DATA TRANSLATION

UM-17316-F

DT3130 Series
Getting Started Manual

Sixth Edition
April, 2002

Data Translation, Inc.
100 Locke Drive
Marlboro, MA 01752-1192
(508) 481-3700
www.datatranslation.com
Fax: (508) 481-8620
E-mail: info@datx.com

Table of Contents

About this Manual

This manual describes how to get started using a DT3131, DT3131-ISO, DT3132, DT3132-ISO, DT3133, or DT3133-ISO frame grabber board, collectively referred to as the DT3130 Series.

Intended Audience

This document is intended for engineers, scientists, technicians, or others responsible for setting up a DT3130 Series board to perform machine vision and/or image analysis operations. It is assumed that you have some familiarity with the operating characteristics of your video source. It is also assumed that you are familiar with the Microsoft® Windows® 98, Windows Me (Millennium Edition), Windows 2000, or Windows XP operating system.

What You Should Learn from this Manual

This manual will help you install and set up your board and device driver successfully. It is organized as follows:

- Chapter 1, "Overview," describes the key features of the DT3130 Series hardware and software, and provides an overview of the getting started procedure;
- Chapter 2, "Preparing to Use the DT3130 Series," describes how to unpack the board and software, check system requirements, install the DT3130 Series software, and view the DT3130 Series documentation online;
- Chapter 3, "Installing the Board and Configuring the Device Driver," describes how to install the DT3130 Series boards and configure the device driver;
- Chapter 4, "Connecting Signals," describes how to connect signals to the board;

- Chapter 5, "Verifying Board Operation," describes how to verify the board's operation using DT Acquire.
- An index completes this manual.

Conventions Used in this Manual

The following conventions are used in this manual:

- Notes provide useful information that requires special emphasis, cautions provide information to help you avoid losing data or damaging your equipment, and warnings provide information to help you avoid catastrophic damage to yourself or your equipment.
- Items that you select or type are shown in **bold**.
- `Courier font` is used to represent source code.

Related Information

Refer to the following documents for more information on using an DT3130 Series board:

- The *DT3130 Series User's Manual* (UM-17314), included on the Imaging OMNI CD™ provided with the DT3130 Series boards, describes the features of the DT3130 Series boards and DT3130 Series Device Driver.
- *Frame Grabber SDK User's Manual* (UM-15943) and the Frame Grabber SDK online help, included on the Imaging OMNI CD provided with the DT3130 Series boards, describe the Dynamic Linkable Library (DLL) that you can use to write image acquisition application software.
- *DT-Active Open Layers User's Manual* (UM-17325), available from Data Translation, describes DT-Active Open Layers™, an ActiveX control, which allows you to use Data Translation PCI frame

grabber boards within graphical programming environments such as Microsoft Visual Basic® and Visual C++®.

- *GLOBAL LAB Image/2 User's Manual* (UM-17790) and *GLOBAL LAB Image/2 API Manual* (UM-17792), available from Data Translation, describe how to use GLOBAL LAB® Image/2 and GLOBAL LAB Image/2 Streamline™ to create scientific applications using object-oriented image processing tools.
- *DT Vision Foundry User's Manual* (UM-17755) and *DT Vision Foundry API Manual* (UM-17757), available from Data Translation, describe how to use DT Vision Foundry™ to create machine vision applications using object-oriented image processing tools.

Where to Get Help

Should you run into problems installing or using a DT3130 Series board, our Technical Support Department is available to provide technical assistance. Refer to the Troubleshooting chapter of the *DT3130 Series User's Manual* for more information (see page 13 for information on viewing this manual). If you are outside the United States or Canada, call your local distributor, whose number is listed in your Data Translation product handbook.

Overview

Key Hardware Features

The DT3130 Series consists of the following boards: DT3131, DT3131-ISO, DT3132, DT3132-ISO, DT3133, and DT3133-ISO. The key features of these boards are listed in Table 1.

Table 1: Video Inputs and Formats

Board Type	Number of Video Inputs	Number of Trigger Inputs[a]	Number of Strobe Outputs[b]
DT3131 and DT3131-ISO[c]	3 composite (CVBS)[d] or	1	1
	2 composite and 1 S-video[e,f]		
DT3132 and DT3132-ISO[c]	6 composite[d] or	2	2
	4 composite and 2 S-video[e,f]		
DT3133 and DT3133-ISO[c]	9 composite[d] or	3	3
	6 composite and 3 S-video[e,f]		

a. The trigger polarity is user-programmable.
b. The strobe pulse width is user-programmable from 3.3 ms to 420 ms.
c. The trigger inputs and strobe outputs are isolated on the DT3131-ISO, DT3132-ISO, and DT3133-ISO boards.
d. NTSC/RS-170 or PAL/CCIR video format.
e. Composite uses NTSC/RS-170 or PAL/CCIR; S-Video uses Y/C.
f. Currently, Data Translation does not supply a cable that supports more than one S-video input or an S-video input and composite inputs together. If you need more than one S-video input or S-video and composite inputs, you must design your own cable.

For more information on the boards, refer to the *DT3130 Series User's Manual* (see page 13 for information on viewing this manual).

DT3130 Series Software

The DT3130 Series software includes the following components:

- **DT3130 Series Device Driver** – You *must* install the device driver to use the DT3130 Series board with any of the supported software packages or utilities.
- ***DT3130 Series User's Manual,* in PDF format** – Describes the features of the DT3130 Series board and how to use the DT3130 Series Device Driver with the Frame Grabber SDK to write an application program.
- This manual in PDF format.

Refer to Chapter 2 starting on page 5 for information on installing the DT3130 Series software.

