MEASUREMENT / TECHNICAL REPORT

SIEMENS AG

Model: Personal Computer Scenic Mobile 800 AGP

FCC ID: HSSMOB80001

Apr. 19, 1999

This report concerns:	☐ Original grant	☒ Class II change
Equipment type:	Personal Computer (Notebook)	

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 prepared by:
Guenther Roesch
Siemens AG
Buergermeister-Ulrich-Str. 100
86199 Augsburg
Germany
Tel.: +49 821 804-2821
Fax: +49 821 804 2675

Applicant for this device:

Siemens AG
Buergermeister-Ulrich-Str. 100
86199 Augsburg
Germany
Tel.: +49 821 804-0

Table of Contents

1 GENERAL INFORMATION

1.1 Product Description

The Siemens Computer Scenic Mobile 800 AGP is a notebook with a removable keyboard and easily changeable displays.
The system board integrates the Pentium Processor, memory, and I/O-techno-logies. The system can be assembled with Processor Intel Pentium 366 MHz.
The first model (original grant, date: July 08, 1998) a standard video bus was included, now an additional AGP-bus has been added.

Description of the power supply:

- AC- / DC- adapter:

  ASTEC, model SA65-3115
  S26113-E428-V30

Features Overview:

- microprcessor-module with Tillamook or Mobile - Deschutes - Core, Cache on Board and North-Bridge
- up to 384 Mbytes main memory, EDO-DRAM or SDRAM (not mixable), three banks, three SO-DIMMs with altogether 24 chips
- ATI RAGE LT PRO VGA-controller with 4 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-module
- 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
- 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- & gameport
- remote on
- soundbluster™ compatible soundsystem on board, 3D-sound
- intel hot docking concept
- PC´98 compliant

The personal computer is assembled by Siemens AG, 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	Siemens Scenic Mobile 800	HSSMOB80001	Notebook (266 MHz) **EUT**	unshielded power cord [292]
2a	Siemens MCM 2110 NTD	M9U9705C97BMD	Monitor	unshielded power cord [175] shielded video cable [168]
2b	Siemens MCM 1705 NTD	A3LCGH760	Monitor	unshielded power cord [175] shielded video cable [168]
3	Siemens S26381-K210-V120	HSS01TASTK210	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]

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 cable [180], shielded centronics cable [190]
7	Hewlett Packard HP 2225D+ (2952S61229)	DSI6XU2225	Printer, serial I/F	unshielded power cord [185], shielded serial cable [190]
8	Siemens FC301 V6	N/A	Television set	unshielded 2 wire AC power cable [190]
9	Siemens SA65-3115 S26113-E428-V30	N/A	AC- / DC-Adapter	unshielded AC cable [152] shielded DC cable [149]
10	Escom	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 Part no 63545	C3KMJ1	Joystick	shielded cable
13	Siemens	N/A	USB cable	shielded cable, terminated [86]

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
	Pos 1 contains:			
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
b	3COM Etherlink III PCMCIA 2.0/2.1	DF63C589D	LAN PC card	for 10Base-T and Coax (with adapter)
c	Siemens S26391-F128-L870	N/A	Accumulator pack	N/A
d	Siemens S26391-F203-L100	N/A	CD-ROM drive	N/A
e	Siemens S26391-F201-L100	N/A	Floppy disk drive	N/A
f	Siemens S26391-F202-E100	N/A	ZIP disk drive	N/A
g	IBM DMCA-21440	N/A	Hard disk drive	N/A
h	Siemens S26361-D1099-A10 GS 1	N/A	System board	N/A
i	Intel MMO PB703414-003 MPG 36602001AA	N/A	Processor module (366 MHz)	N/A

