Blackhawk USB560v2 System Trace Emulator

Installation Guide

USB560v2-IG-01
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Blackhawk
by EWA Technologies, Inc.
TM

Blackhawk USB560v2 System Trace Emulator

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IMPORTANT IMFORMATION

EWA Technologies Document: **USB560v2-IG-01**

Warranty – this manual

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About This Manual

This document represents the Installation Guide for the Blackhawk© USB560v2 System Trace Emulator product (BH560v2). The BH560v2 is a device that attaches to a personal computer or laptop to allow hardware engineers and software programmers to develop applications with DSP's via their computer's USB or Ethernet interfaces.

This guide contains some text paragraphs that are very important for proper device functioning and for preventing the BH560v2 device and target board from being damaged. These paragraphs are shaded as in the following example. Please read each of these areas of text carefully.

Related Documents

1. Texas Instruments CCSv4 Wiki Page (tiexpressdsp Wiki - Updated: daily)
2. To get the latest documentation from TI, click: Get the latest DSP manuals from TI.

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1 BH560v2 Overview

This section contains a brief overview of the features available in the Blackhawk USB560v2 System Trace Emulators (BH560v2). Except where noted, information in this document applies to both Windows and Linux operating systems.

This installation guide describes the fundamentals of the BH560v2 and how to use it with your host machine and interface it to a target system.

The BH560v2 emulator target interface and connector are designed to be backwards compatible with the XDS510 and XDS560-class emulators.

1.1 BH560v2 Standard Features

The following are standard features of the BH560v2.

Table 1. BH560v2 Standard Features

Development Environment and Operating Systems	Compatible with CCS v4.2 and later Windows XP/Vista/7 & 2003 Server (32 and 64-bit editions) Linux[1]
Debug Interfaces (Blackhawk Enhanced Feature)	Supports IEEE 1149.1 (JTAG) Supports IEEE 1149.7[2] System Trace Support • Mobile Industry Processor Interface (MIPI) • System Trace Protocol (STP) • 1-4 pin System Trace • 128 MByte System Trace Buffer **Bh560v2Config** - Comprehensive Graphical Configuration and Diagnostic Tool
TI Embedded Processor Support	C2000, C5000, C6000, ARM, ARM Cortex, Sitara, OMAP, DaVinci, TMS470, TMS570, Stellaris and more Compatible with CTools enabled devices
Target Physical Connections	60-pin MIPI 20-pin ARM Multi-ICE (via pin converter) 14-pin TI (via pin converter) 20-pin cTI (via pin converter)
Target Cable	High-Speed Data Coax Ribbon Cable (8.0 inches) with Native 60-pin MIPI HSPT target connection
Target Electrical and Signal Interface	Auto-sensing target voltage range from 1.2 to 4.1 volts Auto-Adaptive Tesk Clock (TCK) up to 50 MHz 100MHz Export Clock compliant to MIPI STP ESD Protection on target and host connections Detection of target power loss and cable disconnects

[1] Linux Support requires CCS v5 and later
[2] IEEE Standard for Reduced-pin and Enhanced-functionality Test Access Port and Boundary Scan Architecture

	Auto -compensating calibration for edge jitter, channel skew and duty cycle Adaptive receiver for setup/hold times (up to 1.5ns)
Indicators	USB LED (bi-color red / green) MODE LED (red / green)
Host Interfaces	High-Speed USB 2.0 (480Mb/s)
Power Options	USB Cable (bus-powered)

2 Hardware

This section contains the hardware specifications for the BH560v2 pod, including external attachments and indicators.

2.1 Important Environmental Considerations

This equipment is designed to be operated under the following environmental conditions:

Temperature between 0°C –55°C. Relative Humidity of 20% - 70% non-condensing.

Operation of the unit outside of the above range may affect structural and mechanical integrity and cause permanent damage.

Caution is necessary to minimize ESD (Electro-static Discharge) which can damage electronic components. Use in a controlled environment where ESD materials and practices are employed is highly recommended

2.1.1 Other Hardware Requirments

Target Board System - a self- powered board with a TI DSP and compatible JTAG header connection conforming to IEEE 1149.1 Standard.

Copy of Code Composer Studio Version 4.2 or later

2.2 BH560v2 Pod

The following section contains figures that describe the BH560v2 pod, its connectors and indicators. Figure 1 below shows the BH560v2 with its target cable.

Figure 1 - BH560v2 Pod and Target Cable

Figure 2 below shows the BH560v2 JTAG cable end panel, and Figure 3 below shows the BH560v2 USB host connection on its host-side end panel.

This panel also includes two (2) bi-color LED indicators for status and activity, which are described in Table 2.

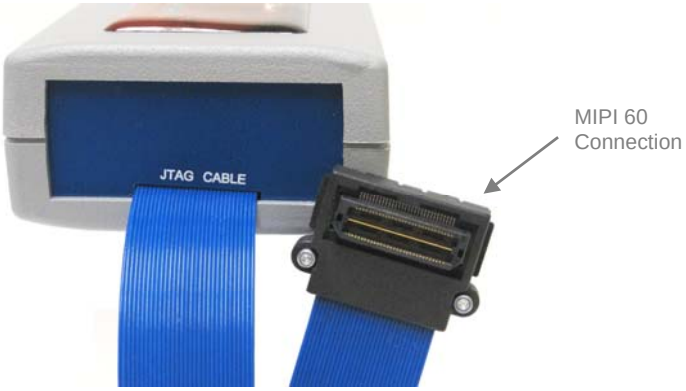

Figure 2 - BH560v2 JTAG Cable End Panel

Figure 3 - BH560v2 Host Side End Panel

2.2.1 LED Indicators

The BH560v2 has eight (8) status and activity LEDs that can provide information during power up, operation, and configuration. These LEDs are described below in Table 2. You can see the LEDs and their respective labels in Figure 3.

Table 2. BH560v2 LED Information

LED	COLOR	Description
USB	Green	Unit is powered and has enumerated
USB	Red	Unit has power (powering up)
USB		LED will blink during USB activity
MODE	Green	Steady Green indicates unit has completed boot cycle and is ready. Blinking Green means unit is booting up (boot time is ~20 seconds)
MODE	Red	Blinking Red indicates that unit is booting into Safe Mode

2.3 LED Modes of Operation

The BH560v2 is running an embedded version of the Linux operating system. Because the BH560v2 is running an operating system, it maintains some of the OS characteristics, such as boot modes. Similar to Microsoft Windows®, Linux has normal and safe boot modes. Safe mode exists to prevent the device from being put into a state where it can't boot or be restored to a normal mode of operation.

Depending on certain events the BH560v2 may boot into safe mode. For example, if the device does not complete a boot cycle into normal operating mode after ~5 tries, safe mode is activated. This scenario is common if you power cycle the device too many times and don't allow it to complete the boot cycle. The following paragraphs describe how you can identify these operating modes.

