

Introduction

Timing Commander allows users to connect the Timing Commander GUI to IDT Evaluation boards or their systems, using the following hardware interfaces:

- IDT “On-board” USB Interface using FTDI chip (default)
- FTDI C232HM-DDHSL-0 USB to I2C/SPI Cable Dongle
- DevaSys USB-I2C/IO 3.0 Card
- Aardvark I2C card

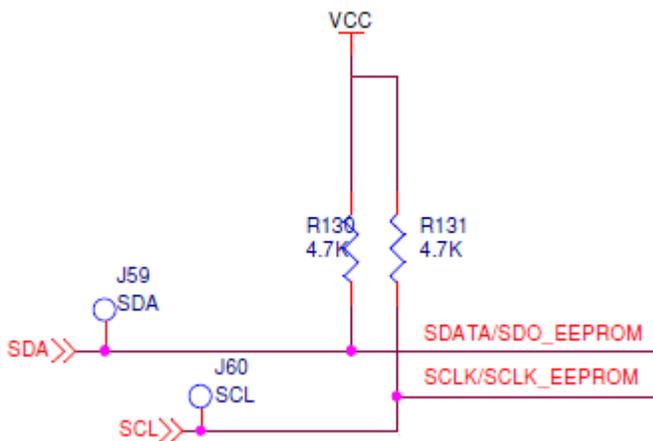
This document provides details on how to use Timing Commander and these hardware devices to configure IDT devices through I2C.

I2C Header

IDT evaluation boards provide a test-point for the SDA and SCL signals. Similarly in the PCB layout, these two test-points, plus an additional GND test-point, can be placed next to each other so that a three-pin header can be soldered into the location for a system.

The optional three-pin header can then be populated in order to connect a FTDI cable, DevaSys card, or Aardvark card.

Figure 1. SDA and SCL Signals Test Points



Optional Hardware

By default, IDT evaluation boards have an on-board FTDI I2C module. In addition, Timing Commander supports a stand-alone FTDI cable, the Aardvark I2C/SPI Host Adapter card and the DevaSys USB-I2C/IO 3.0 card.

For ordering information and drivers, please contact the distributor or manufacturer directly:

FTDI C232HM-DDHSL-0 Cable

www.digikey.com/short/pzbfwf



Aardvark I2C Card

www.totalphase.com/products/aardvark-i2cspi/



DevaSys USB-I2C/IO 3.0 Card

www.devasys.com/usbi2cio.htm



Prior to Connecting

Previous to starting Timing Commander:

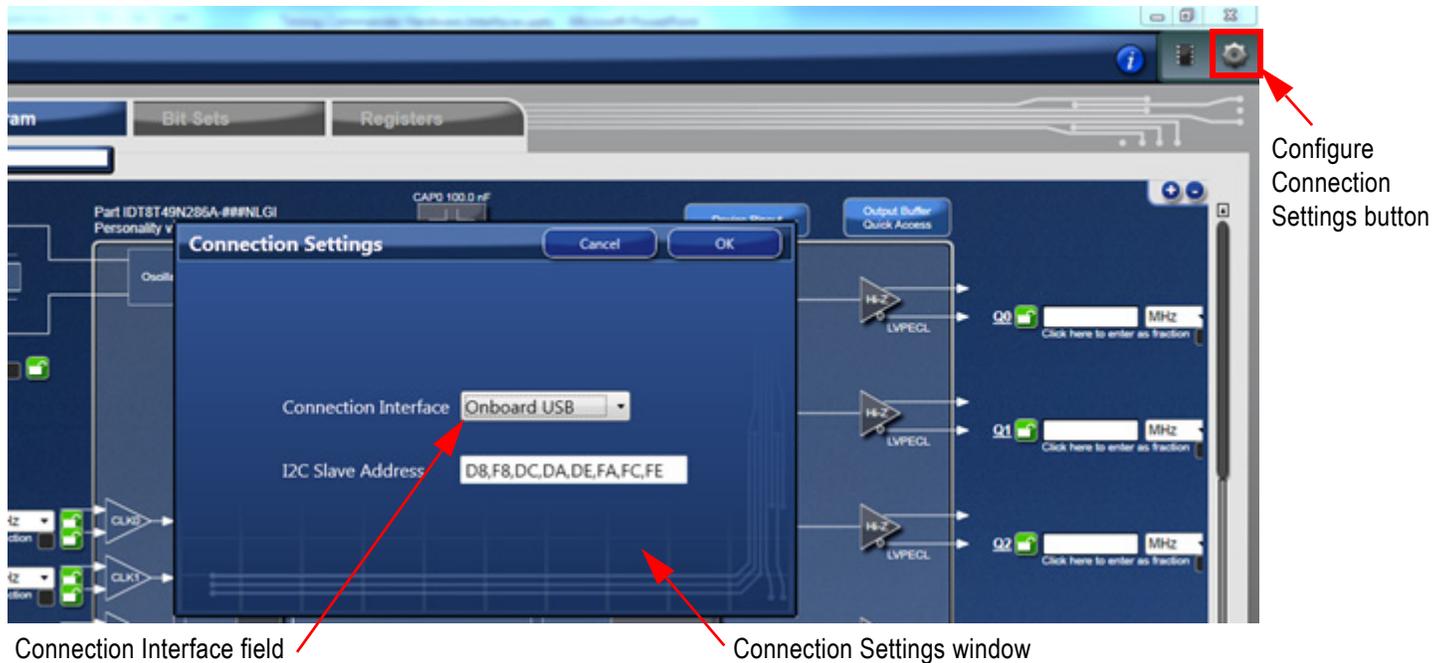
1. Install the drivers for the I2C card. (The drivers for the on-board I2C and FTDI USB dongle are automatically installed during the Timing Commander installation).
2. Connect the I2C interface card to the PC using a USB cable.
3. Connect the I2C interface card SDA/SCL/GND wires to the three-pin header.

