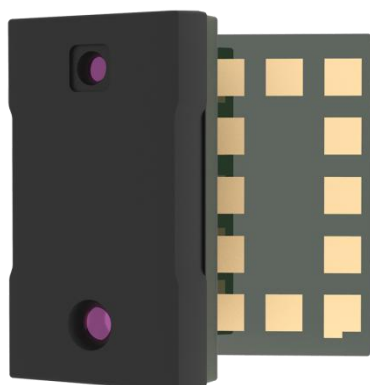




DTS6007M

dToF Sensor Module

Description

The DTS6007M is a single-channel dToF (direct Time-of-Flight) miniaturized module that integrates a high-performance dToF SoC developed by PolarisIC and a VCSEL emitter. It enables high-precision distance measurement within a range of 4.5 meters at a frame rate of 30 fps. Equipped with a built-in histogram algorithm, the DTS6007M offers robust resistance to ambient light interference. It also supports calibration for contaminants and reflectance, as well as cover glass crosstalk calibration.

The DTS6007M employs a 940nm laser that complies with Class 1 eye safety standards. Powered by a single supply voltage and utilizing an I²C interface for data communication, it is designed for easy integration and user-friendly operation.

Visit www.polarisic.com to get more product details.

Features

- Highly integrated miniature dToF SiP with dimensions as 4.4mm × 2.4mm × 1.0mm
- Integrates a time-correlated photon threshold algorithm and narrowband optical filter, delivering exceptional ambient light immunity
- Supports cover glass crosstalk calibration
- Compatible with reflow soldering processes
- Features a high-precision TDC: ± 3cm accuracy within 0.01m to 1m range; ±3% accuracy beyond 1m (improved further after calibration)
- Employs histogram technology
- Incorporates a proprietary co-processor

1 Basic Parameters

Table 1: Basic Parameters

Feature	Detail
Package Type	SiP Miniaturized Module Packaging
Package Size	4.4mm×2.4mm×1.0mm
Number of Connector Pins	12
Interface Type	I ² C
Operating Voltage	3.3V (Typical Value)
FoI	22°
FoV	31.3° (Max) ^[1]
laser Wavelength	940nm
Frame Rate	30fps (Typical Value)
Reflectance Correction	Available
Temperature Compensation	Available

[1] The Oretical Value.

2 Performance Parameters

Table 2: Performance Parameters

Feature	Condition	Typical Value	Unit
Range	Indoor, 88% White Target	4500	mm
	Indoor, 18% Gray Target	2000	mm
	Outdoor Overcast, 5klux, 88% White	1100	mm
	Outdoor Overcast, 5klux, 18% Gray	800	mm
	Outdoor Sunny, 100klux, 88% White	300	mm
	Outdoor Sunny, 100klux, 18% Gray	400	mm
Accuracy	Indoor, 88% White Target, 0.01m~1m	25	mm
	Indoor, 88% White Target, > 1m	3	%
	Indoor, 18% Gray Target, 0.01m~1m	30	mm
	Indoor, 18% Gray Target, > 1m	3	%

Test Conditions: Room temperature, 3.3V power supply, no cover glass installed, typical configuration parameters, target size covering the full FoV (Field of View).

Range Determination: The measurement range is defined based on an effective detection rate greater than 99.7%.

Accuracy = Measured Distance - Target Distance.

3 Power Consumption

The module, under typical configuration, has a typical power consumption of 36mA at a 3.3V power supply.