Smart Parking

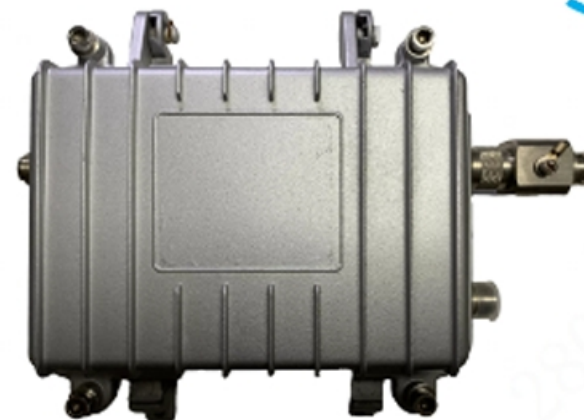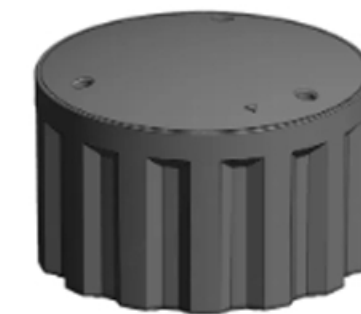# Geomagnetic sensor
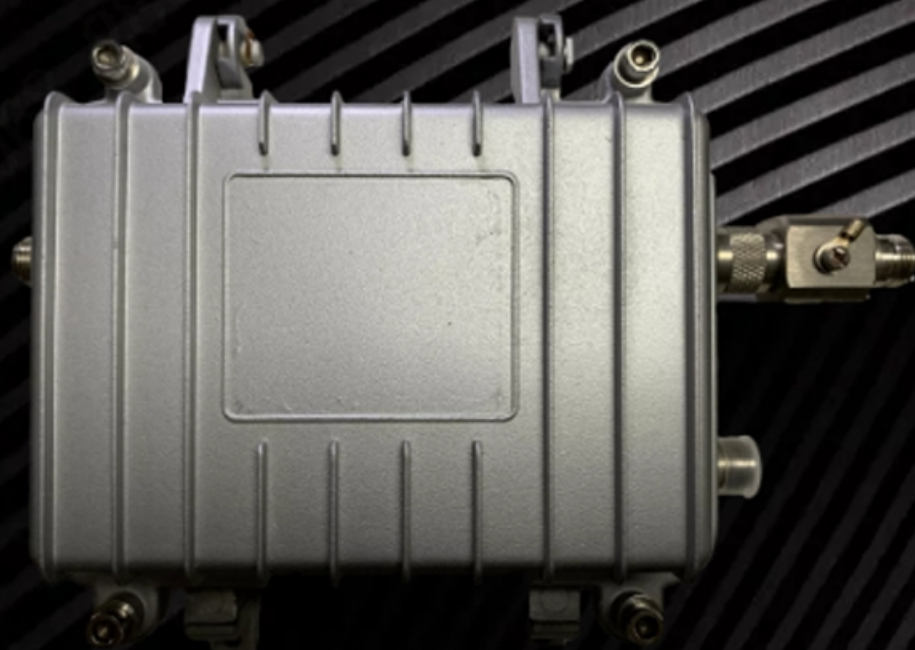## Released

LoRaWAN

LoRa Gate way

DHI-ITSGL-4101-B

Geomagnetic sensor

DHI-ITSJC-1102-DLB

Questions? Contact Solution Manager Jenson Chen

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LoRaWAN®

- 220 VAC power supply; average power consumption remains below 5W;

- Stable Ethernet communication.Maximum radius of 3 km. For cities, the ideal radius is 400 m and below;

- Recommended number of devices allowed to access the gateway: ≤100.

- IP67 rated.

DHI-ITSGL-4101-B is a TDD gateway product powered by LoRaWAN system that features multi-frequency and multi-channel concurrent reception. Driven by its 220 VAC power supply, the gateway effortlessly collects and processes geomagnetic data, generating reports which are sent to the parking management platform via Ethernet.

