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RENESAS

User's Manual

IE-78K0-NS-P02

I/O Board

Target Devices
78K/0 Series

Document No. U16108EJ1V0UM00 (1st edition)
Date Published June 2002 N CP(K)

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INTRODUCTION

Product Overview

The IE-78K0-NS-P02 is designed to be used with an in-circuit emulator (IE-78K0-NS or IE-78K0-NS-A) and emulation board (IE-780×××-NS-EM4) to debug 78K/0 Series 8-bit single-chip microcontrollers.

Target Readers

This manual is intended for engineers who will use an in-circuit emulator (IE-78K0-NS or IE-78K0-NS-A) and emulation board (IE-780×××-NS-EM4) with the IE-78K0-NS-P02 to perform system debugging.
Engineers who use this manual are expected to be thoroughly familiar with the target device's functions and usage methods and to be knowledgeable about debugging.

Organization

When using the IE-78K0-NS-P02, refer to not only this manual (supplied with the IE-78K0-NS-P02) but also the manual that is supplied with the in-circuit emulator (IE-78K0-NS or IE-78K0-NS-A) and the emulation board (IE-780×××-NS-EM4).
The IE-78K0-NS used in combination with the IE-78K0-NS-PA is functionally equivalent to the IE-78K0-NS-A. Therefore, as necessary, read IE-78K0-NS + IE-78K0-NS-PA for IE-78K0-NS-A in this document.

IE-78K0-NS or IE-78K0-NS-A User's Manual
• Basic specifications • System configuration • External interface functions

IE-780×××-NS-EM4 User's Manual
• General • Part names • Installation • Differences between target devices and target interface circuits

IE-78K0-NS-P02 User's Manual
• General • Part names • Installation

Purpose

This manual's purpose is to explain various debugging functions that can be performed when using the IE-78K0-NS-P02.

Terminology The meanings of certain terms used in this manual are listed below.

Term	Meaning
Target device	This is the device that is the target for emulation.
Target system	This includes the target program and the hardware provided by the user. When defined narrowly, it includes only the hardware.
IE system	This refers to the combination of an in-circuit emulator (IE-78K0-NS or IE-78K0-NS-A), I/O board (IE-78K0-NS-P02), and emulation board (IE-780×××-NS-EM4).

Conventions

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Note: Footnote for item marked with **Note** in the text
Caution: Information requiring particular attention
Remark: Supplementary information

Related Documents The related documents (user's manuals) indicated in this publication may include preliminary versions. However, preliminary versions are not marked as such.

Document Name	Document No.
IE-78K0-NS	U13731E
IE-78K0-NS-A	U14889E
IE-78K0-NS-P02	This manual
ID78K Series Integrated Debugger Ver. 2.30 or Later Operation Windows™ Based	U15185E

Caution The documents listed above are subject to change without notice. Be sure to use the latest documents when designing.

