Product Document

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MityCAM-CSG14K

CSG14K EVK User's Manual

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1 Introduction

The purpose of this document is to detail features of the CSG14K EVK, which includes a MityCAM- CSG14K camera head.

1.1 Additional Documentation

In addition to this document, the following documents are also useful / pertinent to the use and operation of the MityCAM-CSG14K cameras.

Table 1: Reference Documentation

Document #	Title	Description
DS000522	CSG14K Datasheet	CSG14K 13.8MP CMOS Machine Vision Image Sensor Datahseet. See www.ams.com
60-000030	MityCAM-CSG14K datasheet	Complete specification for MityCAM-CSG14K.
	U3V Vision Standard 1.0.1	See https://www.visiononline.org/vision-standards-details.cfm?type=11
	GenTL Viewer User's Manual	Users guide for the Critical Link Supplied GenTL Viewer PC software available on the Critical Link Support Site.
	MitySOM-A10S Processor Board	Datasheet and information available on the Critical Link MitySOM-A10S Dual Side Connectors Page.

1.2 Organization

This document is organized in sections covering a specific topic.

2 Interfaces

2.1 AIA USB 3 Vision

The MityCAM-CSG14K includes a USB 3.0 interface that is complaint with the AIA USB 3.0 Vision standard (U3V). This is the main control and data interface to the camera system. A list of the GenICam registers available for control of the system included in Section 14 of this document.

Critical Link supplies a free pc application that may be used to control, capture and save images generated by the evaluation kit. However, this kit should also be compatible with any third-party software that is complaint with the U3V standard, such as the National Instruments Vision Acquisition Software, HALCON, etc. Figures in this document are captured using the Critical Link provided software.

2.2 HDMI

The MityCAM-CSG14K includes an HDMI output interface port. This port will support 1080P 24 bit-per-pixel RGB output as well as UHD 4K (30 Hz) output for sensor preview. Configuration of the HDMI output mode is controlled

through the GenICAM HdmiOutputResolution register. The interface port must use an HDMI 1.4 compliant interface cable and suitable monitor.

2.3 Power Interface

The MityCAM-CSG14K kit requires a +12 V input voltage supply. A minimum of 2 Amps is required. See the datasheet for details on the connector.

2.4 USB 2.0 RNDIS Debug

The USB 2.0 port on the MityCAM-CSG14K kit provides an RNDIS (ethernet) connection to an attached HOST PC. The port is configured to run a DHCP server and present an ethernet IP address of 10.1.47.2/8 for the camera and assign an address of 10.1.47.12/8 to the attached HOST PC. The camera supports accessing the embedded linux shell on the device using the ssh protocol. Using this protocol it is also possible to transfer files onto the camera subsystem. There is also a simple web-server running on the camera to support firmware upgrades.

2.5 Debug Port (JTAG and MicroSD Card Access)

On the side of the MityCAM-CSG14K kit there is a port that allows access to the MicroSD card used by the MitySOM-A10S processor board to load the on-board FPGA and embedded ARM software. The card is installed using a push style spring loaded connector. It is easiest to use a pair of tweezers or similar tool to access the card. Normally, users do not need to remove this card unless they need to replace or reprogram the card. Contact Critical Link for assistance.

The port also provides access to the USB-Blaster II JTAG interface, J2, as described in the MitySOM-A10S with dual side connectors datasheet. Note: an extension adaptor may be required to access the pins due to the external housing. Contact Critical Link for information.

3 Frame Interval and Exposure Time

The MityCAM-CSG14K uses the CSG14K sensor in Full External control mode (CTRL_MODE = 0) as described in section 7.2.7 of the datasheet. Figure 1 illustrates the logical connection of the sensor REQ_EXP and REQ_FRAME signals. The MityCAM-CSG14K kit supports software controlled exposure and frame interval time or externally

controlled exposure and frame interval time. Note that certain Image Modes have restrictions on frame rate and exposure time, see the datasheet for additional details.

In software controlled operation, the onboard FPGA is programmed to generate the proper timing strobes to achieve the requested exposure and frame interval time. In external triggering operation, the external GPIO pins must be used to drive the REQ_EXP (GPIO IO 0, pin 1) signal and REQ_FRAME (GPIO IO 3, pin 4) signals.

In all cases, the sensor is configured to use Full External control mode. The Timing is generated by the FGPA, conditioned by the external trigger pin when TriggerMode is set to "on".

