Allied Vision

Goldeye G/CL:
Cool, Stabilized (TEC), and TECless variants

2020-Aug-12

Goldeye G/CL Features Reference

For detailed information on camera controls, read the Goldeye G/CL Features Reference, which is available on the Allied Vision Technical Documentation web page.

It describes the standard and advanced camera controls for GigE Vision and Camera Link SWIR cameras as seen from the Vimba Viewer or GenICam compliant third-party software solutions.

www.alliedvision.com/en/support/technical-documentation/goldeye-gcl-documentation.html

Firmware update instructions

For more information on updating the firmware on your Goldeye camera, refer to the chapter Firmware Update of the Goldeye G/CL Technical Manual at:

hwww.alliedvision.com/en/support/technical-documentation/goldeye-gcl-documentation.html

Supported cameras

The firmware updates listed are valid for all Goldeye G, Goldeye G Cool, and Goldeye CL models.

Firmware version 02.20.29870

Release date: 2020-Aug-07

- New models: Goldeye CL-034 TEC1, G-034 TEC1

Firmware version 02.18.20213

Release date: 2018-May-15

- Implemented new `SensorTemperatureControlMode` in `TemperatureControlTarget` that allows heating at one particular T-setpoint for Goldeye G/CL-008 variants.
- Introduced new enum feature `SensorTemperatureTargetSetpoint` to select where the heating is active.

Firmware version 02.16.19998

Release date: 2018-Mar-20

- New models:
    - Goldeye CL-008 Cool TEC1, G-008 Cool TEC1,
    - Goldeye CL-032 Cool TEC2,
    - Goldeye CL-033 TECless, G-033 TECless.

Firmware version 02.14.19002

Release date: 2017-Jun-14

- Implemented automatic contrast feature.
- Restructured `ContrastAuto` registers.
- Implemented the Integrate-then-Read mode (ITR) for the external trigger.
- Optimized the IWR mode settings to correct trigger-induced distortions.
- Bug-fix: Loss of symbols received via UART.
- Bug-fix: Baud-rate was not set back to default when resetting AccessPrivilege. Register (0x1E0) (affected CL variants only).
- Fixed a bug causing an overflow at long automatic exposures (which led to big deviations in the regulation).
- Fixed a bug in `FrameTriggerReady` event ID. Set ID to 40026.
- Fixed incorrect behavior at external over triggering.

Firmware version 02.12.17558

Release date: 2016-Jul-07

- Added automatic exposure feature.
- Added support for CC ports (Camera Link).
- Implemented Events for Camera Link variants.
- Added capability to change Camera Link timing parameters including clock frequency.
- Added support for automatic acquisition start after boot if feature is set and saved in user set.
- Improvements in FPGA timing closure.
- Improved and fixed back end Camera Link timing.
- Fixed an issue which caused sometimes a very dark image when changing Integration Mode.
- Fixed an issue of GenICam feature `LutValueAll`.
- Fixed an horizontal image offset error (related to all Goldeye CL variants).

Firmware version 02.10.16613

Release date: 2016-Mar-04

- Added support for automatic acquisition start after boot if I/O pins Auto Iris Out and In 1 (LineIn1) are connected externally.
- Fixed an issue in `DeviceInfo`.
- Adjusted internal task priorities for Camera Link GenCP processing and stripe correction updates.
- Fixed an issue which caused Vimba error message *StartCapture failed! Error -13* when trying to save a UserSet and camera control hangs afterwards.
- Fixed image distortions which occurred after several hours at maximum frame rate (Goldeye CL).
- Added GenICam feature `DeviceClockFrequency` and related.
- Removed GenICam feature `DeviceLinkThroughputLimit` for Camera Link cameras.
- Removed GenICam category `EventControl` and related features for Camera Link cameras.
- Removed unsupported Tap `Geometry 1X3_1Y`.
- Changed `DeviceSFNCFirmwareVersionMinor` to 2.
- Removed `StreamHold` related features for Camera Link cameras.
- Fixed an issue with `LUTSave`.
- Fixed corrupted image output caused by fast external exposure triggering.
- Fixed an RS232 related regression.
- Improvements in FPGA timing closure.
- Fixed corrupted image output at high frame rates of Goldeye CL-033.
- Issue fixes and improvements in the MXC calibration.
- Fixed an issue in UART FIFO reset logic.
- Fixed an issue related to `DeviceTemperature[Sensor]` in Goldeye CL-033 and G-033.
- Added LED control.
- Changed vendor name from *Allied Vision Technologies* to *Allied Vision*.
- Fixed a watchdog related issue.
- Fixed the GenCP checksum calculation routine.
- Fix in GenCP routine.
- Fixed an issue in GenCP routine.
- Fixed several control interface UART related issues.
- Fixed some GenICam feature names.
- Added LED flashing during firmware update.
- Removed unsupported Mono12Packed pixel format for Camera Link.
- Fixed a file system related issue which prevented reformatting in some cases.
- Added Camera Link interface.

