
AAEON
Planting the Seeds
for a Sustainable Future
Explore Solutions

Empowering Smart Sustainability

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AAEON Technology: Innovation Experts

From Concept to Reality

Our expert team provides end-to-end customized services, from concept development to mass production and after-sales support.

Founded in 1992, AAEON Technology Inc. is a leading provider of IoT and AI edge computing solutions. Our comprehensive product portfolio includes:

- **Embedded Boards:**
  SBCs, Computer-on-Modules, Industrial Motherboard
- **Computing Systems:**
  Fanless & in-vehicle Box PCs, Industrial Chassis
- **AI Solutions:**
  NVIDIA/Intel-powered Edge AI systems & modules
- **Rugged Devices:**
  Industrial-grade tablets & HMI panel PCs
- **Network & IoT:**
  Network appliances, gateway systems, server boards
- **UP Series Developer Kits:**
  Rapid prototyping & edge development

Sustainability Solutions Overview

AAEON has a long history of facilitating the development of applications that pair advanced computing with initiatives aimed at improving the world around us to help create a brighter, more sustainable future.

1

Smart Energy Management

Systems that monitor, control, and optimize energy usage using embedded technology.

2

Environmental Monitoring

Embedded systems enable data collection for the processing and communication of environmental parameters.

3

EV Charging Networks

Embedded systems handle everything from user interaction to power control, metering, communication, and safety monitoring.

Sustainable Innovation

Case Studies

Proven Solutions for a Greener Future

- Smart Energy Consumption Meter
- Electric Vehicle Charging Station
- AI-Assisted Forest Fire Detection

01

Smart Energy Consumption Meter

Smart Energy Meter Solution

Client Challenge:

Develop an automated system to monitor and control electricity consumption across multiple premises including campuses, offices, and factories.

SRG-AM62

Solution

Real-time monitoring of energy consumption

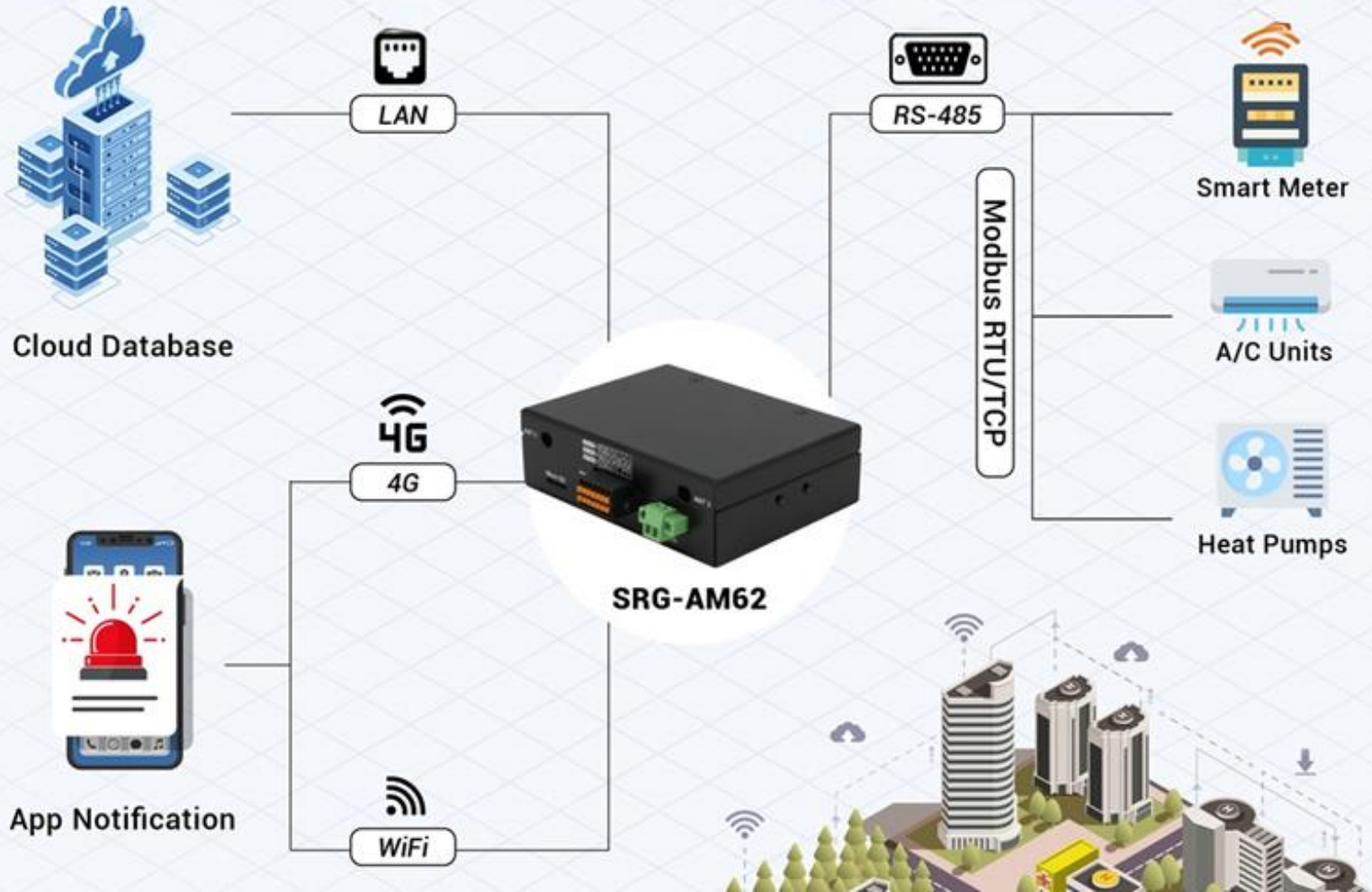
Automated control of non-essential systems

