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LoRaWAN

GSM

LoRaWAN Industrial IoT

- Smart Cities
- Smart Buildings
- Energy
- Agriculture
- Water Treatment
- Petro-chemical
- Mining
- High Sites

EVOLUTION

iCE iSky-III-E Smart Industrial IoT Solutions.

Features

- Rugged Industrial Design
- Enhanced Security
- Up to 16km Range (LoRaWAN)
- Hi Capacity – Up to 2000 Nodes (per Gateway)
- Modular Design
- Real-Time Data Collection and Processing
- GSM Module – GSM/3G/4G LTE
- Wi-Fi IEEE 802.11b/g/n
- GPS Module
- Ethernet (802.3 af PoE Support)
- Quad-Core Processor
- Indoor/Outdoor/Fire-Proof Enclosure Options
- Supports multiple Backhaul Connectivity

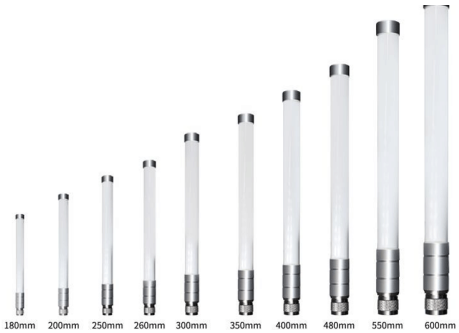
Unlock Efficiency and Innovation with the Industrial Internet of Things (IIoT)

The future of industry: the Industrial Internet of Things (IIoT). This transformative technology leverages the power of smart devices and real-time data analytics to revolutionise environmental monitoring, security, energy, agriculture, water, and many other sectors. By connecting devices, workstations, and systems across a global digital network, IIoT enables unprecedented levels of productivity, efficiency, and operational insight. The core of IIoT lies in its ability to turn vast amounts of raw data into actionable intelligence. Sensors placed in strategic locations and devices collect data on utilisation, performance, environment, and maintenance needs, allowing for predictive maintenance, optimised processes, and minimal downtime. This connectivity not only enhances the performance of critical environments but also redefines how entire industries operate by fostering improved efficiency, safety, reduced costs, and sustainability.
By embracing IIoT and stepping into a connected world where decision-making is swift, informed, and data-driven. Join us in shaping a future where industries operate with unparalleled efficiency and innovation.

THE iCE IoT GATEWAYS

iCE IoT Gateways are robust 8-channel indoor/outdoor devices that support the standards based LoRaWAN IoT protocol. Adopting the SX1302 LoRa chip and high-performance quad-core CPU, they support connections of up to 2000 nodes. They have line-of-sight communications of up to 16km. Multiple enclosure options include IP67 waterproof enclosures, fire-rated and indoor, which cover multiple applications, environments, smart metering and many other outdoor applications. Multiple back-haul redundancy makes it ideal for reliable real-time monitoring and management.

ANTENNAE OPTIONS



- Quad-core industrial processor with large memory capacity
- 8 half/full-duplex channels
- IP67 waterproof enclosure options, industrial design for harsh environmental applications
- Wall or pole mount options
- PoE or solar power options
- Backup Capacitor for alerting of power failures.
- Multiple backhaul backup with Ethernet, cellular (4G/3G) and Wi-Fi.
- The iCE-NEO/iCE365 IoT Cloud provides easy and centralized management of remote devices.
- Enable security communication with multiple VPNs including IPsec/OpenVPN/L2TP/PPTP /DMVPN
- Built-in network server and MQTT/HTTP/ HTTPS API for integration options

Sensor Conversion to iCE LoRaWAN – iC3000 Industrial Controller Series (Indoor/Outdoor)

Where existing or traditional sensors require remote monitoring, the i-Sky-III caters for these scenarios with our iC3000 Controller Series. IP67 Rated option, long-run power and solar options, these controllers introduce conventional sensors into the Industrial IoT space, with low power and remote monitoring options.

MULTIPLE I/O OPTIONS

Supporting most sensor output types, including DI/DO with Pulse support, RS232/485 and Dual Analog (4~20mA or 0~10V) Ports are also available. The variable power output supply port powers most sensor types up to 12VDC. An 11km, line of sight (internal antenna) offers maximum flexibility in design and positioning.

iCE LoRaWAN Commercial Sensors – iS300 Sensor Series

The iCE range of commercial LoRaWAN sensors are designed to support most indoor and outdoor applications. Professional and good protection against the elements, this range of sensors offer a long battery life combined reliability and high levels of accuracy.

Temp/Humidity

IP67 Dust/Moisture

Door/Window Sensor

Leak Sensor (Spot)

Leak Sensor (Zone)

iCE LoRaWAN Industrial Sensors – iS4850 Sensor Series

The iCE range of Industrial LoRaWAN sensors are designed for more extreme environmental and outdoor applications. Higher protection against the elements, and a longer battery life combined reliability and high levels of accuracy make these sensors ideal in almost any environment.

Internal Battery

Solar Type

- **Multi-Sensor – CO2, Temp, humidity & Air-Pressure Combination**
- **Light Levels Sensor (LUX)**
- **Pressure Sensor (Pipes)**
- **Temperature Sensor**
- **Soil Moisture Sensor**
- **Soil Moisture, Temperature and Electrical Conductivity**
- **Tank Level Sensor**
- **Distance Level Sensor (Silos/Dams)**
- **Others on request**

iCE NEO

iCE's NEO, cloud-based Industrial Internet of Things (IIoT) remote monitoring platform represents a transformative leap in operational technology, offering real-time oversight and data analysis of industrial processes from anywhere in the world. Leveraging advanced cloud computing capabilities, this platform seamlessly integrates with a variety of sensors and machines across multiple locations, facilitating unparalleled access to vital operational data. By harnessing the power of IIoT, businesses can enhance efficiency, improve predictive maintenance, and drive innovation, all while ensuring the highest standards of safety and sustainability. This platform not only simplifies complex industrial ecosystems but also empowers decision-makers with actionable insights, fostering a new era of productivity and operational excellence.

Key Features

- **Data management**: Manage and store data from iCE IoT gateways securely and efficiently, including real-time and historical data.
- **Data visualization**: Visualize and analyze the data collected from our IoT devices, such as dashboards, reports, and analytics.
- **Device management**: The ability to manage and monitor IoT devices remotely.
- **Connectivity management**: Manage and secure the connectivity between IoT devices and the cloud platform.
- **Integration capabilities**: Integration options with other systems and applications, including third-party analytics and alerting tools.
- **Alerting and notification**: Configure automated alerts and notifications based on pre-defined thresholds, events, or anomalies.
- **Scalability**: The ability to scale the platform to accommodate large numbers of IoT devices and users, as well as handle high volumes of data.
- **Flexibility**: Flexible and customizable to meet the specific needs and requirements of each business.

Security

iCE utilizes the MQTT protocol with the Mosquitto broker this enables us to setup steps like installing and setting up Mosquitto, using unique client IDs, structuring topics effectively, understanding Quality of Service (QoS) levels, and utilizing features like retained messages and Last Will and Testament (LWT) for robust communication. Security is crucial, with options for authentication and encryption to protect data. Persistent sessions and bridge configurations further enhance connectivity and integration across networks. This setup ensures a secure, efficient, and scalable system for IoT applications or any scenario requiring reliable messaging over constrained networks.