

# FCC PART 15 EMI TEST REPORT of

E.U.T. : notebook computer  
MODEL : 270  
TYPE NO. : 270  
FCC ID. : NYY270

for

**APPLICANT : MOVITA TECHNOLOGIES INC.**

ADDRESS : No. 26, Wu-Chuan 7th Rd., Wu-Ku Industrial Park,  
Taipei County, Taiwan, R.O.C.

Test Performed by

**ELECTRONICS TESTING CENTER, TAIWAN**  
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Report Number : ET91R-03-107-01

# TEST REPORT VERIFICATION

Applicant : MOVITA TECHNOLOGIES INC.  
No. 26, Wu-Chuan 7th Rd., Wu-Ku Industrial Park, Taipei County,  
Taiwan, R.O.C.

Manufacturer : MOVITA TECHNOLOGIES INC.  
No. 26, Wu-Chuan 7th Rd., Wu-Ku Industrial Park, Taipei County,  
Taiwan, R.O.C.

Description of EUT :

- a) Type of EUT : notebook computer
- b) Trade Name : Movita ; MUSTEK
- c) Model No. : 270
- d) Type No. : 270
- e) Power Supply : Adaptor 1 : Model 1:F11203-B  
I/P:100~240VAC,50/60Hz;O/P:17.2VDC,6.5A  
Adaptor 2 : Model 2:EA11203  
I/P:100~240VAC 2.5A,50/60Hz;DC O/P:20VDC,6.5A

Regulation Applied : FCC Rules and Regulations Part 15 Subpart B (2001)

I HEREBY CERTIFY THAT: The data shown in this report were made in accordance with the procedures given in ANSI C63.4, and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

- Note: 1. The result of the testing report relate only to the item tested.  
2. The testing report shall not be reproduced expect in full, without the written approval of ETC.

Issued Date: Apr. 25, 2002

Test Engineer:   
( Ion Lin )

Approve & Authorized Signer:   
Will Yauo, Manager  
EMC Dept. II of ELECTRONICS  
TESTING CENTER, TAIWAN

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## 1 GENERAL INFORMATION

### 1.1 Product Description

- a) Type of EUT : notebook computer
- b) Trade Name : Movita ; MUSTEK
- c) Model No. : 270
- d) Type No. : 270
- e) Power Supply : Adaptor 1 : Model 1:F11203-B  
I/P:100~240VAC,50/60Hz;O/P:17.2VDC,6.5A  
Adaptor 2 : Model 2:EA11203  
I/P:100~240V,50/60Hz; O/P:20VDC,6.5A

### 1.2 Characteristics of Device

1. A standard PS/2 K/B/Mouse Jack.
2. LAN RJ-45 Jack, Mic Jack, Modem RJ-11 Jac.
3. Standard Internal HDD, CD ROM or DVD Drive.
4. One DIMM DDR Memory SIMM.
5. Two USB connector.
6. TV Out.
7. CPU speed 1.8GHz

### 1.3 Modification List

The list of emission source and suppression components

Location & Circuit No.	Emission Source	Suppression Component	Frequencies (or Rating)	Type / Model No & Manufacturer
Power supply Board		X Capacitor Y Capacitor	0.33uF 200 pF	Philips TDK
Mainboard				
R39 C31	(AGP)	(BEAD) Capacitor	ACB1608H-120 22pF	TDK Philips
C1,C2	(USB)	Capacitor	100Pf	Philips
CABLE	(LCD)	CORE	9x10x3 4x3x1x4	禾銳
L87,L88,L89 L90,L91 C301,C302,C303 C304,C305	(VGA PORT)	(BEAD)  Capacitor	ACB1608M-300 ACB2012M-300 6.8pF 220pF	TDK  Philips
L56,L57 L55	(INVERTER)	BEAD	ACB1608M-600 ACZ2012M-301	TDK
L68,L69,L70, L71,L73 L72,L94,L95 C323,C324,C325, C326	(PS/2)	BEAD  Capacitor	ACB2012M-600  ACB2012M-120 47pF	TDK  Philips
L62 POWER ADAPTOR POWER ADAPTOR LCD CABLE	(MDC) POWER BAND POWER BAND VGA CONNENT	BEAD FERRITE CORE *2 FERRITE CORE *2 WIRE/W SHIELD	ACB2012M-120 14.2*6.35*28.5mm  17.5*9.5*28.5mm  4x2x3	TDK ILAN  ILAN  翰宇
LCD CABLE	VGA CONNENT	WIRE/W SHIELD		國際超微

## **1.4 Test Methodology**

For notebook computer, both conducted and radiated emissions were performed according to the procedures in ANSI C63.4 (1992).

## **1.5 Test Facility**

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No.34, Lin 5, Ding Fu Tsun, Linkou Hsiang, Taipei Hsien, Taiwan, R.O.C.

This site has been fully described in a report submitted to your office, and accepted in a letter dated Feb. 10, 2000.

