

ADVANTECH

Enabling an Intelligent Planet

Electronic Tolling & Vehicle Detection Solutions



ADVANTECH

Enabling an Intelligent Planet

Est. 1983

Headquarters: Taipei, Taiwan

INDUSTRIES SERVED

Industry 4.0, Industrial IoT,
 Embedded Computing,
 Medical, Retail, Logistics

\$10.61B

MARKET
CAP (USD)
(Feb., 2024)

HONORS & AWARDS

- No.5 in Best Taiwan Global Brands
- No.17 in Top 50 Global Automation Vendors
- No.9 in Top 100 Industrial IoT Companies
- Red Dot Product Design Award
- iF Product Design Award

WORLD'S LARGEST
IPC COMPANY

Advantech IPC WW Market Share

41%

- Advantech
- Other IPC Companies

Source: OMDIA – Market Share estimates for Industrial PCs: World, 2022 Edition

\$2.07B

2023
REVENUE
(USD)

KEY ECO-SYSTEM PARTNERS

and more...

QUALITY SYSTEMS IN PLACE

- ISO9001
- ISO14001
- ISO13485
- ISO17025
- ISO27001
- ISO45001
- TL9000
- ISO50001
- RoHS
- WEEE
- SONY GP
- REACH

1.8 MILLION+ sq. ft.

MANUFACTURING PLANTS

Linkou, Taiwan

- 9 SMT lines, 16 system lines
- Engineering sample services
- Complex product lines
- Flexible & quick production

Kunshan, China

- 12 SMT lines, 13 system lines, 6 chassis lines
- Chassis design & production
- Mature product lines
- Cost-effective production

Nogata, Japan

- 4 SMT lines, 1 system line
- Japan design center, CTOS service, logistics center, repair center

WORLDWIDE OFFICES

Manufacturing	3
On-site service	4
Design centers	11
CTOS centers	16
Repair centers	17
Logistics centers	20

More than 90 offices globally!

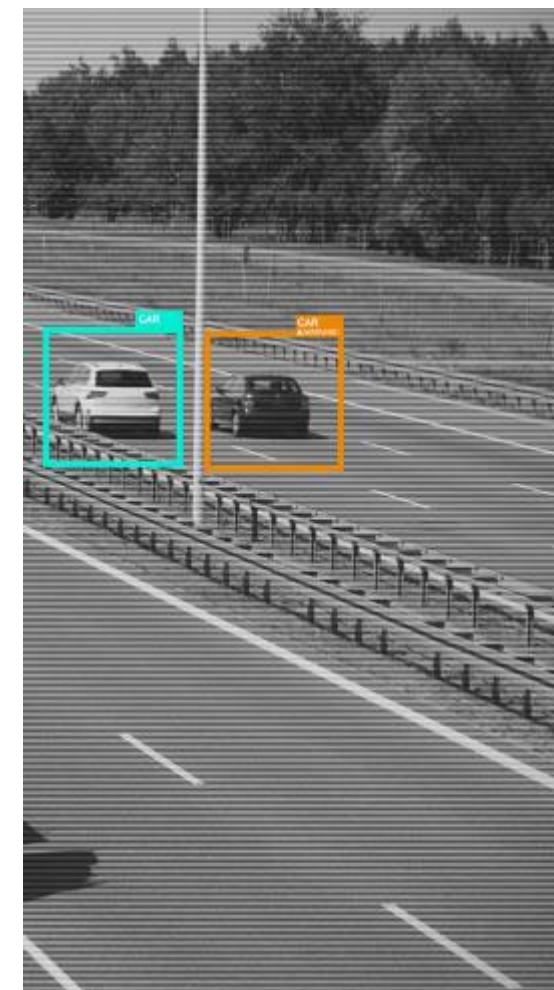
8800+ EMPLOYEES

Why Advantech?

