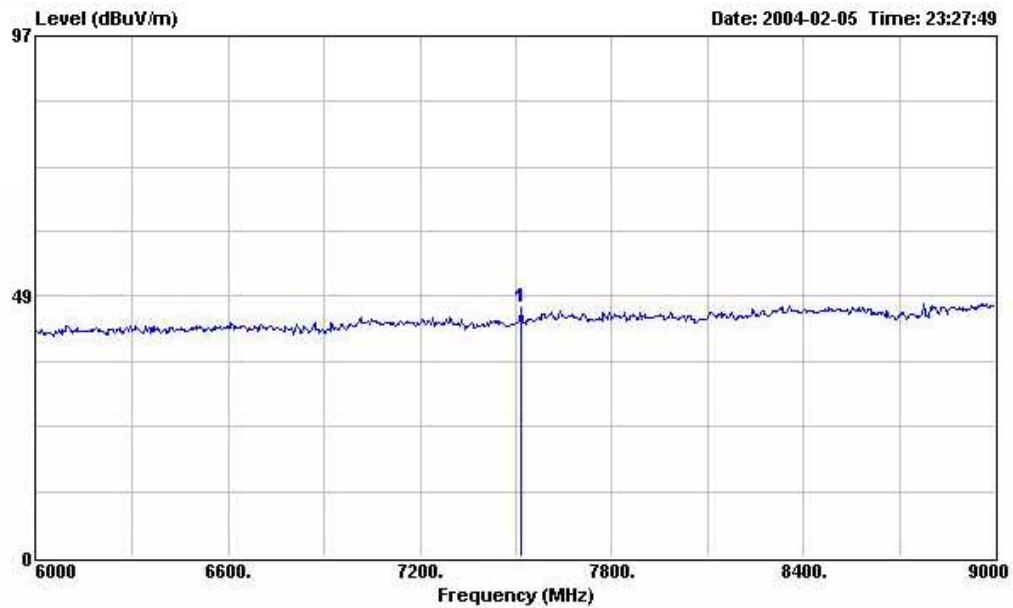
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m		dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1324.000	46.40	-----	-----	60.57	24.91	1.36	40.44	Peak	---	---
2	1932.000	46.93	-----	-----	59.11	27.14	1.55	40.87	Peak	---	---



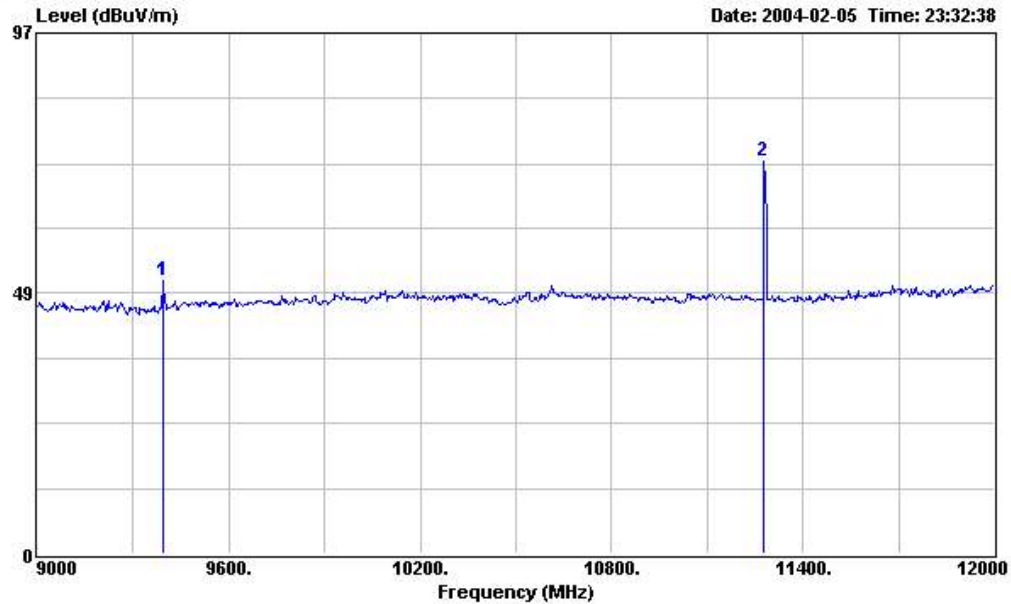
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 VERTICAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	3753.000	55.52	-----	-----	63.19	31.94	1.80	41.41	Peak	---	---
2	4902.000	44.82	-----	-----	51.58	33.23	2.49	42.48	Peak	---	---
3	5637.000	52.36	-----	-----	58.93	34.06	2.53	43.16	Peak	---	---



