IEI

Innovate
Edge
Intelligence

IEI Next Generation Edge Computing Platform

Empowering Industry 4.0 with Remote Recovery, Secure Access, and Redundancy

intel.

www.ieiworld.com

Why Modern Edge Architecture Matters?

Today, edge systems determine productivity, uptime, and safety because they are where industrial data is generated, processed, and acted on in real time. By reducing latency, offloading networks, and keeping operations stable even when cloud connectivity drops, a robust edge foundation enables critical applications—from autonomous transport and robotics to energy management and quality assurance.

As Industry 4.0 shifts responsibility from centralized data centers to distributed edge nodes, organizations must consolidate computing closer to the process without losing manageability. That's why modern edge architecture must run multiple applications in parallel, tolerate failures, provide centralized monitoring, and integrate seamlessly with existing OT/IT—without adding new maintenance overhead. Therefore, a modern edge architecture must meet the following requirements:

Multi-Application Operations
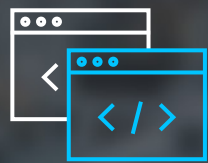
Run multiple applications in parallel on the edge to support consolidated, scalable workloads.

Resilience by Design

Absorb failures and maintain continuity so incidents don't escalate into downtime.

Central Visibility & Control

Enable centralized monitoring to manage distributed edge nodes with consistent oversight.

Seamless OT/IT Integration-Without Added Maintenance

Fit into existing OT/IT structures while keeping total maintenance effort and cost from increasing.

IEI Next Generation Edge Computing Platform: A Unified Architecture for the Modern Industrial Edge

IEI's Next Generation Edge Computing Platform is a unified architecture that combines IEI Virtualization Edge Computer (iVEC) and IEI remote management (iRM) to deliver resilient, self-healing, and secure edge operations. IEI Next Generation Edge Computing Platform consolidates workloads, simplifies OT/IT integration, and maintains compatibility with legacy systems—enabling modern edge intelligence without requiring infrastructure redesign.

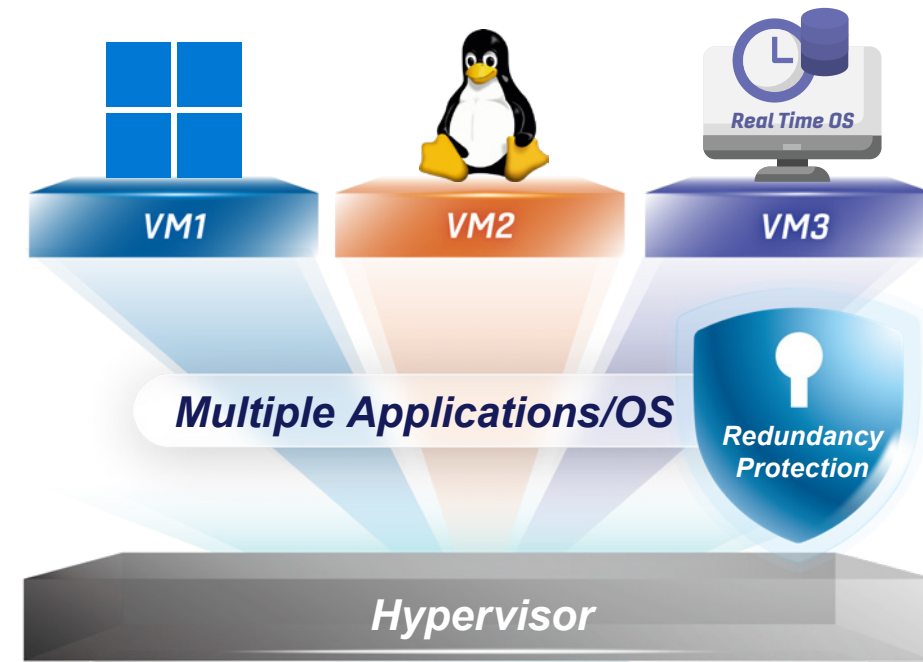*Together, iVEC and iRM blend performance, simplicity, and resilience for self-healing edge operations*

Agility
Enable users to tailor resource allocation to improve the efficiency of mission-critical applications

Data Governance
Essential data resilience with robust disaster recovery and enhanced data protection

Edge AI Computing
Deliver comprehensive Edge AI enablement through CPU acceleration, built-in GPU passthrough, and support for external graphics cards

Next Generation Edge Computing
iVEC + iRM

Green Operation
The CPU dynamically routes workloads to high-performance cores, delivering strong performance with significantly lower power than server-grade processors

Remote Management
Gain centralized visibility and control across distributed systems

Redundancy Management
Protect edge systems through redundancy strategies

AMR Fleet Management   **EV Charging Station**   **Factory Automation**   **Building Automation**

iVEC: Virtualization Edge Computer for Edge Environments

Run Multi-App, Multi-OS Workloads on One System

Built for demanding edge deployments, iVEC (IEI Virtualization Edge Computer) enables multiple applications and operating systems to run on a single industrial system—helping you consolidate hardware while keeping operations consistent and efficient. By reducing hardware requirements and standardizing configurations, iVEC also helps lower energy consumption across distributed sites.

Simplify Architecture
Consolidate workloads that previously required multiple PCs into a single hardware platform.

Support Diverse Applications
Run Windows applications (e.g., HMI) and Linux applications (e.g., an IIoT gateway) simultaneously—no additional hardware required.

Protect Legacy Systems
Securely run legacy or unsupported operating systems on modern hardware, extending the lifecycle of mission-critical applications.

