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Renesas Electronics Corporation

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Connection of H8S/2437F with E10A Emulator

HS2437KCM01H HS2437KCI01H with User System

1. Connecting the E10A Emulator with the User System

To connect the E10A emulator (hereafter referred to as emulator), an H-UDI port connector must be installed on the user system to connect the user system interface cable. When designing the user system, refer to the recommended circuit between the H-UDI port connector and the MCU. Before designing the user system, be sure to read the H8S/2437F E10A user's manual and the hardware manual of the related MCU.

2. Installing the H-UDI Port Connector on the User System

Table 2.1 shows the H-UDI port connector for the emulator.

Table 2.1 Recommended Connector

Type Number	Manufacturer	Specifications
2514-6002xx*	3M Limited	14-pin straight type

Note: xx means plated version.

Note: Do not install any components within 3 mm of the H-UDI port connector.

3. Pin Arrangement of the H-UDI Port Connector

Figure 3.1 shows the pin arrangement of the H-UDI port connector.

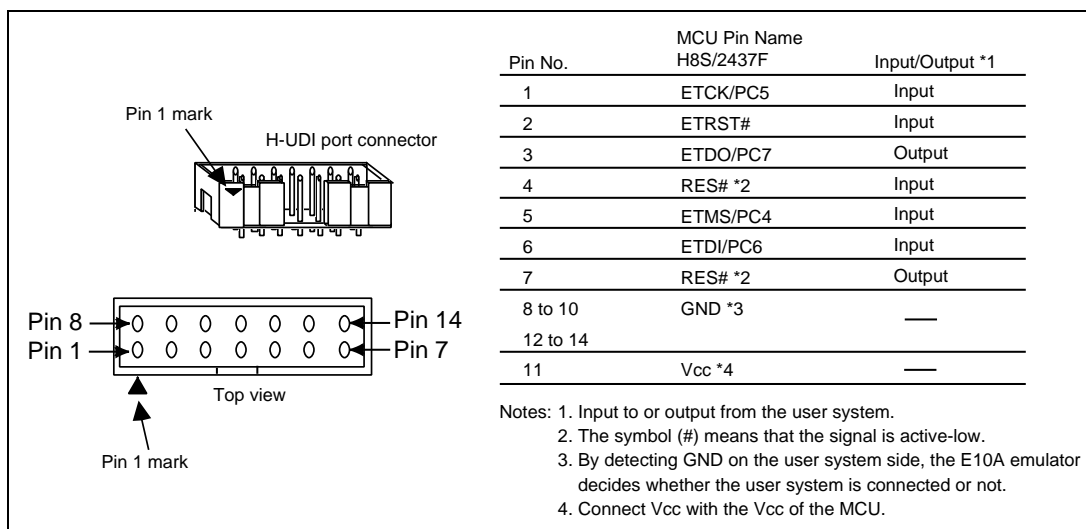


Figure 3.1 Pin Arrangement of the H-UDI Port Connector

4. Example of Emulator Connection

The figure shown below is an example of connecting the user system to the emulator.

