DATA TRANSLATION

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DT3152-LS
Getting Started Manual

Fourth Edition
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About this Manual

This manual describes how to get started using a DT3152-LS frame grabber board.

Intended Audience

This document is intended for engineers, scientists, technicians, or others responsible for setting up a DT3152-LS 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® 95, Windows 98, Windows Me (Millennium Edition), Windows NT®4.0, 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 DT3152-LS hardware and software, and provides an overview of the getting started procedure;
- Chapter 2, "Preparing to Use the DT3152-LS," describes how to unpack the board and software, check system requirements, install the DT3152-LS software, and view the DT3152-LS documentation online;
- Chapter 3, "Installing the Board," describes how to install the DT3152-LS board;
- Chapter 4, "Connecting Signals," describes how to connect signals to the board;

- Chapter 5, "Installing and Configuring the Device Driver," describes how to install and configure the device driver; and
- Chapter 6, "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 a DT3152-LS board:

- The *DT3152-LS User's Manual* (UM-16481), included on the Imaging OMNI CD™ provided with the DT3152-LS board, describes the features of the DT3152-LS board and DT3152-LS Device Driver in detail.
- *Frame Grabber SDK User's Manual* (UM-13442) and online help, included on the Imaging OMNI CD provided with the DT3152-LS board, 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 DT3152-LS board, our Technical Support Department is available to provide technical assistance. Refer to the Troubleshooting chapter of the *DT3152-LS User's Manual* for more information (see page 14 for information on installing and 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

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Key Hardware Features

The DT3152-LS is a high-accuracy, programmable, monochrome frame grabber board for the PCI bus. It is suitable for both image analysis and machine vision applications, and is particularly useful when acquiring snapshots of moving or rotating objects, such as parts on a production line, for analysis.

Key features of the DT3152-LS board are summarized as follows:

- Operates on the PCI local bus interface;
- In area-scan mode, can acquire images up to 4,096 pixels per line by 4,096 lines per frame; in line-scan mode, can acquire images with as many as 8,192 pixels per line and with as many lines as the system memory allows;
- Digitizes 8-bit monochrome video from any one of four video input channels;
- Supports asynchronous reset cameras;
- In area-scan mode, synchronizes to any one of four video inputs;
- In area-scan mode, provides Sync Master mode for driving camera timing;
- Accepts and provides separate control signals for variable-scan devices;
- Accepts and provides synchronization signals for most line-scan cameras (line-sync, pixel clock, and integration output);
- Provides a programmable internal pixel clock and accepts an external pixel clock input;
- Provides digital video synchronization for reduced pixel jitter and good VCR/VTR acquisition;
- Accepts an external trigger with selectable polarity;
- Provides hardware clipping;
- In area-scan mode, provides real-time scaling via decimation;

- Provides a 256 x 8-bit input look-up-table (ILUT);
- Provides a 256 x 8-bit passthru look-up-table;
- Supports a programmable region-of-interest (ROI);
- In area-scan mode, provides a software-selectable chrominance notch filter for 50 Hz and 60 Hz AC-coupled signals;
- Provides programmable A/D reference, offset, and gain (0.5, 1, 2, and 4) settings to adjust black and white levels; and
- In line-scan mode, accepts four TTL-level digital input signals for general-purpose use; in area-scan and line-scan mode, provides four TTL-level digital output signals for general-purpose use.

For more information on these features, refer to the *DT3152-LS User's Manual* (see page 14 for information on installing and viewing this manual).

DT3152-LS Software

The DT3152-LS software, included on the Imaging OMNI CD provided with the board, includes the following components:

- **DT3152-LS Device Driver** – You *must* install this device driver to use the DT3152-LS board with any of the supported software packages or utilities.
- ***DT3152-LS User's Manual*, in PDF format** – Describes the features of the DT3152-LS board and how to use the DT3152-LS Device Driver with the Frame Grabber SDK to write an application program.
- This manual in PDF format.

Refer to Chapter 2 starting on page 7 for information on installing the DT3152-LS software.

Getting Started Procedure

The flow diagram shown in Figure 1 illustrates the steps needed to get started using the DT3152-LS board. This diagram is repeated in each chapter; the shaded area in the diagram shows you where you are in the getting started procedure.

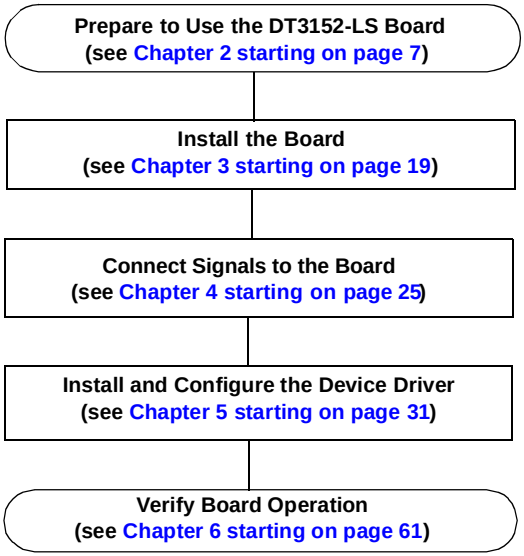

Figure 1: Getting Started Flow Diagram

Preparing to Use the DT3152-LS

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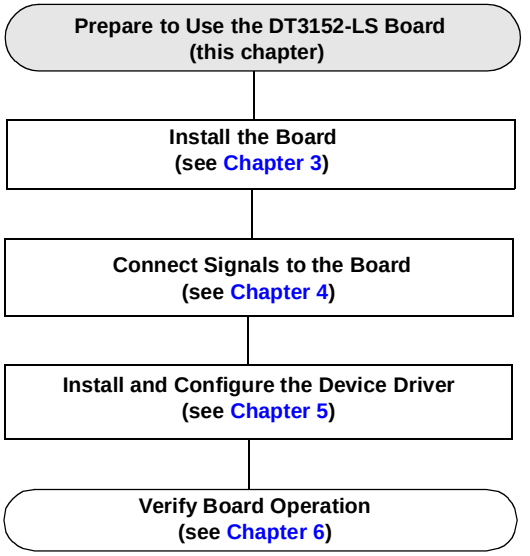
Prepare to Use the DT3152-LS Board
(this chapter)
Install the Board
(see Chapter 3)
Connect Signals to the Board
(see Chapter 4)
Install and Configure the Device Driver
(see Chapter 5)
Verify Board Operation
(see Chapter 6)

Unpacking

Open the shipping box and carefully remove the DT3152-LS frame grabber board.

