

Enabling NFC applications and simplifying connectivity in EMVCo, IoT, Wireless Charging and Mobile by a unique Universal Reader Technology

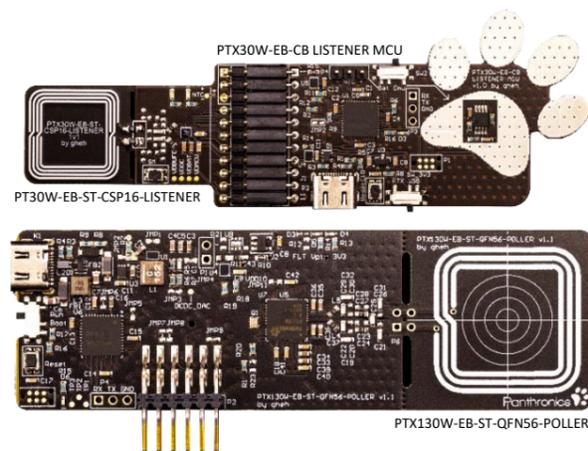
NFC WLC POLLER SOLUTIONS	Released	Released
PRODUCT	PTX100W	PTX130W
Product description	High-performance, high-power NFC Wireless Charging (WLC) Poller solution with multi-protocol reader functionality. Universal SW device integration.	High-efficiency , high-performance, high-power NFC Wireless Charging (WLC) Poller solution with multi-protocol reader functionality. Universal SW device integration.
Technology	180nm	180nm
NFC Wireless Charging standards & features		
NFC Forum certification	-	E: - / N: WLC, Reader compliance
NFC Wireless charging		
NFC Forum WLC Poller protocol	-	N: ✓
NFC WLC Poller exclusive protocol	✓	E: ✓
Listener counterpart	Discrete Listener (WLC-LDI)	Discrete Listener (WLC-LDI) / PTX30W-N
NFC WLC static charging protocol	✓	✓
NFC WLC negotiated charging protocol	✓	✓
Symmetric transparent data channel	-	✓
Data-exchange via NFC protocols	✓	✓
FOD (Foreign object detection)	bFOD	bFOD, Poll FOD
Power regulation in steps [no. of steps]	5	E: 5 / N: 100
Low Power Listener Detection current, typ. [µA], @ 2 Hz	100 µA	<100 µA
Reader standards		
Reader / Writer	ISO/IEC 14443 A/B up to 848 kbit/s, MFCC ISO/IEC 18092, FeliCa™ up to 424 kbit/s ISO/IEC 15693 up to 26,5 kbit/s ISO/IEC 18000-3 M1	ISO/IEC 14443 A/B up to 848 kbit/s, MFCC ISO/IEC 18092, FeliCa™ up to 424 kbit/s ISO/IEC 15693 up to 26,5 kbit/s ISO/IEC 18000-3 M1
Carrier frequency [MHz]	13,56 MHz	13,56 MHz
NFC Forum tag type support	2, 3, 4, 5	2, 3, 4, 5
Card emulation (HCE)	-	-
NFC Tag-Type emulation @ bitrate [kbit/s]	-	-
Peer-to-peer (ISO/IEC 18092)	✓	✓
Passive communication	Initiator	Initiator
Active communication	-	-
Product features		
Ultra-low power on-chip MCU with integrated Firmware	✓	✓
High power digital conversion sine wave RF frontend	✓	✓
Digital dynamic power control (DDPC)	✓	✓
DIRAC®: EMI filter-less solution	-	-
Phase Accurate Active Load-Modulation HCE	✓	✓
High receiver/LMA sensitivity [dBc]	-80 dBc	-80 dBc
Very High Dynamic Range Receiver (VHRR)	✓	✓
RF transmitter supply voltage [V]	2.7 V – 5.5 V	2.7 V – 5.5 V
Transmitter supply current, max. [mA]	650 mA	650 mA
Power harvested on the Listener ¹ , max. [W]	1.0 W	1,0 W
Relative Poller efficiency improvement ² , typ. [%]	-	+18%
Host interface	SPI, I ² C, UART	SPI, I ² C, UART
Supply voltage host interface [V]	1.8 V, 3.3 V, 5.0 V	1.8 V, 3.3 V, 5.0 V
Power-down mode current, typ. [µA]	3 µA	3 µA
Available packages	QFN56	QFN56
Temperature range [°C]	-40 to +70	-40 to +70
Field-detection signal output	IRQ	IRQ
Product support and ordering information		
Product packages	QFN56	QFN56
Product type	PTX100WDQ56	PTX130WDQ56
Order code single tray (dry pack)	PTX100WDQ56B	PTX130WDQ56B
Order code reel (TR dry reel 13")	PTX100WDQ56D13	PTX130WDQ56D13
Evaluation boards		
Name of evaluation kit	PTX100W NFC WLC Eval Kit	PTX130W/30W NFC WLC Eval Kit
Order number of evaluation kit	10009200	10009230
Software / SDKs / GUI	NFC WLC reader libraries for easy integration into MCUs and RTOS. SDK's for WLC for Non-OS. WLC Config Tool GUI for evaluation of IC features, power transfer and RF optimization, NFC Tag reading (Windows® and Linux).	NFC WLC reader libraries for easy integration into MCUs and RTOS. SDK's for WLC for Non-OS. WLC Config Tool GUI for evaluation of IC features, power transfer and RF optimization, NFC Tag reading (Windows® and Linux).

