

APR 19 1985

OEM MICRODISK DRIVES

APR 20 1985

M224X Series

M2241AS/B

M2242AS/B

M2243AS/B

New Fujitsu 5¼-inch Winchester-type fixed disk drives provide 31.4 to 86.3 megabytes and 33 ms average positioning time.



M2243B



Fujitsu expands its 5¼-inch Winchester-type disk drive line with new large capacity, high-performance models – M224X series. The series consists of the M2241, the M2242, and the M2243. They provide up to 86.3 megabyte capacities and a 33 millisecond average positioning time. Each model is available in two types. Type AS has the ST412 interface, and type B has the SA4000 interface. Each model's disk enclosure is completely sealed, integrating three to six disks, four to eleven Whitney-type contact start-stop heads, a rotary voice coil motor (VCM), and a DC spindle motor. With these large capacities and fast positioning time, the M224X series disk drives are ideal for intelligent office systems which can handle even images, voices, and video data.

31.4 to 86.3 megabytes of storage

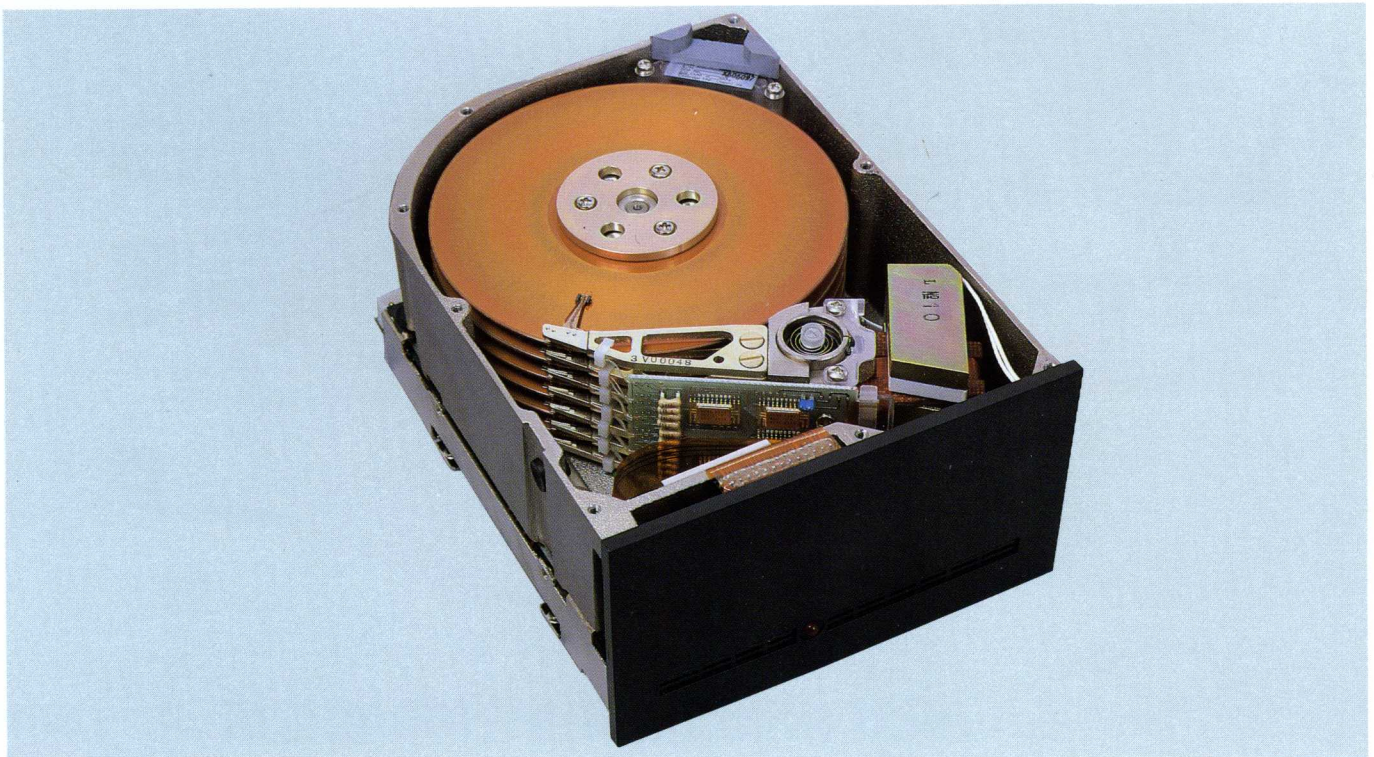
The M224X series disk drives have new large capacities which were available only with conventional 8-inch disk drives. The M2241 is provided with 31.4 megabytes, the M2242 with 54.9 megabytes, and the M2243 with 86.3 megabytes – all unformatted.

