PERSTOR™ COMPATIBLES

THE FOLLOWING COMPUTERS ARE COMPATIBLE AND HAVE BEEN TESTED BY
SYSTEMS AND SOFTWARE, INC.:

IBM PC Models A and B

IBM PC-XT	Zenith PC, AT*
AT & T 6300	IBM PC-AT*
COLUMBIA	ITT-XTRA, XP, XL
COMPAQ PORTABLE	PANASONIC SR. PARTNER
COMPAQ DESKPRO	PANASONIC EXEC. PARTNER
COMPAQ 286 PORTABLE*	TI PROFESSIONAL
COMPAQ 286 DESKPRO*	TI BUSINESS PROFESSIONAL*
CORONA, PC, AT*	MITSUBISHI
LEADING EDGE, PC, AT*	SPERRY PC
PC PORTABLE	SPERRY IT
IDS, AT*	SANYO PORTABLE
ACS*	SANYO AT*

*The **PERSTOR PLUS LINE** works directly with the **PC-AT** controller and power supply for total enhancement and compatibility.

The following list of computers have NOT been tested by SYSTEMS AND SOFTWARE, INC., for compatibility. However, any computer that operates with MS-DOS or PC-DOS 2.0, 2.1, 2.2, 3.0 or 3.1 and has a PC BUS should work with the PERSTOR SYSTEM.

TANDY	EAGLE
SEEQUA	TELEVIDEO
SHARP	MICROMINT

To insure easy installation and complete compatibility, the type and model of your computer must be specified at the time of ordering. Adequate power supply for internal units is especially important.

SYSTEMS AND SOFTWARE, INC. RECOMMENDS THE EXTERNAL PERSTOR SYSTEM if there is any question as to the computer's power capabilities. If further expansion needs are being considered in the foreseeable future, and External System also provides ease in the upgrading process.

SYSTEMS AND SOFTWARE, INC.

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PERSTOR™ HIGHLIGHTS

PERSTOR CONTROLLER
The Perstor Controller Offers Many Advantages Over Other Controllers

THE DATA RECOVERY CIRCUIT uses an LSI chip containing a data separator allowing it to tolerate "bit jitter." Information being read or written at five million bits per second has an unavoidable speed variation. The data separator prevents intermittent read/write errors by consistently being able to lock onto the data despite the variation in speed or slight imperfections in the platter surface. Additionally, the Data Recovery Circuit on the Perstor Controller is a single silicon chip not subject to carbon life deterioration or a mechanical/analog setting procedure. Use of the chip insures that each controller will be able to repeatedly read/write all information previously recorded by that controller or any other Perstor Controller. For the end user this guarantees cartridge interchangeability and assured storage and retrieval of information.

DRIVE SUPPORT exceeds other controllers by 100%. The Perstor Controller can handle up to four 140 megabyte hard disk drives, while others support only two drives of lesser individual megabyte capacity. With the Perstor Controller a growing business can continually upgrade its computers' storage capacity without using up another expansion slot in their mother board. Conceivably, the Perstor Controller could support up to 560 megabytes of added memory. This amount of storage space would take up 1,750 standard floppy diskettes.

SELECTION OF REMOVABLE HARD DISK CARTRIDGES allows the user to swap information back and forth between fixed disks and removable hard disk cartridges. Data can be easily removed from the system for safekeeping and back up or to transfer to another Perstor system.

IDENTICAL CHIP SET USED BY IBM means all software for the IBM PC, PC-XT and PC-AT will run exactly as it was designed to run on an IBM.

HARD DISK DRIVES
Perstor Drives Have Specific Features To Protect Your Data From Read Errors and Information Loss

CLOSED LOOP SERVO gives all Perstor drives the ability to read/write the exact location of the addressed cylinder every time. Without this feature, a power surge or other adverse environmental condition could cause information to be written between cylinders, never to be accessed again. With closed loop servo the system compares a reference signal with a signal indicating the location of the cylinder; a mismatch drives the system to make the actual position agree with the desired cylinder.

QUALITY CONTROLLED, the Perstor drives undergo strict pretesting, formatting and burn-in procedures. The great majority of failures will occur during these stages preventing defective equipment from ever reaching the market place. Perstor drives have demonstrated nearly 100% reliability in the field under numerous adverse conditions, including hotel front desk applications where the drives run 24 hours per day, 365 days per year.

WITHSTAND TEMPERATURE EXTREMES with an operating temperature range of 40°F to 115°F. Non-operating temperature range is −14°F to 140°F, meaning that the Perstor System can be shipped and stored in any kind of weather without data or component loss. The removable hard disk cartridges are much more durable than their tape or floppy counterparts and require a maximum of one hour to adjust from an extreme temperature to operating condition. Thin film nickel plated and carbon overcoated media.

