DFI

Redefining Intelligent Parking: A Deep Dive and Insight on the IAE Smart Parking Solution

At COMPUTEX 2025, DFI, in collaboration with Wei Long Electronics and Data Image, unveils the IAE Smart Parking Solution—an advanced, Edge AI-powered system engineered to address the critical challenges of modern urban parking. Named for its core principles—Innovative, Automated, and Efficient—the IAE platform brings together three technology leaders to deliver a smart parking experience that is intelligent, seamless, and built for real-world demands.

Tackling the Limitations of Cloud-Based AI in Smart Parking Use Cases

Traditional cloud-based AI systems often suffer from high latency, bandwidth constraints, and privacy concerns, especially in environments requiring real-time responsiveness. These limitations can lead to delayed decision-making, increased operational costs, and vulnerability to network disruptions.

The IAE Smart Parking Solution overcomes these challenges by harnessing Edge AI to process data locally at the source. This approach ensures faster response times, reduced bandwidth usage, and enhanced data security, providing a more reliable and efficient parking management system.

According to IDC, global spending on edge computing is projected to reach **$261 billion by 2025** and grow at a **CAGR of 13.8%**, reaching **$380 billion by 2028.**

This rapid growth reflects a broader shift across industries—from cloud-dependent infrastructures to edge-enabled ecosystems—where **real-time data processing, cost optimization, and decentralized intelligence** are becoming essential.

What Sets the IAE Smart Parking Solution Apart?

The IAE Smart Parking Solution distinguishes itself through the powerful synergy between three industry leaders: DFI, Wei Long Electronics, and Data Image. The companies bring specialized capabilities to create a truly integrated, intelligent, and future-ready platform.

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Wei Long Electronics: Enabling Seamless, AI-Driven Payment and Parking Management

As a pioneer in cashless payment and video parking guidance systems across Southeast Asia, Wei Long Electronics delivers the AI brain of the IAE platform. Their patented technologies enable:

- Web & app-based cashless payment systems
- Ticketless and ticket-based options
- Advanced Video Parking Guidance Systems (VPGS) for dynamic parking management
- Seamless integration for both drivers and operators

Mr. Lu You Ming, Managing Director, Wei Long Electronics:
"The IAE Smart Parking Solution delivers an all-in-one AI-powered platform that maximizes convenience and efficiency. With rugged HMI displays from Data Image and embedded systems from DFI, it ensures reliable performance in even the harshest environments."

Video Guidance System

Cashless Payment Kiosk

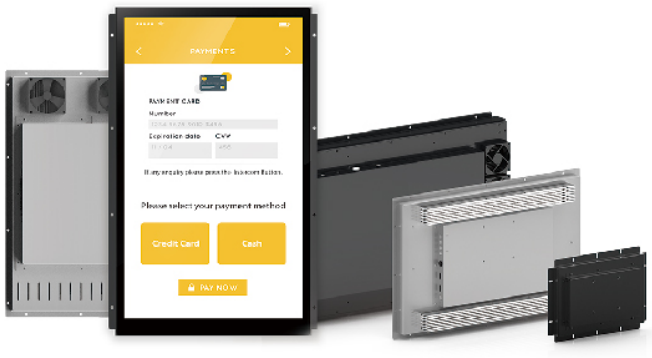
Data Image:
Ruggedized HMI Displays for Seamless Interaction

Data Image enhances the solution with outdoor-ready, sunlight-readable displays optimized for user interaction. Their HMI panels feature:

- Up to 1500 nits brightness, ensuring readability in direct sunlight
- UV protection, IK10/IP65 durability, and operating range from -40°C to 85°C
- Customizable form factors optimized for 24/7 reliability in extreme environments

Phil Yu, CEO, Data Image:
"Our displays are built for resilience and clarity. In the IAE Smart Parking Solution, we provide customizable, outdoor-ready monitors that deliver dependable performance in high-demand settings."

DATA IMAGE



Ranging from 10" to 32"

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DFI: Scalable Embedded Computing for Mission-Critical Reliability

DFI provides the system's industrial-grade computing backbone of the IAE Smart Parking Solution. Designed for 24/7 operation in diverse and demanding environments, their embedded platforms offer:

- Modularity and scalability for flexible integration
- I/O-rich configurations supporting peripheral expansion
- Wide operating temperature range and ruggedized design for reliable performance in harsh conditions

Together, these innovations form a seamless, adaptable, and high-performance parking solution.

A Blueprint for Smarter Cities

The IAE Smart Parking Solution is more than just a parking system—it is a scalable, sustainable, and intelligent platform built for the next era of urban mobility. By uniting the strengths of DFI's broad Edge AIoT capabilities in embedded computing, Wei Long's AI-powered payment and guidance systems, and Data Image's rugged HMI technology, the solution delivers unmatched performance, reliability, and future-proof adaptability.

In a world where real-time decision-making and environmental sustainability are critical, the IAE Smart Parking Solution stands as a blueprint for how Edge AI can reshape smart infrastructure—bringing greater intelligence, responsiveness, and resilience to everyday urban operations.

DFI's Computing Systems Power AI-Driven Smart Parking System

As a global leader in embedded motherboards and industrial computing, DFI enhances the IAE Smart Parking Solution with ultra-compact fanless PCs that provide high reliability, long-term life cycle, and 24/7 durability. DFI's lineup of embedded computing platforms supports a variety of functions, providing flexible options to meet the specific needs of the IAE Smart Parking Solution. For users seeking cost-effective AI integration, DFI recommends the EC700-ADN.

As most parking facilities are outdoors or semi-outdoors with limited climate control, systems are exposed to extreme temperature and continuous vibration, especially in kiosk installations. DFI's fanless design eliminates internal moving parts, significantly enhancing system reliability and extending the hardware lifespan. Paired with its advanced thermal management, these ultra-compact fanless systems deliver stable, high-performance operation in harsh conditions. The EC700-ADN has passed rigorous shock & vibration testing and complies with MIL-STD-810G standard, making it an excellent choice for industrial applications such as smart parking.

DFI

The EC700-ADN supports various expansion slots compatible with M.2 AI accelerator , enabling high-performance AI computing with ultra-low power consumption and optimized edge AI efficiency. Its advanced capabilities are ideal for IAE Smart Parking Solution's requirements, such as fast AI inference, advanced computer vision, low latency, low power consumption, and cost-effectiveness.

For the IAE Smart Parking Solution, the EC700-ADN offers exceptional versatility—enabling advanced features such as License Plate Recognition (LPR) / Automatic Number Plate Recognition (ANPR), vehicle detection and classification, parking space occupancy detection, face recognition and identity verification, as well as multi-camera stream aggregation.

To streamline IT/OT operations in smart parking environments, the EC700-ADN is equipped with DFI's in-house Out-of-Band (OOB) management technology. This powerful feature enables remote system monitoring, power control, and log retrieval—even when the OS is unresponsive or the system experiences power loss. It also supports critical BIOS-level operations such as remote configuration, recovery, and firmware updates. These capabilities ensure greater system resilience, reduce maintenance effort.