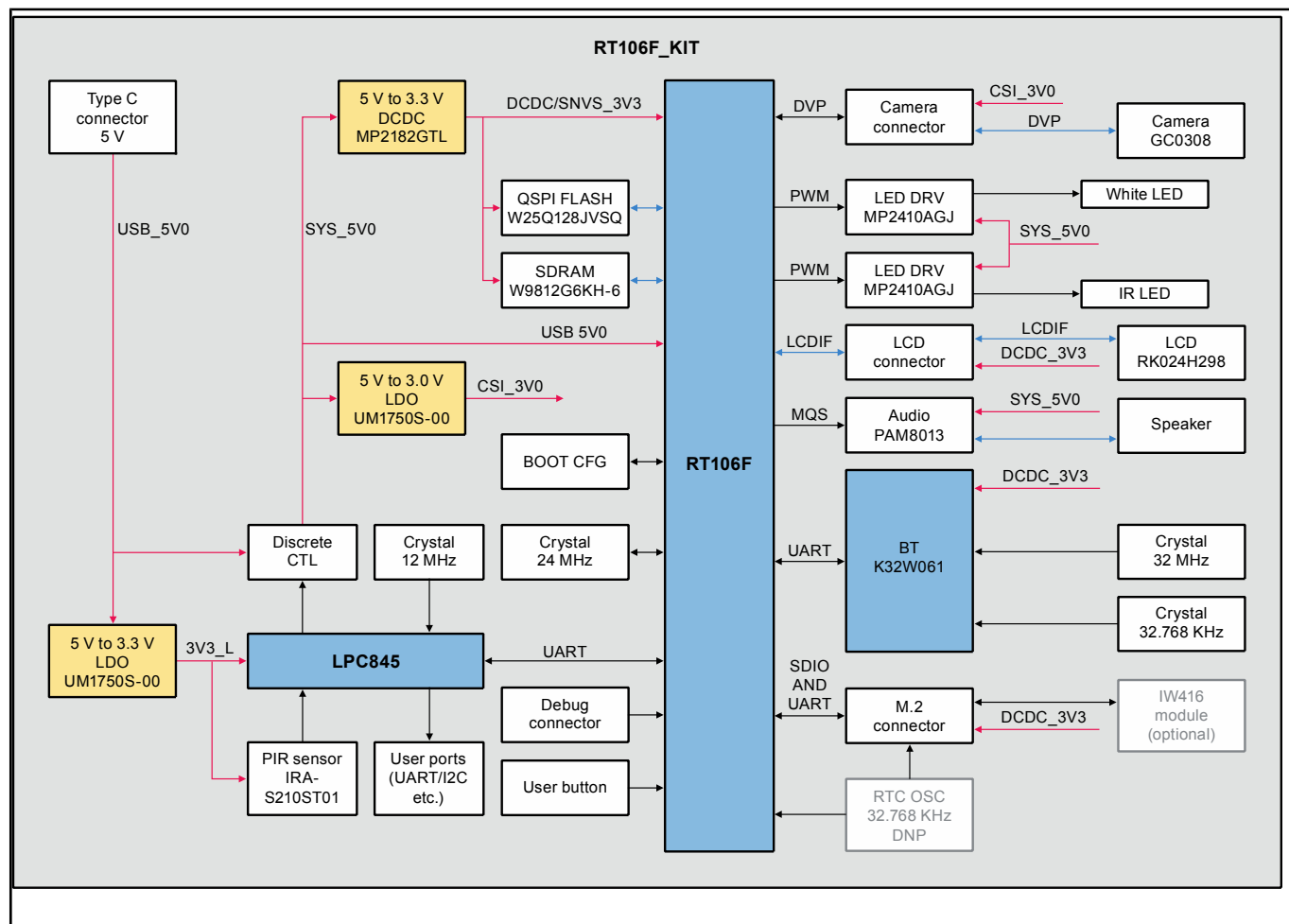# NXP EdgeReady MCU-Based Solution for Face