

CSI-2 FIRMWARE RELEASE NOTES

Alvium 1500 C and 1800 C cameras

 2022-Dec-19
 V00.11.00.9cf0c21e

Helpful downloads

- Operating and updating cameras: Alvium CSI-2 Cameras User Guide
- Controls for **Direct Register Access**: Alvium CSI-2 Register Controls Reference
- Features for **GenICam for CSI-2 Access**: Alvium Features Reference
www.alliedvision.com/en/support/technical-documentation/alvium-csi-2-documentation
- Firmware files
www.alliedvision.com/en/support/firmware
- Firmware updater, included in **Vimba Suite**
www.alliedvision.com/software

Latest firmware version for your Alvium CSI-2 model

The following table lists the latest firmware version for your Alvium CSI-2 camera.

Model	FW version	FW release date
Alvium 1500 C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501 m/c NIR Alvium 1800 C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-234m/c, C-235m/c, C-240m/c, C-291m/c, C-319m/c, C-500m/c, C-507m/c, C-508m/c, C-510m/c, C-511 m/c, C-811 m/c, C-812 UV, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c	FW 00.11.00.9cf0c21e updated notes	2022-Dec-19

Table 3: Latest firmware version by model

FW 00.11.00.9cf0c21e | updated notes

Date of **note updates**: 2022-Dec-19

Date of firmware release: 2022-Nov-14

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-234m/c, C-235m/c, C-240m/c, C-291m/c, C-319m/c, C-500m/c, C-507m/c, C-508m/c, C-510m/c, C-511 m/c, C-811 m/c, C-812 UV, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 4: Supported models

New models

Alvium 1800 C-510m/c

Changed features

- Increments for Offset X and Offset Y for camera models with Sony IMX global shutter sensor
- Reduced options for SoftwareSignalSelector (**GenICam for CSI-2 Access**)*

*Available with Alvium 1800 C-234, C-235, C-500, C-507, C-511, C-1236, C-2050

New features

Available with **GenICam for CSI-2 Access**:*

- Counter features in the CounterAndTimerControl category
- LineDebounceDuration and LineDebounceMode in the DeviceControl category

*Available with Alvium 1800 C-234, C-235, C-500, C-507, C-511, C-1236, C-2050

Resolved issues

Alvium ID	Affected models	Description
806	Color models in GenICam for CSI-2 Access mode	Error in color transformation has been fixed.

Table 5: Resolved issues

Known issues

Alvium ID	Affected models	Description
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.
OCT-2247	Models in GenICam for CSI-2 Access mode	Features StatFramesCRCError, StatFramesIncomplete, StatFramesUnderrun in the StreamInformation/Statistics category return 0, incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start, no image is transmitted.

Table 6: Known issues

FW 00.11.00.9cf0c21e

Release date: 2022-Nov-14

Note: Data of this note entry is outdated. Please see [FW 00.11.00.9cf0c21e | updated notes](#) on page 2.

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-234m/c, C-235m/c, C-240m/c, C-291m/c, C-319m/c, C-500m/c, C-507m/c, C-508m/c, C-510m/c, C-511 m/c, C-811 m/c, C-812 UV, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 7: Supported models

New models

Alvium 1800 C-510m/c

Changed features

- Increments for Offset X and Offset Y for camera models with Sony IMX global shutter sensor
- Reduced options for SoftwareSignalSelector (**GenICam for CSI-2 Access**)*

*Available with Alvium 1800 C-234, C-235, C-500, C-507, C-511, C-1236, C-2050

New features

Available with **GenICam for CSI-2 Access**.*

- **To be removed:** ActionControl category
- Counter features in the CounterAndTimerControl category
- LineDebounceDuration and LineDebounceMode in the DeviceControl category

*Available with Alvium 1800 C-234, C-235, C-500, C-507, C-511, C-1236, C-2050

Resolved issues

Alvium ID	Affected models	Description
806	Color models in GenICam for CSI-2 Access mode	Error in color transformation has been fixed.

Table 8: Resolved issues

Known issues

Alvium ID	Affected models	Description
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.