SMART / PARKING

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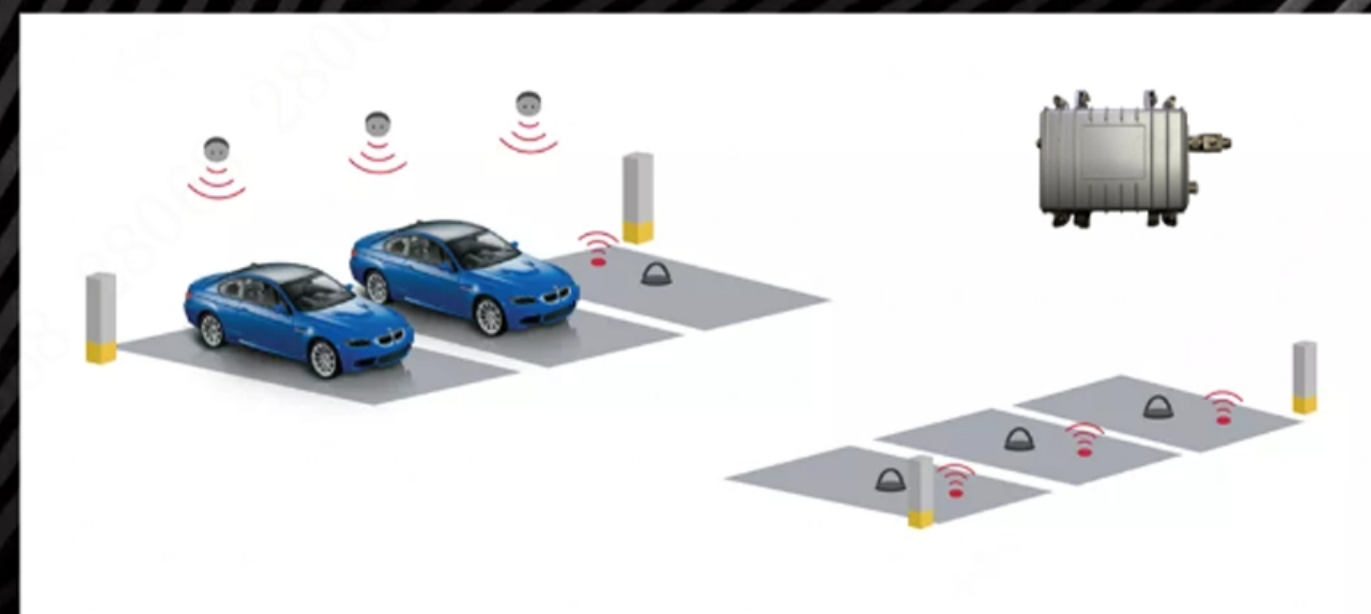
LoRaWAN®
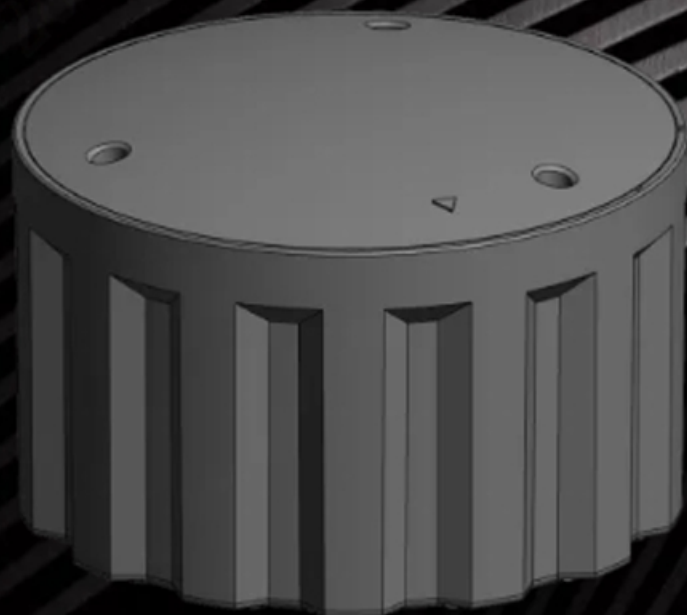
- Bluetooth and OTA remote update.
- Collects information on the battery level and reports on it to the platform.
- Activates and calibrates itself through the app.
- Automatically switches to geomagnetic parking detection mode when
- With its dual-casing design, maintenance and replacement are made
- 38 Ah lithium battery with a standby time of 5 years.

Designed with cutting edge technology, Dual Mode LoRa Geomagnetic Detector uses its embedded 24 GHz microwave radar and geomagnetic sensor to detect parking spaces in real time. Built to be installed in the earth, it tracks vehicles as they enter and exit parking spaces, reporting the information to the platform through the gateway.

