REMOTE POWERING OF SENSORS

NO WIRES, NO BATTERIES, NO WORRIES

QINTEQ

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www.qinteq-energy.com



QINTEQ

QINTEQ specializes in the development, manufacturing and commercialization of microwave power transmission and DC conversion systems for remote monitoring applications.

Value Proposition

The need for monitoring equipment and installations is constantly increasing. In many cases, however, the site to be monitored has limited physical access or no electrical power supply. In addition, sometimes the sheer number of devices to be serviced can create an issue.

Remote powering and reading of the sensor device is therefore the solution of choice. It expands the sensor's working lifespan and drastically reduces maintenance costs. Replacing embedded power sources by wireless energy transmission facilitates installation and opens up new fields of application.

QINTEQ's proprietary technology is designed to cut costs. It allows critical infrastructure to be monitored with maintenance-free wireless sensors without the need to run costly wiring or set up battery replacement. It enables wireless sensors to be located in inaccessible or hazardous areas, or locations where battery replacement is highly impractical.

Once installed, physical access to the system is no longer needed. The devices are powered, and data is read, remotely. There is no need for battery replacement, repair or maintenance, either. Your operating expenditure is dramatically lowered.

With the ability to wirelessly power multiple devices from a single source, our wireless power infrastructure can enable sensor networks to scale by supplying maintenance-free power for hundreds or thousands of nodes.

Products

QINTEQ offers fully operational devices for wireless, battery-free sensor operations. Our off-the-shelf product range is ready for deployment and currently includes PWT power transmitters, DTR data transceivers, and AST autonomous sensor tags. It covers a wide spectrum of industrial applications.

PWT-04 Power Transmitter

The PWT-04 power transmitter wirelessly powers one or more remote devices, such as AST sensor tags, operating in the ISM 2.45 GHz frequency band.

DTR-868 Data Tranceiver

The DTR-868 data transceiver operates in 868 MHz frequency. It enables bi-directional data communication with AST sensor tags as well as one or more DTR-868 transceivers. The DTR-868 transceiver comes with embedded web server and control software permitting identification, setting-up interrogation modes and sending commands to the sensors.

AST Sensor Tags

The AST family of sensor tags allows wireless measurements to be taken by sensors from remote locations. Sensors are powered by microwave energy, harvested from a dedicated RF power source and need no batteries or other consumables.
The AST-01 sensor tags could be used to interface various custom industrial analogue and digital micro-sensors.

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Applications

QINTEQ technology remotely powers devices and offers a wide range of potential applications in hard-to-reach or hazardous places. Our technology enables entirely new applications to be used and reduces the operating costs of existing applications, whilst enhancing monitoring capabilities and performance.

• Structural Monitoring

Wirelessly powered instrumentation of dams, bridges and motorways reduces capex and opex. Close monitoring of the physical parameters at remote locations helps to evaluate the aging processes, track environmental conditions, schedule maintenance and anticipate repair needs.

• Rotating Machinery

Rotating machinery in harsh environments may create tough conditions for the monitoring of key functional parameters. Microwave powered sensors don't need wiring and therefore remove a key issue in terms of reliability and accessibility.

• Industrial sites

Large industrial sites require monitoring of ambient parameters in remote locations. Wireless sensors enable fast deployment of sensors wherever they are needed. Data harvesting can be performed automatically by remote data retrieval from multiple sensors or by adhoc reading.

• Contaminated environments

In contaminated areas, physical access, battery replacements and electrical connections may create serious safety and waste issues. Wireless powering and data retrieval offers an efficient means of guaranteeing monitoring whilst avoiding contamination exposure and spreading.

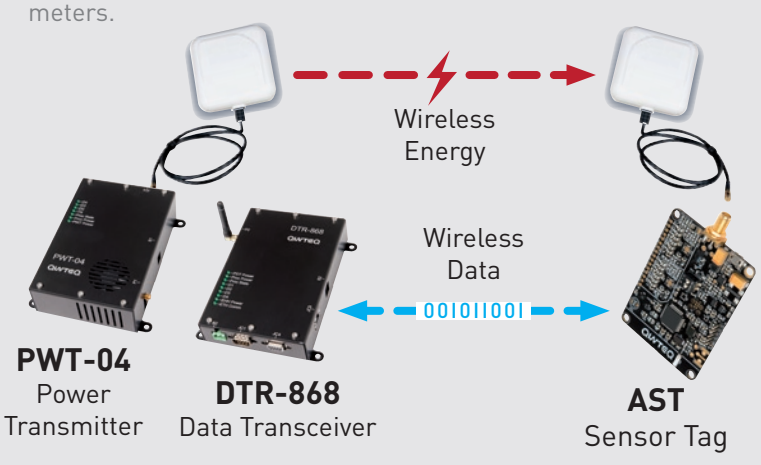
• Others

Lack of electrical power, high maintenance costs and limited physical access impede the deployment of efficient monitoring grids in many industries. Wireless power transmission and data retrieval offer new solutions and opportunities.

How it works ?

Our solution consists in connecting AST Sensor Tag to the sensor. This module will receive the radio wave emitted the PWT-04 Power Transmitter, which is situated in a certain distance from the Tag, and will transform that radio wave into electrical current in order to power the sensor. Data from and to the sensor is sent from the DTR-868 Data Transceiver. One PWT-04 Power transmitter can power multiple sensors.

Available power at the sensor side is typically in the low milliwatt and microwatt range. The maximum working distance for power transmission depends on the power level emitted, the antennas being used, the electrical consumption of the sensor and the communication mode (continuous or pulsed). In continuous mode the typical distance is 2 to 5 meters and in pulsed mode up to 100 meters.



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QINTEQ's proprietary technology was developed in cooperation with Ampère R&D laboratory and École Centrale de Lyon with the financial support of Pulsalys start-up incubator.
The company was founded in 2016 by Spas Balinov.

www.qinteq-energy.com

40 rue de Bruxelles
69100 Villeurbanne - FRANCE
contact@qinteq-energy.com
Tél. +33 (0)4 28 29 50 54

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