- **Normal Operating Mode**

  Normal operating mode can be identified when the device completed its boot sequence, which could take between 20 and 30 seconds, and both LEDs are on steady Green. See Figure 4 for location and orientation of these LEDs on the BH560v2 end panel.

Figure 4 - Normal Operating Mode LED States[3]

- **Safe Mode**

  Safe mode can be identified when the device is powered and the MODE LED is on blinking Red. See Figure 5 for location and orientation of these LEDs on the BH560v2 end panel.

  To clear safe mode, please refer to the section on the Bh560v2Config utility.

Figure 5 - BH560v2 End Panel LEDs (safe mode)[3]

[3] The USB cable must be connected to PC and BH560v2 for power, but has been omitted for better clarity.

2.3.1.1 USB Connector

The BH560v2 emulator has a USB mini-A/B connector (see Figure 2)

The connector serves two purposes.

Host interface used for communications

Power for the BH560v2 pod

The USB connector can be utilize for both purposes at the same time. In other words, you can power the BH560v2 using the USB connector and also use it at the same time for debug. For more information on powering the BH560v2 via the Universal Serial Bus, please refer to section 2.7, *Power Options*.

2.3.1.2 JTAG Cable Connector

The JTAG cable connector is show in Figure 2 and Figure 6. It comes pre-connected to the emulator pod

WARNING:

The BH560v2 does not require an additional buffer board and cannot be used with a buffer board; only use MIPI60 pin converters.

2.4 Target Interface Cable

In the BH560v2 System Trace Emulator kit, you will find that the Coax JTAG cable is pre-connected to the emulator pod and uses a standard MIPI60 connector.

Figure 6 - Target Interface Cable (top view)

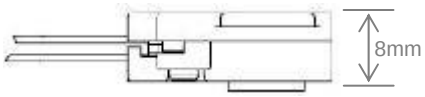

Figure 7 - Target Interface Cable drawing (side view)

2.4.1.1 Target Signal Buffer Board

The BH560v2 kit does not contain an active buffer board. Do not use the BH560v2 with a buffer board. **Only use MIPI60 pin converters.**

2.5 Pin Converters

The BH560v2 is kitted with three pin converters.

MIPI 60 to TI 14 Converter

MIPI 60 to TI 20 (cTI) Converter

MIPI 60 to 20-pin ARM Converter

NOTE:

If you have a TI 60-pin Trace header on your board, a MIPI60_TI60 Pin converter is available separately.

2.5.1 MIPI 60 to TI 14 Pin Converter

This pin converter `60e_MIPI-14t_TI` allows a BH560v2 emulator with standard MIPI 60-pin JTAG connection to connect to the old 14-pin emulation header on a target board.

Figure 8 - MIPI 60 to TI 14 Pin Converter (top/buffer board view)

Figure 9 - MIPI 60 to TI 14 Pin Converter (bottom/target view)

2.5.2 MIPI 60 to compact TI 20 Pin Converter

This pin converter `60e_MIPI-20t_cTI` allows a BH560v2 emulator with standard MIPI 60-pin JTAG connection to connect to the new compact TI 20-pin emulation header. An example of this new, 20-pin header can be found on the TI DM6446 EVM.

Figure 10 - MIPI 60 to compact TI 20 Pin Converter (top/buffer board view)

Figure 11 - MIPI 60 to compact TI 20 Pin Converter (bottom/target view)

2.5.3 MIPI 60 to ARM 20 Pin Converter

This pin converter `60e_MIPI-20t_ARM` allows a BH560v2 emulator with standard MIPI 60-pin JTAG connection to connect to the ARM 20-pin emulation header. An example of this ARM 20-pin header can be found on the TI OMAP-L138 Experimenter board.

Figure 12 - MIPI 60 to ARM 20 Pin Converter (top/buffer board view)

Figure 13 - MIPI 60 to ARM 20 Pin Converter (bottom/target view)

2.6 USB Cable

The BH560v2 ships with a USB cable that has a USB-A male connection and a USB 5-pin mini-B male connection (see Figure 14). The USB-A connector is used to supply power and data from the computer's USB port to the BH560v2.

In addition, the cable supports USB 1.0, USB 1.1, USB 2.0 specifications.

Figure 14 - USB Y Cable

2.7 Power Options

The BH560v2 has one power option - power supplied via USB port.

2.7.1.1 USB

The BH560v2 pod contains a USB mini-B connector. This connector can be used for both data and power using the supplied USB cable (see Figure 16).

3 Installation

3.1 Requirements

The BH560v2 is only supported by Code Composer Studio v4.2 and later. You must have this version (or later) of software installed in order to use the BH560v2. It is not compatible with earlier versions, such as v3.3.

NOTE:

Drivers for the BH560v2 are bundled with the CCStudio software distribution (download or DVD) from Texas Instruments. You don't need to install a separate installer. CCStudio should be installed first, and before attaching or using the BH560v2.

Software updates are provided by Blackhawk and distributed via the Eclipse Update Manager. The eclipse update manager is part of CCS v4.2 and later (CCS v4 is based on the eclipse IDE). The update manager will automatically check for updates for Blackhawk emulation drivers as well as all other features installed with CCStudio.

The following are general hardware guidelines for a computer that will support using the BH560v2 emulator. It is recommended that you refer to the system requirements and recommendations specified by Code Composer Studio for more details.

- 1.2 GHz or faster Pentium or compatible
- 10 GB of free hard disk space
- 2 GB of RAM
- SVGA (1024x768) color display
- Local DVD-ROM drive
- Microsoft Windows XP/Vista/7 (32 or 64-bit editions)
- Available USB port

NOTE

Before attaching the BH560v2 hardware to your computer, install CCStudio v4.2 (or later) FIRST!

3.2 Software

The following section describes the Code Composer Studio software installation process. Please refer to the Code Composer Studio documentation for more details. If Code Composer Studio is already installed on your system, you can skip this section.

The following figures describe the Code Composer Studio installation process and dialogs.

