



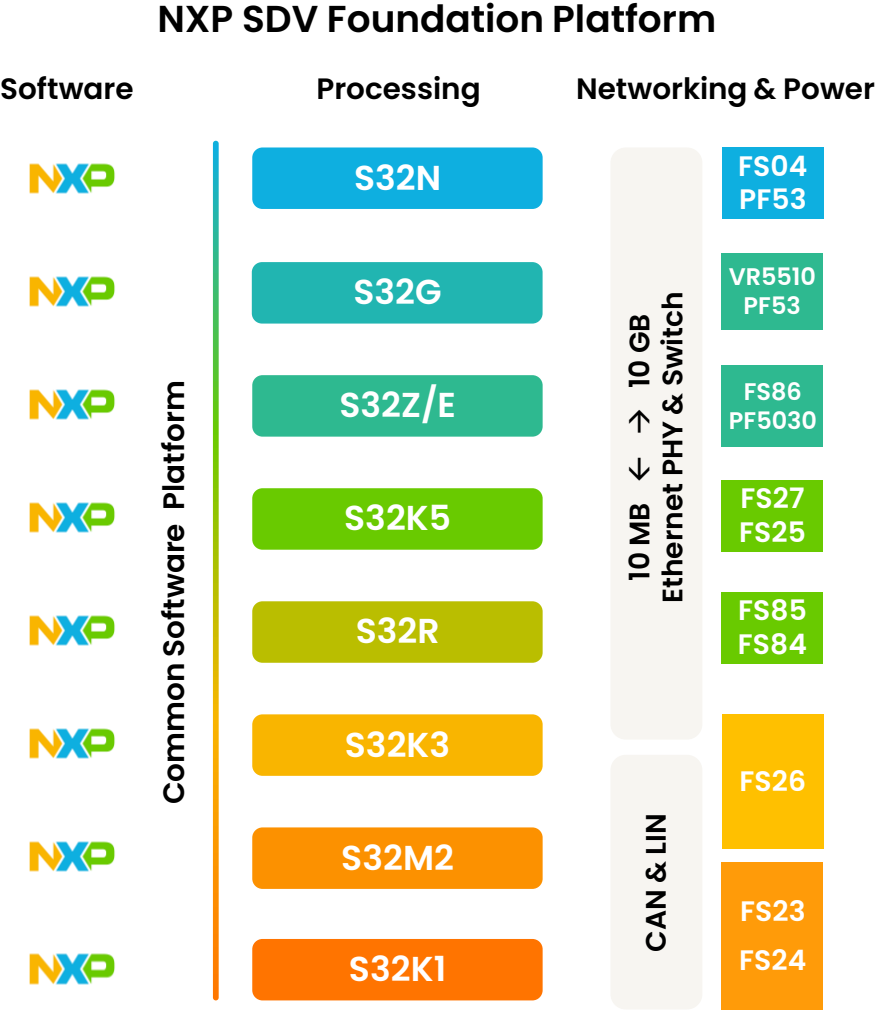
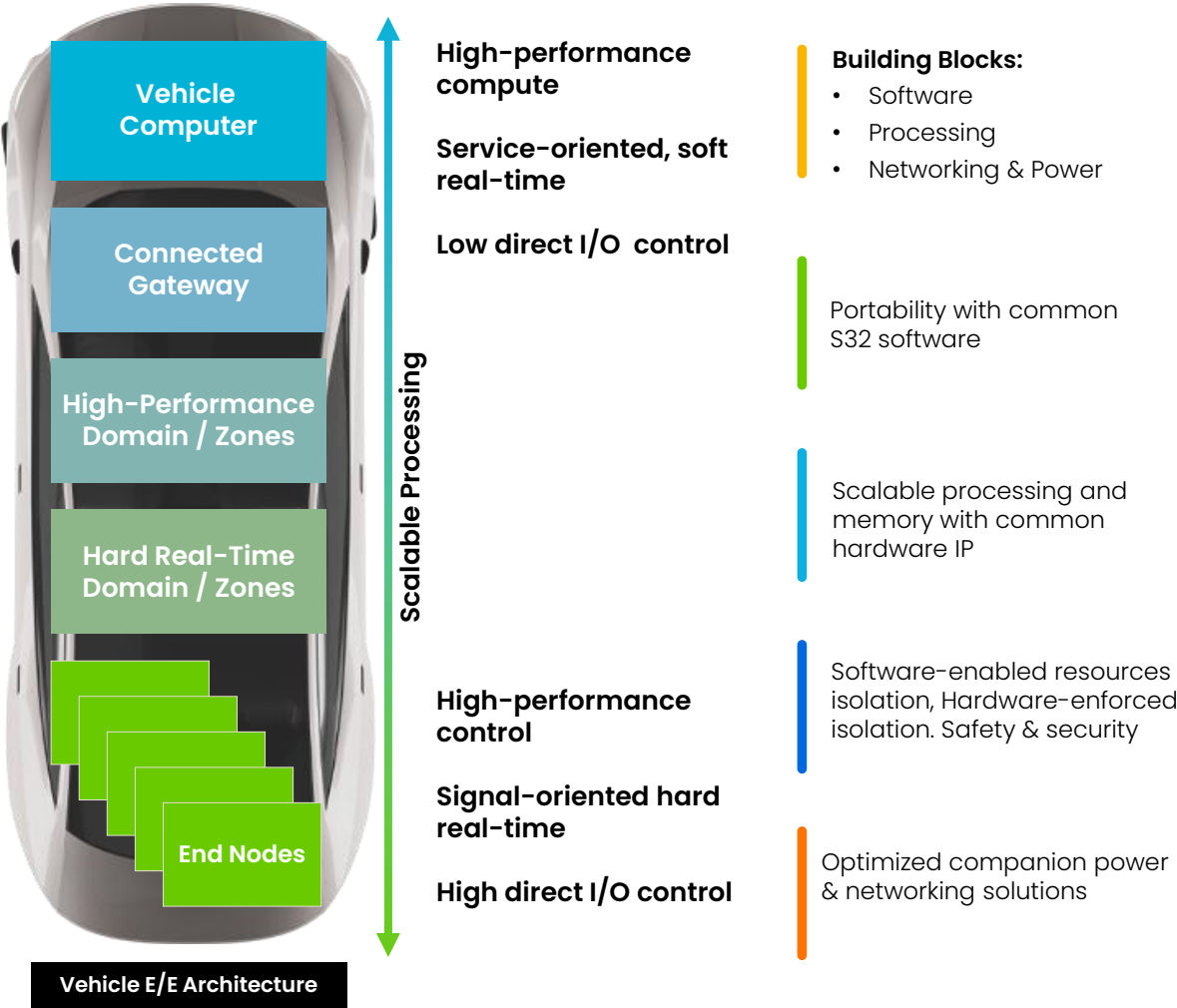
FRDM Automotive Positioning Guide

