

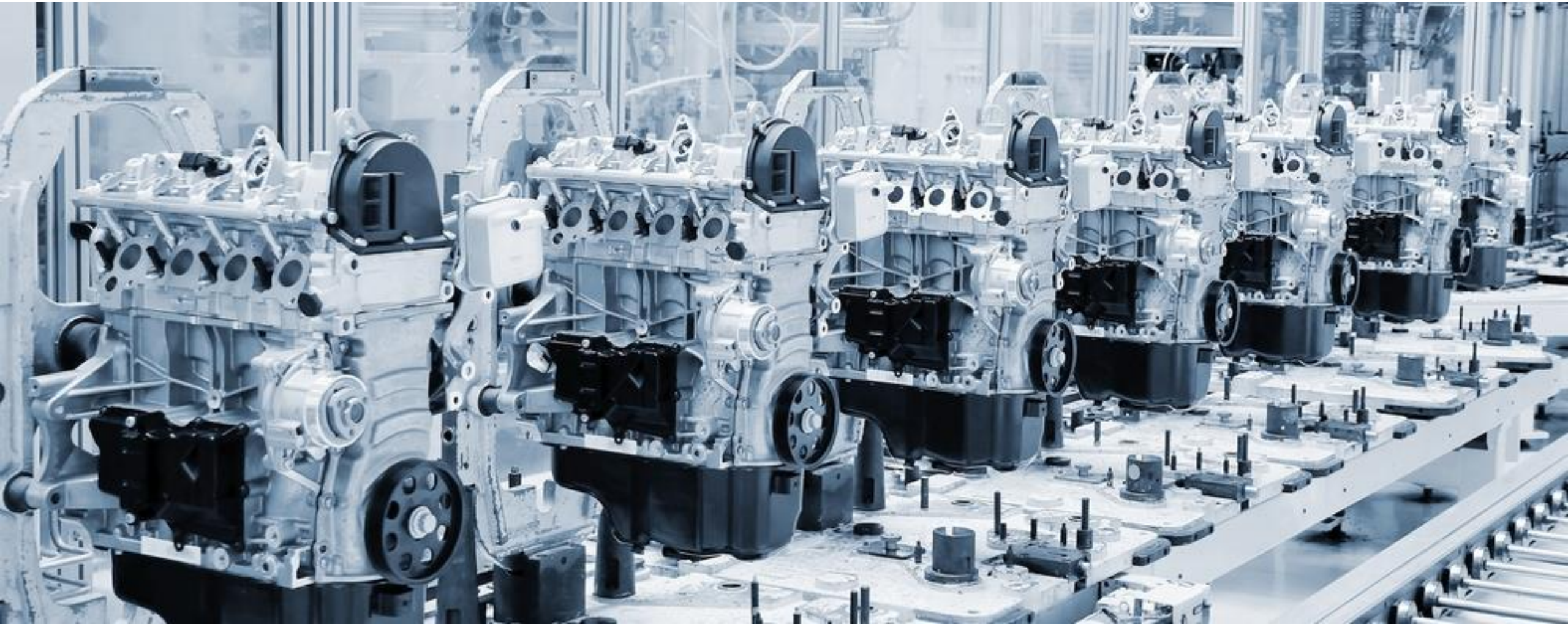
# / Avnet /IOTCONNECT Solutions Suite

Smart Factory Solutions

AVNET®

/IOTCONNECT®

Manage | Secure | Deploy



# / Solution Accelerator & Marketplace Index

## /IOTCONNECT enabled solutions

Smart Generator Monitoring

Smart City Noise Detection

Smart Asset Monitoring

Smart Facility Solutions

Smart Factory Solutions

Smart Fleet Management

Smart Warehouse Monitoring

SaaS offering

/IOTCONNECT®

### Avnet's Smart Factory Solutions powered by IoT and AI

Get real-time insights across the factory floor Avnet's Smart Factory solution, built on /IOTCONNECT™, helps you monitor and track of production and performance on your factory floor. You can collect and analyze data across machines to make your processes faster and more efficient, while gaining real-time insights to make informed decisions. Benefits of the solution include: • Higher quality products • Real-time operational visibility for all locations • Integration with SCM systems • ML-based prescriptive analytics capabilities KPIs: • Availability • Quality • Down Time • Behind Plan • Actual Performance • OEE • Machine Down / Idle Time / In Use



# Visit Our Marketplace Listings



avnet (8 results) showing 1 - 8

Sort By: Relevance

AVNET

[IoTConnect](#)  
By Avnet  
[Free Trial](#) | [Vendor Insights](#)  
Avnet's IoTConnect is a comprehensive solution accelerator software that facilitates IoT device connectivity, real-time monitoring, and advanced analytics. It offers seamless device integration, robust security, and easy and clear methods to gain valuable insights for businesses to optimize...

AVNET

[Avnet's Smart City Noise Detection Solution: Harnessing IoT and AI](#)  
By Avnet  
Avnet's pre-defined and configurable smart city solution focuses on the system integrators' biggest challenges: complexity, security, and scalability. As a global technology distribution and solutions, Avnet brings decades of experience and capabilities to enable digital...

softweb solutions

[Data and Analytics Consulting Services: Data 360 workshop](#)  
By Softweb Solutions AN AVNET COMPANY  
Data in 0's and 1's do not serve any purpose. Data is useful when it can unlock the potential of your business. One of the biggest challenges business users face is the volume of data they have to deal with. With so much data available, it can be difficult to know where to start....

softweb solutions

[IoT 360° Program: Transform Your Business with Advanced IoT Intelligence](#)  
By Softweb Solutions AN AVNET COMPANY  
An IoT 360° program is a comprehensive approach to leveraging the Internet of Things (IoT) for business success. It encompasses various aspects, from connectivity and data capture to processing, analytics, and integration with human value. One of the benefits of an IoT 360° program is its ability to...

softweb solutions

[End-to-End AI now: From Strategy to Deployment with Softweb Solutions](#)  
By Softweb Solutions AN AVNET COMPANY  
Artificial intelligence (AI) is not about replacing humans, but augmenting them by using AI to solve complex problems and make better decisions fast. AI360° is a comprehensive and human-centered approach to adopting AI and intelligence. It aims to help you speed up your...

softweb solutions

[Softwebs' Gen AI 360° Program: Go beyond the hype, unlock real AI value](#)  
By Softweb Solutions AN AVNET COMPANY  
Forget the buzzwords and unlock the true potential of Generative AI (GenAI). The generation of Artificial Intelligence, with Softwebs' Gen AI 360° program. Your compass, guiding you through the exciting yet complex landscape of GenAI, so you create exponential, lasting value...

AVNET

[IoTConnect](#)  
Sold by: [Avnet](#)  
[Free trial](#) | [Vendor Insights](#)  
Avnet's IoTConnect is comprehensive solution accelerator software that facilitates IoT device connectivity, real-time monitoring, and advanced analytics. It offers seamless device integration, robust security, and easy and clear methods to gain valuable insights for businesses to optimize operations and drive innovation. With diverse connectivity options, strong data protection measures, and true scaling capabilities, IoTConnect empowers organizations to leverage the full potential of IoT technology and accelerate digital transformation.  
[Show more](#)

[View purchase options](#)  
[Try for free](#)  
[View assessment data](#)  
[Save to list](#)

Overview

Pricing

Usage

Support

Reviews

### Product Overview

Avnet's IoTConnect is a comprehensive solution accelerator software that facilitates IoT device connectivity, real-time monitoring, and advanced analytics. It offers seamless device integration, robust security, and easy and clear methods to gain valuable insights for businesses to optimize operations and drive innovation. With diverse connectivity options, strong data protection measures, and true scaling capabilities, IoTConnect empowers organizations to leverage the full potential of IoT technology and accelerate digital transformation.

IoTConnect's comprehensive ecosystem and pre-built solutions reduce the time and effort required to bring IoT products and services to market.

Pre-connected device enablement: Easily connect and manage IoT devices without complex configurations.

Application accelerators and integrations: Through APIs, these accelerator templates focus on end applications giving a prebuilt, head-start for any solution design.

Advanced data analytics: Gain valuable insights from IoT data through real-time monitoring and customizable dashboards.

Robust security measures: Industry-standard protocols and encryption mechanisms ensure the security of data transmission and device authentication.

Deployment Manager capabilities: OEM's can deploy custom products and solutions within IoTConnect and have instant access to features like subscription management, billing and support.

