M-G32EV051

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Data Sheet
Relay board for EPSON Accelerometer/IMU

■ OVERVIEW

This Relay board enables the communication of Accelerometer/IMU and PC made of SEIKO EPSON by combining with IMU/Accelerometer evaluation USB board (M-G32EV041) of another sales. The preliminary evaluation of Accelerometer /IMU is facilitated by using this item.
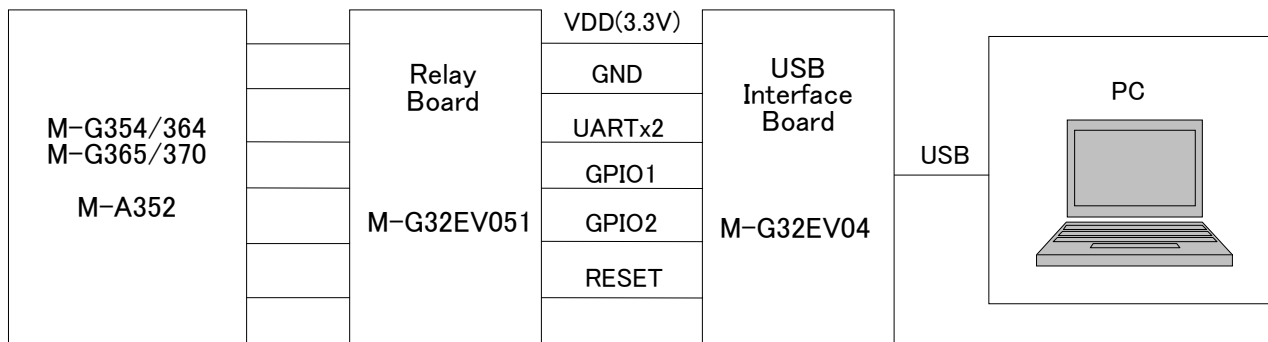
■ BLOCK DIAGRAM

Fig1. Block Diagram

■ RECOMMENDED OPERATING CONDITION

Microsoft Windows7/ 8.1/ 10 (64bit) are supported when the USB interface of the USB Evaluation Cable is connected to the PC. Other hardware connection or software environments are not tested by Epson.

Table1. Recommended Operating Condition

Support OS	Windows 7/ 8.1/ 10 (64bit)
USB Specification	1.1 / 2.0
Operation Temperature	-20～+70℃

■ OUTLINE DIMENSIONS AND PIN LAYOUT
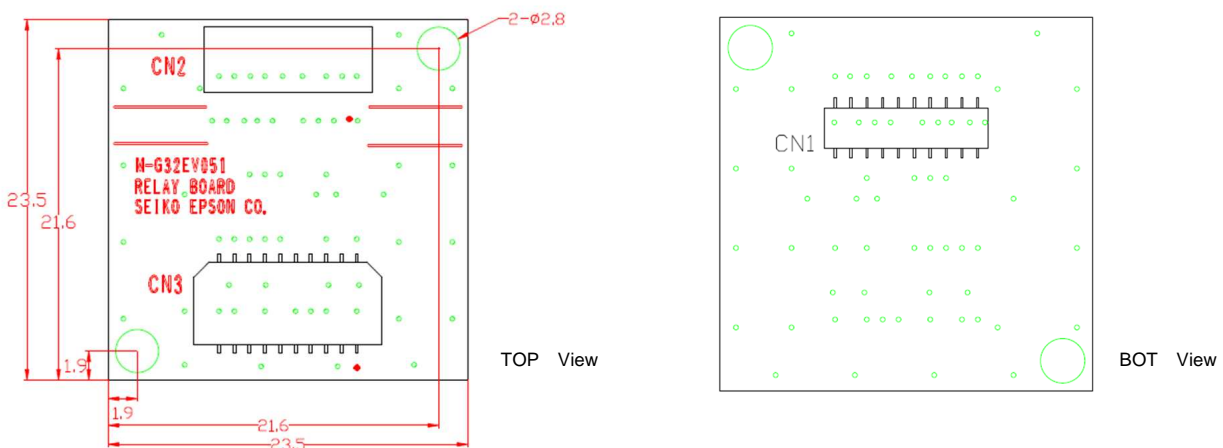
Fig2. Board Outline
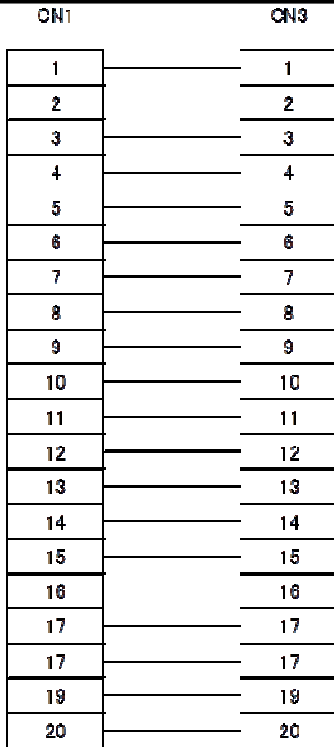
Pin No.	Mnemonic	Type	Description
1	SCLK	I	SPI Serial Clock
2	SDO	O	SPI Data Output
5	SDI	I	SPI Data Input
6	/CS	I	SPI Chip Select
7	SOUT	O	UART Data Output
9	SIN	I	UART Data Input
13	DRDY (GPIO1)	O	Data Ready (General Purpose I/O1)
14	GPIO2 (EXT)	I	General Purpose I/O2 (External Trigger Input or External Counter Reset Input)
16	/RST	I	Reset
10,11,12	VCC	S	Power Supply 3.3V
3,4,8,15	GND	S	Ground
17,18,19,20	NC		

