8.0 FREQUENCY STABILITY - PART 2.1055a **(Temperature)**

The frequency stability was measured from -30° to +50° centigrade at intervals of 10° centigrade throughout the range. Prior to each frequency measurement, the equipment was left alone for a sufficient period of time (approximately 30 minutes or more) to allow the components of the All-Bottle ID System oscillator circuitry to stabilize. The following information was taken:

FREQUENCY STABILITY FOR TEMPERATURE VARIATION IN MHz:

-20°	13560966
-10°	13560996
0°	13560975
+10°	13560942
+20°	13560924
+30°	13560894
+40°	13560852
+50°	13560852

Worst Case Variance:

156 Hz

As stated in Part 74, Section 74.861 e-4 the Frequency Tolerance and Margin for this range are as follows:

Frequency Tolerance: = **0.01%**

Ambient Frequency: = **13560840**

13560840 * 0.01% = **1356.08 Hz**

This is well within the specified limits.

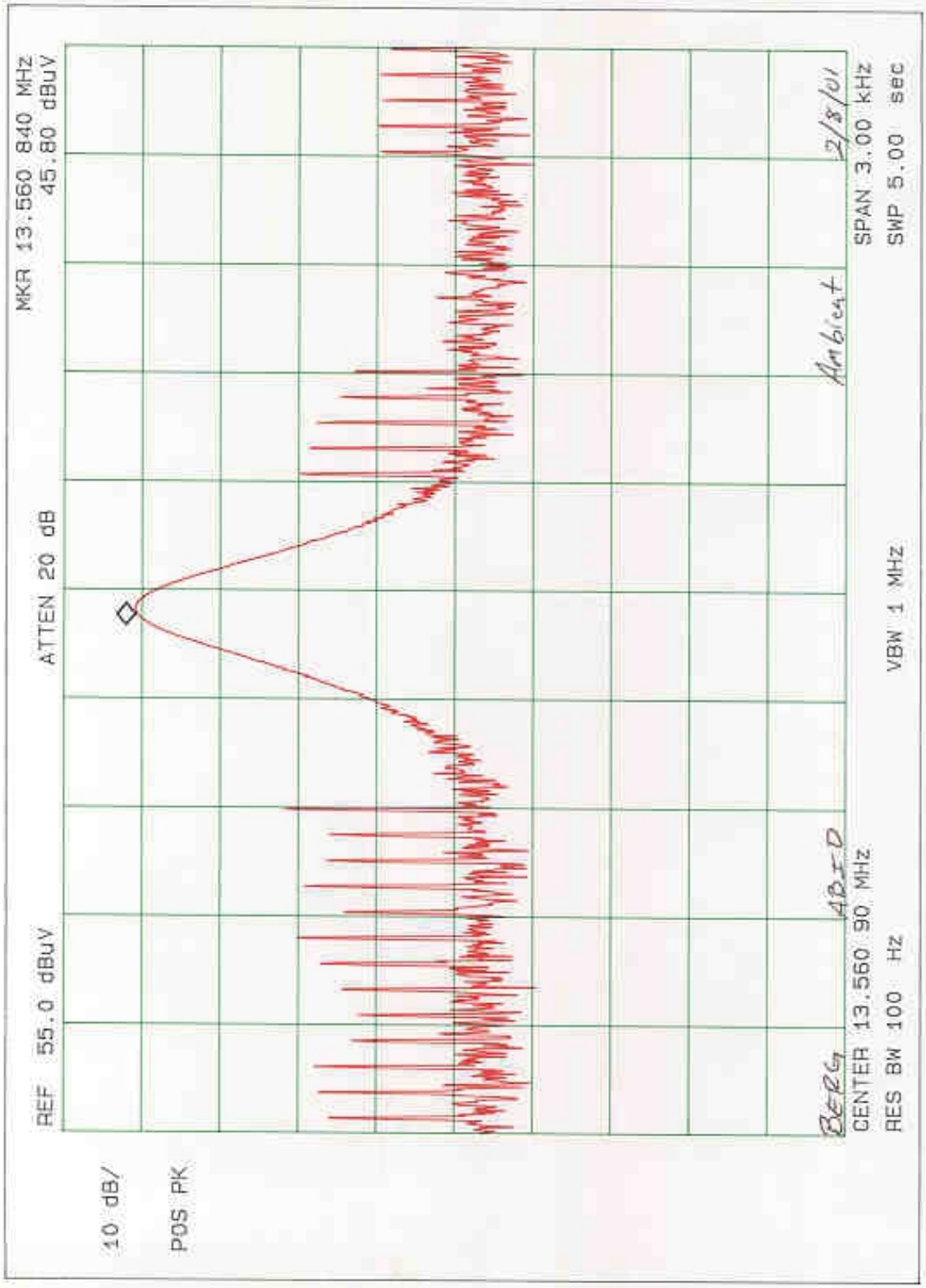
GRAPHS TAKEN FOR FREQUENCY

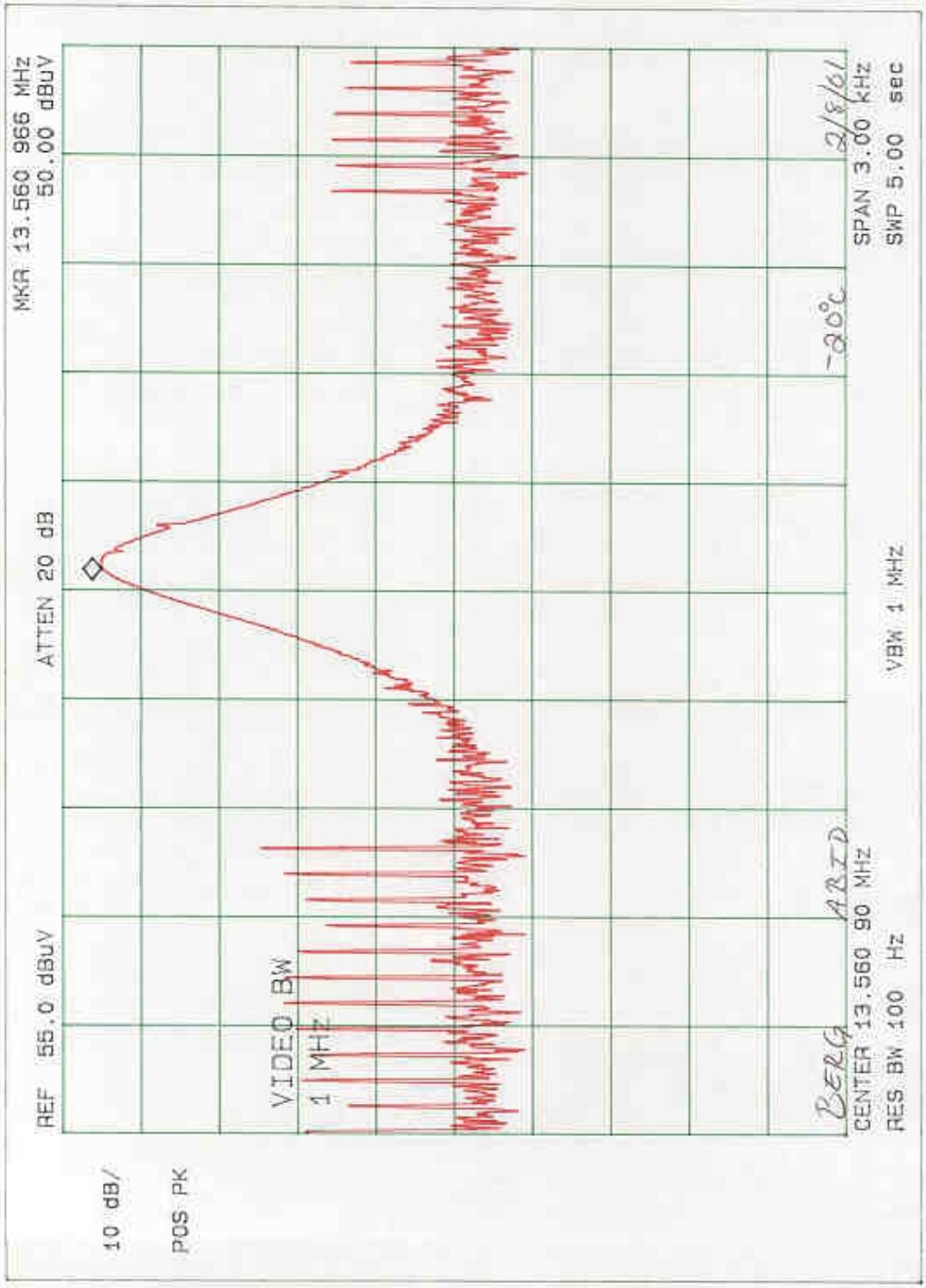
STABILITY WHEN VARYING THE

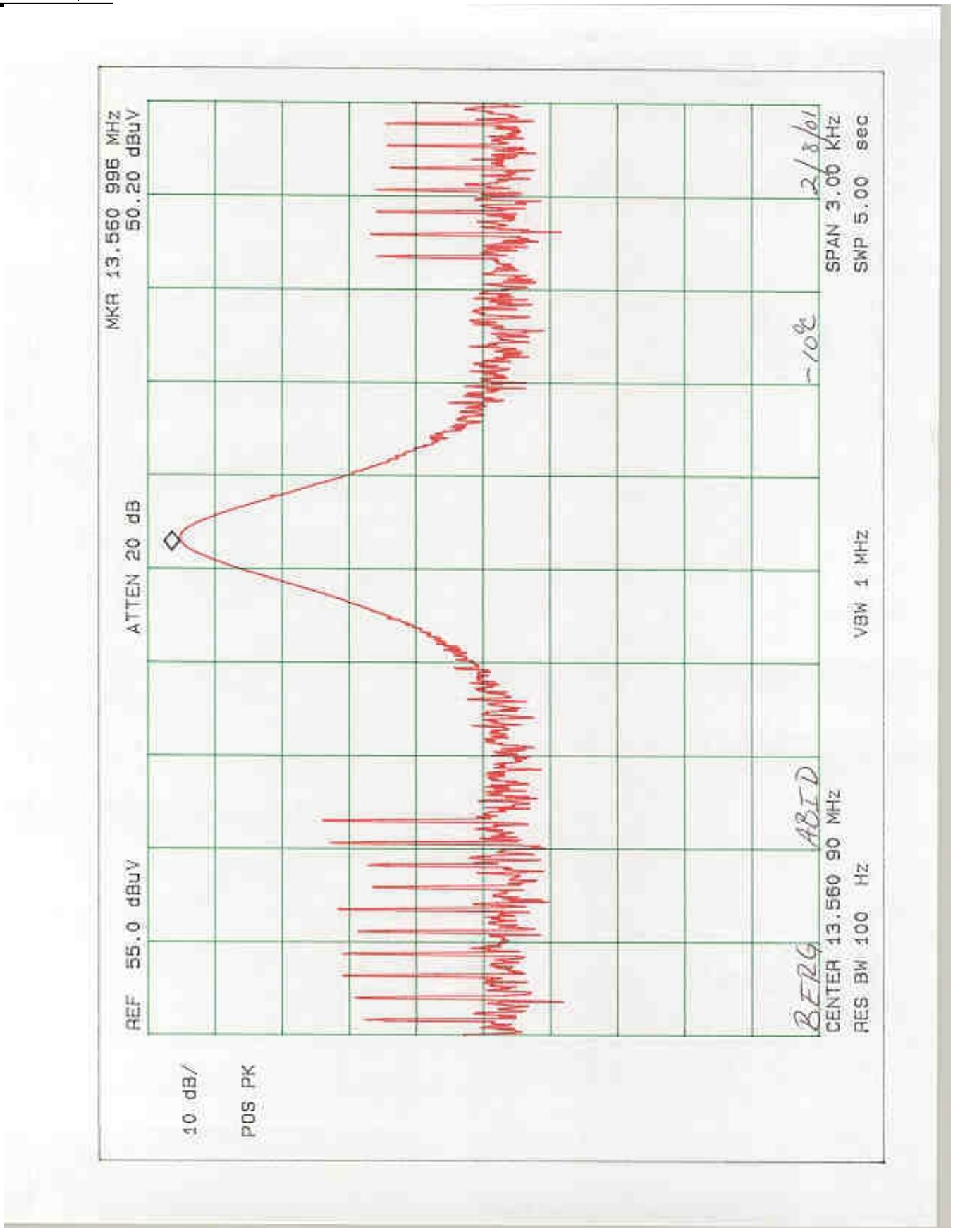
TEMPERATURE

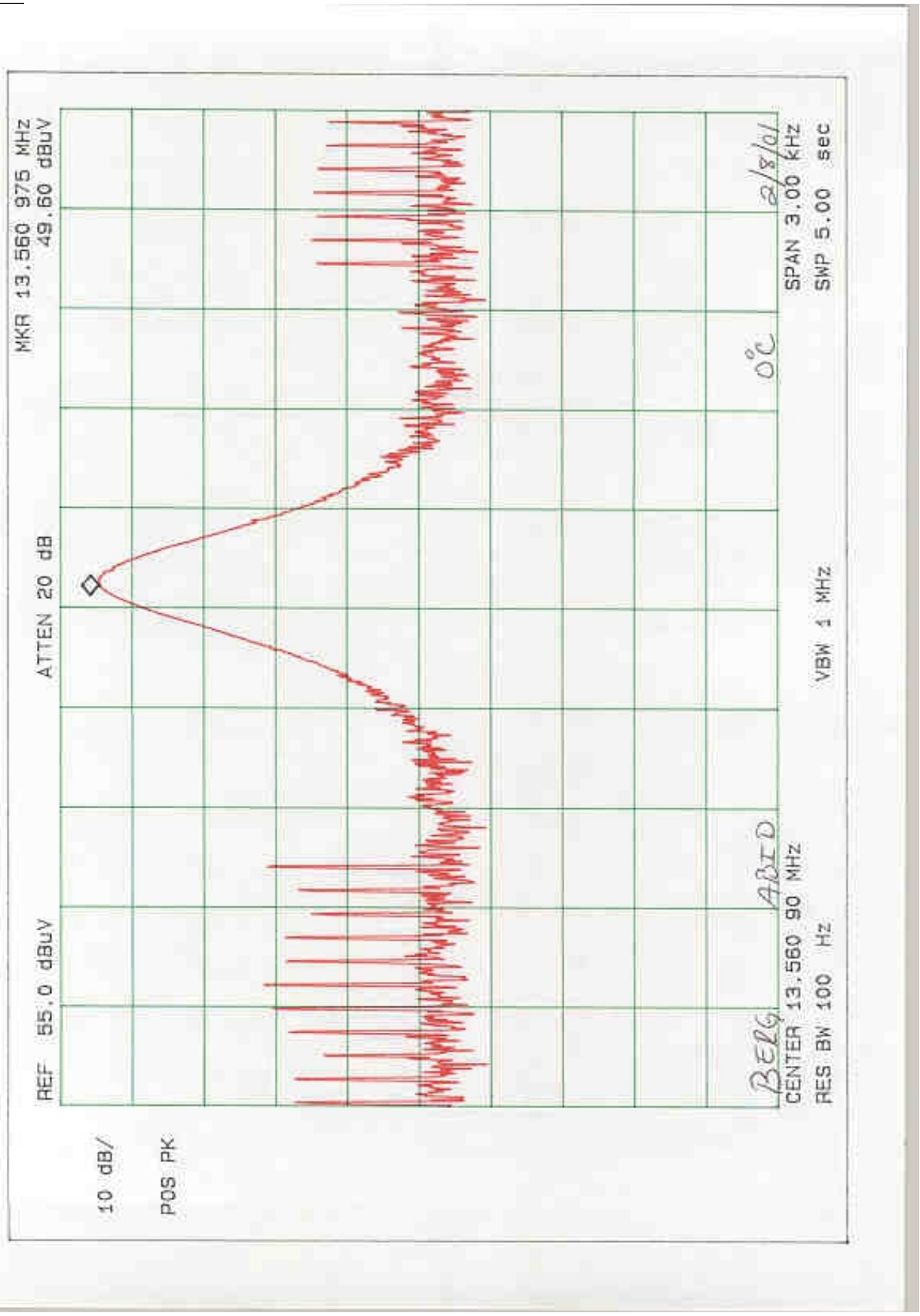
PART 2.1055A

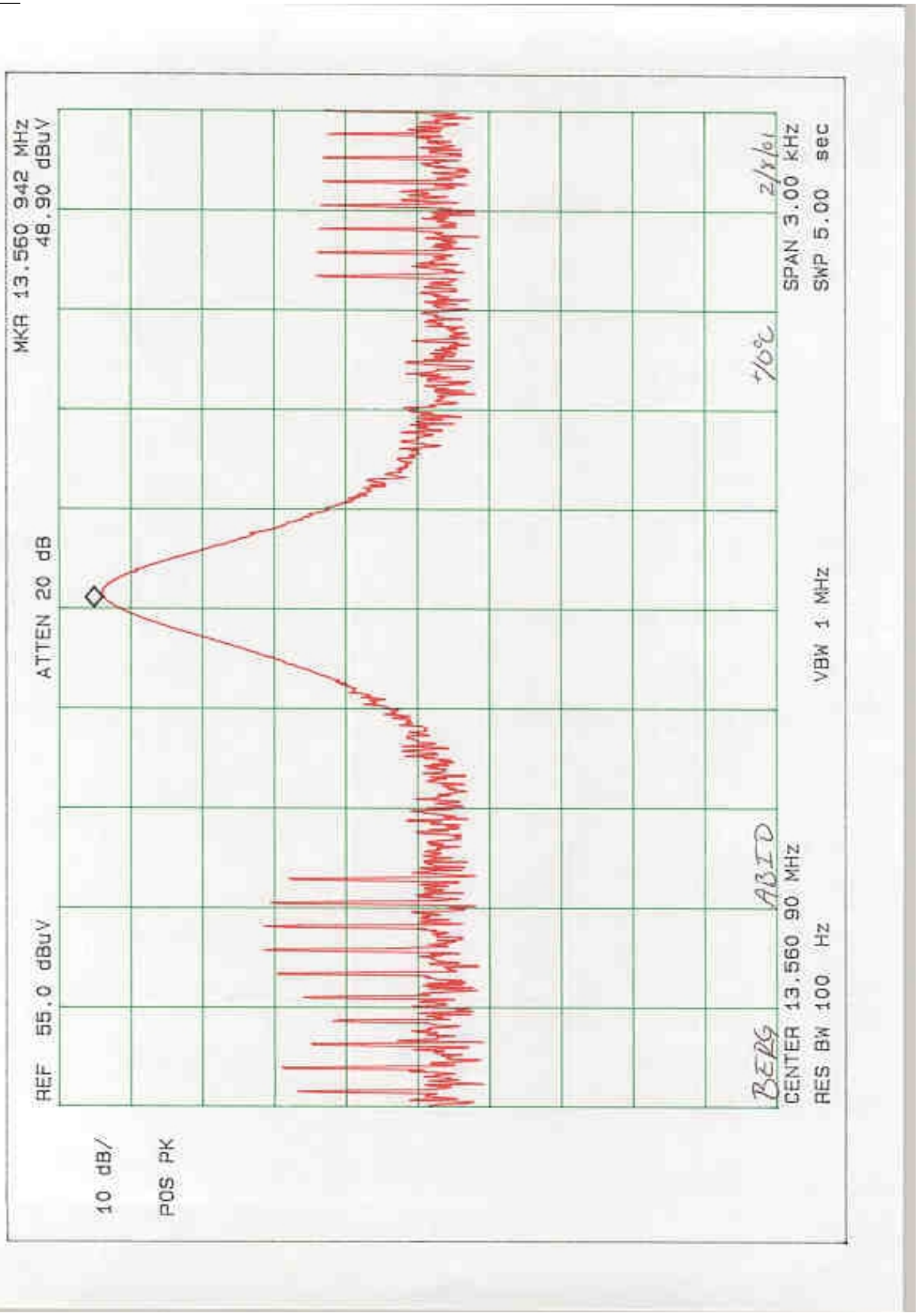
This is well within the specified limits.

