

ACT8870 GUI User Guide

GENERAL DESCRIPTION

The ACT8870 GUI is a Graphic User Interface used to control the ACT8870 via Active-Semi I²C dongle. Clicking on the *ACT8870 GUI.exe* icon invokes the *ACT8870 GUI Rev 0.2* main window as shown in Figure 1 below. Customer is suggested to install the

driver of the Active-Semi USB-I²C dongle properly follow the instruction inside the GUI folder before running the software GUI.

OVERVIEW

The GUI has 2 basic function buttons allocated in top-left of the Tool Bar which are Read and Write I²C.

The GUI contains 2 setting modes: Basic Mode and Advanced Mode. In Basic Mode screen it displays basic user programmable configuration options are programmed using the drop-down

boxes or check boxes. Advanced Mode contains the button text for changing setting for every single bit.

Figure 1: User Interface in Basic Mode

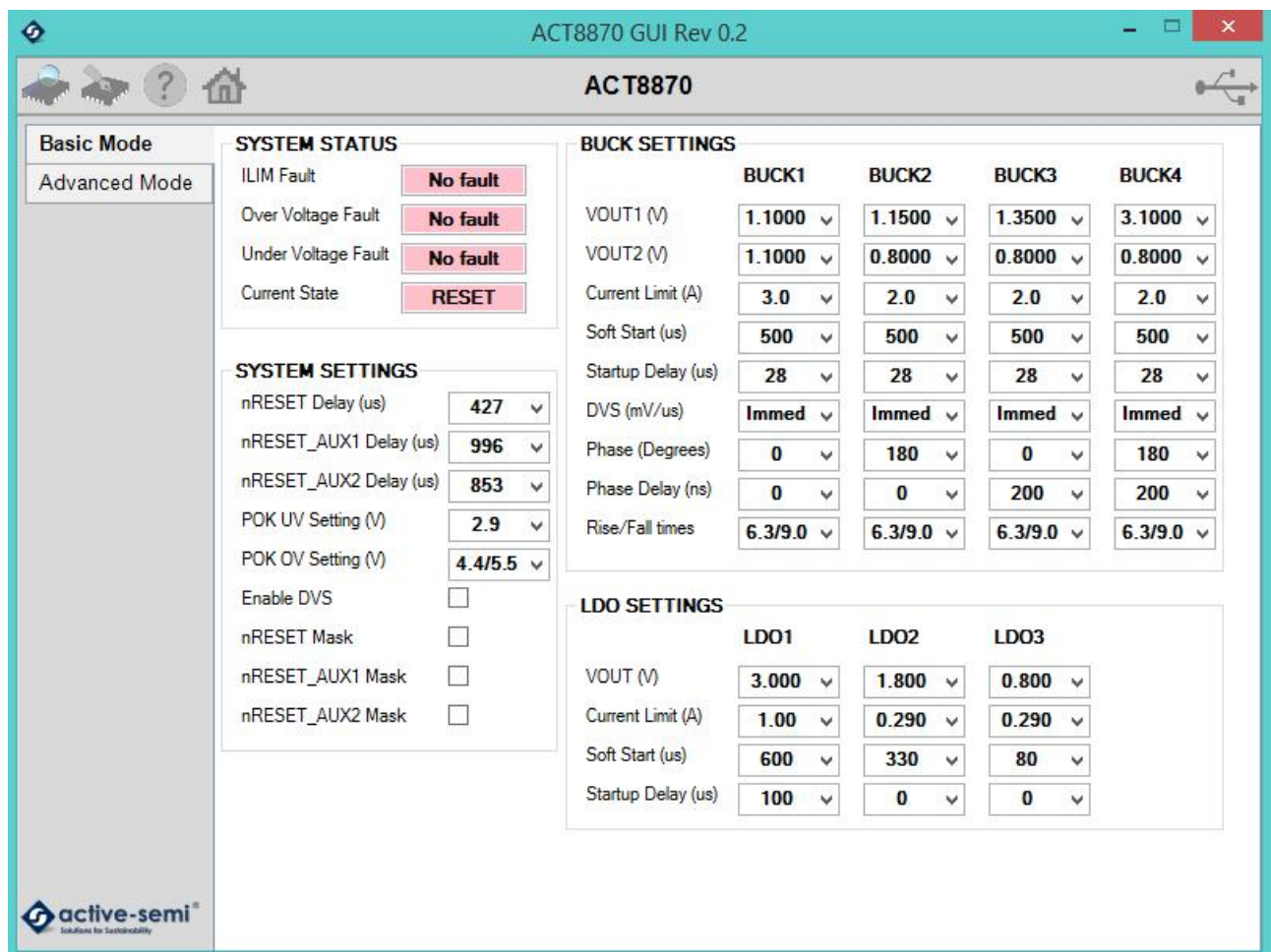
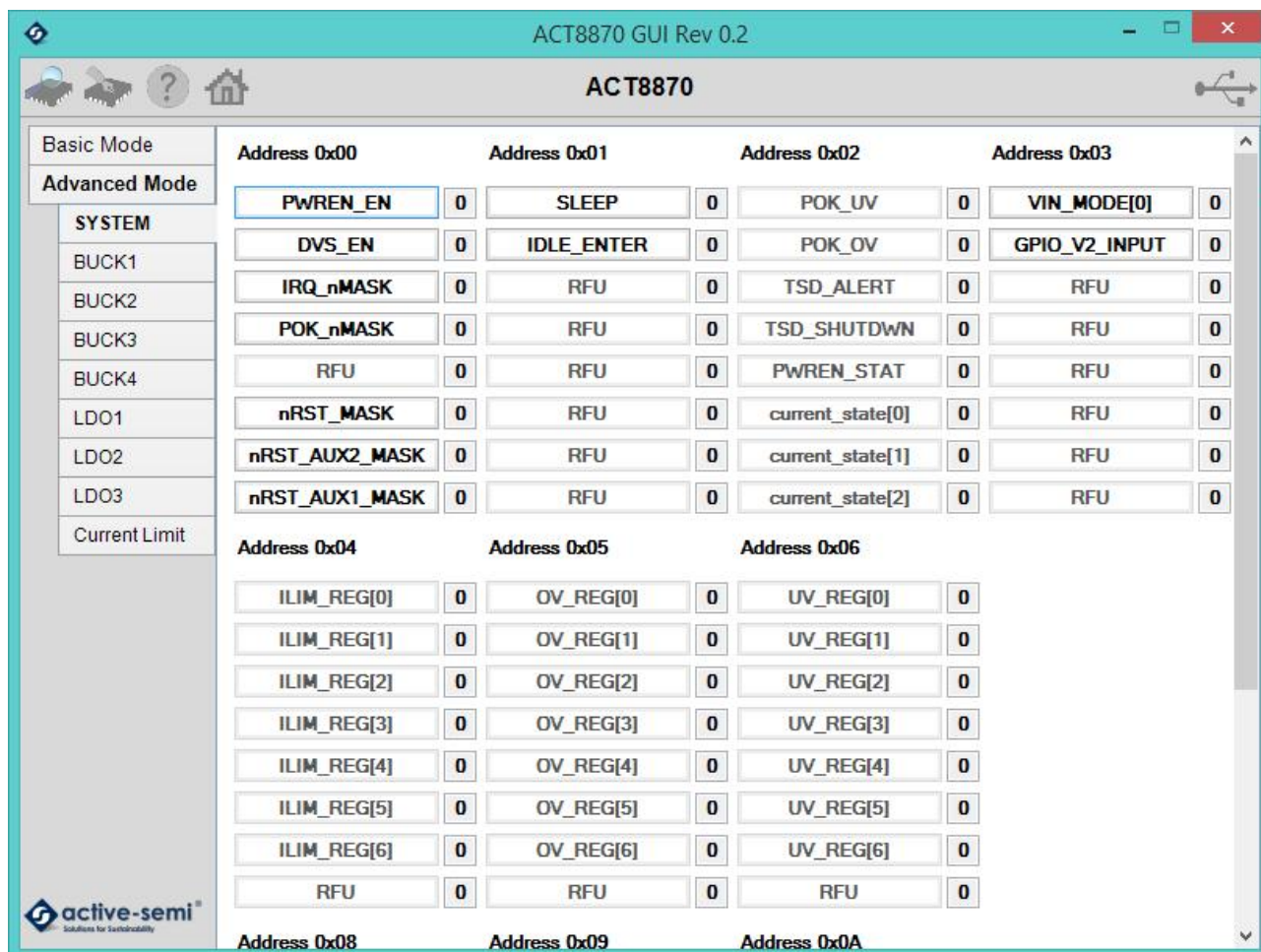


