Marstech Limited

11 Kelfield Street, Etobicoke, Ontario, Canada, M9W 5A1
Telephone (416) 246-1116, Fax (416) 246-1020

Authorized by: Professional Engineers Ontario

Engineering & Administrative

Testing For FCC Submissions/Verifications

Approved Test Facility

Qualified Site

TEST REPORT

REPORT DATE:	08 May 2002	REPORT NO:	22049D
CONTENTS:	See Table of Contents		
SUBMITTOR:	ATLINKS USA, Inc. 101 West 103rd Street Indianapolis, IN 46290-1102 USA		
SUBJECT:	Model No:	**21290XXX-A** [Also covers Model H1290XXX-A (Optional Handset)]	
	FCC ID:	G9H2-1290A	
TEST SPECIFICATION	CFR 47 FCC Part 15 NOTE: Tests Conducted Are "Type" Tests.		
DATE SAMPLE RECEIVED:	12 February 2002	DATE TESTED:	12 February 2002 - 6 May 2002
RESULTS:	Equipment tested complies with referenced specification.		
ALTERATIONS	None		
Tested by:	Edward Chang	Approved by: Date:	Robert G. Marshall, P. Eng. May 15/02

REGISTERED PROFESSIONAL ENGINEER R. G. MARSHALL

TECHNICAL REPORT - FCC 2.1033(b)

Applicant

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

FCC Identifier

G9H2-1290A

Manufacturer

Huiyang CCT Telecommunications Products Co. Ltd.
CCT Technology Park, San He Economic Experimental Zone
Huiyang City, Guangdong Province
P. R. of China

TABLE OF CONTENTS

EXHIBIT D

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

"Report of Measurements"

TABLE OF CONTENTS

TEST REPORT CONTAINING:

PRODUCT DESCRIPTION

The Model 21290XXX-A is a two-line corded telephone with answering machine and caller ID and with a remote 2.4GHz spread spectrum, frequency hopping, cordless telephone (using optional handset Model H1290XXX-A) with battery charger, that operates in the 2403.55 to 2476.95 MHz band. The antenna used for the base and the handset is permanently attached to the EUT. Its actual frequency range is:

Base:	2,400,983.40 to 2,481,601.86
Handset:	2,400,983.40 to 2,481,601.86

A complete frequency list is shown on the following pages.

The optional handset Model H1290XXX-A can be sold separately to be used with Model 21290XXX-A and will bear the same FCC ID: G9H2-1290A as Model 21290XXX-A.

Frequency Table for 2.4G DECT

x-tal= 9.302130MHz

1033.57kHz/1ch ref divide=9 1033.570111

Channel No	Table Frequenc	ref=516.785KHz	Real Frequency	Local Frequency	
0	2400983.40	2323.000281	2400983.11	2290391.11	2216
1	2402016.97	2324.000281	2402016.68	2291424.68	2217
2	2403050.54	2325.000281	2403050.25	2292458.25	2218
3	2404084.11	2326.000281	2404083.82	2293491.82	2219
4	2405117.68	2327.000281	2405117.39	2294525.39	2220
5	2406151.25	2328.000281	2406150.96	2295558.96	2221
6	2407184.82	2329.000281	2407184.53	2296592.53	2222
7	2408218.39	2330.000281	2408218.10	2297626.10	2223
8	2409251.96	2331.000281	2409251.67	2298659.67	2224
9	2410285.53	2332.000281	2410285.24	2299693.24	2225
10	2411319.10	2333.000281	2411318.81	2300726.81	2226
11	2412352.67	2334.000281	2412352.38	2301760.38	2227
12	2413386.24	2335.000281	2413385.95	2302793.95	2228
13	2414419.81	2336.000281	2414419.52	2303827.52	2229
14	2415453.38	2337.000281	2415453.09	2304861.09	2230
15	2416486.95	2338.000281	2416486.66	2305894.66	2231
16	2417520.52	2339.000281	2417520.23	2306928.23	2232
17	2418554.09	2340.000281	2418553.80	2307961.80	2233
18	2419587.66	2341.000281	2419587.37	2308995.37	2234
19	2420621.23	2342.000281	2420620.94	2310028.94	2235
20	2421654.80	2343.000281	2421654.51	2311062.51	2236
21	2422688.37	2344.000281	2422688.08	2312096.08	2237
22	2423721.94	2345.000281	2423721.65	2313129.65	2238
23	2424755.51	2346.000281	2424755.22	2314163.22	2239
24	2425789.08	2347.000281	2425788.79	2315196.79	2240
25	2426822.65	2348.000281	2426822.36	2316230.36	2241
26	2427856.22	2349.000281	2427855.93	2317263.93	2242
27	2428889.79	2350.000281	2428889.50	2318297.50	2243
28	2429923.36	2351.000281	2429923.07	2319331.07	2244
29	2430956.93	2352.000281	2430956.64	2320364.64	2245
30	2431990.50	2353.000281	2431990.21	2321398.21	2246
31	2433024.07	2354.000281	2433023.78	2322431.78	2247
32	2434057.64	2355.000281	2434057.35	2323465.35	2248
33	2435091.21	2356.000281	2435090.92	2324498.92	2249
34	2436124.78	2357.000281	2436124.49	2325532.49	2250
35	2437158.35	2358.000281	2437158.06	2326566.06	2251
36	2438191.92	2359.000281	2438191.63	2327599.63	2252
37	2439225.49	2360.000281	2439225.20	2328633.20	2253
38	2440259.06	2361.000281	2440258.77	2329666.77	2254
39	2441292.63	2362.000281	2441292.34	2330700.34	2255
40	2442326.20	2363.000281	2442325.91	2331733.91	2256
41	2443359.77	2364.000281	2443359.48	2332767.48	2257
42	2444393.34	2365.000281	2444393.05	2333801.05	2258
43	2445426.91	2366.000281	2445426.62	2334834.62	2259

44	2446460.48	2367.000281	2446460.19	2335868.19	2260
45	2447494.05	2368.000281	2447493.76	2336901.76	2261
46	2448527.62	2369.000281	2448527.33	2337935.33	2262
47	2449561.19	2370.000281	2449560.90	2338968.90	2263
48	2450594.76	2371.000281	2450594.47	2340002.47	2264
49	2451628.33	2372.000281	2451628.04	2341036.04	2265
50	2452661.90	2373.000281	2452661.61	2342069.61	2266
51	2453695.47	2374.000281	2453695.18	2343103.18	2267
52	2454729.04	2375.000281	2454728.75	2344136.75	2268
53	2455762.61	2376.000281	2455762.32	2345170.32	2269
54	2456796.18	2377.000281	2456795.89	2346203.89	2270
55	2457829.75	2378.000281	2457829.46	2347237.46	2271
56	2458863.32	2379.000281	2458863.03	2348271.03	2272
57	2459896.89	2380.000281	2459896.60	2349304.60	2273
58	2460930.46	2381.000281	2460930.17	2350338.17	2274
59	2461964.03	2382.000281	2461963.74	2351371.74	2275
60	2462997.60	2383.000281	2462997.31	2352405.31	2276
61	2464031.17	2384.000281	2464030.88	2353438.88	2277
62	2465064.74	2385.000281	2465064.45	2354472.45	2278
63	2466098.31	2386.000281	2466098.02	2355506.02	2279
64	2467131.88	2387.000281	2467131.59	2356539.59	2280
65	2468165.45	2388.000281	2468165.16	2357573.16	2281
66	2469199.02	2389.000281	2469198.73	2358606.73	2282
67	2470232.59	2390.000281	2470232.30	2359640.30	2283
68	2471266.16	2391.000281	2471265.87	2360673.87	2284
69	2472299.73	2392.000281	2472299.44	2361707.44	2285
70	2473333.30	2393.000281	2473333.01	2362741.01	2286
71	2474366.87	2394.000281	2474366.58	2363774.58	2287
72	2475400.44	2395.000281	2475400.15	2364808.15	2288
73	2476434.01	2396.000281	2476433.72	2365841.72	2289
74	2477467.58	2397.000281	2477467.29	2366875.29	2290
75	2478501.15	2398.000281	2478500.86	2367908.86	2291
76	2479534.72	2399.000281	2479534.43	2368942.43	2292
77	2480568.29	2400.000281	2480568.00	2369976.00	2293
78	2481601.86	2401.000281	2481601.57	2371009.57	2294

TEST FACILITY AND EQUIPMENT LIST

FACILITIES

Radiated — ANSI C63.4 (FCC OET/55) open field 3 metre test range. This test range is protected from the cold and moisture by a non-conductive enclosure.

Conducted — 2.5m Anechoic Chamber

EQUIPMENT

Anritsu 2601A Spectrum Analyzer
Advantest R3261A Spectrum Analyzer
Hewlett-Packard RF generator # 8640 B with an 002 doubler
A.H. Systems biconical antenna; ..... 20 MHz to 330 MHz
A.H. Systems log periodic antenna; ..... 300 MHz to 1.8 GHz
Compliance Design P950 Preamp (16 dB) ... 25 MHz to 1.0 GHz

NOTE:

The Anritsu 2601A Spectrum Analyzer and the Advantest R3261A Spectrum Analyzer are calibrated annually, and that calibration is directly traceable to the National Research Council of Canada. (NRC) This equipment is only used by qualified technicians and only for the purpose of EMI measurements. The three metre test range has been carefully evaluated to the ANSI document C63.4 and will be remeasured for reflections and losses every three years.

ADDITIONAL TEST EQUIPMENT LIST

1. Spectrum Analyzer: HP 8591EM, S/N 3639A00995, Calibrated April 2002
2. Spectrum Analyzer: ANRITSU 2601A, S/N MT64544, Calibrated May 2002
3. Spectrum Analyzer: IFR AN940, S/N 635001039, Calibrated March 2002
4. Preamp: HP 8449B, S/N 3008A00378, Calibrated August 2001
5. Horn Antenna: Q-PAR 6878/24, S/N 1721, 1.5-18GHz
6. Line Impedance Stabilization Network.: Marstech, Cal. July 2001

15.107 (a) POWER LINE CONDUCTED INTERFERENCE

Requirements:

0.45 - 30MHz 250μV or 47.96dBμV

Test Procedure:

ANSI STANDARD C63.4-1992. using a 50uH 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 0.45 to 30MHz.

Test Data:

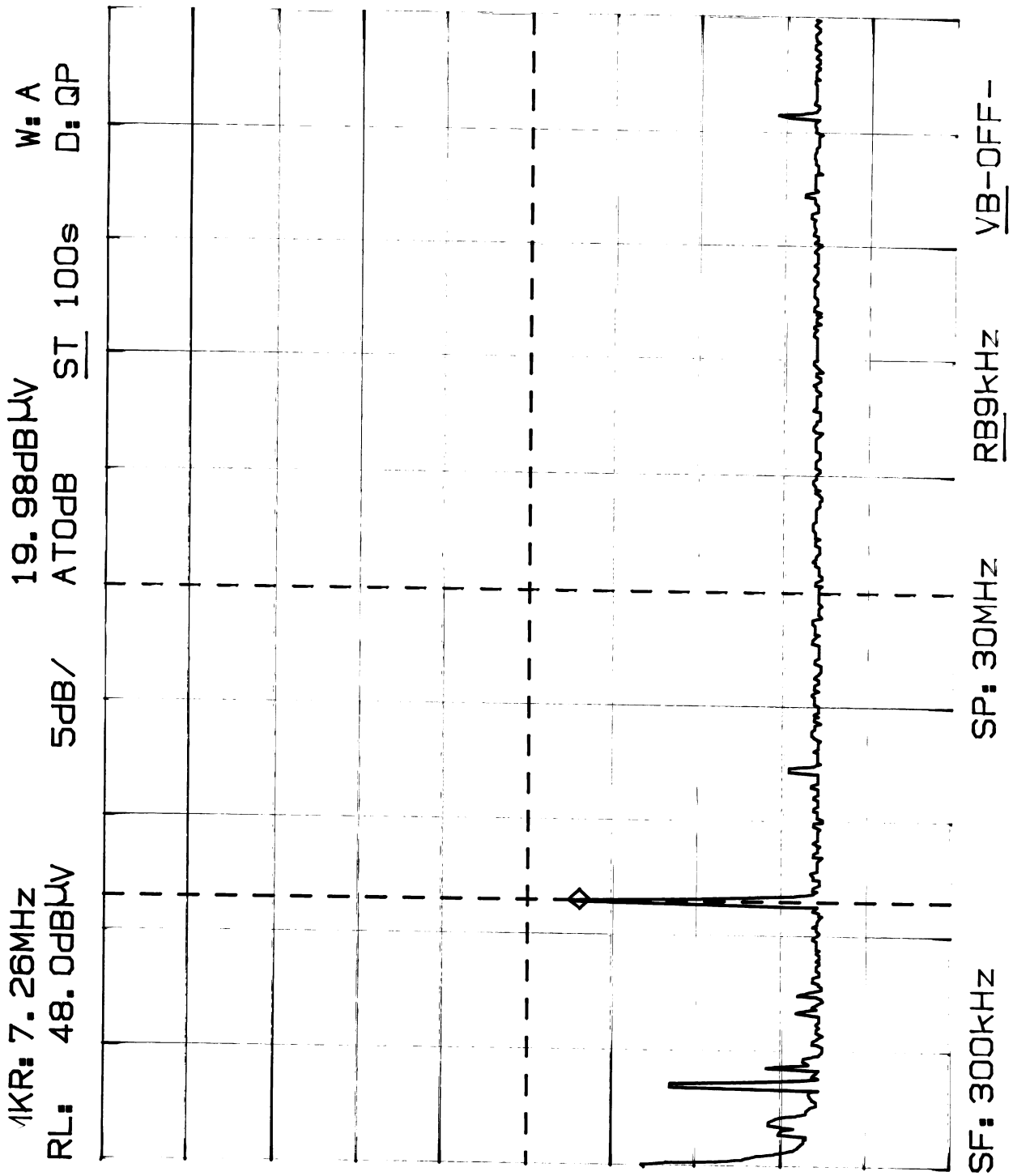
The highest emission read for LINE was 19.98 dBμV@ 7.26 MHz.
The highest emission read for NEUTRAL was 20.20 dBμV@ 7.26 MHz.

The graphs on Exhibit D(1)-8 and -9 represent the emissions taken for this device.

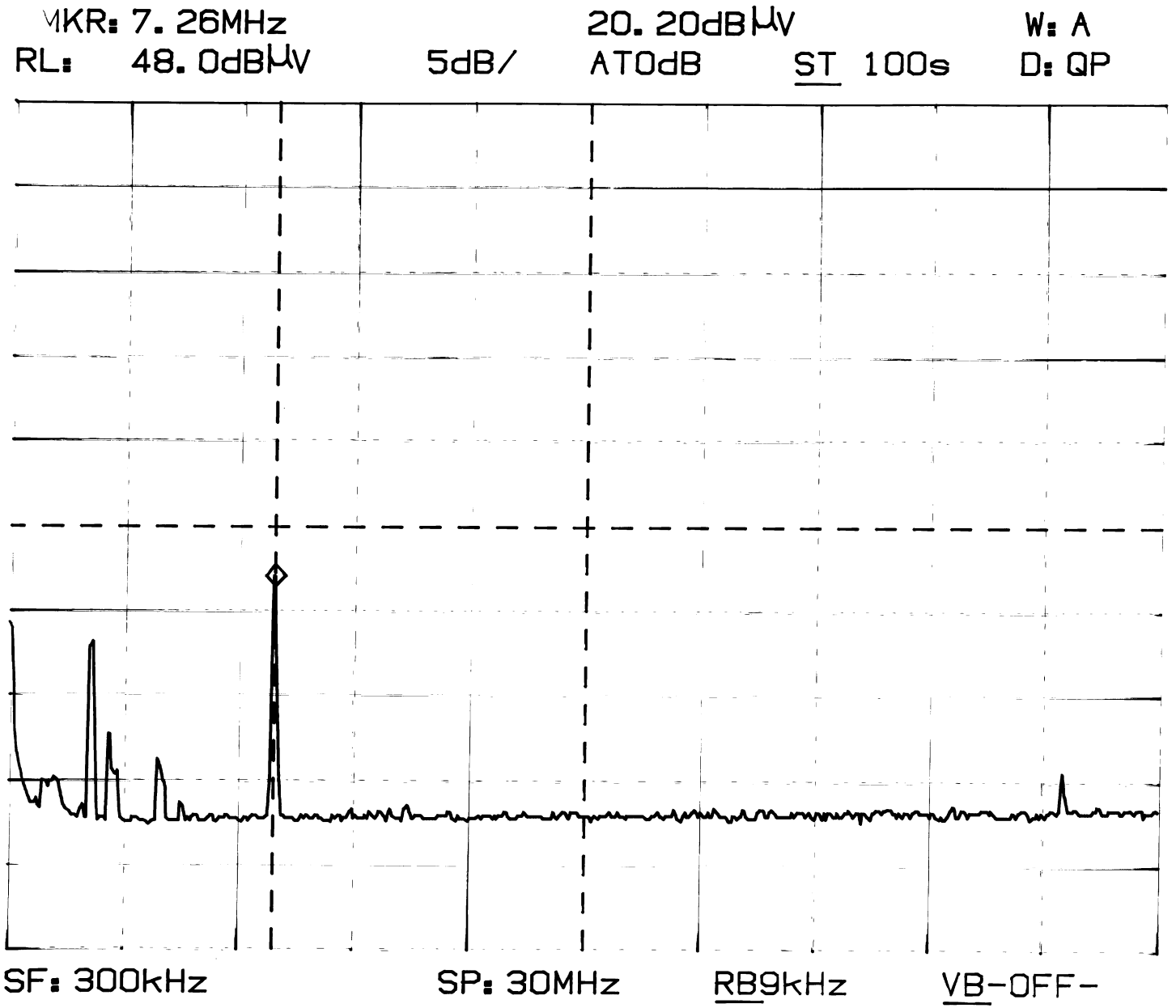
Test Results:

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 21290XXX-A; LINE



POWER LINE CONDUCTED EMISSIONS
MODEL 21290XXX-A; NEUTRAL



15.205(c)/15.209 SPURIOUS RADIATED EMISSIONS IN RESTRICTED BANDS

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 = 1.0GHz. 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%.

