Attachment 3: TEST REPORT

FG05-073EAL (PART 1)

FUJITSU GENERAL EMC LABORATORY LIMITED
1116, SUENAGA, TAKATSU-KU, KAWASAKI 213-8502 JAPAN TEL:044-861-7897 FAX:044-861-9890

EMI Test report

CATEGORY : EN55022(1994),+A1,+A2/ CISPR 22(1993)+A1,+A2 ; Class B
AS/NZS CISPR22 (2002)
FCC Part-15 (2004)
VCCI (2005)

MANUFACTURER : FUJITSU LIMITED
4-1-1, Kamikodanaka, Nakahara-ku, Kawasaki, 211-8588, JAPAN

PRODUCT TYPE : Personal computer P7120
AC Adapter SEC80N2-16.0
Port Replicator FPCPR62
Grouping model: P7120D

TEST SITE : FUJITSU GENERAL EMC LABORATORY
1116, Suenaga, Takatsu-ku, Kawasaki 213-8502 JAPAN

DATE TESTED : August 19 , 2005 25℃ 65%

TESTED BY : Hiroyuki Aikawa

Above EUT conforms mentioned regulations.

APPROVED BY : for K. Aoki DATE : August 24 , 2005
Hiroyuki Shimanoe, President

FUJITSU GENERAL EMC LABORATORY LIMITED
1116, Suenaga, Takatsu-ku, Kawasaki, 213-8502 JAPAN
TEL: (044)861-7897 FAX: (044)861-9890

CLIENT : Engineering Dept.1 Mobile Computing Division, FUJITSU LIMITED
4-1-1, Kamikodanaka, Nakahara-ku, Kawasaki 211-8588 JAPAN

※ The discription of the EUT and the system configuration in this report are provided by the client.

NVLAP LAB CODE 200373-0

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1. Description of EUT

The EUT: P7120 series personal computer using Pentium-M 1.2GHz ULV/ Celeron-M 1.2GHz ULV microprocessor has a system disk (60 GB). The EUT has the interface to extend for, RGB⑱, MIC IN②, Phone out①, Sperker out⑰, LAN⑩, TEL⑦, USB×6 -⑤⑥㉑㉒㉓,Multi memory (SD/ xD/ MS) card slot, PC card slot, BT and wireless LAN.

The following typecode are given according to the Centrino (CPU, Intel753 chipset).

Type	CPU, Chipset and Wireless LAN
P7120	Centrino
P7120D	Non-Centrino

Internal clock frequency： 4.000 MHz, 8.000 MHz, 12.000 MHz, 14.318 MHz, 24.576 MHz, 30.000 MHz, 25.000 MHz, 33.300 MHz, 48.300 MHz, 96.000 MHz, 100.000 MHz

Input power： AC 100 - 230V, 50 / 60 Hz, Single-phase 2 wires

The EUT is intended to general use in the residential / domestic area or commercial and light industrial area; category class B.

1.1 Test system configuration

The measurement was performed using P7120 (Pentium-M 1.2GHz ULV) with FPCPR62 as a maximum personal computer system with all related equipment shown in figure-1.

The EUT was selected from the pre-product line.

1.2 Operating condition

The following EUT and dependent devices were tested using “EMC.exe” and “SPBEST” program for continuously operating and to obtain maximize emission.

① PC-1	LCD-1:	Display “H” character on screen (Maximum contrast / Luminescence/ (Display resolution 1280×768 / Refresh rate 60Hz)
	LAN:	Continuous transmission and reception of the “H” character (1000 Mbps)
	Modem:	Continuous transmission of the test data (56 kbps)
	HDD-1:	Read/write the test data
	DVD:	Play the test disk
② SD card:		Connecting only
③ PC card:		Connecting only
④ USB2.0 Memory:		Read/write the test data (480 Mbps)
⑤ LCD-2:		Display “H” character on screen (Maximum contrast / Luminescence)
⑥ Headset:		Connecting only
⑦ USB mouse:		Connecting only
⑧ PC-2:		Read/write “H” character and receiving serial data.

2. EMI test results summary

Applied standard: EN55022(1994), +A1(1995), +A2(1997)
Limit value: Class B

The test samples met the class B limit of EN55022(1994), +A1(1995), +A2(1997) / CISPR22(1993), +A1(1995), +A2(1996) and applicable following regulations as shown following highest 6 points of each emission profiles.

Australia, New Zealand: AS/NZS CISPR22(2002)
FCC Part-15(2004), Canada: CAN/CSA-CEI/IEC CISPR22-02
Japan: VCCI(2005), Taiwan: CSN 13438(1997)

This test was done without deviation from the standard.
The test result effective only for the EUT.

2.1 Radiated emission (30 MHz to 1,000 MHz): Measured at 10 m distance

< AC 230 V / 50 Hz single phase >

Freq. (MHz)	pol.	Noise level (dB μV/m)	Class B limit (dB μV/m)	Margin (dB)
162.59	Horiz	25.1	30.0	4.9
166.56	Horiz	25.7	30.0	4.3
168.00	Horiz	27.0	30.0	3.0
168.00	Vert	28.0	30.0	2.0
957.90	Horiz	35.7	37.0	1.3
957.90	Vert	32.9	37.0	4.1

- Limit value ; EN55022(1994) / CISPR 22(1993)
- Measurement uncertainty: ± 3.3 dB (K=2, 95 %)

< AC 120 V / 60 Hz single phase >

Freq. (MHz)	pol.	Noise level (dB μV/m)	Class B limit (dB μV/m)	Margin (dB)
166.56	Horiz	25.5	30.0	4.5
168.00	Horiz	25.8	30.0	4.2
168.00	Vert	26.6	30.0	3.4
638.71	Vert	31.9	37.0	5.1
957.90	Horiz	35.7	37.0	1.3
957.90	Vert	32.9	37.0	4.1

- Limit value ; FCC Part-15.
- Measurement uncertainty: ± 3.3 dB (K=2, 95 %)

2.2 Above 1 GHz RF Radiated emission(1 GHz to 6 GHz): Measured at 3 m distance

Freq. (GHz)	Pol	Noise level (dB μV/m)	FCC Part-15 Class B limit (dB μV/m)		Margin (dB to AV)
		Peak	Peak	AV	
1.3586	Vert	44.6	74.0	54.0	9.4
1.4343	Vert	47.2	74.0	54.0	6.8
1.5129	Vert	44.1	74.0	54.0	12.9
1.5929	Vert	40.7	74.0	54.0	13.3
1.7557	Vert	41.2	74.0	54.0	12.8
1.8300	Vert	44.5	74.0	54.0	13.6

2.3 AC power line conducted emission (150 kHz to 30 MHz)

< AC 100 V / 50 Hz single phase >

Freq. (MHz)	Line #	Noise level (dBμV)		Class B limit (dBμV)		Margin (dB)	
		QP	AV	QP	AV	QP	AV
0.193	# 1	52.5	43.5	63.9	53.9	11.4	10.4
0.290	# 1	41.9	34.0	60.5	50.5	18.6	16.5
0.567	# 1	39.8	27.9	56.0	46.0	16.2	18.1
0.684	# 1	37.8	29.7	56.0	46.0	18.2	16.3
17.693	# 2	38.6	34.1	60.0	50.0	21.4	15.9
18.245	# 2	38.1	33.3	60.0	50.0	21.9	16.7

< AC 120 V / 60 Hz single phase >

Freq. (MHz)	Line #	Noise level (dBμV)		Class B limit (dBμV)		Margin (dB)	
		QP	AV	QP	AV	QP	AV
0.180	# 1	52.4	45.1	64.5	54.5	12.1	9.4
0.180	# 2	53.7	43.0	64.5	54.5	10.8	11.5
0.269	# 1	44.5	38.1	61.2	51.2	16.7	13.1
0.612	# 1	40.6	27.5	56.0	46.0	15.4	18.5
0.612	# 2	40.0	32.2	56.0	46.0	16.0	13.8
0.794	# 1	35.6	32.1	56.0	46.0	20.4	13.9

