User Guide

ROA 128 *5151* PIM Evaluation Board	1/28701-ROA 128 5151 Rev A May 2018

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1 Introduction

This User Guide provides a brief introduction and instruction on how to use PIM Evaluation board ROA 128 5151. This board provides the possibility to evaluate operation of PIM 4328 or PIM 4820. The ROA 128 5151 board is a part of the 3E Design Kit.

1.1 Prerequisites

In order to operate the ROA 128 5151 board the following is needed:

- Power supply 36-75 V.
- PIM 4328 or PIM 4820.
- PMBus-to-USB adaptor Flex Power KEP 910 17.
- The 3E GUI Gold Edition software package and a compatible Windows PC. Users must be familiar with the Windows® operating system.

2 Evaluation Board ROA 128 5151

2.1 Board Description

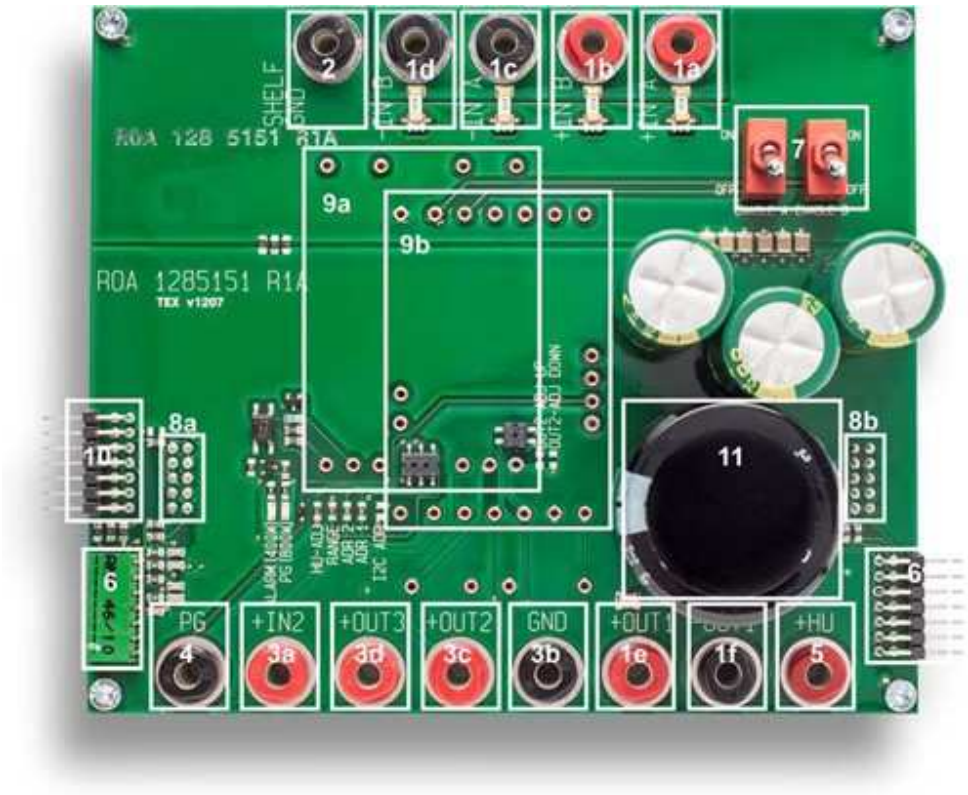

Figure 1. ROA 128 5151 (top side).

1a Input voltage connector A.
1b Input voltage connector B.
1c Input voltage connector A GND.
1d Input voltage connector B GND.
1e Output voltage connector.
1f Output voltage connector GND.

2 Shelf GND.

3a Input Management Power.
3b Input Management Power GND.

3c Output Management Power 2.
3d Output Management Power 3.

4 Power Good.

5 Hold Up Voltage.

6 Male/female board-to-board connectors. Connectors are used to connect the board to other 3E evaluation boards. All interconnected boards are sharing the same PMBus and Sync signals. Only one PMBus-to-USB adaptor is needed. The following signals are connected to the board to board connectors: SYNC, SALERT, SCL, SDA, CTRL, VI2C, DGND.

7 Enable switch A and B.

8a Connector for the Flex Power KEP 910 17 PMBus-to-USB adaptor. It is found on reverse side of the board.

9a Position for PIM 4820.
9b Position for PIM 4328.