Requirements:

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

Test Data:

The Duty Cycle Correction Factor (DCCF) is calculated according to the formula:

$$20 \log \left[\frac{\text{dwell time}}{100}\right] \text{ ms}$$

For the model 21290A:

DCCF (Handset) = $20 \log \frac{15.3}{100} = 20 \log 0.153 = -16$ dB

DCCF (Base) = $20 \log \frac{30.6}{100} = 20 \log 0.306 = -10$ dB

BASE UNIT

Emission Frequency MHZ	Meter Reading @3m dBμV	Antenna	Cable and ACF dB	Field Strength dBμV/M	Pk/Av Ratio (dB) DCCF	Corrected Field Strength dBμV/M	FCC Limit dBμV/M	Margin dB	Detector & BW KHz
Channel 1									
4801.960	18.78	Horn H	38.02	56.80	-10	46.8	54	-7.2	PK 1000
7202.94	---								
9603.93	---								

Emission Frequency MHZ	Meter Reading @3m dBμV	Antenna	Cable and ACF dB	Field Strength dBμV/M	Pk/Av Ratio (dB) DCCF	Corrected Field Strength dBμV/M	FCC Limit dBμV/M	Margin dB	Detector & BW KHz
Channel 40									
4884.650	19.78	Horn H	38.22	58.00	-10	48	54	-6	PK 1000
7326.97	---								
9769.30	---								
Channel 78									
4963.20	23.78	Horn H	38.41	62.19	-10	52.19	54	-1.81	PK 1000
7444.80	10.30	Horn V	43.89	57.19	-10	47.19	54	-6.81	PK 1000
9926.40	---								

HANDSET UNIT

Emission Frequency MHZ	Meter Reading @3m dBμV	Antenna	Cable and ACF dB	Field Strength dBμV/M	Pk/Av Ratio (dB) DCCF	Corrected Field Strength dBμV/M	FCC Limit dBμV/M	Margin dB	Detector & BW KHz
Channel 1									
4801.960	14.05	Horn H	38.02	52.07	-16	36.07	54	-17.93	PK 1000
7202.94	---								
Channel 40									
4884.650	13.76	Horn H	38.22	51.98	-16	35.98	54	-18.02	PK 1000
7326.97	---								
Channel 79									
4963.20	14.78	Horn H	38.41	53.19	-16	37.19	54	-16.81	PK 1000
7444.80	---								

15.205(c)/15.209 FIELD STRENGTH OF RADIATED EMISSIONS IN RESTRICTED BANDS AT 2483.5 MHz

Marker Delta Method

1. The in-band field strength is shown below:
   Base 105.5 dBμV/m
   Handset 103 dBμV/m

2. The Delta amplitude in peak hold mode is shown as follows:
   Base -48dB (Refer Exhibit D(1)-49)
   Handset -48dB (Refer Exhibit D(1)-51)

3. The DCCF for the base and handset are in Exhibit D(1)-10.
   Base -10dB, Handset -16dB

4. The band edge emissions are therefore as follows:
   Base 105.5 -48 -10 = 47.5 dBμV/m
   Handset 103 - 48 -16 = 39 dBμV/m

Emission Frequency MHZ	Meter Reading @3m dBμV	Antenna	Cable and ACF dB	Field Strength dBμV/M	Pk/Av Ratio (dB)	Corrected Field Strength dBμV/M	Detector & BW KHz
Base							
2481.601	72.31	Horn H	33.22	105.53	-10	95.53	PK 1000
Handset							
2481.601	69.80	Horn H	33.22	103.22	-16	87.22	PK 1000

15.247(a)(1) HOPPING CHANNEL SEPARATION

Requirements:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

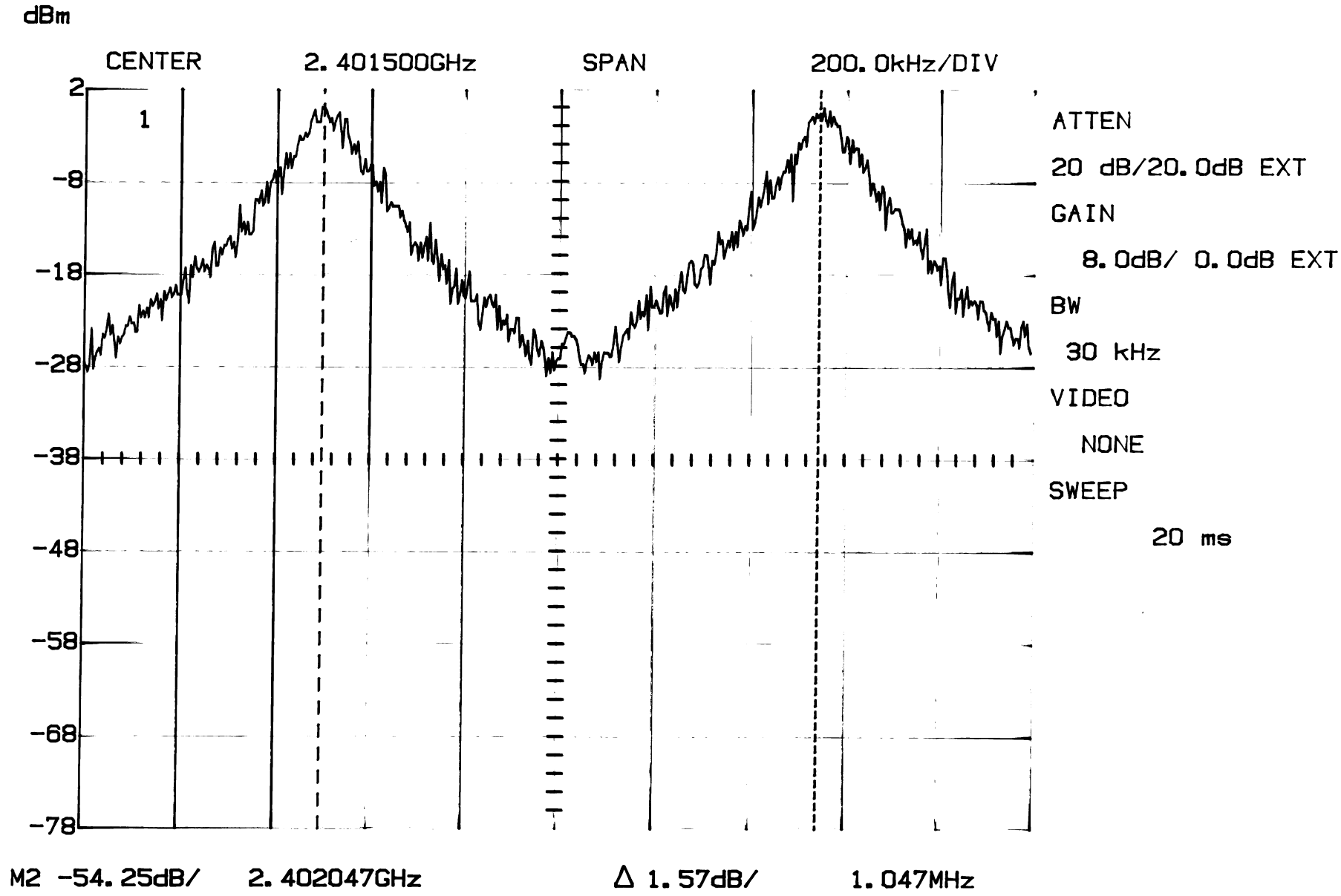
Measurement Procedure

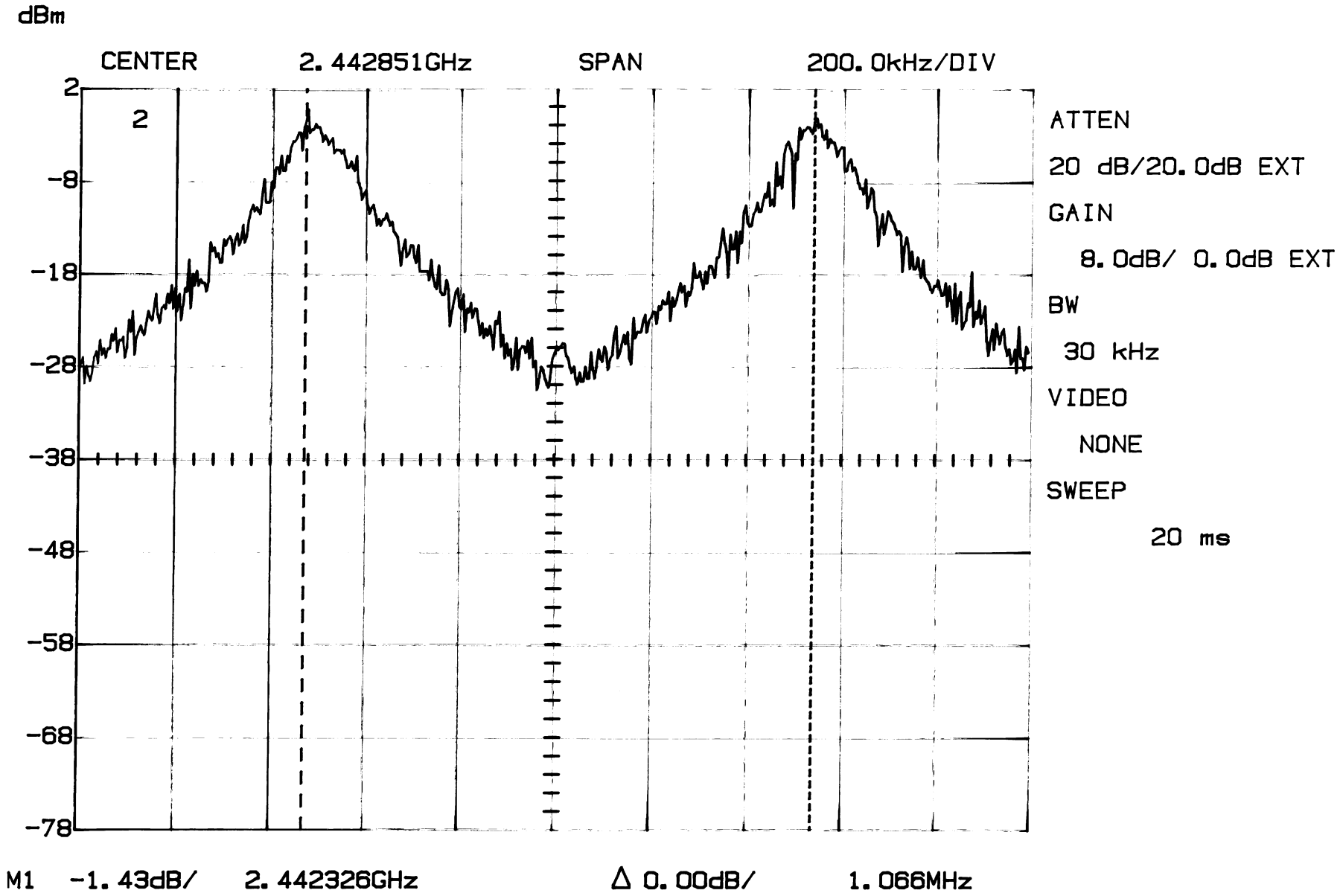
1. Position the EUT without connection to the Spectrum Analyzer (SA). Turn on the EUT and connect it to the SA. Then set it to any one convenient frequency within its operating range.
2. By using the MaxHold function record the separation of two adjacent channels.
3. Measure the frequency difference of these two adjacent channels by SA MARK function and then plot the result on the SA screen.
4. Repeat above procedures until all frequencies measured were complete.

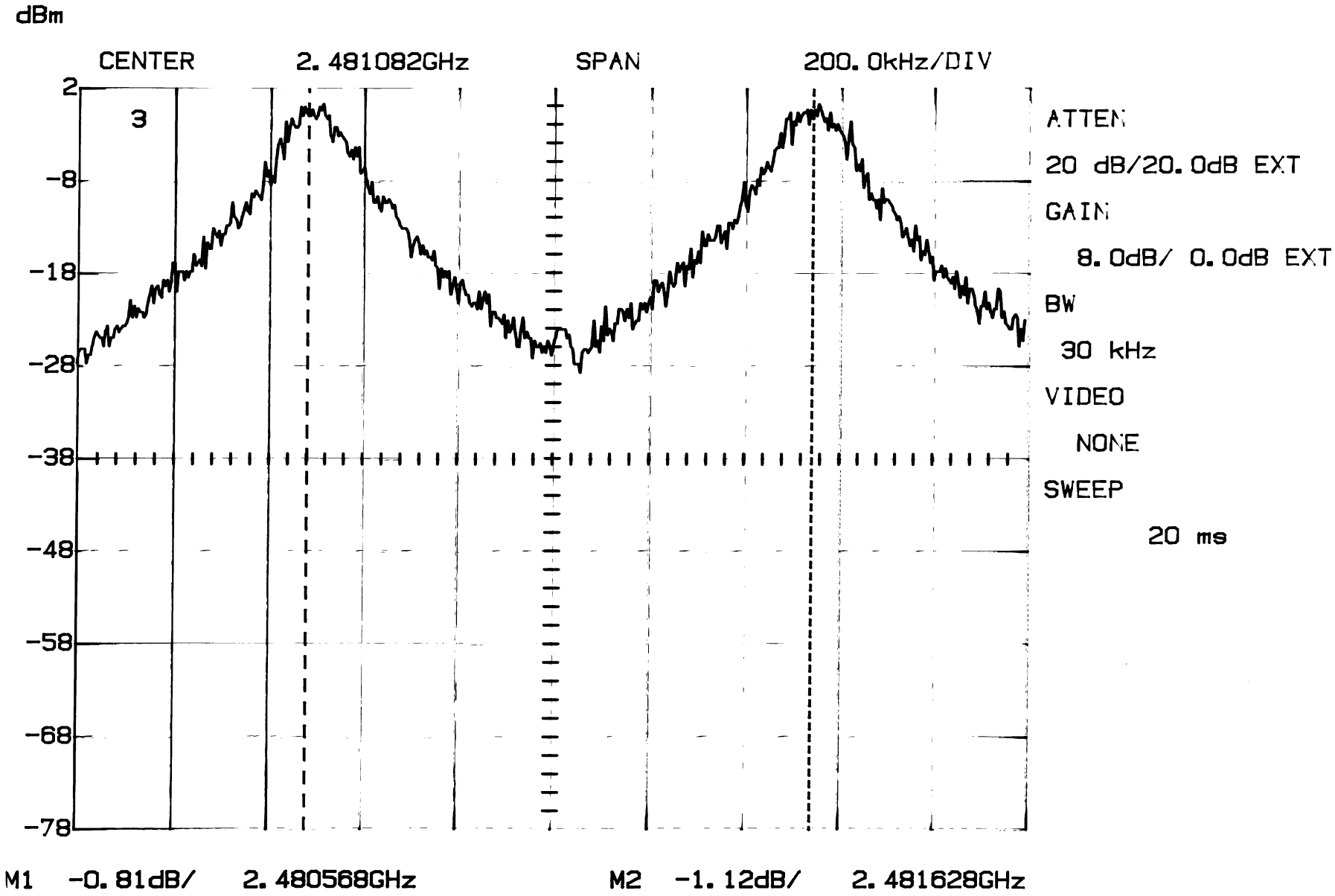
Measurement Data - **Refer Exhibit D(1)-14 to -19 for plotted data**

Handset
Channel 1: Adjacent Hopping Channel Separation is 1047 kHz.
Channel 40: Adjacent Hopping Channel Separation is 1066 kHz.
Channel 79: Adjacent Hopping Channel Separation is 1060 kHz.

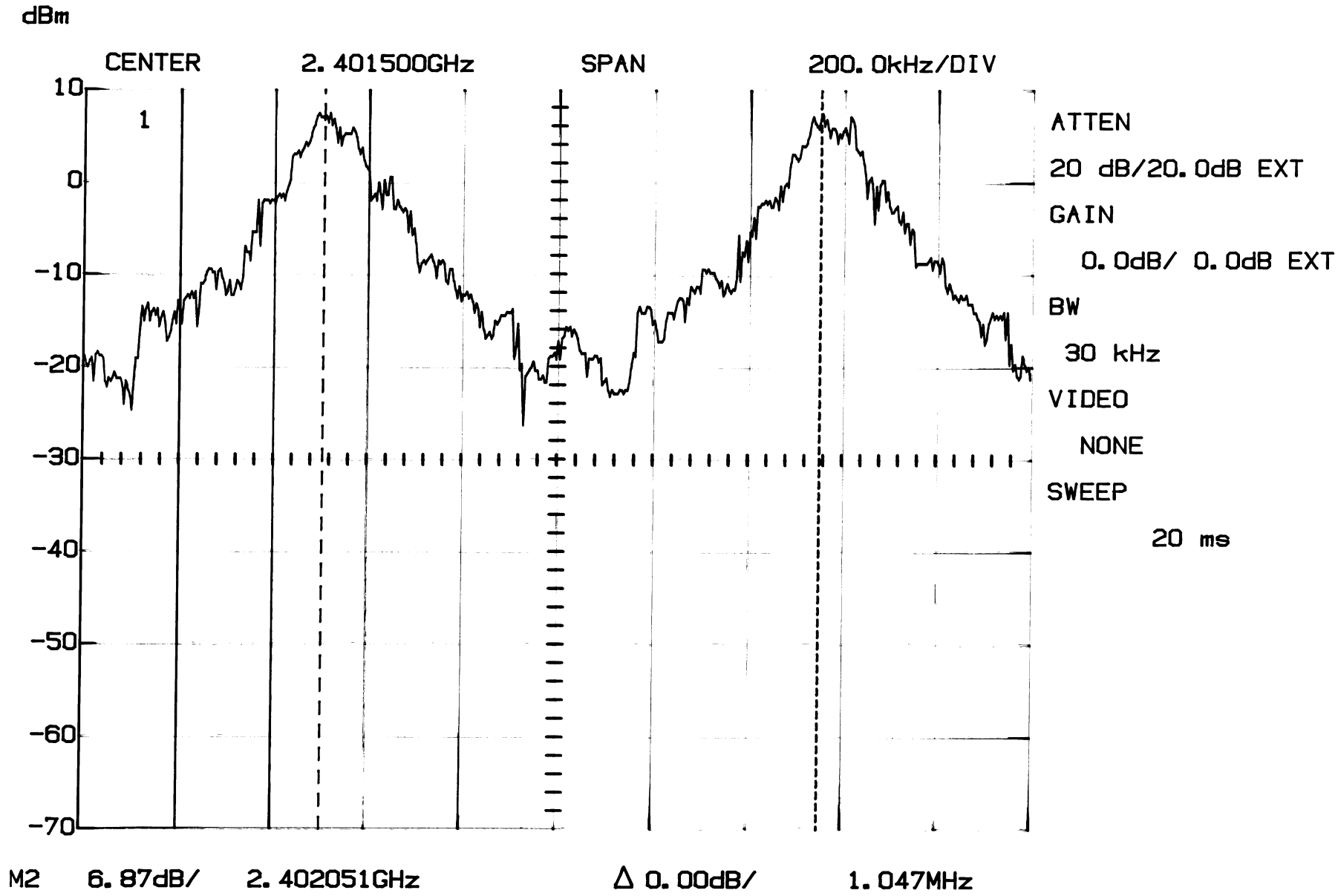
Base Unit
Channel 1: Adjacent Hopping Channel Separation is 1047 kHz.
Channel 40: Adjacent Hopping Channel Separation is 1058 kHz.
Channel 79: Adjacent Hopping Channel Separation is 1053 kHz.


dBm
CENTER
2.401500GHz
SPAN
200.0kHz/DIV
2
-8
-18
-28
-38
-48
-58
-68
-78
1
ATTEN
20 dB/20.0dB EXT
GAIN
8.0dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
20 ms
M2 -54.25dB/ 2.402047GHz
Δ 1.57dB/ 1.047MHz
10:55:49 05-03-2002

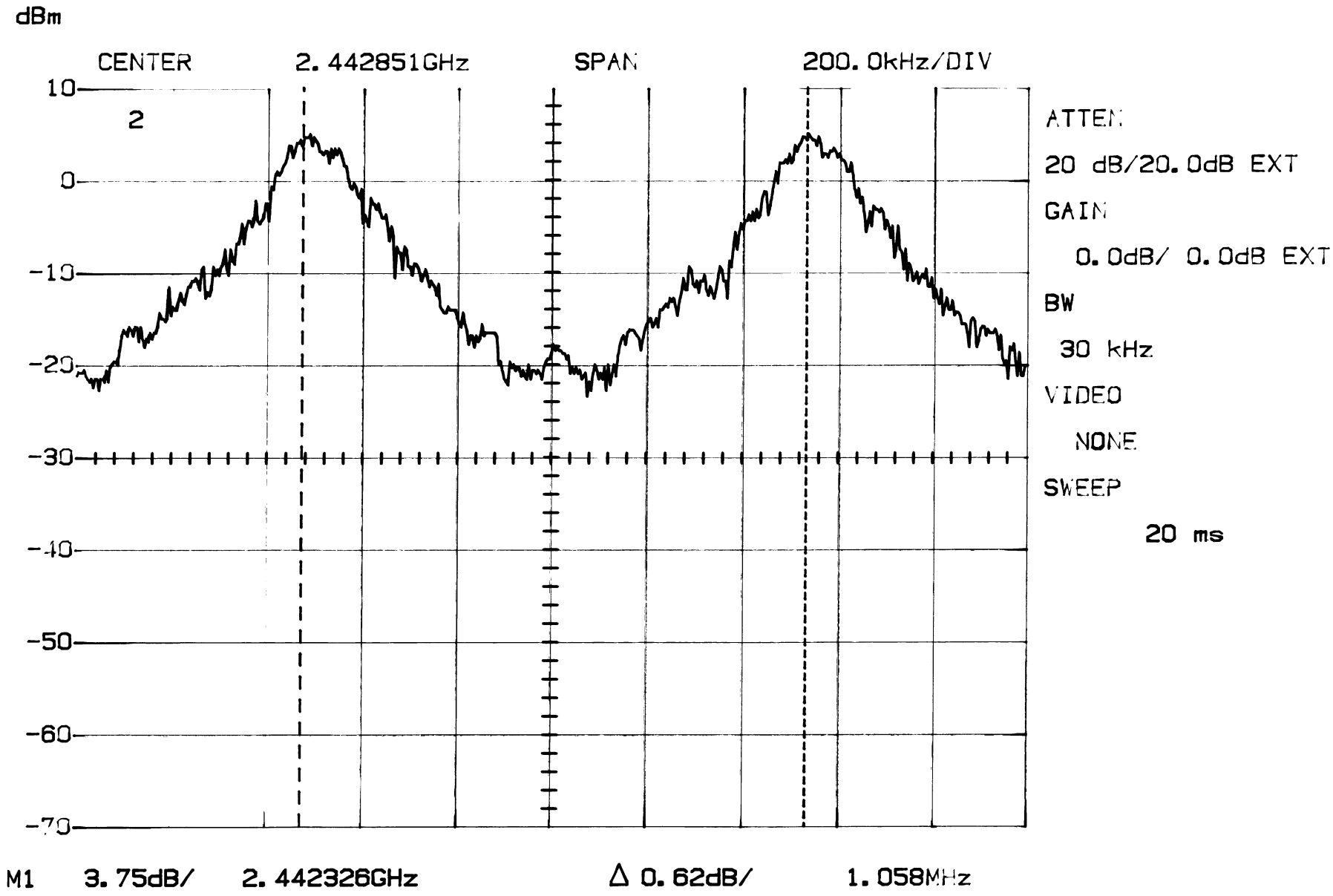

dBm
CENTER 2.442851GHz
SPAN 200.0kHz/DIV
2
-8
-18
-28
-38
-48
-58
-68
-78
ATTEN
20 dB/20.0dB EXT
GAIN
8.0dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
20 ms
M1 -1.43dB/ 2.442326GHz
Δ 0.00dB/ 1.066MHz
11:46:38 05-03-2002

