Allied Vision

GIGE FIRMWARE RELEASE NOTES

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

2021-Jan-14

This firmware release note is applicable to:

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



PvAPI

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



User sets

If new firmware contains a new feature or 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 camera technical manual or the GigE Firmware Update application note at www.alliedvision.com/en/support/technical-papers-knowledge-base



Camera feature reference

A complete listing of camera features including definitions can be found online.

- **Vimba** and third-party software users: GigE Features Reference
- **PvAPI** users: GigE Camera and Driver Attributes document

www.alliedvision.com/en/support/technical-documentation



Supported models

Listed camera models include monochrome, color, NIR, 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 32702

Prosilica families are shortened in the table column headlines. For example, **GC** represents **Prosilica GC**.

Camera family					Models	Firmware version	Release date
Mako	Manta	GC	GT	GX			
	✓				G-1620, G-2040, G-2460	FW 01.54.32153	2021-Jan-14
	✓				G-031, G-033, G-046, G-145, G-145-30fps, G-146, G-201, G-504	FW 01.44.31238	2020-Nov-12
			✓		GT4400, GT5400, GT6400	FW 01.54.29197	2020-Mar-31
	✓				G-125	FW 01.44.28514	2020-Mar-31
✓					G-030, G-223, G-419	FW 01.54.26005	2019-Aug-25
✓					G-508B POL	FW 01.54.21000	2019-Mar-11
	✓				G-040, G-158, G-235, G-319, G-507, G-895, G-1236	FW 01.54.20343	2019-Mar-11
✓					G-040, G-158, G-234, G-319, G-507	FW 01.54.21000	2019-Jan-31
✓					G-131, G-192, G-503	FW 01.54.20700	2019-Jan-31
			✓		GT4090, GT4096, GT5120	FW 01.54.20443	2019-Jan-31
			✓		GT1930, GT1930L, GT2460	FW 01.54.20343	2019-Jan-31
		✓			GC2450	FW 01.54.19678	2017-Dec-15
		✓			GC660, GC1290, GC1380H, GC1600H	FW 01.54.19654	2017-Dec-15
	✓				G-223, G-419	FW 01.54.18163	2017-Jan-27
			✓		GT2000, GT2050	FW 01.54.18163	2017-Jan-27
✓					G-032, G-125	FW 01.54.17933	2016-Oct-23
	✓				G-282, G-283, G-505, G-917	FW 01.54.17624	2016-Aug-12
			✓		GT1290, GT1380, GT1600, GT1660, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300, GT3400, GT4905, GT4907, GT6600	FW 01.54.17562	2016-Aug-12
✓					G-050, G-095	FW 01.54.11233	2014-Oct-06
		✓			GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	FW 01.50.01	2013-Jan-04
	✓				G-032, G-201-30fps	FW 01.44.18241	2016-Dec-16
	✓				G-046, G-146	FW 01.44.18241	2016-Dec-02
	✓				G-095	FW 01.44.7913	2013-Jul-22
				✓	GX1050, GX1660, GX1910, GX1920, GX2300, GX2750, GX3300	FW 01.42.05	2011-Dec-12

Table 1: Firmware releases at a glance (firmware loader 3207)

FW 01.54.32153

Release date: 2021-Jan-14

Supported models

Camera family	Model series	Firmware version
Manta	G-1620, G-2040, G-2460	01.54.32153

New models

Initial commercial release of Manta G-1620B, G-1620C, G-2040B, G-2040C, G-2460B, and G-2460C models.

FW 01.44.31238

Release date: 2020-Nov-12

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-033, G-046, G-145, G-145-30fps, G-146, G-201, G-504	01.44.31238

Resolved issue

Fixed a bug that caused the top of the image to be darker on the first image captured after power-up.

FW 01.54.29197

Release date: 2020-Mar-31

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT4400, GT5400, GT6400	01.54.29197

New features and enhancements

Exposure time control range and increments have changed since the last firmware release.

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.26872	Exposure range and increment Firmware version 01.54.29197
Prosilica GT4400	8-bit, 12-bit	61 µs to 171.8 s; 31.68 µs increments	31 µs to 171.8 s; 1 µs increments
	16-bit	72 µs to 171.8 s; 42.24 µs increments	
	24-bit	93 µs to 171.8 s; 63.36 µs increments	

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.26872	Exposure range and increment Firmware version 01.54.29197
Prosilica GT5400	8-bit, 12-bit	68 µs to 171.8 s; 38.72 µs increments	31 µs to 171.8 s; 1 µs increments
	16-bit	81 µs to 171.8 s; 51.52 µs increments	
	24-bit	107 µs to 171.8 s; 77.44 µs increments	

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.26872	Exposure range and increment Firmware version 01.54.29197
Prosilica GT6400	8-bit, 12-bit	75 µs to 171.8 s; 45.44 µs increments	31 µs to 171.8 s; 1 µs increments
	16-bit	90 µs to 171.8 s; 60.48 µs increments	
	24-bit	120 µs to 171.8 s; 90.88 µs increments	

FW 01.44.28514

Release date: 2020-Mar-30

Supported models

Camera family	Model series	Firmware version
Manta	G-125	01.44.28514

Resolved issue

Fixed a bug that caused the top of the image to be darker on the first image captured after power-up.

FW 01.54.26782

Release date: 2019-Nov-14

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT4400, GT5400, GT6400	01.54.26872

New models

Initial commercial release of Prosilica GT4400, GT4400C, GT5400, GT5400C, GT6400, and GT6400C models.

FW 01.54.26005

Release date: 2019-Aug-25

Supported models

Camera family	Model series	Firmware version
Mako	G-030, G-223, G-419	01.54.26005

New features and enhancements

- Added IEEE 1588-2008 Precision Time Protocol
- Added Trigger over Ethernet Action Commands

Resolved issues

- Auto-exposure does not work when gain is not zero
- Gain will stay within `GainAutoMin` and `GainAutoMax` in auto modes

Known issues

`Gain` feature should be set to zero when using `ExposureAuto` and `GainAuto` features together. Otherwise exposure value could remain constant.

FW 01.54.21000

Release date: 2019-Mar-11

Supported models

Camera family	Model	Firmware version
Mako	G-508B POL	01.54.21000

New model

Initial commercial release of the Mako G-508B POL polarized sensor model.

FW 01.54.20343

Release date: 2019-Mar-11

Supported models

Camera family	Model series	Firmware version
Manta	G-040, G-158, G-235, G-319, G-507, G-895, G-1236	01.54.20343

New features and enhancements

- Improved FPGA timing for improved camera reliability

- Improved frame rate

Model series	Frame rate at full resolution Firmware version 01.54.19767	Frame rate at full resolution Firmware version 01.54.20343
Manta G-040	286.0 fps 295.7 fps (burst mode)	286.3 fps 313.1 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.19767	Frame rate at full resolution Firmware version 01.54.20343
Manta G-158	75.3 fps 83.09 fps (burst mode)	75.2 fps 89.1 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.17562	Frame rate at full resolution Firmware version 01.54.20343
Manta G-235	50.7 fps 57.5 fps (burst mode)	50.8 fps 59.2 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.17562	Frame rate at full resolution Firmware version 01.54.20343
Manta G-319	37.6 fps 43.3 fps (burst mode)	37.6 fps (no change) 45.0 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.17562	Frame rate at full resolution Firmware version 01.54.20343
Manta G-507	23.7 fps 27.6 fps (burst mode)	23.7 fps (no change) 28.7 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.18110	Frame rate at full resolution Firmware version 01.54.20343
Manta G-895	13.4 fps 15.69 fps (burst mode)	13.4 fps (no change) 16.2 fps (burst mode)

- Exposure minimum values and increments have changed since the last firmware release.

