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## Overview

This xCHIP forms part of the core modules and is a low-power micro-controller using the 32-bit ARM® Cortex®-M0+ processor, and ranges from 32- to 64-pins with up to 256 KB Flash and 32 KB of SRAM. This module operates at a maximum frequency of 48 MHz.

### Product Highlights

- 256 KB in-system self-programmable Flash
- 32 KB SRAM Memory

## Specifications

- ARM Cortex-M0+ CPU running at up to 48MHz
- Power-on reset (POR) and brown-out detection
- Idle and standby sleep modes

## Important Programming Notes

- The RGB LED has swapped cathode-anode compared to standard Arduino M0 boards. That means that if you use Arduino M0 or similar board specification and not the XinaBox CS11 board specification, you need to use **LOW when turning a LED ON and HIGH when turning a LED OFF**.
- If you want to use the **SD Card** adapter, you need a **Chip Select Pin**. The value is **3 (PA9)**.
- If you want to use the USB connection as serial monitor, then refer to **SerialUSB**. Standard Serial is accessible using an FTDI xChip, such as the IP01 or IP02.
- The CS11 comes with a boot loader that allows you to program the Core 3 different ways:
  - The usual way by selecting the USB port the CS11 is connected to via either the IP02 or IP03
  - By exporting the .bin file from for example Arduino and the place the .bin file on a properly formatted SD Card. Once inserted into the CS11, the CS11 will program itself with the .bin file
  - By converting the .bin file to a .uf2 file. Use the utils/uf2conv.py from [1] (<https://github.com/Microsoft/uf2>). Then double click on the reset button on the CS11, which puts it into programming mode and then once the CS11 shows up as a disk on your computer, you simply drag the .uf2 file to the CS11 disk.
- LEDs
  - One LED CS11:
    - 4
  - RGB LED CS11:
    - Red: 11
    - Green: 12
    - Blue: 13

## External Links

### Datasheets

- SAM D21 From Microchip Technology Inc. (<http://ww1.microchip.com/downloads/en/DeviceDoc/40001882A.pdf>)

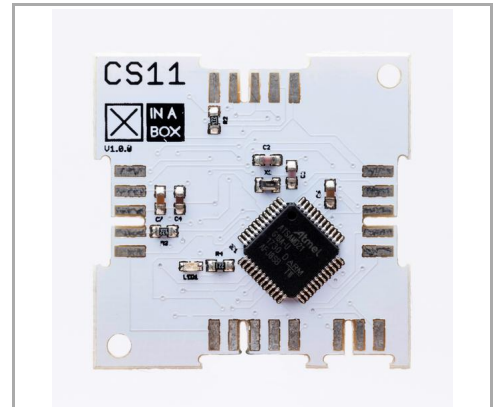
### Shop

- Buy CS11 (<https://xinabox.cc/products/CS11>)

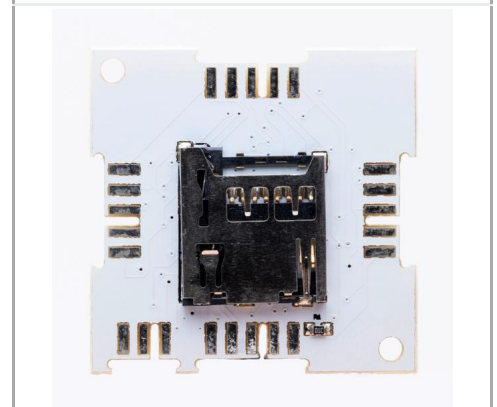
### GitHub

- CS11 on GitHub (<https://github.com/xinabox/xCS11>)

## CS11 - Core with SD Card Interface (ATSAMD21G18A)



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<input checked="" type="checkbox"/> CHIP	
<b>Main Category</b>	Core
<b>Sub Category</b>	Core with SD Card Interface
<b>Introduced</b>	1 January 2018
<b>Current version</b>	1.1.0
<b>Current version date</b>	1 March 2018
<b>Dimensions</b>	
<b>Size</b>	2x2U (32x32 mm)
<b>Weight</b>	3 g
<b>Height</b>	3.1/1.5/0.0 mm
<b>Main Chip Set</b>	
<b>Main Chip</b>	SAM D21
<b>Max. Frequency</b>	48 MHz
<b>Program Memory Size</b>	256 KB
<b>RAM Memory Size</b>	32 KB of SRAM
<b>Serial Configuration</b>	
<b>Default Setting</b>	DTE
<b>Change Setting</b>	DCE
<b>UART Configuration</b>	
<b>RXD</b>	PA11
<b>TXD</b>	PA10
<b>I<sup>2</sup>C Configuration</b>	
<b>SDA</b>	PA22
<b>SCL</b>	PA23
<b>USB Configuration</b>	
<b>USB D+</b>	PA25
<b>USB D-</b>	PA24
<b>SPI Configuration</b>	

<b>MISO</b>	PA12
<b>MOSI</b>	PA10
<b>SCK</b>	PB11
<b>CS</b>	PA09
<b>LED Configuration</b>	
<b>Red pin</b>	PA16
<b>Green pin</b>	PA19
<b>Blue Pin</b>	PA17