

Maxtor XT-8760E Product Specification

MODEL XT-8760E

Interface: ESDI

RLL 1,7 Encoding

Capacity, Unformatted

Capacity, Formatted ESDI Compatible

Per Drive (Mbytes) : 768.92
Per Surface (Mbytes) : 51.26
Per Track (Bytes) : 31,410

Per Drive (Mbytes) : 676.82
Per Surface (Mbytes) : 45.12
Per Track (Bytes) : 27,648
Per Sector (Bytes) : 512

Parameters

Performance Specifications

Cylinders : 1632
Data Heads : 15
Sector\Track : 54
Pre-Comp NONE

Transfer rate, Mbits/sec : 15
Access Time (Average) : 18.0msec
Access Time (Track-To-Track): 3.0msec
Access Time (Maximum) : 35msec

MTBF: 150,000 Hours (POH)

Dimensions(Inches): 3.25" x 5.75" x 8.20"

Power Requirements: +12VDC +\− 5%. 1.5A Typical, 4.5A Maximum
+ 5VDC +\− 5%. 1.7A Typical, 1.9A Maximum

NOTE: The 2 most common ways to Low Level Format this drive are:

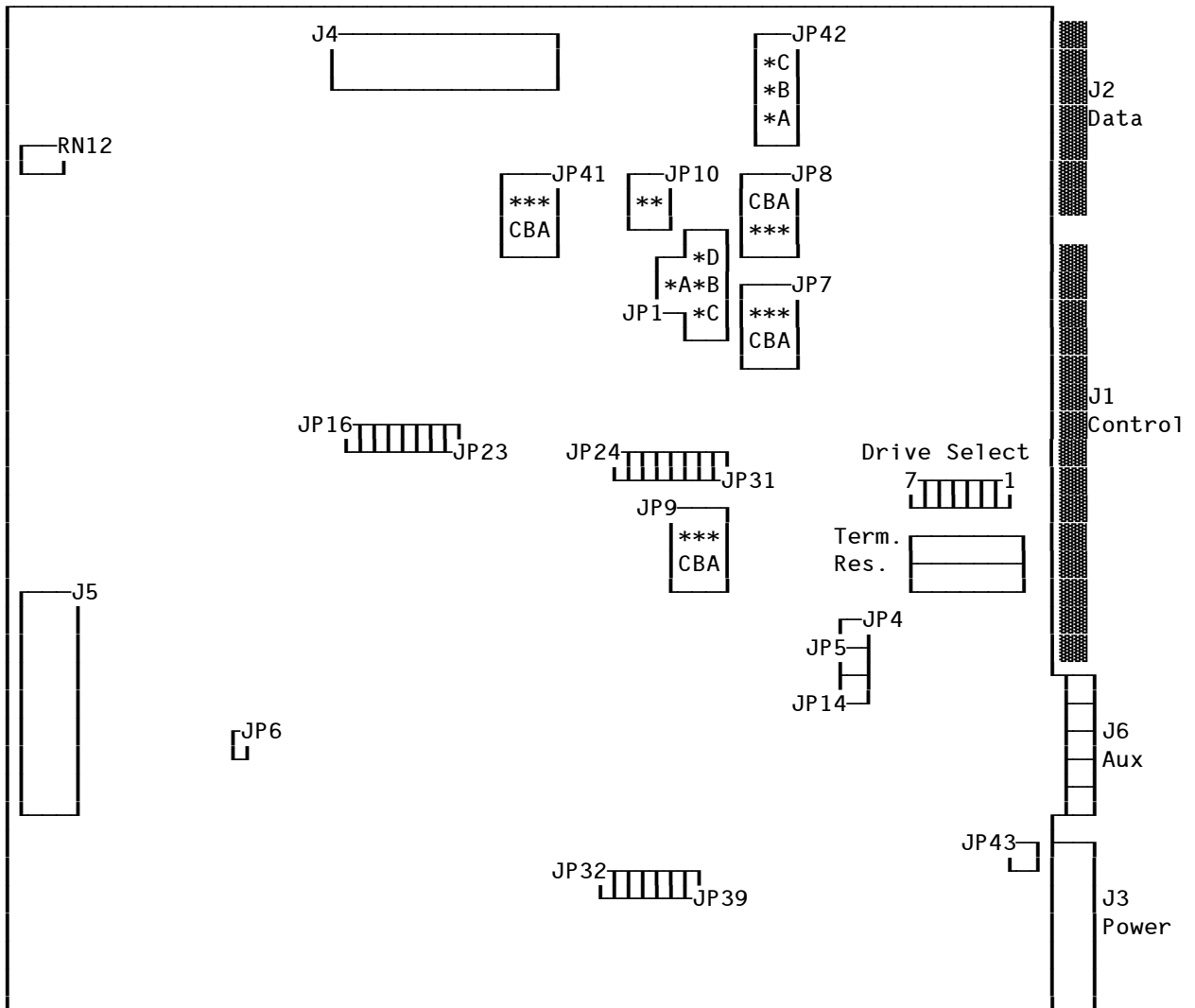
Method 1 is the debug utility. Please follow the Controller Low Level Format instructions your Distributor has provided to you.

