DECLARATION OF COMPLIANCE
FCC PART 24(E) & 22(H) EMC MEASUREMENTS

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Applicant Information

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FCC Rule Part(s):	**FCC 47 CFR §24(E), §22(H), §2**
IC Rule Part(s):	**RSS-133 Issue 2, RSS-132 Issue 1 (Provisional)**
Test Procedure(s):	**FCC 47 CFR §24(E), §22(H), §2**
	IC RSS-133 Issue 2, IC RSS-132 Issue 1 (Provisional)
	ANSI TIA/EIA-603-A-2001
FCC Device Classification:	**PCS Licensed Transmitter Worn on Body (PCT)**
IC Device Classification:	**2 GHz Personal Communication Services**
	800 MHz Cellular Telephones Employing New Technologies
Device Type:	**Body-worn Data Transmitter with RIM 1902G Dual-Band GPRS Modem**
FCC ID:	**KLU03579**
IC Certification No.:	**3079A-03579**
Model(s):	**OVPC2G**
Modulation:	**GMSK**
Tx Frequency Range(s):	**1850.2 - 1909.8 MHz (PCS GPRS)**
	824.2 - 848.8 MHz (Cellular GPRS)
Max. RF Output Power:	**0.420 Watts EIRP (PCS GPRS)**
	0.719 Watts ERP (Cellular GPRS)
Conducted Power Tested:	**30.0 dBm (PCS GPRS)**
	29.0 dBm (Cellular GPRS)
Emission Designator(s):	**245KGXW (§24E), 247KGXW (§22H)**
Frequency Tolerance(s):	**0.1 PPM**
Antenna Type:	**Custom Internal PCB**
Battery Type:	**7.4V Lithium-ion, 740 mAh**

This wireless portable device has demonstrated compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC 47 CFR §24(E), §22(H), §2; IC RSS-133 Issue 2, IC RSS-132 Issue 1 (Provisional), and ANSI TIA/EIA-603-A-2001.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.
The results and statements contained in this report pertain only to the device(s) evaluated.

Russell Pipe
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FCC PART 24(E) & 22(H) EMC MEASUREMENT REPORT

1.1 SCOPE

Measurement and determination of electromagnetic emissions (EME) from radio frequency devices for compliance with the technical rules and regulations of the Federal Communications Commission and Industry Canada.

2.1 GENERAL INFORMATION - §2.1033(a)

APPLICANT

MOBILTEX DATA LTD.
3640 - 26th Street N.E.
Calgary, Alberta T1Y 4T7
Canada

FCC ID	KLU03579
Model(s)	OVPC2G
Serial No.	30000005
EUT Type	Body-worn Data Transmitter with RIM 1902G Dual-Band GPRS Modem
FCC Rule Part(s)	47 CFR §24(E), §22(H), §2
IC Rule Part(s)	RSS-133 Issue 2, RSS-132 Issue 1 (Provisional)
FCC Classification	PCS Licensed Transmitter Worn on Body (PCT)
IC Classification	2 GHz Personal Communication Services 800 MHz Cellular Telephones Employing New Technologies
Test Procedure(s)	FCC 47 CFR §24(E), §22(H), §2 IC RSS-133 Issue 2, RSS-132 Issue 1 (Provisional) ANSI TIA/EIA-603-A-2001
Tx Frequency Range	1850.20 - 1909.80 MHz 824.20 - 848.80 MHz
Modulation	GMSK
Max. RF Output Power	0.420 Watts EIRP (PCS GPRS) 0.719 Watts ERP (Cellular GPRS)
RF Conducted Output Power Tested	30.0 dBm (PCS GPRS) 29.0 dBm (Cellular GPRS)
Emission Designator(s)	245KGXW (§24E), 247KGXW (§22H)
Frequency Tolerance(s)	0.1 PPM
Battery Type(s)	7.4V Lithium-ion, 740 mAh
Antenna Type	Custom Internal PCB

3.1 RF OUTPUT POWER MEASUREMENT - §2.1046

The conducted power was measured with a Gigatronics 8650A Universal Power Meter using burst average power mode. An offset was entered into the power meter to correct for the losses of the attenuator and cable installed before the sensor input. The transmitter terminal was coupled to the power meter and the EUT was controlled in test mode at a full rated power using a Wavetek 4202S communications test set. All subsequent tests were performed using the same tune-up procedures.

Frequency (MHz)	Peak Power (dBm)
824.2	29.0
836.6	29.0
848.8	29.0
1850.2	30.0
1880.0	30.0
1909.8	30.0

4.1 SPURIOUS EMISSIONS AT ANTENNA TERMINAL - §2.1051; §22.917; §24.238

The EUT was tested in PCS and Cellular GPRS modes at a full rated power using a Wavetek 4202S communications test set. An offset was entered into the spectrum analyzer to correct for all losses of the attenuator and cable installed before the sensor input. The level of the carrier and the various conducted spurious frequencies were measured by means of a calibrated spectrum analyzer. The resolution bandwidth and video bandwidth were set to 1MHz. The spectrum was scanned from 10MHz to 20GHz at the low, medium, and high channels. The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator and coaxial cable. The reported emissions were below the specified limit of -13dBm. The test plots are shown in Appendix A.

5.1 RADIATED MEASUREMENT TEST SETUP

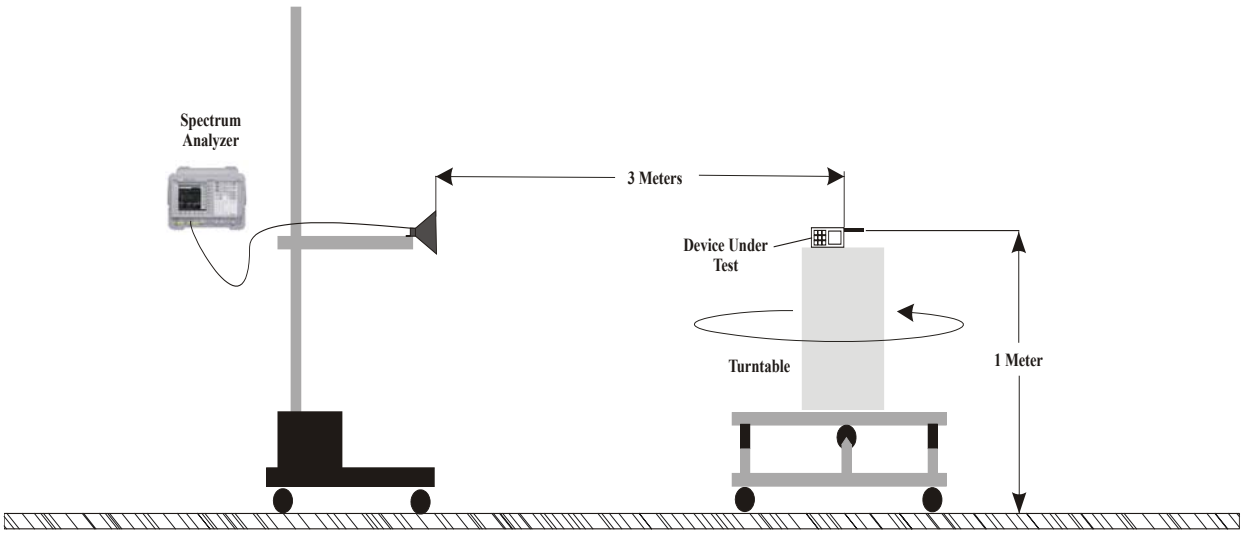


Figure 1. Radiated Measurement Test Setup Diagram

6.1 EFFECTIVE ISOTROPIC RADIATED POWER OUTPUT - §24.232(b)

EIRP measurements were performed on a 3-meter open area test site using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001. The EUT was placed on a turntable 3-meters from the receive antenna and tested in GPRS mode at a full rated power using a Wavetek 4202S communications test set. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once a peak was found the spectrum analyzer was set to peak hold and the value of the emission was extracted. The field strength was recorded for each channel being tested, and for vertical EUT antenna polarization. A standard gain horn antenna was substituted in place of the EUT. The antenna was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the input level of the antenna to reproduce the same field strength level as the EUT. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, this is to account for any mismatch in impedance, which may occur at the horn antenna. The conducted power at the antenna feed point was recorded. The forward conducted power for the horn antenna was then determined and the EIRP level was determined by adding the horn forward conducted power and the horn antenna gain.

Test Configuration	Frequency Tuned	EUT Conducted Power	Maximum Field Strength of EUT	Antenna Polarization	Horn Gain	Horn Forward Conducted Power	EIRP of EUT Horn Gain + Horn Forward Conducted Power	
	MHz	dBm	dBm	H/V	dBi	dBm	dBm	Watts
With Symbol PC	1850.2	30.0	-12.89	Vertical	6.55	18.91	25.46	0.352
	1880.0	30.0	-14.76	Vertical	6.58	17.57	24.15	0.260
	1909.8	30.0	-12.98	Vertical	6.61	19.62	26.23	0.420
Without Symbol PC	1850.2	30.0	-12.84	Vertical	6.55	18.97	25.52	0.356
	1880.0	30.0	-14.78	Vertical	6.58	17.54	24.12	0.258
	1909.8	30.0	-15.09	Vertical	6.61	17.51	24.12	0.258

7.1 EFFECTIVE RADIATED POWER OUTPUT - §22.913

ERP measurements were performed using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001 on a 3-meter open area test site. The EUT was placed on a turntable 3-meters from the receive antenna and tested in GPRS mode at a full rated power using a Wavetek 4202S communications test set. The field of maximum intensity was found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Once a peak was found the spectrum analyzer was set to peak hold and the value of the emission was extracted. The field strength was recorded for each channel being tested, and for vertical EUT antenna polarization. A half-wave dipole antenna was substituted in place of the EUT. The antenna was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the input level of the antenna to reproduce the same field strength level as the EUT. The feed point for the antenna was then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded. This was to account for any mismatch in impedance, which may occur at the dipole antenna. The conducted power at the antenna feed point was recorded. The forward conducted power for the dipole antenna was determined by measuring the power at the dipole antenna feed point and reproducing the coupler power previously measured. The ERP level was determined by adding the dipole forward conducted power and the dipole antenna gain.

Test Configuration	Frequency Tuned	EUT Conducted Power	Maximum Field Strength of EUT	Antenna Polarization	Dipole Gain	Dipole Forward Conducted Power	ERP of EUT Dipole Gain + Dipole Forward Conducted Power	
	MHz	dBm	dBm	H/V	dBd	dBm	dBm	Watts
With Symbol PC	824.2	29.0	-18.02	Vertical	-1.44	22.97	21.53	0.142
	836.6	29.0	-19.34	Vertical	-1.34	21.46	20.12	0.103
	848.8	29.0	-15.98	Vertical	-1.24	22.84	21.60	0.145
Without Symbol PC	824.2	29.0	-13.24	Vertical	-1.44	26.27	24.83	0.304
	836.6	29.0	-13.68	Vertical	-1.34	27.10	25.76	0.377
	848.8	29.0	-8.931	Vertical	-1.24	29.81	28.57	0.719

8.1 FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053

Radiated and harmonic emissions were measured on a 3-meter open area test site using the Signal Substitution Method in accordance with ANSI TIA/EIA-603-A-2001. The EUT was tested in PCS and Cellular GPRS modes at a full rated power using a Wavetek 4202S communications test set.. The EUT was placed on the turntable with the transmitter transmitting into a non-radiating load. A receiving antenna located 3 meters from the turntable received any signal radiated from the transmitter and its operating accessories. The receiving antenna was varied in height from 1 to 4 meters and the polarization was varied (horizontal and vertical) to determine the worst-case emission level. A standard gain horn antenna was substituted in place of the EUT. A modulated signal was fed through a directional coupler to the antenna and the power at the coupler port was monitored. A signal generator and power amplifier controlled the antenna, and the input level of the antenna was adjusted to the same field strength level as the EUT. The antenna feed point was then connected to a calibrated power meter and the power was adjusted to read the same power at the coupler port previously recorded, to account for any mismatch in impedance which may occur at the horn antenna. The conducted power at the antenna feed point was then recorded. The forward conducted power for the horn antenna was determined by measuring the power at the horn antenna feed point and reproducing the coupler power previously measured. The EIRP level was determined by adding the horn forward conducted power and the horn antenna gain. All spurious emissions from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier were investigated. The test data is shown on pages 7-10.

PCS GPRS Mode (with Symbol PC)

Operating Frequency (MHz): 1850.2
Channel: 512 (Low)
EUT Conducted Pwr. (dBm): 30.0
Measured EIRP (dBm): 25.46
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 38.47 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3700.40	-76.86	-43.97	6.6	V	-37.37	-39.51	64.97
5550.60	-77.43	-39.63	7.8	V	-31.83	-33.97	59.43
7400.80	-74.88	-38.30	7.8	V	-30.50	-32.64	58.10
9251.00	-75.03	-37.01	7.6	V	-29.41	-31.55	57.01
11101.20	-74.7	-38.34	8.5	V	-29.84	-31.98	57.44
12951.40	-73.86	-35.98	8.8	V	-27.18	-29.32	54.78
14801.60	-71.85	-33.97	9.6	V	-24.37	-26.51	51.97
16651.80	-70.43	-32.60	9.0	V	-23.60	-25.74	51.20
18502.00	-73.66	-37.45	9.3	V	-28.15	-30.29	55.75

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Operating Frequency (MHz): 1880.0
Channel: 661 (Mid)
EUT Conducted Pwr. (dBm): 30.0
Measured EIRP (dBm): 24.15
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 37.15 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3760.00	-76.39	-43.50	6.6	V	-36.90	-39.04	63.19
5640.00	-76.62	-38.82	7.8	V	-31.02	-33.16	57.31
7520.00	-74.37	-37.79	7.8	V	-29.99	-32.13	56.28
9400.00	-75.77	-37.75	7.6	V	-30.15	-32.29	56.44
11280.00	-74.95	-38.59	8.5	V	-30.09	-32.23	56.38
13160.00	-74.92	-37.04	8.8	V	-28.24	-30.38	54.53
15040.00	-71.2	-33.32	9.6	V	-23.72	-25.86	50.01
16920.00	-70.9	-33.07	9.0	V	-24.07	-26.21	50.36
18800.00	-73.36	-37.15	9.3	V	-27.85	-29.99	54.14

Operating Frequency (MHz): 1909.8
Channel: 810 (High)
EUT Conducted Pwr. (dBm): 30.0
Measured EIRP (dBm): 26.23
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 39.23 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
3819.60	-74.24	-41.35	6.6	V	-34.75	-36.89	63.12
5729.40	-77.17	-39.37	7.8	V	-31.57	-33.71	59.94
7639.20	-74.75	-38.17	7.8	V	-30.37	-32.51	58.74
9549.00	-75.47	-37.45	7.6	V	-29.85	-31.99	58.22
11458.80	-74.79	-38.43	8.5	V	-29.93	-32.07	58.30
13368.60	-70.23	-32.35	8.8	V	-23.55	-25.69	51.92
15278.40	-71.93	-34.05	9.6	V	-24.45	-26.59	52.82
17188.20	-72.46	-34.63	9.0	V	-25.63	-27.77	54.00
19098.00	-72.89	-36.68	9.3	V	-27.38	-29.52	55.75

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Cellular GPRS Mode (without Symbol PC)

Operating Frequency (MHz): 824.2
Channel: 128 (Low)
EUT Conducted Pwr. (dBm): 29.0
Measured ERP (dBm): 24.83
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 37.83 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1648.40	-66.05	-33.16	6.4	V	-26.76	-28.90	53.73
2472.60	-73.23	-35.43	7.8	V	-27.63	-29.77	54.60
3296.80	-76.53	-39.95	8.0	V	-31.95	-34.09	58.92
4121.00	-77.63	-39.61	8.1	V	-31.51	-33.65	58.48
4945.20	-76.89	-40.53	8.6	V	-31.93	-34.07	58.90
5769.40	-76.33	-38.45	8.9	V	-29.55	-31.69	56.52
6593.60	-76.32	-38.44	9.5	V	-28.94	-31.08	55.91
7417.80	-73.98	-36.15	9.0	V	-27.15	-29.29	54.12
8242.00	-74.94	-38.73	9.3	V	-29.43	-31.57	56.40

Operating Frequency (MHz): 836.6
Channel: 190 (Mid)
EUT Conducted Pwr. (dBm): 29.0
Measured ERP (dBm): 25.76
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 38.76 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1673.20	-65.6	-32.71	6.4	V	-26.31	-28.45	54.21
2509.80	-72.63	-34.83	7.8	V	-27.03	-29.17	54.93
3346.40	-75.65	-39.07	8.0	V	-31.07	-33.21	58.97
4183.00	-76.75	-38.73	8.1	V	-30.63	-32.77	58.53
5019.60	-75.64	-39.28	8.6	V	-30.68	-32.82	58.58
5856.20	-76.33	-38.45	8.9	V	-29.55	-31.69	57.45
6692.80	-76.61	-38.73	9.5	V	-29.23	-31.37	57.13
7529.40	-73.38	-35.55	9.0	V	-26.55	-28.69	54.45
8366.00	-74.54	-38.33	9.3	V	-29.03	-31.17	56.93

FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053 (Cont.)

Operating Frequency (MHz): 848.8
Channel: 251 (High)
EUT Conducted Pwr. (dBm): 29.0
Measured ERP (dBm): 28.57
Modulation: GMSK
Distance: 3 Meters
Limit: 43 + 10 log (W) = 41.57 dBc

Frequency	Field Strength of Spurious Radiation	Horn Forward Conducted Power	Standard Gain Horn Antenna Gain	POL	EIRP	ERP	dBc
MHz	dBm	dBm	dBi	H/V	dBm	dBm	
1697.60	-66.09	-33.20	6.4	V	-26.80	-28.94	57.51
2546.40	-73.56	-35.76	7.8	V	-27.96	-30.10	58.67
3395.20	-75.93	-39.35	8.0	V	-31.35	-33.49	62.06
4244.00	-77.23	-39.21	8.1	V	-31.11	-33.25	61.82
5092.80	-76.39	-40.03	8.6	V	-31.43	-33.57	62.14
5941.60	-76.90	-39.02	8.9	V	-30.12	-32.26	60.83
6790.40	-72.87	-34.99	9.5	V	-25.49	-27.63	56.20
7639.20	-73.10	-35.27	9.0	V	-26.27	-28.41	56.98
8488.00	-73.33	-37.12	9.3	V	-27.82	-29.96	58.53

9.1 OCCUPIED BANDWIDTH - §2.1049, §22.917, §24.238

The EUT was tested in PCS and Cellular GPRS modes at a full rated power using a Wavetek 4202S communications test set. The EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator. The resolution bandwidth and video bandwidth were set to 3 kHz. Data was taken for the low, mid and high frequencies in each operating band. The table below lists the -26dBc bandwidth and 99% occupied bandwidth measurement results. Spectrum analyzer plots for 99% power and -26 dBc occupied bandwidths are shown in Appendix A.

Frequency (MHz)	-26 dBc Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
824.2	308.8	242.5
836.6	313.1	247.5
848.8	317.0	247.5
1850.2	310.5	242.5
1880.0	317.1	245.0
1909.8	303.0	240.0

Specified Limits:

§22.917

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
(c) Alternative out of band emission limit. Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.
(d) Interference caused by out of band emissions. If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

§24.238

(a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB.
(b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
(c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
(d) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.
(e) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

10.1 FREQUENCY STABILITY / TEMPERATURE VARIATION - §2.1055, §24.235, §22.355

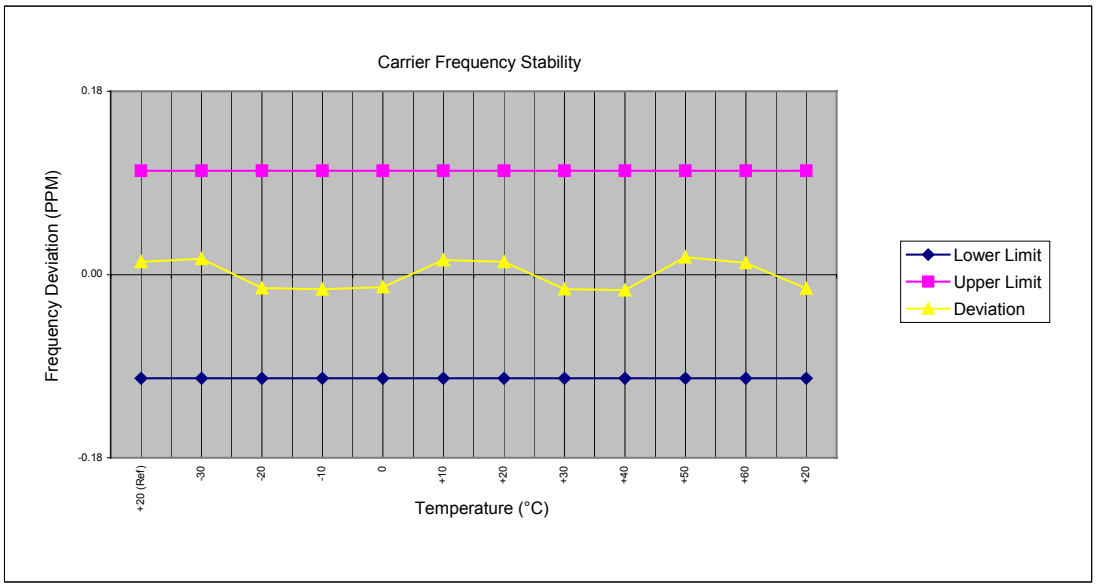
The minimum frequency stability shall be less than 0.1 ppm referenced to a received carrier frequency. An HP 53181A Frequency Counter was used to measure the error in the fundamental frequency. The transmitter was set to maximum power at the center frequency of the band. The EUT was tested inside the ESPEC ECT-2 temperature chamber.

