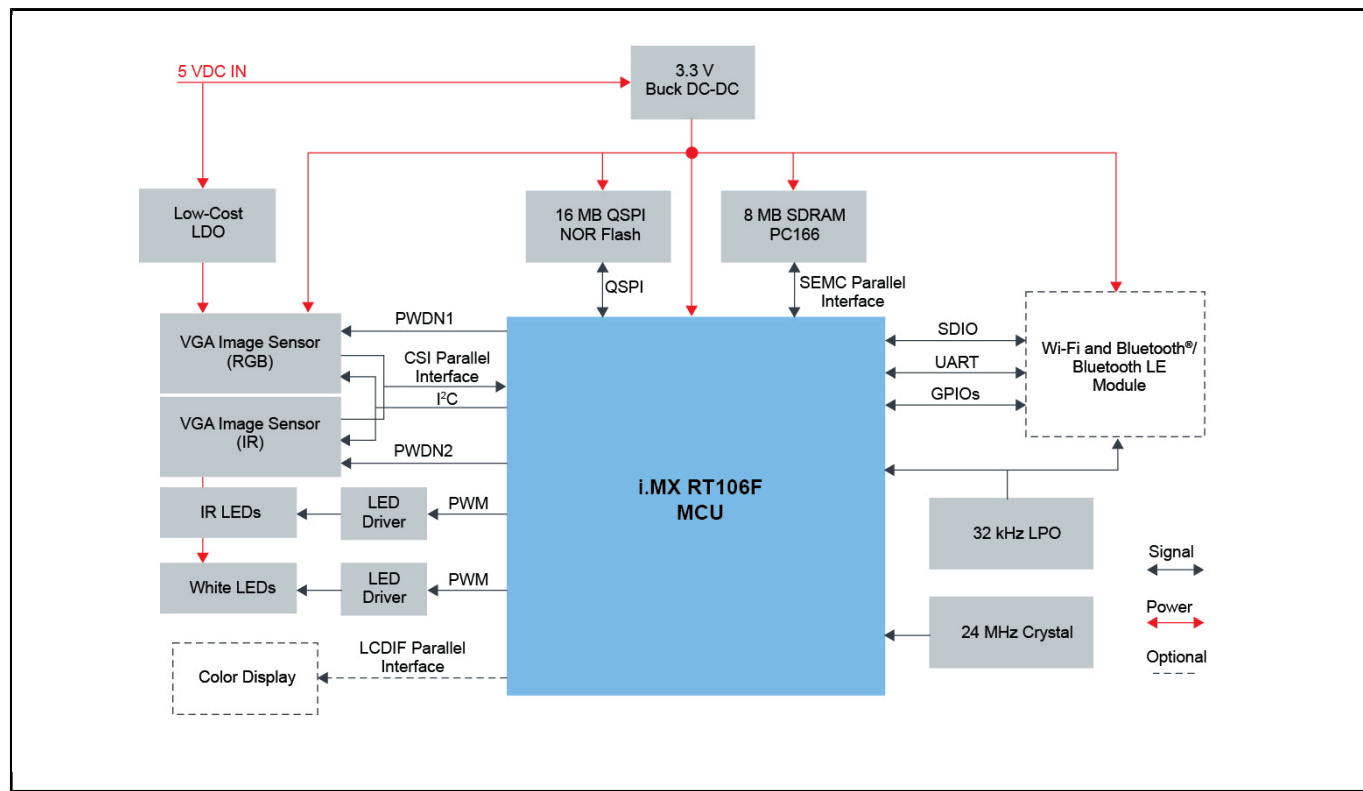# NXP EdgeReady MCU-Based Solution for Face Recognition with Liveness Detection
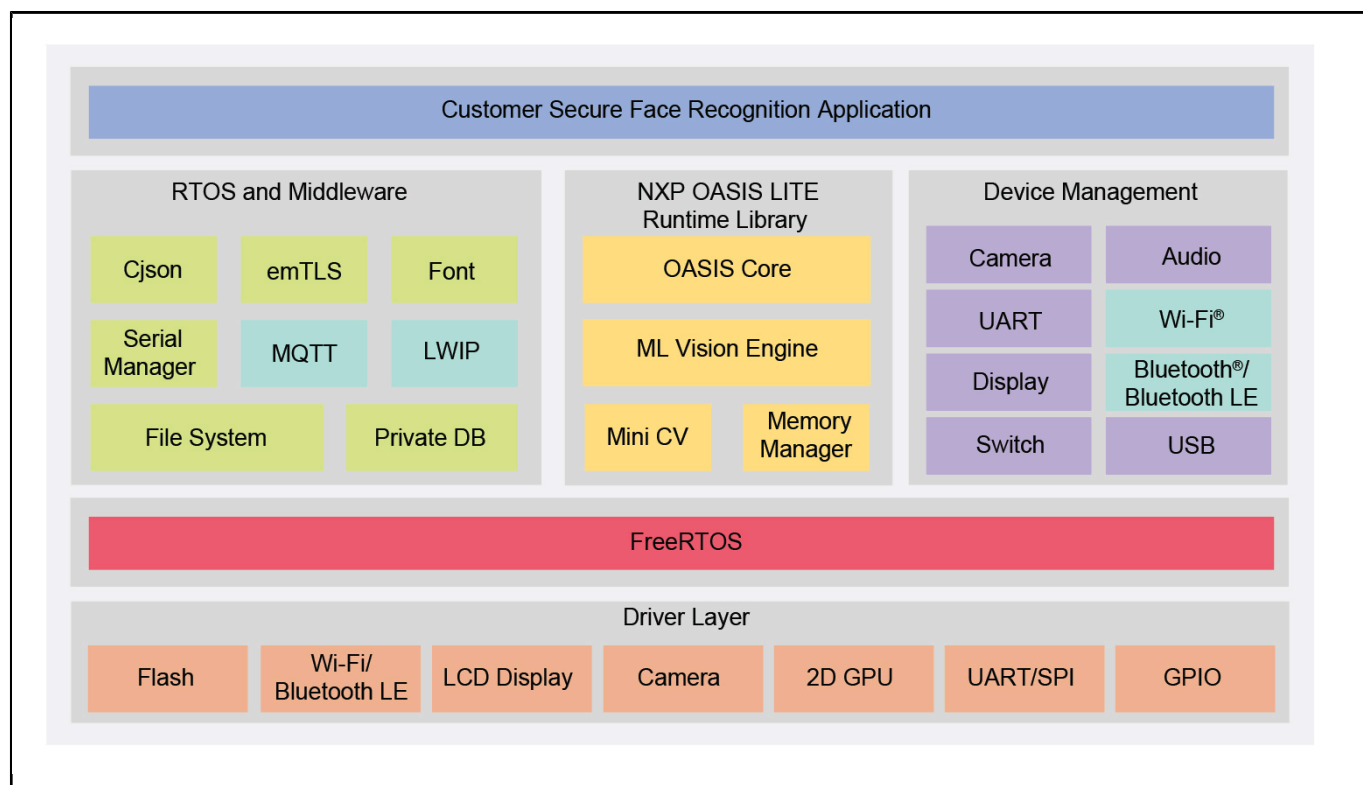
SLN-VIZNAS-IOT