Recognition with Liveness Detection
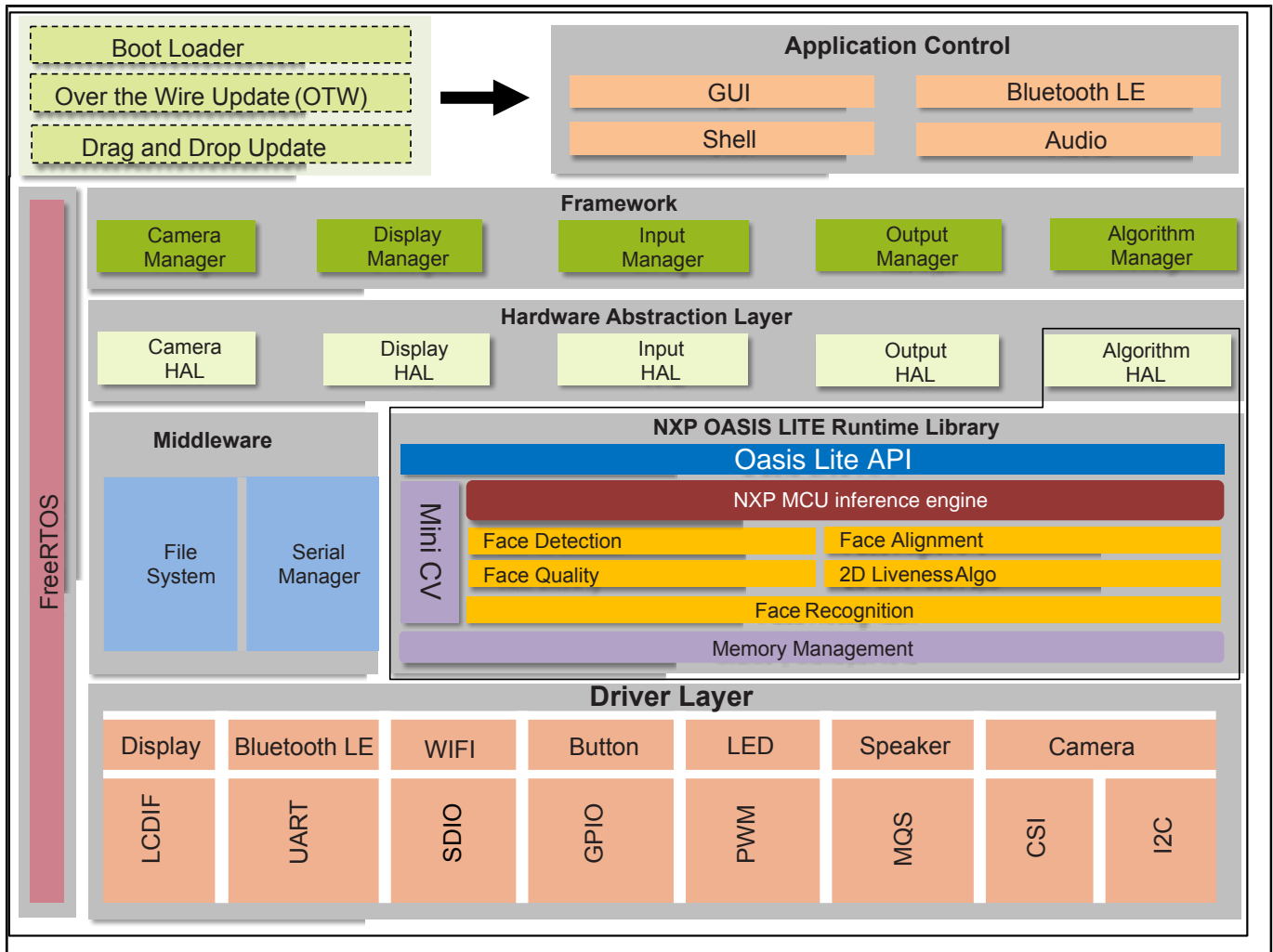
SLN-VIZNLC-IOT

