iDS

It's so easy!

News
VISION 2014

AUTOMATICALLY PERFECT IMAGES
The USB 3 uEye XC

The USB 3 uEye XC is based on the Sony 13 MP CMOS camera module with autofocus. Now, for the first time, the advanced imaging features of Sony's DSLR cameras are available for use in industrial applications.

Featuring autofocus, live Full HD video, high-resolution images, digital zoom, automatic white balance, automatic backlight compensation, face detection and more useful features, this camera automatically provides outstanding images.

The USB 3.0 camera is the perfect choice for applications requiring adaptability to changing lighting conditions or operating distances, e.g. in building access controls, kiosk systems or in logistics. The robust metal housing, screwable USB 3.0 connectors and long-term availability make the USB 3 uEye XC the ideal choice.

Quick connection and advanced control of the USB 3.0 camera is made easy via the free IDS Software Suite. This SDK, available for Windows or Linux, provides extensive useful features, and enables simplified set up, adjustment, and confirmation of camera parameters and properties.

Being completely independent of drivers, the USB 3 uEye XC camera is also available in a UVC version that ensures platform-independent operation.

USB 3.0	13 MP	FULL HD — WITH 30 FPS	AF — AUTOFOCUS	AUTO IMAGE
16 — DIGITAL ZOOM	BACKLIGHT COMPENSATION	FACE DETECTION	SOFTWARE SUITE	VIDEO CLASS STANDARD

INCREDIBLY FAST & RELIABLE

The 2nd generation of USB 3 uEye CP

USB 3.0 | PLUG & PLAY | IMAGE BUFFER | GPIOs
PIXEL PIPELINE | COLOUR CORRECTION | TRIGGER & FLASH | SCREWABLE CONNECTOR
STATUS LED | iDS SOFTWARE SUITE | USB3 VISION

The new generation of USB 3 uEye CP cameras is the totally refined successor of the proven CP camera family. Positioned at the high-end of IDS' USB 3.0 portfolio, it delivers advances in design, quality of workmanship, reliability and performance.

With its standard industrial housing measuring only 29 mm x 29 mm, as well as its extremely light and robust magnesium housing, the USB 3 uEye CP is suitable for use in a wide range of industrial and non-industrial environments. Highlights include an integrated image buffer, along with access to next-generation, high-performance sensors.

The product line starts with brand new CMOS sensors from Sony, Aptina and ON Semiconductor. The USB 3.0 camera series will come with the latest IDS Software Suite that supports all features of these new sensors. In addition, a USB3 Vision-compliant version will be available soon.

UI-3060CP with Sony Sensor IMX174

- 1920 x 1200 (2.3 MP)
- Mono & Color
- Sensor Size: 1/1.2"
- Full Resolution: 160 fps
- Global-Shutter
- Perfect image quality
- Best low-noise CMOS sensor in the market
- Up to 30 seconds long-time exposure

Qualified for:
- Motion analysis
- Motion tracking
- Low-light applications

SONY

UI-3590CP with Aptina AR1820HS

- 4912 x 3684 (18 MP)
- Color
- Sensor Size: 1/2"
- Full Resolution: 20 fps
- Live Full HD video: 90 fps
- Rolling-Shutter
- Latest BSI sensor technology
- Unbeatable value for money

Qualified for:
- Microscopy
- Barcode scanning
- Visualization

Aptina

UI-3140CP with ON Semi PYTHON1300

- 1280 x 1024 (1.3 MP)
- Mono & Color
- Sensor Size: 1/2.3"
- Full Resolution: 200 fps
- Switchable Global/Rolling-Shutter
- Multi AOI

Qualified for:
- ITS
- Slow motion
- Quality assurance

ON Semiconductor® ON

WIDE RANGE OF APPLICATIONS

The 2nd generation of USB 3 uEye CP

The new **2.3 MP sensor by Sony** sets a new standard in terms of light sensitivity, dynamic range and color reproduction. The sensor provides excellent image quality with extraordinarily low-noise performance. The sensor is perfect for applications demanding excellent image quality even in low-light operational conditions.

The new **18 MP sensor by Aptina**, with its high spatial resolution, is the perfect choice for applications including microscopy and barcode scanning. The Ultra HD 4K cinema resolution of the sensor provides optimal performance for visualization. The camera delivers live Full HD video with a frame rate of up to 90 fps, perfect for motion analysis (slow motion).

