

MEASUREMENT / TECHNICAL REPORT

Fujitsu Siemens Computers

**Model: Personal Computer Scenic Mobile 800 S /
Mobile Workstation S**

FCC ID: HSSMOB80001

Feb. 22, 2000

<p>This report concerns: <input type="checkbox"/> Original grant <input checked="" type="checkbox"/> Class II change</p> <p>Equipment type: Personal Computer (Notebook)</p>		
<p>Request issue of grant: <input checked="" type="checkbox"/> Immediately upon completion of review <input type="checkbox"/> 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.</p>		
<p>Measurement procedure used: <input checked="" type="checkbox"/> ANSI C63.4-1992 <input type="checkbox"/> FCC/OET MP-4(1987) <input type="checkbox"/> other _____</p>		
<p>Limits on compliance with: CISPR 22 resp. FCC class B</p>		
<p>Application for Certification prepared by: Alexander Peschka Siemens PC Systeme GmbH & Co. KG Buergermeister-Ulrich-Str. 100 86199 Augsburg Germany Tel.: +49 821 804-2821 Fax: +49 821 804 2675</p>		<p>Applicant for this device:</p> <p>Siemens PC Systeme GmbH & Co. KG Buergermeister-Ulrich-Str. 100 86199 Augsburg Germany Tel.: +49 821 804-0</p>

	<p>Engineer: _____ Heinz Zenkner Fujitsu Siemens Computers Personal Computer Scenic Mobile 800 S / Mobile Workstation S FCC Identifier: HSSMOB80001</p>	Date: Feb. 22, 2000
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1 GENERAL INFORMATION

1.1 Product Description

The Fujitsu Siemens Computers Scenic Mobile 800 S / Mobile Workstation S is a notebook with a removable keyboard and easily changeable displays.

The system board integrates the Pentium Processor, memory, and I/O-technologies. The system now can be assembled with Processors Intel Pentium III up to 650 MHz.

Description of the power supply:

AC- / DC- adapter: Astec, model SA65-3115
S26113-E428-V30

Features Overview:

- Microprocessor-Module with PII (Dixon/Celeron) or PIII-Core (Coppermine), 256/128kB Cache on Board and North-Bridge
- Support of Intel SpeedStep Technology
- Up to 512 MBytes Main Memory, SDRAM four banks, four SO-DIMMs with altogether 32 chips
- ATI RAGE LT PRO AGP VGA-Controller with 8MB-Video-Memory, FBAS or Y/C Output, PAL or NTSC
- Ext. VGA – Out
- TI 1251B Card-Bus-Controller
- 2 x PC - Card Type II or 1 x Type II and 1 x Type III
- Zoomed Video Port on both connectors (only one active at the same time)

- Power Management: (APM 1.2 and ACPI 1.0) with PIIX4 and Super I/O
- Connection for removable IR-Keyboard (with touchpad, status display, charge circuit)
- Interface for 2 Multi Bays
- Interface for the Smart Card Reader
- Additional Suspend battery for charging the battery in Suspend to RAM – mode
- Battery on Socket for recycling (on D1050)
- $114 + 142 = 256$ Bytes CMOS RAM for RTC and Setup-parameters
- Security Features
- Floppy Interface with Floppy support
- Enhanced Busmaster IDE,
two IDE connectors for up to three IDE devices,
supports Win 95™
- Flash EPROM 4 Mbit for System- and VGA-BIOS, Save to Disc,
PCU – BIOS
- BIOS (PCU, System and VGA) upgradable in Flash EPROM
- Remote On
- Soundblaster™ compatible soundsystem on board,
3D-Sound
- Intel Hot docking concept
- PC'98 compliant

Ports:

- 1 Serial Port



- 1 Parallel Port
- External Mini DIN Keyboard Connector
- External Mini-DIN Mouse Connector
- External USB Connector
- Serial Fast-IRdA Interface
- Microphone In
- Line In
- Speaker Out
- Midi- & Game port