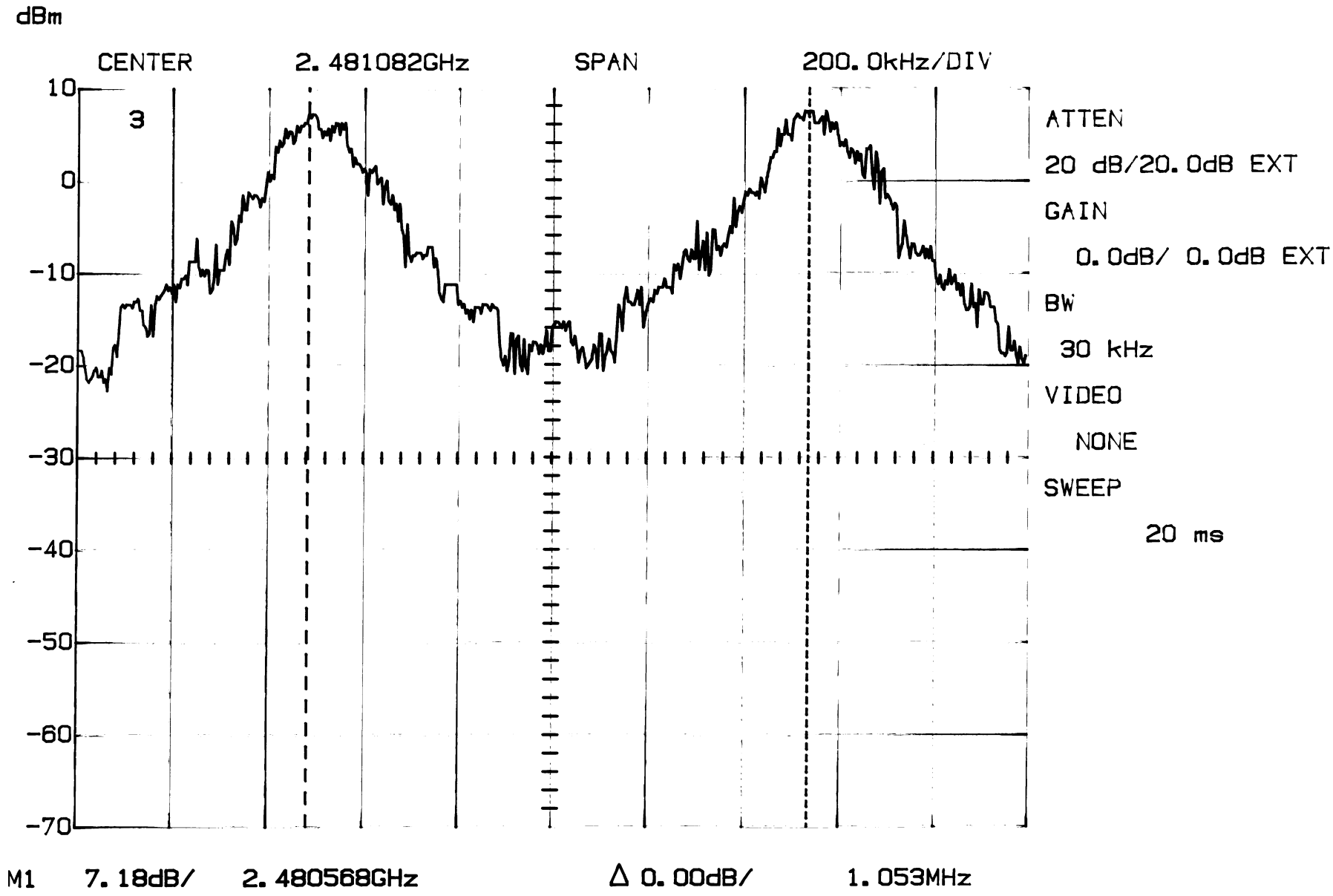

dBm
CENTER 2.481082GHz
SPAN 200.0kHz/DIV
2
-8
-18
-28
-38
-48
-58
-68
-78
3
ATTEN
20 dB/20.0dB EXT
GAIN
8.0dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
20 ms
M1 -0.81dB/ 2.480568GHz
M2 -1.12dB/ 2.481628GHz
13:03:11 05-06-2002

MODEL 21290XXX-A (Base; CH1-CH2)



MODEL 21290XXX-A (Base; CH40-CH41)




dBm
CENTER
2. 481082GHz
SPAN
200. 0kHz/DIV
10
0
-10
-20
-30
-40
-50
-60
-70
3
ATTEN
20 dB/20. 0dB EXT
GAIN
0. 0dB/ 0. 0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
20 ms
M1
7. 18dB/
2. 480568GHz
Δ 0. 00dB/
1. 053MHz
13: 45: 48 05-06-2002

15.247(a)(1)(ii) FREQUENCY HOPPING SYSTEMS

NUMBER OF HOPPING FREQUENCIES USED

Requirements:

Frequency hopping systems operating in the 2400-2483.5 MHz and 5725-5850 MHz bands shall use at least 75 hopping frequencies.

Measurement Procedure

1. Position the EUT without connection to Spectrum Analyzer (SA). Turn on the EUT and connect its antenna terminal to SA via a low loss cable and set it to any one measured frequency within its operating range and ensure that the SA is operated in its linear range.
2. Set the SA on MaxHold Mode, and then keep the EUT in hopping mode. Record all of the signals from each channel until each one has been recorded.
3. Set the SA on View mode and plot the results on SA screen.
4. Repeat the above procedures until all frequencies measured are complete.

Measurement Data

There are 79 hopping frequencies in a hopping sequence. **Refer Exhibit D(1)-21 and-22 for plotted data.**

CHANNEL BANDWIDTH

Requirements:

The maximum 20dB bandwidth of the hopping channel is 1 MHz.

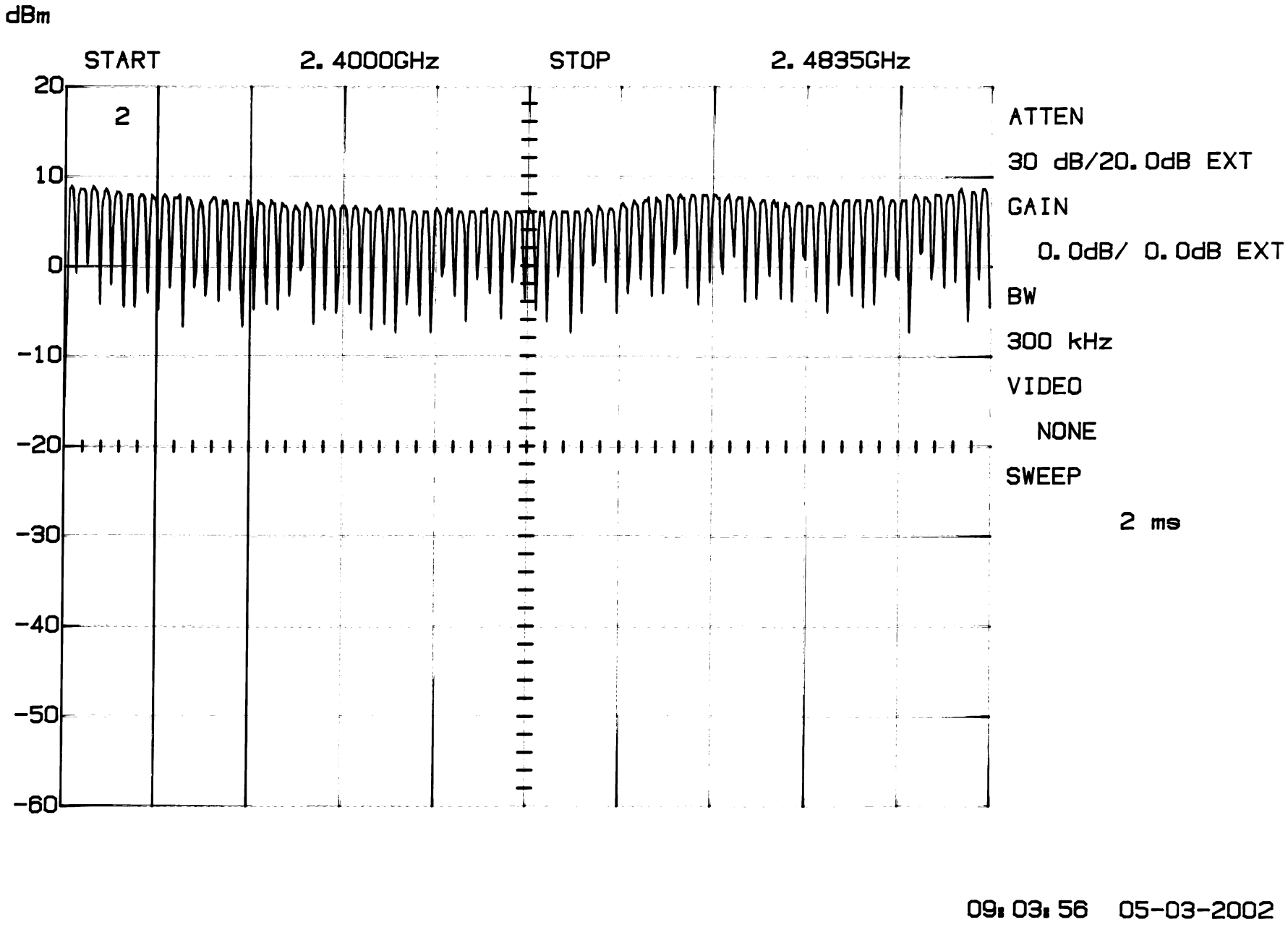
Measurement Procedure

1. Position the EUT without connection to the Spectrum Analyzer (SA). Turn on the EUT and connect it to the SA. Then set it to any one convenient frequency within its operating range. Set a reference level on the SA equal to the highest peak value.
2. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
3. Repeat above procedures until all frequencies measured were complete.

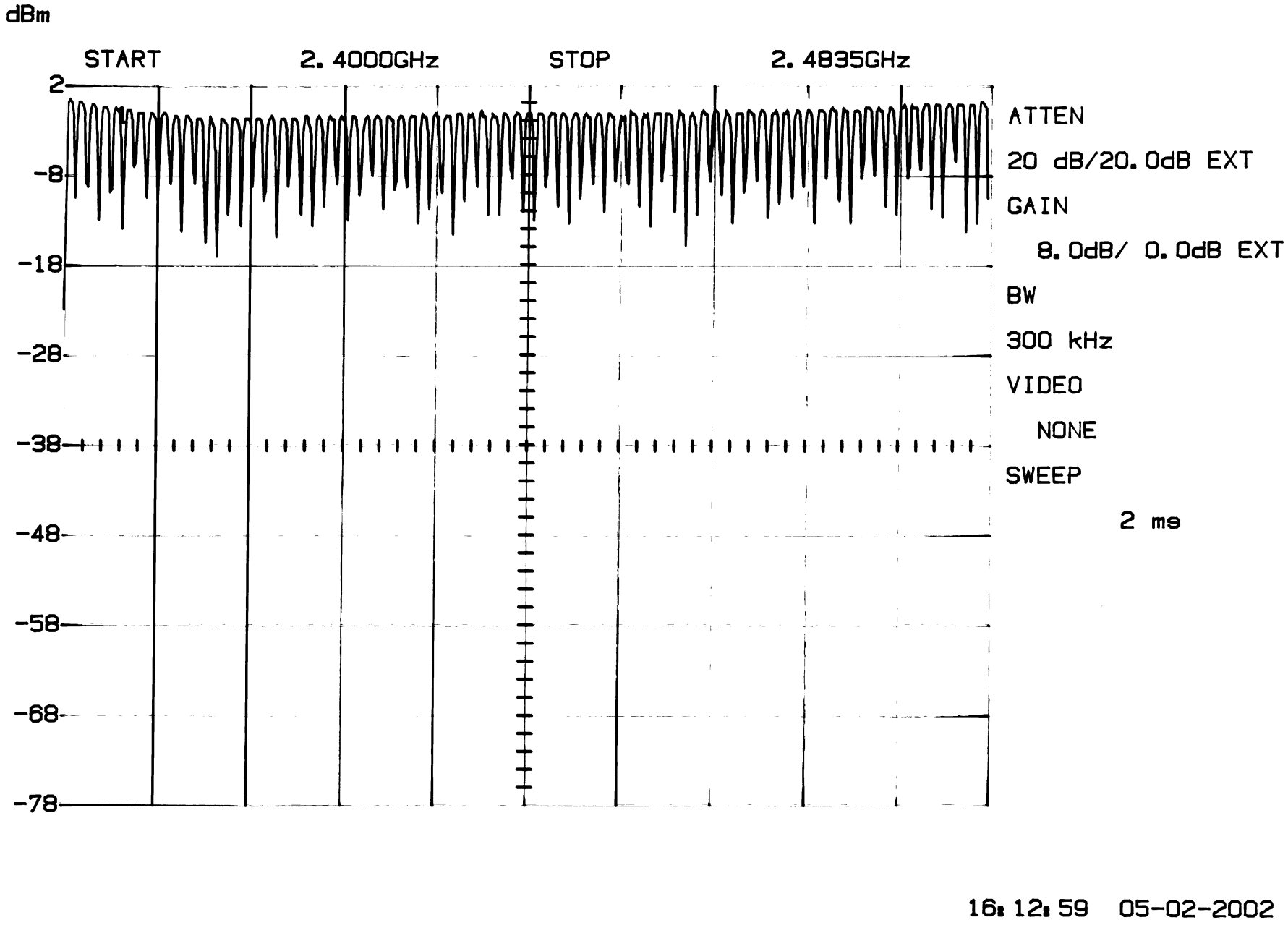
Measurement Data - **Refer Exhibit D(1)-23 to -28 for plotted data**

Handset	Channel 1:	Channel Bandwidth is 692 kHz
	Channel 40:	Channel Bandwidth is 697 kHz
	Channel 79:	Channel Bandwidth is 688 kHz
Base Unit	Channel 1:	Channel Bandwidth is 660 kHz
	Channel 40:	Channel Bandwidth is 664 kHz
	Channel 79:	Channel Bandwidth is 666 kHz

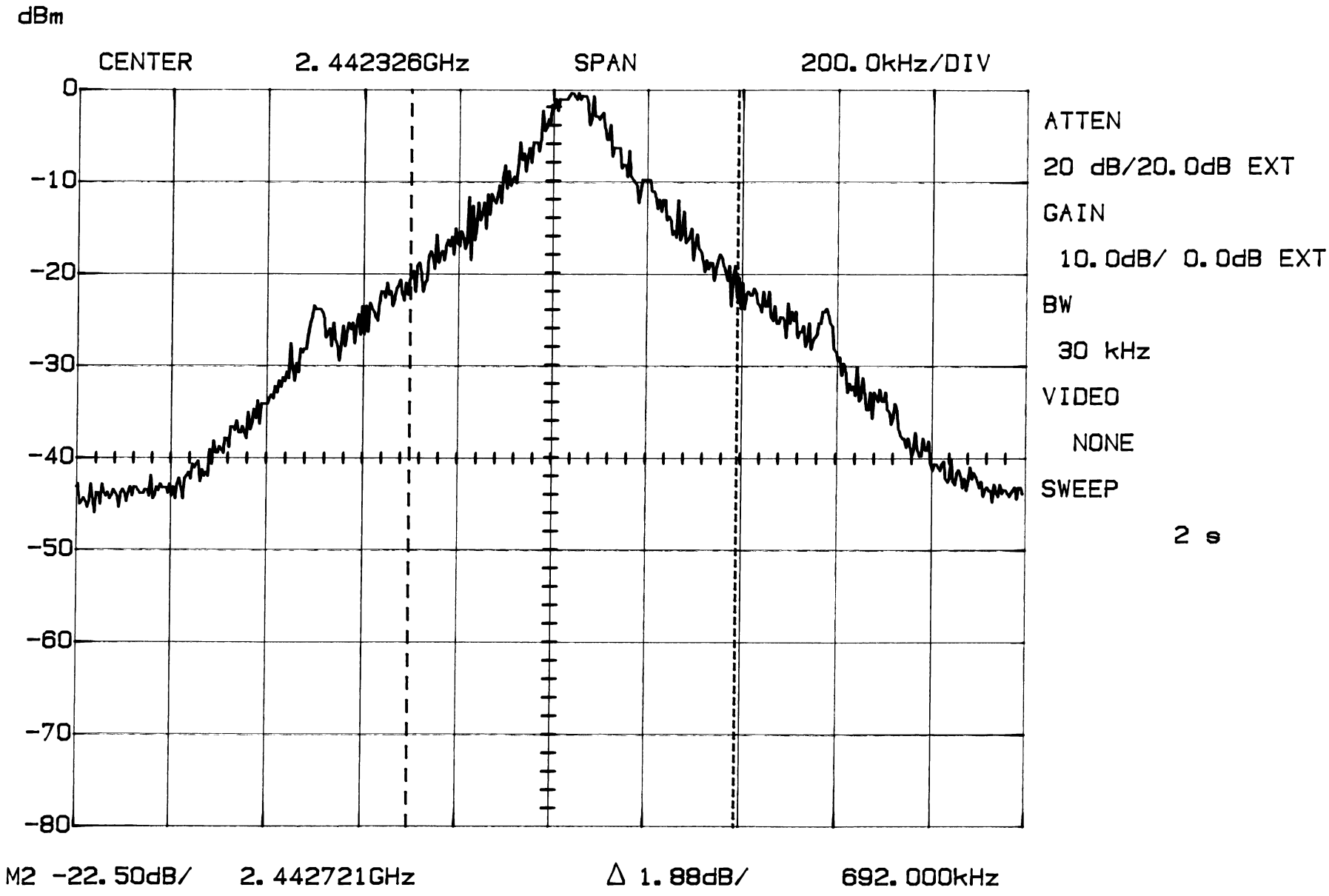
MODEL 21290XXX-A
(Base Hopping Channel; CH79)



