USB-SERIAL DEVELOPMENT KIT

Kit based on USB-Serial bridge - CY7C65211

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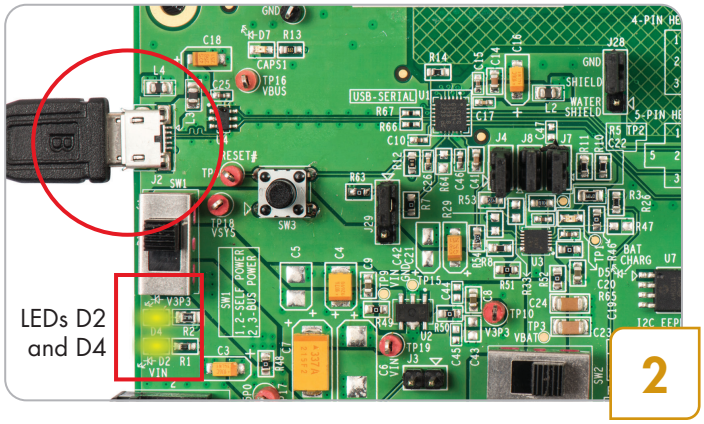
Step 1: Software Installation

- Download and unzip the ISO file from www.cypress.com/go/CYUSBS234
- Run cyautorun.exe and follow the steps in the installer window
- Install Tera Term from the following location: <Install directory>/Cypress/CYUSBS234 DVK/ 1.0/teraterm



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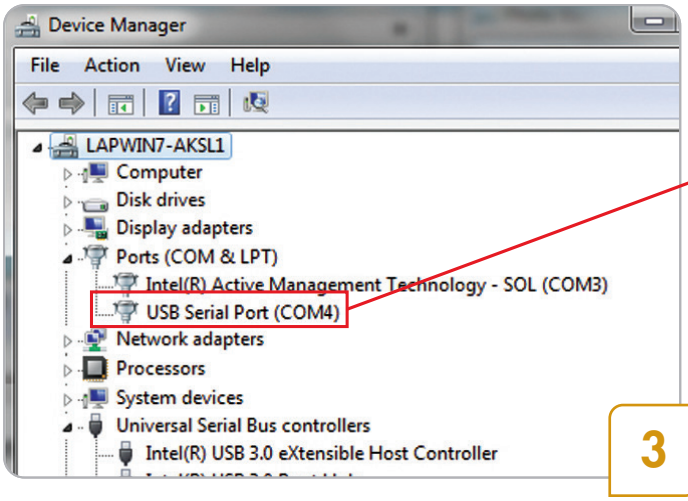
Step 2: Powering the Board*

- Connect the board to the PC using the USB cable
- LEDs D2 and D4 glow to indicate that the board is powered



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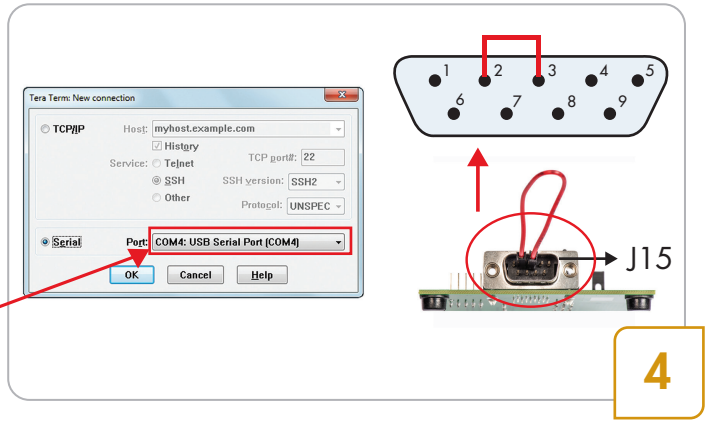
Step 3: Enumeration

- The device appears as a **USB Serial Port (COM#)** in the Device Manager. (To launch the Device Manager in Windows 7, click **Start** and type Device Manager in 'Search programs and files' box)



