

CHROMASENS GmbH

## **Release-History for the allPIXA SWIR GigE Camera Firmware**

Latest changes: August 2022

We welcome any suggestions, questions, bug reports to: [support@chromasens.de](mailto:support@chromasens.de)  
Please be aware that any changes in previous versions are kept in all the following versions.

### **Version 1.3.3**

#### **Bug fixes for:**

- Shift of calibration data set in flash memory.

### **Version 1.3.2**

#### **Bug fixes for:**

- To avoid accidental update of factory calibration data set, the update of data set is protected by maintenance mode.
- Updating calibration data set, also updates corresponding calibration status.
- In File Access Control, file select feature enumeration names are changed.  
DSNULUT1 --> UserDSNUCorrection1 ... and so on.

### **Version 1.3.1**

#### **Changes /new Features:**

- Max Image Height set to 8192 (previously it was 4096).

#### **Bug fixes for:**

- Black calibration functionality and CCD Type Updating related.
- Frame Trigger issue in Continuous and Multiframe Mode.

### **Version 1.3.0**

#### **Changes /new Features:**

- By default, Persistent IP disabled and DHCP and LLA set active.
- "Calculate User Coefficients" moved one level down under "Flatfield Correction" Node.
- Device Hardware Code and Device Version of following cameras can be updated through firmware update.  
SN1002, SN1003, SN1005, SN1006, SN1007, SN1011, SN1012, SN1014, SN1016, SN1020, SN1021
- "Acquisition Abort" feature added.
- "Gain Selector" feature node added under "Analog Control".
- "Analog Gain Selector" marked as deprecated and kept invisible from user, and instead of it "Sensor Gain" added in "Gain Selector".
- "Digital All" moved into "Gain Selector".
- "LUT Enable" added to activate selected LUT from "LUT Selector".

- LUT option "None" removed from "LUT Selector".
  - "Device Manifest Entry Selector" and "Device XML Version Major/Minor/SubMinor" features added.
  - "Binning Selector" and "Binning Horizontal Mode" features added.
  - "Region Selector", "Component Selector", "Component Enable" and "Acquisition Abort" features added. Features "Width", "Height" and "Offset X" moved under "Region Selector". Features "Component Enable", "Pixel Format", "Pixel Size", "Pixel Dynamic Range Min" and "Pixel Dynamic Range Max" moved under "Component Selector". Features "Binning Horizontal Mode" and "Binning Horizontal" moved under "Binning Selector".
  - Optional "Frequency Converter" feature added. It can be activated and made visible through special function register.
  - Optional "Update MAC Address" added. It can be activated and made visible through special function register.
  - Old "Encoder Feature" replaced with standard SFNC encoder.
  - "Horizontal moving ramp frame by frame" test pattern added.
  - Along with single and continuous frame acquisition modes, multiframe acquisition mode added.
  - "Device SFNC Versions", "Device TL Type", "Device Reset", "Device Configuration" features added.
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- XML Version number appended to XML file name during save xml to pc operation. This solves XML caching problem when using Dalsa SDK.
  - Feature names corrected: DigitalGain --> DigitalGainInt, BlackLevel --> BlackLevelInt

**Bug fixes for:**

- The issue with Multiframe Acquisition Mode when lines per frame is 1.
- The problem with image distortion occurring when PRNU/DSNU calibration active and ReverseX changed.
- The issue with single frame acquisition mode not working.
- The issue with software trigger mode not working in AcqStart, FrameStart and LineStart trigger modes.
- The issue with image acquisition working even when Frequency Converter source is off (not selected).

**Version 1.2.0****Changes /new Features:**

- Trigger processing and operation mechanism improved.
- "Digital Out Line" feature sources extended.
- "Trigger Width" option added under "Exposure Mode".
- Change of Digital gain and Black Level of individual Tap is no more possible. Changes are applied to all taps simultaneously.
- LLA is always active and cannot be deactivated.
- Update in Sensor/CCD Type is effective immediately, no need to restart the camera to see the changes.
- "Minimum Pulse Width" feature added.
- Speed to high bit reset through software.

**Bug fixes for:**

- Camera Discovery issue. Camera sends Broadcast IP (0xFFFFFFFF) in DISCOVERY\_ACK during camera discovery process only when one of the following conditions is met. 1. the DISCOVERY\_CMD was not received by camera on the device subnet.  
2. if bit 3 of the "flag" field of DISCOVERY\_CMD was set by host.  
With this changes DISCOVERY\_ACK is sent broadcast only when we are not in the same net mask and the broadcast flag was set in DISCOVERY\_CMD.
- The issue with netmask configuration. Netmask filter in camera removed.
- The issue with null character in XML. Null character is checked and removed before sending XML to host software.
- Error in multiple device hardware code verification.
- The issues in trigger operation.

**Version 1.1.0****Changes /new Features:**

- Device Hardware Code for multiple devices can be verified during firmware update.
- Device Serial Number set as string instead of integer.
- Partial frame acquisition removed.
  
- "Device Version" feature added.
- "Device Product Number" feature added.
- GVSP port number separated from GVCP port number.

**Bug fixes for:**

- Firmware update issue.
- Black Calibration timeout issue.
- Naming of "Line Scan". Line Scane --> Linescan.
- AcqStart or FrameStart together with LineStart not working.
- "Device Hardware Code" set to NA for cameras which are not configured Device Hardware Code.
- The issue related to update of "Default Userset" dropdown menu.

**Version 1.0.0****Changes /new Features:**

- Firmware versioning style changed.
- "Device Hardware Code" feature added.
- "Vertical Binning" feature deactivated.

**Version 0.4-0.10.0****Changes /new Features:**

- Horizontal Grey Ramp and Vertical Grey Ramp test pattern values are calculated in software and loaded in BRAM of logic. This way all possible values can be realized for 8-bit, 10-bit and 12-bit pixel formats.
- "Device Hardware Revision Number" feature added.
- Line Rate set to 40K by default.

- DSNU/PRNU and Black calibration coefficients can be downloaded and saved on pc as well as can be uploaded in camera from pc.
- Address area of following files changed in flash memory.
  1. DSNU coefficients (user and factory)
  2. PRNU coefficients (user and factory)
  3. Shared Parameters
  4. Black calibration coefficients
  5. Special TRC/Gamma LUT.
- Temperature warning enabled when board temperature goes above 70°C
- Gamma value shown feature tree with 2 decimal value precision.
- "Sensor Height" set fixed to 1.
- Feature renaming PRNU LUT--> PRNU Correction, Special Gamma LUT -> Special TRC/Gamma LUT.
- IP Address, Netmask, and MAC Address endianness changed.

**Bug fixes for:**

- The issue related to Jumbo transfer.
- The issue related to saving parameters in "User Set".