

LoRa™ Wireless Solutions

The world's most complete end to end LoRa solution

The AKCP Wireless solution uses LoRa™ technology which provides superior penetration through buildings. A wide range of AKCP's intelligent sensors are available with a LoRa wireless module that transmits sensor data to the nearest AKCP LoRa™ gateway.

LoRa Advantages

- Battery operated sensors
- Rapid deployment
- Save on cabling and installation costs
- Fewer base units and IP addresses
- L-DCIM Gateway with integrated AKCPro Server
- Individually tested to ensure correct broadcast frequency and strength



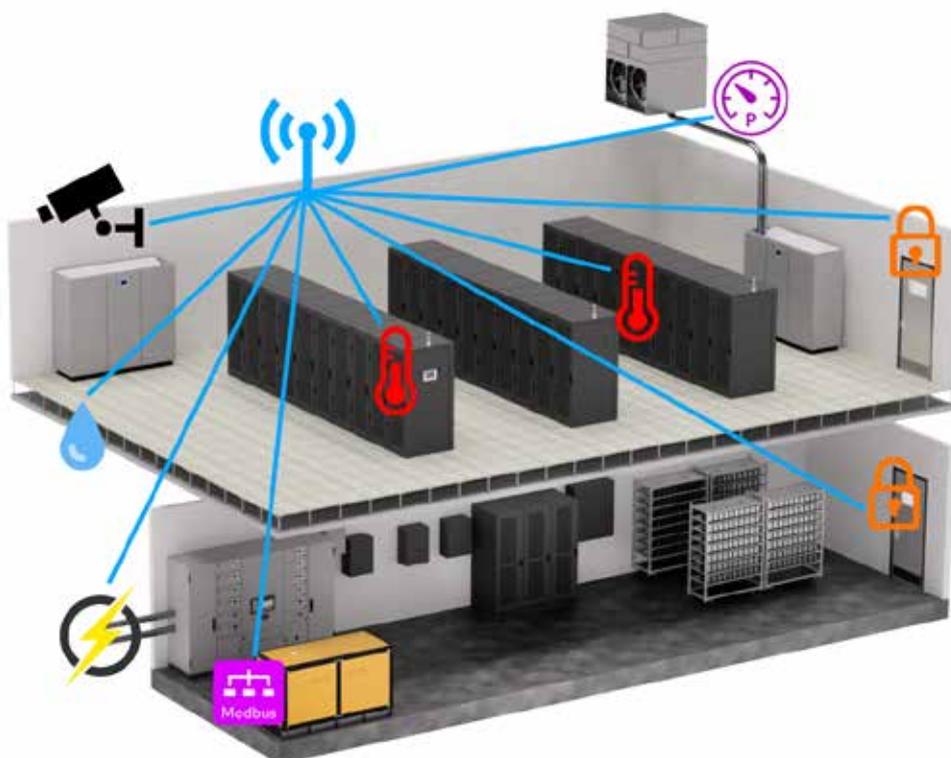
LoRa™ Technology

AKCP Application of LoRa™ Technology

LoRa™ radio is an energy efficient, long range and low cost bi-directional communications technology. Running on unlicensed frequencies it is specifically tailored towards IoT use cases. LoRa™ radio modulation provides deep indoor penetration through walls, elevator shafts and basements.

Data center critical infrastructure requires constant monitoring and instantaneous alerts. AKCP is the first company to bring a LoRa™ wireless monitoring solution tailored for the data center. Below are some of the specific features we have implemented :-

- Immediate broadcast upon sensor status change
- Periodic broadcasting of graph data as frequently as every 10 seconds
- “Listen before talk” to minimize packet collisions
- Queuing and Re-Broadcast of undelivered messages
- Utilizes the shortest spreading factor, giving several benefits
- Increased battery life by using less airtime
- Shorter airtime means more frequent broadcasts are possible
- Individually tuned antennas, maximum range with shortest spreading factor

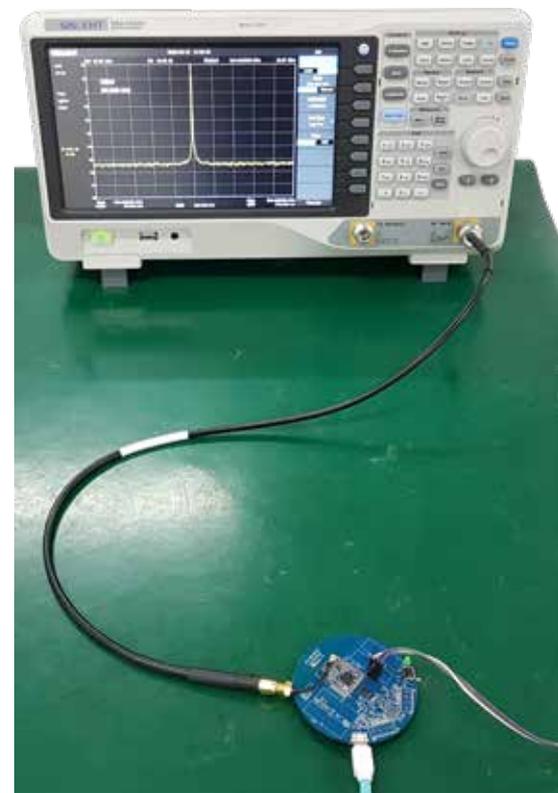


AKCP and LoRa™

AKCP Tests and Tunes every LoRa™ Radio

AKCP uses professional spectrum analyzers to hand tune every antenna to ensure proper broadcast strength and frequency. We only use high quality external Di-Pole antennas for maximum signal strength. Our thorough testing procedures enabled us to identify counterfeit components in our supply chain which allowed us to pro-actively remove them from production and change suppliers

Testing broadcast frequency and strength of AKCP LoRa™ sensor device



Testing of Di-Pole antenna frequency



DCIM in a box with LoRa™ radio (L-DCIM)

The L-DCIM is a “DCIM in a box” solution for data center infrastructure monitoring and management. Many DCIM solutions require annual license fees and are complex to use, as well as needing a dedicated PC. With L-DCIM it's easy to implement a complete DCIM monitoring solution.