SELECTION OF CAPACITY AND ACCESS TIME allows users to choose the perfect system for their particular needs. Twelve megabyte removable hard disk cartridge drives and 25, 26, 40, 53, 85 and 140 megabyte hard disk fixed drives with average access times varying from 20ms to 85ms. The Perstor Plus line offers a selection of drives for insertion into the IBM PC-AT that work directly with AT's controller card providing the greater capabilities than the enhanced IBM PC-AT.

POWER SUPPLY
Perstor Power Is Reliable And International

LINEAR POWER SUPPLY has inherently low conducted and radiated noise levels with a maximum peak to peak of 1.0 mv. As compared with a switching type of power supply, which may have as much as 500 mv ripple, linear power allows the system to separate data from noise on a continuing reliable basis.

FOR WORLDWIDE CONNECTION, the Perstor power supply is designed to use 100/120/220/230-240 VAC and meets or exceeds FCC, UL and CSA Class A requirements in the United States and Canada, and VDE specifications in Europe.

OVERVOLTAGE PROTECTION CIRCUIT prevents damage to the controller card and drive by shutting down power if a voltage surge is detected that could potentially damage sensitive logic circuits. And, in the opposite case, if a short circuit is detected, power will shut down before irrevocable damage is done.

LONG LIFE is provided by a 7½ amp surge capability for the spin up motor. The initial start-up usually requires only 5 amps; but by not using the maximum capability, use-life is increased. This feature also prevents a strain on the system when incoming power is reduced and spin up requires more amperage to start.

ENCLOSURE CHASSIS
Case Is Custom Designed For Cooling Efficiency And Maximum Reduction Of Magnetic/Electrical Interference

CUSTOM DESIGN provides adequate spacing in order to mount two drives securely in addition to isolating electrical/magnetic interference between the two drives, the power supply and the fan. The drives are mounted on aluminum brackets creating a thermal chimney, which along with the Hiflo fan, provides more than adequate cooling for the components. Patent pending.

CONSISTENT COLOR AND DESIGN SCHEME with the IBM PCs or IBM-PC-AT. The durable epoxy finish is painted on the same production line as IBM and the design matches the appearance of numerous personal computers. The chassis is 15" x 14" x 5" and weighs 24 pounds making it easily transportable.

EXTERNAL DISCONNECT for the cables provides easy connect and disconnect for moving and/or changing to another computer. The Perstor case should never have to be opened by the user preventing potentially hazardous situations or destruction of inside components.

PERSTOR™

The FINAL Answer to Security, Privacy and Backup

PORTABLE HARD DISK CARTRIDGE EXPANSION SYSTEMS

Your Personal Business Computer and a PERSTOR™ Expansion System by SYSTEMS AND SOFTWARE, INC. are a natural combination. A PERSTOR™ System will expand the information storage capacity of your IBM-PC, PC-XT, PC-AT, TI Professional/Business Pro or IBM Compatible and give you a system that really flies.

HIGH CAPACITY MASS STORAGE

With a PERSTOR™, you can have 26, 32, 53, 85 or 140 megabytes of high speed fixed disk storage, PLUS the SECURITY of a backup removable Hard Disk Cartridge, that will store your special files. The Hard Disk Cartridge Drive provides 12 megabytes of portable hard disk storage that will fit in a shirt pocket.

RELIABILITY PLUS

Built as an International product and intended for 24 hours/day, 365 days/year operation. A five year media and design life.

DATA RECOVERY CIRCUIT AND CLOSED LOOP SERVO GUARANTEE INTERCHANGEABILITY

HARD DISK CARTRIDGE BACKUP

Use the Hard Disk Cartridge to make a backup of your fixed drive or use it to store your confidential personal files. Unlike tape backup systems, the PERSTOR™ Cartridge may be used as a removable Winchester disk drive all day long. Unaffected by extremes in temperature or repeated use, the PERSTOR™ Cartridge will protect and transport your private files to any other comparable System. With multiple cartriges your capacity is unlimited.

PERSTOR PS PLUS

For immediate enhancement of the IBM PC-AT, 12 megabyte Removable Hard Disk Cartridge Drives and/or 26, 32, 53, 85 or 140 megabyte fixed disk drives can be internally mounted in the AT and will attach directly to the IBM PC-AT controller.

PERSTOR-XP

A custom integrated Computer with the capabilities of an IBM PC-XT or AT and choice of Perstor high performance Disk Drives and Removable Cartridge Drives. All options of an IBM compatible are available with the PERSTOR™-XP.

SOFTWARE COMPATIBLE

All PERSTOR™ products are truly hardware and software compatible with IBM, PC-DOS or MS-DOS and easy to install.