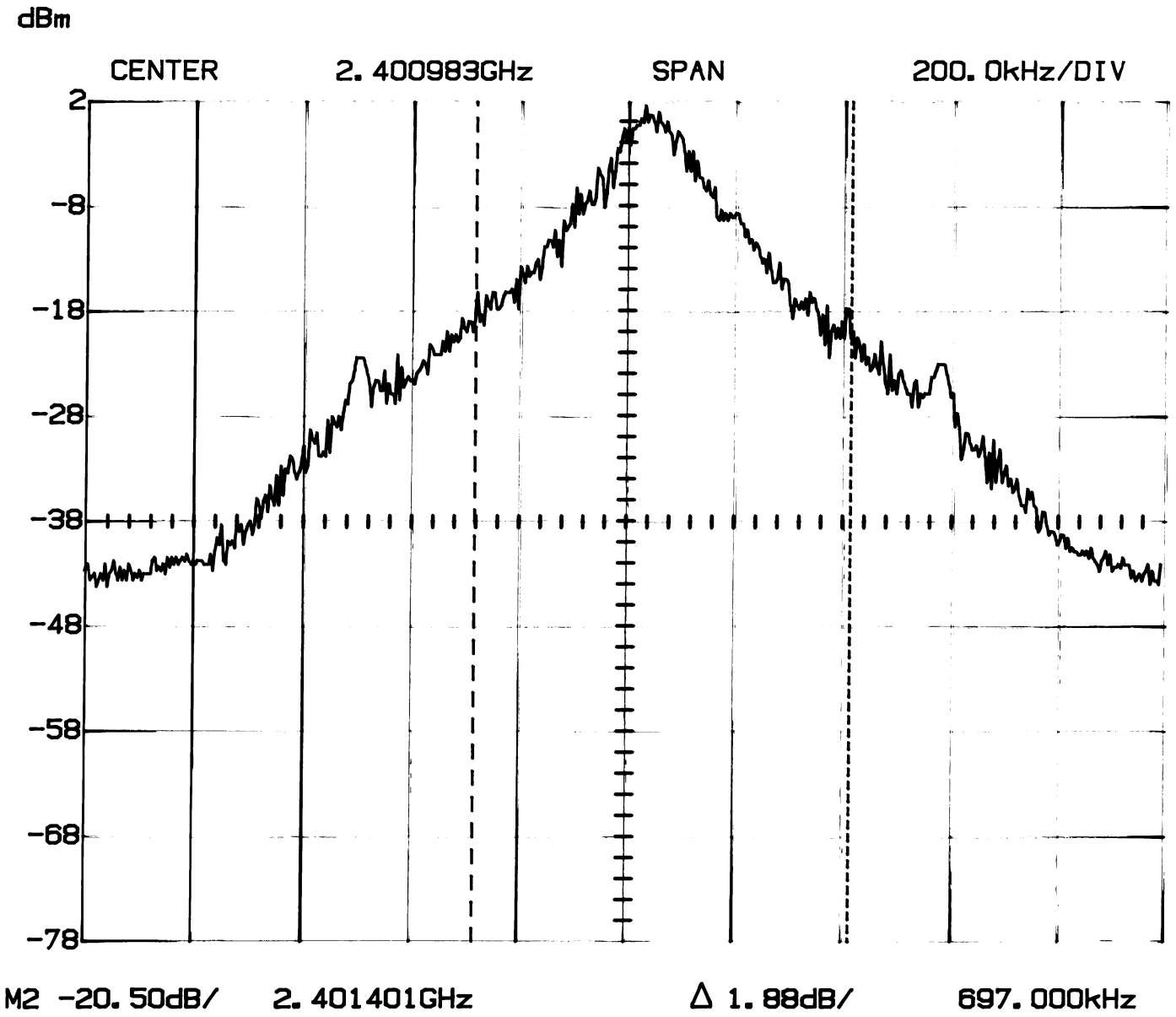
MODEL 21290XXX-A
(Handset Hopping Channel; CH79)



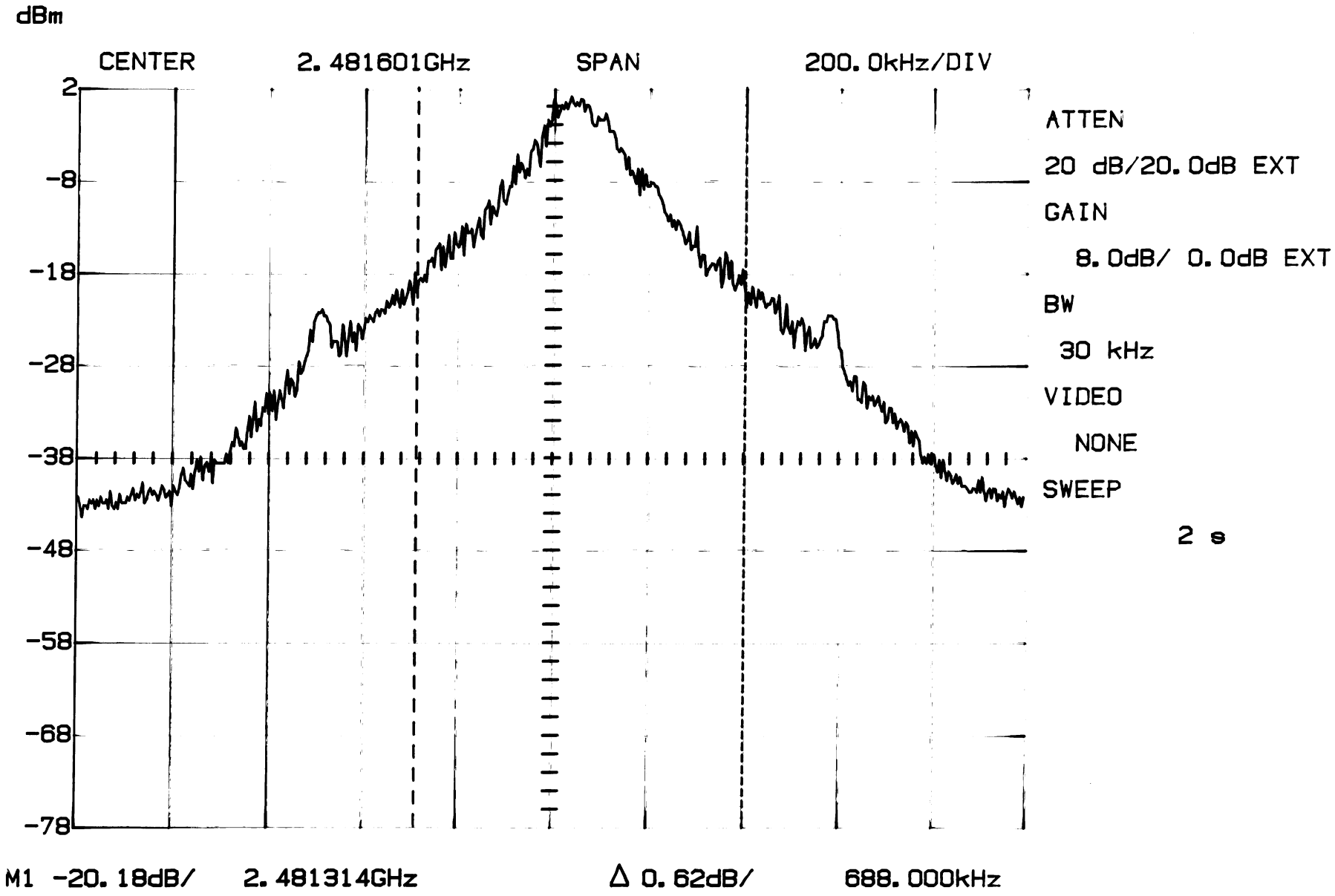
MODEL 21290XXX-A (Handset; CH1)



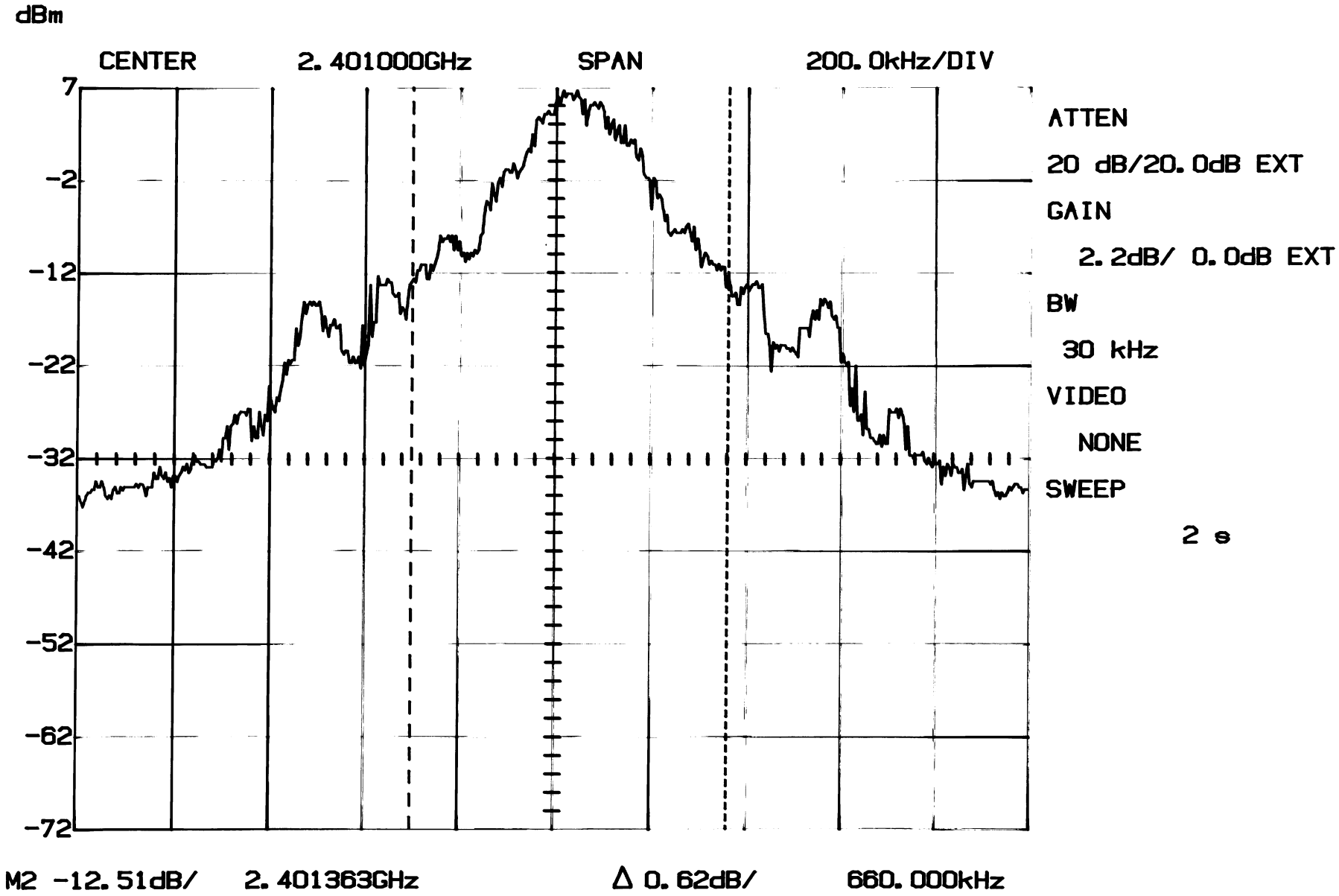
MODEL 21290XXX-A (Handset; CH40)

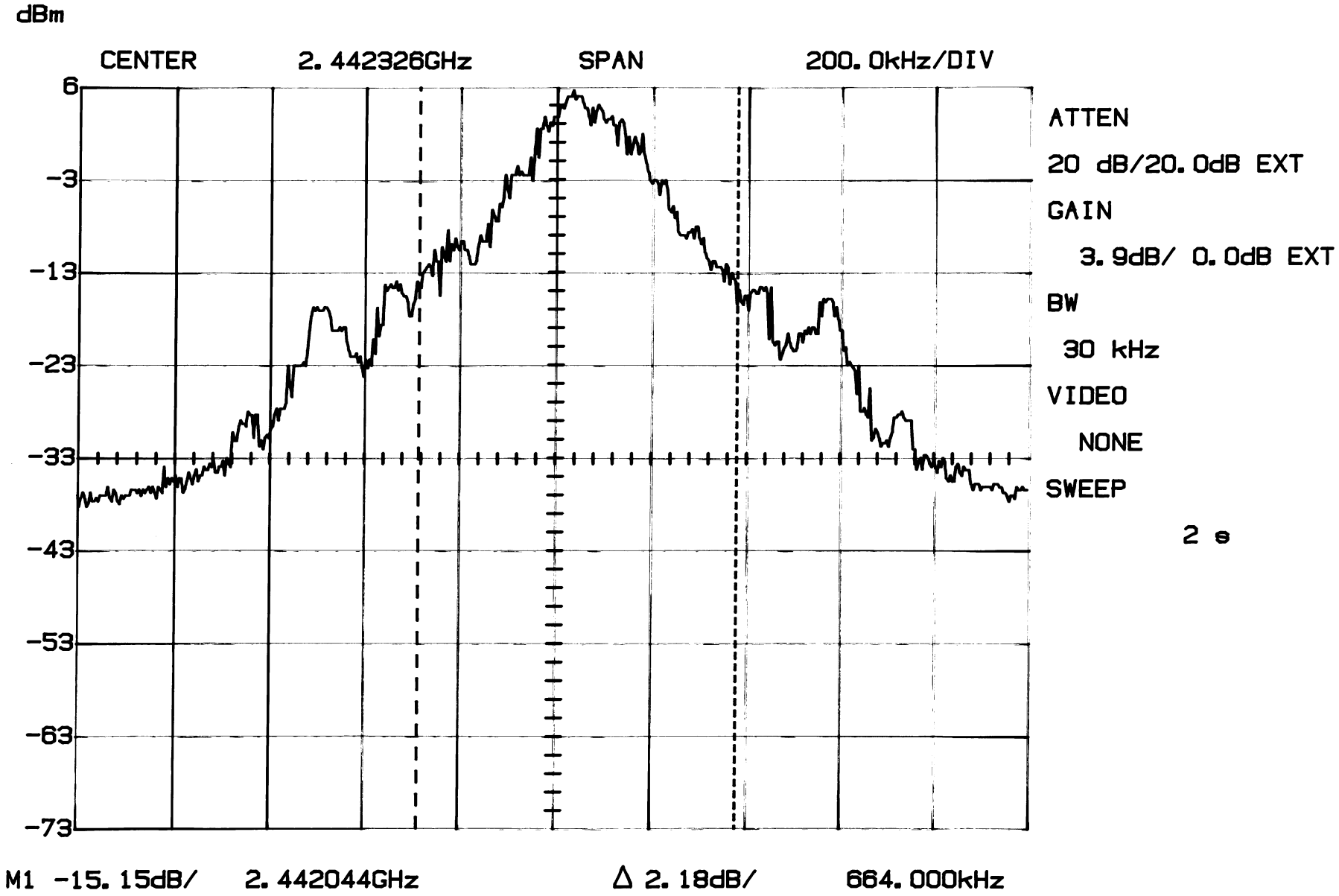


MODEL 21290XXX-A (Handset; CH79)

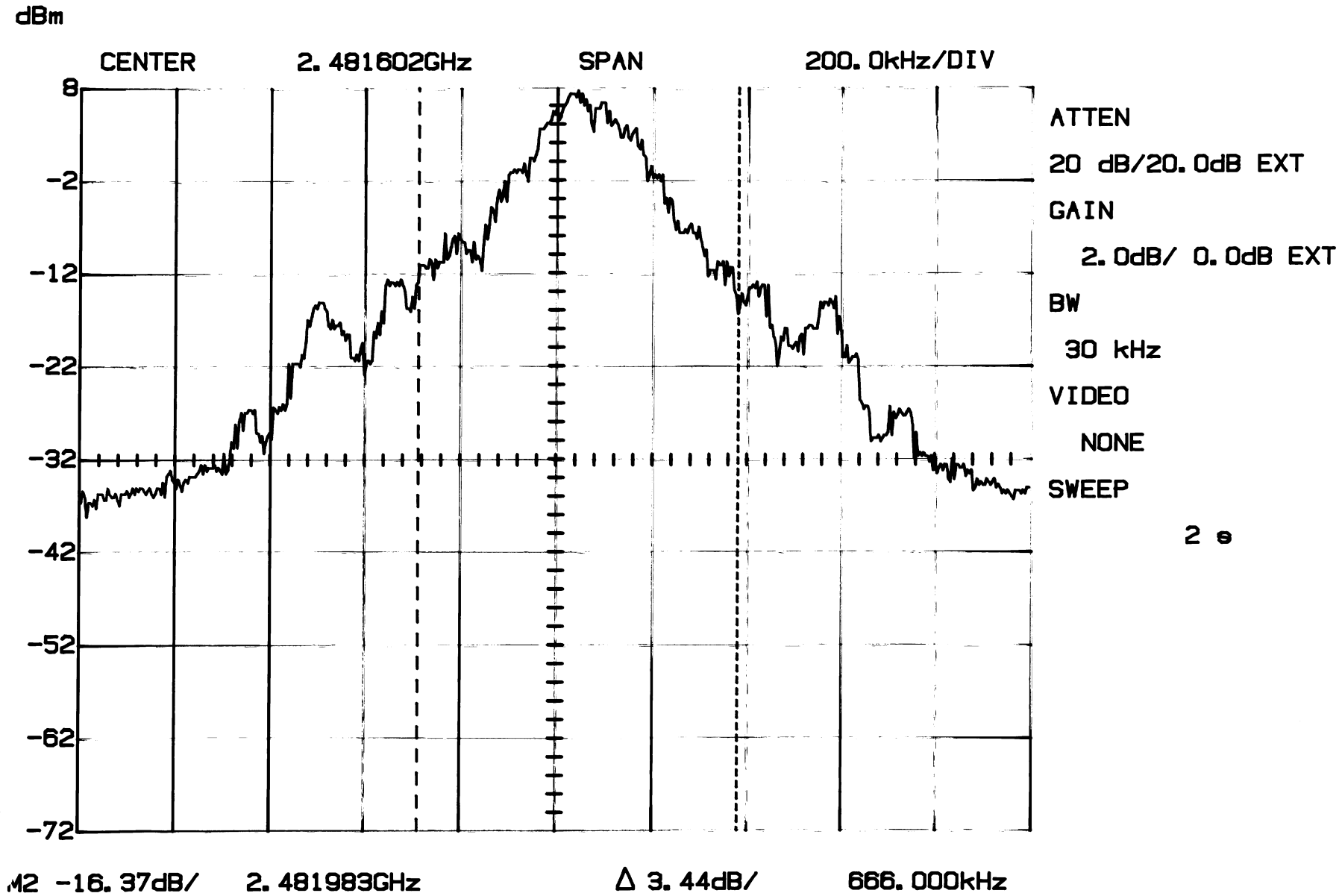


MODEL 21290XXX-A (Base: CH1)




dBm
CENTER 2.442326GHz SPAN 200.0kHz/DIV
6
-3
-13
-23
-33
-43
-53
-63
-73
ATTEN
20 dB/20.0dB EXT
GAIN
3.9dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
2 s
M1 -15.15dB/ 2.442044GHz
Δ 2.18dB/ 664.000kHz
13:14:48 04-30-2002

MODEL 21290XXX-A (Base; CH79)



15.247(a)(1)(ii) FREQUENCY HOPPING SYSTEMS (continued)

DWELL TIME ON EACH CHANNEL

Requirements:

The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30-second period.

Measurement Procedure

1. Position the EUT without connection to Spectrum Analyzer (SA). Turn on the EUT and connect its antenna terminal to SA via a low loss cable and set it to any one measured frequency within its operating range and ensure that the SA is operated in its linear range.
2. Adjust the centre frequency of SA on any frequency to be measured and set SA to zero span mode. Set RBW and VBW of SA to proper value.
3. Measure the time duration of one transmission on the measured frequency and then plot the result with the time difference of this time duration.
4. Repeat the above procedures until all frequencies measured were complete.

