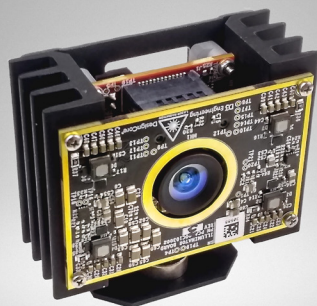


DESIGNCORE[®]

D3TCM-9036 TIME OF FLIGHT CAMERA MODULE

D3 Engineering


Production-intent Time of Flight Camera Module for Robotics and other Applications needing Intelligent Spatial Sensing

Capture high resolution depth and infrared imagery to a variety of industry-standard AI and automation compute platforms

The D3 DesignCore[®] D3TCM-9036 uses the Analog Devices ADDI9036 and a VGA CCD that enable the user to capture a 640x480 depth map of a scene, providing up to 4x higher resolution than many other ToF systems on the market. This enables users to detect and measure the distance to smaller and thinner objects that would otherwise be invisible to other ToF systems. The camera module supports frame rates up to 30 fps. The module is equipped with four VCSEL illuminators at 940 nm for better operation with partial sunlight. There is development planned that will enable the module to support 5-13 m range.

The camera module is designed as a stand-alone sensor with a variety of interface choices. The camera module uses the D3CM interface natively, enabling many interfacing options including GMSL2, FPD-Link III, and CSI2 making it compatible with even more processing options offered by D3 Engineering and others.

FEATURES

- 640x480 depth information resolution at 30 fps
- Four VCSEL illuminators
- Class 1 Laser Operation
- Full SDK support
- Compact and deployable heatsink frame
- Support for NVIDIA Jetson Xavier NX, Raspberry Pi 3 and 4, Arrow Thor96, and DragonBoard410c

APPLICATIONS

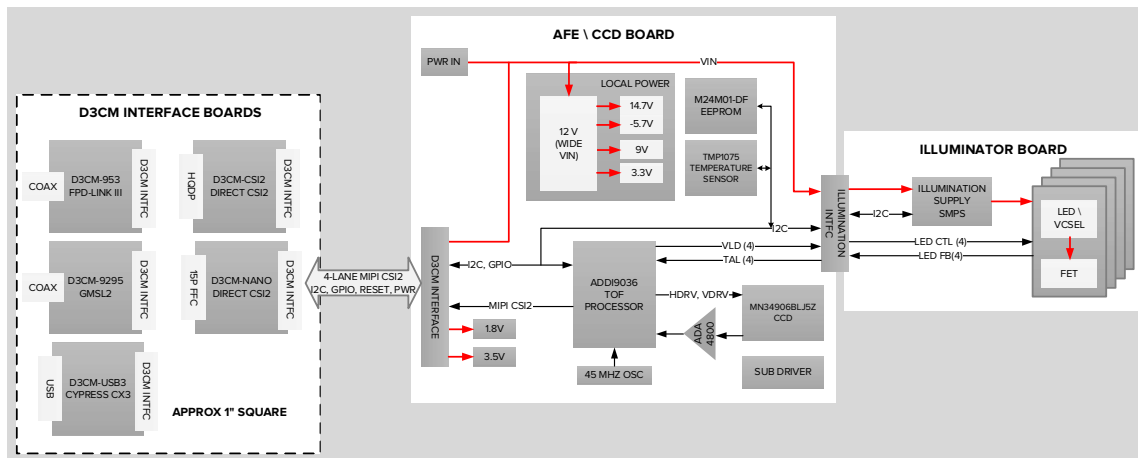
- Robotics
- Autonomous Machines
- Camera Monitoring Systems
- Industrial Vehicle Systems
- Machine Vision

CLASS 1 LASER PRODUCT
EN/IEC 60825-1 2014

TARGET SPECIFICATIONS (SUBJECT TO CHANGE)

Field of View (FOV)	90° horizontal 69.2° vertical
Near Mode	25 cm to 80 cm
Mid Mode	50 cm to 2.25 m
Far Mode	3 m to 6 m
Frame Rate from 10 cm to 5 m	30 fps
Frame Rate from 5 m up to 13 m (planned)	15 fps
Illuminator Type	VCSEL
Number of Illumination Devices	4 units
Illumination Wavelength	940 nm
Laser Class	1
Imager Type	CCD
Imager Working Resolution	640x480 pixels
Maximum Frame Rate	30 fps
Native Interface	D3CM (Samtec ST5-30)
Default Interface Adapter	15-pin FFC CSI2 Camera Interface
Power Supply from Default Interface Adapter	3.3 VDC
Data	MIPI CSI-2 2-Lane plus Clock
Control	I2C
Temperature Sensor Interface	I2C
Sync	GPIO
Power Connector	Hirose DF3A-2P-2DS
Power Supply Voltage	12 VDC
Power Supply Voltage Tolerance (minimum)	+/- 5%
Power Consumption Peak	15.8 W
Power Consumption Average	4 W
Mechanical Form Factor	3 Printed Circuit Board Assemblies plus Heatsink Frame
Dimensions	50 mm H x 56 mm W x 27 mm D including the heatsink frame
Frame Heat dissipation capability (Target) for 70 degC	5 W

DESIGNCORE® D3TCM-9036 TIME OF FLIGHT CAMERA MODULE BLOCK DIAGRAM



NEXT STEPS

Contact us to purchase samples and learn more about volume pricing. We can support integration of D3 Camera Modules into your end product with services including custom ISP tuning, software drivers, and verification support. We can also help you speed embedded vision system development with our proven DesignCore® vision processor platforms and full-cycle embedded product development services.

ORDERING INFORMATION

Contact D3 Engineering for more information:
 CALL: **585-429-1550**
 EMAIL: sales@D3Engineering.com
 VISIT: D3Engineering.com

ACCELERATE TIME TO MARKET

Our expertise in imaging system design will help you get to market faster, while reducing the risks and costs of new product development.

