

# MEASUREMENT / TECHNICAL REPORT

## Fujitsu Siemens Computers

**Model: Personal Computer Scenic Mobile 800 S /  
Mobile Workstation S /  
Workstation Celsius Mobile 810**

**FCC ID: HSSMOB80001**

**Nov. 06, 2000**

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

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Engineer: \_\_\_\_\_  
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Personal Computer Scenic Mobile 800 S / Mobile  
Workstation S / Workstation Celsius Mobile 810  
FCC Identifier:  
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# 1 GENERAL INFORMATION

## 1.1 Product Description

The Fujitsu Siemens Computers Scenic Mobile 800 S / Mobile Workstation S / Workstation Mobile 810 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 750 MHz and has got a new graphic controller.

### *Description of the power supply:*

AC- / DC- adapter:                      Astec, model SA65-3115  
Fujitsu Siemens Computers,  
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 1024 MBytes Main Memory, SDRAM four banks, four SO-DIMMs with altogether 32 chips
- ATI RAGE Mobility 128 VGA-Controller with 16 MB-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 removeable 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
- 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 Fujitsu Siemens Computers GmbH,  
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 Workstation S Mobile Workstation 810	HSSMOB80001	Notebook (PIII 750 MHz) <b>EUT</b>	unshielded power cord [292]
2	Fujitsu Siemens Computers MCM 17P1 YEDA175914	A3LCSE783	Monitor	unshielded power cord [175] shielded video cable [168]
3	Fujitsu Siemens Computers S26381-K240-V155 OGO13BHFBP	HSS01TASTK240	Keyboard	shielded keyboard cable [143]
4	Microsoft MS 2.1A	C3KKMP3	Mouse	shielded mouse cable [183]



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
5	Logitech M-UB48 LZA83300044	DZL211137	USB-Mouse	shielded mouse cable [183]
6	Hewlett Packard HP 2225C+ (3002S66627)	DSI6XU2225	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 SA65-3115 S26113-E428-V30	N/A	AC- / DC- Adapter	unshielded AC cable [152] shielded DC cable [149]
9	Labtec AM32	N/A	Microphone	shielded cable [142]
10	Boeder LT-100	N/A	Headphone	shielded cable [166 + 124]
11	Microsoft Side Winder 3D Pro 02100777	C3KMJ1	Joystick	shielded cable
12	Bay Networks 10BaseT	N/A	HUB	
13	Fujitsu Siemens Computers	N/A	SVHS cable	shielded cable, terminated [86]

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
14	Fujitsu Siemens Computers	N/A	USB cable	shielded cable, terminated [86]
	<b><u>Pos 1 contains:</u></b>			
a <sub>1</sub>	NEC NL10276B26-01 S26391-F198-V411	N/A	Display TFT 14.1"	N/A
a <sub>2</sub>	Mitsubishi AA142XC01 S26391-F198-V423	N/A	Display TFT 14.2"	N/A
a <sub>3</sub>	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



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
f	Fujitsu Siemens Computers S26391-F202-E100	N/A	ZIP disk drive	N/A
g	Fujitsu Siemens Computers SD-2402	N/A	DVD drive	N/A
h	IBM DMCA-21440	N/A	Hard disk drive	N/A
i	Fujitsu Siemens Computers S26361-D1199-A11 GS1 / WGS2	N/A	System board	N/A
k	Intel MMO	N/A	Processor module (PIII 750 MHz)	N/A
l	Fujitsu Siemens Computers S26361-D1057-V1	N/A	Chip card reader	N/A
m	Fujitsu Siemens Computers S26361-D292-V1	N/A	Remote module	N/A
n	Fujitsu Siemens Computers S26361-D1049-A11	N/A	Periphery module	N/A



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Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
o	Fujitsu Siemens Computers S26361-D1050-A12	N/A	Upper connection board	N/A
p	Fujitsu Siemens Computers Ve-20127036C 94V-0	N/A	PCMCIA bay	N/A
q	SEC KMM466S823BT3-F0	N/A	SDRAM	N/A
r	Fujitsu Siemens Computers S26381-H43	N/A	Keyboard for Mobile 800	N/A
	<b><u>Pos 1a<sub>1</sub> contains:</u></b>			
a	Fujitsu Siemens Computers LINFINITY SGE2617X MWS 2943 LSM1610.3000 9x4	N/A	DC- / DC- converter board	N/A
	<b><u>Pos 1a<sub>2</sub> contains:</u></b>			
a	Fujitsu Siemens Computers IM8806 S26113-D1012-V24 E / S1	N/A	DC- / DC- converter board	N/A

