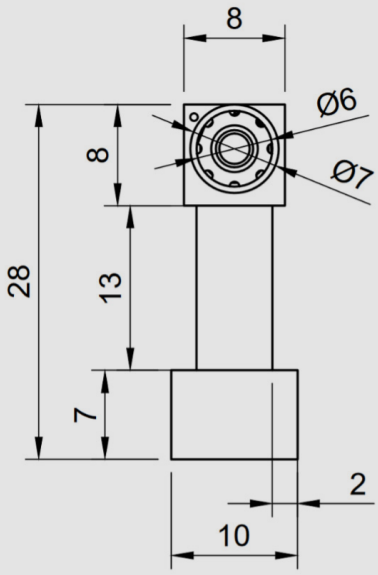
1/5” format 320 x 320-pixel Event-Based Sensor compact optical module with embedded features

PROPHESEE

GENX320 CM2





PARAMETER	UNIT	SPECIFICATION
Body dimension	mm	8 x 8 x 5
Outline dimension	mm	10 x 28
Connector		Hirose BK13 Series
#Connector pins		40
Control Interface		I²C
Data Interface		Parallel & MIPI
Lens Mount		M6
Aperture		f/2.4
Focal Length		1.11 mm
HFoV/VFoV	deg	84
DFoV	deg	104
IR cut filter		No
Integrated EEPROM		Yes (256Kbit)

FEATURES

- Prophesee GenX320 1/5" format 320x320 event-based vision sensor
- 8mm x 8mm flex-rigid module substrate
- 104° DFoV M6 lens mounted using threaded lens holder
- 40 pin board-to-board connector provides full sensor I/O breakout
- Includes 256Kbit EEPROM on module
- High-speed event data output (equivalent to >10kfps time resolution) with row-level 1µs-precision time stamping
- 0.05 lux Low light cutoff
- High dynamic range >140dB
- Ultra-low power mode 36µW
- Very-low operating power 3mW
- Embedded features: Anti-flicker filtering (AFK) + Event-Rate Controller (ERC) + Spatio-Temporal Contrast Filter (STC)
- Ambient Light Measurement
- ML-friendly compressed and uncompressed event data streams
- 1-lane MIPI D-Phy output interface or 8-bit parallel output interface
- I²C interface





APPLICATIONS

- AR/VR/XR
- Eye tracking
- Gesture recognition
- IoT
- AI on the Edge and Machine Learning
- Always on cameras
- Healthcare (privacy) cameras
- Wearables
- Smart Home





DESCRIPTION

Housed in a compact optical module with flex and Hirose board-to-board connector, the GenX320 CM2 offers a powerful solution for diverse embedded vision applications. At the heart of the CM2 is a 320x320 1/5" format 6.3µm pixel BSI stacked event-based sensor. GenX320 was designed with the explicit goal to improve integrability and usability in at-the-edge vision systems. This includes event data pre-processing and formatting, data interface compatibility and low- latency connectivity to different processing platforms including latest low-power, neuromorphic processors. The sensor has been optimized for very low power operation, featuring a hierarchy of application-specific power modes. GenX320 contains an integrated Event Signal Processing (ESP) pipeline which includes timestamping, filtering, throughput regulation and data formatting functions. An Event Rate Controller (ERC) allows to cap the output event rate to a programmable limit. A Spatio-Temporal Contrast filter (STC) detects and removes redundant bursts and trails of events triggered by high contrast features in the scene. An Anti-Flicker (AFK) filter detects and filters events generated by flickering light sources in either band pass or band stop modes.

SENSOR LOW POWER MODES

MODE	ULTRA LOW POWER	LOW POWER STANDBY	LOW POWER MONITOR	CPI STREAMING	CPI STREAMING	MIPI STREAMING
Sub-system				100kEPS CPI @10MHz	1MEPS CPI @10MHz	10MEPS MIPI @800MHz
Pixel array	3x3 GCD		320x320 pixels	320x320 pixels	320x320 pixels	320x320 pixels
Digital ICN + CPU	Powered down	Powered, Clocked	Powered, Clocked	Powered, Clocked	Powered, Clocked	Powered, Clocked
Digital readout	Powered down	Powered, Clocked	Powered, Clocked	Powered, Clocked	Powered, Clocked	Powered, Clocked
Digital ESP + Output I/F	Powered down	Powered, Gated	Powered, Gated	Powered, Clocked	Powered, Clocked	Powered, Clocked
	Total: 36µW	**Total: 1.8mW**	**Total: 2.9mW**	**Total: 3mW**	**Total: 4.8mW**	**Total: 22.8mW**
	AUTONOMOUS FAST WAKEUP <1ms					
	WAKEUP >100ms UNDER HOST CONTROL					

ORDERING CODES AND BRIEF DESCRIPTION

POMX320CDMPCAFSV2: GENX320MP CM2 OPTICAL COMPACT MODULE ENGINEERING SAMPLE

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