The frequency stability of the transmitter was measured by:

1. Temperature: The temperature was varied from -30°C to +60°C at intervals no more than 10°C throughout the temperature range using an environmental chamber. A period of time sufficient to stabilize all of the components in the equipment was allowed prior to each frequency measurement.
2. Primary Supply Voltage: The primary supply voltage was set at the specified nominal rating and reduced to the battery operating endpoint specified by the manufacturer. The voltage was measured at the terminals of the power supply or at the input to the cable normally provided with the equipment.

Test Date: 10/16/2003
Carrier Frequency (GHz): 1.88
Channel: 661
Mode: PCS GPRS
Deviation Limit (PPM): 0.1

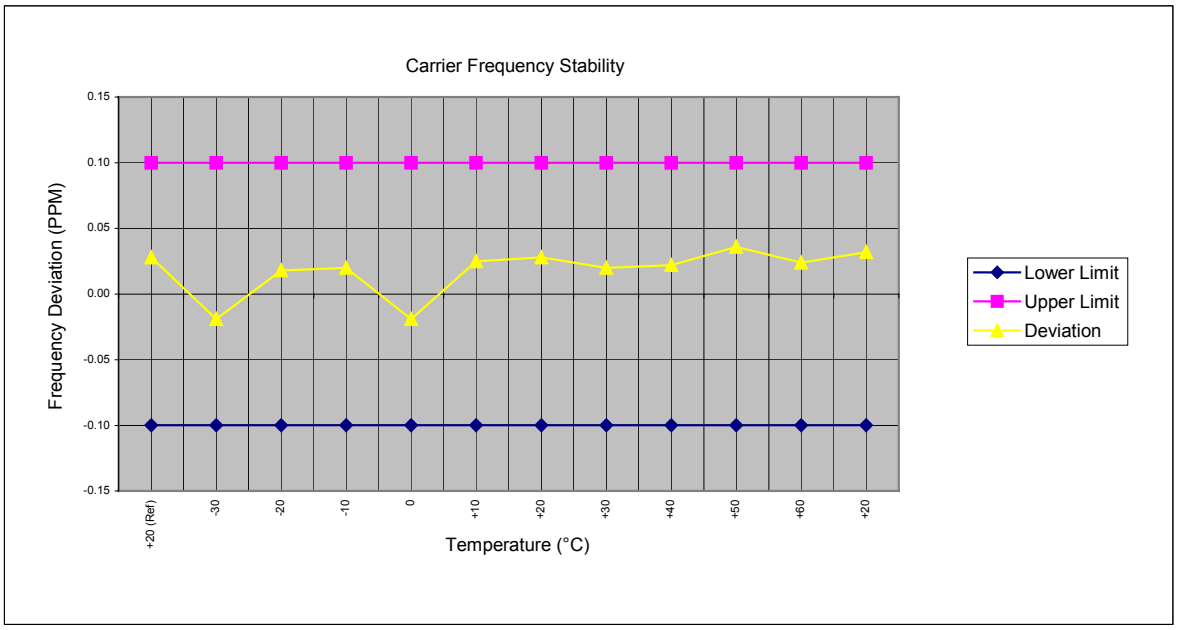
Temperature	Voltage	Power	Carrier Frequency Deviation		Specification	
(°C)	(%)	(VDC)	(Hz)	(PPM)	Lower Limit (PPM)	Upper Limit (PPM)
+20 (Ref)	100	3.8	23.19	0.012	-0.10	0.10
-30	100	3.8	28.77	0.015	-0.10	0.10
-20	100	3.8	-24.60	-0.013	-0.10	0.10
-10	100	3.8	-26.87	-0.014	-0.10	0.10
0	100	3.8	-22.39	-0.012	-0.10	0.10
+10	100	3.8	26.24	0.014	-0.10	0.10
+20	100	3.8	23.19	0.012	-0.10	0.10
+30	100	3.8	-26.10	-0.014	-0.10	0.10
+40	100	3.8	-28.09	-0.015	-0.10	0.10
+50	100	3.8	31.25	0.017	-0.10	0.10
+60	100	3.8	21.00	0.011	-0.10	0.10
+20	115	4.7	-25.47	-0.014	-0.10	0.10
+20	85	3.35	19.60	0.010	-0.10	0.10



FREQUENCY STABILITY / TEMPERATURE VARIATION - §2.1055. §24.235. §22.355 (Cont.)

Test Date: 10/17/2003
Carrier Frequency (MHz): 836.6
Channel: 190
Mode: Cellular GPRS
Deviation Limit (PPM): 0.1

Temperature	Voltage	Power	Carrier Frequency Deviation		Specification	
(°C)	(%)	(VDC)	(Hz)	(PPM)	Lower Limit (PPM)	Upper Limit (PPM)
+20 (Ref)	100	3.8	23.97	0.028	-0.10	0.10
-30	100	3.8	-16.23	-0.019	-0.10	0.10
-20	100	3.8	15.31	0.018	-0.10	0.10
-10	100	3.8	17.53	0.020	-0.10	0.10
0	100	3.8	-16.59	-0.019	-0.10	0.10
+10	100	3.8	21.60	0.025	-0.10	0.10
+20	100	3.8	24.11	0.028	-0.10	0.10
+30	100	3.8	17.21	0.020	-0.10	0.10
+40	100	3.8	18.76	0.022	-0.10	0.10
+50	100	3.8	30.18	0.036	-0.10	0.10
+60	100	3.8	20.15	0.024	-0.10	0.10
+20	115	4.7	27.40	0.032	-0.10	0.10
+20	85	3.35	25.69	0.030	-0.10	0.10



Time Period and Procedure:

1. The carrier frequency of the transmitter was measured at room temperature (25°C to 27°C to provide a reference).
2. The equipment was subjected to an overnight "soak" at -30°C without any power applied.
3. After the overnight "soak" at -30°C, the measurement of the carrier frequency of the transmitter was made within a three-minute interval after applying power to the transmitter.
4. Frequency measurements were made at 10°C intervals up to +60°C, then back to room temperature. A minimum period of one hour was provided to allow stabilization of the equipment at each temperature level.

11.1 TEST EQUIPMENT LIST

Equipment Type	Model	Serial No.	Calibration Due Date
HP Signal Generator	8648D (9kHz-4.0GHz)	3847A00611	Feb 2004
Rohde & Schwarz Signal Generator	SMR40 (10MHz-40GHz)	835537/022	Apr 2004
Gigatronics Power Meter	8652A	1835272	Feb 2004
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833535	Feb 2004
Gigatronics Power Sensor	80701A (0.05-18GHz)	1833542	Feb 2004
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	26235	N/A
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	3123A00587	N/A
Network Analyzer	HP 8753E (30kHz-3GHz)	US38433013	Feb 2004
Audio Analyzer	HP 8903B	3729A18691	Nov 2003
Modulation Analyzer	HP 8901A	3749A07154	July 2004
Frequency Counter	HP 53181A (3GHz)	3736A05175	May 2004
DC Power Supply	HP E3611A	KR83015294	N/A
Multi-Device Controller	EMCO 2090	9912-1484	N/A
Mini Mast	EMCO 2075	0001-2277	N/A
Turntable	EMCO 2080-1.2/1.5	0002-1002	N/A
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	6267	Oct. 2004
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	6276	Oct. 2004
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	9120A-239	Sept 2004
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	9120A-240	Sept 2004
Roberts Dipoles	Compliance Design (2 sets) 3121C		June 2004
Spectrum Analyzer	HP 8594E	3543A02721	Feb 2004
Spectrum Analyzer	HP E4408B	US39240170	Nov 2003
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	16297	N/A
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	0510154-B	Feb 2004

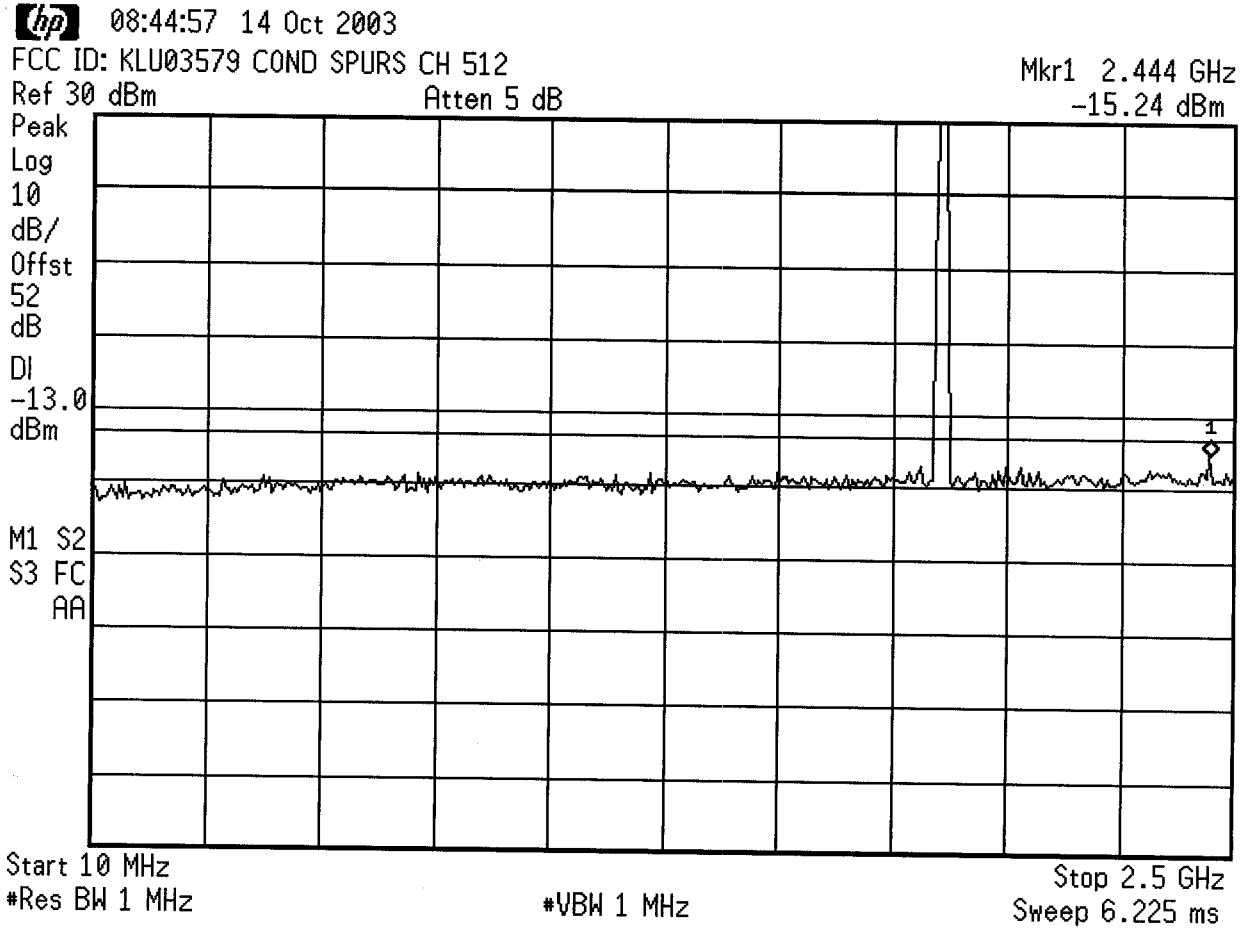
12.1 CONCLUSION

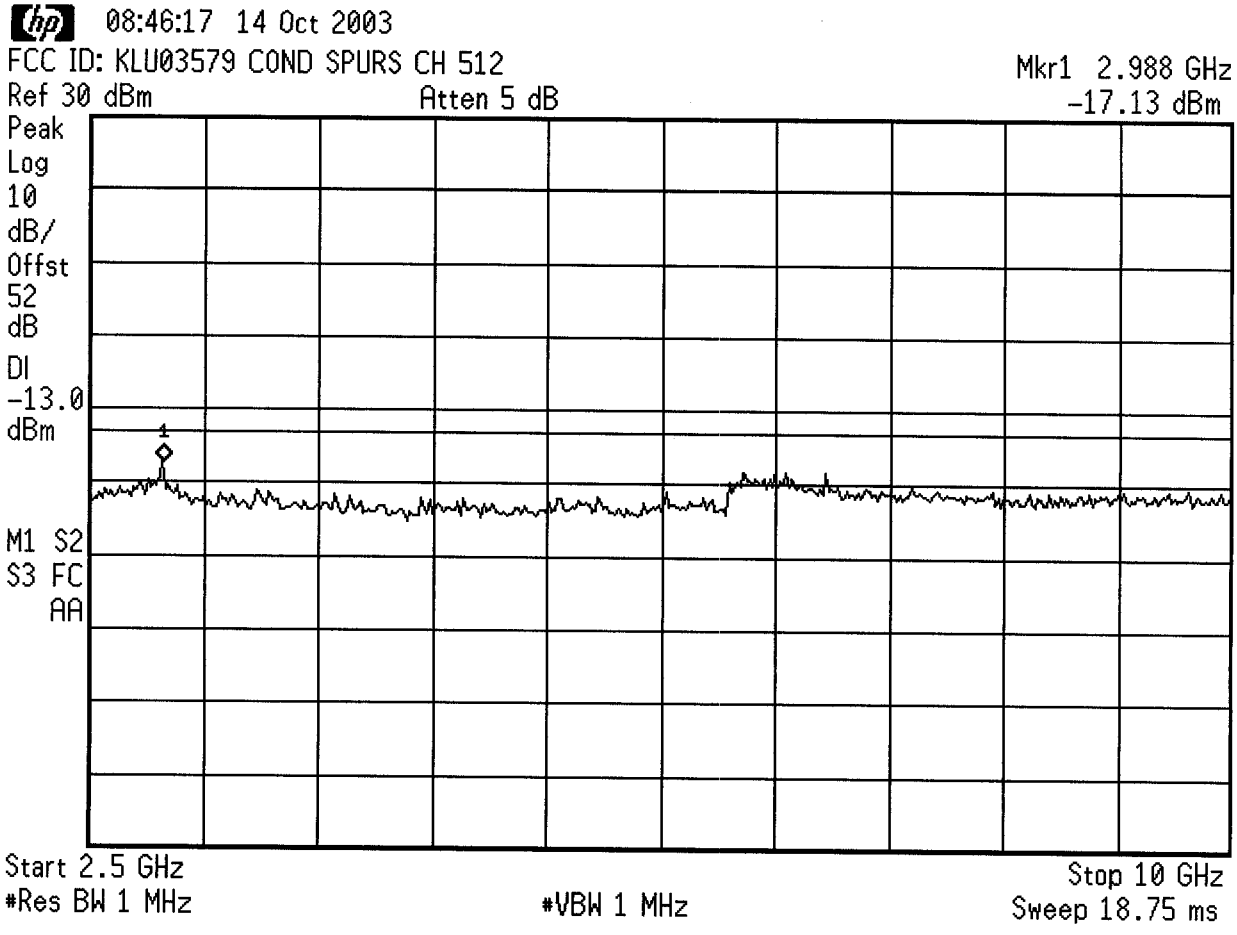
The data in this measurement report shows that the MOBILTEX DATA LTD. Model: OVPC2G FCC ID: KLU03579 Body-Worn Data Transmitter with RIM 1902G Dual-Band GPRS modem complies with the requirements of FCC Rule Parts §24(E), §22(H), and §2.