Getting Started Procedure

The flow diagram shown in Figure 1 illustrates the steps needed to get started using the DT3130 Series boards. This diagram is repeated in each chapter; the shaded area in the diagram shows you where you are in the getting started procedure.

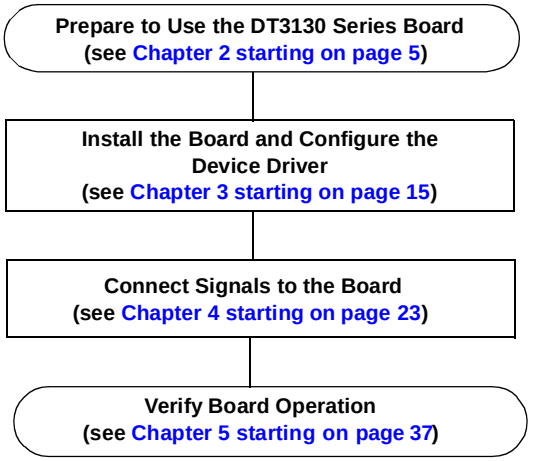
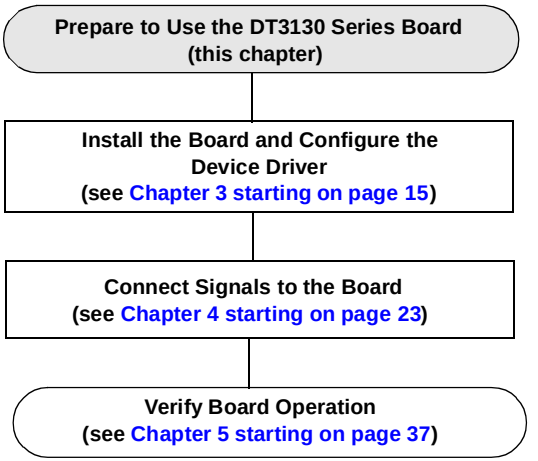


Figure 1: Getting Started Flow Diagram

Preparing to Use the DT3130 Series


Prepare to Use the DT3130 Series Board
(this chapter)
Install the Board and Configure the
Device Driver
(see Chapter 3 starting on page 15)
Connect Signals to the Board
(see Chapter 4 starting on page 23)
Verify Board Operation
(see Chapter 5 starting on page 37)

Unpacking

Open the shipping box and verify that the following items are present:

- DT3130 Series frame grabber board,
- EP315 cable assembly (to provide +12 V power), and
- Imaging OMNI CD-ROM.

CAUTION:

Keep the DT3130 Series board in its protective antistatic bag until you are ready to install it.

If an item is missing or damaged, call Data Translation's Customer Service Department at (508) 481-3700 x394. Customer Service will guide you through the appropriate steps for replacing missing or damaged items. If you are located outside the United States, call your local distributor, listed in your Data Translation Product Handbook.

Note: It is recommended that you save the original packing material in the unlikely event that your board requires servicing in the future.

Checking the System Requirements

For reliable operation, your DT3130 Series board requires the following minimum system requirements:

- 133 MHz Pentium processor with an Intel PCI chip set that supports and enables PCI-to-posted memory writes; Pentium II recommended. The following Intel PCI chip sets are known to work properly:
  - Triton 8243xFX,
  - Triton2 8243xHX,
  - Triton VX 8243xVX,
  - Triton TX 8243xTX,
  - Natoma 8244xFX, or
  - Natoma 8244xLX.

Note: The following Intel PCI chip sets are known not to work properly: Saturn 8242x, Mercury 8243xLX, Neptune 8243xNX, Orion 8245xKX, and Orion 8245xKG. If your system contains one of these chip sets, call your system manufacturer to replace the chip set with one that is supported.

- A BIOS that complies with PCI specifications, such as one of the following:
  - AMI, or
  - AWARD (version 4.51PG).

Note: Version 4, revision 6 of the Phoenix BIOS works properly. However, early versions of this BIOS are known not to work properly. If your system contains an earlier version of the Phoenix BIOS, call your system manufacturer to upgrade the BIOS to Version 4, revision 6.

- At least one available PCI 32-bit or 64-bit bus master expansion slot.
- At least 32 MB of RAM. Note that 864 KB are required to store each frame.
- A 2 MB, 32-bit PCI graphics card with a 256 color palette for 640 x 480 32-bit true color RGB display. A DDI-compatible PCI graphics card is recommended for real-time display. The PCI graphics card memory requirements are as follows:

Resolution	Memory Required
640 x 480	2 MB
800 x 600	2 MB
1024 x 768	4 MB

- Either a composite or S-video input source.
- A selection of the following cables or user-defined cables, as required by your application:
  - EP311 cable assembly to connect three simultaneous composite video inputs to a DT3130 Series board. This cable must be purchased separately.
  - EP312 cable assembly to connect control signals to the DT3130 Series board. This cable must be purchased separately.

  - EP317 cable assembly to connect one S-video signal to a DT3130 Series board. This cable must be purchased separately.
  - EP314 cable assembly to connect up to nine multiplexed composite video inputs to a DT3130 Series board. This cable must be purchased separately.
  - EP315 cable assembly to connect +12 V power from the host computer to a DT3130 Series board. This cable is shipped with the board.
- At least one CD-ROM drive.
- A hard disk.
- Windows 98, Windows Me, Windows 2000, or Windows XP.

Installing the Software

To operate properly, the DT3130 Series board requires the following software components:

- Microsoft DirectX, version 7.0 or greater,
- DT-Acquire, version 3.2 or greater, and
- Frame Grabber SDK, version 3.0 or greater.

