



PHILIPS

Philips Electronics Industries (Taiwan) Ltd - EMC Lab. 5, Tze Chiang 1 Road, Chungli Industrial Park, Chungli, Taoyuan, Taiwan Tel.: +886-3-454-9862 Fax.: +886-3-454-9887 E-mail: ronnie.yang@philips.com	FCC Test Report	Report No.: TYR87-2058 Date : 18 October, 2003 Page : Page 1 of 32
Customer : Philips Electronics Industries Name : Mr. S.T. Huang – EE LCD Address : 5, Tze Chiang 1 Road, Zip/City : Chungli Industrial Park, Country : Chungli, Taiwan, R.O.C.		
Equipment Under Test (including peripherals) : FCC ID. : A3KM127 Model Name : LXH-P17L3 Serial Number : TY0304669 Description : 17" SXGA LCD color monitor, Max. resolution 1280x1024/75Hz		
EMC Standards : FCC Part 15 of October 01,1999 Class B ANSI C63.4-1992 Result : PASSED the limits/test-levels in the standards. Note : The results in this report apply only to the sample(s) and mode(s) tested. It is the manufacturer's responsibility to assume the continued EMC compliance of production models.		
Date of receipt of EUT : 14 Nov. 2003 Date of performance of test : 15 Nov., 2003 to 17 Nov., 2003		
 C.C. Wu - EMC Test Engineer  Ronnie Yang - EMC Manager		

Philips Electronics Industries (Taiwan) Ltd

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1. Summary of test results

Test	Standard	Result	Note
Emission, ANSI C63.4-1992			
Conducted emission	FCC Part 15	Passed	
Radiated emission	FCC Part 15	Passed	

Remark:

The test sample fully complies with the requirements set forth in : FCC Part 15 Class B.

2. General Information of EUT

The EUT, 17" color monitor :

Model No. : LXH-P17L3
 FCC ID : A3KM127
 Brand : Lenovo

The color monitor automatically scans horizontal frequencies between 30KHz and 80KHz , and vertical frequencies between 50Hz and 75Hz. This color monitor displays sharp and brilliant images of text and graphics with a maximum resolution up to 1280x1024 pixels.

The monitor has 12 factory-preset modes as indicated in the following table:

Table #	Resolution	H-Freq (KHz)	Pixel rate (MHz)	V-Freq (Hz)	Comment
1	720x400	31.469	28.322	70.087	VGA
2	640x480	31.469	25.175	59.940	VGA
3	640x480	37.861	31.500	72.809	VESA
4	640x480	37.500	31.500	75.000	VESA
5	800x600	37.879	40.000	60.317	VESA
6	800x600	46.875	49.500	75.000	VESA
7	1024x768	48.363	65.000	60.004	VESA
8	1024x768	56.476	75.000	70.069	VESA
9	1024x768	60.023	78.750	75.029	VESA
10	1280x1024	63.981	108.000	60.020	VESA
11	1280x1024	79.976	135.000	75.025	VESA
12	704x574	31.250	27.000	50.000	TV-PAL

3. Test Equipment

Test equipment used for line Conducted and Radiated emissions as following.

All equipment were calibrated according to ANSI C63.4-1992 and ISO-9000 requirement unless otherwise specified.

Traceability to R.O.C. and international standards is assured by using calibrated all equipment.

- For Conducted Emissions Test:

Test Equipment	Model No.	Serial No.	Last Calibrate	Next Calibrate
Spectrum	HP8568B	2928A04640	02/27/2003	02/27/2004
EMI Receiver	R & S ESVS30	841977/006	02/27/2003	02/27/2004
LISN	EMCO 3825/2	9311-2153	06/16/2003	06/16/2004
LISN	EMCO 3825/2	9311-2154	06/16/2003	06/16/2004
RF Cable	8-meter	N/A	08/21/2003	08/21/2004

- For Radiated Emissions Test:

Test Equipment	Model No.	Serial No.	Last Calibrate	Next Calibrate
Spectrum	HP8568B	2928A04640	09/23/2003	09/23/2004
RF Preselector	HP85685A	2620A00338	09/23/2003	09/23/2004
QP Adapter	HP85650A	2811A01324	09/23/2003	09/23/2004
EMI Receiver	R & S ESVS30	841977/006	02/27/2003	02/27/2004
Biconical Antenna	EMCO 3110B	3224	08/21/2003	08/21/2004
Log-Periodic Antenna	EMCO 3146A	1425	08/21/2003	08/21/2004
Turn Table	EMCO 1060	1068	08/21/2003	08/21/2004
Antenna Tower	EMCO 1050	1113	08/21/2003	08/21/2004
RF Cable	M17/75-RG214-NE	N/A	08/21/2003	08/21/2004

4. Test Configuration of EUT and Peripherals

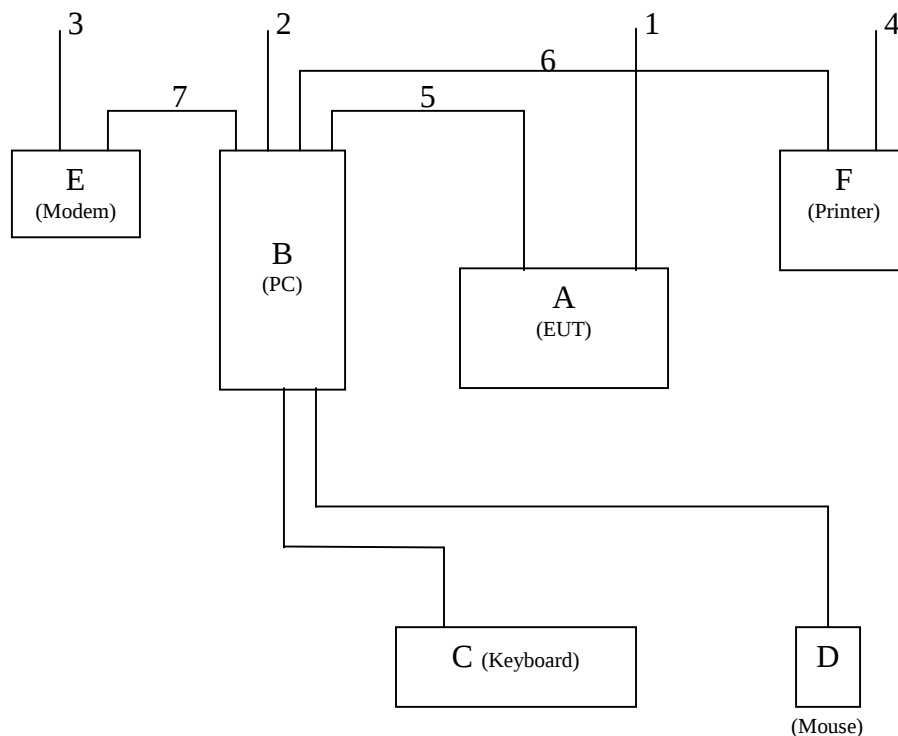
The system was configured for testing in a typical fashion (as a customer would normally use it) according to ANSI C63.4-1992, please see the photographs for detail. For system measurement, the EUT “**LXH-P17L3**” were connected to:

	Description	Brand/ Model No.	Serial No.	FCC ID	Remark
A	Monitor	Lenovo LXH-P17L3	TY0304669	A3KM127	EUT
B	PC	Compaq ENC P866	5K15FXHZ2013	FCC logo	
C	Keyboard	Compaq KB-9963	B26950GGALP13Q	FCC Logo	
D	Mouse	Compaq M-S48a		JNZ201213	
E	Modem	Hayes 231AA	A22231081770	BFJ9D9308US	
F	Printer	HP 2225C	2934S55406	DSI6XU2225	

Connected Cables

No.	Description	Manufacturer	Length	Shielded	Remark
1	Power Cord	Long Shine	1.8 meters	No	for EUT
2	Power Cord	Acer	1.8 meters	No	for PC
3	Power Cord	Aceex	2.0 meters	No	for Modem
4	Power Cord	HP	1.8 meters	No	for Printer
5	Video Cable	Long Shine	1.5 meters	Yes	
6	Printer Cable	HP	1.8 meters	Yes	
7	Modem Cable	Aceex	1.5 meters	Yes	

System Block Diagram of Test Configuration



5. Test Procedure

Test was performed by:

PHILIPS ELECTRONICS INDUSTRIES (TAIWAN) LTD.
CONSUMER ELECTRONICS DIVISION
- EMC LAB

5, Tze Chiang 1 Road, Chungli Industrial Park
P.O. Box 123, Chungli, Taoyuan, Taiwan
Tel : 886-3-4549862 Fax : 886-3-4549887
Internet: ronnie.yang@philips.com

The test was performed in accordance with ANSI C63.4-1992, "AMERICAN NATIONAL STANDARD FOR MEASUREMENT OF RADIO-NOISE EMISSION FROM LOW-VOLTAGE ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9KHz TO 40GHz"

Both conducted and radiated testing were performed according to the procedure in ANSI C63.4-1992. Conducted testing was performed in screen room and radiated testing was performed in open site at an antenna to EUT distance of 3-meter on horizontal and vertical polarization.