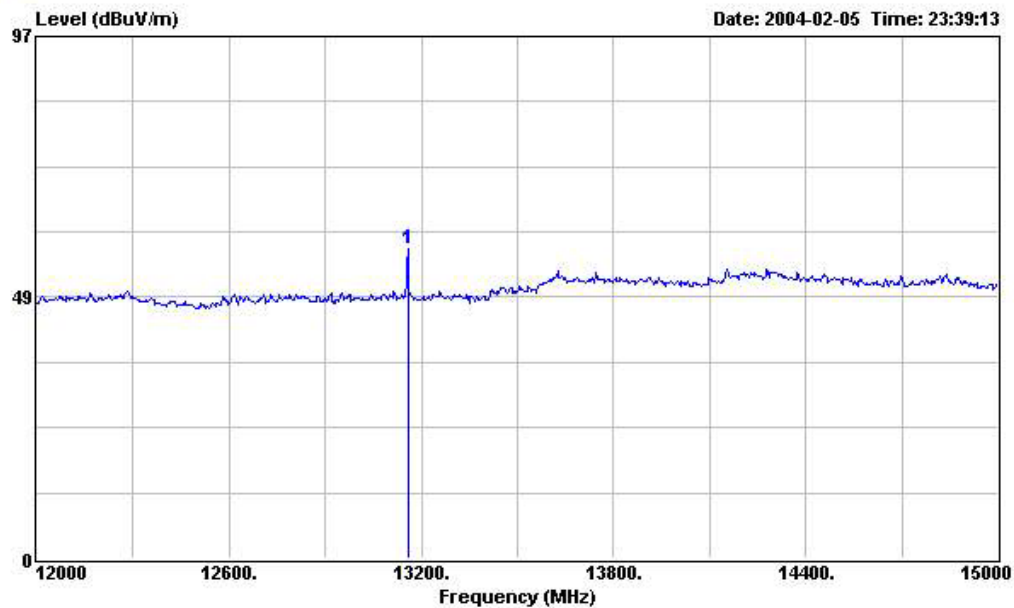
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

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 7518.000	46.39	-----	-----	49.53	36.52	2.72	42.38	Peak	---	---



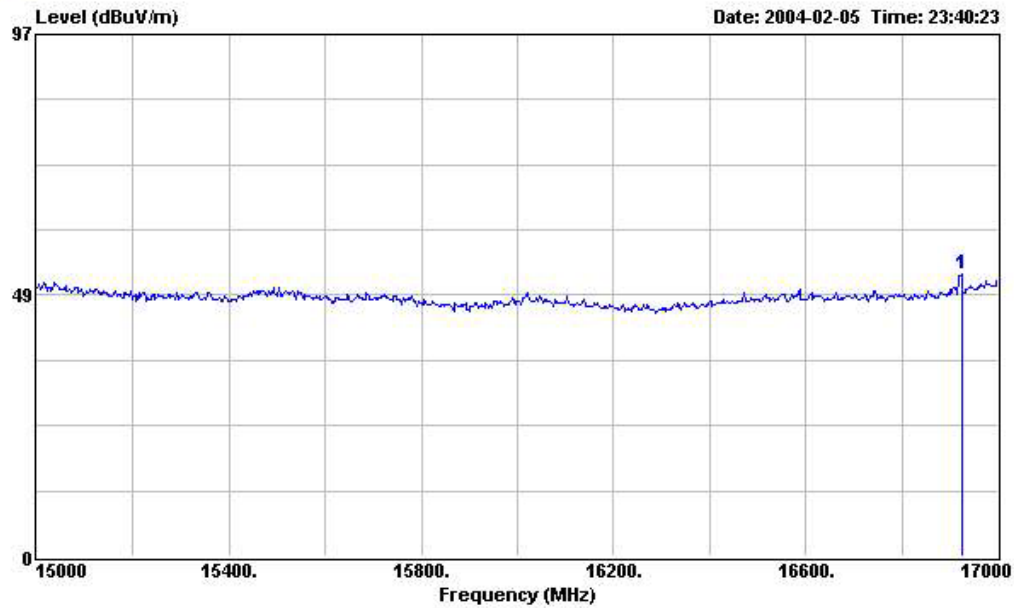
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

