

FaradaySemi Graphical User Interface (GUI): User's Manual

Easily program & test the FS140X

- This user's manual provides instructions on using the *Control Center* 1.24 to program and communicate with the FS140X chip through the FaradaySemi I2C InterfaceBoard.
- The software and complementary hardware read and write directly to the circuit's registers using I2C.

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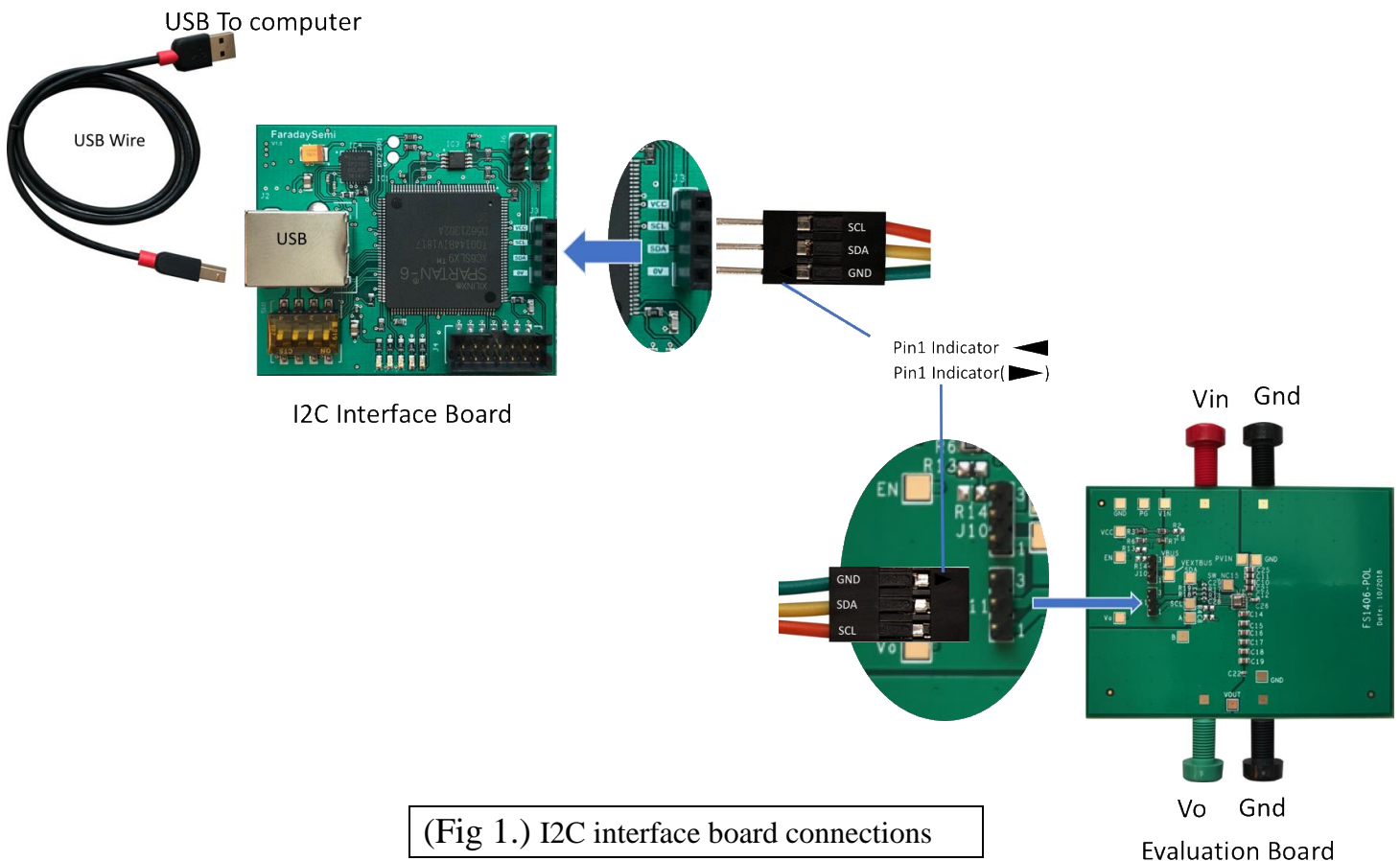
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System Requirements