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
	<b><u>Pos 1a<sub>3</sub> contains:</u></b>			
a	Fujitsu Siemens Computers LXM1612-30019X6	N/A	DC- / DC- converter board	N/A
	<b><u>Pos r contains:</u></b>			
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 1a<sub>1</sub> / 1a<sub>2</sub> / 1a<sub>3</sub> 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 test site is located at Fujitsu Siemens Computers GmbH, Bürgermeister-Ulrich-Str. 100, 86199 Augsburg, Germany. This site consist of a 10 m semi anechoic chamber for radiated emission testing and of two shielded cabinets for conducted emission testing. The 10 m semi anechoic chamber is conform with the NSA-limits described in CISPR22, CISPR16 and ANSI C63.4.1992. The site is registered by the German accreditation body DAR-Registration No. TTI-P-G114 and by the Federal Communications Commission on April 07, 2000, Registration Number 90935.

## 1.6 Referenced Rules Sections

N/A

## 2 PRODUCT LABELING

### 2.1 FCC ID Label:

see original grant, dated: July 08, 1998 and see attached file

### 2.2 Location of Label on EUT:

see original grant, dated: July 08, 1998

## 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 750 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 (dated: July 08, 1998) and the class II changes April 19, 1999, Oct. 19, 1999, July 21, 1999 and Feb. 22, 2000 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 750 MHz,  
video resolution 1024 x 768/100 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 750 MHz,  
video resolution 1024 x 768/100 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 750 MHz,  
video resolution 1024 x 768/100 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 768/100 Hz. The worst case combination according to the test results of the original grant (dated: July 08, 1998) and the class II changes April 19, 1999, July 21, 1999, Oct. 19, 1999 and Feb. 22, 2000 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 750 MHz,  
video resolution 1024 x 768/100 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 750 MHz,  
video resolution 1024 x 768/100 Hz  
floppy disk drive and CD-ROM drive equipped  
Samsung 15" TFT display

### **conducted emission:**

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

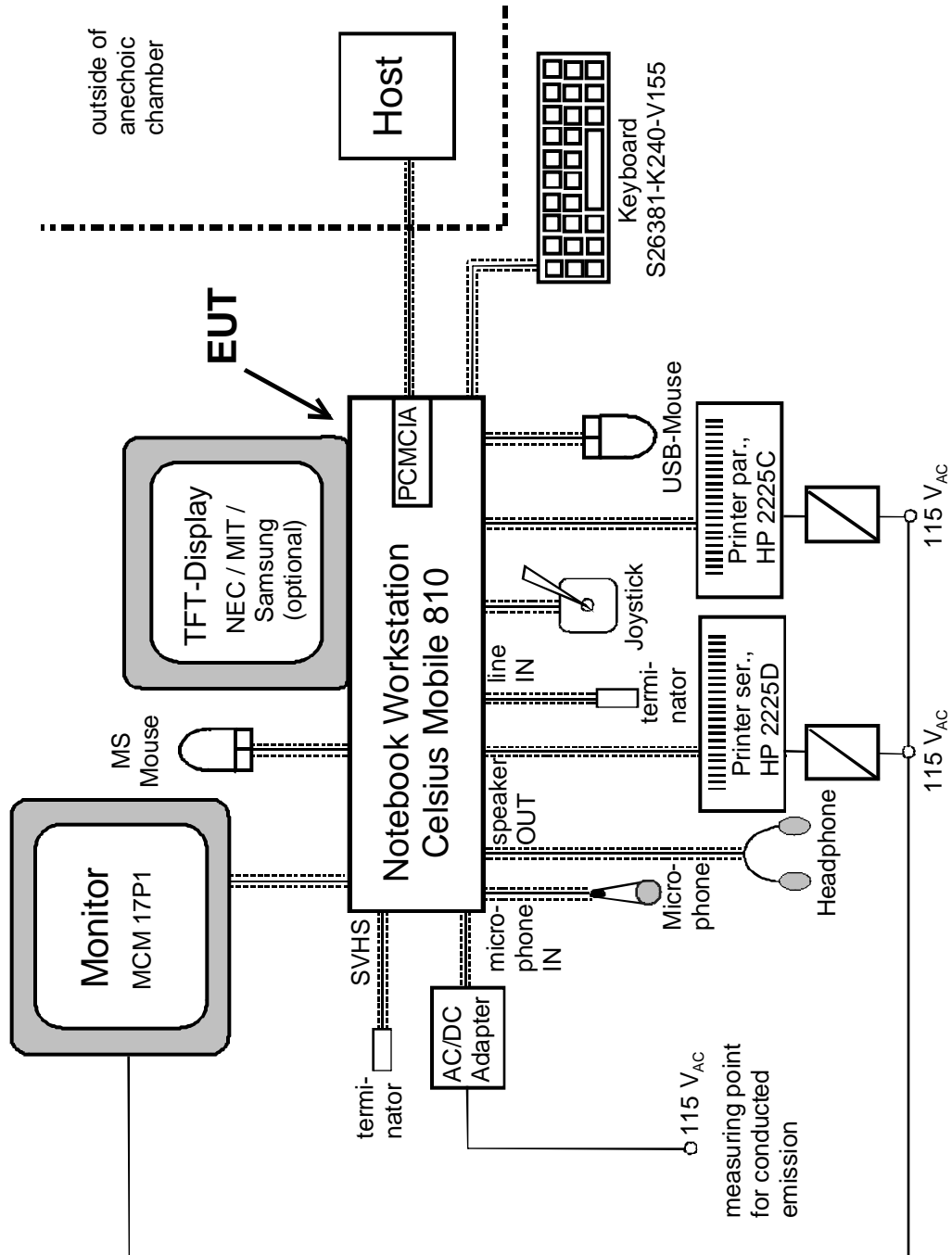
Applicant Signature \_\_\_\_\_ Date \_\_\_\_\_

