



NXP's NFC
controllers
PN7462 family
with customizable
firmware

First all-in-one full NFC controller solution

These state-of-the-art devices are single-chip solutions for contact, contactless, and NFC operation, and can be loaded with fully-custom applications. Optimized antenna operation and low-power modes enable best-in-class performance.

KEY FEATURES

- ▶ 20 MHz Cortex-M0 core
 - 80/160 kB Flash, 12 kB RAM, 4 kB EEPROM
- ▶ State-of-the-art RF interface: Full NFC, EMVCo 2.5
 - Read/Write, Card Emulation & Peer-to-Peer Modes
 - Transmitter current up to 250 mA
 - Full MIFARE family support
- ▶ DPC for optimized antenna performance
- ▶ Extensive host and peripheral interfaces
 - Host/slave & master interfaces: I²C, SPI, USB, HSUART
 - Optional contact interface (PN7462): UART, ISO/IEC 7816, EMVCo 4.3
 - 12 to 21 GPIOs
- ▶ Advanced power management
- ▶ Extensive support tools, including sample source code
- ▶ EMVCo and NFC Forum compliance for easy certification
- ▶ HVQFN64 package (9 x 9 mm)
- ▶ ISO/IEC 14443 Type A&B licenses

KEY BENEFITS

- ▶ Quick development of complete applications
- ▶ Compact designs at a lower cost
- ▶ Advanced yet low-power functionality

APPLICATIONS

- ▶ Access management: corporate and hospitality
- ▶ Secure transactions: eGov, EMVCo, payment, POS/mPOS
- ▶ USB readers, multi-market solutions: home banking, home eID, logical access control
- ▶ Gaming: console accessories

The NXP PN7462 family is based on the first single-chip, dual-interface reader IC. Equipped with a low-power ARM Cortex-M0 microcontroller core with USB, the family supports contact and contactless interfaces with full NFC functionality. Low-power operation, extensive memory resources, a complete set of host



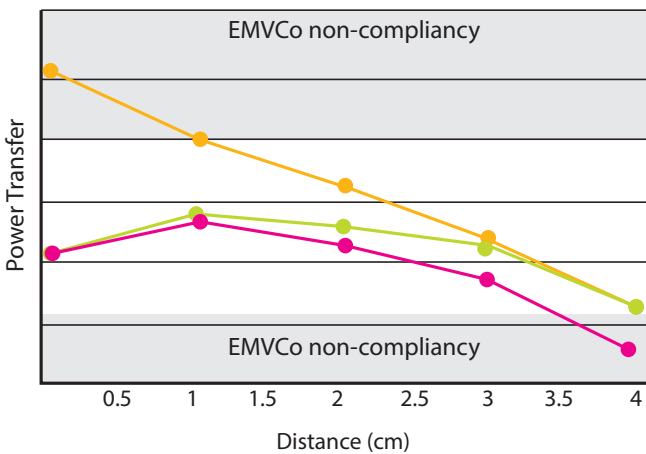
and peripheral interfaces, and reader libraries compliant with different standards combined to enhance performance while simplifying final certification and delivery.

The family includes the PN7462, which has an optional contact interface and 160 kB of Flash, the PN7362, with 160 kB of Flash, and the PN7360, with 80 kB of Flash.

| Recommended applications | PN7462 | PN7362 | PN7360 |
|----------------------------|--------|--------|--------|
| Corporate access | X | X | X |
| Hospitality access | | X | X |
| Payment terminal | X | | |
| Home banking | X | | |
| USB readers | X | X | |
| Gaming-console accessories | | X | X |

DYNAMIC POWER CONTROL

The PN7462 family maximizes performance in detuned conditions using an exclusive feature, called Dynamic Power Control (DPC), for automatic antenna optimization. DPC represents the next step in antenna tuning optimization and improves performance when in the presence of metal, other cards, or a mobile phone. The DPC feature helps reduce power consumption and, along with other power-saving features, including low-power card detection and integrated battery-voltage monitoring, helps extend battery life. At the same time, DPC enables best output power to easily meet EMVCo requirements and provides long reading distances, for higher overall performance and improved compliance with EMVCo requirements.



