Technical Compliance Statement



For the following information

Ref. File No.: C1M1208069

Product	:	Motherboard
Model Number	:	(1)IMBM-H61A (2)LMH61A
		(3)xxxxIMBM-H61Axxxxxxxxxx (4)LMH61Axxxxxxx
Brand	:	(1)AAEON (2)ASUS
Applicant	:	AAEON Technology Inc.
Manufacturer #1	:	AAEON Technology Inc.
Manufacturer #2	:	INFO-TEK ELECTRONICS(SUZHOU)CO., LTD
Manufacturer #3	:	Cal-Comp Electronics and Communications (Suzhou) Co., Ltd
Manufacturer #4	:	Danriver Technology (Guangzhou) Inc.
Manufacturer #5	:	BOATEK ELECTRONIC CO., LTD.
Manufacturer #6	:	Global Brands Manufacture (Dongguan) Ltd
Standards	:	FCC CFR 47 Part 15 Subpart B/Oct. 2011 and
		CISPR 22/1997 and ICES-003 (Class B Limit)

We hereby certify that the above product has been tested by us and complied with the FCC official limits. These products might be marketed at the US accordance to FCC Rule based on the standard CFR 47 Part 2 and Part 15 Class B Equipment Regulations. The test was performed accordance to the procedures from ANSI C63.4-2003. The test data & results are issued on the test report no. EM-F1010685.

Signature

Leon Liu/Deputy General Manager Date: Aug. 17, 2012

Test Laboratory: AUDIX Technology Corporation, EMC Department NVLAP Lab. Code: 200077-0 FCC OET Designation: TW1004 Web Site: www.audixtech.com

NVLAP Lab Code 200077-0

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

TEST REPORT FOR FCC DoC for AAEON Technology Inc. Motherboard Model No.: (1)IMBM-H61A (2)LMH61A (3)xxxxIMBM-H61Axxxxxxx (4)LMH61Axxxxxx Brand: (1)AAEON (2)ASUS

Prepared for : AAEON Technology Inc. 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan

Prepared By : AUDIX Technology Corporation EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan

> Tel : (02) 2609-9301, 2609-2133 Fax : (02) 2609-9303

File Number	:	C1M1208069
		(ACW Ref. No. ACWE-G1207026)
Report Number	:	EM-F1010685
Date of Test	:	Aug. 15 ~ 17, 2012
Date of Report	:	Aug. 17, 2012

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APPENDIX I (Photos of EUT)

TEST REPORT FOR FCC COMPLIANCE DECLARATION

Applicant	:	AAEON Technology Inc.
Manufacturer #1	:	AAEON Technology Inc.
Manufacturer #2	:	INFO-TEK ELECTRONICS(SUZHOU)CO., LTD
Manufacturer #3	:	Cal-Comp Electronics and Communications (Suzhou) Co., Ltd
Manufacturer #4	:	Danriver Technology (Guangzhou) Inc.
Manufacturer #5	:	BOATEK ELECTRONIC CO., LTD.
Manufacturer #6	:	Global Brands Manufacture (Dongguan) Ltd
EUT Description	:	Motherboard
-		(A) Model No. : (1)IMBM-H61A (2)LMH61A
		(3)xxxxIMBM-H61Axxxxxxxxxxx
		(4)LMH61Axxxxxx
		(B) Serial No. : N/A
		(\mathbf{C}) D 1 (1) A A F (D) I (C) A G I I G

(C) Brand
(D) Power Supply
(E) Test Voltage
(C) AAEON (2)ASUS
(D) Power Supply
(D) Power Suppl

Measurement Standard Used:

FCC CFR 47 Part 15 Subpart B/Oct. 2011 and CISPR 22/1997 ANSI C63.4-2003

ICES-003 Issue 4 Feb. 2004

(NOTE : These results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations.)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 Subpart B with the provisions of sections 15.107(a) and 15.109(a)(g) Class B limits both conducted and radiated emission.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Date of Test	: Aug. 15 ~ 17, 2012	Date of Report :	Aug. 17, 2012
Producer :	(Nita Lee/Administrator)		
Signatory : -	Leon Liu/Deputy General Manager)		

Name of the Representative of the Responsible Party :

Signature :

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Motherboard
Model Number	:	(1)IMBM-H61A (2)LMH61A(3)xxxxIMBM-H61Axxxxxxxxxxxx(4)LMH61Axxxxxxx
		The Model: (1)~(4) are identical. "x" can be 0-9, A-Z, a-z, - or blank for marketing purpose.
		The Model: IMBM-H61A is tested in this report.
Brand	:	(1)AAEON (2)ASUS
Applicant	:	AAEON Technology Inc. 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan
Manufacturer #1	:	AAEON Technology Inc. 5F, No.135, Lane 235, Pao Chiao Rd, Hsin-Tien Dist., New Taipei City, Taiwan
Manufacturer #2	:	INFO-TEK ELECTRONICS(SUZHOU)CO.,LTD 183 Jinfeng Rd., Suzhou, Jiangsu, PRC
Manufacturer #3	:	Cal-Comp Electronics and Communications (Suzhou) Co., Ltd Wujiang Export Processing Zone, No 688, Pangjin Road, Wujiang Economic Development Zone, Jiangsu Province, China.
Manufacturer #4	:	Danriver Technology (Guangzhou) Inc. No. 16 Baoying Dadao, Guangzhou Free Trade Zone. People's Republic of China
Manufacturer #5	:	BOATEK ELECTRONIC CO., LTD. No. 124 bubugao road, wu sha kong bavillage, chang an, dong guan, guang dong province
Manufacturer #6	:	Global Brands Manufacture (Dongguan) Ltd Yue Yuen Industrial Estate, Huang Jiang Town Dong Guan City, Guang Dong Province

