

MAY 79 1 3



DESCRIPTION

DATABOARD 4680

1044 is the Control Unit of the Z 80 double board computer. Provides interfacing to the I/O-side of the 4680-bus. The I/O-interrupt handling (INT-signal) is expanded to 8 priority levels. 1044 includes system functions as program control by hardware (watch-dog), on-board PROM for programmed restart and option for I/O-trace. SPECIFICATION

max 1 kbytes ("Bootstrap" option) MEMORY by internal PROM: 64 bytes (IO-trace option) internal RAM: max 64 addressable channels I/0 (normally cards) All bussignals are buffered INTERFACING and TTL-compatible. +5V + 5% POWER PROM:s excluded LOAD option excluded: 370 mA option included: 540 mA Standard Europe card 100 x 160 mm SIZE 64 pin two-row standard CONNECTOR Europe connector (DIN 41612) operating 0-55⁰C. ENVIRONMENT

CONNECTION

Fixed slot in the backplane of standard 4680-rack; The CPU-board to the right and I/O-bus to the left of it as seen from the front.

INTERRUPT HANDLING

1044 expands the INT-interrupt to 8 levels. Level 0 has the highest priority.

The interrupt is delivered as an RST-instruction which the CPU-unit executes as a call to one of eight start addresses.

Mode 0 (8080 A mode)

Level	0	1	2	3	4	5	6	7
Addr.page 0	00H	08H	10H	18H	20H	28H	30H	38H
Mode 2 (indire	ect cal	l). The	bits 7-0	are d	lelivered by	1044	as follows	
Level	0	1	2	3	4	5	6	7
Vector	C7H	CFH	D7H	DFH	E7H	EFH	F7H	FFH

Higher priority is able to interrupt lower. Programmed mask is available. The mask is loaded by the instruction OUT 7, (value). Where "value" determines the level from which lower level interrupt are prohibited (disabled). OUT 7, (value=0) disables all interrupts (exept NMI) OUT 7, (value=8) enables all interrupts.

RESTART

Includes manual restart, watch-dog and programmed restart through on-board PROM. The restart is initiated either manually, through power-on, by bussignal or automatically by the watch-dog. Restart comprises reset of CPU and I/O (not I/O in the watch-dog case). Programstart is initiated at address 0 of either the ordinary memory or the on-board PROM. The restart on-board program will run if it is connected (turned on by an on-board switch).

MANUAL RESTART

Board-edge switch includes switch-positions for:

- 1) Manual restart upper
- 2) Watch-dog switched off mid
- Watch-dog switched on lower

PROGRAM CONTROL BY HARDWARE (WATCH-DOG)

This function is controlled as an I/O-port. It initiates reset after minimum 1 sec. if it is not operated by the instruction "INP 6".

RESTART PROGRAM

Is contained in optional on-board PROM:s. Maximum size is 1kbytes when using MMI 6351 PROM:s. If the on-board switch is closed these bootstrap PROM:s are connected to the system and the restart program is automatically started at reset. Program control is available through the instructions INP5 and OUT 6. See further in System Manual.

Standard restart programs, so called mini-boots, are provided as options. The mini-boots facilitate reload from an external loading as floppy-disks, paper tape equipment etc.

I/O-TRACE

Is delivered as an option. It comprises an on-board 64 bytes trace-memory. Trace is initiated for all OUT-instructions - addressing ports O-3FH. The data present on the data-bus will be saved at an address that is made up of the port number plus 80H. The trace memory is read by INP-instruction and the address as above. Selected channel (OUT 1) for example is read by INP 81H.

SWITCHES for following functions:

Restart program	to be switched	on or off.	(on-board location 4C-D)
Watch-dog	Upper pos.:	reset	(on-board location at the
	Mid. pos.:	Watch-dog off	outer edge of the module.
	Lower pos.:	Watch-dog on	

JUMPERS

Size of the restart program. No jumper - 1 kbytes.



Jumper installed - 1/2 kbytes

OPTIONS

Miniboots for system loading from diskettes (or paper tape) at restart.

TRACE-RAM (I/O-trace) for tracing the last I/O OUT-commands.

On-board locations of memory circuits

PROM-program	Bit 3-0	Bit 7-4		
position	3B	3C		
TRACE-RAM				
Driver 8T28	Bit 3-0	Bit 7-4	RAM	
position	2C	1C	B1	NAL 70 2

3

