Zoner Photo Studio 18

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Introduction

Thank you for choosing Zoner Photo Studio. This program is the latest in a long line of successful digital photo software. It contains the latest digital image processing technology and many new features.

We firmly believe that Zoner Photo Studio will become an irreplaceable aid for you in your photography work.

We wish you many successes in your endeavors with digital photography and more!

ZONER software

Minimum System Requirements

- **Operating system:** Microsoft Windows 7 / 8 / 8.1 / 10 (32 or 64 bits)

- **Processor:** Intel or AMD with SSE2 support

- **Memory:** 2 GB RAM

- **HDD:** 350 MB free disk space

- **Resolution:** 1200 × 800 or higher

System Requirements for Advanced Users

Work with large photographs and panoramas has especially large memory demands. For these situations, we recommend at least 4 GB of RAM and a 64-bit version of Windows.
For comfortable work in these situations, we also recommend a relatively high-performance processor. Zoner Photo Studio can take advantage of multi-core processors—if it detects multiple cores, it automatically divides up tasks and calculations among them.

Last but not least, we recommend a higher-than-minimum monitor resolution.

Warning

Unlike some photo managers that work through a database of pictures rather than the picture files themselves, Zoner Photo Studio works directly with the files on your computer and on any devices attached to it. This means you can start working with your pictures immediately and that they are not trapped "inside" Zoner Photo Studio, but it also means that you can erase these files and make irreversible changes to them. Therefore you should always keep in mind the first rule of digital photo processing:

> **Always work with copies of files, and back up of your originals frequently!**

For safer work with your photo collection, take advantage of these features:

Backups of originals
Folder synchronization

Installing the Program

Before installing the program, make sure that your computer meets the minimum system requirements and that you have administrator rights on your computer.

64-bit version

The Zoner installer contains both a 32-bit version and a 64-bit version of Zoner Photo Studio. It automatically chooses which version to install based the version of Windows you are using. A shortcut for Zoner Photo Studio is then placed on the Desktop and in the Windows Start menu. The program's 64-bit version shows **x64** in its title bar

when it is running.

64-bit Version - Advantages and Limitations

The 64-bit version speeds up work with the program and makes it possible to work with larger pictures. On the other hand, some program function does not work in 64 bits and thus are unavailable. The 64-bit version of Zoner Photo Studio does not contain:

- integration with Google Earth

- support 64-bit 8bf plugin modules (but this is also not in the 32-bit version).

Uninstalling the Program

To uninstall Zoner Photo Studio, use the Windows Control Panel. The exact steps for reaching the Control Panel and for using it to uninstall a program vary among Windows versions.

Troubleshooting

If you run into any trouble while using Zoner Photo Studio , the first thing you should do is to make sure that you are using the latest build of the program. (One build is one "small version," as opposed to the "large version" changes that require an upgrade purchase to move between. Each new build makes the program more reliable, and sometimes adds enhancements as well.) To check for a new build, use **Help | Check for Update...** inside the program.

If you are using the latest build, then please study the frequently asked questions list at http://www.zoner.com/support, where you may find a solution based on the experience of the Zoner Software support team.

If you do not, then please contact ZONER software. Please do your best to provide all information relevant for solving the problem. This includes the program version, edition, and build, your operating system, any special settings you use, etc. Please describe the exact steps that preceded the error or the problems in your work with Zoner Photo Studio. To contact technical support easily, use **Help | Contact Technical Support....**This automatically opens a technical support form, which can send a message to the Support team automatically. The message can optionally include information on the operating system used, its configuration, and some important files. This information is very valuable to the Zoner Software support team, as it can help uncover the cause of the problem.

Please also feel free to write to support with your suggestions on how we could improve and expand the program. Many of the features that you see today are thanks to suggestions from people like you!

Technical Support

You can also find support contacts and forms on the Zoner website: http://www.zoner.com/support

For telephone support, call 1-770-573-3059 on Monday through Friday from 7:00 am to 12:30 pm, US Eastern Time.

Supported Formats

Zoner Photo Studio 18 can **read** the following formats:

Bitmap Formats

PSD, PSB – Adobe Photoshop Image

JPEG – File Interchange Format

GIF – Compuserve Graphics Interchange Format

TIFF – Tagged Image File Format

PNG – Portable Network Graphics

PCD – Kodak Photo CD

BMP – Windows Bitmap

PCX – ZSoft Image File

TGA – TrueVision Targa

ICO – Windows icons

RLE – Windows Bitmap

WPG – WordPerfect Graphics (bitmap)

DIB – Windows Bitmap

BMI – Zoner Bitmap Image

PSP, PSPIMAGE – Paint Shop Pro

CRW, CR2 – Canon RAW

DNG – Digital Negative ("Adobe RAW")

MRW – Minolta RAW

NEF – Nikon RAW

ORF – Olympus RAW

PEF – Pentax RAW

ARW, SRF, SR2 – Sony RAW

MEF – Mamiya RAW

ERF – Epson RAW

RAW – other RAW formats

THM – JPEG thumbnail

HDP, WDP – HD Photo (formerly Windows Media Photo)

JP2, J2K, JPC – JPEG 2000 Codestream

PNM, PPM, PAM, PBM, PGM – "portable bitmap" format group

WBMP – "wireless" format

3FR – Hasselblad RAW Image

BMS, JPS, PNS – Stereo Image

DCM – DICOM Image

KDC – Kodak Digital Camera Image

RAF – Fuji RAW

FFF – Hasselblad RAW Image

RWL – Leica RAW Image

MPO – Multi-Picture Object

CS1 – Sinar RAW Image

JXR – JPEG XR

SRW – Samsung RAW Image

HDR – Radiance HDR Image

To expand the range of bitmap formats that is read-supported, install their WIC codecs (e.g. the WebP codec).

Vector Formats

WMF – Windows Metafile

EMF – Enhanced Metafile

ZBR – Zebra for Windows, the oldest graphics editor produced by ZONER software

ZMF – Zoner Draw 4 and 5

ZCL – clip art for Zoner Draw 3

ZMP – Zoner Photo Studio print jobs

Multimedia Formats

- Video files – **ASF, AVI, M1V, MJPEG, MOV, MP4, MTS, WMV**. Install [MPlayer](#) to expand the range of supported formats to include: **3GP, DIVX, DV, DVR-MS, FLV, M2T, M2TS, M2V, M4V, MKV, MPE, MPEG, MPG, MPV, MQV, NSV, OGG, OGM, OGV, QT, RAM, REC, RM, RMVB, TS, VCD, VFW, VOB**.

- Audio files – **AAC, AIF, AIFF, AU, MP3, MPA, RMI, SND, WAV, WMA**

Keyboard Shortcuts

Global Shortcuts

Ctrl+Tab, Ctrl+Shift+Tab	Switches tabs
Ctrl+F4	Closes the active tab
F11, F12	Toggle the two Fullscreen modes
Ctrl+M	Options
F1	Help Topics
F5	Refresh
Shift+Alt+C	Copy to Folder
Shift+Alt+M	Move to Folder
F2	Rename
1 - 5	Rates a picture
0	Removes a rating
Shift+1 - 9	Label a picture
Shift+0	Removes label

Basic Picture Editing

Ctrl+L	Rotate Left
Ctrl+R	Rotate Right
Ctrl+Shift+R	Specific Rotation
Ctrl+Shift+W	Specific Crop
Ctrl+E	Resize
Shift+E	Advanced Resize
Ctrl+W	Canvas Size
Ctrl+Shift+T	Place Image
Ctrl+T	Place Text
Ctrl+Shift+B	Canvas and Borders
Ctrl+Q	Quick Filter
Shift+Alt+Q	Apply last batch filter

Image Enhancement Features

Ctrl+0	Quick Fix
Shift+L	Levels
Shift+C	Curves
Ctrl+1	Enhance Colors
Ctrl+2	Enhance Color Temperature
Ctrl+3	Enhance Exposure
Ctrl+5	Sharpen
Ctrl+6	Blur
Ctrl+Shift+N	Remove Noise
Ctrl+Shift+A	Correct Chromatic Aberration

Ctrl+Shift+D	Fix Barrel/Pincushion Distortion
Ctrl+Shift+V	Vignetting (and anti-vignetting)
Ctrl+Shift+L	Line Spacing
Ctrl+G	Grayscale

Browser-only

Backspace	Go up one level
Esc	Deselect All
Num *	Invert Selection
Num /	Advanced Selection
Num +	Add to Selection
Num -	Remove from Selection
Ctrl+Shift+K	Search and Replace
Delete	Delete file or folder
Shift+Delete	Delete file or folder; skip Recycle Bin
Ctrl+Shift+C	Copies the picture itself to the Clipboard
Ctrl+C	Copies the file(s)/folder(s) to a new location
Ctrl+X	Cut file or folder to the Clipboard
Ctrl+V	Paste file or folder from the Clipboard
Ctrl+A	Select All
Ctrl+I	Invert Selection
Ctrl+F	Quick Search
Ctrl+P	Print and Export wizard
Ctrl+O	Sort Pictures
F3	Viewer
F7	New Folder
Ctrl+Shift+P	Play Audio Note
Ctrl+Shift+S	Stop Audio Note
Ctrl+Shift+M	Send by Email
Ctrl+Shift+F	Convert File
Shift+Enter	Image Information
Alt+Enter	File properties
Ctrl+K	Batch Edit EXIF
Ctrl+Shift+Q	Batch Rename
Ctrl+J	Compare Images
Ctrl+Q	Batch filter—settings
Shift+Q	Apply last batch filter
Tab	Switch focus between the Browser and the Navigator
Shift+Tab	Switch focus between two Browser panes

Editor-only

Ctrl+N	New Image
Ctrl+Del	Delete file

Ctrl+Shift+Del	Delete file; skip Recycle Bin
Del	Delete selected area from the picture
Ctrl+O	Open file
Ctrl+S	Save file
Ctrl+Shift+S	Save as
Ctrl+Shift+E	Export to PDF—only available in print-job editor
Shift+R	Convert to bitmap—only available in print job editor
Q	Quick Edits*
Shift+K	Quick Filters*
F	Filters*
Z	Zoom*
P	Panning*
C	Crop*
H	Align Horizon*
K	Edit Collinearity*
The	Perspective*
X	Morphing Mesh*
Shift+X	Deform*
R	Red Eye Reduction*
S	Clone Stamp*
U	Iron*
E	Effect Brush*
J	Healing Brush*
B	Paintbrush*
G	Fill*
Y	Eraser*
M	Rectangular Selection*
O	Elliptical Selection*
L	Lasso*
N	Polygonal Lasso*
A	Magnetic Lasso*
W	Magic Wand*
Shift+Q	Selection Brush*
I	Place image*
T	Place text*
Shift+T	Insert symbol*
Shift+S	Place Shape*
D	Place Line*
Shift+G	Gradient Filter*
Shift+F	Tilt-shift Effect*
Shift+R	Lens Flare*
Shift+D	Droste Effect*
Ctrl+A	Select All

Ctrl+Shift+I	Invert Selection
Esc	Cancel selection (if any)
Ctrl+A	Crop tool—create largest possible crop rectangle that still respects the current crop ratio
Shift+A	Crop tool—create largest possible crop rectangle (auto-switching orientation if needed) that still respects the current crop ratio
` (the key under Esc)	Swap crop sides
Ctrl+C	Copy Image
Ctrl+Ins	Copy Image
Ctrl+V	Place Image
Shift+Ins	Place Image
Ctrl+Shift+Ins	Paste as a new image in a new Editor
Shift+Enter	Image Information
Enter	Switch to Browser
Esc	Close the Editor (unless there is currently a selection or something else "escapable")
Ctrl+F	Fullscreen
Arrow keys	Pan the picture
Spacebar	Temporary pan mode*
Ctrl+Spacebar	Temporary zoom mode*
Tab	Toggle cropping marks (off/golden/thirds)
Num +	Zoom in*
Num -	Zoom out*
Num 0	Zoom to fit*
Num *	100% zoom*
Num .	Fit one side*
Num /	Zoom lock*
Ctrl+Page Up	Previous page (multi-page files)
Ctrl+Page Down	Next page (multi-page files)
Ctrl+Shift+X	Delete page
Home	First file in folder*
End	Last file in folder*
Page Up	Previous file*
Page Down	Next file*
Shift+P	Pre-print color preview (if color management is active and a printer profile has been set)
Ctrl+Shift+O	Show focus points (only available for uncropped pictures from selected Canon and Nikon cameras)
Shift+O	Show blowout
Ctrl+H	Show Histogram
Ctrl+Shift+H	Advanced Histogram
Ctrl+Z	Undo
Ctrl+Y	Redo
Ctrl+Shift+Z	Redo
Shift+Z	Undo last step

Ctrl+P	Print

*these shortcuts are naturally not available during text editing, etc.

Editor—Selection And Cropping

Arrow keys	Move selection or crop
Ctrl+arrow keys	Quick-move selection or crop
Shift+arrow keys	Edit selection frame shape

While Using Text Tool in Print Job Editor

Ctrl+B	Bold
Ctrl+I	Italic
Ctrl+A	Select All
Ctrl+D	Duplicate selected object

Editor – mouse wheel

- **rotation** – move to previous/next picture, or change zoom level (depending on your setting in **Settings | Preferences | Editor | Mouse wheel action**)

- **click** – Fullscreen

- **Shift+rotate** – Change radius, for certain tools only

- **Ctrl+rotate** – Change zoom level (always)

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Development Team

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Zoner Photo Studio 18—Help

Revision: 1

- minizip 1.1—Copyright © 2010 Gilles Vollant

- Regex library—Copyright © 1998-2000, Dr John Maddock

- Intel® Integrated Performance Primitives—Copyright © 2002-2011, Intel Corporation. – All Rights Reserved

- SpiderMonkey JavaScript Engine

- Development consulted with prof. RNDr. Miloslavem Druckmüller, CSc.

- Little cms—Copyright © 1998-2005 Marti Maria

- Adobe XMP Software Development Kit—Copyright © 2000-2013 Adobe Systems Incorporated

- Template Numerical Toolkit—National Institute of Technology, USA

- Adobe DNG Software Development Kit 1.4—Copyright © 2006-2012 Adobe Systems Incorporated

- SQLite 3.8.11.1

- Snowball—Copyright © 2001, Dr Martin Porter

The Zoner Photo Studio Interface

The interface of Zoner Photo Studiois made up of three sections, often called "modules": **Manager, Develop,** and **Editor**; to switch among them, use the buttons at the top right of the program window. The left side of each module contains the Navigator, the middle contains a display area, and the right side contains the Side Panel, with tools for work in that module.

Currently-open tabs are listed at the top left. Switching modules does not open a new tab. To open a new tab, click the "plus" button next to the tabs, or click a module's button while holding down **[Ctrl]**.

- The Manager module serves for browsing and organizing photographs. It has several display modes: Browser, Preview, Map, and Compare.

- The Develop Module serves for non-destructive editing.

- The Editor Module serves for advanced edits and work with selections.

Click **Menu** to see the main menu for the current module. To expand the menu out to its classical look, use **View | Menu.**

Look to the top right to find these buttons: **Notifications**, **Help**, **Zoner Account**, **Second Monitor,** and **Fullscreen**.

The Manager Module

The Manager is the foundation for organizing photos in Zoner Photo Studio. The Manager's menus (available under the Menu button) are organized by what step in the typical photo workflow they represent - **Acquire**, **Edit**, **Information**, **Organize, Create, Publish** and **View**. Other chapters will cover these functions.

The Manager has several display modes: Browser, Preview, Map and Compare. To quickly switch to Preview mode, double-click a picture. To quickly switch back, double-click the picture's preview.

To work with these modes and with the Manager layout overall, use the **View** menu or the toolbar in the top center part of the Manager.

The left side of the Manager contains the Navigator, and the right-hand Side Panel shows pictures' information.

Information Pane

This version of the Side Panel displays picture information (metadata) for the picture that is selected (highlighted) in the **Browser**. The top part of Information shows a histogram and basic information for the selected image. Below this is a bar with frequently used tools. The bottom part of Information displays information on the number of items in the current Browser listing.

The information is organized into groups by type. To configure the display here, click the gear-wheel button at the bottom left of Information. This shows the **Information Display Settings** window. Use the controls here to show and hide information items, or restore factory settings.

You can change some types of picture information here directly (unless the picture file is read-only). To save edits made this way:

- click the **Save** button at the bottom of Information.

- use the **[Ctrl+Enter]** keyboard shortcut. This saves the edited information and selects the next picture in the listing. This makes tagging a series of pictures easy.

- switch to another file in the Browser.

If multiple files are selected in the Browser, then the Rating, Label, Title, Description or Keywords can be batch-edited for all these files. Keywords are a bit exceptional here. If pictures with differing keywords are selected, an asterisk appears before any keyword that is not contained in all files. Erase the asterisk to make that keyword be saved to all files.

If a picture contains GPS data, click **Get Location** to tag the picture with text information that describes the GPS location. This affects the following picture-information items: **Location**, **City**, **State/Province**, **Country code**. This function requires an Internet connection.

Browser Mode

The Main Menu

The Manager's functions are divided into several menus based on where they fit in the photo workflow. These menus are: **Acquire**, **Edit**, **Information**, **Organize, Publish, Create,** and **View**.

The main, middle area in the Browser lists the contents of whatever location has been selected in the Navigator. By default, it displays them in a mode called **Thumbnails**.

To change how the Browser's file display mode, click **Display Mode** in the Browser's navigation toolbar, or click any blank area in the Browser listing and then use the right-click menu. To modify the display of thumbnails and their information, useSettings | Preferences... | Thumbnails andSettings | Preferences... | Thumbnail Descriptions.

The Zoner Photo Studio Browser works in many ways similarly to file management in Windows itself. To select pictures, copy and move them via drag and drop, etc., do what you would normally do in Windows.

When organizing photos, the best route is sometimes to use a second Browser pane. To do that, use **View | Two Browsers Stacked / Side by Side**. To switch from one Browser to the other, click inside the other Browser. The listing in the Navigator automatically changes to match the active Browser: whatever location you visit in the Browser automatically becomes selected in the Navigator.

When thumbnails are loading in the background, an hourglass appears by the mouse cursor.

Thumbnails Mode

This is the default mode. Browser panes in this mode show thumbnails (small previews). Other information may also be shown alongside the thumbnails.

The thumbnails show icons indicating the presence of picture information (metadata) and other facts about the thumbnailed pictures. Moving from the top left corner of each thumbnail, the icons refer to photographic picture information, other picture information (name, author, description, etc.), keywords, audio notes, a backup of the picture's original version, a backup of its information, its digital signature if any, GPS data, and online/offline status.

Double-click any of these icons to bring up a window showing information related to them.

Along the bottom, a thumbnail can have a Windows shortcut symbol, denoting that you are working with a shortcut to a file, not the "real" file. At the bottom right, any rating and/or colored label that the picture may have are shown.

The program can display several lines with picture information (time, shutter, etc.) under each thumbnail. You can configure this under**Settings | Preferences | Thumbnail Descriptions**.

For faster browsing, the program makes use of thumbnails stored inside of pictures (e.g. in their EXIF information) and of thumbnails stored ("cached") on disk after your first visit to a folder. Cached thumbnails are loaded in during your next visit; this is much faster than re-generating them.

Rotate the mouse wheel while holding down **[Ctrl]** to change the thumbnail display size.

Details Mode

Details Mode always shows a row of column headers at the top, similar to its namesake in Windows. Using the right-click menu for these column headers, you can add or remove columns for a variety of picture information. Clicking and dragging a header moves the whole column to another position. Just clicking a header sorts the file listing by that column's information type. Clicking it repeatedly toggles between an ascending sort and a descending sort. The arrow next to the column name indicates ascending/descending.

The backgrounds of the files in the listing have different colors depending on the files' types. You can turn this behavior off if desired: go to**Settings | Preferences | Display | Highlight to distinguish bitmap/vector/video/ sound**. Wherever possible, the program shows a thumbnail for a picture next to the mouse cursor as you run the cursor over that picture.

Tiles Mode

This mode is similar to Thumbnails mode, but includes extra information to the right of the thumbnails. This is especially practical for long texts such as descriptions. The column width is set automatically based on thumbnail size and the width of the Browser window. To change settings for the Tiles display mode, use**Settings | Preferences | Thumbnail Descriptions**.

If the description shown for a thumbnail is wider than the space available for showing it, then at the right of the descriptions area, a scrolling arrow is shown. You can also scroll description text by middle-clicking the area with the description and dragging in the desired direction.

Rotating the mouse wheel while holding down **[Ctrl]** changes the thumbnail display size.

Displayed File Types

Normally, the program displays all files in all supported graphics, audio, and video formats. To show a broader or narrower range of file types, use**Settings | Preferences | Display**.

Preview Mode

Use this mode to view a large preview of the currently selected (highlighted) picture. To quickly view picture details, change the zoom level using the mouse wheel. By default, pictures are shown at the "Fit to Window" zoom level. Click and hold the left mouse button to show the picture at 100% zoom. Then drag the picture to pan it. Release the button after this to automatically return to "Fit to Window" zoom.

You can also change the zoom level via the usual shortcut keys or via the commands in the toolbar above the preview.

Use the toolbar above the preview for other options as well.

Map Mode

Use this mode to make the Manager show an online map. Use this map to browse pictures by GPS location, or assign locations to them.

When the current folder contains GPS-tagged photos, red tags are shown on the map. Blue tags, meanwhile, are shown for files selected in the Filmstrip below the map. Clicking a tag selects the corresponding photo in the Filmstrip. If a tag represents more than one photograph, then the number of photographs it represents is shown. Double-click a tag of this type to zoom in on the map.

To assign GPS coordinates to photographs easily, drag and drop them from the Filmstrip onto the map. To change coordinates for a photo already on the map, click and drag its tag.

The toolbar above the map offers the following functions:

- **Home View -** use this to set, and return to, a desired starting map view

- **Fit Map to All Pictures in Folder** - click this for a map display zoomed out just enough to fit all the pictures in the current folder.

- **Fit Map to Selected Pictures** - click this for a map display zoomed out just enough to fit all the currently selected pictures.

- **Display tags for** - use this to set whether the map displays tags for selected files only, or all files in the folder.

- **Track selection** - use this to make the program automatically zoom in or out as needed to fit the currently-selected GPS-tagged files into the display.

The Develop Module

Use Develop for non-destructive edits to pictures, both in RAW format and in other bitmap formats. Develop has the same basic layout as the other main sections of the program. That is, the left side contains the Navigator, the preview in the middle shows any changes set up for the current picture, and the Side Panel on the right shows a histogram, basic picture information, a toolbar for work with basic functions, and controls for work with Presets and for fine-tuning the settings for individual edits. At the bottom beneath the preview is the "Filmstrip." To hide any of these three panes or show it again, click the thin gray bar at its outer edge.

The Picture Display

Use this preview to visually double-check edits while you work. To zoom in or out, use the mouse wheel. Single-left-click to switch between two key zoom levels: **1:1** and **Zoom to Fit**. Alternatively, use the slider above the picture display, or use the items in the View menu. To turn on blowout highlighting, click the button for this in the histogram window at the top right. For RAW images, normally a low-quality preview is quickly shown as you shift the editing sliders, and then the full-quality preview is shown a little later. Use **Full Quality Preview** in the **View** menu to force full quality for the preview even during editing.

Work with the mouse in the display area to set up a **Crop** when you've clicked the **Crop** button in the Side Panel. To modify the cropping frame, click and drag any of the frame's corners or the sides. To move the cropping frame, click and drag inside the frame. To force a certain ratio of sides, use the drop-down list in the side panel. To flip the ratio of sides, use this list, or move a corner of the crop rectangle to force the flip. To rotate the picture, click a spot outside the cropping frame, then drag. To show cropping marks, use the items for this in the Side Panel or in the **View menu**. Press **[Ctrl+A]** to select the largest possible cropping area that respects the picture's current rotation and ratio of sides.

To exit cropping, click the Crop button a second time, or click **Apply**, or press **[Enter]**. Click **Cancel** or press **[Esc]** to cancel the crop. This returns the crop and rotation settings to what they were before. Click **Cancel** to completely cancel an image's crop.

The Side Panel

Use the controls in the right side of the window to check and change the development settings for the current picture. The controls here are divided into groups. When any setting in a group is changed, a checkmark and an arrow button appears in the group's header. Use the checkmark to deactivate that whole group. Click the arrow button to return the settings in the group to their defaults.

The contents of the Side Panel can vary depending a given picture is in RAW format or in another bitmap format. For non-RAW formats, some groups are absent and some controls are inactive. If a RAW image has been edited in an older version of Zoner Photo Studio, then the controls here change in order to reflect that older version and to ensure that the picture is developed correctly.

Presets

Edits made to a picture can be saved as "Presets." Click the Save button here to show a window for naming your new preset, and then a second window for setting which settings groups will be stored. Turn on Changed Items Only to save only those settings that have been changed from their defaults. In this case, when the preset is later applied, only the saved settings will be affected; the others will remain unchanged.

You can work with the settings for the current picture using the commands in the Settings menu under the main

menu:

- **Copy to Clipboard** - this copies the current picture's settings to the Clipboard

- **Paste from Clipboard** - this pastes settings from the Clipboard into the current picture

- **Save Preset** - this saves the current settings to a preset with a name of your choice

- **Make Current Settings the Default** - use this to create your own custom default settings. These are automatically applied to pictures when they are first loaded into Develop.

- **Restore Default Settings** - use this to restore the default settings.

Stored Presets are listed in the Side Panel, in the group named **Settings**. Move the mouse over a preset to see a small preview how it will affect the picture. Click a preset to apply it.

Copying Settings to Multiple Pictures

To apply settings to multiple pictures at once, mark those pictures in the Filmstrip, right-click one of them, and then in the right-click menu, use the item named **Apply Current Settings**. You can also use the Browser's right-click menu for work with settings.

Saving Changes

You don't need to save changes, or confirm them while you work. They are saved automatically when the next picture is loaded, when you switch out of Develop, or when you exit the program. To make advanced edits that are not available in Develop, switch to the Editor. However, changes in the Editor are not non-destructive, and it will no longer be possible to use Develop to modify the original edits. Therefore, we recommend that you save the picture under a new name in the Editor rather than saving it back to its original name.

The Side Panel

The settings here are organized into groups. To expand or collapse a settings group, click the arrow in its header. Right-click a group's header to see a list of all groups. Check the box next to any group in the list to hide that group. Some groups contain sections that are collapsed by default. Click the button next to such a section's name to expand it.

Rotate and Crop

Use the Crop controls to set a fixed aspect ratio for the cropping rectangle. The default is always Current Aspect. Use the Rotation control to rotate a picture to a precise numerical value. Click an item in the Crop Marks list to display crop marks.

White Balance

- **White Balance** - lets you choose from among several predefined values. The default settings correspond to those stored in the picture from the camera.

- **Eyedropper** - this lets you set white balance by clicking on a pixel in the preview whose color should be neutral after white balancing is performed.

- **White temperature** - this lets you control white balance by shifting the picture on the blue-yellow axis.

- **Hue** - this lets you control white balance by shifting the picture on the green-purple axis.

- **Note** - during eyedropper-based white balancing, the hue and white balance values are updated after the preview is generated.

Exposure

- **Exposure** - use this to correct exposure by up to +/-4eV. When this is moved into the negative values, blowout protection is activated.

- **Contrast** - controls the overall contrast of the final picture.

- **Lights** - controls the amount and intensity of light tones in the picture. When this is moved into the negative values, blowout protection is activated.

- **Shadows** - controls the amount and intensity of light tones in the picture.

- **Clarity** - use this to change local contrast at contours in the picture.

- **Automatic** - click this button to make Zoner analyze your picture and set suitable values in the Exposure group.

Controls for "ZPS 16" processing (see the Processing group):

Underexposure method determines the method by which the program handles missing information for the brightest areas while it is darkening the picture. This setting is utilized when you bring Exposure into negative values and when you apply HDR to bright areas. It offers three methods:

- **Linear** - mainly useful for portraits. It darkens the picture in a natural way. In overexposed areas, it grays the picture. This method takes no special steps to stop blowout (loss of detail from overexposure). To create detail in overexposed areas, use the Lights control.

- **Vivid colors** - this method is useful for landscape photographs. It preserves brightness in areas with blowout, and non-linearly darkens the brightest areas, while increasing their contrast and saturation.

- **Contrast** - this method works similarly to Vivid Colors, but it does not increase colors' saturation and does increase contrast for a smaller range of brightnesses.

Controls for the ZPS 17 process:

- **White point** - sets the brightness level that should become pure white in the final picture.

- **Black point** - sets the brightness level that should become pure white in the final picture.

In the ZPS 17 process, the Exposure sliders are organized in such a way that moving them into positive values always brightens the picture, while negative values always darken it.

Blowout protection reconstructs the picture in places where detail has been lost in one or more color channels. This method's brightness reconstruction is relatively good, but because color information in such places has been lost, the final color may not match the original picture.

Color

The Grayscale checkbox sets whether the picture will be processed in color or in black and white. The contents of the panel change based on your setting here.

Controls for color images:

- **Hue** - this lets you shift colors by adjusting hue.

- **Saturation** - this lets you set color saturation.

- **Vibrance** - this lets you set color saturation in a way that respects the existing saturation of colors in the picture – low-saturation colors are affected more.

- **Color Shift** - use the slider in this section for mild HSL-mode color correction. For greater convenience you can use an eyedropper to obtain the color to use for shifting.

Controls for black-and-white images:

These controls offers two methods: Manual Channel Mixing and Automatic. In the first method, use the Red, Green, and Blue sliders to set how strongly each channel influences the final picture. The default settings corresponds to the values that are normally used for grayscale conversion. In Automatic, use the Toning slider to control the channel sliders indirectly. Watch the main preview window to judge the best value to use.

Tone curve

Use the tone curve for fine control over the brightness levels in a picture. You can edit the curve by dragging the handles on it to new positions; these set the path that the brightness curve should take. To add new handles

anywhere on the curve, click in the place where you want to add the handle. Right-click over a node to delete it.

The horizontal axis shows input brightness values. The vertical axis shows output values. The curve must always be continuous, so you cannot move points completely freely. Shifting the curve's endpoints changes the input values for the white point and black point, just as if you were using the Levels function. By shaping the curve into an S-shape, you can make complex adjustments to the picture's contrast.

Starting from the ZPS 17 process, brightness can be set independently for the red, green, and blue channels.

Sharpen

This works similarly to the **Unsharp Mask** function in [Sharpen](#).

Noise Reduction

- **Noise Reduction** - this sets the amount of noise reduction in the picture's brightness element.

- **Colored noise reduction** - this sets the amount of noise filtration in the picture's color element.

- **Suppress color stains** - use this to eliminate large color stains that remain after removal of colored noise.

Effects

Vignetting

- **Strength** - use this to set the effect's strength.

- **Radius** - use this to set how quickly corners are darkened/brightened away from the corners.

Unlike antivignetting, vignetting in ZPS is only applied after a picture is cropped.

Add Grain

This works like the Editor's Add Grain filter.

HDR

The controls here are identical those for the [HDR function in the Publish menu](#).

Lens

Lens Profile

Use the Lens Profile controls to apply Lens Correction Profiles (LCP). These serve to automatically correct geometric defects, chromatic aberration, and vignetting. Zoner does not supply any such profiles, they can be downloaded for free on the Web for certain lenses. Select a profile and then use the Warp, Chromatic aberration, and Vignetting options to set what defects will be corrected using the profile.

Manual Correction

Expand this section to show controls for manual correction of optical defects:

- **Barrel distortion** - this sets the amount of barrel distortion correction applied.

- **Antivignetting** - use this to either suppress unwanted darkening at the edges of a picture (i.e. vignetting) or do the opposite—add such darkening e.g. in order to emphasize content in the middle of the picture.

- **Fix Chromatic Aberration** - if a chromatic defect is not in the middle of the image and expands towards the edges, you can suppress it using the **Red-Green** and **Yellow-Blue**controls. These shift the color elements against each other to suppress the defect.

Camera Profile

Use these settings to apply a DCP profile to a picture. These profiles correct colors and tonality. Although Zoner Photo Studio does not include any such profiles, they can be downloaded for free on the Web for certain cameras.

Processing

Zoner Photo Studio 18 uses a new RAW development process. But for better compatibility it also enables development of pictures using the process from older versions. When an image is loaded, the program autodetects which version the picture was processed in, and the appropriate processing is set automatically, ensuring that the picture will be processed the same as it was in the original version. The processing version used can be changed later at any time.

Non-destructive Editing

When you are working in the Editor, all changes are applied to a picture's image data directly, and when the picture is saved, these changes are stored in the picture file, irreversibly changing the picture. Non-destructive edits, on the other hand, leave the picture's source data unchanged; all that is saved is a list of the individual changes, and these are only applied afterwards, at the moment when the picture needs to be saved. Even saving only records this list of changes to disk, leaving the original picture untouched. Thanks to this, you can change the list of edits later at any time, or even remove them all to go back to the original picture.

For non-destructive editing, use Develop. There is no need to confirm or save changes when you are done editing; changes are automatically saved when you move on to the next picture, switch to a different section of the program, or exit the program. The remaining sections of the program automatically reflect any changes to a picture that you have made in Develop. Thus if you'd like to work on a picture with advanced tools that are not contained in Develop, just open it in the Editor and continue working. When you need to make use of a picture outside of Zoner Photo Studio, and you have used non-destructive edits on the picture, you must export the picture by clicking Export, which applies the changes you've made and saves the picture to a location of your choice in a format of your choice.

The Editor Module

Edit your pictures using the Editor's tools and editing functions (often called filters). Multiple Editor tabs can be open at once.

You can open a new Editor tab in several ways. To close an active Editor tab, press **[Esc]** or **[Ctrl+F4]**. If you have made any changes to the edited picture, you will be asked if you want to save changes before closing it.

You can also set up the program so that pictures are opened in the Editor when double-clicked in Windows. In modern versions of Windows, this is described as Zoner Photo Studio being the "default program" for picture formats. Normally the program is set as the default program for all programs it can handle right during installation, but if needed, you can set it as the default program using the Windows Control Panel, or inside Zoner Photo Studio using **Settings | Preferences | Integration**.