Date of Receipt of Sample	:	Aug. 13, 2012
Date of Test	:	Aug. 15 ~ 17, 2012
*EUT Description *		
CPU	:	Intel Confidential QBQ1 ES 2.46GHz Socket 1155
Chipset	•	South Bridge: Intel H61(B3)
Memory Size		Min: 512 MB, Max: 16 GB
Row (CS) number		Rows: 4 Rows Max: 4 GB/Row
System Memory	•	DIMM A1
System Wentery	•	DIMM_A2
		DIMM_12 DIMM_B1
		DIMM B2
		Type DDR3-1066/1333/1600
Expansion Slots	:	Slots PCI: 1
		PCIEX1:1 PCIEX1_1
		PCIEX16 slot PCIEX16 PCIEX16 (BLUE)
Graphics	:	Integrated Gfx in North bridge
		On board Gfx. Chipset name: Intel H61
		Max. UMA Memory Size: 1024M MB
D-Sub Max. resolution	:	1920*1200@75Hz
DVI Max. resolution	:	1920*1200@60Hz
Audio	:	Azalia CODEC: 6 channels
		IC: ALC887-VD2-CG (Colay with ALC886) 3 x
		Audio Jack w/BTX Type (Mic-in, Line-out,
		Line-in) on Rear IO support Jack detection & ANTI POP Function
Network		Dual Lan
Network	•	Gigabit: RTL8111F-VB-CG*2 CIe
		Manageability WOL*(S3*.S4*.S5*)
		PXE* (must have)
		Support 2 GBE LAN Port
Storage	:	South Bridge: Intel H61 built-in
		Connectors SATA1 Color: Light Blue
		SATA2 Color: Light Blue
		SATA3 Color: Light Blue
USB	:	Standard USB2.0
		Number of ports USB 2.0 Ports: 8
II: h t W l - in - En-		mid-board: 4 ports back panel: 4 ports
Highest Working Frequency	:	2.46GHz
Back I/O Ports	•	(1) USB 2.0 port*4 (2) PL 45 mort*2
		(2) RJ-45 port*2 (3) PS-2 port*2
		(4) Audio port*3
		(5) D-Sub port*1
		(6) DVI port*1
		(7) RS-232 port*2

Remark:

This EUT (Motherboard, within PC system) with the following test modes were pre-scanned. Finally, this report was selected the worst test mode to issue report.

Mode	Operating of EUT	VGA Interface, Resolutions and Frequencies
1.		D-Sub, 1920*1200/75Hz
2.	Full System	DVI, 1920*1200/60Hz
3.		D-Sub + DVI, 1600*1200/60Hz
4.		D-Sub + DVI, 1280*1024/75Hz
5.		D-Sub + DVI, 640*480/60Hz

The details of pre-scanned modes are as follows :

The worst test mode of finally reported are as follows :

Test Item	Operating of EUT	VGA Interface, Resolutions and Frequencies
CE	Full System	D-Sub + DVI, 1600*1200/60Hz
RE		D-Sub + DVI, 1600*1200/60Hz

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM

:	J POWER
:	(1)AAEON (2)ASUS, M/N: IMBM-H61A
:	Intel Confidential QBQ1 ES 2.46GHz
	Socket 1155
:	WD, M/N WD1600ADJS-08WAA0
:	Seventeam, M/N ST-300WAP
	FCC by DoC
:	Kingston, DDR3, Size: 2GB
:	LG, M/N GH22LS30
	FCC By DoC
:	GIGABYTE, M/N GV-NX85T256HP
	FCC By DoC
:	Non-Shielded, Detachable, 1.8m
	•

: Model Number 2408WFP Serial Number GN-OG293H-74261-874-214S-A00 FCC ID By DoC **BSMI ID** R43002 Brand DELL D-Sub Cable Shielded, Detachable, 1.8m Bonded two ferrite cores Power Cord Non-Shielded, Detachable, 1.8m 1.2.3. DELL 24" LCD MONITOR #2 (LINK TO EUT) : 2408WFP Model Number Serial Number : GN-OG293H-74261-874-210S-A00 FCC ID By DoC **BSMI ID** R43002 Brand DELL **DVI** Cable Shielded, Detachable, 1.8m Bonded two ferrite cores Power Cord : Non-Shielded, Detachable, 1.8m 1.2.4. USB KEYBOARD (LINK TO EUT) Model Number SK-8175 Serial Number MY-0W217F-71619-058-1698-A01 FCC ID By DoC **BSMI ID** T3A002 Brand DELL USB→PS2 Cable Shielded, Undetachable, 2.0m 1.2.5. USB MOUSE (LINK TO EUT) Model Number MOC5UO Serial Number HOV055BG FCC ID By DoC **BSMI ID** R41108 Brand DELL USB→PS2 Cable : Non-Shielded, Undetachable, 1.8m 1.2.6. LASER PRINTER (LINK TO EUT) Model Number : ML-1630 Serial Number 4561B1CP600023X A3LML1630 FCC ID **BSMI ID** R33475 Brand SAMSUNG USB Cable : Shielded, Detachable, 1.8m Power Cord : Non-Shielded, Detachable, 1.8m

1.2.2. DELL 24" LCD MONITOR #1 (LINK TO EUT)

1.2.7. USB2.0 STORAGE MEDIA #1 (LINK TO EUT)

	Model Number	:	U172P
	Serial Number	:	95110870047037
	FCC ID	:	By DoC
	BSMI ID	:	D33311
	Manufacturer	:	pqi
	USB Data Cable	:	Shielded, Detachable, 1.5m
1.2.8.	USB2.0 STORAGE MED	IA #2	(LINK TO EUT)
	Model Number	:	U172P
	Serial Number	:	95110870047035
	FCC ID	:	By DoC
	BSMI ID	:	D33311
	Manufacturer	:	pqi
	USB Data Cable	:	Shielded, Detachable, 1.5m
1.2.9.	USB 2.0 STORAGE MED	DIA #3	(LINK TO EUT)
	Model Number	:	U172P
	Serial Number	:	95110870047016
	FCC ID	:	By DoC
	BSMI ID	:	D33311
	Manufacturer	:	pqi
	USB Cable	:	Shielded, Detachable, 1.5m
1.2.10	. USB2.0 STORAGE MED	IA #4	
	Model Number	:	U172P
	Serial Number	:	95110880023210
	FCC ID	:	By DoC
	BSMI ID	:	D33311
	Manufacturer	:	pqi
	USB Data Cable	:	Shielded, Detachable, 1.5m
1.2.11	. USB2.0 STORAGE MED	IA #5	, ,
	Model Number		U172P
	Serial Number	•	95110880023233
	FCC ID	•	By DoC
	BSMI ID	•	D33311
	Manufacturer	•	pqi
	USB Data Cable	•	Shielded, Detachable, 1.5m
1212	. WALKMAN (LINK TO E	EUT)	, 2 emenatione, 1.0111
1.2.14	×		
	Model Number	•	RQ-P35LT-K
	Serial Number	•	HA08697
	Manufacturer	•	Panasonic Non Shielded Detechable 1.8m
	Data Cable	•	Non-Shielded, Detachable, 1.8m