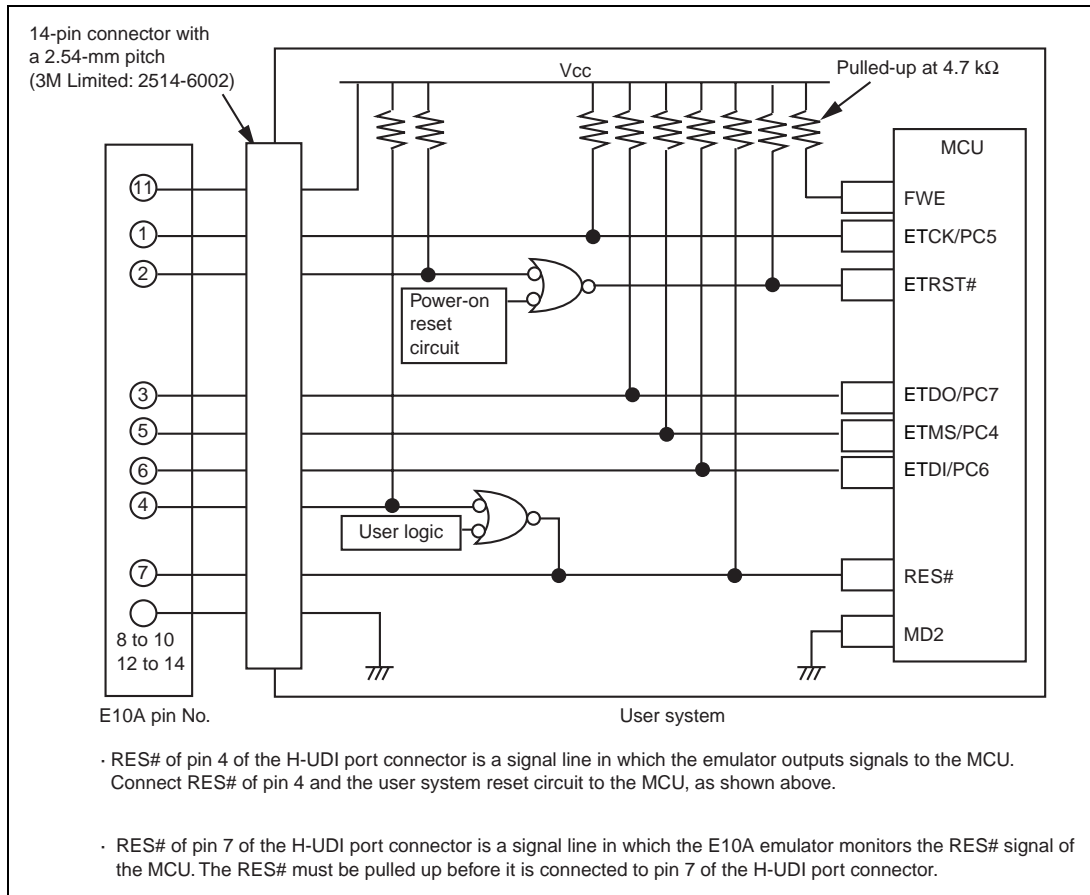


Figure 4.1 Example of Emulator Connection

**Notes: 1. ETCK/PC5, ETMS/PC4, ETDO/PC7, and ETDI/PC6 are used by the emulator.
Pull up and connect the emulator and the MCU pins.**

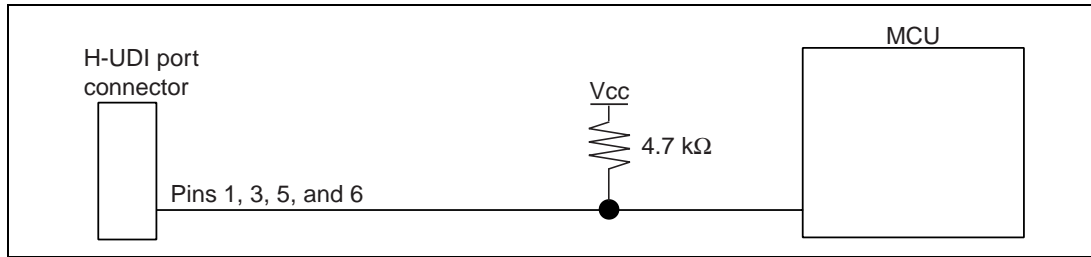


Figure 4.2 Connection of Emulator and MCU

**2. If the emulator is not connected to the user system, pull up pin MD2 of the MCU.
When the emulator is connected to the user system, ground the MD2.**

