MEASUREMENT / TECHNICAL REPORT

Fujitsu Siemens Computers

Model: Personal Computer Scenic MT8

FCC ID: HSSSCENIC8501

Dec. 14, 1999

This report concerns:	☐ Original grant	Class II change
Equipment type:	Personal Computer	

Request issue of grant:

- Immediately upon completion of review
- ☐ Defer grant per 47 CFR 0.457(d)(1)(ii) until _____ date _____. Company Name agrees to notify the Commission by _____ date _____ of the intended date of announcement of the product so that the grant can be issued on that date.

Measurement procedure used:

- ANSI C63.4-1992
- ☐ FCC/OET MP-4(1987)
- ☐ other _____

Limits on compliance with: CISPR 22 resp. FCC class B

Application for Certification
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Applicant for this device:

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Table of Contents

1 GENERAL INFORMATION

1.1 Product Description

The Siemens Computer Scenic 860 is a tower personal computer. The system board integrates the Pentium Processor, memory, and I/O-technologies. The system now can be assembled with Processor Intel Pentium III 750 MHz.

Original grant, dated: Mar. 10, 1999
First class II change, dated: Aug. 18, 1999

Description of the power supplies:

- Power supplies:

ASTEC, model	AA20660 S26113-E427-V30
Minebea, model	SPW1562-1 S26113-E427-V20

Features Overview:

Chip Set – Intel 440BX/ZX and PIIX4E

- 2 IDE ports for up to 4 IDE devices
  support enhanced bus master ATA33 IDE with WIN98™ and NT™
- 2 USB ports with 12 Mbits/s

Super I/O – SMCS FDC37M807

- One internal floppy port for one floppy and one floppy tape drive
  support up to 2,88 Mbyte floppy
- 2 external PS2 ports - support keyboard and mouse connector exchange

- 1 external parallel port
- 1 external serial port (COM1)
- 1 internal connector for chipcardreader or external serial (COM2) port via wire

Main memory

- Two 3,3 V DIMM sockets for 16 Mbyte up to 768 Mbyte support only unbuffered SDRAMs

Security features

- Floppy write protection by BIOS and by switch
- System and BIOS password
- Flash write protection against virus
- SPD EEPROM protection against virus
- Intrusion check

Power management

- ACPI and APM
- On/Sleep/Off by power switch
- On/Sleep/Off by keyboard
- On/Off by SNI desk software
- On by real time clock (RTC)
- On by chip card reader
- On by external serial port 1
- Wake on LAN (WOL)
- Wake on PCI and AGP cards
- Wake on chip card reader
- Monitor power switch control

BIOS features

- Flash EPROM 2 Mbit
- System BIOS
- USB legacy support
- InCom LAN boot support
- Intel LAN desk Service Agent (LSA) support

Environmental protection

- Battery on socket for recycling

Form factor and slots

- Micro ATX
- 1 AGP slot
- 2 PCI slots
- 1 shared PCI-Bus / ISA-Bus slot

The personal computer is assembled by Siemens PC Systeme GmbH & Co. KG, Bürgermeister-Ulrich-Str. 100, 86199 Augsburg.

1.2 Related Submittal Grant

N/A

1.3 Tested System Details

The FCC IDs for all equipment, plus description of all cables used in the tested system are:

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
1	Fujitsu Siemens Computers MT8 (Scenic 860) S26361-K516	HSSSCENIC8501	PC **EUT**	unshielded power cord [292]
2	Fujitsu Siemens Computers MCM 17P1 YEDA175920	A3LCSE783	Monitor	unshielded power cord [175] shielded video cable [168]
3	Fujitsu Siemens Computers S26381-K240-V120	HSS01TASTK240	Keyboard	shielded keyboard cable [143]
4	Cherry MY3000USB4A 000468K37	DOC	Keyboard	shielded keyboard cable [143]