< AC 230 V / 50 Hz single phase >

Freq. (MHz)	Line #	Noise level (dBμV)		Class B limit (dBμV)		Margin (dB)	
		QP	AV	QP	AV	QP	AV
0.186	# 2	47.8	34.4	64.2	54.2	16.4	19.8
0.200	# 2	46.6	35.4	63.6	53.6	17.0	18.2
0.664	# 1	34.4	30.5	56.0	46.0	21.6	15.5
0.732	# 1	39.5	39.2	56.0	46.0	16.5	6.8
0.732	# 2	40.7	39.8	56.0	46.0	15.3	6.2
16.046	# 2	39.0	32.9	60.0	50.0	21.0	17.1

- Limit value ; EN55022(1994) / CISPR 22(1993) and FCC Part-15.
- Measurement uncertainty： ± 2.5 dB（K=2, 95 %）

3. EUT modification under the test

None

4. Measurement procedure and test equipment

4.1 Radiated emission

4.1.1 Radiated emission (30MHz～1,000MHz)

The EUT was set on the turntable in the 10 m RF semi-anechoic chamber.
The PC-2 and HUB were placed at outside of the chamber to make usual installation at the different place. The maximum noise level in the frequency range from 30 MHz to 1,000 MHz were measured by 10 m method with scanning the antenna height from 1 m to 4 m above the ground plane and rotates the EUT through 360 degrees for both horizontal and vertical polarization.
Preliminary measurement using spectrum analyzer peak detection was performed to arrange the minimum margin spectrum. The settings of the interface cables and the mouse were adjusted to obtain maximum level at the minimum margin spectrum. The final measurement was performed using the RFI receiver (CISPR Quasi-peak, 120 kHz band width) and calibrated broadband antennas or dipole antennas about the main spectrums that is obtained by the preliminary measurement.

Test equipment	Manufacturer	Type	S/N	Cal. Date	Due. Date
Bi Log antenna	Schwarzbeck	VULB9160	3118	2004.12.29	2005.12.29
Dipole antenna	Schwarzbeck	VHA9103	VHA91031573	2004.12.29	2005.12.29
Dipole antenna	Schwarzbeck	UHA9105	UHA91052119	2004.12.29	2005.12.29
Field strength meter	Rohde & Schwarz	ESCS30	849650/002	2005.04.25	2006.04.25
Spectrum analyzer	HP	85422E	3746A00242	2005.04.25	2006.04.25
RF switch	Rohde & Schwarz	PSU	848290/003	2005.04.25	2006.04.25
RF cable	———	C61	———	2005.04.25	2006.04.25
2nd semi-anechoic chamber	Riken eletech	———	———	2005.01.16	2007.01.16
EMI test program	FGE	Version 1.3			

4.1.2 Radiated emission (1 GHz～6 GHz)

The EUT was set on the 80 cm height non-reflective desk on the turntable. The radiated emission measurement from 1 GHz to 6 GHz: Operating rate 1.2 GHz was performed using the spectrum analyzer (Peak detection, 1MHz band width) and the horn antenna that was positioned at 3 m from the EUT for class B. The measurement was performed with both horizontal and vertical polarization, rotate the EUT through 360 degrees and fixed the antenna height to the EUT center

Test equipment	Manufacturer	Type	S/N	Cal. Date	Due. Date
Horn antenna	Schwarzbeck	BBHA9120D	136	2005.03.04	2007.03.04
Spectrum analyzer	Advantest	R3371A	75060396	2005.04.01	2006.04.01
Pre amplifier	HP	8449B	3008A01110	2005.03.24	2007.03.2

4.2 AC power line conducted emission

The conducted emission measurement was performed in the shielded room. The EUT was set on the 80 cm height wooden desk with using the 50Ω/50μH artificial mains network: AMN and operate the EUT by AC 100 V/ 50 Hz, AC 120 V/ 60 Hz and AC 230 V/ 50 Hz. Preliminary measurement using spectrum analyzer peak detection was performed in the frequency range from 150 kHz to 30 MHz to arrange the minimum margin spectrum. The setting of the cables was adjusted to obtain maximum level at the minimum margin spectrum. The final measurement was performed using the RFI receiver (CISPR Quasi-peak, 9 kHz band width) and recorded the maximum value in the monitored interval about the main spectrum that is obtained by the preliminary measurement.

Test equipment	Manufacturer	Type	S/N	Cal. Date	Due. Date
AMN for EUT	Kyoritsu	KNW-407	8-823-18	2005.01.14	2006.01.14
AMN for AE	Kyoritsu	KNW-242C	8-1387-7	2005.01.14	2006.01.14
Field strength meter	Rohde & Schwarz	ESCS30	849650/002	2005.04.25	2006.04.25
Spectrum analyzer	HP	85422E	3746A00242	2005.04.25	2006.04.25
RF switch	Rohde & Schwarz	PSU	848290/003	2005.04.25	2006.04.25
Band pass filter	Advantest	TR14202	120200240	2005.04.25	2006.04.25
6 dB attenuator	Kyoritsu	CFA-03	———	2005.04.25	2006.04.25
RF cable	———	C63	———	2005.04.25	2006.04.25
EMI test program	FGE	Version 1.3			

