



apricot **Shogun**

The reliable, robust,
business-critical superserver



Features

- ▶ Up to four 133MHz or 166MHz Pentium Processors
- ▶ Up to 768MB ECC Protected Memory
- ▶ Four PCI Slots plus six EISA Slots
- ▶ Twenty 3.5" Hard Disk Drive Bays
- ▶ High Performance RAID Subsystem
- ▶ SCSI-II Fast and Wide Controllers
- ▶ Triple 5.25" Drive Bays for CD-ROM and Backup Devices
- ▶ Integral UPS with Full Protection
- ▶ Full Systems Management
- ▶ Supports NetWare, SCO UNIX, UnixWare, Windows NT
- ▶ Lifetime Warranty
- ▶ UK Built



Certificate No's:
FM1716 FS21715 FS30305

System Overview

The apricot Shogun sets a new standard in network super-servers. Powerful, versatile, expandable, upgradeable and, above all, robust and reliable, it will provide the ideal combination of processing power, memory and storage capacity for business-critical departmental applications.

Processing Power

Equally impressive is the Shogun's performance. For sheer processing power, its 133MHz single Pentium processor or 166MHz dual or quad Pentium processors provide exactly the right scale of system for a particular application - and the expansion capacity to meet changing demands. The Shogun's capacity for data is huge by any standards. Currently provided by a subsystem containing up to twenty 4GB hard disks, it will gain even greater capacity as larger capacity disks become available.

High Availability

The primary requirement for a business-critical server is complete data integrity. You must have complete confidence in the data that underpins your business. Shogun gives you that confidence through its High Availability features. It has an integral, rugged Uninterruptible Power Supply, and the option of a RAID subsystem.

The UPS protects the system against not just power failures, but also smoothes out the supply, cleaning up any spikes or temporary dips in the mains. Clean power is vital to ensure that all of the components operate at their optimum reliability.

The RAID subsystem is a high-performance three channel controller operating on the fast PCI bus. This splits the data over multiple disks and with the use of data redundancy techniques built into the onboard processor, and a 'hot spare' allows the Shogun to continue without interruption in the event of a disk failure. These two High Availability features deliver data integrity to your business critical system.



Systems Management

Operated through a true Windows application, multiple Shogun systems can be controlled from a remote location. Security is maintained by password, dialback and data encryption.

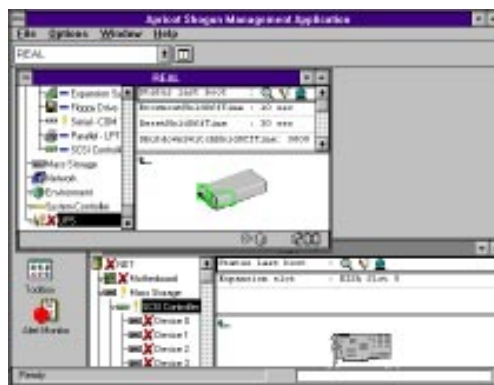
Systems Management maintains statistics of all recovered errors, and if a user defined threshold is exceeded, sends an alert. This allows timely fault identification and resolution. In effect a degraded component can be replaced before it becomes a problem, enabling a strategy of preventative and deferred maintenance to be put in place.

Management information is available via SNMP, allowing Shogun to be part of a heterogeneous network.

Industrial Strength Engineering

Drawing on the expertise of the best of Mitsubishi's mainframe design engineers, Apricot has solved many of the industry issues seen in PC servers. Bus bars are used for power distribution to ensure that components operate at their optimum level, ensuring high reliability.

Hot swap disks can only be removed in two stages, disconnecting power and signal separately. This avoids spikes on the data lines which can cause data corruption. High spin speed disks cause stress on their backplane connectors. Shogun eliminates this by having floating connectors joined by high quality low loss SCSI cable.



Lifetime Warranty

It's this attention to detail that means Shogun is quite simply the best engineered PC server around. And with a lifetime warranty, Shogun is the natural choice for your business critical applications.

Features and Benefits

Pentium Processing Power

The Shogun's twin processor slots support either single 133MHz or dual Pentium 166MHz processors, giving a capacity of up to four CPUs. Each CPU can have a 1Mb two-way set associative cache. The intelligent 64 bit bus is also designed to give good performance with only one processor installed - in this case arbitration is removed, allowing free access to memory and I/O.



High Performance Bus Expansion

For maximum versatility, there are four PCI slots, for use with the latest high performance peripherals, and six EISA slots which accept the widest possible range of boards for support of legacy systems. The PCI slots are provided across two PCI peer busses for maximum I/O performance.

Expandible Memory

Total memory capacity is 768 MBytes, provided by two memory cards, each with twelve 36 bit SIMM sockets. The memory controller is ECC protected, and supports 128bit memory access.

80GB Hard Disk Array

The Shogun's massive drive bay can accommodate up to twenty 3.5" drives, giving a capacity of up to 80 GBytes, using 4GB drives. The drive bay consists of five modules of four drives each, with each module handled by a fast and wide SCSI interface. The architecture is designed to offer RAID high performance and fault tolerance via the DPT PCI RAID controller, ensuring data integrity. The drives are very high reliability, giving 1,000,000 hours MTBF.



