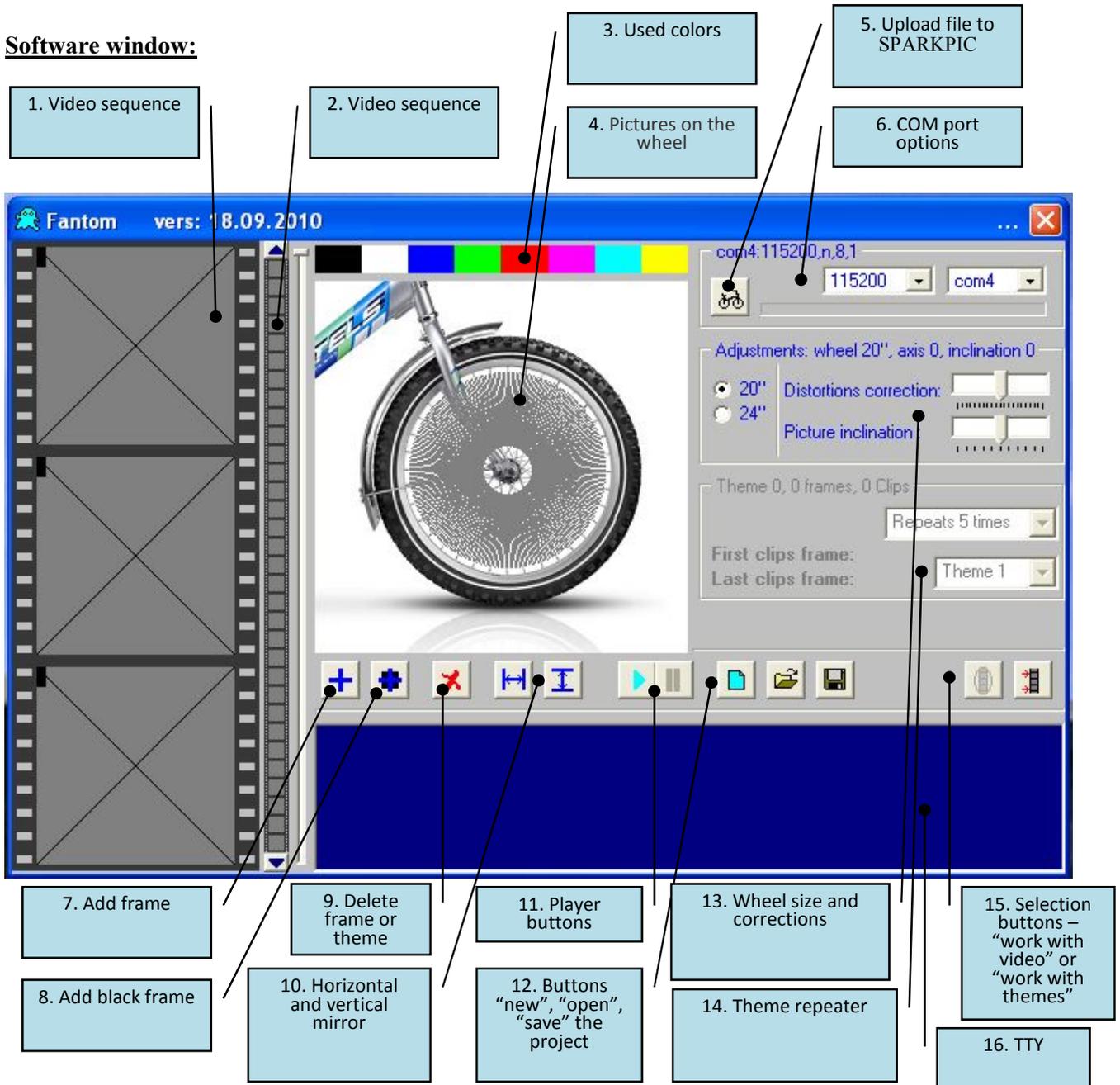


## How to work with FANTOM software vers101118

This software is designed to work personal computer PC and electronic modules SPARKPIC, together via USB port.

