

# ArII

## Smart Monitoring Platform for Critical Environments

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# ILLUSTRO

ILLUSTRO was established in 2020 with a registered capital of 5,000,000 THB (five million baht). The company operates in the fields of high-voltage electrical engineering, alternative energy, technology innovation, specialized machinery and equipment distribution, as well as engineering services including design, installation, and construction of specialized projects.

With our extensive experience in high-voltage electrical contracting, ILLUSTRO has earned the trust of government agencies, particularly in projects related to electrical substations—including construction, installation, equipment testing, and other related services. Additionally, we specialize in the distribution and installation of essential and crucial frangible structures for airports.

In line with our innovation-driven approach, ILLUSTRO has also developed its own proprietary product—Arii, an intelligent environmental and energy monitoring system. Arii is designed to monitor and control indoor air quality, energy consumption, and cold storage systems in real-time, integrating with IoT platforms such as SCADA, Zabbix, and BMS. Arii helps clients reduce operational risks, optimize energy usage, and maintain environmental standards with data-driven precision.

ILLUSTRO is backed by a team of experts from various engineering disciplines, each with extensive experience in their respective fields. With our expertise and innovation, you can trust ILLUSTRO to ensure the smooth and successful execution of your projects—both now and into the future.



## Integrated Environmental & Power Monitoring Platform

Arii is a modular IoT-based monitoring system designed to deliver real-time data acquisition, analysis, and control across critical environments.

The system supports multiple communication protocols such as Wi-Fi, HTTP, and SNMP, and is fully compatible with industrial platforms like SCADA (IGSS v12.00) and Zabbix (v3.0 and above).



### Energy Meter Pack

Real-time electrical current monitoring for load analysis and energy management.

### Environmental Meter Pack

Monitors temperature, humidity, CO<sub>2</sub> equivalent, TVOC, light intensity, and airborne particulates (PM<sub>1</sub> / PM<sub>2.5</sub> / PM<sub>10</sub>). Supports wireless device control integration.

### Cold Room Pack

Specialized for cold storage environments. Tracks system behavior, detects anomalies, and issues alerts when temperatures deviate beyond set thresholds. Predictive maintenance insights help minimize operational risks and preserve asset quality.



## System Features:

- Real-time data collection (sample rate up to 11 sec based on sensor type)
- Centralized data aggregation (Big Query compatible)
- Historical and graphical data visualization
- Configurable alerting & predictive maintenance notifications
- Scalable device architecture via Wi-Fi/NB-IoT
- Seamless integration with BMS and third-party monitoring systems

Arii is engineered to optimize performance, reduce downtime, and enhance environmental control in mission-critical facilities.