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NXP's EdgeReady MCU-based solution for face recognition leverages the i.MX RT106F crossover MCU, enabling developers to quickly and easily add face recognition with liveness detection to their products. Liveness detection prevents spoofing with a photograph and is implemented with low cost IR and RGB cameras, without the need for expensive 3D cameras. The development kit for this solution, SLN-VIZNAS-IOT, comes with fully integrated turnkey software, for quick out-of-the-box operation, minimizing time to market, risk and development effort. Face recognition is done entirely at the network edge, addressing the privacy concerns of many consumers. This NXP EdgeReady solution is part of the EdgeVerse™ edge computing platform.

i.MX RT106F Block Diagram Block Diagram

i.MX RT106F Block Diagram Block Diagram

Block diagram showing:
- 5 VDC IN → 3.3 V Buck DC-DC
- Low-Cost LDO
- 16 MB QSPI NOR Flash (QSPI)
- 8 MB SDRAM PC166 (SEMC Parallel Interface)
- VGA Image Sensor (RGB), VGA Image Sensor (IR) — PWDN1, PWDN2, CSI Parallel Interface, I²C
- IR LEDs ← LED Driver (PWM)
- White LEDs ← LED Driver (PWM)
- Color Display (LCDIF Parallel Interface)
- i.MX RT106F MCU
- Wi-Fi and Bluetooth®/Bluetooth LE Module (SDIO, UART, GPIOs)
- 32 kHz LPO
- 24 MHz Crystal
- Legend: Signal, Power, Optional

i.MX RT106F Software Block Diagram Block Diagram

i.MX RT106F Software Block Diagram Block Diagram

- Customer Secure Face Recognition Application
- RTOS and Middleware: Cjson, emTLS, Font, Serial Manager, MQTT, LWIP, File System, Private DB
- NXP OASIS LITE Runtime Library: OASIS Core, ML Vision Engine, Mini CV, Memory Manager
- Device Management: Camera, Audio, UART, Wi-Fi®, Display, Bluetooth®/Bluetooth LE, Switch, USB
- FreeRTOS
- Driver Layer: Flash, Wi-Fi/Bluetooth LE, LCD Display, Camera, 2D GPU, UART/SPI, GPIO

View additional information for NXP EdgeReady MCU-Based Solution for Face Recognition with Liveness Detection.

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