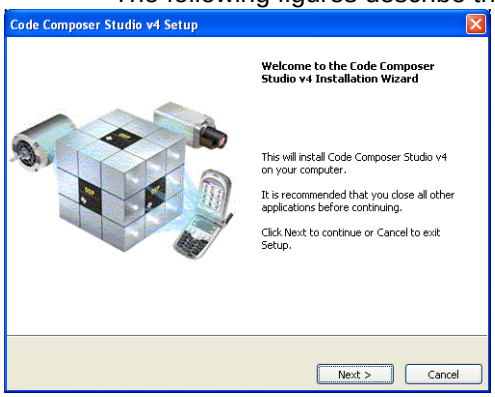

Figure 15 - Initial Welcome Screen

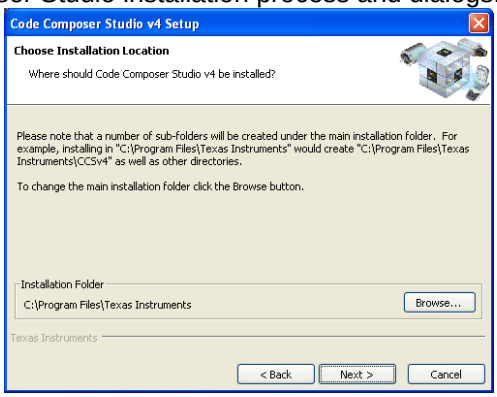

Figure 16 - Installation folder selection

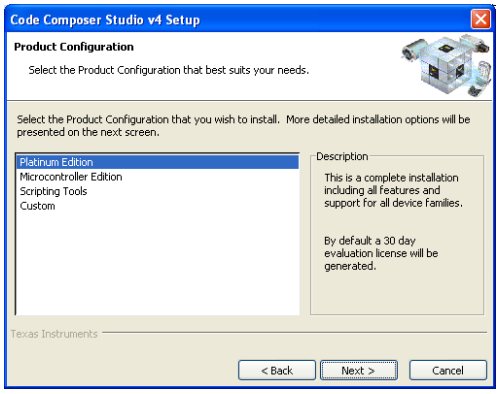

Figure 17 - Product Configuration

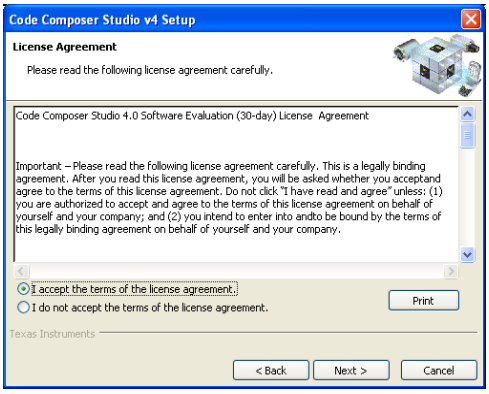

Figure 18 - License Agreement Screen

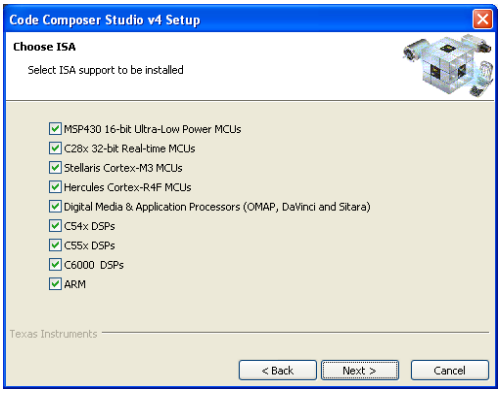

Figure 19 - Custom Target Setup Screen

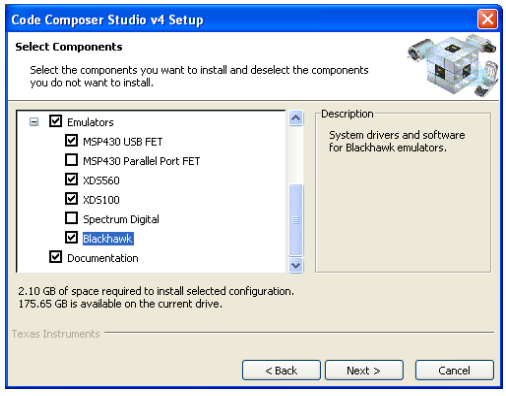

Figure 20 - Custom Driver Setup Screen

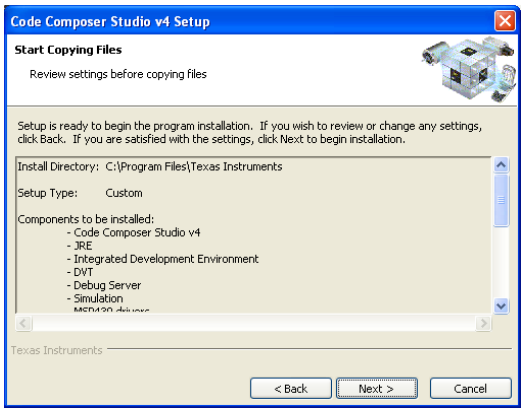

Figure 21 - Custom Setup Screen

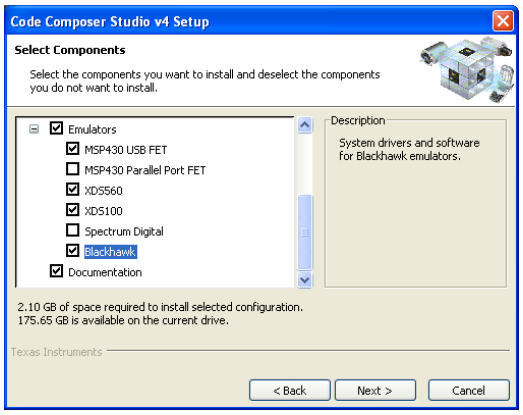

Figure 22 - Overall Installation Status

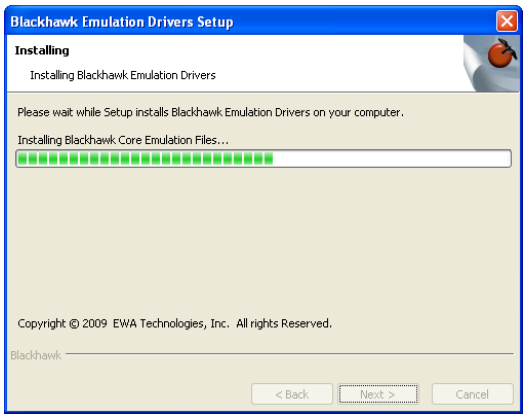

Figure 23 - Component Installation Status

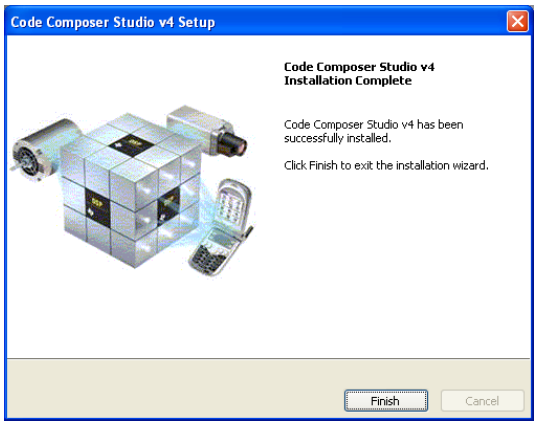

Figure 24 - Completion Screen

3.3 Hardware

The following section describes the BH560v2 hardware installation process.

CAUTION:

Be very careful with the target cable connectors. Connect them with care; don't force them into position or damage may result.

WARNING:

Do not connect or disconnect the emulator cable while the target system is powered.

Installing the BH560v2 hardware requires these two steps.

- Configuring the emulator cable assembly with pin converters (if necessary)
- Installing the host PC connection (USB)

3.3.1 Configuring the Emulator Cable Assembly

The BH560v2 cable assembly requires no changes for use with MIPI60 target connections. For other target connections, such as TI 14-pin JTAG, use the supplied pin converters (see Figure 25 and refer to section 2.5).