Table 9: Known issues (Sheet 1 of 2)

Alvium ID	Affected models	Description
OCT-2247	Models in GenICam for CSI-2 Access mode	Features <code>StatFramesCRCError</code> , <code>StatFramesIncomplete</code> , <code>StatFramesUnderrun</code> in the <code>StreamInformation/Statistics</code> category return <code>0</code> , incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 9: Known issues (Sheet 2 of 2)

FW 00.10.00.6c9062b1 | updated notes

Date of **note updates**: 2022-Aug-16

Date of firmware release: 2022-Jul-20

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-235m/c, C-240m/c, C-291m/c, C-319m/c, C-500m/c, C-507m/c, C-508m/c, C-511 m/c, C-811 m/c, C-812 UV, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 10: Supported models

New models

Alvium 1800 C-234m/c, C-812 UV

Changed features

In previous firmware versions, Black Level values were adjusted to the pixel formats: 8-bit values for 8-bit pixel formats, 10 for 10, and 12 for 12. With this firmware update, the representation of Black Level is independent from the pixel format: 12-bit values are used for all pixel formats. Therefore, you may have to adjust your settings used with previous firmware versions.

The maximum value for Gain was increased from 24 to 48 dB for all models with Sony IMX global shutter sensors. **Added information**: For Alvium 1800 C-030 VSWIR and C-130 VSWIR, the maximum Gain value was increased to 42 dB.

Added information: FPNC was disabled for Alvium 1800 C-030 VSWIR and 1800 C-130 VSWIR models.

Resolved issues

Alvium ID	Affected models	Description
721	Models in GenICam for CSI-2 Access mode	<code>TestPattern</code> has been visible on CSI-2 cameras, but the feature was not working properly. The feature has been removed.

Table 11: Resolved issues

Known issues

Alvium ID	Affected models	Description
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.
OCT-2247	Models in GenICam for CSI-2 Access mode	Features StatFramesCRCError , StatFramesIncomplete , StatFramesUnderrun in the StreamInformation/Statistics category return 0 , incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 12: Known issues

FW 00.10.00.6c9062b1

Release date: 2022-Jul-20

Note: Data of this note entry is outdated. Please see [FW 00.10.00.6c9062b1 | updated notes](#) on page 4.

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-235m/c, C-240m/c, C-291m/c, C-319m/c, C-500m/c, C-507m/c, C-508m/c, C-511 m/c, C-811 m/c, C-812 UV, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 13: Supported models

New models

Alvium 1800 C-234m/c, C-812 UV

Changed features

In previous firmware versions, Black Level values were adjusted to the pixel formats: 8-bit values for 8-bit pixel formats, 10 for 10, and 12 for 12. With this firmware update, the representation of Black Level is independent from the pixel format: 12-bit values are used for all pixel formats. Therefore, you may have to adjust your settings used with previous firmware versions.

The maximum value for Gain was increased from 24 to 48 dB for all models with Sony IMX global shutter sensors.

New features

Available with Alvium 1800 C-500, C-507, C-511, C-1236, C-2050, using **GenICam for CSI-2 Access**:

- Serial Hub subcategory for I/O control by UART
- Software Signal Control subcategory to enable external devices to trigger actions within the camera by software commands (The features in this category are still in the testing phase and not fully validated.)

Resolved issues

Alvium ID	Affected models	Description
721	Models in GenICam for CSI-2 Access mode	TestPattern has been visible on CSI-2 cameras, but the feature was not working properly. The feature has been removed.

Table 14: Resolved issues

Known issues

Alvium ID	Affected models	Description
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.
OCT-2247	Models in GenICam for CSI-2 Access mode	Features StatFramesCRCError , StatFramesIncomplete , StatFramesUnderrun in the StreamInformation/Statistics category return 0 , incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 15: Known issues

FW 00.08.01.13f227a4

Release date: 2022-May-16

Supported models

Camera family	Model
Alvium 1500	C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-500m/c

Table 16: Supported models

New models

No new models were added.

New features

No features were added.

Resolved issues

Alvium ID	Affected models	Description
775	1500 C-120c, 1500 C-210c, 1500 C-500c, 1500 C-501c NIR, 1800 C-500c	Wrong AutoWhiteBalance measurement was fixed.

Table 17: Resolved issues

Known issues

Alvium ID	Affected models	Description
721	Models in GenICam for CSI-2 Access mode	TestPattern is visible on CSI-2 cameras, but the feature is not working properly. If the test pattern value is changed, the embedded board must be rebooted twice before the camera can be operated again.
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.
OCT-2247	Models in GenICam for CSI-2 Access mode	Features StatFramesCRCError , StatFramesIncomplete , StatFramesUnderrun in the StreamInformation/Statistics category return 0, incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 18: Known issues

FW 00.08.00.6727174b

Release date: 2022-Mar-21

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-052m/c, C-130 VSWIR, C-158m/c, C-240m/c, C-291m/c, C-319m/c, C-507m/c, C-508m/c, C-500m/c, C-511 m/c, C-811 m/c, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 19: Supported models

