Overview   Product   Documentation   Design   ⓘ   Support   BUY OPTIONS   GET STARTED (/DOCUMENT/GUIDE/GETT

FRDM i.MX 91 Development Board

FRDM-IMX91   NEW   **ACTIVE**   Receive alerts ⓘ
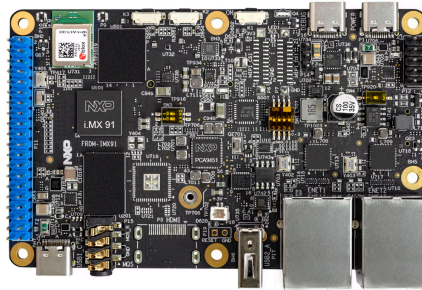
Roll over image to zoom in

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| board-imd | board-imd | board-imd |

The FRDM i.MX 91 development board is a low-cost and compact development board featuring the i.MX91 applications processor. Equipped with an onboard IW610 module, featuring NXP's Tri-Radio solution with Wi-Fi 6 + Bluetooth Low Energy 5.4 + 802.15.4, the board is ideal for developing modern Industrial and IoT applications. This development board includes LPDDR4, eMMC storage for quick boot times, PMIC and expansion capabilities.

The FRDM iMX91 is a part of NXP's developer experience that includes support for Debian, Yocto & GoPoint for Applications Processors.
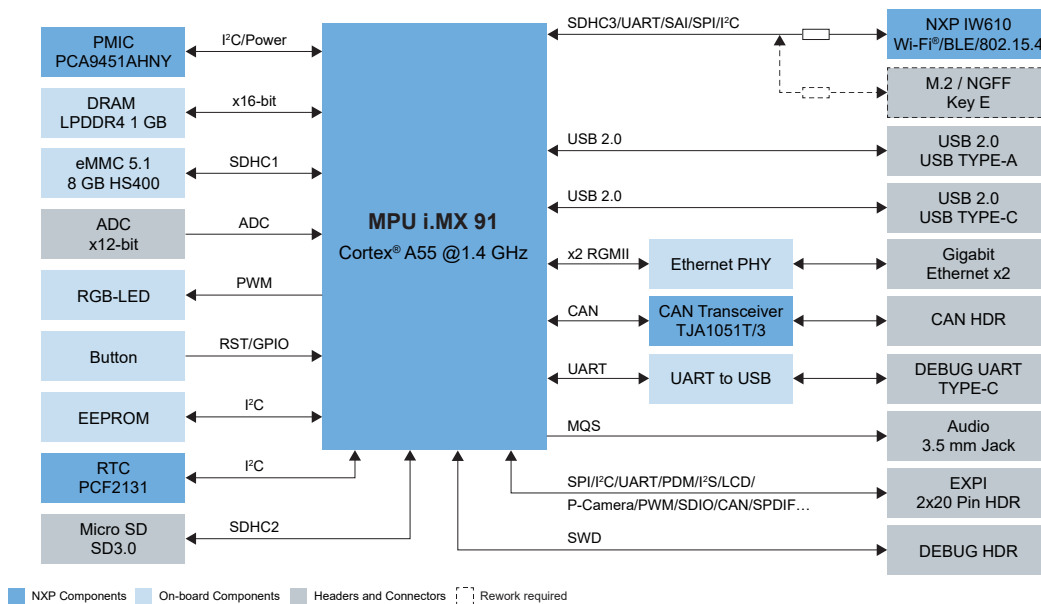
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              Details   Resources

DESIGN FILES   SOFTWARE

Product Details

Block Diagram | Supported Devices | Features | Applications

Block Diagram

FRDM i.MX 91 development board

GET DIAGRAM PDF (/ASSETS/BLOCK-DIAGRAM/EN/FRDM-IMX91.PDF)

Supported Devices

Analog and Mixed Signal

Real-Time Clocks
- **PCF2131** (/products/PCF2131): Nano-Power Highly Accurate RTC with Integrated Quartz Crystal

Interfaces

General Purpose I/O (GPIO)
- **PCAL6524** (/products/interfaces/ic-spi-i3c-interface-devices/general-purpose-i-o-gpio/ultra-low-voltage-translating-24-bit-fm-plus-ic-bus-smbus-i-o-expander:PCAL6524): Ultra-Low-Voltage Translating 24-Bit Fm+ I²C-Bus/SMBus I/O Expander
- **PCAL6408A** (/products/interfaces/ic-spi-i3c-interface-devices/general-purpose-i-o-gpio/low-voltage-translating-8-bit-ic-bus-smbus-i-o-expander:PCAL6408A): Low-Voltage Translating, 8-Bit I²C-Bus/SMBus I/O Expander

3.3 V / 5 V IO CAN Transceivers
- **TJA1051** (/products/interfaces/can-transceivers/can-with-flexible-data-rate/high-speed-can-transceiver:TJA1051): High-Speed CAN Transceiver

Power Management

PMICs
- **PCA9451A** (/products/PCA9451A): PCA9451A Power Management IC for i.MX 93x/91x Application Processor

Processors and Microcontrollers

i.MX 9 Processors
- **i.MX91** (/products/i.MX91): Secure, Energy-Efficient i.MX 91 Family Brings Essential Linux® Capabilities for Thousands of Edge Applications

Features

Processor
- i.MX 91 Applications Processor
- Cortex-A55 @1.4G
- EdgeLock® Secure Enclave

Memory
- 1 GB LPDDR4
- 8 GB eMMC5.1
- MicroSD slot
- EEPROM

Display and Camera Interfaces
- Parallel RGB LCD interface (40-pin Expansion Interface)
- Parallel Camera interface (40-pin Expansion Interface)

Wireless
- u-blox MAYA-W476-00B Tri-Radio Wi-Fi 6, Bluetooth LE 5.4, and 802.15.4 module
- Dual-Band 2.4GHz / 5 GHz Wi-Fi
- 802.15.4 radio supporting Thread and Zigbee
- Matter over Wi-Fi and Thread

Audio
- 3.5mm headphone jack for MQS support

Connectivity
- USB2.0 Type-C connector
- USB2.0 type A connector
- GbE RJ45 x 2
- CAN (HDR)
- 40-pin(2x20)
- Expansion Interface
- I²C HDR
- ADC HDR

Debug
- SWD connector
- UART via USB-Type C

Tools and OS Support
- Linux®
- FreeRTOS

Less ⌃

Applications

Automotive

Audio and Speech Recognition

Domain Controller Compute Off-load Engine

Driver Monitoring Systems (DMS) and Occupant Monitoring Systems (/applications/DRIVER-MONITORING-SYSTEMS)

Consumer

Air Conditioning (AC) (/applications/AIR-CONDITIONING)

Audio/Video (AV) Receivers

Major Home Appliances (/applications/consumer/home-appliances/major-home-appliance:MAJOR-HOME-APPLIANCE)

Robotic Appliance (/applications/consumer/home-appliances/robotic-appliance:ROBOTIC-APPLIANCE)

Small and Medium Appliances (/applications/consumer/home-appliances/small-and-medium-appliance:SMALL-MEDIUM-APPLIANCE)

Industrial

Building Safety Detectors (/applications/BUILDING-SAFETY)