Tamper-Proof Access

All physical access to the Shogun requires keys and infrared control. This prevents unauthorised access to exchangeables, fixed disks and other system components. Even the front panel buttons can be disabled, preventing accidental switch off. This makes Shogun suitable for siting in both departmental situations as well as in a computer room.

Robust Uninterruptible Power Supply

The fully integrated 850watt UPS with replaceable battery pack has comprehensive mains conditioning for protection against spikes and surges, as well as providing a long battery life to allow a controlled shutdown of the system in the event of a mains failure. The UPS also provides standby power for the Systems Management Controller allowing the system to be interrogated even in the event of mains power failure.



Industrial Strength Engineering

A solid metal chassis contains a host of features designed to ensure absolute reliability: bus bars for full voltage power distribution, over-specified power supply, over-specified temperature-sensing fans, a floating backplane to absorb disk torsion and a unique two-stage disk removal process which maintains data integrity by eliminating spikes from the data lines.

All of these, and more, show an attention to detail, ensuring the quality, reliability and robustness have been engineered into Shogun from the outset.

Sophisticated Systems Management

A fully-integrated Systems Management Controller (SMC) operates independently of the main CPUs. It receives standby power from the UPS and so can still function when the mains power has failed. The SMC provides system status monitoring, tamper-proof access control and many other features. Its main function is to provide statistical information on recovered errors, allowing any potentially degraded component to be replaced before it becomes a problem, ensuring maximum service availability. The user interface to the SMC is via the System Management Application: a Windows front end application which can be accessed securely through a serial modem interface and over a local area network.

Technical Specifications

Shogun	Single and Dual	Dual and Quad
Processor	133MHz	166MHz
Type	Intel Pentium	Intel Pentium
No. of CPU's	1 or 2	2 or 4
Clock speed (Internal)	133MHz	166MHz
Clock speed (External)	66MHz	66MHz
Internal cache	2 x 8KB	2 x 8KB
Coprocessor	Integral	Integral
Data/address bus	64/32-bits	64/32-bits
CPU socket type	320-pin ZIF (Type-5)	320-pin ZIF (Type 5)
iCOMP benchmark	1110	1308
External cache		
Supplied: per CPU	512KB	1MB
Mapping	Two way	Two way
Writing scheme	Write back	Write back
Cache speed	15ns	15ns
RAM		
Minimum	32MB	32MB
Maximum	768MB	768MB
Type	36-bit SIMM	36-bit SIMM
Speed	70ns	70ns
Fitted RAM location	Memory board	Memory board
Sockets: per board	12 (3 x 4 SIMM banks)	12 (3 x 4 SIMM banks)
maximum	24	24
Fault detection	ECC	ECC
Sizes supported	4, 8, 16 & 32MB	4, 8, 16 & 32MB
ROM		
Size	512KB	512KB
Type	Flash ROM	Flash ROM
Shadowable	Yes	Yes
Graphics (standard)		
Controller	Cirrus Logic GD5424	Cirrus Logic GD5424
Interface	ISA	ISA
Location	On-board	On-board
Video memory: supplied	512KB	512KB
upgradeable to	1MB	1MB
type	DRAM	DRAM
Max NI resolution	1024 x 768 x 16	1024 x 768 x 16
Max NI colours	256 @ 800 x 600	256 @ 800 x 600
I/O peripheral ports		
Serial: quantity	2	2
connectors	2 x 9-pin D-SUB	2 x 9-pin D-SUB
Parallel: quantity	1	1
type	ECP/EPP compliant	ECP/EPP compliant
Keyboard type	PS/2	PS/2
Mouse type	PS/2	PS/2
Expansion (free)		
Slots: PCI Local Bus	2	2
Shared PCI / EISA	2	2
EISA full length	4(3)	4(3)
Floppy drive		
Type/capacity	3.5"/1.44MB	3.5"/1.44MB
Controller	Embedded	Embedded
CD ROM		
Model	Sony CDU76S	Sony CDU76S
Type	SCSI	SCSI
Speed	4.2	4.2
Buffer memory	256KB	256KB
Sustained transfer rate	684KB/s	684KB/s
Photo CD support	Yes (Multi-session)	Yes (Multi-session)
MTBF (power-on-hours)	100 000	100 000



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Shogun**ALL MODELS****Power supply**

Rating (constant)	850W
Rating (peak)	850W
Type	Switched mode
Voltage setting	Auto ranging
Voltage input range (AC)	100-120V & 200-240V
Frequency input range	47-63Hz
Max loads:	120A
DC0-2 +5V	40A
DC3 +5V	40A
DC4 +12V	1A
DC5 -5V	1A
DC6 -12V	1A
DC7 +5V	1A
External connectors	IEC 320 C20

