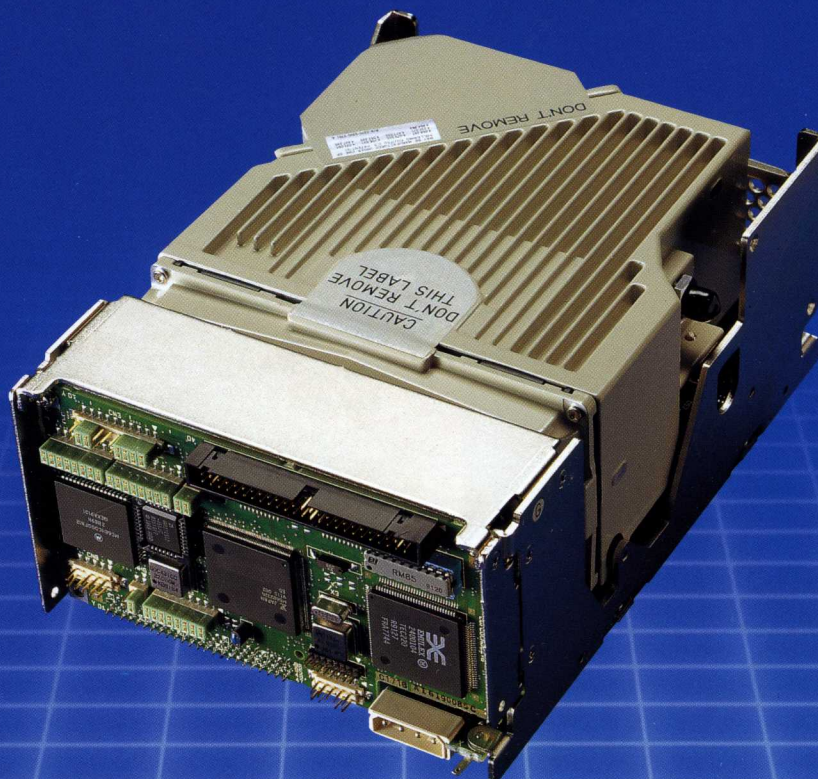


MAR 25 1993

FUJITSU

Fujitsu Quality Storage Products

5 1/4-inch magnetic disk drive
M2654S/H/HD



5 1/4-inch hard disk

M2654

M2654S/SA/SB

SCSI Single-ended

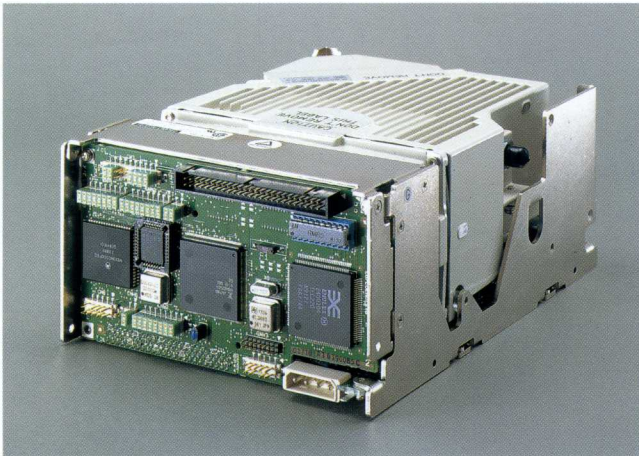
M2654H/HA/HB

SCSI Differential

M2654HD/HDA/HDB

SCSI Differential Dual Port

Featuring a 2.4 gigabyte unformatted data storage capacity, 4.7 megabytes per second data transfer rate, and exceptional reliability, the M2654 is designed for advanced, high-performance computer systems, ranging from workstations to supercomputers.



High storage capacity

The 5.25-inch form-factor M2654 has a large storage capacity of 2.419 megabytes, with 21 data surfaces and 115 megabytes of storage per surface. The M2654 features a large capacity design and high throughput which will satisfy the most demanding of users.

Fast data access and transfer

The M2654 has an average latency time of 5.56 milliseconds. This rapid speed is due to its streamlined actuator with a spindle motor rotating at 5,400 rpm. The data transfer rate of 4.758 megabytes per second is among the highest in the 5.25-inch drive marketplace today.

