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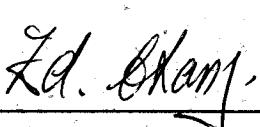
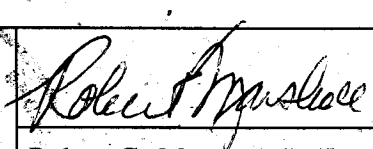
Engineering &
Administrative



Testing For FCC
Submissions/Verifications

Approved Test Facility



TEST REPORT		
REPORT DATE:	14 February 2003	REPORT NO: 22396D
CONTENTS:	See Table of Contents	
SUBMITTOR:	ATLINKS USA, Inc. 101 West 103 rd Street Indianapolis, IN 46290-1102 USA	
SUBJECT:	Model No:	26977XXX-A
	FCC ID:	G9H2-6977A
TEST SPECIFICATION	FCC 47 CFR Part 15 NOTE: Tests Conducted Are "Type" Tests.	
DATE SAMPLE RECEIVED:	18 December 2002 and 22 January 2003	DATE TESTED: 03, 09, 24, and 28 Jan. 2003
RESULTS:	Equipment tested complies with referenced specification. Also, the Model 26977XXX-A meets the new rules (150kHz to 30MHz) FCC Power Line Conducted Limits.	
ALTERATIONS	None	
Tested by:	 Edward Chang	 Robert G. Marshall, P. Eng.
		Date: Feb 27/03
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TECHNICAL REPORT - FCC 2.1033(b)

Applicant

ATLINKS USA, Inc.
101 West 103rd Street
Indianapolis, IN
46290-1102 USA

FCC Identifier

G9H2-6977A

Manufacturer

Integrated Display Technology Telecommunications
(Shenzhen) Co., Ltd.
Block 21, Chentian Industrial Village, Xixian Town
Bao An District, Shenzhen City, CHINA

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EXHIBIT D

[FCC Ref. 2.1033(b)(6)]

"Report of Measurements"

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Exhibit D(4)	Test Setup Diagram for AC Conducted Line Testing

PRODUCT DESCRIPTION

The Model 26977XXX-A is a single-line cordless headset telephone with caller ID that operates from 902 MHz to 928 MHz. The antenna used for the base and the handset is permanently attached to the EUT. Its actual frequency range is:

Base: 902.800 MHz to 904.752 MHz

Handset: 925.301 MHz to 927.251 MHz

A complete frequency list is shown on the following pages.

900MHz FREQUENCY TABLE (WIDE BAND)

CH	HAND		BASE	
	TX	RX	TX	RX
1	925.3	902.8	902.8	925.3
2	925.35	902.85	902.85	925.35
3	925.4	902.9	902.9	925.4
4	925.45	902.95	902.95	925.45
5	925.5	903	903	925.5
6	925.55	903.05	903.05	925.55
7	925.6	903.1	903.1	925.6
8	925.65	903.15	903.15	925.65
9	925.7	903.2	903.2	925.7
10	925.75	903.25	903.25	925.75
11	925.8	903.3	903.3	925.8
12	925.85	903.35	903.35	925.85
13	925.9	903.4	903.4	925.9
14	925.95	903.45	903.45	925.95
15	926	903.5	903.5	926
16	926.05	903.55	903.55	926.05
17	926.1	903.6	903.6	926.1
18	926.15	903.65	903.65	926.15
19	926.2	903.7	903.7	926.2
20	926.25	903.75	903.75	926.25
21	926.3	903.8	903.8	926.3
22	926.35	903.85	903.85	926.35
23	926.4	903.9	903.9	926.4
24	926.45	903.95	903.95	926.45
25	926.5	904	904	926.5
26	926.55	904.05	904.05	926.55
27	926.6	904.1	904.1	926.6
28	926.65	904.15	904.15	926.65
29	926.7	904.2	904.2	926.7
30	926.75	904.25	904.25	926.75
31	926.8	904.3	904.3	926.8
32	926.85	904.35	904.35	926.85
33	926.9	904.4	904.4	926.9
34	926.95	904.45	904.45	926.95
35	927	904.5	904.5	927
36	927.05	904.55	904.55	927.05
37	927.1	904.6	904.6	927.1
38	927.15	904.65	904.65	927.15
39	927.2	904.7	904.7	927.2
40	927.25	904.75	904.75	927.25

15.107 (a) POWER LINE CONDUCTED INTERFERENCE**Requirements:**

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

Test Procedure:

ANSI STANDARD C63.4-1992. using a 50 μ H LISN. Both lines were observed with the EUT transmitting. The bandwidth of the spectrum analyzer was 9KHz QP with an appropriate sweep speed. The ambient temperature of the EUT was 24°C with a humidity of 60%.

The spectrum was scanned from 0.15 to 30MHz.

Test Data:

The highest emission read for LINE was 28.74 dB μ V@ 0.15 MHz.

