

ACT2861 GUI

Description

This document shows basic guidelines to use the Qorvo's Graphic User Interface (GUI) software to control the ACT2861 EVK from a Windows-based PC with a Qorvo's USB-to-I²C dongle.

Reference Documents

For more detail information, user may refer to below documents and may be seek advices from Qorvo.

1. ACT2861 Data Sheet.

Setup

1. Install the Qorvo USB-to-I²C dongle's driver by following the guide on "Qorvo's GUI and Dongle Driver Installation.pdf".
2. Plug the Qorvo USB-to-I²C dongle into PC's USB port and I²C terminal to I²C connector on ACT2861 EVK. Power up the EVK with an appropriate voltage, make sure the DUT started up properly.
3. Double click the "ACT2861 GUI Rev 2.3.exe" to Open the GUI. Below screen would show up, make sure the USB-to-I²C dongle is recognized by PC with status as below RED circle in **figure 1** below.

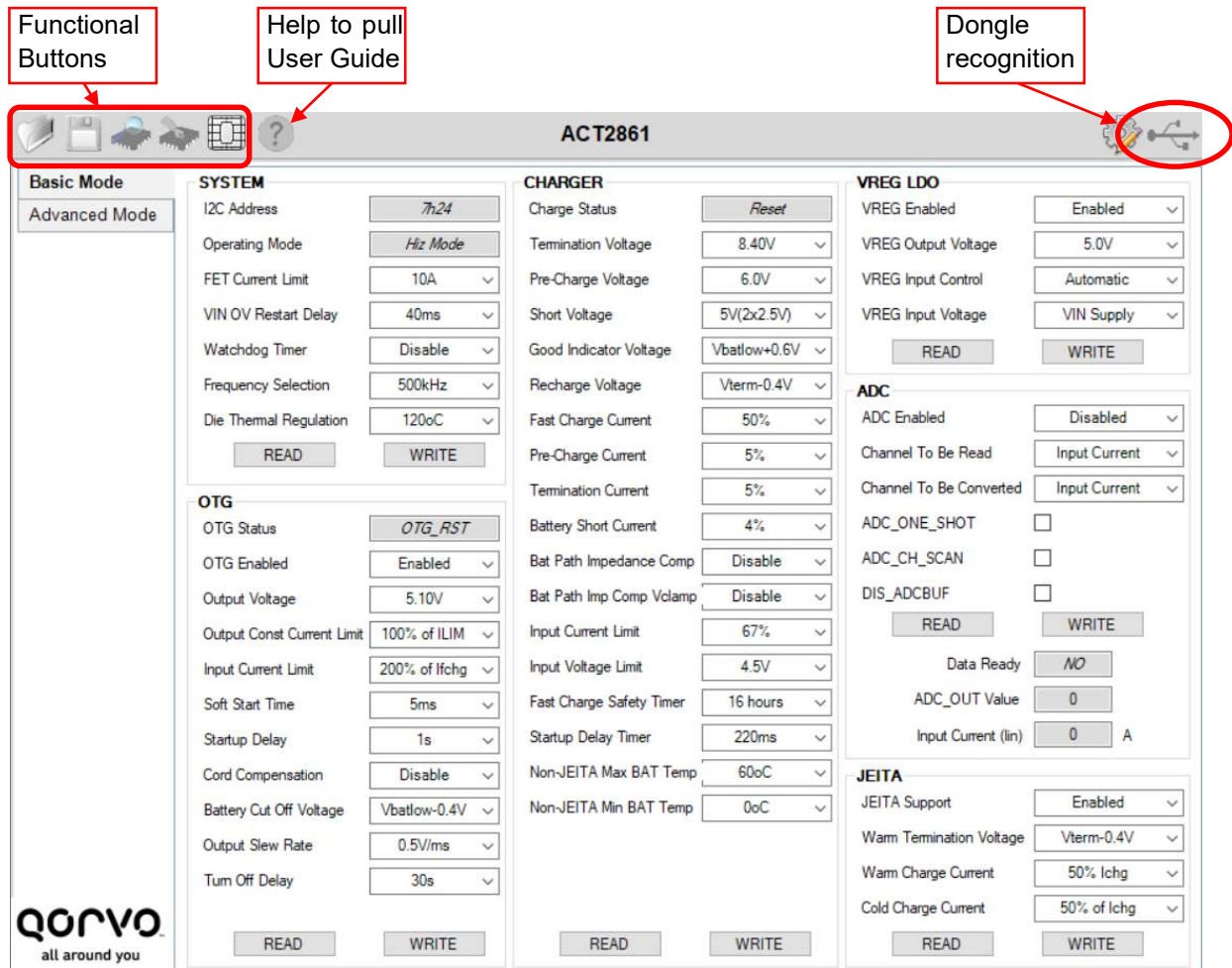
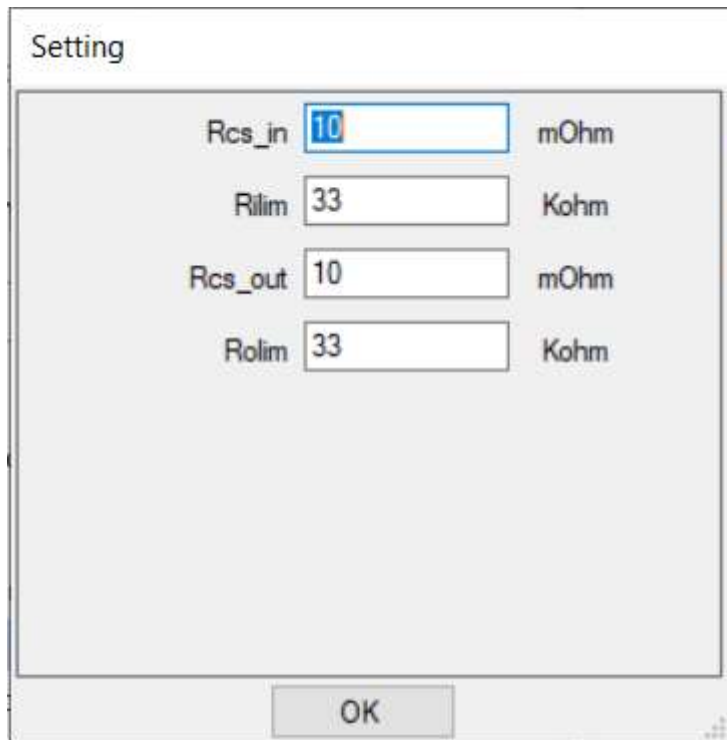


