



Smart Parking

Semtech's LoRa® Technology Enables Affordable Smart Parking Enforcement Solutions

Municipalities are transforming parking management with Semtech's LoRa Technology. By combining low-power sensors, real-time monitoring and cloud-based management, cities can enforce parking more efficiently, increase revenue and reduce operational costs—delivering smarter, more convenient parking for residents and visitors.

QUICKFACTS

Company

Smart parking solutions for cities.

Customer Profile

Designer and manufacturer of smart parking solutions. The company provides end-to-end systems that combine in-space sensors, smart parking meters and cloud-based software to help cities manage parking more efficiently.

Objectives

- Enable cities to efficiently monitor and manage parking spaces.
- Reduce operational costs and infrastructure expenses.
- Improve enforcement efficiency and overall urban parking experience.

Results

- Real-time occupancy monitoring and enforcement.
- Increased parking revenue and optimized workforce.
- Scalable, cost-effective solution adopted by municipalities.

Products and Services

- [LoRa Connect™](#), [LoRa Edge™](#) and [LoRa Core™](#)
- [LoRaWAN®](#) network connectivity.

INTRODUCTION

LoRa® devices and wireless RF technology (LoRa Technology) is making it easy and economical for smart cities to improve public services. From better usage of city street lights to smarter parking meters, LoRa Technology enables the most advanced and affordable solutions for urban planning and management.

City governments are always in search of better ways to optimize spending and increase revenue. With LoRa Technology, municipalities are able to both lower the overall cost of infrastructure while advancing long-term technological goals.

Application

Cities implement smart parking meters and in-space sensors to track long-term parking usage in high traffic areas.

CHALLENGE

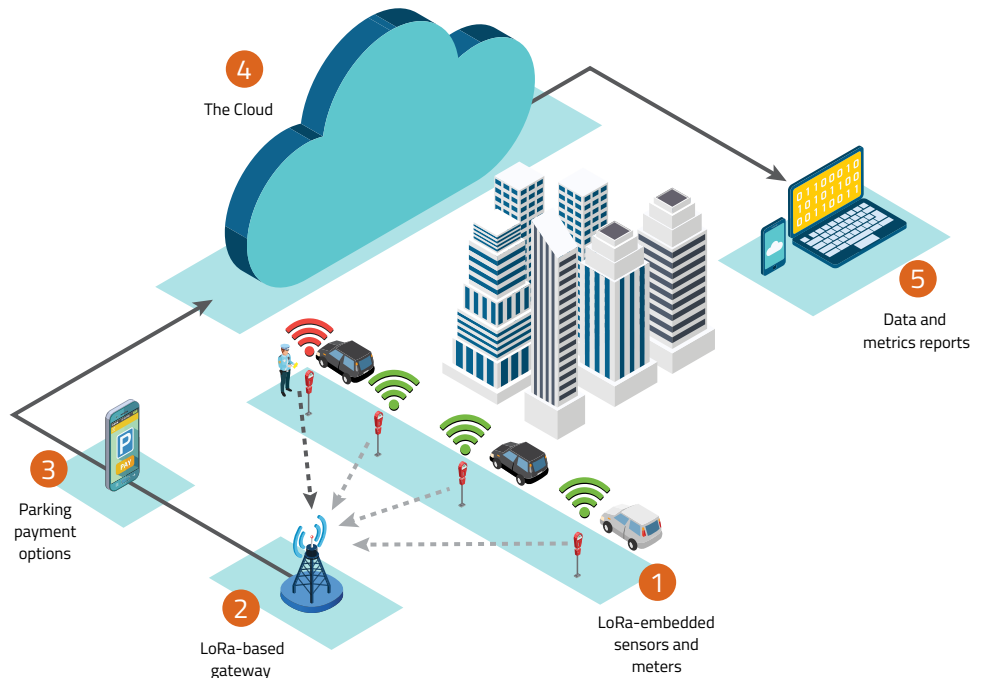
While traditional urban monitoring systems have been prohibitively expensive for medium and small sized municipalities, LoRa Technology provides an affordable solution that can increase municipal revenues and improve city services.