1.2.13. EARPHONE WITH MIC. & IN-LINE VOLUME CONTROL #1 (LINK TO EUT)

Model Number	:	HS10101
Serial Number	:	N/A
BSMI ID	:	R34896
FCC ID	:	By DoC
Brand	:	UIO
Data Cable	:	Non-Shielded, Detachable, 1.5m

1.2.14. EARPHONE WITH MIC. & IN-LINE VOLUME CONTROL #2

Model Number	:	HS10101
Serial Number	:	N/A
BSMI ID	:	R34896
FCC ID	:	By DoC
Brand	:	UIO
Data Cable	:	Non-Shielded, Detachable, 1.5m

1.2.15. MODEM #1 (LINK TO EUT)

Model Number	:	DM-1414
Serial Number	:	980034393
FCC ID	:	IFAXDM1414
Manufacturer	:	Accex
DVI Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, M/N AM-91000A
		Non-Shielded, Undetachable, 1.8m

1.2.16. MODEM #2 (LINK TO EUT)

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

[Partner System]

1.2.17. PARTNER PC SYSTEM

Model Number	:	D220 MT
Serial Number	:	SGH40709CN
FCC ID	:	By DoC
BSMI ID	:	R33001
Brand	:	HP
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.18. PARTNER 15" LCD MONITOR

	Model Number	:	D5063
	Serial Number	:	CN206A6013
	FCC ID	:	ARSLM562H
	BSMI ID	:	R33037
	Manufacturer	:	Top Victory (Brand: HP)
	Data Cable (D-Sub)	:	Shielded, Detachable, 1.8m
			Bonded two ferrite cores
	AC Adapter	:	Delta, M/N ADP-40TB
			BSMI ID 3892D142
			Cord: Shielded, Undetachable, 1.8m
			Bonded a ferrite core
	Power Cord	:	Non-Shielded, Detachable, 1.8m
1.2.19	PARTNER KEYBOARD		
	Model Number	:	AS-KBA000
	Serial Number	:	C0602118403
	FCC ID	:	By DoC
	BSMI ID	:	T3A002
	Manufacturer	:	Siltek (Brand: ASUS)
	Data Cable	:	Non-Shielded, Undetachable, 1.8m
1.2.20	PARTNER USB MOUSE		
	Model Number	:	M-UV69a
	Serial Number	:	HCB60403038
	FCC ID	:	By DoC
	BSMI ID	:	T4A126
	Manufacturer	:	LOGITECH (Brand: ASUS)
	Data Cable	:	Shielded, Undetachable, 1.8m
1.2.21	WIRELESS LAN AP (LIN	К ТС) EUT)
	Model Number		RTW030
	Serial Number	•	122B1077087
	FCC ID	•	H8NRTW030
	Manufacturer		ASKEY
	LAN Cable	•	Non-Shielded, Detachable, 10m
	-to PC System	•	
	LAN Cable	:	Non-Shielded, Detachable, 10m
	-to Partner PC System		,,
	AC Adapter	:	M/N AD-121ANDT, Input
	-		Cord: Non-Shielded, Detachable, 3.0m

1.3. Description of Test Facility

Name of Firm	:	AUDIX Technology Corporation EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Site (C3/R8)	:	No. 3 Shielded Room No. 67-4, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
		No. 8 Open Area Test Site No. 67-4, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Federal Communication Commission Registration Number: 220521 Renewal on September 14, 2010
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)		
Conduction Test	150kHz~30MHz	±1.73dB		
Radiation Test	30MHz~300MHz	±2.99dB		
(Distance: 10m)	300MHz~1000MHz	±2.73dB		
Radiation Test (Distance: 3m)	1GHz~18GHz	± 3.73dB		
Remark • Uncertainty = $k_{11}(y)$				

Remark : Uncertainty = $ku_c(y)$

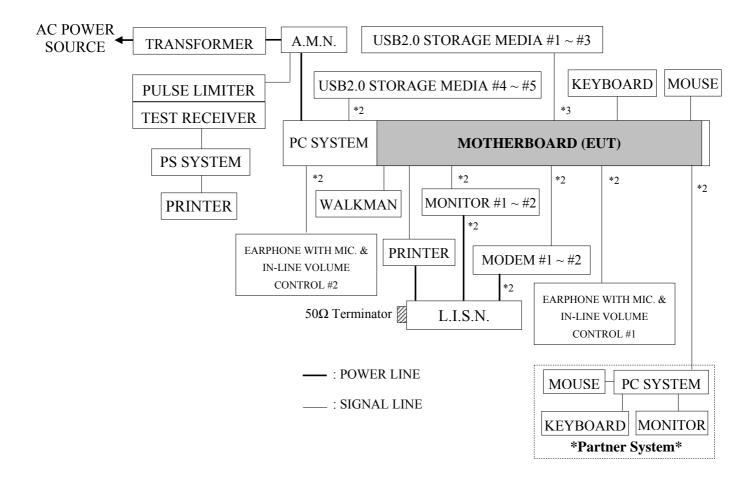
2. POWERLINE CONDUCTED EMISSION MEASUREMENT

2.1. Test Equipment

The following test equipment was used during the powerline conducted emission measurement : (No. 3 Shielded Room)

Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCS30	100337	Apr. 09, 12'	Apr. 08, 13'
2.	A.M.N.	Kyoritsu	KNW-244C	8-1373-5	Mar. 27, 12'	Mar. 26, 13'
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1370-10	Feb. 01, 12'	Jan. 31, 13'
4.	Pulse Limiter	R&S	ESH3-Z2	100041	Feb. 01, 12'	Jan. 31, 13'

2.2.Block Diagram of Test Setup



Frequency	Maximum RF Line Voltage			
	Quasi-Peak Level	Average Level		
150kHz ~ 500kHz	$66 \sim 56 \ dB\mu V \qquad 56 \sim 46 \ dB\mu V$			
500kHz ~ 5MHz	56 dBμV 46 dBμV			
$5 MHz \sim 30 MHz$	60 dBµV	50 dBµV		

2.3. Powerline Conducted Emission Limit (15.107(a), Class B)

Remark : 1. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

2. The lower limit applies at the band edges.

2.4. Operating Condition of EUT

PC system (EUT inside) Exercise Program and Condition			
Operating System	Windows XP		
Test Program	Burnin Test		
Graphic Controller Both two LCD monitors display scrolling "H" (Arial 11) pattern with respective resolution at the same time.			
LAN Controller	AN Controller Data transfer to host PC		
Audio Controller Play 1kHz audio signal			
Serial Ports1. Read/Write operation to USB2.0 storage media. 2. Sent "H" (Arial 11) to printer			
Interface Controller	Interface Controller Read/Write operation to hard disk		
The other peripheral devices were driven and operated in turn during all testing.			