First, pre-scan all modes in screen room then select 2 higher modes (worst case) were tested and reported.

The line conductive interference was tested with 110VAC and 220VAC receptively.

Unshielded power cord was used during test.
D-sub I/F cable with two ferrite cores was used.

Tested and reported modes as following:

Test Item	File No.	Resolution	Frequencies	I/F Cable
Conducted	EMI03-041-C	1280x1024	80KHz/75Hz	D-sub
		1024x768	60KHz/75Hz	D-sub
Radiated	EMI03-041-R	1280x1024	80KHz/75Hz	D-sub
		1024x768	60KHz/75Hz	D-sub

Set up the EUT and all peripherals as chapter 6 of ANSI C63.4-1992 for AC power line conducted emissions testing and radiated emissions testing.

Turn on the power of EUT and all peripherals, select an appropriate displaying mode using the “setup” software. Then run an EMI test program “HTEST.EMI” as a basic software to execute the EUT operating under test. A pattern of scrolling H’s should be displayed on the monitor.

Step 1 : Run the “HTEST.EMI” on personal computer then sends “H” character to monitor continuously until full screen.

Step 2 : Personal computer sends a complete line of continuously repeating “H” to HP 2225C printer.

Step 3 : Personal computer sends a file of “H” pattern to floppy disk then read a file of “H” pattern from floppy disk.

Step 4 : Personal computer sends a file of “H” pattern to hard disk then read a file of “H” pattern from hard disk.

Step 5 : Personal computer sends a file of “H” pattern to USRobotics 268 modem.

Step 6 : Return to step 1

All data in this report are “PEAK” value within 15dB margin unless otherwise noted.

6. Measurement Uncertainty

The system uncertainty listed below are based on the instrument absolute specifications, and do not include uncertainties of the equipment under test.

Uncertainty for Radiated Emissions Test at 3 meters Test Site.

Source of Measurement Uncertainty	Uncertainty/dB
Antenna factor calibration	+/-2.0
Cable loss calibration	+/-0.5
Receiver specification	+/-1.0
Antenna position ver.	+/-2.0
Measurement distance ver.	+/-0.5
Site imperfections	+/-2.0
Mismatch	+/-1.1
System repeatability	+/-0.5

Uncertainty for Conducted Emissions Test at 3 meters Test Site.

Source of Measurement Uncertainty	Uncertainty/dB
LISN specification	+/-2.0
Cable loss calibration	+/-0.5
Receiver specification	+/-1.0
Pulse limiter Spec.	+/-0.3
Measurement distance ver.	+/-0.5
Site imperfections	+/-2.0
System repeatability	+/-0.5

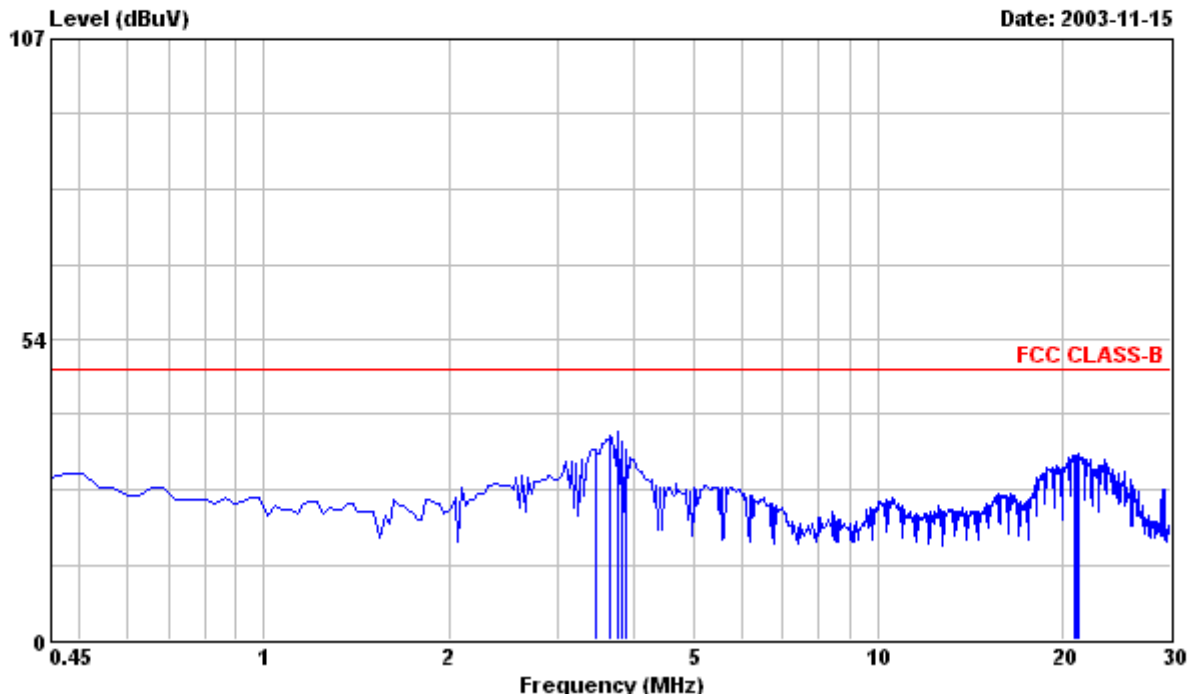
Conducted Emissions FCC Part 15		
Operating conditions EUT: EUT powered on with scrolling “H” pattern.		
Limits:		
Frequency range (MHz)	Class A (dBuv) QP	Class B (dBuv) QP
0.45 – 1.705	60.0	48.0
1.705 – 30.0	69.5	48.0
Test Result : Passed FCC Class B Limits		
Option: The following option may be employed if the conducted emissions exceed the limits, as appropriate, when measured using instrumentation employing a quasi-peak detector function: If the level of the emission measured using the quasi-peak instrumentation is 6dB, or, more higher than the level of the same emission measured with instrumentation having an average detector and a 9KHz minimum bandwidth, that emission is considered broadband and the level obtained with the quasi-peak detector may be reduced by 13dB for comparison to the limits.		
Remark:		
Date of Test	: 15 Nov., 2003 to 17 Nov., 2003	
Test Engineer	: C.C.Wu	
For detail measurement results see next pages.		



PHILIPS

Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 1 File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L1 LINE
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
LINE							
3.464	33.60	---	48.00	0.40	34.00	-14.00	Peak
3.671	36.00	---	48.00	0.40	36.40	-11.60	Peak
3.760	36.70	---	48.00	0.40	37.10	-10.90	Peak
3.819	35.00	---	48.00	0.40	35.40	-12.60	Peak
3.878	33.60	---	48.00	0.40	34.00	-14.00	Peak
20.840	32.00	---	48.00	0.82	32.82	-15.18	Peak
21.135	32.00	---	48.00	0.83	32.83	-15.17	Peak
21.194	32.40	---	48.00	0.83	33.23	-14.77	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

