Design without bounds with FRDM

Sept 2025

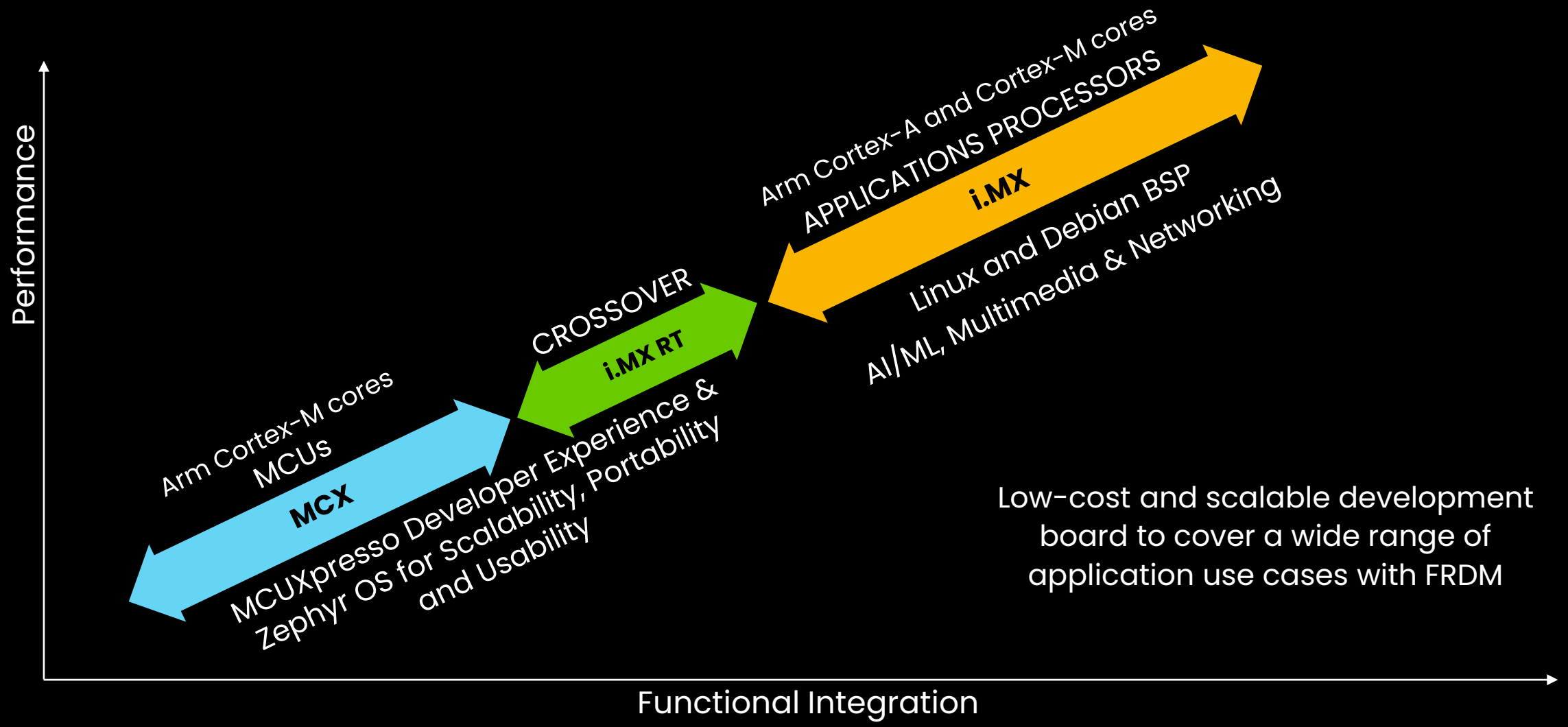
What is a NXP's Development Board?

- NXP evaluation boards are hardware tools that enable developers to experiment with, test, and prototype applications using NXP's microcontrollers & processors.

- FRDM development boards are recognized for being cost-effective, compact, and scalable through add-on expansion boards, ideal for quick prototyping and fast evaluation.

- Evaluation Kits(EVK) offer a complete and integrated experience. Each board is equipped with all the essential resources to evaluate every feature from the silicon.

Design without bound with FRDM across processing portfolio



Low-cost and scalable development board to cover a wide range of application use cases with FRDM

Design without bounds with FRDM

*Optional

One platform, endless possibilities

Software & tools
Comprehensive software and tools for seamless prototyping and rapid development

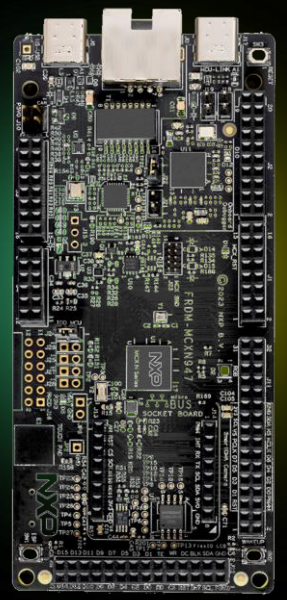
+

Modular Hardware
Scale your project with modular, quick-start FRDM and expansion boards

+

Application code
Leverage our application code hub or GoPoint to access 180+ code snippets and demos

General purpose and Wireless MCUs



Flexible and scalable hardware
Arduino
FRDM
mikroBUS

Price range:
$10 - $35

i.MX Application Processors

Linux Platform with easy setup
On-board wireless
HDMI*
40-pin EXPI

Price range:
$50 - $150

Addressing a wide range of edge applications with baseline features across the platform

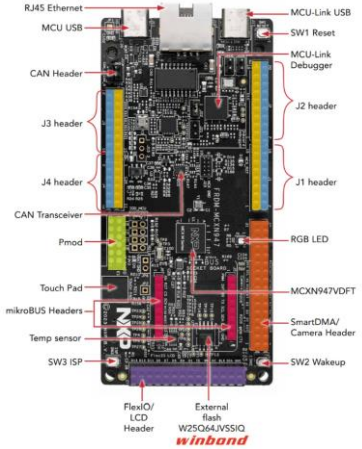
Get Started is easy

FRDM
Find it.
Get it.
Use it.