VM1   VM2   VM3

Real Time OS

Multiple Applications/OS

Redundancy Protection

Hypervisor

Web-based Management Console

TAIWAN EXCELLENCE 2026

Virtualization Edge System
IVEC-TANK-XM811-RPLxx Series

Key Capabilities:

Efficient Resource Management
Customizable edge configurations (CPU, memory, storage, and networking) maximize hardware utilization and ensure QoS for critical workloads

Web-Based Remote Maintenance
Web-based remote desktop enables secure cross-site maintenance without complex network setup, reducing OT/IT costs and accelerating support response

Multi-OS Consolidation
Run multiple isolated OS environments on one host to save space, reduce hardware, and simplify industrial deployment with fewer devices

VM Applications Filesystem Guest OS VM Applications Filesystem Guest OS VM Applications Filesystem Guest OS

IEI Virtualization Edge Computer
Host OS
Hardware

iVEC Platform

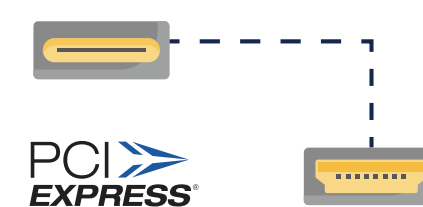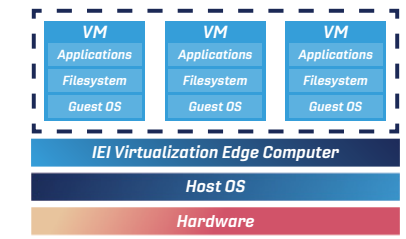Effortless Hardware Platform Upgrade

Legacy-to-Modern OS Compatibility
Windows/Linux compatibility lets you run legacy and modern software while seamlessly upgrading outdated platforms to current hardware

Secure PCIe & USB I/O Control
PCIe/USB device management with optional serial ports and USB access control enhances hardware flexibility and local I/O security for regulatory compliance

PCI EXPRESS

Software-Defined Network Security
Software-defined networking efficiently manages external access and internal routing while strengthening network threat protection to meet regulatory compliance

VM
VM
VM

iVEC Ready Systems:
iVEC-validated systems to reduce integration effort and accelerate deployment at the edge.

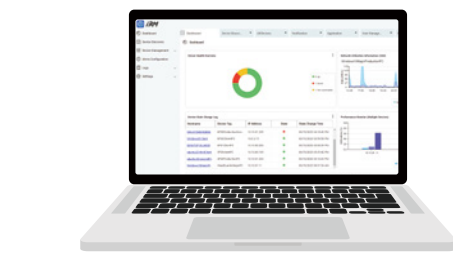| iVEC Ready	iVEC Ready	iVEC Ready	iVEC Ready	iVEC Ready
TANK-XM811	**DRPC-242-ADL-P**	**PUZZLE-5070**	**PUZZLE-7030A**	**IMBA-R680**
• 12th/13th/14th Gen Intel® Core™ processors • Modular eChassis/eBP options, it offers flexible PCIe/PCI expansion	• 13th Gen Intel® Core™ processors • Modular PCIe x4 expansion	• 1U Rackmount Network Appliance with Intel® Core™ Ultra 200S Series processors • 10 x1GbE RJ45 LAN ports	• 1U Rackmount Network Appliance with Intel® Xeon® D processor series • 8 x2.5GbE RJ45 LAN ports • 5 x10GbE SFP+ ports	• 12th/13th/14th Gen Intel® Core™ processors • Dual-channel DDR5 memory up to 4400 MHz

iRM:
Intelligent Remote Management and Recovery

Unlock Remote Efficiency with Seamless Control

iRM (IEI Remote management platform) provides centralized system monitoring, alerts, one-click recovery, and out-of-band access—so even highly distributed systems remain available and can be restored quickly in case of failures.
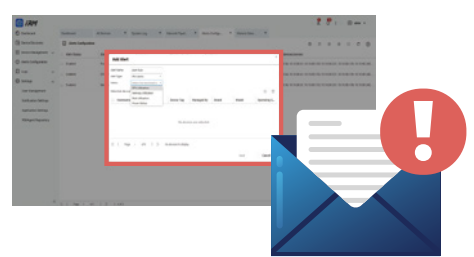
iRM
IEI Remote Management

iRM Mini Server

Total Operational Control and Visibility

Efficient Management & Troubleshooting

Improved Availability

Cross-platform Capabilities

Robust Platform Security

Enhanced Data Protection

Customizable Email Alerts

● Remote One-Click Recovery ● Out-of-Band (OOB) Management ● System Redundancy Management

QSW-IM3216-8S8T

Edge Switch

DRPC-243
Autonomous Robot

TANK-XM813
Machine Vision

MCS-DB001
Smart Ship Management

Managed Far-Edge Systems and Applications

What You Can Do:

Central Monitoring
Unified visibility across distributed edge systems

Configurable Email Alerts
Detect issues early and reduce unplanned downtime

One-Click Recovery
Rapid restore to minimize on-site intervention

Device Management
Provides network-based device discovery, a unified single- and multi-device management page, remote power control, remote desktop access, remote watchdog timer setting, and network topology visualization

Cross-Platform Compatibility
iRM is x86-compatible and manages both Linux and Windows devices—delivering flexible control across diverse industrial environments

Dashboard & Monitoring
Monitors CPU, memory, disk, and fan status, provides live disk volume and throughput insights, tracks network utilization, summarizes device health, and supports performance monitoring for single or multiple devices
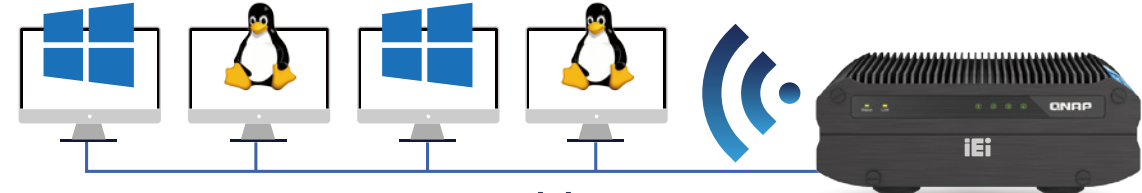
10 GbE Connectivity

