

FOR Federal Communication Commission

TAI 98-F004

DATE Dec. 30, 1998

Class II Permissive Change Application

Class B Computing Device Peripheral  
(15" Multi-scan color Monitor)

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FCC ID : ACJ92512125  
Model Nos. : TX-T5N74\* ( Panasonic)  
DC5N74\*(No Brand)

Application for FCC (under New Part 15 Rules)

**MATSUSHITA ELECTRIC (TAIWAN) CO., LTD.**  
**INFORMATION & COMMUNICATION**  
**INSTRUMENT PRODUCTION DIVISION**

Factory Control No. TAI-98-F004

## **List of Exhibits**

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(Checked item are attached)

1. General Information
2. Test System Details
3. Label Drawing
4. Block Diagram
5. Test Report
6. Photographs
7. Draft of Operating Instruction Manual

# 1. General Information

## 1.1 NOTICE OF ALTERATION

Application Type : Certification  
 FCC ID : ACJ92512125  
 Models : TX-T5N74\* (Panasonic) :  
 DC5N74\* (No Brand)

(1). This is to request the class II permissive change for above mentioned models. All these models marketed under FCC ID : ACJ92512125 are identical to previously reported original application, except that note below:

Item	Model Number	Main PWB Circuit	Audio IN and Microphone OUT Cable	Terminals (Audio Input, Mic. I/O and Headphone)	Internal Speakers and Microphone	Chassis Family
Item	TX-T5N72/DC5N72	TNP4CH0020	None	None	None	15 THV8K
Changed Construction	TX-T5N74*/DC5N74*	TNP4CH0023 (TNP4CH0020 Add : Volume and Mute Control /Audio Circuit and it's Power Supply)	Provided	Provided	Provided	15 THV8KF

(2). The original models (TX-T5N72 Series) and class II permissive change models (TX-T5N74 Series) will be produced and marketed simultaneously in the future.

1.2 Comparison Information For These Models

(1). The model no. TX-T5N74\* is treated as a basic model and model no. DC5N74\* are similar to the basic model.

(2). The model no. DC5N74\* are precisely identical to the basic model no. TX-T5N74\*, except that:

(1). The model number is different.

(2). The trade name is different. (DC5N74\*)

Comparison Table of These Models

Item	Basic Model	Similar Model
	Model	
Model No.	TX-T5N74*	DC5N74*
Trade Name	Panasonic	No Brand

(3). Therefore the data and description attached for the basic model no. TX-T5N74\* are also applicable to and representative of the similar model no. DC5N74\*.

(4). We also guarantee that every precaution regarding to FCC Rules and Regulations will be taken at the actual production line of the additional model as well as that of the basic model.

1.3 Expository Statements for Application

(1). This is to make an application for certification of

X Modified models

① . FCC ID: ACJ92512125  
Model No.: TX-T5N74\*  
Trade Name: Panasonic

② . FCC ID: ACJ92512125  
Model No.: DC5N74\*  
Trade Name: No Brand

(2). This application is submitted pursuant to the Federal Register, Rules and Regulation, Title 47, Chapter 1, Part 2, Section 2.1033.

(3). This is to certify that 15" multi-scan color monitor. FCC ID: ACJ92512125 (Model Nos.: TX-T5N74\*; DC5N74\*) properly complies with New Part 15, Subpart B, Computing

Devices as shown in the attached documents.

(4). The original basic model has been tested in accordance with the requirements contained in Subpart B of New Part 15 of FCC Regulations.

To the best of my knowledge, these tests were performed using measurement procedures consistent with ANSI C63.4-1992 of FCC standards and demonstrate that the equipment

complies with the appropriate standards.

Each unit manufactured, imported or marketed, as defined in the Commission's Regulations, will conform to the sample(s) tested within the variations that can be expected due to quantity

production and testing on a statistical basis.

## 1.4 Supplementary Information

Factory Control No. TAI-98-F004

- (1). These model no. TX-T5N74\* and DC5N74\* (FCC ID: ACJ92512125) is 15" color monitor which is designed to be used as the video terminal for a personal computer, and has no TV tuner.
- (2). The test was made with the typical Digital host system with personal computer model no. PC763 (FCC ID: A09-PC76X) and its clock speed during the test is 50 MHz.
- (3). The statement required in the section 15.19 is marked in the nameplate.  
Please refer to Exhibit 3.
- (4). The warning statement required in the section 15.21, 15.27 and 15.105(b) is indicated in the draft operating instruction manual enclosed in the same carton.  
Please refer to the draft of the attached operating instruction manual.
- (5). This model present the following fundamental Timing:  
 $f_H=31.5\text{KHz}$  ( $640 \times 480$ ),  $f_H=37.5\text{KHz}$  ( $640 \times 480$ ),  $f_H=46.9\text{KHz}$  ( $800 \times 600$ ),  $f_H=49.7\text{KHz}$  ( $832 \times 624$ ),  $f_H=56.5\text{KHz}$  ( $1024 \times 768$ ),  $f_H=60.0\text{KHz}$  ( $1024 \times 768$ ), and  $f_H=64.0\text{KHz}$  ( $1280 \times 1024$ ).  
It is capable of supporting different formats.
- (6). This model specifications:  
Maximum Resolution: 1280 x 1024, Non-interlaced  
Horizontal Frequency: 30 - 70 KHz  
Vertical Frequency: 50 - 180 Hz  
(7). We instructed Tokin to perform tests in the various Video formats and the worst test mode are reported.
- (8). We will incorporate countermeasures into all production units by adding EMI reduction method during compliance testing.

Test System Details

## **EXHIBIT 2**

## 2. Test System Details

### 2.1. Description of EUT

Applicant : Matsushita Electric Industrial Co., Ltd.

Manufacturer : Matsushita Electric (Taiwan) Co., Ltd.  
579 Yuan San Road, Chung-Ho, Taipei Hsien, Taiwan, R. O. C.

Model Name : 15" Multi-scan Color Monitor

Model Number : TX-T5N74\* ; DC5N74\*

Serial Number : N/A

FCC ID : ACJ92512125

CRT : Samsung

Model: M36QAM351X111

Data Cable : Shielded, Undetachable, 1.5m, Employed data cable is provided with bonded one ferrite core.

Power Cord : Non-shielded, Detachable, 1.5m

### 2.2. Personal Computer

Model Name : PC763

Serial Number : TA421U7881

FCC ID : A09-PC76X

Manufacturer : Digital

VGA Card : Sixgraph Computing Ltd.  
M/N Wizard 924, FCC ID: JYOWIZ01

2.3. Keyboard  
Model Number : 5121  
Serial Number : J83300819  
FCC ID : E5XKBM104M10UC  
Manufacturer : Behavior

2.4. Printer  
Model Number : 2225C  
Serial Number : 2526S40437  
FCC ID : BS46XU2225C  
Manufacturer : Hewlett Packard

2.5. Modem #1  
Model Number : DM-1414  
Serial Number : 980034396  
FCC ID : IFAXDM1414  
Manufacturer : Aceex

2.6. Modem #2  
Model Number : DM-1414  
Serial Number : 980094395  
FCC ID : IFAXDM1414  
Manufacturer : Aceex

2.7. Mouse  
Model Number : M-S35  
Serial Number : LZA82103138  
FCC ID : DZL211029  
Manufacturer : Logitech

- 2.8. Microphone
  - Model Number : UDM-111
  - Serial Number : N/A
  - Manufacturer : Uni-Directional
  
- 2.9. Headphone W/Mic
  - Model Number : MI-2
  - Serial Number : N/A
  - Manufacturer : N/A
  
- 2.10. Walkman
  - Model Number : KT-V760
  - Serial Number : N/A
  - Manufacturer : Toshiba Corp

Label Drawing

**EXHIBIT 3**

JAN 14 1999

FBI/DOJ

Block Diagram

**EXHIBIT 4**

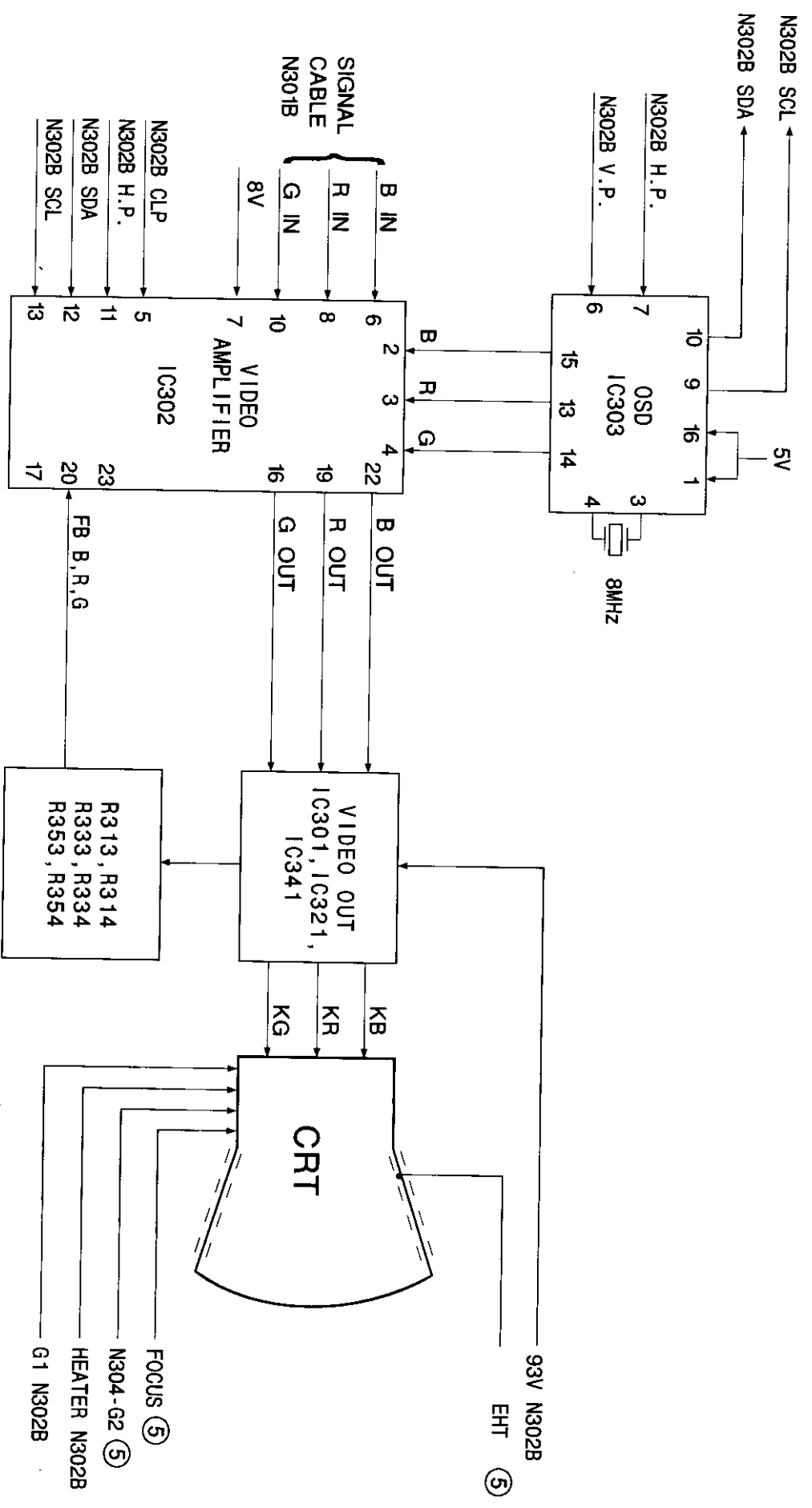
JAN 14 1999

RECEIVED

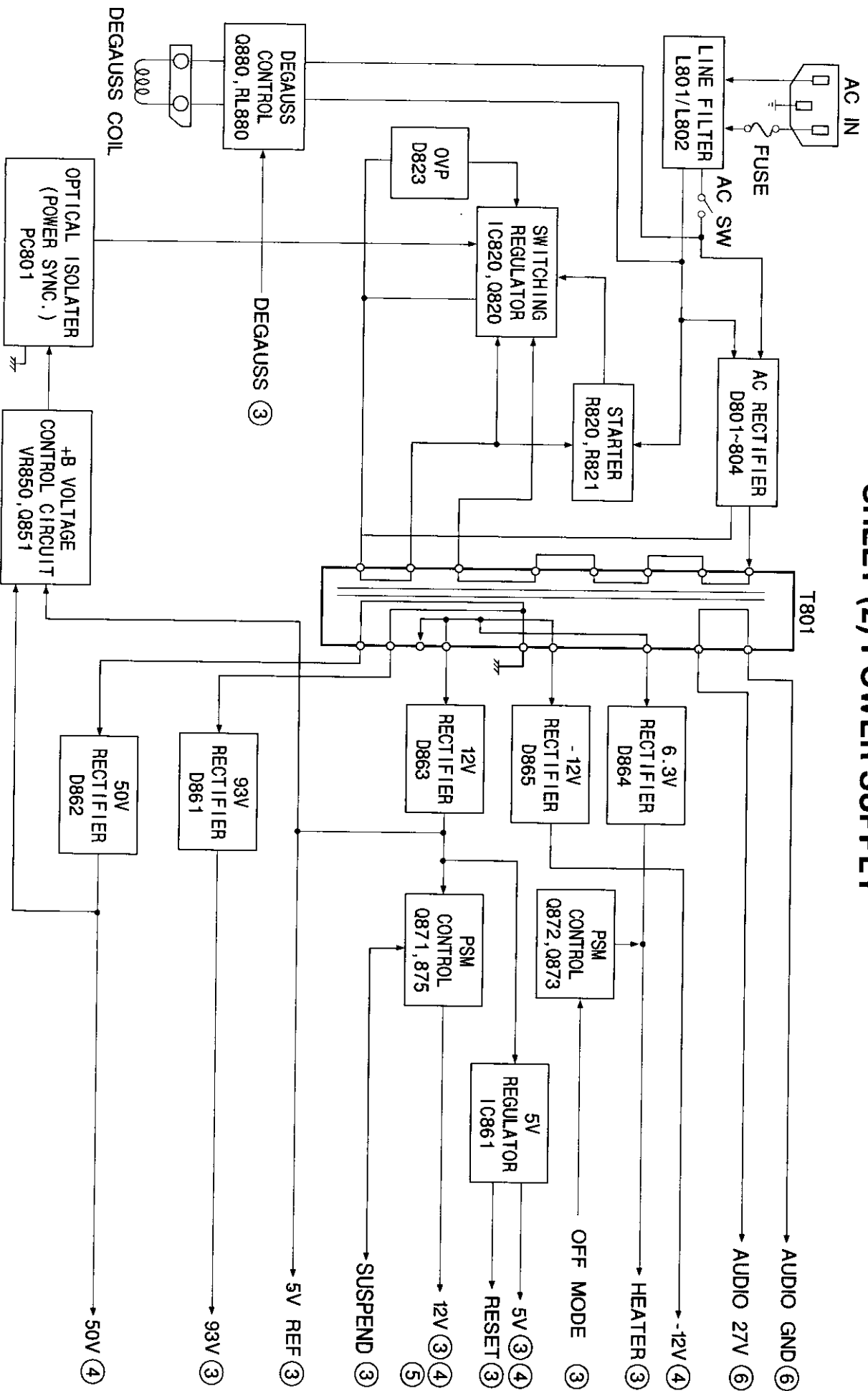
# BLOCK DIAGRAM

Model No:TX-T5N74 \*

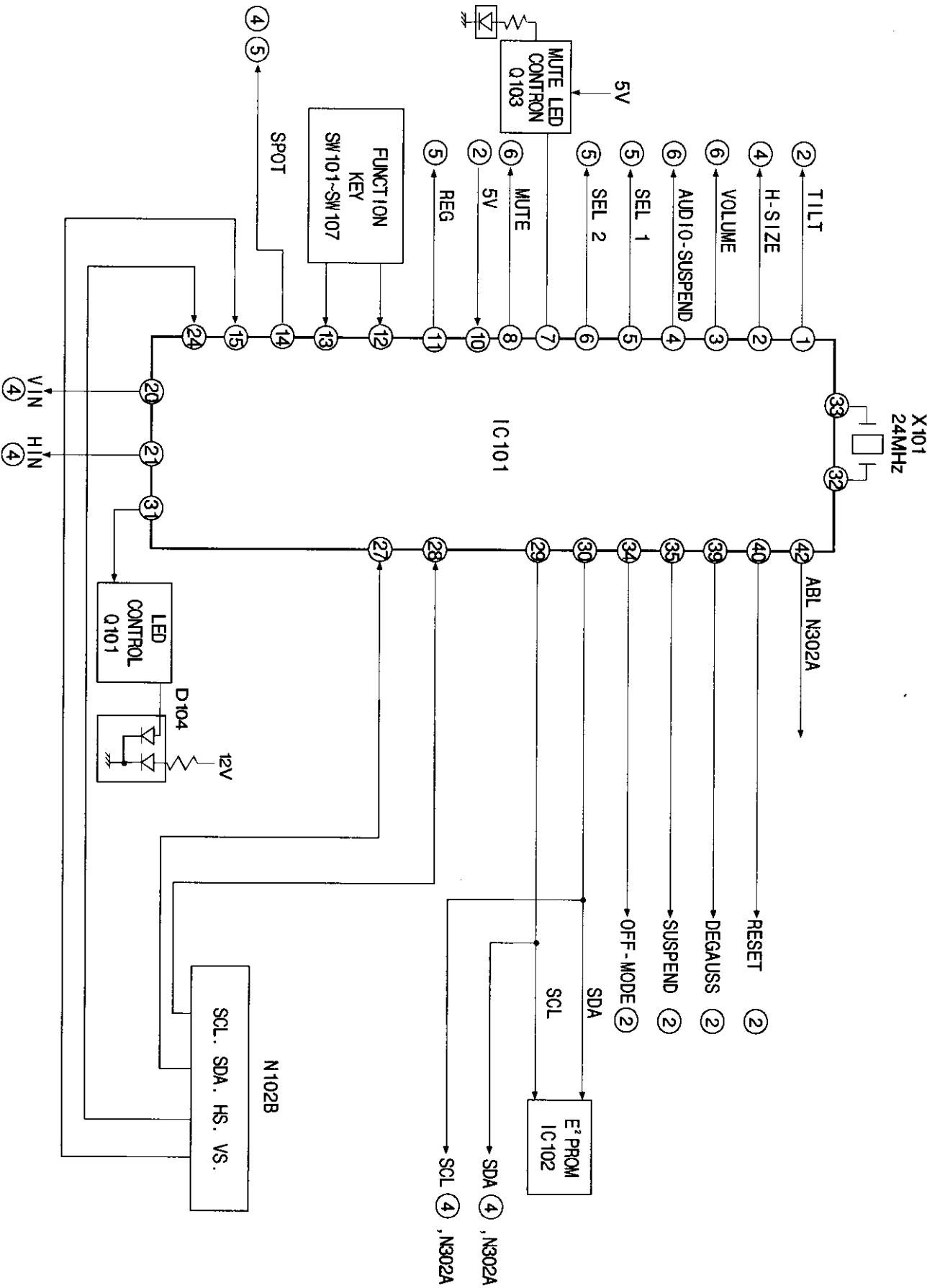
## SHEET (1) VIDEO OUT



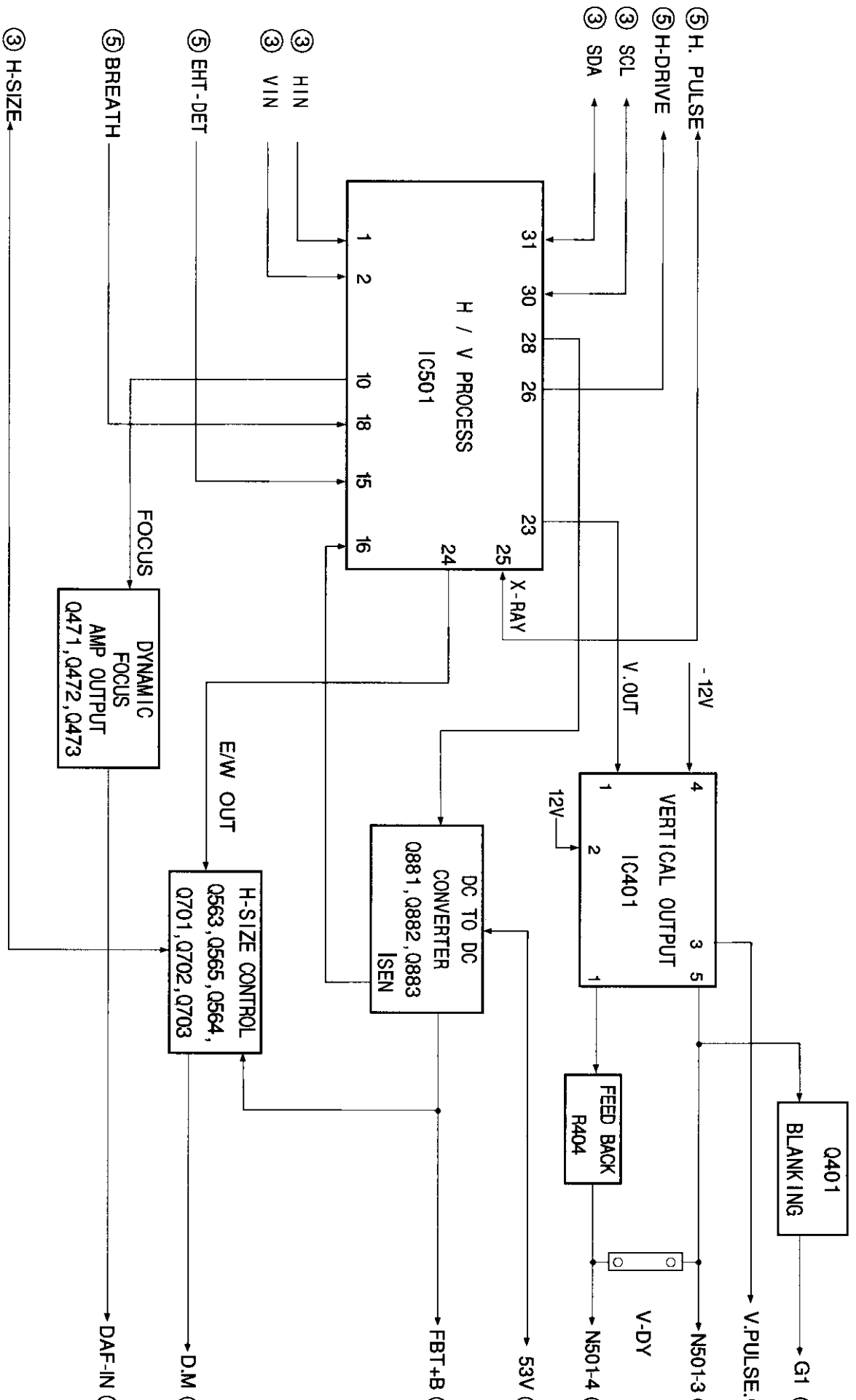
# SHEET (2) POWER SUPPLY



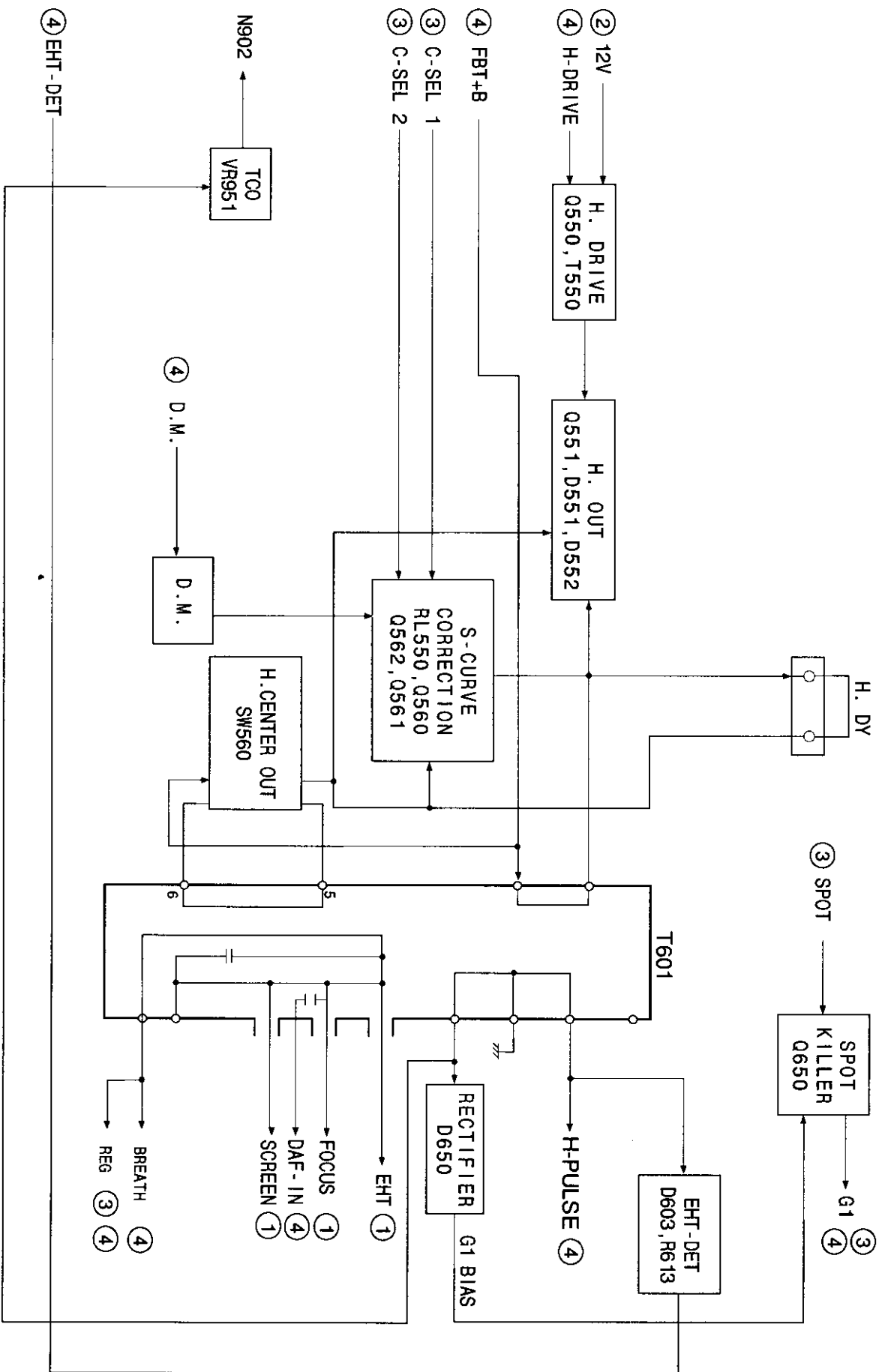
# SHEET (3) MCU / SIGNAL INPUT



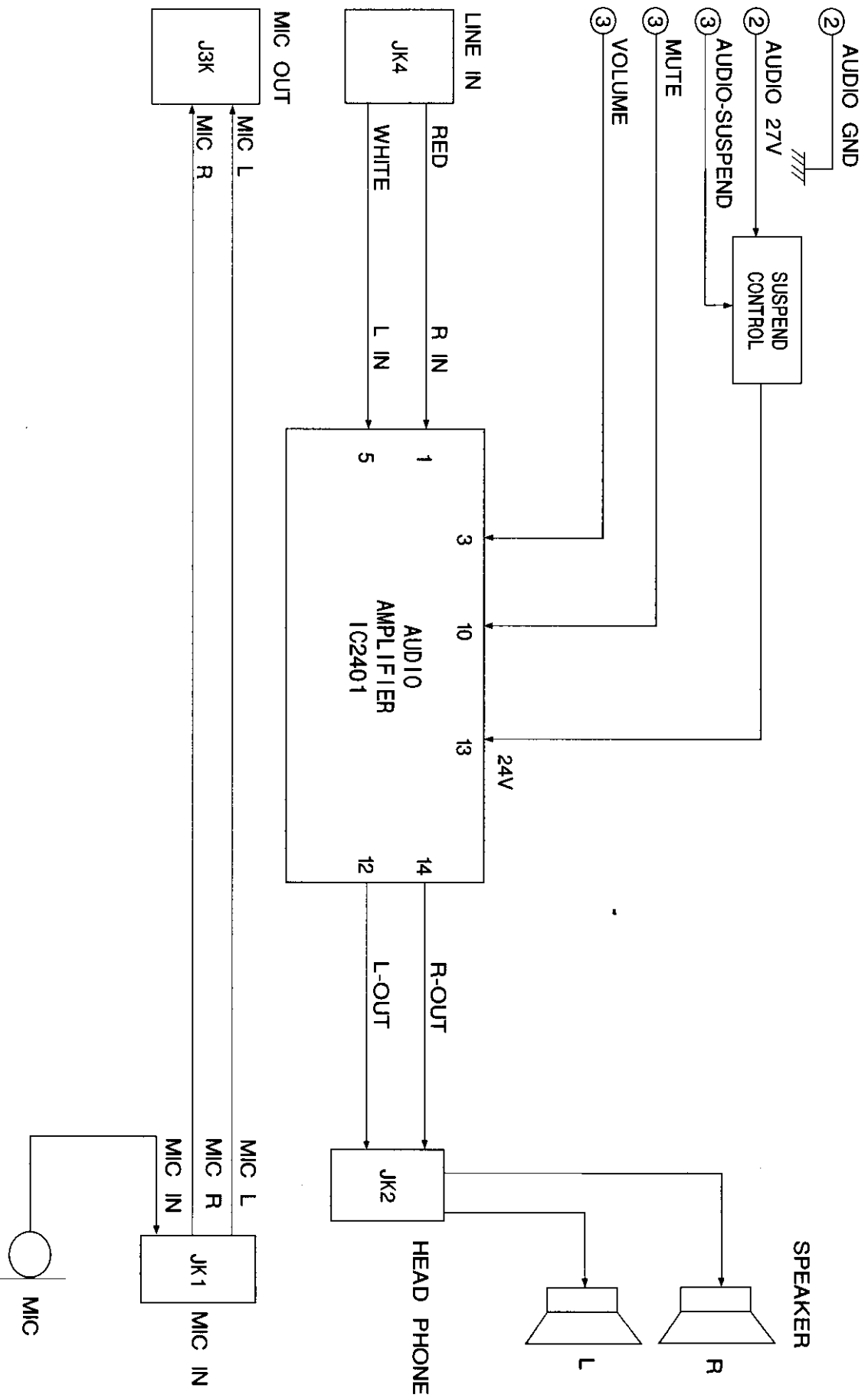
# SHEET (4). H / V PROCESS / V. OUTPUT



# SHEET (5) H OUTPUT / GEOMETRY CONTROL



# SHEET (6) AUDIO OUTPUT



12/14/98

JAN 14 1999

**EXHIBIT 5**

Test Report

APPLICATION FOR CERTIFICATION  
Class II Permissive Change  
On Behalf of  
Matsushita Electric Industrial Co., Ltd.  
15" Multi-Scan Color Monitor

Model : TX-T5N74\*/DC5N74\*

FCC ID : ACJ92512125

Prepared for : Matsushita Electric Industrial Co., Ltd.  
One Panasonic Way, Panazip 4B-8,  
Secaucus, NJ 07094, U.S.A.

Prepared By : Taiwan Tokin EMC Eng. Corp.  
No. 53-11, Tin-Fu Tsun, Lin-Kou,  
Taipei Hsien, Taiwan, R.O.C.

Tel: (02) 2609-9301, 2609-2133

File Number : ATM-G98677  
Report Number : TTEMC-F98178  
Date of Test : Nov. 21 ~ 25, 1998  
Date of Report : Nov. 25, 1998

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## TEST REPORT CERTIFICATION (Class II Permissive Change)

Applicant : Matsushita Electric Industrial Co., Ltd.  
 Manufacturer : Matsushita Electric (Taiwan) Co., Ltd.  
 FCC ID : ACJ92512125  
 EUT Description : 15" Multi-Scan Color Monitor  
 (A) MODEL NO. : TX-T5N74\*/DC5N74\*  
 (B) SERIAL NO. : N/A  
 (C) POWER SUPPLY : AC 120V/60Hz

Measurement Procedure Used :

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 1996  
AND FCC / ANSI C63.4-1992

The device described above was tested by TAIWAN TOKIN EMC ENG. CORP. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15B Class B limits both radiated and conducted emissions.

