This product, formerly sold by ams AG, and before that optionally by either Applied Sensors GmbH, acam-messelectronic GmbH or Cambridge CMOS Sensors, is now owned and sold by

ScioSense

The technical content of this document under ams / Applied Sensors / acam-messelectronic / Cambridge CMOS Sensors is still valid.

Contact information

Headquarters:

Sciosense B.V.

High Tech Campus 10

5656 AE Eindhoven

The Netherlands

info@sciosense.com

www.sciosense.com

Knowing Position with High Accuracy

www.ams.com/AS6500

AS6500 – 4-channel Time-to-Digital Converter

- Ideal combination of speed, precision, power and cost
- Resolution on each channel down to 10ps rms
- High measurement rate up to 1.5 MSamples/s
- Only 60 mW at 1 MSPS

Sensing is life.

General Description

The AS6500 is a high performance time-to-digital converter (TDC) frontend device. It is a derivative of TDC-GPX2, with CMOS inputs and serial SPI output only. It comes in a QFN40 package. AS6500 achieves high measurement performance and high data throughput. High configuration flexibility and unlimited measurement range cover many applications, ranging from portable handheld laser range equipment to ambitious time-of-flight measurements of high performance.

AS6500 calculates calibrated stop measurements, referenced to the applied reference clock. Combinations of single shot accuracy of 10ps with lowest pulse-to-pulse spacing <10ns and maximum data input burst rate of 70 MSPS per stop input are possible. Total data throughput via SPI is about 1.5 MSPS.

Features

- 4 stop channels with 20 ns pulse-to-pulse spacing, CMOS inputs
- 2 combined channels with 10 ns pulse-to-pulse spacing, CMOS inputs
- Maximum 1.5 MSPS via SPI
- Single shot accuracy 20 ps RMS resolution per channel, 10 ps RMS with high resolution option
- Automatic calibration to reference clock
- Power dissipation 60 mW @ 1 MSPS
- QFN40 package (6x6 mm²)

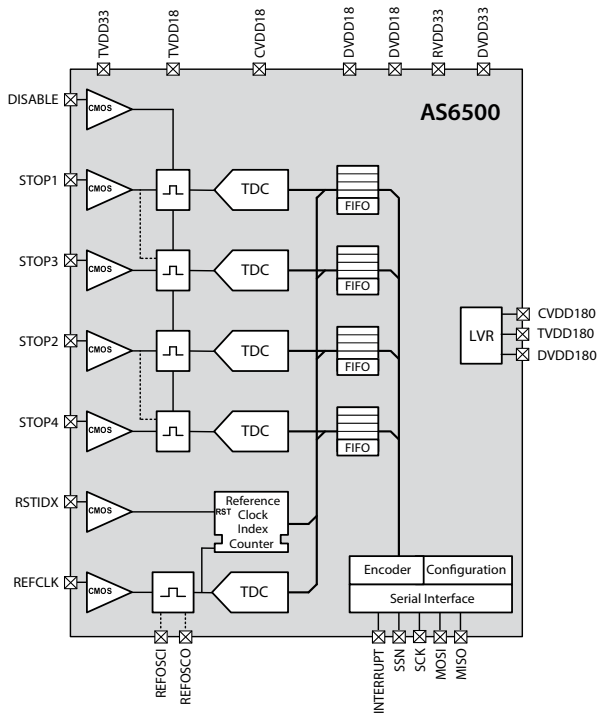
Benefits

- Simple data post-processing thanks to calibrated results
- Event assignment thanks to reference clock index simplifies coincidence measurements
- High efficiency thanks to high sample rate
- High spacial resolution thanks to high timing resolution

Applications

- Laser range finders
- Laser scanners in robots
- ADAS

TDC-GPX2 Block Diagram



www.ams.com
sensors@ams.com

Headquarters
ams AG
Tobelbader Strasse 30, 8141 Premstaetten, Austria
Phone +43 3136 500-0

Sales Offices Worldwide
sales-europe@ams.com
sales-asia@ams.com
sales-americas@ams.com