Intertek Testing Services

FCC Part 15.247 Test Report

Giant Electronics Ltd.

DSSS Cordless Telephone

Model: G2488

FCC ID: K7GG2488

Job # J2017979
Report # 2017979A

Number of Pages: 15 + Supporting Data and Documents

Date of Report: July 10, 2000

The results contained in this report were derived from measurements performed on the identified test samples. Any implied performance of other samples on this report is dependent on the representative of the samples tested.

Table of Contents

1.0 **Summary of Tests**

DSSS Cordless Telephone – Model: G2488
FCC ID: K7G2488

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(d)	Pass
Out of Band Antenna Conducted Emission	15.247(c)	Pass
Out of Band Radiated Emission	15.247(c)	N/A
Radiated Emission in Restricted Bands	15.35(b)(c)	Pass
AC Conducted Emission	15.207	N/A
Radiated Emission from Digital Part	15.109	Pass
Radiated Emission from Receiver L.O.	15.109	N/A
Processing Gain Measurements	15.247(e)	Pass
Antenna Requirement	15.203	Pass

Test Engineer: Xi-Ming Yang Date: July 10, 2000

EMC Manager: David Chernomordik Date: July 10, 2000
David Chernomordik

2.0 General Description

2.1 Product Description

The Model G2488 is a DSSS cordless telephone.

A production version of the sample was received on December 28, 1999 in good condition.

Overview of Model G2488

Applicant	Giant Electronics Limited
Trade Name & Model No.	Giant, G2488
FCC Identifier	K7GG2488
Use of Product	DSSS Cordless Telephone
Manufacturer & Model of Spread Spectrum Module	Giant Electronics Limited
Type of Transmission	Direct Sequence
Rated RF Output (mW)	100 mW
Frequency Range (MHz)	2404.8 – 2475.0
Number of Channel(s)	40
Antenna(s) & Gain, dBi	0
Processing Gain	The same as for Cordless Telephone Model GH2405, FCC ID: LBBGH2405
Antenna Requirement	[X] The EUT uses a permanently connected antenna. [ ] The antenna is affixed to the EUT using a unique connector which allows for replacement of a broken antenna, but DOES NOT use a standard antenna jack or electrical connector. [ ] The EUT requires professional installation (attach supporting documentation if using this option).
Manufacturer name & address	Giant Electronics Ltd. 1,2,5,6 & 11/F., Elite Building Nam Tau, Shen Zhen People's Republic of China

2.2 Related Submittal(s) Grants

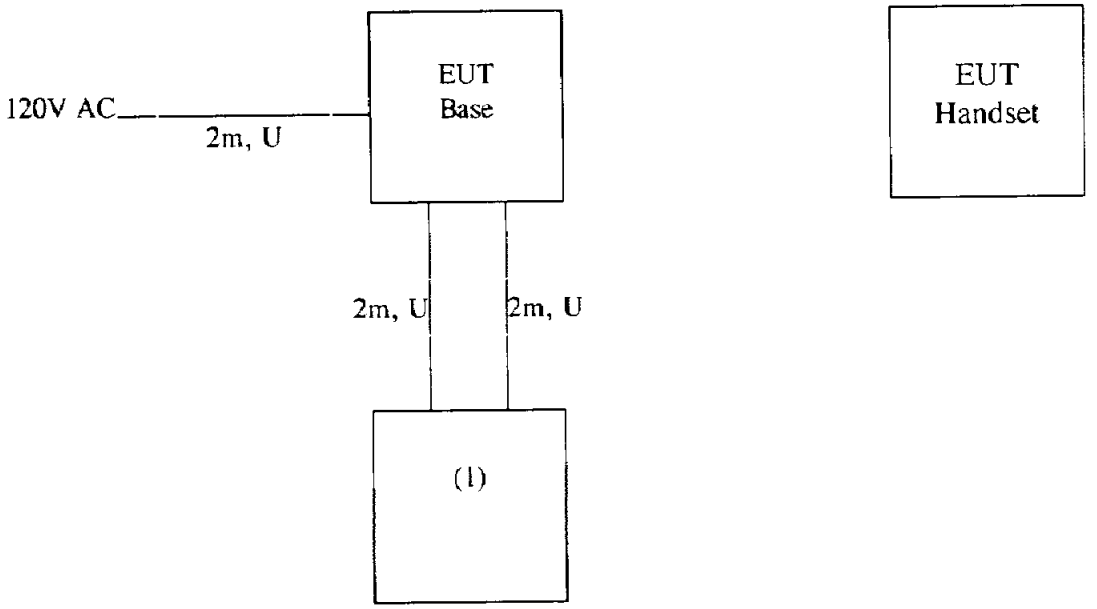
FCC ID: GH2405

3.0 System Test Configuration

3.1 Support Equipment and description

Support equipment					
Qty	Equipment	Manufacturer	Model #	S/N #	FCC ID
1	Telephone Line Simulator	Teltone	TLS-3	022733	N/A

3.2 Block Diagram of Test Setup



* = EUT	S = Shielded;	F = With Ferrite
** = No ferrites on video cable	U = Unshielded	

3.3 Test Methodology

Both AC mains line-conducted and radiated emissions measurements were performed according to the procedures in ANSI C63.4 (1992). Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Data Sheet"** of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

3.4 Software Exercise Program

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. For emissions testing, the units were setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing.

3.5 Mode of Operation During Test

The EUT was running in a transmitting mode.

3.6 Modifications Required for Compliance

The following modifications were installed during compliance testing in order to bring the product into compliance (Please note that this list does not include changes made specifically by prior to compliance testing):

No modifications were made to the EUT by Intertek Testing Services.

3.7 Additions, deviations and exclusions from standards

No additions, deviations or exclusion have been made from standard.

4.0 Measurement Results

4.1 Maximum Radiated Output Power, FCC RULES 15.247(b):

Test Procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane on an open test site.

The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer. During the measurement, the resolution and video bandwidth of the spectrum analyzer were set to 1 MHz. To maximize emissions, the system was rotated through 360°, the antenna height was varied from 1m to 4m, and the antenna polarization was changed.

The ERP was calculated using equation:

$$E = \frac{\sqrt{30 \cdot P \cdot G}}{D}$$

Where E = Field Strength (V/m),
D = Distance between two antennas (m)
G = Numeric Gain of Antenna (G=1 for isotropic antenna),
P = Output Power (W),
EIRP = (P × G), (W)

Frequency (MHz)		EIRP, mWatt
Low Channel:	1, 2404.9 MHz	94.8
Middle Channel:	20, 2439.1 MHz	78.9
High Channel:	40, 2475.0 MHz	88.6

Please refer to the following plots:

Plot B1a: Low Channel, Spectrum Analyzer Reading (Base)
Plot B1b: Middle Channel, Spectrum Analyzer Reading (Base)
Plot B1c: High Channel, Spectrum Analyzer Reading (Base)

Data Sheet 1 – Radiated Emission. EIRP

4.2 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

Test Procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane on an open test site.

The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer. During the measurement, the resolution and video bandwidth of the spectrum analyzer were set to 100 kHz. To maximize emissions, the system was rotated through 360°, the antenna height was varied from 1m to 4m, and the antenna polarization was changed.

For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

Base		
Frequency (MHz)	Min. 6 dB Bandwidth (kHz)	Limit (kHz)
2400.8	1442	500

Refer to the following plots for 6 dB bandwidth sharp:

Plot B2a: Low Channel 6 dB RF Bandwidth
Plot B2b: Middle Channel 6 dB RF Bandwidth
Plot B2c: High Channel 6 dB RF Bandwidth

4.3 Power Density, FCC Rule 15.247(d):

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output passband. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. The specification calls for a 1 second interval at each 3 kHz bandwidth; total SWEEP TIME is calculated as follows:

SWEEP TIME (SEC) = (Fstop, kHz - Fstart, kHz)/3 kHz

Radiated method was used; power density was calculated from field strength.

$$P = (ED)^2/30$$

Base		
Frequency (MHz)	Power Density (dBm)	Limit (dBm)
2438.7	4.6	8.0

Frequency Span = 600 kHz

Sweep Time = 600 Frequency Span/3 kHz
= 200 seconds

Refer to the following plots:

Plot B3a.1 - B3a.2 Low Channel Power Density
Plot B3b.1 - B3b.2 Middle Channel Power Density
Plot B3c.1 - B3c.2: High Channel Power Density

Radiated Emission (Power Density) data sheet #2

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(c):

In any 100 kHz bandwidth outside the EUT passband, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission.

Refer to the following plots for out of band conducted emissions data:

Plot B4a.1 - B4a.5: Low Channel Emissions
Plot B4b.1 - B4b.5: Middle Channel Emissions
Plot B4c.1 - B4c.7: High Channel Emissions

4.5 Out of Band Radiated Emissions (for emissions in 4. above that are less than 20 dB below carrier), FCC Rule 15.247(c):

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the 20 dB attenuation requirement.

[x] Not required
[ ] See attached data sheet

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Radiated emission measurements were performed from 30 MHz to 25000 MHz. Analyzer resolution is 100 kHz or greater for 30 MHz to 1000 MHz, 1 MHz for > 1000 MHz.

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages (data sheets ## 3, 4, 5) list the significant emission frequencies, the limit and the margin of compliance.

In addition, the field strength at the band-edge frequency f = 2484.52 MHz was calculated as follows:

$E_f = E_0$ - delta
where E_0 is the field strength at the fundamental frequency (high channel)
"delta" equal 68.9 dB from Plots B4c4, B4c5
E_0 - 114.7 dBuV/m from data sheet #1.

The results are:

$E_f = 114.7 - 68.9 = 45.8$ dBuV/m

which are below the limit (54 dBuV/m)

Note that the emission at 2484.52 MHz is higher than at 2483.5 MHz.

4.7 AC Line Conducted Emission, FCC Rule 15.207:

Test was not performed

4.8 Radiated Emissions from Digital Section of Transceiver (Transmitter), FCC Ref: 15.109

[ ] Not required - No digital part
[X] Test results are attached
[ ] Included in the separate DOC report.

4.9 Radiated Emissions from Receiver Section of Transceiver (L.O. Radiation), FCC Ref: 15.109, 15.111

[X] Not required - EUT operation above 960 MHz only

[ ] Not required - EUT is transmitter only

[ ] Not performed; exempt until June 1999

[ ] Test results are attached

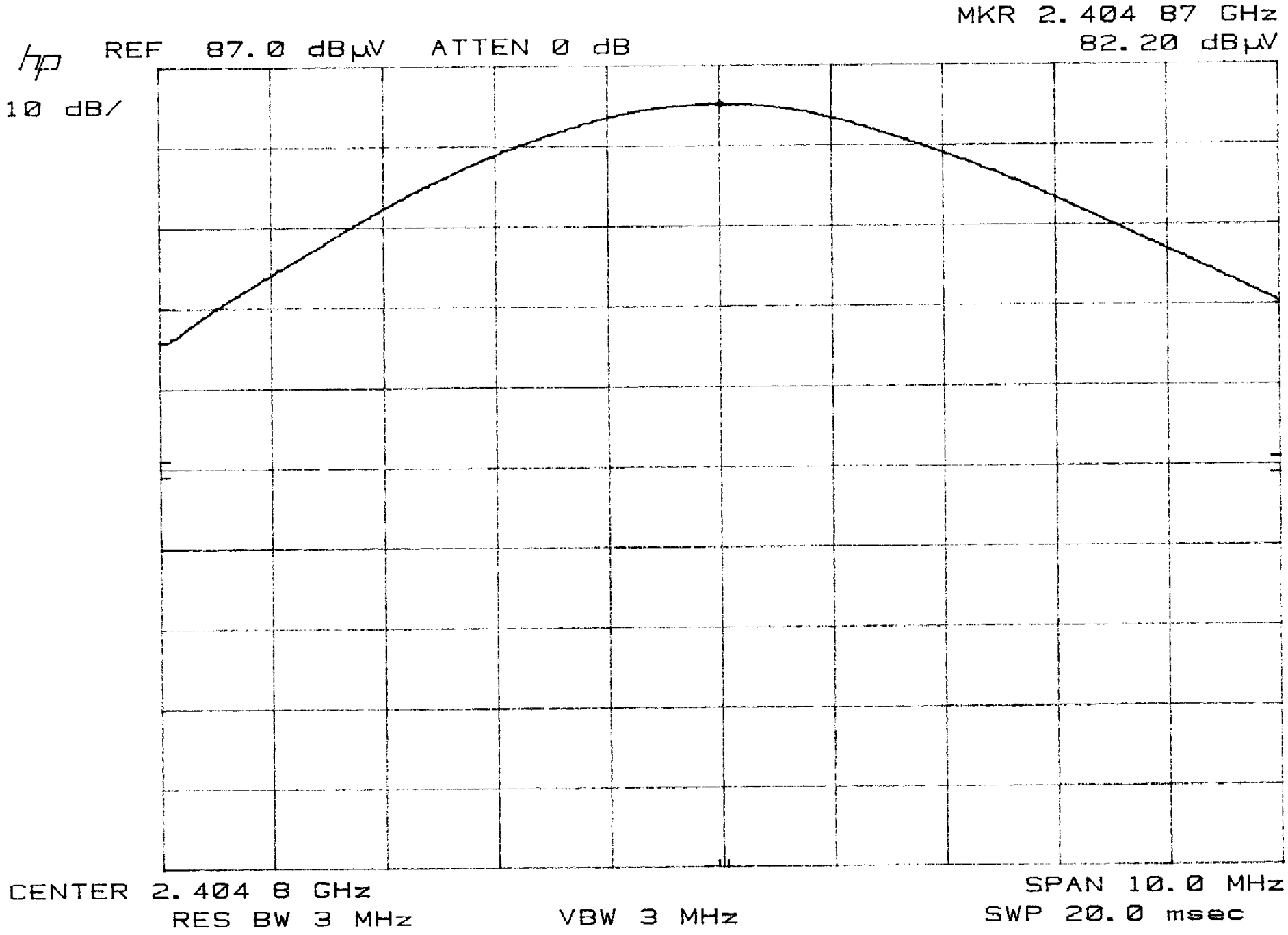
4.10 Processing Gain Measurements, FCC Rule 15.247(e)

Test was not performed, the processing gain is the same as for Model GH2405.

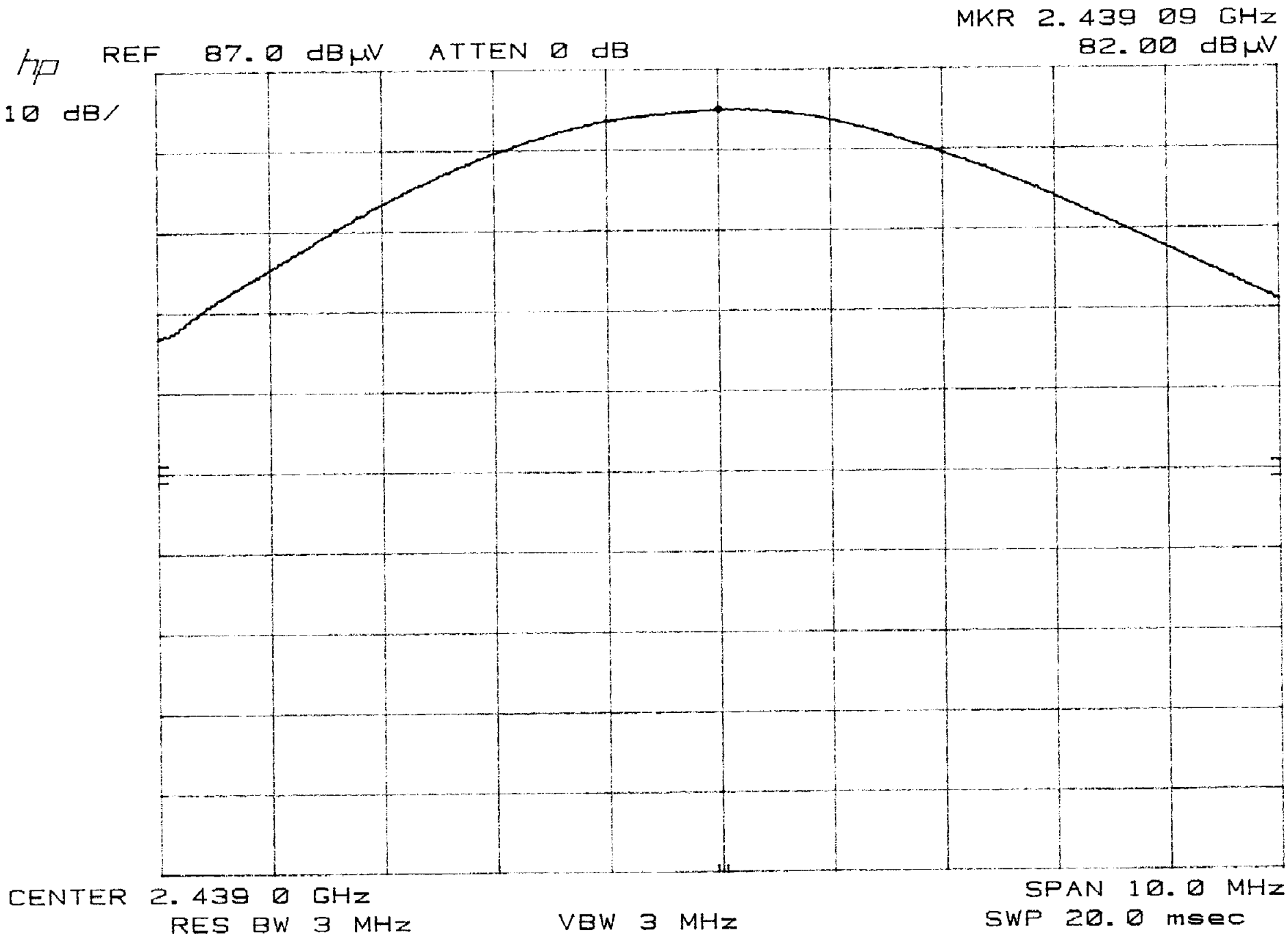
5.0 Miscellaneous Information or Other Comments

None.