Figure 2: ACT8870 GUI Advanced Mode Screen.



ACT8870 GUI Advanced Mode Screen

Click the “Advanced Mode” button in the left of the GUI screen to see all available user programmable options. With Advanced Mode, additional user programmable features can be selected using the button text.

In the left side of the Advanced Mode Screen, the tiles selector is displays to allow user to select to displays registers in tiles basis.

In the Main Advanced Mode Screen, user can change the bit value by click the corresponding bit-name button. The value of the bit is display right next to the bit-name button.

In the far right of the screen there is scroll down button to scroll down to other registers of the tile since the screen is only allowed to displays up to 8 bytes at once.

BUTTON DESCRIPTION

The tool bar in the top left of the main window contains Read and Write buttons operation features:

- **Read:** Read configuration from the ACT8870 to the GUI. Click this button to read back all the IC's registers. **Active-Semi recommend user to read every time after powering-up the ACT8870 to acquire the setting of the IC.**
- **Write:** Write the setting which is set on the GUI to the ACT8870's register. Once this button is clicked, the GUI will write all setting to the IC's Registers.

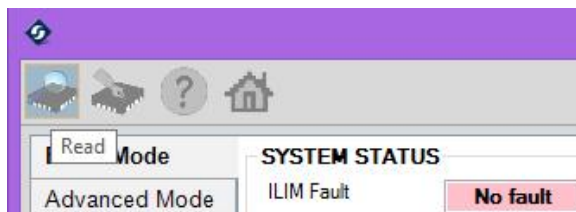


Figure 3: Read Button

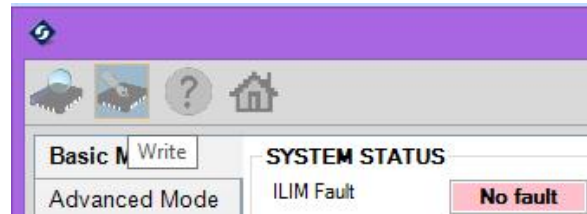


Figure 4: Write Button

– Dongle Connection Status

The GUI also contains a dongle is connected status which indicates a Active-Semi's USB-to-I²C dongle is connected to the USB port of the driver installed. Figure 5 below shows the two possible indication status graphics.

