To our customers,

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April 1st, 2010
Renesas Electronics Corporation

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User's Manual

# USB Adapter for E6000/E8000 Emulator HS6000EIU01H

## Description Notes

Renesas Electronics
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Rev.1.0 2002.07

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## READ FIRST

**• READ this user's manual before using this emulator product.**

**• KEEP the user's manual handy for future reference.**

**Do not attempt to use the emulator product until you fully understand its mechanism.**

### Emulator Product:

Throughout this document, the term "emulator product" shall be defined as the following products produced only by Hitachi, Ltd. excluding all subsidiary products.

- E6000 series emulator station or E8000 series emulator station
- USB adapter
- User system interface cables
- SIMM memory module
- Optional boards

The user system or a host computer is not included in this definition.

### Purpose of the USB Adapter:

When Hitachi Debugging Interface (hereinafter referred to as HDI), a software debugging tool that runs on Windows®, is used, when USB-connecting the USB adapter, this USB adapter is used for USB-connecting an E6000 series emulator or an E8000 series emulator to an host computer, and supports software and hardware development. This USB adapter must only be used for the above purpose.

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This emulator product should only be used by those who have carefully read and thoroughly understood the information and restrictions contained in the user's manual. Do not attempt to use the emulator product until you fully understand its mechanism.

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# SAFETY PAGE

## READ FIRST

**• READ this user's manual before using this emulator product.**

**• KEEP the user's manual handy for future reference.**

**Do not attempt to use the emulator product until you fully understand its mechanism.**

## DEFINITION OF SIGNAL WORDS

**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**

**⚠ DANGER** **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**⚠ WARNING** **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**⚠ CAUTION** **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

**CAUTION** **CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

**NOTE** emphasizes essential information.

# ⚠ WARNING

**Observe the precautions listed below. Failure to do so will result in a FIRE HAZARD and will damage the user system and the emulator product or will result in PERSONAL INJURY. The USER PROGRAM will be LOST.**

1. **Do not repair or remodel the emulator product by yourself for electric shock prevention and quality assurance.**
2. **Always switch OFF the E6000 and E8000 emulator and user system before connecting or disconnecting any CABLES or PARTS.**
3. **Supply power according to the power specifications and do not apply an incorrect power voltage. Use only the provided power cable.**

# Preface

The USB adapter for the E6000 / E8000 emulators is described in this description notes. Read this notes and the User's manuals for the E6000 and E8000 emulators.

This USB adapter provides USB connection of the E6000/E8000 emulator to an host computer via the USB interface, enabling program debugging through an HDI.

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4. Displays in this notes are examples at using the Windows® 2000.
5. Pentium® is a registered trademark of Intel.

# Contents

# Section 1 Overview

This section describes the system configuration at USB connection and the USB adapter.

## 1.1 System Configuration

Figure 1 shows the system configuration when connecting the E6000 emulator and the USB adapter. The E8000 emulator can be connected in the same way. Refer to figure 5 when connecting the E8000 emulator and the USB adapter.

The host computer containing Windows® and the USB adapter are connected via the USB cable.

The USB adapter and the E6000/E8000 emulator are connected through the PC interface cable.