2.5. Test Procedure

The EUT (within PC system) was placed on the table which was above the ground by 80cm and PC System's power cord was connected to the power mains through an Artificial Mains Network (A.M.N.). The other peripheral devices power cords were connected to the power mains through a line impedance stabilization network (L.I.S.N.). 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 simulators of the interface cables were manipulated according to FCC ANSI C63.4-2003 during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 0.15MHz to 30MHz was pre-scanned with a peak detector.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. (Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary) 2.6. Powerline Conducted Emission Measurement Results

PASSED. (All the emissions not reported below are too low against the prescribed limits.)

The EUT (within PC system) with the following **worst test mode (D-Sub + DVI, 1600*1200/60Hz)** was performed during this section testing and to read Q.P. value, the test data are listed in next pages.

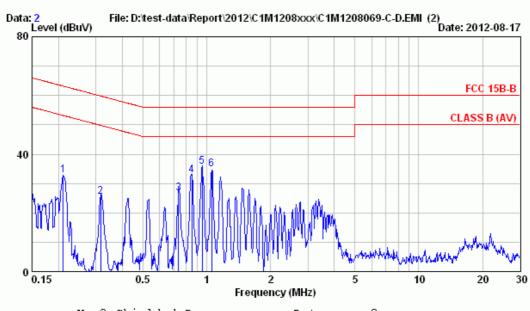
EUT: Motherboard	M/N: IMBM-H61A	
Test Date : Aug. 17, 2012	2 Temperature : 25	Humidity: 52%

The details are as follows :

Mode Operating of EUT		VGA Interface,	Reference Test Data No.		
		\ Resolutions and Frequencies	Neutral	Line	
1.	Full System	D-Sub + DVI, 1600*1200/60Hz	# 2	# 1	



AUDIX Corp. EMC Laboratory No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443 Tel:+886-2-26092133 Fax:+886-2-26099303 Email:ttemc@ttemc.com.tw



Site	: No.3 Shielded Room	Data : 2
Condition	: KNW-244C	Phase : NEUTRAL
Limit	: FCC 15B-B	
Env. / Ins.	: 25*C / 52% ESCS 30 (337)	Engineer: Edward
EUT	: IMBM-M61A	
Power Rating	: 120Vac / 60Hz	
Test Mode	: Full System 1600*1200/60Hz	(D-SUB+DVI)
Env. / Ins. EUT Power Rating	: 25*C / 52% ESCS 30 (337) : IMBM-M61A : 120Vac / 60Hz	-

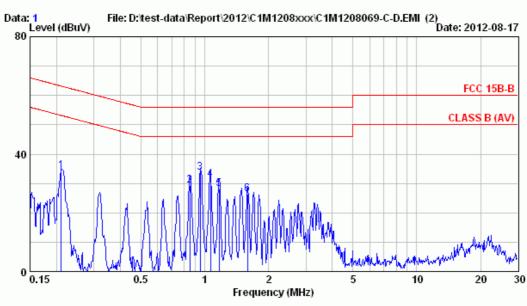
_		Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)		Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
	1	0.211	0.10	0.20	32.39	32.69	63.18	30.49	QP
	2	0.317	0.10	0.20	25.31	25.61	59.80	34.19	QP
	3	0.735	0.10	0.20	26.43	26.73	56.00	29.27	QP
	4	0.853	0.10	0.20	32.56	32.86	56.00	23.14	QP
	5	0.953	0.10	0.20	35.36	35.66	56.00	20.34	QP
	6	1.054	0.11	0.40	34.43	34.94	56.00	21.06	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.

2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



AUDIX Corp. EMC Laboratory No.53-11, Tin-fu Tsun, Lin-kou Hsiang, Taipei County, Taiwan R.O.C. Post Code:24443 Tel:+886-2-26092133 Fax:+886-2-26099303 Email:ttemc@ttemc.com.tw



Site	:	No.3 Shielded Room	Data	:	1
Condition	:	KNW-244C	Phase	:	LINE
Limit	:	FCC 15B-B			
Env. / Ins.	:	25*C / 52% ESCS 30 (337)	Engineer	r:	Edward
EUT	:	IMBM-M61A			
Power Rating	:	120Vac / 60Hz			
Test Mode	:	Full System 1600*1200/60Hz	(D-SUB+D)	VI))

-		Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
	1	0.211	0.10	0.20	33.98	34.28	63.18	28.90	QP
	2	0.853	0.10	0.20	29.11	29.41	56.00	26.59	QP
	3	0.953	0.10	0.20	33.41	33.71	56.00	22.29	QP
	4	1.065	0.10	0.40	30.86	31.36	56.00	24.64	QP
	5	1.172	0.10	0.40	27.55	28.05	56.00	27.95	QP
	6	1.593	0.10	0.40	25.94	26.44	56.00	29.56	QP

Remarks: 1.Emission Level= LISN Factor + Cable Loss + Reading.

2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement :

3.1.1.	For 30MHz-1000MHz Fr	requency (At No.	8 Open Area Test Site	;)
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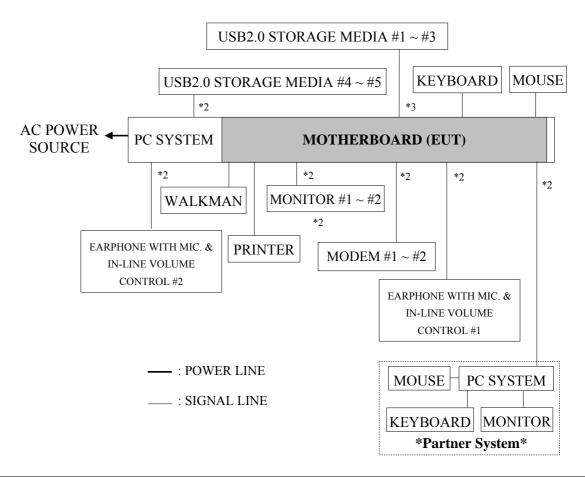
Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY42000134	Aug. 25, 11'	Aug. 24, 12'
2.	Test Receiver	R & S	ESCI7	100746	Jan. 31, 12'	Jan. 30, 13'
3.	Amplifier	HP	8447D	2944A06891	NCR	NCR
4.	Bilog Antenna	Schaffner	CBL6112B	2735	Mar. 03, 12'	Mar. 02, 13'