Traditionally, per meter data costs have been too high due to the usage of commercial cellular networks for the transmission of data, such as credit card validations.

SOLUTION

Semtech's LoRa Technology for Smart Parking System

Semtech's LoRa Technology enables real-time connectivity, monitoring, cost savings and analytics.





1. The city identifies the spaces and meters it would like to upgrade with in-ground sensors and smart parking meters. Data is gathered and turned over to the vendor. Sensors and meters are then pre-configured, enumerated and then sent to the customer for installation.
2. With the LoRa-based sensors and meters installed, the gathered data is then sent to a LoRa-based gateway. Data is collected in a central Cloud-based application and made available to all city users through the web.
3. Users can now securely and reliably use the smart parking meter for credit-card transactions and increasing overall parking payment. LoRa Technology ensures security and affordability of the non-cellular network.
4. Data collected from in-space sensors is used to track, whether or not a space is occupied. If it is occupied, the meter's payment information is checked. If the meter is not paid, enforcement officers can immediately be dispatched to the location to issue a ticket.
5. Over time, data can be analyzed to track most commonly used spaces, off-hour usage and frequency of violations, therefore providing metrics to parking enforcement management and city planning.

REAL USE CASE SOLUTION

Smart parking meter designer and manufacturer. The company offers a complete end-to-end smart parking solution, including in-space sensors, smart parking meters and Cloud-based software to manage and track the system. The company's platform also works with other LoRa-based sensors and hardware and plugs into existing city management software solutions. This customizable solution can fit in any city budget when they utilize LoRa Technology.

Low Per-unit Data Cost

LoRa Technology offers as much as a 50% cost savings per meter.

Standards-based

LoRaWAN®, a Low-Power Wide-Area Network (LPWAN) specification, is an open standard supported by the LoRa Alliance®. This ensures that products built on LoRaWAN offer global interoperability and benefit from economies of scale that help reduce unit costs.

Secure

Multiple layers of security ensure credit card transactions are safely performed. Central management of all devices ensures every piece of hardware on the network is always up to date.

Low Power

LoRa-based in-space sensors typically have at least a 5-year battery life. This ensures devices are durable and need only limited maintenance.

High Capacity

A single LoRa base station can handle millions of messages per day, ensuring smart parking solution is able to support large, active customer bases.



Low Per-unit Cost

LoRa Technology was designed to be affordable to hardware manufacturers and to enable developers to build quickly, reliably and within budget constraints. Additionally, LoRa Technology is easily available to manufacturers, ensuring there will not be shortages of supplies that can drive up costs.

BENEFITS

LoRa-based sensors combined with credit-card enabled parking meters provide municipalities a total solution for expanding the payer base of a parking system. With a mobile app, enforcement officers are able to immediately see from anywhere which parking spaces are currently occupied and unpaid.

These benefits also extend into the workforce since with LoRa Technology, parking attendants do not need to drive or walk specific routes. They can see where they are needed via an application that connects back to the Cloud. This means fewer enforcement officers are required to maintain existing fine revenues and better utilization of the workforce could lead to an increase in total overall revenues.

Jump-Start Your IoT Development Today:

Learn about Semtech's LoRa® Technology platform www.semtech.com/iot
Become a member of the LoRa Alliance® www.lora-alliance.org

About Semtech

Semtech Corporation (Nasdaq: SMTC) is a high-performance semiconductor, IoT systems and cloud connectivity service provider dedicated to delivering high-quality technology solutions that enable a smarter, more connected and sustainable planet. Our global teams are committed to empowering solution architects and application developers to develop breakthrough products for the infrastructure, industrial and consumer markets.

To learn more about Semtech technology, visit us at Semtech.com or follow us on [LinkedIn](#) or [X](#).

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