

Proven architectures
Compact sizes
Broad portfolio

rezence
Alliance For Wireless Power



Magnetic Induction

History of Innovation Includes:

- First company to introduce a dual-mode WPC/PMA solution, P9021
- First to develop a highly integrated transmitter, P9030 A1/A10
- First to introduce an integrated full bridge transmitter, P9038 A5/A11
- First to offer bi-directional communication Tx to Rx along with standard Rx to Tx communication

Magnetic Resonance

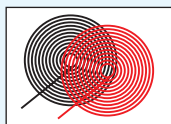
History of Innovation Includes:

- First magnetic resonance receiver designed in collaboration with Qualcomm, P9750
- Partnership with Intel to drive the adoption of resonance technology, with technology expected in products in 2015

IDT is the leader in wireless charger ICs for wireless power transfer systems. Addressing all major standards and technologies, IDT's broad portfolio of wireless charger ICs consists of both transmitters and receivers that offer distinct advantages in physical size, power efficiency, and flexibility. IDT has introduced a number of innovative and award-winning products. Prominent industry players have recognized this leadership and partnered with IDT as their silicon vendor for their next-generation wireless power solutions.

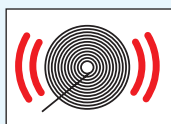
INDUSTRY-COMPATIBLE WIRELESS POWER ICs

IDT participates and has strong partnerships in all major industry associations and ecosystems, including the Wireless Power Consortium (WPC), Power Matters Alliance (PMA), and Alliance for Wireless Power (A4WP). IDT develops wireless charging ICs for both magnetic induction and magnetic resonance wireless power transfer systems that conform to the Qi, PMA, and Rezence standards.



MAGNETIC INDUCTION

- Variable frequency
- Magnetic field mostly contained in between ferrite shielding
- Receiver and transmitter coils aligned and tightly coupled

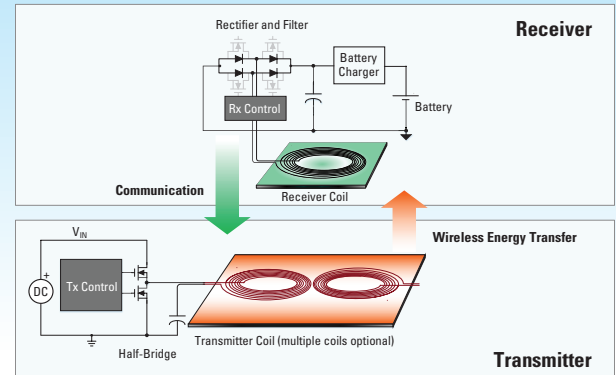


MAGNETIC RESONANCE

- Tx antennas are designed to create a charging area or field
- Magnetic field radiates outward and is not shielded
- Loose coupling provides spatial freedom

WIRELESS POWER SOLUTIONS TO MEET YOUR NEEDS

IDT's highly integrated transmitter ICs are designed for use in fixed and portable charging bases, while the ultra-compact, low-power receiver ICs are targeted at portable devices and accessories. With variations in input voltages, wireless power standards support, and coil types/numbers, IDT's wireless power solutions are suitable for a wide range of applications spanning virtually all markets and industries. In addition, some of the IDT transmitters and receivers provide additional benefits for increased wattage and control when paired together.



FEATURED RECEIVER SOLUTIONS

WIRELESS POWER RECEIVER (RX) SOLUTIONS

IDT is a leader in wireless power receiver IC solutions for wireless charger applications, addressing all major standards and technologies with an extensive portfolio of standards-certified products. IDT offers Qi, PMA, dual-mode (Qi + PMA), and Rezence-compliant solutions to meet the needs of next-generation portable devices. The highly flexible, high-efficiency, and compact designs are ideal for use in a myriad of portable devices where time to market, battery life, and physical size are primary concerns.

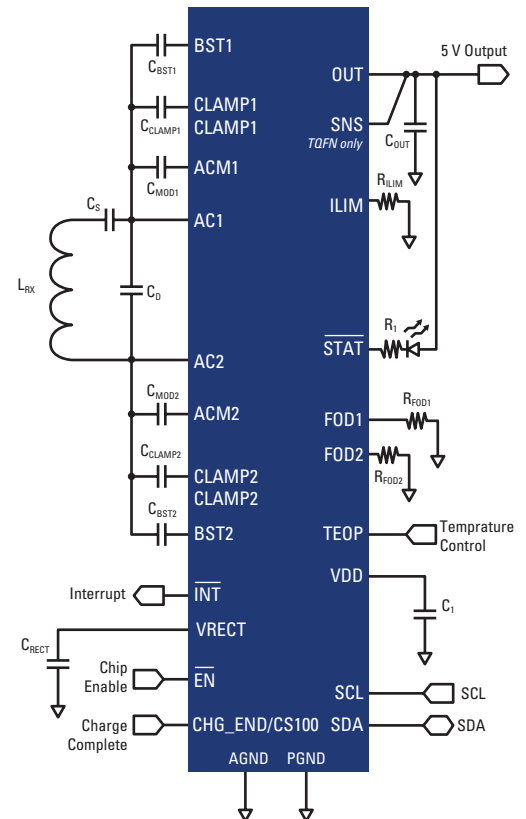
TYPICAL APPLICATIONS

- Wearable devices
- Hand-held GPS
- Game controllers
- Remote controls
- Cellular mobile
- Tablets, DSC, DVC and handhelds

