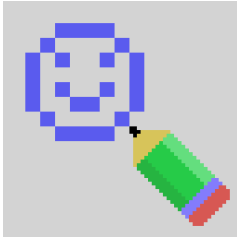


SpriteSX devtool

User Guide



SpriteSX devtool User Guide

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Dedicated to clubSPRITE

<http://www.clubsprite.net/>

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1 What's SpriteSX?

This is a tool for creating a collection of sprites for TMS9918 & V9938 video processors (MSX, colecovision, etc...). Provides the source code for Assembler, C and Basic.

This application is designed for agile and intuitive handling, but always can be improved. We are working on it.

This software was developed in Microsoft Visual Basic 2008 Express.

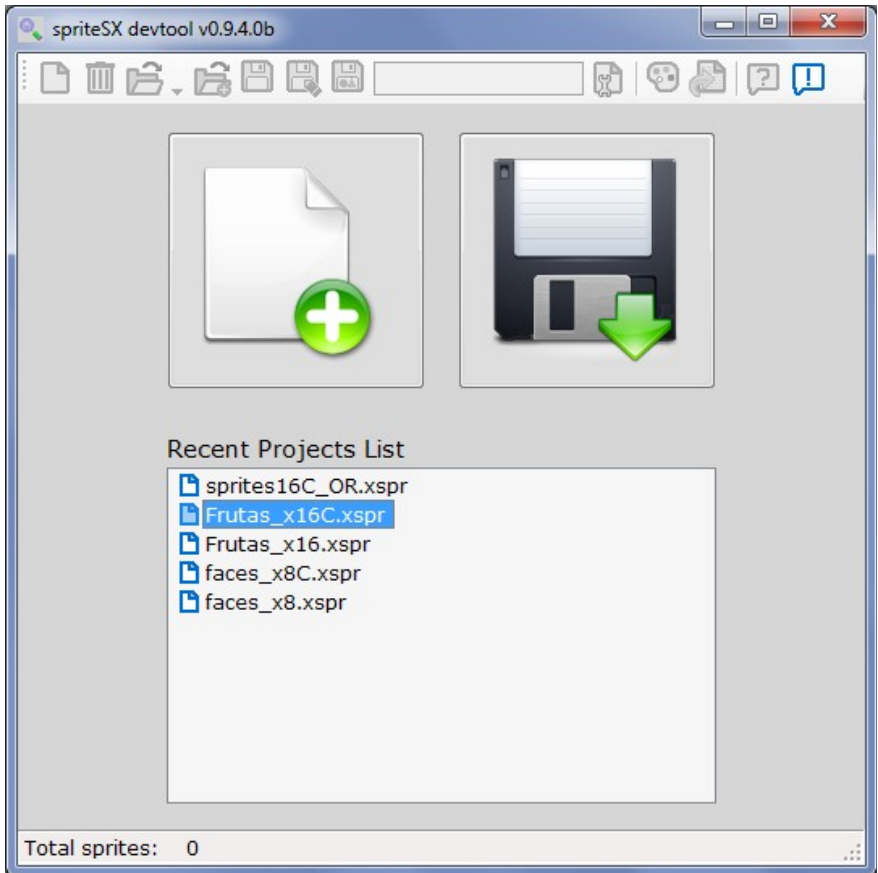
To obtain the source code, go to the WEB project:

<https://code.google.com/p/spritesx-ed/>

2 Start window

When you run spriteSX for the first time you will see the startup window, and there you can start a new project or load one from a disk.

At the bottom of the window will be displayed the top 10 recent projects. You can select one to load it.

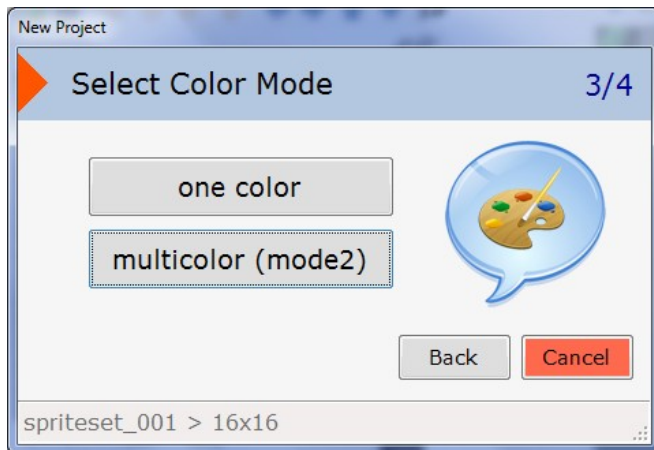


3 New project assistant

This wizard is accessed from the button at the start window or at the project toolbox.