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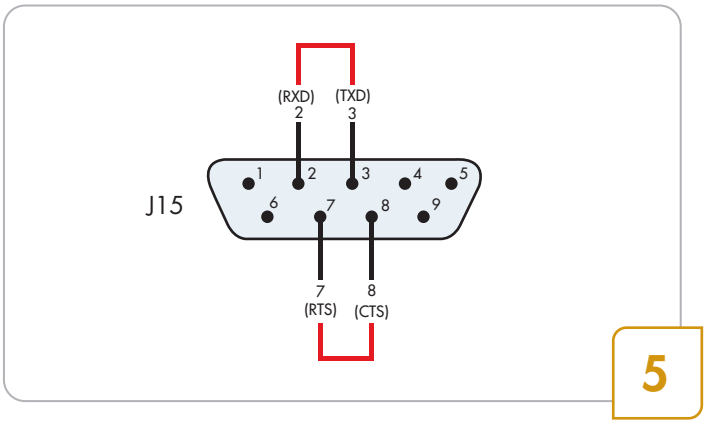
Step 4: Testing Basic UART Functionality

- Connect J15.3 (TXD) to J15.2 (RXD) with the provided jumper wire as shown above
- Run Tera Term (**Start > All Programs > Tera Term**)
- Click **Serial** and select **Port (COM#)** in the 'Tera Term: New Connection' window, and then click **OK**
- Enable local echo option (go to **Setup > Terminal** and check the local echo box)
- Type 'HELLO WORLD'. The text appears on the same terminal and each character appears twice - 'HHEELLLLOO WWOORRLLDD'

Note: * Connect the board to the PC only after software installation. For the latest software updates on Windows, Linux, MAC, and Android, visit www.cypress.com/go/usbserial



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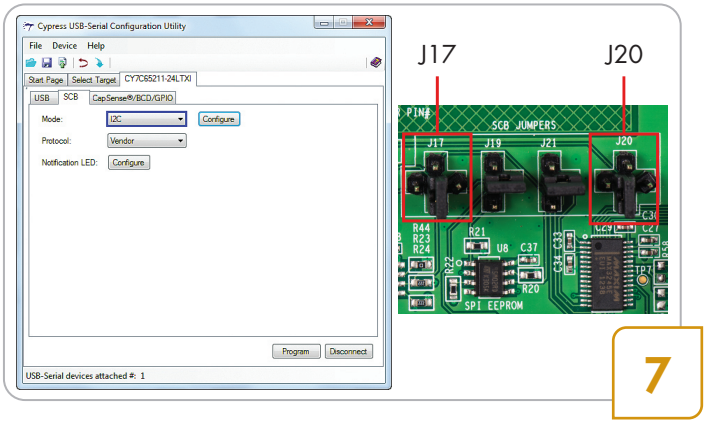
Step 5: 10-MB File Transfer at 1 Mbps, with no Data Loss

- Connect J15.3 (TXD) to J15.2 (RXD) and J15.7 (RTS) to J15.8 (CTS), with the provided jumper wires
- Go to **Setup > Serial Port** in the Tera Term window, and enter 1000000 in the baud rate box. Select **Hardware** in the **Flow control** drop-down menu; go to **Setup > Terminal > Receive** and select **CR+LF**. Click **OK**
- Enable file capture: go to **File > Log**; uncheck **Append** and select <file name> to save the received data
- Go to **File > Send File** and select the Test.txt file from <Install directory>\Cypress\CYUSBS234 DVK\1.0
- The 'Tera Term: Send file' window shows effective data throughput; multiply by 2X to get uni-directional throughput
- Compare Test.txt and received file, using any file compare utility to verify data integrity



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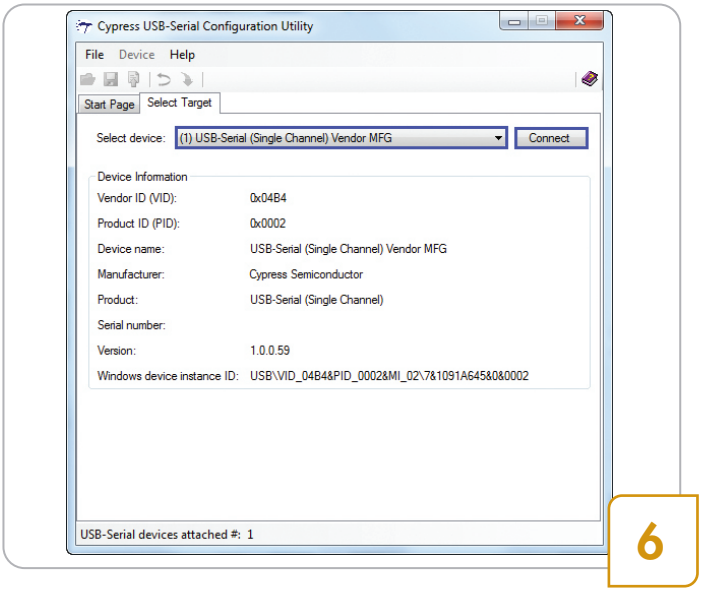
Step 7: USB–I2C Bridge Configuration