Measurement Data - **Refer Exhibit D(1)-30 to -39 for plotted data.**

Handset

1) Channel 1: the dwell time is 0.45 x 34 = 15.3 ms
2) Channel 40: the dwell time is 0.45 x 34 = 15.3 ms
3) Channel 79: the dwell time is 0.45 x 34 = 15.3 ms

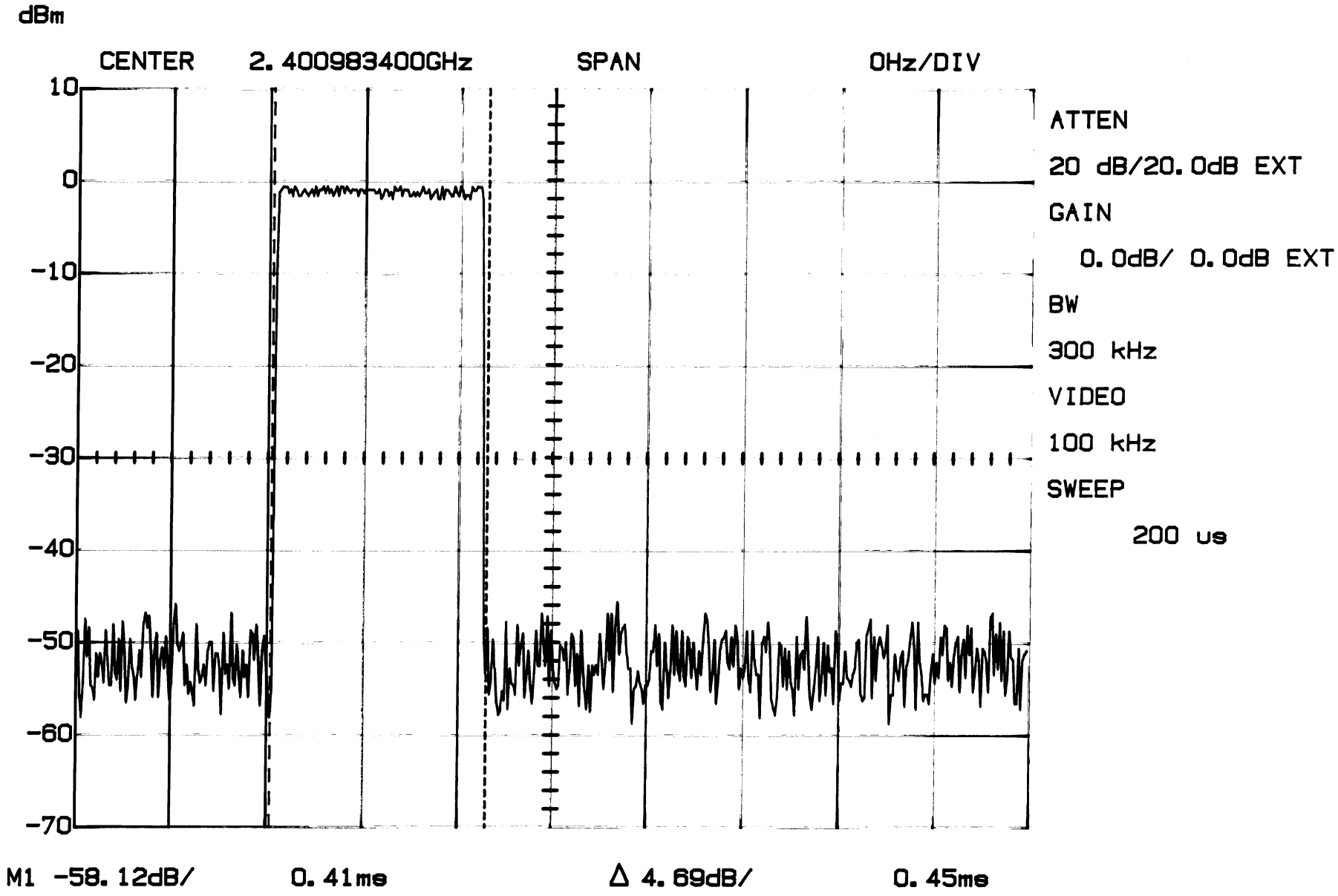
The maximum time of occupancy for a particular channel is 15.3 ms in any 30 second period, which is less than the 400 msecs allowed by the rules.

Base Unit

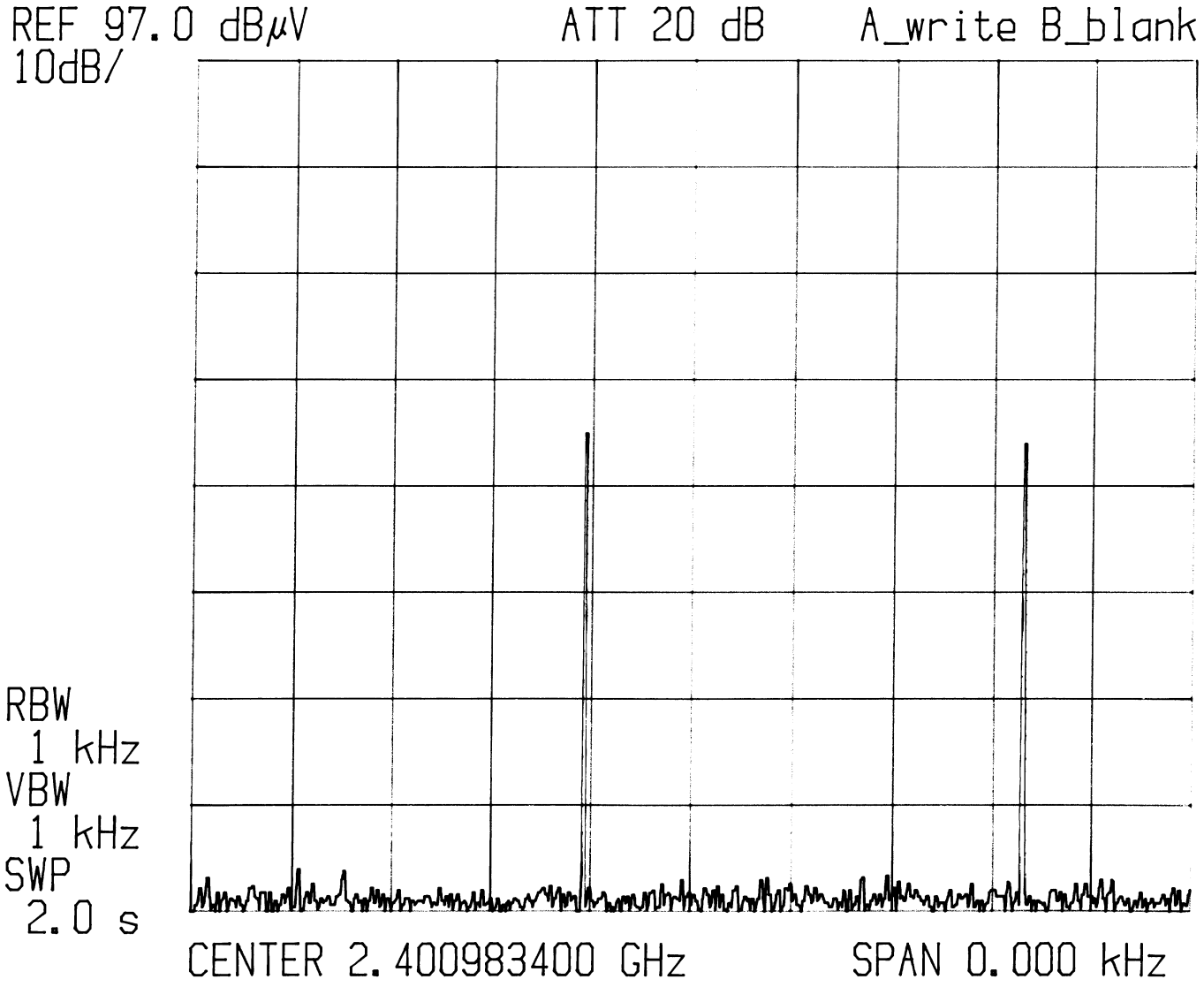
Channel 1: the dwell time is 0.45 x 34 x 2 = 30.6 ms

The maximum time of occupancy for a particular channel is 30.6 ms in any 30 second period, which is less than the 400 msecs allowed by the rules.

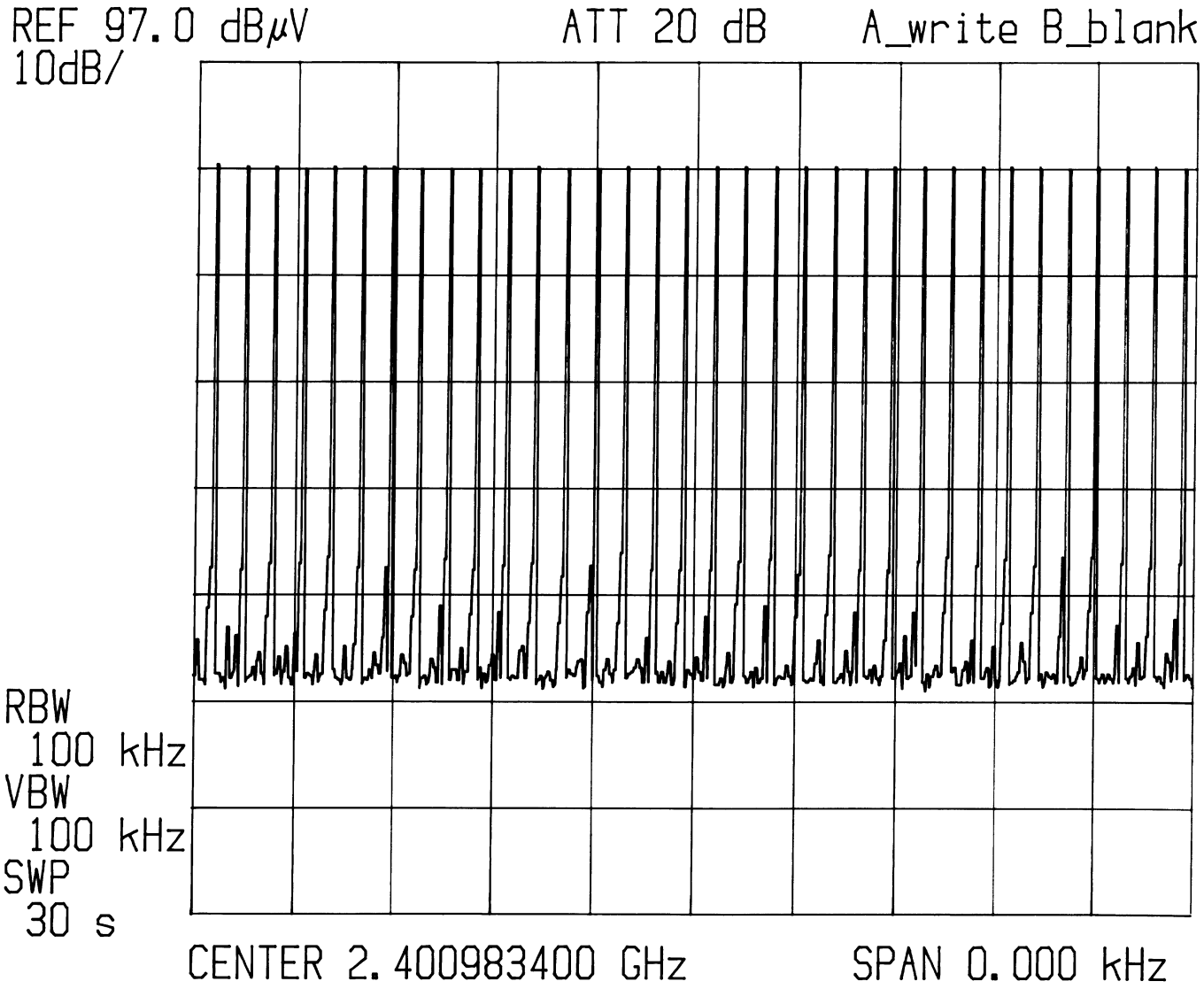
MODEL 21290XXX-A (Handset; CH1)

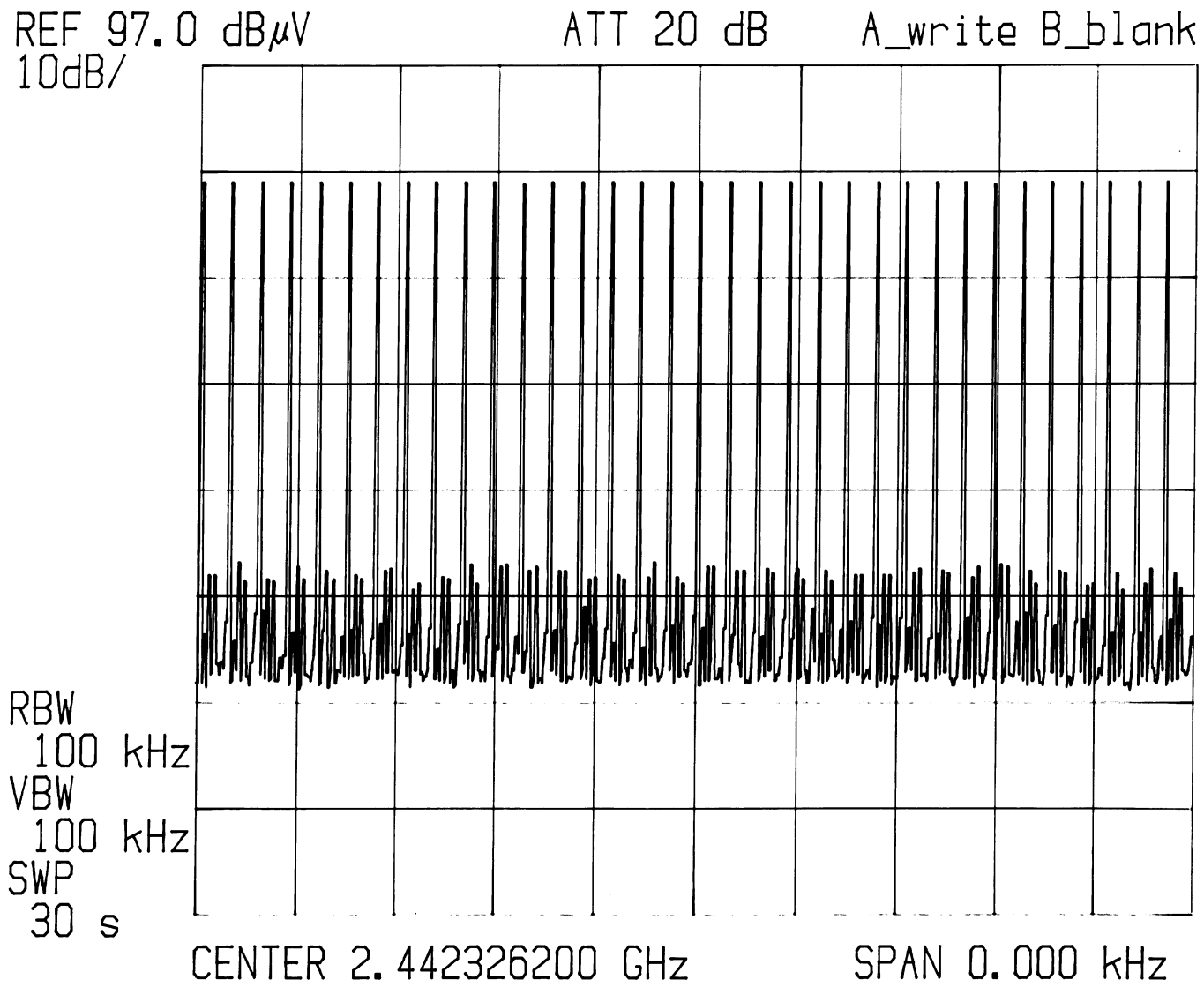


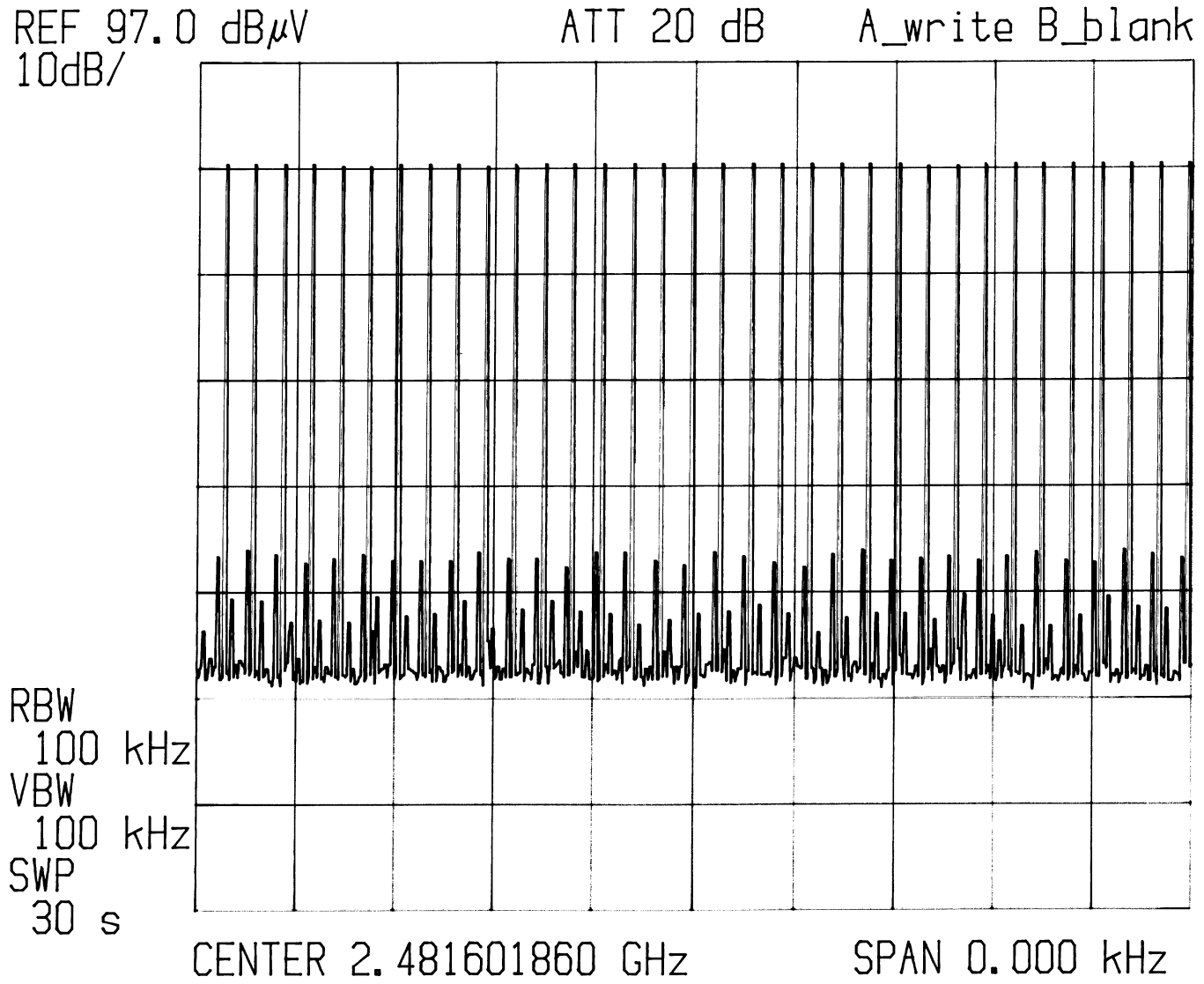
MODEL 21290XXX-A (Handset; CH1)