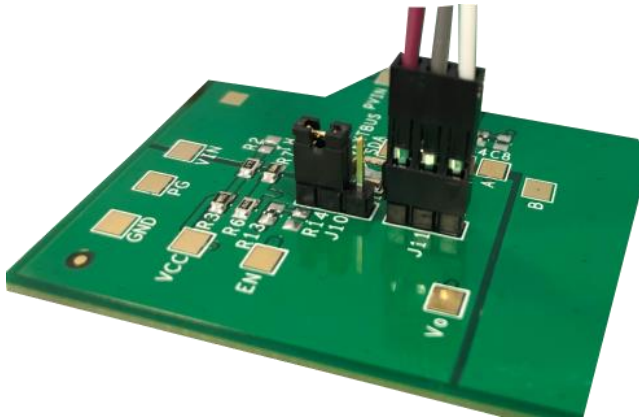
Computer installed with Windows 7 or higher
2GB Of RAM
USB Port Access
FaradaySemi I2C interface board kit

Software and Hardware Setup

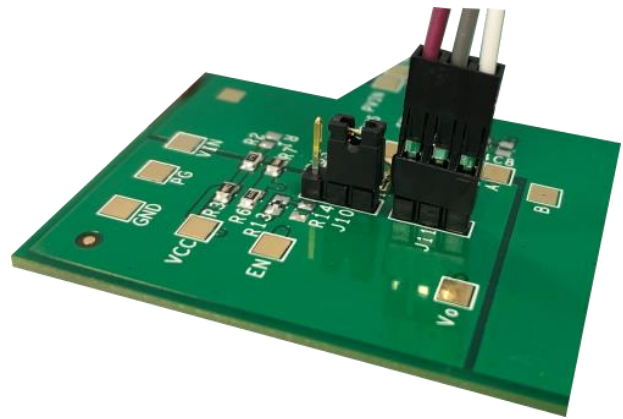
1. Before installing the GUI, download and install Silicon Labs CP210x USB to UART Bridge VCP Driver.
2. Extract the given GUI zip file – ControlCenterV124.zip.
3. Connect the I2C interface board to the evaluation board by using jumper cables as shown in Fig 1.
4. Connect I2C interface board to computer using USB Cable as shown in Fig 1.
5. Bus Voltage
 - a. The default setup uses **VCC as bus voltage**, jumper shorts pins 1 and 2 of J10 as shown in Fig 2.a.
 - b. If using **external bus voltage**, place shorting jumper across pins 2 and 3 of J10 and attach external Bus Voltage to test point “VEXTBUS.” Show in in Fig 2.b.
6. Power up FS140X, then run ControlCenter.exe.