Sold by

Product Video

Fulfillment Method

Avnet

[See product video](#)

Software as a Service (SaaS)

### /IOTCONNECT Platform

0:00 / 2:34

PREVIOUS

NEXT

#### Highlights

- Simplified IOT deployment: IoTConnect offers a user-friendly interface that simplifies the deployment of IOT solutions, enabling businesses to quickly connect and manage devices without complex setup processes.
- Scalability and flexibility: With IoTConnect, businesses can seamlessly scale their Global IOT deployments to accommodate growing needs. The enablement suite supports a wide range of devices and protocols, allowing for flexibility and interoperability across diverse environments.
- Powerful data insights: IoTConnect provides robust analytics and data visualization tools, empowering businesses to gain valuable insights from their IOT devices. Real-time monitoring and predictive analytics enable proactive decision-making and optimization of operations.

All Avnet Listings



# Smart Factory Solution

Avnet's Smart Factory solution, built on the /IOTCONNECT™ platform and hosted on Amazon's AWS, is designed to transform traditional manufacturing environments into efficient, data-driven operations. This modular solution enables real-time monitoring and tracking of production and performance across the factory floor, providing manufacturers with critical insights to optimize processes, reduce downtime, and improve product quality.

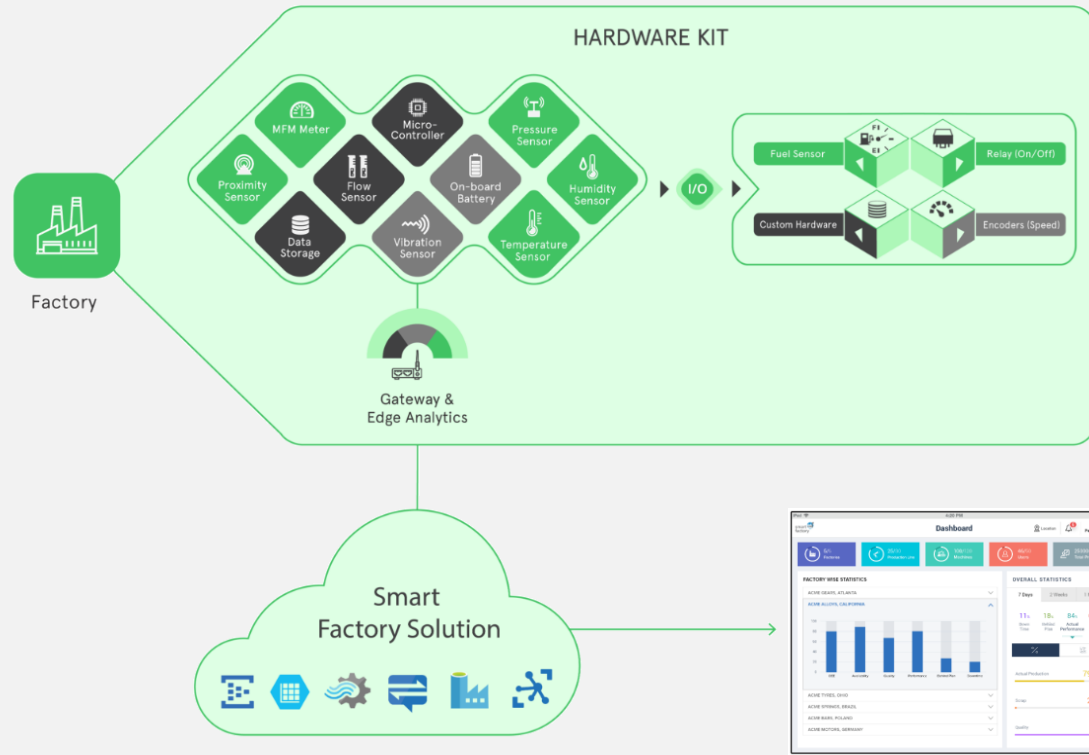
## Seamless integration & rapid deployment:

Our smart factory solutions enable quick deployment with minimal disruption, leveraging an extensive expertise and a strong partner ecosystem reducing time, costs, and risks.

## Advanced Technology for High ROI:

Streamline operations by leveraging IoT, machine learning, AI, and advanced analytics to provide real-time insights.

**Secure and Scalable Platform:** Our solutions implement comprehensive end-to-end data security, adhering to the appropriate industry and federal standards.



## Features

Our Smart Factory Solution has the capability to connect multiple sensors to monitor the status, automate, collect data, analyze it and derive useful insights to improve manufacturing operations.

- Edge analytics
- Factory performance monitoring and predictive analytics
- Smart ticketing systems for issue tracking
- Anomaly diagnosis and precisions

[Learn more](#)

[Marketplace Listing](#)

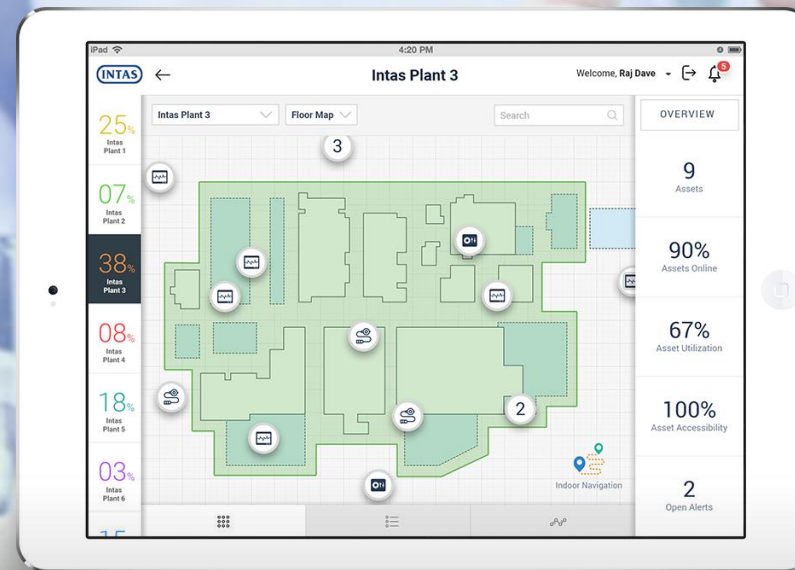
# A leading pharmaceuticals company

## SITUATION:

A leading, vertically integrated global pharmaceutical formulation development, manufacturing, and marketing company. Committed to challenging the unmet medical and societal needs through a comprehensive pharmaceutical value chain spanning across the world.

## VALUE PROPOSITION:

Identify an efficient way to adhere to stringent compliance requirements. With Avnet's Smart Factory solution, they were able to easily monitor and manage the factory environment in real time to ensure optimum product quality; while meeting Title 21 CFR Part 11 compliant.



## HARDWARE CONNECTED TO IOTCONNECT

- PLCs and HMIs - The first phase was connecting 74 PLCs including: Panasonic, Siemens, Mitsubishi, Allen-Bradley, Omron

## DATA ACQUISITION HARDWARE

- Masibus MINT Communication Processor (Data Connector)
- Masibus MINT Intelligent Digital and Analog I/Os (I/O device)

## IOT GATEWAY

- Dell Edge Gateway 3003

[→ READ MORE](#)

## DEPLOYING IOT WITH AVNET HAS ENABLED:

Dashboards accessible via mobile apps help factory floor supervisors and management monitor the factory environment in real-time from anywhere.

Machine learning enables devices to alter their course without the need for human intervention, saving time and resources.

Wireless sensors enable continual monitoring of key environmental variables to ensure quality standards are met.

Sensor data is transmitted directly to the cloud so it can be analyzed and used to identify areas for improvement.