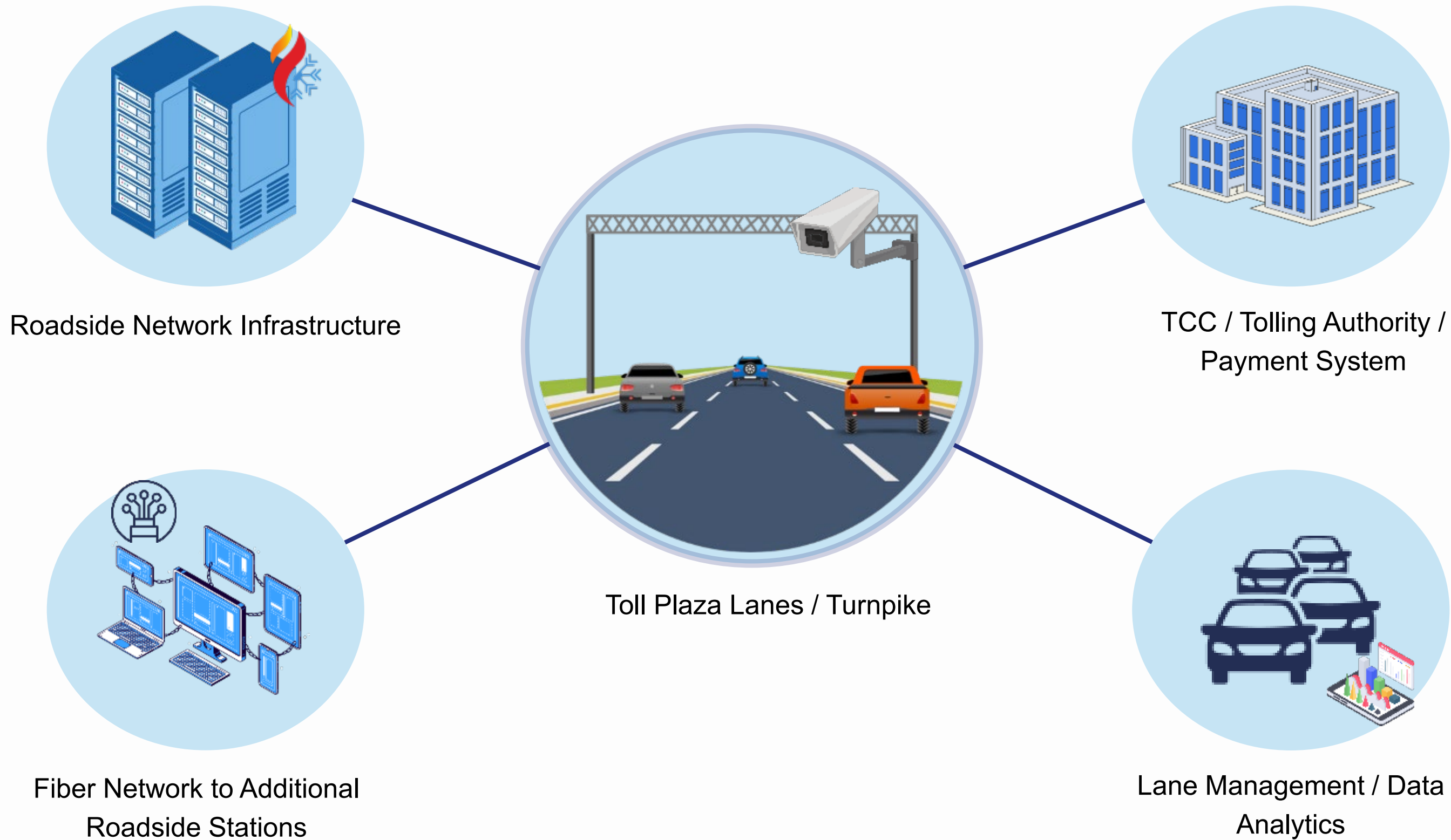
With the rapid integration of industrial networking, video monitoring, and AI-powered solutions, transportation infrastructure is evolving to meet the demands of the 21st century. Advantech offers the industry's most diverse portfolio of products designed to optimize modern highway applications.

By leveraging industrial networking solutions and embedded systems tailored for transportation, tolling authorities, system integrators, and OEMs can benefit from Advantech's unmatched reliability and performance. With private-label NEMA-TS2 hardware and comprehensive ODM and contract manufacturing support, we empower clients to customize solutions for maximum efficiency and scalability.

- Fanless NVIDIA-based & Intel-based GPU & AI Systems
- Industrial Networking
- Embedded Solutions
- Private Label NEMA-TS2 Hardware
- Original Design Manufacturer (ODM) Support
- Co-creation Ecosystem of Software Vendors
- Sample Evaluation Program
- and more!



● Electronic Tolling Ecosystem





TCC / TOLLING AUTHORITY

Data Monitoring + Analytics | Operational Back Office | Traffic Management

ROADSIDE STATION / CABINET



Rackmount IPC Chassis

L2/L3 Managed Switches

DIN-Rail Switches

DIN-Rail IPC / Controller



Station HVAC System

- Condition-based Monitoring
- Temperature Setting



Intelligent RTU



OPC UA Ethernet I/O Modules



OPEN ROAD TOLLING LANES



LPR/ OCR Cameras

- Video Imaging / Identification
- Automatic License Plate Recognition
- Vehicle Classification + Occupancy



Embedded Box IPC



SBC



DIN-Rail IPC



Overhead In-road Sensors + Antennas

- RFID Integration
- Transponder-based Tracking
- Electronic Toll Collection



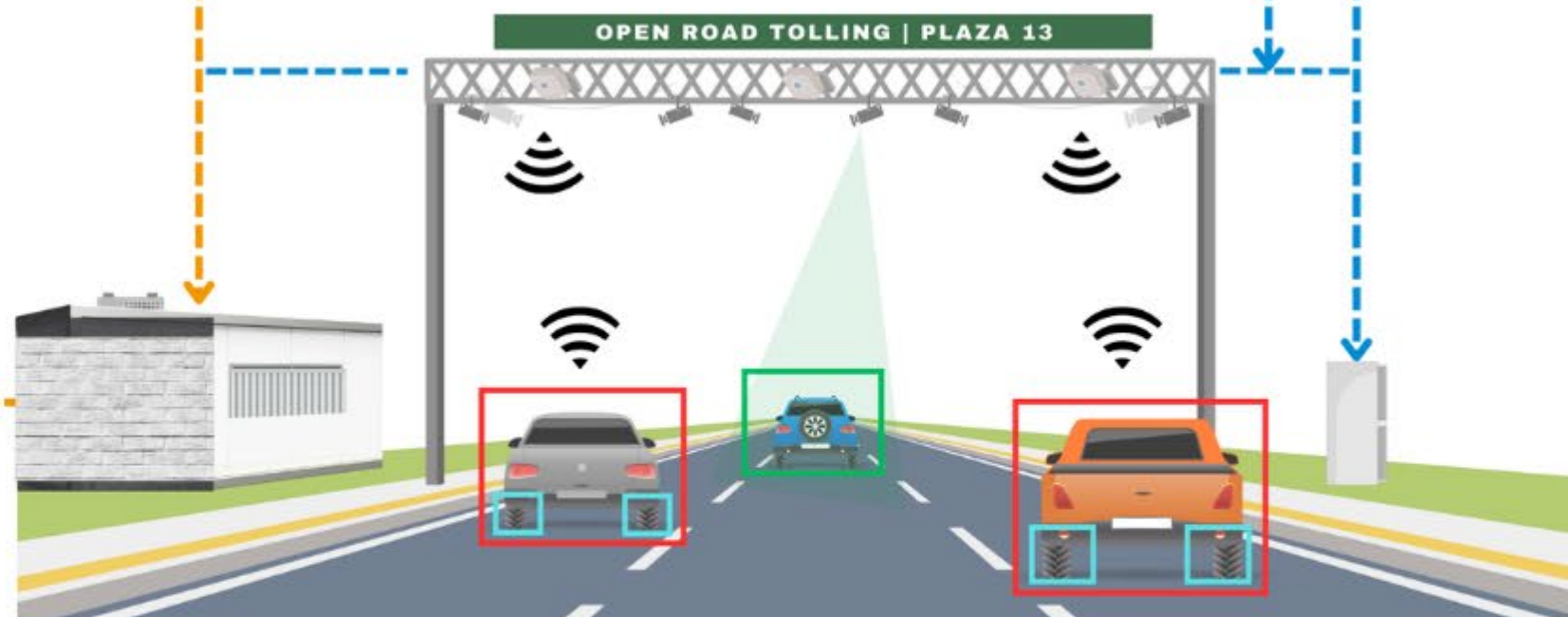
