ADVANTECH

Enabling an Intelligent Planet

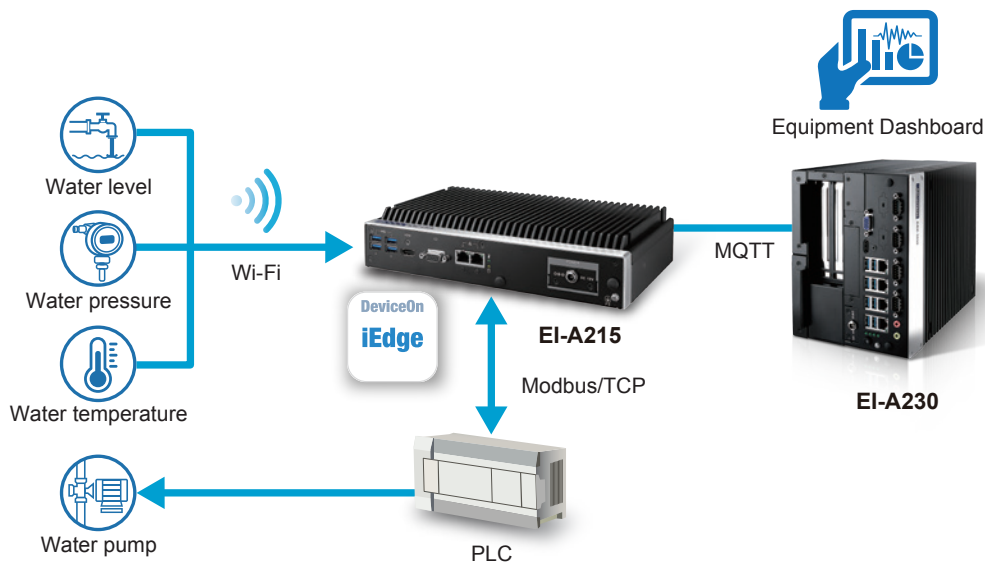# Edge⁺ Smart City
Success Story eBook

Region China

Real-time Monitoring Water Circulation Systems

Using IoT technology to simulate and optimize collected information helps the energy industry monitor, diagnose, and augment water circulation systems and heat exchange equipment. In addition, it provides real-time operation optimization and adjustment, enables the scientific management of circulating water, rations water use, and reduces fouling rates.

Benefits:

• Reduce human errors and increase efficiency with integrated monitoring system
• Supports multiple communication protocols, data collection, and dashboard visualization
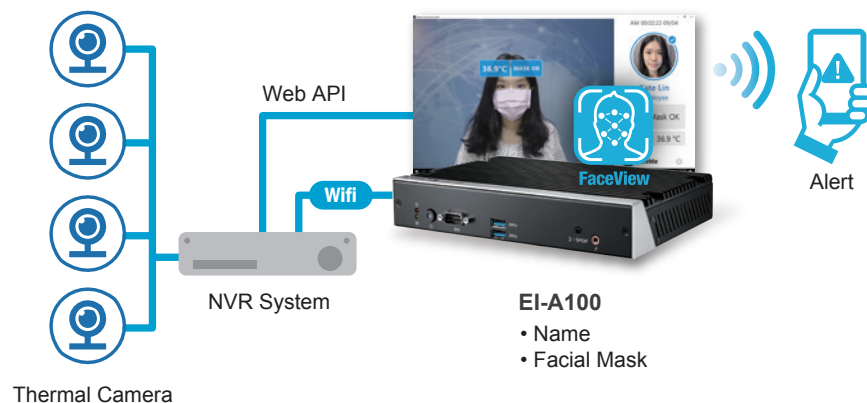• Real-time remote monitoring and control for equipment at the edge

AI Facial Recognition for School Pandemic Prevention and Containment

A Taiwanese system integrator specialized in school IT and surveillance system integration was developing AI-based epidemic prevention systems. Advantech Ei-A100 worked reliably to detect body temperatures and mask wearing. Following installation, the system was capable of sending the names of students with high body temperatures or without face masks to school staff using LINE push notifications. Advantech helped this SI overcome budgetary and technical challenges — creating a total AI-based facial recognition and thermal imaging solution for schools in Taiwan.