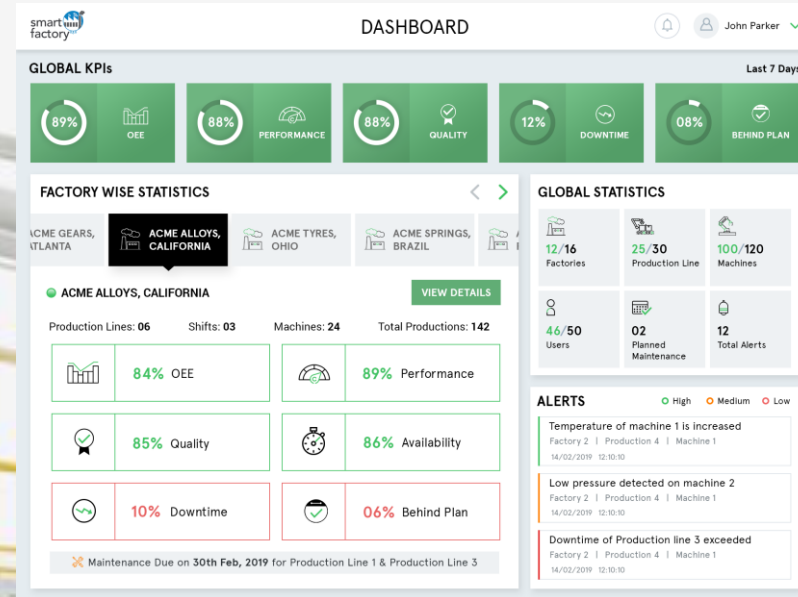
# A leading powder coating manufacturing company

## SITUATION:

- World class manufacturer of high-quality powder coatings.
- The company was founded in 1999 and since then has become the largest privately owned powder coating manufacturer in the U.S.
- The company has two state-of-the-art facilities, centrally located to ensure rapid delivery across the USA and beyond.

## VALUE PROPOSITION:

- Monitor their production lines and also provide detailed insights
- Detect anomalies using ML
- Improve the overall efficiency
- Real-time alerts based on rules defined in the system
- Reports based on usage



## PRODUCTION IMPROVEMENTS:

- 59 assets made connected and smart
- Increased throughput by around 23%
- Reduced inventory or material holding costs by 11%
- \$0.97 million in ROI generated by March 2019 (First Quarter)

→ [READ MORE](#)

## DEPLOYING IOT WITH AVNET HAS ENABLED:

Delivered a smart factory solution that empowers client to monitor their production lines from a centralized dashboard

The solution enabled them to connect multiple production lines and machines to the smart factory solution

Smart rules for autonomous actions

Enabled the ability to acquire data at different stages of production, remote monitoring, view analytics, anomaly detection and predict maintenance

# / Summary & Next Steps

## Benefits

1. **Seamless Integration and Rapid Deployment:** Our smart factory solutions leverage extensive expertise and a strong partner ecosystem, enabling quick deployment with minimal disruption. The modern networking infrastructure easily integrates with existing systems, reducing time, costs, and risks.
2. **Advanced Technology for High ROI:** Featuring cutting-edge technologies such as IoT, machine learning, AI, and advanced analytics, our solutions provide real-time insights and streamline operations, driving accelerated return on investment.
3. **Secure and Scalable Platform:** Our solutions prioritize comprehensive data security, adhering to the highest industry and federal standards. Built on the /IOTCONNECT platform, they offer proven scalability to support future growth and evolving needs.

## Outcomes

1. **Enhanced Operational Efficiency:** Provides real-time insights into production and performance across the factory floor, helping optimize processes and improve efficiency.
2. **Data-Driven Decision Making:** Collects and analyzes machine data, enabling informed decisions and supporting prescriptive analytics through machine learning for improved operations.
3. **Improved Product Quality and Performance:** Monitors key performance indicators (KPIs) such as availability, quality, downtime, and OEE, ensuring higher-quality products and operational visibility across all locations.

## Next Steps

**Let's team up to automate your industrial manufacturing unit**

**Contact us: [IoT@Avnet.com](mailto:IoT@Avnet.com)**



# More about Avnet /IOTCONNECT and Softweb solutions (an Avnet company)



# / About Avnet

## Quick facts

- Founded in 1921
- Headquartered in Phoenix, Arizona
- \$26.5B in revenue (FY23)
- AVT listed on the NYSE since 1960
- AVT listed on NASDAQ since 2018
- #163 on FORTUNE 500 (US) in 2022

**15,300**

Employees  
worldwide

**1,925**

Engineers around  
the world

**2.8M+**

Engineering  
community members

**1M+**

Customers in  
140 countries

**250+**

Locations  
globally

**283B+**

Units shipped  
annually

# Avnet Investments

AVNET

CORE SEMI

softweb  
solutions

AN AVNET COMPANY

CLOUD APPLICATION DEVELOPMENT

W  
Witekio

AN AVNET COMPANY

EMBEDDED SOFTWARE  
DESIGN SERVICES

TRIA  
AN AVNET COMPANY

EMBEDDED MODULES  
& BOARDS



DESIGNED BY AVNET

SOLUTIONS DEVELOPMENT:  
ADVANCED APPLICATIONS GROUP



## IoT Sales Team

A global specialized IoT team focused on providing unique hardware, software and cloud expertise to OEMs



## Extensive line card

Semiconductors, IP&E, embedded systems, software and cloud



## Hardware Edge Design

Technology selection and support provided by 800+ Field Application Engineers



## Embedded Software Design

Design, develop, and integrate embedded OS, firmware, and application software



## Cloud and Digital Design

Complete IoT solutions (cloud, apps, data insights) built on /IOTCONNECT



## Supply Chain and Logistics

Supply chain models to address each customer's priorities



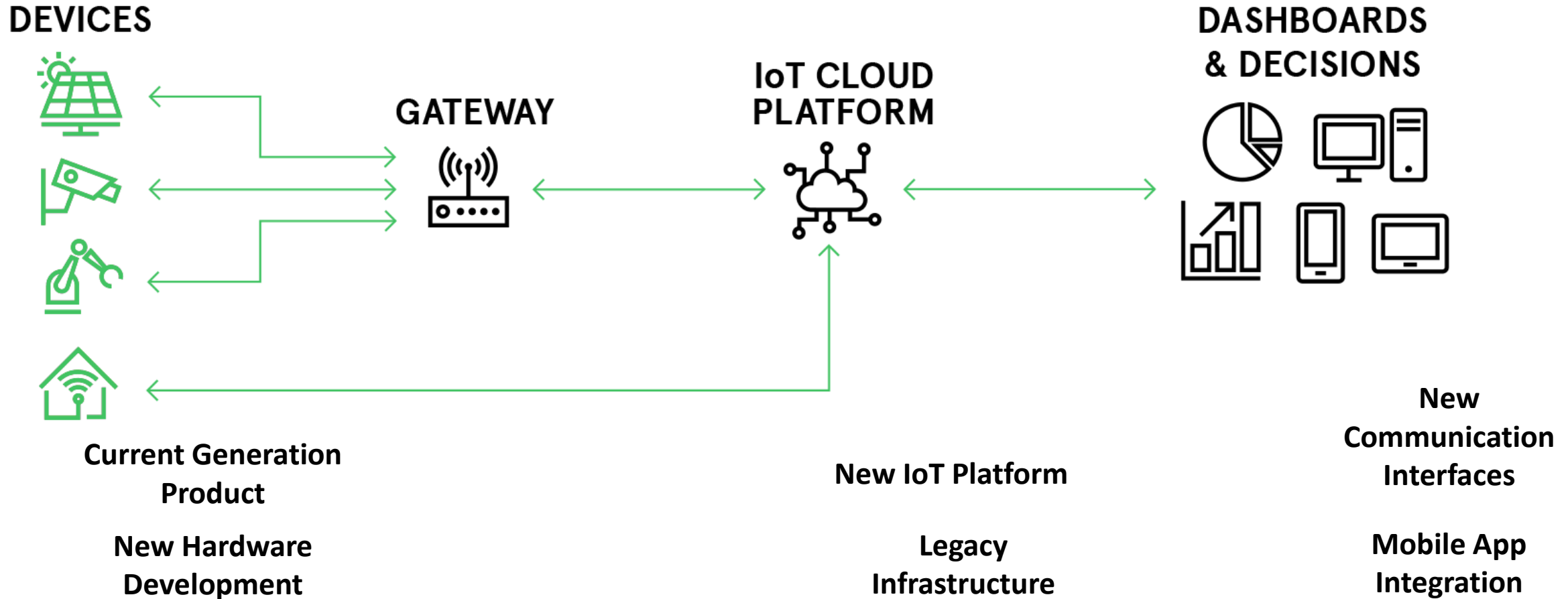
## Lifecycle Management

Digital Managed Services, OTA updates, post sales support

Gives us Unmatched Capabilities

AVNET

# / Challenge of IoT



Developing an IoT product is costly, cumbersome, and time consuming.



# / Challenge of IoT

DEVICES



GATEWAY



IoT CLOUD  
PLATFORM



DASHBOARDS  
& DECISIONS



/ IOTCONNECT<sup>®</sup>

With /IOTCONNECT, IoT development becomes simple, secure, and scalable.

