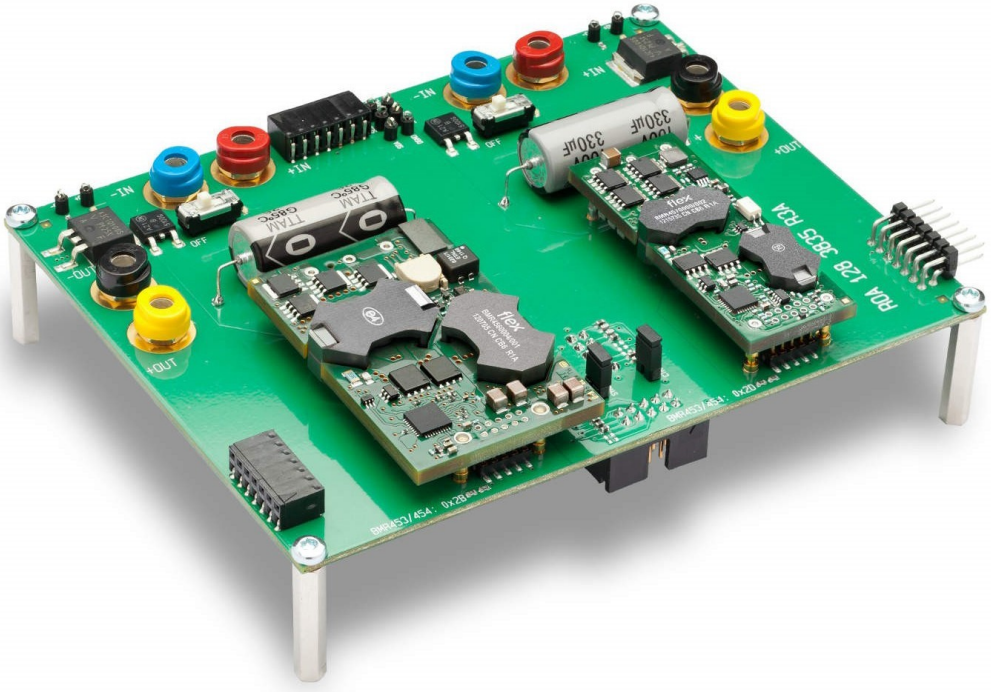
IBC Evaluation Board

ROA 128 3835

User Guide



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1 Schematics

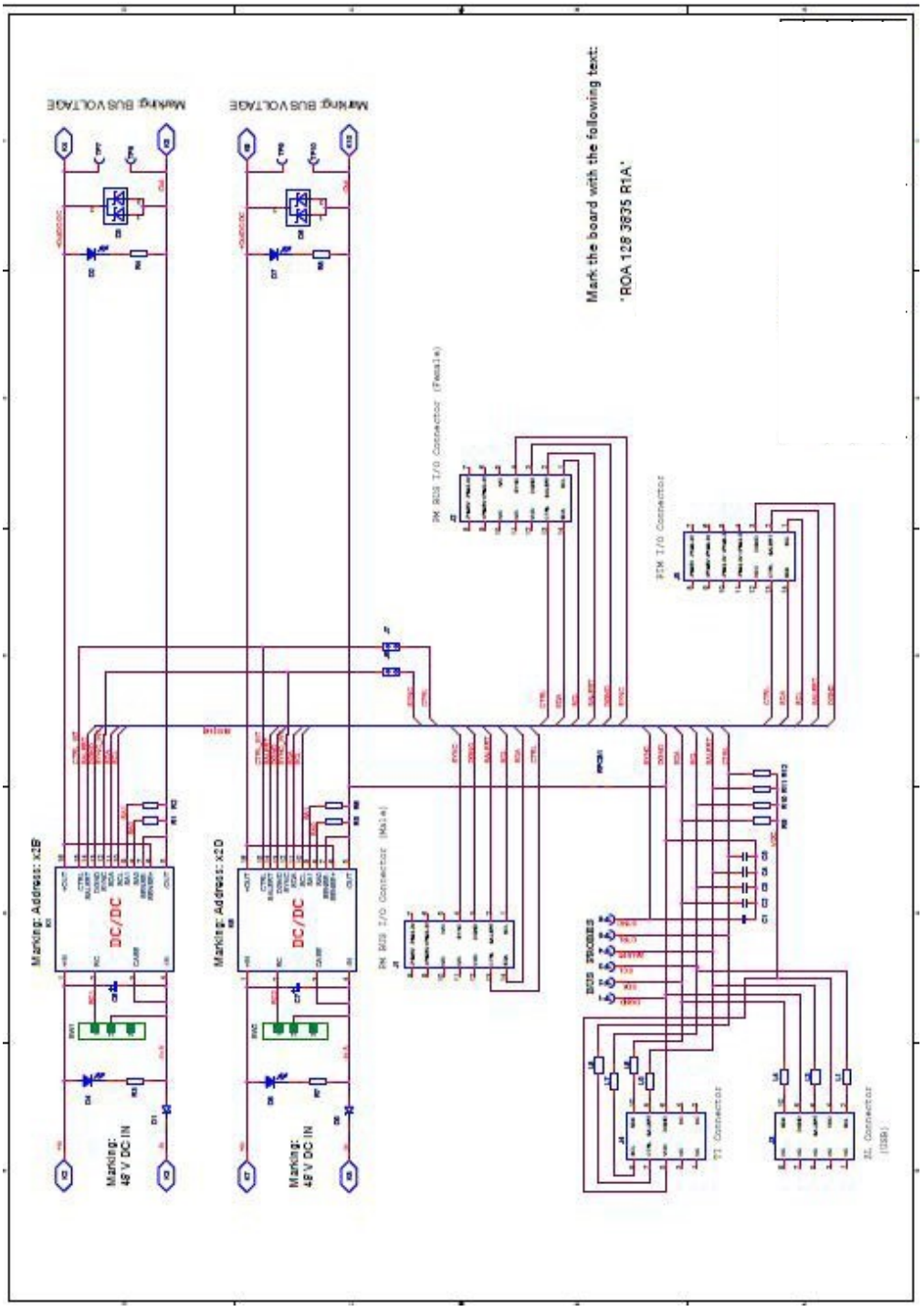

Figure 1.1 Top level schematics of ROA 128 3835. The marking text" x2B" is valid for BMR 453/454. For BMR 456/457 the address in this position is 0x35. Correspondingly the marking "x2D" is only valid for BMR 453/454. For BMR 456/457 the address in this position is 0x36.

2 Component layout

In Figure 2.1 and 2.2 the component layout is shown.

