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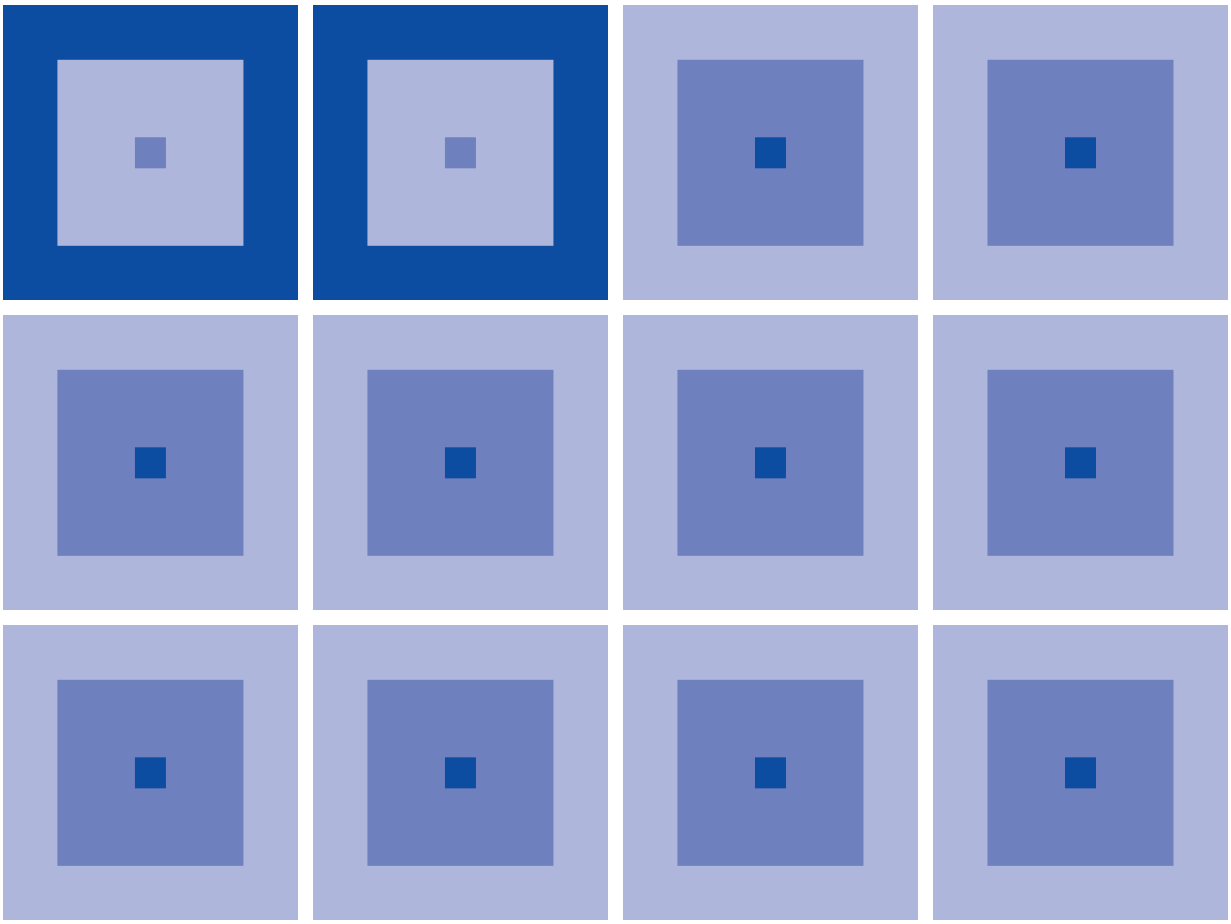
CMOS 4-BIT SINGLE CHIP MICROCOMPUTER

S5U1C63000P Manual

(S1C63 Family Peripheral Circuit Board)



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New configuration of product number