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



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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 Scenic Mobile 800 S Mobile WorkstationS	HSSMOB80001	Notebook (PIII 650 MHz) EUT	unshielded power cord [292]
2	Fujitsu Siemens Computers MCM 1707 NTD	A3LCGS762	Monitor	unshielded power cord [175] shielded video cable [168]
3	Fujitsu Siemens Computers S26381-K240-V120	HSS01TASTK240	Keyboard	shielded keyboard cable [143]
4	Microsoft MS 2.1A	C3KKMP3	Mouse	shielded mouse cable [183]
5	Microsoft Intelli Mouse 1.1A	DOC: m/n:IM1	USB-Mouse	shielded mouse cable [183]



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
6	Hewlett Packard HP 2225C+ (3011S70627)	894C2655X	Printer, parallel I/F	unshielded AC ca- ble [180], shielded centronics cable [190]
7	Hewlett Packard HP 2225D+ (3019S70991)	DSI6XU2225	Printer, serial I/F	unshielded power cord [185], shiel- ded serial cable [190]
8	Fujitsu Siemens Computers FC301 V6	N/A	Television set	unshielded 2 wire AC power cable [190]
9	Fujitsu Siemens Computers SA65-3115 S26113-E428-V30	N/A	AC- / DC- Adapter	unshielded AC cable [152] shielded DC cable [149]
10	Labtec AM32	N/A	Microphone	shielded cable [142]
11	Chairman Power beat P10	N/A	Loud- speakers	shielded cable [166 + 124]
12	Microsoft Side Winder 3D Pro 00877178	C3KMQ1	Joystick	shielded cable
13	Fujitsu Siemens Computers	N/A	USB cable	shielded cable, terminated [86]



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
	<u>Pos 1 contains:</u>			
a ₁	NEC NL10276B26-01 S26391-F198-V411	N/A	Display TFT 14.1"	N/A
a ₂	Mitsubishi AA142XC01 S26391-F198-V423	N/A	Display TFT 14.2"	N/A
a ₃	Samsung LT150X2-126	N/A	Display TFT 15"	N/A
b	3COM Etherlink III PCMCIA 2.0/2.1	DF63C589D	LAN PC card	for 10Base-T and Coax (with adapter)
c	Fujitsu Siemens Computers S26391-F128-L870	N/A	Accumulator pack	N/A
d	Fujitsu Siemens Computers S26391-F203-L100	N/A	CD-ROM drive	N/A
e	Fujitsu Siemens Computers S26391-F201-L100	N/A	Floppy disk drive	N/A
f	Fujitsu Siemens Computers S26391-F202-E100	N/A	ZIP disk drive	N/A



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
g	IBM DMCA-21440	N/A	Hard disk drive	N/A
h	Fujitsu Siemens Computers S26361-D1103-A10 GS 3	N/A	System board	N/A
i	Intel MMO	N/A	Processor module (PIII 650 MHz)	N/A
k	Fujitsu Siemens Computers S26361-D1057-V1	N/A	Chip card reader	N/A
l	Fujitsu Siemens Computers S26361-D292-V1	N/A	Remote module	N/A
m	Fujitsu Siemens Computers S26361-D1049-A11	N/A	Periphery module	N/A
n	Fujitsu Siemens Computers S26361-D1050-A12	N/A	Upper connection board	N/A



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
o	Fujitsu Siemens Computers Ve-20127036C 94V-0	N/A	PCMCIA bay	N/A
p	SEC KMM466S823BT3-F0	N/A	SDRAM	N/A
q	Fujitsu Siemens Computers S26381-H43	N/A	Keyboard for Mobile 800	N/A
	<u>Pos 1a₁ contains:</u>			
a	Fujitsu Siemens Computers LINFINITY SGE2617X MWS 2943 LSM1610.3000 9x4	N/A	DC- / DC- converter board	N/A
	<u>Pos 1a₂ contains:</u>			
a	Fujitsu Siemens Computers IM8806 S26113-D1012-V24 E / S1	N/A	DC- / DC- converter board	N/A



