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H8S Series User System Interface Cable  
For H8S Series Compact Emulator

Microcomputer Development Environment System

User's Manual





**Microcomputer  
Development Environment System**

**CE2000**

**H8S Series User System Interface Cable  
For H8S/2238 FP-100B  
User's Manual**



## **H8S Series User System Interface Cable for Compact Emulator User's Manual**

Published by : Renesas System Solutions Asia Pte. Ltd.

Date : April 1<sup>st</sup>, 2003, Version 1.0

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Throughout this document, the term 'emulator product' shall be defined as the following products produced only by Renesas System Solutions Asia Pte. Ltd.:

- Emulation system (SD01CE2238)
- User system interface cable (SD01UC2214TB2)
- User system interface cable (SD01UC2238FA0B)
- User system interface cable (SD01UC2215TC0)

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

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Renesas cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this user's manual and on the emulator product are therefore not all inclusive. Therefore, you must use the emulator product safely at your own risk.

# PREFACE

## **About this manual**

This manual explains how to link the user cable to the Compact Emulator.

### **Section 1** Introduction

Gives a highlight to the system package and specification.

### **Section 2** Connection Procedures

Explains how to link the user system to the emulator via the user cable.

### **Section 3** Dimensions of User System Cable Head

Details the dimensions of the user system cable head needed.

### **Section 4** Installing MCU to the User System

Describes the steps involved to place the MCU into the socket.

### **Section 5** Warning

Emphasizes the precautionary measures when handling the user cable.

### **Assumptions**

This manual assumes that the user has a working knowledge of

- Renesas Compact Emulator
- General Hardware Interface Circuitry

### **Related Manuals:**

- Compact Emulator User's Manual
- H8S/2238 Series Hardware Manual

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## Section 1. Introduction

### 1.1 General Description

The user system interface cable (SD01UC2238FA0B) connects the Compact Emulator (CE2000-H8S/2238) to the IC socket for a QFP 100B-pin package (Package code: FP-100B).

This user cable is able to support the following devices:

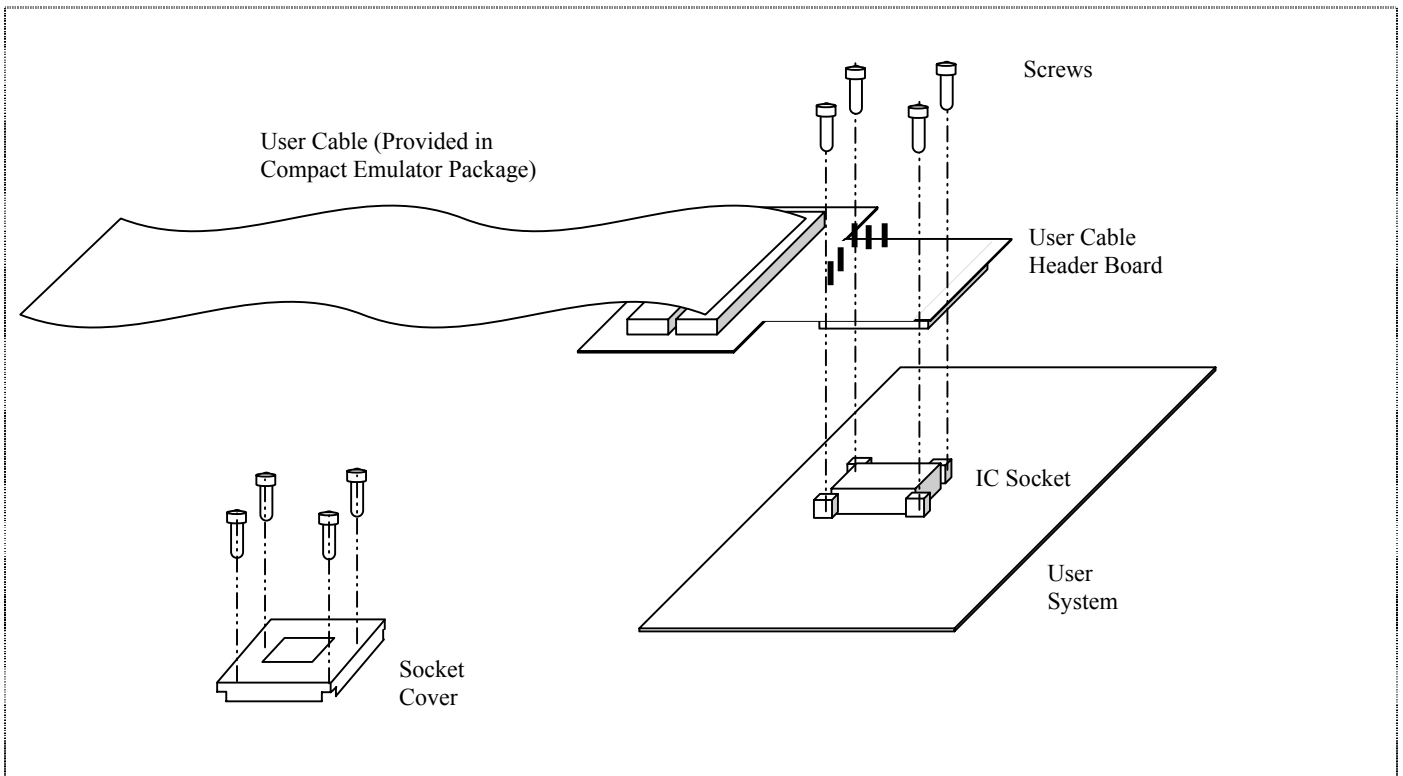
- H8S/2214
- H8S/2223
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- H8S/2227
- H8S/2233
- H8S/2235
- H8S/2236
- H8S/2237
- H8S/2238