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
5	Microsoft MS 2.1A 1825831-00000	C3KKMP3	Mouse	shielded mouse cable [183]
6	Logitech M-UB48 LZA83300052	DLZ211137	USB mouse	shielded mouse cable [174]
7	Hewlett Packard HP 2225C+ (2910S40941)	DSI6XU2225	Printer, parallel I/F	unshielded AC cable [180], shielded centronics cable [190]
8	Hewlett Packard HP 2225D+ (2952S61298)	DSI6XU2225	Printer, serial I/F	unshielded power cord [185], shielded serial cable [190]
9	Bay Networks HUB 100BaseT	N/A	HUB	shielded cable
	Pos 1 contains:			
a_1	ASTEC (UK), AA20660 SNI: S26113-E427-V30	N/A	Power supply	
a_2	Minebea SPW1562-1 SNI: S26113-E427-V20	N/A	Power supply	

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
b	Fujitsu Siemens Computers S26361-D1107-A11 WGS 2	N/A	System board	
c	Hyundai PC100-322-620	N/A	SDRAM	
d	Intel Pentium III 80526/PY750256	N/A	Processor module	
e	Matrox G200 AGP	DOC: G2+/MILA/8B/20	Graphic controller board	
f	S26361-D960-V1	N/A	Cheap card reader	
g	Fujitsu MPB3043AT	N/A	Hard disk drive	
h	Toshiba XM-6302B S26361-H402-V500	CJ6AT98-032	CD-ROM drive	
i	Teac FD235-HF235-7376	N/A	Floppy disk drive	

Remark: position $1a_1$ / $1a_2$ optional

1.4 Test Methodology

Both, conducted and radiated tests were performed according to the procedures in ANSI C63.4-1992. Radiated testing below 1 GHz was performed at an antenna to EUT distance of 10 meters above 1 GHz at an antenna to EUT distance of 3 meters. All radiated emission measurements were done in an anechoic chamber. Limits for radiated and conducted emission are in compliance with CISPR 22 resp FCC class B.

1.5 Test Facility

The anechoic chamber and conducted measurement facility used to collect the emission data is located at Siemens PC Systeme GmbH & Co. KG, Bürgermeister Ulrich Str. 100, 86199 Augsburg, Germany. This site has been fully described in a report dated January 24, 1997 sub-mitted to your office, and accepted in a letter dated March 03, 1997 (31040/SIT).

1.6 Referenced Rules Sections

N/A

2 PRODUCT LABELING

2.1 FCC ID Label

see original grant, date: Mar. 10, 1999

2.2 Location of Label on EUT

see original grant, date: Mar. 10, 1999

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a maximum fashion (as a customer can use it). Each type of external ports was connected with a peripheral unit (e.g. serial port connected to a serial printer, external keyboard port connected to a keyboard and so on). During radiated emission the monitor was powered via system unit, during conducted emission also the external monitor supply was tested.
The system clock is 100 MHz, the clock frequency was tested with the corresponding worst case processor:

100 MHz clock: Intel Pentium III 750 MHz

The system is provided with two kinds of power supplies:

– ASTEC, AA20660 SNI: S26113-E427-V30

– Minebea, SPW1562-1 SNI: S26113-E427-V20

According both worst case results concerning the test report of the original grant (dated: Mar. 10, 1999) and the first class II change (dated: Aug. 18, 1999) the following configuration has been tested:

Referring to radiated emission the following (worst case) results are applicable:

ASTEC PSU, model AA20660:

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Minebea PSU, model SPW1562-1:

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Referring to conducted emission the following (worst case) results are applicable:

ASTEC PSU, model AA20660:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power via EUT

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power from peripheral device LISN

Minebea PSU, model SPW1562-1:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power via EUT

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power from peripheral device LISN

3.2 Video mode Justification

The system was tested in video graphic mode 1024 x 768 / 100 Hz. The worst case combination according the test results of the original grant (dated: Mar. 10, 1999) and the first class II change (dated: Aug. 08, 1999) have been tested:

The following data are applicable:

radiated emission:

ASTEC PSU, model AA20660:

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Minebea PSU, model SPW1562-1:

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz

conducted emission:

ASTEC PSU, model AA20660:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power via EUT

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power from peripheral device LISN

Minebea PSU, model SPW1562-1:

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power via EUT

100 MHz clock/Pentium III 750 MHz, video resolution 1024 x 768/100 Hz monitor power from peripheral device LISN

3.3 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

The used sequence is:

- scrolling ”H” with applicable video mode (see 3.2)
- internal Floppy drive writes to the HD and reads back
- internal CD-ROM writes to the HD
- ”H`s” are sent to the printer ports
- data is sent to USB ports
- LAN data communication

3.4 Special Accessories

As shown in Figure 3.1, all interface cables used for compliance testing are shielded like normally supplied by the manufacturer. All cable connectors feature integral metal hoods for shielding.