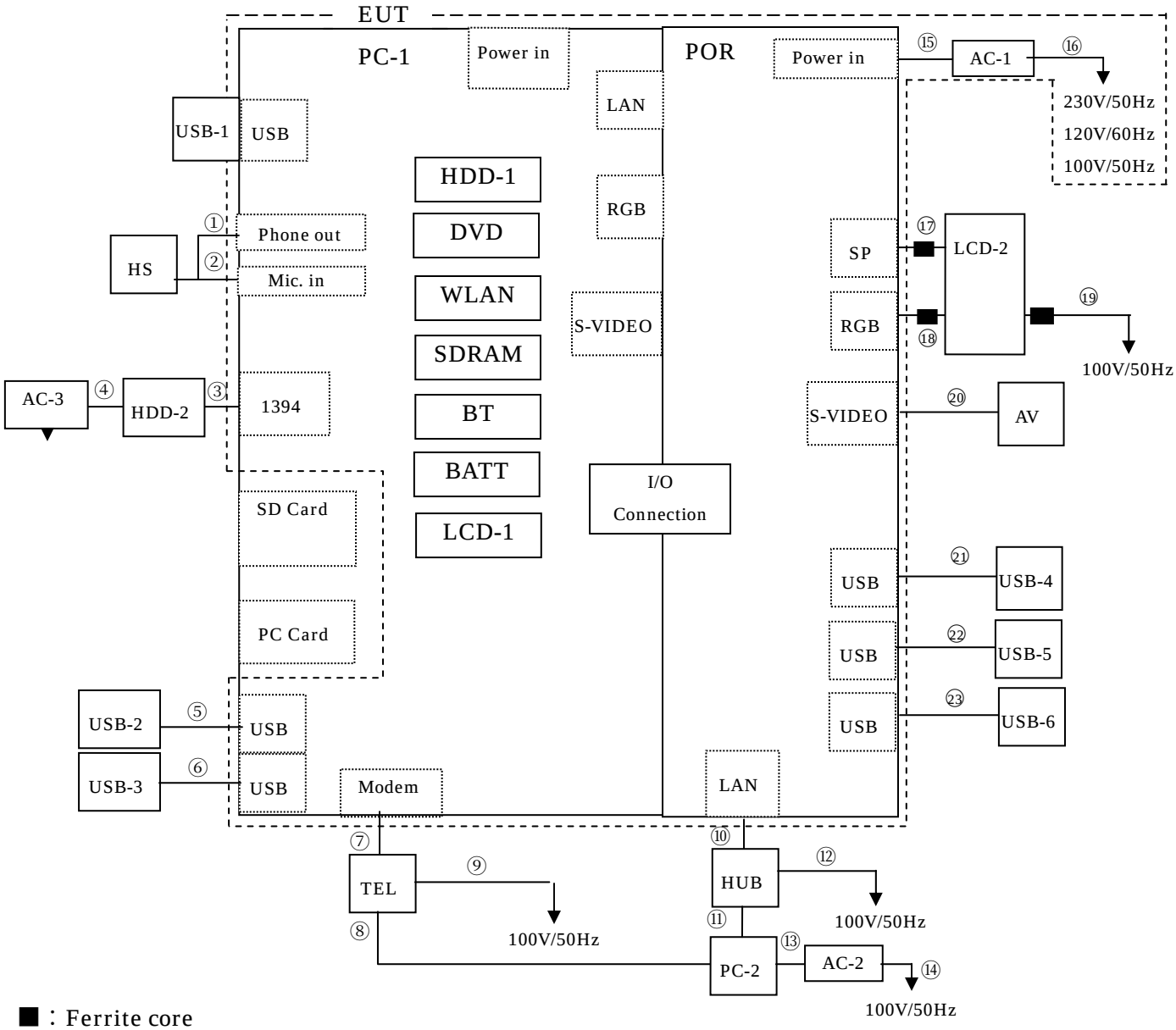
5 Test site and traceability

The FUJITSU GENERAL EMC LABORATORY performs the test for VCCI / EN / CISPR regulation and Fujitsu / Fujitsu General internal regulations. The test procedures and test facilities are comply with international standard. The laboratory is filed on VCCI (Japan), accredited from NVLAP (USA) and authorized from TÜV P. S. (Germany, CE-marking).

VCCI： 1st semi-anechoic chamber(R-753/C-776), Small shielded room(C-777)
Large shielded room(C-778)
2nd semi-anechoic chamber(R-1460/C-1547), 2nd shielded room(C-1548)
3rd shielded room(C-1549)
NVLAP： 1998.12.01 Accredited: Lab code 200373-0
TÜV P.S.： 1999.01.29 Authorized

The measuring equipment used in the laboratory and test data are traceable to the national or international standard. Each equipment is maintain by periodical calibration and by daily check as a total measurement system to keep those accuracy.

Figure-1 System configuration and cables



■：Ferrite core

Main EUT

Code	Name	Type	S/N	Product
PC-1	Personal computer	P7120	pre-production sample	Fujitsu

Related EUT

POR	Port Replicator	FPCPR62	———	Fujitsu
AC-1	AC adapter	SEC80N2-16.0	———	Fujitsu

Included device; PC-1

Code	Name	Type	S/N	Product
HDD-1	60GB	MK6006GAH	75B70685A	TOSHIBA
DVD	DVD-Multi	UJ-832S	———	Matsushita
WLAN	Wireless LAN	WM3B2915ABG	———	Intel
BT	Bluetooth	UGX5-102A	———	ALPS
SDRAM	512MB	D2P400-X256MBJ-FJ×2	———	———
BATT	7800mA/h	FMVNB137	———	Fujitsu
LCD-1	10.6inch WXGA	LQ106K1LA02	———	Sharp

Assisted equipment

Code	Name	Type	S/N	Product
TEL	Telephone line simulator	3KDD002	2198003230	ASCII Corp.
LCD-2	LCD display	P19-1	YEGA217498	FSC
HDD-2	Hard disk drive	KC4020-N	0007293	FSC
HS	Head set	AP-210Pro	———	FSC
PC-2	Personal computer	FMV LOOX	———	Fujitsu
HUB	Switching Hub	GSW-8	0055690030400803	Corega
AC-2	AC adapter	FMV-AC313S	———	Fujitsu
AC-3	AC adapter	ACTN-21	———	Sunfone
USB-1	USB Memory	RUF-GP512-K2	———	BUFFALO
USB-2	USB Mouse	CP-154021-01	HCA50506800	Fujitsu
USB-3	USB Mouse	CP-154021-01	HCA50506759	Fujitsu
USB-4	USB Mouse	M-UV96	HCA44800081	Logitec
USB-5	USB Mouse	M-UV96	HCA44800205	Logitec
USB-6	USB Mouse	M-UV96	HCA45001356	Logitec
SD card	SD card	64MB	———	Panasonic
PC card	PC card	FMV-J502	———	Fujitsu

Cables SLD: Shielded NSLD: Non-shielded CAX: Coaxial
Connector MC: Metal NMC: Non-metal PMC: Point contact metal

No.	I/O Port	Name	Type	Length	Cable type
①	Phone-out	Headset cable	———	2.2m	NSLD, MC
②	Mic-in	Headset cable	———	2.2m	NSLD, MC
③	1394	IEE1394 cable	———	1.0m	SLD, MC
④	———	DC cable	———	1.8m	NSLD, NMC
⑤	USB-2	USB mouse cable	———	1.8m	SLD, NMC
⑥	USB-3	USB mouse cable	———	1.5m	SLD, NMC
㉑	USB-4	USB mouse cable	———	1.5m	SLD, NMC
㉒	USB-5	USB mouse cable	———	1.8m	SLD, NMC
㉓	USB-6	USB mouse cable	———	1.8m	SLD, NMC
⑦	Modem	Modem cable	———	20.0m	NSLD, NMC
⑧	———	Modem cable	———	2.0m	NSLD, NMC
⑨	———	Power cable	———	2.0m	NSLD, NMC
⑩	LAN	LAN cable	———	20.0m	SLD, MC
⑪	———	LAN cable	———	1.0m	SLD, MC
⑫	———	Power cable	———	2.0m	NLD, NMC
⑬	———	DC cable	———	1.8m	NSLD, NMC
⑭	———	Power cable	———	1.8m	NSLD, NMC
⑮	———	DC cable	———	1.8m	NSLD, NMC
⑯	———	Power cable	———	1.8m	NSLD, NMC
⑰	SP	SP cable	———	2.2m	SLD, MC
⑱	RGB	RGB cable	———	1.5m	SLD, MC with fixed core
⑲	———	Power cable	———	2.0m	NSLD, NMC with fixed core
⑳	S-VIDEO	S-VIDEO cable	———	2.2m	SLD, MC

Appendix data (#05-073E: Total 22 pages)

1. Photograph

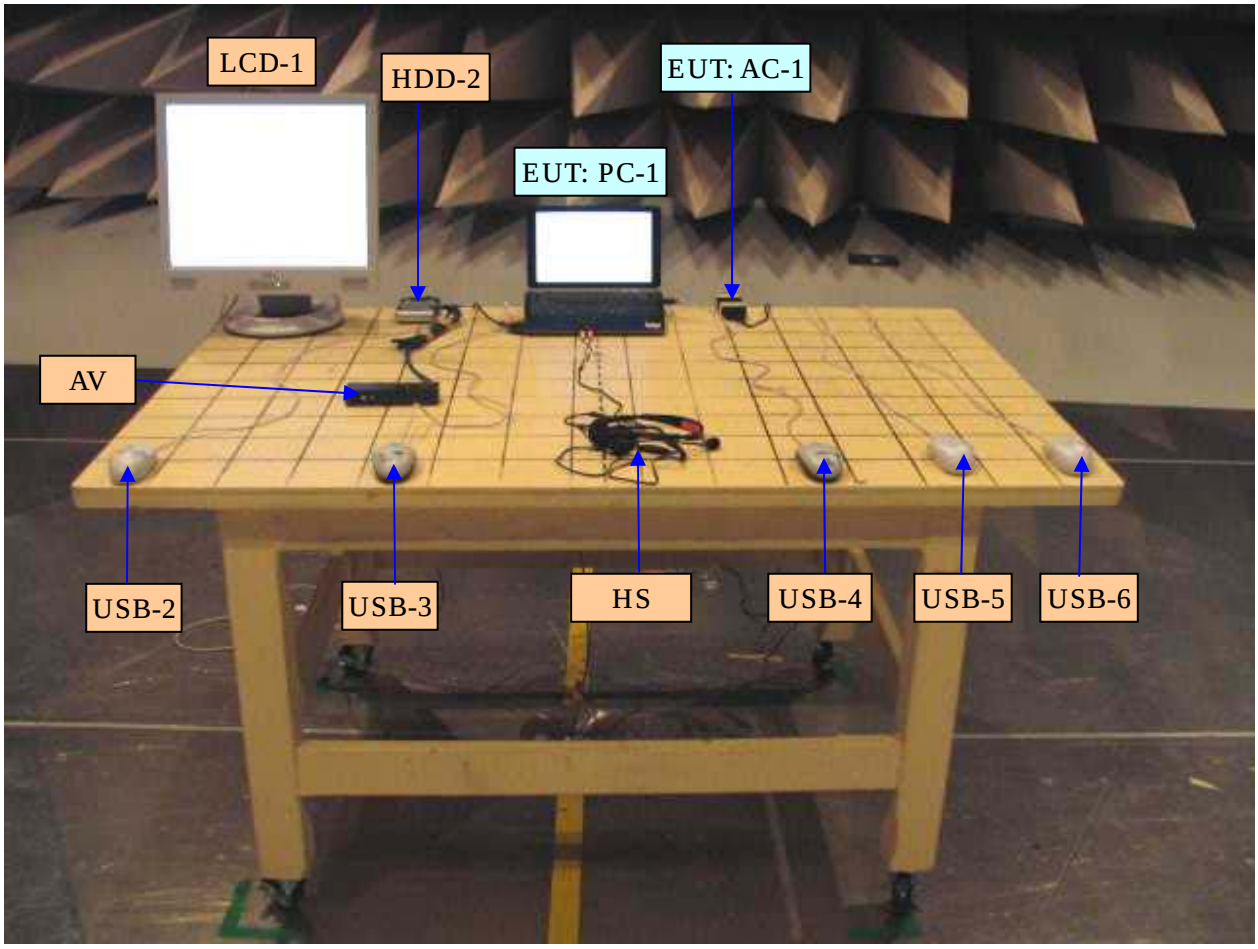
1.1 #05-073E (3 pages)