CAUTION:

Keep the DT3152-LS board in its protective antistatic bag until you are ready to configure and/or install it.

Verify that the following items are present:

- DT3152-LS frame grabber board, and
- Imaging OMNI CD-ROM.

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 USA, call your local distributor, listed in your Data Translation Product Handbook.

Note: We suggest 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 DT3152-LS board requires the following minimum system requirements:

- 120 MHz Pentium processor with an Intel PCI chip set that supports and enables PCI-to-posted memory writes. 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, please 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, release 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, please call your system manufacturer to upgrade the BIOS to Version 4, release 6.

- At least one available PCI 32-bit or 64-bit bus master expansion slot.
- At least 16 MB of RAM. Note that 300 KB (60 Hz) or 432 KB (50 Hz) are required to store each two-dimensional frame.
- A PCI graphics card with a 256-color (8-bit) or 65,536 (16-bit) palette. A DDI-compatible, PCI bus graphics card is recommended for real-time display.
- An image input source with appropriate cabling.
- At least one CD-ROM drive.
- A hard disk.
- Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, or Windows XP.

Configuring Jumper W1

By default, jumper W1 is not installed, allowing you to connect up to four AC-coupled inputs to the DT3152-LS board. If your application uses only AC-coupled signals, leave jumper W1 uninstalled, and proceed to the next section.

If you want to connect a DC-coupled signal to the DT3152-LS board, you must install jumper W1. Figure 2 shows the location of jumper W1 on the board.

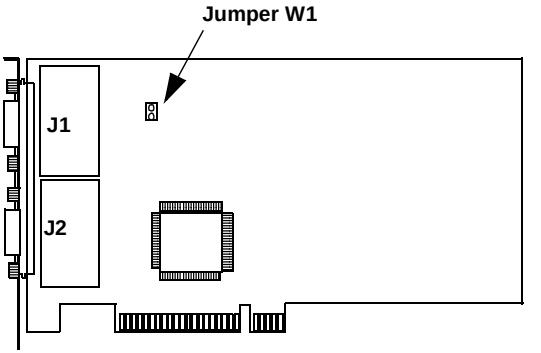

Figure 2: Location of Jumper W1 on the DT3152-LS Board

To install the jumper, perform the following steps:

1. Discharge any static electricity by holding 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.
3. Insert the jumper plug or wire the posts in the jumper location. *Once the jumper is installed, the board can accept a DC-coupled input from video channel 3. You can now install the board in the computer, as described in the following section.*

Installing the Software

To install the DT3152-LS software, perform the following procedure:

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 **Install Products**.
6. Click **Mach I Series**.
7. Click **Device Drivers**.
8. Click **DT3152LS**, then click Next.
   If you are using Windows NT 4.0, Windows 2000, or Windows XP, the installation instructions are displayed. If you are using Windows 95, Windows 98, or Windows Me, the files are copied.
9. If you are using Windows NT, Windows 2000, or Windows XP, click **Print** to print the installation instructions, or go to the next section to install and print the DT3152-LS documentation.
10. Click **Main Menu**, then click **Exit**.

Installing the DT3152-LS Documentation

If you are using Windows 95, Windows 98, or Windows Me and installed the DT3152-LS device driver, the DT3152-LS documentation is automatically copied to your hard drive. Refer to the next section for information on viewing these documents.

If you are using Windows NT, Windows 2000, or Windows XP, perform the following steps to install the DT3152-LS documentation:

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 **Install Products**.
6. Click **Mach I Series**.
7. Click **Documentation**.
8. Click **Getting Started**.
9. Click **DT3152LS**.
10. Browse to the directory in which to copy the manual on your hard disk, the click **Next**.
    The manual is copied to your hard disk.
11. Click **OK**.
12. Click **Back**.
13. Click **User's Manual**.
14. Click **DT3152LS**.

15. Browse to the directory in which to copy the manual on your hard disk, the click **Next**.
The manual is copied to your hard disk.

16. Click OK.

17. Click **Main Menu**, then click **Exit**.

Refer to the next section for information on viewing these documents.

Viewing the DT3152-LS Documentation

Note: To view the DT3152-LS 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\DT3152LS 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 **DT3152LS**, or click **User's Manuals** and click **DT3152LS**.
   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

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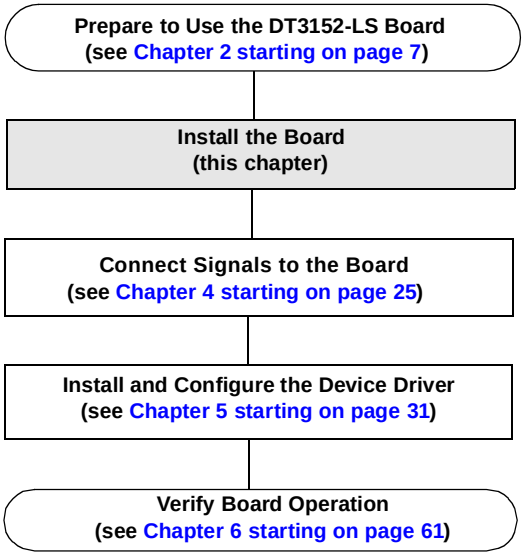
Inserting the DT3152-LS Board in the Computer 23


Prepare to Use the DT3152-LS Board
(see Chapter 2 starting on page 7)
Install the Board
(this chapter)
Connect Signals to the Board
(see Chapter 4 starting on page 25)
Install and Configure the Device Driver
(see Chapter 5 starting on page 31)
Verify Board Operation
(see Chapter 6 starting on page 61)

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 DT3152-LS board in the expansion slot, as described in the next section.

Inserting the DT3152-LS Board in the Computer

To insert the DT3152-LS 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 3.