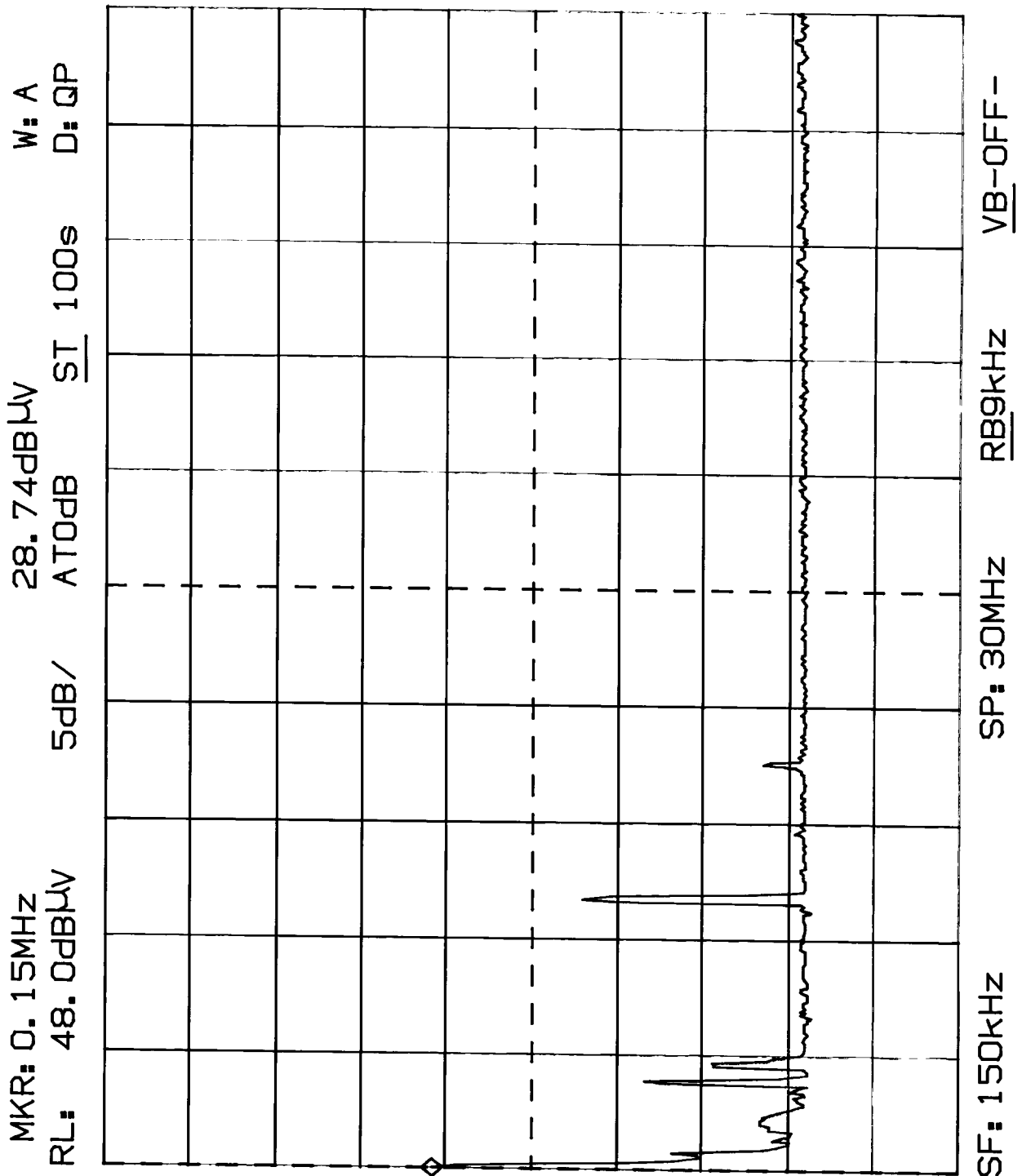
The highest emission read for NEUTRAL was 27.50 dB μ V@ 0.15 MHz.

The graphs on Exhibit D(1)-5 to -6 represent the emissions taken for this device.

