

ADOBE® ONLOCATION™ CS3

USER GUIDE

OL

© 2007 Adobe Systems Incorporated. All rights reserved.

Adobe® OnLocation™ CS3 for Windows®

If this guide is distributed with software that includes an end user agreement, this guide, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. Except as permitted by any such license, no part of this guide may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Adobe Systems Incorporated. Please note that the content in this guide is protected under copyright law even if it is not distributed with software that includes an end user license agreement.

The content of this guide is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Adobe Systems Incorporated. Adobe Systems Incorporated assumes no responsibility or liability for any errors or inaccuracies that may appear in the informational content contained in this guide.

Please remember that existing artwork or images that you may want to include in your project may be protected under copyright law. The unauthorized incorporation of such material into your new work could be a violation of the rights of the copyright owner. Please be sure to obtain any permission required from the copyright owner.

Any references to company names in sample templates are for demonstration purposes only and are not intended to refer to any actual organization.

Adobe, the Adobe logo, and Adobe OnLocation are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Windows is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries. Apple is a trademark of Apple Inc., registered in the United States and other countries. All other trademarks are the property of their respective owners.

Adobe Systems Incorporated, 345 Park Avenue, San Jose, California 95110, USA.

Notice to U.S. Government End Users. The Software and Documentation are “Commercial Items,” as that term is defined at 48 C.F.R. §2.101, consisting of “Commercial Computer Software” and “Commercial Computer Software Documentation,” as such terms are used in 48 C.F.R. §12.212 or 48 C.F.R. §227.7202, as applicable. Consistent with 48 C.F.R. §12.212 or 48 C.F.R. §§227.7202-1 through 227.7202-4, as applicable, the Commercial Computer Software and Commercial Computer Software Documentation are being licensed to U.S. Government end users (a) only as Commercial Items and (b) with only those rights as are granted to all other end users pursuant to the terms and conditions herein. Unpublished-rights reserved under the copyright laws of the United States. Adobe Systems Incorporated, 345 Park Avenue, San Jose, CA 95110-2704, USA. For U.S.

Government End Users, Adobe agrees to comply with all applicable equal opportunity laws including, if appropriate, the provisions of Executive Order 11246, as amended, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 (38 USC 4212), and Section 503 of the Rehabilitation Act of 1973, as amended, and the regulations at 41 CFR Parts 60-1 through 60-60, 60-250, and 60-741. The affirmative action clause and regulations contained in the preceding sentence shall be incorporated by reference.

Contents

Chapter 1: Getting started	1
Installation	1
System requirements	1
Install the software.....	1
Activating the software.....	1
Registering	2
Read Me.....	2
Resources	2
Adobe Help resources	2
Adobe Video Workshop.....	3
Extras	4
Adobe Design Center	4
Adobe Developer Center	4
Customer support	5
Downloads	5
Adobe Labs.....	5
User communities	5
Chapter 2: Setting up	7
Step 1 - Connecting cameras.....	7
Connect a single camera	7
Connecting multiple cameras	8
Step 2 - Setting the monitor aspect ratio	8
Step 3 - Setting the Flip Mode option.....	9
Step 4 - Calibrating the Field Monitor	10
Step 5 - Calibrating the camera with SureShot.....	12
Chapter 3: Workspace	15
User interface	15
Window controls	15
Scrolling in the main window.....	15
Right-click menu	15
Graphical dials	16
Settings Menu in the Field Monitor panel.....	16
Shortcut keys	20

Adding components	22
Removing components	22
Arranging components	23
Quit Adobe OnLocation	23
Components	23
Field Monitor	23
Digital Video Recorder	24
Waveform Monitors	25
Vectorscope	26
Spectra 60	26
Audio Spectrum Analyzer	26
DV Grabber	27
Shot Clock	27
Automatic Quality Monitor	27
SureShot	27
Chapter 4: Analyzing lighting, exposure, and color	29
Evaluating brightness with Zebras	29
Enable or disable a Zebra	29
Setting a Zebra to identify bright or dark areas	29
Setting the threshold for a Zebra	30
Using the Dark Zebra to preserve shadows	30
Evaluating brightness with the Waveform Monitors	31
About video dynamic range	31
About the waveform	32
Configuring the IRE Setup option	33
Configuring the Waveform Monitors	33
Waveform mode	33
Line mode and Full mode	34
Intensity and Illumination dials	34
Position and Scale dials	34
Panning and zooming in the Waveform Monitors	35
Analyzing color with the Vectorscope and Spectra 60	35
Vectorscope	35
Configuring the Vectorscope	37
Panning and zooming in the Vectorscope	38
Spectra 60	38
Maintaining consistent color and brightness for bluescreen or greenscreen	39
About video clipping alerts	40
About the Split Screen and Onion Skin features	41
Enable the Split Screen feature	41
Move the split region	41
Resize the split region	41

Maximize or restore the split region	41
Adjust the split region opacity	41
Checking continuity	42
Creating stop-frame animation sequences	43
Setting the Split Mode option	43
Replace the image in the split region	43
Chapter 5: Monitoring the audio	45
Audio Spectrum Analyzer	45
Stereo and Mono modes	45
Peak, Wave, and Spectrum modes	46
Linear and Log modes	46
Hold and Freeze modes	47
About audio alerts	47
Audio popping alerts	47
Audio clipping alerts	48
Chapter 6: Checking the framing and focus	49
Overview of framing and focusing tools	49
Aesthetic framing	49
About the Grid feature	50
About the Underscan and Overscan modes	51
About the Video Safe Area display	51
About the Letterbox Mask feature	52
About the Zoom feature	53
Chapter 7: Recording and reviewing clips	55
Recording clips	55
Settings for recording	55
DV File Format option	56
Pre-Record Time option	57
Configuring MPEG decompression to avoid dropped frames	57
Recording methods	57
Standard recording	58
Controlling recording from Adobe OnLocation	58
Controlling recording from the camera (Slave Recording)	58
Timecodes for recorded clips	59
Motion-activated recording	59
Stop-motion recording	60
Time-lapse recording	61
Time-lapse frequency settings for DV and DVCPro	62
Time lapse frequency settings for HDV	63
Pause and resume recording	64

Reviewing recorded clips.....	64
Selecting a clip	64
Using basic playback commands	64
Scrubbing and navigating in a clip.....	65
Add notes to clips	66
Reviewing clip information	66
DV Grabber.....	66
Setting the grabbed still pixel ratio	66
Capture still images	67
Configuring the DV Grabber.....	67
Accessing grabbed stills	68
Recording HDV	68
Balancing video quality and system resource usage	68
Visible Lines option	69
MPEG Resolution and MPEG Frames options	69
Choosing the best combination of settings.....	70
Recording DVCPPro HD	71
Chapter 8: Managing projects and clips	73
Managing projects.....	73
Create a new project	73
Open a project	73
Moving projects between computers.....	74
Managing clips.....	74
Renaming clips	74
Moving clips within the DVR	74
Removing clips from the Clips in Use folder.....	74
Emptying the Garbage Clips folder.....	75
Importing clips and still images	76
Working with DVCPPro clips in a video editing application.....	76
Recommended project settings for video editing applications....	76
24P pulldown with Adobe OnLocation	77
Index	79

Before you begin working with your software, take a few moments to read an overview of installation and the many resources available to users. You have access to instructional videos, plug-ins, templates, user communities, seminars, tutorials, RSS feeds, and much more.

Installation

Check the system requirements. Then install and activate Adobe OnLocation. Register the product for the greatest benefit.

System requirements

- To review complete system requirements and recommendations for your Adobe® software, refer to the Read Me file on the installation disc.

Install the software

1. Close any other Adobe applications open on your computer.
2. Insert the installation disc into your CD or DVD drive, and follow the on-screen instructions.

Activating the software

If you have a single-user retail license for your Adobe software, you will be asked to activate your software; this is a simple, anonymous process that you must complete within 30 days of starting the software.

For more information on product activation, see the Read Me file on your installation disc, or visit the Adobe website at www.adobe.com/go/activation.

Registering

Register your product to receive complimentary installation support, notifications of updates, and other services.

- To register, follow the on-screen instructions in the Registration dialog box, which appears after you install and activate the software.

TIP

If you postpone registration, you can register at any time by choosing Help > Register Adobe OnLocation CS3.

Read Me

The installation disc contains the Read Me file for your software. (This file is also copied to the application folder during product installation.) Open the file to read important information about the following topics:

- System requirements
- Installation (including uninstalling the software)
- Activation and registration
- Troubleshooting
- Customer support
- Legal notices

Resources

Adobe provides resources in a variety of media to help you get the most out of Adobe OnLocation.

Adobe Help resources

Documentation for your Adobe software is available in a variety of formats.

In-product and LiveDocs Help In-product Help provides access to all documentation and instructional content available at the time the software ships. It is available through the Help menu in your Adobe software.

LiveDocs Help includes all the content from in-product Help, plus updates and links to additional instructional content available on the web. For some products, you can also add comments to the topics in LiveDocs Help. Find LiveDocs Help for your product in the Adobe Help Resource Center, at www.adobe.com/go/documentation.

Most versions of in-product and LiveDocs Help let you search across the Help systems of multiple products. Topics may also contain links to relevant content on the web or to topics in the Help of another product.

Think of Help, both in the product and on the web, as a hub for accessing additional content and communities of users. The most complete and up-to-date version of Help is always on the web.

PDF documentation The in-product Help is also available as a PDF that is optimized for printing. Other documents, such as installation guides and white papers, may also be provided as PDFs.

All PDF documentation is available through the Adobe Help Resource Center, at www.adobe.com/go/documentation. To see the PDF documentation included with your software, look in the Documents folder on the installation or content disc.

Printed documentation Printed editions of the in-product Help are available for purchase in the Adobe Store, at www.adobe.com/go/store. You can also find books published by Adobe publishing partners in the Adobe Store.

A printed workflow guide is included with all Adobe Creative Suite® 3 products, and stand-alone Adobe products may include a printed getting started guide.

Adobe Video Workshop

The Adobe Creative Suite 3 Video Workshop offers over 200 training videos covering a wide range of subjects for print, web, and video professionals.

You can use the Adobe Video Workshop to learn about any Creative Suite 3 product. Many videos show you how to use Adobe applications together.

When you start the Adobe Video Workshop, you choose the products you want to learn and the subjects you want to view. You can see details about each video to focus and direct your learning.

Community of presenters With this release, Adobe Systems invited the community of its users to share their expertise and insights. Adobe and lynda.com present tutorials, tips, and tricks from leading designers and developers such as Joseph Lowery, Katrin Eismann, and Chris Georgenes. You can see and hear Adobe experts such as Lynn Grillo, Greg Rewis, and Russell Brown. In all, over 30 product experts share their knowledge.

Tutorials and source files The Adobe Video Workshop includes training for novices and experienced users. You'll also find videos on new features and key techniques. Each video covers a single subject and typically runs about 3-5 minutes. Most videos come with an illustrated tutorial and source files, so you can print detailed steps and try the tutorial on your own.

Using Adobe Video Workshop You can access Adobe Video Workshop using the DVD included with your Creative Suite 3 product. It's also available online at www.adobe.com/go/learn_videotutorials. Adobe will regularly add new videos to the online Video Workshop, so check in to see what's new.

Extras

You have access to a wide variety of resources that will help you make the most of your Adobe software. Some of these resources are installed on your computer during the setup process; additional helpful samples and documents are included on the installation or content disc. Unique extras are also offered online by the Adobe Exchange community, at www.adobe.com/go/exchange.

During software installation, a number of resources are placed in your application folder. To view those files, navigate to *[startup drive]/Program files/Adobe/Adobe OnLocation CS3*.

Adobe Design Center

Adobe Design Center offers articles, inspiration, and instruction from industry experts, top designers and Adobe publishing partners. New content is added monthly.

You can find hundreds of tutorials for design products and learn tips and techniques through videos, HTML tutorials, and sample book chapters.

New ideas are the heart of Think Tank, Dialog Box, and Gallery:

- Think Tank articles consider how today's designers engage with technology and what their experiences mean for design, design tools, and society.
- In Dialog Box, experts share new ideas in motion graphics and digital design.
- The Gallery showcases how artists communicate design in motion.

Visit Adobe Design Center at www.adobe.com/designcenter.

Adobe Developer Center

Adobe Developer Center provides samples, tutorials, articles, and community resources for developers who build rich Internet applications, websites, mobile content, and other projects using Adobe products. The Developer Center also contains resources for developers who develop plug-ins for Adobe products.

In addition to sample code and tutorials, you'll find RSS feeds, online seminars, SDKs, scripting guides, and other technical resources.

Visit Adobe Developer Center at www.adobe.com/go/developer.

Customer support

Visit the Adobe Support website, at www.adobe.com/support, to find troubleshooting information for your product and to learn about free and paid technical support options. Follow the Training link for access to Adobe Press books, a variety of training resources, Adobe software certification programs, and more.

Downloads

Visit www.adobe.com/go/downloads to find free updates, tryouts, and other useful software. In addition, the Adobe Store (at www.adobe.com/go/store) provides access to thousands of plug-ins from third-party developers, helping you to automate tasks, customize workflows, create specialized professional effects, and more.

Adobe Labs

Adobe Labs gives you the opportunity to experience and evaluate new and emerging technologies and products from Adobe.

At Adobe Labs, you have access to resources such as these:

- Prerelease software and technologies
- Code samples and best practices to accelerate your learning
- Early versions of product and technical documentation
- Forums, wiki-based content, and other collaborative resources to help you interact with like-minded developers

Adobe Labs fosters a collaborative software development process. In this environment, customers quickly become productive with new products and technologies. Adobe Labs is also a forum for early feedback, which the Adobe development teams use to create software that meets the needs and expectations of the community.

Visit Adobe Labs at www.adobe.com/go/labs.

User communities

User communities feature forums, blogs, and other avenues for users to share technologies, tools, and information. Users can ask questions and find out how others are getting the most out of their software. User-to-user forums are available in English, French, German, and Japanese; blogs are posted in a wide range of languages.

To participate in forums or blogs, visit www.adobe.com/communities.

Step 1 - Connecting cameras

Adobe® OnLocation™ CS3 works with NTSC or PAL DV cameras, as well as HDV and DVCPro cameras. The application automatically detects the camera's standard and video format, so you do not have to change any switches or set any project properties. For a few cameras, however, you must set the color space manually through the Field Monitor overlay menu.

Adobe OnLocation communicates with cameras and other OHCI-compliant devices using the IEEE 1394 standard, which is also known as FireWire and i.Link. If the camera does not have a 1394 connector, you can run its signal through an analog-digital converter that outputs an OHCI-compliant signal.

NOTE

Adobe OnLocation does not support camcorders that record onto DVDs, hard disks, or solid-state flash memory unless they support DV or HDV output over a FireWire connection.

Connect a single camera

1. Plug one end of a 1394 cable into a FireWire port on the computer.
2. With the camera turned off, plug the cable's other end into the camera's FireWire port.

CAUTION

Although some IEEE 1394 devices may be hot-swappable, FireWire ports might be damaged if you plug in a cable when the camera is turned on. Therefore, Adobe recommends that you turn off the camera before connecting the cable.

3. Turn on the camera, and set it to the Record/Camera mode.
4. Choose the camera from the Devices menu.

Connecting multiple cameras

Adobe OnLocation lets you connect as many cameras as you have 1394 buses. However, Adobe OnLocation does not support multiple cameras connected to one FireWire card. The system must have one FireWire bus for each camera.