Get Started

Excellent Out-of-Box Experience Packed with helpful information and a step-by-step web guide to get you up and running quickly.

- Discover Your Board
- Install the Software
- Power Up and Run
- Build Your First Project
- Dive into More Resources

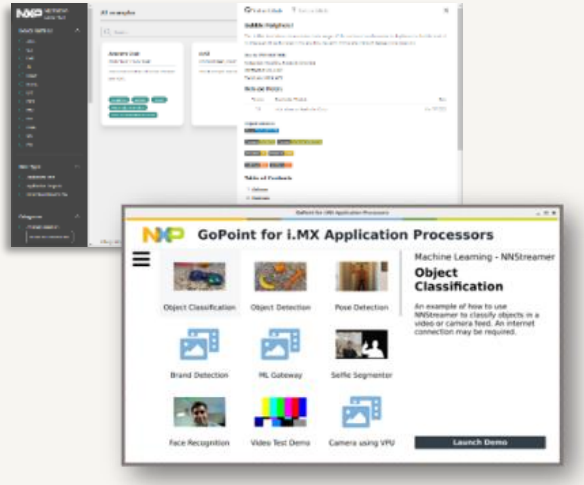


Start with our boards now:
nxp.com/FRDM-MCXN947/start
nxp.com/FRDM-MCXA153/start

There are more options, visit nxp.com/FRDM to know all the FRDM development boards.

Develop

Speed your development with open-source application code examples for different use cases Vision, ML, Graphics and more in Application Code Hub and GoPoint OOB demo experience in Linux BSP



Visit FRDM Community & learn

- Software and tools
- Access to training material
- Know how.. ? articles
- Open-source resources
- And more.

Get in touch

Explore FRDM

At nxp.com/FRDM

Sales points

Buy Direct or though Distribution Network

Support

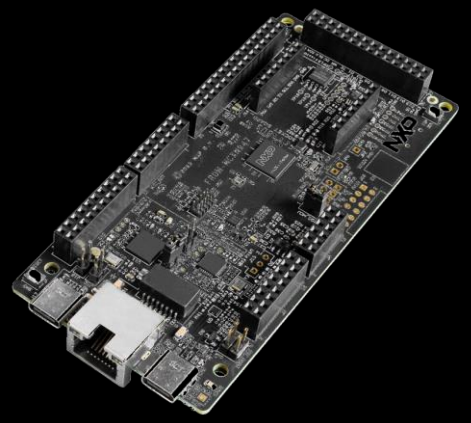
- NXP FAEs and NXP Dedicated FAEs within Distributors. Ask your sales representative about it.
- Web Support
  - Communities
  - Live Chat
  - Raise a ticket

Do you need more?

Professional Support goes beyond our complimentary standard support providing you with a direct link to knowledgeable NXP specialists who are dedicated to accelerating your time to market.

Cut through complexity & scale with NXP's FRDM ecosystem

FRDM Development Platform

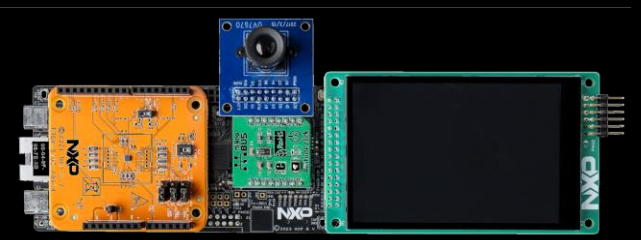


+

Expansion Boards with SW support

=

Easy proof of concept



Enabling technologies with modular hardware and comprehensive software supported by SDK, GitHub or GoPoint

AI/ML	Security	Touch	Motor control	Safety	Industrial Networking
Graphics & Display	Wireless Connectivity	Voice	Vision	Power Conversion	Ultra-Low-Power

FRDM Platform addressing focus use cases

Coming soon

Compact, flexible and scalable hardware design.