- Click the **SCB** tab. Select **I2C** from the drop-down menu and click the **Program** button. The 'Program succeeded' message appears. Click **OK** to continue
- Click the **Disconnect** button to disconnect the board from the configuration utility
- Press the reset switch, SW3 (refer to the figure in step 13). The board enumerates as an I2C bridge
- Set jumpers J17 and J20 as shown in the figure above to connect I2C EEPROM to the CY7C65211 device



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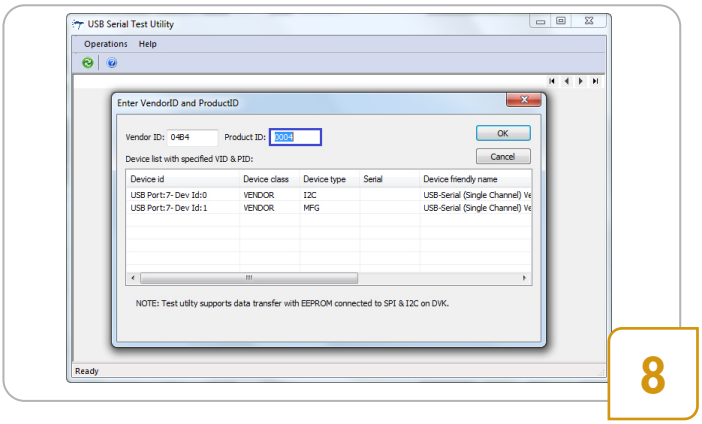
Step 6: Device Connection to Configuration Utility

- Run the configuration utility from **Start > All Programs > Cypress > CYUSBS234 DVK > USB Serial Configuration Utility**
- Click the **Select Target** tab. Select the device **USB-Serial (Single Channel) Vendor MFG** from the drop down menu and click **Connect**



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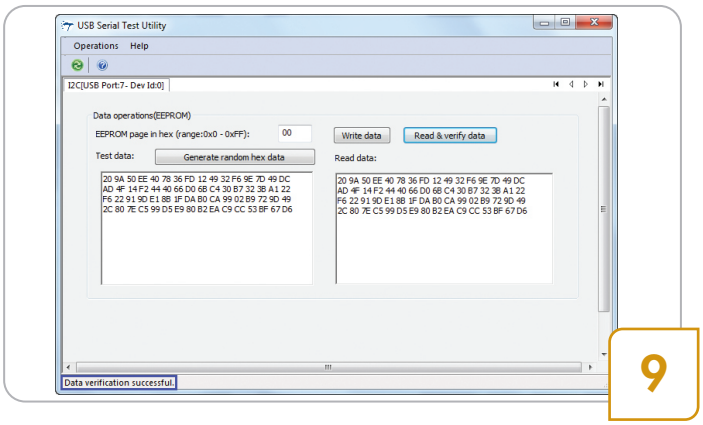
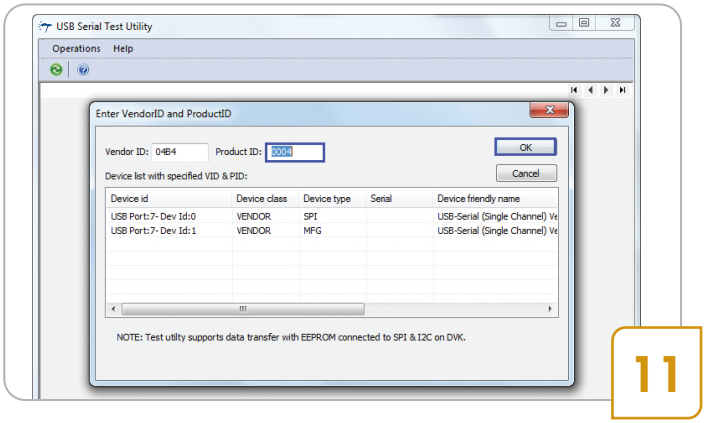
Step 8: USB–I2C Test Utility

- Run the USB Serial Test Utility from **Start > All Programs > Cypress > CYUSBS234 DVK > USBSerialTestUtility**
- Change the Product ID to 0004 to match the default Cypress PID. The test utility lists the I2C interface on the board. Click **OK** to continue