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CHAPTER 1 GENERAL

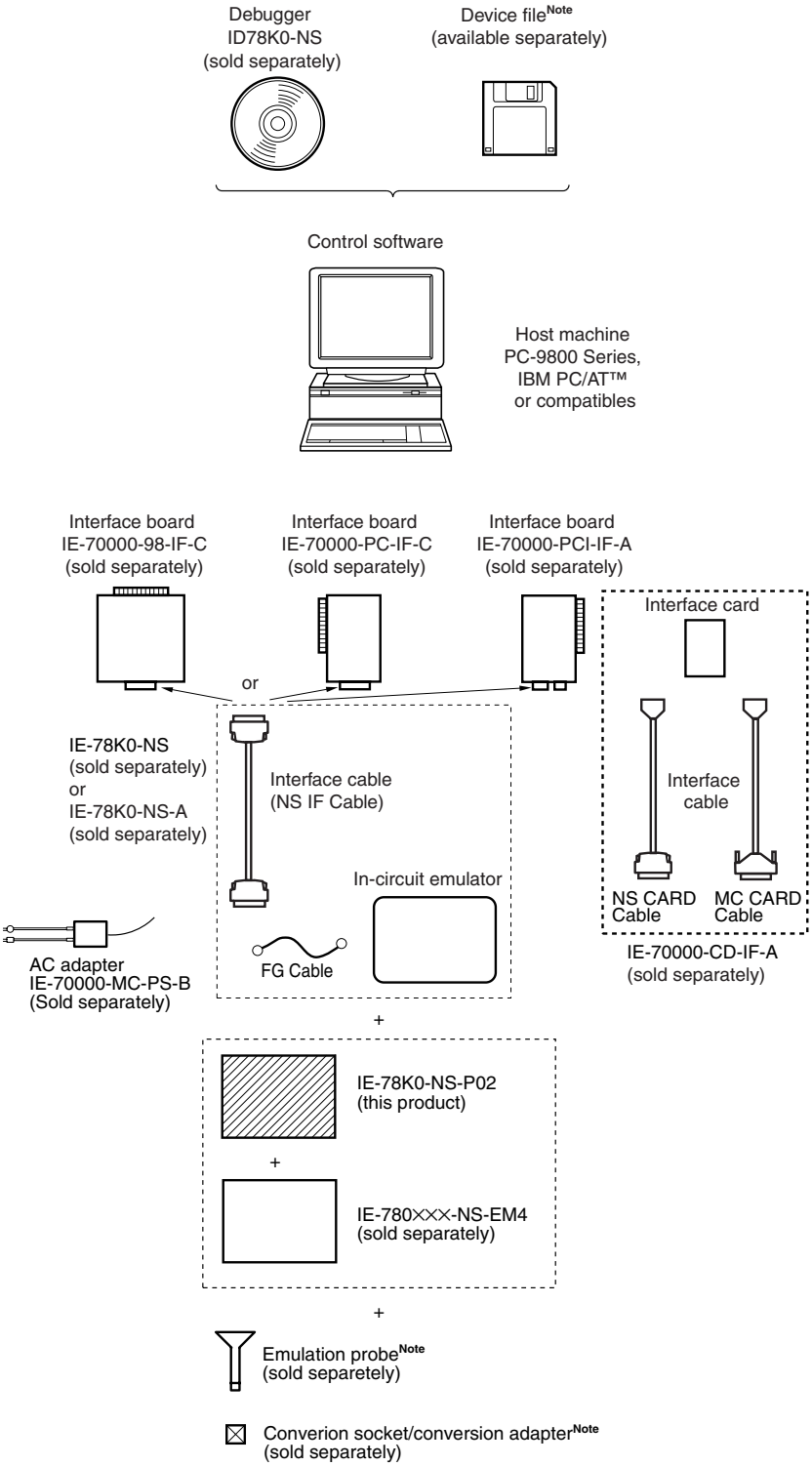
The IE-78K0-NS-P02 is a development tool for efficient debugging of hardware or software when using a 78K/0 Series 8-bit single-chip microcontroller.

This chapter describes the IE-78K0-NS-P02's system configuration and hardware configurations.

1.1 System Configuration

Figure 1-1 illustrates the IE-78K0-NS-P02's system configuration.

Figure 1-1. System Configuration



Note For the device file, emulation probe, and conversion socket/conversion adapter, refer to the user's manual that comes with the IE-780×××-NS-EM4.

1.2 Hardware Configuration

Figures 1-2 and 1-3 show the IE-78K0-NS-P02's position in the basic hardware configuration.

Figure 1-2. Basic Hardware Configuration (Using IE-78K0-NS)