Analog & Automotive Embedded Systems Marketing

2026

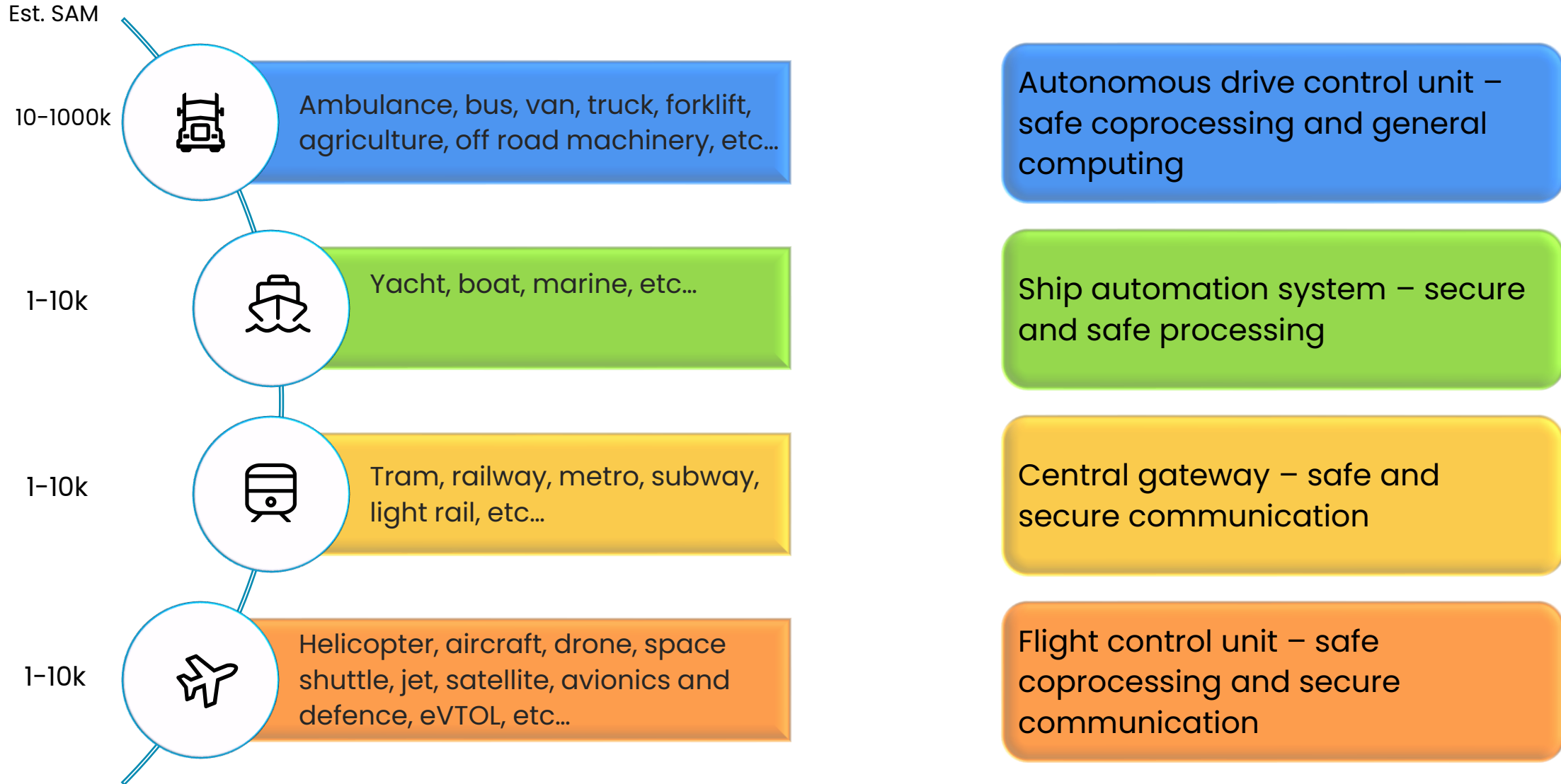
NXP SDV Foundation Platform – A Scalable, Open Platform for Every Vehicle