After you determine the correct pin converter necessary for your target board, or not needed, the cable assembly can be put together following these easy steps.

Attach the pin converter to the JTAG cable by pressing the connectors together with the correct orientation making sure you don't force them. The result is shown in Figure 25.

Figure 25 - JTAG Cable + Pin Converter

3.3.2 USB Cable Assembly

Attach the USB cable "A" connector to an available USB port on the PC or USB hub. Then attach the mini-B connector to the emulator's mini-B port (see Figure 3).

Once both connections are made, the emulator will power-on.

3.4 Configuration and Test

Please refer to the BH560v2Config User Guide (`Bh560v2Config.pdf`) for details on configuration (i.e. network settings) and testing of your BH560v2 emulator. This document is installed as part of the driver installation with CCS v4.2 and later and can be found in the following folder. It is also accessible through the shortcut on your desktop and start menu folder.

```
\Program Files\Texas Instruments\ccsv4\emulation\Blackhawk\docs

\ti\ccsv5\ccs_base\emulation\Blackhawk\docs

/opt/ti/ccsv5/ccs_base/emulation/Blackhawk/docs  (Linux)
```

NOTE:

This document also covers the configuration of the device for use over a local area network connection if you have an XDS560v2 model with an RJ45 connection.

4 JTAG Signal Definitions

The BH560v2 is compatible with all TI DSP devices with a JTAG interface and supported by Code Composer Studio v4.2 and later. Pin converters are supplied with the unit so that you can attach to target boards with various JTAG connections. These connections and their signal definitions are described in Appendix A.

5 Using Code Composer Studio

This section presents a common Code Composer Setup session that will walk through the settings and configurations necessary to communicate with the BH560v2 and a target board. The following steps and figures show how to debug an OMAP3530 target board using CCS v4.2. Your specific application may be different and require a different target board driver (DVR) file than that shown below.

NOTE:

Prior to starting CCSetup, you must complete the installation instructions listed on page 16 under the heading Software

Follow those steps listed prior to running CCSetup, and then continue below.

For more information on how to complete the Code Composer Studio setup, please refer to the CCS User's Guides listed in the Related Documents section.

5.1 Importing a Predefined Configuration

This section describes how you can configure CCS using one of the many available predefined configurations to debug a target board. The following steps show how to import the OMAP3530 configuration for the BH560v2 under CCStudio v4.2.

1. Start CCStudio v4.2 and select the Target option in the menu bar, choose NewTargetConfiguration, change the name if you wish and click on the Finish button.

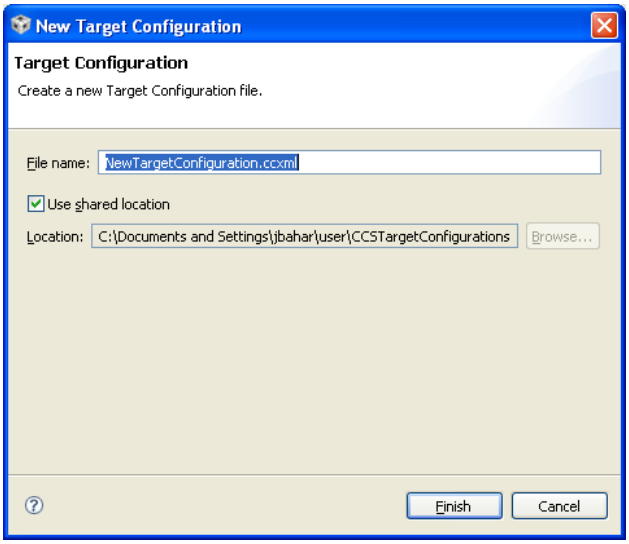

Figure 26 - CCS v4.2 New Target Configuration Dialog

2. Using the "Platform" pull-down menu select the connection filter for your emulator. For the BH560v2, you would select "BH-XDS560v2-USB System Trace Emulator". This will trigger the "Available Factory Boards" list to only show the imports for this emulator.

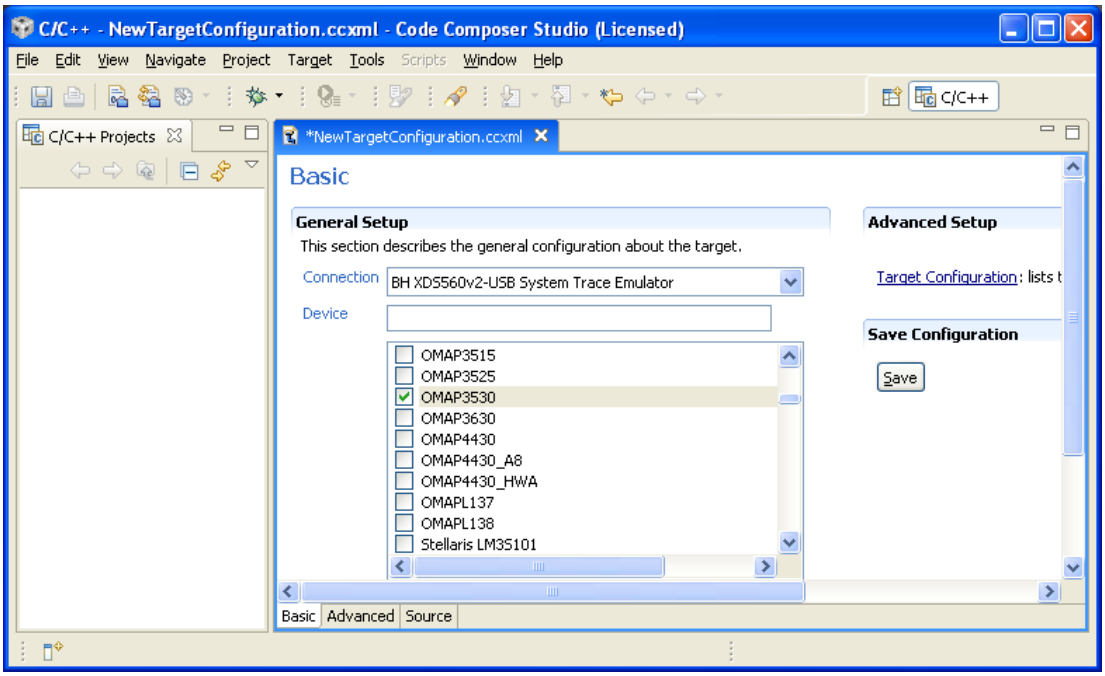

Figure 27 - CCS v4.2 Main Application Window – Basic Tab

3. If necessary, you can further limit the choices using the “Device” filter menu. The default value is “blank”, which displays all available imports.

4. After you find the import that matches your target (or is closest to your target), select it and push the “Check” button. This will complete import of the configuration.

