

FROM THERMALLY OPTIMIZED TO POLARIZATION MEASUREMENT
FROM DEEP LEARNING TO MACHINE VISION
CAMERA, ELECTRONICS, AND HIGH-LEVEL MEASUREMENT SYSTEMS

ABS GmbH – The Specialist for FPGA-, DSP- and GPU-based Digital Camera Systems

NVIDIA JETSON TX2 SMART CAMERA - MACHINE VISION, DEEP LEARNING AND CUSTOMIZED IMAGE PROCESSING



- robust, climatically and thermally optimized housing for industrial applications
- ABS offers the adaption of housing construction and production of carrier boards
- integration of various image sensors or sensor modules is possible on customer request
- powerful multi-GPU accelerated processor platform (256-core NVIDIA Pascal GPU, hex-core ARMv8 64-bit CPU complex, dual-core NVIDIA Denver 2, quad-core ARM Cortex-A57) with scalable power consumption and operable with up to 6 image sensors (4 full HD streams possible)
- Application of various programming frameworks is possible by TensorRT as high-performance interface. Therefore e.g. TensorFlow, Caffe2, PaddlePaddle, Chainer, Pytorch, mxnet, theano, or Microsoft Cognitive Toolkit can be used.
- Reduced development efforts due to usage of neural networks, artificial intelligence, and existing programming libraries to implement machine learning, image processing, and intelligent control with short time-to-market. Classical image processing can be realized in the hardware without a PC.
- Interfaces can be customized: USB3.0 Typ A, USB 2.0 Micro-AB, HDMI, PCIe, Gigabit Ethernet, wireless (Bluetooth 4.1, WLAN 802.11ac).
- Use the possibility to implement your own image processing with this adaptable off-the-shelf camera concept with open programming infrastructure!

HIGH END 5 MEGA PIXEL SOPHISTICATED POLARISATION CAMERA

- Camera is also available with 12 megapixels, active or passive cooling
- simultaneous recording of 4 polarization directions (0°, 90°, 45° and 135°) per macropixel with more than 80 fps (5 MP) or more than 30 fps (12 MP)
- Special software for real time video display and evaluation
- Digital freely programmable opto-decoupled inputs/outputs (2× each)
- 1× TTL trigger input (fast), USB3.1 Gen 1 interface
- Application fields: Detection of scratches and surface defects, detection of mechanical stress in glass or plastics, suppression of light reflection, separation of foreground/object and background, contrast enhancement with low dynamics or shadows, shape recognition in low-contrast scenes, discrimination of direct and reflected light, economical alternative to polarimeter



CLIMATE CHAMBER CAMERA FOR USAGE IN EXTREME ENVIRONMENTAL CONDITIONS

- cold and heat resistant camera system for a temperature range from -40°C to +140°C
- integrated heating and special compressed-air based cooling system
- user-friendly camera control and video documentation software K3-Studio with timer-controlled live image recording, time stamp, image display, time lapse, optional: event-triggered image capture
- Application fields: surveillance in production and process monitoring in climate chamber, cooling and dehumidifying chamber, drying chamber, biotechnology, food and packaging industry, eyepiece imaging (e.g. telescope testing)
- The system comes with a specially designed control software, special connecting hose with customer-specific wall feedthrough, and a accessories kit containing power supply, cable set, e-box, and frame grabber card.
- Optional: protection class IP69K, conformity to autoclaving, pressure up to 6 bar