Method 2 is Ontrack Corporation's Generic Disk Manager. Again, please follow the instructions that Ontrack provides with this software package.

PCB Identification

The PCB part number can be found on a label attached to the J3 DC power input connector or on the drive serial number label.

PCB Part Number 1014520



Jumper setting

(IN) = Jumper installed by default
(OUT) = Jumper removed by default

Drive Address Selection Jumper

Drive Select Number	Jumper Installed
1 (IN)	DS1
2 (OUT)	DS2
3 (OUT)	DS3
4 (OUT)	DS4
5 (OUT)	DS5
6 (OUT)	DS6
7 (OUT)	DS7

In multidrive configurations, it is necessary to configure each drive with a unique address. A maximum of seven drives is permitted per host controller. The address for the drive is determined by installing the jumper plug in the appropriate jumper location.

Removing the jumper entirely is equivalent to "no select".

Jumper Selections PCB Part Number 1014520

Jumper	Type	Description
JP1 B-C	F	Encoded Write Data
JP4 (OUT)	F	Out = 1,7 Encoding
JP5 (IN)	F	In = 15 Mbit/sec Transfer Rate (Hard Wire)
JP6 (IN)	C	In = Motor Remote Spinup Option Disabled OUT = Motor Remote Spinup Option Enabled
DS1-DS7	C	Drive Select
JP7 B-C	C	Read Gate Delay Option
JP8 (OUT)	C	Read Gate Delay Option
JP9 A-B	C	INDEX Width Selection, AB = 2.8 sec. BC = 70 s.
JP10 (IN)	F	Write Current Select (Hard Wired)
JP14 (OUT)	C	In = Write Protect
JP16-JP29	C	Hard Sector Size
JP30 (IN)	C	Out = Disable ESDI Programmable Sector Size (Hard Sector Mode Only) IN = Enable ESDI Programmable Sector Size (Hard Sector Mode Only)
JP31 (OUT)	C	In = Soft Sector Mode Out = Hard Sector Mode
JP32-JP35	F	Drive Model Selection
JP36 (OUT)	F	Reserved
JP37	F	Bytes per PLO Sync Field
JP38 (OUT)	F	Reserved
JP39	F	Bytes per PLO Sync Field
JP41 (OUT)	F	Test Pins (Differential Data Read Signals)
JP42 B-C	F	Write Enable Select
JP43 (IN)	F	Test Out Disables Onboard ROM

C = Customer Configurable, F = Factory Select

JP37/39 Bytes per PLO Sync Field

JP39	JP37	Bytes per PLO Sync Field
OUT	OUT	14
OUT	IN	24
IN	OUT	14
IN	IN	12*

* This value applies only to drives with firmware revision level M2.2 or higher, otherwise this value is undefined.

Read Gate Delay Jumpers

Jumpers JP7 and JP8 have been provided to allow a specified delay to be set on the read gate received by the controller. As shipped by the factory, these jumpers are configured for zero delay. During application testing, Maxtor has found that many controllers require some delay. Maxtor recommends trying 533ns. There is no risk of data corruption, however RECORD NOT FOUND errors may occur in testing various settings.

Nominal Delay nsec	JP8		JP7	
	A-B	B-C	A-B	B-C
0	0	0	0	0
423	S	0	S	0
533	0	S	S	0
633	S	0	0	0
933	0	S	0	0
1233	0	0	S	0

0 = OPEN, S = SHORT

JP32-JP35 Model Selection Jumpers

Jumpers JP32 through JP35 can be configured to set up to eight customer unique model numbers.

