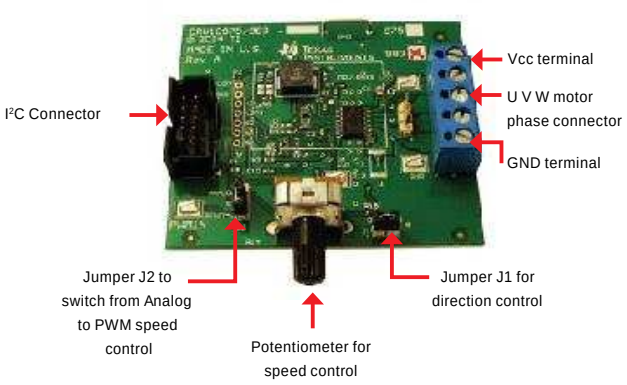
Spinning Motors with the DRV10975, DRV10983, DRV10983-Q1, DRV10987

Here is a quick list of what you will find in the box.

USB2ANY I²C tool
+ USB Cable
+ I²C Ribbon Cable

DRV10975, DRV10983, DRV10983-Q1, or DRV10987 Board

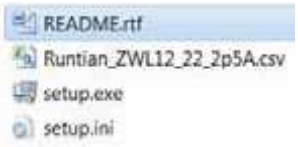


1 Getting Started

1.1 Download the GUI from www.ti.com/tool/DRV10975EVM, www.ti.com/tool/DRV10983EVM, www.ti.com/tool/DRV10983Q1EVM, or www.ti.com/tool/DRV10987EVM

Download and install DRV109xxEVM Software

The LabView Runtime Engine is required please install this after the GUI is installed (refer to the 'README.rtf' in the GUI download folder)



1.2 Connect the Hardware

- Make sure the potentiometer is turned counterclockwise until it stops, and Jumper J2 is in the analog position.

Figure 1. Jumper 2

- Connect the USB2ANY to the computer via the USB cable and to the EVM with the I^2C ribbon cable. With a 3 phase motor, connect the motor phases, USB2ANY, V_{CC} and ground as shown in Figure 2 then apply 24 V for the DRV10975EVM and DRV10983EVM. Apply 6.2 V - 24 V for DRV10983Q1EVM and DRV10987EVM.

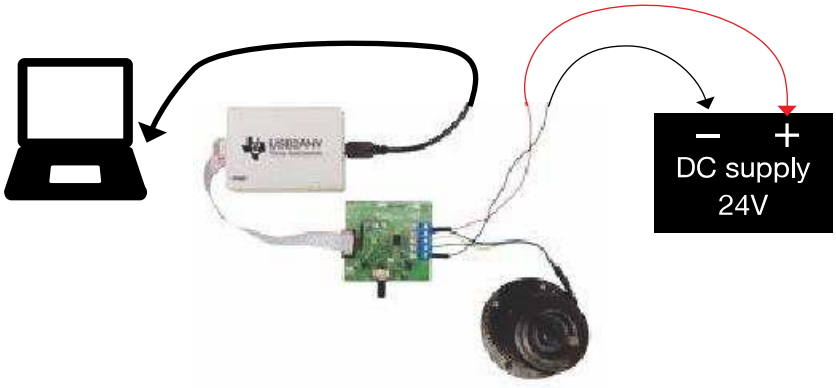


Figure 2. Motor Phases

2 Start the GUI

- Select the device pop up menu (see Figure 3) then click "OK".

