

Product Bulletin

Biometrics Security Solutions

TI DSPs Enable:

- **Higher accuracy** with support for complex image enhancement algorithms, in the form of single-cycle multiply-accumulate (MAC) and high-performance MIPs.
- **Faster, smaller and lower cost solutions** with power-efficient performance and leading-edge CMOS technology.
- **Faster time-to-market** with scalable system solutions that offer extensible architecture and design reuse.

Biometrics is the science and technology of measuring and statistically analyzing biological data for user authentication. Physical and logical access control applications using biometrics for the prevention of unauthorized access are expected to fuel the growth of this industry, bringing convenience with security.

In the near future, a single biometric or the fusion of biometrics with digital encryption and smart cards will be useful in a variety of applications including:

- Personal or business safes
- Frequent traveler cards
- National identification cards or driver's licenses

- Physical access to buildings
- Labor management
- Network and personal computer access
- Automotive and home security systems
- Financial transaction at automatic teller machines and banks
- Retail transactions at point-of-sale terminals
- eCommerce and mCommerce with mobile phones and PDAs

For biometric technology developers, original equipment manufacturers (OEM) and system integrators looking for a complete biometric system solution offering, TI provides a wide portfolio of components, tools and software to

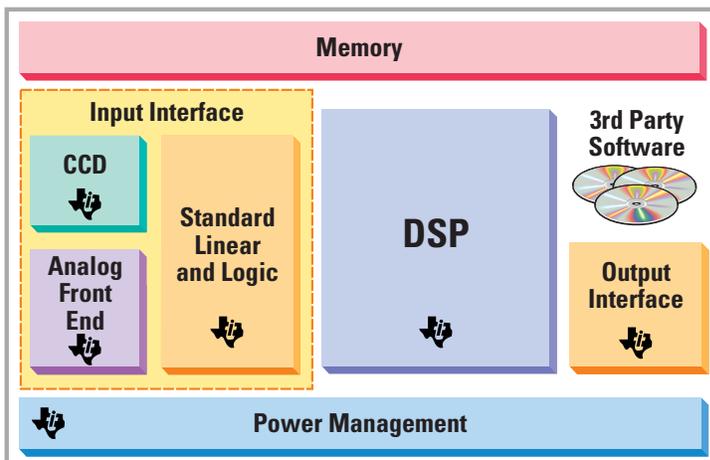
lower development cost and speed time-to-market.

By providing system solutions that allow the integration of multiple biometric technologies and features on the same processor platform, TI solutions enable a customer to differentiate with multiple highly integrated products in a competitive market space. With multiple standards and emerging technologies, having the flexibility of a programmable processor platform allows for customizing solutions to address the needs of a specific end equipment or application.

A biometric system solution consists of:

- **Input interface** for biometric image capture
- **Digital signal processor** for biometric image processing
- **Output interface** to communicate the results and control access to the secured asset
- **Power management** components for efficient power supply regulation and supervision
- **Memory** for the storage of encrypted templates and software code
- **Software** modules for biometric image capture, reconstruction and enhancement, matching, encryption, template management etc.

Complete Biometric System Solution



TI provides both digital and analog components for a biometric system.

Development Tools

TI empowers the customer with industry-leading development tools and software as part of the eXpressDSP™ technology for TI DSPs.

eXpressDSP Software and Development Tools facilitate easy development by offering the industry's best integrated development environment for DSPs—Code Composer Studio™ IDE—and a host of software libraries including peripheral drivers and Imaging Functions Library.

Available **hardware development tools** include various standard DSP developer kits, evaluation modules and the imaging development kit.

An extensive list of **third-party solutions** also accelerates development. TI third parties offer hardware and software solutions to perform functions such as image enhancement, fingerprint

recognition, compression and encryption. TI biometric third parties include:

- **AuthenTec**—Embedded fingerprint development kit and reference design with AuthenTec's FingerLoc™ AFS8500 fingerprint sensor utilizing their patented TruePrint™ technology and TI high-performance TMS320VC5509 DSP
- **Bioscrypt**—MV1200™, a full-featured standalone fingerprint verification module based on TI's TMS320C6711 DSP. Also a registered TI DSP consultant for C5000™ and C6000™ DSP-based fingerprint technology development
- **Ethentica by Security First Corp.**—Image enhancement algorithm for Ethenticator™ TactileSense™ fingerprint sensor
- **Fingerprint Cards AB**—Sensor hardware and Distinct Area Detection (DAD) verification algorithm for C6711 and VC5509 DSPs
- **Idencom**—Biokey2002® stand-alone fingerprint recognition OEM module, hardware development kit and verification software
- **IdentALink**—Fingerprint image enhancement algorithm and consultant for multi-layer biometrics development, networking and authentication on the C6000 DSP platform
- **Neurodynamics**—DEIXIS embedded fingerprint verification software for the TMS320C54x™ DSP generation

For more details and updates on biometrics-specific development tools, visit TI biometrics on the web at www.ti.com/biometrics and also download the *DSP for Smart Biometrics* white paper to see how a DSP can add value to your biometric product portfolio.

TI Worldwide Technical Support

Internet

TI Semiconductor Product Information Center Home Page
support.ti.com

TI Semiconductor KnowledgeBase Home Page
support.ti.com/sc/knowledgebase

Product Information Centers

Americas

Phone +1(972) 644-5580
Fax +1(972) 927-6377
Internet/Email support.ti.com/sc/pic/americas.htm

Europe, Middle East, and Africa

Phone
Belgium (English) +32 (0) 27 45 55 32
Finland (English) +358 (0) 9 25173948
France +33 (0) 1 30 70 11 64
Germany +49 (0) 8161 80 33 11
Israel (English) 1800 949 0107
Italy 800 79 11 37
Netherlands (English) +31 (0) 546 87 95 45
Spain +34 902 35 40 28
Sweden (English) +46 (0) 8587 555 22
United Kingdom +44 (0) 1604 66 33 99
Fax +(49) (0) 8161 80 2045
Email epic@ti.com
Internet support.ti.com/sc/pic/euro.htm

Japan

Fax International +81-3-3344-5317
Domestic 0120-81-0036
Internet/Email International support.ti.com/sc/pic/japan.htm
Domestic www.tij.co.jp/pic

Asia

Phone
International +886-2-23786800
Domestic Toll-Free Number
Australia 1-800-999-084
China 108-00-886-0015
Hong Kong 800-96-5941
Indonesia 001-803-8861-1006
Korea 080-551-2804
Malaysia 1-800-80-3973
New Zealand 0800-446-934
Philippines 1-800-765-7404
Singapore 800-886-1028
Taiwan 0800-006800
Thailand 001-800-886-0010
Fax 886-2-2378-6808
Email tiasia@ti.com
Internet support.ti.com/sc/pic/asia.htm

Important Notice: The products and services of Texas Instruments Incorporated and its subsidiaries described herein are sold subject to TI's standard terms and conditions of sale. Customers are advised to obtain the most current and complete information about TI products and services before placing orders. TI assumes no liability for applications assistance, customer's applications or product designs, software performance, or infringement of patents. The publication of information regarding any other company's products or services does not constitute TI's approval, warranty or endorsement thereof.

Real World Signal Processing, the black/red banner, eXpressDSP, Code Composer Studio, TMS320C5000, C5000, TMS320C54x, TMS320C6000 and C6000 are trademarks of Texas Instruments. FingerLoc and TruePrint are trademarks of AuthenTec Inc. MV1200 is a trademark of Bioscrypt Inc. Ethenticator and TactileSense are trademarks of Ethentica by Security First Corp. BioKey2002 is a registered trademark of Idencom AG.

B010203