You can install these software components from the Imaging OMNI CD. To install the DT3130 Series-related software from the Imaging OMNI CD, perform the following procedure:

1. Insert the Imaging OMNI CD into your CD-ROM drive.
   Note that in most systems, the CD will launch automatically. If your system does not launch the OMNI CD automatically, perform the following steps:
   a. Click **Start** from the Task Bar, then click **Run**.
      The Run dialog box appears.
   b. Either enter ***x*:\LAUNCH.EXE** (where *x* is the letter of your CD-ROM drive) or use the Browse button to locate LAUNCH.EXE.
   c. Click **OK**.
      The Imaging OMNI CD splash screen appears.
2. Click **Install Products**.
3. Click **Device Drivers**.
4. Click **Mach I Series**.
5. Click **DT3130 Series**.
   The InstallShield Wizard appears.
6. Click **Next**.

7. Click **Yes** to accept the license agreement, then click **Finish**. Note that if the DirectX software on your computer is less than version 7.0, you are prompted to install the updated DirectX software. Follow the prompts until Version 8.0 of DirectX has been installed. This process will require restarting your system.
8. If you updated the DirectX software, repeat step 1. If you did not update the DirectX software, click **Main Menu**.
9. To update the version of DT-Acquire on your computer, click **Install Products** from the Imaging OMNI CD, click **Mach I Series**, then click **DT-Acquire**. Follow the prompts until Version 3.2 of DT-Acquire has been installed.
10. To update the version of the Frame Grabber SDK on your computer, click **Install Products** from the Imaging OMNI CD, click **Mach I Series**, then click **Frame Grabber SDK**. Follow the prompts until Version 3.0 of the Frame Grabber SDK has been installed.
11. Click **Main Menu**, then click **Exit**.

Viewing the DT3130 Series Documentation

Note: To view the DT3130 Series documentation, ensure that Adobe Acrobat 4.0 or greater is installed on your system. Acrobat Reader 5.0 is provided on the Imaging OMNI CD. If you install Acrobat Reader 5.0 from this CD, you must open Acrobat Reader and accept the license agreement before you can view the documentation.

Once you have installed the manuals to your hard disk, you can view these documents by accessing them through the Data Translation, Inc\DT3130 Series program folder.

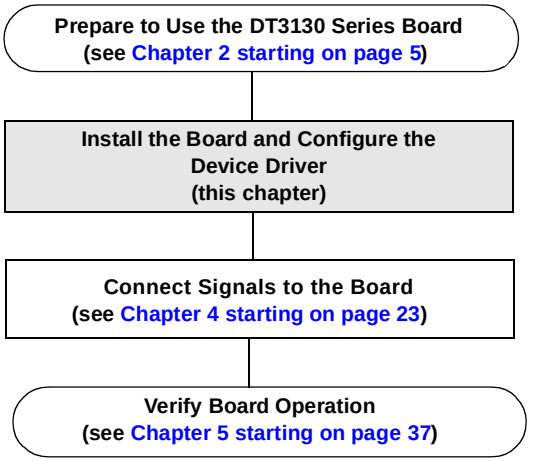
You can also view the documents from the Imaging OMNI CD, by performing the following steps:

1. Insert the Imaging OMNI CD into your CD-ROM drive.
2. Click **Start** from the Task Bar, then click **Run**.
   The Run dialog box appears.
3. In the **Command Line** edit box, enter **x:\LAUNCH.EXE** (where *x* is the letter of your CD-ROM drive)**.**
4. Click **OK**.
   The Imaging OMNI CD splash screen appears.
5. Click **View Documentation**
6. Click **Getting Started Manuals** and click **DT3130 Series**, or click **User's Manuals** and click **DT3130 Series**.
   Adobe Acrobat Reader opens.

Here are a few helpful hints about using Adobe Acrobat Reader:

- To navigate to a specific section of the document, click a heading from the table of contents on the left side of the document.
- Within the document, click the text shown in blue to jump to the appropriate reference (the pointer changes from a hand to an index finger).
- To go back to the page from which the jump was made, click the right mouse button and **Go Back,** or from the main menu, click **Document**, then **Go Back.**
- To print the document, from the main menu, click **File**, then **Print**.
- To increase or decrease the size of the displayed document, from the main menu, click **View**, then **Zoom**.
- By default, text and monochrome images are smoothed in Acrobat Reader, resulting in blurry images. If you wish, you can turn smoothing off by clicking **File**, then **Preferences/General**, and unchecking **Smooth Text and Images**.

Installing the Board and Configuring the Device Driver


Prepare to Use the DT3130 Series Board
(see Chapter 2 starting on page 5)
Install the Board and Configure the Device Driver
(this chapter)
Connect Signals to the Board
(see Chapter 4 starting on page 23)
Verify Board Operation
(see Chapter 5 starting on page 37)

Installing the Board

To install the board, you need to set up the computer, select an expansion slot, then insert the board into the computer, as described in the following sections.

Setting up the Computer

CAUTION:

To prevent electrostatic damage that can occur when handling electronic equipment, use a ground strap or similar device when performing this installation procedure.

Perform the following procedure to set up the computer:

1. Turn off the computer.
2. Turn off all peripherals (printer, modem, monitor, and so on) connected to the computer.
3. Unplug the computer and all peripherals.
4. Remove the cover from you computer. Refer to your computer's user manual for instructions.

Next, select an expansion slot, as described in the next section.

Selecting an Expansion Slot

Perform the following procedure to select an expansion slot:

1. Select a 32-bit or 64-bit PCI master expansion slot. Refer to your computer system's user manual to determine which slots are bus masters.

