

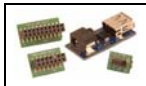
XDS220 Quick Start Guide



XDS220



Cables



4 Adapters



Quick Start Guide

1.0 SYSTEM REQUIREMENTS

To operate the Spectrum Digital XDS220 JTAG Emulator with your system it needs to meet the following requirements:

- 2 GB of free hard disk space
- Microsoft Windows™ XP/Vista/Win 7/Linux
- Minimum 1 GB RAM, 2 GB recommended
- Color Display
- Internet access
- USB port
- Code Composer Studio Rev v5.2 with TI emulator update 5.0.838, or higher

2.0 WHAT'S INCLUDED

The Spectrum Digital XDS220 USB JTAG emulator kit includes:

- XDS220 USB JTAG Emulator with CTI20 header
- Cables: USB cable, Ethernet cable
- 4 Adapters: CTI20-TI14, CTI20-ARM20, CTI20-ARM10, Power-USB
- This Quick Start Guide

Note: This kit does **NOT** include Code Composer Studio or drivers. This software can be obtained from Texas Instruments (www.ti.com). See installation instructions below.

3.0 XDS220 USB DEVICE and CODE COMPOSER STUDIO INSTALLATION

Note: *Install ALL software prior to connecting the XDS220 to the computer !*

This setup guide assumes the user has already acquired and installed Code Composer Studio (CCS). If CCS has not been installed, then do so now. CCS is **not** included in the Spectrum Digital XDS220 USB JTAG Emulator kit. The Spectrum Digital XDS220 supports CCS 5.x, which can be downloaded from the TI web site.

The user must be logged onto Windows with "Administrative Rights" and any anti-virus software must be disabled during installations. Please contact your system administrator if help is needed in this area.

3.1 HOST CONNECTION, TARGET CONNECTION and CCS v5 CONFIGURATION INSTRUCTIONS

The XDS220 can be attached to the host PC in several ways; USB only, USB+Ethernet, and Ethernet only. Section 3.1.1 describes the USB only installation, and section 3.1.2 describes the two Ethernet installations

3.1.1 Installation with USB only

1. All XDS220 USB drivers and CCS v5 drivers are included with the CCS v5 software installation, or as an update.
2. Connect the included USB cable to a USB port on the host computer, then connect the USB cable to the XDS220. Windows will recognize the new hardware connection and complete the XDS220 installation automatically on Windows 7 and higher. On Windows XP follow the hardware installer instructions and answer "Yes" or "default" if prompted.
3. Continue with "Target Connection and CCS v5 Configuration Instructions in section 3.1.3

3.1.2 Installation with Ethernet

1. All XDS220 USB drivers and CCS v5 drivers are included with the CCS v5 software installation, or as an update.
2. Connect you XDS220 to your network via the Ethernet cable provided.
3. Connect your XDS220 to your PC via the USB cable provided, or alternatively you can connect the USB cable to the XDS220 via an external power supply (+5V) using the +5V to USB power adapter. Using the adapter will use the Ethernet only interface to the host.

When power is applied to the XDS220 via the USB port the XDS220 will begin it's network connection process. If a network IP address is assigned within about 15 seconds the ST1 LED will turn off and then the USB connection process will begin. If the USB port is not connected to a host then no USB connection will be established.

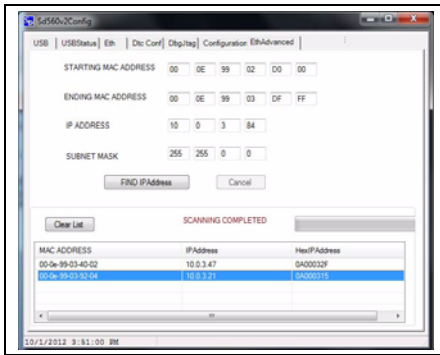
4. If you connected the USB cable to a host then you can get your ENET IP address via USB. From a command prompt go to:

```
<ccs_install_dir>\ccsv5\ccs_base\emulation\specdig\xds2xx.
```

From the command line prompt execute "xds2xx_conf get xds2xxu 0 ipAddress"

Return value: ipAddress=10.0.3.21 for example

5. Alternatively if you only used the USB for power (with adapter) run Sd560v2Config from the desktop icon
 - Select the EthAdvanced tab
 - Set the ENDING MAC ADDRESS to "00 0E 99 03 DF FF"
 - Select FIND IPAddress button. After a few minutes you should see a screen similar to the figure below. Now match the MAC address to the one on the bottom of the XDS220 to get your IP address

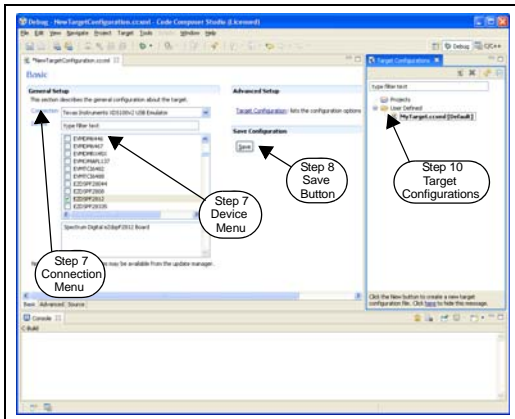


The EthAdvanced feature in Sd560v2Config is a generic IP address search and will look for devices on the network between the start and end MAC address. No other features in Sd560v2Config are applicable to the XDS220.

6. Record the IP address for use later
7. From this point do the normal CCS setup using the IP address to configure the XDS220 connection. See section 3.1.3.