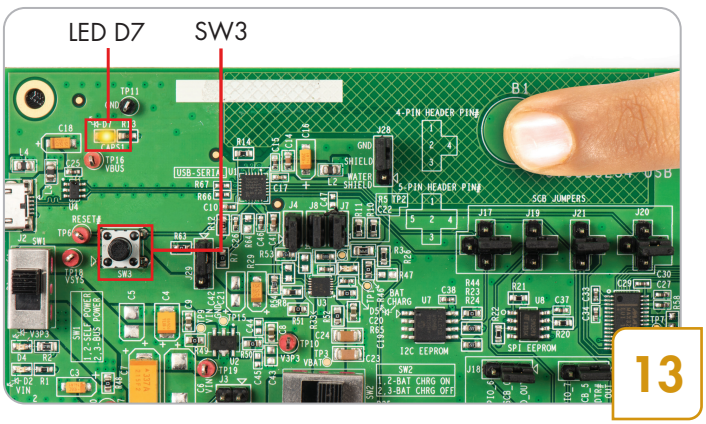
Step 9: USB–I2C Bridge Testing

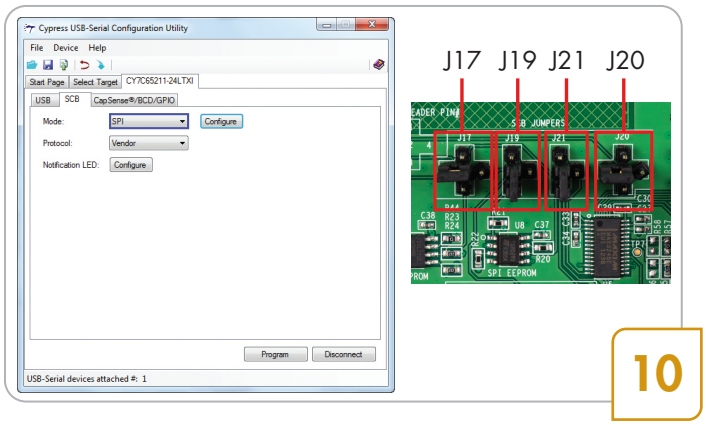
- Click the **Write data** button. Data gets written at the default EEPROM page address
- Click the **Read & verify data** button. When the received and transmitted data is identical, the 'Data verification successful' message appears at the bottom of the window. The test proves successful data transfer with the I2C interface



Step 11: USB–SPI Test Utility

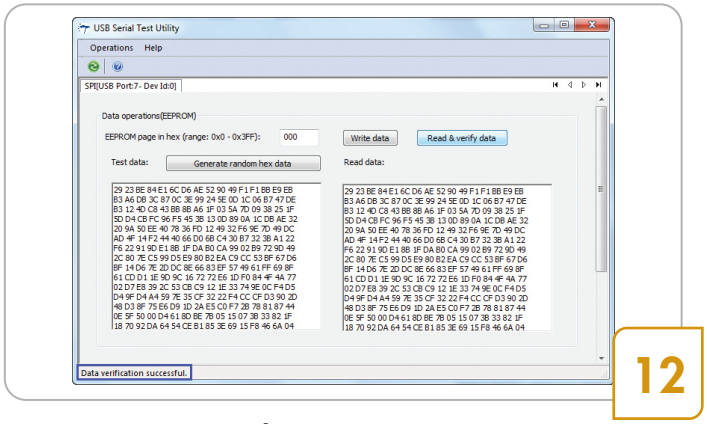
- Run the USB Serial Test Utility from **Start > All Programs > Cypress > CYUSBS234 DVK > USBSerialTestUtility**
- Change the Product ID to 0004 to match the default Cypress PID. The test utility lists the SPI interface available on the board. Click **OK** to continue





Step 10: USB–SPI Bridge Configuration

- Repeat step 6
- Click the **SCB** tab. Select **SPI** from the drop-down menu and click the **Program** button. The 'Program succeeded' message appears. Click **OK** to continue
- Click the **Disconnect** button. Press the reset switch, SW3 (refer to the figure in step 13). The board enumerates as an SPI bridge
- Set jumpers J17, J19, J20, and J21 as shown above



Step 12: USB–SPI Bridge Testing

- Click the **Write data** button. Data gets written at the default EEPROM page address
- Click the **Read & verify data** button. When the received and transmitted data is identical, the 'Data verification successful' message appears. The test proves successful data transfer with the SPI interface

Step 13: CapSense Button

- Touch the CapSense® button B1, as shown in the figure. The D7 LED glows to indicate that the button is sensed
- Remove the finger from the B1 CapSense button and the LED turns OFF to indicate that the button is released

