Wireless Power Solution enabling safe and robust power transfer

WPS-65WS 65W+ Single-Coil Wireless Power Solution

The 65W+ Single-Coil Wireless Power Solution is a robust and versatile end to end system. The Solution includes complete design and software for both transmitter and receiver and support needed for a fast time to market. The WPS-65WS is tested and documented to enable easy implementation into various designs across multiple applications.

OVERVIEW

The 65W+ Single-Coil Wireless Power Solution design offers a safe, robust, wireless power experience. The solution features state of the art foreign object detection, freedom of placement and high z-gap, enabling safe and flexible operation. The system enables power transfers through barriers such as all glass types including low-e, wood, plastic and other non-magnetic materials.

The solution offers scalable form factor and power levels, resulting in optimum support for a broad range of use-cases and applications from e-scooters to 5G fixed wireless access consumer premise equipment, and other motorized and static electronics.

TARGET APPLICATIONS

Every application where cord replacement brings added value:

Consumer Property Equipment

- 5G FWA CPE
- Security cameras
- Outdoor sensors

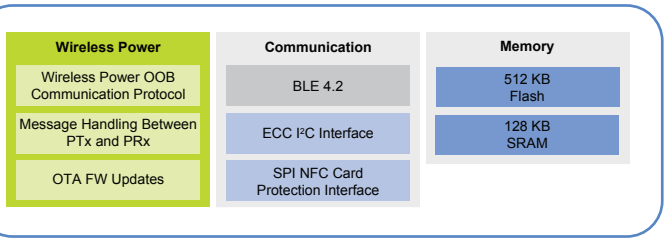
Motorized Electronics

- E-scooters
- Vacuum Cleaners
- Drones
- Robots
- Power tools
- Lawn mowers

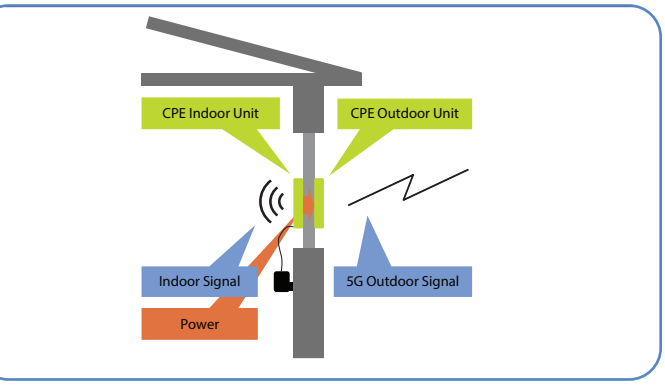
Static Electronics

- Audio assistants
- Monitors
- Conference phones

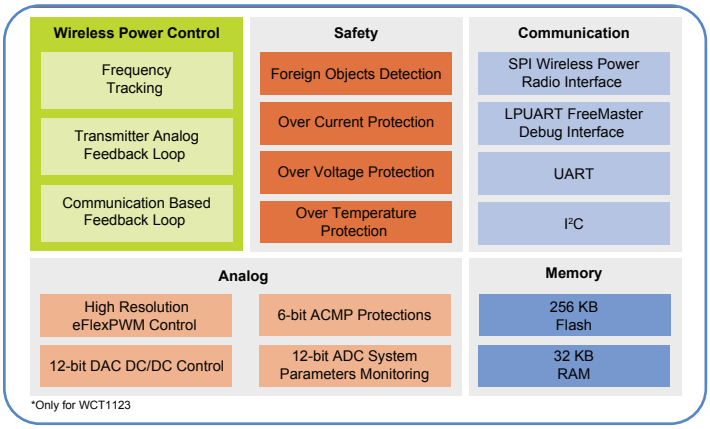
MWCT1R24ZVHT BLOCK DIAGRAM



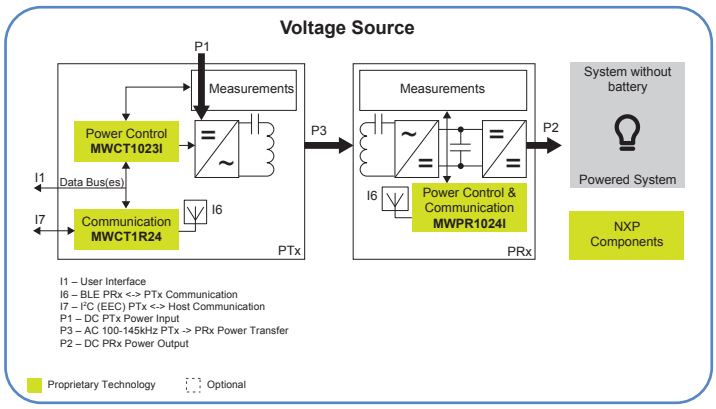
5G FWA CPE APPLICATION



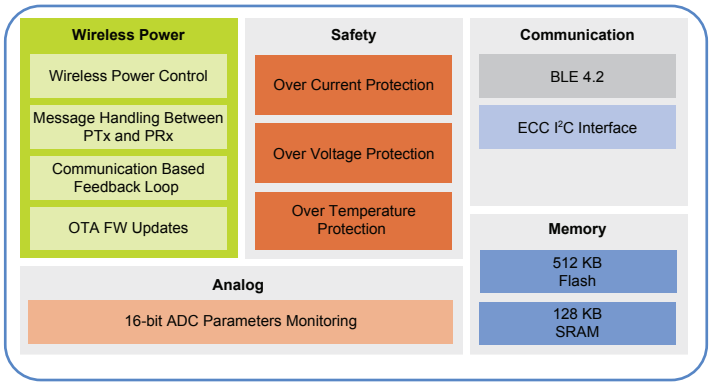
MWCT1X23FVLL BLOCK DIAGRAM

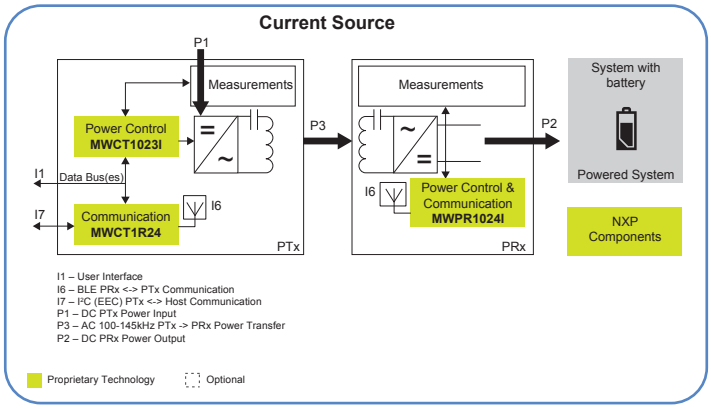