3.5 Equipment Modifications

To achieve compliance to Class B levels, the following modifications were made during compliance testing:

no modifications

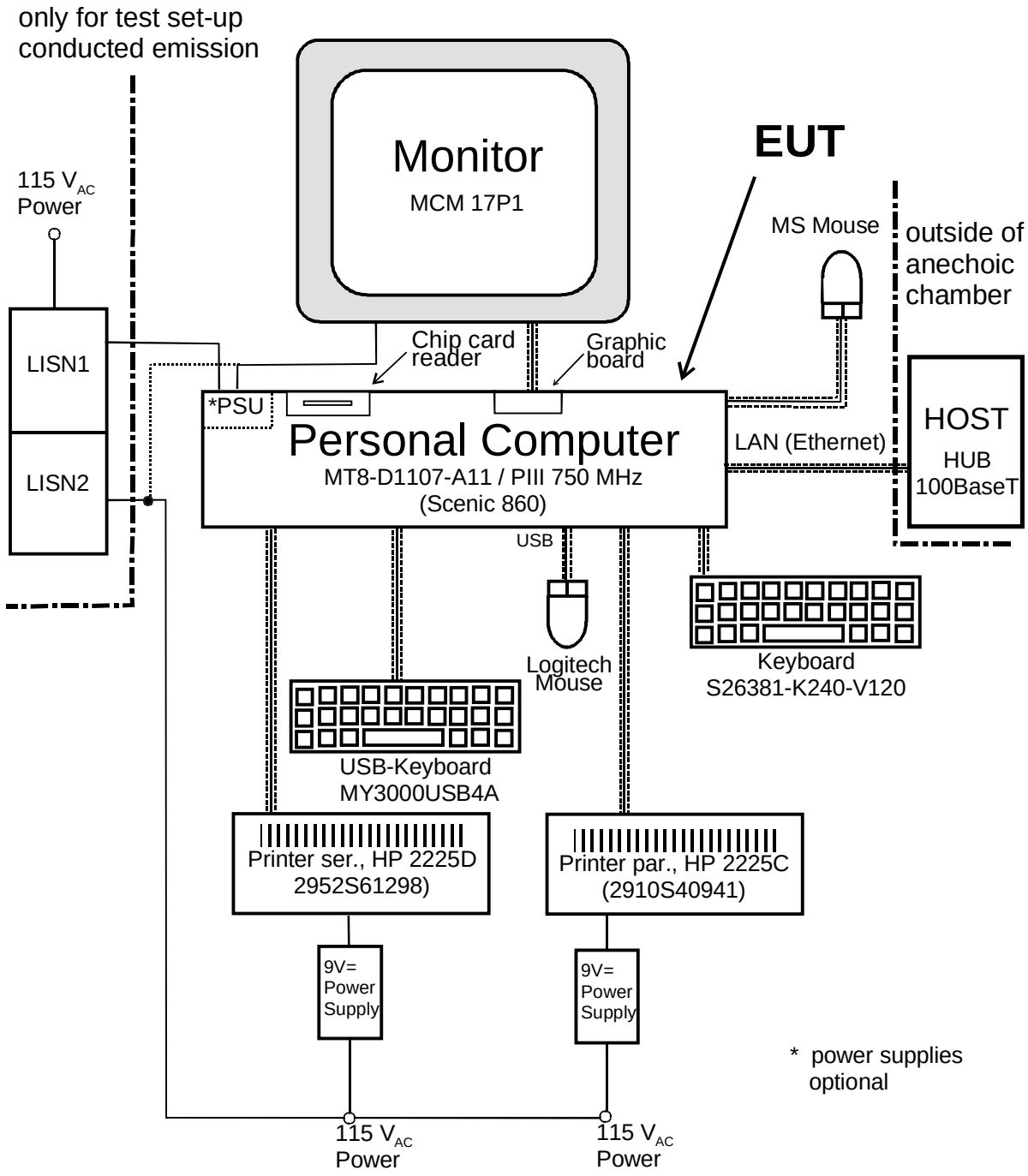
Applicant Signature _____ Date _____

Typed/Printed Name _____ Position _____

3.6 Configuration of Tested System

All necessary tests were carried out like figure 3.1. The system was used according to paragraph 1.1. During test for conducted emission the EUT was connected to a LISN. All peripherals were supplied by a second LISN. The equipment was configured according to ANSI C63.4-1992 Fig 11.

Figure 3.1 Configuration of Tested System



4 BLOCK DIAGRAM OF EUT

see fig 4.1 page 21

4.1 Block Diagram Description (see fig. 4.1)

