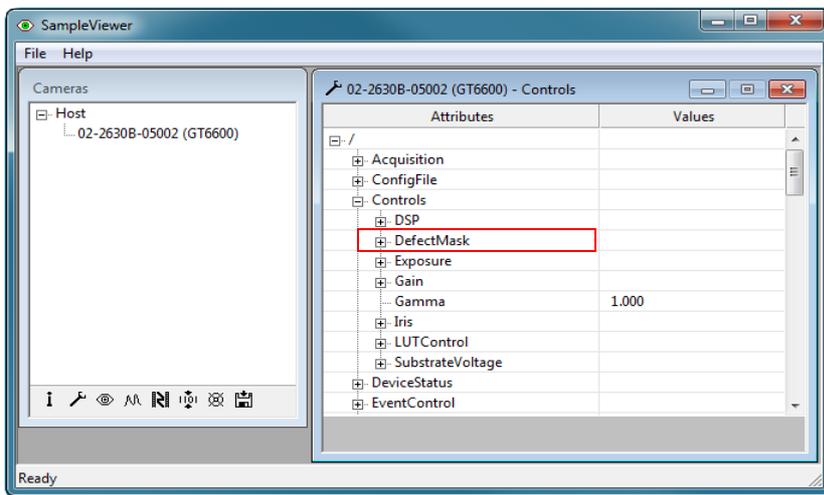


## Introduction

This document presents instructions on how to mask column defects using the Allied Vision **LoadDefects** application. Note that this tool is for use with Microsoft Windows® only. Currently, only large format OnSemiconductor CCD and CMOSIS CMOS sensors have the possibility of containing column defects. See the DefectMask control section of GigE SampleViewer. If your camera does not have DefectMask > DefectMaskColumnEnable feature, column defect masking is not supported or it is not necessary.



**Figure 1:** DefectMask control in GigE SampleViewer



Class 1 and class 0 sensors do not have column defects, and are available on some OnSemiconductor sensors. Contact [support@alliedvision.com](mailto:support@alliedvision.com) or your local Allied Vision sales representative for more information.

## Prerequisites

The following items are required:

- Allied Vision GigE camera with DefectMask > DefectMaskColumnEnable feature.  
Supported models: Mako G-223, G-419, Manta G-223, G-419, and Prosilica GT2000, GT2050, GT3400, GT4905, GT4907, GT6600

Note: Manta G-223, G-419, Prosilica GT2000, and GT2050 must run firmware version 01.52.8151 or later to use this feature.



If your Allied Vision GigE camera has `DefectMaskEnable` feature instead of `DefectMask > DefectMaskColumnEnable`, refer to the Defect Masking application note.

<https://www.alliedvision.com/en/support/technical-papers-knowledge-base>

- GigE SampleViewer installed on the host PC to adjust the camera exposure and gain.



To download the GigE SampleViewer:

<https://www.alliedvision.com/en/support/software-downloads>

- LoadDefects application to mask the column defects.

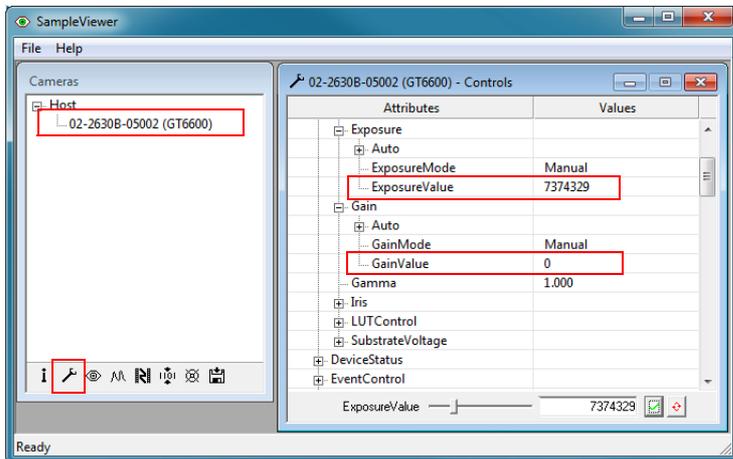


To download the Defect Mask Loader application, go to:

<https://alliedvisiontec.app.box.com/s/hxnztcxanm9juttwpnjb>

## Masking defects

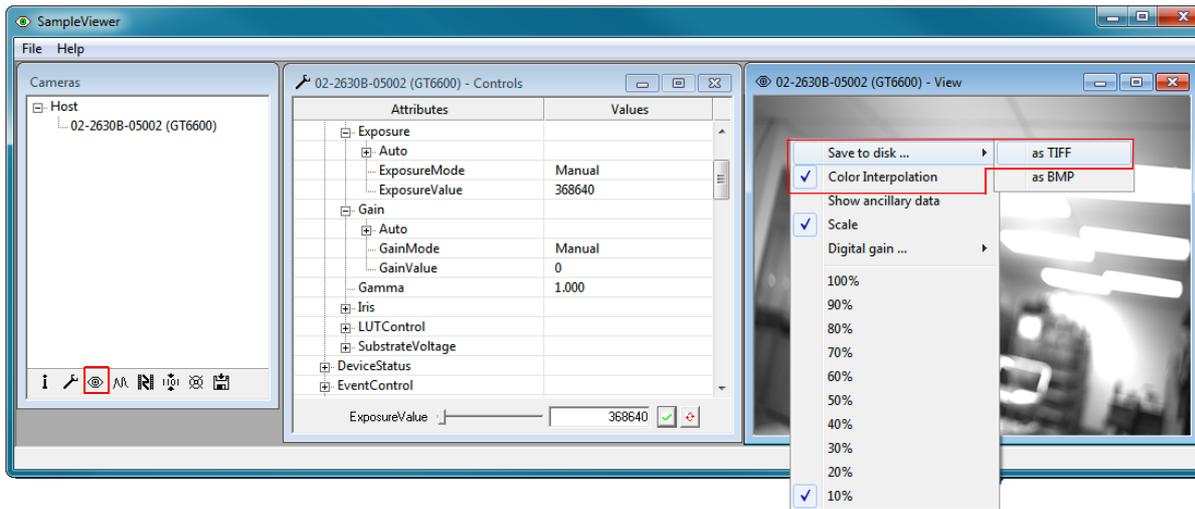
1. Connect your Allied Vision GigE camera and start the GigE SampleViewer application. Wait until the camera is listed in the **Cameras** window. This may take a few seconds.
2. Click on the camera serial number and open the **Controls** window by selecting the **Wrench** icon.



**Figure 2:** GigE SampleViewer - Controls window

3. In the **Controls** window, adjust the camera exposure and gain settings until you have an image that is almost saturated. This will best display column defects.

- Click the **Eye** icon to initiate live camera view. Right-click on the image and uncheck **Color Interpolation** and save the image to disk as a TIFF file.



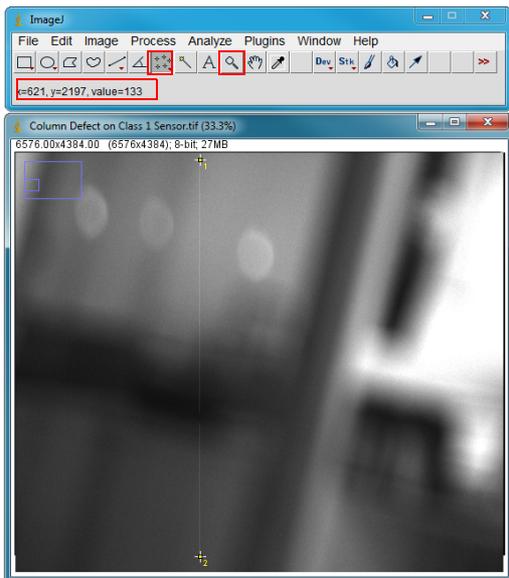
**Figure 3:** Saving the image in GigE SampleViewer

- Open the saved TIFF file in ImageJ. Locate the exact location of your column/spot defect using the **Magnifying** tool and **Cross-hair** tool. For a column, note the upper and lower Y defect locations. For example, a column defect at X = 621, Y top = 2197, Y bottom = 3544.