### 1.2 IC Socket Type

The recommended IC socket used on the user system is from Yamaichi Electronics Co., Ltd. The part number for the FP-100B pin package IC socket is given below:

- **IC149-100-054-B51**

### 1.3 Configuration



**Figure 1.1 SD01UC2238FA0B User System Interface Cable**

- Align pin 1 of the Adapter of user cable header to IC socket on the user system.
- Install Adapter to the socket by tightening the screws.
- Connect the other ends of the 2x80-way connectors from the Compact Emulator to the User Cable header board.

### 1.4 Components

No.	Component	Quantity	Remarks
1	User Cable Header Board	1	
2	IC socket	1	For QFP 100-pin package (FP-100B)
3	Socket cover	1	For installing the MCU
4	Screws (M2.6x12)	4	For fastening cable head (with four flat washers)
5	Screws (M2.6x6)	4	For installing MCU (with four flat washers)

Note: The 2x80-way user cable assemblies are provided in the Compact Emulator package.



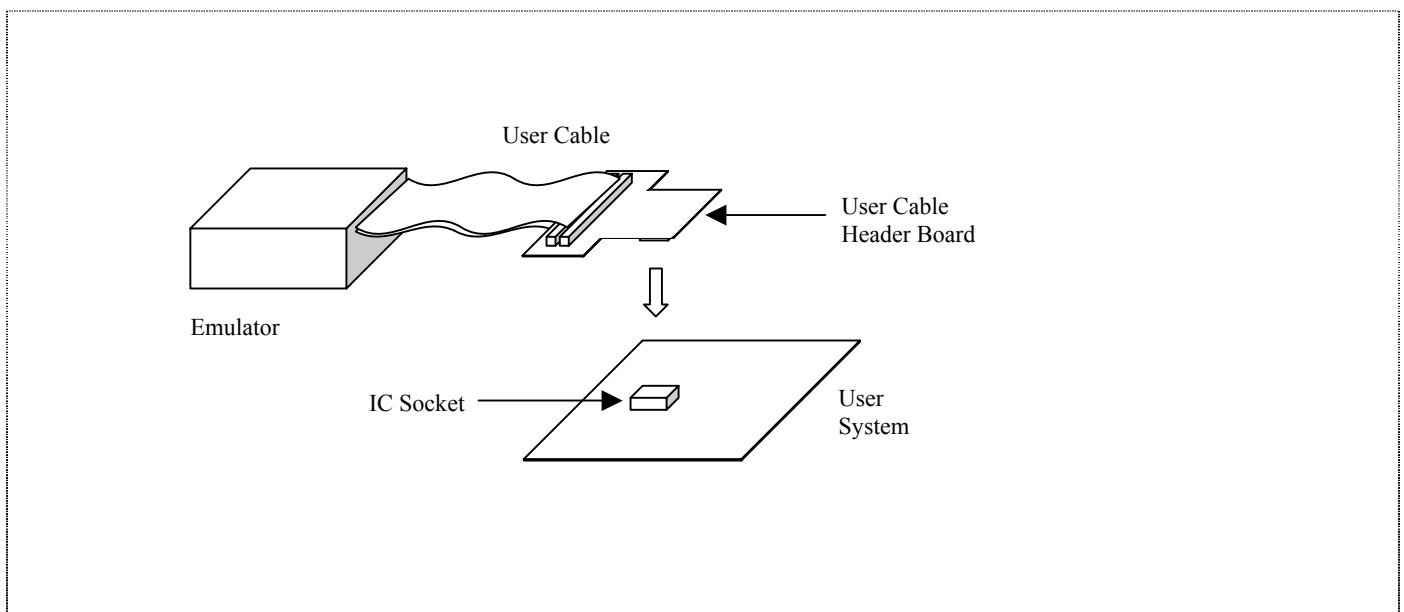
## Section 2. Connection Procedures

**WARNING:** Always switch OFF the user system and the emulator product before the USER SYSTEM INTERFACE CABLE is connected to or removed from either of the boards. Before connecting, make sure that pin 1 is correctly aligned. Failure to do so may result in a FIRE HAZARD, which may damage the user system and the emulator product. PERSONAL INJURY may also be resulted.

### 2.1 Connecting User System Interface Cable to The Emulator

To connect the cable body to the emulator, follow the instructions below:

- Make sure the user system and emulator are powered off.
- Open the cover at the bottom of the emulator.
- Align the connectors on the cable body with those on the emulator according to the specified number, insert the cable body connectors to those on the emulator until they are locked. Refer to figure 2.1.

