ARROW

(intel®)

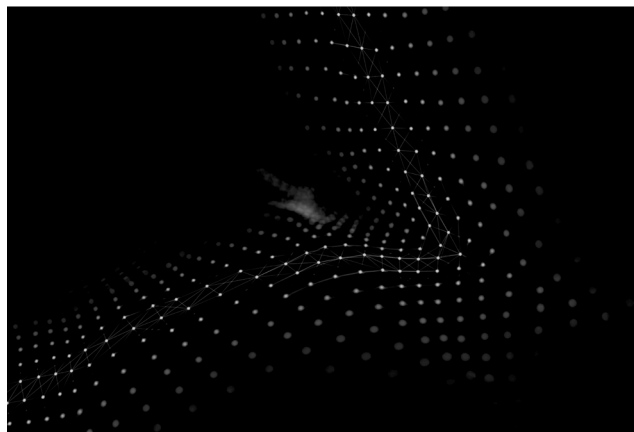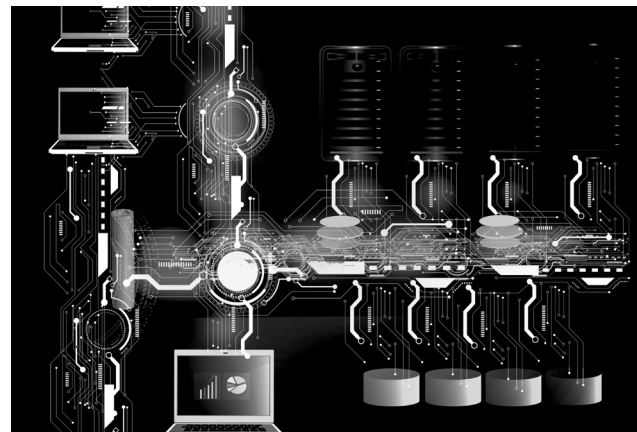## IoT Solutions Sales Guide

Five Years Out

Five Years Out

With Intel® & Arrow as Solution Providers, Customers can...

> Build secure and scalable solutions spanning from edge to the cloud

> Leverage solutions from a rich partner ecosystem for quick deployment

> Achieve easy inter-operability with standards-based implementation

> Reuse software and IP across multiple platforms

> Achieve fast time to market with solutions and platforms targeted at end-markets

> Innovate and adapt quickly to meet market needs

Market Ready Solutions

Intelligent Gateways

Solutions targeted at retail, industrial, security, building management, and digital signage applications are featured.

Editorial

Dear Arrow Colleagues,

The Intel® and the Arrow IoT team are pleased to release the Q1'20 Intel® IoT solutions guide. The guide offers a consolidated view of Intel® and Arrow's approach to the IoT market. In addition, the guide highlights Intel's advantages and showcases the key solutions/partnerships that make deployment of connected solutions easy.

Solutions targeted at retail, industrial, security, building management, and digital signage applications are featured. These solutions integrate all aspects of the IoT stack – from sensor end-points, Intel®-based edge compute modules, connectivity to cloud platforms that offer data-driven insights and easy integration with 3rd party applications.

As you make use of the guide and seek clarifications, please reach out to me or your local IoT BDMs. We would be particularly delighted to assist you with any customer opportunities.

Best Regards.

Roland Ducote
Marketing Director
Arrow Global IoT Team
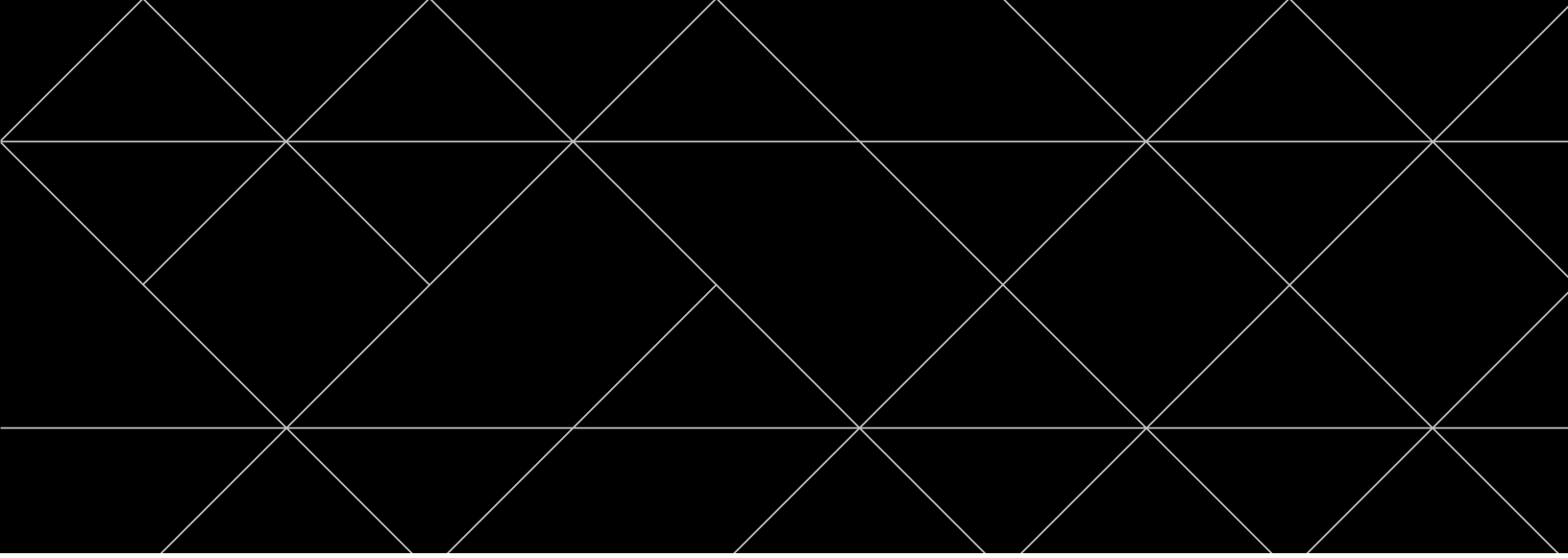
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Table of Contents

IoT Intel® and Arrow Value Proposition
Target Markets

Cities
- Traffic Management
- Smart Lighting
- Energy Management
- Building Auto/Facilities Management
- Public Safety

Industry
- Process Control
- Asset Tracking
- Automation/Precision Motor Control
- Predictive Maintenance

Retail
- POS & Signage
- Smart Kitchen/Forecasting
- Monitoring/Inventory

Environmental
- Remote Monitoring
- Waste Management
- Occupational/Safety

Medical
- Medical Devices
- Medical Equipment Tracking
- Sanitization

Transportation
- Municipalities
- Intelligent Transportation
- Telematics

Agriculture
- Animal Health
- Water Management
- Crop Yield

IoT Spectrum of Needs

Applications
Custom Application Development
Plug and Play Customer Use Cases
Integrating Current Business
Applications

Data Management
Integrating Multiple Data Sources
Handling High Velocity Data Streams
Data Integrity, Formatting, and Verification

Infrastructure
Public, Private or Hybrid Clouds
Geographic Availability
Networking

Security
Authentication
Encryption
Monitoring

Edge Process Control
Local Connectivity
Power Consumption
Fault Recovery
Self Organization

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IoT Elements and Target Audience

Original Equipment Manufacturer/ Original Design Manufacturer

Systems Integrator, Independent Software Vendor, VARs, and Service Providers

End Users

Sensing Nodes → Edge Processing → Backhaul Network → Cloud & Management Platform → Data Analytics → 3rd Party Integrations → Managed Services → User Applications

Winning Criteria

> Legacy compatibility
> Software and IP reuse
> Build vs. buy trade-offs
> Proof-of-concept development
> Ecosystem for quick and easy product development

Winning Criteria

> Breadth of offerings
> Device-to-cloud services
> Vertical market expertise
> Proof of concept development
> Geographic availability and scale
> Strength of services' offering

Winning Criteria

> Ease of deployment at scale
> Ongoing management
> Success stories
> One-stop-shop providers for easy vendor management
> Services and skill

Key Deliverables/ Key Concerns

> Extend legacy technologies
> Optimize connectivity, performance, and security
> Future-proof
> Reduce cost & development time
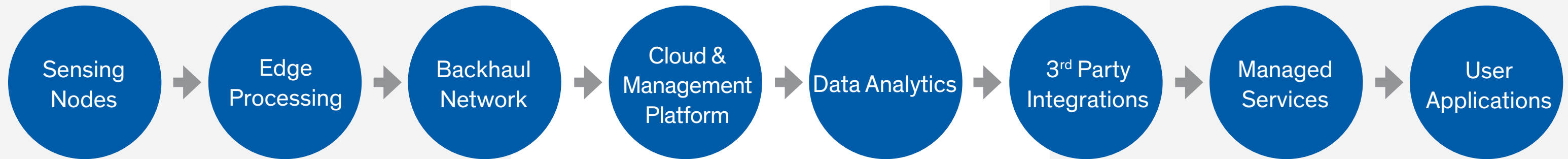> Adopt standards-based approach
> Acquire new skills

> Leverage cloud for data and process integration
> Adopt an API-First approach
> Manage communication and network requirements
> Develop hardware-agnostic approach
> Focus on applications
> Build vertical market expertise
> Manage security

> Adopt new business models
> Monetize actionable data insights
> Manage complexity and heterogeneity
> Scale and adapt rapidly
> Ease of use

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Intel® Unique Value Proposition for IoT

1. Scalable Technology

> Scalable architecture from edge gateway to the cloud
> Software, IP and tool reuse across applications
> Tight integration of hardware and software security capabilities

> Advanced insights from edge to the cloud including AI and machine learning
> Technology leadership for IoT standards bodies, industry consortia, and policymakers

From Edge Gateway to the Cloud

Intel® Atom Processors

Applications
1. Industrial controllers
2. Robotics
3. Gateways
4. Medical equipment
5. High-performing and low-power/mobile applications

Intel® Core Processors
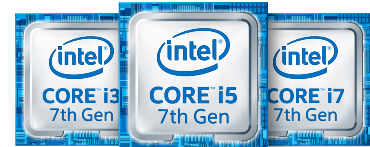
Applications
1. Digital signage
2. Media servers
3. Video surveillance
4. Medical equipment
5. Driver assistance technology
6. Deep learning

Intel® Xeon Processors

Applications
1. Cloud & data centers
2. Autonomous vehicles
3. Medical diagnostics
4. Machine learning
5. High-performance computing applications

Common platform - software, IP, tools, and development processes

2. Robust Community

> Broadest ecosystem with hardware, software, and solution providers
> Reduced risk with over 6000+ solutions from 500+ providers

> Easy interoperability with standards-based implementation
> Hardware-agnostic solutions for easy scale and upgradability

| Sensing Node Providers | Gateway Vendors | Cloud and Platform Providers | Service Providers | Security Solution Providers & Experts |

3. Accelerated ROI with Market Ready Solutions

> Retail
> Building automation
> Digital signage
> Security and surveillance

> Environmental monitoring
> Machine conditioning monitoring
> Compliance management
> Industrial-safety

4. Intel AI Solutions

Combination of hardware, software, and frameworks optimized for maximum performance

> **Hardware:** Intel® Xeon® Scalable Processors, Intel® FPGAs, Intel® Movidius™ Vision Processing Units (VPUs), and Intel® Nervana™ NNP
> **Tools:** Development and deployment kits,

OpenVINO™ Toolkit Deploy across Intel® CPU, GPU, VPU, FPGA
> **Software:** Libraries, SDKs, sample code

Intel AI Vision Portfolio

End Point
IoT Sensors
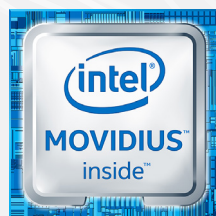
Vision & Inference

Edge
Gateways

Intel® Vision Accelerators
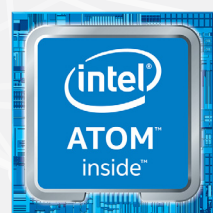
Basic Inference, Media & Vision

Video Storage, Analytics, DL Servers
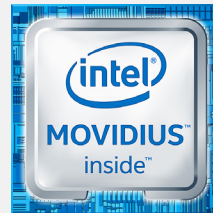
Best Efficiency, Lowest Power Mid/ Small Memory Footprint

High Perf, Large Memory Custom/New HW Architecture

OpenVINO™ Toolkit

Deploy across Intel® CPU, GPU, VPU, FPGA; Leverage common algorithms

Data Center
Servers & Appliances

NNP-L / NNP-I Most Intensive Use Cases

Most Use Cases

Flexible & Memory Bandwidth-Bound Use Cases

OpenVINO Drives AI Scale and Value at the Edge

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Arrow and Intel® IoT Offerings

Market Ready Solutions

Benefits

- Commercially deployable
- Demonstrate clear and measurable ROI
- Include all edge-to-cloud components - sensors, edge hardware, software, cloud, and analytics
- Scalable, repeatable, end-to-end solutions that are currently available in the market

- Ideal for quick proof-of-concept
- Hardware, software, and support bundled with the kit
- Scalable and repeatable
- Solve a class of market problems that have been deployed and tested in the field

Solutions

- Building Management
- Responsive Retail
- Portable Security
- Transportation
- Predictive Maintenance
- Surveillance and Public safety
- Connected Fleet
- Energy Management
- Operational Insights
- Connected Logistics
- Digital Signage
- eMenu Platform
- Healthcare
- Machine Condition Monitoring
- Smart Camera Systems
- Store Traffic Analysis
- Surveillance

Intelligent Gateway Partners

Benefits

- High-performing edge compute hardware for near real-time insights
- Wide OS and ecosystem support for quick deployment
- Scalable and secure architecture

Solutions

- Industrial
- Transportation
- Retail
- Building Management
- Smart Cities

Market Ready Solutions

Scalable, Repeatable, and End-to-End Solutions

HARDENED
- Commercially deployed
- Market tested
- Proven

SUPPORTED
- Training
- Marketing
- Technical support
- Product roadmap

SCALABLE
- Globally available
- Marketing campaign execution
- Deployment capability

ADLINK MCM-100: Machine Condition Monitoring Edge

NA GC: √   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
NA ECS: √   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

ADLINK Technology offers leading edge solutions to drive data-to-decision applications across industries. They offer building blocks and both generic and market-specific Internet of Things (IoT) platforms to serve the automation, communications, healthcare, transportation, and defense/government verticals.

With the Intel® Atom® E3950 Processor

ADLINK's MCM-100 ultra-compact machine condition monitoring edge platform was built for data acquisition and vibration measurement applications, delivering 24-hour vibration monitoring for rotating machinery and equipment. By integrating data collection, vibration analysis algorithms, computation, and network connection tasking in a single system, the MCM-100 enables preventive maintenance of rotating machinery, tooling, and plant and automation equipment. MCM-100 setup and configuration are fast and simple.

With the optional Phoenix GM Lite vibration monitoring software (built-in ISO 10816 vibration severity standards), and simple-to-install magnetic mounted accelerometer and cable, the MCM-100 allows users trouble-free access to vibration monitoring on any rotary device. The Condition Monitoring Platform provides data to enable these business strategies and thus reduces loss from unexpected anomalies in rotating equipment applications.

Benefits of the Solution

> Easy to set up and ready-to-go
> Real-time monitoring
> Intelligent predictive maintenance
> Reduces breakdown and downtime
> Lowers maintenance costs

Target Customer Base

> SIs, ISVs and MSPs serving industrial and factory markets
> Factories
> Oil & Gas
> Power generation
> Metals & Mining
> Automotive
> A&D, Marine
> Food & Beverages

Solution Features

MCM-100 is Intel® Atom® x7-E3950 processor-based and has four-channels with 24-bit high-resolution analog input.

Key features of the MCM-100 include:

> Built-in 4CH, 24-bit simultaneous sampling analog inputs, up to 128kS/s
> 4GB RAM, 128G mSATA SSD
> Wireless connectivity: Wi-Fi®/ 4G LTE (optional)
> Wired connectivity: 2× USB 2.0, 2× USB 3.0, 2× GbE, 2× COM ports
> Supports IEPE 2mA excitation current output on each analog input to drive accelerometer
> Full aluminium alloy enclosure for reliable operation in harsh environments
> Phoenix GM Lite machine condition monitoring software (optional)
> PCB 603C01 vibration sensor accelerometer (optional)
> Starter kit available for quick prototyping

Rotary Machine Condition Monitoring Starter Kit

A ready-to-go starter kit for the Condition Monitoring Platform comes with all the elements required to set up and test the functionality of the Condition Monitoring Platform, including sensors and software.

Resources/Info

ADLINK MCM-100

• Product brief

• Training presentation

ADLINK MCM-100 with Micorsoft Azure IoT Central

• Product brief

• Training presentation

Azure IoT Central- Microsoft Azure IoT Central connects, monitors, and manages the deployed MCM-100 assets, simplifying the overall management. It delivers real-time data analytics to unlock the valuable information needed to keep motors running. The starter kit comes with a trial version of the Microsoft Azure account.