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
	<u>Pos 1a₃ contains:</u>			
a	Fujitsu Siemens Computers LXM1612-30019X6	N/A	DC- / DC- converter board	N/A
	<u>Pos q contains:</u>			
a	Fujitsu Siemens Computers S26381-D293	N/A	Keyboard controller board	N/A
b	Synaptics inc. TM41PUG134-2 IJ805-041	N/A	Touch pad	N/A
c	Minebea C26192-Y95-C1	N/A	Keyboard matrix	N/A
d	Data module C26192-Y94-C1	N/A	LCD	N/A

Remark: position 1a₁ / 1a₂ / 1a₃ optional



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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 submitted to your office, and accepted in a letter dated March 03, 1997 (31040/SIT).

1.6 Referenced Rules Sections

N/A



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2 PRODUCT LABELING

2.1 FCC ID Label

see original grant, date: July 08, 1998

2.2 Location of Label on EUT

see original grant, date: July 08, 1998



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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). The notebook can be equipped either with floppy- / CD-ROM drives or with accumulators.

The system clock is 100 MHz, the clock frequency was tested with the corresponding worst case processor:

100 MHz clock: Intel Pentium III 650 MHz

The system can be provided with three kinds of displays:

- NEC, 14.1" TFT display SN: S26391-F398-V411
- Mitsubishi, 14.2" TFT display SN: S26391-F398-V423
- Samsung, 15" TFT display SN: LT150X2-126

According to the worst case results concerning the test report of the original grant (date: July 08, 1998) and the class II changes April 19, 1999 and July 21, 1999 the following configuration has been tested:

- drives: CD-ROM drive, floppy drive
- display: Samsung 15" TFT display (class II change)

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

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

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

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

3.2 Video mode Justification

The system was tested in video graphic mode 1024 x 768/60 Hz. The worst case combination according to the test results of the original grant (date: July 08, 1998) and the class II changes April 19, 1999, July 21, 1999 and Oct. 19, 1999 have been tested. The configuration is:

- drives: CD-ROM drive, floppy drive
- display: Samsung 15" TFT display (class II change)

The following data are applicable:

radiated emission:

Frequency range 30 MHz - 1 GHz:

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

Frequency range 1 GHz - 5 GHz:

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

conducted emission:

100 MHz clock/Intel Pentium III 650 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped
Samsung 15" TFT display

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 port
- signal to video and audio periphery
- LAN communication via PCMCIA

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.

