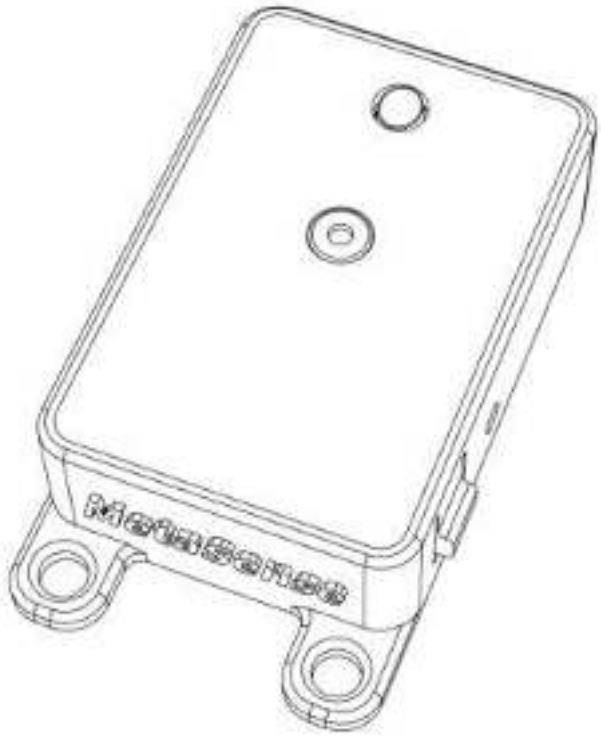
SIPEED
MaixSense A010
DataSheet



Revision History

Date	***Revision***	***Description***
2022-08-05	1.0	Initial Release

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Contents

Overview

MaixSense A010 is an all-in-one, low cost, flexible and easy to use 3D ToF(Time-of-Flight) solution for IoT applications. It consists of an on-board 100x100 array ToF sensor and ToF processor, which combines ToF sensing, ToF signal processing and application algorithm on a single board. It integrates the following algorithms: Specific applications, such as ranging, multi area human body positioning and sensing, posture monitoring, posture control, keystone correction, etc. These features are widely used in loT applications like white goods, L aser TV, smart projector, smart ilumination, smart parking, smart home facilitis...

MaixSense A010 is power supplied via USB2.0, and it outputs ToF depth data at a speed of up to 20fps. With its sophisticated optic, electronic and high accuracy algorithms, MaixSense A010 is able to calculate depth data as accurate as in millimeter level.

Features

- Combination of ToF and RGB sensors
- Depth range 0.15 – 1.5 meters
- Millimeter level accuracy
- Outdoor compatibility
- Power supply and data transfer via USB2.0
- Low and customizable power consumption

Applications

- SLAM and robotic navigation
- Surveillance & security inspection
- People counting & tailgate detection
- VR/AR & gesture recognition
- Autopilot and AGV obstacle avoidance
- 3D modelling
- Dimensions measurement
- Liveness Detection & facial recognition

1 Key Specifications

Parameter	Description
CPU	32-bit RISC CPU with FPU, Up to 144MHz
Memory	132KB RAM & 192KB ROM
Camera Size	23.25*40.70*10.50 mm
Connector	USB Type-C, 1.25mm Connector
External interface	USB2.0, UART
TOF Camera Resolution	100*100 Max
TOF Camera Frame rate	Up to 20 FPS
TOF Camera FOV	70°(H) * 60°(V)
TOF Measurement range	0.2 – 2.5 m
TOF Distortion	< 2.5%
TOF Illumination	940nm, 3W
TOF Measurement Accuracy	<=1% / <=1cm