・Radiated emission measurement	30-1000 MHz(Front)		: Photo-1.1
	30-1000 MHz (Back)		: Photo-1.2
	1-6GHz (Front)		: Photo-1.3
・Conducted emission measurement			: Photo-2
・Label			: Photo-3.1
AC adapter	SEC80N2-16.0		: Photo-3.2

2. Test data (18 pages)

・Radiated emission	30-1000 MHz (AC230V / 50Hz)		: #05-073E-RE1 (2 pages)
	(AC120V / 60Hz)		: #05-073E-RE2 (2 pages)
	1-6 GHz		: #05-073E-GH (2 pages)
・Conducted emission			
・ SEC80N2-16.0	AC 100 V / 50 Hz	QP Mode	: #05-073E-CE1 (2 pages)
		AV Mode	: #05-073E-CE2 (2 pages)
	AC 120 V / 60 Hz	QP Mode	: #05-073E-CE3 (2 pages)
		AV Mode	: #05-073E-CE4 (2 pages)
	AC 230 V / 50 Hz	QP Mode	: #05-073E-CE5 (2 pages)
		AV Mode	: #05-073E-CE6 (2 pages)

Photo-1.1 Radiated emission measurement; 30-1000 MHz (Front)



・PC-2 and HUB were set at outside of the chamber.

Photo-1.2 Radiated emission measurement; 30-1000 MHz (Back)

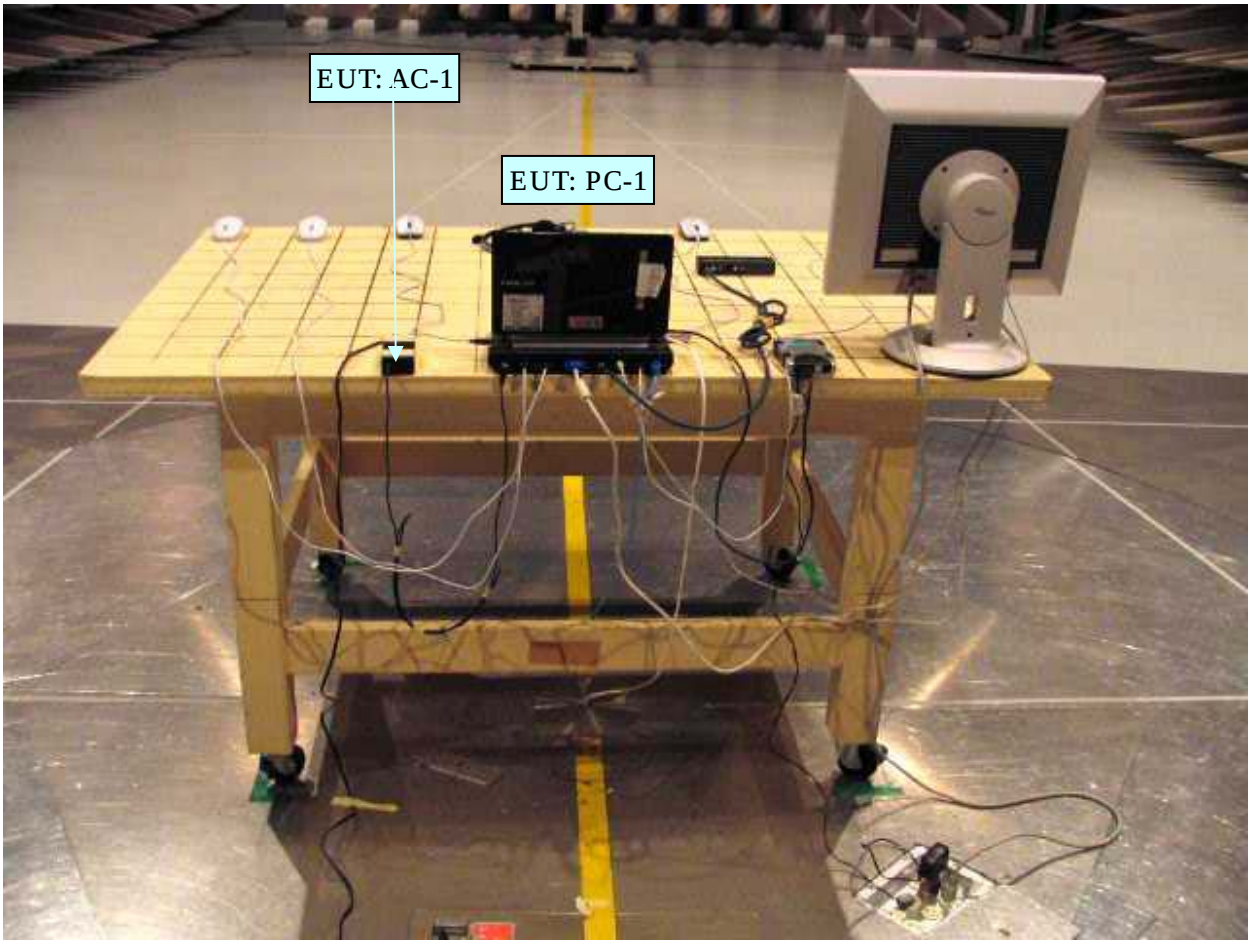


Photo-1.3 Radiated emission measurement; 1-6 GHz (Front)