SoC	FRDM Development board	Sensors on-board	Networking/ Connectivity	Multimedia	Motor Control	AI/ML	Touch	Voice
i.MX	FRDM-IMX93 FRDM-IMX8MPLUS FRDM-IMX91 FRDM-IMX91S		Wi-Fi® 6 Bluetooth®, 802.15.4, Gb Ethernet, USB, CAN	LVDS to HDMI, MIPI CSI/DSI, Parallel LCD & Camera		EdgeLock Secure Enclave	Vision, audio & time-series ML	40 pin EXPI, MQS
RW61x	FRDM-RW612	Temp Sensor	Wi-Fi® 6 Bluetooth LE® 802.15.4, Ethernet, HS USB	LCD Driver (LCD-PAR-S035 Compatible PMOD)		Time-series ML		FRDM header
MCX N	FRDM-MCXN947 FRDM-MCXN236	Accelerometer / Temp Sensor	HS & FS USB 10/100 Ethernet I3C (Arduino)	Parallel display & camera	MC subsystem though FRDM header	NPU, Vision, Time-series ML	TSI , on-board pad + FRDM header	FRDM header
MCX E	FRDM-E247 FRDM-E31B	Accelerometer + Magnetic switch	Ethernet, CAN	Parallel display & camera	BLDC/PMSM though FRDM header	Time-series M		
MCX A	FRDM-MCXA153 FRDM-MCXA156 FRDM-MCXA346	Temp Sensor	FS USB I3C (Arduino)	Parallel display & camera	MC subsystem though FRDM header	Time-series ML		
MCX W	FRDM-MCXW71 FRDM-MCXW72 FRDM-MCXW23	Accelerometer / Light sensor	802.15.4 & Bluetooth, CAN, I3C (Arduino)			Time-series ML		
MCX C	FRDM-MCXC041 FRDM-MCXC242 FRDM-MCXC444	Accelerometer / Light sensor	FS USB	Segment LCD on-board				

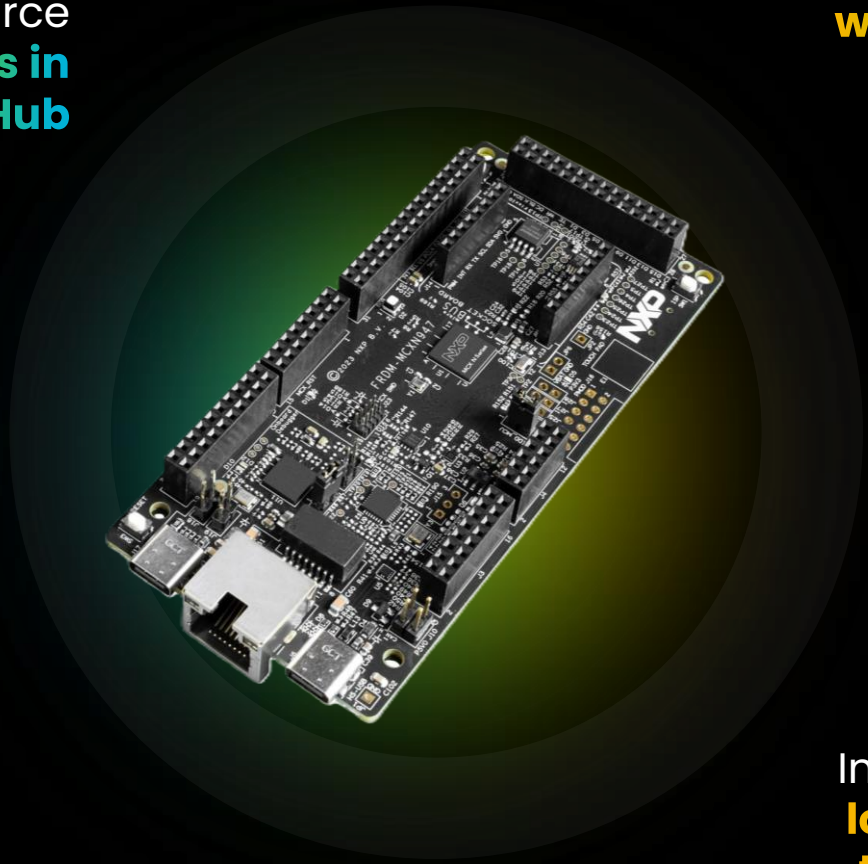
FRDM Development Ecosystem: flexible and rapid development

Join our open-source community of developers migrating to NXP

NXP & Partner open-source code **examples in Application Code Hub**

125 MCX orderable part numbers released in 2024, **on track to double in 2025**

Zephyr RTOS



Join to the **users developing with MCX now!**

MCX MCU portfolio builds on the legacy of LPC and Kinetis, **bringing together the best of the both worlds**

Industry platform **that scales from low-cost MCUs to wireless MCUs, to Linux based microprocessors**

FRDM Ecosystem plus Application Examples

[Application Code Hub]

- Intuitive way to find source code for demos
- Interactive dashboard to filter and find resources

One place to find everything:

- **SDK** software examples
- Demos and Application Examples from **Git repository**
- **GoPoint** demos from Git repository
- **Application notes** with its source code

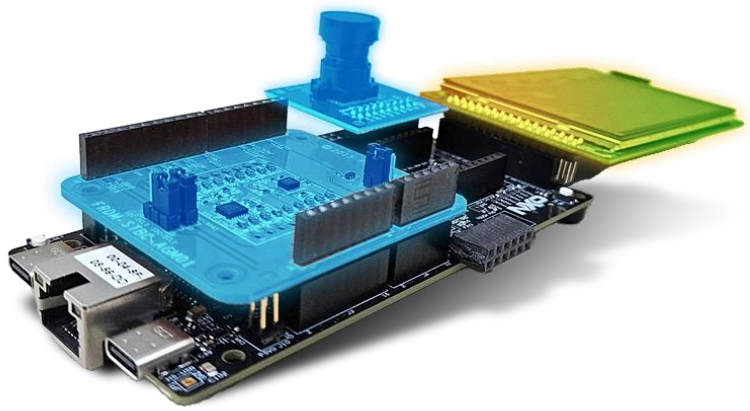
• Use with the [Expansion Board Hub]

- Find expansion boards that are software supported by our SDK, GitHub or Application Code Hub
- Use it together with different FRDM and Evaluation boards

