VD55G1

## Tiny, smart, low-power 800 x 700 global shutter image sensor

Smart 800 x 700 global shutter image sensor featuring dual MIPI/I3C interface and rich processing features in a tiny footprint

Combining leading-edge ST pixel technologies, ultralow power, and advanced processing features, the VD55G1 is the ideal sensor for next-generation embedded vision systems and smart devices.
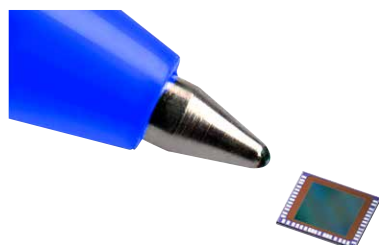
KEY FEATURESS

- Dual output:
  - MIPI CSI-2
  - I3C
- Image enhancement:
  - Autoexposure
  - Noise reduction
  - HDR
  - Dark calibration
  - Defect correction
  - Gamma correction
- Power reduction:
  - Low-power mode
  - Auto wake up
- Data optimization:
  - Background removal
  - Event-like mode
  - Binning
  - Subsampling
  - Cropping
  - Context management

KEY APPLICATIONS

- AR/VR headsets
- Smart glasses
- Smartphone
- IoT
- Laptops & tablets
- Barcode reading
- Machine vision
- Security
- Medical imaging

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VD55G1 at a glance

High performance, small size

The VD55G1 delivers exceptional sensitivity and sharpness for image captures by combining cutting-edge patented BSI and CDTI technologies. Its global shutter operation removes motion and lighting artifacts while reducing lighting power requirements. Leveraging 3D stacking technologies and the world's smallest global shutter pixel, the VD55G1 embeds major innovation in a tiny 2.73 x 2.16 mm² footprint to fit in the smallest consumer devices.

Ultralow power device

The VD55G1, with low-power mode and optimized architecture, features very low power operation, even at high frame rates, rendering it ideal for battery-powered applications. Its smart auto wake up reduces power consumption even further by keeping the sensor in an ultralow power sleep mode and only triggering full streaming mode when an event is detected.

Effortless integration

Enabling image outputs through MIPI CSI-2 or I3C, the VD55G1 is compatible with a broad range of processing solutions, including entry-level MCUs. As part of the ST BrightSense portfolio, we provide major product development support through our comprehensive ecosystem, complete with hardware kits and camera modules for rapid evaluation and vision system prototyping, along with free drivers and evaluation software to further facilitate integration in applications.

Block diagram

Imaging capabilities

Event image

Background removal

HDR
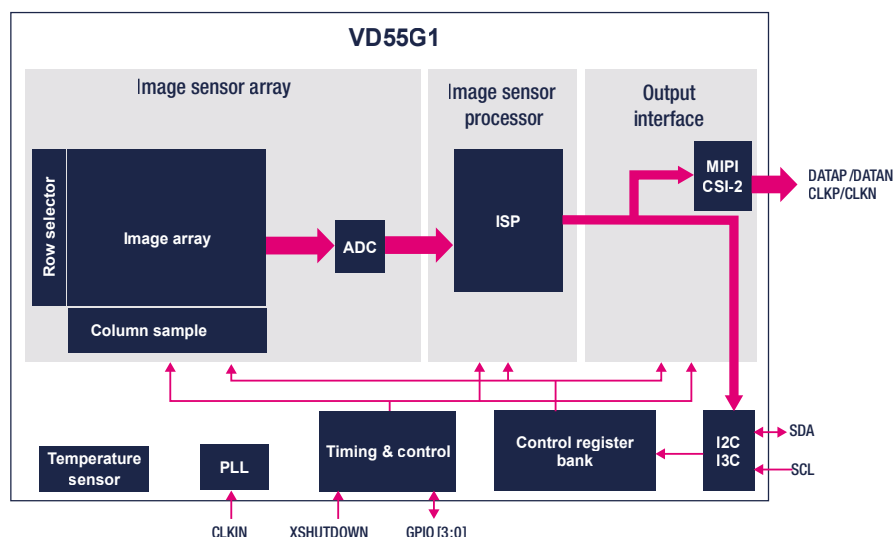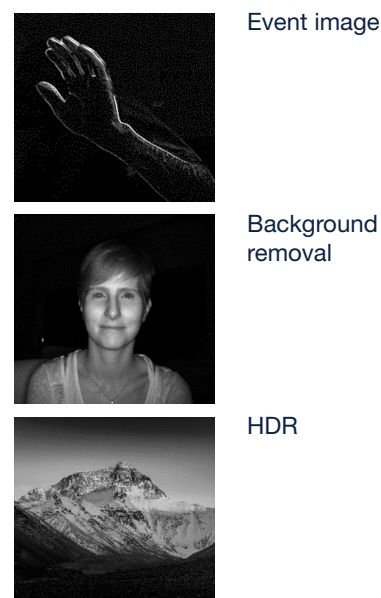
Ordering codes

Category	Item	Deliverable	Description	Part number
Product	VD55G1	Reconstructed wafer	0.56 MP monochrome global shutter image sensor	VD55G1CCB0/RW
Evaluation Tools	EVK Main	Evaluation kit	USB evaluation kit for any ST BrightSense sensor	STEVAL-EVK-U0I1
	P-Board	Development kit	MIPI development kit for any promodule	STEVAL-CAM-M0I1
	VD55G1 S-Board	Development kit	MIPI development kit embedding VD55G1 sensor	STEVAL-55G1MBI1
	CAM-55G1 promodule	Evaluation camera module	Evaluation camera module with VD55G1 sensor	CAM-5G1-160CLR

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