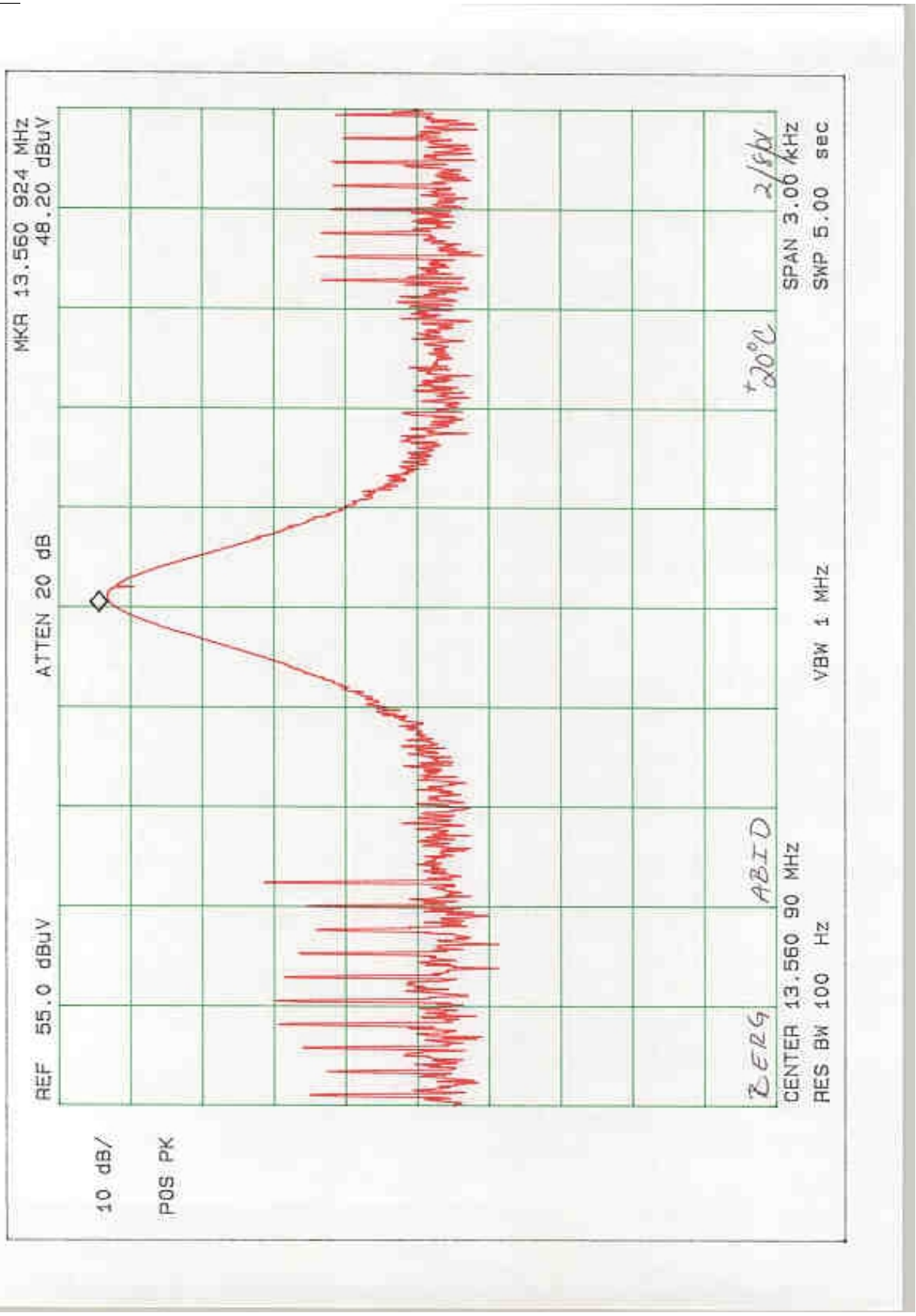

MKR 13.560 840 MHz
45.80 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
2/8/01
Ambient
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
Berg
ABED

