

MEASUREMENT AND TECHNICAL REPORT
POWERWAVE TECHNOLOGIES
2026 McGaw Avenue
Irvine, CA 92614

DATE: 04 December 2000

| | | |
|--|---|------------------|
| This Report Concerns: | Original Grant: X | Class II Change: |
| Equipment Type: | Seahawk 900, Model G3L-900-50-005 | |
| Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? | Yes: | No: X |
| | Defer until: | |
| <i>Company Name</i> agrees to notify the Commission by: | N/A | |
| of the intended date of announcement of the product so that the grant can be issued on that date. | | |
| Transition Rules Request per 15.37? | Yes: | *No: |
| <i>(*) FCC Part 2, Paragraphs, 2.1046, 2.1051, 2.1053 and Part 90, Paragraph 90.210</i> | | |
| Report Prepared by: | TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 546 3999 Fax: 858 546 0364 | |

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1 GENERAL INFORMATION

1.1 Product Description

| | | | |
|------------------------------|-------------------------------|-------------|----|
| EUT Description | Multi-channel power Amplifier | | |
| EUT Name | Seahawk 900 | | |
| Model No.: | G3L-900-50-005 | Serial No.: | -- |
| Product Options: | N/A | | |
| Configurations to be tested: | 50 Watt output | | |

Power Requirements

Voltage: 27 VDC (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: N/A

Current (Amps/phase(max)): 27 A Current (Amps/phase(nominal)): N/A

Typical Installation and/or Operating Environment

TELCOM

EUT Power Cable

Permanent OR Removable Length (in meters): _____
 Shielded OR Unshielded
 Not Applicable

EUT Interface Ports and Cables

| Interface | Shielding | | Type | Termination | Connector Type | Port Termination | Length (in meters) | Removable | Permanent |
|----------------------|-------------------------------------|--------------------------|------|-------------------------------------|--------------------------|------------------|---------------------------|--------------------------|-------------------------------------|
| | Analog | Digital | | | | | | | |
| RF IN/OUT / DC POWER | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | METALIZED D-SUB | RF CONNECTIONS / DC POWER | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

1.1 Product Description (continued)

EUT Operating Modes to be Tested

1. Rf applied to reach 50 Watt output

EUT System Components

| Description | Model # | Serial # | FCC ID # |
|------------------------|------------|----------|----------|
| Power amplifier module | G3L-900-50 | | |

Support Equipment

| Description | Model # | Serial # | FCC ID # |
|--------------------------|---------|------------|----------|
| HP SIGNAL GENERATOR | E4436B | US39260103 | |
| HP POWER METER | E4419B | GB40201926 | |
| RF CABLES AND CONNECTORS | | | |

Oscillator Frequencies

| Frequency | Derived Frequency | Component # / Location | Description of Use |
|-----------|-------------------|------------------------|--------------------|
| 15 MHz | 15 MHz | Y1 MULTIFUNCTION BRD | CLOCK |

Power Line Filters

| Manufacturer | Model # | Location in EUT |
|------------------|----------------|--------------------|
| Spectrum Control | 52-978-107-FA3 | Multifunction Brd. |
| Panasonic | ELK-E103FA | Multifunction Brd. |

Critical EMI Components (Capacitors, ferrites, etc.)

| Description | Manufacturer | Part # or Value | Qty | Component # / Location |
|-----------------|--------------|-----------------|-----|------------------------------|
| Ferrite | Fair-Rite | 2743021447 | 10 | FB1-FB10 / Multifunction brd |
| Bandpass Filter | Panasonic | ELK-E103FA | 1 | FL17 / Multifunction Brd. |

EMC Critical Detail

Inductive filters, capacitive filters, noise filters

1 GENERAL INFORMATION (continued)

1.2 Related Submittal/Grant

None

1.3 Tested System Details

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system are:

None

1.4 Test Methodology

Purpose of Test: To demonstrate compliance with the ANSI C63.4 setup.

Test Performed: X 1. Conducted Emissions, FCC Part 2, Paragraphs 2.1051 and Part 90, Paragraph 90.210
2. Radiated Emissions EN55022: 1992 Class B limit, 30 - 1,000 MHz, 10 meters
X 3. Radiated Emission per FCC Part 2, Paragraph 2.153
4. Engineering evaluations
5. Frequency Stability, Part 2, Paragraph 2.995, and Part 87, Paragraph 87.133
X RF Output Power, Part 2, Paragraph 1.1046, Part 90, Paragraph 90.210

Both Conducted and radiated testing were performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8 - M1983. Radiated testing was performed at an antenna-to-EUT distance of 3 meters (1 - 10 GHz).

1.5 Test Facility

The open area test site and conducted measurement data were tested by:

TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 619 546 3999
Fax: 619 546 0364

The Test Site Data and performance comply with ANSI 63.4 and are registered with the FCC, 7435 Oakland Mills Rd, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

1.6 Part 2 Requirements

Equipment Specifications

| Frequency range in MHz | Rated RF power output in watts | Frequency tolerance %, Hz, ppm | Emission designator (see 47 CFR §2.201 and §2.202) | Microprocessor model number |
|-------------------------------|---------------------------------------|---------------------------------------|---|------------------------------------|
| 935 - 940 | 50 W | | GXW | |

DC voltages applied to and **dc currents** into the several elements of the final radio frequency amplifying device for normal operation over the power range.

27 Vdc / 27 A

For equipment employing digital modulation techniques... N/A

If equipment is an AM broadcast stereophonic exciter-generator: N/A

2. SYSTEM TEST CONFIGURATION

2.1 Justification

The Seahawk was initially tested for FCC emission in the following configuration:

See Block Diagram.

2.2 EUT Exercise Software

None

2.3 Special Accessories

None

2.4 Modification

None

2.5 Configuration of Tested System

See Block Diagram.

3 RADIATED EMISSION EQUIPMENT/DATA

The following data lists the significant emission frequencies, measured levels, correction factor (which includes cable and antenna corrections), the corrected reading, and the limit.

See following page(s).

See test setup photos for radiated emissions test setup.

Radiated Electromagnetic Emissions



Test Report #: S0303 Run 01 Test Area: Site 3 Roof
 Test Method: Spurious Emissions 2.1053 Test Date: 14-Sep-2088
 EUT Model #: G31-900-50-005 EUT Power: 27 Vdc
 EUT Serial #: C0000058N9
 Manufacturer: Powerwave
 EUT Description: GSM800 Amplifier

Temperature: 27 °C
 Relative Humidity: 45 %
 Air Pressure: 100.1 kPa
 Page: 1 of 3

| Level Key | |
|----------------|------------------|
| Pk - Peak | Nb - Narrow Band |
| Qp - QuasiPeak | Bb - Broad Band |
| Av - Average | |

Notes: _____

| FREQ | LEVEL | CABLE / ANT / PREAMP | FINAL | POL / HGT / AZ | DELTA1 (dB) | DELTA2 (dB) |
|-----------------------------------|---------|----------------------|----------|----------------|-------------|-------------|
| (MHz) | (dBuV) | (dB) (dB/m) (dB) | (dBuV/m) | (m) (DEG) | FCC Part 24 | N/A |
| Fundamental Measurements | | | | | | |
| 935.00 | 55.1 Pk | 2.5 / 23.7 / 0.0 | 81.3 | V / 1.0 / 0.0 | -0.9 | N/A |
| 935.00 | 54.9 Pk | 2.5 / 23.7 / 0.0 | 81.1 | H / 1.0 / 0.0 | -1.1 | N/A |
| 937.50 | 56.1 Pk | 2.5 / 23.8 / 0.0 | 82.4 | H / 1.0 / 0.0 | 0.2 * | N/A |
| 937.50 | 56.9 Pk | 2.5 / 23.8 / 0.0 | 83.2 | V / 1.0 / 0.0 | 1.0 * | N/A |
| 940.00 | 56.6 Pk | 2.5 / 23.8 / 0.0 | 82.9 | V / 1.0 / 0.0 | 0.7 * | N/A |
| 940.00 | 50.0 Pk | 2.5 / 23.8 / 0.0 | 76.3 | H / 1.0 / 0.0 | -5.9 | N/A |
| High Channel | | | | | | |
| 1880.00 | 79.0 Pk | 4.2 / 28.5 / 40.5 | 71.1 | V / 1.0 / 0.0 | -11.1 | N/A |
| 2820.00 | 62.0 Pk | 5.5 / 31.0 / 40.3 | 58.2 | V / 1.0 / 0.0 | -24.0 | N/A |
| 3760.00 | 56.1 Pk | 6.9 / 33.6 / 41.0 | 55.6 | V / 1.0 / 0.0 | -26.6 | N/A |
| 4700.00 | 59.4 Pk | 7.3 / 34.3 / 41.7 | 59.3 | V / 1.0 / 0.0 | -22.9 | N/A |
| ambient measurement below | | | | | | |
| 5640.00 | 44.8 Pk | 7.5 / 36.3 / 39.2 | 49.5 | V / 1.0 / 0.0 | -32.7 | N/A |
| 6580.00 | 47.7 Pk | 8.1 / 36.7 / 38.4 | 54.0 | V / 1.0 / 0.0 | -28.2 | N/A |
| 7520.00 | 46.8 Pk | 8.7 / 38.0 / 38.1 | 55.4 | V / 1.0 / 0.0 | -26.8 | N/A |
| 8460.00 | 47.3 Pk | 9.8 / 38.3 / 38.6 | 56.8 | V / 1.0 / 0.0 | -25.4 | N/A |
| 9400.00 | 47.3 Pk | 10.3 / 39.4 / 39.1 | 57.9 | V / 1.0 / 0.0 | -24.3 | N/A |
| Polarity Change | | | | | | |
| 1880.00 | 77.6 Pk | 4.2 / 28.5 / 40.5 | 69.7 | H / 1.0 / 0.0 | -12.5 | N/A |
| 2820.00 | 63.1 Pk | 5.5 / 31.0 / 40.3 | 59.3 | H / 1.0 / 0.0 | -22.9 | N/A |
| 3760.00 | 55.6 Pk | 6.9 / 33.6 / 41.0 | 55.1 | H / 1.0 / 0.0 | -27.1 | N/A |
| 4700.00 | 55.7 Pk | 7.3 / 34.3 / 41.7 | 55.6 | H / 1.0 / 0.0 | -26.6 | N/A |
| ambient measurements below | | | | | | |
| 5640.00 | 44.3 Pk | 7.5 / 36.3 / 39.2 | 49.0 | H / 1.0 / 0.0 | -33.2 | N/A |
| 6580.00 | 47.6 Pk | 8.1 / 36.7 / 38.4 | 53.9 | H / 1.0 / 0.0 | -28.3 | N/A |
| 7520.00 | 46.3 Pk | 8.7 / 38.0 / 38.1 | 54.9 | H / 1.0 / 0.0 | -27.3 | N/A |
| 8460.00 | 46.9 Pk | 9.8 / 38.3 / 38.6 | 56.4 | H / 1.0 / 0.0 | -25.8 | N/A |
| 9400.00 | 47.4 Pk | 10.3 / 39.4 / 39.1 | 58.0 | H / 1.0 / 0.0 | -24.2 | N/A |

