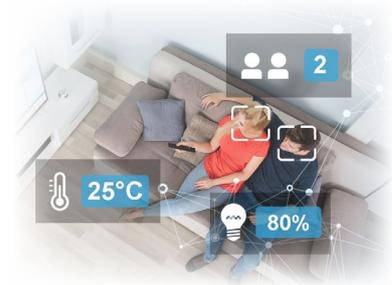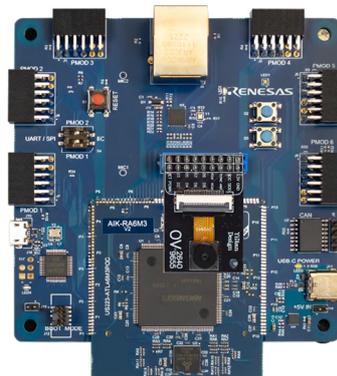# AI SOLUTION KIT

Easy-to-use Reference Design Platform for Real-time Analytics, Vision, and Audio

The AIK series are complete reference solutions designed for fast, simple integration of AI/ML technology for edge and endpoint systems. Each kit comes with highly-tuned AI/ML models combined in a multi-modal solution with optimized CPU performance requiring very low memory resources. The kit series provides a scalable approach enabling flexible selection of Renesas processors.

Hardware Features

- Multiple, reconfigurable connectivity functions to expedite AI/ML system design
- Scalable approach to enable flexible selection of low to high end Renesas processors
  - TFT display PCB SPI (2.8 inch)
    - ILI9341 TFT with resistive touch
    - XPT2046 touch controller
  - TFT to Pmod adapter
  - Prepared for 2.2,2.4, or 2.8 inch display
  - ICM-42670-P Pmod board
  - 6-axis MEMS motion tracking device with
    3-axis gyroscope, 3-axis accelerometer and temperature sensor

Software Features

- Technical documentation with reference design PCB data
- Complete features support on latest FSP version
- Sample applications for analog mic, TFT, UART and Camera
- Asset Movement Recognition using motion sensor Pmod module
- Renesas Ready Partner Ecosystem AI/ML model support

Target Applications

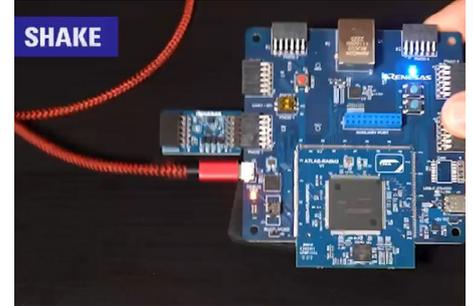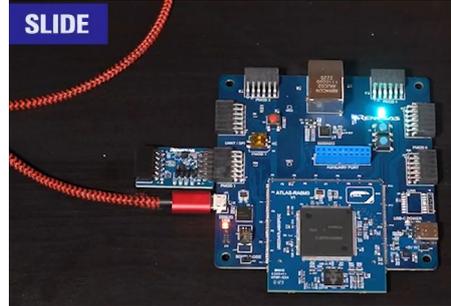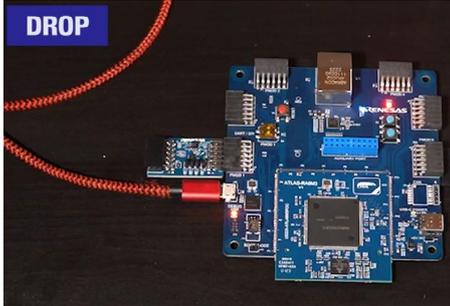| Agriculture | Transportation and Logistics | Home Automation | Consumers Electronics | Building and Industrial Automation | Smart Infrastructure |

AI SOLUTION KIT

Application Example

Asset Movement Recognition

- Reality AI Tools® AI-based solution
- Detects five movement classes in real-time: Idle, In-motion, Circle, Wave and Drop.

AI Kits Comparison Table

	AIK-RA8D1	**AIK-RA6M3**	**AIK-RA4E1**
Part Number	RTK0EG0003D00001BE	RTK0EG0001D00001BE	RTK0EG0002D00001BE
MCU	RA8D1	RA6M3	RA4E1
Peripherals	Power Delivery, user LEDs and pushbutton switches, debug interface, USB Full Speed, Pmod, Ethernet, CAN and camera module		Power Delivery, user LEDs and pushbutton switches, debug interface, USB Full Speed, Pmod and CAN
Debug	On board debugging		—
Pmod	6 Pmod connectors		3 Pmod connectors
Certifications	EMC/EMI standards (FCC, CE, UKCA), EU RoHS, China SJ/T, UL 94V-0		
Documents	Schematics, BOM list, manufacturing files, design files		
e² studio	Startup package with BSP 5.7.0	Startup package with BSP 5.0.0	
Quick Start Example Projects	Accelerometer driver support, MIPI TFT LCD example, Ethernet example	Accelerometer driver support, SPI TFT LCD examples, Ethernet example, new projects supported by FSP, include blinky project	
Application Examples	Reality AI: Asset Movement Recognition Irida Labs: QR Code Scanning NotaAI: Driver Monitoring System	Reality AI: Asset Movement Recognition Aizip: Person Access System (PAS)	Reality AI: Asset Movement Recognition

Get more details and request a kit at: renesas.com/AI