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
k	Siemens S26361-D1057-V1	N/A	Chip card reader	N/A
l	Siemens S26361-D292-V1	N/A	Remote module	N/A
m	Siemens S26361-D1049-A11	N/A	Periphery module	N/A
n	Siemens S26361-D1050-A12	N/A	Upper connection board	N/A
o	Siemens Ve-20127036C 94V-0	N/A	PCMCIA bay	N/A
p	SEC KMM466S823BT3-F0	N/A	SDRAM	
q	Siemens S26381-H43	N/A	Keyboard for Mobile 800	N/A
	Pos $1a_1$ contains:			
a	Siemens LINFINITY SGE2617X MWS 2943 LSM1610.3000 9x4	N/A	DC- / DC-converter board	N/A

Pos	Model Number (Serial Number)	FCC ID	Description	Cable Description (length in [cm])
	Pos $1a_2$ contains:			
a	Siemens IM8806 S26113-D1012-V24 E / S1	N/A	DC- / DC-converter board	N/A
	Pos q contains:			
a	Siemens 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 2a / 2b / $1a_1$ / $1a_2$ 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 AG, 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

2 PRODUCT LABELING

2.1 FCC ID Label: see attached file

2.2 Location of Label on EUT: see attached file

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 66,6 MHz, the clock frequency was tested with the highest possible processor:

66,6 MHz clock: Intel Pentium II 366 MHz

The system can be provided with two kinds of displays:

– NEC, 14,1” TFT display SNI: S26391-F398-V411

– Mitsubishi, 14,2” TFT display SNI: S26391-F398-V423

According to the worst case results concerning the test report of the original grant (date: July 08, 1998) the following configuration has been tested:

– drives: CD-ROM drive, floppy drive

– display: Mitsubishi 14,2” TFT

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

Frequency range 30 MHz - 1 GHz:
66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

Frequency range 1 GHz - 5 GHz:
66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

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

66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

3.2 Video mode Justification

The system was tested in video graphic mode 1024 x 768. The worst case combination according to the test results of the original grant (date: July 08, 1998) have been tested. The configuration is:

– drives: CD-ROM drive, floppy drive

– display: Mitsubishi 14,2” TFT

The following data are applicable:

radiated emission:

Frequency range 30 MHz - 1 GHz:
66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

Frequency range 1 GHz - 5 GHz:
66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

conducted emission:

66,6 MHz clock/Intel Pentium II 366 MHz,
video resolution 1024 x 768/60 Hz
floppy disk drive and CD-ROM drive equipped