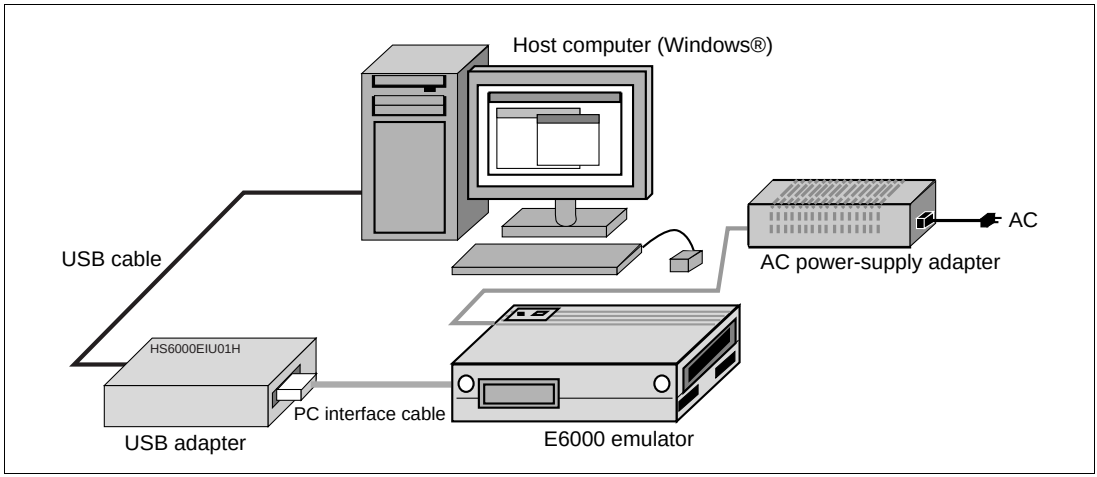



**Figure 1 System Configuration of E6000 Emulator Connection**

## 1.2 Operating Environments

**Table 1 Operating Environments**

| Item | Description |
|---|---|
| Host computer | Built-in Pentium® or higher-performance CPU (500 MHz or higher recommended); IBM PC or compatible machine with the USB interface. |
| USB interface | Complied with USB Specification Rev. 1.1 |
| Basic software | Windows® 98SE, Windows® Me, or Windows® 2000 |
| Minimum memory capacity | 32 Mbytes or more (double of the load module size recommended) |
| Hard-disk capacity | Installation disk capacity: 10 Mbytes or more. (Prepare an area at least double the memory capacity (four-times or more recommended) as the swap area.) |
| Pointing device such as mouse | Connectable to the host computer; compatible with Windows® 98SE, Windows® Me, and Windows® 2000. |
| CD-ROM drive | Required to install the HDI for the emulator or refer to the emulator user's manual. |

## 1.3 Environmental Conditions

# CAUTION

**Observe the conditions listed in table 2 when using the USB adapter. Failure to do so will damage the USB adapter, the emulator product, and the user system.**

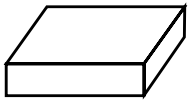
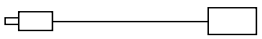
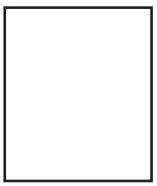
**Table 2 Environmental Conditions**

| No. | Item | Specification |
|---|---|---|
| 1 | Temperature | Operating: +10°C to +35°C<br>Storage: -10°C to +50°C |
| 2 | Humidity | Operating: 35% RH to 80% RH, no condensation<br>Storage: 35% RH to 80% RH, no condensation |
| 3 | Vibration | Operating: 2.45m/$S^2$ max.<br>Storage: 4.9m/$S^2$ max.<br>Transportation: 14.7m/$S^2$ max. |
| 4 | DC power-supply | Voltage: DC 5 V<br>Current: 250 mA |
| 5 | Ambient gases | There must be no corrosive gasses present. |

# Section 2 Components

Table 3 lists the components of the USB adapter.

**Table 3 Components**

| Item | Product Name | Configuration | Quantity | Remarks |
|---|---|---|---|---|
| Hardware | USB adapter |  | 1 | Number of printed circuit boards mounted: 1 |
| | PC interface cable |  | 1 | Cable length: 1.5 m<br>With a ferrite core (for EMI* disturbance) |
| | USB cable |  | 1 | Cable length: 2 m |
| Documen-tation | Description Notes on Using USB Adapter for E6000/E8000 Emulator (HS6000EIU01H) (This manual) |  | 1 | HS6000EIU01HE |

Note: EMI is an abbreviation of electrical magnetic interference.

## 2.1 USB Adapter

Figure 2 shows each part of the USB adapter.