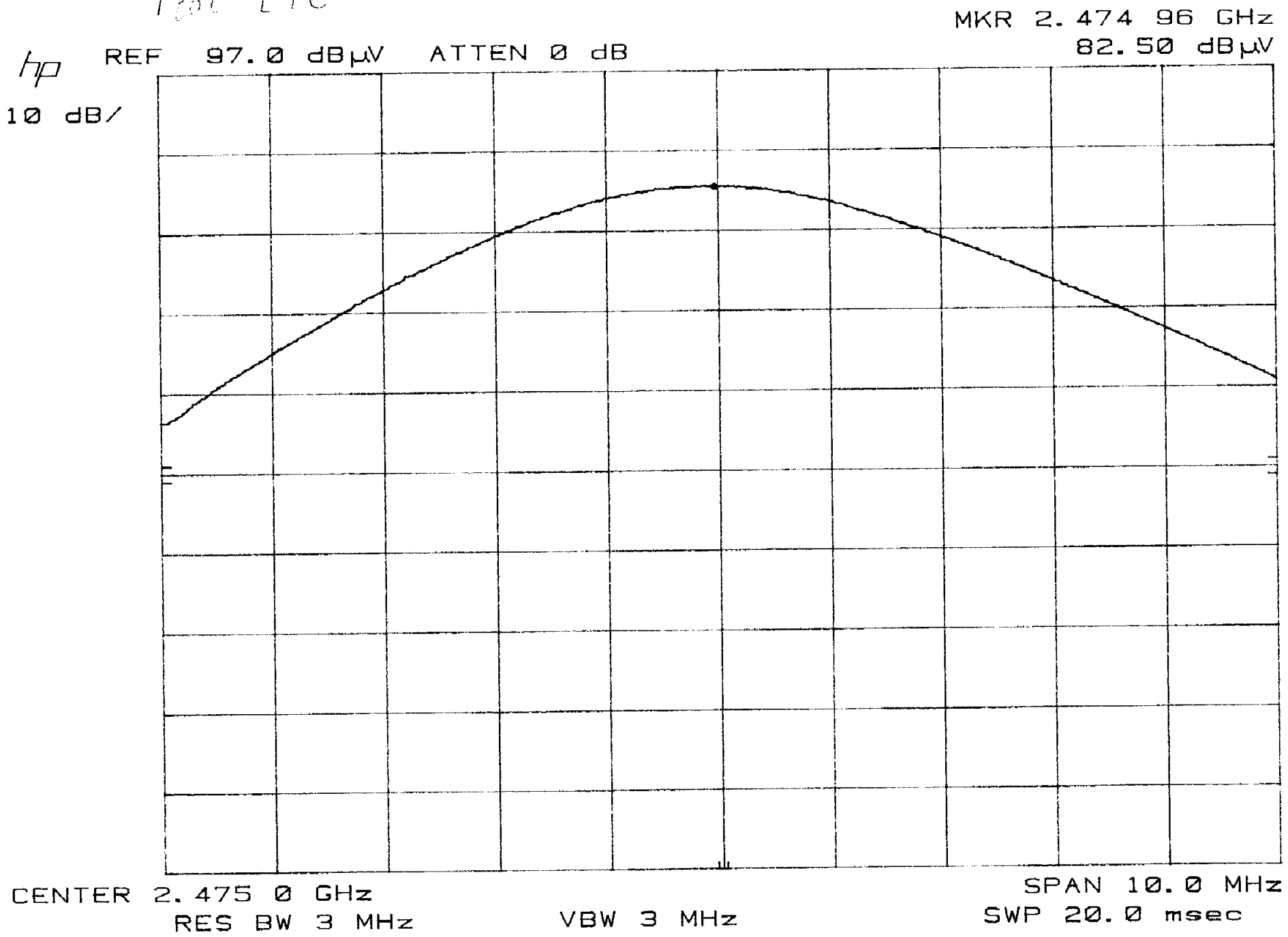
Plot B12


MKR 2.404 87 GHz
82.20 dBµV
hp REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.404 8 GHz
SPAN 10.0 MHz
RES BW 3 MHz
VBW 3 MHz
SWP 20.0 msec

Plot B1b


MKR 2.439 09 GHz
82.00 dBµV
hp REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.439 0 GHz
SPAN 10.0 MHz
RES BW 3 MHz
VBW 3 MHz
SWP 20.0 msec

Plot 21C


MKR 2.474 96 GHz
82.50 dBμV
hp REF 97.0 dBμV ATTEN 0 dB
10 dB/
CENTER 2.475 0 GHz
RES BW 3 MHz
VBW 3 MHz
SPAN 10.0 MHz
SWP 20.0 msec

ITS Intertek Testing Services

Radiated Emissions Test Data

#1

Company:	Giant Electronics Limited	Model #:	G2488		Req.	FCC 2.993

Radiated Emissions Test Data

Company:	Giant Electronics Limited	Model #:	G2488		Req.	FCC 2.993	
EUT:	Cordless Phone Base	S/N or FCC #:			Test Dist.	3	meter
Project #:	J20017979	Test Date:	July 2, 2000		TP	0.10	Watt
Test Mode:	Tx Power for Low, Mid, High Ch.	Engineer:	Xi Ming Y.		Min. Attn.	33.00	dBc

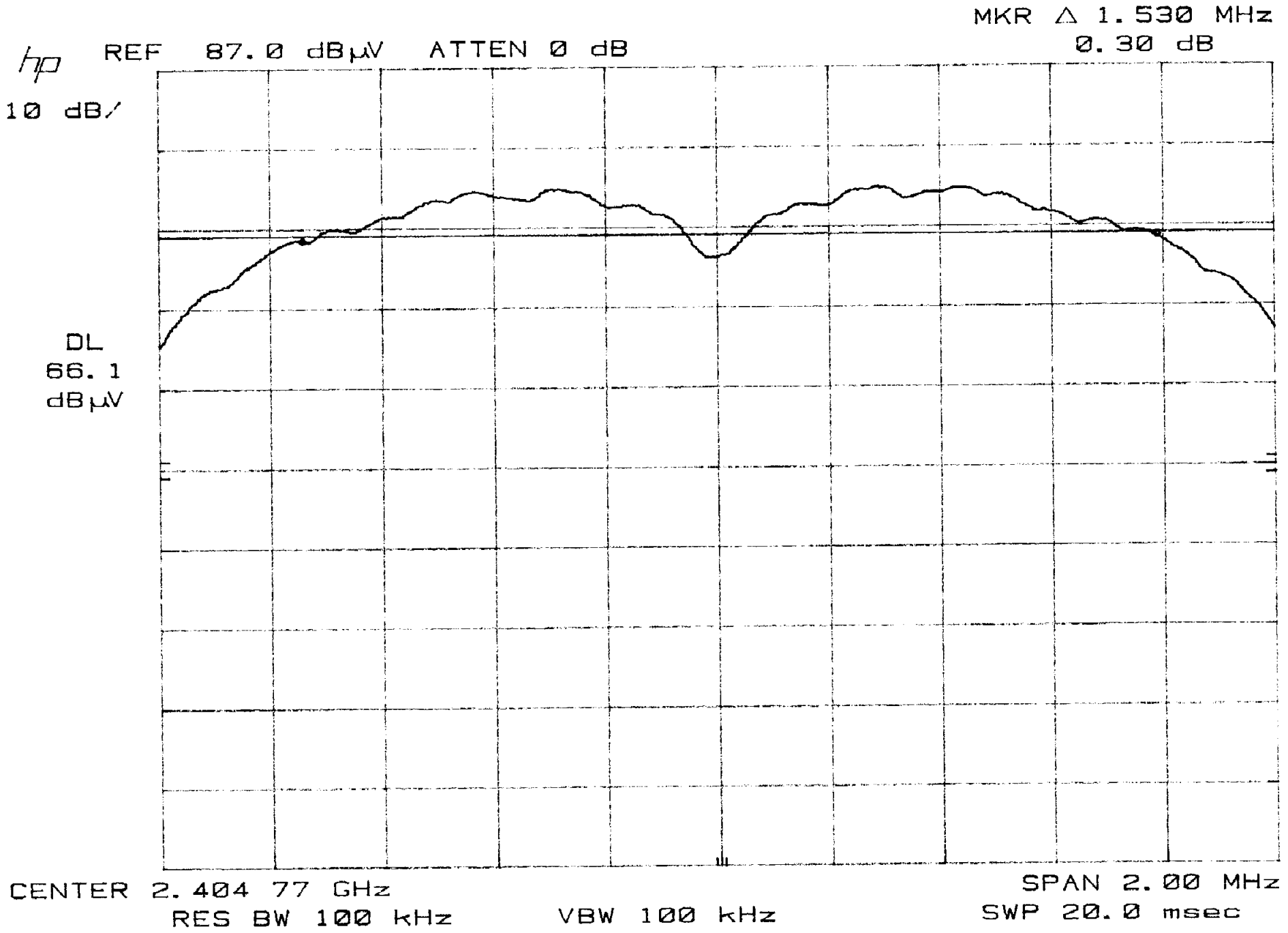
	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	2	14	21	0	8	13	0	0	12	0
Model:	EMCO 3143	EMCO 3115	3160-9	None	CDI_P1000	ACO/400	None	None	NPS368	None

Frequency	Reading	Detector	Ant.	Amp	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	Net	ERP	EIRP	
MHz	dB(μV)	P/A/Q	#	#	H/V	dB(1/m)	dB	dB	dB(μV/m)	mW	mW	
2404.87	82.8	Peak	14	0	V	30.1	0.0	2.1	115.0	5.78E+01	94.8	
2439.09	82.0	Peak	14	0	V	30.1	0.0	2.1	114.2	4.81E+01	78.9	
2474.96	82.5	Peak	14	0	V	30.1	0.0	2.1	114.7	5.40E+01	88.6	

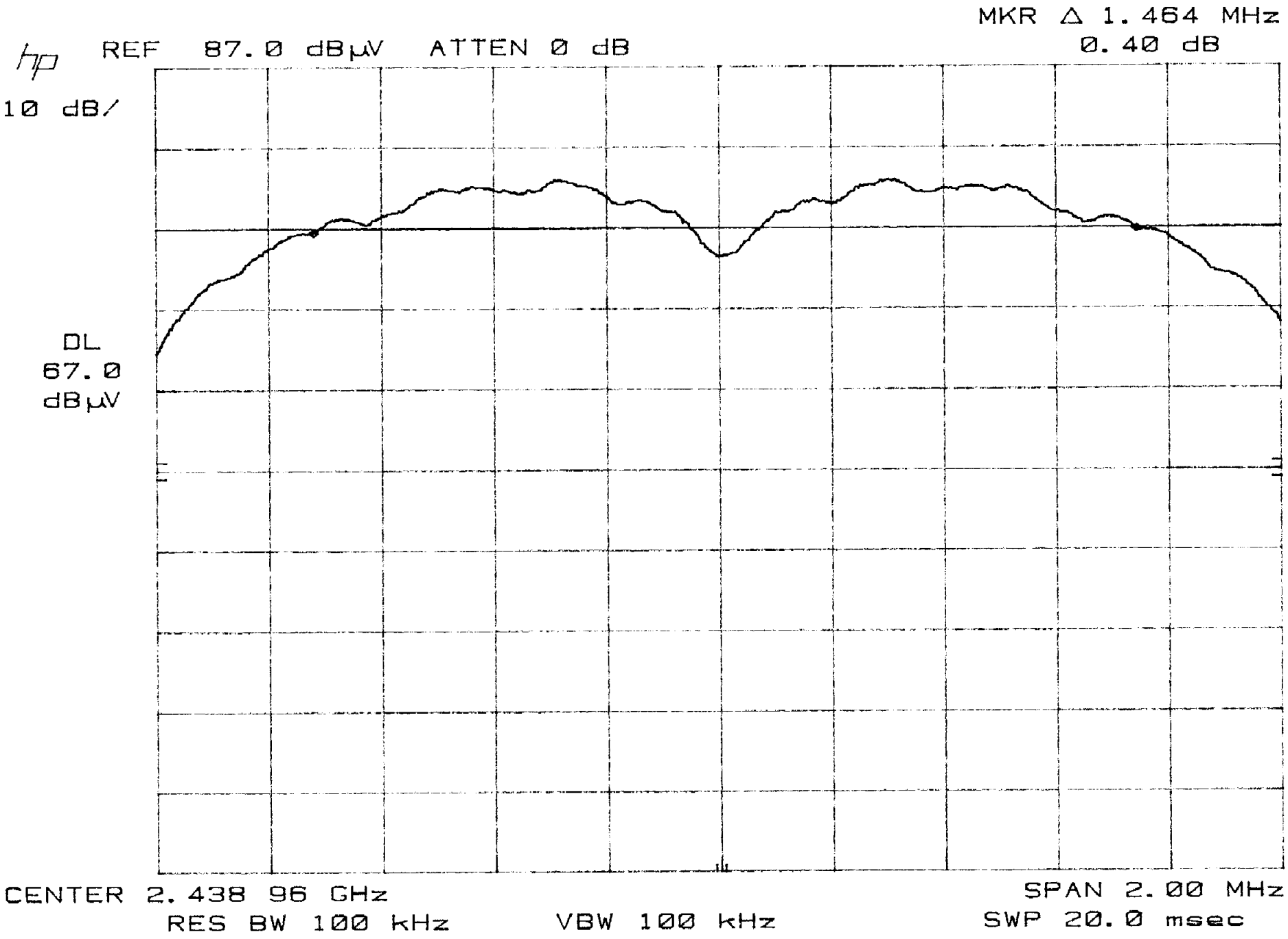
Notes:

a) O.C.F.:Other Correction Factor
b) Insert. Loss = Cable A + Cable B + Cable C + Transducer.
c) Net = Reading + Antenna Factor - Pre-Amp + Insert. Loss.
d) Attn. = Field Strength (Fundamental) - Field Strength (Harmonics).
e) Negative signs (-) in Margin column signify levels below the limits.