(Fig 1.) I2C interface board connections

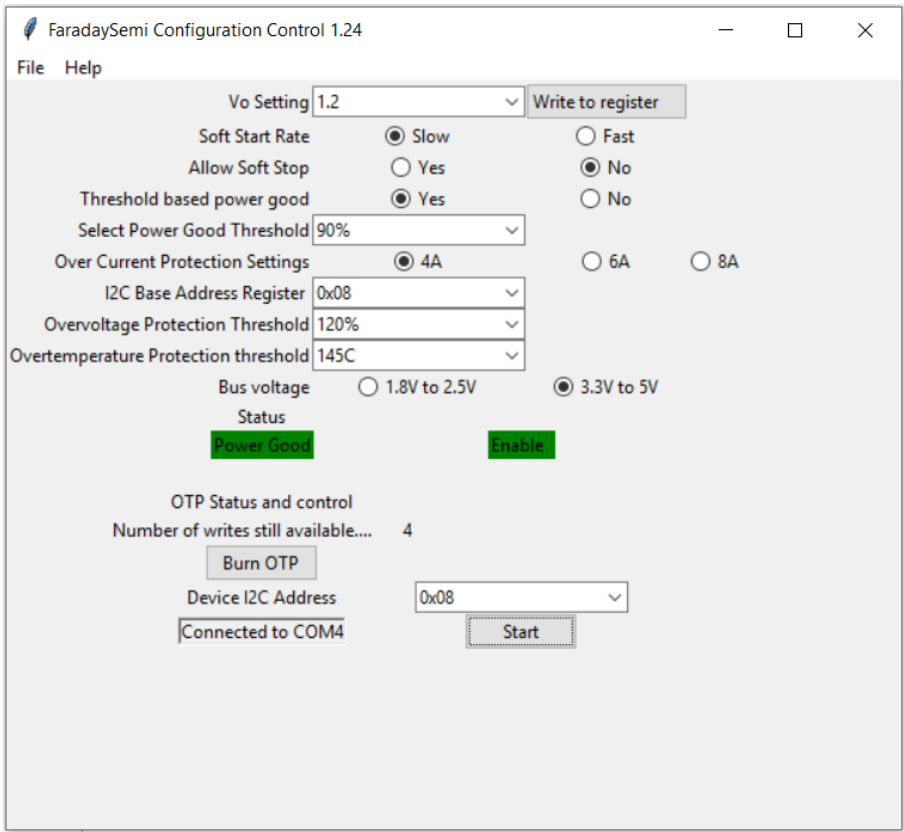


(Fig 2.a) Jumper across Pins 3 and 1of J10. Uses VCC voltage as Bus Voltage.



(Fig 2.b) Jumper across Pins 2 and 1 of J10. Uses VEXTBUS as Bus Voltage.

User interface at a glance



Programming an evaluation board to your specifications

1. Connecting the GUI to the Boards:

To connect the GUI to I2C interface and evaluation board, press “Connect/Reconnect” under “File> Connect/Reconnect”.

If the USB, I2C interface or evaluation board are disconnected at any time, you need to reconnect the GUI to the hardware by selecting “Connect/Reconnect”

2. Start/Read All Registers:

After the hardware and GUI are connected, click start to read the registers content from IC with I2C address shown in the bottom part of GUI and display them in the GUI.

You may click this button to read the registers at any time. Automatic reading of registers every 2 seconds can be turned on/off under “File>Automatic ON/OFF.”

3. Output Voltage Selection:

Select an output voltage (V_o) using the dropdown menu or type in a V_o value. This GUI function is mainly designed for fine tuning the output voltage. If you need to change the output voltage by +/- 20%, contact FaradaySemi for more support.

4. Soft Start Rate Selection:

Select the preferred dv/dt by clicking on the corresponding button.

5. Enable/Disable Soft Stop:

Enable or disable the chip’s soft stop ability. Note: You still need to toggle soft disable button if you wish for a soft stop.

6. Toggle Soft Stops:

Turn off the chip using a soft disable button. Click again to turn on the chip.

7. Setting Power Good Threshold:

Select the threshold at which Power Good signal turns on from the dropdown (threshold is percent of V_o). Note: It is recommended to use threshold-based Power Good setting.

8. Select Over-current Protection Settings:

Select the preferred over-current protection setting by clicking on the corresponding button. Do not change the over current protection setting higher than factory default value.

9. Change Over-voltage protection thresholds (105%-120% of V_o):

Select the over-voltage protection threshold from the dropdown menu.

10. Change Over-temperature Protection Threshold (75°C, 85°C, 125°C, 145°C):

Select the over-temperature protection threshold by from the dropdown menu.

11. Changing Bus Voltage Setting:

Select the Bus voltage range (1.8V-2.5V or 3.3V-5V) at which you wish for the I2C Interface Board bus to communicate with the FS140X. The default setup is 5V.

CAUTION: The bus pull-up voltage is set using pins on the evaluation board; refer to step 4 in “Software and Hardware Setup.”

12. Saving and opening setting files:

Use “File> Save” to save the I2C configuration file. Use “File> open” to open the I2C configuration file in GUI.

13. Burn the Memory

Click “Burn OTP” button to save the current GUI configuration into FS140X’s memory.

CAUTION: The memory can be burn 4 times. GUI shows how many more times memory can be written to.