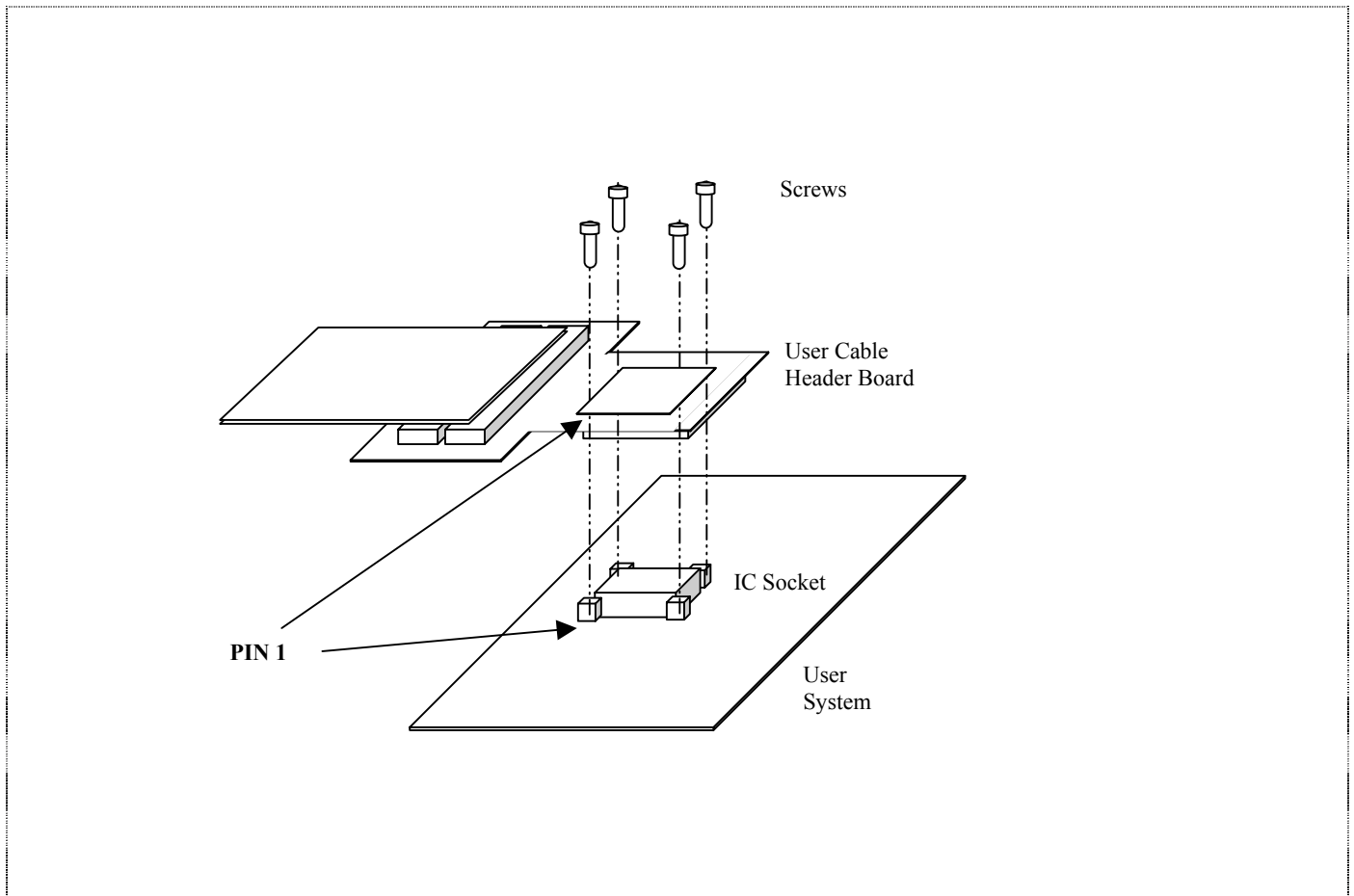


**Figure 2.1** Connect User System Interface Cable to the Emulator

## 2.2 Connecting User System Interface Cable to User System

### 2.2.1 Soldering IC Socket

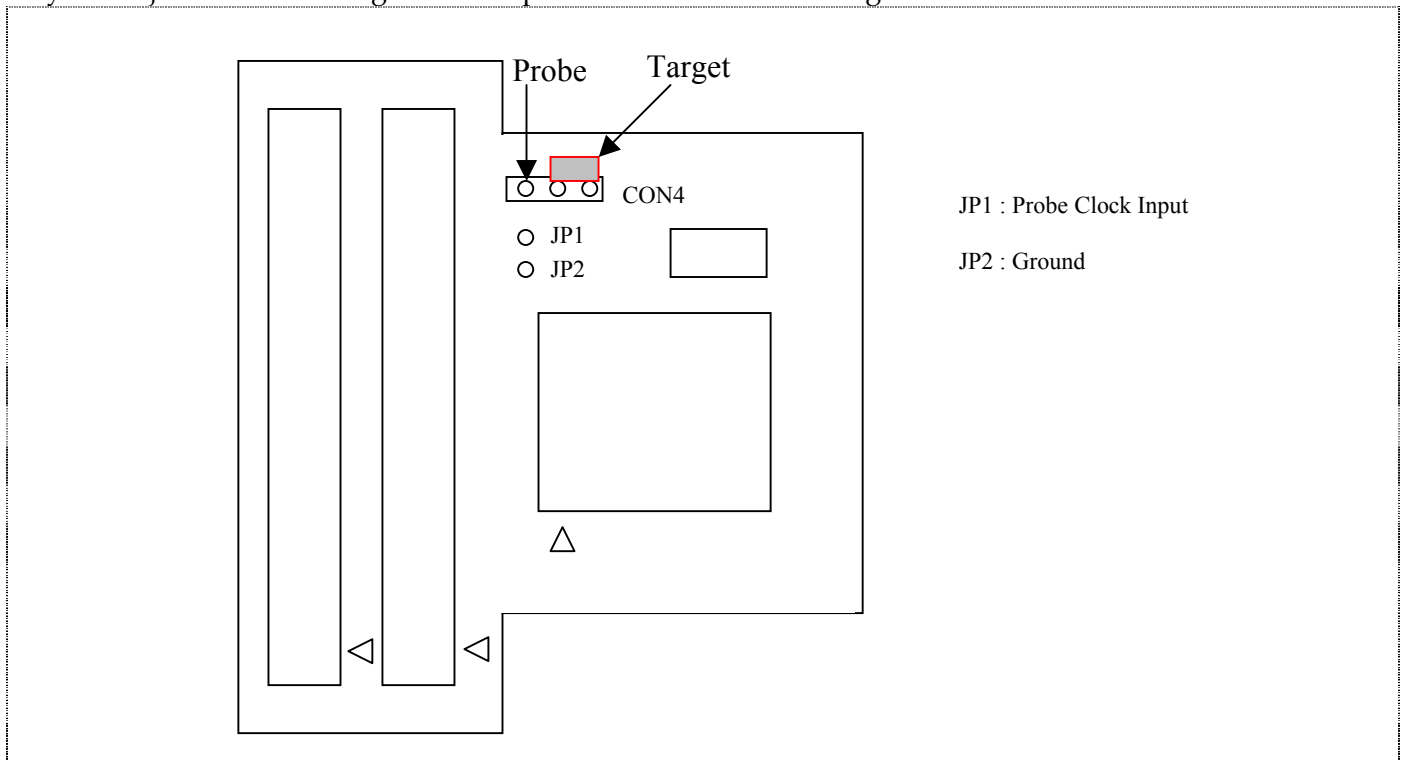
- Apply epoxy resin adhesive to the corner guides and bottom face of an IC socket for the FP-100B pin package and fasten it to the user system.
- Align pin 1 on the IC socket with pin 1 on the user system interface cable head, and insert the user system interface cable head into the IC socket on the user system as shown in figure 2.2.
- Fasten the user system interface cable to the IC socket on the user system with the four screws provided. Each screw should be tightened a little at a time, alternating between screws on opposite corners. Use special care to prevent the soldered IC socket from being damaged by over-tightening the screws or twisting the components.



