To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

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User's Manual

H8S/2426, H8S/2426R Group PLQP0144KA-A Debugging MCU Board

R0E424268PFK00E User's Manual

Renesas Microcomputer Development Environment System
H8S Family / H8S/2400 Series

R0E424268PFK00E

Renesas Electronics
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Rev.1.00 2009.07

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IMPORTANT INFORMATION

READ FIRST

• READ this user's manual before using this H8S/2426, H8S/2426R group debugging MCU board product.

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

Do not attempt to use the H8S/2426, H8S/2426R group debugging MCU board product until you fully understand its mechanism.

H8S/2426, H8S/2426R group debugging MCU board Product:

Throughout this document, the term "H8S/2426, H8S/2426R group debugging MCU board" shall be defined as the following products produced only by Renesas Technology Corp. and Renesas Solutions Corp. excluding all subsidiary products.

- R0E424268PFK00

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

Purpose of the Debugging MCU Board:

The debugging MCU board is used to support developing of a system using the Renesas micro computer H8S/2426, H8S/2426R group. Proper usage is necessary for this debugging MCU board according to this purpose. This debugging MCU board must only be used for the above purpose.

Limited Applications:

This H8S/2426, H8S/2426R group debugging MCU board product is not authorized for use in transportation, vehicular, medical (where human life is potentially at stake), aerospace, nuclear, or undersea repeater applications. Buyers of this H8S/2426, H8S/2426R group debugging MCU board product must notify Renesas Technology Corporation, Renesas Solutions Corporation or an authorized Renesas Technology product distributor before planning to use the product in such applications.

Improvement Policy:

Renesas Technology Corp. (including its subsidiaries, hereafter collectively referred to as Renesas) pursues a policy of continuing improvement in design, performance, and safety of the H8S/2426, H8S/2426R group debugging MCU board product. Renesas reserves the right to change, wholly or partially, the specifications, design, user's manual, and other documentation at any time without notice.

Target User of the H8S/2426, H8S/2426R group debugging MCU board Product:

This H8S/2426, H8S/2426R group debugging MCU board 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 H8S/2426, H8S/2426R group debugging MCU board product until you fully understand its mechanism.

It is highly recommended that first-time users be instructed by users that are well versed in the operation of the H8S/2426, H8S/2426R group debugging MCU board.

The Warranty is Void in the Following Cases:

Renesas shall have no liability for repairing or replacing faults in a product purchased by a customer except in cases where the product was faulty to begin with. The H8S/2426, H8S/2426R Group Debugging MCU Board is an expendable item and thus does not fall within the scope of products for repair. In the case of problems that arise because of usage, purchase of a new product will be required.

Other Important Things to Keep in Mind:

1. Circuitry and other examples described herein are meant merely to indicate the characteristics and performance of Renesas' semiconductor products. Renesas assumes no responsibility for any intellectual property claims or other problems that may result from applications based on the examples described herein.

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Figures:

Some figures in this user's manual may show items different from your actual system.

Limited Anticipation of Danger:

Renesas cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this user's manual and on the H8S/2426, H8S/2426R group debugging MCU board product are therefore not all inclusive. Therefore, you must use the H8S/2426, H8S/2426R group debugging MCU board product safely at your own risk.

SAFETY PAGE

READ FIRST

• READ this user's manual before using this debugging MCU board.

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

Do not attempt to use the H8S/2426, H8S/2426R group debugging MCU board product until you fully understand its mechanism.

DEFINITION OF SIGNAL WORDS

Either in the user's manual or on the product, several icons are used to insure proper handling of this product and also to prevent injuries to you or other persons, or damage to your properties. Their graphic images and meanings are given in this safety page. Be sure to read this chapter before using the product.

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.

In addition to the four above, the following are also used as appropriate.

⚠ WARNING

Observe the precautions listed below. Failure to do so will result in a FIRE HAZARD and will damage the user system and the H8S/2426, H8S/2426R group debugging MCU board product or will result in PERSONAL INJURY. The USER PROGRAM will be LOST.

1. **Do not repair or remodel the H8S/2426, H8S/2426R group debugging MCU board product by yourself for electric shock prevention and quality assurance.**
2. **Always switch OFF the host computer and user system before connecting or disconnecting any CABLES or PARTS.**
3. **Supply power in accord with the power supply specification. Use the cable provided with this product. Do not apply power supply voltages beyond the levels in the specification.**
4. **Before connecting the debugging MCU board with the IC socket on the user system, always make sure that the pin numbers on both sides are correctly aligned.**

User Registration

When you have purchased the emulator represented in this user's manual, be sure to register it. As the H/W Tool Customer Registration Sheet is included with this product, fill it in and send the same contents to the following address by an email. Your registered information is used for only after-sale services, and not for any other purposes. Without user registration, you will not be able to receive maintenance services such as a notification of field changes or trouble information. So be sure to carry out the user registration.

For more information about user registration, send an email to the following address.

regist_tool@renesas.com

Contents

Preface

Thank you for purchasing the H8S/2426, H8S/2426R group debugging MCU board. The debugging MCU board supports system development using Renesas's microcomputer H8S/2426, H8S/2426R group.

Read and keep this manual handy for future reference.

CAUTION
Read and understand this manual before using this debugging MCU board. Illegal usage or connection will result in a FIRE HAZARD and will damage the debugging MCU board. The USER PROGRAM will be LOST.

The H8S/2426, H8S/2426R group debugging MCU board supports the PLQP0144KA-A package of the H8S/2426, H8S/2426R group microcomputer.

Related Manuals:

H8S/2426, H8S/2426R, and H8S/2424 Group Hardware Manual

H8S, H8SX Family E10A-USB Emulator User's Manual

Related Hardware:

H8S, H8SX Family E10A-USB Emulator User's Manual Additional Document

Supplemental Information on Using the H8S/2426, H8S/2426R, and H8S/2424

Section 1 Overview

The H8S/2426, H8S/2426R group debugging MCU board (hereafter referred to as the debugging MCU board) sports a H8S/2426, H8S/2426R group microcomputer (hereafter referred to as the MCU), an interface connector (hereafter referred to as the user system connector) for connection with the E10A-USB emulator, and a user system interface. When the H8S/2426, H8S/2426R group E10A-USB emulator (hereafter referred to as the E10A-USB emulator) and a user system are connected to this debugging MCU board, evaluation that covers pins where user pin functions which are multiplexed with dedicated emulator pin functions can proceed.

1.1 Features

CAUTION

1. **The IC socket mounted on the debugging MCU board has been shown to be usable 100 times. This may, however, be reduced by the conditions of usage. Be sure to clean the IC contact section (gold) of the IC socket. Dust and dirt in this area can prevent correct connection with the E10A-USB emulator.**
2. **Do not warp the IC leads when connecting the user system to the debugging MCU board.**

The debugging MCU board provides the following features:

1. The debugging MCU board sports a user system connector for connection with the E10A-USB emulator. When this board is connected to the E10A-USB emulator, the program can be evaluated simply.
2. A YQPACK144SD (manufactured by Tokyo Eletech Corporation) is mounted on the debugging MCU board as the user system interface. When the user system and E10A-USB emulator are connected, evaluation that covers pins where user pin functions which are multiplexed with dedicated emulator pin functions is possible.
3. Mode switches are mounted on the debugging MCU board. These switches enable or disable of the clock supply, change the operating mode, and enable or disable the emulation connection.
4. Power supply switches are mounted on the debugging MCU board. These switches change the connections of the power supply or ground pins.