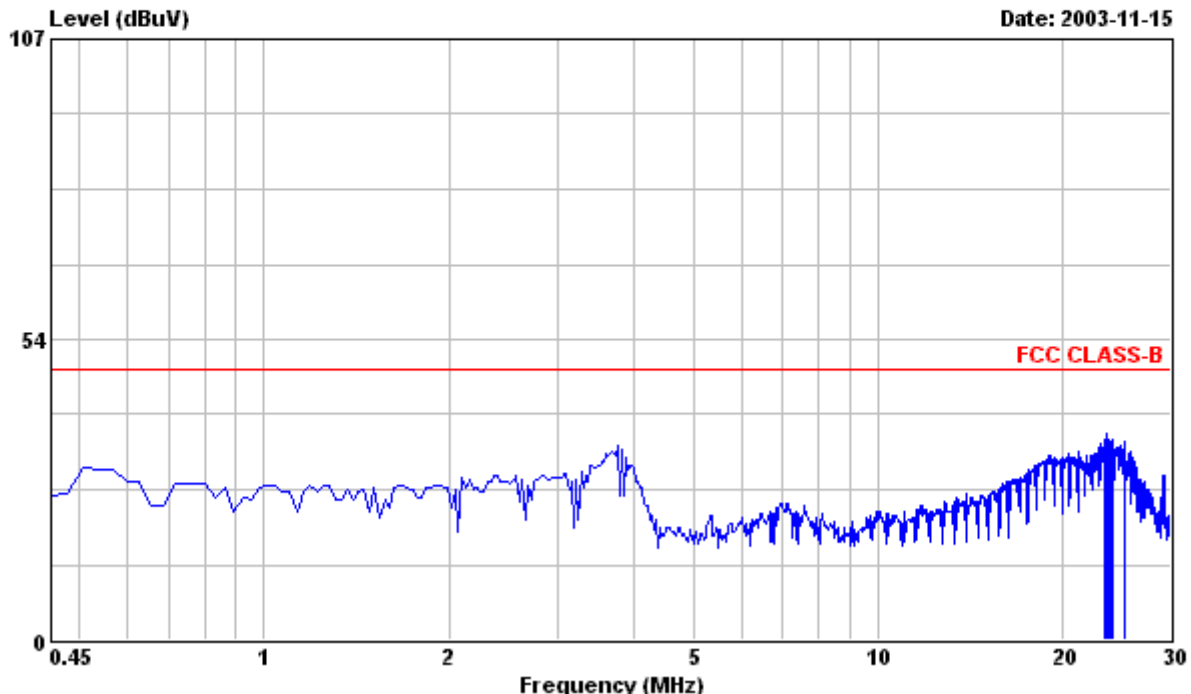


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Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 2

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L2 NEUTRAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
NEUTRAL							

23.440	34.80	---	48.00	0.97	35.77	-12.23	Peak
23.617	35.60	---	48.00	0.97	36.57	-11.43	Peak
23.735	34.60	---	48.00	0.98	35.58	-12.42	Peak
23.854	34.40	---	48.00	0.98	35.38	-12.62	Peak
23.972	34.50	---	48.00	0.98	35.48	-12.52	Peak
24.031	34.50	---	48.00	0.98	35.48	-12.52	Peak
24.149	34.70	---	48.00	0.98	35.68	-12.32	Peak
25.331	34.30	---	48.00	0.99	35.29	-12.71	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

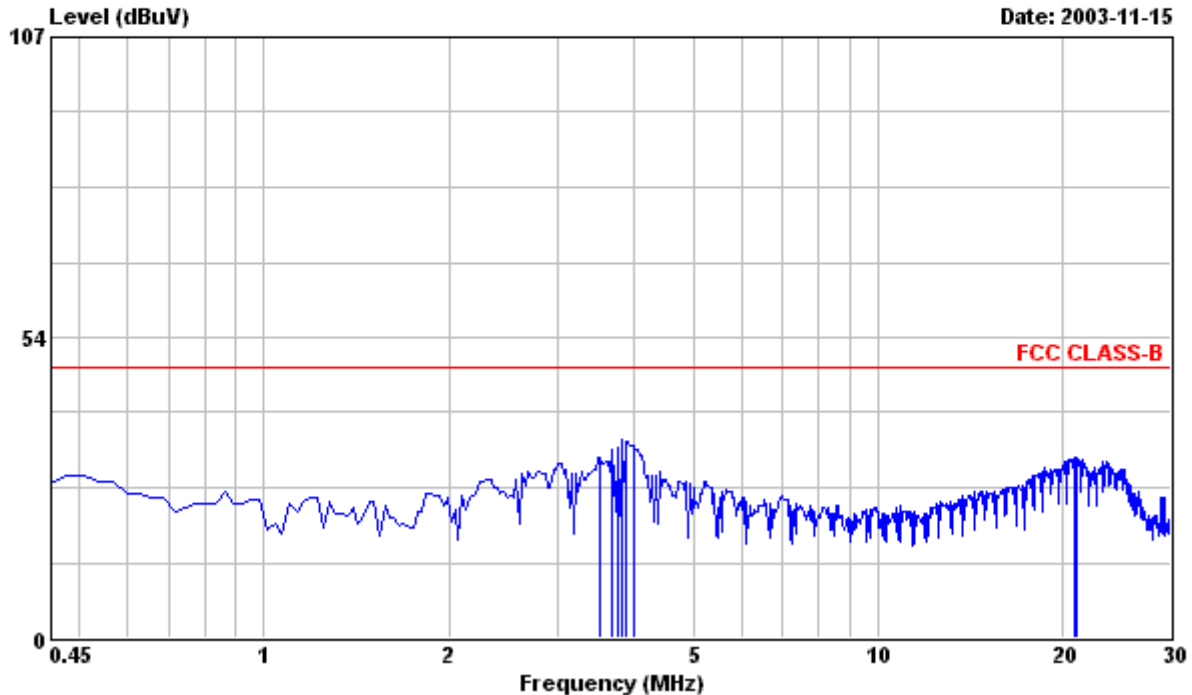


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Chungli, Taiwan, R.O.C.
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Data#: 3

File#: C:\Program Files\es\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L1 LINE
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 220VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
LINE							
3.523	31.70	---	48.00	0.40	32.10	-15.90	Peak
3.701	33.10	---	48.00	0.40	33.50	-14.50	Peak
3.760	33.60	---	48.00	0.40	34.00	-14.00	Peak
3.819	35.00	---	48.00	0.40	35.40	-12.60	Peak
3.878	34.70	---	48.00	0.40	35.10	-12.90	Peak
3.996	33.80	---	48.00	0.40	34.20	-13.80	Peak
20.899	31.20	---	48.00	0.82	32.02	-15.98	Peak
21.017	31.30	---	48.00	0.82	32.12	-15.88	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

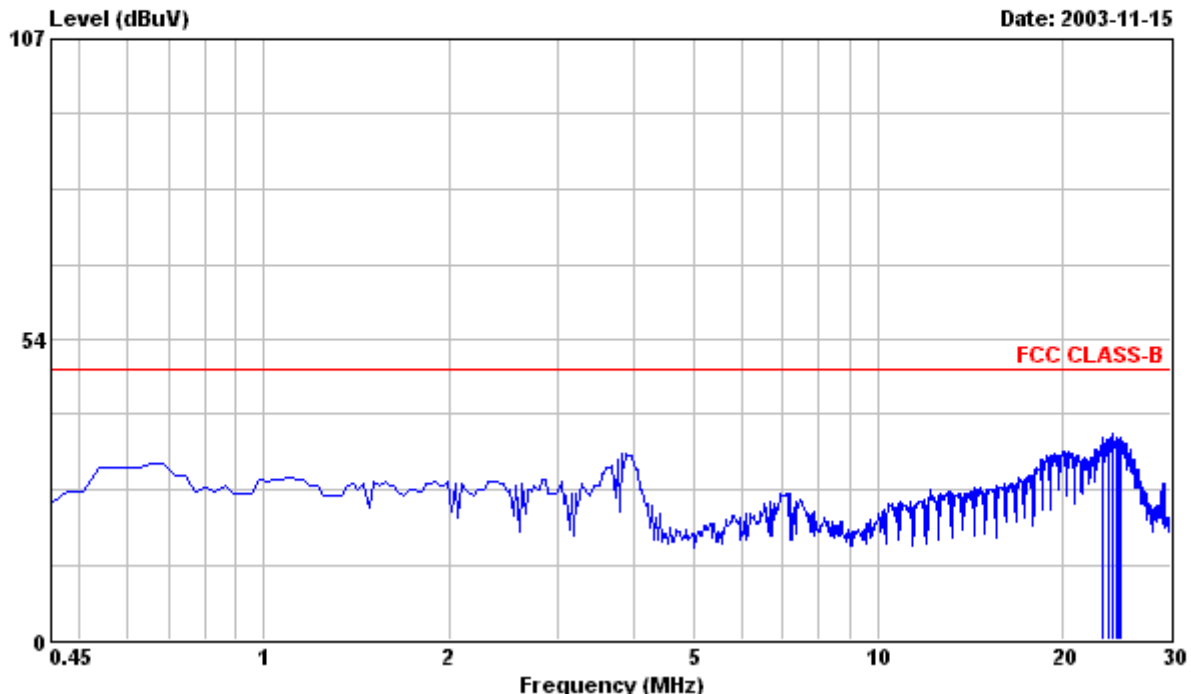


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Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 4