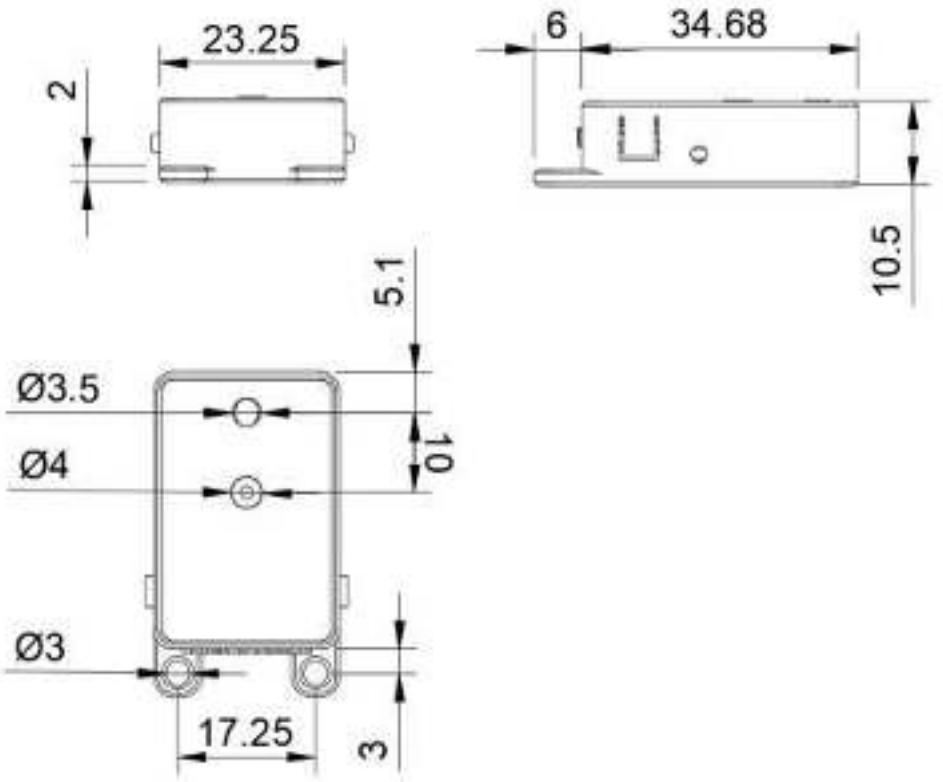
2 Technical Specifications

(Scenario: TA = 25°C, object reflectivity 90% if not otherwise specified)

Parameter	Description	Min	Typ	Max	Unit
Camera Supply Voltage		4.8	5	5.2	V
Supply Electric Current		0.5			A
Operating Electric Current				0.5	A
Wave Length			940		nm
Measurement Range		0.2		2.5	m
Operating Temperature		-20		50	℃

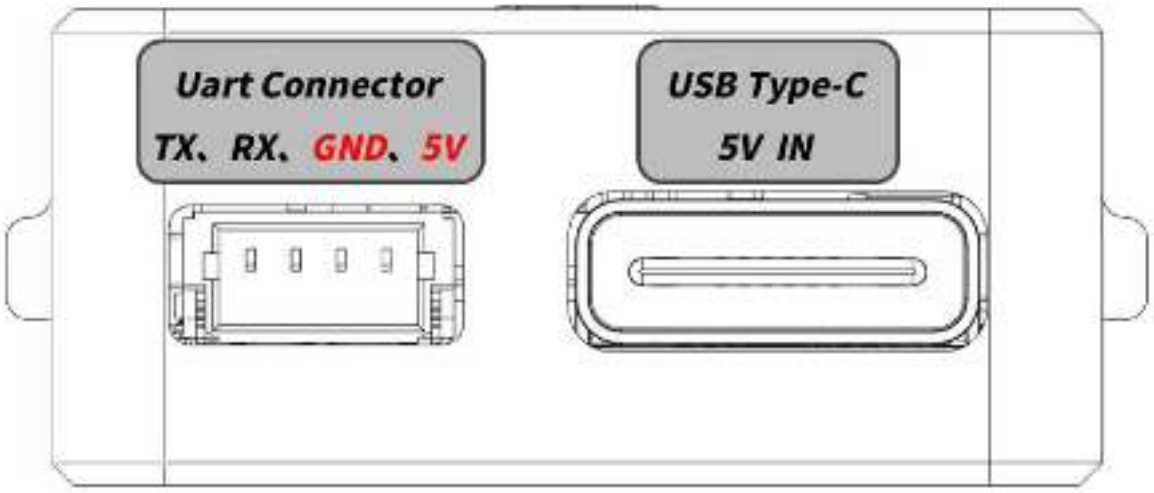
3 Dimensions and interfaces

3.1 Camera size and structure



3.2 Physical picture of camera

3.3 Pin description



4 Product related Executive Standards

Meet human eye safety standards class1 (IEC 60825 1:2014- 3rd edition)。

5 Operating precautions

During the use of this product, attention must be paid to operation safety and maintenance, otherwise it may cause damage to the product, shorten its service life, and even endanger personal safety. For safe use and maintenance, attention should be paid to the following aspects:

- This product is a high-precision electronic product. Please do not collide or fall.
- Although the Class1 laser used in this product meets the safety standards for human eyes, it is not recommended to look directly at the laser for a long time to avoid discomfort.
- Do not place this product in a place with high temperature or direct sunlight.
- Do not disassemble or modify this product without permission to prevent damage to the components of the product.
- Do not touch the camera of this product to avoid leaving fingerprints and other pollutants affecting the image effect.
- Please keep this product out of the reach of children to prevent accidents.
- Please follow the manual for correct and safe operation.