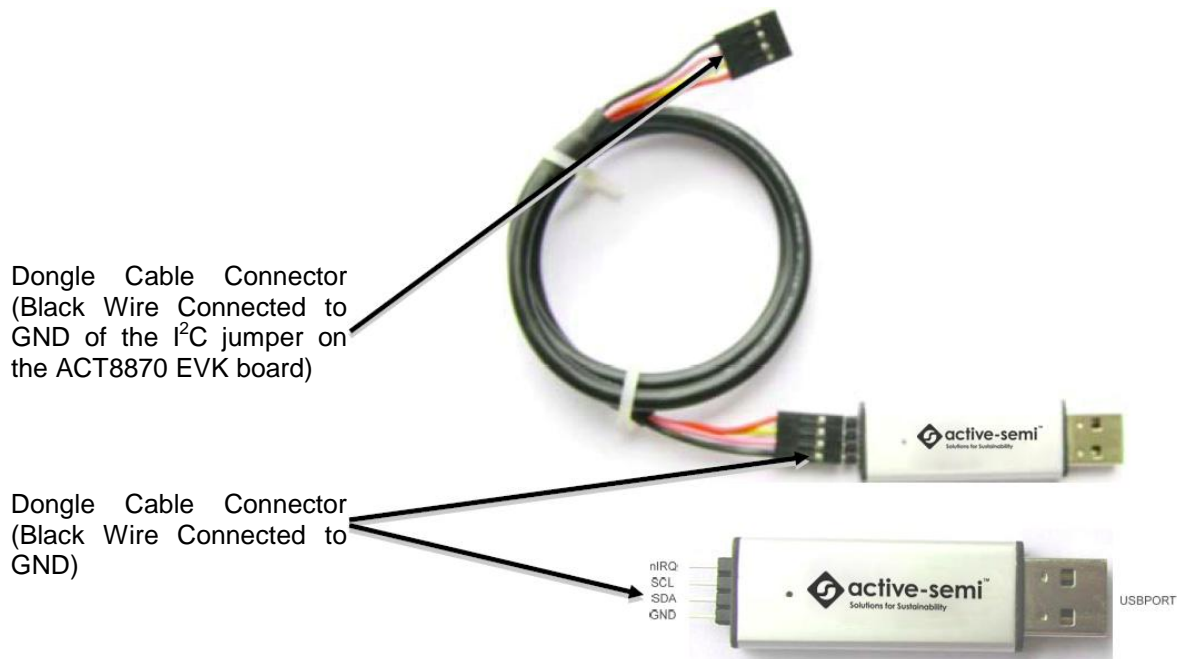
Figure 5: Dongle Connected



Dongle Disconnected



Figure 6: ACT8870 GUI I²C Programming Dongle. The Black Wire Ground Pin on the Cable Connects to the Dongle as Shown.



ACT8870 GUI USB-to-I²C Programming Dongle

The ACT8870 USB-to-I²C Programming Dongle connects to the ACT8870 EVK board through a 4 wire cable with a 4-pin connector at each end. The black wire is ground and should be oriented as shown in Figure 13. As a guide, use the “Active-Semi” logo on the top of the programmer so that the black wire is connected toward the lower left corner of the Dongle.

On the ACT8870 EVK board, the black wire is connected to GND pin of the I²C jumper (J3).

When the ACT8870 on the ACT8870 EVK board is supplied with a appropriated supply voltage, the Dongle will be able to communicate with the IC. If the power supply is out of the valid range or the ACT8870 is not present, or VIO_IN of the ACT8870 is not powered up to a valid voltage, a pop up warning message “**ACT8870 is not connected**” would show up to indicate a failure read/write event is happened.

