US082-INTERPEVZ

The US082-INTERPEVZ Board provides a standard Pmod™ Type 6A (Extended I^2C) connector to compatible Renesas MCU kits. The board plugs into the existing Type 2A or 3A Pmod on the MCU board and interposes key pins to create a Type 6A connector.

The US082-INTERPEVZ features Pmod connectors on both sides of the board allowing additional Type 6/6A boards to be connected in a daisy-chained solution with multiple sensors on the same MCU Pmod connector. Because of the standard connector, the US082-INTERPEVZ is the best choice to rapidly create an IoT system with the Renesas Quick-Connect IoT.

Features

- Corrects the pinout of a Pmod on compatible Renesas MCU evaluation kits providing a standardized Type 6A Pmod connector for an I^2C Extended interface.

Board Contents

- US082-INTERPEVZ Board

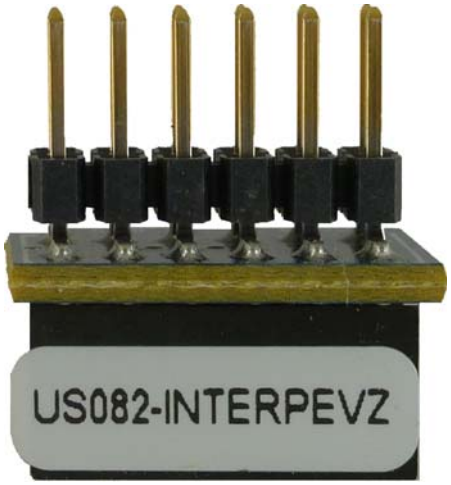

Figure 1. US082-INTERPEVZ Pmod Board

Contents

1. Setup

1.1 Required or Recommended User Equipment

The US082-INTERPEVZ board is used with the evaluation kits listed in Table 1.
Note: This table is not a comprehensive list of supported MCU Kits. See your evaluation kit hardware manual to confirm the Pmod pinout.

Table 1. Renesas MCU Evaluation Kits[1] that support a Type 6A Pmod when used with the US082-INTERPEVZ

RA	RX	Synergy
EK-RA4W1	RX111-Starter-Kit	PK-S5D9
EK-RA2A1	RX231-Starter-Kit	DK-S3A7
EK-RA4M1	RX23W-Starter-Kit	DK-S128
EK-RA6M1	RX23T-Starter-Kit	TB-S1JA
EK-RA6M2	RX24T-Starter-Kit	TB-S3A6
EK-RA6M3	RX24U-Starter-Kit	DK-S7G2
EK-RA6M3G		

1. This table is not a comprehensive list of supported MCU Kits. See the evaluation kit hardware manual to confirm Pmod pinout.

1.2 Kit Hardware Connections

Follow these procedures to set up the kit as shown on Figure 2.

1. Ensure the MCU evaluation kit being used has a Pmod connector that can be used with the US082-INTERPEVZ (to confirm, see the kit hardware manual). See Table 2 for the pin rerouting map.
2. Plug in the US082-INTERPEVZ to the MCU board connector, being careful to align Pin 1 on the interposer board and MCU kit.
3. Plug in any desired Type 6A Pmod into the other side of the US082-INTERPEVZ.
4. The system is now ready for use.

