



NXP MIFARE Ultralight® Nano

The ultimate contactless alternative to conventionally paper-based ticketing

MIFARE Ultralight Nano is the latest generation of smart paper ticketing ICs—the ideal flexible single-use solution offers a customizable originality signature.

TARGET APPLICATIONS

- ▶ Public transport—single trip ticketing
- ▶ Event ticketing

KEY FEATURES

- ▶ Compliant with ISO/IEC 14443A & NFC Forum Type 2 Tag
- ▶ 40 byte user memory
- ▶ 17 pF & 50 pF input capacitance versions
- ▶ ECC-supported NXP originality signature
- ▶ Originality signature reprogrammable to a customer's unique originality signature
- ▶ Interoperability with all other MIFARE Ultralight products

KEY BENEFITS

- ▶ Easily integrated into existing fare collection schemes
- ▶ Increased passenger throughput
- ▶ Fewer interaction steps with the equipment
- ▶ Fraud reduction
- ▶ Fewer maintenance costs
- ▶ Reduced cash flow and related operational costs
- ▶ Enhances application through easy mobile support powered by MIFARE® SDK Android™ libraries



CONTACTLESS SMART PAPER TICKETING

The MIFARE Ultralight product family provides system integrators and application developers with the maximum flexibility for complete system solutions. The target applications include time-based, zone-based or multiple-ride tickets as well as single-use tickets in public transportation and event ticketing.

The one-time-programmable (OTP) memory area in combination with the unique identifier (UID) supports integrators in the implementation of non-reloadable limited use tickets in a secure infrastructure.

The introduction of contactless MIFARE Ultralight ICs for limited-use applications leads to reduced system installation and maintenance costs. MIFARE Ultralight products smoothly integrate into existing contactless schemes. Standard paper ticket vending equipment can also be upgraded to enable contactless smart paper tickets.

MIFARE Ultralight FAMILY OVERVIEW

| MIFARE Ultralight® | MIFARE Ultralight Nano | MIFARE Ultralight EV1 | MIFARE Ultralight C |
|--------------------|------------------------|--|---------------------|
| Memory | 40 bytes | 48/128 bytes | 144 bytes |
| OTP Area | 32 bit | 32 bit | 32 bit |
| Counter | | 3 x 24 bit | 1 x 16 bit |
| Access protection | | 32-bit password + password acknowledge | 3DES |
| Fast read | | ✓ | |
| Originality | ✓ REPROGRAMMABLE | ✓ | |

ORDERING INFORMATION

| Part Type | 12NC | Description | Delivery Type |
|---------------|--------------|----------------|---------------------|
| MF0UN0001DUD | 935307613005 | 7 B UID, 17 pF | Wafer bumped 120 µm |
| MF0UN0001DUF | 935307614005 | 7 B UID, 17 pF | Wafer bumped 75 µm |
| MF0UNH0001DUD | 935307615005 | 7 B UID, 50 pF | Wafer bumped 120 µm |
| MF0UNH0001DUF | 935307616005 | 7 B UID, 50 pF | Wafer bumped 75 µm |