Benefits:
• AI engine with 99.8% accuracy rate
• Built-in APIs quickly integrate with school management systems, student information databases, and LINE push notification systems
• High visual recognition performance via 2 x Intel® Movidius™ VPUs

Web API

Wifi

FaceView

Alert
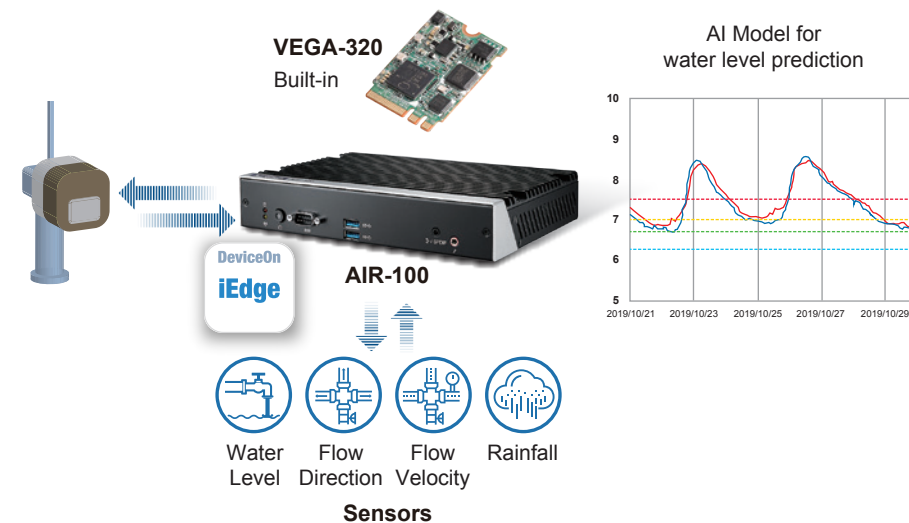
NVR System

EI-A100
• Name
• Facial Mask

Thermal Camera

Efficient Remote Control and Monitor Water Gates

Sluise gates in Nogata City, Fukuoka Prefecture, used to require workers to open them manually. This city decided to introduce AI technology that remotely controls water gates, improving efficiency and reducing labor costs. Advantech cooperates with SI to monitor water level changes and control gates using DeviceOn/iEdge. Advantech's AIR-100 uses AI computing to record water velocity and flow direction. This helps avoid flooding and other disasters.

Benefits:
- Fully integrated system collects and analyzes sensor information and creates dashboard
- Make informed water level predictions and smart control water gates using AI models
- Built-in Intel® Movidius™ Myriad™ X MA2485 VPU up to 4 TOPS
- Reduce human resources requirements

VEGA-320 Built-in

AI Model for water level prediction

DeviceOn iEdge

AIR-100

Water Level · Flow Direction · Flow Velocity · Rainfall
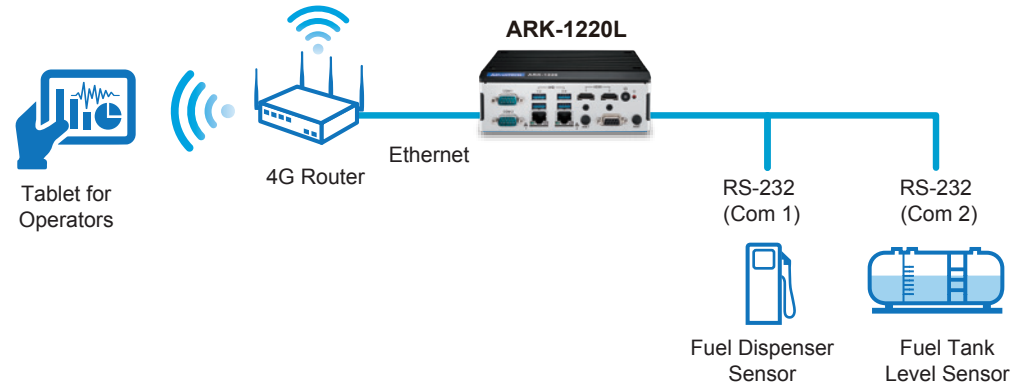
Sensors

Remote Fuel Monitoring for Microsite Fuel Stations

Indonesia is the largest motor vehicle market in Southeast Asia. Therefore providing fuel stations across the country — including remote areas — is crucial. Advantech's customer adopted the ARK-1220L solution in their container fuel station. The ARK-1220L controller collects fuel storage and consumption data from the site and sends it to a central office. This enables the fuel service company to optimize deliveries and use detailed visualization tools.