10 PIM I/O Connector. The following signals are connected to the PIM I/O connector: SALERT, SCL, SDA, CTRL, VI2C DGND, +OUT2 for all products and +OUT3 for PIM 4328.

11 The PIM Evaluation board is equipped with a 3x470µF capacitance. Along with the Board, as a side-part, a 3300µF capacitor is included in the kit. It is up to the user to un-mount and/or mount the capacitance actually needed. For information about hold-up capacitance recommendations, please see the technical specification for the PIM product.

When connecting the 3300µF capacitor attach "-"connector of the capacitor (see a, Figure 2) to the "-" connection of the board (see b, Figure 2). Soldering is required.

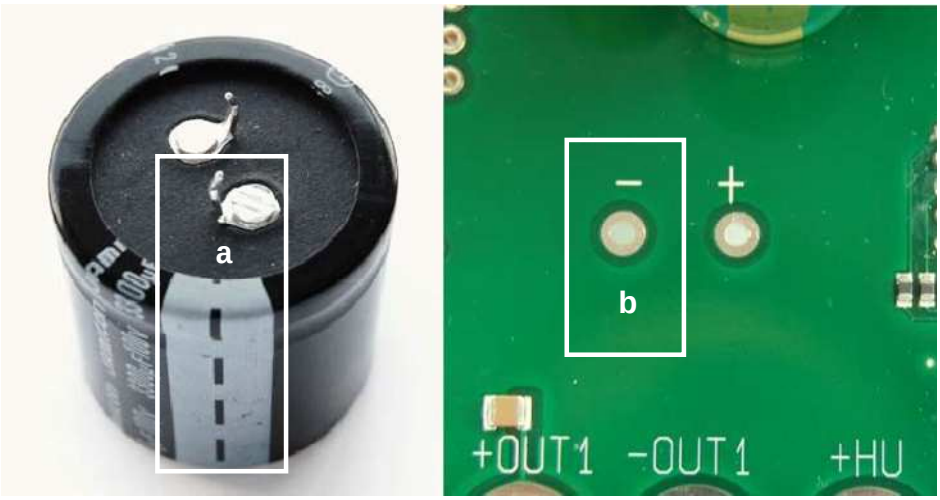

Figure 2. Connection of the Hold Up capacitor.

2.2 Power Supply

Power the board by connecting 36-75 V DC power to the “+IN A” and –IN A” and/or “+IN B” and “-IN B” connectors (see 1a-1d, Figure 1). Enable switches A and B should be in **OFF** position (see 7, Figure 1).

2.3 Management Power

With an external power supply PIM 4820’s management power (see 3c in Figure 1) can handle larger loads, for more information see the technical specification for the PIM product.

The external power supply shall be connected between +IN2 and GND (see 3a-3b, Figure 1). it shall be at least 1.5 V above the +OUT2 voltage (see 3c, Figure 1) and max 14.4 V.

3 PMBus/USB Adaptors

The Flex Power KEP 910 17 PMBus-to-USB adaptor is used to connect the PIM board to a PC.

3.1 Connection of Flex Power KEP 910 17 PMBus-to-USB adaptor

Connect the Flex Power KEP 910 17 PMBus-to-USB adaptor as shown in Figure 3. Connector is found on reverse side of the ROA 128 5151 board (see 8a, Figure 1).