	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	9393.000	50.88	-----	-----	49.38	37.94	3.73	40.17	Peak	---	---
2	11277.000	73.17	-----	-----	69.73	38.94	4.43	39.93	Peak	---	---



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

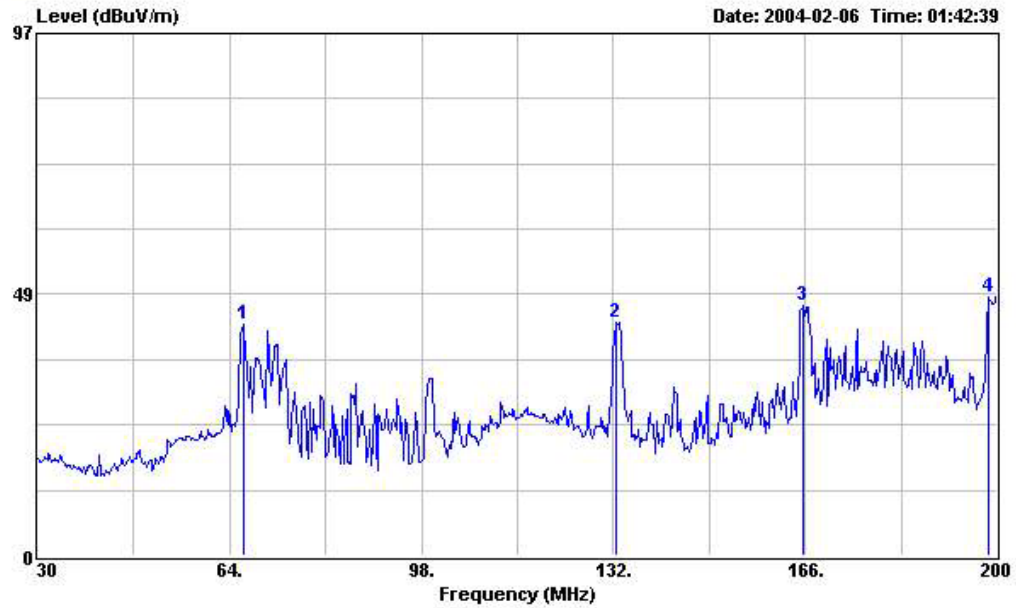
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	13158.000	57.51	-----	-----	54.53	39.63	5.05	41.70	Peak	---	---



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 VERTICAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

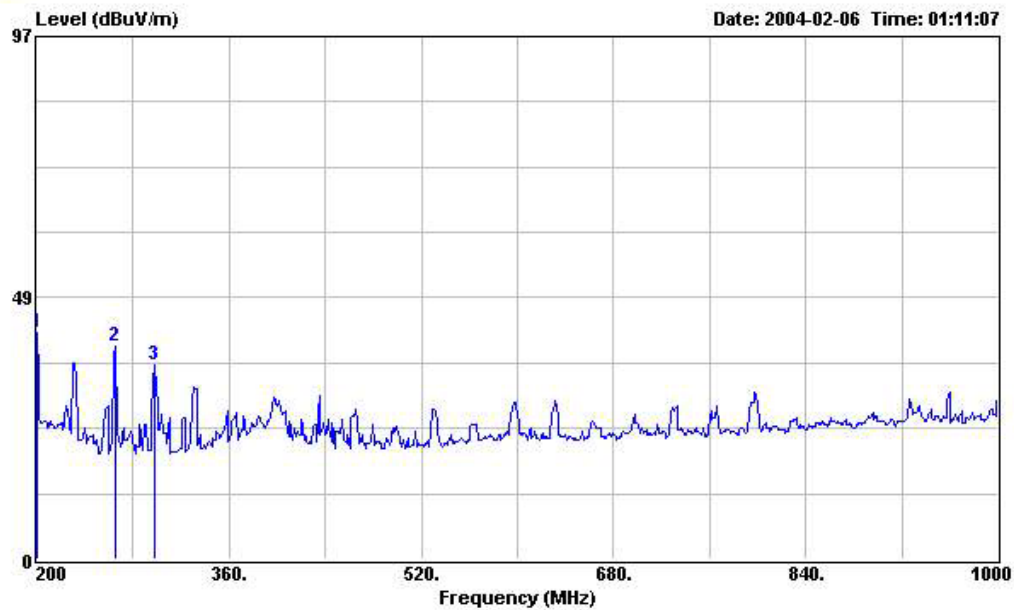
	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark	Pos	Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	16924.000	52.55	-----	-----	49.73	39.88	5.79	42.85	Peak	---	---

