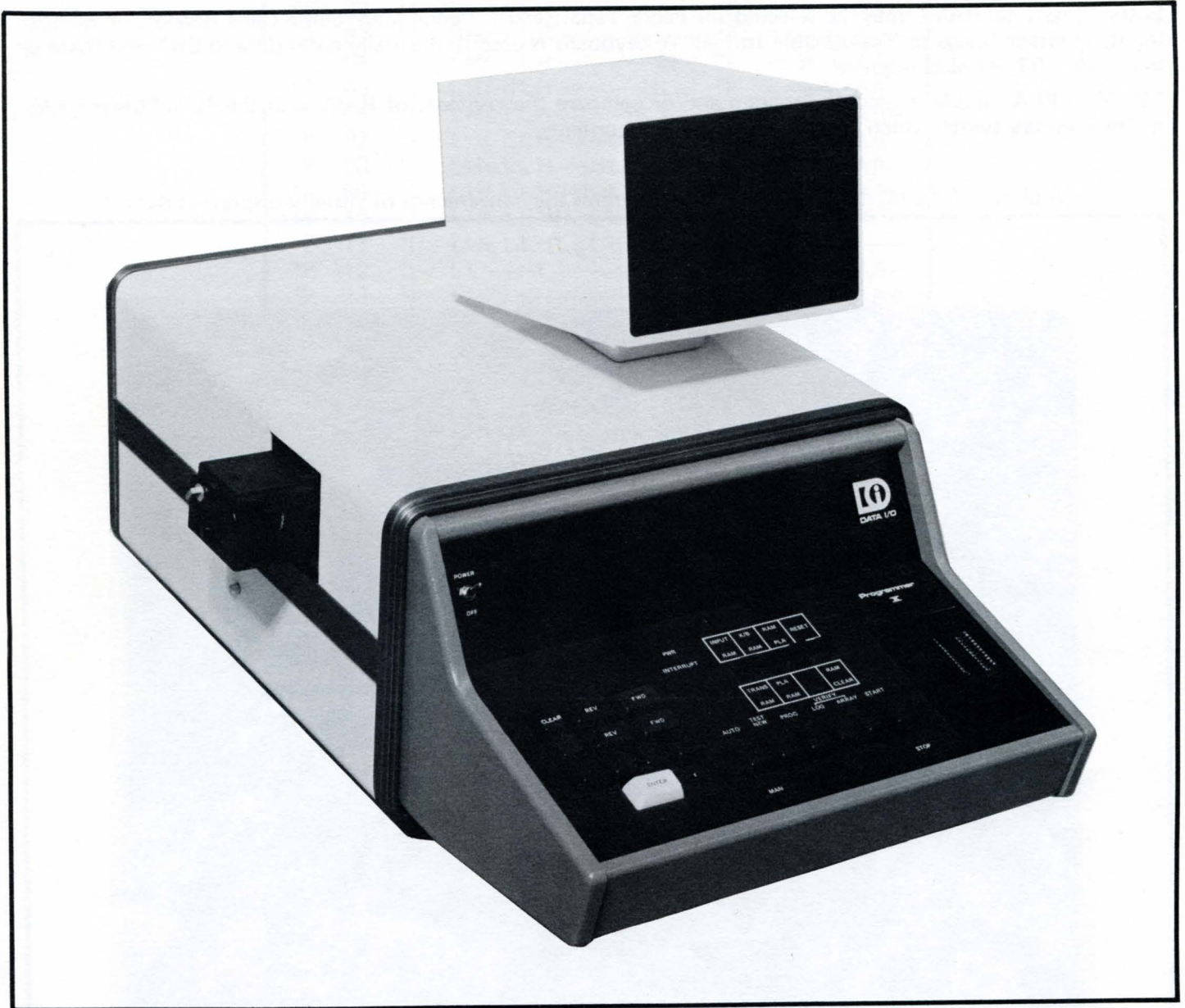


Introducing the Data I/O Model X

(World's first commercial FPLA Programmer)



The Data I/O Model X FPLA Programmer is a Programmer which has the capability of programming FPLA (FIELD PROGRAMMABLE LOGIC ARRAY) devices. The FPLA is a unique device, different from a pROM in both its application and programming characteristics. A completely new system approach is required to allow proper handling of the FPLA. The Model X FPLA Programmer has the capability of programming the devices from a variety of input sources, such as Punched Paper Tape, Mark-Sense Cards, or Master PLA (copy mode).

The various manufacturers of FPLA devices have different architecture for the devices with respect to both Pin-out configuration and Input Term size. Most FPLA devices offer 48 product terms, from 14 to 16 input variables, 8 output variables, and 8 output activation level selections. Each manufacturer's FPLA device may be programmed in the Model X Programmer by use of the respective device plug-in modules. The Model X is configured in its basic architecture to program up to 63 product terms.

