Technical Specification

Intelligent Parking Bay Sensor
- Detection: microwave radar
- Dimensions: 74mm x 74mm x 58mm
- Power supply: non replaceable primary Li-SOCl2 3.6V battery pack
- Range: typically up to 30m to Repeater/Access Point
- Operating temperature: -40°C - +85°C
- Weight: 0.3kg
- Frequency band: 2400 to 2483.5 MHz
- Installation core size: Ø100mm x 57mm deep
- Installation compound: two-part silicone polyurea sealant
- Ingress protection rating: IP67

Access Point
- Interfaces:  
  - to/from detector or Repeater units via 802.15.4 PHY radio
  - to/from configuration device (PC) via TCP/IP over 10Base T Ethernet
  - to/from Digital Radio units via RS-422 full duplex using UART connector
- Power supply: 36 – 58V DC (48V DC nominal)
- Power consumption: less than 700 mW
- Dimensions: 114mm x 94mm x 37mm
- Weight: 263g
- Operating temperature: -40ºC to +80ºC
- IP connectivity:  
  - HTTP, PPP, PPTP, SSH
  - 10/100 Base-T via RJ45 connector
- Data transmission: over a mobile data network (GPRS/3G/4G networks)

Access Point Digital Radio
- Range: AP to sensor range typically up to 50m and up to 600m with repeater relay
- Frequency band: 2400 to 2483.5 MHz (ISM unlicensed band)
- Frequency channels: 16
- Power supply: user replaceable primary Li-SOCl2 3.6v battery pack
- Battery life: approximately 2 years (standard), 7 year (extended) model available
- Dimensions: 7.75” x 6.5” x 5.37”
- Weight (inc. mounting kit): 5.07 lbs
- Ingress protection rating: IP65
- Operating temperature: -40ºC to +80ºC

Repeater
- Range: AP to sensor range typically up to 50m and up to 600m with repeater relay
- Interfaces: to/from detector, Access Point and other repeater units
- Frequency band: 2400 to 2483.5 MHz (ISM unlicensed band)
- Frequency channels: 16
- Power supply: user replaceable primary Li-SOCl2 3.6v battery pack
- Battery life: approximately 2 years (standard), 7 year (extended) model available
- Dimensions: 7.75” x 6.5” x 5.37”
- Weight (inc. mounting kit): 14.1 oz (radio unit SPP), 1.2 lbs
- Ingress protection rating: IP65
- Operating temperature: -40ºC to +80ºC

Part numbers

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent Parking Bay Sensor</td>
<td>640/4/90028/002</td>
</tr>
<tr>
<td>Access Point</td>
<td>640/4/90030/100 / 640/4/90030/150</td>
</tr>
<tr>
<td>Repeater (Standard – 2 Years)</td>
<td>640/4/90029/003</td>
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<tr>
<td>Repeater (Extended – 8 Years)</td>
<td>640/4/90029/002</td>
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siemens.co.uk/traffic
Parked vehicles can become a nerve-wracking experience, even for short journeys. Whether for work or leisure, parking can sometimes be the most stressful part of the day. Intelligent Parking, also known as smart parking, is a solution that can help ease the pain of finding a parking space.

The concept behind the system is simple: sensors are fitted to detect individual parking bay or car park occupancy. The Siemens Parking Bay Sensor is an ultra-low power, advanced sensor technology that forms part of the Siemens Intelligent Parking solution. The sensors are used to detect parked vehicles, reducing vehicles circling around, and improving the information available to drivers looking for parking.

Advanced sensor technology
The Siemens Parking Bay Sensor is an ultra-low power, microwave radar detector. The technology embedded in the sensor is used to detect parked vehicles, measuring parking start and end times. These sensors lie beneath the road, with each containing an in-built wireless transmitter/receiver with a dedicated battery that transmits detection data to an associated access point or repeater, which forwards it to the back office for analysis.

Easy installation
The sensors are easily installed by ‘coring’ an appropriate 100mm diameter hole in the carriageway and fixing in place with a specific epoxy resin compound. The process takes around 15 minutes.

Reasons for adopting an Intelligent Parking system:
- Intelligent Parking systems improve driver information and enrich the driving experience.
- The data produced helps shape traffic behaviour, with the statistics being vital for city planning.
- Emissions and pollution are reduced as a result of reducing vehicles circling around looking for parking.
- Links to enforcement systems could help improve parking compliance.

Applications
The system can be installed in on-street and outdoor off-street environments. With a configurable detection range of up to 90 degrees and 3 metres in width, the system provides accurate parking detection with vehicles not needing to park directly over the detector in order to be identified. The configurability also means that the system can cater for parallel, diagonal and perpendicular parking setups.

High performance
The microwave radar technology adopted by Siemens is advantageous over other sensing technologies for Intelligent Parking such as infrared and radar. Accuracy is not affected by lighting conditions nor dirt, dust or oil on the sensor.

Remote upgrades
All firmware upgrades can be done remotely via the Stratos hosted traffic management system or via local PC connection.

Statistics to help shape strategies
One of the key benefits of the Siemens Intelligent Parking system is its integration with Stratos, the Siemens hosted traffic management solution. Stratos provides the ability to monitor and control parking spaces, utilising the sensor input for the creation of strategies using road and virtual signs, journey times and environmental information.

Improved driver information
The data produced by the sensors can be provided to other road traffic infrastructure, including Variable Message Signs (VMS) to alert drivers of the number of spaces available and the nearest available parking spaces, improving the information available to drivers and enhancing the overall driving experience.

Integration to third-party systems
The system can also offer links to third-party applications via open standards such as DATEX II. This interface can allow integration of the data produced by the system for payment providers, enforcement and in-vehicle platforms that consume data in order to provide services that add value to the infrastructure in place.

Real-time parking information
With user-friendly overview dashboards and maps, Stratos shows current parking occupancy, highlighting overstays based on bay norms using input data from the parking bay sensors.

The Siemens Intelligent Parking solution provides integration of traffic and parking solutions, adopting parking bay sensors to provide cities with a demand-responsive system. The data gives valuable statistics to help city planning, allowing strategies to be shaped in order to increase revenue, improve customer satisfaction and better compliance.

Parking is something that everyone is familiar with, whether for work or leisure. However, sometimes even a short journey can become a nerve-wracking experience, even if it's for work or leisure. Intelligent Parking, also known as smart parking, relates to the adoption of sensor technologies in order to improve parking management, being a way to ease the pain of having to look for a parking space.

Reasons for adopting an Intelligent Parking system:
- The data generated can be used for planning purposes, allowing strategies to be created as part of the systems, in such a way that can boost revenue, increase customer satisfaction and increase parking compliance.
- The data generated by the system can be used for analysis.
- The data produced helps shape traffic behaviour, with the statistics being vital for city planning.
- Emissions and pollution are reduced as a result of reducing vehicles circling around, and improving the information available to drivers looking for parking.
- Links to enforcement systems could help improve parking compliance.