1.2 Components

Figure 1.1 and table 1.1 show the components of the debugging MCU board. Check all the components upon unpacking.

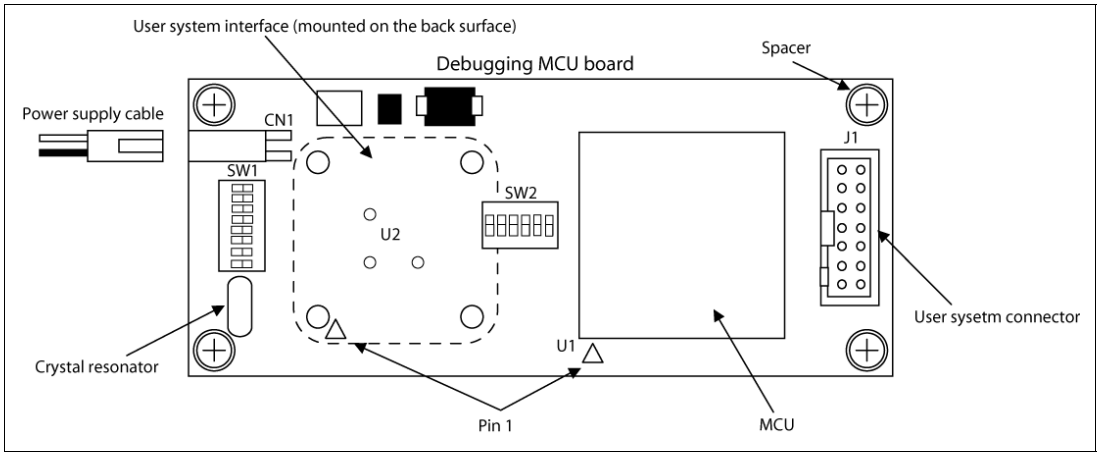


Figure 1.1 External Appearance of the Debugging MCU Board

Table 1.1 Components of the Debugging MCU Board (R0E424268PFK00)

Item	Quantity	Remarks
Debugging MCU Board	1	
Power-supply cable (3.3 V: one, GND: one)	1	For input of the external power supply
HQPACK144SD	1	Top cover for use in operation with the actual chip
NQPACK144SD-ND	1	IC socket for mounting of the user system
Screws (M2 × 10mm)	4	Screws for fastening the user system
Screws (M2 × 6mm)	4	Screws for fastening the HQPACK144SD
Screwdriver	1	Dedicated driver for fastening the screws
Guide pins (∅1mm)	3	Pins for positioning of the screws (NQPACK144SD-ND)
H8S/2426, H8S/2426 Group PLQP0144KA-A Debugging MCU Board User's Manual	1	This manual

Section 2 Limitations on Usage

CAUTION

Read and understand the following limitations before using the debugging MCU board. Failure to do so will damage the debugging MCU board, user system, E10A-USB emulator and the user program.

1. The debugging MCU board must be used in the casing. If it is used without the casing, take full care not to touch it or cause short circuits.
2. Never place heavy objects on the casing.
3. Protect the debugging MCU board from excessive impacts and stresses.
4. Do not apply an incorrect power voltage.
5. When moving the host computer or user system, take care not to vibrate or damage it.
6. Apply power to the connected equipment after connecting all cables. Cables must not be connected or removed while the power is on.
7. The debugging MCU board cannot emulate independently. For emulation, connect it to the E10A-USB emulator.
8. Check the location of pin 1when connecting the debugging MCU board to the user system.
9. The flash memory of MCU has limitations on the number of rewrites. If rewriting or erasing becomes impossible, replace the debugging MCU board.
10. The MCU mounted on the debugging MCU board is for use in debugging. Do not use detach it from the board and use it for other purposes.
11. If you wish to use the debugging MCU board in single operation, place the board in a shield box so that it will not be affected by EMI noise.

Section 3 Functions of the Debugging MCU Board

3.1 Functions

Table 3.1 shows a list of functions of the debugging MCU board.

Table 3.1 Functions of the Debugging MCU board

Item	Specification
Debugging	(1) Independent debugging of the debugging MCU board (2) Connection debugging to the user system
Microcomputer operation	(1) Operation at 8 MHz (Min) to 33MHz (Max) (2) 3V products : Operation at 3.0 V (Min) to 3.6 V (Max) 5V products : Operation at 4.5 V (Min) to 5.5 V (Max) (3) Evaluation in operating modes 1,2,4, or 7
SW switch settings	• Mode switch (SW1) (1) EXTAL signal (2) XTAL signal (3) EMLE signal (4) MD2 signal (5) MD1 signal (6) MD0 signal • Power supply switch (SW2) (1) AVcc signal (2) Vref signal (3) AVss signal
Power supply	(1) CN1: Apply 3.3 V to the power-supply connector (CN1). Pin Assignment of Power-supply Connector Connector: IL-2P-S3FP2 (manufactured by Japan Aviation Electronics Ind, Ltd.) Pin No. 1: 3.3V or 5.0V(red) 2: GND (black)
User system interface	(1) U2 Top cover for connection to the IC socket mounted on the user system
User system connector	(1) J1 Connector to the E10A-USB emulator

Section 4 Usage of the Debugging MCU board

The debugging MCU board has a mode switch (SW1) to change the operating modes of the microcomputer, and a power supply switch (SW2) to change the connections of the ground pins.

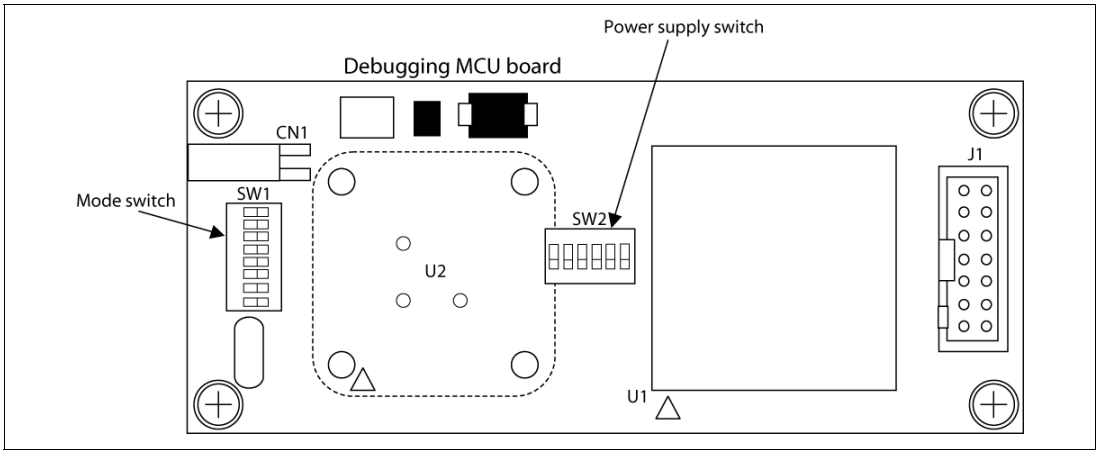


Figure 4.1 Positions of the Switch Blocks

4.1 Switch Setting

Mode switches (SW1) and power supply switches (SW2) are mounted on the debugging MCU board. The following describes the functions of the SW switches.