Software + Processing + Networking & Power



NXP S32

TRANSPORTATION MARKET & LEADING APPLICATIONS



Automotive Microcontrollers Evolution

APPLICATIONS

Cross-Domain
Zone

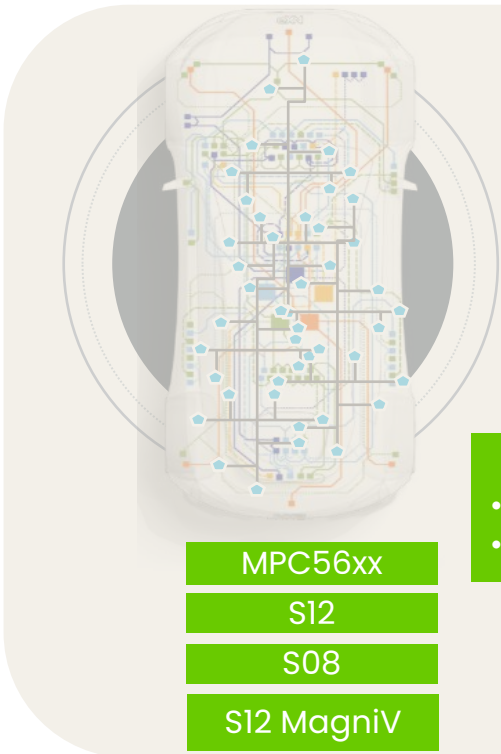
Body Zone

IO Aggregator

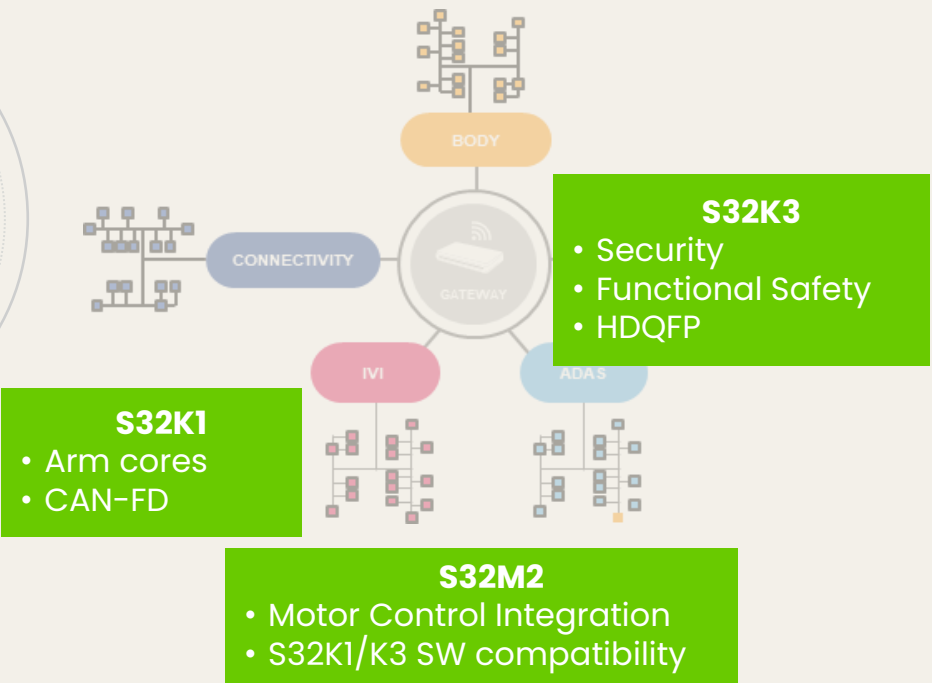
Body Control

Edge Nodes

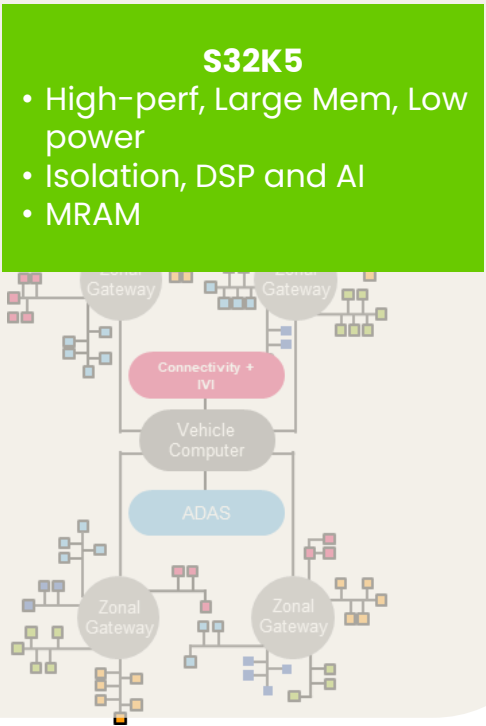
FLAT ARCHITECTURE



DOMAIN ARCHITECTURE



ZONE ARCH AND SDV



Scalable HW

Enablement

Auto Grade
AUTOSAR + SDK

Real-Time Drivers
Security FW
Safety Framework

Pre-Si VDK
Virtualization
AI/ML
Comms stack

Accelerating SW Development

Quality foundation

SW ease of use

Enabling SDV

S32K& S32M BROAD PORTFOLIO AND APPLICATIONS

S32K& S32M BROAD PORTFOLIO AND APPLICATIONS															Typical Application	Arm CPU	Core Speed	
K5															K58	X-domain zone Propulsion domain	4xR52 6xM7 1xM4	800MHz 800MHz 200MHz
														K56		X-domain zone Chassis, Safety domain	2xR52 6xM7 1xM4	800MHz 800MHz 200MHz
											K54/K54E					Premium body zone, body domain	6xM7 1xM4	400/800MHz 200MHz
											K52/ K52E					Body zone, Premium BMS	5xM7 1xM4	400/800MHz 200MHz
										K51						Zonal aggregator Premium BMS	4xM7 1xM4	400/800MHz 200MHz
K3										K38						Zonal Aggregator, Body zone, BMS, IVI	5xM7	320MHz
								K39 / K37/ K36								Inverter	4xM7	320MHz