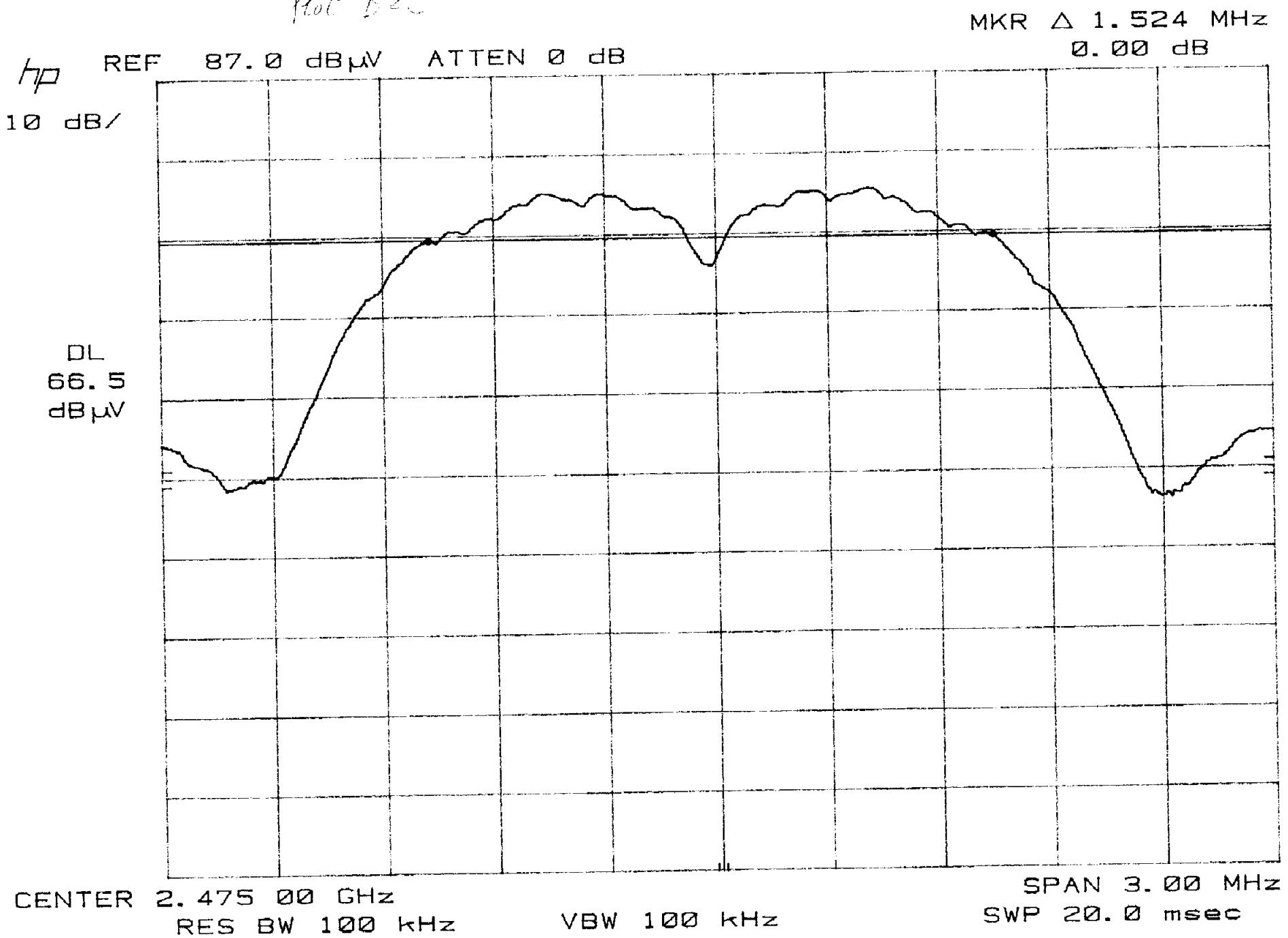
Plot 12a


MKR Δ 1.530 MHz
0.30 dB
hp REF 87.0 dBμV ATTEN 0 dB
10 dB/
DL
66.1
dBμV
CENTER 2.404 77 GHz
RES BW 100 kHz
VBW 100 kHz
SPAN 2.00 MHz
SWP 20.0 msec

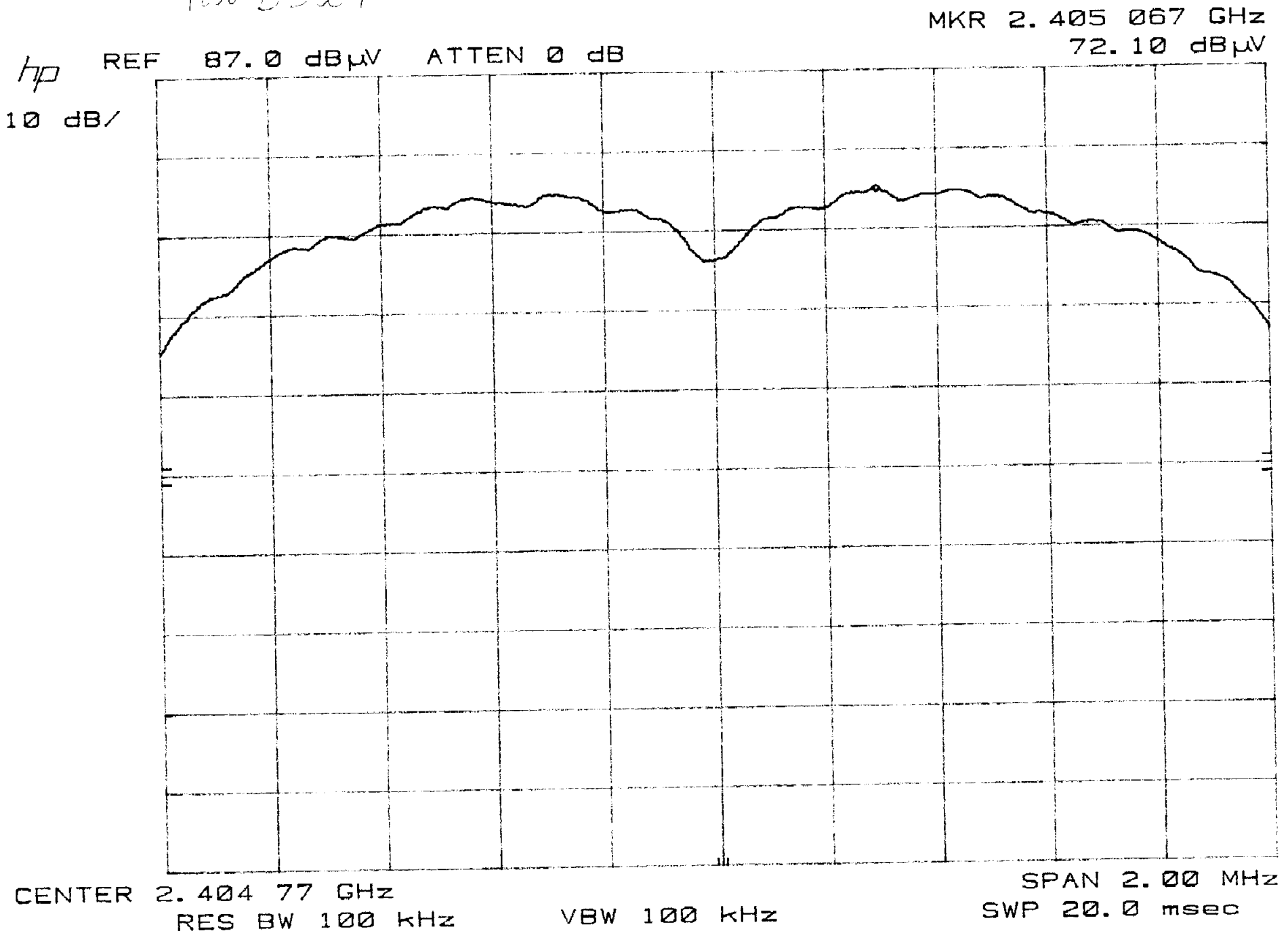
Plot 26


MKR Δ 1.464 MHz
0.40 dB
REF 87.0 dBμV ATTEN 0 dB
10 dB/
DL
67.0
dBμV
CENTER 2.438 96 GHz
SPAN 2.00 MHz
RES BW 100 kHz
VBW 100 kHz
SWP 20.0 msec

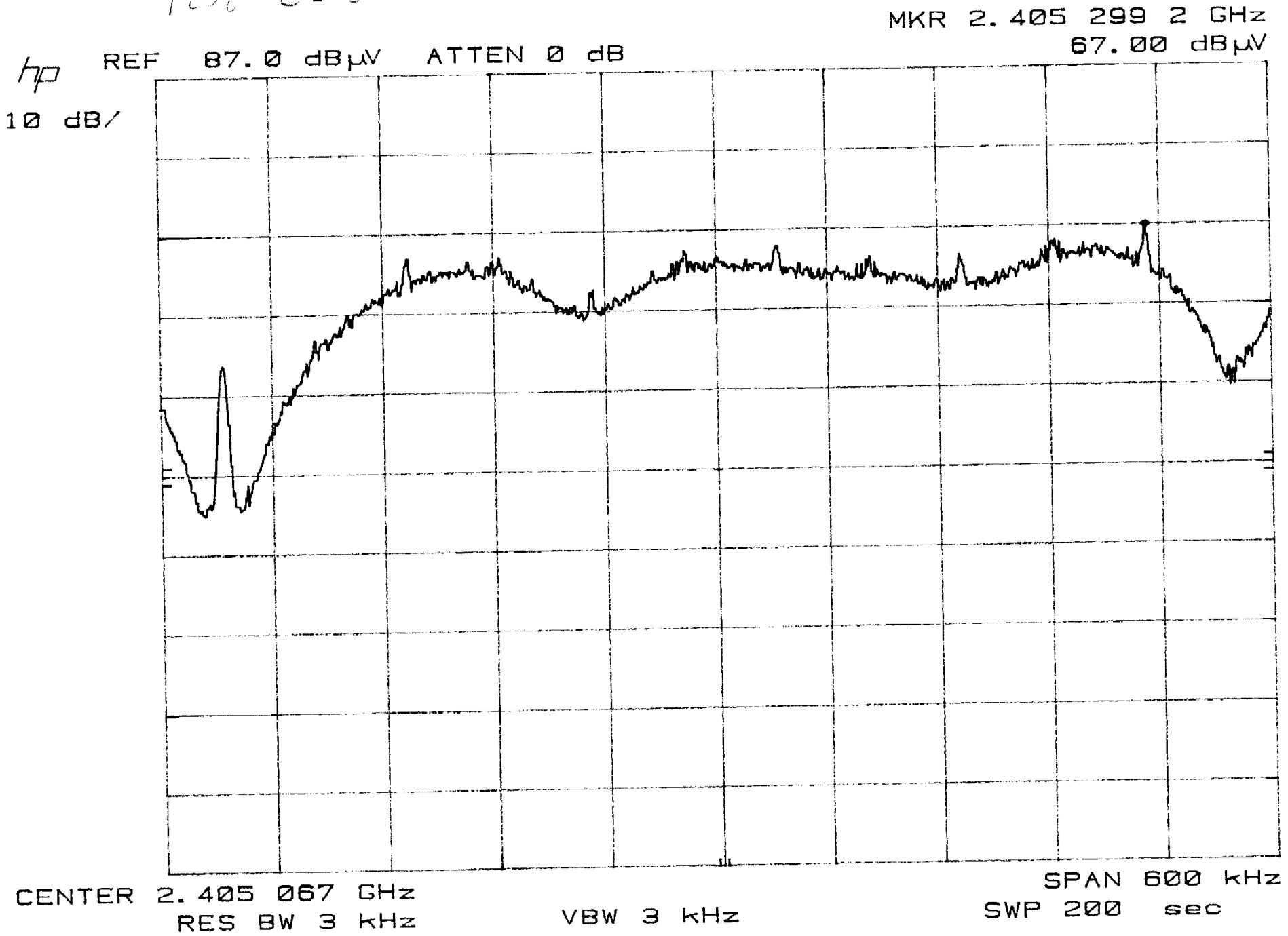
Plot B2C


MKR Δ 1.524 MHz
0.00 dB
REF 87.0 dBμV ATTEN 0 dB
10 dB/
DL
66.5
dBμV
CENTER 2.475 00 GHz
RES BW 100 kHz
VBW 100 kHz
SPAN 3.00 MHz
SWP 20.0 msec

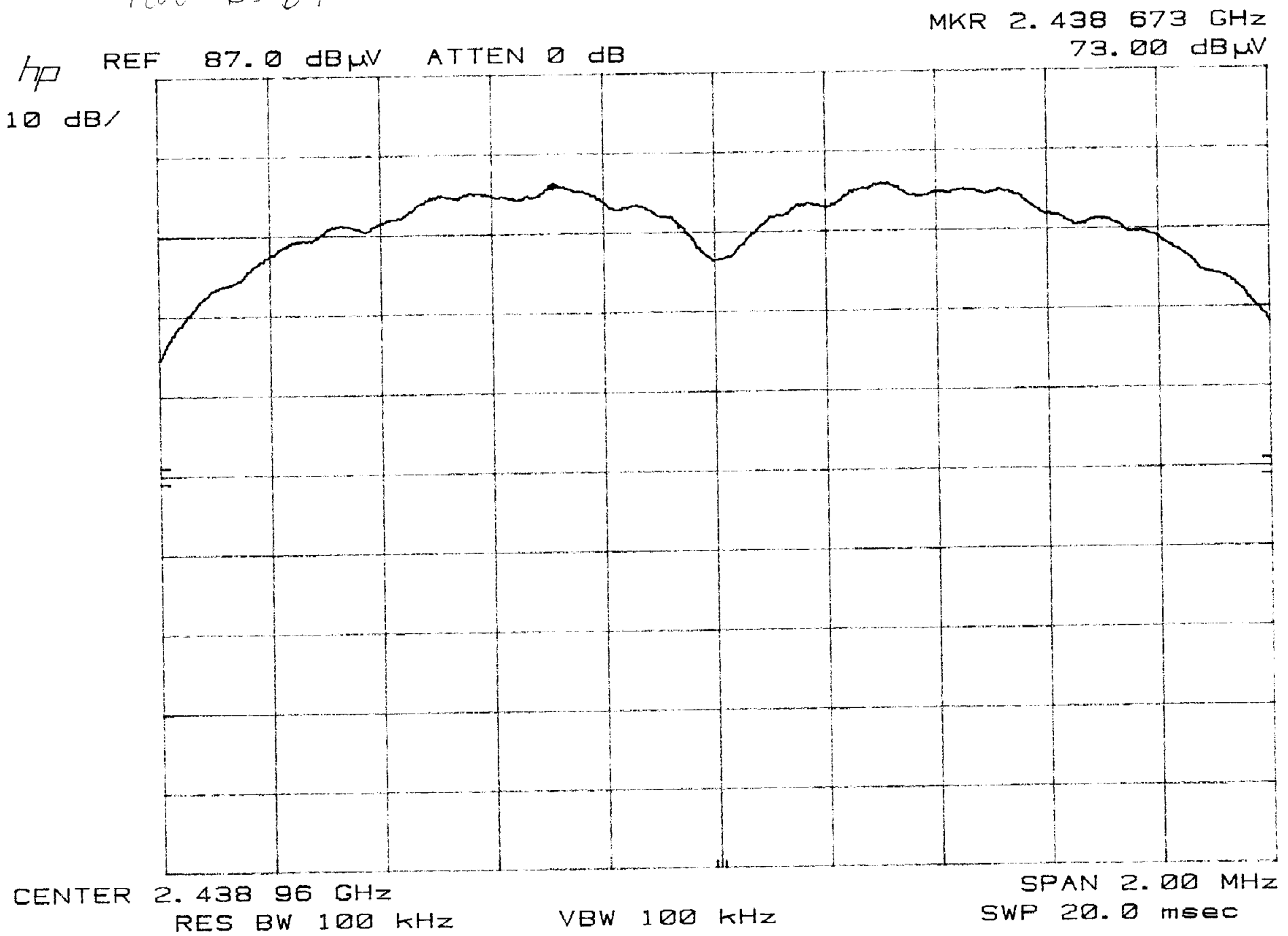
Plot B3a1


MKR 2.405 067 GHz
72.10 dBµV
hp REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.404 77 GHz
RES BW 100 kHz
VBW 100 kHz
SPAN 2.00 MHz
SWP 20.0 msec

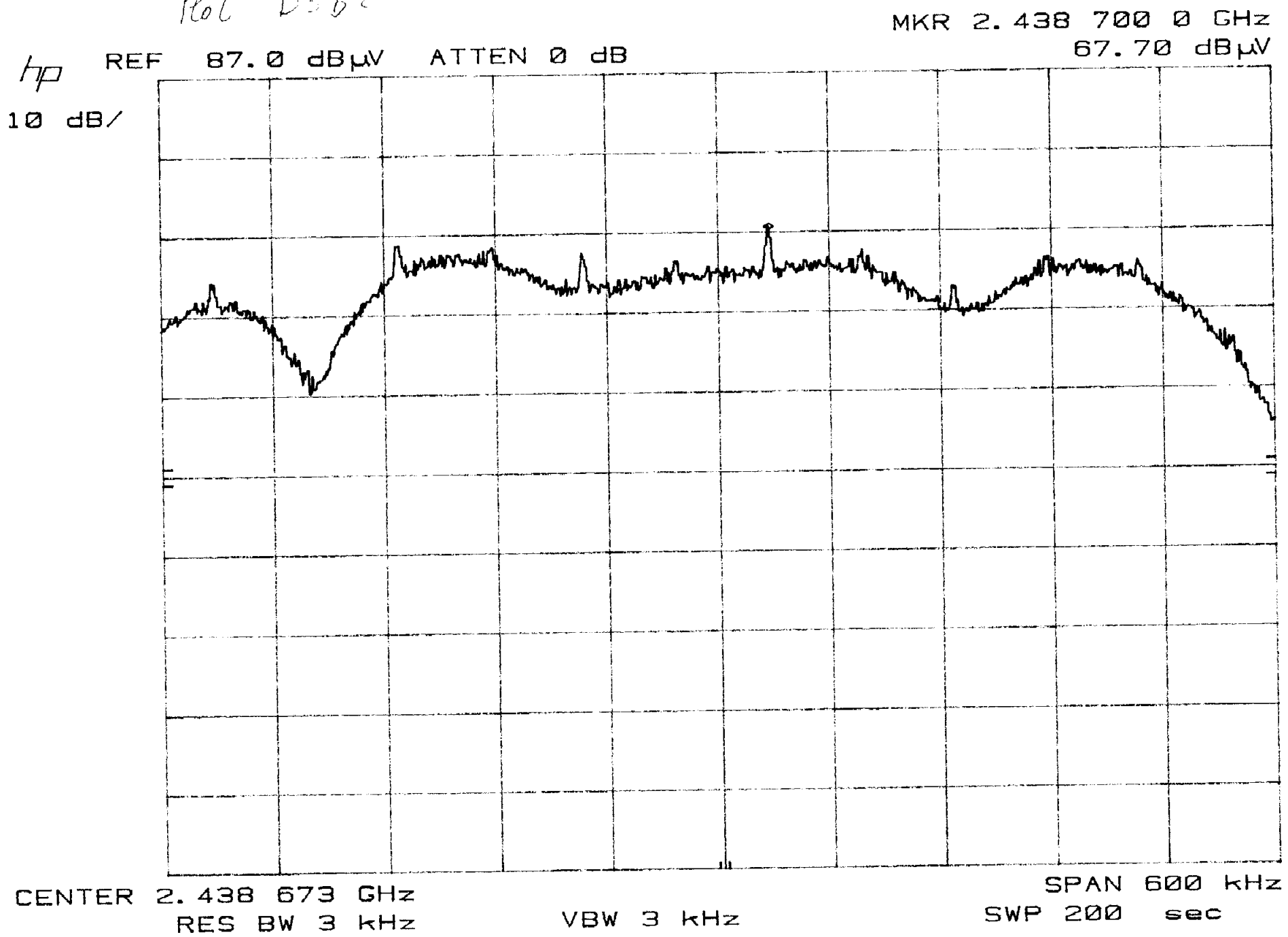
Plot B3a2


MKR 2.405 299 2 GHz
67.00 dBµV
hp
REF 87.0 dBµV
ATTEN 0 dB
10 dB/
CENTER 2.405 067 GHz
RES BW 3 kHz
VBW 3 kHz
SPAN 600 kHz
SWP 200 sec