GPRS 1900, Horizontal Polarization



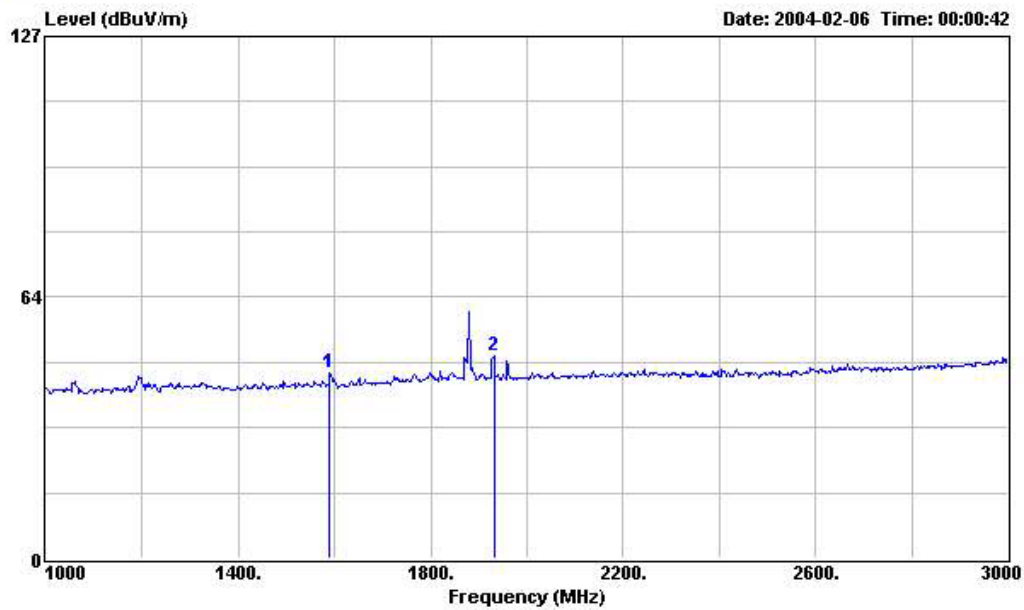
Site : 03CH03-HY
 Condition : 3m BIC-9124--301 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	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	66.380	42.99	-----	-----	61.49	9.17	0.30	27.97	Peak	---	---
2	132.340	43.38	-----	-----	59.21	11.45	0.55	27.83	Peak	---	---
3	165.660	46.48	-----	-----	60.53	13.01	0.71	27.77	Peak	---	---
4	198.470	47.89	-----	-----	60.00	14.76	0.83	27.70	Peak	---	---



