

NXP Near Field Communication (NFC) for handheld devices and POS terminals PN532

Making secure connectivity easy

NXP Semiconductors' controller IC PN532 is a highly integrated transmission module including a microcontroller which reduces the processing power from the host controller. The PN532 offers proximity connectivity targeting 13.56MHz reader/writer applications for POS terminals and handheld devices and is also capable of acting as a smart card when combined with a secure element.

Key features

- Reader/writer functionality compatible to ISO/IEC 14443 A&B, MIFARE, FeliCa and NFC Forum tag types (MIFARE Ultralight, Topaz, FeliCa, MIFARE DESFire)
- Full peer-to-peer functionality
- Card emulation functionality compatible to ISO/IEC 14443 A when connected to secure controller (SmartMX P5CN072)
- Up to 10cm operating distance
- Optimized 80C51 core processor with embedded firmware in ROM
- Multiple interfaces (UART, SPI I^2C)
- Integrated MIFARE cipher crypto1

Key benefits

- Relieve the host controller from real time processing tasks
- Supporting the most widely deployed contactless protocols (ISO 14443 A&B and Felica)
- Support for battery low mode in card emulation
- Small footprint (HVQFN40 6mm*6mm*1mm)
- Application notes to optimize antenna design, software
- Easy access to NFC technology, benefiting from NXP's expertise and experience with major device manufacturers

NXP founded by Philips

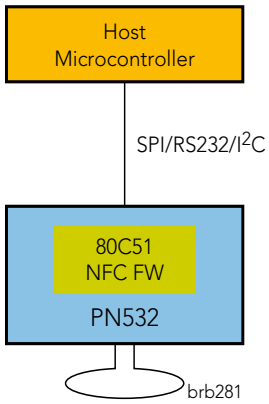
Key applications

Reader/Writer:

- Easy pairing of Bluetooth-, Wi-Fi- or WUSB-enabled devices
- Read/ write NFC Forum tags such as MIFARE, MIFARE Ultralight, DESFire, Felica and Topaz

Peer-to-peer:

- Exchange data (business card, picture, etc.) between two active devices

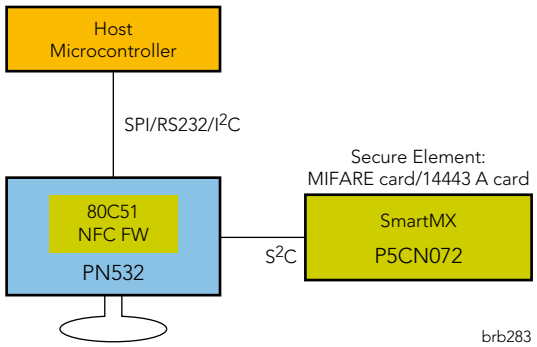


Reader / Writer

Card emulation:

The PN532 makes it possible to emulate:

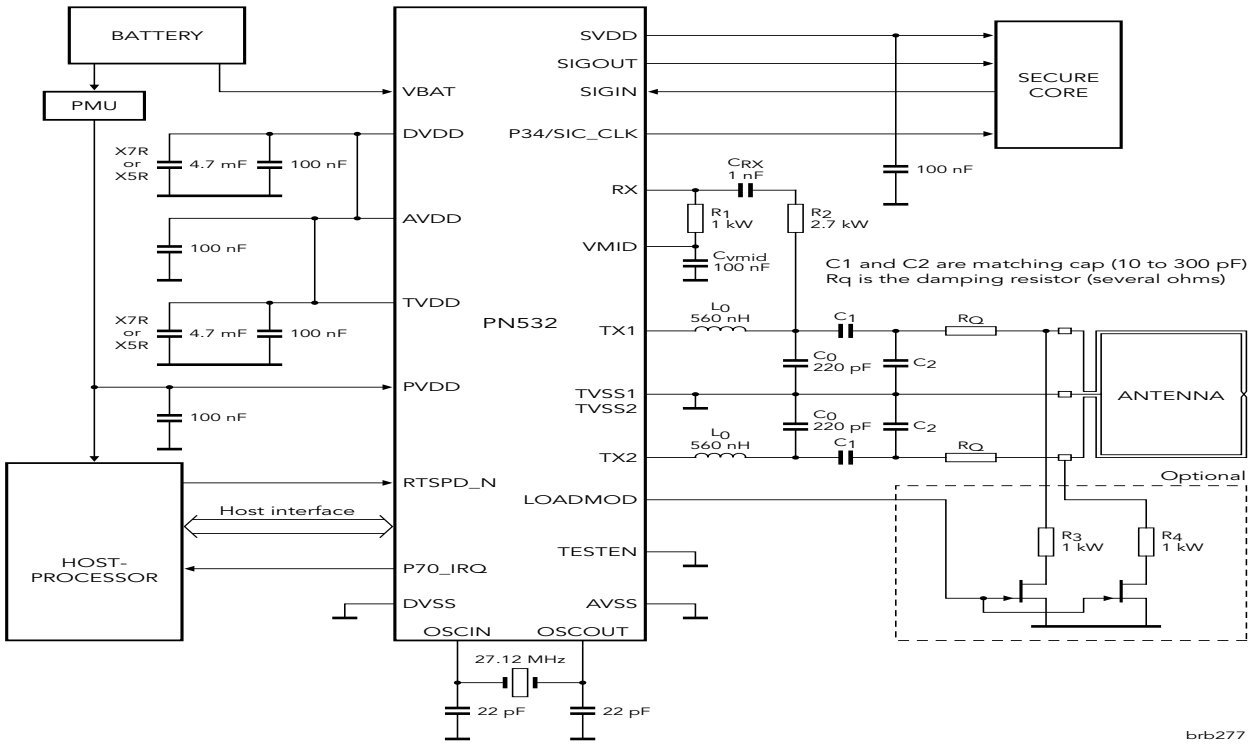
- A MIFARE card to access public transport, stadium, building etc.
- A MIFARE card to store loyalty program or pre-paid wallet
- An EMV payment card such as PayPass and VisaWave
- An active tag and change its content over the air (OTA)



Reader + Card emulation

Key technical data		
Contactless protocols	Peer-to-peer	Full ISO 18092 (up to 424 Kbits/s)
	Reader/writer	ISO 14443 A&B, MIFARE, FeliCa, NFC Forum
	Card emulation	ISO 14443 A, MIFARE, FeliCa
Host interfaces	I²C	400 kHz
	SPI	Up to 5 MHz
	Serial UART	Up to 1.228 Mbits/s
	Secure element interface (SD card or embedded)	NFC-WI (S2C)
Power characteristics	Supply voltage	2.7V - 5.5V
	Supply voltage for external secure element	3.0V
	Power down mode	12µA
	Typ RF active current	60mA
Temperature range		-25°C/+85°C
Package		HVQFN40 (6mmx6mmx1,0mm)
Software		NFC Forum Reference Implementation

Ordering information			
Part number			PN5321A3HN
Sales description	Package		HVQFN40
	Status		Available
Ordering information	12NC	9352 852 23518	MOQ=4000 (5 trays with dry pack)
		9352 852 23551	MOQ=490 (rail with dry pack)
		9352 852 23557	MOQ=2450 (simple tray with dry pack)



Design-in kit PN532 (C106)

- OM5581/N5322S02 (12NC: 9352 862 06699)
- Two serial boards
- Serial cable and power supply
- Documentation: datasheet, user manual, application note
- Drivers, source code and examples (Windows, Linux)
- A daughter board with secure element (SMX) that can be plugged on to the boards of the kit is also available (Export control restrictions apply)

How to order documentation, samples, design-in kit

- A list with technical NFC documentation is available for each IC: (http://www.nxp.com/nfc)
- NFC documentation can be requested by filling in the request form: http://www.nxp.com/acrobat_download/other/identification/NFC_request_final.pdf
- Samples and design-in kits can be ordered:
  - for NXP distributors via our portal: https://extranet.nxp.com
  - for customers a list of distributors is available at: http://www.nxp.com/nfc

Useful Links

NFC Forum specifications: http://www.nfc-forum.org/specs/
EMVco: http://www.emvco.com
MIFARE: http://www.mifare.net

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www.nxp.com

founded by
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