High performance

The M224X series has achieved fast positioning times – 8 milliseconds track-to-track, 33 milliseconds average, and 60 milliseconds maximum, including the settling time. The data transfer rate is 625 kilobytes per second. Also the start time is less than 20 seconds, and a dynamic brake reduces the stop time to less than 15 seconds.

Microprocessor controlled

The M224X series' voice coil motor is controlled by a microprocessor. As a result, the seek control circuit is greatly simplified and reliability is further increased.



M2243B

Reliable, maintenance free

The completely sealed disk enclosure contains a breathing filter and a recirculation filter to provide a contamination-free environment. Whitney-type contact start-stop heads eliminate moving parts for head loading and unloading. All models use LSI drive logic, and the Head IC prevents read errors caused by external electrical noise. With these features, the drives' mean-time-between-failure (MTBF) is 20,000 power-on hours, and their mean-time-to-repair (MTTR) is less than 30 minutes.

Compact, economical

The M224X series' large capacities and high performances have not been achieved at the expense of their compactness. Their physical size is the same as that of a minifloppy disk drive, and can be installed in minifloppy disk drive cabinets to increase storage capacity. They can be mounted horizontally or vertically. Each disk drive consumes only 30 watts. Noise and vibration have also been minimized. These features make the drives ideal choice for office applications.

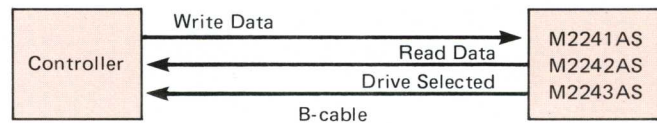
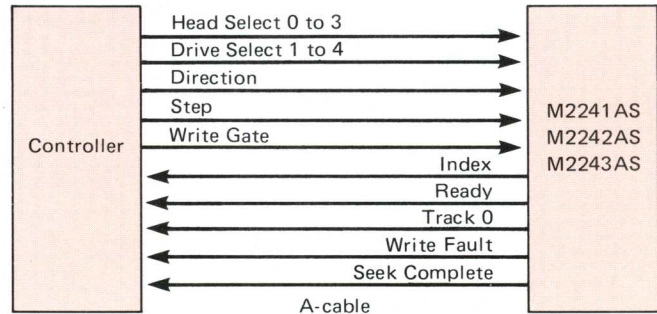
ST412 and SA4000 interfaces

The type AS models have the ST412 interface, an internationally used modified floppy interface for 5¼-inch disks. The type B models provide the SA4000 interface, a widely used modified floppy interface for 8- and 14-inch disks. The type B models include a data separator for improved data integrity. The type B models also offer an optional control board for a bidirectional data bus interface and a simplified host interface. Since the control board is the same size as the main printed circuit board, it can be mounted over the main board, making system design much easier.

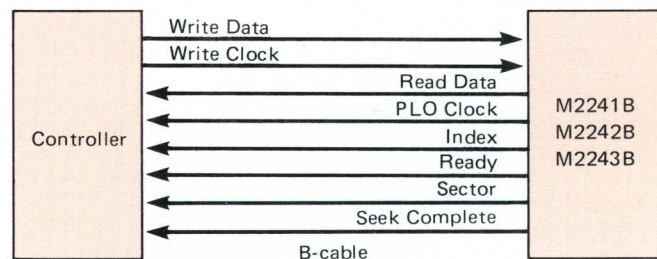
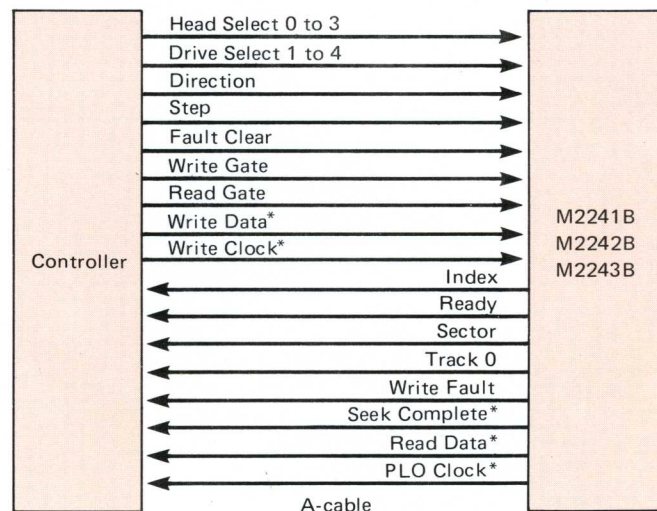
Internationally compatible

The M224X series disk drives use low-voltage DC power of +12V and +5V, permitting international applications and freedom from the effects of power line fluctuations.

