

Make Intelligence Smarter

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



About Speck™

Dynamic Vision 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
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
Low latency / fast reaction use cases

Ultra-light weight

World's lightest complete smart vision system
Ubiquitous vision processing for any device



Person flow monitor based on Speck™ SoC

an all-in-one dynamic vision SoC



Person flow monitor

Speck™ is a dynamic vision system-on-chip (SoC) that integrates dynamic vision sensing and event-driven computing, providing highly integrated, real-time, and low-power dynamic vision solutions for edge perception and computing applications.

The Speck™ SoC includes hardware acceleration for highly efficient impulse neural networks (SNNs), enabling human-machine interaction and intelligent systems, such as a network of lighting and entry/exit gates and human flow calculation based on a human detection SNN model for side or top surveillance. Speck™ is an ultra low-power and ultra low-latency SoC with milliwatt-level power consumption and millisecond response times. Additionally, it provides dynamic recognition without compromising privacy.

SynSense empowers partners with its dynamic recognition technology, ultra low-power consumption, ultra low-latency, and inherent privacy. The solution also supports the implementation of human flow counting and monitoring functions based on recognition results, providing comprehensive support to customers in the smart home and security industries.

Applications

Household

Smart door
Smart home

Commercial

Clients flow monitoring
Security monitoring



Specifications

Circuit	Asynchronous digital circuit
Neurons	320,000
Integration	19,800/mm ²

Resolution	128*128
Dynamic range	90dB
Power consumption	<5mW

Key benefits

Ultra low cost

System cost <\$7

Fast response

Response time <50ms (typical applications)

Dynamic recognition

On-chip inference

Highly integrated

On-chip integration of sensors and processors

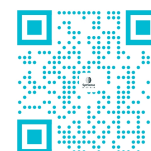
High neuron density

Ultra-low power consumption

Power consumption <5mW (typical applications)

No privacy violation

Pure end-to-end computing of data streams:
no data transfer to the cloud



 sales@synsense.ai

 www.synsense.ai