- Added new firmware update method.
- Fixed an issue which could cause the image acquisition to stop if a feature had been changed.
- Fixed an issue which could cause the camera to hang during boot process.

Firmware version 02.08.15169

Release date: 2015-Aug-24

- Fixed issue related to file handling of MXC.
- Fixed regression in National Instruments MAX support introduced since last commercial release.
- Fixed an issue that caused the camera to output a corrupt image every several thousand frames under certain conditions.
- Fixed an issue that may cause the camera to hang in early boot phase.
- Minor changes to Look-up table.
- Known Issue: Image acquisition stops sometimes if a binning or ROI feature has been changed. Workaround: Restarting the acquisition.
- Improvements and fixes around binning: corrected ROI bounds checking and background correction.
- Corrected error in MXC.
- LUT: removed unnecessary polling with NoCache attribute from XML.
- Fixed crash with Freerun as default for AcquisitionStart and AcquisitionEnd.
- Added LUT.
- Added digital binning.
- Added mux stripe correction for Goldeye G-008 and G-032.
- Some issue fixes in the file system.
- Modified firmware version numbering: the lowest significant number now designates source code revision.
- Fixed regression regarding file access, introduced with firmware version 02.07.01.
- Defect pixel correction for Goldeye G-008 is now working again at full frame rate, removed workaround from firmware version 02.07.02.
- Known issue: every several thousands of images one image may be corrupt (not corrected).
- Workaround: reduced frame rate of Goldeye G-008 a little to get defect pixel correction and `StatFrameRate` running
- Introduced four user files, named `UserData` to `UserData_4`
- Fixed an issue that caused the first image after power cycle to be corrupt.
- Initial support for Goldeye G-008.

Firmware version 02.06.06

Release date: 2015-Apr-21

- Fixed issue that caused camera to crash when receiving data over the serial port.

Firmware version 02.06.05

Release date: 2015-Mar-20

- Fixed issue related to NI attribute Check and NI MAX failed since implementation of background correction.
- Fixed issue regarding missing initialization of registry settings for new keys in user sets, which did not exist in registry before (for example, due to a firmware update). The error occurred if the stored active user set is not the factory set.
- Fixed issue recently introduced in defect pixel correction which causes the six columns at the left edge not being corrected.
- Changed default values for some sensor features and TEC (thermo-electric cooling) features.
- Fixed issue regarding automatic NUC (non-uniformity correction) dataset selection activates wrong datasets.
- Modified background correction to use less memory bandwidth to fully support the Goldeye G-033 sensor, the number of integration images is now limited to four.
- Added Background Correction to image processing.
- Fixed critical issue in registry which potentially destroys registry while repacking.

Warning

All previous firmware versions containing this issue may destroy their user sets and even sensor parameter configuration (and thus the camera calibration) after a firmware update or downgrade.

This occurs if the firmware loaded into the camera is older than firmware version 02.06.02 Independently of the firmware that resided previously in the camera.

- Removed some not implemented features from XML regarding references to Line3, Line4 and PTP in `EventSelector`, `EventID` and `EventData`.
- Fixed a newly emerged issue in the TEC controller.
- Added `IntegrationMode` feature within `AcqusitionControl` category with two values: *IntegrateThenRead* and *IntegrateWhileRead*.
- Changed some default values in the TEC and sensor controller.
- Fixed potential unreliability during internal register access.
- Further speed optimizations in image processing for Goldeye G-033 sensor.
- Reduced power consumption of DRAM memory.
- Fixed issue related to ROI-settings on Snake sensor, leading to corrupted images, a crash, or dropped frames.

- Added workaround for the issue that Vimba rewrites `AcquisitionFrameRate` feature with a wrong value after the camera (re)boots.

- Changed limitations for `AcqusitionFrameRate` feature.

- Changed (optimized) some timing parameters for Goldeye G-033.

- Set the maximum number of TEC set points to five as well as changed default values of some of them.

- Changed some default factory settings for sensor control register of the Goldeye G-033.

- Small issue fix in the TEC controller (micro controller).

- Fixed issue regarding reading the command `SensorTemperatureSetpointActivate`.

- Fixed issue with dropped frames, packet errors, Vimba Viewer crash when changing OffsetX or OffsetY during acquisition.