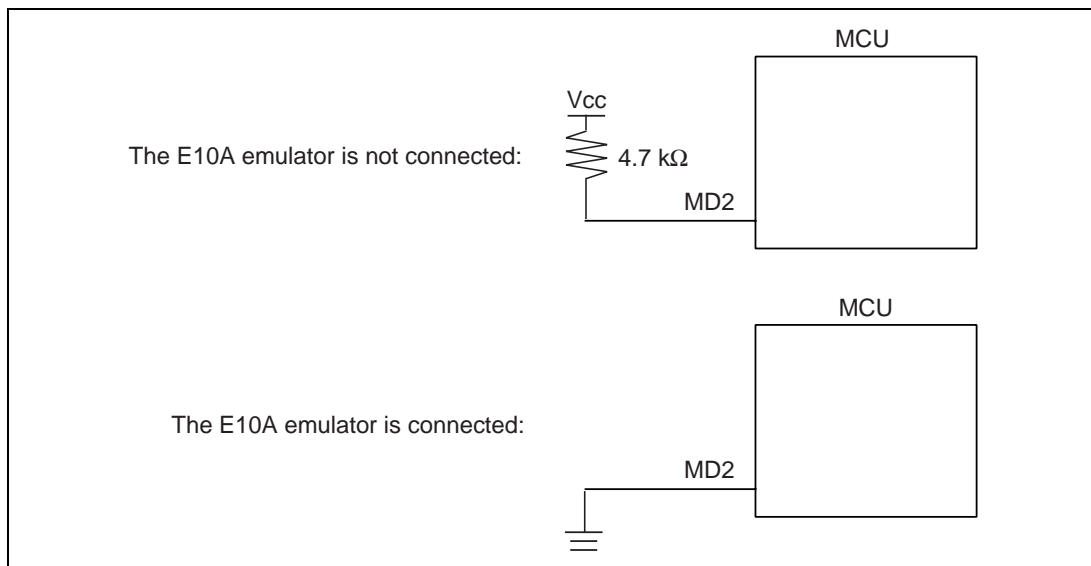


Figure 4.3 Emulator and Pin MD2

3. **RES# of pin 4 of the H-UDI port connector is a signal line in which the emulator outputs signals to the MCU. RES# of pin 4 and the user system reset circuit must be connected to the MCU, as shown in figure 4.4. RES# of pin 7 of the H-UDI port connector is a signal line in which the emulator monitors the RES# signal of the MCU. The RES# must be pulled up before it is connected to pin 7 of the H-UDI port connector.**

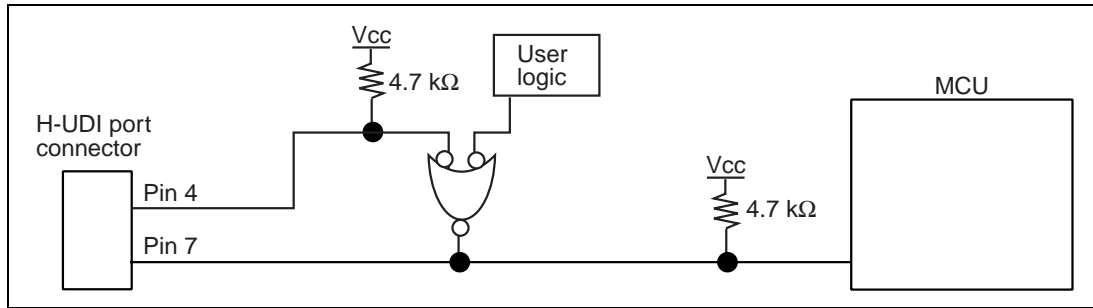


Figure 4.4 Examples of Reset Circuits

4. **Pin FWE of the MCU must be pulled up if the emulator is connected to the user system.**