Fast Evaluation with FRDM Platform & Application Code Hub

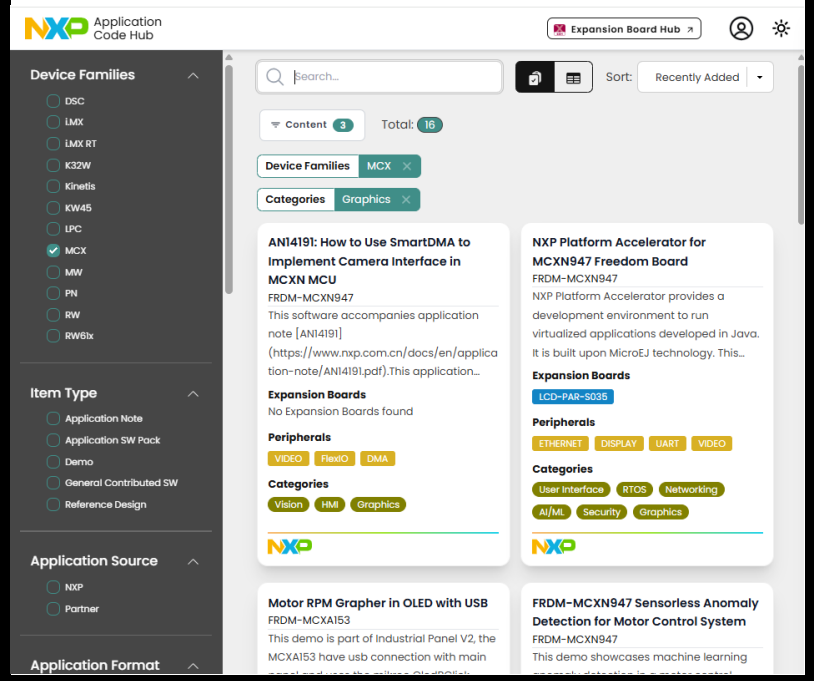
Explore a variety of **Open-source application code examples** based on the **FRDM platform**, designed for use cases like motor control, sensing, networking, graphics, machine learning, and more.

Application Code Examples are **developed by NXP experts and partners**, offering robust support within a rich software ecosystem



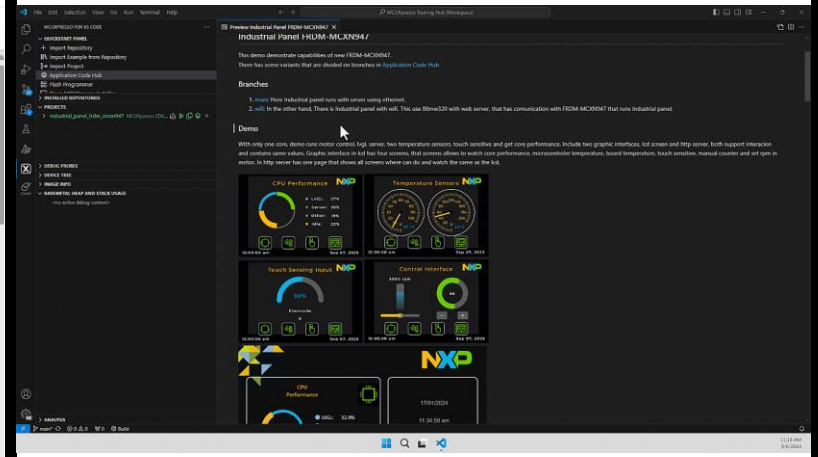
Run Application Code Hub demos from **the GitHub repository**, complete with a **step-by-step guide** for easy set up.

Use the interactive dashboard to filter and access available application code efficiently.



Application Code Hub enable streamlined setup and development for embedded applications.

Learn more how use ACH



Highlighted code examples in Application Code Hub

Doom-MCX port of popular Doom game to run on NXP MCX microcontrollers

Running on Zephyr RTOS
Based on:

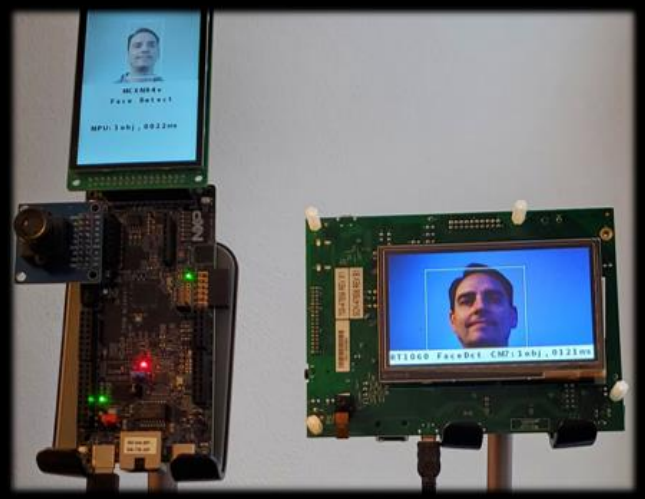
- LCD-PAR-S035 3.5” TFT LCD module
- FRDM-MCXN947 development board
- Joystick Shield V1.A - Arduino UNO compatible

Facial Detection Zephyr Demo

A Zephyr-based app that detects multiple faces in real time, runs on MCXN947 with ML accelerated by the NPU, and on i.MX RT1060, with live camera input and display output.

