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ZT 8954

Low Profile Floppy Disk Controller

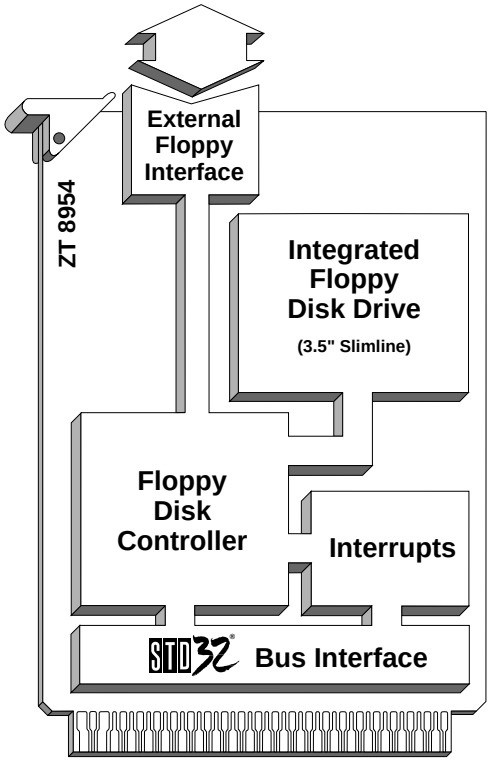
Low profile, low-power, integrated floppy disk interface for STD 32® industrial computer systems.

The ZT 8954 is an integrated floppy disk drive and controller for the STD 32 Bus. The entire assembly occupies a single slot through the use of highly integrated surface mount control logic and a low profile floppy disk drive. The ZT 8954 is intended for use with STD 32 CPU boards that have Direct Memory Access (DMA) capability.

The floppy disk drive does not use +12V, freeing the system of that requirement.

The IBM PC/AT®-compatible floppy disk controller used in the design of the ZT 8954 supports all floppy disk formats, including 360 and 720 Kbyte and 1.2 Mbyte formatted densities. Interface connectors are provided for 3.5" and 5.25" floppy drives. A remote mounting option allows the floppy disk drive to be located up to 21 inches from the STD 32 chassis.

The ZT 8954 is fully compatible with the STD 32 and STD Bus specifications. STD 32 is a superset of the original STD Bus that allows higher speed transfers as well as backplane DMA. The ZT 8954 takes advantage of the capabilities of the STD 32 Bus to provide maximum flexibility and performance.



- STD 32- and STD Bus-compatible
- Low profile one-slot integrated 3.5" option
- 3.5" and 5.25" floppy disk drive support
- High-performance Intel 82078-1 floppy disk controller
- PC-compatible design supporting DOS/Windows and other operating systems
- Direct Memory Access capability
- Integrated 16-byte FIFO
- Support for up to two disk drives
- ZT 260/310 Industrial Enclosure mounting option

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Functional Considerations

STD 32 Bus Interface

The ZT 8954 is compatible with Revision 1.2 of the STD 32 Specification and with the original STD-80 Specification, which is a subset of STD 32. The ZT 8954 is designed to work without any frontplane connections in STD 32 systems. When used in STD Bus card cages a frontplane DMA cable is required. All accesses to the ZT 8954 are 8 bits wide for programming and for DMA. The peripherals on board the ZT 8954 are I/O mapped, with full 16-bit address decoding. There are no memory peripherals on board.

Floppy Disk Interface

The Floppy Disk Controller (FDC) used on the ZT 8954 is register-compatible with the original controller used in the IBM PC. The floppy disk interface supports both 3.5" and 5.25" disk drives in formated capacities of 360 and 720 Kbytes, and 1.2 and 1.44 Mbytes.

The 8954-D1 includes a slimline 3.5" floppy disk drive with 1.44 Mbyte capacity support. This option allows the direct mounting of the floppy disk drive and controller into the STD 32 card cage slot. The ZT 8954 is also available without an integrated floppy disk for applications that require remote mounting of the floppy disk drive. This option is the ZT 8954-D0.

The 8954-D1M and ZT 2523 front plate should be ordered if the drive is to be installed in a ZT 260 or ZT 310 enclosure. This combination allows disks to be inserted into the ZT 8954 from outside the enclosure.

Software Support

The ZT 8954 is supported by Ziatech BIOS version 4.0 or greater.

Specifications

Specifications that include rotating media are based on the Sony MPF350 slimline 3.5" floppy drive drive.

Electrical

Excluding Floppy Disk Drive (ZT 8954-D0):

Power Req.	*Min.*	*Typ.*	*Max.*
Supply Voltage, V_{CC}	4.75V	5.0V	5.25V
Supply Current, V_{CC} = 5.0V	–	100mA	170mA

Integrated TTL Floppy Disk Drive (ZT 8954-D1/ Sony MPF350):

Power Req. (5V)	*Min.*	*Typ.*	*Max.*
Supply Voltage, V_{CC}	4.75V	5.0V	5.25V
Idle	–	105mA	–
Start-up peak	–	–	720mA
Read/Write	–	320mA	500mA
Motor Start	–	–	720mA
Motor Step	–	–	720mA

Mechanical

- Size- and backplane-compatible with STD 32 and STD-80 specifications
- STD 32 Slot Usage: 1 slot (0.5" or 2.7mm maximum component height)
- Weight
  ZT 8954-D0: 3 oz. (85g)
  ZT 8954-D1: 9 oz. (255.1g)
- Connectors
  J1: 10-pin latching frontplane DMA
  J2, J3, J4, J6: Floppy disk drive interface
  J5: Floppy disk drive power connector
- Shock
  Operating: 5g (11ms)
  Non-operating: 80g (11ms)
- Vibration
  Operating: 0.56g (10 to 500 Hz)
  Non-operating: 2.0g (10 to 500 Hz)

Environmental	*without drive*	*with drive (typ.)*
Operating Temperature	0° to 65° Celsius	5° to 45° Celsius
Storage Temperature	-40° to +85° Celsius	-20° to +60° Celsius
Non-Condensing Relative Humidity	less than 95% at 40° C	20% to 80% at 40° C

STD 32 Compliance

- I/O Slave: SA8-SDMA8, SDMABP, EDMAA, EDMAB, I, IXP, IXL

Note: SA8 is equivalent to STD-80 Series Rev. 2.3 (5 and 8 MHz).

Reliability

- MTBF: 25 years
- MTTR: five minutes (based on unit replacement)

Ordering Information

ZT 8954	Low Profile Floppy disk Controller
ZT M8954	Low Profile Floppy Disk Controller manual

Must choose one drive option:

Drive options

D0	No drive installed. Includes ZT 90077 remote mounting cable and power cable.
D1	Integrated slimline 1.44 Mbyte 3.5" floppy disk drive (one slot total)
D2	Remote mounting kit (includes drive)
D3	Integrated drive for use in STD-80 backplanes (3 slots total)
D1M	Integrated slimline 1.44 Mbyte 3.5" floppy disk drive for ZT 260 and ZT 310 card rack systems (2 slots total)

Accessories

Cable *(see Data Book cable section for details):*

ZT 90077	20" (50.8cm) dual floppy disk cable for use with ZT 8954-D0 only

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