Appropriate switches and indicators are used on the control panel of the Model X. All controls are fully interlocked to prevent inadvertent operator errors.

MODE SELECTION

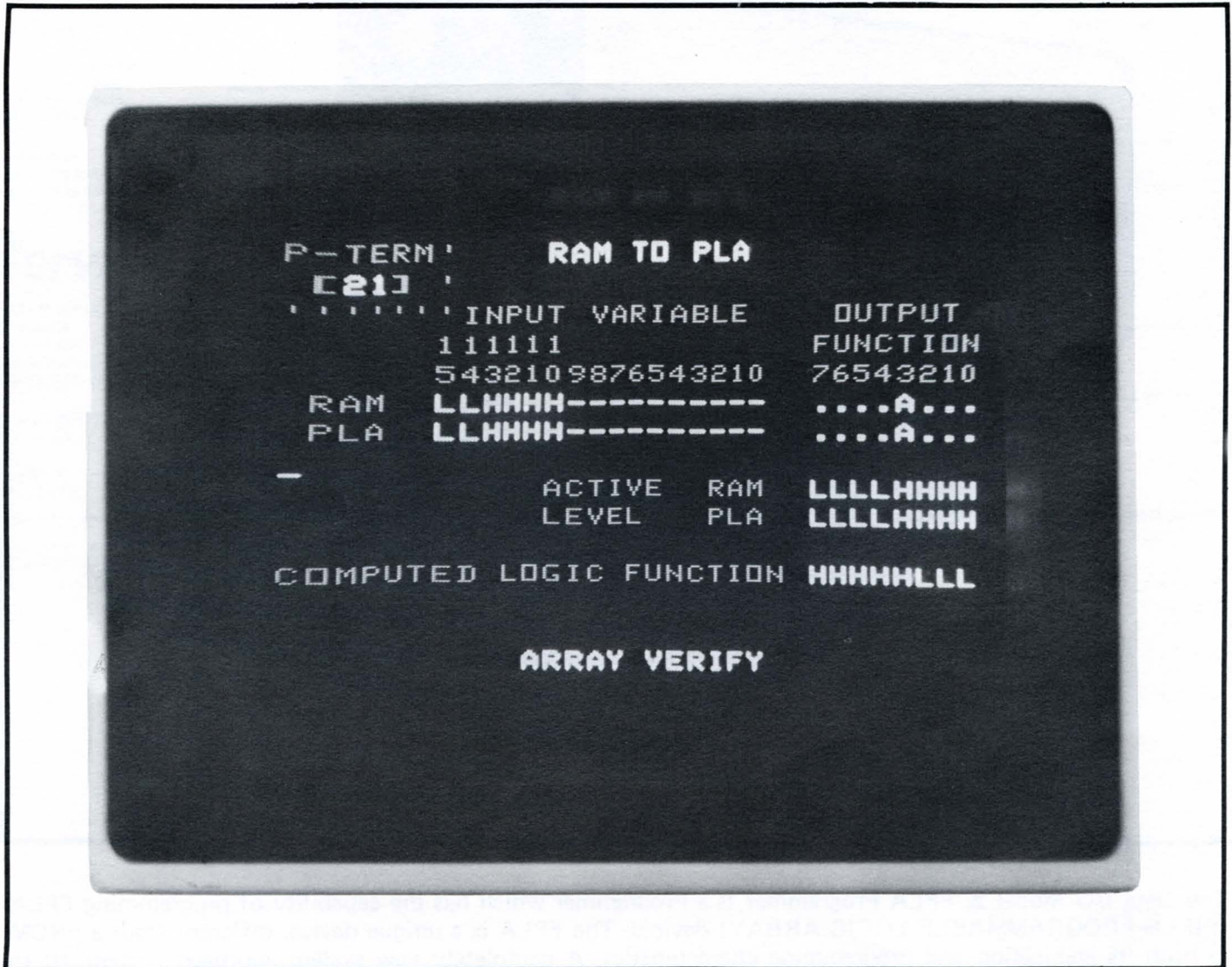
Modes of operation are divided into three categories:

Input to RAM
RAM to PLA
Clear RAM

Entry "Input to RAM" may be selected for Paper Tape Reader; Pencil Mark-Sense Card Reader; or Remote Input, in either Image or Translatable format. A keyboard is used to manually enter data to CRT and RAM or to update CRT/RAM as required.

"RAM to PLA" mode is used to program and/or compare the contents of RAM with the PLA. "Clear RAM" is a momentary switch which erases the entire RAM contents.

