

What is FotoReplica?



Software for Digital Photography

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What is FotoReplica ?

FotoReplica is a software for *instant printing of digital photos* using a PC. With its very simple to understand user interface and the unique DPI independent printing technique, FotoReplica makes printing of digital photos a child's play. It has all the features that are required for printing high quality digital photos easily, without any formal training. It comes with ready to use size templates for printing of photos on various paper sizes, from 4"x6" to 8"x12" and A4 size. Some built in advanced features, such as, photo size template creation, white margin, color correction, B/W, duotone, new custom filter creation, lens distortion removal to remove wide angle bulgy effect, removal of darkened corners of photos taken with low budget cameras, easy printing of large size photos, and the various printing and saving options make FotoReplica a very unique and different software from any photo editing software and is therefore, a must for every digital camera owner, amateur or professional photographer and every photo studio.

How is FotoReplica different from a photo editing software?

FotoReplica is engineered as a photo printing software and not as a photo editing software. As there are no dust particles, thumb marks or pin holes on a photo taken with a digital camera, retouching (editing) at pixel level is not required to be done for each and every digital photo. Most digital photos require an overall change of color overtone, brightness/contrast etc. Printing of photos to a desired size is quite difficult using a photo editing software. Also, FotoReplica always opens a copy of original file for use leaving the original untouched. All changes or corrections made to photos are only applied on-the-fly. Please see the comparison table below for more details-

Comparison of FotoReplica with a photo editing software		
Feature	FotoReplica	photo editing software
File opening & processing	Fully automatic programmable image processing and printing with "Auto-process" macros.	should click mouse 4-5 times for opening a file, and many more times depending on what kind of image processing is required.
Photo size	Opens the photo in user selected size.	Opens photo in original size.
Composing	On-the-fly compose & print without changes to the original file. No loss of information.	No on-the-fly composing. Have to resize, resample, crop etc. There is definite loss of information.
Cropping	Photo is opened in its original proportion on one side. A marquee (box) of the final size aspect ratio is provided for easy composing. Original file remains intact.	Opens original file. Changes are done to the same file. Once saved all original file information is lost forever.
Colour correction	Always applied to a copy of the original file. Original file remains intact. Gives nine different variation at a time.	Always applied to the original file. Once saved, all original information is lost forever.
Colour to B/W	Gives seven different B/W types to choose from.	Gives only one B/W type.
Duo Tone, Sepia & Metallic tones	Gives ready-made Red, Green & Blue duotone, Sepia, Gold, Copper, Silver and skin tone which can be further customised.	None
Effects/ Filters	In addition to conventional effects, has got special photography related filters such as Prism filter and Starlight filter. You can also add Glamour Studio Lights in colors to a photo.	Has only special effects which almost always distort the photo.
Custom Filters	User can create own correction filters and save them for future use. e.g. red overtone of CCD, Wide angle distortion in fixed focus cameras, Dark corners due to insufficient throw of flash.	No such facility.
Printing	Prints in preset sizes without distorting photo information.	Printing to a desired size is very tedious.
Multiple copies	Easy multiple copy printing.	Limited features.
Index printing.	Yes. With file names option.	No index printing.
Enlargement	Any size with interpolation for grainless print.	To a limited size without interpolation. Results in pixellated picture.
Tiled output	Can print large prints in tiles with superb interpolation for grainless enlargement. Printing of	Have to print all tiles at a time with no built in interpolation. Results in a pixellated print. Wastage due to paper jams etc.

a single selected tile or all tiles at once possible.

Page Save	Saves files in preset sizes & with user selected dpi, as Single photo OR Selected page OR All pages.	No facility.
Keyboard shortcuts	Almost all with single key press	Almost all two key presses.
Ink saving feature	Yes. lightens photo towards periphery, saving a small percentage of ink. Very useful for Passport photos.	No.

All the points referred above make FotoReplica very different from a conventional photo editing software. FotoReplica is developed keeping in mind the need for faster and high quality digital photo printing in accurate sizes. Above this, FotoReplica is available in six different models to suit different camera megapixels.

What are the different Models in FotoReplica?

