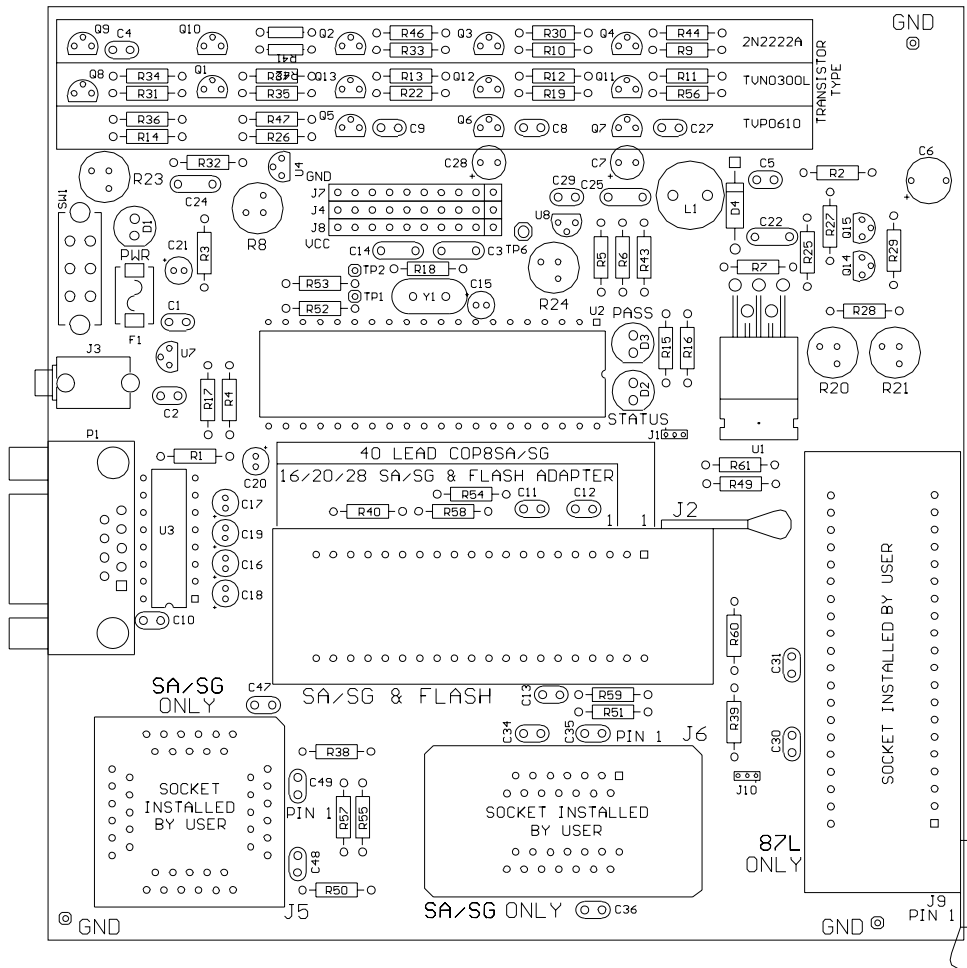


iceMASTER[®] COP8 PM User's Manual for Microsoft[®] Windows[®]



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Chapter 1: Introduction

The Programming Module (PM)

The iceMASTER COP8 PM is a programmer for most COP8 EPROM, OTP and Flash devices. Which devices can be programmed depend on which sockets are installed (see the Programming Socket description in the Hardware Description Chapter).

Warning: Only the devices listed in the Host Software may be programmed using the PM. Attempts to program other devices may result in damage to the device and the PM and will void the warranty.

The PM is controlled through the serial port of an IBM PC (or compatible) running the Windows operating system.

What You Need To Know

Throughout this manual it is presumed that you have a working knowledge of:

- 1) the family of microcontrollers you are using
- 2) Microsoft Windows 3.11, Windows 95, Windows 98, Windows NT 4.0 or Windows 2000.

Chapter 2: Hardware Installation

Connect one end of the RS-232 serial cable to a serial communication port on the Host Computer. Be sure you are using Communication Port 1 (COM1), 2 (COM2), 3 (COM3) or 4 (COM4). Connect the other end of the RS-232 serial cable to the PM.

Connect the power supply to the PM by inserting the power supply's connector into the PM power receptacle. For safety, we recommend that all items in your system, including PM and Host Computer, be connected to the same outlet. Different outlets, though near one another, may be connected to different circuits resulting in large potential differences between grounds.

For a description of all hardware components of the PM see the Hardware Description Chapter.

