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Operating Instructions

For Model PP-400

1. Select and insert proper personality module. (see page 2 for details) making sure to note that pin one (1) of the personality module corresponds to pin one (1) of the personality module's socket.
2. Plug in the PP-400 and turn the POWER SWITCH "ON".
3. Insert the "MASTER" and "COPY" ROMs into their respective sockets making sure that pin one (1) of the ROM corresponds to pin one (1) of the socket. (The "MASTER" ROM is the part that contains the valid information that needs to be duplicated. The "COPY" EPROM is the blank part or the part that has been completely erased.)
4. Once the ROMs have been secured, depress the RESET button. The programming LED should come on. When the programming LED goes off, programming has been completed.
5. Remove the "MASTER" and "COPY" ROMs.
6. Turn POWER OFF.

NOTE: TO PROGRAM MORE THAN ONE EPROM OF THE SAME TYPE, REPEAT STEPS 3 thru 5.

USING THE PP-400 CROSS REFERENCE GUIDE

By reading this step-by-step explanation, one should understand how to choose the proper EPROM and programming module for each individual duplication requirement. Pages 4-11, of this booklet contain the reference guide needed to make the proper choices.

1. Look through the guide to find the part number of the ROM that has the valid information in it to be duplicated. (master part)
2. When the part number, (paragraph 1, above) is found along with the correct manufacturer, look under the Programming Module column to see which program module is needed.
3. Any EPROM with the same program module number may be used as the blank part. The column labeled TYPE specifies whether the part is a ROM or an EPROM (E=EPROM, R=ROM). The blank part (copy) being the destination of the data from the original or "master" ROM or EPROM, must be an EPROM. The PP-400 will not program into any part specified as an "R" (ROM or PROM).
4. The last requirement that must be considered before choosing the proper EPROM is access time! Blank parts that have equal or faster access times compared to the "master" part will be compatible, but, if the master is faster than the blank, it is possible that after the blank is programmed it may not work in the circuit it was designed for.

The following examples illustrate the correct selection of a program module and compatible EPROM.

Example #1 (see page 5)

Master=AM2716 1DC	Access Time = 350 ns
Program Module = 0100	
Blank EPROM = AM2716 1DC	(AMD)
	(Fujitsu)
	350 ns
	Access Time
	2716-1 (Intel)
	MK 2716-6 (Mostek)

In this example the blank part must be an EPROM with a 350ns access time or less and uses the programming module 0100. Thus the program module is 0100.

Example #2 (see page 8)

Master=MCM68A332 Access Time = 350nS

Program Module = 0103

Blank EPROM = MCM2532-35

(Motorola) 350nS

MCM2532-25

(Motorola) ----250nS

In example #2, the "master" is a ROM, therefore, that part number can not be used as the blank. Remember a blank must be an EPROM! The program module for this example would be 0103, and the blank part is any of those listed in the example plus any EPROM in the reference guide that has an access time of 350nS or less and uses the same program module, 0103.

If you have any further questions about picking the proper EPROM and Programming Module, contact the factory.

PP-400---PROGRAMMING MODULES

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROM TEST I & ROM TEST II PERSONALITY BOARD	
1024 x 8--24 pin	AMD	AM 2708	E	450	0101	H24M**	
		AM 2708 1DC	E	350	0101	H24M	
	Fairchild	F 2708	E	450	0101	H24M	
		F2708-1	E	350	0101	H24M	
	Intel	2708	E	450	0101	H24M	
		2708-1	E	350	0101	H24M	
		2708-6	E	550	0101	H24M	
	Motorola	MCM 2708	E	450	0101	H24M	
		MCM 27A08	E	350	0101	H24M	
		MCM 68708	E	450	0101	H24M	
		MCM 68A708	E	350	0101	H24M	
		MCM 68A308	R	350	0104	H24M	
		MCM 68B308	R	250	0104	I24M	
		National Semiconductor	MM2708	E	450	0101	H24M
			MM2708-1	E	350	0101	H24M
	MM 2758A		E	450	0105	H24M	
	MM 2758B		E	450	0106	I24M	
	PD 2308A		R	450	0104	I24M	
	CDP 1834		R	350	0104	I24M	
	AMD		AM 2708	E	450	0101	H24M
AM 2708 1DC			E	350	0101	H24M	
AM 9708		E	350	0101	H24M		
F 2708		E	450	0101	H24M		
F2708-1		E	350	0101	H24M		
2708		E	450	0101	H24M		
2708-1		E	350	0101	H24M		
2708-6		E	550	0101	H24M		
MCM 2708		E	450	0101	H24M		
MCM 27A08		E	350	0101	H24M		

