I/O QuickConnect System Configurator Software

Manual

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1 Introduction

The QuickConnect Configurator is a stand alone software independent of the simulator software drivers. It directly connects to all QuickConnect controllers that it finds on the LAN network. It does not need any other software to do that.

Its purpose is to test all connected hardware and to generate a text file that contains a list of the switches and lights of the overhead panel that are connected to the QuickConnect system. This list informs the simulator software driver about the hardware address of each simulated aircraft switch in the QuickConnect network and some calibration information. For example when the aircraft simulation software switches on a virtual Korry indicator the QuickConnect software driver needs to know the UM controller and driver board address as well as the switch number where the physical Korry switch is connected to so it can give the correct command to switch the physical Korry light on.

For this to work, every single physical switch needs to have its own unique address. The address of each UM controller board can be selected with jumpers between 0 and 15. Each connected UM board needs a different address. Each UD driver board has jumpers to select an address between 0 and 2. When more than one driver board is connected to the same UM controller Bus, each of the drivers needs to have a different address.

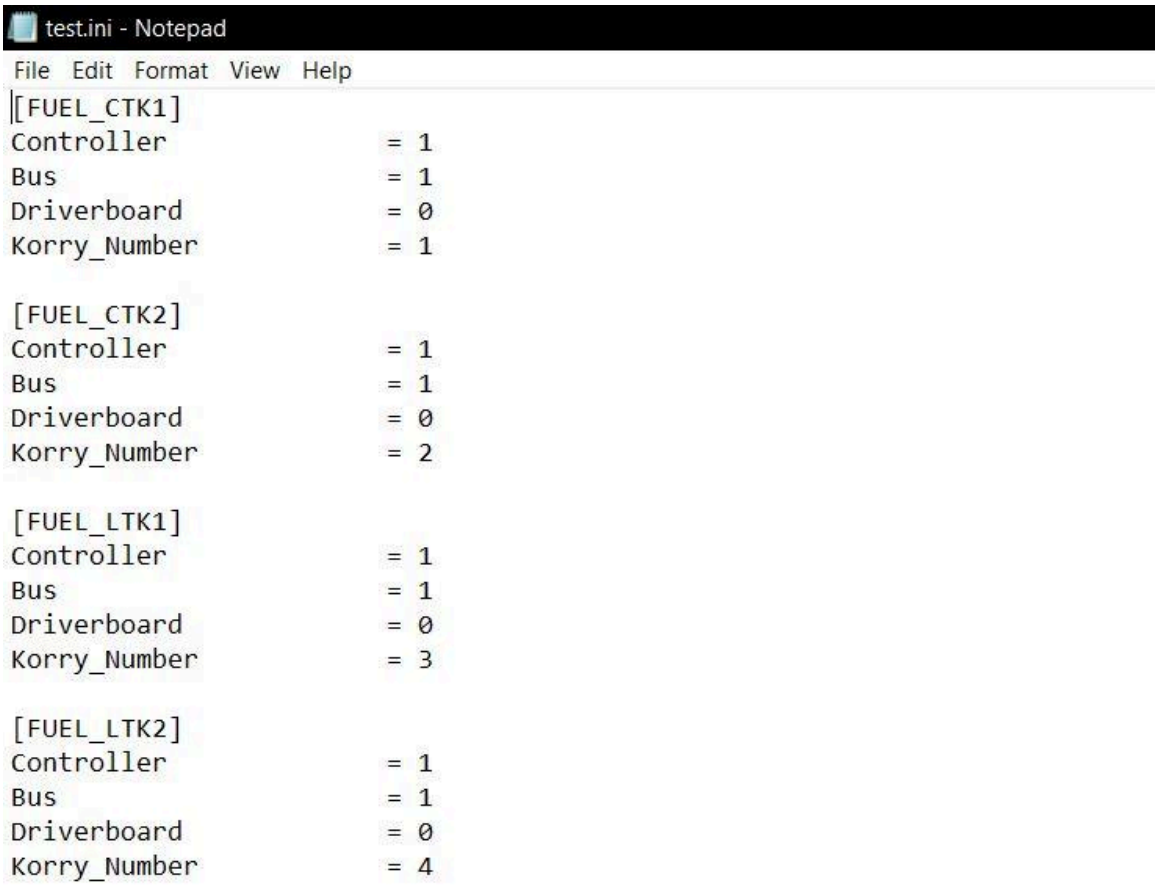
The QuickConnect Configurator will run on Windows 10 or 11 systems. To start it, just click on the exe file. When the pop up “Windows protected your PC” appears, click on ”More info” and then “Run anyway”. This is necessary because the application does not have a Microsoft certificate.

When a popup from Windows defender appears, allow the Application access to private LAN networks so it can communicate with the controller boards.

The application is designed for a monitor resolution of 1920x1080 or greater. The “scale and layout” setting under Windows display settings should be set to 100%.

2 Configuration file format

The text file generated by the QuickConnect Configurator passes the information generated by the user on to the driver software. It is a simple text file. Usually it will be generated and edited with the configurator software, but it can also be read and manually edited with any text editor if needed. The photo below shows a sample file with 4 Korry switch configuration entries:

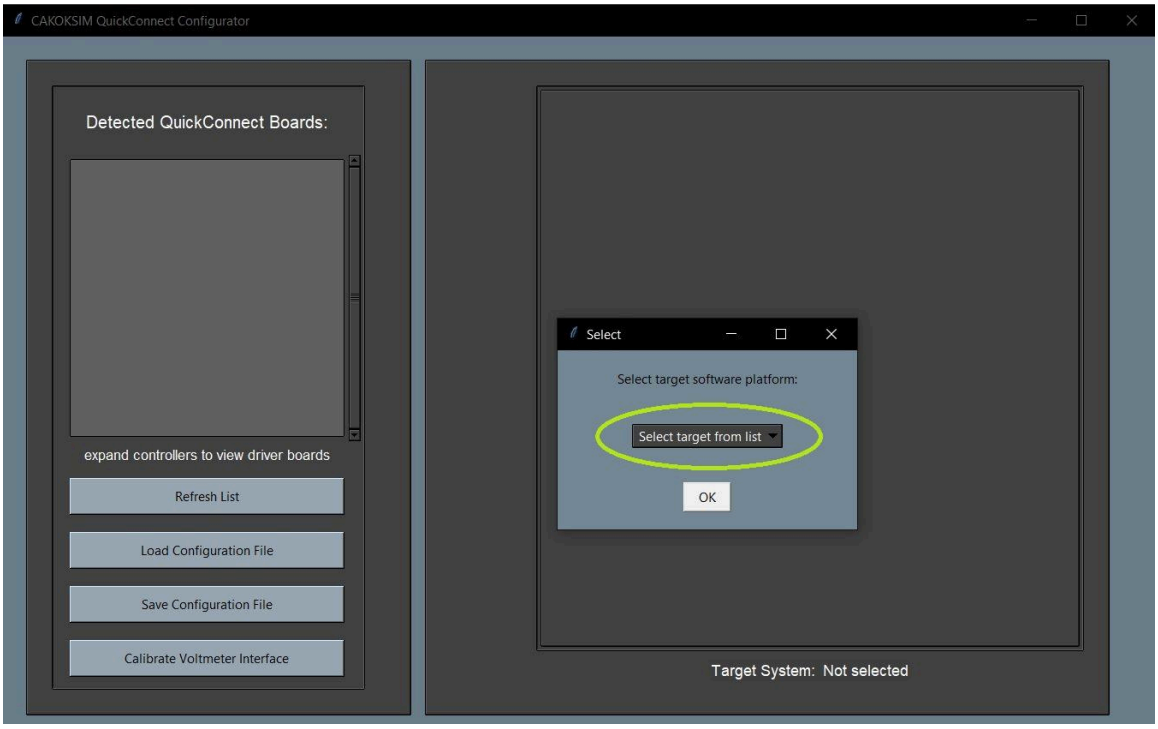


IMPORTANT: The name of the config file must always be **QuickConnect.ini** to be recognized by the driver software. The file must be placed in the same folder as the driver.

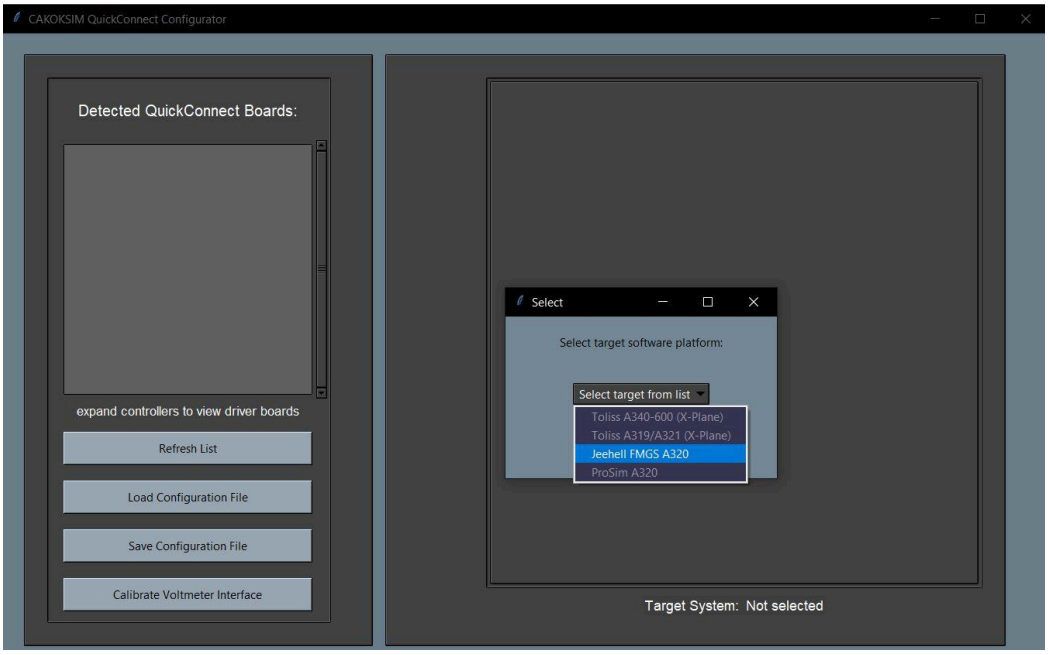
3 Startup and Connection

When an UM Controller board is connected to the LAN network and powered up without any SW running on the host PC, it will show an orange light. This light indicates that the board is not “talking” to any SW. Once a connection is established, the orange light will go out. When there has been no connection for more than 20 seconds, the orange light will flicker for 1 second to indicate that the controller is doing a reset. This is a recovery feature in case that the controller software has malfunctioned.

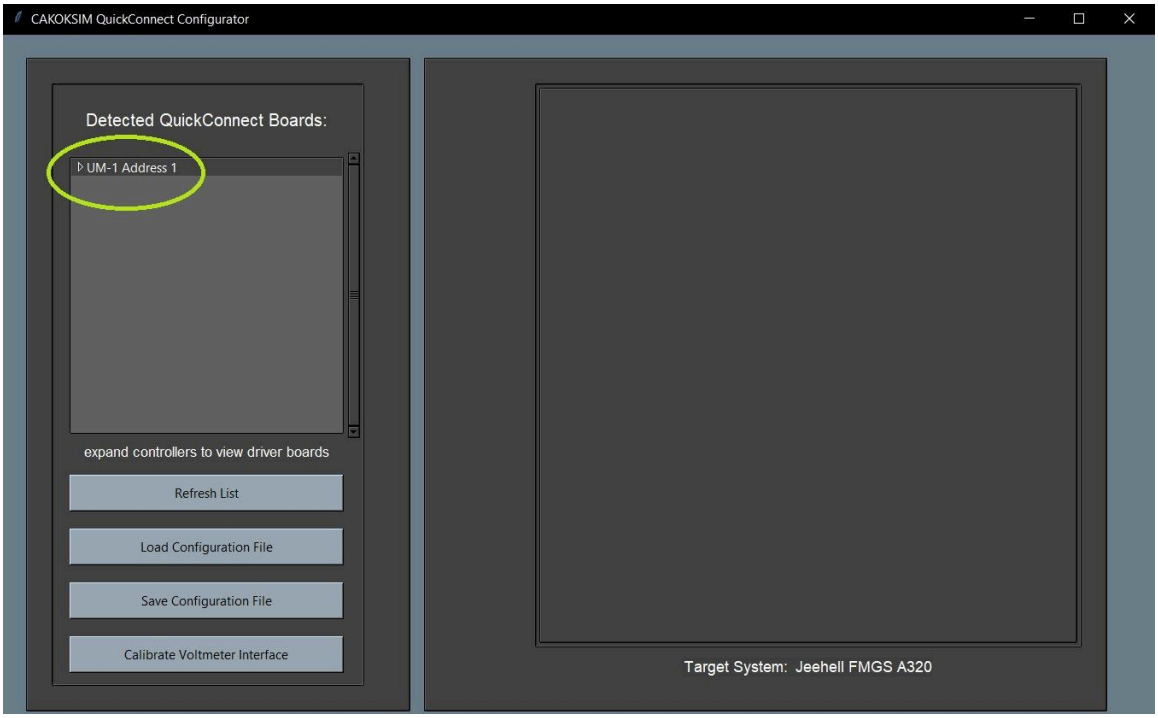
When the QuickConnect configurator exe file is started, this menu should be show:



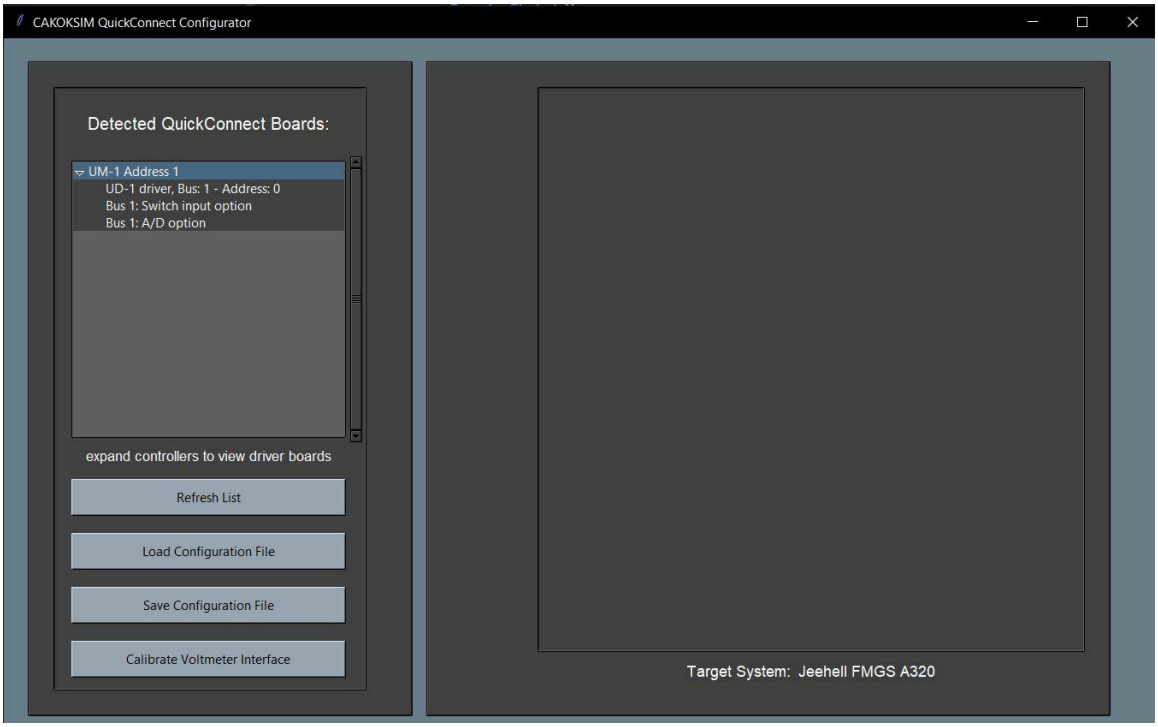
First you have to choose your aircraft simulation target software. Depending on what software you choose this number and labels of the available aircraft switches will change.



This image shows how to select the target software. Once it is selected it will be always shown in the lower right corner of the screen.



Any UM boards that are found on the network will be shown in the list on the left side. In this example, one UM-1 board with the address 1 has been found. The orange light on this board will go out to indicate that the controller is connected to the configurator SW.



Press the triangle symbol to the left of each controller item to view an expanded list that shows all boards that are connected to the 3 controller busses and all of their installed options. Driver boards and options are listed separately because there can be up to 3 driver boards on a bus, but only one switch or A/D option is allowed per bus.

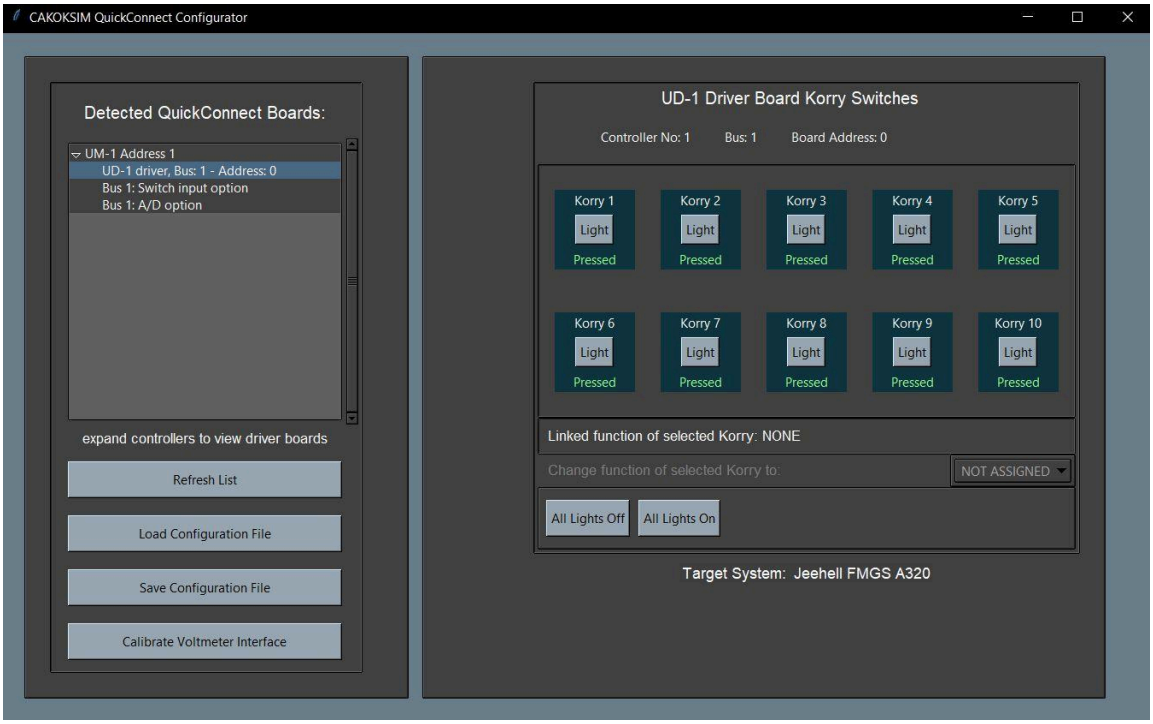
4 Main menu

There are 4 buttons shown on the left side of the main menu:

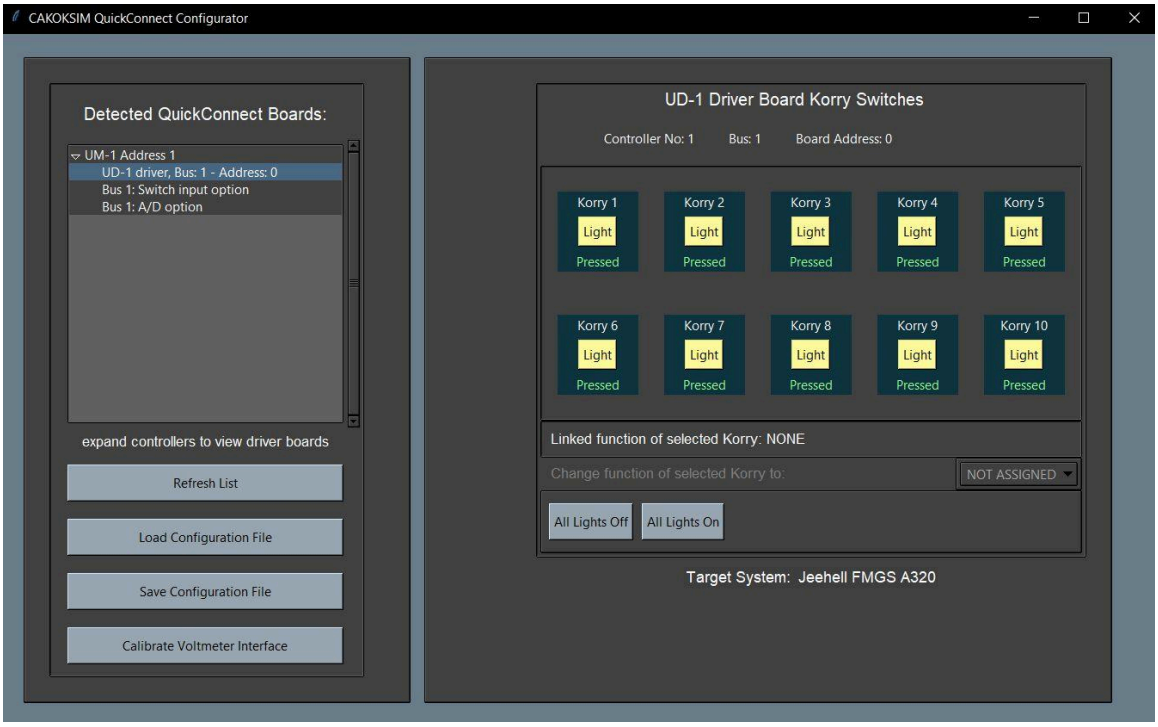
Refresh List	Force a refresh of the controller List. Useful when a controller status has changed and the list has not been updated automatically
Load Configuration File	If you have previously created a configuration file and want to load and modify it, you use this button
Save Configuration File	When you are finished modifying a configuration file or want to save a new one for the first time, press this button
Calibrate voltmeter Interface	Opens a menu to create voltmeter calibration data. Only 1 controller with voltmeter option for up to 2 voltmeters can be installed.

When you create a new configuration for the first time, all changes are initially stored in temporary lists in RAM. When the “save” button is pressed, this configuration is written into a text file. You can give the file any name, but usually it should be named **“QuickConnect.ini”** so the driver SW can find it. This file must be placed in the same folder as the Cavoksim driver for the target aircraft SW. It is recommended to make a backup copy of this file.

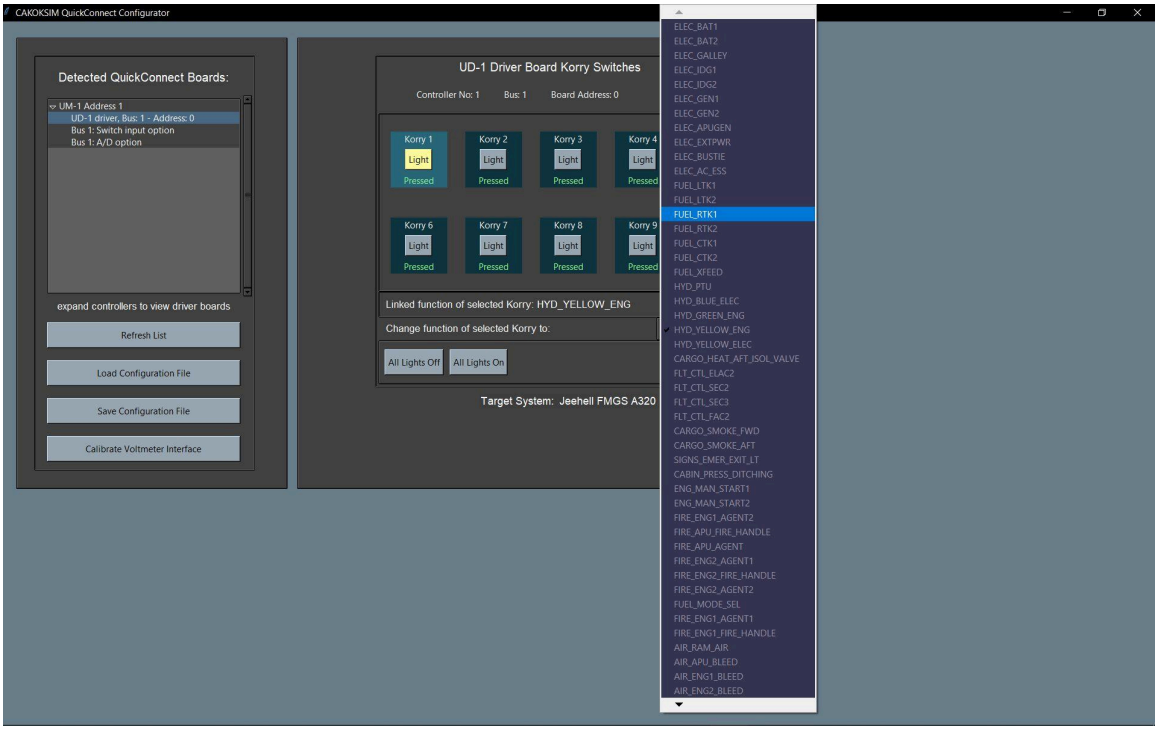
5 Configuration of Korry type switches



After pressing on a driver board entry in the list, the Korry configuration menu is shown on the right side. Each of the 10 Korry connections is represented by a box. The numbering is the same as on the UD board.



When you press the “All Lights On” button, all Korry indicators connected to the selected UD driver board will illuminate and the menu will look as shown above. If the Korry lights do not illuminate, check the wiring and the annunciator power supply to the driver board. Also consider that some lamps or switches might be defective.