5. You can now save your setup, and start Debug section.

5.2 Using the Create Board Feature

This section covers the new “Advance” feature in CCS v4.x, which allows users to manually setup CCS for a particular target configuration and emulator.

1. Start CCStudio v4.2 and select the Target option in the menu bar, choose NewTargetConfiguration, change the name if you wish and click on the Finish button see Figure 26

2. Select the Advance tab at the bottom of the middle window pane of Figure 28, if not already selected.

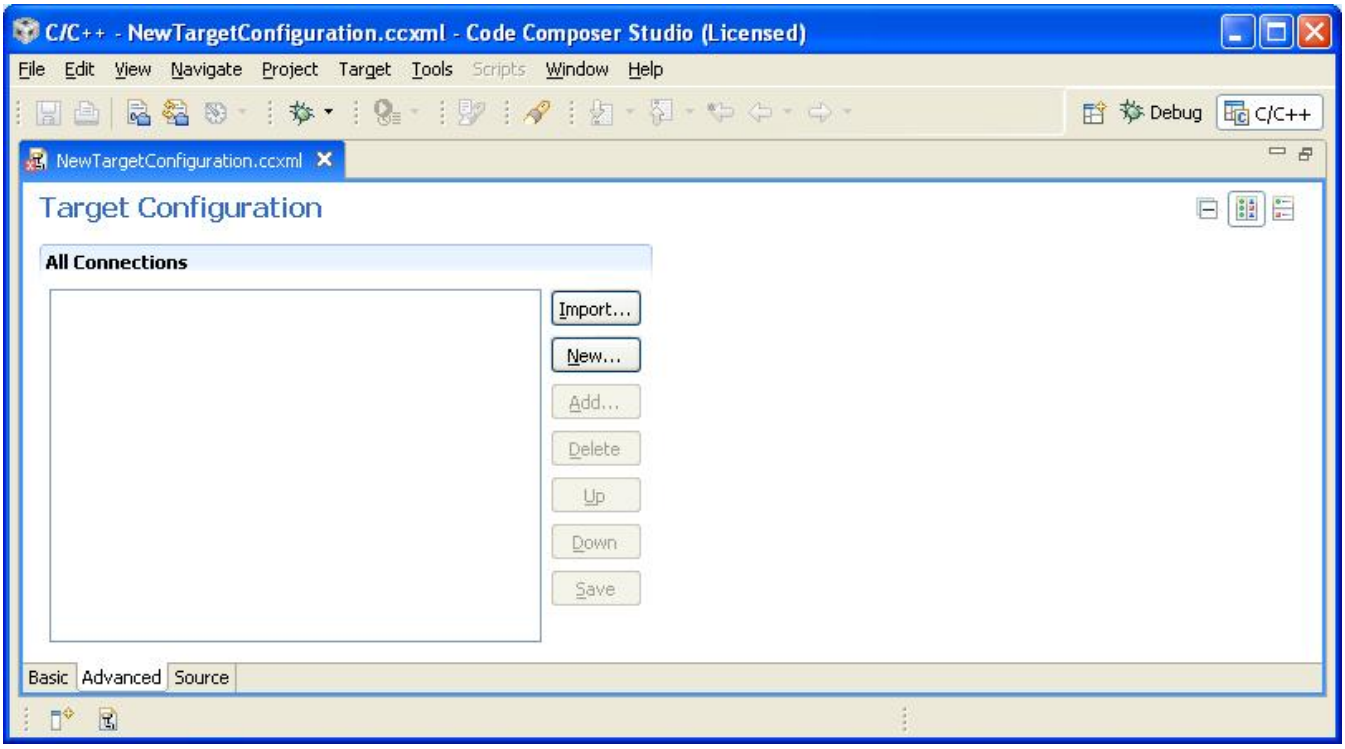

Figure 28 - CCS v4.2 Main Application Window – Advanced Tab

3. Click on the “Import…” button. This will list the types of emulator connections available. See Figure 29.

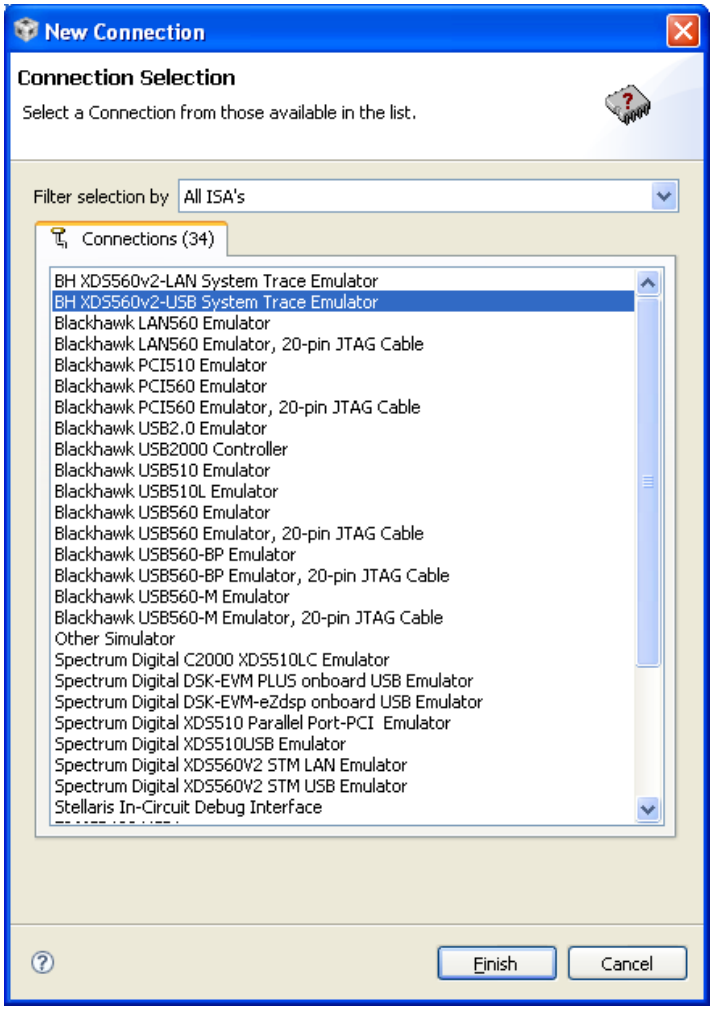

Figure 29 - Create Board display in CCSetup v4.2

4. In this example, we will use the connection definition for the BH560v2 over USB which is “BH XDS560v2-USB System Trace Emulator”. Select it and push the “Finish” button.