## 2 LIMITATIONS AND LABELING REQUIREMENT

### 2.1 Definition

Unintentional radiator:

A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:

A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :

A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business or industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

### 2.2 Limitation

#### (1) Conducted Emission Limits :

For unintentional device, according to FCC§ 15.107(a) Line Conducted Emission Limits class B is as following:

#### Class B Line Conducted Emission Limits:

Frequency MHz	Emissions $\mu V$	Emissions dB $\mu V$
0.45 - 30.0	250	48.0

For unintentional device, according to CISPR Line Conducted Emission Limits class B is as following:

Frequency MHz	Quasi Peak dB $\mu$ V	Average dB $\mu$ V
0.15 - 0.5	66-56	56-46
0.5 - 5.0	56	46
5.0 - 30.0	60	50

**(2) Radiated Emission Limits:**

According to 15.109, Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

**Class B Radiated Emission Limits:**

Frequency MHz	Distance Meters	Radiated dB $\mu$ V/m	Radiated $\mu$ V/m
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
Above 960	3	54.0	500

For unintentional device, according to CISPR Line Conducted Emission Limits class B is as following:

Frequency MHz	Distance Meters	Radiated dB $\mu$ V/m
30 to 230	10	30
230 to 1000	10	37

## 2.3 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## 2.4 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

### 3 SYSTEM TEST CONFIGURATION

#### 3.1 Justification

The system was configured for testing in a typical fashion, as a customer would normally use it.

For radiated emission measuring, the EUT was rotated to obtain the maximum level of radiated emissions. The antenna was varied in height from 1 to 4 meters above ground to obtain the maximum signal strength. Measurement was performed under the condition that a computer program was exercised to simulate data communication of EUT. Three highest emissions were verified with varying placement of the connected cable to maximize the emission from EUT.

#### 3.2 Device for Tested System

Device	Manufacture	Model	Description
notebook computer*	MOVITA TECHNOLOGIES INC.	270	3.0m Unshielded AC Adaptor Power Cord 1.2m Unshielded RJ-11 Telephone Line 20m Shielded RJ-45 LAN Cable
Monitor	NEC	JC-1743UMA	2.0m Shielded Video Cable With 2 Core
Printer	HP	2225C+	1.2m Shielded Cable 2.0m Unshielded AC Adaptor Power Cord
USB Mouse	Logitech	M-UA34	1.5m Unshielded USB Cable
USB Mouse	Logitech	FDM-A10	1.5m Unshielded USB Cable
Keyboard	Acer	631-TW	1.0m Unshielded Cable
Microphone	----	----	1.2m Unshielded Cable
Earphone	----	----	1.3m Unshielded Cable
Hard Disk Drive	IBM	DJSA-210	----
CD-Rom	TEAC	CCD-224E	----
RAM (128 MHz)	Twin MOS DDR 128	PC-2100	----
CPU	Intel	Pentium 4 1.5GHz	----
LCD Pannel	L.G	14.1	----
Adaptor	ILAN	F11203-B	3.0m Unshielded AC Adaptor Power Cord
Adaptor	ILAN	EA11203	3.0m Unshielded AC Adaptor Power Cord
Ether Prefect	USRECOM	EP-505ST3B	1.8m Unshielded AC Adaptor Power Cord 1.5m Unshielded RJ-45 Cable

Remark “\*” means equipment under test.



## 4 RADIATED EMISSION MEASUREMENT

### 4.1 Description for Radiated Emission Measured

For unintentional radiator digital devices, the radiated emission shall comply with § 15.109(a). And according to § 15.109 (g), as an alternative to the radiated emission limits is CISPR 22.

The field strength measurements of the receiver under test which was placed on an wooden turntable 0.8 meter in height. The receiving antenna polarized horizontally was varied from 1 to 4 meters and the wooden turntable was rotated through 360 degrees to obtain the highest reading on the field strength meter or on the display of the spectrum analyzer. And also, each emission was to be maximized by changing the orientation of the equipment under test. These measurements were repeated with the receiving antenna polarized vertically.

The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, the limit , and margin. Explanation of the Correction Factor is given in paragraph 4.3.

## 4.2 Radiated Emission Data

### 4.2.1 Below 1 GHz

Operation Mode : Full System (Run “H” Test Program)

Poewr Supply : Adaptor1 120V/60Hz

Test Date : Mar. 29, 2002      Temperature : 25 °C      Humidity: 60 %

Emission Frequency ( MHz )	Meter Reading ( dB $\mu$ V )		Corr'd Factor ( dB )	Results ( dB $\mu$ V/m )		AH (m)		DRT degree		Limit @10m (dB $\mu$ V/m)	Margin ( dB )
	Hor.	Ver.		Hor.	Ver.	Hor.	Ver.	Hor.	Ver.		
45.600	40.3	45.3	-16.8	23.5	28.5	4.0	1.8	40	270	30.0	-1.5
57.200	43.3	41.2	-20.1	23.2	21.1	4.0	1.9	145	180	30.0	-6.8
110.766	37.0	37.7	-12.1	24.9	25.6	4.0	1.0	180	90	30.0	-4.4
175.916	41.4	40.9	-14.0	27.4	26.9	3.8	1.1	180	145	30.0	-2.6
195.453	41.6	41.1	-13.6	28.0	27.5	3.8	1.2	215	45	30.0	-2.0
208.490	40.1	38.0	-13.5	26.6	24.5	3.6	1.1	345	38	30.0	-3.4
651.508	37.4	38.3	-3.1	34.3	35.2	3.2	2.3	300	115	37.0	-1.8

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “\*\*\*\*” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

Operation Mode : Full System (Run "H" Test Program)Poewr Supply : Adaptor2 120V/60HzTest Date : Apr. 12, 2002Temperature : 27 °CHumidity: 70 %

