White Paper

ADVANTECH
Enabling an Intelligent Planet

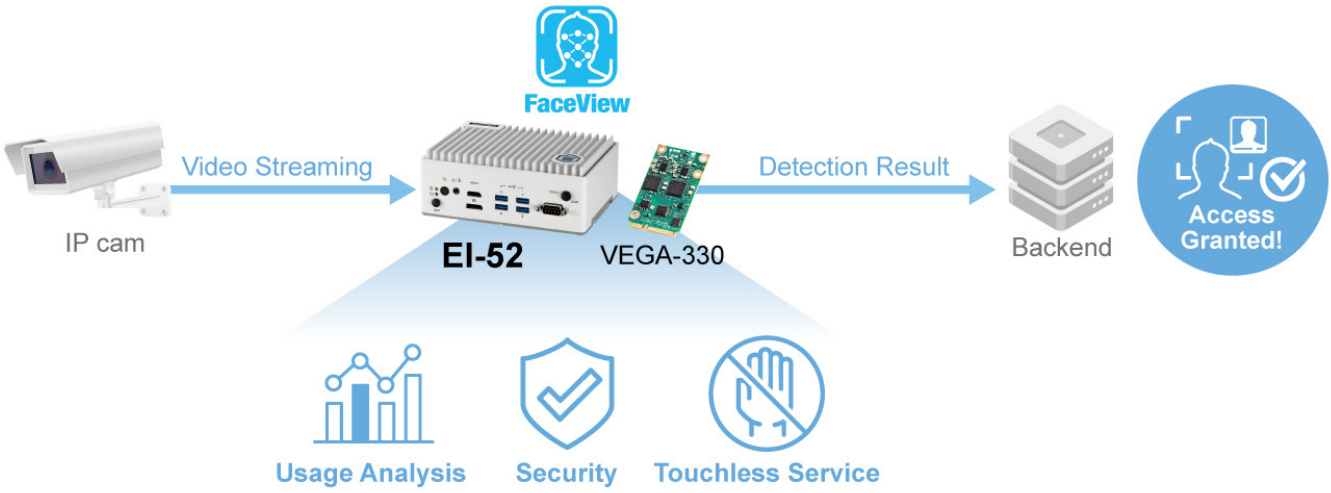
www.advantech.net.au

Advantech Edge Intelligence Solutions Propel the Deployment of the Touchless AI Smart Access Control Systems in Smart Cities

Since the COVID-19 pandemic began in 2020, avoiding activities that pose a high risk of infection has become the new norm, and a multitude of smart contactless technology solutions have become ubiquitous. In line with such trends, Advantech has also leveraged its years of experience with smart cities and launched the EI-52 Edge Intelligence System, which can be equipped with Advantech's VEGA-330 miniPCIe Edge AI Module, and integrated with the FaceView High-Precision AI Face Recognition Solution. The EI-52 can be applied in retail, restaurant, transportation, and smart building industries quickly and with minimal effort to help businesses accelerate the deployment of the Touchless AI Smart Access Control System. Advantech's strengths in software, hardware, and related services mean that they can easily meet the smart city demands of a contactless lifestyle in the post-pandemic era.

Innovative Software Enables Smart Urban Living

In terms of software applications, there are two major features: high-precision facial recognition and multiple software development tools, meaning that the EI-52 makes it faster for system integrators to roll out the Touchless AI Smart Access Control System and a range of smart applications according to project requirements.



1. High-precision facial recognition for a contactless lifestyle

Integration of the EI-52 and FaceView achieves a 99.7 % recognition accuracy rate, which can be applied in various locations throughout a city to create a smart, contactless environment. Deploying FaceView in airport terminals can assist with not only the check-in and boarding process, but also with passenger identification, providing a contactless flight experience.

For customers with facial-recognition payment options enabled, integration of FaceView and POS or self-service machines in shopping malls or restaurants allows for payment of goods and

services in a card-free and contactless environment. FaceView can also be applied at hotspots (e.g., gates, entrances, or elevators) in residential and commercial buildings or shopping malls to check that visitors are wearing face masks or to confirm their identity, even with face masks on. Furthermore, it encourages tighter control over visitor flow, which is helpful for both security management and ensuring social distancing in indoor environments.

FaceView's dashboards are user-friendly tools that help visualize customer visit times, frequency, and other statistical data, allowing business owners to acquire complete facial recognition results in real time and execute business decisions proactively. FaceView also has a built-in function that helps businesses provide VIP customers with personalized services. Once a customer is listed as a VIP, staff can immediately offer gifts, discounts, or preferential services to further improve customer satisfaction and loyalty.

2. Software development kit accelerates development of diverse applications

FaceView's SDK was designed from a field application perspective in order to allow the development of various smart applications specific to different project needs. Leveraging existing IT infrastructures, its API helps system integrators develop facial recognition smart applications quickly. In terms of equipment management, Advantech's DeviceOn has several useful functions, such as remote access, remote power management, and data and device security, all of which help IT personnel manage and maintain the system more easily.

Edge Intelligence Solution's Key Strengths Shape the Future of Smart Access Control

For many industries, Advantech's EI-52 Edge Intelligence System is the best choice for contactless smart access control solutions for four main reasons: high computing power, high usability, high stability, and high scalability. Being equipped with 11th Gen Intel® Core™ i5/i3/Celeron processors, the EI-52 can also be integrated with a VEGA AI module for applications that require additional AI computing power at the edge. For example, facial recognition access control systems capture huge amounts of image data every day. The EI-52 with a VEGA AI module can first analyze images at the edge in real time and then transfer only necessary information to the server. This minimizes bandwidth usage and shortens system response times, ensuring system availability and timely alarm notifications should an abnormal event occur.

Being compact in size, the EI-52 can be installed in various application fields. It can be integrated into different types of equipment, even where space might be limited, which is a significant benefit in application flexibility. Its wide operating temperature range means that it can function stably in environments where temperatures range from -10 to 50°C. Its unique die-cast case also promotes heat dissipation to further improve system stability. The EI-52 also supports additional Wi-Fi or 5G modules for wireless and high-speed data transmission while affording a more flexible system architecture for system integrators. Finally, the EI-52 supports multiple I/O interfaces for connecting to various peripheral devices, ensuring system scalability.

Collaboration Accelerates Smart Application Deployment

In response to the need for custom-made smart applications, Advantech has drawn on its resources to work with DFSI partners in an effort to provide customized solution services for customers in various fields. On computing performance and edge-to-cloud data transmission, Advantech provides comprehensive consulting services to help customers accelerate the deployment of various smart access control applications. With years of experience in software and hardware integration and consultation, Advantech can collaborate with partners for contactless applications in city areas to help establish new social norms in the post-COVID world.