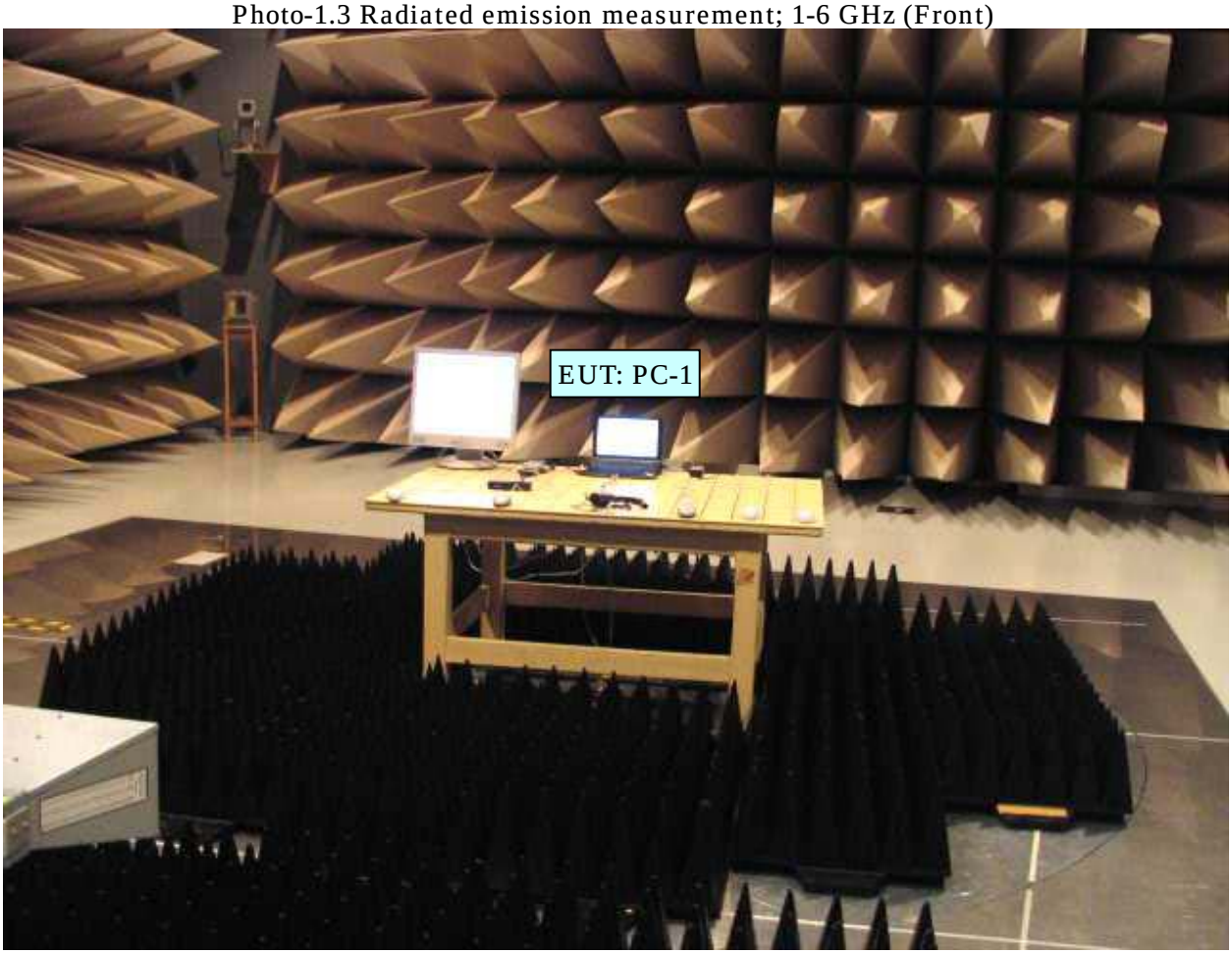


Photo-2.1 Conducted emission measurement

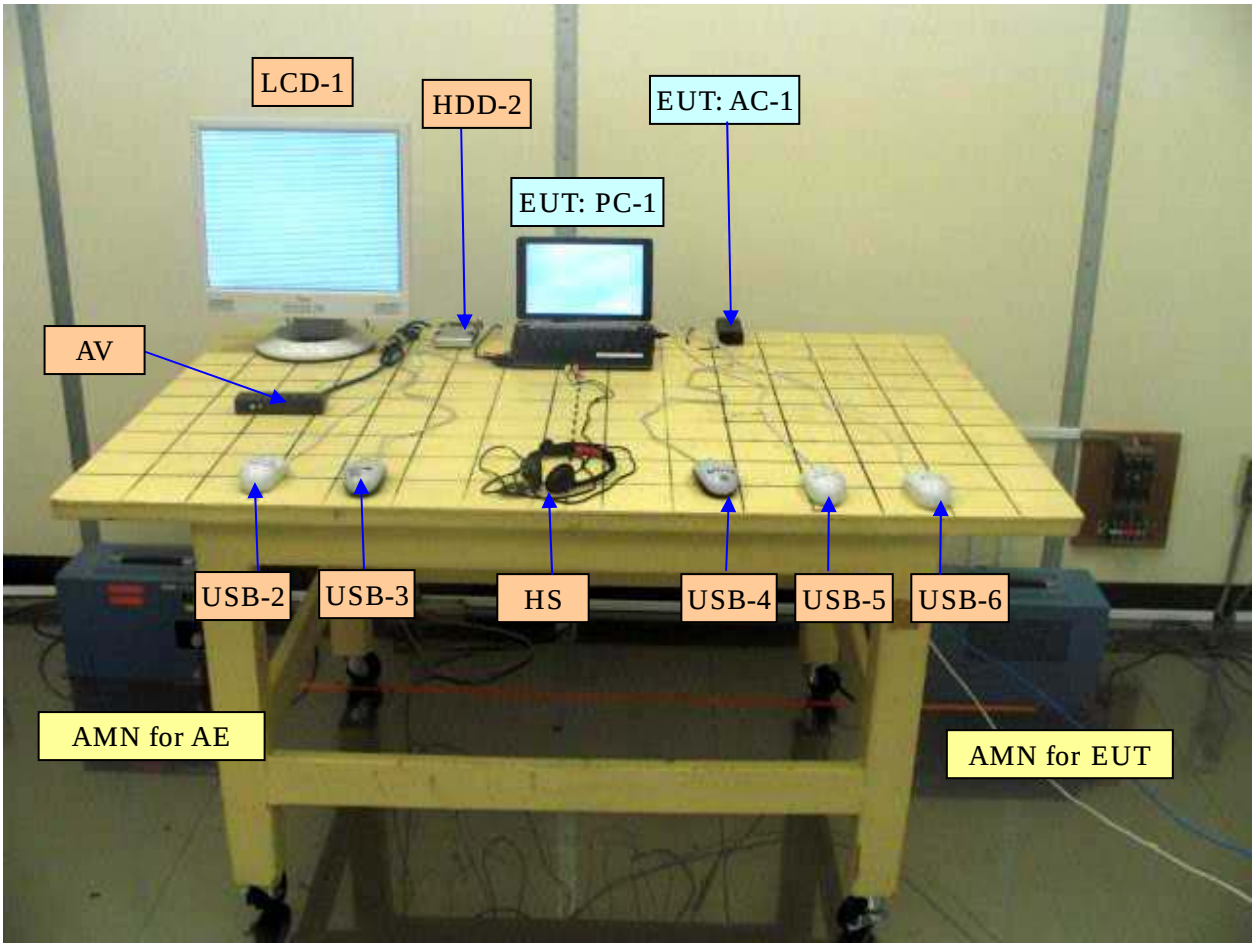


Photo-3.1 PC-1 Label

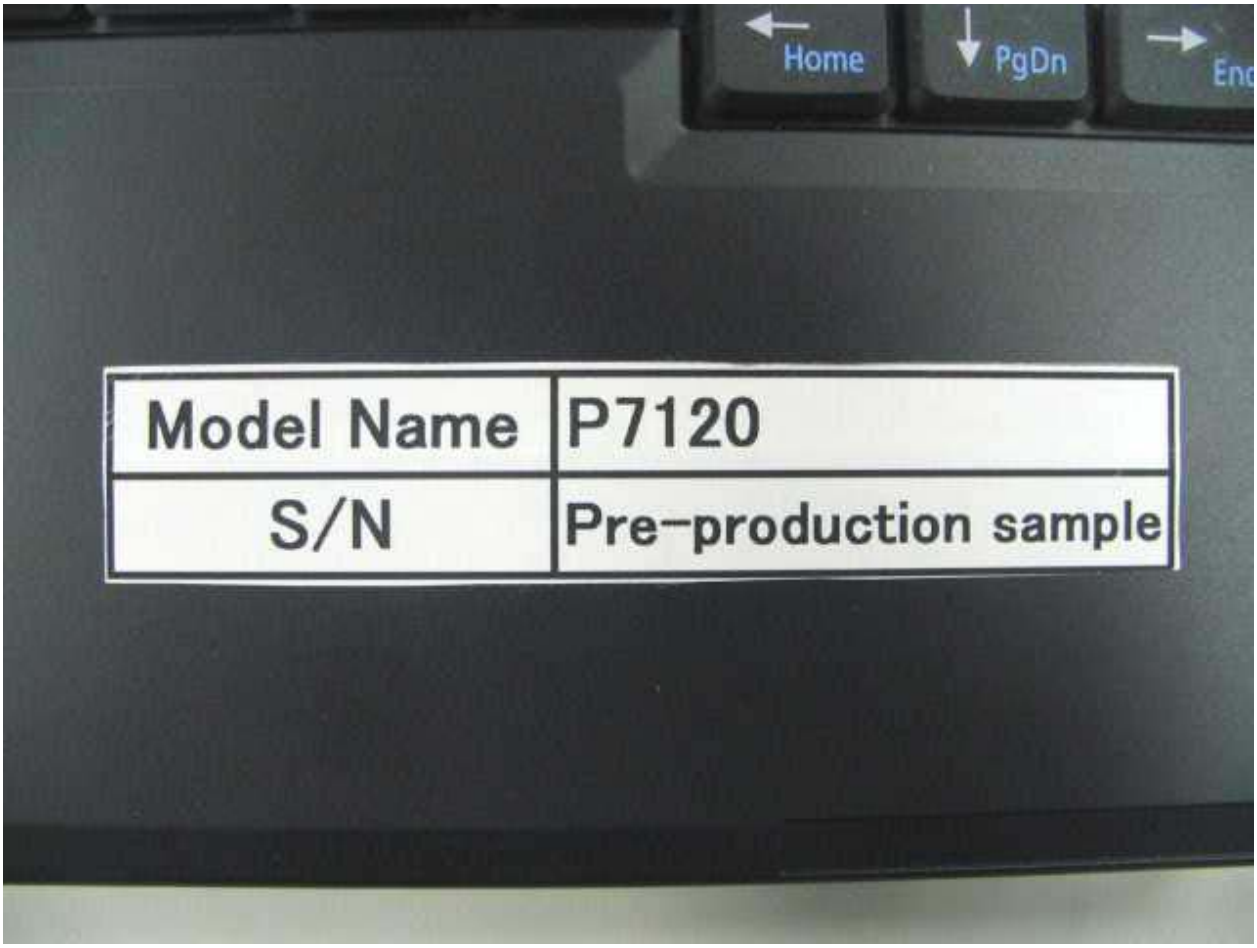


Photo-3.2 AC-1 Label（SEC80N2-16.0）

RADIATED EMISSION MEASUREMENT (30MHz～1000MHz) — Quasi-Peak Mode —

EUT Name: Personal computer Type: P7120
S/N: Pre-production sample
Limit: CISPR22 Class B; Measurement distance is 10 m
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
Antenna: SME Bi-log VULB9160 S/N:3118 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber
Assisted software: EMI measurement software of Version 1.3

Freq. (MHz)	Pol.	Meter Reading (dBuV)	Corr. Factor (dB)	Noise Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
32.11	Vert	8.1	12.7	20.8	30.0	9.2
96.27	Vert	10.1	10.9	21.0	30.0	9.0
104.30	Horiz	6.6	12.7	19.3	30.0	10.7
133.97	Vert	7.9	15.1	23.0	30.0	7.0
162.59	Horiz	9.1	16.0	25.1	30.0	4.9