   PCI slots are shorter than ISA or EISA slots and are usually white or ivory. Commonly, three PCI slots (one of which may be a shared ISA/PCI slot) are available. If an ISA board exists in the shared slot, you cannot use the slot for a PCI board; likewise if a PCI board exists in the shared slot, you cannot use the slot for an ISA board.

   Note: In most PCI systems, any PCI slot can be a bus master.

2. Remove the cover plate from the selected expansion slot. Retain the screw that held it in place; you will use it later to install the board.

Next, insert the DT3130 Series board in the expansion slot, as described in the next section.

Inserting the DT3130 Series Board in the Computer

To insert the DT3130 Series board in the computer, perform the following steps:

1. To discharge any static electricity, hold the wrapped board in one hand while placing your other hand firmly on a metal portion of the computer chassis.
2. Carefully remove the antistatic packing material from the board. (We suggest that you save the original packing material in the unlikely event that your board requires servicing in the future.)
3. Hold the board by its edges and do not touch any of the components on the board.
4. Position the board so that the cable connectors are facing the rear of the computer, as shown in Figure 2.

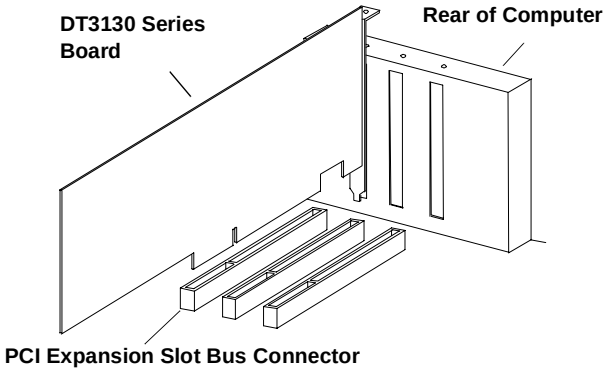


Figure 2: Inserting the DT3130 Series Board in the Computer

5. Carefully lower the board into the PCI expansion slot using the card guide to properly align the board in the slot. When the bottom of the board contacts the bus connector, gently press down on the board until it clicks into place.

CAUTION:

Do not force the board into place. Moving the board from side to side during installation may damage the bus connector. If you encounter resistance when inserting the board, remove the board and try again.

6. Secure the board in place at the rear panel of the system unit using the screw removed from the slot cover.
7. Turn on the computer.

Next, configure the device driver as described in the next section.

Loading and Configuring the Device Driver

In Windows 98, Windows Me, and Windows 2000, the driver is automatically loaded when you install the DT3130 Series driver from the Imaging OMNI CD. Proceed to configuring the device driver, described on page 22.

In Windows XP, however, you must load the device driver, as described in the next section, before configuring the device driver.

Loading the Device Driver (Windows XP Only)

Once you have installed the DT3130 Series Device Driver from the Imaging OMNI CD, installed the board, and powered up the computer, the *Found New Hardware Wizard* message appears. Perform the following steps to load the device driver:

1. Select the option to **Install the software automatically (Recommended)**, then click Next.
2. Click **Finish**.
   The Found New Hardware Wizard message appears for the secondary device on the DT3130 Series board.
3. Select the option to **Install the software automatically (Recommended)**, then click Next.
4. Click **Finish**.
   The Found New Hardware Wizard message appears for the auxiliary device on the DT3130 Series board.
5. Select the option to **Install the software automatically (Recommended)**, then click Next.
6. Click **Finish**.
7. Proceed to the next section to configure the device driver.

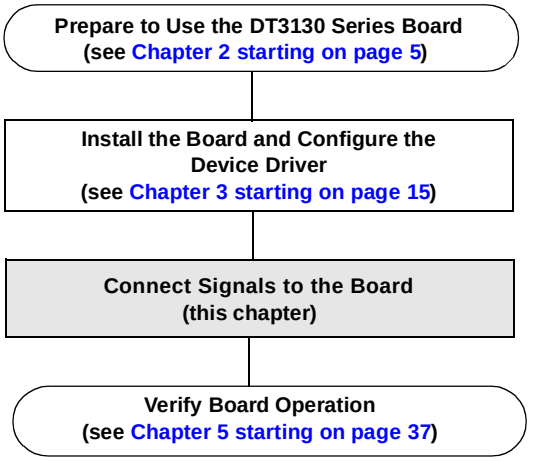
Configuring the Device Driver

To configure the DT3130 Series Device Driver, perform the following steps:

1. Open the Control Panel.
2. Double-click the **DT Imaging Control** icon.
3. Select the DT3130 Series device to configure.
   Note that the DT3131 and DT3131-ISO boards contain one device; the DT3132 and DT3132-ISO boards contain two devices; and the DT3133 and DT3133-ISO boards contain three devices. Device 1 corresponds to channels 0, 1, and 2; device 2 corresponds to channels 3, 4, and 5; and device 3 corresponds to channels 6, 7, and 8.
4. Select the **Video Format** as either 50 Hz or 60 Hz.
5. When you are finished, click **Done**.
   If you made any changes, the Save Changes dialog box appears.
6. If you want to save your changes, click **Yes**.

When you are finished with this procedure, continue by connecting signals to the board. Refer to Chapter 4 starting on page 23.

