

SCSI Configuration Chart

DESCRIPTION

The OMTI 7000 Series High Performance Multifunctional Data controller is designed to attach ESDI & ST506/412 interface compatible Winchester disks, 3 1/2, 5 1/4 and 8 inch flexible disks, and QIC-02 interface compatible streaming tape drives to a wide variety of computer systems via the industry standard SCSI host interface.

The Small Computer System Interface (SCSI) used on the OMTI 7000 Series is designed to provide device independence for multi-tasking systems for host computers sharing the same bus.

The OMTI 7000 Series include the OMTI VLSI controller chip set consisting of the OMTI 5050 Data Sequencer, the OMTI 5060 DMA controller, the OMTI 5070 (or the OMTI 5027) Data Separator and the OMTI 5080 SCSI Multifunctional device.

HIGH PERFORMANCE

The OMTI 7000 Series controllers provide various features well suited for high performance multi-tasking systems including: **Disconnect/Reconnect** functions to minimize bus occupation during time consuming drive operations (Seeks, Rewinds, Cylinder switch etc. . .).

Arbitration support allowing a multi-host/multi-target SCSI bus configuration.

Multi-threading operations allowing concurrent commands to be executed simultaneously on all LUNs of a 7000 Series controller from the same or different hosts.

Consecutive sector (non-interleaved) data transfer.

Multisector buffering (16K or 32K or 64Kbytes) between host and peripherals.

Fast SCSI bus transfer rate, up to 1.6 Megabytes per second.

Ring buffer with four independent ports allowing simultaneous transfers between disk drives, SCSI bus and Tape drive.

ESDI Disk drive interface support with up to 10 megabits transfer rate.

Automatic Defective Sector Handling minimizing access time and alternate spare locations for defects.
Up to 8 Logical Unit numbers supported.

EASE OF SYSTEM INTEGRATION

Device Independence & Auto Configure functions simplify host software by storing drive parameters on the disk.

User Programmable Defective Sector handling.

User Programmable error recovery procedures.

Common Command Set (CCS) supported providing true market second source and solving software drivers compatibility issues.

SCSI message system.

ESDI & ST506/412 disk drive interfaces supported allowing drive upgrade with no need to modify software driver.

Command Linking & Queuing frees the hosts from multiple task management overhead.

Multiple drive interface to reduce system cost.

HIGH RELIABILITY

Sophisticated computer generated ECC polynomials (32 bits and 48 bits).

Automatic retries.

Bus Parity Checking.

Automatic handling of media defects prevents disk defects from corrupting Input/Output information.

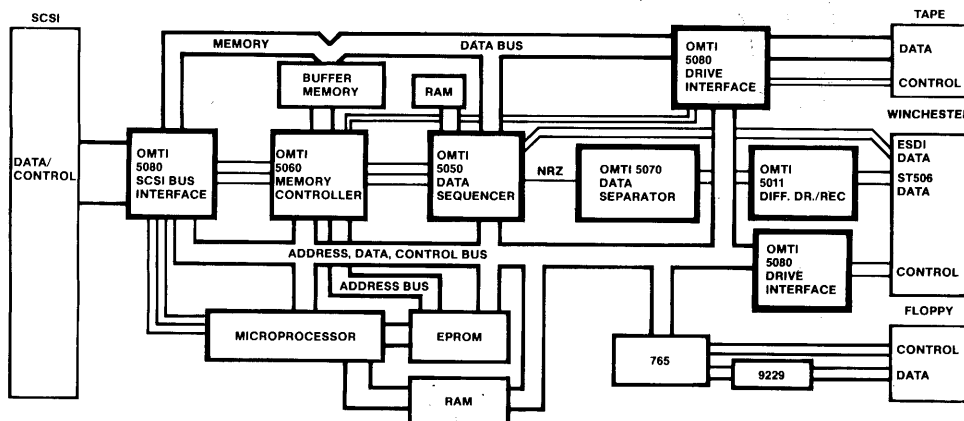
Reserve/Release commands offload the system from tracking file protections.

Diagnostic commands are provided.

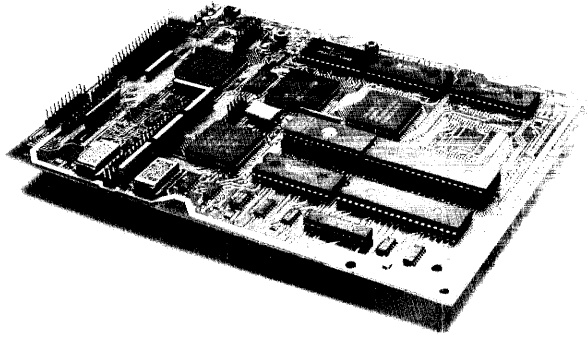
Use of Surface Mount Technology devices and the CMOS VLSI OMTI low consumption chip set for improved reliability.