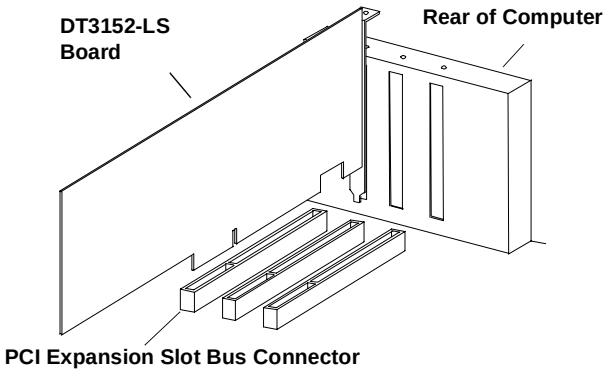


Figure 3: Inserting the DT3152-LS Board in the Computer

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:

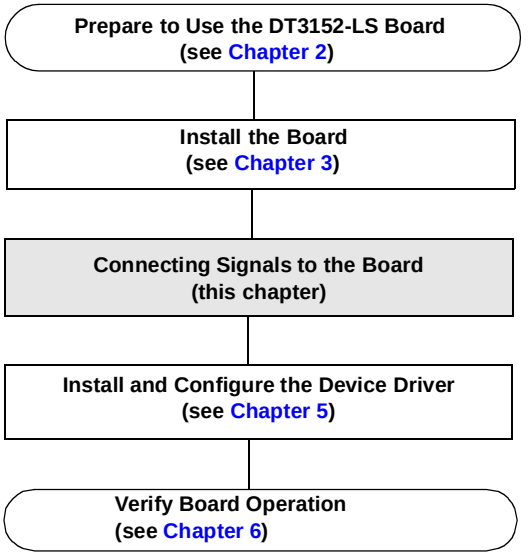
Do not force the board into place. Moving the board from side to side during installation may damage the bus connector. If you encounter resistance when inserting the board, remove the board and try again.

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

When you are finished with this procedure, continue by connecting signals to the board. Refer to Chapter 4 starting on page 25.

Connecting Signals

Connecting Signals to Connector J1 on the Board 27
Connecting Signals to Connector J2 on the Board 29



CAUTION:

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

This section describes how to connect one or more video input sources to the DT3152-LS board. This section assumes that you have purchased two optional EP306 cables.

Connecting Signals to Connector J1 on the Board

To connect signals to connector J1 on the DT3152-LS board, perform the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of the EP306 cable into the J1 socket at the rear of the DT3152-LS board, as shown in Figure 4, and tighten the screws on the connector.

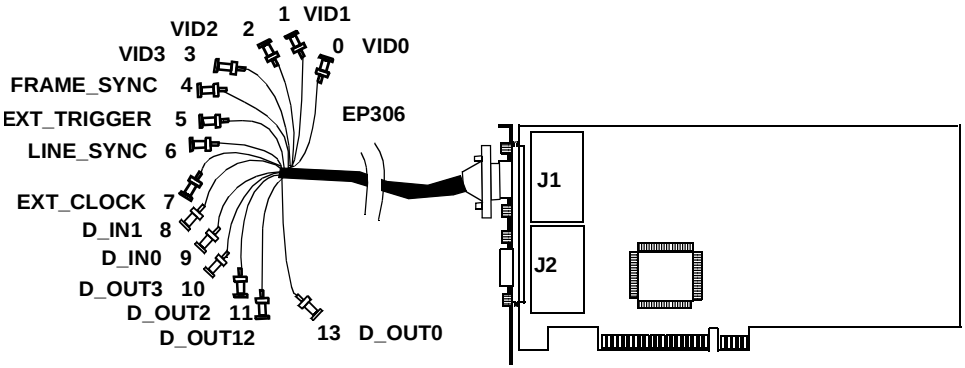


Figure 4: Connecting the EP306 Cable Assembly to Connector J1

2. If you are using AC-coupled video sources, connect a video source to EP306 connectors 0 (VID0), 1 (VID1), 2 (VID2), and/or 3 (VID3).

   If you are using a DC-coupled video source, connect the video source to EP306 connector 3 (VID3).

Note: If you are using a DC-coupled video source, jumper W1 must be installed. Refer to page 12 for more information on installing this jumper.

The EP306 cable attaches to female BNC connectors. If the video out connector on your video source is a male BNC or an RCA connector, you need to obtain an appropriate adaptor (available at electronic equipment stores).

3. For two-dimensional images (area-scan), attach a composite sync input to any unused EP306 video input connector (0, 1, 2, or 3), if desired.
4. If you are using an external trigger source, attach the output of the external trigger source to EP306 connector 5.
5. For line-scan mode only, you can attach the digital output jacks on the line-scan camera to EP306 connectors 8 or 9, if desired.
6. If desired, attach the digital input jacks of the video source to EP306 connectors 10, 11, 12, and/or 13.

Connecting Signals to Connector J2 on the Board

Note: Refer to the camera-specific PDF files on the Imaging OMNI CD shipped with the board and/or to our Web site (www.datatranslation.com) for information on connecting specific line-scan cameras to the DT3152-LS.

To connect signals to connector J2 on the DT3152-LS board, perform the following steps:

1. After making sure power to the computer is off, push the 15-pin connector of the second EP306 cable assembly into the J2 socket at the rear of the DT3152-LS board, as shown in Figure 5, and tighten the screws on the connector.