OT Network Management
Mini server enables reliable IIoT remote management with dual 10GbE LAN for high-speed transfer and OT network control

Industrial Application

All-in-One Edge Platform for Robotic Cognitive Automation (RCA)
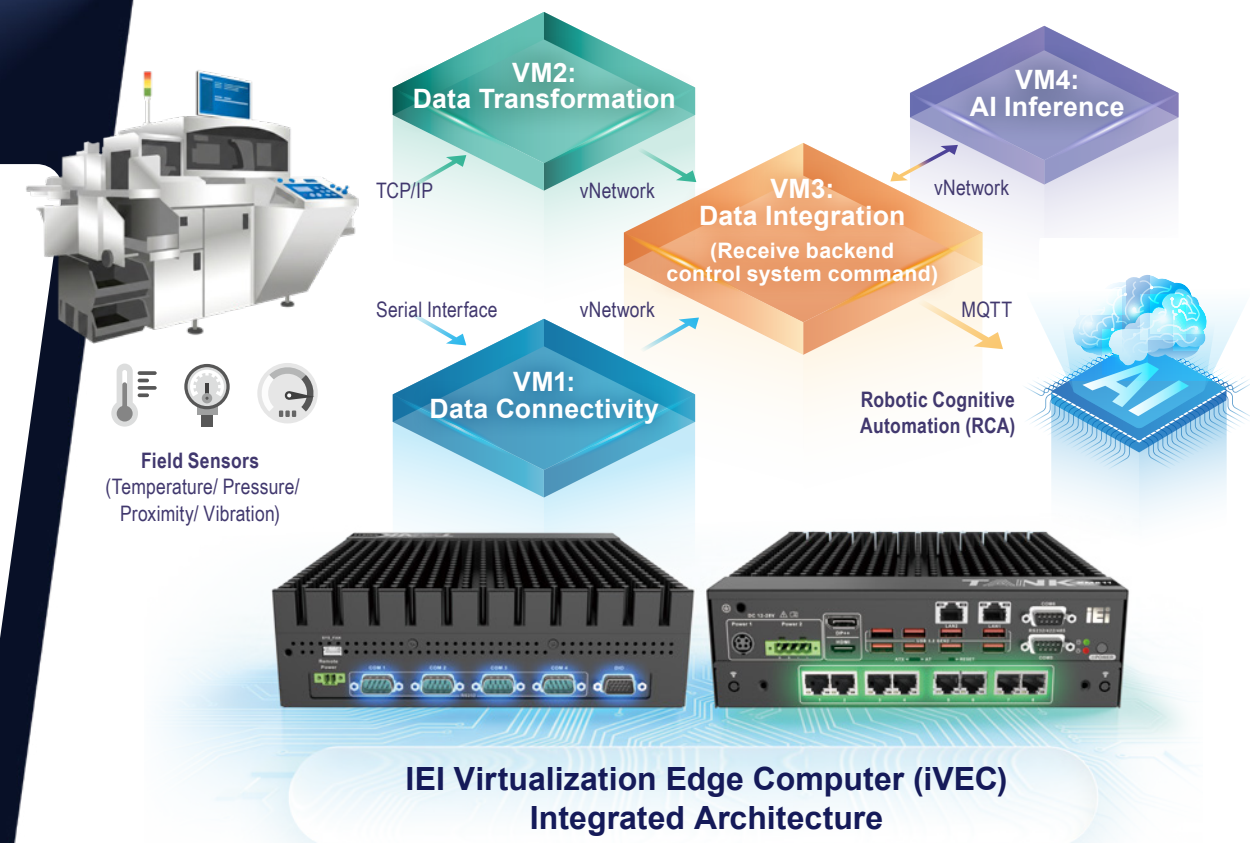
Customer Pain Point

In semiconductor manufacturing environments, Robotic Cognitive Automation (RCA) must operate within tight space constraints while meeting complex system integration requirements. Production floors often rely on multiple Raspberry Pi units to collect sensor data from semiconductor equipment, with data collection software developed by offshore ISVs. As deployments scale, this approach creates fragmented systems, complex wiring, and rising operational overhead. Managing large numbers of devices increases OT maintenance cost, limits centralized monitoring, and makes cross-site support difficult—while extensive network/serial cabling and multiple protocol requirements further drive up installation cost and integration complexity.

Solution

IEI's all-in-one edge platform consolidates RCA workloads into a compact, industrial-grade system capable of hosting up to four virtual machines (VMs) on a single device. The platform supports industrial serial protocols such as Digital I/O and RS-485 and enables software-defined communication between VMs, simplifying multi-system integration. An integrated AI inference module runs at the machine level to analyze real-time sensor and robotic motion data—detecting anomalies, predicting equipment degradation, and enabling cognitive robotic decision-making.

Benefits and Results

- Reduces system fragmentation by virtualizing control, data collection, and AI workloads on one edge device

- Improves centralized monitoring and manageability, lowering OT maintenance effort and cost

- Minimizes physical cabling and simplifies on-floor infrastructure in space-constrained environments

- Increases flexibility and scalability for building and expanding robotic cells, reducing total cost of ownership

VM2: Data Transformation

TCP/IP — vNetwork

VM4: AI Inference

vNetwork

VM3: Data Integration (Receive backend control system command)

Serial Interface — vNetwork — MQTT

VM1: Data Connectivity

Robotic Cognitive Automation (RCA)

Field Sensors (Temperature/ Pressure/ Proximity/ Vibration)

IEI Virtualization Edge Computer (iVEC) Integrated Architecture

All four virtual devices are consolidated on a single industrial PC (IPC), significantly reducing system complexity.

