


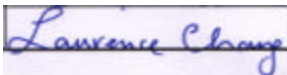
## ELECTROMAGNETIC COMPATIBILITY TEST REPORT

Company : MITAC TECHNOLOGY CORP.  
 Address : NO.19-1, Innovation Rd. I, Hsinchu Science-Based Industrial  
 Park, Hsinchu , Taiwan, R.O.C.  
 Sample Name : Notebook PC  
 Model : A-760  
 Date Received : OCT. 21, 1999  
 Date Tested : OCT. 29, 1999

**MEASUREMENT REQUIREMENT USED:**

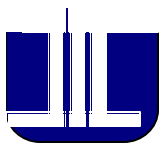
FCC RULES AND REGULATION PART 15 SUBPART B  
 CLASS B OCTOBER 1998 AND ANSI C63.4 MAY 1992  
 CISPR 22, CLASS B, 1996

WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.

	Name	Signature	Date
Testing Engineer	C.F.Wu		Nov.04,1999
Approving Manager	Laurence Chang		Nov. 05,1999

Notes.

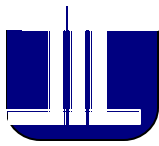
1. This report will be invalid if duplicated or photocopied in part.
2. This report refers only to the specimen(s) submitted to test, and is invalid as separately used.
3. This report is invalid without examination stamp and signature of this institute.
4. The tested specimen(s) will be preserved for thirty days from the date issued.
5. This is a NIST/NVLAP accredited report but not constituted and endorsed by US government.



---

## TABLE OF CONTENTS

TITLE	PAGE NO.
1. GENERAL INFORMATION.....	3
1.1 GENERAL STATEMENT.....	3
1.2 DESCRIPTION OF EUT . POWER.....	3
1.3 DESCRIPTION OF PERIPHERALS .....	4
1.4 EUT & PERIPHERALS SETUP DIAGRAM.....	5
1.5 EUT OPERATING CONDITION .....	6
1.6 DESCRIPTION OF TEST SITE.....	6
2. CONDUCTED EMISSION TEST .....	7
2.1 TEST EQUIPMENTS.....	7
2.2 TEST SETUP .....	7
2.3 CONDUCTED POWER LINE EMISSION LIMIT .....	9
2.4 TEST PROCEDURE .....	9
2.5 UNCERTAINTY OF CONDUCTED EMISSION.....	9
2.6 CONDUCTED RF VOLTAGE MEASUREMENT .....	10
2.7 PHOTOS OF CONDUCTION TEST.....	11
3. RADIATED EMISSION TEST .....	12
3.1 TEST EQUIPMENTS.....	12
3.2 TEST SETUP .....	12
3.3 RADIATION LIMIT .....	13
3.4 TEST PROCEDURE .....	13
3.5 UNCERTAINTY OF RADIATED EMISSION.....	13
3.6 RADIATED RF NOISE MEASUREMENT .....	14
3.7 PHOTOS OF OPEN SITE .....	15-15



## 1. GENERAL INFORMATION

### 1.1 GENERAL STATEMENT

MEASUREMENT DEVIATION : Comply with standard in full

TRACEABILITY : This test result is traceable to national or international std.

### 1.2 DESCRIPTION OF EUT & POWER

MANUFACTURER : MITAC TECHNOLOGY CORP.

SAMPLE NAME : Notebook PC

MODEL NUMBER : A-760

SERIAL NUMBER : Not applicable

POWER SUPPLY : 22.5VDC (from power adapter)

POWER ADAPTER

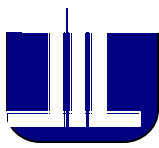
MANUFACTURER : ILAN Electronics Ltd.

MODEL NUMBER : F1700D

POWER CORD : Unshielded cable

I/O Port : Parallel Port × 1 , COM Port × 1 , USB Port × 1 , PS/2 Port × 1 ,  
VGA Port × 1

Engineering Sample  , Product Sample  , Mass Product Sample  .



## 1.3 DESCRIPTION OF PERIPHERALS

### (1) MONITOR

MODEL NUMBER : 6546-00N  
SERIAL NUMBER : 23-M6334  
MANUFACTURER : IBM CORP.  
F.C.C. ID : A3KM065  
POWER CORD : Unshielded , Detachable , 1.8m  
SIGNAL CABLE : Shielded , Undetachable , 1.8m

### (2) KEYBOARD

PRODUCT NUMBER : KB-8923  
PART NUMBER : 1023656  
MANUFACTURER : IBM CORP.  
F.C.C. ID : E8HKB-5923  
SIGNAL CABLE : Shielded , Undetachable , 1.8m  
POWER SOURCE : 5VDC (from PC)

### (3) MODEM

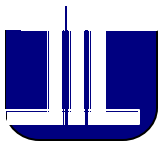
MODEL NUMBER : 5240AM  
SERIAL NUMBER : A0095240K270  
MANUFACTURER : Hayes CORP.  
F.C.C. ID : BFJ5201AM  
POWER CORD : Unshielded , Detachable , 1.8m ( 9VAC from adapter)  
SIGNAL CABLE : Shielded , Detachable , 2m

### (4) MOUSE

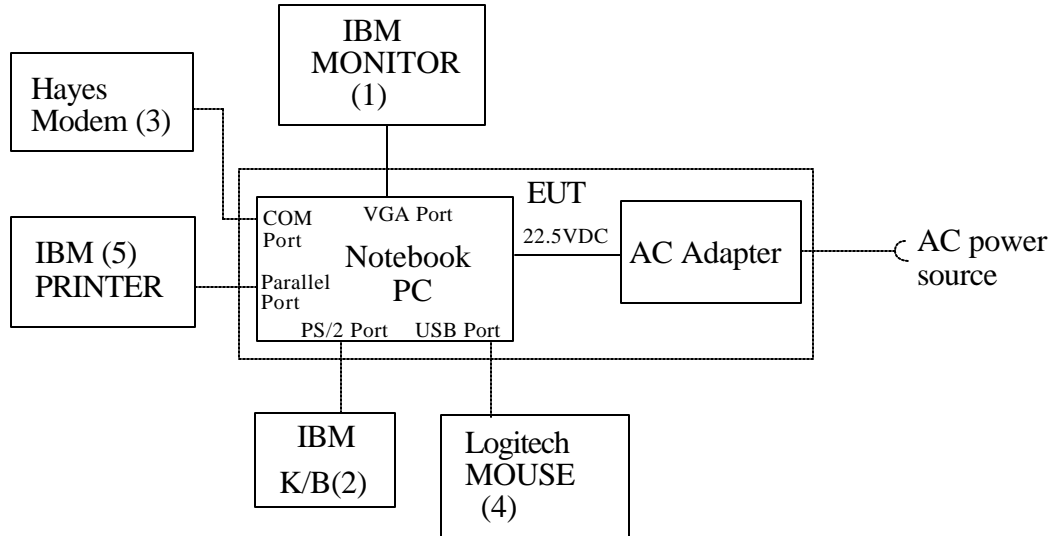
MODEL NUMBER : M-U48a  
SERIAL NUMBER : -----  
MANUFACTURER : Logitech CORP.  
F.C.C. ID : JNZ211360  
SIGNAL CABLE : Shielded , Undetachable , 1.8m  
POWER SOURCE : 5VDC (from PC)

### (5) PRINTER

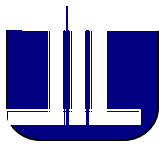
MODEL NUMBER : 5152-002  
SERIAL NUMBER : 0754365  
MANUFACTURER : IBM CORP.  
F.C.C. ID : BKM9A85152002  
POWER CORD : Shielded , Undetachable , 1.8m  
SIGNAL CABLE : Shielded , Detachable , 1.5m