For Part Numbers and Ordering Information see Appendix

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ADLINK NEON Series: Smart Camera

NA GC: √   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
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ADLINK Technology offers leading edge solutions to drive data-to-decision applications across industries. They offer building blocks and both generic and market-specific Internet of Things (IoT) platforms to serve the automation, communications, healthcare, transportation, and defense/government verticals.

Ready-to-Go, High-Performing and Ruggedized Solutions with Built-in FPGA and GPU Co-Processors

Machine vision capabilities are being widely adopted for automatic inspection in industrial production environments, for improved quality, reliability, stability, consistency, and efficiency over conventional visual inspection by operators. ADLINK's new generation x86 NEON Smart Camera product portfolio features 4MP 60fps global shutter sensor and the Intel® Atom™ quad core 1.9 GHz processor, featuring minimal footprint and rugged IP67-rated construction. The quad core CPU increases computing power and FPGA coprocessors and GPU deliver advanced image processing, both beyond the capabilities of conventional smart cameras. Rich software support and API compatibility enable easy migration from original x86 platforms, eliminating software and development language burdens across the platform, reducing time to market.

Resources/Info
- Product brief
- Training presentation

Benefits of the Solution
> Complete machine vision operability in a single solution
> High-speed and high-resolution imaging
> Vision and motion control
> Customization and system integration services
> Distortion free recording and image analysis

Target Customer Base
> SIs, ISVs and MSPs targeting the industrial/factory markets
> Process control/automation
> Security
> Robotics
> Medical
> Retail
> Automotive

NEON Series
Replaces PC + Camera + Cabling with Single Unit

Heat Sink

RS232
USB 2.0, VGA
GigE Port

DC Power   DI/O   Robot   camera   Hub   Mouse   USB dongle   Keyboard   Monitor

Solution Features

The NEON-1040/1021/1020 feature global shutter image sensors (sensor resolutions of 2MP and 4MP), and PWM lighting control support. Rugged construction with IP67-rated housing and M12 connectors enables the NEON Series to withstand the harshest industrial environments.

Key features include:
> Quad core Intel® Atom™ processors E3845 1.91GHz
> VGA output, max. 2048×1152 at 60 Hz
> Global shutter CMOS sensors available
> 4MP 60 fps (NEON-1040), 2MP 120 fps (NEON-1020) and 2MP 60 fps (NEON-1021) resolution
> 4 GB DDR3L RAM, 16 GB and 32 GB SSD Storage
> IP67-rated housing and M12 connectors
> Additional GigE Vision 1 slave camera support
> GeniCam, GenTL, and Open CV compatible with image acquisition
> Built-in PWM lighting control
> 4× digital input and 4× digital output and USB 2.0 and RS-232 ports
> Flexible software support with MVTec HALCON, MVTec MERLIC, COGNEX VisionPro, and many others
> Starter kits available for NEON-1020/1040 versions

MERLIC - Machine Vision Software without Programming

The NEON 1021-M Smart Camera is integrated with a powerful machine vision software—MERLIC.

Features of the MVTec MERLIC tool include:
> An all-in-one interface that does not require programming capability
> Image-centered user interface WYSIWYG (what-you-see-is-what-you-get)
> Easy selection of multiple objects to configure saves development time
> Easy implementation of machine vision algorithms via drag and drop
> Easy and flexible to customize user-defined tools

Products Specifications

Model Name	NEON-1021	NEON-1020	NEON-1040
Image Sensor	e2v EV76C570	CMOSIS CMV2000	CMOSIS CMV4000
Resolution	1600 × 1200	2048 × 1088	2048 × 2048
Pixel Size (μm)	4.5	5.5	
Frame Rate (fps)	60	120	60

* All parts setup in the system. Call for quote.

Advantech SRP-131: An Intelligent eMenu Solution

ADVANTECH

NA GC: √   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: √   APAC AGS: ✕

NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

As one of the leading intelligent solution providers, Advantech offers a portfolio of solution-ready and service-ready platforms to offer user-centric solutions that are flexible and scalable. The iRetail portfolio includes solutions for Digital Signage, eMenu Board, and Store Traffic analysis.

Boosting Sales with Dynamic and Appealing Content

Advantech's UShop SRP-131, Intelligent eMenu Board solution, allows users to easily promote services and products via real-time advertisements. Users can remotely edit and dispatch content to the eMenu Board system, which then disseminates the content to all chain restaurants. The system can be integrated with restaurant's POS data, users then can immediately update product price or promoted meals for limited periods.

Benefits of the Solution

> Real-time control over promotions and pricing
> Remote centralized management across multiple geographies
> Easy to configure and update
> Rich widgets with diverse templates

Target Customer Base

> SIs, ISVs and MSPs serving retailers in the food and beverage industry
> National and multinational restaurant chains or coffee houses

Resources/Info
- Product brief
- Training presentation

Solution Components

Advantech offers three options for board players—Lite (1-2 displays), Standard (1-4 displays) and Pro (up to 6 displays). eMenu server software can also be purchased and installed in self-owned servers for managing multi-client displays all at once.

eMenu Board Player Comparison

Features	Lite	Standard	Pro
P/N	UBX-310UDS1-G1E-C	DS-570UDS1-G1E-C	DS-980UDS1-G1E-C
CPU	Intel® Bay Trail J1900 2.4 GHz	Intel Bay Trail J1900 2.4 GHz	Intel Skylake i7-6700TE
RAM	4GB DDR3L 1333 MHz	4GB DDR3L 1333 MHz	8GB DDR4-2133 MHz
Graphic	Intel HD Graphics	NVIDIA GeForce GT 730M	Intel HD graphics 530 (+ NVIDIA®GeForce® GT 730M)
Numbers of Display Output	2 (HDMI, VGA)	4 (2 × HDMI, 1 × DP++, 1 × VGA)	6 (6 × HDMI)
Storage	SATA 2.5" HDD 500 GB	SATA 2.5" HDD 500 GB	SATA 2.5" HDD 500 GB
Power	12V DC-in	19V DC-in	12V DC-in 150W for top*
Size	245 × 45 × 185 mm	220 × 44.2 × 150 mm	190 × 250 × 88 mm
Weight	2.0 kg	1.7 kg	3.6 kg
Operating System	WES 7 Embedded	Win 10 IoT	
Software	UShop+ SignageCMS		

* Optional 12V DC-in 84W for bottom

UShop eMenu Server

UShop eMenu server is an easy-to-use menu central management system for restaurants menu management. It includes server system and virtual server (software only) that offers complete flexibility and control over displays and content.
> Server-Client architecture
> One server supports up to 500 clients
> Supports public or private cloud service
> Centralized content management in real-time

UShop eMenu Server

For Part Numbers and Ordering Information see Appendix

Advantech UShop SRP-130: Interactive Digital Signage

NA GC: √   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

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As one of the leading intelligent solution providers, Advantech offers a portfolio of solution-ready and service-ready platforms to offer user-centric solutions that are flexible and scalable. The iRetail portfolio includes solutions for Digital Signage, eMenu Board, and Store Traffic analysis.

Interactive Digital Signage Solution to Increase Shopper Engagement and Sales

Advantech's Interactive Digital Signage solution delivers dynamic multimedia content with rich graphics for an immersive viewing experience for consumers. The solution combines industrial grade digital signage players with UShop+ SignageCMS, a web-based content editing/publishing software and remote management. The user friendly interface of UShop+ SignageCMS allows easy editing and publishing of content to digital signage terminals around the world.

Resources/Info

• Product brief

• Training presentation

Benefits of the Solution

> Precise marketing to targeted consumers
> Convenient centralized management
> Easy to configure and update
> Rich widgets and media formats supported

Target Customer Base

> SIs, installers, service providers, ISVs and MSPs serving retail stores, transportation hubs, corporate offices, stadiums, exhibition halls, and public spaces
> Commercial property management companies

3rd Party Integration Capabilities

Using APIs, 3rd party devices like RFID devices, kinect motion sensors, facial recognition cameras, and air quality detection sensors can be easily integrated to create interactive experiences.

Solution Components

Interactive digital signage player consists of hardware UShop Signage Players with integrated OS (Microsoft Windows 7 Embedded or Windows 10 IoT) and UShop+ SignageCMS software.

Interactive Digital Signage Player Comparison

	Lite	Standard	Pro
P/N	UBX-310UDS1-G1E-C	DS-570UDS1-G1E-C	DS-980UDS1-G1E-C
CPU	Intel® Bay Trail J1900 2.4 GHz	Intel Bay Trail J1900 2.4 GHz	Intel Skylake i7-6700TE
RAM	4GB DDR3L 1333 MHz	4GB DDR3L 1333 MHz	8GB DDR4-2133 MHz
Graphic	Intel HD Graphics	NVIDIA GeForce GT 730M	Intel® HD graphics 530 (+ NVIDIA®GeForce® GT 730M)
Numbers of Display Output	2 (HDMI, VGA)	4 (2 × HDMI, 1 × DP++, 1 × VGA)	6 (6 × HDMI)
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Power	12V DC-in	19V DC-in	12V DC-in 150W for top*
Size	245 × 45 × 185 mm	220 × 44.2 × 150 mm	190 × 250 × 88 mm
Weight	2.0 kg	1.7 kg	3.6 kg
Operating System	WES 7 Embedded	Win 10 IoT	
Software	UShop+ SignageCMS		

* Optional 12V DC-in 84W for bottom

UShop+ SignageCMS Software

All UShop digital signage players come with the pre-installed UShop+ SignageCMS Software. This software is designed for simplifying network operations, providing cost-effective performance and delivering state-of-the-art content distribution solutions. Benefits of the software include:

> Web-Based digital signage Content Management System (CMS)
> Management clients up to 500 players
> Flexible to install into existing servers
> Easy access by any web browser
> Online editor, scheduling, and dispatch
> Remote device management

For Part Numbers and Ordering Information see Appendix

Advantech UShop: SRP-700 Store Traffic Analytics

ADVANTECH

NA GC: √   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
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Helps Retails Increase Sales Potential and Maximize Profit

Advantech's iRetail portfolio of user-centric platforms brings to retailers Digital Signage, eMenus and Store Traffic analysis. The UShop Solution Ready Platform is targeted at the retail industry for optimizing store operation management, increasing shopper engagement and driving business intelligence. Advantech's UShop SRP-700 Store Traffic Analytics solution has a flexible and scalable component model that allows combining optional hardware devices and software to create an all-in-one comprehensive cloud solution for store traffic analytics. Using the platform, retailers can easily evaluate sales potential and establish customer service and marketing strategies for maximizing profit.

Store Traffic Analytics
Install smart counting camera at the entrance to analyze the footfall

Wi-Fi Analyzer at Entrance
Detect and analyze store traffic and customer royalty

Solution Key Features

Store Traffic
> Integration of 2D and 3D video analysis technology with POS transaction data
> Customer traffic data analysis to determine consumer loyalty and purchasing habits
> Insights into sales/store performance during periods of high/low traffic

Business Outcomes
> Gain quantitative insight on efficacy of marketing campaigns
> Establish and modify marketing strategies based on analytics
> Optimize staff allocation based on traffics trends
> Increase returning rate and sales conversion rate

Smart Counting Sensors
> Low cost and easily installed counters equipped with human identification algorithm
> Over 95% accuracy for traffic patterns of 5000 people or less
> Shopper intent sensing by analyzing Wi-Fi® signal of shopper mobile devices

Benefits of the Solution
> Guaranteed accuracy even in high traffic areas
> Traffic and conversion measurement
> Cross-store performance benchmarking
> Streamline store layouts to match customer shopping patterns and needs
> Near real-time monitoring easy integration with 3rd-party software integration

Resources/Info
• Product brief
• Training presentation

Solution Components

Edge Computing Devices

UCAM 2D
> 2D single lens camera with human head identification algorithm
> Low cost and easy to install
> Accuracy guarantee
  - Traffic flow of 1,000 people per hour, ≥95%
  - Traffic flow of 3,000 people per hour, ≥90%
  - Traffic flow of 5,000 people per hour, ≥85%

UCAM 3D
> Stereo camera with 3D depth technology
> High average counting accuracy (95% - 98%)
> Immune to shadow and reflection issues
> Detection on U-turns avoid double counting
> Get object height, width and depth information
> Simple installation and maintenance

Wi-Fi® Analyzer
> Sense shopper intent based on analyzing Wi-Fi signal of shopper mobile device within 5-15 meters
> No Wi-Fi connection needed and no APP installation needed

UShop+ Store BI Software Features

Management Center
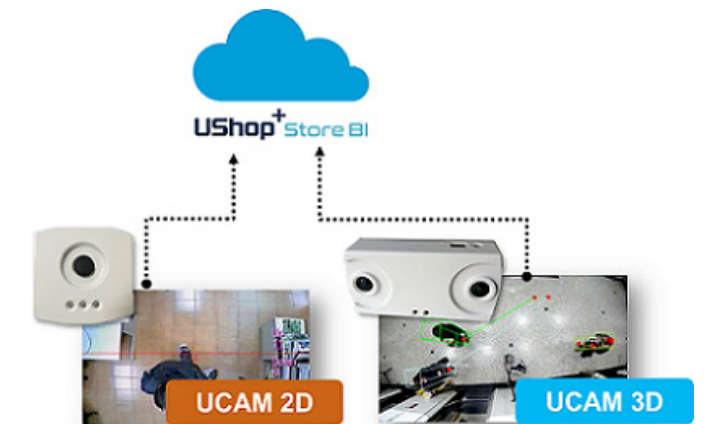> Store management
> User management
> Device management

BI Dashboard
> Statistic widget
> Data investigation
> User-defined dashboard
> Cross platform support
> Data security
> Third party software integration

Enterprise System Architecture
> Public and private cloud support
> Robust redundancy and auto backup

UShop+ Store BI
UCAM 2D   UCAM 3D

Arkessa Intelligent Building Controls for Asset, Facilities, and Energy Management

ARKESSA

NA GC: ✕   EMEA GC: √   APAC GC: ✕
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NA ECS: ✕   EMEA ECS: √   APAC ECS: ✕

✕: Not Available   √: Available

Buildings consume approximately 40% of the world's energy. Monitoring, analyzing, and adapting the ways in which cities and buildings are utilized can save energy and reduce costs. Smart Building solutions offer a chance to reduce total Heating, Ventilating, and Air Conditioning (HVAC) costs by 25% or more. The Arkessa Building Control and Asset Management solution works by acquiring sensor data, analyzing it, and providing actionable insights to drive efficiency, productivity, and cost savings. It leverages a unique set of capabilities to address common challenges in provisioning, connecting, and remotely monitoring of devices and controllers in a simple and secure manner. Businesses can adapt assets and workflows in a dynamic workspace and connect devices remotely to existing infrastructure. The solution automates building and facility management using environmental and occupancy sensors, that provide real-time data on air quality, ambient temperature, occupancy levels, etc. and trigger actions when thresholds are reached. Predictive analytics and anomaly detection can be performed on live and historical data to monitor equipment usage patterns and operational downtime thus driving efficiency.

Arkessa's Building Control and Asset Management solution, powered by Intel®, enables users to create safer, more energy efficient, higher performing buildings through better automation, compliance, and management

Benefits of the Solution

> Normalizes all device data into standardized objects to ensure interoperability between all devices
> The IAConnects edge gateway and wireless sensor devices provisioned and controlled via a 3G/4G managed cellular data service
> Cellular enables faster deployment and independently of IT/OT networks and contractual landscapes
> Global cellular connectivity supports a cloud-based fleet-management service for devices in the field

Use Cases

> Offices
> Airports and Hospitals
> Warehouses
> Manufacturing

Resources/Info

• Product brief

• Training presentation

How It Works

Arkessa's mobile data-enabled (3G/4G) advanced Building Control Systems can be quickly provisioned and deployed into offices, airports & hospitals, warehouses, and manufacturing sites. The solution provides ready access to devices deployed on-site enabling building operators, facilities managers, and insurance companies, to optimize building and asset utilization.
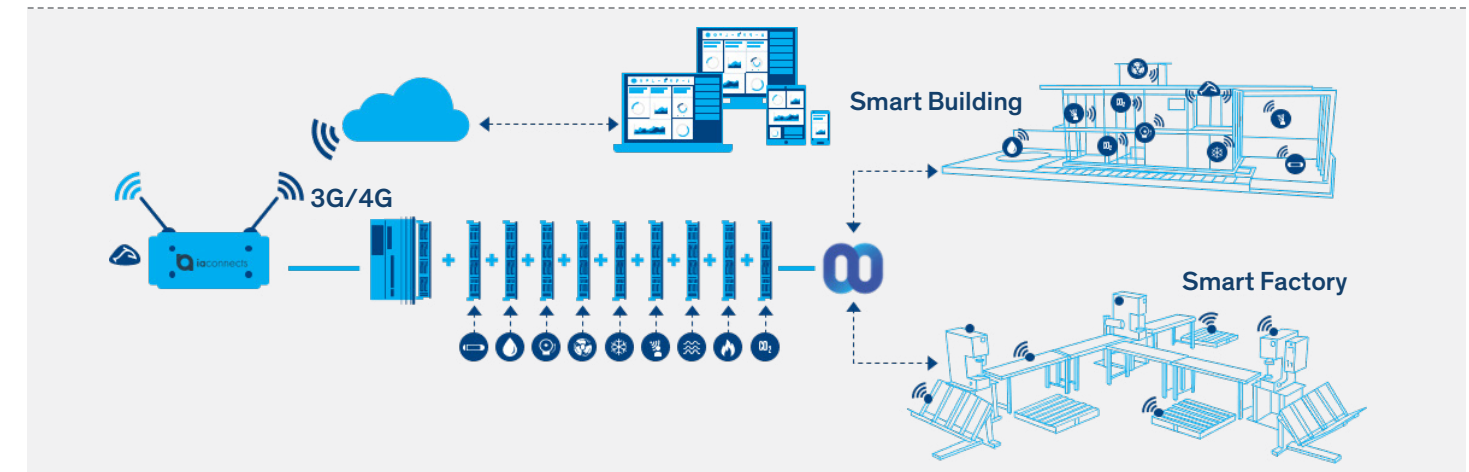
Solution Components

Businesses can quickly deploy and evaluate the solution using the Demo Case and then scale based on requirements. The Demo Case includes:

Arkessa

> IAConnects gateway
> Global 3G/4G modem with bundled cellular data allowance
> EnOcean low-energy wireless sensors (Door & window sensor, motion sensor, desk occupancy sensor, water sensor, light switch, temperature & humidity sensor) and Wi-Fi® air quality sensor.