- Added support for the Goldeye G-033 sensor.

- Changed the sensor gain selection scheme as follows: LowGain-> Gain0- 0, HighGain-> Gain1- 1, Gain2- 2 (the latter only for G-033).

Firmware version 02.04.04

Release date: 2014-Oct-30

- Fixed REGKEY_SC_AFE_SHXLOC.

- Added new features to XML file: `NUCDatasetActiveDescription`

- Added new features to XML file: `NUCDatasetActiveExposureTime`

- Added new features to XML file: `NUCDatasetActiveGain`

- Added new features to XML file: `NUCDatasetActiveTemperature`

- Added new features to XML file: `DPCDatasetActiveDescription`

- Minor corrections / unifications in description and tool-tip texts.

- Added unit attribute to XML features: `AcquisitionFrameRate`

- Added unit attribute to XML features: `AcquisitionframeRateLimit`

- Added unit attribute to XML features: `ExposureTime`

- Added unit attribute to XML features: `TriggerDelay`

- Added unit attribute to XML features: `DeviceLinkThroughputLimit`

- Added unit attribute to XML features: `DeviceRelativeHumidity`

- Added unit attribute to XML features: `DeviceStreamChannelPacketSize`

- Added unit attribute to XML features: `DeviceTemperature`

- Added unit attribute to XML features: `SensorCoolingPower`

- Added unit attribute to XML features: `SensorTemperatureSetpointValue`

- Added unit attribute to XML features: `StrobeDuration`

- Added unit attribute to XML features: `FileAccessLength`

- Added unit attribute to XML features: `FileAccessOffset`

- Added unit attribute to XML features: `FileSize`
- Added unit attribute to XML features: `GevHeartbeatTimeout`
- Added unit attribute to XML features: `ImageSize`
- Added unit attribute to XML features: `PayloadSize`
- Corrected `GevCurrentIPConfigurationLLA` feature name (was `GetCurrentIPConfigurationLLA`).
- Added invisible `GevHeartbeatTimeout` (deprecated) feature.
- Added `DeviceLinkHeartbeatTimeout` feature.
- Added automatic dataset selection to non-uniformity correction.
- Corrected feature name `GevCurrentIPConfigurationPersistentIP`.
- Fixed issue of blinking pixels at high gain and exposure time near to the frame interval.
- Added `FrameRateLimit` feature to `Acquisition`/`Trigger` category.
- Very-first working AOI functionality.
- Minimized frame timing overhead.
- New features added to control/display the ROI limitations with respect to FPA physical pixel coordinates: DeviceConrol->SensorBoadSettings->GoodArea* (RW); ImageFormatControl->SensorOffset* (RO);
- Reworked humidity sensor control.
- Workaround for Issue: Frame out stops for a few seconds if exposure time is set below 120 µs.
- Minimum exposure time is set to 6 µs.
- The set value of the exposure time, before being applied to the sensor, is shortened by the FPA's minimum exposure time.
- Added further following SFNC features
  - `GevCurrentIPAddress`
  - `GevCurrentSubnetMask`
  - `GevCurrentDefaultGateway`
  - `GevPersistentIPAddress`
  - `GevPersistentSubnetMask`
  - `GevPersistentDefaultGateway`
  - `GetCurrentIPConfigurationLLA`
  - `GevCurrentIPConfigurationDHCP`
  - `GevCurrentIPConfigurationPersistensIP`
  - `GevMACAddress`
- Fixed feature category for PvAPI: ROI-> /ImageFormat, TotalBytesPerFrame-> /ImageFormat.
- Optimized the timing generator and trigger: now the exposure time > 1 µs is possible (plus the FPA's internal minimum exposure of approx. 5.4 µs).

Firmware version 02.02.02

Release date: 2014-Jul-22

- Moved and renamed features to match SFNC 2.1 using Vimba and other GigEVision-based software. Structure in PvAPI maintained.

- Moved sensor parameters from Sensorboard EEPROM to a registry that accesses the control board EEPROM.

- Introduced the following features:
  - `DeviceSFNCFirmwareVersionMajor,`
  - `DeviceSFNCFirmwareVersionMinor,`
  - `DeviceSFNCFirmwareVersionSubMinor.`

- Introduced BasePart-Id 262146 (0x0040002) (cooled firmware version).

- Reactivated `DeviceStatus` category (temperature and humidity inquiry sensor readout).

- Added non-uniformity correction and defect-pixel correction, user sets are working.

- Fixed problem with Vimba (Buffer too small). Number of lines transmitted was miscalculated.

- 4-channel mode, 100 fps, TEC +20 °C, minimum exposure 120 µs.

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