Industrial Application

Seamless Digital Transformation for Legacy Facilities

Customer Pain Point

Many industrial plants need modern edge capabilities without replacing decades-old control systems. In long life-cycle environments such as steel mills, legacy operating systems like Windows XP and Windows Server 2008 remain critical to daily operations. However, modern hardware often no longer supports these OS versions, and the high cost and risk of software redevelopment discourages upgrades. At the same time, reliable virtualization options that can run Windows Server 2008 and other legacy OS environments are becoming increasingly scarce—raising the risk of downtime and stalled modernization.

Solution

The platform bridges this gap by integrating into existing OT environments and providing a virtualization-ready edge architecture that maintains compatibility with legacy operating systems. It enables legacy workloads to continue running on supported, modern hardware while simplifying integration through standardized interfaces and centralized management—allowing plants to introduce new digital functions without disrupting established production systems.

Benefits and Results

- Preserves critical legacy OS operations while enabling modern edge capabilities

- Avoids costly, high-risk software redevelopment and reduces modernization effort

- Extends the usable lifespan of existing infrastructure while supporting a gradual, scalable digital transition

- Minimizes integration friction and helps prevent production downtime

Legacy Control Systems
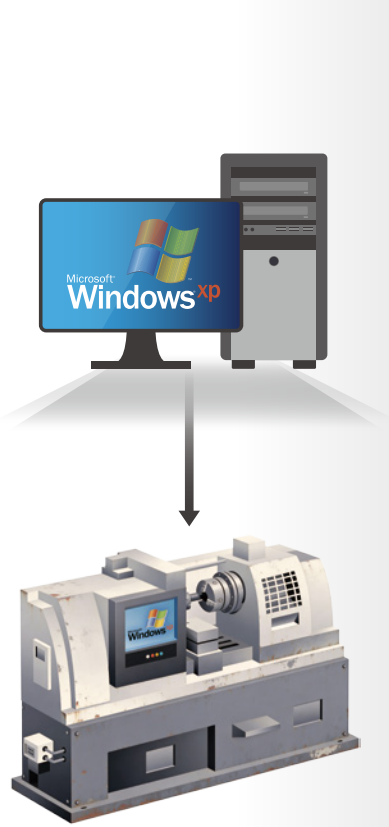
Modern Hardware, Legacy Control

PLC

HMI

Sensors

Cloud Server

Robotic Arm

Legacy OS VM

Modern Apps VM

Smart Logistics

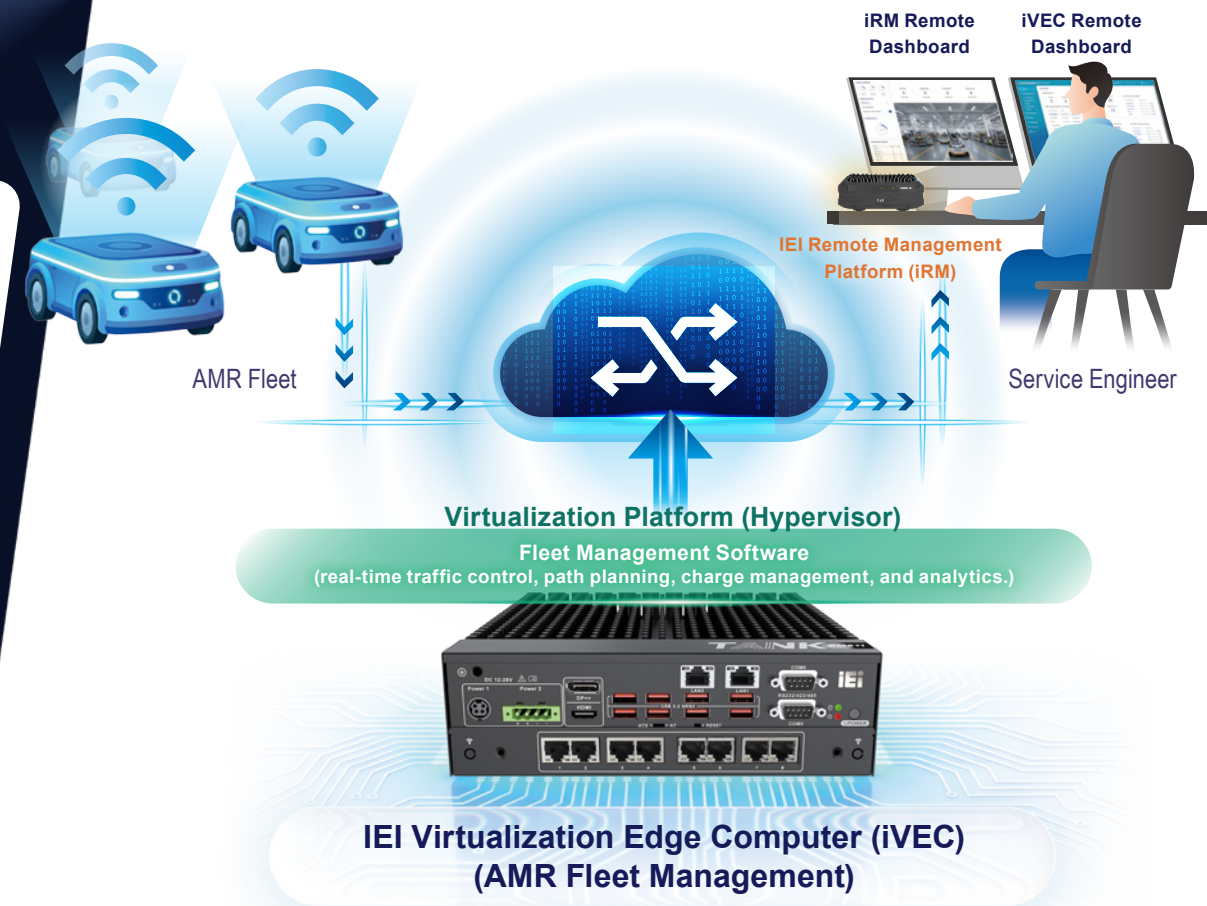## Edge Server as the Computing Core for AMR Fleets

Customer Pain Point

When deploying an AMR management system on site, the customer originally used commercial rack servers. In reality, the workload mainly runs AMR management software, yet the site lacks a dedicated server room and leased-line/private networking. This resulted in over-specified hardware, added enterprise backup software costs, and higher installation and maintenance overhead. Many incidents still required on-site service, increasing downtime and operational burden across distributed locations.