						K34		K35	K33/ K35							BMS, Charge controller	2-3xM7	160-240MHz
							K32			K32						Body & IO, Entry level Zone, Info/Audio	2xM7	160-240MHz
M2					K31											"K1 extension", Advanced Security	1xM7	120-160MHz
					M27											Motor Control with Adv Security, SDV Edge Nodes	1xM7	120MHz
			M24													Motor Control for End nodes	1xM4F	80MHz
K1				K14/K15												CAN FD and Ethernet nodes	1xM4F/ M33	80-120MHz
			K11													Small CAN FD and LIN nodes	1xM0+	48MHz
	K12/K10															3.3v VDD, Small CAN- FD & LIN nodes	1xM23	48-80MHz
eNVM:	32KB	64KB	128KB	256KB	512KB	1MB	2MB	4MB	6MB	8MB	13MB	17MB	21MB	33MB	41MB			

Designer Friendly Automotive Platform

FRDM goes automotive



Enabling the freedom to innovate

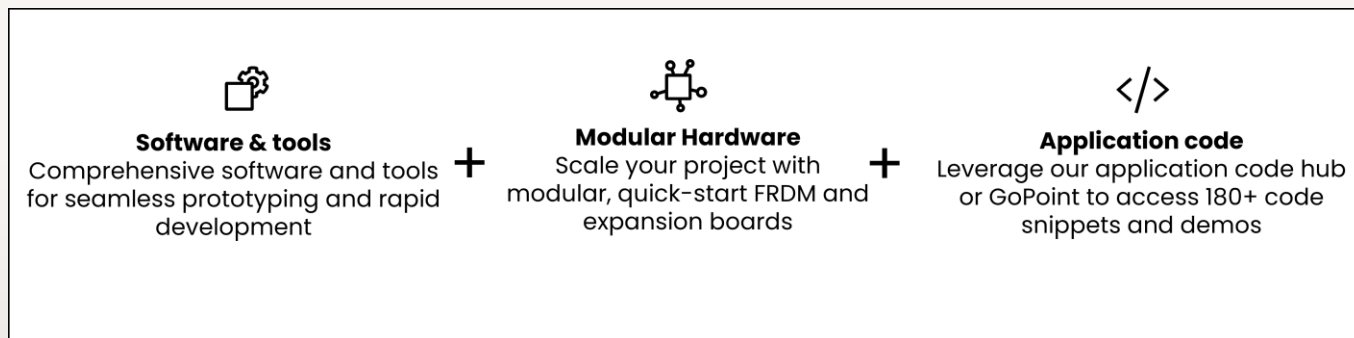
FRDM Development Platform and extensions

Modular platforms to **foster creativity**

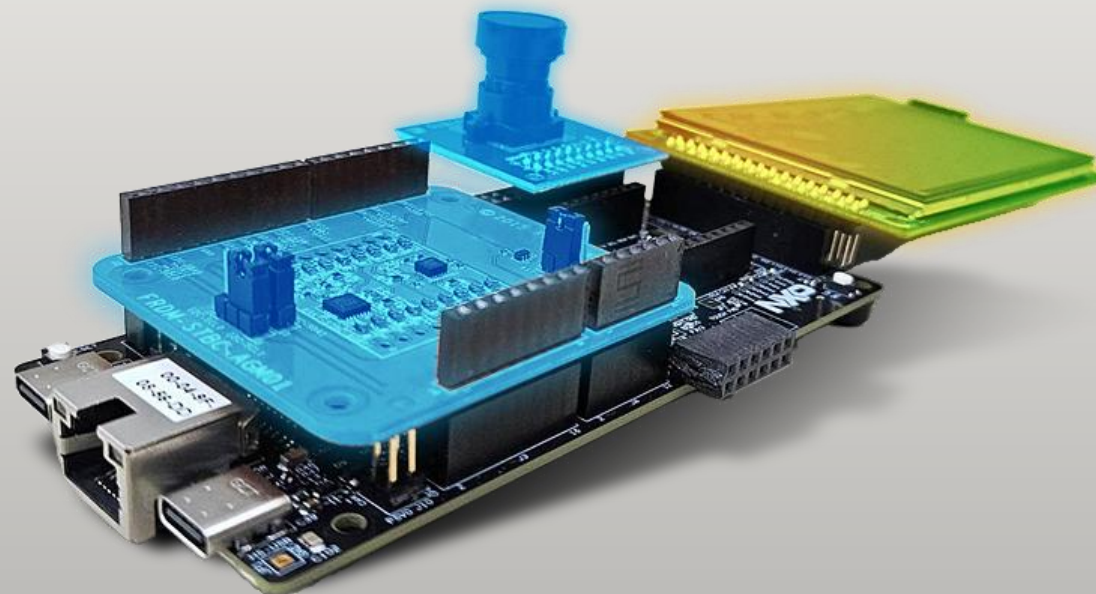
Simplifying the complexity and
accelerating the deployment of solutions

64K+
FRDM board
shipped

220+
Code snippets
and tutorials
through
**Application Code
Hub**



FRDM Development Platform



Introducing **FRDM Automotive** with S32 MCUs

FRDM Development Platform

Scale your project with modular, quick-start **FRDM-A-S32K** across S32K1, S32K3, S32M2 and expansion boards

Starting at 29\$!

