SMART ACCESS PLATFORM SOLUTION

The Smart Access platform showcases NXP smart technologies that enable faster productization in smart homes, smart buildings and smart cities. The smart access platform includes the LPC55S69 MCU lock solution with pinpad and fingerprint matching algorithms. Depending on the use case, developers can choose access control based on NXP ultra-wideband (UWB), Matter or Face recognition solutions. The EdgeLock® secure element SE051 is attached to UWB and Matter.

The smart access platform integrates a variety of NXP connectivity options, including the K32W041 MCU for Matter over Thread, the QN9090 Bluetooth Bluetooth® low energy solution, the SR150T secure UWB solution for IoT devices and the CLRC663 low-power NFC device. Face recognition based on NXP EdgeReady MCU-based turnkey solution leverages the i.MXRT106F/i.MXRT117F crossover MCUs, 3D secure or optional 2D secure and low-cost face recognition. The platform also has optional video intercom through wireless connectivity.

The smart access demo kit enables multiple use cases to unlock/lock doors using Matter, UWB, Face recognition, Fingerprint, password or NFC, providing developers a platform to quickly and easily add these features to a range smart access applications.

Smart Access Main System Control	Main access control, sensor aggregation HMI interface, voice prompt Fingerprint matching algorithm Low power management
Matter Access Control	Matter over Thread Access control through App / Matter gateway
UWB Access Control	Access control through UWB phone Optional Bluetooth LE wake-up
Face Recognition Access Control	Based on NXP SLN-VIZN3D-IOTturnkey solution 3D secure face recognition Optional 2D secure and low-cost face recognition Optional video intercom through cloud
Others	NFC, Bluetooth LE, pin pad access control Secure data management

TARGET APPLICATIONS

Smart home, smart building and smart city applications incorporating Matter, UWB, NFC, WiFi, Security or Secure user identification and authentication.

Smart Door Lock/Smart Access Control

- Low power Smart Lock solution with sensor aggregation, HMI interface, voice prompt and fingerprint matching algorithm

- Face recognition access control with liveness detection using 3D Structured light camera module (SLM) camera

- Wireless connectivity (Matter, UWB, Bluetooth LE, Wi-Fi®, NFC)

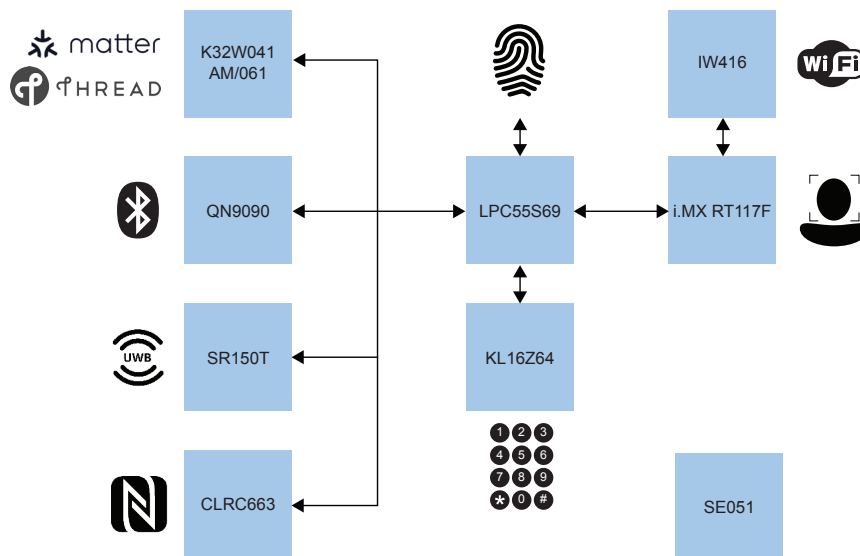- Secure data management for user credential and biometric information

SMART ACCESS PLATFORM OVERVIEW

The Smart Access Platform is designed to provide a comprehensive hardware and software reference solution for Smart Access/Lock applications. The platform integrates basic and advanced smart lock control methods including fingerprint, password, Matter, UWB and Face Recognition. It also provides HMI interface and voice prompt functions. The dedicated NXP EdgeLock secure element provides security for the system.
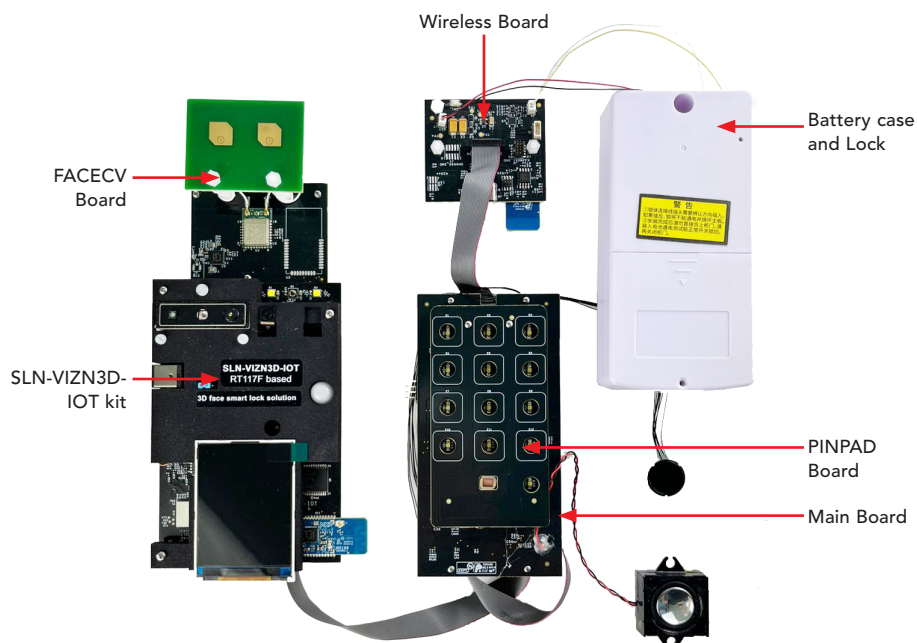
The Smart Access Platform is composed of the following items:

- Based on the LPC55S69: the Main board acts as a host MCU in the Smart Access platform

- The Wireless board: the wireless board supports Matter control, IEEE® 802.15.4 mesh network protocols, Zigbee® and Thread as well as Bluetooth Low Energy 5.0.

- The PINPAD board: the PINPAD board has 13 touch pads and a NFC antenna

- The SLN-VIZN3D-IOT kit: NXP EdgeReady i.MXRT117F MCU-based solution for 3D face recognition, product support page on www.nxp.com/mcu_vision3d

- The FaceCV board: the FaceCV board is a conversion board for SLN-VIZN3D-IOT kit that connects the main board but also provides wireless control options including Matter and UWB.

- Battery case and lock: the box holds 4x 1.5 V batteries

SMART ACCESS PLATFORM SOLUTION

SMART ACCESS PLATFORM DEMO KIT

NXP provides the LPC55S69 software package, the QN9090 Bluetooth Bluetooth® low energy, Matter, UWB software, and Android APK, with maintenance.

For more information, you can visit https://github.com/NXP/smart_access_platform