Tested by: Jim Owen
 Printed


 Signature

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Radiated Electromagnetic Emissions



PRODUCT SERVICE

Test Report #: S0303 Run 01 Test Area: Site 3 Roof
 Test Method: Spurious Emissions 2.1053 Test Date: 14-Sep-2088
 EUT Model #: G31-900-50-005 EUT Power: 27 Vdc
 EUT Serial #: C0000058N9

Temperature: 27 °C
 Relative Humidity: 45 %
 Air Pressure: 100.1 kPa

Page: 2 of 3

Manufacturer: Powerwave
 EUT Description: GSM800 Amplifier

Notes: _____

| Level Key | |
|----------------|------------------|
| Pk – Peak | Nb – Narrow Band |
| Qp – QuasiPeak | Bb – Broad Band |
| Av - Average | |

| FREQ (MHz) | LEVEL (dBuV) | CABLE / ANT / PREAMP (dB) (dB\m) (dB) | FINAL (dBuV/m) | POL / HGT / AZ (m) (DEG) | DELTA1 (dB) FCC Part 24 | DELTA2 (dB) N/A |
|--|--------------|---------------------------------------|----------------|--------------------------|-------------------------|-----------------|
| Mid Channel | | | | | | |
| 1875.00 | 76.0 Pk | 4.2 / 28.4 / 40.5 | 68.1 | H / 1.0 / 0.0 | -14.1 | N/A |
| 2812.50 | 64.0 Pk | 5.5 / 31.0 / 40.3 | 60.2 | H / 1.0 / 0.0 | -22.0 | N/A |
| 3750.00 | 56.0 Pk | 6.9 / 33.5 / 41.0 | 55.5 | H / 1.0 / 0.0 | -26.7 | N/A |
| 4687.50 | 61.8 Pk | 7.3 / 34.2 / 41.7 | 61.7 | H / 1.0 / 0.0 | -20.5 | N/A |
| no emissions detected above 5th harmonic | | | | | | |
| 1875.00 | 77.3 Pk | 4.2 / 28.4 / 40.5 | 69.4 | V / 1.0 / 0.0 | -12.8 | N/A |
| 2812.50 | 62.7 Pk | 5.5 / 31.0 / 40.3 | 58.9 | V / 1.0 / 0.0 | -23.3 | N/A |
| 3750.00 | 56.9 Pk | 6.9 / 33.5 / 41.0 | 56.4 | V / 1.0 / 0.0 | -25.8 | N/A |
| 4687.50 | 60.3 Pk | 7.3 / 34.2 / 41.7 | 60.2 | V / 1.0 / 0.0 | -22.0 | N/A |
| no emissions detected above 5th harmonic | | | | | | |
| Low Channel | | | | | | |
| 1870.00 | 78.2 Pk | 4.1 / 28.4 / 40.5 | 70.3 | V / 1.0 / 0.0 | -11.9 | N/A |
| 2805.00 | 62.5 Pk | 5.5 / 31.0 / 40.3 | 58.7 | V / 1.0 / 0.0 | -23.5 | N/A |
| 3740.00 | 58.5 Pk | 6.9 / 33.5 / 40.9 | 58.0 | V / 1.0 / 0.0 | -24.2 | N/A |
| 4675.00 | 59.8 Pk | 7.3 / 34.2 / 41.7 | 59.6 | V / 1.0 / 0.0 | -22.6 | N/A |
| no emissions detected above 5th harmonic | | | | | | |
| 1870.00 | 76.3 Pk | 4.1 / 28.4 / 40.5 | 68.4 | H / 1.0 / 0.0 | -13.8 | N/A |
| 2805.00 | 63.3 Pk | 5.5 / 31.0 / 40.3 | 59.5 | H / 1.0 / 0.0 | -22.7 | N/A |
| 3740.00 | 55.1 Pk | 6.9 / 33.5 / 40.9 | 54.6 | H / 1.0 / 0.0 | -27.6 | N/A |
| 4675.00 | 62.5 Pk | 7.3 / 34.2 / 41.7 | 62.3 | H / 1.0 / 0.0 | -19.9 | N/A |

Tested by: Jim Owen Printed _____
 _____ Signature

11

Emissions Test Conditions: RADIATED EMISSIONS, FCC Part 2, Paragraph 2.1053

The *RADIATED EMISSIONS* measurements were performed at the following test location :

- Test not applicable

■ - Roof (Small Open Area Test Site), San Diego

Testing was performed at a test distance of:

- 1 meters

■ - 3 meters

- 10 meters

Test Equipment Used :

| Model No. | Prop. No. | Description | Manufacturer | Serial No. | Cal Date |
|----------------------|-----------|---------------------------------------|-----------------|------------|----------|
| 3115 | 453 | Antenna, Double Ridge Guide | EMCO | 9412-4363 | 10/01 |
| AMF-5D-010180-35-10P | 719 | Pre-amplifier (38 dB gain, 1 - 18 GHz | EMCO | 2495 | * |
| 8566B | 720 | Spectrum Analyzer | Hewlett Packard | 211500842 | 03/01 |
| 8566B | 721 | Spectrum Analyzer Display | Hewlett Packard | 2112A02185 | 03/01 |

Remarks: (*) Verified

Field Strength Calculation

If a preamplifier was used during the Radiated Emission Testing, it is required that the amplifier gain must be subtracted from the Spectrum Analyzer (Meter) Reading. In addition, a correction factor for the antenna , cable used and a distance factor, if any, must be applied to the Meter Reading before a true field strength reading can be obtained. In the automatic measurement, these considerations are automatically presented as a part of the print out. In the case of manual measurements and for greater efficiency and convenience, instead of using these correlation factors for each meter reading, the specification limit was modified to reflect these correlation factors at each frequency value so that the meter readings can be compared directly to the modified specification limit. This modified specification limit is referred to as the "Corrected Meter Reading Limit" or simply the CMRL, which is the actual field strength present at the antenna. The quantity can be derived in the following manner:

$$\text{Corrected Meter Reading Limit (CMRL)} = \text{SAR} + \text{AF} + \text{CL} - \text{AG} - \text{DC}$$

Where, SAR = Spectrum Analyzer Reading
AF = Antenna Factor
CL = Cable Loss
AG = Amplifier Gain (if any)
DC = Distance Correction (if any)

Assume the following situation: A meter reading of 29.4 dBuV was obtained from a Class A computing device measured at 83 MHz. Assume an antenna factor of 9.2 dB, a cable loss of 1.4 dB and amplifier gain of 20.0 dB at 83 MHz. The final field strength would be determined as follows:

$$\text{CMRL} = 29.4 \text{ dBuV} + 9.2 \text{ dB} - 1.4 \text{ dB} - 20 \text{ dB/M} - 0.0 \text{ dB}$$

$$\text{CMRL} = 20.0 \text{ dBuV/M}$$

This result is well below the FCC and CSA Class A limit of 29.5 dbuV/m at 83 MHz.

For the manual mode of measurement, a table of corrected meter reading limit was used to permit immediate comparison of the meter reading to determine if the measure emission amplitude exceeded the specification limit at that specific frequency.

4 CONDUCTED EMISSION EQUIPMENT/DATA

See following page(s).

