ROLM CORPORATION

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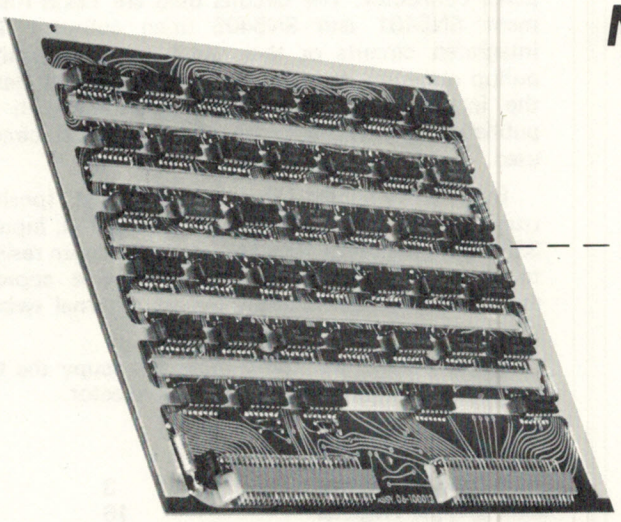
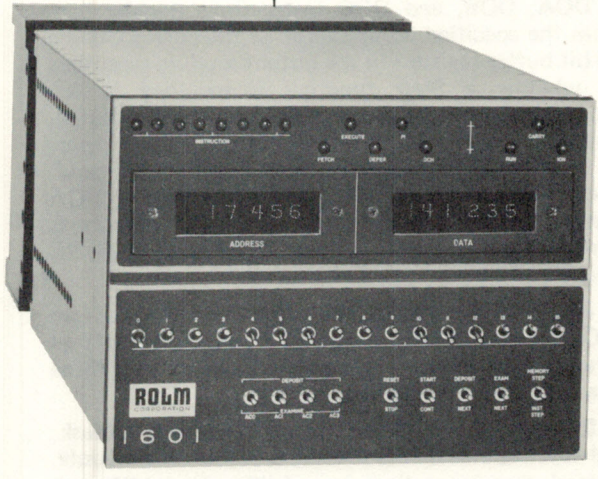
3 x 16 Bit Parallel Output Buffer Module Model No. 1601/41





MODEL 1601 RUGGEDNOVA

3 x 16 Bit Parallel Output Buffer Module
Model No. 1601/41

FEATURES

The Parallel Buffered Output Module provides storage and interface circuitry for 48 bits of information, organized as three 16-bit parallel words. Loading of the buffer registers occurs under direct program control, with the data originating from the accumulators in the Model 1601 Ruggednova central processor. This module is primarily intended for driving devices which have no high-speed synchronous timing cycle of their own seriously restricting the data interface timing. Examples of such devices include numeric displays, external digital-to-analog converters, and combinational switching networks.

Auxiliary control lines in the interface make this module suitable for somewhat more complex applications where the external equipment requires a "ready" signal indicating the time at which new data becomes available. The external equipment may also present two status bits to be tested by the program. Among the uses for these two input 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 DOA, DOB, and DOC 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.

DOA, DOB, and DOC instructions transfer data from the specified accumulator to the corresponding 16-bit buffer registers in the output module regardless of whether a Start function is included in the instruction format. When a start function is executed, Ready lines associated with each of the three registers all go true and remain so. Thereafter, the "A Ready" line becomes momentarily false at the time a DOA instruction changes the contents of the A register. Similar logic applies to the "B Ready" and "C Ready".

A Clear function (normally given in the form of an NIOC instruction) or an IORST instruction resets all three registers to binary zeroes and restores all three Ready lines to their false condition.

Device states "Busy" and "Done", Interrupt Mask, and Interrupt Requests do not apply to this module. Instead, two input lines named "Busy" and "Done" appear at the external interface connector. These inputs allow the external device to control the results of the SKPBN, SKPDN, and SKPDZ instructions when addressed to this device.

INTERFACE

Output lines consisting of 48 Data lines (positive true) and 3 Ready lines (positive false) appear at the panel connector. The circuits used are Texas Instrument SN5401 and SN5405 open collector TTL integrated circuits or their equivalent. No positive pullup resistor is supplied, allowing the user to design the interface in any manner consistent with the published specifications on the integrated circuits used.

Input lines named "Busy" and "Done" (positive true) are each loaded by one 5400 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 an external twisted pair interconnecting cable.

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

SPECIFICATIONS

Number of Registers	3
Data Bits per Register	16
Ready Lines	3
Unbuffered Input Lines	2
Output Circuits	Open-Collector TTL
Input Circuits	One TTL Load Plus Resistive Termination
Net Weight	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 1601/41 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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