MSO 1300 Series

USB fingerprint devices for highly secure desktop applications

- All-in-one solution: superior performance Enrollment, Verification and Identification
- FIPS 201 and MINEX compliant Feature Extractor & Matcher onboard
- FBI PIV IQS certification and fake finger detection available
- Extensive security features, including encryption and digital signature
- Smartcard reader variant for Match-on-Card applications

IDEMIA

The MSO 1300 Series is a range of compact biometric USB devices. They use IDEMIA's patented optical technology and fingerprint algorithms, both acknowledged worldwide for their high levels of performance and their exceptional robustness. IDEMIA fingerprint technology is ranked #1 by NIST for accuracy.

The MSO 1300 Series offers a reliable, ergonomic and cost-effective solution for enrollment, identity verification and user identification. Their match-on-device or match-on-card functions guarantee the faultless protection of information and the security of desktop applications.

MSO 1300 V3 / MSO 1300 E3

MSO 1350 V3 / MSO 1350 E3

Why optical technology?

We selected optical technology for our sensors as it has significantly more operational and accuracy advantages compared with other technologies.

	OPTICAL	CAPACITIVE	SWIPE
Acquisition surface/resolution	●●●●	●●○○ Limited due to silicon chip cost	●○○○
Ergonomics	●●●● Visual indicator (LED light)	●●○○	●○○○ Usually requires several trials
Robustness	●●●●	●○○○ Sensitive to scratches, ESD damages, corrosion	
Fast processing time	●●●●	●●●●	●○○○ Requires image reconstruction
Performance/accuracy	●●●●	●●○○	●○○○

High quality fingerprint acquisition

Optical technology offers superior image quality

- High performance sensor: 500 dpi, 256 grey levels
- Available output formats include RAW, ISO 19794-4 or WSQ-compressed (under license) images

Lessons learnt from real world deployments put into practice

- Mechanical/visual guides ensure intuitive finger placement
- Interfaces display key information to help users: live image, messages (position, pressure etc.) and fingerprint quality score

Large acquisition surface for optimized capture and repeatable placement

MSO 1300 Series capture surface (14x22mm) ensures that the richest area on fingerprints is systematically captured time after time. Acquisition surface contributes significantly to the overall biometric performance:

- It determines the amount of minutiae data that can be captured
- Other, smaller sensors, allow different areas of the same finger to be presented with each placement, leading to poor data acquisition, narrow areas of overlap and matching errors

Richest area | MSO 1300 Series capture | Placement variations on smaller sensors

More than sensors, intelligent devices

While most sensors on the market are only capable of producing fingerprint images, the MSO 1300 Series devices are also capable of processing them internally, running powerful algorithms directly on their embedded processor.

1 **Image Compression** using WSQ algorithm from FBI/NIST

2 **Biometric Feature Extraction** to generate templates
   - Feature Extractor is MINEX/FIPS 201 compliant
   - Proprietary, ISO 19794-2 or ANSI 378 template formats available
   - Templates can be stored in the internal database

3 **Biometric Matching**
   - Matcher is MINEX/FIPS 201 compliant
   - 1:1 authentication or 1:N identification
   - High accuracy: the False Acceptance Rate (FAR) is configurable down to 10^{-8} (depending on the security requirements) and **maintained regardless of number of users in database**
   - Fast matching (refer to the table entitled “2 designs, 4 variants”)
   - Match-on-Card is available on MSO 1350 V3 / MSO 1350 E3

4 **Capability of addressing juvenile fingers**

5 **An anti-latency feature** detects fingerprint traces reactivated under certain lighting conditions

Embedded security features

When sensitive data (image or template) needs to be shared with a Host System, the MSO 1300 Series devices are capable of securing them before dispatching.

1 **Multiple security principles available:**
   - Symmetric and asymmetric keys,
   - Key derivation,
   - Hashing algorithm,
   - Random number generator,
   - etc.