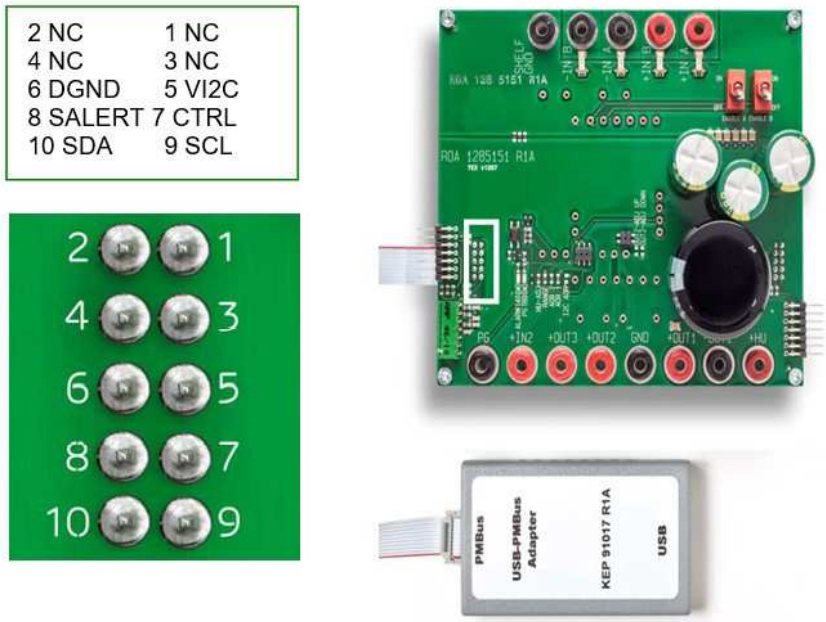

Figure 3. Connection of the Flex Power KEP 910 17 PMBus-to-USB adaptor.

4 Power-up and Power-down Instructions

4.1 Power-up instruction

PIM 4328:

- **Mount** the **PIM** products in the position (see 9b, Figure 1).
- Make sure the enable switches are in **OFF** position (see 7, Figure 1).
- Connect and turn **On** the **36-75 V** supply.
- Turn either enable switch A or B in **ON** position.
- Connect the PMBus Adapter/Cable to the board.
- Start the 3E GUI Gold Edition software.

PIM 4820:

- **Mount** the **PIM** products in the position (see 9a, Figure 1).
- Connect and turn **On** the **36-75 V** supply.
- Connect the PMBus Adapter/Cable to the board.
- Start the 3E GUI Gold Edition software.

4.2 Power-down instruction

PIM 4328:

The products can be removed or replaced only after the enable switches has been set in **OFF** position and the supply voltage has been turned off.

PIM 4820:

The products can be removed or replaced only after the supply voltage has been turned off.

5 Address and Voltage Pin-strap Resistors

This section describes the locations of the address and voltage pin-strap resistors and the resistors for hold up and +OUT2 voltage adjustments. For exact resistor values see the technical specification for the PIM product.

5.1 Address pin-strap resistors

Figure 5 shows the positions of the address pin-strap resistors for the different PIM products. R2 and R3 are positions of the address pin-strap resistors for PIM 4820. R29 is the position of the address pin-strap resistors for PIM 4328.

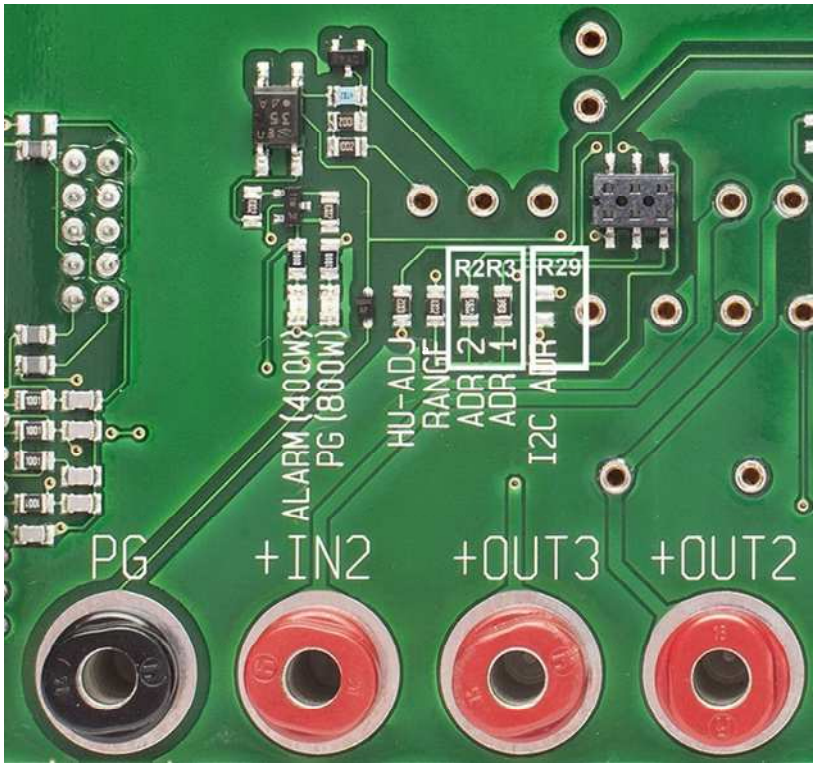

Figure 5. Positions of the address pin-strap resistors.

