Allied Vision

Prosilica GT, GC, GB, GE, GS, GX
Manta and Mako G cameras

2016-Oct-23

This firmware release note is applicable to:

- Prosilica GT, GC, GB, GE, GS, GX
- Manta
- Mako G

PvAPI

PvAPI: given only where naming varies in PvAPI SampleViewer vs. Vimba Viewer and third-party software.

User sets

If new firmware contains a new feature/control, saved camera `UserSets` [PvAPI: `ConfigFiles`] will be invalidated and erased. Before loading new firmware, backup any used camera `UserSets` [PvAPI: see disk icon in SampleViewer to export current settings to file].

Firmware update instructions

For more information on updating the firmware on your GigE camera, see the GigE Firmware Update application note at:

https://www.alliedvision.com/en/support/technical-papers-knowledge-base.html

Feature documentation

Vimba and third-party software
https://alliedvision.com/fileadmin/content/documents/products/cameras/various/features/GigE_Features_Reference.pdf

PvAPI
https://alliedvision.com/fileadmin/content/documents/products/cameras/various/features/GigE_Camera_and_Driver_Attributes.pdf

Supported models

Listed camera models include monochrome, color, and version variants (including hardware revisions). See the firmware loader executable for full list of variants.

Prosilica GS

Prosilica GS models use Prosilica GB firmware. See Table 2 for the latest Prosilica GB firmware releases.

Firmware releases at a glance (firmware loader 00.01.54.18032)

Model	Hardware revision	Part number	Firmware version	Release date
Mako G-032B, G-032C, G-125B, G-125C	A	50-06-	01.54.17933	2016-Oct-23
Manta G-032B, G-032C	A, B, C	06-	01.44.18122	2016-Oct-17
Mako G-234B, G-234C, G-507B, G-507C	A	50-06-	01.54.18032	2016-Oct-11
Mako G-419B, G-419B NIR, G-419C	A	06-	01.52.17702	2016-Aug-12
Manta G-282B, G-282C, G-283B, G-283C, G-505B, G-505C, G-917B, G-917C	A, B, D	50-06-	01.54.17624	2016-Aug-12
Prosilica GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C, GT3400, GT3400C, GT4905, GT4905C, GT4907, GT4907C, GT6600, GT6600C	A, B, D	02-06-	01.54.17562	2016-Aug-12
Prosilica GT1930, GT1930C, GT1930L, GT1930LC	A, D	02-06-	01.54.17562	2016-July-06
Manta G-235B, G-235C, G-319B, G-319C, G-507B, G-507C	A	50-06-	01.54.17562	2016-July-06
Mako G-131B, G-131C, G-192B, G-192C, G-503B, G-503C	A	50-06-	01.54.17455	2016-July-06
Prosilica GC660, GC660C, GC1290, GC1290C, GC1380H, GC1380CH, GC1600H, GC1600CH, GC2450, GC2450C	D	02-	01.54.16528	2016-June-30
Mako G-050B, G-050C, G-095B, G-095C	A	50-	01.54.11233	2014-Oct-06
Mako G-030B, G-030C	A	50-	01.54.11488	2014-Dec-16
Prosilica GT2000, GT2000C, GT2000NIR, GT2050, GT2050C, GT2050NIR	A	02-	01.52.8151	2013-Aug-23
Mako G-223B, G-223B-NIR, G-223C, G-419B, G-419B-NIR, G-419C	A	50-	01.52.8151	2013-Aug-23
Prosilica GC650, GC650C, GC655, GC655C, GC660, GC660C, GC780, GC780C, GC1020, GC1020C, GC1290, GC1290C, GC1350, GC1350C, GC1380, GC1380C, GC1380H, GC1380CH, GC1600, GC1600C, GC1600H, GC1600CH, GC2450, GC2450C	A	02-	01.50.01	2013-Jan-04
Prosilica GT2450, GT2450C	A, B	02-	01.50.01	2013-Jan-04
Manta G-145B, G-145B-30, G-145BNIR, G-145C, G-145C-30	A, B	50-	01.44.8549	2013-Sep-20
Manta G-095B, G-095C	A, B	50-	01.44.7913	2013-Jul-22

Table 1: Firmware releases at a glance (firmware loader 00.01.54.18032)

Model	Hardware revision	Part number	Firmware version	Release date
Manta G-031B, G-031C, G-033B, G-033C, G-046B, G-046C, G-125B, G-125C, G-146B, G-146C, G-201B, G-201B-30, G-201C, G-201C-30, G-504B, G-504C	A, B, C	50-	01.44.09	2013-Jan-18
Prosilica GX1050, GX1050C, GX1660, GX1660C, GX1910, GX1910C, GX1920, GX1920C, GX2300, GX2300C, GX2750, GX2750C, GX3300, GX3300C	A, B, D	02-	01.42.05	2011-Dec-12

Table 1: Firmware releases at a glance (firmware loader 00.01.54.18032) (continued)

Firmware version: 01.54.17933 (release date: 2016-Oct-21)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Mako	G-032B, G-032C, G-125B, G-125C	A	50- 06-	01.54.17933

New models

- Initial commercial release of Mako G-032B, G-032C, G-125B, G-125C (camera part number 06- only)

New features and enhancements

- Improved registry
- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Firmware loader

Released with GigeFirmwareLoader-00.01.54.18032.exe

Firmware version: 01.44.18122 (release date: 2016-Oct-17)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Manta	G-032B, G-032C	A, B, C	06-	01.44.18122

New models

- Initial commercial release of Manta G-032B, G-032C (camera part number 06- only)

New features and enhancements

- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Firmware version: 01.54.18032 (release date: 2016-Oct-07)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Mako	G-234B, G-234C, G-507B, G-507C	A	50- 06-	01.54.18032

New models

- Initial commercial release of Mako G-507B, G-507C (camera part number 50- and 06-)
- Initial commercial release of Mako G-234B, G-234C (camera part number 06- only)

New features and enhancements

- Improved registry
- `DeviceUserID` is now accessible via the Vimba user interface
- Exposure related enhancements
  - When `ExposureMode = Timed`: Improved accuracy in exposure calculation with deviation < 1 μs, exposure calculation takes into account exposure time error (`tOFFSET`)
  - Partial Fix: When `ExposureMode = TriggerWidth`, you will see improved accuracy in exposure calculation with deviation ≤ one `ExposureTimeIncrement`, For a given trigger pulse width, effective exposure duration will be trigger pulse width plus exposure time error (`tOFFSET`)

  > Exposure time error (`tOFFSET`) = 13.73 μs from Sony IMX249, IMX264, and IMX265 data sheets.