## Things

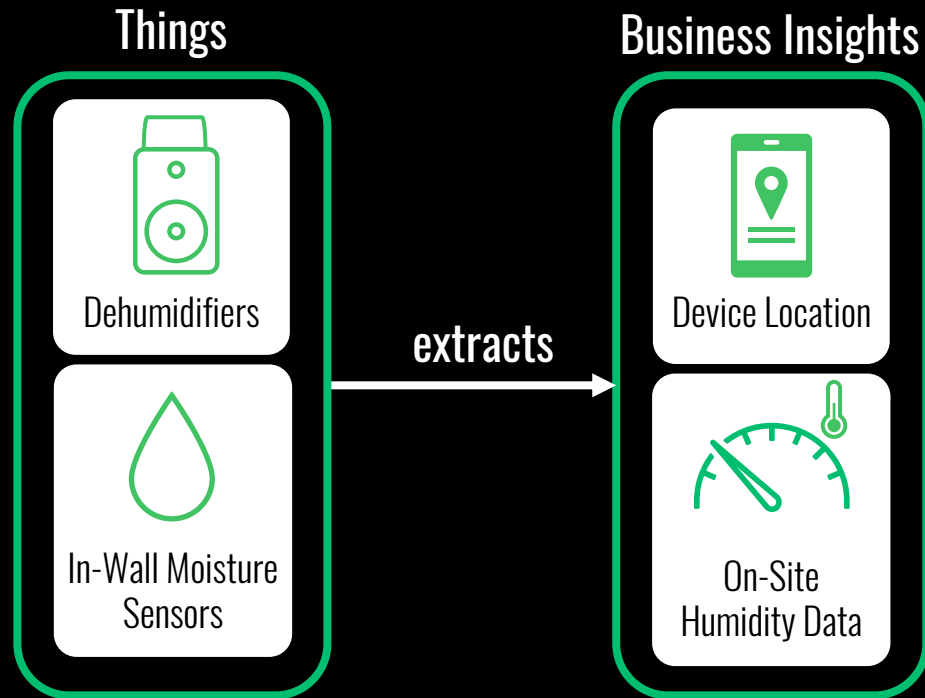


Dehumidifiers



In-Wall Moisture  
Sensors

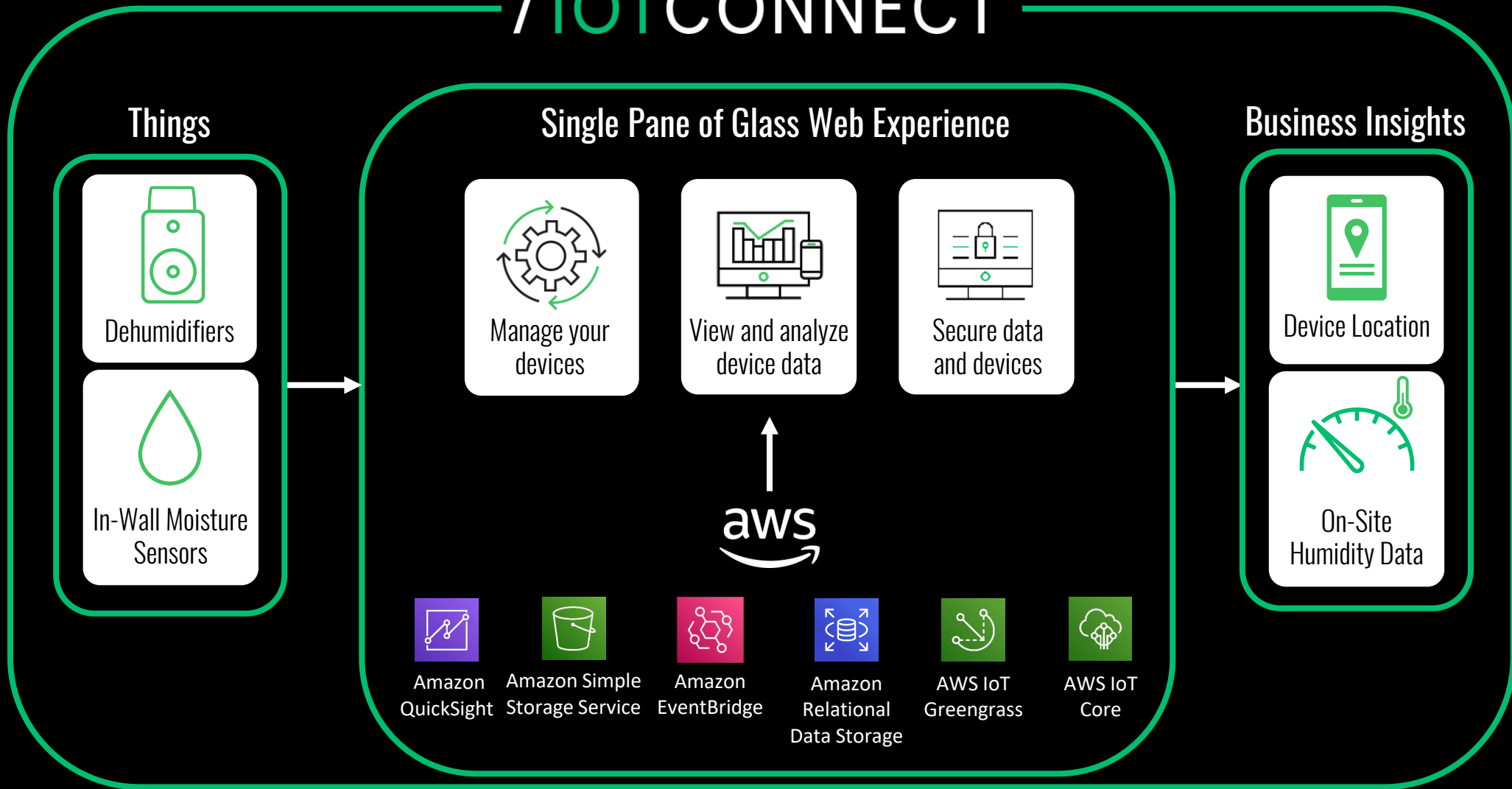
It takes **things** like **connected dehumidifiers** and **moisture sensors**