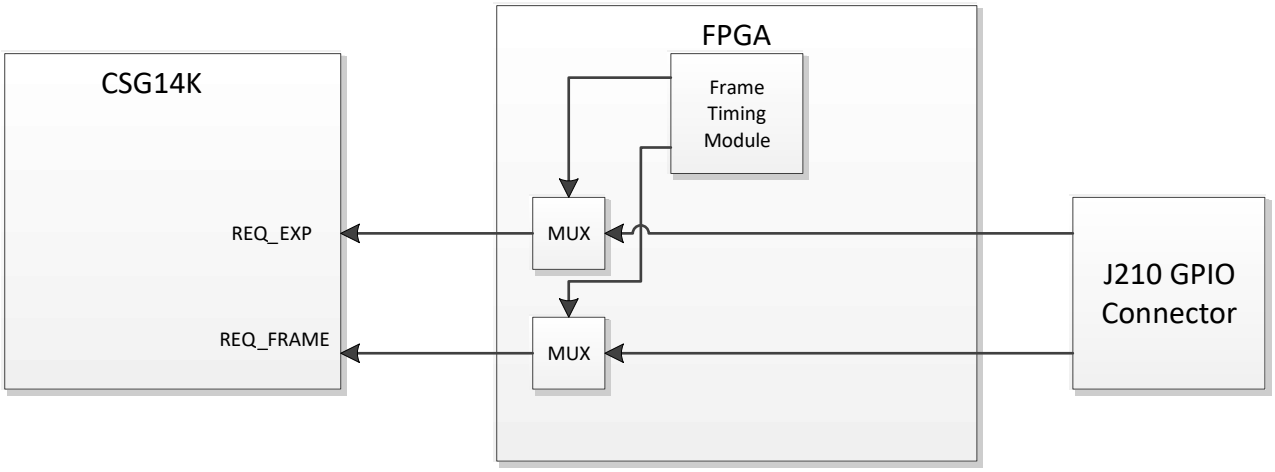

Figure 1 Sensor Connections Relating to Frame Exposure and Timing Control

3.1 Internal Exposure and Internal Frame Rate

This mode uses Control Mode 0 (Full External) mode of the CSG14K as described by the CTRL_MODE register in the sensor datasheet. In this mode the onboard FPGA logic is used to drive the REQ_EXP and REQ_FRAME signals, respectively. To configure this mode, the following GenICAM registers of the camera should be configured:

Register	Setting
LineMode[0]	Output (Exposure Strobe)
TriggerMode	Off
ExposureTime	Desired Exposure Time in microseconds
FrameIntervalTime	Desired Frame Interval Time In Microseconds

3.2 External Frame Rate and External Exposure

This mode uses Control Mode 0 (Full External) mode of the CSG14K as described by the CTRL_MODE register in the sensor datasheet. In this mode GPIO IO 0 (pin 1) of the P201 cable interface is used as the REQ_EXP signal,

and GPIO IO 3 (pin 4) is used as the FRAME_REQ signal. To configure this mode, the following GenICAM registers of the camera should be configured:

GenICam Register	Setting
LineMode[0]	Input
LineMode[3]	Input
TriggerMode	On

3.3 Notes on Frame Interval

The maximum frame interval time is defined in the CSG14K datasheet. For a full *active* ROI (i.e., 3480 x 3600), up to 115 Hz may be achieved. For a full ROI including dark data (i.e., 4032 x 3720), up to 105 Hz may be achieved. For ROIs that are smaller in height, higher frame rates out of the sensor are possible. However, the USB 3.1 interface is limited to approximately 320 MB/sec on a reasonable Windows PC. So, for a 3840 x 3600 image at 12 bits per pixel, the maximum continuous framerate achievable to the PC is limited to approximately 15 Hz. For continuous operation, if the requested frame rate is higher than can be achieved, frames will be periodically dropped on the USB output interface.

4 Dual Exposure Support

The MityCAM-CSG14K kit can be configured to operate using the Dual Exposure HDR mode as described in section 7.5.1 of the CSG14K datasheet. However, currently the GenTL software does not perform the necessary post-processing to combine the rows to present a proper image. Users may still capture the image data and save the data for post processing if they desire to assess the performance of the sensor in this mode.

Enabling and configuring the mode requires modifying the following settings on the Camera Settings tab while the camera is IDLE. First, change the SensorSpecific->DualExposure setting to "true". Second, ensure that the AcquisitionControl->ExposureTimeSelector is set to ExposureL and program the long exposure time in the AcquisitionControl->ExposureTime variable. Then change the AcquisitionControl->ExposureTimeSelector to ExposureS and set the short exposure time in the AcquisitionControl->ExposureTime variable. Note: after setting

the short exposure time, it is recommended to change the ExposureTimeSelector back to ExposureL, which is required for setting the exposure time in all other modes. At this point, you should be able to start an acquisition.

