Description

The USB-BRIDGEV2-EVAL USB Interface adapter board provides quick access to the I2C and other features of various IDT devices.

The tool is designed to allow PC based graphical user interface access via I2C interface, general purpose I/Os, analog input as well as IDT's proprietary OTP (One Time Programmable) Memory interface.

The board supports an I2C voltage level adjustment to the target system and an onboard 1.8V regulator for 1.8V slave-I2C operation in addition to the 5V USB derived operation.

The board allows easy access via the USB micro AB connector and included PC driver Software Package.

Features

- Simple USB to I2C interface for IDT evaluation kits
- Additional Digital and Analog I/O option
- IDT Test Interface bridge for supported IDT devices
- Fully assembled
- Micro USB connector with cable included
- Firmware update option
- LED status indicators

Kit Contents

- USB-BRIDGEV2-EVAL evaluation board
- USB A to micro-USB AB cable
- USB-BRIDGEV2-EVAL user manual
- Download the PC driver for Windows from IDT.com

Figure 1. USB-BRIDGEV2-EVAL Evaluation Board – top view

RENESAS
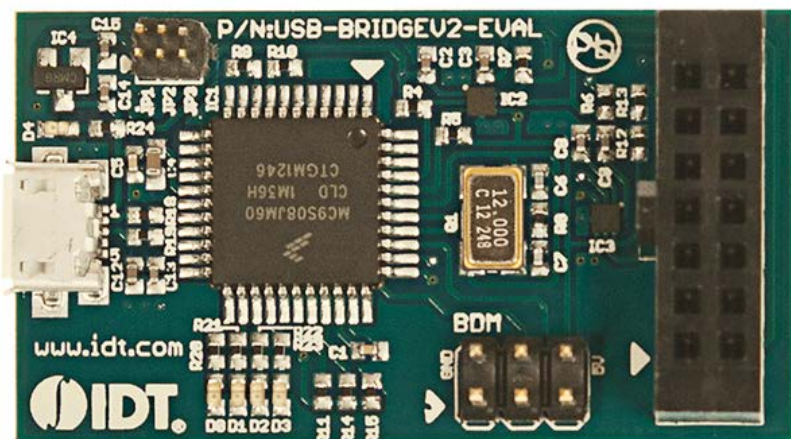
Important Notes

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    (i)   delivered hardware or software

    (ii)   non-observance of instructions contained in this manual and in any other documentation provided to user, or

    (iii) misuse, abuse, use under abnormal conditions, or alteration by anyone other than IDT.

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Restrictions in Use

IDT's USB-BRIDGEV2-EVAL, consisting of the USB-BRIDGEV2-EVAL and USB-BRIDGEV2-EVAL USB Driver, is designed to communicate with and control I2C-enabled boards and devices only.

⚠ **!** **Important Safety Warning:** These procedures can result in high currents, which can cause severe injury or death and/or equipment damage. Only trained professional staff should connect external equipment and operate the software.

⚠ **!** **Important Equipment Warning:** Ensure the correct connection of all cables. Supplying the board using the wrong polarity could result in damage to the board and/or the equipment. Check that all jumpers have been removed from the board before applying power.

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1. Windows Driver Installation for Windows XP to Win7

The first time the USB-BRIDGEV2-EVAL is used, the Windows Drivers must be installed.

The installation of the Windows USB to I2C interface on a Windows (XP to Win7) 32-bit or 64-bit system is shown by the following steps:

1. Connect the USB-BRIDGEV2-EVAL without any target evaluation system connected to your PC via the USB cable included.

2. Choose Update in the Device Manager or follow the instructions for a new device found after first connect of the interface.
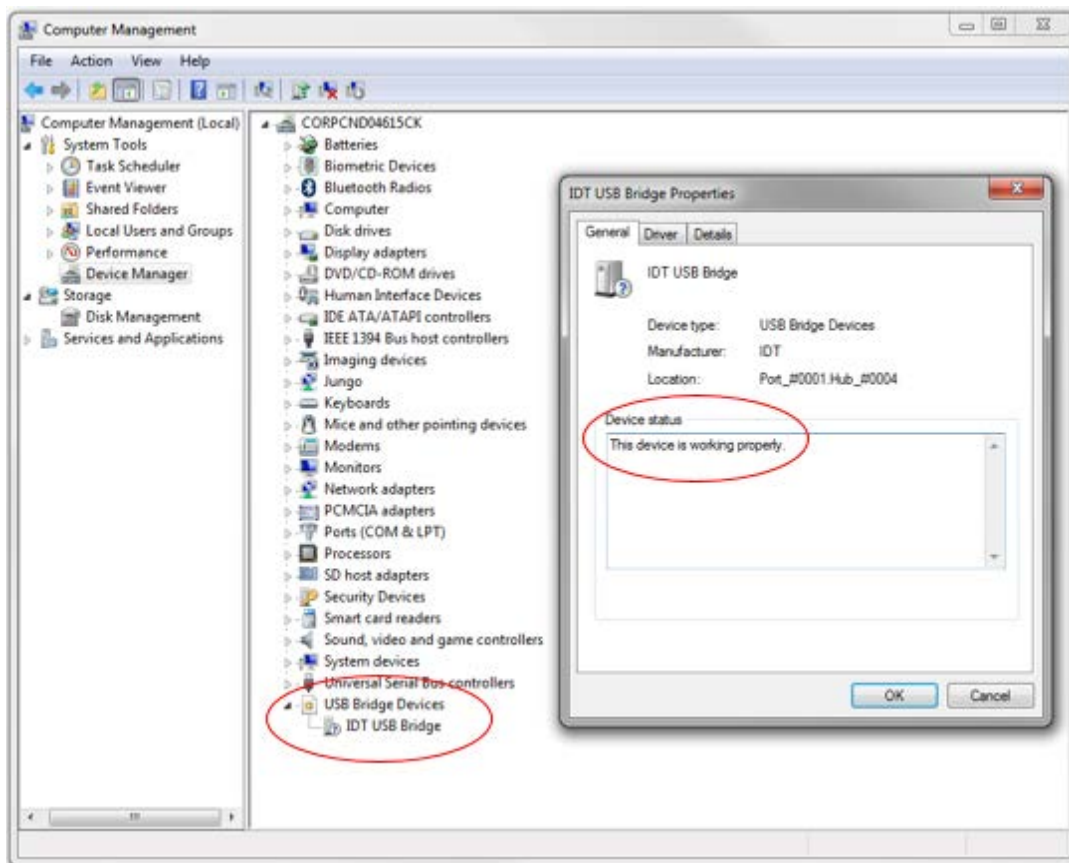

3. Browse manually for the driver location:

4. Choose "Have Disk" and select the "idt_usb_bridge.inf" from the <u>uncompressed</u> driver folder.

5. Accept the Warning (IDT is currently certifying the driver with Microsoft™ to bypass the warning):


6. Verification of successful driver installation:

2. Windows Driver Installation for Windows 8

The first time the USB-BRIDGEV2-EVAL is used, the Windows Drivers must be installed.

The installation of the Windows USB-to I²C-interface on a Windows 8 system is shown by the following steps. Additional reference is available at How to install a driver that does not contain digital signature information in Windows 8?