Threshold-based operation adjustment

Support for multiple communication protocols

Smart Energy Meter Architecture

The SRG-AM62 collects real-time energy consumption data from devices like boilers, lighting systems, and heat pumps via Modbus RTU/TCP, analyzes it, and issues commands to automatically reduce the operation of non-essential functions when consumption exceeds predefined thresholds, using both wired and wireless communication.



Benefits

Key Product Advantages

01

Efficient Communication

Versatile I/O connectors (RS-232 /422/485, CANBus).
Supports Modbus RTU/TCP for multi-device integration.

02

Energy & Cost Efficiency

ARM-based TI Sitara™ Processor (1.2W per core, 5.76W full load).
Wireless module control for energy-saving and scalability.

03

Deployment Versatility

Wide 9V–36V power input, -40°C to 85°C tolerance.
Compact, fanless, and durable design for diverse environments

02

Electric Vehicle Charging Station

EV Charging Station Solution

Client Challenge:

A global EV charging equipment provider needed to deploy user-friendly, energy-efficient charging stations across multiple locations.

PICO-IMX8PL

Solution

PICO-IMX8PL

Compact, low-power SBC

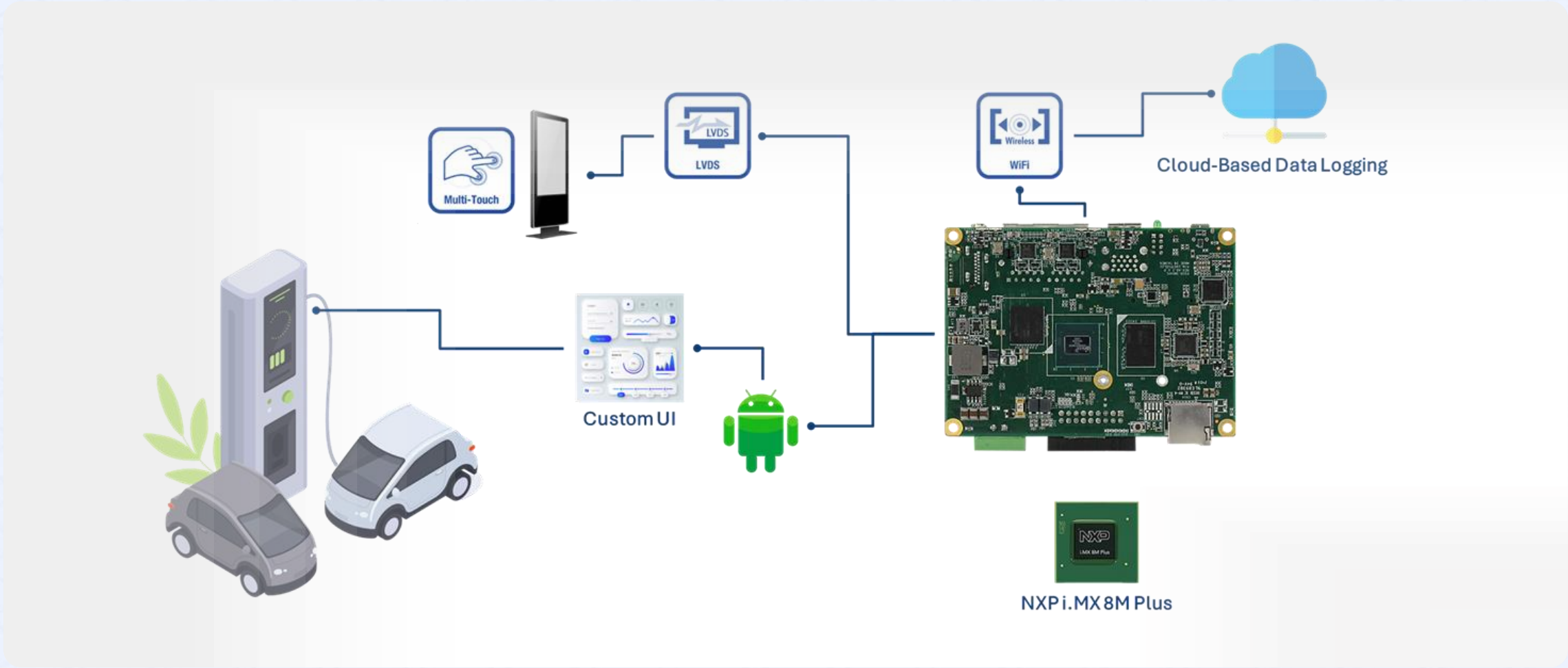
Android™-based touchscreen interfaces

Robust outdoor performance

Seamless cloud connectivity

EV Charging Station Architecture

The integration of the PICO-IMX8PL allowed the customer to roll out a scalable, user-centric EV charging station platform aligned with their sustainability goals. By addressing the project's key technical and environmental demands, AAEON's PICO-IMX8PL became the reliable core of an EV charging solution built for smart, scalable, and sustainable infrastructure worldwide.



Benefits

EV Charging Platform Advantages

1 Energy Efficient

Despite its powerful NXP i.MX 8M Plus platform featuring quad-core Arm® Cortex®-A53 processing, the board averages just 14.8W even under full load.

2 Compact Design

With a 2.5" Pico-ITX form factor, the board was easy to integrate into the space-constrained environment of charging stations.

3 User-Friendly Interface

The platform supported Android™ 13, allowing them to tailor application display panel functions and adjust the UI for different screen sizes.

4 Environmental Durability

Designed for harsh conditions, the PICO-IMX8PL supports a -40°C to 80°C temperature range and 9V to 36V power input.

03

AI-Assisted Forest Fire Detection

AI-Assisted Forest Fire Detection

Client Challenge:

A company specializing in intelligent environmental monitoring needed to upgrade its forest fire detection system to enable faster response times and reduce environmental damage.