and **extracts valuable insights** to improve business intelligence

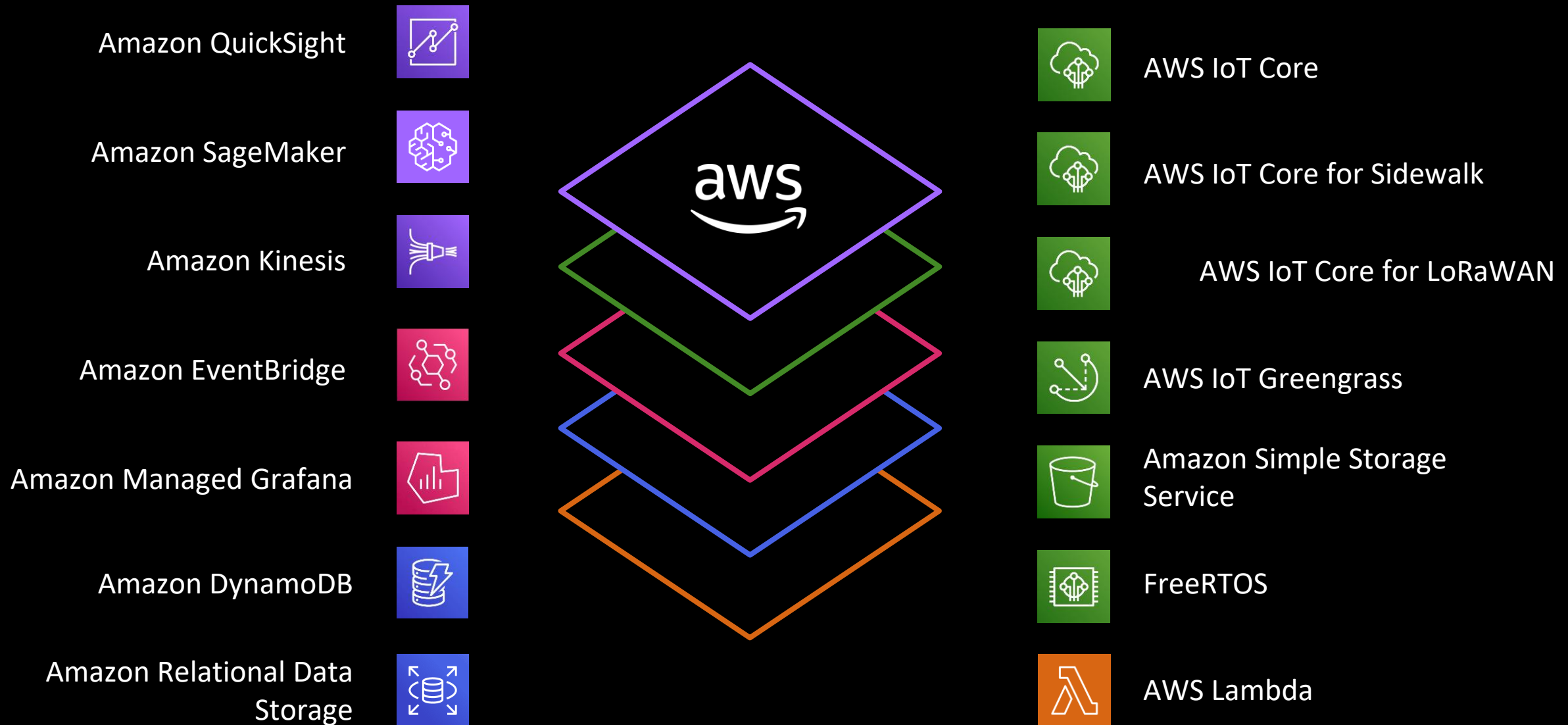


# /IOTCONNECT<sup>®</sup>



to create a **single pane of glass** experience

that's **built on AWS**



We take needed **AWS services** for IoT solution development

# /IOTCONNECT<sup>®</sup>

## Solutions Suite

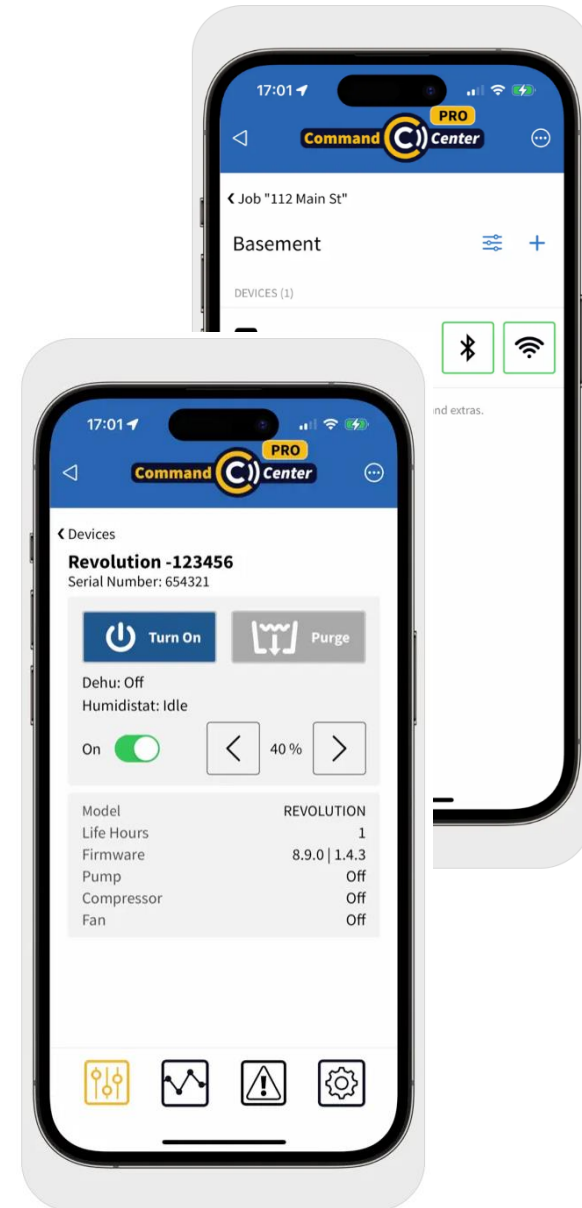
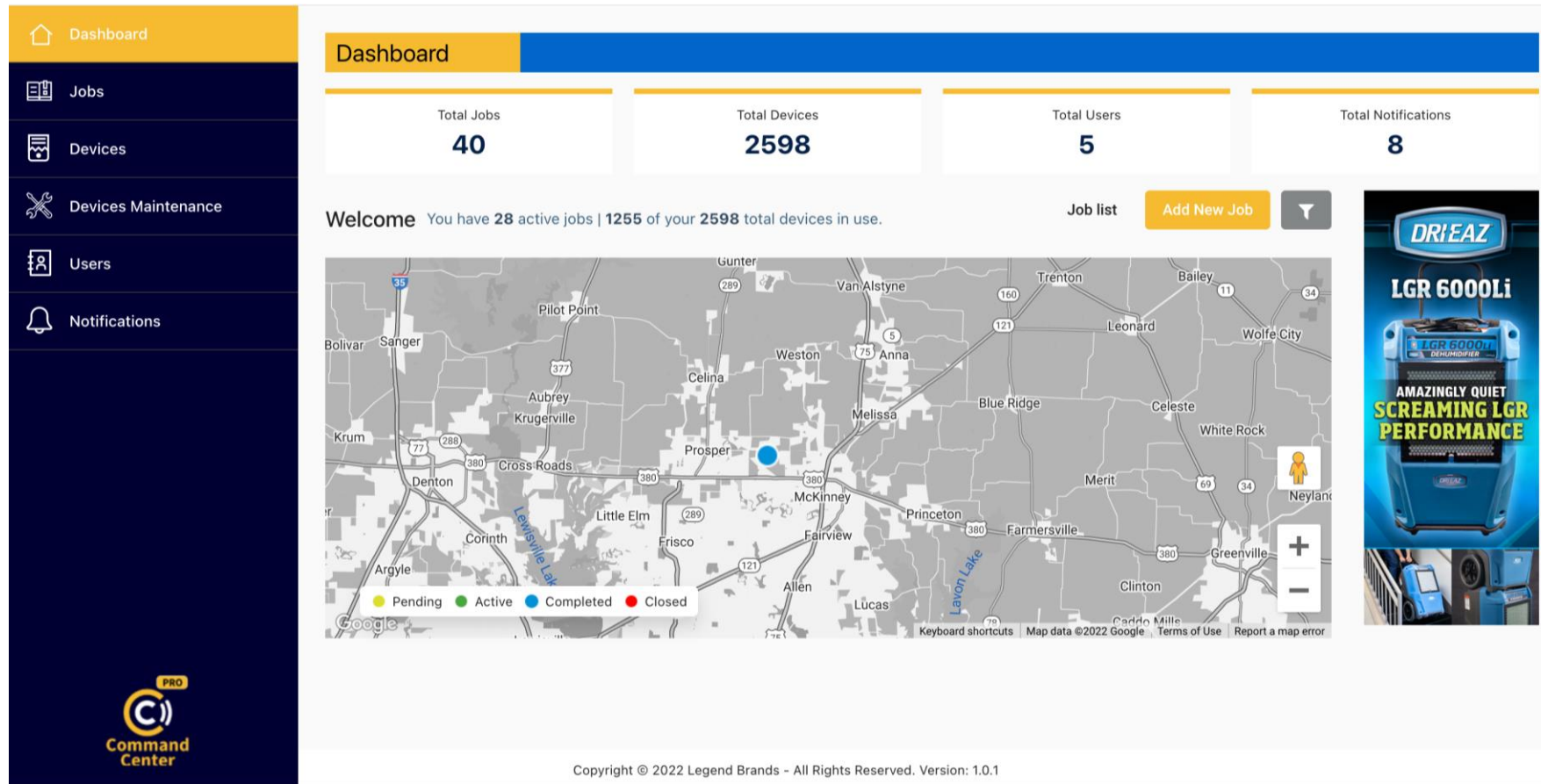


One interface for AWS  
services

And aggregate them to create **one ecosystem** for **production ready IoT**



# /IOTCONNECT SaaS Application in Action



# Next Steps



## /IOTCONNECT®

## Avnet's Smart Factory Solution powered by IoT and AI

## Challenges

## Industrial automation and smart manufacturing of the future

Avnet's Smart Factory addresses several key challenges faced by manufacturers. Traditional systems often fail to provide a centralized, live view of the shop floor, making real-time monitoring difficult. Additionally, older systems lack the operational intelligence required to optimize production processes and improve efficiency.