FASTCOPY, a rapid backup program from SYSTEMS AND SOFTWARE, INC. produces a useable copy of any source disk, in a matter of minutes. PERSTOR™ Drives can use IBM standard backup and restore programs, but with FASTCOPY, backup is 10 times faster.

Unix versions available.

Also compatible with most 3270 Emulation Boards.

PERSTOR IS FAULT TOLERANT WITH DUAL SPINDLES

PERSTOR™ products are available through Authorized Dealers, representatives and directly from SYSTEMS AND SOFTWARE, INC. So don't get lost in the expansion jungle, call SYSTEMS AND SOFTWARE, INC. and order your PERSTOR™ TODAY!

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PERSTOR MODELS

PERSTOR 12R12R TOP SECRET

Dual 12 megabyte removable cartridge drives with a total capacity of 24 megabytes. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridges, cables, manual, and operating software included.

PERSTOR 12RINT

INTERNAL UNIT. 12 megabyte removable Winchester cartridge drive. Controller, cartridge, cables, manual and operating software included.

PERSTOR 12R26PS

12 megabyte removable Winchester cartridge drive and 26 megabyte fixed drive. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridge, cables, manual and operating software included.
Also available in ½ ht.

PERSTOR 12R32PS

12 megabyte removable Winchester cartridge drive and 32 megabyte fixed drive. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridge, cables, manual and operating software included.

PERSTOR 12R53PS

12 megabyte removable Winchester cartridge drive and 53 megabyte fixed drive. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridge, cables, manual and operating software included.

PERSTOR 12R85PS

12 megabyte removable Winchester cartridge drive and 85 megabyte fixed drive. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridge, cables, manual and operating software included.

PERSTOR 12R140PS

12 megabyte removable Winchester cartridge drive and 140 megabyte fixed drive. Enclosed in Hiflo fan cooled case with 7 amp linear power supply. Controller, cartridge, cables, manual and operating software included.

PERSTOR 12R PLUS*

INTERNAL UNIT. 12 megabyte removable Winchester cartridge drive. Cartridge, cables, manual and operating software included, for direct attachment to the IBM PC-AT controller.

*Patent Pending

PRODUCT AND FUNCTIONAL SPECIFICATIONS

TYPE	Removable Cartridges 12R12R 12R PLUS	Fixed Hard Disk Expansion Drives				
MODEL	12RINT (½ HT.)	26PS (½ HT.)	32PS (FH)	53PS (FH)	85PS (FH)	140PS (FH)
Storage Capacity (MB) Per Drive/Unformatted	12.92	25.5	32.0	53.3	85.3	140.24
Per Surface (MB)	6.45	6.38	10.67	10.67	10.67	12.75
Disks	1	2	2	3	5	6
Recording Heads	2	4	3	5	8	11
Cylinders	620	640	1024	1024	1024	980
Data Tracks	1240	2560	3072	5120	8192	13464
Rotational Delay Avg. latency (MS)	8.46	8.33	8.33	8.33	8.33	8.33
Seek Time Track to Track	34MS	15MS	6MS	6MS	6MS	6MS
Average*	74MS	55MS	21MS	21MS	21MS	21MS
Maximum*	130MS	130MS	34MS	34MS	34MS	34MS

Standard Rotational Rate 3600 RPM / Data Transfer Rate 5.0 MBITS/SEC
RLLC QUALIFIED AT 7.5 MBITS/SEC

*Buffered including settling time

PHYSICAL SPECIFICATIONS

125 Watt Linear Power Supply, 7.5 AMP Surge
Input 100/120/220/230-240 VAC, 47-63 HZ ± 10%,
Internal + 12VDC, + 5VDC,
1 MV PP Ripple

Operating Temperature: 40 to 115 F (5 to 46 C)
RH: 8% to 80% Non Condensing.

Shipping Temperature Range: -14 to 140 F (-25 to 60 C)
MTBF 12,000 hours / MTTR 30 minutes / MSL 0 to 15000 feet
Component Design Life 5 years
Soft Errors 1 in 10^{10} Bits read / Hard Errors 1 in 10^{12} Bits read
Seek Errors 1 in 10^{6} Seeks
Size (STD) 6" H x 14" W x 16" D, Weight 27 lbs.

CONTROLLER SPECIFICATIONS

DMA or Program I/O Transfers, Automatic Seek Verification, On-board Sector Buffer, Programmable Sector Sizes (256, 512, 1024), ECC Error Detection and Recovery, Automatic Retries, Programmable Interleave, Fault Detection, Digital Data Recovery Circuit (25MHz), IBM PC-AT Compatible.

—MEDIA PORTABILITY IS ONLY ASSURED WHEN USING THE PERSTOR CONTROLLER CARD—

Note: Capacity is unformatted drive capacity. Drive specifications are for standard drives and subject to variations and availability. Controller specifications subject to change.