



TELEDYNE DALSA
Everywhereyoulook™

Teledyne DALSA • 605 McMurray Road • Waterloo, Ontario, N2V 2E9 • Canada
<http://www.teledynedalsa.com/mv>

Linea GigE Color Firmware

Firmware build for 2K, & 4K cameras

Linea 2K & 4K — Version 1.01: [Linea_Color_2K_4K_STD-Firmware_1CA16.34](#)

Part Numbers and Software Requirements

This table covers the Linea GigE models summarized below.

Camera	Resolution	Lens Mount (treaded)	Product Number
Linea GigE 2K	2048 x 2	M42 x 1	LA-GC-02K05B-00-R
Linea GigE 4k	4096 x 2	M42 x 1	LA-GC-04K05B-00-R

Teledyne DALSA Software Platform	
Sapera LT version 8.30 and later includes the Sapera Network Imaging Package and GigE Vision Imaging Driver.	Available for download http://www.teledynedalsa.com/mv/
GigE Vision Turbo Drive Technology Module — Included with the latest Sapera LT. Improved proprietary package allows the Linea GigE to sustain higher data transfers to the host system.	
New or alternative Linea GigE Firmware Designs	
Sapera Processing Imaging Development Library (available for Windows or Linux - sold separately):	Via web download
	Contact Teledyne DALSA Sales

Third Party GigE Vision Software Platform Requirements	
Support of GenICam GenApi version 2.3	General acquisition and control. File access: firmware, FFC, configuration data, upload & download.
Support of GenICam XML schema version 1.1	
Support of GigE Vision 1.2	Includes end-of-line Metadata
GenICam™ support — XML camera description file	Embedded within Linea GigE

Firmware Features Overview for all Models

- GigE Vision 1.2 compliant
- Supports connection to the host computer NIC through a GigE network switch
- GigE Vision Turbo Drive Technology Module
- 8 bit output
- High line rates
- 2 general purpose inputs with programmable threshold
- 2 bidirectional I/O
- 2 general purpose outputs
- Counter, Timer, and Events available to support imaging applications
- Native Trigger-to-Image Reliability design
- Visual status LEDs on camera back plate
- Supported by Sopera™ LT software libraries
- Support for end-of-line Metadata
- Digital binning for increased sensitivity
- Multiple real-time Flat Field processing available with image cycling (i.e. shading corrections)
- 1µs internal timer or external events can timestamp images
- Provides 4 User Settings sets to store and recall camera configurations

Linea 2K & 4K Color Firmware Builds

Firmware 1.01 Build 34

- Enable Software Frame Triggering support.
- Increase the encoder multiplier up to a max of 256.

Firmware 1.01 Build 32

- Fixed lines being lost in RGB8 mode at linerates above 19.5kHz.
- Fixed the maximum linerate limit in the XML for BiColorRGBG8. It was incorrectly set to 21.5kHz and should be 19.5kHz.
- Fixed the black level offset not correctly being limited to its max value and overflowing.

Firmware 1.01 Build 30

- Enable cycling on color. Spatial Correction will be forced to 0 when cycling is enabled. Vertical binning will also be disabled when cycling is enabled.
- Line rate can now be changed while grabbing images. The camera will pause grabbing, switch linerate and then resume quickly. However, some lines will be lost during the switch (typical < 10ms).
- Enable Luminance LUTs on color models. Values are applied to all color channels equally.
- When B encoder is disabled, don't allow position setting as we can't detect position without it.
- Change verticalBinning to follow SFNC.
- Fixed framerate dropping when binning enabled.
- Fixed memory corruption when FFC is downloaded.
- Fixed crash in RGB8 when AOI Width was a multiple of 4.
- Fixed Flat Field Correction caching behaviour.
- Added edge triggering selection for cycling increment.
- Update the lowpass filter on FFC to support Color.

Firmware 1.01 Build 22

- Fixed metadata handling so it is property appended to the end of a line
- Fixed metadata when multiple ROI are set so it's appended to end of the last ROI
- Fixed PRNU/FCC so the color gain channels are reset to 1.0 when performing a flatfield. User will need to re-apply any custom color gain after performing FFC
- Update Gcore to 1.0.1.114 to resolve image abort issues. Also adds a workaround for random disconnection issue.
- Fixed FPN calibration, so that values not ignored during calibration
- Fixed metadata exposure value when providing an external exposure control

- Fixed PRNU/FFC on 2K version to be done on the whole image, instead of half. Horizontal physical image will shifted due to this fix.
- Fixed horizontal binning problem where lines were repeated.

Uploading Firmware via Teledyne DALSA CamExpert

- Download new firmware to the computer with Sapera LT package
- Open the CamExpert application.
- Click on the File Access Category, then click the "Setting..." button to show the file selection menu.
- The File Type drop menu default is Device Firmware. Do not change this.
- The File Selector drop menu default is Firmware. Do not change this.
- Click the Browse button to open a typical Windows Explorer window and select the new firmware file.
- Click the Upload button to execute the file transfer to the Linea. Follow any instructions as shown.

Firmware Updates via Third Party Software

Refer to the file access tool and instructions of your third party GigE Vision Software Platform.