SIEMENS
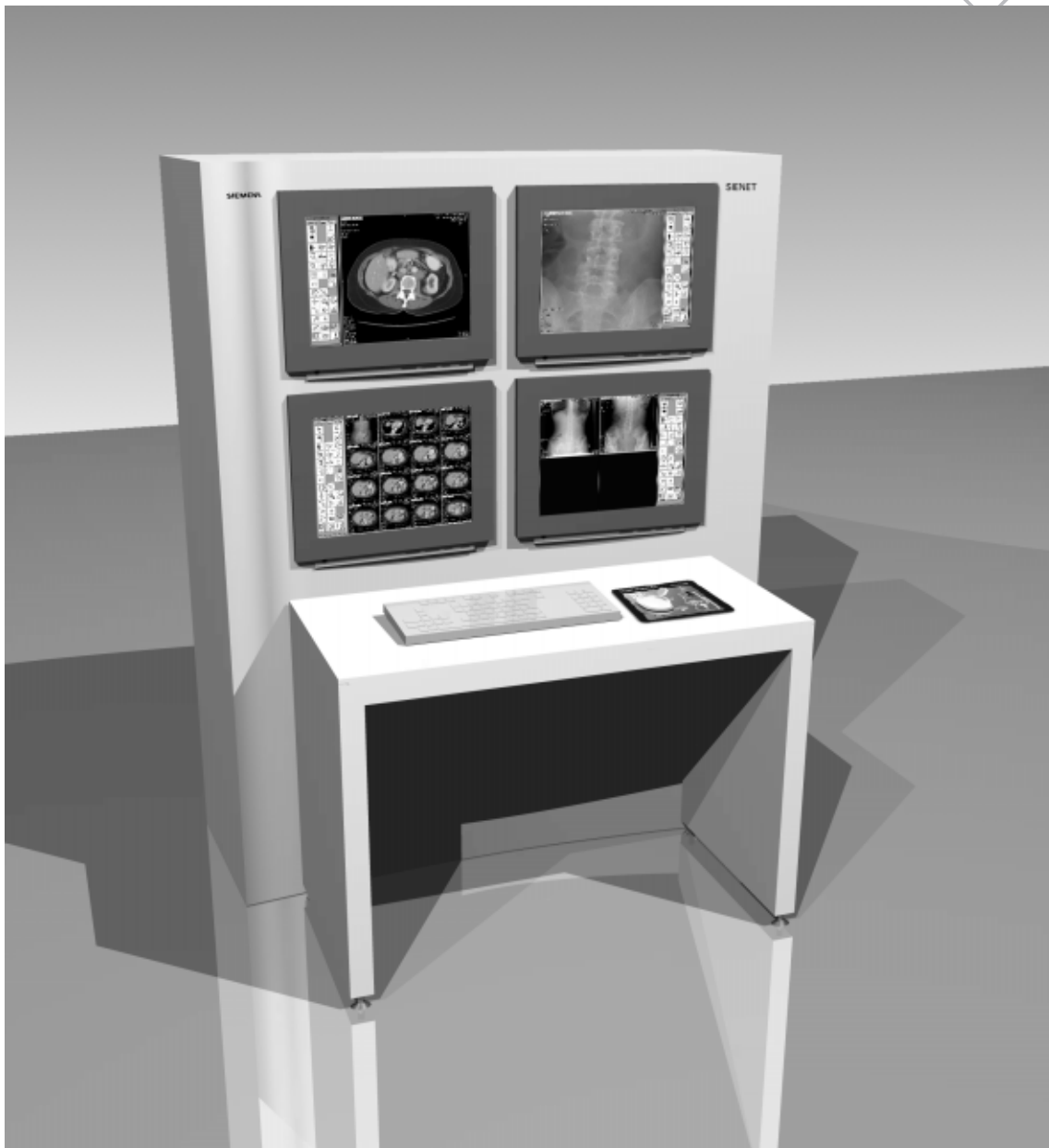
SIENET MagicView 1000

Workstation for image processing, viewing, and reporting
Hardware description

SHS

SIENET MagicView 1000

Brief Description

SIENET® MagicView 1000 workstations are designed for optimal diagnosis, management and postprocessing of digital radiological images.

Main applications are:

- Image optimization
- Softcopy reporting
- Image postprocessing / 3D reconstruction
- Image preparation for hardcopy documentation

The following text describes the hardware configuration of SIENET MagicView 1000 workstations, software version VB32 and above.