Table2. CN1 Pin Function Description

It is wired for CN1 and CN3 straight.
When the signal of CN1 connected with the product is taken out, it is possible to use it.
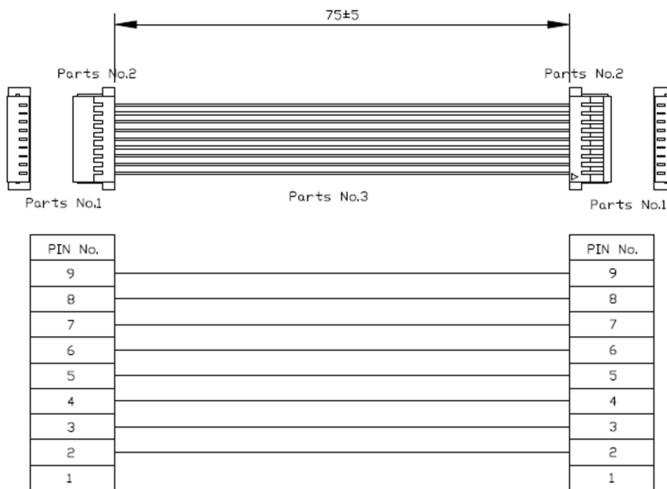Connected harness for CN3 is not attached.

| Parts No.	Parts Name	Maker
1	SHR-09V-S	JST
2	SSH-003T-P0.2-H	JST
3	AWG28 UL1571	N/A

Table3. Harness parts list

Fig3. Attached harness Dimensions

Pin No.	Mnemonic	Type[*1]	Description
1	NC		
2	DRDY (GPIO1)	I/O	Data Ready (General Purpose I/O1)
3	SIN	I	UART Data Input
4	SOUT	O	UART Data Output
5	GND	S	Ground
6	VCC	S	Power Supply 3.3V
7	GPIO2 (EXT)	I/O	General Purpose I/O2 (External Trigger Input or External Counter Reset Input)
8	NC		
9	/RST	I	Reset

Table4. CN2 Pin Function Description

■ INSTALLATION INSTRUCTION

IMU G-Series
／Accelerometer M-A352
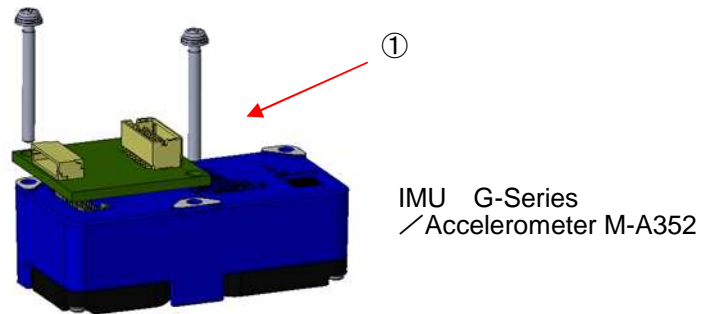
(1) Assembling Instruction.
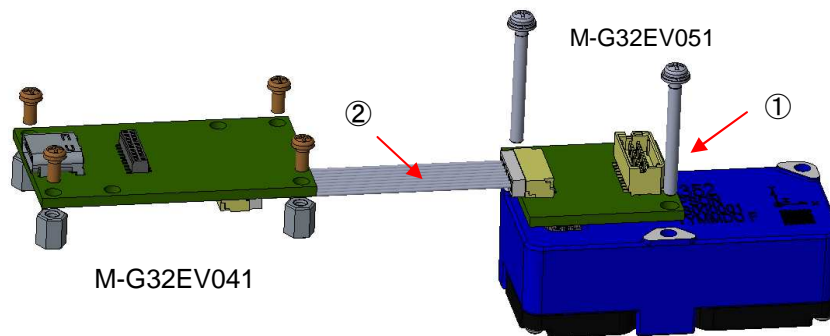
(2) Connecting Instruction for M-G32EV041

