

CERTIFICATE OF COMPLIANCE **FCC PART 24 CERTIFICATION**

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Applicant Information:

WITHUS IT CO., LTD.
2F. DongNam Bldg. 448-16
Shingil-5Dong, YongDungPo-Ku,
Seoul, Korea

FCC Classification:

Part 24 Licensed Portable Transmitter Held to Ear (PCE)

FCC Rule Part(s):

§24(E), §2

FCC ID:

POQWPE-1100

Model(s):

WPE-1100 (Base Model), WPE-1200 (Derived Model)

(Model Difference: Front Chassis Cosmetics)

Equipment Type:

Single-Mode PCS CDMA Phone

Tx Frequency Range:

1851.25 - 1908.75 MHz

Rx Frequency Range:

1931.25 - 1988.75 MHz

Max. RF Output Power:

0.360 Watts (EIRP)

Frequency Tolerance:

150 Hz

Emission Designator:

1M25F9W

Antenna Type:

Retractable Whip (1/4I)

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.

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



Shawn McMillen
General Manager
Celltech Research Inc.



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MEASUREMENT REPORT - FCC PART 24

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.

1.2 GENERAL INFORMATION - §2.1033(a)

APPLICANT:

WITHUS IT CO., LTD.
2F. DongNam Bldg. 448-16
Shingil-5Dong, YongDungPo-Ku,
Seoul, Korea

FCC ID	POQWPE-1100
Model(s)	WPE-1100 (Base Model) WPE-1200 (Derived Model)
EUT Type	Single-Mode PCS CDMA Phone
Classification	Licensed Portable Transmitter Held to Ear (PCE)
Rule Part(s)	§24(E), §2
Max. RF Output Power	0.360 Watts (EIRP)
Tx Freq. Range	1851.25 - 1908.75 MHz
Rx Freq. Range	1931.25 - 1988.75 MHz
Frequency Tolerance	± 150 Hz
Emission Designator	1M25F9W
Modulation	PCS CDMA
Battery Type(s)	3.7V 750mAh Lithium Ion
Antenna Type	Retractable Whip (1/4l)

2.1 MEASUREMENT PROCEDURES

2.2 RF OUTPUT POWER MEASUREMENT - §2.1046

The conducted power was measured with a Gigatronics 8650A Universal Power Meter using modulated 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 placed into test mode via keypad access or a base station simulator at a full data rate in the “always up” power control mode. All subsequent tests were performed using the same tune up procedures.

2.3 OCCUPIED BANDWIDTH EMISSION LIMITS - §2.1049(c), §24.238

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. 100% of the in-band modulation was below the specified mask per §24.238.

Specified Limits:

- (a) On any frequency removed from the assigned carrier frequency by more than 20kHz, up to and including 45kHz, the sideband was 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 was 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 was at least 60dB below the carrier of $40 + \log_{10}$ (mean power output in Watts) dB, whichever was the smaller attenuation.

2.4 SPURIOUS EMISSIONS AT ANTENNA TERMINAL - §2.1051

The level of the carrier and the various conducted spurious frequencies were measured by means of a calibrated spectrum analyzer. The spectrum was 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.

2.5 EMISSION DESIGNATOR - §2.202

Calculation: $2M + 2DK$

CDMA BW = 1.25 MHz

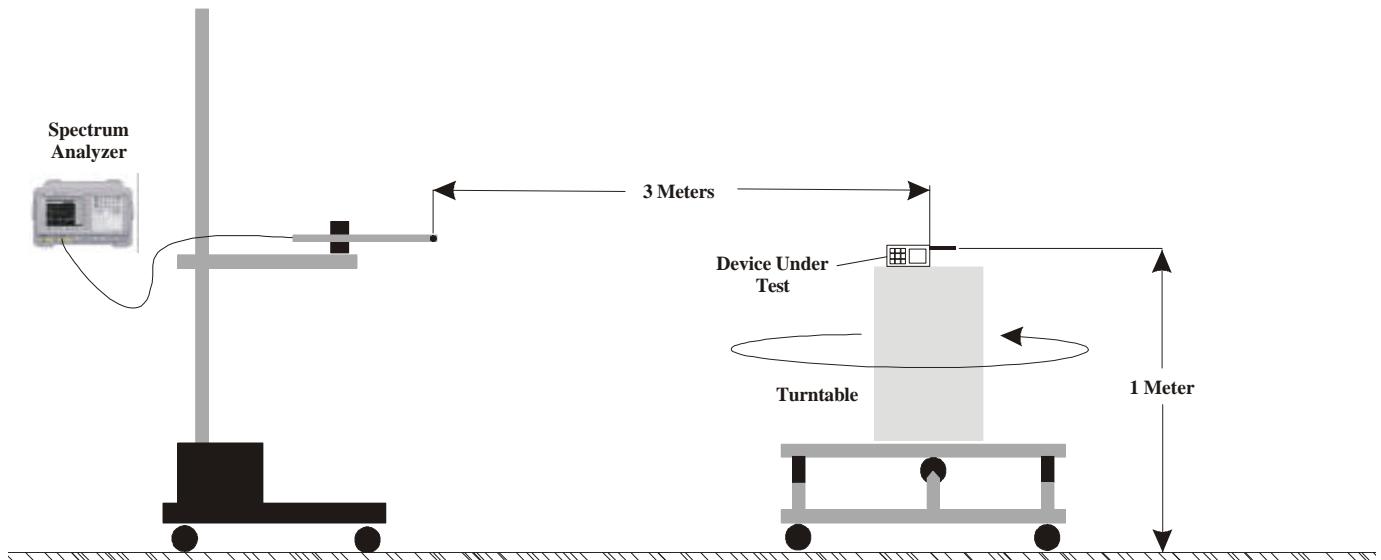
F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

2.6 FIELD STRENGTH OF SPURIOUS RADIATION - §2.1053

Radiated and harmonic emissions were measured on a 3-meter outdoor site. 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.



Radiated Measurement Test Setup Diagram



Radiated Measurement Test Setup Photograph

2.7 FREQUENCY STABILITY / TEMPERATURE VARIATION - §24.235

The minimum frequency stability shall be $\pm 150\text{Hz}$ referenced to a received carrier frequency from a base station. This meets the requirement for operational accuracy of 0.00005% in digital mode. A base station simulator was used to measure the error in the frequency.

Measurement Method:

The frequency stability of the transmitter was measured by:

1. Temperature: The temperature was varied from -30°C to $+60^\circ\text{C}$ 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 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.

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 $+60^\circ\text{C}$, 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 EFFECTIVE ISOTROPIC RADIATED POWER OUTPUT - §24.232(b)

PCS CDMA MODE

Freq. Tuned	EUT Conducted Power	Max. Field Strength of EUT (dBm) (Horizontal Polarization)		Horn Gain	Horn Forward Conducted Power	EIRP of EUT Horn Gain + Horn Forward Conducted Power	
(MHz)	(dBm)	Antenna Retracted	Antenna Extended	(dBi)	(dBm)	(dBm)	Watts
1851.25	24.5	15.92	- 14.40	6.67	15.42	24.51	0.282
1880.00	24.5	16.47	- 14.93	6.68	15.95	24.88	0.308
1908.75	24.5	16.35	- 14.83	6.69	16.80	25.56	0.360

Notes:

1. EIRP 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 horn antenna was substituted in place of the EUT. A CDMA signal with the same bandwidth as the EUT was generated, amplified, and fed through a directional coupler. The height and direction of the horn antenna was adjusted in order to give the field of maximum intensity. The power to the antenna was adjusted in order to give the same field strength reading as previously recorded for the EUT. The power at the coupler port was recorded at this point. 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, 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 EIRP level was determined by adding the horn forward conducted power and the horn antenna gain in dB.

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

3.3 FIELD STRENGTH OF SPURIOUS RADIATION - § 2.1053

Operating Frequency (MHz): 1851.25
 Channel: 25 (Low)
 Measured Cond. Pwr. (dBm): 24.5
 Measured EIRP (dBm): 24.51
 Modulation: PCS CDMA
 Distance: 3 Meters
 Limit: $43 + 10 \log (W) = 37.47 \text{ dBc}$

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
3702.50	-87.47	-54.58	6.6	H	-47.98	-50.12	74.63
5553.75	-89.58	-51.78	7.8	H	-43.98	-46.12	70.63
7405.00	-92.36	-55.78	7.8	H	-47.98	-50.12	74.63
9256.25	-94.64	-56.62	7.6	H	-49.02	-51.16	75.67
11107.50	-97.15	-60.79	8.5	H	-52.29	-54.43	78.94
12958.75	-99.04	-61.16	8.8	H	-52.36	-54.50	79.01
14810.00	-100.33	-62.45	9.6	H	-52.85	-54.99	79.50
16661.25	-101.18	-63.35	9.0	H	-54.35	-56.49	81.00
18512.50	-102.27	-66.06	9.3	H	-56.76	-58.90	83.41

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The video bandwidth and resolution bandwidth were set to 3MHz. 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 horn antenna was substituted in place of the EUT. A CDMA signal with the same bandwidth as the EUT was generated, amplified, and fed through a directional coupler. 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 horn forward conducted power and the horn antenna gain in dB.