Figure 1: GUI in Basic Mode

Besides the USB indicator on the top right corner is the gear shaped button that allows the user to config the parameters for Rcs_in, Rilim, Rcs_out, Rolim. Please refer to charge current and input current circuits in the datasheet for reference design and application.



The image shows a 'Setting' window with four input fields and their corresponding units. The 'Rcs_in' field is highlighted with a blue border and contains the value '10'. The 'Rilim' field contains '33'. The 'Rcs_out' field contains '10'. The 'Rolim' field contains '33'. An 'OK' button is located at the bottom center of the window.

Parameter	Value	Unit
Rcs_in	10	mOhm
Rilim	33	Kohm
Rcs_out	10	mOhm
Rolim	33	Kohm

Figure 2: Setting window

Operating Functions

The GUI has 6 functional buttons as icons on the top left corner, with order from left to right: Open, Save, Read, Write, Load and Help as below **figure 3**.



Figure 3: Functional Buttons

Open Function

Open function allows user to open an ACT2861's register information data (.iact) or (.xml) files. The file should be either provided by Qorvo or saved by the same software previously.

Save Function

Save function allows user to save the ACT2861's register information to a (.iact) or (.xml) file. Qorvo recommends user to save the registers read back to an (.iact) or (.xml) file before implementing any adjustments.

Read Function

Read function allows user to read all the I²C registers of the ACT2861 under test (DUT) and update to the GUI. **Qorvo recommend user always to click "Read" after powering up the Programming board.**

Write Function

Write function will write all the setting on the GUI to a powered DUT. After change value on the GUI, click "Write" button to transfer all setting to the IC via I²C.

Load Function

Load function combine open and write functions, allowing user to open and write a register information data .iact or .xml to the ACT2861 under test at one click.

Help

Click Help button to pull out "User Guide".

Basic Mode

The GUI will startup in Basic Mode screen. In Basic Mode, user can easily change the register setting using options in drop-boxes or check/uncheck check boxes. For check boxes, Left click to check or uncheck check boxes. For drop-boxes, Left-click to the small arrow next to the value then a selection popup will show up to display all possible option to choose from. User may need to scroll up/down to find the target value and left click to select it.

Example in **figure 4** below, user click in to drop-box arrow selects the ADC channel to be read.

Besides the read/write function on the main menu, there are options to read/write by section, namely SYSTEM, OTG, CHARGER, VREG LDO, ADC, and JEITA.

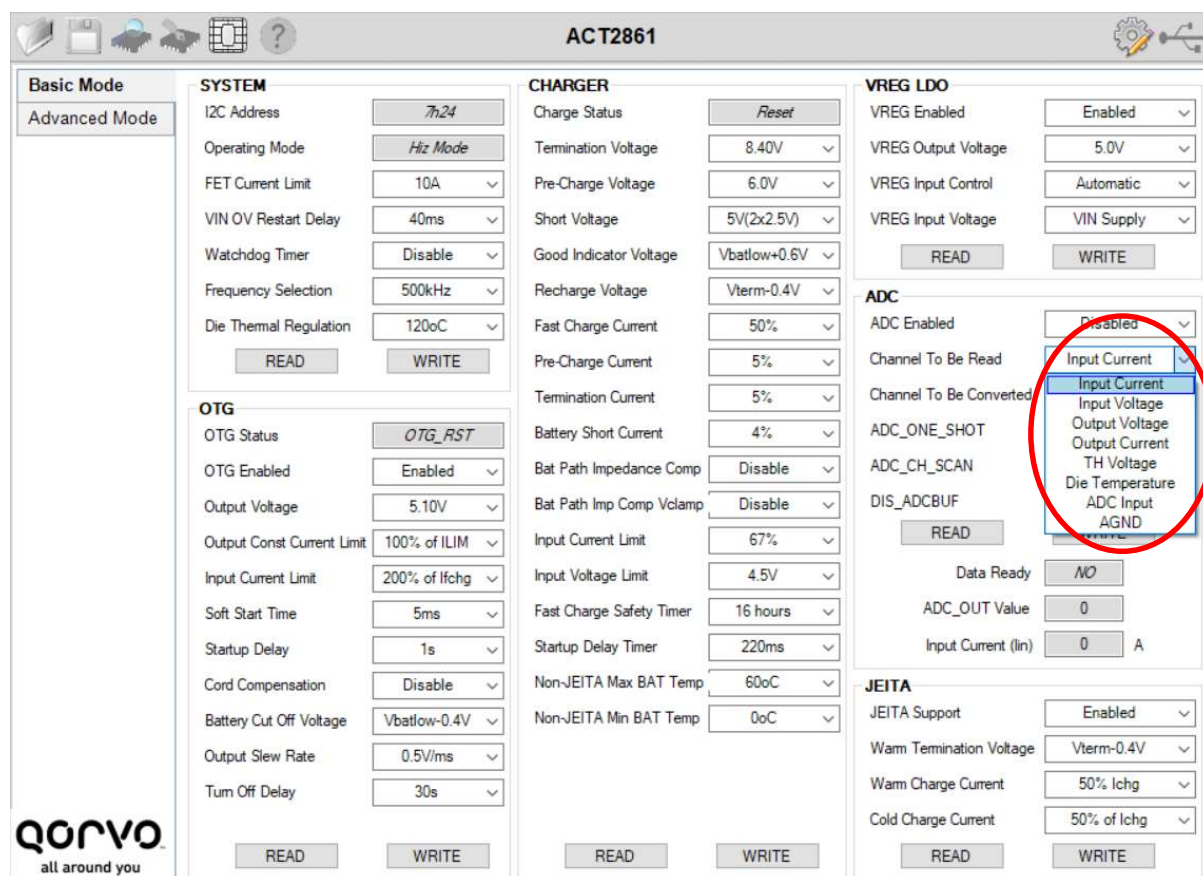
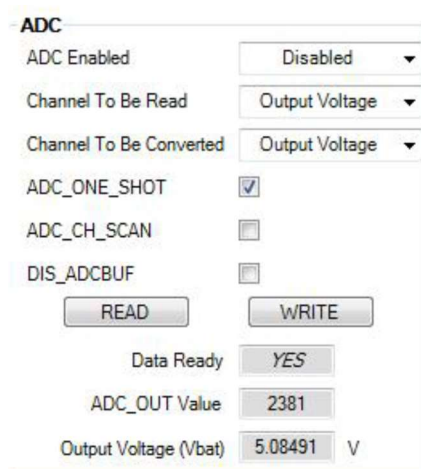