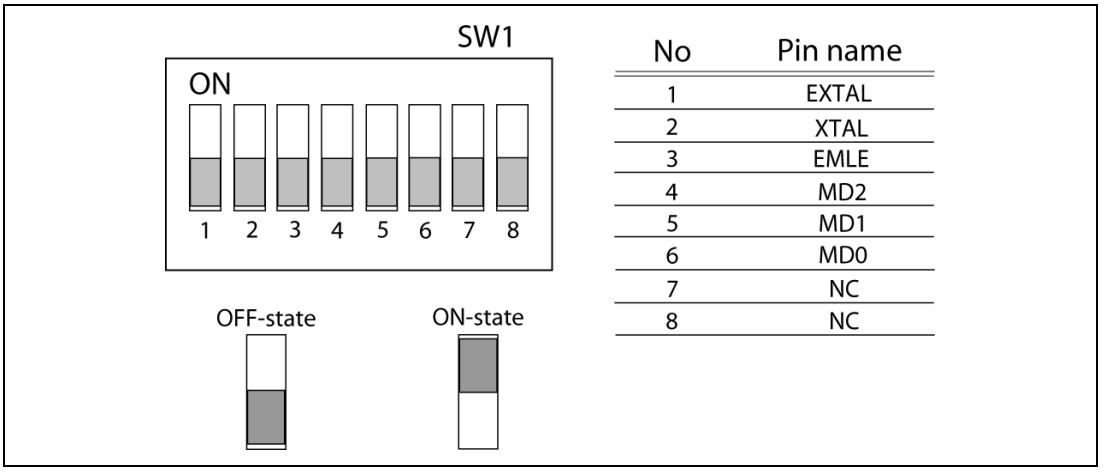
CAUTION

Do not change SW1 and SW2 while power is turned on. Failure to do so will damage the E10A-USB emulator, debugging MCU board, and the user system.

4.1.1 Mode Switch Setting (SW1)

The mode switches determine whether or not the crystal resonator is in use, enable or disable the emulator connection, and change the operation mode of the MCU. All of the switches are initially in the OFF-position. Since numbers 7 and 8 on SW1 are not in used, do not change their settings from the initial OFF-state.

Figure 4.2 shows allocation to the mode switches.



No	Pin name
1	EXTAL
2	XTAL
3	EMLE
4	MD2
5	MD1
6	MD0
7	NC
8	NC

Figure 4.2 Allocation to the Mode Switches

(1) EXTAL and XTAL pins (numbers 1 and 2)

For SW1, number 1 is connected to the EXTAL pins of the MCU and number 2 is connected to the XTAL pins. Switching both to the ON-position makes use of the crystal resonator on the debugging MCU board possible. If the OFF-state is selected, the crystal resonator cannot be used. When evaluation is to be performed with the debugging MCU board as a stand-alone unit, make sure the ON-positions have been selected. When evaluation is to be with a user system connected, do not select the ON-settings, and make sure that both number 1 and number 2 are in the same position.

(2) EMLE pin (number 3)

Number 3 of SW1 is connected to the EMLE pin and either High or Low can be selected as the signal level. When Low (ON) is selected, the MCU disables connection of the E10A-USB emulator. When High (OFF) is selected, the MCU enables connection of the E10A-USB emulator. Therefore, usage is generally with the EMLE pin in the OFF-state.

(3) MD2 to MD0 pins (numbers 4 to 6)

Numbers 4 to 6 are connected to the MD2 pin to MD0 pins of the MCU, and select either High or Low as the signal levels on the pins. When High (OFF) is selected, the value on the pin becomes ″1″; when Low (ON) is selected, the value on the pin becomes ″0″.

Table 4.1 shows the settings of the operating modes.

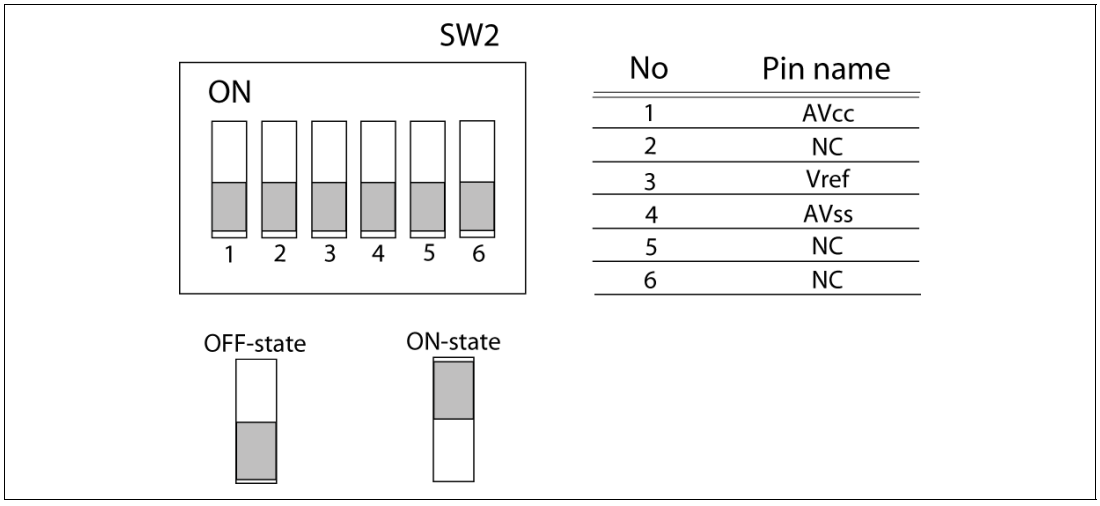
Table 4.1 Settings of Operating Modes

	SW1_No.4	SW1_No.5	SW1_No.6	
	MD2	**MD1**	**MD0**	**Mode**
Operating Mode 1	ON	ON	OFF	Expansion mode with on-chip ROM disabled
Operating Mode 2	ON	OFF	ON	Expansion mode with on-chip ROM disabled
Operating Mode 4	OFF	ON	ON	Expansion mode with on-chip ROM enabled
Operating Mode 7	OFF	OFF	OFF	Single-chip mode (initial value)

Note: Do not use other settings than the above.

