First Sensor is now part of TE connectivity

Mobility

APD development module – based on automotive optimized APDs for 905 nm

The APD development module from First Sensor is ideal for test runs in research and development as well as for integration into OEM LIDAR devices using the time-of-flight principle.

Features

The APD development module from First Sensor is based on avalanche photodiode arrays with optimized circuitry developed and manufactured in-house. Due to its modular design it can be flexibly adapted to your application.

- Compact size (5 x 5 cm)
- 905 nm optimized APD array (60 A/W typ.)
- High internal amplification of 100
- Temperature compensated power control
- Precise amplification for high signal quality
- Fast rise time (high bandwidth > 200 MHz)
- Low noise (fW/√Hz)
- Optical plate with M17 or C-Mount adapter
- Customizable
  - Customer specific APD arrays (pixel geometry and quantity, APD parameters like bandwidth, capacitance, sensitivity etc.)
  - A/D conversion
  - Digital interfaces (USB, LVDS)

Applications

The APD development module from First Sensor is ideal for testing and evaluating various LIDAR system approaches such as flash LIDAR, mirror and MEMS mirror scanning LIDAR systems and OPA (optical phased array) based LIDAR systems. Applications include mid range (50 to 100 m) as well as long range (>200 m) LIDAR systems.

- Turn assist
- Pre-crash sensor
- Pedestrian protection
- Adaptive cruise control
- Intersection assist

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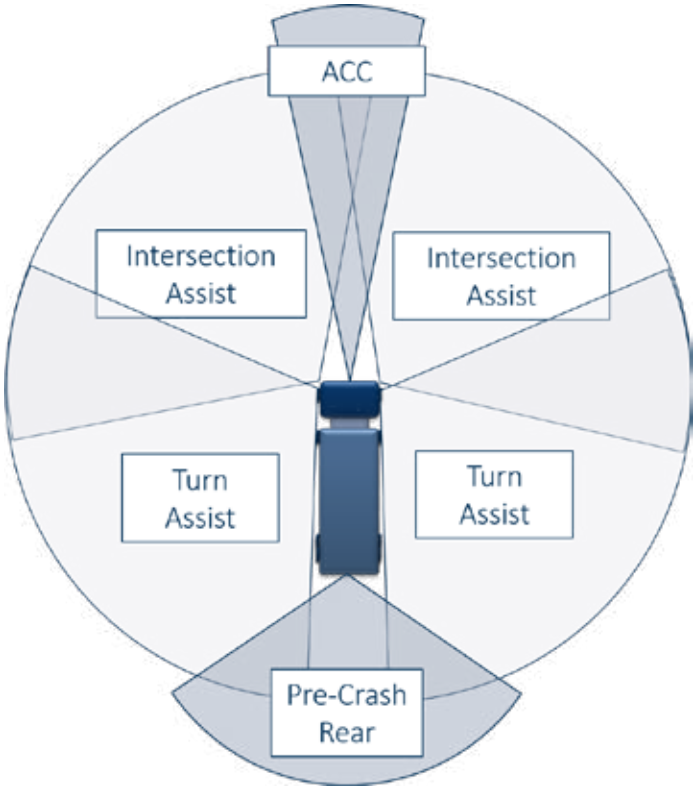

Due to its high angular resolution LIDAR is ideally suited for detection and classification of various objects (e.g. people, cyclists, animals, small object) in complex traffic situations. Sensor fusion with LIDAR data can dramatically increase the reliability of autonomous driving vehicles.

APD technology from First Sensor is highly adaptable and enables high resolution, long range LIDAR systems. We will further develop our APD detectors according to our 2020 strategic advanced technology development roadmap.

The development module from First Sensor can be used to address, demonstrate and validate your own specific LIDAR application. All processes such as APD manufacturing, APD packaging, circuit development, final assembly, final testing and automotive qualification are covered in-house. This enables maximum design flexibility for your LIDAR system with respect to environmental conditions, bandwidth, sensitivity, data processing, integration of optics and filters as well as field of view.

First Sensor can support you to set-up the APD development module best suited to your specific application requirements e.g. by choosing the appropriate APD and packaging technology. Further, we can help you to miniaturize and integrate the development module to your LIDAR system for a following series production.