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Find the *Ribbon / Performance Technologies / Ziatech ZT-88CT72* at our website: *Click HERE*

ZT 88CT72

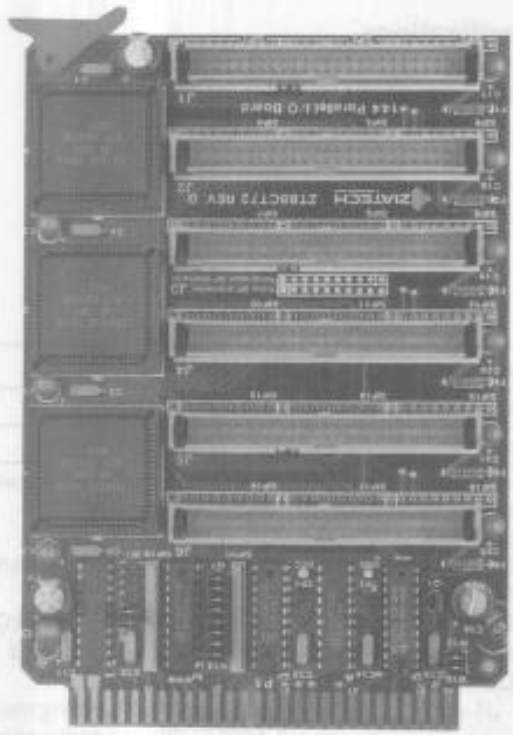
144-Point Digital I/O Interface

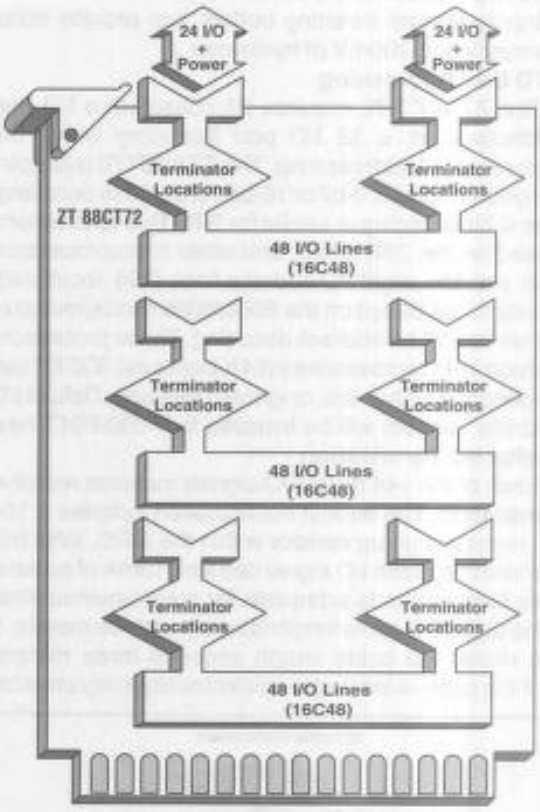
Interface provides 144 digital lines for I/O-intensive STD Bus computer applications

The ZT 88CT72 is a high-current, bidirectional interface providing 144 digital lines that interface STD Bus computers with instruments, peripherals, and industry standard signal conditioning racks such as those manufactured by Ziatech, Opto 22, Gordos, Crydom, Grayhill, Potter & Brumfield, etc.

The interface is designed for I/O-intensive STD computer applications that normally require multiple digital I/O cards. Application Specific Integrated Circuit (ASIC) technology on the interface allows system integrators to consolidate their I/O requirements, reducing system board count and cost while increasing system reliability.

The ZT 88CT72 combines low power consumption with an extended temperature operating range to accommodate harsh industrial or outdoor environments. It utilizes CMOS components but is also TTL backplane-compatible. The digital interface operates in temperatures ranging from -40° to +85° Celsius.





- STD 32®- and STD-compatible
- Selectable 8- or 16-bit I/O addressing
- 144 bidirectional digital I/O signals with termination
- 12mA sink current at V_{OL} of 0.4V
- Write-protect mask register for output registers
- Self-contained power-up reset circuitry
- Cables available for connection to I/O mounting racks
- Extended temperature operation (-40° to +85° C)
- Compatible with industry standard I/O signal conditioning modules
- Software support through device driver software (STD DDP)

Note: CT denotes CMOS, TTL backplane-compatible, and extended temperature operation of -40° to +85° C. (Users should make adjustments for temperature rise in enclosures.)

ZIATECH CORPORATION

Functional Considerations

Digital I/O Operation

The ZT 88CT72 includes 144 digital I/O signals. Each signal is individually programmable for input, output, or output with readback operation. The 144 signals are provided through six 50-pin latching connectors. Each connector is organized to provide 24 digital I/O signals with alternating grounds to improve noise immunity. Each connector also includes fused power (+5V at 1A), required by many industry standard I/O signal conditioning racks, such as those manufactured by Opto 22 and Ziatech.