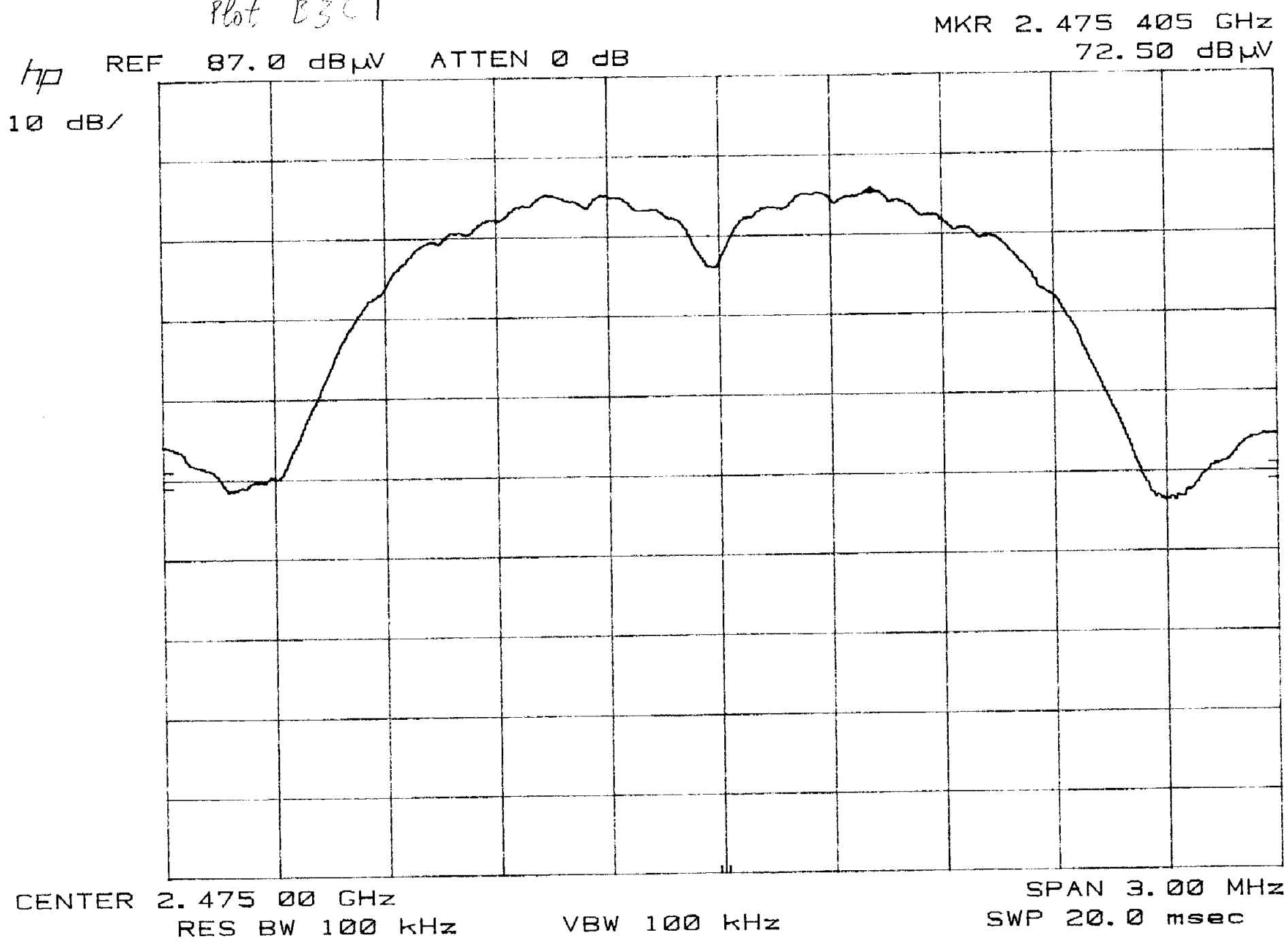
Plot B3b1


MKR 2.438 673 GHz
73.00 dBµV
REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.438 96 GHz
RES BW 100 kHz
VBW 100 kHz
SPAN 2.00 MHz
SWP 20.0 msec

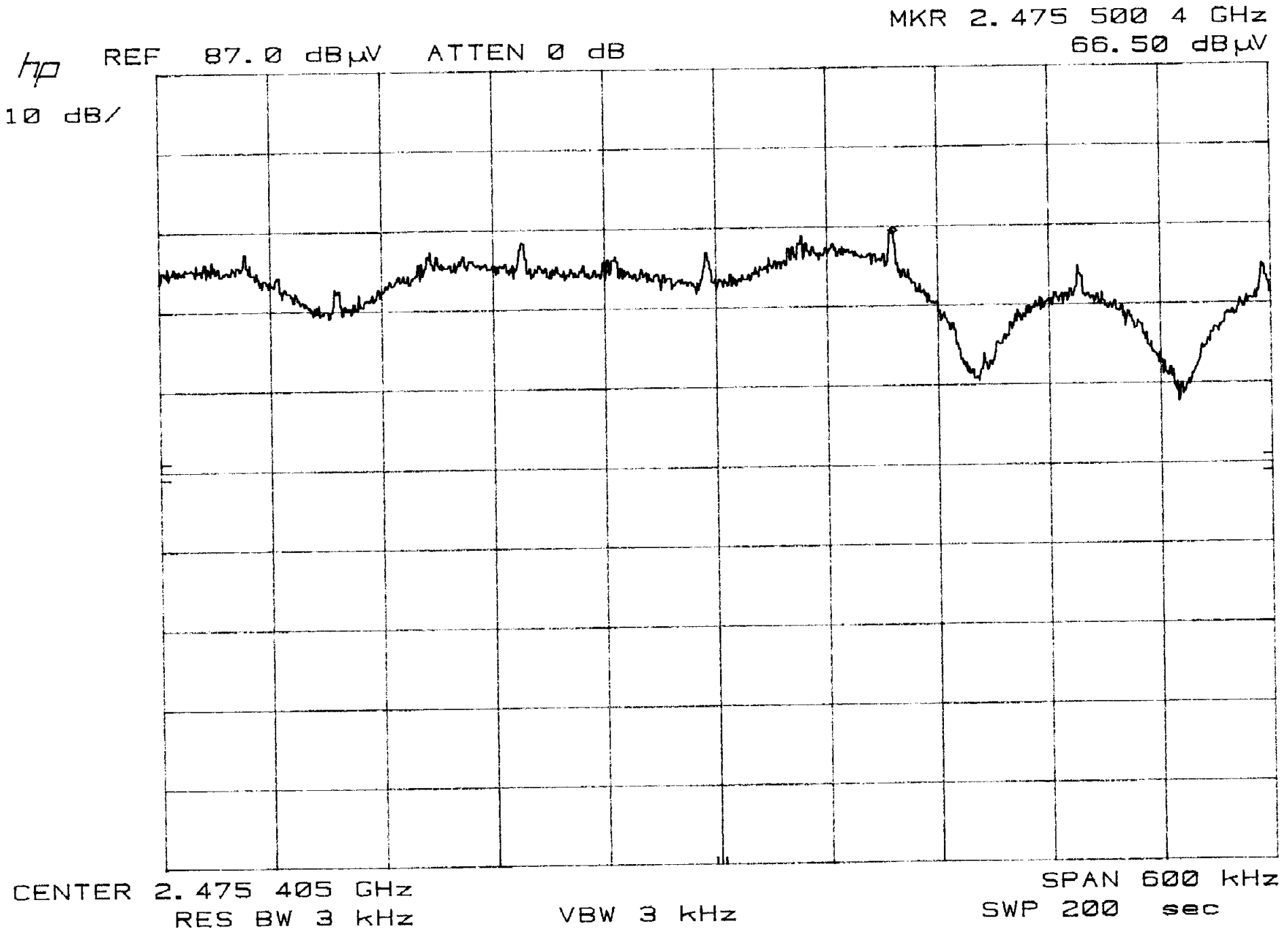
Plot B3b2


MKR 2.438 700 0 GHz
67.70 dBµV
hp REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.438 673 GHz
RES BW 3 kHz
VBW 3 kHz
SPAN 600 kHz
SWP 200 sec

Plot B3C1


MKR 2.475 405 GHz
72.50 dBµV
REF 87.0 dBµV ATTEN 0 dB
10 dB/
CENTER 2.475 00 GHz
RES BW 100 kHz
VBW 100 kHz
SPAN 3.00 MHz
SWP 20.0 msec

Plot B3.2


MKR 2.475 500 4 GHz
66.50 dBµV
REF 87.0 dBµV
ATTEN 0 dB
10 dB/
CENTER 2.475 405 GHz
RES BW 3 kHz
VBW 3 kHz
SPAN 600 kHz
SWP 200 sec

ITS Intertek Testing Services

Radiated Emissions Test Data

#2

Company:	Giant Electronics Limited	Model #:	G2488		Req.	FCC 2.993	
EUT:	Cordless Phone Base	S/N or FCC #:			Test Dist.	3	meters
Project #:	J20017979	Test Date:	July 2, 2000		TP	0.10	Watt
Test Mode:	Tx Power Density for Low, Mid, High Ch.	Engineer:	Xi Ming Y.		Min. Attn.	33.00	dBc

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	2	14	21	0	8	13	0	0	11	0
Model:	EMCO 3143	EMCO 3115	3160-9	None	CDI_P1000	ACO/400	None	None	NPS256-2	None

Frequency MHz	Reading dB(µV)	Detector P/A/Q	Ant #	Amp #	Ant. Pol. H/V	Ant. Factor dB(1/m)	Pre-Amp dB	Insert. Loss dB	Net dB(µV/m)	EIRP dBm	Limit dBm	Margin dB
2405.30	67.0	Peak	14	0	V	30.1	0.0	2.1	99.2	3.9	8.0	-4.1
2438.70	67.7	Peak	14	0	V	30.1	0.0	2.1	99.9	4.6	8.0	-3.4
2475.50	66.5	Peak	14	0	V	30.1	0.0	2.1	98.7	3.4	8.0	-4.6

Notes:

a) O.C.F.:Other Correction Factor

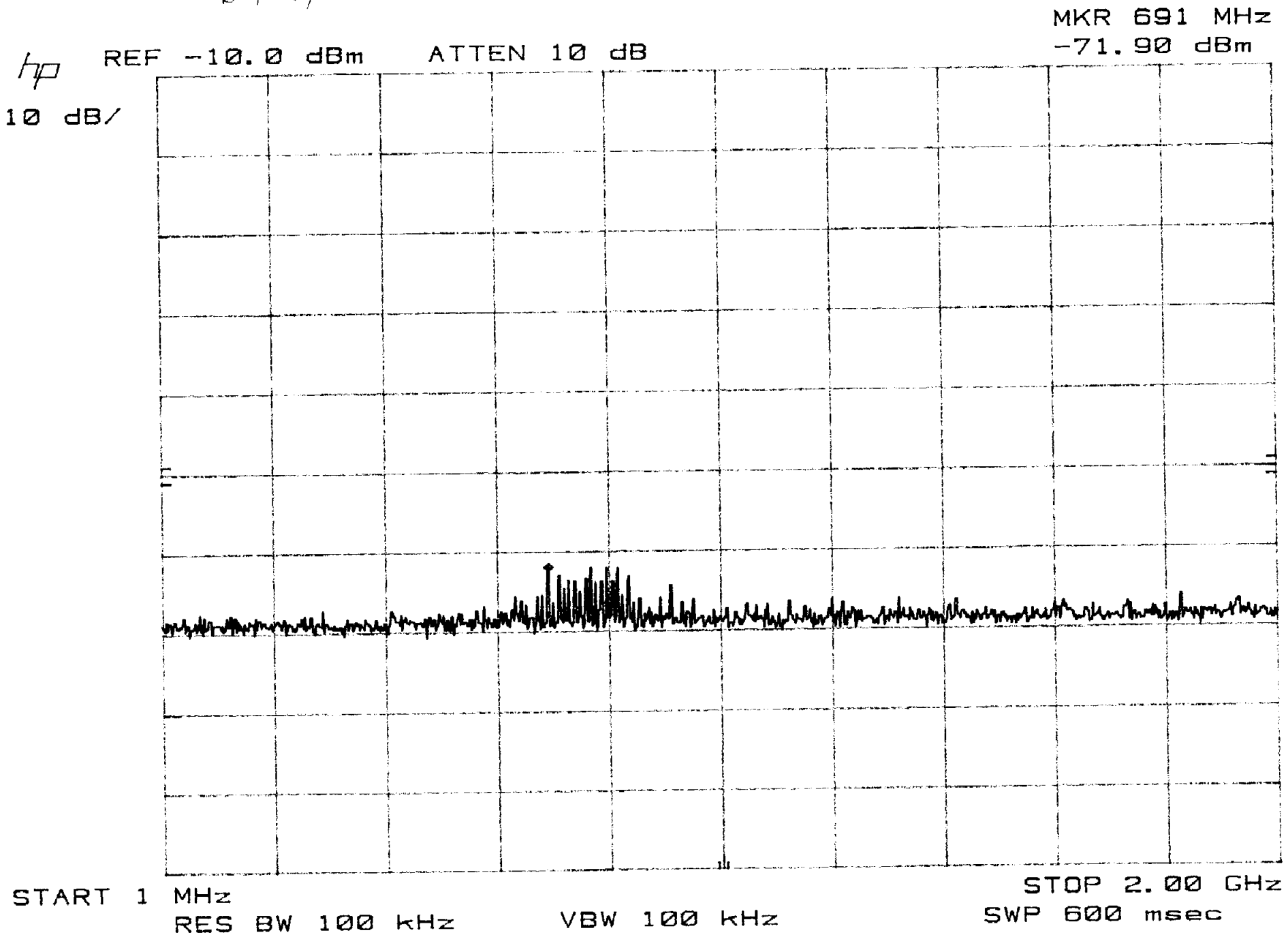
b) Insert. Loss = Cable A + Cable B + Cable C + Transducer.

c) Net = Reading + Antenna Factor - Pre-Amp + Insert. Loss.