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L2 NEUTRAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 220VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
NEUTRAL							

23.322	35.20	---	48.00	0.97	36.17	-11.83	Peak
23.854	34.70	---	48.00	0.98	35.68	-12.32	Peak
24.090	35.80	---	48.00	0.98	36.78	-11.22	Peak
24.208	34.70	---	48.00	0.99	35.69	-12.31	Peak
24.445	34.90	---	48.00	0.99	35.89	-12.11	Peak
24.504	34.60	---	48.00	0.99	35.59	-12.41	Peak
24.681	34.80	---	48.00	0.99	35.79	-12.21	Peak
24.917	35.00	---	48.00	1.00	36.00	-12.00	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

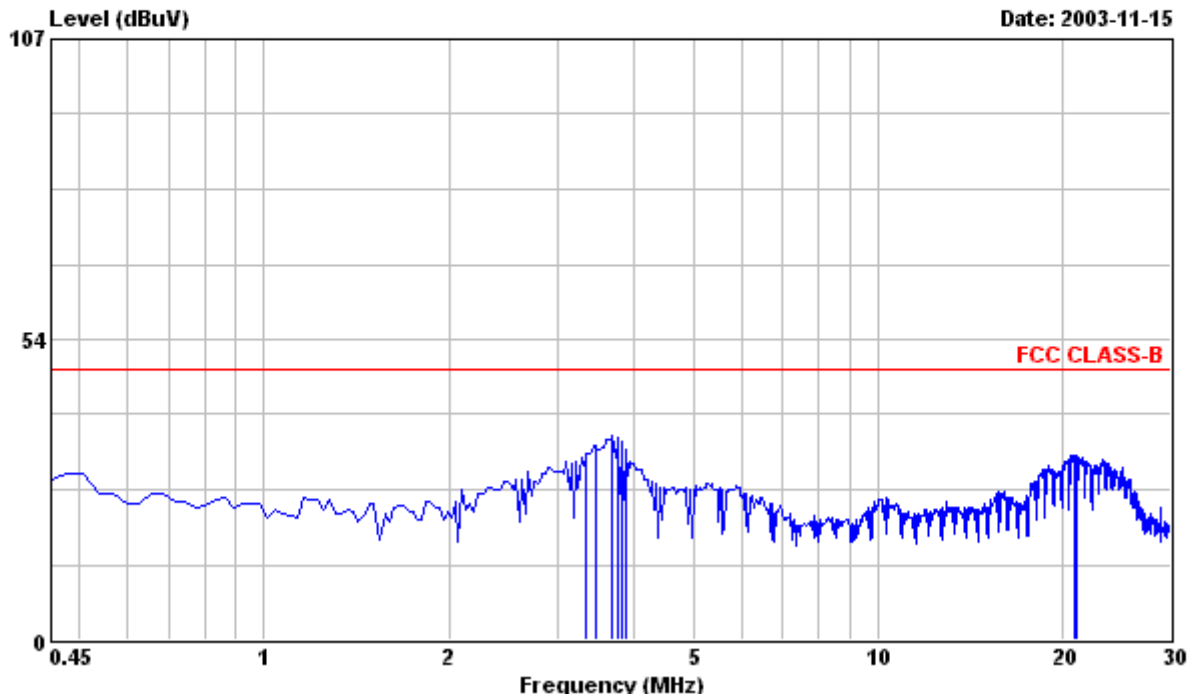


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Data#: 5

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L1 LINE
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
-----------	--------------	------------	-------	--------	----------------	------------	--------

3.346	32.70	---	48.00	0.40	33.10	-14.90	Peak
3.464	34.10	---	48.00	0.40	34.50	-13.50	Peak
3.701	35.90	---	48.00	0.40	36.30	-11.70	Peak
3.760	35.80	---	48.00	0.40	36.20	-11.80	Peak
3.819	35.00	---	48.00	0.40	35.40	-12.60	Peak
3.878	33.60	---	48.00	0.40	34.00	-14.00	Peak
20.899	32.10	---	48.00	0.82	32.92	-15.08	Peak
21.017	32.10	---	48.00	0.82	32.92	-15.08	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

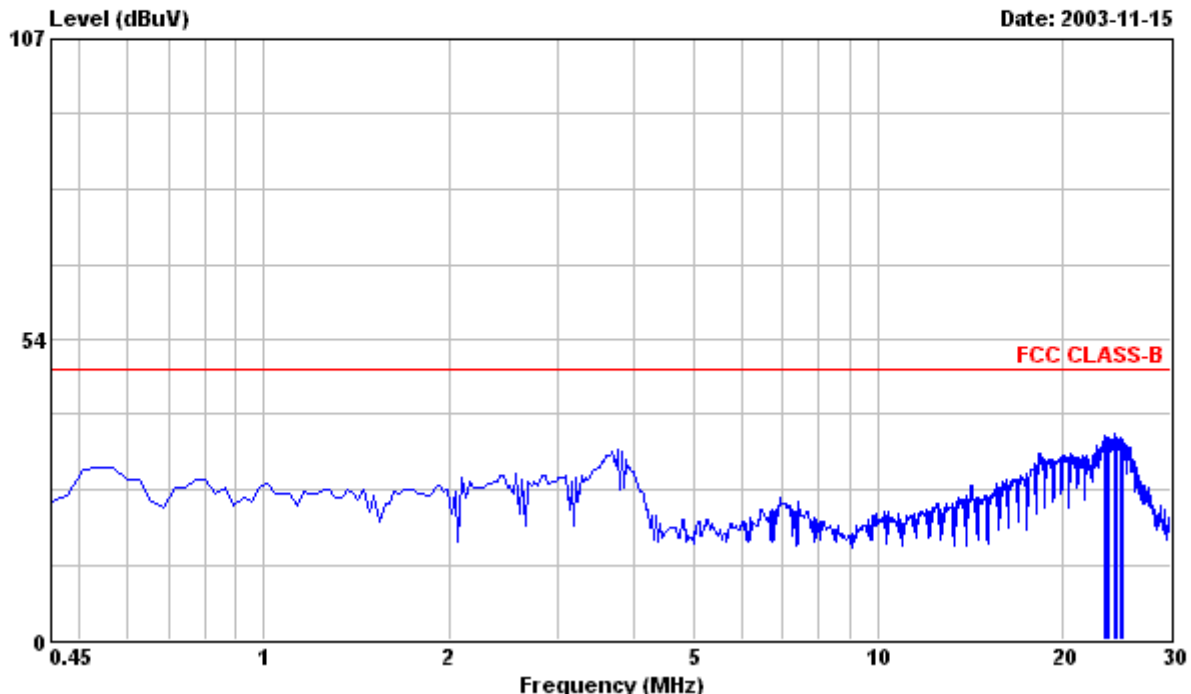


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Data#: 6

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L2 NEUTRAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
NEUTRAL							

23.440	35.30	---	48.00	0.97	36.27	-11.73	Peak
23.676	34.90	---	48.00	0.98	35.88	-12.12	Peak
23.854	34.90	---	48.00	0.98	35.88	-12.12	Peak
24.326	35.60	---	48.00	0.99	36.59	-11.41	Peak
24.386	35.10	---	48.00	0.99	36.09	-11.91	Peak
24.445	35.10	---	48.00	0.99	36.09	-11.91	Peak
24.858	34.90	---	48.00	1.00	35.90	-12.10	Peak
25.006	34.80	---	48.00	1.00	35.80	-12.20	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

