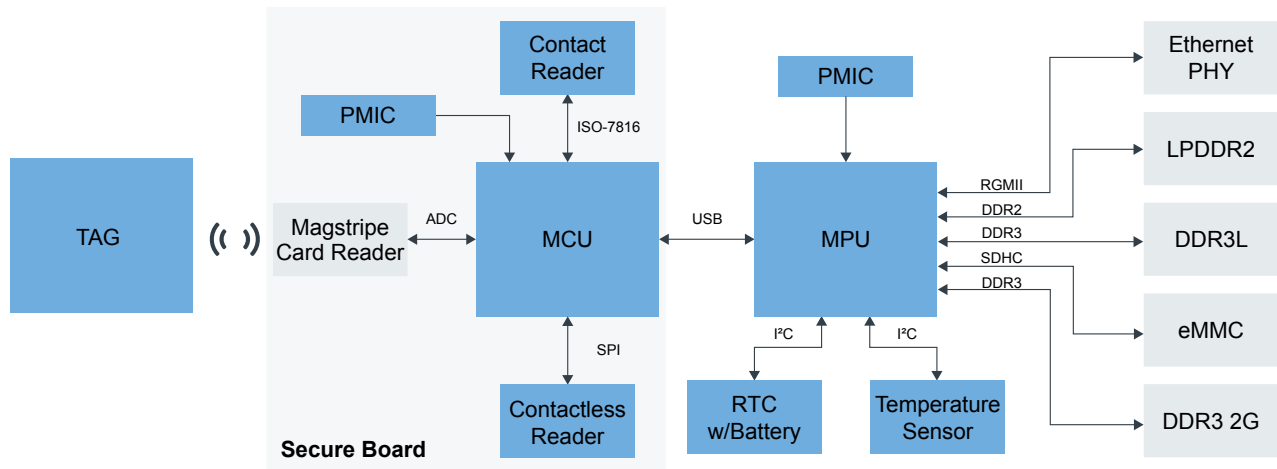# Transport Ticketing

Last Updated: Feb 26, 2025

NXP offers fast and secure solutions for access to, and payment in, public transport. These range from smart cards and ticket ICs to mobile and wearable applications.

Our secure RAIN RFID ICs support hands-free access in public transport, which makes it easier to get around without having to tap a card or ticket to a reader.

Transport barrier systems can validate tickets and also take contactless payment from credit cards and mobile phones. These systems maintain a database of all transactions including a local copy kept in the machine and a copy uploaded to a central database.

Transport Ticketing Block Diagram

Diagram labels (block diagram):

TAG · Secure Board · PMIC · Contact Reader · Magstripe Card Reader · MCU · Contactless Reader · PMIC · MPU · RTC w/Battery · Temperature Sensor · Ethernet PHY · LPDDR2 · DDR3L · eMMC · DDR3 2G

Interfaces: ISO-7816 · ADC · SPI · USB · RGMII · DDR2 · DDR3 · SDHC · DDR3 · I²C · I²C

Legend: ■ NXP Technology ▢ Non NXP Technology ⬚ Optional Technology

Recommended Products for Transport Ticketing	
MCU	• K81_150: Kinetis K81-150 MHz HW Cryptographic Co-Processor, Anti-Tamper and QuadSPI Microcontrollers (MCUs) Based on Arm® Cortex®-M4 Core • i.MX6ULL: i.MX 6ULL Single-Core Processor with Arm® Cortex®-A7 Core
MPU	• i.MX6ULL: i.MX 6ULL Single-Core Processor with Arm® Cortex®-A7 Core
Contact Readers	• TDA8035HN: High-Integrated and Low-Power Smart Card Interface

RTC W/Battery	• PCF85263A: Tiny Real-Time Clock/Calendar with Alarm Function, Battery Switch-Over, Time Stamp Input and I²C-Bus
TAG	• MIFARE DESFire: MIFARE® DESFire® • MIFARE Plus: MIFARE Plus® • SL3S5002N0FUD: UCODE® DNA: UHF Tag IC for Secure Authentication
Readers	• PN5180: Full NFC Forum-Compliant Frontend IC
Temperature Sensor	• P3T1035xUK: I3C, I²C-Bus, ±0.5 °C Accuracy, Digital Temperature Sensor • P3T2030xUK: I3C, I²C-Bus, 2.0 °C Accuracy, Digital Temperature Sensor • PCF85263A: Tiny Real-Time Clock/Calendar with Alarm Function, Battery Switch-Over, Time Stamp Input and I²C-Bus
PMIC	• PCA9460: 13-Channel Power Management Integrated Circuit (PMIC) for Ultra Low Power Application • PF1510: Power Management Integrated Circuit (PMIC) for Low Power Application Processors

View our complete solution for Transport Ticketing.

Note: The information on this document is subject to change without notice.