The measurement results were contained in this test report and TAIWAN TOKIN EMC ENG. CORP. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report showed that the EUT to be technically compliance with the FCC official limits.

This report applied to above tested sample only. This report shall not be reproduced in part without written approval of Taiwan Tokin EMC Eng. corp.

Date of Test : Nov. 21 ~ 25, 1998

Prepared by : Monica Chang Nov. 26. 98'  
(MONICA CHANG)

Test Engineer : Allen Wang 11/26, 1998  
(ALLEN WANG)

Approve & Authorized Signer :

Jackie Deng 11/26'98  
(JACKIE DENG)

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

Description	:	15" Multi-Scan Color Monitor
Model Number	:	TX-T5N74*/DC5N74*
Serial Number	:	N/A
Applicant	:	Matsushita Electric Industrial Co., Ltd.  381 Brea Canyon Rd., Walnut, CA 91789, U.S.A.
Manufacturer	:	Matsushita Electric (Taiwan) Co., Ltd.  579 Yuan San Road, Chung-Ho, Taipei Hsien 23506, Taiwan, R.O.C.
CRT	:	Samsung, M/N M36QAM351X111 S/N B15 80901559
Data Cable	:	Non-Shielded, Undetachable, 1.6m Bonded a ferrite core
Power Cord	:	Non-Shielded, Detachable, 1.8m
Date of Receipt of Sample	:	Nov. 18, 1998
Date of Test	:	Nov. 21 ~ 25, 1998
Remark	:	This EUT is a modified version of original FCC ID ACJ92512125 (Report No. TTEMC-F98142). The differences are to add a audio circuit and two speakers. The EUT configuration on measurement was listed in section 2.4.

## 1.2. Tested Supporting System Details

### 1.2.1. PERSONAL COMPUTER

Model Number	:	PC763
Serial Number	:	TA421U7881
FCC ID	:	AO9-PC76X
Manufacturer	:	Digital
Switching Power Supply	:	Astec M/N SA-201-3440
Floppy Driver 3.5"	:	Teac Corp. M/N FD-235HF
VGA Card	:	Sixgraph Computing Ltd. M/N Wiz 924 S/N 189477 FCC ID JYOWIZ01
Disk Ctrl Card	:	Within Mother Board
Serial/Parallel Card	:	Within Mother Board
Power Cord	:	Non-Shielded, Detachable, 1.8m

### 1.2.2. KEYBOARD

Model Number	:	5121
Serial Number	:	J83300819
FCC ID	:	E5XKBM104M10UC
Manufacturer	:	Behavior Tech Computer Corp.
Data Cable	:	Shielded, Undetachable, 1.0m

### 1.2.3. PRINTER

Model Number	:	2225C
Serial Number	:	2526S40437
FCC ID	:	BS46XU2225C
Manufacturer	:	Hewlett Packard
Power Cord	:	Non-Shielded, Undetachable, 1.8m
Data Cable	:	Shielded, Detachable, 1.2m

### 1.2.4. MODEM #1

Model Number	:	DM-1414
Serial Number	:	980034396
FCC ID	:	IFAXDM1414
Manufacturer	:	Accex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A Non-Shielded, Undetachable, 1.8m

## 1.2.5. MODEM #2

Model Number : DM-1414  
Serial Number : 980034395  
FCC ID : IFAXDM1414  
Manufacturer : Accex  
Data Cable : Shielded, Detachable, 1.2m  
Power Adapter : Amigo, Model AM-91000A  
Non-Shielded, Undetachable, 1.8m

## 1.2.6. MOUSE

Model Number : M-S35  
Serial Number : LZA82103138  
FCC ID : DZL211029  
Manufacturer : Logitech  
Data Cable : Non-Shielded, Undetachable, 1.8m

## 1.2.7. MICROPHONE

Model Number : UDM-111  
Serial Number : N/A  
Manufacturer : Uni-Directional  
Data Cable : Shielded, Undetachable, 1.5m

## 1.2.8. HEADPHONE W/ MIC

Model Number : MI-2  
Serial Number : N/A  
Manufacturer : N/A  
Data Cable : Non-Shielded, Undetachable, 1.7m

## 1.2.9. WALKMAN

Model Number : KT-V760  
Serial Number : N/A  
Manufacturer : Toshiba Corp.  
Data Cable : Non-Shielded, Detachable, 1.8m

### 1.3. Description of Test Facility

Site Description (No. 2 Open Site)	:	Jul. 15, 1996 Re-file on Federal Communication Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, U.S.A.
Site Description (Anechoic Chamber)	:	Aug. 22, 1997 Re-file on Federal Communication Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, U.S.A.
Name of Firm	:	Taiwan Tokin EMC Eng. Corp.
Site Location	:	No. 53-11, Tin-Fu Tsun, Lin-Kou, Taipei Hsien, Taiwan, R.O.C.
NVLAP lab. Code	:	200077-0

## 2. POWERLINE CONDUCTED TEST

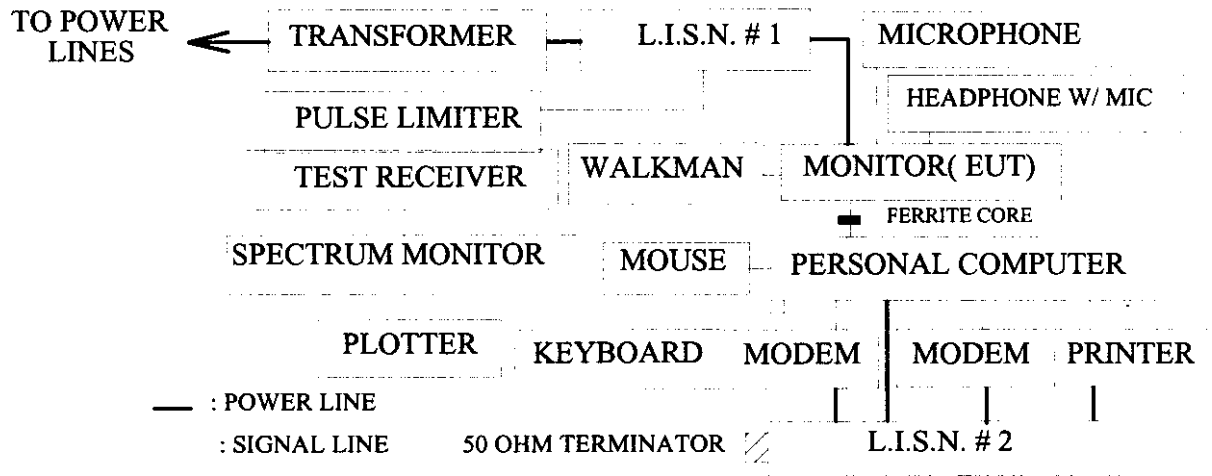
### 2.1. Test Equipment

The following test equipments were used during the power line conducted tests :

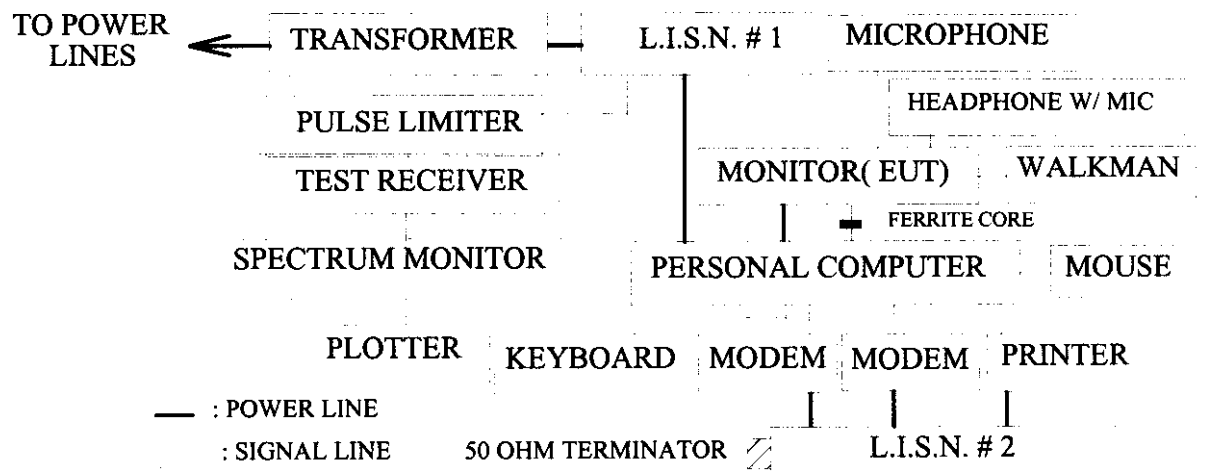
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESH3	880647/035	Jun.24, 98'	1 Year
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-855-9	Apr.14, 98'	1 Year
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-881-13	Apr.14, 98'	1 Year

### 2.2. Block Diagram of Test Setup

#### 2.2.1. EUT Power Connects to L.I.S.N. Directly



#### 2.2.2. EUT Power connects to PC AC Outlet then PC power connects to L.I.S.N.



### 2.3. Powerline Conducted Emission Limit (CLASS B)

Frequency	Maximum RF Line Voltage	
	uV	dBuV
0.45MHz ~ 30Mhz	250	48

REMARKS : RF LINE VOLTAGE (dBuV) = 20 log RF LINE VOLTAGE (uV)

### 2.4. EUT's Configuration during Compliance Measurement

The following equipments were installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tend to maximize its emission characteristics in a normal application.

#### 2.4.1. 15" Multi-Scan Color Monitor (EUT)

Model Number : TX-T5N74\*/DC5N74\*  
 Serial Number : N/A  
 Manufacturer : Matsushita Electric Industrial Co., Ltd.  
 CRT : Samsung, M/N M36QAM351X111  
 S/N B15 80901559  
 Data Cable : Shielded, Undetachable, 1.6m  
 Bonded a ferrite core  
 Power Cord : Non-Shielded, Detachable, 1.8m

2.4.2. Supporting System : As in Section 1.2

### 2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown on 2.2.

2.5.2. Turn on the power of all equipments.

2.5.3. Personal Computer read data from disk.

2.5.4. Personal Computer sent "H" character to monitor (EUT) and the screen displayed and full with "H" pattern.

2.5.5. The other peripheral devices were drove and operated in turn during all testing.

## 2.6. Test Procedure

The EUT was connected to the power mains through a line impedance stabilization network (L.I.S.N.# 1). The EUT is also connected to PC power outlet then the PC power cord connected to the power mains through a line impedance stabilization network (L.I.S.N # 1.). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N. # 2). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to FCC ANSI C63.4-1992 on conducted measurement.

The bandwidth of the R&S Test Receiver ESH3 was set at 10KHz.

The frequency range from 450KHz to 30MHz was checked.

The following test modes were done during conducted measurement and reported the worst test mode (2) (37.9KHz/640\*480, EUT power connected to L.I.S.N.) in the next pages, the others test data are attached within Appendix I.

- (1) 31.5KHz/640\*480
- (2) 37.9KHz/640\*480
- (3) 37.9KHz/800\*600
- (4) 48.1KHz/800\*600
- (5) 48.4KHz/1024\*768
- (6) 58KHz/1024\*768
- (7) 61.6KHz/1280\*960
- (8) 66KHz/1280\*1024

## 2.7. Test Results

**PASSED.** Please refer to the following pages.

## 2.8. Line Conducted RF Voltage Measurement Results

The frequency range from 450KHz to 30 MHz was investigated.  
All emissions not report below are too low against the prescribed limits.

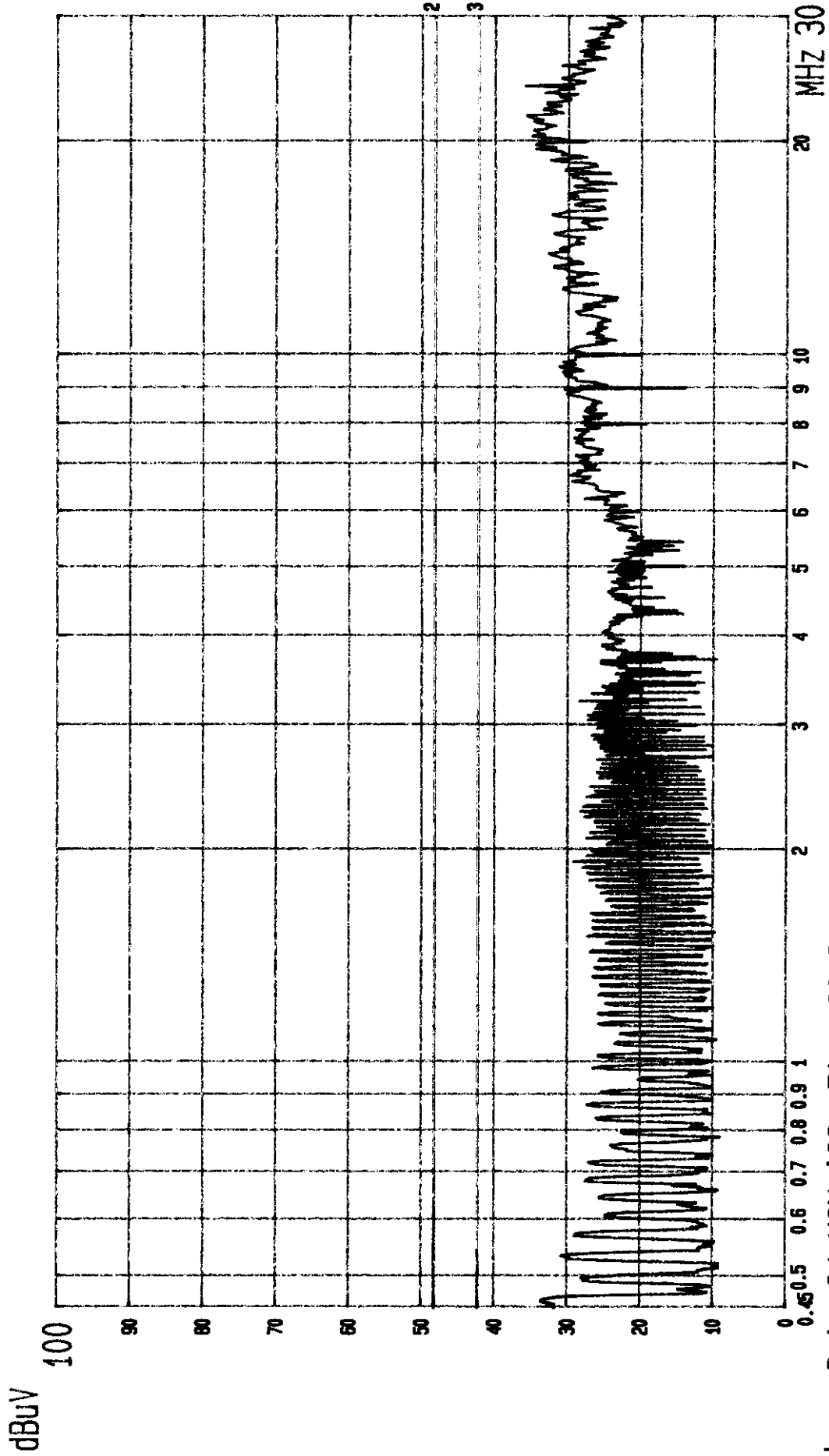
Date of Test : Nov. 25, 1998 Temperature : 24 °C

EUT : 15" Multi-Scan Color Monitor Humidity : 45 %

Test Mode : 37.9KHz/640\*480

Frequency (MHz)	Factor dB	Measurement (dBuV)		Reading (dBuV)		Limits (dBuV)	Margin (dBuV)	
		VA	VB	VA	VB		VA	VB
0.4803	0.5	36.5	*	37	*	48.0	11	*
0.4812	0.5	*	35.4	*	35.9	48.0	*	12.1
1.0420	0.8	*	21.6	*	22.4	48.0	*	25.6
1.0423	0.8	22.4	*	23.2	*	48.0	24.8	*
2.2183	0.8	*	23.7	*	24.5	48.0	*	23.5
2.2197	0.8	24.1	*	24.9	*	48.0	23.1	*
4.9962	1.2	*	27.3	*	28.5	48.0	*	19.5
4.9976	1.2	28.4	*	29.6	*	48.0	18.4	*
<b>12.8918</b>	<b>1.4</b>	<b>38.7</b>	*	<b>40.1</b>	*	<b>48.0</b>	<b>7.9</b>	*
12.8923	1.4	*	33.1	*	34.5	48.0	*	13.5
21.8432	1.7	34.5	29.4	36.2	31.1	48.0	11.8	16.9
25.7185	1.7	35.3	26.2	37	27.9	48.0	11	20.1

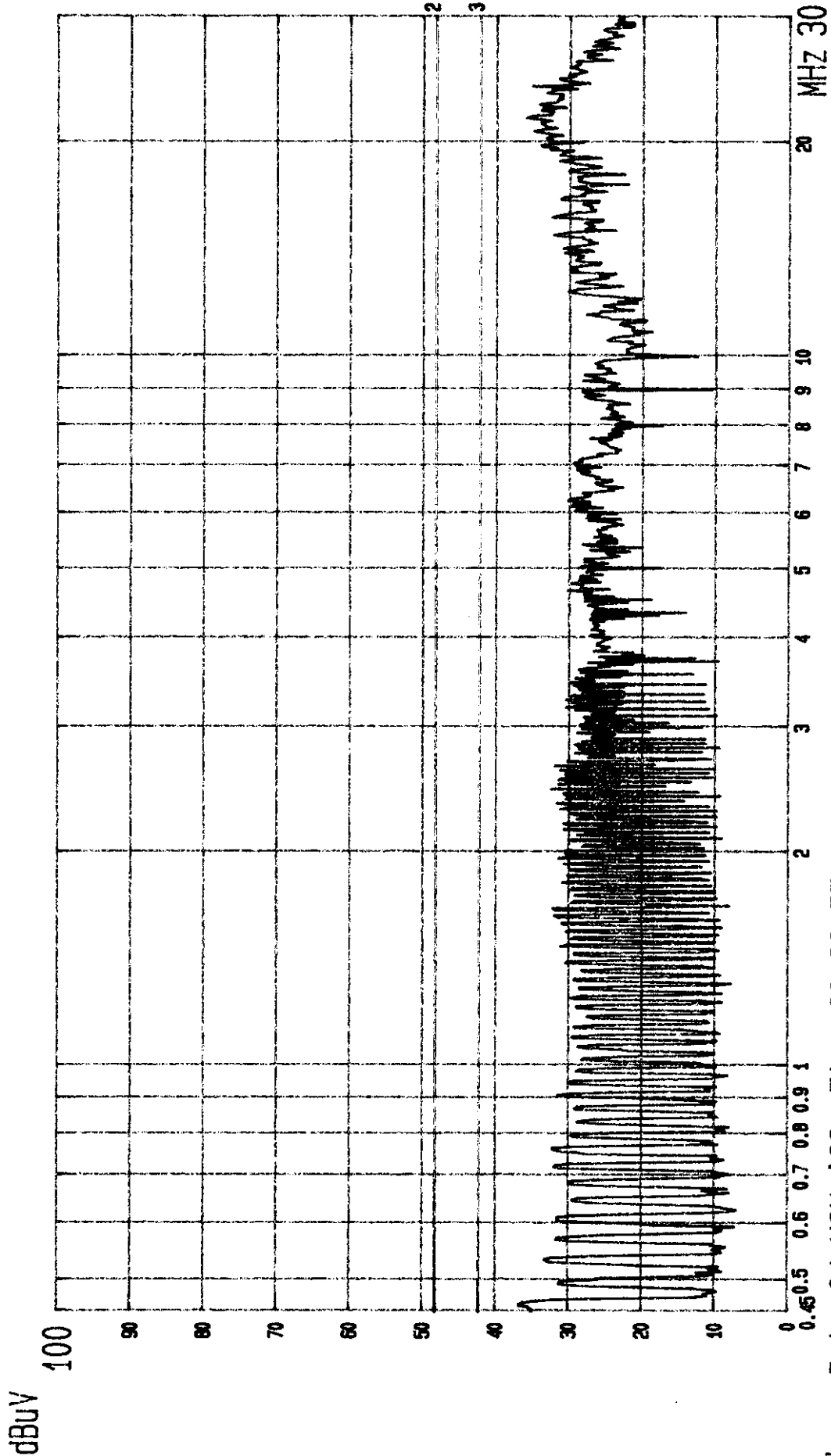
- Remark :
1. All readings are Quasi-Peak values.
  2. Factor = Insertion Loss + Cable Loss
  3. The worst emission was detected at 12.8918MHz with corrected signal level of 40.1dBuV (limit is 48dBuV) when the VA side of the EUT was connected to L.I.S.N.



--- Date 24.NOV '98 Time 20:31:11  
MATSUSHITA EUT: MONITOR  
LINE: VA. MENO: (640X480; 37.9KHZ)

M/N: TX-T5N74\*/DC5N74\*  
EUT TO LISN

PAGE: 007.  
(PEAK VALUE) TTEMC.



--- Date 24.NOV '98 Time 20:32:55  
MATSUSHITA  
LINE: VB.  
EUT: MONITOR  
MENO: (640X480; 37.9KHZ)

M/N: TX-T5N74\*/DC5N74\*  
EUT TO LISN  
PAGE: 008.  
(PEAK VALUE) TTEMC.

### 3. RADIATED EMISSION TEST

#### 3.1. Test Equipment

The following test equipments are used during the radiated emission tests :

##### 3.1.1. For Anechoic Chamber :

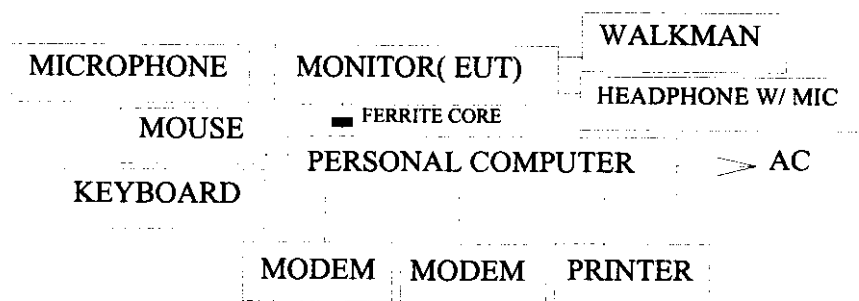
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	8593A	3212A01727	Jul.25, 98'	1 Year
2.	Pre-Amplifier	HP	8447D	2944A06305	May.13,98'	1 Year
3.	Broadband Antenna	Schwarzbeck	BBA9106	A3L	Dec.24, 97'	1 Year
4.	Broadband Antenna	Schwarzbeck	UHALP9107	A3H	Dec.24, 97'	1 Year

##### 3.1.2. For No. 2 Open Site :

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde&Schwarz	ESVP	893202/001	Jul.24, 98'	1 Year
2.	Broadband Antenna	Chase	VBA6106A	1240	Jul. 15, 98'	1 Year
3.	Broadband Antenna	Chase	UPA6109	1048	Jul. 15, 98'	1 Year

#### 3.2. Block Diagram of Test Setup

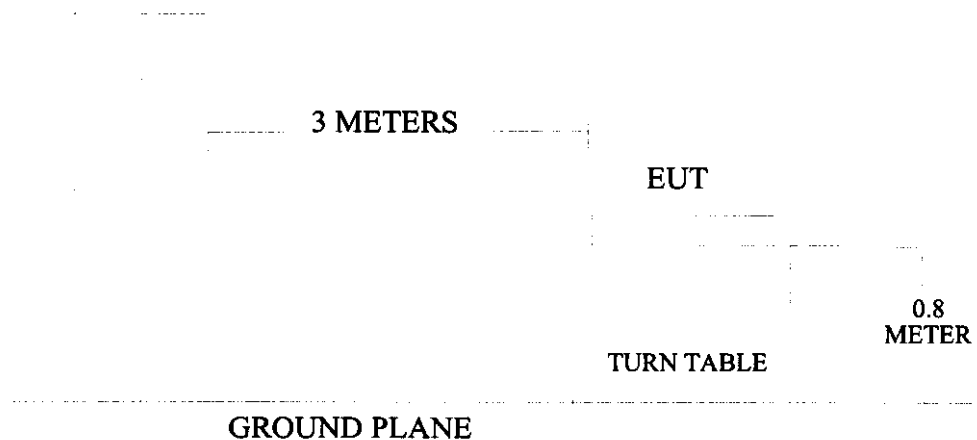
##### 3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Anechoic Chamber & Open Field Test Site Setup Diagram

ANTENNA TOWER

ANTENNA ELEVATION VARIES FROM 1METER TO 4 METERS



3.3. Radiation Limit (CLASS B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS	
		uV/M	dBuV/M
MHz	Meters		
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

- Remark :
- (1) Emission level (dBuV/M) = 20 log Emission level (uV/M)
  - (2) The tighter limit applies at the edge between two frequency bands.
  - (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators were same as those used in conducted measurement. Please refer to 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which is listed in 2.5.

### 3.6. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The turn table rotate 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which were mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVP was set at 120KHz.

The frequency range from 30MHz to 1000MHz was checked.

The following operating conditions were measured within Anechoic Chamber and all the scanning waveform were attached within Appendix II, which include :

- (1) 31.5KHz/640\*480
- (2) 37.9KHz/640\*480
- (3) 37.9KHz/800\*600
- (4) 48.1KHz/800\*600
- (5) 48.4KHz/1024\*768
- (6) 58KHz/1024\*768
- (7) 61.6KHz/1280\*960
- (8) 66KHz/1280\*1024

Finally, re-measured the each worst operating situation (66KHz/1280\*1024) at No. 2 Open Field Test Site and all the test results are listed in section 3.8.

### 3.7. Test Results

**PASSED.** Please refer to the following pages.

### 3.8. Radiated Emission Measurement Results

The frequency spectrum from 30 MHz to 1000MHz was investigated. All the emissions not reported below were too low against the FCC CLASS B limit.

Date of Test : Nov. 21, 1998 Temperature : 23 °C  
 EUT : 15" Multi-Scan Color Monitor Humidity : 81 %  
 Test Mode : 66KHz/1280\*1024

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Horizontal dBuV/m	Limits dBuV/m	Margin dBuV/m
			Horizontal dBuV	Horizontal dBuV/m			
41.315	19.60	2.16	1.40	23.16	40.00	16.84	
68.853	11.50	2.85	8.70	23.05	40.00	16.95	
123.934	19.57	3.91	5.30	28.78	43.50	14.72	
151.476	20.90	4.35	4.80	30.05	43.50	13.45	
179.016	21.24	4.74	3.00	28.98	43.50	14.52	
206.555	21.61	5.13	-1.60	25.14	43.50	18.36	
* 234.098	<b>22.52</b>	<b>5.46</b>	<b>6.10</b>	<b>34.08</b>	<b>46.00</b>	<b>11.92</b>	
261.638	23.23	5.83	1.70	30.76	46.00	15.24	
289.178	24.60	6.20	2.60	33.40	46.00	12.60	
316.719	14.09	6.59	4.30	24.98	46.00	21.02	
344.261	15.35	6.90	2.20	24.45	46.00	21.55	
371.799	15.41	7.18	0.10	22.69	46.00	23.31	
399.341	16.72	7.50	0.90	25.12	46.00	20.88	
454.422	17.19	8.11	0.60	25.90	46.00	20.10	
481.965	17.09	8.35	0.80	26.24	46.00	19.76	
537.044	19.09	9.04	0.40	28.53	46.00	17.47	
564.586	19.38	9.23	-2.30	26.31	46.00	19.69	
647.210	20.21	10.11	-2.70	27.62	46.00	18.38	
702.293	20.61	10.68	-3.30	27.99	46.00	18.01	

- Remark :
1. All reading were Quasi-Peak values.
  2. The worst emission was detected at 234.098MHz with corrected signal level of 34.08dBuV/m (limit was 46.0dBuV/m) when the antenna was at horizontal polarization and was at 1m high and the turn table was at 225 ° .
  3. 0 ° is the table front facing the antenna. Degree was calculated from 0 ° clockwise facing the antenna.

Date of Test : Nov. 21, 1998 Temperature : 23 °C  
 EUT : 15" Multi-Scan Color Monitor Humidity : 81 %  
 Test Mode : 66KHz/1280\*1024

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading		Emission Level Vertical dBuV/m	Limits dBuV/m	Margin dBuV/m
			Vertical dBuV	Vertical dBuV/m			
41.307	18.19	2.16	-0.40	19.95	40.00	20.05	
68.852	13.23	2.85	12.70	28.78	40.00	11.22	
* 123.934	<b>18.50</b>	<b>3.91</b>	<b>12.40</b>	<b>34.81</b>	<b>43.50</b>	<b>8.69</b>	
151.475	19.38	4.35	3.40	27.13	43.50	16.37	
179.018	19.14	4.74	3.70	27.58	43.50	15.92	
206.557	23.63	5.13	-4.50	24.26	43.50	19.24	
234.100	22.48	5.46	7.90	35.84	46.00	10.16	
261.640	21.54	5.83	0.90	28.27	46.00	17.73	
289.179	24.07	6.20	2.60	32.87	46.00	13.13	
316.721	14.69	6.59	4.70	25.98	46.00	20.02	
344.259	15.20	6.90	5.10	27.20	46.00	18.80	
371.801	14.58	7.18	5.00	26.76	46.00	19.24	
399.342	15.99	7.50	4.70	28.19	46.00	17.81	
454.424	17.55	8.11	1.00	26.66	46.00	19.34	
481.964	18.56	8.35	2.30	29.21	46.00	16.79	
509.504	18.60	8.73	2.10	29.43	46.00	16.57	
564.585	19.02	9.23	-0.49	27.76	46.00	18.24	
619.668	20.61	9.80	-0.90	29.51	46.00	16.49	
674.747	19.65	10.39	-2.80	27.24	46.00	18.76	

- Remark :
1. All reading were Quasi-Peak values.
  2. The worst emission was detected at 123.934MHz with corrected signal level of 34.81dBuV/m (limit was 43.5dBuV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 130 ° .
  3. 0 ° is the table front facing the antenna. Degree was calculated from 0 ° clockwise facing the antenna.