- The main tasks of the software:
- Generation output video sequence;
  - Editing of video sequence (permutation, removing frames)
  - Save video sequence to the PC as a single file;
  - To make output video themes for video sequence (of 8 themes);
  - The formation of repeats of episodes in the themes;
  - Frame correction image (mirror, flip, barrel distortion, rotation angle);
  - Selection the size of the wheels 20, 24 inches;
  - Playback of video sequence;
  - Upload streaming video file into SPARKPIC flash memory.

### Software window:



## Description of buttons and control windows



**Sections of the program** - this group of buttons allows you to specify in which section will be work program.  - you are at the editor of video sequence, where you can add new frames, remove them, do mirroring transform, correction barrel distortion, turn left or right for angle till 30 degrees, keep up to 400 frames in one file.  - you are at the theme editor, where you can assign to the theme some quantity scenes (clips). Episode (clip) is a sequence of one or more frames of video sequence, so you can also set how much times will repeats the selected scene.



**Create a new project** - press this button to create a new project. Will be cleared all video sequence, all the regulators would come in its original position.



**Open a previously saved project** - when you click this button it is opens a window for boot previously saved project file - (pic.fdc). When you open this file into of video sequences line will loading previously saved project, and the data will be loaded into themes (frames, themes).



**Save Project** - When you've finished a adding frames in video sequence or finished editing themes, click the button - on the hard disk PC at root will formed file - (pic.fdc).



**Add the frame, the episode** - Depending on whether you're in the theme editor or editing video sequences, this button has a dual purpose. If you are under edition of video sequence, then by pressing this button, you adding a frame from directory where the program FANTOM is. Frame - this is image BMP 128x128 pixels, 8 or 16 colors. If you load a picture with 256 colors or more it will automatically convert to 8 colors. You can load more not more than 400 frames. If you are in the theme editor, then, by pressing the button first time, the program offers choose the initial frame for episode and by clicking second time, you choose the final frame of the episode. Then you choose as many episodes for theme as you want.



**Add black frame to the video** - The button is only active in the editing video.



**Mirroring transformation** - you can make a mirror transformation of each individual frame, both horizontally and vertically.



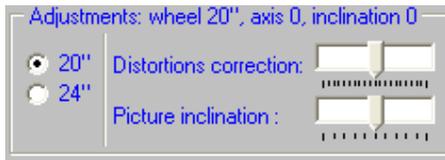
**Play video sequence or a theme** - this group of buttons allows you to start, stop, play, or just a video sequence as a whole, or a selected theme, depending on whether the which you are located.



**Remove frame or theme** - depending on what is open (video sequence or theme editor) by clicking this button, you can remove frame, or a dedicated frame pointer, or set theme number. It is important when you downloaded earlier video created with the themes and want to create a new topic, you must first remove the theme you want to edit.



**The theme editing window** - this box has two control lists, in top of box to select the number of repetitions of the episode in the theme. The lower list is selects theme, you work at the moment. Also inside the box displays the number first and last frame of the episode, number theme, the total number of frames of theme, the number of scenes (clips) in the theme.



**The correction window** - on the left side you can choose the size of the wheels, which will receive the image. It is important, that size selected in the program, and actually used the size of the wheels, will be the same. On the right side two controls, the upper one is corrects barrel distortion, lower one is corrects rotation the image around its axis.



**The transmission data window** - in the box there is two control list, on the left one is selection of the speed of COM port, electronic modules of SPARKPIC are preprogrammed to 57600, so you should always choose a value of 57600, in the right window a list of COM ports used by the PC. At the touch of a button  starts transfer data from the (pic.fdc) to the flash memory of the electronic module via the USB port PC. The transfer process indicated on the progress bar at the bottom.

