EdgeReady MCU Based Solution for Alexa for IOT
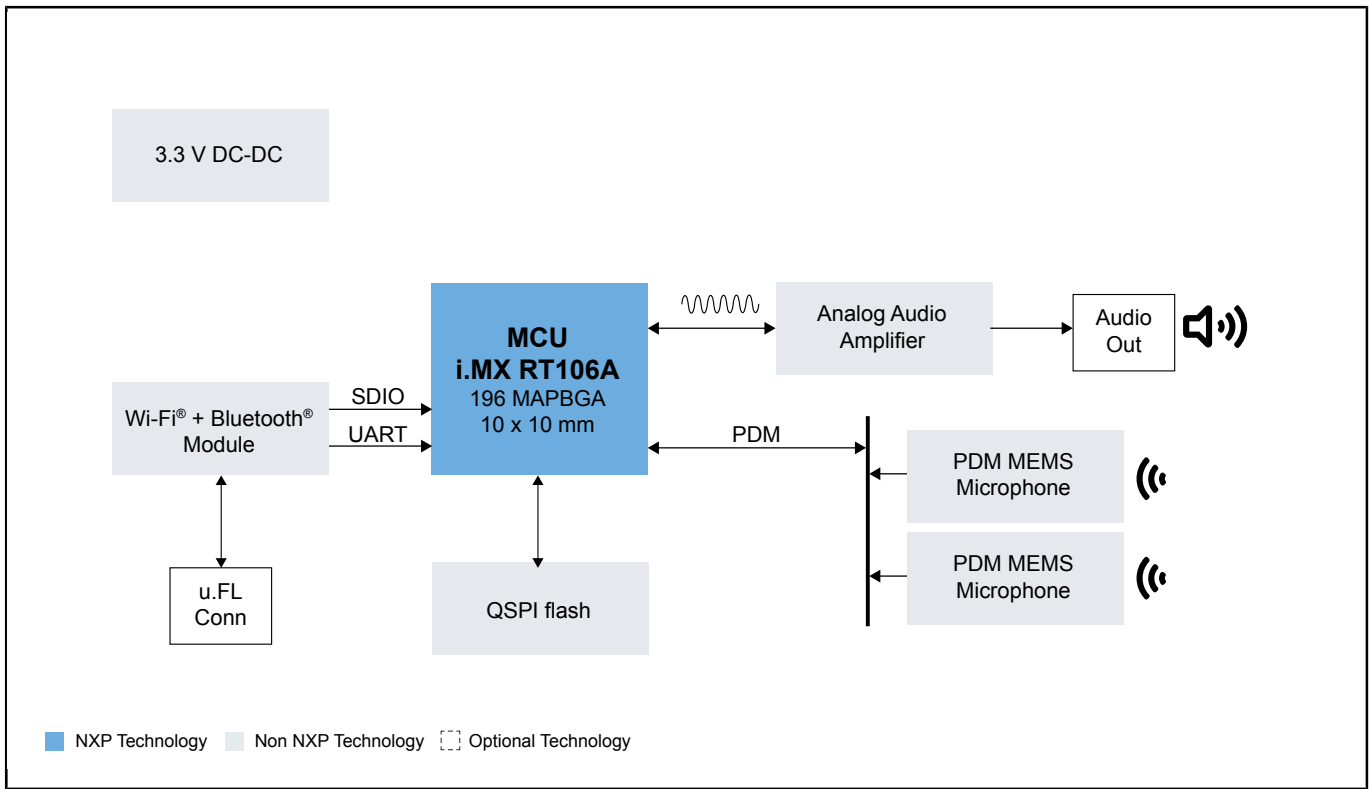
MCU-VOICE-CONTROL-AVS

