Instrument Mainframe 7500

Portable computer for use with CompuScope and CompuGen cards

Instrument Mainframe 7500 is a high-quality portable enclosure for CompuScope and CompuGen cards.

Using an Instrument Mainframe 7500 in combination with one or more CompuScope and CompuGen cards, users can create portable Measurement Systems tailored to their application requirements.

Instrument mainframe specified to operate CompuScope and CompuGen cards as a portable test system.

FEATURES

- Built-in 15” color LCD screen
- Detachable keyboard and mouse
- 4 free full-length PCI slots
- IMF7500 card-retention mechanism
- Extra-wide slot opening
- High-quality, 400-Watt power supply
- Equipped with Windows XP Professional

INSTRUMENT MAINFRAME 7500

Instrument Mainframe 7500 is a high-quality portable enclosure for CompuScope and CompuGen cards.

Features include a built-in 15 inch active matrix LCD screen, a detachable 105-key ergonomic keyboard with an integrated touch-pad pointing device, a 400W power supply.

Using an Instrument Mainframe 7500 in combination with one or more CompuScope and CompuGen cards, users can create portable Measurement Systems tailored to their application requirements.

EXTRA-WIDE ACCESS FOR INSTRUMENT CONNECTORS

Instrument Mainframe 7500 allows all instrument connectors on CompuScope or CompuGen cards to be easily accessible from the side panel of the mainframe.

To make it easier than ever to attach and detach cables and probes to the instrument connectors, the slot openings in the chassis have been made wider by 0.150 inch.

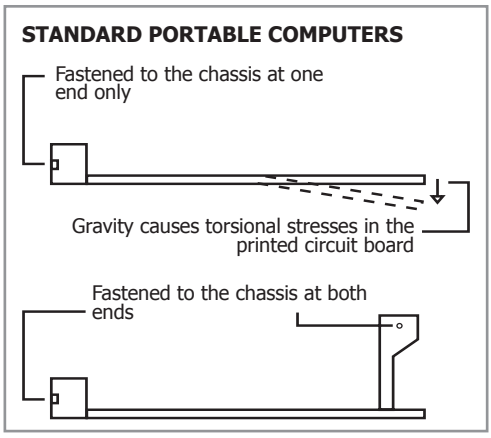
IMF7500 CARD RETENTION MECHANISM

Inside the Instrument Mainframe 7500, all full-length CompuScope and CompuGen cards plug into the bus connector and normally are screwed to the chassis only by the backplate screw. When a customer purchases an IM7500 GaGe System engineers ensure that GaGe cards are additionally secured by back-end card retention brackets.

This card retention mechanism is unique to the Instrument Mainframe 7500 and differentiates it from all other portable computers by providing tremendous improvement in mechanical ruggedness of the entire instrument, particularly during transport.

The extra brackets are secured to the chassis using a single screw mounted on the drive bay.

A hold-down bar mounted across the card cage provides even more mechanical stability.



QUALIFIED PCI BACKPLANES AND MOTHERBOARDS

Instrument Mainframe 7500 features a 4-slot passive PCI backplane and a Pentium IV-based single-board computer (SBC).

Sustained throughput measurements are almost never made by manufacturers of desktop and Industrial PCs. The specification most often touted by these vendors is 132 MB/s, which is actually the data transfer speed for a burst of less than 1 KB of data.

For sustained throughput measurement, the time required to set up PCI bus-mastering data transfer must be taken into account. As a result, 132 MB/s is an impossible number for the sustained PCI bus transfer speed.

Typical data throughput specifications exceed 100 MB/s.

EMBEDDED PENTIUM IV PROCESSOR

At the heart of the Instrument Mainframe 7500 is a Pentium class processor. In order to provide the most robust system, GaGe uses Pentium processors just one step behind the latest offering from the Intel Embedded roadmap.

This conservative approach to component selection rules out any nasty surprises that could result from bugs in Intel's first generation silicon.

BUILT-IN LCD DISPLAY

One of the unique features of Instrument Mainframe 7500 is its built-in TFT (Thin Film Transistor) LCD (Liquid Crystal Display) screen. Unlike passive LCDs, TFT type displays provide fast screen refreshes and a crisp, bright display that has 150 nits brightness and up to 15,000 hours of backlight life.

EXTERNAL VIDEO

For applications which require either a larger display unit, an external monitor or a projector, the SVGA output of the Instrument Mainframe 7500 can be used.

This output can drive monitors with a resolution of up to 1400 x 1050.

CHASSIS CONSTRUCTION

Ruggedized aluminum alloy chassis with rubber corner bumpers and shock-mount drive bays. Removable side panels offer access to I/O ports and removable storage devices.

