## MityCAM-35MMFHDXS Evaluation Kit Quick Start Guide

## Purpose:

This document provides instructions on the setup and capture of images using the MityCAM-35MMFHDXS Evaluation Kit (EVK) with Critical Link GenTL Viewer software.

## Required Hardware/Software:

- Windows 10 64 bit PC with USB 3.0 port available
- GenTL Viewer Software (provided)
- MityCAM-35MMFHDXS Camera Head (provided)
- Camera Power Supply (provided)
- USB 3.0 Cable (provided)
- GPIO/Serial Cable (provided)

### **Camera Back Panel Annotation**

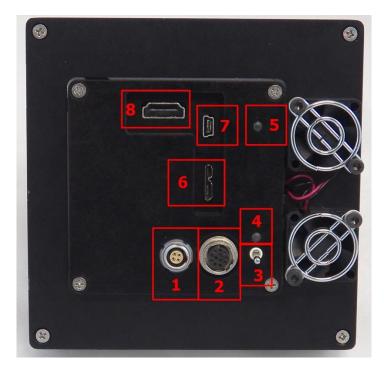


Figure 1

- 1. Power Input Connector Keyed
- 2. GPIO and Serial Connector Keyed
- 3. Power Switch
- 4. Power Good Indicator LED
- 5. Status LED
  - a. Green Ready to Capture Images
  - b. Blinking Blue Capturing Images
  - c. Red Error State
- 6. USB 3.0 Connector PC Image Capture Interface
- 7. USB 2.0 Connector Network connection
- 8. Monitor Connector Not Utilized

### Setup and Initial Image Capture

- 1. Install software (from website or USB stick).
- 2. Connect USB 3.0 cable to camera and PC (Figure 1 Find #6).
- 3. Connect Power (Figure 1 Find # 1).
- 4. Power the camera on with the switch (Figure 1 Find #3).
  - a. The power good LED (Figure 1 Find #4) should light immediately.
  - b. Within 30 seconds the camera status LED (Figure 1 Find #5) should be solid green.
- 5. Launch the GenTL Viewer software on the PC. A screen similar to Figure 2 should be shown.

| GenTL Viewer - 1EF80000FF98 - GenTL Viewer | - | ×     |
|--|---|-------|
| le GenlCam View Controls Help              |   |       |
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| 0.00 fps                                   |   |       |
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Figure 2 GenTL Viewer

6. File->Open Device

| 1 | Dialog - GenTL View             | er 🔓              |               | ?    | ×   |
|---|---------------------------------|-------------------|---------------|------|-----|
|   | Interface<br>Simulated<br>V U3V | Model             | Serial Number |      |     |
|   | 1EF80000FF98                    | MityCAM-35MMFHDXS | 65432         |      |     |
|   |                                 |                   | ОК            | Cano | cel |

#### Figure 3 Open Dialog

7. Select the "MityCAM-35MMFHDXS" camera from the list and press OK

- a. It may take approximately 5 seconds for the camera to connect with the GenTL Viewer software.
- 8. To do a multi-image capture, live video, perform the following steps:
  - a. Select one of the "Pixel Formats", each of these controls the bit-depth of the image and how the pixel data will be converted to color/greyscale.
     Available options are:

| Mono8      | for 35MMFHDXSBM, data is scaled to 8 bits per pixel              |
|------------|--|
| Mono12p    | for 35MMFHDXSBM, data is scaled to 12 bits per pixel             |
| Mono16     | for 35MMFHDXSBM, data is scaled to 16 bits per pixel             |
| BayerRG8   | for 35MMFHDXSBC, data is scaled to 8 bits per pixel color image  |
| BayerRG12p | for 35MMFHDXSBC, data is scaled to 12 bits per pixel color image |

- b. The Exposure and Frame Rate can be changed.
- c. Acquisition Mode needs to be set to Continuous for live video or Multi-frame for burst captures.

