CERTIFICATE OF COMPLIANCE
FCC PART 22 CERTIFICATION

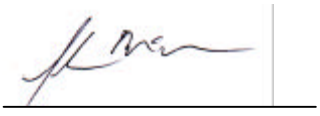
Test Lab:	**Applicant:**
CELLTECH RESEARCH INC. Testing and Engineering Services 1955 Moss Court Kelowna, B.C. Canada V1Y 9L3 Phone: 250 - 860-3130 Fax: 250 - 860-3110 Toll Free: 1-877-545-6287 e-mail: info@celltechlabs.com web site: www.celltechlabs.com	**SEWON TELECOM** 15Fl., Sewon Venture Town Bldg., 705-18, Yeuksam-dong, Kangnam-gu 135-080, Seoul, Korea

FCC Classification:	**Licensed Non-Broadcast Transmitter Held to Ear (TNE)**
FCC Rule Part(s):	**§22(H), §22.901(d), §2**
FCC ID:	**PFZSWC-2001W**
Model(s):	**SWC-2001W**
Equipment Type:	**Dual-Mode AMPS/CDMA Cellular Phone**
Tx Frequency Range:	**824.04 - 848.97 MHz (AMPS)** **824.70 - 848.31 MHz (CDMA)**
Rx Frequency Range:	**869.04 - 893.97 MHz (AMPS)** **869.70 - 893.31 MHz (CDMA)**
Max. RF Output Power:	**0.171 Watts ERP (AMPS)** **0.146 Watts ERP (CDMA)**
Frequency Tolerance:	**2.5 PPM**
Emission Designator(s):	**40K0F8W, 40K0F1D, 1M25F9W**

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947.

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.

Celltech Research Inc. certifies that no party to this application has been denied FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).



Shawn McMillen
General Manager
Celltech Research Inc.

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FCC PART 22 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.

§2.1033(a) General Information

APPLICANT:

SEWON TELECOM
15Fl., Sewon Venture Town Bldg.,
705-18, Yeuksam-dong, Kangnam-gu
135-080, Seoul, Korea

FCC ID	**PFZSWC-2001W**
Model(s)	**SWC-2001W**
EUT Type	**Dual-Mode Cellular Phone**
Classification	**Licensed Non-Broadcast Transmitter Held to Ear (TNE)**
Rule Part(s)	**§22(H), §22.901(d), §2**
Max. RF Output Power	**0.171 Watts ERP (AMPS)** **0.146 Watts ERP (CDMA)**
Tx Freq. Range	**824.04 - 848.97 MHz (AMPS)** **824.70 - 848.31 MHz (CDMA)**
Rx Freq. Range	**869.04 - 893.97 MHz (AMPS)** **869.70 - 893.31 MHz (CDMA)**
Emission Designator(s)	**40K0F8W, 40K0F1D, 1M25F9W**
Modulation(s)	**AMPS / CDMA**
Battery Type(s)	**3.6V Standard**

2.1 MEASUREMENT PROCEDURES

2.2 TRANSMITTER AUDIO FREQUENCY RESPONSE - §2.1047(a)

The frequency response of the audio modulating circuit over the frequency range 100-5000 Hz is measured. The audio signal generator is connected to the audio input circuit/microphone of the EUT. The audio signal input is adjusted to obtain 50% modulation at 1kHz and this point is taken as the 0dB reference. With the input held constant and below the limit at all frequencies, the audio signal generator is varied from 100 to 50 kHz.

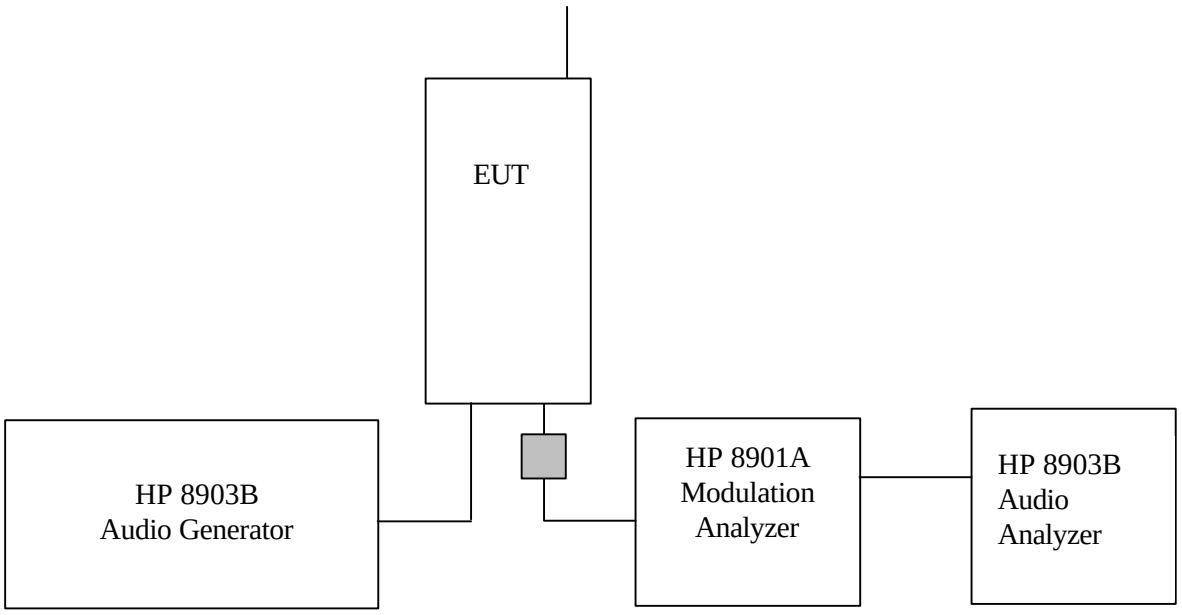
2.3 AUDIO LOW PASS FILTER FREQUENCY RESPONSE - §22.915(d)

The response in dB relative to 1kHz is measured using the HP8901 Modulation Analyzer. For the frequency response of the audio low-pass filter, the audio input is connected at the input to the modulation limiter and the modulated stage. The audio output is connected at the output of the modulated stage.

2.4 MODULATION LIMITING - §2.1047(b) & §22.915(b)

The audio signal generator is connected to the audio input circuit/microphone of the EUT. The modulation response is measured for each of the three modulating frequencies (300Hz, 1000Hz, and 3000Hz), and the input voltage is varied from 30% modulation (±3.6kHz deviation) to at least 20dB higher than the saturation point. Measurements of modulation and test plots are attached. Measurements were performed for ST, SAT, and wide-band data modulations.

Note: ST, SAT, & Wide-Band data were internally generated by the EUT.



Transmitter Audio Frequency & Tone Modulation Test Setup

2.5 OCCUPIED BANDWIDTH - §2.1049(c)

The antenna output terminal of the EUT was connected to the input of a 50Ω spectrum analyzer through a matched 30dB attenuator. The radio transmitter was operating at maximum output power with and without internal data modulation. 100% of the in-band modulation is below the specified mask per §22.917.

Specified Limits:

(a) On any frequency removed from the assigned carrier frequency by more than 20kHz, up to and including 45kHz, the sideband is at least 26dB below the carrier.

(b) On any frequency removed from the assigned carrier frequency by more than 45kHz, up to and including 90kHz, the sideband is at least 45dB below the carrier.

(c) On any frequency removed from the assigned carrier frequency by more than 90kHz, up to the first multiple of the carrier frequency, the sideband is at least 60dB below the carrier of 40 + $\log_{10}$ (mean power output in Watts) dB, whichever is the smaller attenuation.

2.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL - §2.1051

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from 10MHz to 20GHz. 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 transmitter was operating at maximum power with internal data modulation.

2.7 RADIATED SPURIOUS AND HARMONIC EMISSIONS - §2.1053

Radiated and harmonic emissions above 1 GHz were measured at our 3-meter outdoor site. The EUT is placed on the turntable with the transmitter transmitting into a non-radiating load. A receiving antenna located 3 meters from the turntable receives any signal radiated from the transmitter and its operating accessories. The receiving antenna is varied from 1 to 4 meters and the polarization is varied (horizontal and vertical) to determine the worst-case emission level.

2.8 FREQUENCY STABILITY / TEMPERATURE VARIATION - §2.1055

Minimum Standard:

The minimum frequency stability shall be +/- 0.00025% for FM modulation, and ± 0.00005% (±300Hz) for CDMA modulation, referenced to a received carrier frequency from a base station.

Measurement Method:

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 shall be allowed prior to each frequency measurement.

2. Primary Supply Voltage: The primary supply voltage was varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied. The EUT was tested down to the battery endpoint .

Time Period and Procedure:

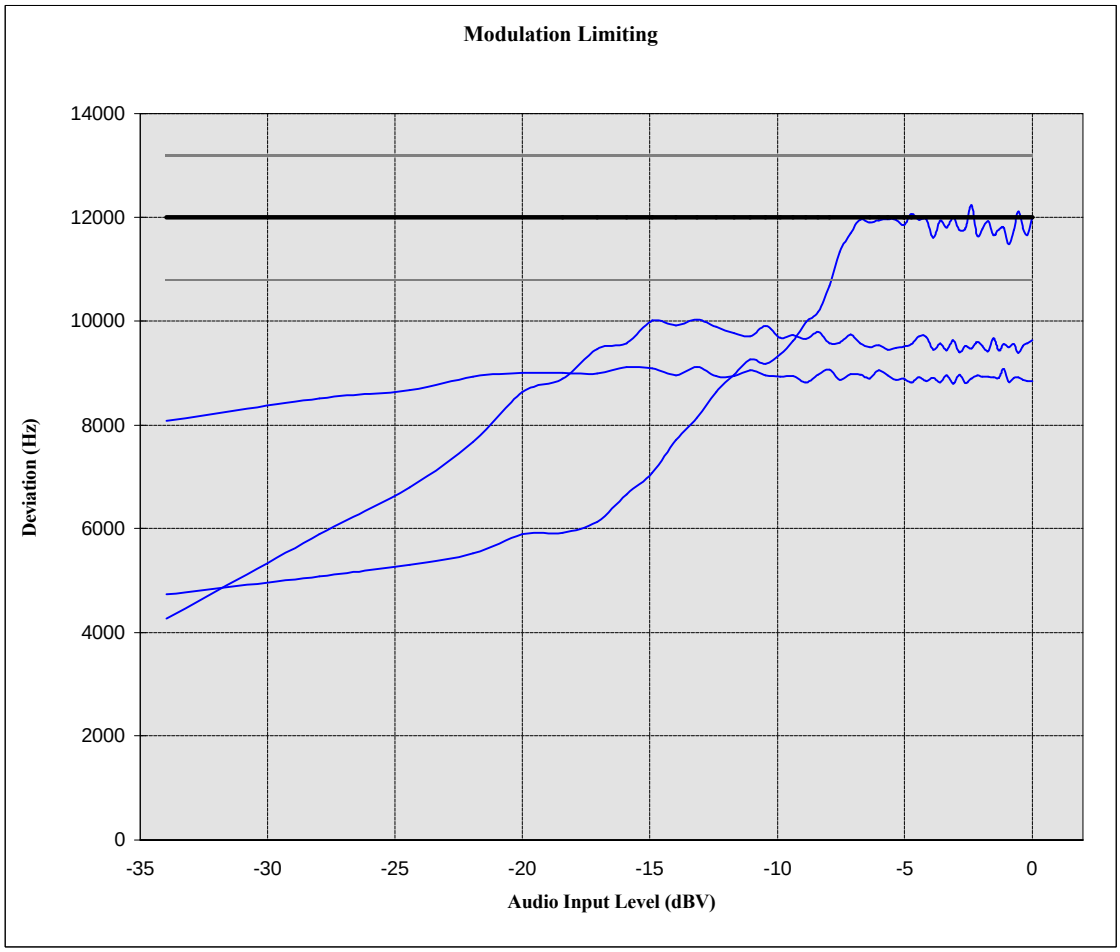
1. The carrier frequency of the transmitter was measured at room temperature (25°C to 27°C to provide a reference).
2. The equipment was subjected to an overnight “soak” at -30°C without any power applied.
3. After the overnight “soak” at -30°C, the measurement of the carrier frequency of the transmitter 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.

3.1 TEST DATA

3.2 MODULATION LIMITING - §2.1047(b) & §22.915(b)

Test Date: 02/21/01
EUT: SEWON TELECOM Dual-Mode AMPS/CDMA Cellular Phone
Model: SWC-2001W
FCC ID: PFZSWC-2001W

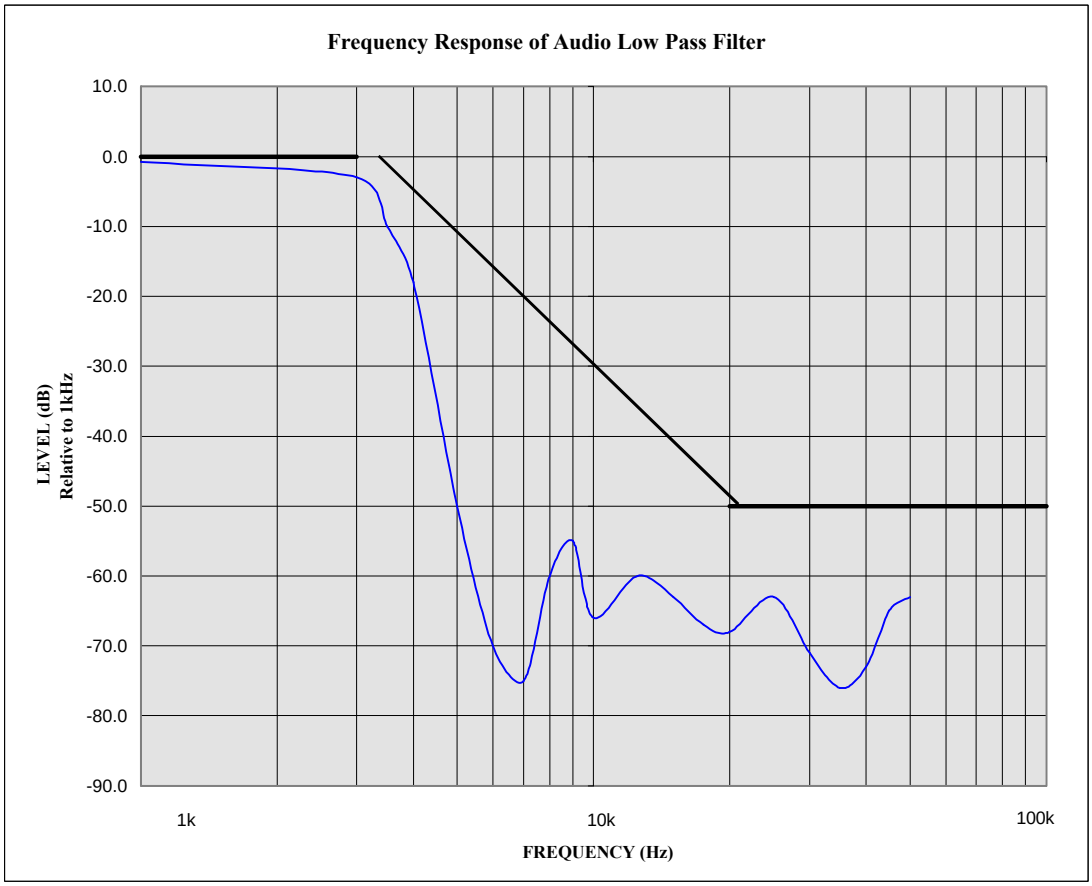
REFERENCE: 1 kHz = 0 dB



3.3 FREQUENCY RESPONSE OF AUDIO LOW PASS FILTER - §22.915(d)

Test Date: 02/21/01
EUT: SEWON TELECOM Dual-Mode AMPS/CDMA Cellular Phone
Model: SWC-2001W
FCC ID: PFZSWC-2001W

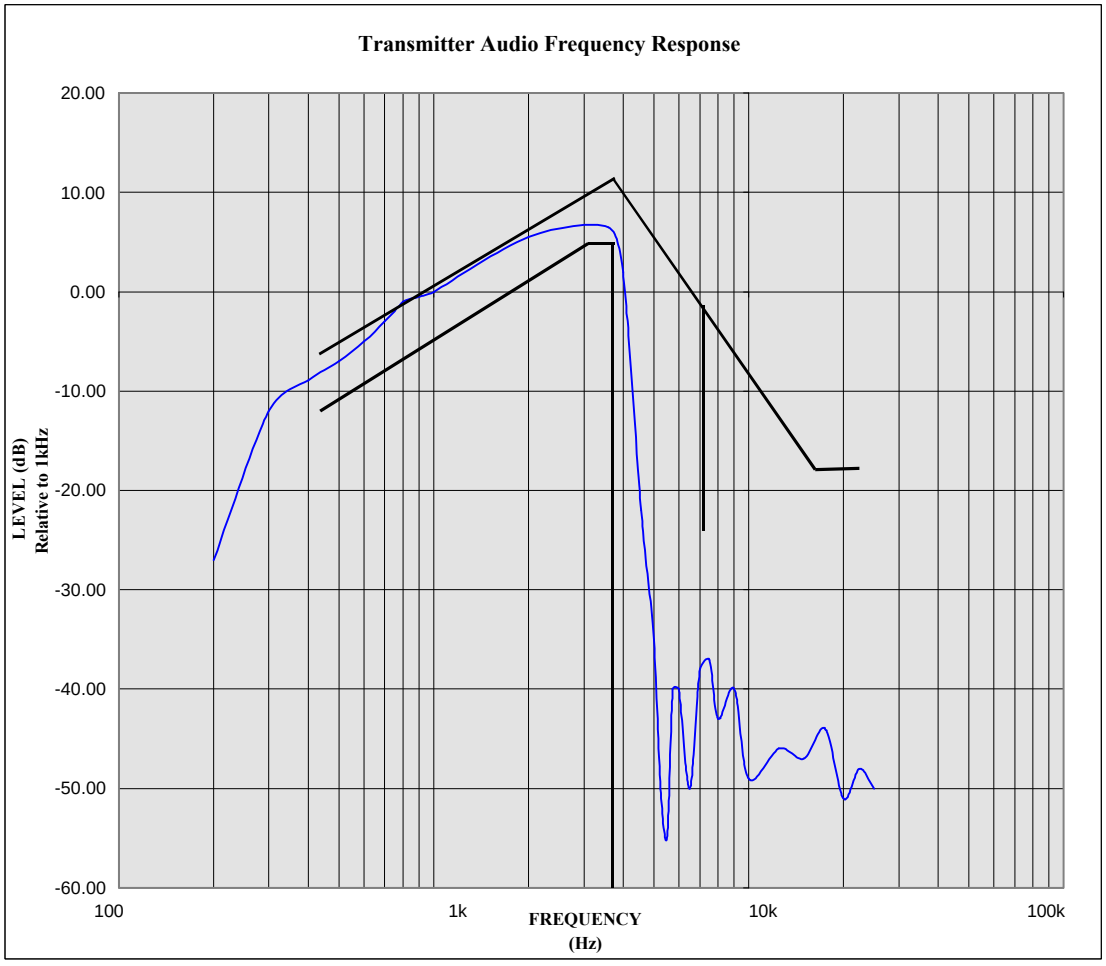
REFERENCE: 1 kHz = 0 dB



3.4 TRANSMITTER AUDIO FREQUENCY RESPONSE - §2.1047(a)

Test Date: 02/21/01
EUT: SEWON TELECOM Dual-Mode AMPS/CDMA Cellular Phone
Model: SWC-2001W
FCC ID: PFZSWC-2001W

REFERENCE: 1 kHz = 0 dB



3.5 EFFECTIVE RADIATED POWER OUTPUT - §2.1046

AMPS MODE

Frequency Tuned	**EUT Conducted Power**	**Max. Field Strength of EUT (Fixed Antenna)** (dBm)	**Dipole Gain**	**Dipole Forward Conducted Power**	**ERP of EUT Dipole Gain + Dipole Forward Conducted Power**	
(MHz)	(dBm)	H	(dBd)	(dBm)	(dBm)	(Watts)
824.04	27.0	-11.00	-1.44	23.76	22.32	0.171
836.49	27.5	-12.48	-1.34	23.54	22.20	0.166
848.97	27.5	-12.90	-1.24	22.89	21.65	0.146

Notes:

1. ERP Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A half-wave dipole was substituted in place of the EUT. The dipole was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the dipole, and the input level of the dipole was adjusted to the same field strength level as the EUT. The feed point for the dipole 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 dipole antenna. The conducted power at the antenna feed point was recorded. The forward power for the dipole was then determined and the ERP level was determined by adding the forward dipole power and the dipole gain in dB. For readings above 1GHz the above method is repeated using standard gain horn antennas.

