Allied Vision

VIMBA DEFECTIVE PIXEL MANAGER

User Guide

Document V1.0.1

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Document history and conventions

This chapter includes:

- Document history
- Conventions used in this user guide

Document history

Version	Date	Remarks
V1.0.0	August 2020	New Release
V1.0.1	March 2021	Added note to switch off triggering

Table 1: Document history

Conventions used in this user guide

To give this document an easily understood layout and to emphasize important information, the following typographical styles and symbols are used:

Typographic styles

Style	Function	Example
Emphasis	Highlights important items and GUI elements	**Emphasis**
Names	Highlights proper names, features, and GUI non-interactive elements	*Names*
Reference	Links inside this document or to web pages	Link
Input	Input commands	`Command`

Table 2: Typographic styles

Symbols and notes

Practical tip

Additional information helps to understand or ease handling the camera.

Safety-related instructions to avoid malfunctions

This symbol highlights instructions to avoid malfunctions.

Additional information

Web address or reference to an external source with more information is shown.

Introduction

This chapter provides an introduction to the Vimba Defective Pixel Manager.

Introduction

Prerequisites

To use Vimba Defective Pixel Manager, you need:

- Vimba for Windows 4.0 or higher (install at least the transport layers for your camera interface and the Vimba driver for Allied Vision USB cameras).
- Allied Vision GigE or USB camera with defect pixel correction features. Tested cameras and restrictions are listed in the Release Notes.

You can use Vimba Defective Pixel Manager on the same drive or on a different drive than Vimba.

Camera features

For information about defect pixel camera features, read the Features Reference for your camera. For camera model specific information, read the technical manual or user guide for your camera, especially section Camera feature comparison.

Download camera documentation

https://www.alliedvision.com/en/support/technical-documentation.html

About pixel defects

Pixel defects occur especially in cameras with high resolution. Manufacturing such sensors for a reasonable price without any defects is impossible. Moreover, only some pixel defects can be identified and corrected during the sensor or camera manufacturing process. Other pixel defects occur and vary in intensity depending on factors such as the camera's operating temperature, camera settings such as the exposure time, and the aging process of the sensor. In these cases, only camera users can see and decide which defects occur and should be corrected for their particular imaging application.

About Vimba Defective Pixel Manager

Vimba Defective Pixel Manager enables you to use the on-board pixel correction features of your Allied Vision camera. Depending on the available features and memory size of your camera, you can create and change lists of defective pixels, upload them to the camera, or store them as an .xml file. The factory defect pixel list is set during calibration (production) and cannot be modified by the user. You can make changes to the user set.

Vimba Defective Pixel Manager is not a tool for pixel correction on the host computer.

Best practice

Apply these tips depending on the requirements of your use case:

- Let the camera warm up until it has reached the typical operating temperature of your use case.
- Set the camera to Mono8.
- Cover the lens of your camera to identify defective pixels on a dark background.
- Use camera settings (especially exposure time) as required by your application.
- Ideally, operate the camera like in the actual use case to correct defective pixels where necessary.

Using Vimba Defective Pixel Manager

This chapter includes:

- Getting started
- Correcting pixel defects

Using Vimba Defective Pixel Manager

Getting started

When you use Vimba Defective Pixel Manager for the first time, an onboarding dialog opens and shows how to get started. To access the onboarding dialog at any time, click the **Support** button.

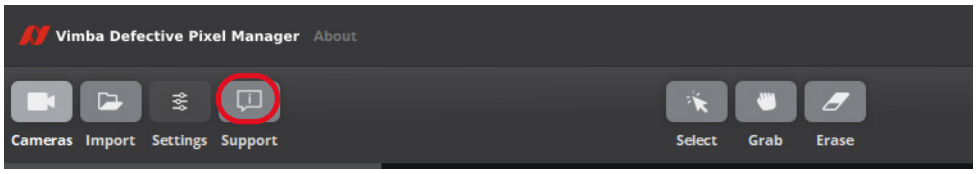

Figure 1: Getting started - Support button

Correcting pixel defects

Identifying pixel defects

Binning and decimation

If the camera cannot load a correction set and an error message is displayed: Use a tool like Vimba Viewer and set binning and decimation to 1.

