

NuMicro® M2L31 Series 32-bit Microcontroller



► NuMicro® M2L31 Series 72MHz Arm® Cortex®-M23 MCU

The NuMicro M2L31 series is based on Arm Cortex-M23 core at Armv8-M architecture with a single cycle hardware multiplier/divider. It features 64 to 512 Kbytes ReRAM, 40 to 168 Kbytes SRAM, 1.71V to 3.6V operating voltage, -40°C to 105°C wide operating temperature, and excellent high immunity characteristics by 4 kV ESD HBM and 4.4 kV EFT.

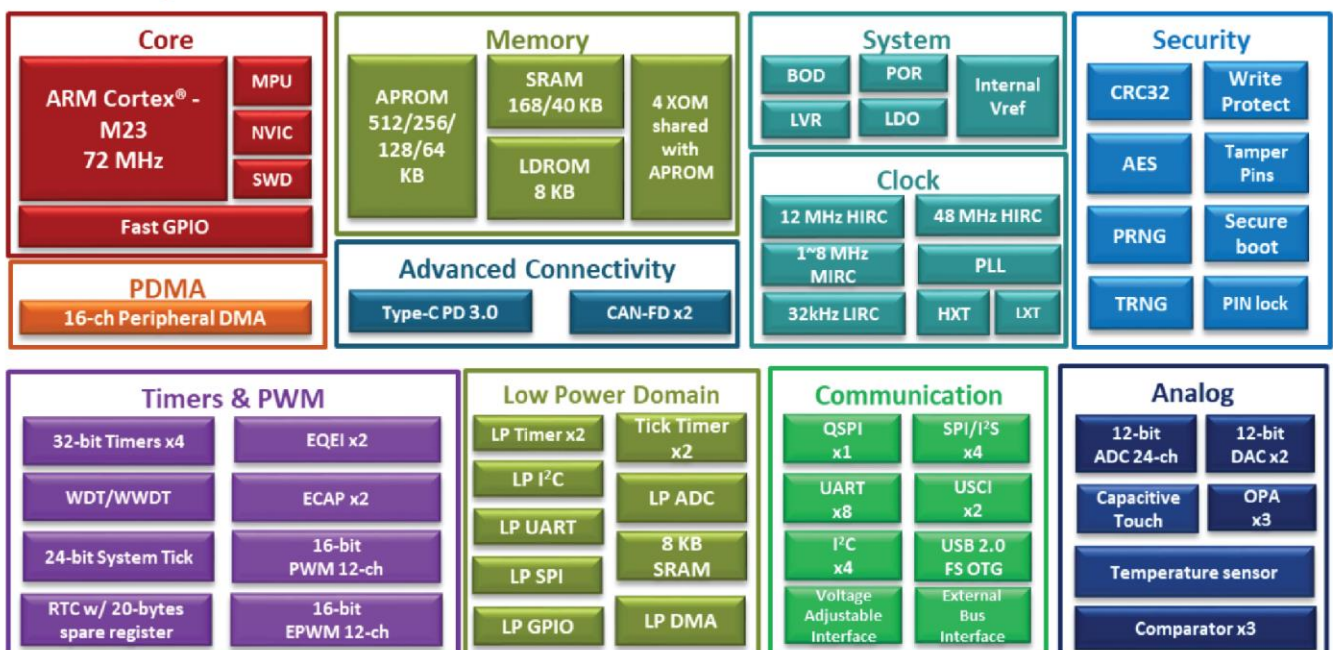
► Key Features

- Supports 512 KB ReRAM and 168 KB SRAM
- Built-in Dual bank and Secure boot
- 2 sets of CAN FD interface, up to 5 Mbps transmission rate
- USB 2.0 FS OTG compliant with PD 3.1 profile
- Normal run: 66 μ A/MHz at 72 MHz
- Supports 0.3 μ A power consumption in Deep Power-down
- 16-channel 12-bit 3.6 Msps SAR ADC
- 2 sets of 12-bit 1 Msps DAC
- Up to 3 sets of ACMP for signal detection and protection
- Supports up to 16-channel Capacitive touch

► Applications

- Industrial Automation
- Home Appliance
- Battery Management System (BMS)
- PC/Mobile Accessories
- Motor Control

► Block Diagram

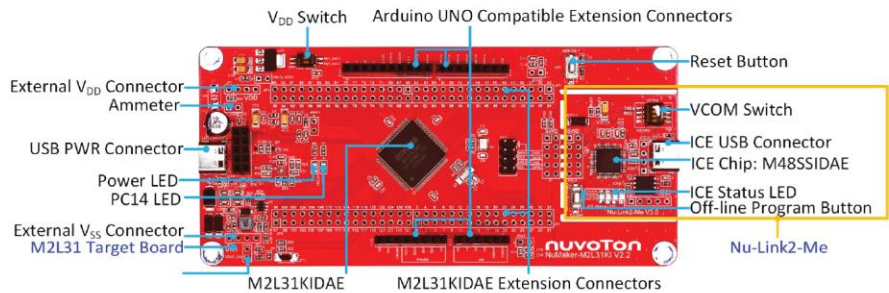


► Support for Development

Item	Name	Features
IDE & compiler	Keil NDK IAR EMARM NuEclipse	NuMicro® M2L31 Series is supported by Keil and IAR's. NuEclipse is Nuvoton's proprietary IDE which integrates SDCC with free license.
Debugger & Programmer	Nu-Link2-Me Nu-Link-Pro Nu-Link2-Pro	Debugging, online programming, offline programming (optional), VCOM port, ISP Firmware upgrade
Board Software Package	NuMicro BSP	The BSP mainly includes the device drivers, library, sample codes and documents.

► Evaluation board

- Ordering No. NuMaker-M2L31KI
- [Quick Start](#)
- [eStore](#)



► Product Selection Guide

Package	Part No.	Flash (KB)	SRAM (KB)	ADC (12-bit)	DAC	CAN FD	IO	Touch Key	OP Amplifier
LQFP128 14x14	M2L31KIDAE	512	168	24	2	2	109	17	3
	M2L31KGDAE	256	168	24	2	2	109	17	3
LQFP64 7x7	M2L31SIDAE	512	168	20	2	2	53	16	3
	M2L31SGDAE	256	168	20	2	2	53	16	3
	M2L31SG4AE	256	40	16	1	1	53	-	2
LQFP48 7x7	M2L31SE4AE	128	40	16	1	1	53	-	2
	M2L31LIDAE	512	168	16	2	2	41	11	3
	M2L31LGDAE	256	168	16	2	2	41	11	3
	M2L31LG4AE	256	40	16	1	1	41	-	2
QFN48 5x5	M2L31LE4AE	128	40	16	1	1	41	-	2
	M2L31LD4AE	64	40	16	1	1	41	-	2
	M2L31YIDAE	512	168	16	2	2	41	11	3
	M2L31YGDAE	256	168	16	2	2	41	11	3
WLCS49 3x3	M2L31YG4AE	256	40	16	1	1	40	-	2
	M2L31YE4AE	128	40	16	1	1	41	-	2
	M2L31YD4AE	64	40	16	1	1	41	-	2
QFN33 5x5	M2L31CIDAE	512	168	16	1	1	40	11	3
	M2L31CGDAE	256	168	16	1	1	40	11	3
QFN33 5x5	M2L31ZE4AE	128	40	10	1	1	26	-	2
	M2L31ZD4AE	64	40	10	1	1	26	-	2

For more details, please visit <https://www.nuvoton.com/products/microcontrollers/arm-cortex-m23-mcus/m2l31-series/>