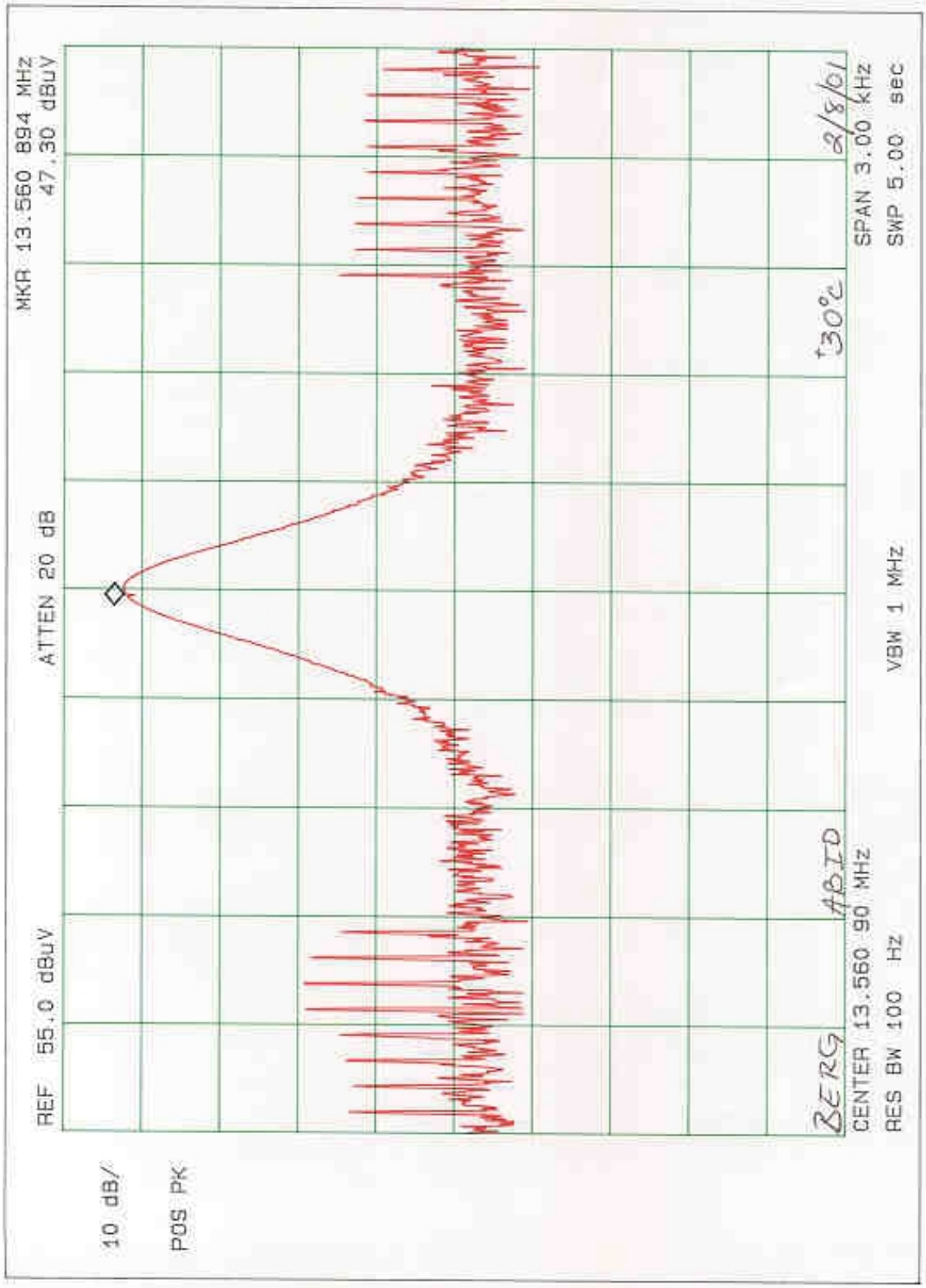

MKR 13.560 966 MHz
50.00 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
VIDEO BW
1 MHz
VBW 1 MHz
SPAN 3.00 KHz
SWP 5.00 sec
CENTER 13.560 90 MHz
RES BW 100 Hz
-20°C
2/8/01
Berg
ARD

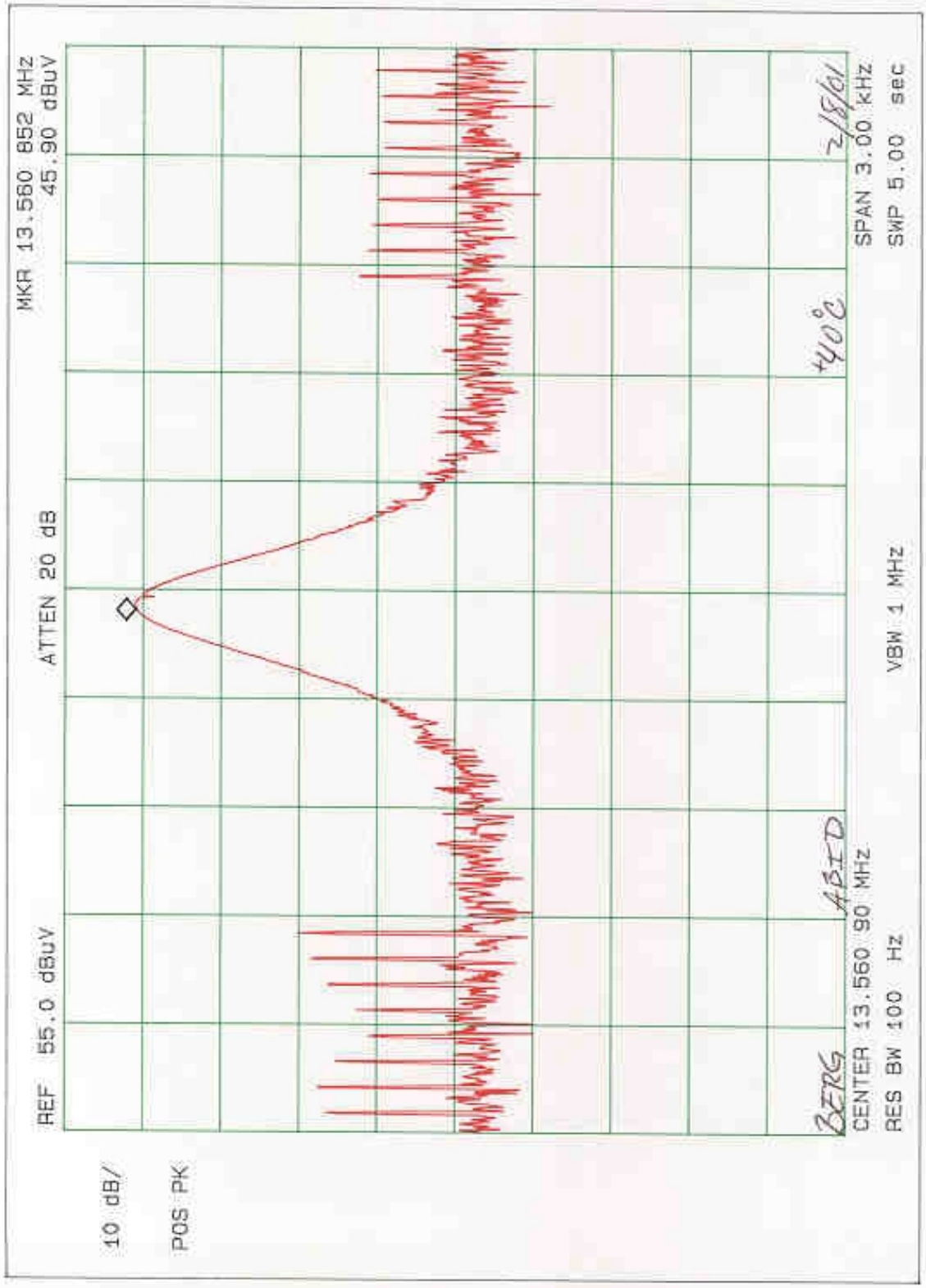

MKR 13.560 996 MHz
50.20 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
SPAN 3.00 KHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
BERG
ABID
2/8/01
-10dB