166.56	Horiz	9.9	15.8	25.7	30.0	4.3
168.00	Horiz	11.2	15.8	27.0	30.0	3.0
168.00	Vert	12.2	15.8	28.0	30.0	2.0
169.37	Horiz	4.7	15.8	20.5	30.0	9.5
176.50	Horiz	4.6	15.2	19.8	30.0	10.2
187.33	Vert	6.4	14.1	20.5	30.0	9.5
191.92	Vert	6.8	13.8	20.6	30.0	9.4
216.61	Vert	8.6	13.4	22.0	30.0	8.0
224.64	Vert	8.9	14.1	23.0	30.0	7.0
278.89	Horiz	13.0	16.6	29.6	37.0	7.4
417.18	Vert	8.7	21.4	30.1	37.0	6.9
638.71	Vert	5.6	26.3	31.9	37.0	5.1
957.90	Horiz	3.2	32.5	35.7	37.0	1.3
957.90	Vert	0.4	32.5	32.9	37.0	4.1

The emissions above 957.90 MHz were below - 20 dB from limits.

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* Corrected reading = meter reading + corr.factor(= antenna factor + cable loss - preamp gain)
* The limit of CISPR 22 is applied for FCC Part-15.

* Measurement uncertainty: ± 3.3 dB (K = 2, 95 %)

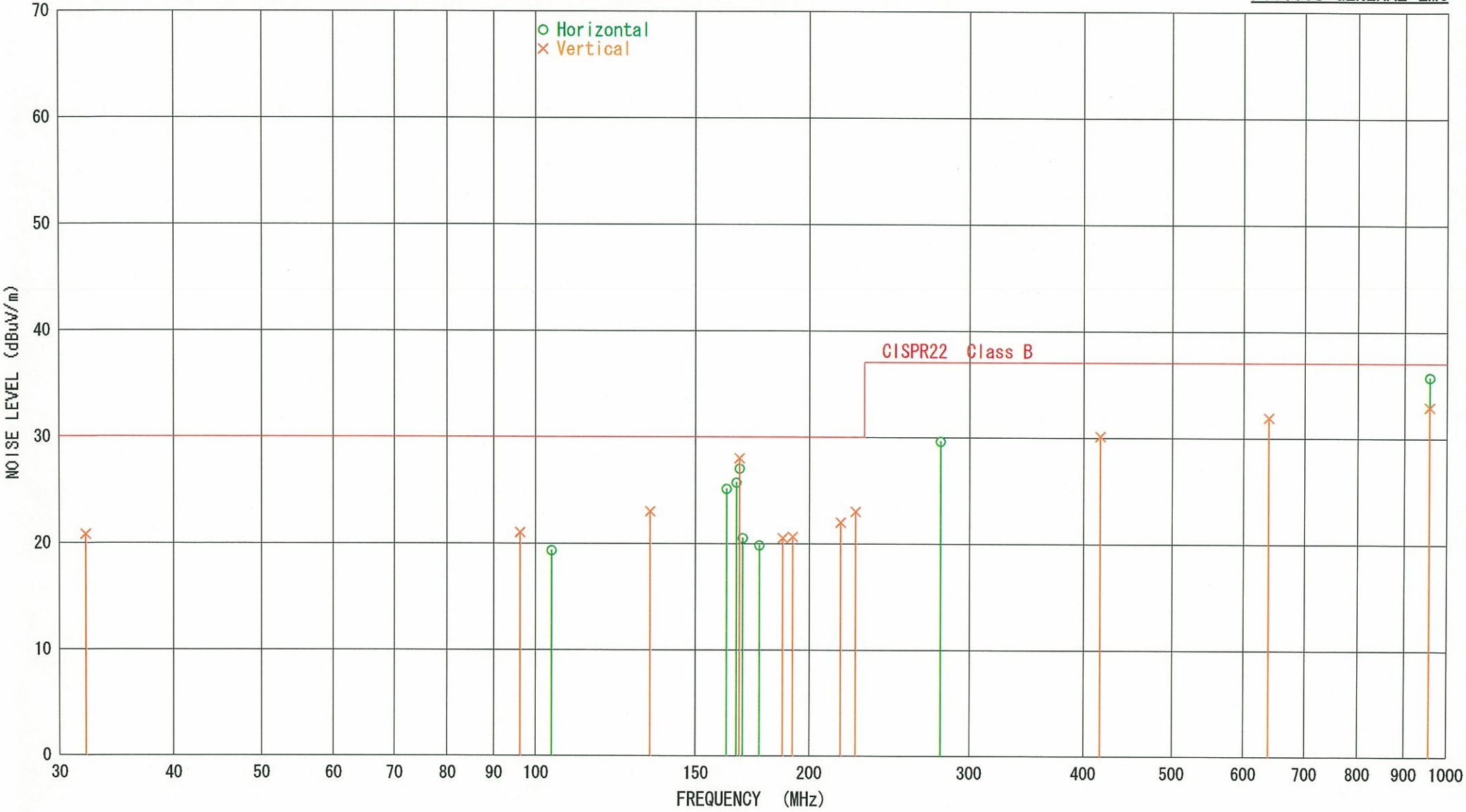
Tested by

RADIATED EMISSION MEASUREMENT -- Quasi-Peak Mode --

No: #05-073E-RE1 (2 / 2)