Hard anodized surface meets MIL-A-8625E Type II/III standards.

NUMBER OF SLOTS

Instrument Mainframe 7500 features 4 PCI slots accessible from the side panel that can host a combined maximum of 4 CompuGen and/or CompuScope cards. All GaGe PCI cards, as well as most third-party PCI-compliant cards, will work in the Instrument Mainframe 7500.

COMPATIBILITY

Instrument Mainframe 7500 is shipped with Windows XP Professional as the standard operating system.

POWER SUPPLY

It is no secret that the integrity of measurements any instrument can make depends heavily on the quality of the power supply built into the instrument. While most CompuScope and CompuGen cards are designed to have a relatively high Power Supply Rejection Ratio (PSRR) for band-limited noise, it is always better not to inject this noise in the first place.

A high-quality power supply is used to power the Instrument Mainframe 7500, which allows instrument cards such as CompuScope cards to deliver Signal-to-Noise Ratio (SNRs) in excess of 75 dB.

FORCED-AIR COOLING

Electronic circuits are designed to operate within a certain operating temperature range. If the ambient temperature exceeds this range, analog amplifiers can start to exhibit non-linear behavior which can lead to reduced accuracy, higher signal distortion and, in the worst case, malfunction.

In order to provide clean data conversion from analog to digital and vice-versa, most CompuScope and CompuGen cards contain high-power analog amplifiers and data converters which can create a heat pocket within the enclosure unless proper measures are taken to control the temperature.

One of the best known ways of controlling the ambient temperature around an electronic circuit is through forced air convection. Air from outside the chassis is sucked into the chassis, blown over the heat

generating components and then exited. If enough air can be convected, ambient temperature can be controlled.

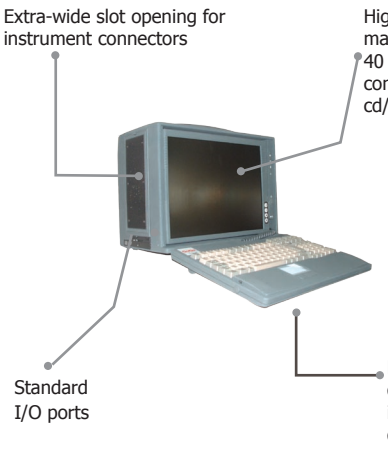
SOFT-SIDED CARRYING CASE

The Instrument Mainframe 7500 comes standard with a rugged woven nylon case.

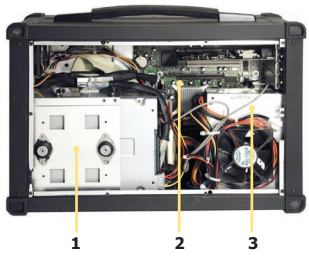
Also included are wheels and a telescopic handle for easy maneuvering.

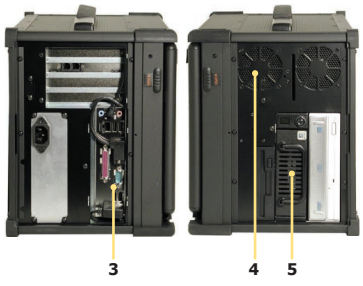
OPTIONAL AIR CARGO CASE

A hard shell case with 1.5 inch minimum of high-density foam padding is also available. Large wheels and a telescopic handle make it easy to navigate in and out of airports.



Instrument Mainframe 7500





1- Drive assembly
2- Micro ATX motherboard
3- Power supply
4- Integrated I/O
5- Ventilation fans
6- Drive bays: floppy drive, removable hard drive, optical disk drive.

CHASSIS

Material:	External chassis-flame retardant ABS plastic/internal chassis-gold color aluminum alloy
Color:	Black
Height:	11.5 inches, 291 mm
Width:	15.7 inches, 400 mm
Depth:	8.8 inches, 223 mm
Weight:	19.5 lbs. fully configured, dependent on configuration. (Not including CompuScope or CompuGen cards)
Operating Temperature:	0°C to 50°C
Humidity:	20-80%, non-condensing

POWER SUPPLY

Input Voltage:	110/220V autoswitching
Input Frequency:	50 to 60 Hz
Safety Certificate:	CE & FC Class B, CCC

SLOTS

GaGe reserves the right to change the motherboard in order to provide state-of-the-art technology.

Unused Slots:	4 full-length PCI slots
Compatibility:	All PCI v2.1 bus compliant third-party add-on cards will function in the Instrument Mainframe 7500.

SINGLE-BOARD COMPUTER

GaGe reserves the right to change the embedded processor in order to provide state-of-the-art technology.