65W+ SINGLE-COIL WIRELESS POWER SOLUTION BLOCK SCHEMATICS



MWPR1X24ZVHT BLOCK DIAGRAM





FEATURES

Feature	Value	Comment
Nominal Power	65W+	Higher Nominal Power available after reference design HW modification
Maximal Power	74W overload for 100ms	Higher Maximal Power available after reference design HW modification
Efficiency	+90% maximum	Coil to coil alignment
Working Frequency	100-145kHz working frequency	
Input Voltage	19.5V DC	Different Voltage available after reference design HW modification
Output Voltage	19.5V DC	Different Voltage available after reference design HW modification
Output Voltage Ripple	+/-0.4V during dynamic load changes	
Safety	Robust foreign object detection prior and during power transfer	Programable thresholds
Coil to Coil Z-Gap	Optimized for 16-30mm	Smaller and higher Z-Gaps are available after reference design HW modification
Communication Interface	PRx and PTx I²C	
Stability	Fast coil to coil position changes supported	
PRx Coil + Ferrite Dimensions	Φ100x2.3mm	Different form factors possible
PTx Coil + Ferrite Dimensions	Φ100x2.7mm	Different form factors possible

ORDERABLE PART NUMBERS

Product	Part Number	Application	Feature	Key Peripherals	Radio	Flash [kB]	RAM [kB]	Package
MWCT1x23	MWCT1023IFVLL	65W+ Wireless Power Transmitter Control	168MHz real-time control with DSP and FPU	16-bit nEdge PWM, 2x 12-bit ADC, 12-bit DAC, PGA		256	32	LQFP-100
MWCT1R24	MWCT1R24ZVHT	65W+ Wireless Power Transmitter Radio	48MHz communication cotrol integrated radio	I²C	BLE 4.2	512	128	LQFN-48
MWPR1x24	MWPR1024IZVHT	65W+ Wireless Power Receiver Control & Radio	48MHz real-time & communication control with integrated radio	16-bit ADC, I²C	BLE 4.2	512	128	LQFN-48

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