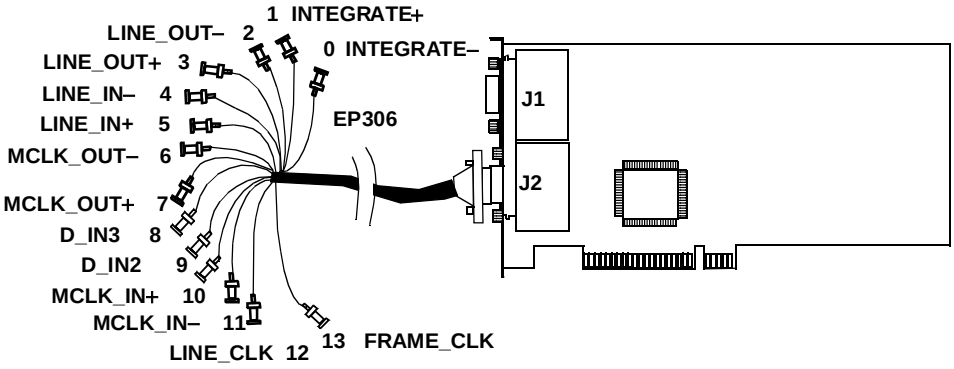


Figure 5: Connecting the EP306 Cable Assembly to Connector J2

2. If an integration pulse is required by your camera, connect the negative (–) integration pulse jack on the line-scan camera to EP306 connector 0; connect the positive (+) integration pulse jack on the line-scan camera to EP306 connector 1.
3. Connect the negative (–) line-sync input jack on the line-scan camera to EP306 connector 2; connect the positive (+) line-sync input jack on the line-scan camera to EP306 connector 3.
4. Connect the negative (–) line-sync output jack on the line-scan camera to EP306 connector 4; connect the positive (+) line-sync output signal on the line-scan camera to EP306 connector 5.
5. Connect the negative (–) clock input jack of the line-scan camera to EP306 connector 6; connect the positive (+) clock input jack on the line-scan camera to EP306 connector 7.
6. Connect the positive (+) clock output jack on the line-scan camera to EP306 connector 10; connect the negative (-) clock output jack on the line-scan camera to EP306 connector 11.
7. For line-scan mode only, you can attach the digital output jacks on the line-scan camera to EP306 connectors 8 or 9, if desired.

Once you have connected all the required video signals to the DT3152-LS board, apply power to the computer, then apply power to your video source.

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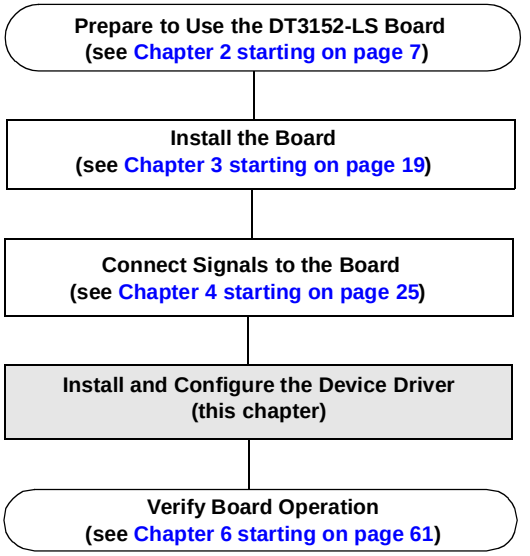
Prepare to Use the DT3152-LS Board
(see Chapter 2 starting on page 7)
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Install and Configure the Device Driver
(this chapter)
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Before Installing the Device Driver

The DT3152-LS Device Driver is provided to support the DT3152-LS board in IBM PC-compatible Pentium systems running Windows 95, Windows 98, Windows Me, Windows NT 4.0, Windows 2000, or Windows XP. The DT3152-LS Device Driver is compatible with any application developed using the 32-bit Frame Grabber SDK, which follows the DT-Open Layers Application Programming Interface (API) standards.

Before installing the software, ensure that you have

- Installed Microsoft Windows 98, Windows Me, Windows NT 4.0, Windows 2000, or Windows XP.
- Read the file README.TXT in the \DRIVERS\Win95, Win98, or WinNT directory (if present on the Imaging OMNI CD-ROM) for any information not included in this documentation at release time.
- Installed the board.
- (Optional) Installed the 32-bit Frame Grabber SDK (SP0585).

Installing and Configuring the Device Driver in Windows 95

For Windows 95, the installation instructions depend on which version of Windows 95 is installed on your machine. For version 4.00.950 or 4.00.950a of Windows 95, follow the instructions on page 34. For version 4.00.950B or 4.00.950 C of Windows 95, follow the instructions on page 37.

To determine the version of Windows 95 installed on your system, perform the following steps:

1. From the Control Panel, double-click the **System** icon.
2. Click the **General** tab, if necessary.
   The version of Windows 95 is listed under System.

Note: To provide Direct Draw support, the Imaging OMNI CD contains the following files: ddraw.dll, ddraw16.dll, and ddhelp.exe. Windows notifies you if it finds newer versions of these files on your system when you are installing the driver; it is recommended that you keep the newest versions of these files.

Installing the Device Driver Under Version 4.00.950 or 4.00.950a of Windows 95

In Windows 95, you can install the DT3152-LS Device Driver when Windows 95 first detects the new DT3152-LS board at startup or install the DT3152-LS Device Driver after Windows 95 has started. Installation at startup is easier and quicker, and is recommended in most cases.

As Windows 95 (Version 4.00.950 or 4.00.950a) Starts

To install the DT3152-LS Device Driver under version 4.00.950 or 4.00.950a of Windows 95 as it starts, perform the following steps:

1. Start Windows 95.
   The New Hardware Found dialog box appears stating that a new PCI Multimedia Video Device was detected.
2. Click **Driver from disk provided by hardware manufacturer**, then click **OK**.
   The Install From Disk dialog box appears.

Note: You may choose **Do not install driver** at this point, if you wish. To install the driver at a later time, see page 36.

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3. Insert Imaging OMNI CD into the CD-ROM drive.
4. Click **Browse**, browse to **x:\DRIVERS\DT3152LS\Win95** (where *x* is the letter of your CD-ROM drive), then click **OK**.
5. When the files have been copied, remove the CD-ROM from the CD-ROM drive.
   You are prompted to restart your system.
6. Click **Yes** to restart the system.
   For proper operation, it is very important that you restart Windows 95 when prompted.
7. If a Windows 95 Shutdown dialog box appears, manually close all open applications on your desktop, then click **OK** to continue. Otherwise, the system restarts.
   When the system restarts, a dialog box appears prompting you to initiate the Configuration Utility.
8. Click **OK** to initiate the Configuration Utility.
   Note that is not necessary to log in to Windows or your network to run the Configuration Utility.
9. Click **OK** to begin configuring the DT3152-LS board.