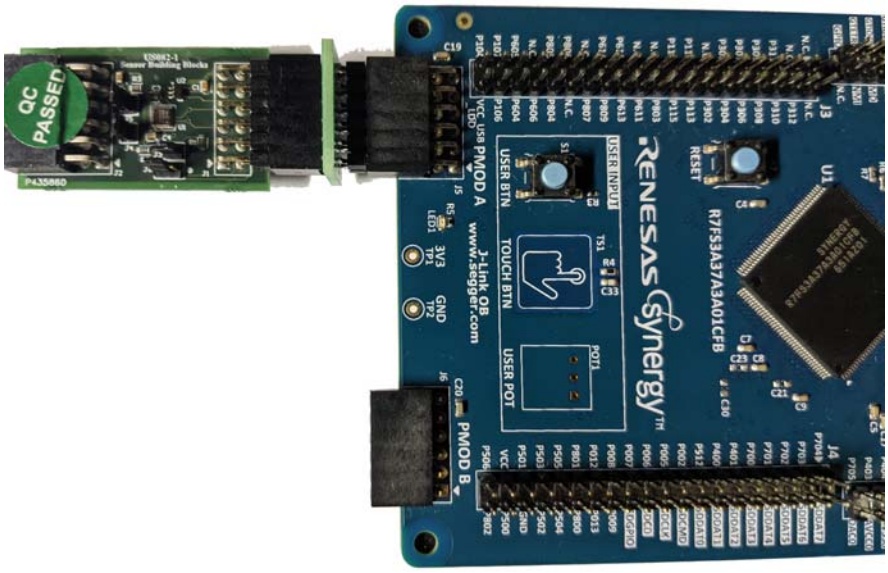

Figure 2. US082-INTERPEVZ Placed Between TB-S3A3 and US082-ZMOD4450EVZ

2. Board Design

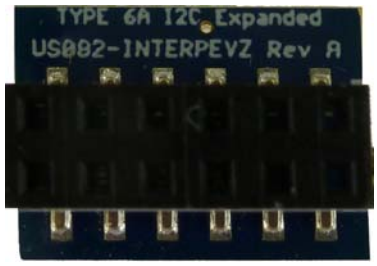

Figure 3. US082-INTERPEVZ Pmod Board (Top)

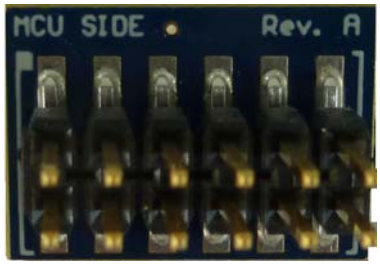

Figure 4. US082-INTERPEVZ Pmod Board (Bottom)

Table 2. Pmod Pin Mapping on US082-INTERPEVZ

Pin	MCU Side	Type 6A Side
1	GPIO 4	IRQ# (INT)
2	GPIO 5 (SDA)	GPIO 7
3	GPIO 6 (SCL)	GPIO 6 (SCL)
4	GPIO 7	GPIO 5 (SDA)
5	GND	GND
6	VCC	VCC
7	IRQ# (INT)	GPIO 4
8	GPIO 1	GPIO 1
9	GPIO 2	GPIO 2
10	GPIO 3	GPIO 3
11	GND	GND
12	VCC	VCC

2.1 Schematic Diagram

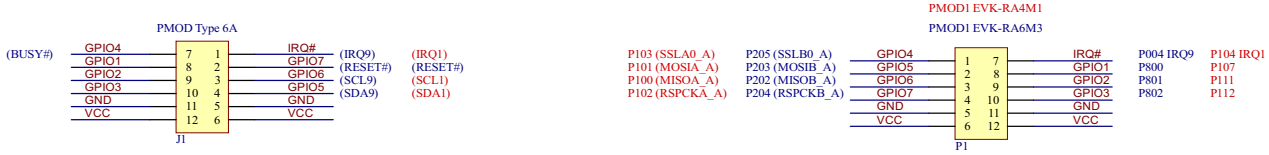

Figure 5. US082-INTERPEVZ Application Schematic

2.2 Bill of Materials

Qty	Reference	Description	PCB Footprint	Part Number
1	J1	CONN SOCKET 12POS 2ROW Vertical SMT	PMOD_VRT_HDR	NPPC062KFMS-RC
1	J2	CONN HEADER 12POS 2ROW Vertical SMT	PMOD_VERT_SOCKET	TSM-106-01-L-DV-P

