OPTIGA™ Trust M Express

The easy way to securely deploy IoT devices to the cloud at scale

OPTIGA™ Trust M Express offers rock-solid security for IoT devices every step of the way from manufacturing through cloud provisioning to field deployment.

The cryptographic identity of OPTIGA™ Trust M Express is provisioned in a certified and secured Infineon fab. It is protected from exposure at all stages during the product lifetime. This off-the-shelf solution removes the need for secured ID injection during IoT device manufacturing. This allows you to enhance the security of your IoT devices and their cloud connectivity while simplifying the production flow, accelerating time-to-market, and increasing cost efficiency.

OPTIGA™ Trust M Express is offered in combination with an Infineon cloud service that automates IoT device certificate registration and the provisioning of the device in the product cloud at scale with zero manual intervention. This saves time and resources, protects against human error, and makes the process highly scalable.

OPTIGA™ Trust M Express reduces complexity and costs while increasing security:
Pre-provisioning: A unique device identity (x.509 certificate) is injected into OPTIGA™ Trust M Express in a security-certified Infineon facility to enable secured cloud authentication and secured communication with Azure, AWS, and other private clouds.

Ready to use: OPTIGA™ Trust M Express is delivered off-the-shelf and requires no additional programming during the manufacturing process.

Zero-touch cloud onboarding: Support for automated onboarding of IoT devices to the cloud with Infineon cloud service.

Robustness: Up to 20 years' lifetime for industrial and infrastructure applications.

Open source: MIT-licensed software framework on GitHub:
github.com/Infineon/OPTIGA-Trust-M.

Main use cases: Secured cloud authentication, secured cloud communication, crypto offloads, secured software updates, etc.
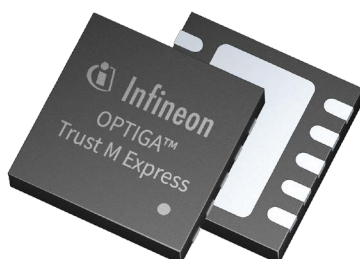
Key features

- Pre-provisioned with ready-to-use certificates and keys for AWS multi-account registration and Azure IoT Hub pre-registration
- Infineon cloud service for automated provisioning of IoT devices in the product cloud
- ECC: NIST curves up to P-521, Brainpool r1 curve up to 512 bits
- RSA with keys up to 2048 bits
- AES key up to 256 bits, HMAC up to SHA-512
- TLS v1.2 PRF and HKDF up to SHA-512
- True/Digital random number generators (TRNG/DRNG)
- Cryptographic toolbox commands for SHA-256, ECC and RSA® features, AES, HMAC and key derivation
- Device certificate tracking
- I2C interface with shielded connection
- Hibernate mode for zero power consumption
- Extended temperature range: -25 – +85°C, -40 – +105°C
- USON-10 package (3 x 3 mm)
- Up to 10 kB user memory
  - Protected updates
  - Usage counters
  - Dynamic object (e.g. credentials) locking
- Configurable device security monitor
- Lifetime of 20 years for industrial and infrastructure applications

Open source

	Save costs	– Removes the need for a highly secured manufacturing environment – Removes the need to build and maintain a public key infrastructure
	Go to market quickly	– Off-the-shelf Secure Elements for faster design-in process – Removes the need for personalization during manufacturing – Easy-to-use developer kit for fast prototyping – NDA-free product documentation on GitHub – Ready to connect to Azure and AWS
	Scale quickly	– Automated device onboarding to cloud – Product-to-cloud provisioning with zero manual intervention – Simplified device claiming process
	Robust security	– Support for all latest symmetric and asymmetric cryptographic algorithms – Unique and protected identity pre-provisioned in a CC-certified facility – Protection against data breeches and human errors as IDs are processed inside the closed system

Product summary

Type	Description	Temperature range [°C]	Package
SLS32AIA010MK	Ready-to-use security solution for IoT devices	-25 – +85	USON-10
SLS32AIA010ML	Ready-to-use security solution for IoT devices	-40 – +105	USON-10
Evaluation kit	OPTIGA™ Trust M Express Shield	–	Board

Applications

Smart city
– Street light

Smart mobility
– EV charging
– E-scooter

Smart building
– Commercial smart HVAC

Smart home
– Residential aircon
– Large home appliances

IoT
– Cyber security

Healthcare
– Connected dental equipment
– Connected toothbrush

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