Emissions Test Conditions: CONDUCTED EMISSIONS, FCC Part 2, 2.1046 and 2.1051 and Part 90, Paragraph 90.210

The *RADIATED EMISSIONS* measurements were performed at the following test location :

- Test not applicable

■ - SR-3, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment Used :

- Signal Generator, Agilent, Model E4433B, Cal: 04/13/01 (1)
- Signal Generator, Agilent, Model E4433B, Cal: 08/02(2)
- Signal Generator, Agilent, Model E4433B, Cal: 08/02(3)
- Circulator, Model, 1-3DF-2354, S/N 00177, verified internally (1)
- Circulator, Model, 1-3DF-2354, S/N 00222, verified internally (2)
- Circulator, Model, 1-3DF-2354, S/N 00260, verified internally (3)
- Attenuator (variable), Arra, Model 2-8354-20D, verified internally
- Spectrum Analyzer, Model HP8594E, P/N 430, Cal: ??
- Power Meter, HPE4419B, Cal: 12/11/00
- Power Sensor, HP8481A; Cal: 07/28/01
- Directional Coupler, Narda, 3022, verified internally
- 30 dB Attenuator, JFW, 50FH-030-100, verified internally
- 20 dB Attenuator, BPF, FSY 80212, DC0030, S/N 0003, verified

Remarks: _____

| Channel | Frequency (MHz) | Peak Power Level | |
|---------|-----------------|------------------|---------|
| Low | 935.0 | 49.35 | 48.417w |
| Mid | 937.5 | 48.71 | 47.424w |
| High | 940.0 | 49.35 | 47.643w |

Equipment Used:

| <u>Model Nr.</u> | <u>Property Nr.</u> | <u>Cal. Due</u> |
|------------------|---------------------|-----------------|
| HP 8900D | PN: 802 | 03/31/01 |
| HP 84811A | PN: 801 | 03/31/01 |
| HP 8594E | PN: 430 | 05/10/01 |