To switch between cameras that are connected to the computer, choose the desired camera from the Devices menu, or right-click anywhere on the interface and choose Devices. You cannot switch cameras during recording.

NOTE

The Split Screen feature is useful for comparing and calibrating the brightness and color of two or more cameras so that video from all of them has a common appearance. If two cameras are close enough together, plug both of them into the computer, adjust the manual settings on one of them, and record a small clip to the hard drive. Then switch to the second camera, and enable the Split feature between the recorded clip from camera one and the live feed from camera two. Now adjust the iris, white balance, and other settings so that the image from the second camera has good continuity with the image from the first camera.

1394 ports: If the computer has either no 1394 ports or too few for your purposes, you can add one or more FireWire cards—PCI cards for a desktop, PCMCIA for a laptop.

1394 cables: Most 1394-compliant cameras have a 4-pin port. Computers can have 4-pin or 6-pin ports. Before buying a cable, check whether you need a 4-pin to 4-pin or 4-pin to 6-pin type cable.

With DV and HDV cameras, you can use 1394 cables up to 25 meters (80 feet) in length. The maximum cable length for DVCPro HD is 4.5 meters (15 feet) because the data rate is much higher. You can use repeaters to daisy-chain up to 16 cables.

NOTE

Visit the Adobe knowledgebase at www.adobe.com/support for the latest information on troubleshooting digital video capture in Adobe OnLocation.

Step 2 - Setting the monitor aspect ratio

The aspect ratio of a rectangular image describes its dimensions in width relative to height. Although Adobe OnLocation has no way of knowing what the correct aspect ratio is for a given video signal, it does provide you with precise control over the aspect ratio of the image displayed in the Field Monitor. To change this setting, change the Monitor Aspect option in the Field Monitor Menu.

Although aspect ratios are typically represented as ratios, such as 2:1, using that type of value is limiting for this control. Instead, this control works with a decimal value, which equals the first value in the ratio divided by the second. For example, the value of 1.333 equals 4 divided by 3, or 4:3.

Set the Field Monitor aspect ratio

In the Field Monitor, click the Menu button. Then, in the overlay menu, click Next Page.

Do one of the following:

- Choose the Monitor Aspect ratio from the range of 1.000 (1:1, which defines a square) to 2.400 (12:5).
- For 4:3, press F8, or set the aspect to 1.333.
- For 16:9, press Ctrl+F8, or set aspect to 1.778.

TIP

If you're not sure what this setting should be, you can check the setting by pointing the camera at a circular image that's parallel to the plane of the lens. If the shape looks circular in the Field Monitor, then the setting is correct. If not, then change the setting until the shape is correct.

If the shape of the image is not what you expect with the current setting, check whether the Letterbox Mask feature is enabled, in which case the mask bars might limit what you see. See ["About the Letterbox Mask feature" on page 52](#) for more information.

Step 3 - Setting the Flip Mode option

Some lens adapters, such as the RedRock Micro M2, invert the image. In some shooting and editing situations, you might want to view the video reversed in one dimension or the other. To accommodate these situations, the Flip feature in Adobe OnLocation lets you flip the image in the monitor horizontally, vertically, or in both dimensions.

Flip the image in the Field Monitor

Do one of the following:

- Click the Menu button <<icon>> in the Field Monitor. In the overlay menu, click Next Page. In the next screen, click Next Page again. Select a Flip Mode in the Field Monitor menu settings.
- To flip the image horizontally, press Alt+Shift+H.
- To flip the image vertically, press Alt+Shift+V.
- To flip the image both vertically and horizontally, press Alt+Shift+M.

Step 4 - Calibrating the Field Monitor

The built-in color bars calibrate the computer screen to display levels of brightness, white, and color to match what the camera records. This step ensures that what you see in the Field Monitor accurately reflects what you will see in post-production. Adobe recommends that you recalibrate the screen whenever the lighting around the computer changes significantly.

NOTE

Calibrating the Field Monitor affects only what you see within Adobe OnLocation. It has absolutely no effect on the brightness, color, and other settings of recorded clips.

Calibrate the Field Monitor

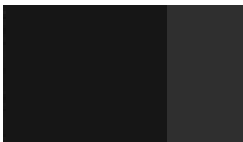
Because the various properties that you change when calibrating the Field Monitor interact with one another, it is important to perform the steps in the following procedure in the order specified.

TIP

For finer control when adjusting a dial, hold down the Ctrl key before selecting and dragging the dial.



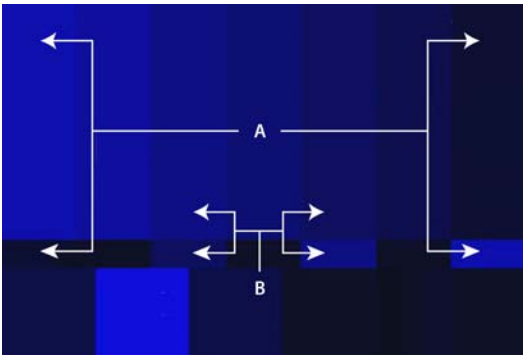
1. If the color bars are not already displayed, click the Bars button. (If the Blue button is enabled, click it to turn it off.)
2. Turn the Chroma dial all the way down. This eliminates all color, reducing the bars to shades of gray.
3. Locate the set of three narrow, dark bars below the second and third bars from the right. These bars are called pluge bars and are used to calibrate the contrast. Adjust the Contrast dial so that the bar on the left and the bar in the center are identical and the bar on the right is faintly lighter than the other two.



4. Locate the set of three narrow, white bars below the second and third bars from the left. Adjust the Bright dial so that the two bars on the left are indistinguishable and the bar on the right is slightly darker than the other two.



5. Click the Blue button. This turns the bars to shades of blue.
6. Adjust the Chroma dial until the tall section at the top of each outer bar is the same shade as the small block just below it.



A) Adjust Chroma until tall outer bars match adjacent small blocks B) (Step 7) Adjust Phase until third and fifth tall blocks match adjacent small blocks.

7. If necessary, adjust the Phase dial until the third and fifth bars are the same shade as the small blocks just below them.
8. Click the Blue button and Bars button to return to displaying video.

TIP	Position the computer screen at an angle that reduces the amount of glare. When shooting in direct sunlight, you might want to consider using a computer screen sunshade for better visibility.
------------	---

Step 5 - Calibrating the camera with SureShot

The best, most expensive cameras are inadequate unless the focus and exposure are set accurately. Conversely, if the focus is crisp, white balance is properly set, and camera exposure and scene lighting yield maximum dynamic range, you can achieve perfectly acceptable video even from a modest camera. To help you achieve the best results from the camera, the SureShot component in Adobe OnLocation digitally analyzes the image from the camera and provides graphical feedback that takes the guesswork out of calibrating the camera and adjusting the lighting.

Although the Waveform Monitor, Vectorscope, and Field Monitor features provide the analytical tools that allow you to assess focus, exposure, and white balance, SureShot has several advantages. First, it digests data into a single meter that's easy to read. Second, it analyzes only a defined region of the frame (specifically the area where you've placed the SureShot cards).



Working with SureShot requires the Focus, Exposure, and White Balance cards that come with the boxed version of Adobe OnLocation and are optional with the downloadable version.

Calibrate SureShot

1. Disable the camera's automatic controls, particularly auto-focus, auto-white balance, and auto-iris. Also, frame and light the scene as you will shoot it.
2. Do one of the following:

- If SureShot Camera Setup Module is not open, right-click anywhere in the interface, choose Add Component, and then choose SureShot Camera Setup.
 - If SureShot is already open (lower-right corner of the rack layout), continue with the next step.
3. In the SureShot Camera Module, click each of the numbered buttons in order, and follow the instructions for calibrating SureShot.
 4. To turn off the yellow mask after you finish the SureShot steps, return to the first page by clicking the 1 button.

You're now ready to use SureShot.

User interface

Customize Adobe OnLocation for specific tasks by adding or removing components. Then, control components much as you would their hardware counterparts.

Window controls

If the computer monitor is set to a resolution higher than 1024 x 768, Adobe OnLocation is displayed in a standard resizable window. If the monitor's resolution is set to 1024 x 768, Adobe OnLocation occupies the entire screen and doesn't have a title bar. In this case, you can switch to another running application by either clicking the Windows button or pressing Alt+Tab. Adobe OnLocation doesn't support resolutions lower than 1024 x 768.

Scrolling in the main window

Scroll in the main window

- To scroll up and down through components, drag the scroll bar on the right side of the window.
- To move up or down a few pixels at a time, click the up or down arrows on the scroll bar. Each click equals 100 pixels, or 1 U in rack terminology.
- If the mouse has a wheel, it also serves to scroll through the interface, with two exceptions. If the pointer is over the DVR the wheel scrolls through the list of clips. If the pointer is placed over the video frame in the Field Monitor after clicking the Zoom button, the wheel will zoom in or out of the clip.

Right-click menu

Clicking the right mouse button (or touchpad equivalent) anywhere in Adobe OnLocation opens a menu through which you can perform the following tasks:

- Open the Add Component submenu, where you can display any Adobe OnLocation component.
- Open the Help submenu, where you can start the online help, access several Adobe web pages, or check for updates.
- Access help about the component the pointer is currently over.
- Create a new project or open an existing project.
- Open the folder containing any of the following files: ejected clips, clips that you moved to the garbage, and still images captured with the DV Grabber.
- Empty the Garbage Clips folder.
- Select a device to monitor from a list of available devices.
- Quit Adobe OnLocation.

Graphical dials

Several of the components in Adobe OnLocation use graphical dials as controls. To turn a dial clockwise, click the dial and drag downward. To turn a dial counterclockwise, click the dial and then drag upward. To reset a dial to its default position, double-click the dial. This action has no effect on dials that do not have a default setting, such as Line Select on the Vectorscope.

For fine control, hold down the Ctrl key while selecting and dragging a dial.

Settings Menu in the Field Monitor panel

The Menu button in the lower-left corner of the Field Monitor opens and closes an overlay menu with settings for a variety of components. To choose an option, either click it or use the up and down arrow keys to scroll to it.

Change the setting for the current option

- Select and drag horizontally.
- Click the right or left arrow following the menu entry. If you click and hold one of these buttons, the value scrolls rapidly through the available settings.
- Press the Right Arrow or Left Arrow key. If you hold one of these keys, the value scrolls rapidly through the available settings.

The following table briefly defines the functions of these menu options. Each setting is addressed in greater detail in the appropriate section elsewhere in this guide.

Click [Next Page](#) or [Previous Page](#) to move between Menu pages.

Setting	Function
DV File Format	Specifies the DV file format in which Adobe OnLocation saves clips. The options are: <ul style="list-style-type: none">• AVI T1 for Type 1 DV .avi files• AVI T2 for Type 2 DV .avi files (default setting)• QUIKTM for standard QuickTime .mov files for use on an Apple platform See “DV File Format option” on page 56 .
HDV File Format	Specifies the format in which you want to record HDV clips. The options are: <ul style="list-style-type: none">• MPEG (MPEG-2 Program Stream): Allows time-lapse and stop-motion recording, and provides the maximum compatibility with editing and post-production applications.• M2T: Preserves the tape timecode (Sony cameras only) and other metadata from the camera. See “DV File Format option” on page 56 .
TmLps Frequency	Controls the exposure frequency for time-lapse recording. The default is 30 frames. See “Time-lapse recording” on page 61 .
TmLps Net Frames	Pauses recording after the specified number of frames are captured when you are recording in time-lapse mode. See “Time-lapse recording” on page 61 .
DVR Slave To	Sets the DVR to automatically start and stop recording either with the camera (see “Controlling recording from the camera (Slave Recording)” on page 58) (default) or when triggered by motion (see “Motion-activated recording” on page 59).
Motion Threshold	Specifies the amount of motion required to start recording when motion-activated recording is enabled. See “Motion-activated recording” on page 59 .
FramesTo Trigger	Specifies the number of consecutive frames that must exceed the Motion Threshold before motion-activated recording starts. See “Motion-activated recording” on page 59 .
Motn NoiseFilter	Specifies a subtractive value that prevents noise in the video signal from triggering motion-activated recording. See “Motion-activated recording” on page 59 .
Motn Stop Time	Specifies how long motion-activated recording continues after motion has dropped below the Motion Threshold. See “Motion-activated recording” on page 59 .

Setting	Function
Pre-Record Time	Specifies the length of the DVR Preroll buffer. The range is 0 to 34 seconds for NTSC video and 0 to 40 seconds for PAL video. A setting of zero effectively disables the DVR Preroll buffer. The default is 5 seconds. See “Pre-Record Time option” on page 57.
HDD Space Disp	Specifies when the Field Monitor displays the space remaining on the hard drive. The options are Always and Warning.
HDD Warning	Specifies the threshold of free hard drive space at which a warning is displayed if the HDD Space Display option is set to Warning. The setting is in megabytes.
HDD Record Stop	Specifies the threshold of free hard drive space at which Adobe OnLocation automatically stops recording. The setting is in megabytes.
Auto Mute Camera	When enabled, automatically turns off the computer’s audio output (speakers or headphones) when recording or monitoring live input. This feature helps avoid feedback. This setting does not affect the audio during playback. The default is On.
Monitor Aspect	Specifies the aspect ratio at which video is displayed in the Field Monitor. The range is 1.000 (1:1, square) to 2.400 (12:5). The default for the 4:3 Field Monitor is 1.333 (4:3). For 16:9, set this option to 1.778. The keyboard shortcut for switching directly to 4:3 is F8. The keyboard shortcut for switching to 16:9 is Ctrl+F8. See “Step 2 - Setting the monitor aspect ratio” on page 8.
Letterbox Ratio	Specifies the aspect ratio of the Letterbox Mask. The default is 1.778. See “About the Letterbox Mask feature” on page 52.
Letterbox Mode	Specifies how the Letterbox Mask is displayed. The options are opaque black or white and semitransparent shadow. The default is Shadow. See “About the Letterbox Mask feature” on page 52.
Flip Mode	Controls the orientation of the video in the Field Monitor. This setting serves primarily to accommodate lenses that invert the image. See “Step 3 - Setting the Flip Mode option” on page 9.
Visible Lines	Specifies whether all of the lines in the video frame are displayed or only half of them (Odd or Even lines). For more information, see “Recording HDV” on page 68.

Setting	Function
MPEG Resolution	Specifies whether video is displayed at half or full resolution. For more information, see “Recording HDV” on page 68 . This setting applies only when using HDV cameras.
MPEG Frames	Specifies whether all frames are displayed or some are skipped to reduce CPU usage. For more information, see “Recording HDV” on page 68 . This setting applies only when using HDV cameras.
Zebra 1 Value	Specifies the Zebra 1 threshold level. The default is 100 IRE. See “Evaluating brightness with Zebras” on page 29 .
Zebra 1 Mode	Changes the Zebra 1 mode to detect areas that are darker or lighter than the threshold value. The default is Light. See “Evaluating brightness with Zebras” on page 29 .
Zebra 2 Value	Specifies the Zebra 2 threshold level. The default is 80 IRE. See “Evaluating brightness with Zebras” on page 29 .
Zebra 2 Mode	Changes the Zebra 2 mode to detect areas that are darker or lighter than the threshold value. The default is Light. See “Evaluating brightness with Zebras” on page 29 .
Safe Area Size	Specifies the size of the Video Safe Area that is displayed when you click the Safe button. The default is 90%. See “About the Video Safe Area display” on page 51 .
Grid Scale	Specifies the grid position by screen percentage. For example, 33% divides the screen into thirds. The default is 33.3%. See “About the Grid feature” on page 50 .
Grid Mode	Specifies whether the grid mode displays tick marks along the edges or lines across the whole monitor or is off altogether. The default is Tick. See “About the Grid feature” on page 50 .
Split Mode	Specifies whether the split image updates automatically during stop motion recording. The default is Auto. See “About the Split Screen and Onion Skin features” on page 41 .
Color Space	Lets you manually set the color space for the Field Monitor and Vectorscope to 601 or 709 if the correct setting is not determined automatically. The default is Auto. See “Configuring the Vectorscope” on page 37 .
IRE Setup	Specifies whether the value for pure black is zero or 7.5. This setting affects the Waveform Monitor and Spectra 60. The default is 7.5. See “Configuring the IRE Setup option” on page 33 .