Manufacturers also struggle with connecting multiple production lines and machines, leading to fragmented data and inefficiencies. Acquiring data at different stages of production from various sources can be complex and time-consuming with outdated systems. Furthermore, legacy systems often lack capabilities like remote monitoring, edge analytics, predictive maintenance, and digital twin technology, which are essential for modern manufacturing.

## Avnet IoTConnect Solution

## Begin your industrial IoT journey with our smart production line monitoring solution

Avnet's Smart Factory is a smart production line monitoring solution powered by AI and IoT technologies, which enables you to monitor everything on the shop floor from a centralized, live dashboard. Our industrial automation solution involves highly trained machine learning algorithms that can predict machine failures and brings higher operational intelligence that your legacy system was not able to perform.

Our Industry 4.0 solution enables manufacturers to connect multiple production lines and machines, acquire data at different stages of production from several disparate sources and develop capabilities like remote monitoring, edge analytics and predictive maintenance and digital twin.

## Key Performance Indicators (KPIs)



## Availability

- Measures the uptime of machines and equipment, ensuring that production schedules are met without delays.

## Quality

- Tracks the consistency and standard of products, helping to maintain high-quality outputs.

## Downtime

- Monitors and minimizes unplanned downtime, which can severely impact production efficiency.

## Behind Plan

- Keeps track of production schedules, ensuring that any delays are quickly identified and addressed.

## Actual Performance

- Evaluates the performance of machines against their expected capabilities, providing insights into areas for improvement.

## Overall Equipment Effectiveness (OEE)

- Combines availability, performance, and quality metrics to provide a comprehensive view of manufacturing productivity.

## Machine Status

- Tracks whether machines are down, idle, or in use, allowing for better resource allocation and maintenance planning.

Avnet Contact: Celine Koh | Celine.Koh@Avnet.com

AVNET

res



## Operational Visibility

comprehensive view of the factory  
manufacturers to monitor equipment  
production metrics in real-time.  
visible via web and mobile apps allow  
management to keep a close eye on  
anywhere, ensuring that potential  
issues are resolved promptly.

## Integration and Analysis

Our solution seamlessly integrates  
Supply Chain Management (SCM) systems  
devices, sensors, and equipment  
data. This integration allows for the  
data, which is then merged with  
analytics and cloud upload.  
ensuring the scalable and secure  
ensuring reliable and efficient

## Learning &amp; AI Capabilities

Machine learning and artificial intelligence,  
predictive and prescriptive  
manufacturers to not only predict  
issues but also to optimize  
overall equipment  
AI-driven insights help in  
improving quality, and making  
enhance operational efficiency.

Available for  
a free  
demo at  
marketplace

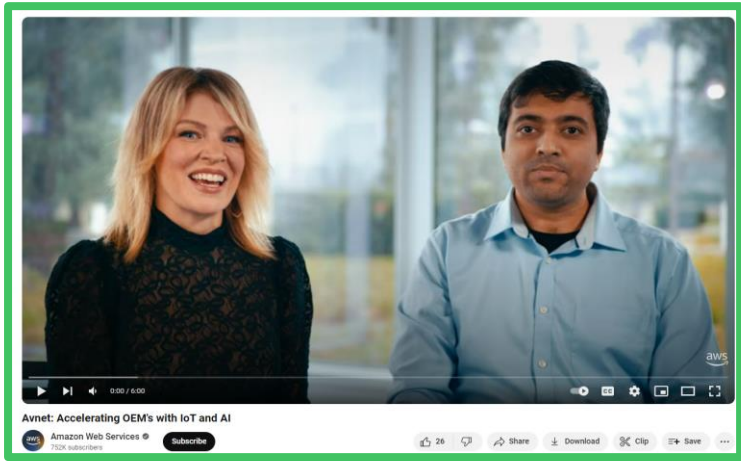


Contact us!

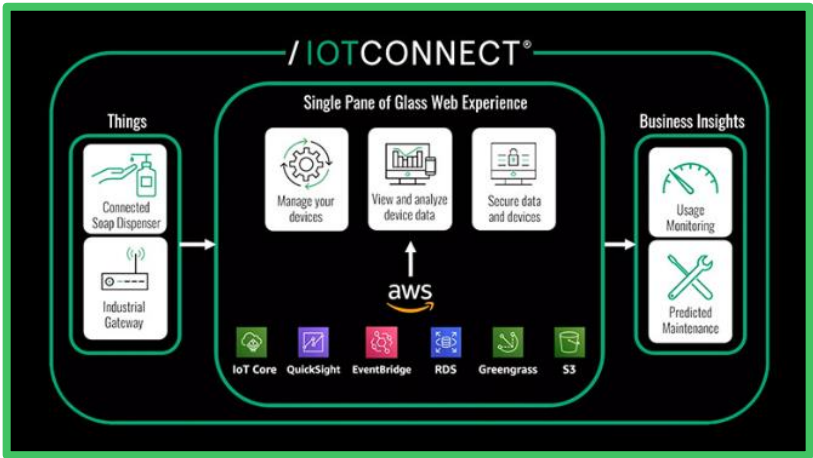
Learn more



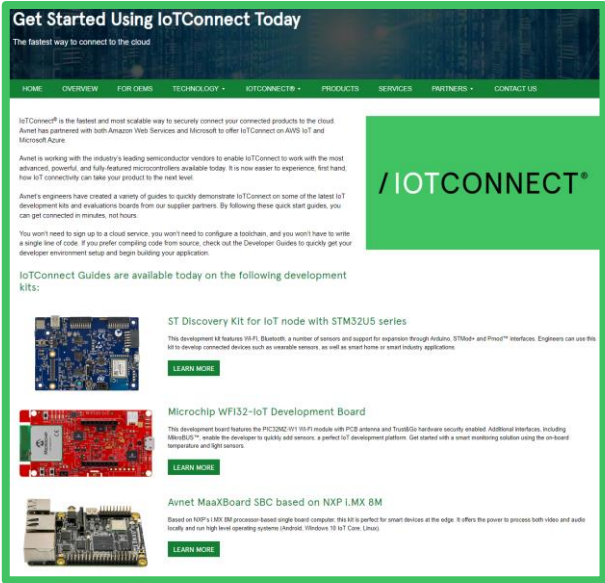
# /Resources



[Avnet and AWS:  
This is My Architecture](#)



[Avnet  
/IOTCONNECT Webinar](#)



[/IOTCONNECT Quick Start  
Development Kits](#)

# /IOTCONNECT Quick Start Enablement

IoTConnect Guides are available today on the following development kits:

- ST Discovery Kit for IoT node with STM32U5 series**  
This development kit features Wi-Fi, Bluetooth, a number of sensors and support for expansion through Arduino, STM32+ and Prox™ interfaces. Engineers can use this kit to develop connected devices such as wearable sensors, as well as smart home or smart industry applications.  
[LEARN MORE](#)
- Microchip WiFi32-IoT Development Board**  
This development board features the PIC32MZ101 Wi-Fi module with PCB antennas and TrustZone hardware security enabled. Additional interfaces, including MicroBLU™, enable the developer to quickly add sensors, a perfect IoT development platform. Get started with a smart monitoring solution using the on-board temperature and light sensors.  
[LEARN MORE](#)
- Avnet MaaXBoard SBC based on NXP i.MX 8M**  
Based on NXP's i.MX 8M processor-based single board computer, this kit is perfect for smart devices at the edge. It offers the power to process both video and audio locally and run high level operating systems (Android, Windows, 10 IoT Core, Linux).  
[LEARN MORE](#)
- Renesas CK-RX65N Cloud Kit Based on RX65N MCU Group**  
This kit combines the RX65N MCU with an LTE Cellular CAT-M1 module and Ethernet connectivity. With IoTConnect support, you start capturing data in the field and send to the cloud in minutes.  
[LEARN MORE](#)
- Infineon XENSIV Kit with PAS CO2 sensor**  
The XENSIV™ connected sensor kit is ideal for battery-powered IoT devices. Its small size hides a lot of performance. With both Wi-Fi and Bluetooth connectivity, the kit includes a CO2 sensor and the OPTIGA™ Trust M security device. The kit works with IoTConnect's Secure Device Management features to provide IoT connectivity with total end-to-end security.  
[LEARN MORE](#)

## Pick a Board

Access our quick start landing page to look at the variety of developer board options that we have enabled. Select which board fits your need.