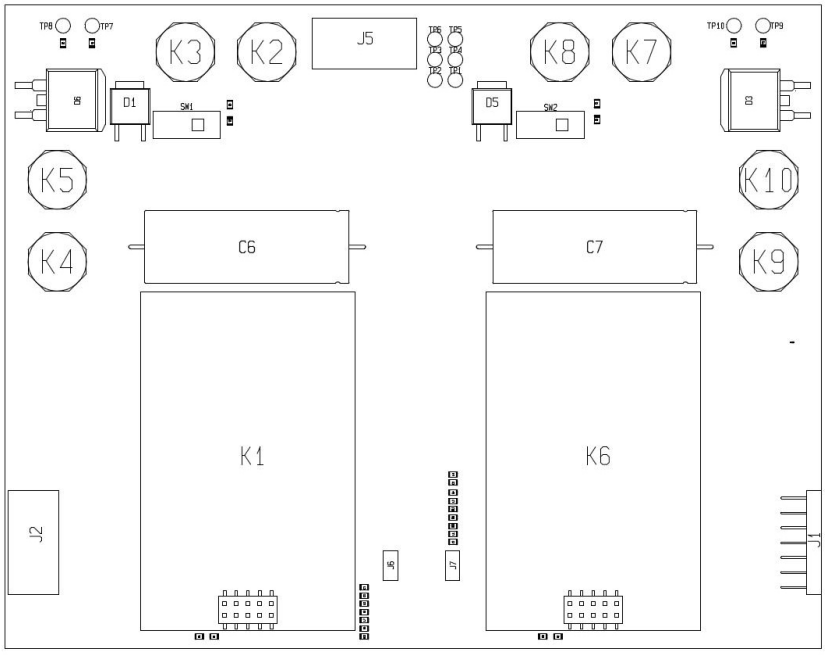

Figure 2.1 Top side component layout of ROA 128 3835

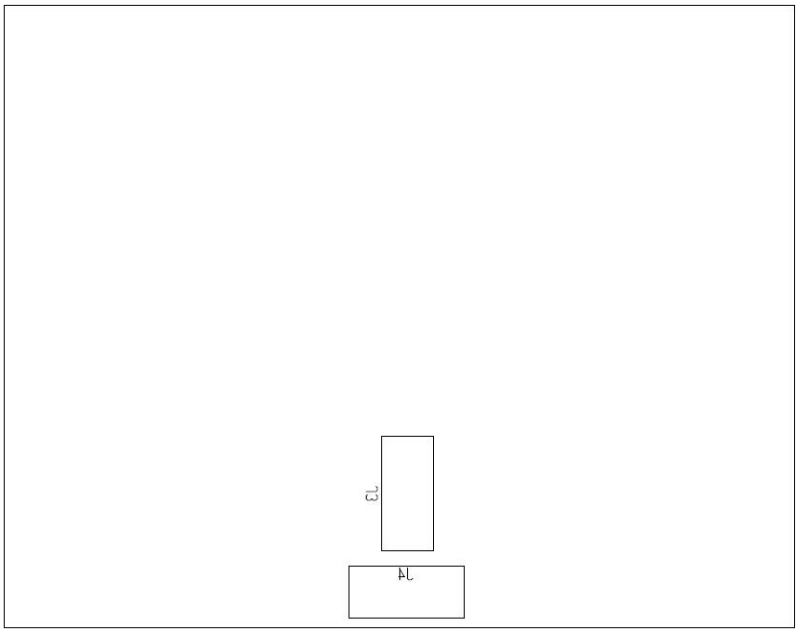

Figure 2.2 Bottom side component layout of ROA 128 3835

3 User Guide

3.1 Power Up/Down Instructions

This section of the document describes how to connect power supply for different cases in order to avoid mistake during measurements.

The jumpers that you need shall be mounted before power-up.
See Section 3.2 for information about jumper positions.

3.1.1 Power Supply Connection

Add the 48V DC power to one or two pairs ot the **“-IN”** and **“+IN”** connectors (see Fig 3.1).

Figure 3.1 Connect 48V between the “-IN” and “+IN” DC power connectors located on the same side of the board (see orange rectangles)

There are two RC switches on the ROA 128 3835 board, one for each IBC converter position. Fig 3.2 shows one of the two RC switches in “Off” position.

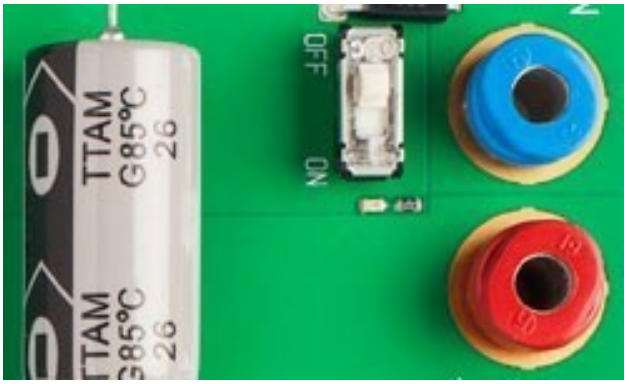

Figure 3.2 One of the two RC switches in “Off” position

Fig 3.3a and Fig 3.3b shows the connection of two types of USB-to-PMBus adapters.