Note: before starting Timing Commander, allow sufficient time for the USB drivers to initialize after connecting the USB cable.

Connection Configuration

1. Startup Timing Commander and load a personality. (For details, consult the “Timing Commander Installation” document.)
2. Click on the “Configure Connection Settings” button” to display the “Connection Settings” window (see [Figure 2](#)).
3. The “Connection Interface” field selects “Onboard USB” by default (see [Figure 2](#)).
 - If using the FTDI cable, keep the default setting.
 - If using an Aardvark or a DevaSys card, it will also be listed under the options. If it is not listed, then verify that the drivers are installed correctly and that the card is connected to the PC. To refresh the cards visible to Timing Commander, it may require exiting and restarting Timing Commander.

Figure 2. Connection Settings Window

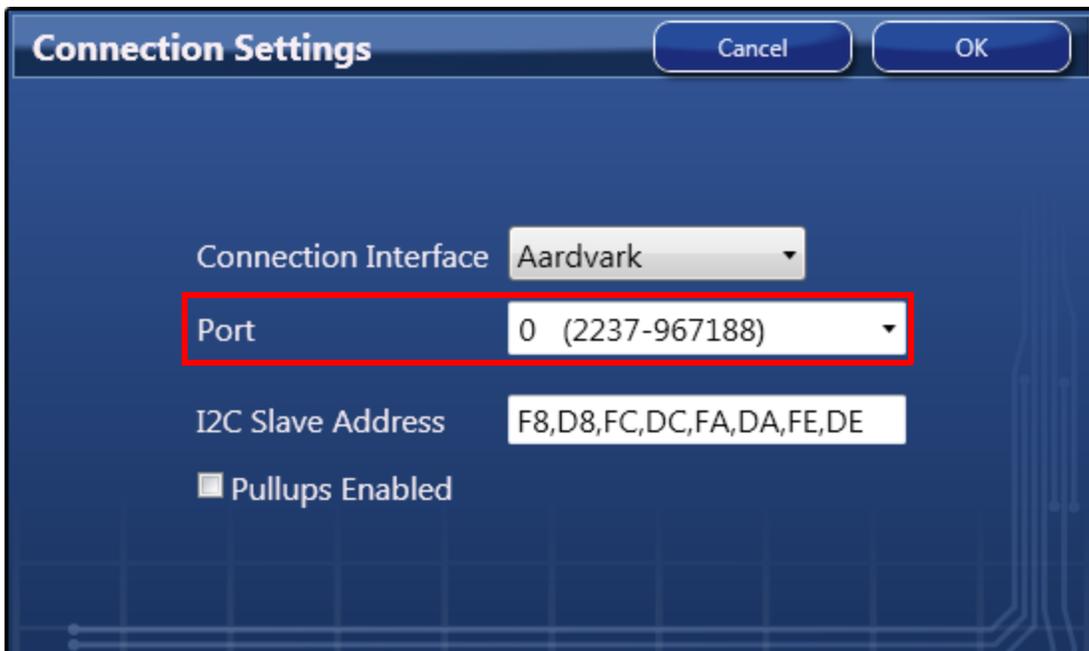


Aardvark Configuration

The Aardvark option will only appear in the Connection Settings window if the card is connected to the PC prior to the execution of Timing Commander (see Figure 3). This card supports 2.5V and 3.3V interfaces.