Solution

The customer adopted an IEI compact industrial edge server with iVEC virtualization to migrate the AMR management system into a single VM, sized for the real workload. iVEC provides built-in backup and fast recovery, reducing dependence on third-party enterprise backup tools. With iRM remote management, the system can be monitored and maintained through a web-based console, enabling remote operations via on-site Wi-Fi or mobile hotspot connectivity even without VPN/private networks.

Benefits and Results

- Right-sized edge performance with lower latency between AMRs and the management host

- Remote maintenance becomes feasible without dedicated lines, cutting on-site service visits and improving response time

- Faster backup and recovery while reducing enterprise backup software costs

- Lower deployment cost with no rack, no server room, and no additional air-conditioning infrastructure

iRM Remote Dashboard   **iVEC Remote Dashboard**

IEI Remote Management Platform (iRM)

Service Engineer

AMR Fleet

Virtualization Platform (Hypervisor)

Fleet Management Software
(real-time traffic control, path planning, charge management, and analytics.)

IEI Virtualization Edge Computer (iVEC)
(AMR Fleet Management)

Smart Transportation

Intelligent Energy Management for EV Charging Infrastructure

Customer Pain Point

EV charging stations depend on OCPP servers for load management, charging control, and billing continuity. However, many deployments face unstable or temporarily unavailable internet connectivity, which can disrupt communication between cloud services and local EV chargers. When failures occur—such as system crashes or unsuccessful updates—operators often must dispatch technicians on site, driving up downtime and maintenance costs.

Solution

IEI integrates its virtualization software, iVEC, into the compact industrial computer DRPC-140 to build an edge-based OCPP server that bridges cloud services and local EV chargers. The system runs two virtualized Linux environments with clear separation of duties:

- VM 1: OCPP intelligent energy management
- VM 2: Local data management
- To further improve resilience, the platform supports remote Guest OS recovery, allowing the operating system to be restarted and restored remotely after crashes or failed updates.

Benefits and Results

- Maintains stable charging control and billing operations even during internet outages or unstable connectivity

- Enables fully remote OS recovery, reducing truck rolls, downtime, and maintenance cost

- Separates critical workloads into dedicated VMs for clearer management and improved reliability

- Improves operational efficiency by accelerating incident response without on-site intervention

EV Charger Public

Mobile / Wi-Fi Network

DRPC-140-EHL
Intel® Celeron® J6412
(4 Core/16G)

VM1:
Smart Energy Control

VM2:
Local Database

OCPP

EV Charger Controller

Smart Building

Redundancy-Secured Edge Platform
for Smart Buildings

Customer Pain Point

Modern buildings run multiple control systems at the same time, and many facilities still operate them on separate industrial PCs. This fragmented architecture increases maintenance workload, makes system management inconsistent across sites, and limits redundancy and scalability—especially when buildings are distributed across campuses or city-wide locations.
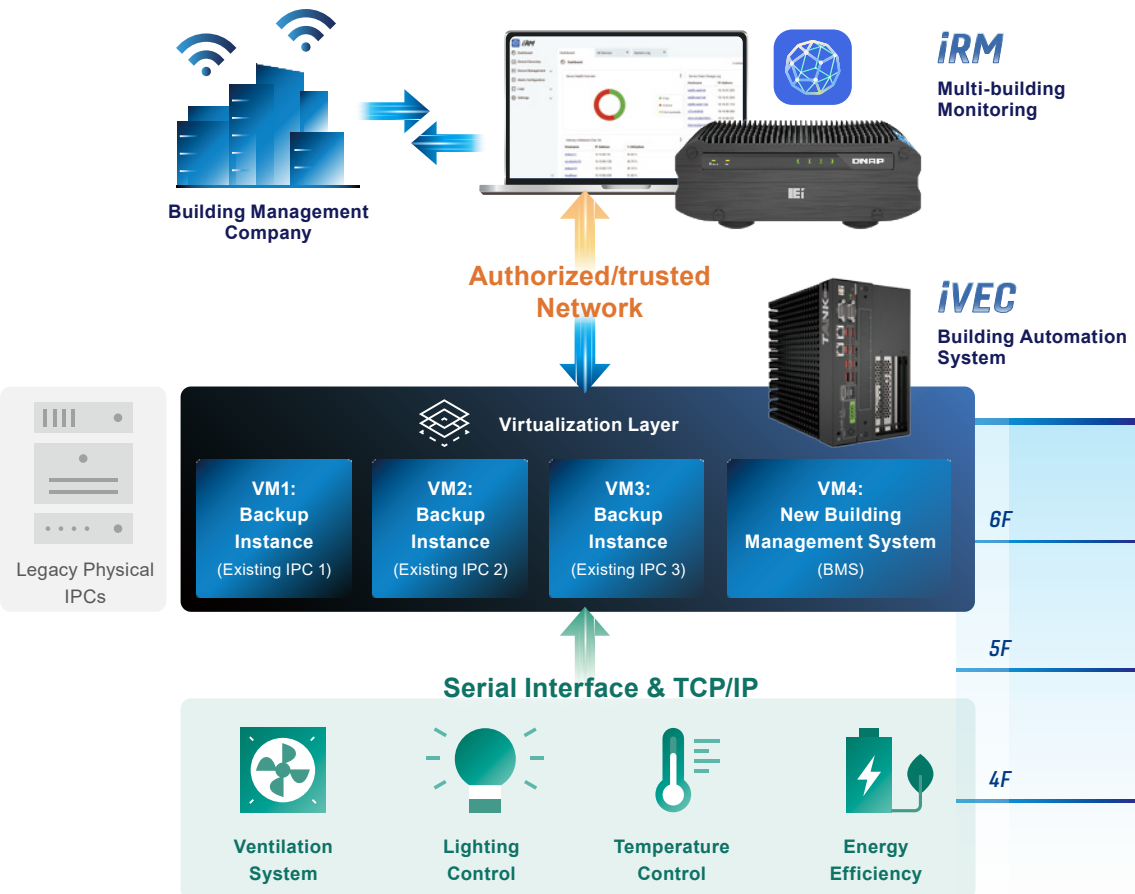
Solution