#### **4. DEVIATIONS TO TEST SPECIFICATIONS**

**[ NONE ]**

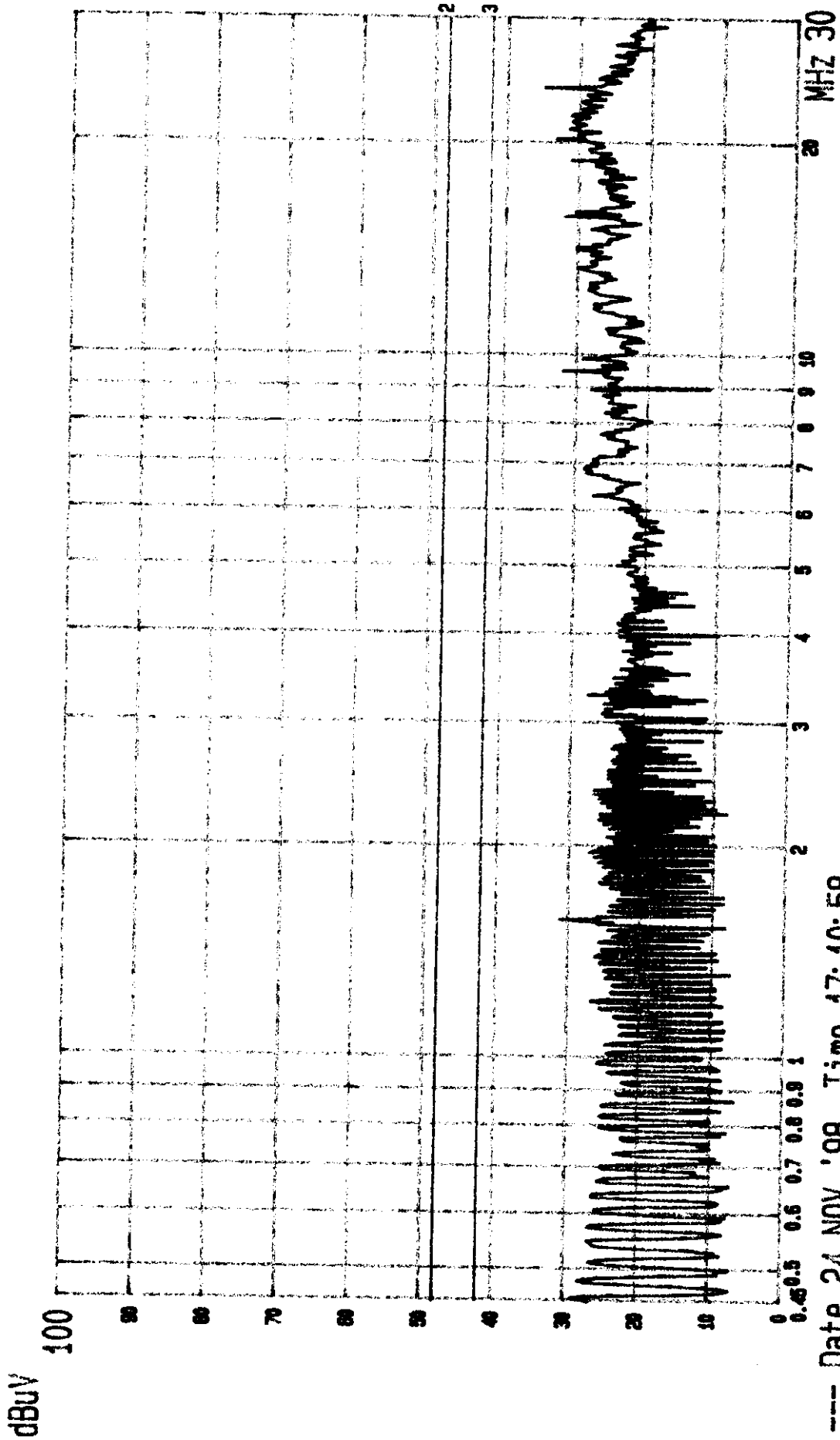
0000111111

0000111111

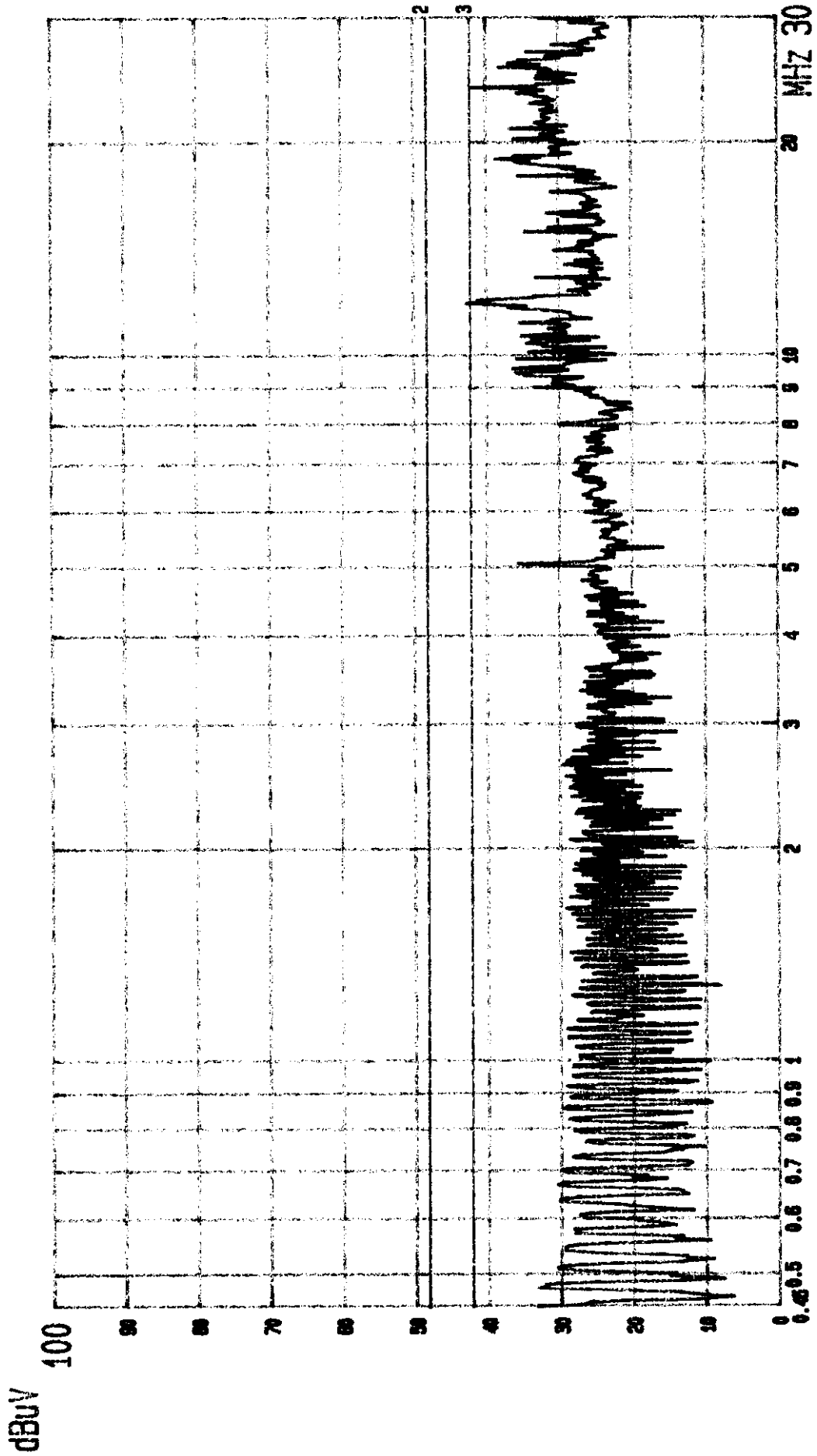
# APPENDIX I

## Conducted Test Data

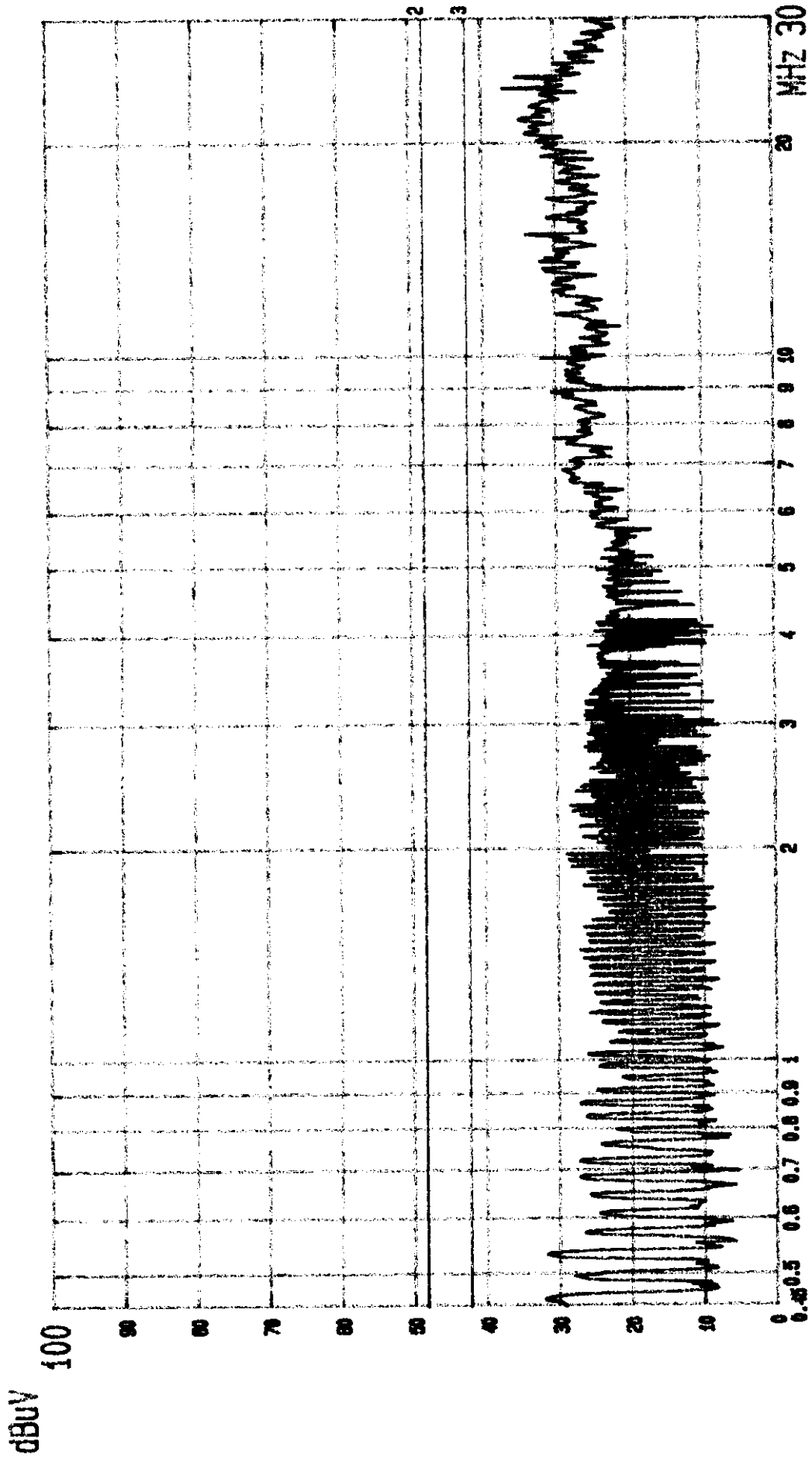
(Total Pages : 30)



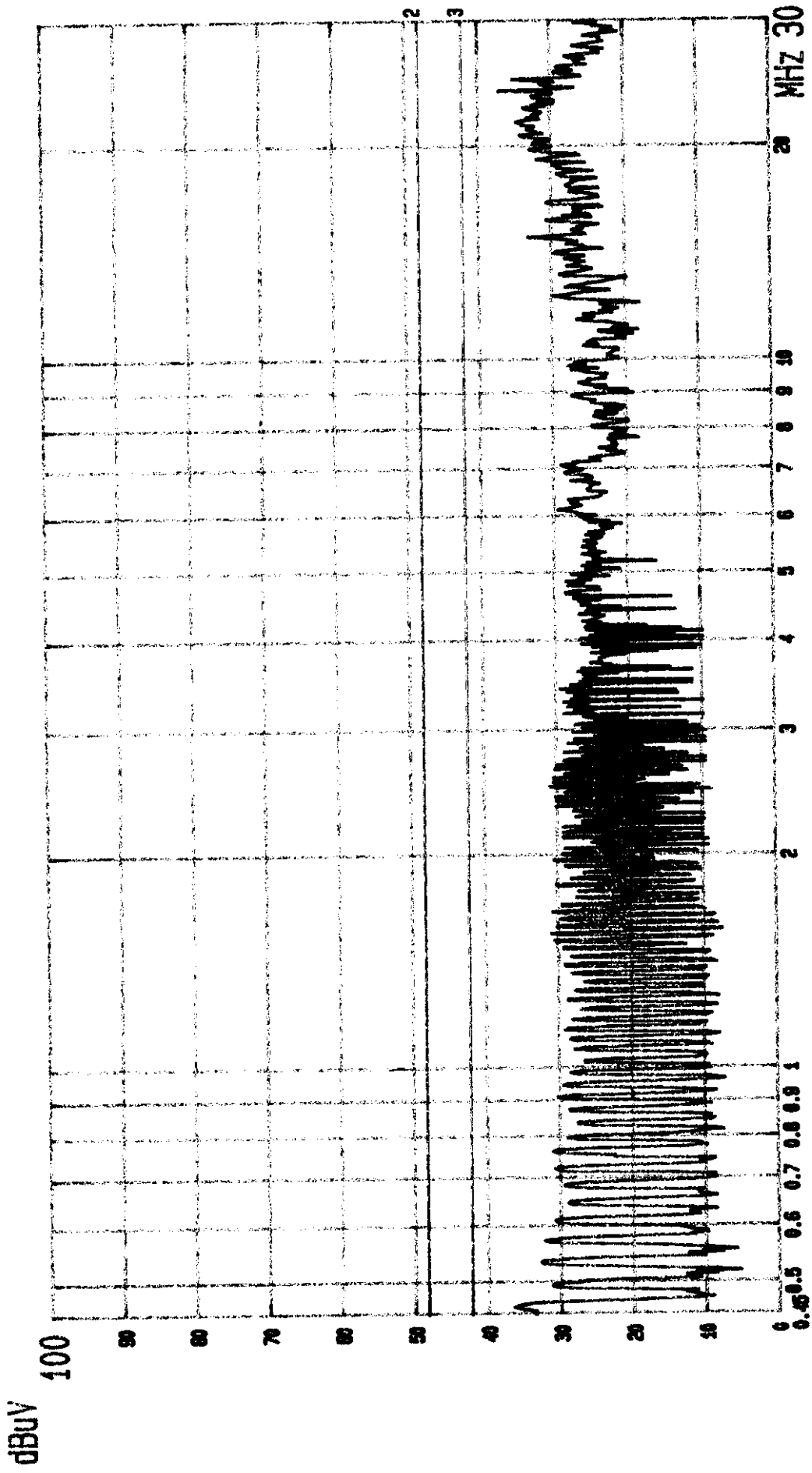
Date 24.NOV.'98 Time 17:10:58  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\* (PEAK VALUE) TTEMC.  
 LINE: VA. MENO: (640X480; 31.5KHZ) EUT TO LISN



Date 24.NOV '98 Time 17:21:19  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\* PAGE: 002.  
 LINE: VB. MENO: (640X480; 31.5KHZ) EUT TO [ISN (PEAK VALUE) TTEMC.

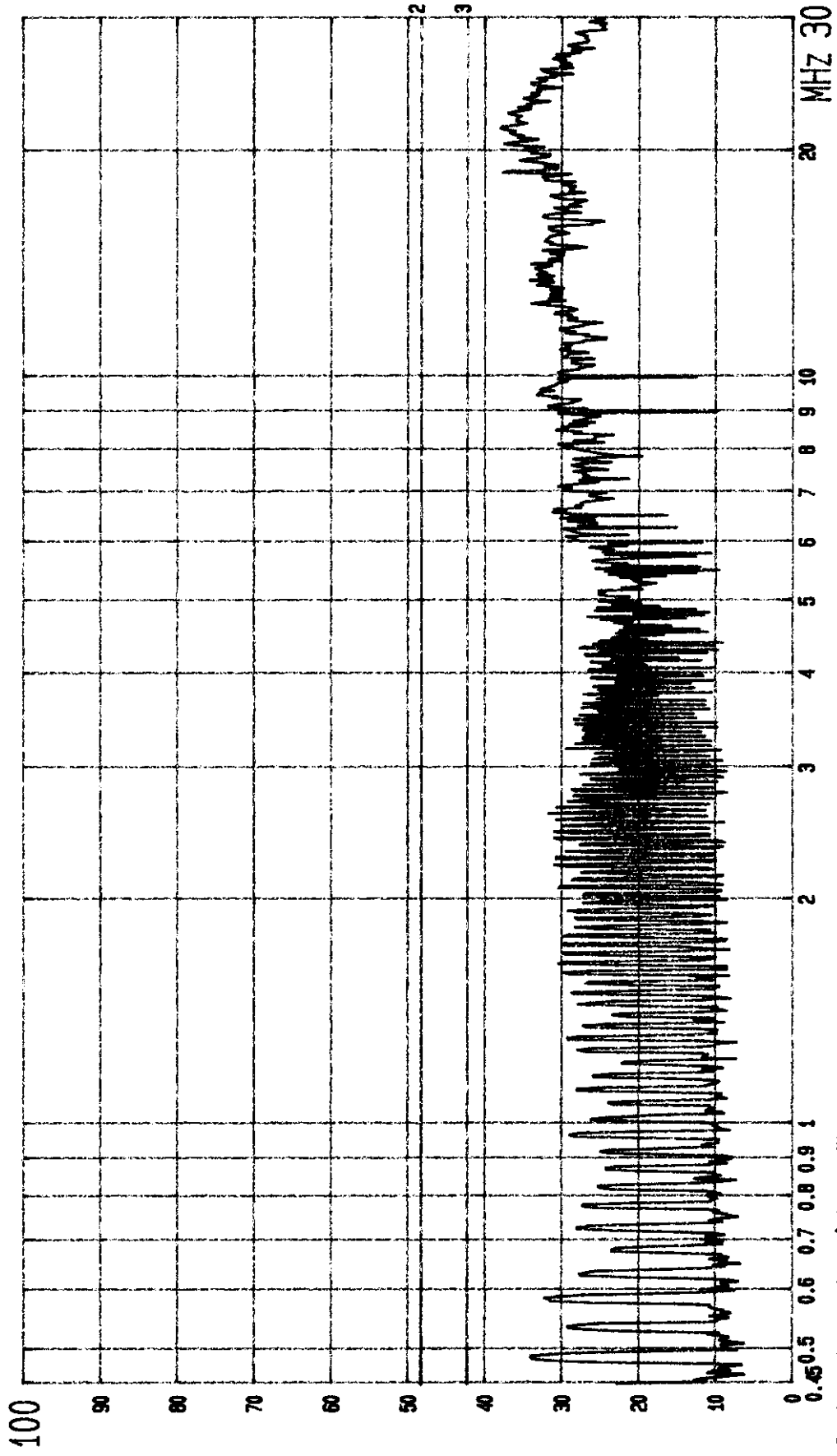


Date 24.NOV.98 Time 17:33:56  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\* PAGE: 004.  
 LINE: VA. MENO: (800X600; 37.9KHZ) EUT TO LISN (PEAK VALUE) ITEM: C.



Date 24.NOV '98 Time 17:28:03  
 MATSUSHITA EUT: MONITOR M/N: TX-15N74\*/DC5N74\* PAGE: 003.  
 LINE: VB. MEND: (800X600; 37.9KHZ) EUT TO LISN (PEAK VALUE) ITEM: C.

dBuV



--- Date 24.NOV.'98 Time 20:36:11

MATSUSHITA EUT: MONITOR

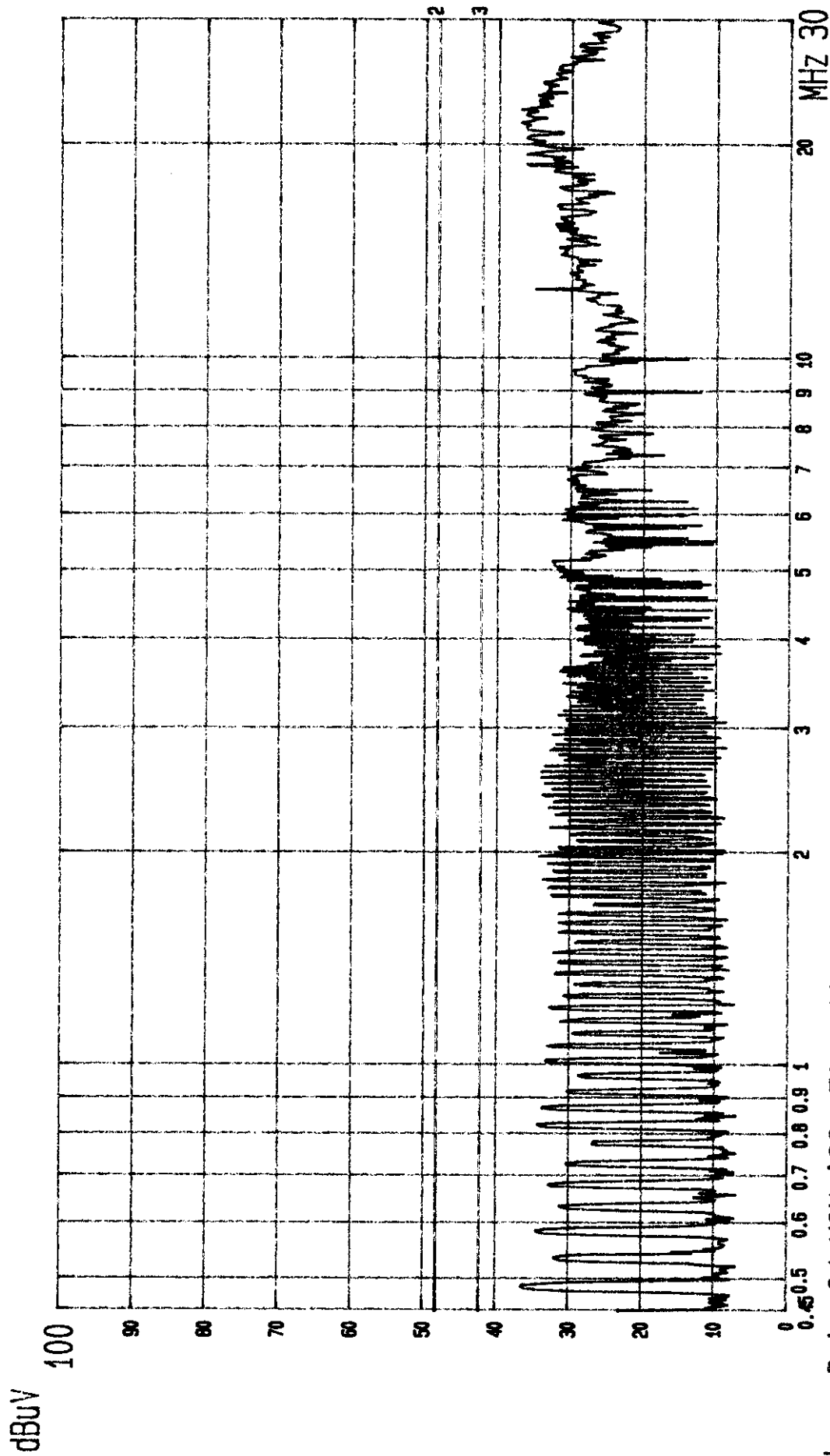
LINE: VA. MENO: (800X600; 48.1KHZ)

M/N: TX-T5N74\*/DC5N74\*

EUT TO LISN

PAGE: 010.

(PEAK VALUE) TTEMC.



--- Date 24.NOV.'98 Time 20:34:30

MATSUSHITA EUT: MONITOR

LINE: VB. MENO: (800X600; 48.1KHZ)

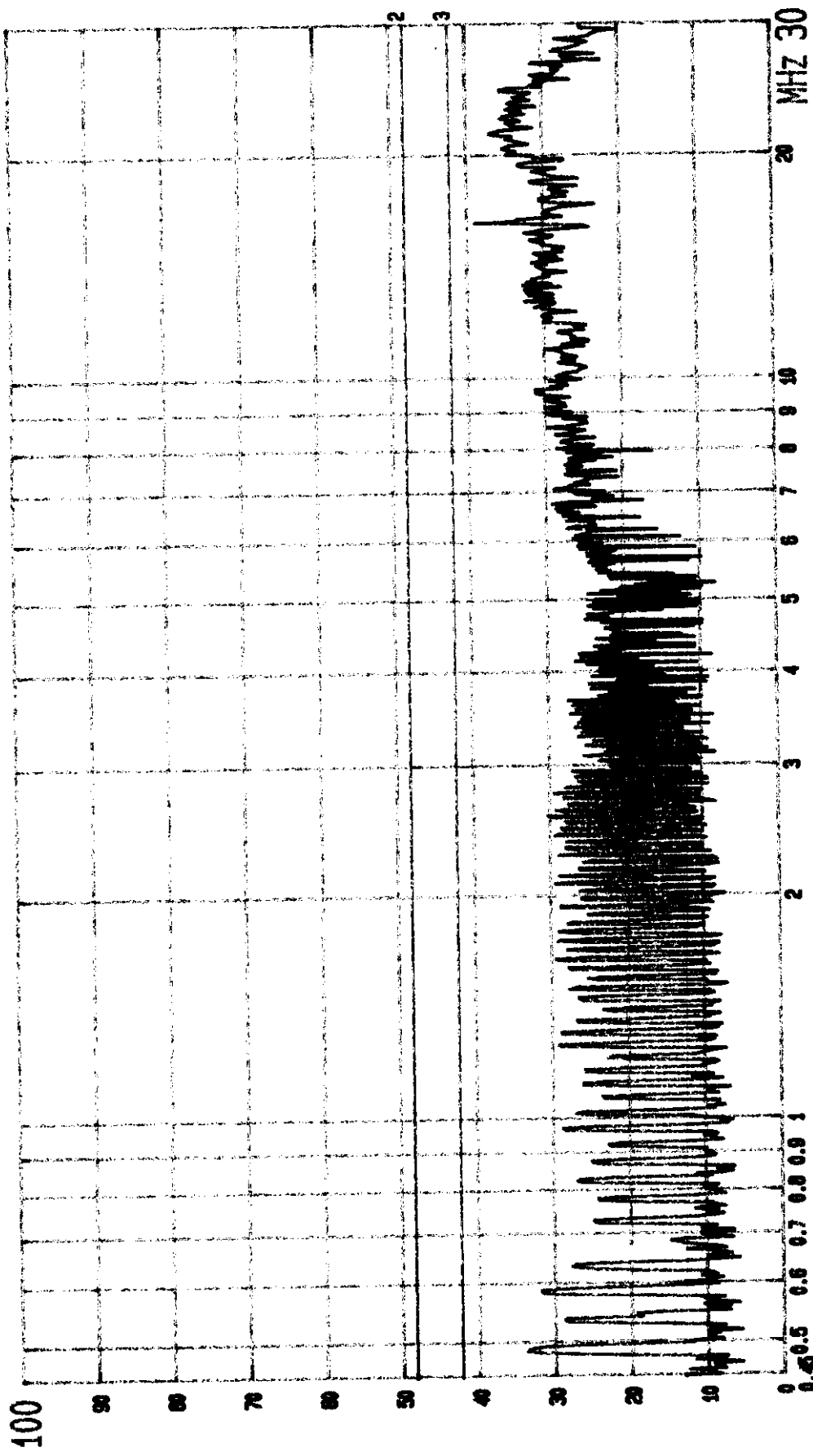
M/N: TX-T5N74\*/DC5N74\*

EUT TO LISN

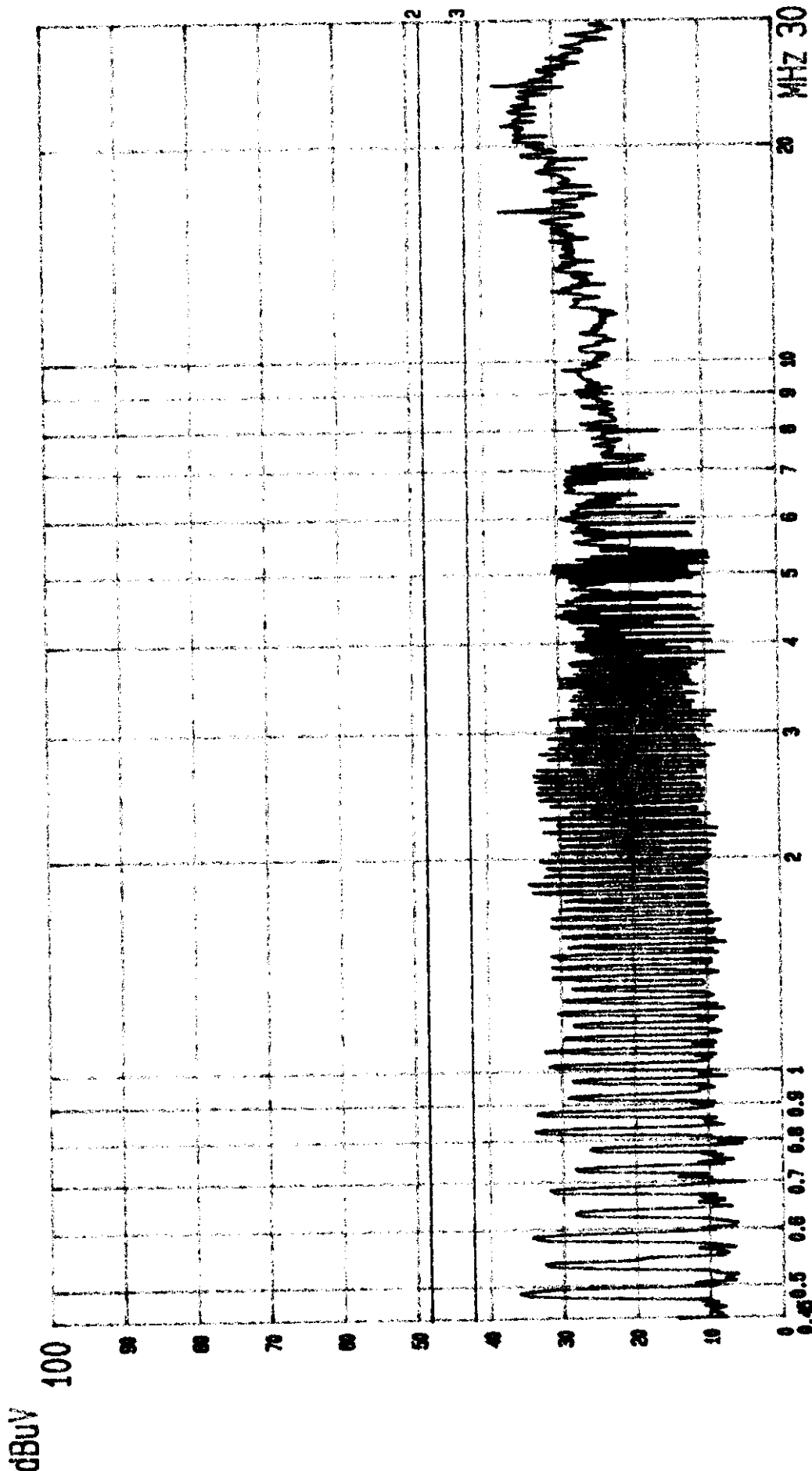
PAGE: 009.

(PEAK VALUE) TTEMC.

