

VD16GZ promodules: Camera module evaluation samples for instant integration of VD16GZ sensor



Order code	Description
CAM-6GZ-073CLR	VD16GZ promodule with 73° FoV lens
CAM-6GZ-152CLR	VD16GZ promodule with 152° FoV lens

Features

- “Promodules”: turnkey camera modules for evaluation:
 - Including [VD16GZ](#) image sensor, lens holder, lens, and plug-and-play flex connection.
 - Lens focused, glued, and tested in a 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).
 - 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 a 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 are also available in color RGB version ([CAM-66GY](#)) and monochrome version ([CAM-56G3](#)).

Description

The CAM-16GZ promodules are a full range of sample camera modules made for a seamless evaluation and integration of the VD16GZ 1.5-megapixel RGB-IR image sensor. These ready-to-use vision extensions integrate VD16GZ image sensor, lens holder, lens, and plug-and-play flex connection in a tiny format down to 6.5 mm square.

The CAM-16GZ line leverages the complete toolbox of on-chip features of the VD16GZ image sensor embedded, such as 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 ST BrightSense portfolio.

CAM-16GZ promodules can be tested and integrated on computers or embedded processing boards using hardware and software tools from STMicroelectronics. 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

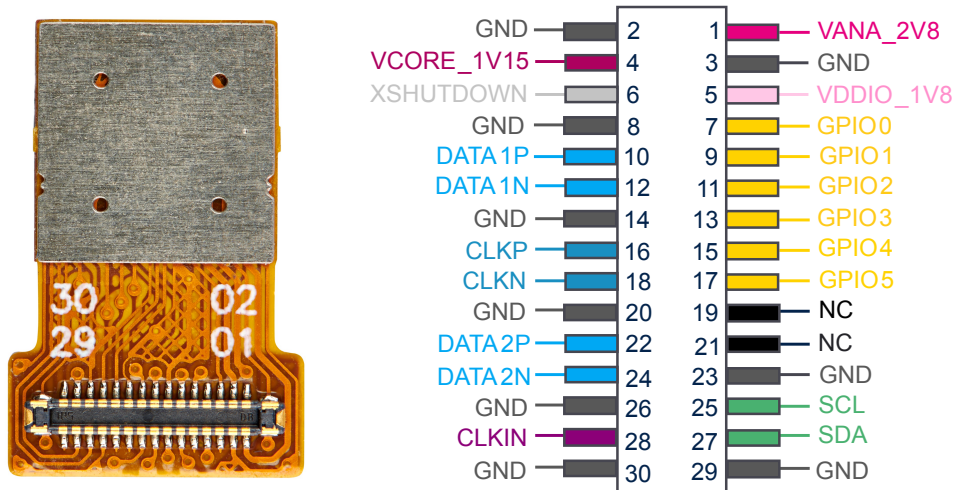


Table 1. Evaluation & development setup with CAM-16GZ promodules

Setup for MCU and MPU boards with MIPI CSI-2 output	Setup for computer with USB output
CAM-16GZ promodule + P-Board	CAM-16GZ promodule + EVK Main

1 Technical specifications

Table 2. Technical specifications

Category	Parameter	Common specifications	
Image characteristics	Sensor featured	VD16GZ	
	Resolution	1.53 MP – 1124 x 1364	
	Aspect ratio	5 : 6	
	Shutter type	Global shutter	
	Color option	RGB-IR	
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	
Embedded features	Image quality optimization	<ul style="list-style-type: none"> • Autoexposure • Automatic dark calibration • Analog and digital gains 	
	Power and data optimization	<ul style="list-style-type: none"> • Cropping • 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-6GZ-073CLR	CAM-6GZ-152CLR
Optical characteristics	Aperture – f/#	F/2.2	F/2.0
	Field of view – D H V	73° 51° 60°	152° 97° 118°
	EFL	3.03 mm	1.69 mm
	Depth of field	43 cm -> ∞	14.4 cm -> ∞
	TV distortion	< 1%	< 27%
	Filter	Clear	Clear
Mechanical characteristics	Module head dimension – L x W x H	6.5 x 6.5 x 4.68 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	13.65 x 9.0 x 7.15 mm
	Distance from connector to optical center	7.45 mm	7.45 mm

Revision history

Table 3. Document revision history

Date	Version	Changes
22-Apr-2025	1	Initial release

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