In this scenario, the platform consolidates building control by virtualizing four control systems on a single edge server. Three VMs act as redundancy instances for existing physical IPCs, while the fourth VM hosts a new building management system.

Using serial interfaces and TCP/IP, iVEC integrates with key subsystems—including ventilation, lighting, temperature control, and energy efficiency. Combined with iRM remote management, the operations team gains secure, browser-based remote access to the building control center.

Benefits and Results

- Consolidates legacy and new building functions into one unified edge architecture

- Provides secure remote control of critical functions, reducing on-site maintenance effort

- Enables redundancy across distributed locations to improve uptime and resilience

- Supports continuous, city-wide monitoring to scale operations and accelerate modernization toward intelligent automation

iRM
Multi-building Monitoring

Building Management Company

Authorized/trusted Network

iVEC
Building Automation System

Legacy Physical IPCs

Virtualization Layer

| VM1: Backup Instance (Existing IPC 1) | VM2: Backup Instance (Existing IPC 2) | VM3: Backup Instance (Existing IPC 3) | VM4: New Building Management System (BMS) |

6F
5F
4F

Serial Interface & TCP/IP

Ventilation System   Lighting Control   Temperature Control   Energy Efficiency

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iRM

(IEI Remote management platform)

Mini Server Appliance Specifications

Model		iRM-TSi410X	iRM-TS410E
Chassis	Color	Black	Black
	Dimensions (H x W x D)	65 x 180 x 254 mm (2.56 x 7.09 x 10 in)	60 x 180 x 254 mm (2.36 x 7.09 x 10 in)
	Fan/Fanless	Fanless	Fanless
	Construction	Extruded aluminum alloy	Extruded aluminum alloy (front panel: plastic)
Processor	CPU	Intel® Atom® x6425E	Intel® Celeron® J6412
	Frequency	4-core/4-thread 2.0 GHz base/3.0 GHz burst	4-core/4-thread processor, burst up to 2.6 GHz
	Encryption engine	AES-NI	AES-NI
	Graphics	Intel® UHD Graphics for 10th Gen Intel® Processors	Intel® UHD Graphics for 10th Gen Intel® Processors
Memory	Pre-installed	8 GB RAM	8 GB RAM (on board)
	Maximum	8 GB RAM	8 GB RAM (non-expandable)
	Flash memory	4 GB (dual-boot OS protection)	4 GB (dual-boot OS protection)
Storage	Drive bays	4 x 2.5-inch SATA 6 Gbps	4 x 2.5-inch SATA 6 Gbps
	Hot-swapping	This device supports hot-swapping for all drives.	This device supports hot-swapping for all drives.
	Pre-installed SSD/HDD	2 x 2.5-inch 512GB SATA SSD with RAID 1 Operational Temperature: - 20°C to 75°C	2 x 2.5-inch 512GB SATA SSD with RAID 1 Operational Temperature: 0°C to 70°C
	RAID	Support RAID 1 / 5 / 6 / 10	Support RAID 1 / 5 / 6 / 10
Network	10 Gigabit network interface	2 x 10G BASE-T (10G/5G/2.5G/1G)	2 x 2.5 GbE RJ45 (2.5G/1G/100 Mb./10 Mb.)
External I/O Ports & Expansion Slots	USB ports	4 x USB 3.2 Gen 2 Type-A	4 x USB 3.2 Gen 2 Type-A
	HDMI™ ports	1 x HDMI™ 1.4b (up to 3840 x 2160 resolution at 30Hz)	1 x HDMI™ 1.4b (up to 3840 x 2160 resolution at 30 Hz)
Interface	Buttons	Power / Reset	Power / Reset
Power	Power supply unit	1. External power adapter 90W and above, 100-240V AC 2. 9-36V DC input	External power adapter, 90W and above, 100-240V AC
	System battery	CR2032 lithium battery (3V, 225 mAh)	CR2032 lithium battery (3V, 225 mAh)
Relative Humidity	Relative humidity	● Non-condensing relative humidity: 5% to 95% ● Wet-bulb temperature: 27˚C (80.6˚F)	● Non-condensing relative humidity: 5% to 95% ● Wet-bulb temperature: 27˚C (80.6˚F)
Package	Package Dimensions	290 x340 x195 mm (11.42 x 11.39 x 7.68 in)	290 x340 x195 mm (11.42 x 11.39 x 7.68 in)
Reliability	Operating Temperature	-40˚C to 70˚C (-40˚F to 158˚F)	0˚C to 40˚C (32˚F to 104˚F)
	Storage Temperature	-45 - 85°C (-49°F - 185°F)	-20˚C to 70°C (-4°F - 158°F)
Mount	Mount support	● VESA mount: 75 x 75 mm (2.95 x 2.95 in)	● Stand Mount
		Load bearing: > 15 kg (33.07 lbs)	● VESA mount: 75 x 75 mm (2.95 x 2.95 in)
		M4x6 screws	Load bearing: > 15 kg (33.07 lbs)
		Hole depth: 7.5 mm (0.26 in)	M4x6 screws
		Tooth depth: 5 mm (0.20 in)	Hole depth: 7.5 mm (0.26 in)
			Tooth depth: 5 mm (0.20 in)