The major parts of the system are (fig 4.1).

- System board
- Power supply
- Floppy disk drive
- Hard disk drive
- CD-ROM drive
- Chip card reader
- Peripheral connector area (Keyboard, Mouse, Ser. 1, Parallel Port, LAN and USB)

The detailed diagram of the system board is shown in fig 4.1

The personal computer works exactly like a traditional P.C..

4.2 Clockfrequencies of EUT

Clock synthesizer	14,318 MHz
Front side bus	66,6 / 100 MHz
Memory	66,6 / 100 MHz
PCI-bus	33,3 MHz
PIIX4 to IDE and USB	33,3 MHz
ISA Bus	8,2 MHz
I/O controller	14,3 MHz
USB	48 MHz
AGP bus	66,6 MHz

4.3 Theory of Operation

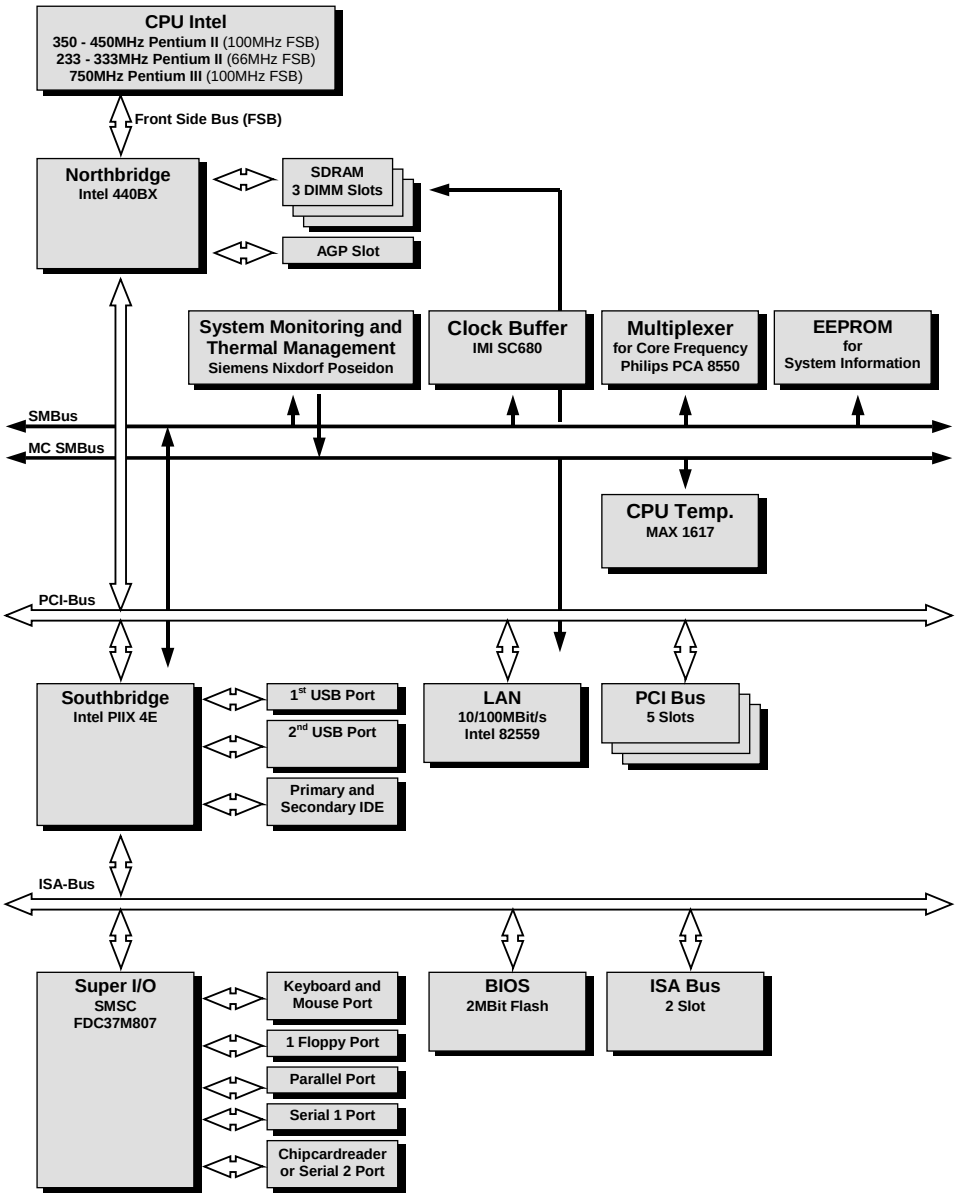
The tower PC works exactly as a traditional PC.