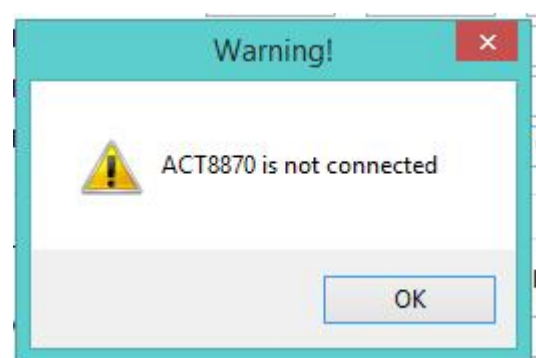
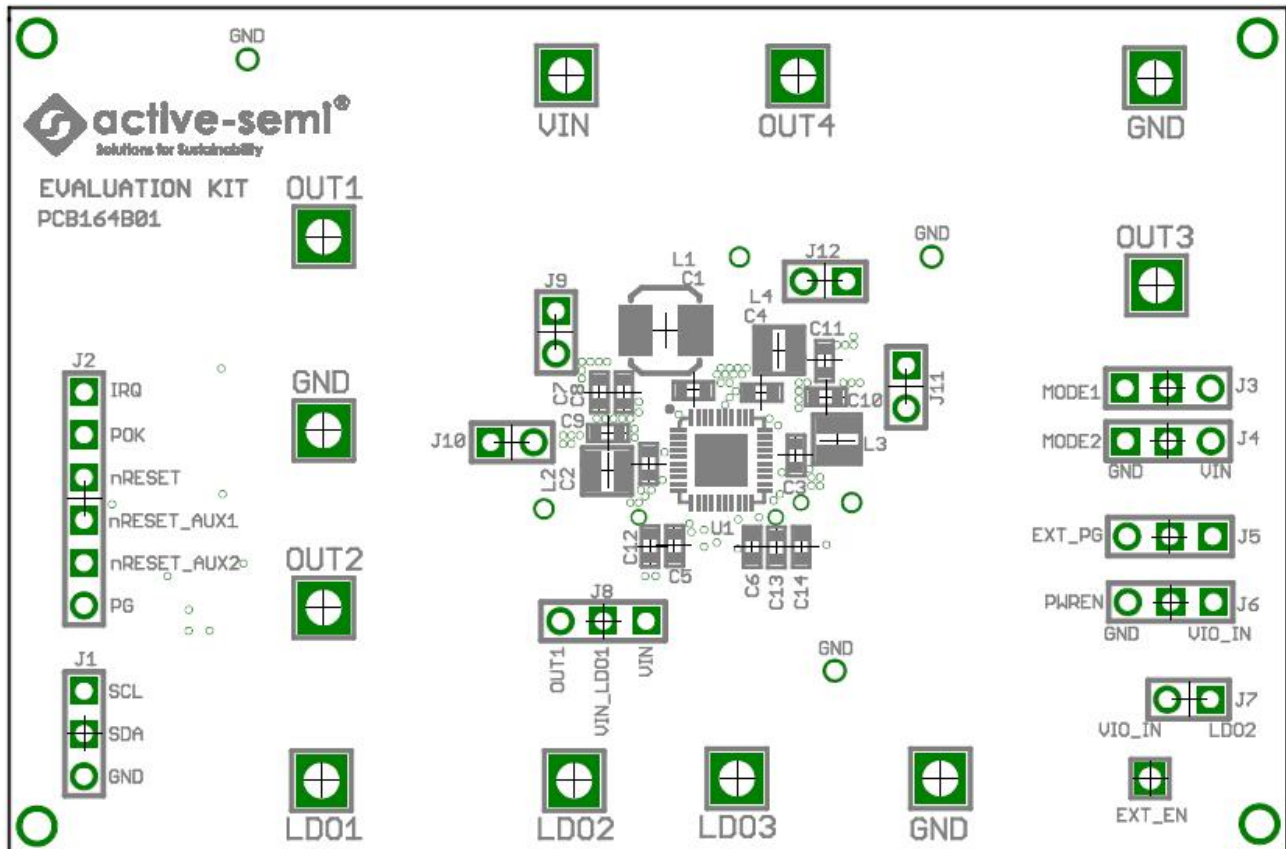


Figure 7: Read/Write failure message

Figure 8: ACT8870 EVK Board



ACT8870 EVK Board

Using the USB-to-I²C Programming Dongle to control the ACT8870 which is put into socket mounted on the ACT8870 EVK board. Figure 14 shows top view of the board. The ACT8870 EVK board contains various of pins, jumpers and headers to allow user to control, measure the ACT8870 input or output. It also contains extra circuit to allow user to reprogram the IC to different configuration.

Pin Description

VIN: Input supply. Apply a valid input voltage from this pin to GND pin to power on the ACT8870.

OUT1, OUT2, OUT3, OUT4: Output of the Buck1, Buck2, Buck3, Buck4 respectively.

LDO1, LDO2, LDO3: Output of the LDO1, LDO2, LDO3 respectively.

Jumper Description

J1: I²C connector. Connect to appropriate Active USB-I²C dongle or other I²C controller for I2C

communication.

J2: Logic outputs indicators.

J3: VIN_MODE1 control, shift left co connect GND.

J4: VIN_MODE2 control, shift left co connect GND.

J5: EXT_PG control, shift left co connect GND, shift to right to connect EXT_PG to VIO_IN.

J6: PWR_DN control, shift left co connect GND, shift to right to connect PWR_DN to VIO_IN.

J7: LDO2—VIO_IN connection. Short it for normal evaluation. Open it when evaluate with different VIO_IN level.

J8: LDO1Input selection. Connect VIN_LDO1 to VIN for proper operation.