- Added support for sensor readout mode in Mako G-234B and G-234C models
  - This allows you to choose between 10-bit and 12-bit (default) sensor readout. 10-bit sensor readout can achieve relatively higher frame rates, especially 8-bit pixel formats and also in a small region of interest.
- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Changes

- Frame rates, exposure minimum/maximum values, `ExposureTimeIncrement`, trigger jitter and trigger latency values are updated for Mako G-234B and G-234C.

Specification	Firmware version 01.54.15954 or earlier	Firmware version 01.54.18032 or later
Maximum frame rate	40 frames per second	41.2 frames per second
Exposure control	53 µs to 73 s; 19.86 µs increments	52 µs to 71 s; 19.3 µs increments
Trigger latency	69.6 µs	58.2 µs
Trigger Jitter	9.8 µs	9.6 µs

Values listed above reflect 8-bit pixel formats (Mono8 and BayerRG8) and 10-bit sensor readout mode at full resolution.

Resolved issues

- Fixed: GVCP command drop (no Ack)
- Fixed: In auto gain/exposure, current value will stay within the range in accordance to minimum/ maximum value changes
- Fixed: Camera no longer ignores ARP message responses sent to IP Address 0.0.0.0 if that is the camera's current IP address (which it is on power-up).
- Fixed: White flicker at minimum exposure and maximum gain no longer occurs.
- Fixed: When `ReverseX` is enabled, changing the pixel format to YUV format will keep `Width` less than `WidthMax`.

Limitations

- Pixel format, binning, and decimation are changeable only when the camera is not streaming

Firmware version: 01.52.17702 (release date: 2016-Aug-12)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Mako	G-419B, G-419B NIR, G-419C	A	06-	01.52.17702

New models

- Initial commercial release of Mako G-419B, G-419B NIR, G-419C (camera part number 06- only)

New features and enhancements

- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Firmware version: 01.54.17624 (release date: 2016-Aug-12)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Manta	G-282B, G-282C, G-283B, G-283C, G-505B, G-505C, G-917B, G-917C	A, B, D	50-06-	01.54.17624

New models

- Initial commercial release of Manta G-282B, G-282C, G-283B, G-283C, G-505B, G-505C, G-917B, G-917C standard and board level models (camera part number 06- only)

New features and enhancements

- Consolidated firmware update for Manta dual-tap cameras
- Improved registry
- `DeviceUserID` is now accessible via the Vimba user interface
- Selectable mode of sensor digitization taps (one-tap or two-tap mode), except Manta G-505B, G505C
- Added Trigger over Ethernet (ToE) Action Commands feature
- Binning
  - Changed the maximum `BinningX` and `BinningY` value to `4` for Manta G-505B, G-505C
- Added `ReverseX` to all color models
- Temperature readout for sensor board (see Limitations)
- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 PTP standard: *Initializing(0), Faulty(1), Disabled(2), Listening(3), PreMaster(4), Master(5), Passive(6), Uncalibrated(7), Slave(8)*
  - `GevTimestampValue` is no longer reset by turning off PTP
  - Acquisition is no longer stopped when changing `PtpMode`
  - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *Off*
  - `EventPtpSyncLost` now sent when `PtpMode` changed
  - `PtpMode` is no longer set to *Off* when PTP synchronization is lost
  - `PtpMode` `Auto` now correctly finds best master clock
  - PTP synchronization drift lessened
- New event added: `ExposureStart` (ID 40019)
- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Resolved issues

- Fixed: GVCP command drop (no Ack)
- Fixed: In auto gain/exposure, current value will stay within the range in accordance to minimum/ maximum value changes

- Fixed: When `ReverseX` is enabled, changing the pixel format to YUV format will keep `Width` less than `WidthMax`.

Limitations

- Pixel format, binning, and decimation are changeable only when the camera is not streaming
- IEEE 1588-2008 Precision Time Protocol (PTP) related limitations
    - PTP in this firmware version has many improvements, some of which cause PTP incompatibility issues with cameras running older firmware versions.
    - When using PTP in a network with cameras running a mix of older and newer PTP firmware, `PtpMode` = *Auto* can not be used, and the master camera (camera with `PtpMode` = *Master*) must be a camera running the newer firmware version.
    - To take full advantage of the latest PTP resolved issues and improvements, it is recommended to upgrade the firmware of the above listed models.
- The temperature readout for the sensor board does not work as expected. When selected, the temperature is the main board temperature.

Firmware version: 01.54.17562 (release date: 2016-Aug-12)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Prosilica	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C, GT3400, GT3400C, GT4905, GT4905C, GT4907, GT4907C, GT6600, GT6600C	A, B, D	02- 06-	01.54.17562

New models

- Initial commercial release of Prosilica GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C, GT3400, GT3400C, GT4905, GT4905C, GT4907, GT4907C, GT6600, GT6600C (camera part number 06- only)

New features and enhancements

- Added Trigger over Ethernet (ToE) Action Commands feature
- Prosilica GT2450, GT2450C
    - Aligned features with Firmware version: 01.54.16845 (release date: 2016-May-12)
- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 02- models do not support this feature.

Limitations

- Black level control is not available for all Prosilica GT CCD cameras
- The following features are not implemented in Prosilica GT quad-tap CCD cameras in single-tap mode:

- `DecimationHorizontal`
- `DecimationVertical`
- `ReverseX`
- `ReverseY`

- Look-up tables (LUTs) may have different behaviors for different cameras

- No iris/exposure/gain selectable auto priority

- Dual-tap and single-tap cameras do not support column defect masking

- Tap mode switchability is not supported for Prosilica GT2450, GT2450C

- The following feature is not implemented in dual-tap CCD cameras due to sensor limitations:
    - `ReverseY` (Prosilica GT2450, GT2450C)

- The following features are not implemented in single-tap CCD cameras due to sensor limitations:
    - `ReverseX, ReverseY` (Prosilica GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C)

Firmware version: 01.54.17562 (release date: 2016-Jul-06)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Prosilica GT	GT1930, GT1930C, GT1930L, GT1930LC	A, D	02-06-	01.54.17562
Manta	G-235B, G-235C, G-319B, G-319C, G-507B, G-507C	A	50-06-	01.54.17562

New models

- Initial commercial release of Prosilica GT1930, GT1930C, GT1930L, GT1930LC (camera part number 06- only)

- Initial commercial release of Manta G-319B, G-319C, G-507B, and G-507C standard and board level models (camera part number 50- and 06-)

New features and enhancements

- Improved registry

- `DeviceUserID` is now accessible via the Vimba user interface

- Update for Manta G-235B and G-235C standard and board level models

- BayerRG12Packed pixel format is supported for color cameras (Manta G-235C)

- Added Trigger over Ethernet (ToE) Action Commands feature

- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements
    - `PtpStatus` enumerations updated to IEEE 1588-2008 PTP standard: *Initializing(0), Faulty(1), Disabled(2), Listening(3), PreMaster(4), Master(5), Passive(6), Uncalibrated(7), Slave(8)*
    - `GevTimestampValue` is no longer reset by turning off PTP
    - Acquisition is no longer stopped when changing `PtpMode`
    - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *Off*
    - `EventPtpSyncLost` now sent when `PtpMode` changed
    - `PtpMode` is no longer set to *Off* when PTP synchronization is lost