The processors run internally between 233 and 750 MHz, the system clock is 66,6 MHz or 100 MHz and is multiplied by the processors internally by 3,5, 4,0, 4,5, 5,0, 5,5 6,0 or 7,5.

The highest possible frequencies and the corresponding processors are:

System clock	Processor	factor
66,6 MHz	233 MHz	3,5
66,6 MHz	266 MHz	4,0
66,6 MHz	300 MHz	4,5
66,6 MHz	333 MHz	5,0
66,6 MHz	366 MHz	5,5
100 MHz	350 MHz	3,5
100 MHz	400 MHz	4,0
100 MHz	450 MHz	4,5
100 MHz	500 MHz	5,0
100 MHz	600 MHz	6,0
100 MHz	750 MHz	7,5

Figure 4.1 Block Diagram of the EUT



5 CONDUCTED EMISSION DATA

5.1 Test Procedure

The initial step in collecting conducted emission data is a Rohde & Schwarz Test Receiver (ESHS10). During first scan all data in peak mode is measured, then all significant peaks are explored either in quasi-peak mode or in average mode. In case of low noise (no peak value reaches the quasi peak limit), only average checks are done.

5.2 Measured Data

The conducted emission was measured the following way:

1. Peak noise on L
2. Peak noise on N

During the emission measurement the printers are supplied with power via a second LISN, the monitor was powered both, via the system unit or separately.

The worst case results of the measurement is given next:

ASTEC PSU:

a) video resolution 1024 x 768/100 Hz, monitor power via EUT
b) video resolution 1024 x 768/100 Hz, monitor power from peripheral device LISN

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]	Configuration
phase	0,162	48,50	QP	65,0	a

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]	Configuration
neutral	0,234	42,50	QP	62,0	a
neutral	0,294	46,80	QP	60,0	a
neutral	0,180	38,20	AV	55,0	a
neutral	0,234	36,60	AV	52,0	a
neutral	0,294	39,30	AV	50,0	a
neutral	0,180	40,70	QP	65,0	b
neutral	0,234	43,10	QP	62,0	b
neutral	0,294	47,50	QP	60,0	b
neutral	0,180	38,40	AV	55,0	b
neutral	0,234	36,70	AV	52,0	b
neutral	0,294	39,20	AV	50,0	b

AV: average
QP: quasi peak

Minebea PSU:
a) video resolution 1024 x 768/100 Hz, monitor power via EUT
b) video resolution 1024 x 768/100 Hz, monitor power from peripheral device LISN