Requires +5V Power Only.

7400 CONTROLLER BLOCK DIAGRAM



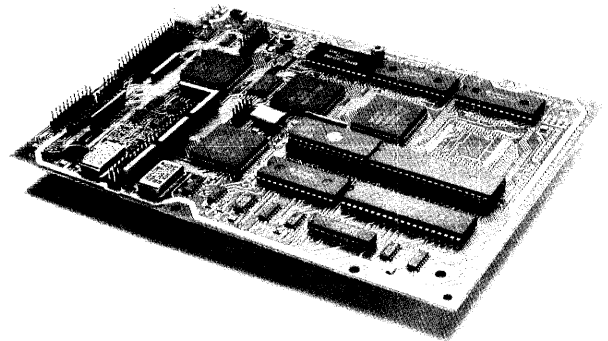
OMTI 7100 High Performance SCSI Controller for ST506/412 and ESDI interface compatible Disk drives.



OMTI 7100

The OMTI 7100 Disk controller supports up to two Winchester Disk drives which can be any combination of ST506/412 or ESDI, Fixed or Removable disks. Up to two LUNs are supported. The drives can have up to 16 heads and 65536 cylinders and be hard or soft sectored. The OMTI 7100 can transfer a full track in one single revolution, provides spiral reads/writes and transfer data on the SCSI bus at up to 1.6 Megabyte per second. The block size can be 256, 512, 1024 or 2048 (ESDI) bytes per sector. See Winchester Disk features.

OMTI 7200 High Performance Multifunctional SCSI Controller for ST506/412 and ESDI interface compatible Disk drives & 3 1/2 inch, 5 1/4 inch or 8 inch Flexible Disk drives.



OMTI 7200

The OMTI 7200 multifunctional controller supports up to six drives, of which up to two can be Winchester Disk drives, (same drive types as 7100 model), and up to four can be 3 1/2 inch, 5 1/4 inch or 8 inch, 250Kbits, 300Kbits or 500Kbits transfer rate, single or double density, single or double sided Flexible disk drives.

SUPPORTED DEVICES

The 7000 Series support a minimum of two LUNs (Logical Unit Number) and a maximum of seven LUNs.

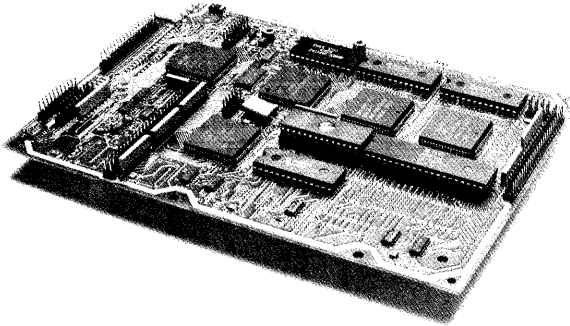
	ST506/412 & ESDI WINCHESTER DISK DRIVES	3 1/2", 5 1/4" & 8" FLEXIBLE DISK DRIVE	QIC-02 1 1/4 INCH TAPE DRIVE
7100	up to 2 Winchesters		
7200	up to 2 Winchesters	up to 4 Floppies	
7300	up to 2 Winchesters		1 Tape
7400	up to 2 Winchesters	up to 4 Floppies	1 Tape

Note: Eight inch Flexible Disk drives are connected to the 7200 and 7400 through an OMTI 528 (34 to 50 pin) adapter board.

SPECIFICATIONS

	OMTI 7100	OMTI 7200	OMTI 7300	OMTI 7400
Size:	5.75"×8"	5.75"×8"	5.75"×8"	5.75"×8"
Current:	1.5 Amp	1.8 Amp	1.8 Amp	2.0 Amp
Voltage:	+5VDC (+/-5%)	+5VDC (+/-5%)	+5VDC (+/-5%)	+5VDC (+/-5%)
Max. Ripple & noise:	100 mVolts	100 mVolts	100 mVolts	100 mVolts
Temperature:	0 to 50 degrees Celsius	0 to 50 degrees Celsius	0 to 50 degrees Celsius	0 to 50 degrees Celsius
Relative Humidity:	10% to 95%	10% to 95%	10% to 95%	10% to 95%
Max. Wet Bulb:	30° C Noncondensing	30° C Noncondensing	30° C Noncondensing	30° C Noncondensing
Altitude:	0-10000ft (Oper.) 0-15000ft (Storage)	0-10000ft (Oper.) 0-15000ft (Storage)	0-10000ft (Oper.) 0-15000ft (Storage)	0-10000ft (Oper.) 0-15000ft (Storage)

OMTI 7300 High Performance Multifunctional SCSI Controller for ST506/412 and ESDI interface compatible Disk drives & QIC-02 Compatible Streaming Tape drive.