Benefits:
• Small footprint with DIN-rail mount for easy installation into cabinets with limited space
• Essential I/O for the connecting to various devices
• Compatibility with wireless modules to send data over internet

ARK-1220L

Tablet for Operators

4G Router

Ethernet

RS-232 (Com 1)

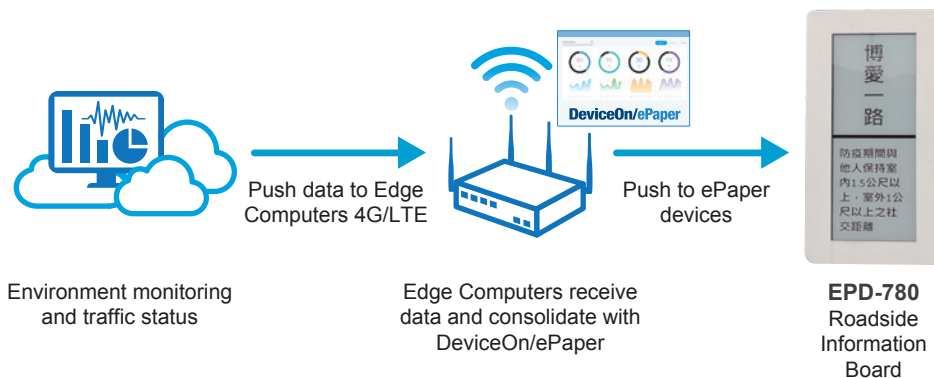RS-232 (Com 2)

Fuel Dispenser Sensor

Fuel Tank Level Sensor

Environmentally Friendly, Ultra Low-power Roadside Information Board

Advantech's wireless 26" ePaper solution has joined a selection of smart lighting applications in Kaohsiung, Taiwan. These innovative large format ePaper displays simultaneously convey traffic information and government announcements. Advantech's signage panels are installed in public spaces where they display emergency/public service announcements and directions. These excellent solutions are capable of performing in bright daylight without using extra power.

Benefits:
• Easy cable-free installation
• Sunlight readable capabilities for outdoor applications
• Supports IEEE 802.11 ac/b/g/n, LTE Cat.1 and USB interfaces

Push data to Edge Computers 4G/LTE

Push to ePaper devices

DeviceOn/ePaper

Environment monitoring and traffic status

Edge Computers receive data and consolidate with DeviceOn/ePaper

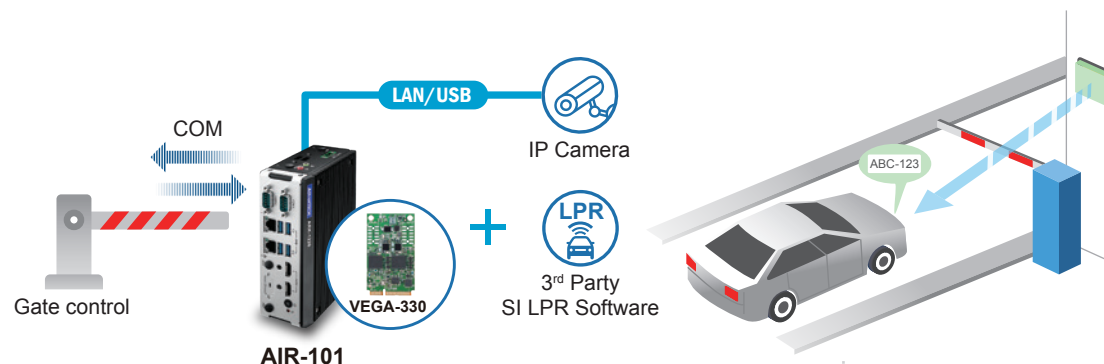**EPD-780**
Roadside Information Board

AI-driven License Plate Recognition Improves Parking Lot Operation

Traditional rule-based license plate recognition can fail due to obscure camera angles or weak ambient lighting. AI technology helps solve these problems. Advantech's AIR-101 AI system precisely scans and analyzes vehicle plates and provides automatic parking lot access. This system uses built-in Intel® Movidius™ VPUs and AI algorithms provided by our ISV partner. These quickly conduct accurate license plate recognition that improves parking experiences and lot efficiency.