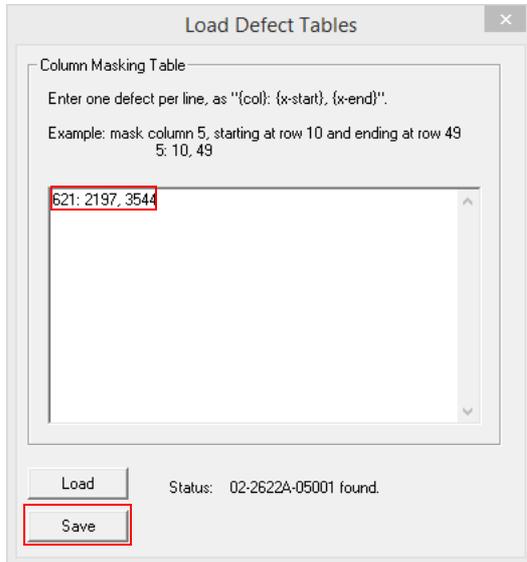
To download ImageJ go to:

<http://rsbweb.nih.gov/ij/download.html>



**Figure 4:** Locating defects in ImageJ

6. With GigE SampleViewer closed, run LoadDefects.exe. Enter your defect and click **Save**. For example: 621: 2197, 3544. For a spot defect, enter it as: 621: 2197, 2197.



**Figure 5:** Masking defects using the LoadDefects application

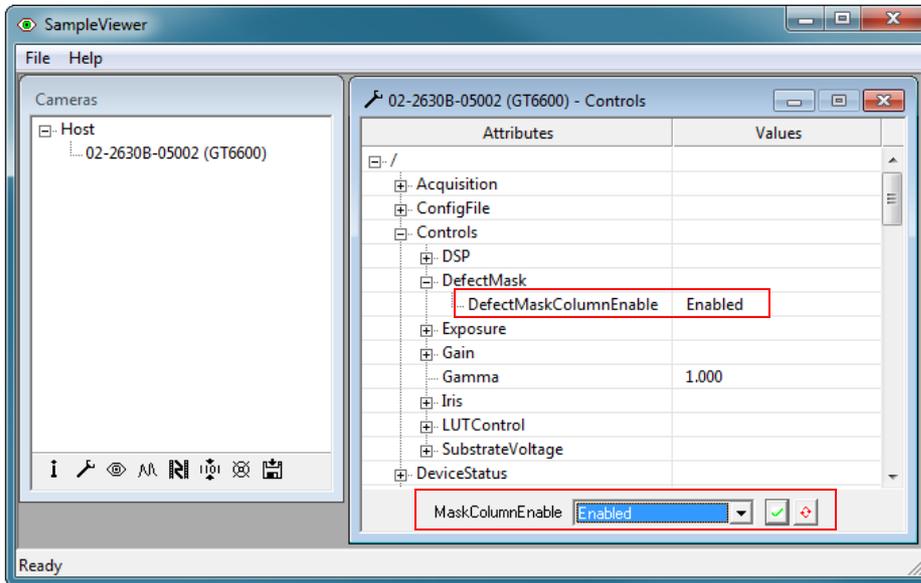


Defect correction averages left and right adjacent pixels for mask value. Therefore, it will not work for clusters, i.e. 2 or more pixels horizontally adjacent.



You can use the LoadDefects application to mask pixel defects (column height 1), but it is limited to 64 entries overall.

7. You can enable/disable the column defect masking in GigE SampleViewer, under Controls > DefectMask > DefectMaskColumnEnable = *Enabled*. By default DefectMaskColumnEnable is *Enabled*.



**Figure 6:** Enabling/disabling column defect masking

## Additional References

Technical manuals and GigE feature reference

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

For technical support, please contact [support@alliedvision.com](mailto:support@alliedvision.com).

For comments or suggestions regarding this document, please contact [info@alliedvision.com](mailto:info@alliedvision.com).

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