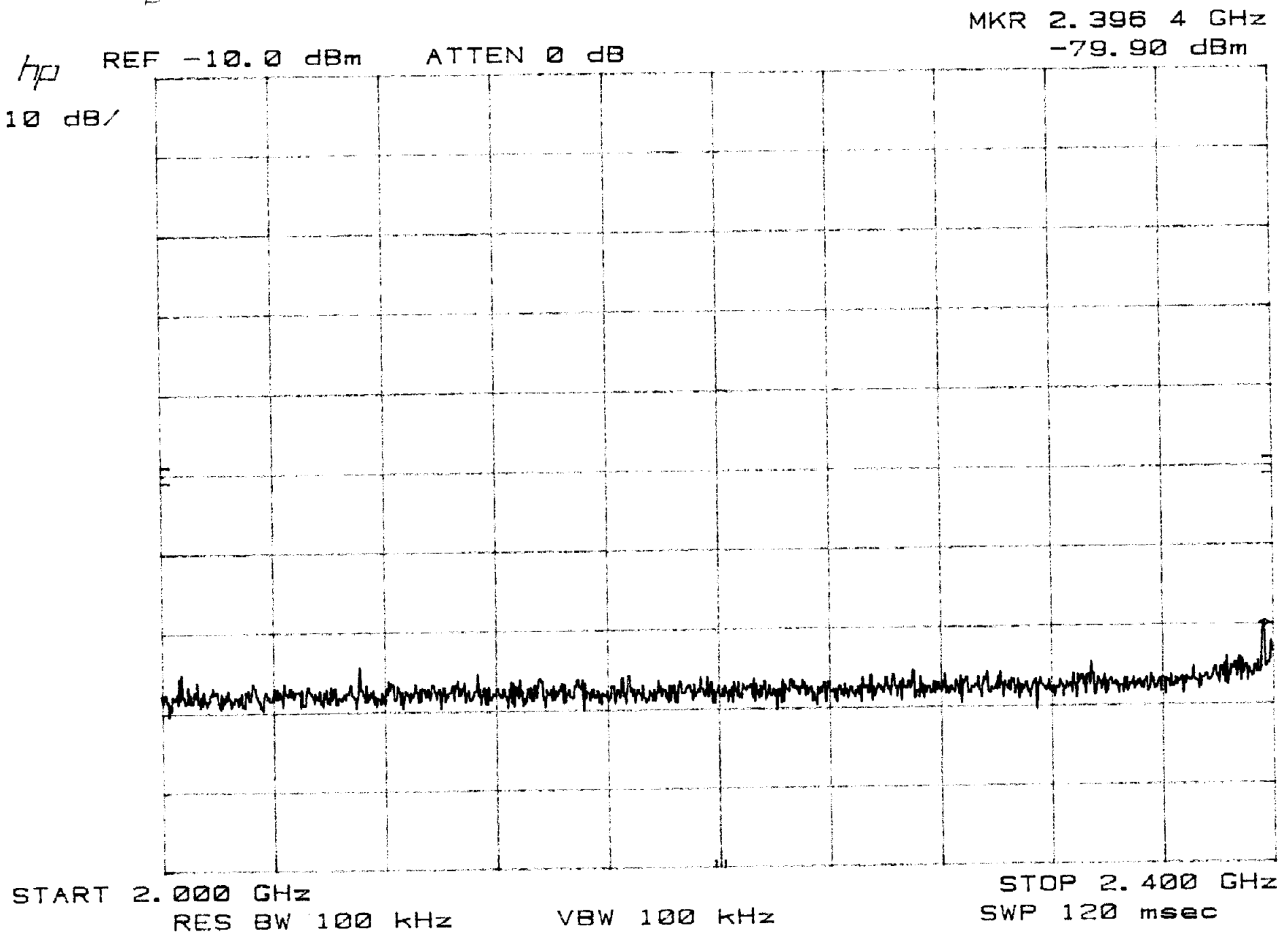
d) Attn. = Field Strength (Fundamental) - Field Strength (Harmonics).

e) Negative signs (-) in Margin column signify levels below the limits.

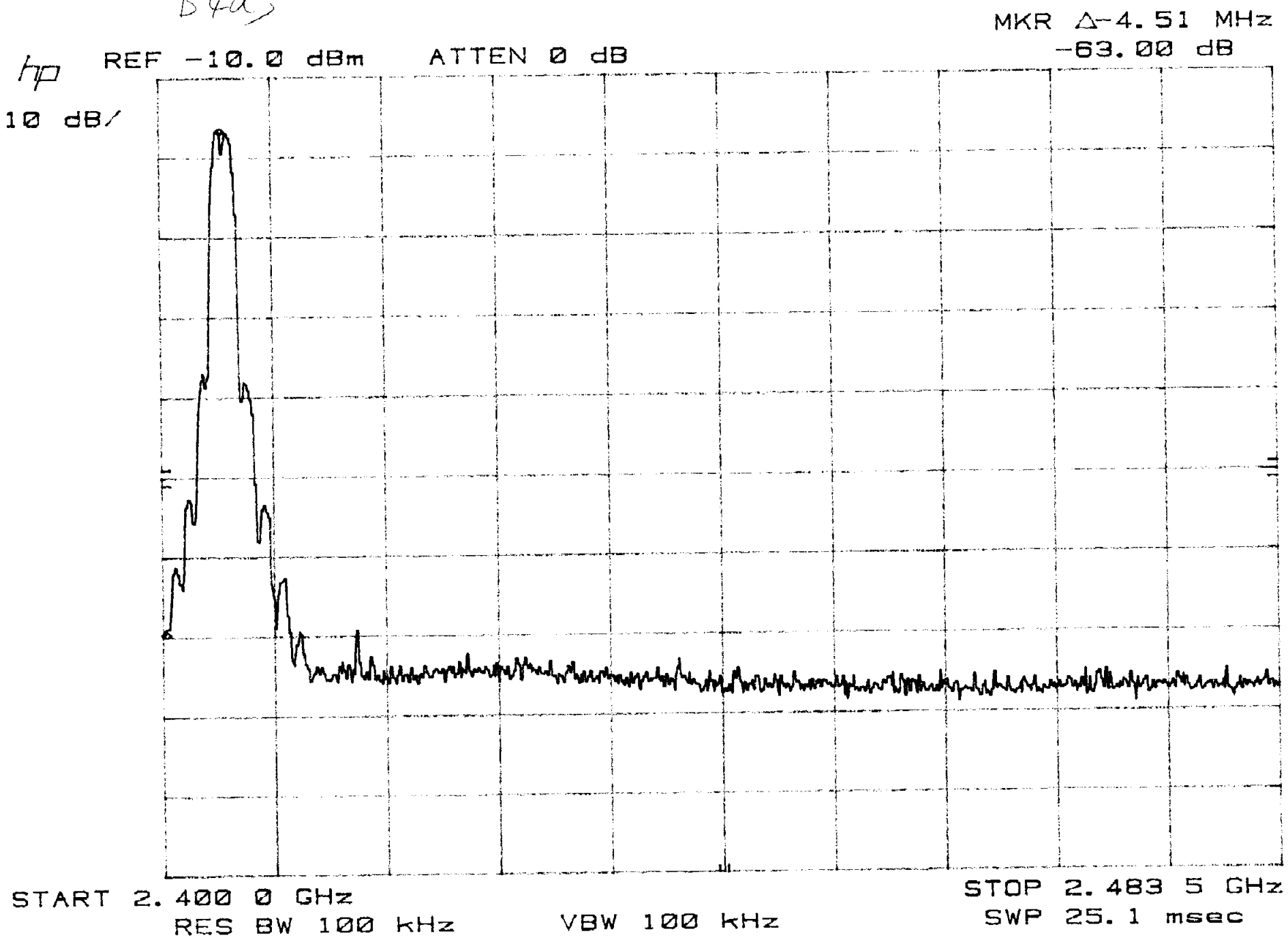
B4a1


MKR 691 MHz
-71.90 dBm
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 1 MHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.00 GHz
SWP 600 msec

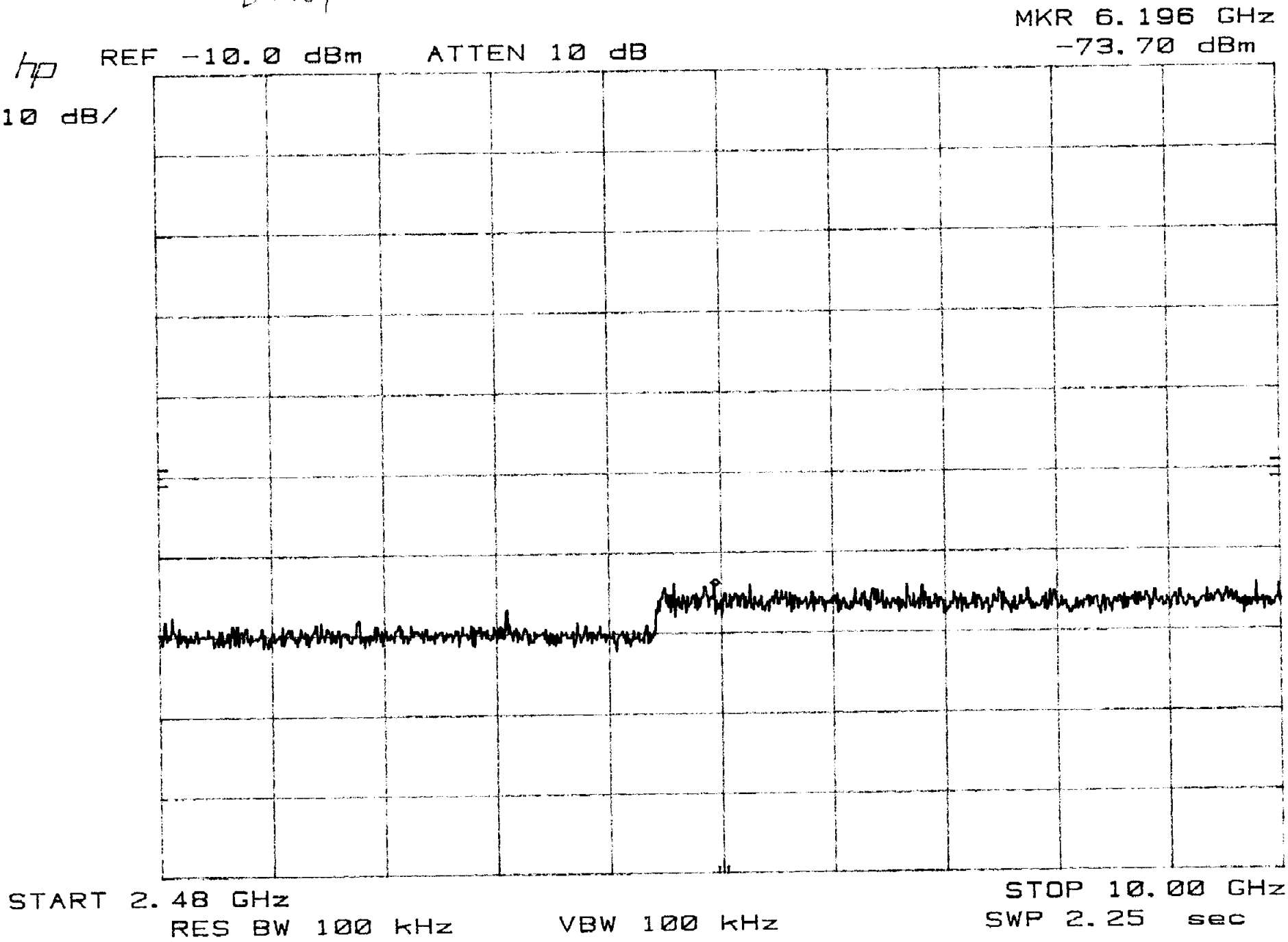
B 4a 2


MKR 2.396 4 GHz
-79.90 dBm
hp
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.000 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.400 GHz
SWP 120 msec

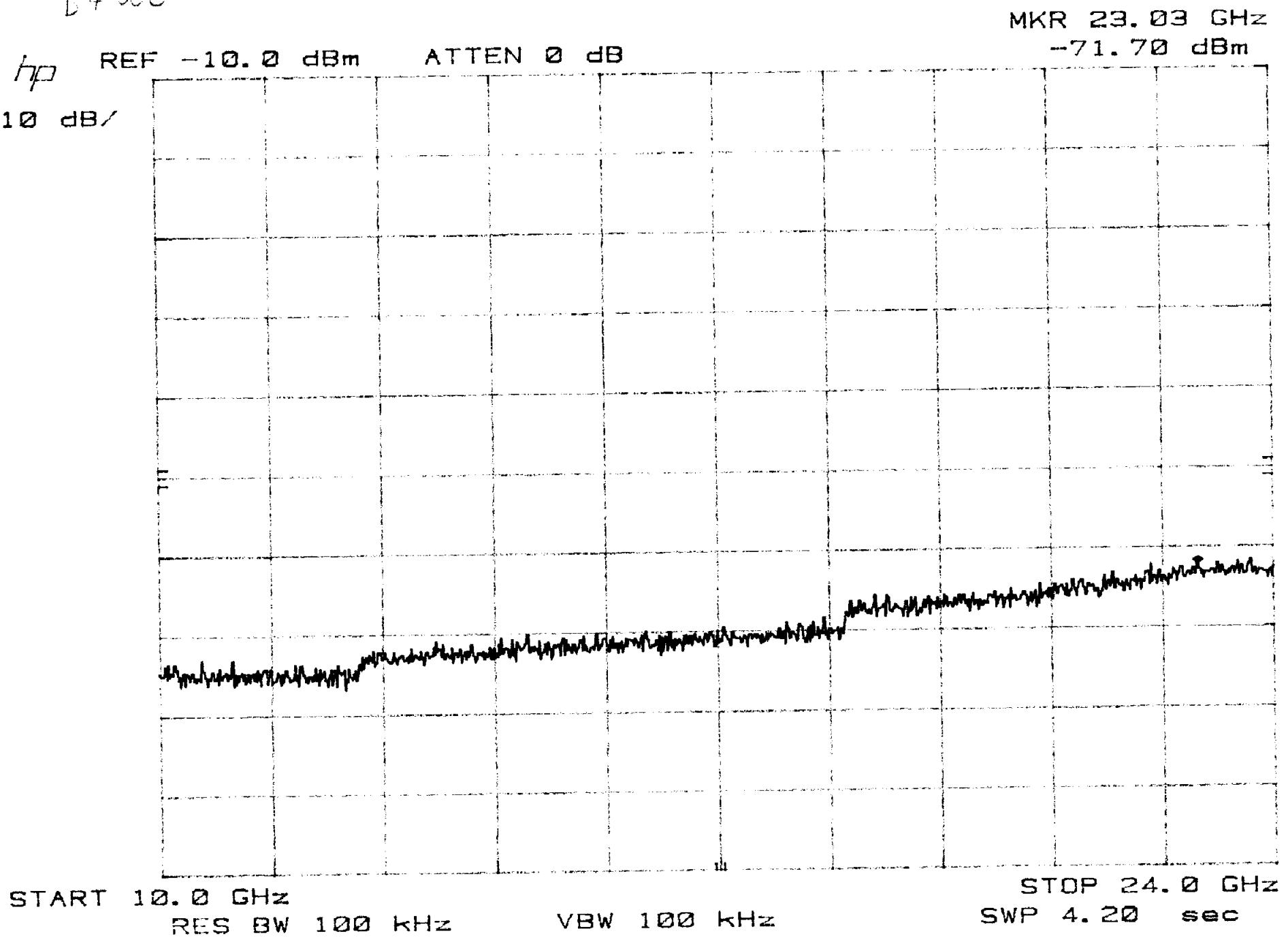
B4a3


MKR Δ-4.51 MHz
-63.00 dB
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.400 0 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.483 5 GHz
SWP 25.1 msec

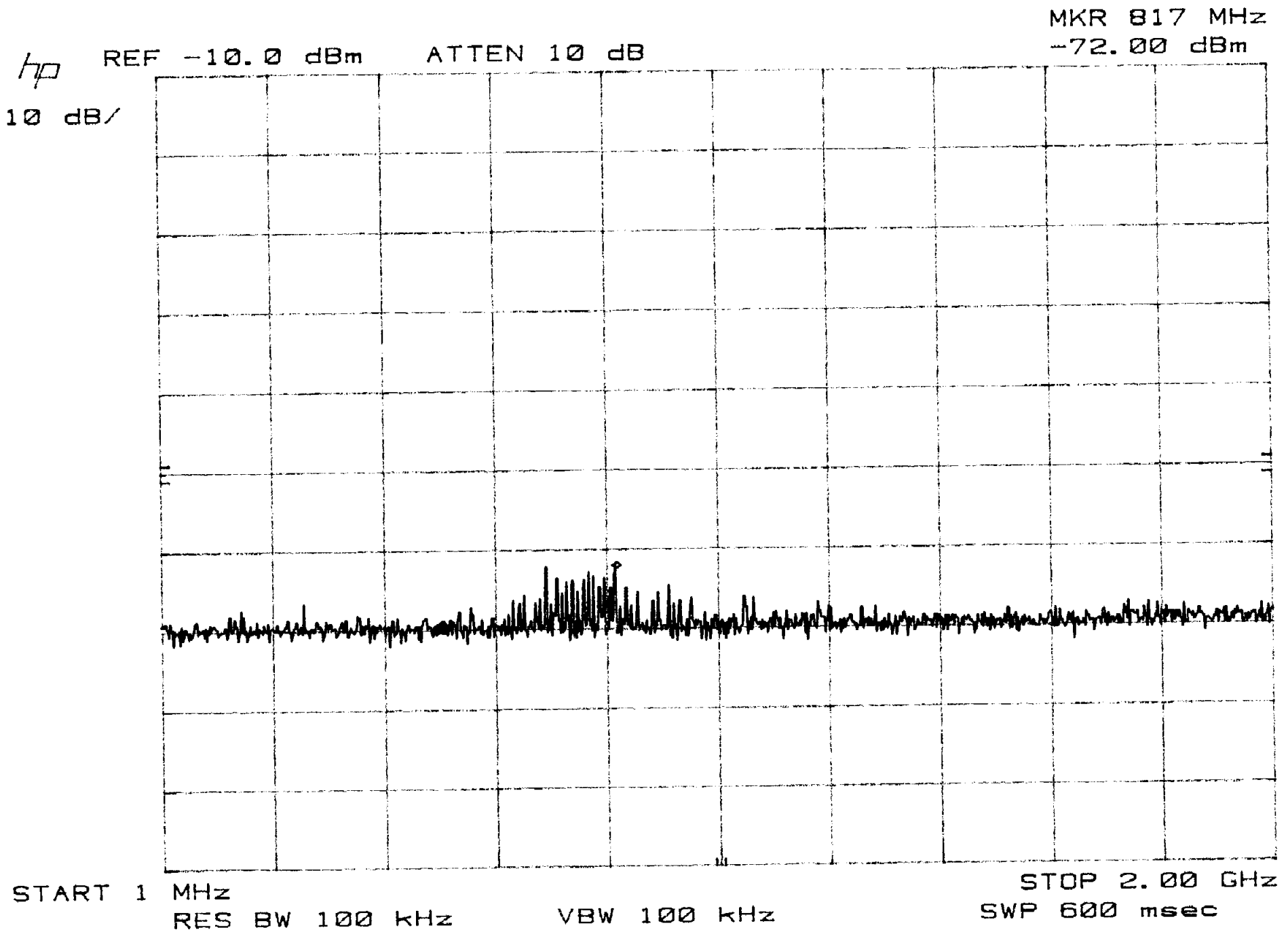
B424


MKR 6.196 GHz
-73.70 dBm
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 2.48 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 10.00 GHz
SWP 2.25 sec

