XDS560v2 System Trace JTAG Emulator for CCS 4.x

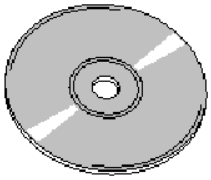
Quick Start Installation Guide

Kit Contents

XDS560v2 System Trace

+5V Universal Power Supply

AC Power Cords



Driver DVD

USB Cable

Ethernet Cable

MIPI60 – 14TI

MIPI60 – 20CTI

MIPI60 – 20ARM

MIPI60 – 60TI

System Requirements

- Microsoft Windows™ XP/Vista/7
- 2 GB of free hard disk space
- Minimum 1 GB RAM, 2 GB recommended
- Minimum 1.5 GHz, dual core recommended
- Color display
- Internet Access
- USB port
- Ethernet port
- DVD reader

Service and Support

Web	http://support.spectrumdigital.com
E-Mail	support@spectrumdigital.com

*The driver install supports the Spectrum Digital XDS560v2 System Trace JTAG Emulator in a CCS 4.2 or higher environment. Emulation drivers are updated on a regular basis so check the Spectrum Digital web site at **support.spectrumdigital.com**. The XDS560v2 System Trace JTAG Emulator will be referred to as the XDS560v2 STM.*

Installation Overview

Installing the XDS560v2 STM is 3 step process:

1. Installing the Code Composer Studio software
2. Configuring the emulator tail with correct target adapter.
3. Installing the USB or Ethernet connection to the host PC.

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Installing the Code Composer Studio software

1. Code Composer Studio should be installed before starting the hardware installation. Please refer to the Code Composer Studio software installation guide for the installation of Code Composer Studio. The baseline Spectrum Digital emulation drivers are included in CCS v4.2 and higher and these should be installed.

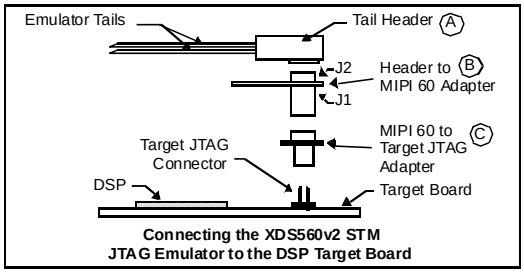
2. Additional documentation is on the driver CD included with your XDS560v2 STM product.

Configuring the Emulator Tail

1. The emulator tail is the physical interface between the emulator and target board. The tail configuration will consist of 3 parts:

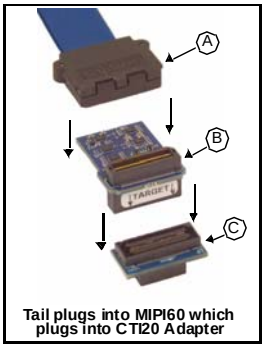
   - Emulator tail header
   - Emulator tail header to MIPI 60 pin header
   - MIPI 60 to target JTAG connector adapter:
     MIPI 60 to 20 pin CTI – *installed at the factory*
     MIPI 60 to TI 14 pin
     MIPI 60 to TI 60 pin
     MIPI 60 to ARM 20 pin

2. The female JTAG header attached to the end of the emulator tail plugs onto the target's male pin header. The figure below shows how the XDS560v2 STM emulator header plugs onto the target's JTAG header.



Connecting the XDS560v2 STM JTAG Emulator to the DSP Target Board

3. The figure below shows the factory installed configuration, MIPI 60 to CTI20.



Tail plugs into MIPI60 which plugs into CTI20 Adapter

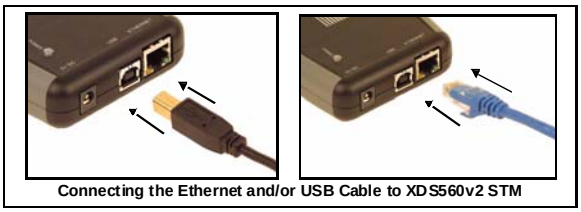
Installing the USB or Ethernet connection to the host PC

This section provides instructions to install the XDS560v2 STM JTAG emulator using the USB or Ethernet interface.

1. Turn off the power to your target board.

2. The XDS560v2 STM may be connected to the host PC by Ethernet and/or USB. Connect the supplied Ethernet and/or USB cable to your PC or laptop. The XDS560v2 STM may be used with an Ethernet router or **powered** USB hub.

3. Connect the other end of the Ethernet and/or USB cable to the XDS560v2 STM.


Connecting the Ethernet and/or USB Cable to XDS560v2 STM

4. Connect the included +5 volt power supply to your wall AC power source using the AC power cord.

5. Apply power to the XDS560v2 STM by connecting the power supply to the +5 volt input on the XDS560v2 STM located on the rear of the emulator.


Applying Power to XDS560v2 STM

When power is connected the "PWR" LED on the XDS560v2 STM should illuminate. After about 45 seconds LEDs "State 2" and "State 3" should come on. At this point the XDS560v2 STM has booted its operating system and is ready for connecting via USB or Ethernet.

