

Product Document



Product Brief

PB000130

TMF8801

Time-of-Flight Sensor

1 General Description

The TMF8801 is a time-of-flight (TOF) sensor in a single modular package with associated VCSEL. The TOF device is based on SPAD, TDC and histogram technology. The device achieves 2500 mm detection range.

2 Key Features

Figure 1:
Added Value of Using TMF8801

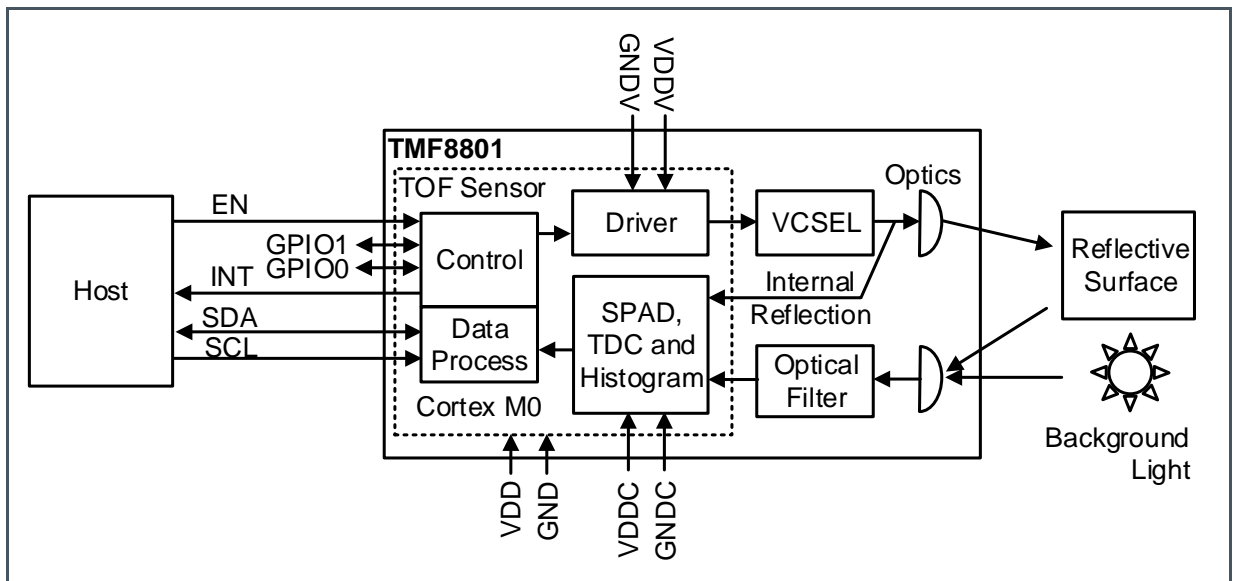
Benefits	Features
Small footprint fits in the mobile phone bezel	Modular package - 2.2 mm x 3.6 mm x 1.0 mm
Detecting central closest objects	21° FOI
Within 5 % of measurement (accuracy); no multipath and no multiple object problems as for iToF	Time-to-Digital Converter (TDC) Direct Time-of-Flight Measurement
Better accuracy detects reliably closest object Minimum distance 20 mm Maximum distance 2500 mm	Single Photon Avalanche Photodiode (SPAD) Histogram based architecture
No complex calibration	Dynamic cover glass calibration
Compensates for dirt on glass	Reliable Operation under demanding use cases
Class 1 Eye Safe	Fast VCSEL driver with protection

3 Applications

- Distance measurement for camera autofocus (Laser Detect Autofocus - LDAF)
- Supporting low-power system operation by enabling high-power components (i.e. 3D camera) only when an object is in the detection range
- Presence detection - Object detection
- Collision avoidance

4 Block Diagram

Figure 2:
Functional Blocks of TMF8801



Headquarters

ams AG
Tobelbader Strasse 30
8141 Premstaetten
Austria, Europe
Tel: +43 (0) 3136 500 0

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