Benefits:
• Intel Atom® CPU with two Intel® Movidius™ VPUs optimize computing workloads and saves costs
• Local 3rd party ISV vendor software cooperation
• Supports wide range power input and temperatures

Edge⁺ Solution High-lights

Edge Intelligence Software and Cloud

WISE-DeviceOn improves management, enables real-time remote access, and facilitates efficient operation. It leverages the Cloud and integrated domain-focused application software

AI Software and Inference

Empower AI at the edge and realize real-time intelligence in AGV/drones, defect inspection, traffic monitoring, and medical imaging applications

Wireless Connectivity

Wi-Fi 6
5G

Demystify AIoT and leverage 5G/Wi-Fi 6 to enjoy faster speeds, millisecond latency, and reduced network congestion

---

Regional Service and Customization Centers

| China | Kunshan 86-512-5777-5666 | Taiwan | Taipei 886-2-2792-7818 | Netherlands | Eindhoven 31-40-267-7000 | Poland | Warsaw 00800-2426-8080 | USA | Milpitas, CA 1-408-519-3898 |

Worldwide Offices

Asia Pacific

Taiwan
Toll Free	0800-777-111
Taipei & IoT Campus	886-2-2792-7818
Taichung	886-4-2372-5058
Kaohsiung	886-7-392-3600

China
Toll Free	800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118

Middle East and Africa
Israel	072-2410527
Turkey	90-212-222-0422
Turkey-Bursa	90-224-413-3134

Asia Pacific

Japan
Toll Free	0800-500-1055
Tokyo	81-3-6802-1021
Osaka	81-6-6267-1887
Nagoya	81-0800-500-1055
Nogata	81-949-22-2890

Korea
| Toll Free | 080-363-9494/5 |
| Seoul | 82-2-3660-9255 |

Singapore
| Singapore | 65-6442-1000 |

Malaysia
| Kuala Lumpur | 60-3-7725-4188 |
| Penang | 60-4-537-9188 |

Thailand
| Bangkok | 66-02-2488306-9 |

Vietnam
| Hanoi | 84-24-3399-1155 |
| Hochiminh | 84-28-3836-5856 |

Indonesia
| Jakarta | 62-21-751-1939 |

Australia
| Toll Free | 1300-308-531 |
| Melbourne | 61-3-9797-0100 |

India
| Bangalore | 91-94-4839-7300 |
| Pune | 91-94-2260-2349 |

Europe

Netherlands
| Eindhoven | 31-40-267-7000 |
| Breda | 31-76-523-3100 |

Germany
Toll Free	00800-2426-8080/81
Munich	49-89-12599-0
Düsseldorf	49-2103-97-855-0

France
| Paris | 33-1-4119-4666 |

Italy
| Milan | 39-02-9544-961 |

UK
| Newcastle | 44-0-191-262-4844 |
| London | 44-0-870-493-1433 |

Spain
| Madrid | 34-91-668-86-76 |

Sweden
| Stockholm | 46-0-864-60-500 |

Poland
| Warsaw | 48-22-31-51-100 |

Russia
Moscow	8-800-555-01-50
St. Petersburg	8-812-332-57-27
	8-921-575-13-59

Czech Republic
| Ústí nad Orlicí | 420-465-524-421 |

Ireland
| Galway | 353-91-792444 |

Americas

North America
Toll Free	1-888-576-9668
Cincinnati	1-513-742-8895
Milpitas	1-408-519-3898
Irvine	1-949-420-2500
Ottawa	1-815-433-5100
Chicago	1-888-576-9668

Brazil
| Toll Free | 0800-770-5355 |
| São Paulo | 55-11-5592-5367 |

Mexico
| Toll Free | 1-800-467-2415 |
| Mexico City | 52-55-6275-2777 |