



Alvium

1800 U-2040

- IMX541 CMOS sensor
- ALVIUM image processing
- USB3 Vision
- Various hardware options

Model without hardware options

Alvium 1800 U – Your entry into high-performance imaging

Industrial USB cameras with attractive price-performance ratio

Alvium 1800 U-2040 with Sony IMX541 runs 17.0 frames per second at 20.4 MP resolution.

Alvium 1800 U is your entry into high-performance imaging with ALVIUM® Technology for industrial applications. Equipped with the newest generation of sensors, these small and lightweight cameras deliver high image quality and frame rates at the best price-performance ratio. With its USB3 Vision compliant interface and industrial-grade hardware, it is your workhorse for different machine vision applications whether it is on a PC-based or an embedded system.

Easy software integration with **Allied Vision's Vimba Suite** and compatibility to the most popular third party image-processing libraries.

See the **Alvium Cameras Hardware Options** for lens mount and housing options, as well as the **Customization and OEM Solutions webpage** for additional options.

Specifications

Alvium 1800 U-2040	
Interface	USB3 Vision
Resolution	4512 (H) × 4512 (V)
Spectral range	300 to 1100 nm

Alvium 1800 U-2040	
Sensor	Sony IMX541
Sensor type	CMOS
Shutter mode	Global shutter
Sensor size	Type 1.1
Pixel size	2.74 μm \times 2.74 μm
Lens mounts (available)	C-Mount
Max. frame rate at full resolution	17 fps at 375 MByte/s, Mono8
ADC	12 Bit
Image buffer (RAM)	256 KB
Non-volatile memory (Flash)	1024 KB
Output	
Bit depth	Max. 12 Bit
Monochrome pixel formats	Mono8, Mono10, Mono10p, Mono12, Mono12p
YUV color pixel formats	YCbCr411_8_CbYYCrYY, YCbCr422_8_CbYCrY, YCbCr8_CbYCr
RGB color pixel formats	BayerRG8, BayerRG10, BayerRG10p, BayerRG12, BayerRG12p, BGR8, RGB8 (default)
General purpose inputs/outputs (GPIOs)	
TTL I/Os	4 programmable GPIOs
Operating conditions/dimensions	
Operating temperature	+5 °C to +65 °C housing temperature (with heat sink)
Power requirements (DC)	Power over USB 3.1 Gen 1 External power 5.0 V
Power consumption	USB power: 3.9 W (typical) Ext. power: 4.1 W (typical)
Mass	15 g (bare board)
Body dimensions (L \times W \times H in mm)	14 \times 26 \times 26 (bare board, standard), 14 \times 30 \times 26 (bare board, 90°)
Regulations	2011/65/EU, including amendment 2015/863/EU (RoHS)

Quantum efficiency



Features

Image control

Auto control

- Auto exposure
- Auto gain
- Auto white balance (color models)
- Auto features regions control
- Auto features algorithms control

Other image controls

- Binning
- Black level
- Contrast
- De-Bayering up to 5×5 (color models)

- Exposure time
- Gain
- Gamma
- Hue (color models)
- Saturation (color models)
- DPC (factory calibrated)
- FPNC (factory calibrated)
- Region of interest (ROI)
- Reverse X/Y

Camera control

- Acquisition frame rate
- I/O and trigger control
- Temperature monitoring (sensor board)
- Status LED luminance control
- Firmware update in the field
- U3 Power Saving Mode

Technical drawing

Camera hardware options



The **Alvium Cameras Hardware Options** document informs about submodels, such as bare board or open housing cameras with different lens mounts.