4.1.2 Power Switch Setting (SW2)

The power switches (SW2) change connections of the power supply and ground pins. In the ON-position, numbers 1 and 3 connect Vcc to the MCU, and number 4 connects Vss to the MCU. In the OFF-positions, the corresponding pin states become those of the user system. Make sure that the ON-position is selected when evaluation is with the debugging MCU board as a stand-alone unit, and that the conditions are those of the user system when evaluation is with a user system connected.
All of the pins are initially OFF-state. Since numbers 2, 5, and 6 are not in use, do not change its setting from the initial state (OFF). Figure 4.3 shows allocation to the power switches.



No	Pin name
1	AVcc
2	NC
3	Vref
4	AVss
5	NC
6	NC

Figure 4.3 Allocation to the Power Switches

Section 5 Connection

5.1 Connection of Debugging MCU Board and E10A-USB Emulator

Be sure to turn off the power to the host computer mounting the E10A-USB emulator before connecting the debugging MCU board.

⚠ WARNING

Turn off the power of the host computer and debugging MCU board. Failure to do so will damage the debugging MCU board and E10A-USB emulator and will result in a FIRE HAZARD.

(1) Connection with E10A-USB emulator

The E10A-USB emulator is connected to the user system connector (J1) of the debugging MCU board. For details on connection, refer to section 1.2 in the H8S/2426, H8S/2426R, and H8S/2424 E10A-USB Emulator User's Manual.

Figure 5.1 shows the top view of the user system connector.

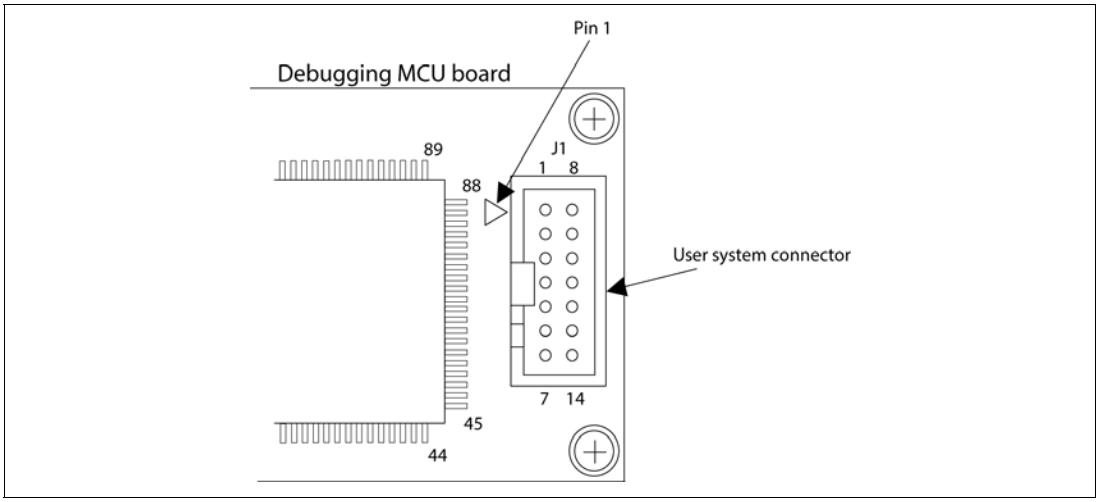


Figure 5.1 Top View of the User System Connector

(2) Connecting the power supply cable

For the supply of power, avoid incorrect insertion of the included power supply cable by ensuring that it matches the socket on the power supply connector (CN1) of the debugging MCU board.

Also, the power supply cables are red (for the 3.3 V or 5.0V pin) and black (for the GND pin). When connecting the cables to the DC power supply, attention and avoid erroneously connecting the black cable to the GND pin. Refer to figure 5.2, connection diagram.

⚠ WARNING

Pay attention to avoid confusing the red cable (3.3V or 5.0V) with the black cable (GND) when connecting the power supply cables to the DC power supply. Failure to do so will damage the debugging MCU board and E10A-USB emulator and will create a FIRE HAZARD.

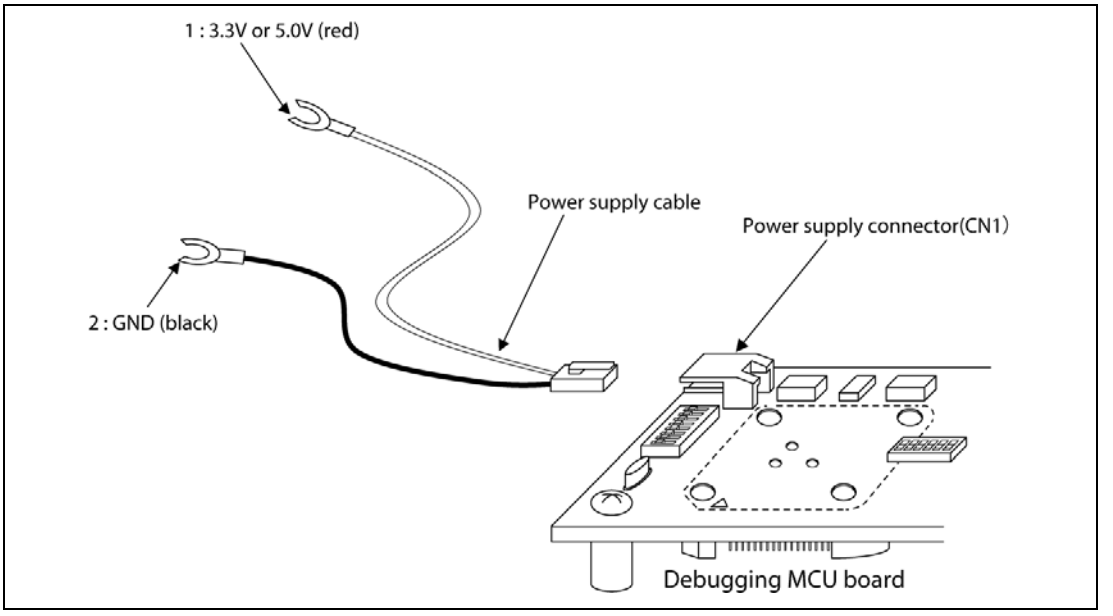


Figure 5.2 Connection of the Power Supply Connector

5.2 Connection of the Debugging MCU Board with the User System

⚠ WARNING

Turn off power to the debugging MCU board, user system, and host computer when connecting the debugging MCU board and user system, and confirm the pin-1 position of the IC socket before connection. Failure to do so will damage the debugging MCU board, user system and E10A-USB emulator and will result in a FIRE HAZARD.

(1) Mounting the IC socket

CAUTION

For positioning the IC socket, affix it to the user system by applying epoxy resin adhesive to the ends of the four projections on the bottom surface of IC socket.

When positioning the IC socket on the user system, use the provided guide pins as shown in figure 5.3.