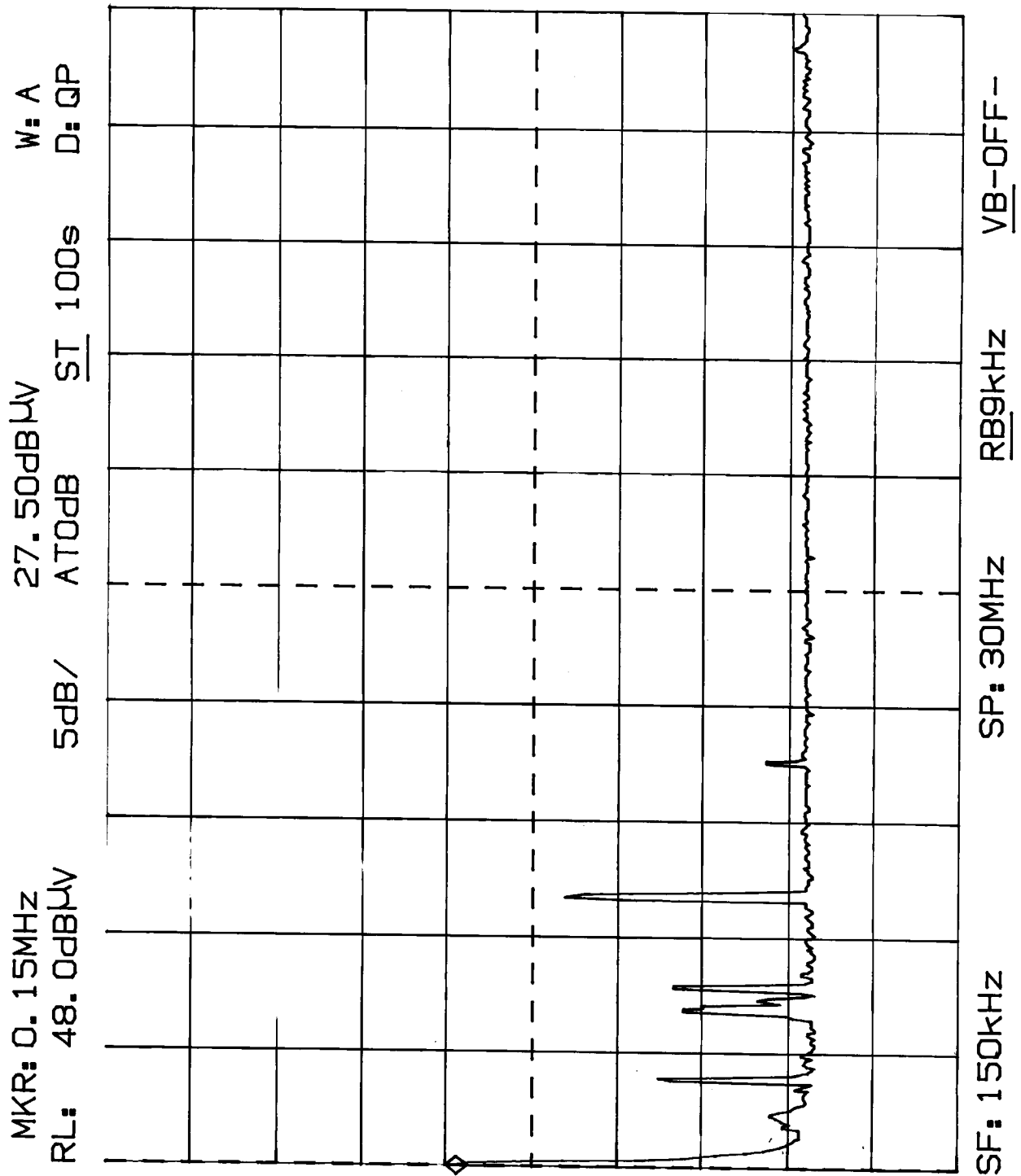
Test Results:

Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

POWER LINE CONDUCTED EMISSIONS
MODEL 26977XXX-A
LINE



POWER LINE CONDUCTED EMISSIONS
MODEL 26977XXX-A
NEUTRAL



15.249 (a), (b) and (c) FIELD STRENGTH OF EMISSIONS**Requirements:**

Fundamental Frequency		Field Strength of Harmonics	15.209	
902-928 MHz	94dB μ V	54 dB μ V/m@ 3m	30-88 MHz	40 dB μ V/m@ 3m
			88-216 MHz	43.5
			216-960 MHz	46
			Above 960 MHz	54

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.

Emissions that fall in the restricted bands (15.205) must be less than 54dB μ V/m

Procedure

The test procedure used was ANSI STANDARD C63.4-1992 and DA-00-705 using an appropriate spectrum analyzer, as listed in the Test Equipment List. The bandwidth (RBW) of the spectrum analyzer was 100KHz/120KHz up to 1GHz with an appropriate sweep speed. The RBW above 1.0GHz was = 1.0MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the EUT was 24°C with a humidity of 60%.

Test Data:

Refer to Exhibit D(1)-8 to -9

FIELD STRENGTH OF EMISSIONS**Test Data:****BASE UNIT**

Frequency Band MHz	Meter Reading (Peak) @3m dB μ V/M	Meter Reading (Average) @3m dB μ V/M	Antenna and Polarization	Cable & Antenna Factor	Peak F. S. dB μ V/M	Average F. S. dBuV/M	Average FCC Limit	Margin dB
<u>Channel 1</u>								
902.800	53.00	---	RT4 H	33.30	86.30	---	94	-7.70
1805.600	19.00	---	Horn V	33.18	52.18	---	54	-1.82
2708.400	12.00	---	Horn V	33.92	45.92	---	54	-8.08
3611.200	9.00	---	Horn V	35.38	44.38	---	54	-9.62
4514.000	---							
5416.800	---							
<u>Channel 40</u>								
904.752	53.90	---	RT4 H	33.30	87.20	---	94	-6.80
1809.504	19.00	---	Horn V	33.18	52.18	---	54	-1.82
2714.256	13.00	---	Horn V	33.92	46.92	---	54	-7.08
3619.008	10.00	---	Horn V	35.38	45.38	---	54	-8.62
4523.760	---							

1. If the peak meets the average limit, nothing further is required.
2. If the peak exceeds the average limit, then an average measurement is required (may be calculated) and must be below the average limit and also:
3. The peak measurement cannot exceed the average limit +20dB.