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

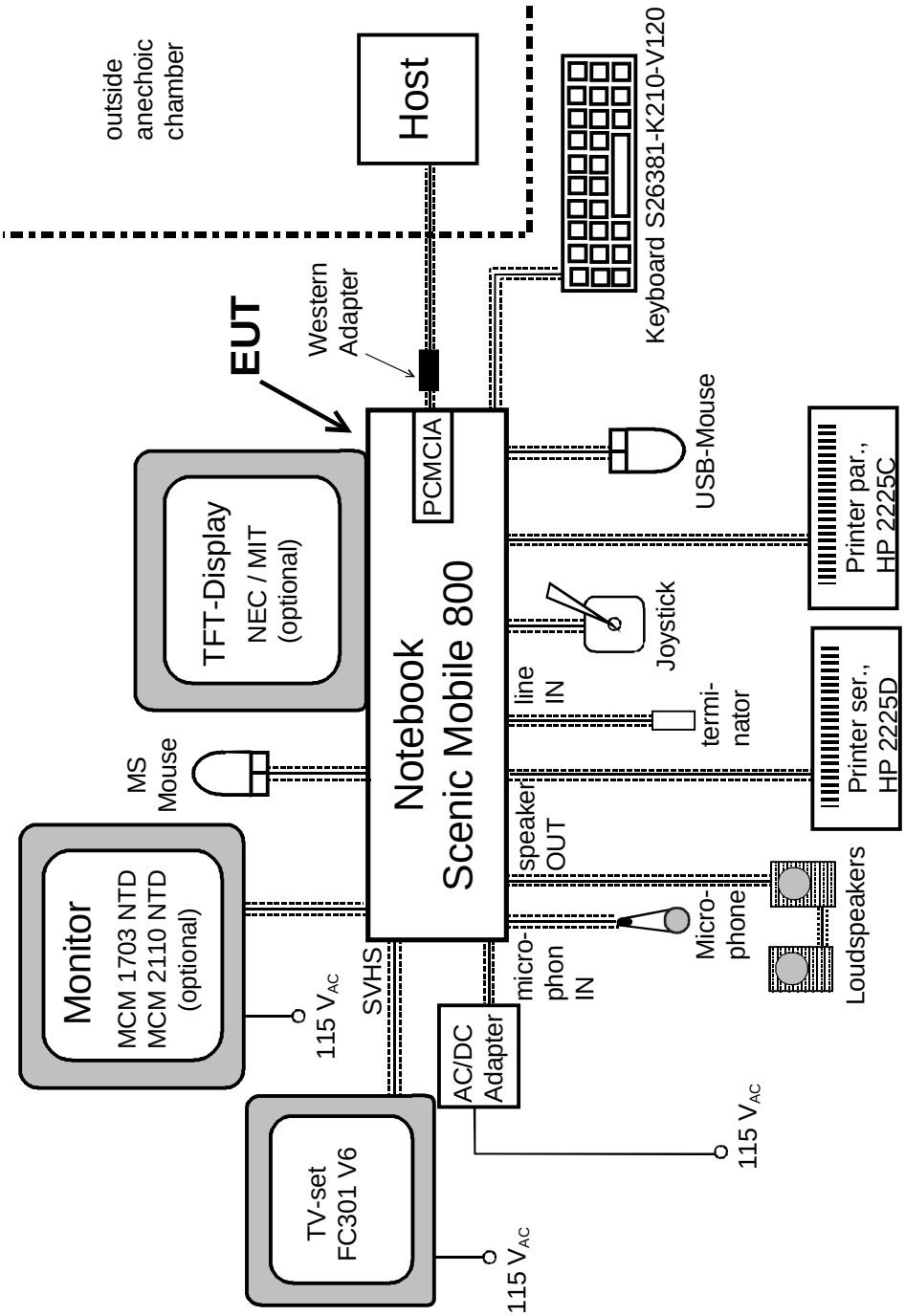
Applicant Signature _____ Date _____

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	66,6 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