2. ERP measurements were performed using the standard battery, which is the only battery option for this phone.

CDMA MODE

Frequency Tuned	EUT Conducted Power	Max. Field Strength of EUT (Fixed Antenna) (dBm)	Dipole Gain	Dipole Forward Conducted Power	ERP of EUT Dipole Gain + Dipole Forward Conducted Power	
(MHz)	(dBm)	H	(dBd)	(dBm)	(dBm)	(Watts)
824.70	26.0	-11.67	-1.44	23.09	21.65	0.146
835.89	26.0	-13.61	-1.34	22.41	21.07	0.128
848.31	26.0	-13.99	-1.24	21.80	20.56	0.114

Notes:

1. ERP Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The spectrum analyzer was set to measure channel power for CDMA mode. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. A half-wave dipole was substituted in place of the EUT. The dipole was fed through a directional coupler and the power at the coupler port was monitored. A signal generator and power amplifier controlled the dipole, and the input level of the dipole was adjusted to the same field strength level as the EUT. The feed point for the dipole 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 dipole antenna. The conducted power at the antenna feed point was recorded. The forward power for the dipole was then determined and the ERP level was determined by adding the forward dipole power and the dipole gain in dB. For readings above 1GHz the above method is repeated using standard gain horn antennas.

2. ERP measurements were performed using the standard battery, which is the only battery option for this phone.

3.6 FIELD STRENGTH OF SPURIOUS RADIATION - 2.1053

AMPS MODE

Operating Frequency (MHz):	824.04
Channel:	991 (Low)
Measured Cond. Pwr. (dBm):	27
Measured ERP (dBm):	22.32
Modulation:	ST (Signaling Tone)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 40.31 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1648.08	-75.08	-47.28	6.6	H	-40.68	-42.82	65.14
2472.12	-83.43	-53.63	7.8	H	-45.83	-47.97	70.29
3296.16	-103.04	-73.66	7.75	H	-65.91	-68.05	90.37
4120.20	-106.20	-77.18	7.6	H	-69.58	-71.72	94.04
4944.24	-106.63	-80.27	8.5	H	-71.77	-73.91	96.23
5768.28	-106.36	-75.48	8.8	H	-66.68	-68.82	91.14
6592.32	-105.55	-66.19	9.6	H	-56.59	-58.73	81.05
7416.36	-103.39	-65.25	9.0	H	-56.25	-58.39	80.71
8240.40	-102.43	-69.13	9.3	H	-59.83	-61.97	84.29

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

AMPS MODE

Operating Frequency (MHz):	836.49
Channel:	383 (Mid)
Measured Cond. Pwr. (dBm):	27.5
Measured ERP (dBm):	22.2
Modulation:	ST (Signaling Tone)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 40.31 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1672.98	-75.78	-47.99	6.6	H	-41.39	-43.53	65.73
2509.47	-84.13	-54.39	7.8	H	-46.59	-48.73	70.93
3345.96	-103.74	-74.33	7.75	H	-66.58	-68.72	90.92
4182.45	-106.90	-77.85	7.6	H	-70.25	-72.39	94.59
5018.94	-107.33	-80.95	8.5	H	-72.45	-74.59	96.79
5855.43	-107.06	-76.20	8.8	H	-67.40	-69.54	91.74
6691.92	-106.25	-66.91	9.6	H	-57.31	-59.45	81.65
7528.41	-104.09	-65.97	9.0	H	-56.97	-59.11	81.31
8364.90	-103.13	-69.85	9.3	H	-60.55	-62.69	84.89

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

AMPS MODE

Operating Frequency (MHz):	848.97
Channel:	799 (High)
Measured Cond. Pwr. (dBm):	27.5
Measured ERP (dBm):	21.65
Modulation:	ST (Signaling Tone)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 40.31 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1697.94	-76.66	-48.83	6.6	H	-42.23	-44.37	66.02
2546.91	-83.23	-56.32	7.8	H	-48.52	-50.66	72.31
3395.88	-102.84	-70.21	7.75	H	-62.46	-64.60	86.25
4244.85	-104.62	-75.64	7.6	H	-68.04	-70.18	91.83
5093.82	-105.45	-79.97	8.5	H	-71.47	-73.61	95.26
5942.79	-106.71	-80.45	8.8	H	-71.65	-73.79	95.44
6791.76	-105.13	-72.62	9.6	H	-63.02	-65.16	86.81
7640.73	-104.37	-67.88	9.0	H	-58.88	-61.02	82.67
8489.70	-103.95	-66.83	9.3	H	-57.53	-59.67	81.32

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

CDMA MODE

Operating Frequency (MHz):	824.70
Channel:	1013 (Low)
Measured Cond. Pwr. (dBm):	26
Measured ERP (dBm):	21.65
Modulation:	CDMA (Internal)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 38.13 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1649.40	-72.72	-44.92	6.6	H	-38.32	-40.46	62.11
2474.10	-81.07	-51.27	7.8	H	-43.47	-45.61	67.26
3298.80	-100.68	-71.30	7.75	H	-63.55	-65.69	87.34
4123.50	-103.84	-74.82	7.6	H	-67.22	-69.36	91.01
4948.20	-104.27	-77.91	8.5	H	-69.41	-71.55	93.20
5772.90	-104.00	-73.12	8.8	H	-64.32	-66.46	88.11
6597.60	-103.19	-63.83	9.6	H	-54.23	-56.37	78.02
7422.30	-101.03	-62.89	9.0	H	-53.89	-56.03	77.68
8247.00	-102.07	-66.77	9.3	H	-57.47	-59.61	81.26

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

CDMA MODE

Operating Frequency (MHz):	835.89
Channel:	363 (Mid)
Measured Cond. Pwr. (dBm):	26
Measured ERP (dBm):	21.07
Modulation:	CDMA (Internal)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 38.13 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1671.78	-73.30	-45.50	6.6	H	-38.90	-41.04	62.11
2507.67	-81.65	-51.85	7.8	H	-44.05	-46.19	67.26
3343.56	-101.26	-71.88	7.75	H	-64.13	-66.27	87.34
4179.45	-104.42	-75.40	7.6	H	-67.80	-69.94	91.01
5015.34	-104.85	-78.49	8.5	H	-69.99	-72.13	93.20
5851.23	-104.58	-73.70	8.8	H	-64.90	-67.04	88.11
6687.12	-103.77	-64.41	9.6	H	-54.81	-56.95	78.02
7523.01	-101.61	-63.47	9.0	H	-54.47	-56.61	77.68
8358.90	-102.65	-67.35	9.3	H	-58.05	-60.19	81.26

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

CDMA MODE

Operating Frequency (MHz):	848.31
Channel:	777 (High)
Measured Cond. Pwr. (dBm):	26
Measured ERP (dBm):	20.56
Modulation:	CDMA (Internal)
Distance:	3 Meters
Limit:	43 + 10 log (W) = 38.13 dBc

Frequency (MHz)	**Field Strength of Spurious Radiation** (dBm)	**Horn Forward Cond. Pwr.** (dBm)	**Standard Gain Horn Antenna Gain** (dBi)	**POL** (H/V)	**EIRP** (dBm)	**ERP** (dBm)	**dBc**
1696.62	-73.81	-46.01	6.6	H	-39.41	-41.55	62.11
2544.93	-82.16	-52.36	7.8	H	-44.56	-46.70	67.26
3393.24	-101.77	-72.39	7.75	H	-64.64	-66.78	87.34
4241.55	-104.93	-75.91	7.6	H	-68.31	-70.45	91.01
5089.86	-105.36	-79.00	8.5	H	-70.50	-72.64	93.20
5938.17	-105.09	-74.21	8.8	H	-65.41	-67.55	88.11
6786.48	-104.28	-64.92	9.6	H	-55.32	-57.46	78.02
7634.79	-102.12	-63.98	9.0	H	-54.98	-57.12	77.68
8483.10	-103.16	-67.86	9.3	H	-58.56	-60.70	81.26

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. 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. The field strength was recorded from a calibrated spectrum analyzer for each channel being tested. 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 antenna, and the input level of the antenna was adjusted to 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 power for the antenna was then determined and the EIRP level was determined by adding the forward power and the antenna gain in dB.

3.7 FREQUENCY STABILITY - § 2.1055

AMPS MODE

Operating Frequency: 836,490,000 Hz

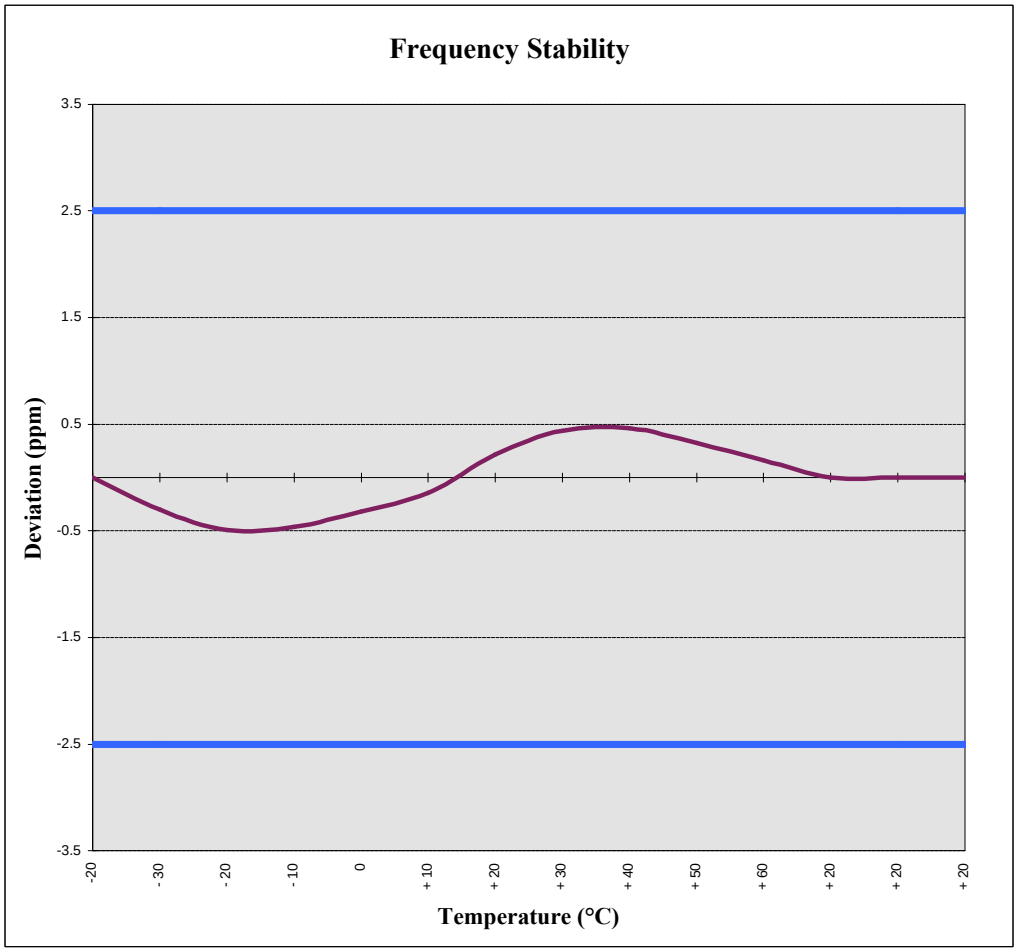
Channel: 383

Reference Voltage: 3.6 VDC

Deviation Limit: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (ºC)	FREQ. (Hz)	Deviation (%)
100 %	3.60	+ 20 (Ref)	836490000	0.00000000
100 %		- 30	836490254	-0.00000030
100 %		- 20	836490412	-0.00000049
100 %		- 10	836490388	-0.00000046
100 %		0	836490266	-0.00000032
100 %		+ 10	836490122	-0.00000015
100 %		+ 20	836489818	0.00000022
100 %		+ 30	836489632	0.00000044
100 %		+ 40	836489613	0.00000046
100 %		+ 50	836489729	0.00000032
100 %		+ 60	836489865	0.00000016
85 %	3.06	+ 20	836490000	0.00000000
115 %	4.14	+ 20	836490000	0.00000000
BATT. ENDPOINT	3.00	+ 20	836490000	0.00000000

FREQUENCY STABILITY - § 2.1055



FREQUENCY STABILITY - § 2.1055

CDMA MODE

Operating Frequency: 835,890,000 Hz

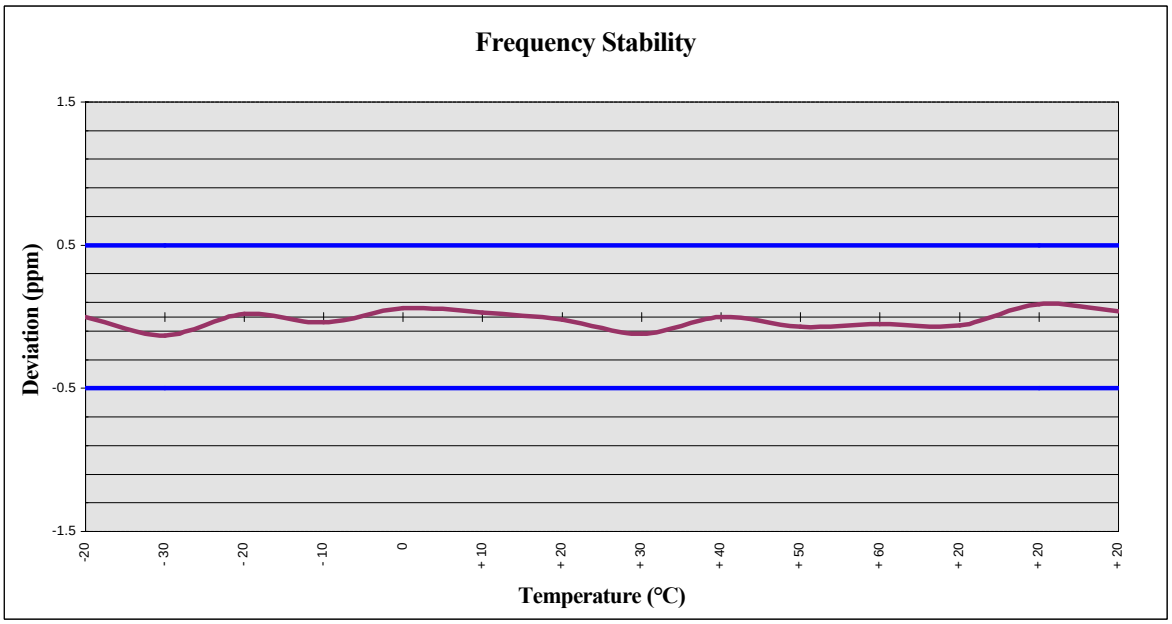
Channel: 363

Reference Voltage: 3.6 VDC

Deviation Limit: ± 0.00005 % or 0.5 ppm

VOLTAGE (%)	**POWER** (VDC)	**TEMP** (ºC)	**FREQ.** (Hz)	**Deviation** (%)
100 %	3.60	+ 20 (Ref)	835,890,000	0.000000
100 %		- 30	835,890,109	-0.000013
100 %		- 20	835,889,983	0.000002
100 %		- 10	835,890,033	-0.000004
100 %		0	835,889,950	0.000006
100 %		+ 10	835,889,975	0.000003
100 %		+ 20	835,890,017	-0.000002
100 %		+ 30	835,890,100	-0.000012
100 %		+ 40	835,890,000	0.000000
100 %		+ 50	835,890,059	-0.000007
100 %		+ 60	835,890,042	-0.000005
85 %	3.06	+ 20	835,890,050	-0.000006
115 %	4.14	+ 20	835,889,925	0.000009
BATT. ENDPOINT	3.00	+ 20	835,889,967	0.000004

