ANALOG REAR VIEW CAMERA

Enhance everyday driving with the Analog Rear View Camera

Drive with confidence using the **Analog Rear View Camera.** Its **wide-angle view** and **mirrored video feed enhance visibility** behind the vehicle, **reduce blind spots**, and **make parking and maneuvering safer** and **more effortless.**

Key Features

- **Activates automatically** with vehicle reverse signal synchronization.
- Meets **2024 GSRII EU** regulations for mandatory **RVC** in vehicles.
- Complies with **FMVSS-111** and **ECE158** regulations.
- Supports **LIN** communication for seamless integration with vehicle systems.
- **Lens distortion correction** provides accurate, natural rearview images.
- **Automatic exposure adjustment** ensures optimal image brightness under varying lighting conditions.
- **Automatic white balance** adjustment maintains **true-to-life colors.**
- **Single connector** for both power and video simplifies installation.
- Overlay function supports **real-time driver guidance and enhanced situational awareness.**

DIGITAL
REAR VIEW
CAMERA

Experience next-generation visibility with the Digital Rear View Camera

Delivering **crystal-clear, wide-angle rear** images via a fully digital signal, it offers **sharper detail, minimal noise, and reliable performance in all lighting conditions** - helping drivers reduce **blind spots** and **navigate with ease.**

Key Features

- Scalable image quality for every use case **(1.3 MP - 3 MP)**
- Meets **FMVSS-111 - 2024 GSRII EU** regulations for mandatory **RVC** in vehicles.
- **Lens distortion correction** ensures a natural, mirror-like image.
- **Superior low-light performance** for clear imaging in dim conditions.
- **Distortion correction** provides accurate, natural views.
- **Automatic exposure and white balance adjustment** for consistent image quality.
- **Single cable (coaxial)** for both power and data, simplifying installation.
- **OEM-quality** design ensures reliability and durability.
- **LED flicker** mitigation for stable visuals under **LED lighting.**
- **Motion artifact-free imaging** for smooth video output.
- Overlay function supports **real-time driver guidance.**

DIGITAL
SIDE MIRROR
CAMERA SYSTEM

for Trucks and Buses

Redefine visibility with the Digital Side Mirror Camera System

The **DSMCS** replaces traditional side mirrors with **high-resolution** digital cameras, providing a **wide-angle**, clear view of the vehicle's surroundings. Designed for **all lighting and weather conditions**, it minimizes **blind spots**, enhances **driver awareness**, and **supports safer, more confident lane changes** and **maneuvers.**

Key Features

- Two-camera, two-monitor system (12.3" - 15") covering **Class II** and **IV** views for side mirror replacement and direct driver display.
- **Class V** and **VI** views transmitted to the vehicle's cluster **HMI** for extended monitoring.
- High-resolution digital cameras for side and wing mirror replacement, **supporting LHD** and **RHD** vehicle configurations.
- Angle views optimized for **Class II & IV** and **Class V & VI fields**, providing comprehensive monitoring coverage.
- Compliance with **UN ECE 46, ISO 26262** and **ASIL B** functional safety standards.
- **Forward and rearward auto panning** for dynamic coverage.
- **Class 2** zoomed view **activated automatically** during reverse gear.
- **Automatic brightness adjustment** for each monitor via integrated sensors.
- **Blind Spot Information System (BSIS)** warning functionality.
- **Anti-theft** protection.
- **End-of-Line (EOL) system auto-calibration** for precise alignment and performance.
- EMC-compliant electronics validated to **R10 standard.**
- **CAD** development compatible; integrated software and project management support.
- Robust performance under all environmental conditions **(temperature, vibration, humidity) and lighting scenarios (day/night).**
- **Automated active alignment** and **multi-axis calibration** for geometric accuracy.

DIGITAL
SIDE MIRROR
CAMERA SYSTEM

Smart visibility, simplified - HD side-view for compact vehicles

A compact side-mirror camera solution providing reliable **HD-quality (analog) video to 5–7"** in-vehicle monitors. Designed for smaller vehicles, the system delivers **clear day/night visibility**, **easy installation**, and **low-power operation while keeping integration** and cost simple compared to **fully digital Mirror Camera** variants.

Key Features

- **5-7" in-vehicle monitors** optimized for side-view display.
- **Analog HD video feed (HD-ready, e.g. 720p class quality)** over automotive-grade analog transmission.
- **Two-camera support (left + right)** typical; scalable to single-camera variants.
- **Day/night capability** with **low-light performance** and optional **IR illumination.**
- Compact harness for simple installation and **LHD/RHD mounting options.**
- **Low-power design** is suitable for small vehicles.
- Robust operation across **automotive temperature**, **vibration** and **humidity ranges.**
- **EMC-compliant** electronics and **IP-rated** external camera housing.
- **Automated alignment aid** (software-assisted) for installer calibration.
- **Cost-optimized architecture** for easier production and retrofit.