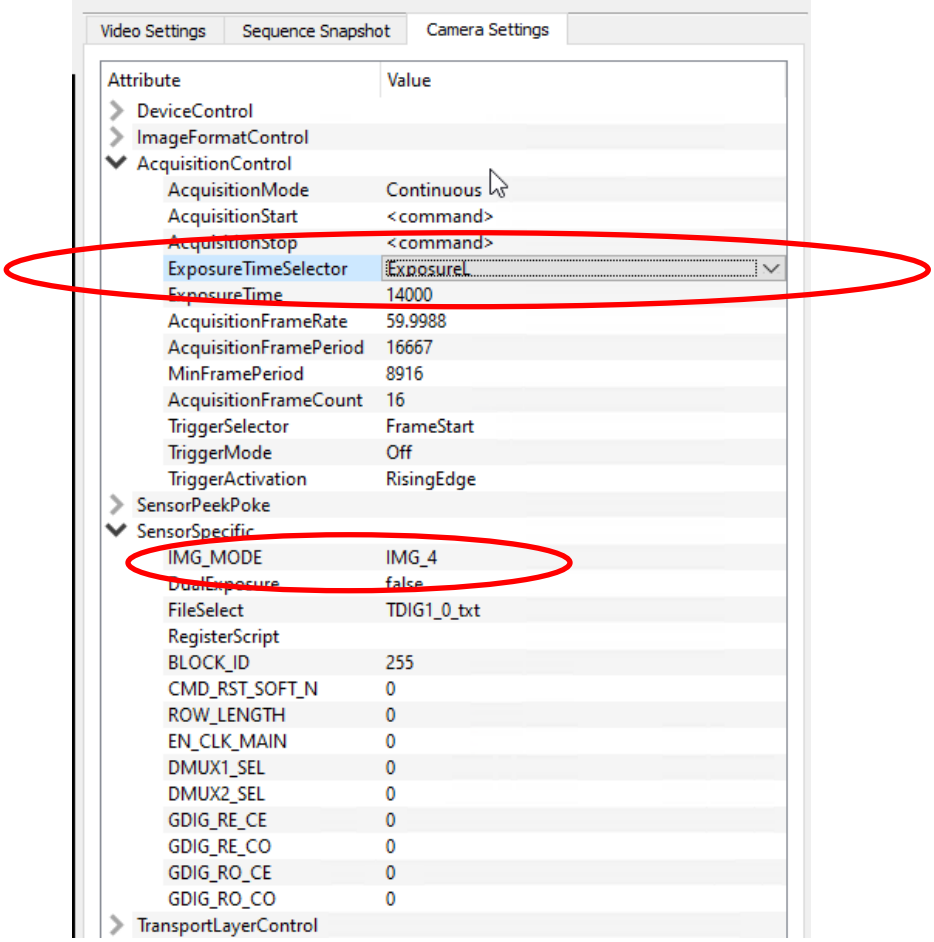

Figure 2 Camera Settings involving Dual Exposure Mode

5 Supported Sensor Image Modes

Section 7.4 of the datasheet outlines various operating modes supported by the sensor. The MityCAM-CSG14K kit supports the 12 bit modes: IMG.4 (standard 12-bit AD-conversion), IMG.5 (12-bit AD-conversion, short exposure mode), IMG.6 (12-bit AD-conversion, small window mode), and IMG.7 (12-bit AD-conversion, 2x2 binning mode). On power up, the camera will enter IMG.4 operating mode. For IMG.7 (binning mode) both monochrome and color sensors are supported.

Users may switch to the other supported modes when the camera is IDLE. To switch modes, switch to the Camera Settings control tab on the GenTL viewer and change the IMG_MODE control (under the Sensor Specific category) to the desired mode. The camera requires several seconds to change the mode. Wait until the IMG_MODE control updates to indicate that the camera is in the desired mode. At this point, you can continue operation.

Note that some settings (ROI, framerate, exposure time, etc.) may be reset in order to ensure a valid setting is applied in the new mode.

