ASUS IoT ALPR Edge Dev Kit

AI-powered automatic license-plate recognition at the edge

ASUS IoT ALPR Dev Kit is a comprehensive automatic license-plate recognition (ALPR) solution that includes both the necessary hardware and software to enable systems integrators (SIs) to create edge applications that mesh seamlessly with existing ALPR infrastructure.

Powered by ASUS IoT Tinker Board Edge R, the single-board computer for AI applications, ALPR Dev Kit is capable of up to 99.9% accuracy with high, 100ms inference performance. It integrates easily with existing USB or IP cameras and, with built-in machine-learning (ML) technology, it's able to learn from each inference – delivering continuously improving detection.

ASUS IoT is able to fine-tune the ALPR software to service specific needs or cater to particular demands, empowering ALPR Dev Kit to provide accurate, fast and tailor-made detection that is ideal for almost any scenario.
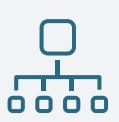
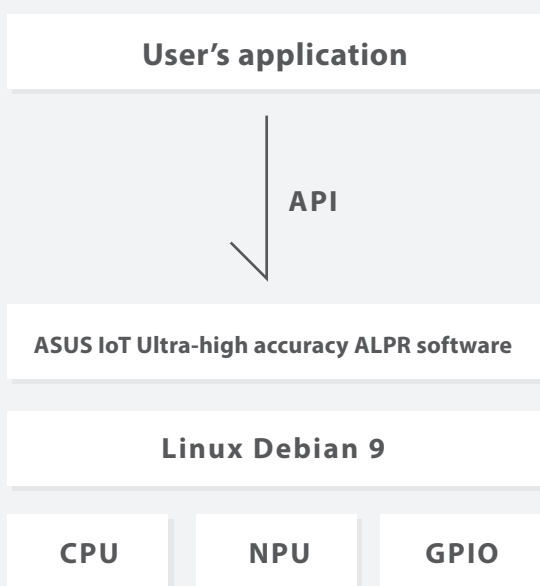| Deep Learning | High Accuracy | Real-time Recognition | Parking Gate and Ground Lock Integrated | All Day Running | Centralized Management |

About ASUS IoT ALPR Edge Dev Kit

ASUS IoT ALPR Edge Dev Kit

- **Ultra - high recognition accuracy**
- **With 100ms inference performance**
- **Ready for USB and IP cameras integration**
- **Support Linux Debian 9**

Product Architecture

User's application

API

ASUS IoT Ultra-high accuracy ALPR software

Linux Debian 9

CPU	NPU	GPIO

Tinker Edge R

ASUS Tinker Edge R is an Single Board Computer (SBC) specially designed for AI applications. It uses Rockchip NPU, a Machine Learning (ML) accelerator that speeds up processing efficiency, lowers power demands and makes it easier to build connected devices and intelligent applications.

- **Rockchip RK3399Pro:Dual core ARM Cortex A72 @1.8GHz + Quad core ARM Cortex A53 @ 1.4GHz**
- **Machine-Learning capability with Rockchip NPU**
- **Multiple MIPI-CSI & DSI / HDMI / Type-C (DP)**
- **40-pin GPIOs & mPCIe for multiple expansions**
- **12V~19V DC-in offers stable power delivery**
- **Linux & Android supported**

Support Public or Private cloud

License Plate Snapshot / log backup

Support ASUS AICC

Device management, Version upgrade, Telemetry data monitor
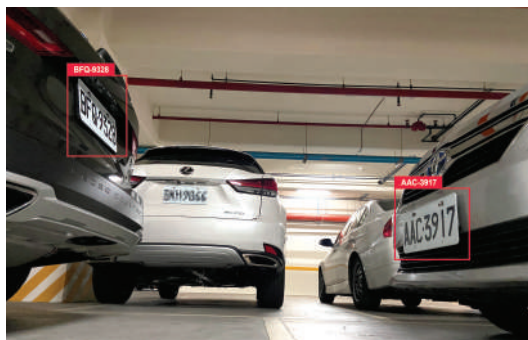
Provide Customization