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.

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/116 MHz
Chip card controller	9.8304 MHz
Keyboard controller	3.579545 MHz
Infrared controller	3.58 MHz

## 4.3 Theory of Operation

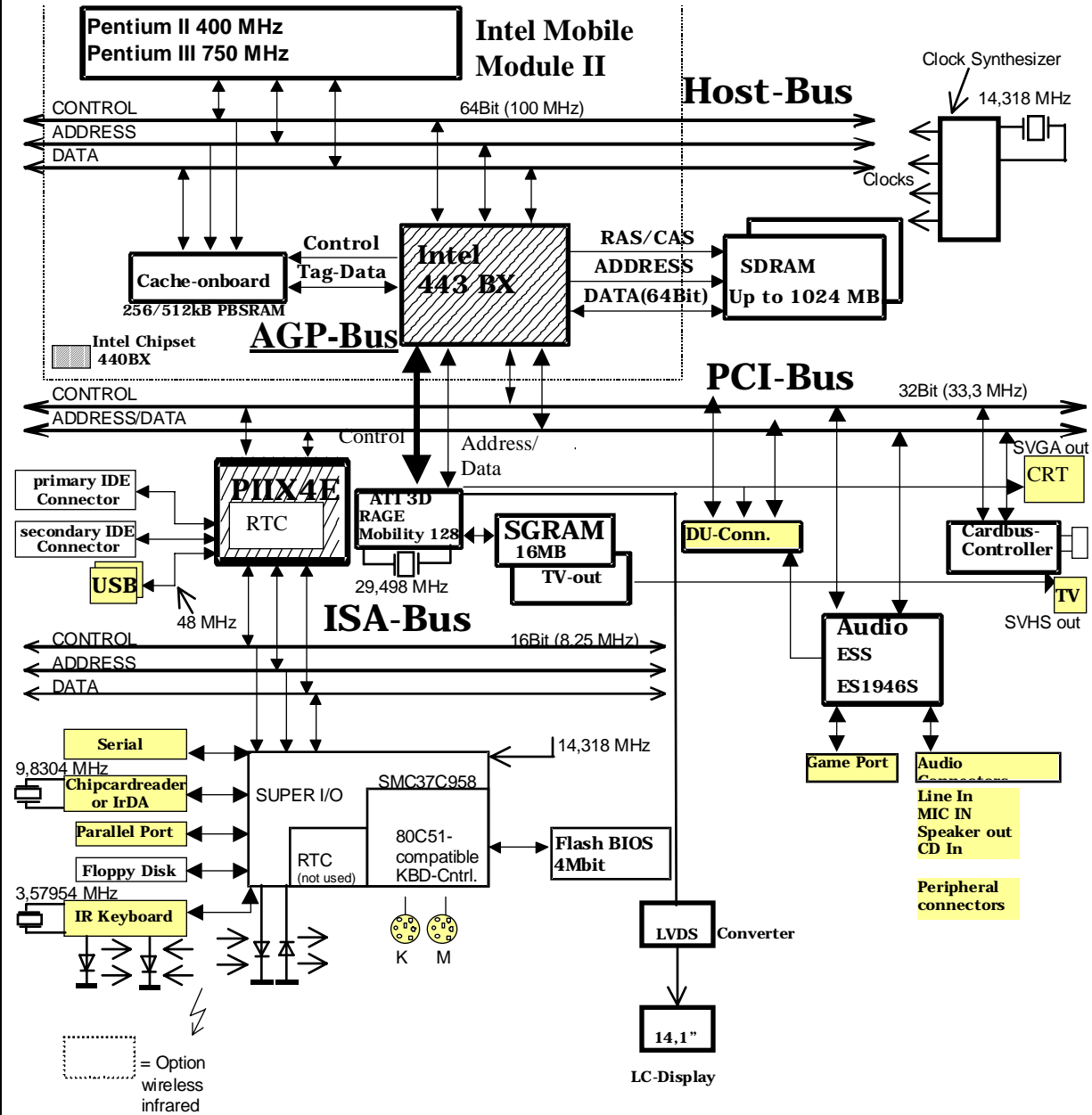
The notebook works exactly like a traditional PC.