1. Connect the USB-BRIDGEV2-EVAL without any target evaluation system connected to your PC via the USB cable included. The computer will report an error message that the driver is not digitally-signed.
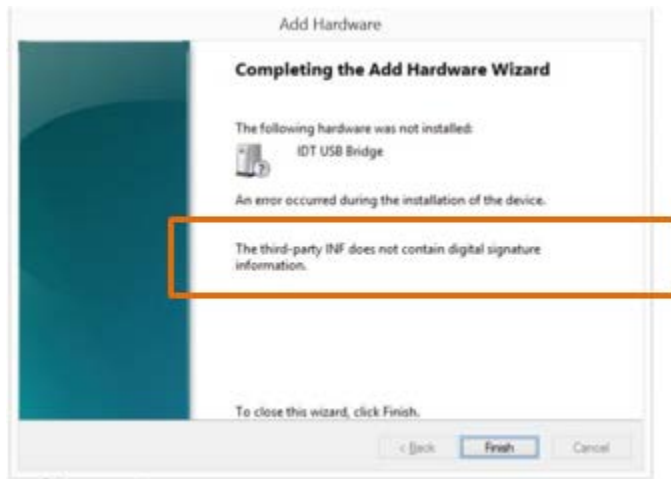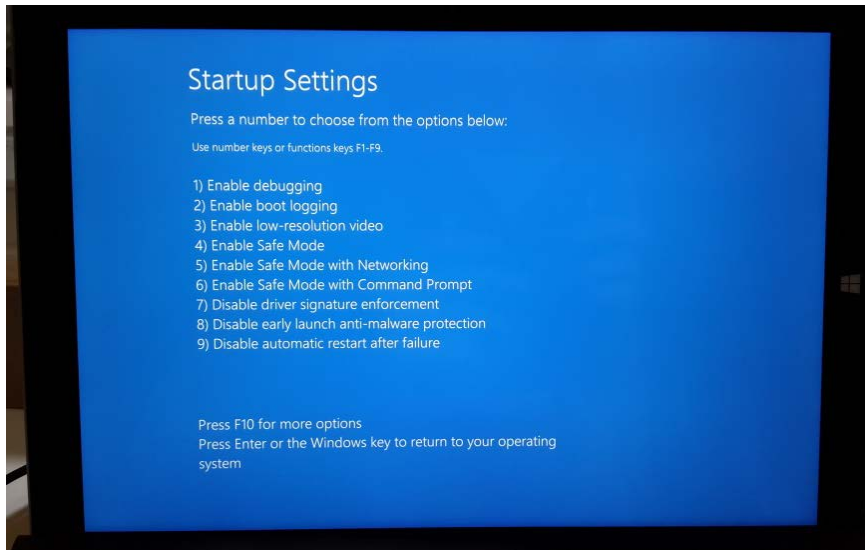

2. Hold the Shift key while choosing to restart the computer.
3. Windows will show options below. Select Troubleshoot, Advanced options, Startup Settings, Restart.
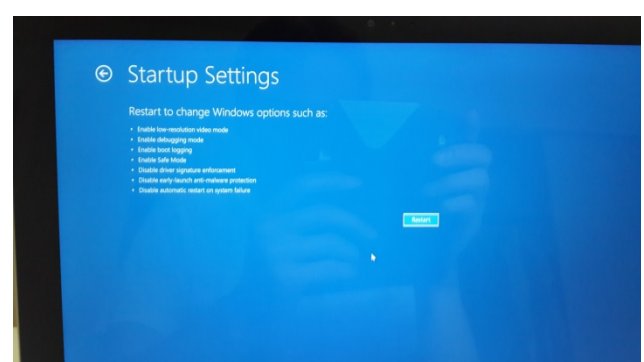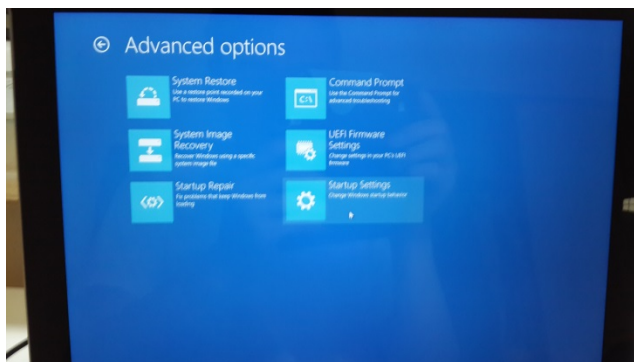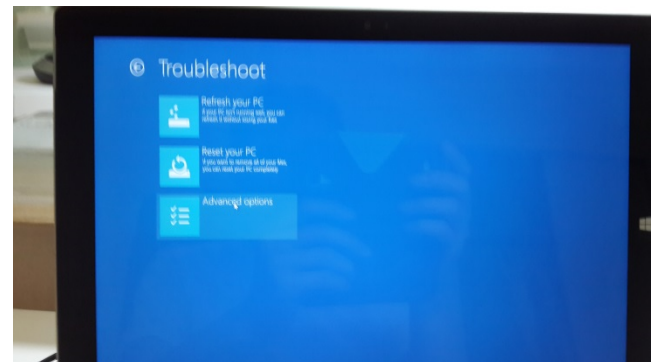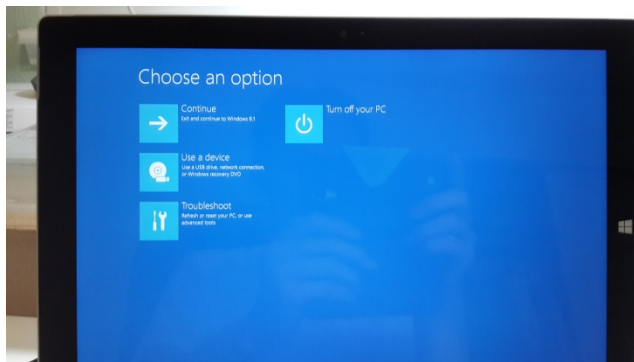
4. After the computer restarts, select option *7) Disable driver signature enforcement.*