5.2 Holdup voltage adjust resistor

Figure 6 shows the position of the hold up voltage adjust resistor which is common for all PIM products (see R4, Figure 6). For exact resistor values see the technical specification for the PIM product.

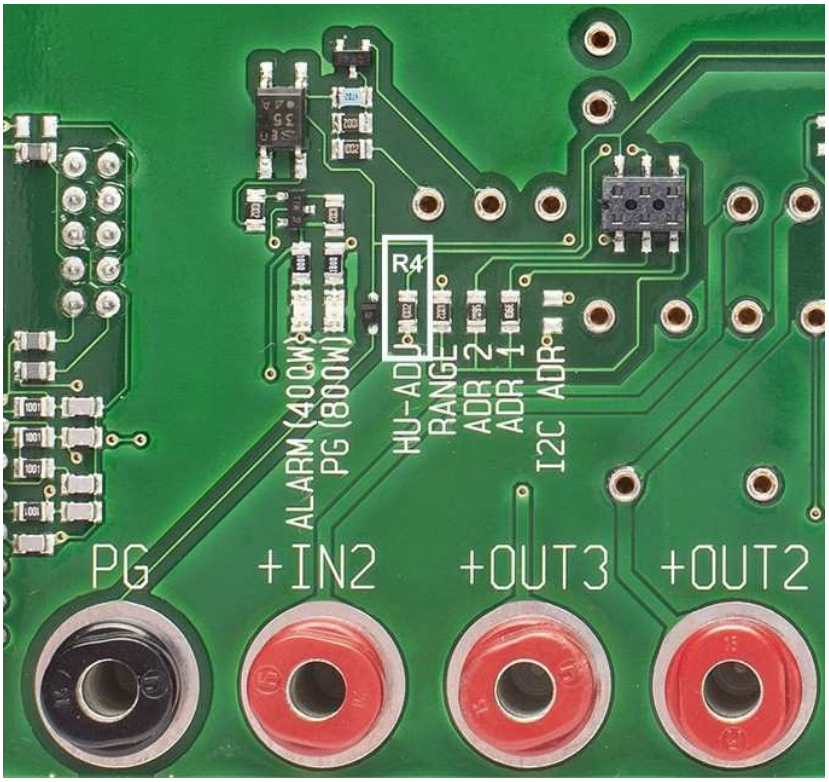

Figure 6. Position of the hold up voltage adjust resistor.

5.3 Input voltage range pin-strap resistor

Figure 7 shows the position of the input voltage range pin-strap resistor for PIM 4820 products (see R1, Figure 7). For exact resistor values see the technical specification for the PIM product.

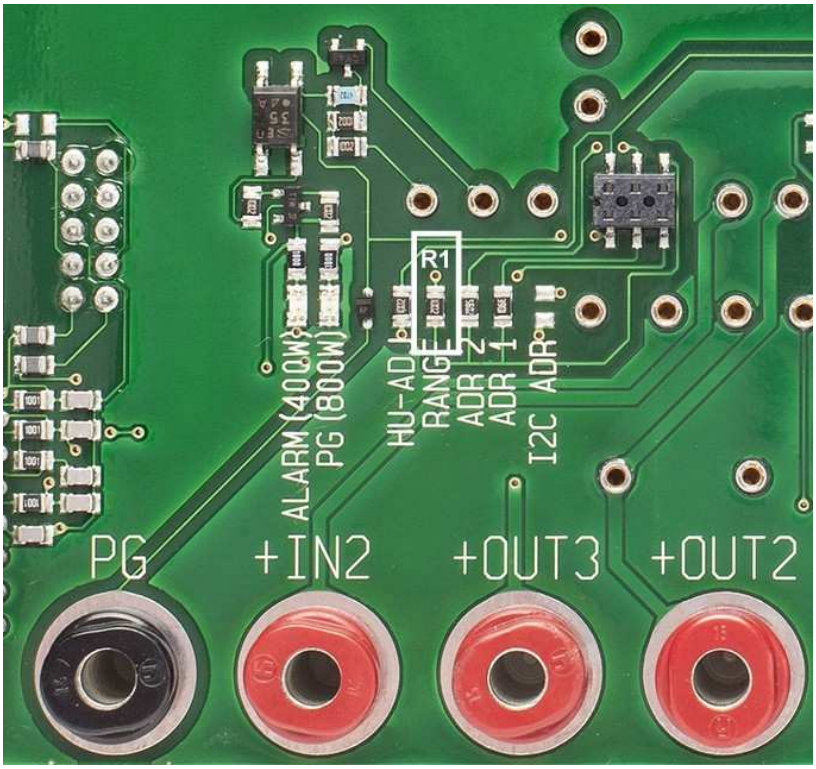

Figure 7 Position of the input voltage range pin-strap resistor.

