Driver Monitoring Systems (DMS) and Occupant Monitoring Systems
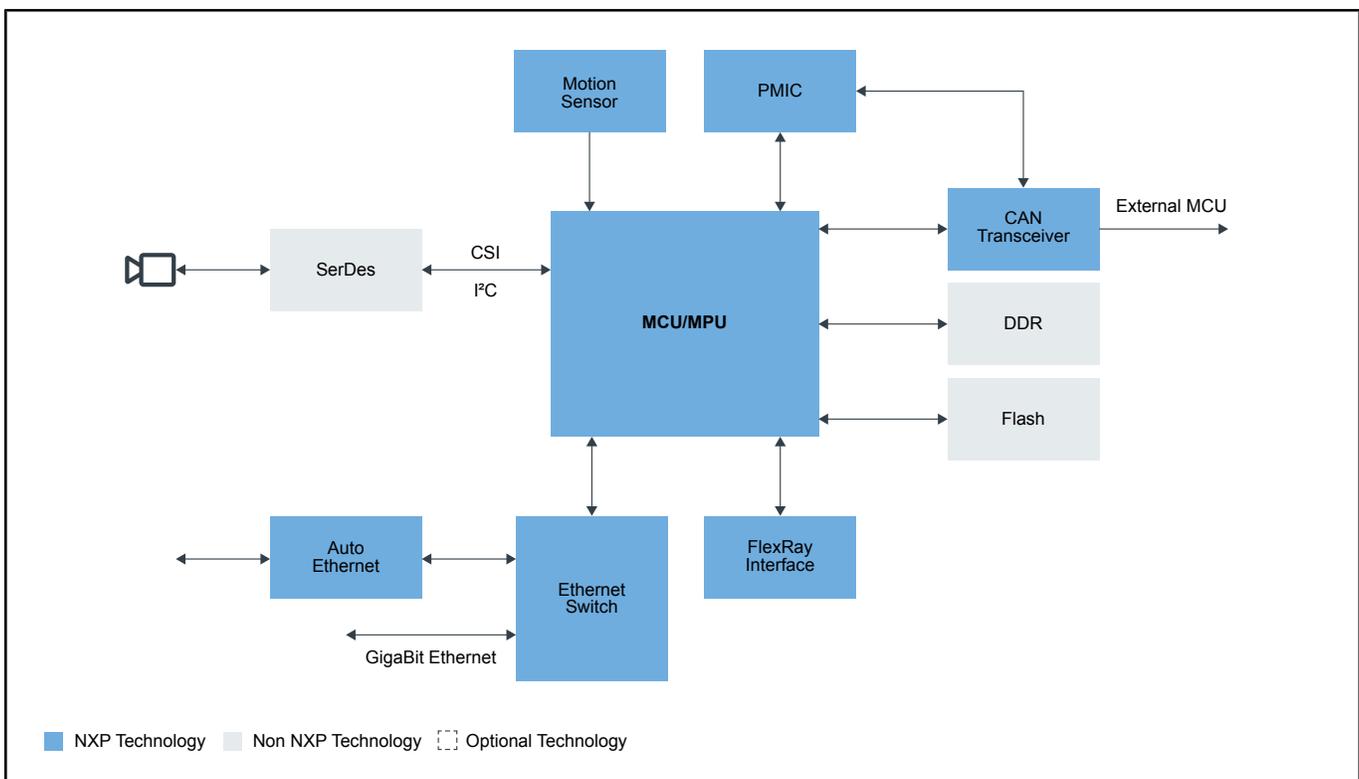
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The driving monitoring system includes a camera-based driver monitoring systems (DMS) pointed at the driver's face which provides a real-time evaluation of the presence and the state of the driver. DMS can help provide alerts to the driver and initiate an intervention to manage the control of the vehicle. The driver monitoring system ensures that the driver is prepared to take control of the vehicle when the situation dictates.

Beyond the driver, occupant monitoring systems can be valuable to understand their condition and even to provide a tailored environment specific to an identified occupant.

NXP offers dedicated silicon solutions for both driver monitoring system and occupant monitoring systems.

Driver Monitoring System Block Diagram

Recommended Products for Driver Monitoring System	
MCU/MPU	• S32V2 Processors for Vision, Machine Learning and Sensor Fusion
PMIC	• FS5600: Automotive Dual Buck Regulator and Controller with Voltage Monitors and Watchdog Timer • PF8100_PF8200: Power Management Integrated Circuit (PMIC) for high-performance processing applications: 12-Channel Power Management Integrated Circuit (PMIC) for High-Performance Processing Applications • FS8400: Safety System Basis Chip for S32 Microcontrollers, Fit for ASIL B • PF7100: 7-Channel Power Management Integrated Circuit for High Performance Applications, Fit for ASIL B Safety Level
Motion Sensor	• FXOS8700CQ: Digital Motion Sensor - 3D Accelerometer (±2g/±4g/±8g) + 3D Magnetometer: Digital Motion Sensor - 3D Accelerometer (±2g/±4g/±8g) + 3D Magnetometer • FXAS21002C: 3-Axis Digital Gyroscope: 3-Axis Digital Gyroscope
CAN Transceiver	• TJA1145: High-speed CAN transceiver for partial networking: High-Speed CAN Transceiver for Partial Networking
Ethernet Switches	• SJA1105PEL/QEL/REL/SEL Series Ethernet Switches • TJA1102/TJA1102S: IEEE 100BASE-T1 compliant Ethernet PHY Transceivers
FlexRay Interface	• TJA1080ATS: FlexRay transceiver: FlexRay Transceiver
Auto Ethernet	• TJA1102/TJA1102A: Dual Port 100BASE-T1 PHY Transceiver • TJA1101/TJA1101B: Robust, Low Power 100BASE-T1 PHY Transceiver

View our complete solution for Driver Monitoring Systems (DMS) and Occupant Monitoring Systems.

Note: The information on this document is subject to change without notice.