Remote I/O connecting to Serial Server



Ethernet I/O Modules



Unmanaged PoE Switch



UNDERGROUND FIBER NETWORK

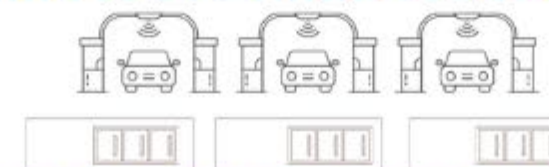
Connected to Additional Roadside Systems



Serial Device Servers



Managed Ethernet Switch



● Key Advantech Solutions

Open Road Tolling - Networking for LPR / OCR Cameras



NVIDIA-based Embedded Box IPCs

MIC-733-AO AI System based on NVIDIA® Jetson AGX Orin™

- Compact, fanless design
- Supports 4 x GbE (optional PoE), 4 x USB 3.2 Gen 2 (10 Gbit/s)
- Supports 2 x mPCIe, 2 x Nano SIM slots
- Supports Allxon 24/7 remote monitoring and OTA deployment



Intel-based Embedded Box IPCs

MIC-770 V3 High-Performance Modular IPC

- Intel® 12th/13th/14th Gen Core™ i CPU socket-type (LGA1700) with Intel® R680E/ H610E chipset
- Wide operating temperature (-20 ~ 60 °C)
- 1 x 2.5" HDD/SSD, 1 x mSATA, and 1 x NVMe M.2;
- 9 ~ 36 VDC input power range
- IP40-rated for deployment in harsh environments



NEMA TS-2 Certified Edge AI System

MIC-733-NEMA based on NVIDIA® Jetson Orin™ AGX computing system

- Compact, fanless system designed and built for outdoor or harsh environments
- Wide operating temperature (-29.2°F~165.2°F)
- 6 Gigabit Ethernet ports with 4 PoE/PoE+ including smart control/monitoring with 60W total PoE power budget
- Built-in +/- 6KV surge protection to handle harsh environments in traffic cabinets
- Microsoft Azure IoT certified