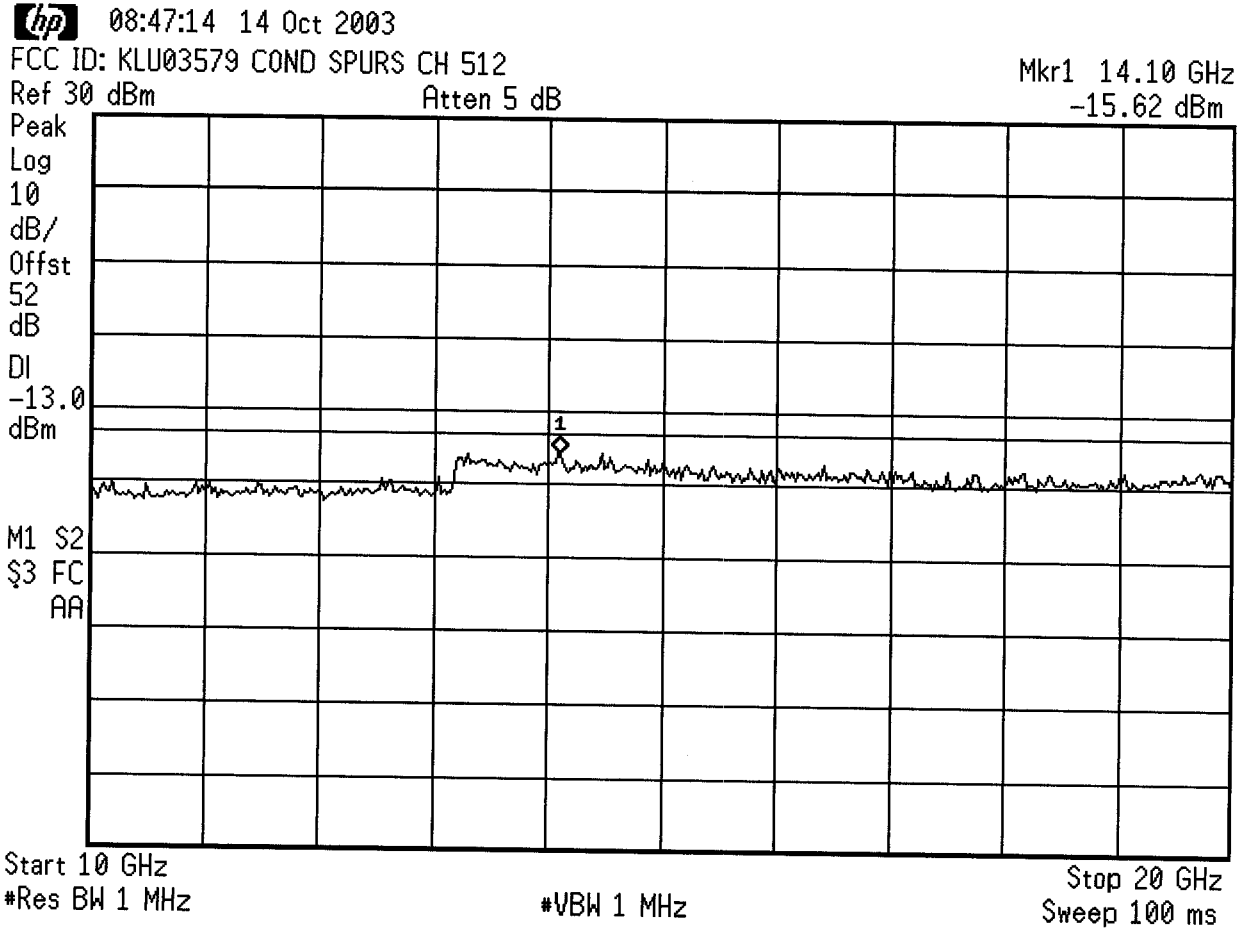
APPENDIX A - TEST PLOTS

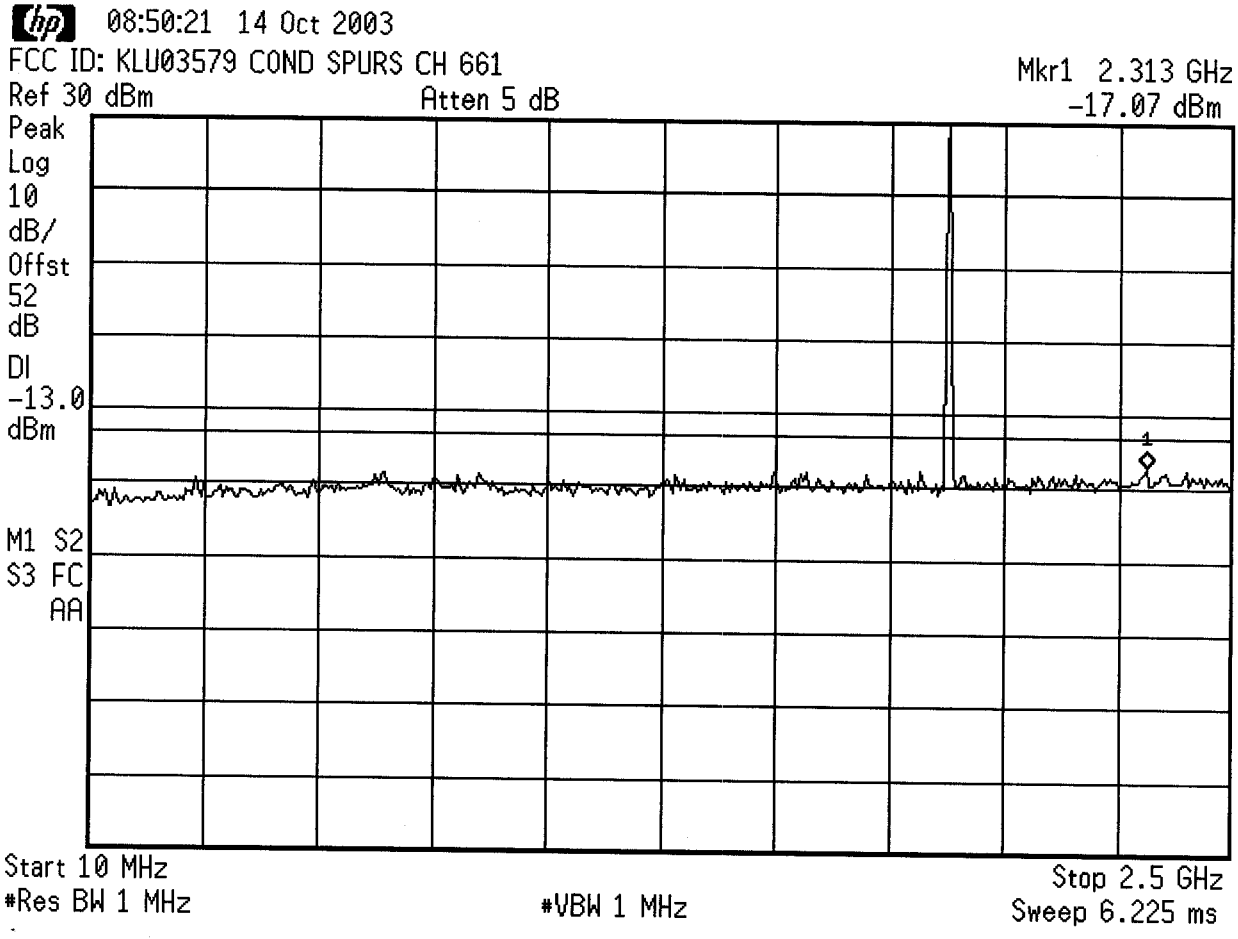
EMC TEST PLOTS - PCS GPRS Mode

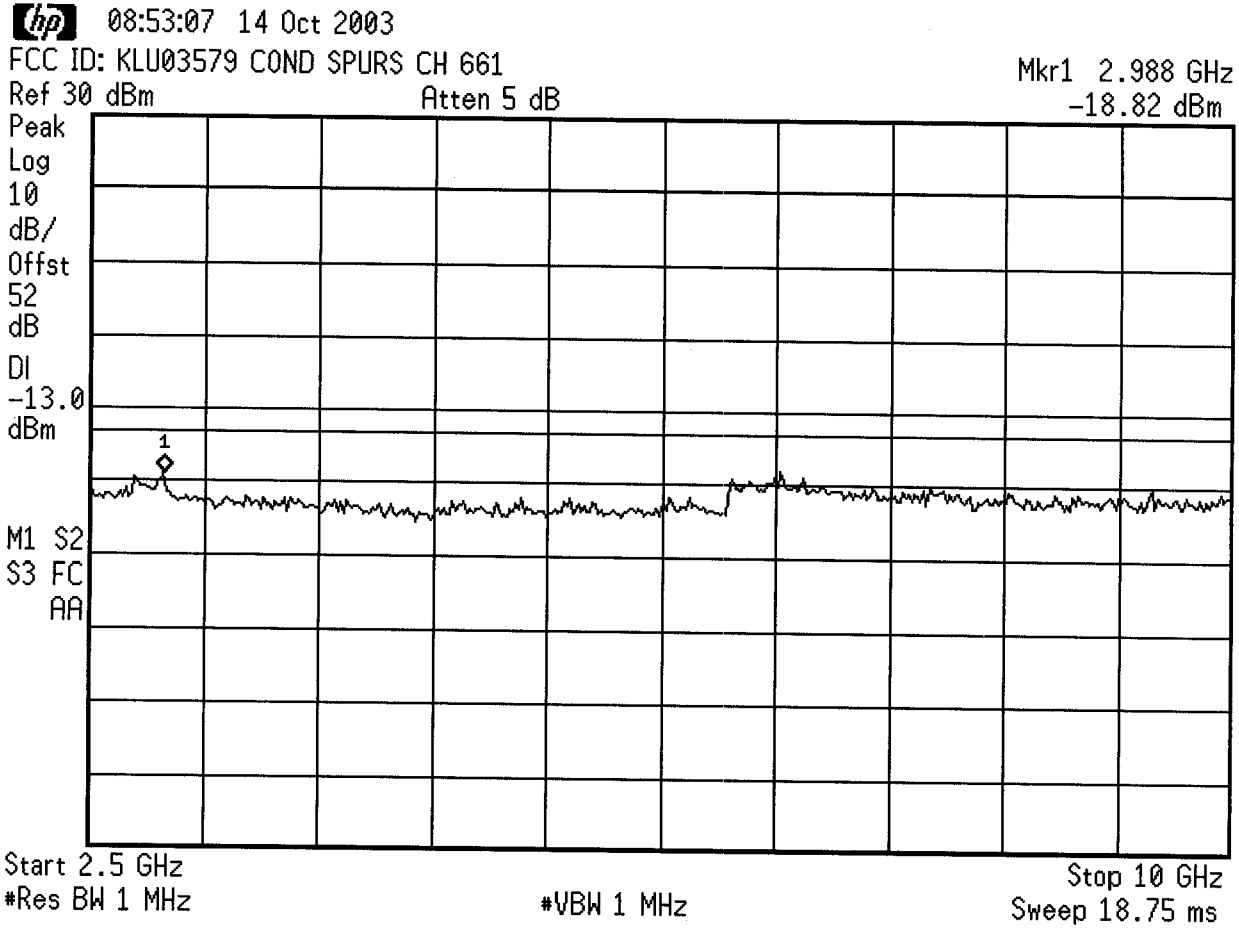
1. Conducted Spurious Emissions
2. Receiver Spurious Emissions
3. Band Edge
4. -26dBc Bandwidth
5. Occupied Bandwidth

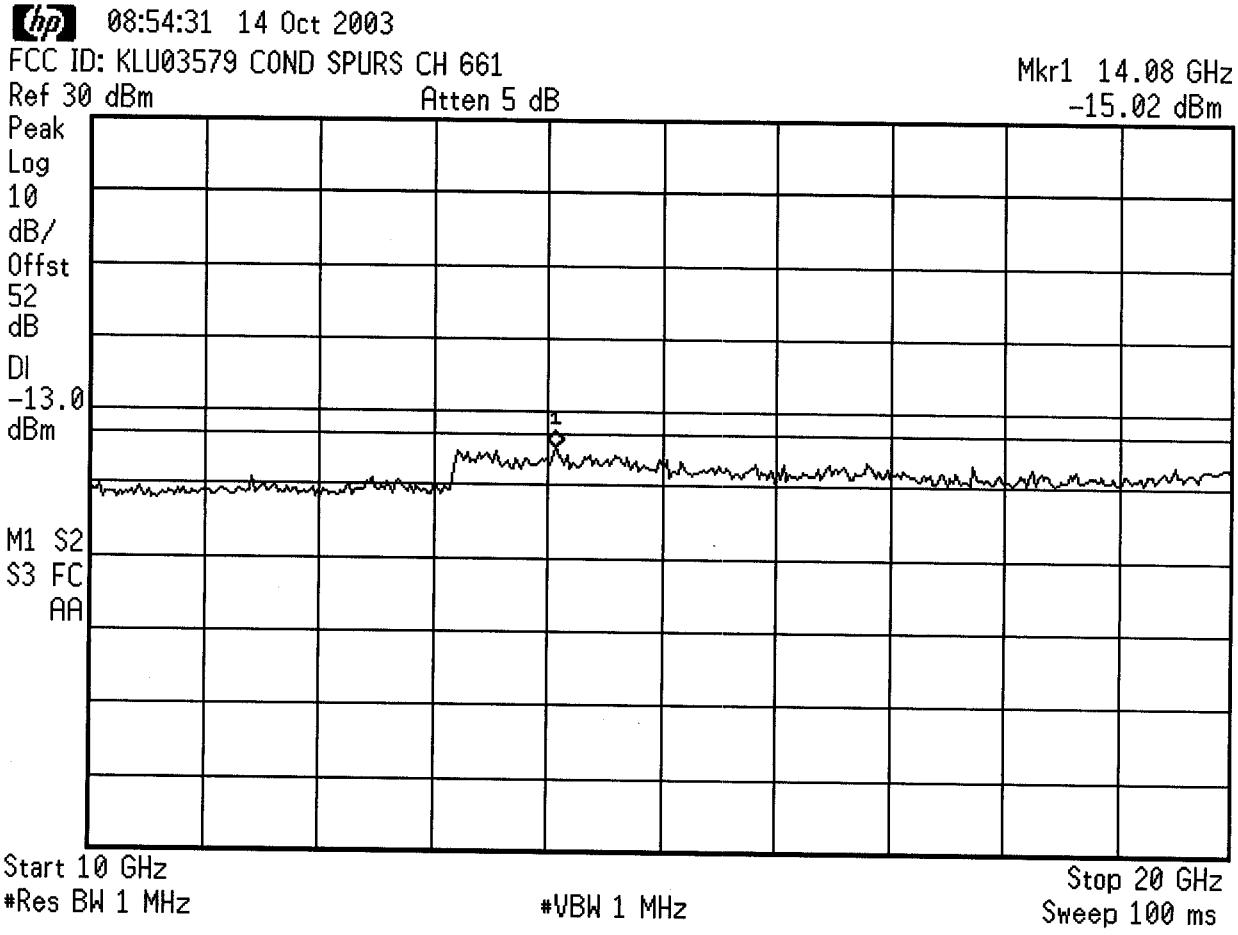

08:44:57 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 512
Ref 30 dBm
Atten 5 dB
Mkr1 2.444 GHz
-15.24 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 MHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

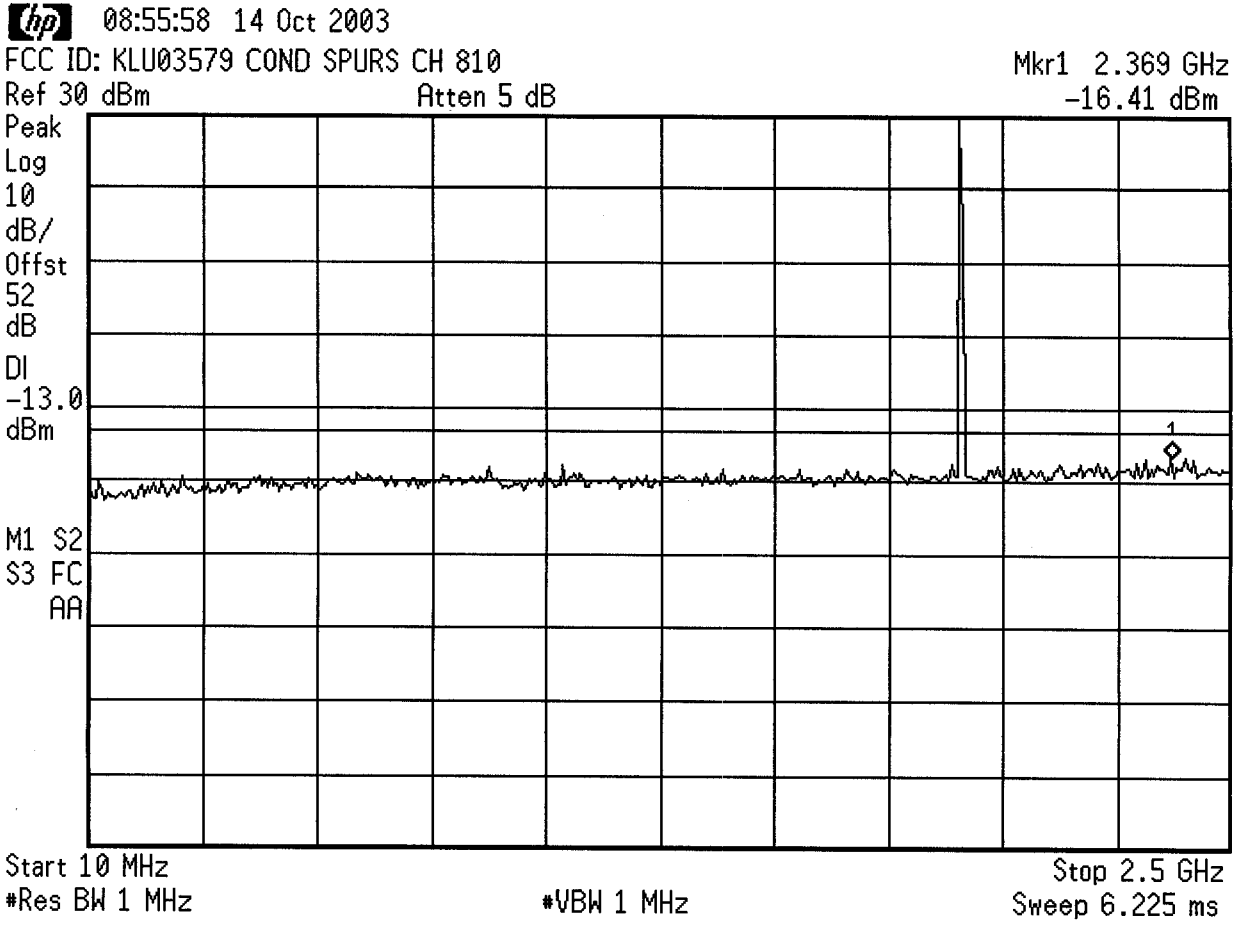

08:46:17 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 512
Ref 30 dBm
Atten 5 dB
Mkr1 2.988 GHz
-17.13 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

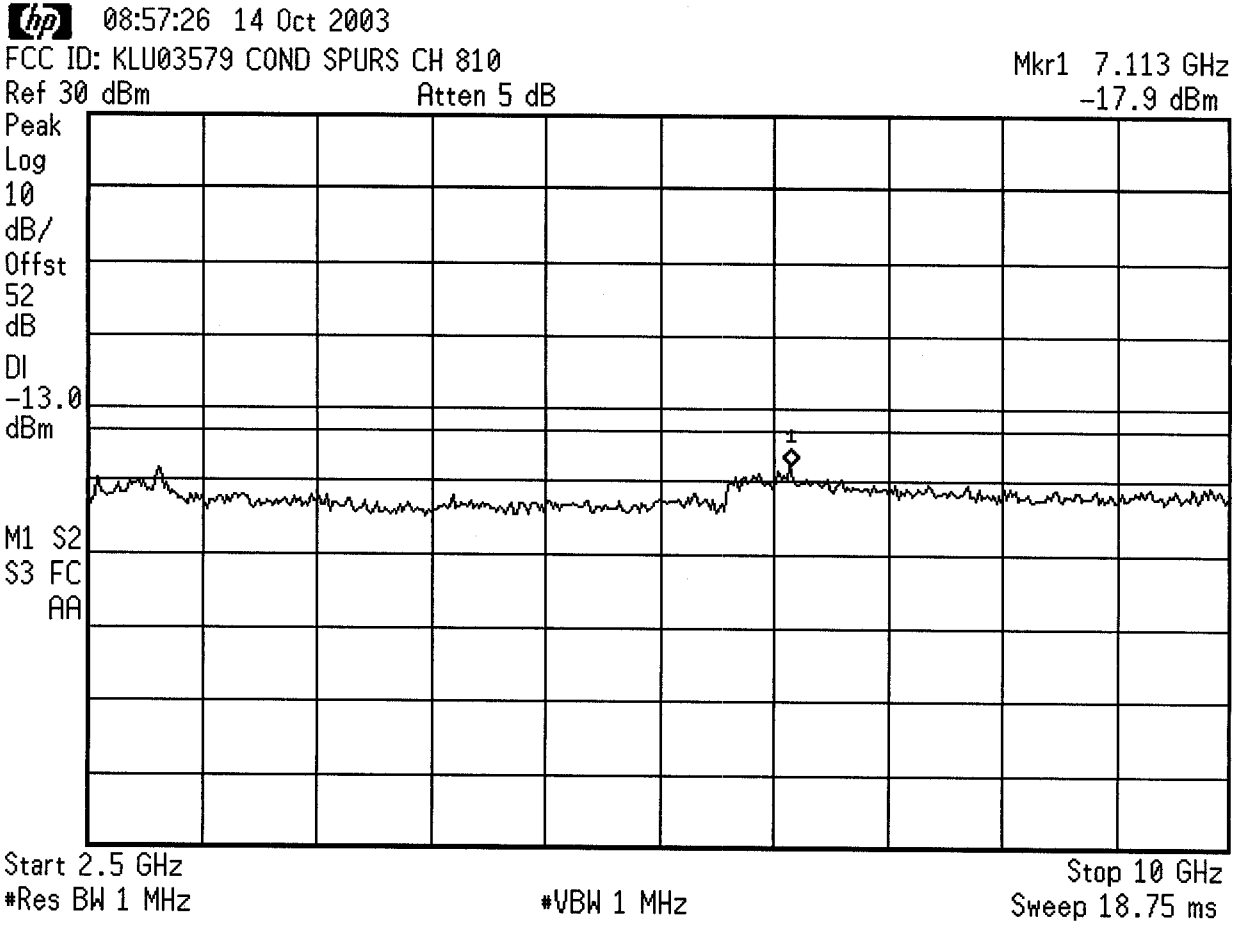

08:47:14 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 512
Ref 30 dBm
Atten 5 dB
Mkr1 14.10 GHz
-15.62 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
$3 FC
AA
Start 10 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

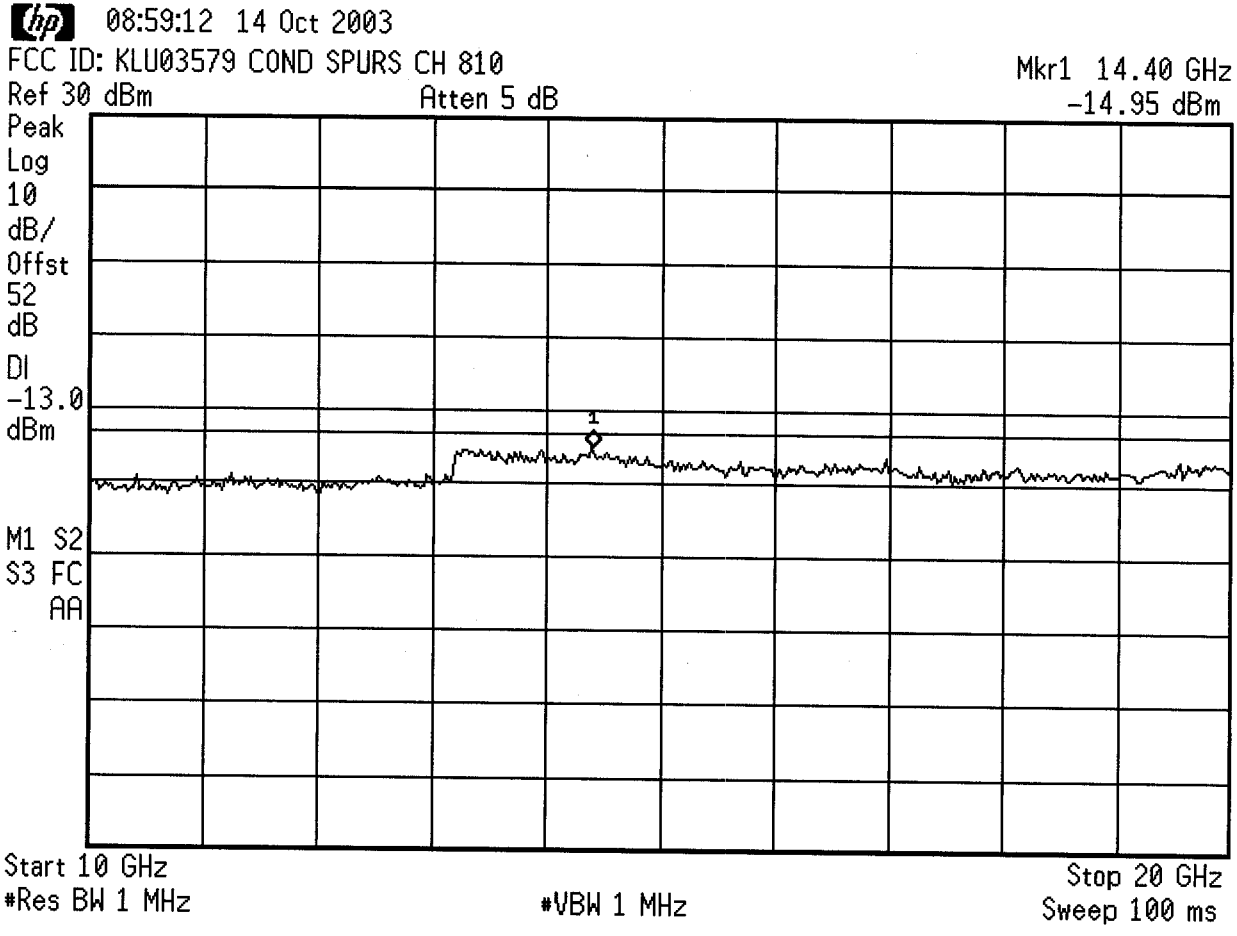

08:50:21 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 661
Ref 30 dBm
Atten 5 dB
Mkr1 2.313 GHz
-17.07 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 10 MHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