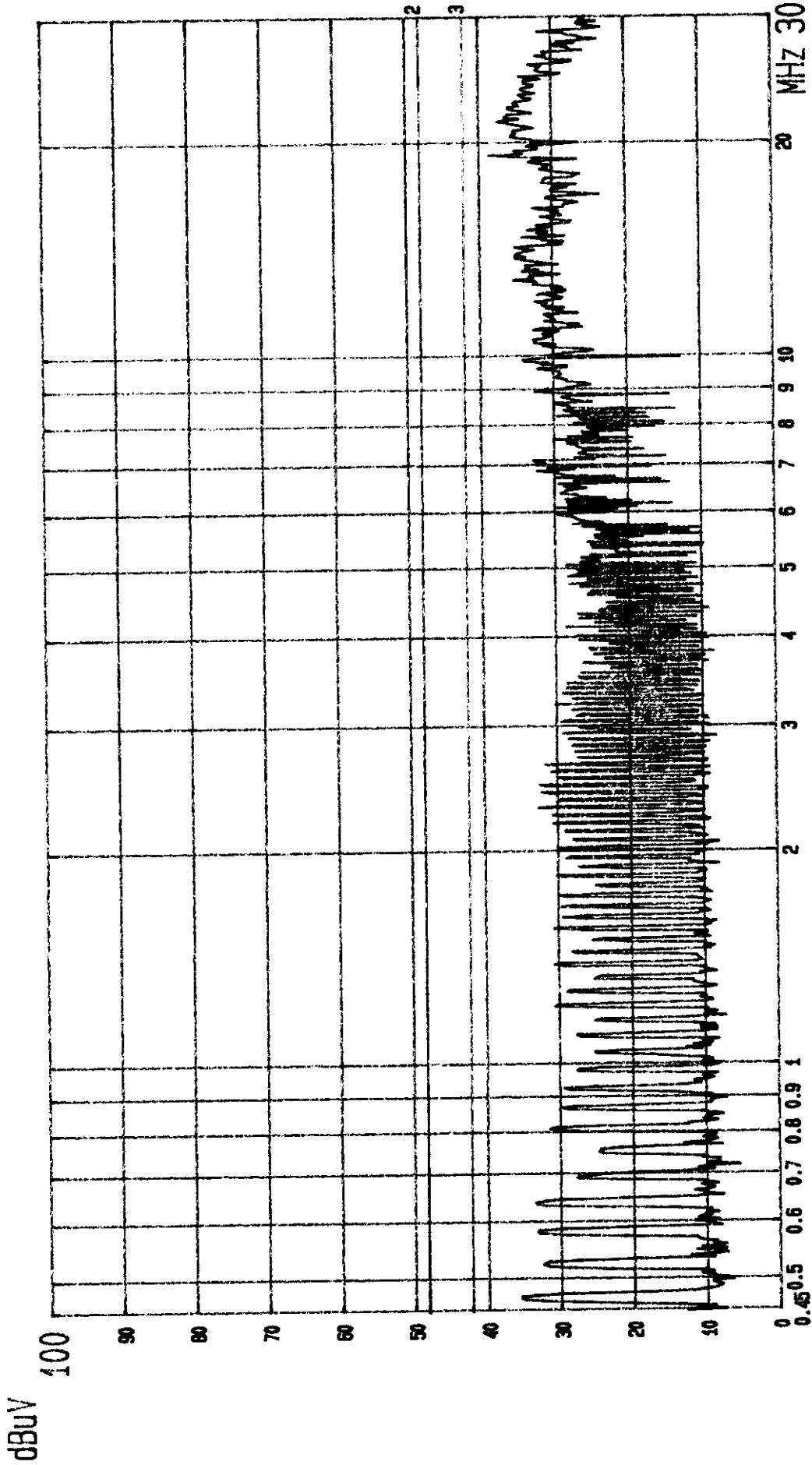
19UV



--- Date 24.NOV '98 Time 17:39:48  
MATSUSHITA EUT: MONITOR M/N: TX-15N74\*/DC5N74\* PAGE: 005.  
LINE: VA. MENO: (1024X768; 48.4KHZ) EUT TO LISN (PEAK VALUE) TTEMC.



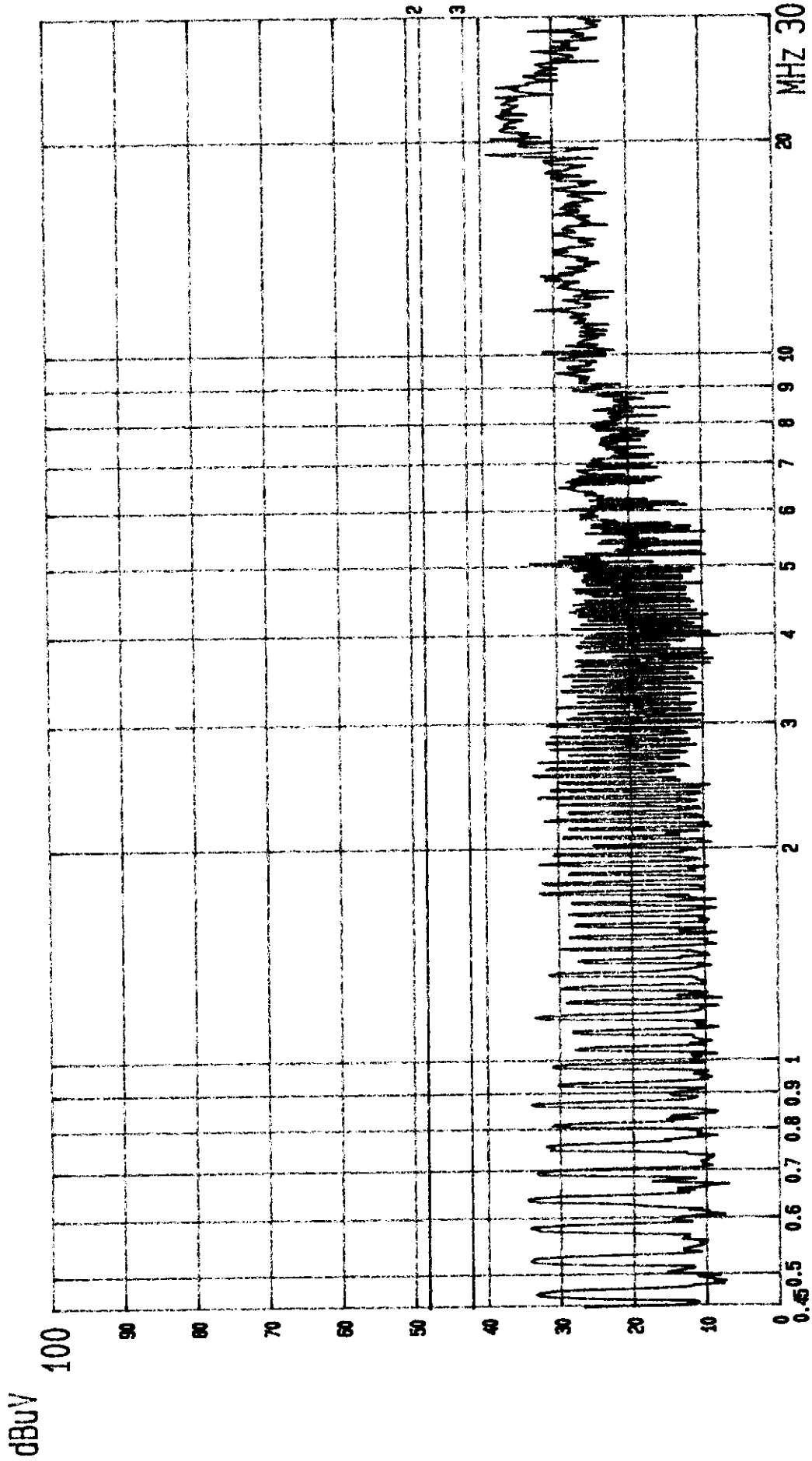
Date 24.NOV '98 Time 17:48:17  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\* PAGE:006.  
 LINE: VB. MENO: (1024X768; 48.4KHZ) EUT TO LISN (PEAK VALUE) ITEM: C.



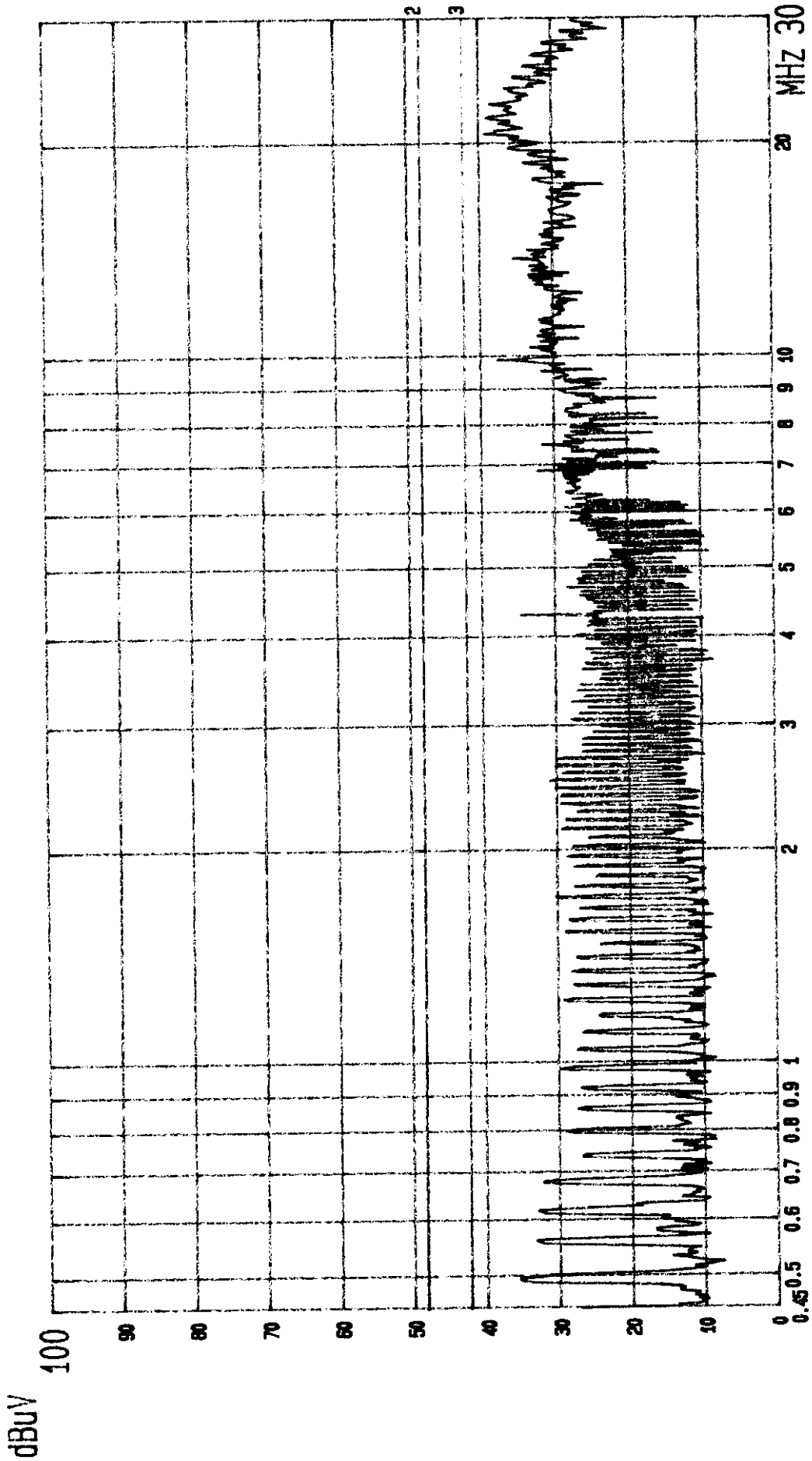
Date 25.NOV.'98 Time 11:49:38  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENC: (1024X768; 58KHZ)

M/N: TX-T5N74\*/DC5N74\*  
 EUT TO LISN

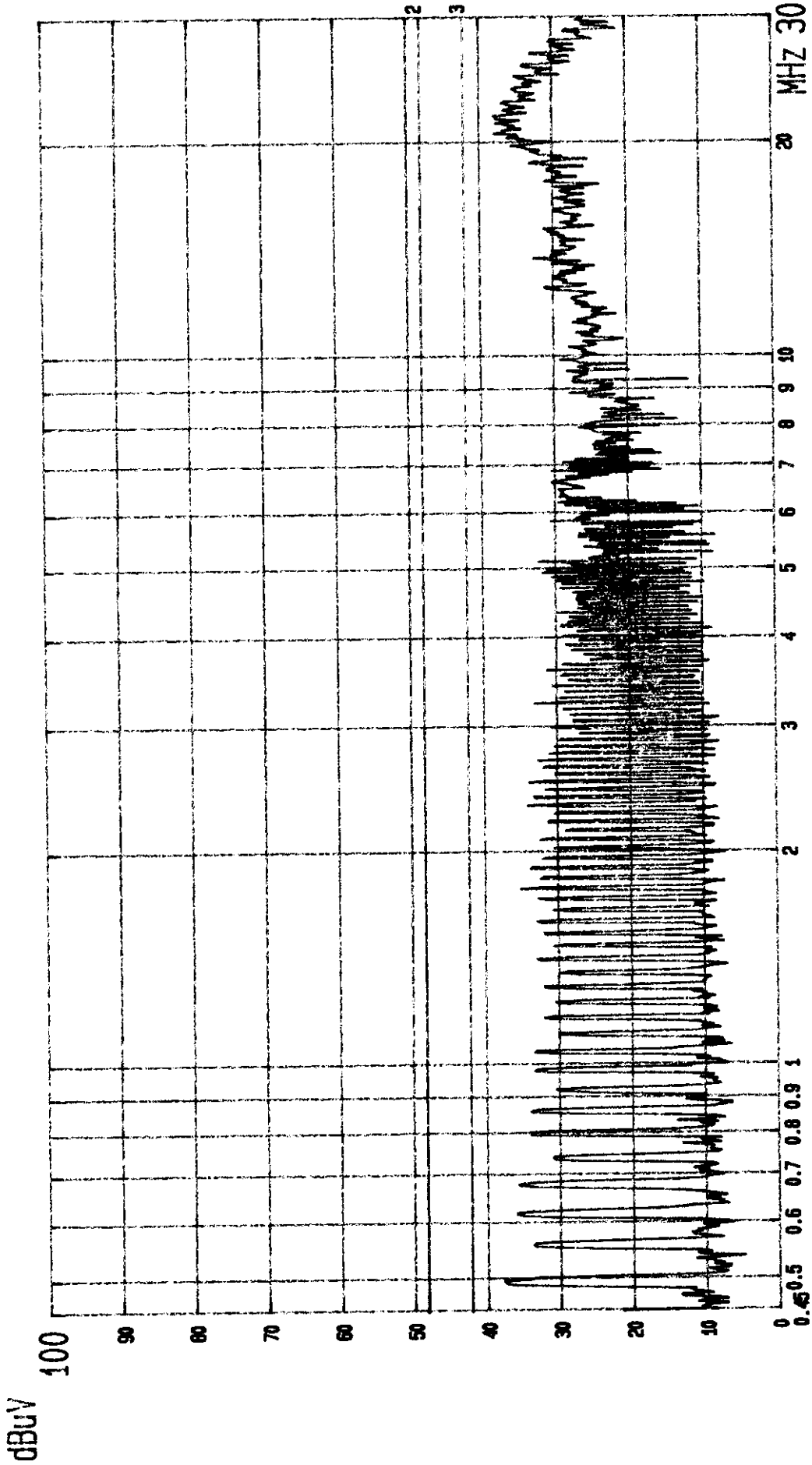
PAGE: 011.  
 (PEAK VALUE) TTEMC.



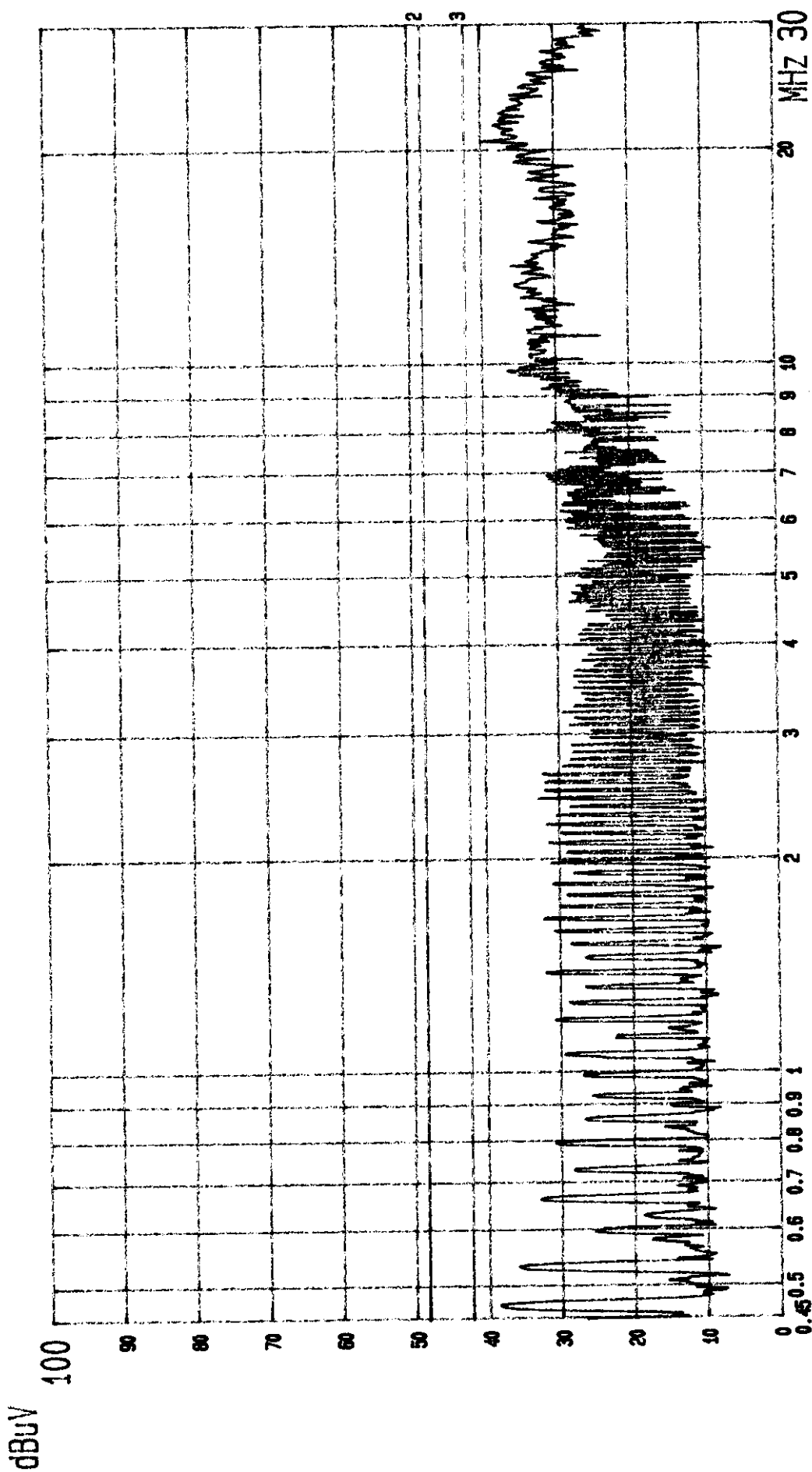
--- Date 25.NOV '98 Time 11:51:32  
 MATSUSHITA EUT: MONITOR  
 LINE: VB. MENO: (1024X768; 58KHZ)  
 M/N: IX-T5N74\*/DC5N74\*  
 EUT TO LISN (PEAK VALUE) TTEMC. PAGE: 012.



Date 25.NOV '98 Time 11:54:47  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (1280X960; 61.6KHZ)  
 M/N: IX-T5N74\*/DC5N74\*  
 EUT TO LISN  
 (PEAK VALUE) TTEMC.  
 PAGE: 014.



Date 25.NOV '98 Time 11:52:58  
 MATSUSHITA EUT: MONITOR  
 LINE: VB. MENO: (1280X960; 61.6KHZ)  
 M/N: TX-T5N74\*/DC5N74\* EUT TO LISN  
 PAGE: 013.  
 (PEAK VALUE) TTEMC.

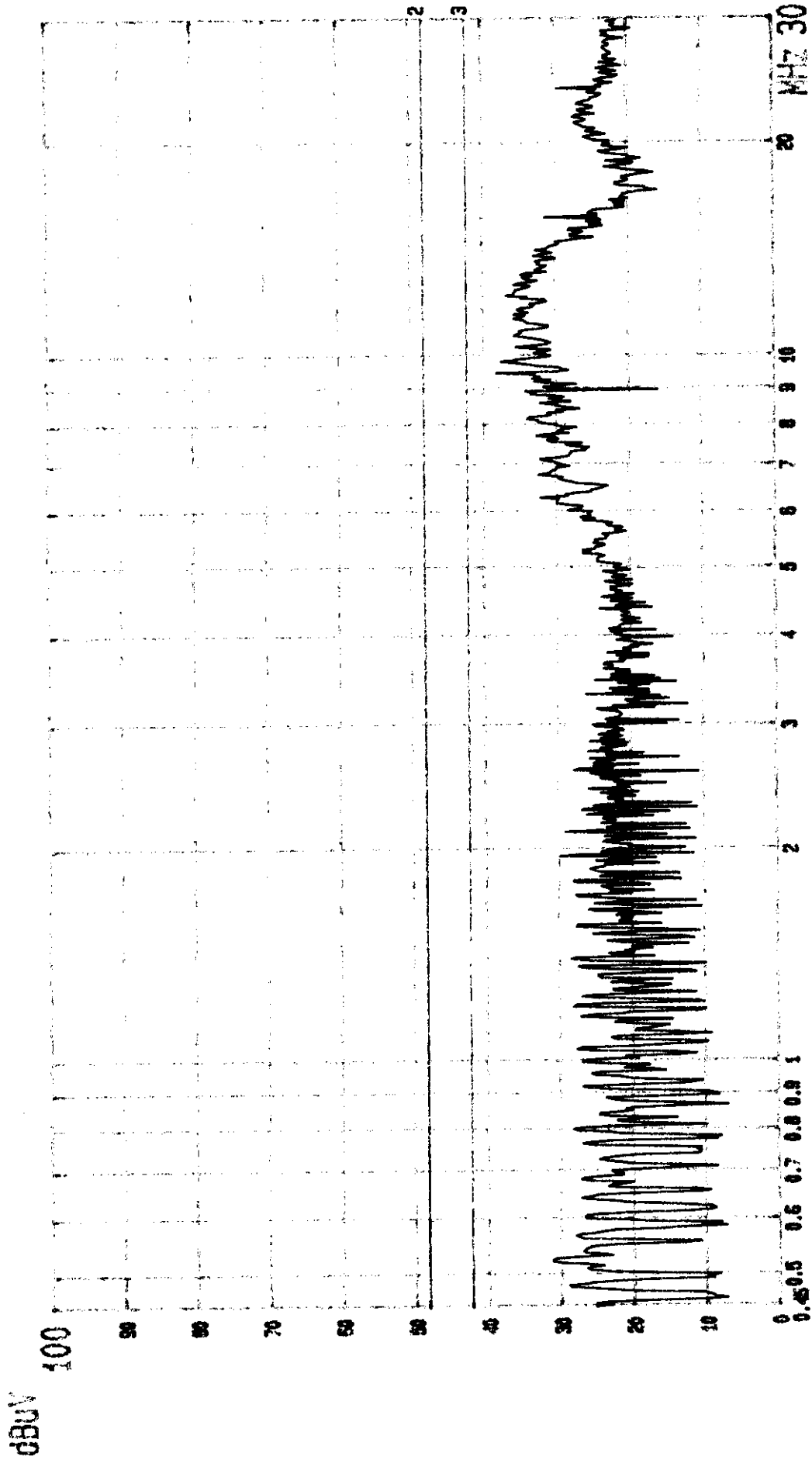


Date 25.NOV '98 Time 11:56:29  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (1280X1024; 66KHZ)

M/N: TX-T5N74\*/DC5N74\*  
 EUT TO LISN  
 (PEAK VALUE) TTENC. PAGE: 015.



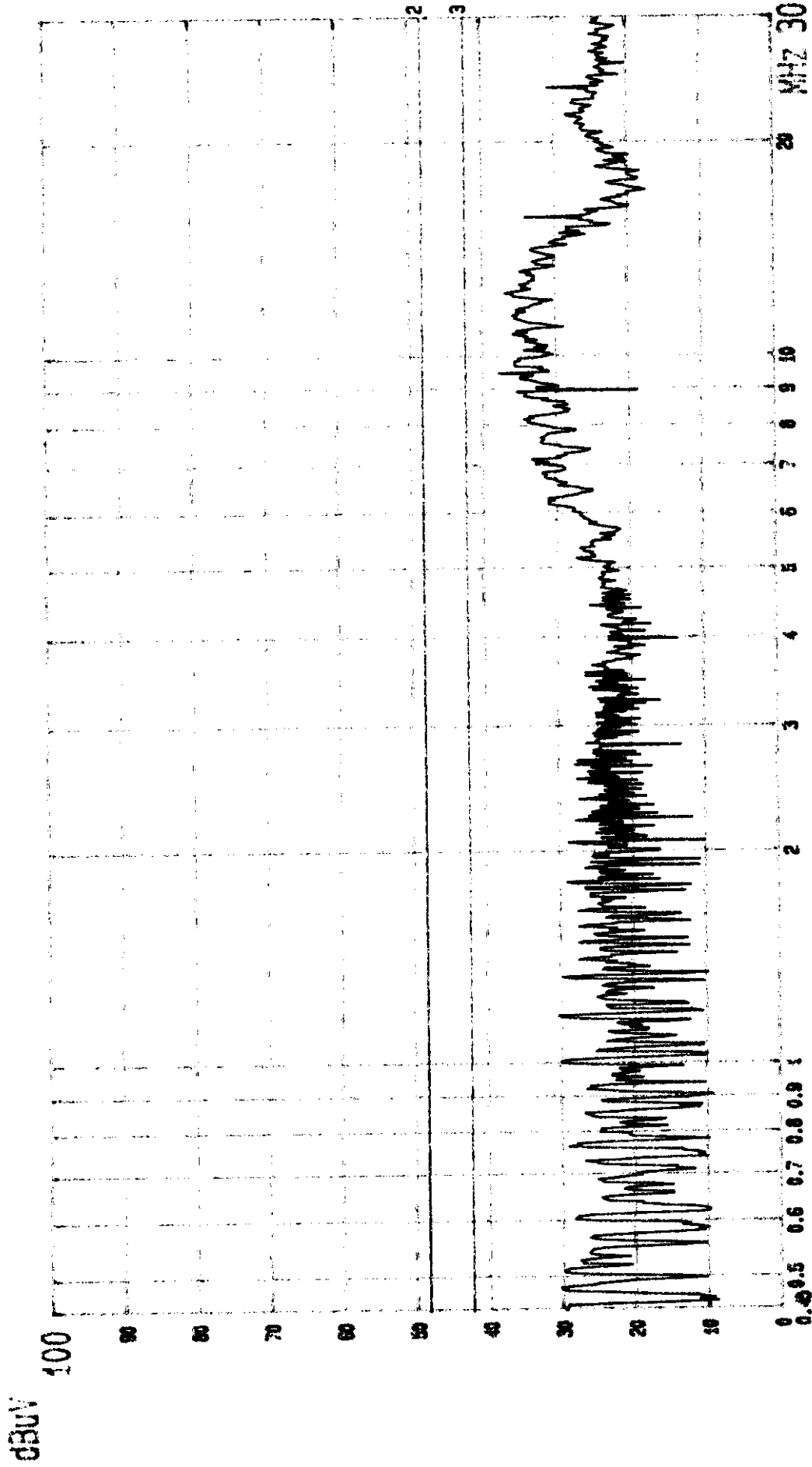
Date 25.NOV '98 Time 11:57:52  
 MATSUSHITA EUT: MONITOR  
 LINE: VB. MENO: (1280X1024; 66KHZ)  
 M/N: IX-T5N74\*/DC5N74\*  
 EUT TO LISN  
 (PEAK VALUE) TTEMC. PAGE: 016.



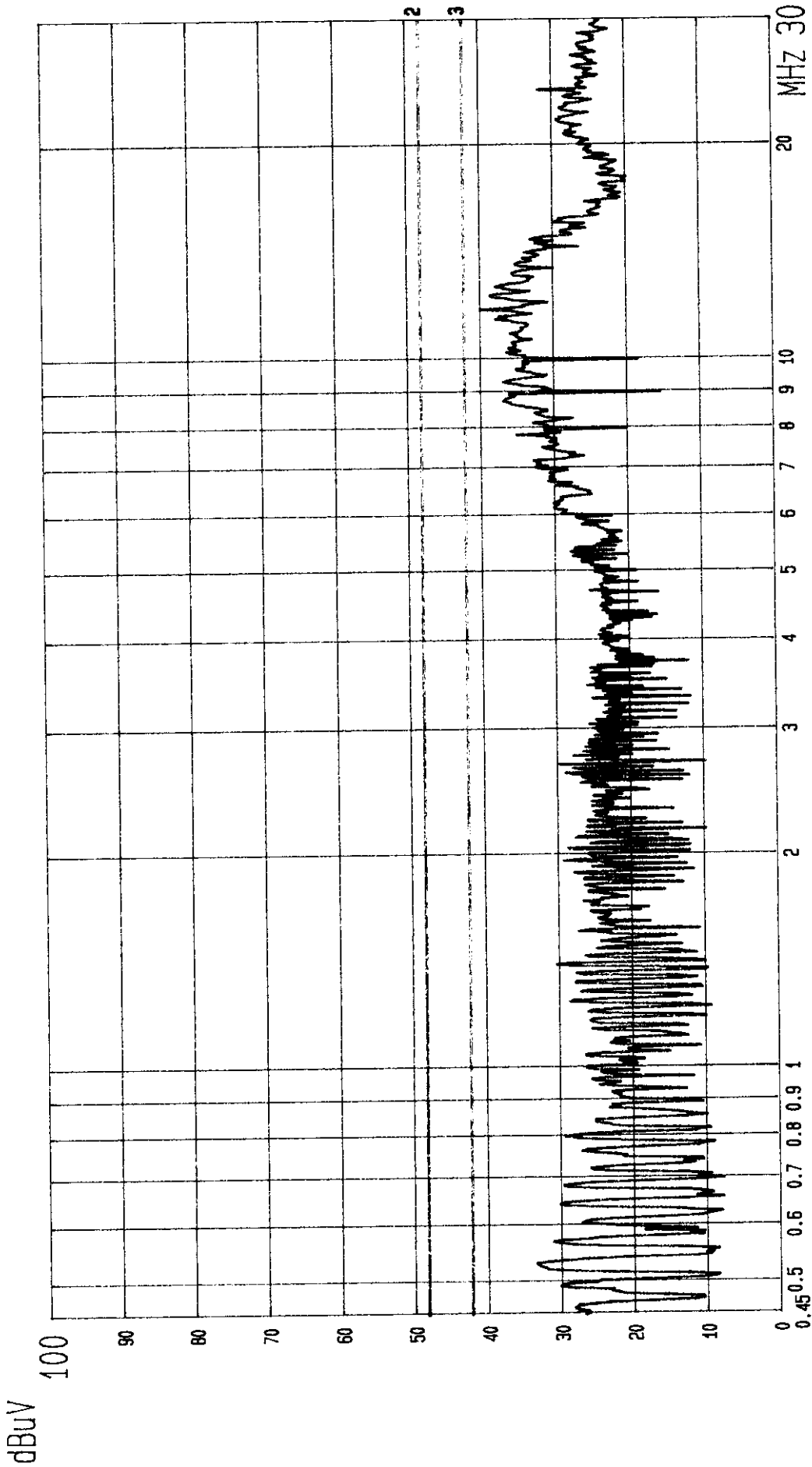
[--- Date 24.NOV '98 Time 21:57:46  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENC: (640X480; 31.5KHz)

M/A: TX-T5N174#/DC5N174#  
 EUT TO PC

PAGE: 002.  
 (PEAK VALUE) TTEXC.