OCCUPANT MONITORING CAMERA SYSTEM

The Occupant Monitoring Camera System delivers **AI-powered** in-cabin awareness designed to improve occupant safety, comfort, and regulatory readiness. It supports key in-cabin safety use cases by **monitoring driver and passenger presence and behavior.** The scalable design is optimized for automotive, commercial, and off-highway vehicles, enabling a smooth path from basic occupancy detection to **advanced in-cabin safety applications.**

Key Features

- **AI-based occupant detection and classification** for reliable driver and passenger presence monitoring
- **US NCAP and Euro NCAP oriented design** supporting current and upcoming occupant safety requirements
- **Child presence and left-behind** detection ready to enhance in-vehicle safety
- Scalable camera and **image quality options** with selectable resolutions to balance performance and cost
- **OEM-ready system integration** compatible with **ECU-based architectures** and CAN communication

Driver ID: James
Eye openness: 85%
Blinks per minute: 16
Gaze vector: 10°, −7°
Pupil dilation: 35%
Attentiveness: YES
Seatbelt: YES
Drowsiness: NO
Cellphone: NO
Smoking: NO

Pitch: 3°
Roll: 0°
Yaw: 15°

DRIVING MONITORING SYSTEM

Enhancing safety and awareness with the complete Driver Monitoring System

The DMS combines a high-performance camera and intelligent ECU to monitor driver's attention in real time. It detects signs of **drowsiness, distraction, or attention,** providing timely alerts to enhance safety. **With seamless integration** and reliable operation under all driving conditions, the system helps reduce accidents and supports smarter, more confident driving.

Key Features

- **All-in-one solution** with ECU and camera bundled together, eliminating the need for an external processing unit.
- Monitors driver's **attention, fatigue, and distraction levels.**
- **Advanced AI algorithms** and **infrared sensors** for accurate real-time monitoring, day or night.
- **Meets 2026 GSRII EU** regulations for mandatory DMS in vehicles.
- Designed in compliance with **ISO 26262** for functional safety **(FuSa).**
- **Meets eye safety standards** for in-vehicle use.
- **Support DDAW and ADDW features** for driver **drowsiness** and **attention** detection.
- Compact standalone design that can be easily mounted behind the steering wheel, on the dashboard, or on the A-pillar.

SURROUND VIEW/REAR VIEW CAMERA

Delivering 360° visibility for safer driving, effortless parking and enhanced fleet efficiency.

Our **Surround View Camera System** provides a seamless **360-degree perspective** around the vehicle, reducing **blind spots** and improving safety in all driving conditions. For passenger cars, it enables effortless parking and maneuvering in tight spaces, while for commercial vehicles it enhances fleet efficiency, driver awareness, and operational safety.

Key Features

- Provides a **360-degree view** around the vehicle.
- **Enhances driver awareness**, **reduces blind spots**, and **prevents collisions during parking.**
- Meets **2024 GSRII EU** regulations for mandatory **RVC** in vehicles.
- **Detect and classify** objects such as pedestrians, **cars**, **trucks**, **and more** improved situational awareness.
- **120dB HDR** ensures clear images in high-contrast lighting.
- **LED flicker** mitigation for stable visuals under **LED lighting**.
- **Motion artifact-free imaging** for smooth video output.
- **Overlay function** supports **real-time driver guidance.**
- **Distortion correction** provides accurate, natural views.

IN-VEHICLE RECORDING SYSTEM

Smart recording, built on security and privacy you can trust

The In-Vehicle Recording System captures high-quality video and data from both interior and exterior cameras, with built-in cybersecurity and privacy safeguards. Designed for **reliability and ease of use, it supports fleet management, incident review, and enhanced driver accountability, providing safe and efficient driving experience.**

Key Features

- Compliant with **Turkey's AITM and relevant UN/ECE regulations** — type-approval eligible.
- Designed for **ISO-21434** cybersecurity readiness (secure boot, encryption) and data privacy **(GDPR, KVKK).**
- **Integrated camera units** (sensor + lens + electronics) for internal and external installations.
- **Multi-camera support** (front, exterior, interior/DMS).
- **Continuous loop recording** (front + interior) and **event-based recording** (emergency button).
- **Live streaming over LTE (HLS).**
- Embedded metadata: **timestamp, vehicle ID, license plate, GPS location.**
- **User/operator access control** with 112 (emergency) integration.
- **Type-C data export** and **firmware update** with rollback capability.
- **Internal (cabin) camera: IR illumination + optimized lens and integrated IR LEDs** for reliable occupant detection in low/no light.
- **External camera: high-quality color sensor optimized** for wide-area external view with robust day/night and all-weather performance.
- Image quality validated against automotive test charts and **AITM** performance criteria.
- **Automated active alignment** and **multi-axis calibration** for geometric accuracy.
- **EMC compliant and validated** for vehicle integration, robust operation across temperature, vibration and humidity ranges.

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Future.
For All.

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