Connecting Signals


Prepare to Use the DT3130 Series Board
(see Chapter 2 starting on page 5)
Install the Board and Configure the Device Driver
(see Chapter 3 starting on page 15)
Connect Signals to the Board
(this chapter)
Verify Board Operation
(see Chapter 5 starting on page 37)

Connecting Video Signals to the Board

You can connect monochrome or composite color video signals to the board in one of two ways:

- **Using the EP311 cable** – Use this cable if you want to connect a maximum of three simultaneous inputs (corresponding to the first channel of each device) to a DT3130 Series board. For example, if you have a DT3131 board, which has one frame grabber device on it, the EP311 cable allows you to connect one monochrome/composite input (VID0) to the board. If you have a DT3133 board, which has three frame grabber devices on it, the EP311 cable allows you to connect one monochrome/composite input (VID0) to device 1, one monochrome/composite input (VID3) to device 2, and one monochrome/composite input (VID6) to device 3.
- **Using the EP314 cable** – Use this cable if you want to connect up to nine multiplexed inputs to a DT3130 Series board. For example, if you have a DT3131 board, which has one frame grabber device on it, the EP314 cable allows you to connect three monochrome/composite inputs (VID0 to VID2) to the board. If you have a DT3133 board, which has three frame grabber devices on it, the EP314 cable allows you to connect three monochrome/composite inputs (VID0 to VID2) to device 1, three monochrome/composite inputs (VID3 to VID5) to device 2, and three monochrome/composite inputs (VID6 to VID8) to device 3.

If you want to connect an S-video signal to a DT3130 Series board, use the EP317 cable.

The following sections describe these connection methods.

CAUTION:

Always turn off the power to both your computer and the video source before making these connections. Damage can result if connections are made with the power on.

Connecting Video Signals to the Board Using the EP311 Cable

If you purchased the optional EP311 cable, you can connect up to three simultaneous monochrome/composite video signals, which use the NTSC/RS-170 or PAL/CCIR video format, to connector J2 on the DT3130 Series board, by performing the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of a EP311 cable into the J2 socket at the rear of the DT3130 Series, as shown in Figure 3, then tighten the screws on the connector.

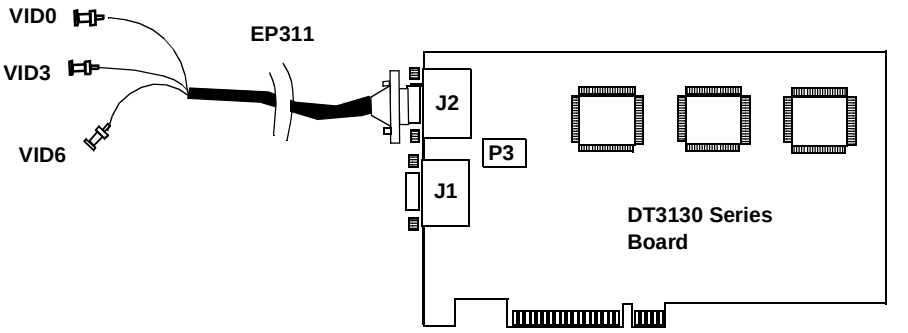


Figure 3: Connecting the EP311 Cable to Connector J2

Note: The EP311 attaches to female BNC connectors. If the video out connector on your video input source is a male BNC or an RCA connector, you need to obtain the appropriate adaptor (available at electronic equipment stores).

2. If you are using monochrome/composite signals, attach the outputs of your video source(s) to the EP311 BNC connectors listed in Table 4.

Table 4: Monochrome/Composite Signal Connections

Signal	Signal Name	EP311 Connector
Monochrome/ Composite Input 0	VID0	VID0
Monochrome/ Composite Input 1	VID3[a]	VID3
Monochrome/ Composite Input 2	VID6[b]	VID6

a. This device is available on the DT3132, DT3132-ISO, DT3133, and DT3133-ISO boards only.

b. This device is available only on the DT3133 and DT3133-ISO boards.

Connecting Video Signals to the Board Using the EP314 Cable

If you purchased the optional EP314 cable, you can connect up to nine multiplexed monochrome/composite video inputs, which use the NTSC/RS-170 or PAL/CCIR video format, to connector J2 on the DT3130 Series board, by performing the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of one EP314 cable into the J2 socket at the rear of the DT3130 Series, as shown in Figure 4, then tighten the screws on the connector.

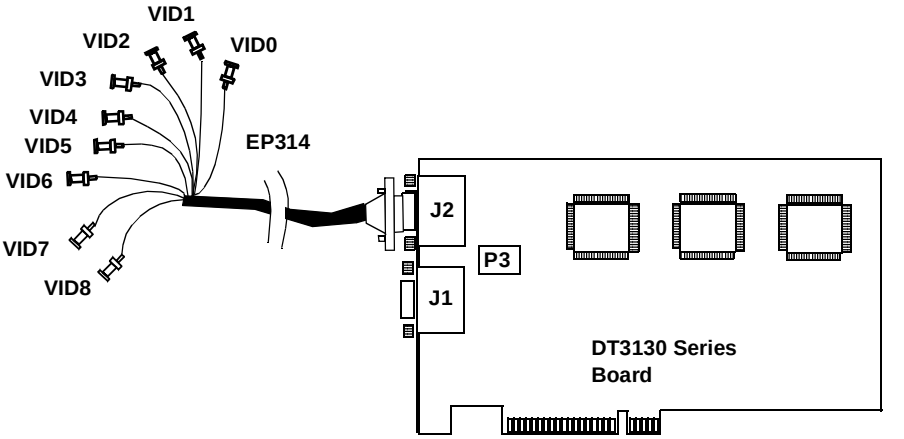


Figure 4: Connecting the EP314 Cable to Connector J2

Note: The EP314 attaches to female BNC connectors. If the video out connector on your video input source is a male BNC or an RCA connector, you need to obtain the appropriate adaptor (available at electronic equipment stores).