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.19767	Exposure range and increment Firmware version 01.54.20343
Manta G-040	8-bit, 12-bit	25 µs to 85.9 s; 5.76 µs increments	19 µs to 85.9 s; 5.44 µs increments
	16-bit	29 µs to 85.9 s; 7.68 µs increments	21 µs to 85.9 s; 7.28 µs increments
	24-bit	36 µs to 85.9 s; 11.52 µs increments	24 µs to 85.9 s; 10.88 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.19767	Exposure range and increment Firmware version 01.54.20343
Manta G-158	8-bit, 12-bit	35 µs to 85.9 s; 10.64 µs increments	23 µs to 85.9 s; 9.92 µs increments
	16-bit	42 µs to 85.9 s; 14.16 µs increments	26 µs to 85.9 s; 13.2 µs increments
	24-bit	56 µs to 85.9 s; 21.28 µs increments	33 µs to 85.9 s; 19.84 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.17562	Exposure range and increment Firmware version 01.54.20343
Manta G-235	8-bit, 12-bit	41 µs to 86 s; 14 µs increments	27 µs to 85.9 s; 13.44 µs increments
	16-bit	50 µs to 86 s; 18 µs increments	31 µs to 85.9 s; 17.92 µs increments
	24-bit	69 µs to 86 s; 28 µs increments	40 µs to 85.9 s; 26.88 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.17562	Exposure range and increment Firmware version 01.54.20343
Manta G-319	8-bit, 12-bit	43 µs to 79.4 s; 14.6 µs increments	27 µs to 85.89 s; 14.08 µs increments
	16-bit	52 µs to 79.4 s; 19.5 µs increments	32 µs to 85.89 s; 18.72 µs increments
	24-bit	72 µs to 79.4 s; 29.3 µs increments	41 µs to 85.89 s; 28.16 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.17562	Exposure range and increment Firmware version 01.54.20343
Manta G-507	8-bit, 12-bit	48 µs to 85.9 s; 17.4 µs increments	30 µs to 85.9 s; 16.64 µs increments
	16-bit	59 µs to 85.9 s; 23.1 µs increments	35 µs to 85.9 s; 22.16 µs increments
	24-bit	83 µs to 85.9 s; 34.7 µs increments	47 µs to 85.9 s; 33.28 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.18110	Exposure range and increment Firmware version 01.54.20343
Manta G-895	8-bit, 12-bit	71 µs to 85.9 s; 28.8 µs increments	42 µs to 85.89 s; 27.84 µs increments
	16-bit	90 µs to 85.9 s; 38.3 µs increments	51 µs to 85.89 s; 37.04 µs increments
	24-bit	129 µs to 85.9 s; 57.6 µs increments	69 µs to 85.89 s; 55.68 µs increments

- Trigger latency values have changed since the last firmware release.

Model series	Pixel formats	Trigger latency Firmware version 01.54.19767	Trigger latency Firmware version 01.54.20343
Manta G-040	8-bit, 12-bit	17.28 µs	16.32 µs
	16-bit	23.04 µs	21.84 µs
	24-bit	34.56 µs	32.64 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.19767	Trigger latency Firmware version 01.54.20343
Manta G-158	8-bit, 12-bit	31.92 µs	29.76 µs
	16-bit	42.48 µs	39.6 µs
	24-bit	63.84 µs	59.52 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.17562	Trigger latency Firmware version 01.54.20343
Manta G-235	8-bit, 12-bit	42 µs	40.32 µs
	16-bit	55.14 µs	53.76 µs
	24-bit	84 µs	80.64 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.17562	Trigger latency Firmware version 01.54.20343
Manta G-319	8-bit, 12-bit	44.21 µs	42.24 µs
	16-bit	58.65 µs	56.16 µs
	24-bit	88.06 µs	84.48 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.17562	Trigger latency Firmware version 01.54.20343
Manta G-507	8-bit, 12-bit	52.3 µs	49.92 µs
	16-bit	69.6 µs	66.48 µs
	24-bit	104.6 µs	99.84 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.18110	Trigger latency Firmware version 01.54.20343
Manta G-895	8-bit, 12-bit	86.34 µs	83.52 µs
	16-bit	114.96 µs	111.12 µs
	24-bit	172.68 µs	167.04 µs

- Trigger jitter values have changed since the last firmware release.

Model series	Pixel formats	Trigger jitter Firmware version 01.54.19767	Trigger jitter Firmware version 01.54.20343
Manta G-040	8-bit, 12-bit	±2.88 µs	±2.72 µs
	16-bit	±3.84 µs	±3.64 µs
	24-bit	±5.76 µs	±5.44 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.19767	Trigger jitter Firmware version 01.54.20343
Manta G-158	8-bit, 12-bit	±5.32 µs	±4.96 µs
	16-bit	±7.08 µs	±6.6 µs
	24-bit	±10.64 µs	±9.92 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.17562	Trigger jitter Firmware version 01.54.20343
Manta G-235	8-bit, 12-bit	±7 µs	±6.72 µs
	16-bit	±9.2 µs	± 8.96 µs
	24-bit	±14 µs	±13.44 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.17562	Trigger jitter Firmware version 01.54.20343
Manta G-319	8-bit, 12-bit	±7.3 µs	±7.04 µs
	16-bit	±9.75 µs	±9.36 µs
	24-bit	±14.65 µs	±14.08 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.17562	Trigger jitter Firmware version 01.54.20343
Manta G-507	8-bit, 12-bit	±8.7 µs	±8.32 µs
	16-bit	±11.55 µs	±11.08 µs
	24-bit	±17.35 µs	±16.64 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.18110	Trigger jitter Firmware version 01.54.20343
Manta G-895	8-bit, 12-bit	±14.4 µs	±13.92 µs
	16-bit	±19.16 µs	±18.52 µs
	24-bit	±28.8 µs	±27.84 µs

- Changes to ROI frame rates.

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.19767	ROI frame rate Firmware version 01.54.20343
Manta G-040	728 × 544 (full res.)	286.0 fps	286.3 fps
	728 × 480	331.9 fps	328.3 fps
	728 × 360	430.7 fps	420.6 fps
	728 × 180	778.5 fps	792.3 fps
	728 × 120	1065.0 fps	1120.8 fps
	728 × 80	1411.4 fps	1494.3 fps
	728 × 60	1684.4 fps	1784.4 fps
	728 × 40	2091.6 fps	2214.3 fps
	728 × 20	2744.5 fps	2918.0 fps
	728 × 12	3156.5 fps	3342.2 fps
	728 × 4	3692.7 fps	3910.8 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.19767	ROI frame rate Firmware version 01.54.20343
Manta G-158	1456 × 1088 (full res.)	75.3 fps	75.2 fps
	1456 × 1080	75.7 fps	75.6 fps
	1456 × 1024	79.8 fps	79.6 fps
	1456 × 960	84.9 fps	85.2 fps
	1456 × 768	105.8 fps	106.0 fps
	1456 × 600	135.2 fps	134.6 fps
	1456 × 480	167.8 fps	168.3 fps
	1456 × 360	221.1 fps	220.6 fps
	1456 × 180	421.4 fps	420.0 fps
	1456 × 120	576.4 fps	610.9 fps
	1456 × 60	912.4 fps	978.7 fps
	1456 × 20	1491.6 fps	1600.0 fps
	1456 × 4	1999.6 fps	2144.5 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.17562	ROI frame rate Firmware version 01.54.20343
Manta G-235	1936 × 1216 (full res.)	50.7 fps	50.8 fps
	1936 × 1080	57.1 fps	57.0 fps
	1936 × 1024	60.1 fps	60.1 fps (no change)
	1936 × 960	64.1 fps	64.2 fps
	1936 × 768	80.2 fps	79.8 fps
	1936 × 600	101.9 fps	102.0 fps
	1936 × 480	127.2 fps	126.5 fps
	1936 × 360	168.4 fps	166.4 fps
	1936 × 180	328.4 fps	320.7 fps
	1936 × 120	454.4 fps	467.9 fps
	1936 × 60	729.9 fps	751.5 fps
	1936 × 20	1224.6 fps	1261.0 fps
	1936 × 12	-	1458.8 fps
	1936 × 4	-	1730.1 fps
	1936 × 2	1762.1 fps	1814.5 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.17562	ROI frame rate Firmware version 01.54.20343
Manta G-319	2064 × 1544 (full res.)	37.6 fps	37.6 fps (no change)
	2064 × 1324	43.9 fps	43.8 fps
	2064 × 1280	45.3 fps	45.3 fps (no change)
	2064 × 1024	56.6 fps	56.6 fps (no change)
	2064 × 960	60.1 fps	60.0 fps
	2064 × 768	75.2 fps	75.1 fps
	2064 × 600	95.5 fps	95.4 fps
	2064 × 480	119.2 fps	118.9 fps
	2064 × 360	158.5 fps	158.1 fps
	2064 × 240	232.3 fps	232.1 fps
	2064 × 160	346.7 fps	344.7 fps
	2064 × 80	604.5 fps	628.4 fps
	2064 × 36	990.0 fps	1029.3 fps
	2064 × 12	1517 fps	1578.2 fps
	2064 × 4	1517 fps	1919.3 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.17562	ROI frame rate Firmware version 01.54.20343
Manta G-507	2464 × 2056 (full res.)	23.7 fps	23.7 fps (no change)
	2464 × 1544	31.5 fps	31.5 fps (no change)
	2464 × 1324	36.8 fps	36.7 fps
	2464 × 1280	38.0 fps	37.9 fps
	2464 × 1024	47.4 fps	47.3 fps
	2464 × 960	50.6 fps	50.4 fps
	2464 × 768	62.9 fps	63.0 fps
	2464 × 600	80.7 fps	80.3 fps
	2464 × 480	100.5 fps	99.8 fps
	2464 × 360	133.3 fps	132.9 fps
	2464 × 240	197.9 fps	196.4 fps
	2464 × 180	259.5 fps	257.9 fps
	2464 × 80	509.8 fps	531.8 fps
	2464 × 40	789.1 fps	823.2 fps
	2464 × 20	1280.1 fps	1133.8 fps
	2464 × 4	-	1624.2 fps
	2464 × 2	1280.1 fps	-

