NXP Near Field Communication (NFC) controller PN533

Extensive proximity connectivity capabilities for USB-enabled devices

Operating at 13.56 MHz, this highly integrated, pin-compatible, and microcontroller-based transmission module provides USB-enabled devices with the most widely deployed contactless communication protocols, including NFC.

Key features

- Reader/writer functionality compatible with ISO/IEC 14443 A&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
- Operating distance up to 70 mm*
- Optimized 80C51 core processor with embedded firmware in ROM
- Integrated MIFARE reader support
- USB 2.0 host interface, serial host interface (High speed UART)
- Firmware complies with German eID and Paypass certifications
- PC/SC driver is WHQL pre-certified
- Supports the most widely deployed contactless card protocols (ISO 14443 A&B and FeliCa)
- Small footprint (HVQFN40 6 x 6 x 1 mm)
- Excellent design-in support available worldwide
- Easy access to NFC technology, built with NXP's expertise and experience with major device manufacturers

Key benefits

- Fast design-in
- USB host interface, serial host interface
- WHQL Certified USB Drivers for PC available (PC/SC)

Target segments

- PC integration, PC peripheral
- Embedded devices for industrial and medical applications

*Depends on antenna device and device integration

Key technical data

Product features	
Host interfaces	USB 2.0, high speed UART I²C Master for external additional EEPROM or TDA8029 connection
Microcontroller	80C51 core with 44 kbyte ROM and 1.2 kbyte RAM
Driver	PC/SC driver WHQL pre-certified
RF interface	
Analog interface	Fully integrated
Carrier frequency	13.56 MHz
Baud rates	up to 848 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	
USB bus power supply	4.2 - 5.5 V
Supply voltage	2.5 - 3.6 V
Power-down mode	5 µA
Temperature range	-25 to +85 °C
Package	HVQFN40 (6 x 6 x 1 mm)
Software	NFC Forum Reference implementation

Ordering information

Part number		PN5331B3HN/C270	
Sales description	Package	HVQFN40	
	Status	Available	
Ordering information	12NC	9352 878 68518	MOQ=4000 (5trays with dry pack)
		9352 878 68551	MOQ=490 (Rail with dry pack)
		9352 878 68557	MOQ=2450 (simple tray with dry pack)

Design-in kit

To support product development and enable easy access to PN533 and NFC technology, NXP offers the OM5588/N5331U01 design-in kit. Equipped with all the necessary hardware, software sources, and documentation, it includes two reference PN533 boards, cables, and power supply. A reference implementation for the NFC Forum's protocol stack is also available. WHQL Certified PC/SC drivers support fast design-in of the PN533.

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).

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, which represents the largest installed base worldwide.

MIFARE.net

www.nxp.com

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