With the view of making all the features available to both low megapixel as well as high megapixel cameras owners, FotoReplica ver.5.0 comes in the following six Models. Each model number represents the camera megapixels supported for input by the software. For example - Model 2.0 can open a file size of up to 2 megapixels (i.e. two million pixels), similarly Model 3.0 can open file size up to 3 megapixels (i.e. three million pixels) and so on. Please see the following table :

Model	Max. uncompressed image file size supported	camera megapixels
0.8M	2.4 MB	0.8
1.4M	4.2 MB	1.4
2.0M	6 MB	2.0
3.0M	9 MB	3.0
4.0M	12 MB	4.0
5.0M	15 MB	5.0

The price of low megapixel model is cheaper than the high megapixel model. All these models give the same high quality output, the **only difference between them is the restriction on the size of file when opening it** for printing. A low megapixel model cannot open a high megapixel image but a higher megapixel model can open a low megapixel image.

What are the various sizes in which photos can be printed using FotoReplica ?

1] FotoReplica gives a choice of output paper sizes of 4"x6", 5"x7", 6"x8", 8"x12" and A4 size. Selecting any of these paper sizes, suitable for the printer, user can print photos in any size, right from 10mm X 10mm to a wall sized photo of 10 feet x 12 feet or even bigger.

2] FotoReplica comes with ready-to-use templates for conventional photo sizes like stamp, passport, ID, postcard, 4x6 and many other sizes.

3] One can arrange different sizes of photos on a single page. These sizes can be rotated at 90 degrees for vertical or horizontal placement.

4] Photos can also be saved as single files or as pages with various photos in different sizes placed on them, for getting prints done from somewhere else such as photo printing labs.

Can we print multiple copies of a photo?

FotoReplica comes with ready to use templates for multiple copy printing. You can also create your own size templates. We can repeat the photo in rows or columns, if a single size is repeated all over the page. Different sizes of photos can also be printed on a single sheet. A full page can be filled with the selected photo by a single mouse click. Above this, if required, each of the copies can be independently composed or color corrected. Even any kind of combination of copies of photo in b/w, sepia, color etc. on a single sheet at a time is possible.

How easy is photo printing with FotoReplica?

1] FotoReplica 5.0 has a very easy to understand graphical user interface with no hidden menus or preferences. All the options are open in front of the user to make a selection. For example, to print a passport size photo in multiple copies, user has to do the following - 1. click on Reset button > 2. Select paper size of A4 > 3. select Passport photo size template

from a list > 4. double click on a photo position in page preview > 5. select the photo file to be printed > 6. adjust composition, if required, by moving the marquee > 7. Fill the entire row by a single click > 8. Click print button to print the photos.

2] All the above process can be recorded and played back as a macro for complete auto processing, with pauses in between, if required, for manually changing the composition or selection of an appropriate black & white type.

Can we make corrections to a photo before printing ?

1] FotoReplica gives you complete control over the brightness, contrast, sharpness, colors (red, green, blue, cyan, magenta, yellow), hue and saturation to make the final output as desired by you. FotoReplica places nine different variations as test prints on the screen for comparison with the original. This visual reference makes it very easy to apply the correct change of values. You can change the color values with one of the two methods - 1. Relative - meaning the values are changed with relation to the highest if above 127 and the lowest values if below 127, and Linear - meaning the change is applied evenly to all values from 0 to 255. Default method is Relative. Both these methods give different results.

2] We can also make corrections to a photo by creating suitable permanent correction filters. Just applying one of these filters makes all the multiple corrections at a time. For creating such a filter, following options are available - 1. brightness , 2. contrast, 3. color (red, green, blue), 4. hue, 5. saturation, 6. sharp/blur, 7. lens distortion (this removes the wide angle bulgy effect in a photo taken with a low budget camera which has a fixed focus small focal length lens such as a webcam), 8. lens diameter/ flash intensity (to remove dark corners in photos taken with low end cameras that have small diameter lenses and small flash lights, which cause the photos to become darker near corners) , 9. jpeg clean (to remove patchy effect in a highly compressed jpeg file), 10. jpeg sharpness (to sharpen if required after removing jpeg effect).

What are the other major features of FotoReplica?