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.18110	ROI frame rate Firmware version 01.54.20343
Manta G-895	4112 × 2176 (full res.)	13.4 fps	13.4 fps (no change)
	4112 × 2048	14.3 fps	14.3 fps (no change)
	4112 × 2000	14.6 fps	14.6 fps (no change)
	4112 × 1600	18.3 fps	18.3 fps (no change)
	4112 × 1280	22.8 fps	22.8 fps (no change)
	4112 × 1200	24.4 fps	24.4 fps (no change)
	4112 × 1024	28.5 fps	28.5 fps (no change)
	4112 × 960	30.4 fps	30.4 fps (no change)
	4112 × 800	36.4 fps	36.4 fps (no change)
	4112 × 768	37.9 fps	37.9 fps (no change)
	4112 × 640	45.5 fps	45.5 fps (no change)
	4112 × 600	48.4 fps	48.4 fps (no change)
	4112 × 480	60.4 fps	60.4 fps (no change)
	4112 × 400	72.3 fps	72.3 fps (no change)
	4112 × 320	90.2 fps	90.3 fps
	4112 × 300	96.2 fps	96.0 fps
	4112 × 240	119.7 fps	119.0 fps
	4112 × 120	224.0 fps	231.7 fps
	4112 × 60	365.5 fps	378.1 fps
	4112 × 32	518.2 fps	536.1 fps
	4112 × 23	738.8 fps	764.2 fps
	4112 × 4	890.3 fps	921.0 fps

Resolved issues

- Auto-exposure does not work when gain is not zero
- Gain will stay within `GainAutoMin` and `GainAutoMax` in auto modes

Known issues

`Gain` feature should be set to zero when using `ExposureAuto` and `GainAuto` features together. Otherwise exposure value could remain constant.

FW 01.54.21000

Release date: 2019-Jan-31

Supported models

Camera family	Model series	Firmware version
Mako	G-040, G-158, G-234, G-319, G-507	01.54.21000

New features and enhancements

- Added IEEE 1588-2008 Precision Time Protocol
- Added Trigger over Ethernet Action Commands
- Improved FPGA timing for improved camera reliability
- Improved frame rate

Model series	Frame rate at full resolution Firmware version 01.54.18318		Frame rate at full resolution Firmware version 01.54.21000	
	12-bit readout	10-bit readout	12-bit readout	10-bit readout
Mako G-234	31.8 fps	41.2 fps	32.3 fps	41.5 fps

Model series	Frame rate at full resolution Firmware version 01.54.18914	Frame rate at full resolution Firmware version 01.54.21000
Mako G-319	37.5 fps -	37.6 fps 39.5 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.18914	Frame rate at full resolution Firmware version 01.54.21000
Mako G-507	23.7 fps -	23.7 fps (no change) 25.3 fps (burst mode)

- Exposure minimum values and increments have changed since the last firmware release.

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.18318		Exposure range and increment Firmware version 01.54.21000	
		12-bit readout	10-bit readout	12-bit readout	10-bit readout
Mako G-234	8-bit, 12-bit, 16-bit	63 µs to 71 s; 25 µs increments	52 µs to 71 s; 19.3 µs increments	38 µs to 85.9 s; 24.64 µs increments	32 µs to 71.6 s; 19.2 µs increments
	24-bit	113 µs to 71 s; 50 µs increments	91 µs to 71 s; 38.6 µs increments	63 µs to 85.9 s; 49.28 µs increments	52 µs to 71.6 s; 38.4 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.18914	Exposure range and increment Firmware version 01.54.21000
Mako G-319	8-bit, 12-bit	46 µs to 85.9 s; 16.5 µs increments	29 µs to 85.9 s; 16 µs increments
	16-bit	57 µs to 85.9 s; 21.9 µs increments	35 µs to 85.9 s; 21.28 µs increments
	24-bit	79 µs to 85.9 s; 32.9 µs increments	45 µs to 85.9 s; 32 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.18914	Exposure range and increment Firmware version 01.54.21000
Mako G-507	8-bit, 12-bit	52 µs to 85.9 s; 19.5 µs increments	32 µs to 85.9 s; 18.88 µs increments
	16-bit	65 µs to 85.9 s; 26 µs increments	38 µs to 85.9 s; 25.12 µs increments
	24-bit	91 µs to 85.9 s; 39.0 µs increments	51 µs to 85.9 s; 37.76 µs increments

- Trigger latency values have changed since the last firmware release.

Model series	Pixel formats	Trigger latency Firmware version 01.54.18318		Trigger latency Firmware version 01.54.21000	
		12-bit readout	10-bit readout	12-bit readout	10-bit readout
Mako G-234	8-bit, 12-bit, 16-bit	75.6 µs	58.2 µs	73.92 µs	57.6 µs
	24-bit	151.2 µs	116.4 µs	147.84 µs	115.2 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.18914	Trigger latency Firmware version 01.54.21000
Mako G-319	8-bit, 12-bit	49.4 µs	48 µs
	16-bit	65.8 µs	63.84 µs
	24-bit	98.9 µs	96 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.18914	Trigger latency Firmware version 01.54.21000
Mako G-507	8-bit, 12-bit	58.6 µs	56.64 µs
	16-bit	78 µs	75.36 µs
	24-bit	117.1 µs	113.28 µs

- Trigger jitter values have changed since the last firmware release.

Model series	Pixel formats	Trigger jitter Firmware version 01.54.18318		Trigger jitter Firmware version 01.54.21000	
		12-bit readout	10-bit readout	12-bit readout	10-bit readout
Mako G-234	8-bit, 12-bit, 16-bit	±12.5 µs	±9.6 µs	±12.32 µs	±9.6 µs
	24-bit	±25.0 µs	±19.3 µs	±24.64 µs	±19.2 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.18914	Trigger jitter Firmware version 01.54.21000
Mako G-319	8-bit, 12-bit	±8.1 µs	±8 µs
	16-bit	±10.9 µs	±10.64 µs
	24-bit	±16.5 µs	±16 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.18914	Trigger jitter Firmware version 01.54.21000
Mako G-507	8-bit, 12-bit	±9.8 µs	±9.44 µs
	16-bit	±13 µs	±12.56 µs
	24-bit	±19.5 µs	±18.88 µs

- Changes to ROI frame rates.