Last Updated: Jun 4, 2025

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. The development kit for this solution, SLN-VIZNLC-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 edge, addressing the privacy concerns of many consumers. This NXP EdgeReady solution is part of the EdgeVerse™ edge computing platform.
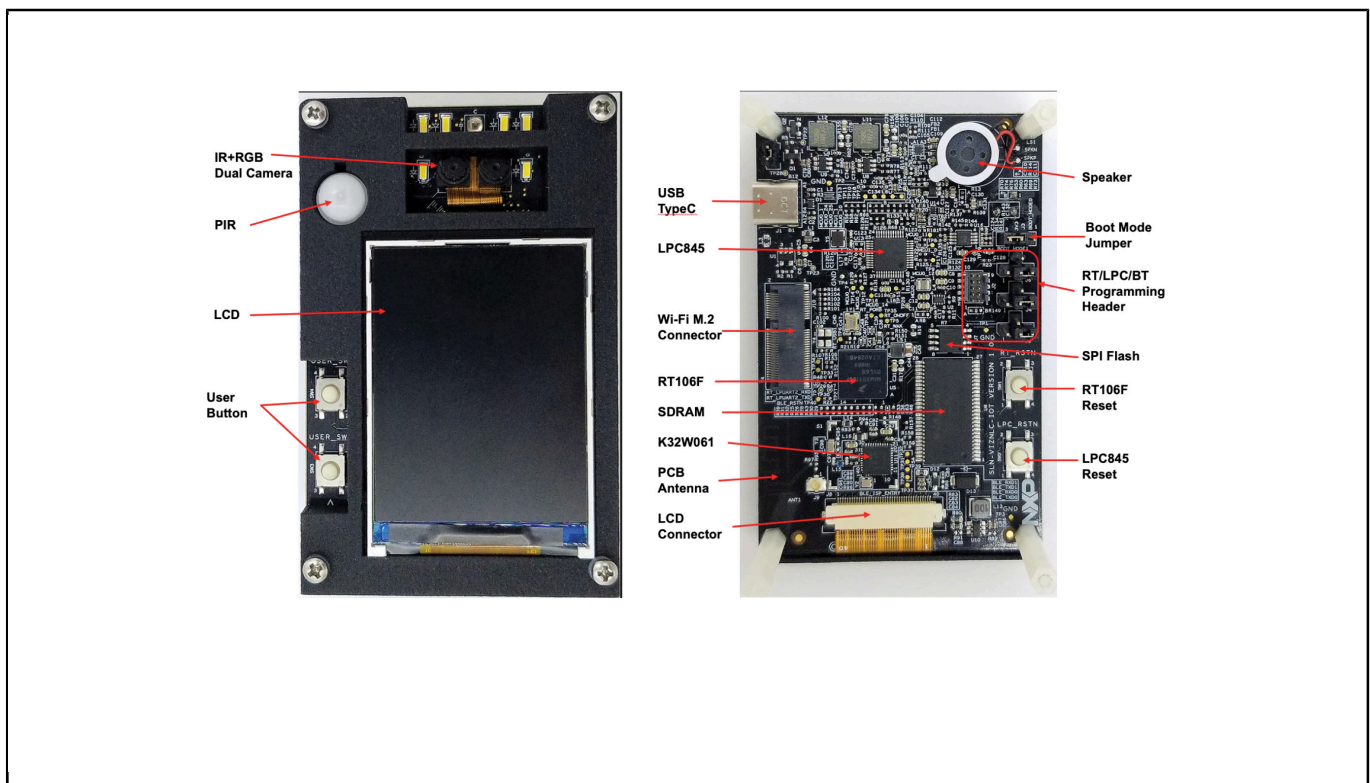
NXP EdgeReady MCU-based Face Recognition Block Diagram

VIZNLC Face Recognition Software Block Diagram

	Application Control		
Boot Loader	GUI		Bluetooth LE
Over the Wire Update (OTW)			
Drag and Drop Update	Shell		Audio

Framework

Camera Manager · Display Manager · Input Manager · Output Manager · Algorithm Manager

Hardware Abstraction Layer

Camera HAL · Display HAL · Input HAL · Output HAL · Algorithm HAL

FreeRTOS

Middleware

File System · Serial Manager

Mini CV

NXP OASIS LITE Runtime Library

Oasis Lite API

NXP MCU inference engine

Face Detection · Face Alignment

Face Quality · 2D Liveness Algo

Face Recognition

Memory Management

Driver Layer

Display · Bluetooth LE · WIFI · Button · LED · Speaker · Camera

LCDIF · UART · SDIO · GPIO · PWM · MQS · CSI · I2C

Demo Kit Block Diagram

IR+RGB Dual Camera
PIR
LCD
User Button

USB TypeC
LPC845
Wi-Fi M.2 Connector
RT106F
SDRAM
K32W061
PCB Antenna
LCD Connector

Speaker
Boot Mode Jumper
RT/LPC/BT Programming Header
SPI Flash
RT106F Reset
LPC845 Reset

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

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

---

www.nxp.com