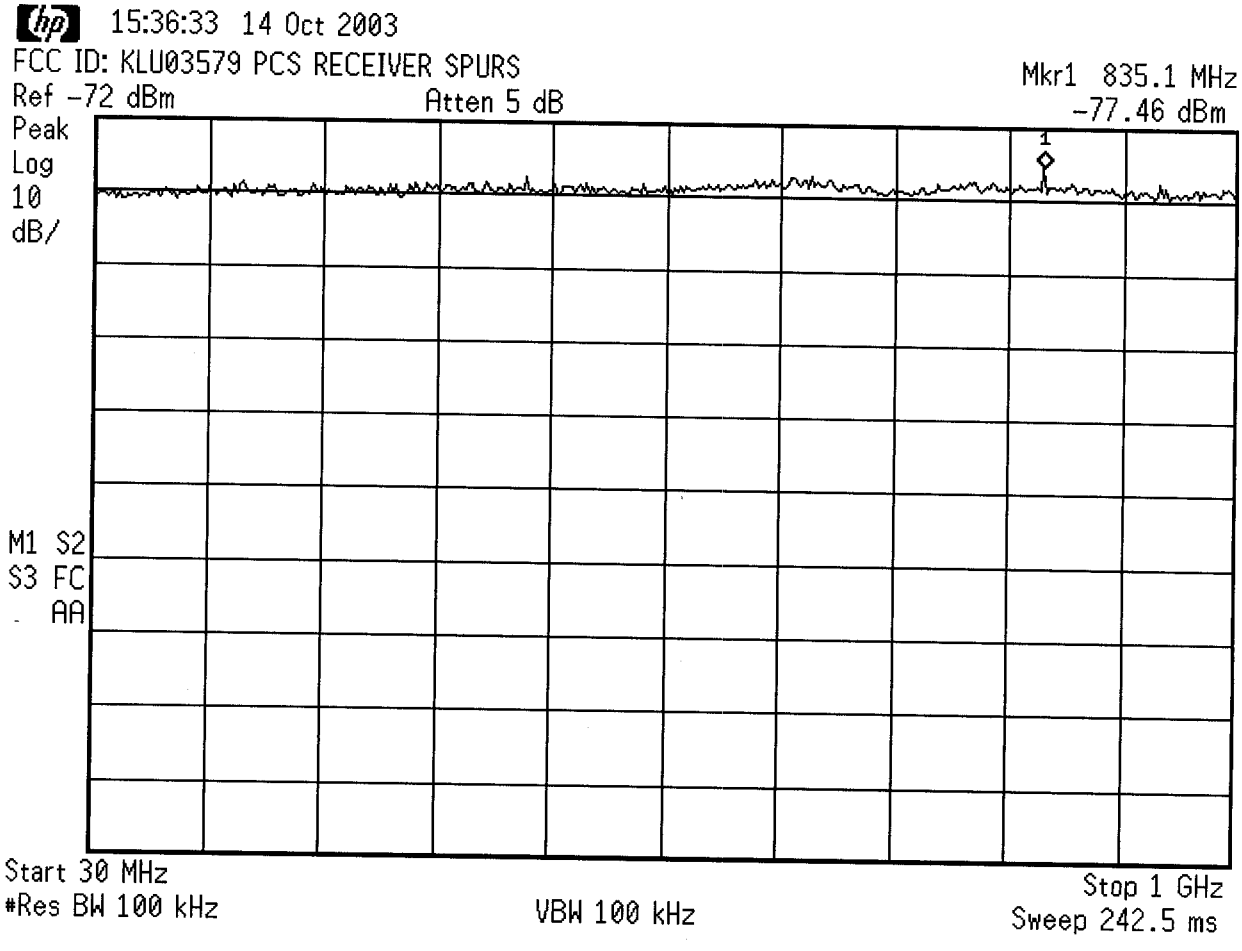

08:53:07 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 661
Ref 30 dBm
Atten 5 dB
Mkr1 2.988 GHz
-18.82 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

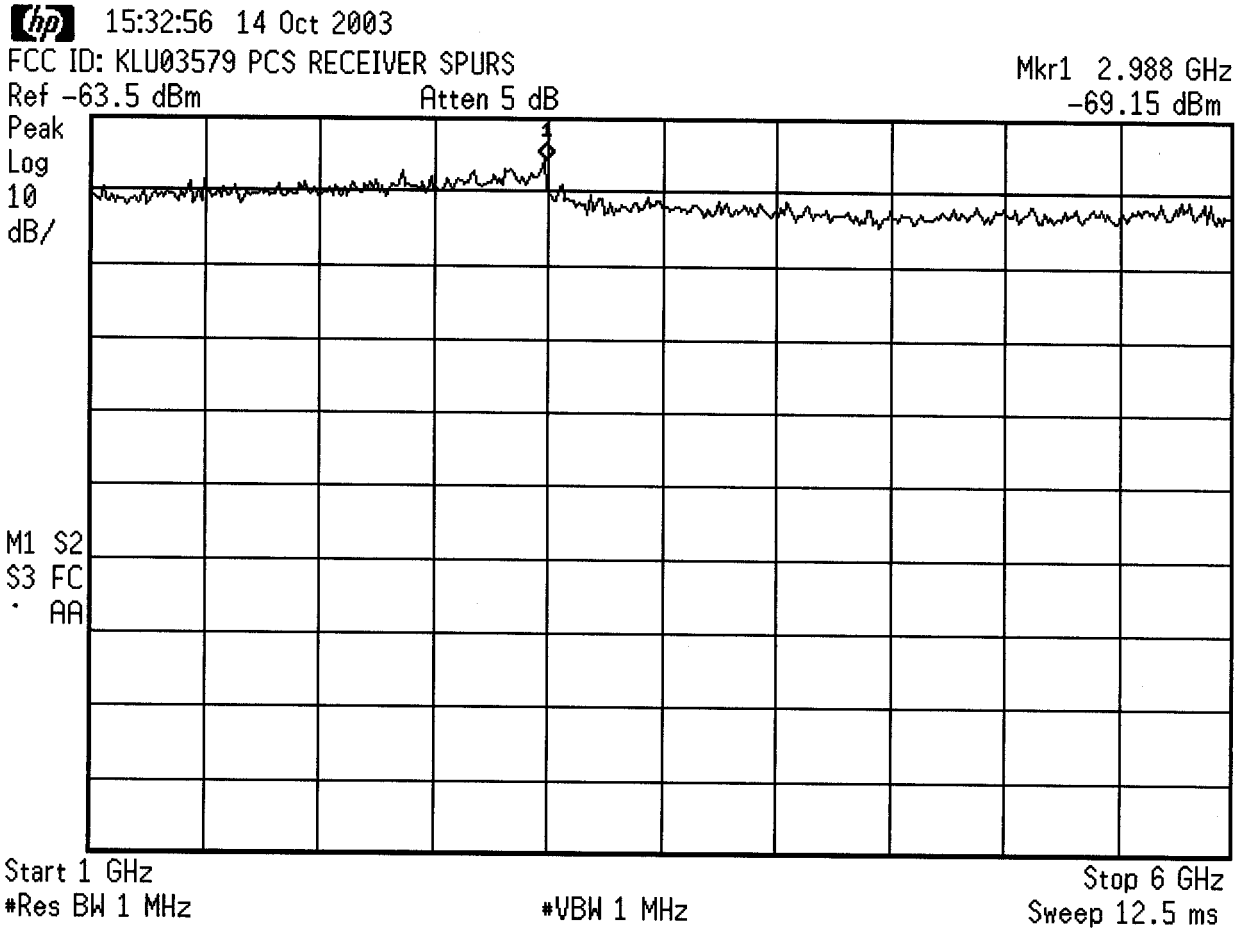

08:54:31 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 661
Ref 30 dBm
Atten 5 dB
Mkr1 14.08 GHz
-15.02 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

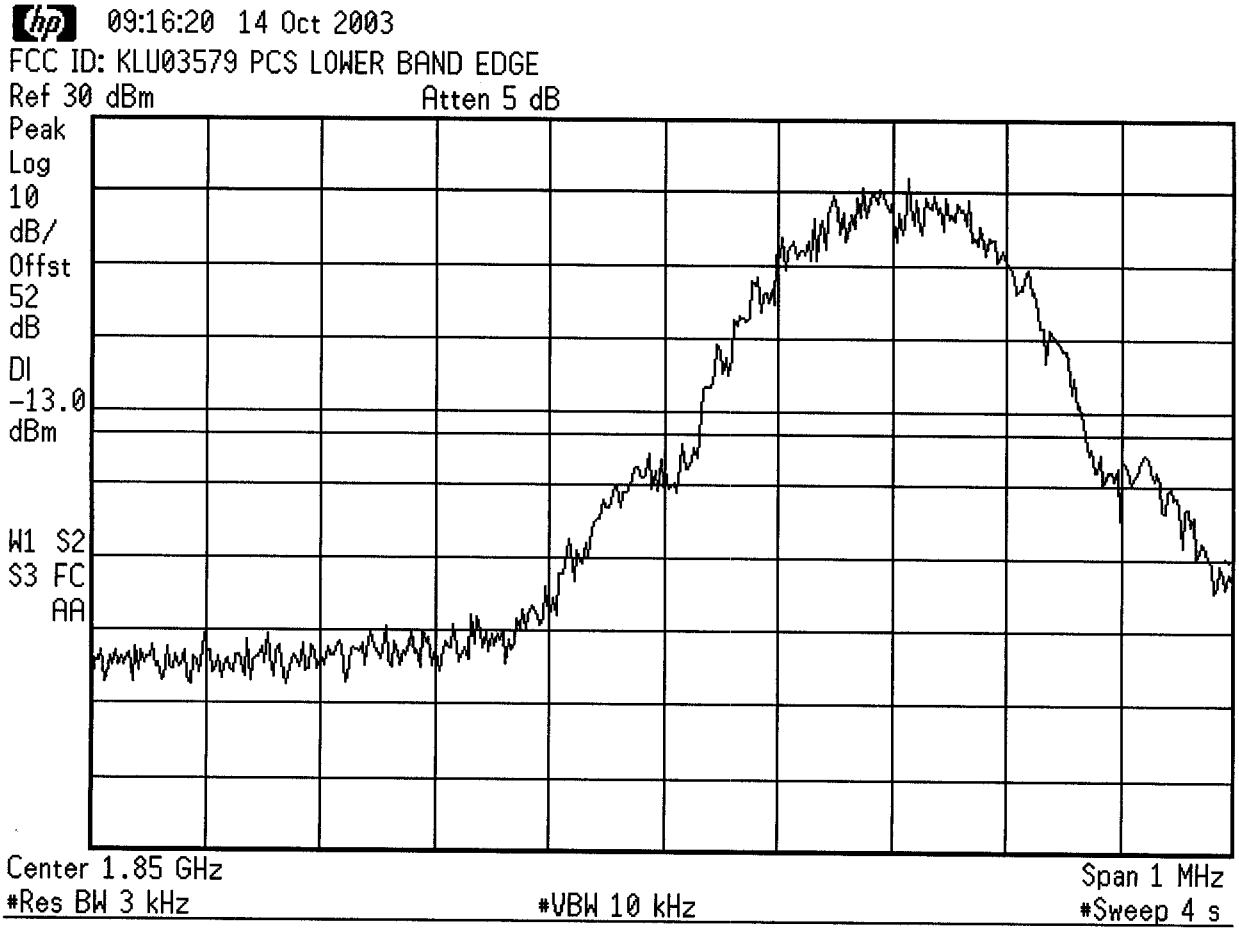

08:55:58 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 810
Mkr1 2.369 GHz
Ref 30 dBm
Atten 5 dB
-16.41 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 MHz
Stop 2.5 GHz
#Res BW 1 MHz
#VBW 1 MHz
Sweep 6.225 ms

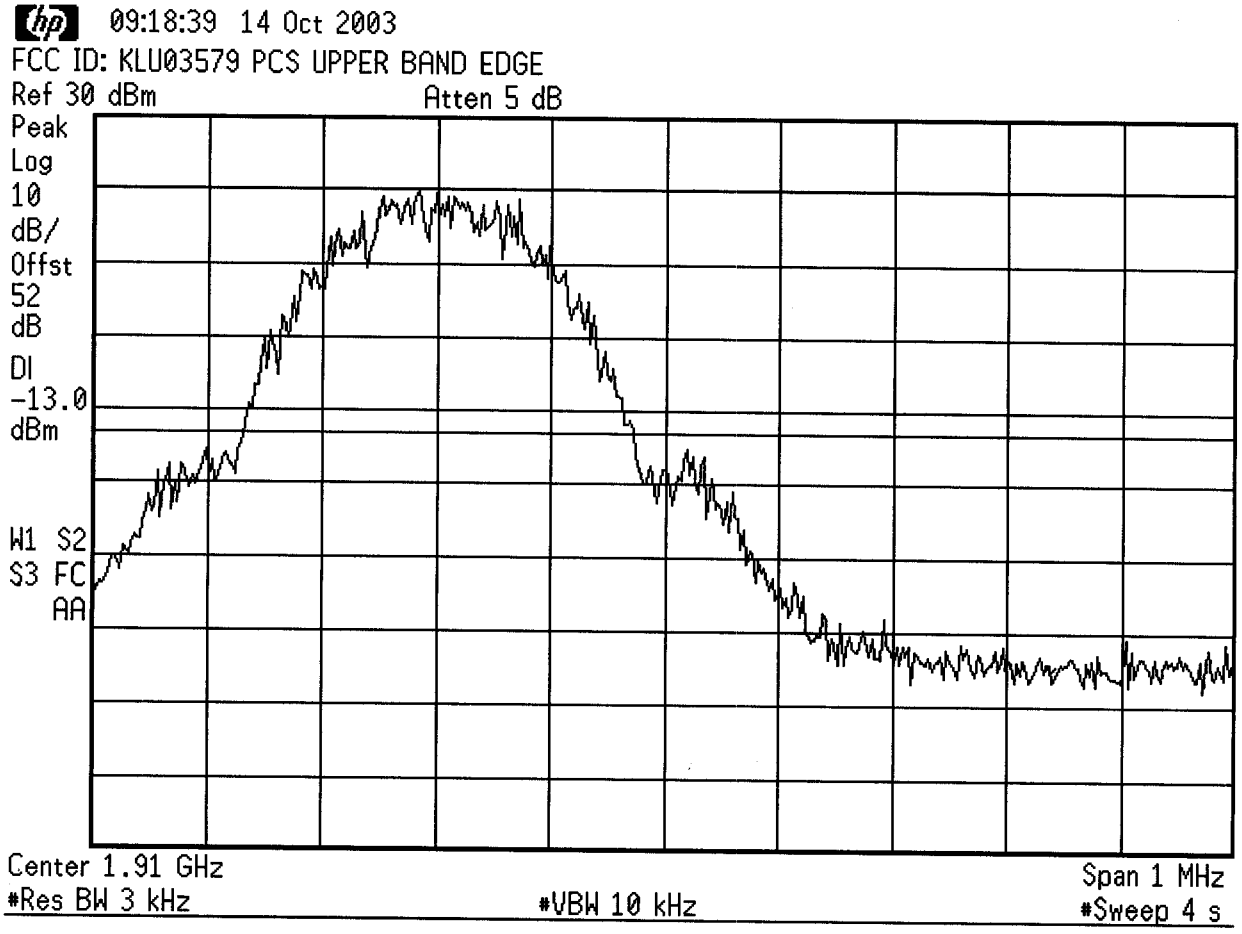

08:57:26 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 810
Ref 30 dBm
Atten 5 dB
Mkr1 7.113 GHz
-17.9 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

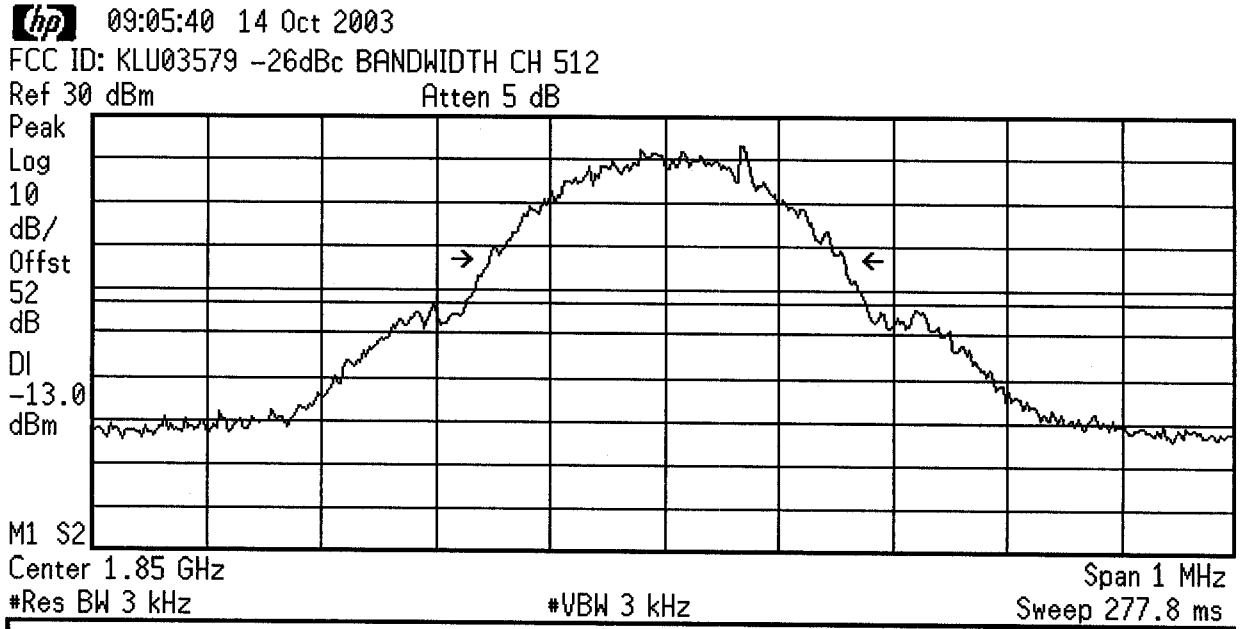

08:59:12 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 810
Ref 30 dBm
Atten 5 dB
Mkr1 14.40 GHz
-14.95 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 20 GHz
Sweep 100 ms


15:36:33 14 Oct 2003
FCC ID: KLU03579 PCS RECEIVER SPURS
Ref -72 dBm
Atten 5 dB
Mkr1 835.1 MHz
-77.46 dBm
Peak
Log
10
dB/
1
M1 S2
S3 FC
AA
Start 30 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1 GHz
Sweep 242.5 ms


15:32:56 14 Oct 2003
FCC ID: KLU03579 PCS RECEIVER SPURS
Ref -63.5 dBm
Atten 5 dB
Mkr1 2.988 GHz
-69.15 dBm
Peak
Log
10
dB/
M1 S2
S3 FC
AA
Start 1 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 6 GHz
Sweep 12.5 ms


09:16:20 14 Oct 2003
FCC ID: KLU03579 PCS LOWER BAND EDGE
Ref 30 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
W1 S2
S3 FC
AA
Center 1.85 GHz
#Res BW 3 kHz
#VBW 10 kHz
Span 1 MHz
#Sweep 4 s


09:18:39 14 Oct 2003
FCC ID: KLU03579 PCS UPPER BAND EDGE
Ref 30 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
W1 S2
S3 FC
AA
Center 1.91 GHz
#Res BW 3 kHz
#VBW 10 kHz
Span 1 MHz
#Sweep 4 s

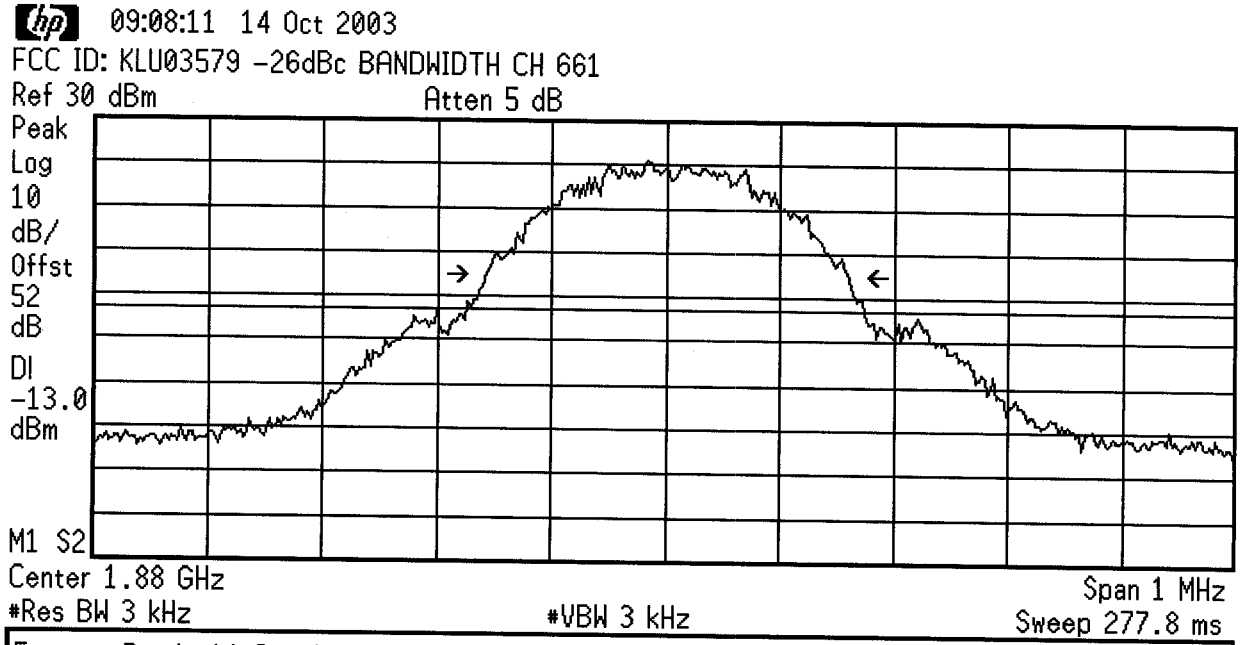


Emission Bandwidth Results (measuring..)

