CAM-55G0

Data brief

VD55G0 promodules:
Camera module evaluation samples for instant integration of VD55G0 sensor

ST Bright Sense

Order code	Description
CAM-5G0-079CLR	VD55G0 promodule with 79° FoV lens
CAM-5G0-158CLR	VD55G0 promodule with 158° FoV lens

Features

- "Promodules": turnkey camera modules for evaluation:
  - Including VD55G0 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 5.0 mm square.
- Various lens options:
  - Ultra-wide-angle lens for wide scene capture (158° DFOV).
  - General-purpose lens enabling various system setups (79° DFOV) and a thin design.
- 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.

Description

The CAM-55G0 promodules are a full range of sample camera modules made for a seamless evaluation and integration of the VD55G0 0.38-megapixel monochrome image sensor. These ready-to-use vision extensions integrate VD55G0 image sensor, lens holder, lens, and plug-and-play flex connection in a tiny format down to 5.0 mm square.

The CAM-55G0 line leverages the complete toolbox of on-chip features of the VD55G0 image sensor embedded, such as binning, autoexposure, or context management. Multiple GPIOs enable users to synchronize the modules with triggers and illumination. Featuring a single lane 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-55G0 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

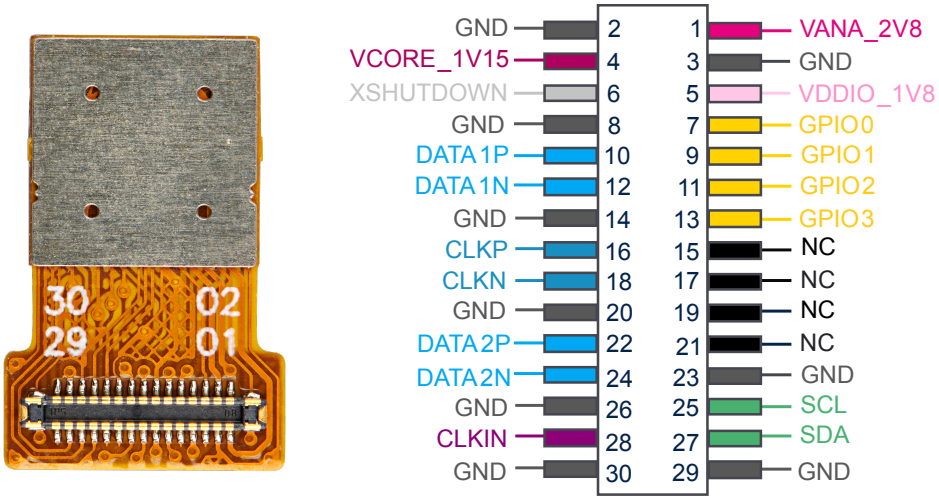
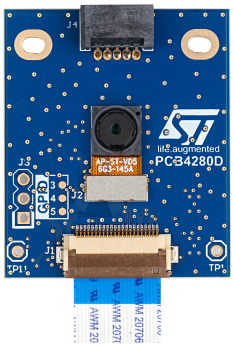


Table 1. Evaluation & development setup with CAM-55G0 promodules

	
Setup for embedded platforms with MIPI CSI-2 output	**Setup for computer with USB output**
CAM-55G0 promodule + P-Board	CAM-55G0 promodule + EVK Main

1 Technical specifications

Table 2. Technical specifications

Category	Parameter	Common specifications	
Image characteristics	Sensor featured	VD55G0	
	Resolution	0.38 MP – 644 x 604	
	Aspect ratio	Close to 1 : 1 (644 x 604)	
	Shutter type	Global shutter	
	Color option	Monochrome	
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 lane	
	Control interface	I²C	
	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	• Autoexposure • Automatic dark calibration • Defective pixel correction • Analog and digital gains	
	Power and data optimization	• Cropping • Binning • Subsampling • Context management with up to 4 contexts	
	Others	• Mirror/Flip • Test pattern generation • Temperature sensor • GPIOs x4	
Category	**Parameter**	**CAM-5G0-079CLR**	**CAM-5G0-158CLR**
Optical characteristics	Aperture – f/#	F/2.0	F/2.0
	Field of view – D | H | V	79° | 62° | 59°	158° | 116° | 108°
	EFL	1.348 mm	0.825 mm
	Depth of field	13.5 cm -> ∞	5.5 cm -> ∞
	TV distortion	≤ 1%	< 11%
	Filter	Clear	Clear
Mechanical characteristics	Module head dimension – L x W x H	5.0 x 5.0 x 2.8 mm	7.0 x 7.0 x 5.72 mm
	Module total dimension – L x W x H	11.65 x 8.0 x 2.8 mm	12.65 x 8.0 x 5.72 mm
	Distance from connector to optical center	7.45 mm	7.45 mm

Revision history

Table 3. **Document revision history**

Date	Version	Changes
17-May-2024	1	Initial release
22-Apr-2025	2	Updated images in Table 1. Evaluation & development setup with CAM-55G0 promodules Table 2. Technical specifications: Updated depth of field values, tv distortion rate for the CAM-5G0-158CLR, and module height.