FIELD STRENGTH OF EMISSIONS**Test Data:****HANDSET UNIT**

Frequency Band MHz	Meter Reading (Peak) @3m dB μ V/M	Meter Reading (Average) @3m dB μ V/M	Antenna and Polarization	Cable & Antenna Factor	Peak F. S. dB μ V/M	Average F. S. dBuV/M	Average FCC Limit	Margin dB
<u>Channel 1</u>								
925.301	55.00	---	RT4 V	33.40	88.40	---	94	-5.60
1850.602	15.00	---	Horn V	33.11	48.11	---	54	-5.89
2775.903	17.00	---	Horn V	34.10	51.10	---	54	-2.90
3701.204	9.00	---	Horn H	35.53	44.53	---	54	-9.47
4626.505	---							
<u>Channel 40</u>								
927.251	56.00	---	RT4 V	33.40	89.40	---	94	-4.60
1854.502	16.00	---	Horn V	33.11	49.11	---	54	-4.89
2781.753	19.00	---	Horn V	34.10	53.10	---	54	-0.90
3709.004	9.00	---	Horn H	35.53	44.53	---	54	-9.47

1. If the peak meets the average limit, nothing further is required.
2. If the peak exceeds the average limit, then an average measurement is required (may be calculated) and must be below the average limit and also:
3. The peak measurement cannot exceed the average limit +20dB.

15.249 (d) BAND EDGES

Requirements:

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

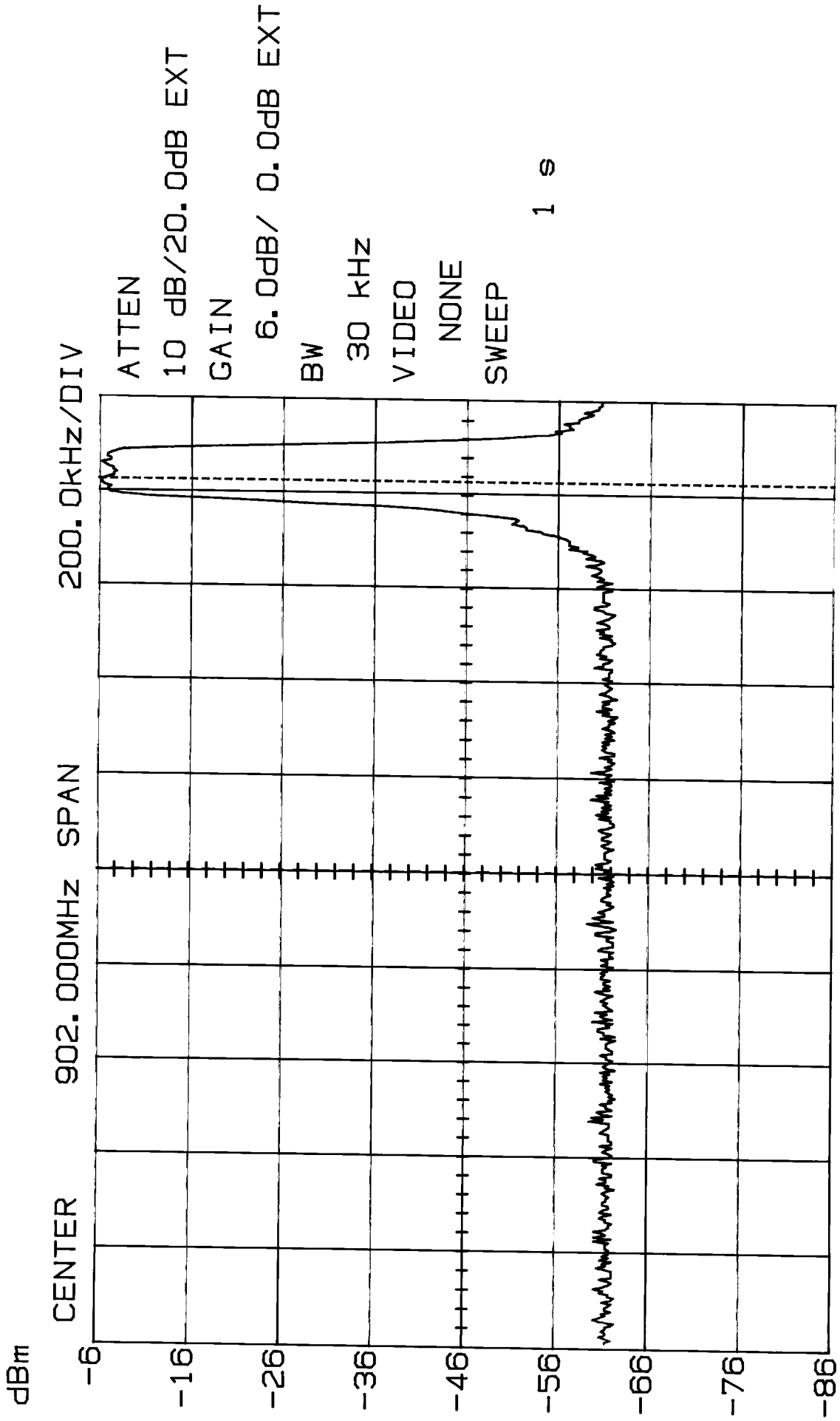
Measurement:

The base was attenuated by 50 dB. The handset was attenuated by 50 dB.

Test Data:

The Bandedge was measured at the Low end of the band for the base, and the High end of the band for the handset. See Plots [Exhibits D(1)-11 to -12].