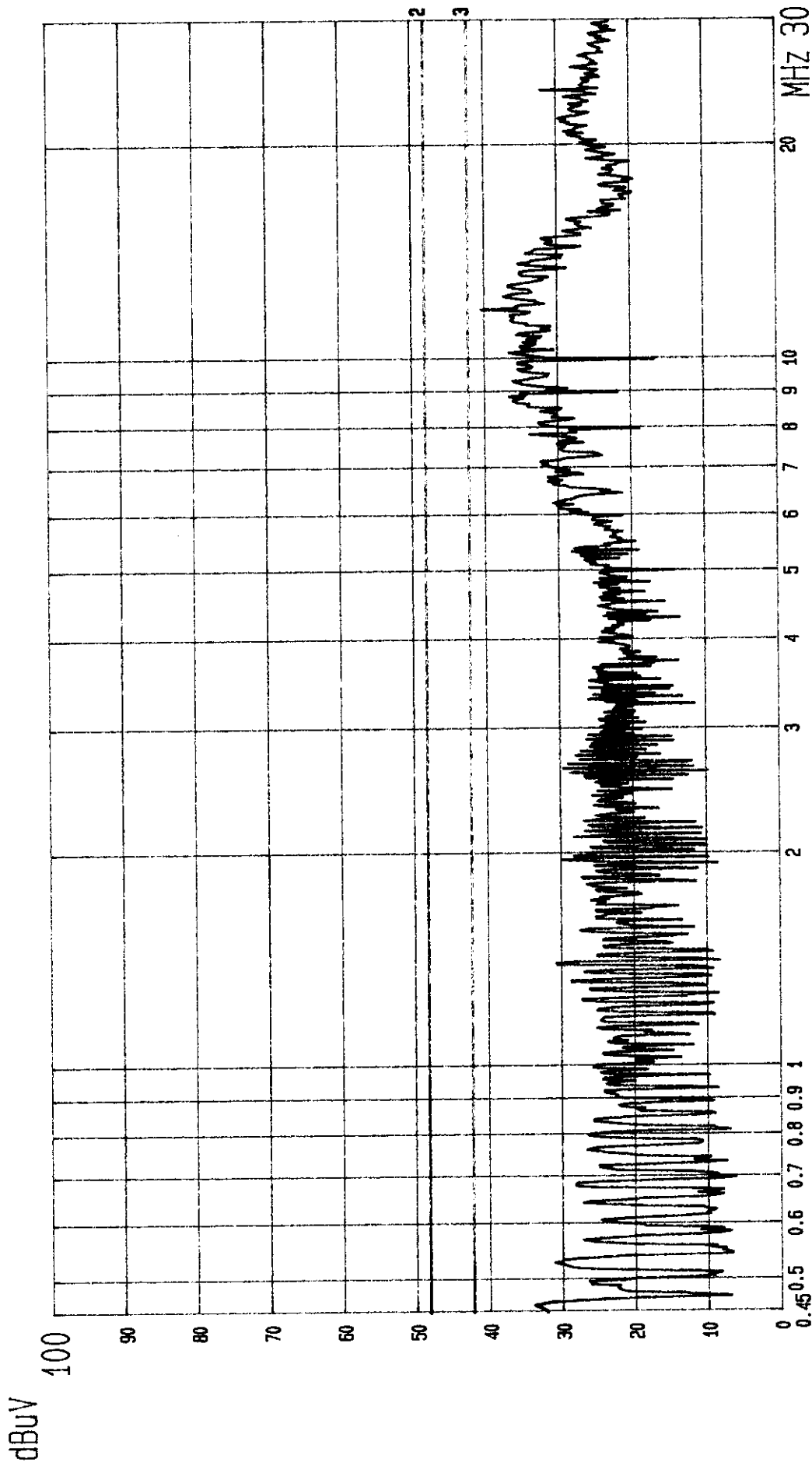
Date 24.NOV '98 Time 21:52:26  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74X PAGE: 001  
 LINE: VB. MENO: (640X480; 31.5KHZ) EUT TO PC (PEAK VALUE) TTEMC.



--- Date 24.NOV.'98 Time 22:32:30  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (640X480; 37.9KHz)

M/N: TX-T5N74\*/DC5N74\*  
 EUT TO PC

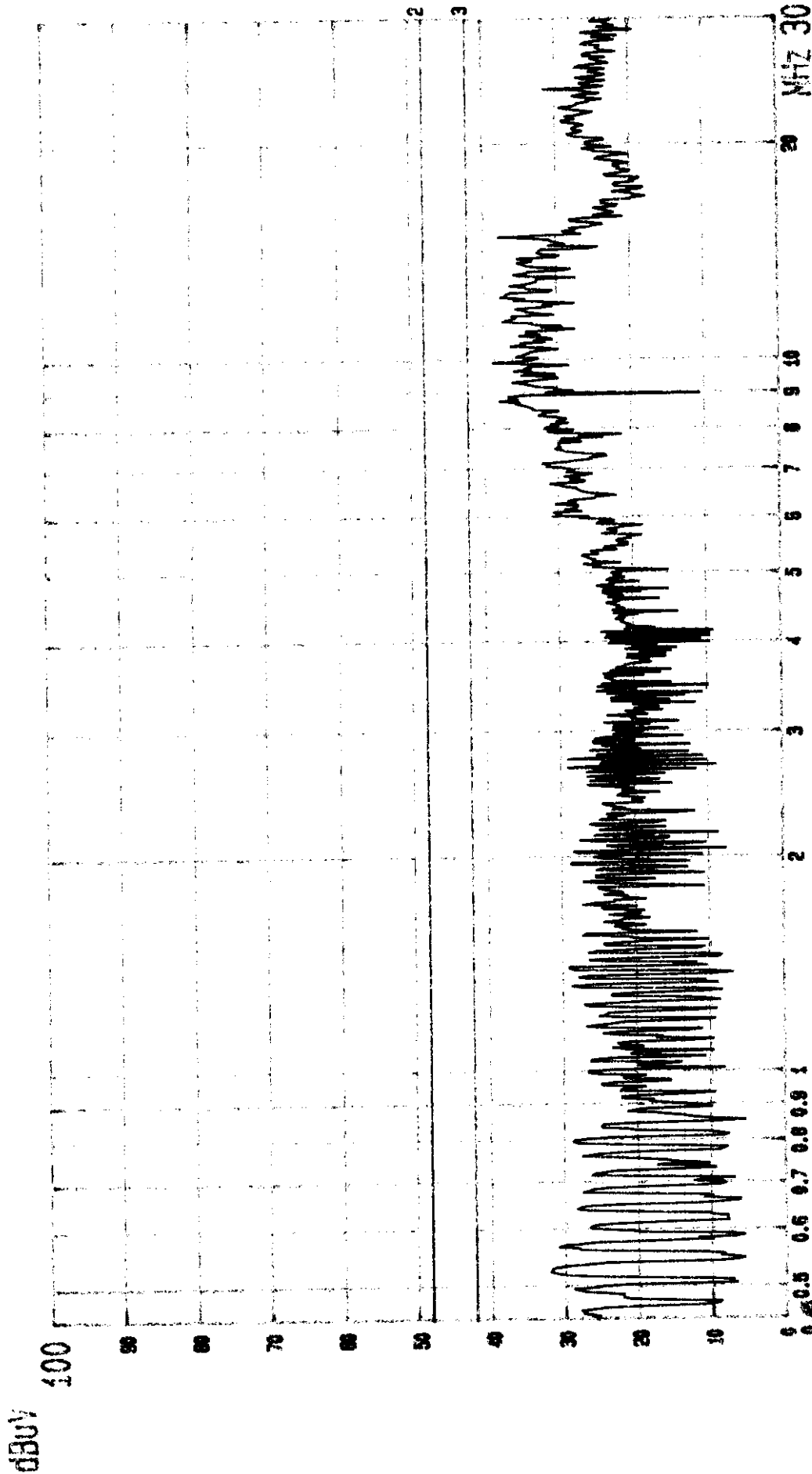
PAGE: 007.  
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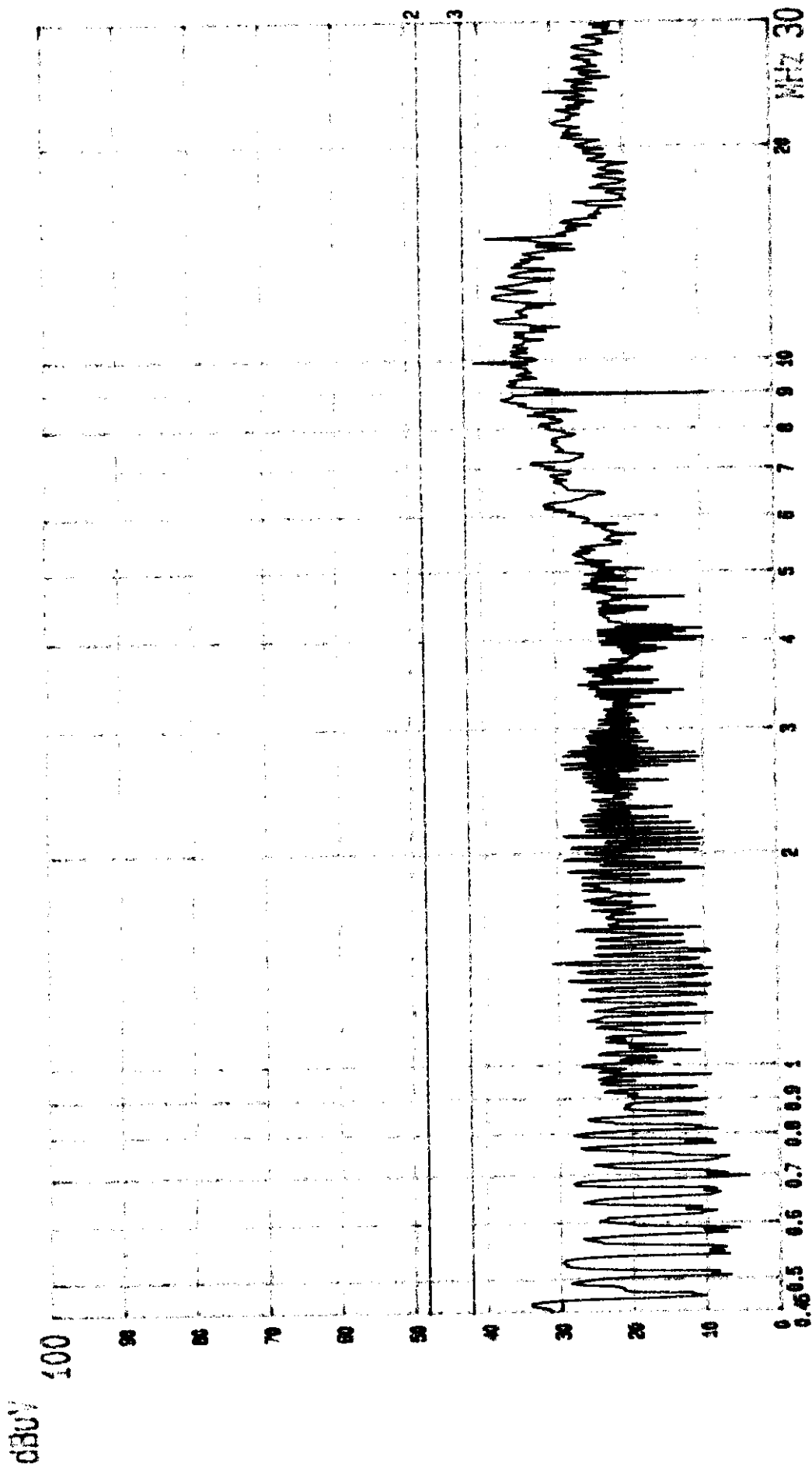
--- Date 24.NOV '98 Time 22: 37: 16  
 MATSUSHITA EUT: MONITOR  
 LINE: VB. MENO: (640X480; 37.9KHZ)

M/N: IX-T5N74\*/DC5N74\*  
 EUT TO PC

PAGE: 008.  
 (PEAK VALUE) TTEMC.



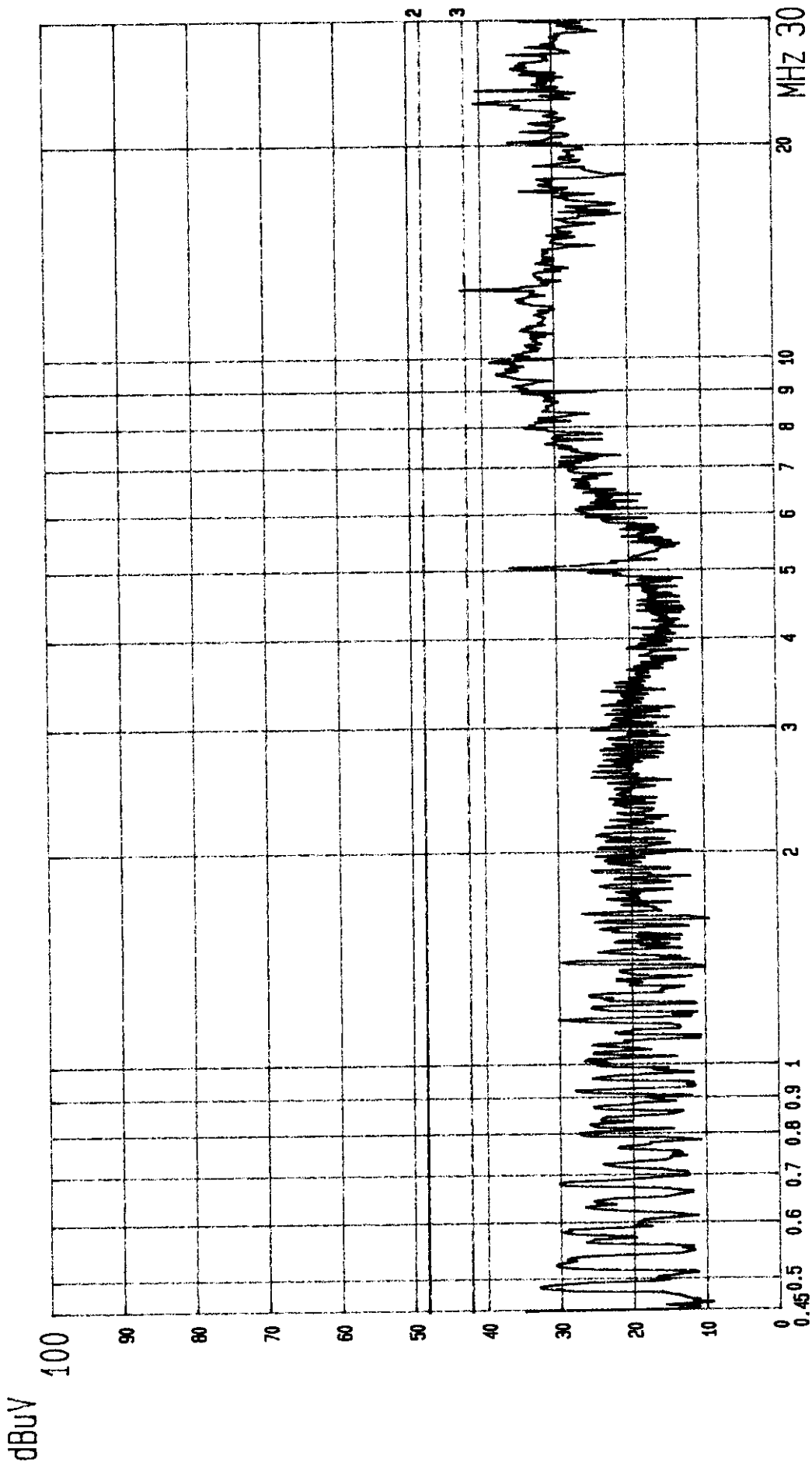
Date 24.NOV.'98 Time 22:02:59  
 WATSUSHITA EUT: MONITOR M/A: TX-T51174X/DC51174#  
 LINE: VA. EUT TO PC (PEAK VALUE) TTEMC. PAGE: 003.



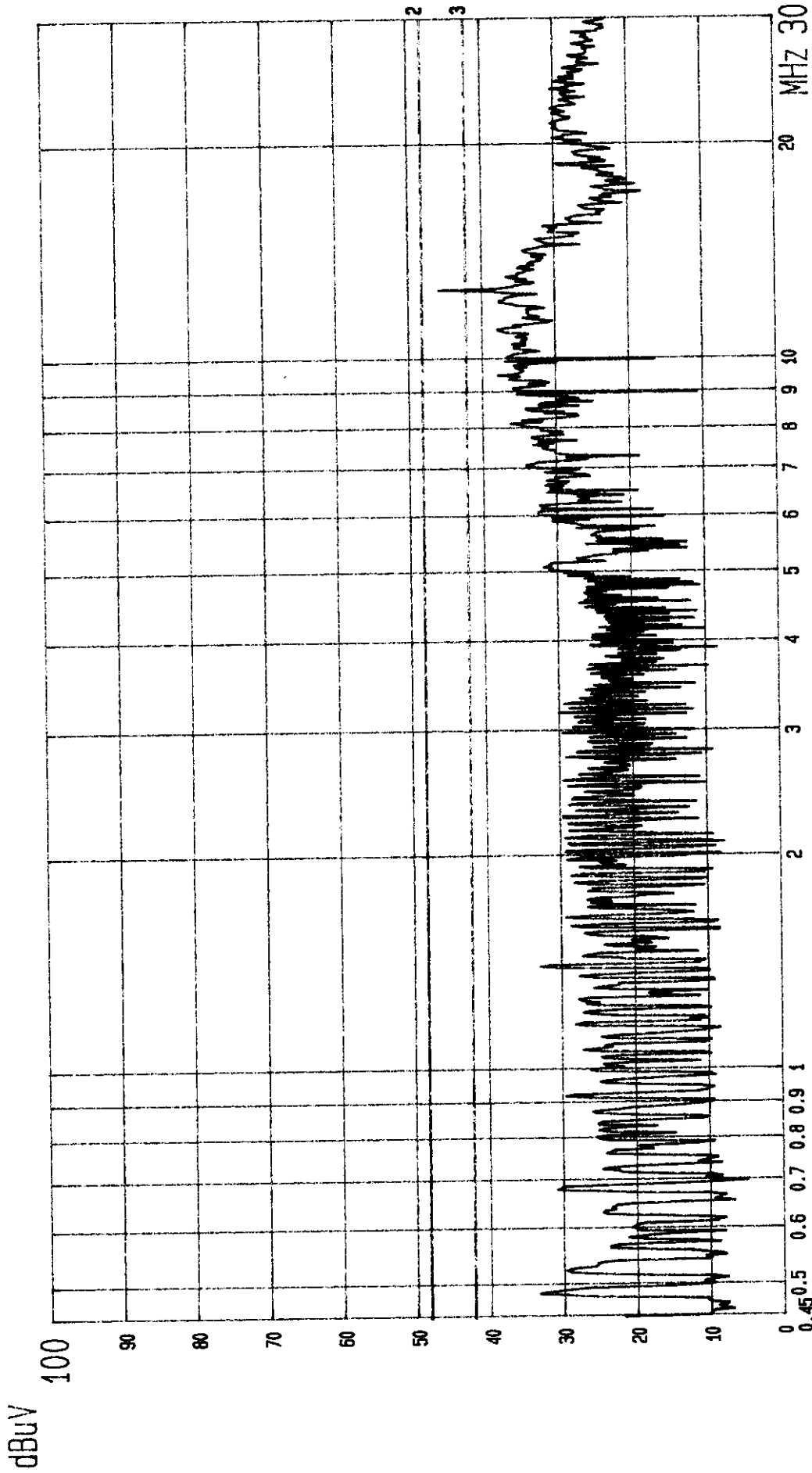
--- Date 24.NOV '98 Time 22:08:08  
 MATSUSHITA  
 LINE: VB.  
 EUT: MONITOR  
 MENO: (800X600; 37.9KHz)

M/N: TX-T5N74\*/D05174\*  
 EUT TO PC

PAGE: 004.  
 (PEAK VALUE) TTENC.

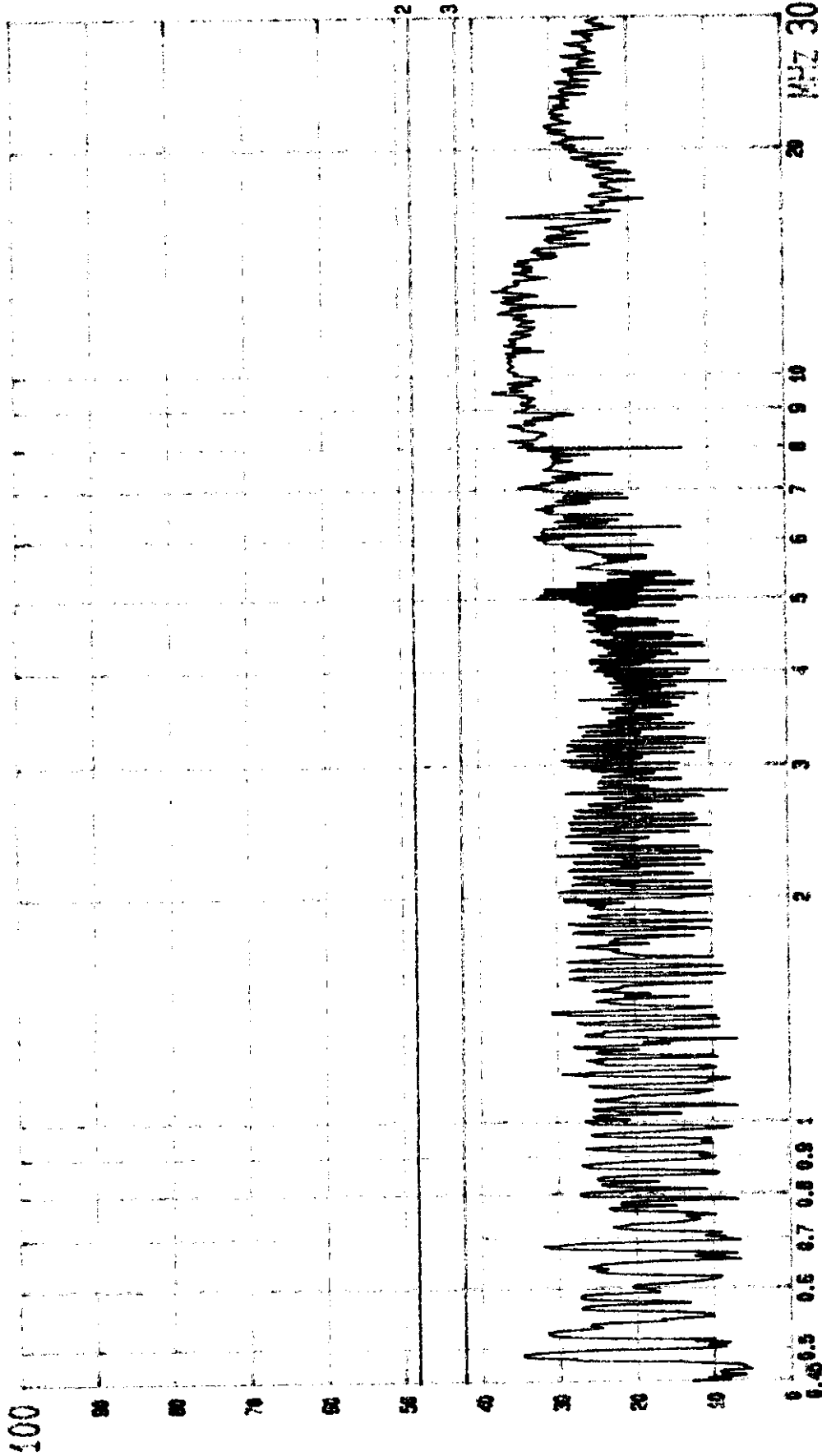


--- Date 24.NOV '98 Time 22: 48: 26  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (800X600; 48.1KHz) M/N: TX-T5N74\*/DC5N74\* EUT TO PC  
 (PEAK VALUE) ITEM: C. PAGE: 010.



--- Date 24.NOV '98 Time 22:43:08  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\*  
 LINE: VB. MENO: (800X600; 48.1KHZ) EUT TO PC (PEAK VALUE) ITEMG. PAGE: 009.

dBuV



Date 24.NOV.'98 Time 22:18:52

LINE: VA.

EUT: MONITOR

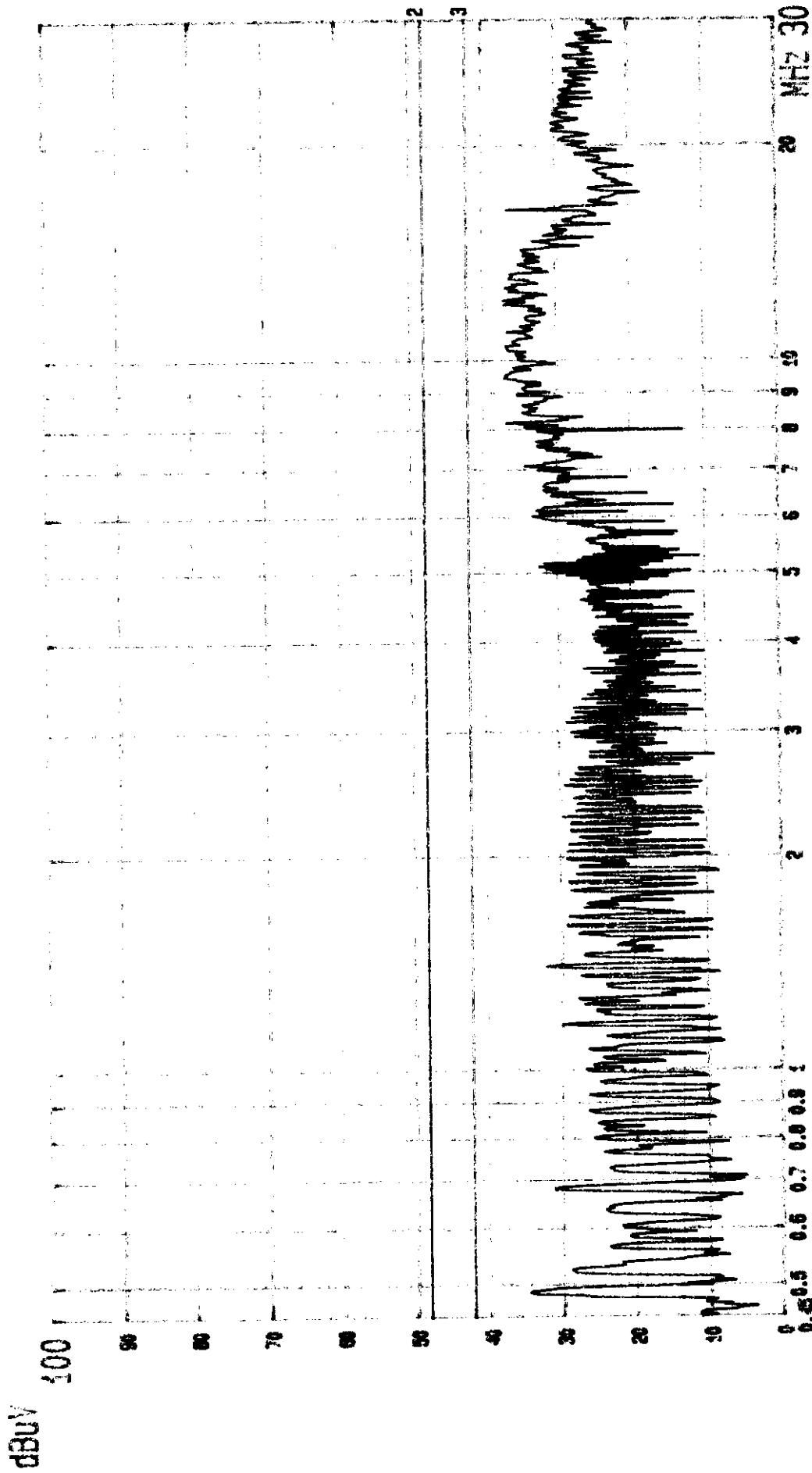
MEMO: (1024X768; 48.4KHZ)

WAVE: IX-15N74\*/DC5N74\*

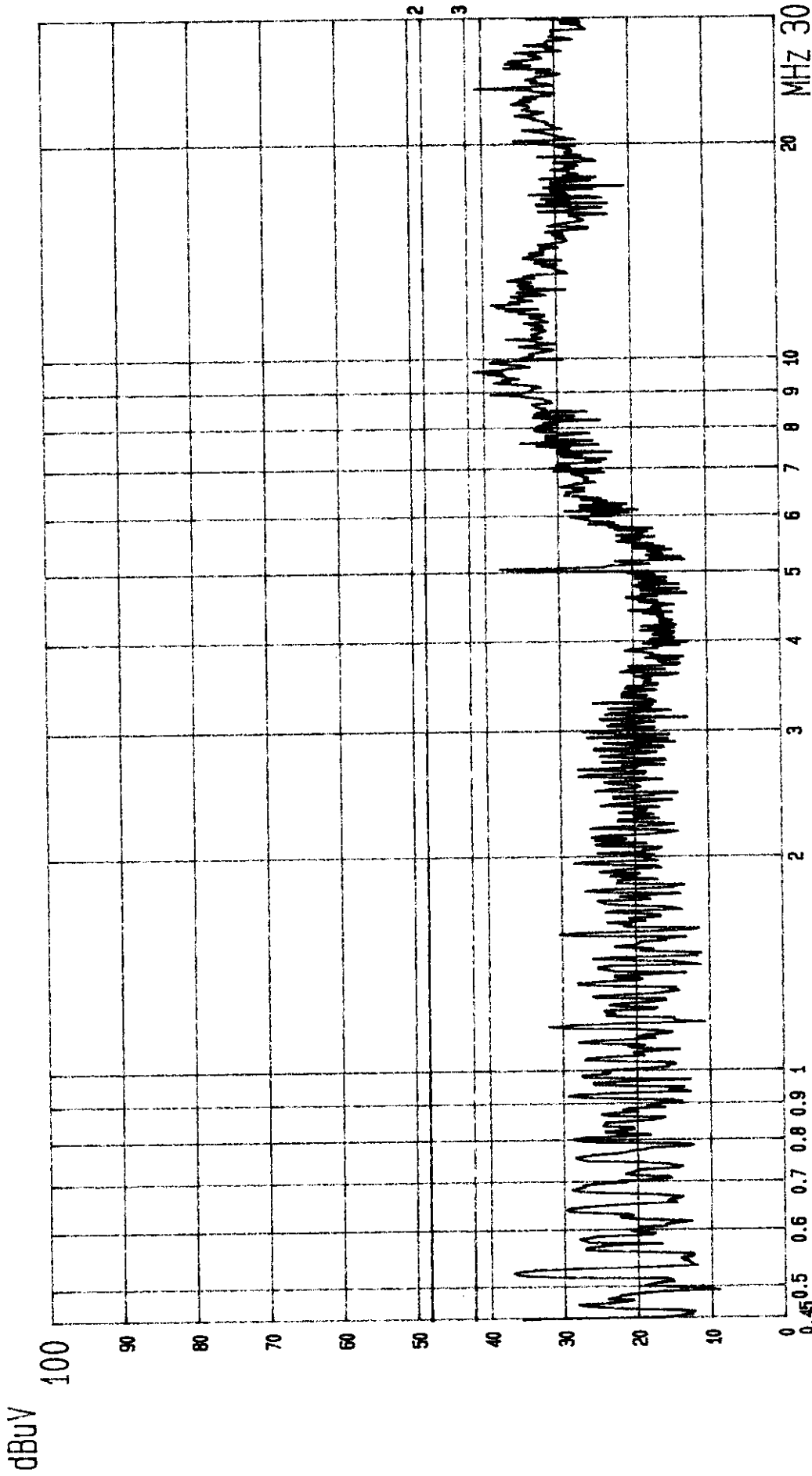
EUT: TO PC

PAGE: 006.