> Other Controllers (e.g. Beckhoff industrial controllers) and sensor networking or device types can be supported
> Compatibility with IBM Watson, Microsoft Azure, and AWS
> Data visualization and management portal
> TLS security and easy to use set up software
> MobiusFlow™ object bus technology

Intel

> Intel® Celeron® processor N3350/N4200

Demo Case

A cellular networking solution enables 3rd party providers to deploy and connect quickly and securely while avoiding the constraints often found with IT or OT security or operational considerations.

For Part Numbers and Ordering Information see Appendix

Create Safer, More Energy Efficient, and Higher Performance Buildings Through

Automation
by removing reliance on manual inspections, data collection, and data entry

Process Compliance
with industry best practices and adherence to stringent health and safety policies

Streamline Management
using secure, remote access to assets, and workflows from anywhere at anytime

Arrow Energy Monitoring Kit

NA GC: √   EMEA GC: √   APAC GC: √
NA AGS: √   EMEA AGS: √   APAC AGS: √
NA ECS: √   EMEA ECS: √   APAC ECS: √

✕: Not Available   √: Available

A global provider of products, services, and solutions, Arrow aggregates electronic components and enterprise computing solutions for customers and suppliers in industrial and commercial markets. The company maintains a network of more than 349 locations serving over 80 countries.

The new Energy Monitoring Kit from Arrow Electronics collects, analyzes, visualizes, and ultimately manages energy consumption to optimize facility operations. The kit incorporates Microsoft's Azure cloud analytics, a data ingestion engine, Dell's edge gateways, and Dent Instruments current aggregation technologies to deliver meaningful energy consumption insights to any facility. By combining state-of-the-art hardware and software components to collect consumption data from sensors and integrating with cloud applications, the solution consolidates information on energy consumption and energy demand and helps managers take proactive actions to plan demand, avoid waste and reduce costs.

Resources/Info

• Product brief

• Training presentation

Benefits of the Solution

> Simple cloud-based Energy Monitoring that aggregates disparate data collection into one integrated metering system
> Capture and aggregate energy data quickly and seamlessly by rapidly consolidating data flows and managing data securely in the cloud
> Reduce energy consumption and costs by identifying waste and balancing workloads; monitoring equipment health and anticipating maintenance needs
> Easily integrate into Building Management Systems (BMS) ecosystem – Through pre-built integration to drive greater efficiencies
> Meet compliance and sustainability goals by obtaining insights into environmental impacts and quantitative information to educate stakeholders on energy usage

Target Customer Base

Large commercial and industrial spaces that incur significant energy costs. These include:
> Manufacturing facilities
> Commercial buildings
> Retail stores
> Public buildings

Energy Monitoring Kit Solution Components

Edge connectivity	Data aggregation	Gateway interface	Powerful cloud	Turnkey analytics
Multiple sensors at the edge provide granulized measurements of electrical demand and consumption	Dent Instruments technology aggregates voltage, current, power factor, energy, and other data; supports Modbus and BACnet protocols	A Windows 10 IoT edge gateway ingests sensor data and interfaces with the cloud	Microsoft Azure IoT Hub connects, monitors, authenticates and automates data transmission in the ecosystem	Customized templates deliver actionable insights and help visualize data via Power BI—ultimately triggering actions to optimize energy use

Microsoft Azure Services – The IoT backbone

> **The Azure IoT Hub** connects, monitors, authenticates, and automates gateways and sensors
> **Stream Analytics** aggregates energy consumption data in near real-time
> **Azure Functions** accelerates development with an event-driven, serverless compute experience that scales on demand and can connect with a variety of services (such as Dynamics 365)
> **Azure Cosmos DB** drives historical data analysis
> **Power BI** visualizes energy consumption data
> **Dynamics 365** presents a comprehensive view of all operations

Energy efficiencies are critical in the buildings sector

55%
of global electricity demand is attributed to the global buildings sector

30%
of energy used in commercial buildings is wasted

88%
of organizations cite the need to improve how they collate and report energy data

Table of Contents

IEI Ruggedized QTS Gateway for Surveillance

NA GC: ✕   EMEA GC: ✕   APAC GC: √
NA AGS: ✕   EMEA AGS: ✕   APAC AGS: ✕
NA ECS: √   EMEA ECS: √   APAC ECS: ✕

✕: Not Available   √: Available

IEI is a leading industrial computer provider in application areas such as factory automation, computer telephony integration, network appliances, security, systems and IoT in the fields of national defense, police administration, transportation, communication base stations, and medical instruments.

Ideal Network Surveillance Solution to Safeguard Assets and Property

With surveillance becoming common place in private and public spaces, the need for high performing surveillance systems is increasing significantly. However, surveillance applications are usually just one of the many applications on a Network Attached Storage (NAS) device. The lack of dedicated storage for surveillance recordings affords limited system performance. IEI, Intel® and QNAP together have developed a new solution that dramatically increases system performance and delivers professional quality surveillance feature sets for a variety of common applications.

Using this comprehensive surveillance solution that includes QVR Pro application software, QNAP QTS operating system and IEI's Tank 870, stakeholders can quickly build a hosted surveillance environment with no additional components. Businesses can easily expand the number of monitoring channels (up to 128 channels) by adding application licenses and rapidly deploy large-scale surveillance networks. Since independent storage space is utilized for recordings on the QNAP NAS, surveillance videos can be safely stored for on-demand playback and can be leveraged for expansion.

Hardware
> IEI TANK* 870-Q170
> Power cable
> Wi-Fi® with antenna

Operating System
> QNAP QTS operating system

Surveillance Application Software
> QVR Pro

Benefits of the Solution

> Centralized, flexible and scalable surveillance system
> Dedicated storage for surveillance recordings with required performance
> Scope for storage/hardware expansion
> Applications support live view, instant playback, e-mapping
> Comprehensive hardware and software offering to minimize deployment time

Use Cases

> Workplace monitoring
> Banking & financial environments
> Healthcare & hospital locations
> Military applications
> Public transport
> City & government buildings
> Retail stores & commercial spaces
> Gaming arenas & casinos

Resources/Info

• Product brief
• Training presentation

Solution Components

IEI TANK* 870-Q170

> Rugged fanless system built for tough environments
> 6th/7th Gen Intel Core™ processor platform with Intel Q170 chipset and DDR4 memory
> Dual independent display with high resolution support
> Rich high-speed I/O interfaces on one side for easy installation
> Great flexibility for hardware expansion

+

QTS Gateway

> Software-defined networking: Centralized, flexible and scalable to simplify network deployment
> Software-defined SSD awareness: Performance driven to cater to a variety of needs
> Advanced security and high performance
> Supports heterogeneous execution across various accelerators—CPU, GPU, Intel Movidius™ Neural Compute Stick, and FPGA—using a common API
> Speeds time to market via a library of functions and preoptimized kernels

+

QVR Pro

> Powerful camera management and support
> Flexible recording space management
> Support for live view, instant playback, dynamic layouts, region of interests and e-mapping
> Multiple notification and remote monitoring modes
> Fully open surveillance platform with provision for permissions and centralized management
> Open Event Platform API helps connect a wide range of IoT applications for easy securing sharing, and across the surveillance system

Arrow Confidential   Table of Contents   For Arrow Internal Purposes Only   arrow.com/iot | 1 855 326 4757

Intel®-Based IEI TANK AIoT Development Kit

NA GC: √   EMEA GC: ✕   APAC GC: √
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

IEI Integration Corp. is a leading provider of industrial computers for factory automation, computer telephony integration, networking appliances, security systems, and IoT applications.

Rapid Development & Fast Time-to-Market of Image Analysis Applications with the Intel OpenVINO™ Toolkit

Artificial intelligence is rapidly finding application in a variety of industrial and commercial applications. IEI Tank AIoT Development Kits are intended for rapid application developed and fast time to market. The development kit comes with a variety of pre-built training models to simulate and infer the status or appearance of objects recognized by cameras. These features can be applied in facial recognition systems and number plate reading systems as well as in industrial applications.
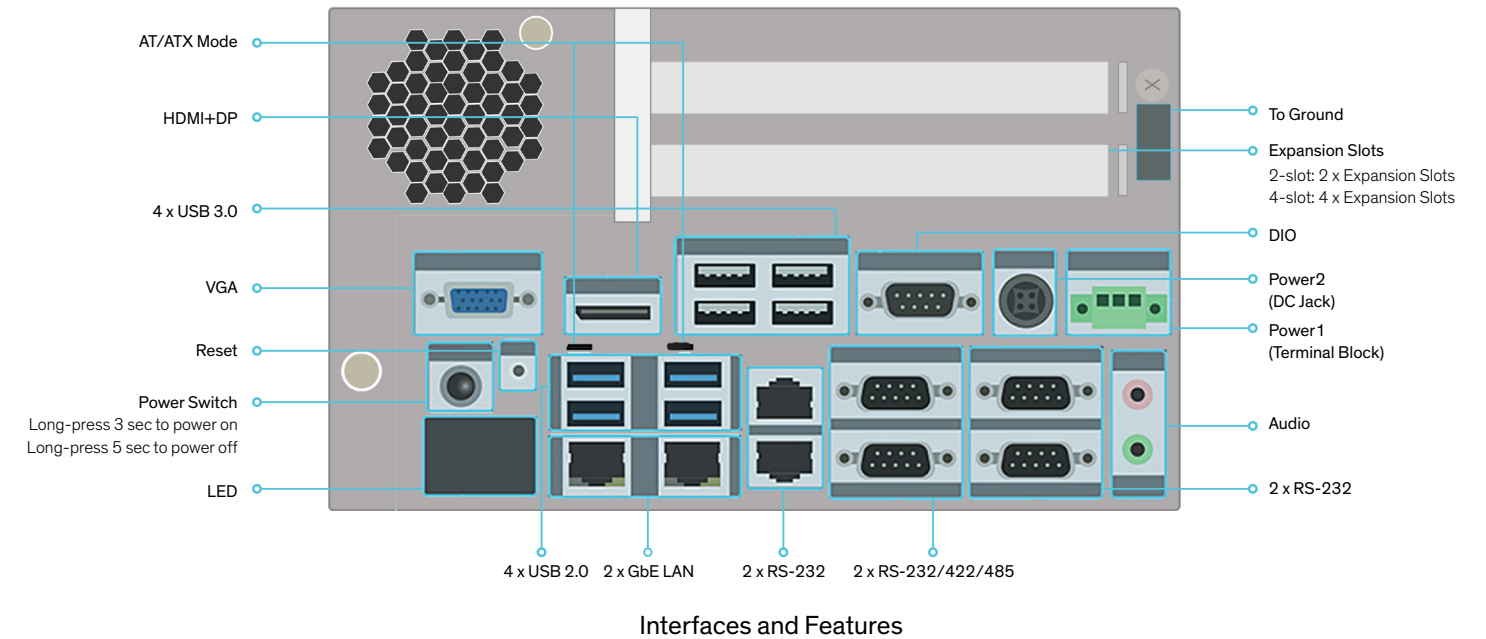
The AIoT Development Kit includes the IEI TANK System featuring rich I/O and dual PCIe by 16 slots with 8 signals for add-on card installations to enhance function and performance for various applications. It comes with Ubuntu 16.04 desktop operating system and long-term support, OpenVINO toolkit and Intel Media SDK are also included. Pre-installed software stack and other libraries are included along with out-of-the-box reference designs.

Applications

> AI inference systems
> Retail traffic analysis
> Access control & security
> Parking & road tolls
> Product quality control
> Regulatory & safety compliance

Resources/Info

• Product brief
• Training presentation

Kit Contents

Hardware
• IEI TANK 870-Q170
• Power cable
• Wi-Fi with antenna

Software & Documentation
• OpenVINO™ toolkit
• Intel® Media SDK
• Ubuntu* 16.04 desktop LTS
• Intel® System Studio 2018
• Quick start guide

Interfaces and Features

Labels: AT/ATX Mode, HDMI+DP, 4 x USB 3.0, VGA, Reset, Power Switch (Long-press 3 sec to power on, Long-press 5 sec to power off), LED, 4 x USB 2.0, 2 x GbE LAN, 2 x RS-232, 2 x RS-232/422/485, To Ground, Expansion Slots (2-slot: 2 x Expansion Slots, 4-slot: 4 x Expansion Slots), DIO, Power2 (DC Jack), Power1 (Terminal Block), Audio, 2 x RS-232

Key Hardware Features

> 6th/7th Gen Intel Core™ processor platform with Intel Q170 chipset, and DDR4 memory
> Dual independent display with high resolution support
> Rich high-speed I/O interfaces on one side for easy installation
> On-board internal power connector for providing power to add-on cards
> Great flexibility for hardware expansion
> High-speed HIROSE FXC8-60S-SV connector for MIPI CSI four lanes, MIPI DSI 2 lanes, MLB, GPIO, and other interfaces

Reference Designs Included

> Build a Store Aisle Monitor
> Develop a Motor Defect Detector
> Create a Facial Recognition Access Application

Software

Intel OpenVINO™ Toolkit
Enables convolutional neural network-based deep learning inference on the edge.
> Supports heterogeneous execution across various accelerators—CPU, GPU, Intel® Movidius™ Neural Compute Stick, and FPGA—using a common API
> Speeds time to market via a library of functions and preoptimized kernels

Intel Media SDK
> Speeds development of professional-grade video applications
> Cuts time-to-market with comprehensive API
> Quickly transition to new codecs

For Part Numbers and Ordering Information see Appendix

Intel® Connected Logistics Platform (Intel® CLP)

Microsoft **ARKESSA**

NA GC: ✕   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: √   APAC AGS: ✕
NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

The Intel® Connected Logistics Platform constituting gateways, smart sensors and cloud connected services, helps customers automate shipment tracking, and increase shipment visibility.

Scalable, Secure, Cost-Effective, and Intelligent IoT Solution

The power of IoT is delivering new business value in the logistics industry. Smart sensors attached to a variety of assets, aggregating gateways and cloud-based analytics are transforming hitherto opaque supply chains into dynamic flows that can adapt based on real-time information. The Intel® Connected Logistics Platform constituting gateways, smart sensors, and cloud-connected services, helps customers automate shipment tracking and increase shipment visibility (e.g. location, temperature, humidity, and mishandling) of high-value goods. Wireless sensors and a secure wireless cellular backhaul capability provided by Arkessa makes the solution easy to deploy and manage in both mobile and fixed warehouse environments. Cost savings can be substantial due to more efficient, transparent logistical flow, and asset tracking. From reducing waste to preventing damage, end customers benefit from higher customer service levels, overall better visibility into the supply chain, and greater predictability of their shipments. Shippers gain through lower costs of claims and effective cost avoidance mechanisms facilitated by the sensors.