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]	Configuration
phase	0,162	49,10	QP	65,0	a
phase	0,228	48,50	QP	63,0	a

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]	Configuration
phase	0,822	41,40	QP	56,0	a
phase	0,228	45,40	AV	53,0	a
neutral	1,950	39,80	AV	46,0	a
neutral	2,052	38,90	AV	46,0	a
phase	0,228	50,20	QP	63,0	b
phase	2,058	42,50	QP	56,0	b
phase	2,160	42,00	QP	56,0	b
phase	0,228	47,40	AV	53,0	b
phase	1,956	40,30	AV	46,0	b
phase	2,058	41,20	AV	46,0	b

AV: average
QP: quasi peak

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: W. Koblbauer

Measurement Protocols: see attached file

ASTEC PSU:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz
monitor power via EUT

100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz
monitor power from peripheral device LISN

Minebea PSU:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz
monitor power via EUT

100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz
monitor power from peripheral device LISN

5.3 Referenced Rules Sections

N/A

5.4 Test Instrumentation Used, Conducted Measurement

Type	Manufacturer/ Model No.	Serial No.	Last Cal.	Cal. Interval
Receiver	ESHS10 Rohde&Schwarz	842884/011	May 99	12 months
LISN	ESH2-Z5 Rohde&Schwarz	871884/004	May 99	12 months
LISN	ESH3-Z5 Rohde&Schwarz	883650/027	May 99	12 months
Pulse limiter	ESH3-Z2 Rohde&Schwarz	---	May 99	12 months

6 RADIATED EMISSION DATA

6.1 Test Procedure

The radiated emission was measured in two parts:

1. in the frequency range from 30 MHz to 1000 MHz. The bandwidth of the EMI-receiver was set to 120 kHz and the detector was set to peak. During prescan all data in peak mode are accumulated automatically. At final measurement the detector was set to CISPR quasi peak and values above the acceptance line were verified automatically.

2. in the frequency range from 1000 MHz to 5000 MHz. The bandwidth of the EMI-receiver was set to 1 MHz and the detector was set to peak. During prescan all data in peak mode are accumulated automatically. At final measurement the detector was set to average and values above the acceptance line were verified automatically.

Both tests were performed in a semi anechoic chamber, measurements below 1000 MHz in a distance of 10 meters between antenna and EUT, above 1 GHz with a distance of 3 meters between antenna and EUT. During tests the EUT was turned 360° and the actual used receiving antenna was moved from 1 to 4 meters and the antenna polarisation was changed from horizontal to vertical for finding the maximum levels of emission.

For each range one antenna for the whole span was used

1. 30 MHz to 1000 MHz: log.-per antenna
2. 1000 MHz to 5000 MHz: rigid tensor antenna

After automatic tests during manual verification the cables and the equipment were placed and moved within the range of position in order to find the maximum of emission.

6.2 Measured Data

The EUT was measured with the Processor Pentium III 750 MHz in video mode 1024 x 768 / 100 Hz. The test results below reflect the worst case with:

ASTEC PSU:
a) 100 MHz clock/Intel Pentium III 750 MHz,
video resolution 1024 x 768/100 Hz

Part 1: frequency range 30 MHz - 1000 MHz:

Judgement: Passed by

Frequency [MHz]	Level* [dB(µV/m)]	10 Meter Limit [dB(µV/m)]	Exceeding [dB]	Ant Pol	Height in [m]	Angle in deg
96.00000	22.70	30.000	-7.3	ver	1.00	270.000
216.00000	20.20	30.000	-9.8	hor	3.00	29.000
384.00000	28.40	37.000	-8.6	hor	2.00	300.000
432.03000	31.10	37.000	-5.9	ver	1.00	150.000
480.06000	30.80	37.000	-6.2	hor	2.00	59.000
733.86000	31.60	37.000	-5.4	hor	1.00	0.000

all levels are quasi-peak levels

*****The correction factor is considered automatically by the test receiver.
A table of correction factors is listed in paragraph 7.4.