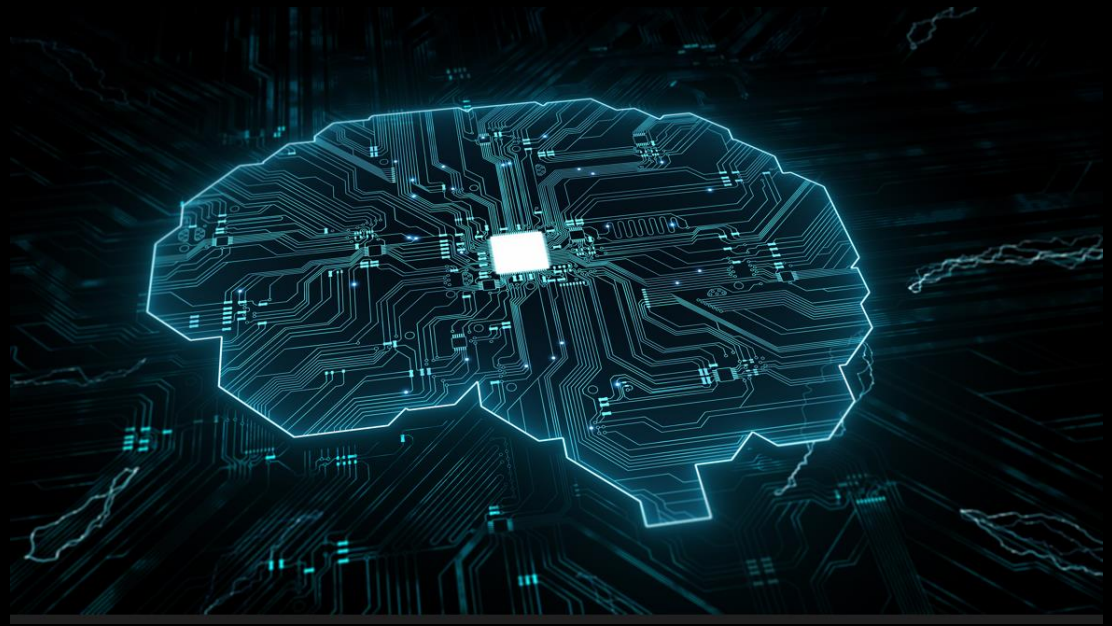
- Real-time multi-face detection using ML models accelerated by NPU.
- Zephyr RTOS integration with TensorFlow Lite Micro and NXP HAL.

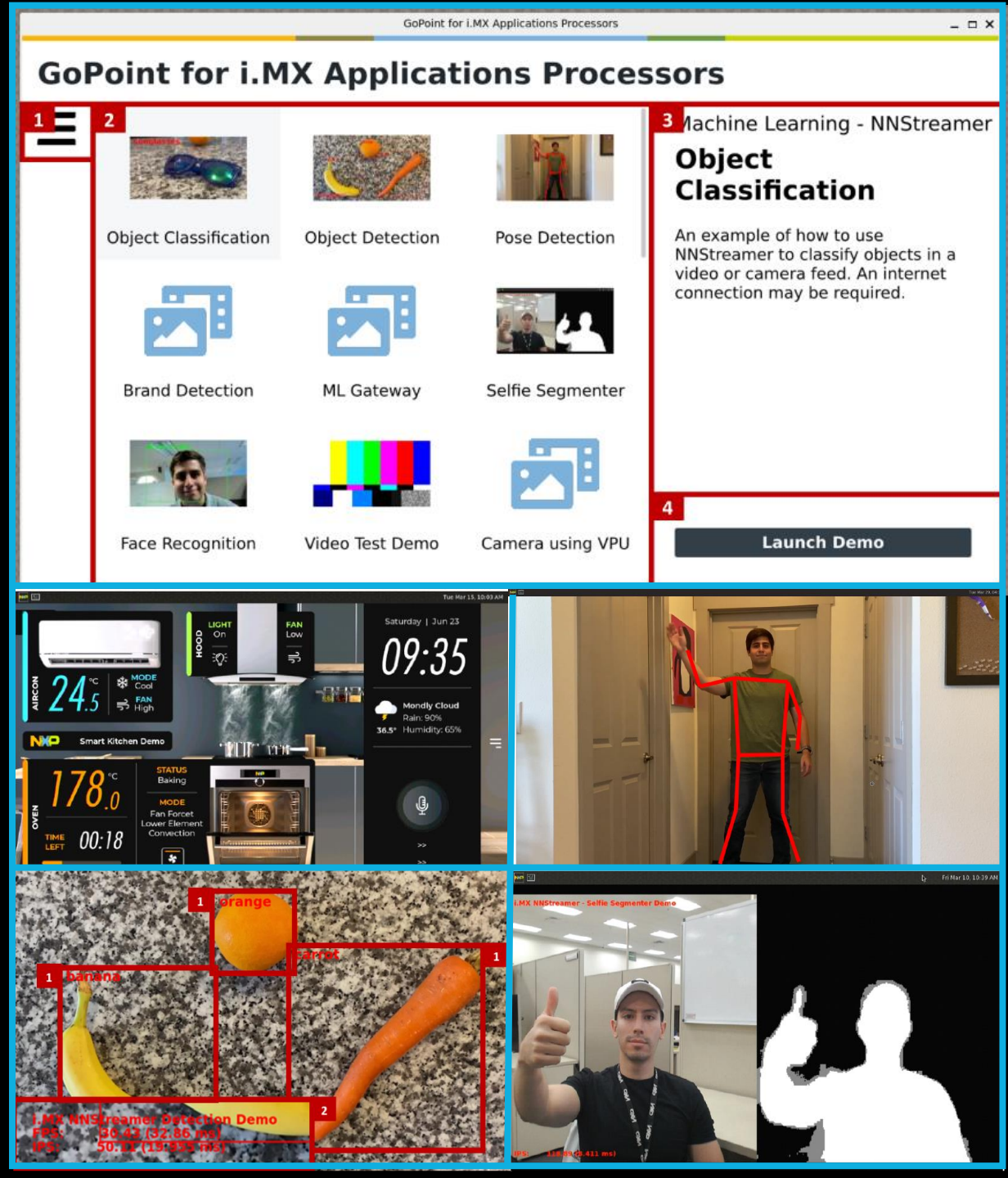
FRDM Solution price:
FRDM-MCXN947 $25 USD
LCD-PAR-S035 $29 USD