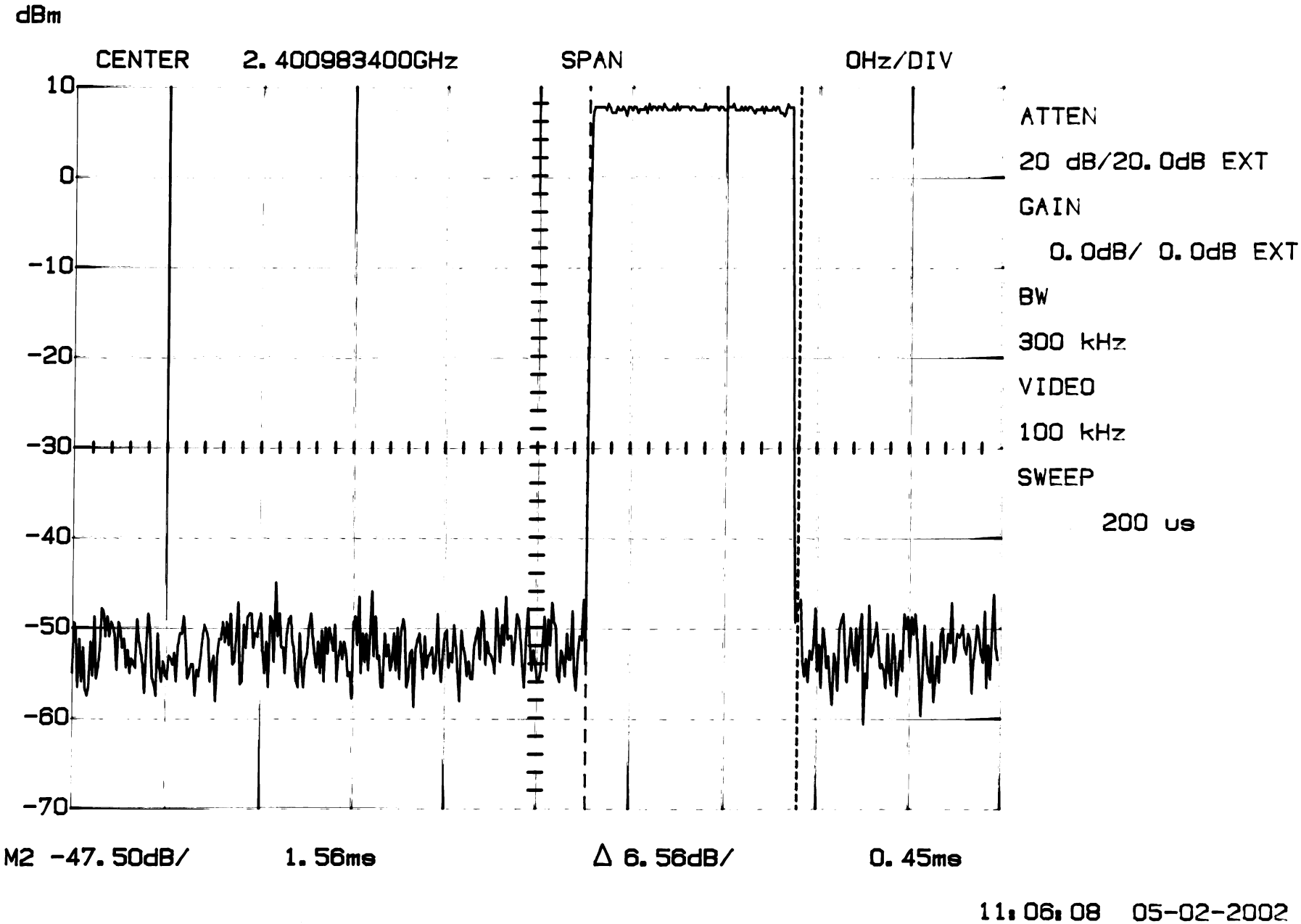
MODEL 21290XXX-A (Handset; CH1)



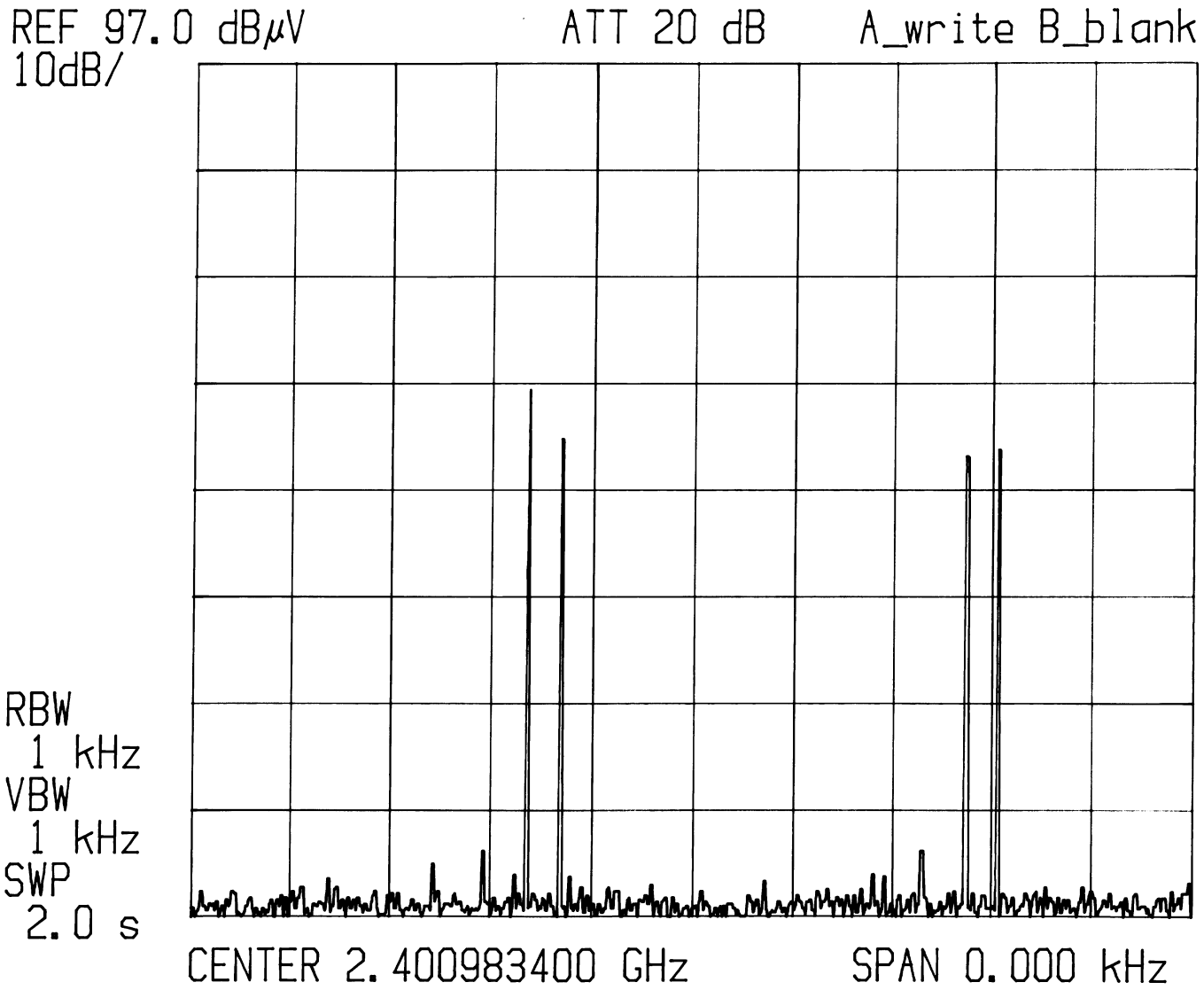

REF 97.0 dBµV
ATT 20 dB
A_write B_blank
10dB/
RBW
100 kHz
VBW
100 kHz
SWP
30 s
CENTER 2.442326200 GHz
SPAN 0.000 kHz


REF 97.0 dBμV
ATT 20 dB
A_write B_blank
10dB/
RBW
100 kHz
VBW
100 kHz
SWP
30 s
CENTER 2.481601860 GHz
SPAN 0.000 kHz

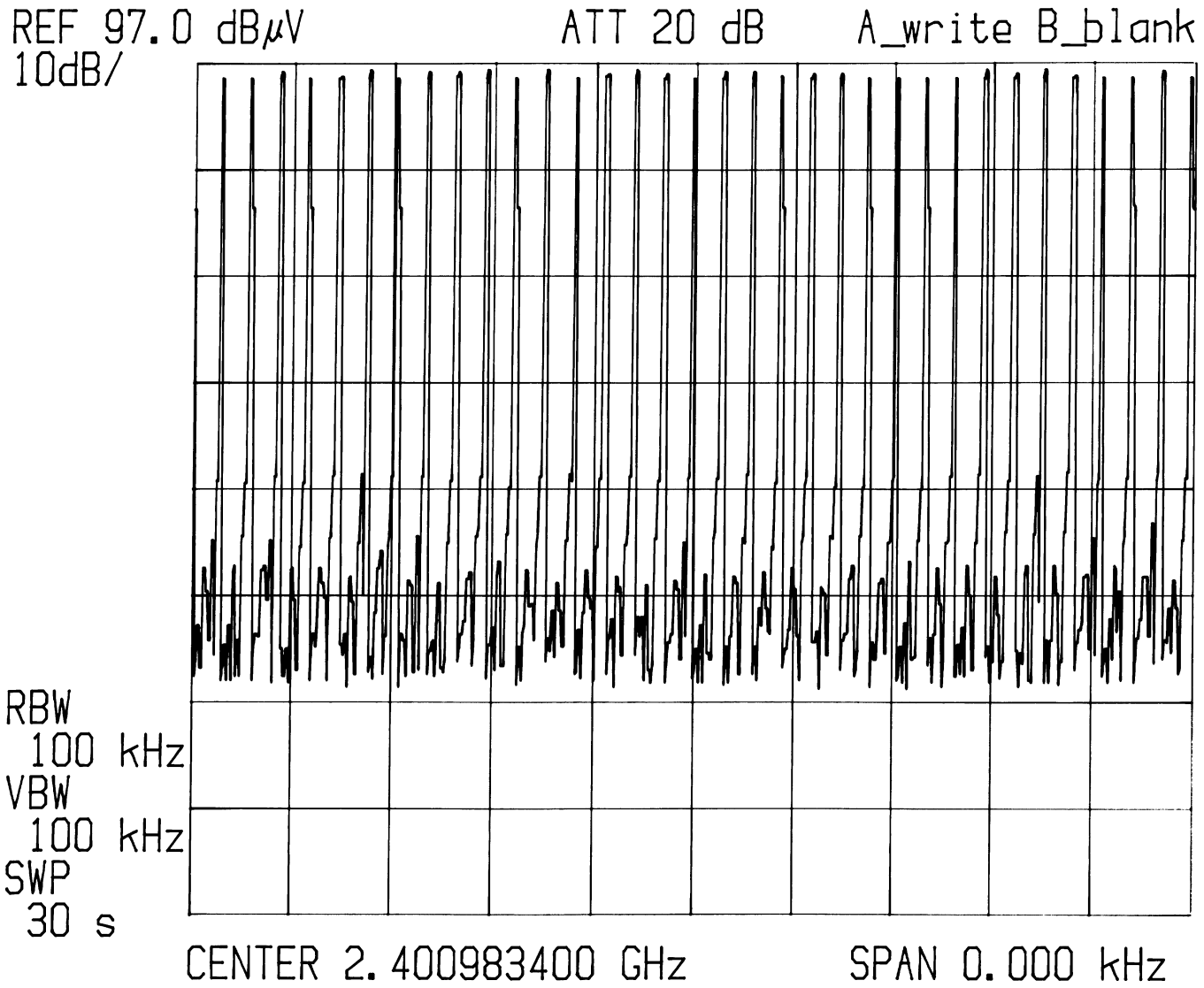
MODEL 21290XXX-A (Base; CH1)

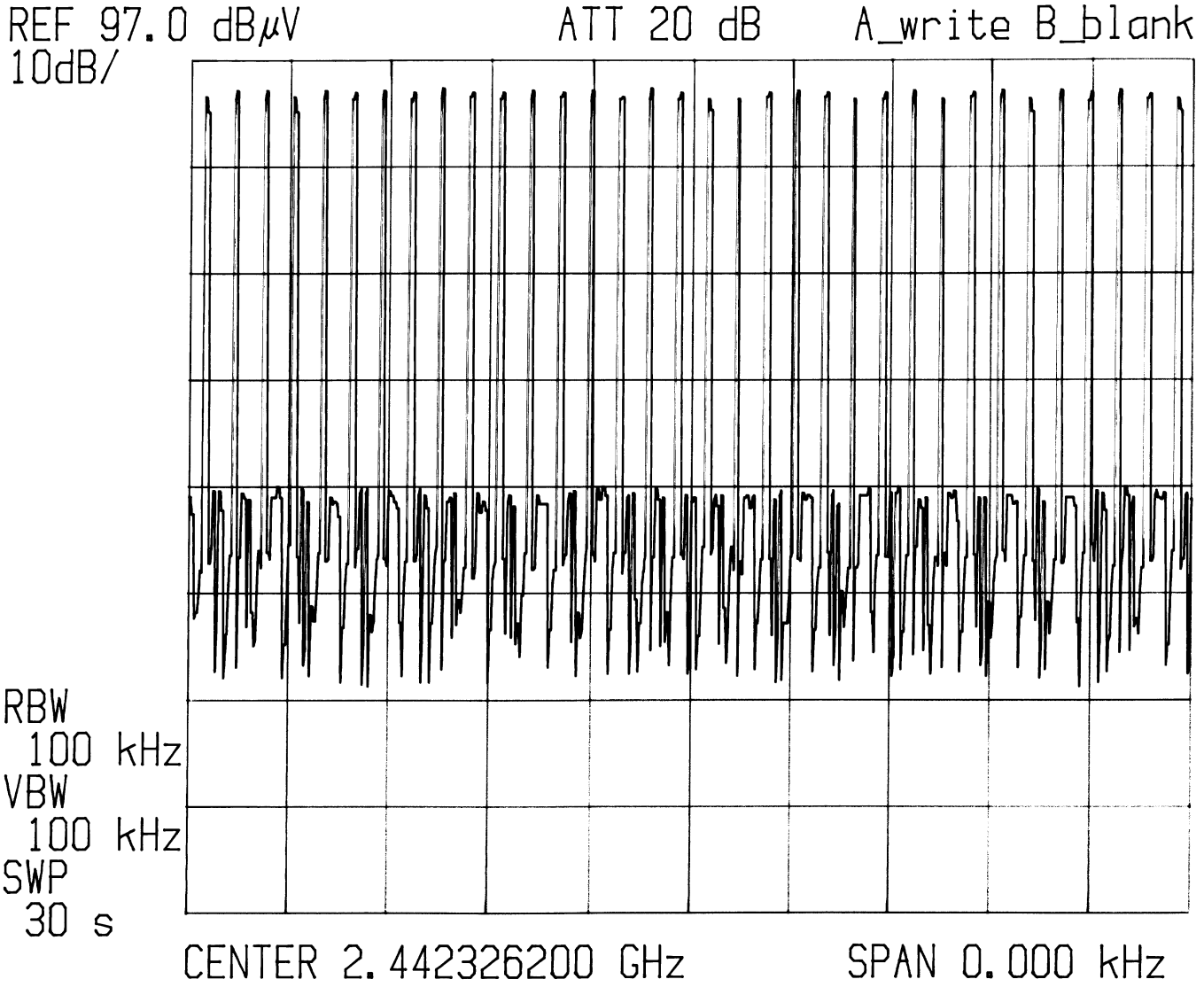


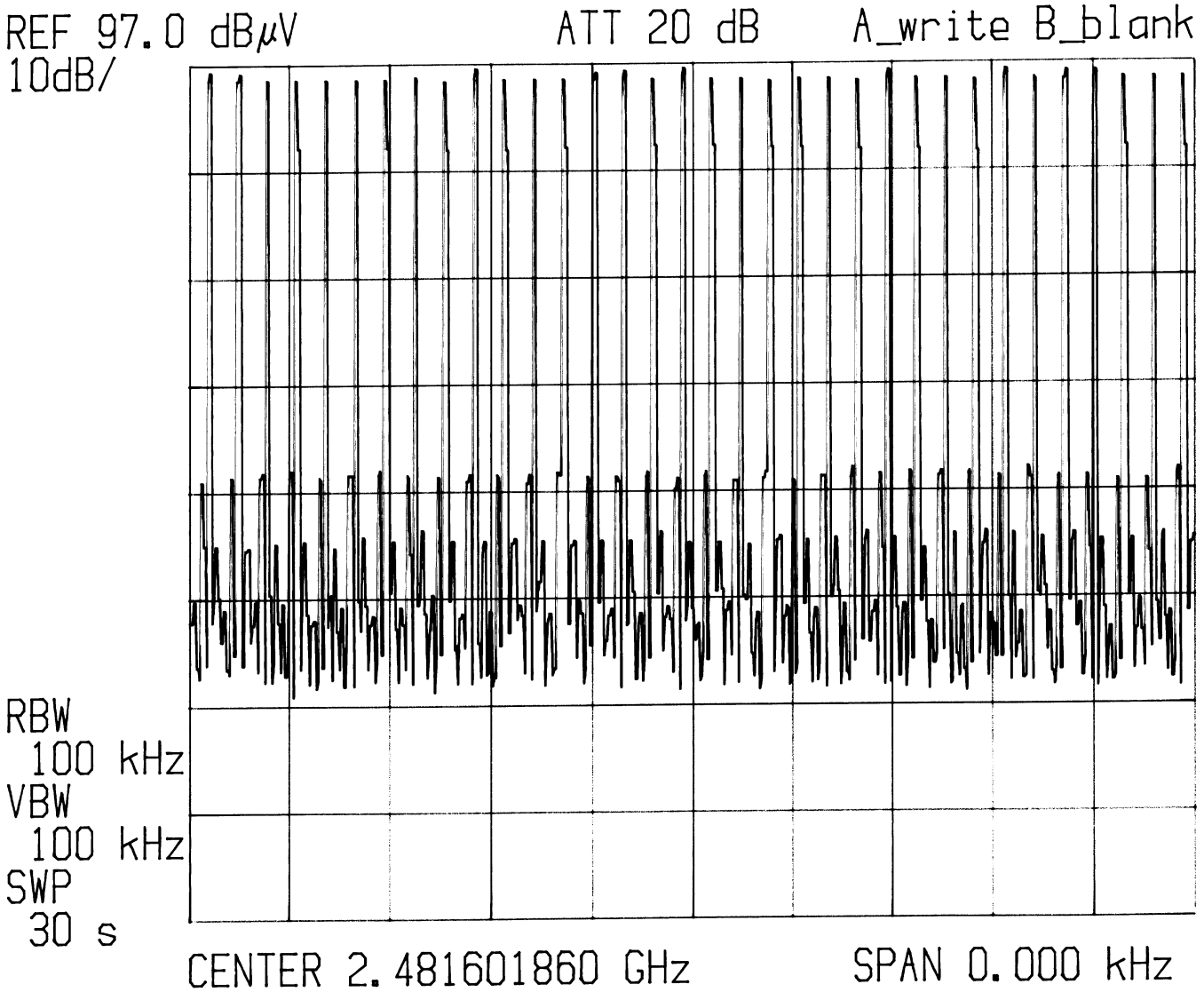
MODEL 21290XXX-A (Base; CH1)



MODEL 21290XXX-A (Base; CH1)




REF 97.0 dBµV
ATT 20 dB
A_write B_blank
10dB/
RBW
100 kHz
VBW
100 kHz
SWP
30 s
CENTER 2.442326200 GHz
SPAN 0.000 kHz


REF 97.0 dBμV
ATT 20 dB
A_write B_blank
10dB/
RBW
100 kHz
VBW
100 kHz
SWP
30 s
CENTER 2.481601860 GHz
SPAN 0.000 kHz

15.247(b) MAXIMUM PEAK OUTPUT POWER

Requirements:

The maximum peak output power of frequency hopping systems in the 2400-2483.5 MHz band, employing at least 75 hopping channels, shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

