

FastMotion

Manual
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Introduction

FastMotion is a time-lapse recorder for all Symbian 3rd Edition and later Nokia mobile phones. An alternative version for Symbian^3 devices which is optimized for touch usage with additional features is available here:

<http://www.tequnique.com/wb/pages/products/fastmotion.php>

FastMotion allows configuration of camera parameters and supports export of time-lapse data to individual frames for later post-processing on a workstation, and direct recording of up to Full HD mp4 videos directly on the mobile phone.

Download and Updates

FastMotion can be purchased through Ovi-Store. I also accept Paypal payments if you do not have access to Ovi-Store. Further details and download links are located here:

<http://www.tequnique.com/wb/pages/products/fastmotion.php#download>

Updates of FastMotion can be downloaded from Ovi store with the following steps:

1. Uninstall FastMotion.
2. Re-download the latest version and install FastMotion with the Ovi client.
3. In case of problems (e.g. download limit reached) contact Ovi support.

Please note that FastMotion and FastMotion Touch are two different applications.

Contact Information

The fastest way to contact the author is by email or with the contact form which can be found here:

<http://www.tequnique.com/wb/pages/contact.php>

If you want to keep up-to-date please also join the FastMotion newsletter:

<http://www.tequnique.com/wb/pages/newsletter.php>

Besides this manual the FAQ section offers useful information:

<http://www.tequnique.com/wb/pages/products/fastmotion.php#faq>

User Interface

The main FastMotion view consists of the camera viewfinder and “Options” and “Exit” buttons. All functionality, including starting and stopping of time-lapse recording can be accessed through the options menu.



Figure 1 FastMotion User Interface

Note: Not all options presented below are available on each phone model due to differences between models.

Flash

The different flash modes can be accessed under “Options” – “Flash”:

- None
- Auto: The flash will automatically fire when required.
- Force: The flash will always fire.
- Red Eye Reduction

Exposure Mode

The different exposure modes can be accessed under “Options” – “Exposure”:

- Auto: The exposure is automatically adjusted by the camera firmware.
- Night: Long exposure for night shootings without flash.
- Backlight: For pictures where the light source is behind the object (bright background).
- Center: The (weighted) center region of the image is used to adjust exposure.
- Sport: Short exposure time for quick movements.
- Very long: Very long exposure. Please note that this mode does **not** work correctly on all phone models.

Focus Range

The different focus ranges can be accessed under “Options” – “Focus range”:

- Auto: Automatically selects focus range.
- Macro: For close objects where details are of interest, such as flowers, insects, etc.
- Normal: Sets the focus range to normal.
- Hyperfocal: All objects at distances from half of the hyperfocal distance out to infinity will be in focus. This gives maximum depth of field, for instance for landscape pictures.
- Infinite: Focus on distance.

Autofocus

Under “Options” – “Focus” the autofocus can be turned on or off.

White Balance

The different white balance modes can be accessed under “Options” – “White balance”:

- Auto: The white balance is set automatically.
- Daylight: Normal daylight.
- Cloudy: Overcast daylight.
- Tungsten: Tungsten filament lightning.
- Fluorescent: Fluorescent tube lightning.

Global Settings

This Section describes how to change global settings, such as picture quality, resolution, geo tagging, etc.

- **Storage location:** Here a storage location can be selected. Images and videos (!) are stored in the default image folders, which are usually “c:\data\Images” or “e:\Images”. For each time-lapse recording a sub-directory “fm_” with a running number is created.
- **Capture interval:** The capture interval in seconds for taking pictures. For instance, if this setting is “10” then every 10 seconds a picture is taken.
- **Save static frames:** If true, then pictures are stored in the storage location. Else individual pictures are not stored.
- **Static frame format:** The possible formats are jpg, png, and bmp. It is **highly recommended** to use **jpg** due to performance reasons. This option has only an effect if “Save static frames” is true.
- **Static frame dimensions:** A list of all possible still picture resolutions. The dimension should be close to the video dimensions (e.g. for Full HD the size should be close to 1920x1080 pixels).
- **Save movie:** If true, then a time-lapse video file is created. See also Section “Creating Time-Lapse Videos on a PC” for details how to create a video offline on a workstation.
- **Movie format:** The only supported format at the moment is mp4. This option applies only if “Save movie” is true.
- **Movie frame rate:** The frame rate of the final time lapse video. This option applies only if “Save movie” is true.
- **Movie frame dimensions:** The dimension of the movie file. If “Custom” is selected, then the custom width and high are used instead. This option applies only if “Save movie” is true.
- **Custom movie width/height:** A custom width and height value for the time-lapse movie. The custom size is only used if the “Movie frame dimensions” setting is set to “Custom”. This option applies only if “Save movie” is true.
- **Keep display active:** If enabled, then the display stays active all the time.
- **Sleep between shots:** If the “Capture interval” is greater than 60 seconds then enabling this option enables the sleep mode. In sleep mode the camera and sensors are shut-down during waiting time to save energy.
- **Stop on low battery:** When the battery level goes below this value, then the time-lapse process is automatically shut-down. To disable this feature set the value to “0”.