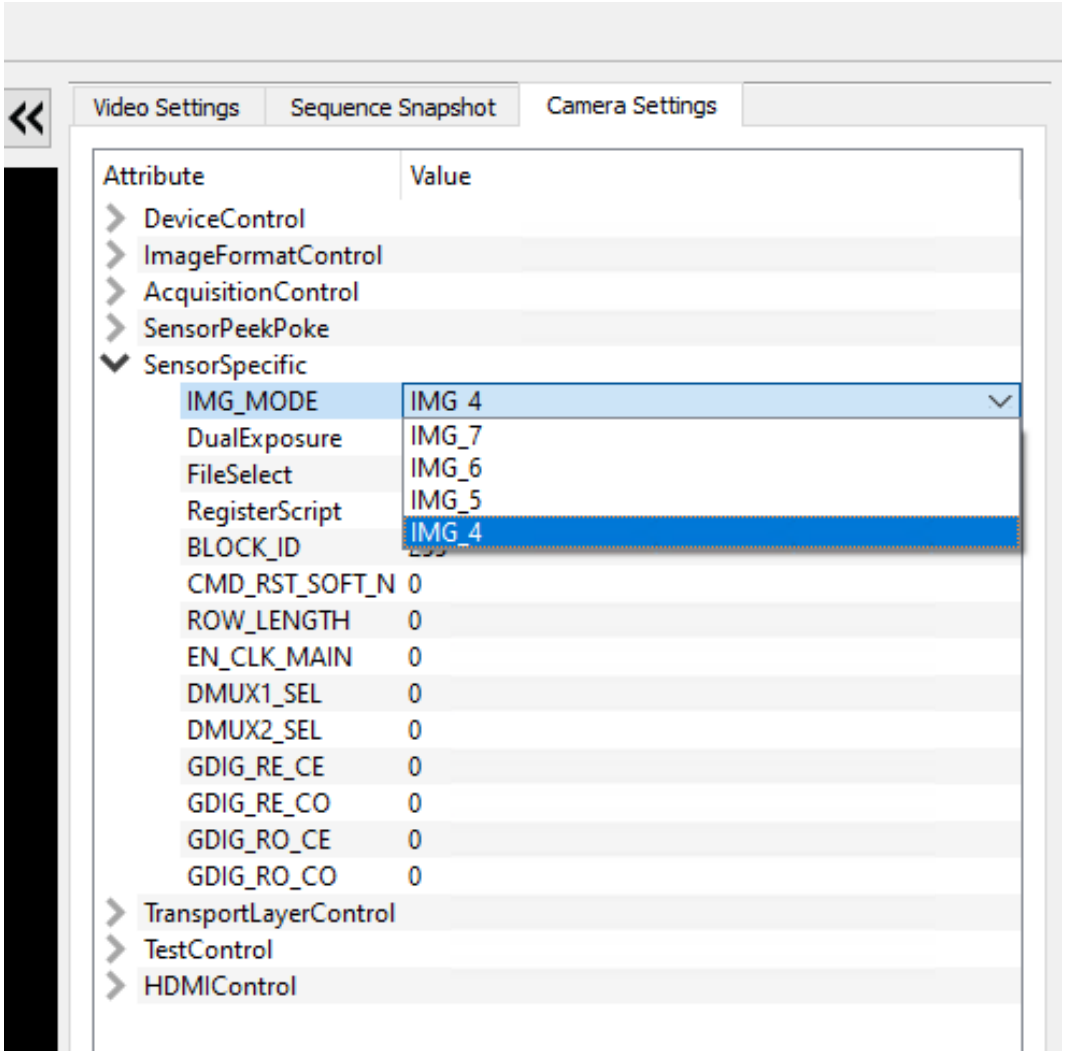

Figure 3 Changing the Image Mode

6 Continuous Operation

6.1 USB Output

When the GenICam AcquisitionMode register is set to Continuous and acquisition is started, the camera will configure the sensor to operate at the requested FrameRate and start transmitting data to the USB 3.0 interface. If the requested data rate exceeds the capability of the USB 3.0 link, the camera will periodically drop incoming frames prior to transmission to the host PC in order to reduce the latency of the data shown on a host PC display.

6.2 HDMI Output

The HDMI output supports operation at UHD 4K resolution at 30 Hz, or 1080P resolution at 60 Hz based on the HdmiOutputResolution GenICam parameter. Frames received by the sensor are clipped according to the

HdmiOffsetX, HdmiOffsetY, HdmiWidth, and HdmiHeight GenICam parameters, converted to RGB colorspace based on the HdmiColor parameter, rate converted (via frame dropping or frame repeating), and transmitted to the HDMI display as the received from the sensor. The latency of the HDMI output is typically 1-2 frames (~66 ms at UHD 4K resolution).

The HDMI output is enabled and disabled using GenICam HdmiStart and HdmiStop commands.

6.3 Simultaneous Output

The MityCAM-CSG14K EVK supports both running both the USB output and the HDMI output at the same time.

7 Changing Sensor Clock Rate

The camera supports operating the LVDS serializer rates of the CSG14K at different frequencies up to 1.2 GHz, the default setting. All LVDS channels are used.

Users that desire to alter the LVDS configuration to the FPGA (change the number of active outputs, change the output data rates) should contact Critical Link. Operating the system in a different configuration will require additional support.

8 Burst Mode Operation

8.1 USB 3 Output

The camera has a section of RAM (1 GB) dedicated as a circular image buffer. When the AcquisitionMode GenICam register is set to Single or Multi-Frame, data will be streamed at the configured rate into the image buffer and streamed out at the maximum achievable rate on the USB 3.0 interface, which is approximately 320 MB/sec.

The GenICam AquisitionFrameCount register maximum value will be limited such that the requested number of frames does not exceed the size of the image buffer.

8.2 HDMI

When the HDMI output is enabled, the maximum frame rate generated by the sensor must be less than or equal to 30 Hz for 4K operation, or 60 Hz for 1080P operation, otherwise undefined behavior (e.g., image tearing) may occur.