What Is LoRaWAN?
Long Range Wide Area Networks Explained

Quick definition: LoRaWAN is an abbreviation for Long Range Wide Area Network. It's a type of Low Power Wide Area Network (LPWAN) that uses open-source technology and transmits over unlicensed frequency bands. Designed for the Internet of Things (IoT), LoRaWAN technology provides a far longer range than WiFi or Bluetooth connections, works well indoors, and is especially valuable for applications in remote areas where cellular networks have poor coverage.

The difference between LoRa and LoRaWAN

It's not uncommon to hear LoRa and LoRaWAN used interchangeably, but they're two different things.

LoRa (Long Range) is an LPWAN protocol that defines the physical layer of a network. It's a proprietary technology owned by Semtech (a chip manufacturer) that uses Chirp Spread Spectrum to convert Radio Frequencies into bits so they can be transported through a network. LoRa is one of the technologies that makes LoRaWAN possible, but it's not limited to LoRaWAN, and it's not the same thing.

LoRaWAN (Long Range Wide Area Network) is an upper layer protocol that defines the network's communication and architecture. More specifically, it's a Medium Access Control (MAC) layer protocol with some Network Layer components. It uses LoRa, but it specifically refers to the network and how data transmissions travel through it.

Advantages of using LoRaWAN

LoRaWAN is a pretty unique networking technology. Here are some of the main reasons why IoT manufacturers find it appealing.

Unlicensed frequency bands

While cellular carriers each primarily operate on licensed frequencies, all LoRaWAN networks use specific unlicensed frequencies that vary by country. This means that if you own your LoRaWAN infrastructure, you don't pay for data usage—however, you're stuck maintaining all the hardware, and you're on the hook for keeping connectivity secure.

Since all LoRaWAN networks use the same frequencies, overlapping LoRaWAN networks and other networks on the same frequency band can interfere with each

other and present IoT security challenges.
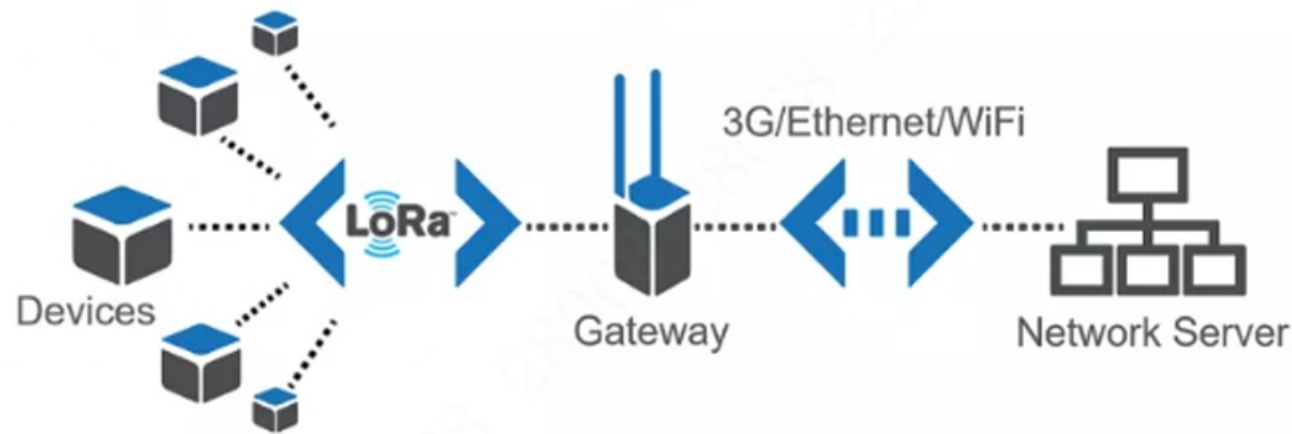
Open source technology

Compared to the proprietary Chip, LoRaWAN software is open source, which means it's easy to develop your own LoRaWAN solutions, and there are numerous vendors that sell the network components like servers and gateways, all of which are interoperable.

Good coverage

LoRaWAN works exceptionally well indoors, though how well depends on the location. It uses sub 1GHz frequencies and a very narrow frequency band, which gives it good coverage and indoor penetration.

LoRaWAN is also useful because you can get coverage pretty much anywhere in the world—so long as there's either a service provider with infrastructure in place, or

you deploy the infrastructure yourself. In most cases, you'll need to build your own LoRaWAN network to ensure the sensors can be connected.

Low power consumption

LoRaWAN allows connected devices to "sleep" when they aren't actively transmitting or listening for a signal. Additionally, transmitting or receiving a signal over LoRaWAN requires less than 50 milliamps (mA) of current. This means manufacturers can expect their devices to have up to 10 years of battery life.