- `PtpMode` 'Auto' now correctly finds best master clock
- PTP synchronization drift lessened
- Exposure related enhancements
  - When `ExposureMode = Timed`: Improved accuracy in exposure calculation with deviation < 1 μs, exposure calculation takes into account exposure time error (`tOFFSET`)
  - Partial fix: When `ExposureMode = TriggerWidth`: Improved accuracy in exposure calculation with deviation ≤ one `ExposureTimeIncrement`. For a given trigger pulse width, effective exposure duration will be trigger pulse width plus exposure time error (`tOFFSET`).
  - `ExposureTimeIncrement` value now shows decimal values
  - Exposure minimum/maximum values, `ExposureTimeIncrement`, trigger jitter, and trigger latencies are updated

> Exposure time error (`tOFFSET`) = 13.73 μs from Sony IMX174, IMX264, and IMX265 data sheets.

- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- and 02- models do not support this feature.

Resolved issues

- Fixed: GVCP command drop (no Ack)
- Fixed: In auto gain/exposure, the current value will stay within the range in accordance to minimum/maximum value changes
- Fixed: Camera no longer ignores ARP message responses sent to IP Address 0.0.0.0 if that is the camera's current IP address (which it is on power-up).
- Fixed: Manta G-235 board level model with 200 mm flex cable is now stable
- Fixed: `ReverseX`/`ReverseY` will first flip the image and then applies region of interest (ROI)
- Fixed: White flicker at minimum exposure and maximum gain no longer occurs.
- Fixed: When `ReverseX` is enabled, changing the pixel format to YUV format will keep `Width` less than `WidthMax`.

Limitations

- Pixel format, binning, and decimation are changeable only when the camera is not streaming
- IEEE 1588-2008 Precision Time Protocol (PTP) related limitations
  - PTP in this firmware version has many improvements, some of which cause PTP incompatibility issues with cameras running older firmware versions.
  - When using PTP in a network with cameras running a mix of older and newer PTP firmware, `PtpMode` = *Auto* can not be used, and the master camera (camera with `PtpMode` = *Master*) must be a camera running the newer firmware version.
  - To take full advantage of the latest PTP resolved issues and improvements, it is recommended to upgrade the firmware of the above listed models.

Firmware version: 01.54.17455 (release date: 2016-Jul-07)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Mako G	G-131B, G-131C, G-192B, G-192C, G-503B, G-503C	A	50-06-	01.54.17455

New models

- Initial commercial release of Mako G-131B, G-131C, G-192B, G-192C, G-503B, G-503C models (camera part number 06- only)

New features and enhancements

- Support for new camera variant with Permanent Data Storage feature (camera part number 06- only) Permanent Data Storage (PDS) uses the non-volatile memory (flash memory) to permanently store data on the camera, such as machine settings, text files, color correction data, or compressed images. Camera part number 50- models do not support this feature.

Firmware version: 01.54.16845 (release date: 2016-May-12)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2750, GT2750C, GT3300, GT3300C, GT3400, GT3400C, GT4905, GT4905C, GT4907, GT4907C, GT6600, GT6600C	A, B, D	02-	01.54.16845

New features and enhancements

- Consolidated firmware update for Prosilica GT CCD single-tap and quad-tap cameras
- `DeviceUserID` is now accessible via the Vimba user interface
- Selectable mode of sensor digitization taps (one-tap or four-tap mode)
- Added `ReverseX` and `ReverseY` to all multi-tap CCD models
- Added look-up tables (LUTs) and binning to all models
- Added `DecimationHorizontal`, `DecimationVertical` for single-tap and quad-tap models
- Temperature readout for sensor board
- Added column defect masking support for all Prosilica GT quad-tap models running in single-tap mode
- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 PTP standard: *Initializing(0), Faulty(1), Disabled(2), Listening(3), PreMaster(4), Master(5), Passive(6), Uncalibrated(7), Slave(8)*

- `GevTimestampValue` is no longer reset by turning off PTP
- Acquisition is no longer stopped when changing `PtpMode`
- `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *Off*
- `EventPtpSyncLost` now sent when `PtpMode` changed
- `PtpMode` is no longer set to *Off* when PTP synchronization is lost
- `PtpMode` = *Auto* now correctly finds best master clock
- PTP synchronization drift lessened

Features removed

- Cleaned up lens controls
    - Removed P-Iris/DC-Iris controls from Prosilica GT large format models
    - Removed EF controls from Prosilica GT standard format models

Resolved issues

- Fixed: GVCP command drop (no Ack)
- Fixed: Issue where changing the auto gain/exposure maximum/minimum value when the current value is within the target range does not change the current value.
- Fixed: When `ReverseX` is enabled, changing the pixel format to YUV format will keep `Width` less than `WidthMax`.

Limitations

- IEEE 1588-2008 Precision Time Protocol (PTP) related limitations
    - PTP in this firmware version has many improvements, some of which cause PTP incompatibility issues with models running older firmware versions.
    - When using PTP in a network with models running a mix of older and newer PTP firmware, `PtpMode` = *Auto* can not be used, and the master camera (`PtpMode` = *Master*) must be a camera running the newer firmware version.
    - To take full advantage of the latest PTP resolved issues and improvements, it is recommended to upgrade the firmware of the above listed models.

Firmware version: 01.54.16528 (release date: 2016-June-30)

Supported models

Camera family	Model	Hardware revision	Part number	Firmware version
Prosilica GC	GC660, GC660C, GC1290, GC1290C, GC1380H, GC1380CH, GC1600H, GC1600CH, GC2450, GC2450C	D	02-	01.54.16528

This firmware is not backwards compatible with Prosilica GC hardware revision A models.

New models

- Initial commercial release of Prosilica GC hardware revision D models.