PP-400---PROGRAMMING MODULES

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROW TEST I & ROW TEST II PERSONALITY BOARD		
1024 x 8--24 pin	Texas Instrument	TMS 2508-25	E	250	0104	124M**		
		TMS 2508-35	E	350	0104	124M		
2048 x 8--24 pin	AMD	AM 2716 DC	E	450	0100	124M		
		AM 2716 1DC	E	350	0100	124M		
		AM 2716 2DC	E	390	0100	124M		
		AM 2716 6DC	E	450	0100	124M		
		AM 4716 DC	E	450	0100	124M		
		AM 4716 6DC	E	650	0100	124M		
		AM 9218	R	450	0100	124M		
		AM 8316	R	450	0100	124M		
		AM 9218 CPC	R	350	0100	124M		
		AM 9218 CCC	R	350	0100	124M		
		AM 9218 CDC	R	350	0100	124M		
		S68316	R	450	0100	124M		
		S68A316	R	350	0100	124M		
		Fujitsu	MBM 2716 H	MBM 2716 H	E	450	0100	124M
				MBM 2716 H	E	350	0100	124M
General Instrument	9316 A 9316 B 9316 C	9316 A	R	850	{ 0115 }	124M		
		9316 B	R	450	{ 0115 }	124M		
		9316 C	R	350	{ 0115 }	124M		
(use 0100 blanks)								

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROM TEST I & ROM TEST II PERSONALITY BOARD
2048 x 8--24 pin	Hitachi	HN 462716	E	450	0100	I24M
	Intel	2716	E	450	0100	I24M
		2716-1	E	350	0100	I24M
		2716-2	E	390	0100	I24M
	Intel	2716-5	E	490	0100	I24M
		2716-6	E	650	0100	I24M
		IM 6316	R	350	0100	I24M
	Mostek	MK 34000	R	350	0100	I24M
		MK 2716-8	E	450	0100	I24M
		MK 2716-7	E	390	0100	I24M
	Mostek	MK 2716-6	E	350	0100	I24M
		MK 2716-5	E	300	0100	I24M
		MK 2716-12	E	650	0100	I24M
		MCM 2716	E	450	0100	I24M
		MCM 2716-35	E	350	0100	I24M
		MCM 2716-25	E	250	0100	I24M
	Motorola	MCH 68A316E	R	350	0100	I24M
		National Semiconductor	MM 2716	E	450	0100
	MM 2716-1		E	350	0100	I24M
	MM 2716-2		E	390	0100	I24M

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PP-400---PROGRAMMING MODULES

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROM TEST I & ROM TEST II PERSONALITY BOARD
2048 x 8--24 pin	NEC	PD 2316E	R	450	0100	124M**
		PD 2316E-1	R	350	0100	124M
		PD 2716	E	450	0100	124M
	Texas Instrument	TMS 2516	E	450	0100	124M
		TMS 2516-35	E	350	0100	124M
	Toshiba	TMM 334P	R	450	0100	124M
		TMM 323D	E	450	0100	124M
		TMM 323D-1	E	350	0100	124M
	AMD	AM 2732 DC	E	450	0102	M24M
		AM 2732-6DC	E	550	0102	M24M
	AM 9732	E	450	0102	M24M	
	AM 9232	R	450	0103	L24M	
	AM 9232-CPC,	R	300	0103	L24M	
	AM 9233	R	450	0102	M24M	
	AM 9233-CPC,	R	450	0102	M24M	
	AM 9233-CPC,	R	300	0102	M24M	
AMI	S68332	R	450	0103	L24M	
	S68A332	R	350	0103	L24M	
	S 2333	R	350	0102	M24M	
Fairchild	F 2732	E	450	0102	M24M	
Fujitsu	MBM 2732-45	E	450	0102	M24M	
	MBM 2732-35	E	350	0102	M24M	
	**MBM 2732A-30	E	300	*0109	M24M	
	**MBM 2732A-25	E	250	*0109	M24M	
	**MBM 2732A-20	E	200	*0109	M24M	