Form Factor:	ATX
Processor:	Pentium IV
Speed:	2.8 GHz or better
System RAM:	512 MB DDR
Parallel Port:	One
Serial Port:	Two RS-232
USB 2.0 Port:	Two
Keyboard/mouse Port:	One PS/2
Video Card:	Integrated
Audio:	Included

STORAGE DEVICES

Drive Cage:	3 drives
Mounting:	Shock-mounted
Floppy Drive:	One 1.44 MB, 3.5" IBM-compatible Drive
Hard Disk:	One 40 GB or higher EIDE Drive, 2.5"
DVD Drive:	Internal DVD R/W

INPUT DEVICES

Keyboard:	108 keys, multi-languages/touchpad, RJ-45 connector
Interface:	PS/2
User Feedback:	Mechanical tactile
Mouse:	Touch-pad pointing device integrated into keyboard

INTERNAL DISPLAY

Type:	TFT LCD Active Matrix
Size:	15 inch
Controls:	Backlight and Contrast
Resolution:	1400 x 1050, maximum
Response Time:	40 milliseconds

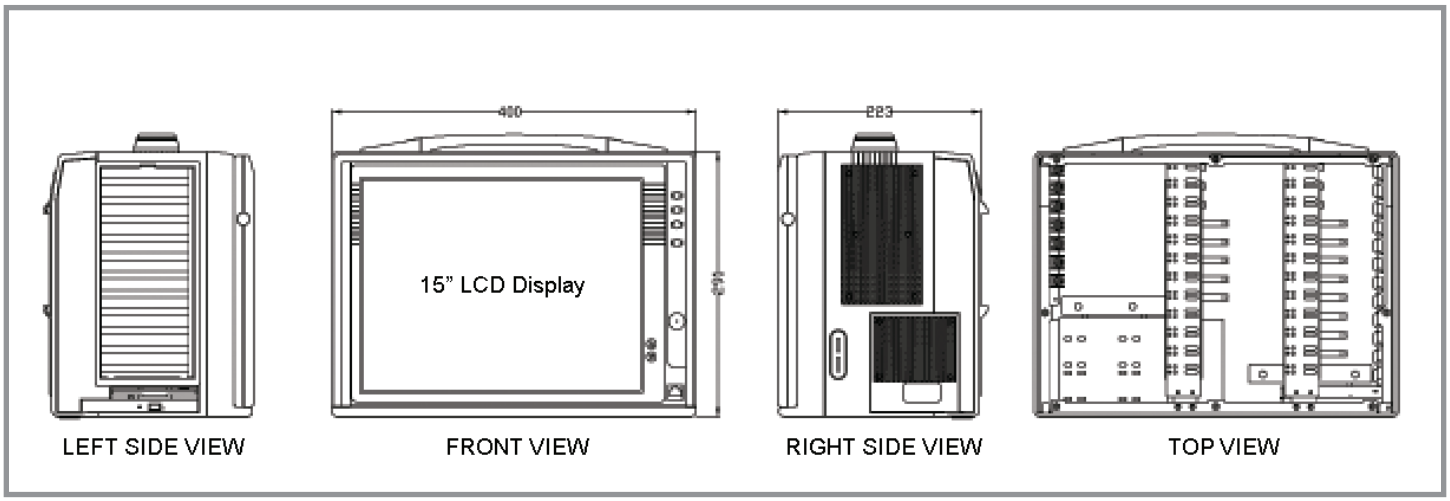
EXTERNAL DISPLAY OUTPUT

Output Type:	Analog SVGA
Resolution:	1400 x 1050, maximum

EXTERNAL CONNECTORS

Ethernet Connection:	Dual 10/100 Gigabit LANs

DIMENSIONS



OPERATING SYSTEM

Standard: Windows XP Professional

MATERIALS SUPPLIED

One Instrument Mainframe 7500

One nylon carrying case

Operating System disks & manuals and driver disks for in-system peripherals

WARRANTY

One year parts and labor limited liability, as per warranty policy listed on GaGe's web site.

Please note: Mainframe specifications are subject to change without notice.

ORDERING INFORMATION

Instrument Mainframe 7500 (4 PCI slots)	400-750-001
*Instrument Mainframe 7500G (4 PCI slots)	400-750-003

**Only available with purchase of GaGe cards.*

Operating Systems

Windows XP Professional	Included

Options

IMF7500 80 GB removable USB hard drive	400-750-005
IMF7500 160 GB removable USB hard drive	400-750-006
IMF7500 Hard-shell Air Cargo Case	400-720-060
System configuration & verification	Included

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