Intel® CLP with Azure IoT Hub
The Intel® CLP is powered by Azure IoT Hub—an Azure IoT PaaS solution that connects, monitors, authenticates and automates shipment tracking thus improving supply chain efficiency

Intel® CLP with Arkessa Cellular Services
The Intel® CLP is offered with Arkessa cellular services enabling maximized mobility coverage and secure private networking making it easier to monitor remote or mobile assets

Coming Soon
Intel® CLP will be available on **Azure IoT Central**—a fully managed global IoT SaaS solution that is easy to configure with no programming required

Key Benefits for Logistics Operations

Competitive Advantage
> Get timely updates on package condition during transit
> Use better forecasting and real-time insights

Save on Shipping Costs
> Increase visibility across the logistics chain
> Reduce waste and accelerate customs clearances

Reduce Damage Claims
> Detect damaged goods early and proactively reduce theft
> Identify conditions leading to damaged goods using data analytics

Target Customer Base

> Sensitive Capital Equipment: Shock, tilt, and vibration
> Bio-Pharmaceuticals: Temperature, humidity, track & trace, and cold-chain monitoring
> High-Value Goods Transportation: Geo-fencing, tamper notification, and light sensitivity
> Trailer/Container Tracking: GPS location and condition

Resources/Info
Intel® CLP with Arkessa
• Product brief
• Training presentation

Intel® CLP with Microsoft
• Product brief
• Training presentation

Platform Components and Features
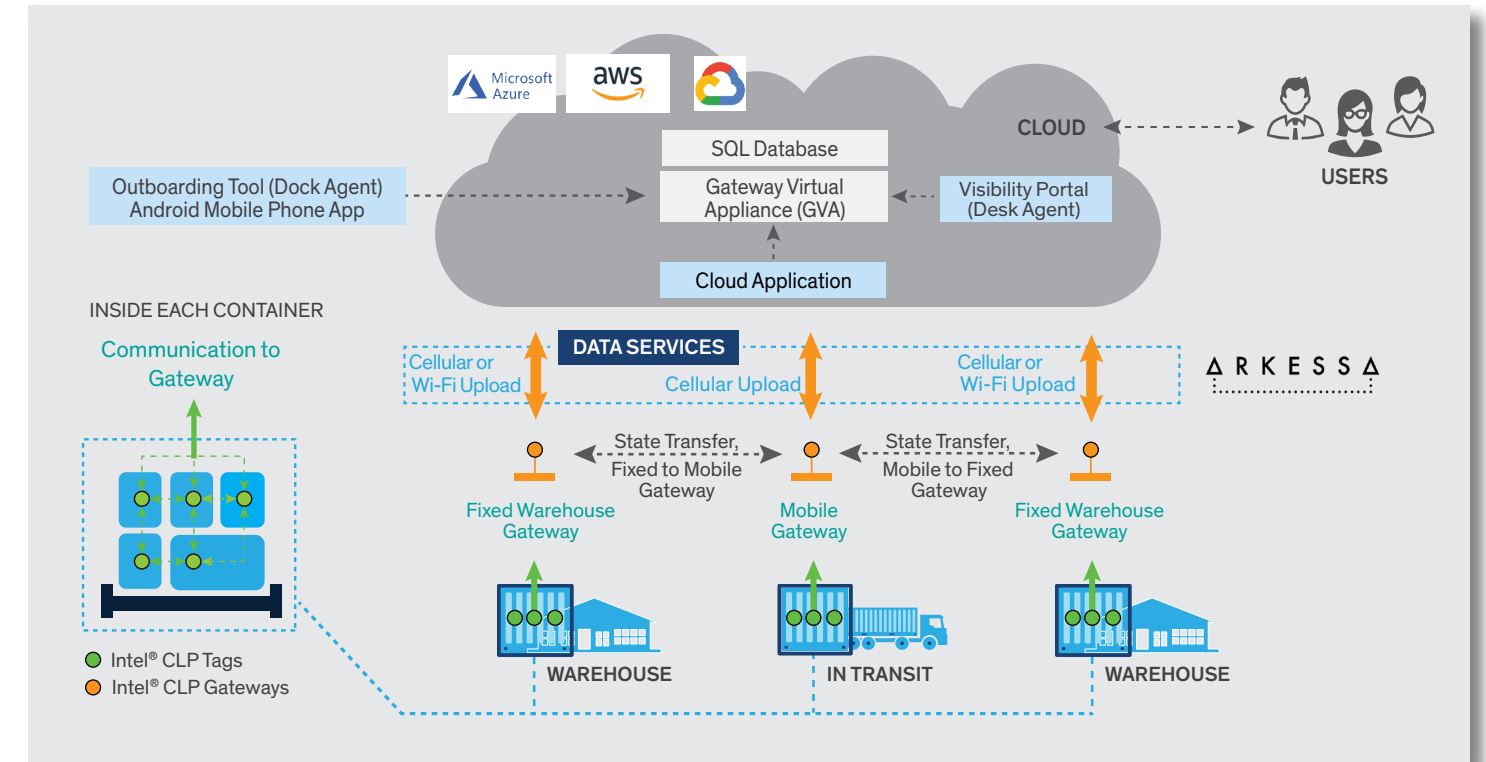
The Intel® CLP forms a high-value ecosystem that connects logistics warehouses, in-transit vehicles, high-value assets, and remote cloud-based management tools. Sensor data from asset tags are aggregated at a container level and transmitted to cloud applications that in turn yield insights into the operation. Secure global cellular services are included to provide consistent operational coverage, optimized deployment time, and installation costs. The platform delivers:

> Cellular services from Arkessa to enable advanced security, rapid deployment, and maximized coverage
> Cost-effective and comprehensive logistics with the aid of multi-function sensor tags
> Near real-time intelligence to enable quick action and continuous monitoring for cost reduction
> A highly flexible configuration to enable seamless integration with existing and legacy systems/interfaces

Key Applications
> Data aggregation
> Device management
> Secure data delivery
> Predictive/trend analytics
> Remote management capabilities
> New business services

Intel® Solutions Ready for the New Edge in Healthcare

NA GC: ✕	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: ✕	APAC AGS: ✕
NA ECS: ✕	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

Intel® Healthcare solution accelerates healthcare transformation by harnessing the power of data generated by medical devices, images, patient records, and other sources.

Intel® Solutions Ready for the New Edge in Healthcare

New infrastructure models need to match the emerging needs of the healthcare industry. The growth in healthcare IoT and the vast amount of new data generated needs new infrastructure with capabilities that can accommodate advanced approaches in medicine, patient care, disease diagnostics and regulatory compliance. Further, Original Equipment Manufacturers (OEMs) serving healthcare customers are challenged by the myriad of possibilities for integrated configurations and compliance requirements associated with certifying a configuration for medical applications. The healthcare new edge platform breaks this rigidity using software-defined and near real-time computing features. By offering known good configurations, OEMs can focus on healthcare applications instead of identifying a compliant hardware configuration. These new features make healthcare infrastructure agile, responsive and highly integrated while reliably supporting multiple edge devices, applications and services at scale.

Benefits of Intel's Healthcare Platform

> Offers limitless configurability to support and adapt to changing operational and care delivery needs while also lowering costs and improving ROI
> Facilitates workload consolidation, reuse and repurposing of infrastructure thus increasing IT infrastructure life
> Creates a secure chain of trust from physical hardware to application deployment ensuring secure care delivery at the edge
> Affords a single robust infrastructure to cover a wide array of clinical and operational needs from asset management to patient monitoring
> Virtualized infrastructure management facilitates non-disruptive maintenance and upgrade (99.9999% infrastructure uptime)

Key Customer Segments

> Medical Technology Companies – Ushering in a new generation of health devices and systems
> Healthcare Providers –Driving patient care and modernization while optimizing cost
> Teaching Hospitals & Research Institutions –Strategic partners for healthcare providers

Use Cases

> Accelerate AI deployment
> Consolidate edge workloads
> Create a flexible edge infrastructure

Resources/Info

• Product brief

• Training presentation

Healthcare New Edge Platform

Intel® enables healthcare technology solutions that increasingly connect and optimize care delivery, setting new standards in technology speed, precision, agility, reliability, and responsiveness. From innovations that change how devices, providers, and patients interact, to optimizing existing edge technologies so that healthcare applications and services can be run on a single common platform, the scope of possibility reaches across the entire healthcare continuum.
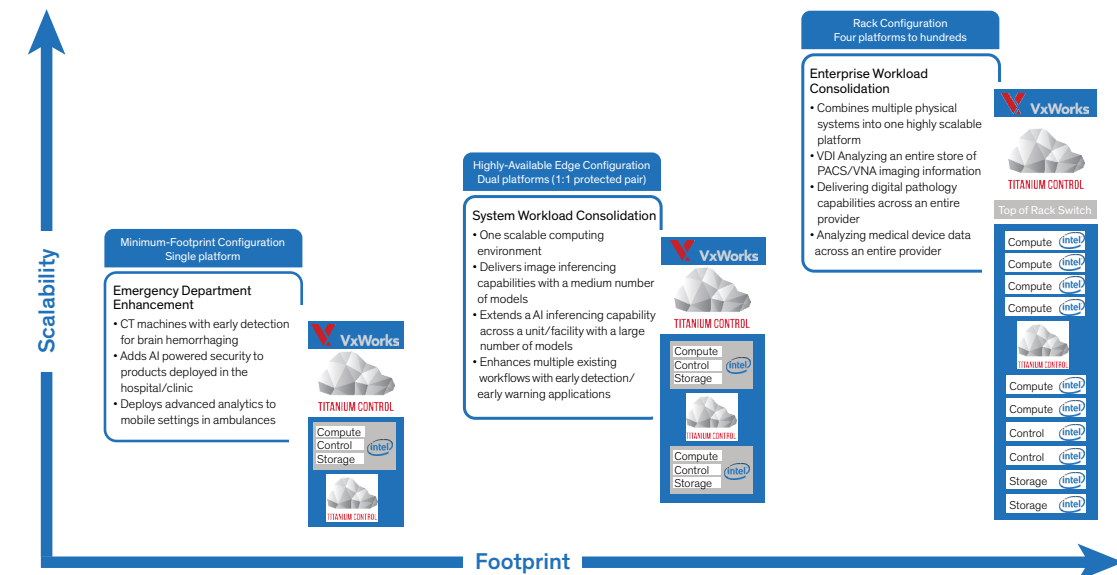
Key Features

The healthcare new edge platform is built on a standards-based architecture to ensure interoperability for a wide range of systems and devices, to facilitate wide application development, and to simplify services deployment.

Key features include:
> **Processors:** Intel Xeon® Scalable and Core Processors
> **Accelerators:** Intel Stratix® 10, Arria® 10, and Intel Vision Accelerator Products
> **OS:** Wind River Titanium Control or VxWorks
> **Inference-Ready:** Fully compatible with the Intel OpenVino™ inference engine with platform features like DL Boost available to take performance to the next level. Expandable with Intel's AI Accelerators to grow with demand
> **Security*:** Hardware features including Protected Boot, Hardware Root of Trust, Secure Boot, and many more

*: No product or component can be absolutely secure.

For Part Numbers and Ordering Information see Appendix

Intel® RFID Sensor Platform (Intel RSP)

NA GC: √	EMEA GC: ✕	APAC GC: √
NA AGS: √	EMEA AGS: √	APAC AGS: ✕
NA ECS: ✕	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

The Intel® RFID Sensor Platform (Intel RSP) brings digital convenience and intelligence to brick-and-mortar retail environments, driving revenue growth and reinventing the customer experience.

Intel RFID Sensor Platform (Intel RSP) Delivers Near 100% Inventory Accuracy

Intel RFID Sensor Platform (Intel RSP) is a low-cost RFID based solution designed to help system integrators and retailers quickly create and deploy innovative retail solutions informed by analytics. This simple-to-install solution manages RFID sensors through a general edge compute gateway and supports analytics capabilities from the edge to the cloud. The Intel RFID Sensor Platform helps system integrators deliver applications that can boost retail profitability and provide new insight into product demand, consumer behavior and store logistics.

Asset Tracking
> Tracking every movement of every item from the warehouse and backroom to the point of sale
> Collect & analyze customer consideration data to influence mark-down and pricing decisions
> Minimize theft and losses

Path Mapping
> Optimize placement of product to achieve high customer engagement
> Optimize customer routing through the store by catering to various customer types
> Track and visualize customer movement to increase sales

Proactive Engagement
> Drive real-time data into retailer's hands to facilitate dynamic selling decisions
> Enable near real-time notifications to sales personnel of immediate actions to increase chances of sale and improve customer experience
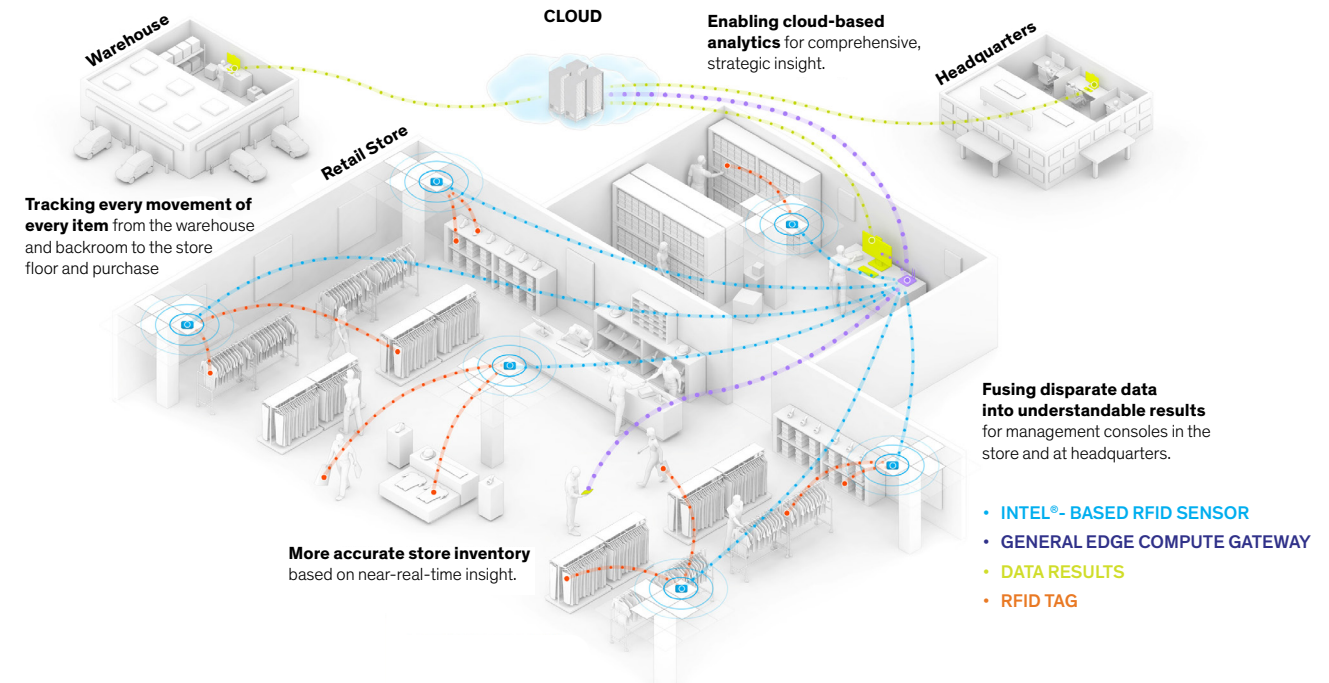
Intel RFID Sensor Platform Key Benefits

> **Affordable Cost:** Intel RFID Sensor Platform is available through distributors at a price point significantly less than many RFID technology and retail sensor solutions. The benefits gained from accurate inventory can deliver substantial ROI for customers, and advanced analytics enabled by the expanded sensor suite can further increase the value gained through the deployment of the Intel RFID Sensor Platform
> **Easy Install:** Intel RSP can be easily affixed to any wall or ceiling using a variety of compatible mounting mechanisms. All sensors run on power over Ethernet Plus (PoE+) to minimize cable installation requirements and eliminate signal loss across large areas
> **High Performance:** Intel RSP offers high performance with optimization enhanced to improve tag read/s accuracy compared to other market solutions in similar price range

Overcoming Inventory Management Challenges

> Reconciling inventory
> Path mapping and item movement tracking
> Integrating digital and physical retail operations
> Replenishing sold items
> Optimizing placements
> Accurately locating items
> Tracking misplaced items

Resources/Info
• Product brief
• Training presentation

CLOUD

Enabling cloud-based analytics for comprehensive, strategic insight.

Tracking every movement of every item from the warehouse and backroom to the store floor and purchase

Fusing disparate data into understandable results for management consoles in the store and at headquarters.

More accurate store inventory based on near-real-time insight.