Notes:

1. All other spurious emissions were found to be below the magnitude of each harmonic.
2. Spurious emissions more than 20 dB below the limit are reported, though not required per §2.1051.

FIELD STRENGTH OF SPURIOUS RADIATION - § 2.1053

Operating Frequency (MHz): 1880.00
 Channel: 600 (Mid)
 Measured Cond. Pwr. (dBm): 24.5
 Measured EIRP (dBm): 24.88
 Modulation: PCS CDMA
 Distance: 3 Meters
 Limit: $43 + 10 \log (W) = 37.91 \text{ dBc}$

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
3760.00	-88.49	-55.60	6.6	H	-49.00	-51.14	76.02
5640.00	-90.32	-52.52	7.8	H	-44.72	-46.86	71.74
7520.00	-93.64	-57.06	7.8	H	-49.26	-51.40	76.28
9400.00	-95.57	-57.55	7.6	H	-49.95	-52.09	76.97
11280.00	-98.22	-61.86	8.5	H	-53.36	-55.50	80.38
13160.00	-100.31	-62.43	8.8	H	-53.63	-55.77	80.65
15040.00	-101.58	-63.70	9.6	H	-54.10	-56.24	81.12
16920.00	-102.06	-64.23	9.0	H	-55.23	-57.37	82.25
18800.00	-102.88	-66.67	9.3	H	-57.37	-59.51	84.39

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The video bandwidth and resolution bandwidth were set to 3MHz. 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 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 horn forward conducted power and the horn antenna gain in dB.

Notes:

1. All other spurious emissions were found to be below the magnitude of each harmonic.
2. Spurious emissions more than 20 dB below the limit are reported, though not required per §2.1051.

FIELD STRENGTH OF SPURIOUS RADIATION - § 2.1053

Operating Frequency (MHz): 1908.75
 Channel: 1175 (High)
 Measured Cond. Pwr. (dBm): 24.5
 Measured EIRP (dBm): 25.56
 Modulation: PCS CDMA
 Distance: 3 Meters
 Limit: $43 + 10 \log (W) = 38.56 \text{ dBc}$

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
3817.50	-88.49	-55.60	6.6	H	-49.00	-51.14	76.70
5726.25	-90.32	-52.52	7.8	H	-44.72	-46.86	72.42
7635.00	-93.64	-57.06	7.8	H	-49.26	-51.40	76.96
9543.75	-95.57	-57.55	7.6	H	-49.95	-52.09	77.65
11452.50	-98.22	-61.86	8.5	H	-53.36	-55.50	81.06
13361.25	-100.31	-62.43	8.8	H	-53.63	-55.77	81.33
15270.00	-101.58	-63.70	9.6	H	-54.10	-56.24	81.80
17178.75	-102.06	-64.23	9.0	H	-55.23	-57.37	82.93
19087.50	-102.88	-66.67	9.3	H	-57.37	-59.51	85.07

Radiated Measurements by Substitution Method:

The EUT was placed on a turntable 3-meters from the receive antenna. The video bandwidth and resolution bandwidth were set to 3MHz. 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 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 horn forward conducted power and the horn antenna gain in dB.

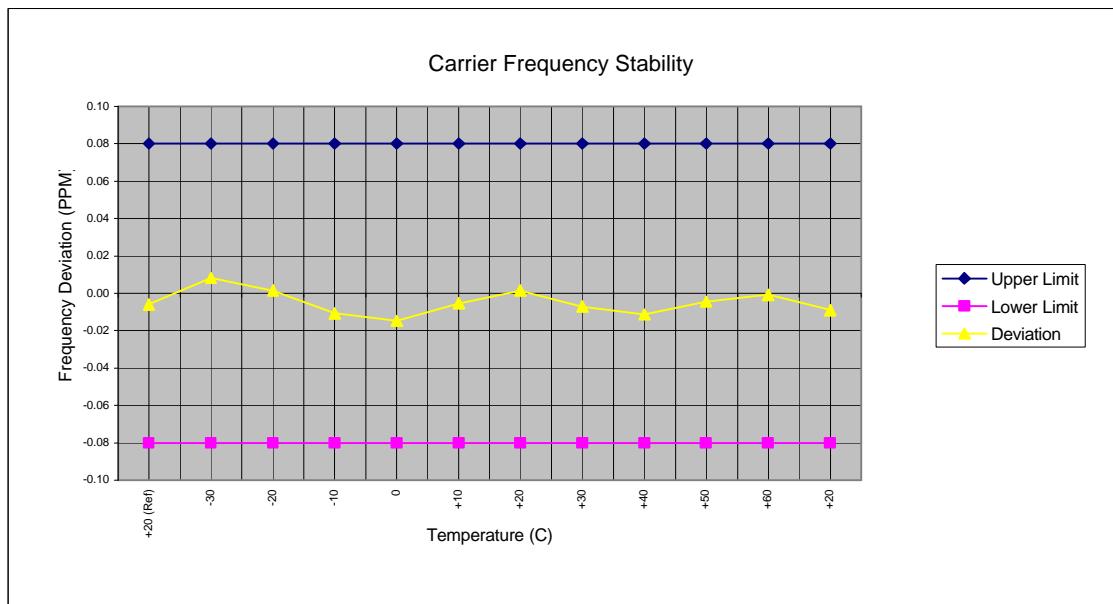
Notes:

1. All other spurious emissions were found to be below the magnitude of each harmonic.
2. Spurious emissions more than 20 dB below the limit are reported, though not required per §2.1051..

3.4 FREQUENCY STABILITY - § 24.235

Carrier Frequency (GHz): 1.88
Channel: 600
Mode: PCS CDMA
Deviation Limit (PPM): 0.08

Temperature (C)	Voltage (%)	Power (VDC)	Carrier Frequency Deviation		Specification	
			(Hz)	(PPM)	Lower Limit (PPM)	Upper Limit (PPM)
+20 (Ref)	100	3.7	-11.17	-0.006	0.08	-0.08
-30	100	3.7	15.43	0.008	0.08	-0.08
-20	100	3.7	2.77	0.001	0.08	-0.08
-10	100	3.7	-20.24	-0.011	0.08	-0.08
0	100	3.7	-27.96	-0.015	0.08	-0.08
+10	100	3.7	-10.33	-0.005	0.08	-0.08
+20	100	3.7	2.41	0.001	0.08	-0.08
+30	100	3.7	-13.37	-0.007	0.08	-0.08
+40	100	3.7	-21.49	-0.011	0.08	-0.08
+50	100	3.7	-8.51	-0.005	0.08	-0.08
+60	100	3.7	-1.82	-0.001	0.08	-0.08
+20	Battery Endpoint	3.3	-17.29	-0.009	0.08	-0.08



4.1 TEST EQUIPMENT

Type	Model	Calibration Due Date	Serial No.
HP Signal Generator	8648D (9kHz-4.0GHz)	Nov. 2002	3847A00611
Rohde & Schwarz Signal Generator	SMR40 (10MHz-40GHz)	Nov. 2002	835537/022
Gigatronics Power Meter	8652A	Oct. 2002	1835272
Gigatronics Power Sensor	80701A (0.05-18GHz)	Sept. 2002	1833535
Gigatronics Power Sensor	80701A (0.05-18GHz)	Sept. 2002	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. 2002	US38433013
Audio Analyzer	HP 8903B	Nov. 2002	3729A18691
Modulation Analyzer	HP 8901A	July 2002	3749A07154
Frequency Counter	HP 53181A (3GHz)	May 2002	3736A05175
DC Power Supply	HP E3611A	N/A	KR83015294
CDMA Base Station Simulator	Agilent E8285A	Feb. 2003	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. 2002	6267
Double Ridged Horn Antenna	ETS 3115 (1-18GHz)	Oct. 2002	6276
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept. 2002	9120A-239
Horn Antenna	Chase BBHA 9120-A (0.7-4.8GHz)	Sept. 2002	9120A-240
Roberts Dipoles	ETS DB-4 (400MHz-1GHz)	June 2002	6276
Spectrum Analyzer	HP 8594E	March 2002	3543A02721
Spectrum Analyzer	HP E4408B	Nov. 2002	US39240170
Shielded Screen Room	Lindgren R.F. 18W-2/2-0	N/A	16297
Environmental Chamber	ESPEC ECT-2 (Temperature/Humidity)	Feb. 2003	0510154-B

5.1 CONCLUSION

The data in this measurement report shows that the WITHUS IT CO., LTD. Models: WPE-1100, WPE-1200 Single-Mode PCS CDMA Phone FCC ID: POQWPE-1100 complies with all the requirements of Parts 2 and 24 of the FCC rules.

