

# Contents

<b>FIMrecorder</b>	<b>1</b>
<b>1 Resources</b>	<b>1</b>
<b>2 Installation</b>	<b>1</b>
<b>3 Usage</b>	<b>1</b>
3.1 Supported Devices . . . . .	1
3.2 Overview . . . . .	1
3.3 Configuration . . . . .	2
3.3.1 <code>settings.json</code> . . . . .	2
3.3.2 <code>.pfs</code> Files . . . . .	3
3.4 Recording Workflow . . . . .	3
3.4.1 Pre-Recording . . . . .	3
3.4.2 Post-Recording . . . . .	4
<b>4 Troubleshooting</b>	<b>4</b>
4.1 Logging . . . . .	4
4.1.1 <code>loggingconf.json</code> . . . . .	4

## FIMrecorder

### 1 Resources

### 2 Installation

See `README.md`<sup>1</sup>.

### 3 Usage

Basic workflow

#### 3.1 Supported Devices

Currently, only Basler USB3 vision cameras recording in `Mono8` format are supported and only the model `acA1920-40um` actually has been tested.

#### 3.2 Overview

- (1) Loads parameters ((7) & (8)) from a previously saved `.json` file.
- (2) Saves parameters ((7) & (8)) to a new `.json` file.

---

<sup>1</sup><https://github.com/fncnt/fimrecorder/blob/master/README.md#prerequisites>

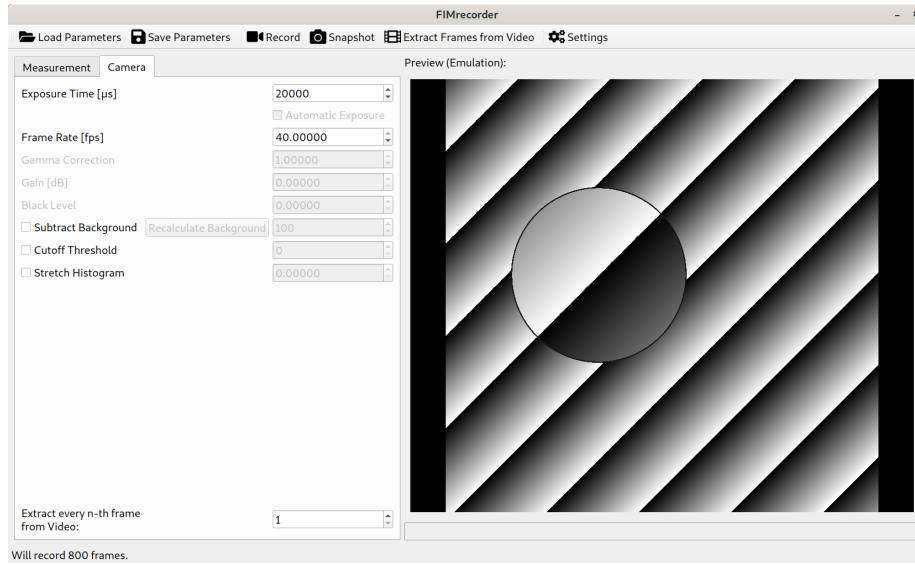


Figure 1: The main UI components of *FIMrecorder*

- (3) Starts recording for the in (7) specified duration.
- (4) Saves a snapshot to **Snapshot Directory**
- (5) Extracts frames as single images from a specified video file. (Required for FIMTrack)
- (6) settings.
- (7) This tab houses information relevant to your experiment such as measurement duration, species or genotype.
- (8) Parameters in this tab modify the image signal your camera is acquiring.
- (9) Live preview of the acquired image signal.
- (10) Zooms by scrolling with your mouse or trackpad.
- (11) When recording or extracting, the progress is displayed here.
- (12) Some relevant status messages appear in this area.

### 3.3 Configuration

To adjust settings not visible in the UI, click the button labelled *Settings* (6). This will launch your favourite text editor allowing you to edit the main configuration.

#### 3.3.1 settings.json

**settings.json** is the primary configuration file and can be edited using any text editor. It contains data ("**Parameters**") relevant to your measurement (see Measurement Annotations for a detailed description). More importantly, it contains a "**Settings**" section controlling the behaviour of the application. The following options can be modified:

**Background Frames to average:** Number of Frames that should be used to construct an averaged static background image for background subtraction. This setting *is* available from the UI.  
default: 100

**Configuration Directory:** Path of the directory where additional configurations files should be stored.  
**settings.json** is **not** stored here.  
default: "config"

**Default Camera Parameters:** default: "FIM\_NodeMap.pfs"

**Extract every n-th Frame:** This setting *is* available from the UI.  
default: 1

**Logging Configuration:** default: "loggingconf.json"

**Single Image Format:** supported: ".tif", ".tiff", ".png"  
default: ".tif"

**Snapshot Directory:** default: "snapshots"

**Video Codec:** default: "XVID"

**Video Container Format:** default: ".avi"

*FIMrecorder* will fall back to hard-coded defaults and create a new configuration file if you happen to delete it.

### 3.3.2 .pfs Files

In addition to **settings.json** there are **.pfs** files in your **Configuration Directory** for every camera model you've used in *FIMrecorder*. Those text files are being generated when you use a device for the first time with *FIMrecorder* and include all the parameters of the specific model.

Those files can be used to modify the resolution, offset and binning parameters of your device. If in doubt, take a look at your **Default Camera Parameters** for a comparison. It is recommended to not change other parameters other than those in these files unless you've read the documentation for your camera model provided by Basler.

## 3.4 Recording Workflow

### 3.4.1 Pre-Recording

#### 3.4.1.1 Checking Setup

1. Adjusting field of view.
2. Adjust aperture.
3. Adjust focus. Use the magnifying feature by scrolling on the preview for more control.

#### 3.4.1.2 Measurement Annotations

#### 3.4.1.3 Applying Camera parameters

#### 3.4.1.4 Real-Time Signal Modifications

### 3.4.2 Post-Recording

#### 3.4.2.1 Locating Recorded Data

#### 3.4.2.2 Extracting Frames from Video Files

## 4 Troubleshooting

Feel free to open an issue on github<sup>2</sup>.

### 4.1 Logging

#### 4.1.1 `loggingconf.json`

See `logging.config`<sup>3</sup>.

---

<sup>2</sup><https://github.com/fncnt/fimrecorder/issues/new>

<sup>3</sup><https://docs.python.org/3.6/howto/logging-cookbook.html#an-example-dictionary-based-configuration>