• INTEL®- BASED RFID SENSOR
• GENERAL EDGE COMPUTE GATEWAY
• DATA RESULTS
• RFID TAG

Intel® RFID Sensor Integrated Technology Components

Intel® IoT ecosystem partners support retailer's data collection and analysis Solution facilitates data collection from multiple stores and builds an end to end IoT platform with edge analytics based on the RFID event data. From a data flow perspective, the Intel RSP interrogates the tag population within its field of view and passes RFID-tag information as well as information from other various on-board sensors to the RFID Gateway, which is based on Intel RSP SW toolkit (open source). The Gateway appliance does more than just aggregate the data from the sensor population, it also orchestrates the behavior of each sensor to optimize the overall in-store data collection process. The ingested Inventory Events (e.g. tag location, time), Alerts and System Status data can be forwarded from the RFID Gateway device to applications running in a customer's cloud infrastructure or to the management console running on system integrators systems for further analytics to gain digital intelligence.
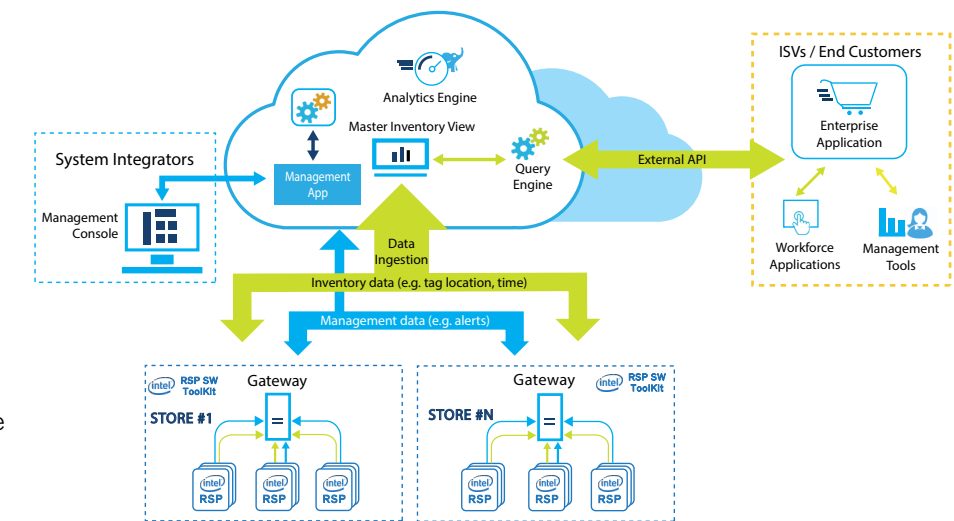
Typical Multi-Store Chain System Setup

KMC Commander™ IoT and Automation Platform

NA GC: ✕   **EMEA GC:** ✕   **APAC GC:** ✕

NA AGS: ✕   **EMEA AGS:** ✕   **APAC AGS:** ✕

NA ECS: √   **EMEA ECS:** ✕   **APAC ECS:** ✕

✕: Not Available   √: Available

Solution offers open, secure, and scalable IoT and building automation platform delivering embedded intelligence and optimized control.

An Open, Secure and Scalable Smart Building Solution that is Easy to Deploy

KMC Controls is an independent American manufacturer of building automation solutions for system integrators, system distributors, and OEM partners. KMC Controls has helped facilities achieve higher levels of energy efficiency and indoor environmental quality by automating and controlling building systems. KMC has strong relationships with Dell and Intel® and is member of the IoT Alliance.

KMC Commander connects building and other devices to the cloud and provides meaningful data in real-time to your PC or mobile device. The KMC Commander platform consists of the Dell Edge Gateway 3002 hardware plus KMC IoT software and cloud services. It is an out-of-the-box solution to visualize, connect, and manage energy, building, and other systems. KMC Commander provides data collection, analysis, visualization, and management for the modern smart building ecosystem, including HVAC, lighting, security, and other building applications.

Benefits of the Solution

> Open device protocols—BACnet IP, BACnet MS/TP, Modbus, SNMPv1/v2c/v3 (MQTT coming soon)
> Easy to use dashboard features
> Connect multiple communication protocols
> Ruggedized for demanding environments—fanless and industrial-grade
> Security implemented in hardware (TPM) and software, with white and black list capabilities
> Scalable architecture—from a single device to a portfolio of buildings

Target Customer Base

> Solution is ideal in commercial buildings, educational facilities, hospitals and retirement communities
> SIs, ISVs and MSPs serving the building automation space
> Building automation vendors
> Warehouse management companies
> IBMS (Integrated Building Management System) vendors

Solution Components

KMC Commander™ is a building automation platform solution comprising Ma programmable IoT gateway, cloud and intuitive software for local and web-based facility management.

KMC Commander BX, an IoT gateway for device and system integration, featuring:
> Dell design based on the Intel IoT gateway reference architecture
> Multiple communication protocol support

KMC Cloud supports data storage, processing, and application hosting, providing:
> Device management
> NoSQL database
> Application integration & orchestration

KMC Commander incorporates solutions from edge devices to cloud with:
> Dashboards and reporting
> Work order and asset management
> Demand response and fault detection
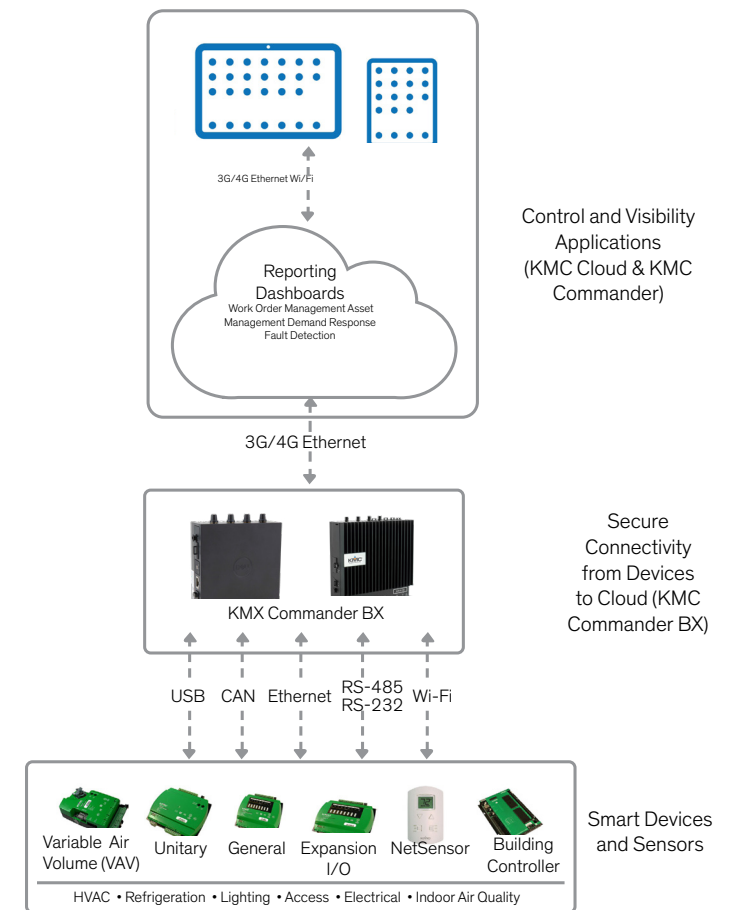
3G/4G Ethernet Wi-Fi

Reporting Dashboards
Work Order Management Asset Management Demand Response Fault Detection

Control and Visibility Applications (KMC Cloud & KMC Commander)

3G/4G Ethernet

KMX Commander BX

Secure Connectivity from Devices to Cloud (KMC Commander BX)

USB   CAN   Ethernet   RS-485 RS-232   Wi-Fi

Variable Air Volume (VAV)   Unitary   General   Expansion I/O   NetSensor   Building Controller

Smart Devices and Sensors

HVAC • Refrigeration • Lighting • Access • Electrical • Indoor Air Quality

Kontron EN50155 Fanless LoRa™ IoT Gateway for Railway and Ground Applications

NA GC: √   EMEA GC: ×   APAC GC: ×

NA AGS: √   EMEA AGS: √   APAC AGS: ×

NA ECS: ×   EMEA ECS: ×   APAC ECS: ×

×: Not Available   √: Available

TRACe-LP1: Promise of IoT in Transportation and Industrial Applications

TRACe-LP1is Kontron's fanless LoRaWAN gateway with edge computing capabilities. It is a solution-ready platform offering easy customization and application-specific requirements. It incorporates an Intel® extended temperature Atom® processor combined with a certified LoRa radio concentrator. Interoperable LoRaWAN sensors deliver information to the gateway on various critical parameters. The gateway supports continuous communication from LoRa-based devices/sensors to on-premises/cloud server while ensuring highly-secure data collection. Data can be accessed from computers, tablets, and smartphones for remote monitoring and analysis. These key advantages make this platform a perfect solution to connect objects for asset management in transportation such as trains, trams, cargos, buses, and stations, depots or any premises.

The LoRa-MQTT protocol is particularly effective in rugged/outdoor environments where security is important and where reliable permanent cloud connectivity is a requirement.

Kontron's EN50155 LoRa™ IoT offers a ready to use private LoRaWAN™ network in railway and ground applications for asset management, remote maintenance, and infrastructure monitoring.

Features

> GPS localization
> Analytics at the edge
> Ruggedized
> Secure implementation
> Easy management interface
> Interoperable with other systems

Benefits of the Solution

> Reliable data transmission from fast moving platforms
> Accurate localization services for efficient management (less than 1m positioning accuracy)
> Seamless interoperability with other smart devices without the need for complex local systems
> Avoids costs due to theft or malfunction by giving remote insight in near real-time

Use Cases

> Trains and Mass Transit
> Logistics and Fleets
> Monitoring for Industrial

Resources/Info

• Product brief

• Training presentation

Solution Specifications

The solution supports two applications, one with EN50155 railway certification standards and another best suited for ground operations.

> **TRACe-LP1 Rail Solution:** Ideal for onboard rail applications and equipped with GPS trackers and sensors that provide data on variables such as position, vibration, door diagnostics, passenger count etc. Armed with this data the rail solution lays the foundation for passenger information systems, video streaming & storage systems, network video surveillance and train management systems
> **TRACe-LP1 Ground Solution:** This solution gathers sensor data for measuring tank levels, energy consumption, smoke/fire detection and other parameters crucial for ground applications or industrial operations
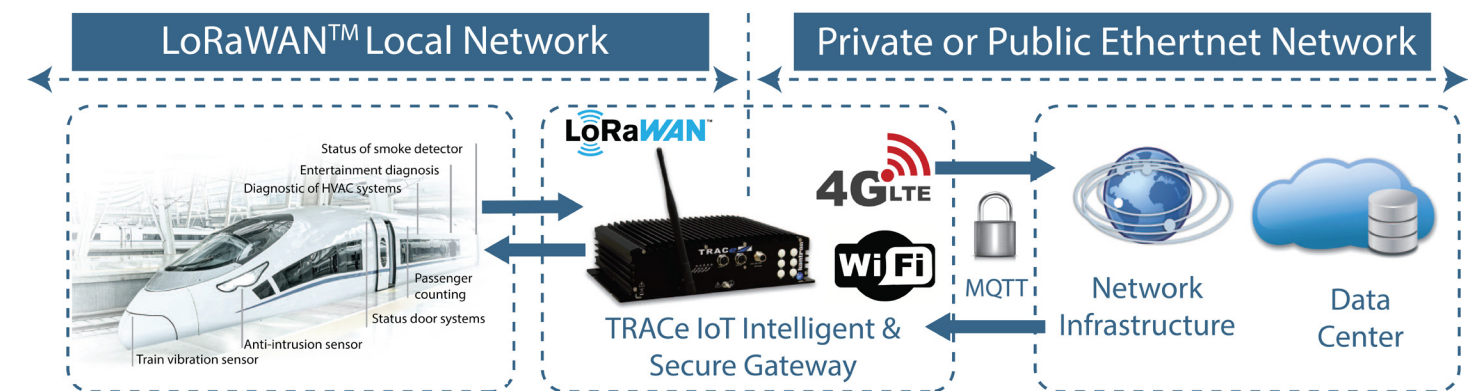
Feature	Description
Processor	Quad Core Intel® Atom™ CPU
System Memory	2GB DDR3 with ECC
LoRa™ Radio	868 MHz for Europe, maximum transmitted power +20 dBm Reference antenna used during qualification: Compotek CTA 868/2/DR/SM/S2
Ethernet	2× Ethernet 10/100/1000Mbps, M12 x-coded connectors, 1.5 kV insulation
Power Supply	24VDC, optional 110/220V AC/DC adaptor
Protection Class	IP40 on all faces, IP54 or IP65 available on request
WWAN	4G modem LTE/HSPA+/GSM/GPRS/EDGE/EV-DO Rev A/ 1×RTT with GPS
WLAN	Wi-Fi® 802.11 a/b/g, 802.11n 3T3R up to 450 Mbps
GPS	Dedicated GPS module
LoRa 915 MHz	LoRaWAN™ network variant for US (EU versions available)
Operating Temperature	-40 ⁰C up to +70 ⁰C
(WxDxH)	272 mm (300m with ears) x 190 mm x 78 mm

For Part Numbers and Ordering Information see Appendix

Lanner and ZEDEDA Cloud-Managed Gateway Solution

Lanner **ZEDEDA**

NA GC: √   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: ✕   APAC AGS: ✕

NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

Lanner's validated white-box gateway combined with ZEDADA's real-time software enables interoperability and connectivity on both hardware and software levels in industrial automation, energy, and retail applications.

Critical infrastructure such as power substations, manufacturing locations, transportation systems, intelligent buildings, and entire smart cities are becoming important areas for edge device deployment. These devices require robust gateway technologies to transmit data to the cloud and for remote management. Lanner's industrial gateway products are designed specifically for critical infrastructure locations like factory floors and harsh environments and ensure fault-tolerant network connection. Ensuring gateway uptime while tolerating large temperature variations, magnetic fields and electrical environments are key differentiators of Lanner gateways.

By partnering with ZEDEDA, Lanner brings new remote management capabilities to the robust gateways. ZEDEDA's virtualization software simplifies edge device management and provides security for all the edge nodes. In addition, a remote management interface centralizes monitoring and maintenance for all the devices.

Benefits of the Solution

> **Solution for rugged environments:** Embedded appliances withstand extreme weather and are operable in a wide operating temperature. IEC 61850-3 and IEEE 1613 compliant

> **Single pane of glass across all edge hardware:** Deployment, management, and monitoring of all hardware through the same console —any hardware, any software, at any time

> **Superior security designed for the edge:** Zero-trust model ensures device integrity in environments where hardware, software, and users cannot always be verified or trusted

> **Zero-touch provisioning and 100% cloud-based delivery:** One-click deployment of edge services and applications. Application configuration and updates are all managed through the central control pane, streamlining common tasks and, thus reducing administrative overhead

> **Future-proof:** Flexible and scalable solution with an open architecture to easily add functionality, devices and control to the network

Use Cases

> Industrial IoT

> Energy and utilities

> Transportation

SilosBreaker™ Edge Security Kit Based on Lanner LEC-6041 Industrial Gateway

The SilosBreaker Edge Security Kit provides seamless endpoint authentication, software property protection, service lifecycle management and advanced device/application monitoring capabilities to enable mission-critical operation, high-availability and mitigate a variety of cyberattacks.

TSS 2.0

By 2022 more than 50% of enterprise-generated data will be created and processed outside the datacenter*

> Data from edge cyber physical systems exceeds data stored in the cloud by 500X

> Enterprise applications data too massive to reside in the cloud

> Reliance on servers necessitates centralized device and app management

* Gartner 2018

Key Components

Lanner's security gateway, LEC-6041

> Based on Intel® Atom™ x7-E3950 or x5-E3930 CPU

> Wide Temperature ICS Cyber Security Box PC

> IEC 61850-3 and IEEE 1613 compliant

> 5 × GbE LAN with 1 pair bypass, 2 × GbE SFP

> Onboard TPM support, programmable LAN bypass technology

> HDMI display output

> Operating Temperature -40 ^{0}C to +75 ^{0}C

> Mini-PCIe with SIM slot supports 4G-LTE

> 2 × USB 3.0 and 2 × Isolated RS232

Lanner Platform Guard

> Comprehensive firmware with security features, encrypted platform identity and TSS2.0 compliant middleware

ZEDEDA Edge Virtualization Software

> 100% cloud-managed deployment, operation, and security automation for real-time edge applications

> Consistent, automated, hardware agnostic, and secure operating model for mass-deployed edge devices and applications

Resources/Info

• Product brief

• Training presentation

Seneca and Navori Digital Signage Kit

NA GC: ✕   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: √   APAC AGS: ✕

NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

Seneca and Navori Digital Signage Kit is a synergy between Navori QL Digital signage software, and Seneca media players.

Rich Personalized Content and Targeted Messaging

Navori and Seneca Signage Kit enhances customer experience with rich personalized content and targeted messaging. This signage kit is a content management and distribution tool that allows authorized users to standardize or customize content, anytime and anywhere. It offers a user-friendly interface and a multi-user cloud-based platform facilitating live streaming of data and real-time decision making.

The solution is comprised of flexible digital signage bundle with three hardware and two software options that include rich content/player management and a rich template design toolset.