9 Configurable Region of Interest

While the CSG14K supports multiple ROI, the MityCAM-CSG14K supports a single ROI setting. However, because of how the CSG14K is tapped as a bottom half and top half and the data is read out from the center to the edge of the array, the implemented ROI for the evaluation kit is limited according to Figure 4. The ROI height must be a

multiple of 4 pixels. The ROI Y offset must be a multiple of 2 pixels. The X Offset must be a multiple of 16 pixels. The Width must be a multiple of 32 pixels.

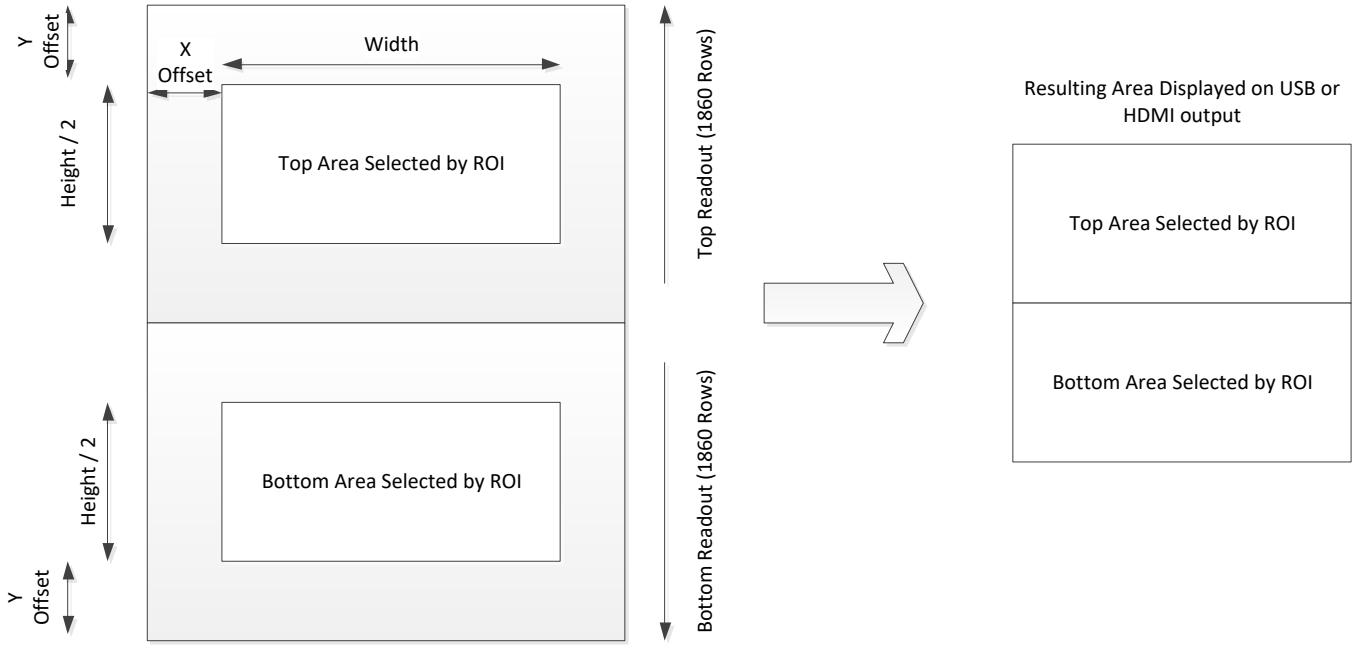

Figure 4 Effective ROI from X Offset, Y Offset, Width and Height GenICam Setttings

9.1 U3V

The base ROI captured from the Sensor and transmitted via the U3V interfaces is configured using the GenICam defined Width, Height, OffsetX, and OffsetY registers while the camera is IDLE.

9.2 HDMI

The HDMI ROI is configured using the GenICam parameters in the HDMI control group: HdmiOffsetX, HdmiOffsetY, HdmiWidth, and HdmiHeight. These parameters are relative to the U3V Width, Height, OffsetX, and OffsetY registers. So if the sensor ROI is configured to start at offset (1024,1024), then the HDMI display will be start at (1024+HdmiOffsetX, 1024+HdmiOffsetY).

10 Optical Black Data

The CSG14K uses optical black data for offset bias correction on a row by row basis. The CSG14K includes 131 optical black columns on the right side of the array as well as 26 rows on the top and bottom side of the array. In addition, there are buffering pixels which are optically active that are used to isolate the optically black pixels.

This is shown in the figure below (taken from the CSG14K datasheet). Users should refer to the CSG14K datasheet for additional information.