Gopoint

- Example applications built into Yocto releases
- User friendly interface to quickly and easily access demos
- Long term support





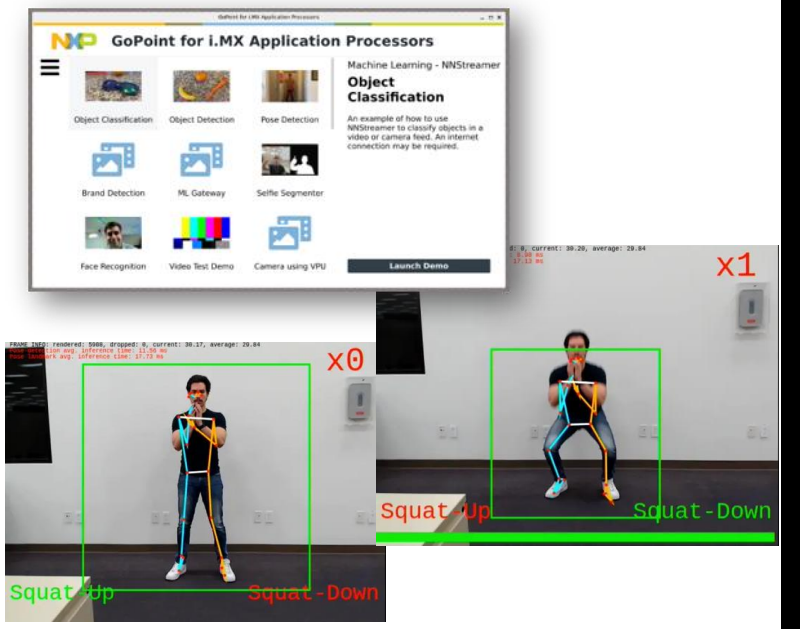
GoPoint = Fast Evaluation with FRDM Platform for i.MX Processors

OOB Demo experience

Showcases a variety of use cases and applications with GoPoint **packed with Linux, Debian and Yocto BSP**

Launch your demos in seconds:

- Part of Out of Box Experience
- Simple GUI
- Continuing Support



What can I find in Go-Point?

You'll find ready-to-use demos for Vision, TSN, graphics, voice, and more—plus a variety of supported open-source examples to explore at official GitHub.

GoPoint for i.MX Applications Processors - Example Applications Package

This repository contains example applications supported by GoPoint for i.MX Applications Processors.

Machine Learning

Name	Description	8MM	8QM	8MP	93	95
Image classification	Image classification example using NNStreamer. Image classification is an ML task that attempts to comprehend an entire image as a whole. The goal is to classify the image by assigning it to a specific label. Typically, it refers to images in which only one object appears and is analyzed.	✅	✅	✅	✅	✅
Object detection	Object detection example using NNStreamer. Object detection is the ML task that detects instances of objects of a certain class within an image. A bounding box and a class label are found for each detected object.	✅	✅	✅	✅	✅
Pose estimation	Pose estimation example using NNStreamer. The goal of pose estimation is to detect the position and orientation of a person or object. In human pose estimation, this is usually done with specific keypoints such as hands, head, legs, etc.		✅	✅		✅
ML Benchmark	This tool allows to easily compare the performance of TensorFlow Lite models running on CPU (Cortex-A) and NPU. The tool works on i.MX93 and i.MX8M Plus.			✅	✅	

FRDM Development Boards Supported:

- FRDM-IMX93
- FRDM-IMX8MPLUS
- FRDM-IMX95📣

Easy set up

FRDM Development Platform offers options to start evaluating SoC with minimal and easy set-up.

Missing pictures

📣 Coming soon

Highlighted GoPoint Demos

Drive Monitor System

This demo showcases a real-time Driver Monitor System running on i.MX8M Plus and i.MX93 Evaluation Kits. It leverages the Neural Processing Unit (NPU) to accelerate ML inference for detecting driver fatigue and distraction, using a camera-based vision pipeline.