Weight	Net weight	2.54 kg (5.6 lbs)	2.64 kg (5.82 lbs)
	Gross weight	3.85 kg (8.5 lbs)	3.83 kg (8.44 lbs)
Safety / EMC		CE / UKCA / FCC / VCCI–B / BSMI	CE / UKCA / FCC / VCCI–B / BSMI
Hardware Standard Warranty		3 Years	3 Years
Pre-install Application		iRM (IEI Remote Management)	iRM (IEI Remote Management)

Software Specifications

Main Features	Sub Features	
Dashboard and Widget (user defined dashboard by system built-in widget)	CPU Utilization, Memory Utilization, Disk Utilization Disk Volume Live Information, Disk Throughput Network Utilization, IPMI Device Monitor CPU and system temperature , FAN Speed	Device Health Overview State Change Log Shutdown Devices (Recent 10) State Change Log Shutdown Devices (Recent 10) Performance Monitor Multiple Devices Monitor Single Devices Monitor Export to PDF Export and email as PDF document
Device Discovery (add your client device in iRM platform through network)	Device Discovery by network Add Device Search Device	
Device Management	Single and Multi Device Management Page ● Export PDF ● Email as PDF ● Add Device ● Delete Device	Remote Power Control Remote Desktop Remote Watchdog Control Network Topology View
Alert Configuration	CPU Utilization Memory Utilization Disk Utilization Power Status	CPU or System Temperature FAN speed
OOB (Out-of-Band) Management	Remote KVM Remote Power Control Hardware health monitor	IPMI 2.0 based remote management IEI IRIS2 Support
Logs	iRM Alerts Log System Log Historic Data IPMI Log Log Query	
Settings	Notification Settings Application Settings User Management: system admin, OT power user iRMAgent Repository Download	
Monitored Client OS Support	● Windows® 32-Bit: Windows® 7, Windows® 8/8.1 ● Windows® 64-Bit: Windows® 7, Windows® 8/8.1, Windows® 10, Windows® 11, Windows® Server 2012,Windows® Server 2016,Windows® Server 2019, Windows® Server 2022 ● Ubuntu 64-Bit: Ubuntu 16.04, Ubuntu 18.04, Ubuntu 20.04, Ubuntu 22.04, Ubuntu 24.04 ● Debian 64-Bit : Debian 8, Debian 9, Debian 10, Debian 11, Debian 12 ● CentOS 64-Bit: CentOS 7	
Software Standard Warranty and Support	1 Year	

iVEC

(IEI Virtualization Edge Computer)

Hardware Specifications

Model	IVEC-TANKXM811-RPL01-R10	IVEC-TANKXM811-RPL02-R10	IVEC-TANKXM811-RPL03-R10	IVEC-TANKXM811-RPL04-R10
Form Factor				
Color	Black			
Dimension (W x D x H)	137.9 x 255.4 x 230.6 mm			
Fan/Fanless	Fanless (optional external fan helps to increase system performance in harsh environments)			
Chassis Construction	Extruded aluminum alloys			
Motherboard				
CPU	Intel® Core™ i9-13900TE 1.0GHz [up to 5.0GHz, 24-Core (8P+16E), 32 Thread, TDP 35W]	Intel® Core™ i7-13700TE 1.1GHz [up to 4.8GHz, 16-Core (8P+8E), 24 Thread, TDP 35W]	Intel® Core™ i5-13500TE 1.3GHz [up to 4.5GHz, 14-Core (6P+8E), 20 Thread, TDP 35W]	Intel® Core™ i3-13100TE 2.4GHz [up to 4.1GHz, 4-Core (4P), 8 Thread, TDP 35W]
Virtual CPU	32	24	20	8
Chipset	Intel® R680E			
System Memory	1 x 32GB SO-DIMM DDR4 3200MHz (pre-installed)	1 x 32GB SO-DIMM DDR4 3200MHz (pre-installed)	1 x 16GB SO-DIMM DDR4 3200MHz (pre-installed)	1 x 16GB SO-DIMM DDR4 3200MHz (pre-installed)
	up to 2 x SO-DIMM DDR4 and 64GB, support ECC memory SKU			
Storage				
Hard Drive	Host OS: 1 x 2.5" 512GB SATA 6Gb/s SSD (pre-installed)			
	VM Storage: 1 x 1TB M.2 2280 M-key SSD (NVMe PCIe x4, pre-installed)			
I/O Interfaces				
Ethernet	2 x RJ45: 1 x Intel I226LM 2.5GbE / 1 x Intel I226-V 2.5GbE (Note: I225 LM/-V 2.5GbE in the previous motherboard version)			
USB 3.2 Gen 2 (10Gb/s)	8			
COM	2 x RS-232/422/485			
	4 x RS-232			
Digital I/O	12-bit (6-in/6-out)			
Display	1 x DP++ (up to 4096 x 2160@60Hz)			
	1 x HDMI (up to 4096 x 2160@30Hz)			
Expansion Slots				
M.2	1 x 2230 A-key (PCIe x1/ USB 2.0 support Intel® vPro)			
Backplane	2 x PCIe x16 slot (x8 signal, pre-installed, total power up to 75W, support FHHL card)			
Power				
Power Input	DC Jack: 12V ~ 28V DC			
	Terminal Block: 12V ~ 28V DC			
Remote Power	Terminal Block: 2-pin			
Reliability				
Mounting	Wall mount			
Operating Temperature	-20°C ~ 60°C with air flow (with SSD), 10% ~ 95%, non-condensing			
Storage Temperature	-40°C ~ 80°C, 10% ~ 95%, non-condensing			
Operating Shock	Half-sine wave shock 5G, 11ms, 100 shocks per axis (with SSD)			
Operation Vibration	MIL-STD-810G 514.6C-1 (with SSD)			
Weight (Net / Gross)	4.6kg / 5.6kg			
Safety / EMC	CE / FCC			
Watchdog Timer	Programmable 1 ~ 255 sec/min			
OS				
Host OS	Ubuntu IoT 22.04 LTS for Intel Platform (pre-installed) / Ubuntu IoT Certified Device : https://ubuntu.com/certified/202307-31831			
Guest OS	Windows / Linux OS (for details, refer to software spec)			