1] Creating preset size templates - Users can create templates as per their requirement by just dragging a preset size from the list and dropping it on the paper. Once dropped it can be rotated by a single right mouse button click. A size can be repeated with a single mouse click all over the paper or in a row or column. Any custom photo size can be created within a template and saved.

2] Opening many photos at a time for printing - You can select multiple files using Shift or Ctrl key, when selecting files from file open menu. This opens all the selected files one after the other, row-wise, in each photo place available on a page. For example, if you select 10 files for opening on A4 size page with 35x35mm passport size template, then, first two rows will be filled with the ten files opened. You can again select more files by double clicking on the first empty file position in the third row. This will open the files in next available places on the page. If the number of files selected is higher than the places available on a page, then FotoReplica automatically adds required number of pages with the same template and opens all the remaining files. All these photos can be individually composed, color corrected by moving through the pages.

3] Composing the photo - The photo opened for printing is seen on the page preview area in the selected size. Also its full image is seen in the photo preview area. A marquee is visible in the selected proportion over this photo. This marquee can be made smaller by moving a corner block towards the centre of the box to enlarge the selected portion of photo or can be made larger by moving a corner block away from the centre to accommodate more portion of photo into the selected size. This can also be done with zoom in/out buttons just below the photo preview area. You can also move the selected area with mouse or by using right, left, top and bottom arrow buttons. You can also flip the photo vertically or horizontally or rotate the photo at 1 degree increment or 90 degrees to left or right.

4] Repeating a photo for multiple copies - When printing document photos like passport size, we require to print and deliver multiple copies of the same photo to a customer. In FotoReplica we need to work on *only one* copy and then it can be very simply repeated for a number of copies. For a full page repetition, we can open a photo on any one position on the page and click on the full page repeat button located at the left-top of page preview to fill the whole page. Similarly, we can open and repeat different photos in each row or column and print them all together. When a template with one size repeated all over the page is selected, repeat (fill) buttons for all rows and columns become visible. Photos opened in the left most column can be repeated in their respective rows by clicking the repeat buttons visible on the left side of the rows. OR Photos opened in top most row can be repeated in their respective columns by clicking the repeat button visible on the top of each column. We can also drag & drop any photo from one position to another irrespective of their size.

5] White margin around photo - We can leave white margin around a photo. The margin can be easily adjusted from 0 to 3mm on each side at increments of half millimeter. The margin can be either *outside* of the selected photo size or *inside* (within) the selected photo size. When we give outside margin, the photos move away from each other relative to the margin we give. If the photos are arranged all over the page, depending on the margin size, some photos at the right side and at the bottom of page may become invisible. This is because those photos may have moved beyond the printable area of paper. FotoReplica does not print the photos which have moved, even partially, out of boundary. For outside margin the photo size remains same, so number of copies decreases. For inside margin, the photo size decreases and the number of photos remain same.

6] Color correction / UV filter - FotoReplica gives you complete control over the brightness, contrast, sharpness, colors (red, green, blue, cyan, magenta, yellow), hue and saturation to make the final output as desired by you. It places nine different variation as test prints on the screen for comparison with the original. This visual reference makes it very easy to apply the correct change of values. Default value of 5% variation can be changed by the user. Color correction screen also has a filter called UV which is similar to a conventional glass UV filter used to reduce atmospheric fog and haze.

7] Creating correction filter - Most digital cameras give different hues to photos taken in different lighting conditions. This can be corrected digitally using color correction options. But if there be a need to make these corrections standard to a particular camera model in a particular studio lighting condition, then this option of creating your own custom filter comes in most handy. Whenever a particular combination of correction is repeatedly required, we can create permanent correction filters. Just applying one of these filters makes all the multiple corrections at a time. For creating such a filter, following options are available -

1. Brightness 2. Contrast 3. Color (red, green, blue) 4. Hue 5. Saturation 6. Sharp/blur 7. Lens distortion (this removes the wide angle bulgy effect in a photo taken with a low budget camera which has a fixed focus, small focal length lens) 8. Lens diameter/ flash intensity (to remove dark corners in photos taken with low end cameras that have small diameter lenses and small flash lights, which cause the photos to become darker near corners) 9. JPEG clean (to remove patchy effect in a highly compressed jpeg file) 10. JPEG sharpness (to sharpen, if required, after removing JPEG effect).

