**ConvImgCpc**

Usage document

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# General interface

When the application starts up, the general interface looks like this:

It is divided into several areas:

-          The left area, which is used for file management: read / save,

-          The central zone, which is used to configure the format of the generated image (resolution, screen mode, etc.)

-          The area on the right, which is used to define the final rendering.

-          The bottom area, which is used to manage the color palette.

## Manage files

### "Read" button:

Allows you to read an image, a palette, or a configuration file.

When clicking on the "Play" button, a file open dialog box opens. On the right side at the bottom of this dialog box, you can choose the type of file to open:

-          Images  : the following image formats are supported:

o   - BMP (Windows "standard" bitmap)

o   - GIF (image in GIF format or GIF animation)

o   - PNG (image in PNG format)

o   - JPG or JPEG (image in JPEG format)

o   - SRC (image in CPC SCR format)

o   - IMP ( ImpDraw CPC IMP formatanimations)

-          Palette  : allows you to open a file in the OCP Art Studio palette format (.PAL)

-          Parameters  : allows to open a configuration file of ConvImgCpc (file in XML format)

To read an image, all you have to do is choose the “Images” file type (type selected by default), and then select the file to open.

**Note**  : The main interface is “Drag & Drop”, which means you can just drag a file onto the interface to play it.

### "Create" button

The "Create" button allows you to create an "empty" animation with a determined number of images. When clicking on the "Creation" button, the following popup appears:

This allows you to select the number of images in the animation.

Then you just need to import frame by frame with the "Import" button each frame of the animation. It is also possible to create the animation frame by frame with the editing tools.

"Import" button

In animation mode, allows you to replace an image in the current animation. In picture mode, identical to "Reading".

### "Convert" button

The "Convert" button converts the read image into a format that can be viewed on a CPC. The converted image then appears in the window named “CPC Image”.

The conversion settings are located on the right in the main interface.

### "Automatically recalculate" checkbox

If this box is checked, modifying one of the conversion parameters from the main window will automatically restart the conversion of the image to CPC format in the "" Image CPC "window.

### "Save" button

The "Save" button allows you to save:

-          The converted CPC image, in different formats possible

-          The image palette in OCP Art Studio .PAL format

-          The conversion parameters, in XML format.

The different recording formats are:

-          CPC image (SCR)  : saves the generated image in “raw CPC” video memory. For example, for a standard resolution image, it will suffice to reread this image on a CPC with the Basic:**Load**command”**ImageName.SCR**”**, & C000.**

-          Bitmap image (.png) : saves the generated image in .PNG format, so that it can be read by any display or image processing software.

-          Assembler sprite (.asm) : saves the image in the form of an assembler source file, in "linear" mode (line by line). Useful for generating "Sprites" in an assembly program.

-          Compacted assembler sprite (.asm)  : saves the image in the form of an assembler source file, in "linear" mode (line by line), but with the data compacted by the internal compactor.

-          Compacted screen (.cmp)  : saves the image generated in “raw CPC” video memory, but compacted by the internal compactor. The image can then be displayed with the basic command:**Run**”**NomImage.cmp**”.

Images saved in "Compact screen" can also be displayed in a Basic program with the following syntax: **Memory & 3FFF: Load** " **Image.cmp** " **: Call & A5C0** using the fact that they will all be saved with the entry point **& A5C0** , and considering that the start address will always be greater than or equal to & 4000 (except for rare exceptions of overscan images with a lot of detail, in this case it will suffice to lower the value given to the basic **Memory** instruction .)

***This option can be interesting for a game or a basic slide show.***

Be careful, however, to be able to display the image, the "Include display code in the image" checkbox must be checked when saving.

-          Compacted assembler screen (.asm)  : saves the image generated in “raw CPC” video memory, but compacted by the internal compactor, and in the form of an assembler source file (.ASM)

-          - Pallet (.pal) : save only the palette of the generated image in OCP Art Studio .PAL format.