● Key Advantech Solutions

Tolling Lanes - Connectivity for Overhead/In-road Sensors & Antennas

ADAM-4150



ADAM-4117



ADAM-4168



ADAM-4100 Series

Remote I/O Connection to Serial Server

ADAM-4150

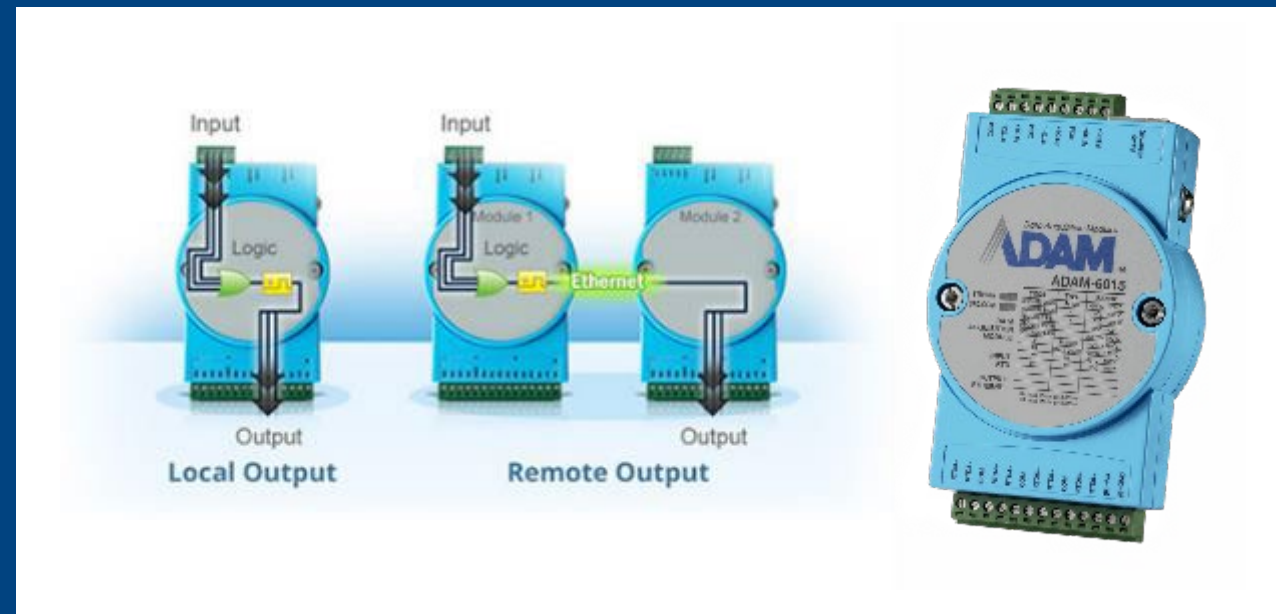
- 7DI/8DO Robust Modbus RS-485 Remote I/O

ADAM-4117

- 8AI Robust Modbus RS-485 Remote I/O

ADAM-4168

- 8Relay Robust Modbus RS-485 Remote I/O



ADAM-6000/6200 Series

Ethernet I/O Modules

ADAM-6015

- 7RTD IoT Modbus Ethernet Remote I/O

ADAM-6017

- 8AI/2DO IoT Modbus/SNMP/MQTT Ethernet Remote I/O

ADAM-6018+

- 8-Thermocouple IoT Modbus/SNMP/MQTT Ethernet Remote I/O

ADAM-6250

- 8DI/7DO IoT Modbus/SNMP/MQTT 2-Ports Ethernet Remote I/O



EKI-2700 Series

Unmanaged Switches

- PoE options help provide power for devices via Ethernet cable, eliminating the need for additional wiring
- Gigabit Ethernet support options
- Compact, IP30-rated metal housing options

● Key Advantech Solutions

Open Road Tolling - Roadside Station



ACP-2320 Rackmount IPC Chassis

- 2U Rackmount Chassis for ATX/ MicroATX Motherboard
- LED indicators and audible alarm notification for system fault detection
- 1x Slim optical disk drive, 2x internal 3.5" drives and dual hot-swap SATA HDD trays
- Various riser card options to support three full-size PCI or PCIe cards for expansion
- Reusable and washable air filters



EKI-8528-4XF/XFL

EKI-7428G



L2/L3 Managed Ethernet Switches

EKI-8528-4XF/XFL IEC 61850-3 L3 Managed Switch

- 3x 8 Gigabit ports module slots + 4x 10G SFP+ ports
- L3 functions: RIP v1/v2, OSPF, VRRP, PIM and NAT
- IEEE 802.1AS Time Synchronization, IEEE 802.1Qbu Frame Preemption, IEEE 802.1Qbv Time Aware Shaper, & IEEE 802.1CB Seamless Redundancy

EKI-7428G 24GE+4G Combo Managed Ethernet Switch

- 24x Gigabit ports + 4x Gigabit Copper/SFP combo ports
- SFP socket for easy, flexible fiber expansion
- SNMP v1/v2c/v3, WEB, Telnet, Standard MIB

