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Renesas Electronics Corporation

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Connection of H8S/2170F with E10A Emulator

with User System

HS2170KCM01H

HS2170KCI01H

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/2170F E10A user's manual and the hardware manual of the related MCU.

2. Installing the H-UDI 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.

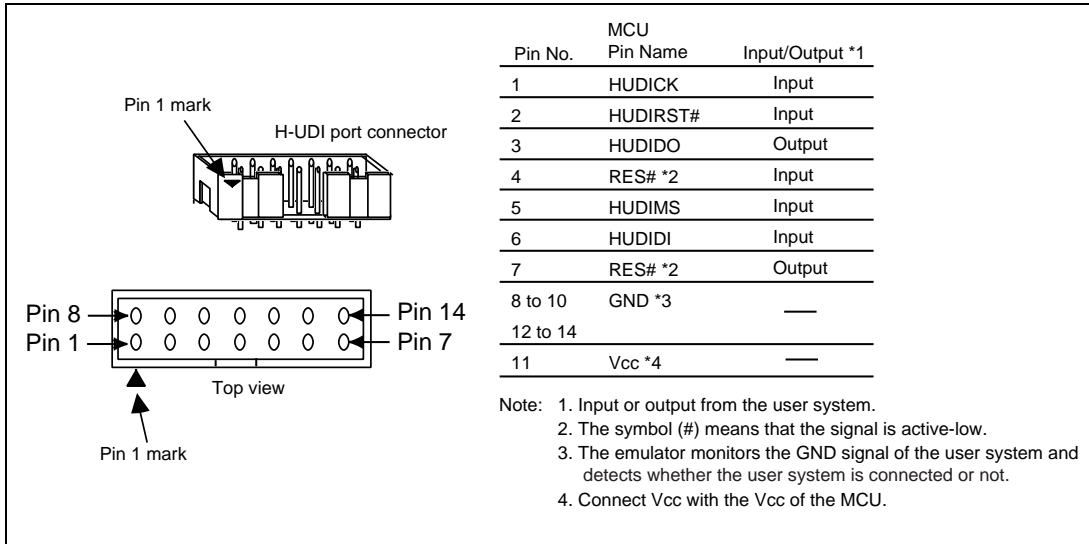


Figure 3.1 Pin Arrangement of the H-UDI Port Connector

4. Example of Emulator Connection

The following shows an example of connecting the user system to the emulator.

