

R0E000200ACB10

R20UT0165EJ0200

Rev.2.00

Mar 09, 2012

Isolator for the E20 Emulator

1. Preface

The R0E000200ACB10 is an isolator for the E20 emulator. This product is used for a debugging environment where there is a GND gap between the user system and emulator system.



Package Components

Before using this product, check if your R0E000200ACB10 contains all of these items.

Table 1.1 Package Components

Item	Qty.
R0E000200ACB10 (Isolator for the E20 emulator)	1
R0E000200ACB10 User's Manual (English) (This manual)	1
R0E000200ACB10 User's Manual (Japanese)	1

Note: Please handle this product as precision equipment for transportation.

Important

CAUTION

Caution on Isolation Voltage:



This product is intended to isolate a small and electrically safe GND gap between the user system and emulator system. In any case isolation voltage must be maintained within SELV limits i.e. less than 42.4VAC, or 60VDC.

The isolator must never be used as an element of a safety isolation system. The part could be expected to function correctly at higher voltage across the isolation barrier; but then the circuitry on both sides of the barrier must be regarded as operating at an unsafe voltage and further isolation/insulation systems must form a barrier between these circuits and any user-accessible circuitry according to safety standard requirements.

Caution to Be Taken for Disposal:



Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

European Union regulatory notices:



The WEEE (Waste Electrical and Electronic Equipment) regulations put responsibilities on producers for the collection and recycling or disposal of electrical and electronic waste. Return of WEEE under these regulations is applicable in the European Union only. This equipment (including all accessories) is not intended for household use. After use the equipment cannot be disposed of as household waste, and the WEEE must be treated, recycled and disposed of in an environmentally sound manner. Renesas Electronics Europe GmbH can take back end of life equipment, register for this service at "<http://www.renesas.eu/weee>".

Cautions to Be Taken for Handling the Isolator:



- Take full care not to touch any parts or cause short circuits on this product.
- Protect this product from excessive physical shock.
- Do not modify this product. Modifying the product will void your warranty.

Cautions for Use Temperature:



The isolator is to be used in an environment with a maximum ambient temperature of 35°C. Care should be taken that this temperature is not exceeded.

**CAUTION****Cautions to Be Taken for Connecting the Isolator:**

- Always switch OFF the power before connecting or disconnecting this product.
- This product has some switches. Make settings depending on debugging interface you use. Before changing settings power off this product and other connected devices.
- To connect this product to the user system align the #1 pin of the connector to the right position.
- To connect this product to the emulator align the #1 pin of the connector to the right position.

Cautions to Be Taken for Power Supply When Disconnecting:

- Turn off the power supply of the user system when you disconnect the user system from the emulator debugger. Otherwise you may fail to reconnect the emulator debugger to the user system.
- When an attempt to reconnect to the user system has failed, turn off the user system and then unplug and plug the USB cable of the emulator before trying again.

European Union regulatory notices

This product complies with the following EU Directives.

Environmental Compliance and Certifications:

- Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC
- Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC

2. Specifications

Table 2.1 Product Specifications

Item	Specification	Remark
Supported Emulator	E20 emulator	This isolator is not usable with the E1 emulator.
Power supply	Supplied from the user system (UVCC) Operating voltage: 3.0 V to 5.5 V	Supply from the user system (UVCC) needs to be 200 mA (max).
Acceptable GND gap voltage	less than 42.4VAC, or 60VDC	
Applicable MCU Series	RX600 Series	Isolator's switch settings vary depending on the user interface. See 4.5 Switch Settings for Each MCU for switch setting.
Device for isolation	ACSL-6420-00TE (Avago Technologies US Inc.) IL260-3E (NVE Corporation) IL261-3E (NVE Corporation) NKE0503SC (Murata Power Solutions Inc.)	
LED indication	LED1: Illuminated when power is supplied from the user system and power source isolation is working normally LED2: Illuminated when power is supplied from the user system	This isolator is only usable when both LEDs are illuminated.

3. Notes on Usage

Note on Power-Supply Voltage:

When you use an emulator with this isolator connected, power-supply voltage of the MCU on your system should be between 3.0 V and 5.5 V. Power-supply voltage less than 3.0 V is not supported.