Software functionality is described in the corresponding MagicView software data sheet:

A91001-M2040-G002

Depending on the number of connected monitors, the MagicView 1000 workstation is delivered as MagicView 1002, 1003 or 1004.

Technical Description

Host computer

Central Processing Unit (CPU) with Ultra 2 and Ultra 60 architecture, keyboard and mechanical mouse.

A second CPU-Module is recommended with the following applications:
- Frequent background printing and the DLR-Option
- DLR-Background filtering and reporting
- Heavy network processing through active prefetching and distribution rules at the workstation

Expansion box

- An expansion box is supplied when connecting more than three monitors or the 9 GB RAID (Ultra 2).

Monitor console

- SIENET MagicView 1004 with four 1k SIMOMED monitors can be supplied with a console for mounting the monitors.

Ultra 2

Standard configuration	Ultra 2 architecture with 400 MHz CPU module, 512 MByte RAM, 3.5" SL hard disk - 9.0 GByte
Dimensions (W x H x D)	450 x 140 x 480 mm
Weight	16 kg
System software	Solaris® 7
SBus slots	4

Ultra 60

Standard configuration	Ultra 60 architecture with 360 MHz CPU module, 512 MByte RAM, 3.5" SL hard disk - 9.0 GByte
Dimensions (W x H x D)	550 x 220 x 450 mm
Weight	23 kg
System software	Solaris® 7
PCI slots	4

Ultra 60 does not support 1.6 K monitors and SPCI/SPDI cameras

Option	additional CPU module; the basic version MagicView 1004 with 2K-monitors already includes a second CPU module

SBus Expansion box	for Ultra 2 only
Dimensions (W x H x D)	450 x 100 x 440 mm
Weight	approx. 17 kg

Console for 4 SIMOMED monitors

Dimensions (W x H x D)	1400 x 1650 x 700 mm
Weight	162 kg

Solaris® is a trademark of Sun Inc.

Memory options

Main memory (RAM)

- The size of the main memory affects the image postprocessing speed and the maximum number of images.

Hard disk memory

- The hard disk requirements depend on the daily production of new exams, the number of previous exams used for comparison, and the time required for image processing/reporting.

External data storage

- For storage on magneto-optical disks (MOD), an external drive can be connected (option).

Main memory	
Standard configuration	512 MByte RAM
	Ultra 60: expandable up to 1 GByte
Hard disk memory	
Standard configuration	9 GByte (approx. 5.5 GByte available for image data)
	Ultra 60: expandable by 9 GByte
RAID expansion	
Ultra 60	18 GByte internal, mirrored RAID
Ultra 2	9 GByte external RAID system for storage of images (approx. 8.6 GByte) and local data base
	Dimensions (WxHxD) 450x100x440 mm
	Weight 15 kg
External MOD drive	5 $\frac{1}{4}$" /4.8 GByte (approx. 7800 CT images) EDM 4100B 4.1 GByte for system backup (one OD for backups is include) EDM 4800B 4.8 GByte for images
Dimensions (W x H x D)	211 x 70 x 239 mm
Weight	approx. 4.9 kg

Storage capacity

The table to the right shows how many images of different types can be stored to a 9 GByte harddisk in the standard configuration. A pixel depth of 16 Bit/32 Bit per image is assumed.

Image type	Matrix size (pixel)	Max. images with one 9 GByte disk
CR	2128 x 1744	approx. 795
DA	1024 x 1024	approx. 2816
CT	512 x 512	approx. 11264
MRI	256 x 256	approx. 45056
US	True Color (32 Bit)	approx. 2446

Note: The storage capacity also depends on the software version and installed software options. Therefore, the number of images may vary.

Communication

SIENET MagicView workstations communicate with

- archives
- image distribution systems, e.g. MagicView 300 or the MagicWeb
- imaging systems and other workstations
- clinical or radiological information systems via the SIENET MagicLink I gateway.

The data transfer is processed in background. Transfer protocols are DICOM and PACSnet.