3.1.3 Target Connection and CCS v5 Configuration Instructions

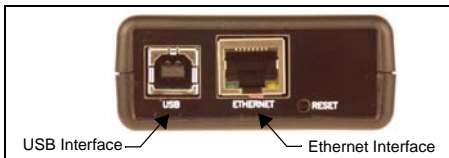
1. The target processor board should be unpowered at this time. Connect the XDS220 female CTI20 pin JTAG connector to the CTI20 pin male JTAG connector on the target board. If your target board does not use the CTI20 pin connector attach one of the 3 adapters that came with the XDS220 emulator to meet your requirements.
2. Launch Code Composer Studio v5 from the shortcut on the desktop. (This was created when CCS v5 was installed.)
3. The Code Composer Studio v5 window will appear. Click the "File" menu, then select "New-->Target Configuration File"
4. The "New Target Configuration" window will appear. Enter a file name that describes the emulator connection and/or Texas Instruments processor being used and then click "Finish".
5. The "Basic" configuration setup window will appear. Select "Texas Instruments XDS2xx USB Emulator" or "Texas Instruments XDS2xx LAN Emulator" from the "Connection" menu and select the target processor being used from the "Device" menu. (See the screen shot below.)
6. From the "Advanced" configuration setup window set your IP address if you are using the Ethernet/LAN connection.



7. Click the "Save" button to save the configuration.
8. Apply power to the target processor board.
9. Click the "View" menu and select "Target Configurations" to expose the configuration(s) that have been built or imported. A new tab labeled "Target configurations" will become available in the CCS window.
10. Expand the "User Defined" folder. Right-click on the configuration that has been created and click "Launch Selected Configuration".
11. CCS will now attempt to connect to the target processor through the XDS220.
12. Code Composer Studio may now be used to download code and debug code on the target board.

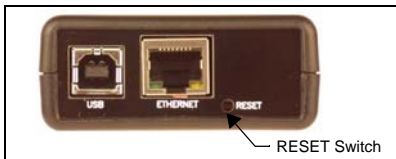
4.0 XDS220 Host Interfaces

The XDS220 has two interfaces to the host PC; USB, and Ethernet. The position of the USB and Ethernet connectors are shown below.



5.0 XDS220 Switches

The XDS220 has one switch; RESET. The RESET switch is used to reset the processor in the XDS220. The RESET switch is used during the manufacturing process at the factory and should NOT be used by the user. The position of the RESET switch is shown below.



6.0 XDS220 LEDs

The XDS220 has three LEDs which provide status information about the operation of the XDS220. The position of the LEDs and their functions are shown below.

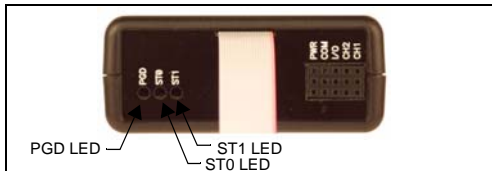
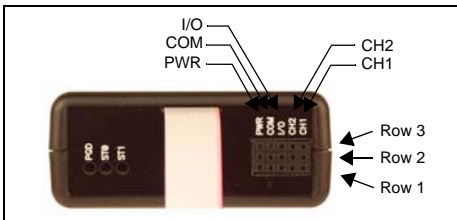


Table 1: XDS220 LEDs

LED	Color	Function
PGD	Green	Emulator Power Good
ST0	Green	On= XDS220 has booted & ready for emulation download
		Off=XDS220 emulation driver has been downloaded. This occurs during CCS target launch
ST1	Green	Flashes on when there is emulation driver activity

7.0 XDS220 I/O

The XDS220 has the interface for 5 pairs of signals. The position of the interface is shown below.



The table below show the signals that can be attached to each connector.

Table 2: XDS220 I/O Interface

Signal	PWR	COM	I/O	CH2	CH1
Row 3	VAR-Vcc(out)	RX(in)	BIO-1(io)	A-(in)	A-(in)
Row 2	GND	GND	GND	GND	GND
Row 1	+5V(out)	TX(out)	BIO-0(io)	A+(in)	A+(in)

For more information about using the I/O features of this emulator refer to this emulator's support page on the Spectrum Digital website.

8.0 CTI20 Header and Adapter Pin Outs

The table below shows the pin outs for the CTI20 header and adapters.

Table 3: XDS220 CTI20 Header and Adapter Pin Outs

Pin #	CTI20 Header	TI14 Adapter	ARM20 Adapter	ARM10 Adapter
1	TMS	TMS	VTRef	VTRef
2	nTRST	TRST	Vsupply	TMS
3	TDI	TDI	nTRST	GND
4	TDIS (GND)	TDIS (GND)	GND	TCK
5	TVRef	TVRef	TDI	GND
6	KEY	KEY	GND	TDO
7	TDO	TDO	TMS	GND
8	GND	GND	GND	TDI
9	RTCK	RTCK	TCK	TDIS (GND)
10	GND	GND	GND	nRESET
11	TCK	TCK	RTCK	
12	GND	GND	GND	
13	EMU0	EMU0	TDO	
14	EMU1	EMU1	GND	
15	nRESET		nRESET	
16	GND		GND	
17	EMU2		DBGRQ	
18	EMU3		GND	
19	EMU4		DBACK	
20	GND		GND	

9.0 SUPPORT RESOURCES

1. If you have problems or need additional information regarding the embedded emulation please refer to the XDS220 USB wiki on the TI web site. The URL for this site is:

<http://processors.wiki.ti.com/index.php/XDS200>

2. Code Composer Studio support is available via a forum at
<http://community.ti.com/forums/138.aspx>

3. More information about other Spectrum Digital emulators can be found at:
www.spectrumdigital.com

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