TEST PLOTS

hp

11:22:29 Feb 7, 2002

WITHUS WPE-1100 PCS CDMA COND SPURS CH 25

Ref 24.5 dBm

#Atten 5 dB

Mkr1 2.382 GHz

-29.26 dBm

Peak

Log

10

dB/

Offst

31

dB

DI

-13.0

dBm

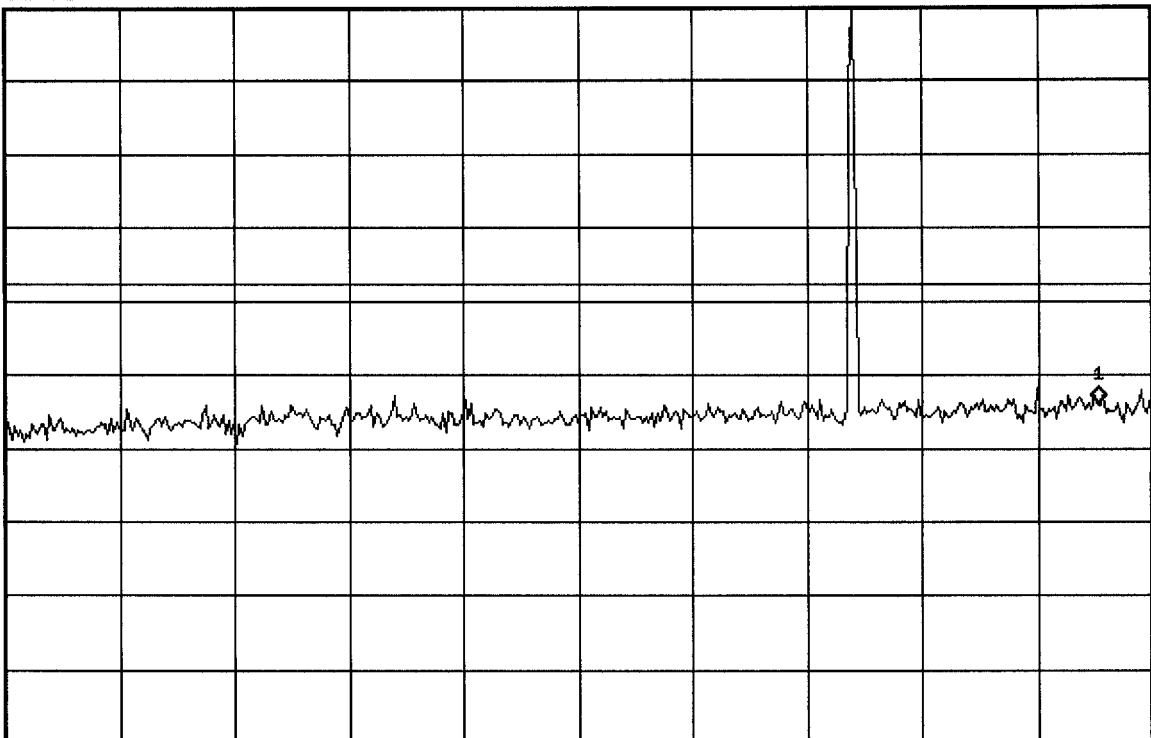
W1 S2

S3 FC

AA

Start 10 MHz
Res BW 3 MHz

VBW 3 MHz

Stop 2.5 GHz
Sweep 5 ms

hp

11:23:41 Feb 7, 2002

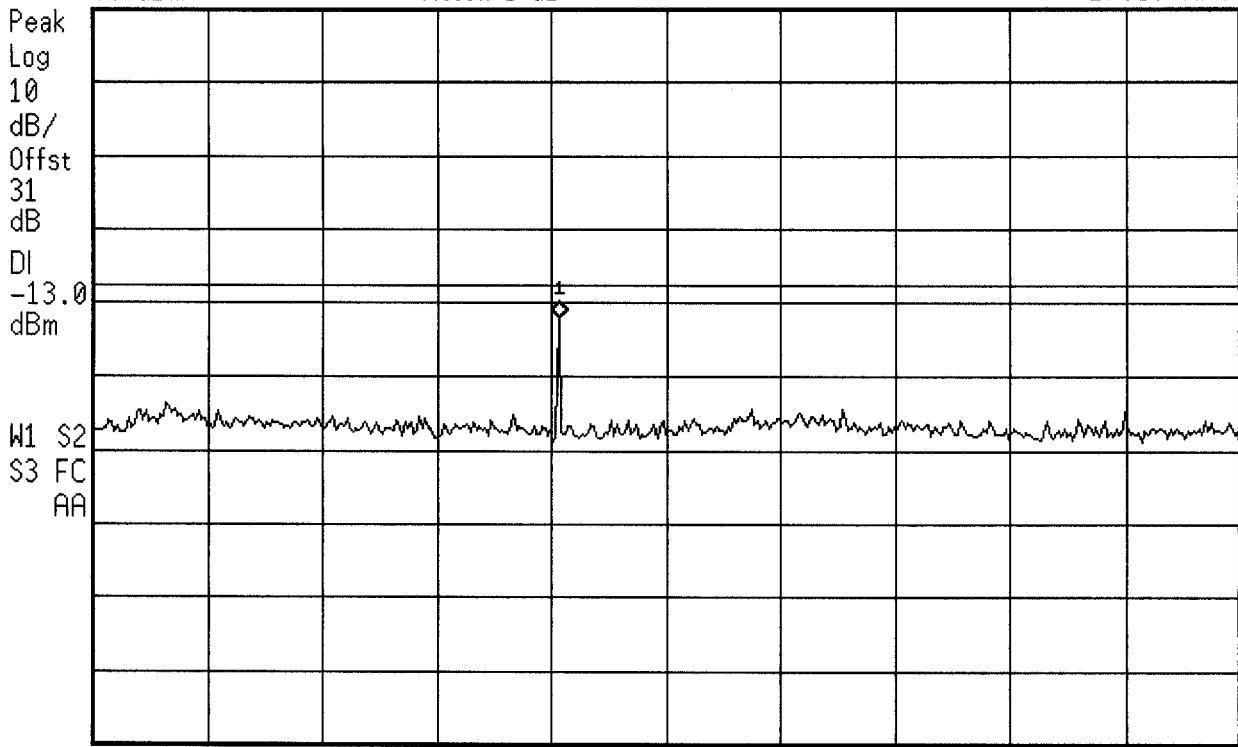
WITHUS WPE-1100 PCS CDMA COND SPURS CH 25

Ref 24.5 dBm

#Atten 5 dB

Mkr1 5.556 GHz

-17.58 dBm

Start 2.5 GHz
Res BW 3 MHz

VBW 3 MHz

Stop 10 GHz
Sweep 18.75 ms

hp

11:24:34 Feb 7, 2002

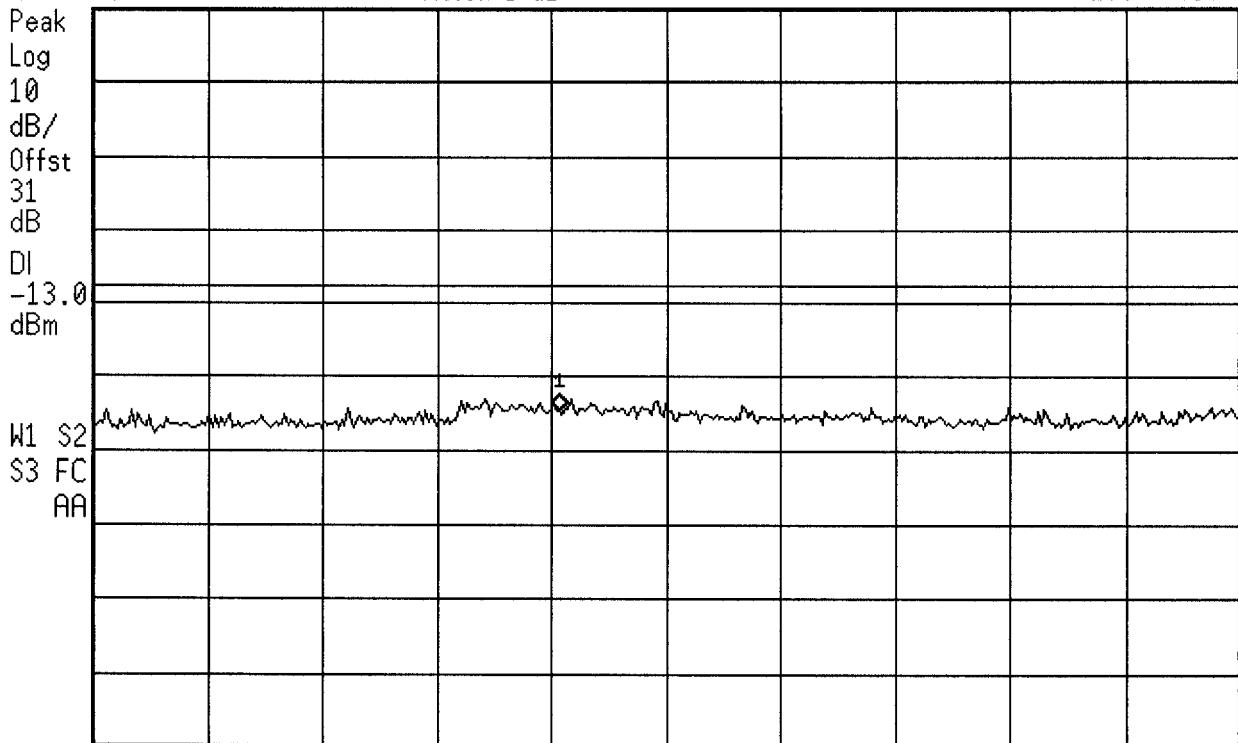
WITHUS WPE-1100 PCS CDMA COND SPURS CH 25

