



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.



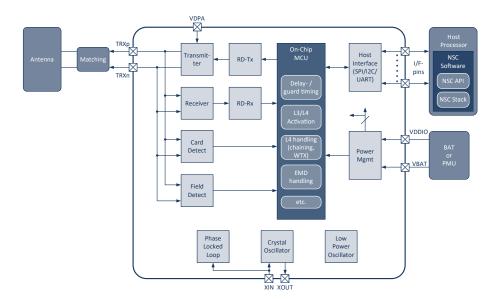
- High reading performance: up to 40% increased reading distance compared to competition
- Simplified HW and SW integration
- Faster standard compliance and ease-of-manufacturing



# Features and Benefits

Product Features	Customer Benefits
High output power up to 2W @5.5V	Allows to pass with margin the EMVCo 3.0/3.1 tests of VoV and PICC
Very high Receiver sensitivity (-80dBc)	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	Simplification of Antenna tuning
introduced by EMI  Xtal-less design using reference clock	No EMI filters for optimal interoperability with different Types of Cards form factor (Card, Dongle, token, wearable, smartphone, ring)
Sine Wave output	Allows to pass EMVCo PCD and NFC Forum Waveform tests with margin
Accurate Digital Wave Shaping	No 3rd harmonic simplifying FCC certification

# 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 PTXIOOR
- 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

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## **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