It will display a window, where you will enter the data needed to start a project:

1. Project Name.
2. Sprite size: 8x8 or 16x16
3. Sprite type: mono or color (V9938 or higher)
4. Confirmation



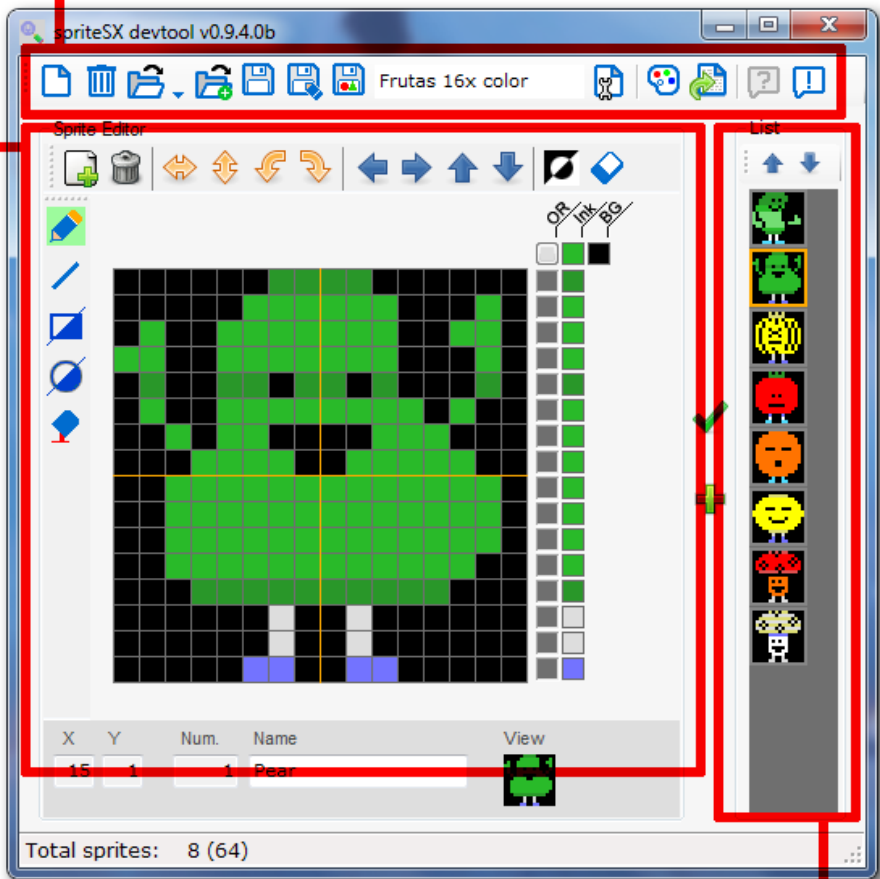
Page 3 of the wizard

4 Main Window

The main window is divided into three parts: Project Toolbox, Sprite Editor and Sprite List from project.