New features and enhancements

- Gamma correction
- Look-up tables (LUTs)
- Hue, saturation, color transformation control (color models only)
- Device temperature readout (sensor is located on mainboard)
- New event added: `ExposureStart` (ID 40019)
- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 PTP standard: *Initializing(0), Faulty(1), Disabled(2), Listening(3), PreMaster(4), Master(5), Passive(6), Uncalibrated(7), Slave(8)*
  - `GevTimestampValue` is no longer reset by turning off PTP
  - Acquisition is no longer stopped when changing `PtpMode`
  - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *Off*
  - `EventPtpSyncLost` now sent when `PtpMode` changed
  - `PtpMode` is no longer set to *Off* when PTP synchronization is lost
  - `PtpMode` = *Auto* now correctly finds best master clock
  - PTP synchronization drift lessened

Features removed

- Black level control
- Non-functional events
- The Prosilica GC has only two inputs. Therefore the following events have been removed in the new Prosilica GC hardware revision D models:
  - `EventLine3FallingEdgeFrameID`
  - `EventLine3FallingEdgeTimestamp`
  - `EventLine3RisingEdgeFrameID`
  - `EventLine3RisingEdgeTimestamp`
  - `EventLine4FallingEdgeFrameID`
  - `EventLine4FallingEdgeTimestamp`
  - `EventLine4RisingEdgeFrameID`
  - `EventLine4RisingEdgeTimestamp`
- The corresponding events in the `EventSelector` were also removed: `Line3RisingEdge`, `Line3FallingEdge`, `Line4RisingEdge`, and `Line4FallingEdge`

Changes

- Differences in frame rates: Some of the new Prosilica GC hardware revision D models require to use different imager frequencies. Therefore it is difficult to apply the same frame rates as Prosilica GC hardware revision A models. As a side effect higher frame rates can be achieved.

Camera model	Frame rate for Prosilica GC hardware revision A models	Frame rate for Prosilica GC hardware revision D models
Prosilica GC660, GC660C	119.30	121.20
Prosilica GC1290, GC1290C	32.79	33.31
Prosilica GC1380H, GC1380CH	30.01	30.49

All other Prosilica GC hardware revision D models support the same frame rates as the previous Prosilica GC models.

- Features renamed: On Prosilica GC hardware revision A models, `Gain` is called `GainRaw`; on the new Prosilica GC hardware revision D models it is referred to as `Gain`. This is just a name change to be GenICam SFNC compliant; the functionality remains the same. `GainRaw` is still available, but now it is an invisible attribute that can still be applied by programmers (e.g. PvAPI users).
- Due to the increased memory the new models have an extended `StreamHoldCapacity`. The changes are as follows:

Camera model	StreamHoldCapacity for Prosilica GC hardware revision A models	StreamHoldCapacity for Prosilica GC hardware revision D models
Prosilica GC660, GC660C	46	194
Prosilica GC1290, GC1290C	12	52
Prosilica GC1380H, GC1380CH	11	46
Prosilica GC1600H, GC1600CH	7	33
Prosilica GC2450, GC2450C	3	12

- Prosilica GC hardware revision A models support five user sets, the new Prosilica GC hardware revision D models support three user sets.

Limitations

- IEEE 1588-2008 Precision Time Protocol (PTP) related limitations
  - PTP in this firmware version has many improvements, some of which cause PTP incompatibility issues with cameras running older firmware versions.
  - When using PTP in a network with cameras running a mix of older and newer PTP firmware, `PtpMode` = *Auto* can not be used, and the master camera (`PtpMode` = *Master*) must be a camera running the newer firmware version.
  - To take full advantage of the latest PTP resolved issues and improvements, it is recommended to upgrade the firmware of the above listed models.

Firmware version: 01.54.16414 (release date: 2016-Mar-07)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1930, GT1930C, GT1930L, GT1930LC	01.54.16414

New models

- Initial commercial release of Prosilica GT1930 and GT1930C models

New features and enhancements

- Prosilica GT1930L and GT1930LC only
  - Added editing capability to `DeviceUserID` (user can now edit `DeviceUserID`)

- All EF-Lens features are now disabled if no EF-Lens is attached to camera
- Increased minimum exposure from 28 to 42

Other

- Prosilica GT1930L and GT1930LC only
  - Removed P-Iris/DC-Iris controls
  - Removed Event Control ID for `SyncIn3` and `SyncIn4`

Resolved issues

- Prosilica GT1930L and GT1930LC only
  - Fixed: `ExposureTimeIncrement` value now shows decimal values

Firmware version: 01.54.15954 (release date: 2015-Nov-20)

Supported models

Camera family	Models	Firmware version
Mako G	G-234B, G-235C	1.54.15954

New models

- Initial commercial release of Mako G-234B and G-235C models

New features and enhancements

- 10/12-bit switchability based on pixel format
- `ExposureValue` now rounds up or down to the nearest valid exposure value instead of always rounding down.

Firmware version: 01.54.14865 (release date: 2015-Oct-22)

Supported models

Camera family	Models	Firmware version
Manta	G-282B, G-282C, G-283B, G-283C, G-505B, G-505C, G-609B, G-609C, G-917B, G-917C	01.54.14865

New features and enhancements

- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 PTP standard: *Initializing(0), Faulty(1), Disabled(2), Listening(3), PreMaster(4), Master(5), Passive(6), Uncalibrated(7), Slave(8)*
  - `GevTimestampValue` is no longer reset by turning off PTP
  - Acquisition is no longer stopped when changing `PtpMode`
  - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *Off*
  - `EventPtpSyncLost` now sent when `PtpMode` changed
  - `PtpMode` is no longer set to *Off* when PTP synchronization is lost

- `PtpMode = Auto` now correctly finds best master clock
- PTP synchronization drift lessened

Changes

- Adjusted the following parameter(s):
  - `/Controls/Exposure; ExposureAuto; RW;   Off(1) Once(3) Continuous(2)`
  - `/Controls/Exposure; ExposureMode; RW;   Timed(0) TriggerWidth(1)`

Limitations

- IEEE 1588-2008 Precision Time Protocol (PTP) related limitations
  - PTP in this firmware version has many improvements, some of which cause PTP incompatibility issues with models running older firmware versions.
  - When using PTP in a network with cameras running a mix of older and newer PTP firmware, `PtpMode = Auto` can not be used, and the master camera (`PtpMode = Master`) must be a camera running the newer firmware version.
  - To take full advantage of the latest PTP resolved issues and improvements, it is recommended to upgrade the firmware of the above listed models.

Firmware version: 01.54.12720 (release date: 2014-Feb-20)

Supported models

Camera family	Models	Firmware version
Mako G	G-503B, G-503C	01.54.12720

New models

- Initial commercial release of Mako G-503B and G-503C models

New features and enhancements

- `DefectMaskEnable`
  Up to 200 pixel defects may be masked

Limitations

- `DefectMaskEnable` is not possible if binning and/or decimation is enabled.

Firmware version: 01.54.12239 (release date: 2014-Dec-19)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1930L, GT1930LC	01.54.12239

New models

- Initial commercial release of Prosilica GT1930L and GT1930LC models

New features and enhancements

- Canon EF iris and focus lens control

Resolved issues

- Fixed: As gain is reported in 1/10 dB steps and gain in chunk data is an integer, gain value is reported as ten times the actual value (e.g., gain of 23.7 is reported as 237).
- Fixed: Mirroring applied before region of interest (ROI) for `ReverseY`

Firmware version: 01.54.11712 (release date: 2014-Dec-19)

Supported models

Camera family	Models	Firmware version
Mako G	G-131B, G-131C, G-192B, G-192C	01.54.11712

New models

- Initial commercial release of Mako G-131B, G-131C, G-192B, and G-192C models

New features and enhancements

- `DefectMaskEnable`
  Up to 200 pixel defects may be masked

Limitations

- Mako G-192B and G-192C: With exposure auto and gain auto both active, the priority mechanism does not work as expected.