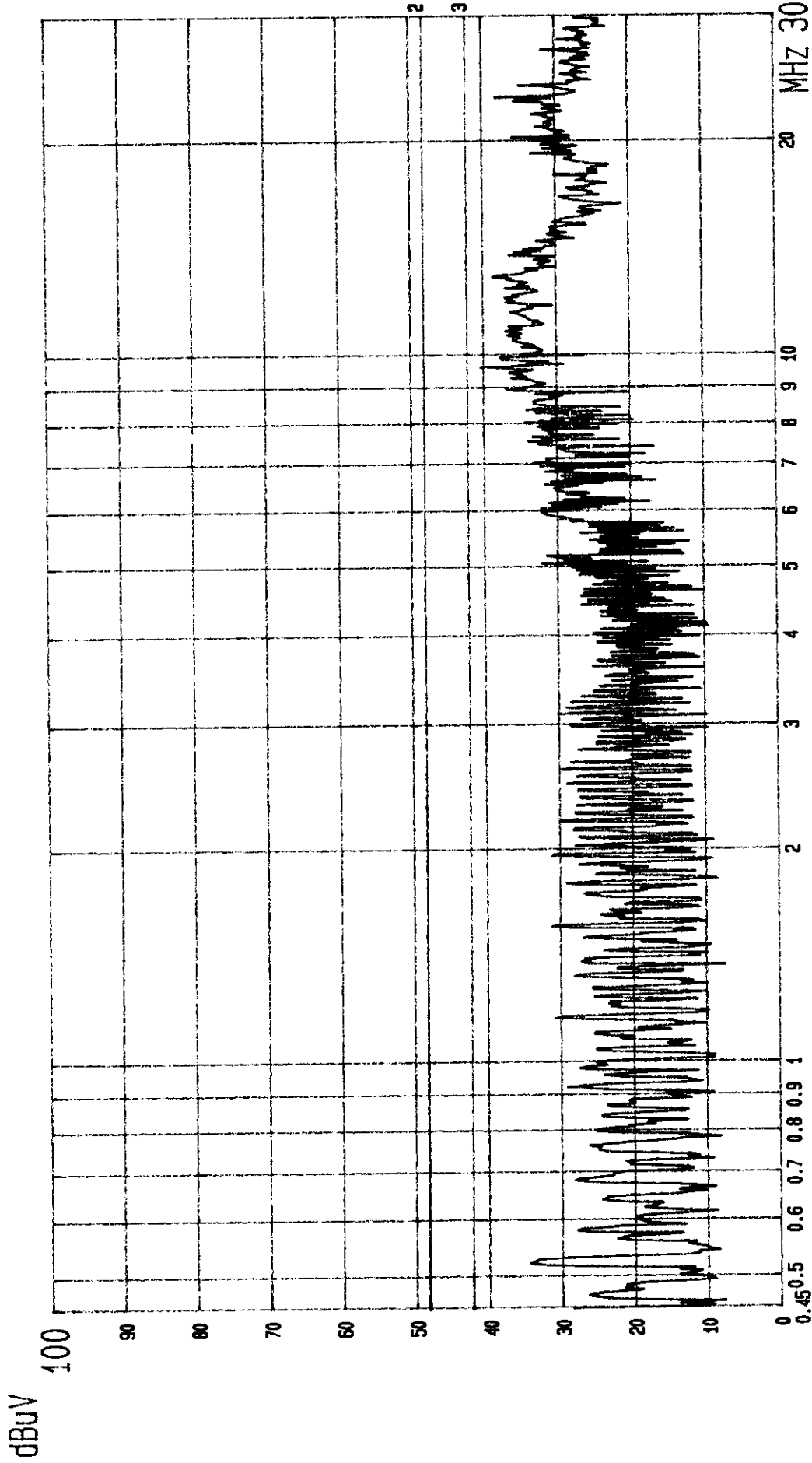
(PEAK VALUE) TTENC.



Date 24.NOV '98 Time 22:13:55  
 MATSUSHITA EUT:MONITOR M/N: TX-15N74\*/DC5N74\*  
 LINE: VB. MEMO: (1024X768; 48.4KHz) EUT TO PC (PEAK VALUE) TTENC. PAGE: 005.

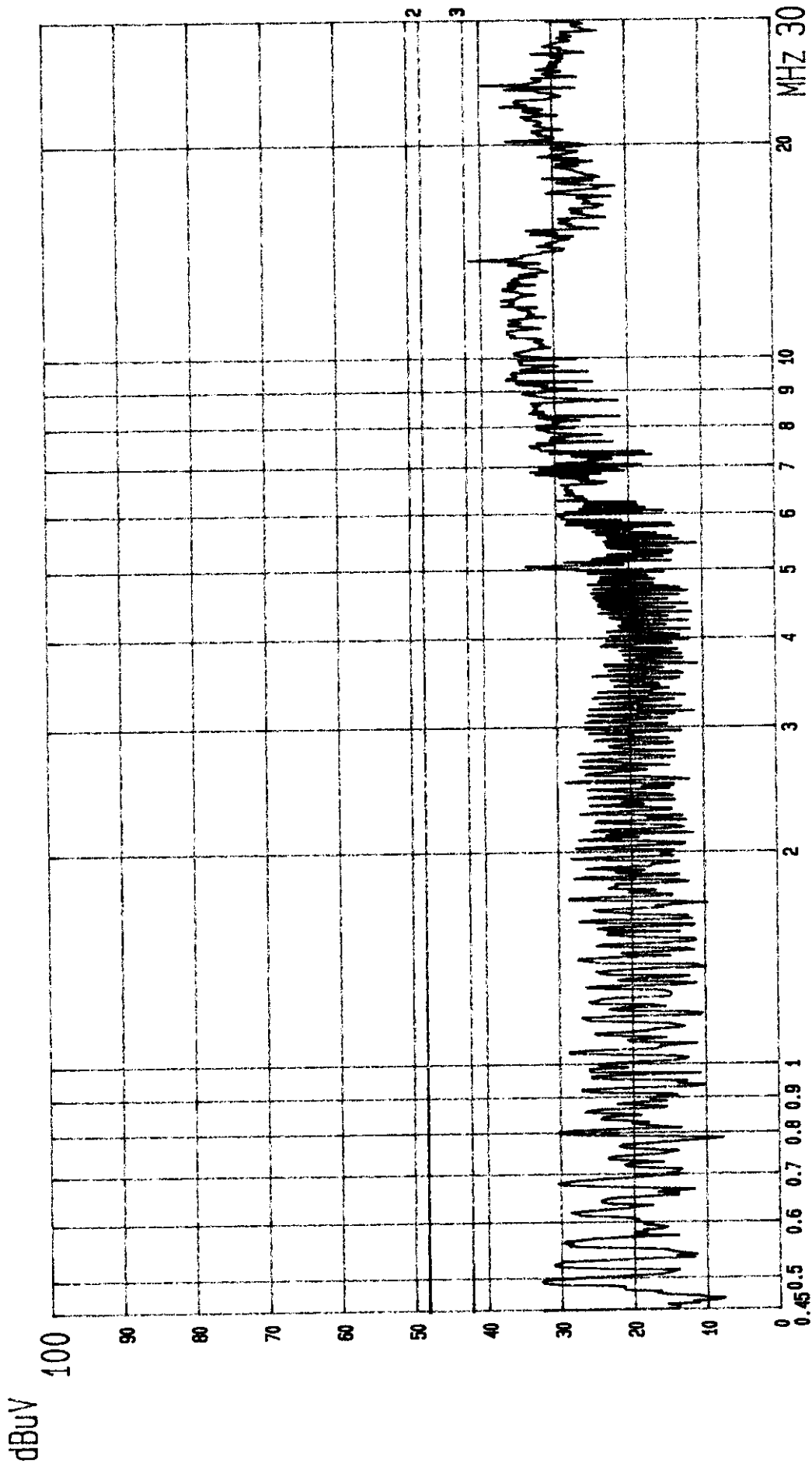


Date 24.NOV.'98 Time 22:54:20  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (1024X768; 58KHZ)  
 M/N: TX-T5N74\*/DC5N74\*  
 EUT TO PC  
 (PEAK VALUE) ITEM: C.  
 PAGE: 011.

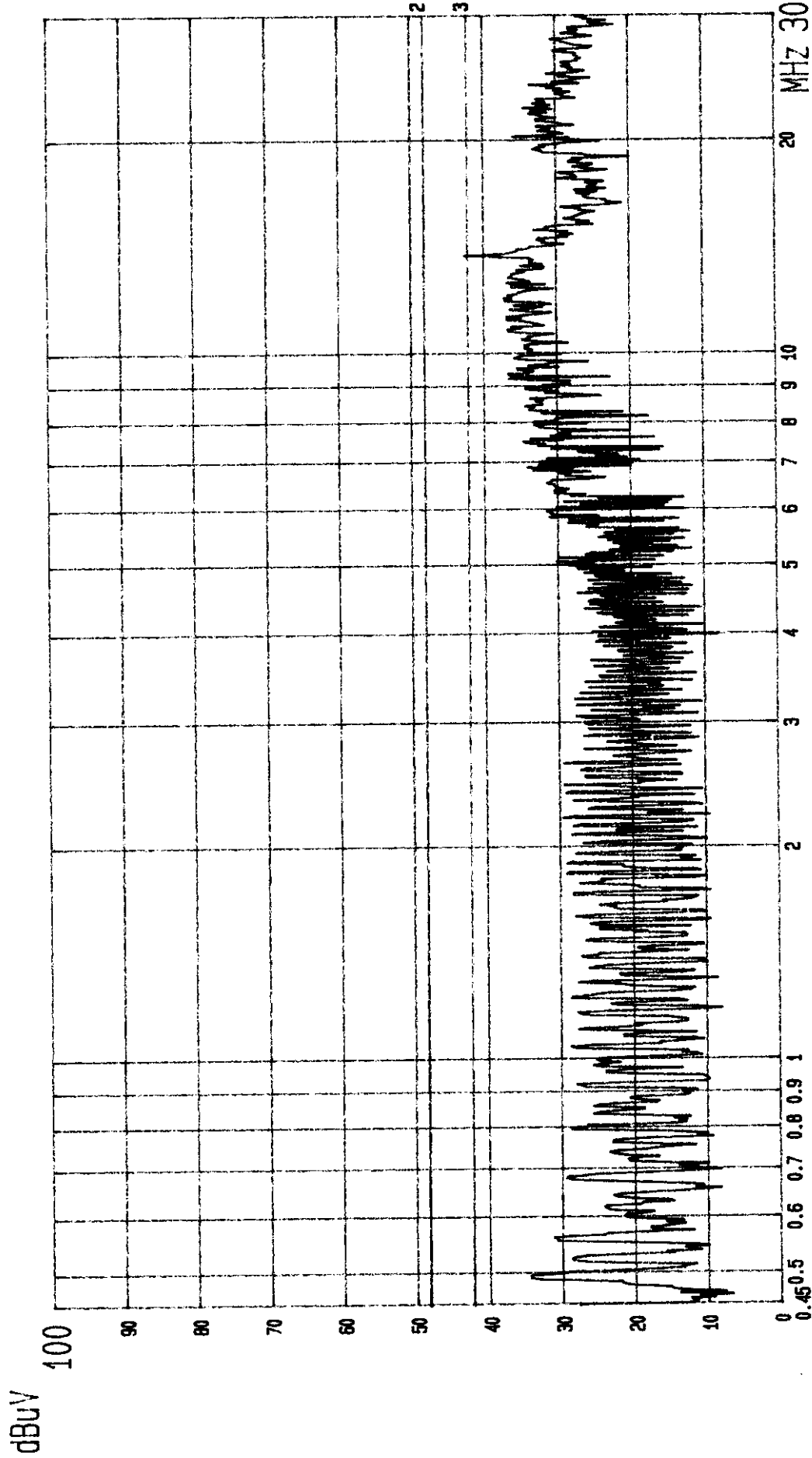


--- Date 24.NOV '98 Time 22:59:31  
 MATSUSHITA EUT: MONITOR  
 LINE: VB. MENO: (1024X768; 58KHz)

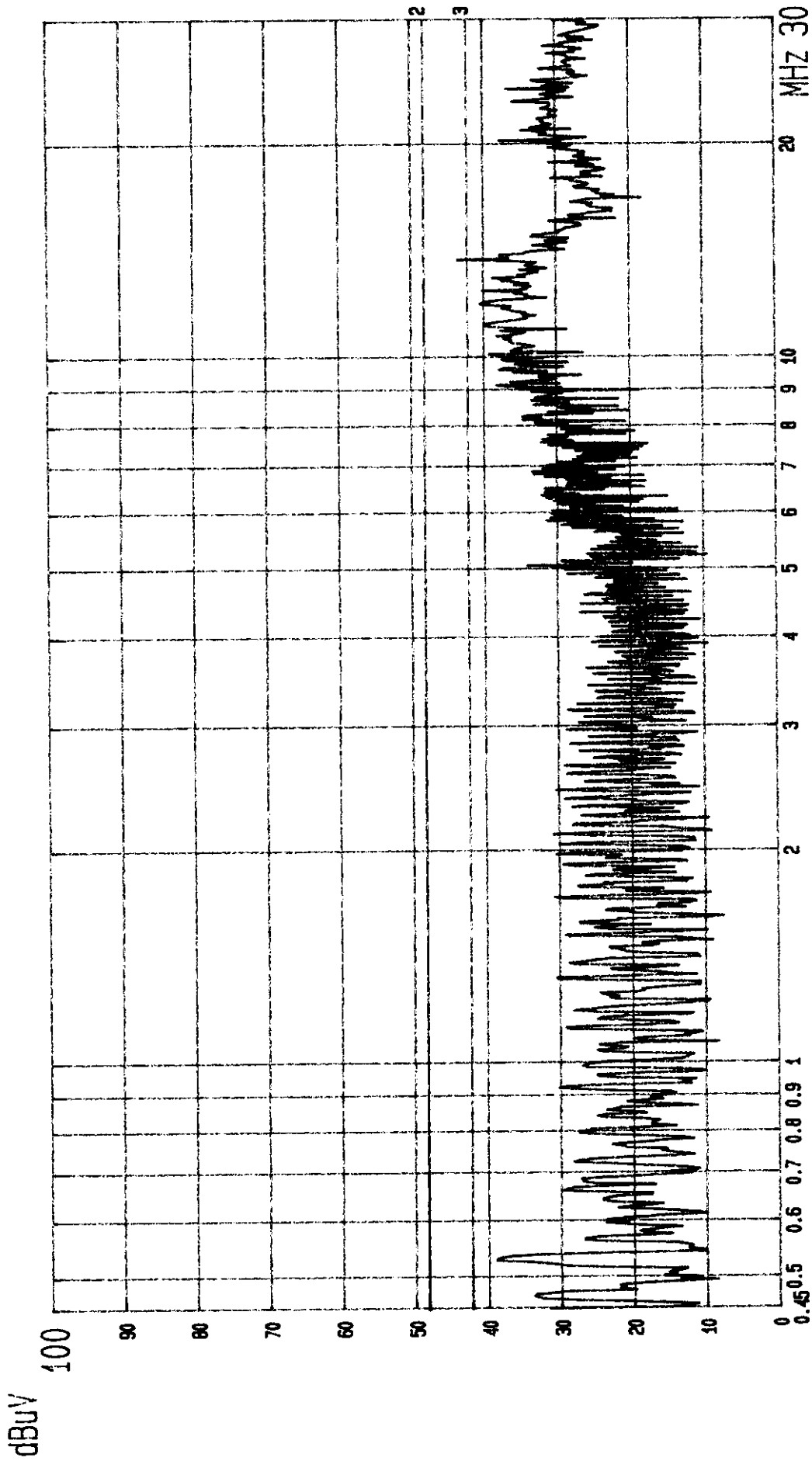
M/N: TX-T5N74\*/DC5N74\*  
 EUT TO PC  
 (PEAK VALUE) TTEMC. PAGE: 012.



--- Date 24.NOV.'98 Time 23:11:02  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\*  
 LINE: VA. MENC: (1280X960; 61.6KHZ) EUT TO PC (PEAK VALUE) ITEM: C. PAGE: 014.



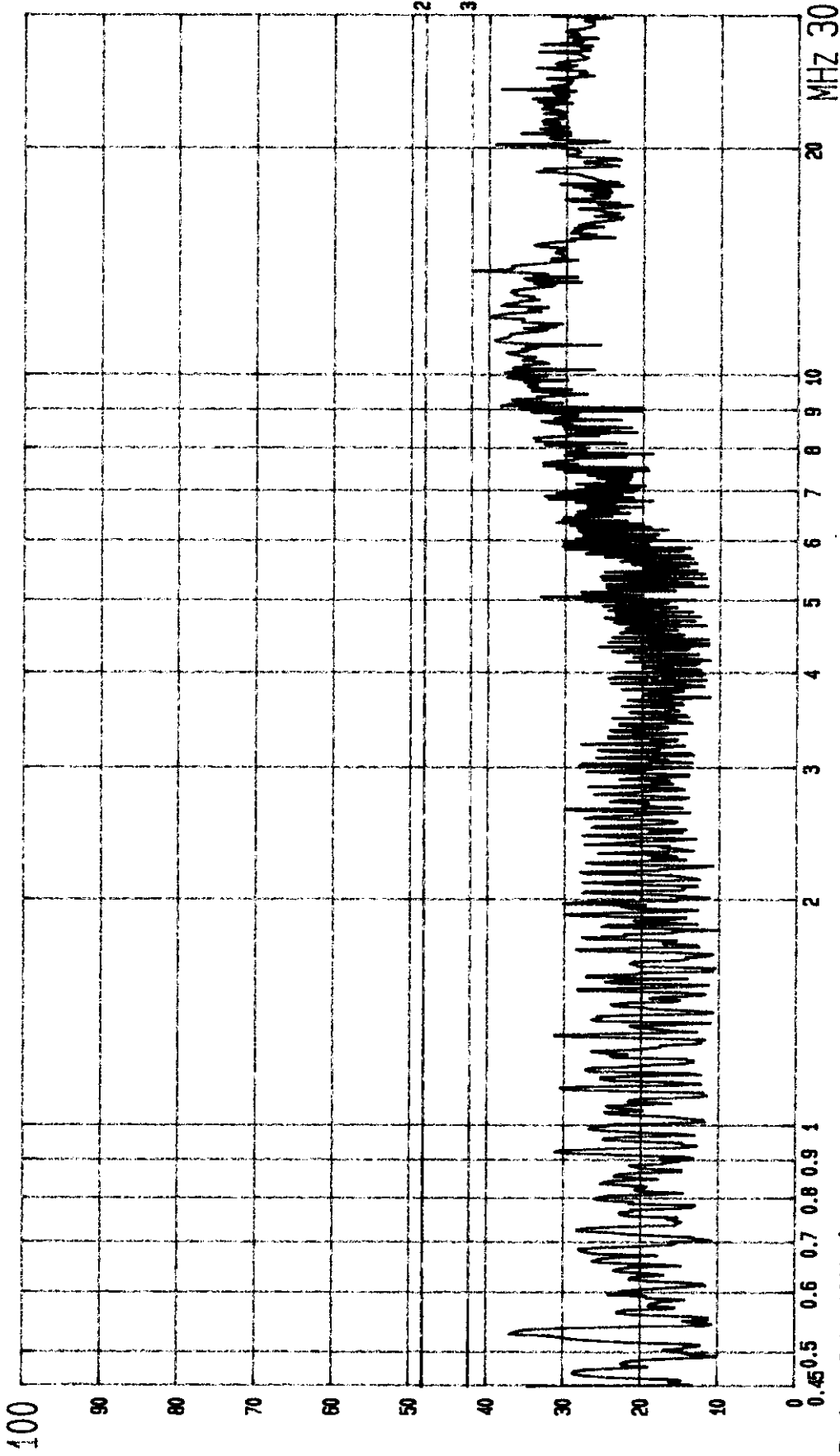
Date 24.NOV '98 Time 23:05:28  
 MATSUSHITA EUT: MONITOR M/N: TX-T5N74\*/DC5N74\*  
 LINE: VB. MENO: (1280X960; 61.6KHz) EUT TO PC (PEAK VALUE) TTEMC. PAGE: 013.



Date 24.NOV.'98 Time 23:16:03  
 MATSUSHITA EUT: MONITOR  
 LINE: VA. MENO: (1280X1024; 66KHZ)

M/N: TX-T5N74\*/DC5N74\*  
 EUT TO PC  
 PAGE: 015.  
 (PEAK VALUE) TTEMC.

dBuV



--- Date 24.NOV.'98 Time 23:21:25

MATSUSHITA EUT: MONITOR

LINE: VB. MENO: (1280X1024; 66KHZ)

M/N: TX-T5N74\*/DC5N74\*

EUT TO PC

PAGE: 016.

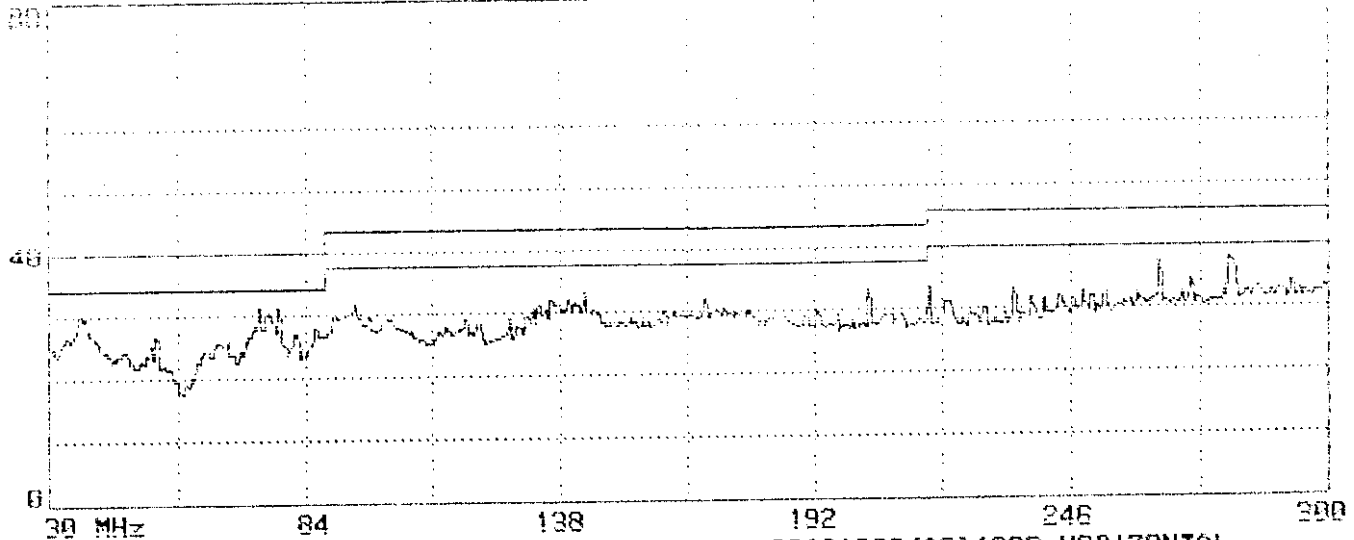
(PEAK VALUE) ITEM C.

666171100

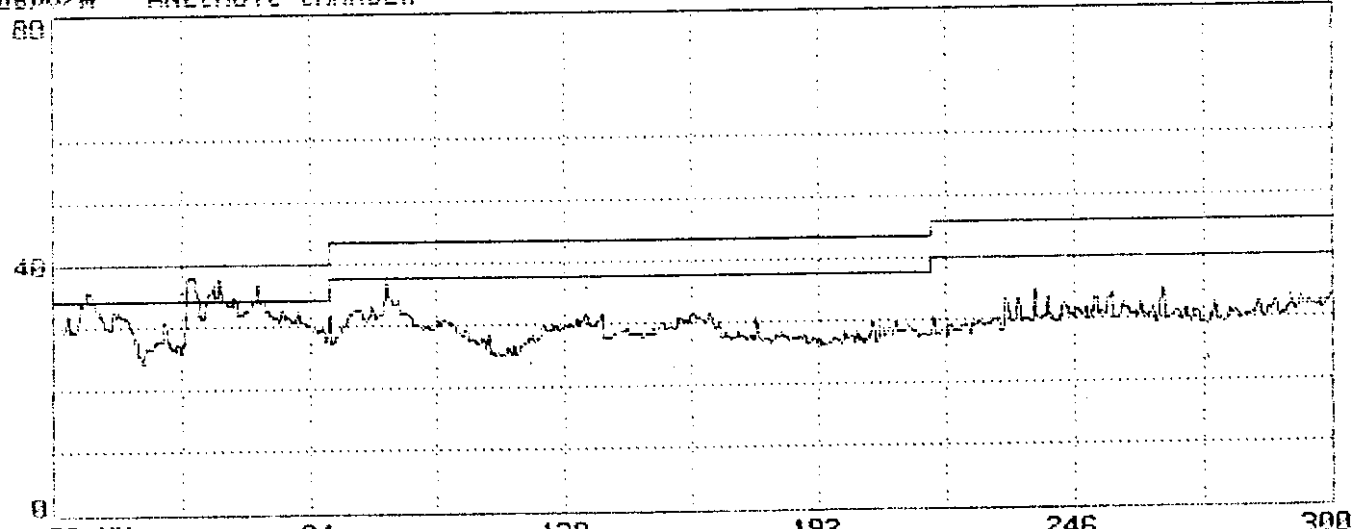
# APPENDIX II

## Radiated Test Data at Anechoic Chamber

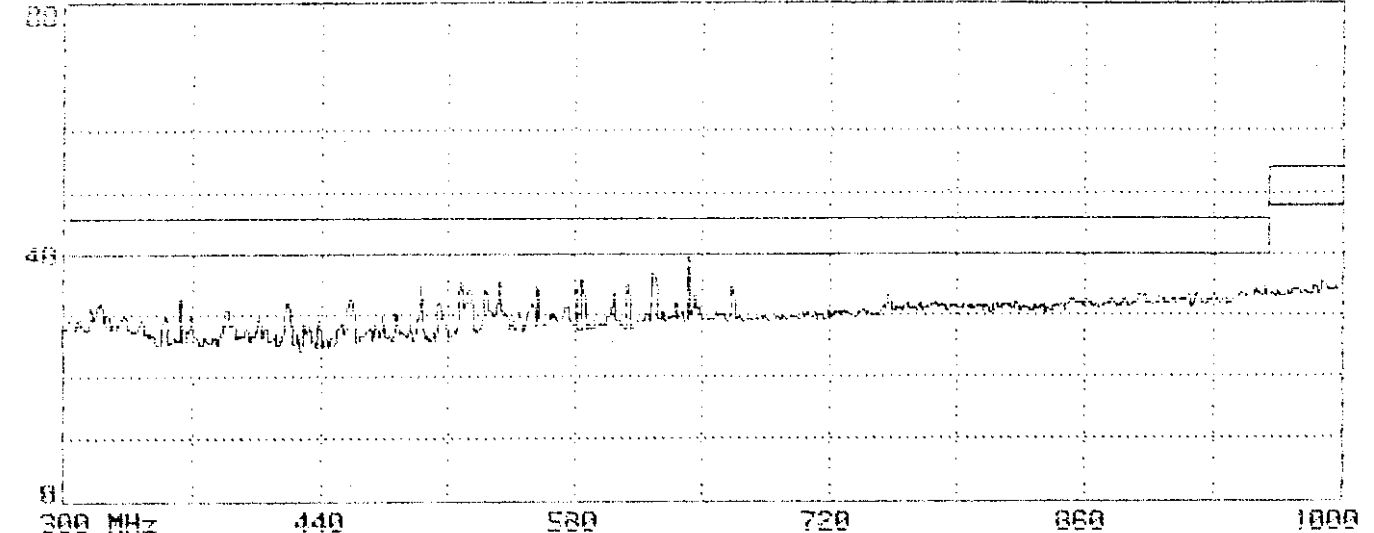
(Total Pages : 16)



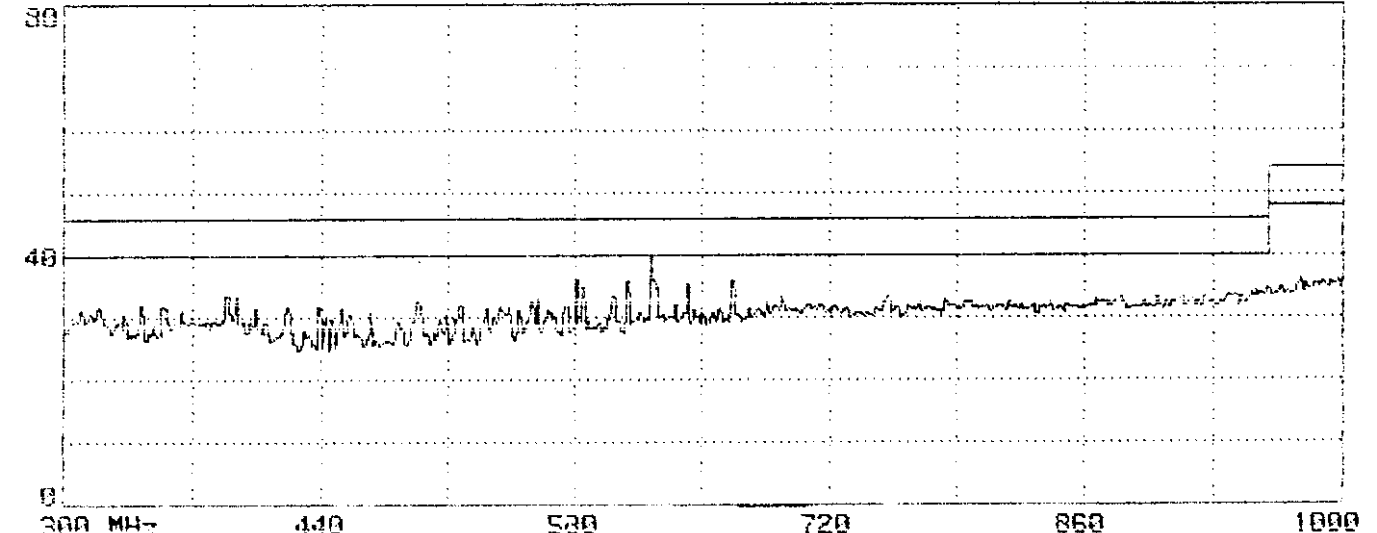
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 31.5KHz(640x480)  
 Probe: BB091068(A3)1223 HORIZONTAL  
 Power: 120Vac/60Hz  
 Trace: 284, 0, 0, 0, 0