| 🕼 GenTL Viewer - 1EF80000FF98 - [Form] - GenTL Viewer      | - 🗆 X  |
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| File GenlCam View Controls Help                            | _ # ×  |
|  |  |
| Keep Aspect Ratio 1:1 None Zoom Show Zoom Pixel area   ROI | Video Settings Camera Settings<br>ROI [ 2160 x 1280 Sensor ] |
|  | X Offset 0 🗣 Width 2160 🗣                                    |
|  | Y Offset 0 € Height 1280 €                                   |
|  | Presets 1920x1080 V Apply                                    |
|  | Set to Full  |
|  | Luces Cashel   |
|  | Image Control Pixel Format Mono8                             |
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|  | Exposure Time [us] 9,988 +                                   |
|  | Frame Rate [Hz] 60.038 🗘                                     |
|  | Number of Frames 16 \$                                       |
| No Image   | Display Brightness   |
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|  | Display Gamma  |
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d. Press the play button to start captures.

- Figure 4: Camera Opened
- 9. To capture a single image:
  - a. Press the camera button; this will configure the camera in SingleFrame Acquisition mode.
  - b. A single frame will be sent.

- 10. The GenTL Viewer software can read (peek) and write (poke) registers of the camera sensor.
  - a. Select "Controls" drop down menu and select "Command Console".
  - b. Run the HELP command to see the available commands.
  - c. To read a value: In the "Commands" field, Enter "PEEK 0x4d", and hit the "Do it" button.i. The value read will be shown in the text box below in decimal format.
  - d. To write a value: In the "Commands" field, Enter "POKE 0x4d 4096" and hit the "Do it" button.
    - a. The response should report OK if the write was successful.

| 🐕 DBGD Client - GenTL Viewer ?   | ×  |
|--|----|
| HELP   | ~  |
| Commands   |    |
| POKE 0x4d 4096   |    |
| REC SAVE [filename]<br>REC PREFIX [prefix]<br>REC DIR [direcotry]<br>REC FMT [format]<br>Valid formats are: tiff,png,dng,raw | ^  |
| SLEEP<br><br>SLEEP - Used to delay script for Nms.<br>SLEEP <sleep_time_in_ms></sleep_time_in_ms>                            |    |
| PEEK 0x100 = 0<br>PEEK 0x4d = 4097<br>POKE 0x4d 4096 = OK  | ~  |
| repeat None 🖨 Do i   | it |

Figure 5: Command Console

11. The GenICam camera registers can be viewed by opening the Camera Settings tab.

| GenTL Viewer - 1EF80000FF98 - [Form] - GenTL Viewer     |  | - 🗆 ×   | Fig   |
|---|--|---|-------|
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| p Aspect Ratio 1:1 None Zoom Show Zoom Pixel area 🔻 ROI | Video Settings Camera Settings                 |   | Ca    |
|   | Attribute                                      | Value   | me    |
|   | ✓ DeviceControl                                |   |       |
|   | DeviceReset                                    | <not readable=""></not>                         | ra    |
|   | DeviceVendorName                               | Critical Link LLC                               |       |
|   | DeviceModelName                                | MityCAM-35MMFHDXS                               | Set   |
|   | DeviceManufacturerInfo                         |   |       |
|   | DeviceVersion                                  | 1.0   | tin   |
|   | DeviceSerialNumber                             | 65432   |       |
|   | DeviceFirmwareVersion                          | CANON_35MM_EVK-10                               | gs    |
|   | DeviceSFNCVersionMajor                         |   | Tak   |
|   | DeviceSFNCVersionMinor<br>DeviceSFNCVersionSub |   | Idi   |
|   | SoftwareBuildDate                              | 0<br>13:13:59 on May 19 2020                    |       |
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|   | FpgaVersion<br>Fx3Version                      | 281485152471914<br>1.0.1.0 Jul 23 2018 12:48:24 |       |
|   | VoltageSelect                                  | VI08  |       |
|   | VoltageSelect                                  | 2,4957265853881836                              | 0     |
|   | > ImageFormatControl                           | 2/4537203033001030                              | 0     |
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switch on the rear of the camera, Figure 1 (Find #3).

Reference the GenTLViewer Manual for additional features.

# **Quick Start Revision History**

| Date      | Rev | Comments        |
|-----------|-----|-----------------|
| 5/06/2020 | 1   | Initial Release |