5. When Windows restarts, reconnect the USB-BRIDGEV2-EVAL without any target evaluation system connected to your PC via the USB cable included. The computer will report that driver is not successfully installed. Use Device Manager to update the driver.

   a. Choose Update in the Device Manager or follow the instructions for a new device found after first connecting the interface.


   b. Browse manually for the driver location:

c. Choose "Have Disk" and select the "idt_usb_bridge.inf" from the **uncompressed** driver folder.

d. The computer will alert that "Windows can't verify the publisher of this driver software". Choose "Install this driver software anyway" to accept the Warning (IDT is currently certifying the driver with Microsoft™ to bypass the warning):
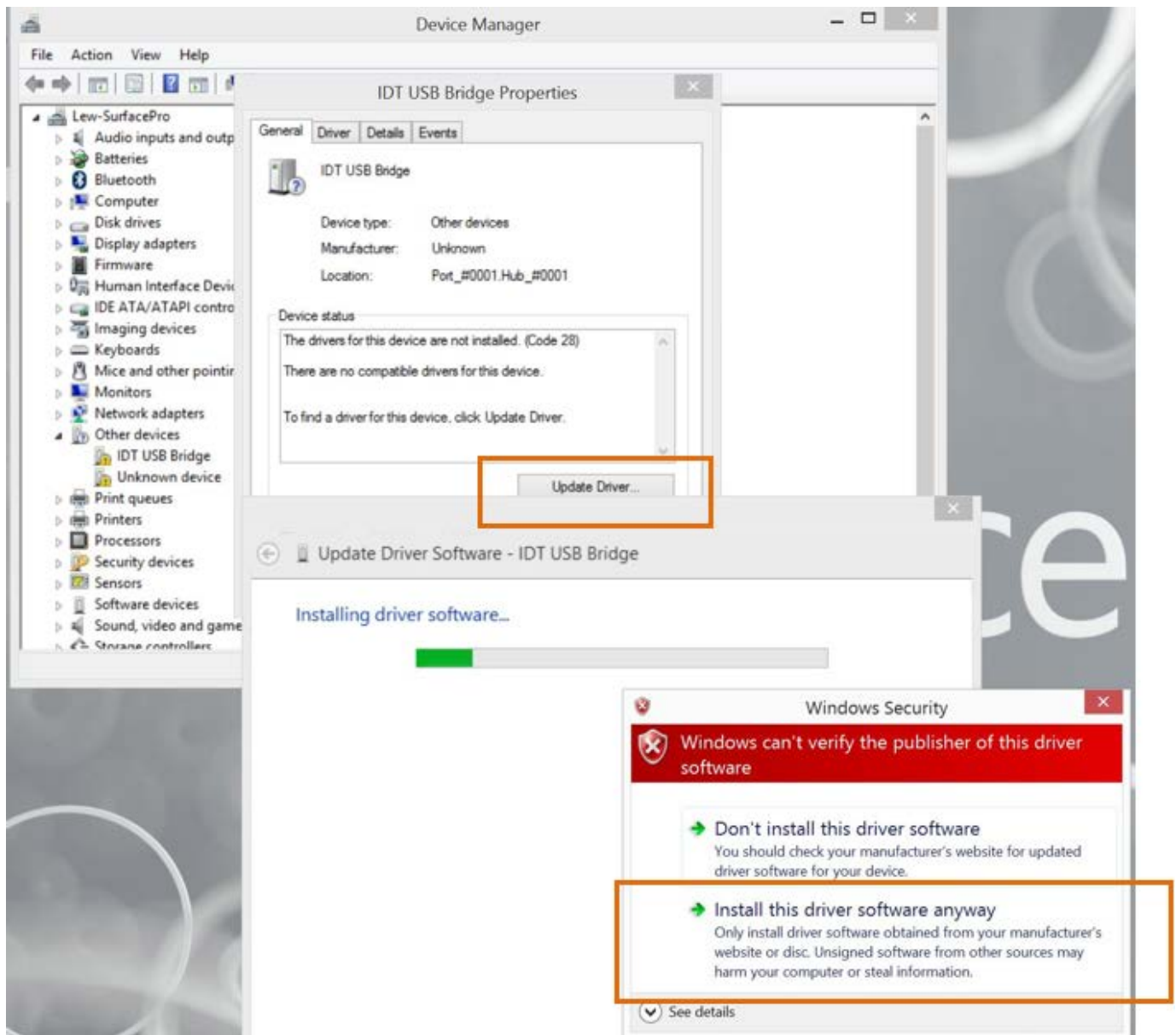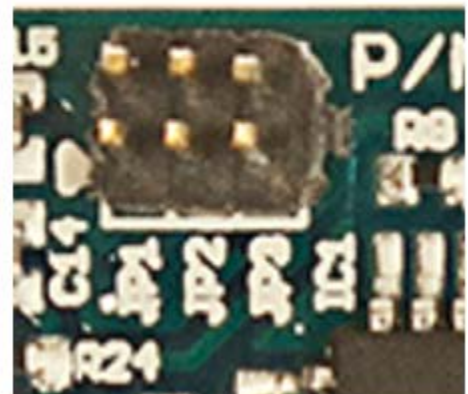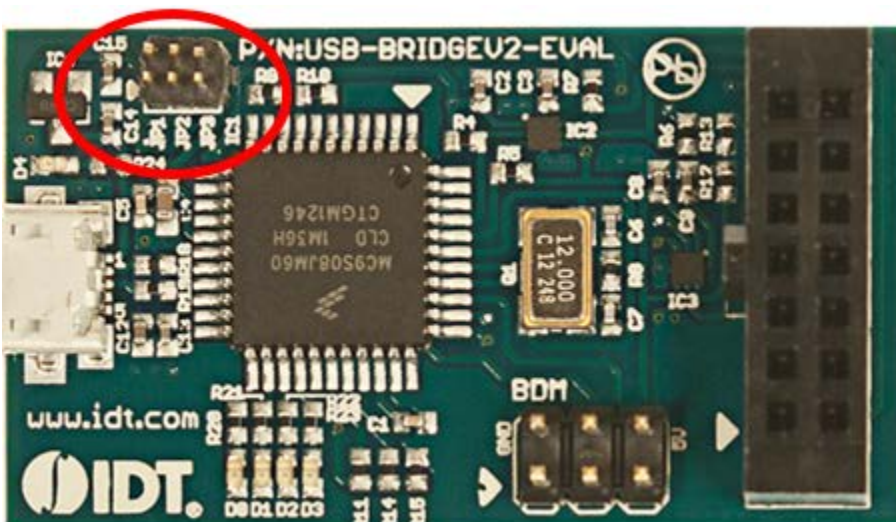
e. Verification of successful driver installation. Once the driver is installed, running IDTP91xx-PMIC-GUI should show that the device is connected.
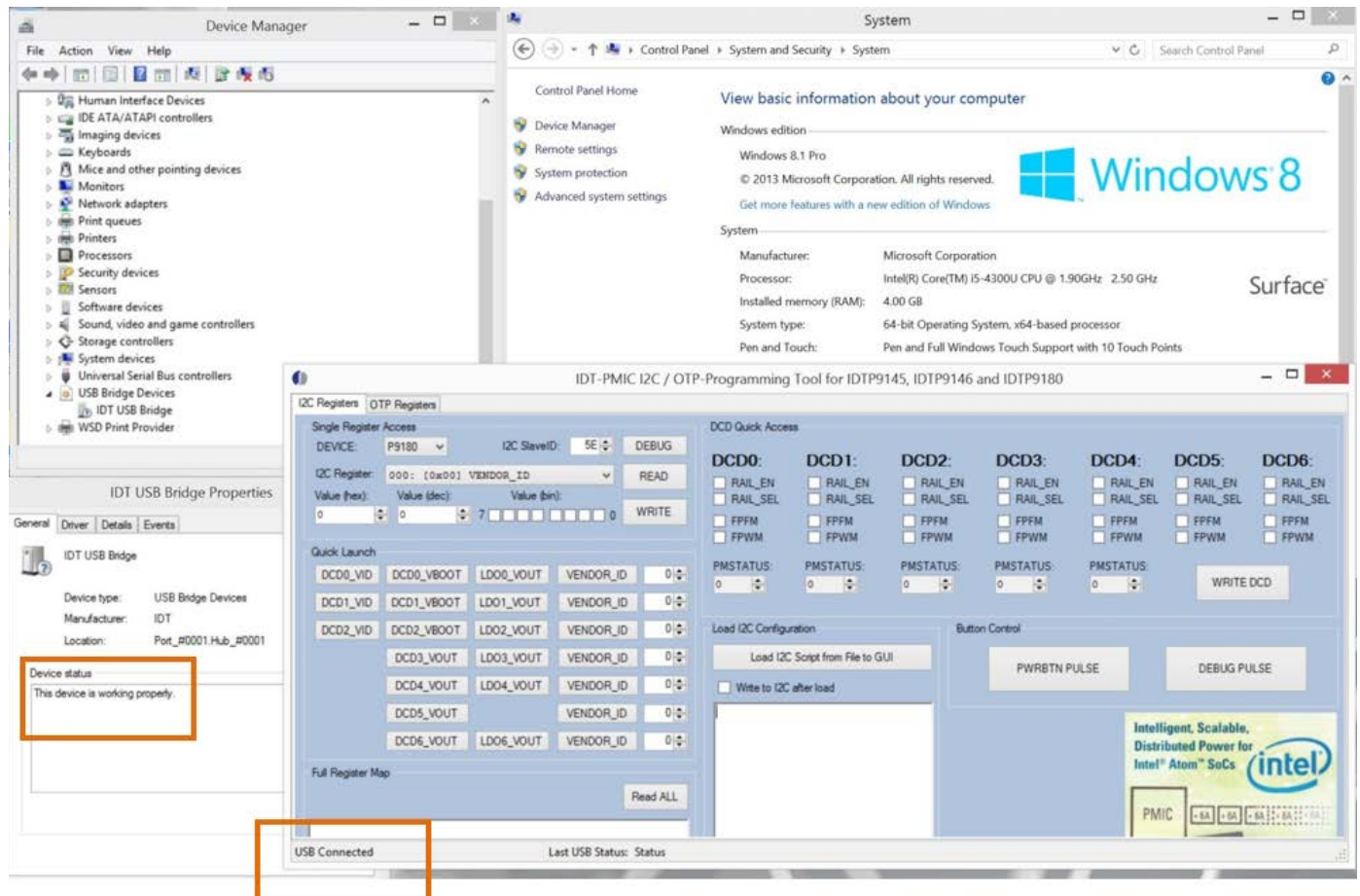