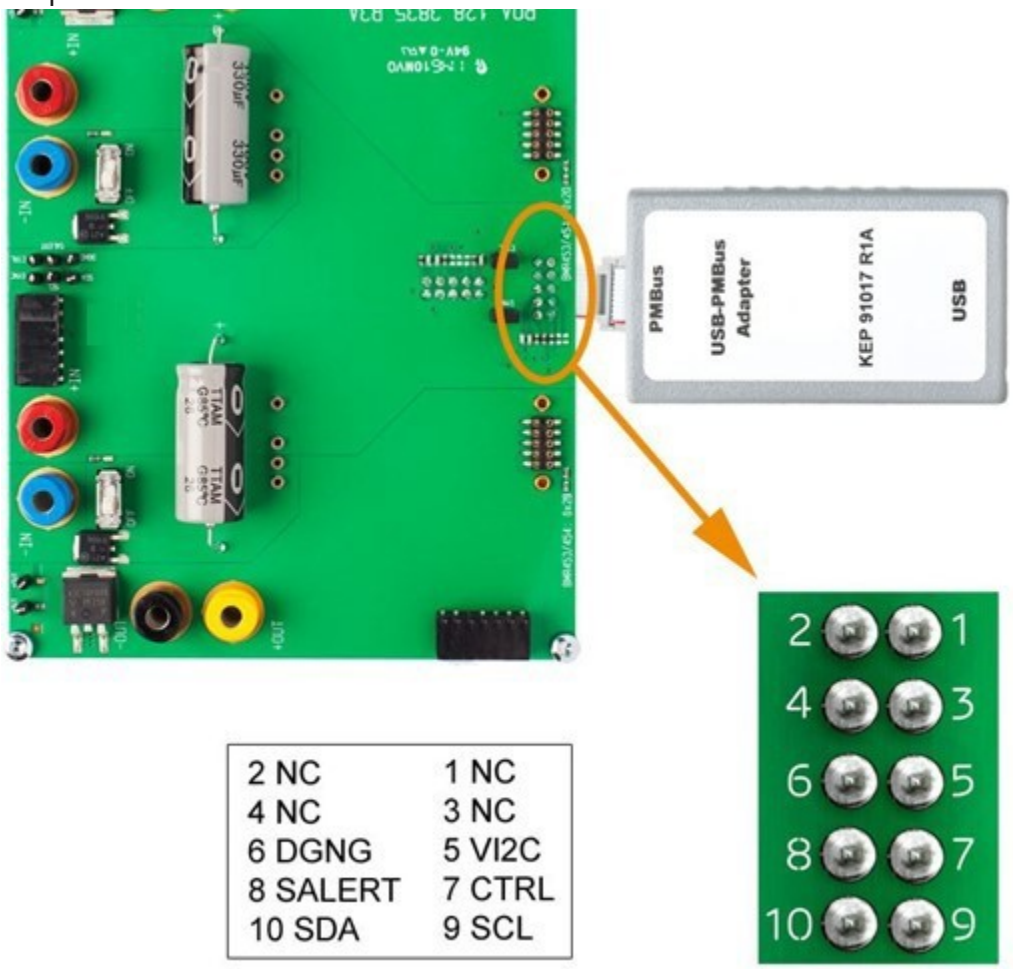

Figure 3.3a *Connection of the Flex KEP 910 17 PMBus-to-USB adapter (connector is found on the back side of the ROA 128 3835 board)*