The Editor has several menus: **File, Edit, Adjust, Effects, Layer, Selection, and View**. The contents of these menus are described in separate chapters.

Beneath the menus there are **toolbars with buttons for the Editor's various tools, and the Side Panel**, whose contents change to reflect what you can do with the current tool or filter. To add, subtract, or rearrange buttons on toolbars, use the Customize window. (Not all toolbars can be edited this way.) The are several ways to reach this window. For example, use **Customize...** in a toolbar's right-click menu or**Settings | Customize... in the main program menu.** The toolbar and the Side Panel are normally located on the right side of the Editor. To change their location if desired, use **Settings | Preferences | Editor**.

The status bar shows information about the picture open in the Editor. You can set what kind of information is shown in the left part of the status bar with the help of variable text by modifiying the Status Bar Information setting in the General section of the program preferences. This setting is shared between the Editor and the Browser. If you have never worked with Variable Text before, we strongly recommend that you first read the chapter about it: Variable Text.

To the right of this customizable information are the picture's size and color depth, and (for multi-page documents) the page number. The next information block shows mouse cursor position and the color values of the pixel under the mouse cursor. If there is currently a selection, its width and height are shown here.

To delete the file you are editing straight from inside the Editor, use **File | Delete File [Ctrl+Del]**. If you are using the Recycle Bin in Windows (unless you specifically turned it off, you are using it), then the picture is sent there. Press **[Ctrl+Shift+Del]** to skip the Recycle Bin.

When part of the picture is selected, edits are applied to the selected part only. Work with selections is described in a separate chapter.

The Filmstrip

Use the Filmstrip to quickly browse among the other files in the folder with the current picture. To resize the Filmstrip, click and drag its top edge. Resizing the filmstrip automatically resizes the previews inside it. To hide the Filmstrip, click the gray bar beneath it with the faint gray triangle.

The Side Panel

The Side Panel displays the controls for **Quick Edits**, the list of effects available through the feature named **Quick Filters**, and when you have activated the tool named **Filters** it lists all the program's filters for quick access. The Side Panel also displays the controls for tools and filters as you use them. The top part of the Side Panel always shows a histogram. The bottom part always shows two buttons, **Apply** and **Cancel**, which are grayed out until it is necessary to apply, or cancel, some operation. When you are using filters, as well as certain tools, the Side Panel displays a section called **Layer** where you can set the **Layer Opacity** and the **Mode** used for blending the layer into the original picture. Press F6 or click the right edge of the Side Panel to hide it or to show it again.

⚡ Quick Edits

Use Quick Edits to quickly access some of the most frequently used photo editing functions. Quick Edits is divided into several groups, offering controls from the following filters: **Enhance Exposure**, **Enhance Color Temperature**, **Enhance Colors** and **Curves**. They can be adjusted at any time, and the results of changes are immediately shown in the picture at full size. Whenever one or more settings in Quick Edits have been changed, the Editor is temporarily locked until the changes are applied or cancelled. To apply the changes, click **Apply** or press **[Enter]**; to cancel (abandon) them, click **Cancel** or press **[Esc]**. To quickly see how the picture looks without the pending Quick Edits, click the button at the bottom left of the Side Panel, or click the middle mouse button over the picture.

Click the title bar of any settings group to restore normal settings for that group. Click the name of a setting to restore that setting only. Use the Presets buttons near the bottom of the Side Panel to save or later reload sets of Quick Edits settings.

Note: In certain cases, the preview and histogram can differ slightly from the result after clicking Apply.

📖 Quick Filters

The **Batch Filter** can be used to create some very interesting effects and, if desired, to save them and re-use them later. Meanwhile, when the Editor's Side Panel has been switched to the Quick Filters tab, it offers access to these very same saved presets. These are shown at the bottom; meanwhile at the top you'll find useful pre-prepared presets that come installed with the program. Run the mouse over an item to see a small preview of what it will do. Click the item to preview its effect directly in the picture itself. This preview is temporary; clicking another item causes it to be replaced with a preview of that other item. To confirm the use of an effect, click **Apply** or press **[Enter]**. To abandon it, click **Cancel** or press **[Esc]**.

The pre-installed effects are also available for use in the Batch Filter where they can be applied to many pictures at once. These pre-installed effects are visually distinguished using square brackets. Unlike the other items, these cannot be deleted.

Navigator Pane

Use the Navigator to set what the Browser or the Filmstrip displays. The Navigator is divided into these sections:

- **Favorites** – this section shows a list of your Favorites, for quick access to them. To add items to Favorites, drag and drop them from the Browser.

- **Catalog** - this section shows the contents of the Catalog, with pictures organized by folder, in a timeline, or by keywords. For more information, see the chapter named Catalog.

- **Zonerama** – this section shows any albums you've uploaded to the Zonerama web galleries. For more information, see the chapter named Upload to Zonerama.

- **Computer** – this section (whose name can differ depending on your version of Windows) shows the complete folder hierarchy on your computer.

- **Network** – this section shows any accessible folders on your local network.

Click **Import** to switch to the program's section for copying or moving photographs from a camera or a memory card. For information on how Import works, see the topic named Import.

Double-click a section's title bar to expand or collapse it.

When you switch folders by, for example, selecting one from Favorites, the Navigator does not automatically expand the subfolders in the folder tree. An "arrow" icon appears at the right end of the nearest selected item in such cases. Click this icon to expand the folder tree out to the target folder.

The Viewer

Use the Viewer to quickly view pictures at full size.

If you have set Zoner Photo Studio to be integrated into Windows, then double-clicking a picture in Windows launches the Viewer.

To reach the Viewer from the Manager in ZPS, press **[F3].**

Control the Viewer using the toolbar buttons, the mouse, or the following keyboard shortcuts:

- **right arrow, [Page Down]** - next picture

- **left arrow, [Page Up]** - previous picture

- **[Home], [End]** - first/last picture in a folder

- **[Spacebar] -** automatic slideshow; to set the slide duration, go to the Viewer's **Settings**.

- **[+], [Num +], rotate mouse wheel upwards** - zoom in

- **[+], [Num +], rotate mouse wheel downwards** - zoom out

- **[Num *], [,]** - 1:1 zoom

- **[Num 0], [.]** - Zoom to Fit

- **[Z], left-click** - switch between 1:1 and Zoom to Fit

- **[Num /]** - Zoom Lock

- **[L], [R]** - rotate picture

- **[Shift+O], middle-click** - blowout display

- **[Del]** - delete file

- **[I]** - show a header with file information

- **[F]** - fullscreen

- **[Enter]** - switch out from Viewer to Zoner Photo Studio

- **[Esc]** - close Viewer

The Histogram

A histogram shows how many pixels in a picture are at each of its possible brightness levels. Its horizontal axis represents the scale of possible brightness values, usually either for the picture overall or for a single color channel. Its vertical axis represents the pixel frequency in the picture for each of these values.

If the histogram shows too many pixels on the left (that is, in the dark tones) and not enough on the right, then the picture is probably underexposed. If most values are on the right, the picture is probably overexposed. In most cases, a normal photo should make use of the whole range of the histogram.

Histograms are only truly useful for pictures with 24-bit, 32-bit, or 48-bit color, or for grayscale pictures. (However, any picture in a modern photo format will use one of these color types anyway.)

Right-clicking on a histogram will show a context menu where you can switch among several display modes: Brightness, brightness plus channels, channels, red channel, green channel, or blue channel. You can also set the

histogram to half size or full size, and choose between a light or dark histogram background.

Acquiring Pictures

Import

Use the Import module to copy or move pictures from a camera or memory card onto your computer. It also offers tools and options that help you organize your photos right as you download them.

> Some digital cameras support USB Mass Storage. No special driver is needed to support this connection mode, and a camera connected in this way behaves like an ordinary disk, with its own letter. Other manufacturers do not support this technology, but do support another called WIA (Windows Image Acquisition). While not as convenient as USB, WIA will still get your pictures onto your computer. Some WIA cameras require that you connect in PTP/MTP (Picture Transfer Protocol/Media Transfer Protocol) mode. For more information about connecting your camera in PTP/MTP mode, see your camera's manual. RAW files are not always visible in PTP/MTP mode. This depends on whether or not the camera manufacturer, or more precisely camera drivers, support the Windows version you are using. The core rule is that whatever is visible in Windows is visible in Import.

Use **Acquire | Import...** in the **Browser** or click the tab for the **Import** Module to display this module, which shows thumbnails of the pictures on your camera or memory card in the main area and import settings on the right.

To include a picture in the import, leave it selected (checkmarked). To exclude it, deselect it. To select or deselect all pictures shown, use **Select All** or **Deselect All**. To set where the selected items are copied or moved to, use the Target section.

The Import Module's settings are divided into the following groups:

Source

Use the box here to select the camera or other source from which pictures will be copied or moved. Click **Browse** to set a folder of your choice as the Source to import from. It may be on any drive the computer can reach, including on a CD, USB stick, removable drive, etc. To control whether or not folders beneath the selected folder are imported, use **Include subfolders**. For extra convenience, turn on **Show Import module automatically on attaching camera or inserting card**. For removable devices (like cameras or memory cards), you can turn on **automatic copying** of pictures right after the device is turned on or a card is inserted.

Target

Use this to set the folder into which pictures are imported. Either enter the path to this folder manually, or choose an existing folder on disk using **Browse**. Turn on **Create subfolders** to create one or more subfolders for the imported pictures. For a single new subfolder, enter its name. For automatically-named subfolders based on picture-taken dates, use **formatting strings** to sort pictures into subfolders based on their date taken, date of import, author, and/or format. Automatically named subfolders are especially useful when importing pictures taken over multiple days. To add formatting strings automatically, right-click in the box or click the small black-arrow button to the right of the box and use the menu this displays. Subfolder examples:

• **Vacation** - all pictures are imported into a subfolder named "Vacation."

• **{Y}-{M}-{D}** - pictures are copied into subfolders named by the date they were taken, e.g. "2012-09-30". If pictures were taken on multiple days, they are imported into multiple subfolders, one for each day.

• **{Y}\{M}\{D}** - pictures are copied into a structure of subfolders organized by picture-taken date. The top folder will contain year folders, beneath them will be month folders, and beneath those, day folders, e.g. "2012\09\30"

• **{YY}-{MM}-{DD}** - pictures are copied into a single subfolder named after the date of import, not the date they were taken.

To visually double-check what folder structure will be created, use the **Preview**. Click the individual subfolders to display their contents in the thumbnails listing. Use the checkboxes to control what subfolders get imported. To rename a folder, press **F2**.

Make backup copy

Use this to make Zoner automatically create a backup copy of your imported pictures, and set its location. For this

backup, Zoner uses the same subfolder structure as for the main copy.

Automatically Add Information

Use the controls here to make Zoner auto-tag pictures with Title, Author, Copyright, and/or Keywords information during import. For more on this subject, read the chapter on Information.

Rename

Files can be auto-renamed during import. The settings here are the same as for Batch Rename. This section also offers renaming via **Search** and **Replace**.

Options

If your camera stores information about how it was held during a shot, use the checkbox here if desired to **Rotate images to respect EXIF orientation**. Use **Import non-duplicate pictures only** to prevent re-importing of photos that have already been imported. **The item named Mark images as read-only** makes the program give imported photos the file property called "Read-only". This protects them from being accidentally changed or overwritten. Turn off **Load thumbnails**to make import start up faster, although without thumbnails it can be hard to choose pictures for import. However, for cameras that store thumbnails in their EXIF information, Zoner Photo Studio uses these, so display of thumbnails is very fast.

Acquire from Scanner

Use this function to acquire pictures from scanners via the TWAIN and WIA interfaces. To access this function, use **Acquire | Acquire from Scanner...** in the Manager, or **File | Scan...** in the Editor. (Note that when scanning from the Editor, the scan is always then opened directly in the Editor.)

Use the control at the top of the window to select an image source: **TWAIN** or **WIA**. For TWAIN, there is also a **Native mode**option. Use it to switch your scanner to a mode where it is in control of the whole scanning process. In this mode, the scanner composes the final scan and hands it over to the program when it is done. If you are not using this option, then communication with the scanner takes place in advanced mode instead. In advanced mode, the program communicates with the scanner during the whole process and assembles the final picture itself. This method saves memory (no temporary image is needed) and usually speeds up scanning. Advanced mode is at its most useful when you are working with large pictures and/or professional scanners. Normally you really only need to know about the two modes because of their use in troubleshooting: often scanning problems disappear if you simply switch modes here.

When not scanning from the Editor, use the bottom of the window to set what is done with scan output. The options are **Open picture in Editor**, **Save picture to disk** and **Save Pictures to PDF**. When you are saving directly to disk, **Target folder** sets where scanned pictures are saved. To set how the program names these picture files, use the **File name** control, where you can take advantage of the program's Variable Text feature and modify filenames with a **counter**. Click **Format** to set scans' file format. During scanning to PDF, the settings for the name of the output PDF are the same as above. Click **PDF Options** to display a window for adjusting the settings of the output PDF. During scanning to PDF, a window appears to show how many pictures have been brought in. Use the buttons in this window at any time to **finish the PDF file** or **cancel scanning**. Each picture scanned into the PDF is stored on its own page, and it has the dimensions that were set for it by the TWAIN or WIA interface.

In some cases Scan Images can be used to acquire pictures directly from a camera. However, this approach has downsides.

> **The scanning interface hands the program only the picture itself. EXIF and similar picture information is lost.**
> **Also, when the picture is then saved in JPEG format, quality-harming lossy compression is unnecessarily applied to it an extra time.**

If the camera contains pictures in JPEG format, then the TWAIN acquisition process "unpacks" those JPEGs and delivers only the pictures inside to Zoner Photo Studio. If Zoner Photo Studio saves the pictures to JPEG with different settings than the camera used (and it is almost certain that it will), then the final file will unnecessarily either grow (without gaining any new useful information) or shrink (and lose detail in the process). For these reasons, we recommend that you use the Import function instead wherever possible.

Acquiring Pictures from the Windows Clipboard

The Acquire | From Clipboard... function opens the contents of the Windows Clipboard in the Editor.

> The Clipboard is where information goes when you cut or copy it in Windows. To place part of a picture in the Clipboard, select that part of it and then use e.g. **[Ctrl+C]**. That part of the picture is then placed in the Clipboard and can be pasted elsewhere in the picture, or in a completely different picture using e.g. **[Ctrl+V]**. You can also send a screenshot to the Clipboard by pressing **[Print Screen]**.

If the Clipboard contains a picture, then you can use the **Acquire | From Clipboard** Browser menu item to open a new Editor window and paste the picture into it. To then save the picture in a format of your choice, use **File | Save.**

Screen Capture

Use the screen capture function to take what is on the screen and place it in a file. This function is useful for preparing pictures for computer manuals, discussing software problems with companies' support staff, and anything else where a picture of what's on the screen is worth 1,000 words.

> Pressing **[PrintScreen]** in Windows will already capture the screen for you, at least in a basic way. It places the resulting "screenshot" in the Windows Clipboard. If you instead press **[Alt+PrintScreen]** then only the current window will be saved. Zoner Photo Studio can save the current contents of the screen directly to a file, or open them in the Editor. You can even capture the mouse cursor, which a normal screenshot will not achieve.

To turn screen capture mode on and off, use **Acquire | Via Screen Capture...** in the Browser. Before the mode actually turns on, you will come to a window where you can adjust screen capture settings.
When screen capture mode is active, a special icon is shown in the Windows system tray (at the bottom left of the screen, next to the clock). Right-clicking on this icon will exit screen capture mode, or resume screen capture mode if you have paused it.

Screen Capture Mode

The **Capture whole screen using PrintScrn** option to capture the whole screen. Use **Capture active window using PrintScrn** to capture only the window of the program that is "active" within Windows.

> (That is, the one you are "working with" at a given moment -- it will generally have a brightened title bar.) A window can include many subwindows and toolbars. For example, even the Window taskbar includes the Start button, some toolbars, buttons for running programs, etc. You can capture these independently if desired.

The **Capture highlighted window using left-click** option, you can narrow down your screen capture to a single window or a single part of a single window. Everything that will not be captured is dimmed. The part that will be captured looks normal (and thus is "highlighted" in comparison). During this screen capture type, pressing **[Esc]** temporarily turns off the dimming, which you can then turn back on by pressing **[PrintScreen]**. The screen capture itself is performed by left-clicking. The right mouse button, meanwhile, is reserved for showing a menu with options relative to the mode. Use the last option, **Capture window under cursor using PrintScrn** to capture windows or parts of windows without viewing highlighting of them while you are preparing to take the screenshot.

> **In practice, the [PrintScreen] key may be marked PrintScrn, Prnt Scrn, Prt Scr, Prt Sc, etc.**

Picture

Use the Open Picture in Editor command to immediately open the screen capure in a new Editor tab. Use Save Picture to Disk to choose or create a folder to save to, and then select a format and save the picture. The way the the folder is filled in depends on your setting here—Default to folder used last time automatically fills in the last folder you used; Default to currently active folder fills in the folder shown in the Browser. You can also have the program Open folder when finished. To individually name files before saving them, use the Always ask for filename option. To let the program name them, use Name files automatically. The automatic filenames consist of a prefix of your choice and a customizable counter. You can set the first number in the counter (Start), how many numbers to go up by each time (Step), and a minimum number of digits to force with leading zeros if necessary (Digits).

To capture the screen at regular intervals, use **Time-lapse screen capture** and enter the Interval under **Interval**.

To exit time-lapse screen capture mode, press **[Esc]** and to renew it, press **[PrintScreen].** During it, an animated icon appears in the Windows system tray.

Options

You can choose whether not to **Include the mouse cursor.** Use the **Include window shadow** option to capture the shadows that show around windows in when you have support for this active in Windows Vista or Window 7. **Force solid background color** eliminates any window transparency (and shadow, outside of Windows XP), replacing it with a forced background color of your choice. This is only supported on Windows XP and Windows Vista. You may have tried at some time to capture a window and found that noisy bits of the surroundings annoyingly showed through in the transparent corners or in Vista's new shadows. This option is the solution to that.

Acquire Pictures from PDF

Use this function to acquire bitmap pictures stored within PDF files. The function stores JPEG-compressed pictures as JPEG files, and other pictures as PNG files.

This function only examines the part of the PDF that is needed in order to extract the pictures. Since that means that only the PDF file's picture data storage area is check, this function can acquire pictures even from a damaged, otherwise unusable PDF file (e.g. one badly downloaded from the Web). Because this method is used, the pictures are extracted exactly as they are stored in the PDF, and so they can have e.g. a different rotation than the one seen when viewing the PDF. For pictures with JPEG compression and CMYK color, you may want to use the **Convert CMYK JPEG files to RGB** option, since PDF stores pictures with CMYK color in a way that is incompatible with most programs. (Color information is stored in them in reverse.)

The PDF format can widely vary. Thus, this function has certain restrictions.

It only supports pictures within the following limits:

- colors: palette colors with 2, 4, 6, or 8 bits/pixel, or RGB or CMYK color.

- compression: only ASCII85, LZW, ZIP, JPEG, and JPEG2000.

This function does not support:

- acquiring pictures from files with copy-protected content

- acquiring pictures less than 5 pixels wide or high

Extract JPEGs from File

This function looks for JPEG signatures in any file you choose, and if it finds such a signature followed by valid data, then it extracts that data and saves it to an external file. Use this function to acquire JPEGs stored in a file of your choice, e.g. the JPEG previews from RAW files.

Use the **Do not create copies of JPEG files** option to prevent the function from creating duplicates of JPEG files if you accidentally use it on them.

File Formats

You can save to the following formats:

- **GIF*** — lossless LZW compression, maximum of 256 colors (stored in a palette), useful for non-photographic Web graphics

- **JPEG** — only True Color and grayscale color depths are supported; compression is lossy (more compression = more loss of detail); great for photos

- **PNG*** — a modern, universal format; has lossless ZIP compression (better than LZW); can use a palette but does not need to; does not support EXIF

- **TIFF*** — a classical DTP format; supports the most options of all the formats (LZW/ZIP/JPEG/RLE compression or no compression; palette or no palette; CMYK colors)

- **TGA** — a historical format

- **BMP** — the standard Windows image format; normally uncompressed; most picture software supports it

- **PCX** — historical format; RLE compression; only useful for simple line drawings

- **JXR*, HDP** – quite new formats; advanced versions of their "parent" JPEG; support 48-bit color depth

*save pictures to these formats to preserve transparency.

JPEG

Progressive – the picture will be saved in such a way that it can be displayed (at reduced quality) before it is done loading. This is only useful for the Web, and only for large pictures and/or audiences with slow connections.

JPEG compression – special lossy compression developed for efficient storage of photographs. The more compression, the more damage to the picture (loss of detail). However, you can get quite good compression without visible damage. For high-quality photos use 90 and above; for previews, you can use lower values like 75. Compression damage varies depending on the nature of a picture, so if you are trying to walk the line on compression vs. quality, be sure to preview each individual picture, not just one. For more information, see Lossy JPEG Compression and Lossless Operations.

TIFF

This classical DTP format supports a wide range of color depths, color models, and compression types.

RAW

RAW files store unprocessed ("raw") data from camera sensors. RAW is actually not one format, but a variety of formats with this kind of data. RAW files have greater color depth than JPEG (48 bits), they do not suffer quality loss from compression like JPEG does, and they offer you a chance to achieve better white balance, etc. than your camera can when it comes time to produce JPEGs or TIFFs. (You cannot just leave pictures in RAW, because RAW files cannot be printed/published.) On the other hand, it takes time and skill to get better outputs from RAW files than you would if you just left the work to the camera.

The RAW Format

Almost all professional cameras, and most hobby cameras, let you store pictures in the RAW format. RAW files contain unprocessed ("raw") sensor values obtained straight from the camera sensors, and usually also a JPEG preview. To turn the sensor values into an actual picture, you must use a converter, a special program that does the RAW conversion work that the camera would normally do instead. The convertor interpolates the sensor values ("demosaics" them), performs white balancing, and sets the picture's saturation, contrast, brightness, and sharpness.

One advantage of acquiring pictures from RAW is that it lets you "do the camera's work better than the camera." Another is that you are working with a picture that has not yet suffered lossy JPEG compression even once. A third is that RAW files generally contain more than just the 8 bits of color depth that JPEG supports.

However, work with RAW has its downsides as well. First, while it is usually discussed as if it were a single format, each RAW file actually contains one out of many "real" formats—RAW "subformats"—on the inside. These vary not only among manufacturers, but even sometimes among individual camera models. Furthermore, no manufacturer to date has publicly released documentation for "its" RAW format. No documentation means, among other things, no way to write to the format, so RAW is read-only.

Besides the formats of individual camera manufacturers, Zoner Photo Studio also supports DNG (Digital Negative), Adobe's universal RAW format. Meanwhile, Adobe has created a program, named Adobe DNG Converter, to convert between the individual RAW subformats and DNG. This program can be downloaded from their website for free. When you install this converter and set the path to it in Zoner's Preferences, and enable its use, you gain the ability to directly process every RAW file the Converter supports. If the Converter is up to date, this means practically every RAW file. You can then use the RAW module with its numerous settings to develop photos from all RAW files, with the photos being converted to DNG in the background as an intermediate step with no action needed from you. Adobe periodically updates Adobe DNG Converter so that it can support formats from the latest camera models.

Edits, Effects, and Enhancements

The program's editing windows are available from both the Editor and the Browser. Unlike the Editor, the Browser enables **batch editing**—editing of multiple photos at once. If you select multiple files and visit an editing window in the Browser, you are making a batch edit.

If not even one file is selected, then you cannot perform direct operations (rotation and flipping), but the ones that lead to an editing window are still available—in this case, they apply to every file in the current folder.

Edits you make in the Browser are always irreversible: the change is saved to file immediately!
So here as always: edit copies of your pictures, not the originals.

Editing Pictures

Rotation and Flipping

Rotating Left, Right, or by 180°

In the Browser, select all the pictures to rotate and use **Edit | Rotate Left [Ctrl+L]**, **Rotate Right [Ctrl+R]** or **Rotate & Flip | Rotate by 180 °**. The edit is made immediately to all selected pictures. When you use this function from the Browser on JPEG images, it is, when possible, lossless. The menu items for this function are the same in the Editor as in the Browser.

Specific Rotation

In the Browser, select the pictures to be rotated to a specific angle and use **Edit | Rotate & Flip | Specific Rotation... [Ctrl+Shift+R]**. The menu item for this function is the same in the Editor as in the Browser.

You can set which **Background color** is used to fill out the empty spaces in the corners after you rotate.

Flipping Pictures

To flip (mirror) a picture in either the Browser or Editor, use **Edit | Rotate & Flip | Flip Horizontally** or **Flip Vertically**. When you use this function from the Browser on JPEG images, it is, when possible, lossless.

Adjusting rotation via EXIF

Some digital cameras with a special sensor can detect the camera's orientation during a shot and store this in the picture information. In ordinary programs, the picture's rotation after downloading is never affected by this setting. In Zoner Photo Studio it depends on your choice under **Settings | Preferences | General | Automatically rotate images to match EXIF orientation flag**. If you wish them to be correctly rotated in every program, then select them in the Browser and use **Edit | Rotate & Flip | Adjust Rotation via EXIF**. Whenever possible, this operation is lossless.

Rotating to an Orientation

Use this function to rotate a picture or pictures to an orientation - either landscape or portrait. You can choose the direction of the rotation. This function is available in the Browser under **Edit | Rotate & Flip | Rotate to Orientation...** Whenever possible, this operation is lossless.

Setting the EXIF Orientation Flag

This function is available in the Browser under **Edit | Rotate & Flip | Set EXIF Orientation Flag...** Use it to change the rotation flag that advanced digital cameras record in pictures' EXIF information. This function does not change the picture itself.

Resize

Use this function to set a picture's size in pixels. You can also use it to set a physical size if you first tell the program a desired number of dots per inch (DPI) for the picture.

To resize a picture, use**Edit | Resize... [Ctrl+E]**.

To set the **Width** and **Height** to resize to, enter them in the box. Normally they are set in pixels, but if needed, use the controls to set them in percent, centimeters, millimeters, or inches instead. Digital pictures' actual dimensions are always in pixels, so sizes in centimeters, millimeters, or inches are relative to a dots per inch (DPI) value. Use the DPI control to set this value. It tells printers, etc. how many pixels should be used per inch during printing, display, etc. The appropriate DPI setting to use depends on how the resized picture will be used. For screen display, 96 DPI is fine. For print, at least 150 is recommended. The best choice of DPI also depends on specifics like printer quality, paper quality, etc.

Leave the **Keep proportions**option on to make the program automatically set one dimension (width/height) based on your value for the other one, so that the picture isn't distorted. To enter Width and Height independently, turn this option off. **Sharpen** reduces the harm caused by the loss of information involved in shrinking a picture. (Major shrinking can cause a loss of detail, and mild sharpening can lessen this problem.) To set the method used for resizing, use [Method](#).

If multiple pictures are selected, you can restrict the function so it only shrinks or only stretches pictures, using the control named **Mode**.

Save image only saves disk space by stripping away any EXIF or other picture information that may be in the resized pictures.

Resampling Methods

There are very many ways to resample a digital picture—to redraw it using more or fewer pixels, either permanently or just on-screen. These methods differ in how they decide on values for the pixels in the new version of the picture, and in how many pixels in the original are analyzed for such decisions. There is no "silver bullet" - each method has its advantages and disadvantages. It all depends on what is being resampled, and why.

One way in which resampling methods differ is the "sharpness" of the output picture. When you are shrinking pictures, some methods, like bicubic and supersampling, lead to a mildly blurry image. Thus it is a good idea to mildly sharpen after resampling in such cases.

- **Nearest neighbor** - the simplest and fastest method; it does not use any interpolation, but rather evaluates each of the original's pixels on their own; a bad choice for photos, but irreplaceable for technical drawings with hairlines.

- **Bilinear** - the simplest kind of interpolation; uses the relative sum of the four nearest pixels; fast and generally good when shrinking a picture.

- **Bicubic** - relatively advanced interpolation; uses the 16 nearest pixels; interpolates values along a cubic curve; suitable for both stretching and shrinking (if the picture is sharpened afterwards).

- **Hermite** - another type of interpolated curve; uses the four nearest neighboring pixels.

- **Bell** - gives a very "soft" image; useful for pictures with noise.

- **Mitchell** - an excellent combination of speed and quality; uses the 16 nearest pixels; has a "self-sharpening" effect.

- **Lanczos** - processor-intensive; pixels are interpolated using a special curve simulating the real dissemination of information; 36 pixels from the original are used per output pixel; has a strong "self-sharpening effect"; most useful when stretching pictures; can cause unaesthetic grid-like artifacts during shrinking due to the sharpening effect.

- **Supersampling** - designed only for shrinking pictures; uses the weighted average of all the pixels that are lost during shrinking. Generally gives the best results for photos, because it works with all pixels in a photo. Can suffer from unsharpness, but this can be solved by mild sharpening afterwards.

Content-aware Resize

Use this function to make the program resize a picture by adding/removing rectangular areas in a "content-aware" way. Content-aware resizing goes easy on content-filled, "important" parts of the picture, while deforming harder-to-notice, "unimportant" parts. This is useful when you want to change a picture's ratio of sides without having to either deform it or perform a crop that may remove important parts. Content-aware resizing resizes the picture and can change its overall ratio of sides, while leaving its important parts untouched.

To use content-aware resizing, go to **Edit | Content-aware Resize [Ctrl+Shift+E]**.

Set a **width** and **height** and the program will analyze the picture to find its important regions, the ones that should be preserved. It then uses that analysis as a basis for choosing rectangles to add to/remove from the picture to bring it to the desired size. **Quality** sets the speed and precision of this analysis.

Click **Mark Regions...** to "inform" the program about which areas (e.g. faces or signs) should definitely keep their original proportions, and ones that may freely be distorted (e.g. skies or unbroken backgrounds), if auto-detection doesn't treat them properly.

> Note that the program treats these regions only as very strong suggestions, not as an iron rule. Thus in extreme cases, when other unimportant areas have "run out," the above-mentioned deformation rectangles can lead through even the areas you have marked as important.

Canvas Size

This function resizes a picture by cropping it or adding a colored border.

To reach this function, use **Edit | Canvas Size [Ctrl+W].**

If the **Relative** is not checked, then the **Width** and **Height** values determine the picture's size. To set the new size via the increase/decrease in size, rather than setting the new size directly, use the **Relative** option. (To set a decrease in size, use a negative value.) To set where to "anchor" the whole operation, use the **Image alignment** control. Increasing the canvas size adds a border around the picture. Click **Color** to set its color using the Windows color picking window. Click the eyedropper to set the color by clicking a color in the picture.

Canvas and Borders

Use this mode to give a picture a frame made up of up to three rectangles with a color of your choice, in several modes:

Use the **Edit | Canvas and Borders [Ctrl+Shift+B].** menu item in both the Browser and the Editor for this.

Choosing a Mode

The **Frame** mode increases the size of the picture by the size of the frames, and thus always preserves all picture data. The **Preserve size** mode covers the original picture with the frames on all sides, and thus preserves the original size of the picture. The **Preserve ratio** option covers the original picture with the frames in such a way as to preserve the original ratio of sides.

Entry Method and Units

When you use the **Canvas and borders** entry mode, you can add an inner or outer frame neighboring the border you set. The width of these frames may never be larger than that of the border. If you set a larger width, the border will adjust automatically. If you choose Three lines, then you will enter three lines with various widths that will surround the picture.

You can enter their widths directly as pixels, or as relatively, in percent. Entering them in relative terms is very useful when you are doing batch work, not all photos have the same size (e.g. due to cropping), and you want the frames to have a unified look.

When you check the **Symmetrical** option, you will be working directly with the width for one side only; the other sides will be calculated automatically.

Specific Crop

Use this to crop whole batches of pictures at once using predefined criteria.

To reach this window from the Editor or Browser, use **Edit | Specific Crop... [Ctrl+Shift+W]**

Use the **Height and Width** fields to set the crop size in pixels. Use the square of dots to anchor the crop to a corner, side, or the middle. Use **Preserve ratio** to ensure that the cropped version of each picture will have the same ratio of sides as the original did.

Use the **Ratio of Sides** dropdown to set the crop to a fixed size in pixels or a fixed ratio of sides. Click **Swap Values** (shown between the two sizes or ratios) to swap the two values, switching the crop from Portrait to Landscape or vice-versa.

Place Text

The most common use for the Place Text function is adding a copyright watermark to a photo, or adding descriptive text near one of its edges.

To reach this window, use **Edit | Place Text [Ctrl+T]** in the Browser or Editor.

In this window, you tell the program what text to place, what settings it should have, its position, offset, and transparency. You can set the text's size either absolutely (in pixels) or relatively (in percent of the picture's size). Besides static, fixed text, you can make use of the program's Variable Text feature in this window. This feature enables you to make use of information about a picture, so you can e.g. store the time a photo was taken inside the photo. If you have never worked with Variable Text before, we strongly recommend that you read the Variable Text topic before beginning work with it.

> **Once you have added text to a picture and saved that picture, the change is irreversible—the text cannot be changed or removed afterwards.**

Place Image

This function is most often used to place a small logo (a watermark) or the photographer's signature in a photo.

To reach this function, use **Edit | Place Image [Ctrl+Shift+T]** in the Browser or Editor**.**

In the window, you choose which picture to place, its **Position**, its **Rotation**, its **Indentation** away from its base position, whether or not to **Use transparency stored in overlaid image** (relevant when placing GIF and PNG pictures) and if desired an overall **Transparency**. There is also a **Use as watermark** option via which you can use the placed image as a mask with a shadow; use the **Light source** control to affect the shadow's direction.

If the picture is too large, then you can use the **If needed, shrink overlay to fit** option, or **Resample** it to a certain percentage of its original size.

Change Color Depth

Use this command to convert a picture between 48-bit color (3 × 16 bits) and classical 24-bit color (3 × 8 bits). You can also use it to convert pictures to 8-bit or 16-bit color.