5. This will display the Connection Properties tab of information. The default values should be used.

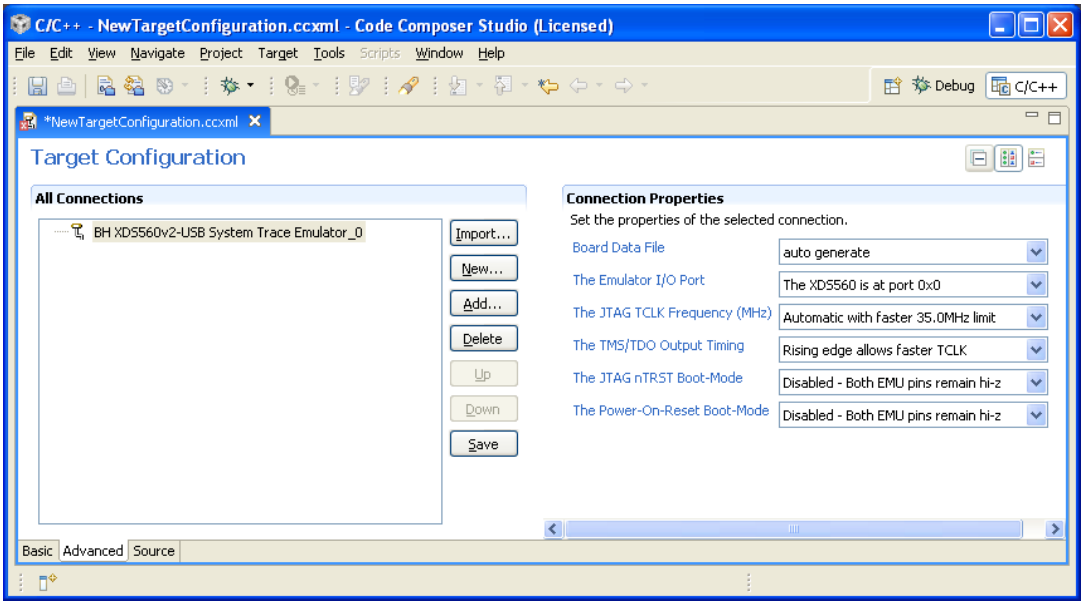

Figure 30 - CCSetup 4.2 Connection Properties Dialogs

6. Now, push the “Add…” button and a new window will now display the list of available processors that can be added as shown in Figure 31. In this example, we will select and add an OMAP3530 processor. Highlight the processor and push the “Finish” button.

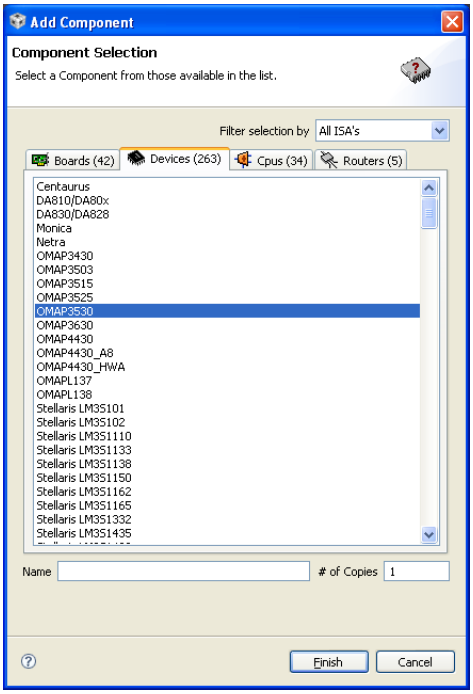

Figure 31 - CCS v4.2 Create Board Dialog - Available Processors

7. This will add the processor to the connection you created and display it in hierarchal form as shown in Figure 32.

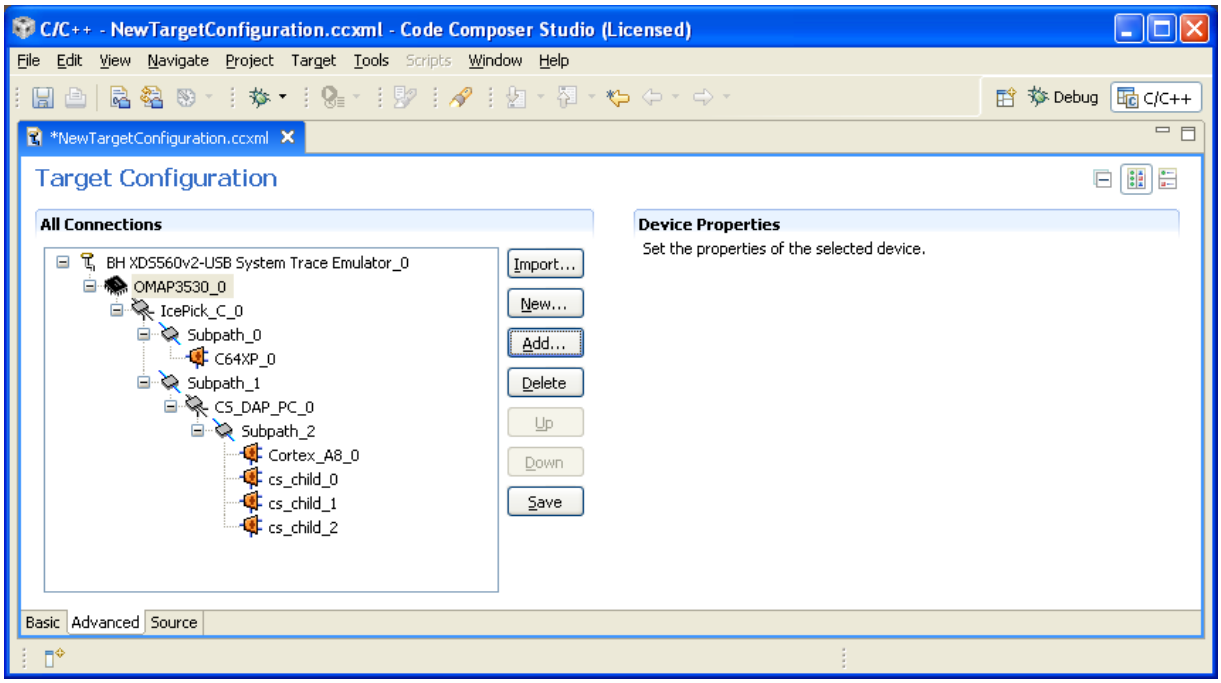

Figure 32 - CCS v4.2 Create Board Dialog - Current Processor

8. You can now save your setup, and start CCStudio Debug section.

Appendix A. Target Connection Specifications.

A.1. MIPI 60 Target Connection

The following table shows the signals for the MIPI 60 connector. The grayed out signals are not supported.