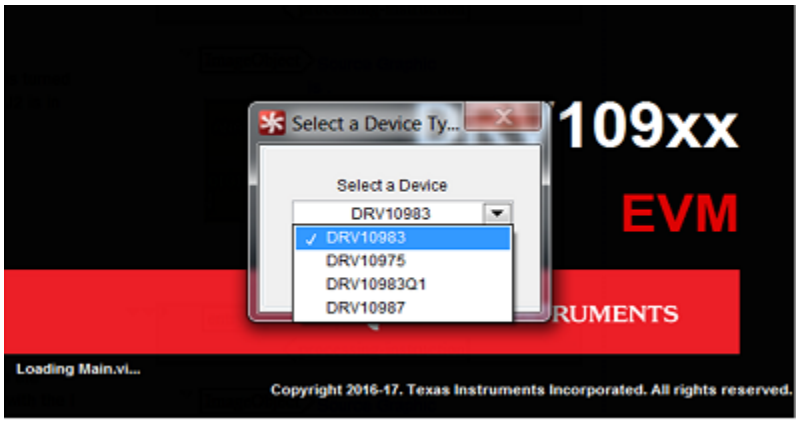
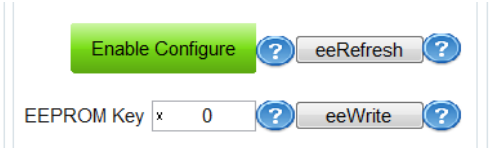


Figure 3. DRV10983 GUI

- Click Enable Configuration, it will turn green verifying the device is connected.



- With the motor parameters, populate the "Motor parameters" - See section 8.4.1 of the data sheet (SLVSCP6) for more details.

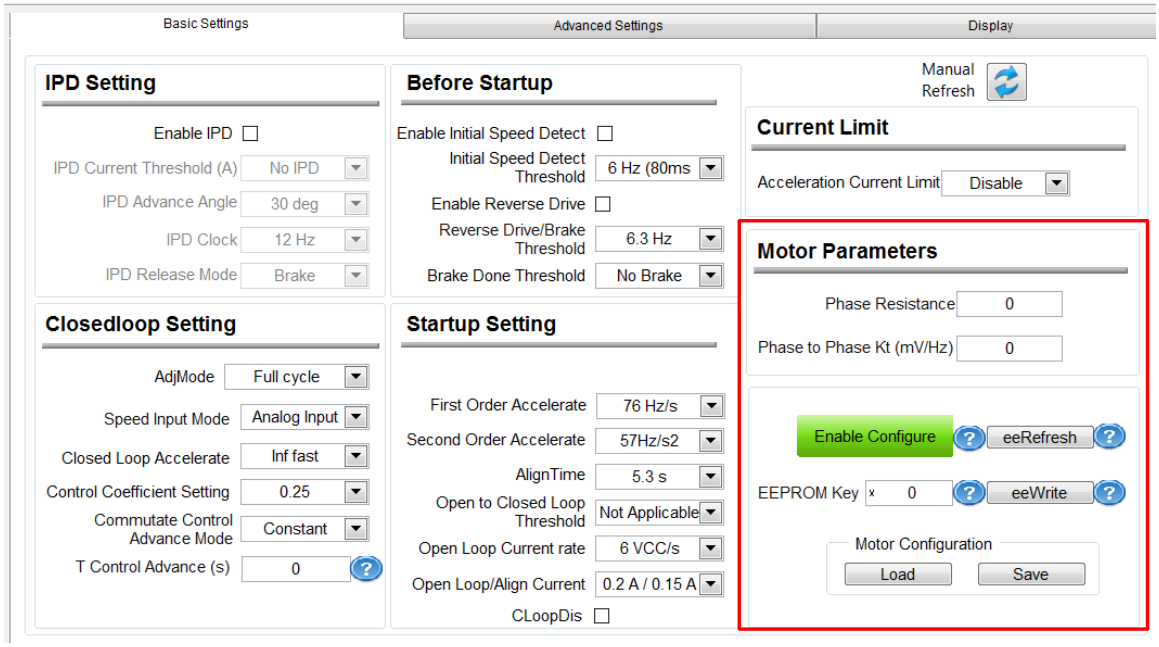


Figure 4. Motor Parameters

3 Run the Motor

Under display tab, check "OverRide" and enter the speed between 1 to 511 to spin the motor