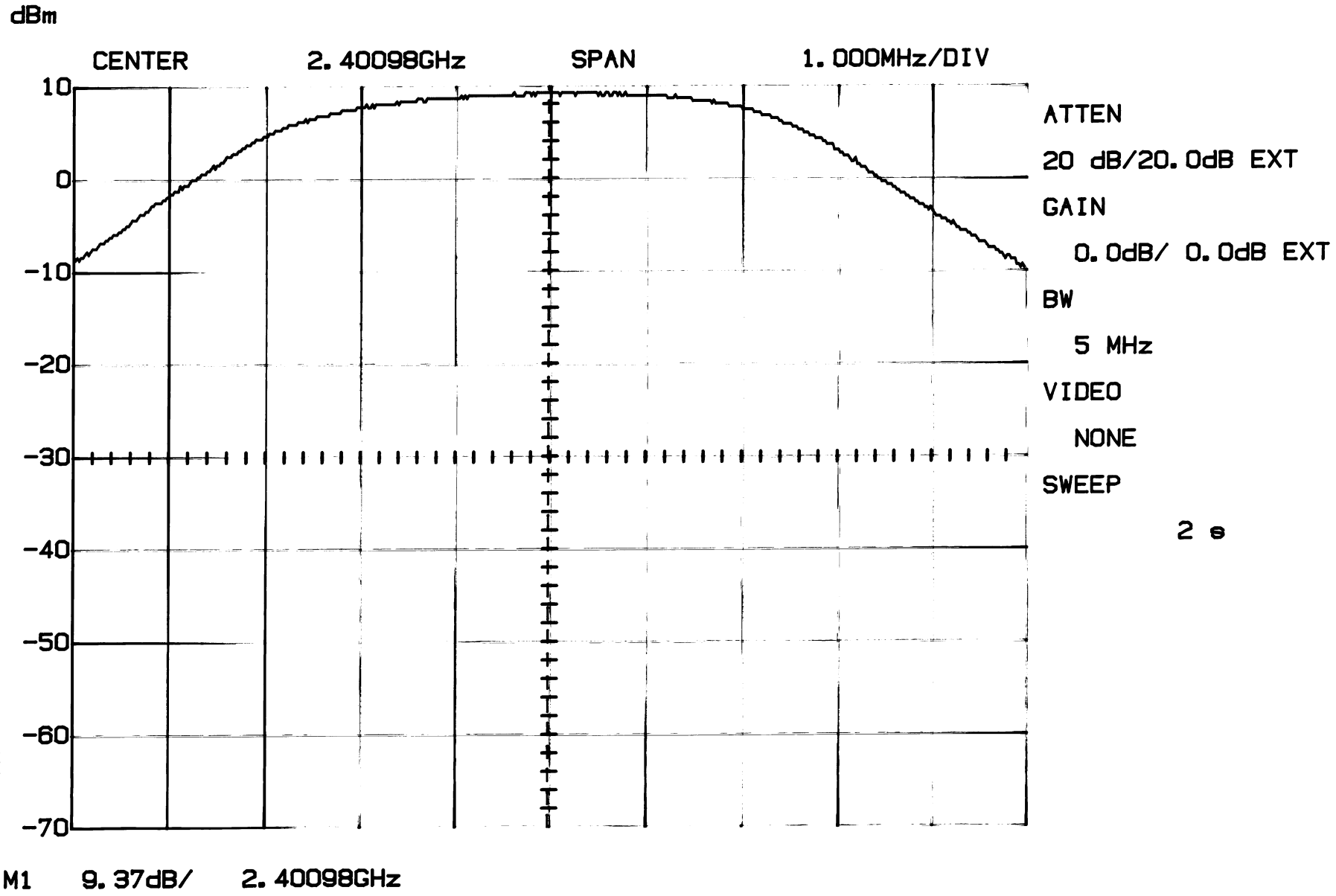
Measurement Procedure

1. Position the EUT without connection to Spectrum Analyzer (SA). Turn on the EUT and connect its antenna terminal to SA via a low loss cable and set it to any one measured frequency within its operating range and ensure that the SA is operated in its linear range.
2. Set RBW of SA to 1MHz and VBW to 1MHz.
3. Measure the highest amplitude appearing on spectral display and record the level to calculate result data.
4. Repeat the above procedures until all frequencies measured were complete.

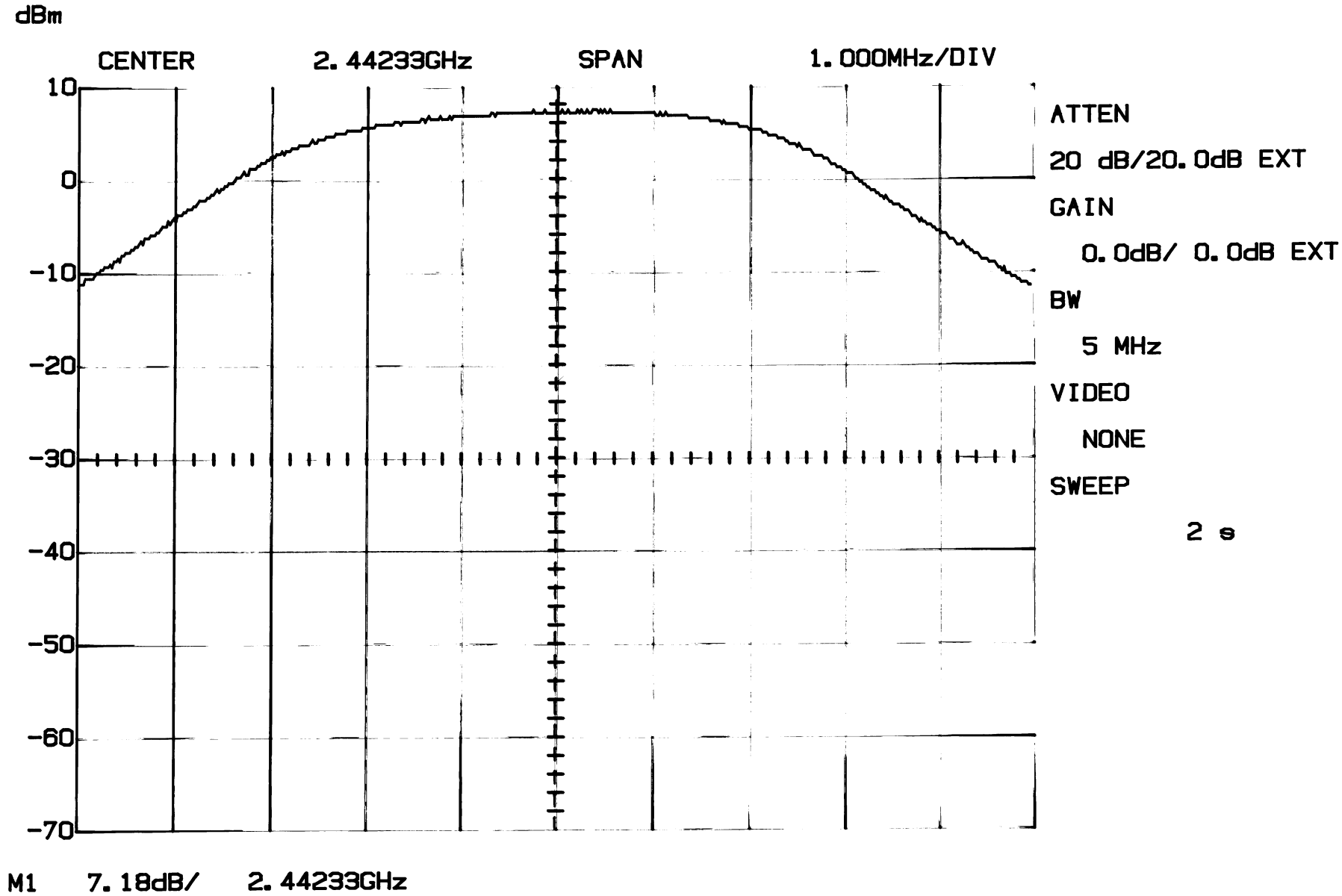
Measurement Data - **Refer Exhibit D(1)-41 to -46 for plotted data**

Handset	Channel 1:	Output Peak Power is 1.25 dBm = 1.33mW
	Channel 40:	Output Peak Power is 0 dBm = 1.0mW
	Channel 79:	Output Peak Power is 1.25 dBm = 1.33mW
Base Unit	Channel 1:	Output Peak Power is 9.37 dBm = 8.65mW
	Channel 40:	Output Peak Power is 7.18 dBm = 5.22mW
	Channel 79:	Output Peak Power is 9.37 dBm = 8.65mW

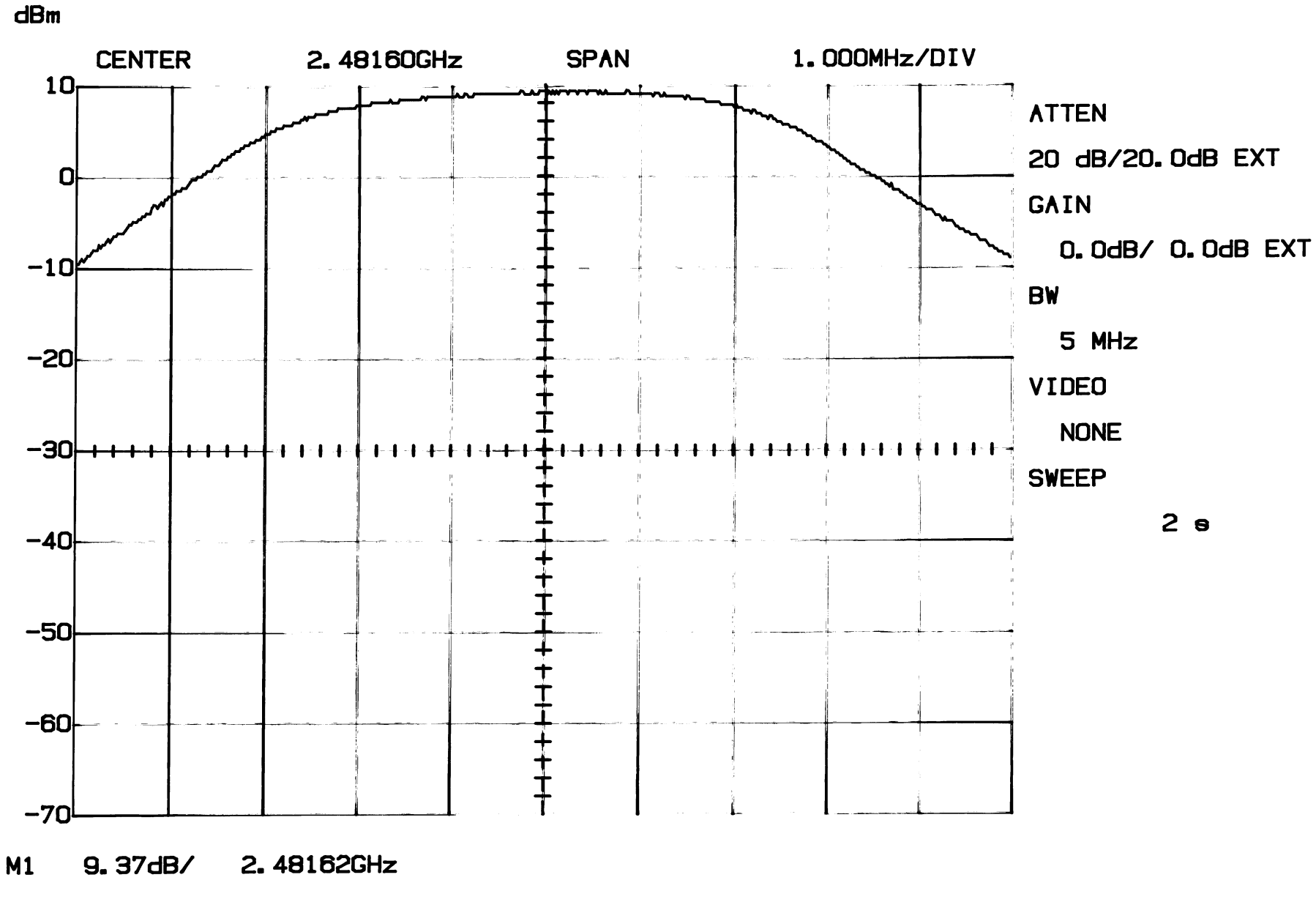
MODEL 21290XXX-A (Base; CH1)



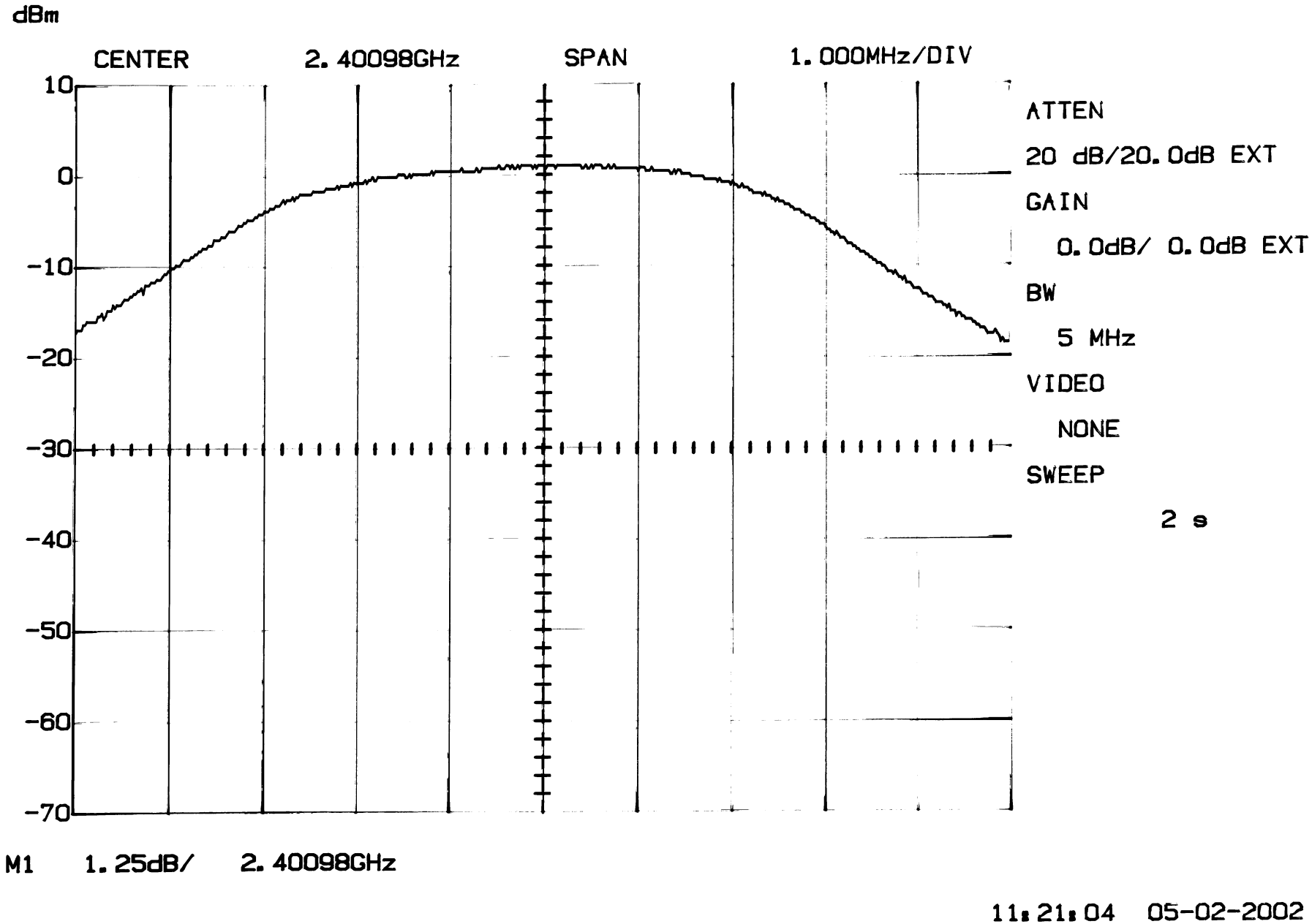
MODEL 21290XXX-A (Base; CH40)



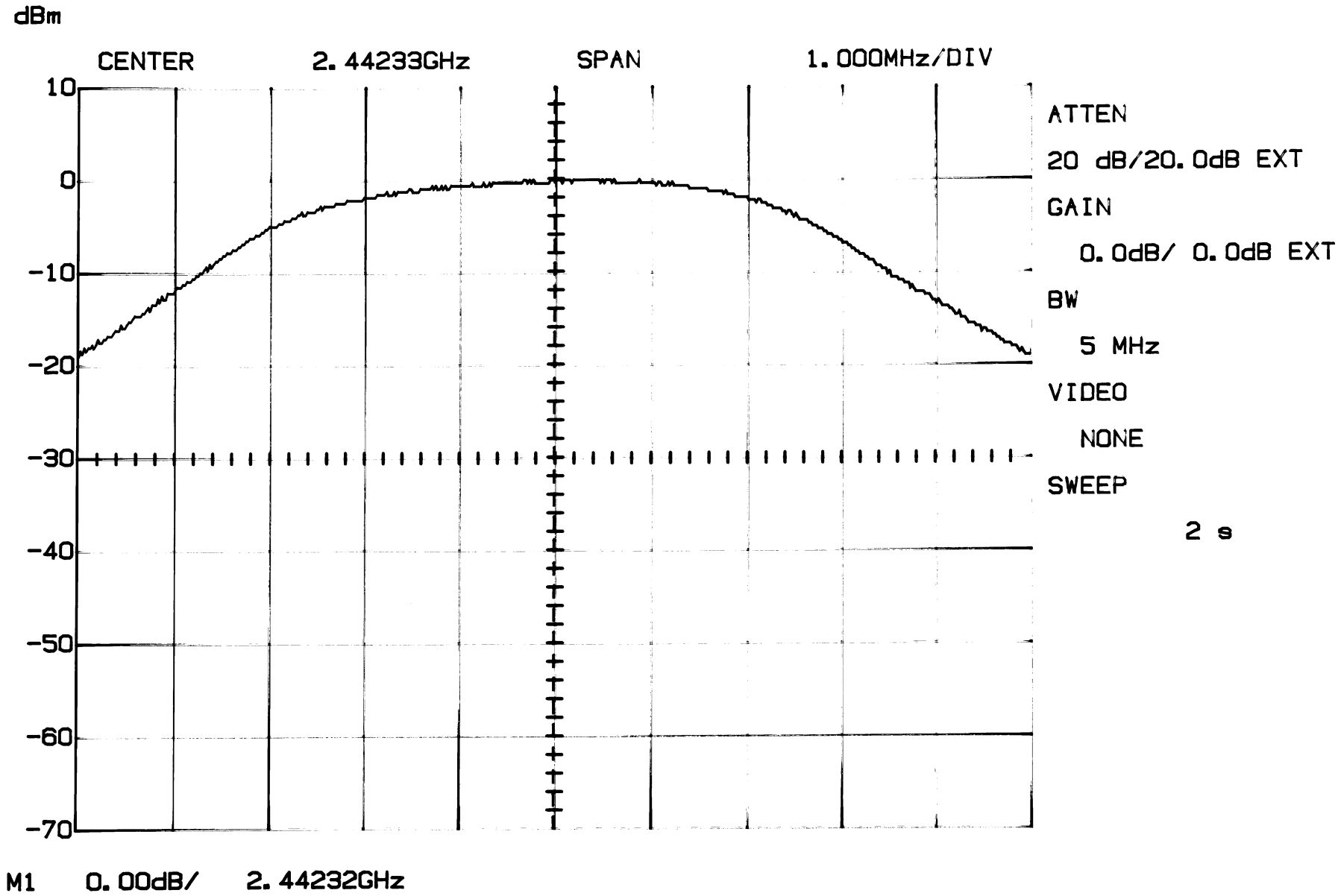
MODEL 21290XXX-A (Base; CH79)