Setting	Function
Shotclock Slave	When enabled, allows the Shot Clock to automatically reset to zero and start running when recording starts. The Shot Clock time does not include any Pre-record time. The default is On. See “Shot Clock” on page 27 .
Grab Pixel Ratio	Specifies whether DV Grabber stills are saved for video use (.9 aspect ratio) or computer viewing (1.0 aspect ratio). The default is PC. See “Setting the grabbed still pixel ratio” on page 66 .

Shortcut keys

Adobe OnLocation includes many keyboard shortcuts and lets you create your own key combinations. The following table identifies a few shortcuts.

Action	Shortcut keys
Record and playback	
Record	F2
Stop recording	F4
Stop-motion recording	F3
Time-lapse recording	Ctrl+F3
Play clip	Space bar or F5
Pause recording or playback	Space bar or F6
Stop playback (return to live camera)	F7
Previous frame	Left Arrow
Next frame	Right Arrow
Skip back (rewind)	Shift+Left Arrow
Skip forward (fast forward)	Shift+Right Arrow
	To set the number of frames skipped, press 0 to 9.
Jump to beginning of a clip	Home key
Jump to end of clip	End key
Previous alert	Ctrl+Left Arrow
Next alert	Ctrl+Right Arrow
Previous clip	Ctrl+Page Up
Next Clip	Ctrl+Page Down

Action	Shortcut keys
Monitor settings	
Full-screen Field Monitor	Alt+Enter Press Alt+Enter again to return to normal view.
Letterbox (toggle on and off)	Alt+L
Zebra 1 (toggle on and off)	F9
Zebra 2 (toggle on and off)	F10
Safe Area (toggle on and off)	Alt+S
Underscan and overscan	Alt+U
Color bars (toggle on and off)	Alt+T (as in Test Pattern)
Blue Gun (toggle on and off)	Alt+B
4:3 monitor aspect ratio	F8
16:9 monitor aspect ratio	Ctrl+F8
Horizontal flip	Alt+Shift+H
Vertical flip	Alt+Shift+V
Flip in both dimensions	Alt+Shift+M
Audio	
Mute (toggle on and off)	Alt+M
Increase volume	Ctrl+Plus sign (+) Use the computer's numeric keypad.
Decrease volume	Ctrl+Minus sign (-) Use the computer's numeric keypad.
DV Grabber	
Grab still image	F12
Miscellaneous	
Reset dial or slider to default	Double-click the dial or slider. Not all dials have a default setting.
Refine control of dials	Hold Ctrl while selecting and dragging.
Zoom in and out on the Field Monitor, Waveform Monitor, or Vectorscope	Hold Shift while selecting and dragging vertically on the desired display.
Pan in on the Field Monitor, Waveform Monitor, or Vectorscope	Select and drag in the desired direction.

Action	Shortcut keys
Open the Help system	F1
Reset entire Adobe OnLocation to the defaults (menu and dial settings, layout, and so on)	Hold Ctrl+Shift while starting Adobe OnLocation, and continuing holding these keys until the application is fully started.

You can change most of these shortcut assignments. To do so, open the Keyboard Shortcuts.txt file in C:\Documents and Settings\[username]\Local Settings\Application Data\Adobe\Adobe OnLocation, and follow the instructions at the top of the document.

Adding components

To add a component, right-click anywhere in the Adobe OnLocation interface, and choose Add Component. Choose the component that you want to add. If the menu bar is displayed, you can also use the Components menu.

The component is placed as close as possible to the position where you clicked. If space for the component is not available, the component is placed at the bottom of the rack.

You can open multiple instances of all components except the Digital Video Recorder. For example, you might want to have two Waveform Monitors open, one in Parade mode and the other in Luma mode. However, settings applied to any instance of the Field Monitor are applied to all instances of the Field Monitor.

Removing components

To remove a component from the rack, click the Off or Power switch or button on the component.

Adobe OnLocation doesn't save a component's settings when you close and reopen the component. If you want to reposition a component and retain its dial and button settings, then you should move the component as described in [“Arranging components” on page 23](#) rather than closing and reopening it.

Arranging components

You can move components into whatever arrangement suits your workflow. To move a component, select and drag its frame, taking care to avoid clicking a dial, button, or display area. Depending on where you drop the component, one or more other components might shift locations. You might need to close other components to make room for the component that you want to move.

NOTE

Adobe OnLocation does not support dual monitor operations with some graphics cards. Running Adobe OnLocation with the graphics card's dual monitor feature enabled might result in the video being displayed in a separate ActiveMovie window rather than in the Field Monitor. The performance of Adobe OnLocation might also be affected. For best performance, always run Adobe OnLocation from the primary monitor (monitor 1).

Quit Adobe OnLocation

Select File > Quit.

TIP

You can also choose Quit from the right-click menu or press Alt+F4..

Components

Adobe OnLocation consists of a range of components that collectively help you improve both the efficiency of shoots and the quality of the resulting video.

Field Monitor

The Field Monitor displays the video image from the camera or a recorded clip. It is a native DV/HDV/DVC Pro display, which means that unlike the camera's viewfinder or LCD screen, the Field Monitor shows what the video looks like after it is compressed exactly as it will be recorded. This is crucial because the camera's DV compression introduces spatial artifacts, and modifies the video in subtle but significant ways, including brightness, saturation, hue, and resolution. The Field Monitor also shows the full video frame, revealing objects on the margins of the image that might be cropped in the camera's viewfinder. You can view the video in full screen by pressing Alt+Enter.

Adobe OnLocation provides versions of the Field Monitor in the two most common aspect ratios: 4:3 and 16:9. To conserve space in the user interface, both of these monitors display only 384 vertical lines. To zoom in to precisely the right degree to view line-accurate resolution, press Ctrl+Z. Adobe OnLocation provides a third model that displays 720 lines, which provides a full-resolution view of 720P HDV and DVCPRO video.

In addition to selecting the version of the Field Monitor with the desired aspect ratio, or display area, you can also specify the aspect ratio of the image displayed in the Field Monitor. For more information about the Monitor Aspect option and the Flip Mode option, which controls the orientation of the image, in the Field Monitor Menu, see [“Step 2 - Setting the monitor aspect ratio” on page 8](#).

The Field Monitor provides several tools for analyzing the quality of shots before and during the shoot when you can still make lighting and camera adjustments. Most of these features, including Underscan & Overscan, Video Safe Area, Grid Display, Letterbox Mask, and Zoom, assist in achieving the correct framing and focus. The Zebras aid in evaluating the lighting and exposure. The Split Screen feature, with its onion skin opacity control, helps with continuity for both framing and lighting and can also be an invaluable tool for performing stop-motion recording. The Freeze feature shows you a still image from the video stream so that you can examine it as long as you want. To lock on the current frame, click the Freeze button. Click it again to return to monitoring the live video.

Achieving the most accurate possible representation of the video involves calibrating the color bars in the Field Monitor as explained in [“Step 4 - Calibrating the Field Monitor” on page 10](#). You should calibrate the Field Monitor whenever the lighting conditions around the computer change. It takes only a few seconds and it’s the only way to be confident that what you’re seeing is true to the image.

TIP

As a rule, you should adjust the Brightness, Chroma, Phase, and Contrast settings only when calibrating the color bars. Changing these settings has absolutely no effect on the recorded footage, and doing so when viewing video can provide a false impression of how that video looks.

TIP

When monitoring DVCPRO HD video, Adobe OnLocation dynamically changes the frame rate to preserve system resources for recording. When playing a DVCPRO HD clip, system resources might reduce the frame rate to slower than real time. With HDV, you can manually reduce the frame rate for monitoring to preserve CPU headroom for recording. In other words, the frame rate that you see in the Field Monitor does not indicate a problem with the recorded content. Barring a system that is under the minimum specifications or a hard drive that is fragmented, all of the frames are recorded. For more information about the frame rate, see [“Recording DVCPRO HD” on page 71](#).

Digital Video Recorder

The Digital Video Recorder (DVR) records and plays back video clips. You can record in any of several file formats, which you choose through the Field Monitor Menu.

The recording and playback controls are located along the top of the DVR. All recording and playback functions, including time-lapse, stop-motion, and motion-activated recording, are described in [“Recording clips” on page 55](#) and [“Reviewing recorded clips” on page 64](#). If a recorded clip has the correct focus and you want to return to monitoring the live feed from the camera, click the Stop button or press F7.

The trays representing the clips in the project appear below the transport controls. The left end of each tray features a thumbnail of a frame from the clip and the clip’s name, date and time stamp, and duration. To rename a clip, click in the Name field, and enter the desired name. You can also enter comments about a clip in the Note field. The rest of the tray displays a waveform of the clip’s audio, which you can also use as a scrub bar for reviewing the clip. Red and yellow markers that you might see on the waveform are clip alerts. For more information, see [“About audio alerts” on page 47](#). To collapse a tray so that more of them are visible in the DVR, click the arrow in the upper-left corner of its audio waveform. The same button expands a tray back to full size.

The DVR contains all of the clips for the current project. For more information about managing clips and projects, including reorganizing clips within the DVR, ejecting and deleting clips, adding clips and still images to a project, creating a new project, and opening another project, see [“Managing projects” on page 73](#).

Waveform Monitors

Adobe OnLocation provides two monitors that show a graphical representation of the video signal’s intensity, which aids in adjusting the lighting and color of a scene and the camera’s iris setting. The more traditional monitor, called the Waveform Monitor, operates in the YUV color space. You typically use the Waveform Monitor to check the video signal’s luminance, or Y, for the purpose of setting the camera’s iris and adjusting the lighting. You can also monitor the color components (R-y and B-y) individually or all three components simultaneously (Parade Mode). For more information, see [“Evaluating brightness with the Waveform Monitors” on page 31](#).

The other monitor is called the RGB Waveform Monitor because it shows the components of the video signal in the RGB (Red/Green/Blue) color model. For more information, see [“Evaluating brightness with the Waveform Monitors” on page 31](#).

Vectorscope

The Vectorscope analyzes the amount of color in the video signal. An image that is only black and white appears as a dot in the center of the Vectorscope. An image with a specific color shows with a green “finger” extending from the center of the Vectorscope out to the edge of the circle. The circle in the Vectorscope is divided into quadrants representing the different colors in the spectrum. For more information, see [“Vectorscope” on page 35](#).

NOTE

Every camera operates in a particular color space. DV cameras use the 601 color space, DVCPRO HD cameras use the 709 color space. Some HDV cameras use 601 color space, but most use 709 color space. Adobe OnLocation works in both color spaces, displaying the current mode in the Vectorscope. In most cases, Adobe OnLocation automatically detects the correct color space for the current video stream, but some cameras do not report this information reliably. If the Vectorscope indicates that Adobe OnLocation is using the wrong color space for the camera, you can manually change to the correct color space by using the Color Space setting in the Field Monitor Menu.

Spectra 60

The Spectra 60 shows the color of a specific pixel in the video image. This is very useful when checking skin tone or adjusting the camera so that an image is recorded with the proper colors. For more information, see [“Spectra 60” on page 38](#).

Whenever the mouse pointer is over the Field Monitor, the Spectra 60 analyzes the pixel at the tip of the arrow. To lock the Spectra 60 on a particular pixel, click the Lock button, and then click the desired point in the Field Monitor.

Audio Spectrum Analyzer

The Audio Spectrum Analyzer (ASA) breaks down the audio into specific frequencies. This is very useful for detecting an A/C hum or matching microphone audio from day to day. For more information, see [“Audio Spectrum Analyzer” on page 45](#).

The Audio Spectrum Analyzer has two display modes. In the linear mode, the total frequency range is divided evenly among all of the bands. In the logarithmic mode, the frequency range is narrowest at the low end of the spectrum and widest at the high end. When you point to a band, its center frequency is displayed at the top of the component.

DV Grabber

The DV Grabber saves the current frame of video as a still image (JPG, BMP, or PNG). You can specify whether you want the frame copied to the clipboard, saved directly as a file, or both. If you choose File, you can also display a link in the DVR so that you can view the image in the Field Monitor. For more information, see [“DV Grabber” on page 66](#).

Shot Clock

The Shot Clock has both a production clock and a frame-accurate timer that can count up or down and be either slaved to the camera or operated manually.

To enter a setpoint for the timer, select the desired column and either drag vertically, use the Up or Down Arrow key, or type a value. After you specify a setpoint, the Shot Clock reverts to that setpoint each time it starts until you erase it by clicking the Clear button twice.

To enable or disable the slave mode, change the Shotclock Slave option in the Field Monitor Menu.

Automatic Quality Monitor

The Automatic Quality Monitor (DV-QM) lets you specify the thresholds above which alerts are added to a clip's scrub bar to in the DVR warn you of a possible problem with the video brightness or audio volume. The word Over appears in the Video Clipping or Audio Pop panes of the DV-QM when the video or audio level exceeds the thresholds specified. When you are recording clips, the DV-QM can automatically monitor the video brightness and audio levels. Yellow markers in the waveform indicate that the video has exceeded a brightness threshold. Dark red markers indicate that a sudden change in audio levels occurred, such as a vocal pop. Bright red markers indicate that the audio was clipped because of overmodulation. For more information, see [“About video clipping alerts” on page 40](#) and [“About audio alerts” on page 47](#).

SureShot

SureShot is a one-stop module for checking the basic settings of the camera. This module is designed to work with the SureShot cards, which are included with the boxed version of Adobe OnLocation and can be purchased separately with a downloaded copy of the software. For more information, see [“Step 5 - Calibrating the camera with SureShot” on page 12](#).

The SureShot wizard performs the basic steps for setting up a camera—checking the focus, adjusting the iris and exposure, and setting the white balance. Each page of this wizard provides its own instructions.

Evaluating brightness with Zebras

Adobe OnLocation provides two adjustable Zebras in the Field Monitor. These Zebras overlay a pattern of diagonal stripes on areas of the video that exceed the specified threshold to help you ensure that the most important parts of the subject matter are exposed at an appropriate level of brightness. By default, the threshold is 100 IRE for Zebra 1 and 80 IRE for Zebra 2. Use Zebra 1 at its default settings to identify areas exposed at 100 IRE or higher. These will "bloom," lose all detail, from overexposure, and may cause "video clipping" or distortion.

Use Zebra 2 at its default settings to identify areas of faces, or other main subjects, that may be too bright (over 80%) to show a satisfactory amount of detail. The complexion of the faces, the overall ambiance of the scene, or the intended artistic mood can dictate different brightness thresholds. Some videographers prefer to expose faces at under 70%, and those creating a film look might use a threshold of 60% or even less. You can change a Zebra's Value setting from its default to any of these values.