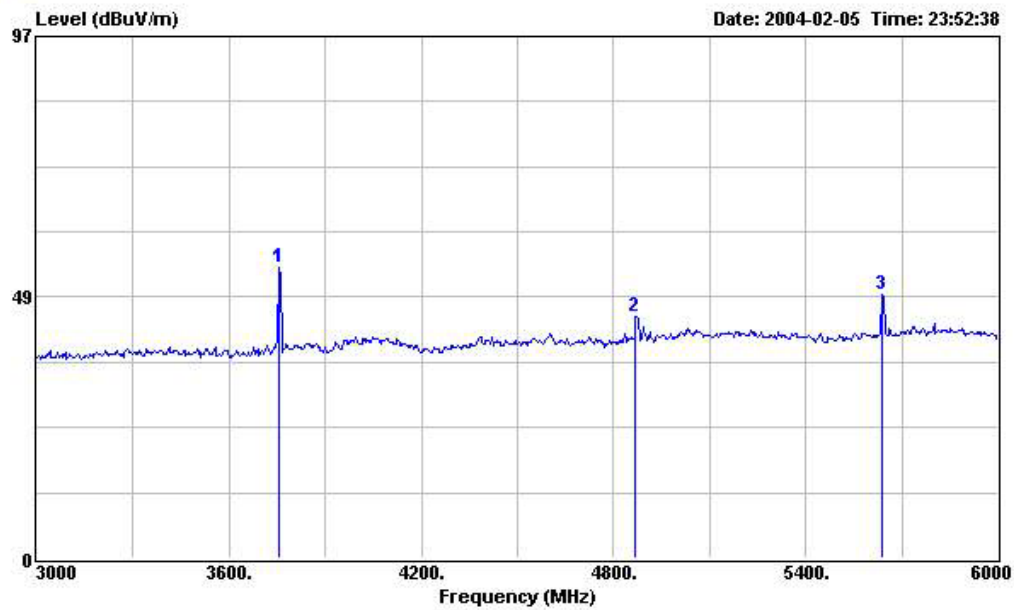
Site : 03CH03-HY
 Condition : 3m LOG-9111-221 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m		dBuV/m	dBuV	dB	dB	dB		cm	deg
1	200.000	42.13	-----	-----	53.41	15.39	1.03	27.70	Peak	---	---
2	265.600	39.57	-----	-----	53.50	12.50	1.01	27.44	Peak	---	---
3	298.400	35.97	-----	-----	49.09	13.16	1.03	27.31	Peak	---	---



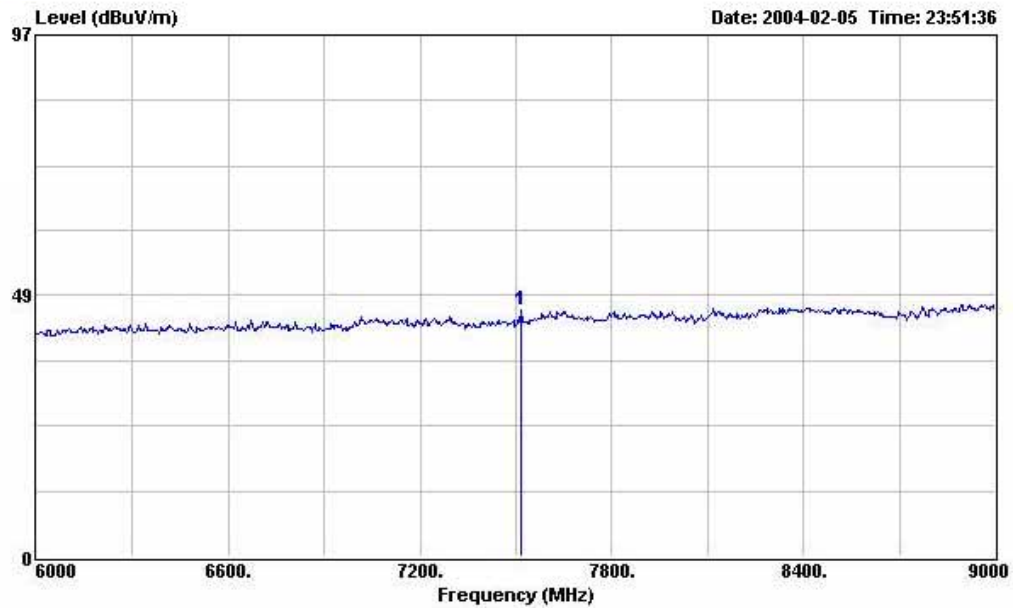
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m		dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1590.000	44.95	-----	-----	58.38	25.73	1.50	40.66	Peak	---	---
2	1932.000	49.24	-----	-----	61.42	27.14	1.55	40.87	Peak	---	---



