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NOTE

What is referred to throughout this manual as PINE is the same as HX-40 or PX-4, which are the same but have different names depending upon the market.

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Nagano, Japan

PX-4·HX-40

Operating System Reference Manual

EPSON

INTRODUCTION

1.1 Purpose of This Manual

This manual describes the functions of the operating system for the EPSON PINE microcomputer system. It is intended for system house users who are to develop applications programs which make the best of the PINE's capabilities.

The reader is assumed to be familiar with the following:

- Basic knowledge about the CP/M operating system
- General knowledge about machine-language programming
- Z80 instructions

1.2 Before Reading This Manual

This manual uses the following notational conventions:

1.2.1 Data representation

This manual uses binary, decimal, and hexadecimal numbers. They are represented in the formats:

Binary: 00100011B (Numbers are followed by 'B')

Decimal: 35 (only numerals)

Hexadecimal: 23H (Numbers are followed by 'H')

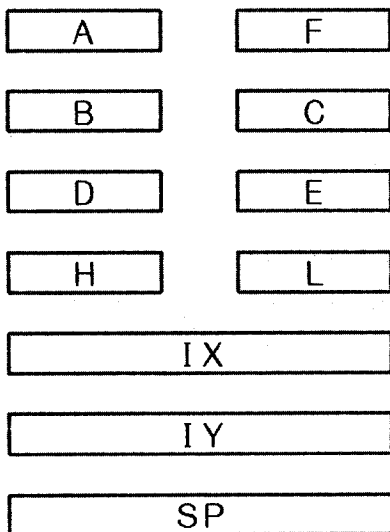
Character constants are enclosed in apostrophes (').

Example:

'ABC'

1.2.2 Register Representation

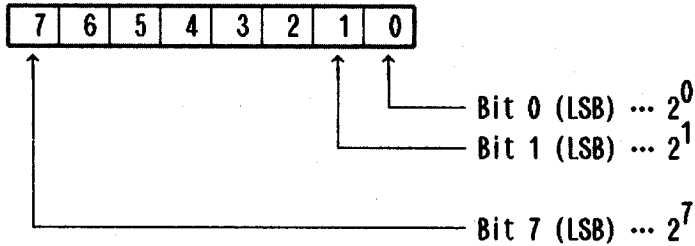
The PINE registers are illustrated below.



Registers are expressed as A, B, DE, HL, and so on. They may sometimes be followed by the word "register" to clearly identify them. The bits of the F (flag) register are sometimes identified as the Z flag (or Z), the C flag (or C), and so on.

1.2.3 Bit Representation

Bits are numbered 0, 1, and so on, from the lowest order bit (0) to the highest order bit. The lowest order bit is referred to as the least significant bit (LSB) and the highest order bit as the most significant bit (MSB).



1.2.4 Address Representation

Addresses are generally represented in hexadecimal notation. I/O addresses are prefixed by "p".

Examples:

0010H	Memory address 10H
p10H	I/O port address 10H

Note that the contents of I/O addresses may differ during read and write operations.

1.2.5 Operating System Types

The PINE runs under three types of operating systems (OS) :

- Kana OS V1.0 (Japan only)
- Kana OS V2.0 (Japan only)
- Export version OS V1.0

These operating systems differ only in the characters they support. This manual will explain about Export version OS V1.0

1.2.6 Organization of This Manual

This manual is divided into Part I, Part II, Part III and Part IV. Part I, "Firmware," explains the PINE firmware, Part II, "Software," describes the PINE CP/M operating system, Part III, "INTERFACE" explains the PINE firmware, and Part IV, "BASIC" describes the PINE Basic.

PART I FIRMWARE

PART II SOFTWARE

PART III INTERFACE

PART IV BASIC