

TouchStrip® Fingerprint Authentication Module TCESC4K



Proven, easy-to-integrate embedded fingerprint authentication

Proven

UPEK's proven, high-quality silicon fingerprint sensors and solutions have been available for over ten years and have been **embedded into millions of devices** such as laptops, mobile phones, garage door openers, USB flash drives, external hard disk drives, car alarms, safes, POS terminals and more. Trusted names that have integrated UPEK fingerprint sensors include Dell, IBM/Lenovo, Sony, Toshiba, SanDisk, Honeywell, Conrad Electronic, and Craftsman.

Easy-to-Integrate and Fast Time-to-Market

Integrating fingerprint biometrics can seem daunting. To make things simple, UPEK provides a **fully assembled and tested** fingerprint module plus a complete integration toolkit. These modules provide three interface options: USB, SPI and UART (RS-232), which are:

- **Quick to integrate** - Just connect and interface with simple commands
- **Self-Contained** – On-board matcher & storage for up to ~100 fingerprint templates
- **Proven** - Designed and certified by the fingerprint experts.

Robust

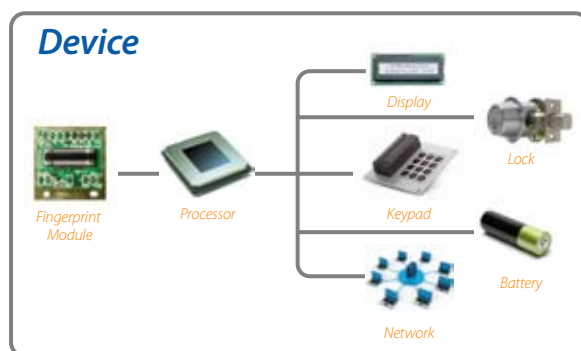
Fingerprint sensors need to withstand human interaction and the elements. UPEK's **SteelCoat™ protective coating** delivers durability that is six times more robust than competing swipe sensors.

Secure

UPEK fingerprint sensors take user authentication from the weakest to the strongest link in a security architecture. **Live-layer sensing** senses the surface and subsurface of the skin and 3rd generation **anti-spoofing technology** counters attempts to fool the sensor with a fake fingerprint.

Satisfying for End Users

Fingerprint sensors need to work for everyone in all conditions – old and young, big and small, dry and wet, etc. UPEK embedded fingerprint sensors offers the most convenient user experience based on proprietary **HD3D™ Sensing technology** that senses 3-D ridges and valleys of a fingerprint and captures the highest image quality for a swipe sensor. Advanced technology significantly reduces "Failure To Enroll".



Access Control



USB Tokens & Storage Devices

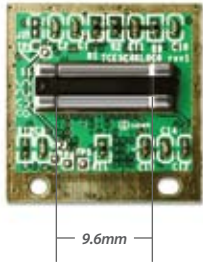


Car Alarms & Embedded Devices

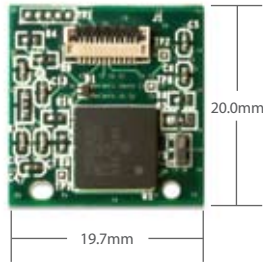


USB Peripherals

Module Top



Module Bottom



Specifications

Hardware

Fingerprint sensor	TCS4K (192 pixels) 508 or 381 DPI 9.6 x 25mm image size SteelCoat protective layer
Processor	TCD50D, 32-bit RISC, 144 MIPS
Fingerprint Template database size	Up to ~100 templates (typical)
ESD	IEC 61000-4-2 level 4 +/- 15KV air, +/- 8KV contact
Power (typical)	3.0V to 3.6V 78ma (capture, match, navigate) Standby (USB): 1350uA Standby (UART/SPI): 1150uA
Finger Detection option	Wakes processor, to save power
Dimensions	20.0 x 19.7 x 3.6mm 0.80" x 0.77" x 0.14"
Environmental	Operating temp: -30°C to +70°C Storage temp: -30°C to +125°C Humidity: 5%-93%, non-condensing ROHS, Low Halogen

Biometric Capabilities

Swipe Speed	~40cm/sec (15in/sec)
Match Time	1 finger: <0.4 sec (from finger liftoff) 15 fingers: <0.75 sec 100 fingers: ~2.5 sec

Sensor Durability

Swipe resistance	>20 million swipes
Pen scratch resistance	6H hardness with 20N force
Pen Drop resistance	60cm
Ball Drop resistance	60cm
Waterproof	24h water soak
Chemical resistance	24h contamination with over 20 chemicals

Software & Tools

PerfectTrust API (PTAPI) [Embedded]	Image capture & transfer, enrollment, match
Biometric Services API (BSAPI)	Windows 32-bit and 64-bit; Linux x86 PTAPI features plus support for RSA/OATH OTP, secure network communications & other features (USB only)
Driver Support	UART and SPI interface libraries - reference implementation for 32-bit MCUs in C source code USB: Windows 2000/XP/Vista (signed) UART: Windows 2000/XP/Vista, WinCE SPI: provided by customer

Flexible Connection Options

To meet today's diverse embedded fingerprint product needs, the UPEK TCESC4K swipe fingerprint module offers three interface options for device flexibility:

- **USB (Full speed):** For USB peripherals such as fingerprint readers, keyboards and smart card readers.
- **UART (RS-232):** Common serial interface available on most embedded processors. (up to 230.4 kbps)
- **SPI:** Higher speed serial interface. More flexible and fewer connect lines. (250k to 1Mbps)

Product Ordering Information

To help customers design products using UPEK's embedded swipe fingerprint module, UPEK offers development kits, evaluation kits and fingerprint sensors. Contact UPEK sales for details.

Product	Part Number
TouchStrip Embedded Module (TCS4K sensor, TCD50D processor, USB/SPI/UART)	TCESC4KS0C0
TCESC4K Starter Kit (80 TCESC4K modules) MOQ for bulk orders: 400	TCKT06
TouchStrip Embedded Development Kit (Sample HW, development board, SW tools & docs)	TCKDSMOD

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