-          DeltaPack animation (.asm)  : in the case of a source file in animated GIF format, save a frame-by-frame animation in assembler format, with the display routine for this animation.

-          Imp animation (.imp)  : save a frame-by-frame animation in ImpDraw imp format.

-          Parameters (.xml) : saves most of the parameters used for converting the image to an XML file. This file can be read again later to retrieve all the parameters.

***One trick is to save the settings in a file named "ConvImgCpc.xml" and place this file in the same folder as the application (ConvImgCpc.exe). This will allow the application, the next time it is started, to read this settings file and use it as default settings.***

### Check box "Include display code in image"

When this box is checked, the code allowing the display of the image is included when saving in the image data. (useful for displaying from Basic for example, or to allow a Run “Filename” to display the image.). The display code will be placed at address & C7D0 for a standard image (17Kb), at address & 811 for an overscan image, or at address & 821 for an overscan image with CPC + palette. If the image is saved in "compact screen" mode, the display code will be placed at address & A5C0.

### "Include palette in image" checkbox

When this box is checked, screen mode and image palette are included when saving to image data. Checking the "Include display code in image" box will automatically check "Include palette in image". The display cannot be done without knowing the palette. The mode and the palette will be placed at the address & D7D0 for a standard image (17Ko), at the address & 800 for an overscan image (standard CPC or CPC +). The first byte corresponds to the mode to which the value & 8C is added, to allow decoding by the Video Gate Array circuit of the CPC. The following bytes correspond to colors from 0 to 15 (1 byte on standard CPC, 2 bytes per color on CPC +).

## "CPC Resolution" part

### "Nb Columns" field

The “Number of Columns” field represents the number of bytes (or characters in mode 2) that the image will make in width (this number also corresponds to the value to be indicated in register 1 of the CRTC multiplied by 2). For a standard CPC screen, this value is equal to 80. The value can vary from 1 to 96 (96 being the theoretical maximum value visible on a CRT screen). The value 80 therefore corresponds to 160 pixels in mode 0, 320 pixels in mode 1, or even 640 pixels in width mode 2 (The value 96 corresponds to 192 pixels in mode 0, 384 pixels in mode 1, or 768 pixels in mode 2 wide).

If the "Automatically recalculate" check box is checked, the display in the "CPC Image" window will be resized in "real time" when this value is changed.

### "Nb Lines" field

The “Nb Lines” field represents the number of bytes (or lines) that the image will make in height (this number also corresponds to the value to be indicated in register 6 of the CRTC multiplied by 8). For a standard CPC screen, this value is equal to 200. The value can vary from 1 to 272 (272 being the theoretical maximum value visible on a CRT screen).

If the "Automatically recalculate" check box is checked, the display in the "CPC Image" window will be resized in "real time" when this value is changed.

### "Standard" button

The "Standard" button is used to modify the values ​​to 80 and 200 for the number of rows and the number of columns.

### "Overscan" button

The "Overscan" button is used to modify the values ​​to 96 and 272 for the number of rows and the number of columns.

### "Mode" combo

The "Mode" combo box allows you to adjust the display mode of the CPC. The values ​​can be the following:

-          Mode 0  : Standard mode 0 of the CPC, allowing the display of a 160x200 dots screen with 16 colors in standard resolution.

-          Mode 1  : Standard mode 1 of the CPC, allowing the display of a 320x200 dots screen with 4 colors in standard resolution.

-          Mode 2  : Standard mode 2 of the CPC, allowing the display of a 640x200 dots screen with 2 colors in standard resolution.

-          EGX1 mode  : Special mode, allowing the display of a screen composed of lines in Mode 0 (160x200, 16 colors) interlaced with lines in Mode 1 (320x200, 4 colors). Even lines (0, 2, 4 ...) will be in Mode 0, odd lines (1, 3, 5 ...) will be in mode 1.