3.1.2. For 1GHz-18GHz Frequency (At No. 8 Open Area Test Site)

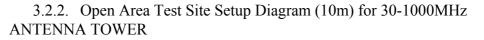
Item	Туре	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY42000134	Aug. 25, 11'	Aug. 24, 12'
2.	Amplifier	Agilent	8449B	3008A02596	Jan. 09, 12'	Jan. 08, 13'
3.	Horn Antenna	EMCO	3115	9609-4927	Jul. 05, 12'	Jul. 04, 13'

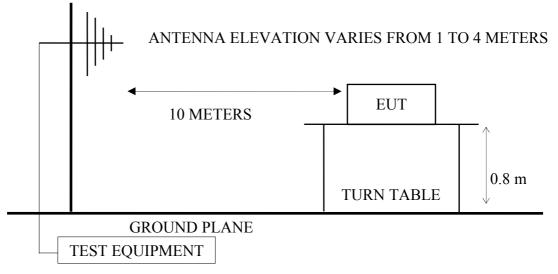
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators

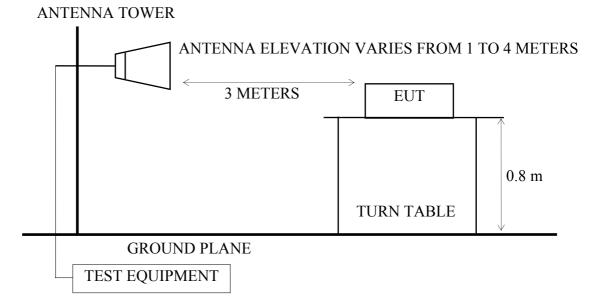


AUDIX Technology Corporation Report No.: EM-F1010685





3.2.3. Open Area Test Site (3m) Setup Diagram for above 1GHz



3.3. Radiation Emission Limit (§15.109(a)(g)/CISPR 22, Class B)

All emanations from a class B computing devices 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 LIMITS (dBµV/m)
30~230	10	30
230~1000	10	37
Above 1000	3	74.0 (Peak)
Above 1000	3	54.0 (Average)

Note : (1) The tighter limit applies at the edge between two frequency bands.

- (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the E.U.T.
- (3) The system under test shall not exceed the radiated emission limits specified in Section 15.109 of this part by more than 6 dB.

3.4. Operating Condition of EUT

Same as conducted measurement which is listed in 2.4., except the test set up replaced by section 3.2.

3.5. Test Procedure

3.5.1. For Frequency Range was 30MHz-1000MHz which measurement distance was 10m at Open Area Test Site:

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 10 meters away from the receiving antenna which was mounted on an antenna tower. The antenna could be moved up and down between 1 meter and 4 meters to find out the aximum emission level. Broadband antennas were used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-2003 on radiated measurement.

The bandwidth of the R&S Test Receiver ESCI7 was set at 120kHz.

The frequency range from 30MHz to 1000MHz was pre-scanned with Peak detector and all the final readings of measurement were with Quasi-Peak detector.

3.5.2. For Frequency Range was above 1GHz which measurement distance was 3m at Open Area Test Site:

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna could be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement, and both average and peak emission level were recorded form spectrum analyzer. In order to find the maximum emission level, all the interface cables were manipulated according to ANSI C63.4-2003 on radiated measurement.

The resolution bandwidth of Agilent Spectrum Analyzer E7405A was set at 1MHz.

The frequency range above 1GHz was checked and all final readings of measurement were with Peak and Average detector.

3.6. Radiated Emission Measurement Results

PASSED. (All the emissions not reported below are too low against the prescribed limits.)

For 30MHz-1000MHz frequency range :

The EUT (within PC system) with the following **worst test mode** (**D-Sub** + **DVI**, **1600*1200/60Hz**) was performed during this section testing and the test data are listed in 3.6.1.

EUT:	Motherboard	M/N: IMBM-H61A

The details are as follows :

Mode	Operating of	VGA Interface,	Reference Test Data No.		
	EUT	\ Resolutions and Frequencies	Horizontal	Vertical	
1.	Full System	D-Sub + DVI, 1600*1200/60Hz (Open Case)	# 4	#3	
2.	Full System	D-Sub + DVI 1600*1200/60Hz (Close Case)	# 2	# 1	

The system under test shall not exceed the radiated emission limits specified in Section 15.109 of this part by more than 6 dB.

For frequency range above 1GHz :

The EUT (within PC system) with the following **worst test mode** (**D-Sub** + **DVI**, **1600*1200/60Hz**) was performed during this section testing and the test data are listed in 3.6.2.

Test Date : Aug. 15, 2012 Temperature : 30

Humidity: 59%

The details are as follows :

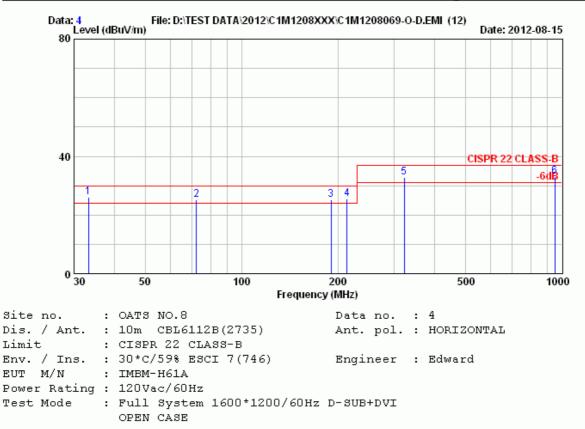
Mode	Operating of EUT	VGA Interface, \Resolutions and Frequencies	Reference Test Data No.				
			Horizontal		Vertical		
			Peak	Average	Peak	Average	
1.	Full System	D-Sub + DVI, 1600*1200/60Hz (Open Case)	# 10	# 12	#9	# 11	
2.		D-Sub + DVI 1600*1200/60Hz (Close Case)	# 6	# 8	# 5	# 7	

The system under test shall not exceed the radiated emission limits specified in Section 15.109 of this part by more than 6 dB.