Emission Frequency ( MHz )	Meter Reading ( dB $\mu$ V )		Corr'd Factor ( dB )	Results ( dB $\mu$ V/m )		AH ( m )		DRT degree		Limit @10m (dB $\mu$ V/m)	Margin ( dB )
	Hor.	Ver.		Hor.	Ver.	Hor.	Ver.	Hor.	Ver.		
45.700	36.8	41.3	-16.8	20.0	24.5	4.0	1.1	180	90	30.0	-5.5
57.128	42.1	39.7	-20.1	22.0	19.6	4.0	1.0	90	360	30.0	-8.0
110.636	37.2	37.4	-12.1	25.1	25.3	3.7	1.0	215	120	30.0	-4.7
174.738	40.2	39.6	-13.9	26.3	25.7	3.8	1.0	270	245	30.0	-3.7
195.451	40.1	40.5	-13.6	26.5	26.9	3.9	1.1	180	90	30.0	-3.1
208.495	39.2	39.2	-13.5	25.7	25.7	3.8	1.0	90	145	30.0	-4.3

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark "\*\*\*\*" means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

**4.2.2 Above 1 GHz**Operation Mode : Full System (Run “H” Test Program)Poewr Supply : Adaptor 1 120V/60HzTest Date : Mar. 29, 2002Temperature : 25 °CHumidity: 60 %

Frequency  (MHz)	Reading (dBuV)				Factor (dB)  Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
	H		V			Peak	Ave	Peak	Ave.			
	Peak	Ave	Peak	Ave								
1113.183	63.5	41.2	63.5	41.5	-9.2	54.3	32.3	74.0	54.0	-19.7	180	1.50
1146.150	62.8	38.3	63.8	41.2	-9.1	54.7	32.1	74.0	54.0	-19.3	180	1.50
1311.575	61.3	41.7	62.5	39.5	-8.3	54.2	33.4	74.0	54.0	-19.8	180	1.50
1546.442	53.5	---	58.3	---	-7.2	51.1	---	74.0	54.0	-2.9	270	1.30
1984.977	54.2	---	55.0	---	-4.7	50.3	---	74.0	54.0	-3.7	270	1.20
2190.958	50.2	---	52.8	---	-3.9	48.9	---	74.0	54.0	-5.1	270	1.20
2399.558	47.8	---	50.8	---	-3.1	47.7	---	74.0	54.0	-6.3	270	1.20
2593.225	48.3	---	48.7	---	-2.4	46.3	---	74.0	54.0	-7.7	270	1.10
3000.000	---	---	---	---	-1.2	---	---	74.0	54.0	---	---	---
5000.000	---	---	---	---	2.9	---	---	74.0	54.0	---	---	---
7000.000	---	---	---	---	5.4	---	---	74.0	54.0	---	---	---
10000.000	---	---	---	---	7.4	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “\*\*\*\*” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

Operation Mode : Full System (Run “H” Test Program)Poewr Supply : Adaptor 2 120V/60HzTest Date : Mar. 29, 2002Temperature : 25 °CHumidity: 60 %

Frequency  (MHz)	Reading (dBuV)				Factor (dB)  Corr.	Result @3m (dBuV/m)		Limit @3m (dBuV/m)		Margin (dB)	Table Deg. (Deg.)	Ant. High (m)
	H		V			Peak	Ave	Peak	Ave.			
1113.183	62.3	40.1	62.4	40.3	-9.2	53.2	31.1	74.0	54.0	-20.8	95	1.50
1146.150	62.4	38.2	62.6	40.5	-9.1	53.5	31.4	74.0	54.0	-20.5	190	1.50
1311.575	60.4	41.6	62.0	39.6	-8.3	53.7	33.3	74.0	54.0	-20.3	230	1.50
1546.442	53.3	---	58.1	---	-7.2	50.9	---	74.0	54.0	-3.1	90	1.40
1984.977	53.6	---	54.4	---	-4.7	49.7	---	74.0	54.0	-4.3	180	1.50
2190.958	49.8	---	51.6	---	-3.9	47.7	---	74.0	54.0	-6.3	180	1.30
2399.558	47.8	---	50.5	---	-3.1	47.4	---	74.0	54.0	-6.6	95	1.50
2593.225	48.0	---	48.5	---	-2.4	46.1	---	74.0	54.0	-7.9	180	1.50
3000.000	---	---	---	---	-1.2	---	---	74.0	54.0	---	---	---
5000.000	---	---	---	---	2.9	---	---	74.0	54.0	---	---	---
7000.000	---	---	---	---	5.4	---	---	74.0	54.0	---	---	---
10000.000	---	---	---	---	7.4	---	---	74.0	54.0	---	---	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark “---” means that the emission level is too low to be measured, with a preamplifier of 35 dB.
3. Measuring data showed on above table was derived with peak detector function.
4. It is considered that the results of average comply with average limit when measuring data with a peak function detector meet the average limit. Mark “\*\*\*\*” means that Peak result is meet average limit.
5. The expanded uncertainty of the radiated emission tests is 3.53 dB.

### 4.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$RESULT = READING + CORR. FACTOR$$

where CORR. FACTOR = Antenna FACTOR + Cable FACTOR

#### 4.4 Equipment for Radiation Measurement

The following test equipment are used during the radiated test .