-          EGX2 mode  : Special mode, allowing the display of a screen composed of lines in Mode 1 (320x200, 4 colors) interlaced with lines in Mode 2 (640x200, 2 colors). Even lines (0, 2, 4 ...) will be in Mode 1, odd lines (1, 3, 5 ...) will be in mode 2.

-          Mode X  : Special mode, allowing the display of a screen composed of lines in Mode 1 (320x200, 4 colors), with change of color n ° 3 on each line. The image will therefore be composed of 3 fixed colors (Pen 0, Pen 1, Pen 2), and of a variable color (Pen 3) at each screen line.

-          <Split>  Mode: Special mode, allowing the display of a screen composed of lines in Mode 1 (320x200, 4 colors), with change of color n ° 3 on each line, with a maximum of 6 possible changes per line ( within the limit of 32 pixels minimum of the same color). The image will therefore be composed of 3 fixed colors (Pen 0, Pen 1, Pen 2), and of a variable color (Pen 3) up to 6 times on each screen line.

-          ASC-UT  mode: Special mode, allowing a screen to be displayed in Mode 1 (320x200, 4 colors), made up of "frames" predefined by the user: when choosing this mode, a "Edit frames" button Appears, allowing 16 frames of 4x4 pixels to be defined in Mode 1 for the display of the image. The image will therefore be calculated using these 16 predefined frames. The advantage of this system is that the image will be encoded using these frames rather than the conventional CPC memory format, thus making it possible to divide by 8 the “raw” size of the image. (one byte allowing to save 2 frames of 4x4 pixels mode 1, a screen of 320x200 will consist of 4000 frames, or 2000 bytes).

-          ASC0 mode : Special mode, allowing the display of a screen in Mode 0 (160x200, 16 colors), made up of "frames" predefined by the internal software. The frames are made up of 2 blocks of 2x4 pixels in Mode 0, each with a particular color, arranged vertically. There are 256 predefined frames (16 colors for the top block x 16 colors for the bottom block). The image will therefore be calculated using these predefined frames. The advantage of this system is that the image will be encoded using these frames rather than the conventional CPC memory format, thus making it possible to divide by 8 the “raw” size of the image. (one byte allowing to save 2 frames of blocks of 2x4 pixels mode 0, a screen of 160x200 will consist of 4000 frames, or 2000 bytes).

-          ASC1 mode : Special mode, allowing a screen to be displayed in Mode 1 (320x200, 4 colors), made up of "frames" predefined by the internal software. The frames are made up of 4 blocks of 2x4 pixels in Mode 1, each with a particular color, arranged in a 2x2 block. There are 256 predefined frames (4 colors for the upper left block, 4 colors for the upper right block, 4 colors for the lower left block, and 4 colors for the lower right block). The image will therefore be calculated using these predefined frames. The advantage of this system is that the image will be encoded using these frames rather than the conventional CPC memory format, thus making it possible to divide by 8 the “raw” size of the image. (one byte allowing to save 2 frames of 4 blocks of 2x4 pixels mode 1, a 320x200 screen will consist of 4000 frames,i.e. 2000 bytes).

-          ASC2 mode : Special mode, allowing a screen to be displayed in Mode 2 (160x200, 2 colors), made up of "frames" predefined by the internal software. The frames are made up of 8 blocks of 2x4 pixels in Mode 2, each with a particular color, arranged in a 4x2 block. There are 256 predefined frames. The image will therefore be calculated using these predefined frames. The advantage of this system is that the image will be encoded using these frames rather than the conventional CPC memory format, thus making it possible to divide by 8 the “raw” size of the image. (one byte making it possible to save 2 frames of 8 blocks of 2x4 pixels mode 2, a 640x200 screen will consist of 4000 frames, or 2000 bytes).

