



# apricot FT4200

Enterprise server –  
the next generation



## Features

- ▶ Up to four Pentium Pro Processors
- ▶ Up to 2GB ECC Protected Memory
- ▶ Six PCI Slots plus three EISA Slots
- ▶ Dual PCI bus (peer bus architecture)
- ▶ Twenty 3.5" Hard Disk Drive Bays
- ▶ High Performance RAID Subsystem
- ▶ Ultra-Wide SCSI & Fast SCSI-II On-board Controllers
- ▶ 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 FT4200 is the next generation of Enterprise servers from the company that introduced the concept. Powerful, scaleable, expandable and offering proven reliability, the FT4200 provides the ideal balance of useable processing power, memory capacity and industry-leading storage capacity for demanding business critical applications.

## Processing Power

Processing power is the essence of the FT4200. The system board, designed and built by Mitsubishi Electric houses single, dual or quad Pentium Pro processors to give power which scales to fit the needs of any application, and the expansion capability to grow with the demands of today's resource hungry software. To translate all this processing power into Real World performance, the FT4200 has dual "Peer Bus" PCI expansion for peak system throughput, coupled with a massive 20-disk Ultra-Wide SCSI storage subsystem to balance performance in all key areas.

## 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. The FT4200 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 FT4200 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 FT4200 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 and supports MIB1 and MIB2 browsers, allowing the FT4200 to be part of a heterogeneous network.

## Industrial Strength Engineering

Drawing on the expertise of the best of Mitsubishi's mainframe design engineers, the FT4200 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, and ensures that data integrity is preserved.



## Lifetime Warranty

It's this attention to detail that means the FT4200 is quite simply the best engineered PC server around. And with a lifetime warranty, the FT4200 is the natural choice for your business critical applications.

# Features and Benefits

## Pentium Pro Processing Power

The FT4200 has two processor sockets on the system board, with an expansion board for two further processors, giving a capacity of up to four processors. Powerful 200MHz Pentium Pro processors are used, each with 256KB or 512KB of level 2 cache to deliver exceptional performance.



## High Performance Expansion Bus Architecture

For maximum system throughput, the FT4200 uses two PCI expansion buses running in parallel - "Peer Bus" Architecture. There are five PCI slots and three EISA slots plus one shared slot, and the video controllers and integrated SCSI controllers are all PCI devices. In addition, there is an on-board PCI Ultra SCSI controller and a PCI Fast SCSI-II controller.

## Expandable Memory

The FT4200 has a total memory capacity of 2GB, (using 256MB DIMMs) using ECC DIMM memory modules for high performance and error correction. Memory access is 64bit wide, and all memory is housed directly on the main system board.

## 80GB Hard Disk Array

The FT4200's massive drive bay can accommodate up to twenty 3.5" drives, giving a capacity of up to 80GBytes, using 4GB drives. The drive bay consists of five modules of four drives each, with each module handled by a separate SCSI channel. 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 FT4200 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 the FT4200 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, extra capacity power supply, temperature-sensing fans, 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 the FT4200 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

<b>FT4200</b>	<b>Single and Dual</b>	<b>Dual and Quad</b>
<b>Processor</b>	<b>200MHz (256KB cache)</b>	<b>200MHz (512KB cache)</b>
Type	Intel Pentium Pro	Intel Pentium Pro
No. of CPU's	1 or 2	1, 2 or 4
Clock speed (Internal)	200MHz	200MHz
Clock speed (External)	66MHz	66MHz
Internal L2 cache (per CPU)	256KB	512KB
Coprocessor	Integral	Integral
Internal/external bus width	300/64-bits	300/64-bits
CPU socket type	ZIF (Type-8)	ZIF (Type 8)
<b>RAM</b>		
Minimum	64MB	128MB
Maximum	2GB	2GB
Type	72-bit DIMM	72-bit DIMM
Speed	60ns	60ns
Fitted RAM location	System board	System board
Sockets:	8	8
Fault detection	ECC	ECC
Sizes supported	16, 32, 64, 128 & 256MB	16, 32, 64, 128 & 256MB
<b>ROM</b>		
Size	512KB	512KB
Type	Flash ROM	Flash ROM
Shadowable	Yes	Yes
<b>Graphics (standard)</b>		
Controller	Cirrus Logic GD54M30	Cirrus Logic GD54M30
Interface	PCI	PCI
Location	On-board	On-board
Video memory: supplied type	1MB DRAM	1MB DRAM
Max NI resolution	1024 x 768 x 16	1024 x 768 x 16
Max NI colours	256 @ 1024 x 768	256 @ 1024 x 768
<b>I/O peripheral ports</b>		
Serial: quantity connectors	2 2 x 9-pin D-SUB	2 2 x 9-pin D-SUB
Parallel: quantity type	1 ECP/EPP compliant	1 ECP/EPP compliant
Keyboard type	PS/2	PS/2
Mouse type	PS/2	PS/2
<b>Expansion</b>		
Slots: PCI Local Bus	5	5
Shared PCI / EISA	1	1
EISA full length	3	3
<b>Floppy drive</b>		
Type/capacity	3.5"/1.44MB	3.5"/1.44MB
Controller	Embedded	Embedded
<b>CD ROM</b>		
Model	Panasonic CR505B	Panasonic CR505B
Type	SCSI	SCSI
Speed	6	6
Buffer memory	256KB	256KB
Sustained transfer rate	900KB/s	900KB/s
Photo CD support	Yes (Multi-session)	Yes (Multi-session)
MTBF (power-on-hours)	125 000	125 000



