uPark

Smart Sensor
Datasheet

uPark

Key differentiators

Electronic permitting
IoT Parking Sensor ability to be paired with an IoT Permit Card and provide an ID of parker (authentication).

Monitoring & control
Precise monitoring (with AI) of deployed devices, notifications, and seamless remote OTA control (logs, FW updates).

Data consistency
Resistant IoT infrastructure against network outages - metrics are preserved after reconnection (no data loss).

Detection resistance
Detection is accurate and reliable despite local interferences or frequent changes (noticing every status change).

IoT Parking Sensor 2.0 Specs

The IoT Parking Sensor detects and reports the presence or absence of a vehicle on a parking slot and enables parking management.

Detection method	3-axis magnetic field & nanoradar
Weight	300 g
Dimensions	Φ 90 mm ↕ 52 mm
Casing	Ultrasonic welded into one piece
Ingress protection	IP68
Impact resistance	IK10
Operating temperature	-40 to +75 °C
Power	3.6V, 14 Ah alt. 19 Ah
Battery life	8+ years
Network	LoRaWAN, Sigfox, NB-IoT, LTE-M, BLE
Manufacturer certification	ISO 9001, ISO 14001, ISO 45001

LoRa   sigfox   NB-IoT   LTE-M

52mm
90mm

Technical specifications and features

FOTA
over-the-air firmware update.

Certification validation
approved by Deutsche Telekom AG & Vodafone.

Data consistency
resistance to connectivity outage. Data is transmitted after connectivity recovery.

Onboard data logger
"black box" for ex-post sensor diagnostics

Own antenna design
optimized for all global IoT networks (Sigfox, LoRa, NB-IoT, LTE-M).

Embedded coulombmeter
reliable online and onboard battery consumption and health monitoring.

Autocalibration
based on a robust algorithm for the magnetometer.

Private APN
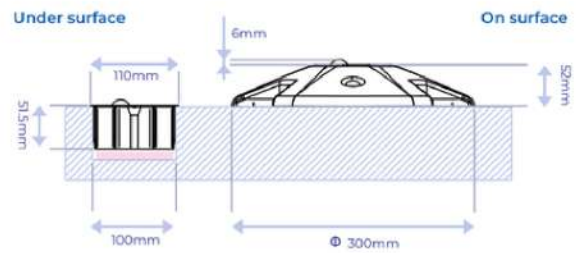secured connection between the sensor and the cloud by private APN.
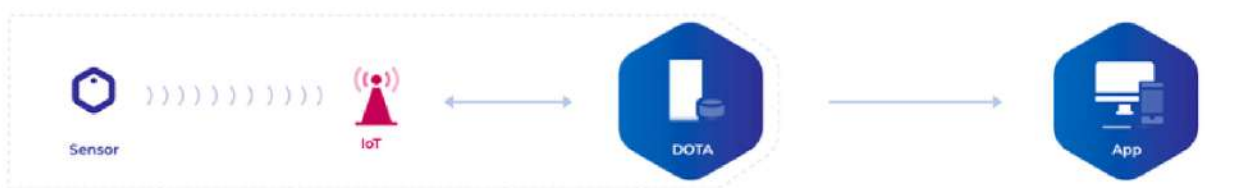
Combined two-way sensing
secured connection between the sensor and the cloud by private APN.

Casing & Installation

✓ **Ultrasonically welded**
casing for 100% hermetic sealing with IP68 ingress protection.

✓ **Minimalistic form factor**
flush-mount and on-surface installation. Straightforward installation and also de-installation thanks to on surface or under surface adapter

✓ **AOI and RTG inspection**
Electronic assembly inspected by AOI (automatic optical inspection), and RTG.

✓ **Tested and inspected**
for an operational lifetime using thermal cycling chamber (-30 to +60 °C), simulated age of 6 years.

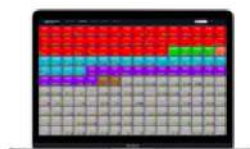# Architecture & Security

DOTA

Although not necessary for the functioning of the sensors, this central system management application tracks and controls all sensors deployed.

Advantages of using DOTA

- GIS-based tracking of deployment localities.
- Monitoring of sensor health and quality of network connectivity Integrated with SHMA
- Monitoring with transparent overview Firmware and OnBoard Logs transfer capability
- Analytics, statistics and future predictions of parking traffic.

SHMA Monitoring - sensors overview

DOTA sensor detail