A 48-bit color depth can express vastly more colors than 24 bits: 2^{24} = 16,777,216 different colors, while 2^{48} = 281,474,976,710,656 colors. Although this difference is not visible to the human eye (the human eye can distinguish "only" about 10 million colors), it does manifest when a picture undergoes digital processing, because many more details are available.

For example, during major brightening of a strongly underexposed photograph, formerly "almost black" areas may flow into a single color. This is caused by the fact that only a narrow portion of the histogram was used in the original picture. If, however, the source picture is stored at a 48-bit color depth, then there is a much higher chance that even this reduced portion of the histogram will be wide enough for the pixels in this area to have differing values, so that finer color transitions remain after brightening.

The disadvantages of 48-bit color depth are larger file sizes, the limited number of programs that support this color depth, and a restricted choice of formats. (Within Zoner Photo Studio, you can only save with 48-bit color depth do

the TIFF, PNG, and HDP formats—the JPEG format does not support 48-bit color depth.)

ICC Profiles

Assigning an ICC profile

Pictures in the JPEG and TIFF formats can contain an ICC profile. An ICC profile is a description of how to interpret the colors in a picture. Different output devices (like a screen, or a printer) store colors in different ways, typical for the given device. Storing an ICC profile enables all devices that you work with to show your picture in exactly the same way, as long as they support color management and they are correctly calibrated. If a picture has no ICC profile, you can assign one to it, using **Edit | Other | Assign ICC Profile...** By assigning profiles to pictures, you ensure that pictures taken in a color space other than sRGB will be interpreted correctly. After you choose a profile, you can set how the operation will treat pictures that already have an ICC profile. If the **Overwrite existing profiles** option is checked, then old profiles will be overwritten by new ones. Adding a profile does not transform the colors inside the picture data itself.

This function depends on color management being active in the Color Management section of the program preferences.

Convert to Profile

This function converts picture data to the color space of the selected profile using the method selected under **Reproduction**. The Perceptual method is offered at first, and is Zoner's recommendation. When you perform this edit in the Editor and then save the picture, the changes are irreversible.

> **In the Browser, meanwhile, this is like all other edits always irreversible: the change is saved to file immediately!**
> **So here as always: edit copies of your pictures, not the originals.**

This function depends on color management being active in the Color Management section of the program preferences.

Convert File

Use this function to batch-convert picture files to another format.

> A typical example is conversion of photos that you have scanned in in TIFF format into JPEG files for use on the Web. If your pictures are stored in JPEG format and you wish to do a large number of edits on them, and it is impractical to make these changes using the Batch Filter or during a single Editor session, then it can be a good idea to convert them to TIFF before the changes. The TIFF format is very useful when you are going to edit pictures, because you can save and re-save pictures to TIFF without any loss of quality, and you can use a higher color depth than in JPEG.

Use **Edit | Convert File Format [Ctrl+Shift+F]** in the Browser to reach this window. It is unavailable in the Editor (but see below).

There is a drop-down menu on the left side of the window where you can choose what format to convert to. Depending on that format, other settings are displayed at the bottom, such as compression type and color depth.

The right side of the window contains three menus for managing **color conversion** and one controlling how **picture information** will be saved.

The **Image information** menu sets whether all picture information, EXIF information only, EXIF information only minus a thumbnail (preview), or no picture information will be saved. If you use any setting other than "All" here, the picture and the color profile will automatically be converted to sRGB.

If the picture is open in the Editor, you can save it in any of format that you could convert it to. To do so, use **File | Save As... [Ctrl+Shift+S]**. In this window, you can both choose a format and give the file a new name and move it to a new path (folder).

Convert to Web JPEG

Use this function to save a picture in JPEG format with an output file size of your choice.

To set your desired output **Size** in kilobytes, use the slider or enter it numerically. You can also set limits for the compression **quality** and other JPEG compression settings—**sampling**, the **progressive** format, and **optimized encoding**.

You can also convert the picture to **grayscale** and choose whether or not to save space by omitting **EXIF** text information, a **preview**, and the **ICC color profile** from the picture.

Quick Filter

Use the Batch Filter to make multiple edits at once to one or more pictures. Use it in the Editor to make them to a single picture, or in the Manager to make them to multiple pictures.

To work with the Batch Filter, use **Edit | Batch Filter [Ctrl+Q]**.

Unlike most of the program's editing filters, the Batch Filter window lets you combine and apply any number of filters, that is, functions for editing pictures and processing picture files. (File-related filters are only available when you've opened the Batch Filter from the Manager.)

> Thus you can, for example, use a single visit to the Batch Filter to shrink a picture, sharpen it, brighten it, give it a white border and a black frame around the border, add a copyright watermark, and then rename it. The renaming filter offers the same settings that are available when you use the function named Batch Rename.

The right side of the window shows settings for the individual filters, grouped together into sections. The title bar of each section includes a checkbox. Use that checkbox to include the section or exclude it. The title bars also each include a button for restoring default settings and a button for displaying a menu. This menu contains commands for removing the given filter, re-ordering filters, and adding a new filter. At the right end of each filter's title bar is an arrow. Click it to collapse or expand the whole filter. The top right of the Batch filter window has buttons for adding and removing filters.

Use the Save button at the bottom right to save **Presets** for the Batch Filter under names of your choice. To quickly run the Batch Filter with a saved preset of your choice, use **Edit | Apply Batch Filter**.

Two of the filters, **Convert File** and **Renaming**, have a few restrictions as a natural result of what they do: each of these filters can be used only once, they can only be used in the order Convert, Rename, and they must be the last filters in order. These filters do not make sense to use from the Editor, so they are ignored if you have called up the Batch Filter from there. There are no restrictions on the output path you can use, and relative paths such as ".. \backup" are allowed. If the path in question does not exist, it will be created.

You can apply edits to one picture at a time, or apply them all at once to all the pictures in the batch. (The column on the left of the window lists the pictures in the batch.)

For more information on the individual edits offered here, see the topics concerning them.

Enhancing Pictures

Quick Fix

This function automatically fixes a picture based on its available picture information and on an analysis of the picture. It does not interfere in matters of exposure level. This function is good for quick batch edits.

You can reach it via **Edit | Adjust | Quick Fix [Ctrl+0]** in the Browser, and via **Adjust | Quick Fix** in the Editor**.**

There are no settings for this function. It performs automatic contrast stretching, local contrast enhancement (and in some cases sharpening), saturation editing, and noise reduction with the help of the picture's EXIF information.

Levels

The Levels tool is an important tool for correcting the brightness levels in a picture. You can use this function to, for example, change a picture's "black point" and "white point" using a histogram. You can also use it to lighten or darken the midtones of a picture—to perform gamma correction.

To reach this window, use **Edit | Adjust | Levels [Shift+L]** in the Browser, or **Adjust | Levels** in the Editor.

Besides manual editing, you can also use it for automatic edits via the window's **Automatically correct colors** option. In the left part of the window, you can see a histogram preview and settings for manual edits. The **Channel** menu lets you choose which color channel to edit. RGB means the brightness channel. You can configure all these settings separately for each channel. The most basic settings when adjusting levels are the input and output levels and the gamma-correction coefficient. The gamma correction slider is located between the input values and output values. It determines colors' brightness in the midtones. All five values can be entered either directly using a number in the corresponding field, or visually, by clicking and dragging the corresponding triangle under the histogram and the brightness scale.

You can use the **Black point** and **White point** eyedroppers to select an input level for individual brightness elements by manually selecting a color directly from a preview pane. Clicking the brightest and darkest pixels in the picture generally gives the most useful white and black points.

When you turn on automatic mode, input levels for the individual channels are set automatically. When you use **Automatic contrast**, they are set the same for all channels. When you use **Automatic levels**, they are set for each channel independently. Automatic contrast "stretches" the brightness of the whole photograph to the maximum values, while Automatic levels "stretches" individual colors separately, and thus can change the picture's tinting. You can sometimes take advantage of this to remove tinting from a picture. The **Target colors and cutoffs** controls sets what colors to map the lightest and darkest areas to. The **cutoffs** aspect of it sets how much of the histogram should be cut off on the left and the right to ensure that the actual effective white and black points are used, rather than one of a few unrepresentative pixels that lie beyond them.

Curves

Like Levels, curves serve for correcting tone range and color balance.
They will help you to perfect pictures' tone range and a exposure, especially if they were taken under extreme conditions.

You can call up this function using **Edit | Adjust | Curves [Shift+C]** in the Browser menu or **Adjust | Curves** in the Editor menu.

Work with curves is more demanding than work with levels. On the other hand, it lets you very precisely set the individual color channels in the picture. While the Levels filter only lets you affect the range of input and output levels and gamma correction, in the Curves filter, you can set the shape of the conversion function (shown as a curve for the sake of visualization) almost at will. The horizontal axis shows input values. The vertical axis shows output values.

The **Channel** menu lets you choose which color channel to edit. RGB means the brightness channel. You can configure all these settings separately for each channel. To get a better idea of how the individual RGB channels are responding, it can be good to turn on **Show color elements**. The **Linear** option determines whether an interpolation curve should link the nodes you add to the curve, or a series of straight lines should link them instead.

Click **Select pixel in image** if you would like to use a pixel from the picture itself to set the color for the current node. If you hold down **[Shift]** at the same time, a node with this color will be added to the curve.

You can easily edit the curve using the mouse. Clicking anywhere on the curve between the red endpoints will add a new node to the curve. You can click any node on the curve to then move it to another position, using either drag-and-drop, the arrow keys, or direct editing via the **Input** and **Output** fields. If you right-click on a node, you can delete that node. You can also select a node by left-clicking it and then pressing **[Del]**. You can keep on deleting nodes until the only two nodes left are the red endpoints. Click **Erase Curve** to restore the original "curve" for the selected **Channel**. That curve is formed simply by a straight line leading from the top left to the bottom right. If the curve is erased for all color channels, then the picture will stay unchanged. Clicking **Automatic Contrast** or **Automatic Levels** will erase the current curves within the R, G, and B channels and set up new ones corresponding to each button's purpose. To control the sensitivity of these automatic settings, use the **Cropping** controls (separate for **Lights** and **Shadows**).

Tips

- Shifting the endpoints will change the input values for the white point and black point, just as if you were using the Levels function.

- Moving the nodes horizontally to the positions where the histogram for the RGB channel "begins" and "ends" will cause an effect similar to using Automatic Contrast within the Levels filter: the brightness of the whole photo will be "stretched" to the maximum values.

- Moving the nodes horizontally to the positions where the histogram for the R, G, or B channel "starts" or "ends" causes an effect similar to when you are using Automatic Levels: the individual color channels throughout the photo will be "stretched" to their maximum values. If each channel is edited using a different curve, then the picture's tinting will change.

- If you wish to influence shadows, create and move nodes on the left sides. If you wish to influence lights, work on the right side.

- Moving a node you have created down on the curve or to the right will darken a part of the tones in the picture. Moving a node up or to the left lightens part of the tones in the picture.

- The curve you create should have an ascending path; if it is descending in some section, that section will be tinted.

- But to get the most contrast for a photo, create an S-curve. This will slightly darken part of the midtones, while "stretching out" the remaining midtones and light tones.

In practice, using the Curves tool well simply requires experience. There are no particular settings that can be recommended universally, because each photo has different tonal characteristics and requires specific edits. To gain the experience mentioned above, you mainly need to keep using the Curves window and pay a close eye to the preview pane and to changes in the histogram.

Enhance Colors

Use this function to adjust a picture's colors, brightness, and contrast. To call up this function, use **Edit | Adjust | Enhance Colors... [Ctrl+1]** in the Manager or use **Adjust | Enhance Colors...** in the Editor.

This function offers: controls for editing the R, G, and B color channels, hue, saturation, vibrance, and lightness, and brightness and contrast, as well as a gamma correction control.

The **Mode** (Normal, Lights Online, Shadows Only) and**Preserve colors** controls affect gamma correction only. **Preserve colors** ensures that colors' hues will not change even after major brightening, so that the picture will not start to look "washed-out." During edits to color channels, this option ensures that the picture's overall brightness will be preserved.

This window also contains a function for **Automatic Contrast**.

Enhance Color Temperature

You can use this function to manually correct pictures that are suffering from tinting due to bad white balance settings during picture-taking.

To reach this window, use **Edit | Adjust | Adjust Color Temperature… [Ctrl+2]** in the Browser window, or **Adjust | Adjust Color Temperature…** in the Editor menu. You can define the color temperature by setting a neutral color or by entering a color temperature.

By manually setting a neutral color lets you set a "gray" point. This is a pixel that should have no tinting after the edit. You cannot use for this purpose a point suffering from maximum blowout (a pure white pixel), becuase no color shift can be determined on the basis of pure white.

You can set a lighting temperature using two sliders. The first slider is for shifting colors based on the picture's current lighting temperature, from blue to yellow. The second slider is for correction from green to purple.

Enhance Exposure

Use this function to adjust a picture's brightness and contrast.

To access it, use **Edit | Adjust | Enhance Exposure... [Ctrl+3]** in the Manager or **Adjust | Enhance Exposure...** in the Editor.

- **Exposure -** use this to correct exposure by up to +/-3 EV.

- **Contrast -** use this to control the picture's overall contrast.

- **Lights -** use this to darken light areas in the picture.

- **Shadows -** use this to lightens dark areas in the picture.

- **White point -** tones brighter than this level are converted to pure white.

- **Black point -** tones darker than this level are converted to pure black.

- **Clarity -** use this to change local contrast at contours in the picture.

Sharpen

This function can at least partially repair a picture that suffers from blurring. It is a good idea to use this function after resizing a picture.

To reach this function, use **Adjust | Sharpen...** [**Ctrl+5**] to sharpen pictures. The most important option in this window is the sharpening type.

- **Simple sharpening** is a quick way to sharpen fine details in certain situations such as after you have shrunk a picture. For this type, you can choose an effect strength and whether or not to use the Brightness method.

- **Unsharp mask** has its roots in film-camera technology. It sharpens only highly visible edges and borders. For this type, you can choose an effect strength, a radius, and a threshold, and toggle the Brightness method.

- **Gaussian sharpening** is a method for removing Gaussian blur. For this method, you can choose an effect strength, a radius, and noise suppression.

- **Overall sharpening** gets rid of overall blur in a picture. For this method, you can choose an effect strength, a radius, and noise suppression.

- **Soft sharpening** sharpens a picture's fine details while suppressing rough structures, making it useful for sharpening e.g. portraits. You can adjust the effect strength.

The **Brightness Method** setting means that the filter will only be applied to the picture's Lightness element within the HSL color model. This prevents the shifts in color that can otherwise happen around borders when you are sharpening strongly.

Differences Among Sharpening Methods

The various sharpening methods have considerably varying effects on pictures. While the **Unsharp mask** sharpens mainly highly visible edges in a picture, the other methods always sharpen the whole picture, thus emphasizing all details. In practice this means that in low-quality photos - whether they suffer from noise or excessive compression - the Unsharp Mask is the most advantageous of the methods, since the remaining ones would overly emphasize the less attractive parts of the picture.

Use the **unsharp mask** method to eliminate unsharpness that arose while taking the picture, scanning, etc. This method is very appropriate for photographs because it uses the details of the picture itself for its decisions. The basic idea behind this method is simple. A blurred copy of the original picture is created, and then that copy is "subtracted" from the original. The new copy that results from this has highlighted edges. This new copy is then "added into" the original. The **Radius** sets how much the mask is blurred, so its size is very important. Too high a value will cause oversharpening, which will show up as bright (or even shining) contours around any edges in the picture. The **Threshold** determines how different two brightness values should be before they are treated as an edge. A value of 0 means that the effect will be used on all pixels in the picture. If the effect overly emphasizes noise, then we recommend that you experiment with values in the range from 2 to 20.

The **Gaussian sharpening** and **Overall sharpening** methods are designed to remove concrete types of blurring

using what is called a convolution matrix. The **Overall** type can rescue pictures damaged by unsharpness during picture-taking itself. **Gaussian** sharpening helps pictures that became blurred during processing - e.g. during shrinking. **Radius** sets how much of each pixel's surroundings will be included in calculations. A larger radius will be subjectively perceived as a much stronger sharpening effect. The **Noise suppression** can prevent oversharpening without preventing sufficient sharpening.

> When you shrink a picture using supersampling, this causes overall blurring, not Gaussian, but this is somewhat of an exception. Blurring that arises during picture-taking tends to lie on the border between Gaussian and overall blurring.

Blur

This function offers several methods for blurring photographs, both to enhance them photographically and for artistic purposes.

To reach this window, use **Edit | Adjust | Blur… [Ctrl+6]** in the Browser, or **Adjust | Blur…** in the Editor.

The filter offers six types of blurring: Fine, Gaussian, Overall, Directional, Rotational, and Zoom. The first type is good for creating weak blurring. For a stronger effect, use Gaussian or Overall. The other blurring types have some extra settings. For Directional blurring, you can set the **Direction**. For Rotational and Zoom blurring, you can set the X and Y **Center** of the blurring. (You can also select the center directly from the picture, using an eyedropper.) The first slider, **Strength**, is shared by all blurring types. The **High quality** option increases the precision of calculations at the price of increased time for calculating the blurring.

Remove Noise

To remove noise from a photograph, use **Edit | Adjust | Remove Noise... [Ctrl+Shift+N]**. Zoner Photo Studio's noise removal function can be used to remove both the noise typical for long exposure times (sometimes called "hot pixels" noise; called "salt and pepper" in the program) and additive noise. Both of these removal types can also be applied at the same time.

Remove "salt and pepper" noise - for this type of noise reduction there is just one control; use it to set the **Noise type** in the picture.

Remove additive noise - with default settings, when you are removing additive noise, you can use the **Brightness** and **Colors** sliders to set the noise reduction level independently for the picture's brightness and color elements.

Advanced

Use **Advanced** to display the more advanced noise-reduction controls, intended for experienced users.

For better, though slower, noise reduction, or vice-versa, use the **Quality** setting.

Besides making global changes using the **Brightness** and **Colors** sliders, you can also selectively adjust the amount of noise reduction for individual colors or image brightness levels. For this, use the controls under **Local correction, by color** and **Local correction, by brightness**. The core of each of these controls is a color or brightness gradient, beneath a curve with several nodes. Drag the nodes to reshape the curve and thus increase/ decrease noise reduction for individual colors/brightness levels. Click anywhere on the curve between existing nodes to add a new node. To delete a node, press **[Del]**. Use the eyedropper to select a color or brightness level directly from the picture.

Very strong noise in a picture often creates distracting color stains that persist even after noise reduction. Use **Color stain removal** to eliminate this problem. Choose the intensity of color stain removal carefully. Too much intensity leads to excessive loss of detail in the image.

To reduce noise smartly, so that noise is removed as much as possible, but only a few details are lost, the program must determine the picture's noise level correctly. Therefore, a rather detailed noise analysis is performed before noise reduction starts. However, in some cases this analysis can still guess the noise intensity level incorrectly, causing either incomplete or overly-aggressive noise reduction. In such cases, under **Image noise intensity** , change the detection method to **Set manually** and adjust the detected noise intensity. It can be adjusted independently for colors and brightness. We recommend setting both noise reduction sliders to 100% and adjusting the noise intensity while watching the preview, until the intensity is at a level where noise reduction is strong, but loss of image detail is still acceptably low. Then put the noise reduction level sliders back to the values you want.

Just after you call up the noise reduction filter, it analyzes the noise in the picture and then runs noise reduction. This process can take a long time on large images. However, changing most settings does not demand running the process again, and so is significantly faster.

Fix Chromatic Defect

To repair photos with this defect, use **Edit | Adjust | Chromatic Aberration... [Ctrl+Shift+A]** in the Browser. In the Editor, use **Adjust | Chromatic Aberration...**.

Chromatic aberration can have any of several causes; one cause is different refraction of rays of light with different wavelengths. Its effect in pictures is to give places with high contrast a purple, or occasionally green or blue, blurred contour. Zoner Photo Studio provides an easy-to-use tool for remedying this defect.

When there is no chromatic aberration in the center of a picture and it becomes gradually stronger towards the edges, you can fix it using the **"Red-green"** and **"Blue-yellow"** sliders. By using these to "push" the color channels towards each other, you will fix the defect.

But if the chromatic aberration manifests itself in another way or if the mentioned controls are not enough to suppress it, you can turn on the **Desaturate a particular color** controls. These let you selectively suppress colors in the picture, with a tolerance level of your choice.

Fix Barrel Distortion

You can fix photos suffering from barrel or pincushion distortion using **Edit | Adjust | Barrel Distortion [Ctrl+Shift+D].**

Barrel and pincushion distortion are frequent lens defects that have unpleasant effects on photographs of architecture and objects with straight edges. Use the slider here to set how strongly the photo's contents should be "pushed in" or "pushed out." When correcting barrel distortion, the **Auto-crop** option here is quite useful. You can set a **quality** level for this function; this sets what algorithm is used by the function. The low-quality but fast **Nearest neighbor** method is good while seeking the right amount of correction to use. The high-quality but slow **Bicubic method** is best once you are ready to apply the correction.

**You should remove barrel or pincushion distortion from a picture before making any other edits to it
(and especially before cropping it or correcting collinearity or perspective).**

Fix Vignetting

To remove vignetting from a picture or add vignetting, use **Edit | Adjust | Vignetting… [Ctrl+Shift+V]** in the Browser or **Adjust | Vignetting…** in the Editor.

Vignetting is uneven exposure throughout a photo, with darkening towards the corners. Typical causes of vignetting are add-on lenses and filters for wide-angle lenses, and low-quality lenses.

When **Automatic mask** mode is active, the brightness correction mask is created automatically based on the picture.

When it is off, the mask is created based on the **Radius** setting, which sets how quickly the picture darkens towards the corner. This second antivignetting mode is only useful for uncropped pictures, because it always places the center of the correction in the center of the picture. Use the **Effect strength** slider to set the amount of vignetting to add or remove. (To add vignetting, use negative values.)

Line Spacing

This window helps you fix problems surrounding interlacing, a common phenomenon in pictures obtained from video.

> Digital cameras and other video equipment work, for historical reasons, with interlaced pictures. Such picture contain two "fields"—half-pictures—that can each come from different scenes, especially if the source video sequence contained a large amount of motion. The first field is stored in the odd rows of the picture; the second field is stored in the even ones. If the scene is static, without movement, then the picture has full resolution, and no deinterlacing is needed. (The same applies for pictures taken from classical film video, which also usually contains two fields in each picture.) If the scene changes fundamentally between frames, then the picture will contain two fundamentally differing fields. The vast majority of camera stills are somewhere inbetween: some parts are moving; others, static.

Use **Edit | Adjust | Interlacing...** in the Browser window or **Adjust | Interlacing...** in the Editor window to reach the Interlacing window, or press **[Ctrl+Shift+L]**.

Zoner Photo Studio can help you adjust and fix photos containing interlaced fields. Different methods are the right solution for different pictures—sometimes you will want to only deinterlace a part of a picture; sometimes you will even want to use different (de)interlacing tools for different part of a picture!

- **Blended clipping**—this method is the one generally recommended. It tries to intelligently join both fields in areas without motion, so as to increase the picture's final resolution. In areas with motion, the program needs advice on a "preferred" field that should be kept (and the other thrown out).

- **Blend fields**—this method joins both fields into one picture. In places with motion, the picture will be "double" and blurry.

- **Interpolate field**—only the preferred field will be used for calculations; the other field is thrown out and replaced with lines determined via interpolation.

- **Duplicate field**—only the preferred field will be used for calculations; the other field is thrown out and replaced with lines determined via duplicating lines from the preferred field.

- **Subsample field**—only the preferred field is used. Instead of filling in lines between it, it is shrunk using interpolation (subsampled), so that the ratio of sides in the final picture remains correct. The resulting picture will have 1/4 the resolution of the original.

- **Swap fields**—This method is not a deinterlacing method at all. It swaps the two fields instead. This is useful because some programs erroneously save fields in the opposite of the correct order. Swapping solves this.

The **Prefer first field** checkbox sets which of the two fields is the "preferred" one. The right setting for this checkbox will vary from case to case.

Joining threshold—this sets the minimum amount of difference that is judged to be motion when you are using **Blended clipping**. If you set it too high, then blended clipping may not catch and remove all interlacing artifacts in the picture. If you set it too low, you will effectively be needlessly reducing the picture's resolution, because more of the non-preferred field will be thrown away and replaced via interpolation than is necessary. We recommend values from 10 to 25.

Test brightness, not color—motion detection when using **Blended clipping** is based on differences in either color or brightness for each pixel in the first and second field. Detection based on color is most useful for drawn pictures or other scenes with large areas of one color (above all animated films). Brightness-based detection works well for parts of a picture with transparent elements (like television graphics, or logos).

> **You should de-interlace a picture before making any other edits to it**
> **(and especially before resizing it).**

Edit Effects

To apply artistic effects to pictures, use the Editor's **Effects** menu, or in the Browser, use **Edit | Effects**.

Old Photograph

This is a popular effect for both photos and film. It is sometimes also called "sepia." There is a slider here for setting the "age" of the picture.

Use **Edit | Effects | Old Photograph...** in the Browser or **Effects | Old Photograph...** in the Editor for this.

Add Grain

This effect simulates high-sensitivity film. You can set the **amount** of graininess and the **grain type**. Use **Colored Grain** to switch from a monochrome grain to a multicolored grain.

Use **Edit | Effects | Add Grain...** in the Browser or **Effects | Add Grain...** in the Editor for this.

Explosion

This effect looks as if you were viewing the picture through smoked glass. There is a slider here for setting the effect strength.

Use **Edit | Effects | Explosion...** in the Browser or **Effects | Explosion...** in the Editor for this.

Oil Painting

This effect makes a picture look as if it had been painted with a brush. There is a slider here for setting the effect strength.

Use **Edit | Effects | Oil Painting...** in the Browser or **Effects | Oil Painting...** in the Editor for this.

Waves

This makes a picture look as if it were reflected on a water surface with circular waves. There is a slider here for setting the effect strength.

Use **Edit | Effects | Waves...** in the Browser or **Effects | Waves...** in the Editor for this.

Pencil Drawing

This makes the picture look as if it had been drawn using colored pencils. There is a slider here for setting the effect strength.

Use **Edit | Effects | Pencil Drawing...** in the Browser or **Effects | Pencil Drawing...** in the Editor for this.

Pixelization

This lowers the quality of a picture by making it "blocky." You can set the size of the pixels (the blocks).

Use **Edit | Effects | Pixelization...** in the Browser or **Effects | Pixelization...** in the Editor for this.

Emboss

This effect makes a picture look as if it has been stamped into a mold. With the Desaturate option active, it will also be drawn in just a single color. Use the sliders here to set the effect strength and the direction from which light is shining on the picture.

Use **Edit | Effects | Emboss...** in the Browser or **Effects | Emboss...** in the Editor for this.

Detect Contours

This effect seeks out high-contrast edges. There is a slider here for setting the effect strength.

Use **Edit | Effects | Detect Contours...** in the Browser or **Effects | Detect Contours...** in the Editor for this.

Negative

This inverts the values in the color channels, creating a negative of the picture.

Use the **Edit | Effects | Negative...** in the Browser or **Effects | Negative...** in the Editor for this.

Dynamic Thresholding

Ordinary thresholding is a process that converts a picture to black and white. Dynamic thresholding is too, but unlike in classical thresholding where a pixel is considered as black beyond a certain threshold, this function uses the surroundings of each pixel for its evaluation. Thanks to this fact, dynamic thresholding can give good results even in pictures with large brightness variations. You can change the feel of this function's output by adjusting the dynamic **Threshold** and**Surroundings**.

Use **Edit | Effects | Dynamic Thresholding...** in the Browser or **Effects | Dynamic Thresholding...** in the Editor for this.

Soft Contours

The Soft Contours effects sharpens a picture's fine details while suppressing rough structures, making it useful for sharpening e.g. portraits. This filter includes four controls for four different levels of fineness of detail. Raising the value for a control raises the contrast for details with that level of fineness, while lowering the value lowers the contrast. Increasing the contrast for sufficiently fine details sharpens a picture, while decreasing the contrast for rougher details softens hard shadows while still leaving fine details sharp.

Damaged Photograph

This function alters a photograph to imitate damage caused by time (e.g. yellowing and faded corners) and mishandling (e.g. scratches and smears).

Use **Edit | Effects | Damaged Photograph...** in the **Browser or Effects | Damaged Photograph...** in the Editor for this.

This function has Advanced and Basic versions. The Basic version offers a single slider; use it to set the desired level of damage. Use **Advanced settings** to switch the interface to the advanced mode, where each type of damage can be set independently. Click **Random with Same Settings** to change the shapes and positions of the individual image defects. Click **New Random Settings** to set the individual sliders to random positions.

Texture

Use this function to make a photograph look as if it had been painted onto a texture.

Use **Edit | Effects | Texture...** in the Browser or **Effects | Texture** in the Editor for this.

Use **Texture** to set the type of material whose texture is simulated. Use the **Intensity** slider to set how visible the texture is.

Tone Mapping

Use Tone Mapping to work with a single picture in a similar way as when working with HDR. Use the settings here to influence local contrast and emphasize details in light and dark areas.

Use **Intensity** to set how strongly the tone mapping affects surrounding pixels. **Compression** determines how strongly the whole HDR dynamic range will be represented in the final output. Use **Light** to suppress lights and shadows effects. To set color intensity, use **Saturation**. Use **Gamma** to shape the gamma correction curve. The **White Color and Black Color** settings determine the "cutoff" percentages for the effect. **Lights Intensity and Shadows Intensity** set how strongly the effect is applied in the picture's lights/in its shadows.

The settings here are the same as for [Create | Tone Mapping HDR](#) in the Browser.

Tilt-shift Effect

This function provides access to the same effect as using [Tilt-shift Effect](#) in the Editor. However, the position and angle for the center of the area in focus must be entered numerically. Unlike in the Editor, the effect can be applied here to multiple pictures at once, which is useful for e.g. time-lapse photography. This filter and the Tilt-shift tool are compatible with each other. To get the most use out of this compatibility when working with e.g. a time-lapse series, open one picture in the series in the Editor, use the Tilt-shift tool to set up the effect visually using guidelines, fine-

tune the other settings, and then save all the settings as a Preset. Then select the series' remaining pictures in the Browser and use **Edit | Effects | Tilt-shift Effect**, load the stored Preset, and click **Apply to All**.

Shift Colors

Use this function to slightly adjust selected colors present in a picture. To set the color to edit, click the eyedropper and then click a spot with that color inside the picture. The color you clicked is added to the color list. You can then edit its **Hue**, **Saturation** and **Lightness**. Normally, your changes also affect colors surrounding the color you change. This is done in order to avoid sharp transitions. However, if a color is selected in the list but no edits have been made to it, then it is immune to this kind of color change. To start changing the color-shifting settings for a color, click that color in the list. To remove a color from the list, click **Remove color from list**. Shift Colors affects pixels with the selected color regardless of their locations. To shift colors in only a part of a picture, select that part of the picture before using Shift Colors.

Grayscale

To convert a color picture to shades of gray (a black-and-white photo), use this function. You can influence the method used, to guarantee perfect grayscale pictures with good contrast.

> Some color contrasts will disappear after conversion to grayscale (e.g. the difference between green and blue or red), making the result look especially "gray" compared to a color picture. An elegant solution to this is color-channel-based grayscale conversion, which can give you a picture with good contrasts even in cases like this.

To use this function, go to **Edit | Effects | Grayscale [Ctrl+G]** in a Browser window, or **Effects | Grayscale** in an Editor window. This window offers you several methods for converting to grayscale. They affect how the individual color channels will be processed:

- **Grayscale**—uses all channels in a fixed ratio that corresponds to the typical way that the human eye perceives light. This is a useful method for most photographs.

- **Desaturation**—this removes the color elements from the picture.

- **Advanced**—this uses a complicated conversion method. The results are comparable with the first method, but more demanding on your computer.

- **Average of channels**—the average value among all color channels is calculated for each pixel.

- **Maximum of channels**—this uses the color channel with the highest value.

- **Minimum of channels**—this uses the color channel with the lowest value.

- **Red channel**—this uses the red channel only.

- **Green channel**—this uses the green channel only.

- **Blue channel**—this uses the blue channel only.

- **Custom**—the channels are used in the ratio that you set under **Source channels**. This method gives the most opportunity to choose which elements should receive how much emphasis. Turning on **Normalize** will ensure that the sum of the percentages will be an even 100%.

Mix Channels

This effect changes a picture's tinting by assembling colors from the original color channels in a new relation to each other.

Work with RGB channels is especially useful when repairing defective pictures with misassembled channels, for advanced color balance adjustments, and for reconstructing the colors in infrared photographs. For infrared photography, due to extremely strong exposure of the red channel, we recommend conversion to black and white, or swapping of the red and blue channels, for a more natural feel.

To reach this window, use **Edit | Effects | Mix Channels...** in the Browser, or **Effects | Mix Channels** in the Editor.

The first three items in this window's **Channel** menu set what channel's output should be affected by the source channels listed below the menu. **Offset** gives a flat strengthening/weakening of the whole channel. Setting the channel to **Grayscale** switches the whole window into grayscale mode. Unlike the Grayscale function, it enables subtraction of individual color channels.

Gradient Map

Use this function to tint the picture towards a pair of colors of your choice. The input picture is first converted internally to grayscale. All output colors are mapped to shades in that "hidden" grayscale step.

You can reach this function using **Edit | Effects | Gradient Map** in the Browser, or **Effects | Gradient Map** in the Editor.

The darkest shades in the picture will receive the color on the left of the gradient; the lightest shades get the color on the right. You can set the endpoints of the gradient by clicking the buttons at the two ends of it. You can add other colors of your choice in the middle of the gradient. To do so, either double-click the gradient or click **Add**. To change a color on the inside of the gradient, select the marker for it and then click **Active**. You can also move the marker to a different place inside the gradient. Clicking **Erase** will erase the selected color from the gradient; **Erase All** will erase all colors inside the gradient, leaving only those at the two ends.

Custom

Very advanced users can use the custom filter to apply a customizable convolution matrix to a picture.