Also, you can change a Zebra from its default Light mode to Dark in order to monitor the levels of shadowy areas. For example, in Dark mode a Zebra with its value set to 20% will put stripes across all areas exposed at 20% or less.

Enable or disable a Zebra

To enable or disable one of the Zebras, click its button on the Field Monitor or press F9 for Zebra 1 or F10 for Zebra 2. Only one Zebra can be enabled at a time, so enabling Zebra 1 disables Zebra 2, and vice versa.

Setting a Zebra to identify bright or dark areas

To switch between the bright and dark modes, change the Zebra Mode option for the desired Zebra in the Field Monitor Menu.

Setting the threshold for a Zebra

To change the threshold above or below which the zebra stripes are painted, change the Zebra Value option for the desired Zebra in the Field Monitor Menu. When you enable a Zebra, a status message in the Field Monitor indicates the current threshold.

Using the Dark Zebra to preserve shadows

The ability to create areas of dark shadow in a scene can meet many different cinematic goals. But it can be particularly challenging to create a dark or moody ambience in the DV format because this format can be unforgiving when areas of shadow are too dark. Undesirable noise is often introduced into the image, which cannot be compensated for in post-production.

When lighting and adjusting the camera to create a dark ambience, you are often pushing the capabilities of the camera. Fortunately, many DV cameras can deliver remarkably compelling images in such scenes. The problem is that the margin for error is narrow, which means that objectively monitoring the shadow areas is crucial.

This situation is especially difficult when using the flip-out screen on many DV camcorders. In these small screens, any region that is too close to black often appears entirely black. Additionally, the camera's flip-out screen does not show the impact of DV compression on the live video. This is even true of high-end external analog monitors. To really see what you're recording with either of these displays, you must first play back the tape. The native DV/HDV/DVCPPro field monitor is invaluable in these situations because you can see the compressed image in real time as you make adjustments.

The Dark Zebra lets you introduce strong shadows into a scene with the confidence that enough detail remains in the desired areas to still resolve an image. For example, rich feature shadows on a person's face can be dramatic. However, it looks amateurish if no detail at all appears in the shadow area. In another situation, you might want to ensure that the darkest parts of a shadow area, such as the recesses of a corner, reach pure black. This maximizes the dynamic range of the image and also provides greater flexibility if you want to post-process the scene in the editing application.

When setting up the Dark Zebra feature, the values that you want to use vary depending on the camera and your goal for the look you are trying to achieve.

Evaluating brightness with the Waveform Monitors

Waveform monitors are analytical tools that convert video signals to waveforms representing luminance and saturation levels. These tools are valuable at a shoot because you can't always trust your eyes. Your eyes are remarkable at adjusting to what you see, making you unwittingly forgiving of lighting problems. By representing luminance information graphically, waveform monitors take the subjectivity out of assessing the brightness of the video, providing a scientific foundation for the art of cinematic lighting and helping you capture video that uses the full dynamic range without clipping.

Adobe OnLocation provides two waveform monitors. One works in the YUV color space and the other operates in the RGB color model. Waveform monitors display the scan lines in a video signal, showing their brightness values on a scale running from 0 to 100 IRE. The OnLocation waveform monitors allow you to monitor any one scan line, or all scan lines superimposed over one another.

About video dynamic range

Dynamic range describes the difference between the smallest and largest possible video brightness, or *luminance*, values. With a wider dynamic range, video becomes more vivid and lifelike. DV, for example, has a scale of brightness values ranging from 16 to 235. That range of values indicates how dark or bright each pixel is.

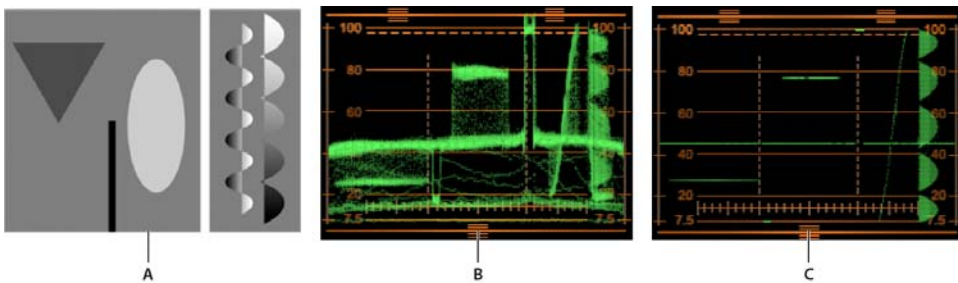
When comparing video shot with a high-end camcorder to footage shot with a prosumer camcorder, it's easy to assume that the high-end camcorder produces better quality video because it's a better camera. Although there is some truth to that, the quality of a video doesn't depend on the sophistication of the camera.

The biggest difference between a high-end camcorder and a prosumer camcorder isn't dynamic range, but instead how well the high-end camera fills the available dynamic range with useful information. In many cases, a prosumer camera can achieve results comparable to a high-end camera if you set up the shot using objective monitoring tools. This is one of the advantages of Adobe OnLocation. Tools such as the Waveform Monitor, Spectra 60, and SureShot let you maximize the signal to fill the available dynamic range. The expanded dynamic range must be captured when shooting by adjusting the camera, lighting, and scene composition. You can't add information that wasn't captured in the first place. Trying to make major corrections in post-production invariably produces unsightly artifacts.

Using as much dynamic range as possible also provides more latitude for image processing in post-production. For example, if you want a shot to be dark and moody, you'll produce better results by shooting a brightly lit scene and darkening it in post-production than by shooting with dark lighting.

To make use of the full dynamic range, leave the darkest shadows sitting at the bottom of the IRE scale on the Waveform Monitor; light the brightest areas so they reach the top, and create lots of grayscale steps in between.

About the waveform



A) Test image B) As seen through the camera C) Analyzed from the original image

This graphic shows a test image and the waveform that it produces. You can clearly see the correspondence between the horizontal position of the shapes in the image and the signal. The gray background produces the horizontal swath that ranges from approximately 45 to 60 IRE. The dark triangle and the light oval account for the stripes at approximately 30 to 35 IRE and 75 to 80 IRE, respectively. Note that because the vertical white line extends all the way from top to bottom, it cuts a full slice out of the background swath, whereas the black line takes only a bite out of that swath because it's just half the height of the image.

The two shapes in the test image are the hardest to interpret both because of their geometric complexity and because they are gradients rather than solid colors. The sine wave produces an angled line because the gradient runs sideways. With the gradient running vertically in the scalloped shape, the signal roughly reflects the shape.

In this example, note that the waveforms for all three shapes extend well above the 100 IRE line. If the waveform display for an actual setup at the shoot extends up that far, you should reduce the brightness to avoid the problems of video clipping.

Configuring the IRE Setup option

The waveform monitors in Adobe OnLocation convert DV or HDV luminance values between 16 (treated as absolute black) and 235 (treated as absolute white) to the IRE values shown on their display graticules. A series of thick lines at the top of the displays indicates the absolute white value, while a similar series at the bottom of the displays indicates the absolute black value. Typically, this places the darkest visible black on the 0 IRE line when the 0 IRE Setup value is used and on the 7.5 IRE line when the 7.5 IRE Setup value is used.

Adobe OnLocation lets you set whether the bottom of the IRE scale is 7.5 or 0. The option that is correct for your purposes depends on whether the video will be broadcast for television and on the standards in your country. Typically, the default 7.5 IRE Setup value is appropriate for North American broadcast while the 0 IRE Setup value is appropriate for broadcast in most other regions. This setting changes the graticule in both the Waveform Monitor and Spectra 60 and also changes the IRE readings in the latter component. As with all controls and options in Adobe OnLocation, the IRE Setup option does not affect the levels in the recorded video; it controls only how values are analyzed and displayed in Adobe OnLocation.

To change this setting, change the IRE Setup option in the Field Monitor overlay menu.

Configuring the Waveform Monitors

The following sections describe the Waveform Monitor settings.

Waveform mode

The dials in the upper-right corner of the Waveform Monitor and upper-left corner of the RGB Waveform Monitor allow you to switch the component among the following modes.

- Waveform Monitor
 - Y: Displays the brightness value of the video signal.
 - Luma: Displays the histogram mode.
 - R-Y: Displays only the red channel.
 - B-Y: Displays only the blue channel.
 - Parade: Displays all three component signals: Y, B-Y, R-Y.
- RGB Waveform Monitor
 - B, G, and R: Displays the brightness of the particular channel.
 - Parade: Displays a waveform of all three channels.
 - B Hist, G Hist, and R Hist: Displays the histogram of the selected channel.

- RGB Hist: Displays histograms for all three channels.

In the non-histogram modes, the horizontal position in the signal corresponds to the horizontal position in the image. If a spike occurs in the signal about one-third of the way from the left side, you should see a bright spot in the image at the same relative position.

In the histogram modes, the monitor analyzes the entire image, counts the number of pixels at each luminance value, and displays that information as a normalized histogram. This means that the luminance value that has the most pixels is displayed as a spike that reaches all of the way to the top of the graticule. All other values are relative to that peak. For example, if the signal at a given value reaches the 40 line, then there are 40% as many pixels at that value as there are at the peak. The vertical dimension of the scale represents the relative number of pixels at each luminance value. The horizontal dimension represents the luminance scale, from dark on the left to bright on the right. In other words, no spatial relationship exists. If you're familiar with Adobe® Photoshop®, this mode is similar to the Levels view.

NOTE

Because the histogram modes count all the pixels in an image, you must set the Waveform Monitor to the Full mode.

Line mode and Full mode

To switch between analyzing the full image and a single line of the video, click the Line Select button. In the Line mode, use the Line Select dial to scroll up and down the frame. When you change this setting, a white line appears across the Field Monitor indicating the current line.

Intensity and Illumination dials

The Intensity dial controls the brightness of the waveform display.

The Illumination dial controls the brightness of the scale, or graticule.

Position and Scale dials

At the preset defaults, the waveform display should be scaled and positioned for perfect alignment with the graticule, which means that you might never need to change the scale or position. Nevertheless, both Waveform Monitors have controls for doing so.

- To move the waveform display up and down, use the Vertical Position dial.
- To move the waveform display sideways, use the Horizontal Position dial.
- To increase or decrease the vertical scale of the waveform display, use the Vertical Scale dial.
- To stretch or shrink the vertical scale of the waveform display sideways, use the Horizontal Scale dial.

To reset any of these controls to the default, double-click the dial.

Changing the position and scale moves the display relative to the graticule, which effectively takes the waveform out of context, making it difficult if not impossible to interpret. If your goal is to see the waveform better, you should use the pan and zoom capability described in [“Panning and zooming in the Waveform Monitors” on page 35](#). This preserves the relationship between the waveform and the graticule.

Panning and zooming in the Waveform Monitors

To zoom in on the waveform, hold the Shift key while selecting the area of interest on the waveform display and dragging downward. To pan to an area of interest once you’ve zoomed in, select and drag in the desired direction.

To return to the normal view, hold the Shift key while selecting anywhere in the display and dragging upward.

Analyzing color with the Vectorscope and Spectra 60

Adobe OnLocation provides the following tools for analyzing the video’s color:

- The Vectorscope represents the color for either the entire frame or a single horizontal line as a signal over a circular display.
- The Spectra 60 samples the pixel at the tip of the mouse pointer when you scroll over the Field Monitor. The Spectra 60 displays the pixel’s color values both numerically and graphically.
- The Waveform Monitors show the intensity of colors in the YUV color space and the RGB color model. For more information, see [“Evaluating brightness with the Waveform Monitors” on page 31](#).

Vectorscope

The Vectorscope displays a signal representing the color of the pixels in the image. The circular graticule is divided into sectors by chrominance. A signal painted on or near the center of the graticule represent pixels with little or no color—black, white, and grays. The greater the distance from the center, the more saturated the color.

The outer circle of the Vectorscope represents the boundary for legal color values in the broadcast industry. If the signal extends outside the circle, television stations might not be able to broadcast the video.

When this scope is in the Full mode, it is additive in nature. A point is added to the signal for each pixel. The brightness of the signal in any given region reflects the number pixels in that region. Bright areas like those near the green and blue targets in the following example indicate that the frame has many pixels of similar colors. The Gain and Intensity settings also directly affect the brightness of the signal.



A) Red B) Magenta C) Yellow D) Green E) Cyan F) Blue

Relying on the Vectorscope can benefit you in many ways, particularly if the only alternative is the camera's small LCD flip-out screen. Flip-out screens often overemphasize saturation, particularly for primary colors. If the SureShot white balance card is placed in front of the camera, the Vectorscope in Adobe OnLocation not only indicates if the white balance is off, but also indicates how far off and in which direction. Used with the Split Screen feature, the Vectorscope can also help you maintain continuity of the color balance between clips or from one camera to another, avoiding the need to perform color correction in post-production to fix a shift in a person's skin tone from a subtle lighting change or to match the hue from two cameras that shot from different angles. For more information, see [“About the Split Screen and Onion Skin features” on page 41](#). If you're shooting against a greenscreen or bluescreen, then the Vectorscope helps ensure that the background color is sufficiently saturated for easy and effective keying. For more information about how this component and others in Adobe OnLocation can help you improve greenscreen shots, see [“Maintaining consistent color and brightness for bluescreen or greenscreen” on page 39](#).

Configuring the Vectorscope

The following sections describe the Vectorscope settings.

Gain setting To change the brightness of the point painted for each pixel in the image, change the Gain setting. By decreasing the gain, you can reduce the display to only colors that are common in the image. Conversely, increasing the gain accentuates the display for colors that appear only sparsely in the image.

Intensity and Illumination dials The Intensity dial controls the brightness of the green vector display. The Illumination dial controls the brightness of the graticule.

Line mode and Full mode To switch between analyzing the full image and a single line of the video, click the Line Select button. In the Line mode, use the Line Select dial to scroll up and down the frame. When you adjust this dial, a white line appears across the Field Monitor indicating the current line.

Phase dial To rotate the display to align known reference points with the graticule, adjust the Phase dial. You should rarely, if ever, have to adjust this dial.

Scale and position dials At the preset defaults, the vector display should be scaled and positioned for perfect alignment with the graticule, so you might never have to change these settings.

- To increase or decrease the size of the vector display, adjust the Scale dial.
- To move the vector display up and down, adjust the Vertical Position dial.
- To move the vector display sideways, adjust the Horizontal Position dial.

To reset any of these controls to the default, double-click the dial.

NOTE

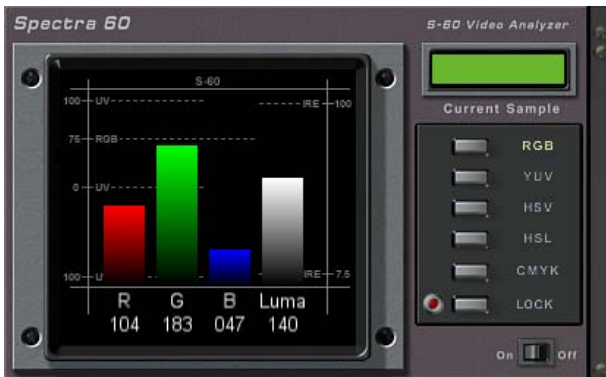
Changing the position and scale moves the display relative to the graticule, which can effectively take the vector display out of context, making it difficult if not impossible to interpret. If your goal is to see the scope better, you should use the pan and zoom capability described in [“Panning and zooming in the Vectorscope” on page 38](#). This preserves the relationship between the vector display and the graticule.