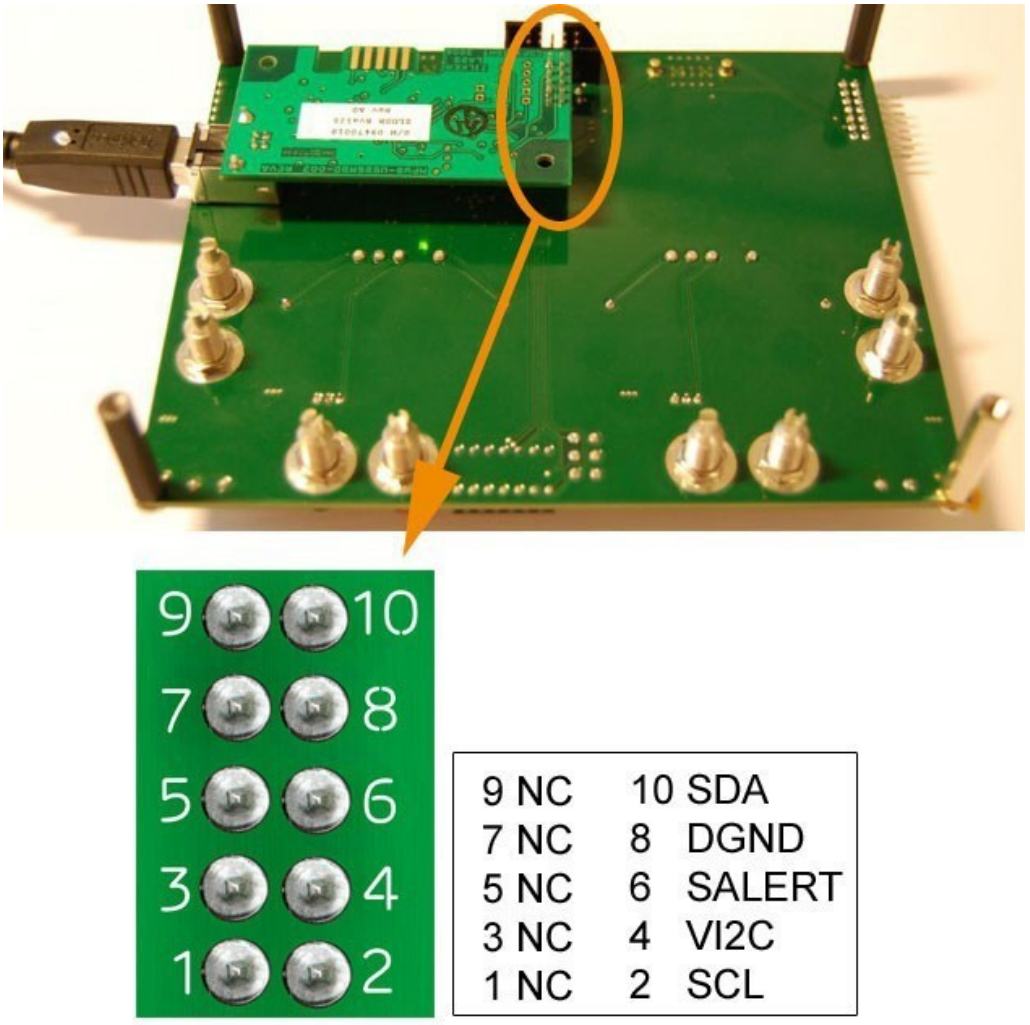

Figure 3.3b Connection of the Intersil ZLUSBREF02 PMBus-to-USB adapter (connector is found on the back side of the ROA 128 3835 board)

A. Power-up instruction:

- **Mount** the **BMRs** in the desired positions
- Connect and turn **On** the **48V** supply
- Turn RC **switch (or switches)** in **On** position
  - The LEDs should now give green light (unless the outputs ofthe BMRs are not configured to be disabled).
- Connect the PMBus Adapter/Cable to the board.
- Start the software program.

B. Power-down instruction:

- Turn **RC switch(es)** in **Off** position **or** turn **Off** the **48V** Supply
- Now, the **BMR** modules can be removed/replaced.

3.2 Jumper positions

3.2.1 Default settings

There are only two jumpers in the ROA 128 3835 board; one for the SYNC and one for CTRL. The factory default jumper positions are the shown in Fig 3.4. The jumper positions are described furthermore in next section.

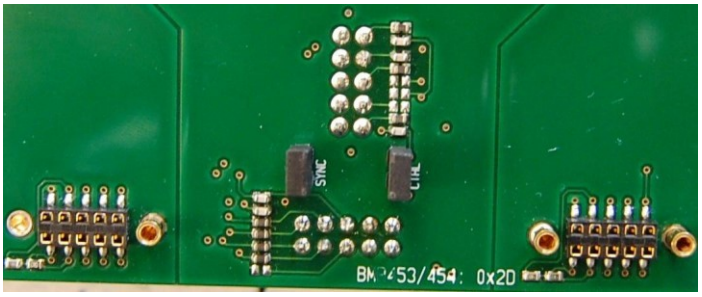

Figure 3.4 Factory default jumper settings of ROA 128 3835

3.2.2 Jumper setting for BMR 453 and BMR 454

In Fig. 3.5 the jumper position numbers for BMR 453 and BMR 454 are given. Using Table 3.1, the user can make a custom configuration of the board.