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**FT4200****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: DC0-2	+5V 80A
DC3	+5V 40A
DC4	+12V 40A
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	Constant DC power level / seamless switchover
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 SCSI-II (Adaptec 7850)	Ultra-Wide SCSI (Adaptec 7880)
Location	On-board	On-board
Max. devices	3 (removable media only)	4
SCSI channels	1	1
Max. data transfer	20MB/s	40MB/s

**Disk Controller I/O (options)**

Type	Ultra-Wide SCSI (Adaptec 2940UW)	RAID DPT PM3334
Location	Expansion board	Expansion board
On-board processor	None	68040 @ 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	40MB/s	40MB/s
SCSI bus support	Ultra-Wide SCSI	Ultra-Wide SCSI
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 (max)
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

**Systems Management Interface Controller**

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

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<b>FT4200</b>	<b>ALL MODELS</b>		
<b>Hard Drives</b>	<b>2GB</b>	<b>4GB</b>	
Type	Fast Wide SCSI-II	Fast Wide SCSI-II	
Average access	7.5ms	8.0ms	
Track to track seek	0.6ms	0.6ms	
Burst data rate	12.58MB/sec	12.58MB/sec	
Cache	512KB	512KB	
MTBF (power-on-hours)	1 000 000	1 000 000	
<b>Tape backup devices</b>	<b>DAT</b>	<b>DAT Autochanger</b>	<b>DLT</b>
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)
<b>System Dimensions</b>			
Width x depth x height	410 x 800 x 700mm		
Weight	115Kg fully loaded / 50Kg minimum system		
<b>Warranty</b>			
Standard cover	Lifetime: includes 5 years parts and 3 year on-site repair service (in countries where available)		
<b>Operating Systems Supported</b>			
Windows NT 3.5, 3.51, 4; NetWare 3.12, 4.1; SCO Openserver 5; UnixWare 2.1			
<b>Environmental</b>			
Temperature (operating)	+5 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		
<b>Monitors</b>	<b>14" SVGAe</b>	<b>15" FST EVGAe</b>	
Standard	SVGAe	EVGAe	
CRT size (diag.)	14"	15"	
CRT type	Anti-glare	FST anti-glare black tinted	
Display area	260 x 190 (+/-3mm)	270 x 203 (+/-3mm)	
Dot pitch	0.28mm	0.28mm	
Phosphor	P22	P22	
Video input	Analogue RGB	Analogue RGB	
Max. video bandwidth	65MHz	110MHz	
Max. res. x vert freq (non-interlaced)	1024 x 768 x 60Hz	1280 x 1024 x 60Hz 1024 x 768 x 75Hz	
Power: full operation	80W	100W	
standby	<30W	<30W	
active off	>5W	>5W	
Power management	VESA DPMS support for EPA compliance	VESA DPMS support for EPA compliance	
EMI/RFI approvals	CE mark compliant MPRII	CE mark compliant MPRII	
Safety approvals	EN60-950	EN60-950	
Dimensions: w x d x h (mm) weight	351 x 384x327 12Kg	361 x 382 x 345 14Kg	
<b>Input Devices</b>	<b>KEYBOARD</b>		
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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