EUT Name: Personal computer TYPE: P7120 S/N: Pre-production sample
Limit: CISPR22 Class B ; Measurement distance is 10 m
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
Antenna: SME Bi-log VULB9160 S/N:3118 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber Assisted software: EMI measurement software of Version 1.3

FUJITSU GENERAL EMC



RADIATED EMISSION MEASUREMENT (30MHz～1000MHz) — Quasi-Peak Mode —

EUT Name: Personal computer Type: P7120
S/N: Pre-production sample
Limit: FCC Part15 Class B: Measurement distance is 10 m
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
Antenna: SME Bi-log VULB9160 S/N:3118 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber
Assisted software: EMI measurement software of Version 1.3

Freq. (MHz)	Pol.	Meter Reading (dBuV)	Corr. Factor (dB)	Noise Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
32.11	Vert	7.2	12.7	19.9	30.0	10.1
96.27	Vert	9.9	10.9	20.8	30.0	9.2
104.30	Horiz	5.8	12.7	18.5	30.0	11.5
133.97	Vert	7.9	15.1	23.0	30.0	7.0
162.59	Horiz	8.7	16.0	24.7	30.0	5.3
166.56	Horiz	9.7	15.8	25.5	30.0	4.5
168.00	Horiz	10.0	15.8	25.8	30.0	4.2
168.00	Vert	10.8	15.8	26.6	30.0	3.4
169.37	Horiz	4.7	15.8	20.5	30.0	9.5
176.50	Horiz	4.1	15.2	19.3	30.0	10.7
187.33	Vert	6.4	14.1	20.5	30.0	9.5
191.92	Vert	6.8	13.8	20.6	30.0	9.4
216.61	Vert	8.6	13.4	22.0	30.0	8.0
224.64	Vert	8.6	14.1	22.7	30.0	7.3
278.89	Horiz	13.0	16.6	29.6	37.0	7.4
417.18	Vert	8.7	21.4	30.1	37.0	6.9
638.71	Vert	5.6	26.3	31.9	37.0	5.1
957.90	Horiz	3.2	32.5	35.7	37.0	1.3
957.90	Vert	0.4	32.5	32.9	37.0	4.1

The emissions above 957.90 MHz were below - 20 dB from limits.

* Corrected reading = meter reading + corr.factor(= antenna factor + cable loss - preamp gain)
* Measurement uncertainty: ± 3.3 dB (K = 2, 95 %)

Tested by

RADIATED EMISSION MEASUREMENT -- Quasi-Peak Mode --

No: #05-073E-RE2 (2 / 2)

EUT Name: Personal computer TYPE: P7120 S/N: Pre-production sample
Limit: FCC Part15 Class B ; Measurement distance is 10 m
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
Antenna: SME Bi-log VULB9160 S/N:3118 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber Assisted software: EMI measurement software of Version 1.3

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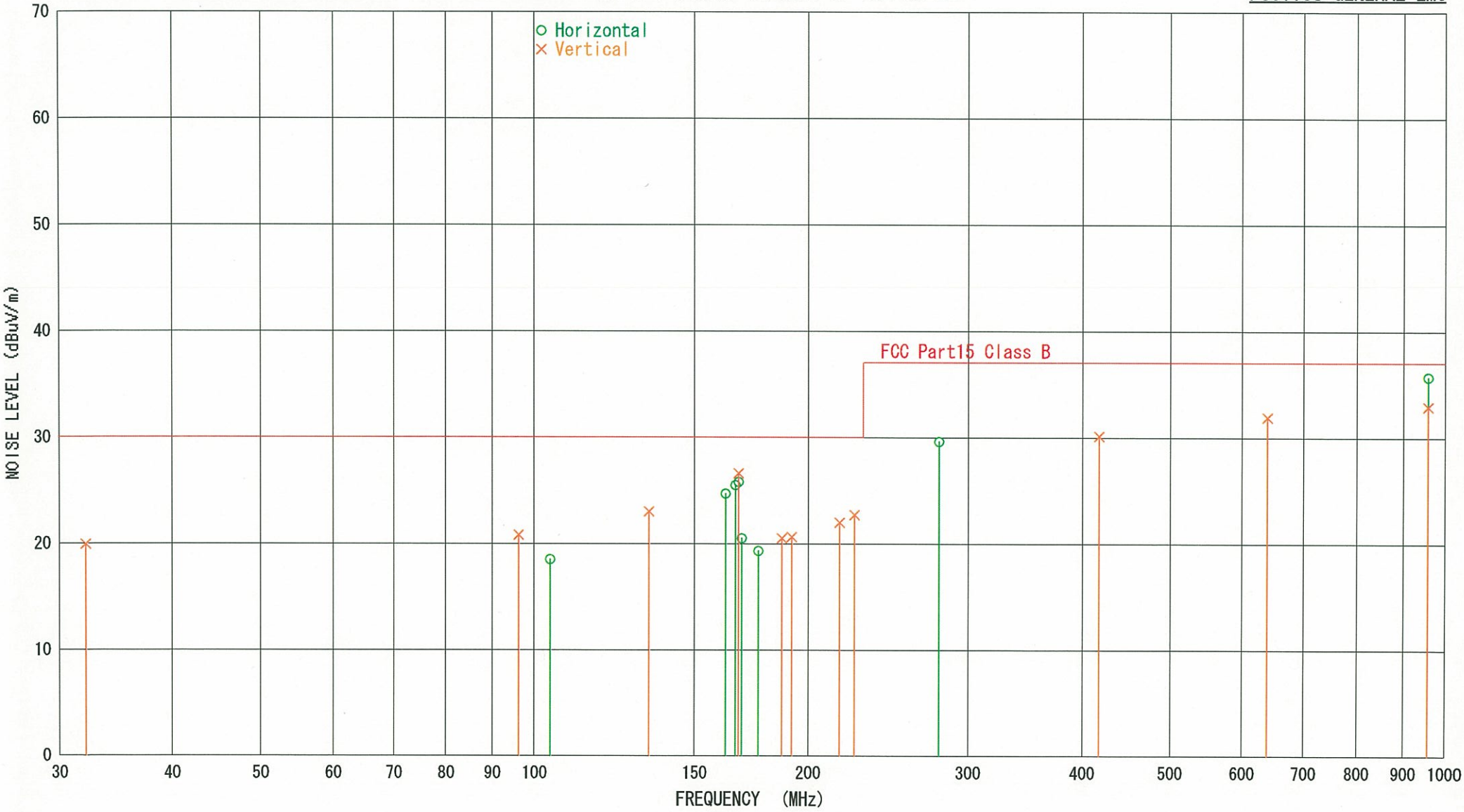

RADIATED EMISSION MEASUREMENT (1GHz～6GHz)

EUT Name: Personal Computer Type: P7120 S/N: Pre-production sample
Limit : FCC Part-15 Class B ; Measurement distance is 3 m
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
Antenna : Schwarzbeck BBHA9120D S/N:136
Receiver : Spectrum analyzer : Advantest R3371A S/N:75060396
Test site: 2nd semi-anechoic chamber

Freq. (GHz)	Pol.	Meter Reading (dBuV)	Corr. Factor (dB)	Noise Level (dBuV/m)	Limit Peak (dBuV/m)	Limit AV (dBuV/m)	Margin (dB)
1.0400	Horiz	43.5	-7.0	36.5	74.0	54.0	17.5
1.0400	Vert	46.5	-7.0	39.5	74.0	54.0	14.5
1.1157	Vert	42.5	-6.6	35.9	74.0	54.0	18.1
1.1986	Vert	46.3	-6.2	40.0	74.0	54.0	14.0
1.2814	Vert	41.3	-5.8	35.4	74.0	54.0	18.6
1.3586	Vert	50.0	-5.4	44.6	74.0	54.0	9.4
1.4343	Vert	52.3	-5.1	47.2	74.0	54.0	6.8
1.5129	Vert	45.7	-4.5	44.1	74.0	54.0	12.9
1.5929	Vert	44.5	-3.8	40.7	74.0	54.0	13.3
1.7557	Vert	43.3	-2.0	41.2	74.0	54.0	12.8
1.8300	Vert	44.5	-1.2	43.3	74.0	54.0	10.7

The emissions above 1.8300 GHz were below – 10 dB from limits.