UNO-137 V2



UNO-148 V2



DIN-Rail IPCs / Controllers

UNO-137 V2 Small-Size DIN-Rail IPC

- Intel® Atom® x6413E & x6425RE processor with 8GB DDR4 memory
- Wide operating temp. range (-40 ~ 158 °F) & power input range (10 ~ 36 VDC)
- Onboard TPM 2.0 for hardware-based security

UNO-148 V2 Fanless DIN-Rail IPC

- Intel® Core™ processors (13th Gen) with 8GB DDR5 memory
- Port isolation for 8 x DI, 8 x DO, 4 x COM

● Key Advantech Solutions

Open Road Tolling - Roadside Station HVAC System



ADAM-3600 Intelligent Remote Terminal Unit

- Domain Focused Onboard IO -8AI / 8DI / 4DO
- High I/O Flexibility with 4-slot I/O Expansion
- Modbus & DNP3 Protocol
- IEC 61131-3&C Programming Language
- Multiple wireless options for Zigbee/ Wi-Fi/ 3G/ 4G/ GPRS
- High Performance CPU Cortex A8 600MHz
- Low Power DDR3L 256MB RAM
- Wide operating temperature: -40~70°C



ADAM-6315

ADAM-6366

ADAM-6317

ADAM-6350

ADAM-6300 Series OPC UA Ethernet I/O Modules

OPC UA empowers Modbus I/O users to access the industrial IoT world and links SCADA and the cloud without gateways, accelerating OT/IT convergence.

- ADAM-6315 8 RTD/6DI/8DO
- ADAM-6317 8AI/11DI/10DO
- ADAM-6350 18DI/18DO
- ADAM-6366 6 Relay/18DI/6DO

● Key Advantech Solutions

Underground Fiber Network



The image shows three Advantech Serial Device Servers. On the left is the EKI-1511-A, a small black module. In the center is the EKI-1522, a black rack-mountable unit with a single Ethernet port and two serial ports. On the right is the EKI-1524, a black rack-mountable unit with a single Ethernet port and four serial ports.

EKI-1511-A

EKI-1522 **EKI-1524**

Serial Device Servers

EKI-1511-A, 1-Port Serial Device Server

- 1 x 10/100 Mbps Ethernet port
- Provides COM port redirection (Virtual COM), TCP, and UDP operation modes
- Baud rate: supports up to 230.4 Kbps

EKI-152X Series

- Numerous port options, AC/DC input options
- Rackmount models available



The image shows four Advantech EKI-7700 Series Managed Ethernet Switches. From left to right: a 4-port switch, a 2-port switch, a 4-port switch, and a 16-port switch. All are black rack-mountable units with green status LEDs.

EKI-7700 Series

Managed Ethernet Switches

Advantech managed Ethernet switches provide fast Ethernet and Gigabit combo ports, as well as numerous network protocols like SNMP, PROFINET, and Ethernet/IP

- Rugged, industrial-grade design assures reliability and stability
- Embedded with Advantech's IXM function to help users with fast deployment