1. The “Port” field will automatically be populated. Use the pulldown selector to ensure that the port has been correctly selected. The default setting may be incorrect in some instances.
2. The card also provides the option to use the Aardvark’s internal pull-up resistors if they are not present in the system. If the system already has pull-up resistors, leave the “Pullups Enabled” option unchecked.

Figure 3. Connection Settings Window–Aardvark Interface Option

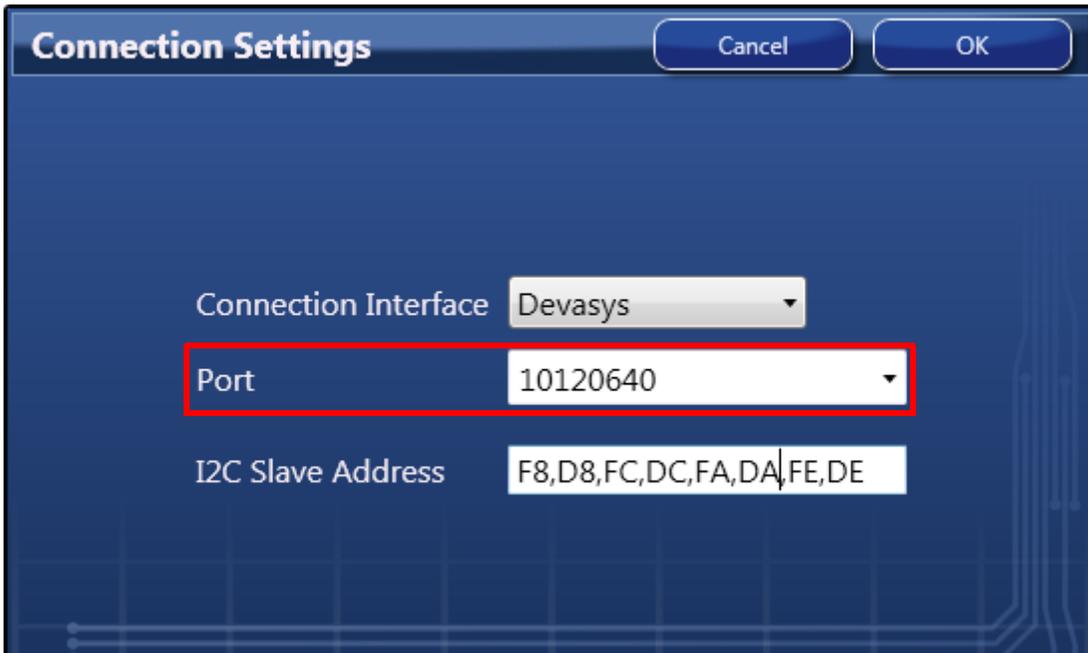


DevaSys Configuration

The DevaSys option will only appear in the Connection Settings window if the card is connected to the PC prior to the execution of Timing Commander (see Figure 3). This card supports 2.5V and 3.3V interfaces.

The "Port" field will automatically be populated. Use the pulldown selector to ensure that the port has been correctly selected. The default setting may be incorrect in some instances.

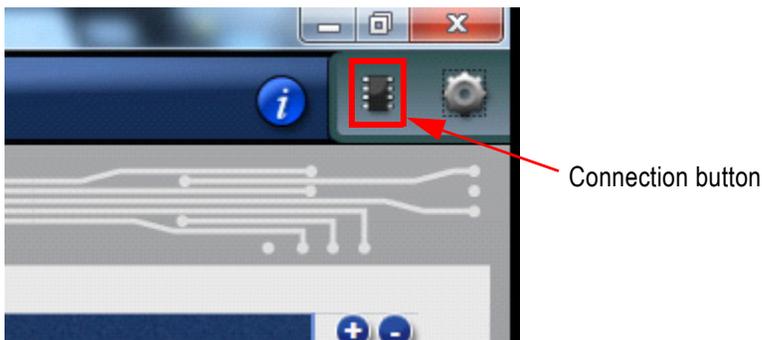
Figure 4. Connection Settings Window–DevaSys Interface Option



Connect to the Board

Once the hardware interface has been selected, click on the connection button (upper right-hand corner of the main window) to initiate a communication with the device.

Figure 5. Connection Button



Revision History

Revision Date	Description of Change
May 8, 2019	Initial release.

IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES (“RENESAS”) PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD-PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers who are designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only to develop an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third-party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising from your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Disclaimer Rev.1.01)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit www.renesas.com/contact-us/.