OMTI 7300

The OMTI 7300 multifunctional controller supports up to three drives, of which, up to two can be Winchester Disk drives (same drive types as 7100 model), and the remaining one can be a QIC-02 Interface compatible Streaming Tape drive.

FEATURES

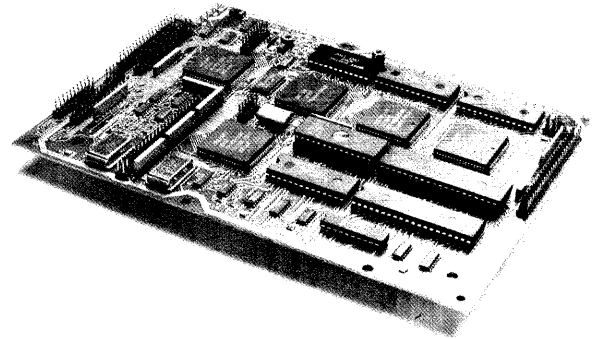
General

- Full SCSI Industry standard Host Interface. (Revision 17 implementation)
Winchesters + Floppies + Tape supported.
- Up to 1.6 Megabyte per second asynchronous host transfer rate.
Consecutive sector transfer (or non-interleaved data transfer).
SCSI Single Ended Drivers/Receivers.
Compact boards (5.75" by 8").
SCSI bus parity generation and checking. Jumper selectable.
- Multiple Host/Multiple controllers addressing (up to 8).
- Bus Arbitration, Disconnect/Reconnect, Message System.
- Multi Threading, Multi Tasking systems.
- Device Independence & Auto Configure.
Automatic error retries.
Limited part count.
- Ring Buffer Type of 16K or 32K or 64Kbytes.
Requires 5 volts only. Consumes 2 amps max.
- Command Linking & Queuing.
- Jumper selectable SCSI Power Termination.

Winchester Disks

- ESDI & ST506/412 interface compatible disk.
Supports Fixed & Removable disks.
Supports Hard & Soft sectored disks (ESDI & ST 506/412).
Supports up to 16 heads and up to 65K cylinders.
Can transfer a full track in one revolution.
- Automatic Handling of media defects at sector level.
- Defect Lists stored on disk.
- 256, 512, 1024 & 2048 (ESDI) bytes per sector.

OMTI 7400 High Performance Multifunctional SCSI Controller for ST506/412 and ESDI interface compatible Disk drives & QIC-02 Compatible Streaming Tape drive & 3½ inch, 5¼ inch and 8 inch Flexible Disk drives.



OMTI 7400

The OMTI 7400 multifunctional controller supports up to seven drives, of which up to two can be Winchester Disk drives (same drive types as 7100 model), up to four can be Flexible Disk drives (same drive types as 7200 model), and one QIC-02 Interface Compatible Streaming Tape drive. For systems requiring Winchester disk, Flexible disk and Tape drive, the OMTI 7400 offers significant system benefits over multiple single peripheral controllers or over SCSI drives of different types.

- Multi block data transfer (up to 64K blocks).
Programmable number of sectors per track.
Programmable Disk parameters.
Implied seeks.
Logical Block addressing.
Automatic Head & Cylinder switching.
Programmable Interleaving.
- 32 & 48 bits ECC detection & correction.

Flexible Disks

- Supports 250Kbits, 300Kbits & 500Kbits/sec transfer rate.
Supports 3½", 5¼" and 8" drives.
Programmable sector size.
Programmable number of sectors per track.
Popular Floppy formats supported.
- Support of High Density (AT compatible) floppies.
- Floppy Motor Speed Control.

Tape Drive

Supports QIC-02 Compatible Streaming Tape drive.
Supports QIC-02 Parity.
Three Data paths: Host to Tape, Host to Disk, Disk to Tape.
Forward Spacing allowed per blocks, per File Marks or to End of Data recorded.
Verify Media integrity, Tape Retention and Erase Tape functions provided.