10. Follow the steps on page 40 to add the new DT3152-LS board to the DT3152-LS Device Driver configuration.

After Windows 95 (Version 4.00.950 or 4.00.950a) Has Started

To install the DT3152-LS Device Driver after version 4.00950 or 4.00.950a of Windows 95 has started, perform these steps:

1. Open the Control Panel.
2. Double-click **System**.
   The System Properties dialog box appears.
3. Click the **Device Manager** tab, then click **View devices by type**.
4. Double-click **Other devices**.
   A list of unknown hardware appears.
5. Click **PCI Multimedia Video Device**, then click **Remove**.
   The Confirm Device Removal dialog box appears.
6. Click **OK** to remove the device.
7. If multiple PCI Multimedia Video Devices are installed, repeat steps 3 to 6 to remove all PCI Multimedia Video Devices.
8. Click **Refresh**.
   The New Hardware Found dialog box appears.
9. Click **Driver from disk provided by hardware manufacturer**, then click **OK**.
   The Install From Disk dialog box appears.
10. Insert the Imaging OMNI CD-ROM into the CD-ROM drive.
11. Click **Browse**, browse to **x:\DRIVERS\DT3152LS\Win95** (where *x* is the letter of your CD-ROM drive), then click **OK**.
12. When the files have been copied, remove the CD-ROM from the CD-ROM drive.
    You are prompted to restart your system.

13. Click **Yes** to restart the system.
    For proper operation, it is very important that you restart Windows 95 when prompted.
14. If a Windows 95 Shutdown dialog box appears, manually close all open applications on your desktop, then click **OK** to continue. Otherwise, the system restarts.
    When the system restarts, a dialog box appears prompting you to initiate the Configuration Utility.
15. Click **OK** to initiate the Configuration Utility.
    Note that it is not necessary to log in to Windows or your network to run the Configuration Utility.
16. Click **OK** to begin configuring the DT3152-LS board.
17. Follow the steps on page 40 to add the new DT3152-LS board to the DT3152-LS Device Driver configuration.

Installing the Device Driver Under Version 4.00.950B or 4.00.950 C of Windows 95

In Windows 95, you can install the DT3152-LS Device Driver when Windows 95 first detects the new DT3152-LS board at startup or install the DT3152-LS Device Driver after Windows 95 has started. Installation at startup is easier and quicker, and is recommended in most cases.

As Windows 95 (Version 4.00.950B or 4.00.950 C) Starts

To install the DT3152-LS Device Driver under version 4.00.950B or 4.00.950 C of Windows 95 as it starts, perform the following steps:

1. Start Windows 95.
   The New Hardware Found dialog box appears stating that a new PCI Multimedia Video Device was detected, followed by an Update Device Driver dialog box.

Note: If Windows 95 does not auto-detect a newly installed board at startup, follow the procedure to install the DT3152-LS Device Driver after Window 95 has started, on page 39.

2. Click **Next.**
3. Insert the Imaging OMNI CD into the CD-ROM drive, click **Other Locations**, browse to **x:\DRIVERS\DT3152LS\Win95** (where *x* is the letter of your CD-ROM drive), then click **OK**.
4. Click **OK**, then click **Finish**.
   Note that Windows 95 may force you to Browse and select drive x: again before copying the files. If prompts appear to overwrite newer files, click ***Yes*** *to keep the newer files. A dialog box appears stating that the files are being copied.*
5. When the files have been copied, remove the CD-ROM from the CD-ROM drive.
   You are prompted to restart your system.
6. Click **Yes** to restart the system.
   For proper operation, it is very important that you restart Windows 95 when prompted.
7. If a Windows 95 Shutdown dialog box appears, manually close all open applications on your desktop, then click **OK** to continue. Otherwise, the system restarts.
   When the system restarts, a dialog box appears prompting you to initiate the Configuration Utility.
8. Click **OK** to initiate the Configuration Utility.
   Note that it is not necessary to log in to Windows or your network to run the Configuration Utility.
9. Click **OK** to begin configuring the DT3152-LS board.
10. Follow the steps on page 40 to add the new DT3152-LS board to the DT3152-LS Device Driver configuration.

After Windows 95 (Version 4.00.950B or 4.00.950 C) Has Started

To install the DT3152-LS Device Driver after version 4.00950B of Windows 95 has started, perform these steps:

1. Open the Control Panel.
2. Double-click **System**.
   The System Properties dialog box appears.
3. Click the **Device Manager** tab, then click **View devices by type**.
4. Double-click **Other devices**.
   A list of unknown hardware appears.
5. Click **PCI Multimedia Video Device**, then click **Remove**.
   The Confirm Device Removal dialog box appears.
6. Click **OK** to remove the device.
7. If multiple PCI Multimedia Video Devices are installed, repeat steps 3 to 6 to remove all PCI Multimedia Video Devices.
8. Click **Refresh**.
   The New Hardware Found dialog box appears, followed by the Update Device Driver dialog box.
9. Click **Next**.
10. Insert the Imaging OMNI CD into the CD-ROM drive, click **Other Locations**, browse to **x:\DRIVERS\DT3152LS\Win95** (where *x* is the letter of your CD-ROM drive), then click **OK**.
11. Click **OK**, then click **Finish**.
    Note that Windows 95 may force you to Browse and select drive D again before copying the files. If prompts appear to overwrite newer files, click ***Yes*** *to keep the newer files. A dialog box appears stating that the files are being copied.*
12. When the files have been copied, remove the CD-ROM from the CD-ROM drive.
    You are prompted to restart your system.

13. Click **Yes** to restart the system.
For proper operation, it is very important that you restart Windows 95 when prompted.

14. If a Windows 95 Shutdown dialog box appears, manually close all open applications on your desktop, then click **OK** to continue. Otherwise, the system restarts.
When the system restarts, a dialog box appears prompting you to initiate the Configuration Utility.

15. Click **OK** to initiate the Configuration Utility.
Note that it is not necessary to log in to your network to run the Configuration Utility.

16. Click **OK** to begin configuring the DT3152-LS board.

17. Follow the steps on page 40 to add the new DT3152-LS board to the DT3152-LS Device Driver configuration.

Adding a Board using the Configuration Utility

To add a new DT3152-LS board to the DT3152-LS Device Driver configuration at system startup, perform the following steps:

1. Click **Add New** to add a DT3152-LS board.
The DT3152-LS Installation dialog box appears for the new board.

2. Enter a board name (alias), which can be any name you choose, then click **Add**. (The board name is used by supported software, such as DT-Acquire and the Frame Grabber SDK.) Only one name (alias) per installed board is allowed.
The DT3152-LS Configuration dialog box appears.

3. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.

4. To configure the board for area-scan (two-dimensional) operations, perform the following steps:

   a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.

   b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.

   c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.

   d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.

5. To configure the board for line-scan (one-dimensional) operations, perform the following steps:

   a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.

   b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

   c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
   The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, to maximize system memory, enable only one mode at a time.