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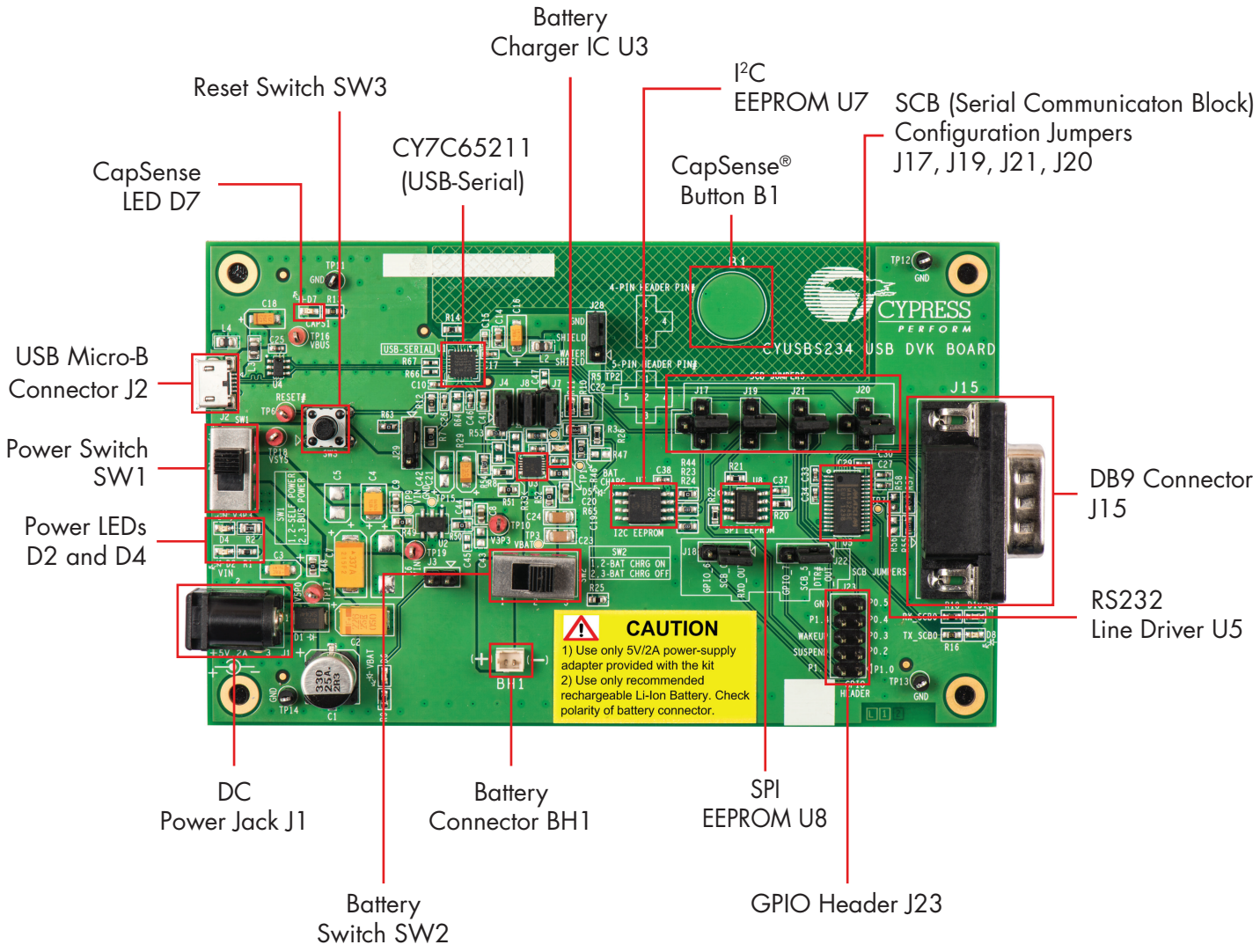

Note: By default, the SCB configuration jumpers are set for the USB-UART bridge as shown above. Refer to the Table 3-1 in the kit guide for additional information on default jumper settings.

Kit operation: The CY7C65211, USB-Serial bridge controller can be configured as an USB-UART bridge, an USB-I2C bridge, or an USB-SPI bridge. As an USB-UART bridge, data is transmitted from USB to UART (TXD). TXD-RXD loop back connection enables the data to be fed back to the UART (RXD) to USB and is displayed on the Tera Term window. The CY7C65211 controller also supports battery charger detection and configurable CapSense functionality, providing best-in-class signal-to-noise ratio (SNR) and water-tolerance

For the latest information about this kit and to download kit software and hardware files, visit www.cypress.com/CYUSBS234

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