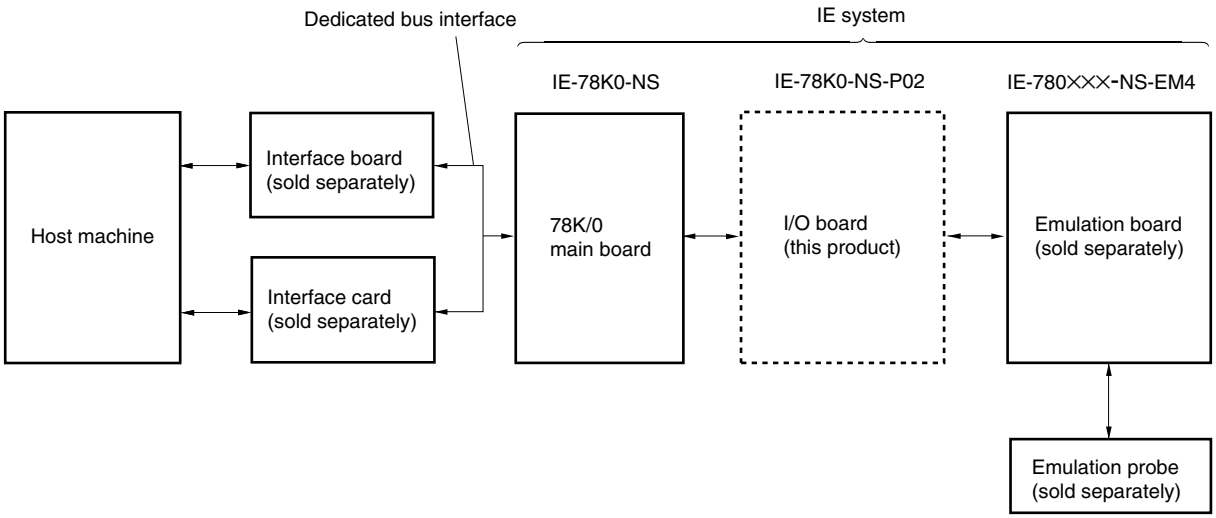
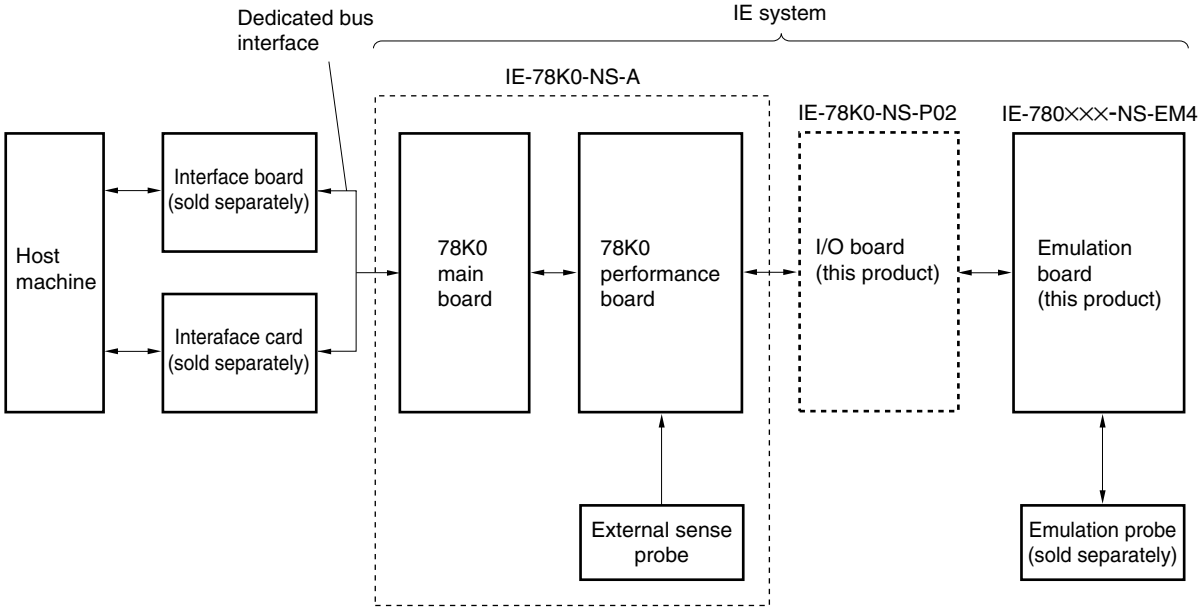


Figure 1-3. Basic Hardware Configuration (Using IE-78K0-NS-A)



CHAPTER 2 PART NAMES

This chapter introduces the parts of the IE-78K0-NS-P02 main unit.

The packing box contains the I/O board (IE-78K0-NS-P02), packing list, user's manual, and guarantee card.

If there are any missing or damaged items, please contact an NEC sales representative.

Fill out and return the guarantee card that comes with the main unit.