FREQUENCY STABILITY - § 2.1055



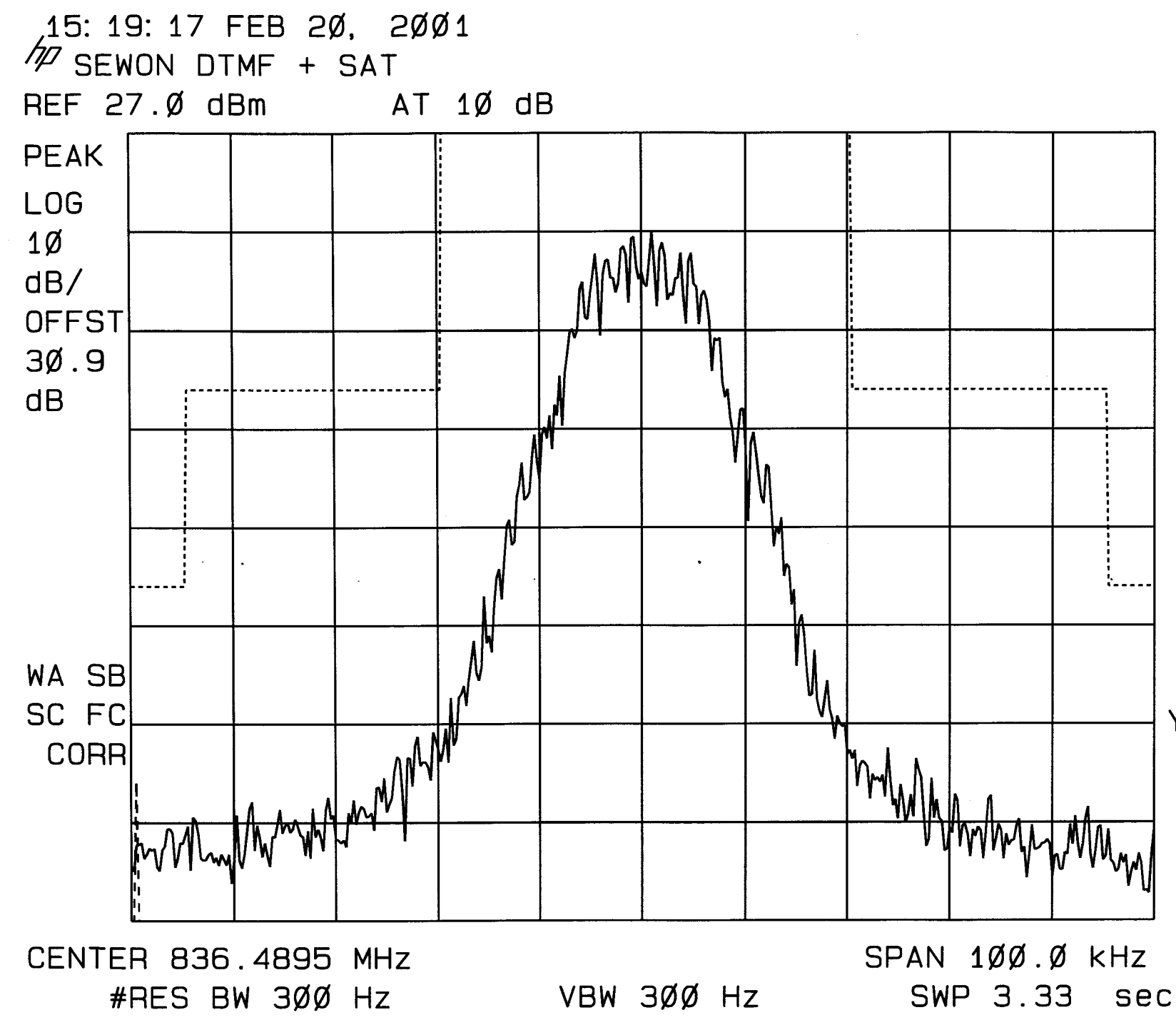
4.1 TEST EQUIPMENT

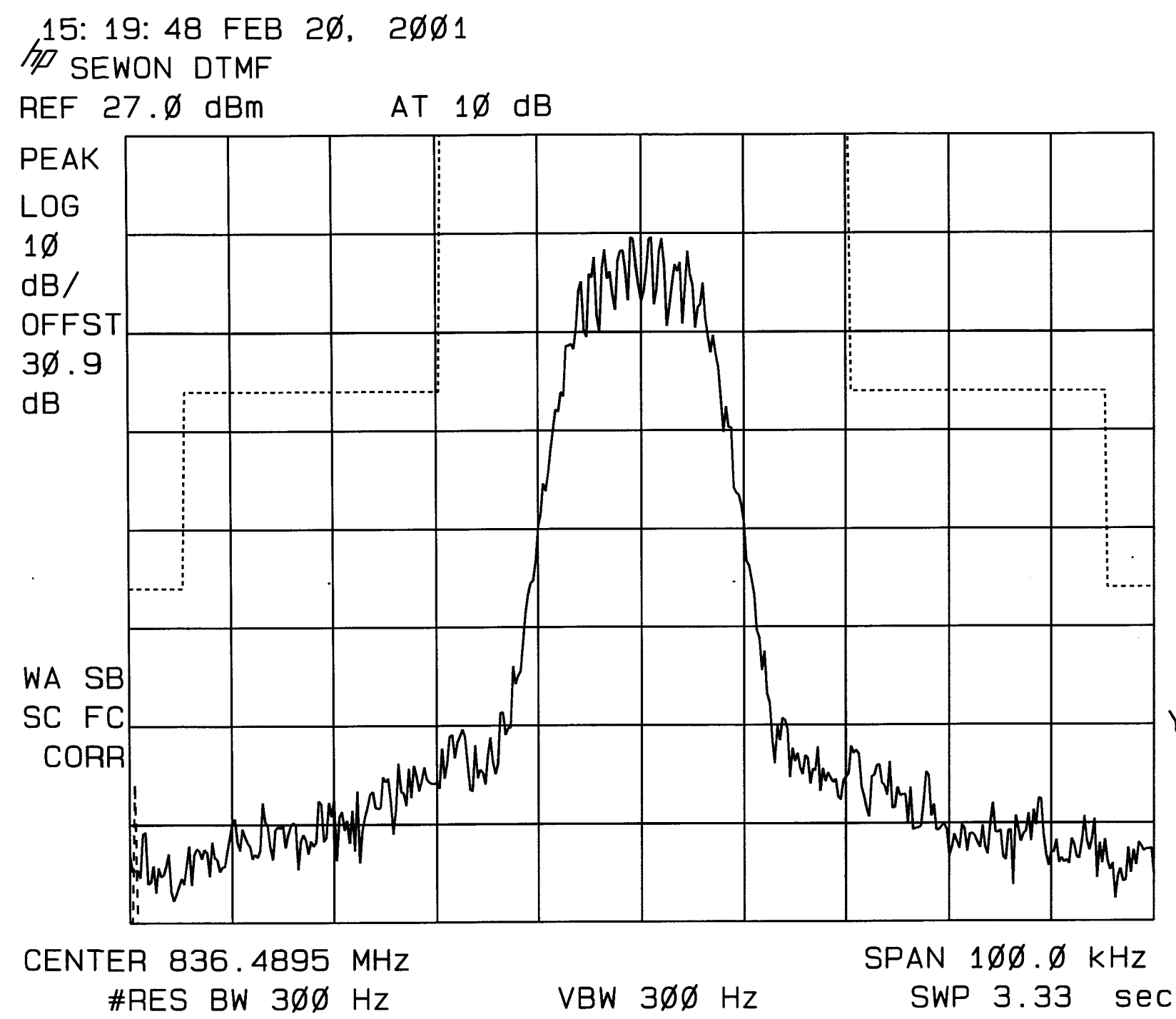
Type	Model	Calib. Date	Serial No.
HP Signal Generator	8648D (9kHz-4.0GHz)	Nov 1999	3847A00611
Rohde & Schwarz Signal Generator	SMR40 (10MHz-40GHz)	Nov 2000	835537/022
Gigatronics Power Meter	8652A	Oct 1999	1835272
Gigatronics Power Sensor (2)	80701A (0.05-18GHz)	Oct 1999	1833535, 1833542
Amplifier Research Power Amp.	5S1G4 (5W, 800MHz-4.2GHz)	N/A	26235
Microwave System Amplifier	HP 83017A (0.5-26.5GHz)	N/A	3123A00587
Network Analyzer	HP 8753E (30kHz-3GHz)	Nov 1999	US38433013
Audio Analyzer	HP 8903B	March 1999	3729A18691
Modulation Analyzer	HP 8901A	March 1999	3749A07154
Frequency Counter	HP 53181A (3GHz)	May 1999	3736A05175
DC Power Supply	HP E3611A	N/A	KR83015294
CDMA Base Station Test Set	Agilent E8285A	N/A	US40332926
Multi-Device Controller	EMCO 2090	N/A	9912-1484
Mini Mast	EMCO 2075	N/A	0001-2277
Turntable	EMCO 2080-1.2/1.5	N/A	0002-1002
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	Oct. 2000	6267
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	Oct. 2000	6276
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-239
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept 1998	9120A-240
Roberts Dipoles	Compliance Design (2 sets) 3121C	June 2000	
Spectrum Analyzer	HP 8594E	March 2000	3543A02721
Spectrum Analyzer	HP E4408B	Nov 1999	US39240170
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	N/A	16297
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	Feb 2000	0510154-B

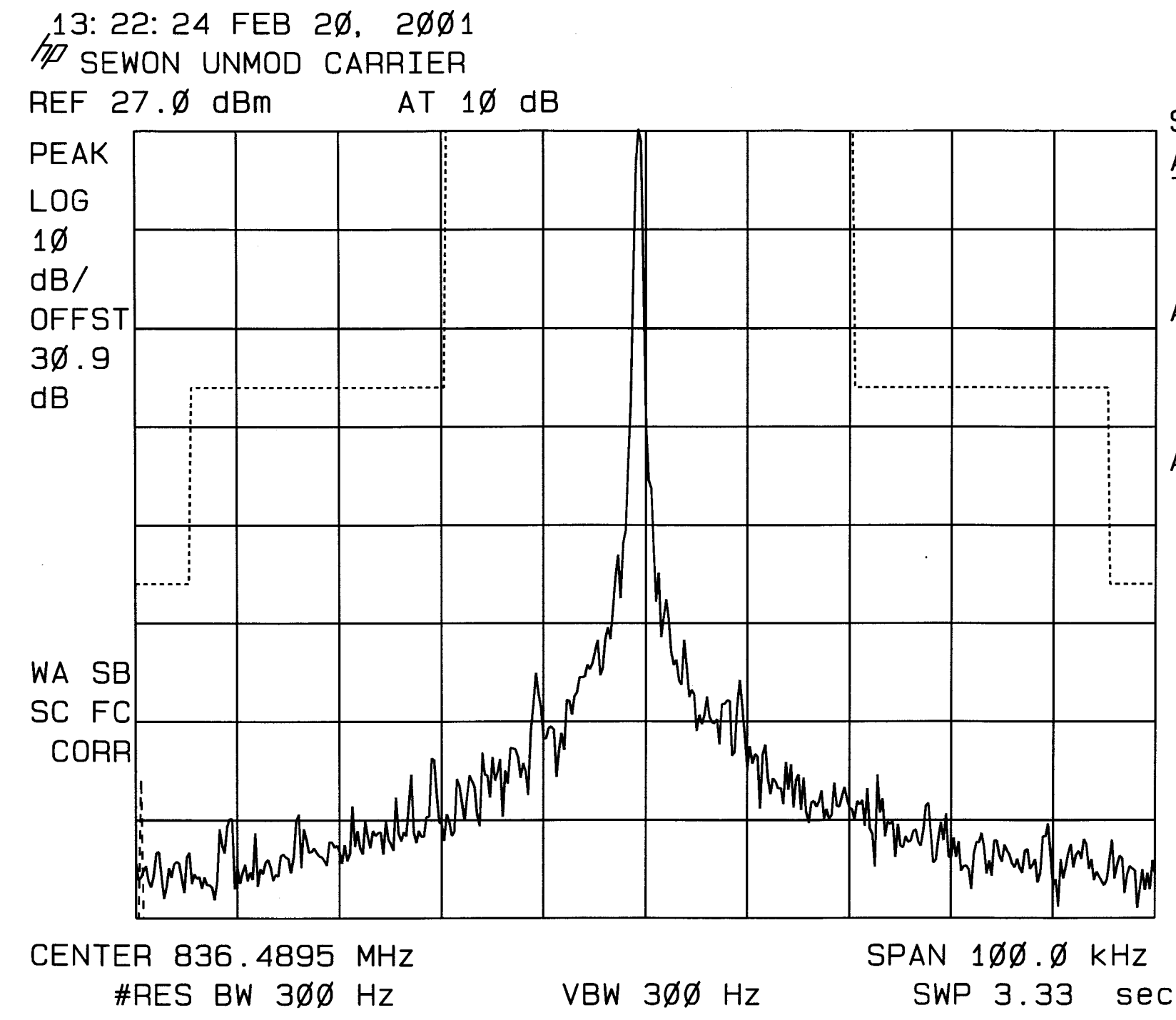
5.1 CONCLUSION

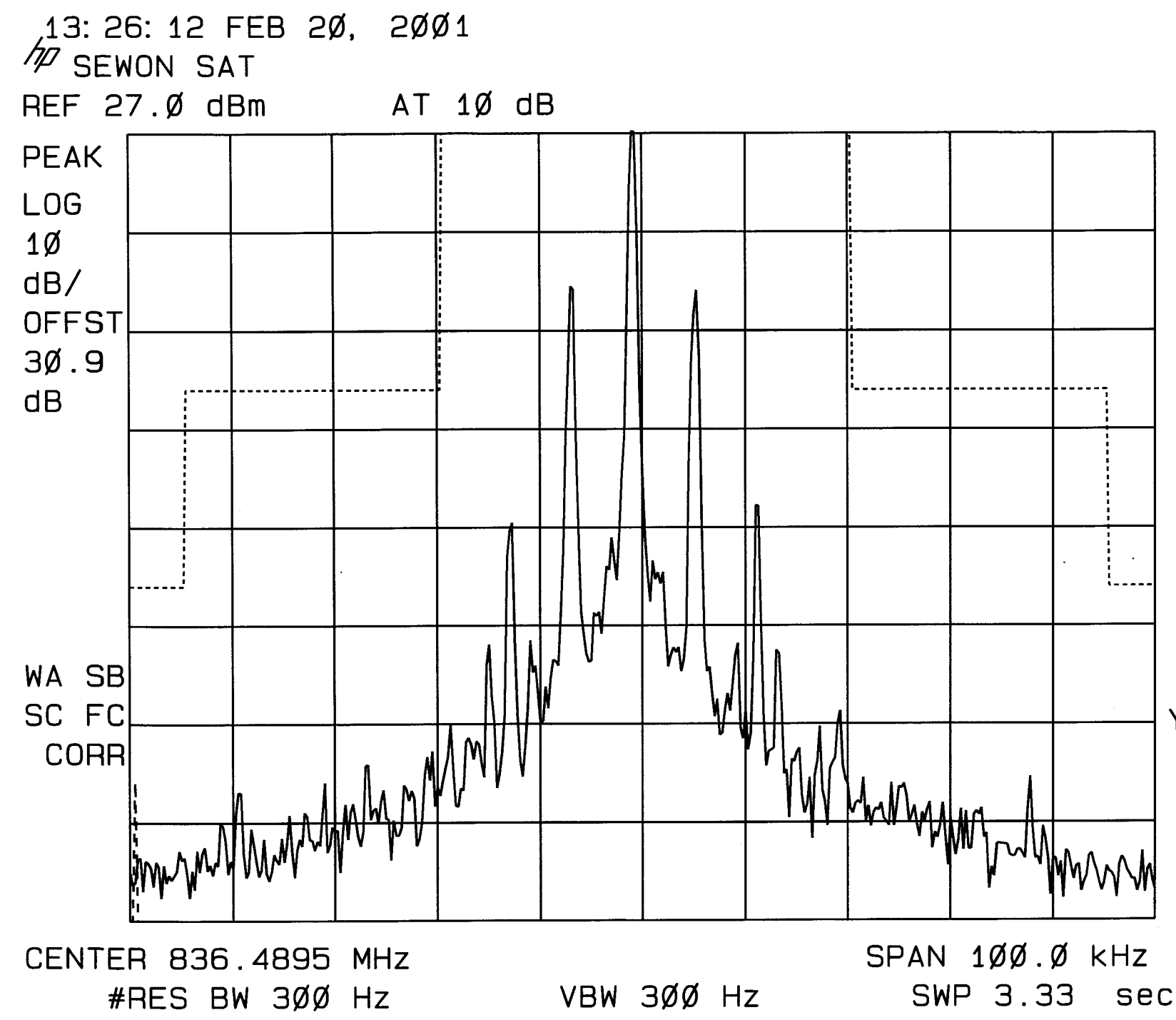
The data collected shows that the SEWON TELECOM Model: SWC-2001W Dual-Mode AMPS/CDMA Cellular Phone FCC ID: PFZSWC-2001W complies with all the requirements of Parts 2 and 22 of the FCC rules.

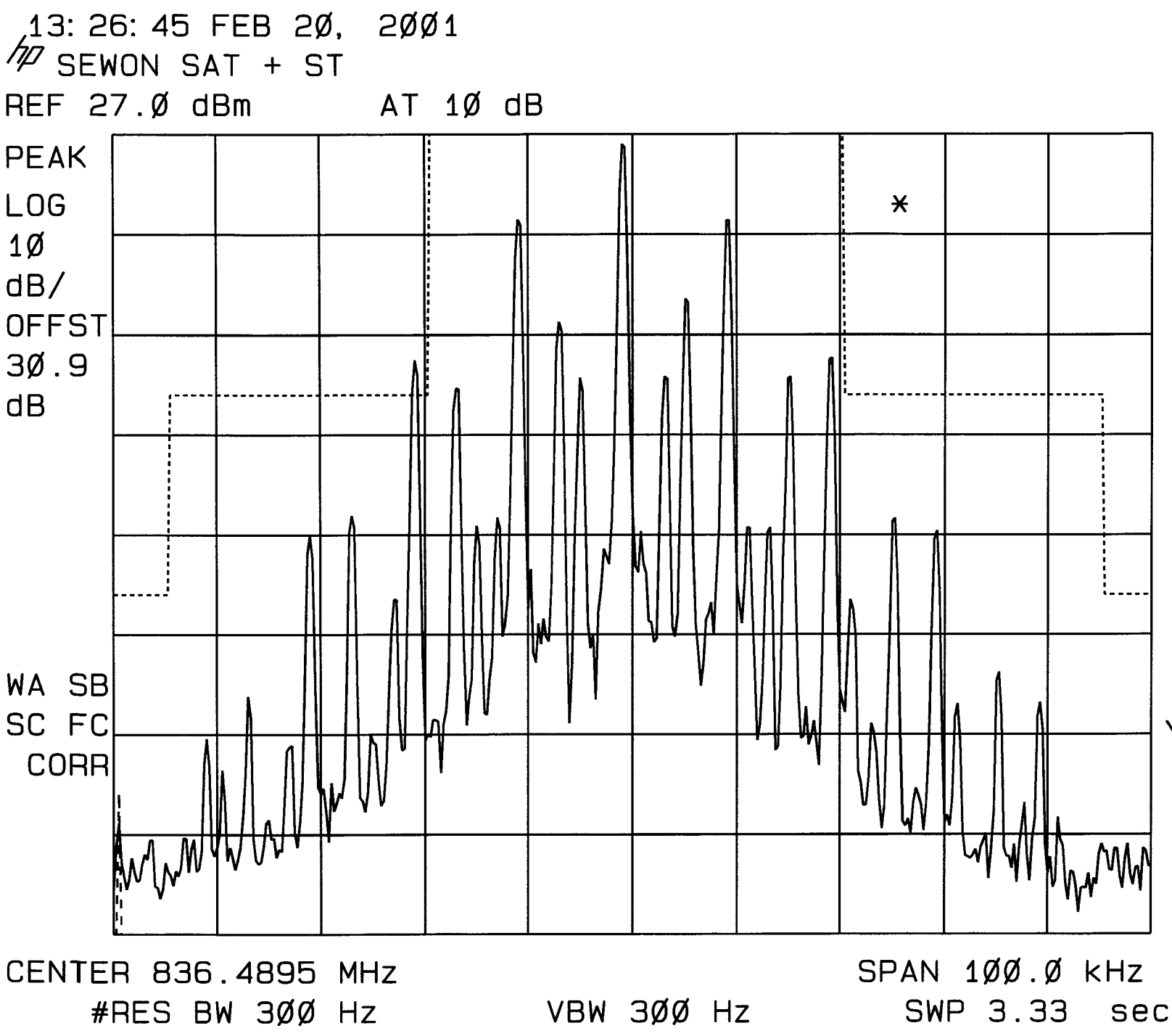
TEST PLOTS

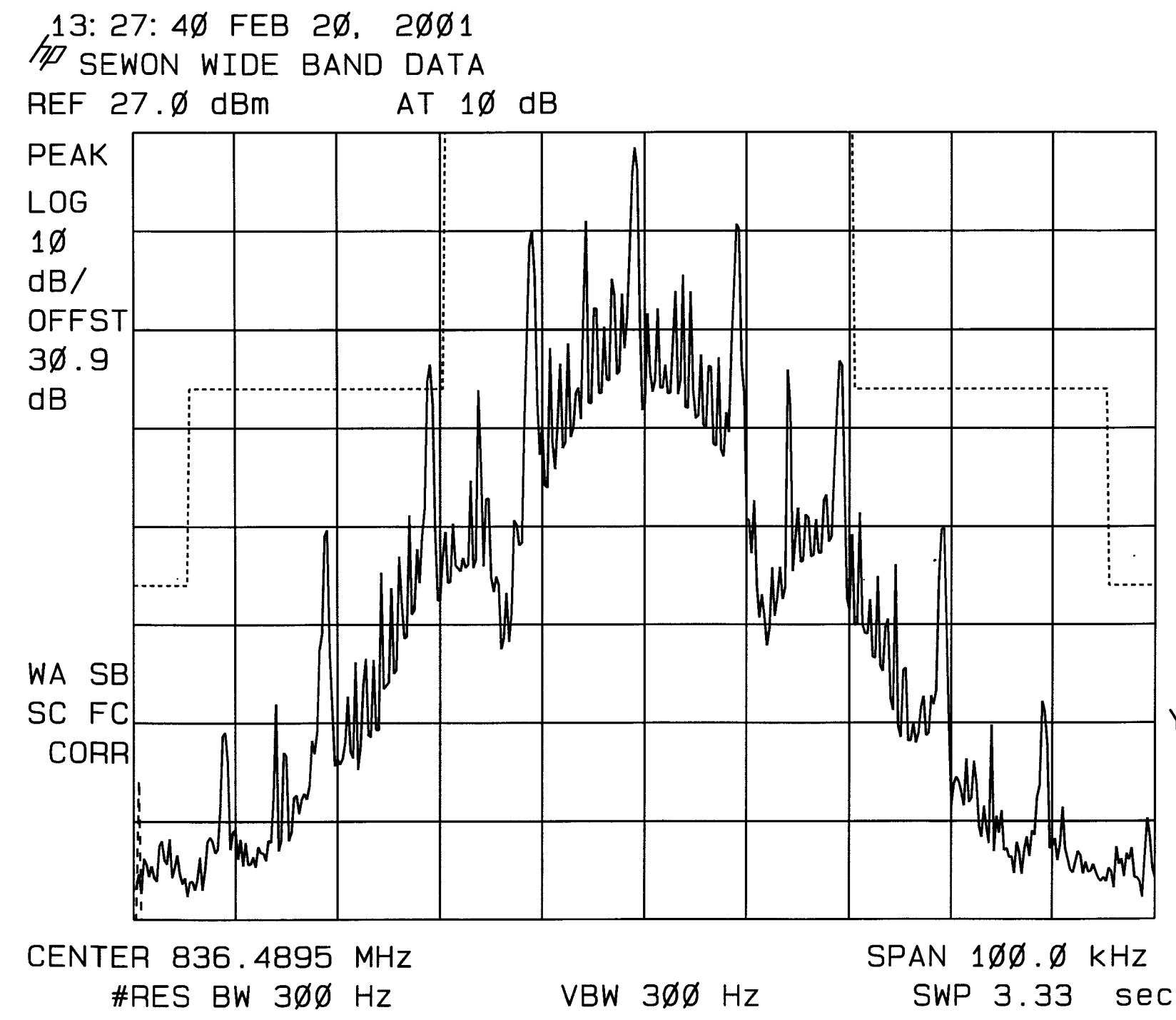

15: 19: 17 FEB 2Ø, 2ØØ1
SEWON DTMF + SAT
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

