

# Qwiic dToF Imager - TMF8821

SEN-19037

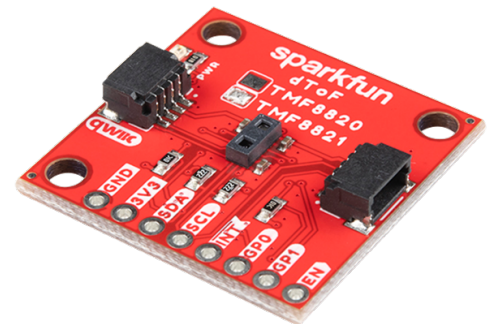
## Product Overview

09/19/2022

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

SparkFun Qwiic dToF - TMF8821 Imager is a direct Time-of-Flight (dToF) sensor that includes a single modular package with an associated Vertical Cavity Surface Emitting Laser (VCSEL) from AMS. This dToF device is based on Single Photon Avalanche Photodiode (SPAD), Time-to-Digital Converter (TDC), and histogram technology to achieve a 5000mm detection range. The Qwiic dToF - TMF8821 includes a lens on the SPAD and supports 3x3, 4x4, and 3x6 multi-zone output data and a wide, dynamically adjustable field of view.



The Qwiic dToF - TMF8821 offers two configurable GPIO pins and one enable (EN) pin, broken out as PTH pads. This dToF requires no soldering as all communication is enacted exclusively via I<sup>2</sup>C. The Qwiic dToF - TMF8821 is ideal for projects such as distance measurement for camera autofocus, presence detection, object detection and collision avoidance, and light curtain.

## Features

- Operating voltage:
  - 2.7V to 3.6V
  - Typically 3.3V via Qwiic cable
- Current consumption:
  - 8 $\mu$ A (standby)
  - 57mA (active)
- AMS TMF8821 Multi-zone Time-of-Flight sensor:
  - Direct ToF technology with high sensitivity SPAD detection
  - 4x4 configurable multi-zone configuration with multi-object detection
  - Fast Time-to-Digital Converter architecture
  - Sub-nanosecond light pulse
  - On-chip histogram processing
  - High-performance on-chip sunlight rejection filter and algorithm
- 10mm to 5000mm @30Hz measurement range
- Class 1 940nm VCSEL light source
- Field of View adjustable up to 63° diagonally
- Up to 30Hz maximum read rate

## Features

- 2x Qwiic connectors
- 0x41 I<sup>2</sup>C address
- -30°C to 70°C operating temperature range
- Breakout pads:
  - 1x ground
  - 1x power
  - 1x I<sup>2</sup>C port
  - 1x interrupt
  - 2x GPIO
  - 1x enable
- Power LED (configurable via jumper)
- I<sup>2</sup>C pull-ups (configurable via jumper)
- 1" x 1" (2.54cm x 2.54cm) board dimensions

## Schematic

- [Qwiic dToF - TMF8821 Imager](#)

## Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/sparkfun/sparkfun-qwiic-dtof-imager-tmf8821/>