

OPTIGA™ Authenticate NBT

NFC I2C bridge tag for contactless device authentication and secured IoT device configuration

OPTIGA™ Authenticate NBT is a high-performance NFC I2C bridge tag for single-tap IoT device authentication and secured configuration. It enables ultra-fast, contactless NFC communication between IoT devices and contactless readers such as smartphones.

Certified as a Type 4 Tag by the NFC Forum, OPTIGA™ Authenticate NBT enables ultra-fast and seamless data exchange even with large data volumes. The powerful combination of a contactless interface speed of up to 848 Kbit/s and an I2C interface supporting up to 1 Mbits/s results in the highest performance levels – a key bonus for demanding applications.

The bridge tag is based on CC EAL 6+ (high) certified hardware and provides high security thanks to our acclaimed Integrity Guard 32 security architecture. It supports both symmetric and asymmetric cryptographic authentications as well as pass-through and asynchronous data transfer modes. These can be used for a variety of applications such as secured configuration of electronic devices without displays, activation of shared mobility vehicles, passive commissioning of non-powered smart bulbs prior to installation, and data logging on patient health monitors.

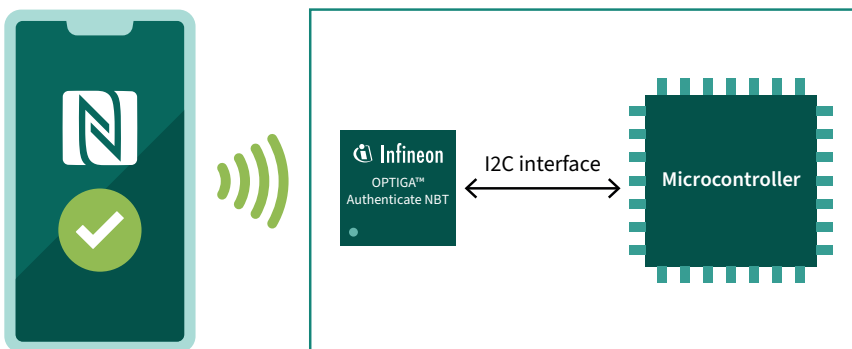
With a generous memory of 8 KB, this NFC I2C bridge tag offers ample space to store customer- and application-specific configuration information. High on-chip capacitance facilitates smaller antenna designs for an optimized BoM and tiny footprint. Customers can rely on us for long-term trustworthy sourcing plus support at every step of their project journey.

Key features

- NFC Forum Type 4 Tag certified
- From 106 to 848 kbit/s data transfer rate for contactless interface
- I2C standard mode, fast mode, fast mode ‘plus’ clock frequencies
- Brand / device verification through ECDSA-based asymmetric cryptography, AES-128-based symmetric cryptography
- 32-bit password-based verification
- Storage capacity of 8 KB user NVM
- 78 pF high on-chip capacitance

Use Cases / Applications

- Secured activation and device configuration of IoT devices
- Activation of shared mobility vehicles
- Passive commissioning of non-powered smart devices
- Data logging in health monitors



PRODUCT BRIEF

Product summary

Sales code	NBT2000A8K0T4
Product description	NFC I2C bridge tag for contactless authentication and secured configuration of IoT devices
Interfaces	<ul style="list-style-type: none">– I2C target interface compliant with Global Platform T = 1'– NFC interface compliant with ISO/IEC 14443 Type A
Communication modes	<ul style="list-style-type: none">– Pass-through: Synchronized communication over I2C and NFC interface through volatile buffer on OPTIGA™ Authenticate NBT– Asynchronous Data Transfer: Mailbox style data transfer between reader and host MCU
Security	<ul style="list-style-type: none">– ECDSA-based asymmetric cryptography (NIST P-256) one-way authentication with PKI (public key infrastructure)– AES-128-based symmetric cryptography– Flexible, per-file and per-interface based password protection using 32-bit passwords
Memory	8 KB user memory organized as NDEF message file of 4KB and four proprietary files of 1 KB each
Data rate	<ul style="list-style-type: none">– From 106 to 848 kbit/s contactless– I2C standard mode (100 kHz), fast mode (400 kHz), fast mode 'plus' (1 MHz) clock frequencies
Ambient temperature	Operating temperature range: -40°C to +85°C -40°C to +105°C for I2C communication only
Input capacitance	78 pF high on-chip capacitance to enable small antenna design and improved RF performance
Delivery forms	PG-USON-8-8 SMD packaging
Other features	<ul style="list-style-type: none">– Pre-provisioned with Infineon's default device certificate– NFC field detect pin

Published by
Infineon Technologies AG
Am Campeon 1-15, 85579 Neubiberg
Germany

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Public

Document number:
B189-I1429-V2-7600-EU-EC
Date: 09/2024

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