2. If you are using monochrome/composite signals, attach the outputs of your video source(s) to the EP314 BNC connectors listed in Table 4.

Table 5: Monochrome/Composite Signal Connections

Signal	Signal Name	EP314 Connector
Monochrome/ Composite Input 0	VID0	VID0
Monochrome/ Composite Input 1	VID1	VID1
Monochrome/ Composite Input 2	VID2	VID2
Monochrome/ Composite Input 3	VID3[a]	VID3
Monochrome/ Composite Input 4	VID4[a]	VID4
Monochrome/ Composite Input 5	VID5[a]	VID5
Monochrome/ Composite Input 6	VID6[b]	VID6
Monochrome/ Composite Input 7	VID7[b]	VID7
Monochrome/ Composite Input 8	VID8[b]	VID8

a. This signal is supported on DT3132, DT3132-ISO, DT3133, and DT3133-ISO boards only.
b. This signal is supported on DT3133 and DT3133-ISO boards only.

Connecting an S-Video Signal to the Board Using the EP317 Cable

If you want to connect an S-video signal, which uses the Y/C video format, to connector J2 on the DT3130 Series board, perform the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of one EP317 cable into the J2 socket at the rear of the DT3130 Series, as shown in Figure 5, then tighten the screws on the connector.

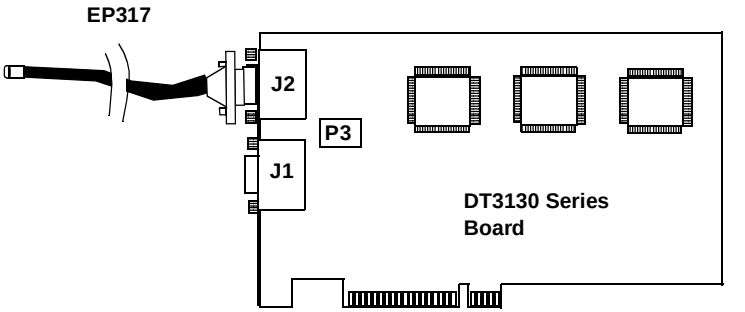


Figure 5: Connecting the EP317 Cable to Connector J2

2. Attach the S-video connector of your signal source to the male S-video connector on the EP317 cable. Refer to Figure 6.

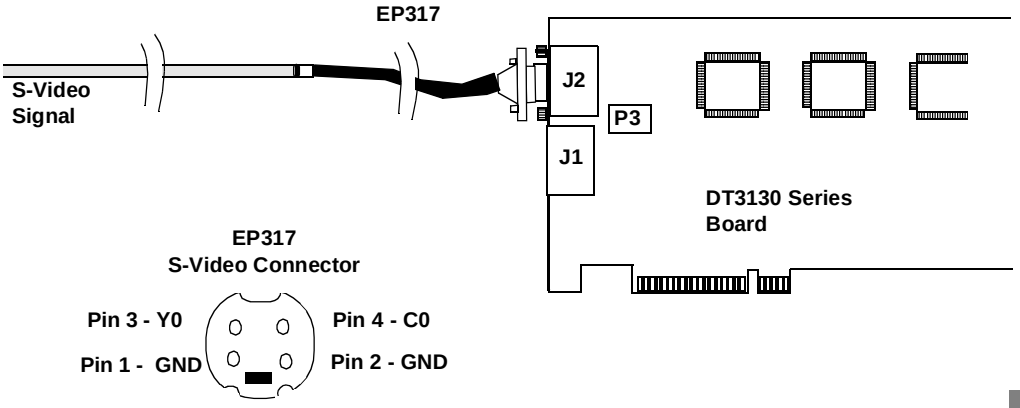


Figure 6: Connecting an S-Video Signal to an DT3130 Series Board

Connecting Trigger, Strobe, and Power Signals to the Board

This section assumes that you have purchased an optional EP312 cable.

Connect trigger input and strobe output signals to connector J1 on the DT3130 Series board by performing the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of one EP312 cable into the J1 socket at the rear of the DT3130 Series, as shown in Figure 7, and tighten the screws on the connector.

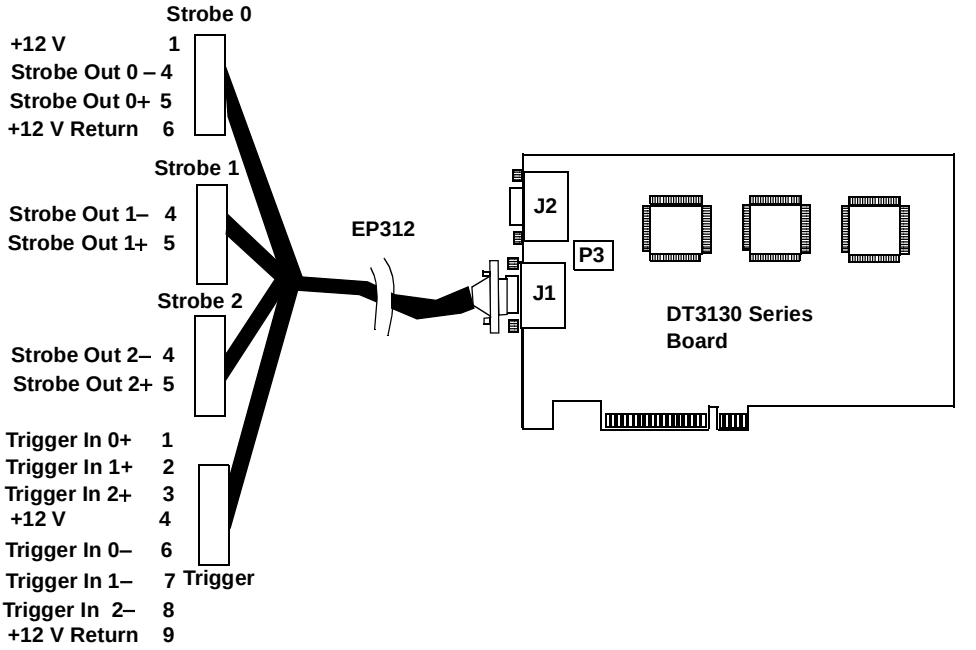


Figure 7: Connecting the EP312 Cable to Connector J1

2. If you are using trigger signals, wire the outputs of your trigger source(s) to the pins of connector J5, listed in Table 6.