If this is the first connection over the USB the Windows Hardware Wizard should find the XDS560v2 STM and install its USB drivers.

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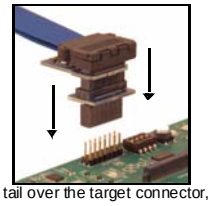
The figure below shows the Ethernet or USB cable, power cord plugged into the XDS560v2 STM.

USB Cable and Power Cord Attached to XDS560v2 STM

6. Now connect the tail of the emulator to the JTAG header on your target board. If your target board requires a different interface than the generic 60 pin header on the tail, attach one of the header adapters as required.

   Caution should be used in the routing of the tail ribbon cable to insure it does not go near the processor(s), power traces, or power cords.



Align the emulator tail over the target connector, then push down

Emulator tail attached to target

Attaching the XDS560v2 STM Emulator Tail To Target

7. Apply power to the target board.

8. Please refer to the XDS560v2 STM Technical Reference Manual for the typical system configurations.

Configuring CCSv4

To configure CCS v4 to use the XDS560v2 STM emulator follow the CCSv4 instruction for creating a “New Target Configuration”. When selecting the emulator select one of the following:
"Spectrum Digital XDS560V2 STM LAN Emulator" for Ethernet connection or
"Spectrum Digital XDS560V2 STM USB Emulator" for USB connection.

For an Ethernet setup you will need to configure the “The Emulator IP Address” under the “Connections Properties”. The IP Address for your XDS560v2 STM can be obtained using the XDS560v2 Configuration utility. There should be an icon on your desktop named Sd560v2Cnfg.

Under the “Eth” tab you can select “FIND IPAddress” and then match the MAC Address found to the MAC address of your XDS560v2 STM. The XDS560v2 STM MAC address is printed on the back of your XDS560v2 STM. CCSv4 takes the IP Address in the form of x.x.x.x for example 10.0.3.54.

For USB the default “Emulator I/O Port Number” of 0 should be used when connecting to a single XDS560v2 STM.

For other methods of finding the IP Address or verifying your XDS560v2 STM connection see the Sd560v2Cnfg help. An alternate example of finding your IP Address is shown in the next section.

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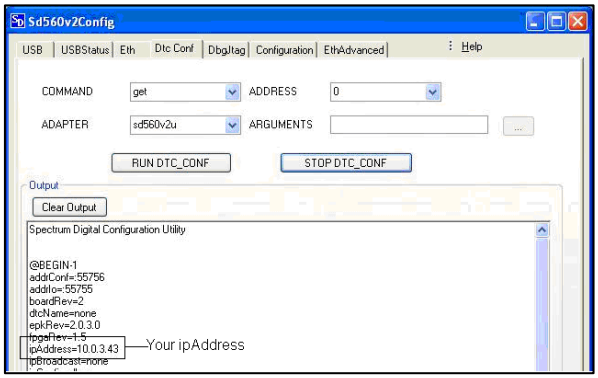
Finding Your Ethernet IP Address with USB

An alternative to the method above the XDS560v2 STM IP Address can be found using the USB port which is a fast and accurate method but requires that both the Ethernet and USB cables be plugged into the XDS560v2 STM. From the XDS560v2 Configuration utility:

- Activate the Dtc Conf tab.
- Select the get command from the COMMAND drop down box.
- Select sd560v2u from the ADAPTER drop down box.
- Select (0) from the ADDRESS drop down.
- Click on RUN DTC_CONF. A sample output is as shown below indicating the IP Address of your XDS560v2 STM.



Troubleshooting

When power is applied to the XDS560v2 STM it will begin booting its OS and provide a visual indication of its progress and also indicate if booting for normal operation or into safe mode. The boot manager will go to Safe Mode if it detects a problem during OS boot or a potential hardware problem with the XDS560v2 STM. When in Safe Mode you cannot run CCS instead you can use the ***Sd560v2Cnfg*** utility to diagnose the problem and return to normal boot mode. The following sequences with approximate timings are provided for reference. From the sequences you can see that it may take the XDS560v2 STM around 60 seconds to boot so during this time do not power cycle the unit.

Normal Boot Progress:

LED Activity	***Sequence Events***
POWER.....ON	time0
ACTIVITY-1...ON	time0 + 3 seconds : Linux + Application booting
STATE-2.....ON	time0 + 39 seconds :FPGA loaded
STATE-3.....ON	time0 + 41 seconds : Communications application running
ACTIVITY-1...OFF	time0 + 41 seconds : Boot process complete

Safe Mode Boot Progress:

LED Activity	***Sequence Events***
POWER.....ON	time0
ACTIVITY-1...ON	time0 + 3 seconds : Linux + Application booting
STATE-3.....ON	time0 + 4 seconds : Linux boot to Safe Mode
STATE-3.....ON	time0 + 41 seconds : Communications application running
ACTIVITY-3, ACTIVITY-2, STATE-1 Blinking	time0 + 41 seconds : Safe Boot process complete

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