8] Conversion to Black & White - Black and white photos are required on many occasions.

In black & white, FotoReplica gives a choice of seven different types of conversion. This give you the freedom to choose the best tonal values for a particular skin color. For example, in India, many times it so happens that the husband happens to have a darker skin tone than the wife, and their black & white conversion makes the husband look even more darker than the wife. To avoid this, you can choose different b/w types for each of them to finally have a similar tonal value. Also some color tones appear to have the same grey values when converted to b/w. FotoReplica gives you different choices before conversion, so that you can retain the details in a color photo even when converted to b/w.

9] Duo tone, sepia, gold, silver, copper, skin tone -We can also add a classic touch to photos with sepia tone. Duo tones such as blue, green or red also have their own grace. FotoReplica also gives you copper, gold and skin tones to experiment with. In sepia or duotone, FotoReplica gives a basic conversion into the selected color and places three color (R,G,B) channels on the screen for the user to customise the tone. User can then make the tone warmer, cooler etc. to his liking. Using this feature and then adding effects discussed later can create very creative glamour photos.

10] Index prints - Index prints come in very handy for references. You can print up to 42 photos on one A4 size sheet with or without file names. All you have to do is select as many files as you want, check a box if you want the file names also to be printed with them and click on print button. FotoReplica automatically prints 42 photos per A4 size sheet.

11] Effects - You can add a lot of novelty into digital photos by creatively applying the various effects available in FotoReplica. All the effects given below have various suitable slider controls to manipulate the final results. All these effects can also be applied one over the other to make interesting combinations.

- 1. 3D horizontal lines** - this adds three dimensional horizontal lines to the photo. You can control the brightness and have a choice between thick, medium or thin lines.
- 2. 3D vertical lines** - this adds three dimensional vertical lines to the photo. You can control the brightness and have a choice between thick, medium or thin lines.
- 3. Emboss** - this creates a grayscale picture having an embossed effect along the various contours in the photo. You can experiment with Density (from light to heavy) and Depth (from low to high) to achieve a proper balance of contrast needed.
- 4. Frost-glass** - This creates an effect of looking at the photo through a frost glass. It is created by shifting of pixels. User can control up to 100 pixels area horizontally and/or vertically.
- 5. Glamour lighting** - A photo with normal studio lighting can be converted into a glamour photo by adding glamour lights. There is a choice of red, green, blue, cyan, magenta, yellow and white lights. You can control the focus from narrow to wide and color saturation from pure color to white for each light independently. You can also add one light over the other to create a combination of colors. FotoReplica adds the colors in the same way as real lights in studio would do, for example if you add cyan and yellow, you will get green, red and blue will create magenta and so on.
- 6. Glass block** - This is similar to looking through rectangular glass blocks. User can vary the number of blocks from 1 to 100 blocks horizontally and/or vertically.
- 7. Grain** - This is similar to the grain we get in a big enlargement done from a negative. Here we can produce negative or positive grain by varying the values from -127 to +127.
- 8. Horizontal lines** - This creates horizontal lines on the photo. We can control the lightness or the darkness of these lines and we have a choice between thick, medium or thin lines.
- 9. Invert** - This inverts the color values, so that white becomes black, magenta becomes green, yellow becomes blue and so on.
- 10. Motion blur** - Creates an effect of motion. We have a choice of eight directions and values from 0 to 10.
- 11. Pixellate** -This combines adjacent pixels together to create larger square pixel areas. We can control the number of pixels from 1 to 100 both horizontally and vertically.
- 12. Posterize** - Creates the effect of painting with flat, bright, relative colors. The range is from 1 to 32. The effect is more pronounced as you go from higher to lower values. At lower values, the picture shows less number of