Firmware version: 01.54.11488 (release date: 2014-Dec-16)

Supported models

Camera family	Models	Firmware version
Mako G	G-030B, G-030C	01.54.11488

New models

- Initial commercial release of Mako G-030B and G-030C models

New features and enhancements

- `DefectMaskEnable`
  Up to 200 pixel defects may be masked
- High dynamic range mode

Firmware version: 01.54.11233 (release date: 2014-Oct-06)

Supported models

Camera family	Models	Firmware version
Mako G	G-050B, G-050C, G-095B, G-095C	01.54.11233

New models

- Initial commercial release of Mako G-050B, G-050C, G-095B, and G-095C models

New features and enhancements

- `DefectMaskEnable`
  Up to 200 pixel defects may be masked

Firmware version: 01.54.11232 (release date: 2014-Oct-06)

Supported models

Camera family	Models	Firmware version
Manta	G-505B, G-505C	01.54.11232

New models

- Initial commercial release of Manta G-505B and G-505C models

New features and enhancements

- IEEE 1588-2008 Precision Time Protocol (PTP) rework:
  - `PTPStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol standard: *Disabled*, *Initializing*, *Listening*, *Master*, *Passive*, *Uncalibrated*, *Slave*.
  - `GevTimestampValue` is no longer reset by turning off PTP
  - Acquisition is no longer stopped when changing `PtpMode`
  - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *OFF*
  - `EventPtpSyncLost` now sent when `PtpMode` changed
  - PTP synchronization drift lessened

Firmware version: 01.54.11026 (release date: 2014-Sep-24)

Supported models

Camera family	Models	Firmware version
Manta	G-235B, G-235C	01.54.11026

New models

- Initial commercial release of Manta G-235B and G-235C models

New features and enhancements

- `ReverseX` and `ReverseY`
- `ExposureTimeIncrement`: read only, constant. Granularity of `ExposureTimeAbs` [PvAPI: `ExposureValue`]
- `ExposureTimeAbs` [PvAPI: `ExposureValue`]: Values written to control are rounded to nearest multiple of `ExposureIncrement`. Reading this control returns the used, rounded value.
- `Gain` [PvAPI: `GainValue`]: increment is 0.1, units are dB.
  [PvAPI: `GainValue` increment is 1, units are 0.1 dB]
- `GainAuto` [PvApi: `GainMode`]: auto algorithm adjusts using 1 dB gain increments. `GainAutoMin` and `GainAutoMax` may be set to using 0.1 dB increments.
- IEEE 1588-2008 Precision Time Protocol (PTP) enhancements:
  - `PTPStatus` enumerations updated to IEEE 1588-2008 standard: *Disabled*, *Initializing*, *Listening*, *Master*, *Passive*, *Uncalibrated*, *Slave*
  - `GevTimestampValue` is no longer reset by turning off PTP
  - Acquisition is no longer stopped when changing `PtpMode`
  - `PtpAcquisitionGateTime` now reset to zero when `PtpMode` is set to *OFF*
  - `EventPtpSyncLost` now sent when `PtpMode` changed
  - PTP synchronization drift lessened

Limitations

`ReverseY` applies any region of interest first, then flips image. This not the correct order. Image flip should be applied first, then the region of interest.

Firmware version: 01.52.11715 (release date: 2014-Dec-04)

Supported models

Camera family	Models	Firmware version
Mako G	G-032B, G-032C, G-125B, G-125C	01.52.11715

Resolved issues

- Fixed: Removed a possible issue that prevents saving a permanent IP address in some cases.

Firmware version: 01.52.8549 (release date: 2013-Sep-20)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C	01.52.7068
Manta	G-145B, G-145B-30, G-145B-NIR, G-145C, G-145C-30	01.44.8549

New features and enhancements

- Added X-Mirror feature to Manta G-145B, G-145B-30, and G-145B-NIR
- Added look-up tables (LUTs) to Prosilica GT1290, GT1290C, GT1380, and GT1380C

Resolved issues

- Fixed: Reduced blooming effect (Manta G-145B and G-145C including 30 fps variants)
- Fixed: Minimum exposure time increased from 38 µs to 43 µs (Manta G-145B and G-145C)
- Fixed: Minimum exposure time increased from 37 µs to 38 µs (Manta G-145B and G-145C 30fps variants only)
- Fixed: Sensor Y-size changed from 1390 to 1388 (Manta G-145B and G-145C including 30 fps variants)
- Fixed: BayerGR12Packed pixel format changed to BayerRG12Packed (Manta G-145C and G-145C-30)

Firmware version: 01.52.8151 (release date: 2013-Aug-23)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT2000, GT2000NIR, GT2000C, GT2050, GT2050NIR, GT2050C	01.52.8151
Manta	G-223B, G-223C, G-419B, G-419B-NIR, G-419C	01.52.8151
Mako G	G-032B, G-032C, G-125B, G-125C, G-223B, G-223C, G-419B, G-419B-NIR, G-419C	01.52.8151

New models

- Initial commercial release Mako G-032B, G-032C, G-125B, G-125C, G-223B, G-223C, G-419B, G-419B-NIR, and G-419C models
- Initial commercial release for Manta G-419B, G-419B NIR, and G-419C models

New features and enhancements

- Enhanced factory sensor calibration of the Prosilica GT2000, GT2050, and Manta G-223
- New maximum gain of 26 dB for Prosilica GT2000, GT2050, and Manta G-223

Limitations

- Camera firmware shows the minimum exposure values without frame overhead time for Prosilica GT2000 and GT2050 series models, i.e., 1 µs. See sensor data sheet for details on frame overhead time.

Firmware version: 01.52.7114 (release date: 2013-May-23)

Supported models

Camera family	Models	Firmware version
Manta	G-917B, G-917C	01.52.7114

Resolved issues

- Fixed: Optimized tap balance

Firmware version: 01.52.7068 (release date: 2013-May-21)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT2000, GT2000NIR, GT2000C, GT2050, GT2050NIR, GT2050C, GT3400, GT3400C, GT4905, GT4905C, GT4907, GT4907C, GT6600, GT6600C	01.52.7068

New models

- Initial commercial release for supported models

New features and enhancements

- Three look-up tables (LUTs) added

Firmware version: 01.52.00 (release date: 2013-Mar-27)

Supported models

Camera family	Models	Firmware version
Manta	G-223B, G-223C, G-282B, G-282C, G-283B, G-283C, G-609B, G-609C, G-917B, G-917C	01.52.00

New models

- Initial commercial release for supported models

New Manta platform

- New hardware to support larger multi-tap sensors. Differences from previously released Manta models:
  - Larger 128MB image buffer
  - Different LED behavior. See the GigE Installation Manual: https://www.alliedvision.com/en/support/technical-documentation/manta-documentation.html
  - IEEE 1588-2008 Precision Time Protocol (PTP) added
  - `DeviceTemperatureSelector` = *Sensor* added
  - Gamma correction enhanced to support values [0.25 to 4]
  - Reduced the number of `UserSets` to 3

Limitations

- Look-up tables (LUTs) on Manta G-223B and G-223C are currently limited to 10-bit. Future maintenance release will bring this to 12-bit.
- `EdgeFilter` is not currently supported
- Manta G-223B and G-223C do not support binning (this is not a sensor feature).

