



Programmable Wireless Charging and Uptime Optimization for Aerial Drones

Autonomous Power Management



Maximize Drone Operations

Base stations can be placed throughout any work site allowing fleets of drones to land and charge quickly for maximum drone uptime.



Enhance Durability

Wireless charging systems can be fully embedded into drone garages or hangars and are impervious to dirty/wet/corrosive environments.



Monitor and Control Remotely

WiBotic's technology enables fleet-wide power management, eliminating the need for constant human monitoring and management of battery charging.

Our Solutions

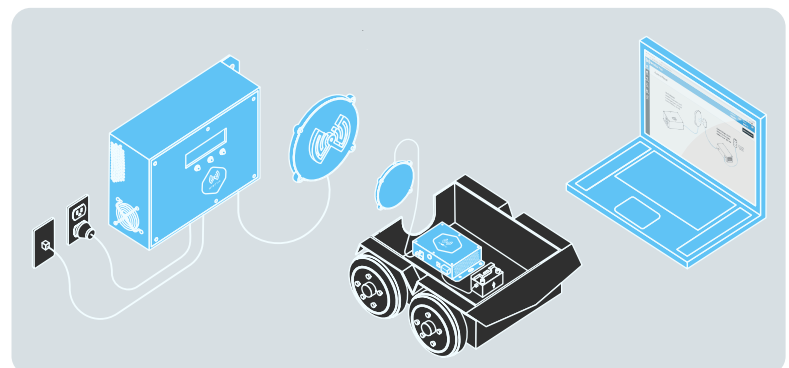
Autonomous aerial drone applications are changing the way modern industries collect and process information. However, their full potential simply isn't realized if they must be manually retrieved for battery exchange or charging after every mission. While semi-autonomous, physical-contact chargers and mechanical battery-swap technologies eliminate some of the operator burden, those devices can suffer from dirty, corroded, or worn out contacts with limited operational lifetimes.

WiBotic's wireless charging and software-enabled uptime optimization solutions solve these problems for OEMs, Service Providers, and Operators – allowing true autonomy for applications where drone "readiness-to-fly" is critical. Wireless charging systems can be integrated into drone garages or hangars to provide weather-proof power for permanently deployed drones. When located strategically throughout a work site, wireless transmitters also allow fleets of drones to charge whenever and wherever they're stationed – constantly topping off batteries. WiBotic systems also offer flexibility in landing position, so drones don't need to make a perfect landing every time to reliably charge.

How WiBotic Wireless Power Solutions Work

Based on more than eight years of research at the University of Washington, WiBotic's unique technology builds on the strengths of both inductive and resonant power transfer by incorporating the best of both worlds.

Our patented Adaptive Matching system constantly monitors relative antenna position and dynamically adjusts both hardware and firmware parameters to maintain maximum efficiency – delivering reliable charging at high power levels, and across several centimeters of vertical, horizontal and angular offset.



Available Components For Your Specific Application Needs

WiBotic offers a range of wireless charging components to accommodate nearly any mobile robot system. Designed for “many-to-many” operation, the system allows multiple transmitters to autonomously recharge multiple robots. Robot battery voltage and charge rate is configurable in software, so robots with different battery chemistries and voltages can share the same set of transmitters.

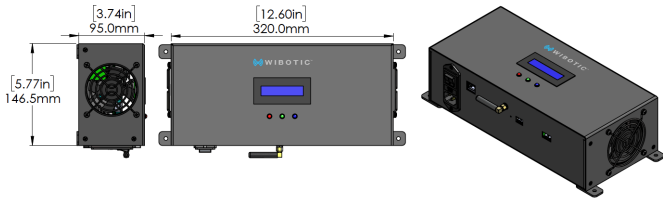
TRANSMITTER UNITS

WiBotic transmitters (TRs) convert AC power to a high frequency wireless power signal for transmission to the robot fleet. (DC powered models also available)

TRANSMITTERS (in enclosure)	TR-302
Recommended Load	300W
Input Voltage (AC*)	90-264v
Input Receptacle	IEC320-C14
Input Frequency	50-60 Hz
Enclosure Type	All Metal
Data Port	Ethernet (RJ45)
Rating (standard encl.)	IP20

*DC powered configurations available

TR-302



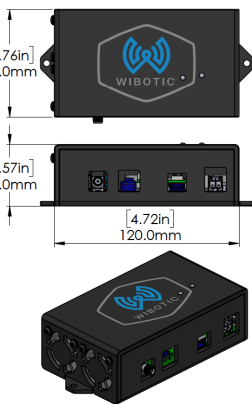
ONBOARD CHARGERS

Onboard Chargers (OC's) are receiver circuit boards that convert incoming wireless power to a usable DC voltage. They're also smart battery chargers, with the ability to safely charge a wide range of battery types at adjustable charge rates.

