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Vision-AI Driver Monitoring System

2023

Product Description

The vision-AI driver monitoring system utilizes a highly sensitive image sensor and invisible 940nm IR LEDs to capture in-cabin images. Its proprietary optical design achieves excellent power efficiency, with nearly 2X illumination. It is also not a problem to detect drivers with level 3 sunglasses or coated glasses. Thanks to the 3D facial landmark AI tracking technology, the system can identify up to 100 drivers and accurately classify their behaviors, such as inattention, dozing, smoking, calling, etc. With vision-AI technology, image quality optimization for the face area is progressing anytime and anywhere.

Product Key Features

- Equipped with 940nm infrared light and high QE sensor
- Innovative optical design, capable of working at bright sunny days (even at 120K lux)
- Support driver wearing level 3 sunglasses and coated glasses
- Compact size camera with power-over-coax
- Image quality optimization for face area anytime, anywhere with AI technology
- 3D facial landmark AI technology to classify driver behavior precisely

Support Functions & Warning Strategy (customizable)

Face ID
Support up to 100 registers

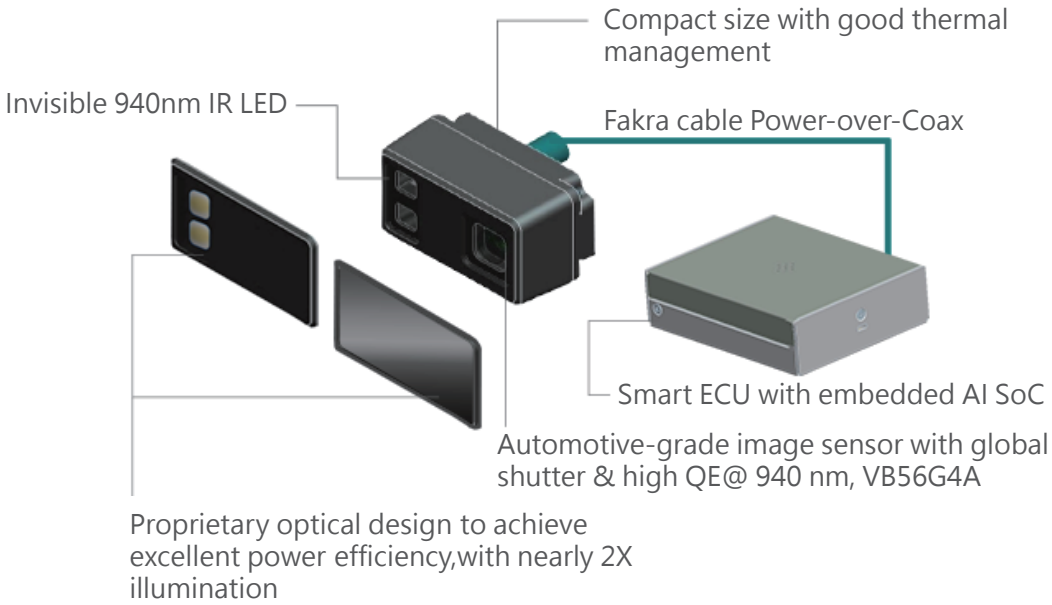
Fatigue detection
Close eyes > 2s or yawn >3s

Inattention detection
Head pose yaw angle over 25˚ or pitch angle over 15˚ > 3s

Smoking
State > 2s

Being phone use
State > 3s

Well-designed Hardware System to Support Stable Functions

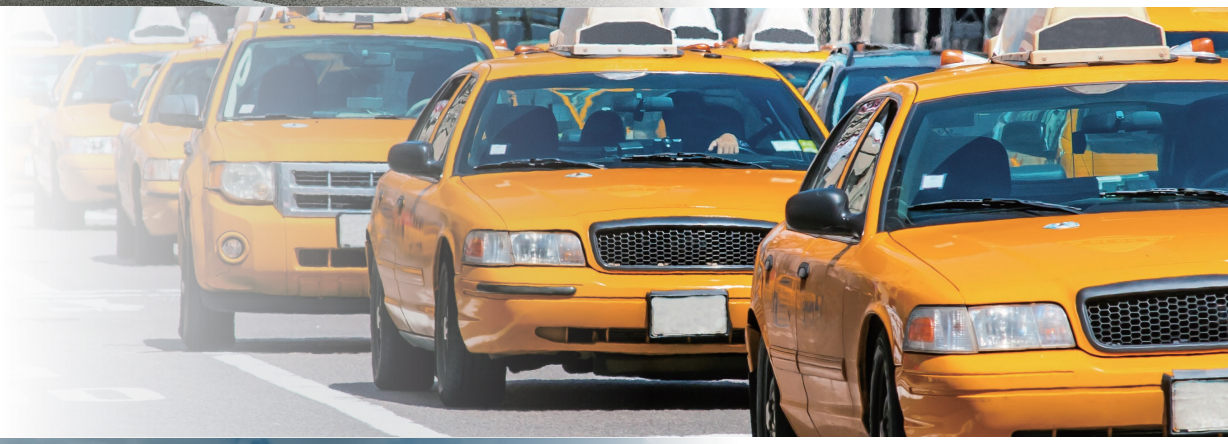


Product Hardware Specifications

System info	
Sensor	ST VB56G4A
View Angle	34˚ (H) x 41˚ (V)
Illumination	940nm LED
Operating Distance	Car : 50-70cm; Truck/Bus : 70-110cm
SoC	KLM5S3
Interface and power info	
Video Output Interface	USB for maintenance
Communication & upgrade Interface	CAN-FD
Power Supply	12V/24V
General info	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Dimensions (ECU)	80x100x27mm
Dimensions (Camera)	65x18x26mm

Applications

The Vision-AI Driver Monitoring System can be used in applications that require actively monitoring drivers to maintain vehicle safety, such as trucks, buses, taxis, etc. It can not only alert drivers in time but also allow the fleet management center to evaluate drivers' behavior and status via the warning information and event-triggered videos from the system.



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