Use **Edit | Effects | Custom…** in the Browser or **Effects | Custom…** in the Editor to reach this function.

The principle behind this function is actually quite simple at its core. The matrix contains 5×5 coefficients, which set how the value of each individual pixel in the future picture will be calculated. Each coefficient multiplies the brightness of the given pixels during processing. The value stored directly in the middle of the matrix represents the value that is used directly for the given pixel itself. The other coefficients are used for processing this pixel's surroundings. For example, the coefficient at the top left is used to multiply the brightness of the pixel two pixels up and to the left from the given pixel; all 25 coefficients are used in a similar manner. The resulting values are summed together one by one, and then their sum is divided by the **Divisor** value. You can have its value **Set automatically** by the program to the sum of all coefficients. The **Shift** is then added to the result of the division, and the result is the final brightness value sent to the given pixel. The whole calculation is repeated for every pixel in the picture and for each of the three color channels.

The function's practical use depends on what matrix you use. For example, a high positive value in the middle and negative values in its immediate surroundings cause sharpening of a picture, doing the inverse blurs it. Using the Shift value, you can lighten or darken the whole picture by a specified amount.

Variations

Use the Variations function to edit a photo's brightness and tinting "visually"—by viewing variations of the current picture and picking the best one.

To reach this function, use **Effects | Variations** in the Editor.

The preview at the far left shows the original picture. Use the three pictures directly to its right to lighten and darken it. Use the six pictures to the right of those to change its tinting. The column for lightening and darkening includes the original for comparison. The hexagon for tinting also includes the original for comparison. To edit the picture's colors, click the preview with the new look that you desire. To return to the picture's original look without leaving the window, click the preview of the original.
Use the slider at the top right to change the effect's **Strength** to any of five levels from **Small** to **Large**.

Envelopes

You can find the Envelopes function under **Edit | Effects | Envelopes...**in the Browser, and under **Effects | Envelopes...** sets what path (folder) is shown when using the Editor's Save As... window.

Use Envelopes to give your photos stylish frames. These frames can have any of several dozen predefined shapes, such as hearts, bubbles, etc. Zoner Photo Studio can set the envelope's background color and the sharpness of the transition into the envelope. It can also do a "fading" crop into the envelope.

You can choose from several types of envelopes:

- **Black-and-white** and **Color Templates** —The photo will be "cropped" to fit the envelope (frame) you choose. You can move the envelope around the photo and resize it. The crop receives the color you set under **Color**. The borders can be made blurry, by increasing the value for **Blur**.

- **Postage Stamp** —Use this to add a postage stamp border that goes around the picture or fits into it. You can set the stamp's color, background color, and width, and a position and rotation for its shadow.

- **Puzzle** —Use this to divide a picture into puzzle pieces with a pen width, pen color, and percentage of missing pieces of your choice.

- **Filmstrip** —makes the picture look like a frame in a filmstrip.

- **Notebook paper** —makes the picture look like a piece of notebook paper.

Custom Envelopes

You can create your own envelopes in addition to the ones already provided. Envelopes "crop" pictures based on masks that are saved in one of the system folders of Zoner Photo Studio – the Envelopes folder. Black-and-white envelopes are defined using a GIF-format picture with a size of 1024 × 768 pixels and a preview (also in GIF format) with a size of 60 × 45 pixels. Color envelopes are defined using a picture in the PNG format, with alpha channel transparency, and another picture for the preview (also a PNG file), with the same sizes as above.

Give the files that make up your custom envelopes numeric filenames following the existing pattern in the Envelopes folder. Your envelopes will then automatically appear in the program's list of envelopes. Zoner Draw (a separate program also by Zoner Software) is one very good program for preparing custom envelopes. The Envelopes folder contains a sample Zoner Draw file (envelope.ZMF) to help you prepare custom black-and-white envelopes.

Borders

Fading Borders

If you want to "fade out" the edges of a picture, you can use **Edit | Effects | Fading Borders...**. In this window, you set either a single fade width for all sides (if the **Symmetrical** option is on) or set them separately for all four sides. The **Transparency** setting determines how strongly the picture will be made transparent at its borders. You can also set the color of the background that the picture will be placed upon.

Soft Shadow

The Soft Shadow effect makes pictures seem to float above a background. To reach this function, use **Edit | Effects | Soft Shadow**. You can set the horizontal and vertical offset for the shadow in pixels. The Blurring setting determines how strongly the edges of the shadow are matted. Transparency affects how the color obtained from mixing the **Shadow color** and **Background color** will be finalized.

3D Buttons

Use **Edit | Effects | 3D Buttons...** to reach this window, where you can make pictures look like buttons by lightening/darkening their edges. These buttons will have a 3D look.

Cartoon

Use this filter to make a picture look like a cartoon. It detects and emphasizes the picture's main outlines, and suppresses the rest.

When applying this effect, the program first smooths the picture - how strongly depends on the **Smoothness**. Then it redraws the picture's major contours, using lines with the requested **Thickness**. To control how intensely lines are added to the picture, adjust the **Strength**.

High pass

High Pass is similar to the frequency filters used in electronics. Its purpose is to eliminate low frequencies while keeping higher ones. The result is a final image where high-contrast areas are kept as-is, while the rest is replaced with 50% gray. How this basic effect is harnessed depends on the **Mode**.

Radius sets how extent to this the filter is applied to nearby pixels. Raise this value to make contours more visible. The ideal value here depends on the picture's resolution.

Switch the **Mode** to **Overlay** to make this filter increase local contrast depending on the Radius.

The **Soft light** mode, meanwhile, emphasizes the picture's details.

The **Normal** mode simply displays the high pass output, where low-contrast areas are replaced with 50% gray.

Plug-In Modules

To use plug-ins compatible with Adobe Photoshop (8bf plug-ins) within Zoner Photo Studio, use the Editor's Plug-ins menu. Plug-ins are external picture processing "filters"—functions—that you can use on the current picture.

Zoner Photo Studio does not include these plug-ins, but both free and commercial plug-ins are available on the Web. To find free plug-ins on the Web, do a Web search for e.g. "free 8bf."

Editing the Selection Border

To reach the Editor's functions for editing the selection border, visit the menu named **Selection.** The selected part of a picture lies within a border (normally shown as an animated dashed line). You can copy the selected part of a picture to the Windows Clipboard and then paste it into another picture. Most of the Editor's tools, filters, and effects work with the selected part of a picture. If there is no selection, they affect the whole picture.

Besides the commands for editing the selection border there are also several others here:

Edit Selection

There are several things you can do with a selection: **stretch it/shrink it,** give the selection outline an emphasized **border** with a size of your choice**,** or **blur** the selection; this is good for "softening" the selection borders. Enter the numbers for these settings as numbers of pixels. When **Automatic Preview** mode is active (the padlock icon), changes are previewed immediately.

Displaying the Mask And the Selection Border

The "Mask" used in Zoner Photo Studio is simply one way of displaying the selection - the Editing Layer. To adjust the mask display settings, use the items under **Selection | Mask Display** or use the toolbar named **Mask**. Youcan choose among several different ways of showing the mask:

- **Do not show** - no selection mask is shown at all

- **Normal** - the unselected part of the picture is covered in a red mask

- **Inverted** - the selected part of the picture is covered in a blue mask

- **Mask Only** - only the selection itself is displayed, in black and white. White indicates the selected part of the picture; black indicates the unselected part; grays indicate selection blurring.

Use **Show Selection Outline** to hide or show the selection border. This can be useful when, for example, previewing the output of editing tools full-screen in the Editor. The mask display and selection outline settings return to their default settings when you move to a different picture: that is, the mask is not shown and the selection outline is visible.

Framing the Selection Border

Use **Selection | Border** to fill the border of the selected part of a picture with a **Color** of your choice, in a way defined by the **Mode** and **Opacity**. You can also set the pen **Width** and its **Position.**

Fill Selection

Use **Selection | Fill** to fill the selected part of a picture with a **Color** of your choice, in a way defined by the **Mode** and **Opacity**.

Fill with Surroundings

Removing an unwanted object from a picture can be a relatively demanding and time-consuming process, requiring

the use of multiple tools, and with no guarantee of a satisfactory result. Use the **Fill with Surroundings** tool to make Zoner Photo Studio attempt to remove an object automatically, thus avoiding this tedious process. Create a selection containing the material to be retouched out of the picture, then press **[Shift+Delete]**. This function fills the selected area with fragments based on the picture, making the area blend with its surroundings as well as possible. Because the algorithm for filling in an area has high processing demands, this function is recommended for small areas only. When a large area is selected, especially in a high-definition image, the process can be extremely slow.

Save Selection

This saves the current selection (to PNG by default) so that you can later read it back in using **Load Selection**.

Load Selection

This loads in a selection (not its contents!) from a file. You can add the loaded selection with the current one, subtract it, or use its intersection. You can also set its position in the picture.

The Editing Layer

The Editing Layer

Most edits and effects in the Editor, as well as "placed" text, pictures, symbols, shapes, and lines, and the Gradient Filter, "float" on what is called the **Editing Layer**. When the Editing Layer is active, use selections to set the area where the effect, or placed material, is actually visible. To edit selections, use the selection tools. Set key attributes of the Editing Layer, **Opacity** and the **Layer Mode** using the controls in the toolbar named **Layer**. Opacity sets how strongly (in percent) the Editing Layer covers up the original picture. The Layer's Mode sets how the Layer's contents are integrated into the original picture; 20 modes are available.

You can adjust the settings for the effect or tool you are applying, for the selection itself, and for the Editing Layer all at the same time, with the changes previewed nonstop in the Editor.

Use the **Apply** and **Cancel** buttons on the toolbar or in the Side Panel to control how the tool or effect is applied. You cannot change Editing Layer settings after you click Apply.

Effects

When using the "Place" tools (Place Image, etc.), you can apply various effects to the Editing Layer. To show the effect settings window, use **Layer | Effects...** in the Editor or in the Side Panel: use the button in the group named **Effects**. You can change effect settings for as long as the Editing Layer is active. Once you click Apply, these settings cannot be changed.

The following effects are available:

- Shadow

- Inner Shadow

- Outer Glow

- Inner Glow

- Outline

- Bevel and Emboss

- Satin

- Color Overlay

- Gradient Overlay

To save effect settings and later reload them, use the **Presets** buttons at the bottom of the window. For the tools that make use of the Editing Layer (these tools are Place Image, Place Text, Place Symbol, and Place Line), the Side Panel shows previews of effect presets. Click these previews to instantly apply them.

Transparency in the Editor

The Editor supports transparency stored within pictures in these formats: **PNG**, **GIF**, **TIFF** , and **JXR**. To ease your work with transparency, the program shows it as a gray-and-white checkerboard.

Applying And Removing Transparency

To apply transparency to a selected part of a picture, use **Layer | Set Transparency**. If needed, set the degree of transparency in percent. To quickly set the transparency for the selected part of the picture to 100%, press **[Del]** . To "draw" transparency onto the picture, use the <u>Eraser</u>.

To remove all transparency from a picture, use **Layer | Remove Transparency...**. You can set the background color to use as a replacement for the transparency.

Saving Files with Transparency

When saving files with transparency, you can **Keep Transparency** for formats that support it. In other formats, to set the color with which to replace transparency, use **Replace transparency with this color:**.

Universal Window for Editing Functions

Zoner displays most editing functions in one single interface, that is, one single way of presenting controls to you. This interface is presented in one of two fundamentally-different ways, depending on which of the program's modules (main parts) you are using when you access a function. When you access it from the Manager, this interface is shown via a window. When you access it from the Editor, the interface "loses" its preview areas (your changes are previewed right inside the picture), and it is displayed in the <u>Side Panel</u>.
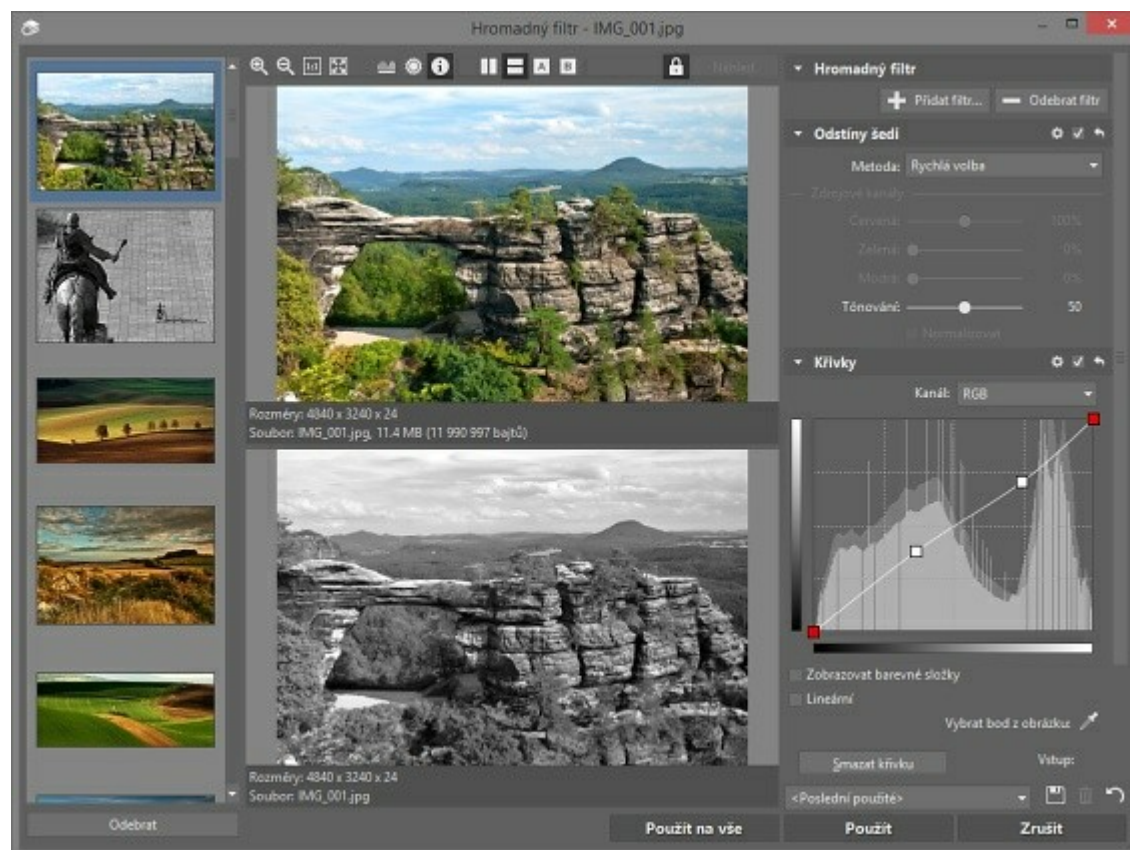
The Filter Window in the Browser

The top part of the window contains a toolbar with buttons for changing the preview's zoom level and for showing/ hiding a histogram, over/underexposure ("blowout") highlighting, and file information, as well as for changing the preview layout. Histogram displays can be moved around freely within previews.

Image previews occupy most of the filter window. By default, both "before" and "after" previews are displayed side by side, but you can also choose a vertical layout, or hide the "before" or "after" preview. Click the mouse wheel to temporarily show the contents of one preview within the other preview.

When a picture's preview is zoomed in far enough that it does not fit inside its preview pane, click and drag it to set which part of it is shown. The sizes of the preview panes change depending on the size of the window. That is, resizing the window also resizes the previews.

When a filter window includes one or more eyedropper buttons, you can click an eyedropper button and then select a color from inside a preview.

If slow refreshing of the previews is slowing down your work, then turn off **Automatic Preview** (using the "lock" button) and then manually refresh preview panes as needed by clicking **Preview**. The "Outdated Preview" text displayed over a preview pane with a "stale" preview disappears as soon as you do a manual refresh.

When you leave any filter window, its size is stored, as well as the settings for blowout and histogram display and for **Automatic Preview**. Thus the "universal" parts of the window will look the same on your next visit. The remaining settings are stored separately for each editing filter.

Using Filters from the Editor

The Editor automatically previews the results of editing filters you use, right inside the picture. In this previewing mode, the Editor is partially blocked—you can only resize the Editor, change its display (the zoom level and blowout and histogram displays), and edit the selection mask.

All of a given filter's options are shown in the Side Panel. The bottom of the Panel contains **Apply** and **Cancel** buttons. Click these to make the filter's effect permanent, or to cancel out of it. Click the button next to these two to quickly show how the picture looks without the filter.

Batch Operations

During batch operations (editing of more than one file at a time), the filter window contains a column on the left with thumbnails for all of the files that the edit will affect. You can browse among these thumbnails so as to "test" how the edit in question affects them. To remove a picture from the list of pictures to process, click its thumbnail and then click Remove. To apply an edit to the active picture only, click Apply. To apply it to all pictures in the batch, click Apply to All. Click Cancel to cancel the whole batch operation.

Saving Filter Settings as Presets

You can save the settings for any filter as a preset with a name of your choice and later reload that preset (that set of settings). Additionally, whenever you apply an edit, the settings you use are automatically saved to a preset named **<Last used>**. The settings stored in the <Last used> preset are automatically loaded in the next time you use the given editing window. Use **Save Preset** and **Delete** to create and manage presets. You can have as many as you wish. Click **Default Preset** to quickly load the preset named **<Default>**, which contains the given filter's "factory settings."

To import and export presets, visit **Settings | Presets Manager...**

The Editor's View Menu

When displaying a multi-page TIFF or ZMF file, the Editor can show any of the pages within it. You can move among pages using **View | Previous Page [Ctrl+Page Up]** and **Next Page [Ctrl+Page Down]**.

Show Blowout

To highlight blowout (overexposed regions) and underexposed regions in the current picture, use **View | Show**

Blowout [Shift+O].

In regions with blowout, one or all color elements have reached their maximum values. No room to go higher means no room for variation, so regions with blowout lack detail. Overexposure is actually not the only cause of blowout; it actually also affects regions with strong light sources, like the sun or a fire. Blowout does not automatically mean a bad photo, though multiple and large regions with blowout do mean a bad photo. In some places, blowout is inevitable (e.g. reflections off of shiny objects). Blowout highlighting is informational only. It makes no sense to, for example, darken a photo just so that Zoner Photo Studio stops highlighting blowout in it: the detail has already been lost, so darkening won't restore it.

Zoner Photo Studio can highlight eight different types of blowout: blowout in the R, G, and B channels, combined RG, RB, and GB, RGB (places where all three elements have blowout), and summary blowout, where even though there is no blowout in the individual channels, their sum exceeds a certain threshold. You can choose to have places without blowout be displayed in grayscale or in color. Places with blowout are shown in saturated colors representing the affected channels: red for R, green for G, blue for B, yellow for RG, purple for RB, cyan for GB, and bright yellow for RGB. Summary blowout is displayed in medium yellow.

Zoner Photo Studio can also call attention to underexposed areas - overly dark places lacking detail. These places are displayed in bright sky blue.

You can change how blowout is highlighted using**Preferences | Other | Display of blowout and underexposure**. For more on this, see the topic about the "Other" section of the program preferences.

Show Histogram

Use **View | Histogram [Ctrl+H]** to show an undocked Histogram window inside the main Editor window. This window can be repositioned. Right-click over the histogram window to show a menu that you can use to resize the window and change the histogram's appearance.

Pre-Print Color Preview

Use **View | Pre-Print Color Preview [Shift+P]** only when you have turned on color management (**Settings | Preferences | Color Management | Use color management**) and selected a printer profile: it is only useful in this situation. This function translates the picture into the color profile that the printer would apply during printing, and displays the result on-screen.

Show Focus Points

Use **View | Show Focus Points [Ctrl+Shift+O]** to see the places in the photo that were selected as focus points at the moment when the camera trigger was pressed. This function is only available for pictures from Canon and Nikon cameras, and only works correctly on unmodified photos.

> **The Show Blowout, Pre-Print Color Preview, and Show Focus Points options have one important thing in common. They only change the way the picture looks on-screen. For all other purposes (e.g. when saving), the program works with the original source picture. Also, these functions turn off automatically when you switch among pictures.**

Lossy JPEG Compression and Lossless Operations

JPEG compression, defined by an ISO norm in 1990, was developed for the purpose of efficient storage of photographic data. Lossy compression (such as JPEG) takes advantage of the human eye's imperfection and stores data with a certain loss of information, thanks to which it achieves much higher compression than lossless compression does. The mentioned imperfections include for example a greater sensitivity towards large changes than fine details, and towards brightness changes than color changes. JPEG takes advantage of this to reduce the size of color information by recalculating color channels to a lower resolution (subsampling). The amount of detail preserved by JPEG is configurable, and is measured by a "quality level" on various scales; Zoner Photo Studio uses a scale from 1 to 100. Higher values mean less distortion and a larger output file. Smaller values mean more distortion and a smaller output file. JPEG compression settings affect only the picture's quality and file size. Its size in pixels remains unchanged.

Choose compression levels based on how you plan for the picture to be used. Use values from 30 to 60 to maximize size saving. Use values from 70 to 80 for usual purposes, e.g. for pictures published on the Internet. Use values from 80 to 100 for desktop publishing. Although higher values give more detail, this relationship is not linear. Values above 90 give nearly imperceptible improvements while markedly increasing file sizes.

Because of rounding errors in calculations, and in some cases due to color subsampling, JPEG compression causes quality less even when you use a quality value of 100. Therefore, JPEG compression is inappropriate for pictures that require absolute precision (pen drawings, line drawings, etc.). However, for photographs, it is invaluable, since with proper settings, the changes to a picture are imperceptible. The JPEG Group also created an ISO standard for lossless JPEG compression, but this standard is unused. It is outdated today, since the more modern PNG standard generally gives better results than lossless JPEG.

Lossless Operations

It is sometimes necessary to rotate pictures because they were taken in portrait orientation (with the camera turned on its side). Every time you open, edit, and resave a picture with JPEG compression, some detail is lost. Therefore, Zoner Photo Studio enables lossless transformations wherever possible, that is, for mirroring pictures and for rotating them by 90 degrees.

Lossless transformations are only possible for those JPEG images that have both dimensions divisible by a number that can in turn by obtained by multiplying the basic JPEG-block size (8) and the color channel sampling values (1 or 2). This number determines the size of the blocks used for performing JPEG compression. The typical samplings are 2:1 in both directions, or 2:1 in the horizontal direction only. Typical block dimensions are 16 × 16, 16 × 8 and 8 × 8. Cameras normally produce photos with dimensions that are multiples of these values, and thus for uncropped, unresized photos, the above-mentioned transformations are always lossless in Zoner Photo Studio .
The program's behavior when these transformations are performed on photos whose sizes do not meet this requirement depends on a setting in Settings | Preferences | General: either the picture is cropped to meet the requirement, or the transformation is lossy rather than lossless.

> **Lossless transformations are only possible for operations performed from the Browser.**
> **By its nature, work in the Editor involves decompressing a picture and then recompressing it before saving.**

To eliminate unneeded quality losses when resaving in the Editor, use high JPEG compression quality values such as 90 to 95. To set what values are used automatically, use Settings | Preferences | General To set the value manually while saving, use "Save As" and then the control offered during the saving process. To avoid quality loss altogether, use a format with lossless compression, like PNG or TIFF. If you need support for EXIF picture information, do not use PNG: it does not support it.

Editor Tools

Use the mouse-based tools in the Editor for precise, visual edits to individual pictures. These tools are in the Editor's vertical toolbar - the Toolbox. Activating a tool makes the Side Panel display options and settings appropriate for that tool. One tool, no more and no less, is always active at a time. When you close the Editor and open it again, the same tool is active as when you closed it.

The tools can be displayed in either one or two columns. To switch between one and two columns, use the toolbar's right-click menu. If some tools do not fit in the toolbar because it is not tall enough, click the arrow symbol at the toolbar's bottom to display them.

The Editor Tools and Their Shortcuts

Quick Edits	Q	
Quick Filters	Shift+K	
Filters	F	
Zoom	Z	
Panning	P	
Crop	C	

Alignment Tools

Align Horizon	H
Edit Collinearity	K
Perspective	V

Deformation Tools

The Morphing Mesh	X
Deform	Shift+X

Selection Tools

Rectangular Selection	M
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Magic Wand	W
Selection Brush	Shift+Q

Retouching and Drawing Tools

Red Eye Reduction	R
Clone Stamp	S
Iron	U
Effect Brush	E
Healing Brush	J
Paintbrush	B
Fill	G
Eraser	Y

Tools for Placing Objects And for Effects

Place Image	I
Place Text	T
Insert Symbol	Shift+T
Place Shape	Shift+S
Place Line	D
Gradient Filter	Shift+G
Tilt-shift Effect	Shift+F
Lens Flare	Shift+R
Droste Effect	Shift+D

The Pan and Zoom Tools

Zoom

Use **Zoom [Z]** to zoom in or out of the picture. To conveniently zoom via keyboard shortcuts; use: **[Num +]** and **[Num -]** for zooming in and out, **[Num *]** for 1:1 scale (100% zoom), **[Num 0]** to fit the whole picture on screen, **[Num .]** to fit only the "short side" (the side easier to fit) on screen, and **[Num /]** for zoom lock. The mouse wheel can also be used to zoom; for this, rotate it while holding down **[Ctrl]**.

To temporarily switch to the Zoom tool while another tool is active, hold down **[Ctrl+Space]**.

Zoom Lock works as follows: when you move among pictures using the Editor's Next, Previous, First, and Last File functions, the zoom level stays the same. The lock turns off when you open a new Editor window.

Panning

Use **Panning [P]** to shift (pan) the image around the screen if it is larger than the screen. To pan without using this tool, hold down **[Space]** or wheel-click the mouse and then drag. You can also simply pan using the arrow keys.

The Crop Tool

Crop

To crop a picture, use the Editor. It contains the **Crop tool [C]**, which you can find in the Editor's main toolbar, the one that runs down the left side. Activate this tool, then draw out (or lay down - see below) the cropping rectangle, and then perform the crop. An easy way to do so is to click **Crop**. If you have right-click menus active in the Editor (using the Editor preferences), then you can crop using an item in the right-click menu. If not, then right-clicking crops immediately.

> Digital and film photography use different ratios of sides: 4:3 vs. 3:2. And the ratios of sides in most professional photo prints are still 3:2 to this day. When you are preparing to send photos out for professional printing, e.g. to a photo lab, you will usually want the pictures they receive to have the same ratios of sides as the paper they will be using. Otherwise, they will have to either crop the photos themselves (quickly, blindly, and badly) or give them white borders.

You can force the cropping rectangle to have a fixed ratio of sides, or even an entirely fixed size. The fixed ratios of sides are, above all, an easy way to crop to the 3:2 ratio discussed above. Fixed sizes are good for things like desktop wallpapers. Several frequently useful ratios and sizes are provided in a drop-down list on the options toolbar - the one whose contents change depending on which tool you are using. The **Free Aspect** for this. **Current Aspect** matches the ratio of the cropped picture itself. Turn on **Fixed Aspect** to set a fixed ratio of your choice using the toolbar. As always with fixed ratios, this means in practice that as you draw out one side of the rectangle, the other will change to match. Turn on **Fixed Size** to enter your own choice of fixed size using the toolbar. Use the last option, **Settings...** to open a window for such work.

Click **Swap Values** (the toolbar button between the two size or ratio boxes) or press the **[`]** key (under **[Esc]**), the values in the two boxes switch places, turning your Portrait crop into a Landscape one or vice-versa.

If you turn on the **Snap to edges**option, then the relevant edge of the cropping rectangle will "snap" to any significant edges detected in the picture as you go about sizing or moving it. You can temporarily turn snapping on or off by holding down **[Alt]**.

If you press **[Ctrl+A]** and you are not using a fixed aspect or size, the cropping frame will immediately stretch out to cover the whole picture. When you are using a fixed ratio, the cropping frame will only stretch out to occupy the largest possible area that it can before hitting an edge. That can be a problem if your picture has a Portrait orientation while your cropping frame is Landscape, or vice-versa. Although you can swap the crop's ratio of sides, this inefficient when you are trying to crop many pictures in a row. Press **[Shift+A]** to stretch the cropping frame to the largest size supported by your chosen fixed aspect, even if it needs to swap the sides to reach that size.

Red Eye Reduction Tool

👁 Red Eye Reduction

There is a tool in the Editor dedicated to red eye reduction. To start using it, click the **Red Eye Reduction [R]** button in the main toolbar.

This tool offers three modes.

In **Remove Red Eye** mode, you can just click on the red part of an eye, and the program will automatically find the borders of the red region and perform the correction. Use the **Remove White Eye** mode when you encounter extremely strong flash reflections (especially common in the dark) and eyes in the picture are unnaturally shining.

You can change reduction settings in the toolbar even after you have clicked on an eye. The changes will immediately be reflected in the picture itself.

In **Remove Using Brush** mode, you give a brush size via the toolbar, and then you repair the eye area by "painting" on it. If you paint in the wrong place, just undo your steps: **Edit | Undo [Ctrl+Z].** Red eye reduction work in general goes best when you are zoomed in on a picture.

You can also work in **Advanced** mode. In this mode, you can choose a different problem color than red or white; just use the eyedropper to pick it out. This is useful for animal-eye problems.

In the options toolbar, you can set the tool's **Radius** , its color **Tolerance**, **Darkening** of the retouched area, **Blurring**, and the tool's **Extent**. You can use a tablet with this tool just like with the other retouching tools.

The Retouching Tools

⬇ The Clone Stamp

Use the clone stamp to "paint" one part of a picture onto another. Usually you will be doing this because you want to cover up something using a background texture from some area with a similar background, but no foreground. Some typical things covered up this way are telephone wires and pimples.

The Clone Stamp [S] is on the Editor toolbar.

After activating the tool, press and hold down the **[Ctrl]** key (the mouse cursor changes to a crosshairs) to set the source area for cloning. After that, the tool will start cloning the source area ("painting" with it) wherever you click or drag with it. The **Radius** sets how large an area of the picture is transferred, **Opacity** is the maximum allowed amount of transfer (achieved by repeatedly using the tool over the same part of the picture), **Density** is the amount of the picture applied during one use of the effect over a part of the picture. In **Aligned** mode, the source area will always move with the target area. When this mode is off, the source will always return to the original point when you let go of the mouse button and then start "painting" again.

Spacing sets how often the tool should be applied. You set it as a percent of the brush size. Thus with small values, the tool will be applied during even the tiniest motion of the mouse, while with a value of 100%, it will be applied only once per full brush length.

Blur The Blur value sets how the tool will behave at the brush edges.

Use the **Mode** to set how the cloned part of the picture blends into the original picture.

⬒ Iron

Use the Iron to iron out fine details, like in portrait photography. To activate it, use the toolbar button named **Iron [U]**.

The settings for **Radius**, **Opacity**, **Density, Blur** and **Spacing** work the same as they do for the other tools, e.g. the Clone Stamp. The **Smoothing** setting determines the effect's strength.

✎ Effect Brush

Use the Effect Brush tool to "paint on" local picture edits. To activate it, use the toolbar button named **Effect Brush [E]**.

What precisely this tool does at a given moment depends on which **Effect**: option you have set: brightness, gamma, contrast, saturation, or sharpening. It also depends on your setting for **Strength**. The other settings, like **Radius**, **Opacity**, **Density, Blur** and **Spacing** work the same as they do for the other tools, e.g. the Clone Stamp.

Healing Brush

Use the **Healing Brush** to remove minor scratches and distracting spots and replace them with material from the healthy, "clean" part of the picture. Work with this tool as you would with the **Clone Stamp** while keeping in mind that this tool does not transfer the source region itself, but just its texture, which is adapted to the target area as you apply it.

Tablet Support

Zoner Photo Studio supports work with a tablet for all of its retouching tools. Once your tablet is properly installed and connected, a tablet icon will appear in options toolbar in the Editor. Clicking it will open a window where you can ask the program to vary one option based on the pen pressure that the tablet measures as you draw. The options you can affect using pen pressure are as follows: **Radius**, **Opacity**, **Density**, **Blur** , and**Spacing**. Of course, all this only apply if the current tool actually has the given option.

> **Note that for technical reasons, only one program in Windows at a time can work with pen pressure on a tablet.**
> **If Zoner Photo Studio is not reacting to pen pressure, check to see if any other pressure-sensitive programs are running. If they are, close them, and then restart the Editor.**

Alignment Tools

Align Horizon

The Editor has a dedicated tool for aligning horizons. To activate this tool, use **Align Horizon [H]**. In the past, you may have fixed tilted horizons using rotation and trial and error. However, trying to arrive by guesswork at how many degrees to rotate a photo leads to wasted time and poor results. In Zoner Photo Studio you simply line up a guideline against the real horizon, and the program takes care of the rest.

When you activate this tool, a guideline with two handles will appear. Line it up against the real horizon, or even against a vertical like a flagpole if you prefer - simply anything that can be used to remove the tilt from the picture. Then click **Apply**. You can also right-click instead. Use **Snap to edges** if you want this tool to auto-detect significant edges in your picture and to "jump" to them on its own. You can temporarily turn snapping on or off by holding down **[Alt]**. **Auto crop** makes the program automatically crop away the empty areas that appear after fixing perspective.

Use **Grid** option turns on display of a grid that can help you find the best rotation for the picture.

Collinearity

To adjust collinearity, that is, to eliminate "tumbling" lines, use the tool named **Collinearity [K]**. Use this tool to remove collinearity problems in e.g. photos of buildings, where the effect of perspective causes the building in the picture to narrow (to recede).

When you activate this tool, two vertical lines are shown in the picture. Click and drag to lay these lines along the edges of the object to be straightened out, then click **Apply**. You can also right-click instead. To adjust collinearity, the program must deform the picture. Thus it will need cropping after the fix. For minor edits, the Auto crop option will suffice for this. Use **Snap to edges** if you want this tool to auto-detect significant edges in your picture and to "jump" to them on its own. You can temporarily turn snapping on or off by holding down **[Alt]**. **Auto crop** makes the program automatically crop away the empty areas that appear after fixing perspective.

Perspective

Perspective editing is basically collinearity editing in two dimensions at once. To activate this tool, use **Perspective [V]**. This tool is an easy way to straighten up e.g. photos of signs.

