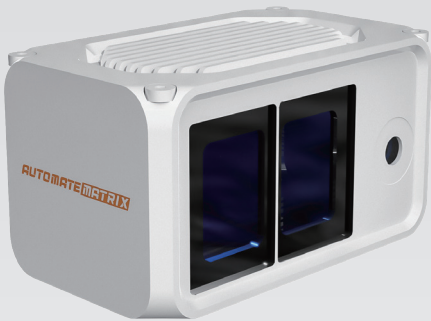


SC-ToF650

dToF
Camera



PRODUCT INTRODUCTION

Automate Matrix's SC-ToF650 is a high - performance depth camera based on the advanced Time - of - Flight (ToF) technology. It is designed for application scenarios that require precise 3D perception and high - definition RGB image acquisition. It has broad application prospects in multiple fields and can provide users with accurate and reliable data support.

PRODUCT FEATURES



High Resolution and Frame Rate

The ToF resolution reaches 640×480 with a frame rate of 30 fps, and the RGB resolution is 1600×1200 with a frame rate of 30 fps as well. It can capture clear 3D scenes and high - definition color images in real - time.



Wide Field of View

The ToF field of view is 75° horizontally and 56° vertically, while the RGB field of view is 70° horizontally and 50° vertically. It can cover a large spatial range to meet the visual requirements of different scenarios.



Rich Output Formats

It supports the output of 16 - bit depth data, 8 - bit infrared data, and JPEG - format RGB images, facilitating users to process and analyze data according to actual applications.



Precise Ranging Ability

The ranging range is from 0.3m to 4.5m, and the accuracy is less than 2% (the detection distance and accuracy error may vary depending on the reflectivity of the measured object's surface). It delivers high-precision 3D perception capabilities.



Low-Power Design

The average maximum power consumption is only 6W (reference value), effectively reducing energy consumption and being suitable for various devices and scenarios with power - consumption requirements.



Safe and Reliable Laser Source

It uses a 940nm, 2×6W optical power VCSEL laser, meeting the Class 1 eye - safety standard. It ensures good performance while guaranteeing the safety of use.



Extensive Interfaces and Protection

It is equipped with a Gigabit Ethernet communication interface and 1 digital I/O (for synchronization, providing a passive synchronization signal), facilitating data interaction and system integration with other devices. The protection level reaches IP42, with certain dust - proof and splash - proof capabilities, and can adapt to various working environments.



Powerful Software Support

It supports multiple software environments such as C/C++, Python, C#, ROS1, and ROS2, and is compatible with operating systems such as Windows 7/8/10/11, Linux, and Arm Linux, facilitating developers to conduct secondary development and system integration.



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PRODUCT PARAMETERS

Parameter Type	Parameter Name	Parameter Value
Camera Type	dToF Camera Model	SC - ToF650
Operating Principle	-	ToF (Time - of - Flight) Depth Camera
Resolution and Frame Rate	ToF Resolution and Frame Rate	640×480@30 fps
	RGB Resolution and Frame Rate	1600×1200@30 fps
Field of View	ToF Field of View (Horizontal × Vertical)	H - 75° V - 56°
	RGB Field of View (Horizontal × Vertical)	H - 70° V - 50°
Output Format	-	16bit (Depth) + 8bit (IR) + JPEG (RGB)
Ranging Parameters	Distance Range	0.3m-4.5m (varies depending on the reflectivity of the object surface)
	Accuracy	<2% (varies depending on the reflectivity of the object surface)
Power Consumption	Average Maximum Power Consumption	6W (Ref)
Laser Parameters	Laser Wavelength	940nm
	Laser Optical Power	2 × 6W Optical Power VCSEL
Physical Specifications	Dimensions (Length x Height x Width)	125 x 50 x 34.5mm
	Weight	256g
Electrical Parameters	Power Supply Method	DC power
	Communication Interface	Gigabit Ethernet
	Digital I/O (Synchronization)	1out, Passive Sync Signal
Protection and Environment	Protection Level	IP42
	Operating Temperature Range	-20°C to 50°C
	Storage Temperature Range	-30°C to 70°C
Software and Certifications	Software Environment	C/C++, Python, C#, ROS1, ROS2
	Operating System Support	Windows 7/8/10/11, Linux, Arm Linux
	Cooling Method	Passive, no fan
Safety Standards	Product Certifications	FCC/CE/FDA
	Eye - Safety Level	Eye - safe Class 1