Part 2: frequency range 1 GHz - 5 GHz:

Judgement: Passed by

Frequency [MHz]	Level* [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Exceed Mark	Height [cm]	Azimuth [deg]	Ant Pol
1199.80000	31.90	53.9	22.0		100.00	0.00	hor
1296.40000	34.50	53.9	19.4		140.00	180.00	hor

Frequency [MHz]	Level* [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Exceed Mark	Height [cm]	Azimuth [deg]	Ant Pol
1495.90000	35.80	53.9	18.1		100.00	180.00	hor
2340.10000	36.80	53.9	17.1		100.00	330.00	ver
2984.80000	32.30	53.9	21.6		140.00	119.00	ver
4996.60000	33.00	53.9	20.9		220.00	29.00	ver

all levels are average levels

*****The correction factor is considered automatically by the test receiver.
A table of correction factors is listed in paragraph 7.4.

Minebea PSU

b) 100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz

Part 1: frequency range 30 MHz - 1000 MHz:

Judgement: Passed by

Frequency [MHz]	Level* [dB(µV/m)]	10 Meter Limit [dB(µV/m)]	Exceeding [dB]	Ant Pol	Height in [m]	Angle in deg
89.13000	21.50	30.000	-8.5	ver	1.60	0.000
96.81000	26.60	30.000	-3.4	ver	1.60	90.000
122.52000	25.00	30.000	-5.0	ver	1.00	180.000
672.48000	31.80	37.000	-5.2	hor	2.80	59.000
695.76000	34.20	37.000	-2.8	hor	1.00	119.000
720.03000	32.70	37.000	-4.3	hor	2.80	180.000

all levels are quasi-peak levels

*****The correction factor is considered automatically by the test receiver.
A table of correction factors is listed in paragraph 7.4.

Part 2: frequency range 1 GHz - 5 GHz:

Judgement: Passed by

Frequency [MHz]	Level* [dB(µV/m)]	Limit [dB(µV/m)]	Margin [dB]	Exceed Mark	Height [cm]	Azimuth [deg]	Ant Pol
1127.20000	32.40	53.9	21.5		140.00	0.00	hor
1499.80000	39.40	53.9	14.5		100.00	29.00	hor
2100.10000	37.50	53.9	16.4		100.00	29.00	hor
2250.10000	35.10	53.9	18.8		140.00	29.00	hor
2340.10000	41.40	53.9	15.5		100.00	29.00	hor
4965.40000	33.10	53.9	20.8		100.00	29.00	hor

all levels are average levels

*****The correction factor is considered automatically by the test receiver.
A table of correction factors is listed in paragraph 7.4.

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: M. Heuser

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: M. Roththauscher

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: H. Zenkner

Measurement Protocols: see attached files

ASTEC PSU:
Frequency range 30 MHz - 1 GHz:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz

Minebea PSU:
Frequency range 30 MHz - 1 GHz:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz

Frequency range 1 GHz - 5 GHz:
100 MHz clock/Intel Pentium III 750 MHz
video resolution 1024 x 768/100 Hz

6.3 Referenced Rules Sections

N/A

6.4 Test Instrumentation Used, Radiated Measurement

Type	Manufacturer/ Model No.	Serial No.	Last Cal.	Cal. Interval
Receiver	ESMI Rohde&Schwarz	840607/006	May 99	15 months
Antenna	CBL 6111 Chase	1345	May 99	12 months
Antenna	CBL 6112 Chase	2041	Aug 99	15 months
Active Ridged antenna	Tensor 4105 Rohde&Schwarz	2063	Dec 99	15 months

6.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor automatically to the measured value. The display of the Receiver shows the corrected value. The complete table of correction factors is given on next page. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where FS = Field Strength

AF = Antenna Factor (incl. Preamplifier factor)

CF = Cable Attenuation Factor

Assume a receiver reading of 28,5 dBµV is obtained. The Antenna Factor of 10,5 and a Cable Factor of 1,3 is added, giving a field strength of 40,3 dBµV/m.

FS = 28,5 + 10,5 + 1.3 = 40,3 dBµV/m

The 40,3 dBµV/m value can be mathematically converted to its corresponding level in µV/m.

