PARQSENSE
OUTDOOR PARKING MONITORING SYSTEM

Q
FREE

Q-FREE PARQSENSE

Up to a third of all traffic in urban areas is generated by vehicles looking for somewhere to park. The need to address parking related congestion and pollution has given rise to more sophisticated outdoor parking monitoring systems. These systems provide accurate real time information on the location and availability of parking and can have a very positive effect on congestion, pollution and overall quality of life.

Q-Free ParQSense is a family of hardware and software solutions providing highly accurate individual space counting data in applications such as on/off-street/surface lot/truck parking, as well as Smart City initiatives. Conceived, engineered, and developed exclusively by Q-Free, the ParQSense family of solutions signifies the latest development in the Q-Free ITS portfolio, bringing provide sensing and guidance technology to the outdoor parking market.

TECHNOLOGY

Outdoor Single Space Sensors
The Q-Free ITS-420 ParQSense Outdoor Sensor is one of the most advanced outdoor sensors on the market. Industry standard single sensing technology sensors provide inaccurate parking data in certain conditions, as interference may negatively affect sensing accuracy. The 10+ year battery lifetime ITS-420 Outdoor Sensor uses highly sensitive radar and magnetic field sensing technology achieving maximum detection accuracy. The exceptionally accurate data output can then be used to make the smartest and most informed parking decisions.

Outdoor Base Station
The Q-Free ITS-950 ParQSense Base Station is the central communication gateway for the ITS-420 ParQSense Outdoor Sensors. It is a universal controller that functions as a transmitter, receiver and/or repeater. The number of connected sensors does not depend on volume as typical in industry standard applications. In the Q-Free ParQSense system, the topological conditions of a project determine the quantity of ITS-950 ParQSense Base Stations required.

Q-Free HUB
The best sensor technology is nothing without a robust and innovative software engine where the highly accurate sensor data is analyzed, processed and stored. Staying on-trend with development in the "connected world", Q-Free developed the Q-Free HUB, the central software engine for the ParQSense family of products, with an open interface for 3rd party and product integration. The cloud-based Q-Free HUB offers data storage and security, extensive analytical and machine learning capabilities as well as data processing.

Q-Free ParQ Information Portal
Q-Free ParQ is the web-based outward facing user portal for the ParQSense product line accessing the Q-Free HUB. Through this portal, the end user can configure and monitor the ITS-420 ParQSense Sensors and ITS-950 ParQSense Base Stations. A comprehensive dashboard overview provides instant high level information on various selectable important elements such as parking/sensor/error/utilization/etc. The extensive reporting tool allows for various export capabilities allowing comparison of past trends to future predictions.

ParQSense API
For even more flexibility, Q-Free also provides ParQSense API access to the Q-Free HUB, when an end-user portal application is not required. The Q-Free ParQSense API is a RESTful web service for fast and easy integration into 3rd party applications. It uses standard HTTP calls and methods and is therefore independent of platform and programming language. The ParQSense API offers a wide range of functions for accessing sensor data and configuration of parking sensors.

Possible Applications
With its flexibility, the ParQSense family of Outdoor Monitoring Products has a vast array of possible applications, including but not limited to:
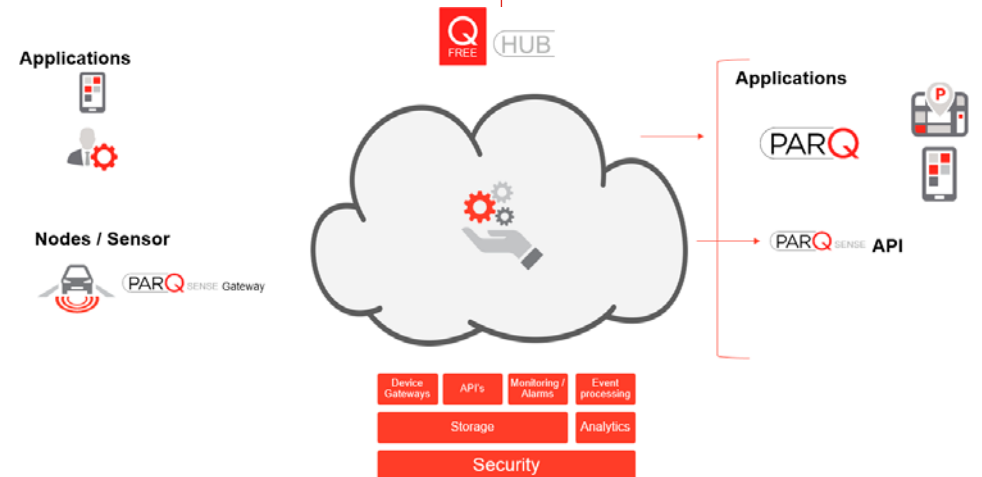
- **Smart City Initiatives** where on-street parking data is used to improve traffic congestion and make smart parking trend predictions
- **Any 3rd party integration applications** such as smart lighting, etc. where occupancy data can be used to trigger specific actions such as in/decreasing lighting intensity or to provide additional information
- **Truck parking** where there is a need for occupancy monitoring to guide truck drivers to the nearest available rest stop space
- **Enforcement applications**, where with 3rd party meter or app provider integration, parking duration revenue can be maximized
- **Queuing applications** such as taxi or truck queuing, where queuing data can be used to trigger a specific action (i.e. warning or information signage, opening of additional lanes, etc.)
- **Surface parking applications** such as transit, shopping center, national/amusement parks surface lots etc. where parking data is used to guide drivers to available spaces
- **Privately owned parking lots** where parking occupancy data may be used to reconcile operating revenues

ParQSense Family of Outdoor Monitoring Products
With this latest development, Q-Free has created one of the most flexible, industry leading outdoor monitoring systems on the market. The advantages in battery life-time, sensing accuracy and topological vs. volume-based base station requirements, establishes Q-Free as one of the leading providers in the smart parking/Smart City market. The next product release of the ITS-421 IoT Outdoor Sensor will provide even more flexibility eliminating the general need for a base station requirement by utilizing available 4G telecommunication networks, thus staying on trend with the latest developments in IoT device connectivity. ParQSense is another great development example of how Q-Free is Changing the Movements of Life.

Visit our website for more information on our complete ITS portfolio.

Applications

Nodes / Sensor
PARQSENSE Gateway

Q FREE HUB

Applications
PARQ
PARQSENSE API

Device Gateways | API's | Monitoring / Alarms | Event processing
Storage | Analytics
Security

Q-Free

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