The processors runs internally with 233 up to 750 MHz, the system clock is either 66 MHz or 100 MHz and is multiplied by the processor internally by 3.5 up to 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
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
100 MHz	750 MHz	7.5

# 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 (ESH10). 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( $\mu$ V)]	Kind of value	Limit [dB( $\mu$ V)]
neutral	0.186	45.3	QP	64.0
neutral	0.636	36.8	QP	56.0
phase	0.924	37.3	QP	56.0
neutral	1.110	38.4	QP	56.0

Judgement: Passed by

	Frequency [MHz]	Measured [dB(μV)]	Kind of value	Limit [dB(μV)]
phase	10.392	40.7	QP	60.0
phase	12.474	43.7	QP	60.0
neutral	0.468	35.2	AV	47.0
neutral	0.654	34.9	AV	46.0
phase	0.750	33.2	AV	46.0
phase	0.942	33.6	AV	46.0
phase	1.104	36.5	AV	46.0
phase	14.460	37.6	AV	56.0

AV: average

QP: quasi peak

Test Personnel:

Tester Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: M. Rothtauscher



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## Measurement Protocols: see attached file

Workstation Celsius Mobile 810  
with Samsung 15" TFT display  
video resolution 1024 x 768/100 Hz  
100 MHz clock/Intel Pentium III 750 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 00	12 months
Receiver	ESH3 Rohde&Schwarz	879599/019	May 00	12 months
LISN	ESH2-Z5 Rohde&Schwarz	871884/004	May 00	12 months
LISN	ESH3-Z5 Rohde&Schwarz	883650/027	May 00	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 750 MHz in video mode 1024 x 768, 100 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 750 MHz, video resolution 1024 x 768 / 100 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
100.08000	26.70	30.000	-3.3	ver	1.60	330.000
162.72000	28.30	30.000	-1.7	ver	1.00	150.000
231.99000	32.60	37.000	-4.4	hor	3.40	270.000
300.21000	32.10	37.000	-4.9	hor	4.00	300.000
455.70000	32.80	37.000	-4.2	ver	3.40	0.000
496.35000	30.50	37.000	-6.5	ver	4.00	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
1100.80000	31.00	53.9	22.9		100.00	180.00	hor
1200.70000	30.80	53.9	23.1		100.00	29.00	ver
1701.40000	29.10	53.9	24.8		100.00	180.00	hor
1900.90000	28.40	53.9	25.5		100.00	29.00	hor
4152.10000	31.60	53.9	22.3		200.00	239.00	hor
4965.70000	34.20	53.9	19.7		300.00	150.00	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: A. Luck

## Measurement Protocols: see attached files

### Frequency range 30 MHz - 1 GHz:

Workstation Celsius Mobile 810  
with Samsung 15" TFT display  
video resolution 1024 x 768/100 Hz  
100 MHz clock/Intel Pentium III 750 MHz

### Frequency range 1 GHz - 5 GHz:

Workstation Celsius Mobile 810  
with Samsung 15" TFT display  
video resolution 1024 x 768/100 Hz  
100 MHz clock/Intel Pentium III 750 MHz



## 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 00	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:

$$\mathbf{FS = RA + AF + CF}$$

where FS = Field Strength

AF = Antenna Factor (incl. Preamplifier factor)

CF = Cable Attenuation Factor

Assume a receiver reading of 28,5 dB $\mu$ 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 $\mu$ V/m.

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

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

Level in  $\mu$ V/m =  
Common Antilogarithm [(40,3 dB $\mu$ V/m)/20] =

**103,5  $\mu$ V/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, dated: July 08, 1998



**Fujitsu Siemens Computers**  
**Personal Computer Scenic Mobile 800 S / Mobile**  
**Workstation S / Workstation Celsius Mobile 810**

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## 9 Internal Photos of EUT: see attached files

9.1 Processor module (PIII 750 MHz), front side view

9.2 Processor module (PIII 750 MHz), rear side view

9.3 System board, top side view, part one

9.4 System board, top side view, part two

9.5 System board, rear side view, part one

9.6 System board, rear side view, part two

Further internal photos see original grand, dated July 08, 1998.

# 10 User Manual

see original grand, dated: July 08, 1998



**Fujitsu Siemens Computers**  
**Personal Computer Scenic Mobile 800 S / Mobile**  
**Workstation S / Workstation Celsius Mobile 810**

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