3.6.1. Radiated Emission Measurement Results at Open Area Test Site (Frequency Range 30-1000MHz)



AUDIX Technology Corp. EMC Department No.53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan R.O.C. Tel:+886-2-26092133 Fax:+886-2-26099303 Email:emc@audixtech.com



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin 1 (dB)	Remark
1	33.225	15.75	0.91	9.30	25.95	30.00	4.05	QP
2	72.415	7.33	1.34	16.55	25.23	30.00	4.78	QP
з :	190.145	9.37	2.25	13.61	25.23	30.00	4.77	QP
4 :	213.205	9.81	2.36	13.19	25.35	30.00	4.65	QP
5 3	322.254	13.88	3.08	15.73	32.69	37.00	4.31	QP
6	951.625	20.89	5.74	6.55	33.18	37.00	3.82	QP *

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

 The emission levels that are 20dB below the official limit are not reported.

- 3. The worst emission was detected at 951.625MHz with corrected signal level of $33.18dB\mu V/m$ (limit is $37.0dB\mu V/m$) when the antenna was at horizontal polarization and was at 4m high and the turn table was at 315° .
- 4. O[°]was the table front facing the antenna. Degree is calculated from O[°]clockwise facing the antenna.
- 5. The EUT with open case was measured, the limit not exceed the radiated emission limits specified in Section 15.109 of this part by more than 6 dB.





Site no.	: OATS NO.8	Data no.	: 3
Dis. / Ant.	: 10m CBL6112B(2735)	Ant. pol.	: VERTICAL
Limit	: CISPR 22 CLASS-B		
Env. / Ins.	: 30*C/59% ESCI 7(746)	Engineer	: Edward
EUT M/N	: IMBM-H61A		
Power Rating	: 120Vac/60Hz		
Test Mode	: Full System 1600*1200/60Hz	D-SUB+DVI	
	OPEN CASE		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	133.255	11.71	1.85	12.55	26.12	30.00	3.88	QP *
2	208.366	9.85	2.32	13.08	25.26	30.00	4.74	QP
3	402.363	16.16	3.47	10.88	30.52	37.00	6.48	QP
4	484.051	17.60	3.85	10.00	31.45	37.00	5.55	QP
5	647.117	19.48	4.51	8.34	32.33	37.00	4.67	QP
6	806.156	20.49	5.17	6.55	32.20	37.00	4.80	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.

- 3. The worst emission was detected at 133.255MHz with corrected signal level of 26.12dBµV/m (limit is 30.0dBµV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 160°.
- 4. O'was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.
- 5. The EUT with open case was measured, the limit not exceed the radiated emission limits specified in Section 15.109 of this part by more than 6 dB.

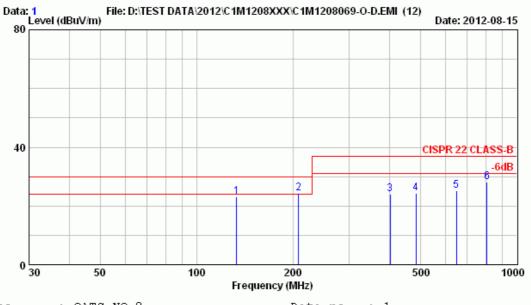




Site no.	:	OATS NO.8	Data no.	:	2
Dis. / Ant.	:	10m CBL6112B(2735)	Ant. pol.	:	HORIZONTAL
Limit	:	CISPR 22 CLASS-B			
Env. / Ins.	:	30*C/59% ESCI 7(746)	Engineer	:	Edward
EUT M/N	:	IMBM-H61A			
Power Rating	:	120Vac/60Hz			
Test Mode	:	Full System 1600*1200/60Hz 3	D-SUB+DVI		

	Freq. (MHz)	Ant. Factor (dB/m)		Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark				
1	33.506	15.54	0.91	6.43	22.89	30.00	7.11	QP				
2	72.154	7.30	1.34	11.85	20.49	30.00	9.51	QP				
3	190.255	9.37	2.25	14.03	25.65	30.00	4.35	QP				
4	213.477	9.80	2.36	12.33	24.50	30.00	5.50	QP				
5	322.054	13.88	3.08	15.29	32.25	37.00	4.75	QP				
6	951.255	20.89	5.74	6.03	32.66	37.00	4.34	QP				
Remar	Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.											





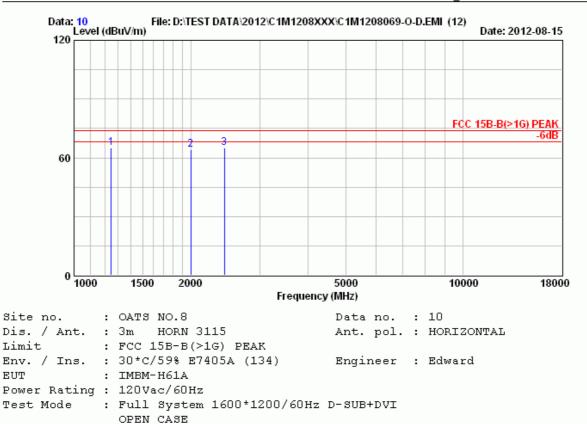
Site no.	: OATS NO.8	Data no.	:	1
Dis. / Ant.	: 10m CBL6112B(2735)	Ant. pol.	:	VERTICAL
Limit	: CISPR 22 CLASS-B			
Env. / Ins.	: 30*C/59% ESCI 7(746)	Engineer	:	Edward
EUT M/N	: IMBM-H61A			
Power Rating	: 120Vac/60Hz			
Test Mode	: Full System 1600*1200/60F	Hz D-SUB+DVI		

	Freq. (MHz)	Ant. Factor (dB/m)		Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark		
1	133.526	11.68	1.86	9.72	23.25	30.00	6.75	OP		
2	208.157	9.86	2.32	12.27	24.45	30.00	5.55	QP		
3	402.115	16.16	3.47	4.29	23.92	37.00	13.08	QP		
4	484.922	17.64	3.86	2.91	24.42	37.00	12.58	QP		
5	647.693	19.48	4.51	1.32	25.31	37.00	11.69	QP		
6	806.211	20.49	5.17	2.59	28.25	37.00	8.75	QP		
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading. 2. The emission levels that are 20dB below the official limit are not reported.										