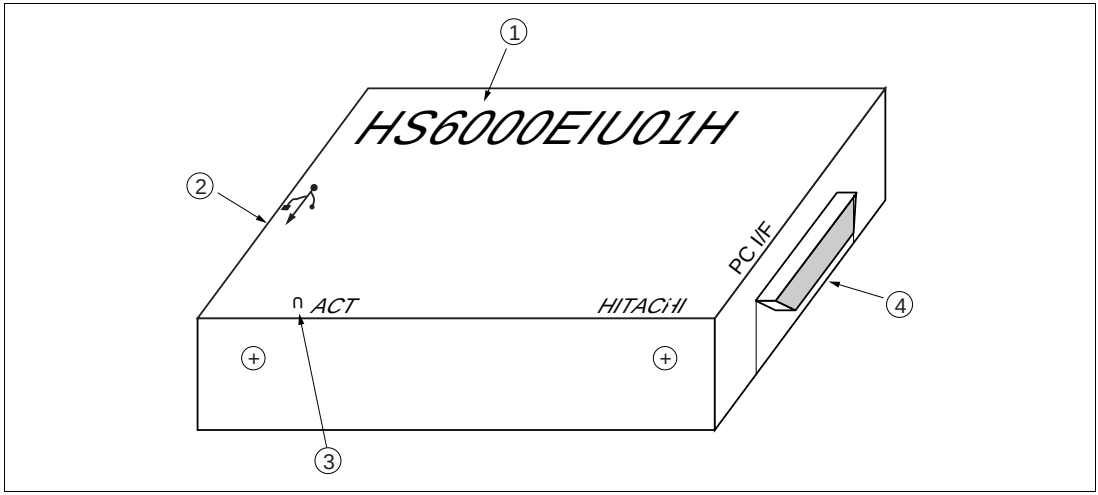



**Figure 2 USB Adapter**

Numbers in figure 2 indicate the following:

(1) Product name: Product name (HS6000EIU01H) of the USB adapter.
(2) USB port: Connects the USB cable.
(3) LED displaying the communication state: This LED is lit if a communication error occurs.
(4) PC interface cable connector: Connects the emulator.

# Section 3 Preparation Before Use

## 3.1 Connecting USB Cable to USB Adapter

**⚠ WARNING**

**Always switch OFF the emulator product and user system before connecting or disconnecting the USB adapter.**
**Failure to do so will result in a FIRE HAZARD and will damage the user system, USB adapter, and emulator product or will result in PERSONAL INJURY.**
**Use the AC power-supply adapter provided in the package.**

(1) Connect the USB cable to the connector marked ‘ ’ as shown in figure 3.

