



RA Ecosystem Partner Solution

AIZIP Face Identification



Solution Summary

AIZIP face identification is a compact face authentication solution enabling secure access control for resource-constrained devices. It registers and recognizes up to 100 users with high accuracy, even with face accessories like glasses. The technology operates entirely on-device, eliminating cloud connectivity while enhancing privacy and reliability. AIZIP face identification works with standard cameras, making integration simple and cost-effective compared to depth-sensor solutions. This solution can be run on [Renesas RA8D1 MCUs](#).

Features/Benefits

- Minimal footprint – requires only 1.8MB Flash and 850KB RAM while supporting up to 100 registered users
- Enhanced privacy – 100% on-device processing eliminates cloud connectivity needs, protecting user data
- Hardware simplicity – works with a single standard camera and MCU without special depth sensors
- Practical deployment – maintains accuracy with face accessories (glasses, etc.) in varied lighting conditions

Diagrams/Graphics



Target Markets and Applications

- Enterprise printers and access control systems
- Time clocks and attendance systems
- Smart home control panels
- Medical device authentication
- Point-of-sale terminals
- Industrial equipment authentication

www.aizip.ai/renesas-face-identification/



AIZIP - Pervasive AI for On-Device Applications

AIZIP is a Silicon Valley-based company founded in 2020 that specializes in developing tiny, resource-efficient AI models for edge and endpoint devices. Our mission is to provide pervasive AI for a better world, enabling "Anything, Anywhere, Anytime" AI capabilities.

Product Portfolio

AIV (AIZIP Intelligent Vision)

- **Face Identification:** High-accuracy user authentication (>95%) supporting up to 100 users
- **People/Package Detection:** Resource-efficient identification and classification of objects
- **Defect Detection:** Identifies visual defects and irregularities in materials and products

AIA (AIZIP Intelligent Audio)

- **Keyword Spotting (KWS):** Wake-word and command detection for device activation
- **Speaker Identification:** Personalized audio authentication for secure access
- **Noise Reduction:** Advanced noise filtering for clear audio in challenging environments
- **Audio Event Detection:** Detects critical sounds like baby crying, glass breaking, etc.
- **Music Source Separation:** Separates vocals and instrumental tracks from audio sources

AIT (AIZIP Intelligent Time-Series)

- **Human Activity Recognition:** Recognizes walking, sitting, and other human activities
- **Preventive Maintenance:** Detect anomaly behavior through sensors

AIL (AIZIP Intelligent Language)

- **AIL-SLM:** Small language model for on-device natural language processing
- **AIL-RAG:** Retrieval-Augmented Generation for contextually relevant responses
- **AIL-Gizmo:** Intelligent agent for autonomous decision making and personalized assistance

AIM (AIZIP Intelligent Module)

- **Person Access System (PAS):** Multi-modal biometric security solution
- **In-Cabin Monitoring:** Enhanced safety and personalization for automotive applications

AIS (AIZIP Intelligent Solution)

- **Voice Control Solution:** Integrated hardware solution for voice-activated systems
- **Camera Solution:** Optimized visual computing systems for various applications
- **TWS/Headset Solution:** Specialized solutions for truly wireless systems and headsets

Partner Value

- **Production Quality:** Over 100 models deployed globally with volume shipping since 2021
- **Resource Efficiency:** Optimized for resource-constrained devices with minimal flash and RAM requirements
- **Complete Ecosystem:** End-to-end solutions from models to tiny edge deployment
- **Proven Performance:** Award-winning technology for excellence in on-device AI

www.aizip.ai