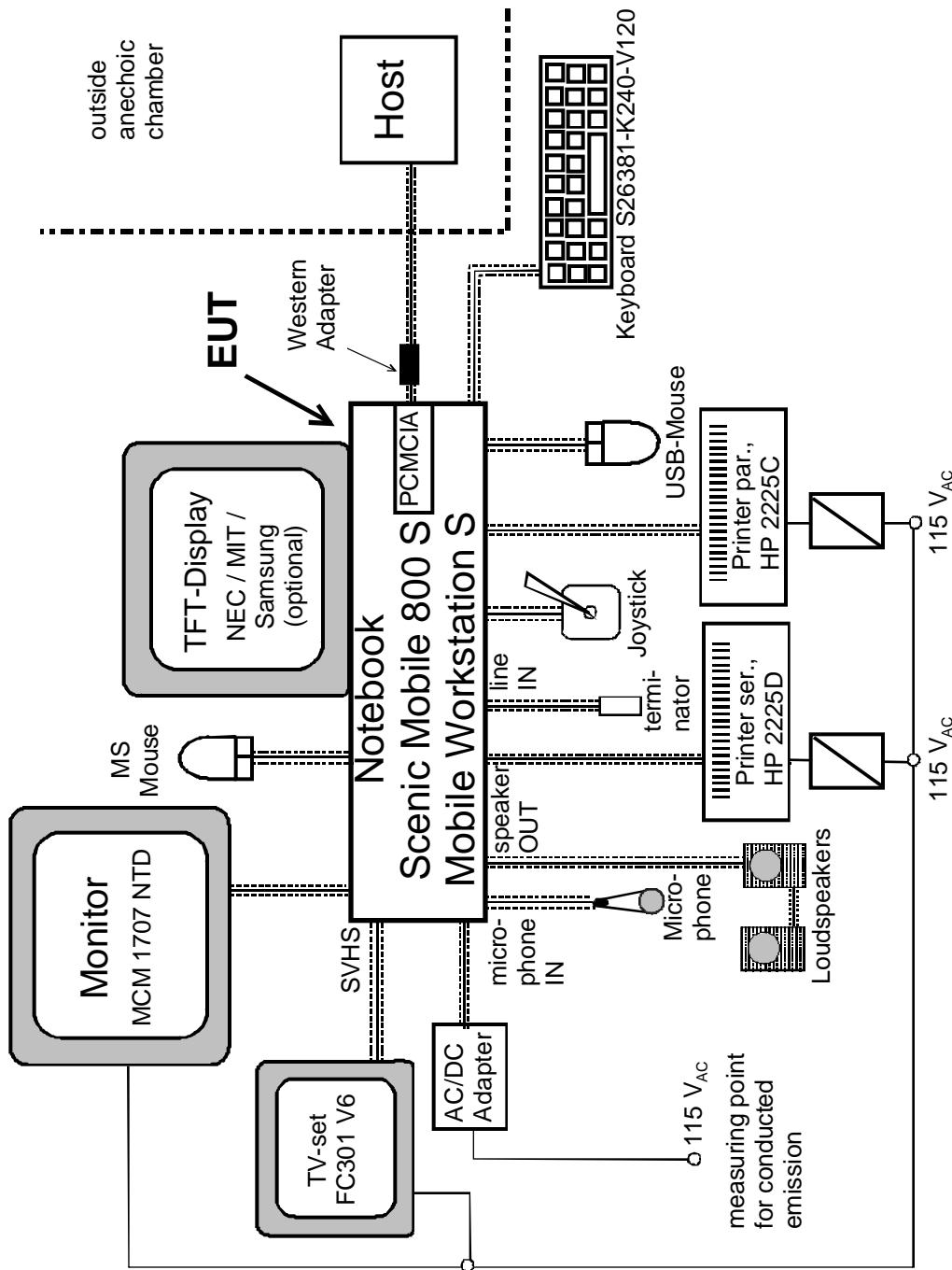


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Figure 3.1 Configuration of Tested System



4 BLOCK DIAGRAM OF EUT

see fig 4.1 page 23

4.1 Block Diagram Description (see fig. 4.1)

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

- System board
- MMO module (processor module)
- Accumulator
- Floppy disk drive
- Hard disk drive
- Keyboard communication module
- CD-ROM drive
- PCMCIA bay
- Chip card reader
- Upper connection board
- Peripheral connector area (keyboard, mouse, serial, parallel, video, USB, SVHS, joystick, microphone, speakers, line out and PCMCIA)

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
Memory	100.0 MHz
PCI-bus	33.3 MHz
PIIX4 to IDE	33.3 MHz
ISA Bus	8.2 MHz
I/O controller	14.3 MHz
USB	48.0 MHz
VGA controller	29.498 MHz
Chip card controller	9.8304 MHz
Keyboard controller	3.579545 MHz
Infrared controller	3.58 MHz