Color Space option Every digital video camera operates in one of two color spaces: 601 or 709. DV cameras use the 601 color space, DVCPRO HD cameras use the 709 color space, and HDV cameras are split between the 601 color space and 709 color space. Adobe OnLocation attempts to automatically detect the correct color space for the current video stream, but some cameras do not report this information reliably. The current mode is indicated on the right side of the Vectorscope. If Adobe OnLocation is using the wrong color space for the camera, you can manually switch to the correct color space by using the Color Space option in the Field Monitor Menu.

Panning and zooming in the Vectorscope

To zoom in, hold the Shift key while selecting the area of interest on the display and dragging downward. To pan to an area of interest once you've zoomed in, select and drag in the desired direction. To return to the normal view, hold the Shift key while selecting anywhere in the display and dragging upward.

Spectra 60



Although traditional scopes such as waveform monitors and vectorscopes analyze the full screen or a single scanline, the Spectra 60 lets you check the chroma and luminance values for any pixel in an image. When you point the cursor at a pixel in the Field Monitor, the Spectra 60 displays the pixel's precise information in the selected color space (RGB, YUV, HSV, HSL, and CMYK).

To lock onto a particular pixel in the video frame, click the Lock button, and then click the desired point in the image. The pixel remains locked until you click the Lock button again. This feature locks onto the precise coordinates of the point where you clicked, not on the color of the pixel that occupied that spot when you clicked, so the color changes as you adjust the lighting, move the camera, change its settings, and so on.

NOTE Like the other analytical tools, the Spectra 60 analyzes the raw video stream, not the pixel as it is displayed in the Field Monitor. If a noticeable difference occurs between the color in the Current Sample box and what you see in the Field Monitor, then you probably need to recalibrate the Field Monitor to the color bars.

TIP The Spectra 60 can be particularly valuable for detecting color spill when you're shooting footage that will be keyed and composited.

Maintaining consistent color and brightness for bluescreen or greenscreen

The Vectorscope, Waveform Monitor, and Spectra 60 can be useful when you are shooting footage against a bluescreen or greenscreen that will be keyed and composited in post-production. The goal is to maximize the purity and saturation of the background as much as possible without negatively impacting the foreground subject.

- The Vectorscope assesses the consistency and saturation of the background color. With nothing in front of the background, look for a tight signal concentrated out near the target for the color of the background. The tighter the signal, the more consistent the background. The farther the signal is from the center of the scope, the more saturated it is.
- The Waveform Monitor assesses the consistency of the brightness across the background. An ideally lit background shows a thin, straight line across the scope.
- The Spectra 60 identifies color spill from the background onto the subject, which typically results from light bouncing off of the floor. Color spill is particularly noticeable when the subject wears light colors. Although you can correct this color tinting in post-production (particularly if you're using Adobe® Ultra® CS3), doing so can take some tweaking in the editing application. Fortunately, you can eliminate most of the spill by adjusting the lighting and covering up those areas of the chroma color floor that aren't visible to the camera.

Spill can be difficult to see, especially on a camera's flip-out monitor. The Spectra 60 takes the guesswork out of catching this problem in advance. If you set the Spectra 60 to the RGB mode, you can move the cursor over the foreground subject, paying particular attention to areas close to the edge of the subject. Look for areas where the readings in the chroma color's channel (usually green or blue) are higher. If you find trouble spots, adjust the lighting, subject, and environment to minimize the spill. Zooming in on the Field Monitor and freezing the image can help you assess color spill.

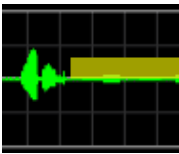
If you are continuing an existing greenscreen or bluescreen shoot, use these tools to ensure that the color balance and brightness of the green screen hasn't changed significantly. This saves time in the editing application by allowing you to use the same keyer settings for all clips.

About video clipping alerts



The DV Quality Monitor (DV-QM) displays alerts on each clip's waveform in the DVR indicating where the audio levels were clipped, where audio pops occurred, and where video luminance levels exceeded the thresholds that you specified. Also, the word "Over" appears in the Video Clipping pane of the DV-QM whenever the video signal exceeds the specified brightness. The word Over appears in the Audio Pop pane of the DV-QM whenever a sound exceeds the specified volume.

Digital video is clipped if luma levels are too high, resulting in problems that cannot be corrected in post-production. With the help of the SureShot, Waveform Monitor, and Zebras, you should have no problem achieving the correct camera settings and lighting so that luma levels are safely below the point where clipping occurs. However, you can still have problems when you return to the editing application if, for example, the sun reflected off a passing car's window or hubcap and into the lens. These transient flashes can be easy to miss. The DV-QM monitors every frame that you shoot and paints a yellow bar, in the DVR, as an alert if the luma level exceeds a specific threshold over a given area of the frame for a specified period of time. You specify these three thresholds with the Level, Area, and Duration sliders.



About the Split Screen and Onion Skin features

The Split Screen feature in Adobe OnLocation freezes the current frame, either from a recorded clip or a live camera feed, and lets you define the size, position, and opacity of the frozen split region. This feature and its opacity control can serve several valuable purposes. You can check the continuity of the lighting and exposure from one shot to the next or one camera to another. You can check the continuity of composition and position of every actor, prop, and wardrobe article. If you're shooting a stop-frame animation, it can show you either the previous frame superimposed over the current image or a still image that maps the sequence.

This feature affects the Waveform Monitor, Vectorscope, and Field Monitor.

Enable the Split Screen feature

To enable the Split Screen feature, click the Split button in the Field Monitor. A frame appears defining the split region.

Move the split region

To move the region, select and drag the cross hairs in the center of the split region control.

Resize the split region

To resize the split region, select and drag a handle at the corner or side of the on-screen control.

Maximize or restore the split region

To snap the split region to full screen, double-click the cross hairs. To return to a floating region, double-click the cross hairs again.

For more information about why you would want to use a full Split Screen, see [“Creating stop-frame animation sequences” on page 43](#).

Adjust the split region opacity

To control how transparent the frozen image is in the split screen, adjust the slider in the lower-right corner of the Field Monitor frame.

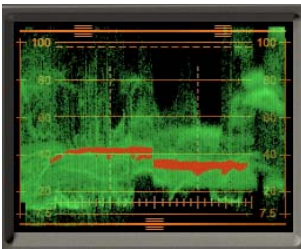
Checking continuity

Typically, when you use the split screen to check continuity, you have a frame from a recorded clip frozen in the split region and the live camera feed as the active source.

Check continuity

1. Scrub to an appropriate frame in a recorded clip.
2. Click the Split button.
3. Click Stop or press F7 to switch the active source to the live camera feed.

To check the continuity of the lighting and exposure, the split region should be fully opaque and stretched to the full height of the frame so that the Waveform Monitor can provide useful information. If the framing between the reference frame and the current image is identical, then the waveform display should have no discontinuities. In the following example, you can see that the band that's shaded red is not well aligned.



Assuming that the left side is the live camera and the right side is the recorded clip that you're trying to match, the remedy would be to either reduce the lighting on the scene or stop down the camera's iris.

To check the compositional continuity, you probably want the split region semi-transparent. Maximizing the split region lets you assess the entire frame.

TIP

As an example, assume that you have a particular shot set up but haven't recorded any footage yet when you need to check out another camera position or composition. To facilitate returning precisely to the current setup, grab a still image with the DV Grabber, and assign that image to the split region.

Creating stop-frame animation sequences

Perhaps the most challenging part of stop-motion animation is precisely controlling how much you move the models from one frame to the next. With the Split Screen feature in Adobe OnLocation, and particularly its Onion Skin mode, you can simultaneously see the last frame that was saved and the current view, so you know exactly how the positions have changed. Or if you prefer, you can superimpose a map of the sequence that shows where the models should be for each frame. These two alternative workflows necessitate different behavior for the Split Screen, which is controlled by the Split Mode option.

Setting the Split Mode option

The Split Mode option in the Field Monitor Menu controls whether the frozen frame updates automatically when recording frames for a stop motion sequence.

- **Auto (default):** Each frame that is added to the clip becomes the new frozen frame in the split region. This enables you to compare the current scene to the composition of the previous frame in the clip so that you can see every change you make in the scene.
- **Manual:** The image assigned to the split region is not automatically updated when you add a frame to the clip. Choose this mode if you want to superimpose a map of the stop-motion sequence over the live feed. As explained in [“Replace the image in the split region” on page 43](#), you can change to a different split image at any time.

Replace the image in the split region

Each time you activate the Split Screen feature, the image that is displayed in the Field Monitor is the frozen image in the split region. You can replace that image at any time by dragging and dropping another image into the split region. The Split Screen feature supports the same image types that you can save with the DV Grabber, specifically BMP, PNG, and JPG. For more information, see [“DV Grabber” on page 66](#).

Audio Spectrum Analyzer



The Audio Spectrum Analyzer (ASA) can help you create a better recording environment by showing you the tonal range of the audio. You can use this information to determine better microphone placement and orientation. The ASA can also be helpful in setting the audio input levels on the camera. While most cameras display only the total volume of the signal, the ASA shows how audio amplitude is distributed across the frequency range of the signal. This tool also provides a visual reference when directing vocal performances.

You can also monitor audio quality by using the DV Quality Monitor and the alerts that it generates. For more information, see [“About audio alerts”](#) on page 47.

Stereo and Mono modes

If the audio is monaural, then you should set the ASA to Mono to increase the resolution of the display. If the camera is sending two channels of audio, then you should set the ASA to Stereo mode to see each channel represented independently. In some circumstances, however, you might find it useful to switch to Mono mode. For example, the higher display resolution of Mono mode can help you isolate the frequency of noise.

To switch between these modes, click the Mono/Stereo button. The green LED indicates the current mode.

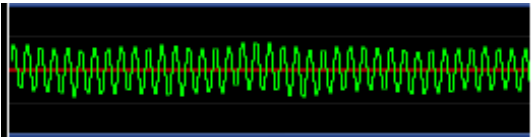
Peak, Wave, and Spectrum modes

The display area on the left side of the Audio Spectrum Analyzer can show a scrolling peak display, a waveform of the current sample, or a scrolling spectrum. To switch between these modes, click the Peak/Wave/Spectrum button. The green LED indicates the current mode.

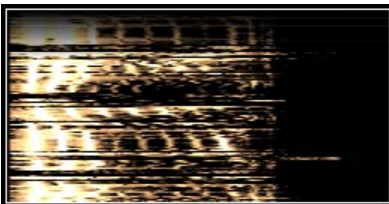
- Peak mode: This mode is similar to the representation of the audio signal that appears in each clip tray, but the following distinctions are important:
 - The display updates when you are monitoring a live feed. (In the clip tray, the display updates only when you are recording.)
 - The display scrolls at a constant speed. (In the clip tray, the peak display condenses as it scrolls left during recording and then fills the tray when recording stops.)



- Waveform mode: This mode is particularly useful for analyzing sine waves.



- Spectrum mode: This mode scrolls vertically from top to bottom. The horizontal axis represents the audio spectrum, with lows on the left and highs on the right. When you move the pointer over this display, the frequency for the band at the tip of the pointer is shown at the top of the ASA.



Linear and Log modes

In the Linear mode, all bands represent an equivalent bandwidth (118 Hz in stereo and 248 Hz in mono).

In the Log mode, the bandwidth is narrowest for the bands on the low end of the spectrum, increasing progressively toward the high end. This conforms to the sensitivity of the human ear.

Hold and Freeze modes

Enabling the Hold mode causes a bar to remain lit for the highest point reached on each frequency band. This serves essentially as a band-by-band history of the peak energy level reached. To reset this mode, click the Hold button. When the Hold mode is disabled, the peak markers stick momentarily.

Enabling the Freeze mode causes all displays in the ASA to stop updating. To return to live analysis, deselect the Freeze button.

About audio alerts

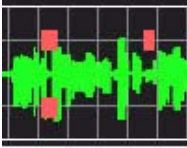


The DV Quality Monitor (DV-QM) displays alerts on each clip's waveform within the Digital Video Recorder (see [“Digital Video Recorder”](#) on page 24). These flags on the waveform indicate where the audio levels were clipped, where audio pops occurred, and where video luminance levels exceeded the thresholds that you specified. Adobe OnLocation does not modify the audio. However, this useful tool lets you quickly identify possible problems in the recording.

Audio popping alerts

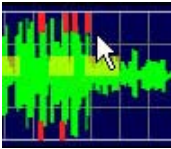
This type of alert identifies sudden surges in sound that aren't loud enough to cause the audio to clip, but are likely to result in unpleasant and possibly unusable audio. A plosive sound at the beginning or end of a word is a common source of such pops. A slight adjustment in the position of a microphone can often reduce this problem.

The Audio Pop slider in the DV-QM panel adjusts the sensitivity of this feature. These alerts appear as dark red tick marks above and below the centerline of the clip's audio waveform.



Audio clipping alerts

This type of alert indicates that a sound exceeded the recording range of the microphone. Audio clipping may or may not be audible on location, but can cause problems when editing. You don't need to change any settings because this is an absolute condition—either the audio is clipped or it isn't. These alerts appear as bright red tick marks at the extreme top and bottom of the clip's tray.



For both types of audio alerts, alerts above the centerline are for the left audio channel and alerts below are for the right channel.

Overview of framing and focusing tools

Adobe OnLocation provides field monitoring tools that help you frame the picture as you shoot the video. Use Overscan to see the area of the picture that viewers will see if they watch the video on television. Use Underscan to see the entire recorded picture that might be visible on video projectors, plasma screens, streaming video, and computer screens. For more information, see [“About the Underscan and Overscan modes” on page 51](#). Use the Grid feature to divide the screen into thirds, which can be helpful when determining framing and composition. For more information, see [“About the Grid feature” on page 50](#). Use the Letterbox Mask feature to see how the video will look if it is cropped to a different aspect ratio. For more information, see [“About the Letterbox Mask feature” on page 52](#). Use the Zoom feature in the Field Monitor to get the sharpest focus. For more information, see [“About the Zoom feature” on page 53](#).

Aesthetic framing

An important part of setting up a shot is the aesthetic or stylistic framing. Without proper framing, the subject might be lost in the shot. You might include things that could be distracting to the viewer and make the shot visually confusing. If the subject is not framed correctly, the shot might deliver a different impression than what you are trying to convey.

The following are some tips for achieving aesthetic or stylistic framing:

- As you frame the shot, question everything in the shot and where it's positioned in the frame. Is everything in the frame there for a reason? Will the logo on the back wall be visible to viewers? If you have more than one subject, do their positions in the shot support the scene?

- The aesthetic framing of the shot can be as important as properly adjusting the camera. For example, a wide, expansive shot might be appropriate if you are showing a specific location, but isn't appropriate if you are trying to establish an intimate one-on-one talk with the audience. Framing the subject too tightly can give the audience a sense of apprehension or claustrophobia, which may or may not be desirable depending on the desired effect.

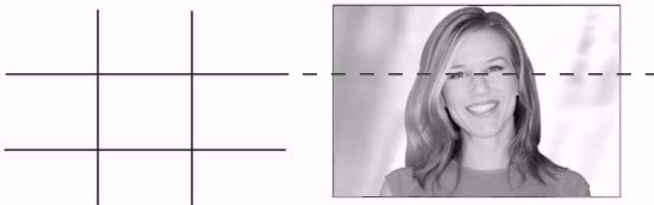
About the Grid feature

The Grid feature displays lines or tick marks to help you frame key elements of the image. To enable this feature, set the Grid Mode option in the Field Monitor Menu to one of the following values:

- Tick (default): Displays short lines around the edges of the Field Monitor.
- Line: Draws the grid all of the way across the frame.