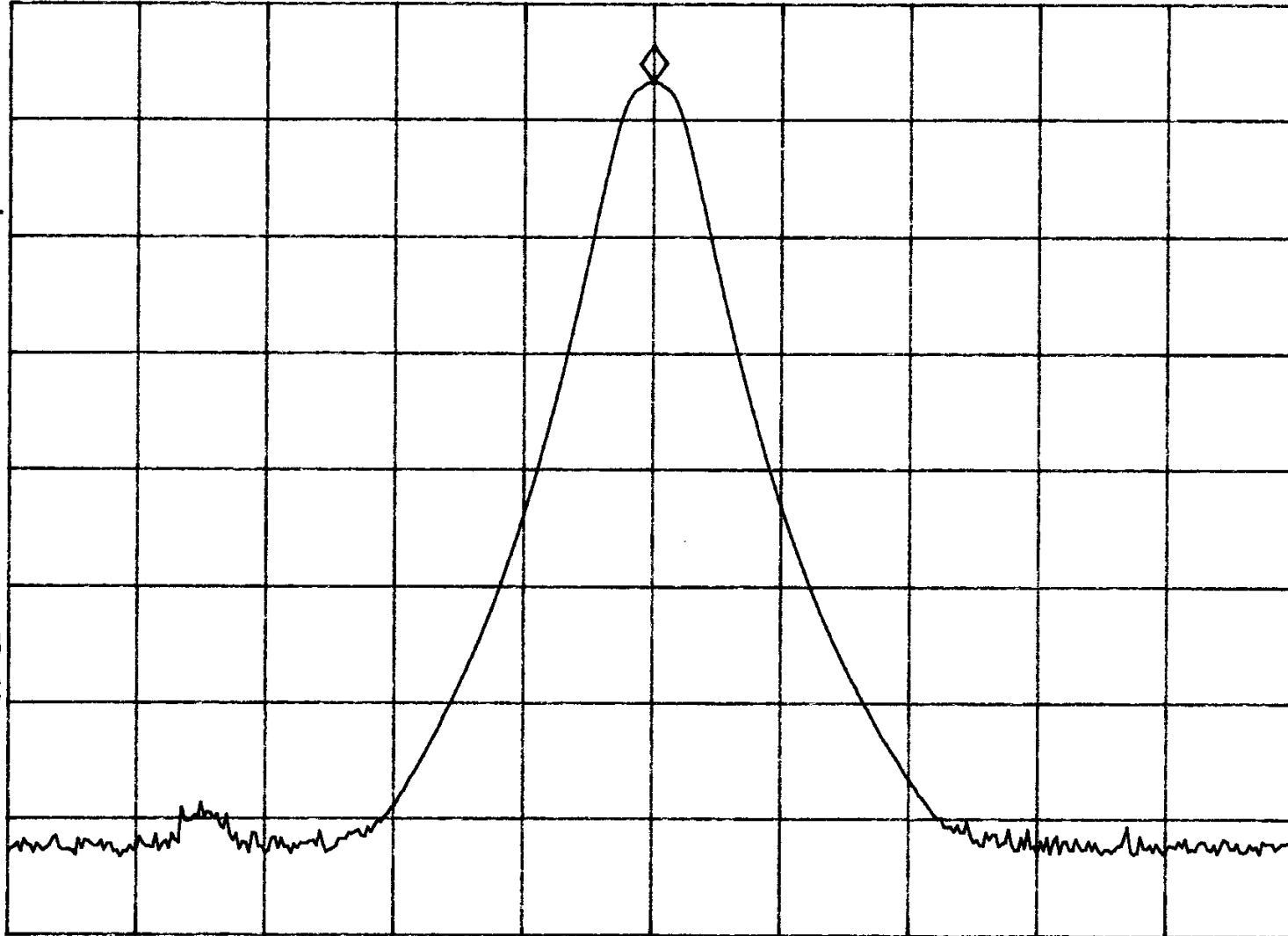
15:08:34 NOV 28, 2000
~~17~~

MKR 937.50 MHz
47.424 W

REF 223.9 W AT 10 dB

PEAK
LOG
10
dB/
OFFST
53.5
dB

VA SB
SC FC



CENTER 937.50 MHz
#RES BW 300 kHz

VBW 100 kHz

SPAN 10.00 MHz
SWP 20.0 msec

16a

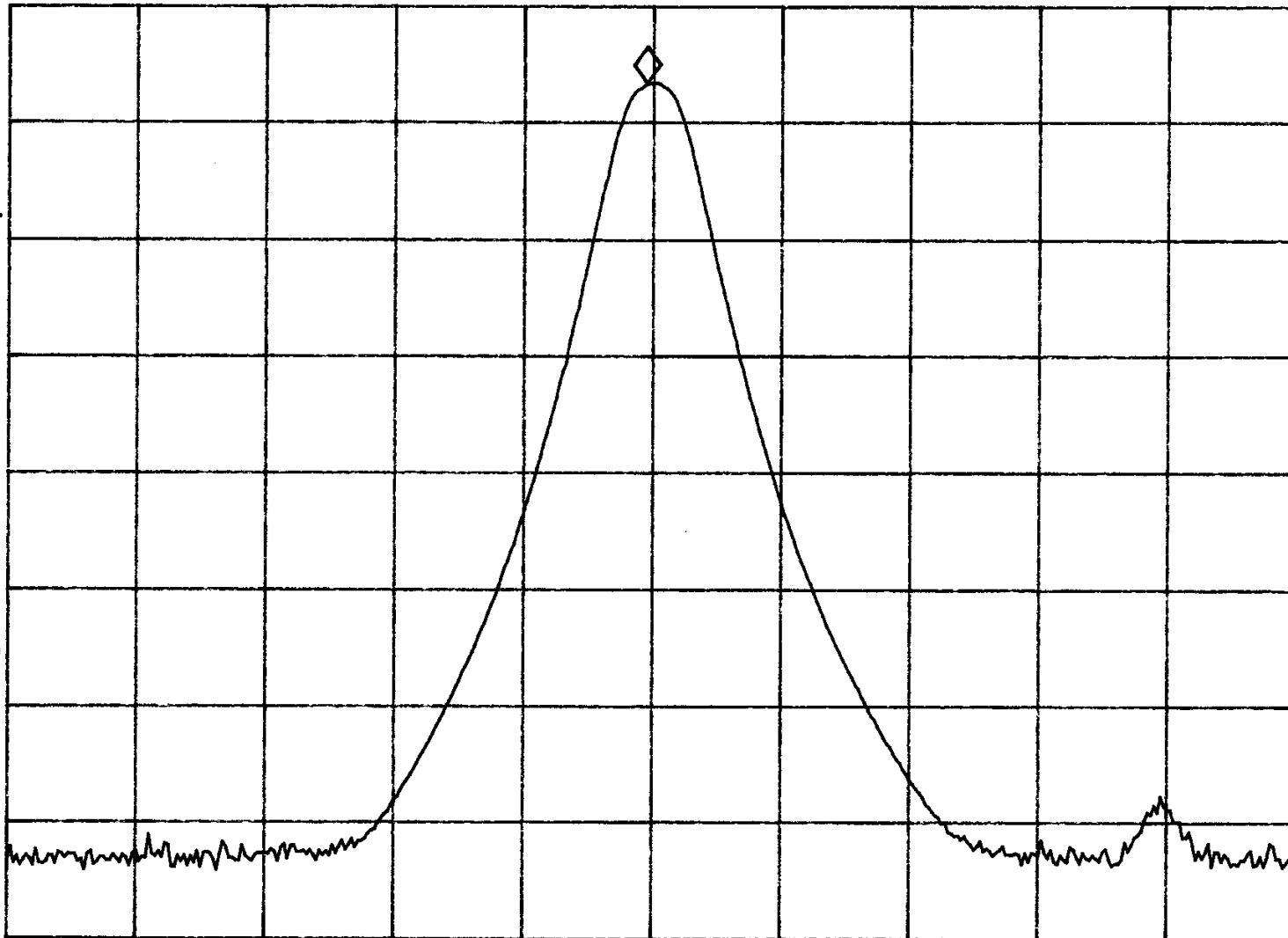
14: 52: 59 NOV 28, 2000
~~17~~

MKR 929.95 MHz
48.417 W

REF 223.9 W AT 10 dB

PEAK
LOG
10
dB/
OFFST
53.5
dB

VA SB
SC FC



CENTER 930.00 MHz
#RES BW 300 kHz

VBW 100 kHz

SPAN 10.00 MHz
SWP 20.0 msec

16b

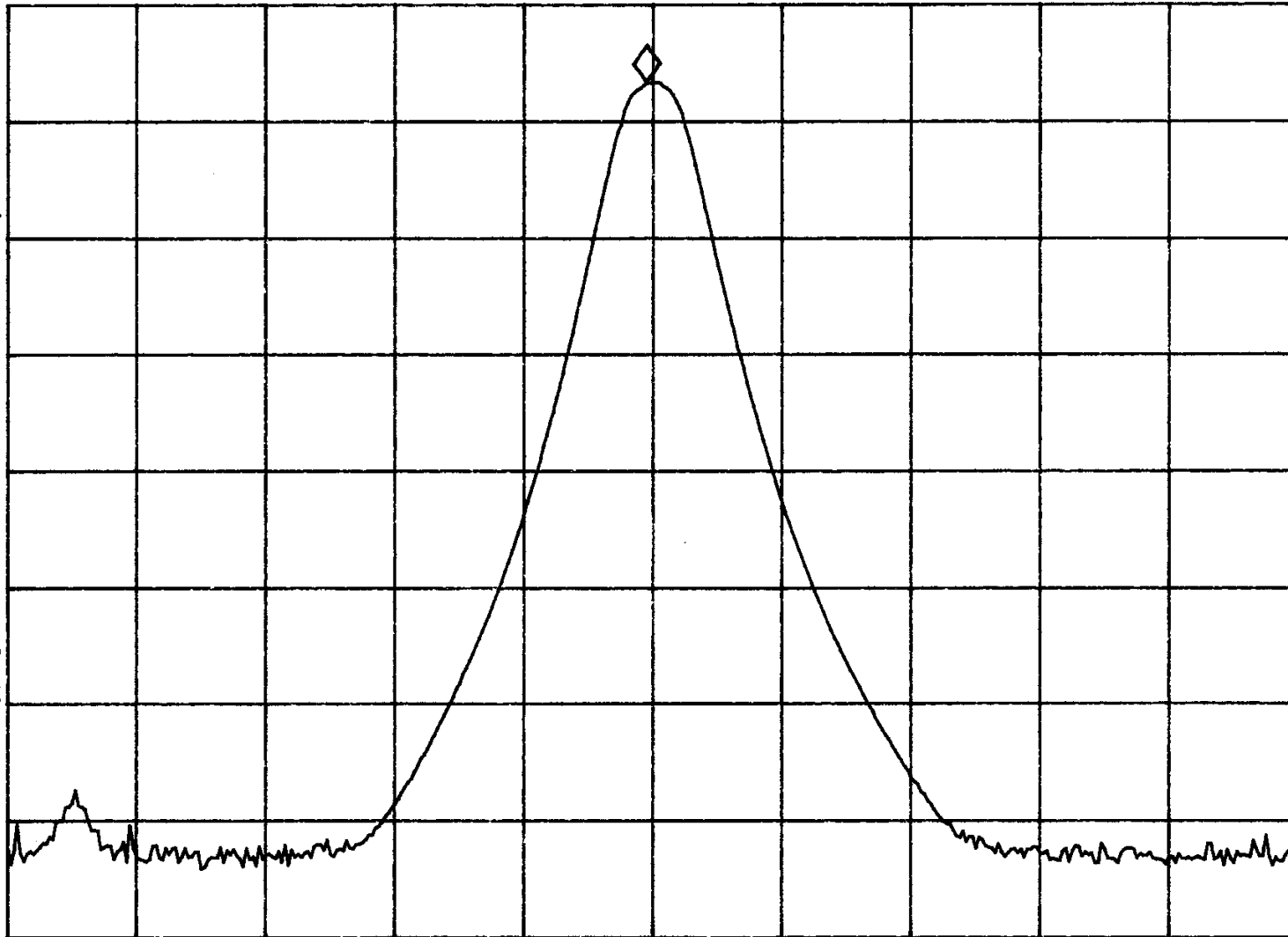
14: 49: 29 NOV 28, 2000
hp

MKR 938.45 MHz
47.973 W

REF 223.9 W AT 10 dB

PEAK
LOG
10
dB/
OFFST
53.5
dB

VA SB
SC FC



CENTER 938.50 MHz
#RES BW 300 KHz

VBW 100 KHz

SPAN 10.00 MHz
SWP 20.0 msec

16c

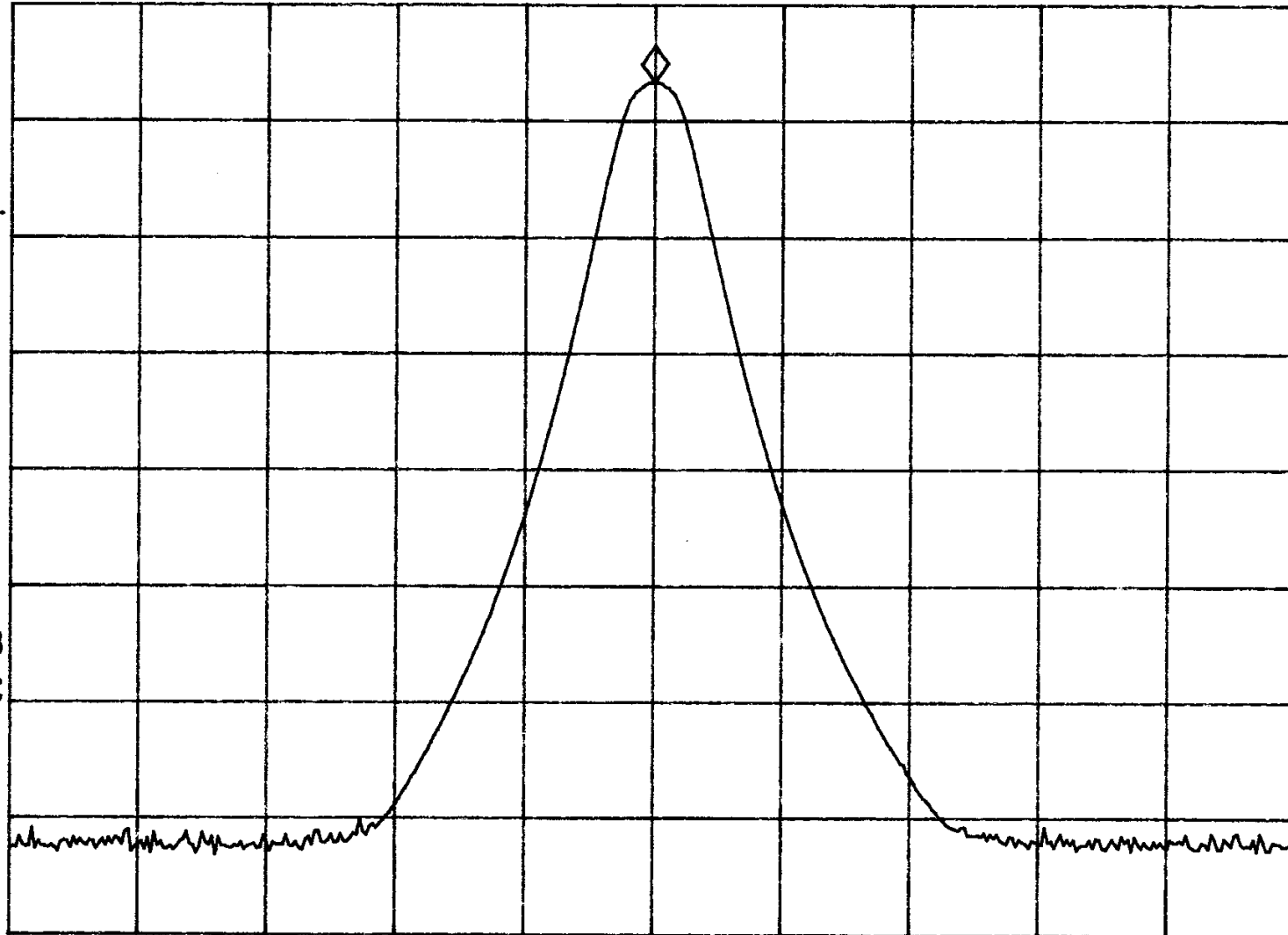
15:05:23 NOV 28, 2000