PP-400---PROGRAMMING MODULES

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROM TEST I & ROM TEST II PERSONALITY BOARD
4096 x 8--24 pin	General Instrument	9332A	R	850	0103	L24M**
		9332B	R	450	0103	L24M
	9332C	R	350	0103	L24M	
	Hitachi	HN 462532	E	450	0103	L24M
		HN 462732	E	450	0102	M24M
	Intel	2732	E	450	0102	M24M
		2732-6	E	550	0102	M24M
		2732A	E	200	0109	M24M
	Motorola	MCM 2532	E	450	0103	L24M
		MCM 2532-35	E	350	0103	L24M
		MCM 2532-25	E	250	0103	L24M
		MCM 68732	E	450	0103	L24M
		MCM 68732-35	E	350	0103	L24M
		MCM 68A332	R	350	0103	L24M
	National Semiconductor	NMC 2532	E	450	0103	L24M
		NMC 2732	E	450	0102	M24M
	NEC	PD 2332A	R	450	0103	L24M
		PD 2332A-1	R	350	0103	L24M
		PD 2332B	R	450	0102	M24M
		PD 2332B-1	R	350	0102	M24M
PD 2732		E	450	0102H	M24M	
Texas Instrument	TMS 2532	E	450	0103	L24M	
	TMS 4732	R	450	0103	L24M	

CONFIGURATION	MANUFACTURER	PART NUMBER	TYPE (E-EPROM) (R-ROM)	ACCESS TIME (ns)	PROGRAMMING MODULE (PP-400)	ROM TEST I & ROM TEST II PERSONALITY BOARD	
8192 x 8--28 pin	Fujitsu	MBM 2764-20	E	200			
		MBM 2764-25	E	250			
		MBM 2764-30	E	300			
	Harris	HM 6389	R	550			
	Intel	2764	E	200			
	Mostek	MK 37000	R	300			
		MK 2764	E	450			
	National Semiconductor	NMC 2564	E	450			
	Texas Instrument	TMS 2564	E	450			
	Toshiba	TMM 2364	R	250			

Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764
Intel 2764	Intel 2764	Intel 2764	TMS 2564	Intel 2764	Intel 2764	Intel 2764

+ TMM2364board has 2 switches to select polarity for pins 26 & 27.

*2732A (Intel) is pin compatible with ROMs and EPROMs using programming module 0102, but takes a special programming module to program it----(0109).

NOTE: Information given by KURZ-KASCH in this publication is believed to be accurate and reliable. However, we cannot be held responsible for any damage to devices which has been a result of using this reference sheet.

ROMs (mask programmed) chip enables may be programmed either high or low. This makes a universal module impossible--check the device for enable polarity and tie enables to proper voltage (out of socket) to program or read devices.

** "N" after number signifies "MOS". Letter may not be on board.

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EPROMS

EPROMS are MOS devices and as such must be handled with care. Static discharges, reverse polarity or improper programming techniques are sure to destroy the device.

EPROMS, to be programmed, should be first checked on a ROM TEST I, or ROM TEST II, using the correct personality module. The signature on a blank EPROM is the same as the Vcc signature for the personality module. Any other signature indicates an un-erased or defective device.

Selection of the PP-400 programming module must be correct or the EPROM could be damaged or if it took a program, would not contain a usable correct program.

Programmed EPROMS can be erased and if not defective, reprogrammed. A good eraser can be obtained from many sources, one of which is:

TPI Distribution
R.R. #2, Box 10
Catoosa, OK 74015
call collect:
(918) 663-5100

When selecting the programming module, be careful to use the one specified for the device manufacturer, as well as the device number. (see page 2 for further details)

Access time is important when selecting a blank. You can use a blank with an access time the same as or smaller than the master.

A device with an access time of say 450ns may not work in place of one with a 350ns access time.

Do everything right and you can successfully duplicate 100%, do anything wrong and you will have problems ranging from an inexact duplicate to a ruined blank and possibly a ruined master.