新規採用非推奨
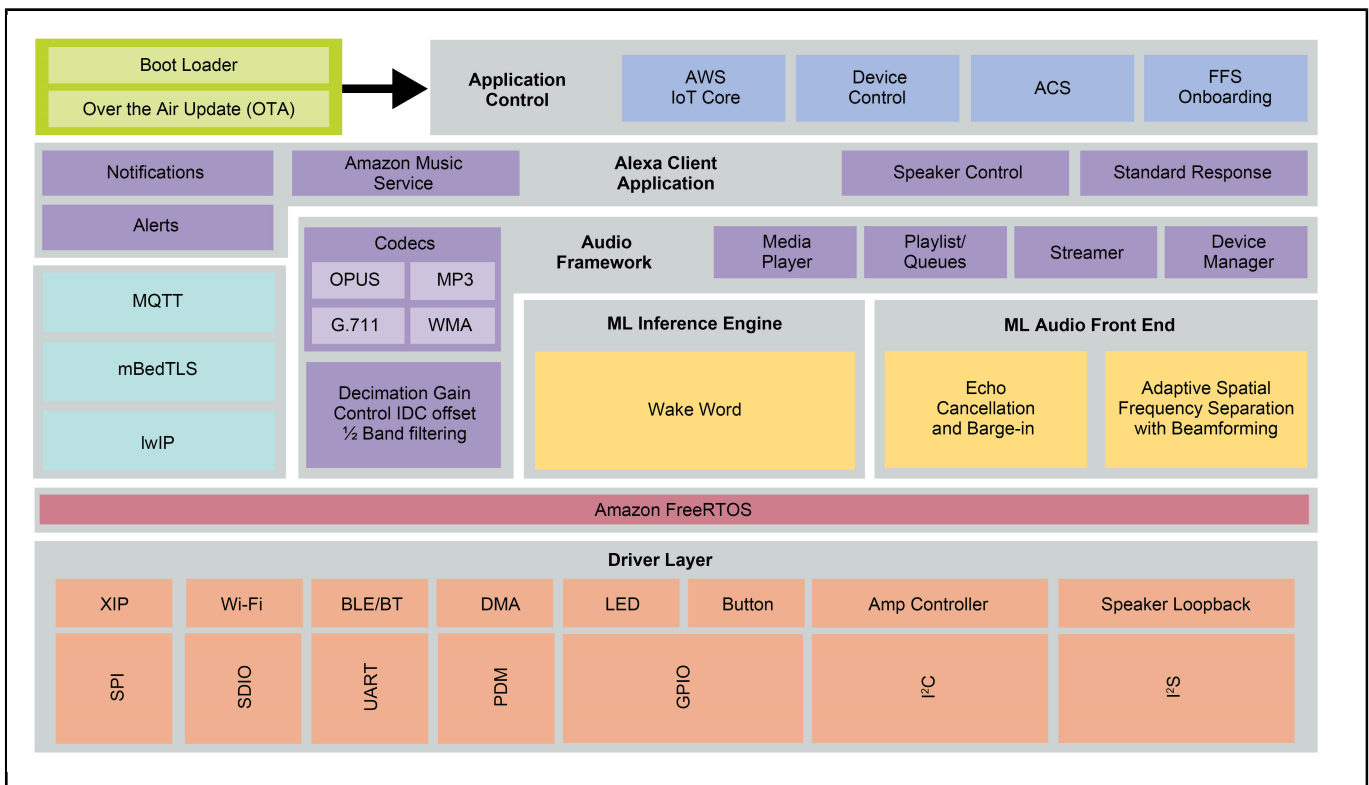このページでは、新規設計を推奨しない製品に関する情報を掲載しています。

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NXP EdgeReady MCU-based solution for Amazon's Alexa Voice Service (AVS) integration for AWS IoT Core (aka Alexa for IoT, or AFI), leverages the i.MX RT crossover MCU, enabling developers to quickly and easily add Alexa voice assistant capabilities to their products. Part of the EdgeVerse edge computing platform, This i.MX RT106A based turnkey solution consists of a hardware reference design integrated with Amazon qualified software, built on Amazon Common Software (ACS) and FreeRTOS for easy integration with AVS and AWS IoT. Out-of-the-box the solution development kit, SLN-ALEXA-IOT, delivers an experience similar to an Amazon Echo™ speaker, and is easily connected to the user's Wi-Fi network and Alexa account using Amazon's Frustration Free Setup (FFS).

Retune DSP is now part of NXP. Find out more.

i.MX RT Hardware Block Diagram

3.3 V DC-DC

MCU i.MX RT106A
196 MAPBGA
10 x 10 mm

Wi-Fi® + Bluetooth® Module

SDIO
UART

u.FL Conn

QSPI flash

Analog Audio Amplifier

Audio Out

PDM

PDM MEMS Microphone

PDM MEMS Microphone

- ■ NXP Technology
- ■ Non NXP Technology
- ⬚ Optional Technology

i.MX RT Software Block Diagram

Boot Loader

Over the Air Update (OTA)

Application Control

AWS IoT Core

Device Control

ACS

FFS Onboarding

Notifications

Amazon Music Service

Alexa Client Application

Speaker Control

Standard Response

Alerts

Codecs

OPUS | MP3

G.711 | WMA

Audio Framework

Media Player

Playlist/ Queues

Streamer

Device Manager

MQTT

mBedTLS

lwIP

Decimation Gain Control IDC offset ½ Band filtering

ML Inference Engine

Wake Word

ML Audio Front End

Echo Cancellation and Barge-in

Adaptive Spatial Frequency Separation with Beamforming

Amazon FreeRTOS

Driver Layer

XIP | Wi-Fi | BLE/BT | DMA | LED | Button | Amp Controller | Speaker Loopback

SPI | SDIO | UART | PDM | GPIO | I²C | I²S

View additional information for EdgeReady MCU Based Solution for Alexa for IOT.

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

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