ST25DA-C

Secure NFC Dynamic Tag for Matter Commissioning

Matter device commissioning over NFC is secure and convenient for battery-less and powered devices with ST25DA-C

Connect more objects with Matter, an industry-unifying protocol to ensure secure, reliable, and seamless connections between compatible devices and systems for smart homes.

NFC makes the commissioning of new devices on a Matter network quick and easy for users. With a simple NFC tap, a network administrator or third-party installer can initiate the process of adding new devices to a Matter network. Matter device commissioning over NFC can be initiated with or without external power and later completed once the installation is powered on and the network is operational.

The ST25DA-C is a secure NFC dynamic tag designed to meet all the specified requirements for the Matter commissioning flow and also support additional secure functions.

KEY FEATURES & BENEFITS

- Targeted certifications: Matter, NFC Forum Type 4 tag, SESIP Level 3
- Dual-interface NFC & I2C
- Support device commissioning over NFC (Matter 1.5 specification)
- Support secure functions with cryptographic functions
- Multiple options for device provisioning, including personalization services at ST secure manufacturing sites
- ST is an active CSA member, with a recognized expertise in NFC technology and Matter specifications

KEY APPLICATIONS

- Matter commissioning of battery-less devices
- Matter commissioning of powered devices
- Matter device attestation
- Signature verification

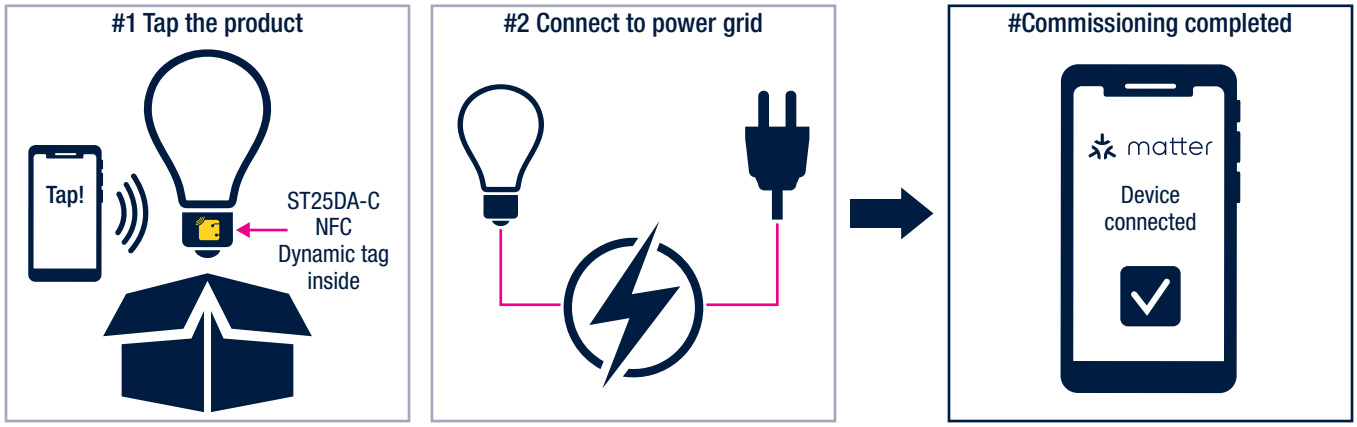
Battery-less Matter commissioning

Improved user experience

The ST25DA-C secure NFC Dynamic tag IC is designed to allow commissioning of any Matter device, whether or not it is powered on.
Starting with a simple tap using any NFC-enabled smartphone, the ST25DA-C embedded in a Matter device will execute key steps of the commissioning flow (onboarding, PASE, device attestation and provisioning credentials). Once the Matter device is powered on, the commissioning flow will resume automatically to join the operational network over Thread or Wi-Fi.
The ST25DA-C enables an optimized user experience that is fast and secure when commissioning a new Matter device.

Easy installation for multiple devices

In case of installation by a technician, or a third-party with no network administration rights, the ST25DA-C allows installers to pre-commission multiple devices without power using a simple tap on each device.
After installation and pre-commissioning, the end user or network administrator will later be able to power on all devices and make them join the operational Matter network over Thread or Wi-Fi.
The ST25DA-C allows for pre-commissioning during power-free installation, which is cost-effective and saves time.



"Connect to power grid" can be done before "Tap the product"

Cryptography for more than commissioning

In addition to supporting NFC device commissioning, the ST25DA-C offers cryptographic capabilities that support additional secure functions.

- As a secure companion, the ST25DA-C can support up to 5 Matter Fabrics, by securely storing certificates and keys associated with each one.
- The ST25DA-C offers ECDSA-based signature generation and verification, ensuring IoT device security and high performance levels.
- On-chip key pair generation, based on ECC NIST P-256 crypto algorithm, prevents the risk of exposing secret keys stored in the ST25DA-C.

Device summary

Part number	Interfaces	Certifications*	Supported cryptographic algorithms	Package options	Operating temperature range
ST25DA-C	• ISO 14443-A/NFC Forum Type 4 • I^2C	• NFC Forum • SESIP Level 3 (targeted)	• ECC NIST P-256 key generation • ECDSA signature & verification • SPAKE2+ & PAKE protocols	UFDFPN (8 pins, 3 × 2.5 mm)	-25 to +85 °C

Order code: FL2602ST25DA-C