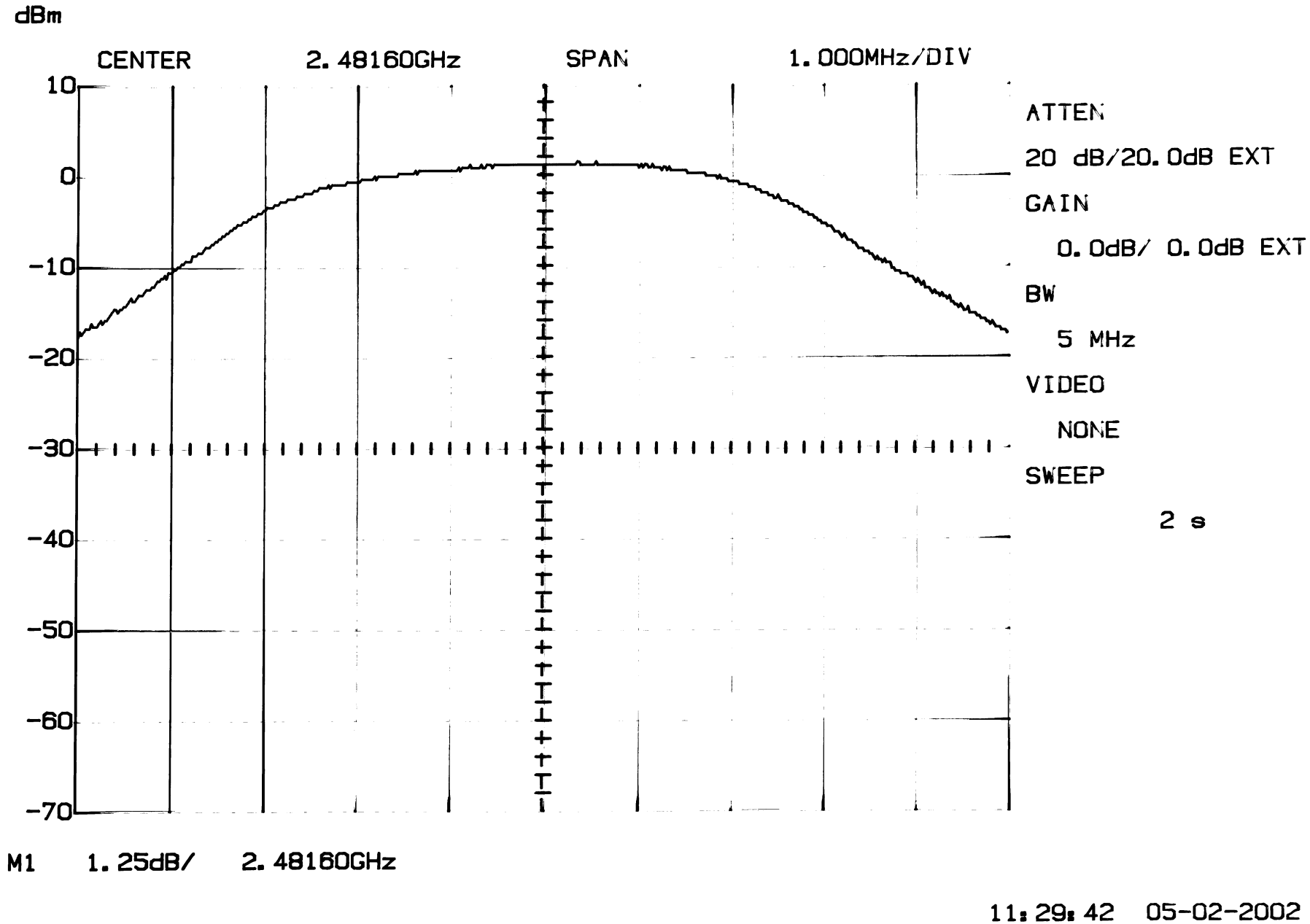
MODEL 21290XXX-A (Handset; CH1)



MODEL 21290XXX-A (Handset; CH40)



MODEL 21290XXX-A (Handset; CH79)



15.247(c) BANDWIDTH OF BAND EDGE MEASUREMENT

Requirements:

In any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Measurement Procedure

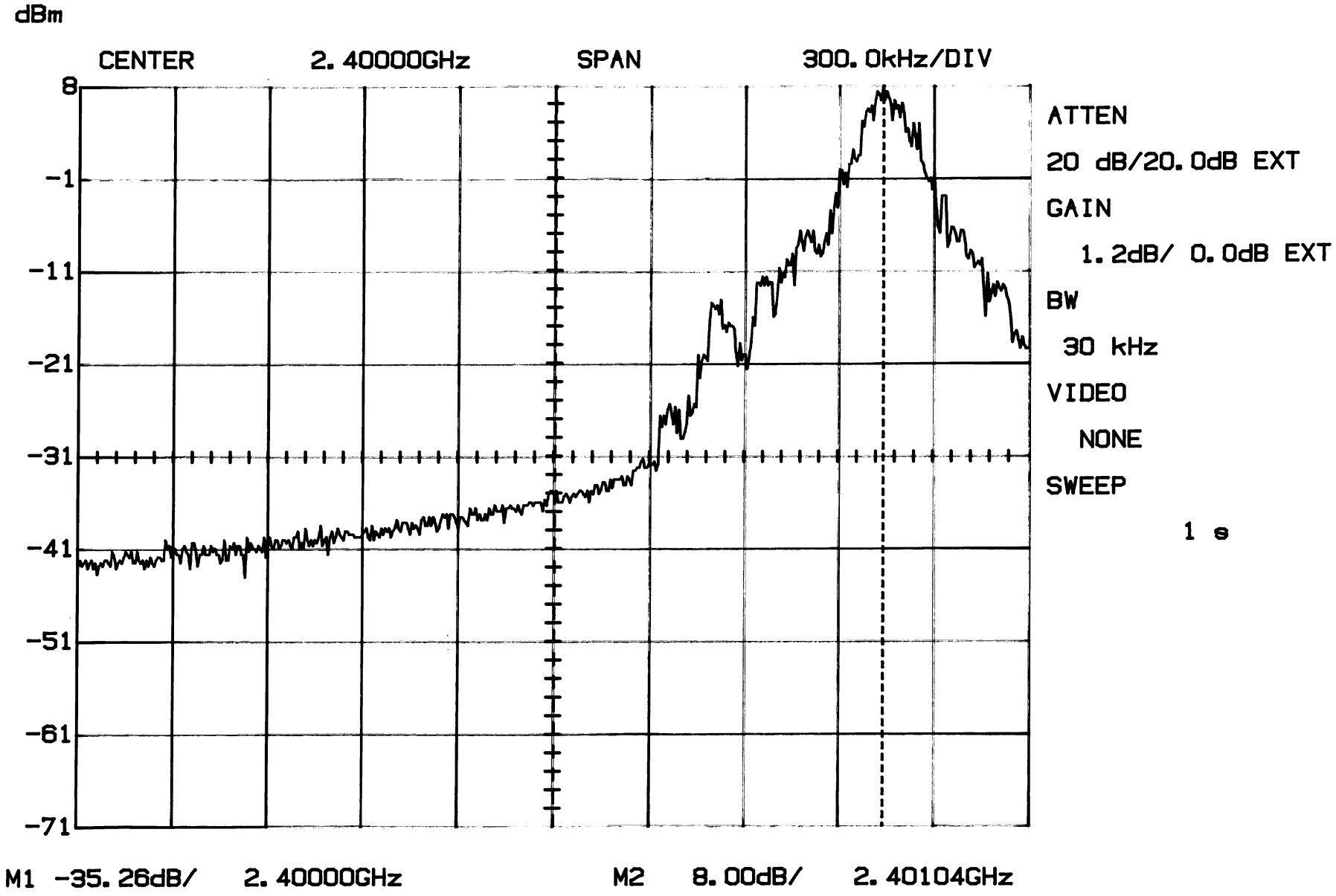
1. Position the EUT without connection to Spectrum Analyzer (SA). Turn on the EUT and connect its antenna terminal to SA via a low loss cable and set it to any one measured frequency within its operating range and ensure that the SA is operated in its linear range.
2. Set RBW to 30 kHz and frequency span to 3000 kHz; VBW = none.
3. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency
4. Repeat the above procedures until all frequencies measured were complete.

Measurement Data - **Refer Exhibit D(1)-48 to -51 for plotted data**

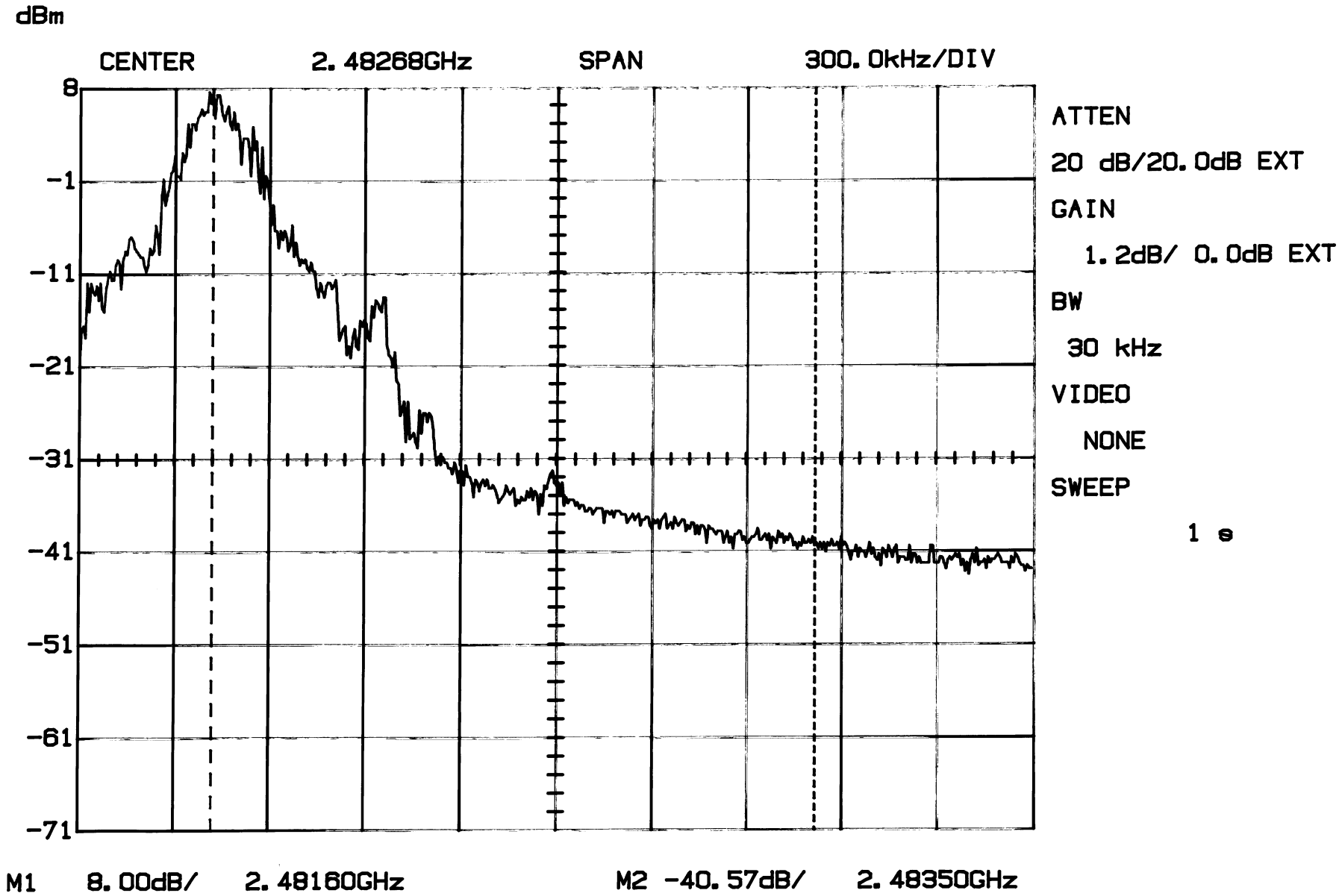
Handset
Lower Band Edge: All emissions in this 100kHz bandwidth are attenuated more than 44 dB from the carrier.
Upper Band Edge: All emissions in this 100kHz bandwidth are attenuated more than 48 dB from the carrier.

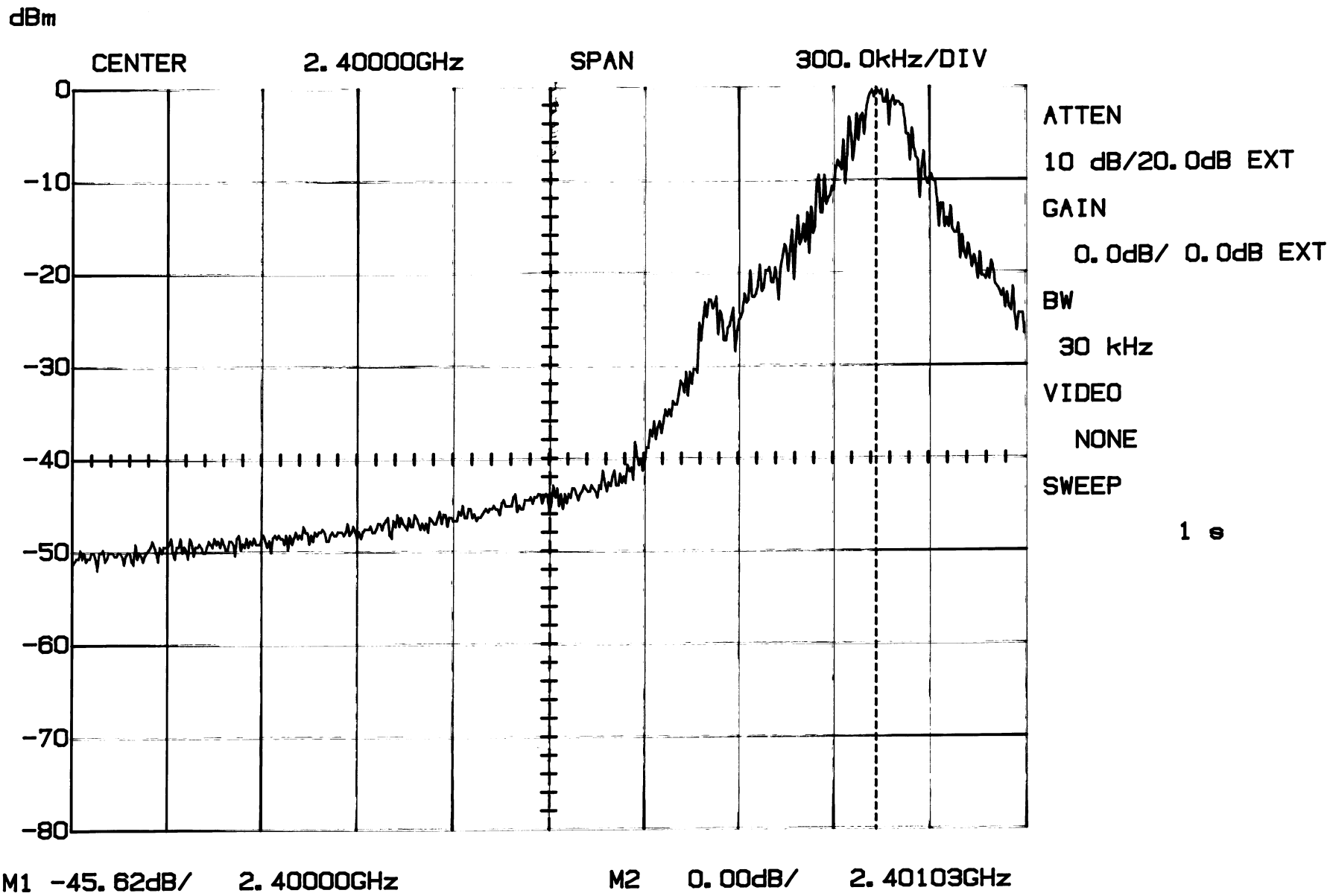
Base Unit
Lower Band Edge: All emissions in this 100kHz bandwidth are attenuated more than 44 dB from the carrier
Lower Band Edge: All emissions in this 100kHz bandwidth are attenuated more than 48 dB from the carrier.

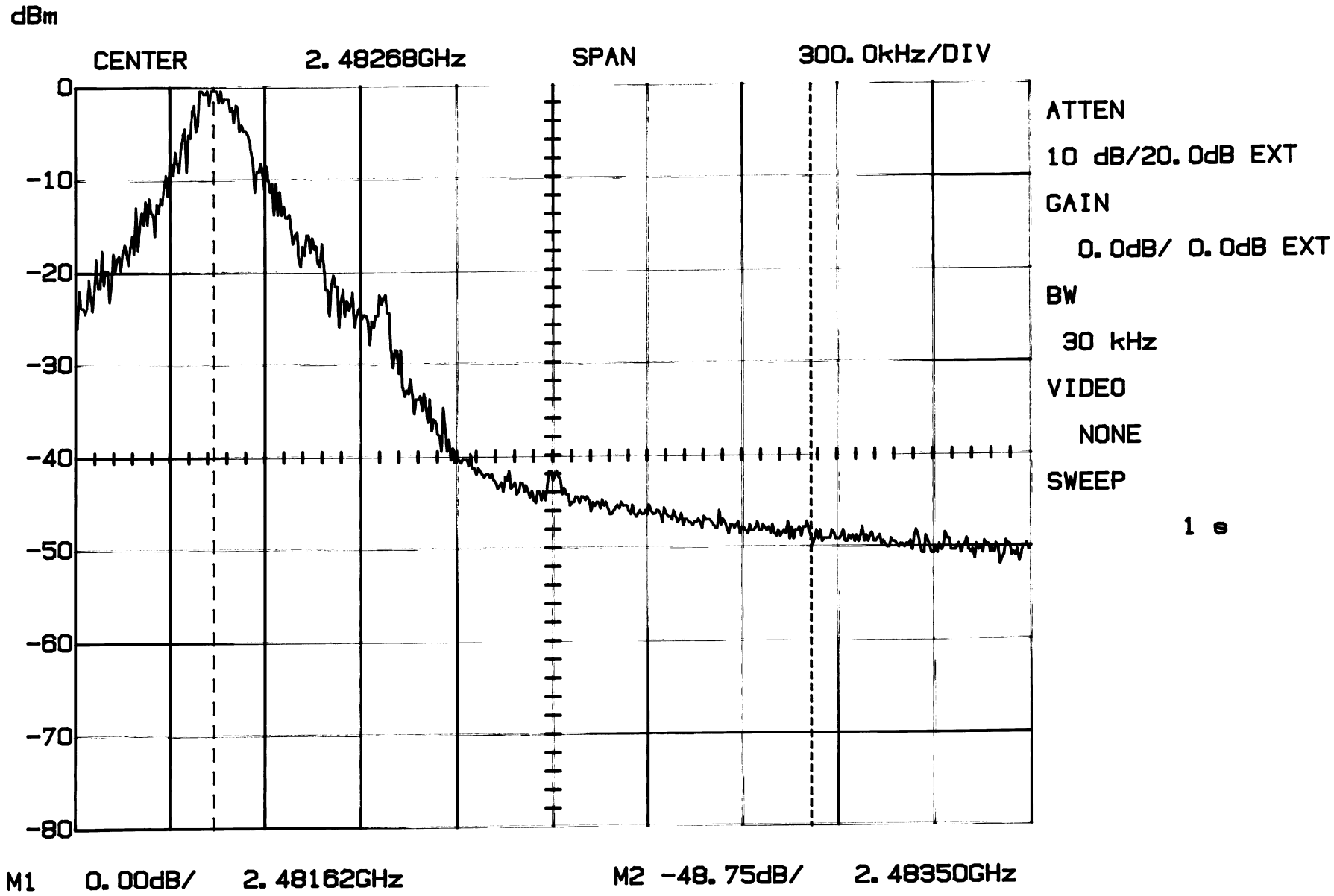
MODEL 21290XXX-A (Base)



MODEL 21290XXX-A (Base)




dBm
CENTER
2.40000GHz
SPAN
300.0kHz/DIV
0
-10
-20
-30
-40
-50
-60
-70
-80
ATTEN
10 dB/20.0dB EXT
GAIN
0.0dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
1 s
M1 -45.62dB/ 2.40000GHz
M2 0.00dB/ 2.40103GHz
16:21:08 04-26-2002


dBm
CENTER 2.48268GHz
SPAN 300.0kHz/DIV
0
-10
-20
-30
-40
-50
-60
-70
-80
ATTEN
10 dB/20.0dB EXT
GAIN
0.0dB/ 0.0dB EXT
BW
30 kHz
VIDEO
NONE
SWEEP
1 s
M1 0.00dB/ 2.48162GHz
M2 -48.75dB/ 2.48350GHz
16:17:48 04-26-2002