3.6.2. Radiated Emission Measurement Results at Open Area Test Site (Frequency Range Above 1GHz)



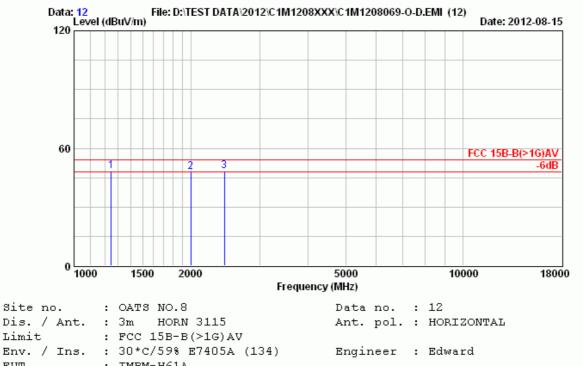
AUDIX Technology Corp. EMC Department No.53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan R.O.C. Tel:+886-2-26092133 Fax:+886-2-26099303 Email:emc@audixtech.com



	Freq. (MHz)	Ant. Factor (dB/m)	Loss	PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)		Remark
2	1245.240 1995.287 2435.257	24.93 27.50 28.28	6.03	35.26 34.50 34.75	70.96 65.18 64.66	65.12 64.21 64.92	74.00 74.00 74.00	9.79	Peak Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



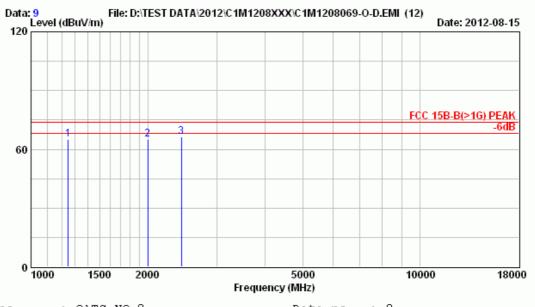


EUT	:	IMBM-H6IA		
Power Rating	:	120Vac/60Hz		
Test Mode	:	Full System	1600*1200/60Hz	D-SUB+DVI
		OPEN CASE		

		Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
	1	1245.545	24.93	4.49	35.26	54.10	48.26	54.00	5.74	Average
	2	1995.419	27.50	6.03	34.50	48.94	47.97	54.00	6.03	Average
	3	2435.656	28.28	6.74	34.75	48.07	48.33	54.00	5.67	Average
 Be	 -ma	 rks: 1. Em	ission	 Level=	Antenna	Factor +	Cable Loss		 Gain +	Beading.

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



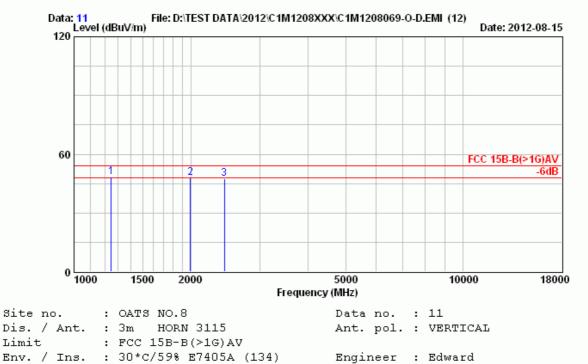


Site no. Dis. / Ant.		OATS NO.8 3m HORN 3115	Data no. Ant. pol.		
Limit	:	FCC 15B-B(>1G) PEAK			
Env. / Ins.	:	30*C/59% E7405A (134)	Engineer	:	Edward
EUT	:	IMBM-H61A			
Power Rating	:	120Vac/60Hz			
Test Mode	:	Full System 1600*1200/60Hz	D-SUB+DVI		
		OPEN CASE			

	Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)		Remark
1	1245.205	24.93	4.49	35.26	70.90	65.06	74.00	8.94	Peak
2	1995.206	27.50	6.03	34.50	66.22	65.25	74.00	8.75	Peak
3	2435.125	28.28	6.74	34.75	66.24	66.51	74.00	7.49	Peak
	·····								

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



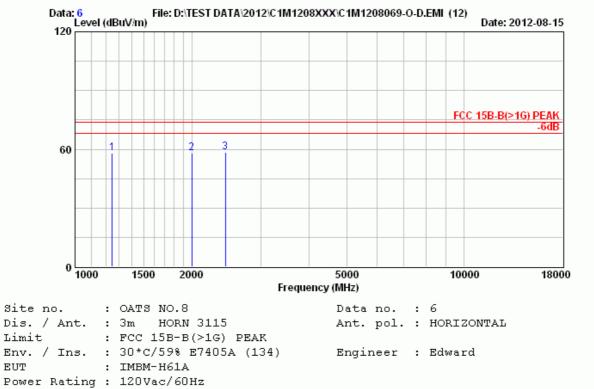


EUT	:	IMBM-H61A	MBM-H61A							
Power Rating	:	120Vac/60Hz								
Test Mode	:	Full System	1600*1200/60Hz	D-SUB+DVI						
		OPEN CASE								

 	Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
2	1245.245 1995.153 2435.572	27.50	4.49 6.03 6.74	35.26 34.50 34.75	54.40 48.67 46.99	48.56 47.69 47.25	54.00 54.00 54.00	6.31	Average Average Average

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Preamp Gain + Reading. 2. The emission levels that are 20dB below the official limit are not reported.



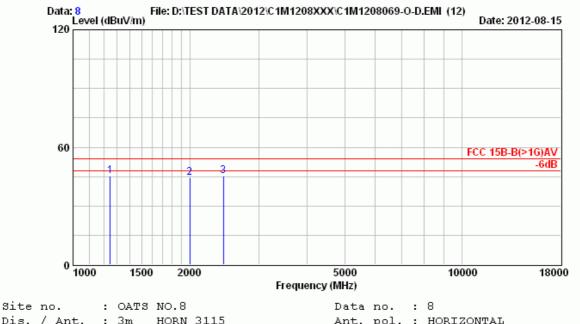


Test Mode : Full System 1600*1200/60Hz D-SUB+DVI

_		Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin 1 (dB)	Remark
	1	1245.954	24.93	4.49	35.26	64.08	58.24	74.00	15.76	Peak
	2	1995.515	27.50	6.03	34.50	59.12	58.15	74.00	15.85	Peak
	3	2435.955	28.28	6.74	34.75	58.29	58.55	74.00	15.45	Peak
-										
R	ema	rks: 1. Em	ission :	Level=	Antenna 🔅	Factor +	Cable Loss	- Preamp	Gain +	Reading.
		2. Th	e emiss:	ion lev	vels that	are 20dE	3 below the	official		

limit are not reported.