Switch off triggering

Before starting Vimba Defective Pixel Manager, make sure the camera isn't waiting for a trigger signal.

1. The Pixel list on the right automatically reads defective pixels from the user correction set in your camera. They are listed in green.
2. Go to the image part of your interest to identify pixel defects. In many cases, a monochrome pixel format and a dark image are recommended.

Selecting and adding defective pixels

You can select and add defective pixels with the **Select** tool or by clicking the **plus** icon of the Pixel list. Pixel defects stored in the camera are displayed in green. Pixels that are not yet stored in the cameras are displayed in blue. To edit pixel coordinates, click the pencil. The user-changeable correction set (in contrast to the factory set, if the camera has one) must be switched on.

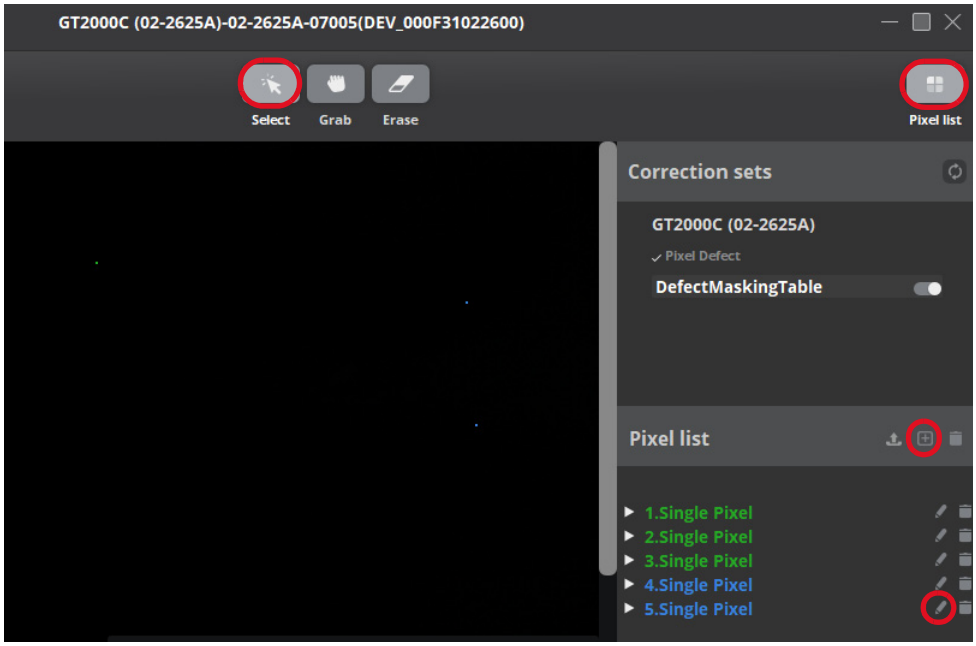

Figure 2: Select tool, Pixel list, plus icon, pencil

Exporting, importing, and uploading pixel defects

If you want to save the pixel list on the host PC, click the **Export to .xml file** icon. You can import and upload the list to the camera later by clicking the **import** button.

Figure 3: Export to .xml file

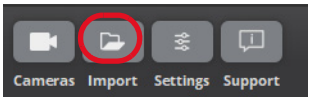

Figure 4: Import an .xml file

To upload the list to the camera, click **Upload to camera**.

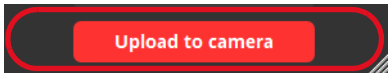

Figure 5: Upload to camera

Pixels that were successfully uploaded are displayed in green.
Now you can use your camera with the corrected pixels.