Benefits of the Solution

> Real-time data support
> Fully web-based CMS
> Available in cloud and on premise
> All popular media formats are supported
> Built-in support for data feeds including social media, Google Calendar, and more
> Offers custom triggers, content interactivity, and gesture support
> Easy integration with 3rd party systems to display live data streams
> Best pre/post sale support for partners and customers globally

Solution Features

> Precise playback accurate to 1/30th of a second with frame synchronization capabilities
> State-of-the-art HTML5 user interface with designer, data feed manager and preview
> Standard software solution with 800+ features + SDK +API
> Hardware agnostic, professional performances and features on video wall, multi-display, LED, System on Chip display
> Incorporate live data from RSS feeds, XML and self-hosted data
> Display live news, events, sports scores, and more

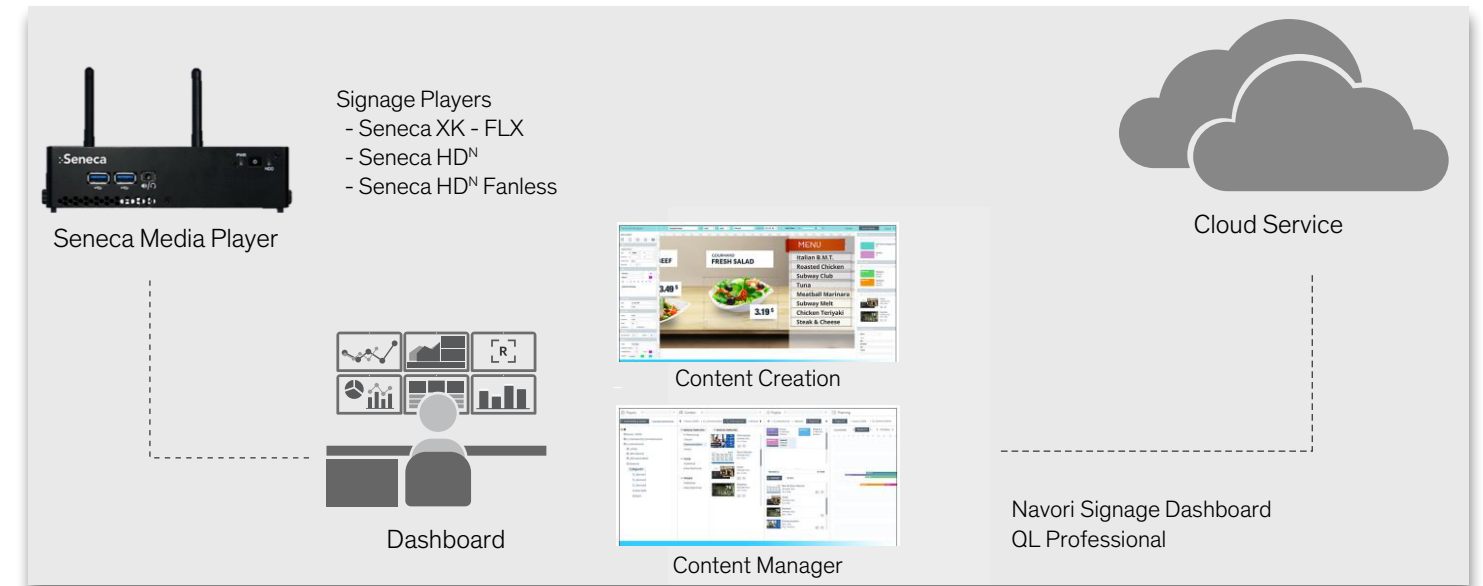## Target Customer Base

> **Corporate:** Metric dashboards, video walls, reporting dashboards
> **Retail:** Sales and advertising, video walls, customer data collection
> **Government:** Information kiosks, wayfinding assistance
> **Transportation:** Information kiosks, FIDS boards in airports, wayfinding
> **Education:** Information displays, campus safety, and emergency alerts

Resources/Info

• Product brief

• Training presentation

Seneca and Navori Digital Signage Kit Components

Seneca Media Player

Signage Players
- Seneca XK - FLX
- Seneca HD^N
- Seneca HD^N Fanless

Cloud Service

Content Creation

Dashboard

Content Manager

Navori Signage Dashboard
QL Professional

Seneca Media Players

XK-FLX: Small, fan-less and optimized for performance
> Dual independent 1080p 60fps
> Single 2160p 30fps
> 100% solid state
> Internal power
> Dual Gigabit LAN

HD^N: Industrial NUC with internal power
> 5th generation Intel® Core™ Processor
> Internal power supply for easy mounting and cabling
> Certified at 55 ^{0}C ambient operating temperature
> Supports triple independent displays at 1080p60fps

HD^N Fanless: Solid state design with internal power
> 5th generation Intel Core i5 Processor
> 100% solid-state design
> Internal power
> Triple display support
> Locking mini display port outputs

QL Professional: Navori Digital Signage Software

Components include Content Manager and Template Design

QL Content Manager
> QL Manager is the user interface that helps create, organize, manage and publish content across digital displays
> Runs on Windows, Android, and Tizen

QL Template Designer
> 100% WYSIWYG tool
> Web-based for easy access
> 3rd party (RSS, XML, etc.)/social media feeds and apps

For Part Numbers and Ordering Information see Appendix

Seneca Video Capture Appliance Enabled by Panopto

NA GC: ✕   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: √   APAC AGS: ✕

NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

Video capture solution simplifies voice recordings, large hall presentations, and webinars with screen capture. It offers industry-leading search, flawless streaming and secure storage, and video management.

Seneca, the recognized leader for design, integration and manufacturing services for PC-based media appliances and storage products, is partnering with Panopto to bring to market a powerful combination of hardware and software as a video capture appliance. Unified in a mission to simplify video capture and search technology, Seneca and Panopto allow customers to unleash the power of video in their organizations. Panopto's enterprise video platform combines professional recording, webcasting tools and a powerful search engine for video content. Businesses and academia can import, record, share, and view searchable video presentations in minutes from any device. From video capture appliances, rich media distribution servers to storage arrays, Seneca's solutions cover a broad range of hardware for purpose engineered video applications. The Seneca Video Capture appliance has been certified by Panopto and is optimized to deliver the ultimate out of box experience. Fully tested with Panopto video capture software, the Seneca appliance is designed for use in a variety of enterprise video and remote video capture applications.

Benefits of the Solution

> Enterprise grade video encoding appliance co-designed by Seneca and Panopto for optimal recording performance
> All recordings can be captured via the appliance and videos are automatically uploaded to the Panopto cloud where they can be searched, streamed and viewed from anywhere
> Simple, reliable and scalable turnkey solutions are purpose built and tested to support large implementations
> Includes a trial version of the powerful Panopto video content management platform

Applications

> Distance learning
> Distance medicine
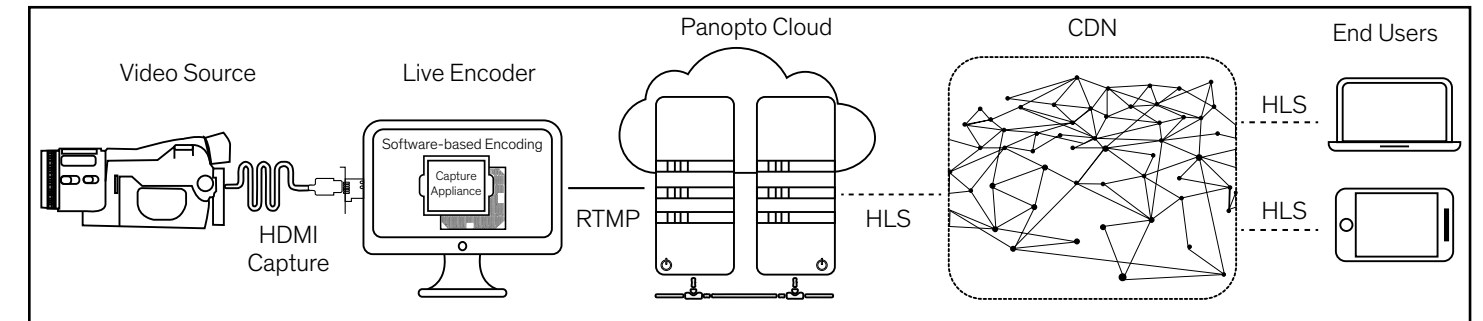> Board rooms
> Court rooms
> Lecture capture
> Video capture

Use Cases

> Serving 5 Million+ end users
> Cloud hosting 2 Million+ videos
> Recognized by Forrester as the "the best support for video search"
> Recognized by Gartner as a leader in video content management

Resources /Info

• Product brief

• Training presentation

Key Features of the Seneca-Panopto Alliance

Capture

The Seneca Video Capture appliance is an exclusive offering built to run in a compact 1U short-depth form factor. Powered by the 6th generation Intel® Core™ i7

> Available in Dual SDI/Dual or Quad HDMI
> Quiet and cool design for low noise threshold during recording and component stability
> Co-developed and certified with Panopto lecture capture software
> Panopto turn-key solution for easy integration of components
> Well suited for A/V racks, desktops, and podiums
> Short depth chassis (11") for convenient install
> Dedicated team for pre and post sales support
> Extended Warranty – 39 months

Manage

Panopto Video Content Management platform makes it easy to manage, disseminate and organize videos. From post capture editing to analytical reporting, the platform offers a comprehensive set of features to manage all aspects of video.

> Create a "Corporate YouTube" – secure, central location either on premise or cloud hosted
> Secure sharing of content
> Edit videos in any browser
> Approve workflows to ensure appropriate content management
> Analytics and SCORM: Site-wide, folder-level, video, and user reporting

Search

Panopto offers powerful search capabilities that make finding the right video among thousands simple and effective. State of the art capabilities allow searching on all attributes of the video content

> Search inside videos-spoken words, on-screen words and slide content etc.
> Multiple choice, multi-select and true-false questions
> Create and take quizzes within any browser (no add-ons required)
> Review and export quiz results

For Part Numbers and Ordering Information see Appendix

Seneca® xConnect Remote Management Platform

NA GC: ✕   EMEA GC: ✕   APAC GC: ✕
NA AGS: √   EMEA AGS: ✕   APAC AGS: ✕
NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

Remote Surveillance Management System from Seneca

xConnect Remote Management Platform allows stakeholders to audit, manage, and maintain all aspects of security installations. From camera function to storage integrity, xConnect provides visibility and control of an entire security perimeter from a single, intuitive dashboard. Using advanced intelligence the system can manage and maintain every function in an installation from a central interface. The remote client is accessible through any Windows®-based device and provides a high level status view of the system, storage, network, and cameras. Advanced options include multi-server monitoring, email configuration, and 3rd party monitoring. In addition to the performance monitoring of network video recorders, the application also provides command and control functionality at the device level. This platform is designed with managed service providers in mind to enable easy operation and is well suited for situation management. xConnect has the ability to be programmed to perform actions as soon as an event is detected and push notifications in multiple modes while simultaneously executing a predefined response protocol in the background.

Microsoft Azure cloud monitors, authenticates and automates data transmission. This solution is agnostic to any Windows-based NVR, be it Seneca or third-party systems and is hosted on Microsoft Azure for maximum security and scalability.

xConnect Remote Management solution helps businesses monitor and manage security environments with advanced intelligence, and maintain each and every function of security installations from a single web-based user interface.

Benefits of the Solution

> Intuitive, yet powerful, enterprise-level management of one or many security networks through a single pane of glass
> Cost avoidance by reducing the number of service calls and truck rolls by getting ahead of issues before end-user experience is affected
> Autonomously resolving glitches significantly reduces downtime, and support calls
> Increased uptime and immediate resolution response ensure confidence in mission-critical environments while simultaneously reducing the time for any given installation

Key Capabilities

> Proactive Monitoring
  - Network video recorder
  - IP devices storage software
> Flexible Implementation: Cloud and on-premise SaaS models
> Simple Implementation
  - Seamless integration
  - VMS integration
  - Manufacturer agnostic
  - 3rd party API integration
  - Easy gateway registration
  - 4-hour remote setup option
> Annual Subscription
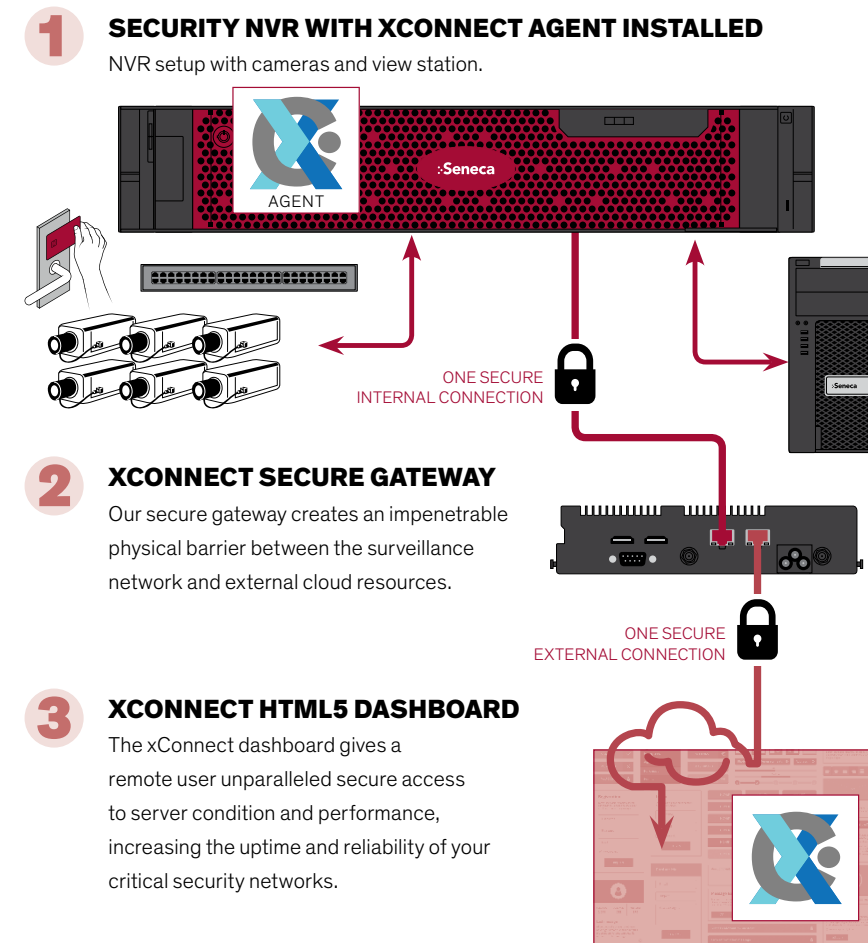
Resources /Info

xConnect with Seneca

• Product brief

• Training presentation

xConnect with Microsoft

• Product brief

• Training presentation

How it Works

The xConnect agent resides locally on network servers discovering network devices and applications interfacing with a proprietary secure gateway device. The xConnect gateway sends real-time data to the xConnect web interface, system, and device. In the event of an issue, xConnect can trigger a workflow to immediately notify or react to an issue in the environment.

1 SECURITY NVR WITH XCONNECT AGENT INSTALLED
NVR setup with cameras and view station.

AGENT

ONE SECURE INTERNAL CONNECTION

2 XCONNECT SECURE GATEWAY
Our secure gateway creates an impenetrable physical barrier between the surveillance network and external cloud resources.

ONE SECURE EXTERNAL CONNECTION

3 XCONNECT HTML5 DASHBOARD
The xConnect dashboard gives a remote user unparalleled secure access to server condition and performance, increasing the uptime and reliability of your critical security networks.

Audit

> Temperatures, fan speeds, and power supplies
> RAID controllers, physical, logical, and virtual storage
> System utilization
> Application monitoring
> Network bandwidth analysis
> VMS log analysis

Manage

> Clientless remote desktop
> Secure tunneling to private networks
> Access to out of band management (iLO, iDRAC, ASMB [Seneca])
> Remote command and execution
> Designed for service providers managing multiple end-users

Act

> Automatic remote command execution
> Mobile push notification
> 3rd party API posting
> Email notifications

Compatible Hardware

> Network Video Recorders (NVRs): The xConnect agent can be installed on any Seneca NVRs or 3rd party NVRs
> **Gateway:** xConnect secure gateway software can be installed on the Seneca XK-FLX embedded gateway or on 3rd party gateways
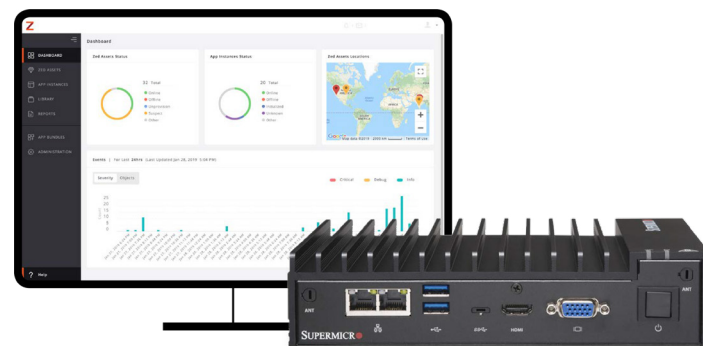
For Part Numbers and Ordering Information see Appendix

Supermicro® and ZEDEDA for the IoT Edge

NA GC: √	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: √	APAC AGS: ✕
NA ECS: √	EMEA ECS: √	APAC ECS: ✕

✕: Not Available   √: Available

Supermicro® is a global leader in high performance, high efficiency server technology and innovation. The company develops and provides end-to-end green computing solutions to the data center, cloud computing, enterprise IT, big data, high performance computing, or HPC, and embedded markets.