Software Specifications

Main Features	Sub Features
System Management Console	Web-based management console
System Overview Dashboard	● VM Status Monitoring: VM running and status change ● CPU Utilization Monitoring: CPU utilization ranking ● Memory Utilization Monitoring: Memory utilization ranking ● Network Traffic Bandwidth Monitoring: Network received and transmitted data rate ● Storage Performance Monitoring: Storage read and write data rate

Virtual Machine Management	● VM Creation
	● VM Import
	● VM Migration
	● Virtual Desktop Console Support for Managing VMs: Browser-based
	● VM Power Management
	● Single VM management:
	  > Information and dashboard: General, System, Display and Sound, Others, Storage, Network
	  > Real time monitor: CPU usage, memory usage, network throughput, disk throughput
	  > Snapshot management
	  > Logs query
	  > Edit VM:
	    > Synchronize time
	    > Edit
	    > Clone
	    > Export
	    > Data protection
	    > Single VM share link management
	    > Delete VM

Data Protection Plan Management	● Query for Protection Plan ● Creating a Backup Data Protection Plan ● Restoring a Backup Data Protection Plan ● Run Backup Data Protection Plan ● Edit Data Protection Plan ● Delete Data Protection Plan
OS Images Management	● Search OS Image ● Edit OS Image ● Delete OS Image ● Upload OS Image
System Management	● User management ● VM access permissions ● Overall VM share link management ● Overall VM exported file management

System Preferences	● Memory:
	  > Provisioning System Memory
	  > Memory Optimizer
	● Remote Device Credentials Management

System Log	● Query Log ● Save and export Log ● Clear Log
Virtual Desktop Console for Managing VM	● Browser base remote desktop ● Pin task bar ● Task bar layout option ● VM power management ● Take snapshot ● Display quality setting ● Send function key and custom key ● Full screen ● Capture screen to image ● Audio on/off

Supported Guest Operating Systems	● Microsoft Windows:
	  Windows 11, Windows 10, Windows 8.1, Windows 8,
	  Windows 7, Windows XP SP3
	● Windows Server:
	  Windows Server 2022, Windows Server 2019, Windows Server 2016
	● Linux - Ubuntu:
	  Ubuntu 22.04, Ubuntu 20.10, Ubuntu 20.04, Ubuntu 19.10, Ubuntu 19.04, Ubuntu 18.10,
	  Ubuntu 18.04, Ubuntu 17.10, Ubuntu 17.04, Ubuntu 16.10, Ubuntu 16.04
	● Linux - Debian:
	  Debian 9.1.0 (Linux kernel: 4.9.0-6), Debian 10, Debian 11, Debian 12
	● Linux - Fedora
	  Fedora 24 – 26, Fedora 27–38
	● Linux - Red Hat:
	  Red Hat Enterprise Linux 7, Red Hat Enterprise Linux 8, Red Hat Enterprise Linux 9
	● Linux - CentOS:
	  CentOS 7.0 - 7.4, CentOS 8.0-8.5, CentOS Stream 8/9
	● Linux - SUSE:
	  SUSE Linux Enterprise Server 15
	● UNIX - FreeBSD:
	  FreeBSD 11, FreeBSD 12, FreeBSD 13

Serial Connection Expansion Card for VM	IEI approved RS232/RS485 card
AI Acceleration for VM	● iGPU (CPU integrated GPU): virtual GPU card supports up to 7 VM (based on Intel Core-i9 13900TE) ● Dedicated GPU : NVIDIA GeForce Series Note: The VM enabled AI Acceleration will not support Browser base VM remote desktop
NIC Expansion Card	IEI approved POE NIC Card
Maximum Number of Snapshots	Up to 32 per VM
Maximum Number of Simultaneously Running VMs	The number of concurrently-running VMs is generally limited to the available CPU and memory resources of the device. Running multiple VMs at the same time may affect the performance of the device.
Maximum Number of VMs	No limit
Maximum Number of Virtual Devices	Each VM supports up to 16 devices, including hard disks and CD/DVD ROMs.
Maximum Number of Virtual Network Adapters	Up to 8 per VM
Maximum Number of Physical USB Connections	Up to 4 per VM
Maximum Number of Physical PCIe Connections	Up to 3 per VM
Supported File Types for Import	*.ova, *.ovf, *.vmx, *.qvm(from iVEC), *.vhdx
Supported File Types for Export	*.ovf, *.qvm, *.vhdx
Host OS Support	Ubuntu IoT 22.04 LTS for Intel Platform
Hardware Support	IEI approved hardware
Application OTA Upgrade	Supported
External Storage Support	● iRM Mini Server (recommended QTS OS V5.1.*) ● iVEC Node ● QNAP Storage (recommended QTS OS V5.1.*)

Network	● IP Configurations: Manual (Static IP) / DHCP (Dynamic IP) Client
	● Network Mode: Bridge and NAT
	● Network Redundancy Support: Active/Standby mode of operation
	  (For detailed settings, please refer to the user manual.)
	● Virtual Networking Support: Yes
	Note:
	  ● Support user-defined bridge networks
	  ● Optional Accessories: IEI PoE LAN Module for network expansion