Ref 24.5 dBm

#Atten 5 dB

Mkr1 14.08 GHz

-29.94 dBm

Start 10 GHz
Res BW 3 MHz

VBW 3 MHz

Stop 20 GHz
Sweep 100 ms

hp

11:27:11 Feb 7, 2002

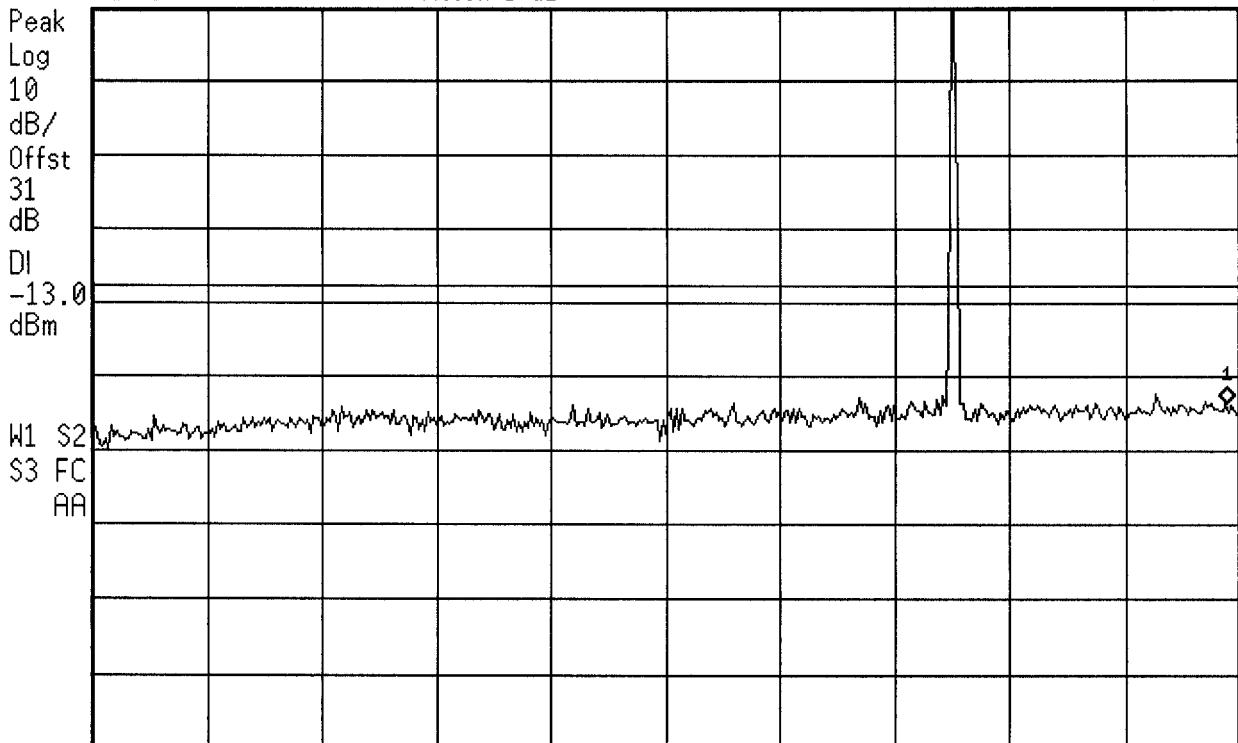
WITHUS WPE-1100 PCS CDMA COND SPURS CH 600

Ref 24.5 dBm

#Atten 5 dB

Mkr1 2.469 GHz

-29.02 dBm



Start 10 MHz

Res BW 3 MHz

VBW 3 MHz

Stop 2.5 GHz

Sweep 5 ms

[hp] 11:27:55 Feb 7, 2002

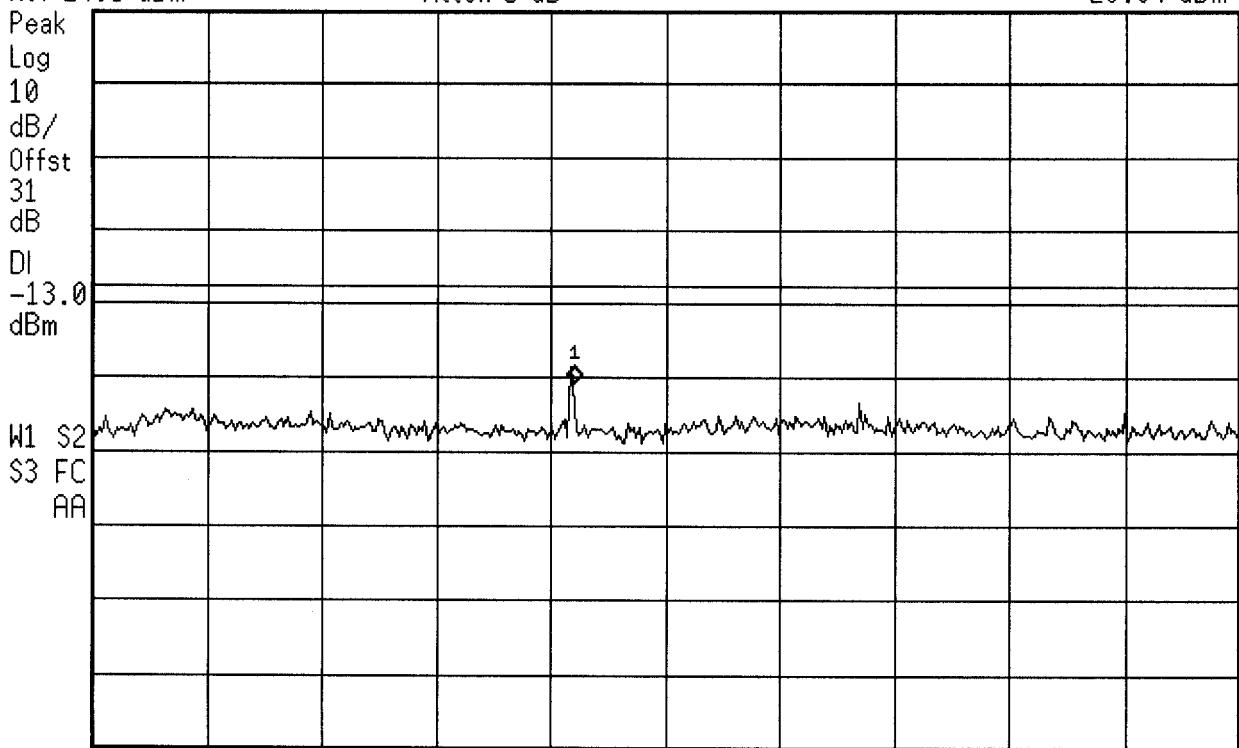
WITHUS WPE-1100 PCS CDMA COND SPURS CH 600