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.18318		ROI frame rate Firmware version 01.54.21000	
		12-bit readout	10-bit readout	12-bit readout	10-bit readout
Mako G-234	1936 × 1216 (full res.)	31.8 fps	41.2 fps	32.3 fps	41.5 fps
	1936 × 1080	35.7 fps	46.2 fps	36.3 fps	46.5 fps
	1936 × 1024	37.6 fps	48.6 fps	38.2 fps	49.0 fps
	1936 × 960	40.0 fps	51.7 fps	40.6 fps	52.1 fps
	1936 × 768	49.5 fps	64.0 fps	50.3 fps	64.5 fps
	1936 × 600	62.5 fps	80.9 fps	63.5 fps	81.5 fps
	1936 × 480	77.0 fps	99.6 fps	78.2 fps	100.3 fps
	1936 × 200	167.3 fps	216.4 fps	169.8 fps	217.9 fps
	1936 × 100	287.7 fps	372.1 fps	292.0 fps	374.7 fps
	1936 × 50	449.4 fps	581.1 fps	456.0 fps	585.2 fps
	1936 × 20	677.9 fps	876.6 fps	687.8 fps	882.8 fps
	1936 × 12	-	-	795.7 fps	1021.2 fps
	1936 × 10	813.3 fps	1055.6 fps	-	-
	1936 × 4	-	-	943.7 fps	1211.2 fps
	1936 × 2	-	-	989.8 fps	1270.3 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.18914	ROI frame rate Firmware version 01.54.21000
Mako G-319	2064 × 1544 (full res.)	37.5 fps	37.6 fps
	2064 × 1280	45.3 fps	45.2 fps
	2064 × 1024	56.5 fps	56.5 fps (no change)
	2064 × 800	71.9 fps	71.9 fps (no change)
	2064 × 600	95.4 fps	95.4 fps (no change)
	2064 × 400	140.1 fps	141.4 fps
	2064 × 300	182.2 fps	187.7 fps
	2064 × 120	396.5 fps	408.5 fps
	2064 × 60	652.4 fps	672.0 fps
	2064 × 20	1144.8 fps	1179.2 fps
	2064 × 12	-	1388.9 fps
	2064 × 10	1348.4 fps	-
	2064 × 4	-	1889.2 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.18914	ROI frame rate Firmware version 01.54.21000
Mako G-507	2464 × 2056 (full res.)	23.7 fps	23.7 fps (no change)
	2464 × 1544	31.5 fps	31.5 fps (no change)
	2464 × 1324	36.8 fps	36.8 fps (no change)
	2464 × 1280	38.0 fps	38.0 fps (no change)
	2464 × 1024	47.4 fps	47.4 fps (no change)
	2464 × 960	50.6 fps	50.6 fps (no change)
	2464 × 768	62.9 fps	62.9 fps (no change)
	2464 × 600	80.5 fps	80.6 fps
	2464 × 480	99.9 fps	100.3 fps
	2464 × 360	130.4 fps	133.0 fps
	2464 × 240	187.7 fps	194.0 fps
	2464 × 180	240.5 fps	248.7 fps
	2464 × 80	453.4 fps	468.7 fps
	2464 × 40	701.8 fps	725.5 fps
	2464 × 20	996.6 fps	999.3 fps
	2464 × 4	1384.5 fps	1431.4 fps

Resolved issues

- Mako restrain Heartbeat Acknowledge
- Auto-exposure does not work when gain is not zero
- Gain will stay within `GainAutoMin` and `GainAutoMax` in auto modes

FW 01.54.20700

Release date: 2019-Jan-31

Supported models

Camera family	Model series	Firmware version
Mako	G-131, G-192, G-503	01.54.20700

Resolved issues

Host/camera connection timeout issue

FW 01.54.20443

Release date: 2019-Jan-31

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT4090, GT4096, GT5120	01.54.20443

New features and enhancements

Improved exposure time control

	Exposure range and increment Firmware version 01.54.19199	Exposure range and increment Firmware version 01.54.20443
Exposure Time Control	100 µs to 1 s; 1 µs increments	1 µs to 1 s; 1 µs increments

FW 01.54.20343

Release date: 2019-Jan-31

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1930, GT1930L, GT2460	01.54.20343

New features and enhancements

- Improved FPGA timing for improved camera reliability
- Improved frame rate

Model series	Frame rate at full resolution Firmware version 01.54.17562	Frame rate at full resolution Firmware version 01.54.20343
Prosilica GT1930, GT1930L	50.7 fps 55.8 fps (burst mode)	50.8 fps 59.2 fps (burst mode)

Model series	Frame rate at full resolution Firmware version 01.54.17562	Frame rate at full resolution Firmware version 01.54.20343
Prosilica GT2460	23.7 fps 27.4 fps (burst mode)	23.7 fps (no change) 28.7 fps (burst mode)

- Exposure minimum values and increments have changed since the last firmware release.

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.17562	Exposure range and increment Firmware version 01.54.20343
Prosilica GT1930, GT1930L	8-bit, 12-bit	42 µs to 88 s	27 µs to 85.9 s; 13.44 µs increments
	16-bit	28 µs to 88 s; 14 µs increments	31 µs to 85.9 s; 17.92 µs increments
	24-bit	56 µs to 88 s; 28 µs increments	40 µs to 85.9 s; 26.88 µs increments

Model series	Pixel formats	Exposure range and increment Firmware version 01.54.19214	Exposure range and increment Firmware version 01.54.20343
Prosilica GT2460	8-bit, 12-bit	48 µs to 85.9 s; 17.44 µs increments	30 µs to 85.9 s; 16.64 µs increments
	16-bit	60 µs to 85.9 s; 23.2 µs increments	35 µs to 85.9 s; 22.16 µs increments
	24-bit	83 µs to 85.9 s; 34.88 µs increments	47 µs to 85.9 s; 33.28 µs increments

- Trigger latency values have changed since the last firmware release.

Model series	Pixel formats	Trigger latency Firmware version 01.54.17562	Trigger latency Firmware version 01.54.20343
Prosilica GT1930, GT1930L	8-bit, 12-bit	50.1 µs	40.32 µs
	16-bit	-	53.76 µs
	24-bit	-	80.64 µs

Model series	Pixel formats	Trigger latency Firmware version 01.54.19214	Trigger latency Firmware version 01.54.20343
Prosilica GT2460	8-bit, 12-bit	52.3 µs	49.92 µs
	16-bit	69.6 µs	66.48 µs
	24-bit	104.6 µs	99.84 µs

- Trigger jitter values have changed since the last firmware release.

Model series	Pixel formats	Trigger jitter Firmware version 01.54.17562	Trigger jitter Firmware version 01.54.20343
Prosilica GT1930, GT1930L	8-bit, 12-bit	±7.2 µs	±6.72 µs
	16-bit	-	±8.96 µs
	24-bit	-	±13.44 µs

Model series	Pixel formats	Trigger jitter Firmware version 01.54.19214	Trigger jitter Firmware version 01.54.20343
Prosilica GT2460	8-bit, 12-bit	±8.72 µs	±8.32 µs
	16-bit	±11.6 µs	±11.08 µs
	24-bit	±17.44 µs	±16.64 µs

- Changes to ROI frame rates.