High reliability

The M2654 is built through a precision manufacturing process, extensively utilizing LSI and surface-mount technology. The M2654, with its mean-time between failure (MTBF) rating of 300,000 power-on hours, reflects Fujitsu's on-going commitment to supplying one of the most reliable hard disk drives available today.

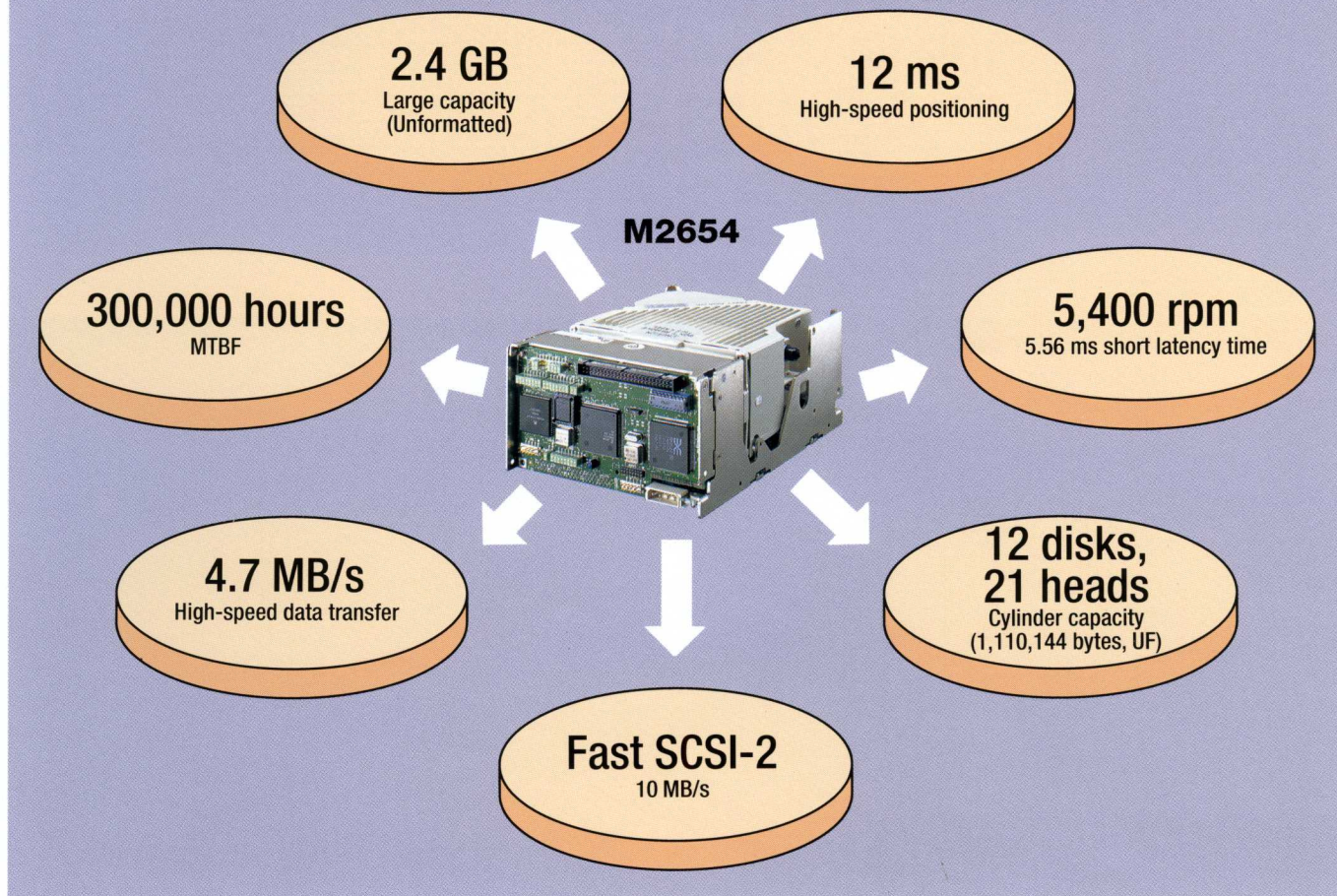
Technology

The high-capacity M2654 uses 12 thin-film media disks within the standard 5.25-inch form factor. Fujitsu has put the latest disk manufacturing technology into the M2654, thus expanding its data area, increasing the number of data heads, and reducing the number of internal components, which cuts down power consumption.

