

Make Intelligence **Smarter**

Speck[™], an all-in-one dynamic vision SoC

About SpeckTM ision Processing

Speck[™] is a fully event-driven neuromorphic vision SoC. Speck[™] supports large-scale spiking convolutional neural networks (sCNNs) with a fully asynchronous chip computational architecture.

Speck[™] is fully configurable with up to a capacity of 320k neurons and integrates a state-of-art dynamic vision sensor (DVS), enabling fully event-driven, real-time, highly integrated solutions for a range of visual applications. For most applications, Speck™ provides intelligent visual processing at milli-Watt power levels, and with a response latency of down to a few ms.



Features

Power consumption <5mW

100-1000x lower than GPU solutions An AA battery can power Speck[™] for up to 100 days Low latency / fast reaction use cases Fully-asynchronous, always-on

Privacy security

On-chip vision processing, no video stream recorded or transmitted For privacy-sensitive applications

Application latency <5ms

Real-time human interaction

Ultra-light weight

World's lightest complete smart vision system Ubiquitous vision processing for any device Front face recognition solution based on Speck[™] SoC

an all-in-one dynamic vision SoC

Front face detection

Speck[™], a dynamic vision SoC integrating sensing and computing, enables efficient sensing and real-time detection of moving objects, with milliwatt-level ultra-low power consumption and millisecond-level ultra-low latency. This technology brings more intelligent and convenient interaction methods to end user devices and a better user experience.

🕄 Syn Sense

The dynamic vision sensor (DVS) embedded in Speck[™] captures visual information that changes in real-time, such as suddenly appearing faces, hands covering eyes, and waving hands.Using spiking neural networks (SNNs), Speck can efficiently analyze dynamic visual information and perform detection and recognition of target objects, such as object classification, gesture recognition. All this can be done with milliwattlevel ultra-low power consumption and millisecond-level ultra-low latency.

The face detection model for Speck[™] supports face detection within 0.4-0.8 meters and can be used in interactive scenarios such as smart toys and smart mirrors, allowing users to engage in handsfree human-machine interaction.

Specifications

	Circuit Asynchronous digital circuit Neurons 320,000 Integration 19,800/mm ²		t	Resolution Dynamic range Power consumpt	tion	128*128 90dB <5mW	
App	lications						
	Smart door locks Smart toys		Smart refrigerator		Sma	Smart mirror	
Key	benefits						
	Ultra low cost System cost <\$7			Ultra-low power consumption Power consumption <5mW (typical applications)			
	Fast response Response time <50ms (typical applications) Highly integrated On-chip integration of sensors and processors High neuron density			Privacy Pure end-to-end computing of data streams:			
					sales@sy www.syr	u msense.ai nsense.ai	