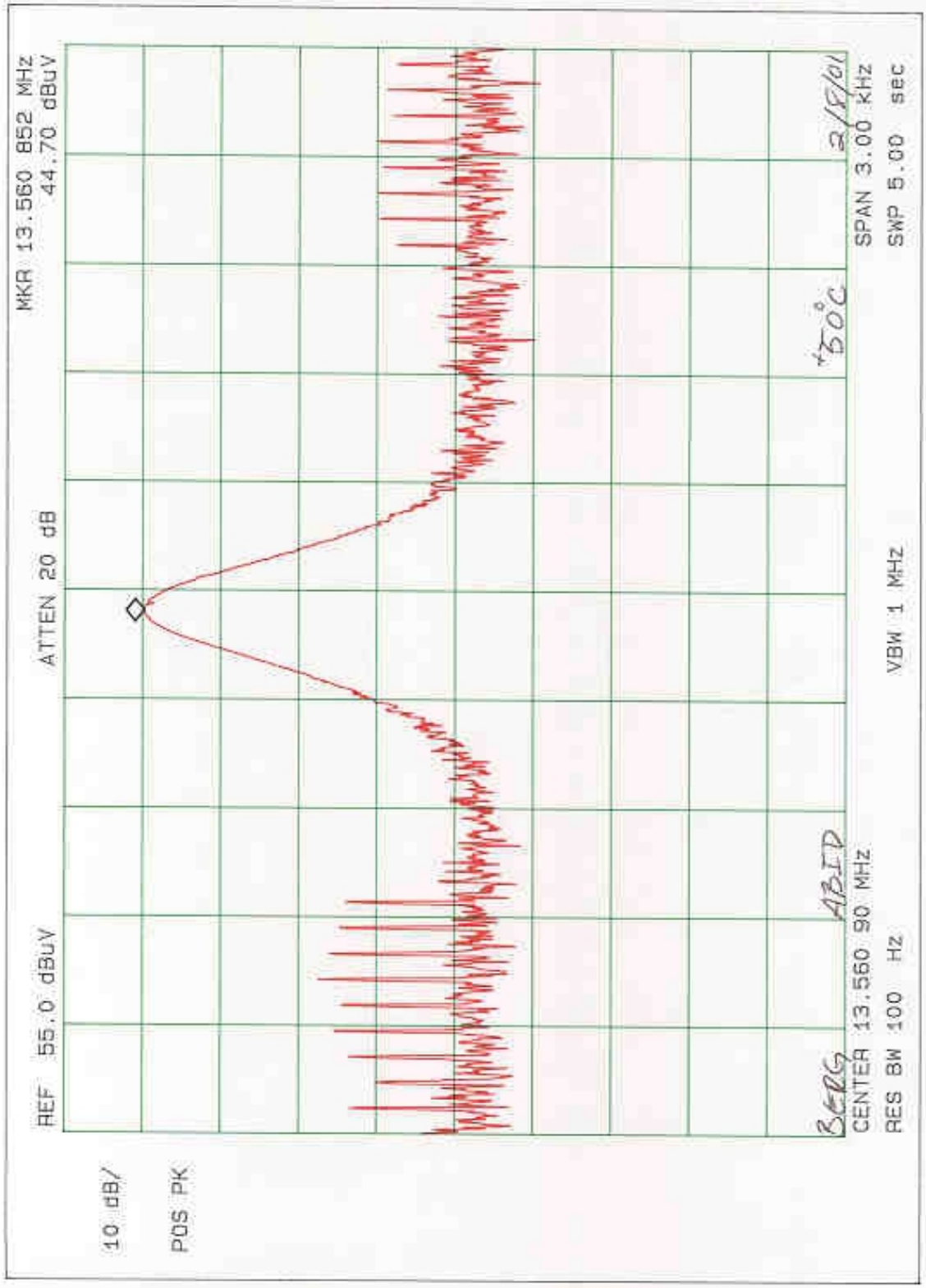

MKR 13.560 975 MHz
49.60 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
0°C
2/8/01
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
BELG
ABID


MKR 13.560 942 MHz
48.90 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
BERG
ABID
2/16/01
+10°C


MKR 13.560 924 MHz
48.20 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
2/6V
+20°C
ABID
BERG


MKR 13.560 894 MHz
47.30 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
BERG
ABID
2/8/01
130°C
CENTER 13.560 90 MHz
SPAN 3.00 kHz
RES BW 100 Hz
VBW 1 MHz
SWP 5.00 sec


MKR 13.560 852 MHz
45.90 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
BERG
ABID
40°C
2/15/01


MKR 13.560 852 MHz
44.70 dBuV
ATTEN 20 dB
REF 55.0 dBuV
10 dB/
POS PK
SPAN 3.00 kHz
SWP 5.00 sec
VBW 1 MHz
CENTER 13.560 90 MHz
RES BW 100 Hz
2/6/01
+50°C
ABID
BELOW

9.0 FREQUENCY STABILITY - PART 2.1055d **(Voltage)**

The frequency stability of All-Bottle ID System was measured by varying the primary supply voltage from 85% to 115% of nominal value for all equipment other than hand carried battery equipment.

FREQUENCY STABILITY FOR VOLTAGE VARIATION:

85% 13560850
115% 13560850

This is well within the specified limits.