NFC WLC LISTENER SOLUTIONS	Customer samples available
PRODUCT	PTX30W
Product description	Highly integrated, scalable NFC WLC Listener with I ² C interface and on-board PMIC and LDO. Operating devices with or without battery using standalone or MCU controlled operation.
Technology	130nm
Standards & protocols	
NFC Forum compliance	✓ (Type 2 Tag, WLC Listener)
Wireless charging (WLC Listener)	
WLC exclusive protocol	-
NFC Forum WLC static charging protocol	✓
NFC Forum WLC negotiated charging protocol	✓
Operating frequency [MHz]	13,56 MHz
NFC Forum tag type support	Type 2 Tag
ISO/IEC 14443-3A bitrate [kbit/s]	106 kbit/s
Host interface	I ² C Slave
Product features	
Ultra-low power on-chip embedded core	✓
Integrated PMIC solution	✓
Integrated flexible battery charger with reverse current limiter	✓
Integrated highly efficient active rectifier	✓
Standalone mode of operation (without Host MCU)	✓
Embedded power regulation control	✓
Required PCB integration area (est.)	17 mm ²
Rectification efficiency (AC to DC)	up to 92%
Energy harvesting [W]	up to 1W
Charging current range [mA]	5-250 mA
Li-Ion and Li-Polymer batteries support	✓
Charge status monitor	✓
On-chip over-temperature detection/protection	✓
Transparent data exchange channel	✓
Shipping mode (support for battery protection)	✓
System MCU supply output voltage, typ. [V]	1.8, 3.3 V
Battery-less power supply output	✓
JEITA support	✓
Shipping mode current consumption, typ. [nA]	25 nA
I2C clock frequency [kHz]	Up to 1 MHz
Available packages	CSP16
Temperature range [°C]	-40 to +85
Product support and ordering information	
Product packages	CSP16
Order code reel (TR dry reel 7")	VDMCU as input: PTX30WCC16D7A1 VDMCU as output 1.8V: PTX30WCC16D7B1 VDMCU as output 3.3V: PTX30WCC16D7C1
Evaluation kits and boards	
Name of evaluation kit	PTX130W/30W NFC WLC Eval Kit
Order number of evaluation kit	10009230
Software	PTX30W SDK for host MCU. Supports flexible porting to any MCU.

¹ Regarding placement deviation in a coupling-volume of ±5mm in x/y/z directions (with Eval Kits)

² Relative to PTX100W

EVALUATION KITS	NFC Wireless Charging
Evaluation Kit / Board (Order number)	PTX130W/30W NFC WLC Eval Kit (10009230)
Supported products	PTX130W, PTX30W
Contents (Order number of boards)	<ul style="list-style-type: none"> 1 PTX130W-EB-ST-QFN56-POLLER (10009020) 1 PTX30W-EB-ST-CSP16-LISTENER (10009021) 1 PTX30W-EB-CB-LISTENER MCU (10009022) 1 PTX H-Filed Detector Card 2 USB-A to USB-C cable 1 WLC Spacer
Key features	<ul style="list-style-type: none"> NFC Wireless Charging evaluation kit for high-efficiency, high-power PTX130W NFC WLC IC Fully integrated high-power harvesting WLC Listener (PTX30W) with integrated PMIC and LDO Support of NFC Forum NFC Wireless Charging protocol Easy-to-use, ready-to-go SW integration Reader functions supporting all type of NFC and standard protocols (ISO14443 A/B, ISO18092, ISO15693, FeliCa and NFC P2P-Initiator) Bi-directional transparent data channel EMI filter less (DiRAC™) for high-power end-application RF-design supported with Config Tool and SDKs
Certifications	-
Software and tools	<ul style="list-style-type: none"> SDK "Non-OS" WLC for Poller (PTX130W) and optionally for Listener (PTX30W): NFC Wireless Charging libraries in C source code with compact code size. Applicable for any host MCU/RTOS integration. Config Tool (PTX130W/30W) for evaluation: Demonstration and evaluation of WLC IC-features, RF/antenna optimization Antenna design support with open-source tool Qucs Studio.
Target applications	<p>High-power NFC Forum WLC compliant wireless charging solution with Poller and Listener system:</p> <ul style="list-style-type: none"> Wireless charging in combination with universal reader solution supporting all types of NFC reader protocols and applications. Integrated system for battery based and battery-less applications Applications: <ul style="list-style-type: none"> Stylus Smart rings Smart glasses Smart watches, fitness trackers Hearing aids Small accessories
Application team support for registered customers	<ul style="list-style-type: none"> SW-expert team supports you with target system Software/Firmware integration Finalized product antenna design support dedicated to your NFC Wireless charging devices <ul style="list-style-type: none"> Retrofit support: Customer antenna retrofitted with customer antenna design Possibility to optimize and verify charging performance on end device form factor



For registration, ordering of boards and SDK's please contact sales@pantronics.com