## 1.4 EUT & PERIPHERALS SETUP DIAGRAM



The indicated numbers(1)(2)---,please refer to item 1.2

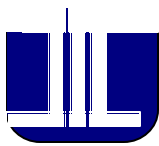


## 1.5 EUT OPERATING CONDITION

1. Powered on all equipments.
2. Get into Win98 system.
3. Run "EMITEST.EXE" program.
  - .Scrolling "H" will be displayed on monitor.
  - .Printer will print out "H" character.
  - .MODEM will exercise sending & receiving operation.
  - .Keyboard and mouse function will be checked periodically.
  - .FDD & HDD function will be checked periodically.

## 1.6 DESCRIPTION OF TEST SITE

SITE DESCRIPTION	: FCC certificate NO. :31040/SIT TUV certificate NO. :I9664582-9610 Lloyd's certificate NO. :LA003 BSMI certificate NO. :SL2-IN-E-0002 NVLAP Lab code.200118-0 CNLA certificate NO. :CNLA-ZL97018 VCCI certificate NO. : R-706, C-650
NAME OF SITE	: Electronics Research & Service Organization Industrial Technology Research Institute
SITE LOCATION	: K500, 195-4 , sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu, Taiwan 31015 R.O.C.



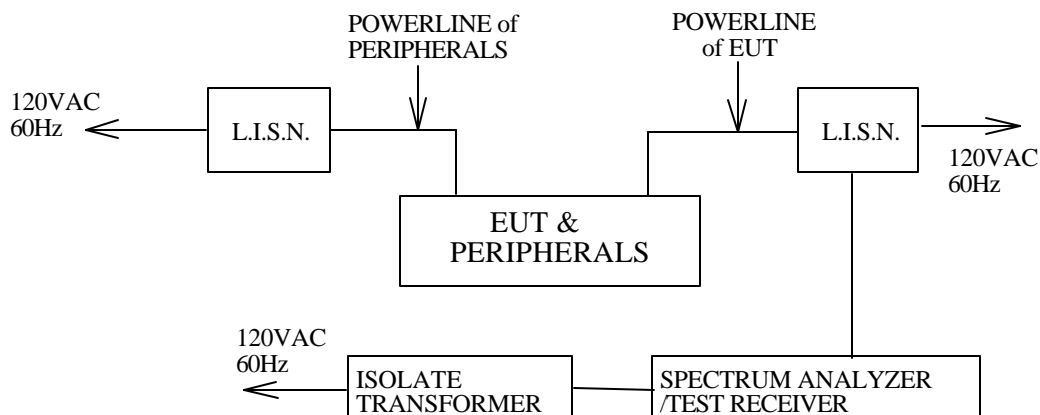
## 2. CONDUCTED EMISSION TEST

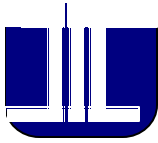
### 2.1 TEST EQUIPMENTS

The following test equipments are used during the conducted powerline tests :

MANUFACTURER OR TYPE	MODEL No	SERIAL NO.	DATE OF CALIBRATION	CALIBRA-TION PERIOD	REMARK
SPECTRUM ANALYZER & DISPLAY	HP 8568A	2235A02320	MAR. 18, 1999	1 Year	PRETEST
QUASI-PEAK ADAPTER	HP 85650 A	2341A00672	MAR. 18, 1999	1 Year	PRETEST
ISOLATION TRANSFORMER	SOLAR 7032-1	N/A	N/A	N/A	FINAL
L.I.S.N.	EMCO 3850/2	9311-1025 9401-1028	MAR. 25, 1999 For Characteristic impedance JUN. 11, 1999 For Insertion loss	1 Year	FINAL
TEST RECEIVER	R/S ESH3	8720791118	JUL. 29, 1999	1 Year	FINAL
SHIELDED ROOM	KEENE 5983	NO.1	N/A	N/A	FINAL
PULSE LIMIT	R/S EHS3Z2	357.8810.52	JUL. 22, 1999	1 Year	FINAL
N TYPE COAXIAL CABLE	-----	-----	JUL. 05, 1999	1 Year	FINAL
50. TERMINATOR	-----	-----	JUL. 14, 1999	1 Year	FINAL