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.17562	ROI frame rate Firmware version 01.54.20343
Prosilica GT1930, GT1930L	1936 × 1216 (full res.)	50.7 fps	50.8 fps
	1936 × 1200	51.4 fps	-
	1936 × 1080	57.0 fps	57.0 fps (no change)
	1936 × 1024	60.0 fps	60.1 fps
	1936 × 960	64.0 fps	64.2 fps
	1936 × 768	80.1 fps	79.8 fps
	1936 × 600	102.0 fps	102.0 fps (no change)
	1936 × 480	126.9 fps	126.5 fps
	1936 × 360	-	166.4 fps
	1936 × 180	-	320.7 fps
	1936 × 120	-	467.9 fps
	1936 × 100	503.6 fps	-
	1936 × 60	-	751.5 fps
	1936 × 50	787.0 fps	-
	1936 × 20	1187.2 fps	1261.0 fps
	1936 × 12	-	1458.8 fps
	1936 × 10	1429.4 fps	-
	1936 × 4	-	1730.1 fps
	1936 × 2	-	1814.5 fps

Model series	ROI (H × V)	ROI frame rate Firmware version 01.54.19214	ROI frame rate Firmware version 01.54.20343
Prosilica GT2460	2464 × 2056 (full res.)	23.7 fps	23.7 fps (no change)
	2464 × 1544	31.5 fps	31.5 fps (no change)
	2464 × 1324	36.7 fps	36.7 fps (no change)
	2464 × 1280	37.9 fps	37.9 fps (no change)
	2464 × 1024	47.4 fps	47.3 fps
	2464 × 960	50.5 fps	50.4 fps
	2464 × 768	63.0 fps	63.0 fps (no change)
	2464 × 600	80.3 fps	80.3 fps (no change)
	2464 × 480	99.7 fps	99.8 fps
	2464 × 360	133.3 fps	132.9 fps
	2464 × 240	196.3 fps	196.4 fps
	2464 × 180	258.3 fps	257.9 fps
	2464 × 80	507.4 fps	531.8 fps
	2464 × 40	785.4 fps	823.2 fps
	2464 × 20	1081.9 fps	1133.8 fps
	2464 × 4	1549.7 fps	1624.2 fps

FW 01.54.20339

Release date: 2018-Jul-11

Supported models

Camera family	Model series	Firmware version
Mako	G-040, G-158	01.54.20339

New models

Initial commercial release of Mako G-040B, G-040C,G-158B, and G-158C models

FW 01.54.19214

Release date: 2018-May-01

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT2460	01.54.19214

New models

Initial commercial release of Prosilica GT2460, GT2460C (order code 02-xxxx and 06-xxxx)

FW 01.54.20072

Release date: 2018-Mar-07

Supported models

Camera family	Model series	Firmware version
Manta	G-1236	01.54.20072

New features and enhancements

- Improved FPGA timing for improved camera reliability
- Improved burst mode frame rate.

	Burst mode frame rate Firmware version 01.54.18183	Burst mode frame rate Firmware version 01.54.20072
Burst mode frame rate	11.4 fps	11.8 fps

- Exposure minimum values and increments have changed since the last firmware release.

Pixel formats	Exposure range and increment Firmware version 01.54.18183	Exposure range and increment Firmware version 01.54.20072
8-bit and 12-bit formats	71 µs to 85.89 s; 28.8 µs increments	42 µs to 85.89 s; 27.84 µs increments
16-bit formats	90 µs to 85.89 s; 38.32 µs increments	51 µs to 85.89 s; 3 7.04 µs increments
24-bit formats	129 µs to 85.89 s; 57.6 µs increments	69 µs to 85.89 s; 55.68 µs increments

- Trigger latency values have changed since the last firmware release.

Pixel formats	Trigger latency Firmware version 01.54.18183	Trigger latency Firmware version 01.54.20072
8-bit and 12-bit formats	86.4 µs	83.52 µs
16-bit formats	114.95 µs	111.12 µs
24-bit formats	172.8 µs	167.04 µs

- Trigger jitter values have changed since the last firmware release.

Pixel formats	Trigger jitter Firmware version 01.54.18183	Trigger jitter Firmware version 01.54.20072
8-bit and 12-bit formats	±14.4 µs	±13.92 µs
16-bit formats	±19.16 µs	±18.52 µs
24-bit formats	±28.8 µs	±27.84 µs

- Changes to ROI frame rates.

ROI (H × V)	ROI frame rate Firmware version 01.54.18183	ROI frame rate Firmware version 01.54.20072
4112 × 3008	9.73 fps	9.73 fps (no change)
4112 × 3000	9.76 fps	9.76 fps (no change)
4112 × 2800	10.46 fps	10.46 fps (no change)
4112 × 2560	11.43 fps	11.43 fps (no change)
4112 × 2400	12.2 fps	12.2 fps (no change)
4112 × 2048	14.3 fps	14.3 fps (no change)
4112 × 2000	14.6 fps	14.6 fps (no change)
4112 × 1600	18.3 fps	18.3 fps (no change)
4112 × 1280	22.8 fps	22.8 fps (no change)
4112 × 1200	24.4 fps	24.3
4112 × 1024	28.5 fps	28.5 fps (no change)
4112 × 960	30.4 fps	30.4 fps (no change)
4112 × 800	36.4 fps	36.4 fps (no change)
4112 × 768	37.9 fps	37.9 fps (no change)
4112 × 640	45.5 fps	45.5 fps (no change)
4112 × 600	48.4 fps	48.4 fps (no change)
4112 × 480	60.4 fps	60.4 fps (no change)
4112 × 400	72.3 fps	72.3 fps (no change)
4112 × 320	90.2 fps	90.2 fps (no change)
4112 × 300	96.2 fps	96.0
4112 × 240	119.7 fps	118.9
4112 × 120	224.0 fps	231.7
4112 × 60	365.5 fps	378.1
4112 × 32	518.2 fps	536.1
4112 × 12	738.8 fps	764.2
4112 × 4	890.3 fps	921.0

Known issues

`Gain` feature should be set to zero when using `ExposureAuto` and `GainAuto` features together. Otherwise exposure value could remain constant.

FW 01.54.19767

Release date: 2018-Jan-31

Supported models

Camera family	Model series	Firmware version
Manta	G-040, G-158	01.54.19767

New models

Initial commercial release of Manta G-040B, G-040C, G-158B, G-158C (order code E00xxxx and E06xxxx)

FW 01.54.19654

Release date: 2017-Dec-15

Supported models

Camera family	Model series	Firmware version
Prosilica GC	GC660, GC1290, GC1380H, GC1600H	01.54.19654

New models

Initial commercial release of Prosilica GC660, GC660C, GC1290, GC1290C, GC1380H, GC1380CH, GC1600H, GC1600CH (order code 06-xxxx)

New features and enhancements

Improved FPGA timing for improved camera reliability (order code 02-xxxx only)

Changes

- Exposure minimum and exposure maximum values have changed since the last firmware release (order code 02-xxxx only).

Model series	Exposure range and increment Firmware version 01.54.16528	Exposure range and increment Firmware version 01.54.19654
GC660	10 µs to 72.4 s; 1 µs increments	10 µs to 72.9 s; 1 µs increments
GC1290	12 µs to 72.9 s; 1 µs increments	12 µs to 72.4 s; 1 µs increments
GC1380H	10 µs to 72.4 s; 1 µs increments	10 µs to 72.9 s; 1 µs increments

- Gain maximum values have changed since the last firmware release (order code 02-xxxx only).

Model series	Gain range and increments Firmware version 01.54.16528	Gain range and increments Firmware version 01.54.19654
GC1600H	0 to 32 dB; 1 dB increments	10 to 30 dB; 1 dB increments

FW 01.54.19678

Release date: 2017-Dec-15

Supported models

Camera family	Model series	Firmware version
Prosilica GC	GC2450	01.54.19678

New models

Initial commercial release of Prosilica GC2450 and GC2450C (order code 06-xxxx)

New features and enhancements

Improved FPGA timing for improved camera reliability (order code 02-xxxx only)

Changes

- Exposure minimum and exposure maximum values have changed since the last firmware release (order code 02-xxxx only).