Re-train for accuracy fine-tune Car model, EV/Oil car detector, color, parking time calculation
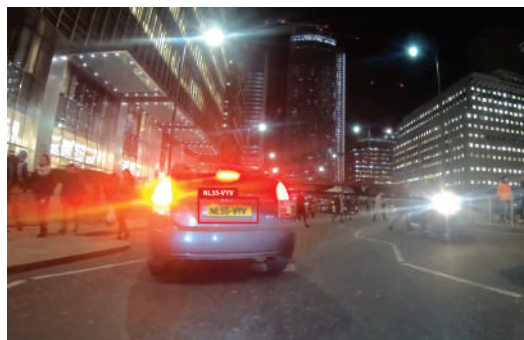
Product Performance

1

Wide angle skew correction

- Wide-angle skew correction enables superior positioning flexibility for camera deployment.
- Angle-independent camera placement allows avoidance of foreground obstructions, such as charging-station cable.
- The system can detect and identify the registration plates of two cars parked in parallel, with a single scan.

2

Lighting Conditions

- Climate filtering and light correction enables recognition even in rainy, reflective or blurry conditions.
- Supports diverse illumination conditions and mounting scenarios, from low-light parking areas to outdoor security gates.
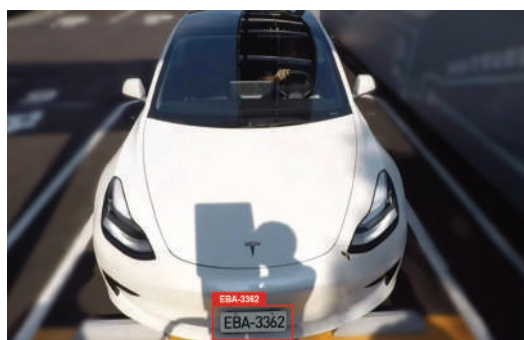
3

Novelty noise reduction

- High-performance deep-learning algorithm enables accurate framing of formal license-plate boundary, minimizing risk of misidentifying custom plates.
- Automatic enhancement minimizes risk of custom license-plate frames impacting accuracy.

4

Easy Deployment

- APIs for ASUS IoT ALPR AI Edge Dev Kit's software are available on GitHub, enabling customization for specific needs or applications.
- The AI-powered Tinker Edge R is ready for a wide range of peripheral devices, including both USB and IP cameras. The AI-powered ALPR software is able to cope wide fields of view (FOV) – offering superb positioning flexibility.

Why ASUS IoT ?

ASUS IoT delivers best-in-class products and services across diverse vertical markets, and partners with customers in the development of fully integrated and market-ready applications. Our solutions drive efficiency by providing convenient, efficient and secure living and working environments for people across the globe/worldwide.

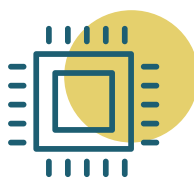**Leading hardware design and software development capabilities**

Exceptional quality control for reliability, compatibility and safety

Efficient thermal design and power protection

Product availability guarantee

x86 and ARM-platform solutions

Multiple compliances available

2018 THOMSON REUTERS
TOP 100
GLOBAL TECH LEADER

ASUS is named as 2018 Top 100 Global Technology Leaders

Forbes 2018
GLOBAL
BEST REGARDED COMPANIES
2000

Top Regarded Companies for 2 consecutive years (2017 & 2018)

Interbrand

No. 1 most valuable brand in Taiwan for 6 consecutive years (since 2013)

FORTUNE
WORLD'S MOST ADMIRED COMPANIES 2019

Fortune has praised ASUS as one of the World's Most Admired Companies for 4 years (2015, 2016, 2018 & 2019)

ASUS IoT Website

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