### 2.2 TEST SETUP





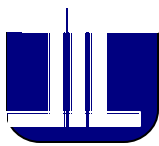
---

*Electronics Research & Service Organization*  
Bldg. 17, 195-4 Sec. 4, Chung Hsing Rd., Chutung, Hsinchu, 310  
Taiwan, Republic Of China  
TEL : 886-3-5917069 FAX : 886-3-5825720

FCC ID : MAU007  
Report No. : 500-8810-019F  
Page 8 of 16

---





## 2.3 CONDUCTED POWER LINE EMISSION LIMIT

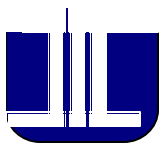
FREQUENCY (MHz)	MAXIMUM RF LINE VOLTAGE (dB.V)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56	56-46
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

## 2.4 TEST PROCEDURE

The test procedure is performed in a 12ft x 12ft x 8ft (L x W x H) shielded room. The EUT along with its peripherals were placed on a 1.0m(W) x 1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

## 2.5 UNCERTAINTY OF CONDUCTED EMISSION

The uncertainty of conducted emission is  $\pm 1.36$ dB.



## 2.6 CONDUCTED RF VOLTAGE MEASUREMENT

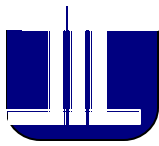
The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.

Temperature : 26.

Humidity : 50 % RH

FREQUENCY (MHz)	READING(dB.V)				LIMITS (dB.V)	
	ONE END & GRD'D		THE OTHER END & GRD'D		Q.P.	Ave.
	Q.P.	Ave.	Q.P.	Ave.		
0.150	.	.	.	.	66.00	56.00
0.179	46.40	.	46.30	.	64.55	54.55
0.241	44.40	.	43.80	.	62.06	52.06
0.290	.	.	37.50	.	60.52	50.52
0.300	34.20	.	.	.	60.24	50.24
3.832	.	.	40.80	.	56.00	46.00
4.195	.	.	41.00	.	56.00	46.00
4.202	35.40	.	.	.	56.00	46.00
7.600	33.40	.	38.10	.	60.00	50.00
14.318	25.20	.	.	.	60.00	50.00
30.000	.	.	.	.	60.00	50.00

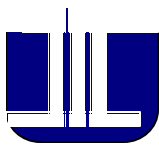
REMARKS .1. . Undetectable or the Q.P.values is lower than the limits of Ave