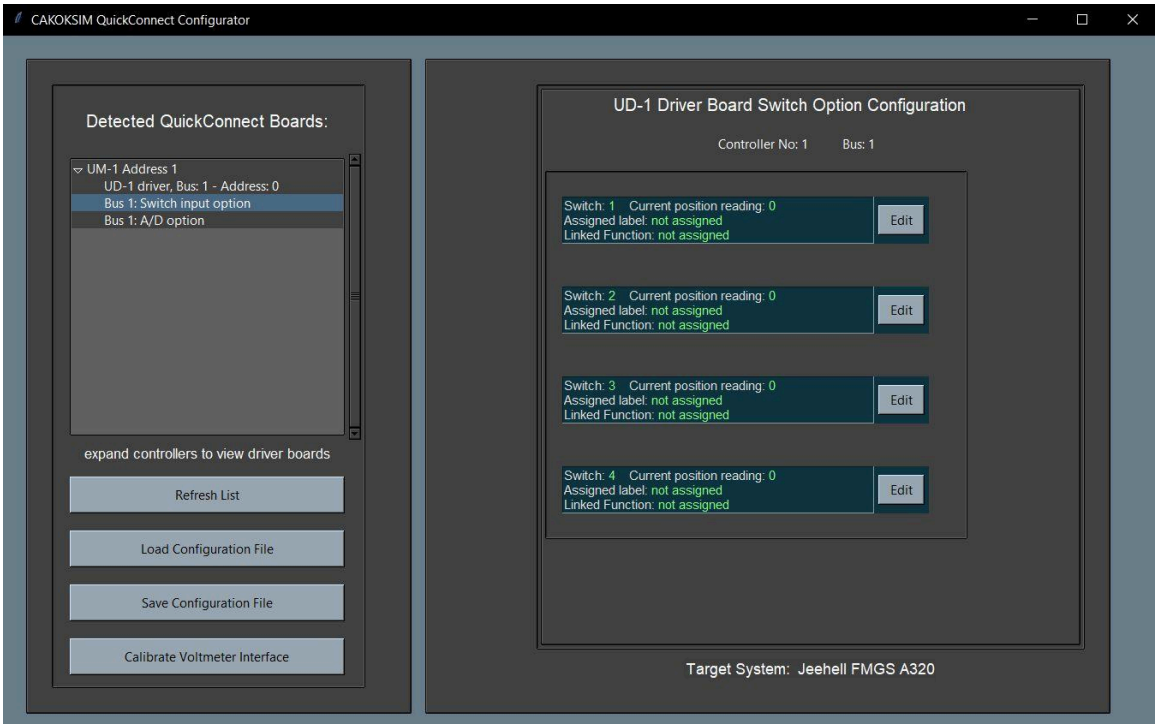
Select a single Korry switch by pressing the “Light” button in the center of the box. The respective Korry will illuminate and can easily be identified. Next click on the box to the right of “Change function of selected Korry to”. You will see the selection menu as shown above. Select the label that describes the function of the selected Korry switch. The label names are dependent on the target software. Depending on this software the same switch can have different names. For example Toliss calls a switch “AIR_APU_BLEED” while ProSim calls the same switch “PNEUMATIC_APU_BLEED”. In any case it should be no problem to identify the correct switch in the list. If in doubt, please contact us for advice.

When a selection is made, the configurator SW will save the link between the hardware address and the label in an internal list. There is no “Save” button. Selecting a label from the list is enough to update the list instantly.

When you select a different Korry switch by pressing its light button and then go back to your last modified switch, you should see the current label selection under “Linked function of selected Korry”.

5 Configuration of other switches

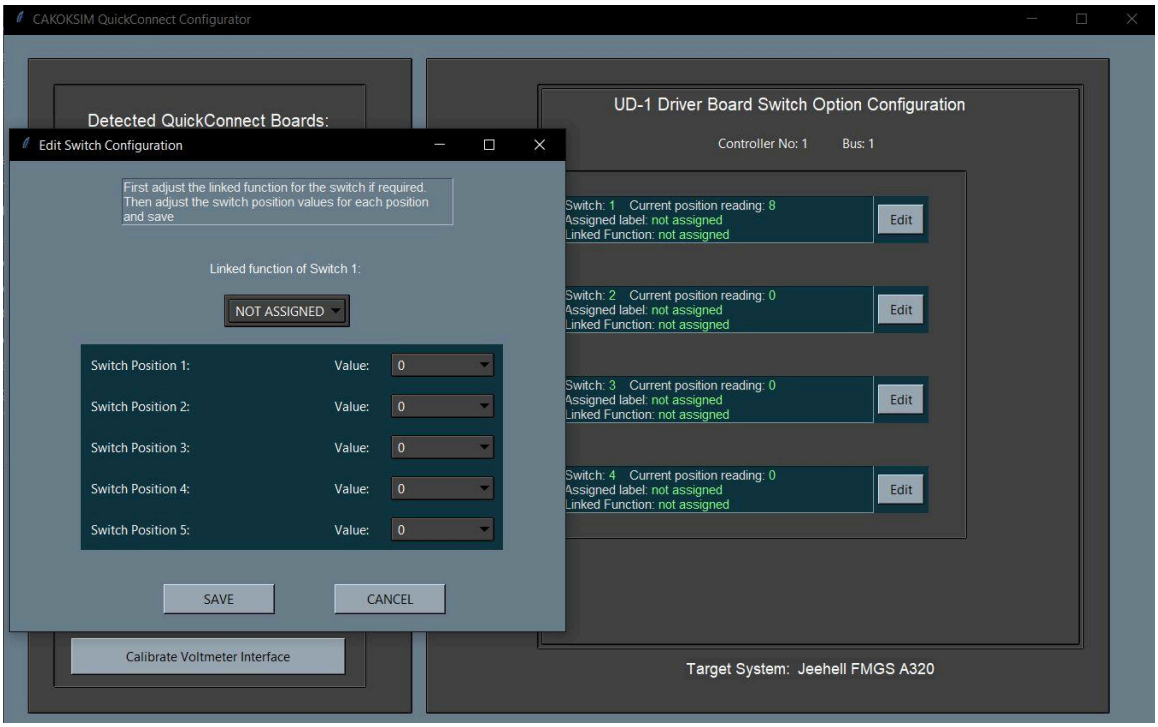
For detailed instructions on how to connect switches, please refer to the QuickConnect installation manual.