Ref 24.5 dBm

#Atten 5 dB

Mkr1 5.650 GHz

-26.04 dBm



Start 2.5 GHz
Res BW 3 MHz

VBW 3 MHz

Stop 10 GHz
Sweep 18.75 ms

hp

11:29:34 Feb 7, 2002

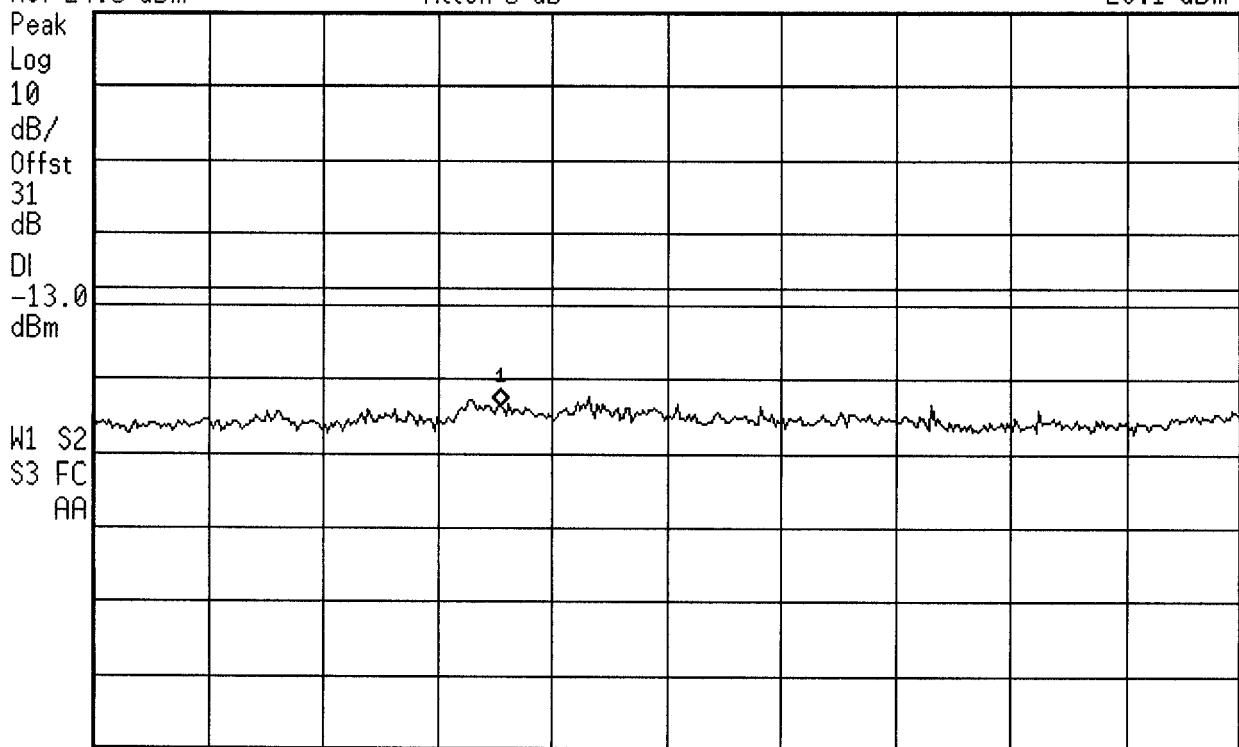
WITHUS WPE-1100 PCS CDMA COND SPURS CH 600

Ref 24.5 dBm

#Atten 5 dB

Mkr1 13.55 GHz

-29.1 dBm

Start 10 GHz
Res BW 3 MHz

VBW 3 MHz

Stop 20 GHz
Sweep 100 ms

hp

11:31:04 Feb 7, 2002

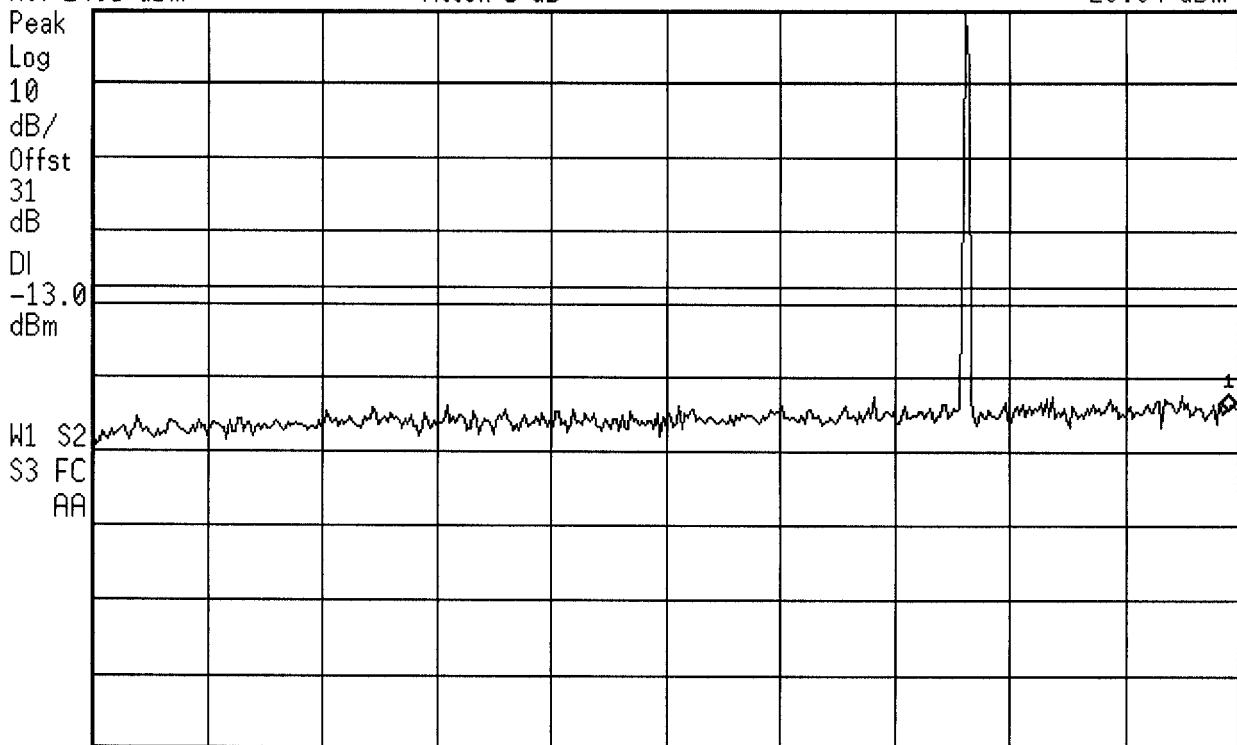
WITHUS WPE-1100 PCS CDMA COND SPURS CH 1175

Ref 24.5 dBm

#Atten 5 dB

Mkr1 2.475 GHz

-29.84 dBm

Start 10 MHz
Res BW 3 MHz

VBW 3 MHz

Stop 2.5 GHz
Sweep 5 ms

hp 11:35:55 Feb 7, 2002

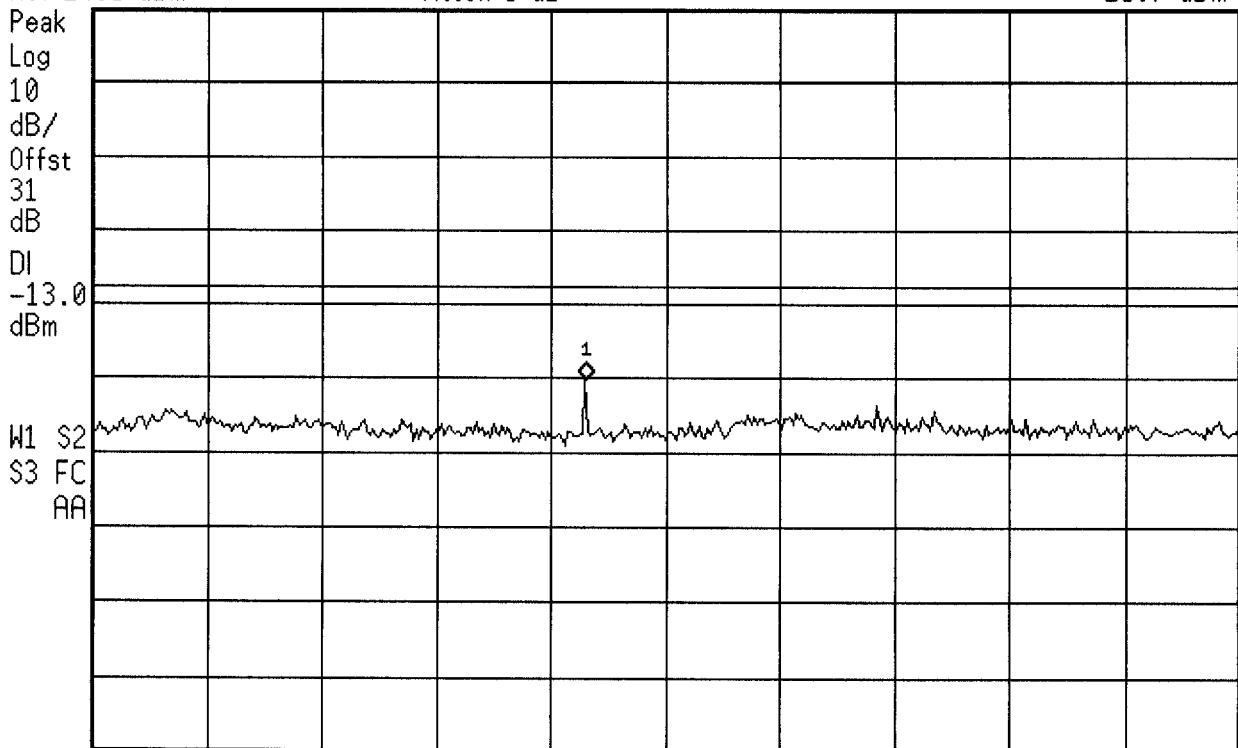
WITHUS WPE-1100 PCS CDMA COND SPURS CH 1175