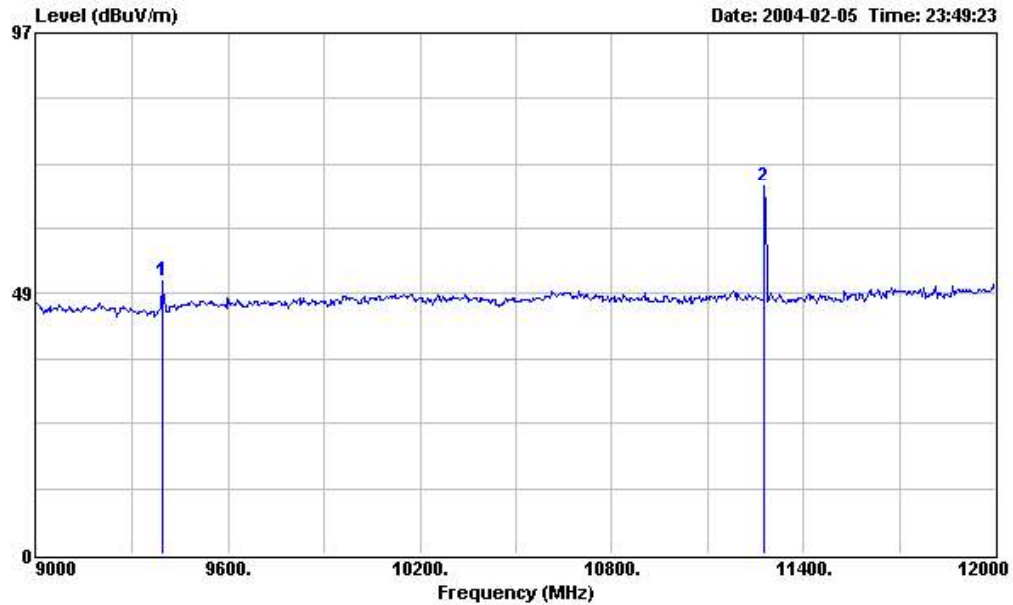
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	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	53.91	-----	-----	61.58	31.94	1.80	41.41	Peak	---	---
2	4869.000	44.74	-----	-----	51.49	33.16	2.52	42.43	Peak	---	---
3	5637.000	49.02	-----	-----	55.59	34.06	2.53	43.16	Peak	---	---



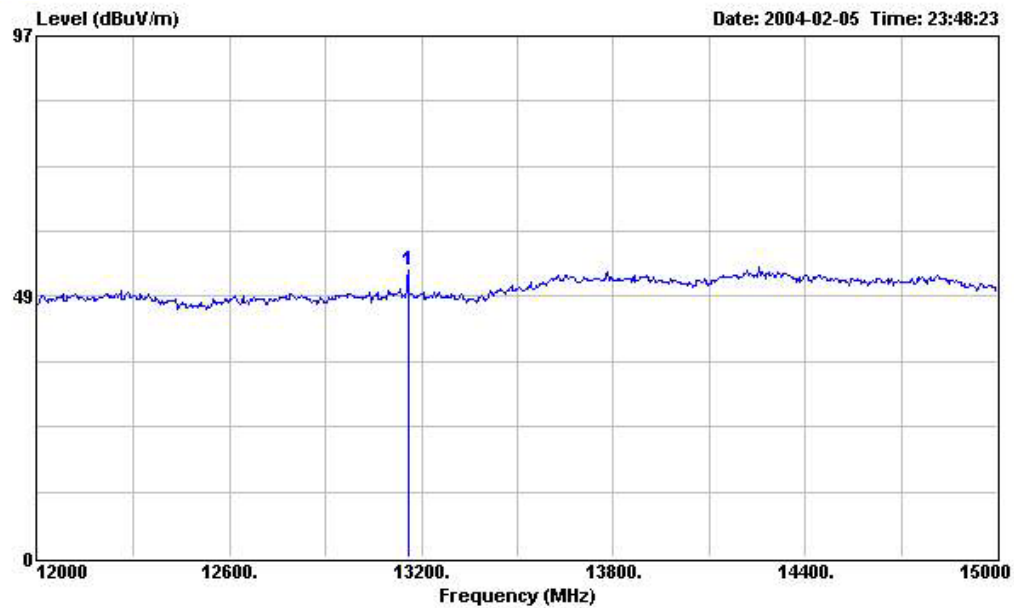
Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

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 7518.000	45.84	-----	-----	48.98	36.52	2.72	42.38	Peak	---	---