Figure 4: ACT2861 GUI Basic Mode

The GUI for ACT2861QI also provide users with access to the ADC function. There are two options: one shot conversion and auto scanning conversion, which can be selected by ticking in ADC_ONE_SHOT or ADC_CH_SCAN boxes. DIS_ADCBUF should always be unchecked. The drop-down menus allow users to enable/disable the ADC function, the channel to convert and the channel to read. The parameters that can be read are input current and voltage, output current and voltage, TH voltage, die temperature, ADC input and AGND. Click Write to write to I2C registers and click Read to show the results. For ADC one shot reading, the ADC Enabled parameter resets to Disabled after one reading, remember to enable it again before processing another reading. In the example shown in **figure 5**, the user selects to read a one-shot conversion of the Output voltage (Vbat). Please refer to ADC function description in the datasheet for more information. For ADC one shot reading, Channel to be read and Channel to be converted should be the same, while in ADC scan mode, all channels are converted, hence the channel to be converted is not taken into account. **Note that before reading a new parameter, it is required to click Write and Read buttons again for correct results, changing configuration without clicking write and read may result in incorrect values in the result box.**



ADC

ADC Enabled: Disabled

Channel To Be Read: Output Voltage

Channel To Be Converted: Output Voltage

ADC_ONE_SHOT: ☒

ADC_CH_SCAN: ☐

DIS_ADCBUF: ☐

READ WRITE

Data Ready: YES

ADC_OUT Value: 2381

Output Voltage (Vbat): 5.08491 V

Figure 5: ADC section

Advanced Mode

User can access to all I²C register in bit level by selecting the “Advanced Mode” tab. In Advanced Mode screen, registers are divided into tile-based groups. To change the registers, user select the corresponding tile then left click on the “bit name” button to flip the bit value between “0” and “1”. Refer to the ACT2861 datasheet for functionality of each bit. User is required to have fully understanding of each bit/register function.

Example in **figure 6** below, user selects “Advance Mode” then left click the OTG_EN_OVERRIDE button to flip bit, then “right-click” to write or read this 0x0E register.