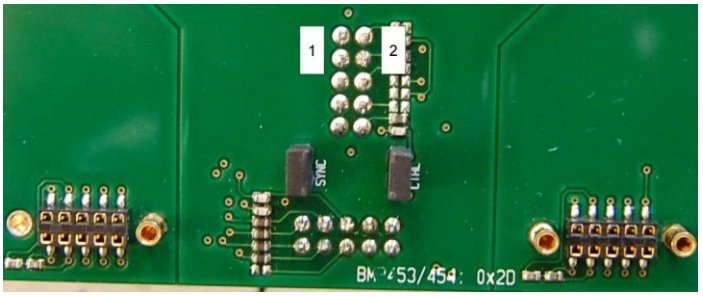

Figure 3.5 Position number of the jumpers in ROA 128 3835

Table 3.1 Description of jumper positions for BMR 453/454 in ROA 128 3835

Jumper Position No.	Description	Shall be used for	Notes
1	Jumper mounted: The common two modules' SYNC signal is **connected** to the SYNC signal on the board's interfaces	Synchronization of BMR 453/454 products with external parts	Note 1: This jumper is connected to BMR 453/454 PG SYNC pin (pin no 12) which can be configured for Power Good output, SYNC, tracking or external reference input
	Jumper not mounted: The common two modules' SYNC signal is **disconnected** from the SYNC signal on the board's interfaces	Using local interconnections between BMR 453/454s mounted on the board	
2	Jumper mounted: The common module's PMBus CTRL signal is **connected** to the CTRL signal on the board's interfaces	Connecting the PMBus CTRL signal of BMR 453 or BMR 454 to external parts	Note 2: This jumper is connected to BMR 453 CTRL CS pin (pin no 15) which can be configured for PMBus remote control or active current sharing
	Jumper not mounted: The common two modules' CTRL CS signal is **disconnected** from the CTRL signal on the board's interfaces	Active current sharing between two BMR 453s (not between BMR 454s) on the board	

3.2.3 Jumper settings for BMR 456/457

The same jumper position in Fig. 3.5 is also used for BMR 456 and BMR 457. Using Table 3.2, the user can make custom configurations of the board using these jumpers.

Table 3.2 Description of jumper positions for BMR 456/457 in ROA 128 3835

Jumper Position No.	Description	Shall be used for	Notes
1	Jumper mounted: The common two modules' PG signal is **connected** to the SYNC signal on the board's interfaces	N/A	Note 1: This jumper shall always be removed for BMR 456/457
	Jumper not mounted: The common two modules' PG signal is **disconnected** from the SYNC signal on the board's interfaces	All cases	
2	Jumper mounted: The common module's PMBus CTRL signal is **connected** to the CTRL signal on the board's interfaces	Connecting the PMBus CTRL signal of BMR 456 or BMR 457 to external parts	Note 2: This jumper is connected to BMR 456/457 CTRL pin (pin no 15)
	Jumper not mounted: The common two modules' CTRL signal is **disconnected** from the CTRL signal on the board's interfaces	Disconnecting the PMBus CTRL signal of BMR 456 or BMR 457 to external parts	

4 Change of series resistors for the LEDs

In order to reduce power dissipation, the series resistors for the LEDs can be changed to higher values. The resistors are located at the places shown in Fig. 4.1.