Model series	Exposure range and increment Firmware version 01.54.16528	Exposure range and increment Firmware version 01.54.19678
GC2450	49 µs to 38.0 s; 1 µs increments	10 µs to 48.0 s; 1 µs increments

- Gain maximum values have changed since the last firmware release (order code 02-xxxx only).

Model series	Gain range and increment Firmware version 01.54.16528	Gain range and increment Firmware version 01.54.19678
GC2450	0 to 32 dB; 1 dB increments	10 to 24 dB; 1 dB increments

FW 01.54.18914

Release date: 2017-Aug-18

Supported models

Camera family	Model series	Firmware version
Mako	G-319, G-507	01.54.18914

New features and enhancements

Improved FPGA timing for improved camera reliability

FW 01.54.19199

Release date: 2017-Aug-04

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT4090, GT4096, GT5120	01.54.19199

New models

Initial commercial release of Prosilica GT4090, GT4090NIR, GT4096, GT4096NIR, GT5120, GT5120NIR (order code 02-xxxx and 06-xxxx)

New features and enhancements

- Fixed Pattern Noise Correction (FPNC)
- Enhanced Defect Pixel Correction (DPC) feature with a new **Defective Pixel List Management** tool

FW 01.54.18836

Release date: 2017-May-02

Supported models

Camera family	Model series	Firmware version
Mako	G-131, G-192	01.54.18836

Resolved issues

Mako G-131B, G-131C, G-192B, G-192C loses connection after setting the `TriggerSource` to *`Line1`* and then stopping acquisition.

FW 01.54.18318

Release date: 2017-May-02

Supported models

Camera family	Model series	Firmware version
Mako	G-234	01.54.18318

New features and enhancements

Improved FPGA timing for improved camera reliability.

FW 01.54.18391

Release date: 2017-Mar-13

Supported models

Camera family	Model series	Firmware version
Mako	G-030, G-223, G-419	01.54.18391

New models

Initial commercial release of Mako G-030B, G-030C, G-223B, G-223B NIR, G-223C (order code E06xxxxx)

New features and enhancements

- Improved registry
- `DeviceUserID` is now accessible via the **Vimba** user interface
- Piecewise Linear (HDR) mode

Resolved issues

- GVCP command drop (no Ack)

- 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)

FW 01.54.18110

Release date: 2017-Feb-10

Supported models

Camera family	Model series	Firmware version
Mako	G-131, G-192, G-503	01.54.18110

New features and enhancements

- Improved registry
- `DeviceUserID` is now accessible via the **Vimba** user interface

Resolved issues

- GVCP command drop (no Ack)
- 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)
- Black stripe on top of the image in Mako G-503B

Limitations

- Mako G-503B, G-503C catches two frames with one software trigger
- Mako G-131B, G-131C, G-192B, G-192C loses connection after setting the `TriggerSource` to *`Line1`* and then stopping acquisition

FW 01.54.18163

Release date: 2017-Jan-27

Supported models

Camera family	Model series	Firmware version
Manta	G-223, G-419	01.54.18163
Prosilica GT	GT2000, GT2050	01.54.18163

New features and enhancements

- ToE Action Commands feature
- Piecewise Linear (HDR) mode
- Improved registry
- `DecimationHorizontal` and `DecimationVertical`
- `ReverseX` and `ReverseY`

- `DeviceUserID` is now accessible via the **Vimba** user interface
- IEEE 1588-2008 Precision Time Protocol enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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)

FW 01.54.18184

Release date: 2016-Dec-16

Supported models

Camera family	Model series	Firmware version
Manta	G-1236	01.54.18184

New models

Initial commercial release of Manta G-1236B, G-1236C (order code E00xxxx and E06xxxxx)

FW 01.44.18241

Release date: 2016-Dec-16

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-125, G-145, G-145-30fps, G-146, G-201, G-201-30fps, G-504	01.44.18241

New models

Initial commercial release of Manta G-031B, G-031C, G-032B, G-032C, G-033B, G-033C, G-125B, G-125C, G-145B, G-145B-30fps, G-145B NIR, G-145C, G-145C-30fps, G-201B, G-201B-30fps, G-201C, G-201C-30fps, G-504B, G-504C (order code E06xxxxx only)

New features and enhancements

Added `ReverseX` to monochrome models (Manta G-031B, G-033B, G-046, G-125B, G-146B, G-201B, G-201B-30fps, G-504B). Previously only Manta G-145B, G-145B-30fps, and G-145B NIR had this feature.

Resolved issues

- BayerGR12Packed pixel format changed to BayerRG12Packed
- Chunk data displayed is from the previous frame.
- `AutoExposureOnce` does not work if `ExposureTimeAbs` is set to a value less than 100 µs before imaging.
- When `BinningVertical` > *8* using a packed pixel format, the camera stops responding and requires a power cycle to continue streaming (Manta G-504C).

Limitations

- Manta G-032B: `ReverseX` is not supported
- Manta G-145: Enabling `Binning` with `OffsetY` > 0 stops camera streaming
- Manta G-201-30fps: When selecting an Region of Interest, only even `OffsetX` or `OffsetY` numbers are supported.

FW 01.44.18241

Release date: 2016-Dec-02

Supported models

Camera family	Model series	Firmware version
Manta	G-046, G-146	01.44.18241

New models

Initial commercial release of Manta G-046B, G-046C, G-146B, G-146C (order code E06xxxxx only)

FW 01.44.18182, 01.52.18193, 01.54.18110

Release date: 2016-Nov-25

Supported models

Camera family	Model series	Firmware version
Manta	G-895	01.54.18110
Manta	G-223, G-419	01.52.18193
Prosilica GT	GT2000, GT2050	01.52.18193
Manta	G-031, G-033, G-145	01.44.18182

New models

- Initial commercial release of Manta G-895B, G-895C (order code E00xxxx and E06xxxxx)
- Initial commercial release of Manta G-223B, G-223B NIR, G-223C, G-419B, G-419B NIR, G-419C (order code E06xxxxx only)
- Initial commercial release of Prosilica GT2000, GT2000NIR, GT2000C, GT2050, GT2050NIR, GT2050C (order code 06-xxxx only)

- Initial commercial release of Manta G-031B, G-031C, G-033B, G-033C, G-145B, G-145C (order code E06xxxxx only)

FW 01.44.18182

Release date: 2016-Nov-17

Supported models

Camera family	Model series	Firmware version
Manta	G-032, G-125, G-201, G-504	01.44.18182

New models

Initial commercial release of Manta G-032B, G-032C, G-201B, G-201C, G-125B, G-125C, G-504B, G-504C (order code E06xxxxx only)

FW 01.54.18110

Release date: 2016-Nov-02

Supported models

Camera family	Model series	Firmware version
Mako	G-319	01.54.18110

New models

Initial commercial release of Mako G-319B, G-319C (order code xxxx and xxxx-06)

Limitations

The Mako G-319C does not support `BinningY`

FW 01.54.17933

Release date: 2016-Oct-21

Supported models

Camera family	Model series	Firmware version
Mako	G-032, G-125	01.54.17933

New models

Initial commercial release of Mako G-032B, G-032C, G-125B, G-125C (order code xxxx-06 only)

New features and enhancements

Improved registry

FW 01.54.18032

Release date: 2016-Oct-07

Supported models

Camera family	Model series	Firmware version
Mako	G-234, G-507	01.54.18032

New models

- Initial commercial release of Mako G-507B, G-507C (order code xxxx and xxxx-06)
- Initial commercial release of Mako G-234B, G-234C (order code xxxx-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.