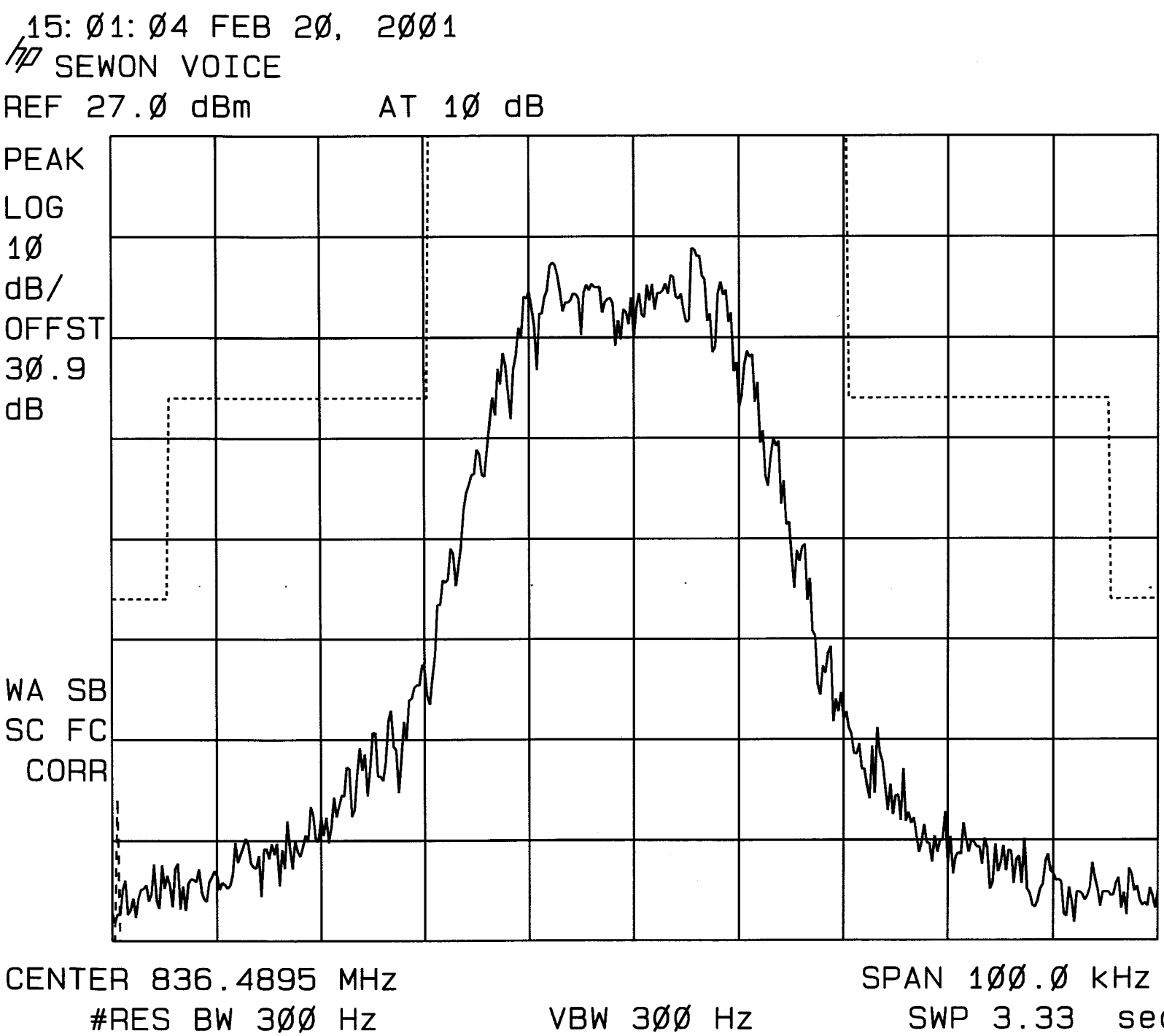

15: 19: 48 FEB 2Ø, 2ØØ1
SEWON DTMF
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SPAN 1ØØ.Ø kHz
SWP 3.33 sec

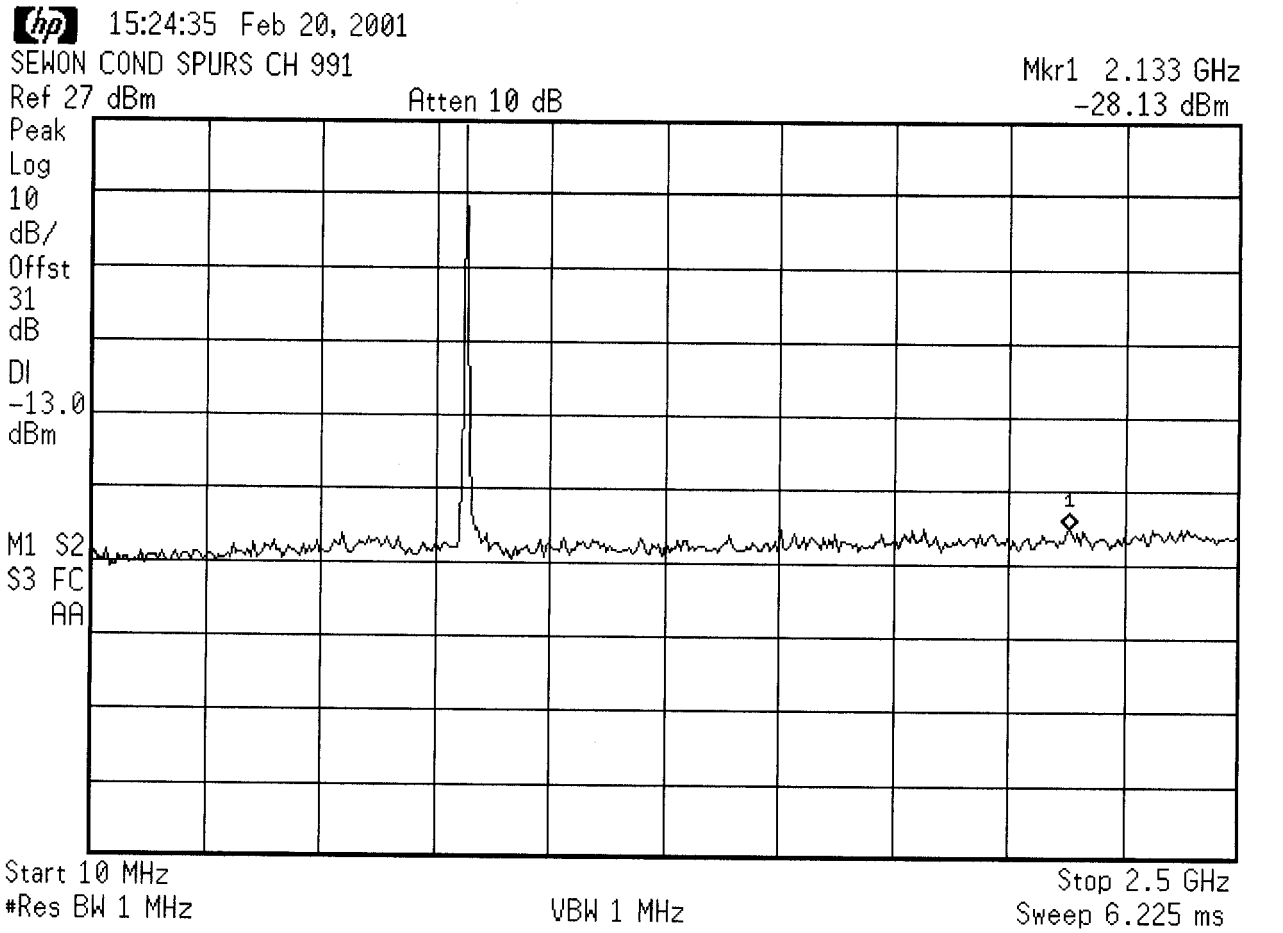

13: 22: 24 FEB 2Ø, 2ØØ1
SEWON UNMOD CARRIER
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

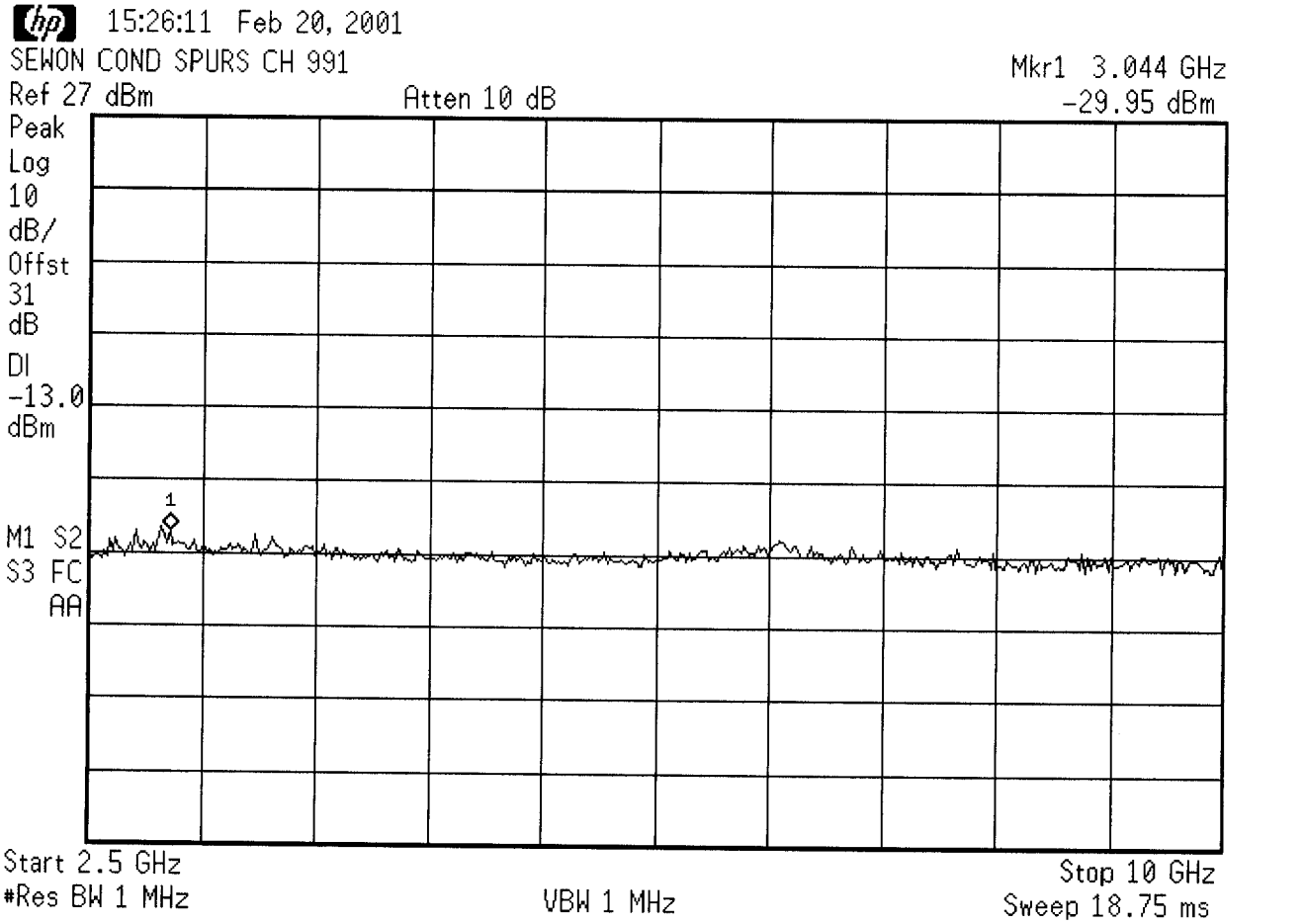

13: 26: 12 FEB 2Ø, 2ØØ1
SEWON SAT
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

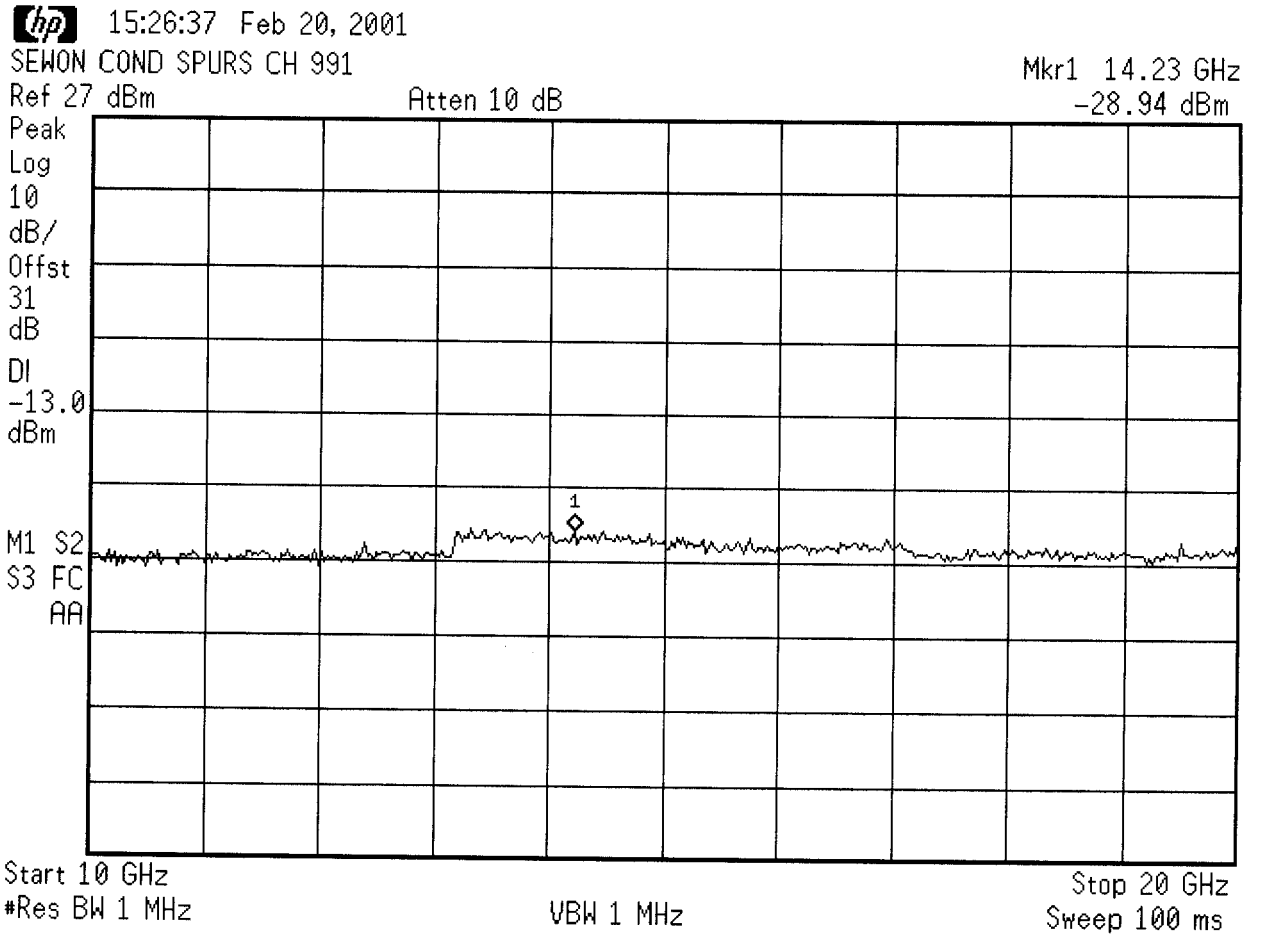

13: 26: 45 FEB 2Ø, 2ØØ1
SEWON SAT + ST
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

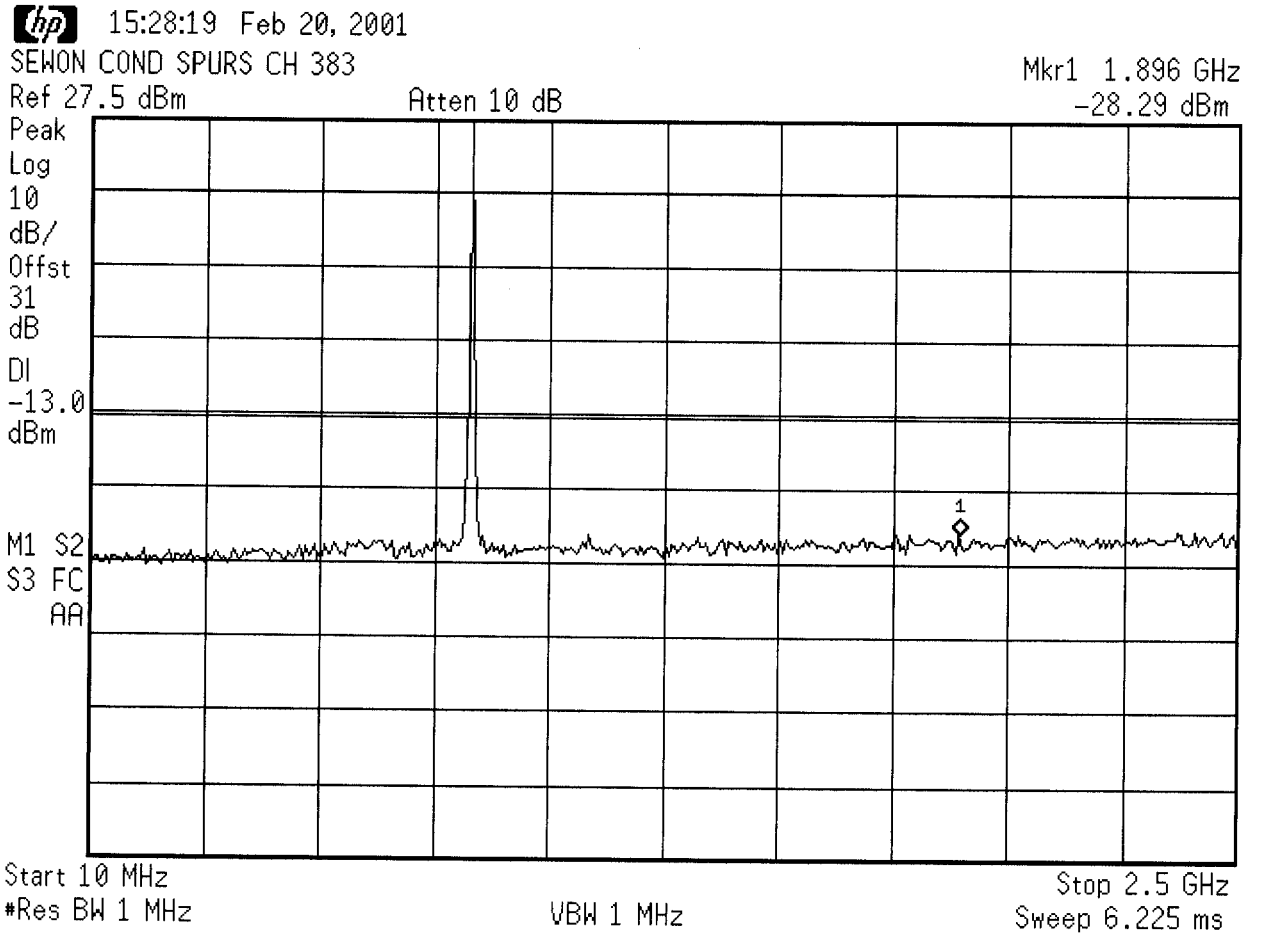

13: 27: 4Ø FEB 2Ø, 2ØØ1
SEWON WIDE BAND DATA
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