Fig4. Relay board Installation

Please use the harness of the attachment when you connect this relay board with our company UART-USB conversion board (M-G32EV041).

Please prepare and use the socket for CN3 when you take out the signal of the product terminal of Accelerometer /IMU.

Please confirm specifications of each product about the terminal function of CN3.

·CN3:DF20F-20DP-1V(56) socket HIROSE ELECTRIC CO.,LTD.

socket	DF20A-20DS-1C
Pressure terminal	DF20F-2830SCFA(**)
	DF20F-3032SCFA(**)

■ BUNDLED PARTS

Table5. Bundled Parts

Product Number	Product Name	Specifications	Quantity
①	Sems Screw for Accelerometer	M2 L=25mm	3
②	harness	9pin-9pin (8 connecting wires)	1

■ SOFTWARE REQUIREMENT

FTDI Driver

If the driver software (USB Serial Converter, USB Serial Port (COMx)) is requested when the USB Evaluation Cable is connected, install the driver using either of the following two methods.

- Update the driver via Windows Device Manager. (Automatic Update over the Internet is recommended.)

- Access the FTDI website (http://www.ftdichip.com/Drivers/VCP.htm) and download the appropriate driver for the OS.

■ Accelerometer/IMU LOGGER SOFTWARE

The IMU logger software is provided for use with the USB evaluation tools to allow easy evaluation of the Epson IMUs. For information about the IMU evaluation software, contact our representatives.
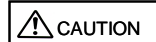
> For Contact
> SEIKO EPSON CORPORATION
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> TEL: +81-266-61-0614, FAX: +81-266-61-2051

Software & Manuals Download Website:
http://global.epson.com/products_and_drivers/sensing_system/technical_info/evaluation_tools/

## ■ IMPORTANT NOTES OF USE   ⚠ CAUTION

- Please read the caution sheet that is bundled before use.

- This "Relay Board" communicates with the Accelerometer/IMU through the UART-USB conversion board.

- Please ensure the Accelerometer/IMU & UART-USB conversion board is properly connected before inserting or removing the USB cable.

- Do not insert or remove the USB cable immediately after connecting.

- The Accelerometer/IMU & Relay Board can be easily moved by the USB cable resulting in possible damage by impact. Please take precaution to prevent impact by restraining the Accelerometer/IMU & Relay Board.

■ PRODUCT NUMBER AND ORDER INFORMATION

Please order using the following number.

Order Number	Product Number	Comment
E92E609051	M-G32EV051	Relay board
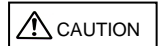
Evaluation Board/Kit and Development Tool Important Notice   ⚠ CAUTION

1. This evaluation board/kit or development tool is designed for engineering evaluation, demonstration, or development purposes only. Do not use it for any other purposes. The conformance test for this product in accordance with European EMC regulations and United States FCC regulations has not been conducted.
2. This evaluation board/kit or development tool is intended for use by electronics engineers and is not a consumer product. Malfunction by the electrical noise may result from usage depending on your environment. The user should ensure it is used in a safe and proper manner.
3. Seiko Epson does not assume any responsibility or liability of any kind from damage and/or fire caused by the use of this evaluation board/kit or development tool. The user should cease using this evaluation board/kit or development tool if any abnormal issue occurs even during proper and safe usage.
4. When disposing of this evaluation board/kit or development tool, discard in accordance with domestic law concerning disposal.
5. The parts used for this evaluation board/kit or development tool may be changed without notice.
6. Do not allow heaters, human body or metal parts to contact the non-insulated parts of this evaluation board/kit or development tool.
7. Do not allow the human body or metal parts to contact any openings of this evaluation board/kit or development tool.
8. Do not allow excessive stress on mounted components, board wiring, and electric wire of this evaluation board/kit or development tool.
9. When exporting the products or technology described in this material, the user should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations. Do not use, resell, export and/or otherwise disclose of these products (and any technical information, if any) for the development and/or manufacture of weapons of mass destruction or other military purposes.