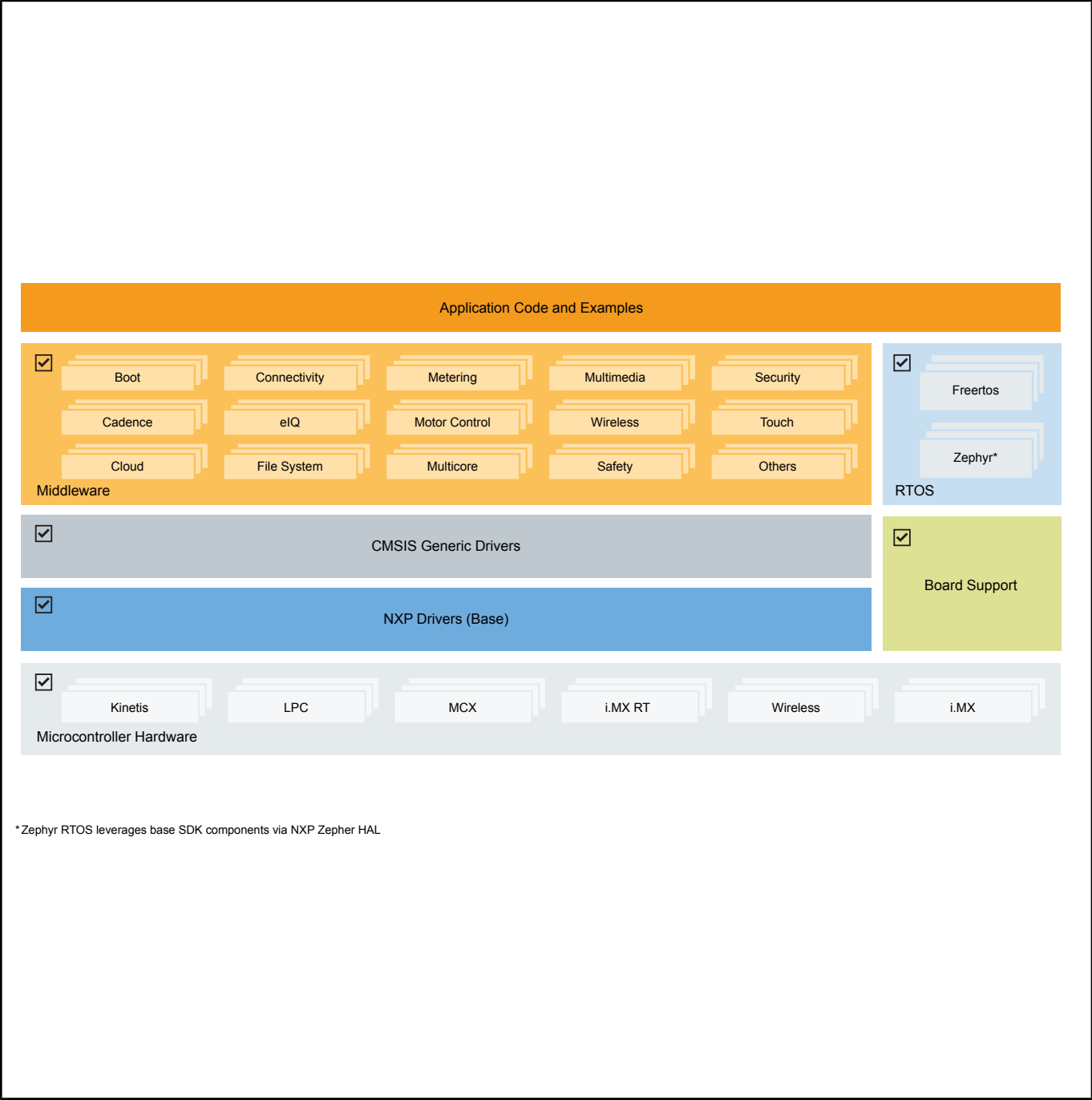# MCUXpresso Software Development Kit (SDK)