Equipment	Manufacturer	Model No.	Next Cal. Date
Spectrum Analyzer	Hewlett-Packard	8568B	01/10/2003
Quasi Peak Adapter	Hewlett-Packard	85650A	01/10/2003
Pre-selector	Hewlett-Packard	85685A	01/10/2003
Pre-Amplifier	Hewlett-Packard	8447D	10/14/2002
Log Periodic Antenna	EMCO	3146	11/02/2002
Horn Antenna	EMCO	3115	05/10/2002
Preamplifier	Hewlett-Packard	8449B	05/10/2002
RF Test Receiver	Rohde & Schwarz	ESVS 30	08/06/2002
Biconical Antenna	EMCO	3110B	11/01/2002
Spectrum Analyzer	Hewlett-Packard	8564E	04/22/2002

#### 4.5 Measuring Instrument Setup

Explanation of measuring instrument setup when respective function is used in any frequency band is as following :

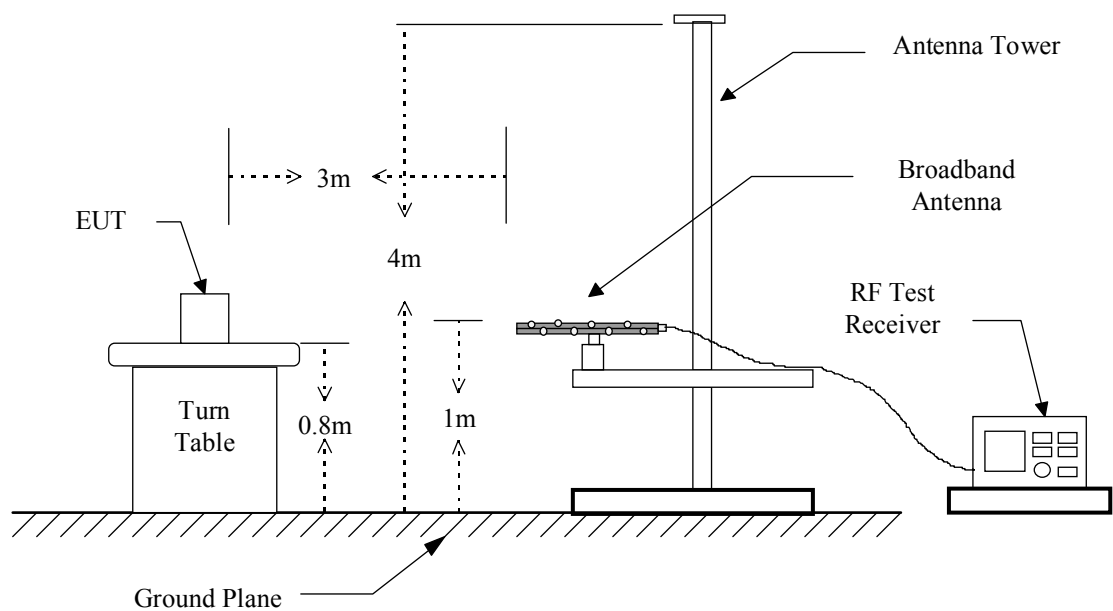
Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi Peak	120 kHz	N/A
	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	300Hz

## **4.6 Photos of Radiation Measuring Setup**

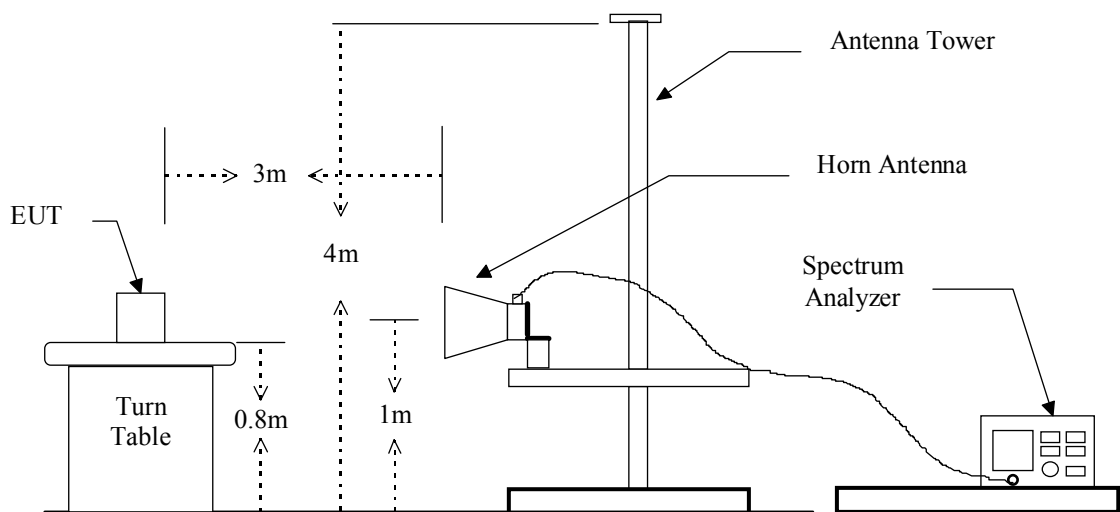
Please see Setup Photos in Exhibit F.

