



This version (22 Apr 2021 11:49) was **approved** by [Andrei Cozma](#).
The [Previously approved version](#) (20 Apr 2021 11:06) is available.

AD-FXTOF1-EBZ

Introduction

The **AD-FXTOF1-EBZ** is a proven hardware platform for depth perception. When paired with a processor board from the Raspberry Pi or Nvidia family, it can be used for 3D software and algorithm development. The solution has VGA resolution which means that objects can be detected to a higher level of granularity than other 3D ToF solutions, an ability to detect depth in strong ambient light conditions and multiple range detection modes for increased accuracy. A native and host SDK is provided. The SDK also provides OpenCV, Python®, MATLAB®, Open3D and RoS wrappers so that developers can use them to simplify application development.

The full system hardware includes:

- ToF module
- Interposer board
- 25 pins flex cable
- 15 pins flex cable
- Screws and standoffs to attach the interposer board to the ToF module
- USB cable to supply 5V to the system



High level specification

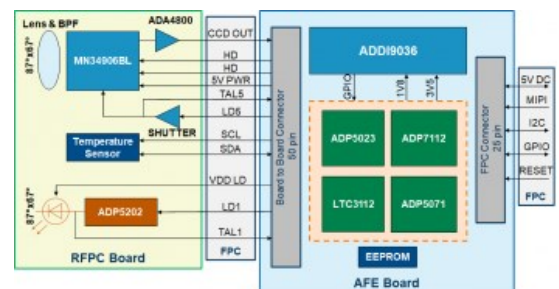
- Range
 - Near: 20cm to 180cm
 - Medium: 50cm to 300cm
 - Accuracy: < 2% for all ranges
- Frame Rate up to 30fps dependent on processor board, OS and interface to host computer
- Resolution 640 x 480 pixels
- Operating Temperature -20°C to 75°C
- 940nm VCSEL with 87° x 67° batwing profile diffuser
- Receive lens: FoV 87° x 67° including 940nm BPF
- 5V @ 2A power input



For more information and how to buy the system please goto the [Analog Devices AD-FXTOF1-EBZ Product page](#)

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System setup & evaluation

The development kit is delivered with a set of accessories required to put the system together and get it up and running in no time. The evaluation software for the supported embedded platforms can be accessed by following the instruction in the **Application Development** section below

Development kit contents:

- ToF module
- Interposer board

- 25 pins flex cable
- 15 pins flex cable
- Screws and standoffs to attach the interposer board to the ToF module
- USB cable to supply 5V to the system
- One page Quick Start Guide

Getting the system up and running

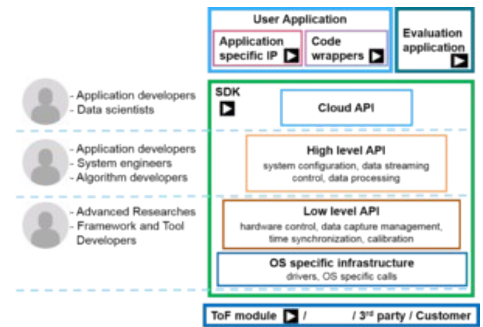


- [Raspberry Pi 3 & 4 User Guide](#)
- [Nvidia Jetson Nano User Guide](#)
- [Nvidia Xavier NX User Guide](#)

Application Development

The system has options of USB, Ethernet or Wi-Fi to connect to a host computer, this flexibility enables evaluation across a wide range of use cases and environments. Sampling rates of up to 30fps are supported. Data is fed from the depth camera to the processor board over MIPI-CSI interface. This data is read using V4L2 capture driver and in-turn either feeds it to native SDK or sends it to the Host SDK over Ethernet, WiFi and USB interfaces. Native/Host SDK provides this data to user applications for further use. For ease of application, the SDK also provides OpenCV, Python and MATLAB wrappers such that developers can simply use these wrappers to develop application.

The Depth Perception Rapid Prototyping Platform supports a wide range of operating systems and programming languages. An open-source SDK that accompanies the hardware platform enables you to extract depth data from the camera on the processor and operating system of your choice. Windows and Linux support are built into the SDK as well as sample code and wrappers for various languages including Python, C/C++ and MATLAB. The SDK also integrates with 3rd party technologies like OpenCV and RoS.



[Access the full ADI 3D ToF software suite to get started](#)



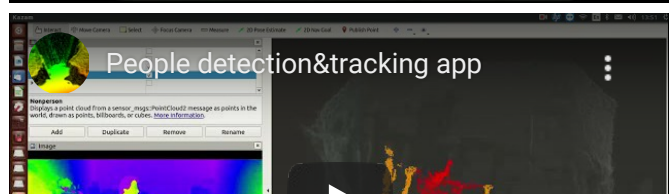
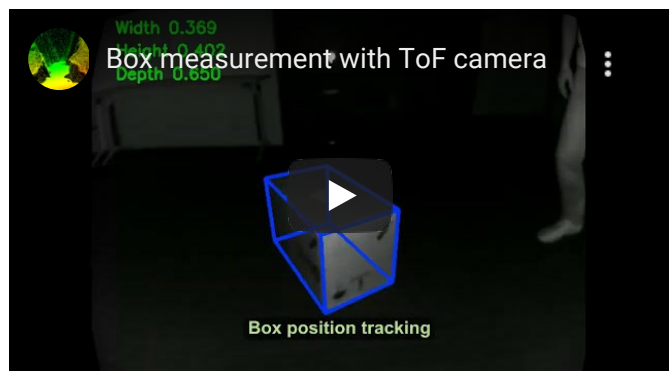
- [Get more information about the available 3D ToF algorithms from Analog Devices](#)
- [Explore the available 3D vision algorithms demos](#)

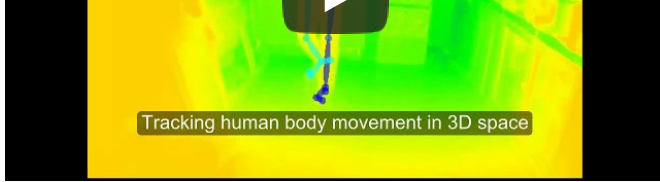
Laser Safety



This device complies with International Standards IEC 60825-1:2014 & 2007 for a Class 1 laser product. This device also complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Only use Software and Firmware updates that are specifically provided for this solution.

Videos





Help and Support

For questions and more information please contact us on the Analog Devices Engineer Zone.

[EngineerZone 3D ToF Depth Sensing](#)

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