




CAM-6GY-084VIS Time of Flight Sensor



STMicroelectronics CAM-6GY-084VIS Time of Flight Sensor Instruction Manual

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STMicroelectronics CAM-6GY-084VIS Time of Flight Sensor



Product Information

The CAM-6GY-084VIS is a circuit schematic with various pins and components for electronic applications. It includes features like CPPOS, AVDD, AGND, DGND, DVDD, SDA, SCL, RESET, DOVDD, VANA, VCORE, and more.

Specifications:

- **Model:** CAM-6GY-084VIS
- **Revision:** 1
- **Date:** June 2024

Product Usage Instructions

Installation:

1. Refer to the Application Schematic section of the datasheet for the latest version.
2. Add external capacitors at the host side for VDDIO, VCORE, VANA pins as specified in the schematic diagrams.
3. Ensure proper alignment and connection of all pins and components as shown in the circuit schematic.

Powering Up:

Connect the necessary power inputs to CPPOS, AVDD, DVDD, VANA, VCORE, and other designated pins following the recommended voltage levels.

Usage:

1. Interact with the device using the specified communication pins like SDA, SCL for data transfer.
2. Utilize the RESET pin for restarting or resetting the device as needed.

Frequently Asked Questions (FAQ):

- **Q: What should I do if I encounter issues with power supply?**

A: Check the connections of external capacitors at the host side for VDDIO, VCORE, VANA pins. Ensure proper voltage levels and connections.

- **Q: How can I reset the device?**

A: Use the RESET pin to restart or reset the device. Refer to the circuit schematic for details on the RESET functionality.

Features

- **“Promodules”: turnkey camera modules for evaluation:**

- Including [VD66GY](#) image sensor, lens holder, lens, and plug-and-play flex connection.
- Lens focused, glued, and tested in cleanroom environment using specialized equipment.
- Small footprint down to 6.5 mm square.

- **Various lens options:**

- Ultra-wide-angle lens for wide scene capture (152° DFOV).
- Highly compact lens for a thin module (84° DFOV).
- General purpose lens enabling various system setups (73° DFOV).

- **Plug-and-play connector to change promodules at any time:**

- FPC-to-board 30-pin connector.
- Same connector for all ST promodules.

- **Ready for evaluation and integration:**

- On computer with a USB output using the [EVK Main hardware tool](#) and the [Evaluation GUI](#) free software.
- On embedded processing platforms with a MIPI CSI-2 output using the [P-Board](#) hardware tool and free [Linux software tools](#).

- Promodules also available in monochrome versions (CAM-56G3).

Description

The CAM-66GY promodules are a full range of sample camera modules made for a seamless evaluation and integration of the VD66GY 1.5-megapixel color image sensor. These ready-to-use vision extensions integrate VD66GY image sensor, lens holder, lens, and plug-and-play flex connection in a tiny format down to 6.5 mm square.

Order code	Description
CAM-6GY-073VIS	VD66GY promodule with 73° FoV lens
CAM-6GY-084VIS	VD66GY promodule with 84° FoV lens
CAM-6GY-152VIS	VD66GY promodule with 152° FoV lens

The CAM-66GY line leverages the complete toolbox of on-chip features of the VD66GY image sensor embedded, such as binning, autoexposure, or context management. Multiple GPIOs enable users to synchronize the modules with triggers and illumination. Featuring MIPI CSI-2 output, the promodules are perfectly suited for embedded low-

power setups.

Multiple promodule references are available, featuring various lenses to best match the needs of every application in terms of optical setup and mechanical constraints. All camera modules are equipped with the same FPC-to-board connector and pinout. This plug-and-play architecture allows users to change promodule instantly, and reuse the same setup with different lenses, color options and even different image sensors in the STMicroelectronics portfolio.

CAM-66GY promodules can be tested and integrated on computers or embedded processing boards using hardware and software tools from ST BrightSense. The compatible [EVK Main](#) and [P-Board](#) hardware kits enable straight connection to PC and embedded processing platforms respectively. Evaluation GUI software and Linux drivers are available for download from the [Imaging Software](#) section of the website.