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6. Click **OK**.
   The DT3152-LS Device Driver Configuration dialog box reappears; you can see the name of the board you just added.
7. Click **Close** to end the DT3152-LS configuration.
   The DT3152-LS Configuration COMPLETE! dialog box appears.
8. Click **OK**.
9. Click **OK** to restart the system.
   The system automatically restarts so that the changes take effect.

Once you have configured the device driver with the information for your board, verify the operation of your board using the instructions in Chapter 6 starting on page 51.

Installing and Configuring the Device Driver in Windows 98

Perform the following steps to install the device driver under Windows 98:

1. Start Windows 98.
   The New Hardware Found dialog box appears, followed by the Add New Hardware Wizard.
2. Click **Next**.
3. Click **Search for the best driver for your device (Recommended).**
4. Click **Next**.
5. Click **Specify a location**, and ensure that the rest of the selections are unchecked.
6. Insert the Imaging OMNI CD into the CD-ROM drive.
7. Click **Browse**, browse to **x:\DRIVERS\DT3152LS\WIN98** (where *x* is the letter of your CD-ROM drive), and click **OK**.
8. Click **Next**.
   The name of the device driver is displayed.
9. Click **Next**.
   A dialog box appears stating that the files are being copied.
10. Click **Finish**.
    A dialog box appears asking whether you want to restart your computer.
11. Remove the CD-ROM from the CD-ROM drive, and click **Yes**.
    When your system restarts, a prompt appears stating that your DT3152-LS board needs to be configured.
12. Click **OK**, then click **OK** to indicate that you want to configure the board.
13. Click **Add New** to add a DT3152-LS board.
    The DT3152-LS Installation dialog box appears for the new board.

14. Enter a board name (alias), which can be any name you choose, and click **Add**. The board name is used by supported software, such as DT-Acquire and the Frame Grabber SDK. Only one name (alias) per installed board is allowed.
The DT3152-LS Configuration dialog box appears.

15. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.

16. To configure the board for area-scan (two-dimensional) operations, perform the following steps:

    a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.

    b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.

    c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.

    d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.

17. To configure the board for line-scan (one-dimensional) operations, perform the following steps:

    a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.

    b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

    c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
    The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, to maximize system memory, enable only one mode at a time.

18. Click **OK**.
    The DT3152-LS Device Driver Configuration dialog box reappears; you can see the name of the board you just added.
19. Click **Close** to end the DT3152-LS configuration.
    The DT3152-LS Configuration COMPLETE! dialog box appears.
20. Click **OK**.
21. Click **OK** to restart the system.
    The system automatically restarts so that the changes take effect.

Once you have configured the device driver with the information for your board, verify the operation of your board using the instructions in Chapter 6 starting on page 61.

Installing and Configuring the Device Driver in Windows Me

Perform the following steps to install and configure the device driver in Windows Me:

1. If you have not already done so, power up your computer and any attached peripherals.

   Note: On power-up, the PCI bus takes one available interrupt from system resources for the DT3152-LS board. If any devices are using this interrupt, problems may arise. Verify that no other devices in your system are using the same interrupt that the DT3152-LS board is using and ensure that PCI interrupts are enabled in your system BIOS.

2. Start Windows Me.
   The Add Hardware Found dialog box appears.
3. Click **Next**.
4. Click **Specify the location of the driver (advanced)**, then click **Next.**
5. Insert the Imaging OMNI CD into the CD-ROM drive.
6. Click **Browse**, browse to **x:\DRIVERS\DT3152LS\WIN98** (where *x* is the letter of your CD-ROM drive), and click **OK**.
7. Click **Next**.
   The name of the device driver is displayed.
8. Click **Next**.
   A dialog box appears stating that the files are being copied.
9. Click **Finish**.
   A dialog box appears asking whether you want to restart your computer.

10. Remove the CD-ROM from the CD-ROM drive, and click **Yes**.
A dialog box appears prompting you to configure the driver.

11. Click **OK**, then click **OK**.

12. Click **Add New** to add a DT3152-LS board to the configuration.
The DT3152-LS Installation dialog box appears for the new board.

13. Enter any unique name (or alias) for the DT3152-LS board, then click **Add**. Only one alias per installed board is allowed.
The DT3152-LS Configuration dialog box appears.

14. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.

15. To configure the board for area-scan (two-dimensional) operations, perform the following steps:

    a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.

    b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.

    c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.

    d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.

16. To configure the board for line-scan (one-dimensional) operations, perform the following steps:

    a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.

    b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, to maximize system memory, enable only one mode at a time.

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17. Click **Done**.
The DT3152-LS Configuration dialog box is redisplayed; you can see the name of the board you just added.
18. Click **Close** to end the DT3152-LS configuration.
The Changes Saved dialog box appears.
19. Click **OK** to save the configuration.
20. Click **OK** to restart the system.

Once you have configured the device driver with the information for your board, verify the operation of your board using the instructions in Chapter 6 starting on page 61.

Installing and Configuring the Device Driver in Windows NT

To install and configure the DT3152-LS device driver under Windows NT 4.0, perform the following procedure:

1. Start Windows NT 4.0.
2. From the My Computer icon, double-click **Control Panel**.
3. Double-click **Multimedia**.
4. Click **Devices**.
5. Click **Add**.
6. Click **Unlisted or Updated Driver**, and click **OK**.
   A dialog box appears prompting you to insert the driver diskette.
7. Insert the Imaging OMNI CD into the CD-ROM drive and enter **x:\DRIVERS\DT3152LS\WINNT** (where *x* is the letter of your CD-ROM drive)**.**
8. Click **OK**.
   The Add Unlisted or Updated Driver dialog box appears.
9. Click **OK**.
10. Click **Add New**.
    The DT3152-LS Device Driver Installation dialog box appears.
11. Enter a board name (alias), which can be any name you choose. The board name is used by supported software, such as DT-Acquire and the Frame Grabber SDK.
12. Click **Add**.
    Another DT3152LS Configuration dialog box appears.
13. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
    If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.

14. To configure the board for area-scan (two-dimensional) operations, perform the following steps:

    a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.

    b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.

    c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.

    d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.