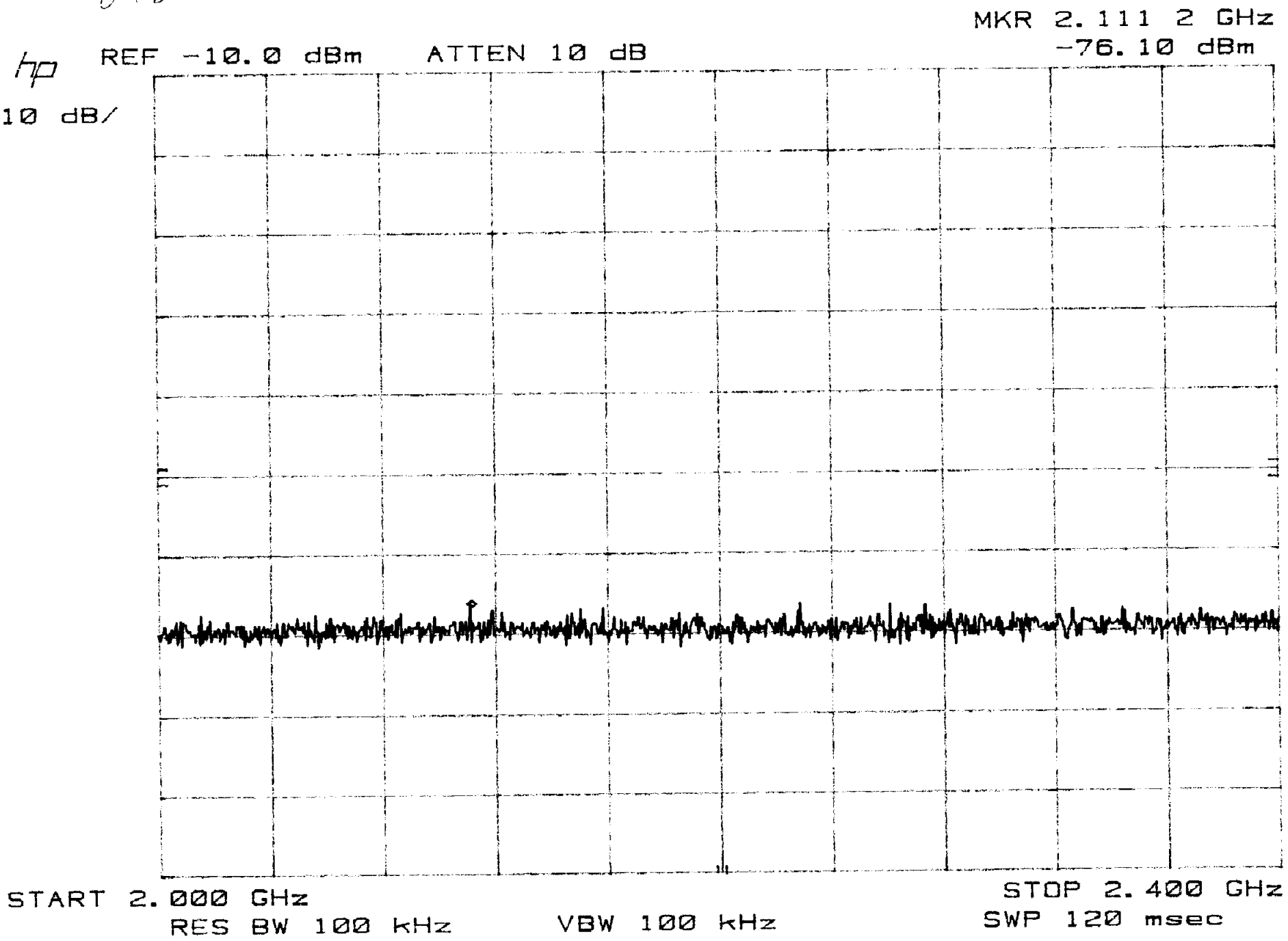
B4a5


MKR 23.03 GHz
-71.70 dBm
hp
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 10.0 GHz
STOP 24.0 GHz
RES BW 100 kHz
VBW 100 kHz
SWP 4.20 sec

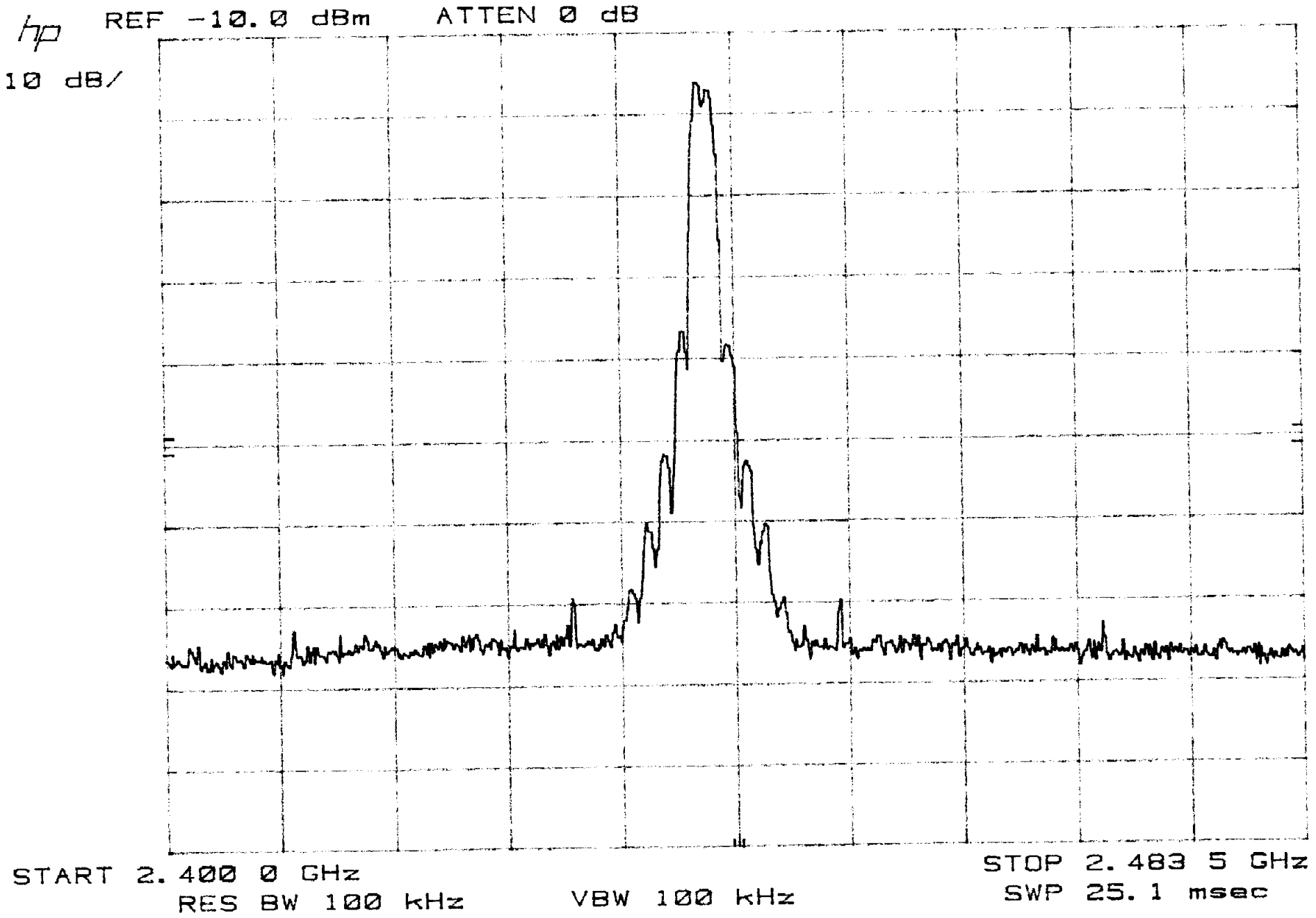
B461


MKR 817 MHz
-72.00 dBm
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 1 MHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.00 GHz
SWP 600 msec

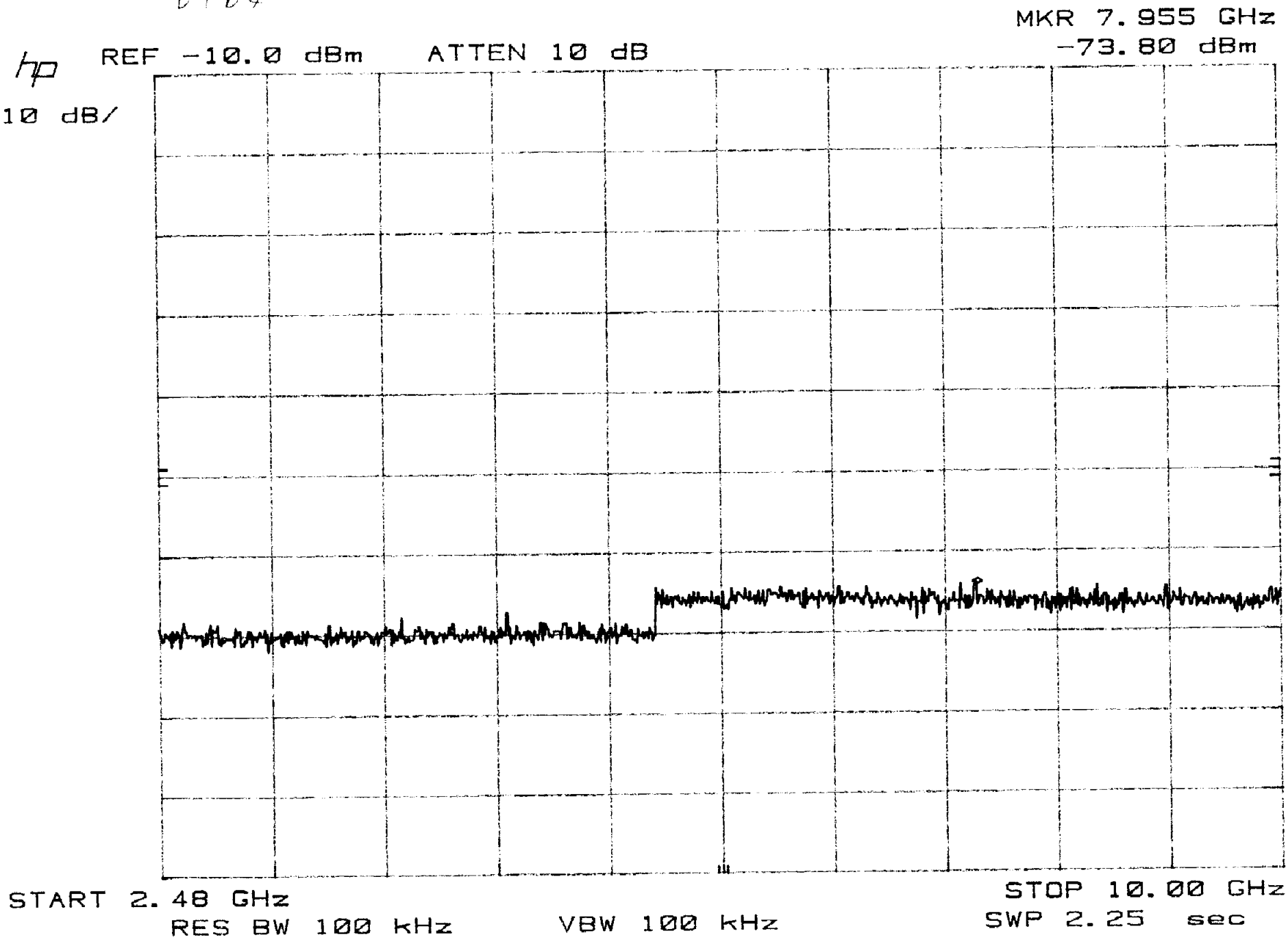
B462


MKR 2.111 2 GHz
-76.10 dBm
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 2.000 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.400 GHz
SWP 120 msec

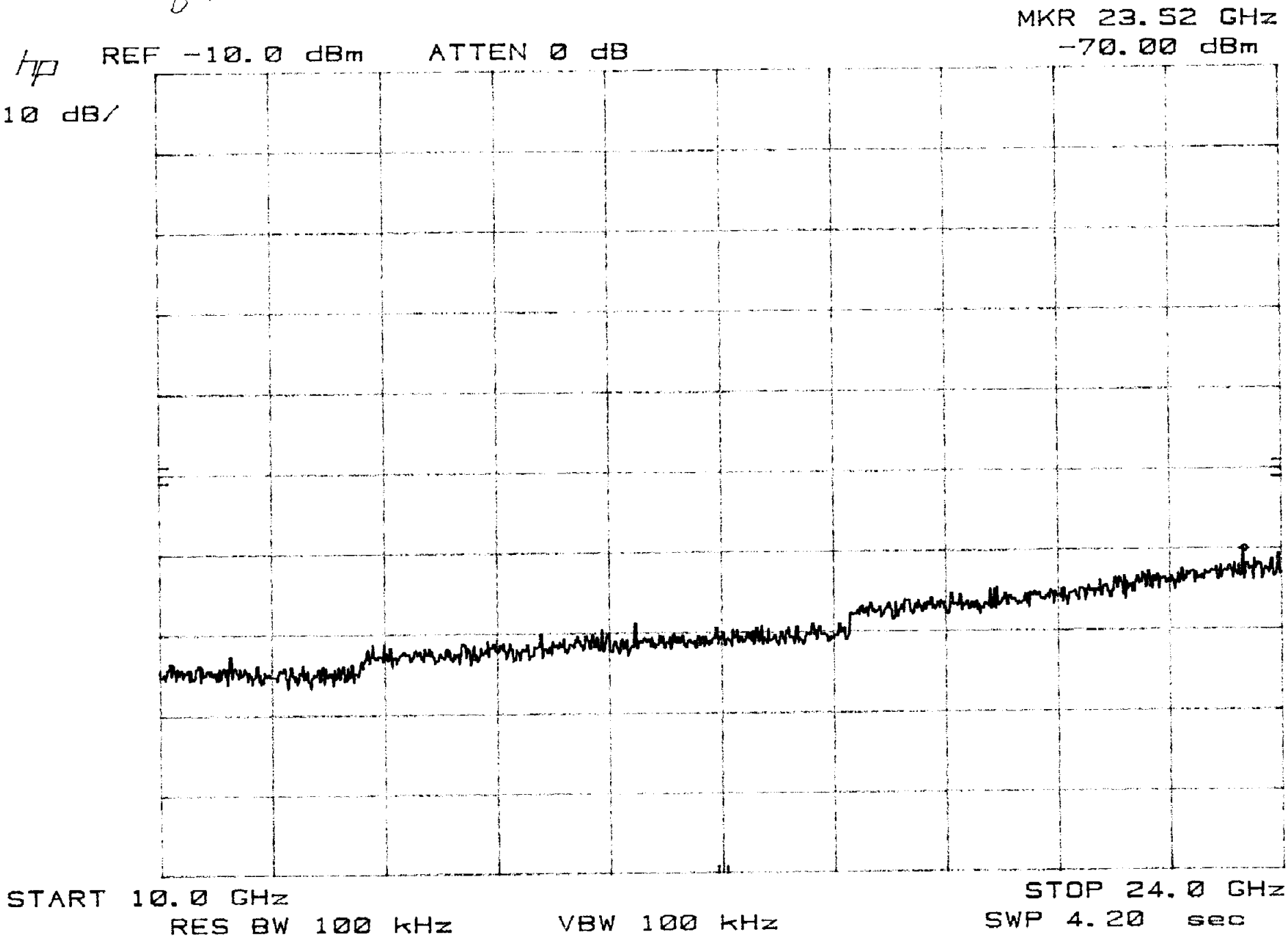
B4b3


hp
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.400 0 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.483 5 GHz
SWP 25.1 msec