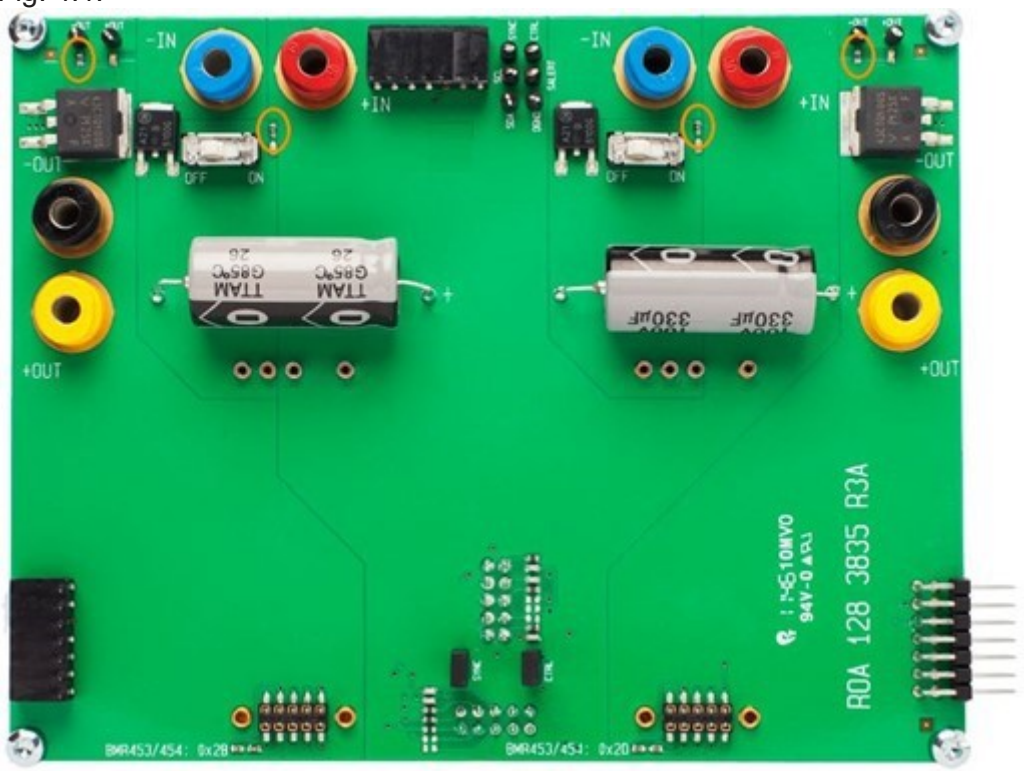

Figure 4.1 Series resistors for the LEDs

4.1 Change of LED series resistors R3 and R4 in position 0x2B

Fig. 4.2 shows where LED series resistors R3 and R4 are located.

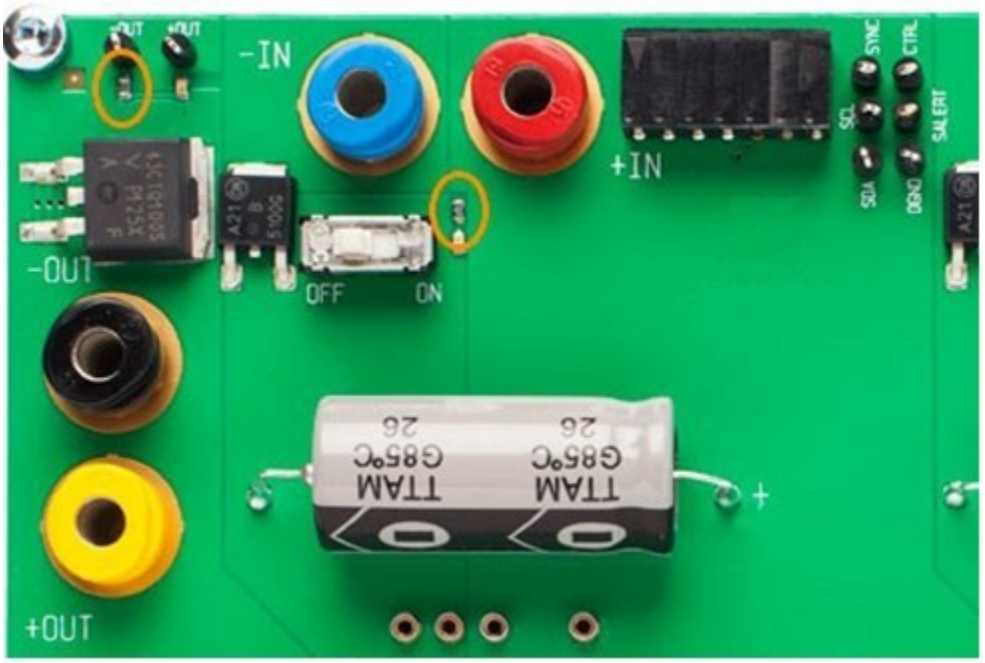

Figure 4.2 Resistors R3 and R4

4.2 Change of LED series resistors R7 and R8 in position 0x2D

Fig. 4.3 shows where resistors R7 and R8 located.