15. To configure the board for line-scan (one-dimensional) operations, perform the following steps:

    a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.

    b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

    c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
    The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, if you want to maximize system memory, enable only one mode at a time.

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16. Click **OK**.
    The DT3152-LS Configuration dialog box reappears; you can see the name of the board you just added.

17. Click **Close** to finish.
    A dialog box appears, indicating that you need to restart Windows NT for the changes to take effect.

18. Restart your system to cause the new configuration to take effect.

Once you have configured the device driver with the information for your board, verify the operation of your board using the instructions in Chapter 6 starting on page 61.

Installing and Configuring the Device Driver in Windows 2000

To install the DT3152-LS Device Driver in Windows 2000, you need to disable the device, then install and configure the device driver as described in the following sections.

Note: In some machines, the DT3152-LS may not be detected automatically when you start Windows 2000. If this should occur, skip the section on disabling the device, and continue with the instructions on page 53.

Disabling the Device

You need to disable the device so that Windows 2000 does not reidentify the board every time the system is restarted. To disable the device, perform the following steps:

1. Start Windows 2000.
   The Found New Hardware Wizard dialog box is displayed.
2. Click **Next**.
3. Click **Search for a suitable driver**, then click **Next**.
4. Uncheck all optional search locations boxes, then click **Next**.
5. Verify that **Disable the device** is selected, then click **Finish**.
6. Repeat these steps, if necessary.

Installing/Configuring the Device Driver

Once you have disabled the device, install/configure the device driver by performing the following steps:

1. From the Control Panel, click **Add/Remove Hardware**.
2. Click **Next**.
3. Click **Add/Troubleshoot a device**, then click **Next**.
4. Click **Add a new device**, then click **Next**.
5. Click **No, I want to select the hardware from a list**, then click **Next**.
6. Click **Sound, video and game controllers**, then click **Next**.
7. Click **Have Disk**.
8. Insert the Imaging OMNI CD into your CD-ROM drive.
9. Browse to the **\Drivers\DT3152LS\Win2K** directory on the Imaging OMNI CD.
10. Select the OEMSETUP.INF file, then click **Open**.
11. Click **OK**.
    A Digital Signature Not Found dialog box appears.
12. Click **Yes** to continue.
13. Select the **DT-Open Layers DT3152-LS Frame Grabber**, then click **Next**.
14. Click **Next**.
    Another Digital Signature Not Found dialog box appears.
15. Click **Yes** to continue.
    The DT-Open Layers configuration dialog box appears.
16. Click **Add New**.
17. Enter a name for the device, then click **Add**.

18. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.

19. To configure the board for area-scan (two-dimensional) operations, perform the following steps:

    a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.

    b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.

    c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.

    d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.

20. To configure the board for line-scan (one-dimensional) operations, perform the following steps:

    a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.

    b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

    c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
    The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, if you want to maximize system memory, enable only one mode at a time.

21. Click **OK**.
The DT3152-LS Configuration dialog box reappears; you can see the name of the board you just added.

22. Click **Close** to finish.
A dialog box appears, indicating that you need to restart Windows 2000 for the changes to take effect.

23. Click **Finish**.

24. Restart the system.

Installing and Configuring the Device Driver in Windows XP

To install the DT3152-LS Device Driver in Windows XP, you need to disable the device, then install and configure the device driver as described in the following sections.

Note: In some machines, the DT315-LS2 may not be detected automatically when you start Windows XP. If this should occur, skip the section on disabling the device, and continue with the instructions on page 57.

Disabling the Device

You need to disable the device so that Windows XP does not reidentify the board every time the system is restarted. To disable the device, perform the following steps:

1. Start Windows XP (with administrative rights).
   The Found New Hardware Wizard dialog box is displayed.
2. Select **Install from a list of specific location (Advanced)**.
3. Click **Next**.
4. Select **Search for the best driver in these locations,** and uncheck all other options.
5. Click **Next**.
6. Uncheck all the optional search locations boxes, then click **Next**.
   If the Multimedia Video Controller dialog box appears, proceed to step 7. Otherwise, the message ***Cannot Install this Hardware*** *appears; proceed to step 8.*
7. Select the option **No, do not connect to Internet now**, then click **Next**.

8. Select **Don't prompt me again to install this software**, then click **Finish**.
   The Help and Support Center window appears.
9. Click **Cancel**, then click **Finish**.

Installing/Configuring the Device Driver

Once you have disabled the device, install/configure the device driver by performing the following steps:

1. From the Control Panel, click **Add Hardware**.
   The Add Hardware Wizard appears.
2. Click **Next**.
   A message about hardware connection appears.
3. Select **Yes, I have already connected the hardware**, then click **Next**.
4. Scroll through the list and select **Add a new hardware device**, then click **Next**.
5. Select **Install the hardware that I manually select from a list (Advanced)**, then click **Next**.
6. Click **Sound, video and game controllers**, then click **Next**.
7. Click **Have Disk**.
8. Insert the Imaging OMNI CD into your CD-ROM drive.
9. Browse to the **\Drivers\DT3152LS\Win2K** directory on the Imaging OMNI CD.
10. Select the OEMSETUP.INF file, then click **Open**.
11. Click **OK**.
    A Software Installation window appears.
12. Click **Continue Anyway**.
    A Digital Signature Not Found dialog box appears.
13. Click **Next**.

14. Click **Next**.
    A message about the compatibility with Windows XP appears.
15. Click **Continue Anyway**.
    The DT-Open Layers configuration dialog box appears.
16. Click **Add New**.
17. Enter a name for the device, then click **Add**.
18. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable Board** to activate the board.
    If you want to retain the settings but disable the board, remove the checkmark next to Enable Board.
19. To configure the board for area-scan (two-dimensional) operations, perform the following steps:
    a. On the **General** tab of the DT3152LS Configuration dialog box, click **Enable 2 Dimensional Mode**.
    b. Click the **2 Dimension** tab of the DT3152LS Configuration dialog box.
    c. For **Video Format**, indicate the video format that you want for the default setting by clicking 50 Hz or 60 Hz.
    d. For **Memory Size**, select the amount of memory (in MB) that you want to allocate in your system to hold the acquired frames. A 60 Hz, 640-by-480 image requires 308 KB per frame; a 50 Hz, 768-by-576 image requires 443 KB per frame. The upper limit depends on your system's resources. The recommended minimum is 1 MB.
20. To configure the board for line-scan (one-dimensional) operations, perform the following steps:
    a. Click the **General** tab of the DT3152LS Configuration dialog box, then click **Enable Line Scan Mode**.
    b. Click the **Line Scan** tab of the DT3152LS Configuration dialog box.

c. Enter the number of 500 KB FIFO buffers to use. A typical number of FIFO buffers is 9.
The default is 0. If, when running your program, you encounter overflow errors, increase the number of FIFO buffers.