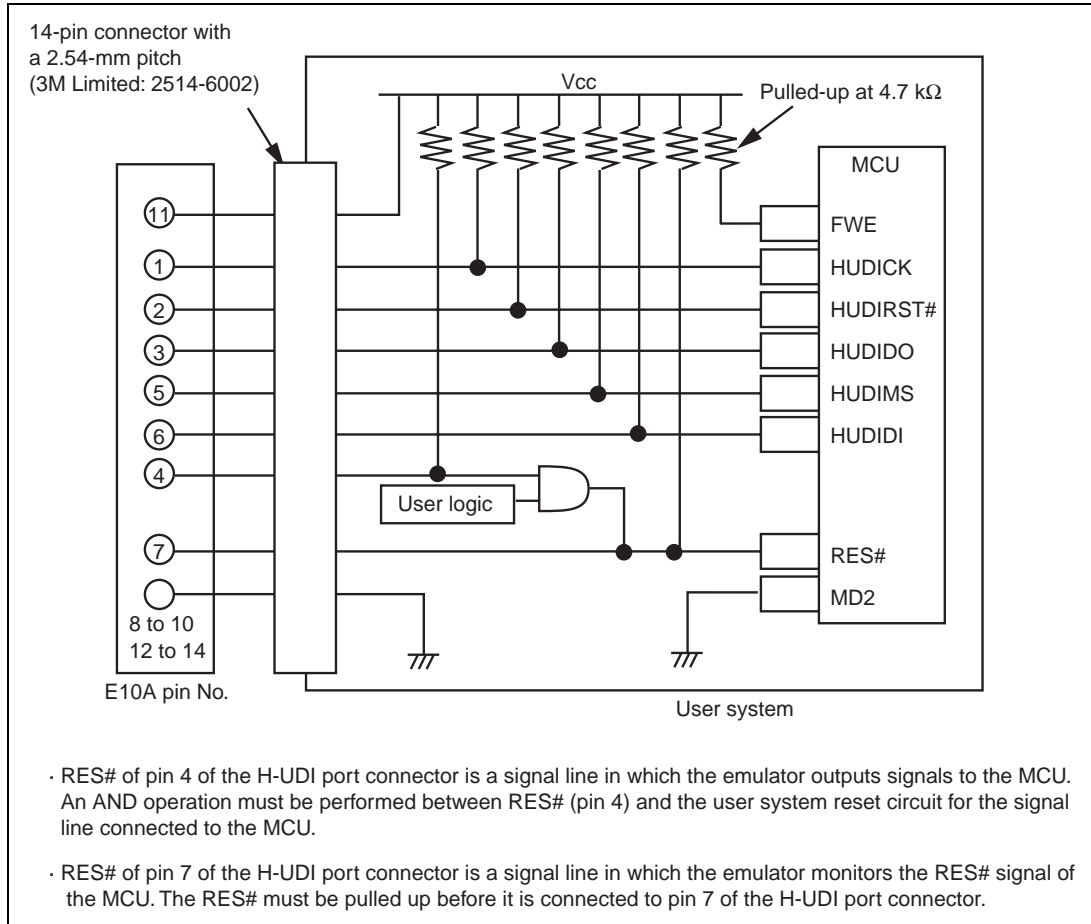


Figure 4.1 Example of Emulator Connection

Notes: 1. HUDIRST#, HUDICK, HUDIMS, HUDIDO, and HUDIDI are used by the emulator. Pull up and connect the emulator and MCU pins.

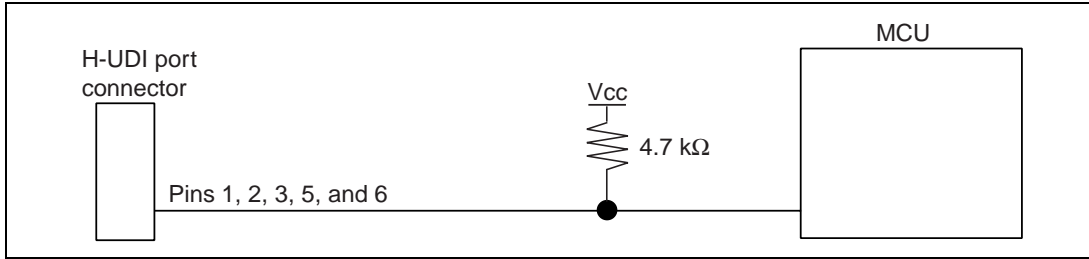


Figure 4.2 Connection of Emulator and MCU

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.

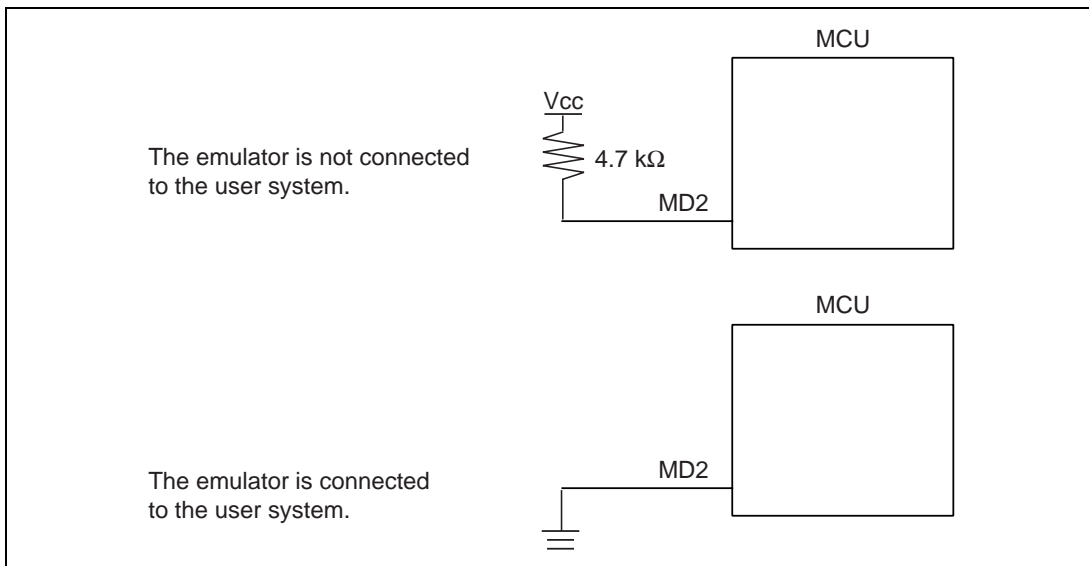


Figure 4.3 E10A Emulator and Pin MD2

3. **RES# of pin 4 of the H-UDI port connector is a signal line in which the emulator outputs signals to the MCU. An AND operation must be performed between RES# and the user system reset circuit for the signal line connected to the MCU. 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.**