Table 3. MIPI 60 Connector Signals

Signal	Pin#	Pin#	Signal
CBL_VREF_DBG	1	2	TMS
TCK	3	4	TDO
TDI	5	6	CBL_nRESET
RTCK	7	8	CBL_nTRST_PD
CBL_nTRST	9	10	EXTE
EXTF	11	12	CBL_VREF_TR
TRCLK0	13	14	TRCLK1
CBL_TDIS	15	16	GND‡
TRD0.0†	17	18	TRD1.0 or TRD0.20
TRD0.1	19	20	TRD1.1 or TRD0.21
TRD0.2	21	22	TRD1.2 or TRD0.22
TRD0.3	23	24	TRD1.3 or TRD0.23
TRD0.4	25	26	TRD1.4 or TRD0.24
TRD0.5	27	28	TRD1.5 or TRD0.25
TRD0.6	29	30	TRD1.6 or TRD0.26
TRD0.7	31	32	TRD1.7 or TRD0.27
TRD0.8	33	34	TRD1.8 or TRD0.28
TRD0.9	35	36	TRD1.9 or TRD0.29
TRD3.0 or TRD0.10	37	38	TRD2.0 or TRD1.10 or TRD0.30
TRD3.1 or TRD0.11	39	40	TRD2.1 or TRD1.11 or TRD0.31
TRD3.2 or TRD0.12	41	42	TRD2.2 or TRD1.12 or TRD0.32
TRD3.3 or TRD0.13	43	44	TRD2.3 or TRD1.13 or TRD0.33
TRD3.4 or TRD0.14	45	46	TRD2.4 or TRD1.14 or TRD0.34
TRD3.5 or TRD0.15	47	48	TRD2.5 or TRD1.15 or TRD0.35
TRD3.6 or TRD0.16	49	50	TRD2.6 or TRD1.16 or TRD0.36
TRD3.7 or TRD0.17	51	52	TRD2.7 or TRD1.17 or TRD0.37
TRD3.8 or TRD0.18	53	54	TRD2.8 or TRD1.18 or TRD0.38
TRD3.9 or TRD0.19	55	56	TRD2.9 or TRD1.19 or TRD0.39
CBL_TYPE0	57	58	GND‡
TRCLK3	59	60	TRCLK2

†TRD – Trace Data signal

‡GND – GND signal also passes on pins 61,62,63,64 native to the QTH connector.

A.2. TI 14-pin Target Connection

The following table describes the signal and pin definitions for the standard TI 14-pin JTAG connection.

Table 4. Standard TI 14-pin signal definitions

Signal	Pin#	Pin#	Signal
TMS	1	2	nTRST†
TDI	3	4	GND
TVD	5	6	key
TDO	7	8	GND
RTCK	9	10	GND
TCLK	11	12	GND
EMU0	13	14	EMU1

† Signal active low

A.3. Compact TI 20-pin Target Connection

The following table describes the signal and pin definitions for the compact TI 20-pin JTAG connection.

Table 5. Compact TI 20 pin signal definitions

Signal	Pin#	Pin#	Signal
TMS	1	2	nTRST†
TDI	3	4	GND
TVD	5	6	key
TDO	7	8	GND
RTCK	9	10	GND
TCLK	11	12	GND
EMU0	13	14	EMU1
nSRST†	15	16	GND
EMU2	17	18	EMU3
EMU4	19	20	GND

† Signal active low

A.4. ARM® 20-pin (Multi-ICE)Target Connection

The following table describes the signal and pin definitions for the standard ARM® 20-pin (Multi-ICE) JTAG connection.

Table 6. ARM® 20-pin (Multi-ICE) signal definitions

Signal	Pin#	Pin#	Signal
VDD	1	2	VDD
nTRST†	3	4	GND
TDI	5	6	GND
TMS	7	8	GND
TCK	9	10	GND
RTCK	11	12	GND
TDO	13	14	GND
nSRST†	9	10	GND
NC	11	12	GND
NC	13	14	GND

† Signal active low

A.5. TI 60-pin Trace Target Connection

The following table describes the signal and pin definitions for the TI 60-pin Trace JTAG connection.

Table 7. TI 60-Pin Trace signal definitions

Pin#	Signal	Pin#	Signal	Pin#	Signal	Pin#	Signal
A1	GND	B1	ID0	C1	ID2	D1	NC
A2	GND	B2	TMS	C2	EMU18	D2	GND
A3	GND	B3	EMU17	C3	nSRST†	D3	GND
A4	GND	B4	TDI	C4	EMU16	D4	GND
A5	GND	B5	EMU14	C5	EMU15	D5	GND
A6	GND	B6	EMU12	C6	EMU13	D6	GND
A7	GND	B7	TDO	C7	EMU11	D7	GND
A8	TYPE 0	B8	TVD	C8	TCLKRTN	D8	TYPE 1
A9	GND	B9	EMU9	C9	EMU10	D9	GND
A10	GND	B10	EMU7	C10	EMU8	D10	GND
A11	GND	B11	EMU5	C11	EMU6	D11	GND
A12	GND	B12	TCLK	C12	EMU4	D12	GND
A13	GND	B13	EMU2	C13	EMU3	D13	GND
A14	GND	B14	EMU0	C14	EMU1	D14	GND
A15	nTGTRST†	B15	ID1	C15	ID3	D15	GND

† Signal active low

Appendix B. Device Driver Installation

B.1. USB Plug n' Play for Windows XP/Vista/7

The device drivers for the Bh560v2 support Microsoft Windows XP, Vista, and 7 (32 and 64-bit editions). These drivers were installed as part of the CCS v4 installation. Depending on the operating system version you are using, you may or may not be prompted for installing the device drivers. This section will describe the process.

If this is the first time the BH560v2 is being connected, Windows will identify the hardware and start the "Found New hardware" wizard. Figure 33 shows an example of wizard starting, which should display at the lower, right hand side of your monitor.

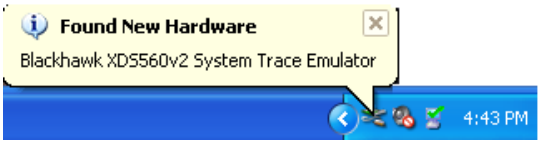

Figure 33 - Initial Windows PnP Detection

Depending on the operating system you are using, you may be prompted for the location of the device drivers. For example, Windows XP will prompt for the location, but Windows 7 will not.

The following wizard dialog boxes describe the steps to install the drivers. During installation of the driver files you may or may not be prompted by Windows security to verify and approve the driver manufacturer as shown in Figure 38 below. Typically, this is done during the installation of Code Composer Studio.

