REJ10J1363-0100

Everywhere you imagine.

E10A-USB Optional 38-Pin User System Interface Cable

HS0005ECK01H User's Manual

Renesas Microcomputer Development Environment System

HS0005ECK01HE

User's Manual

Rev.1.00
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IMPORTANT INFORMATION

READ FIRST

• READ this user's manual before using this emulator product.

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

Do not attempt to use the emulator product until you fully understand its mechanism.

Emulator Product:

Throughout this document, the term "emulator product" shall be defined as the following products produced only by Renesas Technology Corp. excluding all subsidiary products.

- Emulator
- User system interface cable

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

Purpose of the User System Interface Cable:

This user system interface cable is for connecting the emulator unit and user system. This user system interface cable must only be used for the above purpose.

Limited Applications:

This emulator product is not authorized for use in MEDICAL, atomic energy, aeronautical or space technology applications without consent of the appropriate officer of a Renesas sales company. Such use includes, but is not limited to, use in life support systems. Buyers of this emulator product must notify the relevant Renesas sales offices before planning to use the product in such applications.

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Target User of the Emulator Product:

This emulator 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 emulator 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 emulator product.

LIMITED WARRANTY

Renesas warrants its user system interface cables to be manufactured in accordance with published specifications and free from defects in material and/or workmanship. Renesas will repair or replace any user system interface cables determined to be defective in material and/or workmanship. User system interface cables are wearing parts which Renesas will not repair or replace if damaged and/or worn through use. The foregoing shall constitute the sole remedy for any breach of Renesas' warranty. This warranty extends only to you, the original Purchaser. It is not transferable to anyone who subsequently purchases the user system interface cable from you. Renesas is not liable for any claim made by a third party or made by you for a third party.

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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 emulator product are therefore not all inclusive. Therefore, you must use the emulator product safely at your own risk.

SAFETY PAGE

READ FIRST

• READ this user's manual before using this emulator product.

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

Do not attempt to use the emulator product until you fully understand its mechanism.

DEFINITION OF SIGNAL WORDS

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.

⚠ WARNING

Observe the precautions listed below. Failure to do so will result in a FIRE HAZARD and will damage the user system and the emulator product or will result in PERSONAL INJURY. The USER PROGRAM will be LOST.

1. **Do not repair or remodel the emulator 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. **Connect the connectors in the user system and in the user system interface cable by confirming the correct direction.**

Warnings on Emulator Usage

Be sure to read and understand the warnings below before using this emulator. Note that these are the main warnings, not the complete list.

⚠ WARNING

Always switch OFF the host computer and user system before connecting or disconnecting any CABLES or PARTS.

Failure to do so will result in a FIRE HAZARD and will damage the user system and the emulator product or will result in PERSONAL INJURY. The USER PROGRAM will be LOST.

CAUTION

Place the host computer and user system so that no cable is bent or twisted. A bent or twisted cable will impose stress on the user interface leading to connection or contact failure.

Make sure that the host computer and the user system are placed in a secure position so that they do not move during use nor impose stress on the user interface.

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Section 1 Components of the E10A-USB Optional 38-Pin User System Interface Cable

Table 1.1 lists the components of the E10A-USB optional 38-pin user system interface cable. After unpacking the product, check to ensure you have all components in table 1.1.

Table 1.1 Components of the E10A-USB Optional 38-Pin User System Interface Cable

Component	Appearance	Quantity	Remarks
User system interface cable		1	38-pin type Length: 30 cm, Mass: 62 g
E10A-USB Optional 38-Pin User System Interface Cable User's Manual		1	HS0005ECK01HJ and HS0005ECK01HE

Section 2 Connecting the Emulator to the User System

Follow the procedure below to connect the E10A-USB emulator (hereinafter referred to as the emulator) to the user system with the user system interface cable, and when reconnecting them after disconnection to move the emulator or user system.

1. Ensure that the host computer is turned off or the emulator is not connected to the host computer with the USB cable.
2. Connect the user system interface cable to the connector on the user side of the emulator.
3. Connect the USB cable to the connector on the host side of the emulator.

Section 3 Installing the H-UDI Port Connector on the User System

Table 3.1 shows the recommended H-UDI port connector for this user system interface cable.

Table 3.1 Recommended Connector

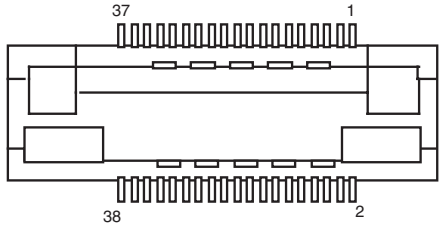
Connector	Type Number	Manufacturer	Specifications
38-pin connector	2-5767004-2	Tyco Electronics AMP K.K.	38-pin Mictor type

Note: When designing the placement of the 38-pin connector layout on the user board, reduce cross-talk noise etc. by keeping other signal lines out of the region where the H-UDI port connector is situated.

