

# ADYTON

## revolutionary security

### Highly secure

Secure data transaction systems - including token generation, transaction processing, digital signatures, data protection - are built around a Hardware Security Module (encryption device).

The revolutionary solution from Worldline is a hardware-based encryption device and cryptographic accelerator: ADYTON. This device provides unprecedented security, speed and user-friendliness, and adds a new dimension to overall security by including fingerprint, chip-card and password authentication. ADYTON guarantees dual control for administrators and security officers.

ADYTON meets all current international standards and is ready for the future.

### Great styling

The styling of the ADYTON fuses fashionable beauty and functional perfection. The aluminium housing is a perfect heat conductor: removing the need for electrical cooling brings a smaller energy footprint, lower noise levels and higher reliability.

ADYTON has been chosen as winner of the red dot design award 2012 and the iF design award 2013.



reddot design award  
winner 2012



The design also incorporates modern features such as capacitive keys with distinct white and blue illumination, fingerprint-reader, chip-card reader, USB connector and high-resolution colour display.

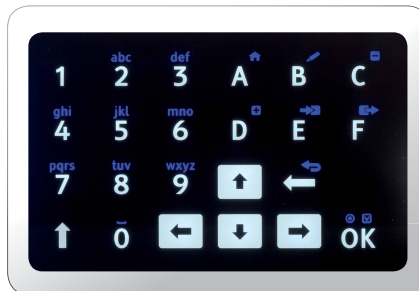
With the robust guide rails on each side, ADYTON easily slides into the ADYTON Rack for simple, secure installation in standard IT-cabinets. The rack features two physical locks, covered mounting holes, two 1Gb LAN connectors and two hot-swappable power supplies.



### Focus on the user

Operating ADYTON is easier than operating a smartphone! The front panel is clearly arranged in blocks: display, keyboard and authentication devices.

- The 24-bit colour display uses strong contrasts for easy legibility. Wizards guide the user through the selected operations and user input is clearly indicated on the display. There are also shortcuts for the most common functions.
- The keypad gives a clear feedback with the help of its distinct illumination. The hexadecimal layout also allows easy key entry.



### Powerful

ADYTON is built for power, speed and revolutionary reliability. It calculates about 7,000 RSA private key operations and over 10,000 symmetric-key transactions - per second. The platform is based on a dual-core processor and has a cryptographic accelerator designed by Worldline.

High performance also needs suitable channels. The cryptographic operations are injected in the network via two 1Gb LAN connections.

### Reliable

ADYTON runs on a QNX® Neutrino® RTOS operating system, ensuring high software stability and reliability. To reduce downtime due to hardware failure, the ADYTON has been designed without any moving parts. No switches, no cooling fan...

The design also takes external factors into account: two hot-swappable power supplies and two 1Gb LAN connectors guarantee that ADYTON keeps on performing. ADYTON was tested under extreme conditions, ready for integration in IT-cabinets with limited air circulation.

# ADYTON - revolutionary security

## Low cost of ownership

It is not only ADYTON's outstanding reliability and performance that keep total costs of ownership low, but also some less obvious features.

Integrated user management functions make operations easier. The understandable interface reduces training costs. Push and pull cloning enable easy remote management of Hardware Security Modules, reducing the need for on-site interventions by service staff.



And like all Worldline devices, ADYTON offers compatibility with the previous version: cryptographic services are compatible with DEP/T6.

## Cloneable

New cloning functions let you set up two or more ADYTON with identical configurations. The principle of cloning is based on secure ADYTON to ADYTON communication (SSL).

- Pull cloning: add a new ADYTON to a system by copying the configuration of a master ADYTON on to a client device for immediate use.
- Push cloning: update a system with several ADYTON via the master ADYTON. Updates are downloaded and installed on the master device first, then distributed to the client devices.

## Markets

ADYTON is suitable for any market where highsecurity cryptography is required, such as:

- Finance (issuing, processing, acquiring, EMV, NFC, 3DSecure, PCI DSS, card personalisation, tokenisation and much more)
- Industrial production (injecting keys in secure chips such as TPM)
- Energy (smart metering, smartgrid...) telecom (SIM personalisation, mobile wallets, secure OTA solutions...)
- Multimedia delivery (payTV...)
- e-health, electronic document signature, confidential information exchange, on-line gambling...

## Specifications

### ADYTON

- Tamper evident, tamper responsive and tamper proof design
- Colour display, fingerprint reader (FIPS 201), chip-card reader, USB-Host, HEX-keypad
- Around 7,000 digital RSA private key operations per second
- +10,000 symmetric key transactions per second
- Host Authentication and encryption through SSL (optional)
- Push/Pull cloning

### Communication

- USB device interface\* (also for ADYTON rack)
- 1 Gb LAN connector

### Physical characteristics

- Dimensions: 24 x 7 x 18.5 cm (w x h x d)
- Ambient temperature: 0°C - 35°C
- Relative humidity: 10%-90%
- 100-240 VAC, 50/60Hz, 1.4A

### Certification and compliance

- FIPS 140-2 Level 3 certified
- Hardware FIPS 140-2 Level 4 certified
- Cartes Bancaires (FR) certified (MEPS2)
- FIPS 140-3 (draft) compliant
- Fingerprint FIPS 201 certified
- FCC, CE

### Algorithms

- Random number generator (SP800-90)
- RSA (X9.31 key generation, encrypt/decrypt, sign/verify)
- ECC (key generation, encrypt/decrypt, sign/verify)
- (T)DES (encrypt/decrypt, MAC)
- AES (encrypt/decrypt, MAC)
- HMAC
- MD5, SHA1, SHA2, SHA256, SHA512
- X509
- All functions supported by OpenSSL Crypto Library ([www.openssl.org](http://www.openssl.org))

### ADYTON rack

- Increases high reliability
- Two redundant hot-swappable power supplies
- Two 1Gb Ethernet interfaces
- Two physical locks prevent unauthorised removal of ADYTON and ADYTON Rack
- Swappable ADYTON

### Communication

- USB device\*
- Two 1Gb LAN connectors

### Physical characteristics

- 19" rack for integration in standard IT cabinets - 2U High
- Dimension: 48 x 8.8 x 43 cm (w x h x d)
- Weight: -15 kg
- 100-240 VAC, 47-63Hz, 1.5-1A

### Interfaces (ADYTON & ADYTON rack)

- Dedicated API
- PKCS #11
- JAVA (JCE) support through standard
- JAVA-PKCS#11 wrappers including EJCBA, IAIK-JCE
- OpenSSL using standard PKCS#11 Engine
- HTTP (for big data operations)

### Power consumption at 20°C ambient temperature

- standalone ADYTON - -16W (typical) to -20W max.
- ADYTON in ADYTON Rack - -18W (typical) to -23W max.

\* Hardware only

## About Worldline

Worldline [Euronext: WLN] is the European leader in the payments and transactional services industry. Worldline delivers new-generation services, enabling its customers to offer smooth and innovative solutions to the end consumer. Key actor for B2B2C industries, with over 40 years of experience, Worldline supports and contributes to the success of all businesses and administrative services in a perpetually evolving market. Worldline offers a unique and flexible business model built around a global and growing portfolio, thus enabling end-to-end support. Worldline activities are organized around three axes: Merchant Services & Terminals, Mobility & e-Transactional Services, Financial Processing & Software Licensing. Worldline employs more than 7,300 people worldwide and generated 1.15 billion euros revenues in 2014. Worldline is an Atos company.

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