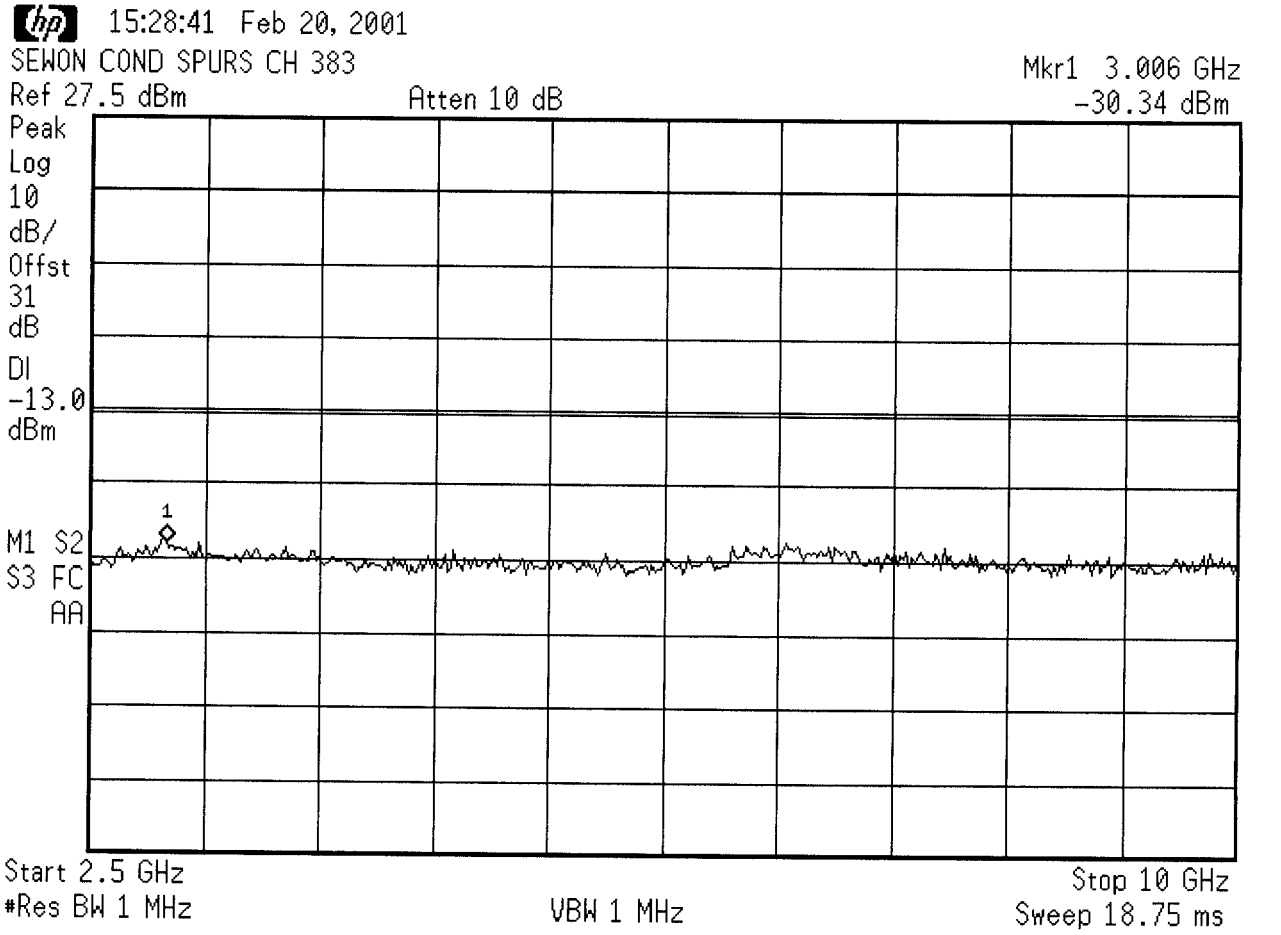

15: Ø1: Ø4 FEB 2Ø, 2ØØ1
SEWON VOICE
REF 27.Ø dBm
AT 1Ø dB
PEAK
LOG
1Ø
dB/
OFFST
3Ø.9
dB
WA SB
SC FC
CORR
CENTER 836.4895 MHz
SPAN 1ØØ.Ø kHz
#RES BW 3ØØ Hz
VBW 3ØØ Hz
SWP 3.33 sec

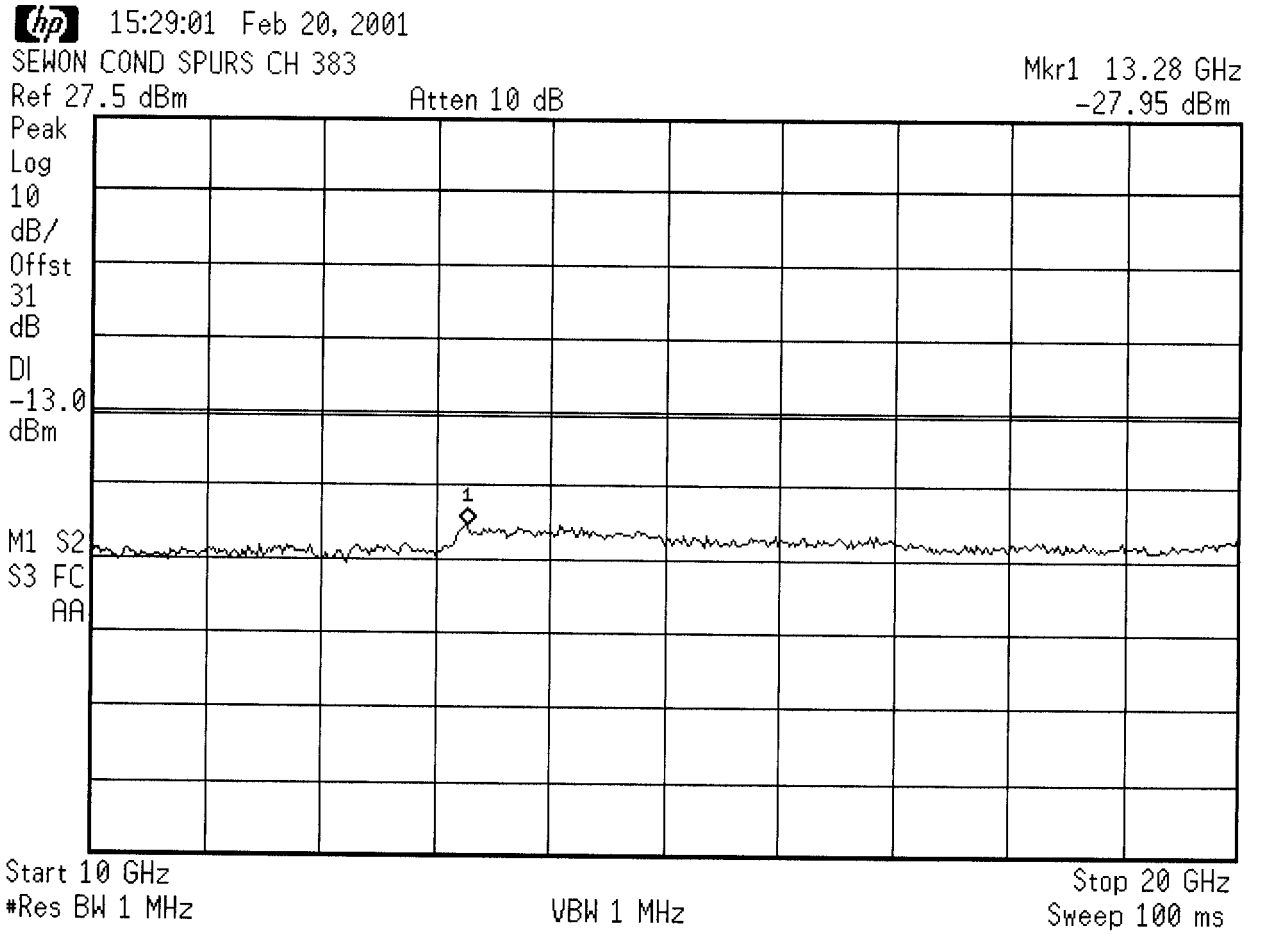

15:24:35 Feb 20, 2001
SEWON COND SPURS CH 991
Ref 27 dBm
Atten 10 dB
Mkr1 2.133 GHz
-28.13 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

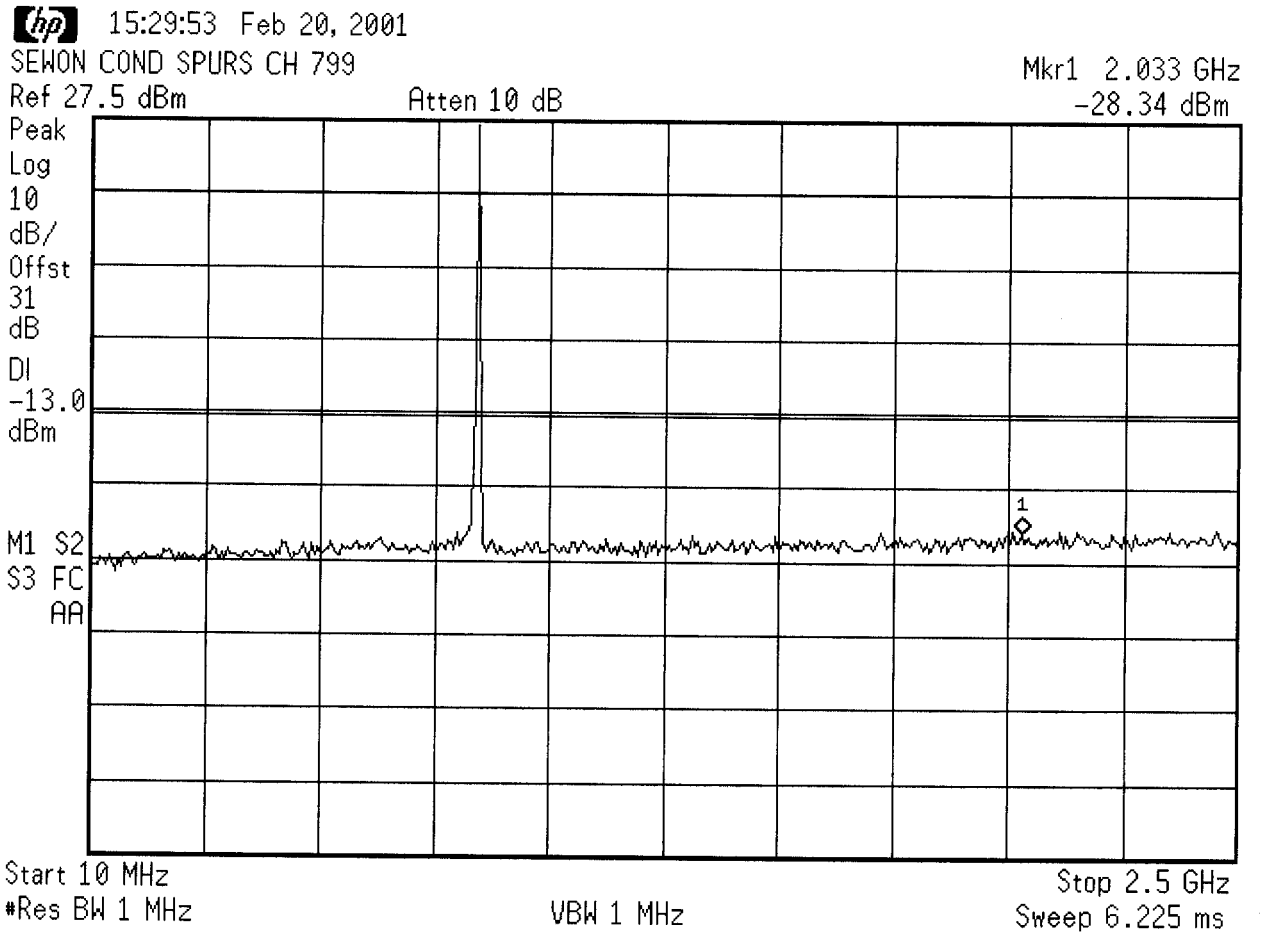

15:26:11 Feb 20, 2001
SEWON COND SPURS CH 991
Ref 27 dBm
Atten 10 dB
Mkr1 3.044 GHz
-29.95 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

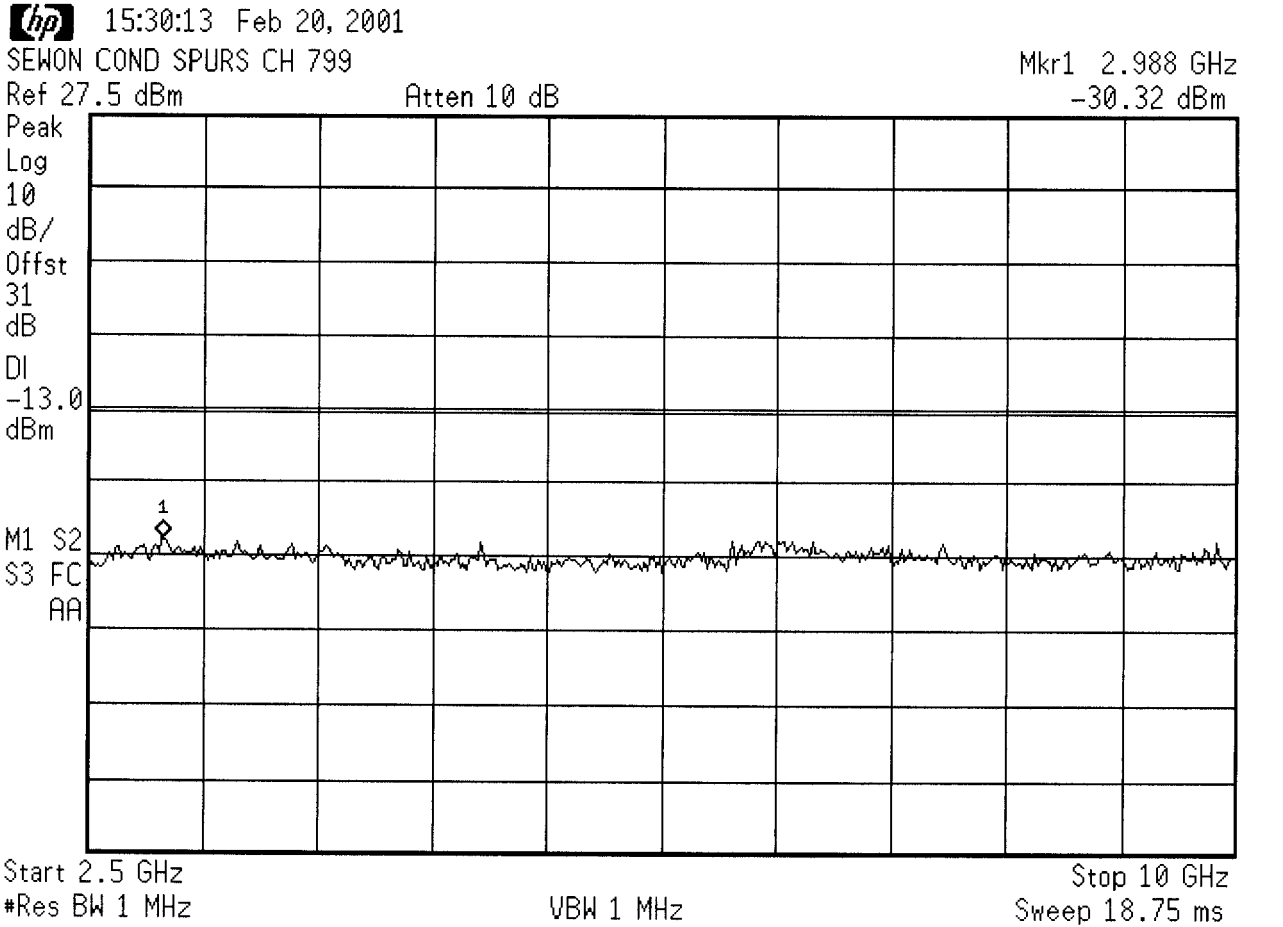

15:26:37 Feb 20, 2001
SEWON COND SPURS CH 991
Ref 27 dBm
Atten 10 dB
Mkr1 14.23 GHz
-28.94 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

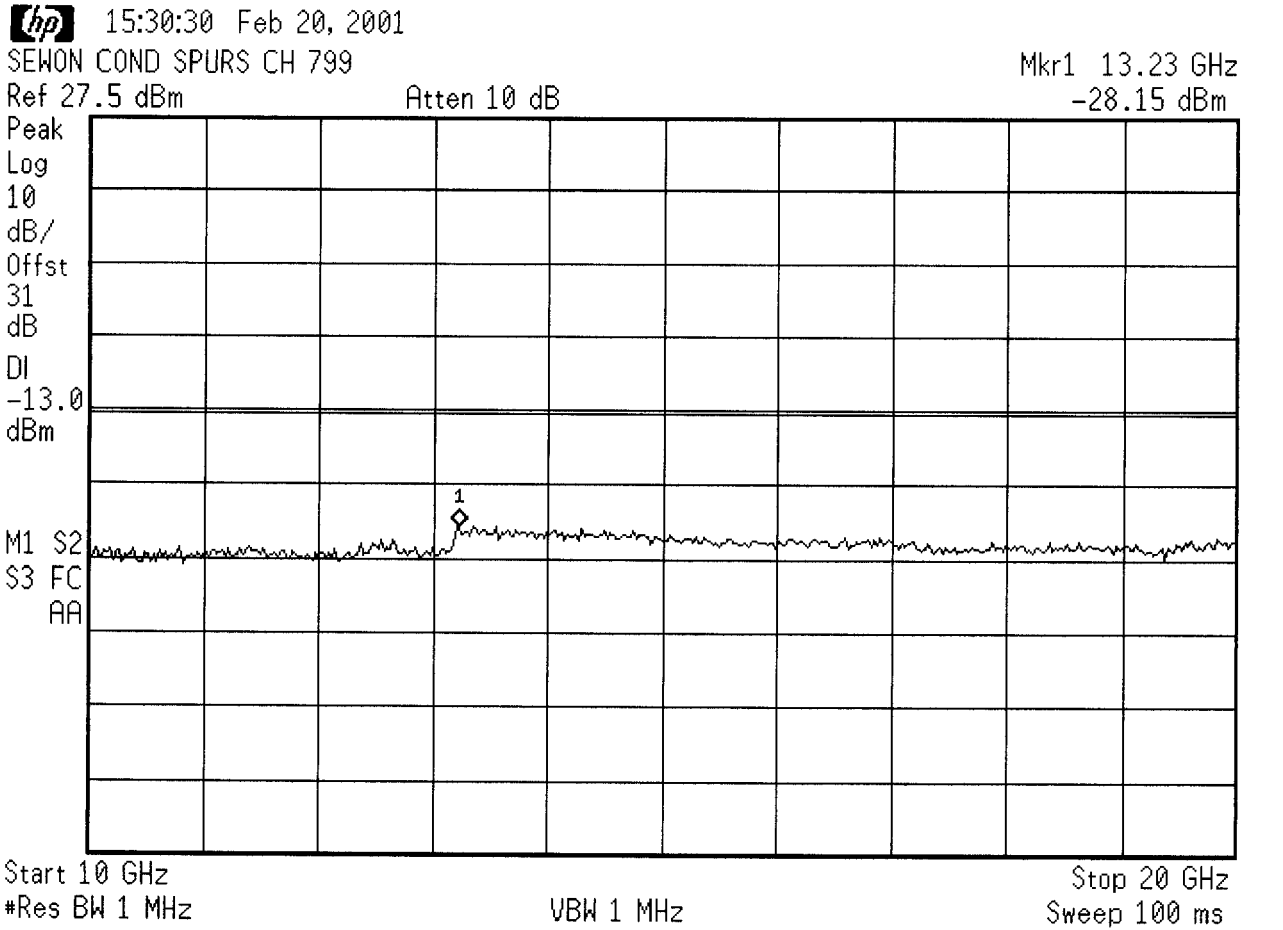

15:28:19 Feb 20, 2001
SEWON COND SPURS CH 383
Ref 27.5 dBm
Atten 10 dB
Mkr1 1.896 GHz
-28.29 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