**IoTConnect SDK for STM32-U5 based on X-Cube-Azure**

SDK and sample application to connect [STM32U5 IoT Discovery Kit](#) to IoTConnect.

The QuickStart Guide below provides a binary image to program the board for quick evaluation of the sample application.

- [QuickStart Guide](#)

Use this Developer Guide to setup the project and modify the source to further develop using the sample application.

- [Developer Guide](#)

The BG96 Module from the [P-L496G-CELL02 Combo](#) is also supported by this project. To run your board with this module, follow the respective BG96 sections linked in the Developer or QuickStart guides.

## Access GitHub

Click the GitHub link to see the sample code we have created for each of these developer kits. These include templates and dashboards.

**Select a Personal Plan**

Test Drive

**2 Months Free**

- Messages **30K (Max)**
- Devices **5 (Max)**
- Users **5 (Max)**

[SUBSCRIBE NOW](#)

No Credit Card Required.

## Sign up for Free Trial

Using the provided link from the quick start guide, sign up for a free /IOTCONNECT account and demo all of the design acceleration features.

Temperature: 30.979  
Pressure: 843.168  
Humidity: 14.746

Env Sensors

Device Command

Command Executed On (UTC) Status Executed Count

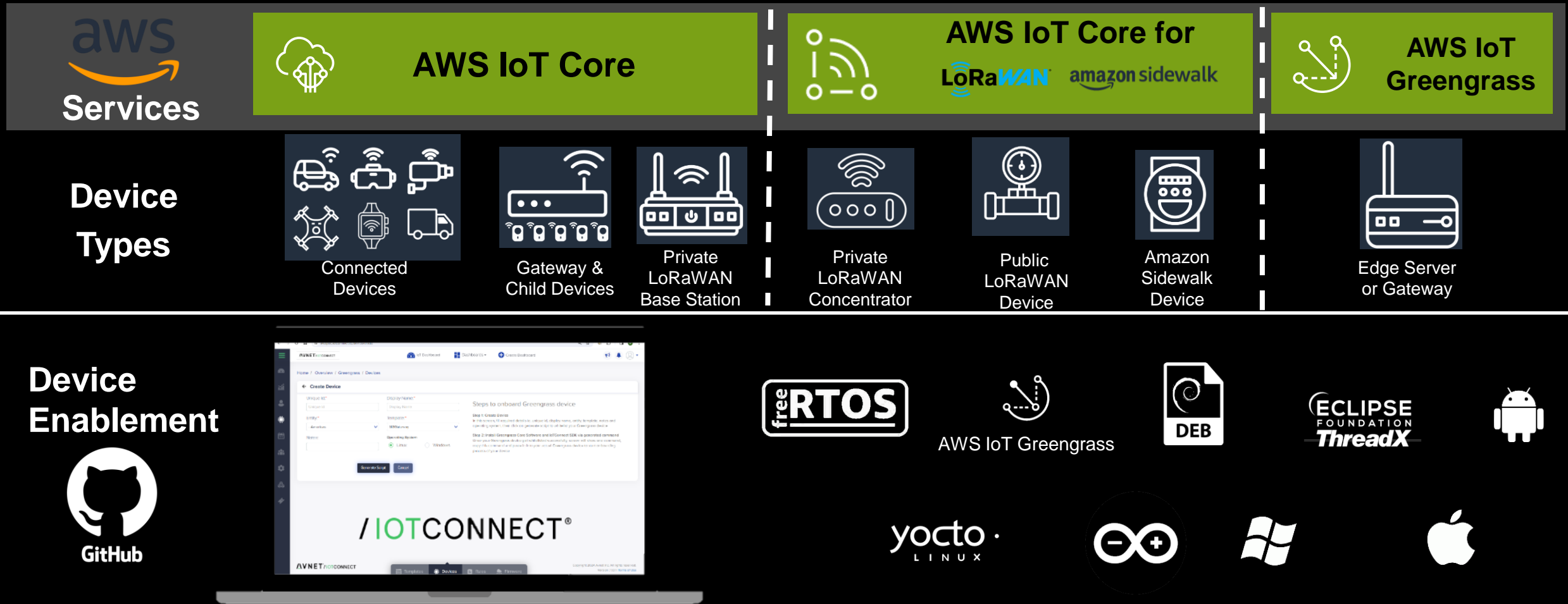
## Start Developing

With dynamic dashboards and easy onboarding widgets, /IOTCONNECT makes designing for your application simple, secure, and scalable.

# Appendix

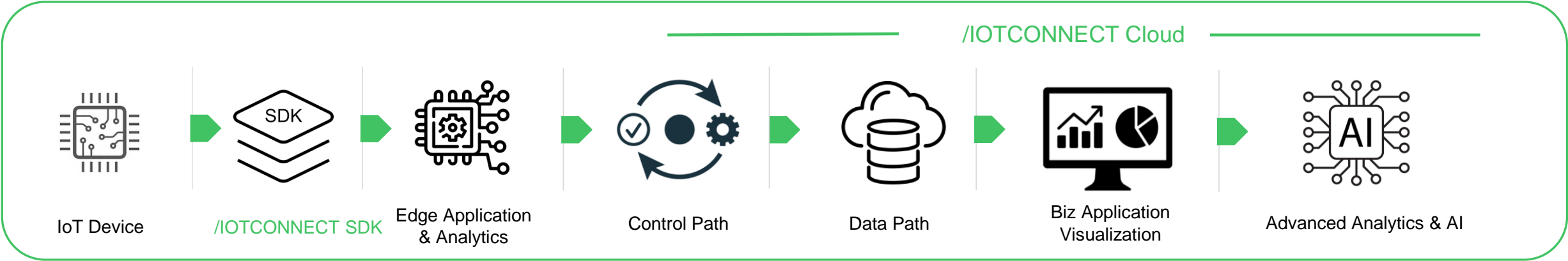
# /IOTCONNECT Supports All Devices

AVNET



/IOTCONNECT enables ALL devices types through a single pane of glass.