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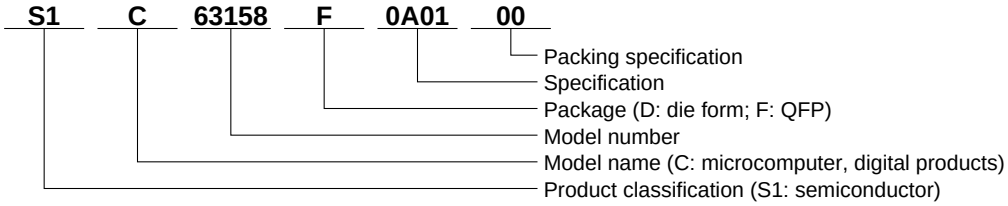
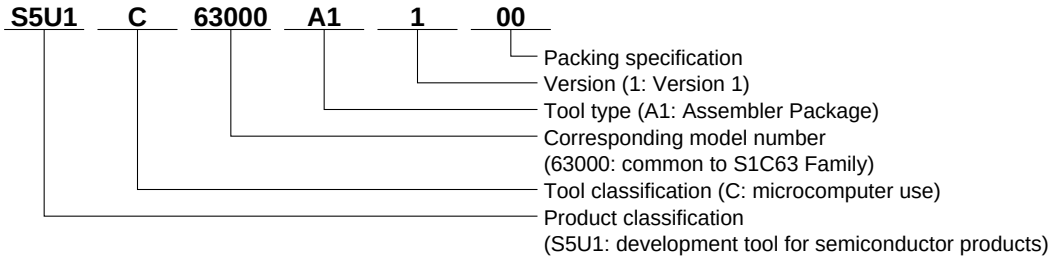


Development tools



S5U1C63000P Manual (S1C63 Family Peripheral Circuit Board)

This manual describes how to use the S1C63 Family Peripheral Circuit Board (S5U1C63000P). This circuit board is used to provide emulation functions when it is installed in the ICE (S5U1C63000H1 / S5U1C63000H2), a debugging tool for the 4-bit Single Chip Microcomputer S1C63 Family.
This manual describes only the common specifications of the S1C63 Family Peripheral Circuit Board (S5U1C63000P), so refer to the S5U1C63000P Manual (Peripheral Circuit Board for S1C63xxx) for the model dependent specifications. For details on ICE functions and how to operate the debugger, refer to the separately prepared manuals.

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CHAPTER 1 INTRODUCTION

1.1 Outline of S5U1C63000P

The S5U1C63000P provides on a board all the peripheral circuits of S1C63 Family microcomputers other than the core CPU. By installing this board in the ICE (S5U1C63000H1 / S5U1C63000H2) you can use it to emulate each model in the S1C63 Family. This board contains a programmable gate array (FPGA) and supports each model by downloading the circuit data from the host PC to the FPGA via the ICE.

1.2 Components of S5U1C63000P

After unpacking your S5U1C63000P package, check to see that all of the following components are included.

(1) S5U1C63000P main unit ..... 1 board
(2) I / O cable (80-pin / 40-pin × 2 flat type) ..... 1 pair
(3) I / O cable (100-pin / 50-pin × 2 flat type) ..... 1 pair
(4) Connector for connecting to target system (40-pin) ..... 2 pieces
(5) Connector for connecting to target system (50-pin) ..... 2 pieces
(6) Warranty card ..... 1 card
(7) User registration card ..... 1 card
(8) Precautions on Using the S5U1C63000P Peripheral Circuit Board ..... 1 sheet
(9) S5U1C63000P Manual (S1C63 Family Peripheral Circuit Board) ..... 1 copy