To control the position of the grid markings, change the Grid Scale option.

By default, the grid scale is set to 33.3%, which divides the frame into thirds. That's because the best guideline when framing the shot is the Rule of Thirds, which holds that many compositions benefit from aligning a key element with an imaginary line that's one-third of the way from the top, bottom, or one of the sides of the frame. Also, you can draw the greatest attention to a key element by placing it at one of the intersections of these lines. In the following example, the subject is framed so that the eyes are one-third of the way from the top of the frame. In a full-body shot, you might want to frame the subject's body along one of the vertical lines.



Keep in mind that the Rule of Thirds is really only a guideline, not a hard rule. The most important rule is to keep the audience's attention.

About the Underscan and Overscan modes

The Underscan mode displays the full video frame, which reveals content on the edges that is recorded but not shown in the camera's flip-out LCD. In Overscan mode, the Field Monitor zooms in to the area that will be visible on most televisions. Set the Field Monitor to Underscan if the video will be viewed on a computer monitor or shown with a projector. Look for light stands, microphones, and other unwanted objects on the edges of the shot. Set the Field Monitor to Overscan to see how the video will look on a television.

To switch between these two views, click the U. Scan button on the Field Monitor or press Alt+U.

NOTE

In the early days of television, the image on the small screens shrank as TV sets aged because the electron gun that created the picture didn't move as well as it aged. As a result, a black border appeared around the edges of the picture. The electron gun could be recalibrated to fill the whole screen, but that was time consuming and costly. The solution that the TV industry settled upon was to make the electron guns of new picture tubes paint the image beyond the borders of the picture tube. Then, as a TV set aged, more of the image would be visible rather than black bands appearing.

Although this remedy worked, it created the following problems:

- The broadcast industry coined the terms underscan and overscan and gave them counterintuitive meanings. Overscan was defined as the central part of the image that you can see on a standard TV. Underscan was defined as the full frame, which is visible only on a production monitor. So the underscan actually shows more of the picture than the overscan.
- The underscan solution frustrates videographers and graphic designers because they cannot be sure just how much of the frame will be visible on any given TV set. So they must ensure that everything essential to the scene is visible within the Safe Area and nothing extraneous appears in the overscan margin.

About the Video Safe Area display

If you set the monitor to the Underscan mode, Adobe recommends that you turn on the Video Safe Area display, which superimposes a white line that is centered on the true center of the picture that all televisions display.

To enable this feature, click the Safe button.

The Video Safe Area conventionally is the central 90% of the frame. The Safe Area Size option in the Field Monitor menu lets you adjust the area from 50% to 100% of the frame.

About the Letterbox Mask feature

The Letterbox feature displays a mask at an aspect ratio for the image that's different from the native video to show what the video would look like if it were cropped. The Letterbox does not stretch or squish the image to display it in its proper proportions; to do that, change the Monitor Aspect Ratio (MAR). For more information, see [“Step 2 - Setting the monitor aspect ratio” on page 8](#). The Letterbox Mask appears either above and below the image or on the sides, depending on the Letterbox Aspect Ratio relative to the MAR.

To enable the Letterbox feature, click the Ltrbox button or press Alt+L.



To change the aspect ratio, change the Letterbox Ratio option in the Field Monitor Menu. Like the Monitor Aspect Ratio, the range for this option is from 1.000 (1:1) to 2.400 (12:5). If this setting is higher than the MAR (for example, 2.400 versus 1.778 as in the example), then the Letterbox Mask appears as horizontal bands. If this setting is lower than the MAR (1.333 versus 1.778), then the mask consists of vertical bands on the left and right of the image. If the two settings are identical, then no Letterbox bands appear, even if the Letterbox Mask feature is enabled.

To set how the mask appears, change the Letterbox Mode option in the Field Monitor Menu. The options are:

- Shadow (default): Displays a semitransparent gray filter.
- Black: Displays opaque black bars.
- White: Displays opaque white bands.

About the Zoom feature

The Zoom feature in the Field Monitor lets you magnify any part of the image up to 10 times. To turn on this feature, click the Zoom button. You can then zoom in and out by either selecting the image or holding down the Shift key while selecting anywhere on the image and dragging vertically. Once you're zoomed in, you can pan to the desired region by selecting and dragging on the image.

You can also zoom in and out using the following keyboard shortcuts:

- 1:1 Zoom: Ctrl+Z

This zooms in to line-accurate resolution, displaying exactly one line of video per line in the Field Monitor. This is particularly useful for checking the focus.

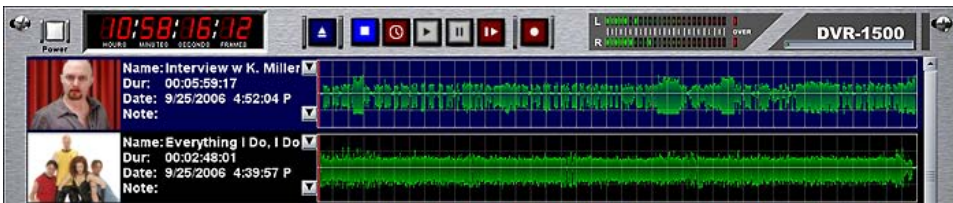
NOTE

This option functions relative to the display settings in the Field Monitor, not the video's native resolution. This means that if the Visible Lines setting or, in the case of HDV, the MPEG Resolution setting is reduced, nothing happens when you use the Zoom 1:1 with 480i or 720P video, and the zoom ratio will be reduced by half with 1080i footage. For more information, see ["Visible Lines option" on page 69](#) or ["MPEG Resolution and MPEG Frames options" on page 69](#).

- Zoom in: Alt+Z
- Zoom out: Ctrl+Shift+Z
- Maximum Zoom: Alt+Shift+Z

Recording and reviewing clips

Recording clips



The Adobe OnLocation Digital Video Recorder (DVR) lets you record clips straight to the hard drive. After you record clips, they're added to the DVR Clip List. In the DVR, you can scrub through clips digitally, which is faster than reviewing tape in the camera. With one click, you can jump to the frames that you want to analyze, identify clip quality alerts, and then make improvements by adjusting the camera or lighting at any time. You can also add notes to clips.

NOTE

Adobe OnLocation records only two channels of audio, even if the camera supports additional channels. Both channels must pass through the camera and into Adobe OnLocation via the FireWire cable.

NOTE

FAT32-formatted drives have a 4-GB file size limit. When a file reaches 3.9 GB, Adobe OnLocation automatically auto-spans to a new file and continues recording, notifying you with a message displayed on the Field Monitor. To eliminate the need to auto-span, format video-capture drives in NTFS format, which has no file size limit.

Settings for recording

The Field Monitor Menu provides DV File Format and Pre-Record Time options that help you optimize recordings for your projects.

DV File Format option

Although Adobe OnLocation does not change the video stream that is recorded, it adds information to each clip's file that defines the video format. The file format options vary depending on the type of video stream. Select the DV file format that is native to your non-linear editor (NLE) and other post-production applications.

DV and DVCPro The DV File Format option in the Field Monitor Menu controls the format of clips recorded from DV and DVCPro cameras. The options are:

- AVI T1 (for Type 1 DV .avi files) records the audio and video in one embedded stream in the file. If you select this, DVCPro clips are recorded to AVI Type 2. This option is not available for DVCPro.
- AVI T2 (for Type 2 DV .avi files) records the audio and video in separate streams in the file. This is the preferred format for Adobe® Premiere® Pro.
- QUIKTM (for QuickTime .mov files to Final Cut Pro NLEs)

If you are unsure of which format to use, you might want to perform some test recordings. Try dragging and dropping the clip into the editor. If the clip reads properly and doesn't require re-rendering to preview, then it's a good format to use. If you're not sure which format to use and you can't access the editing application, choose AVI Type 2. This is the most common format for DV files, and most editing applications can read or import files of this type.

HDV: The HDV File Format option controls the format only for HDV cameras. The options are:

- MPG (for MPEG-2 Program Stream files): This format allows time-lapse and stop-motion recording as well as pausing and resuming recording within a single clip. MPEG clips are compatible with more editing applications, but they do not preserve the timecode from the camera.
- M2T (for MPEG-2 Transport stream): This is the native format for HDV cameras, but most editing applications must transcode this file type, so it is a legacy option. About the only situation in which you might want to select this option is if you have a Sony HDV camera and want to preserve the timecode from the tape and certain other metadata that is saved within the .M2T file but not within the .MPG format.

If you select this option, you cannot pause recording or perform stop-motion or time-lapse recording.

Pre-Record Time option

Adobe OnLocation begins capturing video as soon as you start monitoring the live video feed. If a clip is not being recorded, Adobe OnLocation buffers incoming content to RAM. When you start standard recording, Adobe OnLocation adds the buffered content to the beginning of the clip. For more information, see [“Controlling recording from Adobe OnLocation” on page 58](#). To specify how many seconds are added to the beginning of each clip, change the Pre-Record Time option in the Field Monitor Menu. The default setting is 5 seconds.

When Adobe OnLocation monitors the live feed, the Buffer Meter in the upper-left corner of the DVR shows how much content is in the buffer. The Buffer Meter’s scale is relative to the maximum buffer setting, which is approximately 35 seconds (for standard DV). The buffer fills to the level defined by the Pre-Record Time option.

NOTE

When the focus is on a recorded clip, video from the camera is not being buffered. You must be monitoring the live feed for the buffer to operate.

NOTE

The actual number of seconds added might be less than the Pre-Record Time option if sufficient RAM is not available.

Configuring MPEG decompression to avoid dropped frames

Strictly speaking, the MPEG decompression settings involve monitoring, not recording. However, because the purpose of these settings is to conserve system resources for recording, they are relevant here. Because of the complexity of MPEG compression, decompressing the HDV stream for display in the Field Monitor and analysis by other components places a high load on the CPU. Because problems occur with the recorded clips if CPU usage reaches 100%, Adobe OnLocation provides three options that let you make a trade-off between the resolution and frame rate of what’s displayed in Adobe OnLocation and the reduced demand on the CPU, thereby avoiding dropped frames and other problems. To learn more about these features, see [“Recording HDV” on page 68](#). These settings affect only what you see in Adobe OnLocation; the HDV data stream that is recorded to the hard drive is not compromised in any way.

Recording methods

Adobe OnLocation provides the following standard recording methods:

- [“Controlling recording from Adobe OnLocation” on page 58](#)
- [“Controlling recording from the camera \(Slave Recording\)” on page 58](#)

Additionally, you can use these special recording modes:

- “Motion-activated recording” on page 59
- “Stop-motion recording” on page 60
- “Time-lapse recording” on page 61

Regardless of which mode you start recording in, Adobe OnLocation adds a new clip tray to the DVR showing the clip’s name and date and time stamp. The DVR’s frame counter starts running and both the audio waveform and clip duration are updated constantly as the clip is recorded. If the Shotclock Slave option is enabled, its timer starts running.

You can switch between standard recording, stop motion, and time lapse at any time. Although a single DV or DVCPRO clip can seamlessly bridge these modes, in the HDV realm Adobe OnLocation automatically starts a new clip when you switch between standard recording and one of the special recording modes. This is necessary because standard recording captures all three types of HDV frames, whereas stop motion and time lapse work only with I frames, and a clip that switched between these modes in midstream would confuse the editing application.

Standard recording

You can initiate standard recording with either Adobe OnLocation or your camera.

Controlling recording from Adobe OnLocation

To begin recording, click the Record button or press F2.

If the Pre-Record Time option is enabled, the appropriate number of seconds of footage appears at the start of the clip.

At any time when you are recording, you can start a new clip by clicking Record or pressing F2. Adobe OnLocation closes the current clip and starts a new one without missing a frame.

To stop recording, click the Stop button on the DVR or press F4.

Controlling recording from the camera (Slave Recording)

If you have the DVR Slave To option in the Field Monitor Menu set to Camera, then Adobe OnLocation automatically starts and stops recording when you start recording on the camera. The camera must have a tape or P2 card inserted for the Slave Recording feature to work. Adobe OnLocation responds to a message from the camera that it is recording. If you press the camera’s Record button with no tape or P2 card inserted, no message is generated.

For the Slave Recording feature to work, Adobe OnLocation must be monitoring the correct camera's live feed. This feature does not function if the focus is on a recorded clip, regardless of whether it's playing or paused.

NOTE

Clips that start recording in slave to the camera automatically stop recording whenever recording stops at the camera. One common situation in which you might not want this to happen is when the tape runs out. (Unfortunately, because the camera sends the same command regardless of whether recording stops automatically or manually by pressing the camera's Record button, Adobe OnLocation cannot continue recording when the tape runs out.) If you want Adobe OnLocation to continue recording, you must manually start a new clip. This bypasses the Slave Recording feature so that stopping the camera has no effect on the DVR. However, if you start recording in slave mode but then manually begin a new clip for some reason, then pressing Stop on the camera does not control the DVR. You must end the recording in Adobe OnLocation.

Timecodes for recorded clips

If the camera has a tape inserted or is generating free-run timecode, then recorded clips adopt the timecode from the tape. For slave recording, this means that the timecode for content on the tape corresponds to the timecode for the same content in the Adobe OnLocation clip. In all other situations, the timecode depends on whether tape was rolling in the camera when you stopped recording in Adobe OnLocation, regardless of whether the slave mode was enabled. If tape is rolling at that point, then the clip adopts the timecode from the tape. If not, then the timecode starts at 0:00:00.

Motion-activated recording

You can set the DVR to automatically start and stop recording based on the amount of motion within the center of the frame. Motion-activated recording is similar to standard recording in that Adobe OnLocation records every frame. However, it's also distinct because it operates without any user actions—once you set the DVR in this mode, it records clip after clip until you disable the mode or the hard drive fills up.

Initiate motion-activated recording

1. To put the program in the Motion mode, set the DVR Slave To option in the Field Monitor Menu to Motion. When this mode is selected, Adobe OnLocation compares each pair of frames, analyzing the luma values of each pixel within the center of the image (the area defined by the Safe Area box when it's set to 50%). The Motion Meter in the upper-right corner of the DVR indicates how much motion is detected.

2. To enter the ready state, click Record or press F2. The Record button blinks to indicate that the Motion mode is active.


The following options in the Field Monitor Menu define the threshold for how much motion is required to trigger recording:

- Motion Threshold is the primary option. This option factors in both the number of pixels that change and the extent of the change per pixel. The higher this value, the more motion is required before the DVR starts recording. The Motion Meter is green when motion is below this threshold, and turns red when motion is above this threshold. Because the Motion Meter reflects only this option, it can be green without the DVR starting to record.
- Motn NoiseFilter specifies a threshold below which motion is ignored. This prevents noise in the video signal from triggering recording. The higher this value, the more motion is required before the DVR starts recording.
- FramesTo Trigger specifies the number of consecutive frames that must exceed the motion threshold before recording starts.

In addition, the Motn Stop Time option specifies the number of seconds that are recorded after motion drops below the threshold. If motion climbs back above the thresholds during this period, then the Motion Stop counter resets and recording continues.