4.7 Open Field Test Site Setup Diagram

Radiated Emission's Frequency Below 1 GHz



Radiated Emission's Frequency Above 1 GHz



## 5 CONDUCTED EMISSION MEASUREMENT

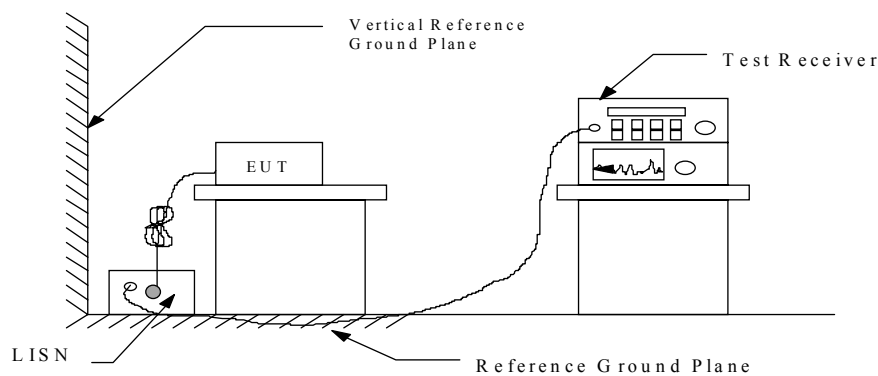
### 5.1 Standard Applicable

For unintentional digital devices, Line Conducted Emission Limits are in accordance to § 15.107(a) . And according to § 15.107(e), an alternative to the conducted limits is CISPR 22.

### 5.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



### 5.3 Conducted Emission Data

Operation Mode : Full System (Run “H” Test Program)

Poewr Supply : Adaptor 1 120V/60Hz

Test Date : Mar. 27, 2002

Temperature : 25 °C

Humidity: 60 %

Freq.  (MHz)	Meter Reading (dB $\mu$ V)				Factor  (dB)	Limit (dB $\mu$ V)		Result (dB $\mu$ V)			
	Q.P Value		AVG. Value			Q.P Value	AVG. Value	Q.P Value		AVG. Value	
	N	L1	N	L1				N	L1	N	L1
0.1544	56.9	56.6	36.6	36.5	0.2	65.8	55.8	57.1	56.8	36.8	36.7
0.4729	38.3	40.2	----	----	0.3	56.5	46.5	38.6	40.5	----	----
0.6737	40.8	38.3	----	----	0.3	56.0	46.0	41.1	38.6	----	----
0.8685	37.2	38.1	----	----	0.3	56.0	46.0	37.5	38.4	----	----
1.3488	36.9	38.5	----	----	0.4	56.0	46.0	37.3	38.9	----	----
4.3858	34.8	40.9	----	----	0.6	56.0	46.0	35.4	41.5	----	----
13.8655	49.5	46.3	----	----	1.0	60.0	50.0	50.5	47.3	----	----

Operation Mode : Full System (Run “H” Test Program)

Poewr Supply : Adaptor 2 120V/60Hz

Test Date : Mar. 12, 2002

Temperature : 27 °C

Humidity: 70 %

Freq.  (MHz)	Meter Reading (dB $\mu$ V)				Factor  (dB)	Limit (dB $\mu$ V)		Result (dB $\mu$ V)			
	Q.P Value		AVG. Value			Q.P Value	AVG. Value	Q.P Value		AVG. Value	
	N	L1	N	L1				N	L1	N	L1
0.1603	56.5	55.4	----	----	0.2	65.4	55.4	56.7	55.6	----	----
0.2179	46.8	46.9	----	----	0.2	62.9	52.9	47.0	47.1	----	----
0.2559	43.5	45.0	----	----	0.2	61.6	51.6	43.7	45.2	----	----
0.3623	46.2	48.4	----	----	0.3	58.7	48.7	46.5	48.7	----	----
0.3873	45.8	44.2	----	----	0.3	58.1	48.1	46.1	44.5	----	----
0.6126	42.3	44.0	----	----	0.3	56.0	46.0	42.6	44.3	----	----

Note : 1. Please see appendix 1 for Plotted Data

2. The expanded uncertainty of the conducted emission tests is 2.45 dB.

## 5.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

$$\text{RESULT} = \text{READING} + \text{LISN FACTOR}$$

Assume a receiver reading of 22.5 dB  $\mu$  V is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dB  $\mu$  V.

$$\text{RESULT} = 22.5 + 0.1 = 22.6 \text{ dB } \mu \text{ V}$$

$$\begin{aligned} \text{Level in } \mu \text{ V} &= \text{Common Antilogarithm}[(22.6 \text{ dB } \mu \text{ V})/20] \\ &= 13.48 \mu \text{ V} \end{aligned}$$

## 5.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test.

Equipment	Manufacturer	Model No.	Next Cal. Date
RF Test Receiver	Rohde and Schwarz	ESH3	01/03/2003
Spectrum Monitor	Rohde and Schwarz	EZM	N.C.R.
Line Impedance Stabilization network	Rohde and Schwarz	ESH2-Z5	08/06/2002
Line Impedance Stabilization network	Kyoritsu	KNW-407	12/02/2002
Plotter	Hewlett-Packard	7440A	N/A
Shielded Room	Riken	N/A	N.C.R.