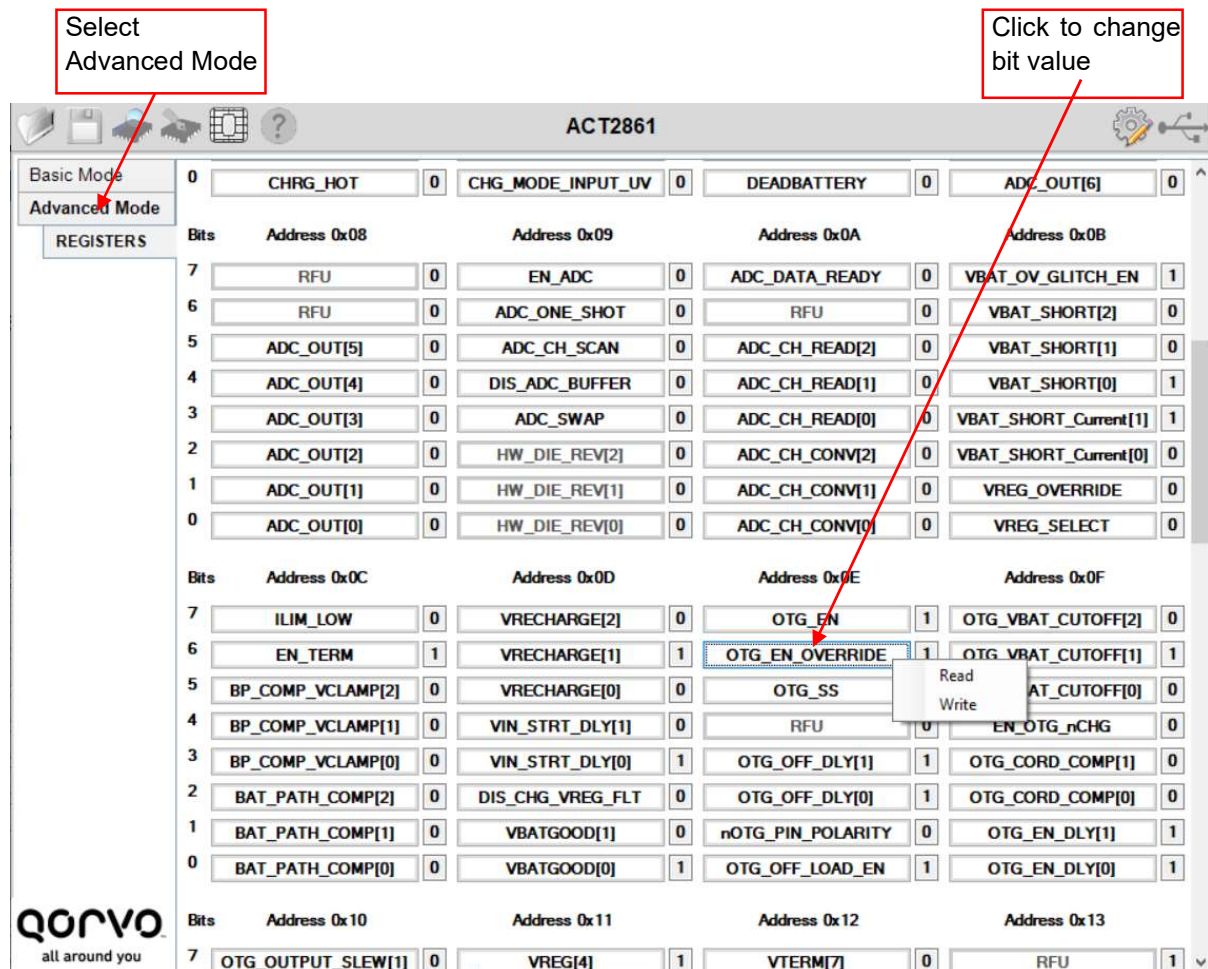


Figure 6: ACT2861 GUI in Advanced Mode

User can change value of multiple bits and click “Write” functional button on top bar to transfer the changes to the IC.

Revision history

REVISION	DATE	DESCRIPTION
2.3	Jan-2020	Update Qorvo Logo

Contact Information

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