The new **1.3 MP sensor by ON Semiconductor** fully takes advantage of the fast transfer rate of USB 3.0 and delivers extremely high frame rates up to 200 fps. Applications include intelligent traffic systems, medical, astronomy, quality assurance and 3D scanning.

NEW: USB3 VISION STANDARD

For USB 3 uEye ML and LE series

At the beginning of 2015, IDS will start series production of camera models from the uEye ML and LE family with USB3 Vision support. The new future proof communication standard provides users with a guarantee of individual yet universal suitability for machine vision applications.

IDS offers users a freedom of choice that is unique in the market. Users who are looking for 100% support for the standard can opt for our U3V versions. Users who want the benefit of additional features can choose the specially developed IDS Software Suite. Switching between the two versions is possible at any time with no problems simply by software configuration.

INGENIOUS, EASY & FOR FREE

The IDS Software Suite

IDS Software Suite is a software package free of license fees that provides a consistent interface for all IDS cameras, even when using mixed configurations of USB 2.0, USB 3.0, and GigE uEye cameras. IDS Software Suite is available for Windows and Linux in both 32 bit and 64 bit versions. Besides the camera drivers, it includes a range of other application software:

The IDS Camera Manager is a central and straightforward tool for managing all your IDS cameras. The uEye Cockpit is a live viewer and provides access to all major camera settings and features. Cameras are qualified by quickly measuring tools. In addition, you can capture pictures and videos or configure a stream. Recorded videos can be played comfortably with the uEye Player.

More than 25 sample programs in different programming languages such as .NET, C, C++, C#, or Visual Basic demonstrate the integration of the IDS camera using the source code. uEye interfaces offer support for the most popular imaging processing libraries such as HALCON, LabView, NeuroCheck und Cognex. The uEye Hotpixel Editor enables you to define your own hot pixels in the camera in addition to those detected during the factory calibration.

Learn more about free IDS Software Suite on our YouTube channel **www.youtube.com/IDSGmbH** or on the IDS website **www.ids-imaging.com**.

DRIVER FOR ARMv7 ARCHITECTURE

Perfect for embedded systems

More than simple: Visit the IDS homepage, download the driver, and use the embedded board. In the future, things will be much easier for users who use IDS cameras in embedded systems. They can download a single standard driver for boards with ARMv7 Cortex-A (Odroid, BeagleBoard, Freescale i.MX6 etc.) - free of charge. It could not be easier.

The numerous advantages of the ARM (Advanced RISC Machines) architecture - such as low energy requirement and high performance - make the microprocessor chips the most widely used in the embedded sector. A driver is also available for Raspberry Pi. If users prefer different architectures, we are able to develop custom solutions on request. The standard driver will be consistently developed so that embedded users will always be right up to date.

REAL-TIME 3D IMAGING
## Stereo 3D Camera Ensenso N20

Equipped with two 1.3 MP CMOS sensors, the stereo 3D camera Ensenso N20 with Gigabit Ethernet interface is a versatile and easy-to-use solution for 3D imaging applications.

With its wide field of view, it is suitable for capturing large volumes and for working distances of up to 3 meters. A powerful projector with blue LEDs combined with the high resolution of the sensors provides a great level of detail and precise 3D data, even with complex surfaces. Its GigE interface permits cable lengths of up to 100 m and, because the camera is „powered over Ethernet" (PoE), there is no need for an additional cable for the power supply.

Each individual shot delivers a virtually flawless 3D image. The GigE 3D camera works according to the „projected texture stereo vision" principle, so the integrated projector casts a random point pattern onto the object to be captured, enhancing structures that are not visible or are only faintly visible. The stereo 3D camera is comparatively small, despite the integrated projector and the two CMOS sensors. Measuring only 175 x 50 x 50 mm, it is highly compact and its robust aluminum housing and screwable connectors make it extremely suitable for use in industrial applications.