MCUXpresso-SDK
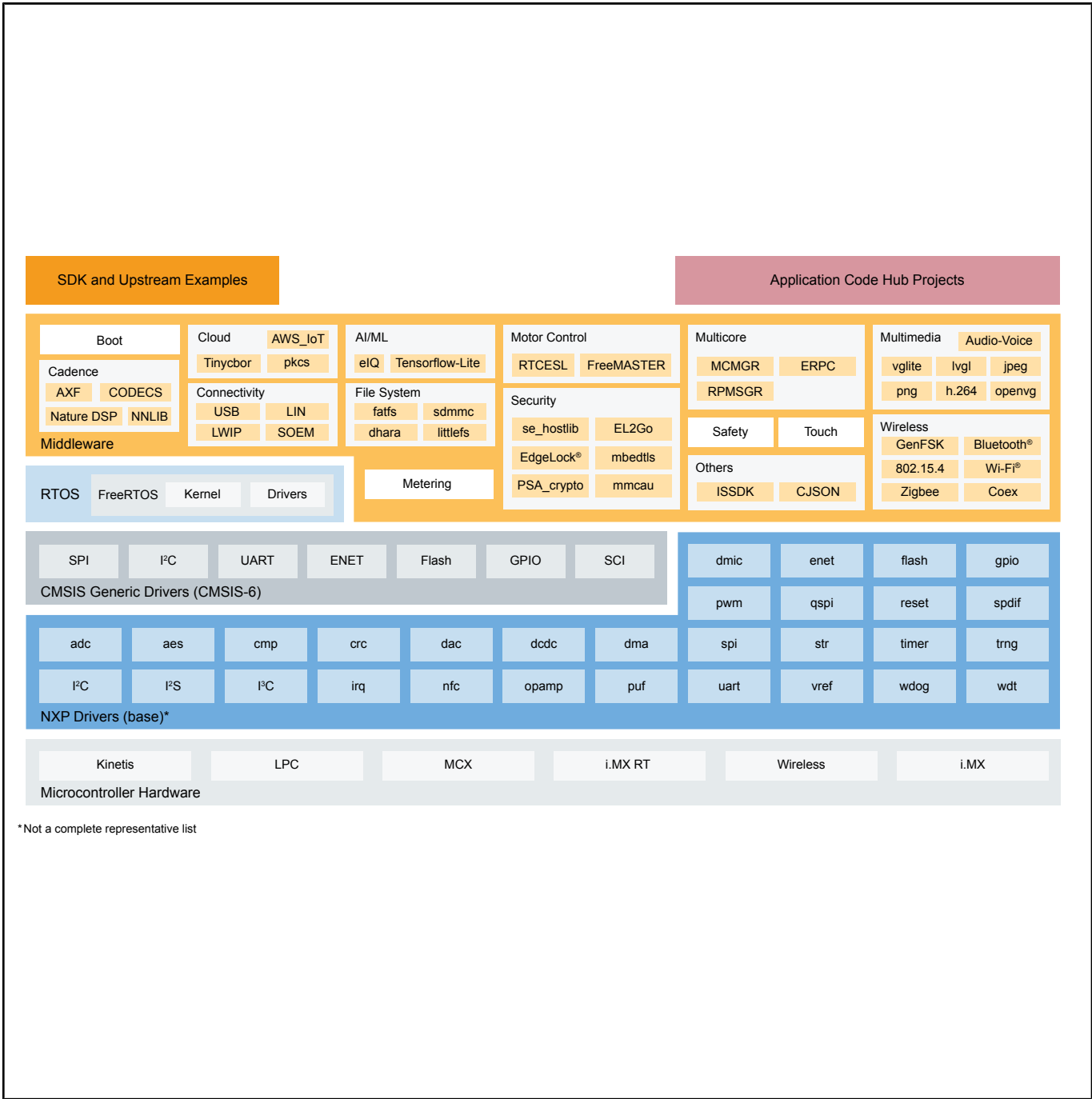
Last Updated: Dec 10, 2025

The MCUXpresso SDK is a comprehensive software enablement package designed to simplify and accelerate application development with Arm® Cortex®-M based devices from NXP, including its general purpose, crossover and wireless-enabled MCUs. The MCUXpresso SDK includes production-grade software with integrated RTOS (optional), integrated enabling software technologies (stacks and middleware), reference software, and more. Partner middleware and software can be integrated via the use of custom west manifests. The MCUXpresso SDK is inherently compatible with MCUXpresso IDE, MCUXpresso for VS Code but also supports and provides example projects for IAR Embedded Workbench, KEIL MDK and GCC with CMake + Kconfig. Custom SDK packages are available as custom archives or west manifests based on user selections of MCU, evaluation board, and/or optional software components.

NXP is committed to delivering secure, high-quality software to customers. To support this, industry-leading tools such as Coverity® Static Analysis and Black Duck Software Composition Analysis is integrated into the SDK development lifecycle.

MCUXpresso SDK High-Level Block Diagram Block Diagram

Application Code and Examples					

☑ Middleware

Boot	Connectivity	Metering	Multimedia	Security
Cadence	eIQ	Motor Control	Wireless	Touch
Cloud	File System	Multicore	Safety	Others

☑ RTOS

Freertos

Zephyr*

☑ **CMSIS Generic Drivers**

☑ **NXP Drivers (Base)**

☑ Board Support

☑ Microcontroller Hardware

Kinetis	LPC	MCX	i.MX RT	Wireless	i.MX

*Zephyr RTOS leverages base SDK components via NXP Zepher HAL

MCUXpresso SDK Detailed Block Diagram Block Diagram

SDK and Upstream Examples	Application Code Hub Projects

Boot

Cadence
AXF	CODECS
Nature DSP	NNLIB

Middleware

Cloud
	AWS_IoT
Tinycbor	pkcs

Connectivity
USB	LIN
LWIP	SOEM

AI/ML
eIQ	Tensorflow-Lite

File System
fatfs	sdmmc
dhara	littlefs

Motor Control
RTCESL	FreeMASTER

Security
se_hostlib	EL2Go
EdgeLock®	mbedtls
PSA_crypto	mmcau

Metering

Multicore
MCMGR	ERPC
RPMSGR	

Safety	Touch

Others
ISSDK	CJSON

Multimedia
	Audio-Voice
vglite	lvgl	jpeg
png	h.264	openvg

Wireless
GenFSK	Bluetooth®
802.15.4	Wi-Fi®
Zigbee	Coex

RTOS
FreeRTOS	Kernel	Drivers

SPI	I²C	UART	ENET	Flash	GPIO	SCI

CMSIS Generic Drivers (CMSIS-6)

dmic	enet	flash	gpio
pwm	qspi	reset	spdif

adc	aes	cmp	crc	dac	dcdc	dma	spi	str	timer	trng
I²C	I²S	I³C	irq	nfc	opamp	puf	uart	vref	wdog	wdt

NXP Drivers (base)*

Kinetis	LPC	MCX	i.MX RT	Wireless	i.MX

Microcontroller Hardware

*Not a complete representative list

View additional information for MCUXpresso Software Development Kit (SDK).

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