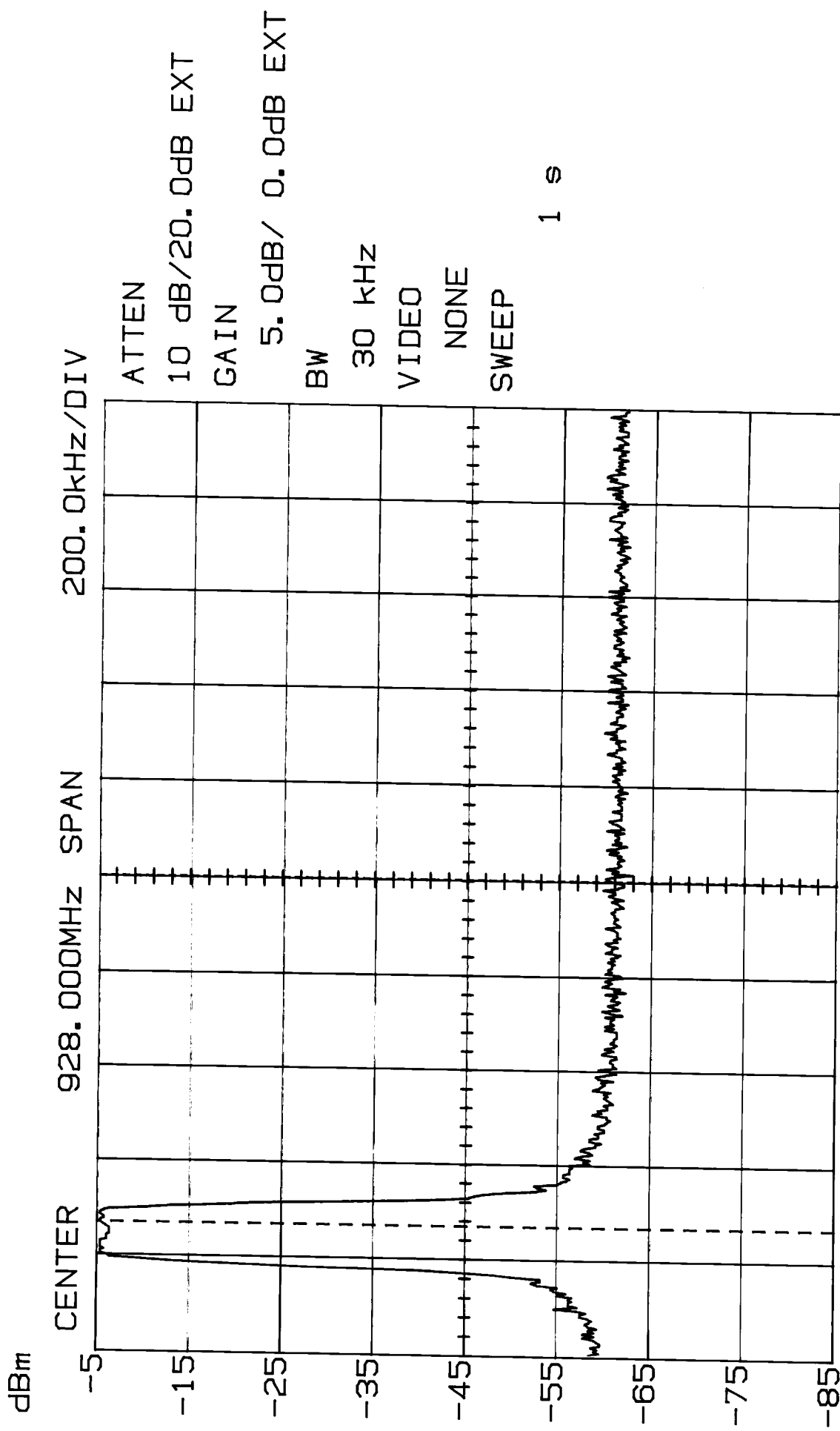
BAND EDGE - Base (CH1)
MODEL 26977XXX-A



M2 -6.00dB/902.826MHz Δ55.93dB/ 826.000kHz

10:50:11 01-28-2003

BAND EDGE - Handset (CH40)
MODEL 26977XXX-A



M1 -5.00dB 927.271MHz Δ55.93dB/ 729.000kHz

11: 46: 24 01-28-2003

2.202 BANDWIDTH

Measurement:

The measurements were made with the spectrum analyzer's resolution bandwidth (RBW) = 30KHz (Base and Handset) and the video bandwidth (VBW) = NONE and the span set as shown on plot.

Test Data:

Base:

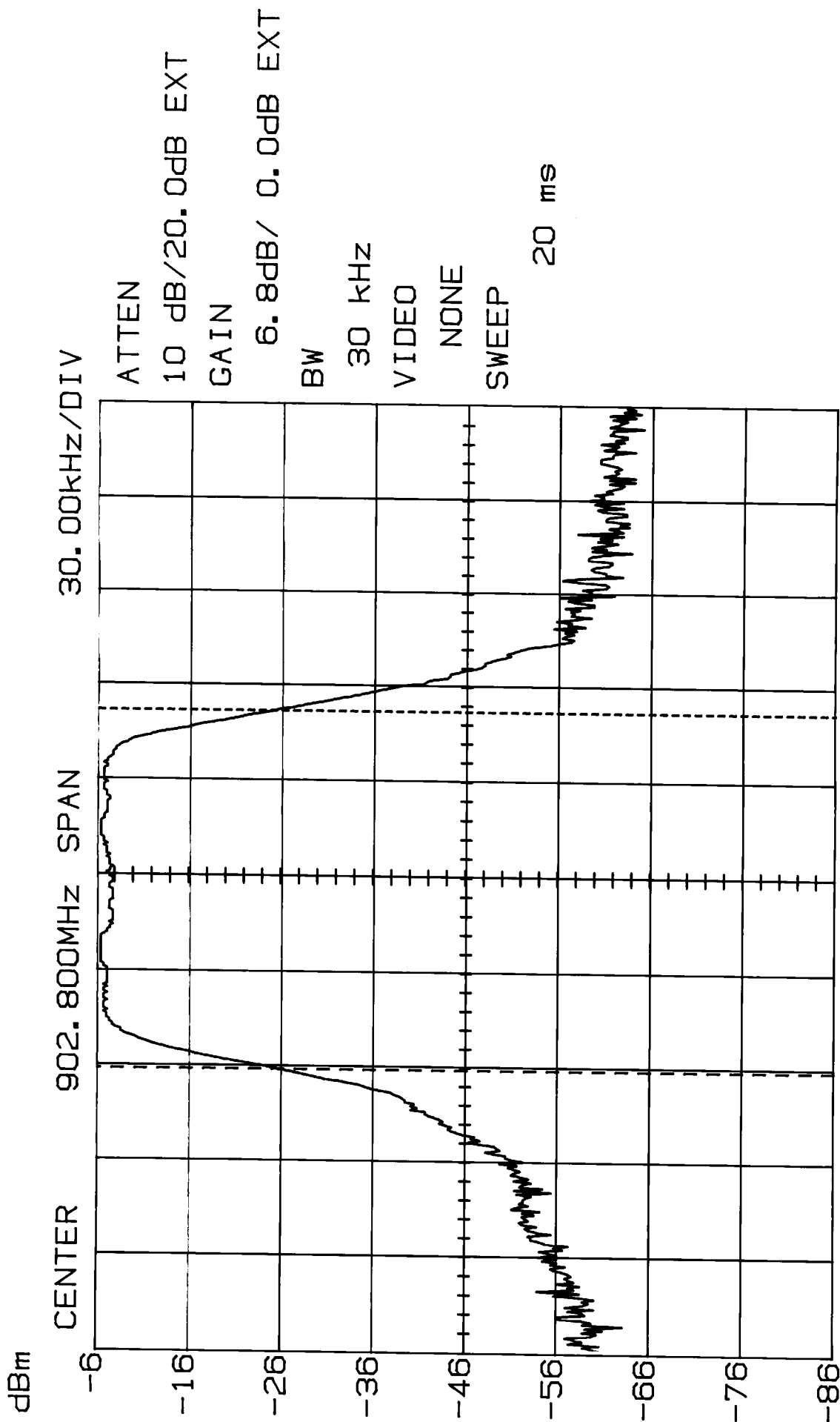
Channel 1: **0.113 MHz** [Refer to Exhibit D(1)-14]
Channel 40: **0.113 MHz** [Refer to Exhibit D(1)-15]

Handset:

Channel 1: **0.127 MHz** [Refer to Exhibit D(1)-16]
Channel 40: **0.124 MHz** [Refer to Exhibit D(1)-17]

BANDWIDTH = **0.113 MHz** (Base)
 0.127 MHz (Handset)