## 2.7 PHOTOS OF CONDUCTION TEST



Comp. : MITAC TECHNOLOGY CORP.  
Model : A-760



### 3. RADIATED EMISSION TEST

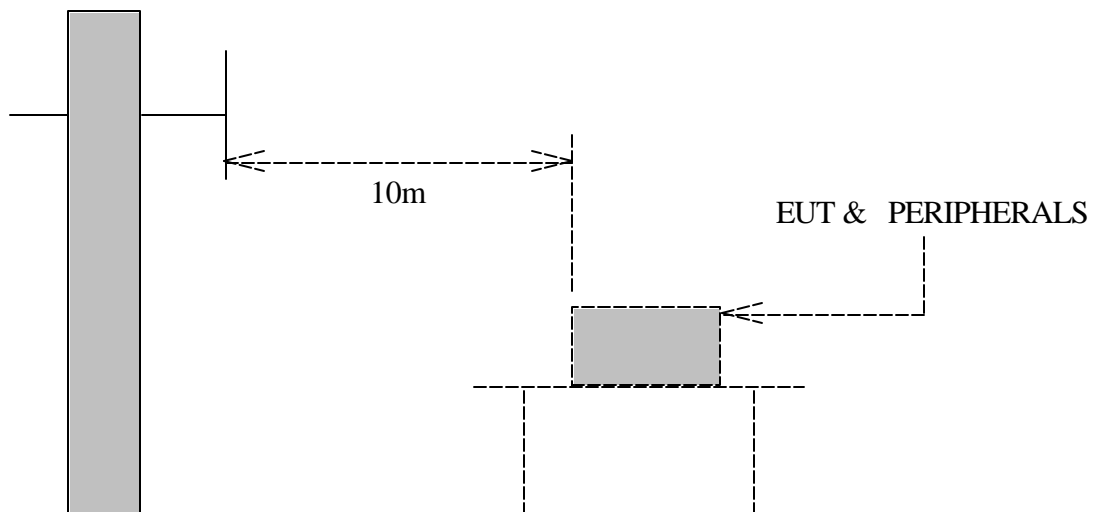
#### 3.1 TEST EQUIPMENTS

The following test equipments are utilized in making the measurements contained in this report.

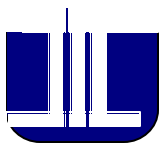
MANUFACTURER OR TYPE	MODEL NO	SERIAL NO	DATE OF CALIBRATION	CALIBRATION PERIOD	REMARK
CHASE BI-LOG ANTENNA	CBL6112B	2562	MAY.01, 1999	1 Year	FINAL
R/S TEST RECEIVER	ESMI	842088/005 841978/008	JUL.29, 1999	1 Year	FINAL
OPEN SITE	-----	No.1	JUN. 29, 1999	1 Year	FINAL
N TYPE COAXIAL CABLE	CHA9525	015	JUL. 06, 1999	1 Year	FINAL

#### 3.2 TEST SETUP

The diagram below shows the test setup which is utilized to make these measurements.



Antenna Elevation Variable



### 3.3 RADIATION LIMIT

All emanation from a class B computing device or system , including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below.

FREQUENCY (MHz)	DISTANCE (METERS)	FIELD STRENGTHS(dB.V/m)	
		CLASS A	CLASS B
30.230	10	40	30
230.1000	10	47	37

Note.(1)The tighter limit shall apply at the edge between two frequency bands.

(2)Distance refers to the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.

### 3.4 TEST PROCEDURE

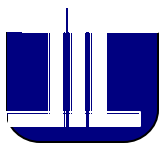
The devices under test were placed on a rotatable table top 0.8 meter above ground. The table was rotated 360 degrees to determine the position of the highest radiation. EUT is set 10 meters from the interference receiving antenna which is mounted on the top of a variable height mast. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength Both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

The bandwidth setting on the E.M.I. meter (R/S TEST RECEIVER ESMI) is 120 KHz.

The levels are quasi peak value readings. The frequency spectrum from 30MHz to 1000MHz was investigated.

### 3.5 UNCERTAINTY OF RADIATED EMISSION

The uncertainty of radiated emission is  $\pm 2.72$ dB.



### 3.6 RADIATED RF NOISE MEASUREMENT

The frequency spectrum from 30 MHz to 1000 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.

All readings are quasi-peak values.

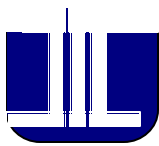
Temperature: 25 .