+

Software & Tools

SW package download including S32 software and tools including RTD, communication stacks, OS, safety and security SW, IDEs and tool chain for seamless prototyping and rapid development

One click installation

+

Application code hub

Start building applications with ready-to-use examples, which can then be evolved into a production ready solution

Faster Time-to-Market

FRDM-A-S32Kx

Introducing FRDM Automotive with S32 based MCUs
S32K1, S32K3, and S32M2 series at 3V and 5V

Successful FRDM Platform

Foundation: Board + Expansion boards + Software + Application code hub

FRDM Automotive Hardware Portfolio

FRDM-A-S32K118, FRDM-A-S32K118V(3.3V)

29\$

Target MCU: S32K118, S32K118V (3.3V)

- Arm®Cortex®-M0+ @ 48 MHz
- **PMIC FS23** including CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

Apr 2026

[Get Started](#)

FRDM-A-S32K144, FRDM-A-S32K144N(3.3V)

29\$

Target MCU: S32K144, S32K144N (3.3V)

- Arm®Cortex®-M4F @ 80 MHz
- **PMIC FS23** including CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

Apr 2026

[Get Started](#)

FRDM-A-S32K312

49\$

Target MCU: S32K312

- Arm®Cortex®-M7 @ 120 MHz
- **PMIC FS26** including CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

Available

[Get Started](#)

FRDM-A-S32K344

59\$

Target MCU: S32K344

- Arm®Cortex®-M7 @ 160 MHz
- **PMIC FS26** including CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

Available

[Get Started](#)

FRDM-A-S32K358

69\$

Target MCU: S32K358

- Arm®Cortex®-M7 @ 240 MHz
- **PMIC FS26** including CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

May 2026

[Get Started – Coming Soon](#)

FRDM-A-S32M276

149\$

Target MCU: S32M276

- Arm®Cortex®-M7 @ 120 MHz
- CAN, LIN PHYs
- **Production-grade software** for faster time to market with downloadable package

Available

[Get Started](#)

FRDM Automotive Platform

Software and Application Code Hub



Hardware board

FRDM-A-S32K



Software package

one-click install under 20 min

Software & Tools

LIN Stack

TCP/IP
Stack

Real-Time OS
(FreeRTOS etc)

Real-Time Drivers

Arm Cortex – M MCU

S32 Design
Studio

S32 Config Tools

S32 FreeMASTER

GCC 111.4

PnE Debugger



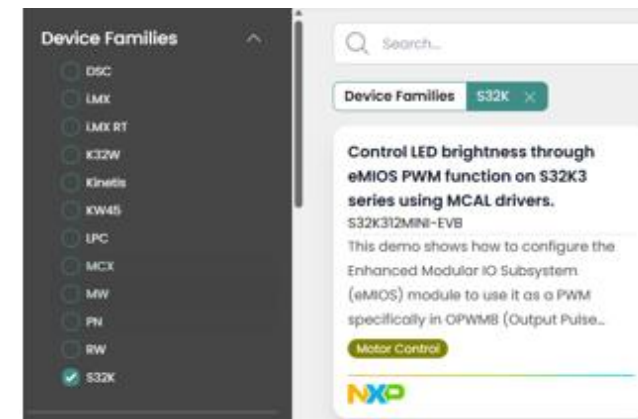
Application Code Hub

Ready to use examples

Start your design

Add S32 application examples

Application Code Hub



Cut through complexity & scale with NXP's FRDM Automotive ecosystem

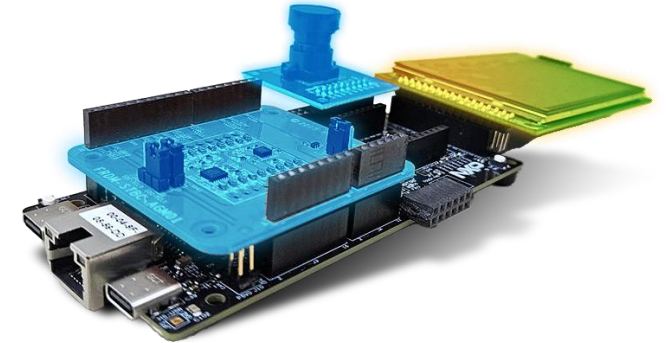
FRDM Development Platform

Expansion Boards with SW support

Easy proof of concept



FRDM-A-S32K



Enabling technologies with modular hardware and comprehensive software supported by Application Code hub