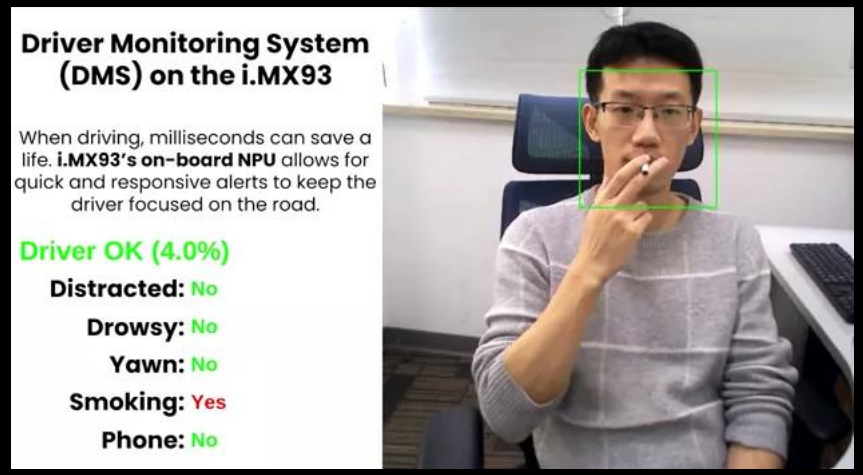
Key Features:

Real-time facial analysis for detecting drowsiness and inattention

NPU acceleration for low-latency inference

Demo Benefits:

- Enhances vehicle safety by proactively identifying risky driver behavior
- Demonstrates edge AI performance on embedded platforms
- Reduces CPU load by offloading inference to NPU



i.MX Smart Kitchen

This demo simulates a voice-controlled smart kitchen. It showcases real-time voice command recognition to operate virtual appliances such as a hood, oven, and air conditioner.

Key Features

Wake word activation: "Hey Hood", "Hey Oven", "Hey Aircon"

Command recognition for specific functions (e.g., "Fan High", "Open Door")

Touchscreen/mouse input as alternative control

NXP's GUI Guider for advanced graphics and animations

Benefits

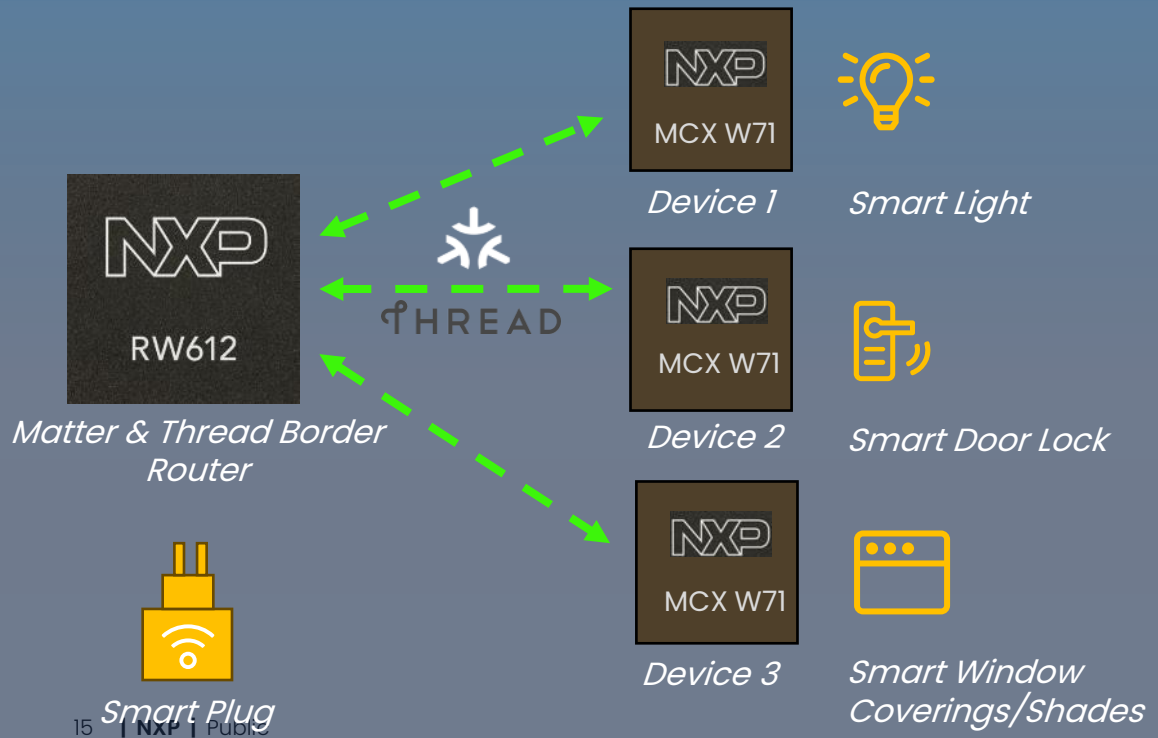
Demonstrates real-time voice interaction on embedded systems

Highlights low-latency, offline voice recognition

Showcases intuitive user interface and multi-modal control

Create a Connected Ecosystem with RW612 and MCX W71

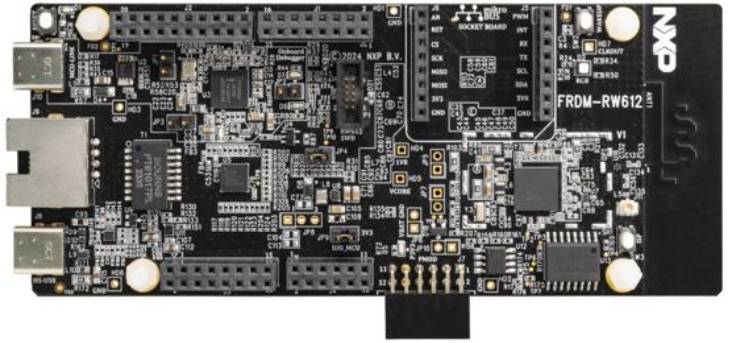
- ✓ Ease of Integration
- ✓ Excellent End User Experience
- ✓ Silicon Designed with Security



Get Started with NXP's FRDM Development Platforms for Wireless Connectivity!