Table 6: Trigger Input Signal Connections

Signal	Signal Name	EP312 Connector	Connector Pin
Trigger Input 0	Trigger In 0+	Trigger	1
	Trigger In 0–	Trigger	6
Trigger Input 1[a]	Trigger In 1+	Trigger	2
	Trigger In 1–	Trigger	7
Trigger Input 2[b]	Trigger In 2+	Trigger	3
	Trigger In 2–	Trigger	8

a. The Trigger In 1 signal is supported on DT3132, DT3132-ISO, DT3133, and DT3133-ISO boards only.
b. The Trigger In 2 signal is supported on DT3133 and DT3133-ISO boards only.

3. If you are using strobe signals, attach the inputs of your strobe(s) to the signals listed in Table 7.

Table 7: Strobe Output Signal Connections

Signal	Signal Name	EP312 Connector	Connector Pin
Strobe Output 0	Strobe Out 0+	Strobe 0	5
	Strobe Out 0–	Strobe 0	4
Strobe Output 1[a]	Strobe Out 1+	Strobe 1	5
	Strobe Out 1–	Strobe 1	4
Strobe Output 2[b]	Strobe Out 2+	Strobe 2	5
	Strobe Out 2–	Strobe 2	4

a. The Strobe Out 1 signal is supported on DT3132, DT3132-ISO, DT3133, and DT3133-ISO boards only.
b. The Strobe Out 2 signal is supported on DT3133 and DT3133-ISO boards only.

Note: The strobe wiring for the DT3131, DT3132, and DT3133 is compatible with standard EG&G strobe inputs. The strobe wiring for the isolated boards (DT3131-ISO, DT3132-ISO, and DT3133-ISO) is not compatible with EG&G strobe inputs. Refer to the *DT3130 Series User's Manual* for information on how the strobes work for the isolated and nonisolated boards.

4. If you want the DT3130 Series board to provide +12 V (1.5 A) power to a strobe or camera, perform the following steps:

   a. Attach the +12 V input signal to connector J2 of the EP312, if you are powering a strobe, or to connector J5 of the EP312 cable, if you are powering a camera. Table 2 describes the connectors and pins of the EP312 cable.

Table 2: +12 V Power Signal Connections

Signal Name	EP312 Connector	Connector Pin
+12 V	Strobe 0	1
+12 V Return	Strobe 0	6
+12 V	Trigger	4
+12 V Return	Trigger	9

   b. Using an EP315 cable, connect the P1 connector of the cable to the +12 V power plug inside your computer, as shown in Figure 8.

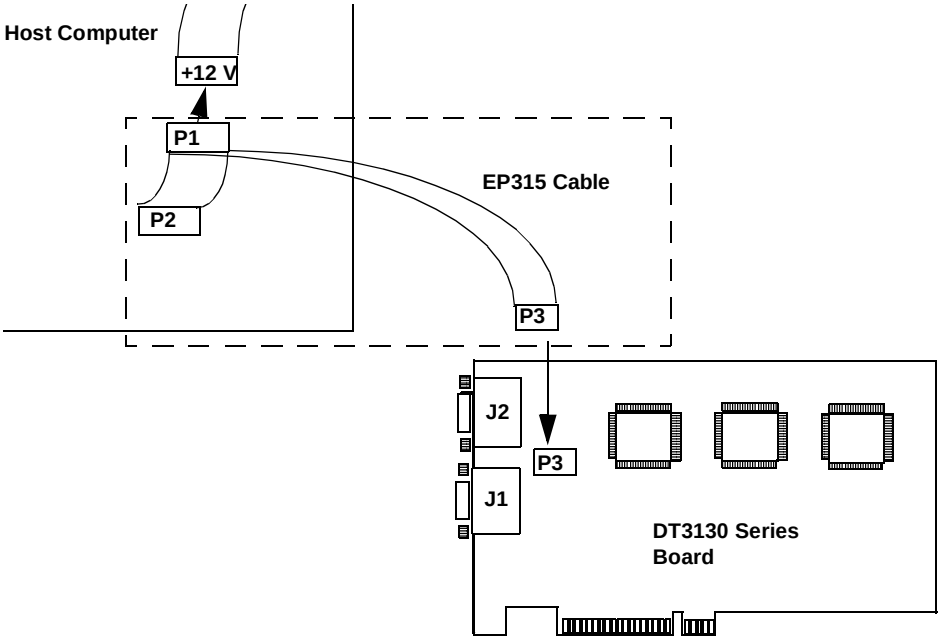
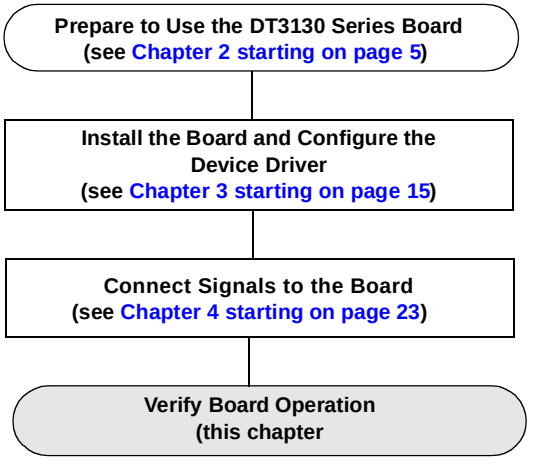


Figure 8: Supplying +12 V Power from the Computer to an DT3130 Series Board

c. Connect the P3 connector of the EP315 cable to the 2-pin P3 connector on DT3130 Series board.
Note that you can use the P2 connector of the EP315 cable to attach other peripherals, such as disk drives, to the host computer, if desired.