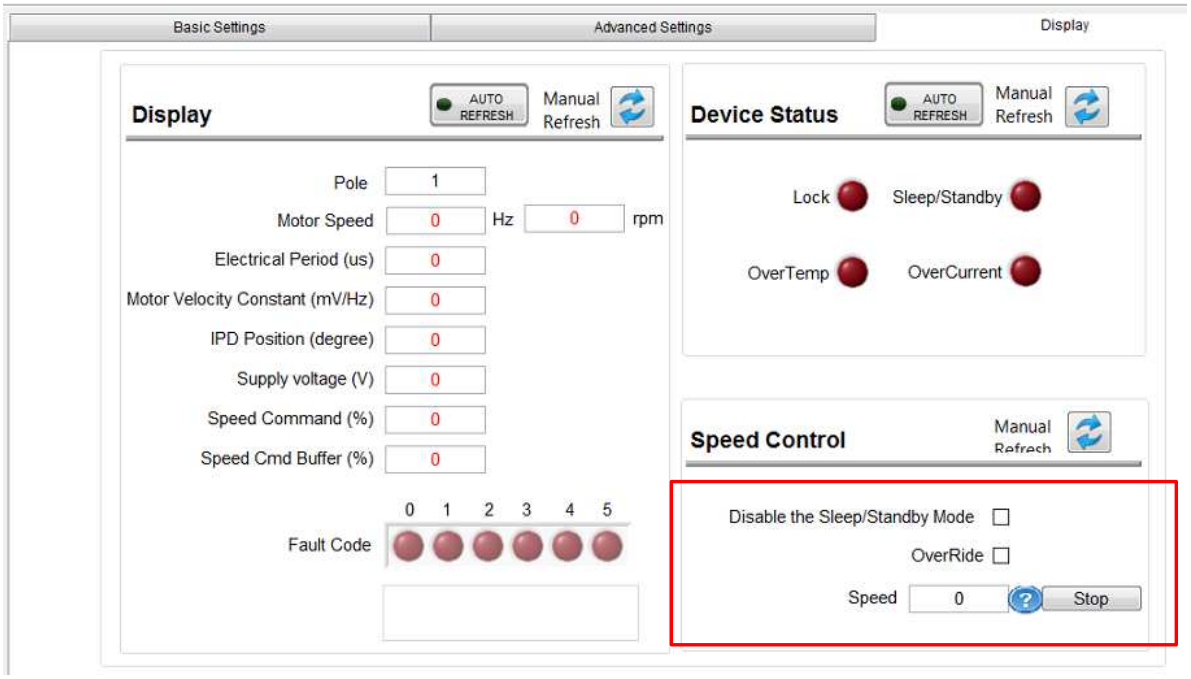


Figure 5. Display

Turn the potentiometer to control the speed of the motor.

4 Explore More information for DRV10975, DRV10983, DRV10983-Q1, or DRV10987

On www.ti.com on the DRV10975, DRV10983, DRV10983-Q1, or DRV10987 product pages these additional resources can be found.

- DRV10975, DRV10983, DRV10983-Q1, or DRV10987 EVM User Guide
  - An in depth explanation about how to use the EVM and associated GUI. Refer to this guide for questions about the EVM and GUI.
- DRV10975, DRV10983, DRV10983-Q1, or DRV10987 Tuning Guide
  - A detailed guide about finding the best parameters and settings for your specific motor. Using the GUI you can enter these parameters to verify them and see the operation of the DRV109xx with your motor.
- DRV10975, DRV10983, DRV10983-Q1, or DRV10987 Datasheets
  - A standard document describing the characteristics of the part and details of its operation.

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Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Original (October 2014) to A Revision **Page**

- Changed the document to a TI user's guide format 1
- Changed the DRV10983EVM software link in Section 1.1 3
- Changed Section 2 4
- Changed Section 3 5

Revision History

Changes from A Revision (January 2018) to B Revision **Page**

- Changed the document title added DRV10975 and DRV10987 devices 1

Revision History

Changes from B Revision (February 2018) to C Revision **Page**

- Added device DRV10983-Q1 to the document 1
- Added test to the second bulleted item in Section 1.2 3

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