STEP 1

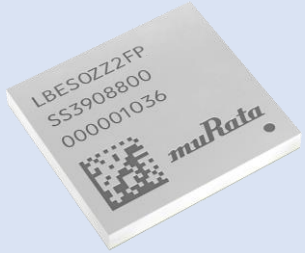
Prototype with a FRDM board



Wi Fi
Bluetooth
zigbee
THREAD
matter

STEP 2

Integrate wireless into your design using a module



NXP partners with leading module manufacturers to offer certified wireless solutions

STEP 3

Finalize your product

Get to market faster with NXP's Wireless Community Support

Get Started with NXP's FRDM Development Platforms for Wi-Fi Connectivity!

FRDM-RW612

- **Compact and scalable** development board
- Powered by **RW612** Wi-Fi 6 i.MX RT MCU
- **External flash** and on-board **MCU-Link Debugger**

Get Started

FRDM-IW416-AW-AM510

- **Wi-Fi 4 + Bluetooth** FRDM Expansion Board
- Compatible with **FRDM-MCXN9x**
- Based on the **Azurewave AW-AM510 Wi-Fi Module**

Get Started

FRDM-IMX91

- **Cost optimized** entry-level IoT platform
- Powered by **i.MX91** processor and **IW610**, IoT optimized Wi-Fi 6 Tri-radio
- **Linux** support and **eMMC** pre-programmed with SW BSP

Get Started

FRDM-IMX93

- **Low cost** and **compact** development board
- Powered by **i.MX93** processor and **IW612**, high performance Wi-Fi 6 Tri-radio
- Supports **GoPoint** for i.MX application processors

Get Started

FRDM Platform for i.MX Application Processors

Scalable platforms for Essential Compute and HMI

Feature	FRDM-IMX91S	FRDM-IMX91	FRDM-IMX93
Package	11 x 11	11 x 11	11 x 11
eMMC	256 MB	8GB	32GB
DRAM	512 MB	NANYA 1GB	Micron 2GB
PMIC	MPF9453	PCA9451	PCA9451
WiFi Module	MAYA-W4	u-blox MAYA-W476	u-blox MAYA-W276
USB TYPE C	Type-C+Type-A	Type-C+Type-A	Type-C+Type-A
ENET	1xGbe	2xGbE	2xGbE
M.2 (Key E) SDIO WiFi / BT	N	Y (rework needed)	Y (rework needed)
HDMI	N	N	IT6263/Y
Display	Parallel RGB LCD	Parallel RGB LCD	22 Pins FPC HDR, Parallel
Camera	Parallel	Parallel	22 Pins FPC HDR, Parallel
2x20 Expansion Interface	Y	Y	Y
CAN BUS	Y	Y	Y
MicroSD	Y	Y	Y
UART	Y	Y	Y
Audio	MQS	MQS	MQS
Power Connector	Type-C	Type-C	Type-C
PCB layers	6	10	10
Base Board DIM	6.5 x 9.5 cm	6.5x10.5cm	6.5x10.5cm
Price	$50	$75	$80

Scalable platforms for advanced Industrial vision and HMI applications

The i.MX 8M Plus FRDM development board

Compact and **low-cost board** for **ML, advance multimedia** and **industrial networking** applications

- 4x Arm Cortex®-A53 + Cortex®-M7 + ML Acceleration
- **On-board Wireless:**
  - Wi-Fi 6 + BT + 802.15.4 Module. IW612: MAYA-W276-00B

- 2x GB Ethernet, 1x USB 2.0 Type-C + 1x USB 2.0 Type-A
- MIPI-CSI/DSI, HDMI, LVDS
- eMMC 5.1, **32GB,** MicroSD 3.0 card slot, LPDDR4 **4GB**
- 40 pin Expansion Interface
- PMIC **PCA9450,** CAN Transceiver **TJA1051T/3**

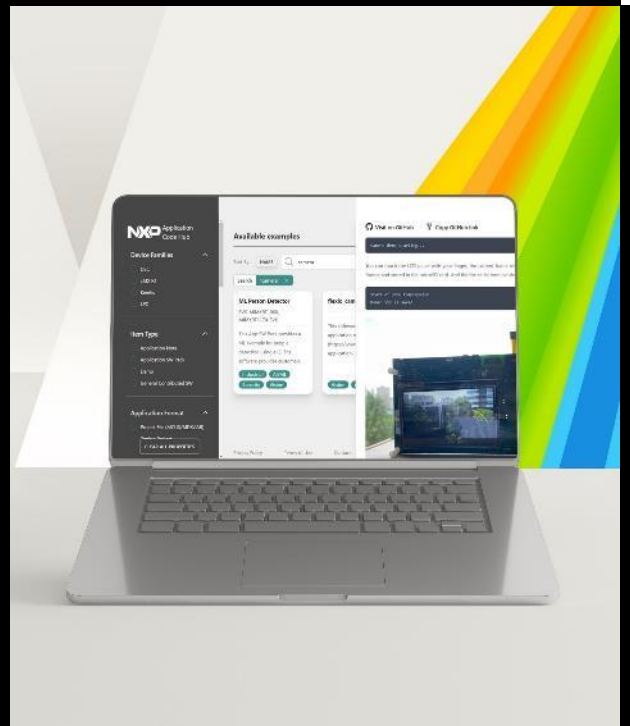
Flexible & Rapid Development Platform

Explore FRDM Development Platforms at nxp.com/FRDM

Keep learning though our different channels:

- FRDM Blogs
- FRDM Training Hub
- FRDM Demo videos

Find it.
Get it.
Use it.



Design without bounds