Figure 1. Common connector to all ST promodules

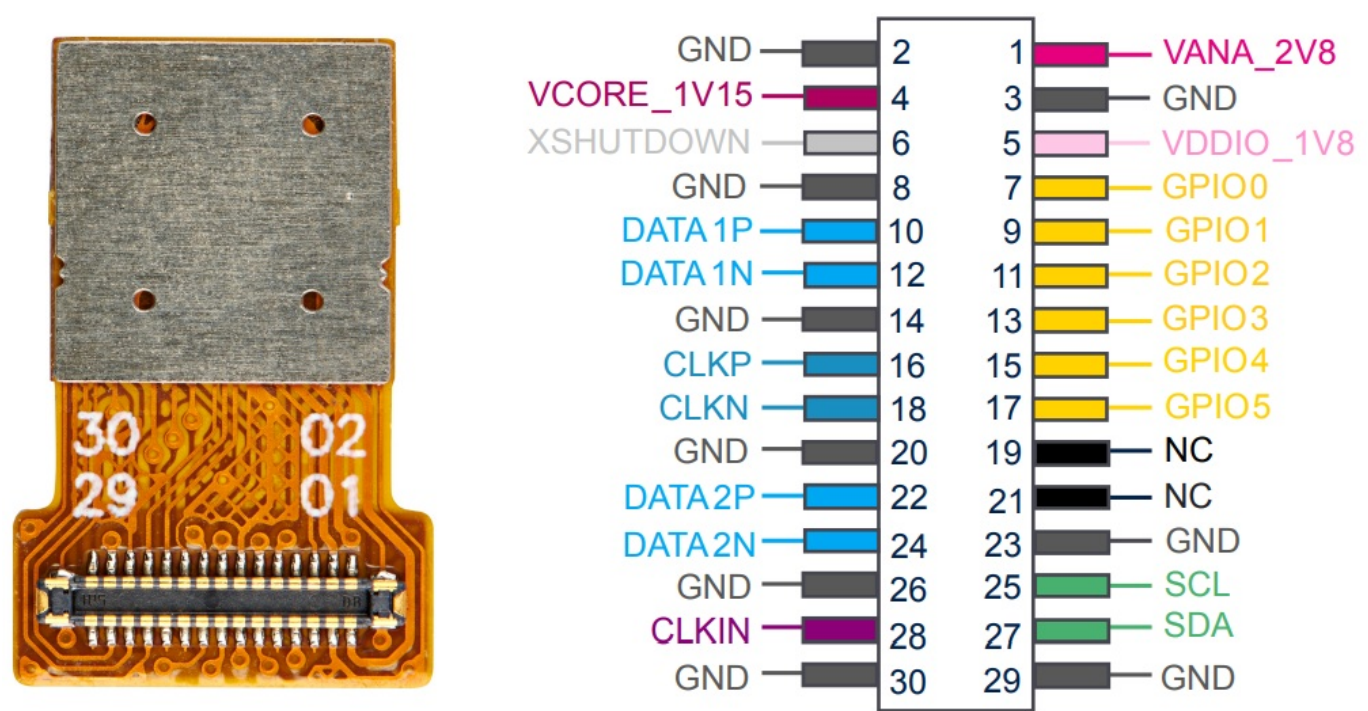


Table 1. Evaluation & development setup with CAM-66GY promodules



Setup for embedded platforms with MIPI CSI-2 output

CAM-66GY promodule + P-Board



Setup for computer with USB output

CAM-66GY promodule + EVK Main

Technical specifications

Category	Parameter	Common specifications
Image characteristics	Sensor featured	VD66GY
	Resolution	1.53 MP – 1124 x 1364
	Aspect ratio	5 : 6
	Shutter type	Global shutter
	Color option	Color RGB
Electrical characteristics	Connector type	FPC-to-board
	Connector reference	Hirose BM28 B0.6-30DP/2-0.35V
	Pinout	30 pins
	Output interface	MIPI CSI-2 1 or 2 lanes
	Control interface	I ² C
	Output format	RAW8, RAW10
	Supply voltages	2.8 V – 1.8 V – 1.15 V
	External clock frequency	6 to 27 MHz
	Image quality optimization	<ul style="list-style-type: none"> • Autoexposure • Automatic dark calibration • Defective pixel correction • Analog and digital gains

Embedded features	Power and data optimization	<ul style="list-style-type: none"> Cropping Binning Subsampling Context management with up to 4 contexts 		
	Others	<ul style="list-style-type: none"> Mirror/Flip Test pattern generation Temperature sensor GPIOs x6 		
Category	Parameter	CAM-6GY-073VIS	CAM-6GY-084VIS	CAM-6GY-152VIS
Optical characteristics	Aperture – f/#	F/2.2	F/2.0	F/2.0
	Field of view – D H V	73° 51° 60°	84° 60° 69°	152° 97° 118°
	EFL	3.03 mm	2.51 mm	1.69 mm
	Depth of field	40 cm -> ∞	30 cm -> ∞	40 cm -> ∞
	TV distortion	< 1 %	< 1.5 %	< 27 %
	Filter	Visible	Visible	Visible
Mechanical characteristics	Module head dimension – L x W x H	6.5 x 6.5 x 4.68 mm	6.5 x 6.5 x 3.98 mm	9.0 x 9.0 x 7.15 mm
	Module total dimension – L x W x H	12.4 x 8.0 x 4.68 mm	12.4 x 8.0 x 3.98 mm	13.65 x 9.0 x 7.15 mm
	Distance from connector to optical center	7.45 mm	7.45 mm	7.45 mm

Revision history

Date	Version	Changes
21-May-2024	1	Initial release

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Documents / Resources

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References

- [User Manual](#)

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