# /IOTCONNECT Building Blocks w/ AWS



FreeRTOS



Python



Greengrass



IoT Core



RDS



QuickSight



SageMaker



C



EventBridge



S3 Data Lake



Grafana

Transport



LoRaWAN™

PRIVATE | PUBLIC



Kinesis



S3



Lambda

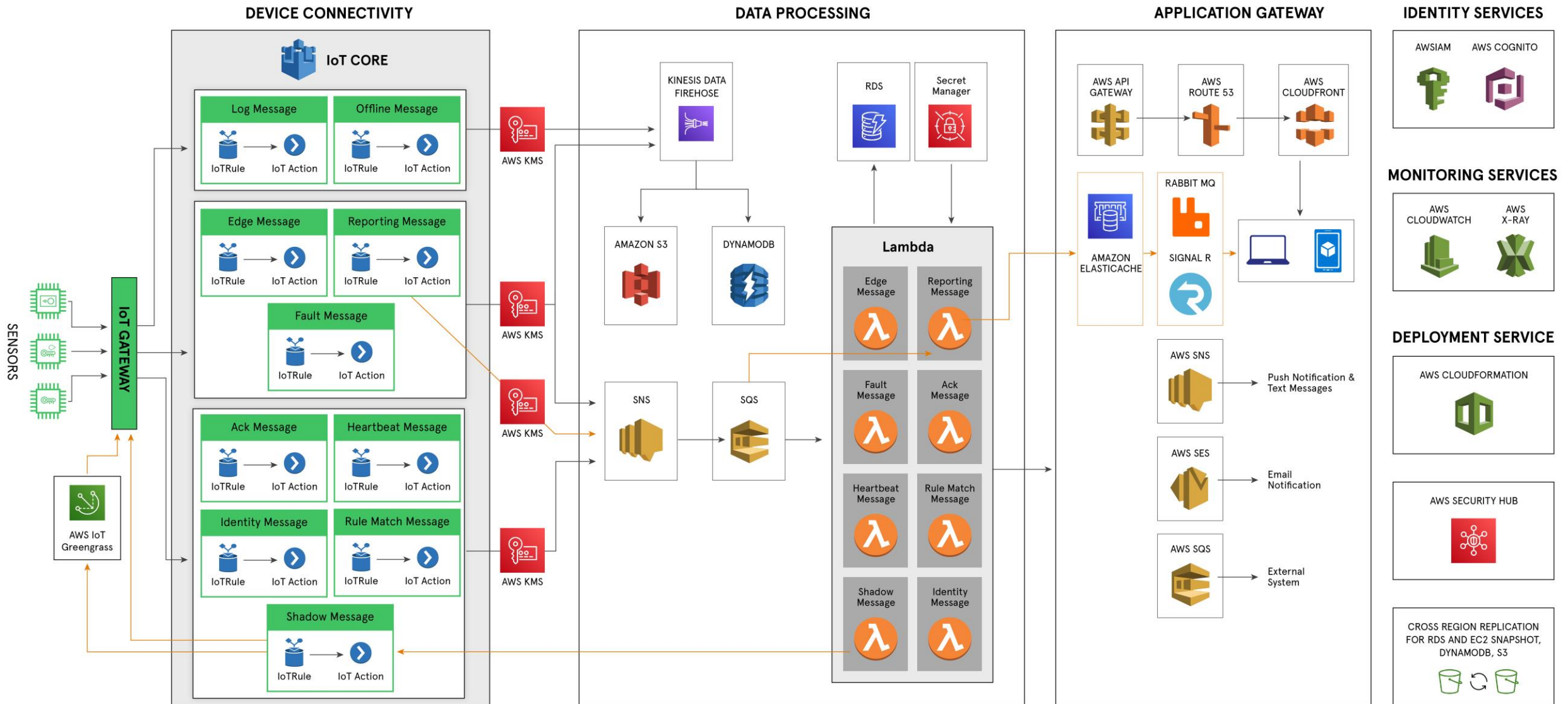


DynamoDB

/IOTCONNECT®



# /IOTCONNECT Platform Architecture



# //IOTCONNECT Developer Personas



- Device, User, Roles, and Entity Admin
- Security manag
- Basic dashboarding
- Internal Ops

**Device Builders & Deployment Managers**



- RESTful API
- Predictable URLs
- Intelligent error handling
- OAuth 2.0 authentication
- Access to all IoT functions

**Application & UX Developers**



- Dynamo DB, S3
- Signal R
- MQTT
- Grafana
- AWS SNS

**Cloud Developer & Data Science**

# /IOTCONNECT SDKs: Deliver a Positive Developer Experience



## Objectives:

- Deliver device-builders a positive developer-experience
- Integrate into the Avnet Supplier's development flow and ecosystem
- Provide confidence for a successful outcome at the onset of our customer's IoT journey



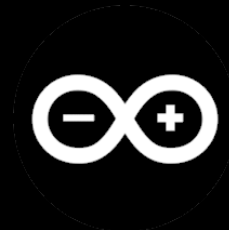
## Software Resources

- /IOTCONNECT Enablement, Witekio, and Softweb service teams
- Access to global and scalable Avnet software services
- Skills: C, Python, Java, OS/RTOS, Applications, AI/ML



## Deliverables

- /IOTCONNECT Library
- SDK (C / C# / Python / ...)
- Test Strategy
- Platform Targeted Samples
- Developer Guide
- QuickStart Experience



AWS IoT Greengrass

# / Device Enablement: SDKs

## Generic SDKs

### Multiple Languages and Environments



## Platform-specific SDKs

### Development Boards and Embedded Hardware



 <https://docs.iotconnect.io/iotconnect/sdk/>

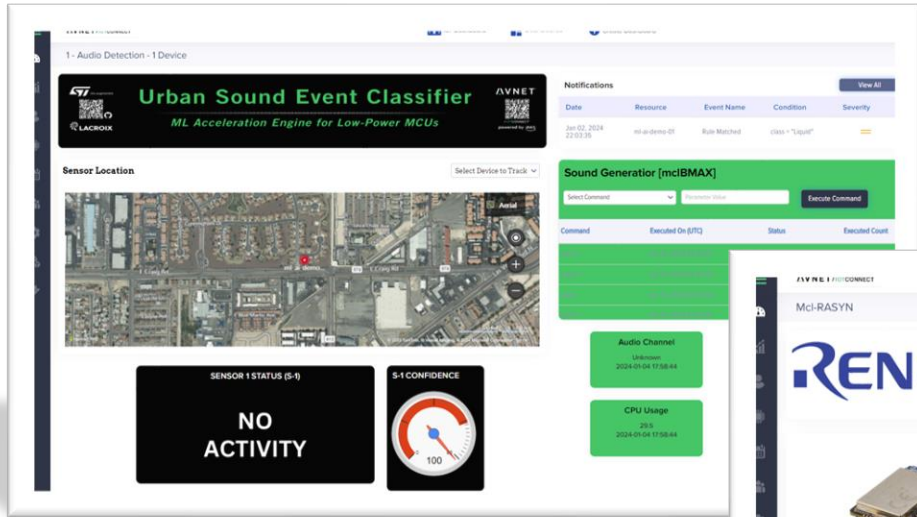
 <https://github.com/avnet-iotconnect/>



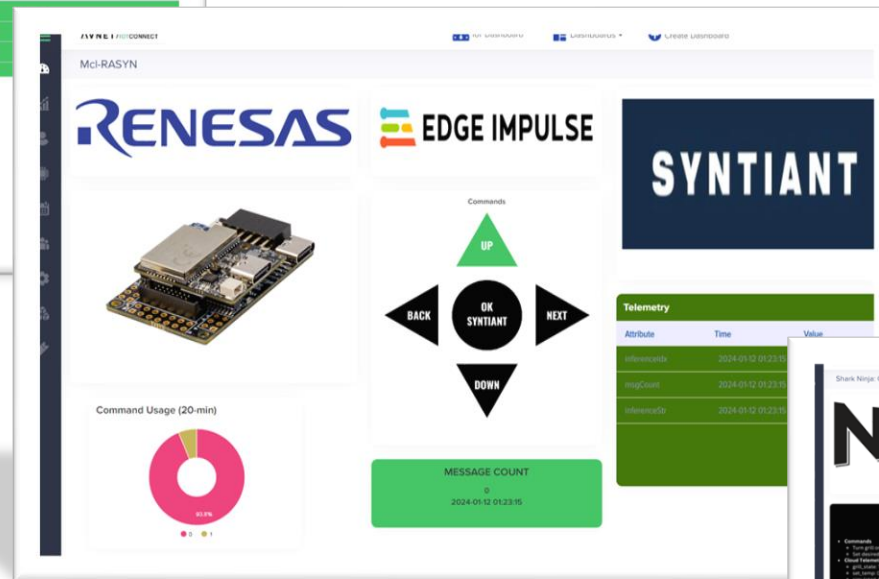


# /IOTCONNECT AWS Demo Examples

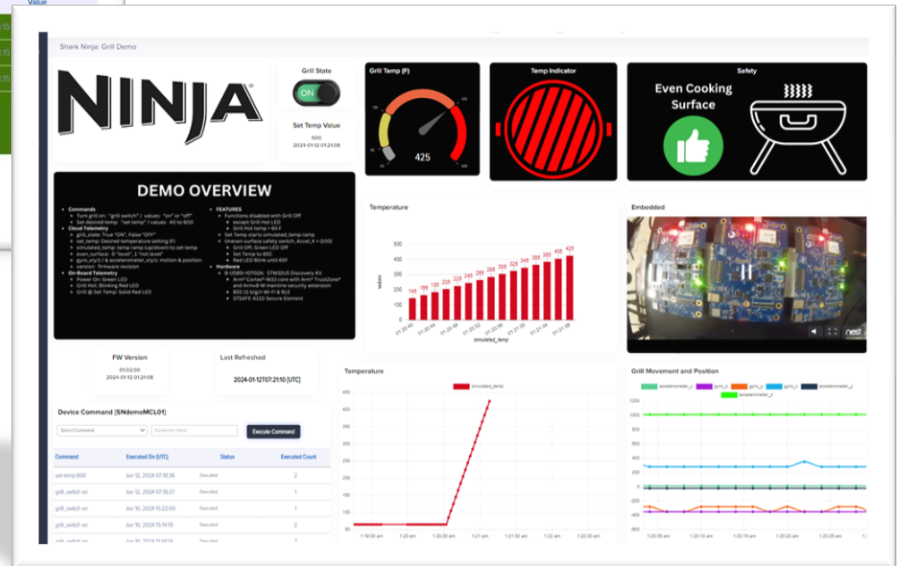
AVNET



AI/ML Audio Classification



Edge ML Voice and Motion Detection



Consumer Indoor Grill