Jumper				Request Configuration, Vendor ID(3F00h)			
				Before the first start spindle command is executed (5300h)*		After drive is ready	
JP35	JP34	JP33	JP32			8380E	8760E
IN	IN	IN	IN	0801h	0802h	0801h	0806h
IN	IN	IN	OUT	0821h	0822h	0821h	0826h
IN	IN	OUT	IN	0841h	0842h	0841h	0846h
IN	IN	OUT	OUT	0861h	0862h	0861h	0866h
IN	OUT	IN	IN	0881h	0882h	0881h	0886h
IN	OUT	IN	OUT	08A1h	08A2h	08A1h	08A6h
IN	OUT	OUT	IN	08C1h	08C2h	08C1h	08C6h
IN	OUT	OUT	OUT	08E1h	08E2h	08E1h	08E6h
OUT	IN	IN	IN	0802h	0802h	0801h	0806h
OUT	IN	IN	OUT	0822h	0822h	0821h	0826h
OUT	IN	OUT	IN	0842h	0842h	0841h	0846h
OUT	IN	OUT	OUT	0862h	0862h	0861h	0866h
OUT	OUT	IN	IN	0882h	0882h	0881h	0886h
OUT	OUT	IN	OUT	08A2h	08A2h	08A1h	08A6h
OUT	OUT	OUT	IN	08C2h	08C2h	08C1h	08C6h
OUT	OUT	OUT	OUT	08E2h	08E2h	08E1h	08E6h

* The information in this table assumes that JP6 is out; drive is in the remote spin mode. If JP6 is in, ignore this column. This table applies only to drives with firmware revision level M2.2 and higher.

JP14 Write Protect Selection Jumper

Jumper JP14 is the write protect jumper. When the jumper is present (installed), the drive is write protected and can only be read; no writing can take place. As shipped from the factory, jumper JP14 is removed.

JP6 Sequential Spindle Motor Spinup Jumper

The spindle motor spinup jumper allows a string of drives to be started sequentially by the controller. When the jumper is present (installed), the drive automatically spins up as soon as power is applied. If JP6 is removed, the drive is started by issuing the appropriate command from the controller. As shipped from the factory, jumper JP6 is installed.

JP16–JP29 Hard Sector Configuration Jumper

JP31 selects the mode of operation. When JP31 is installed, it configures the drive as a soft sector drive; when removed, it configures the drive as a hard sector drive.

Jumper JP16 through JP29 allow the user to configure the drive's hard sector size. The sector size can range from a minimum of 123 to a maximum of 31,410 unformatted bytes per sector, with 1 byte granularity.

The hard sector configuration jumpers are encoded in a binary fashion, with JP16 being the least significant byte and JP29 being the most significant byte. An installed jumper selects the binary value.

Jumper JP30, if installed, enables setting the hard sector size over the ESDI. The drive must be in hard sector mode (i.e. JP31 removed).

Jumper	Binary Value for each jumper*	52SpT 604Byte	53SpT 592Byte	54SpT 581Byte
JP16	1	0	0	S
JP17	2	0	0	0
JP18	4	S	0	S
JP19	8	S	0	0
JP20	16	S	S	0
JP21	32	0	0	0
JP22	64	S	S	S
JP23	128	0	0	0
JP24	256	0	0	0
JP25	512	S	S	S
JP26	1024	0	0	0
JP27	2048	0	0	0
JP28	4096	0	0	0
JP29	8192	0	0	0

*Used to Determine the Number of Unformatted Bytes/Sector
0 = OPEN, S = SHORT

Customer Configurable Default Settings

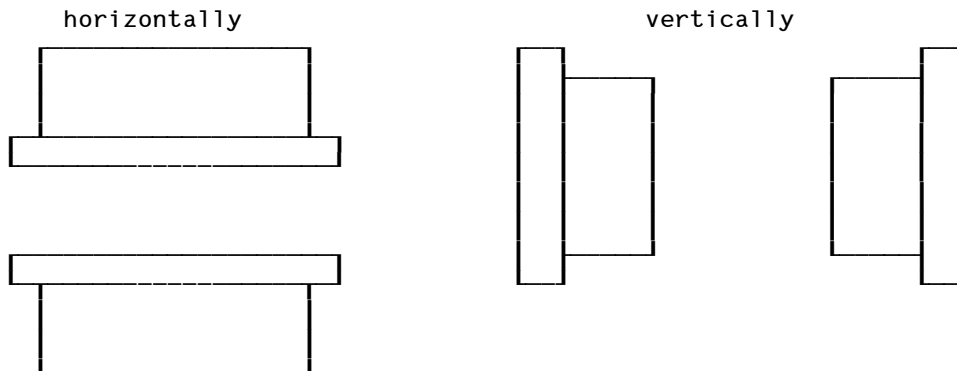
Customer configuration default settings as shipped from the factory are identified for PCB 1015468 and PCB 1014520