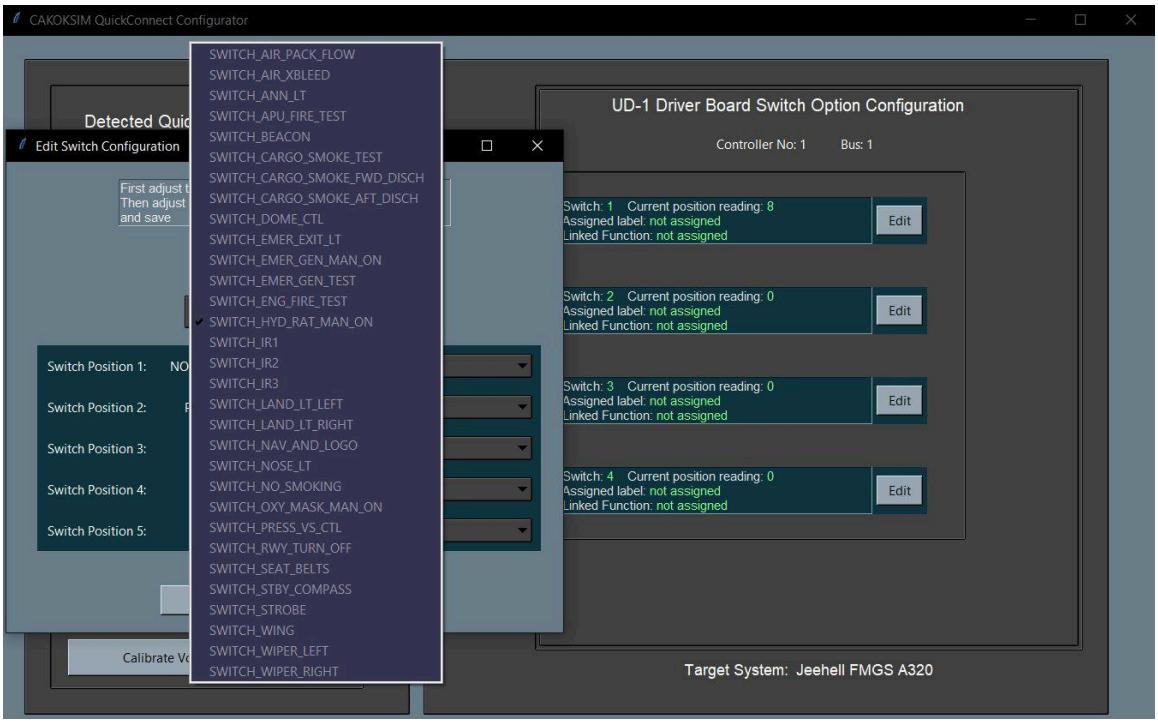
When pressing on a “switch input option” list item, the switch as shown above will be visible. Each of the 4 switch terminal blocks S1-S4 has its own configuration box.

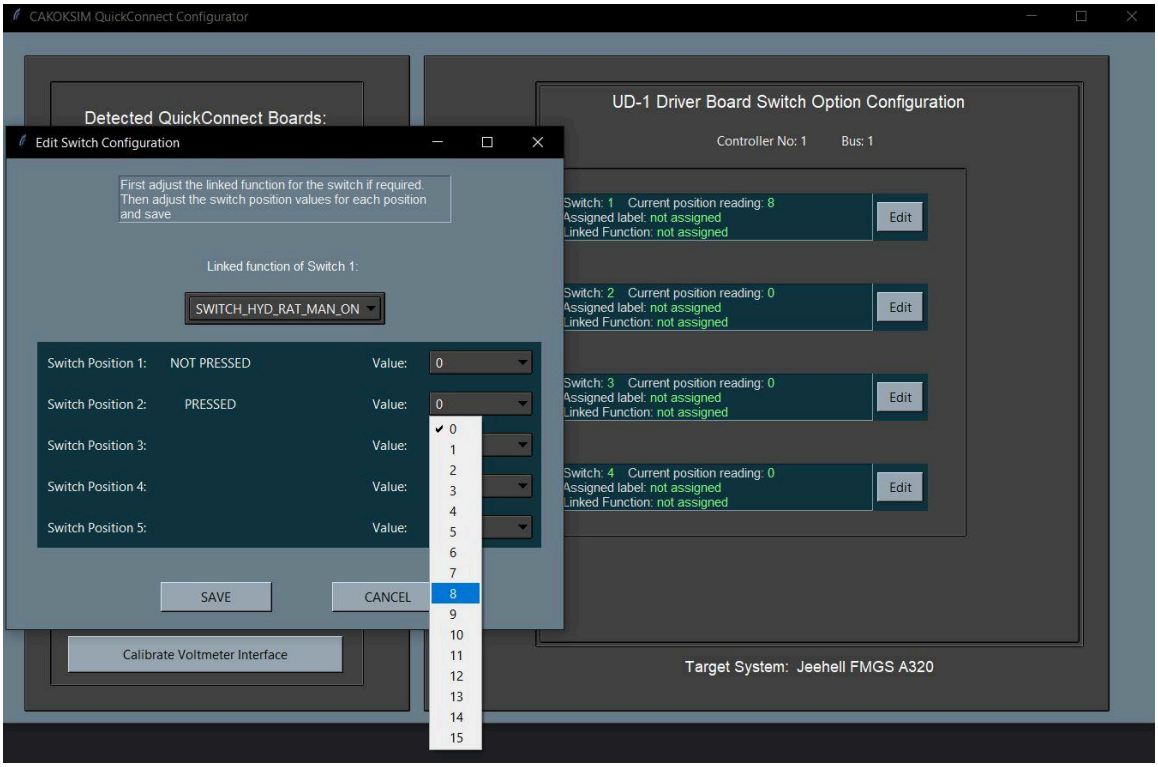
The configuration box shows the following information:

- Switch number: Same as S1-S4 printed on the driver board
- Current position reading: Raw data value between 0-15 that is generated from the 4 input lines of the switch as described before. This value should change to a different unique number for each selectable switch position. If not, the switch wiring needs to be changed.
- Assigned Label: Name of the switch position linked to the current position reading value, for example a wiper selector switch can have the position labels “OFF”, “SLOW” and “FAST”.
- Linked function: Selected aircraft function of the switch, for example “SWITCH_WIPER_LEFT”



When pressing the edit button for a switch the above pop up menu will be shown. Move this menu a little to the left so that you can see the current position readings of the switches. To configure a new switch first select the function label of the switch from the drop down list:





After a switch function label is selected all possible switch position labels are automatically shown in the switch position list. These labels can not be changed. The number of positions is also determined by the selected switch. In the example above a simple push button has been selected. It has only 2 possible positions: ‘not pressed’ and ‘pressed’. All switch positions in use must now be linked to a position value. Move the switch to all selectable positions one by one and read the current position reading value. Then select this value from the dropdown list for the correct switch position label to link it to the switch position, as shown above. When finished press the “SAVE” button to save the selections in a temporary list for as long as the program is running. After saving, the pop up menu will close. Note that each selectable switch position needs to have a different value assigned to it. When that is not the case a warning message will appear to remind you that the value assignment is not correct.