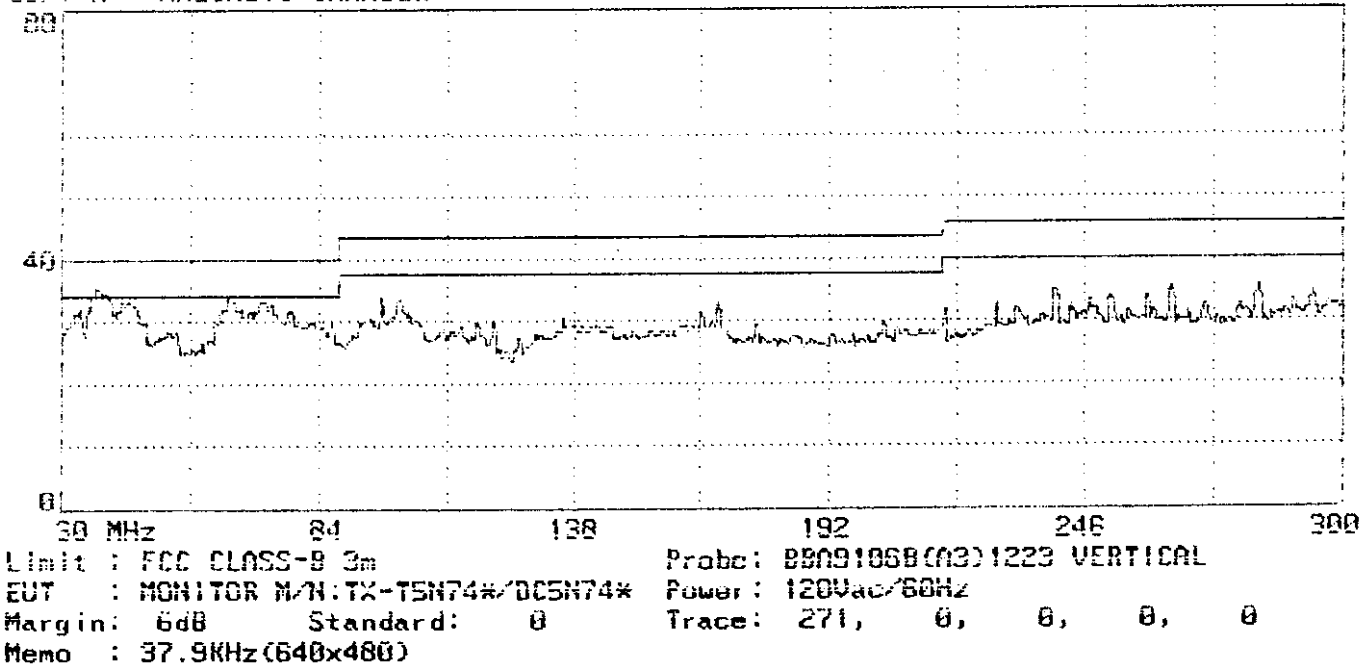
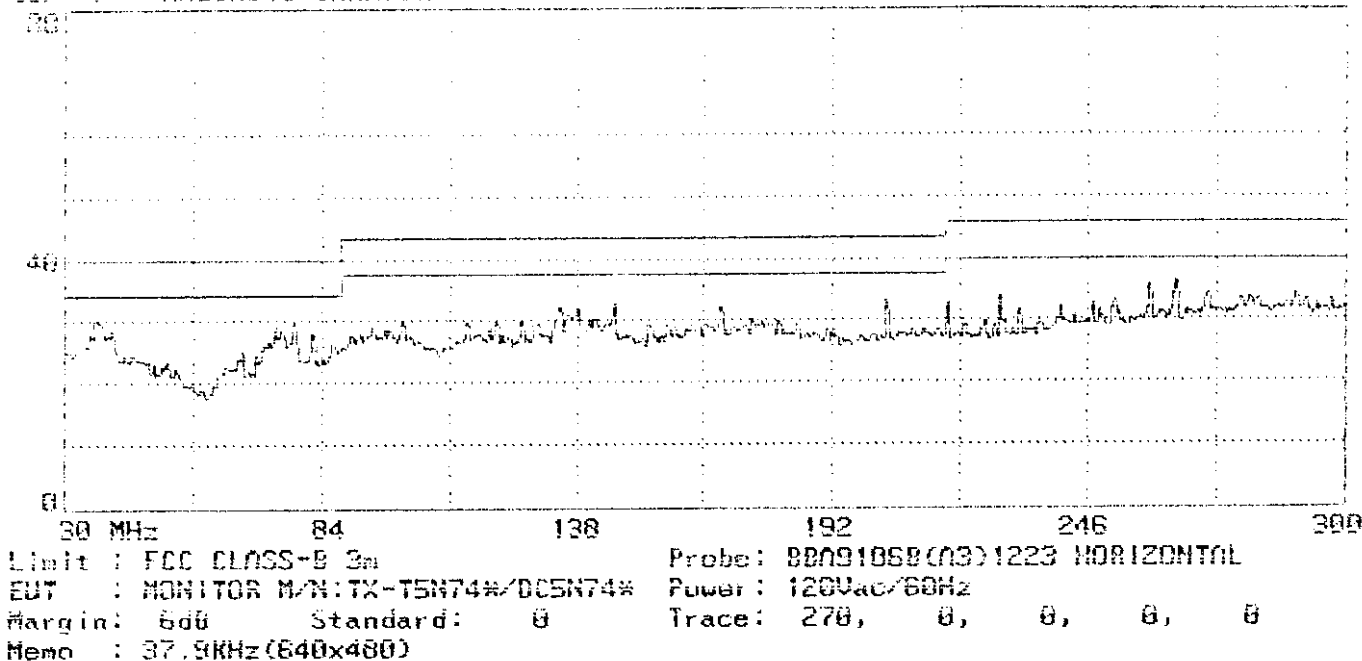
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 31.5KHz(640x480)  
 Probe: BB091068(A3)1223 VERTICAL  
 Power: 120Vac/60Hz  
 Trace: 285, 0, 0, 0, 0

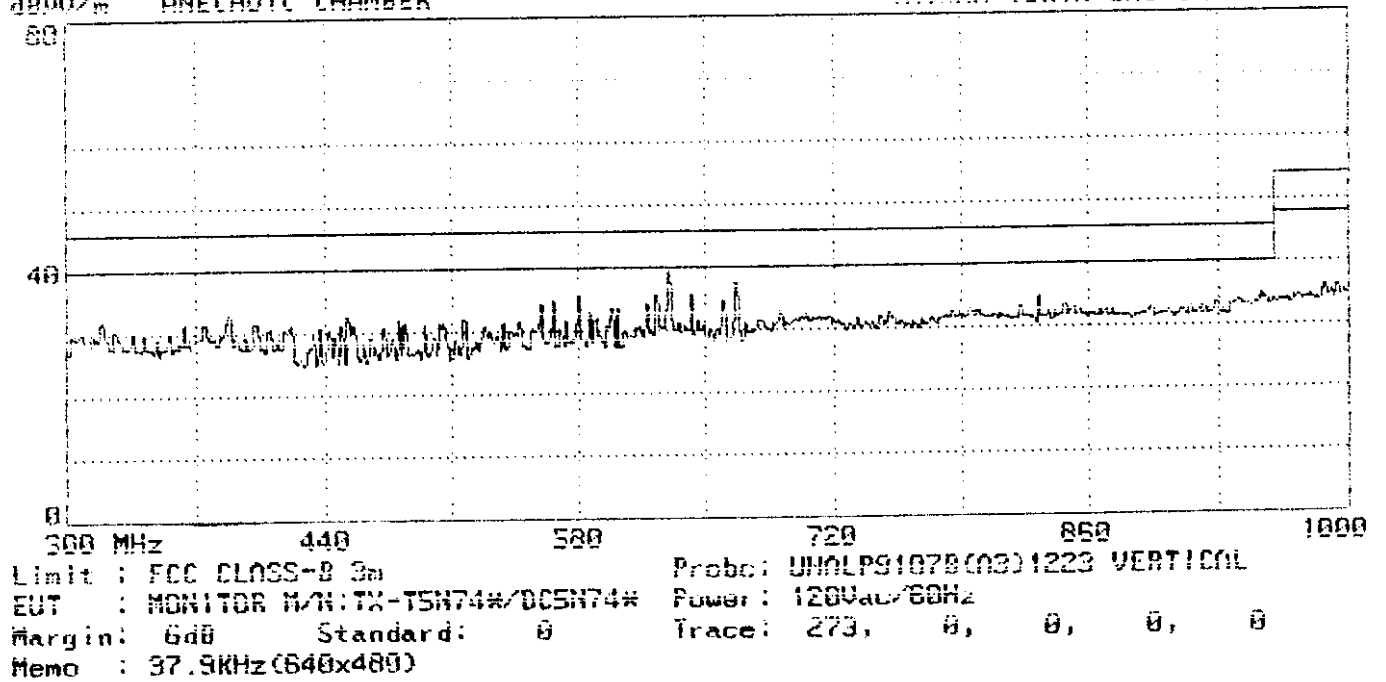
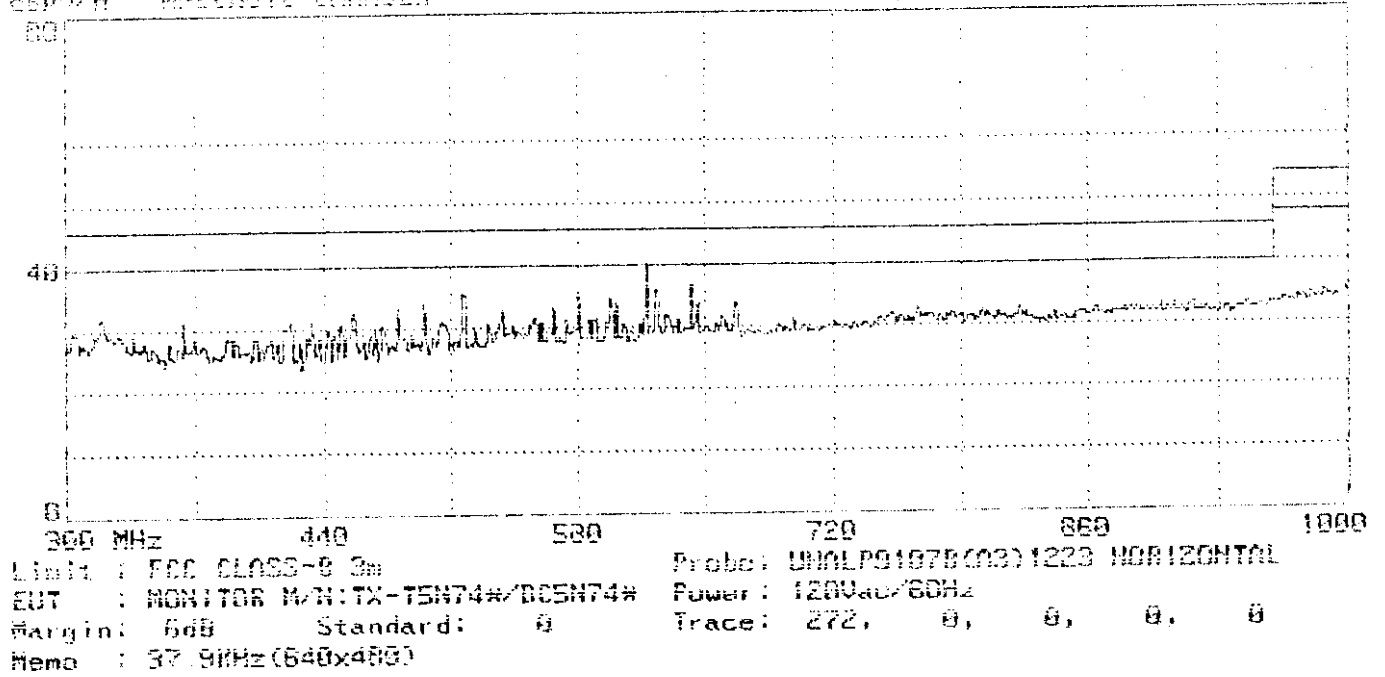


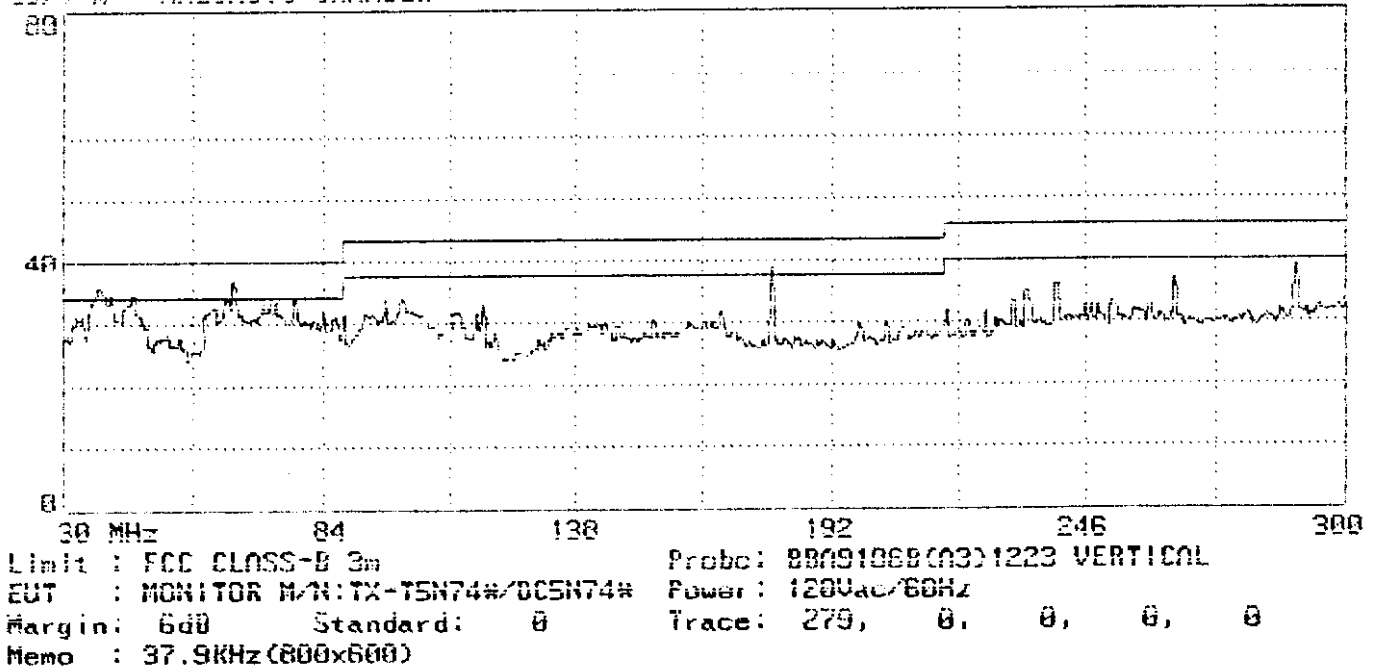
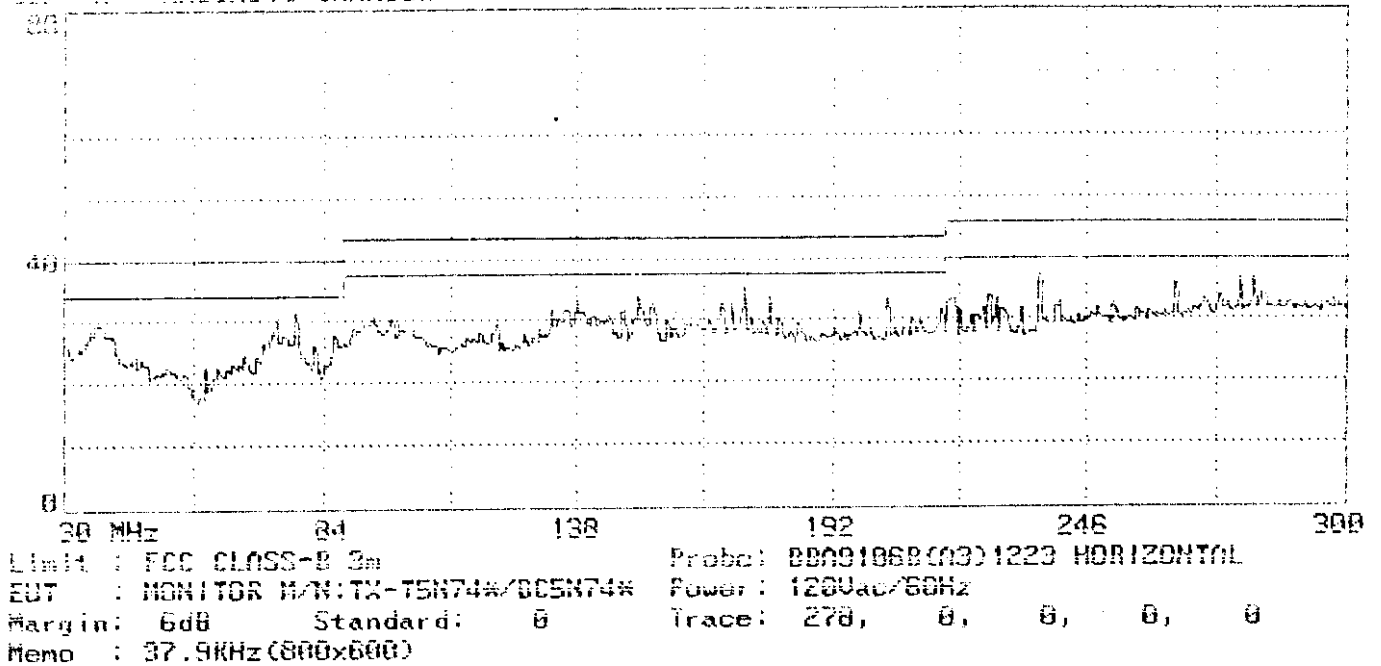
Limit : FCC CLASS-B 3m Probe: UNALP9107B(03)1223 HORIZONTAL  
EUT : MONITOR M/N:TX-T5N74#/D05N74# Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 282, 0, 0, 0, 0  
Memo : 31.5KHz(640x480)

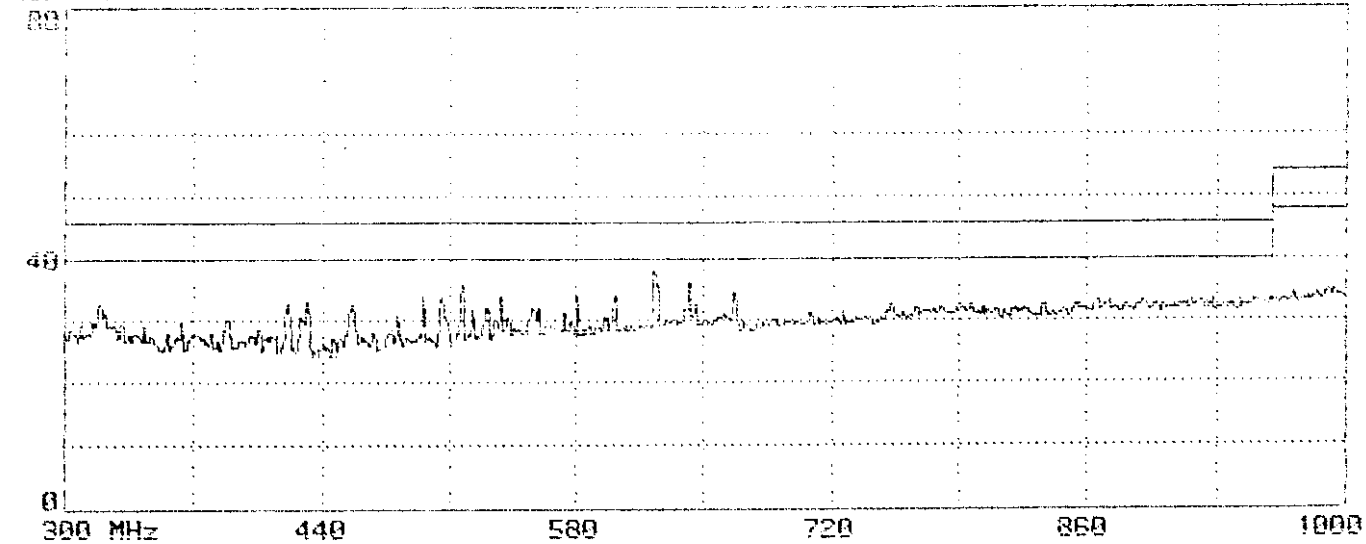


Limit : FCC CLASS-B 3m Probe: UNALP9107B(03)1223 VERTICAL  
EUT : MONITOR M/N:TX-T5N74#/D05N74# Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 283, 0, 0, 0, 0  
Memo : 31.5KHz(640x480)

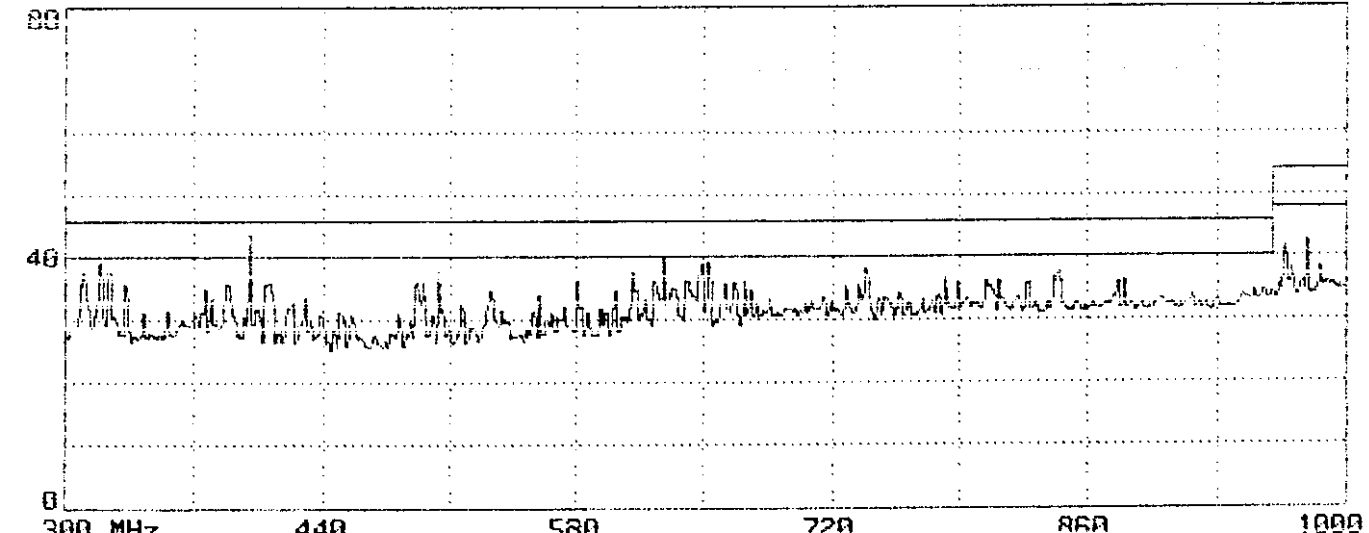




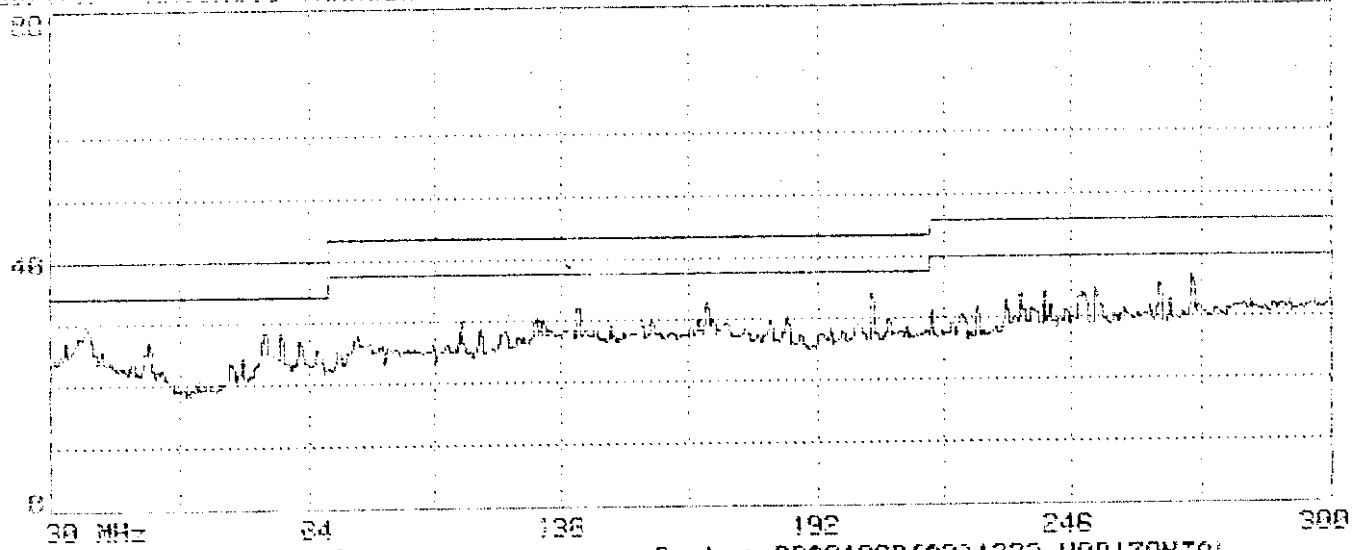




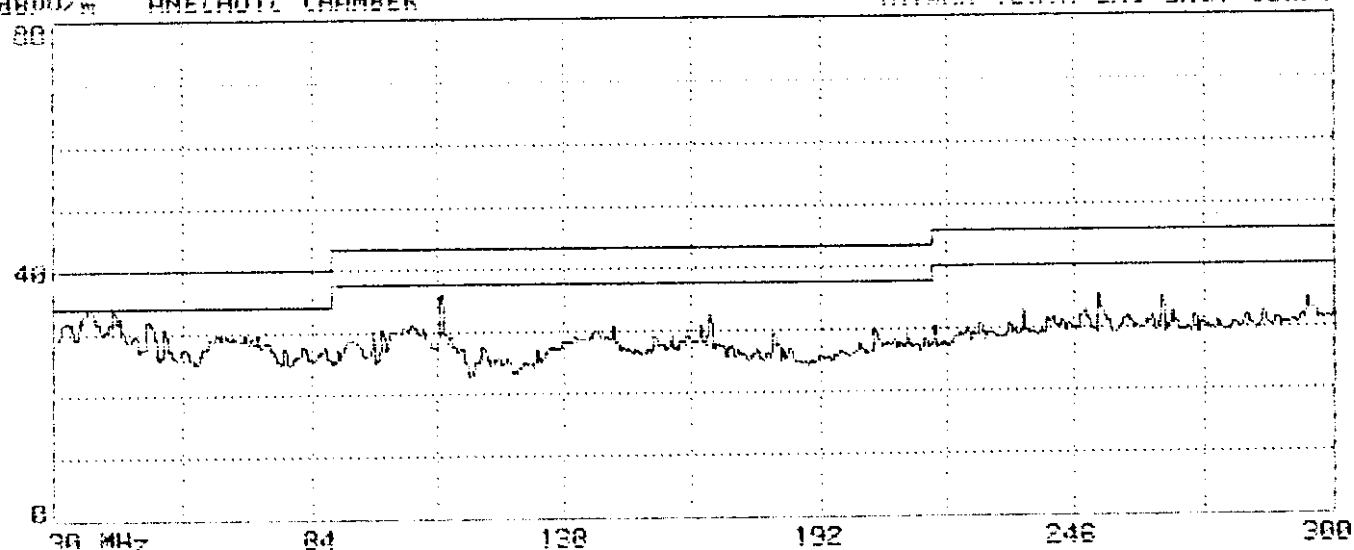
Limit : FCC CLASS-B 3m Probe: UMALP9107B(A3)1223 HORIZONTAL  
EUT : MONITOR M/N:TX-T5N74\*/DC5N74\* Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 200, 0, 0, 0, 0  
Memo : 37.9KHz(800x600)



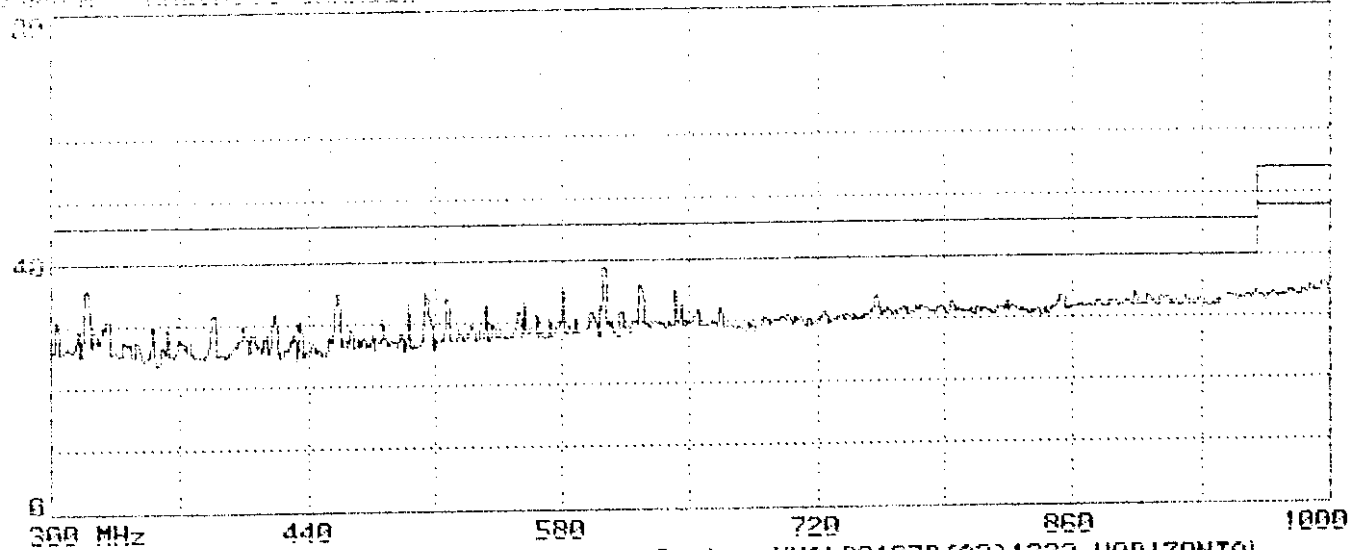
Limit : FCC CLASS-B 3m Probe: UMALP9107B(A3)1223 VERTICAL  
EUT : MONITOR M/N:TX-T5N74\*/DC5N74\* Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 201, 0, 0, 0, 0  
Memo : 37.9KHz(800x600)



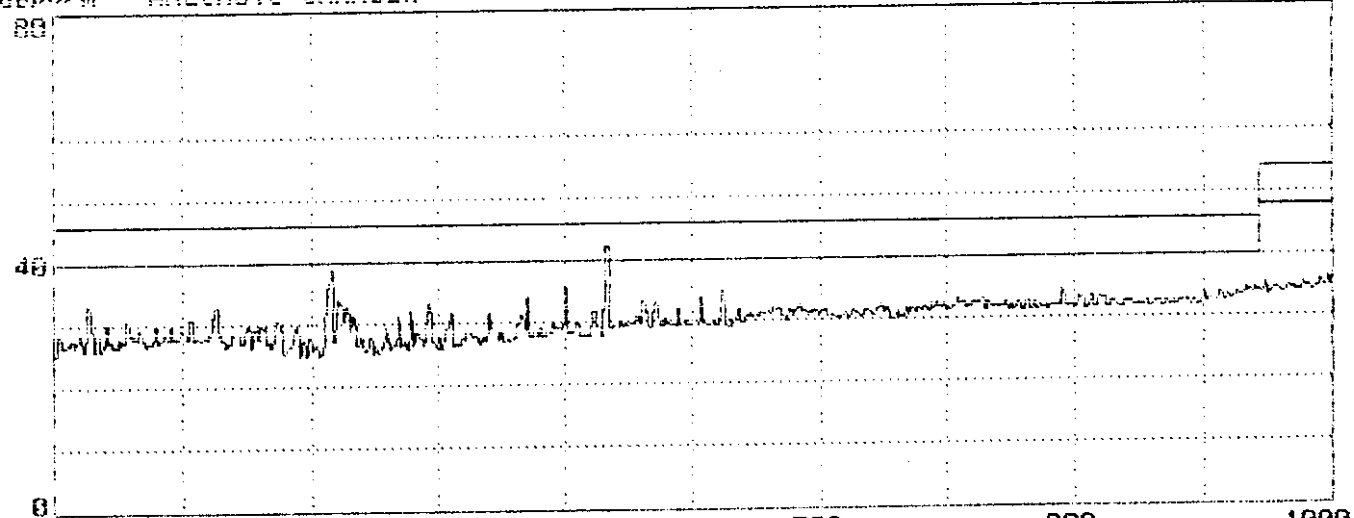
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 48.1kHz(800x600)  
 Probe: BB09106B(03)1223 HORIZONTAL  
 Power: 120Vac/60Hz  
 Trace: 268, 0, 0, 0, 0



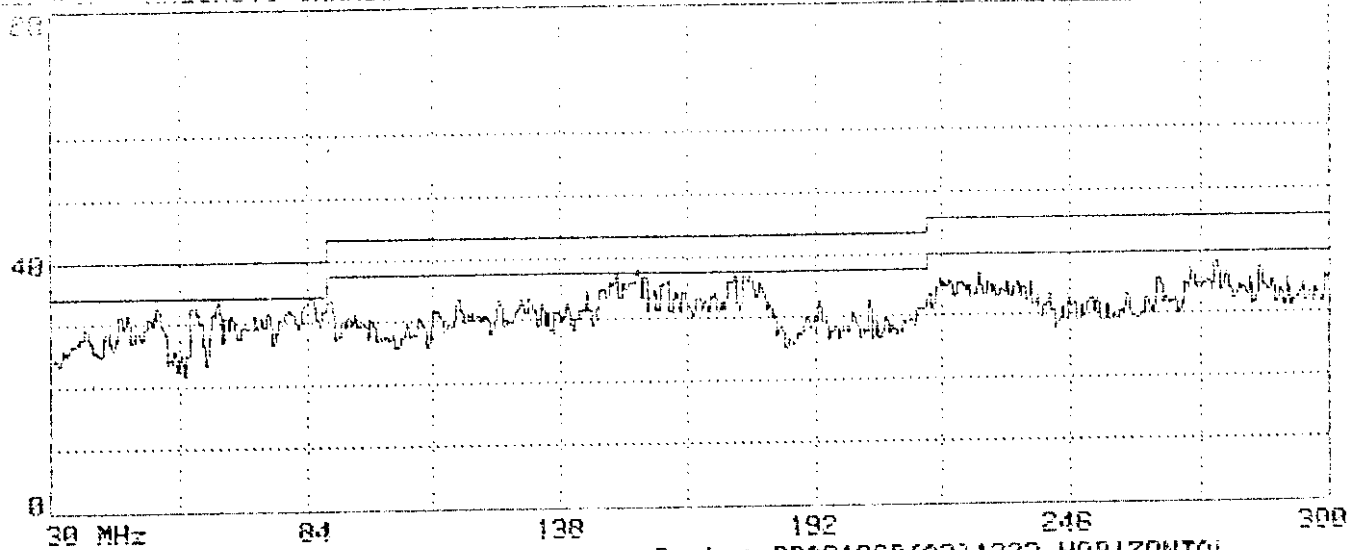
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 48.1kHz(800x600)  
 Probe: BB09106B(03)1223 VERTICAL  
 Power: 120Vac/60Hz  
 Trace: 269, 0, 0, 0, 0