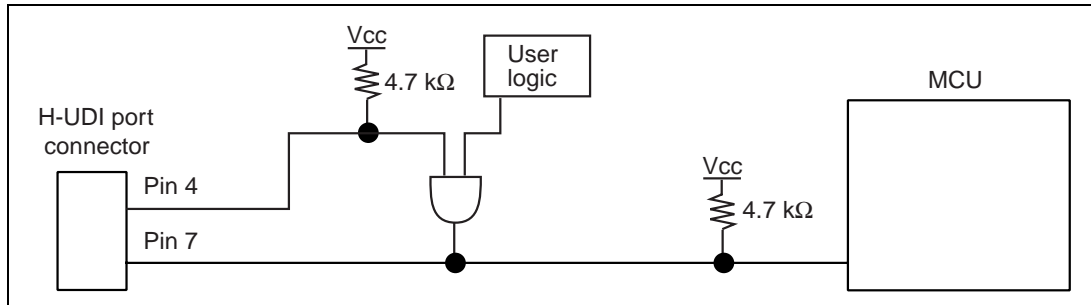


Figure 4.4 Examples of Reset Circuits

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

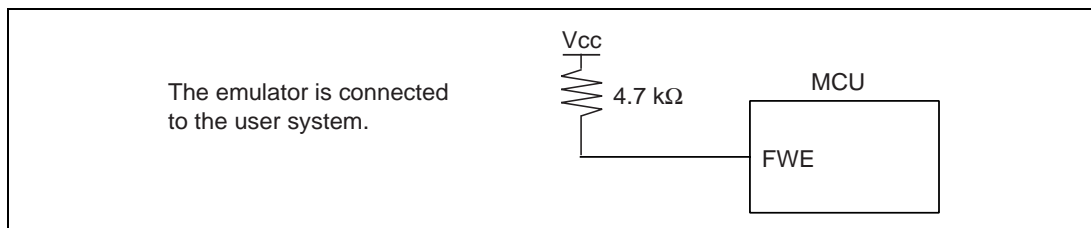


Figure 4.5 Connection of Pin FWE

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

7. Figure 4.6 shows the interface circuit in the emulator. Use this figure as a reference to decide the pull-up resistance value.

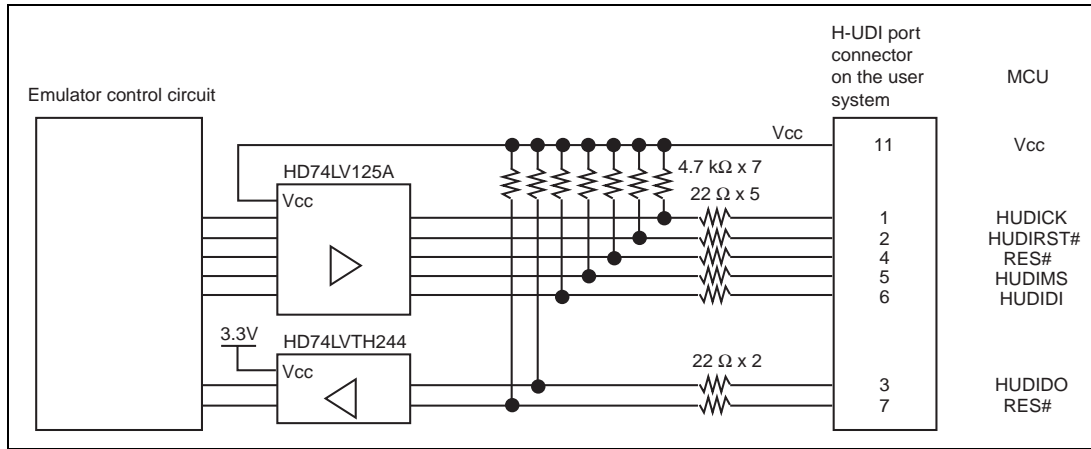


Figure 4.6 Interface Circuit in the Emulator (Reference)