Note on Signal Delay:

When this isolator is connected, because of signal delay in the isolation circuit, speed of the communication interface may be limited. As an example, the JTAG frequency of the RX600 series needs to be 12.38 MHz or less.

4. Usage

4.1 Setting Switches (JP1-JP6)

To configure the circuit of this product depending on the communication method of the MCU you use, set switches JP1 through JP6. For details, see 4.5 Switch Settings for Each MCU.

4.2 Setup

Confirm both the user system and the emulator are switched OFF before installing this product. Do not connect the USB cable to the emulator.

To connect this product to the user system or the emulator, be sure to align the #1 pin of the connector to the right position.

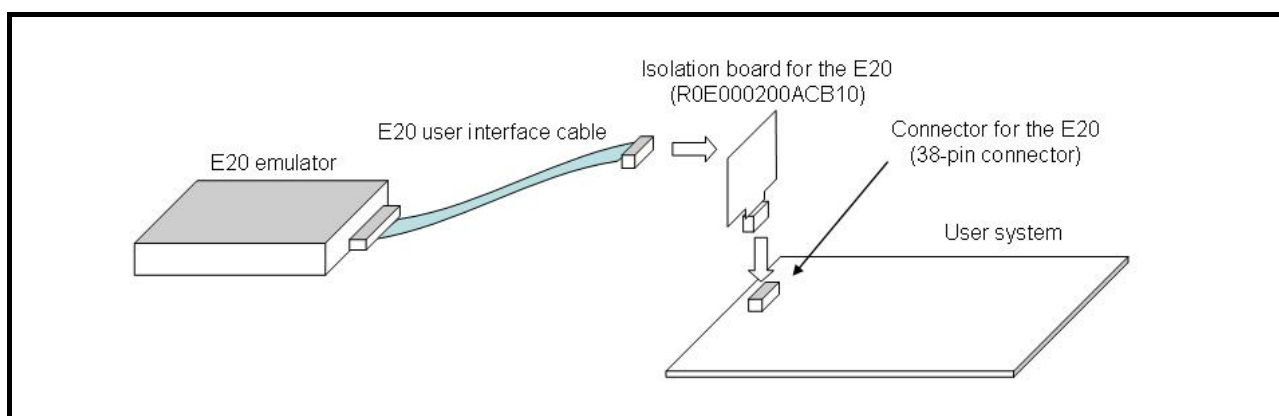


Figure 4.1 Mounting the R0E000200ACB10

4.3 Starting the Power Supply

Start the power supply following the procedure below.

(1) Turn ON the emulator.

Connect the host machine and the E20 emulator with the USB cable, then shift the power switch on the E20 emulator to ON.

(2) Turn ON the user system.

Turn ON the user system.

(3) Start the debugger.

Start the debugger from the host machine.

For the settings after the above, refer to the user's manual for the E20 emulator.

Unlike the isolator R0E000010ACB10 for the E1 emulator, this product does not require power supply from the emulator.