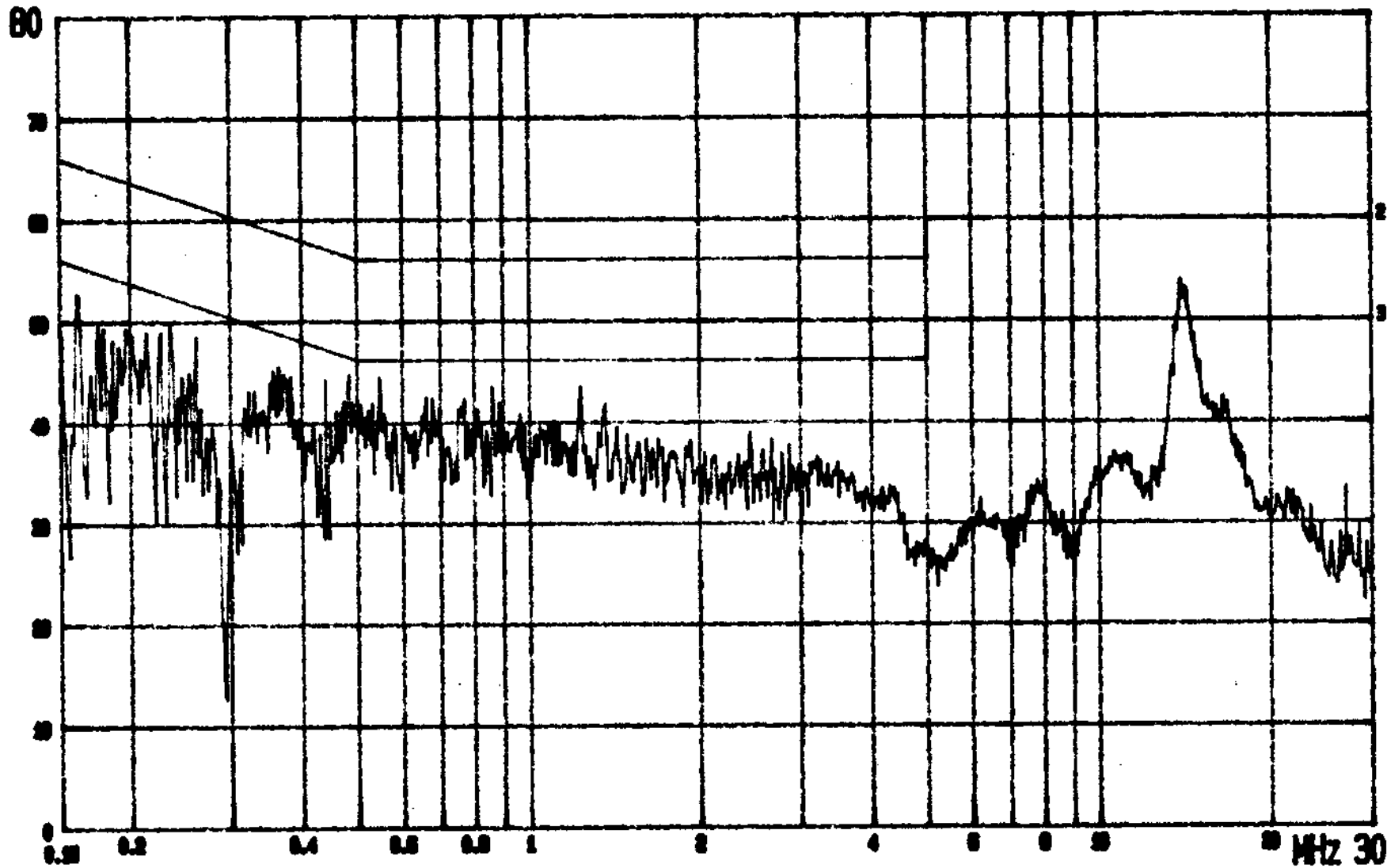
## 5.6 Photos of Conduction Measuring Setup

Please see Setup Photos in Exhibit F.