Use Case | Intelligent Truck Tolling & Dynamic Weighing System



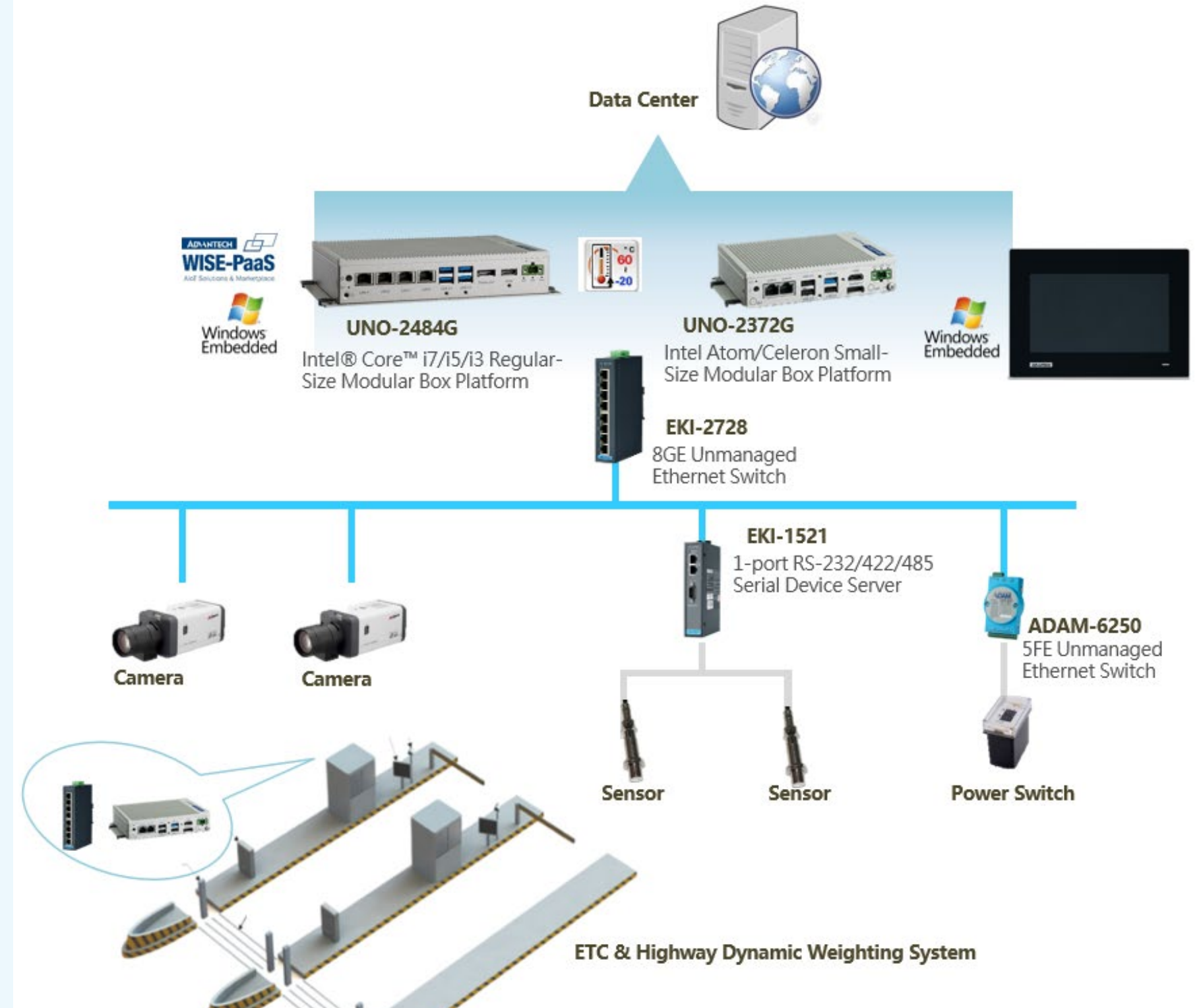
An international electronic toll collection (ETC) company needed a solution capable of handling massive data, enabling real-time license plate recognition, and enabling edge computing for tolling corridors. It also had to integrate with dynamic highway vehicle weighing systems to measure weight in motion.

The Solution:

- The company adopted Advantech's [UNO-2484G](#) fanless, industrial edge gateway as an embedded computing solution for collecting data and managing vehicle weighing operations.
- The [UNO-2484G gateway](#) is highly rugged with an embedded operation system powered by an Intel® Core™ i7 processor, delivering high-performance computing.
- The system's rugged chassis protects against vibration, and the modular design enables flexible configuration for a wide range of applications.
- For this application, the UNO-2484G was integrated with four cameras and vehicle weighing system measuring vehicle axle weight and total weight.