~~17~~

MKR 940.00 MHz
47.643 W

REF 223.9 W AT 10 dB

PEAK
LOG
10
dB/
OFFST
53.5
dB

VA SB
SC FC



CENTER 940.00 MHz
#RES BW 300 kHz

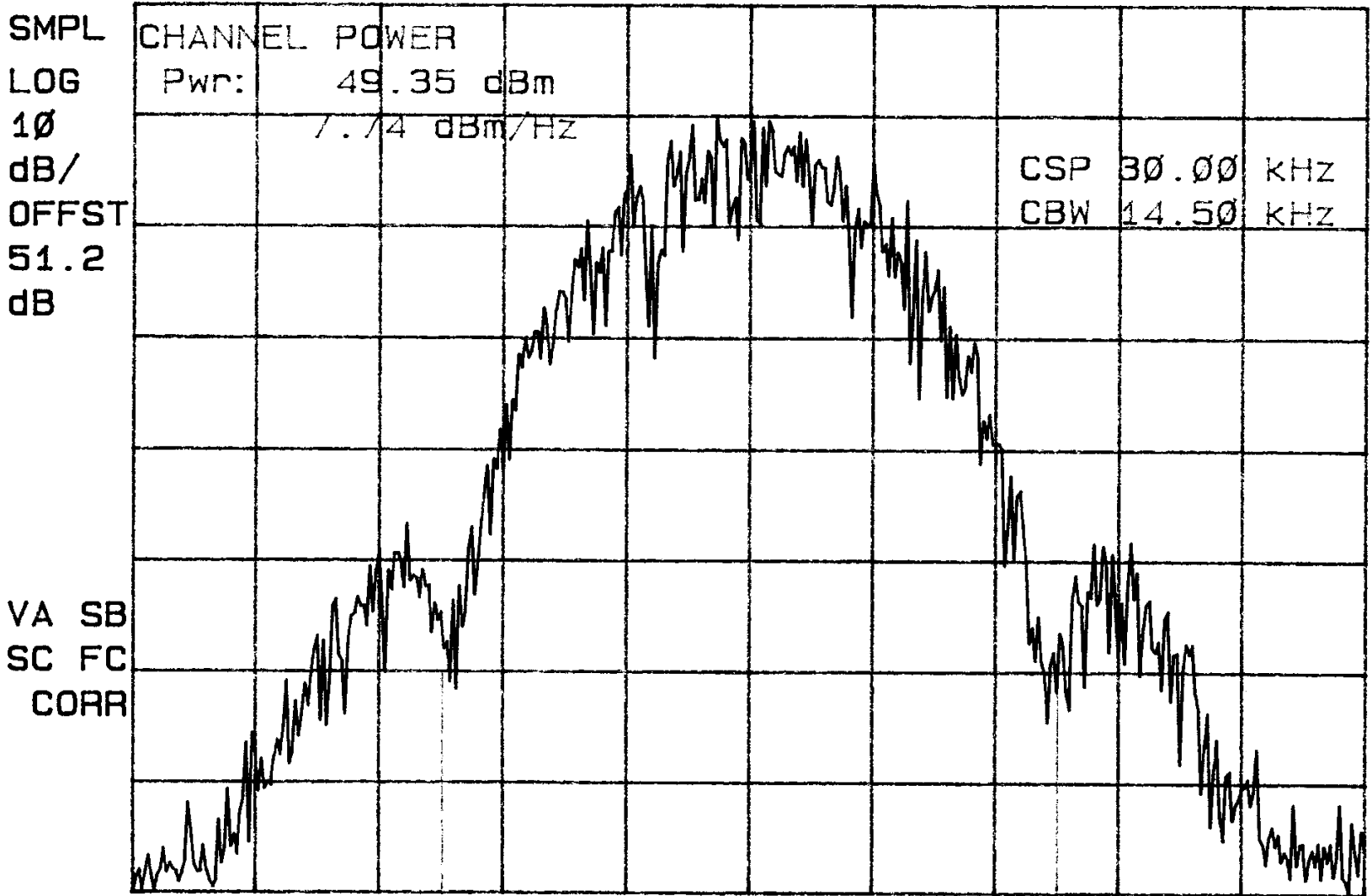
VBW 100 kHz

SPAN 10.00 MHz
SWP 20.0 msec

16d

15:07:38 SEP 13, 2000
hp

REF 51.6 dBm AT 20 dB



CENTER 937.50000 MHz
#RES BW 300 Hz

#VBW 3 KHZ

SPAN 29.00 KHZ
SWP 1.00 sec

17

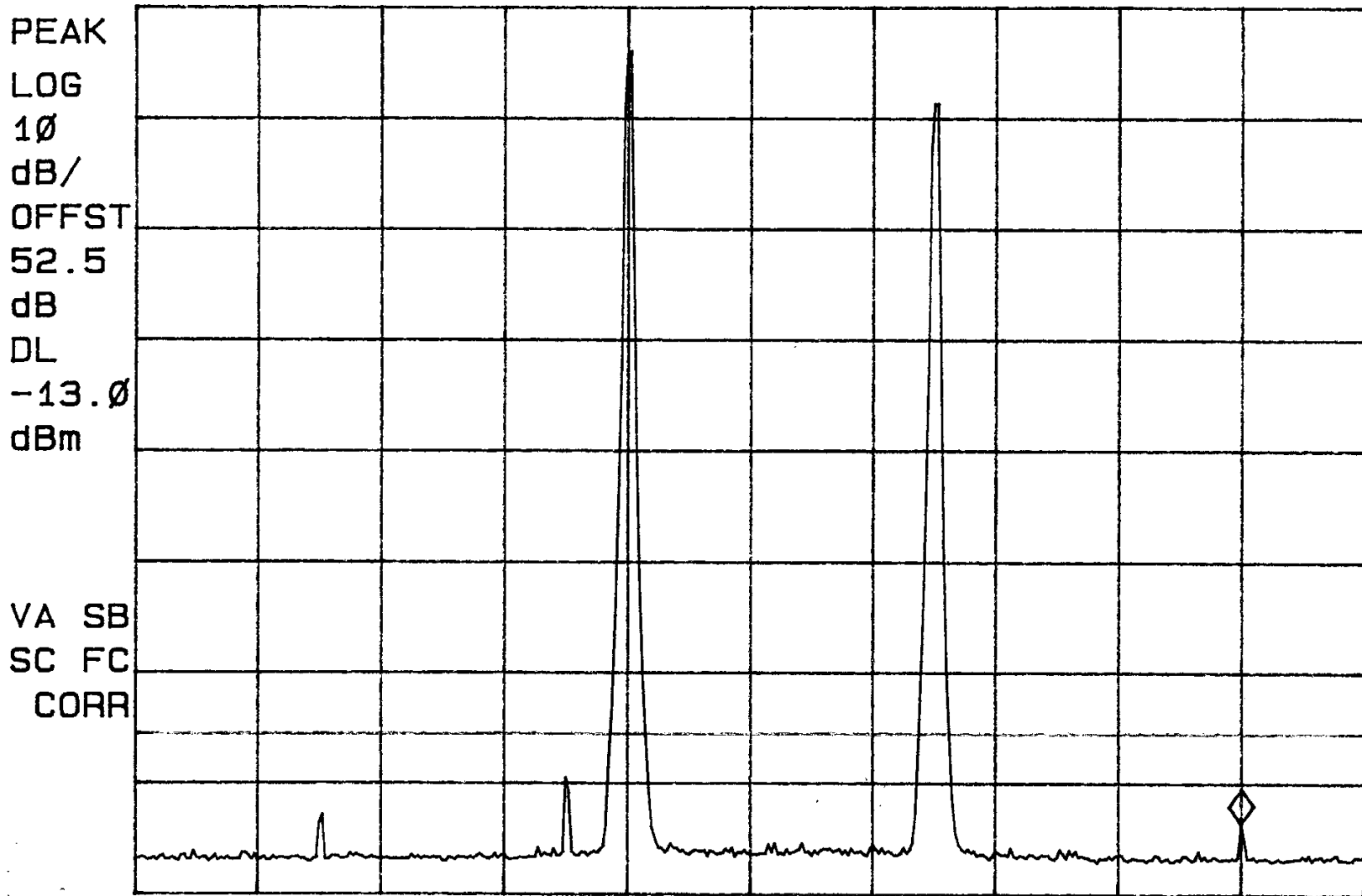
POWERWAVE
DATE: 9/12/00

TEST: Intermodulation

09: 37: 22 SEP 12, 2000
HP

MKR 945.10 MHz
-21.10 dBm

REF 52.5 dBm AT 10 dB



CENTER 937.10 MHz
#RES BW 30 KHZ

#VBW 100 KHZ

SPAN 20.00 MHz
SWP 66.7 msec

18

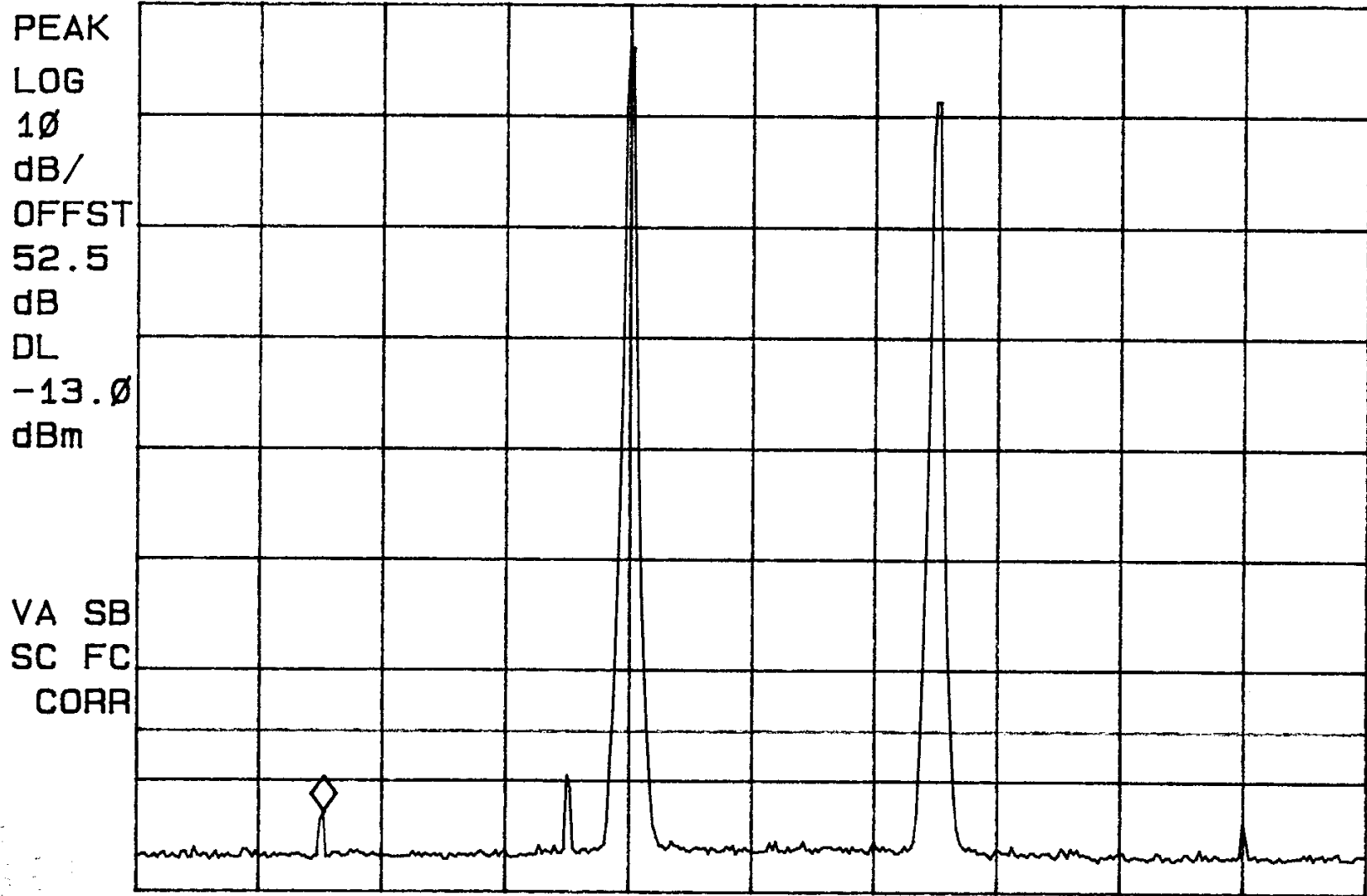
POWERWAVE
DATE: 9/12/00

TEST: Intermodulation

09:34:30 SEP 12, 2000

MKR 930.15 MHz
-20.31 dBm

REF 52.5 dBm AT 10 dB



CENTER 937.10 MHz