4.3 Theory of Operation

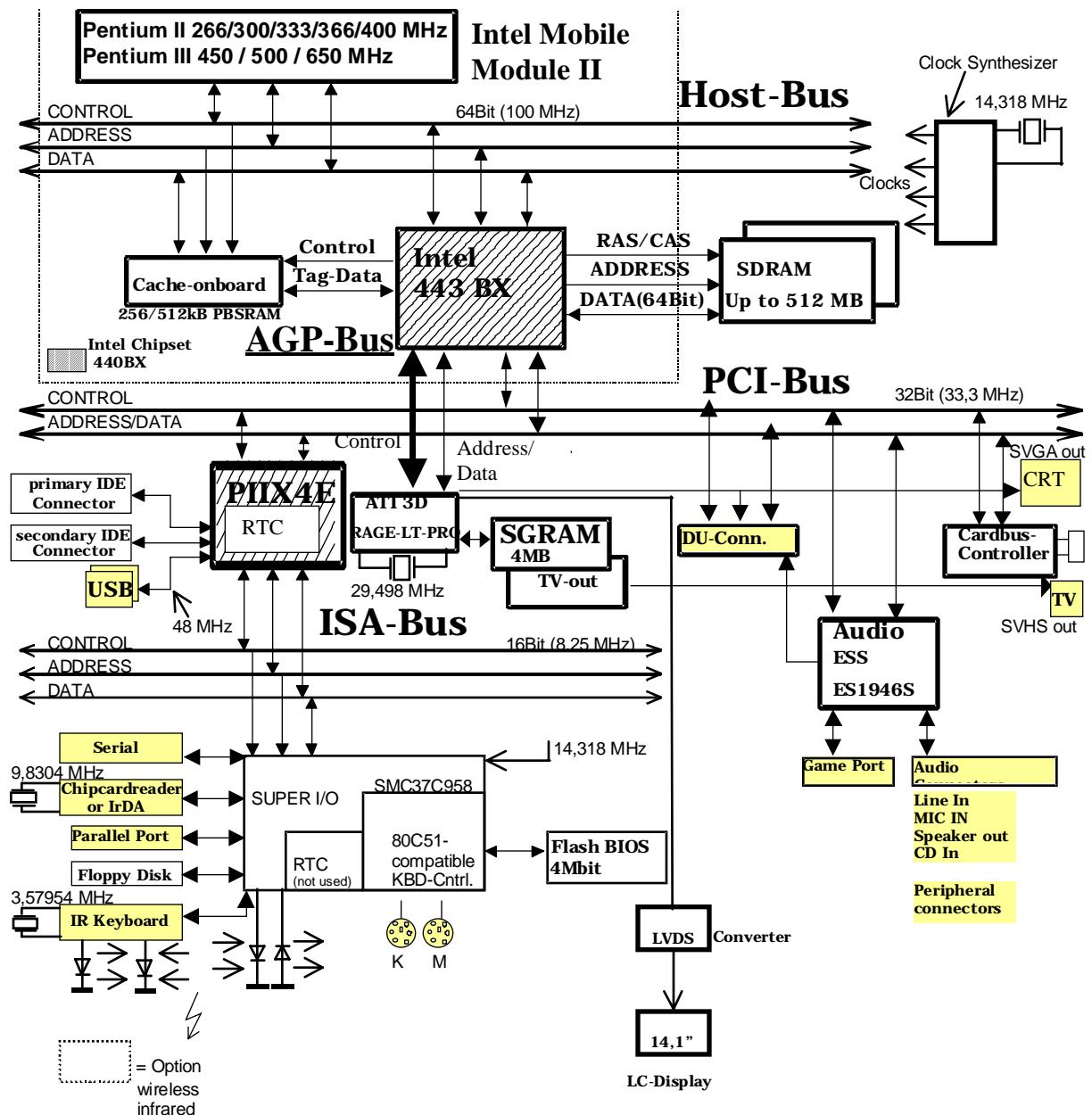
The notebook works exactly like a traditional PC.

The processor runs internally with 233 up to 650 MHz, the system clock is either 66 MHz or 100 MHz and is multiplied by the processor internally by 3.5 up to 6.5.

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
66.6 MHz	400 MHz	6,0
100 MHz	450 MHz	4,5
100 MHz	500 MHz	5,0
100 MHz	550 MHz	5,5
100 MHz	600 MHz	6,0
100 MHz	650 MHz	6,5

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 (ESH3). 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 and the monitor are supplied with power via a second LISN.