Each output point provides low true, open collector, non-glitching operation. Non-glitching outputs are desirable to prevent inadvertent I/O operation of a critical nature. Special care has been taken to provide non-glitching outputs on the ZT 88CT72.

Inputs feature inverting buffers that provide noise immunity and 200mV of hysteresis.

STD Bus Addressing

The ZT 88CT72 requires 24 consecutive I/O port addresses on a 32 I/O port boundary within the processor I/O address map. The ZT 88CT72 is jumper-programmable for 8-bit or 16-bit I/O address decoding. The 8-bit decoding is useful for STD Bus applications based on the Z80, 8085, and other microprocessors that provide eight I/O address lines (256 locations). Applications based on the 8088/8086 microprocessor series use 16-bit address decoding. These processors provide 16 I/O address lines (64 K locations). IOEXP can be decoded high or low, or ignored (default). Default I/O address jumpers will be installed for F000-F017 hex.

Digital I/O Termination

Each of the 144 digital I/O signals includes resistive termination. The default configuration includes a 100 k nominal pull-up resistor within the ASIC. With this termination, each I/O signal can sink 12mA of current. This termination is adequate for most environments if the digital I/O cable length is less than three meters. If the digital I/O cable length exceeds three meters, or if the cable is located in an electrically noisy environment, it may be necessary to add pull-up termination or a pull-up/pull-down termination. Termination network locations are provided for user-installed termination networks.

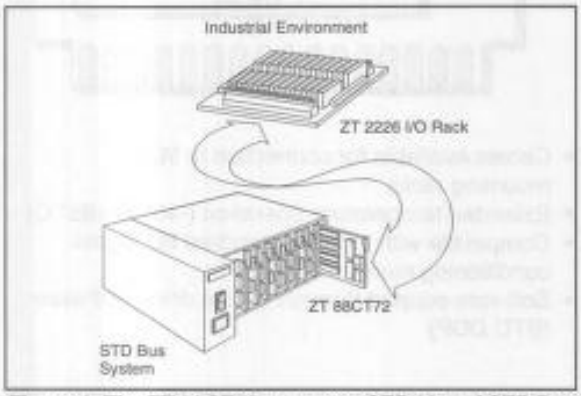


Figure 1. The ZT 88CT72 connects STD 32 and STD Bus systems to various industrial environments

Signal Conditioning Modules

The ZT 88CT72 (with six ZT 90072 cables) allows direct control of 144 signal conditioning modules using the industry standard 50-pin I/O module bus. Each bank of 24 control lines can be used for module control or interrogation. Each bank also has its own fused, 1A 5V logic supply for the modules. These industrial modules control machinery for process control, automation, etc.

Software Support

The ZT 88CT72 manual includes several examples of software routines used to drive the ZT 88CT72. Ziatech's STD Device Driver Package (STD DDP) includes a linkable device driver for the ZT 88CT72 as well.

Specifications

Electrical

- 144 terminated bidirectional I/O lines

Output:

Inverting open collector operation
100 k nominal pull-up resistor
- V_{OH} = 3.0V min.at -4.0mA
- V_{OL} = 0.4V max. at 12.0mA

Input:

Inverting buffers
100 k nominal pull-up resistor

Power Req.	*Min.*	*Typ.*	*Max.*
Supply Voltage, V_{CC}	4.75V	5.00V	5.25V
Supply Voltage, V_{CC} = 5.0V	16mA	32mA	70mA

Note: Currents given for quiescent operation will vary with external devices attached.

Mechanical

- Size- and backplane-compatible with STD 32 and STD-80 specifications.
- Occupies two STD slots (0.625-inch [15.88 mm] spacing) with six 50-pin ribbon cables attached.
- Connectors

J1 - J6: 50-pin vertical, dual-row latching male header (0.100" [2.58mm] centers) for 50-pin ribbon cable. For general purpose digital I/O, including fused +5V.

Environmental	
Operating Temperature	-40° to +85° Celsius
Storage Temperature	-55° to +105° Celsius
Non-Condensing Relative Humidity	less than 95% at 40° Celsius

STD 32 Compliance

- I/O Slave: SA8-I

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

Reliability

- MTBF: 86 years
- MTTR: five minutes (based on board replacement)

Ordering Information

ZT 88CT72	144-Point Digital I/O Interface
ZT M88CT72	144-Point Digital I/O Interface manual

Accessories:

Cables (see Data Book cable section for details):

ZT 90021	10' (3m), 50-pin to 50-pin card
ZT 90028	40" (1m), 50-pin to 25-pin D-shell
ZT 90072	10' (3m), 50-pin both ends
ZT 90137	2' (0.6m), 50-pin both ends

Boards (see separate data sheets for details):

ZT 2224	24-Line Termination Assembly
ZT 2226	24-Channel I/O Mounting Rack

All products are shipped FOB San Luis Obispo, CA, USA. OEM discounts are available for quantity purchases. Contact Ziatech for additional information.

Warranty – Five years with an optional five-year extension. See the full warranty statement in the *Technical Data Book* appendix.

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