Integral Uninterruptable Power Supply

Model	Unipower
Maximum power load	850W
Mains failure runtime (minimum)	15 mins. subject to loading
Peak power	850W
Typical detection & switchover time	10ms
Dimensions: w x d x h	340 x 655 x 127mm
weight	40Kg
MTBF (power on hours)	50 000

Disk Controller I/O

Type	Fast & wide SCSI-II (Adaptec 7870)
Location	On-board
Max. devices	7
SCSI channels	2
Max. data transfer	20MB/s

Disk Controller I/O (options)

Type	SCSI-II (Adaptec 3940)	RAID DPT PM3224
Location	Expansion board	Expansion board
On-board processor	None	68030 @ 40MHz
Cache supplied (max)	None	4MB (64MB)
Interface	PCI 32-bit bus	PCI 32-bit bus
Bus master rate	132MB/s	132MB/s
Max. SCSI transfer	20MB/s	20MB/s
SCSI bus support	Fast Wide SCSI-II	Fast Wide SCSI-II
SCSI channels	2	3
RAID support	0 & 1 (software)	0, 1 & 5 (hardware)
External port	68-pin high density	68-pin high density

Disk Subsystem

3.5" drive bays	5
No. of 3.5" drives per bay	4
Hotpluggable	Yes
5.25" removable media drive bays	3

Systems Management Controller

Processor	80C186EB
Modem port	25-pin D-SUB
Fault monitoring	Fans & front door lock

Systems Management Interface Controller

Type	ISA adapter card
BIOS	128KB
Diagnostic processor	8051
Dedicated serial ports	3
Flash RAM	8MB

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Shogun		ALL MODELS		
Hard Drives	1GB	2GB	4GB	
Type	Fast Wide SCSI-II	Fast Wide SCSI-II	Fast Wide SCSI-II	
Average access	6.9ms	7.5ms	8.0ms	
Track to track seek	0.6ms	0.6ms	0.6ms	
Burst data rate	12.58MB/sec	12.58MB/sec	12.58MB/sec	
Cache	512KB	512KB	512KB	
MTBF (power-on-hours)	1 000 000	1 000 000	1 000 000	
Tape backup devices	DAT	DAT Autochanger	DLT	
Model	Conner Peregrine	Conner Diamondback + Peregrine	Quantum DLT4000S	
Interface type	SCSI-II / 1MB buffer	SCSI-II / 1MB buffer	SCSI-II+TCQ / 2MB buffer	
Media	DAT 120m DDS & DDS II	4 x DAT 120m DDS & DDS II	DLT	
Native capacity	4GB	16GB (4 x 4GB)	20GB	
Max. capacity	8GB @ 2:1 / 16GB @ 4:1	32GB @ 2:1 / 64GB @ 4:1	40GB @ 2:1	
Compression type	Hardware	Hardware	Hardware	
Effective backup rate	48MB/min (compressed)	48MB/min (compressed)	180MB/min (compressed)	
System Dimensions				
Width x depth x height	410 x 800 x 700mm			
Weight	115Kg fully loaded / 50Kg minimum system			
Warranty				
Standard cover	Lifetime: includes 5 years parts and 3 year on-site repair service (in countries where available)			
Environmental				
Temperature (operating)	+10 to +35°C			
Temperature (non-op.)	-10 to +60°C			
R. humidity (operating)	20 to 80%			
R. humidity (non-op.)	20 to 80%			
EMI/RFI approvals	EMC Directive 89/336/EEC			
Safety approvals	EN 60-950			
Monitors	14" SVGAe	15" FST EVGAe	15" Trinitron EVGAe	
Standard	SVGA	EVGA	EVGA	
CRT size (diagonal)	14"	15"	15"	
CRT type	Anti-glare	FST	Super Fine Trinitron anti-glare/static	
Display area	245 x 183 (+/- 3mm)	270 x 203 (+/- 3mm)	270 x 202 (+/- 2mm)	
Dot pitch	0.28mm	0.28mm	0.26mm	
Phosphor	P22	P22	P22	
Video input	Analogue RGB	Analogue RGB	Analogue RGB	
Maximum video bandwidth	35MHz	110MHz	107MHz	
Max resolution (non-interlaced)	800 x 600	1280 x 1024 x 60Hz	1280 x 1024 x 60Hz 1024 x 768 x 75Hz	
Power: full operation	Less than 80W	100W	110W maximum	
standby	Less than 20W	<5W	8W maximum	
active off	>5W	>5W	>5W	
Power management	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance	
EMI/RFI approvals	EN 55022 Limit B VDE 0871 Vfg 243 Limit B MPRII	EN 55022 Limit B VDE 0871 Vfg 243 Limit B MPRII	CE mark compliant MPRII	
Safety approvals	EN60-950	EN60-950	EN60-950	
Dimensions: w x d x h weight	351 x 384 x 327mm 11.5Kg	361 x 382 x 345mm 16Kg	368 x 385 x 373mm 13.7Kg	
Input Devices	KEYBOARD			
Keys/buttons	102			
Interface	PS/2			
Cable length	3m			
Dimensions: w x d x h weight	465 x 170 x 45mm 1.4Kg			

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