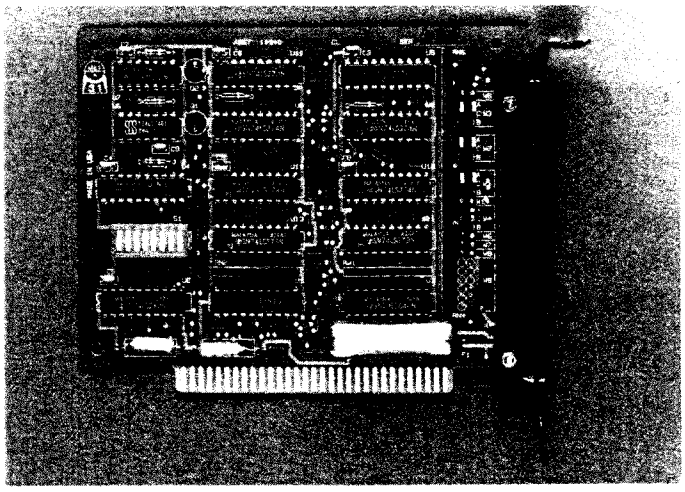
IBM PC/XT/AT™ Compatible Digital Input/Output Board

RTI-817

FEATURES
24 Channels of Digital Input/Output
Three 8-Bit Groups Independently Selectable for I/O
Interrupt Generation on Change of State
Compatible to 16 and 24 Position Solid-State Relay Subsystems

GENERAL
Compatible to IBM PC/XT/AT or Equivalent
Optional Screw Termination Panels

APPLICATIONS
Parallel Data Transfer to PC
Digital I/O Control
AC or DC Monitoring and Control of Voltages
Relay Control



GENERAL DESCRIPTION

An IBM-compatible member of the RTI™ Interface family, the RTI-817 is a 24-channel (bit) input and output board that plugs into one of the expansion slots in the IBM PC/XT/AT. The board can be used with TTL low-level input/output circuitry or with solid-state relay subsystems (16- or 24-channel versions) to provide 2500V isolation for interfacing with high-level ac and dc signals.

The 24-channel capability of the RTI-817 is divided into three ports (or groups) with 8 bits per group. These eight bit ports can be configured for either a digital input or output function.

There are two unique features associated with the RTI-817: an eight-bit latching capability and an interrupt on change of state. The latching capability is software or hardware selectable. It stores the state of eight digital input lines in a register which can then be read from the PC data bus. Interrupt generation occurs when one of the eight digital input channels changes state in a single port. This feature frees up the PC to do other activities since there is no need to poll the digital input port for an event to occur.

The RTI-817 can be installed in either a long or short slot in the IBM PC/XT/AT. The board maps into the I/O channel address structure as 4 consecutive bytes, addressable in an unoccupied 4-byte boundary using a DIP switch. The board operates from the bus +5V power source.

Typical applications of the RTI-817 include sensing and control of high-level signals, sensing low-level (TTL) switches or signals, driving indicator lights or controlling recorders, and parallel data transfer (via software) to computers or panel meters.

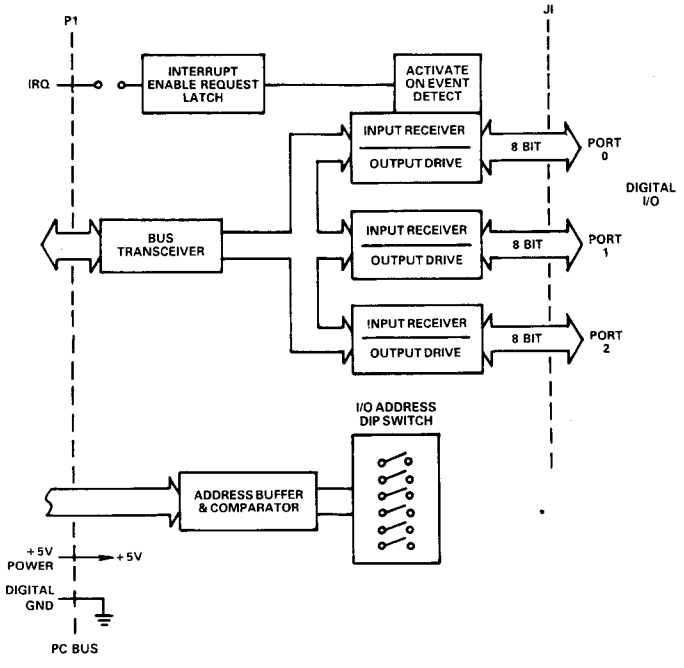


Figure 1. RTI-817 Block Diagram

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SPECIFICATIONS (typically at +25°C and nominal power supply voltage unless otherwise specified)

DIGITAL INPUT AND OUTPUT	
NUMBER OF CHANNELS	24, Selectable in 8-Bit Groups or Ports Inputs or Outputs
I/O CONFIGURATION[1]	TTL Compatible
INPUT SPECIFICATION	V_{IH} = 2.0V min V_{IL} = 0.8V max I_{IL} = 1.5mA max I_{IH} = 20μA max
OUTPUT SPECIFICATIONS	V_{OH} = 2.4V min V_{OL} = 0.5V max I_{OL} = 23mA I_{OH} = 3.6mA max
MAXIMUM APPLIED VOLTAGE	7V dc
ISOLATION VOLTAGE	N/A
SYSTEM CONFIGURATION SPECIFICATIONS	
Bus Resource Utilization	Occupies One Short or Long Slot in IBM Expansion Bus. Use of Interrupt Channel is Optional
Address	Switch Selectable I/O Locations (4 Consecutive Bytes in 512 Byte Block)
Digital Input Monitoring Modes	Interrupt Line Required for Use as System Priority Interrupt
Compatibility	IBM, Compaq, or Other IBM-Compatible Backplane
PHYSICAL/ENVIRONMENTAL SPECIFICATIONS	
I/O Connector	50-Pin Male Ribbon Connector
Dimensions	5 7/8 in. (14.4 cm.) × 5 in. (17.2 cm.) × 1 in. (2.54 cm.)
Operating Temperature Range	0°C to +70°C
Storage Temperature Range	−25°C to +85°C
Relative Humidity	Up to 90% (Non-Condensing)
POWER	
Power Consumption	+5V dc @ 0.5A max

NOTES
[1]Polarity inverted for solid-state relay compatibility (active low) such as OPTO-22 or equivalent.
Specifications are subject to change without notice.