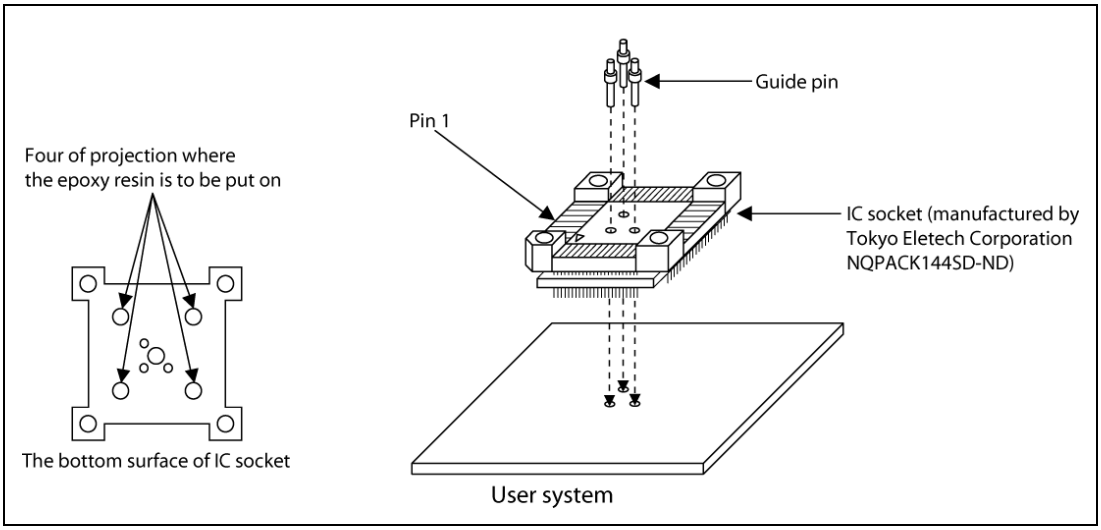


Figure 5.3 Positioning the IC socket

(2) Connection to the user system

CAUTION

1. **Check the location of pin 1 before insertion.**
2. **Use the provided screwdriver to tighten screws.**
3. **The tightening torque must be 0.054 N•m or less. If the applied torque cannot be accurately measured, stop tightening when the force required to turn the screw becomes significantly greater than that needed when first tightening. If a screw is tightened too much, the screw head may break or an IC socket contact error may be caused by a crack in the IC socket solder.**
4. **If the debugging MCU board does not operate correctly, cracks might have occurred in the solder. Check conduction with a tester and re-solder the IC socket if necessary.**

Fasten the debugging MCU board to the user system with the four screws (M2 x 10 mm) provided. Each screw should be tightened a little at a time, alternating between screws on opposing corners. Take special care, such as manually securing the soldered portion of the IC socket, to prevent damage to the soldered IC socket by over-tightening of the screws or twisting of components.

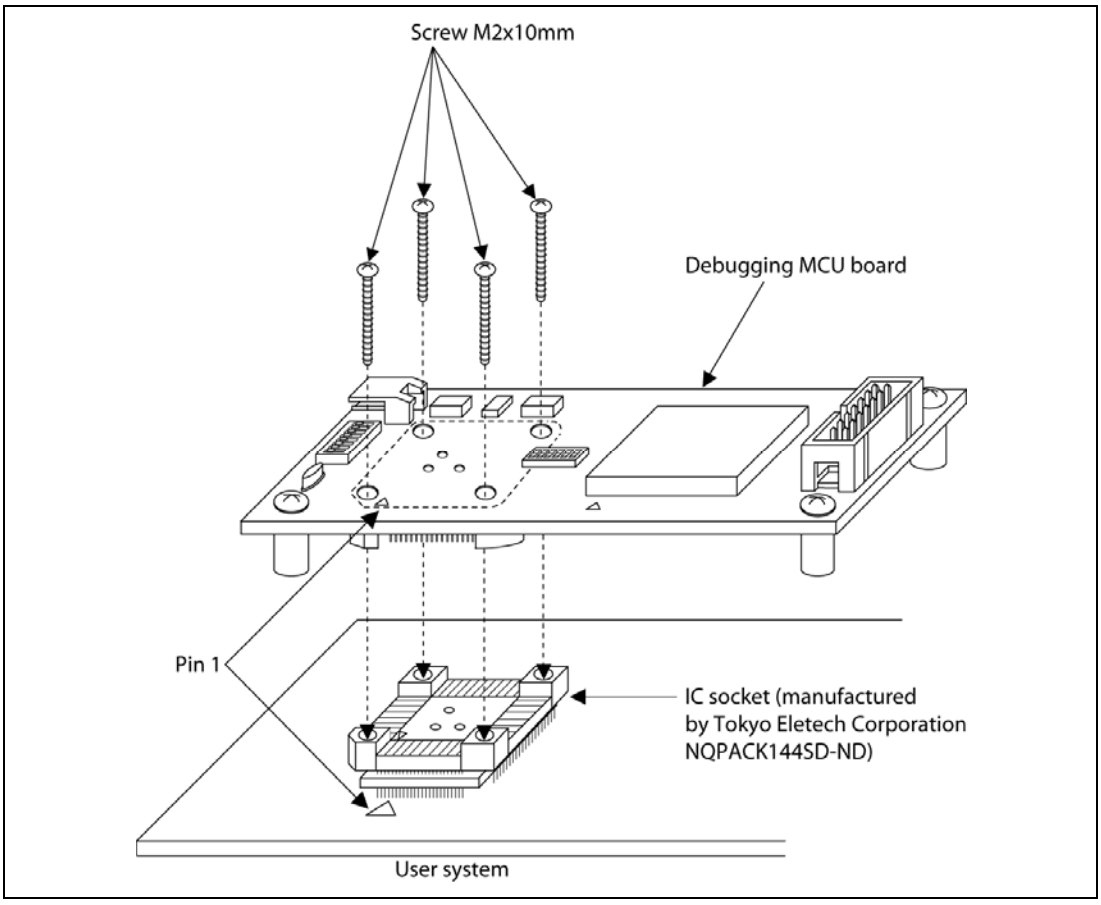


Figure 5.4 Connecting to the User System

5.3 When mounting the MCU to IC socket

CAUTION
1. Check the location of pin 1 before insertion. **2. Use the provided screwdriver to tighten screws.** **3. The tightening torque must be 0.054 N•m or less. If the applied torque cannot be accurately measured, stop tightening when the force required to turn the screw becomes significantly greater than that needed when first tightening. If a screw is tightened too much, the screw head may break or an IC socket contact error may be caused by a crack in the IC socket solder.** **4. If the debugging MCU board does not operate correctly, cracks might have occurred in the solder. Check conduction with a tester and re-solder the IC socket if necessary.**

Fasten the top cover to the user system with the four screws (M2 x 6 mm) provided. Each screw should be tightened a little at a time, alternating between screws on opposing corners. Take special care, such as manually securing the IC socket soldered area, to prevent the soldered IC socket from being damaged by overtightening the screws or twisting the components.