Ref 24.5 dBm

#Atten 5 dB

Mkr1 5.725 GHz

-25.7 dBm



Start 2.5 GHz
Res BW 3 MHz

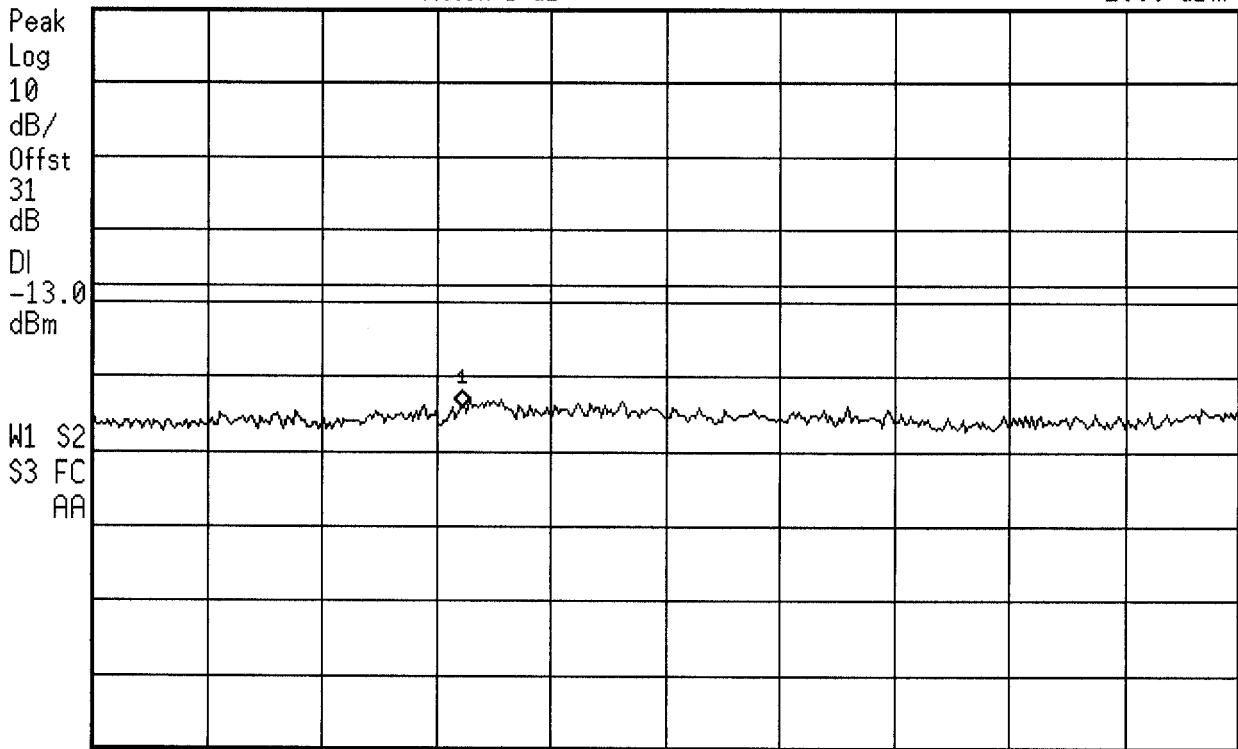
VBW 3 MHz

Stop 10 GHz
Sweep 18.75 ms

hp 11:36:20 Feb 7, 2002

WITHUS WPE-1100 PCS CDMA COND SPURS CH 1175
Ref 24.5 dBm #Atten 5 dB

Mkr1 13.23 GHz
-29.6 dBm



Start 10 GHz
Res BW 3 MHz

VBW 3 MHz

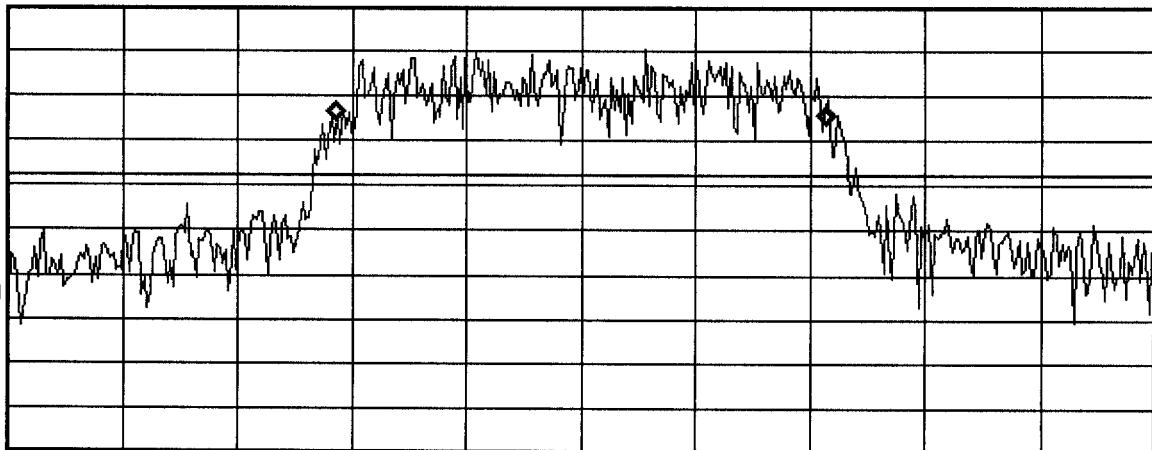
Stop 20 GHz
Sweep 100 ms

[120] 12:03:04 Feb 7, 2002

WITHIN WPE-1100 OCCUPIED BANDWIDTH

Ref 24.5 dBm #Atten 5 dB

Samp
Log
10
dB/
Offst
31
dB
DI
-13.
dBm



Center 1.88 GHz

#Res BW 30 kHz

*VBW 30 kHz

Span 3 MHz

Sweep 9.167 ms

Occupied Bandwidth Results (measuring..)