P9025AC WPC Wireless Power Receiver

- Fully integrated single chip solution
- Supports up to 6 W output power
- WPC V1.1.2 compliant
- Peak Efficiency up to 83%
- Integrated synchronous full bridge rectifier
- Integrated tracking LDO output stage
- WPC 1.1 FOD algorithm
- Power good status pin
- Programmable current limit
- Active low enable function
- I²C interface
- Thermal loop control
- Over temperature/current/voltage protection
- 3.1 x 2.9 mm, 0.4 mm pitch WLCSP 36-pin

P9025AC



Receivers Selection Table

Part Number	Standards Supported	Qi	LDO	Buck Reg	MCU + Firmware
P9022	WPC 1.1	Yes	—	Yes	Yes
P9023	WPC 1.1, PMA R1	Yes	—	Yes	Yes
P9024	PMA R1	—	Yes	—	No
P9025AC	WPC 1.1	Yes	Yes	—	No
P9028	WPC 1.1, PMA R1	—	Yes	—	No
P9750	A4WP - MR	—	—	Yes	—

FEATURED TRANSMITTER SOLUTIONS

WIRELESS POWER TRANSMITTER (TX) SOLUTIONS

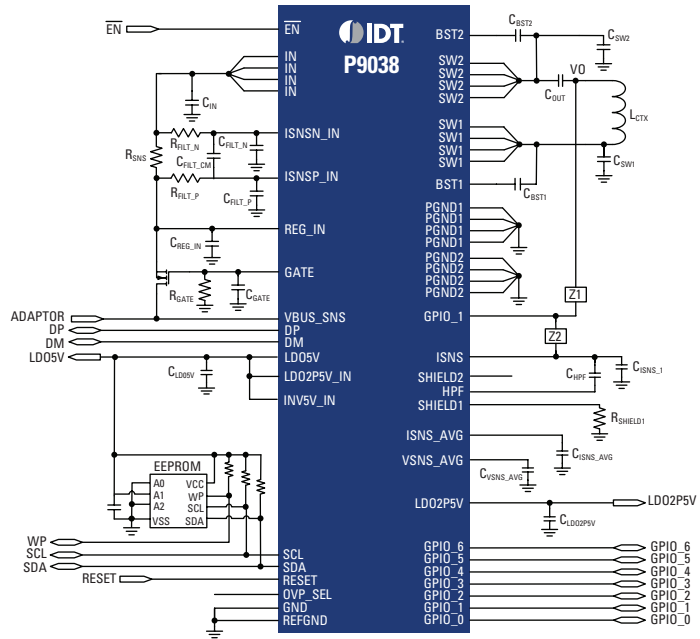
IDT is a leader in wireless power transmitter IC solutions for wireless charger applications. With Qi-compliant support for various input voltages and coil configurations, IDT enables OEMs to develop charging bases that are fully compatible with any Qi-compliant portable device. IDT's wireless power transmitter solutions are ideal for use in a variety of wireless charger applications, including charging mats and pads, public facilities, office furniture, personal computer docks, and other portable electronic charging systems.

TYPICAL APPLICATIONS

- Charging mats or pads
- Office Furniture
- Personal Computer Docks
- Wearables

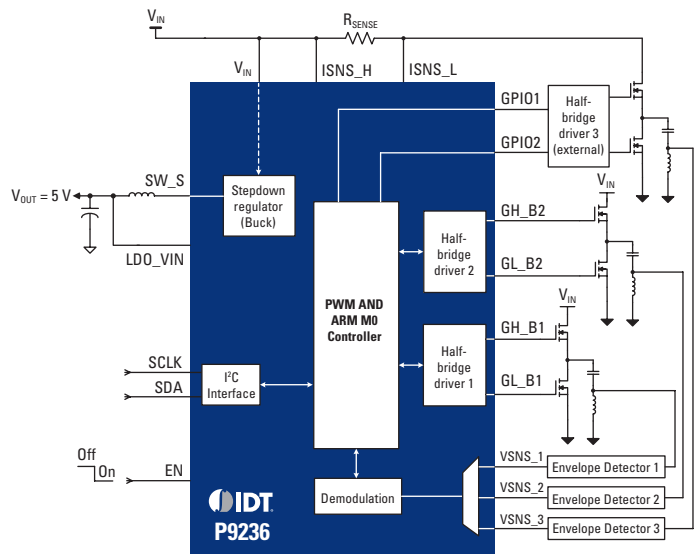
P9038 Single-chip WPC 1.1 5V Wireless Power Transmitter for A5 and A11