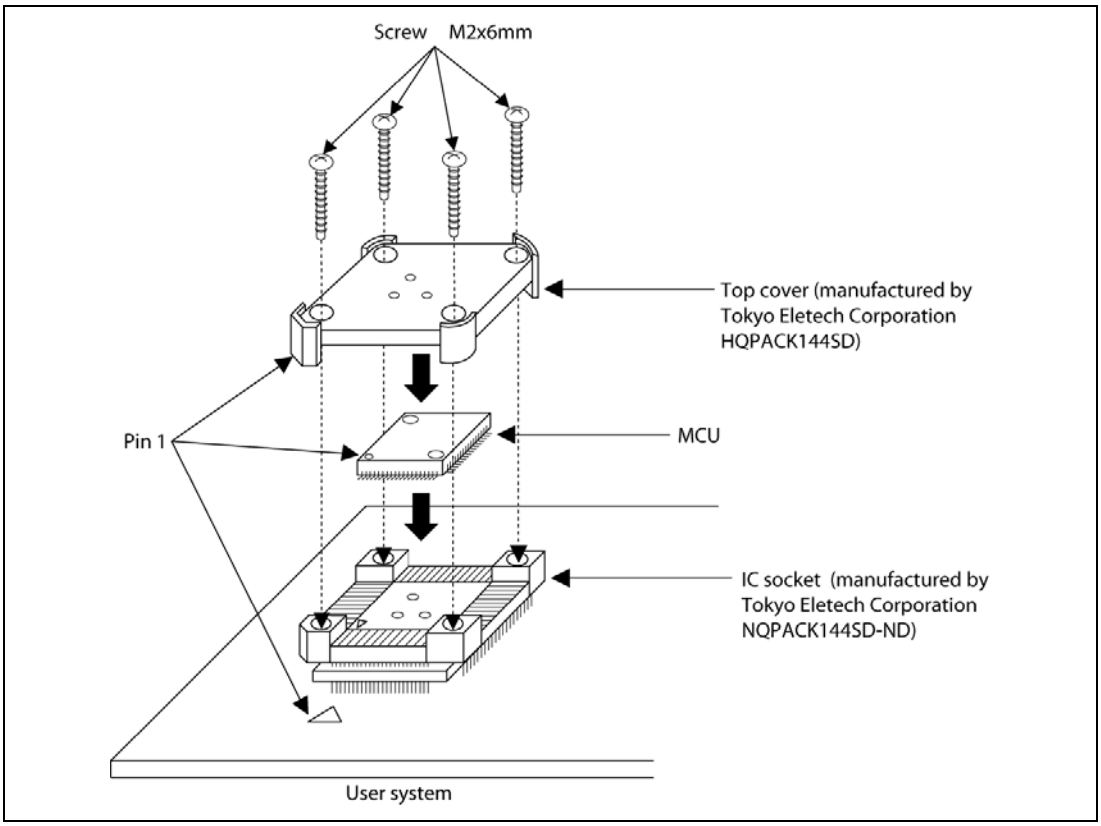


Figure 5.5 When Mounting the MCU to the User System

Section 6 User Interface

6.1 Pin Processing of H8S/2426, H8S/2426 Group

Table 6.1 shows the points of connection for mounting the user system interface on the debugging MCU board and handling of the pins of the debugging MCU board.

Table 6.1 Access Destination and Pin Processing of the User System Interface

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
1	MD2	MCU SW1	Pulled up	Operating mode can be set by switches on SW1.
2	Vss	GND		
3	P80/IRQ0-B#/EDREQ2#	MCU		
4	Vcc	Vcc		
5	PC0/A0/TIOCA9	MCU		
6	PC1/A1/TIOCB9	MCU		
7	PC2/A2/TIOCC9	MCU		
8	PC3/A3/TIOCD9	MCU		
9	PC4/A4/TIOCA10	MCU		
10	Vss	GND		
11	PC5/A5/TIOCB10	MCU		
12	PC6/A6/TIOCA11	MCU		
13	PC7/A7/TIOCB11	MCU		
14	PB0/A8/TIOCA6	MCU		
15	PB1/A9/TIOCB6	MCU		
16	PB2/A10/TIOCC6/TCLKE	MCU		
17	PB3/A11/TIOCD6/TCLKF	MCU		
18	Vss	GND		

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
19	PB4/A12/TIOCA7	MCU		
20	PB5/A13/TIOCB7/TCLKG	MCU		
21	PB6/A14/TIOCA8	MCU		
22	PB7/A15/TIOCB8/TCLKH	MCU		
23	PA0/A16	MCU		
24	PA1/A17/TxD4-B	MCU		
25	Vss	GND		
26	PA2/A18/RxD4-B	MCU		
27	PA3/A19/SCK4-B	MCU		
28	PA4/A20/IRQ4-A#/SCS0-B#	MCU		
29	PA5/A21/IRQ5-A#/SSCK0-B	MCU		
30	PA6/A22/IRQ6-A#/SSI0-B	MCU		
31	PA7/A23/IRQ7-A#/SSO0-B	MCU		
32	EMLE	MCU SW1	Pulled up	Disabling or enabling is selected by a switch on SW1.
33	P81/IRQ1-B#/PO1-B/ TIOCB3-B/TMRI1-B/ TxD3/EDREQ3#	MCU		
34	P82/IRQ2-B#/ETEND2#	MCU		
35	PH0/CS4#/RAS4#/WE#	MCU		
36	PH1/CS5#/RAS5#/SDRAM∅	MCU		
37	PH2/CS6#/IRQ6-B#	MCU		
38	PH3/CS7#/OE-A#/CKE-A/ IRQ7-B#	MCU		
39	WDTOVF#	MCU		
40	NMI#	MCU	Pulled up	
41	VCL			Bypass capacitor processing on the debugging MCU board

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
42	P10/PO8/TIOCA0	MCU		
43	P11/PO9/TIOCB0	MCU		
44	P12/PO10/TIOCC0/TCLKA	MCU		
45	P13/PO11/TIOCD0/TCLKB	MCU		
46	P14/PO12/TIOCA1/SSO0-A	MCU		
47	P15/PO13/TIOCB1/TCLKC /SSI0-A	MCU		
48	P16/PO14/TIOCA2/EDRAK2# /SSCK0-A	MCU		
49	P17/PO15/TIOCB2/TCLKD /EDRAK3#/SCS0-A#	MCU		
50	Vss	GND		
51	P20/IRQ8-B#/PO0-A/TIOCA3-A	MCU		
52	P21/IRQ9-B#/PO1-A/TIOCB3-A	MCU		
53	P22/IRQ10-B#/PO2-A/TIOCC3-A	MCU		
54	P23/IRQ11-B#/PO3-A/TIOCD3 /TxD4-A	MCU		
55	P24/IRQ12-B#/PO4-A/TIOCA4-A /RxD4-A	MCU		
56	P25/WAIT-B#/IRQ13-B#/PO5-A /TIOCB4-A	MCU		
57	P26/IRQ14-B#/PO6/TIOCA5 ⁄SDA2/ADTRG1#	MCU		
58	P27/IRQ15-B#/PO7/TIOCB5 /SCL2	MCU		
59	P83/IRQ3-B#/PO3-B/TIOCD3-B /TMCI-B/RxD3/ETEND3#	MCU		
60	P84/IRQ4-B#/EDACK2#	MCU		
61	P85/IRQ5B#/PO5-B/TIOCB4-B /TMO1-B/SCK3/EDACK3#	MCU		
62	PJ2	MCU		
63	PE0/D0/AD0	MCU		