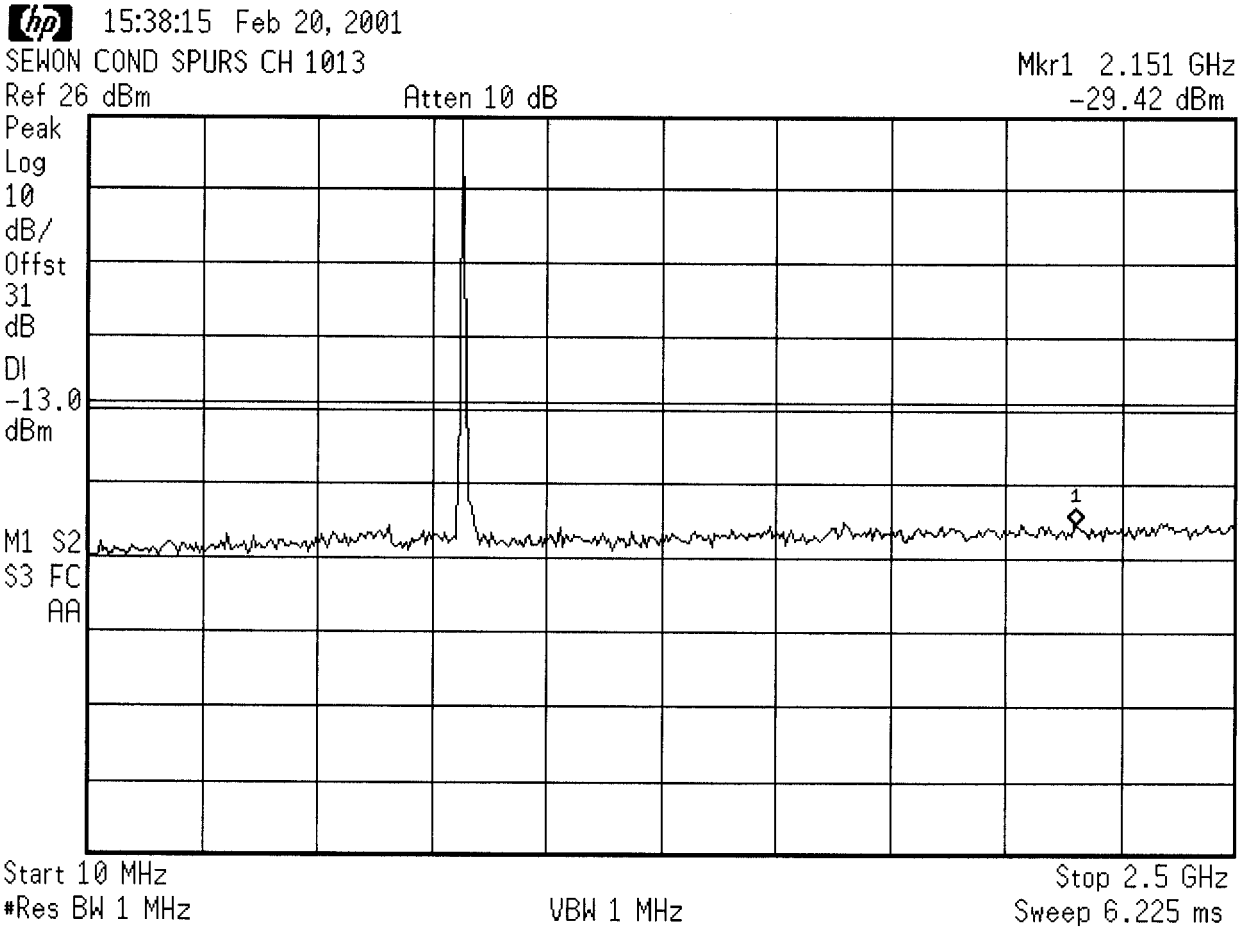

15:28:41 Feb 20, 2001
SEWON COND SPURS CH 383
Ref 27.5 dBm
Atten 10 dB
Mkr1 3.006 GHz
-30.34 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

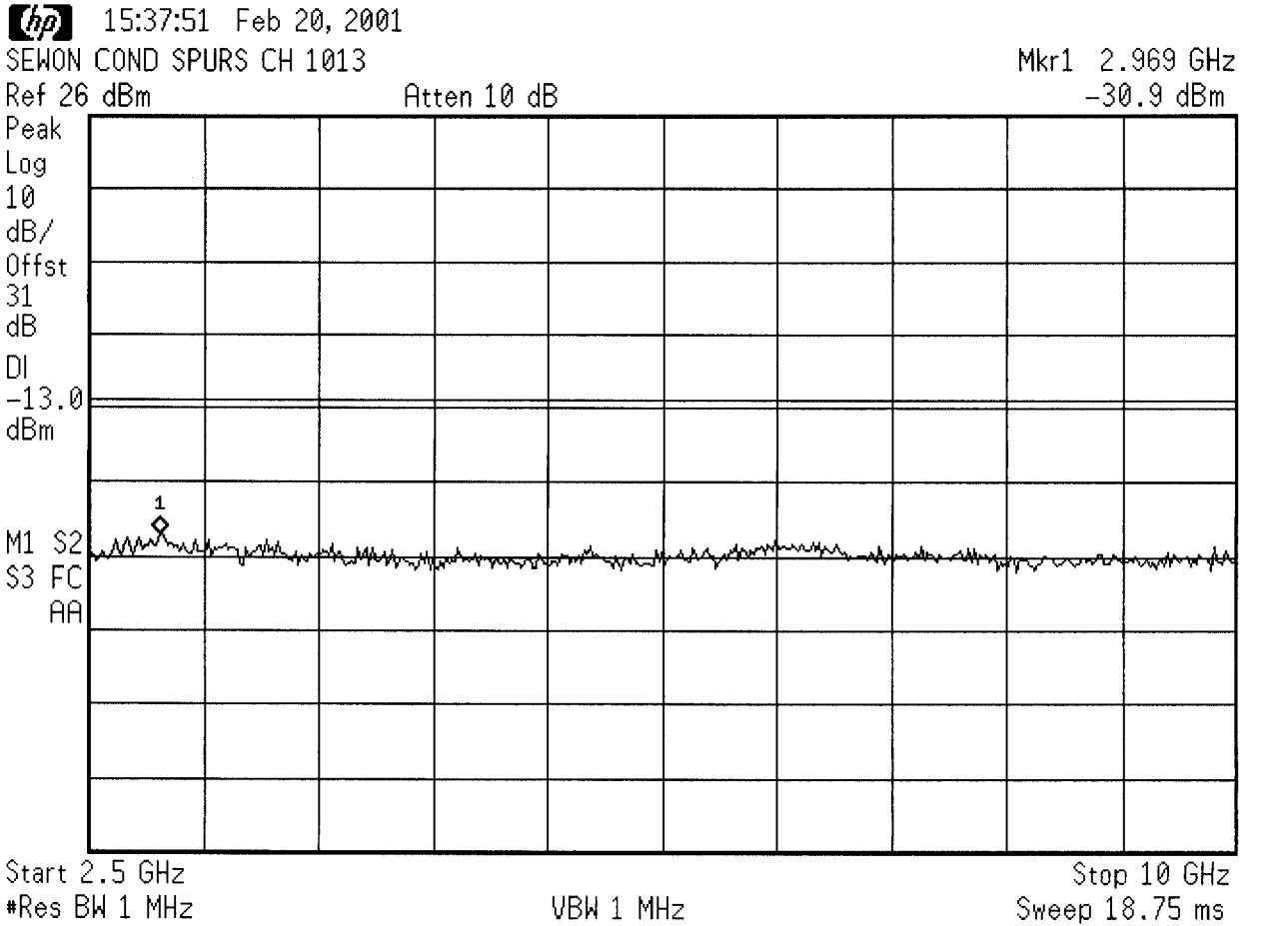

15:29:01 Feb 20, 2001
SEWON COND SPURS CH 383
Ref 27.5 dBm
Atten 10 dB
Mkr1 13.28 GHz
-27.95 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

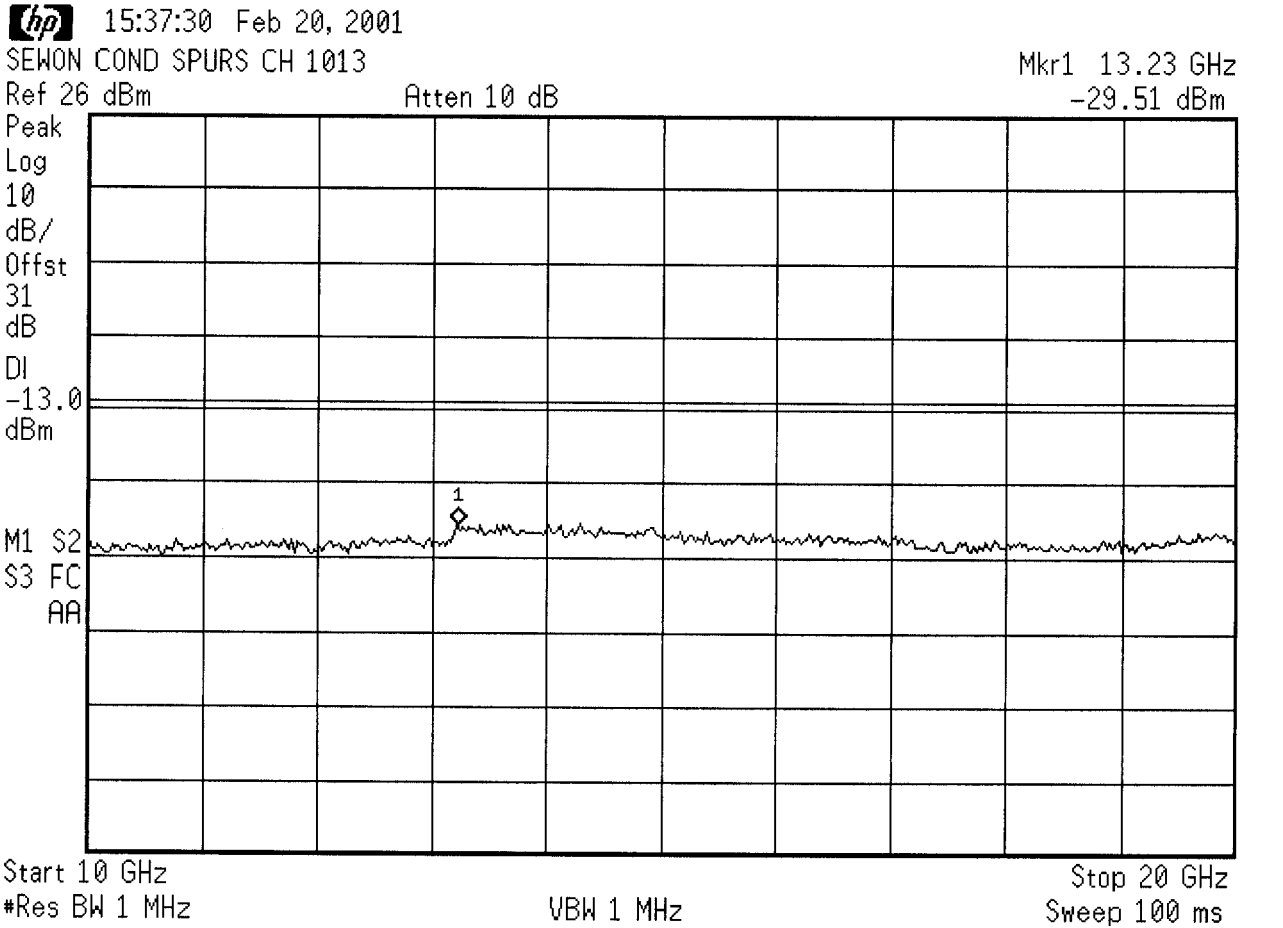

15:29:53 Feb 20, 2001
SEWON COND SPURS CH 799
Ref 27.5 dBm
Atten 10 dB
Mkr1 2.033 GHz
-28.34 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

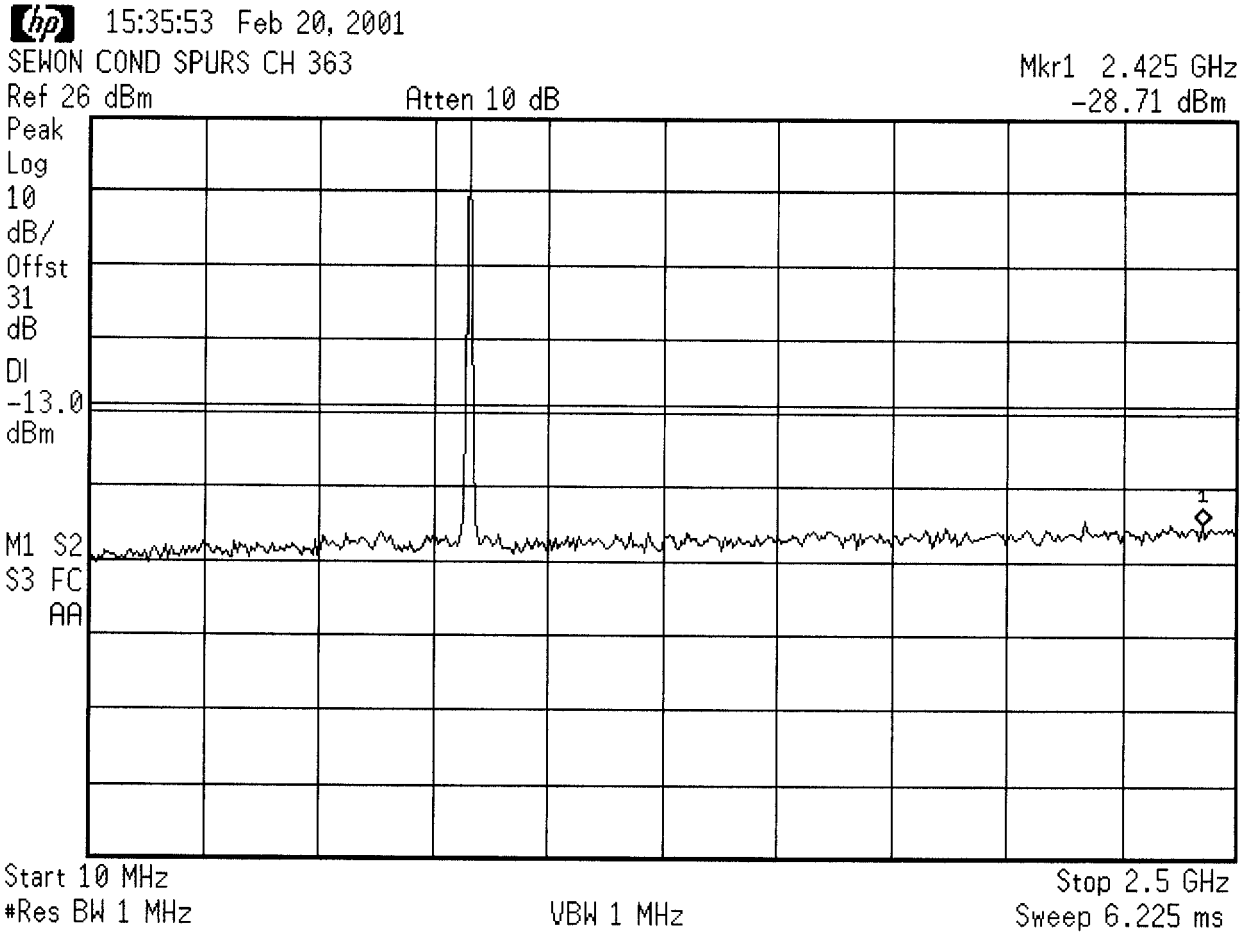

15:30:13 Feb 20, 2001
SEWON COND SPURS CH 799
Ref 27.5 dBm
Atten 10 dB
Mkr1 2.988 GHz
-30.32 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 2.5 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

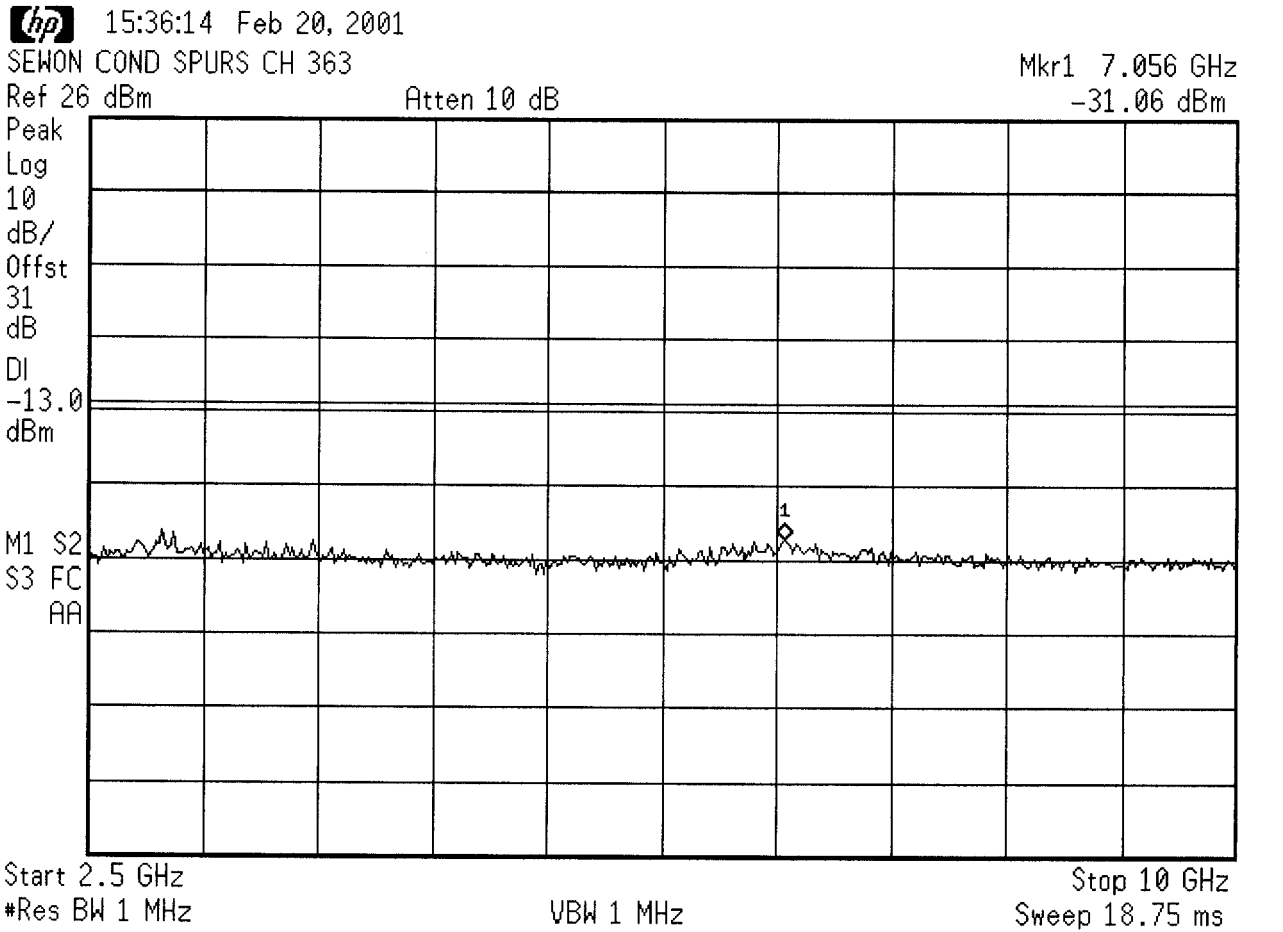

15:30:30 Feb 20, 2001
SEWON COND SPURS CH 799
Ref 27.5 dBm
Atten 10 dB
Mkr1 13.23 GHz
-28.15 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