Level in µV/m =
Common Antilogarithm [(40,3 dBµV/m)/20] =

103,5 µV/m

6.6 Table of Correction Factors

Frequency range: 30 MHz to 1000 MHz (Antenna CBL6112)

Frequency [MHz]	Correction Bilog Antenna [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
30,0	17,80	0,65	18,45
35,0	15,10	0,67	15,77
40,0	12,40	0,68	13,08
45,0	9,80	0,73	10,53
50,0	7,70	0,74	8,44
55,0	6,20	0,82	7,02
60,0	5,10	0,84	5,94
70,0	5,00	0,90	5,90
80,0	6,60	0,95	7,55
90,0	8,50	0,99	9,49
100,0	10,30	1,10	11,40
120,0	11,40	1,14	12,54
140,0	10,40	1,27	11,67
160,0	9,40	1,35	10,75
180,0	8,50	1,45	9,95
200,0	9,10	1,51	10,61
250,0	11,80	1,71	13,51
300,0	13,00	1,84	14,84
350,0	14,10	2,00	16,10
400,0	16,00	2,18	18,18
450,0	16,30	2,35	18,65
500,0	17,10	2,43	19,53

Frequency [MHz]	Correction Bilog Antenna [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
550,0	18,80	2,62	21,41
600,0	18,60	2,73	21,33
650,0	19,00	2,88	21,88
700,0	19,10	2,91	22,01
750,0	19,80	3,01	22,81
800,0	19,80	3,21	23,01
850,0	20,40	3,32	23,72
900,0	20,50	3,40	23,90
950,0	20,80	3,49	24,29
1000,0	21,10	3,69	24,79

Frequency range: 1 GHz to 5 GHz

Frequency [GHz]	Correction Tensor Antenna with Pre-amplifier [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
1,0	5,70	1,62	7,32
1,1	4,80	1,68	6,48
1,2	5,10	1,75	6,85
1,3	5,00	1,80	6,80
1,4	5,10	1,96	7,06
1,5	5,90	2,00	7,90
1,6	5,60	2,15	7,75
1,7	6,70	2,30	9,00
1,8	6,60	2,32	8,92
1,9	5,90	2,35	8,25
2,0	7,20	2,44	9,64
2,1	7,30	2,62	9,92
2,2	7,40	2,75	10,15
2,3	8,40	2,70	11,10
2,4	8,00	2,69	10,69
2,5	9,30	2,65	11,95
2,6	8,70	2,75	11,45
2,7	8,70	2,92	11,62
2,8	9,00	2,98	11,98
2,9	8,60	3,10	11,70
3,0	9,50	3,12	12,62
3,1	9,20	2,37	11,57
3,2	8,60	2,40	11,00

Frequency [GHz]	Correction Tensor Antenna with Pre-amplifier [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
3,3	8,70	2,42	11,12
3,4	9,70	2,43	12,13
3,5	9,70	2,46	12,16
3,6	10,40	2,43	12,83
3,7	10,80	2,45	13,25
3,8	11,50	2,47	13,97
3,9	11,90	2,49	14,39
4,0	10,90	2,46	13,36
4,1	10,10	2,48	12,58
4,2	8,80	2,49	11,29
4,3	8,70	2,51	11,21
4,4	8,50	2,53	11,03
4,5	8,70	2,54	11,24
4,6	9,50	2,57	12,07
4,7	10,10	2,57	12,67
4,8	11,10	2,59	13,69
4,9	11,50	2,60	14,10
5,0	11,60	2,62	14,22

7 Conducted And Radiated Emission Measurement Photos: see attached files

7.1 Test set-up, conducted emission, front side view

7.2 Test set-up, conducted emission, rear side view

7.3 Test set-up, radiated emission, front side view

7.4 Test set-up, radiated emission, rear side view

8 External Photos of EUT

see original grant, date: Mar. 10, 1999

9 Internal Photos of EUT: see attached files

9.1 Inside view of EUT

9.2 Processor module, front side view

9.3 Processor module, rear side view

Original grant, dated Mar. 10, 1999
First class II change, dated: Aug. 18, 1999

10 User Manual

see original grant, date: Mar. 10, 1999