Emission Bandwidth

310.5 kHz

Emiss BW X dB -26.0 dB



Emission Bandwidth Results (measuring..)

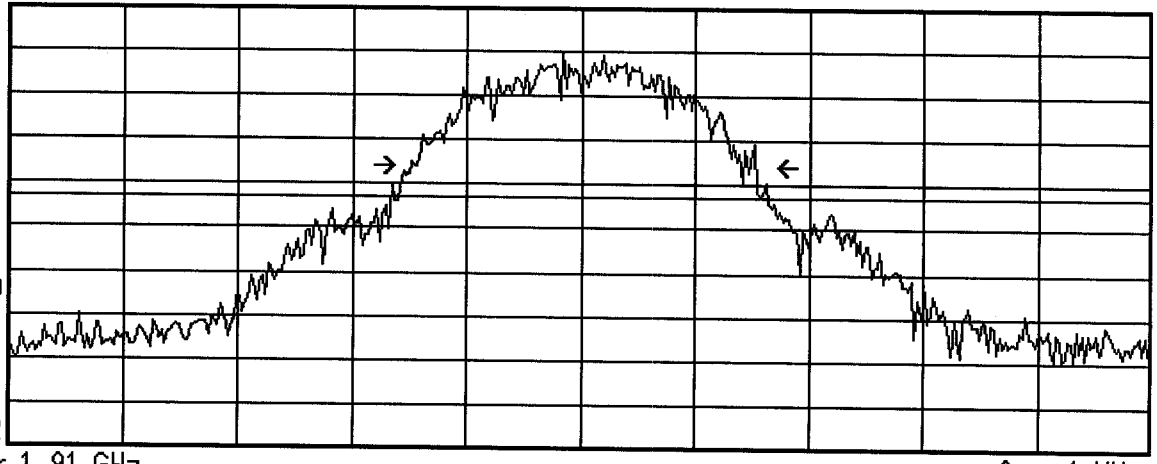
Emission Bandwidth

317.1 kHz

Emiss BW X dB -26.0 dB

09:11:01 14 Oct 2003

FCC ID: KLU03579 -26dBc BANDWIDTH CH 810

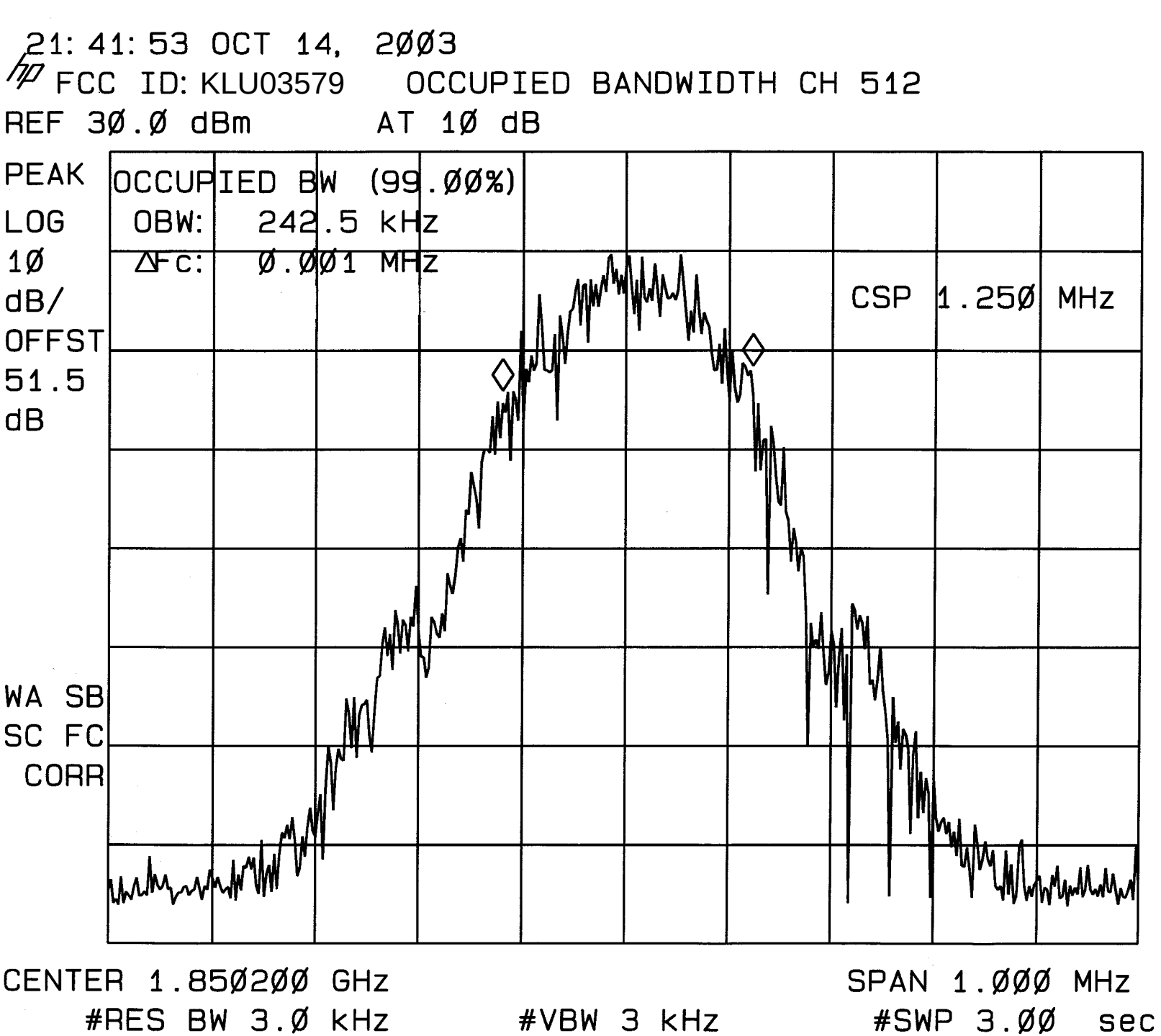


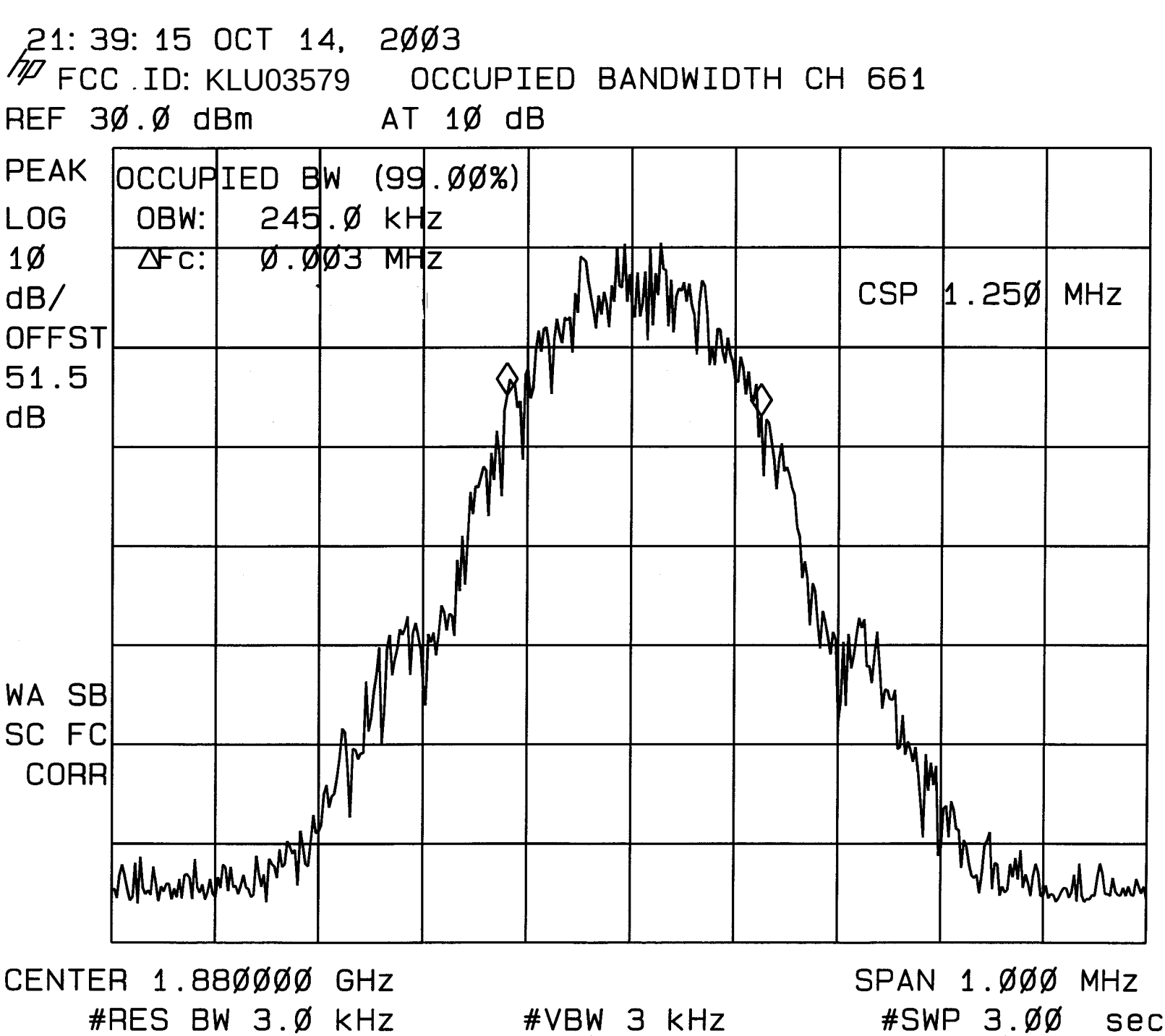
Emission Bandwidth Results (measuring..)

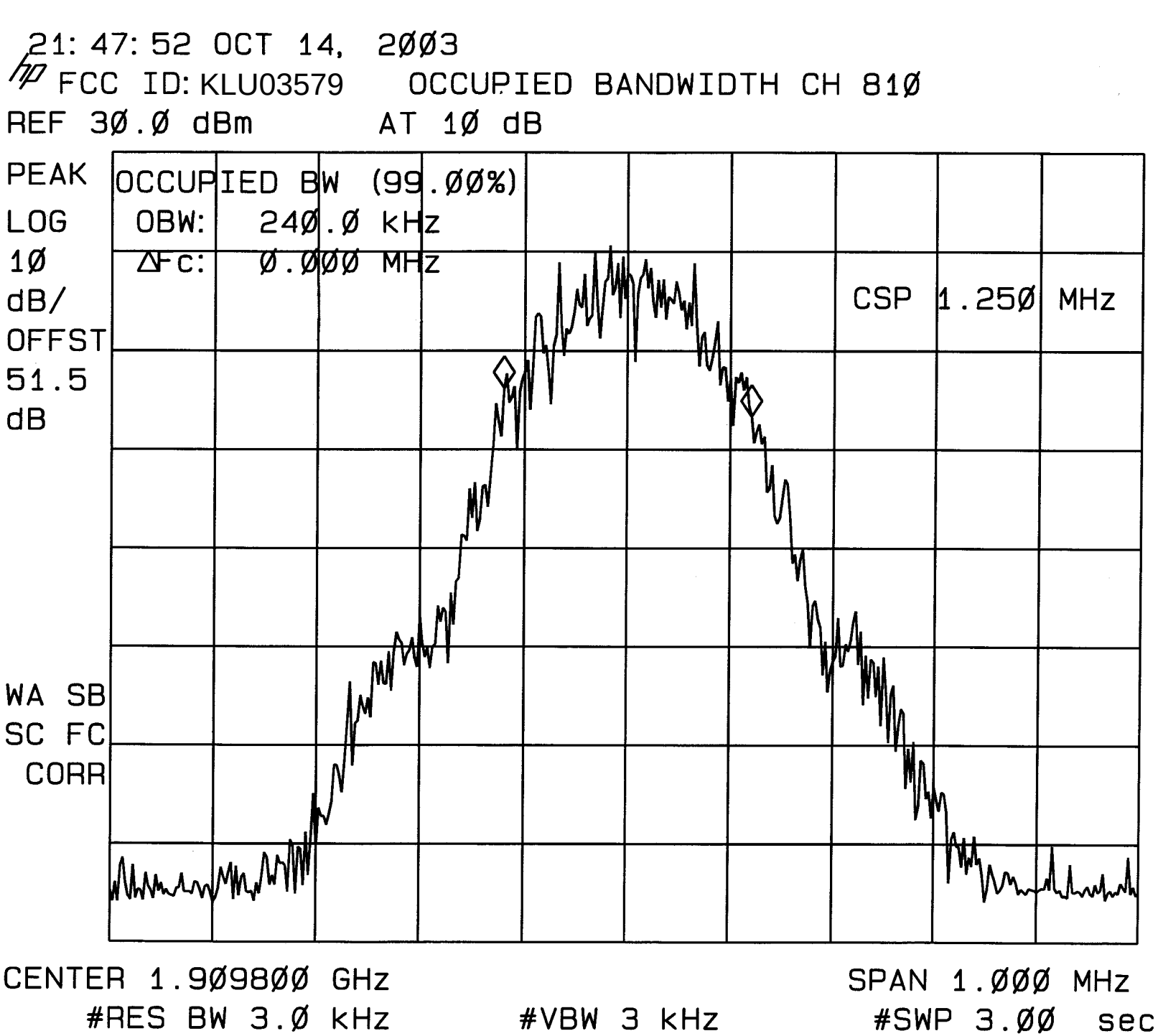
Emission Bandwidth

303.0 kHz

Emiss BW X dB -26.0 dB

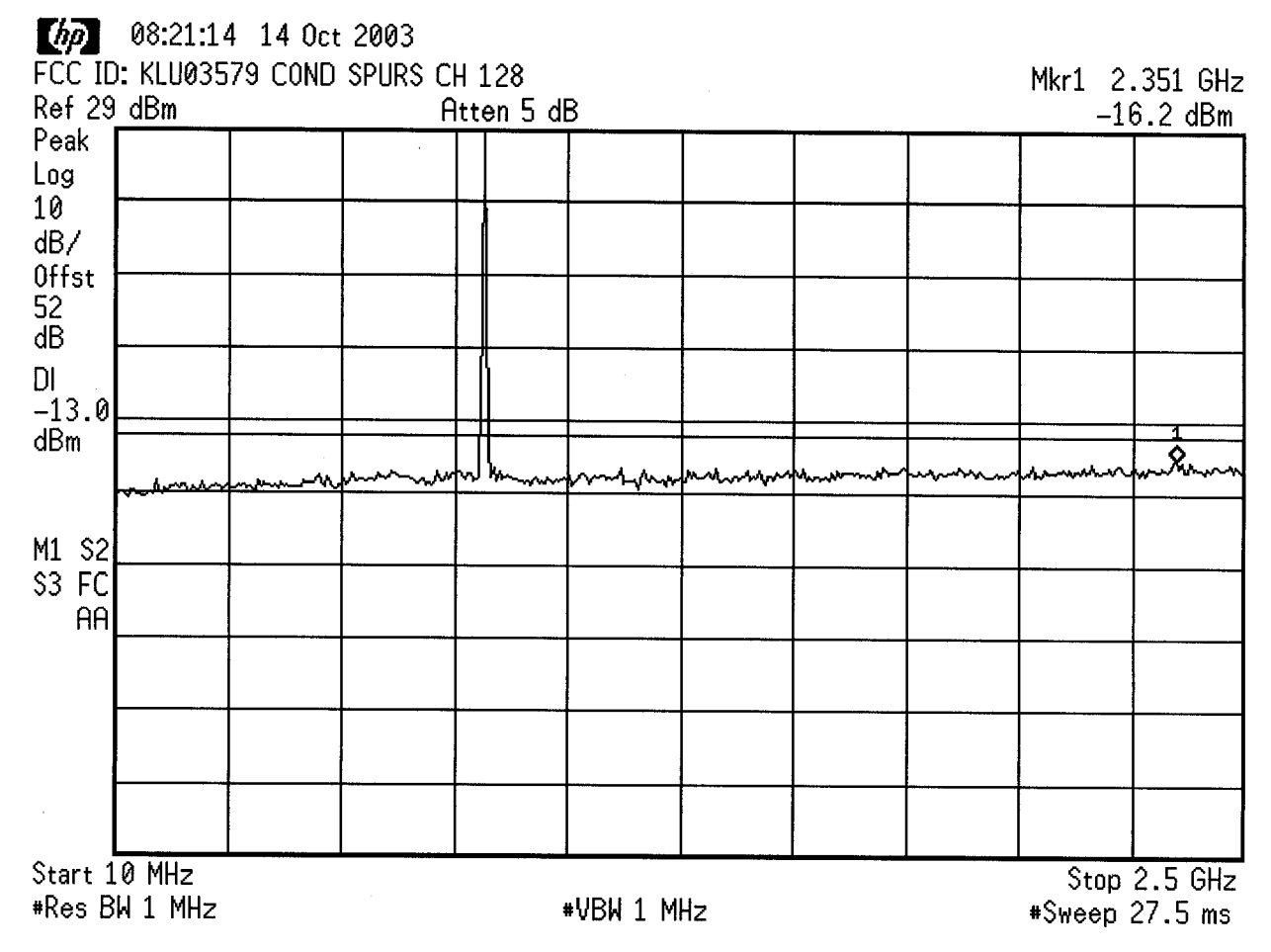

21: 41: 53 OCT 14, 2ØØ3
FCC ID: KLU03579 OCCUPIED BANDWIDTH CH 512
REF 3Ø.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.5
dB
OCCUPIED BW (99.ØØ%)
OBW: 242.5 kHz
ΔFc: Ø.ØØ1 MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 1.85Ø2ØØ GHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec

