



• Description

Love FLORA but want a bite-sized version? Look no further, GEMMA is a tiny wearable platform board with a lot of might in a 1" diameter package. Powered by a Attiny85 and programmable with an Arduino IDE over USB, you'll be able to realize any wearable project

We wanted to design a microcontroller board that was small enough to fit into any project, and low cost enough to use without hesitation. Perfect for when you don't want to give up your Flora and you aren't willing to take apart the project you worked so hard to design. It's our lowest-cost sewable controller

The Attiny85 is a fun processor because despite being so small, it has 8K of flash, and 5 I/O pins, including analog inputs and PWM 'analog' outputs. We designed a USB bootloader so you can plug it into any computer and reprogram it over a USB port just like an Arduino (it uses 2 of the 5 I/O pins, leaving you with 3). In fact we even made some simple modifications to the Arduino IDE so that it works like a mini-Flora. Perfect for small & simple projects the GEMMA will be your go-to wearable electronics platform.

Even though you can program GEMMA using the Arduino IDE, it's not a fully 100% Arduino-compatible. There are some things you trade off for such a small and low cost microcontroller!

- GEMMA does not have a Serial port connection for debugging so the serial port monitor will not be able to send/receive data
- Some computers' USB v3 ports don't recognize the GEMMA's bootloader. Simply use a USB v2 port or a USB hub in between
- Trinket is not supported on Linux operating system at this time - try Mac OS or Windows!

Here are some useful specifications!

- Super small, only 1.1" / 28mm diameter and 0.28" / 7mm thick.
- Easy-to-sew or solder pads for embedding in your wearable project
- Low cost enough, you can use one for every weekend project
- ATtiny85 on-board, 8K of flash, 512 byte of SRAM, 512 bytes of EEPROM
- Internal oscillator runs at 8MHz
- Ultra low power, draws only 9 mA while running
- USB bootloader with a nice LED indicator looks just like a USBtinyISP so you can program it with the Arduino IDE (with a few simple config modifications)
- Mini-USB jack for power and/or USB uploading, you can put it in a box or tape it up and use any USB cable for when you want to reprogram.
- We really worked hard on the bootloader process to make it rugged and foolproof
- ~5.25K bytes available for use (2.75K taken for the bootloader)
- On-board 3.3V power regulator with 150mA output capability and ultra-low dropout. Up to 16V input, reverse-polarity protection, thermal and current-limit protection.
- Power with either USB or external output (such as a battery) - it'll automatically switch over
- On-board green power LED and red pin #1 LED
- Reset button for entering the bootloader or restarting the program.
- 3 GPIO - The 3 independent IO pins have 1 analog input and 2 PWM output as well.
- Hardware I2C capability for breakout & sensor interfacing.

• Technical Details



- Dimensions: 27.98mm / 1.1" round x 7.14mm / 0.28" high
- Weight: 3.29g