-          Capture Sprites  : Special mode, available only using the CPC + palette, allowing to convert an image in standard 320x200 resolution and in 16 colors. This mode allows you to "capture" hard CPC + sprites from a converted image (see chapter "Capture sprites mode"

### "Frames edition" button

This button is only visible if the chosen mode is "ASC-UT". It opens the pop-up for editing the frames predefined by the user to be used when converting the image in "ASC-UT" mode:

## Popup "Asc-ut frame edition"

At the top of the interface are displayed the 16 predefined frames. A click on one of them allows it to be displayed in "zoom" to allow it to be edited.

“Previous” button  : used to go to the previous frame, if the frame being edited is not the first.

“Next” button  : allows you to go to the next frame, if the frame being edited is not the last.

Fixed field "Left Bp"  : displays the color that will be assigned to the frame being edited when clicking with the left button

Fixed field "Right Bp"  : displays the color that will be assigned to the frame being edited when clicking with the right button

"Read frame" button : allows you to read a complete configuration of frames (16 frames)

"Save frames" button  : allows you to save the complete configuration of the frames (the 16 frames)

Colored squares under raster editing : A left click on one of these squares is used to define the color that will be assigned to the frame being edited when clicking with the left button. Right-clicking on one of these squares allows you to define the color that will be assigned to the frame in editing when you click with the right button.

"Automatic Generation" button  : allows you to automatically generate frames according to the loaded image / animation. Warning: for an animation comprising a lot of images, this processing may take time, because each image of the animation is analyzed.

## "Source image size" part

“Fit” radio button : Adapts the image size to the configured CPC resolution. For example, for a standard resolution (80 columns and 200 rows), the image will be resized to match 80 columns and 200 rows in CPC resolution.

"Keep Smaller" radio button : Allows you to adapt the image to the configured CPC resolution, keeping the aspect ratio and ensuring that the entire image falls within the configured CPC resolution.

"Keep Larger" radio button : Allows to adapt the image to the configured CPC resolution, keeping the proportions, but adapting the smallest dimension of the original image (length or width) adapts to take the entire length or width of the resolution CPC.

"User size" radio button  : Allows you to define the size of the image (width, height) as well as the relative position in the CPC screen. The values ​​must be entered in the “Size” and “Position” boxes. The values ​​correspond to 1 Mode 1 pixel of CPC resolution.  
***In this size mode, it is also possible, if the "Automatically recalculate" check box is checked in the left part, to place / size the image directly using the mouse in the "CPC Image" window: moving the mouse with the left button pressed moves the image in the CPC screen, moving the mouse with the right button pressed resizes the image. Using this system, the values ​​are automatically displayed in the “Size” and “Position” boxes.***

"Original size" radio button  : Allows you to keep the original size of the image, ie one pixel of the image will correspond to the equivalent of one pixel in mode 1 for the image CPC.

## "Screening and rendering" part

### Combo "type"

The "type" combo box allows you to choose the type of screening matrix to apply to the source image before the calculation. The types of screening can be as follows:

-          None  : performs no dithering on the source image. Default value.

-           Floyd-Steinberg (2x2) : Uses a 2x2 matrix with error propagation to neighboring pixels

-           Bayer 1 (2X2)  : Uses a 2x2 Bayer matrix

-           Bayer 2 (4x4) : Uses a Bayer 4x4 matrix

-           Bayer 3 (4X4) : Uses a Bayer 4x4 matrix (different from the previous one)

-           Ordered 1 (2x2) : Uses an Ordered 2x2 matrix

-           Ordered 2 (4x4) : Uses an Ordered 4x4 matrix

-           Ordered 3 (8x8) : Uses an Ordered 8x8 matrix

-           ZigZag1 (3x3)  : Uses a 3x3 zig-zag matrix

-           ZigZag2 (4x3) : Uses a 4x3 zig-zag matrix

-           ZigZag3 (5x4) : Uses a 5x3 zig-zag die

-           Test0 : 2x2 test matrix

-           Test1  : 2x2 test matrix

-           Test2  : 2x2 test matrix

-           Test3 : 3x3 test matrix

-           Test4 : 2x3 test matrix

-           Test5 : 3x2 test matrix

-           Test6 : 3x3 test matrix

-           Test7 : 3x3 test matrix

-           Test8 : 4x2 test matrix

-          Test9 : 4x3 test matrix

### Percent screening:

Allows you to define the “percentage” of screening to be performed. The value can vary from 0 to 400%. The default is 100%.