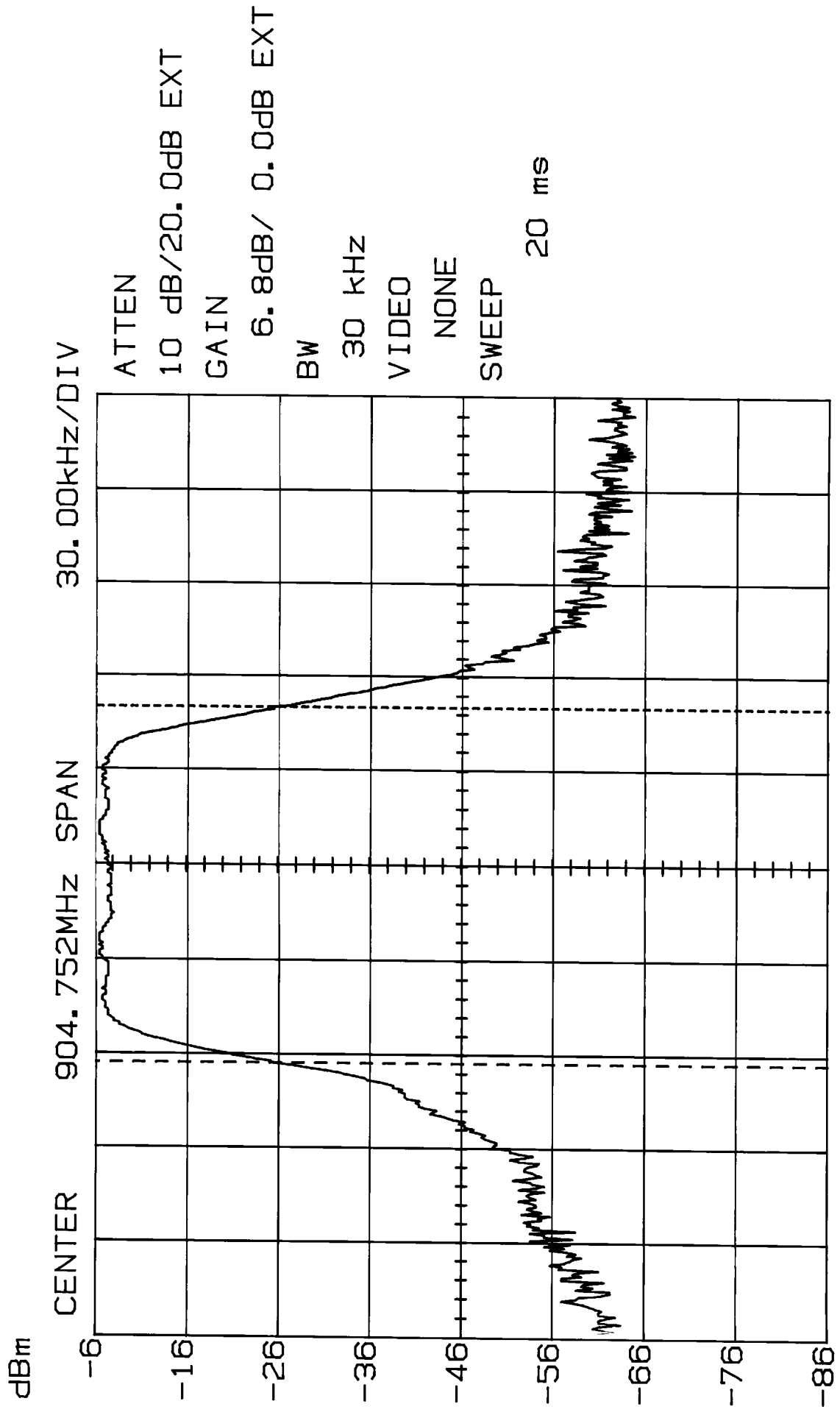
20dB BANDWIDTH
Channel 1 - Base
MODEL 26977XXX-A



M1 -26.48dB/902.739MHz Δ 0.62dB/ 113.000kHz

10:33:43 01-28-2003

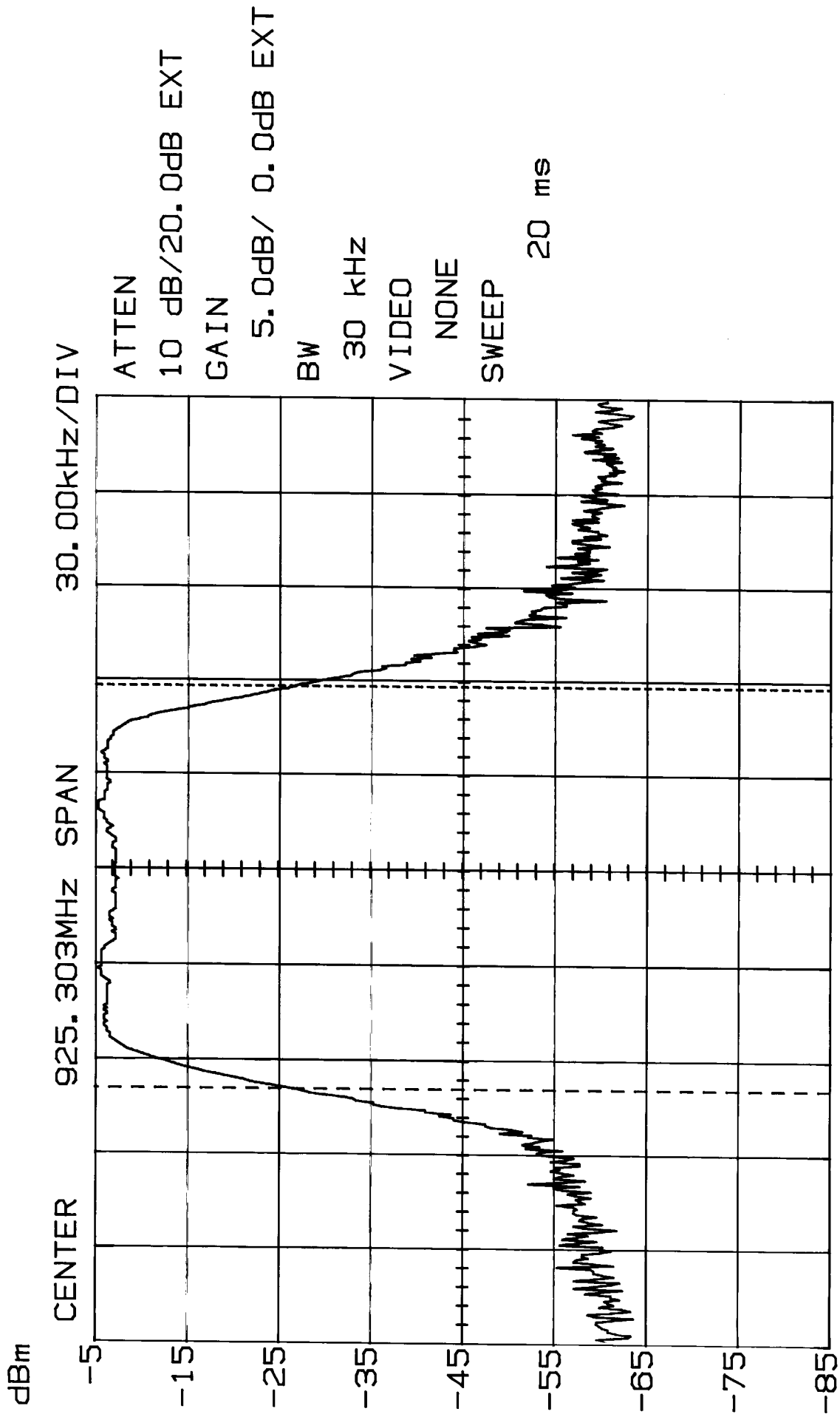
20dB BANDWIDTH
Channel 40 - Base
MODEL 26977XXX-A