Sprite Editor

Project Toolbox



Sprite List

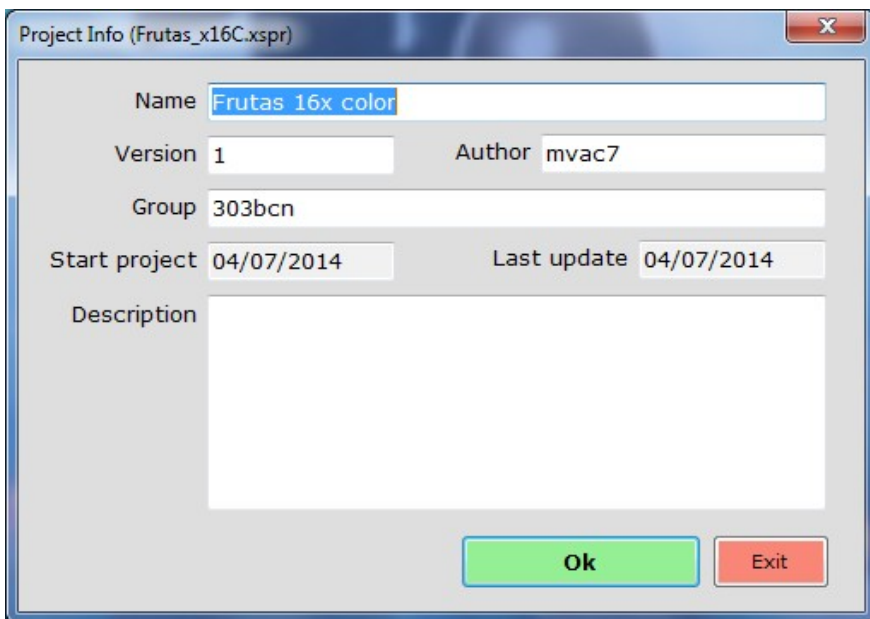
4.1 Project Toolbox

- **New Project.** Access the project assistant (wizard).
- **Clear Project.** Clears all data but keeps the project type.
- **Load Project.** Opens a dialog for loading a project.
- **Load Recent Project.** Load a project from a list of 10 recent projects.
- **Merge Project.** This can be used to convert projects to different formats of sprites. It will load a project stored on disk, and add all its data on the current project.
- **Save Project.** Save project to disk.
- **Save As Project.** Displays a dialog to save the project to disk.
- **Project Name.** Displays the name of the project, and allows edit.
- **Project Info.** Open the window of project information.
- **Edit Palette.** Displays a tool to edit the color palette.
- **Generate Data.** Displays a window to get the code from the data sprites.
- **About** this Application.

4.2 Project Info

To help you organize your project, we added a form for you to add information that is stored within the MSX Tiles devtool project file.

Includes: project name, version, author, group, description, start date and date of last update.



The image shows a screenshot of a Windows-style dialog box titled "Project Info (Frutas_x16C.xspr)". The dialog box has a standard Windows title bar with a close button (X) in the top right corner. The main content area is light gray and contains several input fields and labels:

- Name:** A text input field containing "Frutas 16x color".
- Version:** A text input field containing "1".
- Author:** A text input field containing "mvac7".
- Group:** A text input field containing "303bcn".
- Start project:** A date input field containing "04/07/2014".
- Last update:** A date input field containing "04/07/2014".
- Description:** A large, empty text area for entering a description.

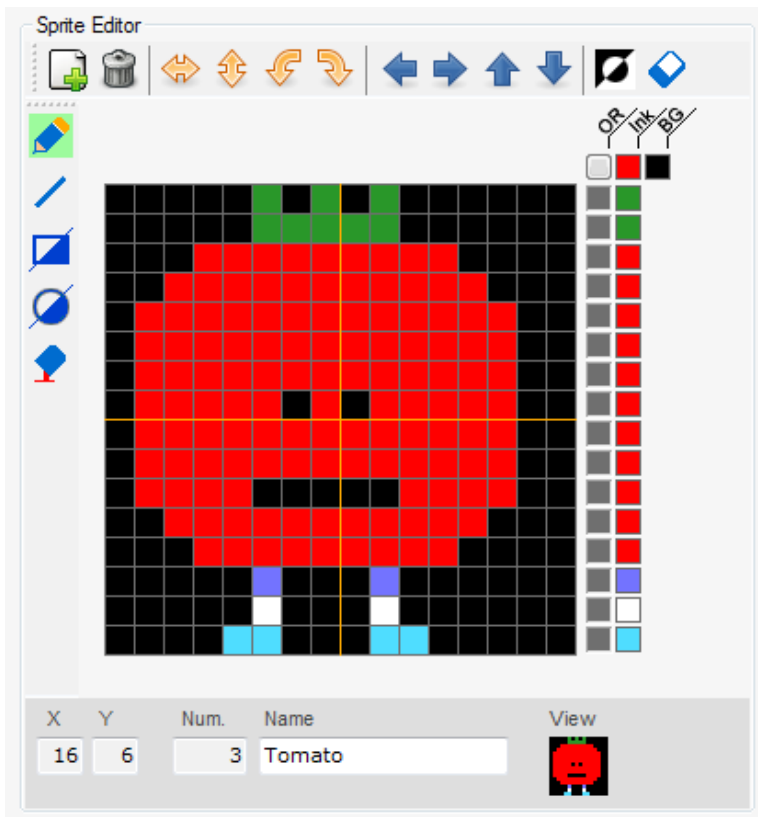
At the bottom right of the dialog box, there are two buttons: a green "Ok" button and a red "Exit" button.

4.3 Sprite Editor

In this area, we have a matrix with the size of the sprite, and a toolbox with a set of tools for working with the sprite. At the bottom is shown a representation of the figure, 2:1 scale pixel.

