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

<table>
<thead>
<tr>
<th>Product Features</th>
<th>Customer Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>High output power up to 2W @ 5.5V</td>
<td>Allows to pass with margin the EMVCo 3.0/3.1 tests of VoV and PICC</td>
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<tr>
<td>Very high Receiver sensitivity (-80dBc)</td>
<td>Allows to design antenna in challenging environment (behind display, small area… )</td>
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<tr>
<td>High reading distance in Type A, B, F, V</td>
<td>Higher reading distance in Type A, B, F, V (up to 40% increase in Type V vs competition)</td>
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<tr>
<td>DiRAC: Direct antenna connection for Tx and Rx</td>
<td>BoM reduction (EMI and Xtal)</td>
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<td>Less components allow to assure marginal NFC variation between devices during production</td>
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<td>Removal of second resonating structure introduced by EMI</td>
<td>Simplification of Antenna tuning</td>
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<tr>
<td>Xtal-less design using reference clock</td>
<td>No EMI filters for optimal interoperability with different Types of Cards form factor (Card, Dongle, token, wearable, smartphone, ring)</td>
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<tr>
<td>Sine Wave output</td>
<td>Allows to pass EMVCo PCD and NFC Forum Waveform tests with margin</td>
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<tr>
<td>Accurate Digital Wave Shaping</td>
<td>No 3rd harmonic simplifying FCC certification</td>
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</table>
PTX100R NFC READER IC

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 PTX100R
- PMOD connector to attach application specific microcontroller
- Interface selection via switches (SPI / I2C / UART via USB)
- Test pads for current measurement + analog and digital debug pins
- Option for external clocking
- Voltage supply value selectable via switch

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