Occupied Bandwidth
1.295 MHz

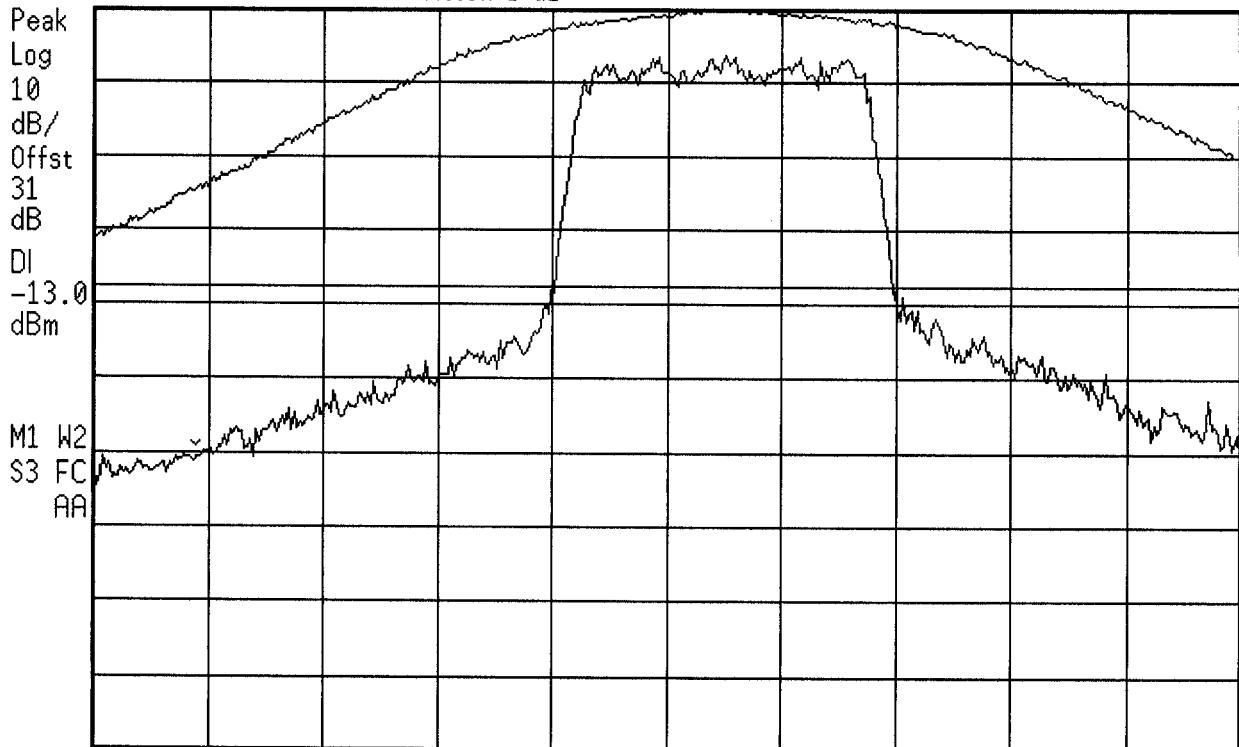
Occ BW % Pwr 99.00 %

Transmit Freq Error 159.1 Hz

hp 12:13:32 Feb 7, 2002

WITHUS WPE-1100 PCS CDMA CH 25

Ref 24.5 dBm #Atten 5 dB



Center 1.851 GHz

#Res BW 30 kHz

#VBW 30 kHz

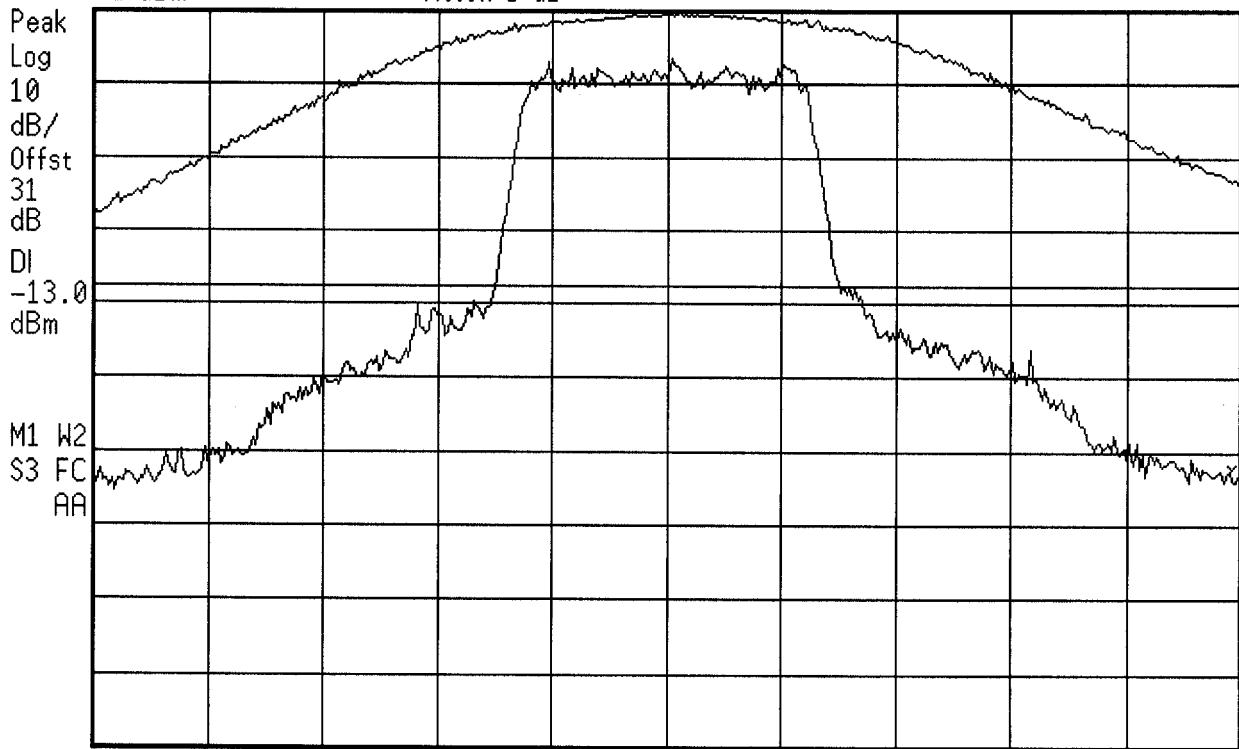
Span 5 MHz

#Sweep 2.083 s

[hp] 12:16:58 Feb 7, 2002

WITHUS WPE-1100 PCS CDMA CH 600

Ref 24.5 dBm #Atten 5 dB

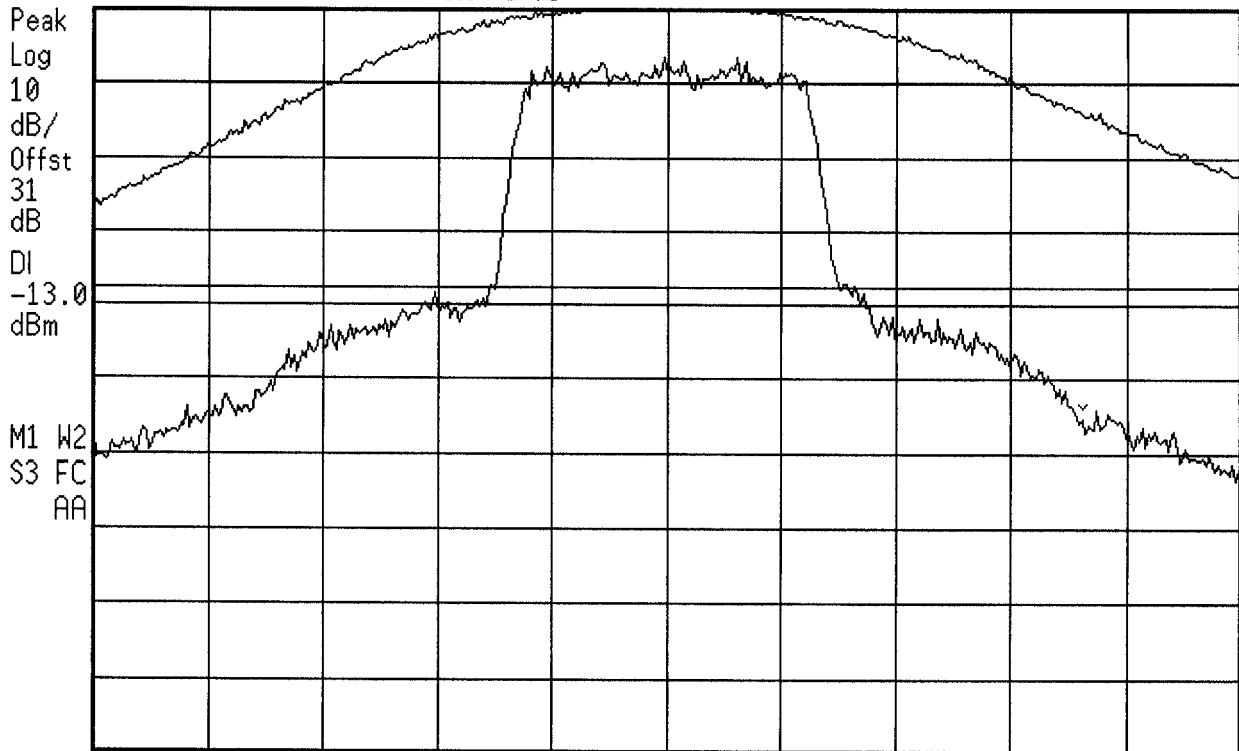


hp

12:19:10 Feb 7, 2002

WITHUS WPE-1100 PCS CDMA CH 1175

Ref 24.5 dBm #Atten 5 dB

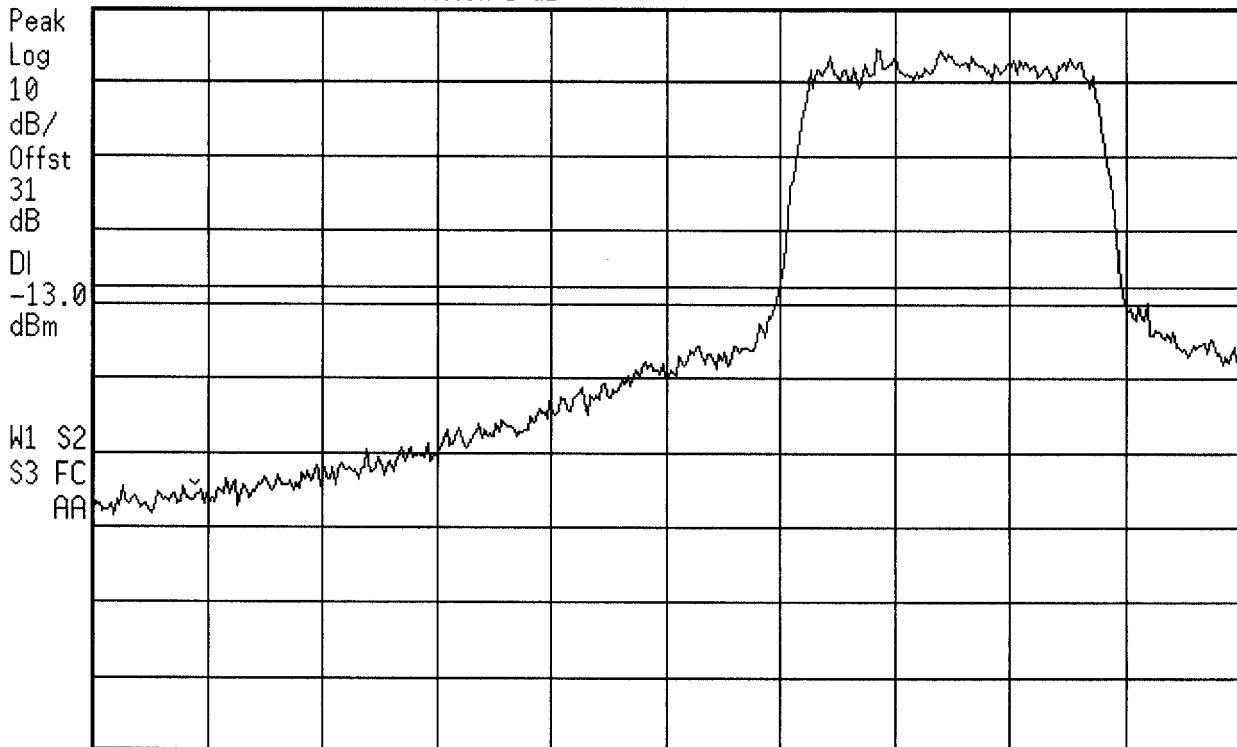