At the top we have the tools for editing sprites and left the toolbox for painting.

At the right of the matrix, you have the color pickers. If you are working in multicolor mode, you can change the color of each line and the OR bit value.



4.3.1 Sprite Toolbox

- **New sprite.** Create a new sprite.
- **Clear sprite.** Deletes the sprite being edited.
- **Horizontal Flip.**
- **Vertical Flip.**
- **Rotate Left.** Rotates the picture 90 degrees to the left.
- **Rotate Right.** Rotates the picture 90 degrees to the right.
- **Move to the left.** Moves the picture, a point to the left.
- **Move to the Right.** Moves the picture, a point to the right.
- **Move up.** Moves the picture, a point to up.
- **Move down.** Moves the picture, a point to down.
- **Invert.** Invert the drawing.
- **Undo/Redo.** Restores up to 16 steps of editing.

4.3.2 Paint Toolbox

To access the second functionality, use the right mouse button. Paint in positive or negative in all tools, using left or right mouse button.



Draw. Draw pixels pressing the mouse button.



Lines. Mark first and last points.



Rectangles/Fill rectangles. Mark the points on the diagonal of the rectangle.



Circles/Fill circles. Mark the center and mark the radius from the center.



Fill. Make a point inside the area to be filled.

4.3.3 Confirmation buttons:

With the sprite you have in the editor, you can do the following:



Update sprite. Update the edited sprite data in the list of sprites.



Copy sprite. Add the edited sprite, like a new one, to the list. The sprite editing, now is this.

4.4 Sprite List

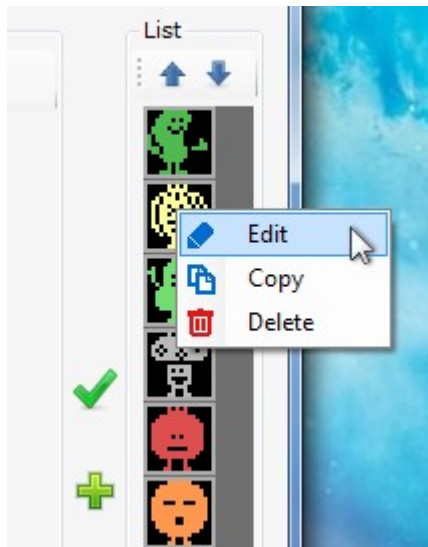
Manages the project sprites.

It has a toolbox with tools to sort the list by moving up or down the sprite that is selected.

To edit a sprite from the list, *doubleclick* it and it will appear on the editor.

Sprite context menu (press right button on a sprite):

- **Edit.** Send the sprite to the editor.
- **Copy.** Copy the sprite. Shown at the end of the list.
- **Delete.** Removes the sprite from the list.



5 Shortcuts keys

Performs functions from the keyboard.

Keys	Function
Ctrl + O	Open project
Ctrl + S	Save project
Ctrl + Z	Undo
Ctrl + Y	Redo
Ctrl + Enter	Add or update Sprite
Ctrl + [+]	Copy current sprite
Ctrl + N	New sprite
Ctrl + D	Draw tool
Ctrl + I	Invert
Ctrl + Up	Move up gfx sprite
Ctrl + Down	Move down gfx sprite
Ctrl + Left	Move left gfx sprite
Ctrl + Right	Move right gfx sprite
Alt + Up	Changue Sprite order Up (in Sprite List).
Alt + Down	Changue Sprite order Down (in Sprite List).
Alt + D	Set draw mode
Alt + L	Set line mode
Alt + R	Set rectangle mode
Alt + C	Set circle mode
Alt + F	Set fill mode
Shift + Alt + R	Set fill rectangle mode
Shift + Alt + C	Set fill circle mode

6 Output Data Window

This window has an area with options to adjust the output data.

From the Language selector, we can indicate the programming language that we want: Basic, C, Assembler and Assembler SDCC.

If you select Basic, you can adjust the line numbers and number interval of the output data. You can remove the zero values to save memory too.

Next to the language selector you indicate the numerical system of all data, Decimal or Hexadecimal. This can be also be adjusted independently, for each data set.

At the following lines of options you can select the type of data to export: patterns and colors of the sprites. You can select them depending on the current project type.

For each kind of data selected, indicate the number of data per line and the numerical system of the output. In the case of colors, if our project has the 8x8 size, we generate 16 color values instead of 8, so we can copy all in a block to the VRAM.

Now you can press the button "Get Data" to get the code in the output field.

You can edit or copy the output to the clipboard by clicking "Copy all" button.