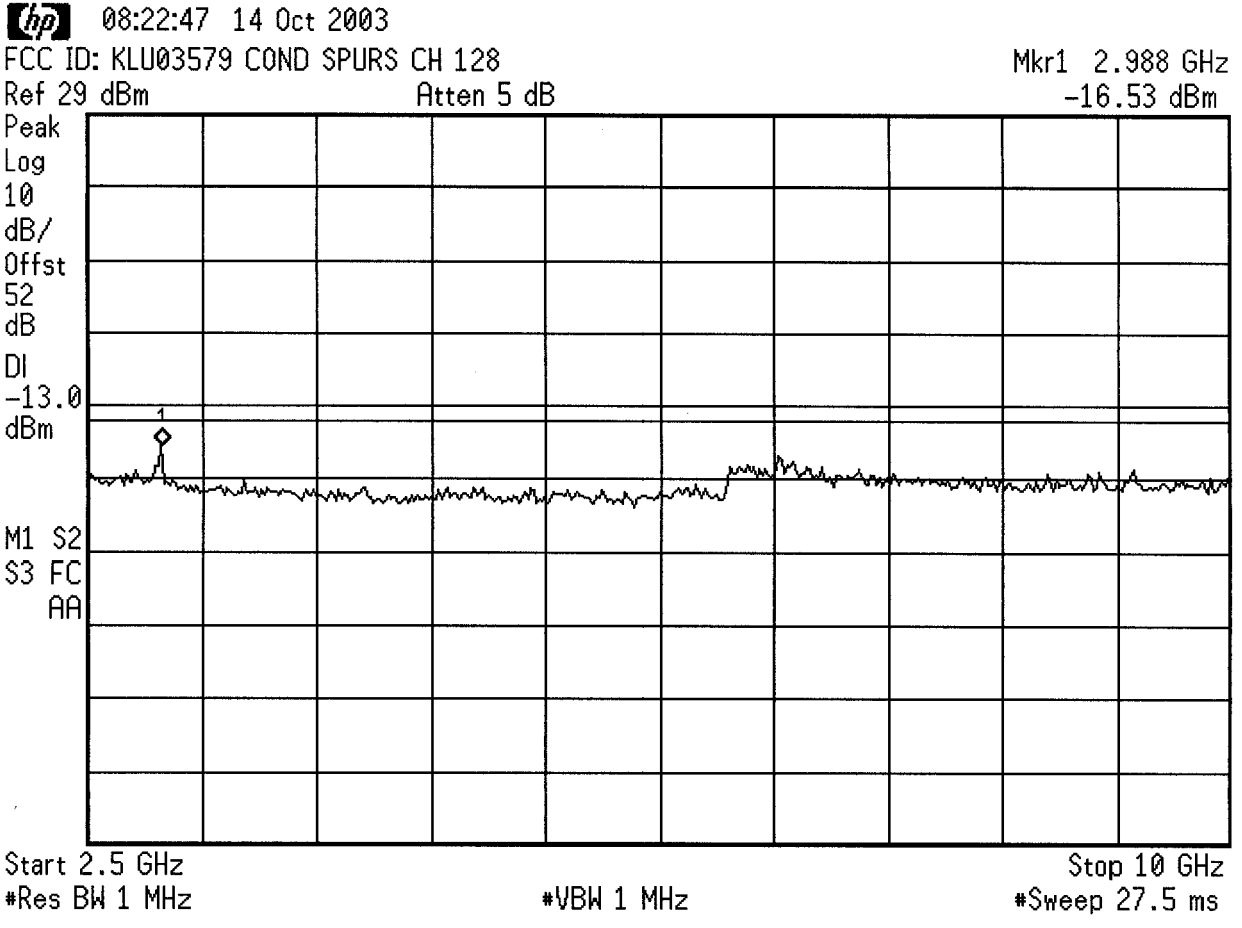

21: 39: 15 OCT 14, 2ØØ3
FCC ID: KLU03579 OCCUPIED BANDWIDTH CH 661
REF 3Ø.Ø dBm AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.5
dB
OCCUPIED BW (99.ØØ%)
OBW: 245.Ø kHz
ΔFc: Ø.ØØ3 MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 1.88ØØØØ GHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec

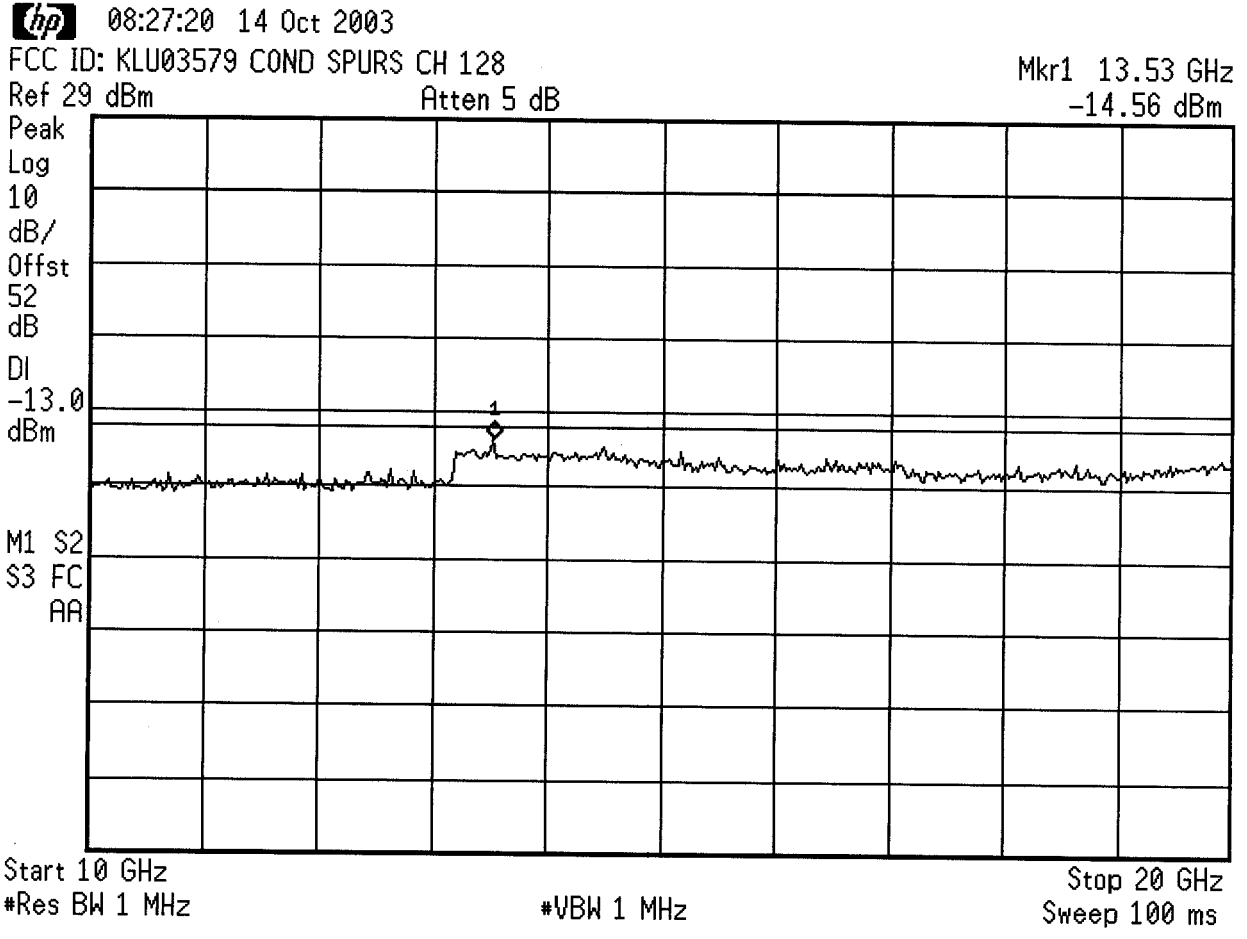

21: 47: 52 OCT 14, 2ØØ3
FCC ID: KLU03579 OCCUPIED BANDWIDTH CH 81Ø
REF 3Ø.Ø dBm AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.5
dB
OCCUPIED BW (99.ØØ%)
OBW: 24Ø.Ø kHz
ΔFc: Ø.ØØØ MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 1.9Ø98ØØ GHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec

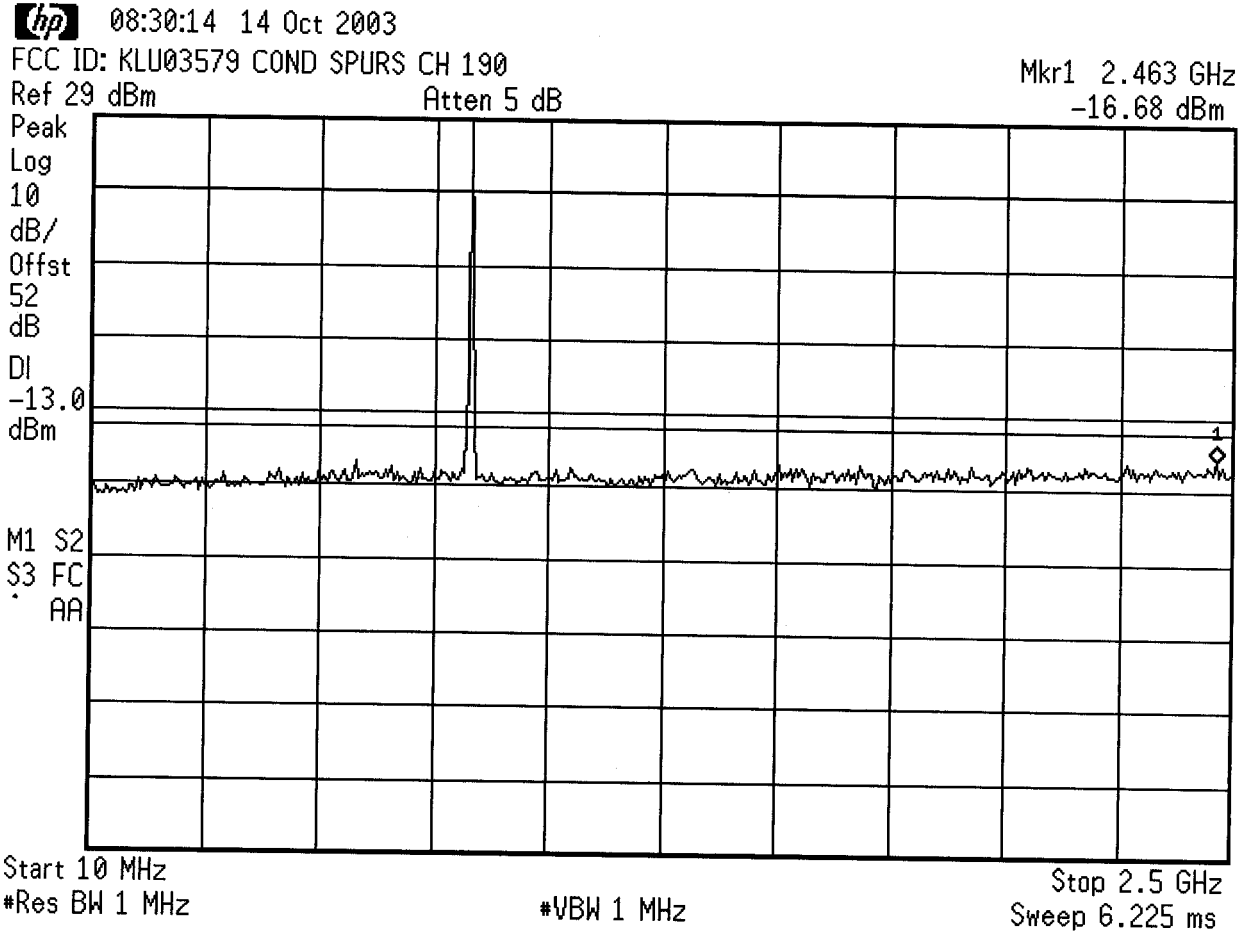
EMC TEST PLOTS - Cellular GPRS Mode

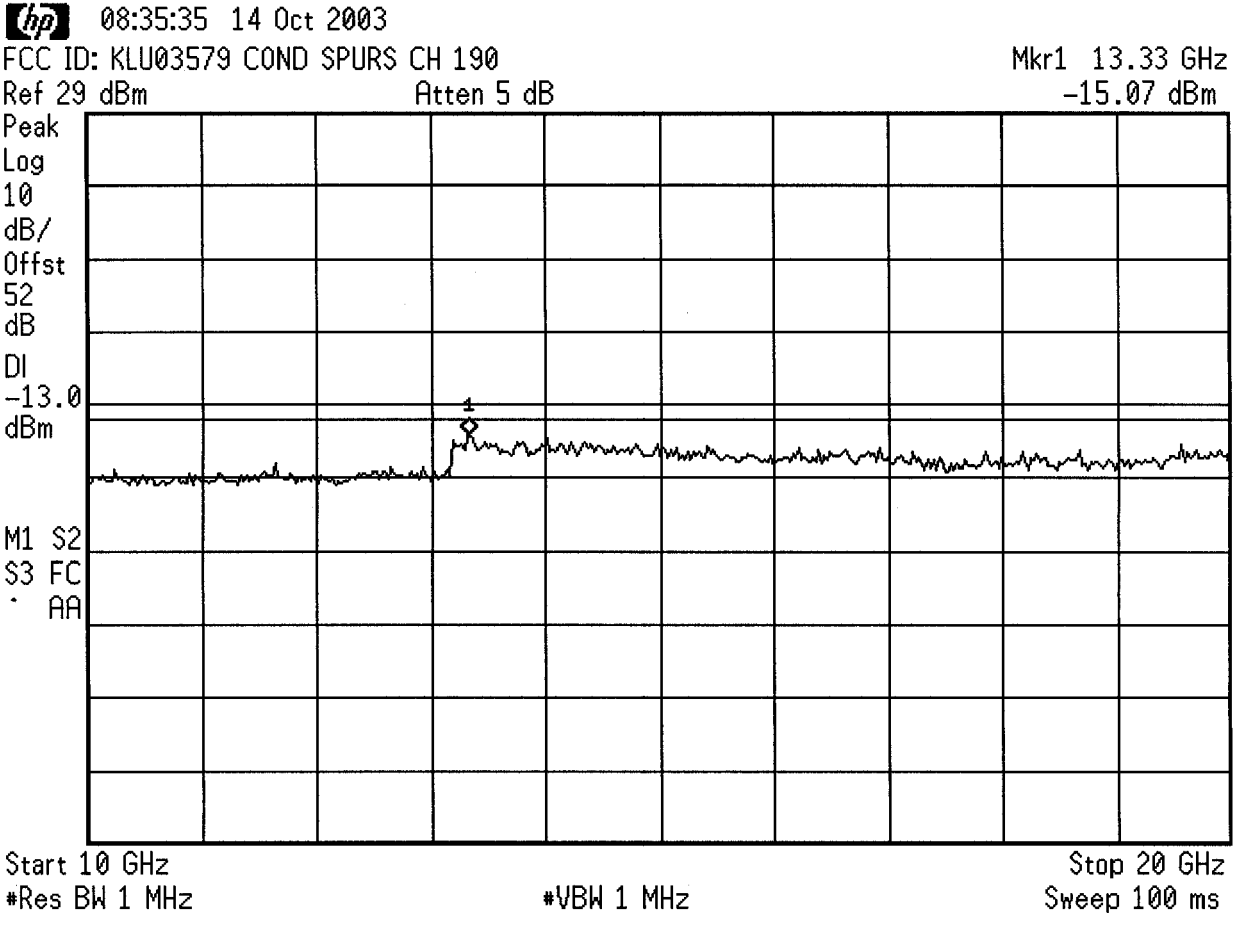
1. Conducted Spurious Emissions
2. Receiver Spurious Emissions
3. Band Edge
4. -26dBc Bandwidth
5. Occupied Bandwidth

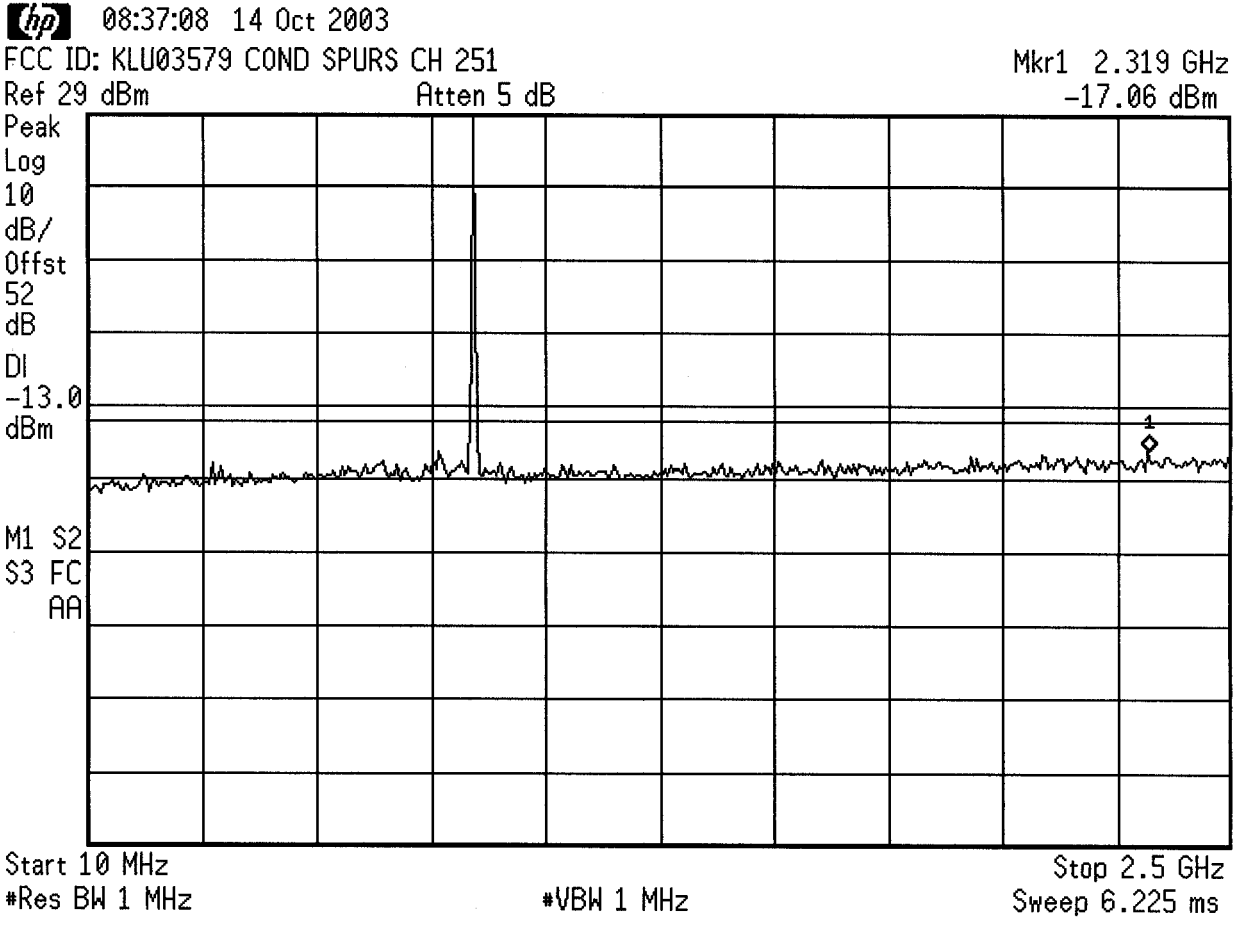

08:21:14 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 128
Mkr1 2.351 GHz
-16.2 dBm
Ref 29 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 MHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 2.5 GHz
#Sweep 27.5 ms

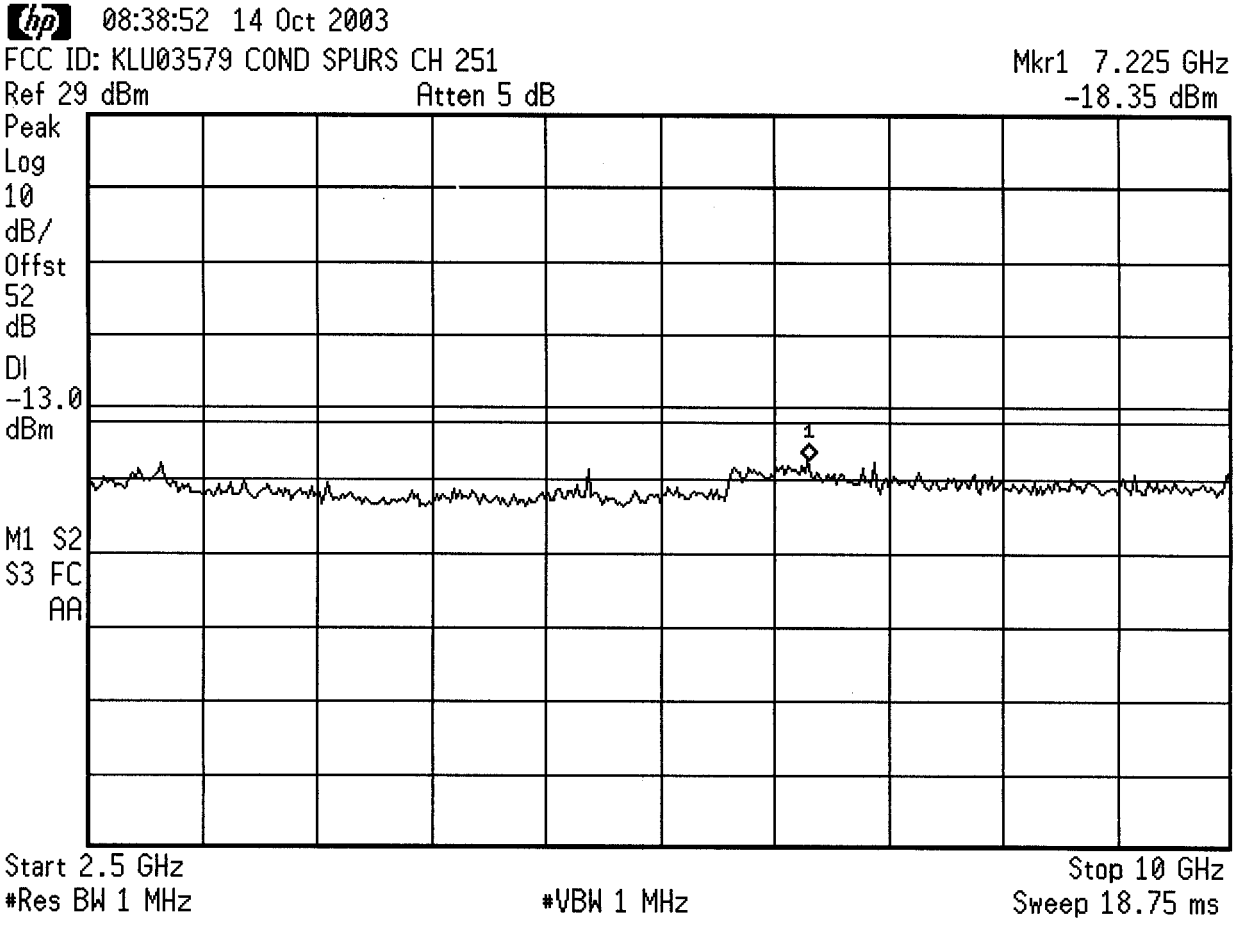

08:22:47 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 128
Mkr1 2.988 GHz
Ref 29 dBm
Atten 5 dB
-16.53 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 1 MHz
#VBW 1 MHz
#Sweep 27.5 ms