AKCPro Server is embedded on every L-DCIM allowing you to monitor all your data center infrastructure, manage access control, sync video with sensor events track assets, graph sensors and generate alerts.

Equipped with a LoRa™ radio and high quality Di-Pole antenna, monitoring of AKCP wireless sensors means you can rapidly deploy your environmental monitoring system without needing to run cables, tap power, use network ports and IP addresses.



DIN rail / Desktop L-DCIM

The L-DCIM comes in a compact DIN rail, desktop or wall mounted unit. 1U version for standard rack mounting is also available.

The LoRa radio comes in different frequency bands suitable for your specific country regulations

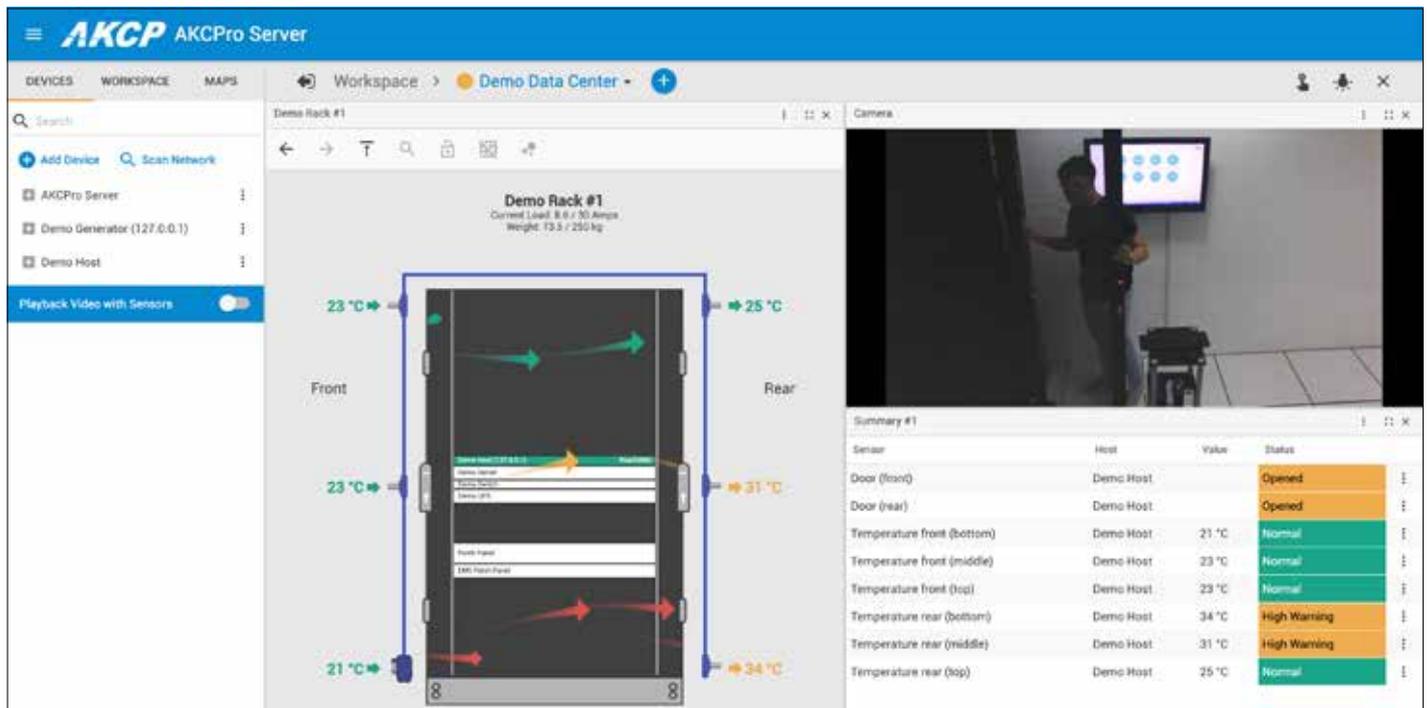


1U rack mounted L-DCIM

DCIM in a box with LoRa™ radio (L-DCIM)

L-DCIM is a mini computer running a full version of AKPro Server. Up to 100 wireless LoRa™ sensors, or a total of 1,000 data points can be monitored. Add your existing sensorProbe devices, and use virtual sensors to monitor third party equipment. 25 virtual sensors are included, with additional available with a licensed unlock code.

Drill down mapping, cabinet rack maps, asset tracking, graphing, reports, data replay synched with video data. All of the usual AKCPro Server functions are included.



Screenshot of AKCPro Server central monitoring software embedded in every L-DCIM

L-DCIM - Tablet View

Use any Android or IOS tablet or cellphone to monitor your data center at ground level. The L-DCIM acts as a WiFi hotspot for mobile devices to connect directly with and display sensor data in a dedicated tablet user interface. No apps to install, just access using your google Chrome web browser. Now your technicians on the data center floor can be kept up to date and be alerted instantly to critical situations as they arise.