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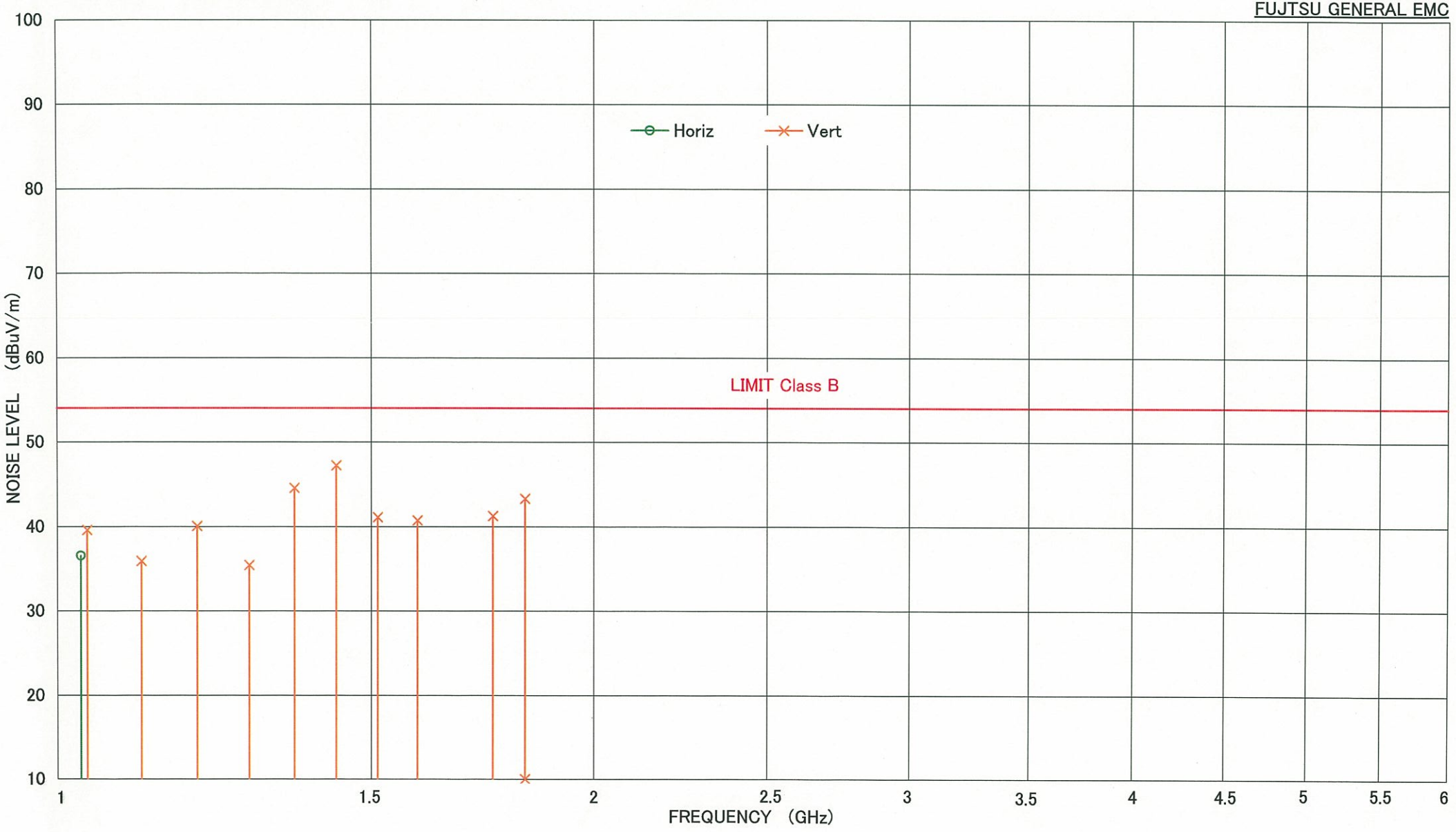
* Corrected reading: = meter reading + corr. factor (= antenna factor + cable loss – preamp gain)

Tested by

RADIATED EMISSION MEASUREMENT (1GHz - 6GHz)

No: #05-073E-GH2 (2/2)

EUT Name : Personal computer TYPE : P7120 S/N : Pre-production sample
LIMIT : FCC Part-15 class B ; Measurement distance is 3m
Test date : 2005/08/17 Temp : 25 ℃ R/H : 65 %
Antenna : Schwarzbeck BBHA9120D S/N:136 Receiver : Advantest R3371A S/N:75060396
Test site : 2nd semianechoic chamber



POWER LINE CONDUCTED EMISSION MEASUREMENT -- Quasi-Peak Mode --

EUT Name: Personal computer Type: P7120
S/N: Pre-production sample
Limit: CISPR22 Class B Test voltage: 100 VAC, Single phase
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
AMN: Kyoritsu KNW-407 S/N:8-823-18 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber
Assisted software: EMI measurement software of Version 1.3

Freq. (MHz)	Line	Meter Reading (dBuV)	Corr. Factor (dB)	Noise Level (dBuV)	Limit (dBuV)	Margin (dB)
0.1885	# 2	33.7	7.0	40.7	64.1	23.4
0.1934	# 1	45.5	7.0	52.5	63.9	11.4
0.2898	# 1	35.2	6.7	41.9	60.5	18.6
0.2898	# 2	32.4	6.7	39.1	60.5	21.4
0.3692	# 1	31.4	6.5	37.9	58.5	20.6
0.3773	# 2	29.5	6.5	36.0	58.3	22.3
0.4700	# 1	31.5	6.2	37.7	56.5	18.8
0.4700	# 2	29.1	6.2	35.3	56.5	21.2
0.5672	# 1	33.7	6.1	39.8	56.0	16.2
0.5909	# 2	29.1	6.1	35.2	56.0	20.8
0.6537	# 2	29.6	6.1	35.7	56.0	20.3
0.6843	# 1	31.7	6.1	37.8	56.0	18.2
0.7602	# 1	29.4	6.1	35.5	56.0	20.5
0.8223	# 2	25.3	6.1	31.4	56.0	24.6
17.6930	# 2	31.7	6.9	38.6	60.0	21.4
18.2446	# 2	31.1	7.0	38.1	60.0	21.9

The emissions above 18.2446 MHz were below - 20 dB from limits.

* Corrected reading = meter reading + corr.factor(= AMN factor + 6-dB pad + cable loss)
* The limit of CISPR 22 is applied for FCC Part-15.
* Measurement uncertainty: ± 2.5 dB (K = 2, 95 %)

T Aikawa
Tested by

POWER LINE CONDUCTED EMISSION MEASUREMENT

-- Quasi-Peak Mode --

No: #05-073E-CE1 (2 / 2)

EUT Name: Personal computer TYPE: P7120 S/N: Pre-production sample
Limit: CISPR22 Class B Test voltage: 100 VAC, Single phase
Test date: 2005/08/17 Temp: 25 ℃ R/H: 65 %
AMN: Kyoritsu KNW-407 S/N:8-823-18 Receiver: HP 85422E S/N:3746A00242
Test site: 2nd semianchoic chamber Assisted software: EMI measurement software of Version 1.3

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