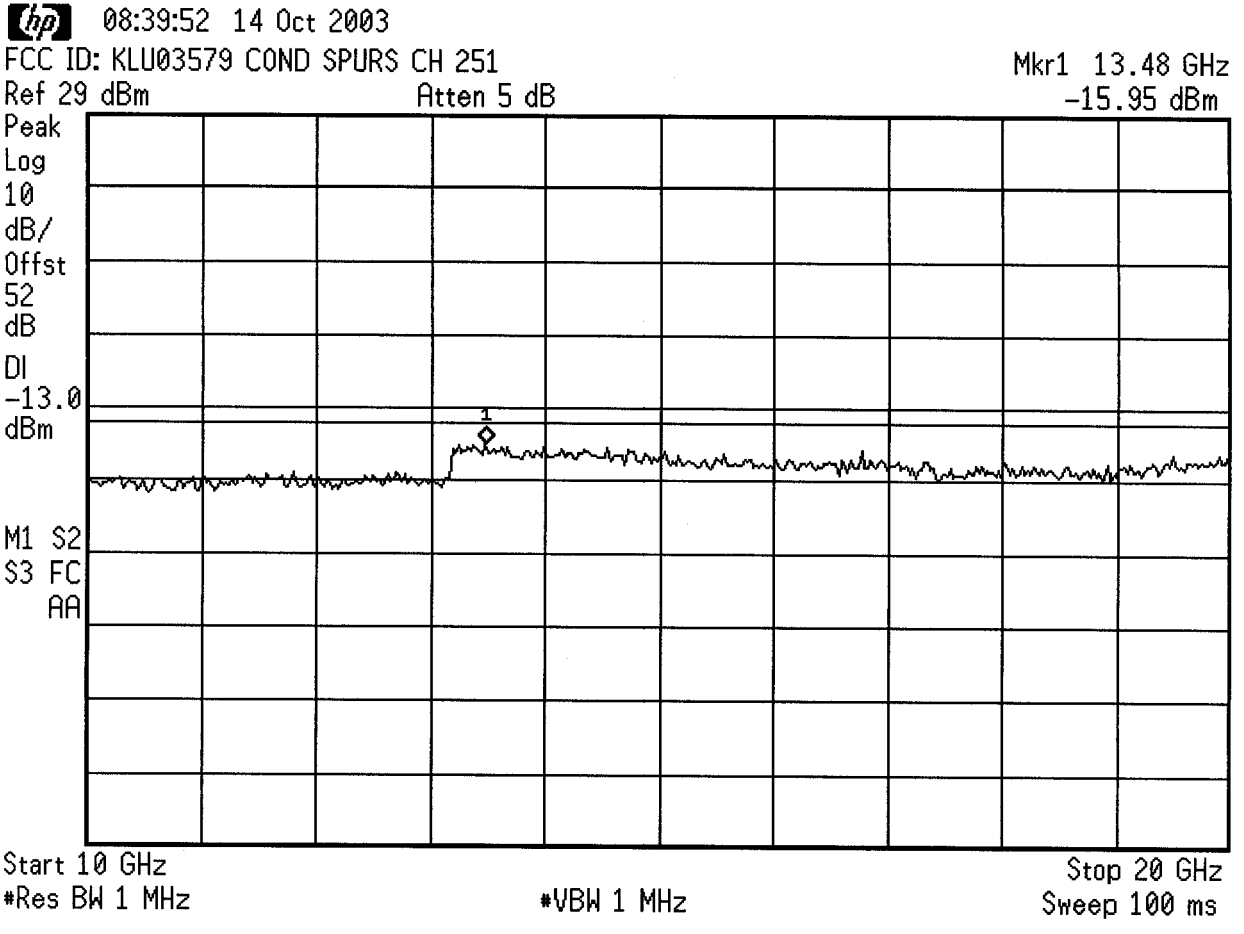

08:27:20 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 128
Ref 29 dBm
Atten 5 dB
Mkr1 13.53 GHz
-14.56 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

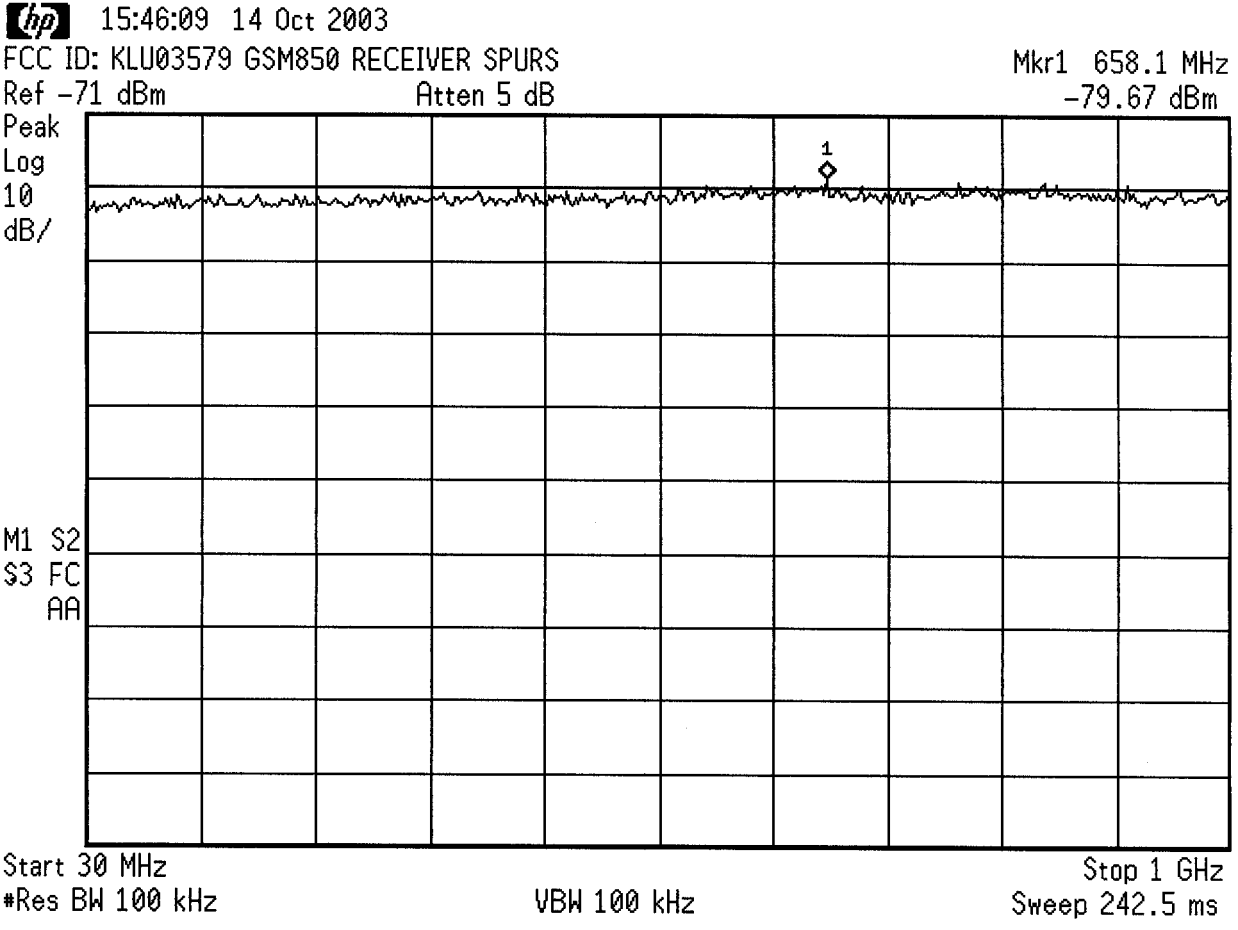

08:30:14 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 190
Ref 29 dBm
Atten 5 dB
Mkr1 2.463 GHz
-16.68 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 10 MHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

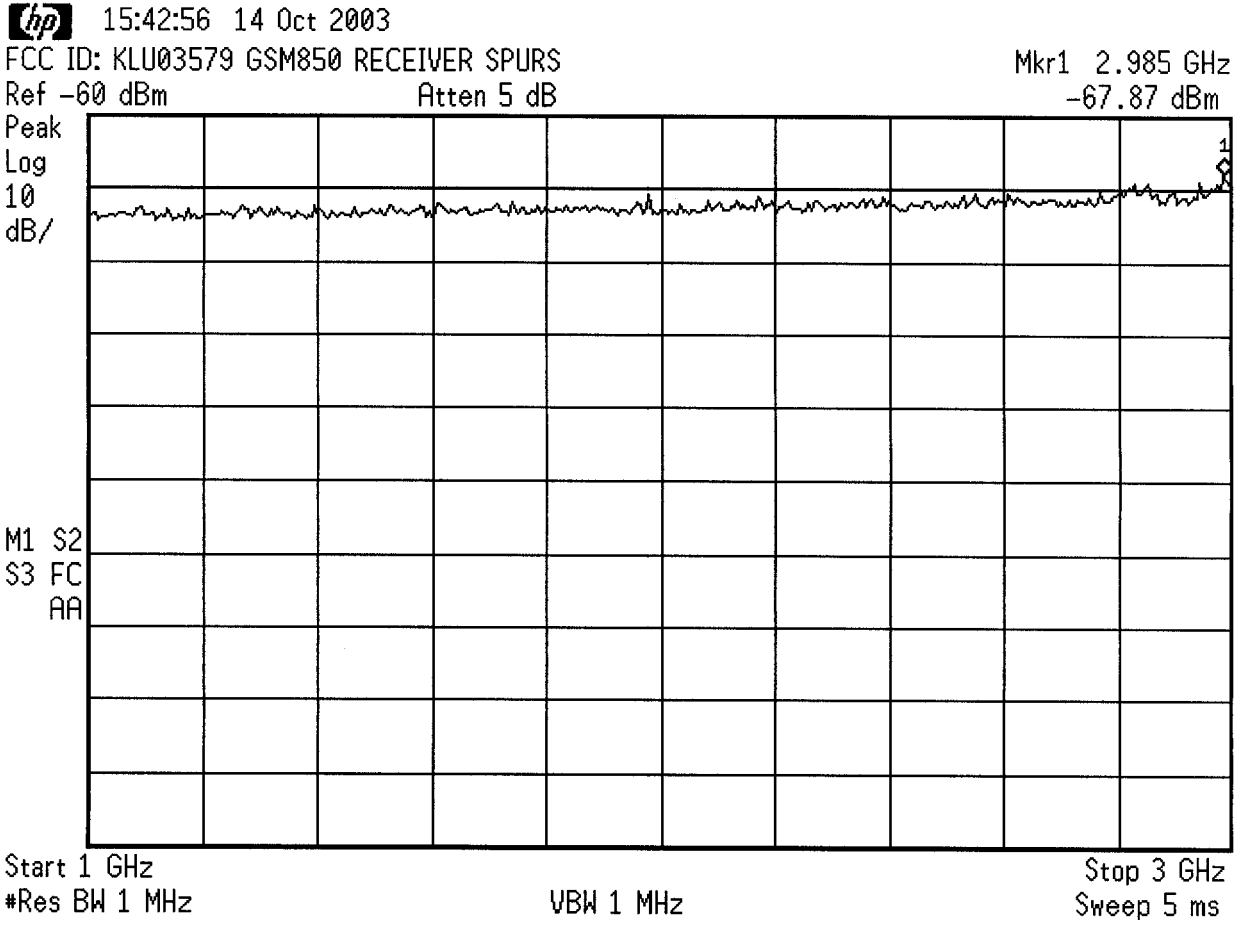

08:35:35 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 190
Mkr1 13.33 GHz
Ref 29 dBm
Atten 5 dB
-15.07 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 10 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 1 MHz
Sweep 100 ms

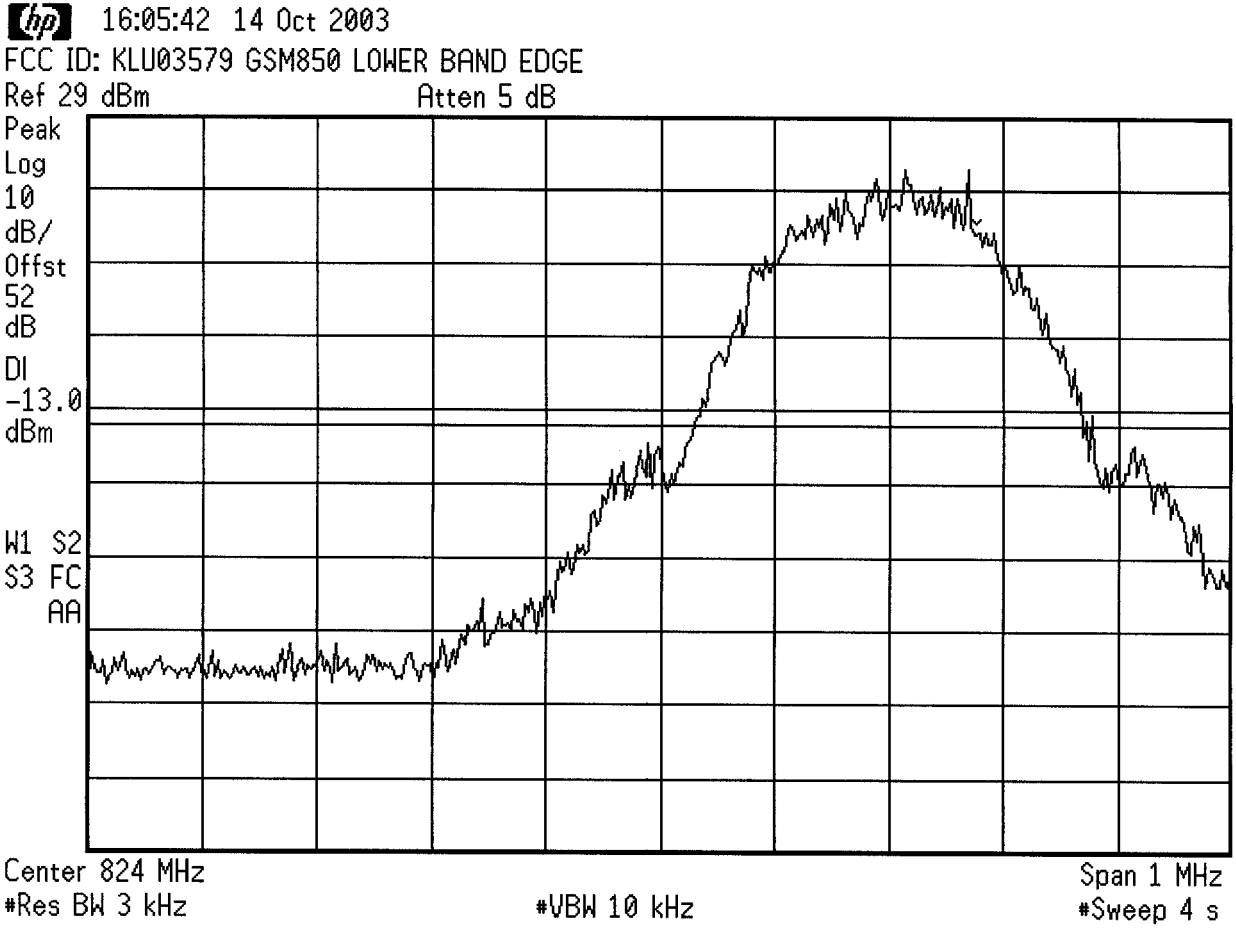

08:37:08 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 251
Mkr1 2.319 GHz
Ref 29 dBm
Atten 5 dB
-17.06 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 10 MHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

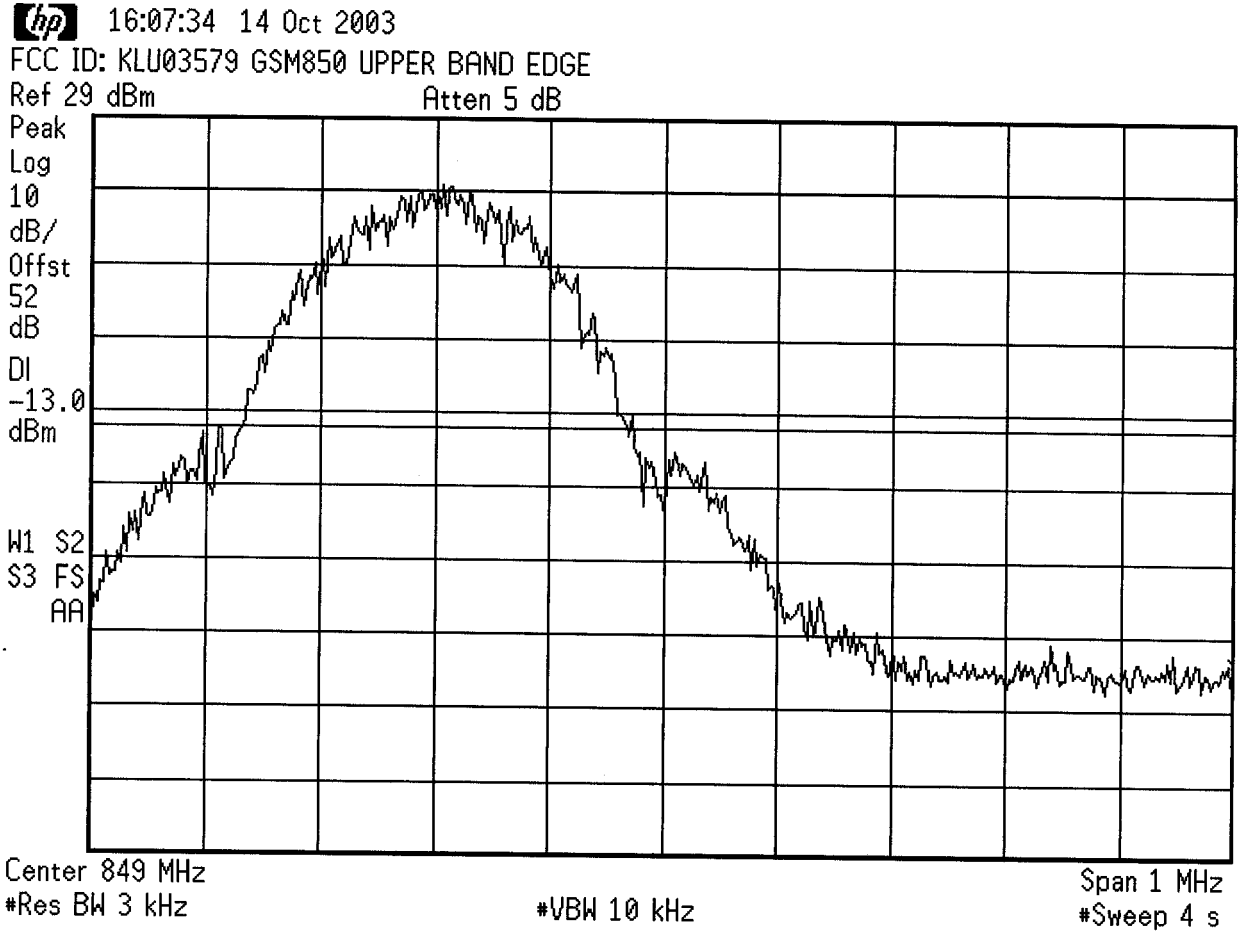

08:38:52 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 251
Mkr1 7.225 GHz
-18.35 dBm
Ref 29 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
#VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