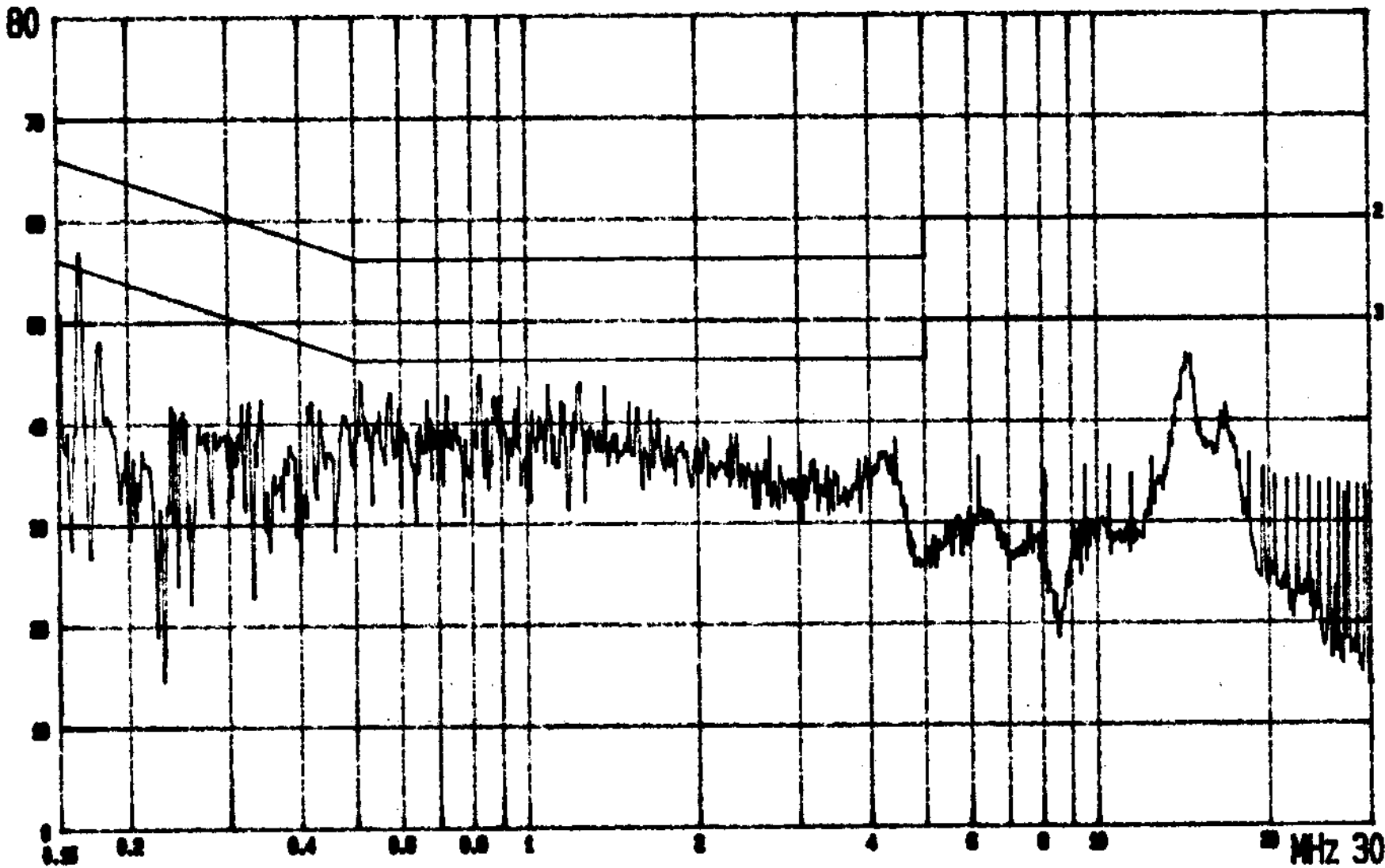
## **APPENDIX 1 : PLOTTED DATA FOR CONDUCTED EMISSION**

dBuV



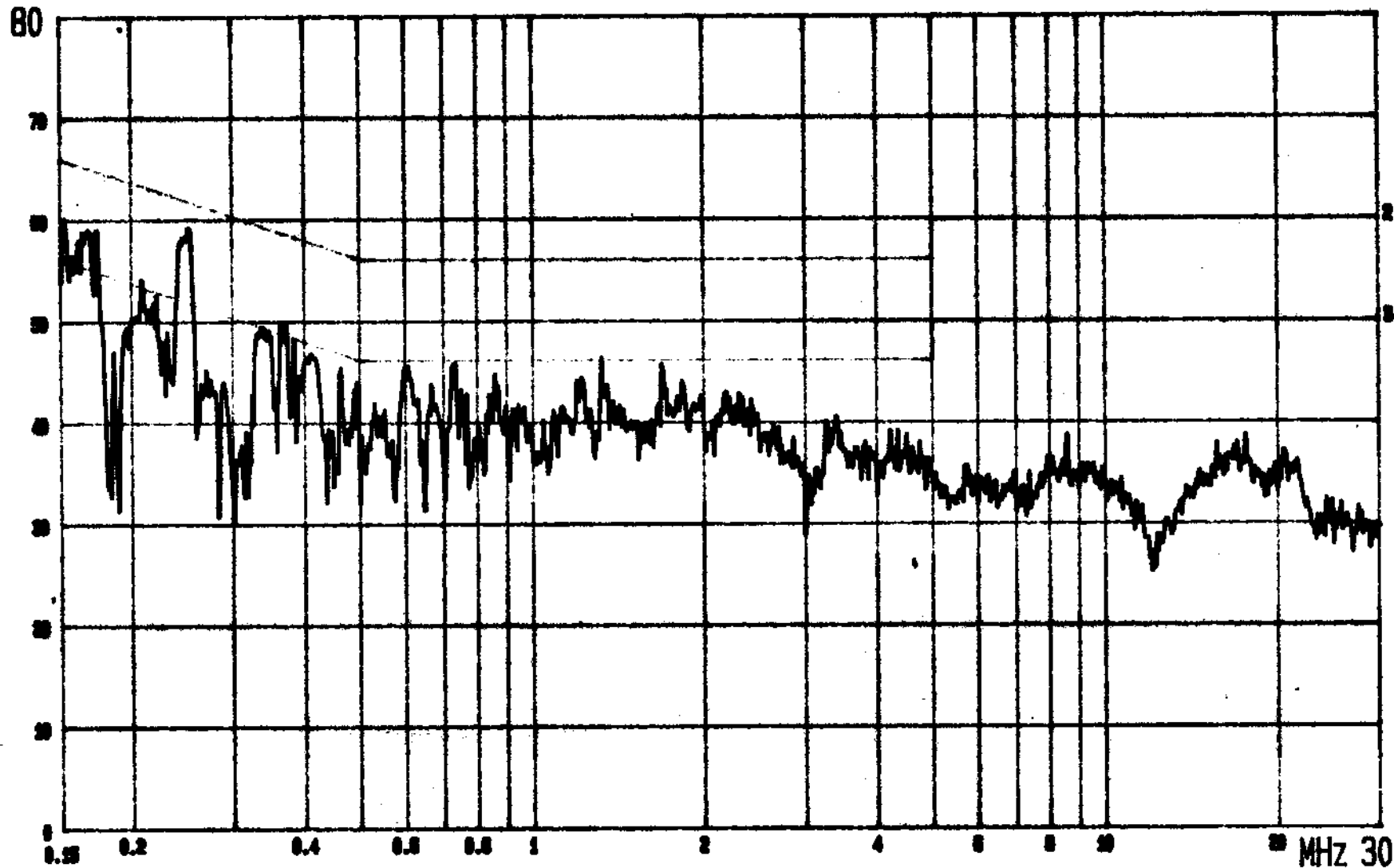
EN55022	CONDUCTED	TEST	EUT: NOTEBOOK PC	2: GP.; 3: AVG	CLASS B LIMIT
MODEL: 270			POWER: 120V/60Hz	LISN: N	ETC EMI LAB