2.3 Board Layout

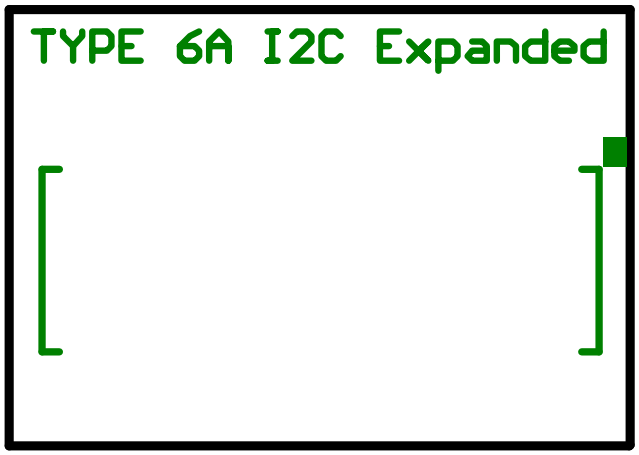

Figure 6. Silkscreen Top

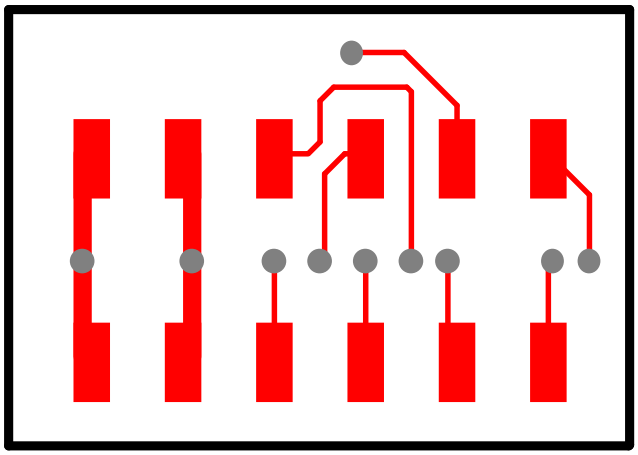

Figure 7. Copper Top

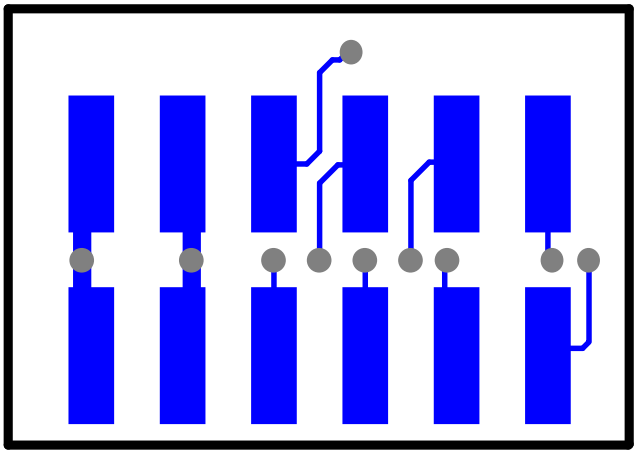

Figure 8. Copper Bottom

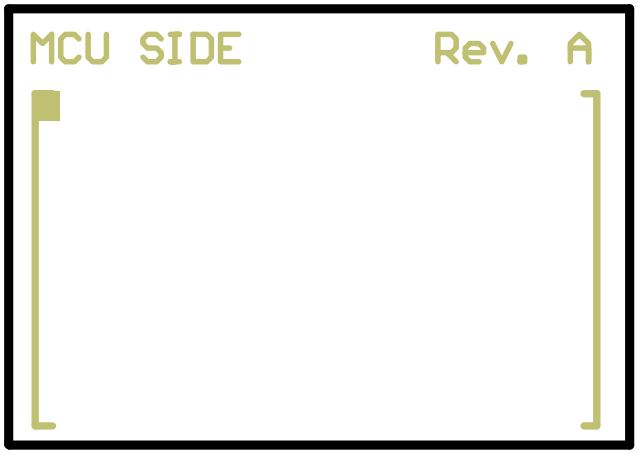

Figure 9. Silkscreen Bottom

3. Ordering Information

Part Number	Description
US082-INTERPEVZ	Pmod interposer board to convert Type 2A and 3A to Type 6A on older Renesas MCU kits.

4. Revision History

Revision	Date	Description
1.0	Jun 15, 2021	Initial release

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