Firmware version: 01.50.02 (release date: 2013-Jan-28)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1660, GT1660C, GT1910, GT1910C, GT2300, GT2300C, GT3300, GT3300C	01.50.02

Resolved issues

- Fixed: ON Semiconductor (Kodak) CCD Prosilica GTs dropping packets on multiple camera systems

Firmware version: 01.50.01 (release date: 2013-Jan-04)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC650, GC650C, GC655, GC655C, GC660, GC660C, GC780, GC780C, GC1020, GC1020C, GC1290, GC1290C, GC1350, GC1350C, GC1380, GC1380C, GC1380H, GC1380CH, GC1600, GC1600C, GC1600H, GC1600CH, GC2450, GC2450C	01.50.01
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C	01.50.01

New features and enhancements

- `FrameTriggerReady` event added
- `DeviceTemperatureSelector` = *Sensor* [PvAPI: `DeviceTemperatureSensor`] added for Prosilica GT series, except Prosilica GT2450 and GT2450C.

Resolved issues

- Fixed: Camera maximum `ExposureTimeAbs` [PvAPI: `ExposureValue`] are now accurate. Previously, all cameras were listed as 60 seconds, but all cameras did not achieve this. See the camera Technical Manual for new maximum values.
- Fixed: `FrameTrigger` signal removed from `SyncOutSource` [PvAPI: `SyncOutMode`]. Signal was too short to be seen on camera outputs
- Fixed: `DSPSubregionBottom`, `DSPSubregionTop` upper limit changed from 4294967295 to sensor maximum height
- Fixed: `DSPSubregionLeft`, `DSPSubregionRight` upper limit changed from 4294967295 to sensor maximum width
- Fixed: Gamma correction is now properly saved/loaded in `SavedUserSets` [PvAPI: `ConfigFile`]

Limitations

- `EdgeFilter` does not work, feature removed
- RGB48 `PixelFormat` does not work, feature removed

Firmware version: 01.50.00 (release date: 2012-Jun-01)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC650, GC650C, GC655, GC655C, GC660, GC660C, GC780, GC780C, GC1020, GC1020C, GC1290, GC1290C, GC1350, GC1350C, GC1380, GC1380C, GC1380H, GC1380CH, GC1600, GC1600C, GC1600H, GC1600CH, GC2450, GC2450C	01.50.00
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1660, GT1660C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C	01.50.00

New models

- Initial commercial release of Prosilica GT1660 and GT1660C models

New features and enhancements

- IEEE 1588-2008 Precision Time Protocol (PTP) synchronization added to Prosilica GC models

Firmware version: 01.48.02 (release date: 2012-Apr-04)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C	01.48.02

Resolved issues

- Fixed: `LensDCIris` was not driving some DC lenses properly

Firmware version: 01.48.01 (release date: 2012-Feb-20)

Supported models

Camera family	Models	Firmware version
Prosilica GT	GT1290, GT1290C, GT1380, GT1380C, GT1600, GT1600C, GT1910, GT1910C, GT1920, GT1920C, GT2300, GT2300C, GT2450, GT2450C, GT2750, GT2750C, GT3300, GT3300C	01.48.01

New models

- Initial commercial release of Prosilica GT series

New features and enhancements

- IEEE 1588-2008 Precision Time Protocol (PTP) synchronization
- `LensDCIris` control
- `LensPIris` control
- `DeviceTemperature` [PvAPI: `DeviceTemperatureMainboard`] monitoring

Firmware version: 01.44.7913 (release date: 2013-Jul-22)

Supported models

Camera family	Models	Firmware version
Manta	G-095B, G-095C	01.44.7913

Resolved issues

- Fixed: Imaging artifact on Manta G-095B and G-095C observed at-20 °C to +5 °C ambient.

Firmware version: 01.44.09 (release date: 2013-Jan-18)

Supported models

Camera family	Models	Firmware version
Manta	G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-046B, G-046C, G-095C, G-125B, G-125C, G-145B, G-145B-30, G-145B NIR, G-145C, G-145C-30, G-146B, G-146C, G-201B, G-201B-30, G-201C, G-201C-30, G-504B, G-504C	01.44.09

Resolved issues

- Fixed: `StreamBytesPerSecond` calculation issues for all Manta models
- Fixed: `LUTControl` parameters (e.g., `LUTEnable`, `LUTMode`) are not saved in `ConfigFile` for all Manta models
- Fixed: `Gain` or `Offset` affecting maximum gray level on Manta G-032B and G-032C

Firmware version: 01.44.08 (release date: 2012-Oct-26)

Supported models

Camera family	Models	Firmware version
Manta	G-032B, G-032C, G-095C	01.44.08

Resolved issues

- Improved production yield for Manta G-032B, G-032C, and G-095C

Firmware version: 01.44.04 (release date: 2012-Feb-13)

Supported models

Camera family	Models	Firmware version
Manta	G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-046B, G-046C, G-095C, G-125B, G-125C, G-145B, G-145B-30, G-145B NIR, G-145C, G-145C-30, G-146B, G-146C, G-201B, G-201B-30, G-201C, G-201C-30, G-504B, G-504C	01.44.04

Resolved issues

- Fixed: `TimestampValue` between first and second frame was not correct
- Fixed: Delay between first and second image in external triggered acquisition
- Fixed: Influence of `ExposureValue` in `ExposureMode` = *External*

Other

- Feature renamed: `BlackLevelValue` to `BlackLevel` according to GenICam SFNC version 1.5
- Feature renamed: `GainRaw` to `Gain` according to GenICam SFNC version 1.5

Firmware version: 01.44.00 (release date: 2011-Jul-11)

Supported models

Camera family	Models	Firmware version
Manta	G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-046B, G-046C, G-095C, G-125B, G-125C, G-145B, G-145B-30, G-145B NIR, G-145C, G-145C-30, G-146B, G-146C, G-201B, G-201B-30, G-201C, G-201C-30, G-504B, G-504C	01.44.00

New models

- Initial commercial release of Manta G-145B, G-145C, G-201B, and G-201C (including 30 fps variants)