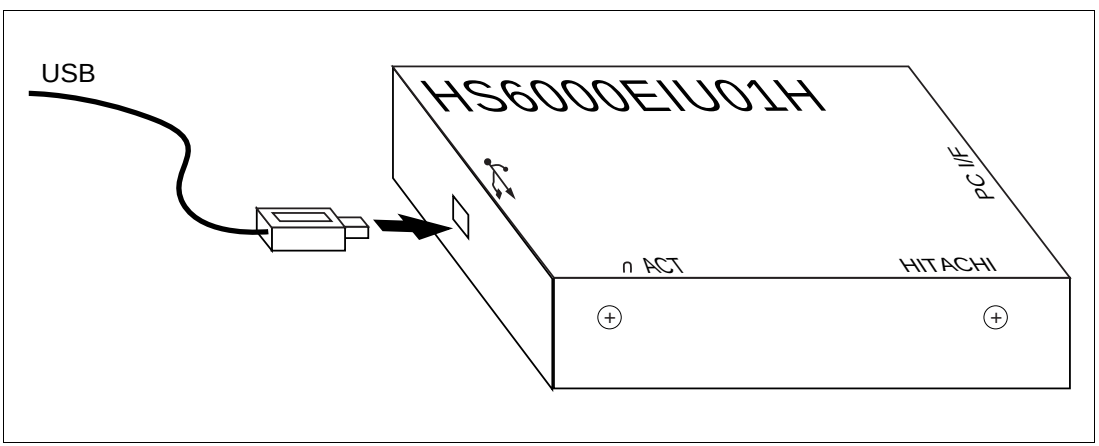



**Figure 3 Connecting USB Cable to USB Adapter**

## 3.2 Connecting USB Adapter to E6000 Emulator

**⚠ WARNING**

**Always switch OFF the emulator product and user system before connecting or disconnecting the USB adapter.**
**Failure to do so will result in a FIRE HAZARD and will damage the user system, USB adapter, and emulator product or will result in PERSONAL INJURY.**

To use the E6000 emulator, connect the USB adapter to the E6000 emulator station via the supplied PC interface cable, as shown in figure 4. Connect the PC interface cable connector with a ferrite core to the E6000 emulator.

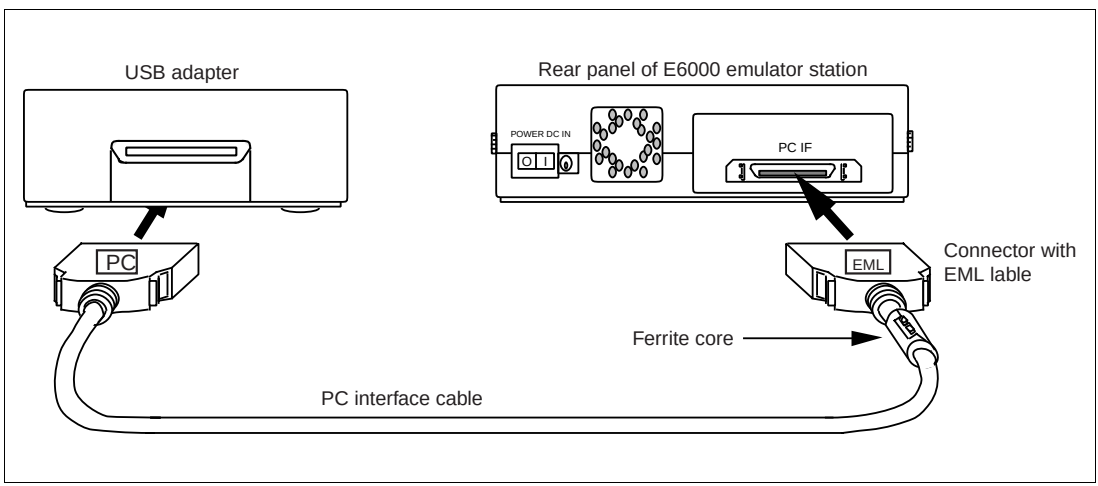



**Figure 4 Connecting USB adapter to E6000 Emulator**

## 3.3 Connecting USB Adapter to E8000 Emulator

**⚠ WARNING**

**Always switch OFF the emulator product and user system before connecting or disconnecting the USB adapter.**
**Failure to do so will result in a FIRE HAZARD and will damage the user system, USB adapter, and emulator product or will result in PERSONAL INJURY.**

To use the E8000 emulator, connect the USB adapter to the E8000 emulator station via the supplied PC interface cable, as shown in figure 5. Connect the PC interface cable connector with a ferrite core to the E8000 emulator.