When you activate this tool, a rectangle is shown in the picture. Click and drag the corners of this rectangle to

match the corners of the object to be straightened out, and then click Apply. **Apply**. You can also instead finish the straightening by right-clicking or using a right-click menu. To adjust perspective, the program must deform the picture. Thus it will need cropping after the fix. For minor edits, the Auto crop option will suffice for this. Use **Snap to edges** if you want this tool to auto-detect significant edges in your picture and to "jump" to them on its own. You can temporarily turn snapping on or off by holding down **[Alt]**. **Auto crop** makes the program automatically crop away the empty areas that appear after fixing perspective.

Deformation tools

![icon] The Morphing Mesh

Use the Morphing Mesh to distort a picture, or to straighten out an already distorted picture.

Click **Create Mesh...** on the options toolbar (below the menus) to make the Morphing Mesh appear atop your picture. The mesh is represented as a grid of points; you move the points to adjust the mesh. The picture under the network "liquefies" and reacts to deformations of the mesh. To add a point (a node) to the mesh, double-click on the place where you want to add the point. To remove a point, select it and click **Remove Point** on the options toolbar. To remove the entire morphing mesh, click **Remove Mesh**. However, this only removes the mesh, not the deformation that it caused.

![icon] Deform

The Deform tool works similarly to the Morphing Mesh, but for this tool, it is not necessary to work with a mesh. Move the mouse cursor over the picture, click, and drag to locally deform the image.

Use the **Strength** setting to set the strength of the transformation; use **Radius** to set how much of the cursor's surroundings are affected by the tool. Other deformations besides shifting are available; to choose the type of deformation, use **Effect**. Unlike for shifting, these types of deformation do not require click-and-drag. Just click and hold down the left mouse button over a spot to repeatedly apply the selected effect to it. One effect is different from the others: **Restore**. Use it to gradually undo deformation, locally restoring the original.

The Paintbrush, Fill, and Eraser Tools

![icon] Paintbrush

Use the Paintbrush tool to paint color onto a picture. The most basic option for this tool is the brush color. You can change it by clicking the colored rectangle (this calls up a color mixing window) or using the eyedropper to choose a color from the picture itself. The other settings, like **Radius**, **Opacity**, **Density, Blur** and **Spacing** work the same as they do for other tools, e.g. the Clone Stamp. Use the **Mode** to set how the color painted on by the brush blends into the original picture.

![icon] Fill

Use the Fill tool to set an area to fill with a color of your choice. The program sets the fill area based on its similarity to the spot you click. Similarity is checked based on your settings for **Comparison mode** (**RGB, Brightness,** or **Hue**) and based on your setting for **Tolerance.** The **Continuous** option determines whether the fill will "spill" out into all similarly-colored areas in the whole picture, or just one continuous area. To use the tool, click on a spot within the similarly-colored area that you want to fill in with the fill color.

![icon] Eraser

Use the Eraser to erase part of the picture. The settings for **Radius**, **Opacity**, **Density, Blur** and **Spacing** work the same as they do for other tools, e.g. the Clone Stamp. The erased part of the picture becomes transparent. For more information on transparency, see [Transparency in the Editor](#).

Creating a Selection

There are several Editor tools for **creating a selection**, a part of a picture to which the program's edits and effects should be applied. You can also copy the selection and paste it into another picture.

A selection can take on any form from a simple rectangle to a collection of areas as complicated as you would like. You can compose a selection using any combination of the selection tools.

The selection process always has a "selection mode" that affects how your actions affect the selection. It starts in "normal" mode. **Normal** Normal mode creates a new selection each time you drag out a rectangle, click the magic wand, etc. Use the options toolbar button named **Add to Selection** if you want your new selection(s) to instead be added to the existing one. To just enter this mode temporarily, hold down **[Shift]**. (A plus sign will appear by the mouse cursor.) If you want to do the opposite - to subtract your new selection(s) from the existing one - turn on **Remove from Selection** or hold down **[Ctrl]** during your work. (A minus sign will appear by the mouse cursor.) Mode **Intersection** or hold down **[Ctrl]** and whether or not to **[Shift]** while making the new selections. (An x will appear by the mouse cursor.)

The **Blur** control on the options toolbar for all these tools sets how edits will behave when they reach the edges of the selection: with a blurred border, effects will gradually lose intensity - "fade" - towards the edge. Click **Invert** or pressing **[Ctrl+Shift+I]** deselects all selected areas of the picture and vice versa. Use the **Antialiasing** option antialiases (smooths) the edges of non-rectangular selections.

You can erase your whole selection by pressing **[Esc]**.

Rectangular Selection

To activate the Rectangular Selection tool, use the Editor's **Selection | Rectangular Selection [M]** command or the toolbar button. Use this tool to select areas that can easily be defined using one or more rectangles. After activating the tool, you click and drag out a rectangle to make the selection. If you hold down **[Shift]** while making your selection, it will be a square. If you hold down **[Ctrl]** then clicking will set the center of the rectangle rather than its top left corner.

Elliptical Selection

To activate the Elliptical Selection tool, use the Editor's **Selection | Elliptical Selection [O]** command or the toolbar button. Use this tool to select areas that can easily be defined using one or more ellipses. After activating the tool, you click and drag out an ellipse to make the selection. If you hold down **[Shift]** while making your selection, it will be a circle. If you hold down **[Ctrl]** then clicking will set the center of the ellipse rather than the top left corner of the rectangle that contains it.

Lasso

Use the Lasso tool to enclose a complex area by hand. To activate the Lasso tool, use the Editor's **Selection | Lasso [L]** command or the toolbar button. After activating the tool, you click and drag with the mouse to enclose the desired area. If you do not enclose it completely, the program will add a straight line between the starting and ending points to finish the job.

Polygonal Lasso

Use the Polygonal Lasso tool to select any area that you can easily enclose using a collection of straight lines. To activate this tool, use the Editor's **Selection | Polygonal Lasso [N]** command or the toolbar button.. After activating the tool, click in the picture and then gradually "click around" the desired area. If you ever want to undo your last click, press **[Backspace]** or **[Delete].** To finish the enclosing shape—the polygon—you can either double-click or just use a single-click that is close enough to the starting point. (The mouse cursor will change when you are close enough.) When you hold down **[Alt]** while selecting, you will temporarily switch from the polygonal lasso to the magnetic lasso.

Magnetic Lasso

Use the Magnetic Lasso tool to select complex areas that contain parts of a picture with clearly defined edges: those with a high contrast between the two sides of the edge. The program will seek such edges and automatically

snap the selection to them. To activate this tool, use the Editor's **Selection | Magnetic Lasso [A]** command or the toolbar button. Your actual workflow with this tool is the same as with the polygonal lasso. Use the **Sensitivity** option sets how far away from your lines the program should look for edges in the picture. The **Line smoothing** option affects the shape of the selection line; higher values give a "smoother" line, but may also make it poorly copy complex edges. If you hold down **[Alt]** then you will temporarily switch to the polygonal lasso.

Magic Wand

To activate this tool, use the Editor's **Selection | Magic Wand [W]** command or the toolbar button. Use the Magic Wand to select areas similar to the place where you click. Similarity is checked based on your settings for **Comparison mode** (**RGB, Brightness,** or **Hue**) and based on your setting for **Tolerance.** Use the **Continuous** option determines whether the selection will "spill" out into all similarly-colored areas in the whole picture, or just one continuous area. To use the tool, click on a spot within the similarly-colored area that you want to select.

Selection Brush

Use the **Selection Brush [Shift+Q]** to create a selection by "painting" it. The settings are similar as for the Paintbrush tool—you can set the **Radius**, **Density**, **Blur** , and **Spacing.** This tool offers two modes—one for adding to, and one for subtracting from the selection. To switch modes, use the buttons in the Options toolbar. To temporarily switch modes during your work, press and hold down **[Ctrl]**. To quickly check which mode you are in, look for the "+" or "-" by the mouse cursor.

Placing Pictures, Text, And Symbols

Place Image

Use this tool to place (to paste) a picture, or just a copied part of a picture, inside the picture open in the Editor.

To paste just part of a picture, select that part in any Editor tab using the selection tools, and then press **[Ctrl+C]** to copy it. To paste, use **[Ctrl+V]**. The **Place Image [I]** tool then activates just as if you have clicked the toolbar button. Work with this tool is like work with the Editing Layer. When you are using this tool, the Side Panel also offers a button for pasting a picture from a file.

Set the area in the picture where the placed material will go, and set its **Transparency** and/or use**Blur edges** to blur the edges of that area, and then confirm by clicking **Apply** or by right-clicking in the picture. To remove the Editing Layer and cancel pasting, click **Cancel** or press **[Esc]**. Use the Side Panel to modify the placed picture with various Edit Effects.

Place Text

Use **Place Text [T]** to activate the text placement tool. Then click to set the top left corner of the text frame. The text frame behaves as an Editing Layer. TheSide Panel shows settings for this tool. Use it to enter your desired **Text.** To use picture information as a part of, or all of, the text, use Variable Text. The window includes controls for setting the text's **Font**, **Size**, **Line Spacing**, and optionally a **Background**, which can have a **Color** and/or**Opacity**. There are also three buttons for typical text decorations: **Bold**, **Italic**, **Underline**.

For multi-line text, there are three buttons to set its alignment: **Left**, **Center**, **Right** . Use **Print quality** to configure or turn off anti-aliasing, that is, smoothing of the text's edges.

Use the Layer section to set the text's **Transparency** and the layer mode. To actually paste the text, click **Apply** – this merges the Editing Layer into the picture. To cancel the pasting of the text and remove the Editing Layer, click the **Cancel** button. To restore the original font and alignment presets, click the **Default** button. To add a configurable shadow, etc. to the pasted text, click Edit Effects....

Place Symbol

Use **Place Symbol [Shift+T]** to place a symbol in the picture. This works very similarly to Place Text. TheSide Panel shows settings for this tool, including these options:

- **Last Symbols Used**

- **Symbol groups** —e.g. arrows, mathematical symbols, etc. The symbols displayed are organized by font.

- **All Symbols** —all available symbols are displayed. The symbols displayed are organized by font.

- **Individual symbol fonts** — only symbols available in the selected font are displayed.

The available choice of symbols depends on the fonts you have installed in Windows. To give a placed symbol e.g. a shadow, click Edit Effects.

Place Shape

Use **Place Shape [Shift+S]** to insert a frame with a shape of your choice. Click and drag to set the location and size of the frame, and the positions of the shape's guidepoints. The Side Panel shows settings for this tool, including **Shape**, **Pen Color**, **Opacity**, **Pen width**, **Fill color** and/or use **Opacity**. For line-type shapes, there are also settings available for the **Line ending**. To add a configurable shadow, etc. to the shape, click Edit Effects....

Place Line

Use **Place Line [D]** to insert an Editing Layer frame containing a customizable line, which need not be straight. (Use nodes to set where and how it changes directions.) Use the mouse to add, reposition, and select nodes on the line. Press **[Insert]** to add a new node after the selected node. Press **[Delete]** or **[Backspace]** on a selected node to remove it. The Side Panel shows settings for **the Pen (outline) color, opacity, and width, and the Fill color and opacity,** as well as the **Line ending**. To add a configurable shadow, etc. to the line, use the section named Effects.

Transforming Placed Objects

While placing an object (a picture, text, symbol, shape, or line), you can transform it in one way at a time—the "transformation mode"—which you can choose using the six buttons at the top left of its frame: **free transformation, resizing, rotation, skewing, deformation, and perspective.** To switch among transformation modes, click the modes' icons. The default mode is **free transformation.**. In this mode you can move or resize the object. To resize the object, drag its edges or its handles. To rotate the object, click and drag outside of it. Hold down Shift to lock rotation to 15 degree angles only. To change the center of rotation, drag the handle that is initially in the middle of the object. In the other modes (except for rotation), use the object's edges or handles to transform the picture.

Normally, resizing respects the original ratio of the object's sides. Hold down **Ctrl**while resizing the object to change its ratio of sides (to deform it) as you resize it. Hold down **Shift**while resizing to mirror an object.

To cancel all transformations, click the **Original size** button.

> **Clicking Apply makes the placed object a permanent, integral part of the picture. It cannot later be changed or removed.**

More information

> **Editing the Selection Border**
> **Creating a Selection**
> **The Editing Layer**

Gradient Filter

Gradient Filter

This tool creates an effect similar to the use of the gradient filters that you can place across a camera lens. You can use it to, for example, change a picture's mood by changing part of its tinting or exposure.

The most important settings for this tool are the gradient's angle and centerline, defined by a guideline drawn atop the picture. Use the handles at the guideline's ends to manipulate it, similarly as with the alignment tools.

Gradient Filter offers two basic kinds of filters:

- **Color -** for tinting pictures

- **Exposure** - for adjusting exposure

To place the gradient, click on the picture. The filter's centerline is automatically placed where you click. **The gradient width** can be set either numerically in the toolbar or visually by dragging the arrow on the guideline. Gradient width is shown as a percentage of the picture's size, so 100% means the picture's whole height. To change the filter's angle, click and drag the arrow. To flip the angle, click **Flip**. Click the color button to set the gradient's color. **Presets** let you save and later reload sets of gradient filter settings (except for the tilt and centerline) under names of your choice.

Until applied, the gradient filter is on Zoner's Editing Layer, so you can reduce its opacity using **Layer Opacity**. To merge the filter into the picture, click **Apply.** To remove the Editing Layer without applying the filter, click **Cancel** or press **[Esc]**.

Tilt-shift Effect

Tilt-shift Effect

This tool is most often used to make a scene look like it contains a miniature photographed under a macro lens. There are also many other uses for tilt-shift, for example achieving low depth of field just like one could using an actual tilt-shift lens.

Use the guidelines shown over the picture to set which parts of the picture will be sharp, and which blurred. Click and drag in the picture to set the position and angle of the horizon line. This line defines the center of the area that will be in focus. To quickly set up and position a level horizon line, just click where it should be. To change the position or angle later, click and drag the whole line (position) or move the guidelines (angle). The shorter lines that run parallel to the horizon line set the breadth of the area that is in focus and the width of the transition between the focused and blurred parts of the image. To reposition these lines, click and drag them or set their positions numerically using the controls in the side panel (enter them as a percent of the image's overall dimensions).

If the picture contains light sources, then to get the most faithful simulation of bokeh, that is, of areas outside the depth of focus, blur these light sources as needed. To do this, use the settings named **Reflection threshold** and **Reflection intensity**. When using tilt-shift to make objects look like miniatures, you can make the effect more lifelike using the controls named **Brightening** and **Saturation**.

Use the High Quality option to maximize the fidelity of the blurry areas, at the cost of slowing down calculations.

To store settings for later use and to reuse them later, use the Presets controls. Keep these controls in mind above all when you need to apply this effect to multiple images (e.g. in time-lapse work), especially since settings saved here are also available when accessing Tilt-shift from the Manager.

Lens Flare

This filter simulates the situation where sunlight hits the lens at the moment a picture is taken. This situation often arises when a picture is taken against the light. This filter is most useful for emphasizing existing real lens flare.

Click in the picture to set the point where the light source is hitting the lens. The various elements of the added lens flar cross through the center of the picture. Use the controls here to set their size, tinting, and intensity.

Size sets the size of the effect's visual elements. Set a size that suits the picture's resolution.

Hue sets the effect's tinting.

Saturation sets the intensity of the elements' colors.

Lightness sets the effect's visibility in the picture.

The settings from **Light spikes** down to **Additional halos** show/hide individual elements.

Droste Effect

Droste Effect

The Droste Effect tool creates a specific type of recursive picture. That is, the selected portion of the picture rotates inwards in constantly shrinking spirals. In the Droste Effect implemented in Zoner Photo Studio, the part of the picture to be placed in the spiral is selected by the user. This part is defined using a ring. You can set its position, its inner and outer radius, and the point towards which the spiral converges.

Not every picture is appropriate for applying the Droste Effect. Pictures of circular or oval objects work best.
Usually for these, no selection needs to be made before using the effect.

It is best to use a picture with an object in its center. The idea is for that object to be replaced by the spiral formed by recursing the selected part of the picture. Thus the first step in using the tool is to select the part of the picture to be rotated. The "uninteresting" part of the picture, to be replaced by the spiral, should not be in the selection. This is because when the function encounters the unselected area, picture data from the outer, neighboring spiral is inserted. This gives an effect where the picture rotates inward in an particular part of the original picture only.

Information

Most digital cameras can save supplementary information into JPEG-format pictures, including things like shutter speed, exposure time, whether or not a flash was used, focal length, etc. This information is stored under a standard named EXIF (EXchangeable Image Format). Twenty pieces of camera-settings information are stored on average. Meanwhile, EXIF can also store text descriptions, keywords, ratings, GPS data, and more.

EXIF is not the only standard for storing picture information. There are two others: IPTC and XMP. The IPTC standard was created mainly for authorial descriptions of pictures and communication between photographers and publishers. Adobe's XMP is the most open and modern of the three standards, and can include custom information.

Metadata

The more technical name for what we call "picture information" is metadata. "Metadata" means "information about information" - in this case, about the set of information that makes up the picture itself. Most metadata for photos is text metadata, telling about where, when, how, etc. the photo was created, and perhaps also how it should be used. You can take advantage of metadata to organize your picture archive so that you can later quickly and efficiently find the photos that you are looking for. Besides text information, digital photos can also contain audio notes, color profiles, previews, and other binary data.

In Zoner Photo Studio As mentioned above, avoids the term "metadata" in favor of the phrase "picture information." Picture information can be managed from the Information menu in the Browser, or the File menu in the Editor. The Image Information window is a quick and easy way to add textual picture information.

Zoner Photo Studio supports all three picture information standards: EXIF including its latest version, 2.3 (EXIF Print), and XMP.

Variable Text

Variable text is text that can include a series of codes that tells the program to include not a fixed piece of information, but instead a certain kind of information about a picture—its output can "vary." You can mix ordinary unchanging text and these codes freely within variable text. The program evaluates the codes, examines the picture's picture information, and fills in the relevant text. Each code must have exactly the form listed below, and must be enclosed in {curly braces}. However, any place where you can use variable text offers either a menu or an entire window that can take care of both of these requirements for you.

For example, the variable text {PATH}{NAME}.{EXT} Dimensions: {W} x {H}

might lead to this for a particular picture: E:\Photos\Photo.JPG Dimensions: 1209 x 984

{PATH} is replaced by the path to the file, "E:\Photos\," {NAME} by the filename, "." is kept as-is, {EXT} is replaced by the filename extension "JPG," " Dimensions: " is kept as-is, and {W} and {H} are replaced by the picture's width and height.

To reach the window for adding these codes, click the small button with the triangle next to the text field where you want to use variable text. The left part of this window lists all the available variable-text codes. After you select a code and click **Add**, the code will be inserted at the position of the text cursor. The precise format of the code can vary depending on your settings under **Include descriptor**, **Separator**, **Time and date format**, and **Uppercase/lowercase**.

If you are willing and know how, you can also modify variable text directly without using this window.

Editing Variable Text

Meanings for the Individual Fields:

Field	Meaning
{II}	Picture's place in a series - e.g. "Picture X out of Y"
{IC}	Total picture count in series; can only be used in file lists and slideshows

{PAGE}	The number of the page on which the picture will be printed
{PAGES}	Total number of pages
{TIME}	Current time (e.g. at the start of generating a gallery)
{DATE}	Current date

{NAMEEXT}	Filename with extension
{NAME}	Filename without extension
{EXT}	File extension
{PATH}	Path to file
{FS}	File size
{TC} or {PT}	Created (Picture taken)
{TM} or {TA}	Last changed (Last opened)

{W}	Width
{H}	Height
{BPP}	Bits per pixel
{IS}	Data size
{C}	Compression
{CM}	Color model
{DPI}	DPI

{A}	Author
{T}	Title
{K}	Keywords
{D}	Description
{AUD}	Audio Note

{FLASH}	Flash
{ET}	Exposure length
{F}	Shutter
{FL}	Focal length
{ISO}	ISO

{CAM_MAXAPERTURE}	Maximum aperture
{CAM_FOCALLENGTH35MM}	Focal length (EQ 35mm)
{CAM_DIGITALZOOM}	Digital zoom
{CAM_EXPOSITIONADJUSTMENT}	Exposure balancing
{CAM_EXPOSUREMETERINGMODE}	Exposure measuring mode

{CAM_EXPOSUREMODE}	Exposure mode
{CAM_WHITEBALANCE}	White balance
{CAM_MODEPSMA}	Exposure program
{CAM_ORIENTATION}	Camera orientation
{CAM_SHARPNESS}	Sharpen
{CAM_CONTRAST}	Contrast
{CAM_SATURATION}	Saturation
{CAM_GAINCONTROL}	Gain control
{CAM_PHOTOENHANCEMENT}	Picture Enhancement
{CAM_SCENECAPTURETYPE}	Type of captured scene
{CAM_LIGHTSOURCE}	Light source
{CAM_FLASHDETAILED}	Flash, detailed
{CAM_LENSNAME}	Lens used
{CAM_FOCUSMODE}	Focusing mode (that is, automatic or manual)
{CAM_FLASHENERGY}	Flash energy
{CAM_FLASHBIAS}	Bias (balance) of flash
{CAM_SCENETYPE}	Scene type
{CAM_SUBJECTDISTANCE}	Distance to subject
{CAM_SUBJECTDISTANCERANGE}	Distance mode (macro, etc.)
{CAM_COLORPROFILE}	Name of picture's color profile (if present)
{CAM_CAMHWMAKER}	Camera manufacturer
{CAM_CAMHWMODEL}	Camera model
{CAM_CAMERASW}	Software
{CAM_FIRMWARE}	Firmware version
{CAM_CAMERASERIALNUMBER}	Camera's serial number
{CAM_CAMERAOWNER}	Camera owner
{CAM_LONGITUDE}	Longitude
{CAM_LATITUDE}	Latitude
{CAM_ALTITUDE}	Altitude
{IMG_PICTURERATING}	Picture ratings
{IMG_ISSIGNED}	Picture has a digital signature - yes/no
{IMG_HASCAMERADATA}	Picture has picture information regarding camera settings - yes/no
{IMG_HASTEXTDATA}	Picture has text picture information - yes/no
{IMG_COLORSPACE}	Color space (sRGB etc.)
{IMG_QUALITY}	JPEG compression quality for original of picture

{IMG_COPYRIGHTEDITOR}	Editor copyright
{IMG_COPYRIGHTPHOTOGRAPH}	Photographer's copyright
{IMG_CATEGORY}	Category
{IMG_SUPCAT}	Supplementary category
{IMG_CAPTIONWRITER}	Author of picture's description
{IMG_AUTHORPOSITION}	Author's position
{IMG_CITY}	City
{IMG_STATE}	State/Province
{IMG_COUNTRY}	Country
{IMG_COUNTRYCODE}	Country code
{IMG_LOCATION}	Position
{IMG_CREDIT}	Credits
{IMG_PHOTOSOURCE}	Source
{IMG_HEADLINE}	Header
{IMG_SPECIALINSTRUCTIONS}	Instructions
{IMG_TRANSREF}	Link to origin
{IMG_URGENCY}	Urgency
{IMG_LABEL}	Labels
{IMG_PICTURERATING}	Rating
{USRF#xx}	The contents of custom information field #xx

Web Galleries Only

{GPSLINK}	By default, this is a link to a web map

Only during filtering of the Catalog view

{RT_SEARCH_RANK}	Number of times search text appears in file
{RT_SEARCH_GPSDISTANCE}	Distance from GPS coordinates sought

If the #S modifier is in a field and that field is not the last one, then a text separator will automatically be written after the text. Normally this is a comma and a space: ", " For example, for a photo with the title "Photo," the code {NAME#S}{D} will be translated into "Photo, description" if the photo has a description, or just "Photo" with no separator otherwise. To use a different separator than the standard one, you can define your own using e.g. {NAME#S:"; "}

Most fields have predefined field descriptors, e.g. {NAME} "Name: " etc. You can include these descriptions automatically, by adding #P at the end of a code. For example, {NAME#P} is expanded into "Name: Photo.jpg." You can use such descriptions without worries even for codes that may not give any output, because if there is no output for a code for a given picture, no description will be shown either.

If the predefined description does not meet your needs, you can define your own. To do so, use the technique illustrated below: {NAME#P:"My name: „}.

Other ways to extend fields

Modifying the size indication for the {FS} and {IS} fields

{FS}	automatically

{FS#FM:A}	automatically
{FS#FM:B}	bytes
{FS#FM:K}	kilobytes
{FS#FM:M}	megabytes
{FS#FM:G}	gigabytes
{FS#FM:A-}	automatically (without units)
{FS#FM:B-}	bytes (without units)
{FS#FM:K-}	kilobytes (without units)
{FS#FM:M-}	megabytes (without units)
{FS#FM:G-}	gigabytes (without units)

Modifying the internal separator for {IID_KEYWORDS}

{K#IS:";"}	custom internal separator (default is ",")

Default value

{TC#DV:"Unknown"}	"Unknown" value to show if the selected field cannot be used
{TC#DV}	„?"

Modifying character case

{NAME}	unchanged (standard behavior)
{NAME#C:U}	force uppercase
{NAME#C:L}	force lowercase
{NAME#C:C}	make first letter in each word uppercase, make the rest lowercase

Suppress the actual code output

{???#DO}	suppresses the writing of the code output itself. Just the name of the field is used instead. For example: {NAME#DO#P} "Name:"
{???#DO: ONLYIFVALID}	only gives output when the given code is valid for the given file

Time and date formatting

{TC#F:S}	short date format (e.g. 9/30/2008 1:45 AM for the United States)
{TC#F:L}	long date format (e.g. Tuesday, September 30, 2008 10:29:29 AM for the United States)
{TC#FD:S/L}	date only (short/long)
{TC#FT:S/L}	time only (short/long)

{TC#FT:"time format"}

h	Hour without leading zero, 12-hour cycle
hh	Hour with leading zero, 12-hour cycle
H	Hour without leading zero, 24-hour cycle
HH	Hour with leading zero, 24-hour cycle

m	Minutes with no leading zero
mm	Minutes with leading zero
s	Seconds with no leading zero
ss	Seconds with leading zero
t	Single-character a.m./p.m. indicater - A/P
tt	Multi-character a.m./p.m. indicator - AM/PM

{TC#FD:"date format"}

d	Day of the month, with no leading zero
dd	Day of the month, with leading zero
ddd	Three-character day-of-week indicator
dddd	Full name of day of the week
M	Month number, with no leading zero
MM	Month number, with leading zero
MMM	Month as a three-character shortcut
MMMM	Full name of month
y	Year as last two digits, with no leading zero
yy	Year as last two digits, with leading zero
yyyy	Year as all 4 digits

All month names, day names, and other language-independent texts are replaced based on your regional and language options in the Windows control panel.

Examples of use:

Variable text:	{TC#FD:"ddd',' MMM dd yy"#S:"; "}{TC#FT:"hh':'mm':'ss tt"}
result:	Tue, Sep 30 08; 10:29:29 AM

Formatting GPS coordinates

{CAM_LONGITUDE} Degrees° Minutes' Seconds" Direction (49° 33' 30" S)

{CAM_LONGITUDE# same as CAM_LONGITUDE, but with no parameters
F:N}

{CAM_LONGITUDE# Degrees° Minutes' Seconds" Direction, with decimal precision (49.00° 33.00' 30.00" E)
F:S}

{CAM_LONGITUDE# Degrees° Minutes', with decimal precision (+49° 33.500')
F:M}

{CAM_LONGITUDE# Degrees as a floating-point number (e.g. 49.5583333)
F:D}

When you are preparing Web galleries, you can also specify which files should be used when the program is "mining" the data to use in the codes. This can be useful with, for example, date information: wanting to publish the time when a picture reached the gallery is different than wanting to publish the time when the picture file reached your gallery. If the variable text codes are written in uppercase letters, the original picture on disk is used as the source. If they are written in lowercase letters, then the picture located on the web is used as the information source.

You can chain modifiers one after the other. Example of use: {NAME#C:U#P}. If a code does not make sense in the context where it is used, it is ignored.

Formatting options for codes used to set Tiles and Thumbnails texts

- **, ** —start and end of bold text

- **<i>, </i>** —start and end of italic text

- **
** —new line (can be used in combination with {_E#T:"<br />"})

- **<alb>, </alb>** —start and end of text that you want to receive automatic line breaks (e.g. in Tiles mode)

- **, ** —active link...

Data Import/Export

Generate Lists

Use **Information | Data Import/Export | Generate Lists** in the Browser menu to create a text file with a list of files and information about them, in a form of your choice. After choosing files, you select an output type and prepare variable text.

Use the **Folder names** control to set whether and how folder names will be included in the output. If the output includes both files and folders, then folder names will be preceded by three asterisks. Unlike filenames, you cannot affect the processing of folder names using variable text.

When you turn on **Generate HTML table**, the function will generate a Web page, with your data placed in a simple table, suitable for import into other programs and for processing. Wherever you include the code {TAB} among your text, this will add a new column.

Use the **Save to file** option to have the list be saved to a file of your choice instead of just to a temporary folder. The filename can include either an ordinary absolute path or a relative path like "..\list.txt").

If **Save to file** is turned off, then after you close the window, the list is saved to a temporary folder and is opened in your computer's associated viewer for text files or web pages. By default, these will be Notepad and Internet Explorer respectively.

Importing and Exporting Descriptions

Some programs generate and save simple one-line file descriptions in special, and quite non-standardized, files located in the same folders as the files being described. These files are generally have names like descript.ion, 0index.txt, files.bbs etc. Use **Information | Data Import/Export | Export Descriptions** and **Import Descriptions** to create such files or to bring the information from such files into pictures' standard picture information. During export, you can choose whether to use the **Title** or **Description** field as the description.

If the pictures already had description files, these will be overwritten by your export. If you check the **Preserve remaining files' descriptions** box, then the descriptions for any pictures in the folder that were not selected will be kept as-is; otherwise, they will be thrown away.

If you turn on **Give exported file Hidden attribute**, then the file will receive the Hidden file attribute. This will make it invisible to most programs.

Scan for Keywords

Use **Data Import/Export | Scan for Keywords** to use the keywords that are already in your pictures as raw material for building or supplementing the keyword list contained "inside" Zoner Photo Studio.

As relates to actual individual pictures, Zoner Photo Studio does not maintain their keywords in a database of its own; it stores keywords directly inside image files, in their EXIF data. This way, pictures will not lose their keywords no matter where you move them, and any EXIF-aware program can process their keywords.

We recommend that you use this function when, for example, upgrading from previous versions of Zoner Photo Studio. This way, Zoner Photo Studio will have a complete list of the keywords you have used in the past, and will offer them in all of its windows where you can search keywords or add them.

Managing Information

Backing up and Restoring Information

Many picture editing programs cannot work with picture information such as EXIF or IPTC information or color profiles.

Many such "unaware" programs are also too useful to pass up. To solve this problem, use Zoner Photo Studio's functions for backing up and restoring information. The program can back up and restore all picture information, including EXIF MakerNote information. To back up picture information, use the Browser's **Information | Manage Information | Create EXIF Backup** menu item. Information is stored in a hidden file with the same name as the picture, but with the exifbak extension.

Pictures with backup information have arrow icons in their thumbnails. To restore a picture's information from backup, use the Browser's **Information | Manage Information | Restore from EXIF Backup** or **Advanced Restore from EXIF Backup….** In advanced restoration, you can selectively restore only the information items that you want.

Remove EXIF Data

Use **Information | Manage Information | Remove EXIF Data** to remove all EXIF picture information from a picture, including its color profile. The actual picture data is unaffected by this function.

Remove Data Blocks from JPEG

Use **Information | Manage Information | Remove Data Blocks from JPEG...** to remove data blocks of your choice from all currently selected JPEG-format pictures. These blocks can have various meanings depending on which program saved the picture, and thus this function is intended for advanced users. The actual picture data is unaffected by this function.

Delete EXIF Backup

The **Information | Manage Information | Delete EXIF Backup** command deletes all information needed for restoring a picture's EXIF data after it has been damaged or destroyed. The picture itself remains unchanged.

Add EXIF Preview

EXIF previews are used to speed your picture browsing (unless you have disabled their use in the program preferences). Use **Information | Manage Information | Add EXIF Thumbnail...** in cases where, for example, you have edited a picture in another program, and that program did not update its EXIF preview to reflect how it actually currently looks. The picture itself is unaffected by this, as is all of the remaining picture information.

Remove EXIF Preview

Use **Information | Manage Information | Remove EXIF Preview...** to remove the EXIF preview from a picture. The picture itself will be unaffected, as will all of the remaining picture information.

Fix EXIF Marker Position

The specification for the EXIF standard states that the EXIF block must be the first block in an image file. Unfortunately, some programs do not observe the specification, and thus the EXIF data can then be inaccessible in other software. Zoner Photo Studio can both work correctly with pictures where EXIF data is in a nonstandard block and fix such pictures so their EXIF data will be usable anywhere. To do so, use **Information | Manage Information | Fix EXIF Marker Position....** The EXIF block will be moved to the first position in the file, where it belongs.

Set Date using EXIF

Use **Information | Manage Information | Set Date using EXIF...** to set pictures' file creation dates to match their EXIF picture-taken dates. This lets you sort pictures based on when they were taken even in programs that cannot use EXIF information.

Audio Note

Some cameras can save a short audio note inside a photograph. Zoner Photo Studio can manage existing notes and add new ones.

Play Audio Note

To play an embedded or external audio note, use **Information | Audio Note | Play Audio Note [Ctrl+Shift+P]**. Alternatively, click the audio note icon that is shown at the top of the picture's thumbnail in the Browser.

Stop Audio Note

To stop the playing of an audio note, use **Information | Audio Note | Stop Audio Note [Ctrl+Shift+S]**.

Edit

To reach the window for editing an audio note, use **Information | Audio Note | Edit**.