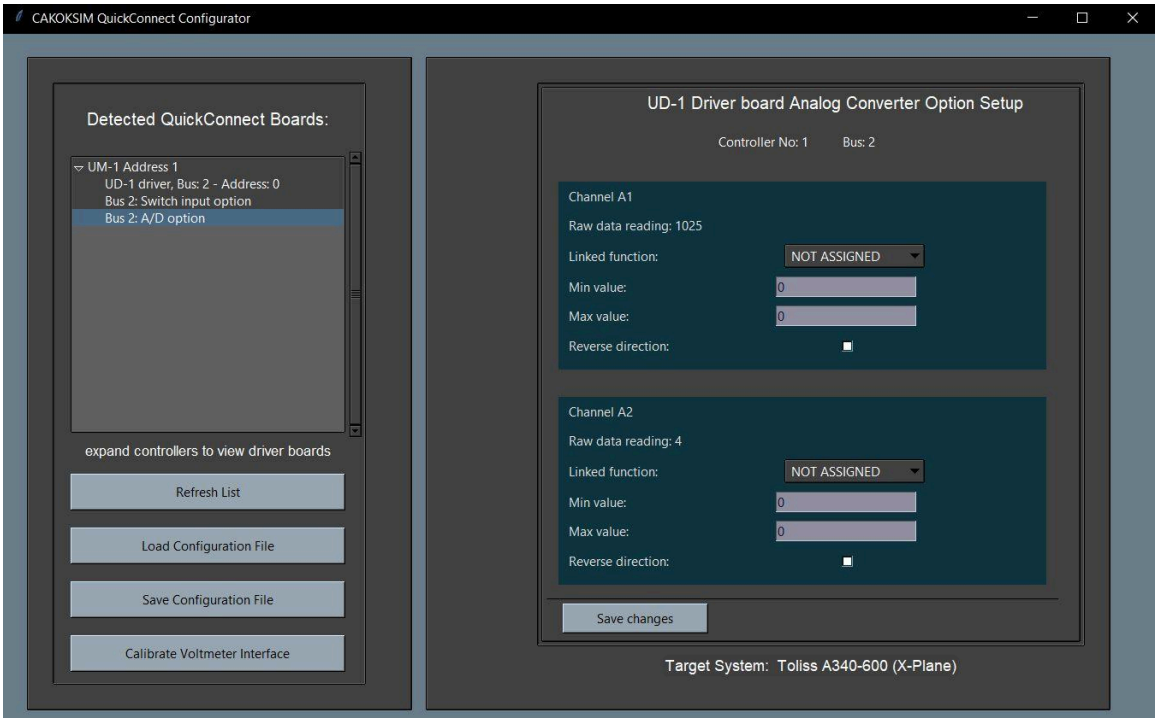
After saving the changes cycle the switch though all possible positions again and check that the correct assigned labels are shown.

6 Configuration of A/D inputs (Potentiometers)

UD boards can have the A/D option installed. In this case 2 A/D inputs are present on the board which can be connected to panel potentiometers for analog inputs. Airbus uses only a few potentiometers on the overhead panel. The number varies, but they are all used for temperature control and landing elevation selection.

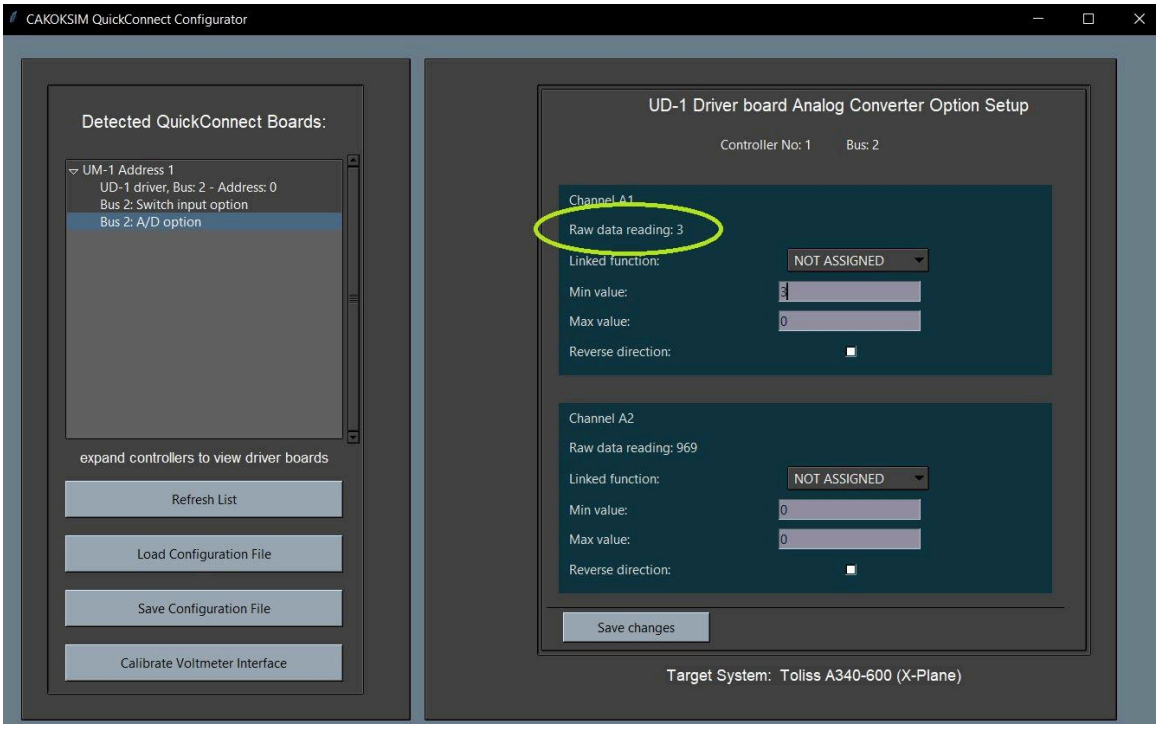
The UD board provides a voltage of 5V to the potentiometer and reads the output voltage. The raw data reading of the A/D channel equals the measured voltage in volt multiplied by 100. So the normal range of readings is between 0 and about 5000.

To configure the A/D converter inputs press the “A/D option” item in the expanded controller treeview. This option is only displayed when it is installed and detected.



