

User's Manual

QB-788061

In-Circuit Emulator

μPD78F8061(A)

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- Network requirements

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Introduction

Tool Settings

This manual is intended for users who wish to perform debugging using the QB-788061. The readers of this manual are assumed to be familiar with the device functions and usage, and to have knowledge of debuggers.

Purpose

This manual is intended to give users an understanding of the basic specifications and correct usage of the QB-788061.

Organization

This manual is divided into following parts:

- Basic Operation
- Differences between QB788061 and QB-78K0KX2
- Setup Procedure
- Cautions

How to read this manual

It is assumed that the readers of this manual have general knowledge in the fields of electrical engineering, logic circuits, and microcontrollers.

This manual describes the basic setup procedures and how to set switches.

To understand the overall functions and usages of the QB-788061:

- Read this manual according to the **CONTENTS**.

To know the manipulations, command functions, and other software-related settings of the QB-788061:

- See the user's manual of the debugger to be used.

Legend

Symbols and notation are used as follows:

Weight in data notation : Left is high-order column, right is low order column

Active low notation : \overline{xxx} (pin or signal name is over-scored) or /xxx (slash before signal name)

Memory map address : High order at high stage and low order at low stage

Note : Explanation of (Note) in the text

Caution : Item deserving extra attention

Remark : Supplementary explanation to the text

Numeric notation : Binary . . . XXXX or XXXB

Decimal . . . XXXX

Hexadecimal . . . XXXXH or 0x XXXX

Prefixes representing powers of 2 (address space, memory capacity)

K (kilo): $2^{10} = 1024$

M (mega): $2^{20} = 1024^2 = 1,048,576$

G (giga): $2^{30} = 1024^3 = 1,073,741,824$.

Terminology

The meanings of the terms used in this manual are described in the table below.

Terms	Meaning
Target device	This is the device to be emulated.
Target system	This is the system to be debugged. This includes the target program and the hardware provided by the user.
μPD78F8061	Generic name

General Precautions For Handling This Product

1. Circumstances not covered by product guarantee

- If the product was disassembled, altered, or repaired by the customer
- If it was dropped, broken, or given another strong shock
- Use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range
- If power was turned on while the AC adapter, USB interface cable, or connection to the target system was in an unsatisfactory state
- If the cable of the AC adapter, the USB interface cable, the emulation probe, or the like was bent or pulled excessively
- If an AC adapter other than the supplied product was used
- If the product got wet

2. Safety precautions

- If used for a long time, the product may become hot (50°C to 60°C). Be careful of low temperature burns and other dangers due to the product becoming hot.
- Be careful of electrical shock. There is a danger of electrical shock if the product is used as described above in 1 Circumstances not covered by product guarantee.

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1 Basic Operation

This In-Circuit Emulator can be operated in the same way as the In-Circuit Emulator QB-78K0KX2 added by a hardware board plugged on to the probe for emulating the analogue features of the μ PD78F8061 device.

All features, settings, functions and limitations for QB-78K0KX2 can also apply to this tool, where for the QB-788061 some special setup is required and must be observed for correct function. Please refer to the user's manual of QB-78K0KX2 for details.

2 Differences between QB-78K0KX2 and QB788061

2.1 Emulated Devices

The following devices can be emulated:

μPD78F8061(A)

2.2 Device Specific Emulation

The QB-788061 is able to emulate within the μPD788061 specific range.

Supply voltage: 12V

Operating frequency: 8MHz

Device package: 48-pin QFN

3 Setup

3.1 Tool Settings

Apply the settings to this tool as described in the User's Manual of QB-78K0KX2. In addition setup the tool as described below.

3.1.1 Hardware Setup

Plug on the extension probe QB-788061-EA-01T (Probe extension cable, incl. board). The tool does only work as a QB-788061 tool with this hardware setup.

This setup must always be used for the QB-788061.