Drive features

- Large 2.4 GB (unformatted) capacity
- Balanced light rotary actuator
- DSP-controlled servo system
- Advanced thin-film heads and media
- Spindle motor synchronization
- 300,000 power-on hours MTBF

Large capacity and high-speed data throughput



SCSI features

- SCSI-2 command set
- 10 MB/s Fast SCSI
- Downloadable microcode:
ECC-protected control store
- Tagged command queuing
- User-selectable block size:
180 to 4,160 bytes
Two-byte granularity
- 256 KB data buffer:
Programmable segmented buffer
Read-ahead cache
Write cache
Minimal latency read
Path-through parity protection
- Advanced implementation:
 - Minimal SCSI overhead
 - Diagnostics
 - Error recovery procedures
- 64-bit ECC
- Defective sector slipping
- Automatic defect reallocation
- Remote SCSI ID & LED connector
- SCSI ID sequenced spin up
- Statistical information

FUNCTIONAL SPECIFICATIONS

Model		M2654S/H/HD
Storage capacity	Unformatted	2.419 Gbytes
	Formatted	2.055 Gbytes (512 B/Data field)
Disks (5 1/4-inch)		12
Heads	Read/write	21
	Servo	1
Track capacity (unformatted)		52,864 bytes
Tracks per cylinder		21
Cylinders		2,179
Sectors per track		12 (4,160 B/Data field) to 201 (180 B/Data field) [88 (512 B/Data field)]
Positioning time (Including settling time)	Track-to-track	2 ms
	Average	12 ms
	Maximum	22 ms
Average latency time		5.56 ms
Rotational speed		5,400 rpm
Data transfer rate	Drive	4,758 MB/s
	Interface	Max. 3.0 MB/s (Asynchronous) Max. 10 MB/s (Synchronous)
Recording code		1/7 RLL
Interface		SCSI-2
Start time		Less than 45 seconds
Stop time		Less than 30 seconds

PHYSICAL SPECIFICATIONS

Model		M2654S/H	M2654HD
Power requirements	12V DC \pm 5%	Start up: 5.0 A peak Operating: 2.8 A rms (typical)	
	5V DC \pm 5%	2.0 A rms Typical (SCSI Single-ended)	
Dimensions	Height	82.5 mm (3.3 in.)	
	Width	146 mm (5.7 in.)	
	Depth	203 mm (8.0 in.)	220 mm (8.7 in.)
Weight		4.0 kg (8.8 lbs.)	
Ambient temperature	Operating	10°C to 45°C (50°F to 113°F)	
	Non-operating	-40°C to 60°C (-40°F to 140°F)	
	Gradient	Less than 15°C (27°F)/hour	
Relative humidity	Operating	20% to 80% RH (non-condensing)	
	Non-operating	5% to 90% RH (non-condensing)	
Vibration	Operating	Max. 0.2 G (3Hz to 100Hz)	
	Non-operating	Max. 0.4 G (3Hz to 100Hz)	
Shock resistance	Operating	Max. 2 G (10 ms)	
	Non-operating	Max. 20 G (10 ms)	
Altitude	Operating	3,000 m (10,000 ft.)	
	Non-operating	12,000 m (40,000 ft.)	

RELIABILITY SPECIFICATIONS

Model		M2654S/H/HD
Mean time between failures (MTBF)		300,000 power-on hours
Mean time to repair (MTTR)		Less than 30 minutes
Component life		5 years or 20,000 hours*
Error rates	Recoverable errors	10 per 10 ¹¹ bits read
	Unrecoverable errors	10 per 10 ¹⁵ bits read
	Seek errors	10 per 10 ⁷ seeks

* Power-on hours under continuous use

Specifications are subject to change without notice. For the latest information, contact your local Fujitsu representative.

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