**Figure 2.2 Connecting User System Interface Cable to User System**

## 2.2.2 Using Target Clock

The user cable supports the use of crystal as the main clock. In default, the jumper is set to the target crystal. Injection of clock signal is also provided. Please refer to figure 2.3.

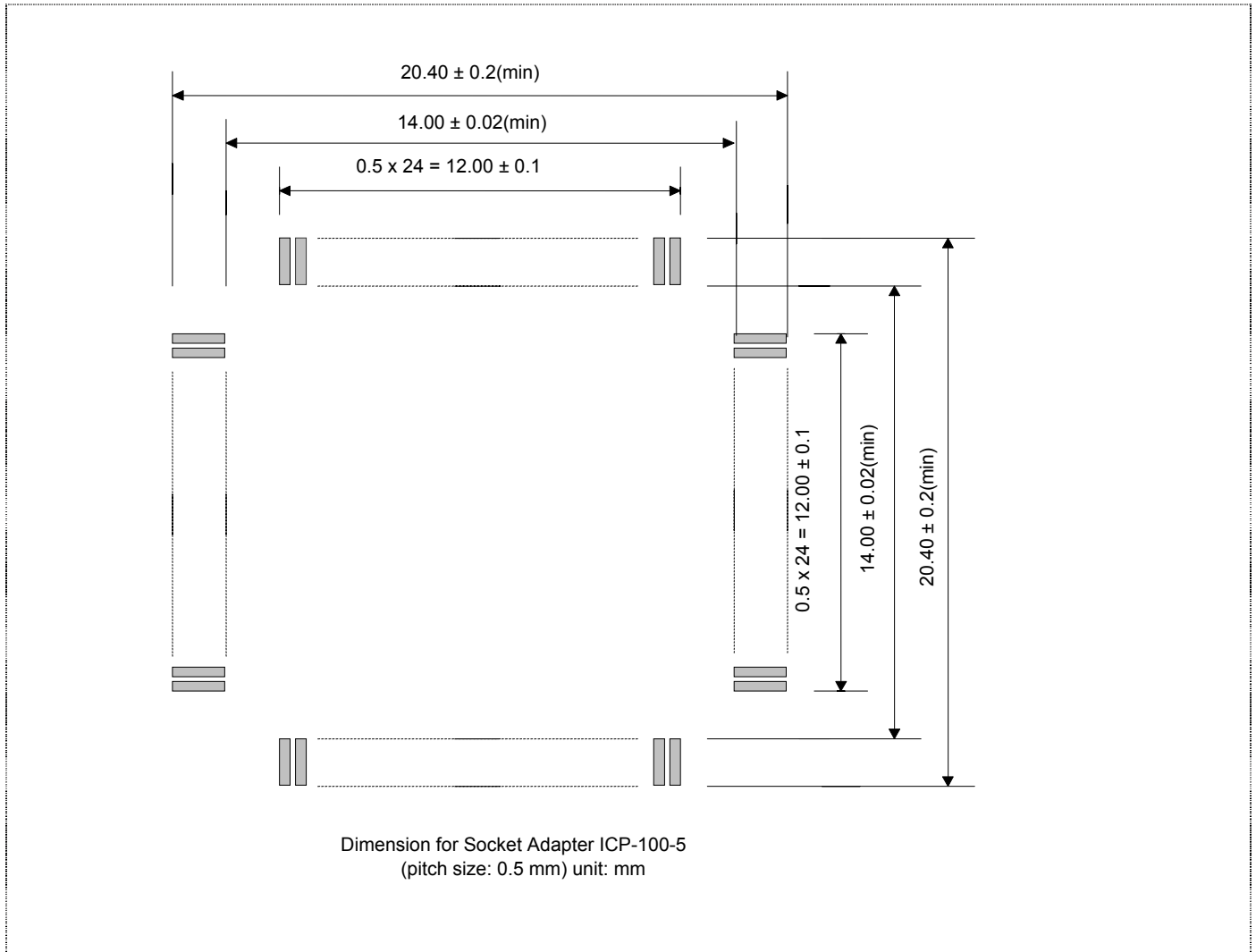


**Figure 2.3 Clock Selection**

If user intends to inject clock signal, fix the