colors with high saturation

- 13. Prism filter** - This gives the effect of that old classic optical prism filter used in film cameras. We can rotate the false images around the centre and also move them closer or away from the centre.
- 14. Sand grain** - This creates an effect of three dimensional texture of grains on the photo and we have control over the brightness values from -127 to +127 and the number (density) of grains from 0 to 100.
- 15. Sketch pen** - This creates the effect of a sketch made with a felt tip pen. FotoReplica draws an outline on some areas where there needs to be a boundary shown just like an artist would do. You have control over the density of the felt tip and lightness or heaviness of sketching. You can choose the color of the pen for sketching.
- 16. Solarize** - This is similar to the solarize effect we create in conventional b/w darkroom. User has to set a value for pixel color between 0 and 255. Pixel colors get inverted from 0 up to the value set.
- 17. Star burst filter** - This is very similar to the classic star light glass filter used for 35mm cameras. In FotoReplica you can set the lightness range of pixel areas for the effect to be applied, length of the rays, brightness of the rays and angle of the rays.
- 18. Super impose** - As the name suggests, you can super impose one photo over the other. You have control over the transparency of the overlapped photo.
- 19. Swirl** - This gives the effect of swirling or rotating in a circular motion. You have control over the total angle of rotation.
- 20. Templates** - Instead of the regular rectangular shape of photo, you can put a photo into another shape like an oval using shape templates. There are 36 different shapes - Award (6 types), bell, circle, club, corner (4 types), diamond, flower (3 types), heart, hexagon, oval (2 types), pentagon, raindrop, shape (4 types), spade, star (7 types) and triangle to choose from.
- 21. Texture** - This gives the feel of a texture by applying a preset brightness / contrast map to a photo. You have a choice of - Canvas (1,2,3), Cloth (1,2,3), Mesh (1,2,3), Paper (1,2,3), Surface (1,2,3). You can control the brightness of the texture, thereby making it more or less obvious.
- 22. Threshold** - Is similar to posterize, but the effect is applied only up to the color values selected by user. The range is from 0 to 255. If you set the color value to 127 then all the colors up to that value will be converted to minimum possible range of nearer shades with saturation enhanced.
- 23. Tiles-brick** - The effect is of looking at a photo painted on three dimensional brick wall. User can vary the Brightness from -127 to +127, select one of the eight directions of incident light, set brick size, brick thickness (depth), vertical gap between two adjacent bricks and horizontal gap between two adjacent bricks.
- 24. Tiles-pattern** - The effect is of looking at a photo painted on three dimensional tiled wall pasted in a pattern. User can vary the Brightness from -127 to +127, select one of the eight directions of incident light, set tile size, tile thickness (depth), vertical gap between two adjacent tiles and horizontal gap between two adjacent tiles.
- 25. Tiles-square** - The effect is of looking at a photo painted on three dimensional wall surface of square tiles. User can vary the Brightness from -127 to +127, select one of the eight directions of incident light, set tile size, tile thickness (depth), vertical gap between two adjacent tiles and horizontal gap between two adjacent tiles.
- 26. Vertical lines** - This creates vertical lines on the photo. We can control the lightness or the darkness of these lines and we have a choice between thick, medium or thin lines.

12] DPI independent printing - When printing a photo, FotoReplica fits all the pixels of the original camera image into the size you have selected for printing, if the number of pixels exceeds 300 per inch. If the number of pixels available are less than 300, then FotoReplica interpolates the pixels, to create new pixels to make up to 300 pixels per inch. This feature can be tabulated for comparison as follows :

Print size	35 x 35 mm	200 x 280 mm
Pixels taken by FotoReplica from original camera image of 1200 X 1600 Pixels	1200 x 1200	2362 x 3307
Print DPI of FotoReplica	870 dpi	300 dpi

The above table shows that, for 35x35mm print size, all the 1200 pixels in the width of the image are taken, whereas from the height of 1600 pixels, 1200 pixels are used. This is due to the aspect ratio being 3:4 for 1200x1600 and 1:1 for 35x35. So, to convert the aspect ratio from 3:4 to 1:1 and to avoid the elongated look, extra pixels in the photo are automatically eliminated.

