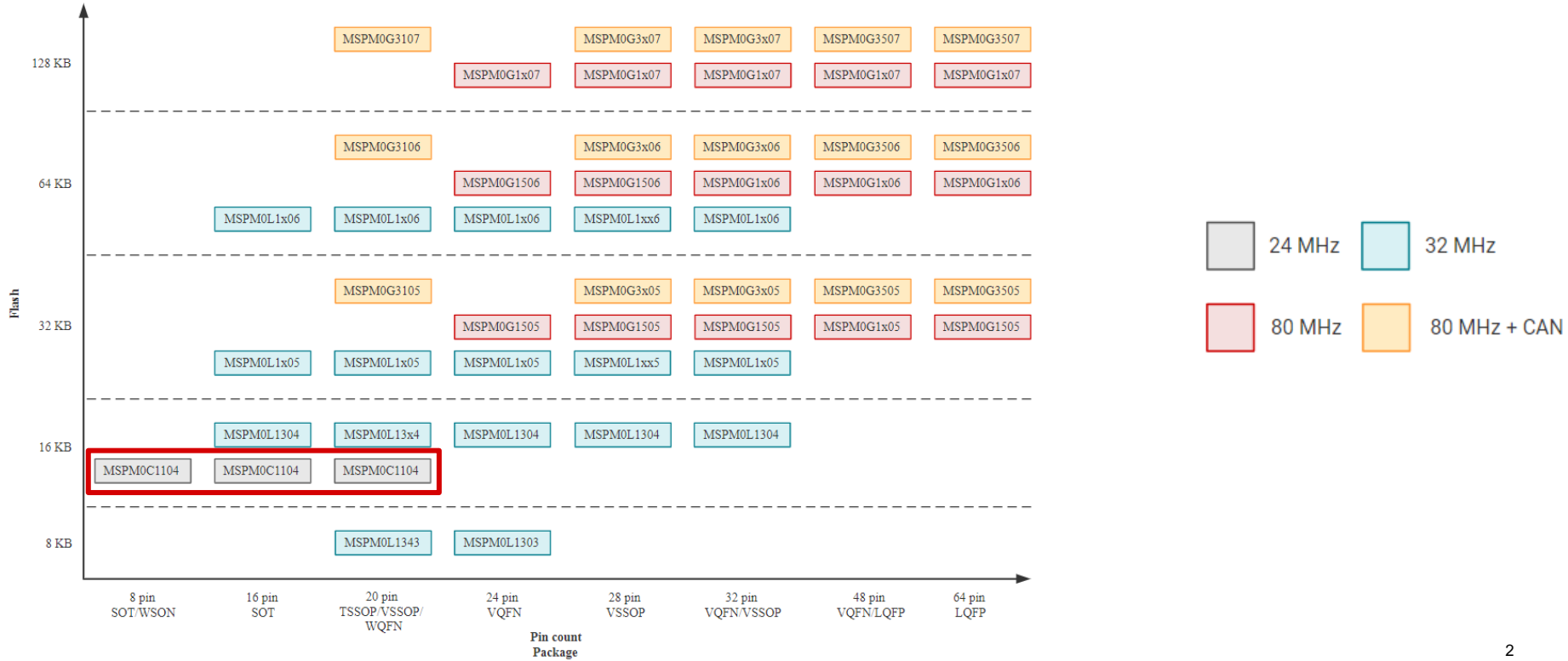# MSPM0C Series

Arm® Cortex® M0+ for 8/16bit cost-optimized applications
Small, low-cost, & easy migration

TEXAS INSTRUMENTS

Expanding our Arm® Cortex® M0+ portfolio

MSPM0C1103/4 product overview

Low cost

- **Optimized cost structure**
- **Integrated peripherals: 12bit SAR ADC, LIN, advanced timer, etc.**

Small package

- **8-pin QFN package: 2.0 x 2.0 mm², 0.50 mm pitch**
- **8-pin SOT package: 2.8 x 2.9 mm², 0.65 mm pitch**

Effortless Migration

- P2P in hardware with both TI MSPM0 family and selected MCU vendors
- Simplified code migration

MSPM0C1103/4 — 1.62 - 3.6V, -40 to 125 C

CPU
ARM Cortex-M0+
24 MHz

NVIC / 1-ch Basic DMA

On-chip Memory
8, or 16 kB flash
1 kB SRAM

Data Integrity & Security
CRC accelerator (16 bit)

Programming & Debug
ARM SWD interface

Power & Clocking
POR / BOR
Internal LF 32kHz (3%)
Internal HF 24MHz (1%)

Communication
UART w/ LIN (1)
SPI (1)
I2C (1) w/ FastMode+

Precision Analog
12-bit SAR ADC (10-ch)
Internal ADC reference (1.5%)

Timers
Advanced control 16-bit 4 CC (1)
General purpose 16-bit 4 CC (1)
General purpose 16-bit 2 CC (1)
Windowed watchdog

IO
Up to 18 GPIO

Leaded packages: SOT-8/16, VSSOP-20, TSSOP-20
No-lead packages: WSON-8, WQFN-20

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MSPM0 C-series MCUs | broad applications

