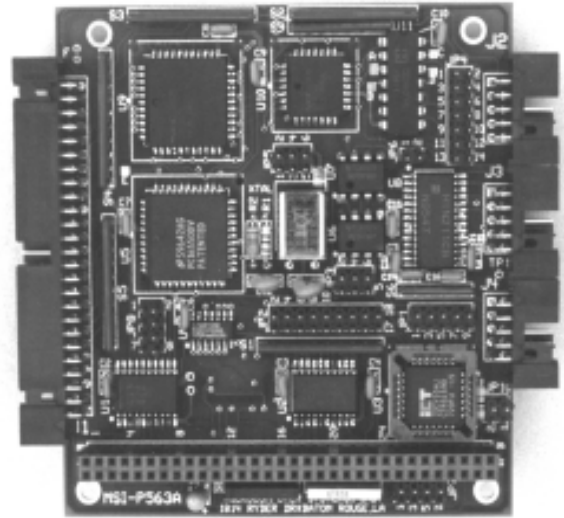


MSI PC/104 Embedded PC Series

MSI-P563 UNIVERSAL INPUT/OUTPUT CARD

FEATURES

- ◆ 24 parallel TTL I/O lines.
- ◆ Single 82C55A with selectable strobed I/O mode.
- ◆ 50-pin digital I/O connector (Opto-22 or equivalent).
- ◆ Single 16550 PC compatible serial channel with 16-byte transmit and receive FIFO's.
- ◆ Selectable as RS-232C, RS-422 or RS-485.
- ◆ Programmable rates from 50 to 64K BAUD.
- ◆ Full modem control for RS-232C interface.
- ◆ Individual 10-pin connectors for RS-232C and RS-422/RS-485 selections.
- ◆ Single 82C54 for three independent 16-bit counter/timers from DC to 8 MHz.
- ◆ Selectable option jumpers for each gate, clock input and output signal with buffered clock inputs.
- ◆ 8-bit stackthrough PC/104 with I/O mapped 16-bit addressing.
- ◆ Four selectable interrupt-sharing channels using tri-state buffers.
- ◆ Jumper selectable address and card options.
- ◆ Single +5V power supply operation.
- ◆ Operating temperature range -40° C to 85° C.
- ◆ 100% testing and 48-hour burn-in.
- ◆ Two-year warranty from date of shipment.