Domain/Zone
Controller

BMS

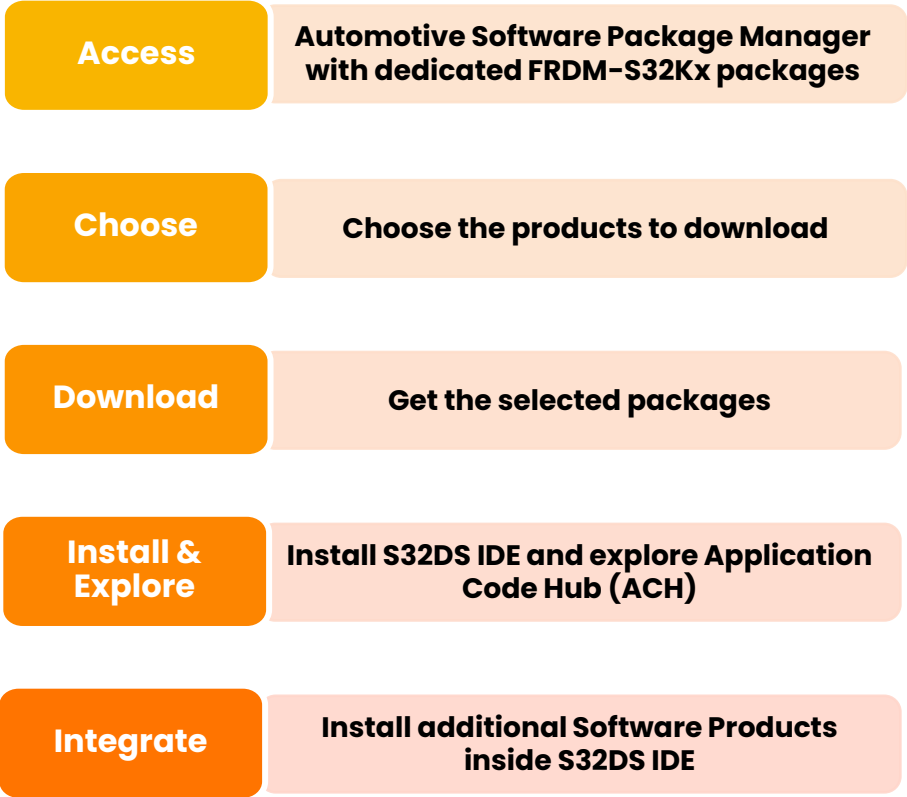
Ultra-Low-
Power

Motor control

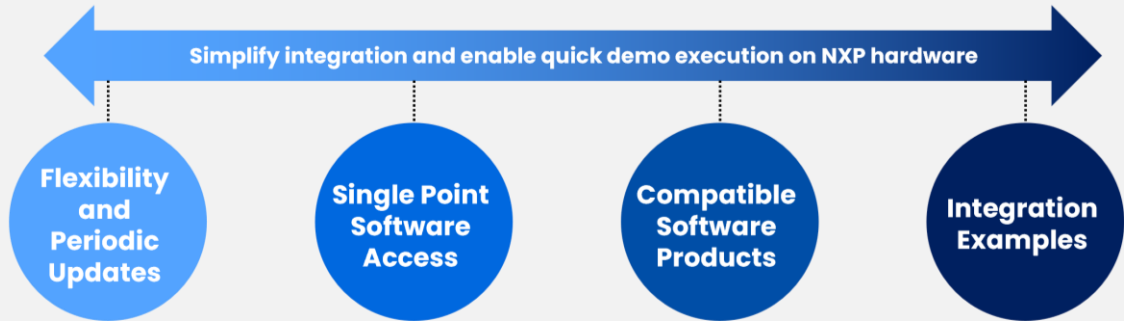
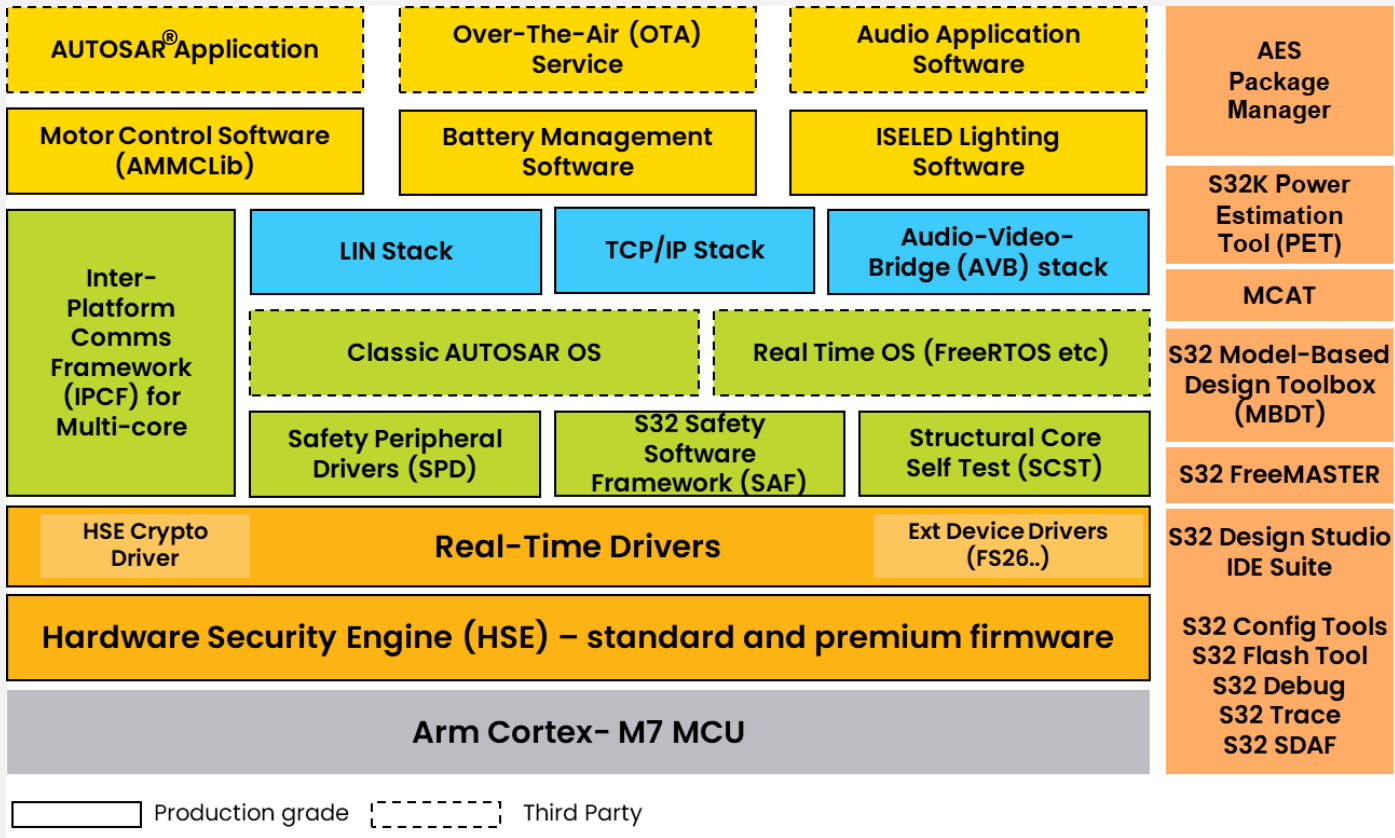
Safety