Depending on the configuration, MagicView workstations exchange:

- patient data, complete examinations, and selected images with imaging systems and other workstations
- examinations and the status of examinations with SIENET MagicStore
- previous studies (Prefetching)
- patient data with a Radiology Information System (RIS)

Networking

(Ultra 2 / Ultra 60)	Ethernet/Fast Ethernet, 10/100 MB/sec (DECnet or TCP/IP)
Options	Ultra 2 only: FDDI, 100 MB/sec (TCP/IP) ATM ISDN (via external router)

Hardcopy documentation (options)

- The MagicPrint option is a PostScript® print application for flexible documentation of images and other objects (e.g. text windows from the monitor) on film, paper, or other media suitable for the printer.*
- With DICOM Basic Print images can be sent to DICOM compatible cameras via the DICOM protocol
- Hardcopy documentation is also possible from non-PostScript laser cameras via a Camera Server II or the LocalPrint option.
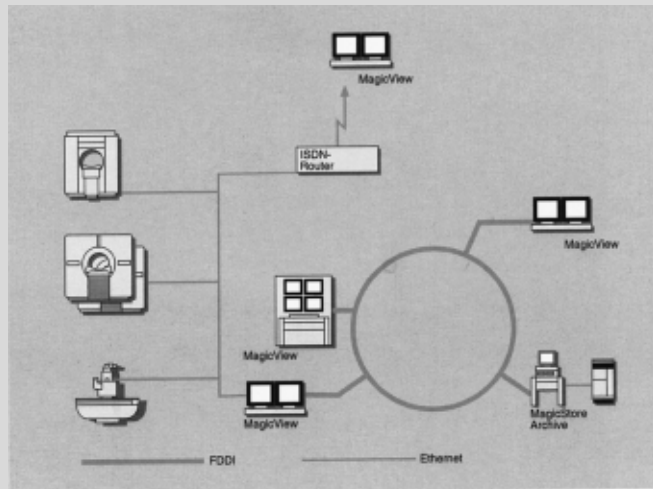
 *In the USA printouts should not be used for diagnosis unless the PostScript printer has specifically received 510 (K) clearance for this purpose

PostScript® is a registered trademark of Adobe Systems

MagicPrint:
SW option. Creates print jobs to be transferred to PostScript printers** over the network.

** PostScript printers do not require Siemens approval for connection.

MagicPrint D:
SW option – PostScript + DICOM Basic Print. Creates print jobs to be transferred to DICOM cameras over the network

Camera Server
With the Camera Server print jobs can be transferred to SPCI/SPDI film laser cameras***.

LocalPrint:
SW/HW option, only for Ultra 2. Converts PostScript print jobs created by the MagicView for transfer to non-PostScript film laser cameras*** which are connected directly to the MagicView via the SPCI/SPDI interface. Incl.10 m connection cable. Optional cables 30 m and 100 m.

*** SPCI/SPDI film laser cameras must be Siemens-approved

Monitors

SIENET MagicView supports up to four monitors (SIENET MagicView 1001,1002,1003,1004).
Depending on the application, you can choose between gray-scale (max. 4) or color (max. 3) monitors:

- SIMOMED monitors are high-luminance gray-scale monitors for the display and softcopy reporting of radiological images (e.g. DLR, DFR, and DSA).
  They feature glare suppression and an ambient light sensor for automatic contrast adjustment.

- Color monitors are suitable for the reporting of CT and MR cases. They are also recommended for 3D-postprocessing.

- 1.6 and 2k monitors display very fine structures of radiological images.

- For True-Color display the graphic board is delivered with the monitors. Up to two monitors for True-Color can be connected

SIMOMED HM-monitor

Display format	Landscape
Screen diagonal	54 cm
Resolution	1280 x 1024 pixels
Vertical frequency	72/76 Hz
Peak luminance	$\geq 650cd/m^2$
Phosphorus type	P45, cadmium-free
Dimensions	499 x 520 x 476 mm (W x H x D)
Weight	approx. 35 kg
Standards	UL 1950,GS,CE,CSA
	MPR II, VESA, DPMS, DHHS

SIMOMED Color monitor

Type	SCM 21107-M
Display format	Landscape
Screen diagonal	54 cm
Resolution	1280 x 1024 pixels
Vertical frequency	76 Hz
Peak luminance	≥ 110 cd/m^2
Dimensions	498 x 485 x 538 mm (W x H x D)
Weight	approx. 33 kg
Standards	UL1950, GS, CE, CSANo. 950,
	VDE0805/EN, DHHS
	MPRII, FCC ClassB, 2CFR sub5, TCO92,
	CISPR Pub, 22 2H 1/618, EN 9241

