Extensive proximity connectivity capabilities for electronic devices

This highly integrated transceiver equips electronic devices with the most widely deployed contactless communication protocols, including NFC. Operating at 13.56 MHz and available in various packages with extended temperature ranges, it enables flexible, future-proof terminals at the lowest costs.

Key features
- Reader/writer functionality compatible with ISO/IEC 14443A&B, MIFARE™, FeliCa and NFC Forum tag types (Jewel, MIFARE UltraLight™, FeliCa, MIFARE DESFire™)
- Full peer-to-peer functionality (ISO/IEC 18092 NFC-IP1)
- Card emulation functionality
- Certifiable with antenna booster EMVCo
- Operating distance up to 70 mm*
- Integrated MIFARE reader support
- Available with extended Temperature range
- PN512AA: AEC-Q100 compliant
- Flexible device host connection via multiple interfaces
- High efficiency with low-power down currents
- Small footprint with HVQFN32
- Design-in with excellent support available worldwide
- Easy access to NFC technology, built with NXP’s expertise and experience with major device manufacturers

Key benefits
- Single-chip support for the most widely deployed contactless protocols, including full NFC
- Future-proof design for POS implementations

Target markets and applications
- Payment and loyalty schemes
- NFC enabled POS terminals
- Gaming and entertainment systems
- Industrial and medical applications
- Easy pairing of Bluetooth, Wi-Fi, or WUSB devices
- Automotive applications

*Depends on antenna device and device integration
**Key technical data**

**Product features**

| Host interfaces | SPI up to 5 Mbit/s  
| | Serial UART up to 1228 kbit/s  
| | Parallel (HVQFN40 version only)  
| | I²C up to 3.4 Mbit/s  
| | FIFO | 64 bit  

**RF interface**

| Analog interface | Fully integrated  
| Carrier frequency | 13.56 MHz  
| Baud rates | up to 424 kbit/s  

**Contactless protocols**

| Reader / writer | ISO/IEC 14443 A&B  
| | MIFARE NFC Forum Tag Type support  
| | FeliCa  
| Peer-to-peer | ISO/IEC 18092 (active and passive)  
| Card emulation | ISO 14443 A & Mifare  

**Additional product information**

| Supply voltage | 2.5 - 3.6 V  
| Power-down mode | 5 µA  
| Typical RF current | 60 mA  
| Package | HVQFN32 (5 x 5 x 1 mm)  
| | HVQFN40 (6 x 6 x 1 mm)  
| Software | Host controller reference implemented in Source code and examples (C, C++)  

**Ordering information**

| Part number | PN5120A0HN1/C2  
| Sales description | Package  
| | Temperature range | -25 to +85 °C  
| Status | Released  
| Ordering information | 12NC  
| | 9352 92115 118 | MOQ=6000 (rail without dry pack)  
| | 9352 92115 151 | MOQ=490 (simple tray without dry pack)  
| | 9352 92115 157 | MOQ=2450 (5 trays without dry pack)  

| Part number | PN5120A0HN/C2  
| Sales description | Package  
| | Temperature range | -25 to +85 °C  
| Status | Released  
| Ordering information | 12NC  
| | 9352 92114 518 | MOQ=6000 (rail without dry pack)  
| | 9352 92114 551 | MOQ=490 (simple tray without dry pack)  
| | 9352 92114 557 | MOQ=2450 (5 trays without dry pack)  

| Part number | PN512A0A0HN1/C2  
| Sales description | Package  
| | Temperature range | -40 to +85 °C  
| Status | Released  
| Ordering information | 12NC  
| | 9352 96854 518 | MOQ=6000 (rail without dry pack)  
| | 9352 96854 551 | MOQ=490 (simple tray without dry pack)  
| | 9352 96854 557 | MOQ=2450 (5 trays without dry pack)  

**MIFARE pedigree**

NXP MIFARE is the leading technology platform for contactless ticket, card, and reader solutions. With more than 40 million core reader components, two billion cards, and one billion smart ticket ICs sold, MIFARE is a proven and reliable technology that represents the largest installed base worldwide.

Design-in kit

To support product development and enable easy access to PN512 and NFC technology, NXP provides a design-in kit equipped with all the necessary hardware, software sources, and documentation. A reference implementation for the NFC Forum’s protocol stack is also available.

To order samples or design kits, please contact a local NXP distributor (www.nxp.com) or access the NXP distributor portal (https://extranet.nxp.com).

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