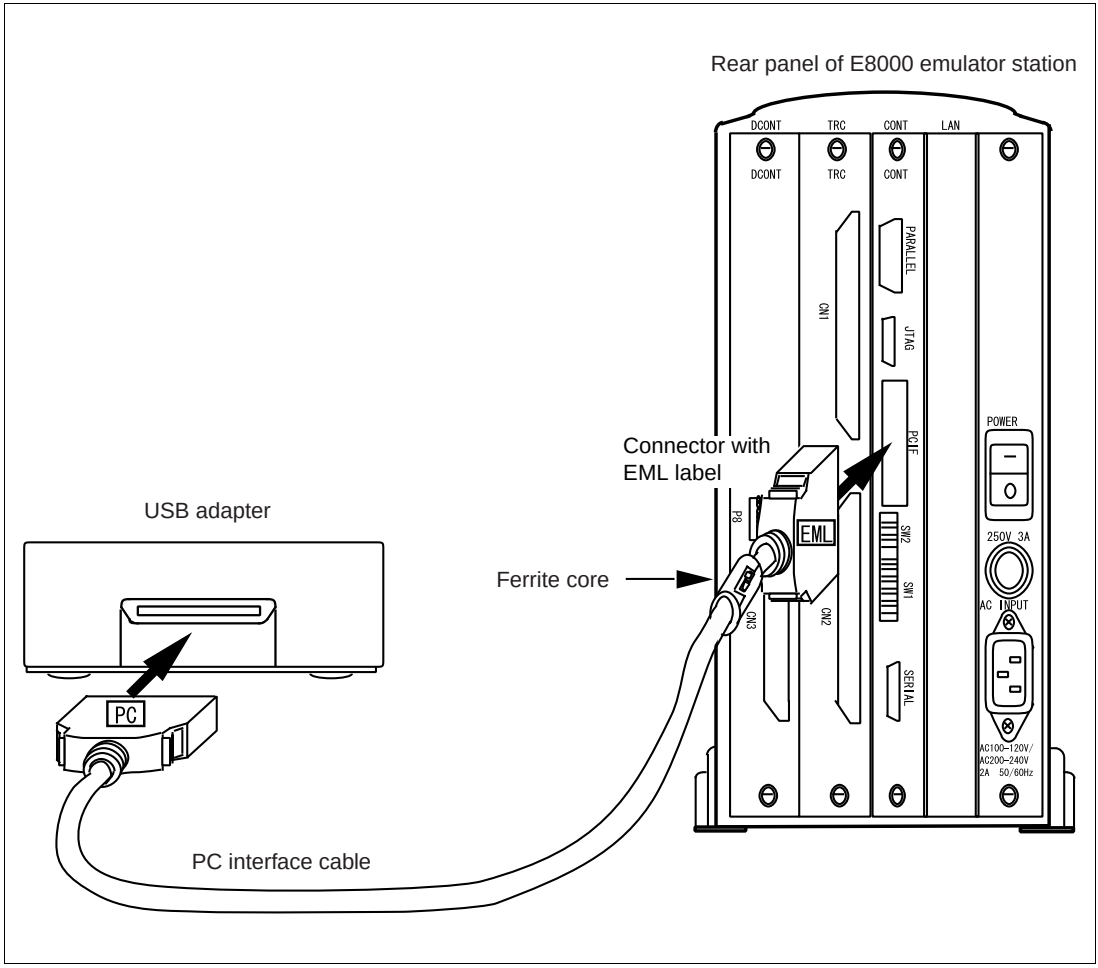



**Figure 5 Connecting USB Adapter to E8000 Emulator**

# Section 4 Setting up the USB Adapter

## 4.1 Procedures

Figure 6 shows the setup procedures of the USB adapter.

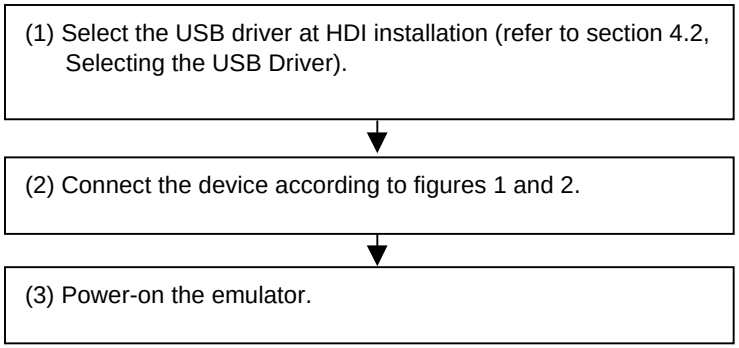



**Figure 6 Setup Procedures**

## 4.2 Selecting the USB Driver

During HDI installation, select 'USB Driver' in the [Select Components] dialog box.