SIMOMED 1.6 k monitor

Type	SMM 21140P
Display format	Portrait
Screen diagonal	54 cm
Resolution	1280 x 1600 pixels
Vertical frequency	76 Hz
Peak luminance	≥ 800 cd/m^2
Phosphorus type	P45 cadmium-free
Dimensions	400 x 565x 510 mm (W x H x D)
Weight	approx. 30.5 kg
Standards	UL 1950,CUL 950, DHHS, UL, CE
	IEC 950/EN 60950,
EMC	FCC -Class A, MPR II,
	IEC 601-1-2/EN 60601-1-2,
	CISPR 11, EN 55011 Class B,
	CISPR 22, EN 55022 Class B
Imunity	EN 61 000-4-2,3,4,5

SIMOMED 2k monitor

Type	SMM 21190P
Display format	Portrait
Screen diagonal	54 cm
Resolution	2048 x 2560 pixels
Vertical frequency	76 Hz
Peak luminance	≥ 600cd/m^2
Phosphorus type	P45, cadmium-free
Dimensions	390 x 565 x 510mm (W x H x D)
Weight	approx.30.5 kg
Standards	UL 1950,CUL 950, DHHS, UL, CE
	IEC 950/EN 60950,
EMC	FCC -Class A, MPR II,
	IEC 601-1-2/EN 60601-1-2,
	CISPR 11, EN 55011 Class B,
	CISPR 22, EN 55022 Class B
Imunity	EN 61 000-4-2,3,4,5

Installation planning

For planning larger installations, consultation is available from the SIENET Project Engineering team.

Connection and environmental conditions

Power line voltage (V)	100 to 240 VAC	
Power line frequency	48 Hz to 63 Hz	
Max. rated power	Computer	375 W
	SIMOMED HM	150 W (each)
	SIMOMED color	180 W (each)
	1.6/2K monitor	150 W (each)
	9 GB RAID	220 W
	Expansion box	220 W
	MOD drive	90 W
Ambient temperature	Operation	+ 10 °C to + 30 °C
	Storage	− 10 °C to + 50 °C
Temperature gradient	6°C/h, maximum	
Rel. humidity	Operation	20% to 80% (not condensating)
	Storage	20% to 80% (not condensating)
Air pressure	Operation	700 to 1060 hPa
	Storage	400 to 1060 hPa
Height above sea level	Operation	3000 m
	Storage	7300 m