Recording Time-Lapse Videos

Depending on the phone model there are three means for starting and stopping the time-lapse recording process:

- By pressing the hardware camera shutter key.
- By tapping the red/green recording icon (top left side) on the touch screen.
- By going to "Options" – "Start" (respectively "Stop").

Hints for Recording Time-Lapse Videos

Of course, settings significantly depend on the envisioned scene and effects to be achieved. But there are some common hints which help to improve the quality of time-lapse videos:

- **Use manual settings.** Due to firmware restrictions it is currently not possible to manually lock settings. Thus, even when, for instance, a manual exposure mode is set, the exposure still adapts automatically. But in general, try to turn off as much automatic settings as possible.
- **Manually set flash.** Make sure that the flash setting stays constant over multiple pictures. E.g. set the flash mode either to "force" or "off".
- **Encode video on a workstation.** Encoding video on the mobile phone involves several preprocessing steps which require additional energy, memory, and time.
- **Use the lowest possible image/video resolution if recording video.** Higher resolutions lead to higher processing times which can result in dropped frames.
- **Storage space.** Make sure that enough free storage space is left on your mobile device.

Creating Time-Lapse Videos on a PC

If possible, it is highly recommended to record only still images with the mobile phone and perform the video encoding on a workstation because:

- It saves resources on the mobile device.
- The video-picture quality is better.
- There are more options.

In the following a short step-by-step guide is presented how to encode a video with the freeware VirtualDub which can be downloaded here:

<http://sourceforge.net/projects/virtualdub/files/virtualdub-win/1.9.10.32839/VirtualDub-1.9.10.zip/download>

1. Go to settings in FastMotion and enable to record only individual pictures, preferable in jpg format, with highest needed resolution. Make sure to turn off movie generation, as it consumes much processing time. When selecting image quality and resolution keep in mind that pictures use a lot of storage space on your memory card / mass memory.
2. After capturing transfer all pictures stored under "<drive>:\Images*fm_*\" to your local hard disk.
3. Download and start the open source freeware VirtualDub.
4. In VirtualDub select "File" - "Open video file" and select the first time lapse picture, for instance "fm000000000.jpg".
5. Select "Video" - "Filter" - "Add" and choose the "Resize" filter in VirtualDub and set the settings as shown in Figure 2 (the example shows the settings for Full HD).

6. Adjust your preferred video frame rate, compression (codec), etc. settings which can be found in the "Video" menu.
7. Save the video by selecting "Save" - "Save as AVI". The final video can be watched with a media player or uploaded to YouTube.

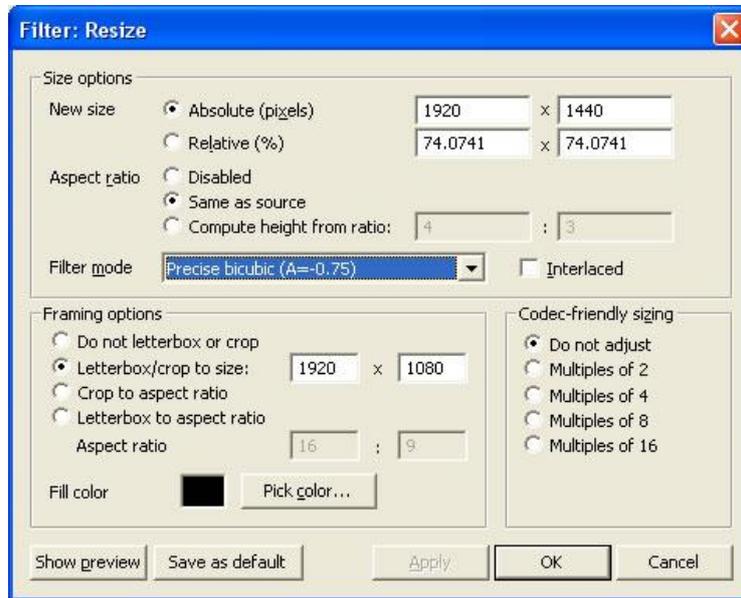


Figure 2 Creating time-lapse videos with VirtualDub

Frequently Asked Questions

Can I manually set exposure, focus range, and aperture?

At the moment it is only possible to use the presets because manual selection is not possible due to camera firmware restrictions.

How can I take pictures in 16:9 formats?

When you are in photo mode, go to "Settings" and change the image size to dimension with a 16:9 ration, e.g. "4000x2248".

What's the difference between CameraPro and FastMotion?

FastMotion is specifically optimized for time-lapse videos. The main differences are:

- More time-lapse modes.
- Energy saving options.
- Ability to record videos from time-lapse pictures.

The video is captured in X seconds interval although I set the rate to Y seconds!

Depending on the settings, your mobile phone might not be fast enough to capture videos in Y second intervals. To improve speed set the image format to "jpg", the image resolution only as high as you need it and disable video capturing (instead create the video offline as described below).

An error message similar to "assertion 'q>0. 0' failed" is shown and no video is captured!
FastMotion crashes when recording a video!

Please restart your phone. The problem is caused by an internal error.