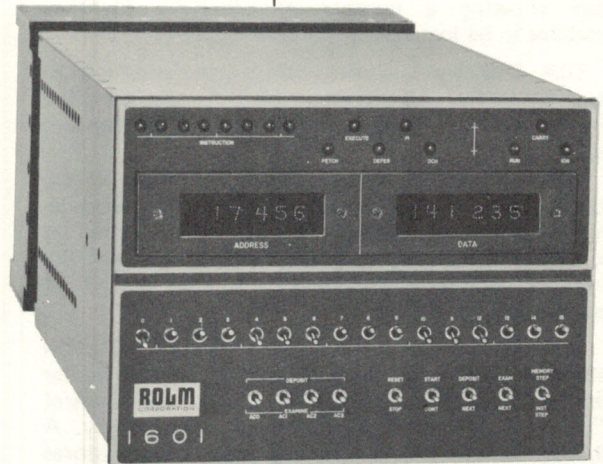
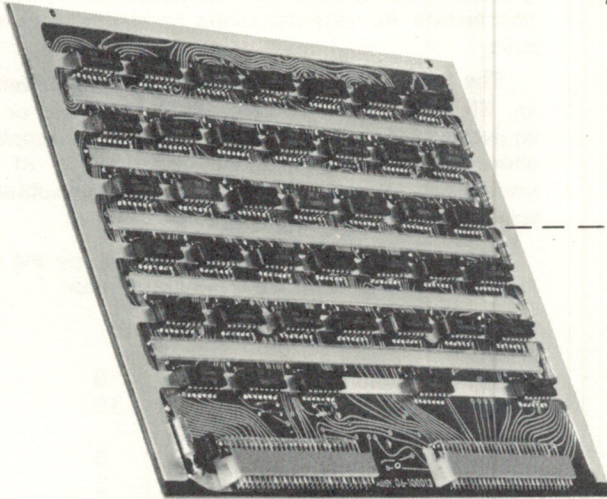


## 3 x 16 Bit Unbuffered Parallel Input Module Model No. 1601/42



MODEL 1601 RUGGEDNOVA

# 3 x 16 Bit Unbuffered Parallel Input Module

## Model No. 1601/42

### FEATURES

The Parallel Input Module provides input gating and interface circuitry for 48 bits of information, organized as three 16-bit parallel words. Sensing of the input lines occurs under direct program control, with the incoming data entering the accumulators in the Model 1601 Ruggednova central processor. This module is primarily intended for sampling data from devices which have no high-speed synchronous timing cycle of their own seriously restricting the interface timing. Examples of such devices include discrete switches, slowly varying measurements of physical parameters, and equipment which has built-in buffer registers.

Auxiliary sense lines in the interface make this module suitable for somewhat more complex applications where the external equipment supplies a "ready" signal indicating the time during which the data lines are stable and carry significant information. The module also generates two buffered control signals. Among the uses for these two output bits are data request/acknowledgement and interface timing.

This module occupies one I/O slot in the basic computer or in an expansion box. The option includes a front panel connector and cabling to the card file.

### PROGRAMMING

The computer normally communicates with this module using DIA, DIB, and DIC instructions with a single device address. A group of jumpers on the printed circuit card determines the device address, thus allowing a number of otherwise identical modules to be installed in the same system.

DIA, DIB, and DIC instructions transfer data from their respective 16-bit input lines to the specified accumulator any time the associated Ready Signal is true.

Device states "Busy" and "Done", Interrupt Mask, and Interrupt Requests do not apply to this module. Instead the status of the "A Ready" line is sensed by executing the SKPBN or SKPBZ instructions, and the status of "B Ready" is sensed by SKPDN or SKPDZ addressed to their device.

Incorporating an IO PULSE or START function into the instruction format sets an output buffer flip-flop associated with the "Control 1" or "Control 2" line at the interface connector, respectively. A CLEAR function or an IORST instruction restores both outputs to their false condition.

### INTERFACE

Input lines consisting of 48 Data Lines (positive true) and 3 Ready Lines (positive false) appear at the panel connector. Each line is loaded by one Texas Instruments SN5400 series TTL input, a 330 Ohm resistor to +5 volts, and a 390 ohm resistor to logic ground. These resistors provide approximately correct termination for external cables consisting of twisted pairs.

The two outputs (positive true) are each driven by an SN5405 open collector TTL inverter or its equivalent. No positive pullup resistor is supplied, allowing the user to design this portion of the interface in any manner consistent with the published specifications on the integrated circuits used.

Logic ground and chassis ground occupy the two remaining locations on the 55-pin connector.

### SPECIFICATIONS

Number of Input Groups	3
Bits per Group (Sensed simultaneously)	16
Ready Lines	3
Buffered Output Lines Input Circuits	2
Output Circuits	One TTL Load Plus Resistive Termination
Net Weight	Open-Collector TTL 1.1 lb.
Power Requirements	+ 5 volts, 1 ampere (supplied by computer power supply)
Thermal Dissipation	5 watts (conductively cooled to ATR box side plates)
Environment	Same as Model 1601 Ruggednova

### EQUIPMENT SUPPLIED

This module is of the same construction as the basic Ruggednova CPU modules. The module is conductively cooled and includes the aluminum "cookie sheet" type stiffener. Fork-type connectors plug into pre-installed female connectors in one of the slots reserved for I/O options in the main frame or in an extender box. This option includes a panel connector and internal cabling to the module. It is known as Model 1601/42 and should be ordered with your Model 1601 Ruggednova, although field installation at a later date can be arranged when necessary.

For further information call or write:

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