1.3 External View of S5U1C63000P

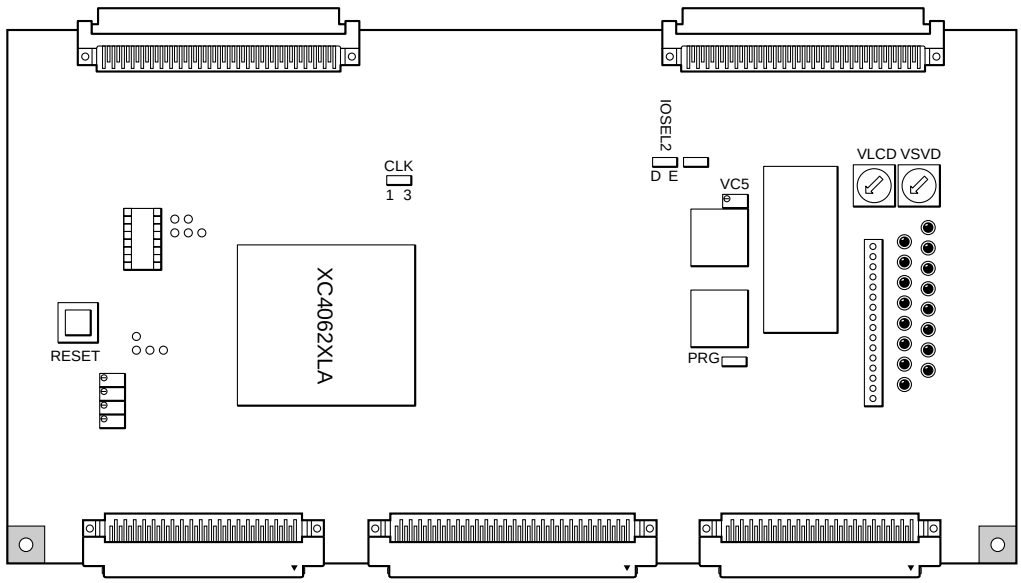

Fig. 1.3.1 External view of S5U1C63000P

CHAPTER 2 SETTING UP THE S5U1C63000P

2.1 Installing the S5U1C63000P in the ICE (S5U1C63000H1/S5U1C63000H2)

(1) Unfasten the screws located on the left and right sides of the front panel of the ICE (S5U1C63000H1 / S5U1C63000H2) by turning them counterclockwise, then remove the front panel.

(2) Insert the S5U1C63000P board into the ICE along the its uppermost guide rails until the tip of the board touches the back of the ICE. If some other board is mounted on the uppermost guide rails, remove that board by using the jig supplied with the ICE before you insert the S5U1C63000P board (see Figure 2.1.3).

(3) Once the S5U1C63000P board has been inserted almost fully into the ICE, secure it in position by using the jig supplied with the ICE (see Figure 2.1.2).

(4) When the above is done, replace the front panel.

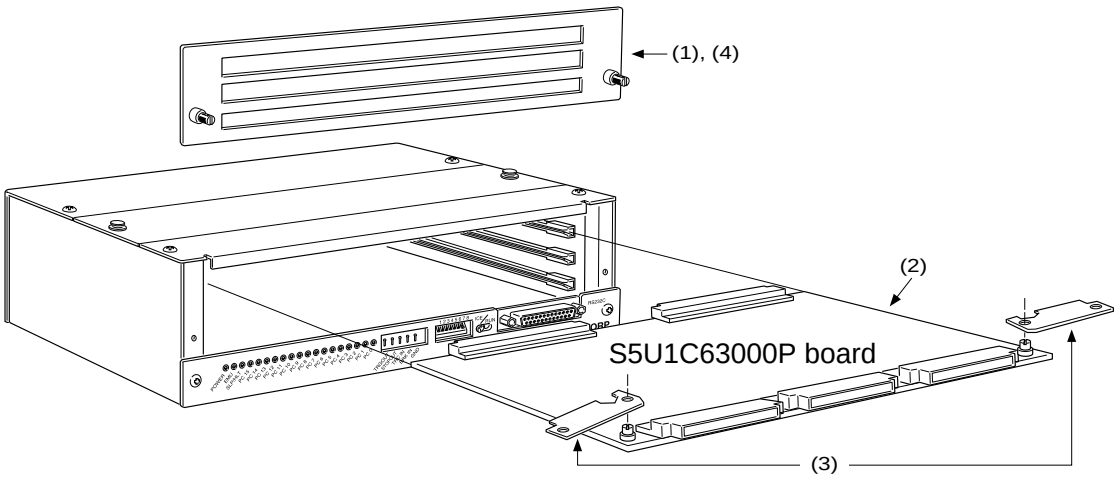

Fig. 2.1.1 Installing the S5U1C63000P board in the ICE (S5U1C63000H1/S5U1C63000H2)

- **Installing the S5U1C63000P board**

Set the jig included with the ICE into position as shown in Figure 2.1.2. Using this jig as a lever, push it toward the inside of the board evenly on the left and right sides. After confirming that the S5U1C63000P board has been firmly fitted into the internal slot of the ICE, remove the jig.

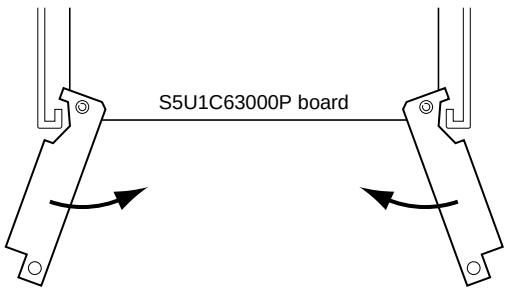

Fig. 2.1.2
Installing the S5U1C63000P board

- **Dismounting the S5U1C63000P board**

Set the jig included with the ICE into position as shown in Figure 2.1.3. Using this jig as a lever, push it toward the outside of the board evenly on the left and right sides. After confirming that the S5U1C63000P board has been dismounted from the backboard connector, pull the S5U1C63000P board out of the ICE.