Lighting

Software and Tools Environment Setup



Automotive Software Package Manager



FRDM Automotive Platform

Simple



Easy-to-use environment
Install with a single click



Fast



Fast-prototyping
Faster time to market



Affordable



Digital board solutions
Starting from \$29



What it translates to

- **Unified installation bundles** for S32K1, S32K3, and S32M2 make it straightforward to start
- **Ready-to-use** Application Code Hub examples simplify getting started.
- **Modular hardware** with expansion boards makes configuration easy.

- Start development instantly with board-specific bundles, **less time configuring**
- Create a new project **instantly** using unified S32K1, S32K3, S32M2 bundles.
- Leverage demos from ACH to first **working prototype in an hour**
- Pre-validated software and examples **accelerate development progress.**

- **Low-cost** FRDM boards, **high-value** software and tools available **without additional licensing costs**, reducing upfront investment
- Pre-integrated and tested Software = **Lower development complexity** = **lower development cost**, lowering overall cost of ownership

FRDM-Automotive Software Installation Package

- IDE installed in a single click in under 20 min
- Examples available on [Application Code Hub](#)
- Projects could be created in less than an hour including the IDE installation

K1

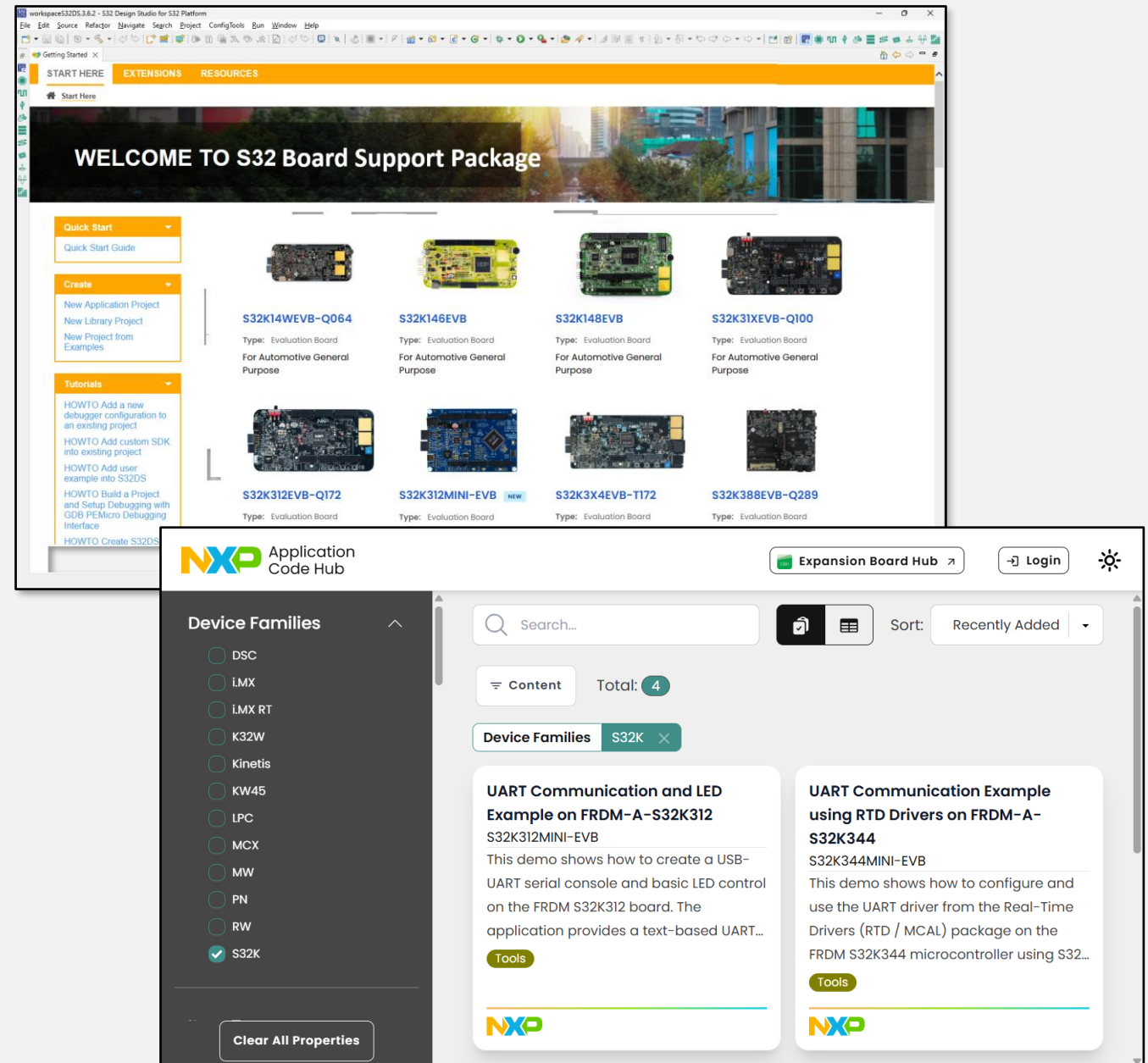
[FRDM-A-S32K1 Bundle](#)