Chapter 3: Hardware Description

PM Board

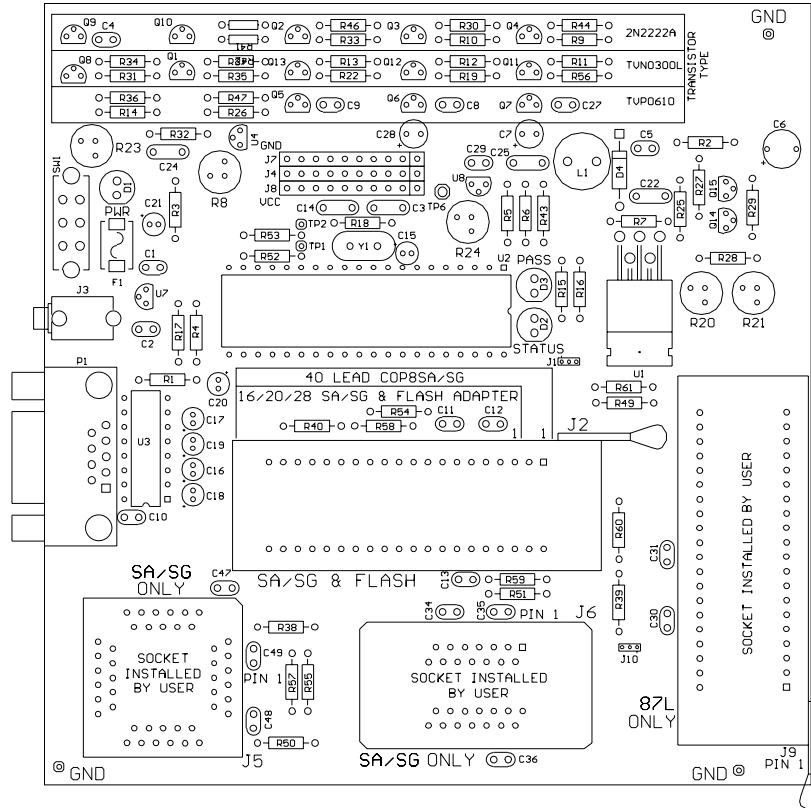


Figure 1. PM Board

Switches

One switch is provided on the PM:

- 1) The slide switch controls **Power** coming in on the power connector.

LED Indicators

POWER LED The POWER LED (red) indicates that power is being supplied to the PM board through the power connector.

PASS LED The PASS LED (green) is used to indicate the final status of a programming operation. When lit, the previous programming operation was successful. When dark, the STATUS LED is used to determine the status of the programming operation.

STATUS LED The STATUS LED (red) is used to indicate the status of a programming operation. A flashing STATUS LED (red) indicates that a programming operation is in progress. When lit (steady), the previous programming operation failed.

Power

The power supply supplies both the logic and programming voltage of the PM. It is supplied using a standard 2.5mm mono plug and jack, center positive. The power supply must provide +9V to +15V DC at 300mA. The ripple voltage must be no more than 400mV, peak to peak.”

RS-232 Interface

Host PC Cable Connector		Cable			PM Cable Connector (Male DB-9)	
Signal	Pin		Function	Direction	Pin	Signal
	PC/XT (Female DB-25)	PC/AT (Female DB-9)				
TxD	2	3	Data to PM	→	2	RxD
RxD	3	2	Data to Host	←	3	TxD
RTS	4	7	Reset PM - active high	→	4	RTS
Ground	7	5	DC Ground	↔	7	Ground

Table 1. RS-232 Interface

The communication link to the Host Computer is based on the serial RS-232C specification. The serial baud rates are established entirely under Host Software control. Therefore, you do not need to adjust your serial port’s baud rate using, for example, the DOS MODE command.

The cable mates via a 9-pin male DB-9 connector on the cable at the PM end. At the host end, the mating connector on the cable is a 9-pin female DB-9 connector. A 9-pin cable is

provided with the PM. Adapters are available to connect the DB-9 connector (at the PC end) to a DB-25 connector (DB-25 female to DB-9 male). Note that Pins 2 and 3 are reversed from their normal 25-pin D connector assignments in the 9-pin RS-232C interface of the PC/AT.

Programming Socket

The PM is shipped with one 40-pin DIP ZIF socket installed. This socket can directly program all DIP versions of COP8 Sx, SGx, AJx, AKx, and most Flash devices via optional socket adapters. There are also unpopulated sites on the PM board for three other sockets which you can install if you need them. If you want to install a socket in any of the unpopulated sites we recommend:

Site	Used To Program	Manufacturer: Part Number
J5	SA/SG 44 Pin PLCC	Yamaichi: IC120-0444-306
J6	SA/SG/AJC/AKC 28 Pin SOIC	Enplas: FP-28-1.27-07
J9	87L 40 Pin DIP	Aries: 40-6553-10

Table 2. Socket Site Recommended Parts

For a list of all supported devices along with information required for programming each device (such as whether an adapter is required and which programming socket to use), press the *Write* button in the *Device Programmer* Dialog Box. The device list will be written to a text file, in a format suitable for printing.

Note that when a new device is selected, the Host Software will report if a Programming Adapter is required and which programming socket to use.

Chapter 4: Operational Considerations

Static

Perhaps the most difficult problem anyone who uses MOS devices will face is static. You may go for years with no fault traceable to static, or you may damage devices frequently. The iceMASTER PM can be as sensitive to static as any other circuit. The microcontroller devices used in the PM are especially vulnerable since adding extra protection would change response characteristics. The built-in protections internal to the devices are operative.

We do still recommend, however, that you take every precaution regarding static. The use of grounding straps, static free workstations, and a little extra care in handling the PM (and any MOS part) can prevent most problems.

Chapter 5: Contacting National Semiconductor

Phone, Fax, Email

Americas

Tel: 1-800-272-9959
Fax: 1-800-737-7018
Email: support@nsc.com

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Asia Pacific

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Fax: 65-250-4466
Email: ap.support@nsc.com

Internet

National's Analog Microcontroller Web Site

www.cop8.com

National's Home Site

www.national.com