2.1 Parts of Main Unit

Figure 2-1. Side Connected to IE-780xxx-NS-EM4

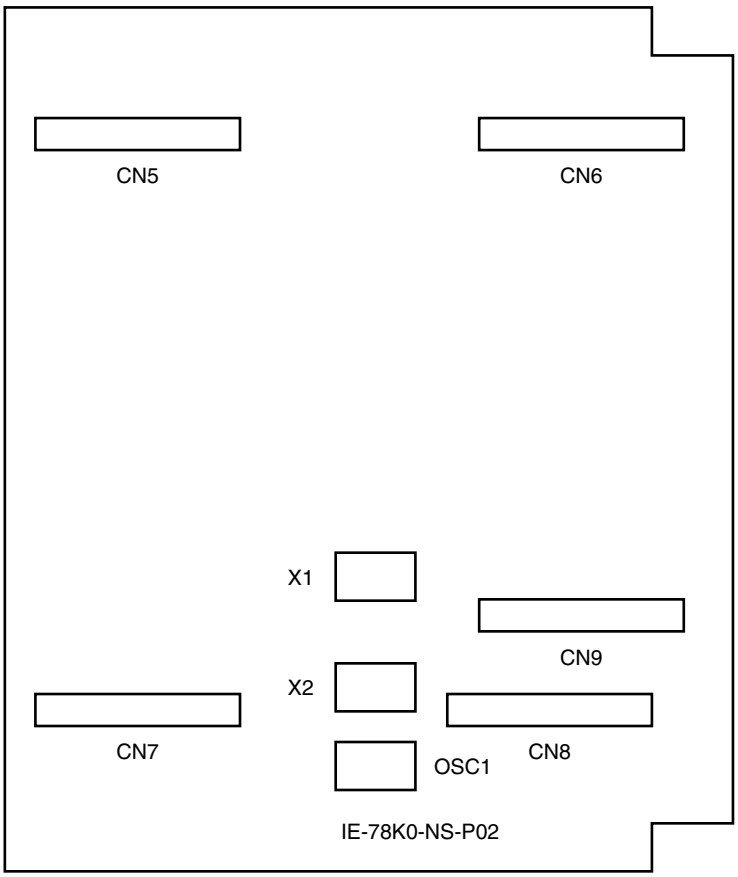
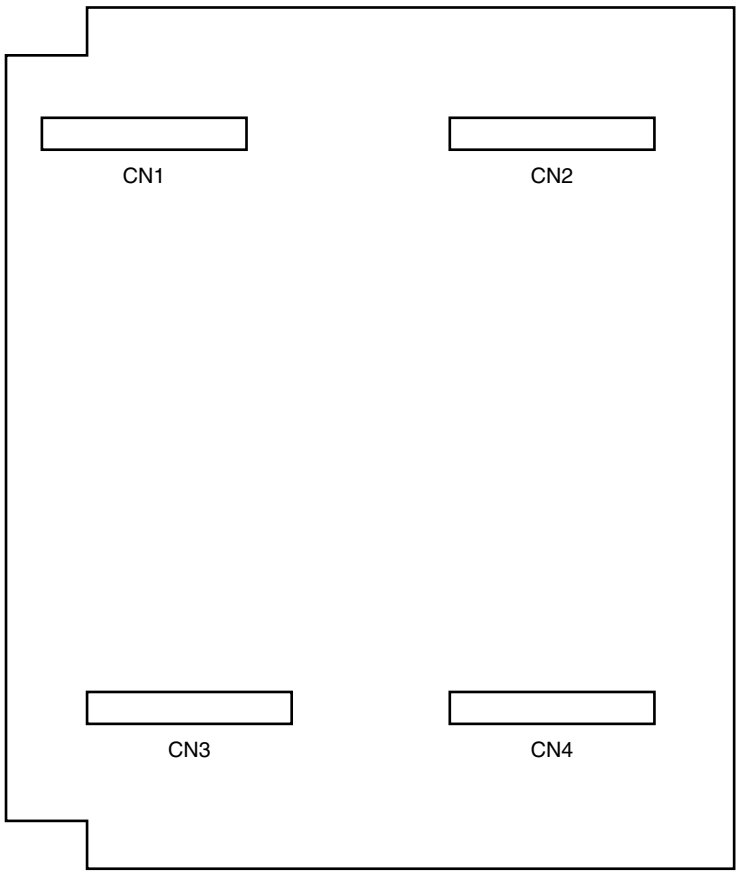


Figure 2-2. Side Connected to IE-78K0-NS or IE-78K0-NS-A



CHAPTER 3 INSTALLATION

This chapter describes methods for connecting the IE-78K0-NS-P02 to the in-circuit emulator (IE-78K0-NS or IE-78K0-NS-A), emulation probe, etc. Mode setting methods are also described.

Caution Connecting or removing components to or from the target system, or making switch or other setting changes must be carried out after the power supply to both the IE system and the target system has been switched OFF.

3.1 Connection

See the **IE-78K0-NS User's Manual (U13731E)** for a description of how to connect the IE-78K0-NS-P02 to the IE-78K0-NS and the IE-780×××-NS-EM4.

See the **IE-78K0-NS-A User's Manual (U14889E)** for a description of how to connect the IE-78K0-NS-P02 to the IE-78K0-NS-A and the IE-780×××-NS-EM4.

Caution Incorrect connection may damage the IE system.
Be sure to read the user's manual of each product for a detailed description of the connection method.

3.2 Clock Settings

IE-78K0-NS-P02 includes the following oscillator and parts boards for the clock.

(1) 8.388608 MHz (OSC1) (fixed mounting)
(2) Parts board for clock (X1)
(3) Parts board for clock (X2)

For the clock setting procedure of the IE-78K0-NS-P02, refer to the user's manual of the IE-78K0×××-NS-EM4 to be used. If no instructions regarding clock settings are provided in the user's manual of the IE-78K0×××-NS-EM4 to be used, clock setting is not necessary in the IE-78K0-NS-P02. Leave the parts boards for the clocks, X1 and X2, mounted in the IE-78K0-NS-P02 as they are.

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