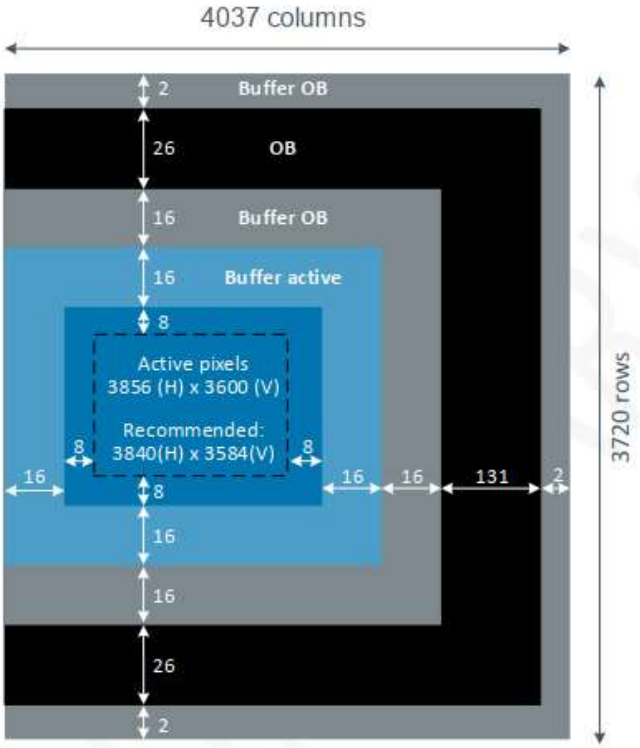

Figure 5 CSG14K Pixel Array

The MityCAM-CSG14K kit provides access to all of the rows available from the sensor, including the optical black and buffered row pixels. The ROI maximum height is 3720 rows. The kit will capture all of the active pixels in a row (3856) and will pack the first 120 of the 131 black column data followed by 56 zero pixels. The ROI maximum width is then 4032 columns (3856 + 120 + 56). If the right side of the desired ROI is less than the active pixel boundary, the FPGA will not read from the optical black LVDS channel (though the channel data will still be enabled).

The nominal ROI that will capture the Active pixels should be specified as having a X offset of 0, a Y offset of 60, a width of 3840 and a height of 3600. To capture the black pixels along the right side of the sensor the ROI should have an X offset of 0, a Y offset of 60, a width of 4032 (or 4000, as the last 56 columns are logical 0), and a height of 3600. To capture the black row pixels, the ROI should have an X offset = 0, a Y offset = 0, a width of 3840 and a height of 3720. NOTE: the maximum frame rate for capturing the full ROI including the 120 buffered/black rows is 105 Hz.

11 Color Processing

The MityCAM-CSG14K kit will perform color processing on the HDMI output path using a standard bilinear demosaicing algorithm. This will be performed whenever a color sensor is installed and the user has selected a

bayer output pixel format. The GenTL viewer will also convert received bayer data from the sensor using the OpenCV demosaicing algorithms.

12 GPIO Interface

The EVK comes with a breakout cable for the GPIO interface harness. The pin connections are listed in Table 2. P1 is the 12-Pin GPIO connector interface. P2 is the USB Type A interface for Host PC insertion. P3 is the 9 Pin receptacle (female) cable end. P4 is the 9 pin plug (male) cable end.

Table 2 GPIO Break Out Cable Pin Assignments

GPIO Port (P1)	Break Out Cable Port-Pin	Description
1	P3-6	FPGA IO 0 – 1.8V CMOS Logic Level
2	P3-7	FPGA IO 1 – 1.8V CMOS Logic Level
3	P3-8	FPGA IO 2 – 1.8V CMOS Logic Level
4	P3-9	FPGA IO 3 – 1.8V CMOS Logic Level
5	P3-4	Camera shutdown, short to GND to turn off camera, otherwise leave unconnected.
6	P3-5	Ground
7	USB-A Connector, P2	1.8V Serial Console Output
8	USB-A Connector, P2	1.8V Serial Console Input
9	P4-5	Reference / Return for Isolated input currents.
10	P4-6	Opto-isolated Input 0
11	P4-7	Opto-isolated Input 1
12	P4-8	Opto-isolated Input 2

The available modes of operation for the 4 GPIO pins are listed in Table 3.

Table 3: GPIO Modes

#	Mode
1.	Input for reading
2.	Output driven low
3.	Output driven high
4.	Input for external trigger

The following sections will cover Modes 1, 2 and 3. Mode 4 is covered in separate sections.

The Opto-Isolated Input pins may be used as inputs for reading. Input 0 may be used as an optional trigger source in the same way as GPIO 0.

12.1 Input

In the input mode of operation, the pin can be queried for its current logical value (High or Low).

12.2 Output

In output mode, the pin can be driven high or low. This can be used to toggle a light source or some other operation.

13 Firmware Upgrade

Recent versions of the MityCAM-CSG14K allow upgrading the firmware via the network interface. Details for acquiring the firmware and downloading the firmware to the camera are available on the Critical Link MityCAM Support Site.

14 MityCAM-CSG14K GenICam Features

This section presents a summary of the Generic Interface for Cameras (GenICam) available features provided by the camera. Many of the listed features, identified by the SFNC=Y field, are defined by the european machine vision association (emva) Standard Features Naming Convention.

