Press Release

Embedded 3D image processing

Vision Components has developed new 3D laser scanners with powerful integrated electronics. The VCnano3D-Z-series embedded vision systems are compact, lightweight, and easy-to-integrate in OEM applications. They contain a Xilinx Zynq SoC, which comprises a dual-core ARM processor and an FPGA. In order to determine line coordinates in laser triangulation, a point cloud has to be calculated. In the new sensors, this is done in the FPGA – the programmable circuit processes large amounts of data without delay. Thus, full processor power remains available for application-specific tasks. The laser profilers provide scan rates of up to 2 kHz. Featuring a 1-Gbit Ethernet interface, they are ideally suited, amongst others, for real-time applications in robotics, for example, for welding robot guidance and adhesive bead tracking.

Illustration: The new intelligent laser profilers are suitable for 3D/laser triangulation OEM applications

The system integrates a class-2-rated, high-intensity blue 450-nm laser. Thanks to "Ambient Light Suppression Technology", it can be used with ambient light up to 100,000 lux. This novel technology from Vision Components ensures optimal visibility of the laser line even on especially challenging surfaces. In addition, the blue laser is suitable for food applications such as volume measurement in slicing and packaging stations. The series includes various models for different working distances from about 60 mm to over 3 m. The range of possible

resolutions is therefore enormous, too: resolutions up to about 40 µm on the X axis and 10 µm on the Z axis as well as over 2000 mm wide visual fields are possible. Latest generation CMOS image sensors ensure high image quality with minimal noise. The manufacturer also handles special requests to build customized laser profile sensors in a short time.