New features and enhancements

- Three 12-bit look-up tables (LUTs)
- Gamma correction default values: 0.45, 0.5, and 0.7
- `DecimationHorizontal` and `DecimationVertical` (sub-sampling) excluding Manta G-032B and G-032C
- Added Mono12Packed and Bayer12Packed
- `ChunkData`
- Event channel
- `SyncInGlitchFilter`
- Video Iris support

Resolved issues

- Fixed: Baud rate of serial interface now configurable
- Fixed: Manta G-032B, G-032C, G-125B, and G-125C first image defective
- Fixed: Manta G-201B and G-201C picture optimization
- Fixed: Manta G-032B and G-032C trigger error in external level trigger mode
- Fixed: Varying image brightness in level and edge mode
- Fixed: Exposure signal jitter in external trigger mode
- Fixed: Manta G-145B and G-145C stops grabbing in free-run @ exposure time 320 μs

Firmware releases at a glance (firmware loader 01.42.05)

Model	Hardware revision	Firmware version	Release date
Prosilica GB650, GB650-P, GB650-PV, GB650-V, GB650C, GB650C-P, GB650C-PV, GB650C-V, GB660, GB660-V, GB660C, GB660C-V, GB1380, GB1380-P, GB1380-PV, GB1380-V, GB1380C, GB1380C-P, GB1380C-PV, GB1380C-V, GB2450, GB2450-V, GB2450C, GB2450C-V	A, B	01.42.04	2011-Jun-01
Prosilica GC650, GC650C, GC655, GC655C, GC660, GC660C, GC780, GC780C, GC1020, GC1020C, GC1290, GC1290C, GC1350, GC1350C, GC1350H, GC1350CH, GC1380, GC1380C, GC1380H, GC1380CH, GC1600, GC1600C, GC1600H, GC1600CH, GC2450, GC2450C	A, B	01.42.04	2011-Jun-01
Prosilica GE650, GE650C, GE655, GE655C, GE680, GE680C, GE1050, GE1050C, GE1350, GE1350C, GE1380, GE1380C, GE1600, GE1600C, GE1650, GE1650C, GE1660, GE1660C, GE1900, GE1900C, GE1910, GE1910C, GE2040, GE2040C, GE4000, GE4000C, GE4900, GE4900C	A, B, C	01.42.04	2011-Jun-01
Prosilica GX1050, GX1050C, GX1660, GX1660C, GX1910, GX1910C, GX2300, GX2300C, GX3300, GX3300C	A, B	01.42.02	2011-Jan-17
Prosilica GX1920, GX1920C, GX2750, GX2750C	B	01.42.05	2011-Dec-12
Prosilica GC640, GC640C, GC1280	A, B	01.36.00	2009-Mar-13
Prosilica GE640, GE640C	A, B, C	01.36.00	2009-Mar-13
Prosilica GC750, GC750C	A, B	01.30.00	2007-Dec-17

Note: Prosilica GS models use the Prosilica GB firmware version.

Table 2: Firmware releases at a glance (firmware loader 01.42.05)

Firmware version: 01.42.05 (release date: 2011-Dec-12)

Supported models

Camera family	Models	Firmware version
Prosilica GX	GX1920, GX1920C, GX2750, GX2750C	01.42.05

New models

- Initial commercial release of Prosilica GX2750 models

Resolved issues

- Fixed: Prosilica GX1920 connection issue with National Instruments LabView

Firmware version: 01.42.04 (release date: 2011-Jun-01)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.04
Prosilica GC	GC650, GC655,GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.04
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.04

New features and enhancements

- No changes

Firmware version: 01.42.03 (release date: 2011-Apr-19)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.03
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.03
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.03
Prosilica GX	GX1050, GX1660, GX1910, GX1920, GX2300, GX3300	01.42.03

New models

- Initial commercial release of Prosilica GX1920 model

Firmware version: 01.42.02 (release date: 2011-Jan-17)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.01
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.01
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.01
Prosilica GX	GX1050, GX1660, GX1910, GX1920, GX2300, GX3300	01.42.01

Resolved issues

- Fixed: `ChunkModeActive` added to Prosilica GB models
- Fixed: Issue where firmware update from version 01.36 to 01.42.00 or 01.42.01 corrupts `SavedUserSets` if `UserSetDefaultSelector` = *Default* [PvAPI: `ConfigFilePowerUp` = *Factory*].
- Fixed: `SyncIn1GlitchFilter` now defaults to 2000 on startup

Firmware version: 01.42.01 (release date: 2011-Jan-06)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.01

Resolved issues

- Fixed: Issue on Prosilica GE models where `BinningVertical` [PvAPI: `BinningY`] > 1 caused tap imbalance.

Firmware version: 01.42.00 (release date: 2010-Nov-10)

Supported models

Camera family	Models	Firmware version
Manta	G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-046B, G-046C, G-095C, G-125B, G-125C, G-145B, G-145B NIR, G-145C, G-146B, G-146C, G-201B, G-201C, G-504B, G-504C	01.42.00

Resolved issues

- Fixed: Intermittent gaps within histogram
- Fixed: Corrected minimum `ExposureValues`
- Fixed: `SyncOut1` delay issue at short exposure times. Applicable to Manta G-032B and G-032C only

Firmware version: 01.42.00 (release date: 2010-Nov-02)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.00
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.00
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.00
Prosilica GX	GX1050, GX1660, GX1910, GX2300, GX3300	01.42.00

New features and enhancements

- `ChunkModeActive` added to Prosilica GC and GE models
- `EventControls` added to all camera models
- `StreamFrameRateConstrain`
- `TriggerOverlap`
  [PvAPI: `FrameStartTriggerOverlap`]
- `SyncInGlitchFilter`
- If using `ExposureMode` = *Auto*, and `GainMode` = *Auto* simultaneously, priority is given to changes in exposure until `ExposureAutoMax` is reached, at which point priority is given to changes in gain.
- RGB and YUV color modes added to Prosilica GC2450C, GB2450C, and GC1600CH

Firmware version: 01.40.00 (release date: 2010-Jun-15)

Supported models

Camera family	Models	Firmware version
Manta	G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-046B, G-046C, G-095C, G-125B, G-125C, G-145B, G-145B NIR, G-145C, G-146B, G-146C, G-201B, G-201C, G-504B, G-504C	01.40.00

Change log

Update of pre-series models from firmware version 01.38 to version 01.40.