jumper[CON4] at the “Probe” selection. User has to ensure correct signal level while injecting the clock signal at JP1 with respect to the grounding point at JP2.

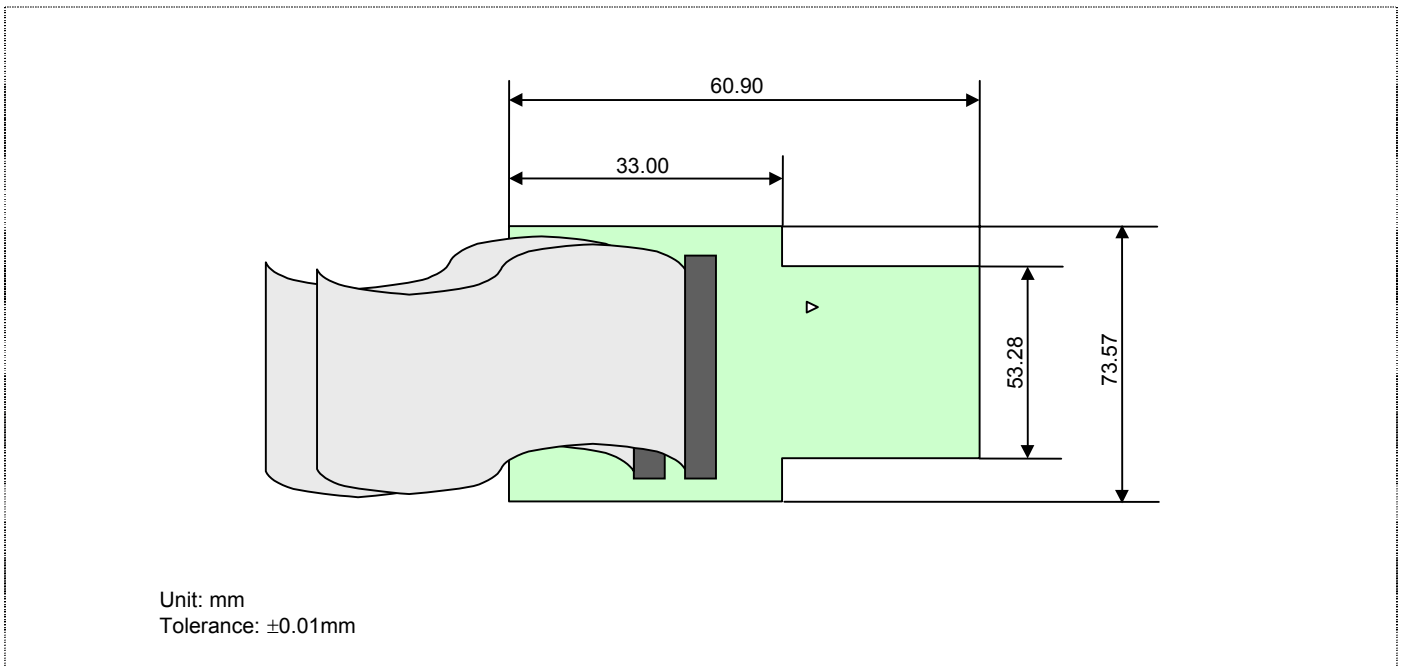
### Section 3. Dimensions of User System Cable Head

The dimensions of the recommended footprint for the QFP 100-pin package (manufactured by Yamaichi Electronics Co., Ltd.) on the user system are given in figure 3.1.