dBuV



EN55022 CONDUCTED TEST EUT: NOTEBOOK PC 2: GP.; 3: AVG CLASS B LIMIT  
MODEL: 270 POWER: 120V/60Hz LISN: L1 ETC EMI LAB

dBuV

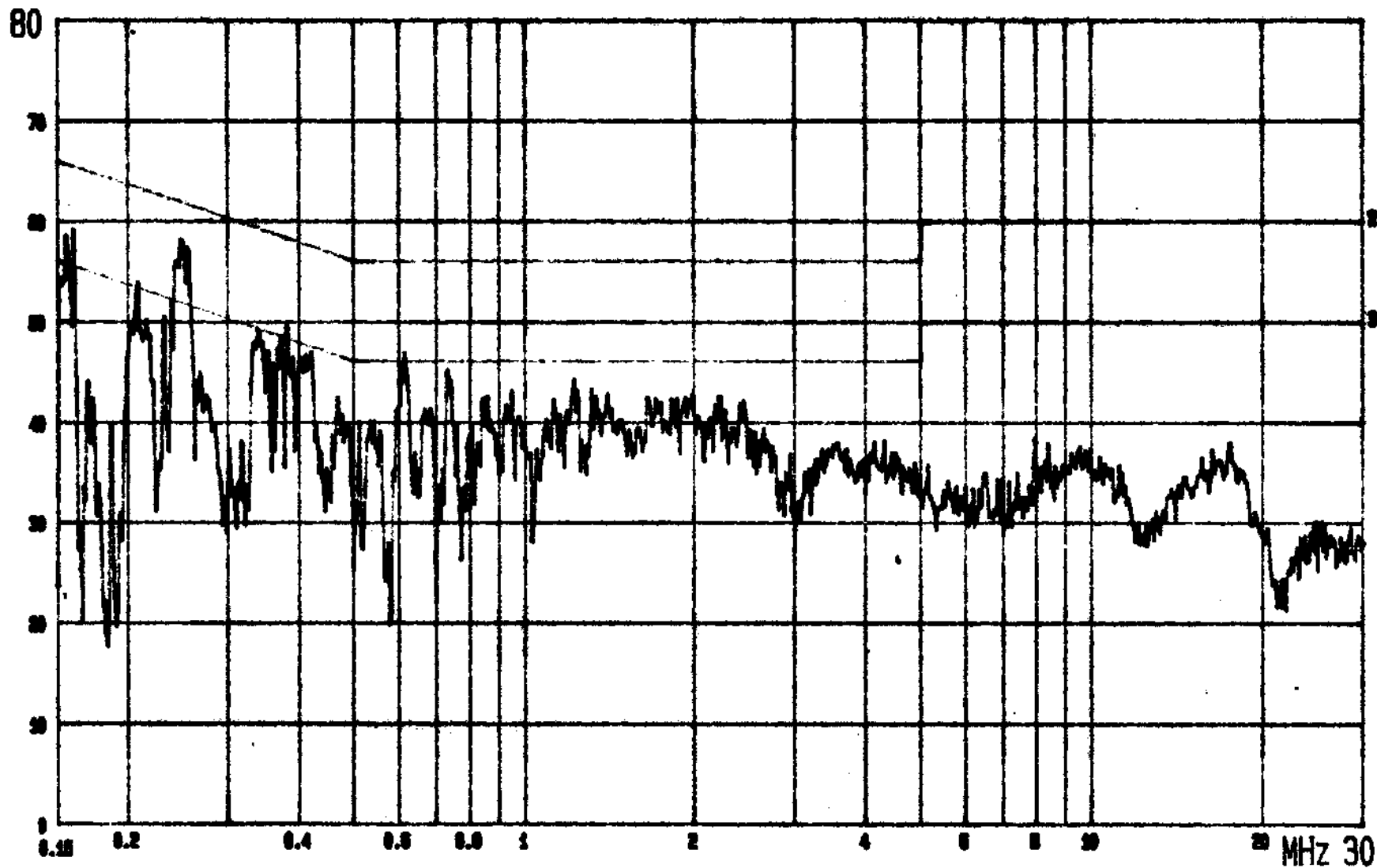


CONDUCTED TEST  
MODEL: 270

EUT: NOTEBOOK PC  
POWER: 120V/60Hz

2: QP.; 3: AVG CLASS B LIMIT  
LISN: N ETC EMI LAB.

dBuV



CONDUCTED TEST  
MODEL: 270

EUT: NOTEBOOK PC  
POWER: 120V/60Hz

2: GP.; 3: AVG CLASS B LIMIT  
LISN: L1 ETC EMI LAB.