4.4 External Dimensions

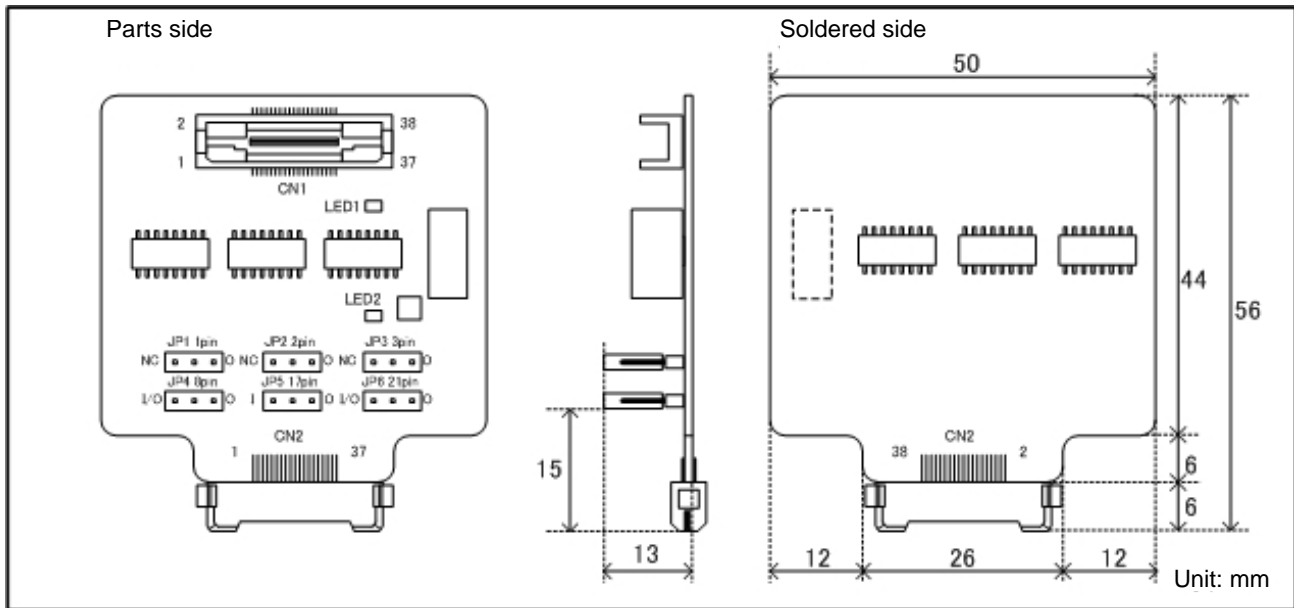


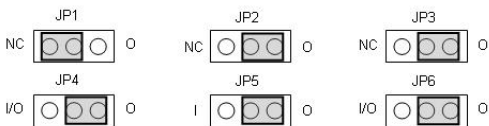
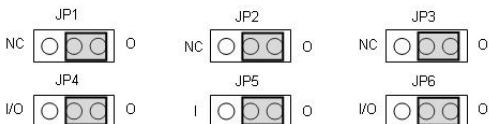
Figure 4.2 External Dimensions

4.5 Switch Settings for Each MCU

Table 4.1 Correspondence between the MCUs Supported by the E20 and the Isolator Switch Settings

MCU	User interface	Switch setting No. See Table 4.2
RX Family RX600 Series	JTAG	Setting 1
	When using Flash Development Toolkit	Setting 2

Table 4.2 Isolator Switch Setting

Switch setting No.	Settings of JP1 to JP6
Setting 1	
Setting 2	

* Do not use the isolator with settings other than the above.

5. Warranty

This product comes with a one-year warranty after purchase.

- (1) Should the product break down or be damaged while you're using it under normal condition based on its user's manual, it will be replaced free of cost.
- (2) However, if the following failure or damage occurs to the product under warranty, the product will be replaced at cost.
 - a) Failure or damage attributable to the misuse or abuse of the product or its use under other abnormal conditions.
 - b) Failure or damage attributable to improper handling of the product after purchase, such as dropping of the product when it is transported or moved.
 - c) Failure or damage to the product caused by other pieces of equipment connected to it.
 - d) Failure or damage attributable to fire, earthquakes, thunderbolts, floods, or other natural disasters or abnormal voltages, etc.
 - e) Failure or damage attributable to modifications, repairs, adjustments, or other acts made to the product by other than Renesas Electronics Corporation.
- (3) This product is accessories product. We cannot accept any request for repair.

Precautions

This product is only intended for use in a laboratory environment under ambient temperature and humidity conditions. A safe separation distance should be used between this and any sensitive equipment. Its use outside the laboratory, classroom, study area or similar such area invalidates conformity with the protection requirements of the Electromagnetic Compatibility Directive and could lead to prosecution.

The product generates, uses, and can radiate radio frequency energy and may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off or on, you are encouraged to try to correct the interference by one or more of the following measures;

- ensure attached cables do not lie across the equipment
- reorient the receiving antenna
- increase the distance between the equipment and the receiver
- connect the equipment into an outlet on a circuit different from that which the receiver is connected
- power down the equipment when not in use
- consult the dealer or an experienced radio/TV technician for help

NOTE: It is recommended that wherever possible shielded interface cables are used.

The product is potentially susceptible to certain EMC phenomena. To mitigate against them it is recommended that the following measures be undertaken;

- The user is advised that mobile phones should not be used within 10m of the product when in use.
- The user is advised to take ESD precautions when handling the equipment.

This product does not represent an ideal reference design for an end product and does not fulfil the regulatory standards for an end product.

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