# ENERGY METER PACK

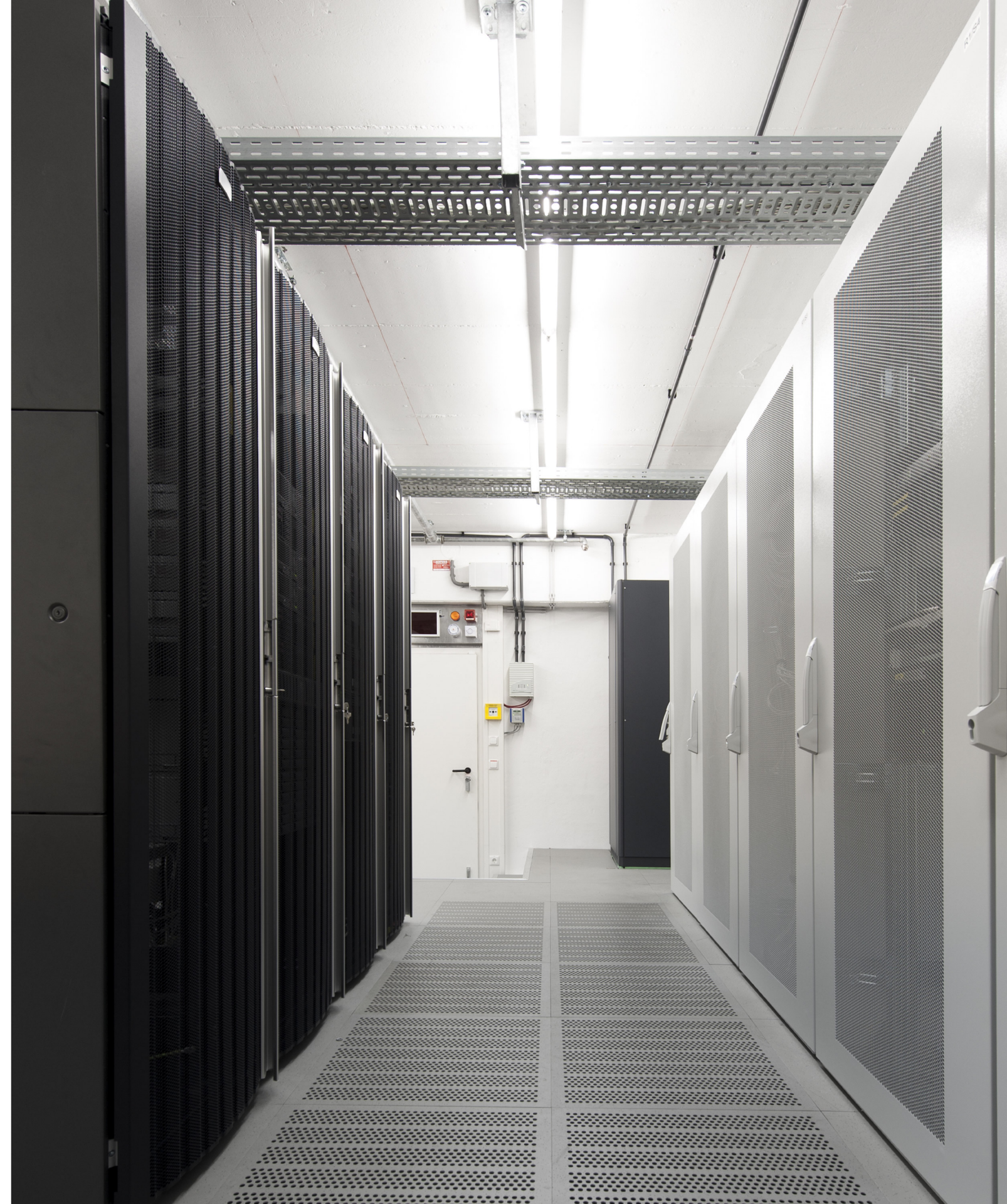
Our IoT Energy Monitoring System is designed to help organizations monitor and analyze energy usage in real-time using Internet of Things (IoT) technology.

This solution enables precise tracking of electrical consumption at various points within a facility, allowing for data-driven decisions.

## Key features:

- Measurement of electrical parameters (voltage, current, power, total energy, etc.)
- Detection of abnormal loads or usage patterns
- Energy trend analysis and reporting
- Data transmission via Wi-Fi or NB-IoT networks
- Real-time visualization through an intuitive dashboard
- Configurable alerts for threshold breaches

This system is ideal for office buildings, industrial facilities, data centers, and any site where energy management is critical. It empowers organizations to optimize energy usage, reduce operational costs, and support sustainability goals through actionable insights.





# ENVIRONMENT METER PACK

The IoT Environment Monitoring System is designed to measure, control, and monitor environmental conditions in real-time—focusing on Indoor Air Quality (IAQ) and Air Quality Index (AQI).

This system is ideal for residential buildings, offices, hospitals, cold rooms, or storage areas. It uses highly accurate sensors to monitor key air quality indicators that affect human health and equipment performance, including:

- Temperature
- Relative Humidity
- Carbon Dioxide (CO<sub>2</sub>)
- Particulate Matter (PM1 / PM2.5 / PM10)
- Total Volatile Organic Compounds (TVOC)
- Air Quality Index (AQI)

All collected data is transmitted over Wi-Fi or NB-IoT networks to centralized platforms such as SCADA or Zabbix, where it is visualized, analyzed, and used to trigger alerts when thresholds are exceeded.

Moreover, Arii can be integrated with automated systems—such as HVAC units or air purifiers—to automatically adjust the indoor environment, maintaining optimal conditions and supporting both health and productivity.





# COLD ROOM PACK

Arii's Cold Room Pack is specifically engineered for cold storage applications. It provides precise environmental monitoring and control to preserve product quality, reduce system downtime, and enhance energy efficiency.

## Key Features:

- Real-time monitoring of temperature and relative humidity
- Automatic alerts when conditions exceed defined thresholds
- Integration with refrigeration system controllers
- Historical data logging for analysis and predictive maintenance
- Supports Wi-Fi and NB-IoT connections with dashboard visualization via the Arii platform
- Compatible with BMS and SCADA systems

## Benefits:

- Minimizes risk of product spoilage or damage
- Reduces maintenance and energy costs
- Enables predictive maintenance planning
- Strengthens cold chain reliability and compliance

The Arii Cold Room Pack is highly versatile and suitable for a wide range of applications across industries that require strict environmental control. Key use cases include:

## • Cold Storage Warehouses

Real-time monitoring of temperature and humidity to preserve the quality of frozen foods, pharmaceuticals, or sensitive equipment.

## • Hospitals & Laboratories

Ensure safe storage of vaccines, biological samples, or chemicals that require consistent environmental conditions.

## • Distribution Centers

Maintain cold chain integrity during storage and prepare data logs for compliance and reporting.

## • Food & Beverage Industry

Monitor refrigeration in restaurants, retail cold rooms, or food processing plants to ensure food safety and quality.

## • Agricultural & Processing Facilities

Use in post-harvest storage or temperature-sensitive processing areas to prevent spoilage or loss of value.



# Project: Karnchana Fresh Pork – Ratchaburi

**Customer:** Ocean King Machinery

**Scope:** Blast Freezer Room at -35°C

**System:** Arii Cold Room Pack integrated with refrigeration system

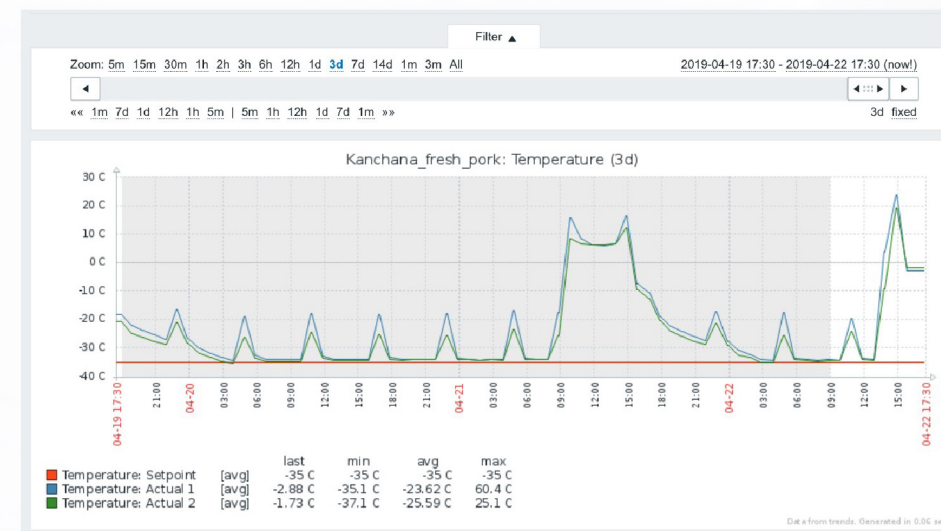
## Project Overview:

This project involves the design and deployment of a blast freezer monitoring solution with an ultra-low temperature of -35°C for Karnchana Fresh Pork, located in Ratchaburi. The Arii Cold Room Pack is used to monitor and control key environmental and operational parameters such as:

- Temperature and relative humidity inside the freezer room
- Real-time status of the refrigeration unit
- Door open/close monitoring
- Alert system integrated with the Arii platform for live notifications
- Historical data logging for analysis and maintenance planning

Arii seamlessly integrates with the refrigeration system provided by Ocean King Machinery, ensuring stable storage conditions for fresh pork.

The system enhances operational reliability by detecting anomalies (e.g., abnormal temperature rise) and notifying operators before product quality is affected.



The logo for ILUSTRO features the word "ILUSTRO" in a dark blue, serif font. The letter "O" is replaced by a dark blue circle with a small red dot at the top right, resembling a stylized eye or a light fixture. The background of the entire page is a soft-focus photograph of a modern, minimalist interior with white walls, a white ceiling, and several rectangular, recessed ceiling lights.

**ILUSTRO**

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