#RES BW 30 KHZ

#VBW 100 KHZ

SPAN 20.00 MHz
SWP 66.7 msec

19

09:30:46 SEP 12, 2000

MKR 934.10 MHz
-16.93 dBm

REF 52.5 dBm AT 10 dB

PEAK
LOG
10
dB/
OFFST
52.5
dB
DL
-13.0
dBm

VA SB
SC FC
CORR



CENTER 937.10 MHz
#RES BW 30 KHz

#VBW 100 KHz

SPAN 20.00 MHz
SWP 66.7 msec

20

POWERWAVE
DATE: 9/12/00

TEST: Conducted Spurious

SPEC.: FCC Part 2, Para. 2.1051; Part 90, Para. 90.210

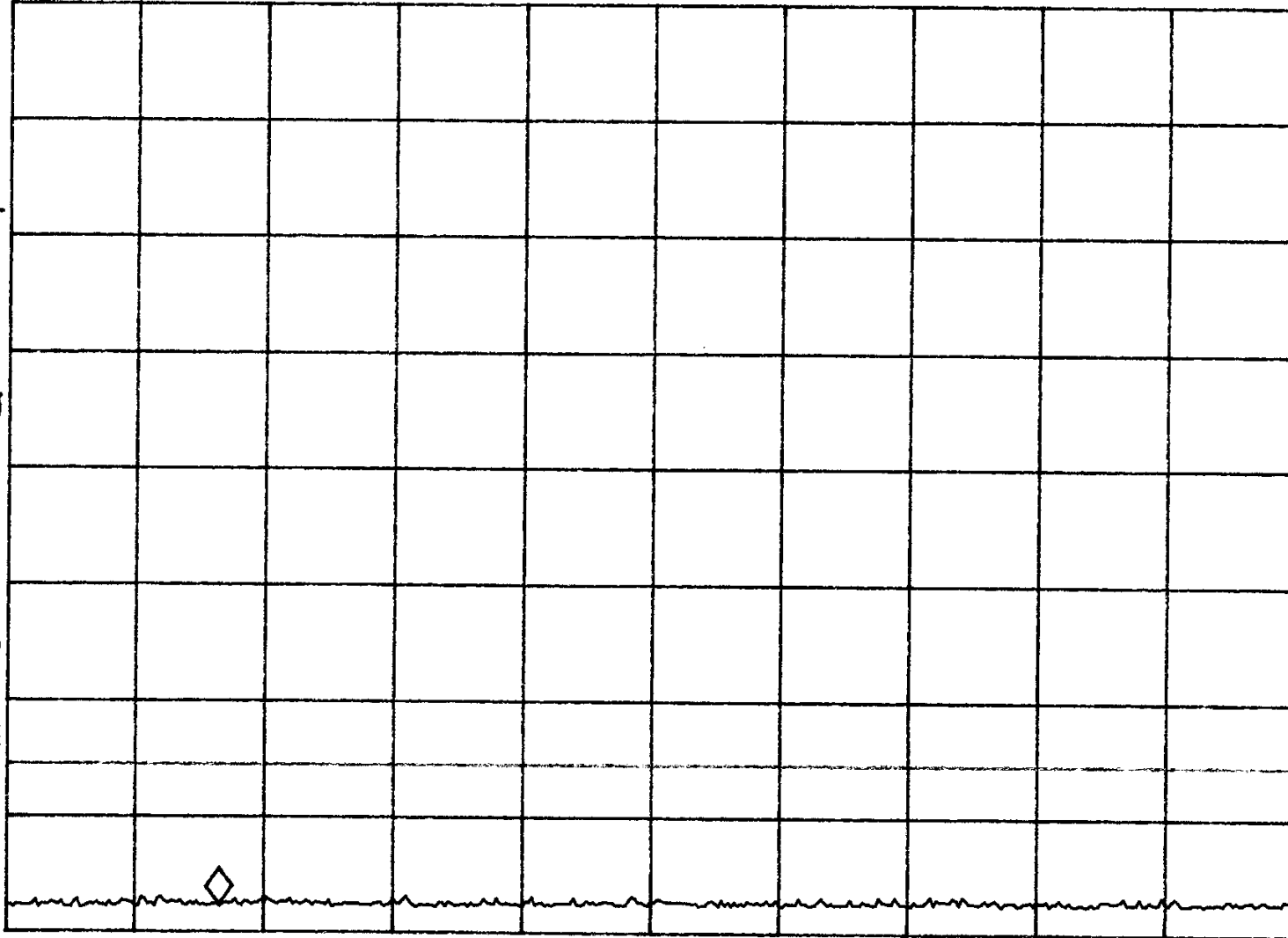
09:54:23 SEP 12, 2000

MKR 107.6 MHz
-25.13 dBm

REF 52.5 dBm AT 10 dB

PEAK
LOG
10
dB/
OFFST
52.5
dB
DL
-13.0
dBm

VA SB
SC FC
CORR



START 30.0 MHz

#RES BW 30 kHz

#VBW 100 kHz

STOP 500.0 MHz

SWP 1.57 sec

21

POWERWAVE
DATE: 9/12/00

TEST: Conducted Spurious

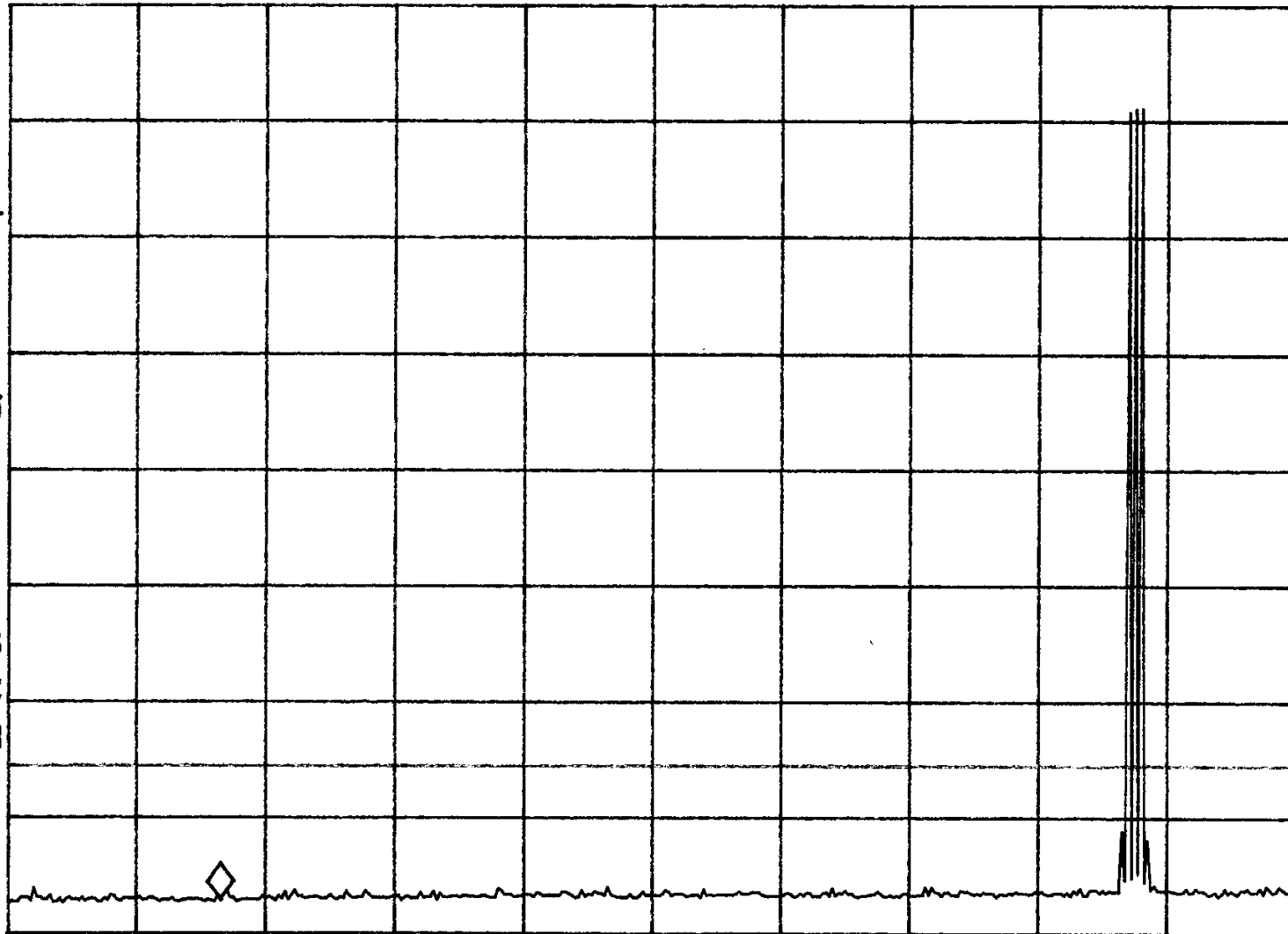
SPEC.: FCC Part 2, Para. 2.1051; Part 90, Para. 90.210