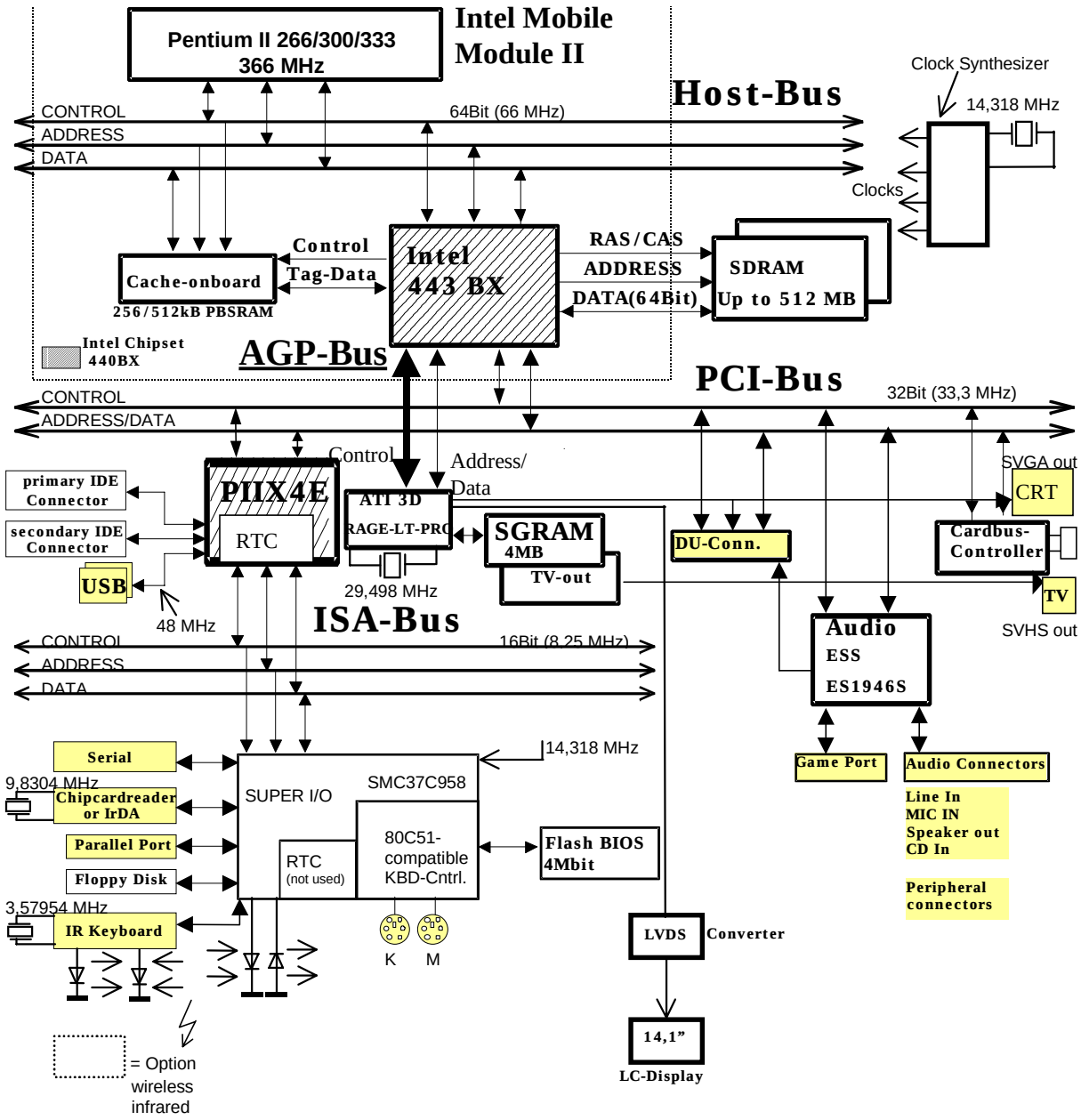
The notebook works exactly like a traditional PC.

The processors runs internally with 233, 266, 300, 333 or 366 MHz, the system clock is in each case the same - 66,6 MHz and is multiplied by the processor internally by 3,5, 4,0, 4,5, 5,0 or 5,5.

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

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 (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 Mitsubishi display, CD-ROM and floppy disk drives equipped.

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]
phase	2,748	42,80	QP	56,0
phase	3,360	46,50	QP	56,0

Judgement: Passed by

	Frequency [MHz]	Measured [dB(µV)]	Kind of value	Limit [dB(µV)]
phase	0,654	39,60	QP	46,0
neutral	2,442	41,50	QP	46,0
phase	2,748	41,30	QP	46,0
phase	3,054	40,40	QP	46,0
phase	3,360	43,40	QP	46,0

AV: average
QP: quasi peak

Test Personnel:

Tester Signature: _____ Date: _____

Printed Name: H. Zenkner

Measurement Protocols: see attached file

Scenic Mobile 800 with Mitsubishi display
with CD-ROM and floppy disk drives
video resolution 1024 x 768/60 Hz
66,6 MHz clock/Intel Pentium II 366 MHz

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	ESH3 Rohde&Schwarz	871650/030	May 98	12 months
LISN	NSLK 8126 Schwarzbeck	8126160	May 98	12 months
LISN	ESH3-Z5 Rohde&Schwarz	871884/004	May 98	12 months
Pulse limiter	ESH3-Z2 Rohde&Schwarz	357.8810.52	May 98	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 II 366 MHz in video mode 1024 x 768 with the Mitsubishi Display (worst case). The test results below reflect the worst case with:

Mitsubishi display:
66,6 MHz clock/Intel Pentium II 366 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
95.97000	23.50	30.000	-6.4	ver	1.6000	119.000
113.79000	24.60	30.000	-5.3	ver	1.0000	330.000
228.00000	23.80	30.000	-6.1	hor	3.4000	270.000
466.71000	32.40	37.000	-4.5	hor	2.2000	29.000
866.70000	30.20	37.000	-6.7	ver	2.2000	180.000
956.85000	33.40	37.000	-3.5	ver	2.2000	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
1133.50000	45.90	53.9	7.9		140.0	300.00	hor
1266.70000	35.70	53.9	18.1		100.0	180.00	ver
1400.20000	34.80	53.9	19.0		100.0	180.00	ver
2566.90000	40.60	53.9	13.2		100.0	0.00	hor
4955.80000	33.20	53.9	20.6		180.0	239.00	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

Measurement Protocols: see attached files

Frequency range 30 MHz - 1 GHz:
Scenic Mobile 800 with Mitsubishi display
with CD-ROM and floppy disk drives
video resolution 1024 x 768/60 Hz
66,6 MHz clock/Intel Pentium II 366 MHz

Frequency range 1 GHz - 5 GHz:
Scenic Mobile 800 with Mitsubishi display
with CD-ROM and floppy disk drives
video resolution 1024 x 768/60 Hz
66,6 MHz clock/Intel Pentium II 366 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 98	15 months
Antenna	CBL 6112 Chase	0003	May 98	12 months
Active Ridged antenna	Tensor 4105 Rohde&Schwarz	2063	May 98	12 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

Frequency [MHz]	Correction Bilog Antenna [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
30,0	17,90	0,65	18,55
35,0	15,20	0,67	15,87
40,0	12,80	0,68	13,48
45,0	10,00	0,73	10,73
50,0	8,20	0,74	8,94
55,0	6,90	0,82	7,72
60,0	6,50	0,84	7,34
70,0	6,40	0,90	7,30
80,0	7,20	0,95	8,15
90,0	9,30	0,99	10,29
100,0	11,10	1,10	12,20
120,0	12,10	1,14	13,24
140,0	11,30	1,27	12,57
160,0	10,60	1,35	11,95
180,0	9,60	1,45	11,05
200,0	9,50	1,51	11,01
250,0	12,40	1,71	14,11
300,0	13,80	1,84	15,64
350,0	15,00	2,00	17,00
400,0	16,40	2,18	18,58
450,0	16,90	2,35	19,25
500,0	17,40	2,43	19,83

Frequency [MHz]	Correction Bilog Antenna [dB]	Correction Cable [dB]	Correction Antenna + Cable [dB]
550,0	19,00	2,62	21,62
600,0	18,70	2,73	21,43
650,0	19,70	2,88	22,58
700,0	19,00	2,91	21,91
750,0	20,00	3,01	23,01
800,0	19,90	3,21	23,11
850,0	22,90	3,32	26,22
900,0	20,70	3,40	24,10
950,0	21,00	3,49	24,49
1000,0	25,00	3,69	28,69

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 setup, conducted emission, front side view

7.2 Test setup, conducted emission, rear side view

7.3 Test setup, radiated emission, front side view

7.4 Test setup, radiated emission, rear side view

8 External Photos of EUT: see attached files

8.1 Front side of EUT

9 Internal Photos of EUT: see attached files

9.1 System board, front side view, part one
9.2 System board, front side view, part two
9.3 System board, rear side view, part one
9.4 System board, rear side view, part two
9.5 MMO module front side view
9.6 MMO module rear side view

10 User Manual:

see original grant, date: July 08, 1998