5.4 Output 2 voltage adjust resistors

Figure 8 shows the positions of the Output 2 voltage adjust resistors for PIM 4820 products (see R6-R7, Figure 8). For exact resistor values see the technical specification for the PIM product.

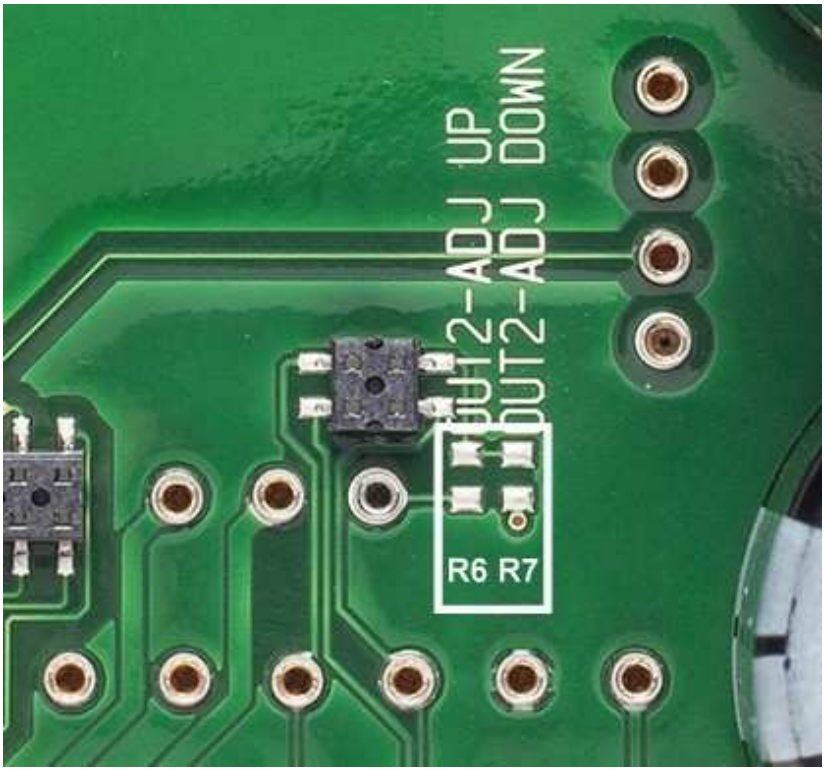

Figure 8. Positions of the Output 2 voltage adjust resistors.

6 Fuses

The DC input to the board is protected by fuses. Figure 9 shows the positions (a-d) of the fuses. In each position there are two 12 A fuses mounted in parallel.

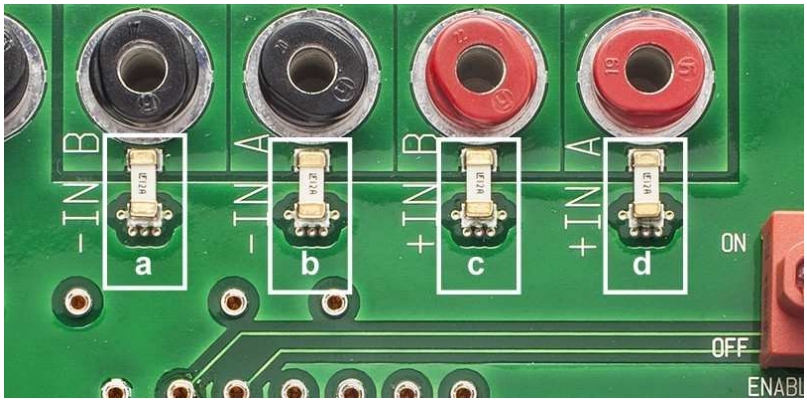

Figure 9. The positions of the fuses.

7 Isolation

The board is equipped with 0 Ohm resistors tying SHELF_GND and GND/DGND together. If 2250 V isolation is desired the resistors R33-R35 have to be removed. Figure 10 shows the positions of the resistors R33-R35

Figure 10. Positions of the resistors R33-R35 tying SHELF_GND and GND/DGND together.

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