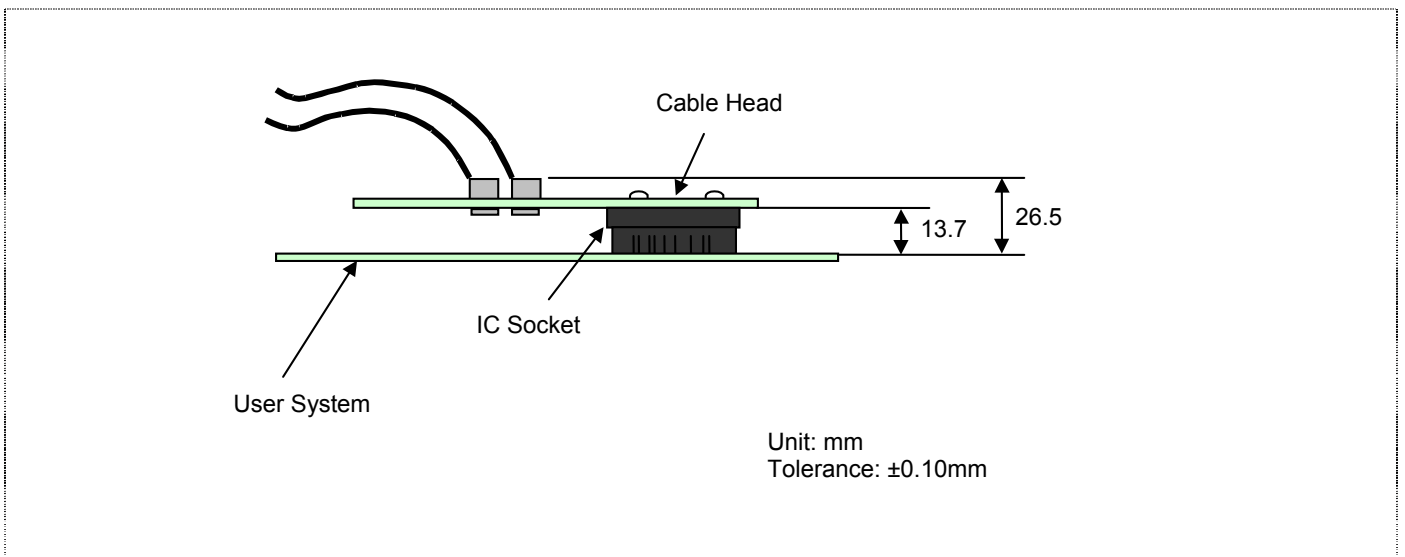
**Figure 3.1 PCB Footprint of User System Interface Cable Head**

The dimensions for the user system interface cable head are shown in figure 3.2.