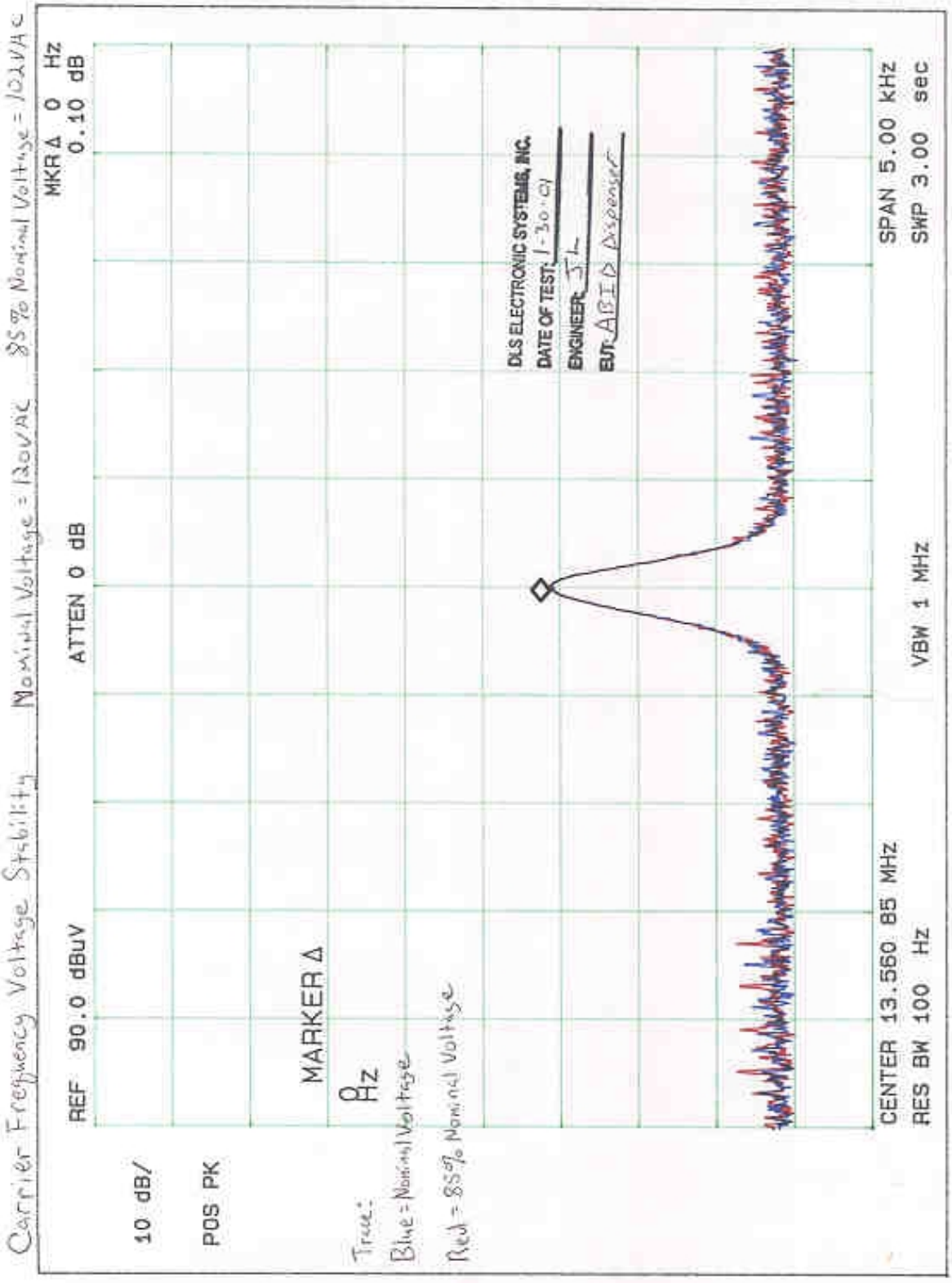
GRAPHS TAKEN FOR FREQUENCY

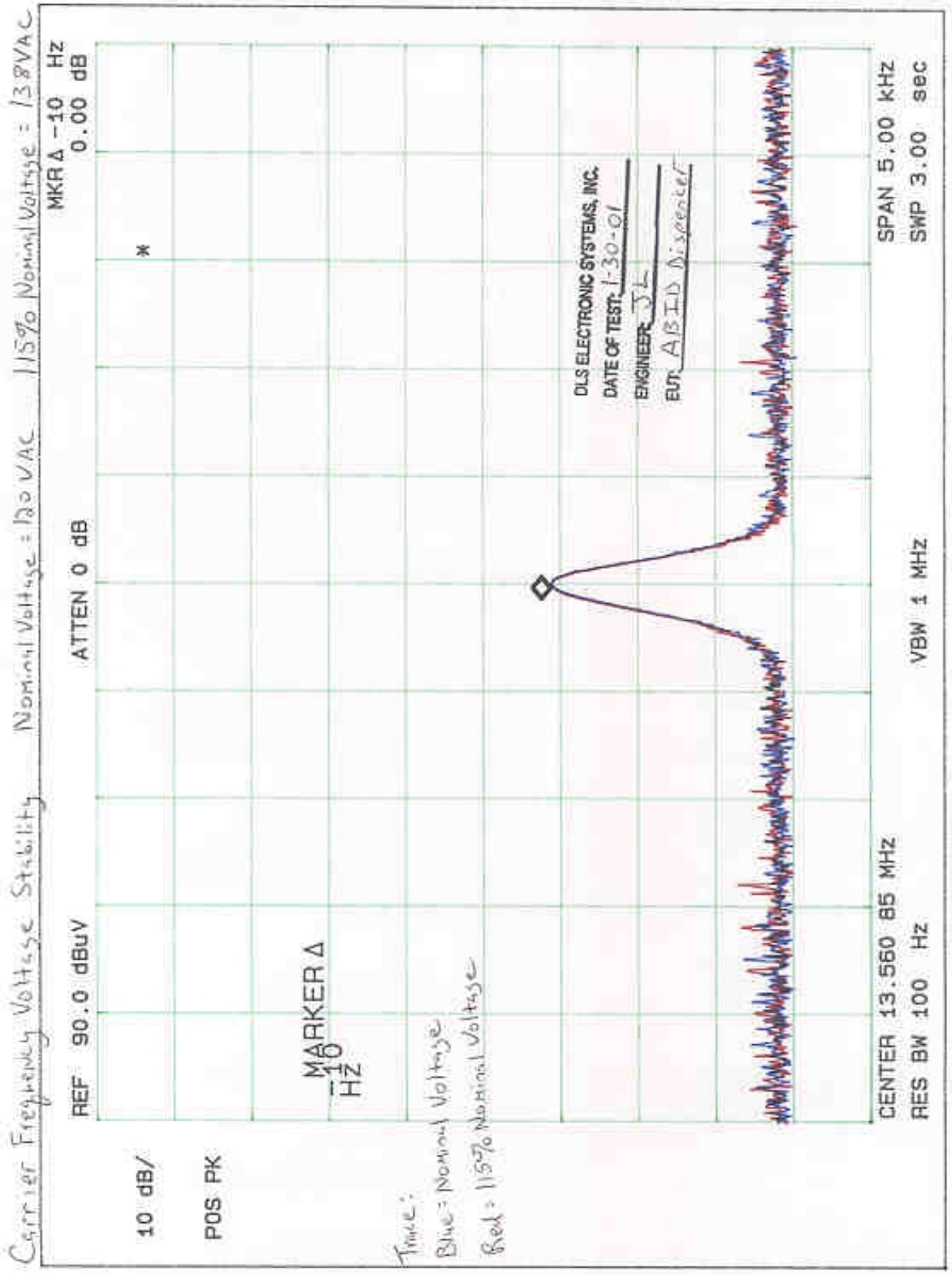
STABILITY WHEN VARYING THE

PRIMARY SUPPLY VOLTAGE

PART 2.1055d

This is well within the specified limits.


