

New time-to-digital converter from ams offers industry-best combination of speed, precision and power

The ams TDC-GPX2 measures time intervals at a resolution of up to 10ps for ultra-accurate time-of-flight measurements in laser ranging and medical scanning applications

Premstaetten, Austria (24 January, 2017) -- ams AG (SIX: AMS), a leading provider of high performance sensor solutions and analog ICs, has launched a new version of its market-leading time-to-digital converter (TDC) offering improved speed and precision together with low power consumption. The new TDC-GPX2 also features standard low-voltage differential signaling (LVDS) and serial peripheral (SPI) interfaces, and a new, smaller 9mm x 9mm QFN64 package.

TDCs from ams, which can measure short time intervals with great precision, are widely used in light detection and ranging (LIDAR) and laser-ranging devices, in positron emission tomography (PET) medical scanners, and in automated test equipment (ATE). The introduction of the TDC-GPX2 means that these applications can benefit from increased resolution up to 10ps and a new high sampling rate of up to 70 Msamples/s.

The TDC-GPX2 is an integrated four-channel converter IC offering single-measurement resolution of up to 20ps_{rms} per channel in normal mode. Operating in dual-channel high-resolution mode, it can achieve a maximum resolution of 10ps_{rms} with 5ns pulse-to-pulse spacing.

The superior performance of the TDC-GPX2 has been achieved without sacrificing power efficiency: The new product uses between 60mW and 450mW in normal operation, and draws just 60µA in stand-by mode.

The combination of higher precision and a higher sampling rate means that LIDAR systems in cars, drones and robots will be able to achieve better object detection and avoidance. This is the result of the more detailed and accurate ranging measurements, with a wider field of view, that they will be able to take. In virtual- and augmented-reality applications, the new, higher sampling speed and greater precision will support real-time 3D image rendering in unprecedented detail. The new, higher sampling speed and greater precision will also enable PET scanners to achieve greater contrast while reducing the patient's exposure time.

ams has put particular emphasis on making the TDC-GPX2 easy to implement in end-product designs, providing standard interfaces and requiring few external components. The chip also includes a driver for a quartz reference clock, which can be used for automatic calibration alternatively to the reference input.

In addition, ams supplies an evaluation kit, the GPX2-EVA-KIT, which includes a programmer and GUI software for PCs, enabling users to configure and connect their Start and Stop signals and begin taking sample time measurements within minutes.

“ams was already the leader in the market for the high-end TDCs used in precision ranging and scanning applications. Now with the TDC-GPX2, we have responded to customers' requests for



Press Release
**ams launches TDC-GPX2 high-resolution
time-to-digital converter**

even better precision and a higher sampling rate, enabling them to develop new generations of end products that provide greater detail and accuracy”, said Georg Jedelhauser, Marketing Director at ams.

The TDC-GPX2 is available now in production volume. Unit pricing is available on request from ams. For sample requests and technical information, go to <http://ams.com/Time-to-Digital-Converters/TDC-GPX2>.

About ams

ams is a global leader in the design and manufacture of advanced sensor solutions and analog ICs. Our mission is to shape the world with sensor solutions by providing a seamless interface between humans and technology. ams’ high-performance analog products drive applications requiring extreme precision, dynamic range, sensitivity, and ultra-low power consumption. Products include sensors, sensor interfaces, power management and wireless ICs for consumer, communications, industrial, medical, and automotive markets.

With headquarters in Austria, ams employs over 2,200 people globally and serves more than 8,000 customers worldwide. ams is listed on the SIX Swiss stock exchange (ticker symbol: AMS). More information about ams can be found at www.ams.com.

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