PTX100R NFC READER IC

The industry's best-performing NFC controller for point-of-sale terminals and mobile point-of-sale applications



The PTX100R is a comprehensive NFC reader system-on-chip for use in point-of-sale (PoS) terminals and mobile PoS applications. It provides a complete NFC reader implementation optimized for use in contactless payment terminals, including the RF physical layer, power management circuit, and on-chip EMVCo hardware accelerator.



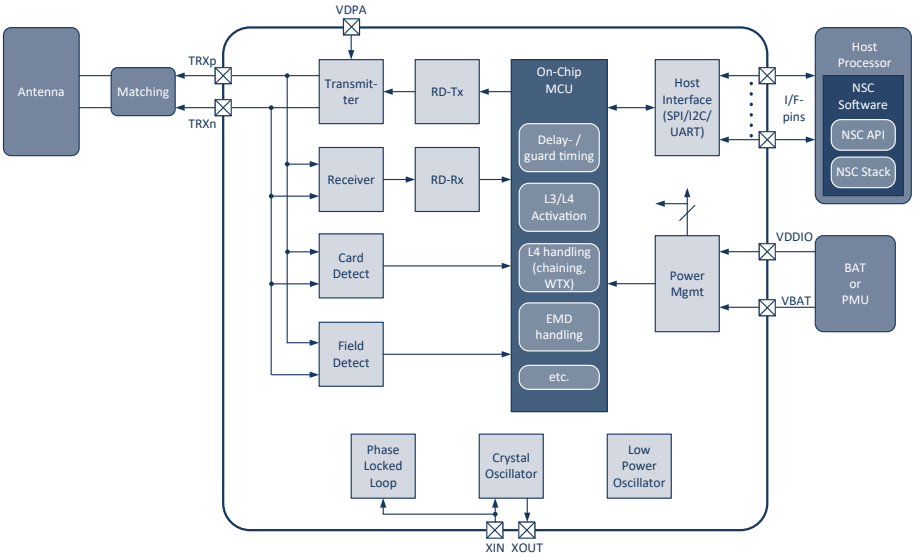
- EMVCo 3.0/3.1 in small form factor or behind the display POS
- High reading performance: up to 40% increased reading distance compared to competition
- Simplified HW and SW integration
- Faster standard compliance and ease-of-manufacturing

Features and Benefits

Product Features	Customer Benefits
High output power up to 2W @5.5V Very high Receiver sensitivity (-80dBc)	Allows to pass with margin the EMVCo 3.0/3.1 tests of VoV and PICC Allows to design antenna in challenging environment (behind display, small area…) Higher reading distance in Type A, B, F, V (up to 40% increase in Type V vs competition)
DiRAC: Direct antenna connection for Tx and Rx	BoM reduction (EMI and Xtal) Less components allow to assure marginal NFC variation between devices during production
Removal of second resonating structure introduced by EMI Xtal-less design using reference clock	Simplification of Antenna tuning No EMI filters for optimal interoperability with different Types of Cards form factor (Card, Dongle, token, wearable, smartphone, ring)
Sine Wave output Accurate Digital Wave Shaping	Allows to pass EMVCo PCD and NFC Forum Waveform tests with margin No 3rd harmonic simplifying FCC certification

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PTX100R Block Diagram



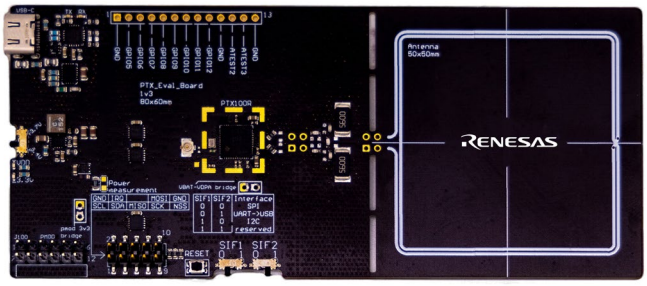
This superior RF performance provides manufacturers of PoS terminals and mobile PoS applications with valuable benefits:

- Easier to achieve compliance with the broader set of more demanding interoperability tests specified in the latest EMVCo 3.0/3.1 standard for contactless payment terminals
- Reliable NFC coupling in challenging operating environments, such as through an antenna mounted behind a PoS terminal's display
- Supports operation through an antenna typically 4-5 times smaller than that required by conventional NFC readers
- Fewer external components for bill-of-materials cost and space savings

PTX100R Evaluation Kit

Evaluation Kit Development Features

- Connection for customized antenna design for RF evaluation
- PC application for easy evaluation and development with PTXI00R
- PMOD connector to attach application specific microcontroller
- Interface selection via switches (SPI / 12C / UART via USB)
- Test pads for current measurement + analog and digital debug pins
- Option for external clocking
- Voltage supply value selectable via switch



Evaluation Kit Contents:

- PTX100R NFC Reader Evaluation Board
- USB A-C Cable
- PTX H-Field Detector Card

Typical Applications

- PoS
  - Mobile Point of Sale Terminal
  - High-Performance Electric Vehicle (EV) Charger Wall Box
  - Metered Electric Vehicle (EV) Charging Station
- Authentication
  - Printer Control Panel with NFC Authentication
- HMI
  - HMI Solution for Appliances
- Brand Protection
- ID Reader
  - Public Transportation Pass Reader
- PDA



For more details, please visit: renesas.com/PTX100R

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