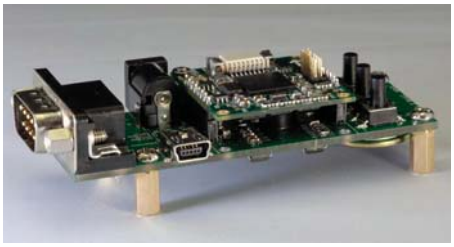
TMS320C5515 Fingerprint Development Kit (FDK)

Comprehensive development tool for only U.S. $79

There is an increasing need for better forms of security. Therefore, biometrics, the use of a person's unique biological characteristics (such as face, voice, or fingerprints) for personal identification, is a fast growing market.

TI's TMS320C5515 Fingerprint Development Kit is a complete signal chain solution to help manufacturers and developers add fingerprint authentication features into their products faster. A programmable processor like the C5515 digital signal processor (DSP) provides maximum processing flexibility to a biometric system and allows the product to be small and portable while maintaining power-efficient performance – at a low system cost. For users who have no experience in developing fingerprint applications, this kit can potentially reduce their time to market by 9 to 12 months. Target markets include fingerprint-enabled physical access control products (electronic door locks and safe boxes), USB smart keys and storage device, PC user identification and time and attendance monitoring systems.



▲ *C5515 DSP-based core board and extension board*

TMS320C5515 Fingerprint Development Kit features

This robust development kit includes a core board based on TI's C5515 DSP, two widely used fingerprint sensor types (swipe and optical), as well as optimized application software to ease product creation and implementation.

The comprehensive C5515 Fingerprint Development Kit includes:

- C5515 DSP-based core board
- Extension board for power supply, communication to PC and user interaction
- Tooan optical sensor
- AuthenTec swipe sensor
- A-to-mini-B USB cable for power supply and communication to PC
- Mini converter board for JTAG emulation
- Mini DVD contains:
  - Code Composer Studio™ IDE Rev. 3.3
  - Simplified fingerprint application source code and software documentation
  - Production-quality demo code .out file
  - C5515 datasheet and CSL
  - Technical documentation including quick start guide, user guide, application notes, schematics, BOM and gerber files

Why the TMS320C5515 DSP?

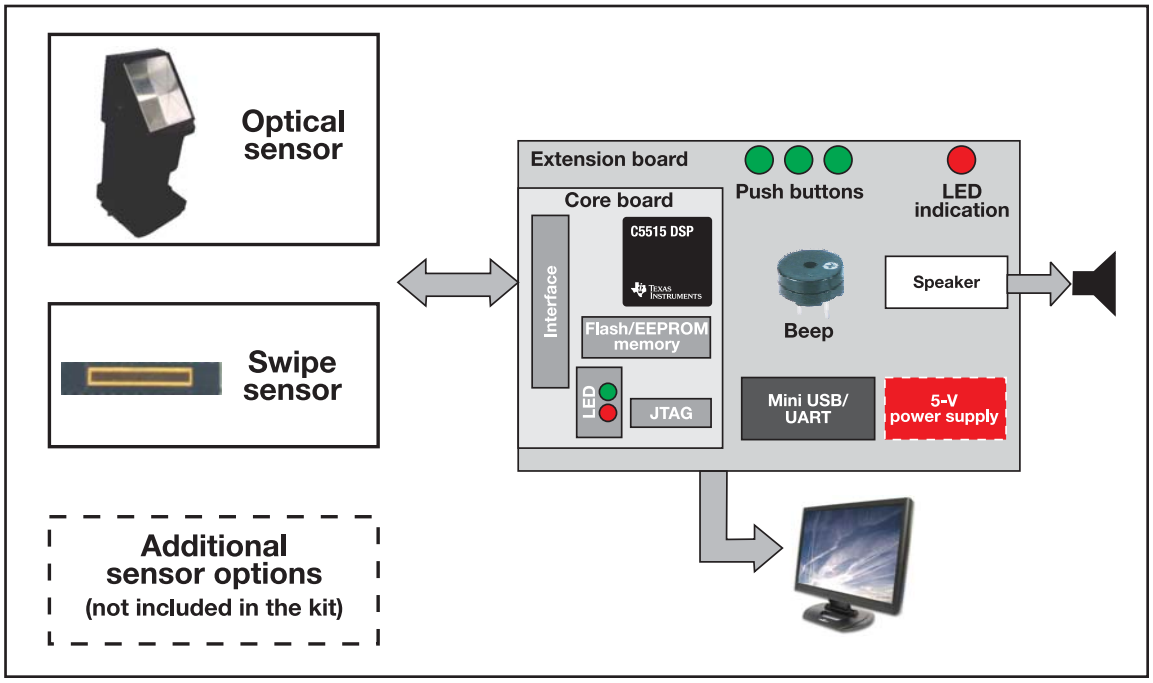
Fingerprint biometrics is an area rich with opportunities for DSP-based innovation. The signal-processing elements in fingerprint algorithms are classic DSP functions such as filtering, transforming and sorting operations. The FDK is based on TI's latest C5515 digital signal processor, which is the industry's lowest power, 16-bit fixed point DSP and helps conserve energy at an exceptional level and enables longer battery life.

TMS320C5515 DSP features and benefits:

- TMS320C55x™ architecture achieves code execution efficiency and reduces power consumption through three main areas:
  - Increased parallelism from the dual multiply-accumulate (MAC) units

Key benefits

- Based on industry's lowest power 16-bit TMS320C5515 DSP for longer battery life
- Comprehensive, low cost (U.S. $79) development tool that greatly reduces product design cycle
- Optimized DSP code for fast and accurate fingerprint matching
- Very small form factor (the core board is only 30mm × 30mm, the extension board is 70mm × 30mm) meets portable application requirements
- Two-board architecture provides great design flexibility, allowing customers to reuse their designs to develop scalable product lines



▲ *TMS320C5515 Fingerprint Development Kit system overview*

- Higher data bandwidth to on-chip memory through the multiple simultaneous accesses
- Advanced DSP addressing features

- With extensive power management features such as memory retention, real-time clock (RTC)-only mode and clock gating to maximize battery life for portable devices
- Highly-integrated peripherals – including a high-speed USB 2.0, three on-chip low-dropout regulators (LDO), UART, SPI and GPIOs – as well as up to 320KB of on-chip memory saves system costs and power enabling new emerging applications.

Get started today

The C5515 Fingerprint Development Kit is available today for only U.S. $79 from TI and TI authorized dealers. The orderable part number is TMDXBDKFP5515. For more details, go to our website at **www.ti.com/c5515fdk**

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