ST412 interface



SA4000 interface



* Signal lines are connected by turning on the corresponding switches on the printed circuit boards.

FUNCTIONAL SPECIFICATIONS

		M2241AS	M2242AS	M2243AS	M2241B	M2242B	M2243B
Storage capacity	Unformatted	31.4 megabytes	54.9 megabytes	86.3 megabytes	31.4 megabytes	54.9 megabytes	86.3 megabytes
	Formatted	24.7 megabytes	43.2 megabytes	67.9 megabytes	24.7 megabytes	43.2 megabytes	67.9 megabytes
Disks (5¼-inch)		3	4	6	3	4	6
Heads	Read/write	4	7	11	4	7	11
	Servo	1	1	1	1	1	1
Track capacity	Unformatted	10,416 bytes					
	Formatted	8,192 bytes (32 sectors)					
Tracks per cylinder		4	7	11	4	7	11
Cylinders		754					
Sectors		32			16 or 32		
Positioning time (including settling time)	Track-to-track	8 milliseconds					
	Average	33 milliseconds					
	Maximum	60 milliseconds					
Average latency time		8.3 milliseconds					
Rotational speed		3,600 rotations/minute					
Recording density		10,200 bits/inch					
Track density		760 tracks/inch					
Data transfer rate		625 kilobytes/second					
Recording code		MFM (Modified Frequency Modulation)					
Interface code		MFM (Modified Frequency Modulation)			NRZ (Non-Return-to-Zero)		
Interface		Modified Floppy (ST412 interface)			Modified Floppy (SA4000 interface) Option: control board		
Head positioning method		Rotary voice coil motor					
Start time		Less than 20 seconds					
Stop time		Less than 15 seconds					

RELIABILITY SPECIFICATIONS

		M2241AS/B M2242AS/B M2243AS/B
Mean-time-between-failures (MTBF)		20,000 power-on hours
Mean-time-to-repair (MTTR)		30 minutes
Component life		5 years
Error rates	Recoverable errors	10 per 10 ¹¹ bits read
	Unrecoverable errors	10 per 10 ¹³ bits read
	Seek errors	10 per 10 ⁷ seeks

PHYSICAL SPECIFICATIONS

		M2241AS M2242AS M2243AS	M2241B M2242B M2243B
Power requirements (typical)		12 VDC±5% 1.8 A (max. 4.8 A) 5 VDC±5%, 1.6 A	12 VDC±5% 1.8 A (max. 4.8 A) 5 VDC±5%, 1.6 A
Dimensions	Height	83 mm (3.3 in)	
	Width	146 mm (5.7 in)	
	Depth	203 mm (8.0 in)	
Weight		3 kg (6.6 lb)	
Ambient temperature	Operating	5°C to 45°C (41°F to 113°F)	
	Not 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% (non condensing)	
	Not operating	5% to 95% (non condensing)	
Vibration and shock resistance	Operating	Max. 0.2 G (3 Hz to 100 Hz) Shock: max. 2 G (max. 10 ms)	
	Not operating	Max. 0.4 G (3 Hz to 100 Hz) Shock: max. 20 G (max. 10 ms)	
Altitude	Operating	3,000 m (10,000 ft)	
	Not operating	12,000 m (40,000 ft)	

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

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North American contact:

FUJITSU AMERICA INC. 3055 Orchard Drive, San Jose, CA 95134, USA Phone: (1-408)946-8777 Telex: 230-176207 TWX: (910)338-2193

European contact:

FUJITSU EUROPE LTD. Royal Trust House, 54 Jermyn St., London, S.W. 1, England Phone: (44-1)408-0043 Telex: 51-263871

FUJITSU ELEKTRONIK GmbH. Sonnenstraße 29, D-8000, Munich 2, F.R. Germany Phone: (49-89)592891 Telex: 41-5213994

FUJITSU ITALIA S.p.A. Via Lazzaroni No. 4, 20124 Milano, Italy Phone: (39-2)607-3601

FUJITSU NORDIC AB Kungsgatan 44, 111 35, Stockholm, Sweden Phone: (46)08-231125 Telex: 54-13411

Australasian contact:

FACOM AUSTRALIA LTD. 41 McLaren St., North Sydney, N.S.W. 2060, Australia Phone: (61-2)922-1822 Telex: 71-25233

FUJITSU LIMITED

Communications and Electronics

6-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100, Japan

Phone: National (03) 216-3211 International (Int'l Prefix) 81-3-216-3211 Telex: J22833 Cable: "FUJITSULIMITED TOKYO"

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