Also, in the above table, for the size of 200x280mm there are actually more pixels than the original camera file. This is because the original number of pixels in the photo give us only 145 pixels per inch (the 1600 pixels of the height get divided into the height of 280mm (11.02 inches) and effective DPI becomes 1600 / 11.02 i.e. 145 dpi.) We require minimum 180 pixels per inch for printing a photo. A digital photo file is composed of pixels which are represented in the printed output as square areas. The human eye can see individual pixels if they become larger than 1/180th of an inch, in other words, 180 dpi or less. At this dpi the eye can perceive individual pixels and the whole photo will look blotchy (square patches). To remedy this, FotoReplica automatically increases the number of pixels of the photo to 300 pixels per inch and fills the exact extra pixel information with a technique called as "interpolation". Higher the dpi, better the details we get in a photo. FotoReplica uses all the pixels in a camera file if they are going to be printed at more than 300 dpi in the final print. This gives a very high degree of details in the final print.

13] Print DPI selection - You can also use the option to print at selected DPI of your choice from 72, 96, 150, 300 and 600 DPI.

14] Keyboard shortcuts - FotoReplica ver.5.0 comes with keyboard shortcuts for almost every option, thereby freeing the user from pointing the mouse and clicking a button every now and then. Just pressing the 'K' on keyboard activates the key shortcuts list. Most options have a single key press for simplicity. This makes the work even more faster and almost magical. The keyboard shortcuts also works from the keyboard help screen.

15] Auto process - This feature lets you record the sequence of your clicks which are saved as macros. When you choose and play one of these macros, FotoReplica automatically repeats the recorded sequence on its own for you from start to finish. You can also insert a pause anywhere in between the recording for any manual selection (for example, selecting a file or selecting the type of black & white). If you need to print passport photos for various clients everyday, you can create an Auto Process macro for this. Clicking on the Record button located just below the list of templates, complete a sequence of one passport photo printing job. You can insert pauses in between wherever needed. Click the Stop button when finished and save your macro with a name for appearing in a list. Next time, select this macro, and click on Play. The whole sequence will be repeated exactly as you did for the first time.

16] Using scanner with FotoReplica - You can get an image scanned through a scanner from within FotoReplica. For example, when you are working in passport size and need to scan a photo for input, check the box 'auto open in selected size' on the scanning screen, before you start scanning the photo. When the scanner software starts actual scanning, the control goes to the scanner software. Here you need to find out the option to "return to easy TWAIN client" which closes the scanner software after scanning and then FotoReplica automatically opens the just scanned image into the size selected. The image so scanned is a temporary image in memory and gets an auto file name. This image is removed from memory when you reset in FotoReplica.

17] Printing options in FotoReplica - Print options on the Printing screen in FotoReplica give you the choice of

1. Printing of Selected tile or All tiles (when printing large size print in tiles),
2. Current page or All pages (when many photos are opened on multiple pages),
3. Print at original DPI (i.e. DPI independent printing) or Print at selected DPI and Printer setup.

18] Printing Large size photos - We can print a large wall sized photo using the "large size photo" option. When the size exceeds the selected page size (for example if we select A4 size paper and give a size of 20 inches x 30 inches for printing), the photo is printed in tiles, using the selected paper size (e.g. A4 size). We can set the overlap for tiles from 0 to 3 mm. FotoReplica prints thin cutting marks on each tile showing the exact overlap area. Each tile is printed with the row and column number, to help you paste the correct tile at the correct position. The tiles so printed can be pasted together, after cutting off the white margin on sides, to make a big picture. The tiles so created can also be saved in files for remote printing.

19] Saving files/pages with preset photo templates for remote printing. We can save single photo in the selected size with a given DPI, also a full selected page with all the various photos arranged on it can be saved in the selected DPI. We can also save multiple pages by selecting "All pages" on the save screen for which, we have give a prefix name to the file. Using this prefix FotoReplica saves the files for all pages in a selected folder. Files can be saved in BMP or JPEG format.

20] Sending photo by e-mail - A selected photo can be sent to a remote location by e-mail through FotoReplica. The photo is automatically cropped to the selected size at a resolution of 300 DPI, converted to JPEG file format to make it smaller in size suitable for sending by e-mail.

For other information please visit : <http://www.deltrasoftware.com>

Known problems :

Changing the printer setup at run time through FotoReplica in Windows 2000 operating system is ineffective. When using FotoReplica ver.5.0 in Windows 2000 operating system, ensure that the printer settings are set from the control panel before printing. (Note: It is the best practice to set the frequently required printer settings as default setting through Windows Control Panel.)