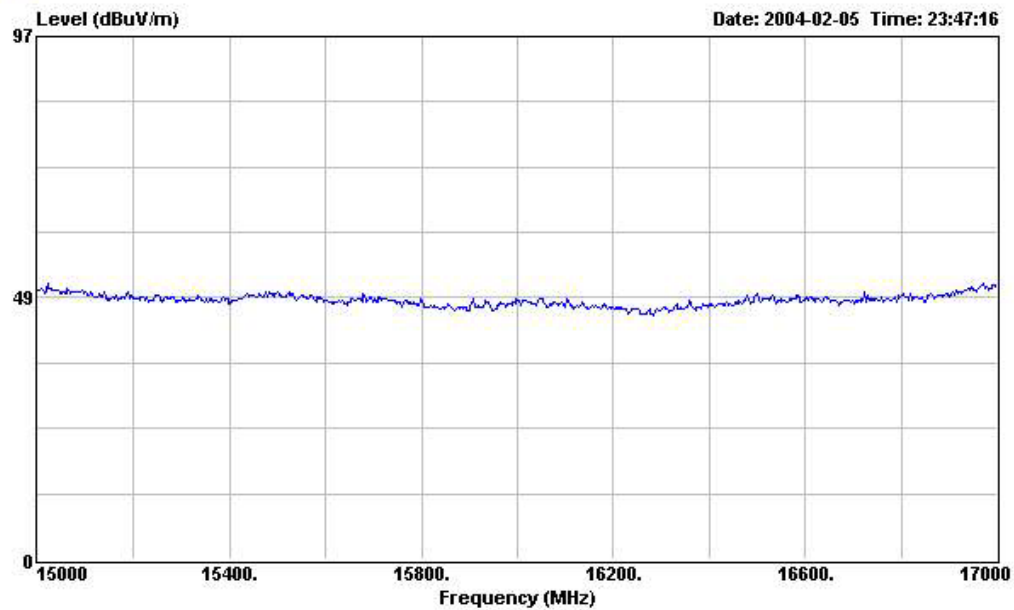
Site : 03CH03-HY
 Condition : 3m HORN-ANT-6741 HORIZONTAL
 EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
 Power : AC 110V / 60Hz
 Model : 56W11
 Memo : GSM1900 CH661

	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	50.96	-----	-----	49.46	37.94	3.73	40.17	Peak	---	---
2	11277.000	68.41	-----	-----	64.97	38.94	4.43	39.93	Peak	---	---



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark	Ant	Table
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
		dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1 13158.000	53.51	-----	-----	50.53	39.63	5.05	41.70	Peak	---	---



Site : 03CH03-HY
Condition : 3m HORN-ANT-6741 HORIZONTAL
EUT : Tri Band GSM/WLAN (802.11b) PCMCIA Card
Power : AC 110V / 60Hz
Model : 56W11
Memo : GSM1900 CH661

Name of Test: Frequency Stability (Temperature Variation)

Specification: 47 CFR 2.1055(a)(1)

Test Conditions: As Indicated

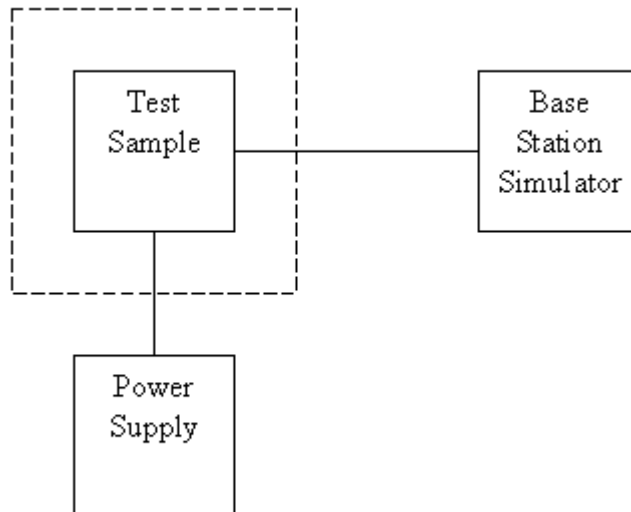
Test Equipment: As per previous page

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°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°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

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

Name of Test: Frequency Stability (Temperature Variation)**GSM/GPRS PCS BAND****GSM/GPRS850**

Temperature(°C)	Change, Hz	Change, ppm
-30	78	0.09
-20	64	0.08
-10	46	0.05
0	43	0.05
10	39	0.05
20	37	0.04
30	43	0.05
40	42	0.05
50	47	0.06