Changes

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

Specification	Firmware version 01.54.15954	Firmware version 01.54.18032
Maximum frame rate	40 fps	41.2 fps
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

Specification	Firmware version 01.54.15954	Firmware version 01.54.18032
Trigger Jitter	±9.8 µs	±9.6 µs

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

Resolved issues

- GVCP command drop (no Ack)
- In auto gain and auto exposure, current value will stay within the range in accordance to minimum and maximum value changes
- 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).
- White flicker at minimum exposure and maximum gain no longer occurs.
- 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.
- The Mako G-507C does not support `BinningY`

FW 01.52.17702

Release date: 2016-Aug-12

Supported models

Camera family	Model series	Firmware version
Mako	G-419	01.52.17702

New models

Initial commercial release of Mako G-419B, G-419B NIR, G-419C (order code xxxx-06 only)

FW 01.54.17624

Release date: 2016-Aug-12

Supported models

Camera family	Model series	Firmware version
Manta	G-282, G-283, G-505, G-917	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 (order code E06xxxxx 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
- 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 enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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)

Resolved issues

- GVCP command drop (no Ack)
- In auto gain and auto exposure, current value will stay within the range in accordance to minimum and maximum value changes
- 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 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 listed supported models.
- The temperature readout for the sensor board does not work as expected. When selected, the temperature is the main board temperature.

FW 01.54.17562

Release date: 2016-Aug-12

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1290, GT1380, GT1600, GT1660, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300,GT3400, GT4905, GT4907, GT6600	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 (order code 06-xxxxx only)

New features and enhancements

- Trigger over Ethernet (ToE) Action Commands feature
- Prosilica GT2450 and GT2450C
  - Aligned features with FW 01.54.16845

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 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)

FW 01.54.17562

Release date: 2016-Jul-06

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1930, GT1930L	01.54.17562
Manta	G-235, G-319, G-507	01.54.17562

New models

- Initial commercial release of Prosilica GT1930, GT1930C, GT1930L, GT1930LC (order code 06-xxxxx only)
- Initial commercial release of Manta G-319B, G-319C, G-507B, and G-507C standard and board level models (order code E00xxxxx and E06xxxxx)

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)
- ToE Action Commands feature
- IEEE 1588-2008 Precision Time Protocol enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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, exposure 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.

Resolved issues

- GVCP command drop (no Ack)
- In auto gain and auto exposure, the current value will stay within the range in accordance to minimum and maximum value changes
- 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).
- Manta G-235 board level model with 200 mm flex cable is now stable
- `ReverseX`, `ReverseY` will first flip the image and then applies the Region of Interest
- White flicker at minimum exposure and maximum gain no longer occurs.
- 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 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 listed supported models.

FW 01.54.17455

Release date: 2016-Jul-07

Supported models

Camera family	Model series	Firmware version
Mako	G-131, G-192, G-503	01.54.17455

New models

Initial commercial release of Mako G-131B, G-131C, G-192B, G-192C, G-503B, G-503C models (order code E06xxxx only)

FW 01.54.16845

Release date: 2016-May-12

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1290, GT1380, GT1600, GT1660, GT1910, GT1920, GT2300, GT2750, GT3300, GT3400, GT4905, GT4907, GT6600	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 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 enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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 and DC-Iris controls from Prosilica GT large format models
  - Removed EF controls from Prosilica GT standard format models

Resolved issues

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

Limitations

- IEEE 1588-2008 Precision Time Protocol 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 listed supported models.

FW 01.54.16528

Release date: 2016-June-30

Supported models

Camera family	Model series	Firmware version
Prosilica GC	GC660, GC1290, GC1380H, GC1600H, GC2450	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
- 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 enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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.

Model series	Frame rate for Prosilica GC hardware revision A models	Frame rate for Prosilica GC hardware revision D models
Prosilica GC660	119.30 fps	121.20 fps
Prosilica GC1290	32.79 fps	33.31 fps
Prosilica GC1380H	30.01 fps	30.49 fps



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 (**PvAPI** users for example).
- Due to the increased memory the new models have an extended `StreamHoldCapacity`. The changes are as follows:

Model series	StreamHoldCapacity for Prosilica GC hardware revision A models	StreamHoldCapacity for Prosilica GC hardware revision D models
Prosilica GC660	46 frames	194 frames
Prosilica GC1290	12 frames	52 frames
Prosilica GC1380H	11 frames	46 frames
Prosilica GC1600H	7 frames	33 frames
Prosilica GC2450	3 frames	12 frames

- 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 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 listed supported models.

FW 01.54.16414

Release date: 2016-Mar-07

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1930, GT1930L	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` (users 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 and DC-Iris controls
  - Removed Event Control ID for `SyncIn3` and `SyncIn4`

Resolved issues

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

FW 01.54.15954

Release date: 2015-Nov-20

Supported models

Camera family	Model series	Firmware version
Mako	G-234	01.54.15954

New models

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

New features and enhancements

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

FW 01.54.14865

Release date: 2015-Oct-22

Supported models

Camera family	Model series	Firmware version
Manta	G-282, G-283, G-505, G-609, G-917	01.54.14865

New features and enhancements

- IEEE 1588-2008 Precision Time Protocol enhancements
  - `PtpStatus` enumerations updated to IEEE 1588-2008 Precision Time Protocol 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 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 listed supported models.

FW 01.54.12720

Release date: 2014-Feb-20

Supported models

Camera family	Model series	Firmware version
Mako	G-503	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 or decimation is enabled.

FW 01.54.12239

Release date: 2014-Dec-19

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1930L	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

- 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 (gain of 23.7 is reported as 237 for example).
- Mirroring applied before the Region of Interest for `ReverseY`

FW 01.54.11712

Release date: 2014-Dec-19

Supported models

Camera family	Model series	Firmware version
Mako	G-131, G-192	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.

FW 01.54.11488

Release date: 2014-Dec-16

Supported models

Camera family	Model series	Firmware version
Mako	G-030	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
- Piecewise Linear (HDR) mode

FW 01.54.11233

Release date: 2014-Oct-06

Supported models

Camera family	Model series	Firmware version
Mako	G-050, G-095	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

FW 01.54.11232

Release date: 2014-Oct-06

Supported models

Camera family	Model series	Firmware version
Manta	G-505	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 enhancements:
  - `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

FW 01.54.11026

Release date: 2014-Sep-24

Supported models

Camera family	Model series	Firmware version
Manta	G-235	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 enhancements:
  - `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

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.

FW 01.52.11715

Release date: 2014-Dec-04

Supported models

Camera family	Model series	Firmware version
Mako	G-032, G-125	01.52.11715

Resolved issues

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

FW 01.52.7068

Release date: 2013-Sep-20

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1290, GT1380	01.52.7068

New features and enhancements

Added Look-up Tables to Prosilica GT1290, GT1290C, GT1380, and GT1380C

FW 01.44.8549

Release date: 2013-Sep-20

Supported models

Camera family	Model series	Firmware version
Manta	G-145, G-145B-NIR, G-145B-30fps	01.44.8549

New features and enhancements

Added X-Mirror feature to Manta G-145B, G-145B-30fps, and G-145B-NIR

Resolved issues

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

FW 01.52.8151

Release date: 2013-Aug-23

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT2000, GT2050	01.52.8151
Manta	G-223, G-419	01.52.8151
Mako	G-032, G-125, G-223, G-419	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, that is, 1 µs. See sensor data sheet for details on frame overhead time.

FW 01.52.7114

Release date: 2013-May-23

Supported models

Camera family	Model series	Firmware version
Manta	G-917	01.52.7114

Resolved issues

Optimized tap balance

FW 01.52.7068

Release date: 2013-May-21

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT2000, GT2050, GT3400, GT4905, GT4907, GT6600	01.52.7068

New models

Initial commercial release for supported models

New features and enhancements

Added three Look-up Tables

FW 01.52.00

Release date: 2013-Mar-27

Supported models

Camera family	Model series	Firmware version
Manta	G-223, G-282, G-283, G-609, G-917	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 128 MB image buffer
  - Different LED behavior. See the Manta Technical Manual: www.alliedvision.com/en/support/technical-documentation/manta-documentation.html
  - IEEE 1588-2008 Precision Time Protocol
  - `DeviceTemperatureSelector` = *`Sensor`*
  - Gamma correction enhanced to support values [0.25 to 4]
  - Reduced the number of `UserSets` to 3

Limitations

- Look-up Tables 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).