"Diffusion" checkbox  : If checked, allows you to generate an "error diffusion" with the screening carried out. When choosing the “Floyd-Steinberg” screening, this box is automatically checked.

"Smoothing" check box  : allows you to smooth the resolution of the source image to the resolution of the CPC. That is to say that an average of the colors of the pixels will be carried out to correspond to the resolution of the pixels of the CPC image.

Check box "TC  frames " : Used to process the source image by reducing the color palette to 5 levels, and then define a screening of the image to correspond to the 3 color levels of a CPC palette. This makes it possible to obtain raster images without using a rasterization matrix.

## "Color management" part

This part of the interface is used to generate the color palette, according to various parameters:

"Sort" checkbox  : When this box is checked, the colors calculated in the cpc palette will be sorted from the smallest (eg 0: black) to the largest (eg 26: white).

"Black & white" check box: When this box is checked, the source image will be treated as a black & white image.

"More precise"  checkbox: When this box is checked, the conversion of the colors of the source image to a CPC color will use a luminance comparison algorithm rather than an RGB threshold comparison algorithm to calculate the CPC palette from the source image.

"Alternative method" check box  : When this box is checked, the color search algorithm will search for the most different colors between it, rather than the most used colors in the image. This sometimes makes it possible to obtain a better rendering in terms of contrasts in CPC + mode.

"Source image palette reduction" check box : allows you to reduce the source image palette to the colors of the CPC. That is to say a palette of 27 colors in the case of a classic CPC, or a palette of 4096 colors for a CPC +. This option changes the closest color searches when converting to a CPC image.

"CPC +"  check box: When this box is checked, the generated palette will correspond to the CPC + palette (4096 different shades) instead of the "standard" CPC palette (27 different shades).

"Reduction 1"  check box: When this box is checked, a first level of "posterization" of the source image is performed ("removal" of bits in the RGB components of the image).

"Reduction 2"  check box: When this box is checked, a second level of "posterization" of the source image is performed.

"Reduction 3"  check box: When this box is checked, a third level of "posterization" of the source image is performed.

"Reduction 4"  check box: When this box is checked, a fourth level of "posterization" of the source image is performed. Warning ! If this box is checked, the source image will only contain 8 different colors.

“Colors in 24 bits” radio  button: This button is used to process the image in 24 bits of color (8 for red, 8 for green, 8 for blue). This option is selected by default.

“Colors in 12 bits  ” radio button: This button is used to process the image in 12 color bits (4 for red, 4 for green, 4 for blue).

“Colors in 9 bits” radio  button: This button is used to process the image in 9 color bits (3 for red, 3 for green, 3 for blue).

“Colors in 6 bits” radio  button: This button is used to process the image in 6 color bits (2 for red, 2 for green, 2 for blue).

Lum : The brightness of the source image is set to 100% by default. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows quick adjustment of the brightness.

Sat : The color saturation of the source image is set to 100% by default. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows a quick adjustment of the saturation.

Ctrst : The contrast of the source image is set to 100% by default. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows a quick adjustment of the contrast.

R  : The consideration of the red component of the source image is set by default to 100%. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows quick adjustment of the percentage of the red component.

V  : The green component of the source image is taken into account by default at 100%. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows quick adjustment of the percentage of the green component.

B  : The taking into account of the blue component of the source image is set by default to 100%. The " +  " and "  -  "buttons allow fine adjustment between 0 and 200%. The slider allows quick adjustment of the percentage of the blue component.