Sample SIENET installations

Radiology practice

Digital Hospital
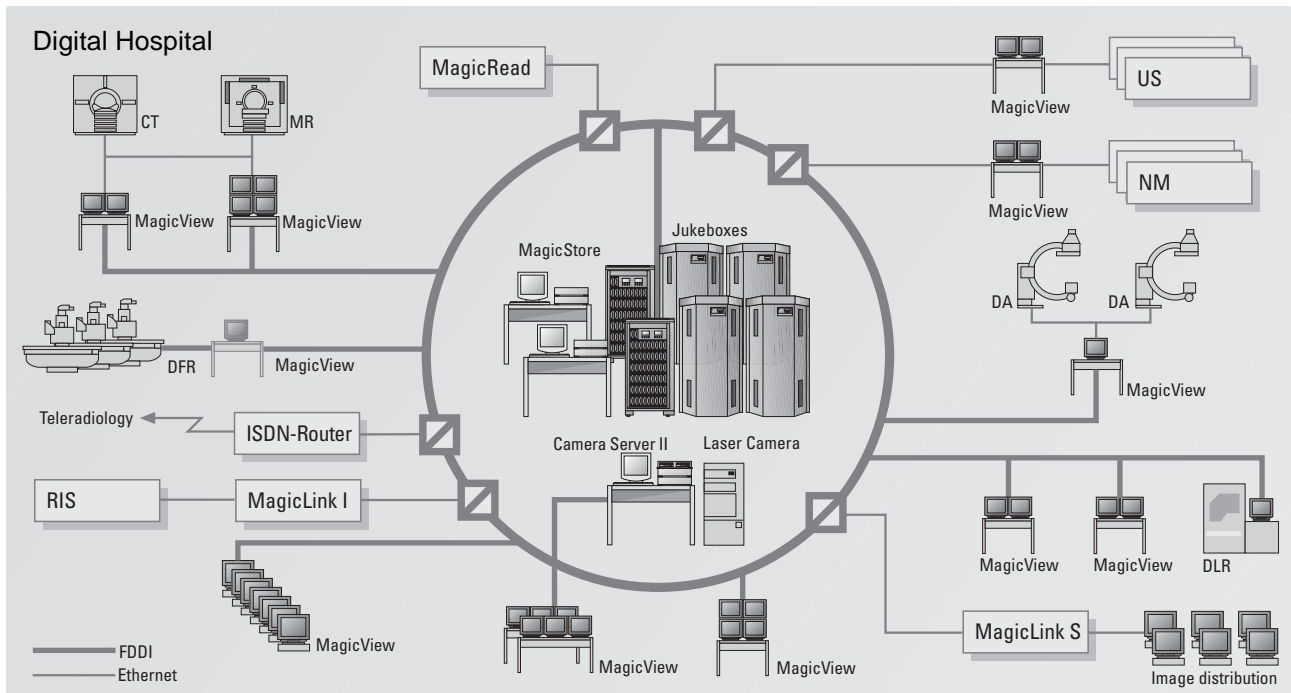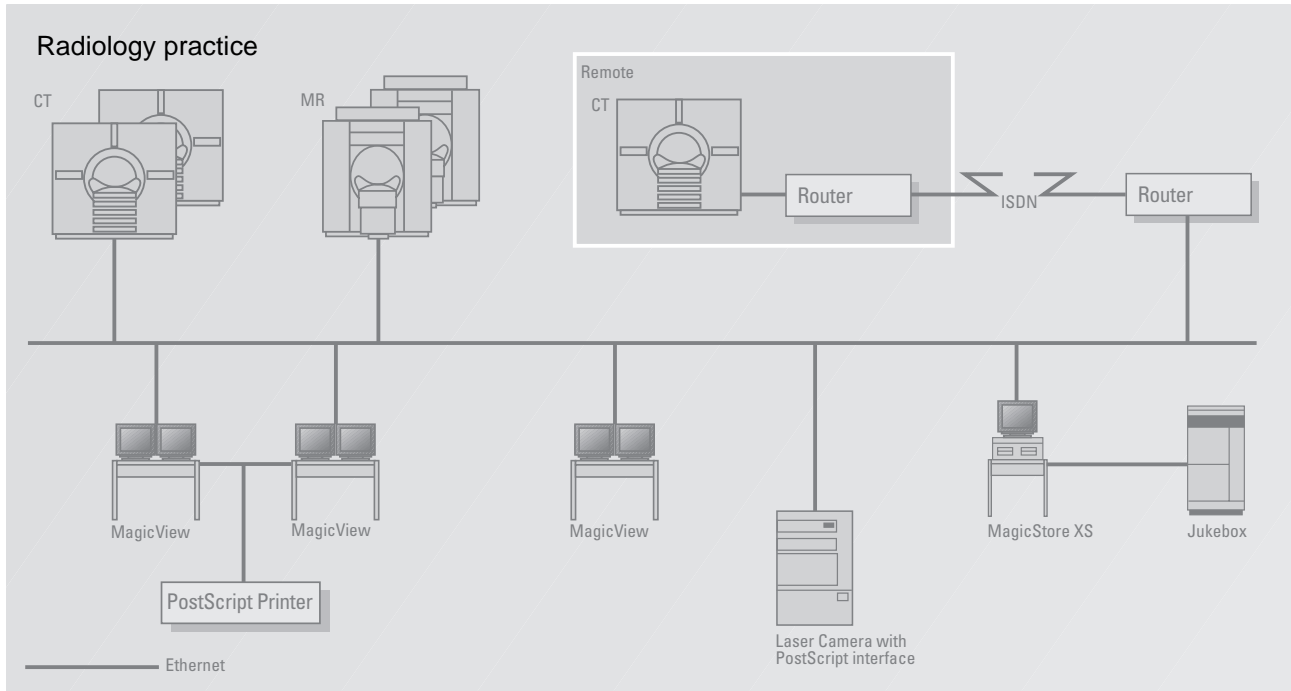
The software described here is CE-compliant in accordance with Directive 93/42/EC Schedule VII, June 14 1993. It rates as a Class I product as designated in Schedule IX.
Hardware supplied by us and marked accordingly is CE-compliant in accordance with EMC Directive 89/336/EC and, if applicable, NSR 73/23/EC.

Siemens reserves the right to change design and specifications without notice.
The latest information is always available on request from your Siemens agent.