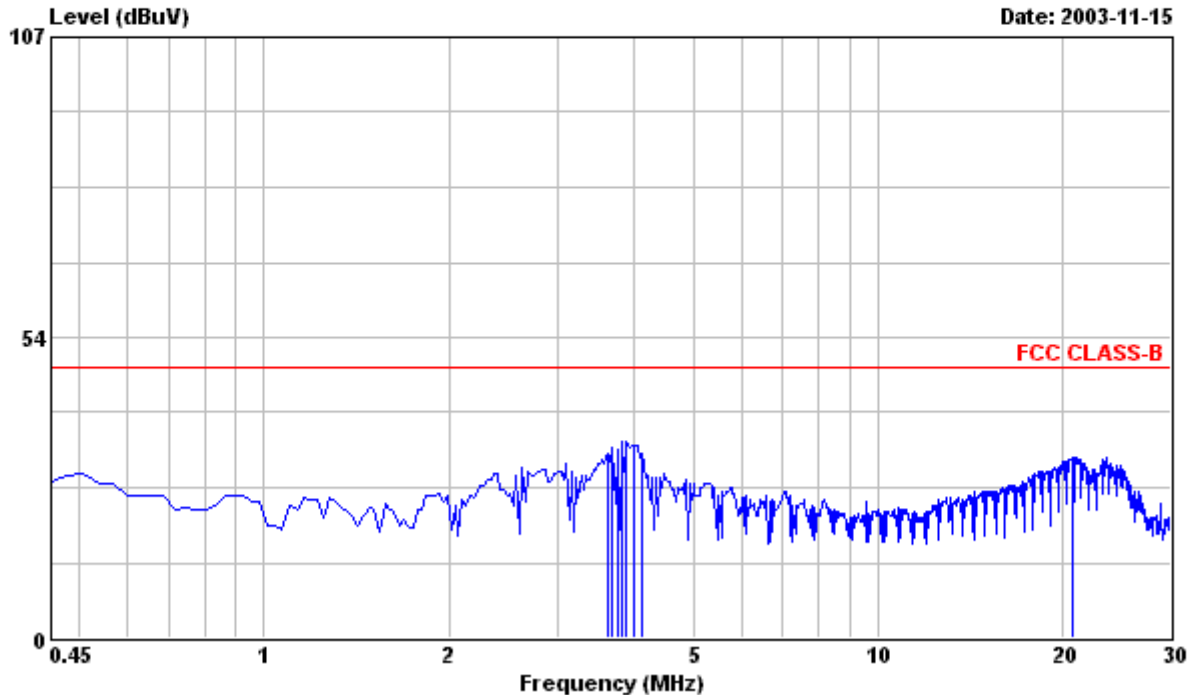


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Data#: 7

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L1 LINE
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 220VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
LINE							
3.641	32.30	---	48.00	0.40	32.70	-15.30	Peak
3.701	33.50	---	48.00	0.40	33.90	-14.10	Peak
3.760	33.30	---	48.00	0.40	33.70	-14.30	Peak
3.819	34.50	---	48.00	0.40	34.90	-13.10	Peak
3.878	34.60	---	48.00	0.40	35.00	-13.00	Peak
3.996	34.00	---	48.00	0.40	34.40	-13.60	Peak
4.114	32.40	---	48.00	0.39	32.79	-15.21	Peak
20.780	31.40	---	48.00	0.82	32.22	-15.78	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

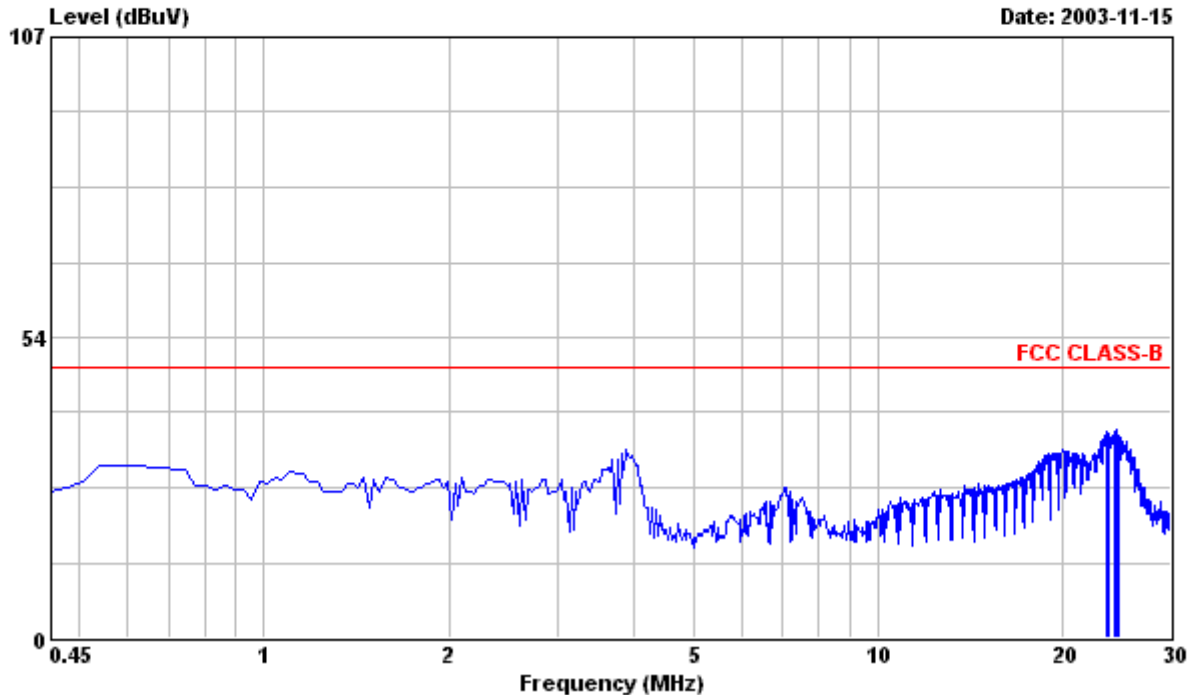


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Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 8

File#: C:\Program Files\em3\EMI03-041-C(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI Shielding Room
Condition : FCC CLASS-B FCC_LCI_L2 NEUTRAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 220VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency	Peak Reading	QP Reading	Limit	Factor	Emission Level	Over Limit	Remark
NEUTRAL							

23.558	35.80	---	48.00	0.97	36.77	-11.23	Peak
23.676	35.40	---	48.00	0.98	36.38	-11.62	Peak
23.854	35.40	---	48.00	0.98	36.38	-11.62	Peak
24.267	35.70	---	48.00	0.99	36.69	-11.31	Peak
24.445	36.00	---	48.00	0.99	36.99	-11.01	Peak
24.622	35.00	---	48.00	0.99	35.99	-12.01	Peak
24.681	35.20	---	48.00	0.99	36.19	-11.81	Peak
24.740	35.11	---	48.00	0.99	36.10	-11.90	Peak

Remarks: 1. All Readings are Peak & Quasi-Peak Values.
2. Emission Level (dBuV) = Factor (dB) + Meter Reading (dBuV)
3. Factor (dB/m) = LISN Loss (dB) + Cable Loss (dB)

Tested by : C C.Wu

Radiated Emissions FCC Part 15																				
Operating conditions EUT: EUT powered on with scrolling “H” pattern.																				
Limits: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Frequency range (MHz)</th> <th style="width: 33%;">Class A at 10m (dBuv) QP</th> <th style="width: 33%;">Class B at 3m (dBuv) QP</th> </tr> </thead> <tbody> <tr> <td>30.0 – 88.0</td> <td>39.0</td> <td>40.0</td> </tr> <tr> <td>88.0 – 216.0</td> <td>43.5</td> <td>43.5</td> </tr> <tr> <td>216.0 – 960.0</td> <td>46.5</td> <td>46.0</td> </tr> <tr> <td>960.0 – 1000.0</td> <td>49.5</td> <td>54.0</td> </tr> <tr> <td>Above 1000.0</td> <td>49.5</td> <td>54.0 Average</td> </tr> </tbody> </table>			Frequency range (MHz)	Class A at 10m (dBuv) QP	Class B at 3m (dBuv) QP	30.0 – 88.0	39.0	40.0	88.0 – 216.0	43.5	43.5	216.0 – 960.0	46.5	46.0	960.0 – 1000.0	49.5	54.0	Above 1000.0	49.5	54.0 Average
Frequency range (MHz)	Class A at 10m (dBuv) QP	Class B at 3m (dBuv) QP																		
30.0 – 88.0	39.0	40.0																		
88.0 – 216.0	43.5	43.5																		
216.0 – 960.0	46.5	46.0																		
960.0 – 1000.0	49.5	54.0																		
Above 1000.0	49.5	54.0 Average																		
Test Result : Passed FCC Class B Limits Remark:																				
Date of Test Test Engineer	: 15 Nov., 2003 to 17 Nov., 2003 : C.C.Wu																			
For detail measurement results see next pages.																				