3. Device Configuration

Figure 2. Board Configuration

The USB-BRIDGEV2-EVAL has to be configured for the target system used. The detailed requirement for the target system can be found in the respective manual.

The configuration will adjust the voltage level of the 2 on board level shifters (including pull-up resistors) to the required target system level using JP1, 2 and 3 highlighted in the figure above and below.

Figure 3.   System Overview
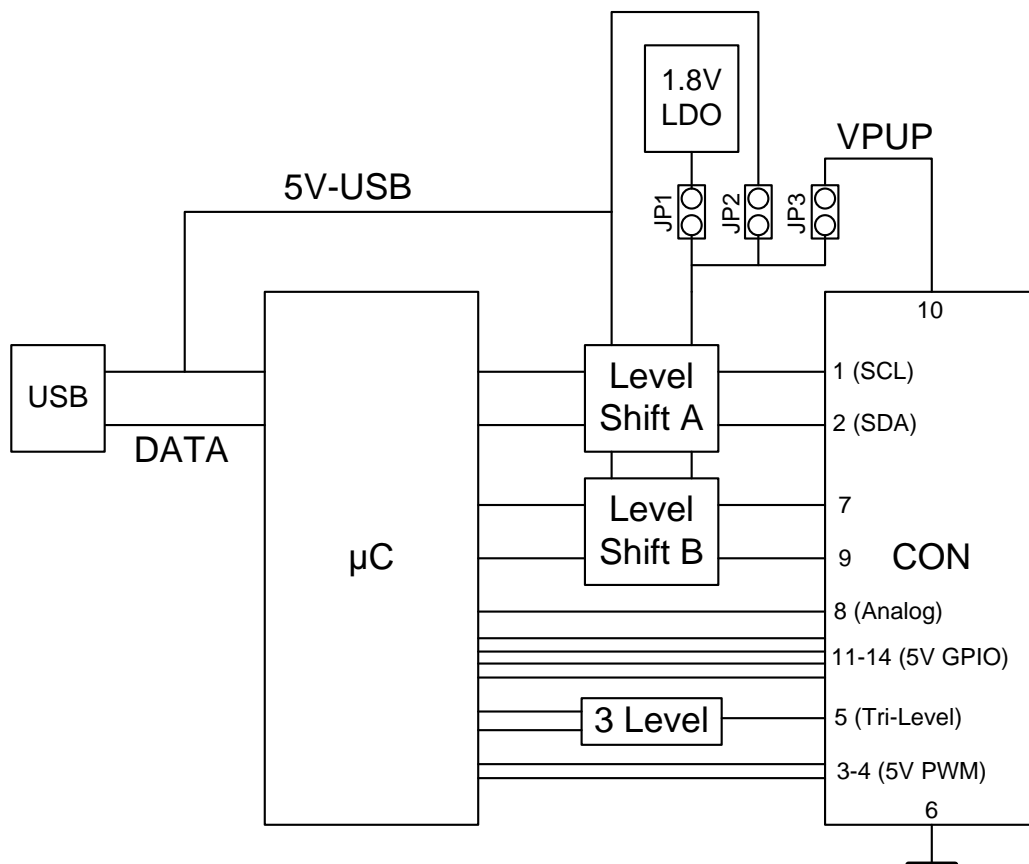
- Option 1 (JP1 shorted, JP2, 3 open) will provide a 1.8V (on board LDO) voltage level for the I2C interface and CON-7, 8 pins.
- Option 2 (JP2 shorted, JP1, 3 open) will provide the USB 5V voltage level for the I2C interface and CON-7, 8 pins.
- Option 3 (JP3 shorted, JP1, 2 open) will provide the VPUP voltage level for the I2C interface and CON-7, 8 pins. VPUP is provided through the CON interface connector and allows the target system to supply the desired voltage level.
- Option 1 and 2 can be combined with JP3 shorted to provide the 1.8V or 5V to the target system.

WARNING: Never short JP1 and JP2 the same time or provide a voltage through VPUP with JP1 and JP2 shorted.

4. Schematic

Figure 4. Evaluation Board Schematic

5. Ordering Information

Orderable Part Number	Ambient Temperature Range	Shipping Carrier	Quantity
USB-BRIDGEV2-EVAL	0°C to +85°C	Box 14″ × 10″ × 2″	1

6. Revision History

Revision Date	Description of Change
September 14, 2018	Updated document to latest template.
August 3, 2015	Released Version 2.0.
April 24, 2013	Initial release, Version 1.0.

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