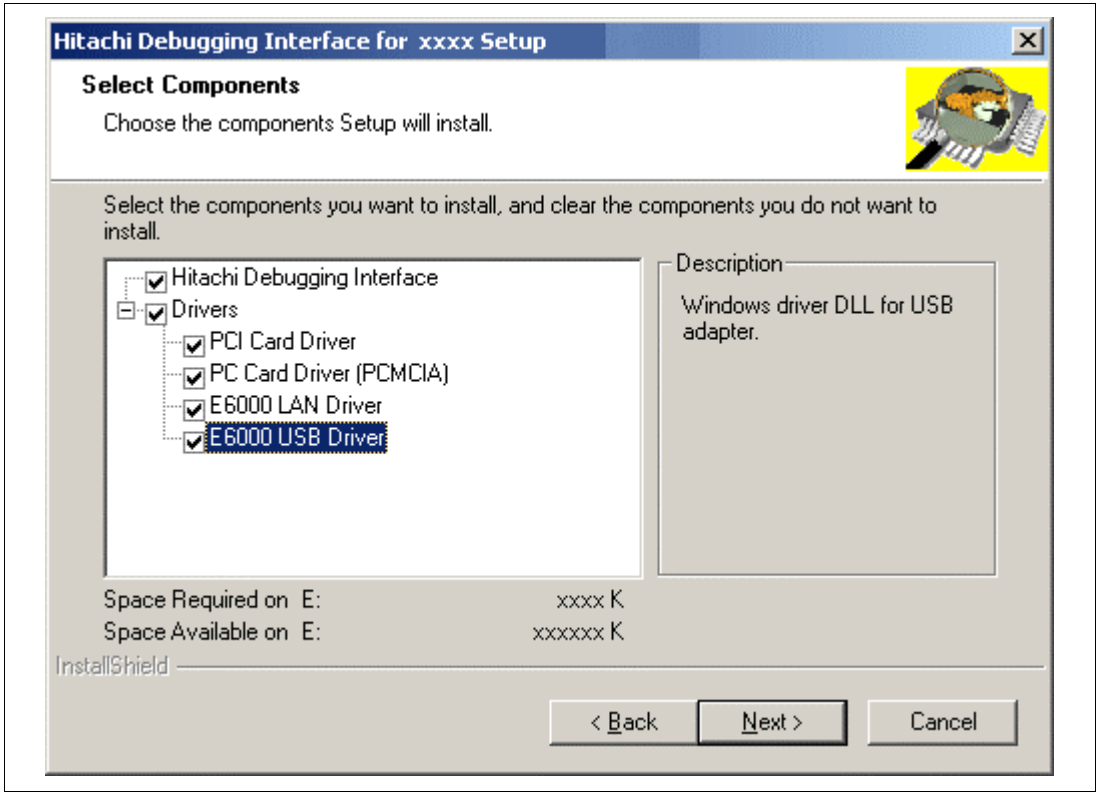



**Figure 7 [Select Components] Dialog Box**

Notes: 1. Figure 7 is a dialog box for installing the E6000 HDI.

2. If ‘USB Driver’ is not displayed as a component, operating environments in table 1 will not be satisfied. Check the operating system in use.

# Section 5 Troubleshooting

The problems that may occur when using the USB adapter and the measures to be taken are as follows.

1. The HDI will not start.
   - If the emulator is not powered-on, an error message will be displayed when the HDI is started. Check that the USB adapter and emulator are correctly connected and the emulator is powered-on.
2. The HDI stops operating.
   - Check that the USB adapter and emulator are correctly connected.
   - Check if another HDI tries to communicate with the USB adapter. Multiple HDIs cannot use one USB adapter at the same time.
3. The LED is lit for displaying the communication state.
   - The USB adapter has an LED for displaying the communication state as shown in figure 8. This LED will be lit if an error occurs in the USB interface communication.
     If this LED is lit after above items 1 and 2 have been checked and have no problems, turn the emulator and the user system off, remove the USB cable from the USB adapter, and connect them again.