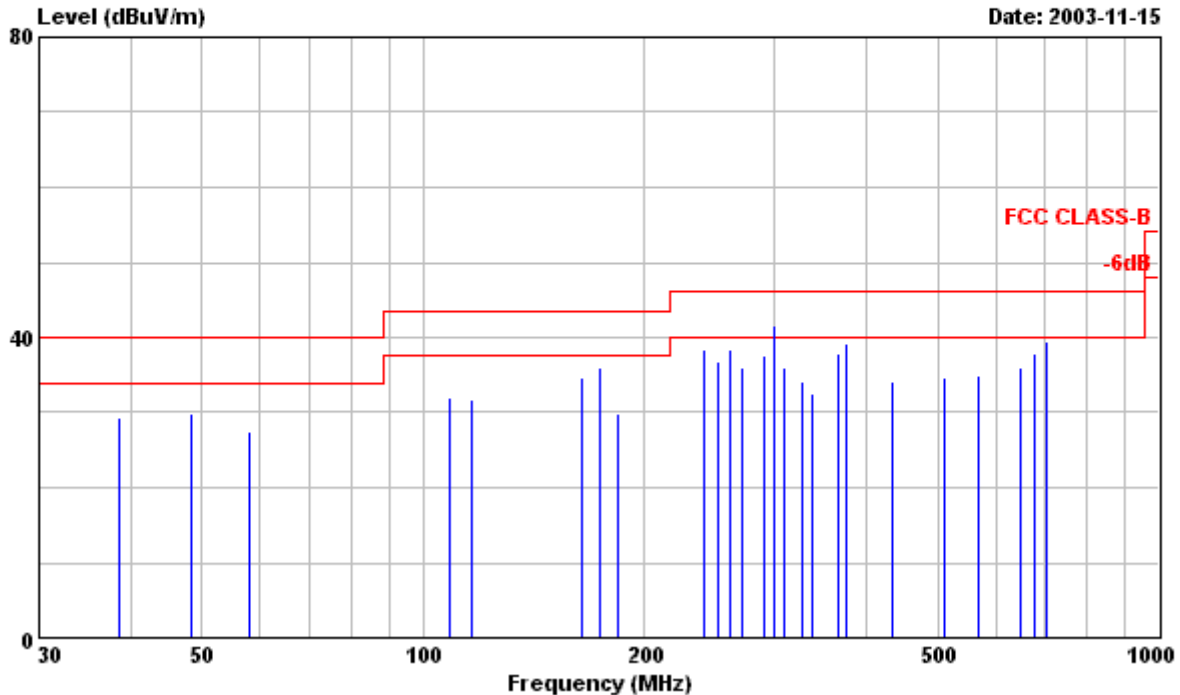


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Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 1

File#: C:\Program Files\em3\EMI03-041-R(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI 3M open site
Condition : FCC CLASS-B 3m FCC-3M-FACTOR HORIZONTAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120-240VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency Peak Reading QP reading Limit Factor Emission Level Over Limit Remark
HORIZONTAL

MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
38.630	16.80	---	40.00	12.47	29.27	-10.73	Peak
48.310	18.90	---	40.00	11.03	29.93	-10.07	Peak
57.960	17.50	---	40.00	10.07	27.57	-12.43	Peak
108.370	20.10	---	43.50	11.83	31.93	-11.57	Peak
115.940	19.40	---	43.50	12.21	31.61	-11.89	Peak
164.230	20.90	---	43.50	13.82	34.72	-8.78	Peak
173.870	22.00	---	43.50	14.07	36.07	-7.43	Peak
183.540	15.00	---	43.50	14.78	29.78	-13.72	Peak
241.480	18.60	---	46.00	19.84	38.44	-7.56	Peak
251.150	16.20	---	46.00	20.55	36.75	-9.25	Peak

Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)



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Philips Electronics Industries (Taiwan) ., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Frequency	Peak Reading	QP reading	Limit	Factor	Emission Level	Over Limit	Remark
					HORIZONTAL		
MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
260.810	17.40	---	46.00	21.12	38.52	-7.48	Peak
270.470	14.30	---	46.00	21.64	35.94	-10.06	Peak
289.780	15.00	---	46.00	22.68	37.68	-8.32	Peak
299.450	---	16.65	46.00	23.15	39.80	-6.20	QP
! 299.450	18.50	---	46.00	23.15	41.65	-4.35	Peak
309.090	19.30	---	46.00	16.66	35.96	-10.04	Peak
328.420	17.10	---	46.00	17.06	34.16	-11.84	Peak
338.070	15.20	---	46.00	17.27	32.47	-13.53	Peak
367.060	20.00	---	46.00	17.81	37.81	-8.19	Peak
376.710	21.10	---	46.00	18.00	39.10	-6.90	Peak
434.670	15.30	---	46.00	18.87	34.17	-11.83	Peak
511.940	14.80	---	46.00	19.90	34.70	-11.30	Peak
569.900	14.20	---	46.00	20.80	35.00	-11.00	Peak
647.170	13.70	---	46.00	22.35	36.05	-9.95	Peak
676.150	14.80	---	46.00	22.98	37.78	-8.22	Peak
705.150	15.90	---	46.00	23.57	39.47	-6.53	Peak

Remarks: 1. All Readings are Peak & Quasi-peak values.

2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)

3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Tested by : C C.Wu

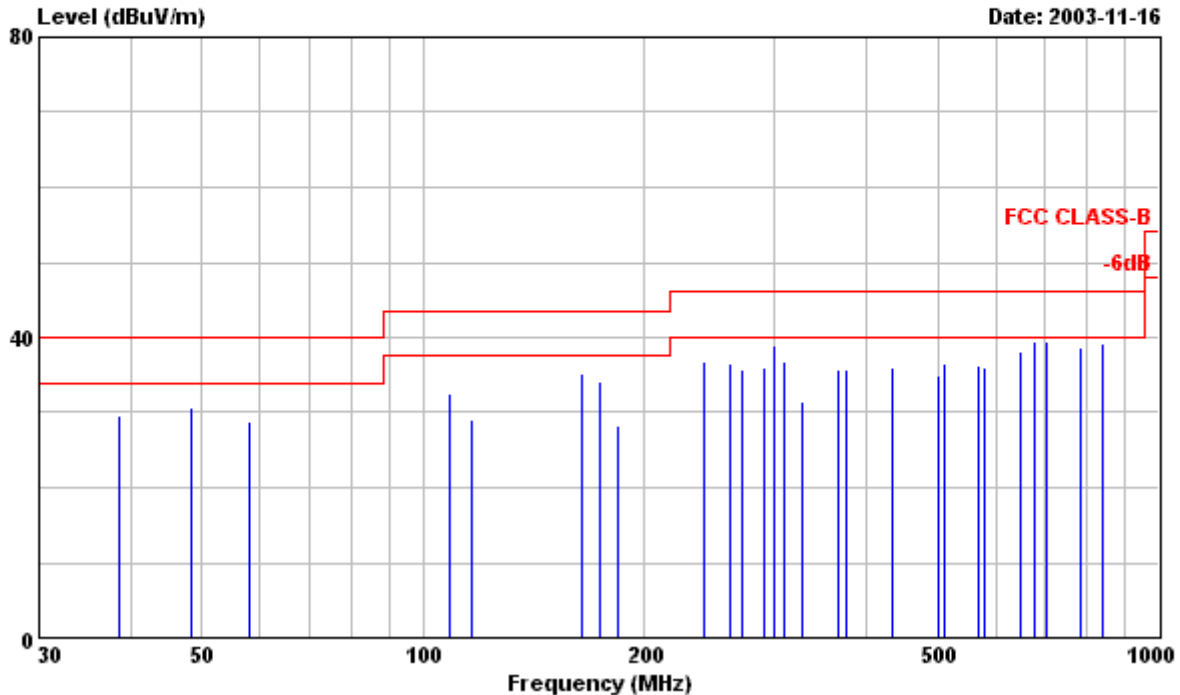


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Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 2

