



PRODUCT FACT SHEET

PTX100W NFC wireless charging IC

The industry's first dedicated NFC transmitter for wireless charging applications alongside data communication

- Industry best output power, harvesting 1W on the listener with 2.4W power on the PTX100W, enabling fast charging
- Innovative sine-wave transmitter for Direct Antenna Connection (DiRAC™)
- Superior RF performance enable small antenna design and allow flexible placement of charger and device antennas
- On-chip processing of Foreign Object Detection (FOD) and time critical commands
- Accurate digital wave shaping for enhanced data communication and interoperability while in charging mode

Pantronics innovative architecture enables new NFC wireless charging applications

PTX100W is a powerful and efficient NFC transmitter system-on-chip for use in wireless charger devices for consumer application. On top of the wireless charging capability it also provides a complete NFC reader implementation.

Its new RF architecture enables NFC wireless charging solutions of devices with smaller antenna and larger battery capacity compared to the existing solutions.

NFC Solution tailored for charging

PTX100W sets a new, high standard for the performance of NFC transmitter ICs, thanks to the innovative RF architecture developed by Pantronics. Implementing unique DiRAC™ direct-to-antenna technology, PTX100W dispenses with the EMC filter and other lossy, large-tolerance components used by the conventional NFC devices in today's wireless charging solutions.

Key innovations of PTX100W RF and software architectures:

- The industry's highest power output harvesting 1W on the listener with 2.4W power on PTX100W
- DiRAC™: Direct Antenna Connection
- Accurate wave shape control for interoperability and certification compliance
- On-chip processing of Foreign Object Detection (FOD) and time critical commands

The resulting advantages are the mirror image of the drawbacks of conventional NFC transmitters:

- Losses are reduced because the EMC filter and most matching components are eliminated.
- Wide-tolerance capacitors and inductors are removed, allowing matching impedance of less than 5Ω to increase the transmitter's output power.
- Matching circuit simplified to the bare minimum bill-of-materials for space and cost savings
- Software integration facilitated by on-chip processing

While the output power is significantly higher than conventional architecture, the efficiency of the overall system also improves due to the reduced losses. The PTX100W reader provides a new, easier solution to embed NFC wireless charging in devices where the recharge duration time, the small antenna and the larger battery capacity are key factors.

Applications

- Wireless charger devices
- Wearables
- Smart Watches
- Portable consumer devices (hearable, smart-glasses)
- Gaming
- IoT devices

Features

- Up to 1W received power on the listener side
- On chip processing
- Accurate digitally-controlled wave shaping
- NFC Forum compliant
- Supported host interfaces: SPI, I²C, UART
- Supply voltage range: 2.7V to 5.5V
- Ambient temperature range: -40°C to 70°C
- Compatible with Linux®, RTOS and non-OS



PTX100W BLOCK DIAGRAM