Stop-motion recording

Stop-motion animation is a technique that involves assembling a clip from individual frames that are recorded on command. The workflow is straightforward enough: set up a shot, shoot a frame, make a slight adjustment in the position of one or more objects in the scene, shoot another frame. Repeat this cycle 30 times to produce one second of video, 1,800 times to record one minute of stop-motion animation.

Filmmakers have been using this technique for decades. Indeed, some of the first moving pictures produced were stop-motion animation. Adobe OnLocation simplifies the technological side of the equation. With the DVR stopped or paused, click the Stop Motion button , or press F3 to record the current frame. The DVR then automatically goes to the Pause mode and waits for you to add another frame, switch to another recording mode, or stop recording. If the DVR was stopped when the first frame was recorded, then a new clip tray is created containing the single frame.

NOTE

The Stop Motion button is available only when monitoring the live feed. When the focus is on a recorded clip, the button serves to advance by a single frame.

The ease of adding frames to a clip is only part of what makes Adobe OnLocation a valuable tool for recording stop motion sequences. Perhaps even more noteworthy are the ways that the Split Screen feature and its onion skin opacity control assist in staging each frame. For more information, see [“About the Split Screen and Onion Skin features” on page 41.](#)

The frame rate for the playback of stop-motion clips within Adobe OnLocation is defined by the camera’s frame rate.

TIP	For stop-motion recording to work with HDV, you must set the HDV File Format option to MPEG.
------------	--


NOTE	Because of the frame number system used for pulldown of 480/24P and 1080/24P video, stop-motion clips recorded with the camera in one of those modes might not be readable in an NLE.
-------------	---

Time-lapse recording

In this mode, the DVR records frames at an interval that you define. When played back at a normal frame rate, the resulting clips show events that unfolded over minutes, hours, or even days telescoped down to a few seconds. To specify the interval between frames, change the TmLps Frequency option in the Field Monitor Menu. This option defines the exposure interval only by reference to the number of frames skipped. To translate that value into a meaningful measure of frames per unit of time (for example, 12 frames per hour, which is equivalent to 5 minutes per frame), you must factor in the camera’s frame rate and the video format.

- With DV and DVCPro, the Time Lapse Frequency is a function of the number of frames skipped between exposures. The only variable you must take into account is the camera’s frame rate. For more information, see [“Time-lapse frequency settings for DV and DVCPro” on page 62.](#)
- HDV is more complex because of its interframe compression. If you set the TmLps Frequency option to 1, Adobe OnLocation records all I-frames and P-frames, which yields roughly 15 frames per second. At all other settings, Adobe OnLocation records only I-frames. For more information, see [“Time lapse frequency settings for HDV” on page 63.](#)

TIP	To record in time lapse with HDV, you must set the HDV File Format option to MPEG.
------------	--

To begin recording a time-lapse clip after you specify the frequency, click the Time Lapse button , or press Ctrl+F3. The DVR immediately records a frame and then pauses for the specified number of frames before adding another frame.

NOTE The Time Lapse button is available only when monitoring the live feed. When the focus is on a recorded clip, the button serves to step back by a single frame.

The frame rate for playback of time-lapse clips within Adobe OnLocation is the same as the camera's frame rate.

If desired, you can set the DVR to pause after recording a given number of frames with the TmLps Net Frames option in the Field Monitor Menu.

NOTE Because of the frame number system used for pulldown of 480/24P and 1080/24P video, time-lapse clips recorded with the camera in one of those modes might not be readable in an NLE.

TIP You can change the time-lapse interval at any time during recording, thereby increasing or decreasing the extent to which time is telescoped.

Time-lapse frequency settings for DV and DVCPro

In the table below, you'll find settings for a range of basic frame rate and frequency combinations for DV and DVCPro.

If you have another frequency in mind, the formula for calculating the correct setting for DV and DVCPro is frequency (in seconds) divided by the camera's current frame rate.

		Frame Rate for DV and DVCPro				
		NTSC			PAL	
		24	30	60	25	50
Frames per Second	4	6	8	15	6	13
	3	8	10	20	8	17
	2	12	15	30	13	25
	1	24	30	60	25	50
Frames per Minute	4	360	450	900	375	750
	3	480	600	1200	500	1000
	2	720	900	1800	750	1500
	1	1440	1800	3600	1500	3000

		Frame Rate for DV and DVCPro				
		NTSC			PAL	
		24	30	60	25	50
Minutes per Frame	5	7200	9000	18,000	7500	15,000
	10	14,400	18,000	36,000	15,000	30,000
	15	21,600	27,000	54,000	22,500	45,000
	30	43,200	54,000	108,000	45,000	90,000

Time lapse frequency settings for HDV

In the table below, you'll find settings for a range of basic frame rate and frequency combinations for HDV.

		Frame Rate for HDV	
		JVC 6 Frame GOP	Sony 15 Frame GOP
Frames per Second	15	1	1
	5	2	
	2	3	2
	1	6	3
Frames per Minute	4	75	30
	3	100	40
	2	150	60
	1	300	120
Minutes per Frame	5	1500	600
	10	3000	1200
	15	4500	1800
	30	9000	3600
	60	18,000	7200

Pause and resume recording

Adobe OnLocation lets you pause recording and then resume recording within a single clip. To pause, click the Pause button. To resume, click the Play button.

NOTE

Because of the frame number system used for pulldown of 480/24P and 1080/24P video, each time you pause and resume recording with the camera in one of those modes, one frame might be bad.

Reviewing recorded clips

Review recorded clips to confirm that video looks as you expect and notate them for future reference.

Selecting a clip

To select a clip to play, click anywhere on its tray. If you click on the waveform, then the position in the clip jumps to where you clicked. Clicking outside the waveform area retains the position wherever it was the last time that clip had the focus during the current session, or at the beginning if you never set the focus on the clip.

If the clip you want is not visible, you can browse to it by using the DVR's scroll bar or by positioning the mouse pointer over the clip list and turning the mouse wheel.

You have the following options for selecting a clip without clicking on it:

- Any playback command takes you directly from the live feed to the last clip that you selected or to the first clip in the list if you haven't selected a clip during the current session. All playback commands have keyboard shortcuts.
- The shortcuts Ctrl+Page Up and Ctrl+Page Down display the previous or next clip, respectively, even if you're monitoring the live feed when you press the hotkey.

Using basic playback commands

Button	Description
--------	-------------



Play: Click the Play button or press F5.



Pause: Click the Pause button or press F6. The current frame remains displayed on the Field Monitor.

Button	Description
--------	-------------



Advance one frame: With the clip paused, click the Frame Advance button or press the Right Arrow key. Holding down the key plays the video forward frame by frame.



Back up one frame: With the clip paused, click the Frame Back button or press the Left Arrow key. Holding down the key plays the video backward frame by frame.



Stop and return to the live feed: Click the Stop button or press F7. Adobe OnLocation returns to the live camera feed, assuming one exists. If not, then a message on the Field Monitor indicates that no camera could be found.

NOTE

Adobe OnLocation plays clips back in real time based on the camera's frame rate setting when the clip was recorded. Currently, you cannot change the playback speed.

NOTE

When monitoring the live signal, Adobe OnLocation drops frames to conserve system resources for recording. When reviewing recorded clips, however, Adobe OnLocation plays every frame. If the CPU isn't fast enough, the playback speed is slower than real time. For more information about the frame rate, see ["Recording DVCPRO HD" on page 71](#).

If the audio for DVCPRO HD clips is scrambled, drops out, or doesn't play smoothly, that doesn't indicate a problem with the recorded audio. Instead, it indicates that the system can't keep up with the data stream or that the hard drive is fragmented.

Scrubbing and navigating in a clip

- Jumping to any spot: Clicking anywhere on a clip's waveform goes directly to that point in the video. If the DVR is playing, play resumes when you release the mouse button.
- Scrubbing: Selecting and dragging across a clip's waveform samples frames of the video.
- Fast forwarding and rewinding: The DVR moves forward and backward through a clip by a specified number of frames. This feature does not fast forward or rewind in the same way as a VCR in that it skips frames as opposed to playing all of them faster.
 - To specify the number of frames to jump, select a clip tray and press any number from 0 to 9. The frame speed is displayed momentarily in the Field Monitor.
 - To move forward by the specified increment, press Shift+Right Arrow. To move back, press Shift+Left Arrow.
- Jumping to the beginning or end of a clip: Press the Home key to jump to the beginning of a clip or the End key to jump to the last frame.

- Jumping to the previous or next alert: The DV Quality Monitor paints alerts on a clip's waveform where a problem might have occurred. To jump to the previous such alert, press Ctrl+Left Arrow. To jump to the next alert, press Ctrl+Right Arrow. For more information about these alerts, see [“About video clipping alerts” on page 40](#) and [“About audio alerts” on page 47](#).

Add notes to clips

In the Clip List, click in the Note field. When the cursor appears, enter any notes that you want to save about the clip. The note is saved and viewable within Adobe OnLocation.

Reviewing clip information

In addition to the clip information that's displayed between the thumbnail and the waveform, Adobe OnLocation maintains other statistics about each clip, such as the width, height, aspect ratio, and file format. To view this data, click the arrow button to the right of the Notes field.



DV Grabber



The DV Grabber lets you capture still image files. You can quickly grab high-resolution stills from video clips or live video and save them to the hard drive. You can edit the resulting images in any standard graphics editing application, such as Photoshop®.

Setting the grabbed still pixel ratio

Adobe OnLocation lets you select the shape of pixels for images you grab from the video stream, which affects the resolution of the picture. To change this setting to match your intended use, change the Grab Pixel Ratio option in the Field Monitor Menu. The options are:

- **PC 1:1 (default):** This option produces square pixels. Select this option if the final display medium is a computer, you are editing the image in a graphics application such as Photoshop, or the picture is printed.
- **Video:** This option applies a pixel aspect ratio of .9 to 1. Select this option if the image is shown on a television or you are working with it in a video editing application.

The size of the resulting image varies depending on whether the camera is NTSC or PAL and whether the video stream is DV or HD. Because HD video is not standardized, the resolution varies from one brand of camera to another.

			PC 1:1	Video
DV	NTSC	4:3	640x480	720x480
		16:9	853x480	
	PAL	4:3	720x540	720x576
		16:9	1024x576	
HD	NTSC or PAL	Sony	1440x1080	
		JVC	1280x720	

NOTE

With an HD stream, the MPEG Resolution option also affects the size of grabbed images. If you set this option to Half, the resulting picture is one-quarter of the size of a full-resolution still because the resolution is reduced by half in both dimensions.

Capture still images

To grab an image of the current frame, click the Grab button or press F12.

The name of the last grabbed still is displayed in the Base File Name field. To change the name of the next image grabbed, click in the field, edit the name, and then press Enter. The new name is used for all subsequent grabbed images, with a number automatically added after the filename.

Configuring the DV Grabber

You can set the DV Grabber in Adobe OnLocation to save images to a file, the Clipboard, or both. Click the button for each desired option.

- If you select File, the image is saved to a file in the Grabbed Stills folder within the current project folder. You can access this folder by selecting Open Grabbed Stills Folder from the File menu or the right-click menu.

- If you select Clipboard, the image is copied to the Windows Clipboard. To paste the image into another application or file, open the second application, and press Ctrl+V on the keyboard or use the Paste command.

TIP

If you shut down the computer before pasting the still into another application, the still is lost. Also, because the clipboard can only hold one object at a time, if you copy other items from Adobe OnLocation or any other application onto the clipboard before pasting the still into an application, the grabbed image is overwritten.

- If you select Add to DVR, the image is added to the list of clips in the Digital Video Recorder.

To set the desired file format, click the JPG, BMP, or PNG button.

Accessing grabbed stills

The images you save to files are stored in the Grabbed Stills folder for the current project. You can browse to them through Windows or from a graphics, video editing, or email application. Adobe OnLocation also provides the Open Grabbed Stills shortcut in the File menu and the right-click menu to save you from having to browse to the folder.

Recording HDV

Recording HDV in real time requires a powerful system with settings optimized for maximum performance.

Balancing video quality and system resource usage

Everyone wants to see the highest resolution and frame rate possible, but some computers cannot process all of the data. Maximizing the quality of the images displayed requires the computer to analyze more video data, which directly increases the CPU usage. If the CPU usage rises to 100% when you are recording HDV, frames can be dropped. With HDV, frames aren't dropped individually, but in groups of pictures (GOPs), which can consist of up to 15 frames depending on the camera.

TIP

To determine which settings you should use, you might find it useful to observe the CPU usage on the Performance Tab of the Windows Task Manager (open by pressing Ctrl+Shift+Esc).

Assuming that capturing frame-complete recordings takes precedence over everything else that Adobe OnLocation does, you should reduce the demand on the CPU by making some compromises in the resolution and frame rate of the display and analysis tools. The following sections describe the options that are available in the Field Monitor overlay menu. To open this menu, click the Menu button in the Field Monitor.

Visible Lines option

This menu option controls whether the Field Monitor displays all of the lines in the image or only half of them (Odd or Even). This setting affects the display of video from both DV and HDV cameras.

The options are:

- All: Higher quality; displays both fields. This is the default setting.
- Odd or Even: Lower CPU usage; displays only one of the two fields.

MPEG Resolution and MPEG Frames options

Decompressing an HDV camera's MPEG stream for display and analysis is resource-intensive, much more so than for a DV stream. If Adobe OnLocation maximizes the system's CPU usage, you see transient rectangular artifacts.

MPEG Resolution: The MPEG data for each frame includes information about the brightness or luma (Y) and the color (UV). This menu option controls how much of this data is used.

The options are:

- Full: Higher image quality; uses all of the YUV data.
- Half: Lower CPU usage; uses half of the YUV data.

The Y data accounts for roughly half of the MPEG stream, so ignoring half of the Y data saves substantially on CPU usage.

NOTE

This setting also affects the dimensions of grabbed stills.

MPEG Frames: The MPEG stream consists of data about a series of frames that use three types of compression: I, P, and B. I-frames are self-contained. P-frames are encoded with reference to the preceding I-frame. B-frames are encoded with reference to the other two frames. This menu option lets you control which frames are displayed and analyzed. In effect, it lets you decrease the frame rate. However, because the number and sequence of these three component frames varies from one camera manufacturer to another, Adobe OnLocation can refer only to which types of frames are displayed, not to a specific frame rate.

The options are:



- All: Full frame rate; displays all three frame types.
- I + P: Medium quality and CPU usage; displays I-frames and P-frames. This is roughly 15 frames per second (fps) in NTSC and 12 fps in PAL.
- I Only: Lowest CPU usage; only displays I-frames. This ranges from 2 to 5 fps, depending on which HDV camera you have.

Choosing the best combination of settings

The combination of settings that you choose depends primarily on the speed of the system. Adobe recommends that you test different combinations to see what suits your needs best. Keep the following in mind as you test combinations:

- Because the native resolution of HD video is much higher than that of the Field Monitor display, you're not likely to notice a great difference when you reduce either of the two resolution-related settings—Lines Displayed and MPEG Resolution. However, if you reduce both of these settings, the effects are much more noticeable.
- You might find it worthwhile to use different combinations of settings in different circumstances. For example, when you're setting up a shot and checking the levels and focus, the value of using the full resolution and full frame rate might outweigh the cost of having artifacts flash across the image.

The following table shows the trade-off between CPU usage, frame rate, and resolution for all possible combinations of settings.