Benefits:

- If a vehicle is overloaded, integrated cameras automatically take images and send them to the UNO-2484G gateway for upload to a centralized server to enable real-time remote monitoring.
- Advantech's [WISE-DeviceOn](#) remote device management software was also implemented to ensure information accuracy and reduce manpower costs by facilitating remote monitoring, automated support, and intelligent management.



● The Advantech Difference

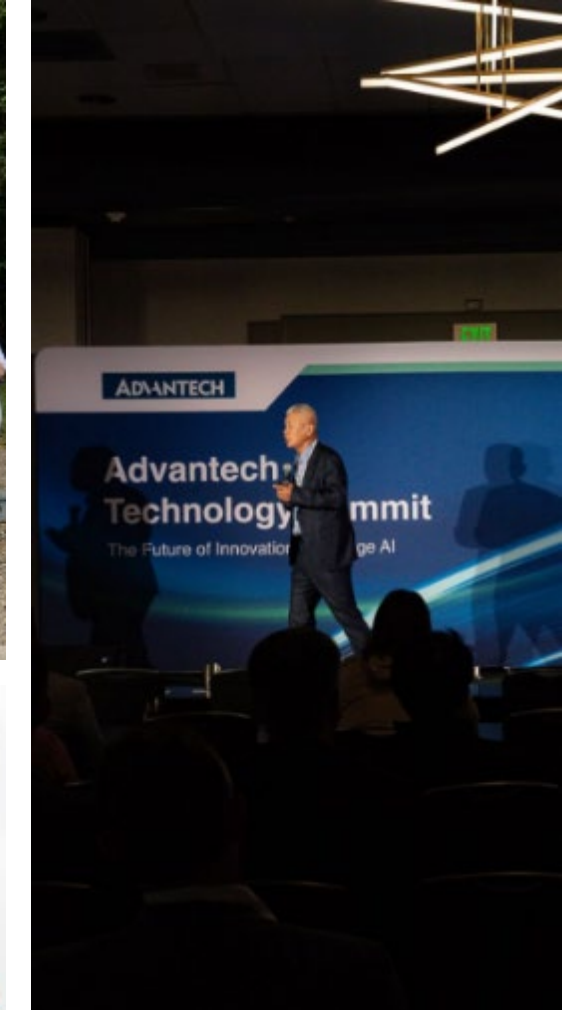
- ✓ Most Comprehensive AIoT Solution Portfolio
- ✓ Design and Manufacturing Options for TAA Compliance
- ✓ Comprehensive Customization to Meet Your Requirements
- ✓ North America-based Engineering Design Centers (EDCs) for Local Engineering and Development Teams

Design and Manufacturing Options for TAA Compliance

Made in USA	Hybrid	Engineering Front-End
U.S.-based design & manufacturing	Combination of design & manufacturing between N. America & Global Advantech HQ team in Taiwan	Local EDC completes technical front-end, design & manufacturing completed by Advantech HQ team in Taiwan

Comprehensive Customization to Meet Your Requirements

Advantech's Design To Order Services (DTOS) include a full range of customization services that integrate strong engineering knowledge with cutting edge design technology. Additionally, North America-based Engineering Design Centers (EDCs) offer local engineering and development teams with a wide range of technical, industry, and compliance knowledge.



ADVANTECH

Connect with us.



Regional Contact Information

<https://www.advantech.com/en-us>

<https://www.advantech.com/contact>



Inquiry Request

<https://www.advantech.com/en/contact/service-request-form>



Technical Support Request

<https://www.advantech.com/en/contact/service-request-form>



1-888-576-9668

Advantech Global Headquarters

No. 1, Alley 20, Lane 26, Rueiguang Rd.,
Neihu Dist., Taipei 114, Taiwan
Tel: 0800-777-111

Advantech North America, Greater Chicago Area

2655 Warrenville Road, Suite 250,
Downers Grove, IL 60515

Advantech North America, Cincinnati

4445 Lake Forest Drive, Suite 200,
Cincinnati, OH 45242
Tel: (513) 742-8895