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
64	PE1/D1/AD1	MCU		
65	PE2/D2/AD2	MCU		
66	PE3/D3/AD3	MCU		
67	PE4/D4/AD4	MCU		
68	PE5/D5/AD5	MCU		
69	PE6/D6/AD6	MCU		
70	Vss	GND		
71	PE7/D7/AD7	MCU		
72	Vcc	Vcc		
73	PD0/D8/AD8	MCU		
74	PD1/D9/AD9	MCU		
75	PD2/D10/AD10	MCU		
76	PD3/D11/AD11	MCU		
77	PD4/D12/AD12	MCU		
78	PD5/D13/AD13	MCU		
79	PD6/D14/AD14	MCU		
80	PD7/D15/AD15	MCU		
81	P60/IRQ8-A#/DREQ0#/TMRI0-A	MCU		
82	P61/IRQ9-A#/DREQ1#/TMRI1-A	MCU		
83	P62/IRQ10-A#/TEND0#/TMCI0-A	MCU		
84	PF0/WAIT-A#/ADTRG0-B# /SCS0-C#	MCU		
85	PF1/UCAS#/DQMU/IRQ14-A# /SSCK0-C	MCU		
86	PF2/LCAS#/DQML/IRQ15-A# /SSI0-C	MCU		
87	PF3/LWR#/SSO0-C	MCU		
88	PF4/HWR#	MCU		
89	PF5/RD#	MCU		

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
90	PF6/AS#/AH#	MCU		
91	PLLVcc	Vcc		
92	RES#	MCU		
93	PLLVss	GND		
94	PF7/∅	MCU		
95	Vss	GND		
96	XTAL	MCU SW1		Crystal resonator on the debugging MCU board can be selected by switches on SW1
97	EXTAL	MCU SW1		Crystal resonator on the debugging MCU board can be selected by switches on SW1
98	Vcc	Vcc		
99	Vcc	Vcc		
100	PJ0	MCU		
101	PJ1	MCU		
102	Vss	GND		
103	STBY#	MCU	Pulled up	
104	P63/IRQ11-A#/TEND1# /TMCI1-A	MCU		
105	P64/IRQ12-A#/DACK0# /TMO0-A	MCU		
106	P65/IRQ13-A#/DACK1# /TMO1-A	MCU		
107	PG0/CS0#	MCU		
108	PG1/CS1#	MCU		
109	PG2/CS2#/RAS2#/RAS#	MCU		
110	PG3/CS3#/RAS3#/CAS#	MCU		
111	AVcc	MCU SW2		Can be set to handle Vcc by a switch on SW2

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Access Destination	Pin Processing	Notes
112	Vref	MCU SW2		Can be set to handle Vcc by a switch on SW2
113	P40/AN0_0	MCU		
114	P41/AN1_0	MCU		
115	P42/AN2_0	MCU		
116	P43/AN3_0	MCU		
117	P44/AN4_0	MCU		
118	P45/AN5_0	MCU		
119	P46/AN6_0	MCU		
120	P47/AN7_0	MCU		
121	P90/AN8_1	MCU		
122	P91/AN9_1	MCU		
123	P92/AN10_1	MCU		
124	P93/AN11_1	MCU		
125	P94/AN12_1/DA2	MCU		
126	P95/AN13_1/DA3	MCU		
127	P96/AN14_1	MCU		
128	P97/AN15_1	MCU		
129	AVss	MCU SW2		Can be set to handle GND by a switch on SW2
130	PG4/BREQO-A#	MCU		
131	PG5/BACK-A#	MCU		
132	PG6/BREQ-A#	MCU		
133	P50/BREQO-B#/IRQ0-A# /PO0-B/TIOCA3-B /TMRI0-B/TxD2/SDA3	MCU		
134	P51/BREQ-B#/IRQ1-A# /PO2-B/TIOCC3-B /TMCI0- B/RxD2/SCL3	MCU		
135	P52/BACK-B#/IRQ2-A# /PO4-B/TIOCA4-B /TMO0- B/SCK2	MCU		

Table 6.1 Pin Assignment and Pin Processing of the User Interface (cont)

Pin No.	Pin Name of H8S/2426, H8S/2426R Group	Pin Assignment	Pin Processing	Notes
136	P53/IRQ3-A#/ADTRG0-A#	MCU		
137	P35/OE-B#/CKE-B/ SCK1/SCL0	MCU		
138	P34/SCK0/SCK4-A/SDA0	MCU		
139	P33/RxD1/SCL1	MCU		
140	P32/RxD0/IrRxD/SDA1	MCU		
141	P31/TxD1	MCU		
142	P30/TxD0/IrTxD	MCU		
143	MD0	MCU SW1	Pulled up	Operating mode can be set by switches on SW1.
144	MD1	MCU SW1	Pulled up	Operating mode can be set by switches on SW1.

Note: A '#' symbol indicates that the pin is active when it is receiving a low-level signal.

1. Details on points of connection
   (1) MCU: Connection to the corresponding pin of the MCU mounted on the debugging MCU board.
   (2) Vcc: Connection to the 3.3 V or 5.0V power supply.
   (3) GND: Connection to GND of the debugging MCU board.
   (4) Blank: Not connected.

2. Handling of pins
   (1) Pulled up: Connection to Vcc via a 100-kΩ resistor on the debugging MCU board.
   (2) Blank: No handling

6.2 Wiring in the Debugging MCU board

Figures 6.1 and 6.2 show the wiring on the debugging MCU board.