14.1 Device Control Group

Feature	Type	SFNC?	Description
DeviceReset	Command	Y	This command is used to reset the device and to put it in its power up state.
DeviceVendorName	StringReg	Y	Name of camera vendor
DeviceModelName	StringReg	Y	Name of the camera model
DeviceManufacturerInfo	StringReg	Y	Manufacturer Info
DeviceVersion	StringReg	Y	Device Version
DeviceSerialNumber	StringReg	Y	Displays the factory set camera serial number.
DeviceFirmwareVersion	StringReg	Y	Firmware Version
DeviceSFNCVersionMajor	Integer	Y	Major version of the Standard Features Naming Convention that was used to create GenICam XML
DeviceSFNCVersionMinor	Integer	Y	Minor version of the Standard Features Naming Convention that was used to create GenICam XML
DeviceSFNCVersionSubMinor	Integer	Y	Sub-Minor version of the Standard Features Naming Convention that was used to create GenICam XML
SensorTemperatureTop	Float	Y	Sensor temperature in degrees C. **Min Value:**-200.0 **Max Value:**200.0
SensorTemperatureBottom	Float	Y	Sensor temperature in degrees C. **Min Value:**-200.0 **Max Value:**200.0
SoftwareBuildDate	StringReg	N	Build date of the camera software.
FpgaVersion	IntReg	N	Version information of the FPGA.
Fx3Version	StringReg	N	Version information for the FX3.
VoltageSelect	Enumeration	N	ADC Voltage Select **Allowed Values :** • VDD12_PLL • VDDPIX • VDD33 • VDD33D • VDD12 • VDD12C • VDD45 • VSSNEG
Voltage	Float	N	The measured voltage at the VoltageSelect Position.

14.2 Image Format Control Group

Feature	Type	SFNC?	Description
OffsetX	Integer	Y	Horizontal offset from the origin to the region of interest (in pixels). **Min Value:**0 **Increment:**8
OffsetY	Integer	Y	Vertical offset from the origin to the region of interest (in pixels). **Min Value:**0 **Increment:**2
Width	Integer	N	Width of the image provided by the device (in pixels). **Min Value:**128 **Increment:**64
Height	Integer	Y	Height of the image provided by the device (in pixels). **Min Value:**4 **Increment:**4
SensorWidth	Integer	Y	Effective width of the sensor in pixels.
SensorHeight	Integer	Y	Effective height of the sensor in pixels.
WidthMax	IntSwissKnife	Y	Maximum width of the image (in pixels). The dimension is calculated after horizontal binning, decimation or any other function changing the horizontal dimension of the image.
HeightMax	IntSwissKnife	Y	Maximum height of the image (in pixels). This dimension is calculated after vertical binning, decimation or any other function changing the vertical dimension of the image.
PixelFormat	Enumeration	Y	Pixel format **Allowed Values :** • Mono12p • Mono8 • Bayer8 • Bayer12p
BinningHorizontal	Integer	Y	Binning in horizontal direction. **Min Value:**1 **Max Value:**2

Feature	Type	SFNC?	Description
BinningVertical	Integer	Y	Binning in vertical direction. **Min Value:**1 **Max Value:**2
ReverseX	Boolean	Y	Flip horizontally the image sent by the device.
TestPattern	Enumeration	Y	This control allows the user to select between normal Sensor Data and the CSG14K sensor channel test gradient test data. **Allowed Values :** • SensorData • SensorGradient

14.3 Acquisition Control Group

Feature	Type	SFNC?	Description
AcquisitionMode	Enumeration	Y	Acquisition mode **Allowed Values :** • Continuous • SingleFrame • MultiFrame
AcquisitionStart	Command	Y	Start acquisition.
AcquisitionStop	Command	Y	Stop acquisition.
ExposureTimeSelector	Enumeration	Y	ExposureTimeSelector **Allowed Values :** • ExposureL • ExposureS
ExposureTime	Float	Y	Exposure duration, in microseconds.
AcquisitionFrameRate	Converter	Y	Frame rate, in frames per second.
AcquisitionFramePeriod	Integer	Y	Frame rate, in microseconds. **Max Value:**5000000 **Increment:**1
MinFramePeriod	Integer	Y	Minimum interval between frames, in microseconds.
AcquisitionFrameCount	Integer	Y	Number of frames to aquire in MultiFrame Acquisition mode. **Min Value:**1 **Increment:**1
TriggerSelector	Enumeration	Y	TriggerSelector **Allowed Values :** • FrameStart

Feature	Type	SFNC?	Description
TriggerMode	Enumeration	N	TriggerMode **Allowed Values :** • Off • On
TriggerActivation	Enumeration	N	TriggerActivation **Allowed Values :** • RisingEdge

14.4 Sensor Peek/Poke Group

Feature	Type	SFNC?	Description
RegAddress	Integer	N	Register address of the Peek/Poke **Min Value:**0 **Max Value:**255 **Increment:**1
RegValue	Integer	N	Value of the address peeked or to be written when poked **Min Value:**0 **Max Value:**255 **Increment:**1
ExecRead	Command	N	Command reads and invalidates/replaces the RegValue register with the setting read back from the sensor.
ExecWrite	Command	N	Command reads and invalidates/replaces the RegValue register with the setting read back from the sensor.