2 **Image and Template Encryption** for the sake of confidentiality

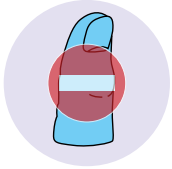
3 **Template Signature (X9.84 standard)** to guarantee the origin and the integrity of the data sent to the Host System

4 **The communication channel between device and Host/Distant System can be protected** using either Secure Tunneling or Offered Security mode

MSO 1300 E3 & MSO 1350 E3: best in series, best in class

Enhanced image quality

These precision designed, top of the range devices produce a fingerprint image that is certified PIV IQS by the FBI.
The reference standard in terms of single fingerprint image quality (equivalent to ISO 19794-4:2011 Annexure B) was defined to ensure in particular interoperability between multiple solutions.



Fake finger detection

MSO 1300 E3 and MSO 1350 E3 detect a large panel of counterfeit fingerprints, including but not limited to those made with latex, Plasticine, Kapton, transparent film, rubber, Play-Doh, graphite or paper.

Multiple applications

- Deployment of light and reliable solutions for **population registration** or **customer acquisition**

- **Logical access control**
  - Banking and finance: secure and swift access to core banking applications or trading stations in dealing rooms
  - Enterprise: biometric PC login and Single-Sign-On solutions (no more passwords)
  - Healthcare: access to medical records restricted to authorized staff

- **Easy and secure payment**
  - Fast, convenient, cashless payment at checkouts in stores, supermarkets or cafeterias
  - E-commerce secure payment
  - Check cashing services, pension/benefit payments after ID verification or identification

Software packages

- The **MSO SDK** enables a rapid integration and the use of device-embedded capabilities.
  - Available for Windows, Linux and Android platforms
  - Includes a BioAPI interface

- **Low level protocol** (ILV) is also available

- The MSO 1300 Series can be used with **MorphoKit™ by IDEMIA**, advanced SDK for the capture and processing of fingerprint images, authentication and identification

2 designs, 4 variants

	MSO 1300 V3	MSO 1300 E3	MSO 1350 V3	MSO 1350 E3
Dimensions (L x W x H)	68.7 x 39.7 x 15.3 mm (2.7 x 1.56 x 0.6 inches)		82 x 71 x 41 mm (3.23 x 2.8 x 1.61 inches)	
Weight	40g (1.41 oz)		140g (4.94 oz)	
Smartcard reader	—	—	Yes	Yes
Database capacity (users)	500, 3000[1], 5000[2] or 10 000[3]	500, 3000[1] or 5000[2]	500, 3000[1], 5000[2] or 10 000[3]	500, 3000[1] or 5000[2]
Database capacity (templates or fingers)	1000, 6000[1], 10 000[2] or 20 000[3]	1000, 6000[1] or 10 000[2]	1000, 6000[1], 10 000[2] or 20 000[3]	1000, 6000[1] or 10 000[2]
Match-on-Device capability (1:N)	1:500, 1:3000[1], 1:5000[2] or 1:10 000[3]	1:500, 1:3000[1] or 1:5000[2]	1:500, 1:3000[1], 1:5000[2] or 1:10 000[3]	1:500, 1:3000[1] or 1:5000[2]
Matching speed	0.6s in 1:1 mode / 0.7s in 1:500 mode			
Match-on-Card capability	—	—	Yes	Yes
Fake Finger Detection	—	Yes	—	Yes
Security Layer	Optional			
Certifications FBI PIV IQS / ISO 19794-4: 2011 (Annex. B)	—	Yes	—	Yes
MINEX & FIPS 201 compliant algorithms	Yes			
STQC	—	Yes	—	Yes
CE, CB, FCC, UL	Yes			
RoHS, REACH, WEEE	Yes			
WHQL drivers	Yes			

[1] With MSO IDENTLITE License loaded in the device
[2] With MSO IDENTPLUS License loaded in the device
[3] With MSO IDENT10K License loaded in the device