09: 57: 06 SEP 12, 2000

MKR 582.5 MHz
-24.58 dBm

REF 52.5 dBm AT 10 dB

PEAK
LOG
10
dB/
OFFST
52.5
dB
DL
-13.0
dBm
VA SB
SC FC
CORR



START 500.0 MHz

#RES BW 30 KHz

#VBW 100 KHz

STOP 1.0000 GHz

SWP 1.67 sec

22

POWERWAVE
DATE: 9/12/00

TEST: Conducted Spurious

SPEC.: FCC Part 2, Para. 2.1051; Part 90, Para. 90.210

MKR 1.876 GHz
-18.10 dBm

hp REF 55.0 dBm ATTEN 10 dB

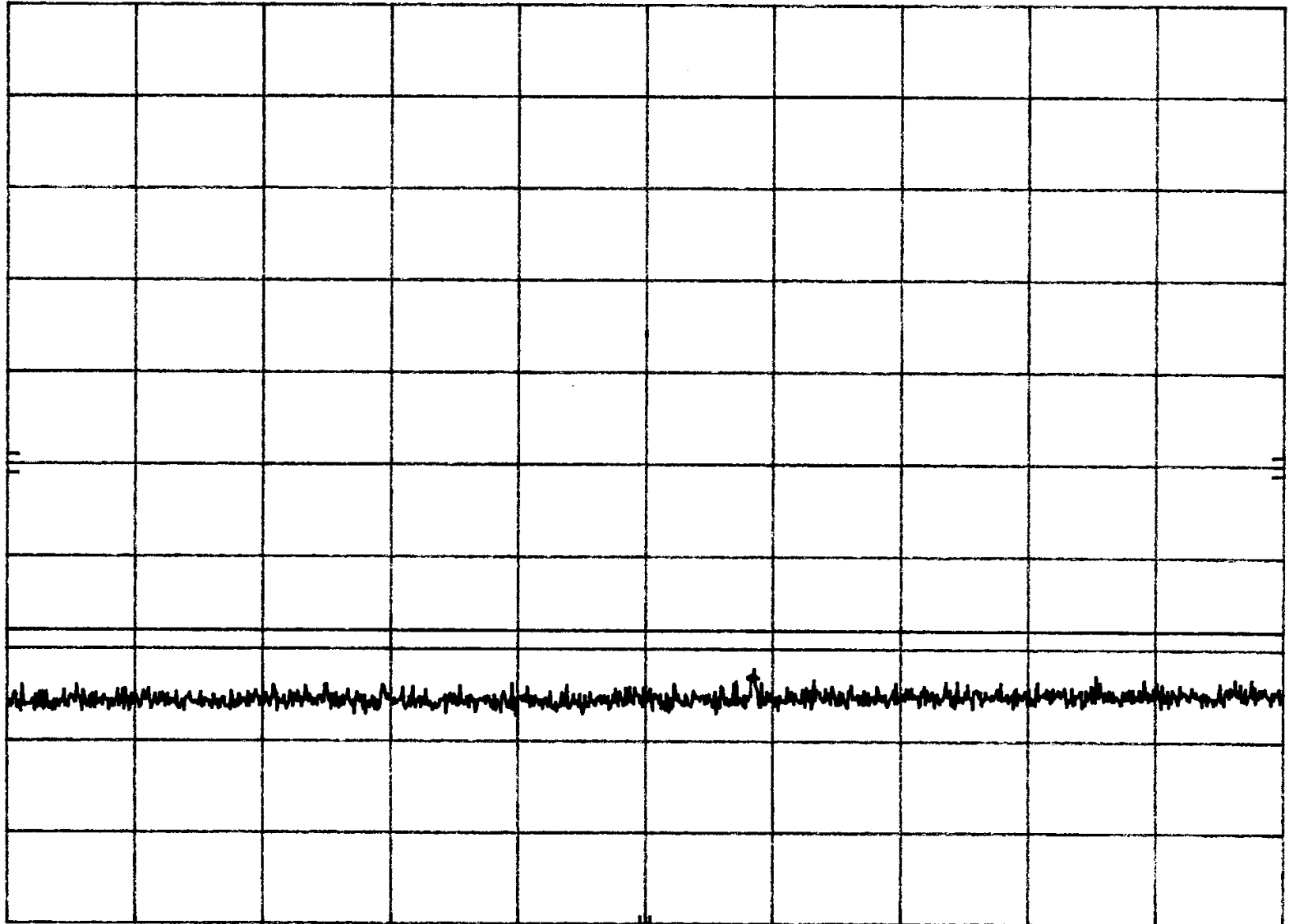
10 dB/

POS PK

OFFSET
65.0
dB

DL
-13.0
dBm

CORR'D



START 1.00 GHz

RES BW 30 kHz (1)

VBW 100 kHz

STOP 2.50 GHz
SWP 11.3 sec

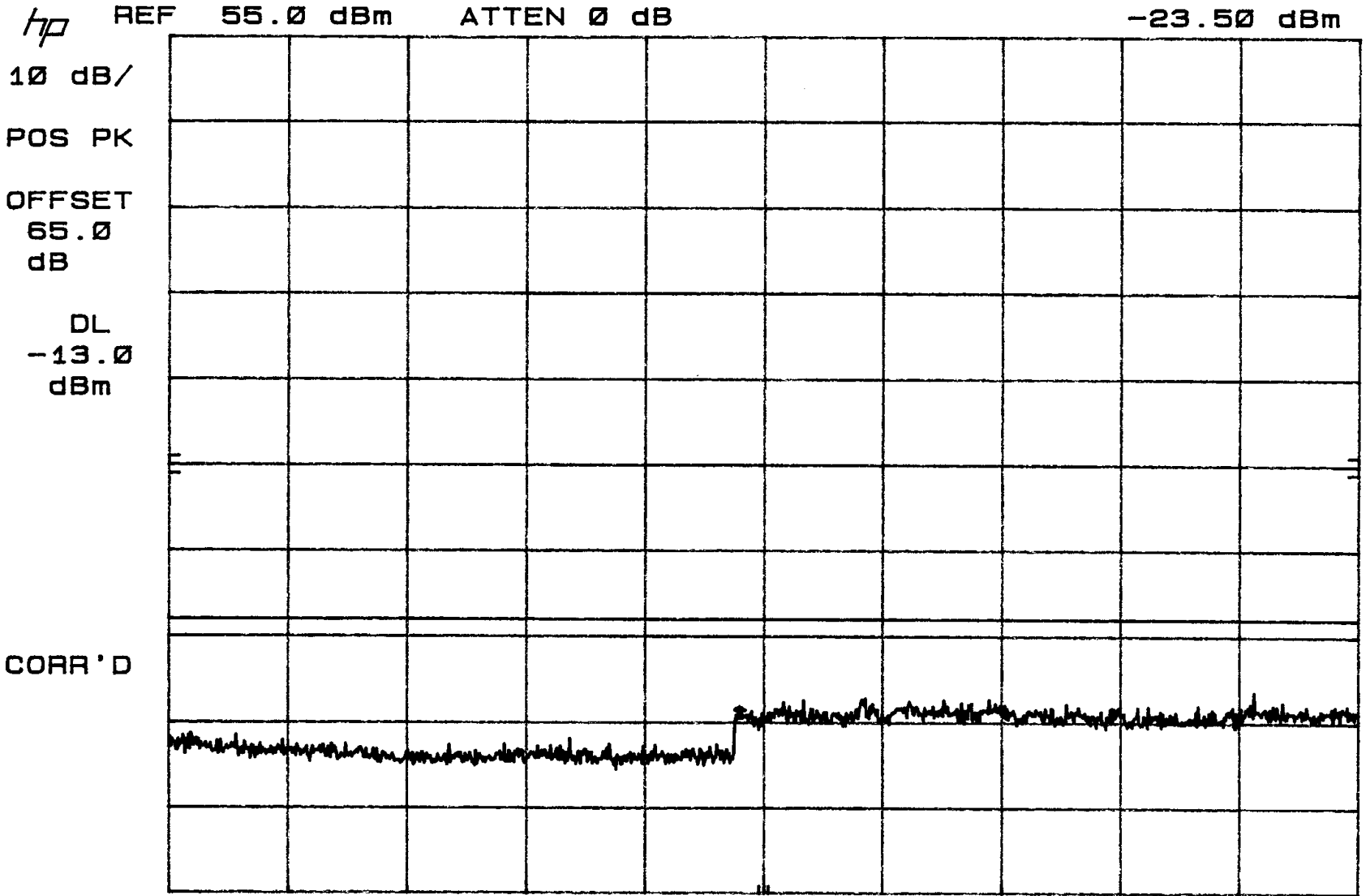
23

POWERWAVE
DATE: 9/12/00

TEST: Conducted Spurious

SPEC.: FCC Part 2, Para. 2.1051; Part 90, Para. 90.210

MKR 5.832 GHz
-23.50 dBm



START 2.00 GHz

RES BW 30 kHz (1)