**Figure 3.2 User System Interface Cable Head**

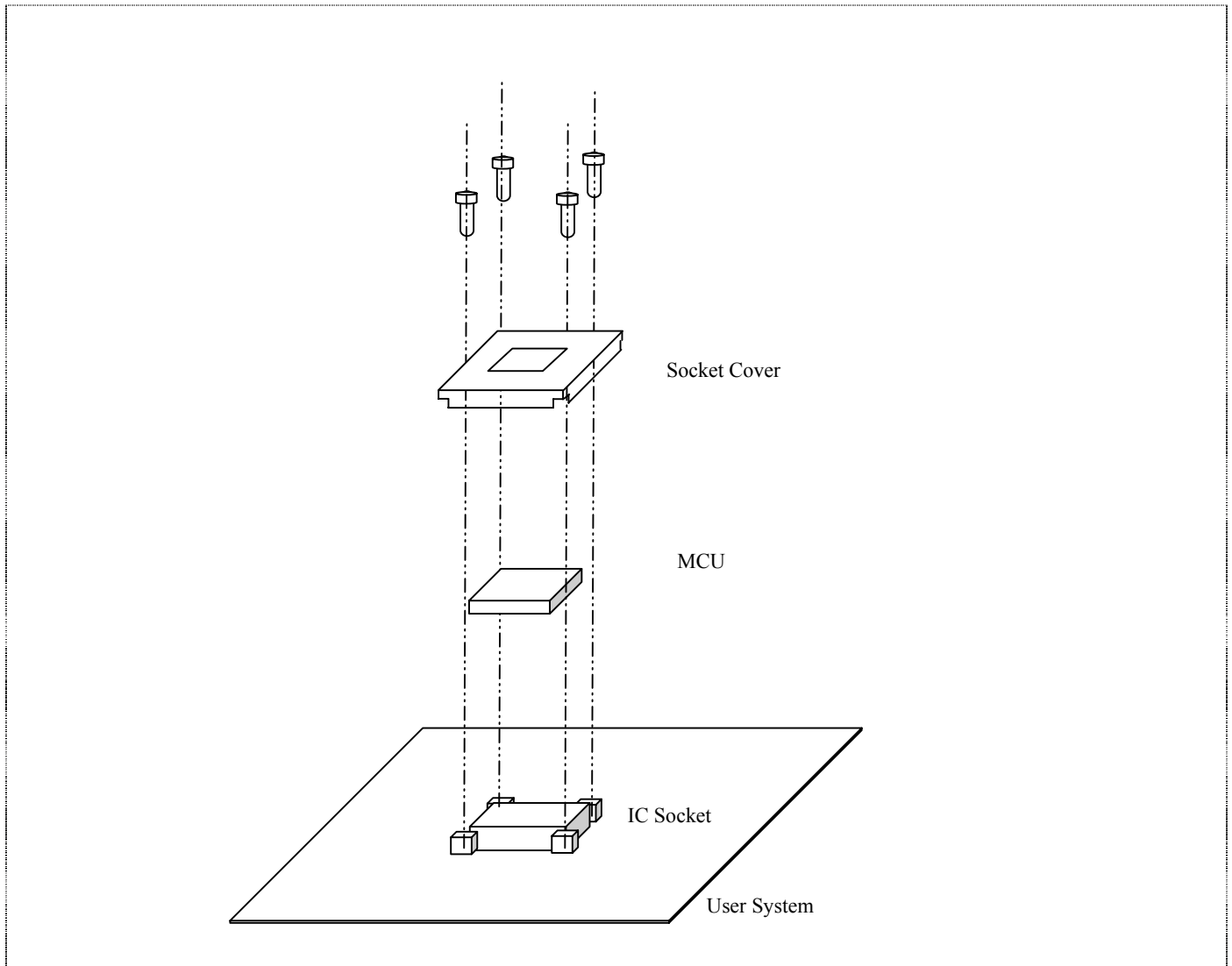
The dimensions after connecting user system interface cable to the user system are shown in figure 3.3.



**Figure 3.3 Connecting User System Interface Cable to User System**

## Section 4. Installing MCU to the User System

- Check the location of pin 1 before inserting the MCU into the IC socket on the user system as shown in figure 4.1.
- After inserting the MCU, fasten the socket cover with the four screws provided.
- Take special care such as manually securing the IC socket soldered area, to prevent the soldered IC socket from being damaged by over-tightening the screws or twisting the component.



**Figure 4.1** Installing MCU to User System

## Section 5. Warnings

- Make sure that pin 1 on the IC socket is correctly aligned with pin 1 on the cable head before inserting the cable head into the IC socket on the user system.
- Do not apply excessive force to the user system interface cable while it is connected to the user system.
- The dimensions of the recommended footprint for the IC socket are different from those of the actual chip.
- This user system interface cable is specifically designed for the Compact Emulator. Do not use this cable with any other emulator.

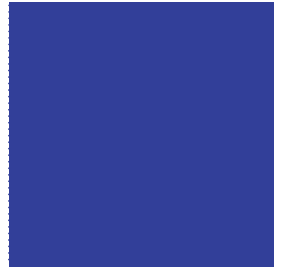
While the emulator is connected to the user system with the user system interface cable, force must not be applied to the cable head.

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## H8S Series User System Interface Cable



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