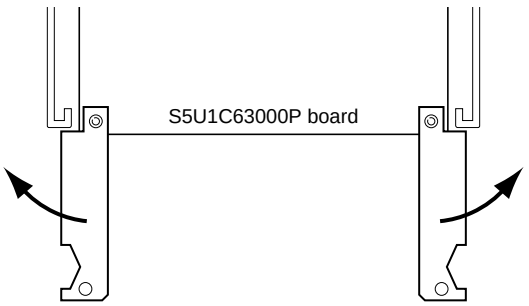

Fig. 2.1.3
Dismounting the S5U1C63000P board

2.2 Downloading Circuit Data 1 – when new ICE (S5U1C63000H2) is used

This board (S5U1C63000P) comes with the FPGA that contains factory inspection data, therefore the circuit data for the model to be used should be downloaded. The following explains the downloading procedure.

1) Remove the ICE top cover and then set the DIP switch "IOSEL2" on this board to the "E" position.
2) Connect the ICE to the host PC. Then turn the host PC and ICE on.
3) Invoke the debugger included in the assembler package (ver. 5 or later). For how to use the ICE and debugger, refer to the manuals supplied with the ICE and assembler package.
4) Download the circuit data file (.mot) corresponding to the model by entering the following commands in the command window.

`>XFER`	(erase all)
`>XFWR` *<file name>*	(download the specified file)*
`>XFCP` *<file name>*	(compare the specified file and downloaded data)

   * The downloading takes about 15 minutes.
5) Terminate the debugger and then turn the ICE off.
6) Set the DIP switch "IOSEL2" on this board to the "D" position.
7) Turn the ICE on and invoke the debugger again. Debugging can be started here.

2.3 Downloading Circuit Data 2 – when previous ICE (S5U1C63000H1) is used

The standard ICE (S5U1C63000H1, previous model) did not support the circuit data download function for this board. To use the download function, update the ICE firmware according to the following procedure.

1) Set the baud rate of the ICE to 9600 bps. Refer to the manual supplied with the ICE for setting the DIP switch.
2) Connect the ICE to the host PC and then start up the host PC in DOS. When Windows is running, restart in DOS mode.

   Note: Do not use the DOS prompt of Windows.
3) Turn the ICE on.
4) Configure the RS232C parameters for the host PC as follows:

   `C:\>MODE COM1:9600,n,8,1,p` (9600 bps, 8-bit data, 1 stop bit, no parity)
5) Copy the following files included in the assembler package (ver. 5 or later) to a directory on the hard disk.

   `tm63.exe, ice63.com, i63com.o, i63par`
6) Move to the directory in Step 5, run the TM63. TM63 enters command ready status after invocation, enter a command as follows:

```
C:\>tm63 xat↵
TM63 start on IBM PC
TM63 start V01.01
>dlf ice63.com i63com.o i63par 0b↵
                ...
>q↵
```

7) Enter "q" to terminate TM63 after the prompt mark is displayed.
8) The ICE firmware is now updated. Turn the ICE off and then download the circuit data by the procedure described in Section 2.2.

CHAPTER 3 PRODUCT SPECIFICATIONS

The specifications of the S5U1C63000P are listed below.

S5U1C63000P

Dimension:	254 mm (wide) × 144.8 mm (depth) × 13 mm (height) (including screws)
Weight:	Approx. 300 g
Power supply:	DC 5 V ± 5%, less than 1 A (supplied from ICE main unit)

I/O connection cable (80-pin)

S5U1C63000P connector:	KEL8830E-080-170L	
Cable connector (80-pin):	KEL8822E-080-171	
Cable connector (40-pin):	3M7940-6500SC	1 pair
Cable:	40-pin flat cable	1 pair
Interface:	CMOS interface (3.3 V)	
Length:	Approx. 40 cm	

I/O connection cable (100-pin)

S5U1C63000P connector:	KEL8830E-100-170L	
Cable connector (100-pin):	KEL8822E-100-171	
Cable connector (50-pin):	3M7950-6500SC	1 pair
Cable:	50-pin flat cable	1 pair
Interface:	CMOS interface (3.3 V)	
Length:	Approx. 40 cm	

Accessories

40-pin connector for connecting to target system:
3M3432-6002LCSC × 2

50-pin connector for connecting to target system:
3M3433-6002LCSC × 2

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