## "Image CPC" interface

The "CPC Image" window contains a preview that allows you to see what the final image will look like on a CPC. It looks like this:

The blue rectangle represents the part that will contain the CPC image once calculated. Its size varies according to the parameters defined for the size of the CPC screen (“  Nb Columns ” and “  Nb Rows ” ).

The "Edit image" check box allows you to switch to edit mode (see corresponding chapter). Edit mode allows you to apply changes to the CPC image before saving.

The colors at the bottom of the screen represent the different "pen" of the CPC, each with their defined color. By default, the app will automatically recalculate each color for each pen, based on the source image. It is possible to "lock" a pen, by checking the checkbox below it. In this case, it is possible to define a “personalized” color for it by clicking on the square representing the pen. A color selection popup will then open to allow you to choose the latter:

All you have to do is click on the desired color and then on the "Validate" button (or make a "double click" on the desired color).

To quickly lock / unlock all the colors, all you have to do is check / uncheck the " Lock all " box on the far right of the interface.

## "Image CPC" interface in edit mode

To switch the CPC image to edit mode, all you have to do is check the "Edit image" box at the top right:

By switching to edit mode, there are several tools:

"Render window" checkbox: by checking / unchecking this box, a window appears with the content of the CPC image. This option is useful if you are in "Zoom" mode in the editor, to follow the modifications "live" on the entire image:

Below this checkbox, there is a palette with 3 tools:

"Pencil" tool: allows you to modify "point by point" the CPC image. Below the tool palette, you can select the “pencil size”  (1 pixel, 2x2 pixels, 3x3 pixels, 4x4 pixels or 8x8 pixels).

You can also choose the color that will be applied during a left click or during a right click. To do this, simply click at the bottom of the image color palette with the left or right mouse button. The chosen colors will then appear under "Pencil color" . These colors are proportional to the pixel size of the CPC image. For example in mode 0, the color blocks will be twice as wide as they are high, in mode 1, the color blocks will be square, in mode 2, the blocks will be twice as high as they are wide. And in EGX1 / EGX2 mode, the blocks will represent the size of the CPC pixels according to the line on which the mouse cursor is located.

"Magnifying glass" tool  : allows you to zoom in / out the CPC image. If the CPC image is not zoomed (zoom equal to 1), all you have to do is choose the zone to zoom by describing a rectangle in the CPC image while remaining clicked with the left button. Once the image is zoomed in, you can change the tool (use the pencil for example) to modify the CPC image. Vertical and horizontal scroll bars allow you to adjust the zoom position in the image.

To zoom out the image, simply re-select the magnifying glass tool and right-click on the CPC image. The right click does not zoom out the image, but reduces the zoom by dividing it by 2. For example, if we were in zoom x 8, a first right click in the image will go into zoom x 4, a second click right in x2 zoom, and a last right click to return to the initial size.

"Block copy" tool   : allows you to copy part of the image. You must first select the part to copy by describing a rectangle in the CPC image while remaining clicked with the left button. Then, just place the block in the desired location and click with the left button to copy it. The block will remain selected as long as you stay on the block copy tool. As soon as you change the tool, the block is erased from the memory, and to use it you will have to define a new one.

Buttons are also available at the bottom of the interface:

-           “Hor. Flip ”  : allows you to flip the image along a horizontal axis,

-           Button "Ver. Flip ”  : allows you to flip the image along a vertical axis,

-           "Undo" button  : used to "undo" the last modification made on the image,

-           “Redo” button  : used to “redo” the last “undone” modification of the image.

"Check for update" button

This button, below the version number and the compilation date, allows you to check if there is not a more recent version on the website. In this case, a popup indicating an update will invite you to download the new version on the dedicated website. Otherwise, a popup will indicate that you have the latest updated version.

## Checkboxes at the bottom of the main interface

"Information" checkbox

This box, if checked, displays information in a window when playing, converting, saving an image or animating. If the box is unchecked, the window disappears.