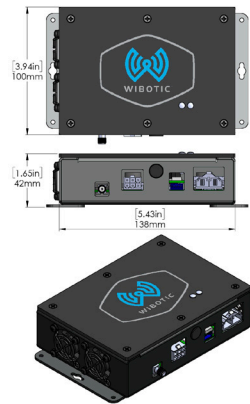
ONBOARD CHARGERS	OC-150	OC-251	OC-262-ST	OC-262-WP	OC-301
Battery Voltage Range	8.0-58.4v DC	8.0-58.4v DC	8.0-58.4v DC	8.0-58.4v DC	8.0-58.4v DC
Max Charging Current	10A	12A	12A	12A	30A
Max Charging Power	150W*	250W*	300W*	300W*	300W*
Battery Compatibility	LiPO, Lilon, Lead Acid/SLA, LiFePO4,NiMH, NiCAD	LiPO, Lilon, Lead Acid/SLA, LiFePO4,NiMH, NiCAD	LiPO, Lilon, Lead Acid/SLA, LiFePO4,NiMH, NiCAD	LiPO, Lilon, Lead Acid/SLA, LiFePO4,NiMH, NiCAD	LiPO, Lilon, Lead Acid/SLA, LiFePO4,NiMH, NiCAD
Weight (in enclosure)	170g	293g	580g	630g	540g
Operating Temperature	-20 to 45C	-20 to 45C	-20 to 45C	-20 to 45C	-20 to 45C
Onboard API Comms	UAVCAN API over CANBus	UAVCAN API over CANBus	UAVCAN API over CANBus	UAVCAN API over CANBus	UAVCAN API over CANBus
Aux Wired Charging Input Voltage	24-50v DC	24-50v DC	24-50v DC	24-50v DC	24-50v DC
Cooling Method	Active	Active	Passive	Passive	Active
IP Rating	IP20	IP20	IP20	IP67	IP20

*Must be paired with properly sized transmitter to achieve max value

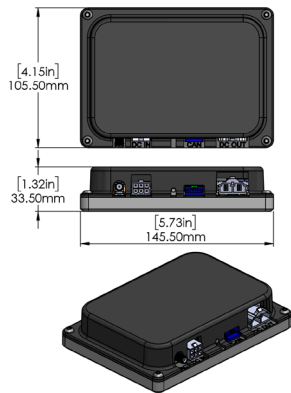
OC-150



OC-251



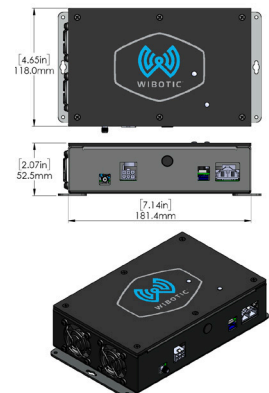
OC-262-ST



OC-262-WP



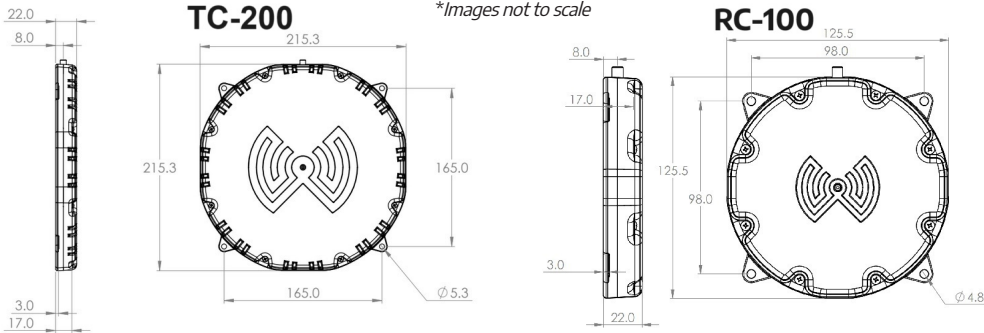
OC-301



TRANSMITTER AND RECEIVER COILS

Transmitter (TC) and receiver (RC) coils are specialized antennas that transmit and receive wireless power at specific frequencies. The standard WiBotic coil set is shown, but custom coil configurations, offered through our Professional Services, are also available.

TRANSMITTER/RECEIVER COILS (in enclosure)	TC-200	RC-100
Total Weight (PCB only)	101g	27g
Total Weight (w/enclosure)	457g	160g



DESIGN OPTIONS:



WiBotic technology easily integrates with landing pads and drone hangars, providing fully autonomous charging for UAVs of all sizes and types. We offer reference designs for multiple configurations that ensure reliable charging in even the most difficult environmental conditions. Offloading data and uploading flight plans to/from the UAV are other capabilities the WiBotic platform enables.

Contact us today if you're interested in a custom solution that includes WiBotic's universal drone charging hardware.

About WiBotic



WiBotic wireless charging solutions can greatly enhance the working efficiency of your robot fleets and significantly reduce your company's charging and maintenance costs.

Our solutions include wireless charging and power optimization software. So we not only maximize the battery life of each battery we charge, we create an operational plan for the entire collection of batteries in your robot fleet.

WiBotic wireless charging and power optimization solutions are safe, reliable and scalable. And they are easy-to-implement and highly customizable for specific robot deployments.



For more information, visit our [Products Page](#)!



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