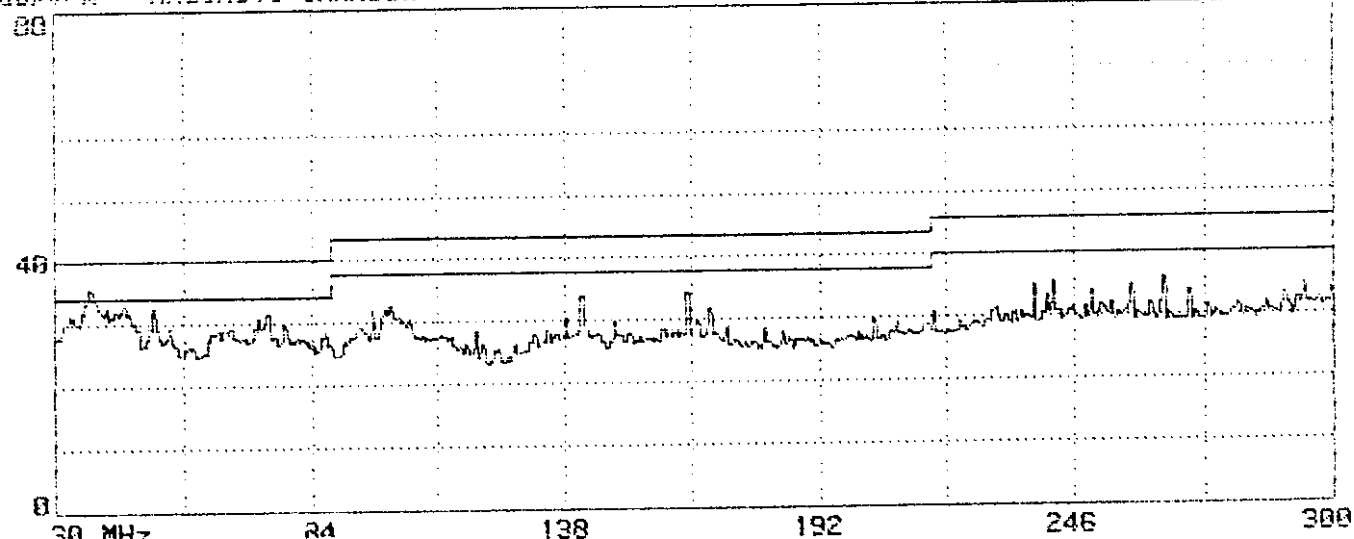
Limit : FCC CLASS-B 3m Probe: UMALP9107B(A3)1223 HORIZONTAL  
EUT : MONITOR M/N:TX-T5N74#/DC5N74# Power: 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 266, 0, 0, 0, 0  
Memo : 40.1KHz(800x600)



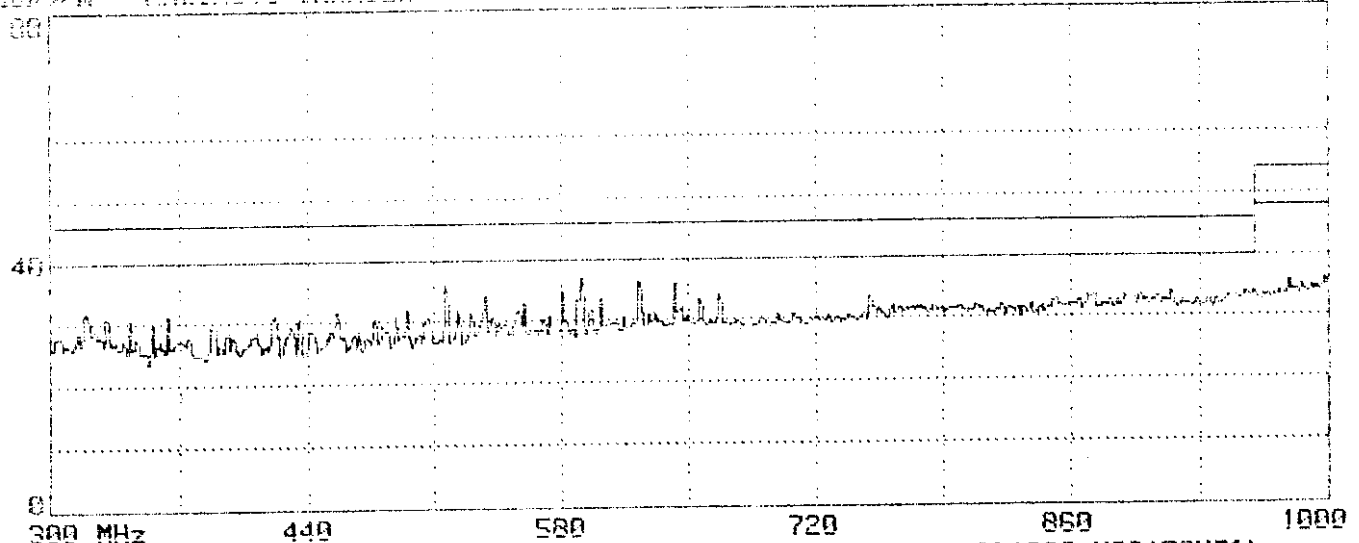
Limit : FCC CLASS-B 3m Probe: UMALP9107B(A3)1223 VERTICAL  
EUT : MONITOR M/N:TX-T5N74#/DC5N74# Power: 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 267, 0, 0, 0, 0  
Memo : 40.1KHz(800x600)



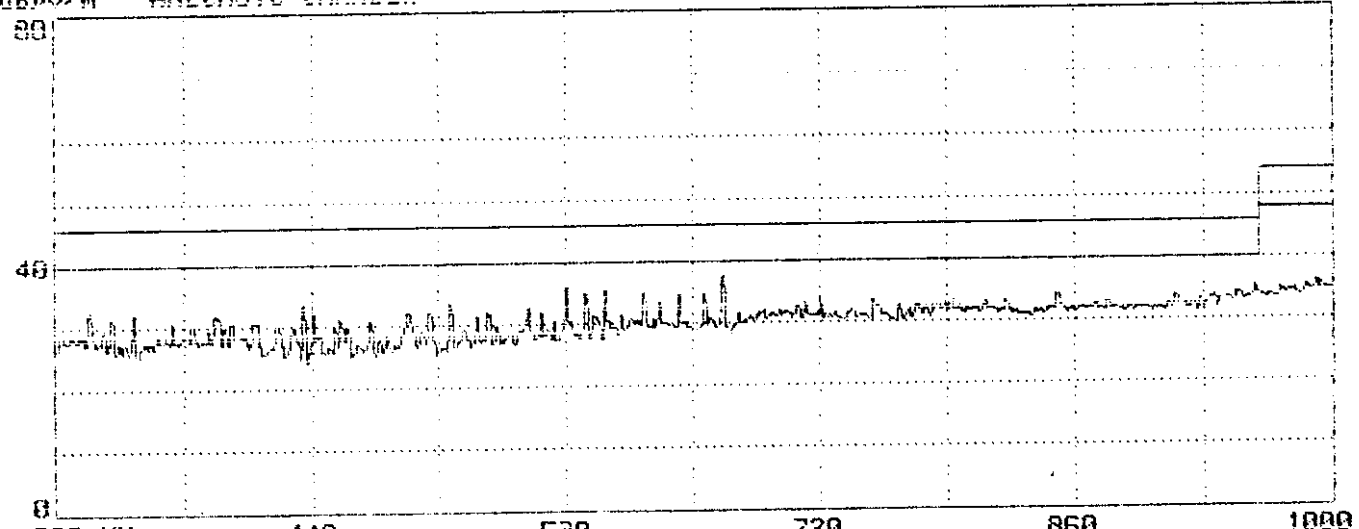
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 48.4KHz(1024x758)  
 Probe: BB09105B(A3)1223 HORIZONTAL  
 Power: 120Vac/60Hz  
 Trace: 276, 0, 0, 0, 0



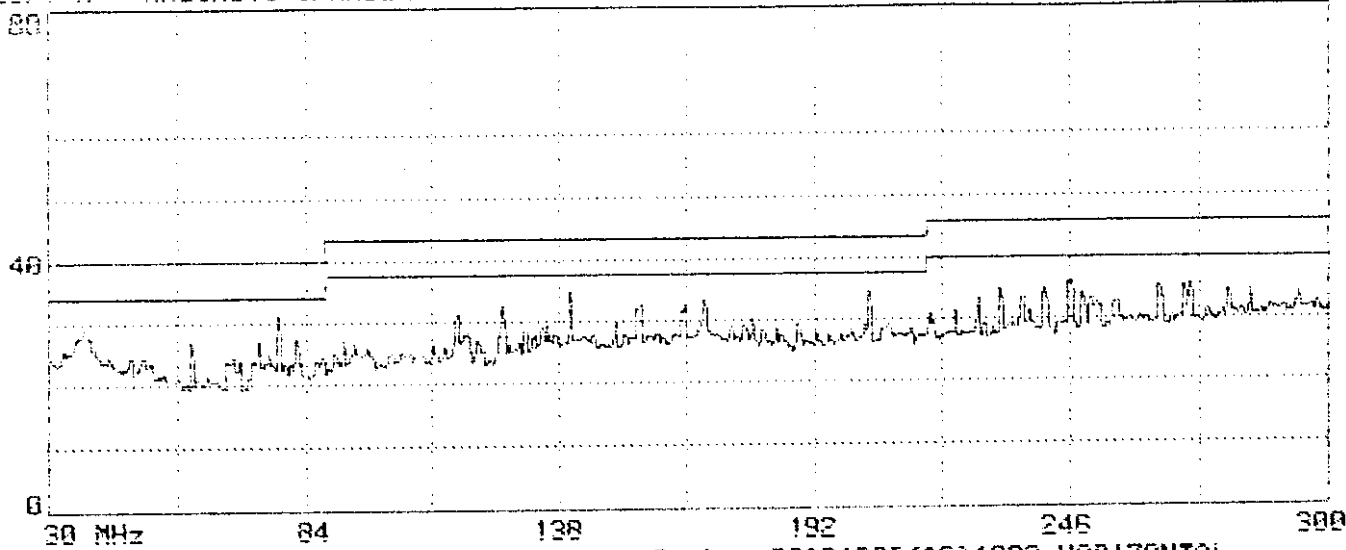
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 48.4KHz(1024x768)  
 Probe: BB09105B(A3)1223 VERTICAL  
 Power: 120Vac/60Hz  
 Trace: 277, 0, 0, 0, 0



300 MHz 440 580 720 860 1000  
 Limit : FCC CLASS-B 3m Probe: UHALP9107B(03)1223 HORIZONTAL  
 EUT : MONITOR M/N:TX-T5H74\*/DC5H74\* Power: 120Vac/60Hz  
 Margin: 6dB Standard: 0 Trace: 274, 0, 0, 0, 0  
 Memo : 48.4KHz(1024x768)

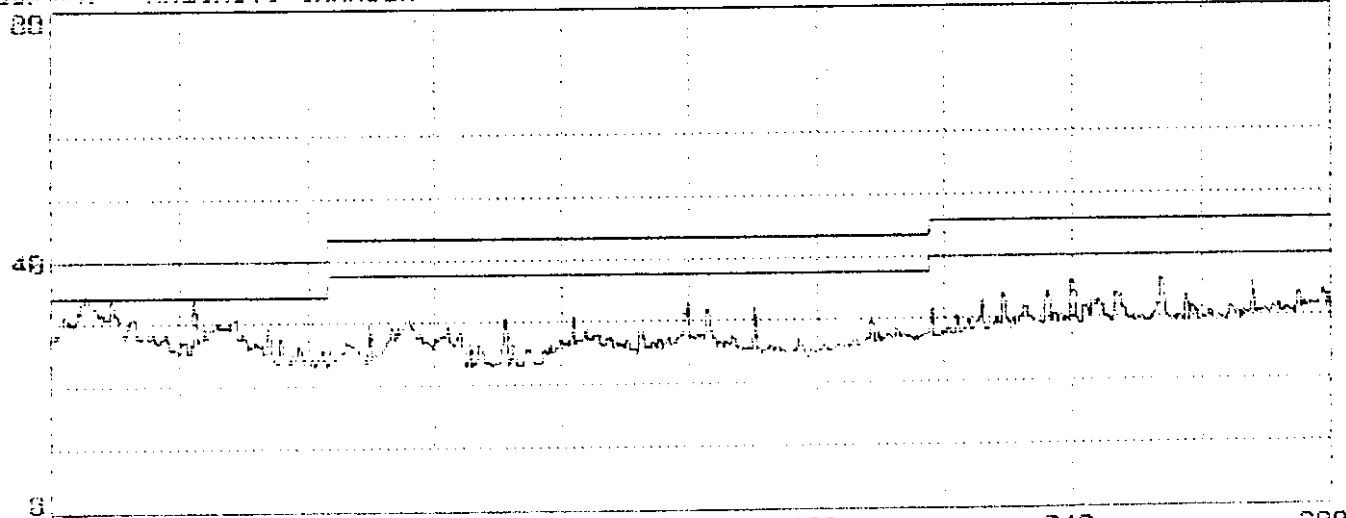


300 MHz 440 580 720 860 1000  
 Limit : FCC CLASS-B 3m Probe: UHALP9107B(03)1223 VERTICAL  
 EUT : MONITOR M/N:TX-T5H74\*/DC5H74\* Power: 120Vac/60Hz  
 Margin: 6dB Standard: 0 Trace: 275, 0, 0, 0, 0  
 Memo : 48.4KHz(1024x768)



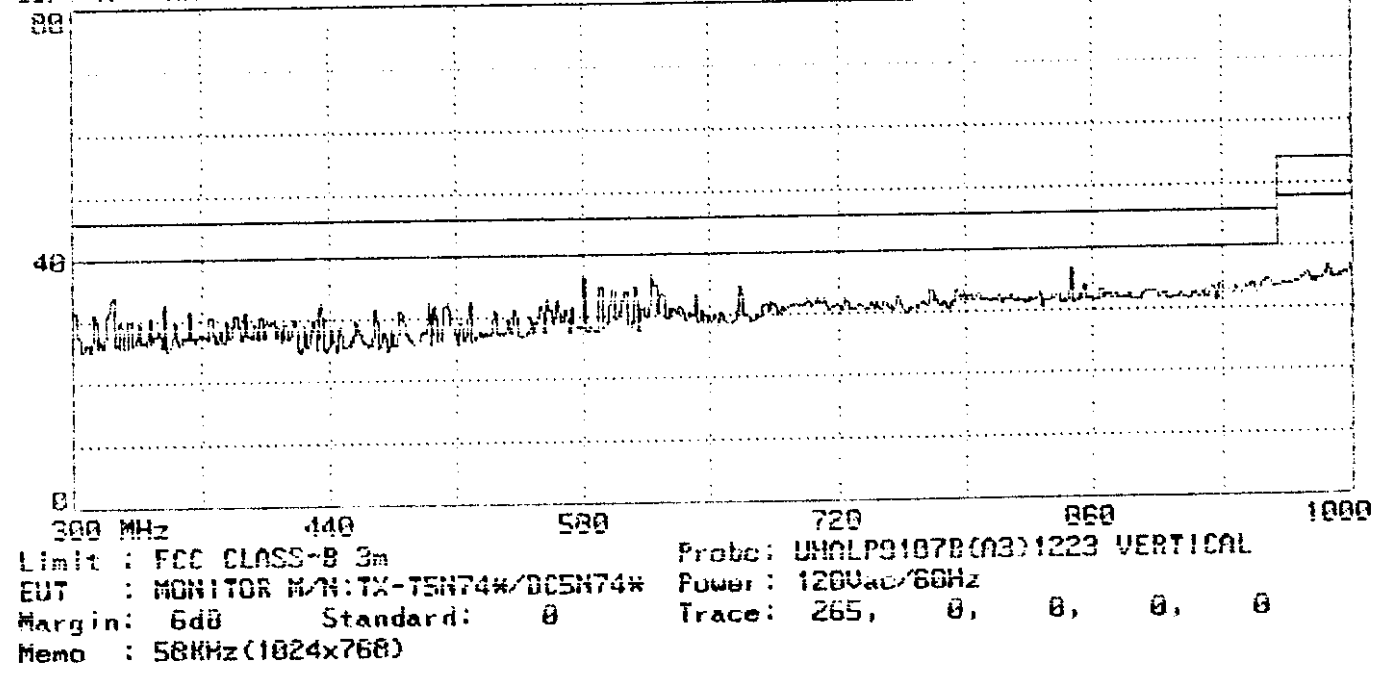
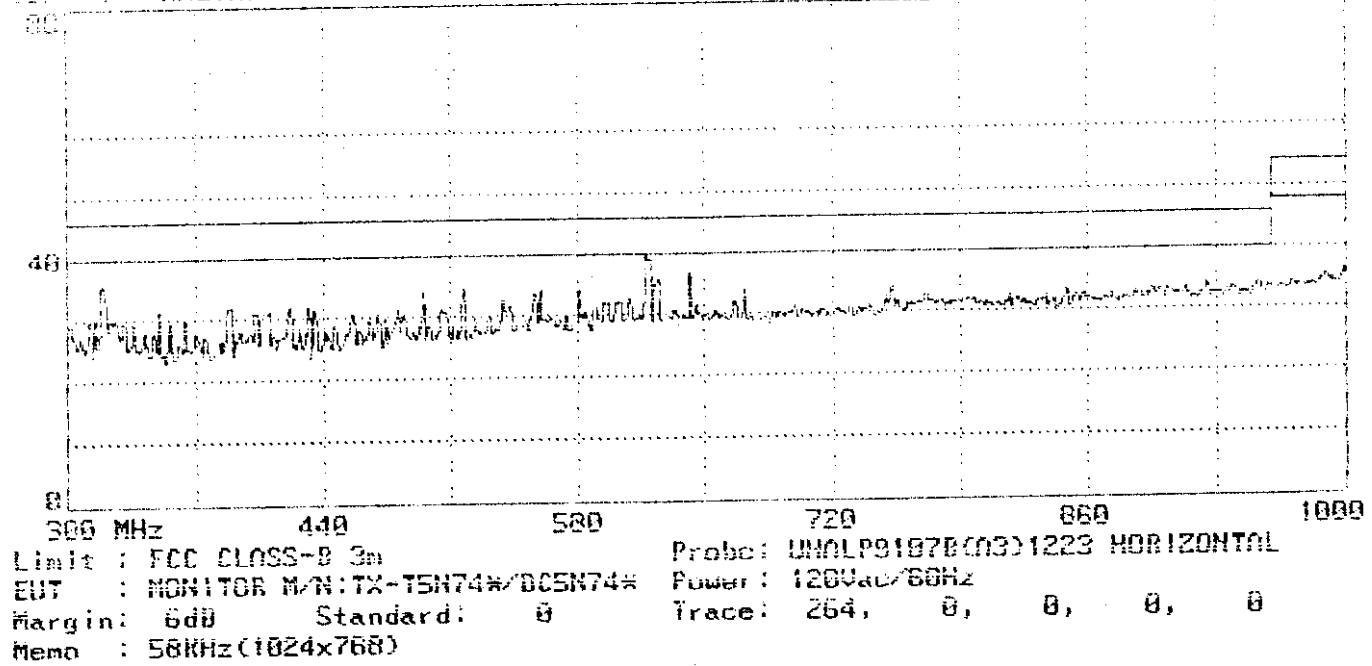
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 50kHz(1024x768)

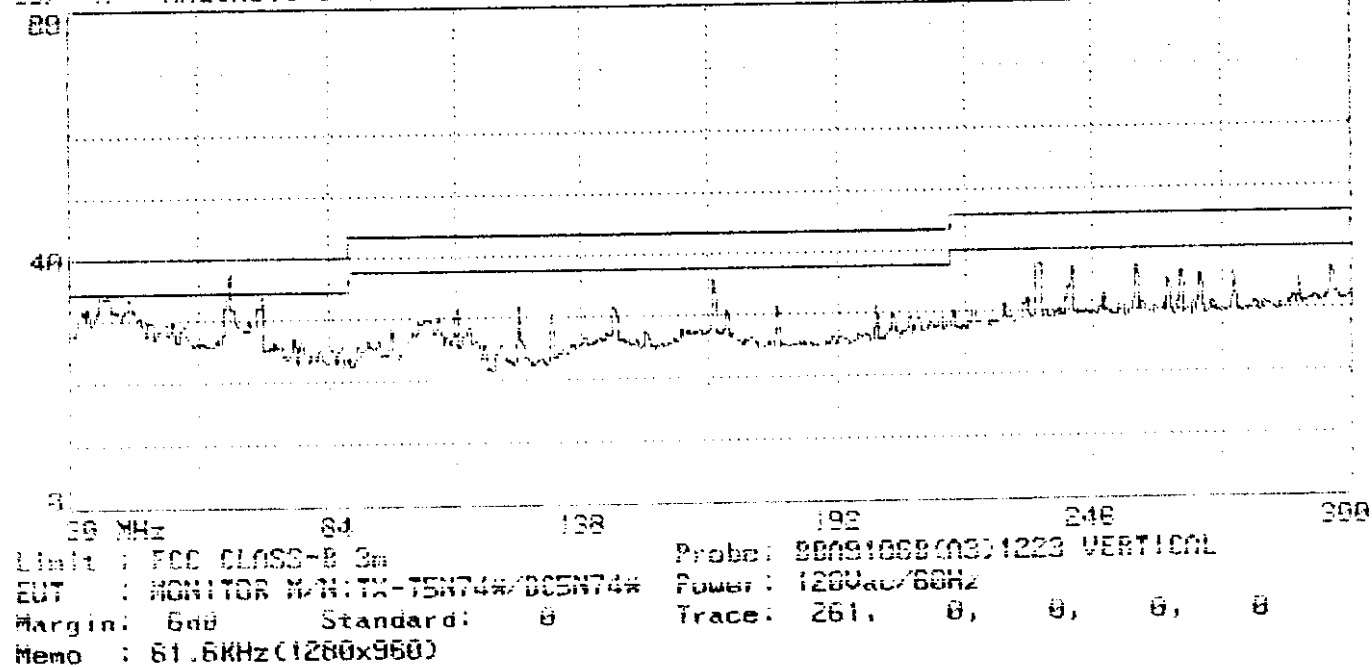
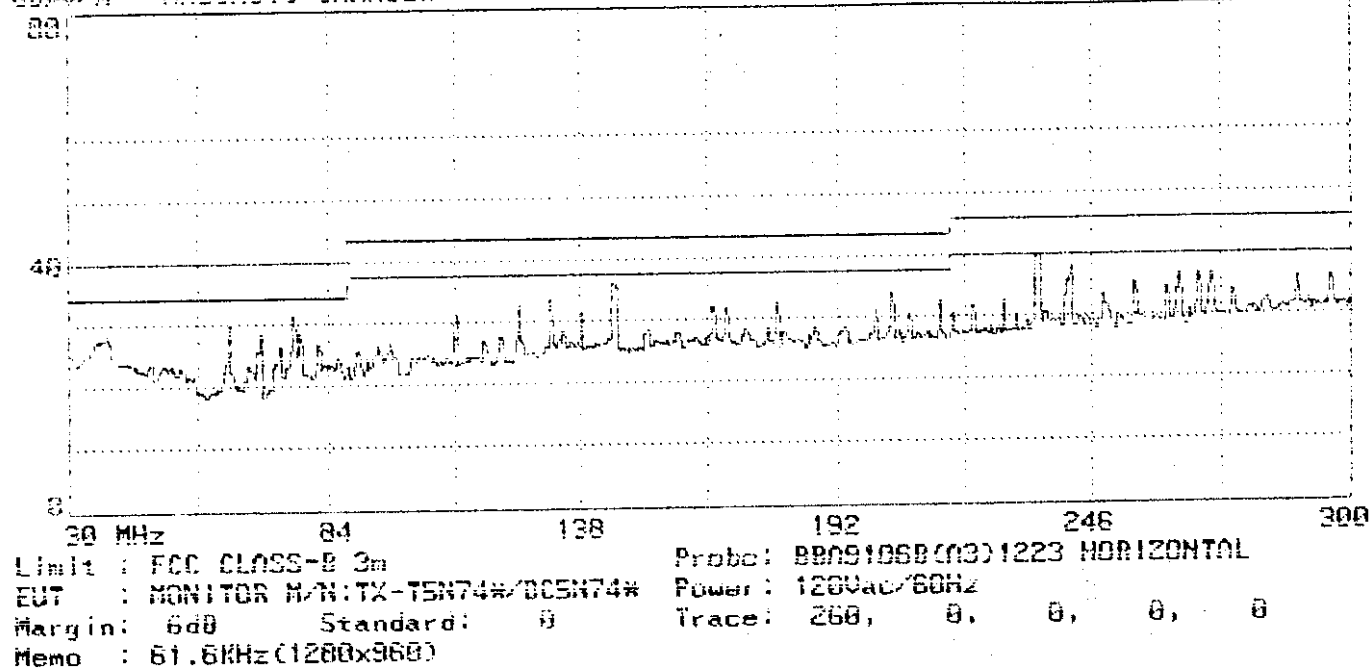
Probe: BB09106B(03)1223 HORIZONTAL  
 Power: 120Vac/60Hz  
 Trace: 262, 0, 0, 0, 0



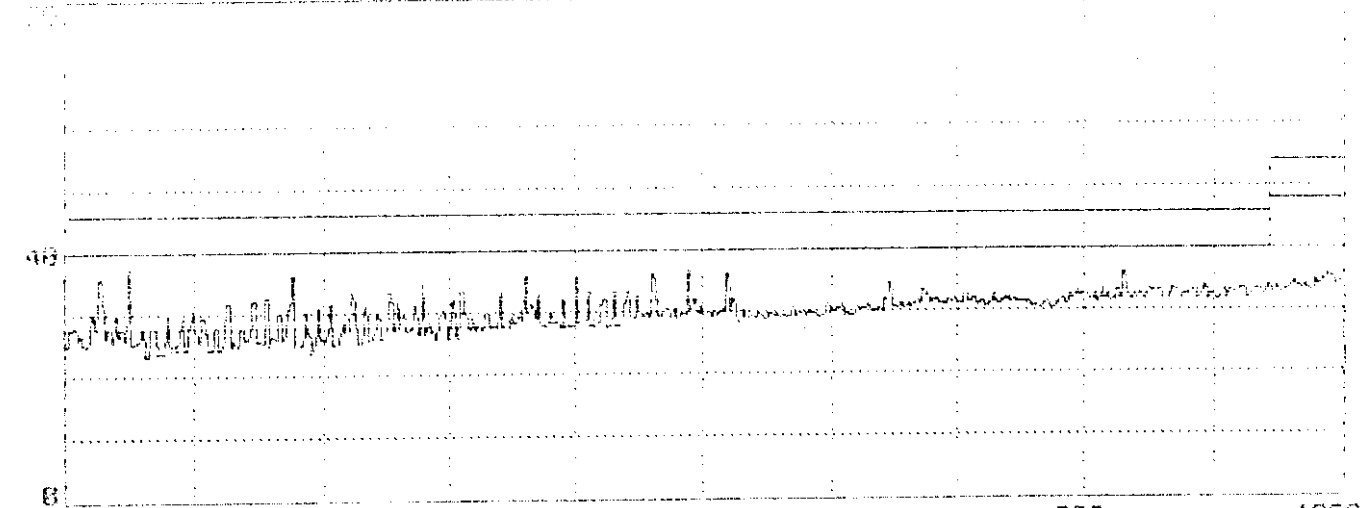
Limit : FCC CLASS-B 3m  
 EUT : MONITOR M/N:TX-T5N74#/DC5N74#  
 Margin: 6dB Standard: 0  
 Memo : 50kHz(1024x768)

Probe: BB09106B(03)1223 VERTICAL  
 Power: 120Vac/60Hz  
 Trace: 263, 0, 0, 0, 0



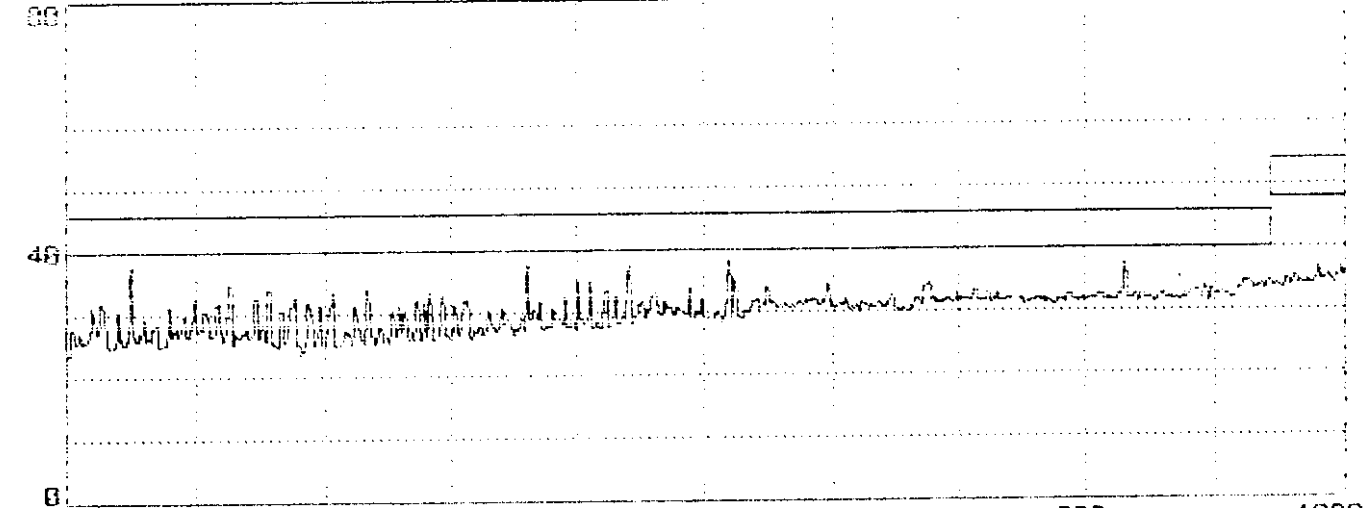


Page#: 258 SP File#: MATSUSHI.E1 Date: 11-21-1998 Time: 13:39:03  
dBm/Hz ANECHOIC CHAMBER TAIWAN TOKIN EMC ENG. CORP.



300 MHz 440 580 720 860 1000  
Limit : FCC CLASS-B 3m Probe: UNALP9107B(03)1223 HORIZONTAL  
EUT : MONITOR M/N:TX-T5H74#/DC5H74# Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 258, 0, 0, 0, 0  
Memo : 61.5KHz(1280x950)

Page#: 259 SP File#: MATSUSHI.E1 Date: 11-21-1998 Time: 13:48:49  
dBm/Hz ANECHOIC CHAMBER TAIWAN TOKIN EMC ENG. CORP.



300 MHz 440 580 720 860 1000  
Limit : FCC CLASS-B 3m Probe: UNALP9107B(03)1223 VERTICAL  
EUT : MONITOR M/N:TX-T5H74#/DC5H74# Power : 120Vac/60Hz  
Margin: 6dB Standard: 0 Trace: 259, 0, 0, 0, 0  
Memo : 61.5KHz(1280x950)