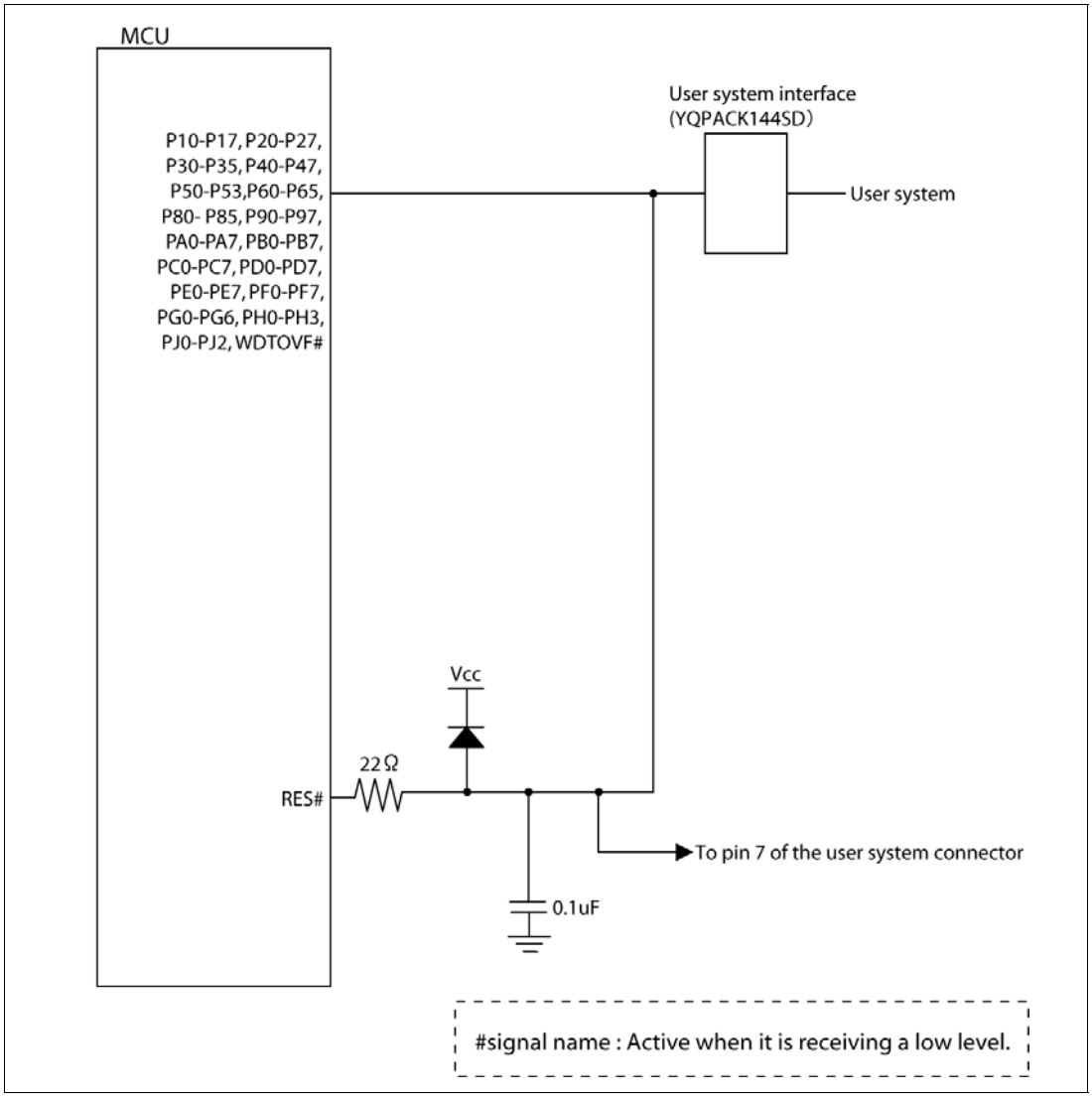


Figure 6.1 Wiring on the Debugging MCU Board (1)

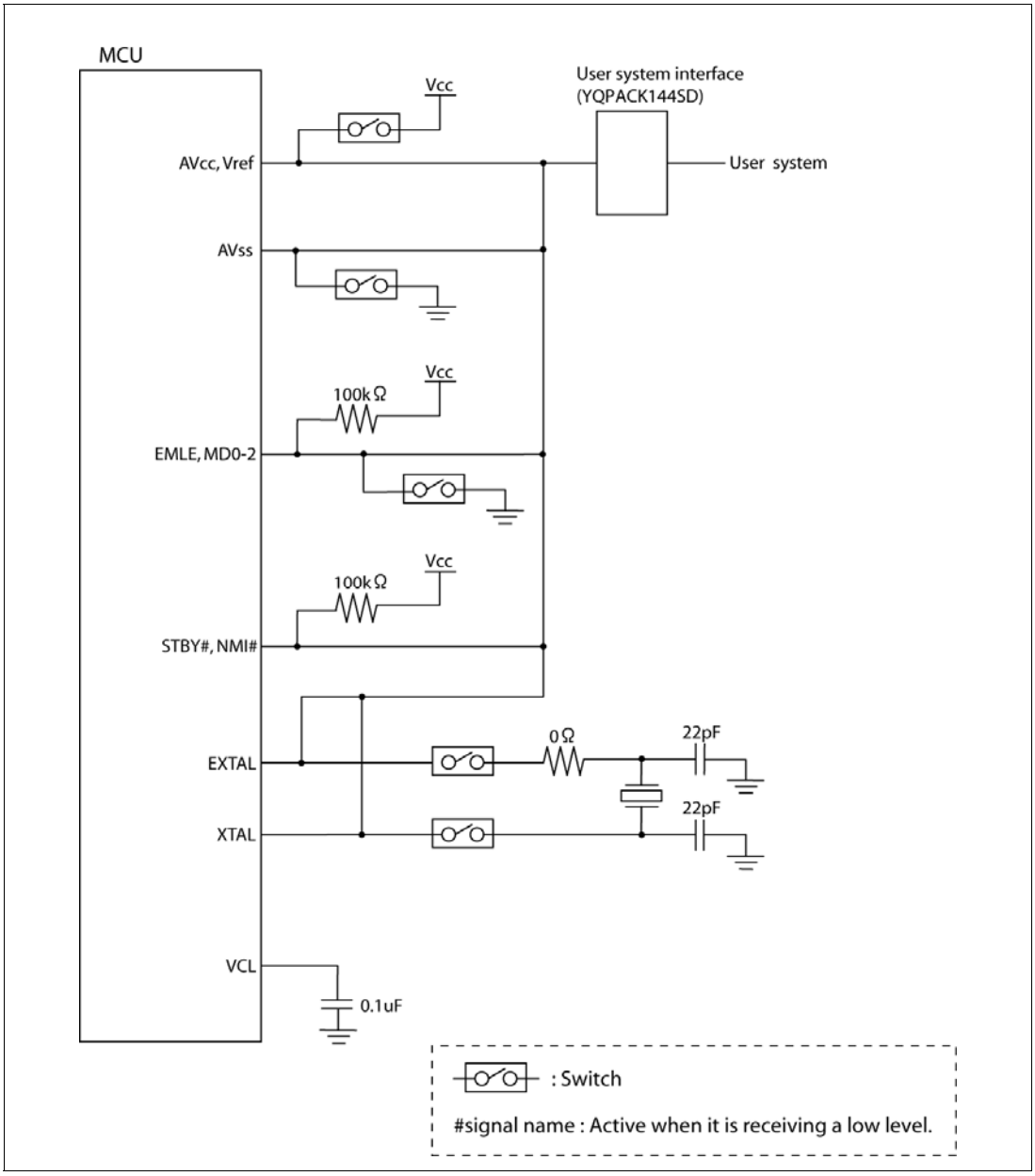


Figure 6.2 Wiring on the Debugging MCU Board (2)

H8S/2426,H8S/2426R Group PLQP0144KA-A Debugging MCU Board
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R0E424268PFK00E User's Manual

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