In multi-camera applications the data from two or more inter-connected 3D cameras is combined into one 3D dataset automatically. Thus, an object can be captured from several sides. In addition, the working area and the resulting precision can be scaled to meet virtually any requirements by adjusting the number of cameras installed.
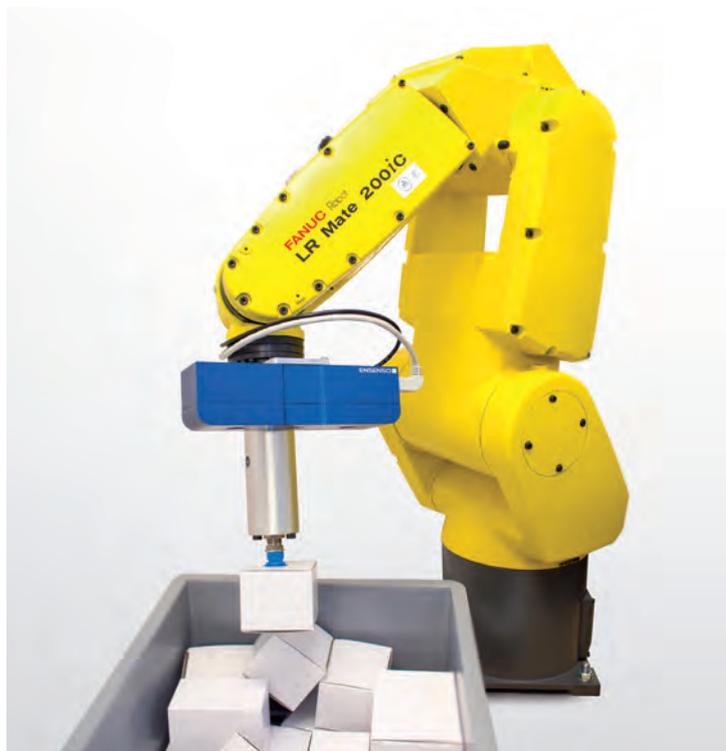
The Ensenso software also allows you to easily integrate IDS industrial cameras with USB 2.0, USB 3.0, or GigE connections, for example, to capture addition color information or barcodes as well as 3D images.

A camera selector at **www.ids-imaging.com/ensenso** assists the user in selecting the correct model.

The Ensenso N20 comes pre-calibrated and ready for immediate use.

3D machine vision in real time: quick, easy, precise.

Learn more about the camera technology and 3D applications on our YouTube channel **www.youtube.com/IDSGmbH** or on the IDS website **www.ids-imaging.com.**

INSIDE IDS

USB3 Vision or IDS Software Suite?

USB 3.0 continues to be one of the major topics of consideration for the machine vision industry. What is IDS' interim conclusion concerning USB as an interface for industrial applications?

Jürgen Hartmann: When we launched the first cameras with a USB 2.0 connection more than 10 years ago, it was followed critically by many sides. While we were confident of the interface's industrial capabilities from day one, many competitors questioned whether the interface will prove itself in industrial applications… and ignored the Universal Serial Bus. However, each successfully installed application has diminished the reservations in the market. It has been clearly shown that the technology can be implemented with full industrial capability. Over time, our developers have overcome numerous challenges that have cropped up in

CEOs: Jürgen Hartmann and Torsten Wiesinger

association with processors and components, such as cables, hubs, etc. and every solution increased their experience in the area of USB technology. This increased know-how is now proving especially beneficial in implementing USB 3.0, as it helps to overcome the initial teething problems that come with any new technology and enables us to tap into the full potential of the technology.

IDS has recently introduced its first USB3 Vision cameras. Why has the company decided to offer both cameras with its "organic" IDS Software Suite and cameras with USB3 Vision?

Torsten Wiesinger: A key advantage of the USB3 Vision standard is that cameras can be exchanged as required, regardless of the manufacturer, without the need for any changes to the software. The simplicity of image optimization and the range of functions play only a secondary role. Nevertheless, if users opt for a USB3 Vision industrial camera from IDS, they can switch to the IDS Software Suite at a later date if their application requires it and the USB3 Vision features are not sufficient. In this case, there is no need to replace the camera, simply to update the firmware; there is not even any need to send the camera away to perform the update. The functions specified in the USB3 Vision standard will not be sufficient to utilize the potential of the latest generation of sensors. That is why IDS is adopting a dual approach.

What specific advantages does IDS Software Suite offer, compared to USB3 Vision?

Jürgen Hartmann: Our IDS Software Suite ensures to be much quicker and more flexible in responding to specific needs and customer preferences. It is identical across all camera models – no matter if USB 2.0, USB 3.0 or GigE interface – and enables cameras within our range to be interchanged easily, even across different interfaces. The application does not have to be reprogrammed, only the camera-specific parameters have to be adjusted. Software developers have the opportunity to carry out extensive measurements and compare different camera settings before custom programming takes place. In view of the numerous advantages offered by our IDS Software Suite, we intend to keep with it and continuously develop it in the long term. Half a million IDS cameras are already in use worldwide.