New models

Alvium 1800 C-052m/c, C-291m/c, C-500m/c

New features

GenICam for CSI-2 Access for 1800 C-500, C-507, C-511, C-1236, C-2050

This includes the following features:

- Auto Mode Regions feature group
- Contrast
- Convolution filters for image processing
- Counter and Timer Control category
- Digital binning
- Exposure Active Mode
- Look-up table (LUT)
- Shutter Mode
- Stream Information features for MIPI CSI-2

- Transport Layer Control: Additional features for CSI-2
- Triggering: Additional features and options
- User Sets

Known issues

Alvium ID	Affected models	Description
721	Models in GenICam for CSI-2 Access mode	TestPattern is visible on CSI-2 cameras, but the feature is not working properly. If the test pattern value is changed, the embedded board must be rebooted twice before the camera can be operated again.
617	Models in GenICam for CSI-2 Access mode	Feature settings are lost when the camera is closed. After restart, features must be set manually again.
OCT-2247	Models in GenICam for CSI-2 Access mode	Features StatFramesCRCError , StatFramesIncomplete , StatFramesUnderrun in the StreamInformation/Statistics category return 0 , incomplete or dropped frames cannot be detected.
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 20: Known issues

FW 00.07.00.81db3896

Release date: 2021-Dec-10

Note: Binning controls were stated as new features in the version from 2021-Dec-10 of this document. This information had to be removed from the document because the current camera driver does not support binning.

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-030 VSWIR, C-040m/c, C-130 VSWIR, C-158m/c, C-240m/c, C-319m/c, C-507m/c, C-508m/c, C-511 m/c, C-811 m/c, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 21: Supported models

New models

Alvium 1800 C-030 VSWIR, C-130 VSWIR

New features

- Configurable I2C address
- Monochrome image output from color models

Resolved issues

Alvium ID	Affected models	Description
395	All	After Acquisition Stop has been executed on a camera streaming in RGB888 (RGB3) pixel format, acquisition cannot be restarted if Exposure Auto is enabled. The camera must be rebooted.

Table 22: Resolved issues

Known issues

Alvium ID	Affected models	Description
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.

Table 23: Known issues

FW 00.06.00.35992

Release date: 2021-Aug-13

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c, C-501m/c NIR
Alvium 1800	C-040m/c, C-158m/c, C-240m/c, C-319m/c, C-507m/c, C-508m/c, C-511 m/c, C-811 m/c, C-1236m/c, C-1240m/c, C-1242m/c, C-1620m/c, C-2040m/c, C-2050m/c, C-2460m/c

Table 24: Supported models

New models

Alvium 1500 C-501m/c NIR, 1800 C-511, C-811, C-1242, C-1620, C-2040

New features

No features were added.

Resolved issues

Alvium ID	Affected models	Description
553	1800 C-2460m/c	Calculated frame rates for small ROIs are not exact.

Table 25: Resolved issues

Known issues

Alvium ID	Affected models	Description
338	1500 C-210m/c, 1500 C-500m/c, 1500 C-501m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.
395	All	After Acquisition Stop has been executed on a camera streaming in RGB888 (RGB3) pixel format, acquisition cannot be restarted if Exposure Auto is enabled. The camera must be rebooted.

Table 26: Known issues

FW 00.04.00.34658

Release date: 2021-May-03

Supported models

Camera family	Model
Alvium 1500	C-120m/c, C-210m/c, C-500m/c
Alvium 1800	C-040m/c, C-158m/c, C-240m/c, C-319m/c, C-507m/c, C-508m/c, C-1236m/c, C-1240m/c, C-2050 m/c, C-2460m/c

Table 27: Supported models

New models

Alvium 1800 C-2460m/c

New features

- Exposure Active controls
- Line Configuration for I/O lines
- Line Status for I/O lines

Resolved issues

Alvium ID	Affected models	Description
387	1500 C-120m/c, 1500 C-210m/c, 1500 C-500m/c, 1800 C-2050m/c	When the ROI is reduced during streaming, the frame rate remains the same. The correct frame rate can be adjusted if streaming is stopped and the pixel format is selected again.

Table 28: Resolved issues

Known issues

Alvium ID	Affected models	Description
338	1500 C-210m/c, 1500 C-500m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.
395	All	After Acquisition Stop has been executed on a camera streaming in RGB888 (RGB3) pixel format, acquisition cannot be restarted if Exposure Auto is enabled. The camera must be rebooted.
553	1800 C-2460m/c	Calculated frame rates for small ROIs are not exact.