Carrier Frequency Voltage Stability Nominal Voltage = 120VAC 85% Nominal Voltage = 102VAC
REF 90.0 dBuV
10 dB/
POS PK
ATTEN 0 dB
MKR Δ 0 Hz
0.10 dB
MARKER Δ
Hz
True:
Blue = Nominal Voltage
Red = 85% Nominal Voltage
DLS ELECTRONIC SYSTEMS, INC.
DATE OF TEST: 1-30-01
ENGINEER: JL
EUT: ABID Dispenser
CENTER 13.560 85 MHz
RES BW 100 Hz
VBW 1 MHz
SPAN 5.00 kHz
SWP 3.00 sec


Carrier Frequency Voltage Stability Nominal Voltage = 120 VAC 115% Nominal Voltage = 138 VAC
MKR Δ -10 Hz
0.00 dB
REF 90.0 dBuV
ATTEN 0 dB
10 dB/
POS PK
MARKER Δ
-10 Hz
DLS ELECTRONIC SYSTEMS, INC.
DATE OF TEST: 1-30-01
ENGINEER: JL
EUT: ABID Dispenser
Trace:
Blue = Nominal Voltage
Red = 115% Nominal Voltage
CENTER 13.560 85 MHz
RES BW 100 Hz
VBW 1 MHz
SPAN 5.00 kHz
SWP 3.00 sec

10.0 PHOTO INFORMATION AND TEST SET-UP

The test set-up can be seen on the accompanying photo page.

Item 0 All-Bottle ID System
FCC ID#: PKBABID1 SN: NA

Item 1 Infinity ECU
Non-shielded Interconnect Cable with plastic shells.

Item 2 Air Solenoid PN: 8009414
Non-shielded Air Solenoid Cable Plastic Shells. 4'

Item 3 Laser 1600
Two shielded Laser 1600 Cables with Metal Shells. 10'

Item 4 Waiter Id Box
Two shielded Waiter ID Box Cable with Metal Shells. 4'

Item 5 Non-shielded Auxiliary Cable with Plastic Shells. 10'

Item 6 Non-shielded Auxiliary Cable with Plastic Shells. 10'

Item 7 RS-232 to Rs485 Converter PN: 8009336

Item 8 Shielded RS-232 Cable with Metal Shells. 10'

Item 9 Non-shielded 120 vac Power Line Cord. 5'

Item 10

11.0 CONDUCTED PHOTOS TAKEN DURING TESTING.

12.0 RADIATED PHOTOS TAKEN DURING TESTING

13.0 CHANGE INFORMATION

The following changes were implemented during the testing and must be incorporated into the production units to ensure compliance.

Change 1.

Change 2.

Change 3.

Change 4.

Change 5.

13.0 CHANGE INFORMATION (CON'T)

Change 6.

Change 7.

Change 8.

Change 9.

Change 10.

The responsibility of implementing the changes listed in this report is accepted or I certify that no changes were made

by _____ _____
Signature Title

for _____ _____
Company Name Date

14.0 RESULTS OF TESTS

The emission test results can be seen on pages at the end of this report. Data sheets indicating the open field radiated measurements can also be found with this report. Those points on the radiated charts shown with a yellow mark are background frequencies that were verified during the test.

15.0 CONCLUSION

It was found that the All-Bottle ID System, Model Number: ABID DISPENSER, S/N NA **"meets"** the radio interference emission requirements of the FCC "Rules and Regulations", Part 15, Subpart C, Sections 15.225, 15.209 and 15.207 for Intentional Radiators operating in the **13.553 to 13.567 MHz Frequency Band**. This test report relates only to the items tested.

This report contains the following number of pages.

Text:	25 pages
Data Summary:	5 pages
Charts:	26 pages

TABLE 1 - EQUIPMENT LIST

Test Equipment	Manufacturer/ Description	Model Number	Serial Number	Frequency Range	Cal Due Date
*Spectrum Analyzer	Hewlett/ Packard	8566B	2240A 02041	25 Hz –22 GHz	10/01
Quasi-Peak Adapter	Hewlett/ Packard	85650A	2043A 00121	10 kHz – 1 GHz	10/01
***Spectrum Analyzer	Hewlett/ Packard	8591A	3009A 00700	9 kHz- 1.8 GHz	3/01
Receiver	Electrometrics	EMC-25 Mark-III	772	.01-1000 MHz	10/01
Meter Module	Electrometrics	CRM-25	162	.01-1000 MHz	10/01
Receiver	Electrometrics	EMC-25 Mark-III	804	.01-1000 MHz	10/01
Meter Module	Electrometrics	CRM-25	138	.01-1000 MHz	10/01
Receiver	Electrometrics	EMC-25 Mark-III	645	.01-1000 MHz	10/01
Meter Module	Electrometrics	CRM-25	116	.01-1000 MHz	10/01
Receiver	Electrometrics	EMC-30 Mark-III	44168	.01-1000 MHz	9/01
Antenna	Electrometrics	BIA-25	2453	20 - 200 MHz	4/01
Antenna	Electrometrics	LPA-25	1114	200 - 1000 MHz	4/01
Antenna	Electrometrics	BIA-25	2614	20 - 200 MHz	4/01
Antenna	Electrometrics	LPA-25	1205	200 - 1000 MHz	4/01
Antenna	Electrometrics	BIA-25	4785	20 - 200 MHz	4/01
Antenna	Electrometrics	LPA-25	4895	200 - 1000 MHz	4/01
Antenna	Electrometrics	ALR-25	557	.01-30 MHz	5/01

*Firmware Version 29.9.86 Software Version 85864C Rev A
**Firmware Version 14.1.85 Software Version 85864C Rev A
***Firmware Version 5.1.3 Software Version 82301-12029 Rev C

I/O Initial Calibration Only