Figure 34 - Found New Hardware Wizard welcome dialog

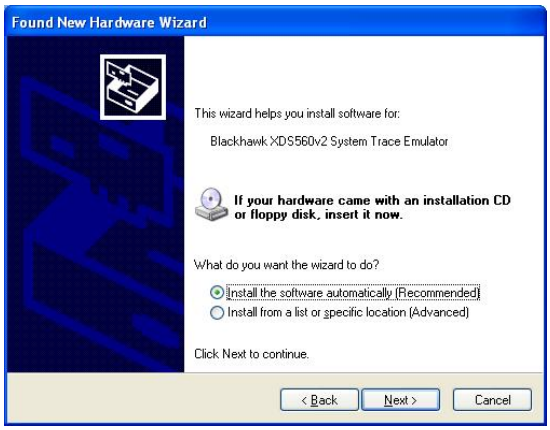

Figure 35 - Found New Hardware Wizard Automatic Install option

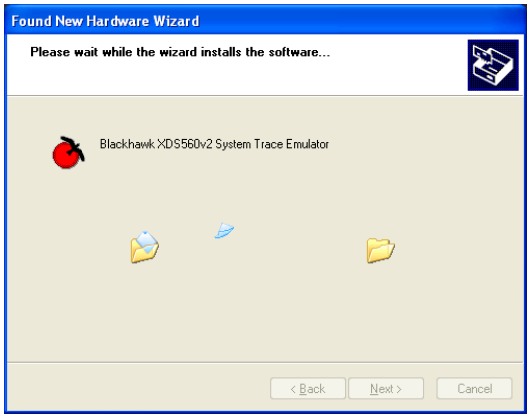

Figure 36 - Copy Driver Files

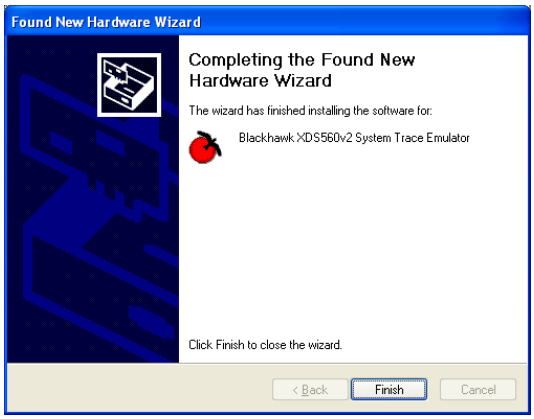

Figure 37 - Driver Install Complete

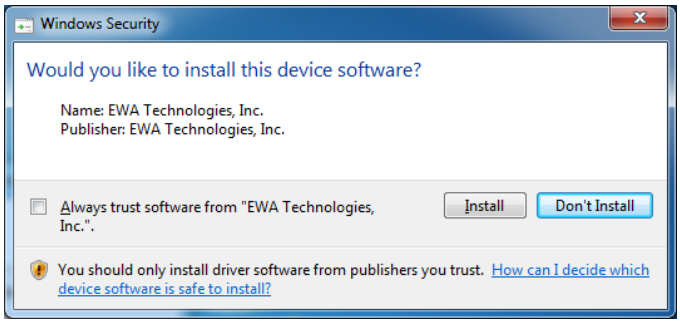

Figure 38 - Windows Security Prompt – Signed Drivers

After completing the steps in the previous section, start the Blackhawk Control Panel (icon located on the desktop or Windows control panel) and it should list the emulator as shown below in Figure 39. You can also locate the device in the Windows Device Manager.

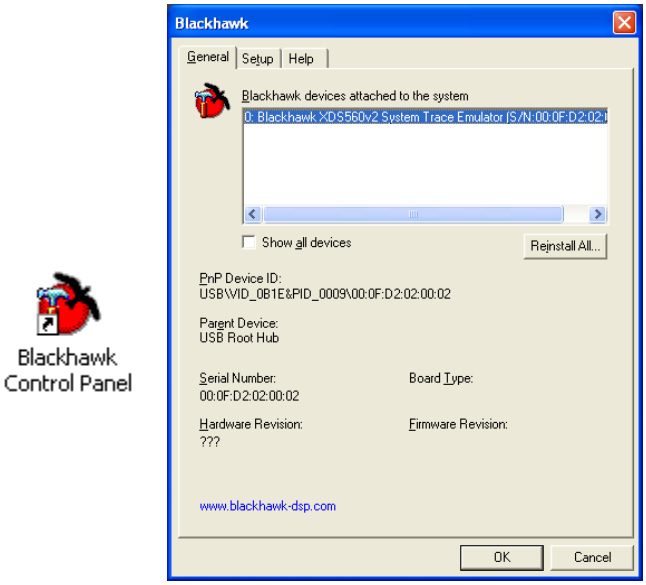

Figure 39 - Blackhawk Control Panel Dialog

For more information on the Blackhawk Control Panel, see the next section.

B.2. Linux Device Information

Once the BH560v2 is connected and powered, Linux will automatically see the device. To check that this device is communicating properly, use the **`lsusb`** command in a terminal window. The BH560v2 will show up with a device ID of **`0b1e`** as shown below.

```
user@linux-ubuntu:/home/user> lsusb
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
Bus 001 Device 002: ID 0b1e:0009 EWA Technologies, Inc. (EWA)
user@linux-ubuntu:/home/user>
```

B.3. Blackhawk Control Panel

Upon installation of the USB device drivers, a Windows Control Panel application will also be installed. The file, blackhwk.cpl, will be copied into the Windows directory structure and can be run using the icon created in the Windows Control Panel dialog box.

This application will allow the user to see all Blackhawk USB devices connected to the system, including the serial number, and more importantly, the USB index assigned by Windows. **The USB device drivers communicate to the JTAG emulator using this index.** This value typically defaults to 0 (zero) and is designated in CCSetup using the "I/O Port" setting (XDS510-class) or Emulator Name field (XDS560-class). If, after completing driver installation and CCSetup, CCS does not start correctly, you may want to verify this index number. Shown below in Figure 40, is an example of the Blackhawk Control Panel Application.

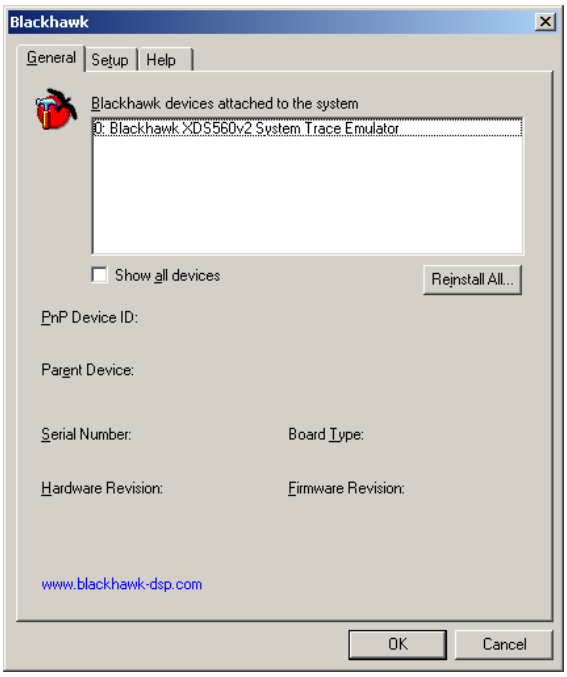

Figure 40 - Blackhawk Control Panel

Appendix C. Support and Contact Information

Support is provided for pre-sales information and registered products.

Mailing Address

Blackhawk

123 Gaither Drive

Mt. Laurel, New Jersey 08054-1701

Phone Numbers

(877) 983-4514

(856) 234-2629

FAX Number

(856) 866-1100

World Wide Web

http://www.blackhawk-dsp.com

E-Mail Address

support@blackhawk-dsp.com

Corrections

Please report any documentation errors by email to support@blackhawk-dsp.com .