Table 29: Known issues

FW 00.03.00.31919

Release date: 2020-Dec-08

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c
Alvium 1800	C-040m/c, C-158m/c, C-240m/c, C-319m/c, C-507m/c, C-508m/c, C-1236m/c, C-1240m/c, C-2050 m/c

Table 30: Supported models

New models

No models were added.

New features

- Exposure Auto limits (minimum and maximum values)
- Gain Auto limits (minimum and maximum values)
- Intensity Auto controls (precedence and target value controls)
- Frame rate control
- Sensor timing optimizations increase maximum frame rates for selected models
- Triggering over CSI-2 (Frame Start)
- Updated default values for auto white balance
- Fixed pattern noise correction (FPNC) support for all models, except Alvium 1800 C-2050
- Defect pixel correction (DPC, factory calibrated) for 1800 C-2050m/c models

Resolved issues

Alvium ID	Affected models	Description
299	1800 C-1236m/c, 1800 C-1240m/c, 1800 C-2050m/c	Fixed issue with Acquisition Stop command.

Table 31: Resolved issues

Known issues

Alvium ID	Affected models	Description
338	1500 C-210m/c, 1500 C-500m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , no image is transmitted.
387	1500 C-120m/c, 1500 C-210m/c, 1500 C-500m/c, 1800 C-2050m/c	When the ROI is reduced during streaming, the frame rate remains the same. The correct frame rate can be adjusted if streaming is stopped and the pixel format is selected again.
395	All	After Acquisition Stop has been executed on a camera streaming in RGB888 (RGB3) pixel format, acquisition cannot be restarted if Exposure Auto is enabled. The camera must be rebooted.

Table 32: Known issues

FW 00.02.00.29974

Release date: 2020-Jul-23

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c
Alvium 1800	C-040m/c, C-158m/c, C-240m/c, C-319m/c, C-507m/c, C-508m/c, C-1236m/c, C-1240m/c, C-2050 m/c

Table 33: Supported models

New models

Alvium 1800 C-240m/c, C-508m/c, C-1240m/c

New features

No features were added.

Resolved issues

No issues were fixed.

Known issues

Alvium ID	Affected models	Description
299	1800 C-1236m/c, 1800 C-1240m/c, 1800 C-2050m/c	Acquisition Stop command during sensor readout can stop the camera.
338	1500 C-210m/c, 1500 C-500m/c, 1800 C-1240m/c, 1800 C-2050m/c	If Acquisition Stop is executed shortly after Acquisition Start , the captured frame is discarded.

Table 34: Known issues

FW 00.01.03.29478

Release date: 2020-May-07

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c
Alvium 1800	C-040m/c, C-158m/c, C-319m/c, C-507m/c, C-1236m/c, C-2050 m/c

Table 35: Supported models

New models

Alvium 1800 C-319m/c, C-507m/c, C-1236m/c, C-2050m/c

New features

Defect pixel correction (DPC, factory calibrated, except for 1800 C-2050m/c models)

Resolved issues

Alvium ID	Affected models	Description
49	All	Fixed first black image in qv4l2.
79	All	Fixed issues with Offset X for Offset Y .

Table 36: Resolved issues

Known issues

Alvium ID	Affected models	Description
299	1800 C-1236m/c, 1800 C-1240m/c, 1800 C-2050m/c	Acquisition Stop command during sensor readout can stop the camera.
395	All	After Acquisition Stop has been executed on a camera streaming in RGB888 (RGB3) pixel format, acquisition cannot be restarted if Exposure Auto is enabled. The camera must be must be rebooted.

Table 37: Known issues

FW 00.01.02.28100

Release date: 2019-Dec-03

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-210m/c, C-500m/c
Alvium 1800	C-040m/c, C-158m/c

Table 38: Supported models

New models

Alvium 1500 C-210m/c

Alvium 1800 C-040m/c, C-158m/c

New features

- Gamma
- Saturation
- ROI: Adjustable width
- Mirror image

Resolved issues

No issues were fixed.

Known issues

Alvium ID	Affected models	Description
49	All	When streaming with qv4L2, the first image is black.
79	All	Large values for Offset X for Offset Y may not work properly.

Table 39: Known issues

FW 00.01.00.26405

Release date: 2019-Jul-01

Supported models

Camera family	Model
Alvium 1500	C-050m/c, C-120m/c, C-500m/c

Table 40: Supported models

New models

Initial commercial release of Alvium 1500 C-050m/c, C-120m/c, C-500m/c

Known issues

No issues have been discovered.

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Current firmware and release notes

<https://www.alliedvision.com/en/support/firmware-downloads>

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