To remove an audio note, use this window's **No audio note** option. This option is active if a picture contains no embedded audio note. If the picture does contain an embedded note, then **Embedded audio note** is active. You can also use this option to play a note and to embed a note. Use **External audio note** to set the location of a picture's external audio note or to see the location of an already-attached one. An external audio note files must be in the same folder as its corresponding picture file. To set whether or not Zoner Photo Studio moves/renames/ deletes external audio files along with their corresponding pictures, use the program preferences. The EXIF norm does not support the use of MP3 format audio notes.

Under the pane for viewing the sound waves of an audio note, there are buttons for playing, stopping, and playing the note. Use the **Change Format...** button to change the sound quality. Use the **Edit...** button to launch a sound editor. (To set which editor this is, use the program preferences). To delete the audio note, click **Remove**.

This window can also be reached by using **Information | Image Information [Shift+Enter]** and then visiting that window's Audio Note section.

Digital Signatures

Digital signature technology helps to **verify the origin and completeness of a picture**. The author (or owner, or administrator, etc.) signs the picture and thereby places his signature in the picture file, as well as a description of the picture's characteristics.

Signed pictures are differentiated in the Browser listing via a ribbon icon. You can verify a signed picture at any time, for example by double-clicking its ribbon. Although a signed picture can still be changed, it is easy to discover that it has been changed.

Digital signature technology does not protect a picture from unauthorized publication.

Adding Digital Signatures

Use the Browser's **Information | Digital Signature | Add Digital Signature** menu item to add to a picture a signature and a "fingerprint" of the picture's current contents. This information describes the state of the picture at the time of signing, and is used when you wish to verify the digital signature. Signing makes use of the signing certificate that you have specific under **Settings | Preferences [Ctrl+M]**, in the **Signing Certificates** section.

Verifying Digital Signatures

Use the **Information | Digital Signature | Check Digital Signature** command to verify that a particular signed picture is still the same as it was at the time of its signing. You can also perform this operation by clicking the "ribbon" digital signature icon shown on a picture's thumbnail.

Go to **Settings | Preferences [Ctrl+M]** and then the **Signing Certificates** section for options governing the verification of digital signatures. **Verify that certificate has not been revoked**: this option requires that you be connected to the Internet, so if you are not connected non-stop, it can be best to turn it off. The **Only check revoking for signature certificates** prevents the whole certificate hierarchy from being checked.

Remove Digital Signature

Use **Information | Digital Signature | Remove Digital Signature** to remove a digital signature from a picture.

Picture Rating

Use ratings to store information on photographs' quality. Picture ratings are shown as stars on photos' thumbnails in the Browser and the Filmstrip. Naturally, ratings are purely subjective, but they will help you find your best pictures later.

Ratings run from 1 to 5. To rate a photo, use:

- keyboard shortcuts: **[1]** through **[5]** in the Manager, Viewer, or Editor. To remove a photo's rating, press **[0]**.

- the **Information** pane in the Manager or the **Rating and Label** toolbar in the Viewer and Editor.

- the rating buttons in the **Descriptions Pane.**

- the **Information | Image Information [Shift+Enter]** window - use the tab named **Description**.

Ratings, once added, are useful in various parts of Zoner, e.g.:

- **Quick Search [Ctrl+F]**

- **Filter** and **Search** windows - use the tab named **Notes**

- **Organize | Selection | Advanced Selection**

Labels

Use the Labels feature to add colored labels to your pictures, to help sort them by a system of your own.

To add labels to pictures, use the **Descriptions Panel**, or use the **Information | Image Information [Shift+Enter]** window's **Descriptions** tab. Alternatively, use the Browser's **Information | Label** submenu or the **[Shift+1]** through **[Shift+9]** hotkeys. To remove any existing rating from the picture, click **None** or use the keyboard shortcut **[Shift+0]**.

The label (if any) for a picture is indicated in its Browser thumbnail, by an icon at the bottom right. Right-clicking that icon calls up a menu where you can change the rating or remove it (the "-" item).

To set which colors are used for labels, use **Settings | Preferences | Labels**. Here you can define up to 9 custom labels or choose colors used in other programs. Label information is stored within a picture's XMP-type picture information.

GPS

Zoner Photo Studio lets you work with longitude, latitude, and altitude. You can assign coordinates to pictures here, and display their coordinates on a map as well. You can have the program batch-assign coordinates from a GPS device's tracklog, or assign them by hand using an online map.

The coordinates are recorded to both EXIF and XMP picture information, so that you can process them and work with them in many other programs, not just Zoner Photo Studio. Some of the Web galleries you can make in the

program can also show pictures' GPS coordinates on a map.

Assigning GPS Data

Use this function to add information to a picture about its GPS coordinates and its altitude. You can add this information automatically using a track log downloaded from a GPS device, or manually by either entering coordinates directly or reading them off of a map.

Use **Information | GPS | Assign GPS Data...** in the Browser or **File | GPS | Assign GPS Data...** in the Editor to open this window, which shows a preview of the picture and, beneath it, controls for assigning GPS data to it. The window's right portion contains a map and its controls.

Reading in Data from a GPS Track Log

Click **Read Data from GPS Track Log...** to read in coordinates from a track log generated by a GPS device. Zoner Photo Studio supports several major log formats. You can find instructions on downloading and storing a track log in a desired format in the documentation for your GPS device.

Once the track log is loaded, information on the number of records in the log and the times when the first and last records were created is displayed under the button. The time when the first picture was taken is also displayed here. Picture-taken time/date information is used to determine which GPS data from the log is assigned to which picture. If the camera's clock was not perfectly synchronized with the GPS device's clock, use **Time correction** to avoid imprecise results. Use the **Set position using:** control to set how the program calculates values for pictures taken at times for which there is no position record. (This is useful when, for example, the GPS device was recording positions automatically at one-minute intervals, rather than your manually using it each time you took a picture.)

The GPS section of the program Preferences has an option to filter out "junk" GPS tracklog data.

Entering Coordinates Manually

Use the **Latitude** and **Longitude** controls to enter GPS coordinates manually. If you have the coordinates recorded in a text file, then you can copy them out of the text they are in and paste them into the corresponding fields using the Paste from Clipboard button. Zoner Photo Studio tries to correctly process even coordinates written in non-standard form.
You can also also copy values from here to the Clipboard, using the Copy to Clipboard button. Values are pasted in the standard form: 49°11'55.83"N, 16°37'41.42"E.

You can also enter the **Altitude**, which is not copied via the Clipboard, and may also be missing from track logs.

Click **Show on Map** to show the entered position on a map of your choice. To instead have the position updated automatically as you work, use Automatic.

When using Google Maps, you can enter the location as a place name, and the program will show the first location that corresponds to a Google Maps search for that name.

Reading Coordinates from a Map

To choose a map from which to read in coordinates, use the **Map** control, above the map pane. You can also optionally show it on Google Earth using **Simultaneously show in Google Earth**.

You can change the zoom level on Google Maps using the mouse wheel.

The right-click menu will depend on which map service you are using; it is the same as when you are working with that service in an ordinary Web browser.

To acquire coordinates from Google Maps, left-click on the map.

Zoner Photo Studio also lets you acquire coordinates from Google Earth.

Showing GPS Data

Use this function to make Zoner Photo Studio display a picture's shot location on a map.

To display this window, double-click the globe icon on a picture's thumbnail, or select a GPS-enhanced photo and use the Browser's **Information | GPS | Show GPS Data...** command. Alternatively, in the Editor, use **File | GPS |**

Show GPS Data....

Use the **Map** menu to choose which map Zoner Photo Studio uses to show the shot location.

Different on-line map services offer different features. The service normally offered, Google Maps, offers normal maps, satellite maps, and hybrid maps, and a choice of scale.

Remove GPS Data

This function removes all information about GPS coordinates and altitude from a file.

To reach this function, use **Information | GPS | Remove GPS Data...** in the Browser or **File | GPS | Remove GPS Data...** in the Editor.

Maps

Zoner Photo Studio supports two kinds of maps:

- on-line maps on the Google Maps service. You can use these both for displaying photo's GPS coordinates (that is, showing on a map where the pictures were taken) and as the foundation for setting GPS coordinates. (You must be connected to the Internet to use Google Maps.)

- the map software named Ozi Explorer. You can set the GPS coordinates for a photo by double-clicking a map in Ozi Explorer. (Ozi Explorer is third-party commercial software.)

> **If you run into trouble while using Google Maps with Zoner Photo Studio, first check your Internet connection. If problems continue, check the program's settings for connecting to the Internet, and your firewall settings.**

Cooperation with Google Earth

If you have Google Earth installed, then you can make use of it to assign GPS coordinates to photographs and to display your pictures' positions on a map.

When you use **Information | GPS | Assign GPS Data from Google Earth...** in the Browser, Google Earth is launched, and above it, a window is displayed with a preview of the picture with a preview of the picture buttons to **Assign Coordinates to (the) Picture**, **Close** the program, and move to the next or previous picture. To "reach" the place on the Earth whose coordinates you wish to assign, use the same methods as you would normally use for viewing places in that program.

You can display all the GPS-enhanced pictures in a folder, or all such selected pictures, in Google Earth by using the Browser menu item named **Information | GPS | Show in Google Earth...** . The pictures in Google Earth are displayed as thumbnails above the areas where their coordinates lie. After you click a thumbnail, a large version of the picture is displayed, along with its title and description, if such information is stored in the picture.

Use **Information | GPS | Show in Google Earth (Advanced)...** in the Browser to create a KML or KMZ file that you can then immediately view in Google Earth. GPS coordinates and the title and description of the picture are written to the KML file. The KMZ file also contains a thumbnail for each picture.

Create KML/KMZ files, then show in Google Earth immediately opens the file you created in Google Earth. **Create KML/KMZ files, then save them to disk** enables you to name and save the file.

The **For KMZ archives, include large previews** option adds both thumbnails and larger pictures for viewing to the KMZ file. If you do not check this option, Google Earth will show you only marked picture-taken locations, with no thumbnails.

You can add picture information of your choice to pictures' **Title** and **Description** fields using the program's variable text feature. Normally, the Title {T} and Description {D} fields are chosen here. (You can set the contents of these two fields using, for example, the Browser's Descriptions Pane.

> KML (Keyhole Markup Language), supplemented by KMZ (Compress Keyhole Markup Language), is a standard for storing GPS, descriptions, and pictures for use in Google Earth, Google Maps, and other geographical programs and websites.

Image Information

Use the Image Information window to view, add, and edit information (metadata) contained in a picture.

To display this window, use **Information | Image Information** in the Browser, or press **[Shift+Enter]** in the Browser, Editor, or Viewer.

The top of this window shows a preview and the picture's filename, file size, bit depth, and date of creation and of last changes.

Under the preview is a menu for choosing what type of information to show. To the right of the menu, there are icons you can use to show various information types, and one to **show your position on an online map**. To set a particular map, use the program preferences.

Use **Description** to edit the picture's title, author, copyright, and description, and the description's author. You can also edit the picture's rating and its label. These fields are most often useful during archival and publishing.

Use **General Information** to work with all available information about the camera's settings when the picture was taken (EXIF information and MakerNote). Some items have a pencil symbol by them. This means that they can be edited.

Use **Keywords** to add and remove keywords for a picture via two buttons: **<<** and **>>**. Click **>>>** to add a keyword including the categories above it. Click **Add** to edit the keywords tree rather than the picture's keywords.

Use **Origin** to edit detailed information about the picture's origins (location, city, etc.). **Transfer information** and the right way to use it are defined by the IPTC standard, which is designed for electronic communication between an editor and a journalist or professional photographer.

This information is always stored in the standard EXIF, IPTC, and XMP fields. Other programs can read it back in from there.

Use **Audio Note** to add, edit, remove, etc. an audio note for a picture.

Use **Custom Information** to edit XMP information fields that you can define yourself.

All of the information in all sections except for Audio Note can be **copied to the Clipboard**.

Statistics

Using this function, you can show statistics on pictures' picture information (shutter information, film sensitivities, titles, keywords, etc.) for a folder or for selected photos.

To show statistics, use **Information | Statistics...** in the Browser. In the top section, choose which picture information **Field** you wish to analyze. You can also choose a **Graph type** and a **Sorting** method. Underneath the graph, you can also choose how many values it shows. Click **OK** to close the statistics window.

Batch Assign Information

Use this function to add or change picture information, including ratings, keywords, and picture-taken dates, for multiple photos at once.

To edit photos' picture information, use **Information | Batch Assign Information... [Ctrl+K]** in the Browser. Batch assigning information is efficient when you need to change the picture information for many pictures at once. To edit the information for just a single picture more conveniently, use Image Information.

This window's settings are divided out over six tabs. To quickly deactivate/reactivate a tab, and thus the settings on that tab, use the checkbox next to its name.

<div style="border:1px solid pink">

The values in all checkmarked tabs are used - not just those in the visible tab!

</div>

Each text field must also be activated (checkmarked) before use. Next to the text fields are arrows for automatically inserting variable text into the field. Use the variable text feature to make use of information from one field (or from the picture's file properties) in another field. (For example, to automatically fill pictures' Titles with their filenames, use {NAME}.)

Use the **Basic Information** tab to edit pictures' titles, authors, copyrights, descriptions, and description authors. You can also batch-assign ratings and labels here.

Additionally, you can batch-assign pictures' location with fields for place, city, state/province, and country.

Use the **Keywords** tab to assign and remove keywords in batch with the aid of the program's keywords tree. Use **Remove All** to remove all picture keywords (even words that are not listed in the program's keywords tree). This option removes the entire contents of the keywords field, even for example spaces and other characters that can cause problems.

Use the **Date and Time** tab to set pictures' date and time or shift them by a certain amount. Set date values using the calendars that become active when you click **Set picture-taken time and date** and **Shift date**. Use Shift date to push times and dates forward or backward by a given amount, e.g. to go back and change the time zone in which you took a group of pictures.

Use the **Custom Information** tab to batch-add or batch-edit custom information types for pictures outside of what is normally available.

Use **Change IPTC encoding to UTF8** to change the way IPTC blocks are stored so that extended character sets are in better agreement with the standard. However, for now, photo programs widely ignore the standard and do not recognize it. Therefore, Zoner Photo Studio does not use it by default and it can only be activated in this window.

Use **Write data only where it is not already present** to restrict the changes' effects to empty fields. This makes it easier to apply batch information edits when some pictures in a batch already contain information.

Presets work the same in this window as elsewhere: you can store all of your settings for the whole window as a preset so you can reuse them later. The presets controls are at the bottom left, no matter what tab you are in. To fill in the fields in this window using the information in an existing picture, click **Read in from Picture...**. Click **Apply** to run the operation on all selected pictures. Click **Cancel** to exit without changing any pictures' information.

Search and Replace

You can use this function to replace one piece of text with another within picture-information fields of your choice. This function is useful when, for example, you have entered some information incorrectly, or to replace information in one language with information in another language.

To reach this window, use **Information | Search and Replace… [Ctrl+K]** in the Browser.

This opens a window for batch edits of all textual picture information in the selected pictures, via search-and-replace. Use the column on the left to choose which text items in the photos to **Search in**. Use the **Find** and **Replace** fields to indicate what text should be replaced with what other text. Use **Whole words only** to set whether or not to replace text when the contents of the **Find** field in the text not as a separate word, but rather as a part of a word. The **Match case** option determines whether or not capitalization differences should be ignored. The **Approve changes one by one** option sets whether replacements should be automatic, or whether you will monitor the whole process picture-by-picture instead. When this option is turned on, the **Search**, **Replace**, and **Replace All** options become active so that you can use them to confirm each replacement. Use the **Apply** button (and the **Apply to All** button if multiple pictures are selected) at the bottom of the window to do the actual replacing and resaving of the modified files.

Organizing Pictures

Catalog

The Catalog is the starting point for convenient work with your photo collection. It is available in the Navigator in every section of Zoner Photo Studio. When a folder is added to the Catalog, Zoner starts automatically indexing thumbnails and information for the pictures in that folder. This happens in the background while you work. While Zoner is indexing, it shows a blue gear wheel in the Navigator's Catalog section. To manage indexing, click that wheel and use the items in the menu that appears.

The Catalog only works with indexed pictures, and likewise, only indexed pictures are seen by **Quick Search.**

The Catalog also offers a **Timeline**view, which sorts photos into virtual "folders" by the date they were taken, and a **Keywords** view, where you can organize the keywords you are using, view all of the pictures with a particular keyword, and assign keywords by dragging and dropping them onto your pictures. You can also tag pictures by dragging and dropping those pictures onto keywords in the Catalog.

To change Catalog settings, visit Settings | Preferences... | Catalog.

Quick Search

Press **[Ctrl+F]** or click in the Quick Search box above the Navigator to activate **Quick Search.** Quick Search only finds pictures that are in the Catalog.

The Quick Search pane contains several controls.

- **Text** — enter the text to find here. Zoner starts searching immediately once you begin typing. Use **Search in** to make Zoner look only in certain portions of pictures' information (e.g. just their keywords or location), instead of all their text information.

- **Rating** — use this search for pictures by rating. Use the options here to search for ratings less than, equal to, or higher than the one you set.

- **Labels** — use this to search based on one or more of the various colored Labels that can be given to photos.

- **GPS** — use this to find pictures by GPS coordinates. Use the buttons here to get coordinates from the selected picture, a different picture file, or a map. After setting the coordinates, set how far away from them Zoner should look, using **Radius.**

- **Include subfolders -** use this option (available in the Browser only) to find pictures in both the current folder and its subfolders.

Click the button at the end of each row of Quick Search controls to return that row to factory settings. Combine multiple conditions to see only files that meet all of those conditions.

File Operations

Zoner Photo Studio behaves similarly to the file browsing tools in Windows itself.

Overview of basic file operations:

- drag-and-drop copying and moving of files*

- copying and moving of files via the Windows Clipboard*

- copying (creating) Windows shortcuts

- creating new folders

- deleting files and folders

- renaming files and folders

- displaying files' Properties windows

Right-click menu

When you right-click on a file in the Browser, a context-sensitive menu appears, similar to the one that appears when you right-click a file in Windows' own file-browsing tools.

Selecting Files

Selecting files in the Browser works similarly to how it does in Windows overall. There are some extra methods for selecting files provided under **Organize | Selection**. Use **Organize | Selection | Advanced Selection [Num /]** to select files by criteria. The available criteria are: **Existing filename**, **Rating** and **Labels**. The way that file selection works depends on the selection mode you have chosen. They are: **Select**, **Add to Selection**, **Remove from Selection** and **Refine Selection.**. The **Add to Selection** and **Remove from Selection** modes can be quickly reached from the Browser using shortcut keys: **[Num+]** and **[Num-]**.

Deleting Files

In the file deletion window, use the **Options** button to show settings for **deleting related files.** Use **All files with differing extension** when, for example, deleting JPEG/RAW file pairs. Used by accident, this option can easily lead to erasing of needed files, so it is automatically turned off when moving to a different folder.

File Tree Versus Database

Most programs for working with digital photos choose one of two basic approaches to working with photos - classical browsing of the disks on your computer, or browsing of databases of indexed files. Each of these methods has its advantages and disadvantages in certain situations. Zoner Photo Studio tries to provide the best of both methods. For ordinary work with pictures, you do not really need a database. But for detailed work with, above all, external (removable) media, you can take advantage of a picture database.

Advanced File Operations

Zoner Photo Studio enables you to queue up multiple file moving, copying, etc. operations at once. Each such operation can be in any of three states:

- **Running** —the files are actively being copied/moved. Only one file operation is ever in this state at one time.

- **Paused** —You must place an operation into this state manually. An operation will never take place as long as it still is in this state. You can remove it from this state and return it to the queue.

- **Queued** —Operations enter this state when a new operation is added for processing—that operation automatically enters the Running state, and the previously Running one enters the queue. Any operation waiting in the queue can start running immediately if you intervene to make this happen.

As is hinted above, the operations queue works on a "last in, first out" basis. You have two ways of intervening here:

- Letting an operation waiting in the queue jump to the front of the queue. Other operations will automatically start up after it has finished.

- Pause the currently running operation—this makes the "youngest" operation in the queue start running automatically. You can place a paused operation back in the queue, after which it will start up automatically once its turn in the queue comes up.

Basic Organizing Tasks

The **Organize** menu contains commands for use in navigating, archiving, and organizing your photos (and other multimedia files). This menu contains commands for creating new folders and albums, for work with the Media Archive feature, for work with the Windows Clipboard (copying, pasting, etc.), and for selecting files (Select All, inverting the selection, or selection by various other criteria).

Sorting

You can sort the files in a folder by their attributes—their names, file sizes, extensions, types, and dates. You can also set your own custom sorting, or use advanced sorting, that is, sorting based on EXIF picture information. You can set sorting type in the Browser's right-click menu (the **Sort by** item), in the Browser's main menu under **Organize | Sort by**, using the **Sort by** button on the toolbar, or using column headers, if you have activated **Organize | Sort by | Show Header**.

Custom sorting—in this mode, you can sort pictures freely, by dragging and dropping their thumbnails to the intended places in the sorting order. The first time you switch to custom sorting for a folder, whatever sorting order you are currently using for that folder is retained. You can then drag the picture to the position that you need. The red line between pictures while you drag indicates what the dragged picture's sorting position will be if you drop it at a given moment. You can cancel custom sorting for a folder at any time using the right-click menu. If you rest the mouse cursor over an edge of the thumbnails window during your drag-and-drop work, the display will scroll so that you can see what is beyond that edge.

The sorting method has an effect on the speed of the program. Sorting by EXIF information requires that EXIF information be read for each file in a folder before that folder can be displayed. For this reason, sorting by name is the fastest.

Filter

When you want to see only the kinds of files that interest you during browsing, and there is a "technical" way to define what you want, use the Filter. Any files that do not meet the conditions you set will be temporarily hidden.

The Filter window lets you set exactly the same kinds of conditions as you can set for the Search function. The conditions are divided into tabs (sections). You can disable an entire tab at once using the checkbox by its name.

> **Note that filter conditions in checkmarked tabs are used even if those tabs are not currently displayed!**

You can filter by full or partial filename, date of creation, date of last changes, size, name, author, description, keywords, technical details like shutter speed, or GPS information.

To turn the filter on and off, use **Organize | Filter...** or the Filter button on the main Browser toolbar.

Searching

To search for photos in selected folders and their subfolders, use **Organize | Search... [Ctrl+F]**.

This window divides the search conditions you can use into four types. The conditions are divided into tabs (sections). You can disable an entire tab at once using the checkbox by its name.

> **Note that search conditions in checkmarked tabs are used even if those tabs are not currently displayed!**

You can search by filename, location, the picture file's time/date, the actual picture-taken time/date, file size, author, description, rating, and keywords. In the Advanced Search tab, you can also search by camera-related EXIF picture information (shutter, exposure time, ISO, exposure compensation, flash, focal length) and by similarity of color to a selected photograph. In the GPS tab, you can search by a geographical location. To set the location to search by, use the map or choose a picture whose coordinates the program will use. You can use conditions ("contains"/"does not contain") and logical operators (AND and OR) to modify searches for textual picture information.

Backups of Originals

The first time a photograph is changed (e.g. resized, rotated, or even rated), Zoner Photo Studio automatically creates a backup of the original version of the photo. This way, if a photo is inadvertently changed and degraded, it is possible to go back to the original version. In Zoner Photo Studio, this is called a **backup of the original**.

Backups of originals are not visible in the Browser as files. Where a backup exists for the original version of a photograph, an blue-arrow icon is shown on its thumbnail. Double-click this icon to restore it to its original version. Right-click this icon to call up a menu; use this menu to restore from the backup or delete the backup. To work with the backup of a picture's original from the main menu, use the items under **Organize | Backup of Original**.... Use this menu both to access the above-mentioned functions, and to back up a picture manually. Use this when for example you plan to edit a photo outside Zoner Photo Studio, and therefore it will not automatically be backed up as you edit it.

Backups of originals are stored in the**Backups folder**. Use the program preferences to see the size of this folder, delete its contents, and change its location. For best performance, the backup should be in a location that has plenty of space, and that the computer can access quickly (ideally on the same disk where your photo collection is located). You can also turn off automatic backups completely.

Batch Rename

Use this function to batch rename pictures, with the option to make use of their picture information.

> Cameras give pictures fairly meaningless names made up of some letters and a number. That number may be a picture's position in a folder, its position in all the pictures you have ever taken, etc. In any case, it is of little use for organizing or publishing.

You can rename a single file in the same way as in Windows: select the file and then click on it (after a pause) or press **[F2]**.

You can also select a whole group of files and rename them in the window that appears when you use **Organize | Batch Rename... [Ctrl+Shift+Q]** in the Browser.

In the **Filename** box, you can compose the pattern by which the new names should be formed. This pattern can make use of a limited version of the program's variable text feature and/or a counter.

Existing filename	{N}	Year	{Y}
Existing extension	{E}	Month	{M}
Author*	{A}	Date	{d}
Title*	{T}	Hour	{h}
Counter	{C}	Minute	{m}
		Second	{s}

*information from the picture information field of the same name

The code for including the existing filename can be supplemented with information on which part of that filename to include; for example {N5-8} would include the fifth through either character. The date that is filled in is either the file's date of creation or the date of last changes.

Besides normal absolute paths, you can indicate the output path using a relative path such as "..\backup"—in this particular example, the folder would be automatically created one level above the current folder.

Use **Remove accents, replace spaces** if you wish to place files on the Web or some other environment where spaces or accent marks could cause technical problems.

Tips for Batch Renaming

The most commonly used combinations of variable text used for batch renaming are described below.

Filenames Based on When Pictures Were Taken

This kind of renaming is useful when bringing together pictures taken on multiple cameras, when using photos for documentation, and when archiving photos.

Variable text (date as filename): *{Y}-{M}-{D}-{h}-{m}-{s}-{C}*

Filenames That Include a Counter

Using a counter at the beginning of a filename is a good way to ensure that the custom sorting you have set within Zoner Photo Studio works even outside of it.

For the counter—{C}—you can set a starting value, a step (how much to go up each time), and the number of digits that should be guaranteed by adding zeros at the beginning of the number if necessary ("001," "002," etc.)

Variable text (to add a counter just before a filename): *{C}-{N}*

Filename Making Use of Picture Title

You can use this technique to make files' contents clear from their filenames. Although just renaming the files by hand would do almost the same, the variable text cited below also includes a counter, so you do not have to order the pictures alphabetically. A name like this is useful when publishing photos on the Web, sending them by email, sharing them, etc.

Variable text (counter, contents of the picture's Title, then Author fields)**:** *{C}-{T}-{A}*

You can freely mix variable-text codes and ordinary text—for example "{C} Chicago vacation" to get names like "01 Chicago vacation."

If you do not have a serious reason to do otherwise, do not change the file extension (which is normally set to "{E}"). If you change a picture's extension, it can "disappear" from the Browser.
This is because Zoner Photo Studio (and Windows itself) determines the format of a file based on its extension, and, depending on your program preferences, Zoner Photo Studio may show only certain pictures and hide all other formats. If you do accidentally change a picture's extension (e.g. from JPG to JPG001) and it disappears, turn on the display of all files under **Settings | Preferences | Display** and use renaming to change the extension back.

Compare Images

Use the Compare Images function to view multiple pictures at once in order to select the best ones from among them. To access Compare Images from the Browser, use **View | Compare Images [Ctrl+J].**

The way that the Compare Images space is divided up depends on the display mode: **One preview**, **Two previews, vertical**, **Two previews, horizontal**, **Three previews, vertical**, **Three previews, horizontal** or **Four previews**.

One of the previewed pictures is always the active picture. It is framed with a red rectangle. This picture can be copied or moved to another folder, or deleted from disk. Click another picture's thumbnail to make it active instead. You can also move among pictures using the **Previous File** and **Next File** buttons. These automatically skip over files that have already been displayed.

The other functions govern the contents of the preview panes—zooming in and out, showing/hiding a picture's histogram, turning blowout highlighting on/off, and showing/hiding picture information.

If the **View | Information** option is active, a pane beneath each thumbnail shows picture information and controls for labels and picture ratings.

You can also use the mouse wheel to quickly display a picture from one pane in another pane. In two-picture mode, you can click the mouse wheel over any part of a preview and, until you release the mouse wheel, the other preview is shown in place of that preview. The other preview receives a blue frame around it. In modes with more than two pictures, setting the "other" picture is more complicated. You need to hold down the mouse wheel in a place that corresponds to what the position of the desired picture would be if the active preview were divided into sections in the same way that the overall preview space is divided into sections. For example, if you are using the "Three previews, horizontal" mode, then each preview is divided into three sections side by side, and clicking in, for example, the leftmost third of the picture displays the picture from the leftmost preview pane in the active pane.

Use the settings in Settings | Preferences | Compare Images to set how mouse wheel scrolling works here and what information is shown under pictures.

Sort Pictures

This is a wizard for sorting photos on a disk or in a folder into an new, organized folder structure in a few easy steps.

Use **Organize | Sort Pictures [Ctrl+O]** to reach this function.

The first step includes a drop-down menu where you can choose a disk containing files to organize. You can also instead choose a particular folder, using the **Browse...**

You can also choose a **picture sorting method**. There are three standard options here representing common ways of organizing pictures into folders by their picture-taken dates. These differ in the number of different levels of folders are created. The **Custom** option enables you to set your own choice of how many levels and what to base them on (e.g. pictures' times and date, shutter speeds, authors, focal lengths, etc.), with the help of the program's variable text feature. Clicking the arrow button here takes you to a window that largely automates the process of work with this feature. To indicate a subfolder, use the "\" (backslash) character.

At the bottom of the window for this step, you set the folder to which the sorted pictures should be copied. To continue to the next step, click **Next**.

In the second step of the wizard, you can choose whether, besides sorting bitmap images (photos and graphics), you would like to also find and sort vector-graphics files (files from Zoner Draw and saved print jobs from the Print and Export wizard), videos, and sounds. You can use the **Only sort files larger than** option to filter out very small pictures (like miniatures and banners). To continue to the next step, click **Next**.

In the third step, you can see the picture folders that were found and are marked for sorting. Here you can deselect folders that you would like for the program to not sort. Click **Finish** to finish the wizard and start the actual sortting of the selected folders. If you are not ready to do this yet, click **Previous**.

This function is useful when you want to reorganize an existing photo archive (set of photos) or create a new one. You can add further pictures to an archive in a variety of ways, e.g. using the Import function, which also provides for some basic sorting of pictures into folders.

Synchronize Folders

The **Synchronize Folders** function helps you maintain a copy of photos from a chosen source in a chosen target location. It works in two steps. First the contents of the **Source Folder** and **Target Folder** are compared, and the program recommends a list of file copying/deletion actions to be made for synchronization. Then after confirmation and any desired changes, these synchronization actions are actually taken. The recommended synchronization actions can differ based on the selected **Synchronization Method**. **Symmetric** means that a successful synchronization copies files from the source to the target and vice versa so that after synchronization, they both have all the files that were in either the source or the target at the start. **Asymmetric** comparison is one-way: only source files missing from the target are marked for copying. **Asymmetric, Delete in Target** is similar, but also deletes from the target anything not in the source.

A proposed synchronization action is listed for each item in the operations column. An arrow means copying in that direction. An X means deletion. An equals sign means the files are the same (this is only shown when **Hide duplicates** is not checked). A "not equal" sign is shown for files that differ, but for which no action will be taken. Click on an operation to change it. Changing a folder operation (these are shown with a gray background) affects all operations for files and folders under that folder, in cases where that is appropriate. The direction in which files are copied (for the Symmetric method) is decided based on which copy was changed more recently.

The **Synchronize** button starts the actual copying and/or deleting of files. To have the opportunity to view and, if desired, to disallow operations one-by-one, turn on **Confirm file operations**.

Run the mouse cursor over a folder name to see a bubble showing the full path to the folder. Run the mouse cursor over a file name to see the full path to the file plus its date of last changes and its size. For files that exist in both the source and the target, information about their comparison is shown in bubble help above the Operation field. A short summary of the planned synchronization is displayed under the file list.

Find Duplicate Files

Use this function to find photo files that contain identical data, and thus are needlessly taking up space on disk. Set the search location and then press **Search**. Finding and comparing files requires intensive disk access, so use this function when the computer is not doing other tasks.

When this process completes, Zoner shows a listing, with duplicate files grouped together into sets, distinguished by color. To mark a file, click the checkbox by its name, or use one of the alternative ways described below. Right-click any listed file to show a context menu. This meny has items to show picture files' **Properties** and **Image Information**. This menu also contains items to **Mark All Duplicates in This Folder** or in the folder and its subfolders. Use these to quickly mark all unneeded picture files in a folder. Use the buttons here to move all marked files to the Recycle Bin or a folder of your choice.

To prevent data loss, the program does not let you mark all duplicates in a set - at least one must stay unmarked.

Creating Special Outputs

Video

Use this function to create a video slideshow out of your pictures. It can include transition effects and a soundtrack. The video is saved as an MP4 file. The images are stored in H.264 format, and the sound in AAC.

Use the buttons at the bottom of the Video interface to instantly add all the files (or just the selected files) in the current folder to the video. Another option is to add the pictures by dragging and dropping them from the Filmstrip. Use drag-and-drop to change the order of pictures as well. To remove a picture from the timeline, use the picture's right-click menu.

To adjust settings for the video overall or settings for how individual pictures are displayed, use the items in the Side Panel. Pictures **Resolution**, **Quality,** and **FPS** affect the whole video file – higher values mean higher quality, but also a larger file that takes longer to save. **Background color** is used whenever a picture's ratio of sides does not correspond to the video's ratio of sides. To add files to the video's soundtrack, click the "**+**" button. MP3, WAV, and AAC sound files may be used. To remove files from the soundtrack, click "**–**". To change the order of sound files, click and drag them. The soundtrack is automatically muted at the end of the video.

Use the settings in the group named **Pictures** to fine-tune the display of individual pictures. Changes you make here are instantly applied to all currently selected pictures. **Transition effect** sets how a picture is displayed, while **Pan and Zoom** sets whether or not, and how, to apply a pan-and-zoom effect to the picture, and the strength of that effect. **Fit pictures** sets whether pictures, if needed, should be "letterboxed" (Fit to Frame) or instead stretched to fill the frame and cropped (Fill Frame). **Time per picture** sets how long a picture is displayed. Click **Fit Length to Soundtrack** to set all pictures' display times so that the video length matches the length of the current soundtrack.