File#: C:\Program Files\em3\EMI03-041-R(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI 3M open site
Condition : FCC CLASS-B 3m FCC-3M-FACTOR VERTICAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120-240VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 16 ARIAL "H" PATTERN.
: 3. 1280x1024/75Hz 80KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency Peak Reading QP reading Limit Factor Emission Level Over Limit Remark
VERTICAL

MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
38.630	17.10	---	40.00	12.47	29.57	-10.43	Peak
48.310	19.70	---	40.00	11.03	30.73	-9.27	Peak
57.960	18.60	---	40.00	10.07	28.67	-11.33	Peak
108.670	20.60	---	43.50	11.85	32.45	-11.05	Peak
115.940	16.80	---	43.50	12.21	29.01	-14.49	Peak
164.230	21.40	---	43.50	13.82	35.22	-8.28	Peak
173.870	20.40	---	43.50	14.07	34.47	-9.03	Peak
183.540	13.40	---	43.50	14.78	28.18	-15.32	Peak
241.480	16.90	---	46.00	19.84	36.74	-9.26	Peak
260.810	15.30	---	46.00	21.12	36.42	-9.58	Peak

Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)



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Philips Electronics Industries (Taiwan) ., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Frequency	Peak Reading	QP reading	Limit	Factor	Emission Level	Over Limit	Remark
					VERTICAL		
MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
270.470	14.10	---	46.00	21.64	35.74	-10.26	Peak
289.780	13.40	---	46.00	22.68	36.08	-9.92	Peak
299.450	15.80	---	46.00	23.15	38.95	-7.05	Peak
309.090	20.20	---	46.00	16.66	36.86	-9.14	Peak
328.420	14.40	---	46.00	17.06	31.46	-14.54	Peak
367.060	18.00	---	46.00	17.81	35.81	-10.19	Peak
376.710	17.60	---	46.00	18.00	35.60	-10.40	Peak
434.670	17.20	---	46.00	18.87	36.07	-9.93	Peak
502.300	15.30	---	46.00	19.76	35.06	-10.94	Peak
511.940	16.60	---	46.00	19.90	36.50	-9.50	Peak
569.900	15.60	---	46.00	20.80	36.40	-9.60	Peak
579.560	15.20	---	46.00	20.91	36.11	-9.89	Peak
647.170	15.70	---	46.00	22.35	38.05	-7.95	Peak
676.150	16.60	---	46.00	22.98	39.58	-6.42	Peak
705.150	15.80	---	46.00	23.57	39.37	-6.63	Peak
782.400	14.20	---	46.00	24.59	38.79	-7.21	Peak
840.360	13.90	---	46.00	25.42	39.32	-6.68	Peak

- Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Tested by : C C.Wu

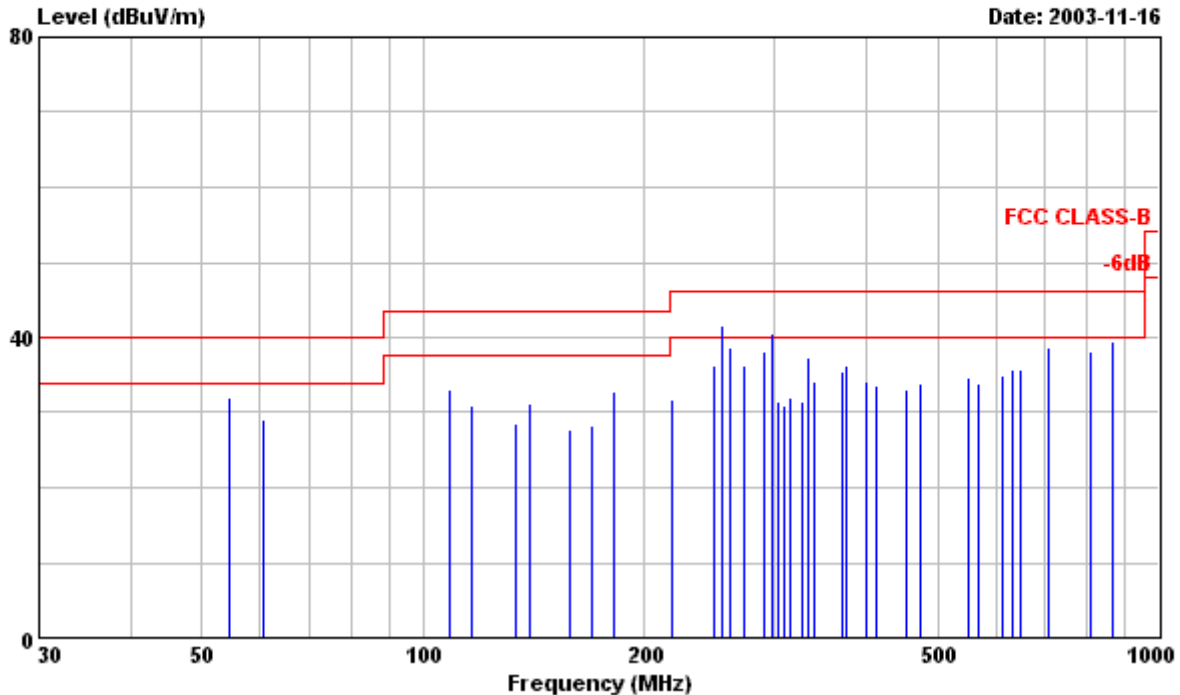


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Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 3

File#: C:\Program Files\eml\EMI03-041-R(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI 3M open site
Condition : FCC CLASS-B 3m FCC-3M-FACTOR HORIZONTAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120-240VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency Peak Reading QP reading Limit Factor Emission Level Over Limit Remark
HORIZONTAL

MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
54.600	21.60	---	40.00	10.37	31.97	-8.03	Peak
60.670	19.20	---	40.00	9.91	29.11	-10.89	Peak
108.230	21.20	---	43.50	11.83	33.03	-10.47	Peak
116.270	18.60	---	43.50	12.21	30.81	-12.69	Peak
133.460	15.80	---	43.50	12.83	28.63	-14.87	Peak
139.530	18.20	---	43.50	13.04	31.24	-12.26	Peak
157.730	14.10	---	43.50	13.63	27.73	-15.77	Peak
169.870	14.40	---	43.50	13.96	28.36	-15.14	Peak
182.020	18.10	---	43.50	14.59	32.69	-10.81	Peak
218.390	13.70	---	46.00	17.94	31.64	-14.36	Peak

Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)



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Philips Electronics Industries (Taiwan) ., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Frequency	Peak Reading	QP reading	Limit	Factor	Emission Level	Over Limit	Remark
HORIZONTAL							
MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
248.740	15.80	---	46.00	20.37	36.17	-9.83	Peak
254.800	---	19.15	46.00	20.76	39.91	-6.09	QP
! 254.800	20.90	---	46.00	20.76	41.66	-4.34	Peak
260.870	17.60	---	46.00	21.12	38.72	-7.28	Peak
273.000	14.50	---	46.00	21.80	36.30	-9.70	Peak
291.190	15.40	---	46.00	22.73	38.13	-7.87	Peak
297.260	---	16.06	46.00	23.04	39.10	-6.90	QP
! 297.260	17.40	---	46.00	23.04	40.44	-5.56	Peak
303.330	14.80	---	46.00	16.55	31.35	-14.65	Peak
309.400	14.20	---	46.00	16.66	30.86	-15.14	Peak
315.460	15.20	---	46.00	16.80	32.00	-14.00	Peak
327.610	14.50	---	46.00	17.06	31.56	-14.44	Peak
333.660	20.20	---	46.00	17.18	37.38	-8.62	Peak
339.740	17.10	---	46.00	17.30	34.40	-11.60	Peak
370.060	17.50	---	46.00	17.88	35.38	-10.62	Peak
376.130	18.40	---	46.00	17.98	36.38	-9.62	Peak
401.020	15.90	---	46.00	18.40	34.30	-11.70	Peak
412.530	15.10	---	46.00	18.57	33.67	-12.33	Peak
455.000	13.80	---	46.00	19.14	32.94	-13.06	Peak
473.200	14.40	---	46.00	19.39	33.79	-12.21	Peak
552.060	14.00	---	46.00	20.54	34.54	-11.46	Peak
570.270	13.20	---	46.00	20.80	34.00	-12.00	Peak
612.720	13.50	---	46.00	21.51	35.01	-10.99	Peak
630.920	13.70	---	46.00	21.98	35.68	-10.32	Peak
649.130	13.20	---	46.00	22.40	35.60	-10.40	Peak
709.790	15.00	---	46.00	23.64	38.64	-7.36	Peak
806.860	13.10	---	46.00	24.93	38.03	-7.97	Peak
867.510	13.70	---	46.00	25.81	39.51	-6.49	Peak

- Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Tested by : C C.Wu

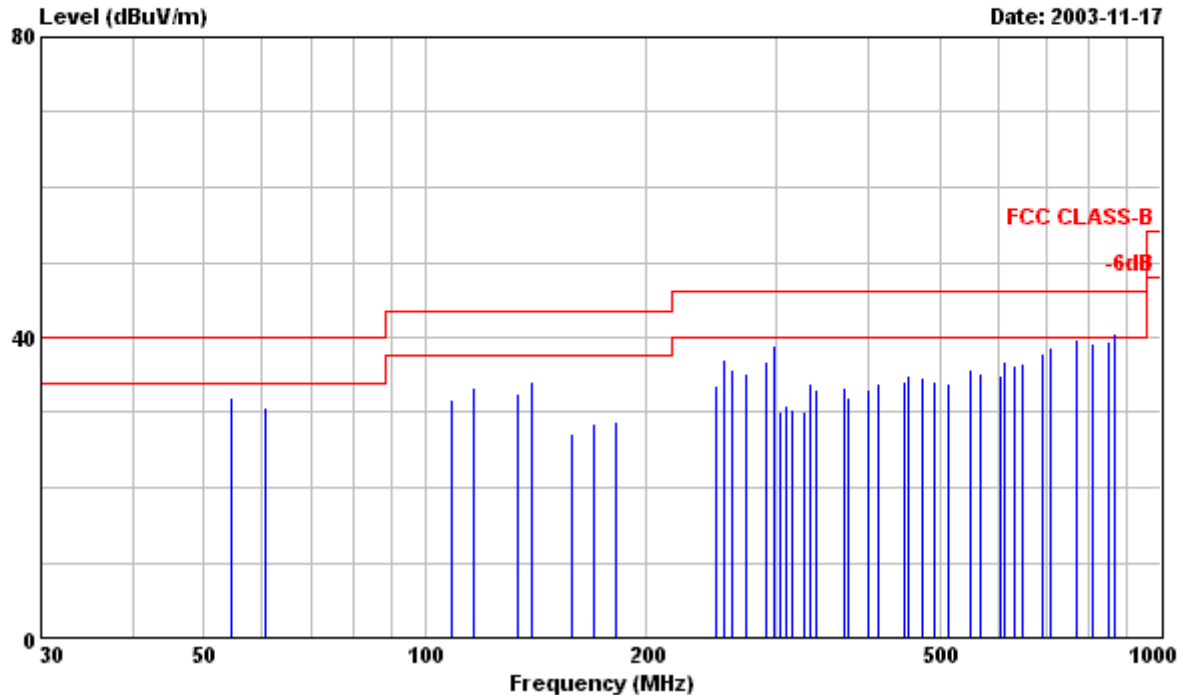


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Philips Electronics Industries (Taiwan)., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Data#: 4

File#: C:\Program Files\eml\EMI03-041-R(Lenovo LXH-P17L3).emi



Site : PHILIPS EMI 3M open site
Condition : FCC CLASS-B 3m FCC-3M-FACTOR VERTICAL
EUT : Lenovo LXH-P17L3 Serial No:TY0304669
Power : 120-240VAC
Memo : 1. EMI EVALUATION FOR FCC SAMPLE.
: 2. 2ND MODEL QDI PANEL,RUN IBM V1.8
: FONT 14 ARIAL "H" PATTERN.
: 3. 1024x768/75Hz 60KHz MODE WITH COMPAQ
: ENC/P866/2OE/8/128A TAI PC,ATI RADEON
: VE DDR VIDEO CAR WAS TESTED.

Frequency Peak Reading QP reading Limit Factor Emission Level Over Limit Remark
VERTICAL

MHz	dBuV	dBuV	dBuV/m	dB/m	dBuV/m	dBuV/m	
54.600	21.60	---	40.00	10.37	31.97	-8.03	Peak
60.670	20.80	---	40.00	9.91	30.71	-9.29	Peak
108.620	19.80	---	43.50	11.85	31.65	-11.85	Peak
116.270	21.20	---	43.50	12.21	33.41	-10.09	Peak
133.460	19.80	---	43.50	12.83	32.63	-10.87	Peak
139.530	21.40	---	43.50	13.04	34.44	-9.06	Peak
157.730	13.60	---	43.50	13.63	27.23	-16.27	Peak
169.870	14.60	---	43.50	13.96	28.56	-14.94	Peak
182.020	14.20	---	43.50	14.59	28.79	-14.71	Peak
248.740	13.10	---	46.00	20.37	33.47	-12.53	Peak

Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)



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Philips Electronics Industries (Taiwan) ., Ltd.
No.5, Tze Chiang 1 Road, Chungli Industrial Park,
Chungli, Taiwan, R.O.C.
Tel:+886-3-4549862 Fax:+886-3-4549887

Frequency	Peak Reading	QP reading	Limit	Factor	Emission Level	Over Limit	Remark
MHz	dBuV	dBuV	dBuV/m	dB/m	VERTICAL		
					dBuV/m	dBuV/m	
254.800	16.30	---	46.00	20.76	37.06	-8.94	Peak
260.870	14.70	---	46.00	21.12	35.82	-10.18	Peak
273.000	13.30	---	46.00	21.80	35.10	-10.90	Peak
291.190	14.10	---	46.00	22.73	36.83	-9.17	Peak
297.260	16.00	---	46.00	23.04	39.04	-6.96	Peak
303.330	13.60	---	46.00	16.55	30.15	-15.85	Peak
309.400	14.40	---	46.00	16.66	31.06	-14.94	Peak
315.460	13.70	---	46.00	16.80	30.50	-15.50	Peak
327.610	13.20	---	46.00	17.06	30.26	-15.74	Peak
333.660	16.70	---	46.00	17.18	33.88	-12.12	Peak
339.740	15.80	---	46.00	17.30	33.10	-12.90	Peak
370.060	15.40	---	46.00	17.88	33.28	-12.72	Peak
376.130	14.10	---	46.00	17.98	32.08	-13.92	Peak
401.020	14.70	---	46.00	18.40	33.10	-12.90	Peak
412.530	15.30	---	46.00	18.57	33.87	-12.13	Peak
448.920	15.10	---	46.00	19.08	34.18	-11.82	Peak
455.000	15.80	---	46.00	19.14	34.94	-11.06	Peak
473.200	15.40	---	46.00	19.39	34.79	-11.21	Peak
491.380	14.90	---	46.00	19.60	34.50	-11.50	Peak
515.650	13.90	---	46.00	19.96	33.86	-12.14	Peak
552.060	15.30	---	46.00	20.54	35.84	-10.16	Peak
570.270	14.40	---	46.00	20.80	35.20	-10.80	Peak
606.660	13.70	---	46.00	21.36	35.06	-10.94	Peak
612.720	15.20	---	46.00	21.51	36.71	-9.29	Peak
630.920	14.40	---	46.00	21.98	36.38	-9.62	Peak
649.130	14.10	---	46.00	22.40	36.50	-9.50	Peak
691.590	14.60	---	46.00	23.34	37.94	-8.06	Peak
709.790	14.90	---	46.00	23.64	38.54	-7.46	Peak
770.440	15.20	---	46.00	24.46	39.66	-6.34	Peak
806.860	14.30	---	46.00	24.93	39.23	-6.77	Peak
849.320	13.90	---	46.00	25.55	39.45	-6.55	Peak
! 867.510	14.60	---	46.00	25.81	40.41	-5.59	Peak
867.510	---	11.50	46.00	25.81	37.31	-8.69	QP

- Remarks: 1. All Readings are Peak & Quasi-peak values.
2. Emission Level (dBuV/m) = Factor (dB/m) + Meter Reading (dBuV/m)
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Tested by : C C.Wu