VD55G1 promodules:
Camera module evaluation samples for instant integration of VD55G1 sensor



Features

- "Promodules": turnkey camera modules for evaluation:
  - Including VD55G1 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, with smaller dimension achievable as a customized solution from partner camera module integrators.
- High lens flexibility:
  - Ultra-wide-angle lens for wide scene capture (160° 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.

Order code	Description
CAM-5G1-160CLR	VD55G1 promodule with 160° FoV lens

Description

The CAM-55G1 promodules are a full range of sample camera modules made for a seamless evaluation and integration of the VD55G1 0.56-megapixel monochrome image sensor. These ready-to-use vision extensions integrate VD55G1 image sensor, lens holder, lens, and plug-and-play flex connection in a tiny format down to 6.5 mm square.

The CAM-55G1 line leverages the complete toolbox of on-chip features of the VD55G1 image sensor embedded, such as autoexposure, auto-wake up, background removal, or event-like mode. Multiple GPIOs enable users to synchronize the modules with triggers and illumination. Featuring a single lane MIPI CSI-2 output and very low operating power, 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-55G1 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.

lectronics sales office.

Figure 1. Common connector to all ST promodules

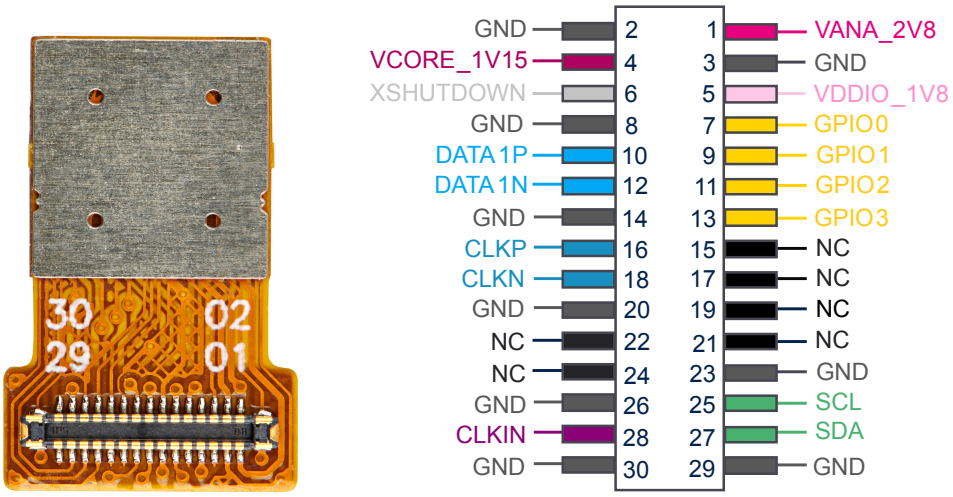

Table 1. Evaluation & development setup with CAM-55G1 promodules

	
Setup for embedded platforms with MIPI CSI-2 output	**Setup for computer with USB output**
CAM-55G1 promodule + P-Board	CAM-55G1 promodule + EVK Main

Downloaded from Arrow.com.

1 Technical specifications

Table 2. Technical specifications

Category	Parameter	Common specifications
Image characteristics	Sensor featured	VD55G1
	Resolution	0.56 MP – 804 x 704
	Aspect ratio	Close to 1 : 1
	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	2.8V – 1.2V, or 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 • Noise reduction • Gamma correction • Defective pixel correction • Analog and digital gains
	Power and data optimization	• Auto wake-up • Background removal • Event-like mode • Cropping • Binning • Subsampling • Context management with up to 4 contexts
	Others	• Mirror/Flip • Test pattern generation • Temperature sensor • GPIOs x4
Category	**Parameter**	**CAM-5G1-160CLR**
Optical characteristics	Aperture – f/#	F/2.0
	Field of view – D | H | V	160° | 105° | 120°
	EFL	0.825 mm
	Depth of field	40 cm -> ∞
	TV distortion	< -76 %
	Filter	Clear
Mechanical characteristics	Module head dimension – L x W x H	7.0 x 7.0 x 5.72 mm
	Module total dimension – L x W x H	12.4 x 8.0 x 5.72 mm
	Distance from connector to optical center	7.45 mm

Revision history

Table 3. **Document revision history**

Date	Version	Changes
17-May-2024	1	Initial release

IMPORTANT NOTICE – READ CAREFULLY

STMicroelectronics NV and its subsidiaries (“ST”) reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST’s terms and conditions of sale in place at the time of order acknowledgment.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of purchasers’ products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2024 STMicroelectronics – All rights reserved