NXP®
UCODE® DNA City

Your convenient long-range credential for enhanced Smart City experiences

With this advanced RAIN RFID chip, integrators offering systems based on contactless cards in a variety of Smart City applications can upgrade their existing portfolio to include long range capability while not compromising on security and while ensuring that end-user privacy is not violated.

KEY FEATURES

- Tag authentication with AES using 128-bit secret key
- Tag privacy based on AES encryption and with EPC G2V2 compliant untraceable command
- 96-bit TID
- 224-bit EPC memory, pre-serialized for 96-bit EPC
- 1-kbit user memory
- Read sensitivity: -19 dBm
- Write sensitivity: -11 dBm
- Integrated product status flag
- Tag power indicator
- 32-bit kill password and 32-bit access password
- Fast encoding: 32 bits in 1.5 ms
- Parallel SKU encoding: 100 tags in 60 ms
- 100 K write cycles
- 20-year data endurance

KEY BENEFITS

- Provides consumers and businesses with a secure way to confirm tag authenticity at long distances
- Enables new use cases with long read range while ensuring end-user privacy and protection against tracking
- Offers easy possibility to upgrade existing contactless smart card systems with long range capability

TARGET APPLICATIONS

- Automatic Fare Collection (with hands-free access and Be-in/Be-out systems)
- Access Control
- Event and Crowd Management
- Customer Loyalty Management

NXP's UCODE DNA City is a best-in-class RAIN RFID tag IC that combines long-range identification with cryptographic authentication and privacy protection.

Supporting widely used contactless smart cards in automatic fare collection, access control, event management and other Smart City applications, UCODE DNA City gives end users additional convenience since they can interact with their environment without the need to look for their contactless cards and without having to tap them very closely against reader infrastructure. Simply by having a card somewhere on the person, gates can open, attendance can be registered etc. On top of that, end users can have peace of mind because they can be sure that secure cryptography is protecting their credential and also ensuring that any private data stays private as well as that they are protected against tracking.

As for system integrators and operators, UCODE DNA City provides them – besides offering this additional convenience to their customers – with the possibility for additional insights into the dynamics of their systems. For example, knowing how many users are in which part of the system at any given time (crowd management), where are the users spending most of their time (e.g. which booths at a tradeshow are attracting most attention).

When combined with traditional MIFARE DESFire contactless smart cards, UCODE DNA City ensures backwards compatibility with existing short range RFID infrastructure and offers possibility for staged deployment. This combination also enables two step authentication, and can tie privileges associated with user credential to a particular time or place.

For example, high security RFID can be used to get access to a building by tapping a card at close range, and then afterwards the long-range capability of the card can be used to conveniently but still securely move between floors and areas within the building without the need to tap the card at every step of the way.

In an automatic fare collection system, high security portion of the contactless card can be used at short-range to approve the user for convenient hands free access to the public transport network for a day, and then all future getting in and out of the network for that day can occur at dedicated fast speed lanes for pre-authorized users, conveniently and still securely.

In the case of loyalty cards, their short-range capability can still be used at point-of-sale counters, while their long range function can enable convenient and secure access to restricted VIP parking areas.

UCODE DNA City's authentication feature is based on Advanced Encryption Standard (AES) techniques and uses a 128-bit AES secret key.

The tag IC also complies with the latest standards, including GS1™ UHF RFID Gen2 v2.0 (Annex N, Tag Alteration), which adds powerful security options to protect data and prevent tag counterfeiting, and ISO/IEC29167-10, for proof of origin based on AES.

ORDERING INFORMATION

UCODE DNA City	Delivery Form	Type	12NC
	8" wafer	SL3S5005N0FUD/00BG1	9353 311 56003

www.nxp.com

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