M2 -26.17dB/904.802MHz Δ 0.00dB/ 113.000kHz

10:29:40 01-28-2003

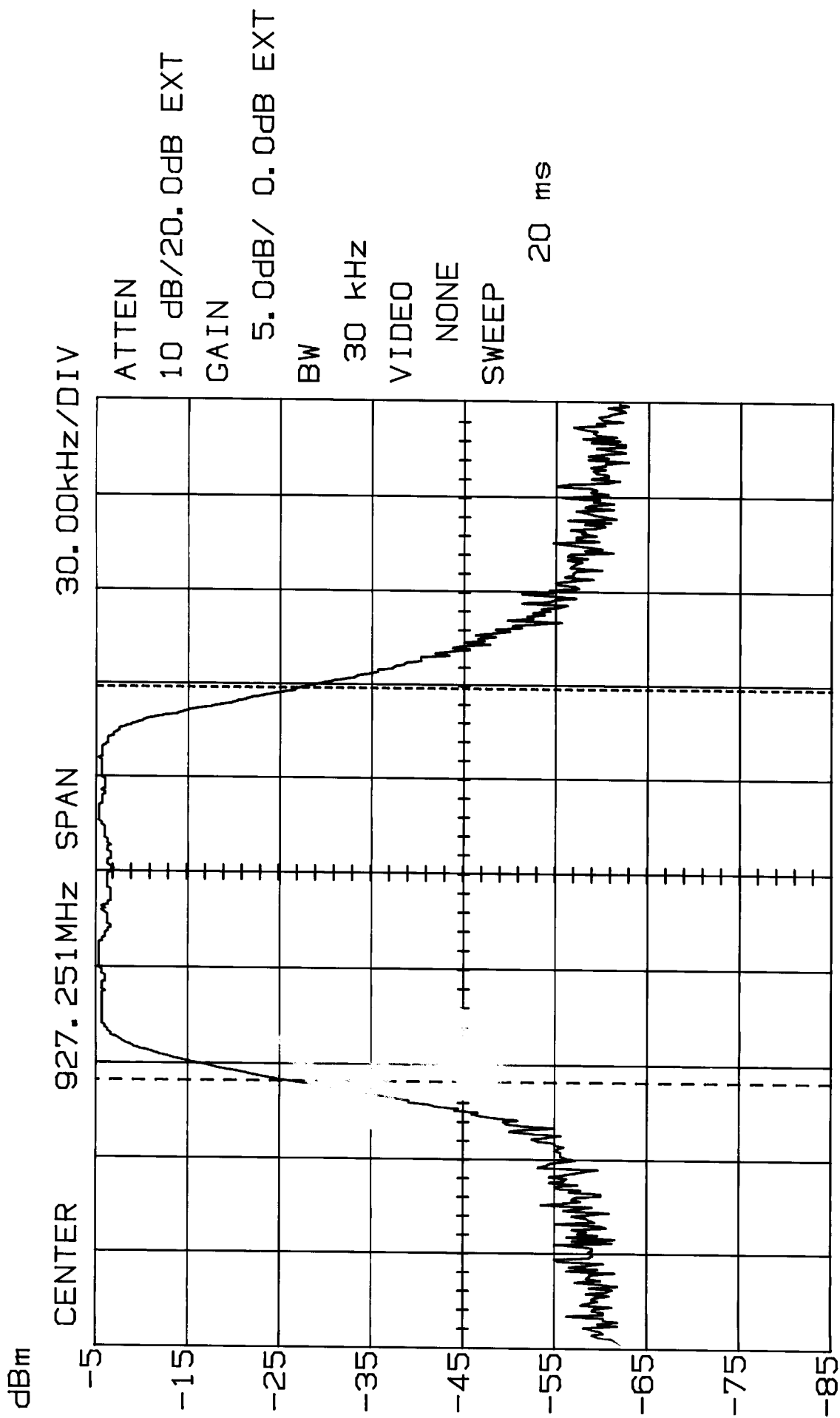
20dB BANDWIDTH
Channel 1 - Handset
MODEL 26977XXX-A



M1 -26.87dB@925.234MHz Δ 0.31dB/ 127.000kHz

10:09:20 01-28-2003

20dB BANDWIDTH
Channel 40 - Handset
MODEL 26977XXX-A



M2 -26.87dB 927.310MHz Δ 0.62dB/ 124.000kHz

10:15:06 01-28-2003