The worst case results of the measurement is given next:

Configuration with Samsung 15" TFT display

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]
neutral	0.258	45.3	QP	61.4
neutral	0.546	42.2	QP	56.0
phase	0.600	42.4	QP	56.0
phase	0.642	43.0	QP	56.0

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]
phase	0.732	40.4	QP	56.0
phase	1.104	39.1	QP	56.0
phase	0.456	35.9	AV	46.7
neutral	0.516	37.6	AV	46.0
phase	0.600	39.5	AV	46.0
neutral	0.642	39.3	AV	46.0
phase	0.732	37.3	AV	46.0
phase	1.104	35.5	AV	46.0

AV: average

QP: quasi peak

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: M. Thiel



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Measurement Protocols: see attached file

Scenic Mobile 800 S / Mobile Workstation S
with Samsung 15" TFT display
video resolution 1024 x 768/60 Hz
100 MHz clock/Intel Pentium III 650 MHz



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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
Receiver	ESH3 Rohde&Schwarz	879599/019	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 Intel Pentium III 650 MHz in video mode 1024 x 768, 60 Hz with the Samsung 15" TFT display (worst case). The test results below reflect the worst case with:

Samsung 15" TFT display:

100 MHz clock/Intel Pentium III 650 MHz, video resolution 1024 x 768 / 60 Hz, CD-ROM and floppy disk drive equipped

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
74.97000	25.60	30.000	-4.4	hor	4.00	150.000
83.31000	26.00	30.000	-4.0	ver	1.60	300.000
99.93000	27.80	30.000	-2.2	hor	3.40	270.000
110.13000	28.20	30.000	-1.8	ver	1.00	300.000
365.76000	34.60	37.000	-2.4	hor	2.80	330.000
956.91000	33.50	37.000	-3.5	ver	1.60	210.000

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
1036.60000	41.30	53.9	12.6		100.00	330.00	hor
1499.20000	30.40	53.9	23.5		100.00	180.00	hor
2099.20000	29.70	53.9	24.2		100.00	0.00	hor
2599.00000	32.30	53.9	21.6		100.00	0.00	hor
4050.10000	31.80	53.9	22.1		100.00	330.00	ver
4394.50000	36.20	53.9	17.7		200.00	210.00	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: H. Zenkner

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: M. Heuser



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Measurement Protocols: see attached files

Frequency range 30 MHz - 1 GHz:

Scenic Mobile 800 S / Mobile Workstation S
with Samsung 15" TFT display, CD-ROM and floppy disk drives
video resolution 1024 x 768/60 Hz
100 MHz clock/Intel Pentium III 650 MHz

Frequency range 1 GHz - 5 GHz:

Scenic Mobile 800 S / Mobile Workstation S
with Samsung 15" TFT display, CD-ROM and floppy disk drives
video resolution 1024 x 768/60 Hz
100 MHz clock/Intel Pentium III 650 MHz



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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 dB μ V is obtained. The Antenna Factor of 10,5 and a Cable Factor of 1,3 is added, giving a field strength of 40,3 dB μ V/m.

$$FS = 28,5 + 10,5 + 1,3 = 40,3 \text{ dB}\mu\text{V/m}$$

The 40,3 dB μ V/m value can be mathematically converted to its corresponding level in μ V/m.

Level in μ V/m =

Common Antilogarithm $[(40,3 \text{ dB}\mu\text{V/m})/20] =$

103,5 μ V/m

6.6 Table of Correction Factors

Frequency range: 30 MHz to 1000 MHz

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



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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



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8 External Photos of EUT

see original grant, date: July 08, 1998



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9 Internal Photos of EUT: see attached files

9.1 Processor module (PIII 650 MHz), front side view

9.2 Processor module (PIII 650 MHz), rear side view



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10 User Manual

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