Edge-based devices and IoT networks are being implemented at an unprecedented rate. From industrial settings with smarter machinery to cities deploying surveillance cameras, computing devices are moving closer to the network edge while simultaneously requiring remote centralized management and oversight. Supermicro and ZEDEDA are partnering to solve the challenge of securely deploying and managing edge device nodes at scale, with minimal complexity. Further, Supermicro's fan-less IoT edge computing solutions combat dust and withstand wide environmental temperature swings ensuring reliable operation in harsh conditions.

Incorporating ZEDEDA's virtualization software, Supermicro now delivers a comprehensive edge computing solution that can be provisioned, managed and secured at scale without the need for IT expertise. Customers can deploy cyber-physical systems that are not only rugged enough to tolerate environmental and climate-related factors but are also robust enough to combat cybersecurity threats.

Benefits of the Solution

> Energy-efficient, rugged and resilient IoT edge infrastructure for diverse needs
> Future proof infrastructure for all edge needs that can be scaled, managed, updated and controlled on-demand from the cloud
> Device software can be automatically downloaded from the cloud and upgrades and remote configuration can be performed without the need for physical access to devices
> Single pane of glass across devices allows status checks in real-time
> Secure ports only accessible remotely by specific apps. A zero-trust model ensures device integrity and disables ports when intrusions are detected
> Supermicro devices can be drop-shipped and instantly provisioned with no truck rolls or technicians

Target Customer Base

> Smart factories
> Smart workspaces
> Smart cities
> Renewable energy
> Retail
> Oil and gas

Resources/Info

• Product brief

• Training presentation

Supermicro Intel® IoT RFP Ready Kits

Supermicro Intel IoT RFP Ready Kits (RRK) come preinstalled with ZEDEDA software with a license validation period of one year. By bundling hardware and software, Intel RRK kits can be deployed and tested easily.

	CPU	Memory	Storage	OS	ZEDEDA
SYS-E50-9AP-Wi-Fi	Intel® Atom® x5-E3940	8 GB DDR3L 1600 SO-DIMM 2Rx8	64G SATA M.2 2242	Windows 10 IoT Enterprise LTSB 2016 Entry ePKEA License	1 year service
SYS-E100-9S-E	7th Gen Intel® Core™ i5-7300U	8 GB DDR4 2666 SO-DIMM 1Rx8	150G SATA M.2 2280	Windows 10 IoT Enterprise LTSB 2016 Value ePKEA License	1 year service
SYS-E300-8D	Intel® Xeon® D-1518	16 GB DDR4 2400 1Rx4 ECC REG DIMM	150G SATA M.2 2280	Windows 10 IoT Enterprise LTSB 2016 High End ePKEA License	1 year service
SYS-5018D-FN8T	Intel® Xeon® D-1518	2 × 16 GB DDR4 2400 2Rx8 ECC REG DIMM	240G SATA 2.5" HDD, 6Gb/s, TLC, 7 mm	Windows 10 IoT Enterprise LTSB 2016 High End ePKEA License	1 year service

Architecture Diagram: Supermicro Edge Devices with ZEDEDA Software

Supermicro systems with ZEDEDA software eliminate maintenance challenges and ensure an open data architecture that affords software defined approaches to secure device management, control, and visibility.
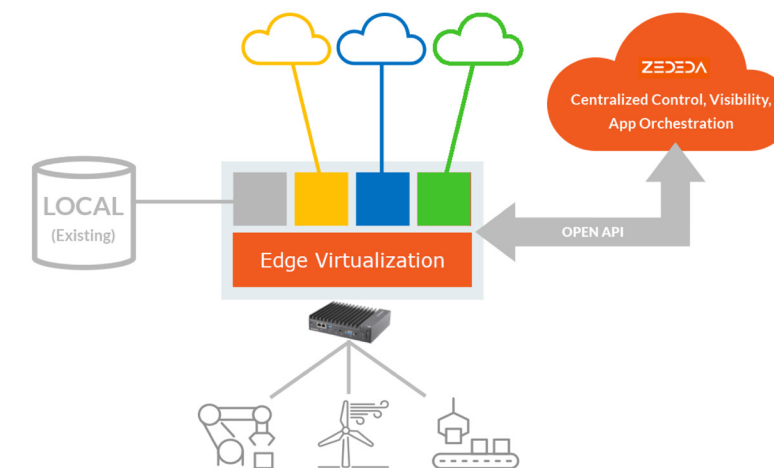
For Part Numbers and Ordering Information see Appendix

MRS Part Numbers and Ordering Information

Solution	Type	Description	Part Information
ADLINK MCM-100: Machine Condition Monitoring Edge	MCM-100	MCM-100 Intel® Atom® E3950 Processor-with built-in 4-ch 24-bit DSA, 4GB RAM, 128G mSATA SSD	MCM-100
	Optional Accessories	ICP Accelerometer IMI_603C01, 100mV/g, 0.5 to 10kHz, 2-pin connector w/ 10-ft cable and magnetic mount	ICP Accelerometer IMI_603C01
		Software License key for Phoenix GM Lite	GM Lite License Key
		FANGTEC WIFI/BT KIT(EA) 820.11ac 2T2R+BT4.0 Half Mini Card	WIFI®/BT KIT
		MEANWELL,GST40A24-AD,Input:90~264Vac/40W Output: 24Vdc/1.67A	AC-DC ADAPTER 40W
ADLINK Neon Series: Smart Camera and Embedded Vision Systems	Smart Camera	Ready-to-Go, 2MP, 60fps, MERLIC inside, 4 GB RAM, 32 GB SSD, 32-bits Windows® Embedded Standard	NEON-1021-M/M4G/SD32G/32bits WS7E
		Ready-to-Go, 2MP, 60fps, MERLIC inside, 4 GB RAM, 32 GB SSD, 64-bits Windows Embedded Standard 7	NEON-1021-M/M4G/SD32G/64bits WS7E
		2MP, 60fps, global shutter sensor with 32G SSD	NEON-1021/M4G/SSD32G
		2MP, 120fps, global shutter sensor with 16G SSD	NEON-1020/SSD16G
		2MP, 120fps, global shutter sensor with 32G SSD	NEON-1020/SSD32G
		4MP, 60fps, global shutter sensor with 16G SSD	NEON-1040/SSD16G
		4MP, 60fps, global shutter sensor with 32G SSD	NEON-1040/SSD32G
Advantech SRP-131: An Intelligent eMenu Solution	Hardware with Integrated OS and Software	Digital Signage Player Lite (1-2 Displays)	UBX-310UDS1-G1E-C
		Digital Signage Player Standard (1-4 Displays)	DS-570UDS1-G1E-C
		Digital Signage Player Pro (Up to 6 Displays)	DS-980UDS1-G1E-C
	Software	Digital Signage Server Software	968SPUDSS0
Advantech UShop SRP-130: Interactive Digital Signage	Hardware with Integrated OS and Software	Digital Signage Player Lite (1-2 Displays)	UBX-310UDS1-G1E-C
		Digital Signage Player Standard (1-4 Displays)	DS-570UDS1-G1E-C
		Digital Signage Player Pro (Up to 6 Displays)	DS-980UDS1-G1E-C
	Software	Digital Signage Server Software	968SPUDSS0
Advantech Ushop SRP-700 Store Traffic Analysis	Hardware	UCAM-2D	UCAM-120A-U01
		UCAM-3D	9680016713
		Wi-Fi Analysis	968SPUSWL0 (Service Activation Fee)
	Software	Public Cloud P/N	968SPUSTL0 (Annual License Fee)
			968SPUSWL1 (Annual License Fee)
		Private Cloud P/N	968SPUSTS0 Max. 25 Channels
			968SPUSTS1 Max. 50 Channels
			968SPUSTS2 Max. 300 Channels
			No Support Private Cloud

Solution	Type	Description	Part Information
Arkessa Intelligent Building Controls for Asset, Facilities, and Energy Management	Demo Case	Demo kit with sensors and connectivity	DEMKIT001
Arrow Energy Monitoring Kit		Dent Mini Hinged Split Core .4" (10mm) Opening	1× CT-HSC-020-U
		Dent Mini Hinged Split Core .4" (10mm) Opening	1× PS48HD-C-D-N
		Dell 5000 Series Gateway	1× 5000-GAT-C5
IEI Ruggedized QTS Gateway for Surveillance	Software	QVR Pro	TANK-870-Q170-QGW-2A-R10
		QTS Gateway	
	Hardware	IEI TANK* 870-Q170	
Intel®-Based IEI TANK AIoT Development Kit	Surveillance	With Intel Core™, i7-6700TE 2.4GHz, (up to 3.4 GHz, Quad Core, TDP 35W)	TANK-870AI-i7/8G/2A-R10
		With Intel Core, i7-6700TE 2.4GHz, (up to 3.4 GHz, Quad Core, TDP 35W)	TANK-870AI-i5/8G/2A-R10
Intel® Connected Logistics Platform (Intel® CLP)	Connected Logistics	Castle Canyon Gateway	GWS-CSCG-GW
		Castle Canyon Tag	GWS-CSCG-Tag
		Arrow stock SIM which can have any of pre-defined Arrow tariffs applied to it during provisioning	GECGY/016546
Intel Solutions Ready for the New Edge in Healthcare		Please contact Arrow	
Intel® RFID Sensor Platform	Sensors	RRS, Black Color, US Band	RSP9000W-SKU-ROW BLACK
		RRS, White Color, US Band	RSP9000W-SKU-ROW WHITE
		RRS, Black Color, European Band (ETSI)	RSP9000W-SKU-EU BLACK
		RRS, White Color, European Band (ETSI)	RSP9000W-SKU-EU WHITE
		White FCC	H4000WF 962071
		White ETSI	H4000WE 962081
		Black FCC	H4000BF 962104
		Black ETSI	H4000BE 962093
		White FCC	H3000WF 962055
		White ETSI	H3000WE 962056
		Black FCC	H3000BF 962115
		Black ETSI	H3000BE 962059
		Black FCC/ETSI	H1000B 985819

Table of Contents

Solution	Type	Description	Part Information
Intel® RFID Sensor Platform	Discrete Mounting Plates (2× mounting kits available)	Bracket, Single Flange, Sheet Metal, Unit Mounting, White (For RSP 9000 sensors also need to add a Mounting kit from below)	9220-03^HARDWARE-NMO-20682
		Bracket, Single Flange, Sheet Metal, Unit Mounting, Black (For RSP 9000 sensors also need to add a Mounting kit from below)	9220-04^HARDWARE-NMO-20682
		Plate Mounting POS RSP 9800/ AL ALLOY 5052-H32,.09 Thick (For H1000 sensors)	2024-xx_001
	Mounting Kits (8× mounting kits available)	9615 BOM, Mounting Kit, VESA 75, Wall, White, 6.0"L - (For H4000, H3000 sensors)	9615 ASSY
		9627 BOM, Mounting Kit, VESA 75, Wall, Black, 6.0"L - (For H4000, H3000 sensors)	9627 ASSY
		9645 Mounting Kit, VESA 75, Wall, White, 3.0"L - (For H4000, H3000 sensors)	9645 ASSY
		9647 Mounting Kit, VESA 75, Wall, Black, 3.0"L - (For H4000, H3000 sensors)	9647 ASSY
		9649 Mounting Kit, VESA 75, Track Light, White, 4.0"L - (For H4000, H3000 sensors)	9649 ASSY
		9653 Mounting Kit, VESA 75, Track Light, Black, 4.0"L - (For H4000, H3000 sensors)	9653 ASSY
		9633 Mounting Kit, VESA 75, Track Light, White, 3.0"L - (legacy mtg for RSP 9000 sensors) (not ideal, but will work for H4000, H3000 sensors)	9633 ASSY
		9643 Mounting Kit, VESA 75, Track Light, Black, 3.0"L - (legacy mtg for RSP 9000 sensors) (not ideal, but will work for H4000, H3000 sensors)	9643 ASSY
KMC Commander™ IoT and Automation Platform	Commander Base Packages (Hardware with integrated OS and software) with 250 points license, 5GB cloud storage, & PoE injector	Wi-Fi®	CMDR-V2-WIFI-BASE
		Cellular (AT&T)	CMDR-V2-ATT-BASE
		Cellular (Verizon)	CMDR-V2-VRZ-BASE
	Commander Lite Packages -Similar to the base packages but with 100 point license	Wi-Fi	CMDR-V2-WIFI-BASE-L
		Cellular (AT&T)	CMDR-V2-ATT-BASE-L
		Cellular (Verizon)	CMDR-V2-VRZ-BASE-L
	Software*	250 points license	CMDR-V2-LIC-00250

Solution	Type	Description	Part Information
KMC Commander™ IoT and Automation Platform	Commander Base Packages (Hardware with integrated OS and software) with 250 points license, 5GB cloud storage, & PoE injector	Wi-Fi®	CMDR-V2-WIFI-BASE
		Cellular (AT&T)	CMDR-V2-ATT-BASE
		Cellular (Verizon)	CMDR-V2-VRZ-BASE
	Commander Lite Packages -Similar to the base packages but with 100 point license	Wi-Fi	CMDR-V2-WIFI-BASE-L
		Cellular (AT&T)	CMDR-V2-ATT-BASE-L
		Cellular (Verizon)	CMDR-V2-VRZ-BASE-L
	Software*	250 points license	CMDR-V2-LIC-00250
Kontron EN50155 Fanless LoRa™ IoT Gateway for Railway and Ground Applications		Please contact Arrow	
Lanner and ZEDEDA Cloud-Managed Gateway Solution	Secure, Cloud-Managed Gateway	IEC 61850-3 Wide Temperature ICS Cyber Security Gateway with Intel® Atom™ x5-E3930 processor	ZED-6041A
		IEC 61850-3 Wide Temperature ICS Cyber Security Gateway with Intel® Atom™ x7-E3950 processor	ZED-6041B
Seneca and Navori Digital Signage Kit	Digital Signage	NAVORI-PLAYER-CLOUD (1 – Year License)	Seneca XK-FLX Series Kit
		NAVORI-PLAYER-CLOUD (1 – Year License)	Seneca HDn i3 Kit
		NAVORI-PLAYER-CLOUD (1 – Year License)	Seneca HDn i5 Kit
Seneca Video Capture Appliance Enabled by Panopto		Please contact Arrow	
Seneca® xConnect Remote Management Platform		Please contact Arrow	
Supermicro® and ZEDEDA for the IoT Edge	Edge Computing Solution	Supermicro® Intel® IoT RFP Ready Kits	SYS-E50-9AP-Wi-Fi
			SYS-E100-9S-E
			SYS-E300-8D
			SYS-5018D-FN8T
	Edge Computing Solution	Additional ZEDEDA Software	SFT-ZE-ZEDEDGE1EAP1YR
			SFT-ZE-ZEDEDGE1EAP2YR
			SFT-ZE-ZEDEDGE1EAP3YR

Intelligent Gateway Partners

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Role of Gateways in IoT

Turn Edge Data into Real Value in Near Real-Time

1. Near Real-Time Analytics, Local Decision-Making, and Tighter Process Controls
2. Security for Trusted Data from Edge to Cloud and Protection from Attacks
3. Secure Remote Upgrades, Edge-Node Provisioning and Other Services
4. Enables Interoperability of Various Domains (for ex: Lighting, HVAC, Access Control, Security)

Things — Gateway — Network — Data Center / Cloud Analytics
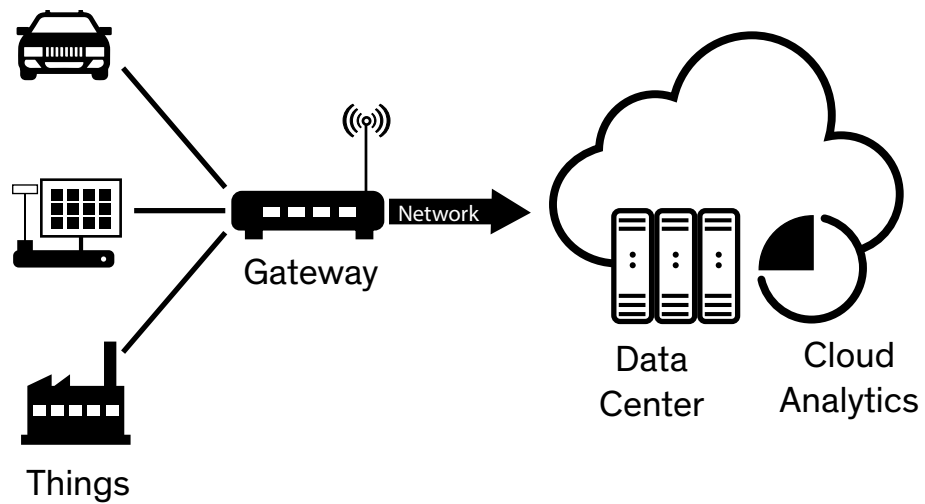
Advantages of Intel®-based Intelligent Gateways

| High performing, even for demanding data processing application (security and surveillance, facial recognition, traffic analysis, smart cities, etc.) | Built-in-security that tightly integrates hardware-based security with software methods | Scalability for various levels of performance requirements without needing to modify application software. Future-proofs application. | Fast and flexible deployment with a platform that supports various operating systems | Wide-ecosystem of 3rd party applications for plug-and-play options across many market applications |

Arrow Intelligent Gateways

Arrow is partnered with leading Intel® gateway providers to offer companies a key ingredient for enabling the connectivity of legacy devices and other systems to the IoT. The table below compares gateway offerings from our most strategic gateway partners.