Section 4 Pin Assignments of the H-UDI Port Connector

Pin No.	Signal *4	Input/ Output *1	Note	Pin No.	Signal *4	Input/ Output *1	Note
1	N.C.	—		20	N.C.	—	
2	N.C.	—		21	TRST# *2	Input	
3	MPMD (GND)	—		22	N.C.	—	
4	N.C.	—		23	N.C.	—	
5	UCON# (GND)*3	—		24	AUDATA3		
6	AUDCK	Output		25	N.C.	—	
7	N.C.	—		26	AUDATA2		
8	ASEBRK#/ BRKACK*2	Input/ output		27	N.C.	—	
9	RESET# *2	Output	User reset	28	AUDATA1		
10	N.C.	—		29	N.C.	—	
11	TDO	Output		30	AUDATA0		
12	UVCC_AUD	Output		31	N.C.	—	
13	N.C.	—		32	AUDSYNC# *2	Output	
14	UVCC	Output		33	N.C.	—	
15	TCK	Input		34	AUDRST# *2	—	
16	N.C.	—		35	N.C.	—	
17	TMS	Input		36	AUDMD	—	
18	N.C.	—		37	N.C.	—	
19	TDI	Input		38	N.C.	—	

Notes: 1. Input to or output from the user system.
2. The symbol "#" means that the signal is active-low.
3. The emulator monitors the GND signal of the user system to detect whether or not the user system is connected.
4. Signal names are not intended to correspond to those for the actual MCU. Refer to recommended circuits and notes described in the Supplementary Information on Using the SHxxxx and connect only the required signals. Other than UVCC_AUD, the signals are the same as those for the 36-pin interface. Supply the operating voltage of the AUD to UVCC_AUD.
5. The GND bus leads, which are allocated on the center of the H-UDI port connector, must be connected to GND.
6. When an MCU incorporating the AUD with the SSTL18 specification (e.g., the SH7785) is used, the emulator is used with the same circuit as for the E200F. For details, refer to the E200F emulator additional document (Supplementary Information on Using the SHxxxx).



H-UDI port connector (top view)

Figure 4.1 Pin Assignments of the H-UDI Port Connector (38 Pins)

The following shows the correspondence between the 38-pin and 36-pin connectors. For the required processing between the target MCU and the connector, refer to Supplementary Information on Using the SHxxxx.

Signal Name	38-Pin Connector		36-Pin Connector	Note
	1	----------		
	2	----------		
MPMD	3	----------	22	
	4	----------		
UCON#	5	----------	33	
AUDCK	6	----------	1	
	7	----------		
ASEBRK#/BRKACK	8	----------	27	
RESET#	9	----------	31	
	10	----------		
TDO	11	----------	25	
UVCC_AUD	12	----------		Specific to the 38-pin connector
	13	----------		
UVCC	14	----------	29	
TCK	15	----------	17	
	16	----------		
TMS	17	----------	19	
	18	----------		
TDI	19	----------	23	
	20	----------		
TRST#	21	----------	21	
	22	----------		
	23	----------		
AUDATA3	24	----------	9	
	25	----------		

Signal Name	38-Pin Connector		36-Pin Connector	Note
AUDATA2	26	----------	7	
	27	----------		
AUDATA1	28	----------	5	
	29	----------		
AUDATA0	30	----------	3	
	31	----------		
AUDSYNC#	32	----------	11	
	33	----------		
AUDRST#	34	----------	13	
	35	----------		
AUDMD	36	----------	15	
	37	----------		
Reserved	38	----------	35	

Section 5 Restriction on Component Mounting

An upper limit (5 mm) applies to the heights of components mounted around the user system connector. The connector for the user system interface cable is of the straight (plug) type.

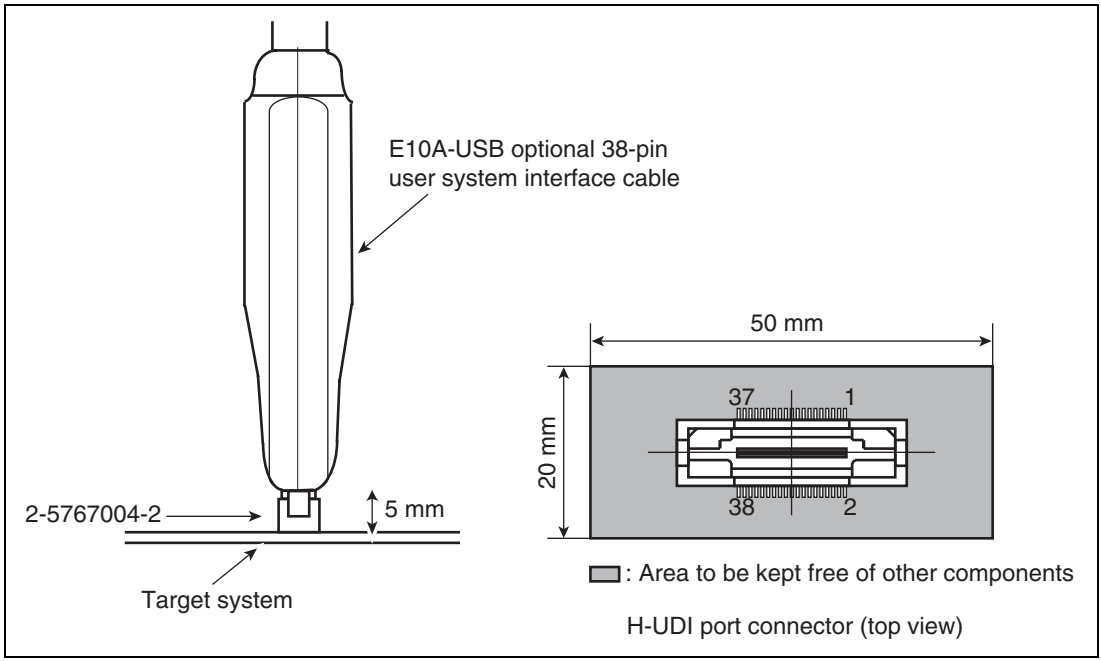


Figure 5.1 Restriction on Component Mounting

Section 6 Notes

1. When connecting the user system interface cable to the user system, be sure to note the position of pin 1 to avoid erroneous connections.
2. Do not apply force to the user system interface cable while it is connected to the user system.

E10A-USB Optional 38-Pin User System Interface Cable
HS0005ECK01H User's Manual

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