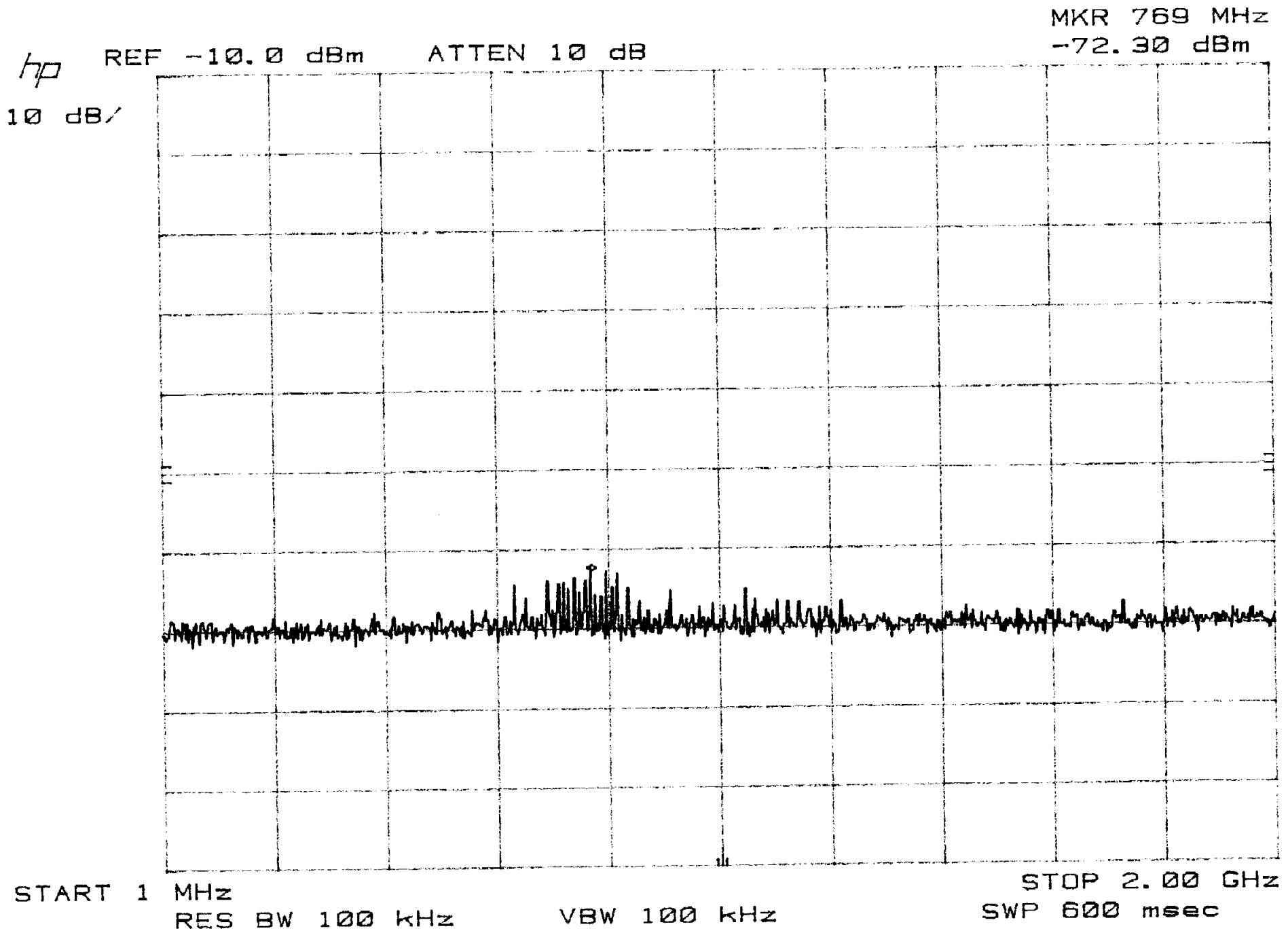
B464


MKR 7.955 GHz
-73.80 dBm
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 2.48 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 10.00 GHz
SWP 2.25 sec

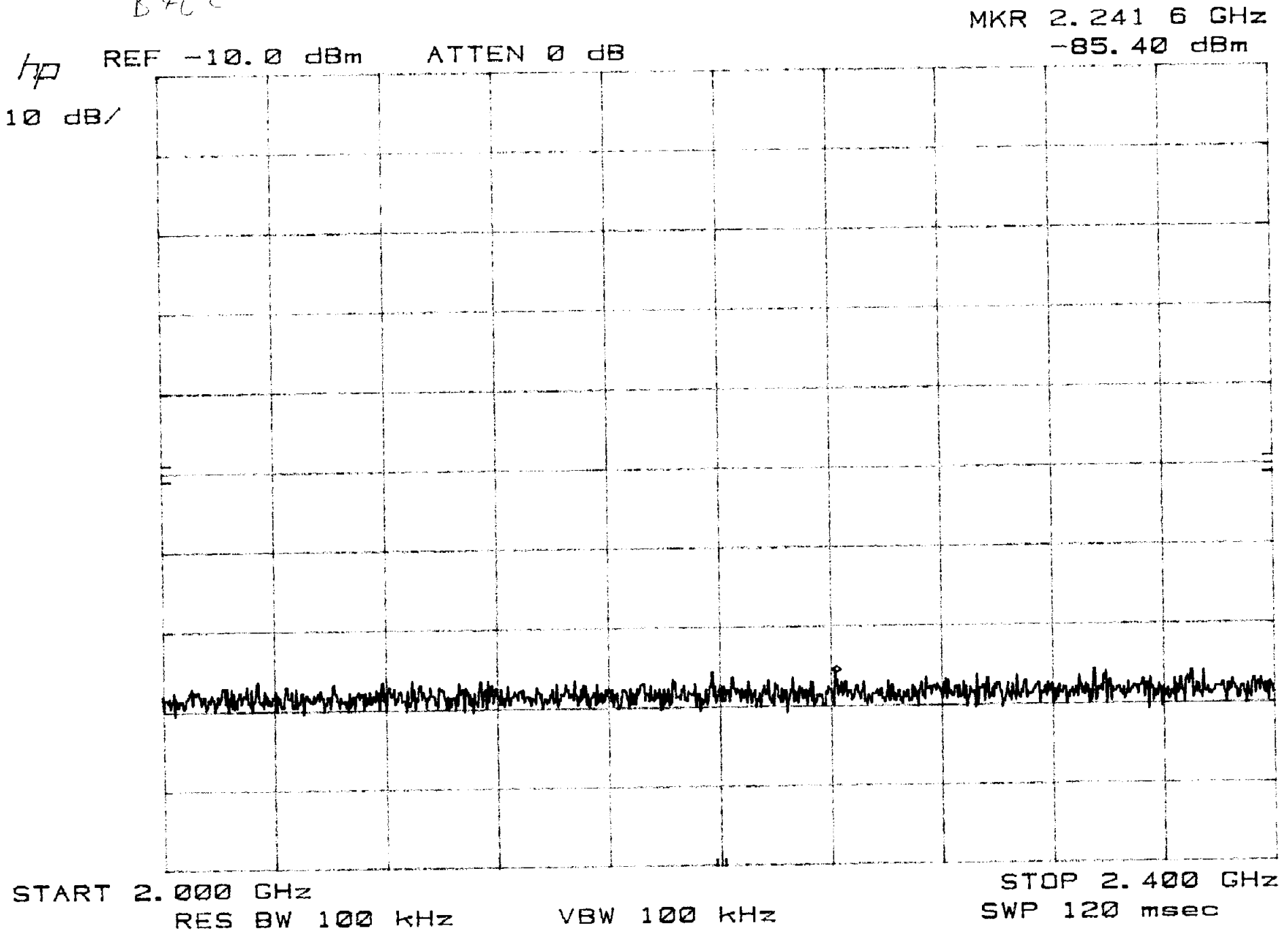
B465


MKR 23.52 GHz
-70.00 dBm
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 10.0 GHz
STOP 24.0 GHz
RES BW 100 kHz
VBW 100 kHz
SWP 4.20 sec

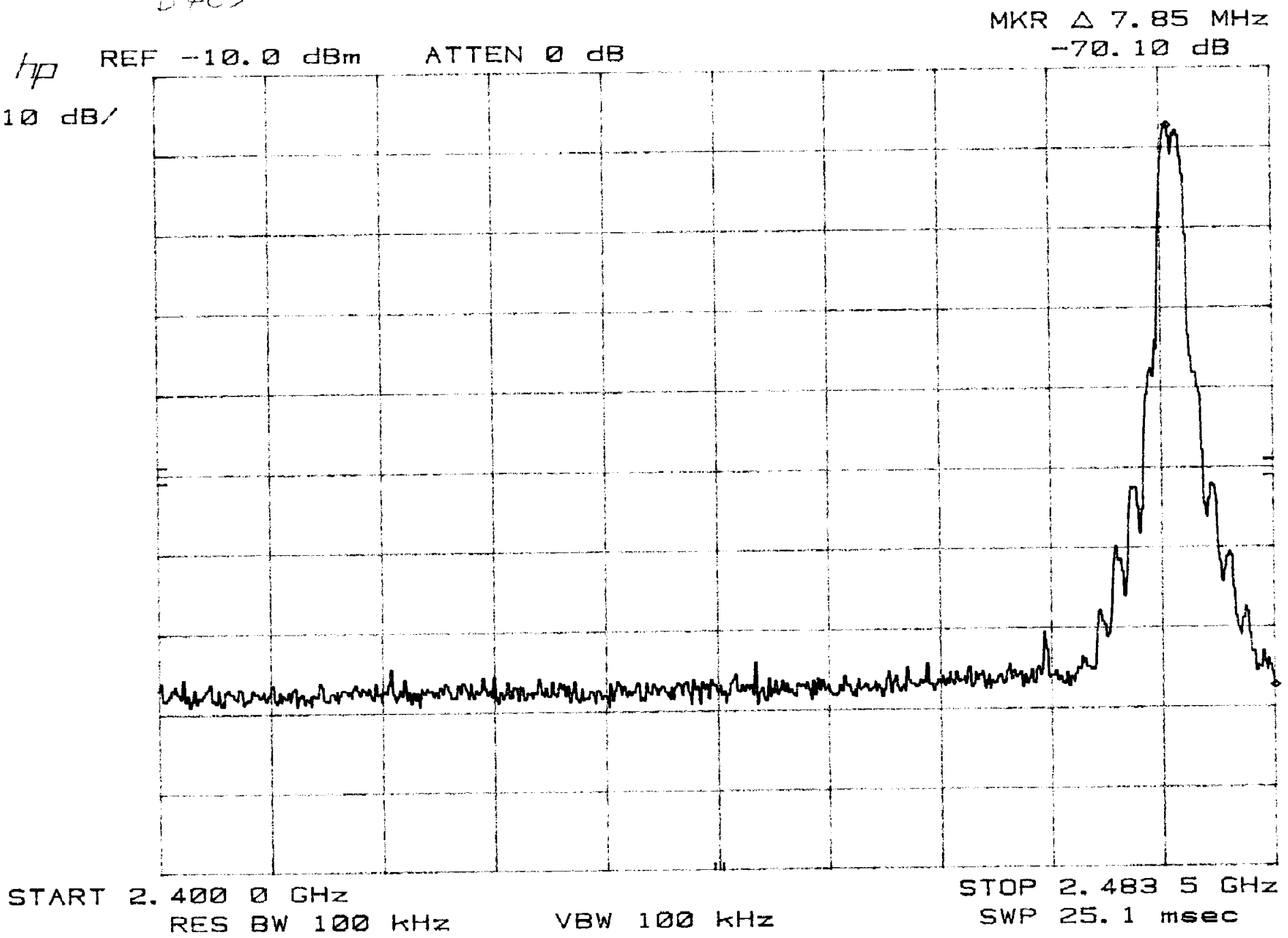
B4C1


MKR 769 MHz
-72.30 dBm
hp
REF -10.0 dBm
ATTEN 10 dB
10 dB/
START 1 MHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.00 GHz
SWP 600 msec

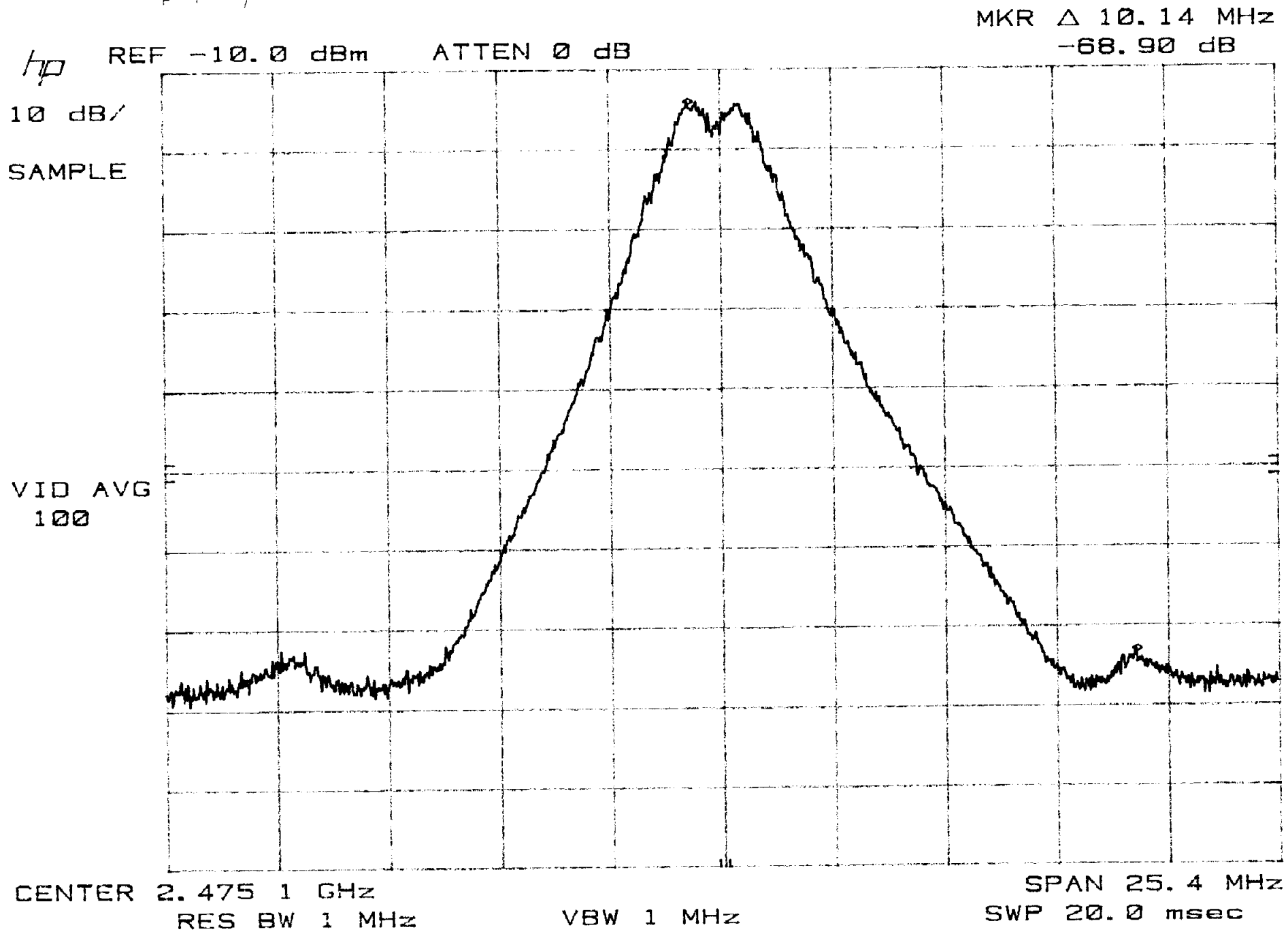
B4C2


MKR 2.241 6 GHz
-85.40 dBm
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.000 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.400 GHz
SWP 120 msec