- NFC reader without DPC (symmetrical tuning)
- NFC reader with DPC
- NFC reader without DPC (asymmetrical tuning)

CONTACT READER (PN7462)

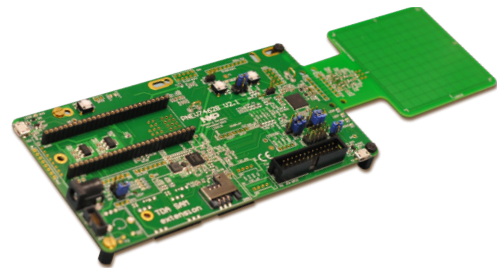
The optional contact reader, included with the PN7462 type number, supports Class A, B, and C cards and includes a fully integrated ISO/IEC 7816-3&4 UART. The UART supports all ISO baud rates and performs at up to 1 Mbit/s. The contact reader can also drive directly a Secure Access Module (SAM). The contact interface complies with EMVCo 4.3 specification.

ADVANCED CUSTOMIZATION

The ARM Cortex-M0 core includes up to 160 kB of Flash and can be configured to run fully-custom applications. A full set of host/slave and master interfaces, along with up to 21 GPIOs and the optional contact interface, give developers the widest range of options for functionality and enable a high degree of design flexibility. A primary downloader enables firmware downloads using the SWD interface and USB mass storage. In-Application Programming (IAP) enables in-field firmware upgradability. Its extended temperature range (-40 to +85 °C) allows to use it in every kind of operating environment.

FAST COMPLETION

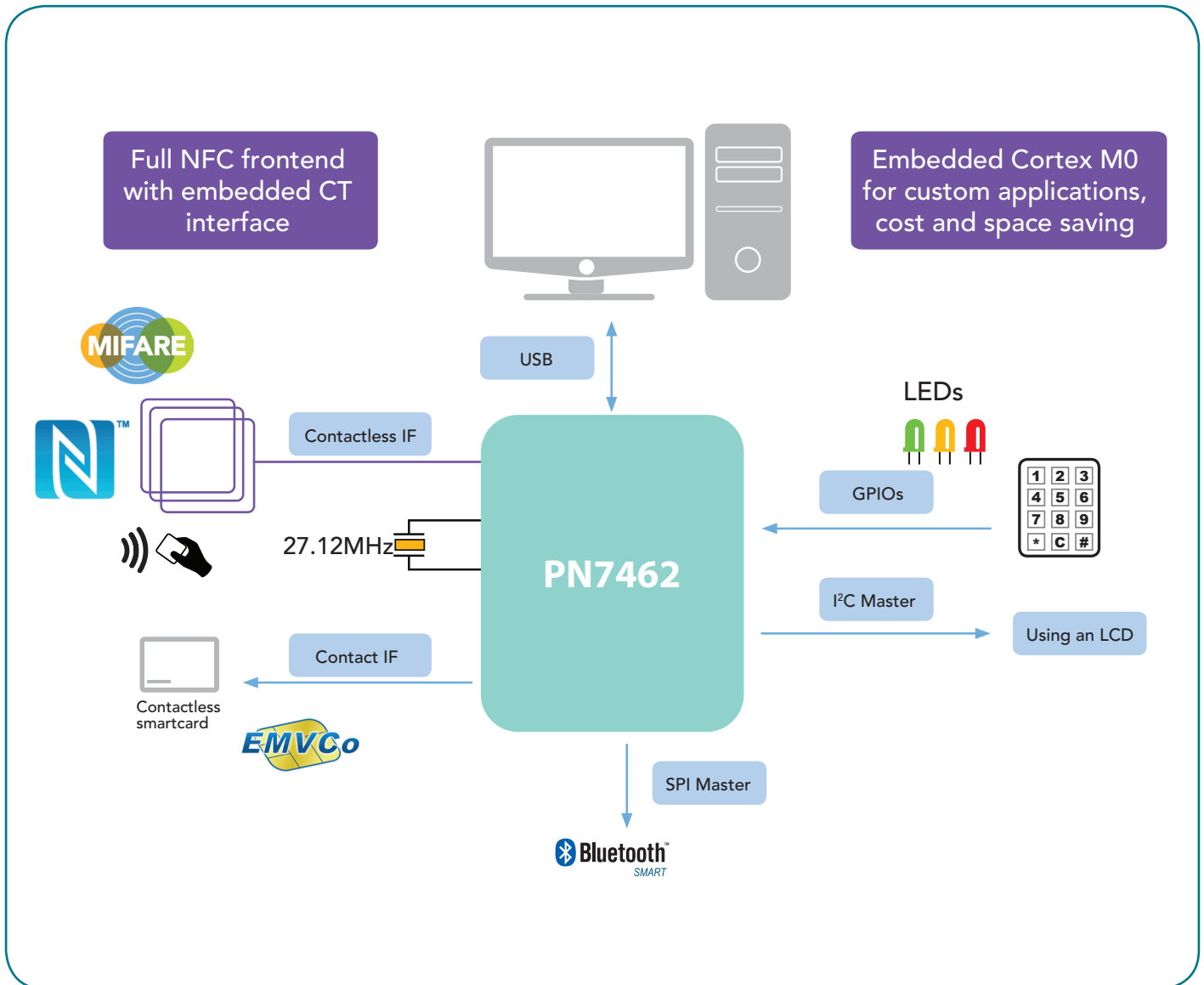
Backed by an extensive set of support tools, the PN7462 family makes it easy to complete a design. The devices are compatible with industry-standard development tools for embedded, are supported by tutorials, and come with a complete evaluation kit and multiple software examples for the most popular use cases, including payment and access. To reduce complexity and simplify the certification process, the devices are supplied with libraries that are validated and pre-certified for EMVCo hardware and software (contact and contactless), and also comply with NFC Forum guidelines for NFC analog and digital, as well as the MIFARE card family.