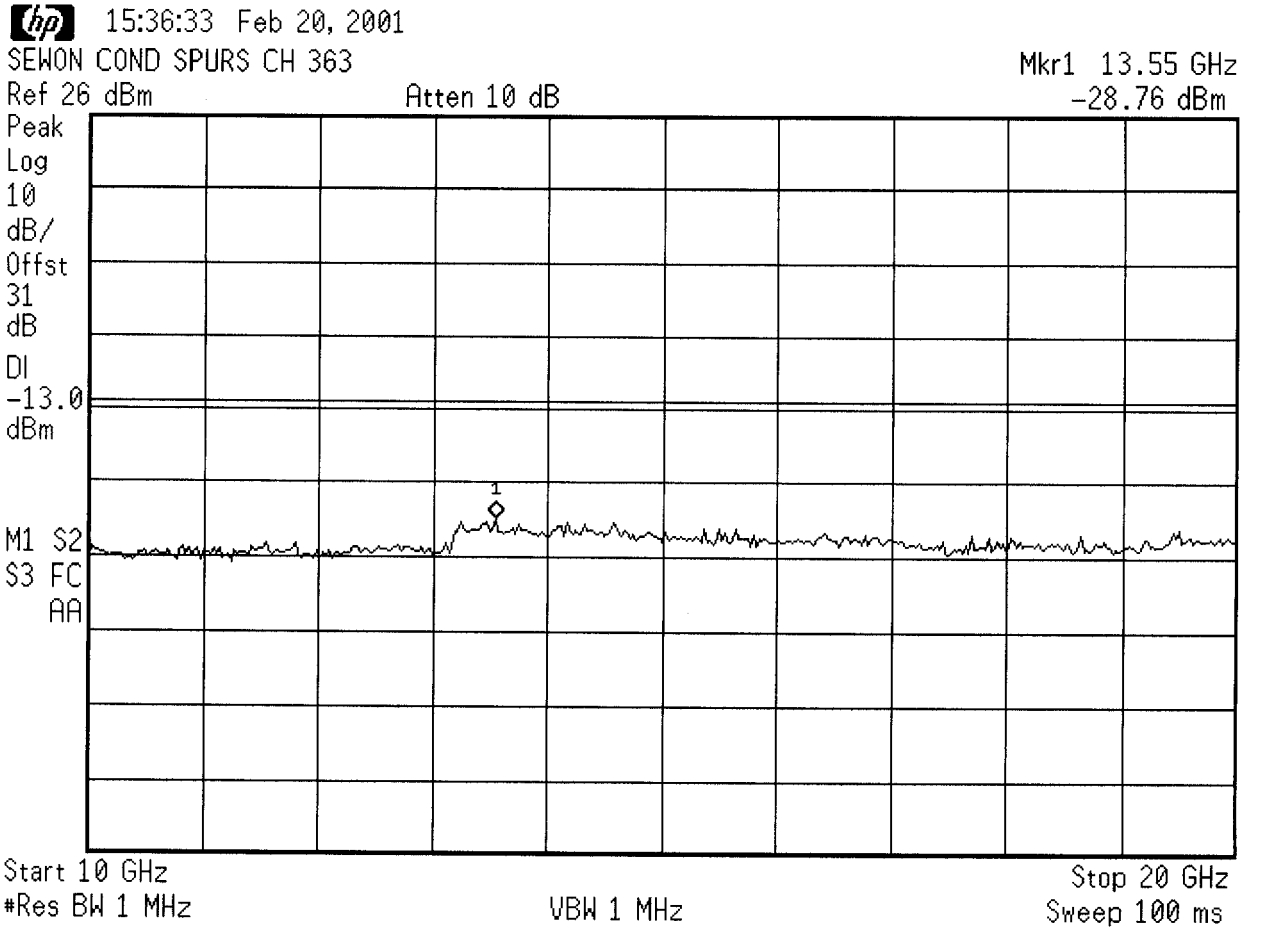

15:38:15 Feb 20, 2001
SEWON COND SPURS CH 1013
Ref 26 dBm
Atten 10 dB
Mkr1 2.151 GHz
-29.42 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

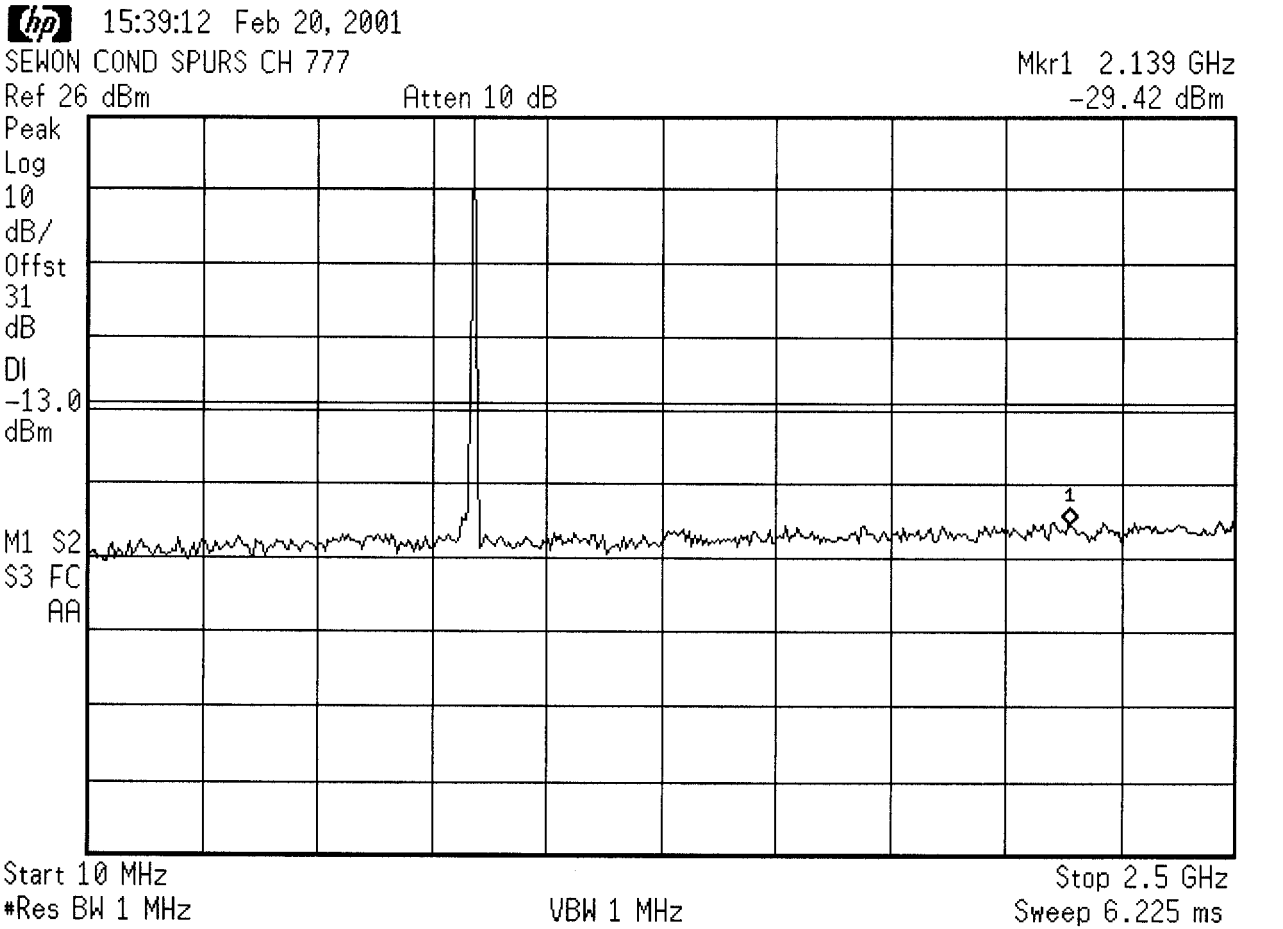

15:37:51 Feb 20, 2001
SEWON COND SPURS CH 1013
Mkr1 2.969 GHz
Ref 26 dBm
Atten 10 dB
-30.9 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
Stop 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Sweep 18.75 ms

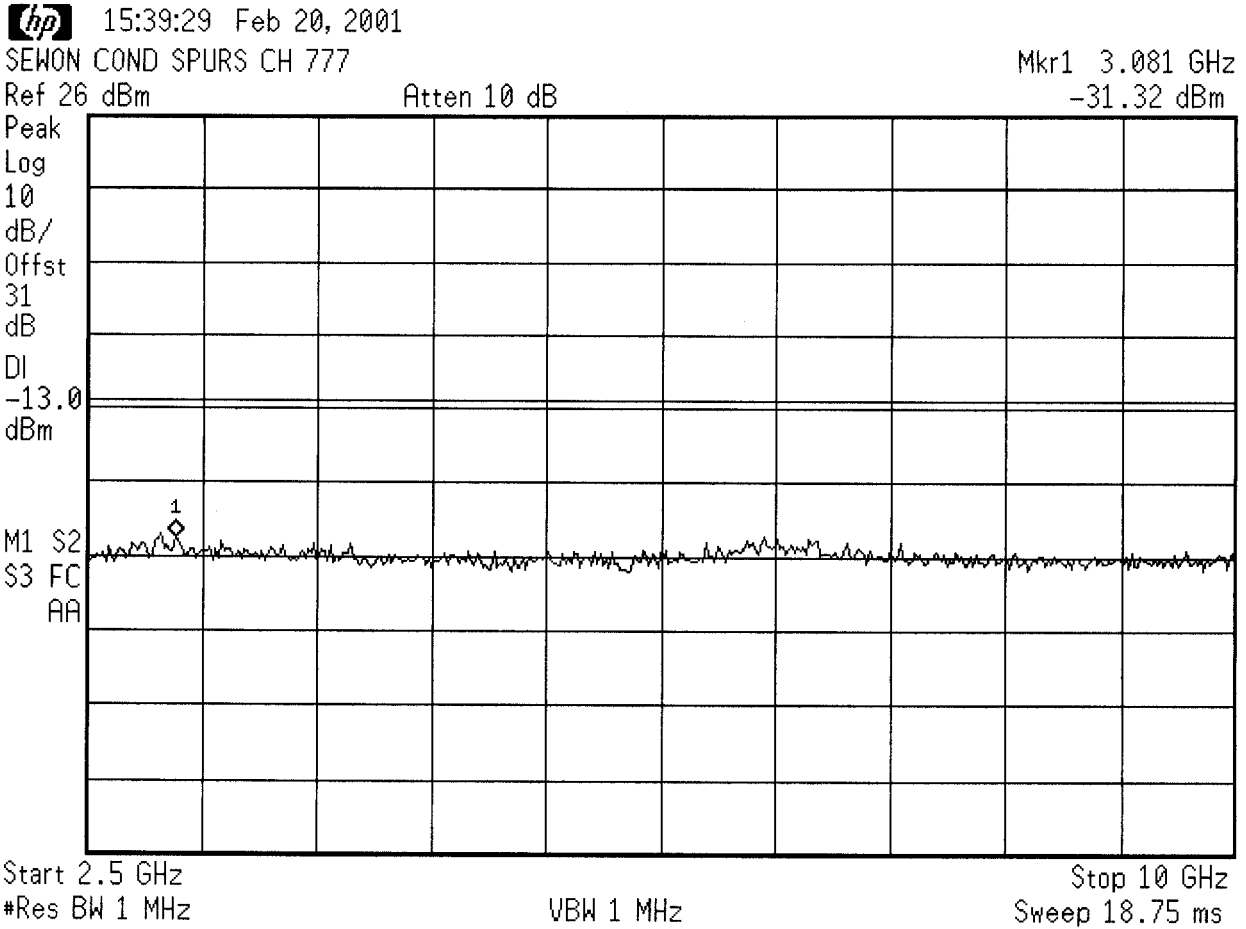

15:37:30 Feb 20, 2001
SEWON COND SPURS CH 1013
Ref 26 dBm
Atten 10 dB
Mkr1 13.23 GHz
-29.51 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

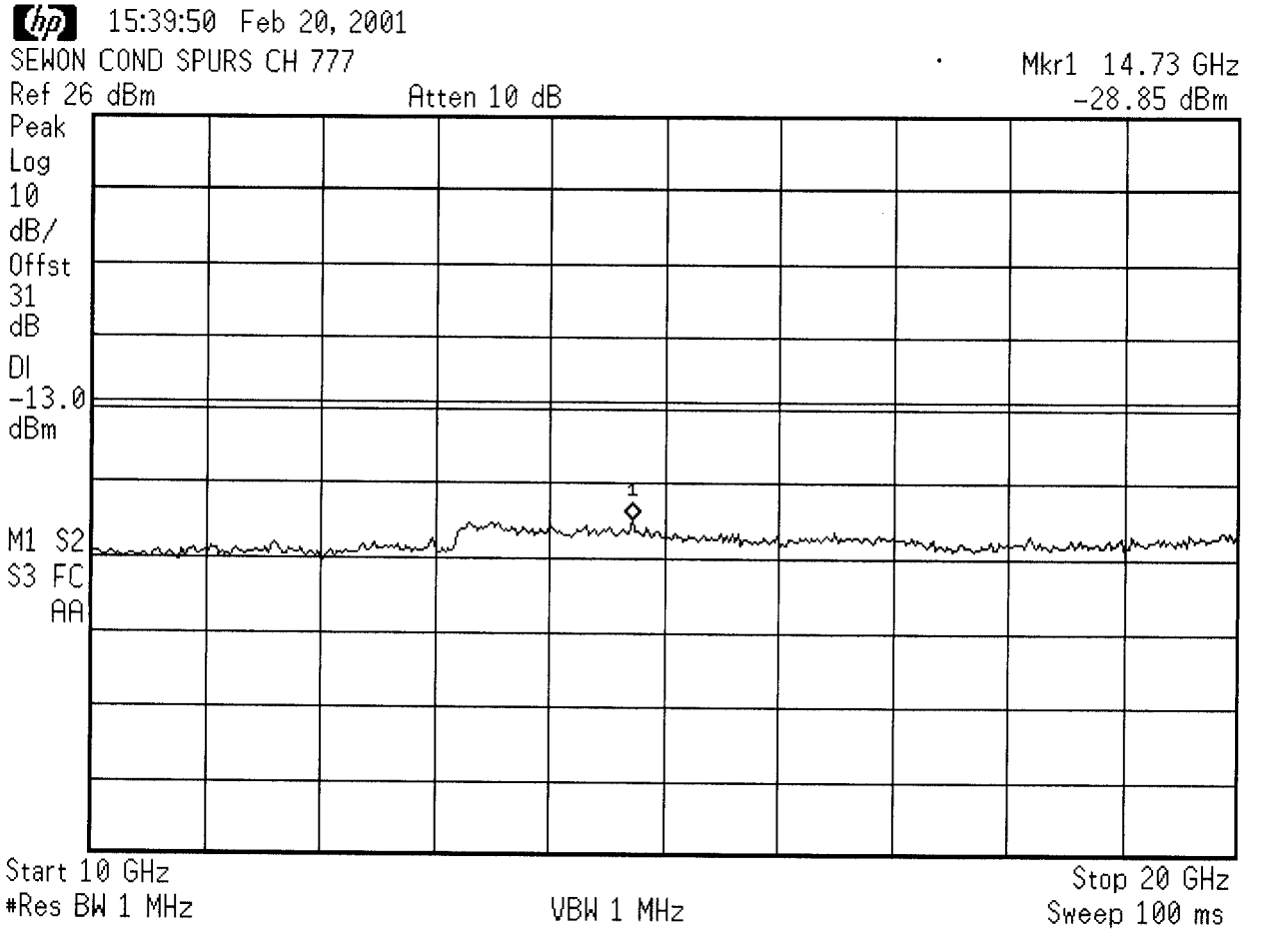

15:35:53 Feb 20, 2001
SEWON COND SPURS CH 363
Mkr1 2.425 GHz
-28.71 dBm
Ref 26 dBm
Atten 10 dB
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

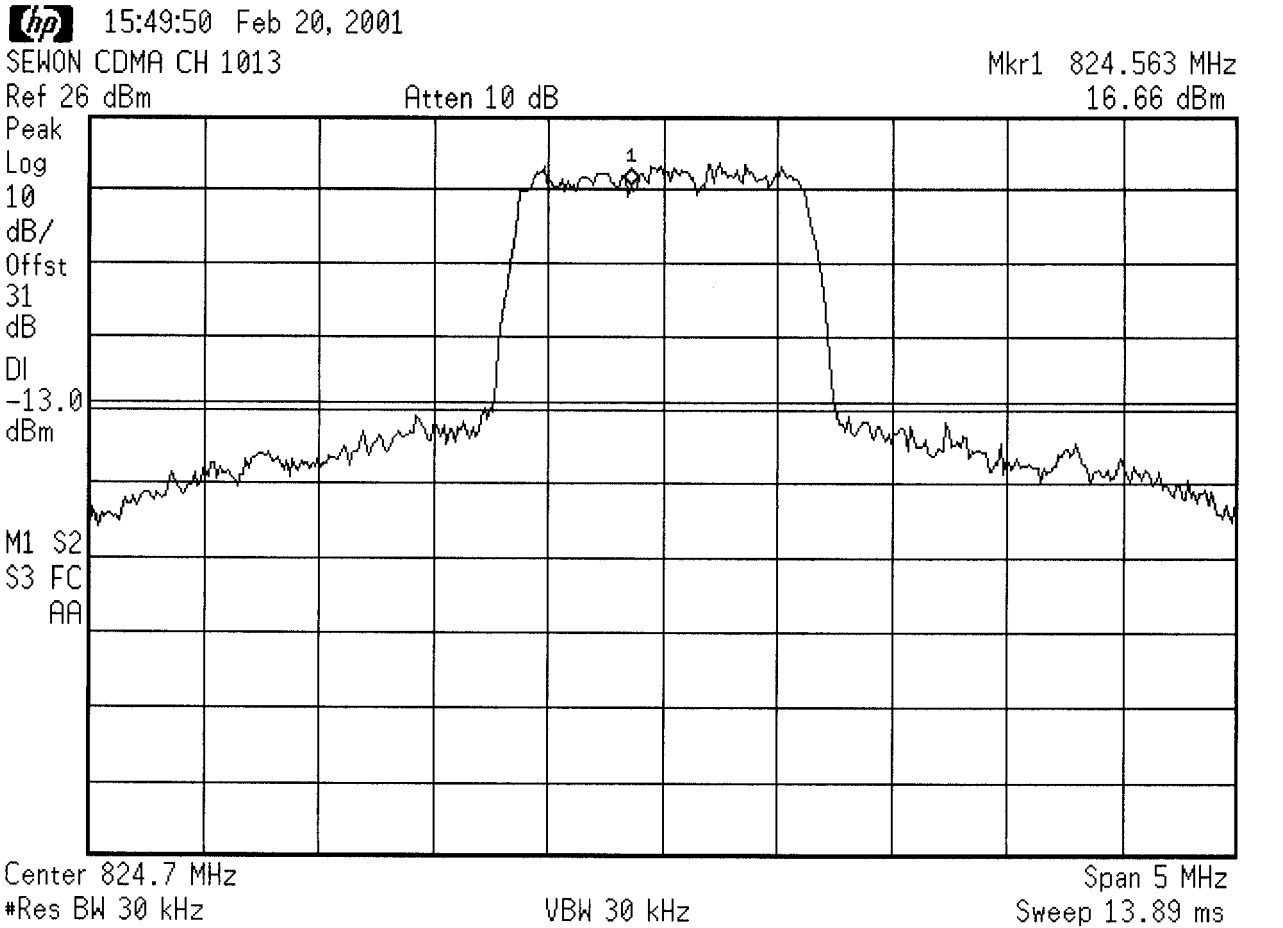

15:36:14 Feb 20, 2001
SEWON COND SPURS CH 363
Mkr1 7.056 GHz
Ref 26 dBm
Atten 10 dB
-31.06 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 2.5 GHz
Stop 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Sweep 18.75 ms

