

# WiiUNG - The Parking Lot Sensor

WiiHey's in-ground parking lot sensor enables you to monitor your parking facilities efficiently with real-time, individual vehicle, individual space data. It is the key to smart, active parking lot management.



## Features

- Electro-magnetic sensor & luminance sensor;
- Wireless communication for ease of installation;
- Powered by long-life batteries;
- Robust construction to resist both vandalism and accidental damage;
- Easy integration with existing parking management systems;

## Applications

- Parking space occupancy detection;
- Vehicle detection in drive-through;
- Vehicle counting in toll booths;
- Enable advanced parking space management and planning;
- Enable advanced parking guide system;

## Overview

The effectiveness of a parking lot management system is greatly relied on detection of available parking spaces. WiiUNG offers parking lot sensing technology that can be easily tailored to your existing parking system, to monitor parking traffic, and to gather live, precise information from each individual parking lot space.

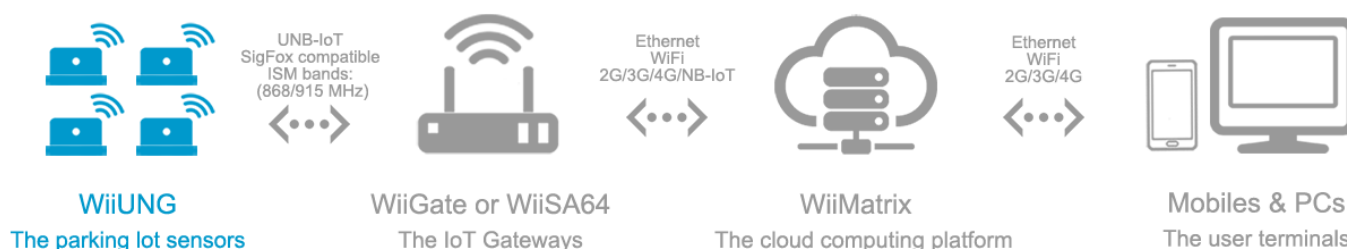
The heart of the WiiUNG sensor is an electro-magnetic sensor that measures the X, Y and Z-axis components of the Earth's magnetic field. As vehicles come within range of the sensor, changes in the surrounding magnetic field occur and are detected. Each sensor continually monitors the background magnetic field using advanced filtering and noise reduction techniques to differentiate parking events from other electromagnetic interferences or false events.

The WiiUNG sensor transmits data via LPWAN (Low Power Wide Area Network) technologies, i.e., NB-IoT (Narrow Band-IoT) or UNB-IoT (Ultra Narrow Band-IoT), and is battery powered for several years, so it requires no wires for installation and can be easily fitted into each parking lot space.

# Topology

WiiUNG supports two optional wireless communication methods -- UNB(Ultra Narrow Band) IoT technology and NB (Narrow Band)-IoT technology. Both technologies have transmission ranges of up to several kilometers in urban environments, with very low power consumption, data are then transmitted to cloud sever for further processing and delivery into the end-user's system.

## Topology of UNB-IoT communication (ISM Sub-GHz, most often it's 868 MHz):



## Topology of NB-IoT communication:

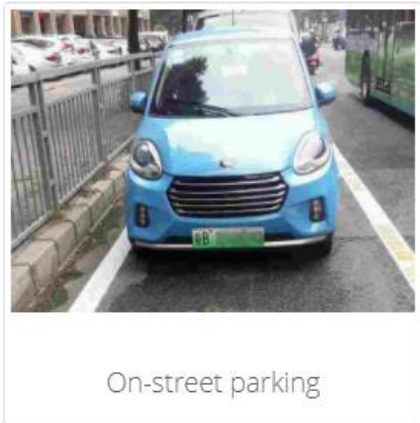


## Tech Specifications

Magnetic-field Measurement	
Sensor	<ul style="list-style-type: none"> <li>- 3-axial magnetic-field MEMS sensor;</li> <li>- Auxiliary infrared/ luminance sensor for precise detection;</li> </ul>
Measurement range	Maximum $\pm 16$ gauss selectable magnetic full scales
Resolution	1.5 mgauss
Wireless Connectivity	
Radio	Version 1: NB-IoT; Version 2: UNB-IoT ISM Sub-GHz bands (868/915 MHz);
Power	
Power source	Built-in lithium battery
Battery life	5-7 years
Mechanical	
Dimensions	$\varnothing 90$ mm * height 33 mm
Weight	120 g
Environmental	
Operating temp	-32 °C to 85 °C
IP Rating	IP68
Compressive strength	>20,000 kg

# Gallery

The 1<sup>st</sup> generation product:



The 2<sup>nd</sup> generation product, transparent shell to support infrared/ luminance sensing:

