ZEN

Intelligent Control
for Distributed Networks

ENERGY · SERVICE · SECURITY · SCALE

IoT ZEN transforms fragmented retail and franchise networks into one predictable, controlled operational system — in real time.

→ **15–20% ENERGY REDUCTION**

→ **AUTOMATED SERVICE OPERATIONS**

→ **REAL-TIME NETWORK VISIBILITY**

→ **SCALABLE OPERATIONAL STANDARD**

Scaling Without Control Is a Risk

Managing multiple locations today means:

→ Rising energy costs
→ Reactive service management
→ Lack of real-time visibility
→ Inconsistent operational standards
→ Growing pressure on central teams

Without centralized intelligence, scale creates complexity — and complexity destroys margins.

The Real Risk

Uncontrolled energy consumption, delayed reactions, and inconsistent standards silently erode profitability across the network.

What Is IoT ZEN?

IoT ZEN is a ready-to-deploy operational platform for retail and franchise networks.

It integrates with existing infrastructure — without requiring costly hardware replacement.

EDGE
In-Store Intelligence

Live data from HVAC, refrigeration, meters, alarms, and doors.

CLOUD
Central Analysis

Anomaly detection, benchmarking, predictive diagnostics.

CONTROL CENTER
Action

Automated alerts, service tickets, remote control, scenario management.

→ Proven Operational Impact

→ 15–20% Energy Consumption Reduction

→ Achieved without infrastructure replacement or heavy CAPEX investment.

→ Automated Service Management

→ Early anomaly detection.
Automatic ticket generation.
Reduced emergency interventions.

→ Real-Time Network Standardization

→ Every location operates under the same data-driven operational model.

→ Beyond Monitoring — Intelligent Control

IoT ZEN does not simply collect data.

It translates technical parameters into automated actions, reducing operational risk before it turns into financial loss.

→ Smart HVAC Automation

→ Refrigeration Diagnostics

→ Energy Monitoring

→ Security & Access Oversight

ZEN

ZEN is an intelligent IoT platform for centralized control and monitoring of distributed facilities — including retail networks, offices, and warehouses.

It combines real-time data acquisition, edge processing, cloud analytics, and automated operational response — without requiring infrastructure replacement.

What ZEN delivers

1 Centralized Control Across All Locations

All operational and technical data is aggregated into a single system with real-time visibility across the entire network.

- Secure cloud architecture
- Role-based access control
- Remote access from any location

RESULT: operational transparency and data-driven decision-making at scale.

2 Intelligent HVAC Automation

Direct integration with existing HVAC controllers (e.g., Modbus, RS485, TCP/IP).

- Remote setpoint control
- Time & scenario scheduling
- Central override logic
- Threshold-based automation
- Local edge autonomy during connectivity loss

RESULT: lower energy use, standardized configuration, longer equipment life.

3 Energy Monitoring & Data Intelligence

Real-time energy data acquisition and cross-location benchmarking.

- Continuous monitoring
- Configurable anomaly detection
- Historical analysis
- API & data export

RESULT: measurable energy optimization based on real operational data.

The Challenges ZEN Solves

As networks scale, technical complexity increases:

→ Fragmented infrastructure
→ Disconnected monitoring systems
→ Manual service workflows
→ Delayed fault detection
→ Limited cross-location benchmarking

Without unified architecture, operational scale introduces systemic risk. ZEN provides a structured IoT framework that standardizes infrastructure while preserving flexibility at the local level.

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Facility Security & Event Monitoring ZEN monitors:

ZEN monitors:
- Alarm system status
- Door access events (entrance, backroom, cold storage)
- Emergency circuit usage

Event-based alerts are generated in real time via configurable notification channels (SMS, email, API triggers).

RESULT: faster incident response and reduced operational exposure.

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Advanced Refrigeration Diagnostics

Direct integration with refrigeration controllers. Continuous monitoring of:
- Temperature readings
- Defrost cycles
- Compressor runtime
- Error and fault codes

Rule-based detection identifies deviations before product loss or system failure. Energy optimization potential: 10–20%

RESULT: fewer emergency interventions, lower service costs, improved asset reliability.

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Automated Service Workflows

ZEN shifts maintenance from reactive to proactive. The platform:
- Detects irregular operating patterns
- Generates structured service tickets
- Integrates with external ticketing systems via API
- Provides diagnostic context to reduce unnecessary site visits

RESULT: predictable maintenance processes and reduced "blind" service calls.

ZEN Control Center

ZEN Dedicated Carrier Board

Cloud

Edge Hardware Specifications

- CPU: 4 × ARM Cortex-A76 up to 2.4 GHz
- RAM: 8 GB LPDDR4X
- 1 × Ethernet (1 GbE)
- 1 × Wi-Fi
- 2 × USB 3.0
- 2 × USB 2.0
- 2 × RS485
- up to 1 TB SD storage
- 8 to 6,432 I/O channels
- 6 × temperature sensor inputs

Cloud Connectivity

- AMQP
- MQTT
- HTTPS/REST-API

Supported Communication Protocols

- Ethernet TCP/IP
- Modbus
- OneWire

OPERATING & MONITORING

- Parameter monitoring
- Service data collection
- HACCP reporting

HVAC

- Refrigeration
- Air conditioning
- Air curtains

LIGHTING

- Indoor lighting
- Outdoor lighting
- Shelf lighting
- Spot lighting

DEDICATED ZONES (E.G., GASTRO)

- Heating devices
- Ovens
- Microwaves
- Grills
- Bain-maries

Scale Without Operational Chaos

IoT ZEN enables retail and franchise networks to grow — even at high expansion speed — without losing control, consistency, or cost discipline.

For CEOs & Founders

Operational transparency across the entire network.

For CFOs

Stabilized OPEX, energy cost control, predictable budgeting.

For Operations Teams

Automated workflows instead of manual incident handling.

CONTROL ENERGY.

AUTOMATE SERVICE.

STANDARDIZE SCALE.

Say Hello To Us

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