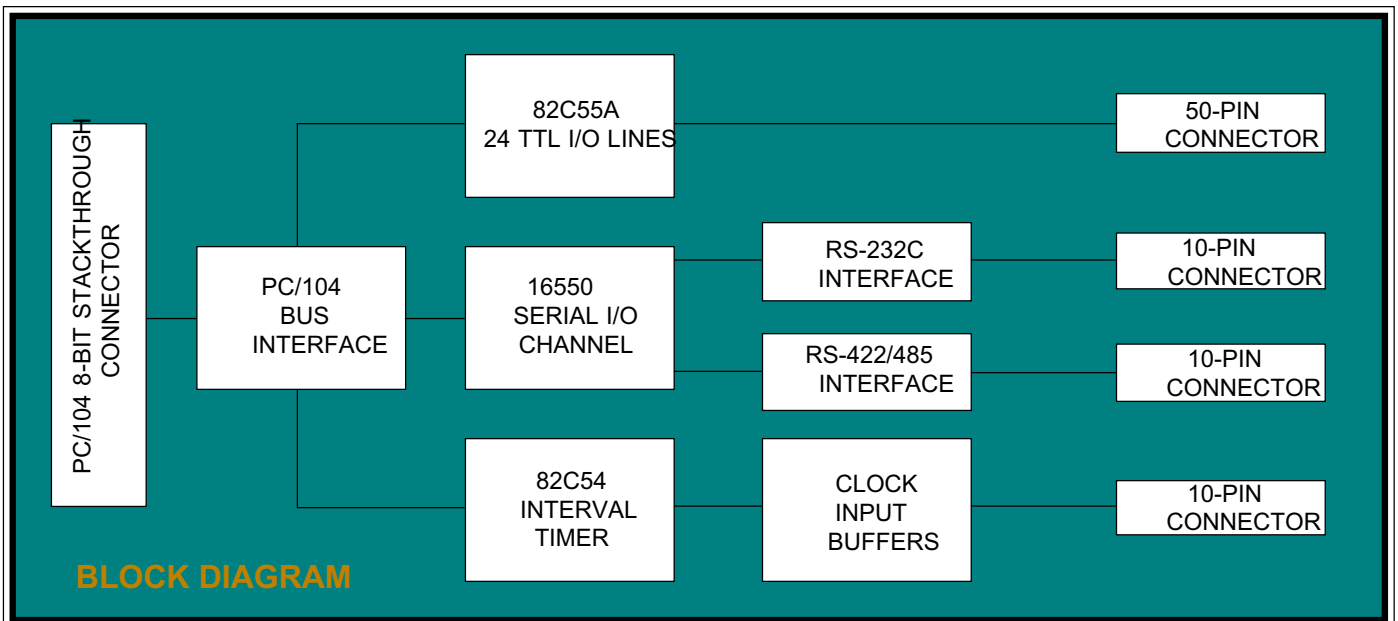


DESCRIPTION

The MSI-P563 is a general purpose I/O card designed for use with all PC/104 embedded systems. The card provides a versatile mixture of I/O functions for the designer which includes 24 TTL I/O lines, an asynchronous serial port, and three 16-bit counter/timers. The card is designed for use in harsh environments such as those which occur in industrial applications.

TTL I/O Lines - A 82C55A PPI provides 24 TTL I/O lines which are programmable as ports A, B

(over)



and C. Ports A and B are programmable as 8-bit groups of input or output lines. Port C is programmable as two 4-bit groups of input or output lines. Provisions for implementing an interrupt driven strobed I/O mode are also included using option jumpers. A 10K pull-up resistor is connected to each I/O line for accommodating input connections. I/O connections are provided by a 50-pin connector that is Opto-22 (or equivalent) compatible.

Serial Interface - A 16550 UART provides a serial port that is software compatible with IBM PC software. The device is fully programmable for 5 thru 8-bit characters, selectable parity and numbers of stop bits, BAUD rates from 50 to 56K, and a selectable mode for 16-bit I/O FIFO's. The port is selectable as RS-232C, RS-422, or RS-485 using option jumpers and a hardware serial interrupt is enabled by option jumpers to select any of four interrupt-sharing channels.

The RS-232C electrical interface is generated by a MAX211E that provides RX, TX, and modem control signals CTS, RTS, DSR, DTR, RI and DCD. Input connections are made via a 10-pin connector for a standard DTE configuration using a 10-conductor flat-cable terminated to a DE-9P type connector.

The RS-422 or RS-485 electrical interface is generated by two 75163's that provide RX and TX. I/O connections are made using a 10-pin connector.

Counter/Timer Channels - A 82C54 interval timer provides three 16-bit timers programmable in six modes. Option jumpers are provided for all gates, clock inputs and outputs of the three channels as well as the bus signal OSC (pin B30). All clock inputs are buffered by a socketed 74HCT14 inverter. The gate and clock input lines are connected to 10K pull-up resistors. I/O connections are made via a 10-pin connector. A spare inverter is also available using onboard option jumpers.

Card Addressing - The card is I/O mapped using 16-bit addressing to select the various

devices. The 24 TTL I/O lines of the 82C55A are jumper selectable at hex addresses 124-127 on 64 distinct 1KB boundaries. The serial interface of the 16550 is selectable at hex addresses for COM1 thru COM4 on 64 distinct 1KB boundaries. The three counter/timer channels are selectable at hex addresses 120-123 on 64 distinct 1 KB boundaries. Other addresses can be provided by MSI if required by programming of the 22CV10A device.

SPECIFICATIONS

| | |
|---------------------------------------|--|
| PC/104 | 8-bit, stackthrough |
| Digital I/O Lines | |
| PPI | 82C55A |
| Port A & B | 8-bit, Input or Output |
| Port C | Two 4-bit, Input or Output |
| Interface | TTL levels |
| Connector | 3M 30350-5002 or eq. (50-pin) |
| Serial Channel | |
| UART | PC16550DV |
| BAUD Rate | 50 thru 56K |
| Word Size | 5, 6, 7 or 8 Bits |
| Stop Bits | 1, 1.5, or 2 |
| Parity | Even, odd, or none |
| Interfaces | RS-232C, RS-422/RS-485 |
| Control | CTS, RTS, DSR, DTR, RI and DCD (RS-232C) |
| Connectors | 3M 30310-5002 or eq. (10-pin) |
| Counters/Timers | |
| Device | 82C54 |
| Channels | Three, 6 programmable modes |
| Clock Input | DC to 8 MHz |
| Clock Buffers | 74HCT14 inverters |
| Spare Buffer | 74HCT14 inverter |
| Connector | 3M 30310-5002 or eq. (10-pin) |
| Interrupts | |
| Channels | Four, sharing with tri-state buffers for IRQ3-7, 9 |
| Option Jumpers | .025" square posts, 0.1" grid |
| Electrical & Environmental | |
| | +5V @ 200 mA typical |
| | -40° to 85° C |



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