K3

[FRDM-A-S32K3 Bundle](#)

M2

[FRDM-A-S32M2 Bundle](#)



MicroBundles

High-value, cost-optimized S32K MCU + SBC/Transceiver bundles



Cost-effective

Up to 35% saving vs. equivalent, non-bundled device pricing. Pre-validated HW & SW reduces development effort & cost



Scalable

S32K1/3 3&5V Automotive MCUs from 128kB-1MB flash for end nodes. CAN/LIN SBCs & Transceivers with configurable power & safety



Software-enabled

Large NXP software and tool ecosystem – low-cost FRDM Automotive EVBs, free-of-charge AUTOSAR drivers / Safety SW / Security FW / MATLAB Toolbox / ...



One-Stop Shop

Single supplier for pricing, supply & support. Extended product longevity for long lifetime projects. Supply resilience & manufacturing diversity

MicroBundle Options

■ 5V MCU ■ CAN
■ 3V MCU ■ LIN

	128 KB	256 KB	512 KB	1MB
CAN Premium	S32K116V MCU ASIL-B 3.3V FS2400 CAN SBC ASIL-B 3/5V Production grade Software	S32K118V MCU ASIL-B 3.3V FS2400 CAN SBC ASIL-B 3/5V Production grade Software	S32K144N MCU ASIL-B 3.3V FS2400 CAN SBC ASIL-B 3/5V Production grade Software	S32K311 MCU ASIL-B 5V FS2400 CAN SBC ASIL-B 3/5V Production grade Software
CAN Mid range	S32K116 MCU ASIL-B 5V UJA1164AT CAN MiniSBC QM safety 5V Production grade Software	S32K118 MCU ASIL-B 5V UJA1164AT CAN MiniSBC QM safety 5V Production grade Software	S32K144 MCU ASIL-B 5V UJA1164AT CAN MiniSBC QM safety 5V Production grade Software	
LIN Mid range	S32K116V MCU ASIL-B 3.3V TJA1028AT LIN miniSBC QM safety 3/5V Production grade Software	S32K118V MCU ASIL-B 3.3V TJA1028AT LIN miniSBC QM safety 3/5V Production grade Software	S32K144N MCU ASIL-B 3.3V TJA1028AT LIN miniSBC QM safety 3/5V Production grade Software	
CAN Value	S32K116V MCU ASIL-B 3.3V TJA1057BT CAN TRX 5V Production grade Software	S32K118V MCU ASIL-B 3.3V TJA1057BT CAN TRX 5V Production grade Software	S32K144N MCU ASIL-B 3.3V TJA1057BT CAN TRX 5V Production grade Software	

Get Started with NXP's FRDM Development Platforms based on your needs!

FRDM-Automotive

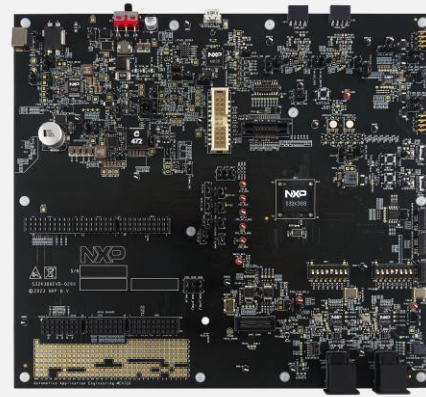
Prototype with a FRDM-Automotive board



Get to market faster with
[nxp.com/FRDM-A](https://www.nxp.com/FRDM-A)
Portfolio

Full Feature Boards

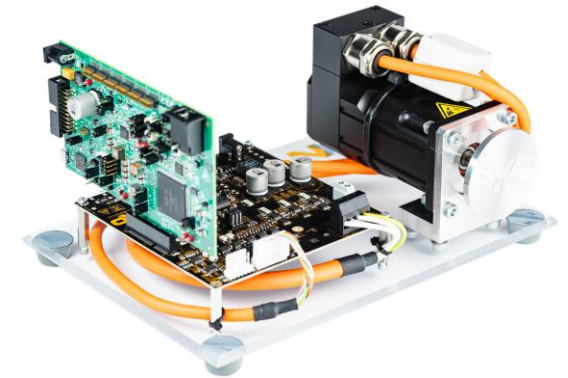
Expand your application if you need full features



Explore
[S32K Automotive Development Platforms](#)

Application Specific Kits

Get started incase of specific application needs



Leverage NXP's expertise
[Motor Control Solutions](#)

Value for Customers

FRDM Automotive Platform

Your entry point to NXP's
top-tier technologies

Distinctive and highly
competitive solution

Reduce development complexity and risk

- Easy access to NXP's automotive MCU portfolio
- Pre-integrated & tested software bundle
- Large suite of pre-tested application, security & safety SW

Save development costs

- Lower development complexity
- Free of charge production-ready security crypto drivers & more
- Save time = save cost

Accelerate time to market

- HW can be easily assembled with FRDM board catalog
- Customer focus on their application value add
- Pre-validated NXP SW elements



nxp.com

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Presentation Feedback