Supplier	Intel Processor Support — Increasing Performance								Core Competencies
	Quark™	Atom™	Celeron®	Pentium®	Core™ i3	Core™ i5	Core™ i7	Xeon®	
AAEON		●	●	●	●	●	●		– Comprehensive offerings of hardware platforms – Strong expertise in transportation and railway markets
ADLINK	●	●							– End-to-end solutions with industrial hardware, data connectivity and software platforms – Strong expertise in the industrial market – RRKs available for machine condition monitoring and machine vision
Advantech	●	●	●			●			– Integrated solution provider – Vertical market solutions for retail, signage, transportation, and automation – RRKs available for retail solutions
Dell		●							– Industrial and ruggedized offerings – MRS available in partnership with V5 systems
Eurotech	●	●							– End-to-end IoT solution provider with cloud, software frameworks, and cellular connectivity – Expertise in industrial, automotive, rolling stock, and heavy-duty markets
HPE		●				●		●	– Very high-performing gateways with integrated Xeon® processors – Products integrate seamlessly with enterprise systems
Kontron	●	●			●	●	●	●	– Wide range of hardware platforms – Expertise in industrial applications

AAEON an ASUS assoc. co. · ADLINK Leading EDGE COMPUTING · ADVANTECH Enabling an Intelligent Planet · DELL

EUROTECH Imagine. Build. Succeed. · Hewlett Packard Enterprise · kontron

AAEON
an ASUS assoc. co.

NA GC: √	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: ✕	APAC AGS: ✕
NA ECS: ✕	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

AAEON is a leading designer and manufacturer of advanced industrial and embedded computing platforms. AAEON offers more diversified embedded products and solutions at higher quality standards to meet world-class design, and manufacturing demands.

AAEON Core Value and Differentiation

> Comprehensive offerings of hardware platforms to serve the IoT market
  — Different form factors, and different core logic (various Intel® processors from Low-end to high-end)
  — PCs in a small form factor, fanless, rugged design
  — Board or system-level (deployable solutions)
  — Withstand industrial and extended temperature
  — Provide ruggedized solutions IP67/68
> Strong expertise in transportation and railways markets
> Products leverage Windows® IoT ecosystem (Windows 10 IoT, Azure)

Target Applications

> SIs and OEMs in the industrial markets
> Specific focus on railways and transportation

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel Atom®, Core-I
Operating systems	Windows, Linux, Android™
Wired connectivity	Ethernet
Wireless connectivity	Wi-Fi®/BT, ZigBee®, 3G/LTE, LoRa™
Protocols	Depending on the software platform
Security	TPM
Manageability	Depending on the software platform
Application-bundles	Software development kits (SDKs)
Interoperability with other devices/systems	
Cloud support	Azure and depending on Partners' solutions
Certifications	FCC/CE, UI/cUL, E-Mark
Product families	AIoT and Boxer

ADLINK
Leading EDGE COMPUTING

NA GC: √	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: √	APAC AGS: ✕
NA ECS: √	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

ADLINK Technology is a global leader of Edge Computing. By providing offerings from building blocks to fully-featured Edge platforms, ADLINK reduces the complexity of building Industrial Internet of Things (IIoT) systems.

ADLINK Core Value and Differentiation

> "Connects the unconnected" by offering systems & Edge platforms for the industrial market
> End-to-end IIoT solutions which include of industrial hardware, advanced data connectivity, industry leading partner software and vendor-agnostic cloud compatibility
> Strategic partner eco-system enables the pre-integration of best-in-class offerings for a complete system to connect the unconnected

Target Applications

> SIs and service providers with expertise in the industrial markets
> Industrial, Manufacturing, Smart Infrastructure, and Oil & Gas companies

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel® Atom® x7-E3950 quad core/x5-E3930 dual core process
Operating systems	Windows® 10 IoT Enterprise 64Bit Ubuntu Linux 16.04 LTS 64Bit
Wired connectivity	2× Intel GbE LAN
Wireless connectivity	Wi-Fi®/BT/3G/4G LTE/LoRa™ wireless kit (w/Antenna)
Protocols	Modbus RTU, Modbus TCP/IP, DDS, Http, MQTT (by using Vortex Edge)
Security	> Built-in TPM 2.0 (Trusted Platform Module) to provide hardware-based security > Intel Boot Guard features hardware-based boot integrity protection that prevents unauthorized software and malware takeover > UEFI secure boot protects endpoints and blocks malicious software
Manageability	SEMA 3.5
Application-bundles	N/A
Interoperability with other devices/systems	N/A
Cloud support	Microsoft Azure, IBM Bluemix, Amazon
Certifications	FCC/CE/RMC
Product families	MXE-210 series

ADVANTECH

NA GC: √   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: √   APAC AGS: ✕

NA ECS: ✕   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

As one of the leading intelligent solution providers, Advantech offers a portfolio of solution-ready and service-ready platforms to offer user-centric solutions that are flexible and scalable. The iRetail portfolio includes solutions for Digital Signage, eMenu Board and Store Traffic analysis.

Advantech Core Value and Differentiation

> Provider of integrated solutions that include edge computers, edge intelligence and sensing integration software, IoT development tools, and preconfigured cloud services to accelerate IoT implementation
> End-to-end vertical market solutions for retail, signage, transportation, and automation
> Global leader of Embedded and Automation Solution Platforms for IoT System Integrators

Target Applications

SIs and service providers with expertise in the retail, signage, transportation, and Automation markets.

Summary of Gateway Offerings

Areas	Description
Hardware platforms	X86
Operating systems	WES7, Win 10, Win 10 IoT Ent., Linux (project based)
Wired connectivity	Ethernet, Serial, Digital I/O, Analog I/O, Modbus
Wireless connectivity	BLE, Wi-Fi®, LoRa™, LTE 4G, 3G, Sub1G, WSN, GPS
Protocols	MQTT
Security	Acronis, McAfee, Intel® SDO
Manageability	WISEPaaS RMM, and OTA, SCADA
Application-bundles	Edge Intelligent System
Interoperability with other devices/systems	Azure, AWS
Cloud support	AWS Greengrass and Microsoft Azure, GE Predix
Certifications	FCC, UL, CE
Product families	EIS, WISE, ARK, UBC, and UTX

DELL

NA GC: √   EMEA GC: ✕   APAC GC: ✕

NA AGS: √   EMEA AGS: √   APAC AGS: ✕

NA ECS: √   EMEA ECS: ✕   APAC ECS: ✕

✕: Not Available   √: Available

Dell Technologies is a unique family of businesses that provides the essential infrastructure for organizations to build their digital future, transform IT and protect their most important asset information.

Dell Core Value and Differentiation

> Gateways from Dell ideal for industrial and ruggedized environments. Wide variety of protocols and legacy standards can be implemented
> Scale and combination of OT and IT expertise for implementing platform-level solutions
> Enterprise-class security and manageability

Target Applications

> SIs and service providers with expertise in the industrial markets
> Industrial, Manufacturing, Smart Infrastructure, Oil & Gas companies

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel® Atom™ E3805 1.33 GHz & E3827 1.75GHz
Operating systems	Ubuntu Core 16 Linux, Windows 10 IoT Enterprise LTSB
Wired connectivity	Gigabit Ethernet, USB 2.0, USB 3.0, Serial, CANbus (optional), HDMI, BACNet, Modbus
Wireless connectivity	Wi-Fi®, BT/BLE, 3G/4GLTE, IEEE 802.15.4/ZigBee®/6LoWPAN (optional)
Protocols	
Security	Trusted Platform Module (TPM) v2.0 capable for Windows 10 OS and Ubuntu Core 16; Secure Boot, BIOS password and I/O port disablement. Chassis intrusion alerting via optional rugged enclosure
Manageability	Available Microsoft® SCCM integration (on Windows platforms) and remote cloud management option via Dell Edge Device Manager
Application-bundles	
Interoperability with other devices/systems	Support a wide variety of third-party solutions, including offerings from Dell qualified ISV partners
Cloud support	Dell gateways integrate with most 3rd party cloud providers
Certifications	
Product families	Edge Gateway

EUROTECH
Imagine. Build. Succeed.

NA GC: √	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: √	APAC AGS: ✕
NA ECS: ✕	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

Eurotech is a leading company in Internet of Things solutions. With 25+ years of experience in Embedded Computing and a global footprint, Eurotech has contributed key IoT technologies, such as the MQTT protocol.

Eurotech Core Value and Differentiation

> Provide integrated IoT solutions that include
  – A cloud-based integration platform (Everyware Cloud) with data analytics
  – A software framework for developing and deploying applications at the edge (Everyware Software framework)
  – Device management solutions
  – Industry specific bundles
  – Security
> Hardware: A portfolio that spans different vertical markets (Industrial, Automotive, Rolling Stock, and Heavy Duty)
> Carrier-certified devices ready for deployment

Target Applications

System integrators and end-customers in Medical, Healthcare, Logistics, Defense, Surveillance, Retail, and Building Automation.

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel® Quark SoC and Intel Atom processors
Operating systems	Windows® 10 IoT, Yocto Linux, Windriver Linux
Wired connectivity	Ethernet, USB, Serial, CAN, Audio, VGA
Wireless connectivity	GPS, Wi-Fi®, Cellular, Bluetooth®
Protocols	HTTP, MQTT, XML, Websockets, JSON
Security	Authentication (device, user, data), access control, user management, roles and permissions
Manageability	Device management with OTA capabilities
Application-bundles	Industrial application (ReliaGATE), lightly rugged and automotive (DynaGATE), and rolling stock and heavy-duty (BoltGATE)
Interoperability with other devices/systems	
Cloud support	Eurotech's Everyware Cloud, AWS and Azure
Certifications	Carrier (e.g. Sprint, NTT DoCoMo), Physical (e.g. SAE, IP65), Regulatory (e.g. FCC), Vertical (e.g. E-Mark), Safety (e.g. EN60950)
Product families	ReliaGATE (for industrial), DynaGATE (for automotive) and BoltGATE (for rolling stock)

Hewlett Packard Enterprise

NA GC: √	EMEA GC: ✕	APAC GC: ✕
NA AGS: √	EMEA AGS: √	APAC AGS: ✕
NA ECS: √	EMEA ECS: ✕	APAC ECS: ✕

✕: Not Available   √: Available

Hewlett Packard Enterprise is a global technology leader focused on developing intelligent solutions that allow customers to capture, analyze and act upon data seamlessly from edge to core to cloud.

HPE Core Value and Differentiation

> Range of gateways integrated with Intel® Atom™, i5 Core to Xeon® processors
> Ruggedized for industrial environments
> Products integrate seamlessly with enterprise systems with HPE's expertise that span OT to enterprise IT systems

Target Applications

> SIs and service providers with expertise in the industrial markets
> Industrial, Manufacturing, Smart Infrastructure, Oil & Gas companies

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel Atom, Core i5, Xeon
Operating systems	Microsoft Windows 7/8.1/10, Microsoft Server, Red Hat Linux, VMware vSphere, Citrix XenServer, CentOS
Wired connectivity	Gigabit Ethernet, 10 Gb (SFP+) or two pass-through 4×10 Gb (QSFP+), USB 2.0/3.0, VGA, HDMI, PoE, Serial
Wireless connectivity	Wi-Fi®, Bluetooth®
Protocols	
Security	I/O Port Disablement, BIOS Password, Secure Boot. Compatible with Aruba ClearPass, Aruba Virtual Intranet Access for VPM tunnels
Manageability	HPE Integrated Lights Out (iLO) management
Application-bundles	Edge Intelligent System
Interoperability with other devices/systems	Support a wide variety of third-party solutions, including enterprise systems
Cloud support	Compatible with cloud offerings from HPE and 3rd party providers
Certifications	
Product families	HPE Edgeline, HPE GL10/20 series

NA GC: √ EMEA GC: ✕ APAC GC: ✕

NA AGS: √ EMEA AGS: √ APAC AGS: ✕

NA ECS: ✕ EMEA ECS: ✕ APAC ECS: ✕

✕: Not Available √: Available

Kontron is a global leader in embedded computing technology. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure, and innovative applications for a variety of industries.

Kontron Core Value and Differentiation

> Wide range of hardware platforms
  – Covering full spectrum of Intel® processors for scalability
  – Compact and ruggedized with fanless PCs for harsh environments
> Strong focus on industrial applications and automation (support for real-time communication protocols like IEEE 1588)
> Modular designs for easy configuration and long-life cycles

Target Applications

> SIs and service providers with expertise in the industrial markets
> Industrial, manufacturing, transportation, video surveillance, navigation, and Medical

Summary of Gateway Offerings

Areas	Description
Hardware platforms	Intel® Atom™, Xeon®, Core™-I, Celeron®
Operating systems	Windows® 7/8.1/10, Yocto Linux, Ubuntu Linux
Wired connectivity	10/100/1000 Ethernet, IEEE1588, USB 2.0, Serial, Profibus, CAN, EtherCAT, Fieldbus, HDMI, Display port, PCI, and PCIe extensions
Wireless connectivity	Wi-Fi-BT, Cellular (GPRS/3G/LTE), LoRa™
Protocols	HTTP, MQTT
Security	Kontron's security solution APPROTECT with full IP and copy/reverse engineering protection, integrated TPM 2.0 security chip, role-based access control
Manageability	Secure updates, Device authentication
Application-bundles	Transportation
Interoperability with other devices/systems	
Cloud support	Cloud connector to support a variety of 3rd party cloud platforms
Certifications	UL/CB/CE/FCC, IEC 60068 (shock and vibration)
Product families	KBOX series, TRACe

With Intel® & Arrow as solution providers, customers can...

> Build secure and scalable solutions spanning from edge to the cloud
> Leverage solutions from a rich partner ecosystem for quick deployment
> Achieve easy inter-operability with standards-based implementation
> Reuse software and IP across multiple platforms
> Achieve fast time to market with solutions and platforms targeted at end-markets
> Innovate and adapt quickly to meet market needs

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Are You Five Years Out?

Most people live in the present. The world of now. But a handful of us work in a unique world that doesn't quite exist yet—the world of Five Years Out.

Five Years Out is the tangible future. And the people who live and work there know that new technologies, new materials, new ideas and new electronics will make life not only different, but better. Not just cheaper, but smarter. Not just easier, but more inspired.
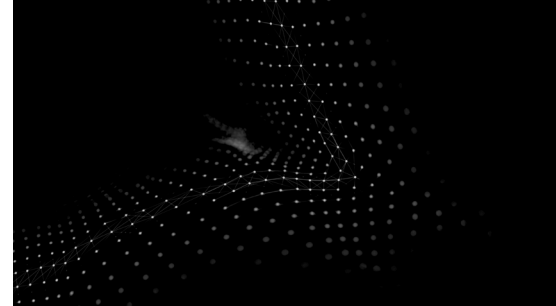
Five Years Out is an exciting place to be. So exciting that, once you've been there, it's hard to get excited about the present. Because we know what's coming is going to be so much better.

Five Years Out is a community of builders, designers, engineers and imaginers who navigate the path between possibility and practicality. Creating the future of everything from cars to coffeemakers.
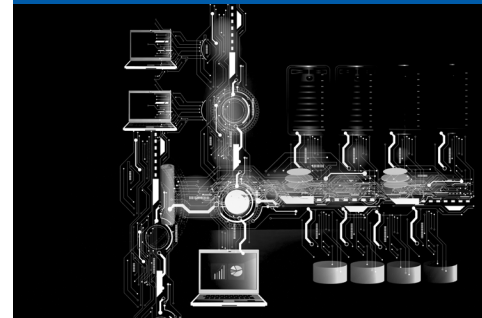
Are you one of them? Then you're probably working with us.

Market Ready Solutions

Intelligent Gateways

Arrow Intel Solutions Portfolio

Via Email

iot@arrow.com
Email us for answers to your questions or to start a conversation.

Online

arrow.com/iot
Visit our website for everything from the latest news to line card information.

ARROW
Five Years Out

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