24 MHz low-cost MCU with up to 16kB flash, 20 pins, 12-bit ADC

BUILDING & FACTORY AUTOMATION

- Smoke detector
- Gas detector
- PIR sensor
- Garage sensor
- Field transmitter

APPLIANCE

- Coffee machine
- Power tool
- Vacuum cleaner
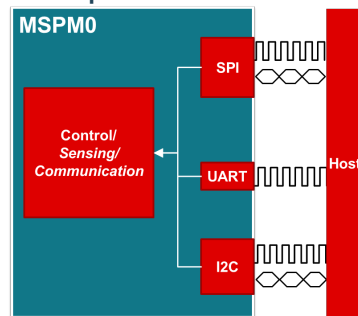- Dish washer

PERSONAL ELECTRONIC
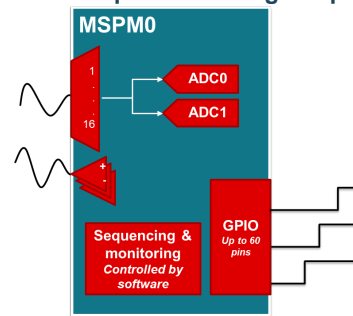
- TWS
- Stylus
- E-toothbrush
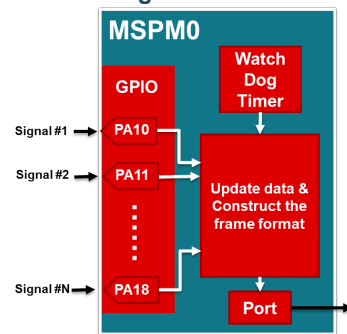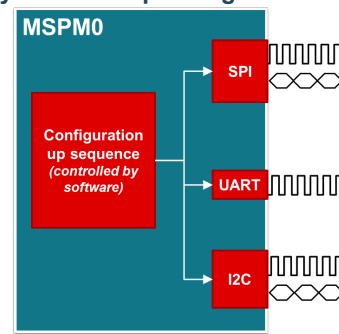- Shaver
- Printer
- Wireless charger

SUBSYSTEM

➤ IO Expander

MSPM0

Control/ *Sensing/ Communication*

SPI

UART

I2C

Host

➤ Power Sequencer/Voltage Supervisor

MSPM0

1 ... 16

ADC0

ADC1

Sequencing & monitoring *Controlled by software*

GPIO *Up to 60 pins*

➤ Watch Dog

MSPM0

GPIO

Watch Dog Timer

Signal #1 → PA10

Signal #2 → PA11

Signal #N → PA18

Update data & Construct the frame format

Port

➤ System startup/configuration controller

MSPM0

Configuration up sequence *(controlled by software)*
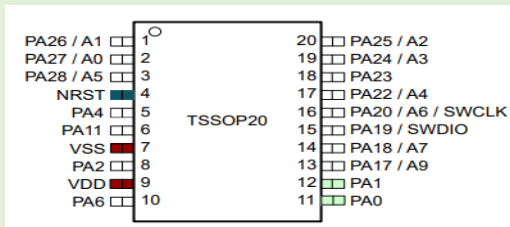
SPI

UART

I2C

TEXAS INSTRUMENTS

MSPM0 C-series MCUs | effortless migration

24 MHz low-cost MCU with up to 16kB flash, 20 pins, 12-bit ADC

Hardware
P2P with both TI MSPM0 family and selected MCU vendors

MSPS003 TSSOP20 pinout

Software
Simplified code migration with header file replacement.

Library Components		
Compatible Documentation		
IDE Project Templates	**Supported Peripherals**	
	ADC1 AWU BEEP	
	CLK EXTI FLASH	
API Compatible Drivers	GPIO I2C WWDG	
	UART1 RST SPI	
	TIM1 TIM2 TIM4	

Improved performance

➢ **32 bit ARM Cortex M0+ core**

8/16 bit replacement
24MHz frequency

➢ **Faster communication**

I2C	1 MHz Fast Mode Plus
SPI	12 MHz
UART	3 MHz

➢ **Integrated peripherals**

12 bit SAR ADC up to 10-ch
16 bit advanced timer

TEXAS INSTRUMENTS
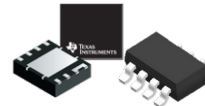
Start your design with MSPM0C now
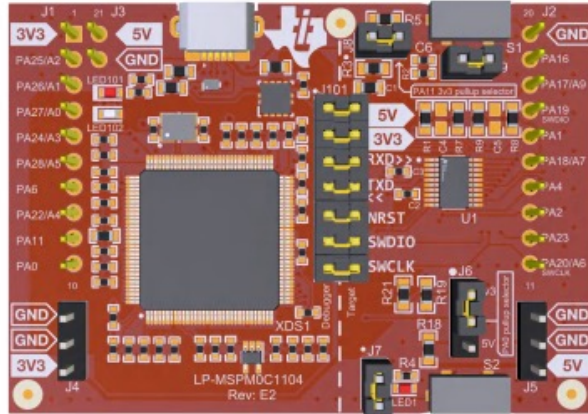
[LP-MSPM0C1104](#)
Compact EVM available
$5.99

➢ **MSPM0 TI.com resource:**

- [MSPM0-SDK](#) — MSPM0 Software Development Kit (SDK)
- [MSPM0 Academy](#) — Self-pace training module
- [AN: Migration Guide From STM8 to MSPM0](#)
- [AN: Migration Guide From MSP430 MCUs to MSPM0 MCUs](#)

[MSPM0C1104](#)
Get your sample at ti.com now

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