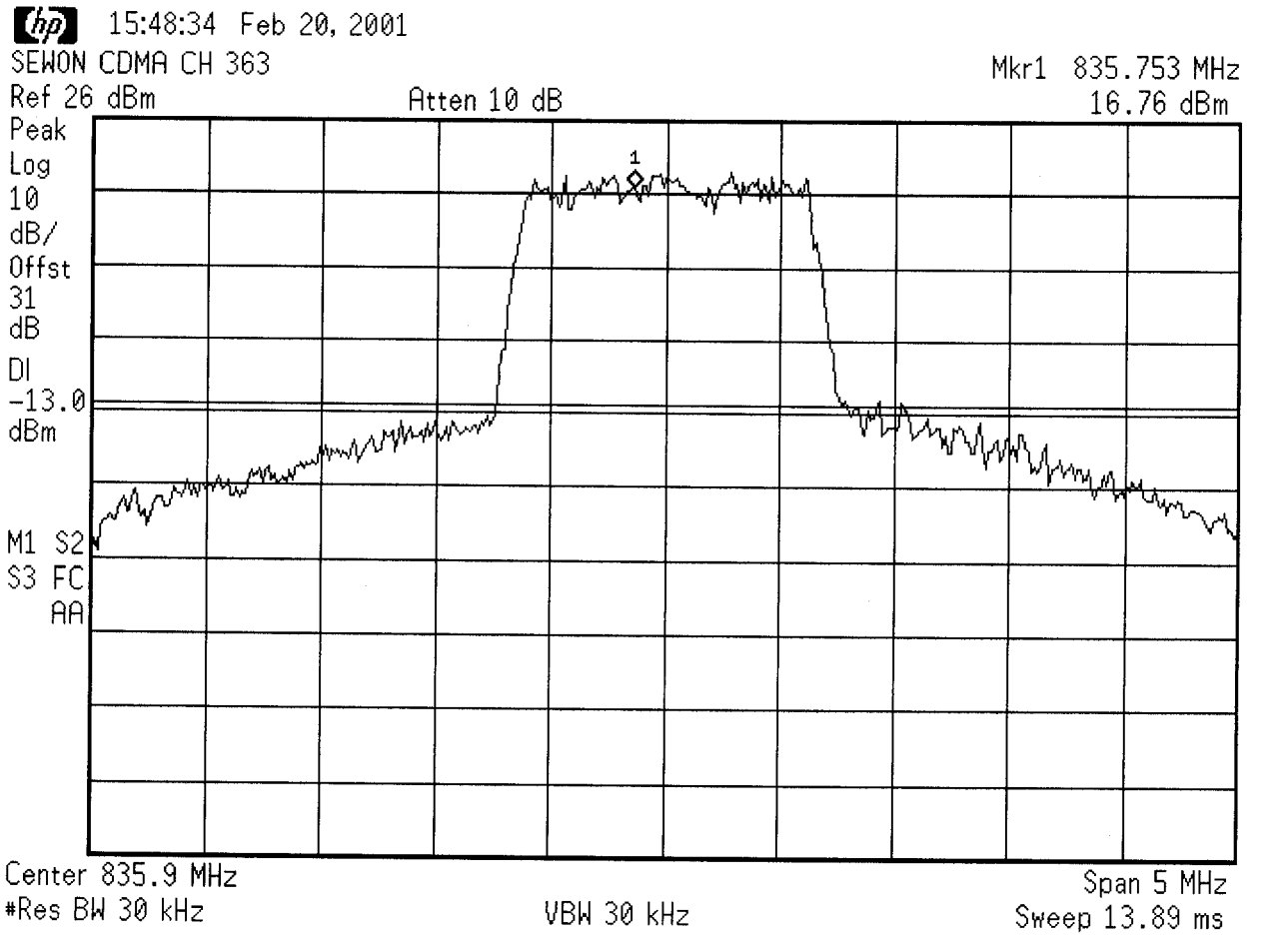

15:36:33 Feb 20, 2001
SEWON COND SPURS CH 363
Mkr1 13.55 GHz
Ref 26 dBm
Atten 10 dB
-28.76 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
Stop 20 GHz
#Res BW 1 MHz
VBW 1 MHz
Sweep 100 ms

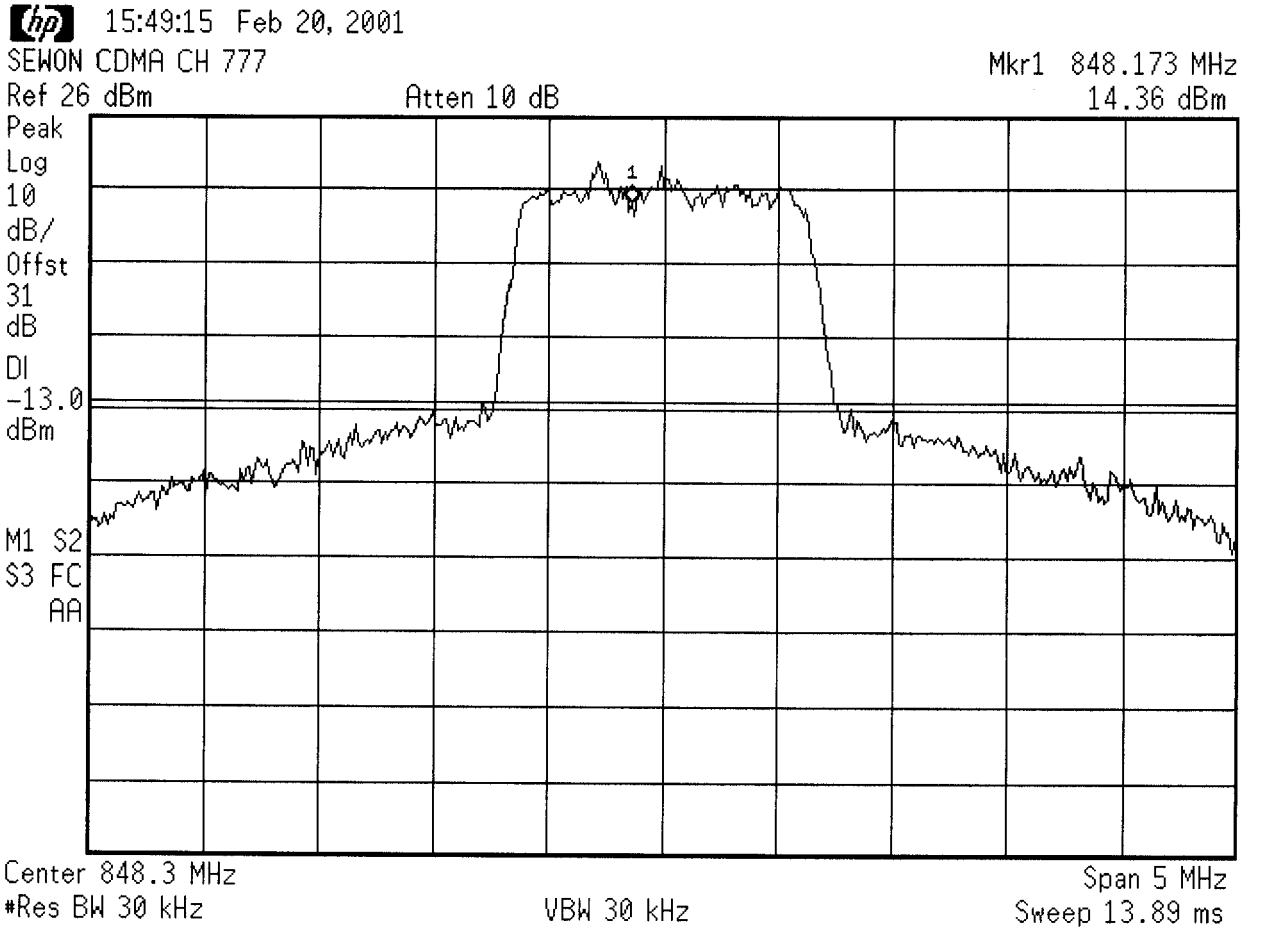

15:39:12 Feb 20, 2001
SEWON COND SPURS CH 777
Mkr1 2.139 GHz
Ref 26 dBm
Atten 10 dB
-29.42 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Start 10 MHz
#Res BW 1 MHz
VBW 1 MHz
Stop 2.5 GHz
Sweep 6.225 ms

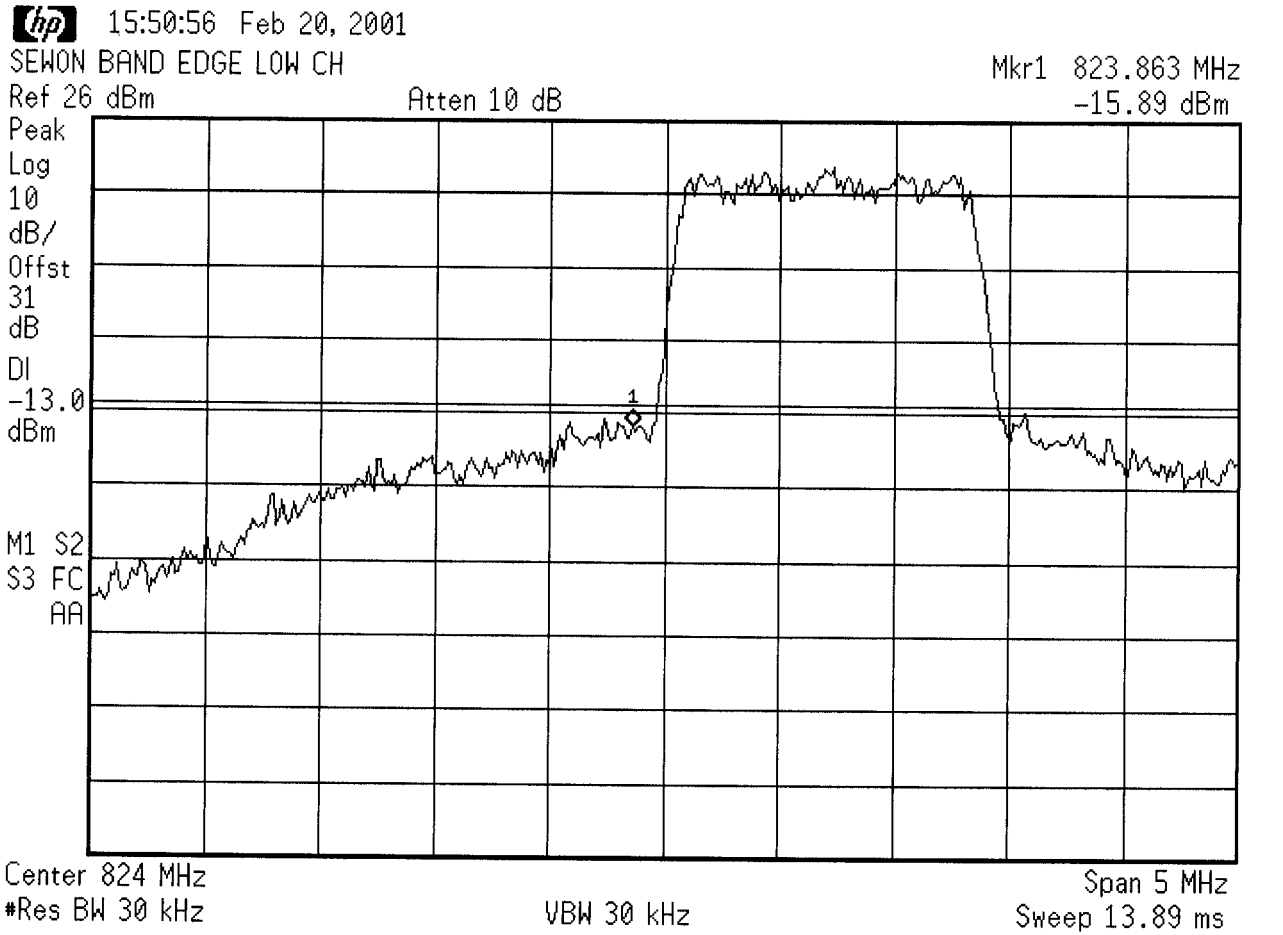

15:39:29 Feb 20, 2001
SEWON COND SPURS CH 777
Mkr1 3.081 GHz
Ref 26 dBm
Atten 10 dB
-31.32 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 2.5 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 10 GHz
Sweep 18.75 ms

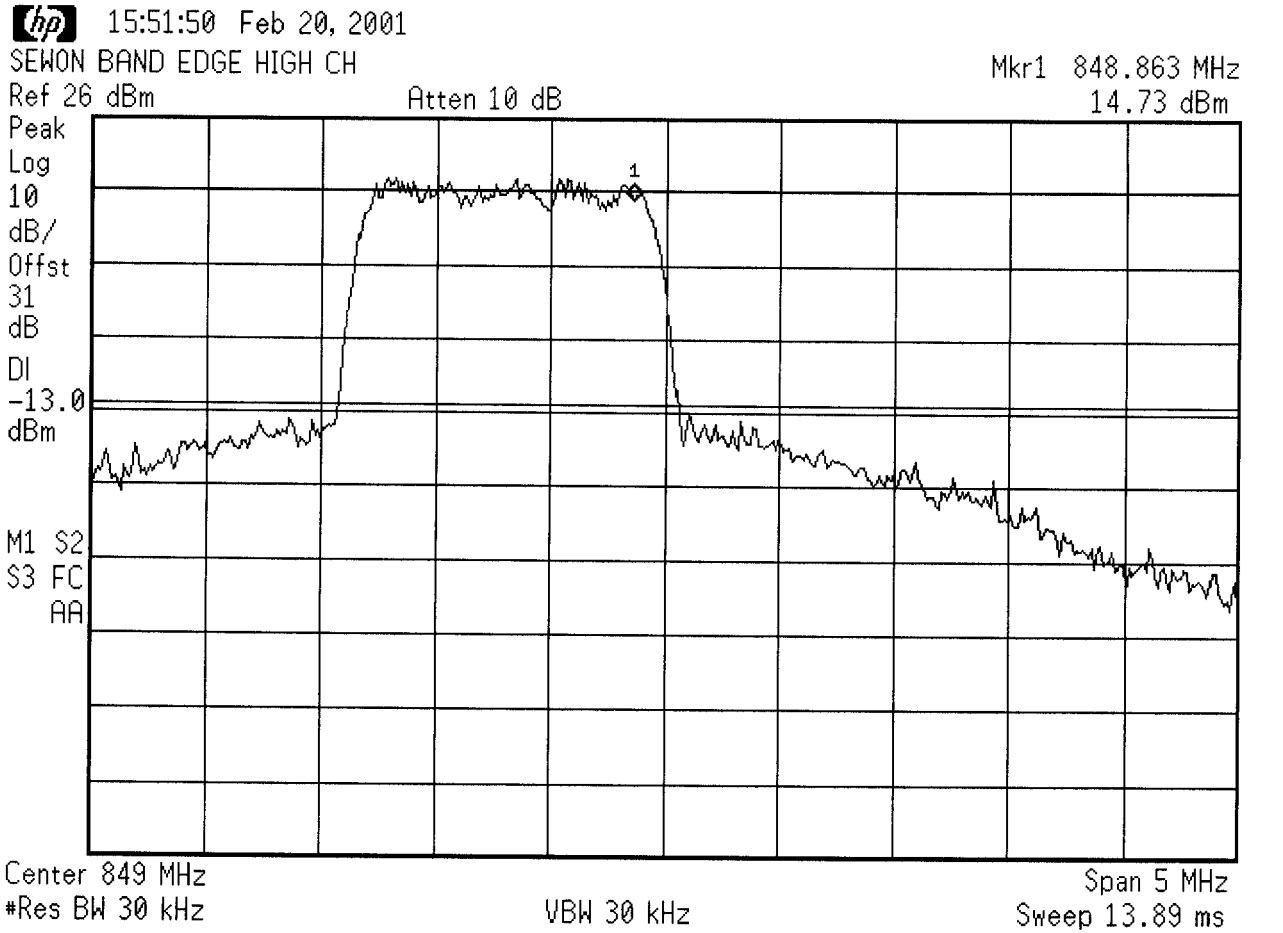

15:39:50 Feb 20, 2001
SEWON COND SPURS CH 777
Mkr1 14.73 GHz
-28.85 dBm
Ref 26 dBm
Atten 10 dB
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
1
M1 S2
S3 FC
AA
Start 10 GHz
#Res BW 1 MHz
VBW 1 MHz
Stop 20 GHz
Sweep 100 ms

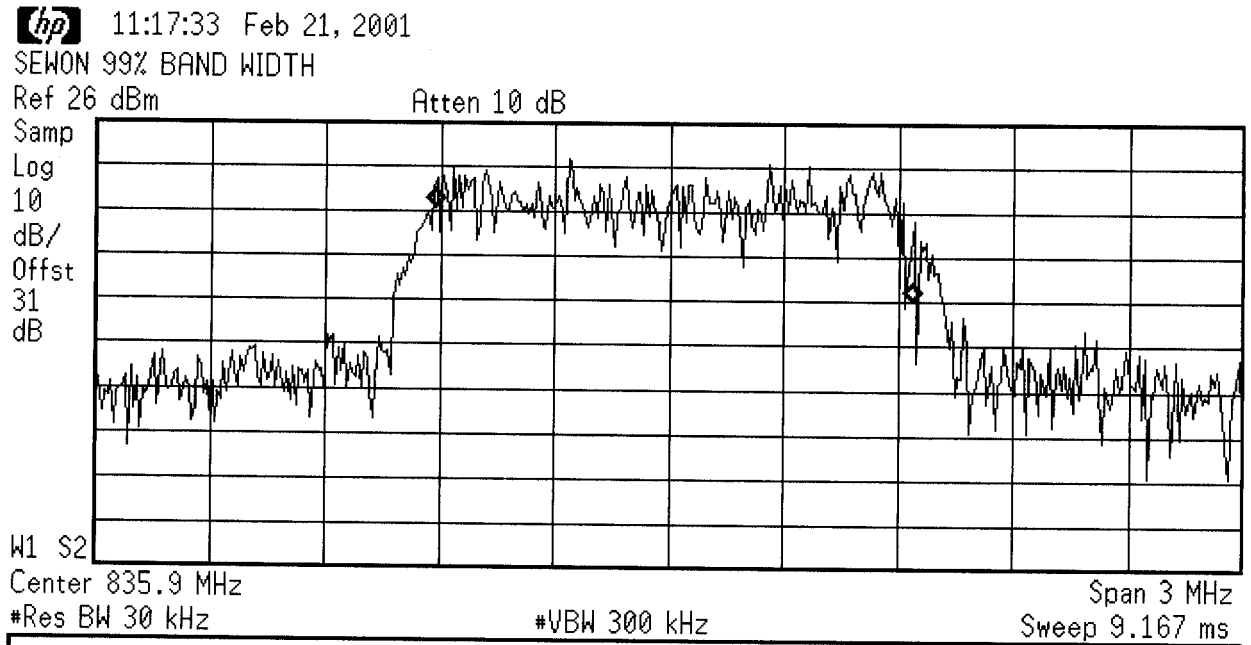

15:49:50 Feb 20, 2001
SEWON CDMA CH 1013
Mkr1 824.563 MHz
Ref 26 dBm
Atten 10 dB
16.66 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Center 824.7 MHz
Span 5 MHz
#Res BW 30 kHz
VBW 30 kHz
Sweep 13.89 ms


15:48:34 Feb 20, 2001
SEWON CDMA CH 363
Ref 26 dBm
Atten 10 dB
Mkr1 835.753 MHz
16.76 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Center 835.9 MHz
#Res BW 30 kHz
VBW 30 kHz
Span 5 MHz
Sweep 13.89 ms


15:49:15 Feb 20, 2001
SEWON CDMA CH 777
Mkr1 848.173 MHz
Ref 26 dBm
Atten 10 dB
14.36 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
Center 848.3 MHz
#Res BW 30 kHz
VBW 30 kHz
Span 5 MHz
Sweep 13.89 ms


15:50:56 Feb 20, 2001
SEWON BAND EDGE LOW CH
Ref 26 dBm
Atten 10 dB
Mkr1 823.863 MHz
-15.89 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Center 824 MHz
#Res BW 30 kHz
VBW 30 kHz
Span 5 MHz
Sweep 13.89 ms


15:51:50 Feb 20, 2001
SEWON BAND EDGE HIGH CH
Ref 26 dBm
Atten 10 dB
Mkr1 848.863 MHz
14.73 dBm
Peak
Log
10
dB/
Offst
31
dB
Dl
-13.0
dBm
M1 S2
S3 FC
AA
1
Center 849 MHz
#Res BW 30 kHz
VBW 30 kHz
Span 5 MHz
Sweep 13.89 ms



Occupied Bandwidth Results (measuring..)

Occupied Bandwidth

1.255 MHz

Occ BW % Pwr 99.00 %

Transmit Freq Error 10.38 kHz