If the problem is not solved even if those measures have been taken, there will be a failure in the USB adapter. In such a case, contact Hitachi's sales agency.

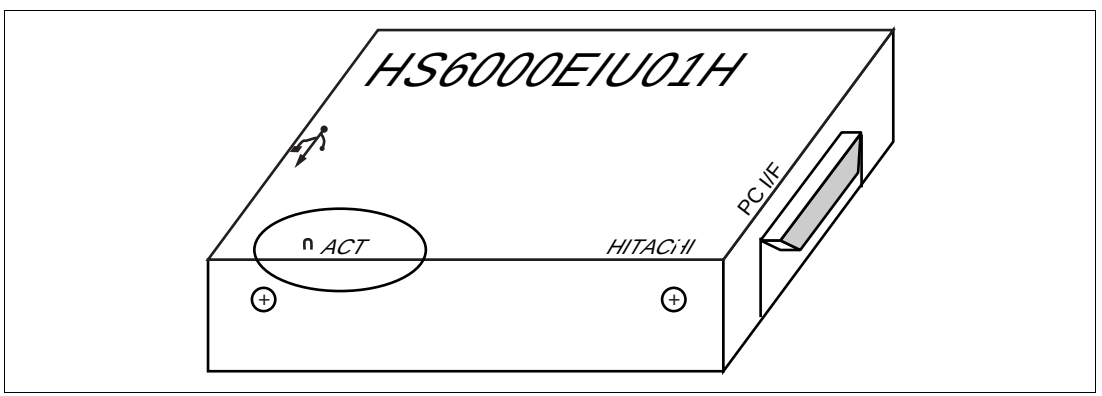
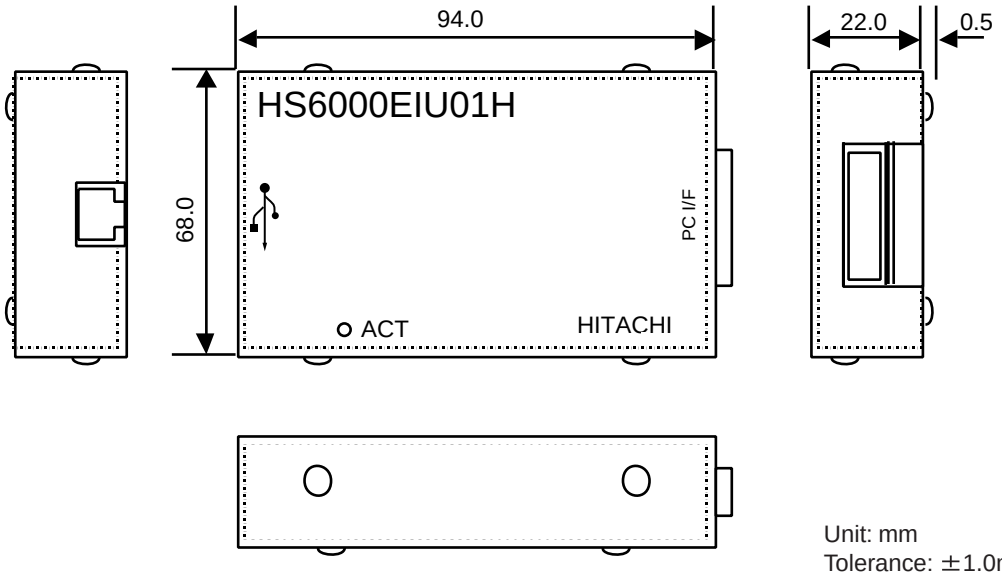



**Figure 8 LED for Displaying the Communication State**

# Section 6 External Dimensions of the USB Adapter




Unit: mm
Tolerance: ±1.0mm