## **Working with the program**

### **Video editor:**

The first thing to do is select the section of the button  and choose the size of the wheel of your bicycle or motorcycle (20-24 inches). If you do not have the data (images file or GIFs), you should consistently to load images (frames) to video sequence . To download the frames, go to the video sequence editor by pressing the button . Pressing the button  in this section will open dialog to select the file at the PC disk. Find folder where you keep image files of (frames) and specify the image (frame) you want download. If the file is correct, the picture will appear in the video sequence line.

So, add all the images (frames) images, but not more than 400. By pressing button  you can add black frame. On the right side from a large scale video sequence line, there is small scale video sequence line on which flashes yellow square box the cursor of the current frame. You can move the cursor to the desired location of line by click on the required frame where will move the cursor. With the frame can make some operations: download here the picture, remove, to mirror horizontally and vertically, to correct barrel distortion, rotation around an axis. To scroll line video sequence up, down, there is a button - the arrow at the top and bottom small scale video sequence line and fast scrolling bar. After downloading the required number of pictures, do save them to a special file **pic.fdc**, by pressing save button . You can view the video by pressing the  buttons.

## Theme editor:

After you have loaded pictures into video sequence, you need to distribute this video into groups (themes). Them can be up to 8. Theme - this is a sequence of images or group of pictures following each other, and each one picture or group of pictures has N number of repeats from 1 to 255. period repetition - it's a one turn of the wheel. To go into the theme editor you need to press button . Video sequence should be filled by information - pictures, group of pictures.



1. In window  - select the theme number you want to form: Theme 1, Theme 2, Theme 3 ... Theme 8.
2. Select the number of repetitions for the N-h episode of the theme: repeat 1 times, repeat two times, repeat three times ... .. repeat 255 times.
3. Click here  - should blink **First clips frame:** - select by the mouse the first frame of the episode, then should blink **Last clips frame:** - specify by mouse the last frame of the episode. Episode formed.
4. Repeat steps 2 - 3, enter as many episodes, with individual repetitions, as you want, but not more than 255.
5. Next, choose the next theme and select episodes for her.

You can view each theme, by selecting a number of theme and pressing  buttons. When you have finish to complete the themes, click  and save all to file pic.fdc.

**Remember:** that if you going to open a previously saved project, then into the program FANTOM, will loaded old created themes. If you do not erase these themes, then new created theme will be imposed on the old ones. If you want to change some theme, firstly - to specify the number of that theme and remove her frames.

## Upload file (pic.fdc) to electronic modules SPARKPIC.

1. Go to the video sequence editor by clicking 
2. Insert batteries to the electronic modules
3. Turn on the electronic modules, see instruction **info.pdf**
4. Plug the USB cable to the electronic module and the PC
5. Look at the PC: Control Panel - System - Device Manager - Ports COM and LPT, which one COM port number for module SPARKPIC.



6. In the program FANTOM, in communication box , select the COM port number and speed 57600, then click , the upload progress bar indicator should be going. After the transfer of information, the program shows "stop" window banner. Unplug the USB cabel. If during the recording of the program will report a failure, try re-writing, performing points: 1-6. The recording time of

all FLASH memory - about 4-5 minutes. Repeat procedures 1-6 for the second electronic module SPARKPIC. Information to first and second electronic module must be absolutely identical.

### **Requirements for the image format that is loaded into the program FANTOM**

Image format: BMP, 128 x 128 pixels, 8 - 16 colors. Range of colors specified on main window of FANTOM, in the form of colored bands above bicycle wheel. Keep in mind that your picture is square, will be inscribed in a circle of the wheel, so, locate all relevant information within the circumference of the wheel. Experience in application of these pictures for your SPARKPIC shows - for better visual perception, try to apply contrast colors. A good combination gives red - yellow, blue - green, white - red - blue, etc. Try not to use many small details on the image. Good results gives large monochrome and colors forms on top and bottom side of image.