You can also save it to a text file using the disk button.

Output Data

Language C hex 0xFF

Range From: 0 to: 7 All

Sprite Data 16 hex 0xFF

Color Data 8 hex 0xFF 1f

Palette Data 2 hex 0xFF

Get Data!

Basic

Line number: 10000

Interval: 10

Remove zeros ☐

```
// Frutas 16x color

// SPRITE DATA
unsigned char SPRITE_DATA[]={
0x0F,0x1F,0x3D,0x3F,0x7B,0x7C,0xBF,0xBF,0x9F,0xEF,0x6F,0x1F,0x0F,0x05,0x05,0x1D,
0xC0,0xE0,0x60,0xC0,0x40,0x80,0x84,0x86,0xDE,0xC0,0xC0,0x80,0x00,0x00,0xC0,
0x03,0x07,0x4F,0xCF,0x4D,0x4F,0x2C,0x1E,0x3F,0x3F,0x3F,0x1F,0x02,0x02,0x06,
0xC0,0xE2,0xE6,0xE2,0xA2,0xF4,0x38,0x7C,0xFE,0xFE,0xFE,0xFC,0xF8,0x40,0x40,0x60,
0x05,0x07,0x1A,0x2E,0x6F,0x5B,0x5C,0x5B,0x5F,0x58,0x6F,0x2D,0x16,0x02,0x02,0x06,
0x40,0xC0,0xB8,0xD4,0xD4,0x6A,0xEA,0x6A,0xEA,0x6A,0xD4,0xD4,0xF8,0x40,0x40,0x60,
0x05,0x07,0x1F,0x3F,0x7F,0x7F,0x7F,0x7D,0x7F,0x7F,0x78,0x3F,0x1F,0x04,0x04,0x0C,
0x40,0xC0,0xF0,0xF8,0xFC,0xFC,0xFC,0x7C,0xFC,0xFC,0x3C,0xF8,0xF0,0x40,0x40,0x60,
0x07,0x1F,0x3F,0x3F,0x7F,0x71,0x7F,0x7F,0x7F,0x7E,0x3E,0x3F,0x1F,0x07,0x02,0x06,
0xE0,0xF8,0xFC,0xFC,0xFE,0x8E,0xFE,0xFE,0xFE,0x7E,0x7C,0xFC,0xF8,0xE0,0x40,0x60,
```

Copy All

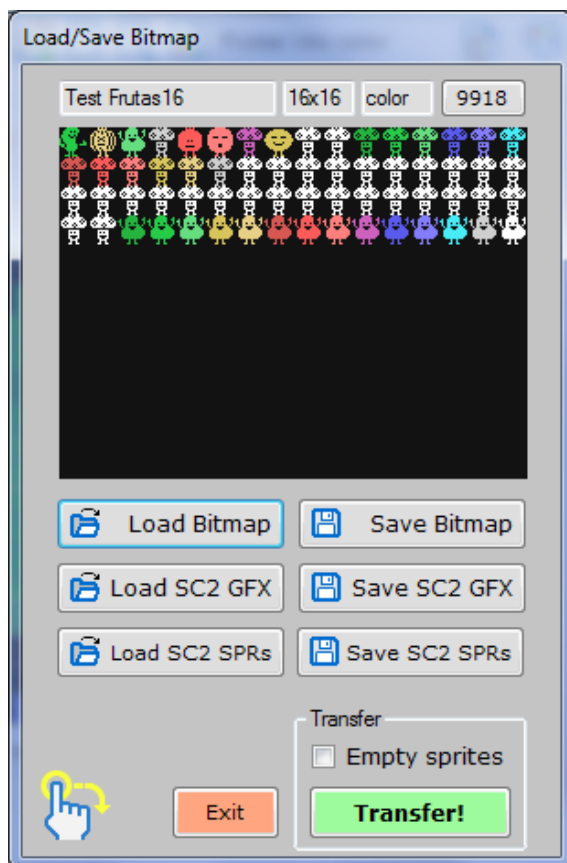
Exit!

Output data window

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7 Load or Save Bitmap Window

From this window you can load a bitmap with your own Sprite, drawn from your favorite software. You can save a bitmap with the sprites you have with the editor. You can also read or save in MSX Basic binary format (SC2) as a graphic or sprites pattern table.