"Internal parameters" check box

This box, if checked, is used to adjust the “internal” parameters used for converting an image. Modify with care ...

"Edit Sprites Hard" button

This button, available only when using the CPC + palette, allows you to enter the hard sprite editing mode of CPC +. By clicking on this button, this interface appears:

This interface allows editing hard sprites for CPC +, namely sprites of 16x16 pixels, using a palette of 16 colors among 4096 (in fact, 15 colors and a transparent color).

At the top of the interface we find the 16 sprites displayed one after the other, starting with sprite 0 until sprite 15. To the right of this display we find a combobox containing the choices "Bank 1" to " Bank 4 ”. This allows editing up to 64 sprites (a bank representing a set of 16 sprites).

Below the sprites are the “Previous” and “Next” buttons, which allow you to switch from one sprite to another. Below we find a large grid of 16x16 squares, which allows you to modify the selected sprite. The selection is made either by clicking on the desired sprite in the upper part (the 16 sprites displayed), or by clicking on the “Previous” and “Next” buttons.

To choose with which color to draw the sprite, all you have to do is click with the left mouse button on one of the colors of the palette shown to the right of the drawing grid. Then, with the left button in the grid, we draw a pixel with this color. Right button in the grid will erase the pixel.

A right click on the palette allows you to modify the desired color by choosing the R, G, B components of the color.

The part to the far right of the drawing grid serves as a "test": you can display the selected sprite there with the X and Y zooms possible on the CPC +. There is also a 2x2 sprites mode, which allows you to test 4 superimposed sprites in 2x2 sprites. Also a 4x4 sprites mode which allows you to test the 16 sprites superimposed in 4x4 sprites.

The "Read sprites" button allows you to read one or more banks of sprites. The format is a file with the extension .spr, containing an Amsdos header, and compatible with ImpDraw V2.

The "Save sprites (current bank)" button allows you to save the 16 sprites of the current bank in .spr format. The saved file will occupy 4096 bytes (without the Amsdos header). The palette will also be saved in .kit format (format compatible with ImpDraw V2).

The "Save sprites (all banks)" button allows you to save the 64 sprites (banks 1 to 4) in .spr format. The saved file will occupy 16384 bytes (without the Amsdos header). The palette will also be saved in .kit format (format compatible with ImpDraw V2).

The "Read palette" button allows you to read the sprites palette, from a file in .kit format.

The "Save palette" button allows you to save the sprites palette in a file in .kit format.

"Capture Sprites" mode

When this mode is chosen from the Mode combo box (in CPC + palette only), the conversion of an image will be done in a resolution equivalent to mode 1 of the CPC, but with 16 colors.

The “Image CPC” interface then has a “Capture sprites” checkbox.

When this box is checked, the following capture interface appears:

The "Capture 1 sprite" button allows the capture of a 16x16 pixel sprite,

The button "Capture 2x2 sprites" allows the capture of an area of ​​32x32 pixels, i.e. 2x2 CPC + sprites,

The button "Capture 4x4 sprites" allows the capture of an area of ​​64x64 pixels, i.e. 4x3 CPC + sprites,

The choice to which sprite number to capture is set via the "Sprite n °" field ,

And as in the sprite editor, we have 4 banks of 16 sprites.

In the “Image CPC” interface, a rectangle that just needs to be moved with the mouse is used to position itself on the area to be captured. A click will then capture the desired sprite (s), and will be visible in the previous interface:

Just click in the image on the desired area to display it in the capture interface.

Then, a click on the "Capture" button allows you to memorize the sprites.

These can then be edited via the "Edition Sprites Hard" interface

"Animations" mode

ConvImCpc allows you to create animations that can be used on cpc, from an animation in animated .GIF format, or by creating an animation frame by frame.

Animation from an animated .GIF.

