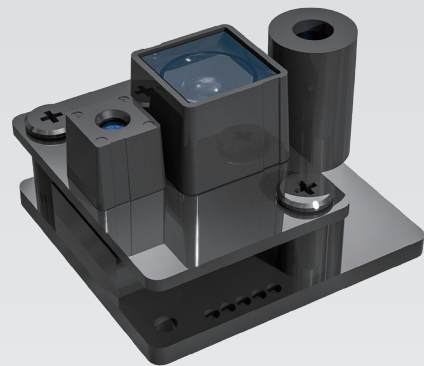


SC-MOD40

Laser Ranging
Module



PRODUCT FEATURES



Compact and Portable

With dimensions of only 23.2 × 22 × 17 mm and a weight of less than 10g, it comes with a red light indicator, facilitating integration and use.



High-Precision Measurement

It can achieve an accuracy of ±6cm within the range of 0.1 - 5m, and 1% of the measured distance in the range of 5 - 40m, meeting the accuracy requirements of various application scenarios.



Strong Anti-Light Interference

It integrates a time-correlated photon threshold ambient light resistance algorithm, enabling effective measurement at a distance of 30m even under strong light of 100kLux.



Rich and Practical Functions

It integrates a histogram statistical algorithm to output the positions of double peaks for easy calibration; has a reflectivity correction function to effectively reduce the black - and - white error; the TDC time window is configurable to adapt to different application scenarios; data is stably output according to the configured cycle, with a frame rate of 10 fps.



Highly Integrated and Easy to Integrate

It integrates a power module and is powered by a single 5V supply, and has a built - in temperature compensation function. It supports the UART interface with a communication rate of 921600 bit/s, facilitating integration with other devices.

PRODUCT INTRODUCTION

Automate Matrix's SC-MOD40 is a fully integrated single - channel dToF ranging small module specifically designed for small - scale ToF applications. It integrates a self-developed high - sensitivity infrared - enhanced SPAD sensor, featuring excellent ranging performance and ambient light resistance, making it an ideal choice for numerous scenarios that require precise ranging.

PRODUCT PARAMETERS

Basic Parameters			
Dimensions	23.2 × 22 × 17mm	Connector Pins	4
Operating Voltage	5V DC	FOV	<2°
Temperature Compensation	Yes	Reflectivity Correction	Yes
Measurement Laser Wavelength	905nm	Measurement Laser Peak Power	11 W
Measurement Laser Eye Safety Class	Class 1	Weight	<10g
Interface Type	UART	Indicator Laser Wavelength	650nm
Indicator Laser Spot	Single point (default, cross - shaped spot optional)	Indicator Laser Peak Power	<1mW
Indicator Laser Eye Safety Class	Class 2		

Performance Parameters			
Parameter	Minimum	Typical	Maximum
Measurement Distance (D)	0.1m	30m	40m
Frame Rate	10 fps		
Accuracy	±6 cm (0.1–5 m), 1% of distance (D >5 m)		
Accuracy Rate	≥98%		
Ambient Light Resistance	30m@100kLux		
Operating Power Consumption	700mW		
Static Power	600mW		
UART Interface Rate	921600bit/s		

Operating Conditions	
Parameter	Value
Operating Temperature Range	-20°C to 50°C
Storage Temperature Range	-40°C to 85°C
Human - Body - Model ESD (HBM)	2000V
Machine - Model ESD (MM)	200V
Charged - Device - Model ESD (CDM)	500V