JP6	Installed	Automatic Spinup as soon as power is applied
JP7	B-C	Read Gate Delay = 0ns
JP8	Removed	Read Gate Delay = 0ns
JP9	A-B	2 sec INDEX pulse
DS1-DS7	DS1	Drive Select 1
JP14	Removed	Write Operation Allowed
JP16-JP29	JP18,JP19, JP20,JP22, JP25-installed	604 Bytes/Sec = 52 Sec/Track
JP30	Installed	Enable ESDI Programmable Sector Size Over Interface
JP31	Removed	Hard Sector Mode
JP37	Removed	14 Byte PLO Sync Field

This table applies only to drives with firmware rev. levels below M2.2.

Notes on Installation

Installation direction



The drive will operate in all axis (6 directions).

Mounting

The XT-8000E may be mounted in any orientation. In any final mounting configuration, ensure that the operation of the three shock mounts which, isolate the base casting from the frame is not restricted.

Certain switching power supplies may emanate electrical noise, which can degrade the specified read error rate. For best results, orient the drive so that the PCB assembly is not adjacent to these noise sources.

Mounting Holes

Eight mounting holes, four on the bottom and two on each side, are provided for mounting the drive into an enclosure. The size and location of these holes are identical to industry standard floppy drives.

Caution: The casting is very close to the frame mounting holes in some locations. Mounting screws lengths must be chosen such that no more than 0.125 inch of the screw

is available to enter the frame mounting hole. The torque applied to the mounting screws must be between 9 and 12 inch pounds.

Installation Requirements

The XT-8000E must operate in a temperature range between 50°F and 122°F (10°C and 50°C). The drive should be installed in applications where temperature extremes outside of this range are avoided.

To maintain proper operating temperature, the XT-8000E must be mounted in such a way as to ensure adequate airflow.

Caution: These requirements must be met to ensure proper functioning of the drive. If they are not met, data loss and/or permanent damage to the drive will result.

J1/P1 Connector

Connection to J1 is via a 34-pin OCB edge connector. The pins are numbered 1 through 34 with the even pins located on the component side of the PCB. Pin 2 is located on the end of the PCB connector closest to the DC power connector J3/P3. A key slot is provided between pins 4 and 6. The recommended mating connector for P1 is AMP ribbon connector, P/N 88373-3.

J2/P2 Connector

Connection to J2 is via a 20-pin PCB edge connector. The pins are numbered 1 through 20 with the even pins located on the component side of the PCB. The recommended mating connector for P2 is AMP ribbon connector, P/N 88373-6. A key slot is provided between pins 4 and 6.

J3/P3 Connector

The DC power connector, (J3), is a 4-pin AMP MATE-N-LOCK connector, P/N 350543-1 mounted on the solder side of the PCB. The recommended mating connector (P3) is AMP P/N 1-480424-0 using AMP pins P/N 350078-4 (strip) or P/N 61173-4 (loose piece).

J4/P4 Frame Ground Connector

The frame ground connector is a Faston type connector, AMP P/N 61761-2. The recommended mating connector is AMP P/N 62187-1. If wire is used, the hole in J4 will accommodate a maximum wire size of 18 AWG. Normally, this connector is not used.

J6/P6 Auxiliary Connector

The auxiliary connector is a Berg 68451-121, 10 pin connector. The mating connector is a 3M 3473-6010 connector.

Removable Faceplate

The faceplate may be removed in installations where it is not required. Remove the two e-clips and unplug the LED cable from the PCB.

Standards

UL 478, Standard for Safety, Electronic Processing Units and Systems.

CSA C22.2 No. 220, 1986, Information Processing and Business Equipment (Consumer and Commercial Products).

VDE 0806/8.81, Safety of Office Appliances and Business Equipment.

Only the last physical device on the control cable (J1) in a multi-string of drives should be terminated.

Seek Time

		8380E	8760E	8610E
Track-to-Track	msec. typ.	2.5	2.5	2.5
	msec. max.	3	3	3
Average	msec. typ.	14.5	16.5	16
	msec. max.	16	18	18
Full Stroke	msec. typ.	32	33	33
	msec. max.	35	35	35
Latency	msec. Avg.	8.33	8.33	8.33

Seek Time includes Settling Time.

Reliability Specifications

MTBF 150,000 Hours
PM None Required
MTTR 30 Minutes
Component Design Life 5 Years