



SECURE CONNECTIONS
FOR A SMARTER WORLD

EDGEREADY SOLUTION FOR SMART VOICE UI BASED ON i.MX RT106V CROSSOVER MCUS

This NXP EdgeReady solution for both local and online voice control leverages the i.MX RT106V crossover MCU with integrated Voice Intelligent Technology (VIT) offering a voice user interface for touchless applications. This ultra-small form-factor, production-ready hardware design comes with fully integrated software running on FreeRTOS for quick out-of-the-box evaluation and proof of concept development. This turnkey solution minimizes time to market, risk, and development effort enabling OEMs to easily add voice to their Industrial and IoT products.

KEY FEATURES

- i.MX RT106V Crossover MCU with Arm® Cortex®-M7 core, 3020 CoreMark/1284 DMIPS @ 600 MHz
- Advanced multimedia for GUI and enhanced HMI
 - 2D graphics acceleration engine
 - LCD display controller (up to WXGA 1366x768)
 - 3x I²S for high-performance, multi-channel audio
- Secure JTAG PLL OSC eDMA 4x Watch Dog 6x GP Timer 4x Quadrature ENC 4x QuadTimer 4x FlexPWM IOMUX
- Far field audio front end Automatic Speech Recognition Supports 360° far field voice 65dB noise @ >3 meters
- Extensive external memory interface options
 - NAND, eMMC, QuadSPI NOR Flash, and Parallel NOR Flash
- Supports 2xPDM or up to 3xI²S DMIC Provides 2 or 3-mic for audio Beamforming



- Turnkey solution, one platform to support local and online control
- Text input tool creates speech models of custom commands and wake words with no NRE
- IW416 integrated on board to support Wi-Fi® 4 (802.11n) + Bluetooth® 5.2

TARGET APPLICATIONS

Industrial

- Elevator
- Smart Lighting

Smart Home

- Home Control Panel
- Washing Machine
- Small and Medium Appliances

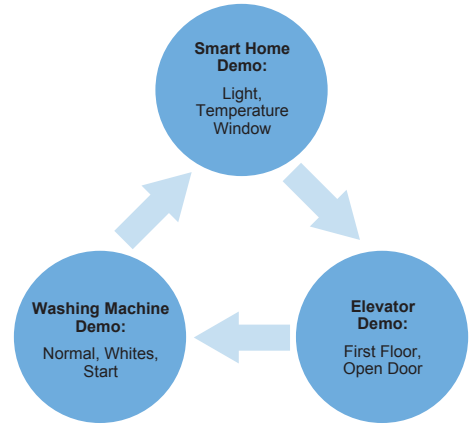
- Industrial HMI
- Vending Machines

- Robotic Appliance
- Smart Fan
- Smart TV

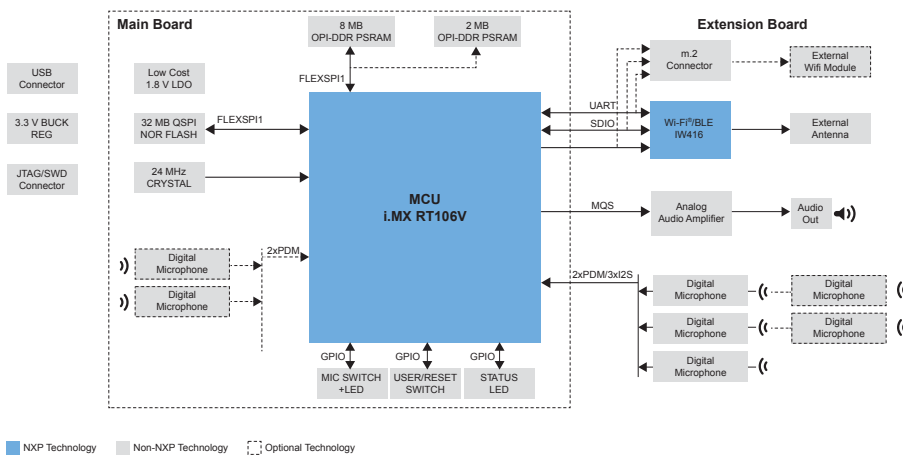
SLN-SVUI-IOT



Hey NXP**
Salut NXP**
Hallo NXP**
Nihao NXP**
Multi-language Support



HARDWARE BLOCK DIAGRAM



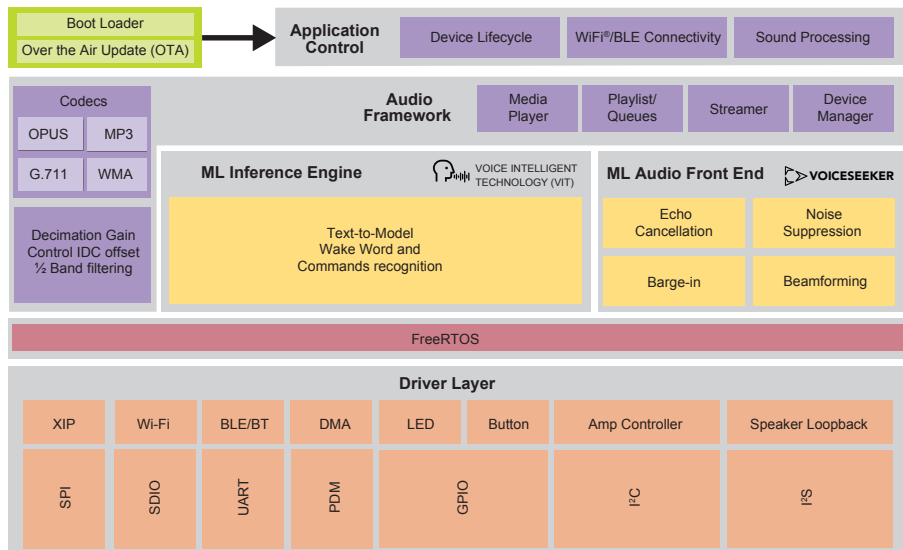
Main Board

- i.MX RT106x MCU
- 16MB QSPI Flash
- 8MB OPI PSRAM
- 2MB QSPI PSRAM (option)
- 2x pdm DMIC (option)

Extension Board

- IW416 Wi-Fi/BLE (+ m.2 connector)
- Low-cost LDO
- Low-cost
- Analog audio amplifier
- 3xI²S DMIC
- 2xpdmDMIC (option)
- JTAG/SWD connector
- LED, Buttons

SOFTWARE BLOCK DIAGRAM



Local 2 Based SW with:

- SDK 2.12 upgrade
- NXP Front-end
- NXP Inference Engine
- Improved OOBE

Audio Front End

- Voice Seeker (NXP)

Inference Engine

- VIT (NXP) Default ASR and royalty free
- Cyberon Optional ASR, with royalty

nxp.com/sln-svui-iot

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