Use the buttons at the top right to save and load **Presets** for videos. Your last-used video settings are saved and re-loaded automatically.

Videos are saved in the background while you work. To check the status of a long-running video saving process, visit **Notifications** - see the bell icon at the top right of the program.

Panoramas

Use **Create | Panorama** to turn a group of photos into a panorama.

The source pictures must have been taken with a certain amount of overlap, so that they can be joined properly. In this function, you prepare your source pictures and configure settings using a wizard, and then the program handles the rest automatically. In the first step, you choose the pictures from which the panorama will be assembled. In the next steps, you configure (if needed) various settings to ensure that the panorama is assembled correctly.

Sorting the Pictures

After the pictures are loaded, they are analyzed, and the program tries to guess the panorama type and the order of the pictures. In this step, you can either accept the program's guess or select a different panorama type or a different order for the source pictures. Use the buttons for these changes; to re-order pictures, you can also use drag-and-drop. When you are dragging a picture, its outline is displayed, and a vertical line shows where its new position will be if you drop it.

Joining Pictures

At the end of this step, the actual joining of the pictures into a panorama takes place. However, you must first enter the **focal length** of the lens that was used to take the pictures. The program also guesses this value automatically, but here again you can **set it manually**. This is recommended for experienced users only. Pictures from digital cameras generally have focal length information stored in their EXIF data. However, this is usually the relation between the true focal length and the size of the camera's sensor. To compose a panorama, meanwhile, you need to know the focal length equivalent for 35 mm film. To get this equivalent focal length, you multiply the actual focal length by a certain factor, which is the ratio of the diagonal of a 35mm film field to the diagonal of the sensor. Click **Determine** to open the **Determine Focal Length**window. In this window, you enter either the multiplication factor

or the sensor size of the camera with which the pictures were taken. (The sensor size should be mentioned in the camera's manual.) Once you click OK, the equivalent focal length is determined automatically and meanwhile the multiplication factor is also saved, so that for all future pictures from the same camera, the equivalent focal length is determined automatically. If the picture's EXIF data does not include focal length information, then the **Determine** button is grayed out and the focal length equivalent must be entered directly.

To start the actual assembling of the panorama, click **Join**. Once the panorama has been assembled, the **Next** button becomes active, enabling you to continue to the next step of the wizard.

Edit Connections

In this step, you can manually correct the automatically-determined joining points between source pictures. During automatic joining, the program finds, for each pair of neighboring pictures, points contained in both of those pictures. Then it uses these pairs of points to calculate any eventual shifting and rotation of the pictures against each other. If any of the joins is less than ideal, then click the red framed area enclosing that join.

This displays a window showing the pair of photos that meet in the given join. Each of the shared points that define the join is shown for each of the two pictures. The points are color-coded by pair. You can use the mouse to reposition these points, or enter new points by clicking in the places where you want them. (The program tries to automatically find the position of the paired point in the other picture.)

You can erase a point by clicking the **Erase Point** button or pressing **[Del]**. Click **Delete All Points** to erase all shared points. For correct joining, you need at least two points; the maximum you can enter is 12 shared points. To make your joins as precise as possible, use as many points as you can, and distribute them evenly throughout the join area. Also, emphasize places with high contrast (objects' corners, etc.). If the **Optimize point position**option is active, then it is enough to enter the position of a shared point only approximately; the program then seeks out an optimal position for it.

A horizon line is also shown on the panorama. This line sets the panorama's virtual horizon. If your panorama is forming an unpleasant "arc," move this line up or down to solve the problem. To rotate the horizon line, and thus the panorama as a whole, use the mark at the right edge.

Crop

Because the source pictures are usually variously shifted against each other, the final panorama generally needs cropping. In this step, you can enter the cropping borders, although the program tries to guess a suitable crop automatically. The program's guess is the crop displayed when you enter this step.

Finalizing

After you click **Next** in the cropping step, the panorama is assembled at full size and then the last step in the wizard is displayed. In this step, you can **Save...** the panorama to a file, or use **Open in Editor**to open it in the Editor, where you can finalize it.

Panorama Tips

- Photos taken using a wide-angle lens often suffer from barrel distortion, which makes it more difficult to correctly join them, and also often causes ugly breaks within what should be straight lines. You can counter this problem by using a larger focal length in the panoramas wizard than the one that was actually used when taking the source pictures.

- When manually fine-tuning your joins, enter primarily points in the middles of the transitions between pictures. Also, emphasize places with high contrast (objects' corners, etc.).

- Keep in mind that the final image can be relatively large, and this means large memory requirements. For example, a panorama containing 10 pictures from a 6-megapixel camera has, assuming 30% overlap between pictures, roughly 22,000 × 2000 pixels, and occupies over 130 MB of memory (!) if it is perfectly flat, and even more if it is not. Therefore you need to ensure that the computer on which you compose the panorama has enough memory. If you do not need to have the panorama at a large resolution (if you will not be printing it), we recommend that you assemble it from reduced-size copies of the original files. This significantly lowers the process's memory demands, making the work of assembling the panorama much faster.

How to Take Pictures for a Panorama

- The individual pictures should be taken using a lens with a large focal length. Source pictures from wide-angle lenses (and especially zoom lenses) often suffer from barrel distortion, making it impossible to precisely join them. If you cannot use a lens with a larger focal length (because you cannot get far enough away), it is a good idea to at least take pictures with the camera turned on its side. (You will need to take more source pictures, but they will be easier to join.)

- While taking pictures, you should be turning the camera around the center of its optical apparatus. If you do not do so, then the individual pictures will each be taken from a slightly different angle. This too makes joining more difficult (especially for close objects). This requirement can only be met completely using special tools, but even just placing the camera on a tripod will help considerably. When taking pictures by hand, it is practically impossible to meet this demand, and thus it will also be impossible to join your pictures with complete precision.

- During picture-taking, the camera should rotate around its vertical axis only. Once again, the easiest way to achieve this is using a tripod. (The ideal is to keep the camera straight using a level. Tripods often have a level built-in.) When taking photos by hand, just try to rotate the camera on only one axis.

- The overlap between pictures should be from 30 to 50%. If it is smaller, then it can be difficult to find points shared between neighboring pictures, and it also becomes necessary to join pictures towards their very edges, where lens defects are the most apparent, making the seams between pictures much more noticeable. The program does not expect overlap greater than 70-80%, and so larger values can cause bad joins.

- If there are no great changes in lighting conditions throughout the scene you are capturing, it is a good idea to use exposure locking. If, however, the lighting conditions differ significantly among pictures and some of them could therefore be overexposed or underexposed, we recommend that you set exposure manually and even out exposure differences among pictures using exposure correction. Naturally, you can make use of automatic exposure, but in this case the exposure levels can differ significantly between neighboring pictures, and even though the joining algorithm generally does a good job of evening out such differences, joins between pictures can be quite noticeable. If your camera enables it, then we recommend in any case that you manually set white balance.

3D Images

Use **Create | 3D Images...** to create stereoscopic pictures that are viewable in 3D with the aid of special equipment. To create such pictures, you need two special source shots that are then joined into a single 3D picture.

> Creating source pictures is fairly simple, and you do not need any special tools—you just take two shots of the subject from two slightly different angles. When taking the second shot, you move the camera by about the distance between an average pair of eyes (around 2 1/2 inches: 6-7 centimeters).

After you choose the two source images, Zoner Photo Studio tries to **Find Shared Points**. Using these points, it tries to compose the 3D image precisely even in cases where you turned, raised, or lowered the camera between the two shots. To delete any improperly detected shared points, select them and click **Delete Selected Point** or press **[Del]**. To delete all shared points, click **Delete All Points.** To add new points, click on the previews. The most points you can add is 12.

It is important to ensure that the left photo is on the left and the right photo is on the right. If the photos are switched, the final picture will not look 3D. If you do need to swap them, you can do so using the button named **Left < — > Right**.

The second step of the wizard is where the 3D image is actually created. Choose a 3D image type to set what method will be used to deliver depth information. The **Anaglyph** type stores depth information in the individual color channels. Viewing an anaglyph in 3D requires glasses with colored filters. The next type is **JPS/PNS**, which is based on placing the left and right source picture right next to each other; the resulting double-width image is then encoded to JPEG (JPS) or to PNG (PNS). Applications that support this format can determine the file format based on the extension and divide it into the two source pictures. The last type is **MPO**, which is the de facto standard for storing stereoscopic pictures and is supported by a wide range of devices (cameras, 3D televisions, etc.).

For the Anaglyph image type, there are also four anaglyph types available. **Black-and-white** makes the program convert the source pictures to grayscale and then from grayscale to the target colors. The remaining three methods create color anaglyphs. **Color** retains all colors. This may work poorly if the image contains large bright-red areas. To create aesthetically pleasing anaglyphs of scenes with such red areas, use **Half-color**, which weakens the red channel by an amount of your choice. To weaken the red channel further, use **Optimized**. Then use the **Red Channel Level** slider to set the amount of weakening.

Use the arrow buttons to manually correct the positions and rotations of the pictures against each other. Use the button in the middle of them to cancel your manual adjustments. To ensure that unjoined edge regions are removed automatically, leave the factory setting for **Crop**. Use the preview pane to preview the result. PNS/JPS and MPO images are only viewable in 3D using special software. To preview 3D images in these formats when that software is not at hand, force an anaglyph-style preview using the Preview Type control.

In the last step, save the 3D image or, for anaglyphs, open it in the Editor for further edits if desired.

Support for the MPO, JPS, PNS, and BMS Formats

For source pictures in normal image formats, two source files are always necessary, but some specialized formats can contain both source pictures in a single file. In this case, just select that one file, and the program will read both source pictures automatically.

> **Some persons with vision defects do not see anaglyph-type 3D pictures in 3D.**

Exposure Blending HDR

Use the HDR (High Dynamic Range) function to assemble multiple photos with varying exposure ranges into a single picture. This is sometimes called "sandwiching."

> This function helps solve the problem of the limited dynamic range of camera sensors. Because of this limited range, digital cameras cannot satisfactorily capture scenes with large differences in brightness, like a dark forest beneath a bright sky, or a dark room with light pouring in from a window. Since a photograph cannot capture a scene with such a large exposure range in a way that captures details in all parts of the scene, the photographer is forced to "sacrifice" details in either the light or the dark areas. But if the photographer can take three pictures identical except for their exposure - underexposed, overexposed, and "medium" - they can take advantage of HDR. Zoner Photo Studio can then use the most detailed areas from each shot to put together a new picture.

HDR pictures are normally composed from three shots, but sometimes two are enough, that is, either normal + underexposed (to capture lights), normal + overexposed (to capture shadows), or under/overexposed. After selecting source pictures in the Browser, use **Create | HDR via Exposure Mapping...** to start the wizard. To fix any mistakes you might have in your selection, use the wizard's first step. In the next step, the pictures are automatically aligned. Double-check the alignment and manually fix it here if needed. For advice on checking and fixing alignment, see the Help section for Aligning Pictures , as this function contains a similar window.

Use the next step to set which picture is properly exposed, which is underexposed, and which is overexposed. The program will try to order the pictures automatically. However, you can also reorder them by dragging and dropping them. In the next step, the HDR picture is actually created. You can use several settings to influence how it will look.

The various settings are separate for lights and for shadows, but their meaning is the same for both. Use **Transition threshold** to set the brightness level beyond which a pixel in the underexposed/overexposed picture is copied into the "medium" picture. However, this threshold need not be a sharp one; pixels from the source pictures can be phased in gradually. To set the width of such gradual transitions, use **Transition smoothness**. However, even with this sort of smooth transition, the border between the original and the changed part of the picture can be quite visible. You can alleviate this by using what is called an unsharp mask to blend the edit into the surrounding pixels as well. You can change the mask's unsharpness using **Mask blurring**. The last setting is **Intensity**, which sets the ratio between the original picture and the one being copied in.

Use the buttons in the last step to save the final HDR picture to file or open it in the Editor so you can continue editing it.

Tone Mapping HDR

Use Tone Mapping HDR to combine several photographs with varying exposure ranges into a single picture via tone mapping. Unlike Exposure Blending HDR, it enables work with an unlimited number of source pictures.

This function helps solve the problem of the limited dynamic range of camera sensors. Because of this limited range, digital cameras cannot satisfactorily capture scenes with large differences in brightness, like a dark forest beneath a bright sky, or a dark room with light pouring in from a window. Since a photograph cannot capture a scene with such a large exposure range in a way that captures details in all parts of the scene, the photographer is forced to "sacrifice" detail in either the light or the dark areas. However, if the photographer prepares several shots that are identical except for their exposure levels, tone mapping HDR can be used. Zoner Photo Studio then uses the most relevant parts out of each of these images and assembles them together to create a new HDR image, to which tone mapping is then applied.

An unlimited number of source pictures can be used for tone mapping HDR. After selecting source pictures in the Browser, use **Create | Tone Mapping HDR**. To create an HDR image, the program must know the exposure value (EV) of each source picture. Darker pictures have lower exposure values than light ones. The exposure value is taken automatically from EXIF using the data for aperture, exposure time, and ISO. If there is not enough data available for that, the EV must be entered manually. Click **Set** to set the exposure value difference between pictures. Alternatively, a separate exposure value can be entered for each picture. In the next step, the pictures are automatically aligned. Double-check the alignment and manually fix it here if needed. For advice on checking and fixing alignment, see the Help topic named [Aligning Pictures](), as that function contains a similar window. In the next step the HDR image is actually created, and tone mapping is initialized. Various settings are provided there for influencing the final output.

Brightness Method works exclusively with the Brightness value. Use this method to maximize the suppression of picture's lights and shadows. It lightens dark regions and darkens light regions. **Contrast method** works with contrast values in the area around a given pixel. This method emphasizes details and leaves the original distribution of light and shadow in the picture intact. Use the settings here for fine-tuning.

Use **Intensity** to set how strongly the tone mapping affects surrounding pixels. **Compression** determines how strongly the whole HDR dynamic range will be represented in the final output. Use **Light** to suppress lights and shadows effects. To set color intensity, use **Saturation**. Use **Gamma** to shape the gamma correction curve. The **White Color and Black Color** settings determine the "cutoff" percentages for the effect. **Lights Intensity and Shadows Intensity** set how strongly the effect is applied in the picture's lights/in its shadows.

In the last step, you can either save the final HDR picture to file or open it in the Editor, where you can continue editing it.

Note that one possible and even attractive use of tone mapping HDR is the creation of HDR from one single image (typically JPEG or RAW).

Postcards

To create images that look like postcards, use **Create | Postcard**.

After you start this function, Zoner Photo Studio chooses a postcard type based on the number of source pictures you have selected. If no appropriate type is available, it chooses the first type. To bring pictures into the postcard, drag and drop their previews. To reposition them within the postcard, right-click, drag, and drop them. You can also add pictures using the button named **Add Picture**. Each field in the postcard can receive a **placement method (Place:)**, **Transformation**, position, and size. To select a field in the postcard, left-click it. To remove a picture from a selected field, press **[Delete]**. **Envelope** settings are shared by every frame in the postcard; so are the settings for **blurring**, **frame width**, **frame color**, and **background color**.

You can set the postcard's **dimensions**, **the border thickness** and **border color**, **the grid thickness** and **grid color** and whether or not to **draw the outside edges of the grid**.

Dimensions can be entered in millimeters, or given in inches at a DPI of your choice. 96 DPI is enough for the screen; 150 DPI is recommended for printing and 300 DPI for quality printing.

Use the buttons in the next step to save the postcard or open it in the Editor for further edits.

PDF Slideshows

PDF slideshows are a very good way to share photographic presentations. They can be used even if your audience uses a Macintosh or Linux computer. Unlike "self-launching" presentations, this is a safe format - no program code is transferred, and thus the risk of transferring viruses among computers is minimal.

At their core, PDF slideshows are standard PDF files that contain one full-page photograph per page. During slideshow generation, you can set the way each photo (page) in the slideshow will be displayed. This means the **Transition effect** used and the amount of time to **Show (the) image for** – these can be set individually for each picture. Click **Apply to All** to apply the selected effect and display time to all pictures. You can also give the whole document a unified **effect display time (Show effect for)** and you can **set a soundtrack**. The soundtrack can be in the MP3, WAV, MIDI, AIFF or AU format. When possible, use MP3, because of its advanced compression. For more information, see [Export to PDF](#).

For your audience to see your slideshow as intended, they need to have Adobe Reader 6 or higher on their computer. (It is unlikely that they will not.) Older versions of Adobe Reader and other PDF viewers (e.g. GSView) will display the photos only, without the transition effects and the soundtrack.

Removing Noise using Multi-exposures

When taking pictures in insufficient light and without a tripod, it's usually not possible to use a very long exposure time, and a high ISO is usually needed too. This leads to photos with a lot of noise. If, however, you have taken several such photos in a row, you can use this function to combine them into one picture. The program averages their pixels, reducing noise. When taking the source pictures, make sure to move the camera as little as possible, because even a small change in its position can cause quite large changes to perspective, making it difficult to align the pictures so they can be sharpened. Cameras' functions for taking quick series of pictures are very useful here. About 4-6 shots is best. With fewer, the noise reduction is smaller than it could be. With more, the risk of nudging the camera during the series is greater.

After selecting source pictures in the Browser, use **Create | Join Multi-exposures | Remove Noise...** to start the wizard. To fix any mistakes you might have in your selection, use the wizard's first step. In the next step, the pictures are automatically aligned. Double-check the alignment and manually fix it here if needed. For advice on checking and fixing alignment, see the Help section for **Align Pictures** , which contains a similar window. In the next step, the sharpened picture is generated. Use the settings here to influence the results.

Use **Crop** to crop away edge areas where the source shots have not perfectly overlapped. Small shifts of the camera between pictures are normal for shots taken by hand, so pictures need to be aligned. This process is not always perfect, so edge areas may be blurred. Use the **Sharpen** option to eliminate this blurring. If some objects have changed position between shots, use the option named **Remove differences between pictures** and if necessary use the **Amount to remove** slider to fix the problem. Use the lowest slider level that works, because higher levels can mean less noise reduction: with strong reduction, in pictures with a high degree of noise, the noise can be mistaken for a change in the picture, and thus not reduced. But areas that contain removed differences between pictures always receive less noise reduction than other areas. This option can also be useful even when a scene contained no moving objects. If the camera position shifted heavily between shots, it can be hard for the program to align them well. Use this option to eliminate e.g. doubled contours caused by poorly aligned source pictures.

In the last step, you can either save the final picture to file or open it in the Editor, where you can continue editing it.

Removing Moving Objects

Use this function when you want to photograph a certain object, but other objects that you do not want in the picture keep moving around it—for example a monument surrounded by tourists. Prepare for this function by taking pictures of the object at several time intervals. Then use the function to join them into a single picture. For each part of the final picture, the function only uses the part of the picture that best matches the other pictures. Therefore, when taking your source pictures, make sure that for every area in the picture's subject, there are at least two shots where nothing is blocking it. Although shots from a tripod work best, you can also shoot by hand— the function straightens them out before starting. We strongly recommend using exposure locking and manual white balance for your source shots.

After selecting source pictures in the Browser, use **Create | Join Multi-exposures | Remove Moving Objects...** to start the wizard. To fix any mistakes you might have in your selection, use the wizard's first step. In the next step, the pictures are automatically aligned (straightened). Double-check the alignment and manually fix it here if needed. For advice on checking and fixing alignment, see the Help section for **Align Pictures** , which contains a similar window. In the next step, the final picture is created. Use **Blur edges** for smooth transitions between parts

taken from different pictures. Use **Duplicate Objects** to bring all the removed objects back into the final picture. Use this technique for creative images where e.g. a single object in a photo is in several different places in the picture.

With poor source materials, the final output can sometimes contain scraps of the objects that were removed. Use manual correction to handle this. In the place that you wish to adjust, drag out a frame, and in the next step of the wizard, choose which source picture to use for the area in the frame.

In the last step, you can either save the final picture to file or open it in the Editor, where you can continue editing it.

Aligning Pictures

Use this pictures to align several pictures of the same object taken without a tripod. After selecting source pictures in the Browser, use **Create | Join Multi-exposures | Align Pictures...** to start the wizard. To fix any mistakes you might have in your selection, use the wizard's first step. In the next step, the program tries to find points shared between the different pictures, and to use these to align the pictures. The pictures are always aligned to the first one in the series. The left part of the window contains a list of the pictures in the series. Click a picture other than the first one in order to select the picture and to check its alignment in the preview pane on the right. Use the buttons under the preview to toggle the display in the preview pane between the aligned picture, the first picture, and the one overlaid above the other.

If no shared points could be found for a given picture or it is badly aligned, edit the shared points manually using **Edit Shared Points**. During shared point editing, the right part of the window shows the two pictures and their shared points aside each other. Click a spot in either picture to add a shared point. The program automatically adds its equivalent to the other picture. Click and drag a point to move it. To delete a point, press **[Delete]** or click **Delete Selected Point**; click **Delete All Points** to remove all shared points. To help check alignment during editing, use the buttons on the right to see how the program has overlapped the pictures. Click **Save Added Points** to exit editing and align the picture based on the newly added shared points. Click **Cancel Shared Point Editing** to restore the state before you started editing.

Use **Crop** to crop away edge areas where the source shots have not perfectly overlapped.

Use the last step of the wizard to save the final picture, add a useful suffix to the names of the individual files, and choose a folder and format for saving the files.

Publishing

Printing a Single Picture

To print a single picture from the Editor, use **File | Print... [Ctrl+P].**

In the printing window, you can set the size and position of the picture and add a caption.

After choosing a printer, you can click **Properties...** to set a paper size and color (this is very important when printing to special photo paper). Zoner Photo Studio can also read in page size and margins on its own. If you turn on **Print to file**, the program will save the printout as a data file use by the selected printer instead of actually printing. **Number of copies** is automatically preset based on your settings in the printer properties, but you can also set it within the main preprint window. The **Automatically change paper orientation to match image** option changes the paper orientation (landscape vs. portrait) to match the orientation of the picture you are printing.

There are buttons beneath the print preview for changing the picture's size and position.

The **Fit to page and if required** option centers the picture on the page and handles how it should be fit on the page, using the fitting method that you select. The **Add borders** option adjusts the picture so that it fits on the page in full. The second option, **Crop**, makes the picture completely fill up the page's printable area and crops out any part of the picture that spills off the page. Such edge areas are marked in red in the preview.

The **By image DPI** option places the picture on the page at the size needed to achieve the DPI level you set.

The **Custom** option enables you to set a fixed **Width** or **Height** for the picture. You can set just one dimension—the program will automatically, proportionally calculate the other dimension.

You can use the buttons beneath the picture to anchor the picture to an edge or corner of the page, or to its middle. You can also instead use the **fixed position** menu. Use the **Custom** option to set a position of your choice for the **Left** and **Top** corner of the picture.

You can choose which **Units** to define the custom position in—millimeters or inches.

You can also optionally add a **Caption** to the picture. You can **Place** the caption below or above the picture, and **Align** it to either the edges or the center of the picture.
You can either write the caption manually or make use of picture information via the program's variable text feature. Click **Font...** to select a font and size for the text.

Printing and Exporting Groups of Pictures

In the Browser, there is a single wizard that provides access to all the program's ways for printing and exporting multiple pictures at once. In several steps, you can create any of four basic types of print output. Your first step in the process is to select the pictures that you wish to print or export. Then use the **Publish | Print & Export… [Ctrl+P]** menu item. In the first step, you double-check that you really want to use all of the pictures that you selected, and deselect any that you do not want. You can skip this step in the future if you check the **Skip this step from now on** box. To continue, click the **Next >** button.

On the following page you can choose what type of print or export you want to prepare:

- **Templates**—page layouts prepared by Zoner that you can place photographs into

- **Contact Sheets**—automatically generated layouts with the number of rows and columns you choose, with customizable spacing between pictures, headers, footers, and captions

- **Calendars**—automatically generated calendars for a year, month, and day of your choice

- **Paper Saver**—printing of any number of photos with any combination of sizes and shapes on the minimum necessary number of pages

Placing Pictures in a Print Template

Pictures can be placed either manually or automatically. In the mode named **Automatically**, pictures will be placed

on individual pages based on their current positions in the folder, and the print job will be generated all at once, with the corresponding number of pages. The **Automatically with rotation** mode rotates pictures by 90° if their orientations do not correspond with the orientation of their placement frames. When you are in the mode named **Manually**, in the next step you will see an empty print page onto which you can drag pictures from the list on the left side of the window. You can add further pages by clicking the **Add Page** button. You can also delete pages. You can move among pages using the **<<** and **>>** buttons.

There are three different ways that pictures can be placed:

- **Frame**—the whole picture is fit into the frame, and its ratio of sides is retained. If its ratio of sides is not the same as the frames, then empty strips surround its sides or its top and bottom.

- **Crop**—the picture is fit into its frame based on its "shorter" dimension (the dimension that will make the other dimension "stick out" when it is fit snugly into the frame) and the other dimension is cropped.

- **Stretch**—the picture is placed in a frame and, if it does not fit snugly in the frame, its ratio of sides is changed so that it does snugly fit.

You can mirror or rotate pictures after placing them. These transformations always relate to the currently selected frame, which is highlighted with a red frame.

Output Options

Once you are done preparing the print job, the program offers five options as to what to do next: **Print**, **Save**, **Export**, **Edit** and **Edit in Zoner Draw 5**. These options are described below.

Saving Print Jobs

Pages can be saved to the ZMP format. You can open ZMP files in the Editor and then edit, print, and save them from there. ZMP files do not actually store photos inside of them, only links to the photos.

Exporting Print Jobs

Zoner Photo Studio can export a print job to the widespread PDF document format. This is an easy way to send electronic albums to your friends without the need to include a viewing program. (Adobe's PDF viewing program named Adobe Reader is already installed on most computers.)

When you click **Export to PDF…** after preparing a print job, a window for work with PDF settings is displayed, followed by a window for setting the PDF file's name and path.

The first of these windows is described in more detail in the Export to PDF topic. Another possibility is to export the individual pages of the print job as a series of bitmaps; this is described in the Convert to Bitmap topic.

Editing Print Job Pages

You can edit the pages of a print job in a special print-job version of the Editor. To start editing them, either use the button for this at the end of the Print and Export wizard, or open a saved ZMP file (see above). The Editor toolbar changes when you are editing print jobs. This version of the Editor contains several desktop-publishing editing tools:

- **the arrow**—for selecting and editing objects (moving, resizing, rotating, and skewing them)

- **small arrow**—for shaping objects, and especially for editing existing text

- **the "T"**—for adding new text

- **import**—for adding pictures

- **paging**—for moving among pages

This version of the Editor is in practice generally used for fine-tuning the positions of photos and adding custom supplementary texts. Not all parts of print job pages can be edited. Some elements are unchangeable parts of the templates. You can save print jobs after editing them.

Editing Print Job Pages in Zoner Draw 5

You can edit print job pages in Zoner Draw 5, a separate product by Zoner. There is a button for precisely this within Zoner Photo Studio, but it is grayed out unless Zoner Draw 5 is installed. Work with this program is somewhat more complicated than work with the built-in Editor, but it also offers more possibilities. For detailed help on using Zoner Draw, use the Help **[F1]** function in that program.

Printing using Templates

Templates

Zoner Photo Studio contains several dozen templates grouped by theme: simple and complex contact sheets, prints to photo paper, business prints, congratulations on a new baby, weddings, birthdays, photodocumentaries, etc.

Some templates contain editable text. Some templates further let you make use of the Variable Text feature, so that texts can vary based on information about a picture or about the printout page. For more information, see the topic on the Variable Text feature.

Custom Templates And New Templates

You can create your own templates using Zoner Draw 5 (a separate product). For more information on this, see the Zoner website.

New templates are published on the Zoner website from time to time. To reach the page where they are published, click the **Get more** link next to the list of template categories in the print wizard.

Contact Sheets

Choosing a Page Size

For the **Contact Sheets, Calendars,** and **Paper Saver** printing types, the next step is choosing a page size. You can choose one of the paper sizes offerred, or use the last item, **Custom**. For custom page sizes, you can either enter the size yourself, or use the **Read Page Size and Margins from Printer...** button, which will call up your printer's own Print Setup window so you can choose a size from there. This button will also automatically set the printer's smallest possible unprintable regions as the page borders.

Contact Sheets

Use the Contact Sheets printing type print a specified number of pictures per row and column, and the size of the spaces between pictures. You can include a page header and footer, picture captions, and a background for the page and for individual pictures.

Calendars

When creating a calendar in Zoner Photo Studio, the most important thing is picking a template. Several templates are included for each of a variety of periods: weekly, monthly, bimonthly, quarterly, half-yearly, and yearly. You can also choose a starting **month**, **year**, **week orientation**, and a choice of **day of the week**.

In the next step, you configure the details of the day and month displays, day names, underlining, framing, and special days. For all of these texts, you can set the font, size, alignment, color, and other attributes after clicking the corresponding **Text Properties** button.

Paper Saver

This function optimally distributes pictures with sizes of your choice so that they fit on the least possible number of pages.

If the predefined sizes do not meet your needs, you can choose the **Custom** item and enter all needed sizes by hand. To add a group of picture "frames," enter their widths, heights, and quantity, and then click **Add**. To remove all the frame groups that you have added, click **Remove All**. To remove a single group, click **Remove**. To edit a group, select it, change its settings using the controls at the top, and then click **Change**.

Print Settings

Before printing a print job that you have just created in one the publishing wizards or that you are editing in the print-job version of the Editor, you can configure various print settings. The settings here are divided into four tabs.

- **Printer**—Here you can select a **Printer name** to choose a printer. Under the drop-down printer list, you can see basic printer information. Click **Properties…** to call up a window for choosing printer properties, like the page format, print quality settings, paper type, etc. **Print range** sets whether the whole document should be printed, or just selected pages or selected objects. (This last option only makes sense when printing from the Editor.) **Number of copies** sets how many copies of the given print range will be printed out. When you use **Print to file**, the document will not actually be printed; the print output will be saved to a file instead. This is useful when you need to send a file to a printer that is not connected to your computer, or for exporting to PostScript.

- **Options**—Use the **Fit to page** option to make the program proportionally resize the contents of each printed page so that they just barely fit on the page. Use this option when, for example, you want to print a document on paper that has the same shape as a template, but a different size. For non-US users, a good example would be moving from the normal A4-sized templates to A3-size paper. When you use the **Center on page** option, the contents of each printout page are centered on the page. You can use the **Scale** to stretch or shrink the contents of the printout pages. Use the **Print text as curves** item to make the program treat text as a collection of curves instead of as actual text. Some printers are unable to print letters that cross the edge of a printed page. This is a problem when, for example, you are using the Billboard Printing option. Printing text as curves will prevent this. **Print quality** sets how fountain fills and transparent areas will be printed. ("Fountain fills" is a term from a kind of graphics called vector graphics. They are gradual transitions from one color to another. They are only found in templates themselves, not in your photos.) Only the highest level, "Transparency," guarantees that the document will look the same way on paper as it does on the screen. However, it is also the slowest to print.

  Wireframe—object outlines only

  Low—pictures and fills are shown as hatching instead of their real contents. Fountain fills are reduced to 10 steps.

  High—Fountain fills have a reduced number of steps.

  Full—everything is printed exactly as shown, except for transparent areas.

  Transparency—objects' transparency is also taken into account.

- **Billboard printing**—Use the controls on this tab to print documents larger than your printer's maximum paper size. While the standard templates have the Letter or A4 paper size, you can create your own templates (using Zoner Draw, a separate product) with sizes of up to several meters. Billboard printing enables you to actually print such large sizes, by dividing them out into multiple pages that you then reassemble with the help of printing marks. That is, when you turn on billboard printing, each page in the printout will contain information around its edges informing you of which pages to join to which other pages. This makes it easy to print large pictures for use in place like shop windows. Before you can do all of this, you need to actually turn Billboard Printing on. To do so, use the **Enable billboard printing** control. Then set what kind of **Cutting marks** you prefer. Normally, the program will print out all pages in the billboard printing job, but there can be situations where you only want to print selected pages. To call up a window where you can select pages to print, click **Select Pages….** The pages marked in blue in this window will not be printed.

- **Prepress**—Here you can select whether or not to **Print prepress marks**, and what kinds to use. Prepress marks are supplementary information about a document or marks that are helpful when e.g. cropping the printed page. Use **CMYK separations** when printing to film for a professional printing machine. When preparing color publications, you need to supply pages "separated" into the basic print colors. To print separation, check the CMYK separations checkbox and then the plates that you wish to print.

Convert to Bitmap

This function is only available when you are editing a readied print job. It converts the print job into a bitmap.

This function is available as a button in the last step of the Print and Export wizard, and under **File | Convert to Bitmap** when you are editing a print job in the Editor.

In the conversion window, you can set how the bitmap's size in pixels will be determined: directly, or in terms of dots per inch (DPI). To convert multiple pages to a bitmap, you must use the Convert to Bitmap command from the last step of the Print and Export wizard.

Export to PDF

Use **File | Export to PDF [Ctrl+Shift+E]** while you are editing a finished print job (created using e.g. **Publish | Print and Export [Ctrl+P]**) to export it to PDF (Portable Document Format). PDF documents can contain some information about themselves, so you are offered a chance to enter **Title, Subject, Author, and Keywords** data for the PDF. The remaining items in the PDF export window let you adjust technical aspects of the PDF to save space, or ensure that your audience can read it.

One way or another, each PDF needs to handle the fonts for any text you use. We highly recommend that you include them directly. For this, you need to do nothing; it is the default setting. But occasionally it is better to export text as curves instead. For small amounts of text, this can reduce your PDF's size: while expressing text as curves wastes space, including the font file would take even more space. But one disadvantage will still remain: since the text is now curves, not text, your audience will not be able to search in it, copy it, etc. This choice is placed under **Export text as**.