FW 01.50.02

Release date: 2013-Jan-28

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1660, GT1910, GT2300, GT3300	01.50.02

Resolved issues

Prosilica GT cameras with ON Semiconductor CCD sensors dropping packets on multiple camera systems.

FW 01.50.01

Release date: 2013-Jan-04

Supported models

Camera family	Model series	Firmware version
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.50.01
Prosilica GT	GT1290, GT1380, GT1600, GT1660, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300	01.50.01

New features and enhancements

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

Resolved issues

- 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.
- `FrameTrigger` signal removed from `SyncOutSource` [**PvAPI**: `SyncOutMode`]. Signal was too short to be seen on camera outputs
- `DSPSubregionBottom`, `DSPSubregionTop` upper limit changed from 4294967295 to sensor maximum height
- `DSPSubregionLeft`, `DSPSubregionRight` upper limit changed from 4294967295 to sensor maximum width
- Gamma correction is now properly saved or loaded in `SavedUserSets` [**PvAPI**: `ConfigFile`]

Limitations

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

FW 01.50.00

Release date: 2012-Jun-01

Supported models

Camera family	Model series	Firmware version
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.50.00
Prosilica GT	GT1290, GT1380, GT1600, GT1660, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300	01.50.00

New models

Initial commercial release of Prosilica GT1660 and GT1660C models

New features and enhancements

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

FW 01.48.02

Release date: 2012-Apr-04

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1290, GT1380, GT1600, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300	01.48.02

Resolved issues

`LensDCIris` was not driving some DC-lenses properly

FW 01.48.01

Release date: 2012-Feb-20

Supported models

Camera family	Model series	Firmware version
Prosilica GT	GT1290, GT1380, GT1600, GT1910, GT1920, GT2300, GT2450, GT2750, GT3300	01.48.01

New models

Initial commercial release of Prosilica GT series

New features and enhancements

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

FW 01.44.7913

Release date: 2013-Jul-22

Supported models

Camera family	Model series	Firmware version
Manta	G-095	01.44.7913

Resolved issues

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

Firmware end of life

This is the last official firmware release for the Manta G-095B and G-095C models.

FW 01.44.09

Release date: 2013-Jan-18

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-095, G-125, G-145, G-145-30fps, G-146, G-201, G-201-30fps, G-504	01.44.09

Resolved issues

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

FW 01.44.08

Release date: 2012-Oct-26

Supported models

Camera family	Model series	Firmware version
Manta	G-032, G-095	01.44.08

Resolved issues

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

FW 01.44.04

Release date: 2012-Feb-13

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-095, G-125, G-145, G-145-30fps, G-146, G-201, G-201-30fps, G-504	01.44.04

Resolved issues

- `TimestampValue` between first and second frame was not correct
- Delay between first and second image in external triggered acquisition
- 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

FW 01.44.00

Release date: 2011-Jul-11

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-095, G-125, G-145, G-145-30fps, G-146, G-201, G-201-30fps, G-504	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

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

Resolved issues

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

Firmware releases at a glance

Firmware loader 01.42.05

Camera family	Model series	Firmware version	Release date
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.04	2011-Jun-01
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1350H, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.04	2011-Jun-01
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.04	2011-Jun-01
Prosilica GX	GX1050, GX1660, GX1910, GX2300, GX3300	01.42.02	2011-Jan-17
Prosilica GX	GX1920, GX2750	01.42.05	2011-Dec-12
Prosilica GC	GC640, GC1280	01.36.00	2009-Mar-13
Prosilica GE	GE640	01.36.00	2009-Mar-13
Prosilica GC	GC750	01.30.00	2007-Dec-17
Note: Prosilica GS models use the Prosilica GB firmware version			

FW 01.42.05

Release date: 2011-Dec-12

Supported models

Camera family	Model series	Firmware version
Prosilica GX	GX1920, GX2750	01.42.05

New models

Initial commercial release of Prosilica GX2750 models.

Resolved issues

Prosilica GX1920 connection issue with National Instruments LabView

FW 01.42.04

Release date: 2011-Jun-01

Supported models

Camera family	Model series	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

FW 01.42.03

Release date: 2011-Apr-19

Supported models

Camera family	Model series	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 models.

FW 01.42.02

Release date: 2011-Jan-17

Supported models

Camera family	Model series	Firmware version
Prosilica GB	GB650, GB660, GB1380, GB2450	01.42.02
Prosilica GC	GC650, GC655, GC660, GC780, GC1020, GC1290, GC1350, GC1380, GC1380H, GC1600, GC1600H, GC2450	01.42.02
Prosilica GE	GE650, GE655, GE680, GE1050, GE1350, GE1380, GE1600, GE1650, GE1660, GE1900, GE1910, GE2040, GE4000, GE4900	01.42.02
Prosilica GX	GX1050, GX1660, GX1910, GX1920, GX2300, GX3300	01.42.02

Resolved issues

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

FW 01.42.01

Release date: 2011-Jan-06

Supported models

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

Resolved issues

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

FW 01.42.00

Release date: 2010-Nov-10

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-095, G-125, G-145, G-146, G-201, G-504	01.42.00

Resolved issues

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

FW 01.42.00

Release date: 2010-Nov-02

Supported models

Camera family	Model series	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

FW 01.40.00

Release date: 2010-Jun-15

Supported models

Camera family	Model series	Firmware version
Manta	G-031, G-032, G-033, G-046, G-095, G-125, G-145, G-146, G-201, G-504	01.40.00

Change log

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

FW 01.40.00

Release date: 2010-Feb-23

Supported models

Camera family	Model series	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`

FW 01.38.00

Release date: 2010-Feb-10

Supported models

Camera family	Model series	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`

FW 01.36.00

Release date: 2009-Mar-13

Supported models

Camera family	Model series	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 models.

Resolved issues

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

FW 01.34.00

Release date: 2009-Jan-12

Supported models

Camera family	Model series	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

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

FW 01.32.00

Release date: 2008-Mar-28

Supported models

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

Resolved issues

Mono16 and Bayer16 image pixel format issue

FW 01.30.00

Release date: 2007-Dec-17

Supported models

Camera family	Model series	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

Firmware version 01.28.00 flash erase issue

Firmware end of life

This is the last official firmware release for the Prosilica GC750 models.

FW 01.28.00

Release date: 2007-Dec-04

Supported models

Camera family	Model series	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**: `ConfigFiles`]
- User Read/Write non-volatile `CameraName` (**PvAPI** only)

Resolved issues

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

FW 01.26.00

Release date: 2007-May-30

Supported models

Camera family	Model series	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 models.

FW 01.24.00

Release date: 2006-Nov-30

Supported models

Camera family	Model series	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.

FW 01.22.00

Release date: 2006-Sep-08

Supported models

Camera family	Model series	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`]

FW 01.20.00

Boot code update only

FW 01.18.00

Release date: 2006-Aug-02

Supported models

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

New features and enhancements

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

FW 01.16.00

Release date: 2006-Jun-28

Supported models

Camera family	Model series	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 models.

FW 01.14.00

Release date: 2006-Apr-12

Supported models

Camera family	Model series	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`*]

FW 01.08.00 to 01.12.00

Boot code update only

FW 01.06.00

Release date: 2006-Mar-08

Supported models

Camera family	Model series	Firmware version
Prosilica GE	GE650, GE1350, GE1380, GE1600	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`*]

FW 01.04.00

Release date: 2006-Feb-24

Supported models

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

New models

Initial commercial release of Prosilica GE1350 and GE1600 monochrome models.

FW 01.02.00

Release date: 2006-Feb-13

Supported models

Camera family	Model series	Firmware version
Prosilica GE	GE650, GE1380	01.02.00

New features and enhancements

Serial RS232 communication

FW 01.00.00

Release date: 2006-Feb-03

Supported models

Camera family	Model series	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
www.alliedvision.com/en/support/technical-documentation

For technical support, please contact support@alliedvision.com.
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