14.5 Sensor Specific Group

Feature	Type	SFNC?	Description
IMG_MODE	Enumeration	N	The IMG.X mode as outlined in the CSG14K Datasheet. **Allowed Values :** • IMG_4 • IMG_5 • IMG_6 • IMG_7
DualExposure	Boolean	N	Configures sensor to run in dual exposure mode.
FileSelect	Enumeration	N	FileSelect **Allowed Values :** • TDIG1_0_txt • TDIG1_1_txt • TDIG3_0_txt • TDIG3_1_txt • clock_txt • gradient_txt • prbs_txt
RegisterScript	StringReg	Y	Name of a script file to program
BLOCK_ID	IntReg	N	
CMD_RST_SOFT_N	IntReg	N	
ROW_LENGTH	IntReg	N	
EN_CLK_MAIN	IntReg	N	
DMUX1_SEL	IntReg	N	
DMUX2_SEL	IntReg	N	
GDIG_RE_CE	Integer	N	Digital Gain for Even Rows, Even Columns. See the CSG14000 datasheet. **Min Value:**0 **Max Value:**255 **Increment:**1

Feature	Type	SFNC?	Description
GDIG_RE_CO	Integer	N	Digital Gain for Even Rows, Odd Columns. See the CSG14000 datasheet. **Min Value:**0 **Max Value:**255 **Increment:**1
GDIG_RO_CE	Integer	N	Digital Gain for Odd Rows, Even Columns. See the CSG14000 datasheet. **Min Value:**0 **Max Value:**255 **Increment:**1
GDIG_RO_CO	Integer	N	Digital Gain for Odd Rows, Odd Columns. See the CSG14000 datasheet. **Min Value:**0 **Max Value:**255 **Increment:**1

14.6 HDMI Control Group

Feature	Type	SFNC?	Description
HdmiStart	Command	N	This command will cause the evalation kit to configure the Sensor to capture images, scale and output them to the HDMI port according to the settings in the HDMI Control group.
HdmiStop	Command	N	This command will cause the evalation kit to configure the Sensor to stop sending data to the HDMI output port.
HdmiOffsetX	Integer	Y	X pixel offset of the clipping region of the captured sensor image that will be routed to the HDMI display. Note: This offset is with respect to the effective region transmitted to the USB 3 interface port as defined by the OffsetX parameter. **Min Value:**0 **Increment:**16
HdmiOffsetY	Integer	Y	Y pixel offset of the clipping region of the captured sensor image that will be routed to the HDMI display.Note: This offset is with respect to the effective region transmitted to the USB 3 interface port as defined by the OffsetY parameter. **Min Value:**0 **Increment:**2
HdmiHeight	Integer	Y	Pixel Height of the image sent to the HDMI output interface. Note: the image sent to the HDMI output interface will be scaled (up or down depending on the scenario) to match the configured HdmiOutputResolution parameter. Aspect ratio is not preserved. **Min Value:**4 **Increment:**2
HdmiWidth	Integer	Y	Pixel Width of the image sent to the HDMI output interface. Note: the image sent to the HDMI output interface will be scaled (up or down depending on the scenario) to match the configured HdmiOutputResolution parameter. Aspect ratio is not preserved. **Min Value:**16 **Increment:**16

Feature	Type	SFNC?	Description
HdmiOutputResolution	Enumeration	N	Selects the transmitted output resolution on the HDMI interface. Currently, 1080P60 and UHD 4K at 30 Hz are supported. **Allowed Values :** • Res_1080p • Res_4K
HdmiGamma	Float	N	The evalation system will perform a gamma gain conversion of the HDMI output data using this parameter.
HdmiWhiteBalanceRed	Float	N	This is a Red Gain term that may be used to white balance the HDMI output color. **Min Value:**0.0 **Max Value:**1.999
HdmiWhiteBalanceGreen	Float	N	This is a Green Gain term that may be used to white balance the HDMI output color. **Min Value:**0.0 **Max Value:**1.999
HdmiWhiteBalanceBlue	Float	N	This is a Blue Gain term that may be used to white balance the HDMI output color. **Min Value:**0.0 **Max Value:**1.999

14.7 Transport Layer Control Group

Feature	Type	SFNC?	Description
PayloadSize	Integer	Y	Size of payload, in bytes **Min Value:**16 **Max Value:**95103360 **Increment:**1