Just click on the "Play" button and choose an animation in animated .GIF format as the source. The "Animation" window displays a summary of the source animation:

In this window, you can interact with:

- Image number  : allows you to choose which image to display / convert,

- Value below the image: contains the display time of the image in ms. This time contains by default the value read from the .GIF animation, and can be set from 3 to 850 ms.

- "Delete" button  : allows you to delete an image from the animation.

- Horizontal scroll bar: allows you to quickly search for an image in the animation.

To convert an animation to CPC format, it is necessary to convert all the frames of the source animation. To simplify the task, a checkbox "all images" is presented to the right of the "Conversion" button in the main interface. By checking this box then clicking on "Conversion", it converts all the frames of the animation one by one. In this case, it is then preferable to have “locked” the whole color palette, because the animation generated for the CPC will only use the palette of the first frame.

Once all the images are converted, it is still possible to modify each image from the “ImageCPC” interface in edit mode.

Saving a generated animation

Once the images have been generated / edited, it is possible to save the final result to be viewed on CPC.

In this case, by clicking on the "Record" button , you must choose the type "Animation DeltaPack (.asm)" from the save window. Saving an animation must be done via an assembler source, which will therefore have to be assembled in order to be able to see the final result.

Then select the name of the file to save and validate the save.In this case, a new interface appears with several options:

- "Looping on the first frame"  : check this box if your animation has to loop,

- "Generate 128Kb of memory"  : when saving, a message may warn you that the totality of the animation exceeds the standard CPC memory (approximately 42kb useful). In this case, check this box to use the additional 64Kb of the 6128 for example.

- "Memory address not to be exceeded"  : if you check this box (visible only if "Generate 128KB of memory" is checked), you can then determine which memory address the data must not exceed (in the bank # C0 of the CPC).

-           “'Direct memory' mode”  : this option allows you to write byte by byte in the video memory of the CPC, rather than going through a division into “blocks”. This can be useful if the differences between each image are small, and it is only appropriate to write the bytes that change, rather than comparing changes between rectangular blocks.

-           "Generate all the lines"  : when this option is chosen (by default), all the lines of the images are generated for the animation

-           "Generate 1 line / 2"  : when this option is chosen, one line out of 2 of each image will be generated for the animation, leaving one line out of 2 "empty".

-           "Generate 1 line / 4"  : when this option is chosen, one line out of 4 of each image will be generated for the animation, leaving 3 lines out of 4 "empty".

-           "Generate 1 line / 8"  : when this option is chosen, one line out of 8 of each image will be generated for the animation, leaving 7 lines out of 8 "empty".

-           “Add inter-image delay”  : if this box is checked, the display delay of each configured image will be used to save the animation. Otherwise, the animation will be replayed at the highest possible speed.

-           "Start address"  : allows you to choose the start address at which the code will be generated.

"Raw" data export "  : allows you to generate" raw "data for each image (without compacting)

-           "Compact in '' columns ''"  : allows to perform a compacting in "columns" of the memory blocks rather than a "row" compacting.

## Compression used in ConvImgCpc

ConvImgCpc now uses 2 compression methods:

-          A so-called "standard" method, which uses an algorithm for searching for identical channels. With a very fast compression speed, a very good decompression speed, and a so-called "medium" compression rate,

-          A method called "ZX0", which uses the ZX0 compression algorithm of Einar Saukas. This algorithm has agood decompression speed, very good compression rate, but uses a very slow compression algorithm (several seconds to compress an image). It can be interesting to use, but watch out for animations: it can take a really long time, because in an animation we compact the inter-frame differences.

During ZX0 compression, to display the remaining time, a "bar graph" appears with the progress of the compaction:

The progression of the bar graph is of the “logarithmic” type, that is to say that the first steps of progression will appear faster than the last steps.

When saving images, if the checkbox "include display code in image" is checked, the appropriate decompression routine will be included in the image, regardless of the choice of compression method. .