- Differs with the OMTI 5000 series multifunctional controllers.

OMTI 7000 SERIES SCSI COMMAND SET SUMMARY

Select.	Command	Code (Hex)	Length (Bytes)	Device	Data Length (Bytes)
1-2	TEST UNIT READY	00	6	W-F-T	0
1-2	REZERO UNIT	01	6	W-F-T	0
1-2	REQUEST SENSE	03	6	W-F-T	14
1-2	FORMAT UNIT	04	6	W-F-T	Host Dependent
1	CHECK TRACK FORMAT*	05	6	W	0
1	FORMAT TRACK*	06	6	W-F	0
-2	REASSIGN BLOCKS	07	6	W	Host Dependent
1-2	READ	08	6	W-F-T	Up to 256 Blocks
1-2	WRITE	0A	6	W-F-T	Up to 256 Blocks
1-2	SEEK	0B	6	W-F	0
1	ASSIGN ALT. TRACK*	0E	6	W	4 Bytes
-2	WRITE FILE MARKS	10	6	T	0
-2	INQUIRY	12	6	W-F-T	36 Bytes
-2	MODE SELECT	15	6	W	Host Dependent
-2	RESERVE UNIT	16	6	W-F-T	0
-2	RELEASE UNIT	17	6	W-F-T	0
-2	COPY	18	6	TBD	Programmable
-2	ERASE	19	6	T	Programmable
-2	MODE SENSE	1A	6	W-F-T	Programmable
1	CHANGE CARTRIDGE*	1B	6	W-F	0
-2	START/STOP UNIT	1E	6	W-F	0
-2	LOAD/UNLOAD	1E	6	T	0
-2	SEND DIAGNOSTIC	1D	6	D	0
1	COPY*	20	12	W-F	Programmable
-2	READ CAPACITY	25	10	W	8 Bytes
-2	READ (Extended)	28	10	W-F-T	Up to 64K Blocks
-2	WRITE (Extended)	2A	10	W-F-T	Up to 64K Blocks
-2	WRITE and VERIFY	2E	10	W-F	Up to 64K Blocks
-2	VERIFY	2F	10	W-F	Up to 64K Blocks
-2	SEEK (Extended)	2E	10	W-F	
-2	READ DEFECT DATA	37	10	W	Drive Dependent
-2	READ DATA BUFFER	3E	10	D	Programmable
-2	WRITE DATA BUFFER	3C	10	D	Programmable
1	DEFINE FLEXIBLE DISK FORMAT*	C0	10	F	10
1	ASSIGN DISK PARAMETERS*	C2	6	W-F	10
1	RAM DIAGNOSTICS*	E0	6	D	0
1	READ ID*	E2	6	W-F	4 Bytes
-2	READ LONG	E8	6	W	Programmable
-2	WRITE LONG	EA	6	W	Programmable
1	READ BUFFER*	EC	6	D	One Block
1	WRITE BUFFER*	EF	6	D	One Block

W = Winchester (All models) F = Floppy (7200,7400) T = Tape (7300,7400) D = Diagnostic

Notes: - The bold commands are commands not supported in the OMTI 5000 Series.

- Select. is jumper selectable command set.

- * These commands are not defined in the ANSC X3T9.2 SCSI specifications. Implemented with vendor unique codes in the 7000 Series, these commands provide software compatibility with the OMTI 5000 Series controllers.

SMS Scientific Micro Systems, Inc.

Corporate: 339 N. Bernardo Avenue, Mountain View, CA 94039 (415) 964-5700
TWX: 910-3379-6577 TELEX: 172555

Northeast: 40 Lowell Street, Suite 13, Peabody, MA 01960 (617) 246-2540

Southeast: 21 Covington Road, Avondale Estates, GA 30002 (404) 296-2029

Central: 9238 Mango Drive, Morton Grove, IL 60053 (312) 966-2711

North Central: 1526 N. 31st Street, Melrose Park, IL 60160 (312) 345-5320

South Central: 2400 Hilldale Boulevard, Arlington TX 76016 (817) 429-8527

Northwest: 20427 N.E. 162nd Street, Woodinville, WA 98072 (206) 883-8303

South Atlantic: 2300 West Meadowview Road, Suite 118, Greensboro, NC 27407
(919) 292-8072

Mid Atlantic: 115 Spring Garden Mill Drive, Newtown, PA 18940 (215) 860-8626

Distributors:

United States - Arrow Electronics, Inc.

(516) 694-6800

Canada - Allan Crawford Associates Ltd

(416) 678-1500

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