- V_{IN} Range: 4.5 - 6.9 V
- Supports up to 8W power transfer - 1.6 A
- Integrated power stage
 - Minimizes real estate and BOM cost
 - Very low $R_{DS(ON)}$ offering high efficiency
- Proprietary slew rate control
- Input source voltage flexibility
 - USB or AC adaptor
- Programmable input in-rush control
 - Supports both USB and AC adaptor
 - Prevents surges with low cost adaptors
- Integrated current sense and FOD
 - Minimizes real estate and BOM cost
- Input over-voltage protection
 - Protection from unregulated adaptors
- WPC-1.1 compliant
- Proprietary bi-directional communication
- Over-current protection
- Available in 7 x 7 mm VFQFN 56-pin



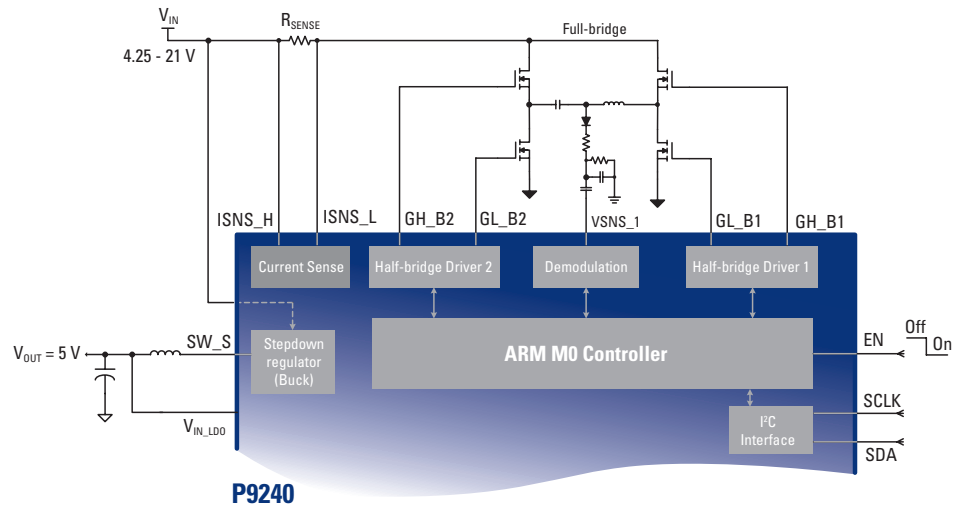
P9236 Highly Integrated, Free Positioning, Qi-Compliant Wireless Power Transmitter

- V_{IN} Range: 4.0 - 21 V
- Supports up to 10 W power transfer
- High efficiency
- Patented slew rate controller offering excellent EMI
- WPC-1.1.2 compliant
- Integrated step-down switching regulator
- Embedded 32-Bit M0 ARM processor
- Supports I²C serial interface
 - Meets ENERGY STAR requirement
- Simultaneous voltage and current demodulation
 - More robust Rx to Tx connection
- Available in 6 x 6 mm QFN 48-pin



P9240 High-Efficiency, 15W, Qi-Compliant Wireless Power Transmitter

- V_{IN} Range: 4.0 - 21 V
- 15 W power transfer
- Up to 80% peak efficiency
- Integrated drivers
- Low BOM count
- WPC-0.9 medium power compliant
- Supports MP-A1 and MP-A2 coil configuration
- Integrated step-down switching regulator
- Embedded 32-Bit M0 ARM processor
- Supports I²C serial interface
- Low standby power
- Simultaneous voltage and current demodulation
- Available in 5 x 5 mm QFN 40-pin



Transmitters Selection Table

Part Number	V_{IN} Range	Coils	WPC Qi Certified	Integrated Step-down Reg.	EMI	Package
P9030	18 - 20V	A1	Yes	Yes	Good	6 x 6 mm TQFN
P9035	4.75 - 5.25	A5/A11	Yes	—	Good	6 x 6 mm TQFN
P9035A	4.75 - 5.25	A5/A11	Yes	—	Excellent	6 x 6 mm TQFN
P9036B	11.5 - 12.5	A6	Yes	Yes	Excellent	6 x 6 mm TQFN
P9038	4.5 - 6.9	A5/A11	Yes	No	Excellent	7 x 7 mm QFN
P9236	4.0 - 21	A6	Yes	Yes	Excellent	6 x 6 mm QFN
P9240	4.0 - 21	MP-A1; MP-A2	Yes	Yes	Excellent	5 x 5 mm QFN

RESOURCES



To provide customers with design support IDT has a library of application notes you can find at: www.idt.com/go/appnotes. Check back often because we continue to expand the library. Here's a few of the Wireless Power applications notes that may be of interest:

- AN-867 P9038 OVP and In-Rush Current Limiting Options
- AN-819 P9038 Layout Guidelines
- AN-816 IDT Wireless Power Transmission Resonance LC Calculations



IDT's Knowledge Base is an online resource available to customers. It includes a growing list of commonly asked questions about IDT products. You can find it under the support section of our website. If you have questions you can always submit them via the website. Look for technical support at: www.idt.com/go/support

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