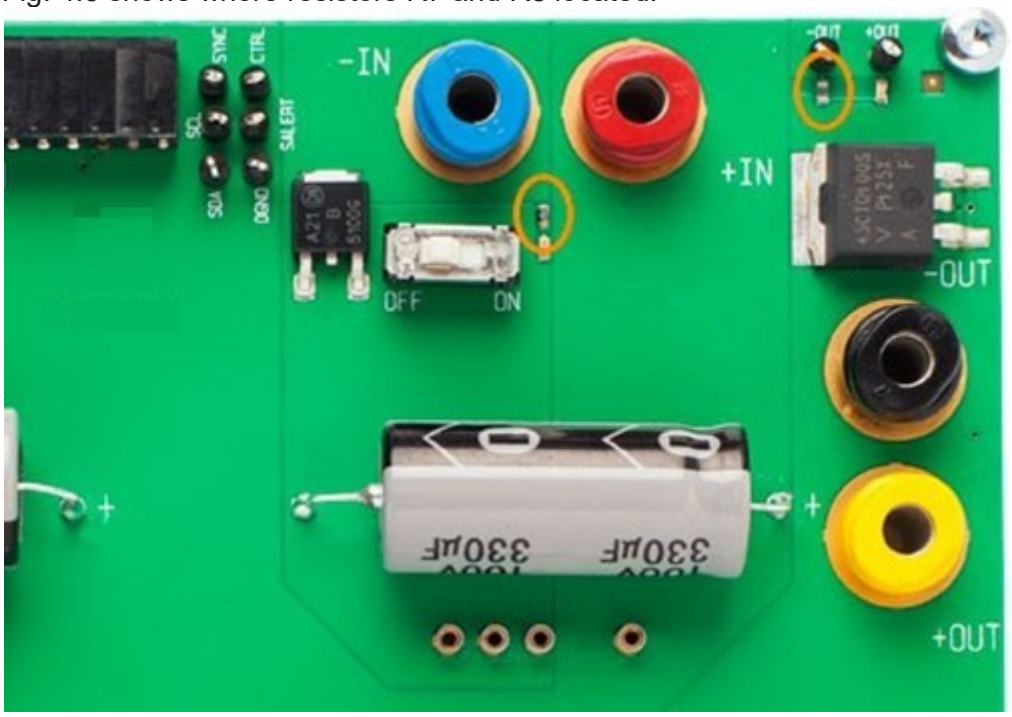

Figure 4.3 Resistors R7 and R8

5 Dimensions

The outer dimensions (in mm) of the test board are shown in Fig. 5.1.

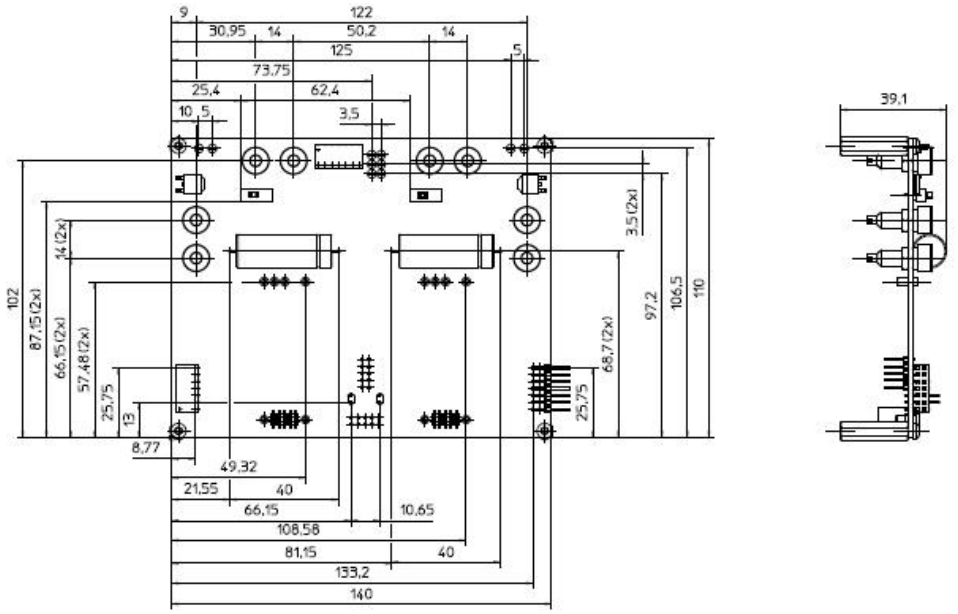

Figure 5.1 The outer dimensions of ROA 128 3835 (in mm)

The whole test board has the outer dimensions 140 x 110 x 39.1 mm (L x W x H). Weight of the complete test board including 2 jumpers is 180 g.