COMPACT, LOWER-COST DESIGNS

Housed in a small HVQFN64 package that measures just 9 x 9 mm, the PN7462 family needs fewer external components and requires less PCB space than other implementations. As a result, the bill of materials (BoM) is lower and the final design is smaller.

SAMPLE APPLICATION



RF COMMUNICATION MODES

| | |
|----------------|--|
| Read/Write | <ul style="list-style-type: none"> ▶NFC Forum tag types 1, 2, 3, 4, 5 ▶EMVCo 2.5 ▶ISO/IEC 14443 type A&B R/W up to 848 kbit/s ▶ISO/IEC 15693 reader (I-Code SLI) ▶ISO/IEC 18000-3M3 reader (I-Code ILT) ▶FeliCa tags up to 424 kbit/s ▶MIFARE Classic 1K/4K, MIFARE DESFire |
| Card Emulation | <ul style="list-style-type: none"> ▶ISO/IEC 14443-4 type A |
| Peer-to-Peer | <ul style="list-style-type: none"> ▶Active and passive initiator and target according to ISO/IEC 18092 at all data rates |

NXP LEADERSHIP

Having invented MIFARE and co-created NFC, NXP is the market leader in contactless and contact interfaces with more than 1 billion units shipped. NXP is also a recognized leader in low-power Cortex-M0 core architectures, has proven expertise in EMVCo L1 software stacks, and is a standardizing member of ISO/IEC 14443 A&B licenses. The PN7462 family builds on these legacies to offer a state-of-the-art reader solution on a single chip.

| Product | Flash | Contact interface | Delivery | 12NC |
|---------|--------|-------------------|-------------|----------------|
| PN7462 | 160 kB | Yes | Single Tray | 9353 076 92551 |
| | | | Reel | 9353 076 92518 |
| PN7362 | 160 kB | No | Single Tray | 9353 084 36551 |
| | | | Reel | 9353 084 36518 |
| PN7360 | 80 kB | No | Single Tray | 9353 077 96551 |
| | | | Reel | 9353 077 96518 |

