

## Low-Cost Cortex-M0 MCUs

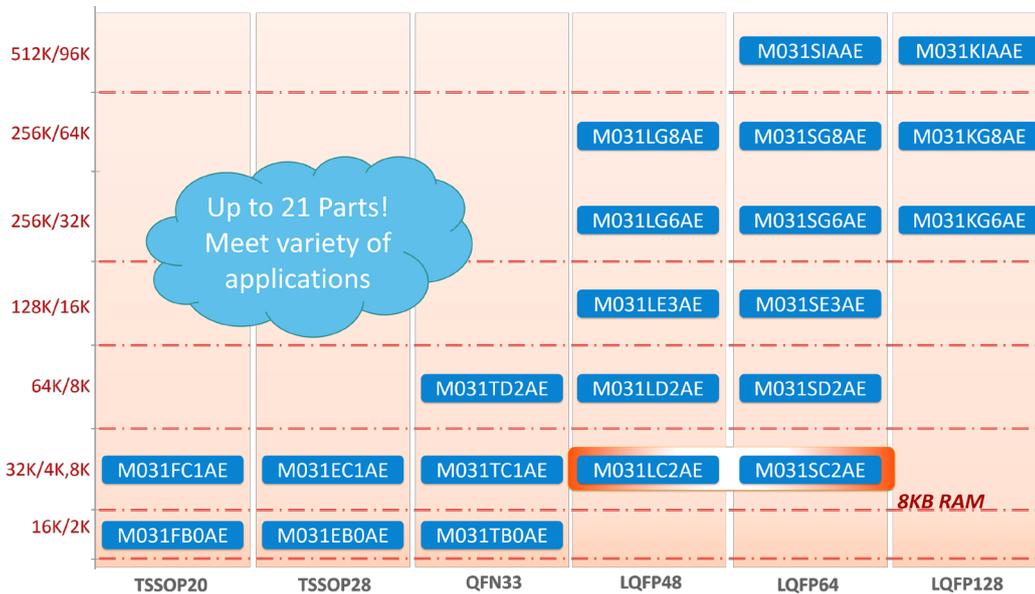
Nuvoton's M031 series features a 32bit Cortex-M0 microcontroller. This series has an even wider supply voltage range than before and comes with more peripherals. It features an interface connection with enhanced fast 2 MSPS conversion rate 12-bit ADC, comparators and up-to 24-ch 96/144 MHz PWM control, providing a fast and precise data conversion for the voltage, current, and sensor data, then fast response control to the external device.



The M031 series peripherals included Universal Serial Control Interface (USCI) can be set as UART / SPI / I<sup>2</sup>C flexibly, up to 10 sets of UART, 4 sets of SPI, 4 set I<sup>2</sup>C, 1-wire UART interface for data communication between master and slave devices.

### All new M031 series products support the following advanced features:

- ◆ Support single-wire UART half-duplex mode with bit rate up to 6 Mbps
- ◆ Support UART (9600 bps) in power-down mode by Internal 38.4 kHz LIRC. Collaborate with 16byte FIFO to support wake-up function (receiving up to 15 bytes in power-down mode)
- ◆ Support High-speed SPI (1.8V-3.6V) with 4x32 byte FIFO & Tx / Rx PDMA function (Master mode 24MHz/ Slave mode 16MHz)
- ◆ PWM input clock source can be from PLL (frequency up to 96/144 MHz). PWM frequency can be up to 375 kHz (at 96 MHz clock source). PWM supports capture mode & PDMA. Pulse count value can be directly stored into SRAM using PDMA function. Support to measure the minimum pulse width down to 0.5 us.



Supported packages from small form factor TSSOP20, TSSOP28, QFN33, LQFP48 to LQFP 64 and LQFP128 with pin-compatible for different part number makes the system design and change parts easy. Each package has different Flash/SRAM options.

### Key Features of the M031 series:

- ◆ Arm® Cortex® -M0, CPU speed up to 72MHz
- ◆ 1.8V to 3.6V operating voltage
- ◆ 180 uA/MHz in normal run mode
- ◆ Flash memory from 16K to 512K
- ◆ SRAM from 2K to 96K
- ◆ Operating temperature: -40°C to 105°C
- ◆ 20-128 pin packages

### Applications:

- ◆ Industrial Control
- ◆ High precision meter
- ◆ Wireless charger
- ◆ HMI
- ◆ IoT