Note: In the DT3152LS Configuration dialog box, you can enable the board for both 2 Dimensional Mode and Line Scan mode at the same time. However, if you want to maximize system memory, enable only one mode at a time.

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21. Click **OK**.
The DT3152-LS Configuration dialog box reappears; you can see the name of the board you just added.

22. Click **Close** to finish.
A dialog box appears, indicating that you need to restart Windows XP for the changes to take effect.

23. Click **Finish**.

24. Restart the system.

Verifying Board Operation

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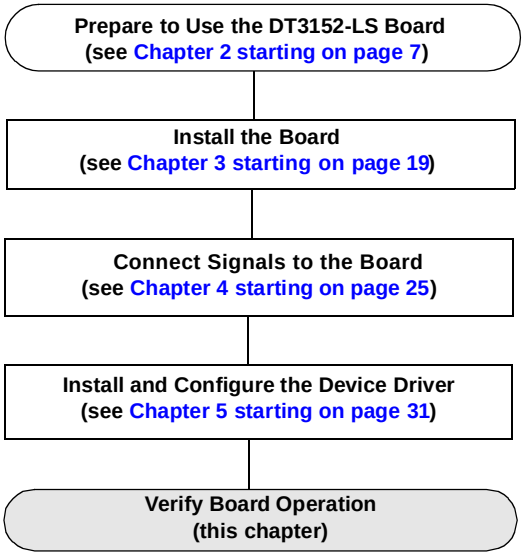
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Install the Board
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Verify Board Operation
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Overview

The DT-Acquire and LS-Acquire utilities provide 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 a two-dimensional frame of video information (area scan) to system memory;
- Display the area-scan image live in passthru mode;
- Open a previously saved image; and
- Save an acquired image in BMP format.

LS-Acquire allows you to acquire a one-dimensional frame of video (line scan) to system memory, and perform a line-scan passthru operation.

Installing DT-Acquire or LS-Acquire

To install DT-Acquire or LS-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** if you want to install DT-Acquire or click **LS Acquire** if you want to install LS-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

Note: DT-Acquire works with your display monitor set to 16 colors, 256 colors, or high color (16-bit) only.

To start DT-Acquire, double-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 verify that the DT3152-LS board is working using DT-Acquire. If you have any trouble performing any of these operations, refer to the Troubleshooting chapter of the *DT3152-LS User's Manual* (refer to page 14 for information on installing and 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 online help provided with the utility.

For detailed information on the supported features of the board, refer to the *DT3152-LS User Manual* (refer to page 14 for information on viewing this manual).

Performing an Area-Scan Operation

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

1. Connect video input signals to input channel 0 (VID0).
2. From the DT-Acquire main menu, click **Setup**, then click **Select Device**.
3. Select the alias that you gave to the DT3152-LS board when you configured the device driver, then click **OK**.
4. To get started, 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 DT3152-LS board by clicking the desired parameter under **Setup,** and changing the associated values, then repeat step 5.

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

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8. If you wish, save the graphic by clicking **File** from the DT-Acquire main menu, then **Save Graphic File**.
9. When you are finished with this utility, from the DT-Acquire main menu, click **Setup**, and **Close Device**. Then, close the application.

Performing a Passthru Operation

To acquire live images to display memory (without storing the data in system memory), perform the following steps:

1. Connect video input signals to input channel 0 (VID0).
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 DT3152-LS board when you configured the device driver, then click **OK**.
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, click **Run**, then **Stop Pass Thru!** from the DT-Acquire main menu.
6. If you wish, modify the parameters available for the DT3152-LS 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 source, ensure that you connect the video input signal to the corresponding channel.

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

Using LS-Acquire

Note: Before starting LS-Acquire, ensure that your video display adapter resolution is set to a mode that supports 8 bits (256 colors) or 16 bits (65,536 colors).

To start LS-Acquire, click the **LS-Acquire** icon in the Data Translation, Inc.\DT3152-LS program group. The main menu is displayed.

The following subsections describe how to verify that the DT3152-LS board is working using LS-Acquire. If you have any trouble performing any of these operations, refer to the Troubleshooting chapter of the *DT3152-LS User's Manual* (refer to page 14 for information on installing and viewing this manual).

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

For information on each of the features provided, refer to the online help provided for LS-Acquire.

For detailed information on the supported features of the board, refer to the *DT3152-LS User's Manual* (refer to page 14 for information on installing and viewing this manual).

Performing a Line-Scan Acquisition

To asynchronously acquire a line-scan image, perform the following steps:

1. Connect a video input signal to input channel 0 (VID0).
2. Connect the line-sync input, master clock input, and if desired, an external trigger from the video source to the board.
3. Connect the line-sync output, integration output (if needed by your camera), and master clock output signals from the board to the video source.
4. Click **Board**, then click **Select Device**, and select the alias you specified for the DT3152-LS board when you configured the device driver.
5. Change the parameter settings to match the requirements of your camera.
6. Click **Acquire**.
   The number of lines specified in the list of parameters is acquired and stored in host memory.
7. To acquire another line-scan image, repeat step 6.

Performing a Continuous Line-Scan Passthru Operation

To acquire line-scan images to display memory (while storing the data in system memory), perform the following steps:

1. Connect a video input signal to input channel 0 (VID0).
2. Connect a line-sync input, master clock input, and if desired, an external trigger from the video source to the board.
3. Connect the line-sync output, integration output (if needed), and master clock output signals from the board to the video source.

4. Click **Board**, then click **Select Device**, and select the alias you specified for the DT3152-LS board when you configured the device driver.
5. Change the parameter settings to match the requirements of your camera.
6. Click **Start Pass**.
   Lines are continuously acquired and displayed on the screen.
7. To stop the passthru operation, click **Stop Pass**.
8. To perform another line-scan passthru operation, repeat steps 6 and 7.

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