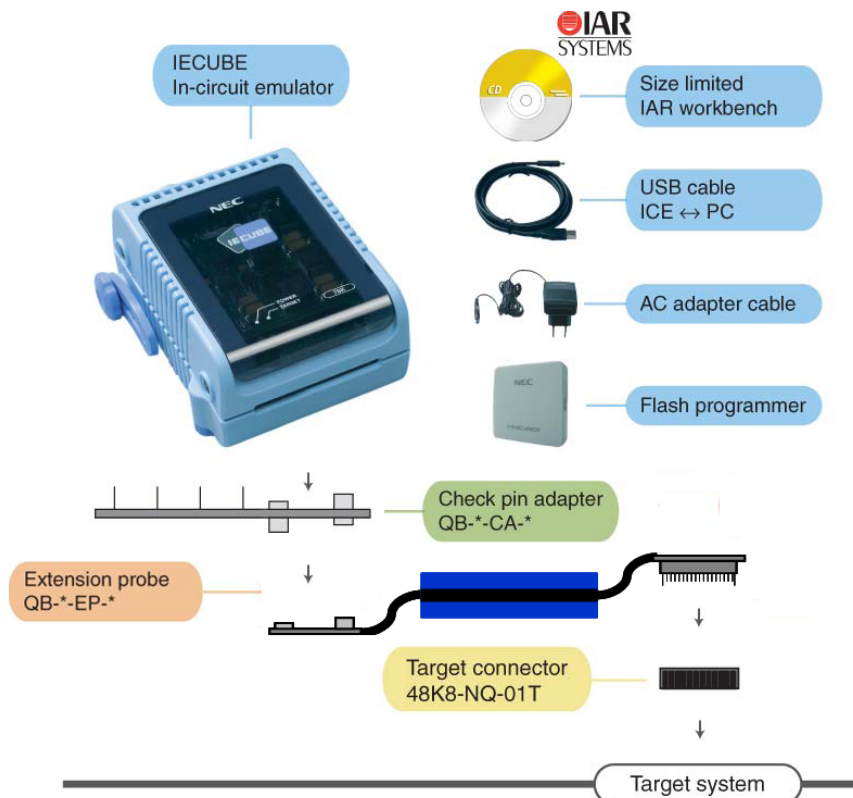
3.1.2 Device File

DF8061.78K

3.2 Emulation Probe

Use the probe accessories as described below. Extension probe and the board QB-788061-EA-01T are part of the QB-78061-ZZZ-EE package.

Figure 3-1 Tools Overview



3.2.1 Probe Setup

- Plug on the emulation probe to the QB-788061 (IECUBE).
- The QB-788061-EA-01T is already assembled to the probe on target side (inside a box)

3.2.2 Target Connector

- Plug on the connector of the QB-788061-EA-01T carefully to the target connector QB-48K8-NQ-01T.

- Check correct orientation with the three guide pins of the QB-788061-EA-01T.
- In case of plugging off the connectors, use an anti-electrical flat screwdriver between both connectors and remove on two sides carefully and step by step the connectors.

3.3 Setup and Initialization

3.3.1 Initialization of the QB-788061

Ensure that the setup of the ports used/shared with QB-788061 analogue functions is set correctly. This is required to guarantee correct function and to avoid possible damage of the tool.

3.3.2 Emulation Mode Setup

Ensure the setting for the emulation mode. Even with no target board is connected, select the following setting:

- Target connected
- Target Reset enabled

Figure 3-2 Emulation Mode Setup

4 Cautions

Observe the following cautions.

Do not turn off the target power supply during a break (power supply can be turned off only during RUN).

Even when using the product without connecting a target system, connect and use the emulation probe.

If the product is used without connecting the emulation probe, a warning window is displayed but use is possible.

5 Appendix

5.1 Package Drawings

This section shows areas on the target system where component mounting is prohibited and areas.