BOXER-8651AI

Solution

Edge AI processing for early fire detection

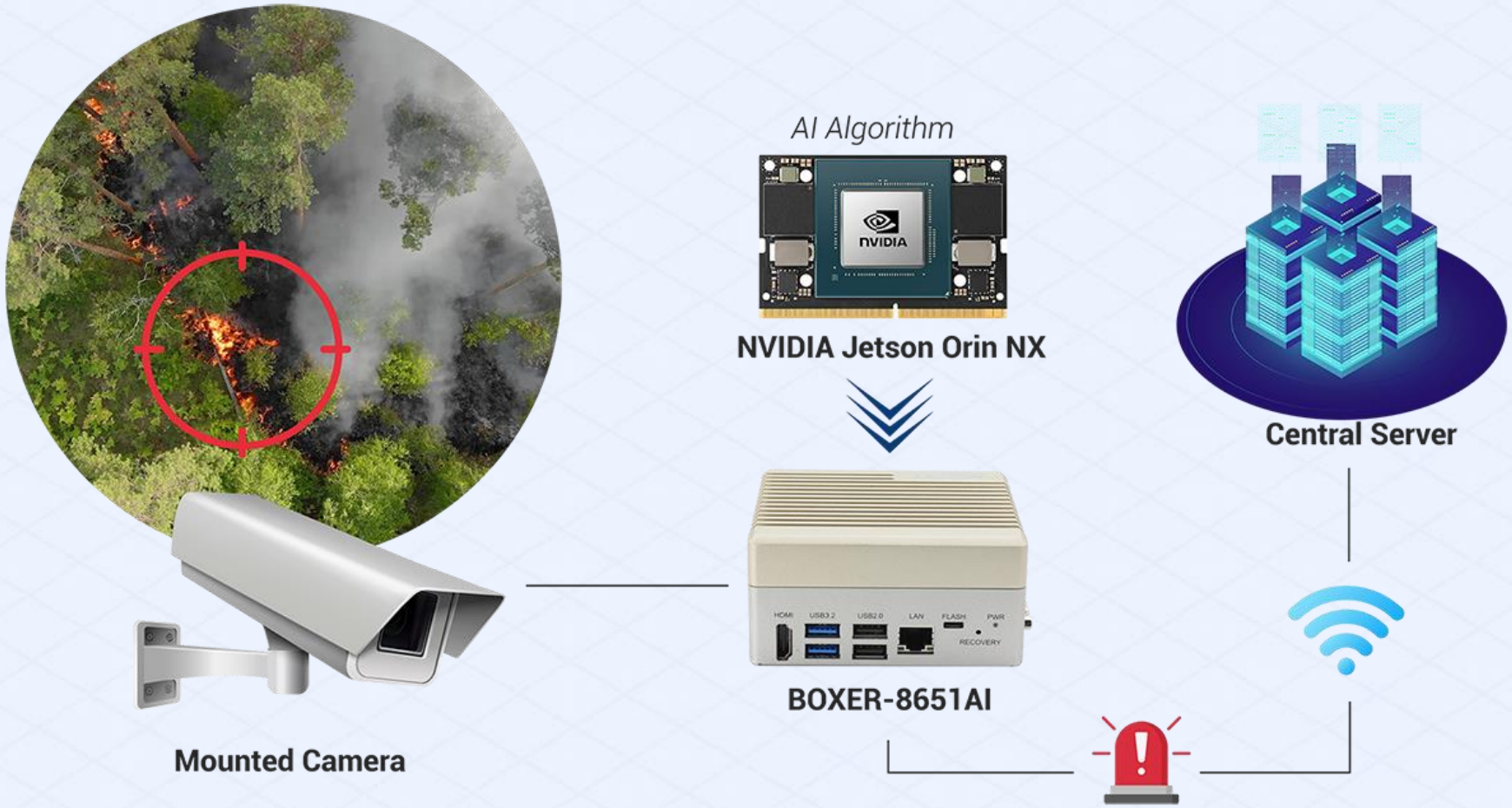
Real-time monitoring in remote areas

Minimal latency for critical alerts

Scalable network with low maintenance requirements

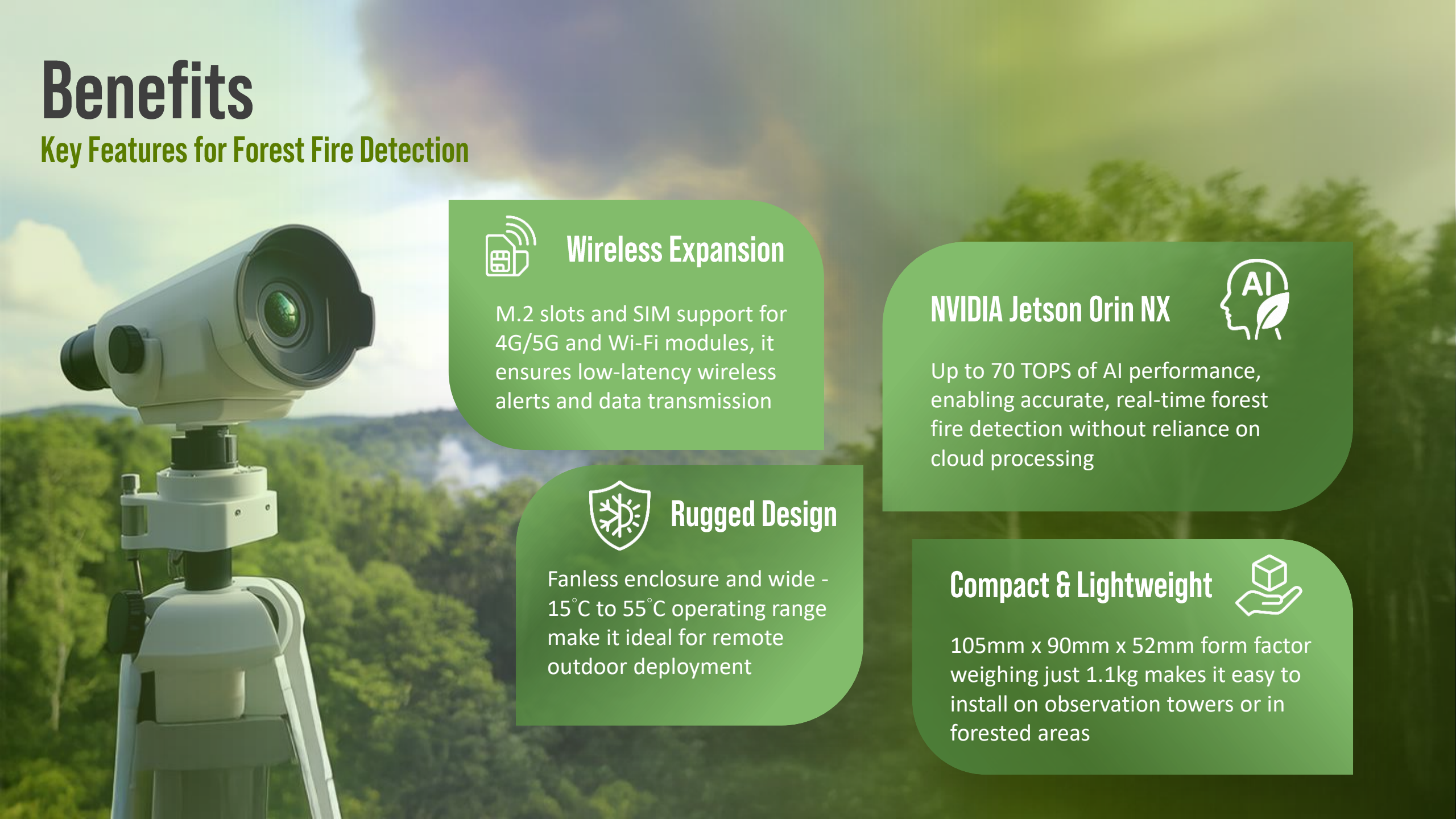
Forest Fire Detection Architecture

The system uses the live video feed from an IP camera and runs advanced deep learning models locally using the BOXER-8651AI's NVIDIA® Jetson Orin™ NX module to identify early signs of fire such as smoke or flickering. In the event a fire is detected, the device transmits real-time alerts via the installed cellular or Wi-Fi modules to a central server, enabling rapid response with minimal manpower across a scalable, low-maintenance network.



Benefits

Key Features for Forest Fire Detection



Wireless Expansion

M.2 slots and SIM support for 4G/5G and Wi-Fi modules, it ensures low-latency wireless alerts and data transmission

Rugged Design

Fanless enclosure and wide -15˚C to 55˚C operating range make it ideal for remote outdoor deployment

NVIDIA Jetson Orin NX

Up to 70 TOPS of AI performance, enabling accurate, real-time forest fire detection without reliance on cloud processing

Compact & Lightweight

105mm x 90mm x 52mm form factor weighing just 1.1kg makes it easy to install on observation towers or in forested areas

AAEON

Shaping a Sustainable Future Together

Let's Collaborate for a Better Planet

Contact your AAEON representative to explore how to leverage embedded technology for a more livable, sustainable future

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