Humidity: 86 .RH

FREQ- UENCY  (MHz)	ANTENNA FACTOR  (dB/m)	CABLE LOSS  (dB)	METER READING		LIMITS  (dB $\mu$ V/m)	EMISSION LEVEL	
			AT10m(dB $\mu$ V)			AT10m(dB $\mu$ V/m)	
			HORIZON- TAL	VERTICAL		HORIZON- TAL	VERTICAL
30.00	18.02	1.06	i <sup>-</sup>	i <sup>-</sup>	30.00	i <sup>-</sup>	i <sup>-</sup>
62.36	5.85	1.57	7.70	12.60	30.00	15.12	20.02
84.23	8.88	1.72	8.96	11.90	30.00	19.56	22.50
160.24	10.16	2.37	7.74	i <sup>-</sup>	30.00	20.27	i <sup>-</sup>
224.71	11.04	2.80	i <sup>-</sup>	8.68	30.00	i <sup>-</sup>	22.52
240.00	11.93	2.90	7.28	4.62	37.00	22.11	19.45
260.53	12.68	3.04	10.64	i <sup>-</sup>	37.00	26.36	i <sup>-</sup>
331.24	14.11	3.49	5.18	i <sup>-</sup>	37.00	22.78	i <sup>-</sup>
456.12	16.73	4.18	4.76	i <sup>-</sup>	37.00	25.67	i <sup>-</sup>
521.08	17.66	4.51	5.32	i <sup>-</sup>	37.00	27.49	i <sup>-</sup>
1000.00	21.18	6.80	i <sup>-</sup>	i <sup>-</sup>	37.00	i <sup>-</sup>	i <sup>-</sup>

REMARKS : 1. .Undetectable

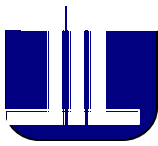
2. Emission level (dB.V/m) =Antenna Factor (dB/m) + Cable loss (dB)  
+ Meter Reading (dB.V).



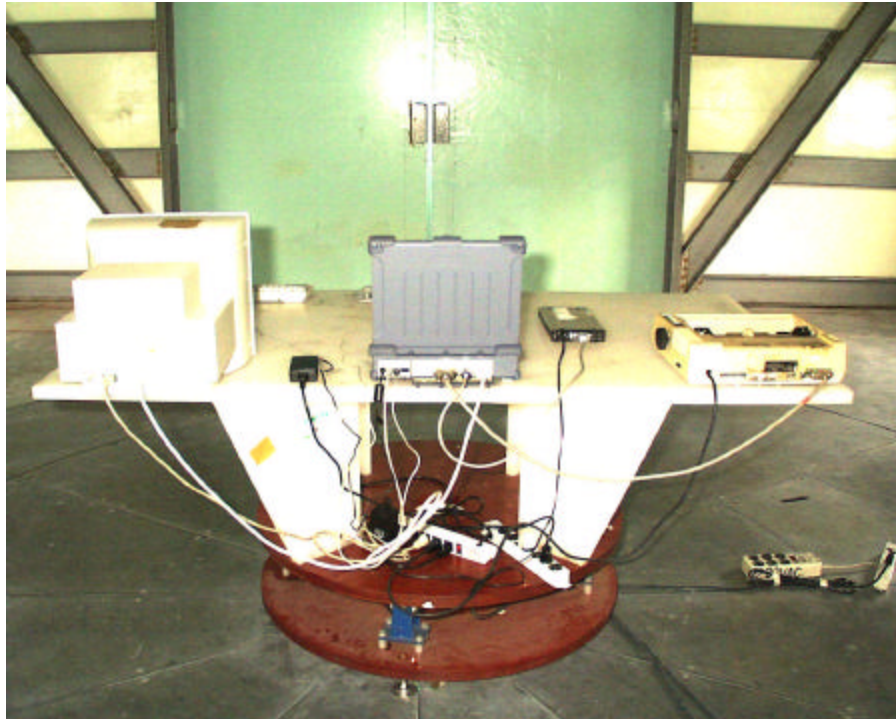
### 3.7 PHOTOS OF OPEN SITE



Comp. : MITAC TECHNOLOGY CORP.  
Model : A-760



### 3.7 PHOTOS OF OPEN SITE



Comp. : MITAC TECHNOLOGY CORP.  
Model : A-760