5.1.1 Target Connector

Figure 5-1 Package Drawing

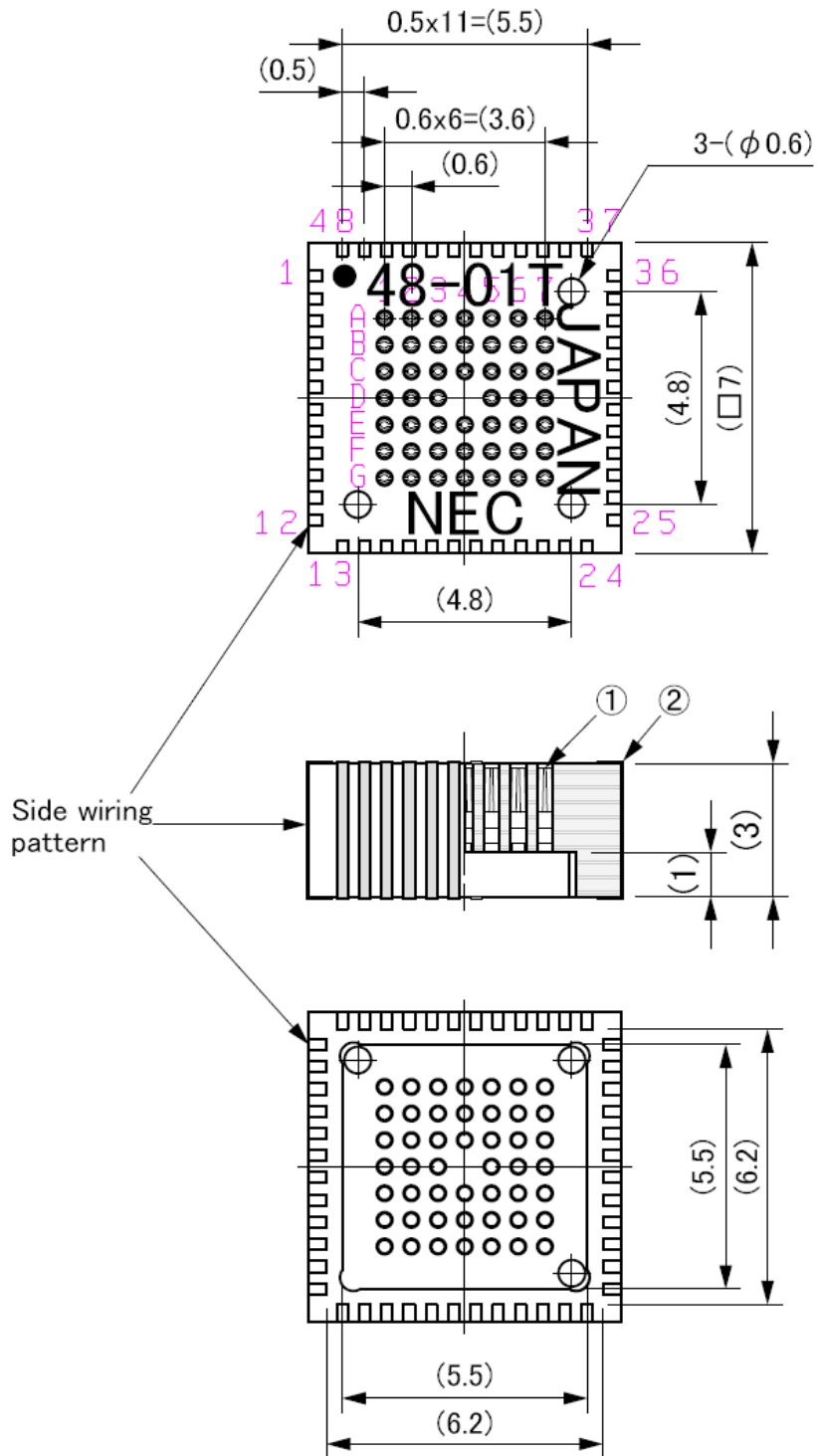
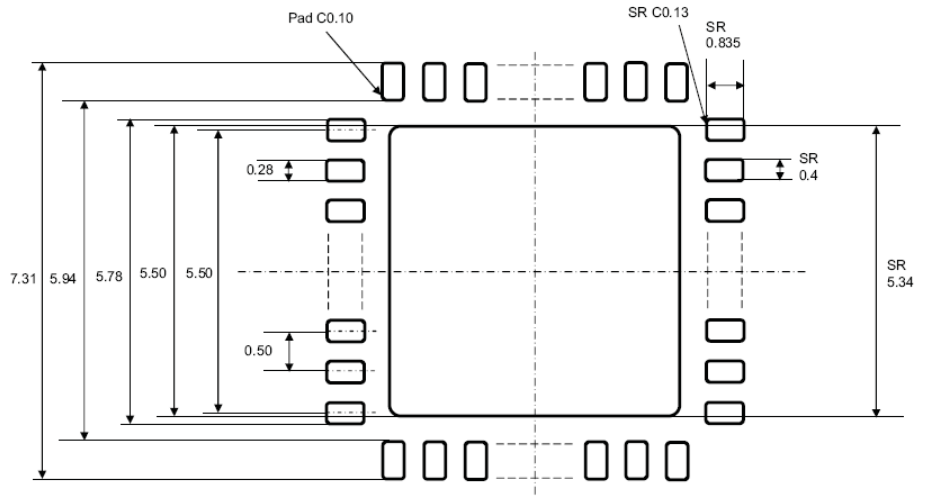


Figure 5-2 Land Pattern



5.1.2 Check Pin Adapter

Figure 5-3 Check Pin Adapter