Verifying Board Operation


Prepare to Use the DT3130 Series Board
(see Chapter 2 starting on page 5)
Install the Board and Configure the Device Driver
(see Chapter 3 starting on page 15)
Connect Signals to the Board
(see Chapter 4 starting on page 23)
Verify Board Operation
(this chapter

Overview

The DT-Acquire example program provides a quick way to verify that your board is properly installed, that the camera or cameras are properly connected, and that you can acquire images.

DT-Acquire allows you to

- Acquire an image to system memory,
- Display live video in passthru mode,
- Open a previously saved image, and
- Save an acquired image in BMP format.

Note: DT-Acquire works with your display monitor set to 16-bit, 24-bit, or 32-bit.

Installing DT-Acquire

To install DT-Acquire, perform the following steps:

1. Insert the Imaging OMNI CD into the CD-ROM drive.
2. Click **Start** from the Task Bar, then click **Run**.
   The Run dialog box appears.
3. Enter **x:\LAUNCH.EXE** (where *x* is the letter of your CD-ROM drive).
   The Imaging OMNI splash screen appears.
4. Click **Install Products**.
5. Click **Mach I Series**.
6. Click **DT Acquire**.
7. Click **Next**.
   The default installation destination folder is displayed.
8. Change the destination folder or accept the default folder, then click **Next**.
   The default installation program folder is displayed.
9. Change the program folder or accept the default folder, then click **Next**.
   The files are copied to the specified folders.
10. Click **Finish**.
11. Click **Main Menu**.
12. Click **Exit**.

Using DT-Acquire

To start DT-Acquire, click the **DT-Acquire** icon in the Data Translation, Inc\DT-Acquire\ program group. The main menu is displayed.

The following subsections describe how to use DT-Acquire to verify that the DT3130 Series board is working. If you have any trouble performing any of these operations, refer to the Troubleshooting chapter of the *DT3130 Series User's Manual* (see page 13 for information on viewing this manual).

Note: This utility allows you to verify basic operations on the board; however, it does not support all of the board's features.

For information on each of the features provided, read the Readme.txt file provided with the utility.

For detailed information on the supported features of the board, refer to the *DT3130 Series User's Manual* (see page 13 for information on viewing this manual).

Synchronously Acquiring a Single Frame to Memory

To synchronously acquire a single frame to memory, perform the following steps:

1. If you are using a composite video input signal, connect the video input signal to channel 0 (VID0). If you are using an S-video (Y/C) input, connect the Y signal to the luminance signal of channel 1 (Y1), and connect the C signal to the chrominance signal of channel 1 (C1).
2. From the DT-Acquire main menu, click **Setup**, then click **Select Device**.
3. Select the alias that you gave to the DT3130 Series board when you configured the device driver, then click **OK**. To get started, select device -1.
4. Leave the remainder of the settings under **Setup** at their default values.
5. From the DT-Acquire main menu, click **Run**, then **Single Frame Acquire!**.
   A single frame is acquired (synchronously) and displayed on the screen.
6. To acquire another frame, repeat step 5.
7. If you wish, modify the parameters available for the DT3130 Series board by clicking the desired parameter under **Setup** and changing the associated values, then repeat step 5.

Note: If you change the video input channel, ensure that you connect the video input signals to the appropriate channel.

---

8. If you want to save the graphic, click **File** from the DT-Acquire main menu, then click **Save Graphic File**.

9. When you are finished with this utility, from the DT-Acquire main menu, click **Setup**, then click **Close Device**. Then, close the application.

Performing a Passthru Operation

To capture live images and display them (without saving the images), perform the following steps:

1. If you are using a composite video input signal, connect the video input signal to channel 0 (VID0). If you are using an S-video (Y/C) input, connect the Y signal to the luminance signal of channel 1 (Y1), and connect the C signal to the chrominance signal of channel 1 (C1).

2. From the DT-Acquire main menu, click **Setup**, then click **Select Device**. Leave the remainder of the settings under **Setup** at their default values.

3. Select the alias that you gave to the DT3130 Series board when you configured the device driver, then click **OK**. To get started, select device -1.

4. From the DT-Acquire main menu, click **Run**, then **Start Pass Thru!**.
   Live video is asynchronously acquired to display memory, converted to bitmap format, and displayed on the screen.

5. To stop the asynchronous passthru operation, from the DT-Acquire main menu, click **Run**, then **Stop Pass Thru!**.

6. If you wish, modify the parameters available for the DT3130 Series board by clicking the desired parameter under **Setup** and changing the associated values, then repeat steps 4 and 5.

Note: If you change the video input channel, ensure that you connect the video input signals to the appropriate channel.

7. When you are finished with this utility, from the DT-Acquire main menu, click **Setup**, then click **Close Device**. Then, close the application.

Index

S

U

V