Normally it is a good idea to use some kind of **Image compression**. JPEG compression is best for photos and other pictures with the same range of color (i.e. TrueColor); ZIP is best for the rest. Below this you will find more settings that can help keep your PDFs small. ZIP compression will not touch its quality, but also does little to compress photos. The ZIP compression level setting lets you trade quality for speed. JPEG compression can as usual worsen pictures' appearance, but at high quality levels (low compression levels) it is unnoticeable, while still heavily shrinking the file.

When publishing photos you may often use pictures straight from the camera. Normally you will not want to show them to your audience at their original size. Resizing them is technically called resampling them, and so the next item here is **Bitmap resampling**. 96 DPI is normally enough for screen viewing. If your audience will be printing your pictures, use 150 DPI. If they will want to make good-quality prints, use 300 DPI and up. The **Resampling method** sets what resizing technology to use. Usually, Supersampling will give the highest-quality results. **DPI for vector transparency** sets what quality should be used in places with vector transparency. (In practice, this means any transparency at all.) The same guidelines apply here as for bitmaps.

When you check **Open automatically after export**, the exported PDF will immediately open up in the viewer associated with PDFs on your computer. Normally this will be Adobe Reader.

The **Compress text and vectors** and **Compress fonts** options will make the program use ZIP compression on these parts of the document. This has no effect on quality; it trades some speed of opening for some size.

When you check **Anti-alias bitmaps**, the exported PDF will contain instructions informing PDF-viewing programs to smoothen edges in pictures when not displaying them at original size.

Send by E-Mail

Use the **Publish | Send by E-Mail... [Ctrl+Shift+M]** item to hand selected files in the Browser over to your e-mail program, which will then attach them to a new message. Before control is transferred to your e-mail program, you are given a chance to apply several types of edits to your pictures.

> **The e-mail program used must be an actual program, and must support the MAPI interface. Web e-mail services do not support this interface, so you cannot send files over a web e-mail service using this function.**

You can shrink pictures or convert them to JPEG before sending. Using the **Shrink TrueColor images** item will shrink pictures with dimensions higher than the values you set down to those values. (TrueColor images are images with a certain maximum color range; normally, photographs will be in TrueColor.) The will be shrunk proportionally so that it fits the maximums for both width and height (and fits at least one of these snugly). Use the **Convert TrueColor images to JPEG** to change the picture's format to JPEG (if needed) and resave the picture with a compression level of your choice. Pictures stored in GIF and other formats with palette-based colors will ignore this function.

You can also compress your picture files before sending them. When you check **ZIP-compress** images, all the files will be saved into a single compressed file with the name and compression level that you choose.

Use **Size warning** if you want Zoner Photo Studio to warn you when the total size of your pictures exceeds an amount of your choice. This warning window gives you a chance to either continue or go back and change settings.

You can also use this window to send pictures **To (the) clipboard** instead of attaching them to an e-mail. When you click this button, the pictures in question, in altered versions with the compression, etc. you have requested in this window, are saved to a temporary folder, and links to those temporary files are placed in the Windows

Clipboard. After this, you can go to any window capable of accepting a pasted file—like a new e-mail window or a folder—and use **[Ctrl+V]** (or the Paste item in the program's Edit menu) to paste the files into it. Temporary files will be deleted automatically when you exit Zoner Photo Studio; only files that still have a link to in the Clipboard will be retained.

When **Convert pictures with a profile to sRGB** is active, pictures with a color profile other than sRGB will be converted to this, the most "universal" color space. (If you have no experience with color profiles, the chance that you will need to change this option is low.)

> **You can choose which e-mail program actually "receives" the pictures. In Windows Vista, go from the Control Panel to Programs, then to Default Programs, then to Set your default programs. In Windows XP, go to Start, then All Programs, then Set Program Access and Defaults.**

Upload to Zonerama

Zoner Photo Studio provides easy access to web albums hosted on **Zonerama.** You can easily and quickly manage web albums straight from inside the program.

You must log in using a Zoner Account before using Zonerama for the first time. To do so, click the words **Not logged in** near the top right corner of the program, beneath the "Import," "Manager," etc. buttons.

Use **Publish | Upload to Zonerama** to make the Manager display two Browsers, with one showing your current folder on disk, and one showing your Zonerama albums. Switching to the Zonerama Browser switches you to the Zonerama section of the Navigator as well.

To create a new album, use **Organize | New Album**. New albums are set as hidden, that is, they are not displayed among the public galleries on Zonerama. To unhide an album, right-click it and use **Set Privacy.**

Drag and drop photos to copy them from your computer into an album, from an album onto your computer, or among albums. You can also drag a folder from your computer onto Zonerama. This automatically creates a new album. During each upload, Zoner lets you **Choose upload quality**. At the quality level called "Highest," the picture is uploaded at its original resolution.

You can **rename, delete,** or change information for pictures on Zonerama in the usual ways. To use a picture as an album cover, right-click it and choose **Set as Album Cover** in the menu.

> **Warning: Deleting photos in the Cloud album deletes them on all your devices' Cloud folders.**

To view photos at full size, open them in the **Viewer** or **Slideshow**.

You can also edit any Zonerama photo directly from inside Zoner Photo Studio. To do this, open the photo in the **Editor**, edit it, and save it using **File | Save [Ctrl+S]**.

The bottom part of the Zonerama Browser shows a status bar with information on the current album and a link named **Show on Web.** Click it to open the current album in a web browser.

Export

Non-destructive editing in Zoner Photo Studio works transparently, that is, it is applied intuitively in all parts of the program. However, in order to use a non-destructively edited picture in other software, it must be exported. To **export** a picture, click **Export** in the Side Panel. This button is available in the Manager and in Develop. In Develop, it normally affects the picture currently being edited. However, if multiple pictures are selected in the Filmstrip, the **Export** button affects all selected pictures.

The **Export** window lets you pick a target folder for the files being exported, as well as their format, quality, and color space, and lets you resize them and choose what metadata the exported file will contain. These settings can be modified as needed, or quickly picked using a list of common settings. These quick settings can also be picked directly, using the small arrow button next to **Export**.

The export itself is done in the background while you work. To check the status of a long-running export job, visit **Notifications** - see the bell icon at the top right of the program. Notifications also shows any warning or error messages that may appear.

Program Settings

To display the window for work with program preferences, use **Settings | Preferences [Ctrl+M]** in the program's main menu.

The left side of this window shows a list of sections. The right side shows options within a given section. Click **Restore Settings for All Selected** to restore the defaults (factory settings) for the currently-displayed section.

Appearance

Use the setting named **Color Theme** to change the program's overall appearance. Several themes are available. You can also set the **Editor background color**, **Thumbnail background color,** and **Thumbnail style**.

Here you can also tell the program not to **Highlight module switcher buttons**.

Use the **Toolbars** group to choose an **Icon size** from among these two options: **Normal Icons** and **Large Icons**. Underneath these options is a **Preview** of how toolbars will look with your settings.

Click **Change Toolbar Settings...** to call up a window for customizing toolbars' contents.

The Zoner Photo Studio window always shows a title bar at the top if you turn off the option named **Hide program's title bar when maximizing window**.

Use the **Optimize interface for touch devices** option to change Zoner Photo Studio's interface (mainly the sizes of certain controls) so that it is easier to use with touch controls.

General

Double-clicking a thumbnail in the Browser should launch: - four options are available here: **Preview**, **Develop**, **Editor, Viewer.** This option also controls what happens when you press **[Enter]** when a thumbnail is selected in the Browser.

When displaying pictures that do not fit on the screen at 100% (1:1) scale, the program must show them at reduced size. To set the method used for this resizing, use **Bitmap display quality**. **Low** gives high display speed, but low quality. For most purposes, the best option is **Normal**. **High** gives the best display quality, but it also places the highest demands on your computer. The bitmap display quality setting is shared by all parts of the program.

Milliseconds to wait before automatic previews sets how quickly Zoner starts to update the display after you change settings.

Default JPEG compression sets what JPEG compression quality is used when saving pictures. The next option sets what happens **If (an) image does not qualify for lossless JPEG transformation**. **Crop to qualify it** makes the program automatically crop the picture as needed to let the program use a lossless edit. **Perform lossy transformation** makes the program preserve the picture's exact size. Uncropped photographs from a digital camera always meet the size requirements.

Use the setting named **Show Import automatically on attaching camera or inserting card** to control whether or not the program automatically shows the Import module after you attach a camera, etc. **Automatically rotate images to match EXIF orientation flag** makes the program automatically visually rotate pictures to landscape/ portrait as needed to match their EXIF orientation.

Use the setting named **Always start the Browser in this folder:** to make the program always start in a certain folder. Use the Browse button here to pick that folder. With this option turned off, Zoner Photo Studio remembers what folder you are in when you exit the program, and shows that folder again the next time you start it.

Saving, Loading, and Restoring Settings

Zoner Photo Studio is rich in settings for its various windows and for the program overall. All of these settings are stored in the Windows registry. If you reinstall Windows or your disk fails, these settings are lost forever. For this reason, it can be a good idea to store away a file with your settings for the whole program, so that you can later renew them. To save settings, click **Save Settings...**. You will be asked to choose a location for the settings file. To reload the settings later on, use **Load Settings...**. Use **Default Settings** to completely return the program to factory settings. This restores the program's behavior to how it was just after installation. Changes to settings are not reflected by Zoner Photo Studio until you restart the program.

Toolbars and Keyboard Shortcuts

Use these two buttons to call up windows for customizing toolbars and keyboard shortcuts. Alternatively, bring up these windows by clicking the **Customize Toolbar** item in the right-click menu for a toolbar.

Use the **Keyboard Shortcuts** tab to change functions' keyboard shortcuts. You can assign multiple shortcuts to the same action. If you enter a keyboard shortcut that is already in use, then the program automatically shows the name of the action that is already using the same shortcut.

Use the **Toolbars** tab to change what buttons are shown on toolbars. The left side shows available buttons. The right side shows buttons that are already present on the toolbar. Add a button, select an item on the left and a future position on the right, and then click Add. The item is then added at the selected position. Removing buttons works similarly. To reorder the **Displayed buttons** , either select items and click **Up** or **Down**, or drag and drop items to your desired positions directly.

Use **Settings** and the controls at the bottom of the window to save and reload this window's settings.

Display

Use this section to set which file types are displayed in the Browser. (A file's filename extension determines its type.)

You can either tell the program to **Show all files** or select which types of **supported files** it should display.

Turn off **Highlight to distinguish bitmap/vector/video/sound** to prevent the Browser from color-highlighting files by type in the Details viewing mode.

Catalog

The Catalog can contain multiple folders. To add or remove folders, use **Add Folder** and **Remove Folder.** Adding folders to the list makes the Catalog start indexing them in the background.

Checkmark a cataloged folder to make ZPS create large previews for the pictures inside it. These are available even when the device with that folder is offline (e.g. a flash stick, USB disk, etc.) Such unavailable files remain listed in the Catalog; you can view their previews and their file information. When a file is unavailable, a cross icon is displayed on its thumbnail.

Use **Maximum thumbnail size** to set the size at which the thumbnails used in the Browser and Filmstrip are stored.

> Warning: If you choose a size larger than 160 pixels, thumbnail generation can slow down considerably, because the program cannot take advantage of pictures' internal EXIF thumbnails. Those thumbnails have a size of 160 × 120 pixels.

The Catalog's index file, its "Index," stores thumbnails and information for your pictures. That makes browsing cataloged pictures faster. Also, the Browser's Quick Search box only works with cataloged pictures. By default, the Index is stored in your Windows user profile folder. This is usually on the same disk as your Windows installation. To save space on that disk, change the **Index location** or use the control named **Trim index when it reaches this size.**

Note that the Index only stores information that is already contained inside your picture files. Therefore, clicking **Delete the Index** does not destroy your data - it only slows down browsing and prevents Quick Search.

Use the setting named **For Quick Search ("fulltext"), assume I'm using** to set which language Quick Search should assume you are using, so that it can find e.g. "dogs" when you look for "dog." Zoner only applies this setting during indexing, so to make this setting have an effect, delete the Index and re-catalog your pictures.

Thumbnails

Use the settings in this section to control how thumbnails are displayed in the Browser and the Filmstrip. Use the settings here to set the **Thumbnail Width** and **Ratio of Sides**. To quickly resize thumbnails within the Browser, use the slider on its toolbar or scroll the mouse wheel while holding down **[Ctrl]**. The maximum thumbnail size is

not set here; change it under <u>Catalog</u>.

Zoner can and normally does **Load EXIF thumbnails** when they are present, instead of generating its own. This speeds up browsing, but if your pictures have outdated EXIF thumbnails, you'll see those, rather than thumbnails based on how they look now. Zoner Photo Studio itself always updates EXIF thumbnails whenever it edits a picture. In pictures whose EXIF thumbnails are missing or outdated, you can tell the program to generate new ones. For this, use **Information | Manage Information | Add EXIF Preview...**. Note that that function only affects JPEG and TIFF pictures.

Use **Generate thumbnails for videos** to make Zoner Photo Studio create thumbnails for video files. **Show icons for pictures' Default Programs in their thumbnails** makes each file's thumbnail show an icon for its Default Program in Windows. Double-click the icon to open the picture in that program. **Show sample picture thumbnails inside folder thumbnails** makes Zoner Photo Studio show the first four pictures in each folder within the folder's icon. The **Look for sample pictures this many levels deep:** control sets how many levels deep the program looks to find these sample pictures.

Use the **Tool tip:** settting to set what information is shown in a tool tip bubble when hovering the mouse over a file in the Browser.

Thumbnail Descriptions

Use the options here to control whether or not the thumbnails in the Browser and Filmstrip will **Show file names** and **extended information**. This information can be displayed directly under thumbnails, or in a **tool tip.** This information is customized using a <u>formatting string</u>. Use the controls at the bottom to set what information is shown in the Tiles listing mode.

Editor

Use this section of the preferences to adjust settings affecting how the Editor looks and behaves, like the **Default Zoom** used when opening pictures in the Editor. **Darken area to be cropped** sets how strongly the program darkens (on-screen) the area to be removed during cropping.

Use **Mouse wheel action** to set whether rotating the mouse wheel in the Editor switches to the next/previous picture, or changes the zoom level instead. (When in the Editor, hold down **[Ctrl]** while rotating the mouse wheel to change Zoom level regardless of this setting.)

Use **positions for Side Panel and Toolbox** to set where the Side Panel and main toolbar are shown; normally they are both on the right.

The **Animate selection outline** option, which is normally on, makes the outline (border) of any selected area in the picture "move" so it is more visible. If you encounter problems with selections in the Editor, such as a flashing screen or program slowdowns, turn this option off.

The next item is called **For the "Save As..." command, offer:** and controls what folder is shown at first when you use the Editor's Save As command. Use the options to set whether it starts out showing the last folder visited, or instead the one containing the currently open file (if any).

Use **Folder for Editor's temporary files** to set where temporary files created by the Editor while you work are stored. To put a maximum limit on their size, use **Limit for temporary files.** This is useful when editing very large files.

Minimum number of steps sets the number of Undo steps that is guaranteed even when it makes the temporary files larger than the limit for temporary files.

Preview

Use the options in this section to configure the behavior of the Manager's Preview mode.

- Use **Mouse wheel action** to set what action the Viewer performs when the mouse wheel is rotated: moving among pictures, or changing the zoom level. (Hold down **[Ctrl]**and rotate the mouse wheel to zoom regardless of this setting.)

- **For "Zoom to Fit," stretch small pictures to fit whole window** - when using "Zoom to Fit" with this option active, small pictures are normally stretched out to fit the whole Preview or Viewer display. With this option inactive, small pictures are never stretched to fit the display.

Compare Images

In this section, you can adjust program preferences for the function named **Compare Images**.

Use **Mouse wheel action** to set which action Compare Images takes when the mouse wheel is rotated: moving among pictures, or changing zoom level.

You can also change the **Picture captions**. These are defined using the program feature named **Variable Text**.

Integration

Use the settings in this section to adjust integration of Zoner Photo Studio into Microsoft Windows. Some settings here, concerning Zoner's status as the default program for image files (or "associated" program in Windows XP), vary depending on which version of Windows you are using. Keep in mind that these controls can only set Zoner as the default program for formats; they cannot "un-set" it! To set another program as default for some or all image formats, use the Windows Control Panel.

- **Windows Vista, Windows 7** - two buttons are available. **Set as default program for all supported file types** makes Zoner Photo Studio the default program for every file type it can support. **Set as default program for selected file types...** displays a windows for setting Zoner Photo Studio as the default program for file types of your choice.

- **Windows 8, Windows 10** - only one button is available: **Set as default program for selected file types...**.

The next set of controls sets which part of Zoner Photo Studio is shown when you double-click a picture: the **Viewer** or the **Editor.**

Use **Integrate Zoner Photo Studio into Windows** to set whether or not items for launching Zoner Photo Studio are shown in the right-click menus in Windows for files of supported types. You must have administrator rights to change this setting.

Check for updates on system startup: Zoner Photo Studio can check for updates even when it is not running. When an update is found, a message appears in the Windows system tray. Use this setting to prevent these update checks.

Color Management

Checking **Use color management** turns on the program's support for work with input and output devices' color profiles. On a properly configured system, using color management gives you more faithful colors on the monitor and when printing.

Image's color space—this option sets whether pictures will be processed in the color spaces that are assigned to them, or whether they will be converted to a custom color space during loading instead.

Working color space—this sets the default color space used during conversion to CMYK and RGB (if automatic conversion to a working color space is enabled).

Color management during printing—this sets whether and how programs and the printer driver will monitor conversion to the printer profile.

Device Profiles

- **Monitor**—color profile for display

- **Printer**—color profile for printing

- **Camera**—color profile automatically placed in a picture when using the "Import" function

- **Scanner**—color profile automatically placed in pictures when you use the "Acquire from Scanner" function

When No Profile Is Selected...

- **Monitor** and **Printer**—the profile selected within Windows is used

- **Scanner** and **Camera**—no profile is assigned

CMYK Image Profiles

Default input profile is a color profile used for conversion from CMYK to RGB in pictures that contain no color profile. If none is selected, a mode compatible with older programs is used. **Output profile** is the target color profile for CMYK pictures. If none is selected, a mode compatible with older programs is used.

Color management during printing

Color management during printing—this sets whether and how programs and the printer driver will monitor conversion to the printer profile.

Color management modes during printing:

- **Controlled by application** —it is assumed that color management in the printer is turned off. The application has full control over conversions among profiles. This option does not work correctly for printers that do not have an RGB profile, but it gives the best output control.

- **Controlled by printer (sRGB)** —it is assumed that color management in the printer is turned on. Pictures are sent to the printer in sRGB only, but the printer profile settings are applied.

- **Controlled by printer (Adobe RGB)** —works like the above, except that the program sends the picture to the printer in Adobe RGB.

- **None** —the picture is converted to sRGB and sent to the printer without the use of color management. Output control is fully managed by the printer.

- **XPS printing** —the picture is sent to the printer as an XPS document. This enables the printing of pictures with a higher color depth. This function is only available for printers with an XPS driver, and color management is fully controlled by the printer.

> **Even though Zoner Photo Studio can load in CMYK pictures with the use of a color profile, internally, it always works with pictures in RGB. The way in which CMYK pictures are interpreted is not 100% compatible with Adobe Photoshop. For this reason, it is better to transfer pictures in RGB.**

Information

Even though Zoner Photo Studio can read information from various formats, it focuses primarily on the JPEG and TIFF formats. Within pictures of these formats, information can be stored in three types of so-called "data sources"—EXIF (**Ex**changeable **I**mage **F**ile Format), IPTC and XMP (e**X**tensible **M**etadata **P**latform). The options on this tab give you tighter control over these data sources. Zoner Photo Studio loads picture information into a cache. The cache information is reused until program exit. Thus certain changes to these settings are only respected after the program is restarted.

Primary Data Source sets which data source (which standard) should be given preference when loading picture information. This option does not affect the saving of information. Information is always saved to all supported sources. In light of the limitations of the EXIF and IPTC standards, encoding problems can occur when using Zoner Photo Studio in conjunction with other programs or web galleries. Therefore we recommend leaving the default, that is the XMP standard, which does not suffer these problems.

Default IPTC Encoding - use this to choose the default encoding for the IPTC information block, if the program is creating it. For full compatibility with older applications, leave the Current Code Page setting. For full support of all character sets, switch to UTF-8.

Preserve EXIF Maker Notes —besides publicly available information, digital cameras can also store information inside EXIF in private formats specific to the camera's manufacturer. For the major camera manufacturers, Zoner Photo Studio can at least partially understand this information, and after loading the information in, it can save it back into pictures correctly. But if nonsensical data appears in the software supplied by your camera manufacturer for pictures edited in Zoner Photo Studio, try turning this option off.

Save keywords to EXIF notes— the EXIF specification does not set aside a space for storing keywords. For this reason, Zoner Photo Studio normally saves keywords to EXIF notes. Use this option to turn that behavior off.

Load in IPTC keywords —turn this option off if bad fragments appear among your keywords. This problem can occur when you are loading pictures on a computer with different Windows language settings than the ones used by the person who originally saved the information.

Save information for DNG images to an external XMP file – Zoner Photo Studio can save XMP information inside DNG files, but storing it externally is faster and is safer for the DNG file.

Click **Custom Information** to set up custom XMP data to meet your individual needs. You will most appreciate this ability if you are placing pictures in a company database or publishing system.

Custom Information

Zoner Photo Studio can save picture information in three standard formats for such information; one of them is XMP.

The specification for XMP can be found at e.g.http://www.adobe.com/devnet/xmp/pdfs/xmp_specification.pdf.The XMP standard allows for the addition of custom information types, and Zoner Photo Studio supports this aspect of XMP. The information defined in Zoner Photo Studio is normally in the http://zoner.com/xmp/userdata/1.0/ namespace. Only text information is allowed. Four types of custom information are supported. Zoner Photo Studio does not enable full use of these types. This possibility is present only so that certain standard XMP data that Zoner Photo Studio does not display can be mapped to custom information.

These types are:

- **plain text** (and lists—these actually only differ in the way they are visually presented)

- **date and time** (this is stored in XMP as text with certain rules)

- **localized text** (an XMP type that is used for e.g. storing copyright)

- **text sequence** (an XMP type; author information, for example, is stored in this way—under XMP a photo can have multiple authors and these can be stored as multiple items

For a normal user, the only important types are plain text and, occasionally, date and time.

Configuration—this sets the placement of the configuration file. If you wish to share custom information with multiple users, it is essential for these users to also have the items selected in their own configuration files. You can achieve this either by copying the configuration or by placing it on a shared path. If the configuration is on a shared path, do not permit multiple users to edit it at once.

An item's **Title** is the name under which it is shown in your copy of Zoner Photo Studio. The type is governed by the rules mentioned above. This option shows the variants available for the "list" type.

Use the settings under **Configure XMP settings** to configure how information is stored in XMP. If this group of controls is not activated, the configuration is created automatically on the basis of the item name, and the program shows a warning whenever any conflict occurs.

Namespace identifies the group of data to which the selected item belongs. You can find a list of standard namespaces in the XMP specification, but you can also create your own namespaces.

The **Prefix** sets how the items in the corresponding namespace will be identified in the stored XMP file. It should be short and should contain neither spaces nor extended characters.

The **Item** control sets the name under which the item will be stored in XMP. Its name should be short and should contain neither spaces nor extended characters.

Here is how you would include a copyright field as Custom Information (even though, of course, the program already offers such a field):

Title: Copyright
Type: Localized text
Namespace: http://purl.org/dc/elements/1.1/
Prefix: dc
Item: rights

Labels

Use the Labels feature to add colored labels to your pictures, to help sort them by a system of your own. Labels are stored in EXIF and XMP picture information as texts that describe their color ("red," "green," etc.)

RAW Format

RAW-to-DNG converter tells the program the path to Adobe DNG Converter. If the converter is installed in its standard location, Zoner Photo Studio fills in the path automatically. If the use of Adobe DNG Converter is enabled, Zoner Photo Studio enables the use of the RAW module for all RAW files. Processing a picture with the RAW module in this case includes creating a temporary DNG version of the picture so that Zoner Photo Studio can process it. Use **Convert to linear image (interpolate) when converting to DNG** to set whether demosaicing is performed by the DNG converter or afterwards in the RAW module. (In the second case, an interpolation method can be chosen.)

Helper Programs

You can set a list of "helper programs" for any format of your choice. First you create a list of helper programs using the **Add** button. Then you choose a format (a filename extension) to assign them to and click **Assign**. You can then easily reach these programs in the Browser, by right-clicking and then using the **Helper Programs** submenu within the right-click menu.

Signing Certificates

This section shows the digital signature certificates installed on your computer. Whichever certificate you choose here will be used signing digital photos in Zoner Photo Studio. **Verify that certificate has not been revoked**: this option requires that you be connected to the Internet, so if you are not connected non-stop, it can be best to turn it off. **Only check revoking for signature certificates** prevents the program from checking the whole certificate hierarchy.

Other

To make the program show all warnings, including those for which you have turned on "Do not show again," click **Renew All Warnings**.

The **For Canon images, show Canon's exposure values instead of true values** item sets whether the program uses the exposure values you set on your Canon camera, or rather the ones that the camera actually used instead. These values often do not fall precisely within the classical exposure values.

Compensate for asymmetric resolution lets the program automatically correct photos that have differing resolution in the horizontal and vertical directions.

The settings group named **Display of blowout and overexposure** determines how the program displays areas with exposure problems, that is, areas that are so dark or so light that they have lost detail. When **Desaturate image** is active, the picture will be converted to grayscale in those areas where there are no problems. **Use colors in blowout highlighting to indicate problem channels** determines whether or not the program uses colors to highlight blowout that occurred in only one or two channels. **Show underexposed areas** determines whether or not areas with underexposure should be highlighted in addition to those with blowout.

This section also contains settings for **File operations** in Zoner Photo Studio. **Remove "read only" flag when copying files from CD** , when active, makes the program remove this flag when copying files from CD (these normally are automatically flagged read-only). **Sound signal when finishing long operations** determines whether or not a sound will be played at the end of any copying or moving operation that lasts more than 30 seconds. The **When moving/deleting pictures, do the same for supplementary files** option, when active, makes the program move/delete/copy files with the same name as a picture, but a different extension, for these extensions: EXIFBAK (backups of EXIF information), XMP (external picture-information file), THM (external thumbnail), and WAV (external audio note). **Automatically propose file names** makes the program suggest new names for files and folders based on names you have used in the past.

Do not copy contents of symbolic links— when this option is active, the program only creates copies of symbolic links themselves instead of copying their contents. When it is inactive, the whole structure of folders and

files that the link refers to is copied.

Filters

Here you can find settings that affect how "filter windows" behave. These are the windows where you apply edits, effects, and enhancements.

The **Offer highest color depth by default when saving in Editor** option tells the program to offer you the highest possible color depth when you save your pictures, even if you used a lower one the last time you saved.

Apply filters in Browser to all pages in multi-page TIFFs : files in the TIFF format can contain multiple pages, one image on each page. With this option on, any editing windows you use in the Browser will affect all pages of such files, not just the first.

The **Save "last used" presets when you exit the filter window** option makes the program record your settings in filter windows to the preset named "Last used" even if you did not apply those settings.

The next two items affect batch renaming. The first tells the program whether or not to **Reset (the) batch renaming counter** each time you enter a filter window. The second, **Reset batch renaming counter when the name template is changed**, resets the counter when you change the rest of the name, or the variable text used to generate the rest of the name.

 With **Display full path in filter window** active, filter windows will always show the path to the file you are currently editing.

The last two options once again relate to batch renaming. Warning: The **Allow filename collisions during batch renaming** option is dangerous. However, it can also be useful. With this option on, if batch renaming produces a filename that matches an existing filename in the target folder, the file with the old filename will be overwritten. The picture will be destroyed. When you turn on **Allow batch renaming for all file types**, the batch renaming window will not be limited to renaming just pictures.

Plug-In Modules

Before the first time you use a plug-in, you must set the folder where it is located. To set the paths to plug-ins, use **Settings | Preferences | Plug-ins** window's **Add** button. To use a plug-in after you have set the path to it, use the Editor's **Edit | Plug-ins** submenu. Plug-ins each have their own controls and settings. In case of trouble with a plug-in, contact its author or consult its documentation.

GPS Settings

The field named **Show GPS on this web site:** contains, and lets you edit, the map website link that is shown when you use "Custom" in the program's GPS windows.

Click the **GPS icon on a Browser thumbnail to show a picture's location** on a map inside Zoner Photo Studioor Google Earth.

If the source tracklog for assigning GPS coordinates contains a large amount of errors in its data, turn on **Filter junk data from GPS tracklogs**.

Video

Zoner Photo Studio can play videos in the Manager's Preview window and in the Viewer.

The **Windows Media Foundation**technology is normally used for playback of files in video and audio formats. To expand the range of such formats that are supported, install **MPlayer**. Then use the preferences here to make ZPS utilize MPlayer. This free and open-source software is available as a part of e.g. SMPlayer. On its first run, Zoner Photo Studio looks for an installation of MPlayer in the usual locations. To manually set the MPlayer location, click **Browse**. Use the setting named **For video playback, prioritize** to set which method is given priority during video playback. If that method fails, then the program automatically tries the other method.

List of supported formats.

Second Monitor

Use the controls here to set which monitor to use to display the **Develop** and **Editor** sections of the program when working on a computer with two monitors.

The following options are available:

- **Active Window -** the tab opens up in whichever window is active;

- **Previous Location -** the tab opens up in the same window where it was shown the last time;

- **Main Window** - the tab always opens up in the main window;

- **Second Monitor** - the tab always opens up in the window for the second monitor.

Other tabs can be moved among windows at any time using the options in the right-click menus for each tab.

Backups of Originals

Use the top option in the Backups preferences to make the program start or stop making **automatic backups of originals when a picture is edited**. This function is described in detail in the topic named Backups of originals.

Backups of originals are stored in the **Backups folder**. Click **Browse...** here to change the location of the **Backups folder.** For best performance, the Backups folder should be in a location that has plenty of space, and that the computer can access quickly (ideally on the same disk where your photo collection is located).

The Backups preferences section also provides information on the **Size of the backups folder.** There is a **Delete Backups of Originals...** button here; use it to remove all backups of originals, saving space but making it impossible to restore originals using these backups.

Media Server

Use the first preference here to set a **Server name** of your choice - the factory setting is "Zoner Media Server (your computer's name)." Below that there are two settings: **Maximum picture quality** and a setting for whether or not to **Start the Media Server automatically when starting Windows** as well as a button to **Stop the Media Server.**

A DLNA server can be reached by any DLNA-compatible client; these include for example smart TVs and various mobile devices like smartphones and tablets.

Zoner Media Server automatically converts various image formats (including RAW) to the format that is used by the DLNA standard. Using a media server also has two other advantages. It eliminates the need to transfer pictures around your home network, and it makes pictures immediately available throughout the house. (If using WiFi, then this is all wireless as well.)

> **To activate Zoner Media Server, click the DLNA icon for any folder in the Catalog inside Zoner Photo Studio.**

The folder immediately becomes available in DLNA clients. Our recommended DLNA client for the Android platform is **Zoner Photo Studio - Edit & Go**.

Zoner Media Server has the following system and other requirements:

- Client devices must support the DLNA standard (which is a subset of UPnP).

- The server and clients must be in the same network segment. This makes it possible to ensure that data is shared securely - only persons connected to the local network can access the pictures.

- The router must have "Multicast" turned on, and "Multicast Isolation" turned off.

- Zoner Media Server's network access must not be restricted by a firewall.

- When Zoner Photo Studio is installed, it automatically configures the standard Windows Firewall to allow it access.

Advanced

Using 10-bit Color Depth

Displaying pictures at a 10-bit color depth (with 10 bits of information used for each color channel) enables the display to work with over a billion colors, far more than traditional 8-bit displays. This gives a truer image and smoother color gradients. To display pictures in Zoner Photo Studio at 10-bit color depth, turn on this option and use a graphics card and monitor that support OpenGL-based 10-bit color.

If the function works incorrectly, please first check that you have the latest drivers for your graphics card.

Enable use of GPU for calculations

Using the GPU (the graphics card) for calculations demands a high-performance graphics card with up-to-date drivers and support for CUDA or OpenCL. If no supported graphics card is found, the options for GPU-accelerated calculations are grayed out.

Supported graphics cards:

- all **NVIDIA** cards with support for OpenCL or CUDA with compute capability 2.0 or higher, including the latest drivers (minimum: NVIDIA Driver Release 346)

- **ATI/AMD** Radeon HD 5000 or higher with the latest drivers (minimum: AMD Catalyst 14.4)

- **Intel** HD Graphics 2500 or Intel HD Graphics 4000 or higher with the latest drivers

Computers can have multiple graphics cards, and therefore, all available, supported cards on your computer are listed and can be selected under **Graphics card**. Click **Benchmark** to compare acceleration between the processor and the selected graphics card. If the graphics card does not have sufficient memory or its drivers are outdated, benchmarking may not work correctly.

GPU acceleration speeds up the following functions:

- Unsharp Mask

- Adjust Color Temperature

- Mix Channels

- Gaussian blurring

- Overall blurring

- Soft Contours

- HDR via Tone Mapping

- Tilt-shift Effect

- Specific Rotation

- Align Horizon

- High Pass

- Cartoon

- Lens Flare

- Lights and shadows in the Develop module

- Noise Reduction

- Oil Painting

- Clarity

Hardware Acceleration in Preview Mode and in the Viewer

Hardware acceleration, if active, is used in the Manager's Preview mode and in the Viewer. With hardware acceleration turned on, pictures are shown more quickly in those two parts of the program, especially when you are

not using the default zoom level.

If you are have any of these options active, we strongly recommend installing the latest driver for your graphics card. Also, install only drivers that have received WHQL certification —these have been tested and approved by Microsoft.

These functions' performance and stability directly depend on the quality of your graphics card's drivers. Zoner Photo Studio cannot influence those drivers' quality. If corruption appears in your pictures, or the program crashes, while you are using our hardware acceleration functions, then install the latest drivers for your graphics card. If that does not help, turn off these functions.