Firmware version: 01.40.00 (release date: 2010-Feb-23)

Supported models

Camera family	Models	Firmware version
Prosilica GX	GX1050, GX1660, GX1910, GX2300, GX3300	01.40.00

New features and enhancements

- LensDrive controls for 1,2,3 axis (iris, focus, zoom) lenses
- `DefectMaskColumnEnable`
- `ChunkModeActive`

Firmware version: 01.38.00 (release date: 2010-Feb-10)

Supported models

Camera family	Models	Firmware version
Prosilica GX	GX1050, GX1660, GX1910, GX2300, GX3300	01.38.00

New models

- Initial commercial release of Prosilica GX series

New features and enhancements

- `EventControls`

Firmware version: 01.36.00 (release date: 2009-Mar-13)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.36.00
Prosilica GC	GC640, GC650, GC655, GC660, GC780, GC1020, GC1280, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.36.00
Prosilica GE	GE640, GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.36.00

New models

- Initial commercial release of Prosilica GC780 model

Resolved issues

- Fixed: XML register `RegMemoryFileCmdExecute` changed from Read Only to Read/Write for Cognex compatibility.

- Fixed: Issue where Prosilica GC1290 first exposure after `AcquisitionStart` was slightly darker than rest.

Firmware end of life

- This is the last official firmware release for the Prosilica GC640, GC1280, and GE640 models.

Firmware version: 01.34.00 (release date: 2009-Jan-12)

Supported models

Camera family	Models	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.34.00
Prosilica GC	GC640, GC650, GC655, GC660, GC1020, GC1280, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.34.00
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.34.00

New models

- Initial commercial release of Prosilica GB series
- Initial commercial release of Prosilica GE1660 and GE1910 models

Resolved issues

- Fixed: DHCP now works when multiple DHCP servers are active
- Fixed: `AcquisitonStart` now allowed while `AcquisitionStop` is in progress
- Fixed: RGBA32, BGRA32 works on all cameras

Firmware version: 01.32.00 (release date: 2008-Mar-28)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE680, GE1650, GE1900, GE2040	01.32.00

Resolved issues

- Fixed: Mono16 and Bayer16 image pixel format issue

Firmware version: 01.30.00 (release date: 2007-Dec-17)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC640, GC650, GC655, GC660, GC750, GC1020, GC1280, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.30.00
Prosilica GE	GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040, GE4000, GE4900	01.30.00

Resolved issues

- Fixed: Firmware version 01.28.00 flash erase issue

Firmware end of life

- This is the last official firmware release for the Prosilica GC750 model.

Firmware version: 01.28.00 (release date: 2007-Dec-04)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC640, GC650, GC655, GC660, GC750, GC1020, GC1280, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.28.00
Prosilica GE	GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040, GE4000, GE4900	01.28.00

New models

- Initial commercial release of Prosilica GC660, GC1290, GC1600H, GC2450, and GC1280 models

New features and enhancements

- `SavedUserSets`
  [PvAPI: `ConfileFiles`]
- User Read/Write non-volatile `CameraName` (PvAPI only)

Resolved issues

- Fixed: `StreamBytesPerSecond` now works at very low values
- Fixed: `StreamHoldCapacity` correctly calculated

Firmware version: 01.26.00 (release date: 2007-May-30)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC640, GC650, GC655, GC750, GC1020, GC1350, GC1380, GC1380H, GC1600	01.26.00
Prosilica GE	GE640, GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040, GE4000, GE4900	01.26.00

New models

- Initial commercial release of Prosilica GC750, GC1380H, GE4000, and GE4900 models

New features and enhancements

- Prosilica GC Iris controls added (auto iris for video-type iris lenses)
- `AcquisitionMode` = *SingleFrame*, *Multiframe*, *Recorder*
- `StreamBytesPerSecond BandwidthCtrlMode` added. Allows limiting camera bandwidth
- `StreamHoldCapacity`

Firmware end of life

- This is the last official firmware release for the Prosilica GE640 model.

Firmware version: 01.24.00 (release date: 2006-Nov-30)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC640, GC650, GC655, GC1020, GC1350, GC1380, GC1600	01.24.00
Prosilica GE	GE640, GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040	01.24.00

New models

- Initial commercial release of Prosilica GC655, GC1020, and GE655 models

Firmware version: 01.22.00 (release date: 2006-Sep-08)

Supported models

Camera family	Models	Firmware version
Prosilica GC	GC640, GC650, GC655, GC1020, GC1350, GC1380, GC1600	01.22.00
Prosilica GE	GE640, GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040	01.22.00

New models

- Initial commercial release of Prosilica GC series

New features and enhancements

- `StreamHold`
- `SyncOutSource` = GPO with `SyncOutLevels`
  [PvAPI: `SyncOutGPOLevels`]

Firmware version: 01.20.00

Boot code update only

Firmware version: 01.18.00 (release date: 2006-Aug-02)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE640, GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040	01.18.00

New features and enhancements

- Added DHCP/Auto-IP/Persistent-IP addressing modes
- `PixelFormat` = YUV411Packed, YUV422Packed, YUV444Packed
  [PvAPI: YUV411, YUV422, YUV444]

Firmware version: 01.16.00 (release date: 2006-Jun-28)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE640, GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040	01.16.00

New models

- Initial commercial release of Prosilica GE640 model

Firmware version: 01.14.00 (release date: 2006-Apr-12)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650, GE655, GE680, GE1350, GE1380, GE1600, GE1650, GE1900, GE2040	01.14.00

New models

- Initial commercial release of Prosilica GE655, GE680, GE1650, GE1900, and GE2040 models

New features and enhancements

- `ExposureAuto` = *Once*, *Continuous*
  [PvAPI: `ExposureMode` = *Auto*, *AutoOnce*]
- `BalanceWhiteAuto` = *Once*, *Continuous*
  [PvAPI: `WhitebalMode` = *Auto*, *AutoOnce*]

Firmware version: 01.08.00 to 01.12.00

Boot code update only

Firmware version: 01.06.00 (release date: 2006-Mar-08)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650C, GE1350C, GE1380C, GE1600C	01.06.00

New models

- Initial commercial release of Prosilica GE650C, GE1350C, GE1380C, and GE1600C color models

New features and enhancements

- `PixelFormat` = BayerRG8, BayerRG12, RGB8Packed, BGR8Packed
  [PvAPI: Bayer8, Bayer16, RGB24, BGR24]

Firmware version: 01.04.00 (release date: 2006-Feb-24)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650, GE1350, GE1380, GE1600	01.04.00

New models

- Initial commercial release of Prosilica GE1350 and GE1600 monochrome models

Firmware version: 01.02.00 (release date: 2006-Feb-13)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650, GE1380	01.02.00

New features and enhancements

- Added serial RS232 communication

Firmware version: 01.00.00 (release date: 2006-Feb-03)

Supported models

Camera family	Models	Firmware version
Prosilica GE	GE650, GE1380	01.00.00

New models

- Initial commercial release of Prosilica GE650 and GE1380 monochrome models

Additional References

Technical manuals and GigE Features Reference
https://www.alliedvision.com/en/support/technical-documentation

For technical support, please contact support@alliedvision.com.
For comments or suggestions regarding this document, please contact info@alliedvision.com.

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