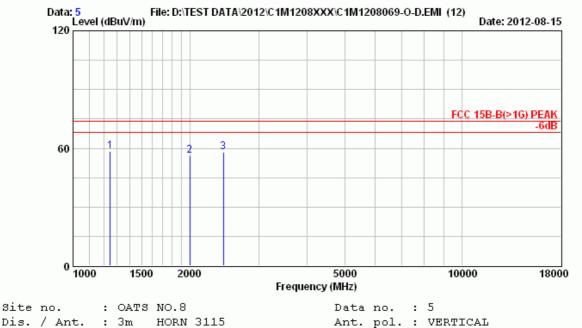


Dis. / Ant.	:	3m HORN 3115	Ant. pol.	:	HORIZONTAL
Limit	:	FCC 15B-B(>1G)AV			
Env. / Ins.	:	30*C/59% E7405A (134)	Engineer	:	Edward
EUT	:	IMBM-H61A			
Power Rating	:	120Vac/60Hz			
Test Mode	:	Full System 1600*1200/60Hz	D-SUB+DVI		

	Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin 1 (dB)	Remark
1	1245.249	24.93	4.49	35.26	51.26	45.42	54.00	8.58	Average
2	1995.416	27.50	6.03	34.50	45.48	44.51	54.00	9.49	Average
3	2435.518	28.28	6.74	34.75	44.94	45.20	54.00	8.80	Average
Rema	rks: 1. Em.	ission 🗄	Level=	Antenna	Factor +	Cable Loss	; - Preamp	Gain +	Reading.

2. The emission levels that are 20dB below the official limit are not reported.



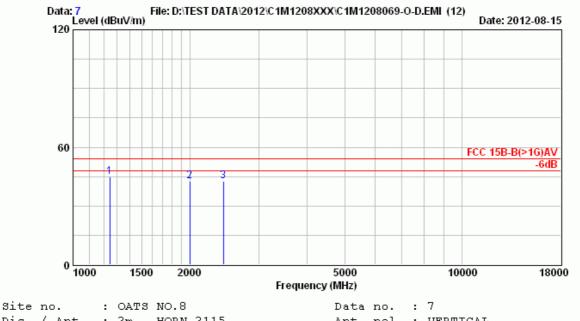


pree no.	. CAID NO.0	Data no.	
Dis. / Ant.	: 3m HORN 3115	Ant. pol.	: VERTICAL
Limit	: FCC 15B-B(>1G) PEAK		
Env. / Ins.	: 30*C/59% E7405A (134)	Engineer	: Edward
EUT	: IMBM-H61A		
Power Rating	: 120Vac/60Hz		
Test Mode	: Full System 1600*1200/60Hz 3	D-SUB+DVI	

_		Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
	1	1245.188	24.93	4.49	35.26	64.20	58.35	74.00	15.65	Peak
	2	1995.625	27.50	6.03	34.50	57.34	56.36	74.00	17.64	Peak
	3	2435.584	28.28	6.74	34.75	57.94	58.21	74.00	15.79	Peak
-										
R	ema	rks: 1. Em	ission :	Level=	Antenna 1	Factor +	Cable Loss	- Preamp	Gain +	Reading.
		2. Th	e emiss:	ion lev	els that	are 20dE	3 below the	official		

limit are not reported.





	-			-	
Dis. / Ant.	:	3m HORN 3115	Ant. pol.	:	VERTICAL
Limit	:	FCC 15B-B(>1G)AV			
Env. / Ins.	:	30*C/59% E7405A (134)	Engineer	:	Edward
EUT	:	IMBM-H61A			
Power Rating	:	120Vac/60Hz			
Test Mode	:	Full System 1600*1200/60Hz	D-SUB+DVI		

	Freq. (MHz)	Ant. Factor (dB/m)		PREAMP GAIN (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
2	1245.054 1995.244 2435.215	24.93 27.50 28.28	4.49 6.03 6.74	35.26 34.50 34.75	50.48 43.55 42.17	44.64 42.58 42.43	54.00 54.00 54.00 54.00	11.42	Average Average Average
Rema	rks: 1. Em.					Cable Loss	-		Reading.

The emission levels that are 20dB below the official limit are not reported.

4. **DEVIATION TO TEST SPECIFICATIONS**[NONE]

5. PHOTOGRAPHS

5.1. Photos of Powerline Conducted Emission Measurement



FRONT VIEW OF CONDUCTED MEASUREMENT



BACK VIEW OF CONDUCTED MEASUREMENT

5.2. Photos of Radiated Emission Measurement at Open Area Test Site (30-1000MHz)

Test Mode: Open Case



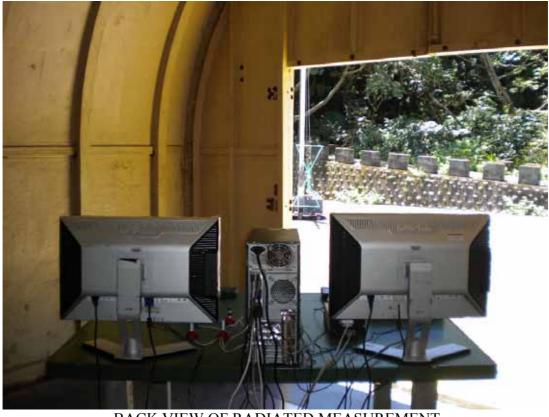
FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT



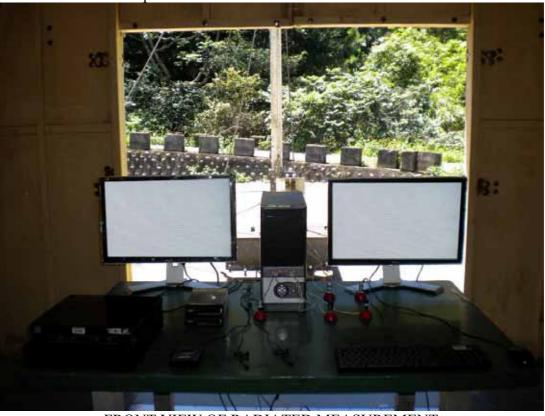
FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

5.3. Photos of Radiated Emission Measurement at Open Area Test Site (Above 1GHz)

Test Mode: Open Case



FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

FRONT VIEW OF RADIATED MEASUREMENT



BACK VIEW OF RADIATED MEASUREMENT

5.4. Partner PC System



APPENDIX I

(Photos of EUT)

(Total Page: 2 Pages)

Figure 1 Motherboard (Front View)



Figure 2 Motherboard (Back View)



Figure 3 Motherboard (Side View, I/O Ports)