A photo of the Model X's CRT screen illustrates the convenience of visually displaying data.



The CRT is the heart of the operating system, displaying all pertinent information associated with the translated input format shown. It is used to inform the operator as to the data being presented from the RAM Memory for a given Product Term and all of the input variables for I Term, F Term, and Activation level. As the PLA is updated to these levels, the display is updated also. If an error occurs in any element of the programming or verification sequence the information is clearly displayed on the screen for the operator to diagnose and take appropriate action.

The Model X control system features a DATA I/O custom CPU system with 24K pROM memory and 15 word instruction stack register. All instructions (132) are completely flexible so that as new developments and improvements are made, field units may be easily updated.

An example of a typical FPLA Truth Table is shown below.

STX			*A	LLLLLLLL
*P 00	*I	LL---L-----H	*F	-----AA-
*P 01	*I	LLLLLH-----	*F	A----AAA
*P 02	*I	HLLLLH-----	*F	AA---AA-
*P 03	*I	HHLLLH-----	*F	-A---A-
*P 04	*I	LHLLLH-----H-	*F	--A--AA-
*P 05	*I	LHLLLH-----HL-	*F	---A-AA-
*P 06	*I	LHLLLH-----HLL-	*F	---AA-AA-
*P 07	*I	LHLLLH----HLLL-	*F	----AAA-
*P 08	*I	LHLLLH--HLLLL-	*F	---A-AAA-
*P 09	*I	LHLLLH-HLLLLL-	*F	----AAAA-
*P 10	*I	LHLLLHHLLLLLL-	*F	----AAAAA-
*P 11	*I	LHLLLHLLLLLLLL-	*F	-----
*P 12	*I	LL---L-----HL	*F	--A--AA-
*P 13	*I	LLHLLH-----	*F	A-A--AAA
*P 14	*I	HLHLLH-----	*F	AAA--AA-
*P 15	*I	HHHLLH-----	*F	-AA--A-
*P 16	*I	LHHLLH-----H--	*F	---A-AA-
*P 17	*I	LHHLLH-----HL--	*F	---AA-AA-
*P 18	*I	LHHLLH----HLL--	*F	----AAA-
*P 19	*I	LHHLLH--HLLL--	*F	---A-AAA-
*P 20	*I	LHHLLH-HLLLL--	*F	----AAAA-
*P 21	*I	LHHLLHHLLLLL--	*F	----AAAAA-
*P 22	*I	LHHLLHLLLLLLLL-H	*F	-----AA-
*P 23	*I	LHHLLHLLLLLLLL-L	*F	-----
*P 24	*I	LL---L-----HLL	*F	---A-AA-
*P 25	*I	LLLHLH-----	*F	A--A-AAA
*P 26	*I	HLLHLH-----	*F	AA-A-AA-
*P 27	*I	HHLHLH-----	*F	-A-A-A-
*P 28	*I	LHLHLH-----H---	*F	---AA-AA-
*P 29	*I	LHLHLH----HL---	*F	----AAA-
*P 30	*I	LHLHLH--HLL---	*F	---A-AAA-
*P 31	*I	LHLHLH-HLLL---	*F	----AAAA-
*P 32	*I	LHLHLHHLLLL---	*F	----AAAAA-
*P 33	*I	LHLHLHLLLLLL--H	*F	-----AA-
*P 34	*I	LHLHLHLLLLLL-HL	*F	---A--AA-
*P 35	*I	LHLHLHLLLLLL-LL	*F	-----
*P 36	*I	LL---L-----HLLL	*F	---AA-AA-
*P 37	*I	LLHHLH-----	*F	A-AA-AAA
*P 38	*I	HLHHLH-----	*F	AAAA-AA-
*P 39	*I	HHHHLH-----	*F	-AAA-A--
*P 40	*I	LHHHLH---H----	*F	----AAA-
*P 41	*I	LHHHLH--HL----	*F	---A-AAA-
*P 42	*I	LHHHLH-HL----	*F	----AAAA-
*P 43	*I	LHHHLHHLLL----	*F	----AAAAA-
*P 44	*I	LHHHLHLLLL--H	*F	-----AA-
*P 45	*I	LHHHLHLLLL--HL	*F	---A--AA-
*P 46	*I	LHHHLHLLLL--LL	*F	---A-AA-
*P 47	*I	LHHHLHLLLL-LLL	*F	-----

ETX

ASCII INPUT DATA FORMAT

Input data is configured in ASCII coding to define Product Term #, Input Term, Output Term and Activation Level. Checking of input format is accomplished within the Model X to insure correct length of fields.

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STOP
MIDT
STOP
STOP
STOP

START
STOP
STOP
STOP

STOP
STOP
STOP
STOP

STOP