Lowest CPU Usage Lowest Image Quality		 Higher Frame Rate			
 Higher Image Quality	Visible Lines	Odd/Even	Odd/Even	Odd/Even	
	MPEG Resolution	Half	Half	Half	
	MPEG Frames	I Only	I + P	All	
	Visible Lines	All	All	All	
	MPEG Resolution	Half	Half	Half	
	MPEG Frames	I Only	I + P	All	
	Visible Lines	Odd/Even	Odd/Even	Odd/Even	
	MPEG Resolution	Full	Full	Full	
	MPEG Frames	I Only	I + P	All	
	Visible Lines	All	All	All	
	MPEG Resolution	Full	Full	Full	
	MPEG Frames	I Only	I + P	All	
				Highest Image Quality Highest CPU Usage	

Recording DVCPro HD

Recording DVCPro HD requires that the computer be able to rapidly absorb large amounts of binary data. A state-of-the-art hard drive spinning at 7200 rpm should be more than capable of absorbing the 100 Mbit/s flowing out of DVCPro HD sources, unless the hard drive must pause too often to seek an empty space to continue writing the data. If the hard drive must pause for too many of these seeks, the result might be dropped frames when recording and choppy performance during playback.

To eliminate or at least minimize the number of seeks, Adobe strongly recommends that you defragment the hard drive used for video capture on a regular basis. The best practice is to dedicate a hard drive to video projects and start each project with nothing on the hard drive. Adobe also recommends that you format the video-capture hard drive, in NTFS format, after you offload all of the old content.

TIP

The Buffer Meter, which is in the upper-right corner of the DVR, provides the best indication of whether the hard drive is keeping up with the data flow. Under ideal operations, video is written directly to the hard drive without being buffered. If the Buffer Meter routinely shows activity, then the hard drive is not keeping up with the data flow. If the meter reaches the red, then there is a possibility that frames are being dropped.

Monitoring and reviewing DVCPro HD When monitoring and reviewing DVCPro HD, the CPU takes the burden of the high volume of data. You might see the following issues when CPU usage reaches 100%:

- When monitoring the live stream from the camera, Adobe OnLocation skips frames that it doesn't have time to process. For 1080i video in particular, the application can also fall behind the live action. A latency of 6 to 7 frames is unavoidable because of the multiple steps involved in the video going from the camera to the monitor, but with an over-worked CPU that can increase to over 20 frames.
- When playing a DVCPro HD clip, Adobe OnLocation displays every frame as fast as it can (up to real time). If the CPU usage is at the maximum, playback might occur in slow motion.

To improve performance, try the following:

- Quit other applications, including anti-virus software.
- Turn off any components that you're not using. The Waveform Monitors, Vectorscope, and Audio Spectrum Analyzer use the most CPU time.
- Change the Visible Lines option in the Field Monitor Menu to Odd or Even.
- Use a faster computer. Adobe OnLocation runs most efficiently on dual-core processors.

NOTE

FAT32-formatted drives have a 4-GB file size limit. When a file reaches 3.9 GB, Adobe OnLocation automatically auto-spans to a new file and continues recording, notifying you with a message displayed on the Field Monitor. To eliminate the need to auto-span, format video-capture drives in NTFS format, which has no file size limit.

Managing projects

The highest level of organization for content saved through Adobe OnLocation is the project. Each project has subfolders for video and audio clips that are in the DVR, have been ejected, and have been moved to the Garbage Clips folder. A fourth folder contains still image files saved with the DV Grabber.

You can store Adobe OnLocation projects on any local drive, internal or external. Both FireWire and USB2 external drives are adequate for Adobe OnLocation. For DVCPro HD, Adobe strongly recommends that you use a 7200-rpm drive and keep it defragmented.

Create a new project

1. Choose New Project from the File menu or the right-click menu.
2. Navigate to the drive and folder where you want to save the project.
3. Enter a name for the project. Use a descriptive name that includes, for example, the name of the project or client or a job number.
4. Click Save. Adobe OnLocation creates a Windows folder and the master project file, both with the name you entered. The project files have a dvr extension.

Open a project

1. Choose Open Project from the File menu or the right-click menu.
2. Navigate to the project folder, and open it.
3. Choose the project file (*[project name].dvr*).
4. Click Open. Adobe OnLocation opens the project, populating the DVR with its clip list.

Moving projects between computers

You can access a project that was created on one computer from any other computer by moving the external drive, copying the entire project folder, or connecting over a network. Adobe does not recommend recording video to a network location. Latency in the network might drop data.

Because all paths are relative within the project folder, you must move the project folder as a unit without moving or deleting any subfolders or video files that are within the Clips in Use by Adobe OnLocation folder.

Managing clips

Rename, rearrange, or remove clips to better organize your project.

Renaming clips

When you start recording a clip, Adobe OnLocation automatically names it by adding an auto-incremented number to the end of the base filename. The default base name is Clip.avi. If you never change a clip's name, the clips are Clip.avi, Clip 01.avi, Clip 02.avi, and so on.

You can rename a clip at any time except when it's being recorded. Each time you enter a new name, that name becomes the new base name that's used when you record new clips.

To rename a clip, click in the Name field, type a new name, and then press Enter.

Moving clips within the DVR

To rearrange the order of clips in the DVR, select the thumbnail for any clip, and drag it to the desired location.

Removing clips from the Clips in Use folder

Adobe OnLocation saves clips to the Clips in Use by Adobe OnLocation folder within the current project folder. This is the only place Adobe OnLocation knows to look for a given project's clips, and it expects them to be unchanged from the way it recorded them. If you make any changes to a clip, Adobe OnLocation might be unable to continue working with that file.

Therefore, you should never delete, move, rename, or edit clips within this folder. The only action that's safe is to copy clips to other folders or drives, which is only necessary if you want to work with a clip in another application and keep it in Adobe OnLocation. If you are finished with the selected clip in Adobe OnLocation, then you can delete it in one of the following ways:

- Clips that you want to keep and edit: Click the Eject button or press Delete. This moves the clip to the Ejected Clips folder. (If you use a MacBook Pro and run Windows with Apple Boot Camp, press fn+Delete.)
- Clips that you don't expect to use, but don't want to delete: Hold the Ctrl key and click the Eject button or press Ctrl+Delete. Adobe OnLocation moves the clips to the Garbage Clips folder. Each time you switch projects or quit Adobe OnLocation, the application asks if you want to permanently delete the contents of this folder.
- Clips that you're certain you don't want to keep: Hold Ctrl+Shift and click the Eject button or press Ctrl+Shift+Delete. A dialog box is displayed asking to confirm this action. If you are absolutely positive that you want to delete the clip, click Yes. Review the clip's name displayed in the message to ensure that you are deleting the intended clip. If you have any doubt, click No, and move the clip to the Garbage Clips folder. Because clips can be very large, the clip is permanently deleted—it is not moved to the Windows Recycle Bin, so you cannot recover it (except possibly with some advanced file recovery tools).

NOTE

You can bring clips back into the DVR by dragging and dropping them from a standard Windows folder. The right-click menu lets you open all of the different folders in the current project.

Emptying the Garbage Clips folder

As noted previously, every time you switch projects or quit Adobe OnLocation, the application prompts you to empty the Garbage Clips folder if it contains any files. You can also empty the Garbage Clips folder manually by selecting Empty Garbage Clips Folder from the File menu or the right-click menu.

The confirmation dialog box indicates how many files the folder contains and the total size of those files. Just as with deleting clips directly, this action is permanent. If drive space permits, Adobe recommends that you leave files in the Garbage Clips folder until you have edited or backed up the project. Remember that you moved clips here rather than deleting them for a reason. During editing, you might find that an otherwise good clip has an audio glitch and one of the clips that you kept in the Garbage Clips folder contains the audio clip that you need.

Importing clips and still images

Any video clip that Adobe OnLocation recorded can be imported into any project by dragging the file from a Windows file manager window and dropping it in the DVR clip list. This allows you to not only retrieve ejected or deleted clips back into their original project but also bring a clip from one project into another project so that you can conveniently compare clips. If the metadata file (.smvp) associated with an ejected or deleted clip is in the same folder as the clip, then the imported clip is complete with its waveform and all metadata.

You can also drop still images saved by the DV Grabber into the DVR.

If you move a file into a project's Clips in Use by Adobe OnLocation folder before importing it into that project, then subsequently ejecting or deleting the file works exactly as described in the previous sections. Ejecting or deleting an imported clip that resides anywhere else removes its tray from the DVR without affecting the actual file in any way.

Working with DVCPRO clips in a video editing application

Before transferring clips to a video editing application, ensure that its project settings reflect your footage.

Recommended project settings for video editing applications

For many video editing applications, you specify appropriate settings on the Video tab of the New Project dialog box. For Adobe Premiere Pro CS3, however, specify the settings below on the Custom Settings tab of the New Project dialog box. (For information about additional project settings, see Adobe Premiere Pro Help.)

	720P	1080i PAL	1080i NTSC
Editing Mode	Desktop	Desktop	Desktop
Frame Size	960 horizontal, 720 vertical	1440 horizontal, 1080 vertical	1280 horizontal, 1080 vertical
Field Order	No fields	Lower Field First	Lower Field First
Pixel Aspect Ratio	HD Anamorphic (1.333)	HD Anamorphic (1.333)	DVCPRO HD (1.5)

Once you've created the custom project setting for your DVCPro HD project, be sure to click the Save Preset button and save the project setting. Use a meaningful name for the project preset and add a project setting description so that the custom setting can be easily selected for future projects.

NOTE

Due to a limitation of the QuickTime format, DVCPro clips captured in the QuickTime format can not be played on a PC outside of Adobe OnLocation. DVCPro clips captured in the QuickTime format can only be played on a Macintosh computer.

24P pulldown with Adobe OnLocation

If you are shooting DVCPro HD at 24P or 24PA frame rates, Adobe OnLocation automatically skips the extra fields when recording to minimize the size of the video files. When shooting DV at 24P or 24PA, Adobe OnLocation records these files at 29.97 fps. The pulldown for these files can then be removed when they are imported into either Adobe Premiere Pro or Adobe After Effects® for editing. By not permanently removing the pulldown from these files during the capture process, the pulldown can be reinserted into the files, if necessary, for export back to tape.

NOTE

If you set the DV File Format option to AVI Type 1 and have a DVCPro video stream, Adobe OnLocation does not delete pulldown frames (and it records to AVI Type 2 format at 29.97 fps).

Index

Numerics

24P pulldown 77

A

activating the software 1
Adobe Design Center 4
Adobe Developer Center 4
Adobe Help 2
Adobe Labs 5
Adobe Premiere Pro, project settings 76
Adobe Video Workshop 3
ASA. *See* Audio Spectrum Analyzer 45
aspect ratio, setting in Field Monitor 8
audio
 clipping alerts 48
 popping alerts 47
Audio Spectrum Analyzer
 about 26, 45
 Hold and Freeze modes 47
 Linear and Log modes 46
 Mono and Stereo modes 45
 Peak, Wave, and Spectrum modes 46
Automatic Quality Monitor (DV-QM), about 27

B

bluescreen and greenscreen 39
brightness
 evaluating with Waveform Monitors 31
 evaluating with Zebras 29

C

calibrating
 cameras 12

Field Monitor 10
cameras
 connecting multiple 8
 connecting one 7
clips
 importing 76
 notes for 66
 playing 64
 rearranging 74
 recording 55
 removing 74
 renaming 74
 scrubbing 65
 selecting 64
 statistics 66
color, analyzing 35
components
 adding 22
 arranging 23
 removing 22
continuity checking 42
CPU usage 68
customer support 5

D

Design Center 4
dials 16
Digital Video Recorder (DVR), about 24
dropped frames, avoiding 57
DV Grabber
 about 27, 66
 configuring 67
DV Quality Monitor (DV-QM)
 audio alerts 47
 video alerts 40
DVCPro HD

- 24P pulldown 77
- recording 71
- dynamic range, about 31

E

- extras 4

F

- Field Monitor
 - about 23
 - aspect ratio 8
 - calibrating 10
 - Letterbox Mask feature 52
 - quality of video 68
 - Split Mode option 43
 - Split Screen and Onion Skin 41
 - Underscan and Overscan modes 51
 - Video Safe Area 51
 - Zoom feature 53
- Flip Mode 9
- framing 49
- Full mode 34

G

- Garbage Clips folder, emptying 75
- graphical dials 16
- greenscreen and bluescreen 39
- Grid feature 50

H

- HDV
 - optimizing settings 70
 - recording 68
- Help, about 2

I

- Illumination dial 34
- importing clips and images 76
- installing the software 1
- Intensity dial 34
- IRE setup 33

K

- keyboard shortcuts 20

L

- Letterbox Mask feature 52
- Line mode 34
- LiveDocs 2

M

- Menu button, in Field Monitor 16
- motion-activated recording 59
- moving clips in the DVR 74
- MPEG resolution 69

N

- navigating clips 65
- non-linear editors, project settings for 76
- notes for clips 66

O

- Onion Skin 41
 - creating stop-frame animation with 43
 - moving the region 41
- overlay menu 16
- Overscan mode 51

P

- panning and zooming
 - in the Field Monitor 53
 - in the Vectorscope 38
 - in Waveform Monitors 35
- pausing recording 64
- playback controls 64
- plug-ins
 - in Adobe Store 5
- plug-ins at Adobe Store 5
- Position dial 34
- projects
 - about 73
 - creating 73
 - moving 74
 - opening 73
- properties for clips, viewing 66

R

- read me file 2
- recording
 - about 55
 - controlling with camera 58
 - DV File Format option 56
 - DVCPProHD 71
 - HDV 68
 - motion-activated 59
 - pausing 64
 - Pre-Record Time option 57
 - stop-motion 60
 - time-lapse 61
 - timecode 59
- registering the software 2
- requirements, system 1
- right-click menu 15
- rule of thirds 50

S

- Scale dial 34
- scrolling 15
- scrubbing clips 65
- selecting clips 64
- settings for video editing applications 76
- settings menu 16
- shortcut keys 20
- Shot Clock, about 27
- software
 - activation 1
 - downloads 5
 - registration 1
- Spectra 60
 - about 26, 35
 - reading 38
- Split Mode 43
- Split Screen
 - about 41
 - adjusting the opacity 41
 - changing the split image 43
 - checking continuity with 42
 - maximizing the region 41
 - moving the region 41
 - resizing the region 41
- still images
 - accessing 68
 - capturing 66
 - importing 76

- stop-frame animation 43
- stop-motion recording 60
- SureShot 12
 - about 27
 - calibrating with 12
- system requirements 1

T

- time-lapse
 - frequency settings for DV and DVCPPro 62
 - frequency settings for HDV 63
 - recording 61
- timecode, and recording 59
- transport controls 64
- tryouts 5

U

- Underscan mode 51
- updates 5
- updates, plug-ins, and tryouts 5
- user communities 5

V

- Vectorscope
 - about 26, 35
 - configuring 37
 - panning and zooming 38
 - reading 35
 - Split Screen and Onion Skin 41
- video dynamic range 31
- Video Safe Area 51
- Video Workshop 3
- Visible Lines option 69

W

- Waveform Monitors 31
 - configuring 33
 - Intensity and Illumination dials 34
 - IRE setup 33
 - Line and Full modes 34
 - panning and zooming 35
 - Position and Scale dials 34
 - reading 32
 - Split Screen and Onion Skin 41
 - waveform mode 33

window controls 15

Z

Zebras

- about 29

- dark 30

- enabling and disabling 29

- setting bright and dark modes 29

- setting threshold 30

Zoom feature in the Field Monitor 53