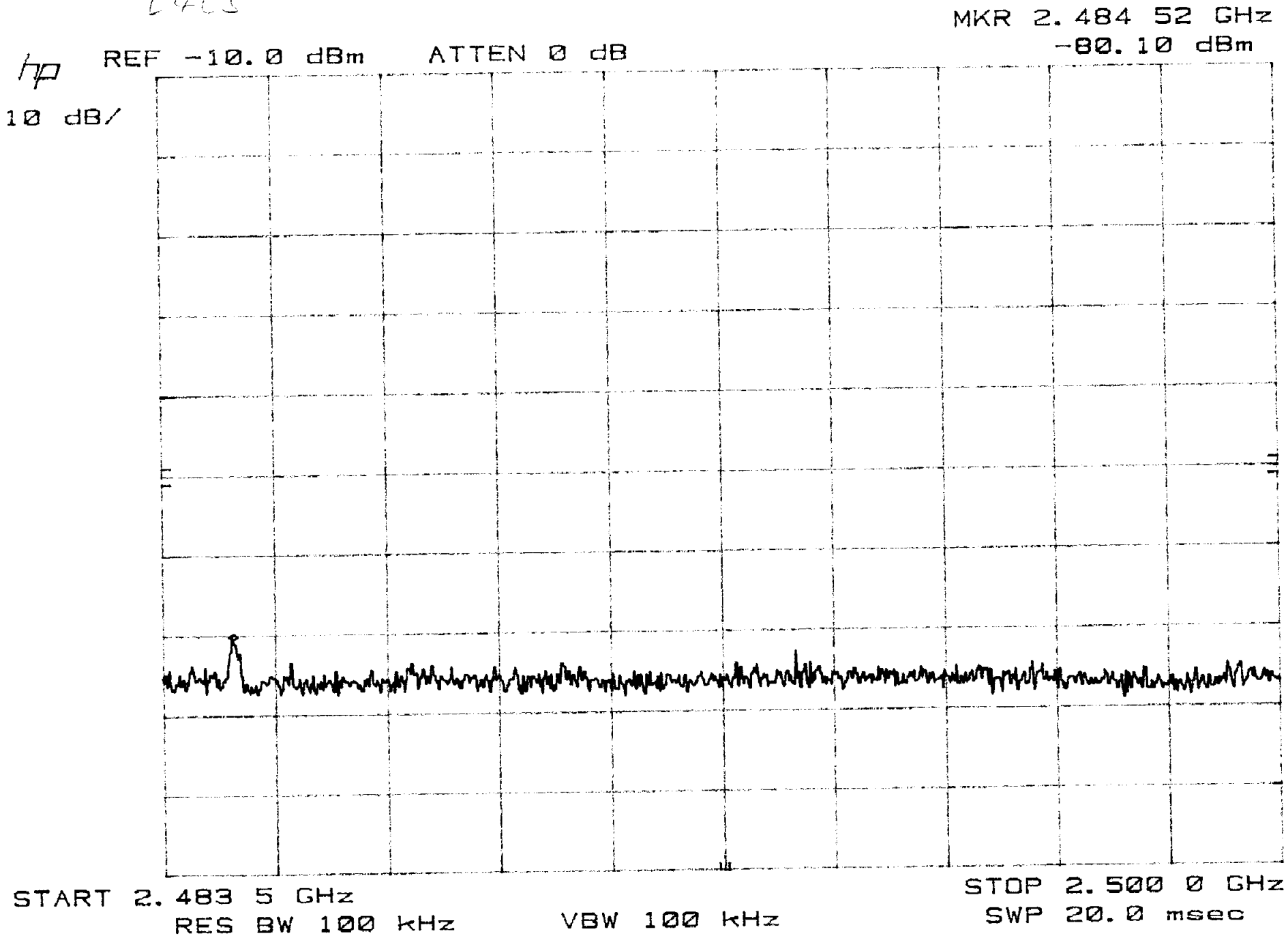
B4C3


MKR Δ 7.85 MHz
-70.10 dB
hp REF -10.0 dBm ATTEN 0 dB
10 dB/
START 2.400 0 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.483 5 GHz
SWP 25.1 msec

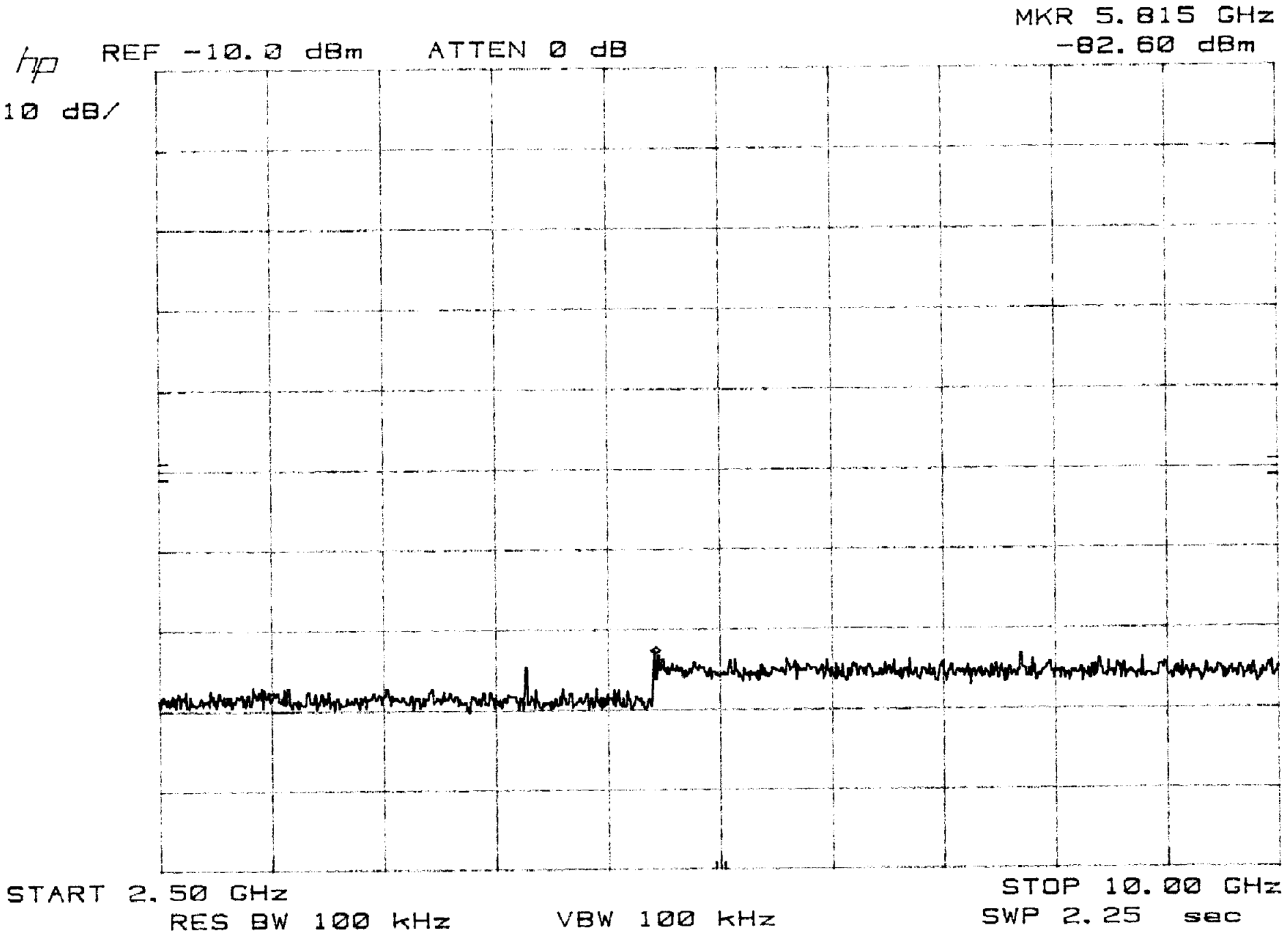
B4C4


MKR Δ 10.14 MHz
-68.90 dB
REF -10.0 dBm
ATTEN 0 dB
10 dB/
SAMPLE
VID AVG
100
CENTER 2.475 1 GHz
RES BW 1 MHz
VBW 1 MHz
SPAN 25.4 MHz
SWP 20.0 msec

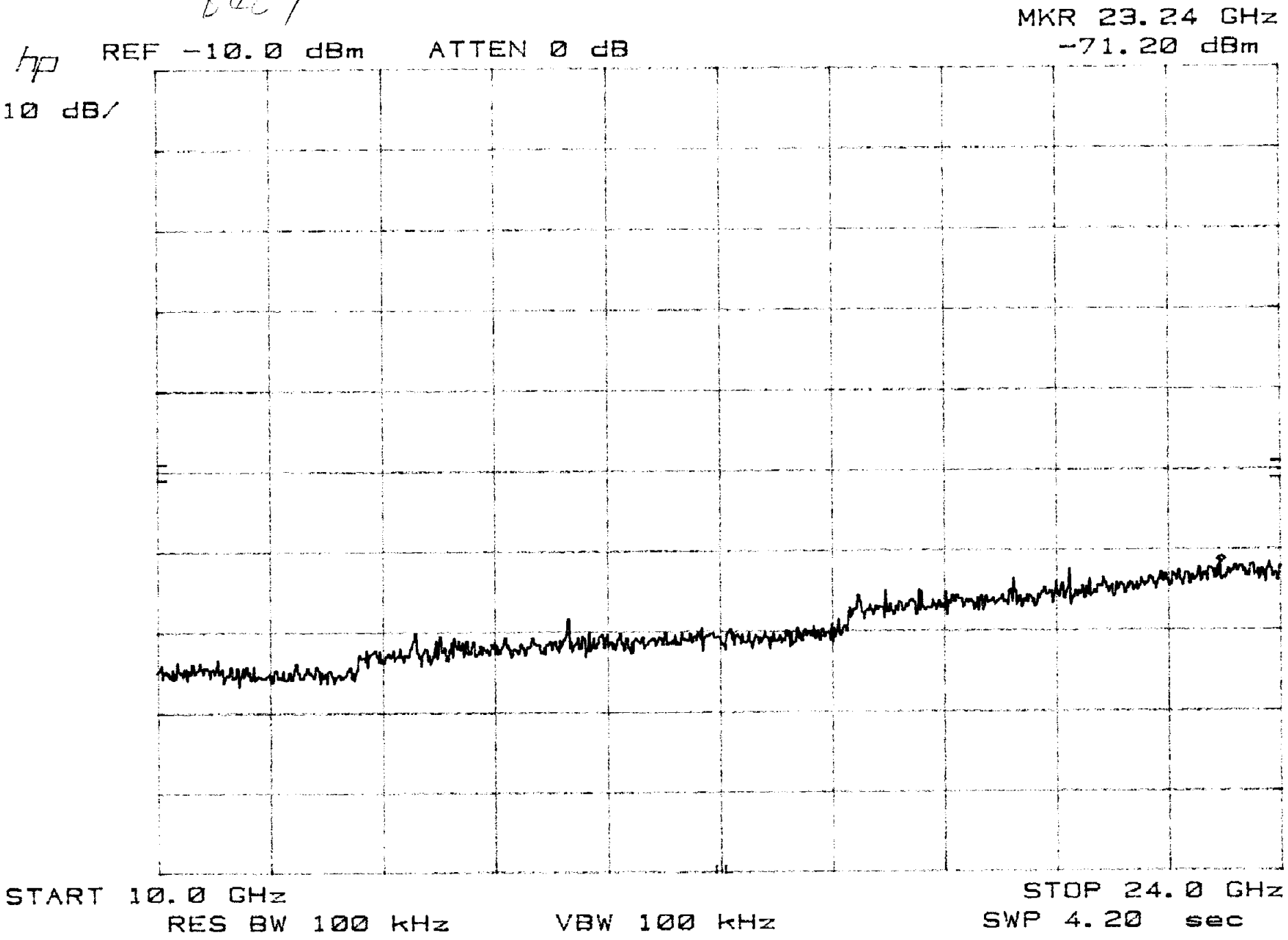
B4C5


MKR 2.484 52 GHz
-80.10 dBm
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.483 5 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 2.500 0 GHz
SWP 20.0 msec

B4C6


MKR 5.815 GHz
-82.60 dBm
hp
REF -10.0 dBm
ATTEN 0 dB
10 dB/
START 2.50 GHz
RES BW 100 kHz
VBW 100 kHz
STOP 10.00 GHz
SWP 2.25 sec

B467


REF -10.0 dBm
ATTEN 0 dB
MKR 23.24 GHz
-71.20 dBm
10 dB/
START 10.0 GHz
STOP 24.0 GHz
RES BW 100 kHz
VBW 100 kHz
SWP 4.20 sec

ITS Intertek Testing Services

Radiated Emissions Test Data

#3

Company:	Giant Electronics Limited	**Model #:**	G2488	**Standard**	FCC § 15.247 (R.B.)
EUT:	Cordless Phone Base	**S/N #:**		**Limits**	11
Project #:	J20017979	**Test Date:**	July 2, 2000	**Test Distance**	3 meters
Test Mode:	Tx @ 2404.8 MHz	**Engineer:**	Xi-Ming Y.	**Duty Relaxation**	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	11	14	21	8	10	13	11	0	0	0
Model:	LPB-2520A	EMCO 3115	3160-9	CDI_P1000	AFT18855	ACO/400	NPS256-2	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(μV)	P/A/Q			H/V	dB(1/m)	dB	dB	dB	dB(μV/m)	dB(μV/m)	dB
4809.50E+0	47.0	Peak	14	8	V	33.9	28.1	3.0	0.0	55.8	74.0	-18.2
4809.50E+0	41.0	Ave.	14	8	V	33.9	28.1	3.0	0.0	49.8	54.0	-4.2
7214.37E+0	39.0	Peak	14	8	V	38.0	28.0	3.9	0.0	52.9	74.0	-21.1
7214.37E+0	29.0	Ave.	14	8	V	38.0	28.0	3.9	0.0	42.9	54.0	-11.1
1.20E+4	43.0	Peak	14	10	V	42.3	39.1	5.4	0.0	51.6	74.0	-22.4
1.20E+4	35.0	Ave.	14	10	V	42.3	39.1	5.4	0.0	43.6	54.0	-10.4
1.92E+4	41.0	Peak	21	13	H	40.2	23.3	7.0	-9.5	55.4	74.0	-18.6
1.92E+4	31.0	Ave.	21	13	H	40.2	23.3	7.0	-9.5	45.4	54.0	-8.6

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

f) Reading above 18 GHz was taking at 1m distance

ITS Intertek Testing Services

Radiated Emissions Test Data

#4

Company:	Giant Electronics Limited	**Model #:**	G2488	**Standard**	FCC § 15.247 (R.B.)
EUT:	Cordless Phone Base	**S/N #:**		**Limits**	11
Project #:	J20017979	**Test Date:**	July 2, 2000	**Test Distance**	3 meters
Test Mode:	Tx @ 2440.8 MHz	**Engineer:**	Xi-Ming Y.	**Duty Relaxation**	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	11	14	21	8	10	13	11	0	0	0
Model:	LPB-2520A	EMCO 3115	3150-9	CDI_P100 0	AFT18855	ACO/400	NPS258-2	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(μV)	P/A/Q			H/V	dB(1/m)	dB	dB	dB	dB(μV/m)	dB(μV/m)	dB
4881.60E+0	43.0	Peak	14	8	V	33.9	28.1	3.0	0.0	51.8	74.0	-22.2
4881.60E+0	37.5	Ave.	14	8	V	33.9	28.1	3.0	0.0	46.3	54.0	-7.7
7322.35E+0	42.0	Peak	14	8	V	38.0	28.0	3.9	0.0	55.9	74.0	-18.1
7322.35E+0	32.9	Ave.	14	8	V	38.0	28.0	3.9	0.0	46.8	54.0	-7.2
1.22E+4	44.0	Peak	14	10	V	42.3	39.1	5.4	0.0	52.6	74.0	-21.4
1.22E+4	35.0	Ave.	14	10	V	42.3	39.1	5.4	0.0	43.6	54.0	-10.4
1.95E+4	40.5	Peak	21	13	H	40.3	23.3	7.0	-9.5	55.0	74.0	-19.0
1.95E+4	30.6	Ave.	21	13	H	40.3	23.3	7.0	-9.5	45.1	54.0	-8.9

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

f) Reading above 18 GHz was taking at 1m distance

ITS Intertek Testing Services

Radiated Emissions Test Data

#5

Company:	Giant Electronics Limited	Model #:	G2488	Standard	FCC § 15.247 (R.B.)
EUT:	Cordless Phone Base	S/N #:		Limits	11
Project #:	J20017979	Test Date:	July 2, 2000	Test Distance	3 meters
Test Mode:	Tx @ 2475 MHz	Engineer:	Xi-Ming Y.	Duty Relaxation	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	11	14	21	8	10	13	11	0	0	0
Model:	LPB-2520A	EMCO 3115	3160-9	CDI_P100-6	AFT18855	ACC/400	NPS256-2	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(μV)	P/A/Q			H/V	dB(1/m)	dB	dB	dB	dB(μV/m)	dB(μV/m)	dB
4950.00E+0	41.0	Peak	14	8	V	33.9	28.1	3.0	0.0	49.8	74.0	-24.2
4950.00E+0	35.3	Ave.	14	8	V	33.9	28.1	3.0	0.0	44.1	54.0	-9.9
7425.00E+0	43.0	Peak	14	8	V	38.0	28.0	3.9	0.0	56.9	74.0	-17.1
7425.00E+0	36.0	Ave.	14	8	V	38.0	28.0	3.9	0.0	49.9	54.0	-4.1
1.24E+4	41.0	Peak	14	10	V	42.3	39.1	5.4	0.0	49.6	74.0	-24.4
1.24E+4	33.0	Ave.	14	10	V	42.3	39.1	5.4	0.0	41.6	54.0	-12.4
1.98E+4	40.2	Peak	21	13	H	40.3	23.3	7.0	-9.5	54.7	74.0	-19.3
1.98E+4	30.5	Ave.	21	13	H	40.3	23.3	7.0	-9.5	45.0	54.0	-9.0
2.23E+4	42.0	Peak	21	13	V	40.3	23.3	7.2	-9.5	56.7	74.0	-17.3
2.23E+4	32.0	Ave.	21	13	V	40.3	23.3	7.2	-9.5	46.7	54.0	-7.3

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

f) Reading above 18 GHz was taking at 1m distance