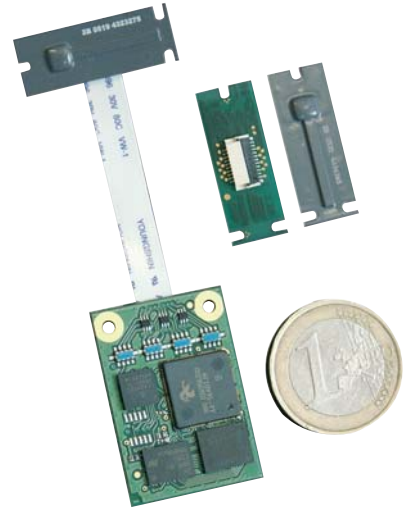


## "Match-On-Smartcard" Fingerprint Recognition Module

**The need for security, continuously reinforces the obligation for every one to prove he's the person he claims to be. BIOModule MOS is a key solution as it provides an efficient solution combining biometrics and smartcards. Using "Match-On-Smartcard" algorithm, BIOModule MOS meets security requirements without undermining ethics.**



### Overview

- The BIOModule MOS is a biometric sub-system based on Atmel's FingerChip® fingerprint sensor and a dedicated cryptographic and imaging processor.
- Combined with biometric smartcards and "Match-On-Smartcard" technology, it offers the best possible performance and security for embedded system applications.
- With this technology, the reference template and the matching algorithm are stored in the smart card itself preventing any crucial information from leaving the card and eliminating the possible concern of fingerprint database.
- The miniature sized module has a state-of-the-art low power design making it a perfect match in a wide range of applications from battery operated mobile equipments to network based security systems.

### Key features

- Highly secure architecture for code/data storage and processing
- Biometric operations with id3 "Match-On-Smartcard" Technology
- High speed fingerprint verification
- Match on board capabilities
- Direct interfacing with Atmel FingerChip® fingerprint sensor
- Asynchronous serial host interface
- Operates with a single 3.3V DC supply
- Low power consumption < 0.5 µA in shutdown mode
- Operating t° range : - 10° C to + 60° C
- Compact size (33 x 23 x 4 mm)
- ISO 19794-2 compliant

### Applications

- Logical/physical access control
- Time and attendance systems
- Portable point of sale terminal
- National ID card readers
- Secure payment terminal



### Biometrics

- Thermal sensor, swiping type
- 500 dpi image
- 256 gray levels
- Finger motion speed : 20 cm/s max
- FRR < 2 %
- FAR < 0.001%
- Matching time on smartcard : < 1sec
- Template size : < 256 bytes

Understand  
Analyze  
Design  
Evolve

[www.id3.eu](http://www.id3.eu)

5, rue de la Verrerie F - 38120 Le Fontanil-Cornillon - FRANCE • Tel. 33 (0)4 76 75 75 85

All brand names listed here are registered trademarks of their respective companies.

This document is not contractual. id3 keeps the rights to modify the characteristics without prior notice.

# BIOModule MOS



## "Match-On-Smartcard" Fingerprint Recognition Module

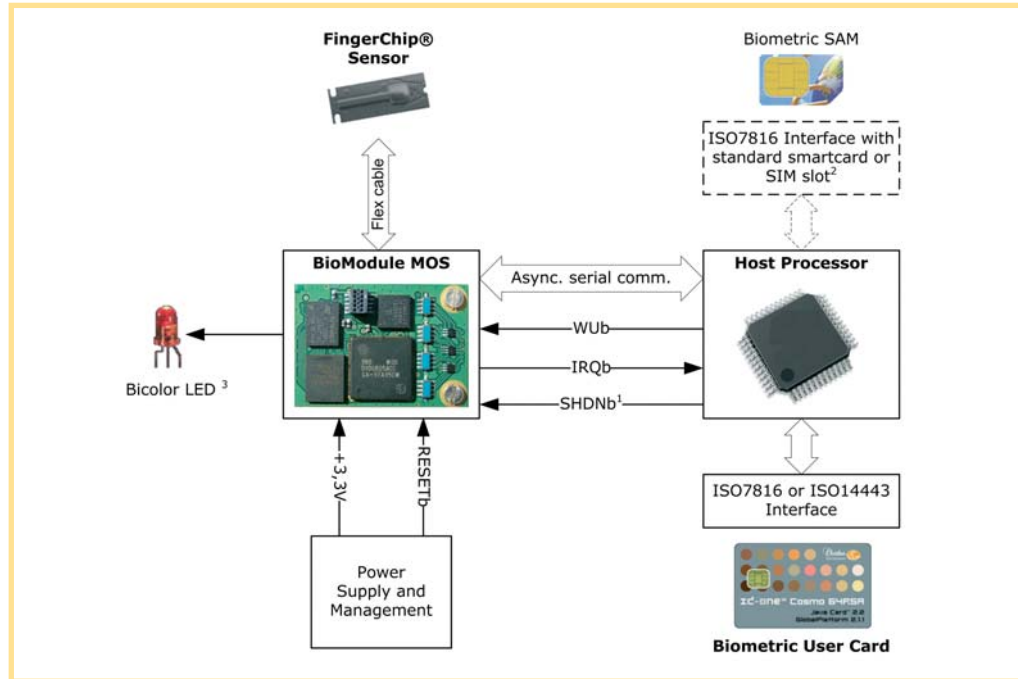
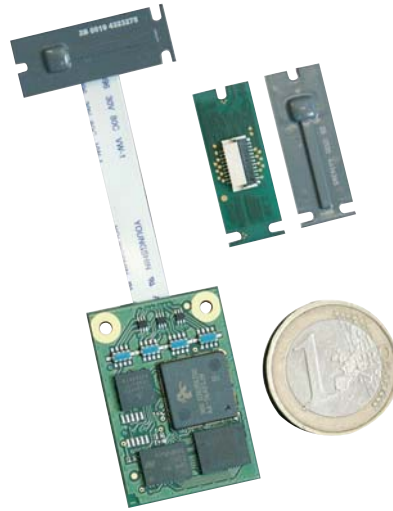
### Functional description

#### Typical architecture

The BIOModule MOS must be connected to a motherboard for power supplies and interface connections.

The motherboard must have at least one smartcard interface (contact ISO7816, contactless ISO14443, or USB).

If fingerprint enrollment is needed on the device, the motherboard should also be equipped with a SAM slot (Secure Access Module), and a second ISO7816 card interface.



#### On-card fingerprint verification process

1. The end-user scans his fingerprint by sweeping it across the FingerChip sensor.
2. The BIOModule MOS extracts a fingerprint signature (candidate template) from the image.
3. The motherboard gets an encrypted template from the BIOModule and sends it to the smartcard.
4. The smart card performs matching of the candidate template against the reference template stored during the enrollment procedure.

