

CHIP DATA SHEET · MADE BY NXP

Advance chip

The Advance chip is the NXP NTAG 424 DNA. It adds encrypted, per-tap cryptographic authentication, cannot be cloned and can be tokenised.

CHIP

NXP NTAG 424 DNA

USER MEMORY

416 bytes

Specification

CHIP	NXP NTAG 424 DNA
STANDARD	NFC Forum Type 4 Tag; ISO/IEC 14443A-2/-3/-4; ISO/IEC 7816-4
FREQUENCY	13.56 MHz
DATA RATE	106 to 848 kbit/s
MEMORY	416 bytes user memory: 32-byte capability file, 256-byte NDEF file, 128-byte protected file
UNIQUE ID	7-byte UID, with optional Random ID for privacy
OPERATING DISTANCE	Up to 10 cm, depending on the antenna and the phone
DATA RETENTION	50 years
WRITE ENDURANCE	200,000 cycles
AMBIENT TEMPERATURE	-25 °C to 70 °C (chip)
CERTIFICATION	Common Criteria EAL4, hardware and software

Security features

Secure Unique NFC (SUN) message: a new AES-128 code on every tap, checked by the server.

Incremental tap counter, built into each message.

Five customer-defined AES-128 keys; three-pass mutual authentication.

Plain, CMAC-protected or fully encrypted communication, set per file.

ECC originality signature and AES originality keys; optional LRP for side-channel protection.

Access rights configurable per file for read, write and configuration.

In DEPARTMNT tags

Every standard format takes the Advance chip.

Used where the tag has to prove the object is genuine: high value products, ownership claims, Product Passports (DPP-ready) and OCC.

Cannot be overwritten once locked.

A lost or damaged tag can be disabled remotely in Core.

Chip specifications summarised from the NXP NTAG 424 DNA (NT4H2421Gx) product data sheet, Rev. 3.0, 31 January 2019. NXP and NTAG are trademarks of NXP B.V. Read ranges are for DEPARTMNT formats and vary with the phone.