hp

11:41:21 Feb 7, 2002

WITHUS WPE-1100 BAND EDGE PCS CDMA LOW CH

Ref 24.5 dBm #Atten 5 dB

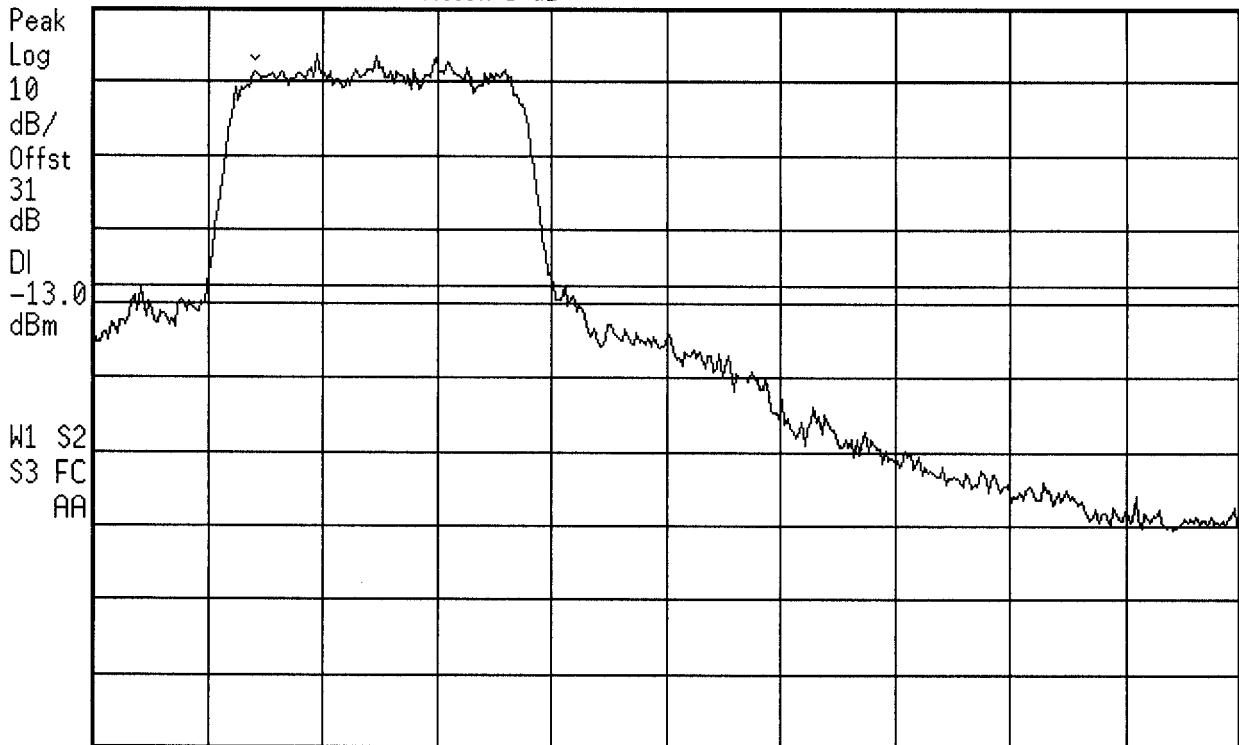


[hp]

11:57:48 Feb 7, 2002

WITHUS WPE-1100 BAND EDGE PCS CDMA HIGH CH

Ref 24.5 dBm #Atten 5 dB

Center 1.91 GHz
#Res BW 30 kHz

#VBW 30 kHz

Span 5 MHz
#Sweep 2 s

[hp] 15:43:49 Feb 7, 2002

WITHUS WPE-1100 RECEIVER SPURS

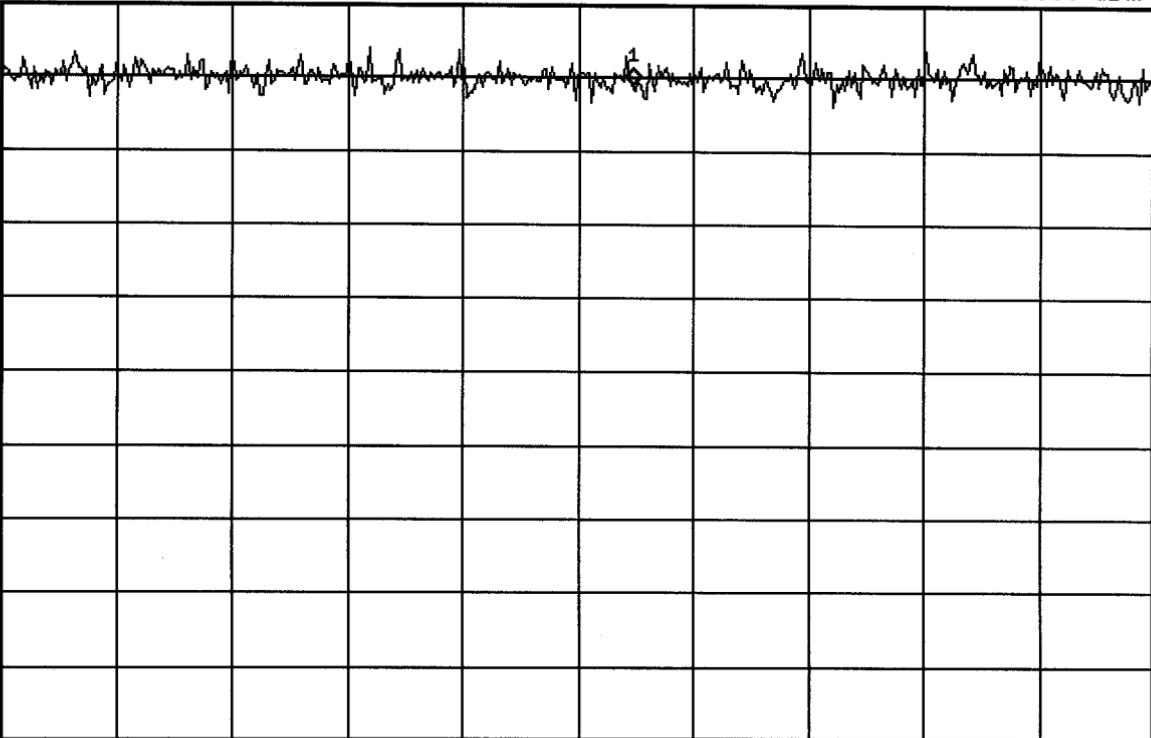
Ref -83 dBm

Atten 5 dB

Mkr1 1.96276 GHz

-93.96 dBm

Peak
Log
10
dB/



Start 1.931 GHz
#Res BW 30 kHz

*VBW 30 kHz

Stop 1.989 GHz
Sweep 161.1 ms