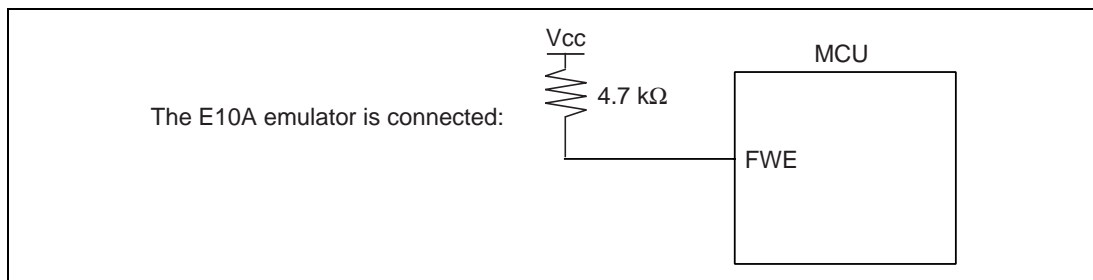


Figure 4.5 Connection of Pin FWE

5. **Pin ETRST# must be connected as shown in figure 4.6.**

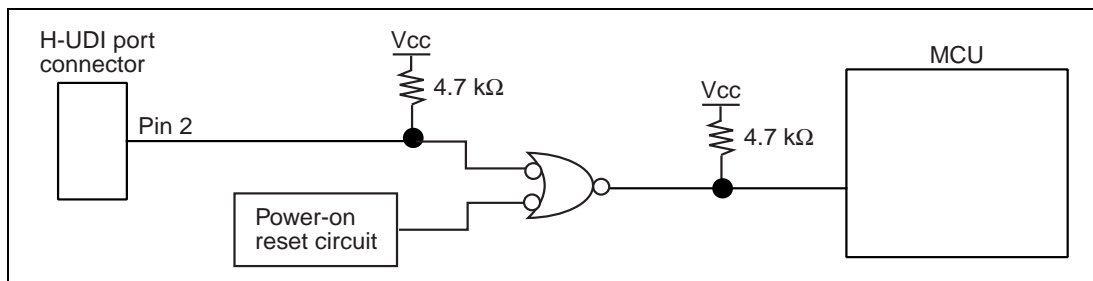


Figure 4.6 Connection of Pin ETRST#

6. **Ground pins 8 to 10 and 12 to 14 of the H-UDI port connector.**

7. Pin 11 of the H-UDI port connector must be connected to the user system Vcc (power supply). The amount of voltage permitted to input to the H-UDI port connector must be within the guaranteed range of the microcomputer.
8. Figure 4.7 shows the interface circuit in the emulator. Use this figure as a reference to decide the pull-up resistance value.

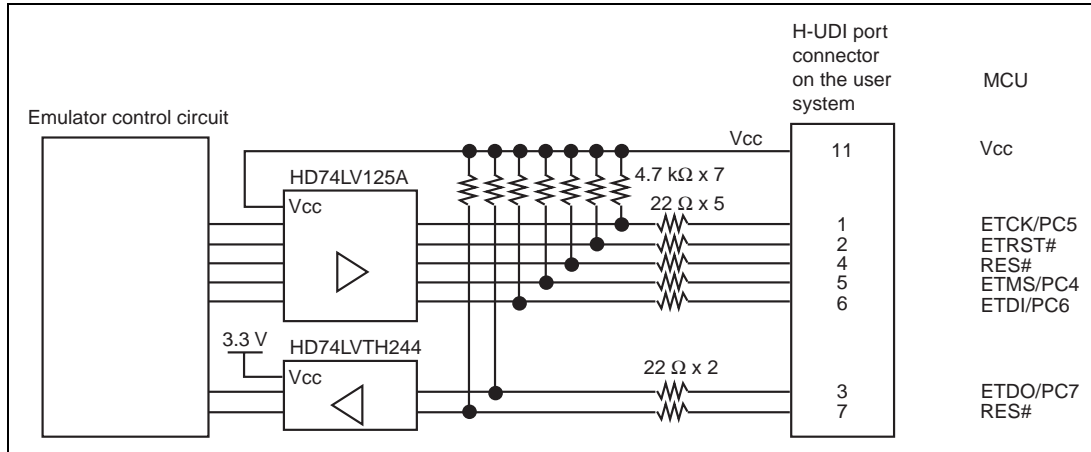


Figure 4.7 Interface Circuit in the Emulator (Reference)

9. When the H8S/2437F in use is connected to the emulator, the pin functions listed below are not available.

Table 4.1 Pin Functions Not Available

H8S/2437F

PC4 to PC7

The symbol (#) means that the signal is active-low.