

# High Performance Low Power ARM Cortex-M4F MCUs

The NuMicro®M480 series microcontroller is embedded with Arm® Cortex®-M4F core with secure boot and hardware cryptography which supports DSP instruction and integrated floating-point unit. The M480 series consists of six sub-series according to characteristics and applications.

The M480 series provide high performance system design up to 90-240 DMIPS operating at up to 72-192 MHz. When executing from the embedded Flash memory, the power consumption can be lowered to 175µA/MHz with dynamic power scaling function supported. The M480 series supports Flash size up to 2.5MB and SRAM size up to 160 KB.

## Key Features of the M480 series:

- ◆ Arm® Cortex® -M4F, CPU speed up to 192MHz
- ◆ 1.8V to 3.6V operating voltage
- ◆ 175 uA/MHz with dynamic power scaling
- ◆ Up to 2.5MB dual bank flash memory
- ◆ SRAM from 64KB up to 160KB
- ◆ Up to 16-ch, 12-bit ADC
- ◆ 24-ch, 16-bit, 192MHz PWM
- ◆ Up to 8x UART, 3x I<sup>2</sup>C, 2x QSPI, 4x SPI

M480 Series	SPI Flash (XIP)	Quad-SPI	OPA	USB FS OTG	USB HS OTG	CAN	Crypto	Ethernet
M487 Ethernet	●	●	3x	●	●	2x	●	●
M485 Crypto	●	●	3x	●	●		●	
M484 USB HS	●	●	3x	●	●			
M483 CAN	●	●	3x	●	●	2x		
M482 USB FS	●	●	3x	●				
M481 Base	●	●	2x					

## These are the six NuMicro®M480 sub-series:

M481 Base series: high performance, low power consumption, versatile high speed UART/SPI/I<sup>2</sup>C/PWM peripherals, eligible for data collector.

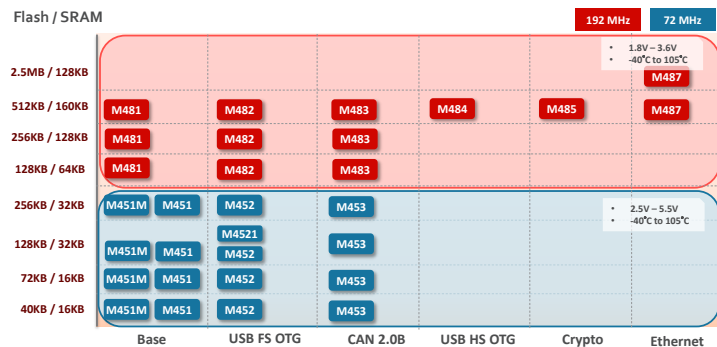
M482 USB FS OTG series: Integrated **USB 2.0 full speed interface** with on-chip OTG PHY, eligible for gaming or PC accessories.

M483 CAN series: Integrated 2 or 3 sets of **CAN 2.0B interfaces**, 2 sets of USB 2.0 interfaces, dual ADC and up to 9 sets of UART interfaces, eligible for industrial control.

M484 USB HS OTG series: Integrated 2 sets of USB 2.0 interface with op-chip full speed and high-speed OTG PHY, eligible for data concentrator of USB sensor.

M485 Crypto series: Integrated **hardware cryptography engine** and random number generator for randomly fabricating the key for data encryption/decryption and certification, eligible for fingerprint module, smart payment and secure USB device.

M487 Ethernet series: Integrated **10/100Mbps Ethernet MAC** with industrial standard RMII interface for quickly implementing the network connection, eligible for industrial IoT gateway, UART-to-Ethernet converter, industrial automation, smart home, etc.



Supported Packages are QFN33, LQFP48, LQFP64, LQFP128, LQFP144

## Applications:

- ◆ LED backlight dimming
- ◆ Number Recognition
- ◆ Servo Motor Control
- ◆ Sound processing
- ◆ Touch panel control
- ◆ Programmable Logic Control