VBW 100 kHz

STOP 10.00 GHz

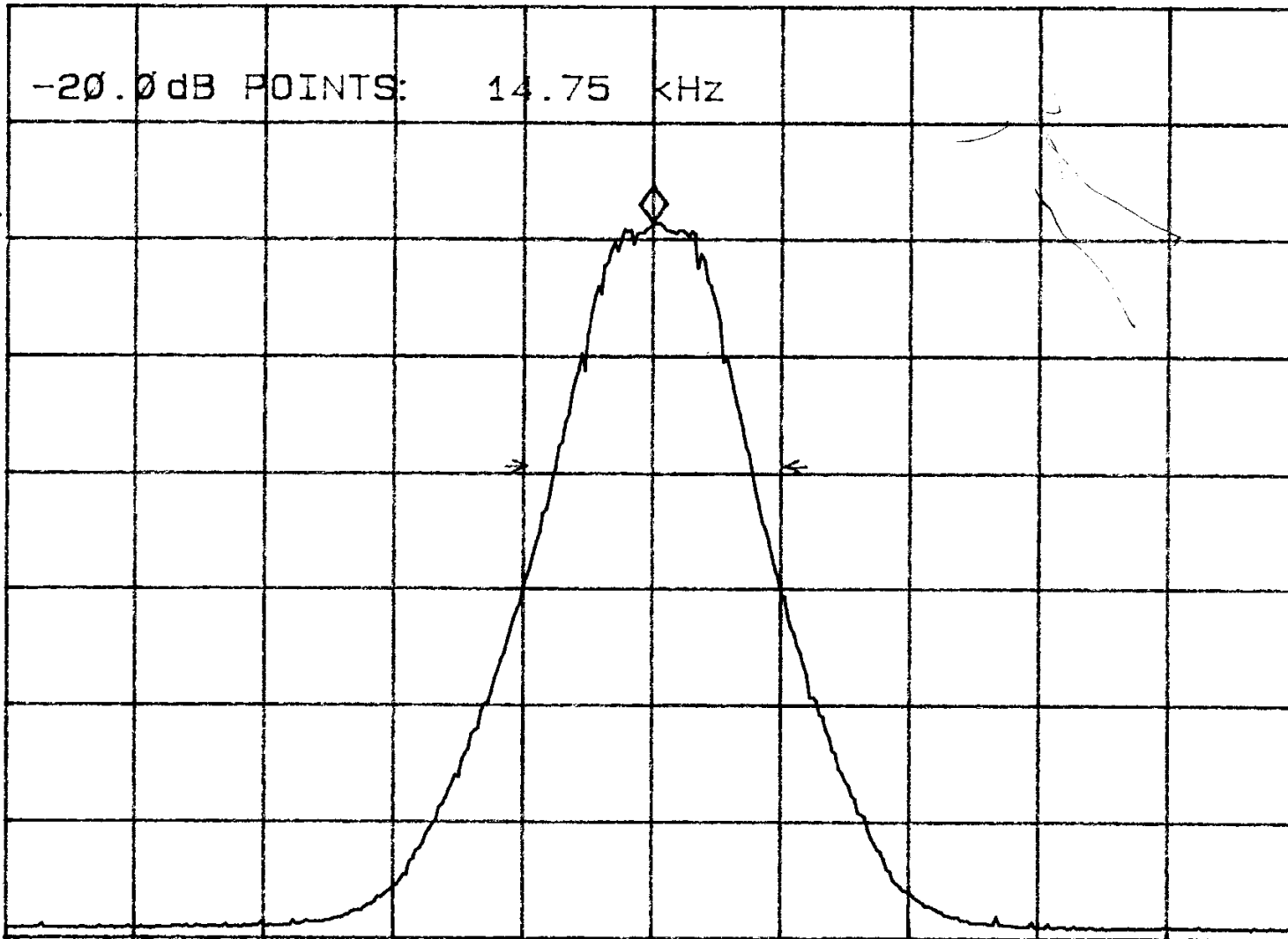
SWP 60.0 sec 24

15: 16: 05 SEP 13, 2000
~~hp~~

MKR 937.5000 MHz
-7.36 dBm

REF 11.2 dBm AT 30 dB

SMPL
LOG
10
dB/
OFFST
.8
dB



VA SB
SC FC
CORR

CENTER 937.5000 MHz
#RES BW 3.0 kHz

#VBW 3 kHz

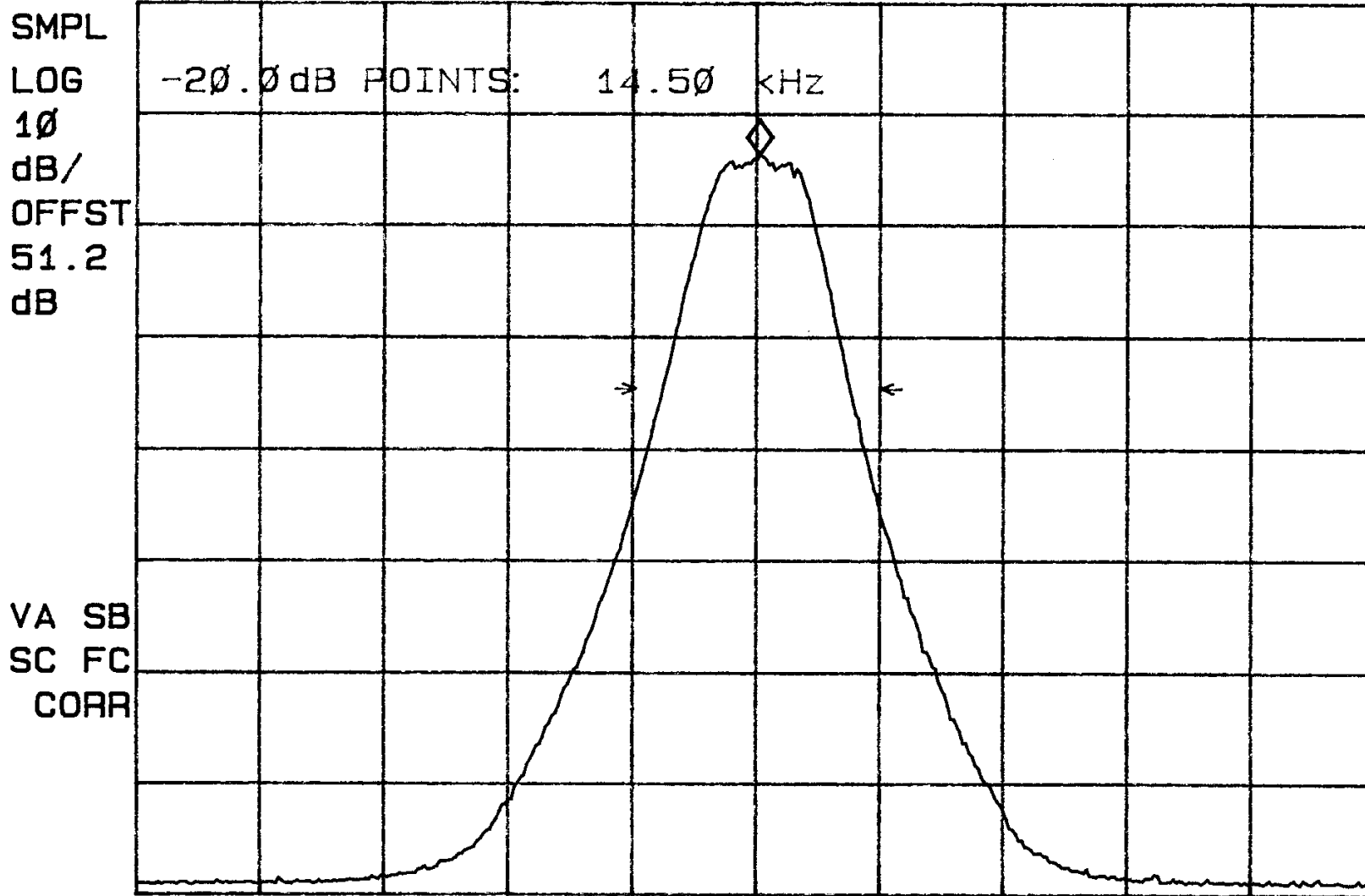
SPAN 100.0 kHz
SWP 100 msec

25

14: 58: 45 SEP 13, 2000
hp

MKR 937.5002 MHz
47.93 dBm

REF 61.6 dBm AT 30 dB



CENTER 937.5000 MHz
#RES BW 3.0 kHz

#VBW 3 kHz

SPAN 100.0 kHz
SWP 100 msec

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7 SIGNATURE PAGE

GENERAL REMARKS:

SUMMARY:

All tests according to the standards sited on page 1 of this report.

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 1.

□ - **Does not** fulfill the general approval requirements cited on page 1.

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer:



Jim Owen
(EMC Engineer)