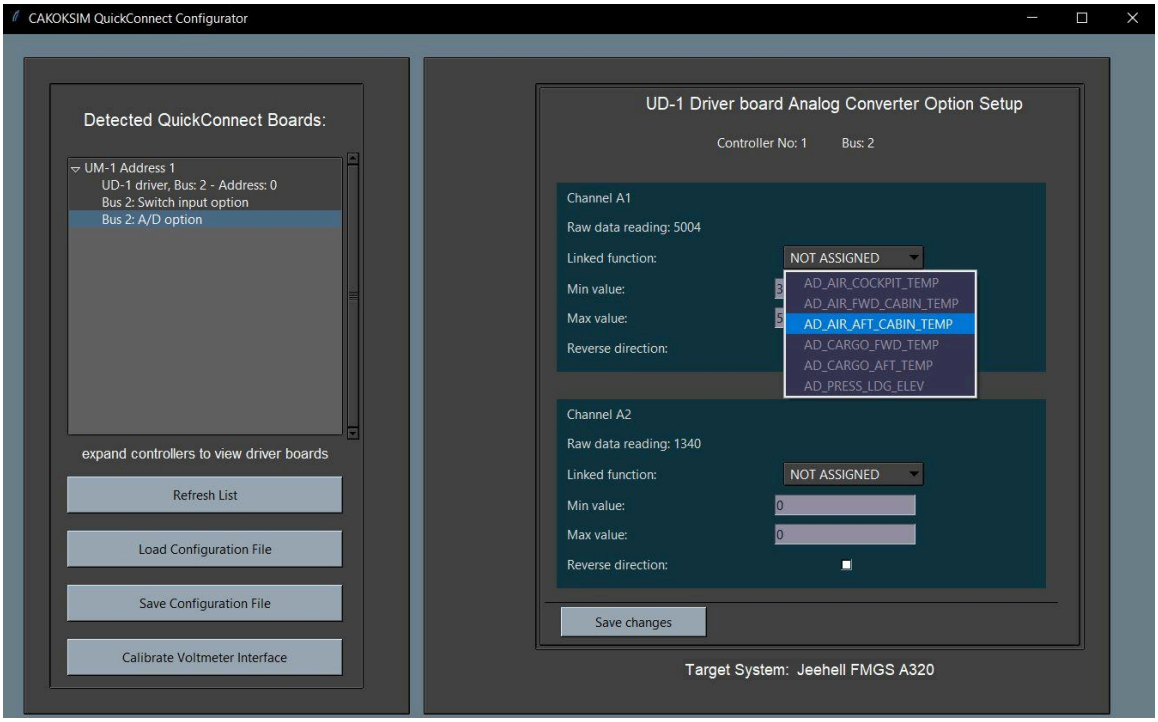
When this item is selected, the analog converter configuration menu is shown as above

In this menu, you can see the current raw data reading of each of the 2 channels. When a potentiometer is connected, you should see a change of the raw data value when you turn the selector. If there is no change, check the wiring.



To configure the input, turn the selector all the way to one side until the raw data value is at the minimum (normally close to zero). This value should be shown when the selector is turned all the way counterclockwise. If it is shown when the selector is turned fully clockwise, the +/- wiring of the potentiometer is reversed. This is not a problem and no change to the wiring is required. In this case just tick the “reverse direction” box.

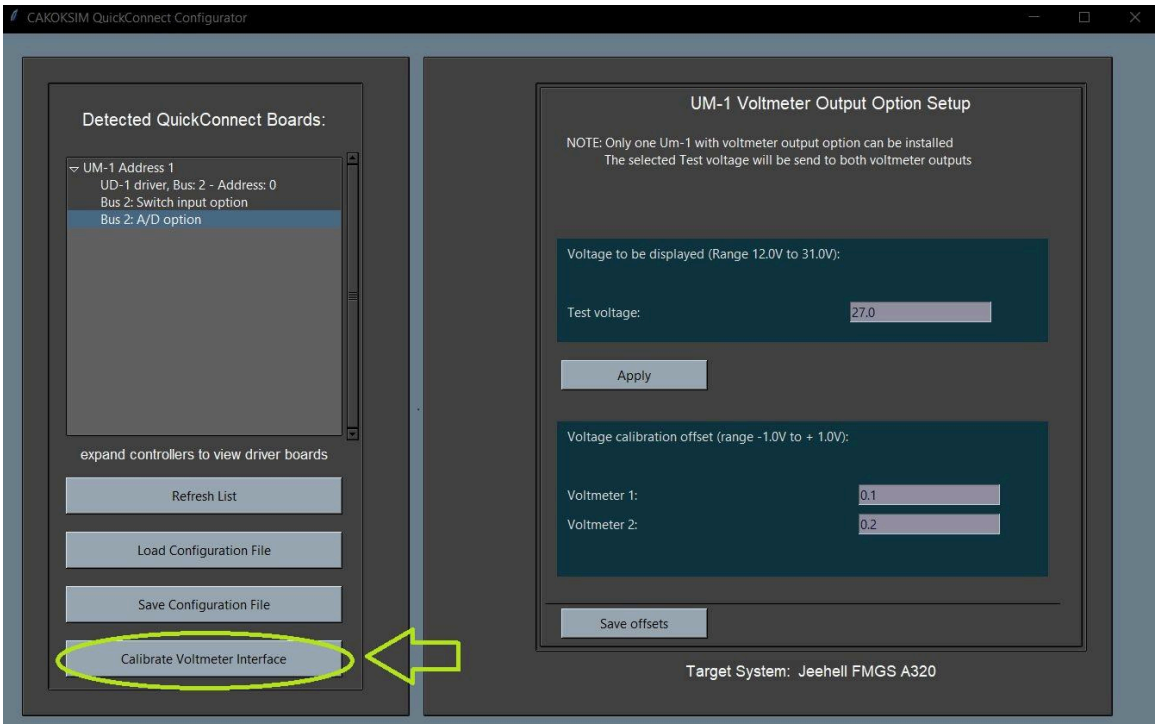
When the minimum raw data value is reached, read the value and type it into the “Min Value” field. Then turn the selector to the maximum value and type this value into the “Max Value” field.



After the min and max values are entered, select the linked function of the connected potentiometer as shown above. When finished, press “Save changes” and the configuration of the potentiometer is completed.

7 Voltmeter Calibration

Press the “Calibrate Voltmeter Interface” button to show the calibration menu:



In this menu, you can enter a test voltage between 12.0V and 31.0V that will be generated on the voltmeter output terminals and displayed on the connected panel voltmeters. The test voltage will be sent to both voltmeter outputs simultaneously when the “Apply” button is pressed.

Note that the minimum voltage is set to 12V because Airbus panel voltmeters receive their own power supply from the voltage that they measure. They will start to malfunction and stop working when the input voltage falls to below approximately 10V. In the aircraft these voltmeters are directly connected to 28V batteries. A voltage below 12V would mean the battery is completely dead, so that would not be a useful reading anyway.

The panel voltmeters are not very accurate. If you notice a difference between the voltage shown on the virtual voltmeters and the real ones, you can enter a calibration offset to make the readings more accurate. For example when a voltmeter shows 28.0V in the simulation and 28.2V on the real panel, you can enter a calibration offset of -0.2. After pressing “saving offset” the voltage shown on the real voltmeter should then decrease to a value of 28.0V. The calibration is only perfectly accurate for a single voltage point. There can still be small differences for other voltages that are different from the calibration point. It is recommended to calibrate for the voltage that is most commonly shown, which is about 27V.