

Natural ID™ VFS5100-Family Swipe Fingerprint Sensor

Product Brief

The Versatile Natural ID™ Fingerprint Identification Solution for PC Device



The Synaptics® Natural ID™ VFS5100 family of fingerprint identification solutions protects the user's identity, while simplifying the user experience of electronic devices.

By replacing cumbersome, complex passwords with the swipe of a finger, they deliver an intuitive way to unlock

devices and quickly access online services such as banking, retail, and social media.

The VFS5100 family enables OEMs to deliver the most compelling, differentiated, high-performance PC devices to market at the lowest, most competitive costs.

VFS5100 Family Optimized for PCs

The Synaptics VFS5100 LiveFlex™ family of USB Dual-Line-Imager (DLI) fingerprint sensors provides the ultimate in design flexibility, high performance, and low cost identification solutions for PC devices.

The VFS5100 physically separates the ASIC and the fingerprint imaging functions — resulting in a larger sensing area for better usability and advanced security, while minimizing the ASIC size for lowest cost. Using a high frequency RF transceiver, the sensor captures the unique features of the user's fingerprint. Proprietary image processing and matching algorithms deliver superior Failure to Enroll (FTE), False Acceptance Rate (FAR), and False Reject Rate (FRR) performance.

The VFS5100 family includes encapsulated BGA and ultra slim COF button modules for PC devices. Small-footprint packages allow integration into tight, challenging areas. VFS5100 family is also optimized for minimal power consumption.

Part Number	Package	Resolution	Imaging Width
VFS5011	COF	508 DPI	8 mm
VFS5111	COF	508 DPI	10 mm
VFS5131	COF	508 DPI	10 mm

The VFS5100 family portfolio continues the Synaptics tradition of driving innovation, supporting sleek industrial designs, and ease-of-integration across platforms and operating systems, including Microsoft® Windows®.

Features and Benefits

High-Performance Sensor

Synaptics' proprietary image processing and matching algorithms ensure industry-leading False Acceptance Rates (FAR) and False Rejection Rates (FRR) performance. The VFS5100 family is also optimized for minimal power consumption to maximize battery life.

LiveFlex™ Technology

Separates the fingerprint sensing element from the fingerprint controller IC to deliver more system design options for the size, shape, and placement of a fingerprint sensing module.

Superior Durability

The VFS5100 family delivers the highest performance, most rugged, durable sensors at competitively low prices. Since the user never touches the ASIC, the parts are resistant to electrical discharge (ESD), abrasion, liquids, and chemicals as well as industry-leading resistance to impact damage.

Integration Options

The versatile VFS5100 family can be embedded in a variety of PC products, such as notebooks, palm rests, keyboards, mice, or monitors. Low-profile, small-footprint packages, and flexible LiveFlex™ sensors support integration into the tightest, most challenging spaces.

Improved Usability and Ergonomics

The user swipes a finger over a durable sensor surface to acquire the fingerprint image. Bi-directional swiping is even supported.

Advanced OS Support

The VFS5100 is fully compliant with leading operating systems such as Microsoft Windows® Biometric Framework (WBF). Synaptics' open system architecture enables easy integration with industry leading biometric security software applications.

Proven Technology

The Natural ID™ product portfolio is backed by Synaptics' deep system integration expertise, user experience design capabilities, and the ability to reliably meet the fingerprint authentication needs of top-tier OEMs and high-volume programs. Synaptics' VFS5100 family of sensors is used in over one hundred million devices.

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Key Hardware Specifications

Item	Specification
Sensor Type	Swipe
Sensor Image Width	VFS5011: 8 mm VFS5111: 10 mm VFS5131: 10 mm
Interface	USB 1.1 – 3.1: Full Speed
Power Supplies	3.3V

Key Software Specifications

Item	Specification
OS Support	Microsoft® Windows®, Linux
FRR/FAR Performance	FRR ~ 1% @ 1:50K FAR
Security Level	Match on Host

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