

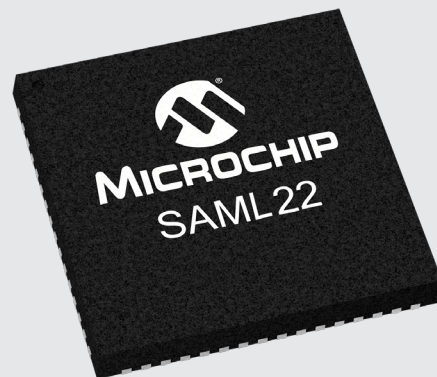
# SAM L22 Microcontroller Family

## Ultra-Low Power Microcontrollers with LCD Controller

### Summary

Microchip's SAM L22 Arm® processor-based Microcontrollers (MCUs) are optimized for battery-powered and low current consumption applications. These devices feature an Arm Cortex®-M0+ processor, 48- to 100-pin packages and up to 256 KB Flash and 32 KB of SRAM.

Microchip's Arm SAM L22 series of MCUs operate at a maximum frequency of 32 MHz and deliver ultra-low power—down to 39  $\mu$ A/MHz in Active mode and 490 nA in backup mode with RTC running. With its LCD controller, the series is ideal for applications in the Human Machine Interface (HMI) market that require a display, such as home/industrial automation (e.g. thermostats), metering (e.g. water, gas and electricity meters), portable instrumentation and access control. These devices are also ideally suited for a host of other applications requiring visual feedback and ultra-low power consumption.



### SAM L22 Device Details

The overview below shows SAM L22 sub-series Flash and SRAM combinations, package options and feature sets.

Features	Sub-Series		
256 KB/32 KB	SAML22G18	SAML22J18	SAML22N18
128 KB/16 KB	SAML22G17	SAML22J17	SAML22N17
64 KB/8 KB	SAML22G16	SAML22J16	SAML22N16
SERCOM	4 x SERCOM	4 x SERCOM	6 x SERCOM
ADC	10 ch-ADC	16 ch-ADC	20 ch-ADC
PTC Mutual X x Y/Self-Cap Y	11 x 12/15	13 x 14/19	16 x 16/24
GPIOs	up to 36 GPIOs	up to 50 GPIOs	up to 74 GPIOs, plus 8 GPIs
Package	49-pin WLCSP, 48-pin TQFP and QFN	64-pin TQFP and QFN	100-pin TQFP and UFBGA
Features common to SAM L22 devices	Event System, DMA, USB Device, ISO7816 interface, AES, TRNG, Tamper Detection, Peripheral Touch Controller, 32-bit RTC with calendar, 32 MHz operation		

## Development Tools

### SAM L22 Wearable Electrocardiogram (WECG) Reference Design

The SAM L22 MCU is at the heart of this ECG reference design, driving the display, controlling and sensing the touch screen, interfacing with the BLE Radio (BTLC1000), and processing the NeuroSky BMD101 CardioChip and Bosch BHA250 Smart-Hub sensors to provide readings that include heart rate, heart age, heart rate variability and step count. This reference design also includes an ECC508 CryptoAuthentication™ device, enabling advanced Elliptic Curve Cryptography (ECC) capabilities. In addition to acting as a standalone device, it can connect to Neurosky's smartphone app via BLE, to provide remote connectivity. Please contact your local Microchip sales office for availability.



### SAM L22 Xplained Pro Evaluation Kit (ATSAML22-XPRO-B)

The SAM L22 Xplained Pro Evaluation Kit is ideal for evaluating the ultra-low power SAM L22 Arm Cortex-M0+ MCUs with a touch-segment LCD. The kit includes the TSLCD1 Xplained Pro Extension Board.

SAM L22 MCUs are designed for simple and intuitive migration with identical peripheral modules, hex compatible code, identical linear address map and pin-compatible migration paths between all devices in the product series. All devices include intelligent and flexible peripherals, Event System for inter-peripheral signaling and support for capacitive touch button, slider and wheel user interfaces.