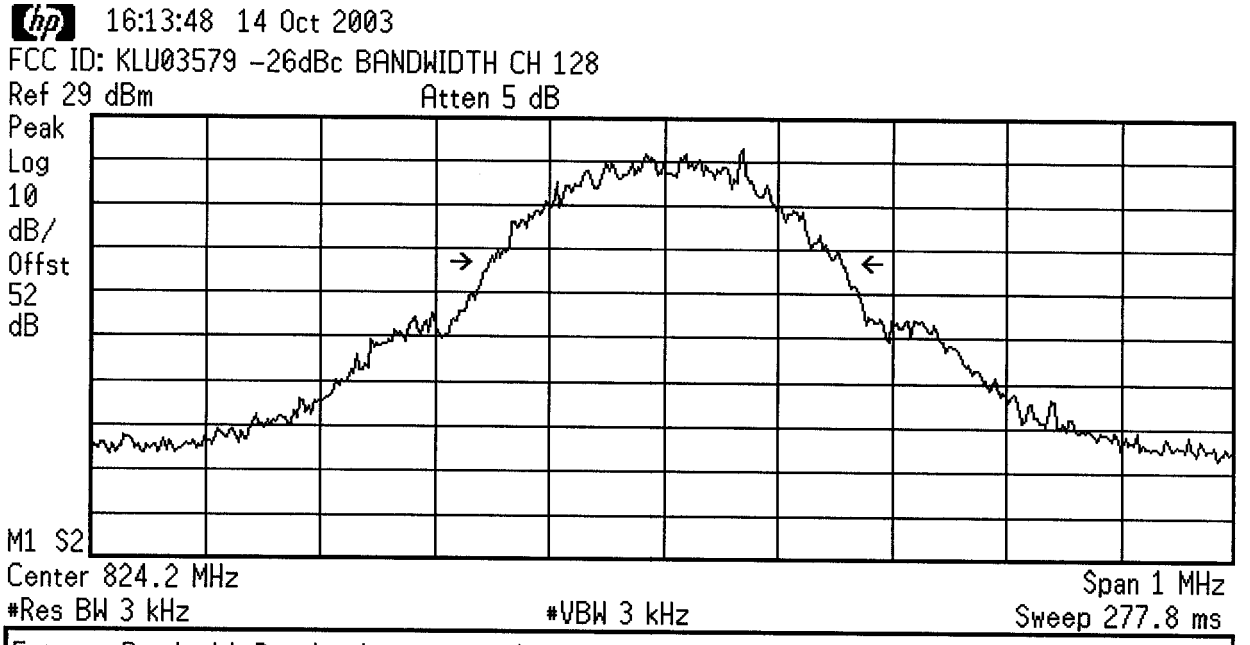

08:39:52 14 Oct 2003
FCC ID: KLU03579 COND SPURS CH 251
Mkr1 13.48 GHz
Ref 29 dBm
Atten 5 dB
-15.95 dBm
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 1 MHz
Sweep 100 ms


15:46:09 14 Oct 2003
FCC ID: KLU03579 GSM850 RECEIVER SPURS
Mkr1 658.1 MHz
Ref -71 dBm
Atten 5 dB
-79.67 dBm
Peak
Log
10
dB/
1
M1 S2
$3 FC
AA
Start 30 MHz
Stop 1 GHz
#Res BW 100 kHz
VBW 100 kHz
Sweep 242.5 ms


15:42:56 14 Oct 2003
FCC ID: KLU03579 GSM850 RECEIVER SPURS
Mkr1 2.985 GHz
Ref -60 dBm
Atten 5 dB
-67.87 dBm
Peak
Log
10
dB/
1
M1 S2
S3 FC
AA
Start 1 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 3 GHz
Sweep 5 ms


16:05:42 14 Oct 2003
FCC ID: KLU03579 GSM850 LOWER BAND EDGE
Ref 29 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
W1 S2
S3 FC
AA
Center 824 MHz
#Res BW 3 kHz
#VBW 10 kHz
Span 1 MHz
#Sweep 4 s


16:07:34 14 Oct 2003
FCC ID: KLU03579 GSM850 UPPER BAND EDGE
Ref 29 dBm
Atten 5 dB
Peak
Log
10
dB/
Offst
52
dB
Dl
-13.0
dBm
W1 S2
S3 FS
AA
Center 849 MHz
#Res BW 3 kHz
#VBW 10 kHz
Span 1 MHz
#Sweep 4 s



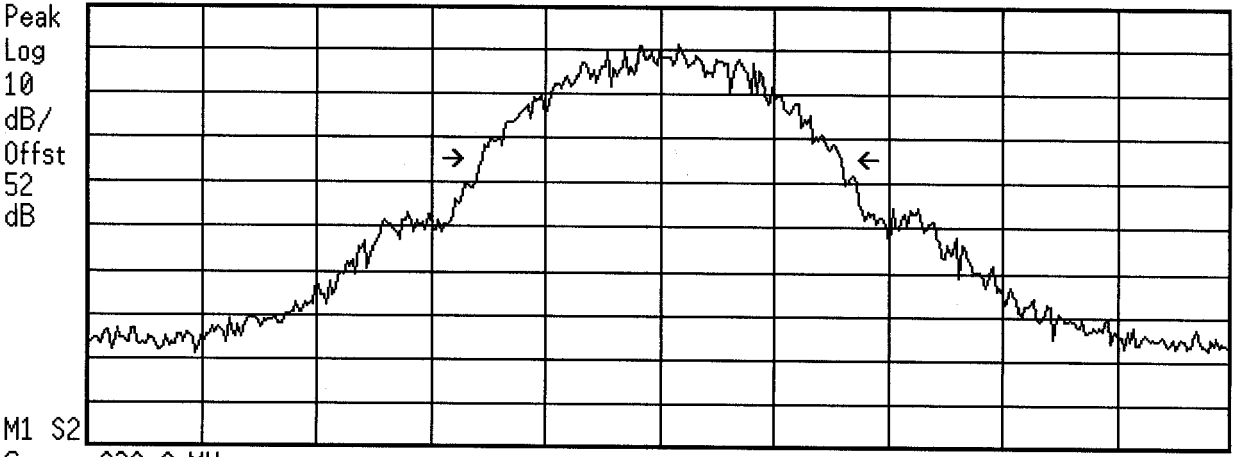
Emission Bandwidth Results (measuring..)

Emission Bandwidth

308.8 kHz

Emiss BW X dB -26.0 dB

16:15:01 14 Oct 2003
FCC ID: KLU03579 -26dBc BANDWIDTH CH 190

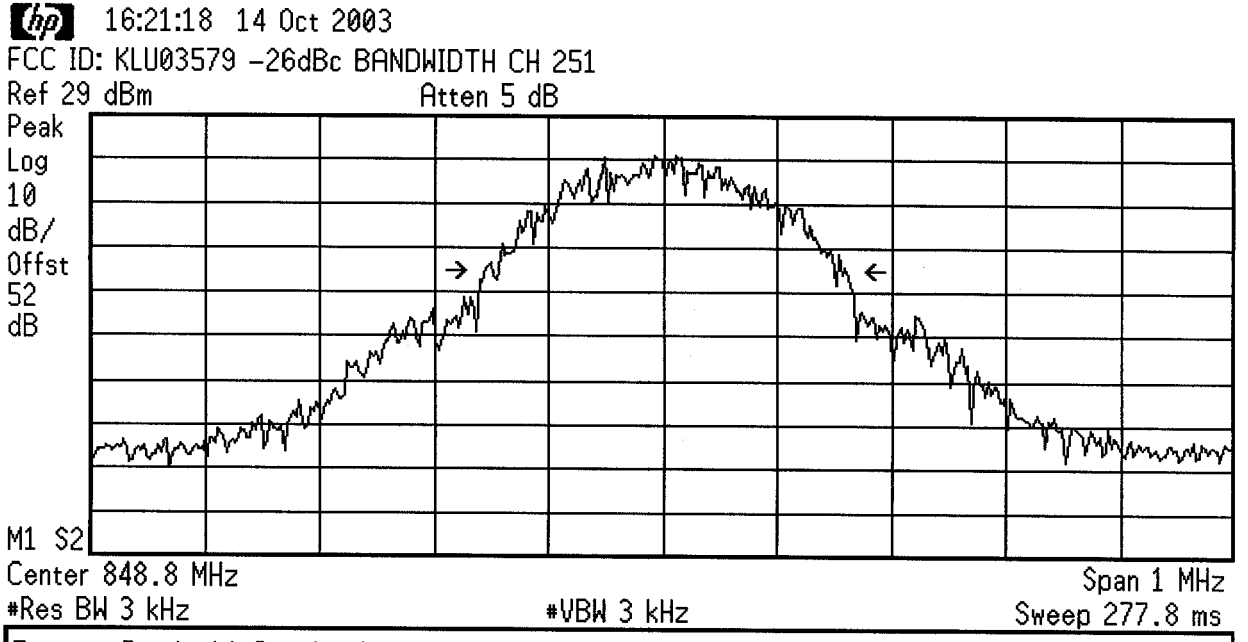


Emission Bandwidth Results (measuring..)

Emission Bandwidth

313.1 kHz

Emiss BW X dB -26.0 dB

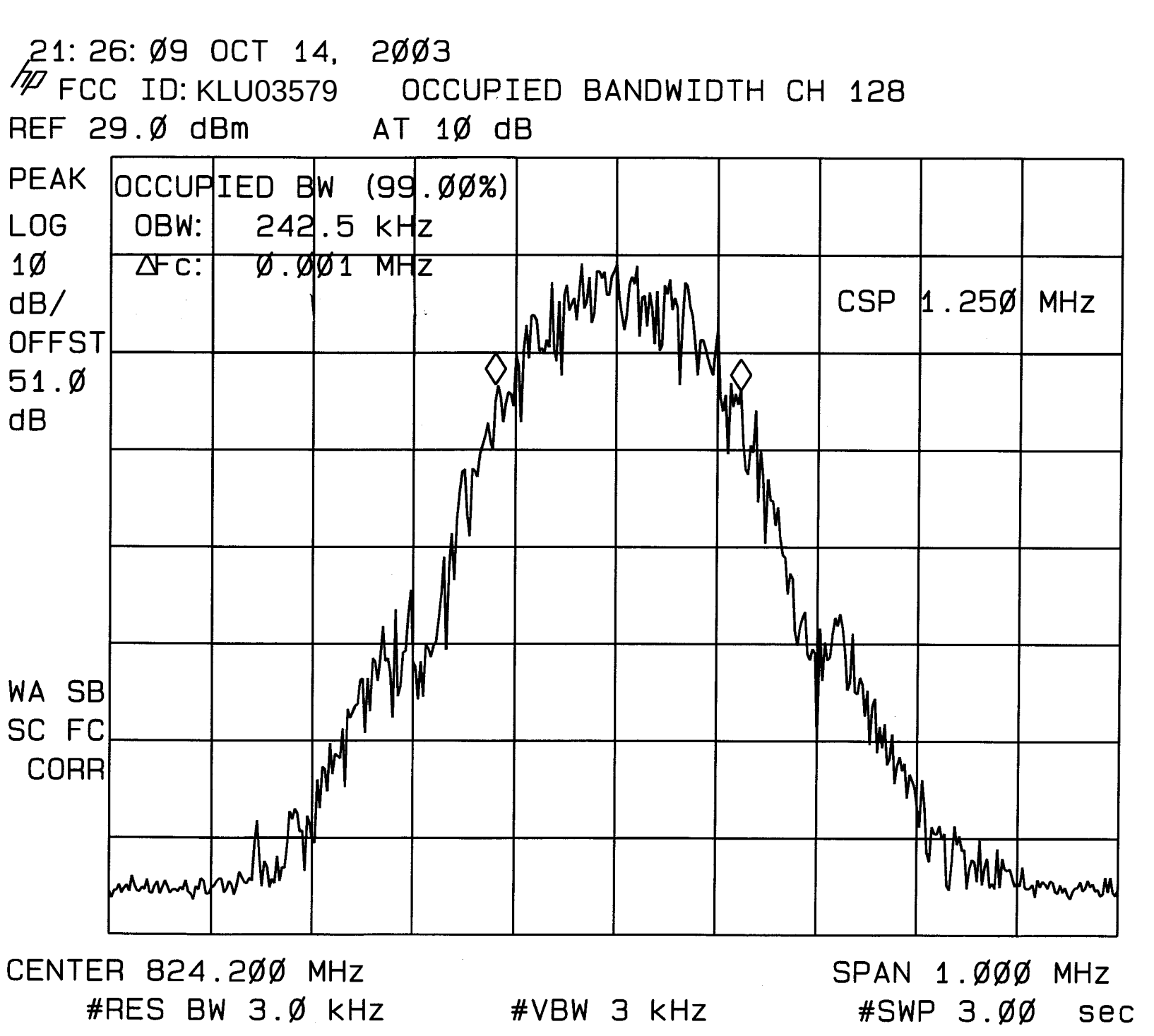


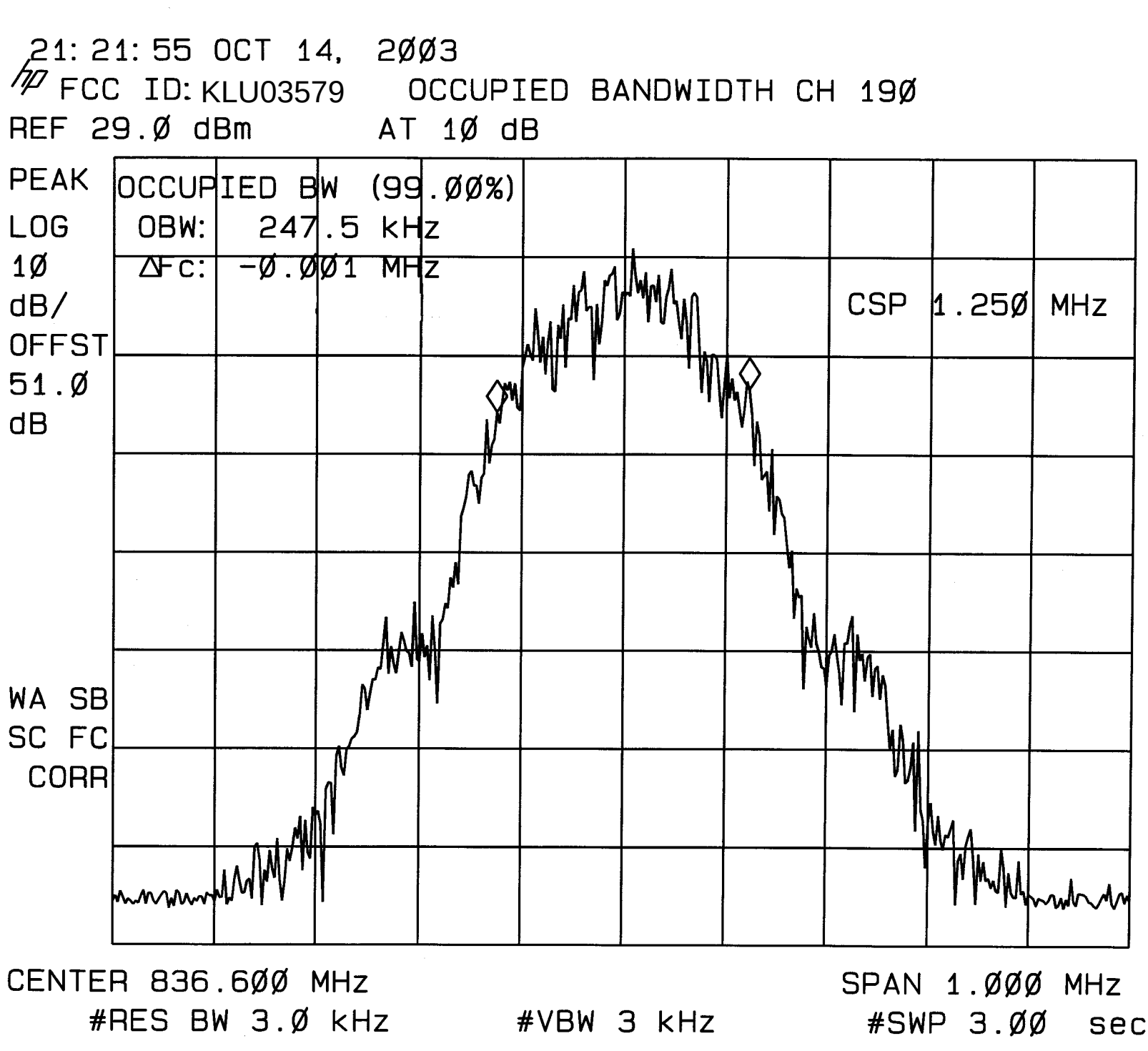
Emission Bandwidth Results (measuring..)

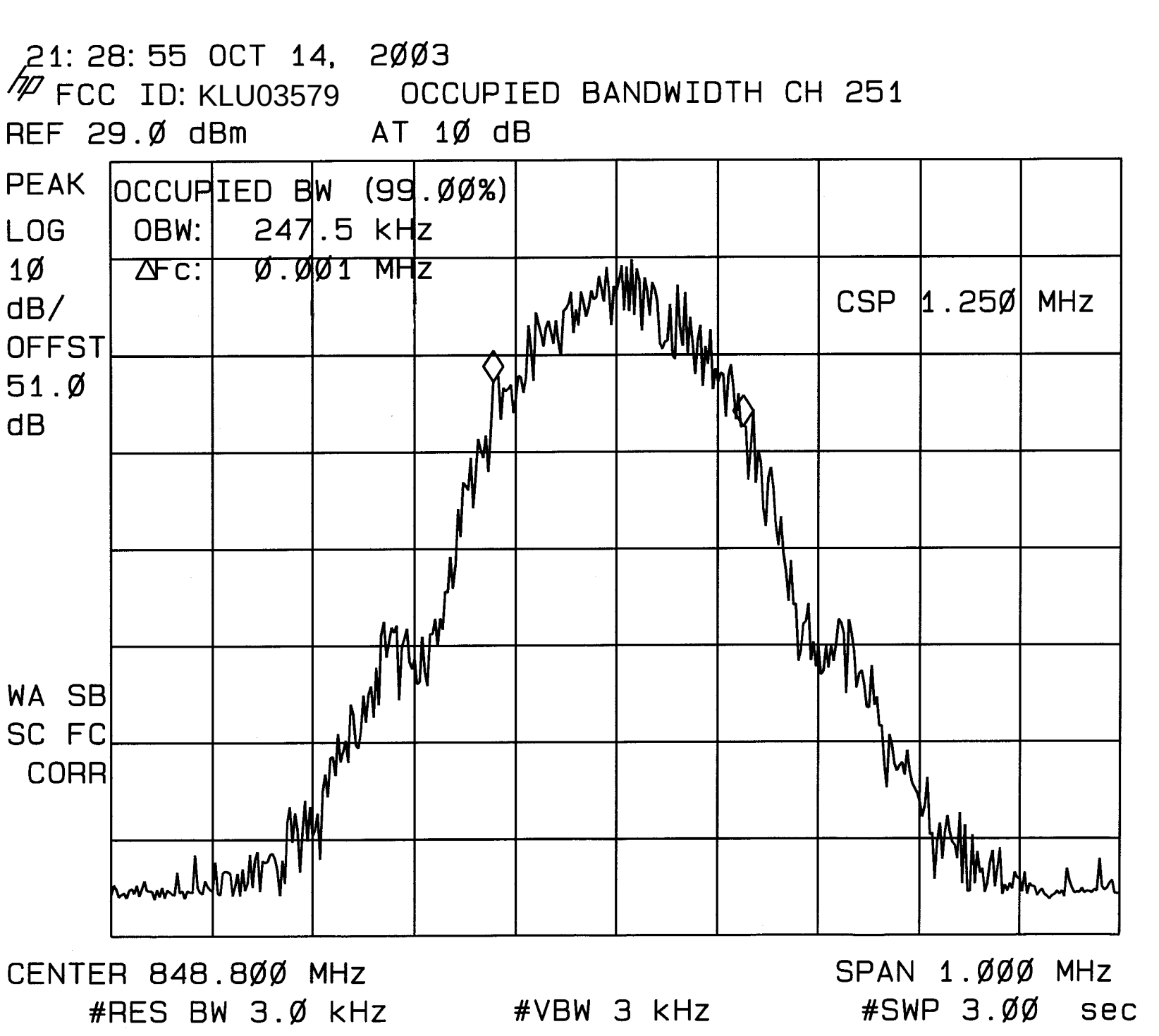
Emission Bandwidth

317.0 kHz

Emiss BW X dB -26.0 dB


21: 26: Ø9 OCT 14, 2ØØ3
FCC ID: KLU03579 OCCUPIED BANDWIDTH CH 128
REF 29.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.Ø
dB
OCCUPIED BW (99.ØØ%)
OBW: 242.5 kHz
ΔFc: Ø.ØØ1 MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 824.2ØØ MHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec


21: 21: 55 OCT 14, 2ØØ3
FCC ID: KLU03579 OCCUPIED BANDWIDTH CH 19Ø
REF 29.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.Ø
dB
OCCUPIED BW (99.ØØ%)
OBW: 247.5 kHz
ΔFc: -Ø.ØØ1 MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 836.6ØØ MHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec


21: 28: 55 OCT 14, 2ØØ3
FCC ID: KLU03579
OCCUPIED BANDWIDTH CH 251
REF 29.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
51.Ø
dB
OCCUPIED BW (99.ØØ%)
OBW: 247.5 kHz
ΔFc: Ø.ØØ1 MHz
CSP 1.25Ø MHz
WA SB
SC FC
CORR
CENTER 848.8ØØ MHz
SPAN 1.ØØØ MHz
#RES BW 3.Ø kHz
#VBW 3 kHz
#SWP 3.ØØ sec