7.1 Load Bitmap

Load PNG and GIF files and converts the top (equivalent of bank 0 from tilesets), to the current format Sprites. To do the conversion correctly, it must meet the following conditions:

1. The image must have a resolution of 256x192. If no resolution, the program will adapt, but produce unexpected effects.
2. The background color must be black.
3. And the palette has to be similar to that defined by Sean Young:

<http://bifi.msxnet.org/msxnet/tech/tms9918a.txt>

<http://aorante.blogspot.com.es/2011/10/paleta-vdp-de-los-msx-1.html>

7.2 Save Bitmap

Save the image shown on the display, in PNG format.

7.3 Load SC2 GFX

Load a MSX Basic binary file and converts the top (equivalent of bank 0 from tilesets), to the current format Sprites.

If the file has been saved from this application will not find problems but if not, the result may be unpredictable. It is necessary that the ratio of patterns and colors is ordered (which have not reversed lines).

7.4 Save SC2 GFX

Save the image shown on the display, in SC2 format.

Includes V9938 palette (VRAM 0x1B80) and a copy of the graphic in the Sprite pattern table.

7.5 Load SC2 SPR

Load a MSX Basic binary file with sprite pattern table (0x3800-0x3FFF).

Assigns white color for all Sprites.

7.6 Save SC2 SPR

Save a MSX Basic binary file with sprite pattern table (0x3800-0x3FFF).

Remember that if you include this file directly from your sources, MSX Basic binary files include a header of 7 bytes.

7.7 Transfer button

When you click "Transfer" the Sprites will be loaded to the editor. If you check the "Empty Sprites" option, empty sprites are included.

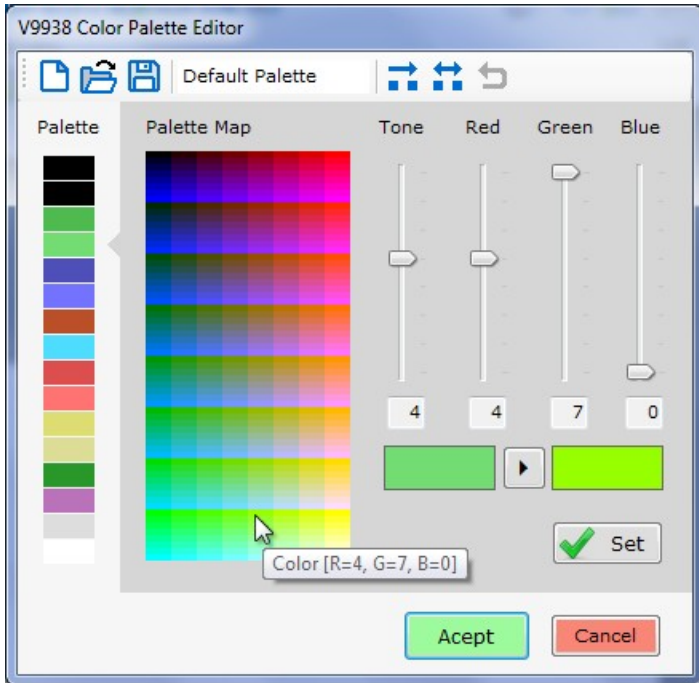
NOTE: All information publisher will be lost.

7.8 Drag&Drop

You can drag files from explorer win and drop in the Bitmap Window. Accept PNG, GIF and SC2 formats.

8 Color palette tool

From this window we can design a color palette for computers that have the V9938 or higher graphics processor.



8.1 Project toolbox

Contains these tools:

- **New.** Sets the default palette..
- **Load.** Displays a dialog for loading a color palette.
- **Save.** Displays a dialog to save the palette to disk.
- **Palette name.** Displays and edit the name of the palette.
- **Copy color.** Copy a color to the specified number.
- **Swap colors.** Swap two colors.
- **Undo.** Removes the last change.

8.2 Confirmation color buttons

Set. Sets the color in the palette.

Right Arrow. Retrieves the previous color (left) to edit.

8.3 Colors list

Displays the list of the 16 colors from the palette.

The color 0 is not allowed to edit.

8.4 Palette map

Show in map form, the 512 colors from the palette of V9938.

By placing the cursor over a color shows a tooltip with the color values and if you make a click, is assigned to the color you are editing.

8.5 Sliders

There are four sliders to adjust a color:

- **Tone slider.** A color tone slider to change the current color.
- **Red slider.** Slider to modify the red component.
- **Green slider.** Slider to modify the green component.
- **Blue slider.** Slider to modify the blue component.

8.6 Confirmation palette buttons

Accept. Return to the main window.

Cancel. Return to the main window without making changes to the palette.