GSM/GPRS1900

Temperature(°C)	Change, Hz	Change, ppm
-30	145	0.08
-20	114	0.06
-10	93	0.05
0	77	0.04
10	62	0.03
20	51	0.03
30	53	0.03
40	55	0.03
50	53	0.03

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)

GSM/GPRS PCS BAND

Nominal Value (Voltage) = 5.0

Voltage(Volt)	Change, Hz	Change, ppm
5	37	0.02
4.25	45	0.02
5.75	38	0.02

Nominal Value (Voltage) = 5.0

Voltage(Volt)	Change, Hz	Change, ppm
5	55	0.03
4.25	54	0.03
5.75	61	0.03

Limit: Must remain within authorized frequency block.



Performed By:

Hendry Yang

Antenna Factor & Cable Loss

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)	Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	15.35	1.01	1000	24.10	3.92
35	13.63	1.04	2000	27.40	5.66
40	11.11	1.09	3000	30.00	7.20
45	10.59	1.24	4000	32.60	9.36
50	6.47	1.43	5000	33.40	9.16
55	5.83	1.39	6000	34.20	10.70
60	5.18	1.59	7000	35.30	12.16
65	4.81	1.41	8000	36.90	13.12
70	4.43	1.43	9000	38.10	13.81
75	5.10	1.55	10000	39.00	14.83
80	5.91	1.56	11000	38.60	15.83
85	7.33	1.62	12000	39.50	17.11
90	8.74	1.41	13000	39.30	17.62
95	9.05	1.81	14000	41.60	18.37
100	9.36	1.68	15000	40.60	19.10
110	9.65	1.73	16000	37.20	19.72
120	9.97	1.79	17000	40.20	21.98
130	10.51	1.93	18000	48.90	21.22
140	10.32	2.06	19000	37.60	23.90
150	9.42	2.09	20000	37.30	24.07
160	8.09	2.12	21000	37.00	25.49
170	7.43	2.12	22000	38.00	24.92
180	7.60	2.12	23000	38.70	25.60
190	7.43	2.21	24000	38.60	25.70
200	7.26	2.29	25000	24.10	3.92
220	9.11	2.42	14000	27.40	5.66
240	10.88	2.54	15000	30.00	7.20
260	11.75	2.66	16000	32.60	9.36
280	11.55	2.76	17000	33.40	9.16
300	11.36	2.85	18000	34.20	10.70
320	12.03	3.10	19000	35.30	12.16
340	12.69	3.36	20000	36.90	13.12
360	13.33	3.49	21000	38.10	13.81
380	14.00	3.50	22000	39.00	14.83
400	14.63	3.51	23000	38.60	15.83
450	15.33	3.55	24000	39.50	17.11
500	16.03	3.81	25000	39.30	17.62
550	16.65	4.05			
600	17.29	4.23			
650	17.64	4.63			
700	18.00	4.74			
750	18.39	4.95			
800	18.79	5.06			
850	19.10	5.18			
900	19.42	5.40			
950	19.58	5.91			
1000	19.75	5.58			

List of Measuring Equipments Used

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	COM-POWER	3115	6741	1GHz – 18GHz	Apr. 08, 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

Contribution	Probability Distribution	3m
Antenna factor calibration	normal(k=2)	±1
cable loss calibration	normal(k=2)	±0.3
RCV/SPA specification	rectangular	±2
Antenna Directivity	rectangular	±3
Antenna Factor V.S. Height	rectangular	±2
Antenna Factor Interpolation for Frequency	rectangular	±0.25
site imperfection	rectangular	±2
Mismatch Receiver VSWR $\Gamma_1=0.09$ Antenna VSWR $\Gamma_2=0.67$ Uncertainty= $20\log(1-\Gamma_1\Gamma_2)$	U-shaped	±0.54
combined standard uncertainty $U_e(y)$	normal	±2.7
Measuring uncertainty for a level of confidence of 95% $U=2U_e(y)$	normal (k=2)	±5.4

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

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

END OF TEST REPORT

**Testimonial
and
Statement of Certification**

This is to certify that:

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.



Joe Yang Feb. 16, 2004

Certified by:

Joe Yang