adafruit

Adafruit Trinket - Mini Microcontroller - 3.3V Logic - MicroUSB

PRODUCT ID: 1500

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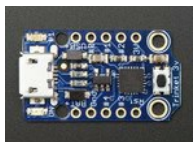10-99
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DESCRIPTION

TECHNICAL DETAILS

DESCRIPTION

Trinket may be small, but do not be fooled by its size! It's a tiny microcontroller board, built around the Atmel ATtiny85, a little chip with a lot of power. 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 expensive dev-board and you aren't willing to take apart the project you worked so hard to design. It's our lowest-cost arduino-IDE programmable board!

As of May 27th, 2015 the 3.3V Trinket has been revised! The board is now even smaller - at just 27mm x 15mm - and comes with a micro-B USB connector rather than mini-B

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. In fact we even made some simple modifications to the Arduino IDE so that it works like a mini-Arduino board. You can't stack a big shield on it but for many small & simple projects the Trinket will be your go-to platform.

This is the 3V Trinket. There are two versions of the Trinket. One is 3V and one is 5V. Both work the same, but have different operating logic voltages. Use the 3V one to interface with sensors and devices that need 3V logic, or when you want to power it off of a LiPo battery. The 3V version should only run at 8 MHz. Use the 5V one for sensors and components that can use or require 5V logic. The 5V version can run at 8 MHz or at 16MHz by setting the software-set clock frequency.

Even though you can program Trinket 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!

- Trinket 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 Trinket's bootloader. Simply use a USB v2 port or a USB hub in between

Here are some useful specifications!

- ATtiny85 on-board, 8K of flash, 512 byte of SRAM, 512 bytes of EEPROM
- Internal oscillator runs at 8MHz, but can be doubled in software for 16MHz
- **USB bootloader with a nice LED indicator looks just like a USBtinyISP so you can program it with AVRdude** (with a simple config modification) **and/or the Arduino IDE** (with a few simple config modifications)
- Micro-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, this board wont up and die on you in the middle of a project!
- ~5.25K bytes available for use (2.75K taken for the bootloader)
- **Available in both 3V and 5V flavors**
- On-board 3.3V or 5.0V 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. No need to unplug/replug the board every time you want to reset or update!
- 5 GPIO - 2 shared with the USB interface. The 3 independent IO pins have 1 analog input and 2 PWM output as well. The 2 shared IO pins have 2 more analog inputs and one more PWM output.
- Hardware I2C / SPI capability for breakout & sensor interfacing.
- Works with many basic Arduino libraries including Adafruit Neopixel!
- Mounting holes! Yeah!
- Really really small

For a lot more details, including a tour of the Trinket, pinout details and Arduino IDE examples, check out the Introducing Trinket tutorial

New Products 5/27/2015

TECHNICAL DETAILS

- Dimensions: 1.1" x 0.6" x 0.2" / 27mm x 15 x 4mm
- Weight (no headers): 1.85 grams
- Datasheet, EagleCAD PCB files, schematics, and Fritzing Library available in the product tutorial

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LEARN

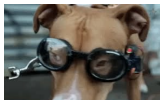 **Serial Debugging with GEMMA**
Calibrate sensors on GEMMA and Trinket!

 Kaleidoscope Eyes (Trinket-Powered NeoPixel LED Ring Goggles)
Fashion headwear for cyberpunks, steampunks and Daft Punks.
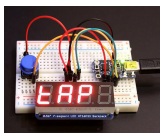
 Laser Dog Goggles
Canine costume fun

 Introducing Trinket
Introducing Adafruit's mini microcontroller

 NeoPixie Dust Bag
Make a GEMMA and NeoPixel Pixie Dust Bag

 Tap Tempo Trinket
I got rhythm! I got music!

 Trinket "Question Block" Sound Jewelry
Jump around, jump up and get down!
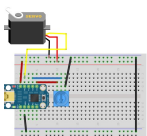
 Trinket (& Gemma) Servo Control
Get your Trinket or Gemma moving
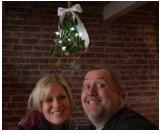
 Cyber Tank Girl Cosplay
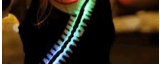
Light up the dystopian future
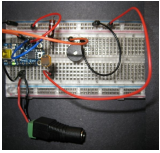
Trinket / Gemma Mini-Theramin
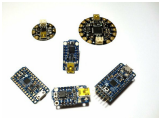Make music with tiny microcontrollers and varying light levels

Magical Mistletoe
Step under the mistletoe and you'll get more than a kiss-- the berries light up!
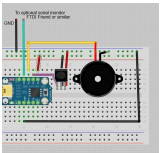
Larson Scanner Shades (Trinket-Powered NeoPixel LED Strip Glasses)
A simple cyberpunk/Tronpunk fashion project!

Adafruit Arduino IDE Setup
Setup the Arduino IDE to work with Trinket, Gemma, Flora, and more!

Trinket / Gemma IR Control
Use a Trinket or Gemma to determine the IR codes from your remote and use the codes in your own program to trigger events

Adding Third Party Boards to the Arduino v1.6.4+ IDE
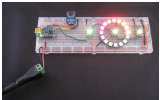Easily add support for Adafruit boards to Arduino v1.6.4!

Trinket / Gemma Space Invader Pendant
Itsy bitsy electronic jewelry!

Bluetooth-Controlled NeoPixel Goggles
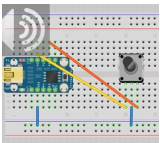Adding a smartphone interface to your wearable project couldn't be easier!

Trinket Sound-Reactive LED Color Organ
Add sound reactive color to your tunes.

Trinket React Counter
Make a Physical Like Button

Trinket USB Volume Knob
Making a volume control knob using the Trinket connected to your computer via USB.

3D Printed Glowing Mace Prop
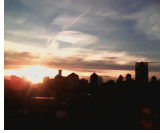Make a medieval morning star for cosplay!

Trinket Audio Player
Adafruit Trinket is the talk of the town. Now it can talk back!

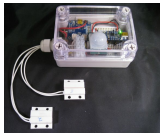### Lie Ren's Stormflower Gun Blade
Trigger NeoPixel Blasts!

Trinket / Gemma Blinky Eyes
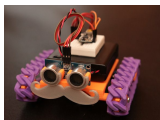Spook up your Halloween item with Blinky Eyes

Timelapse Spy Camera
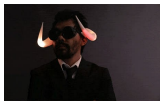Create a battery powered timelapse camera!

Adafruit Trinket-Modded Stuffed Animal
Use Trinket as a platform to make animals come alive - you chose the animal

Trinket Bluetooth Alarm System
Use the Trinket to build a custom wireless alarm system

Trinket Powered Rover
Small and sweet this rover can't be beat.

3D Printed LED Fire Horns
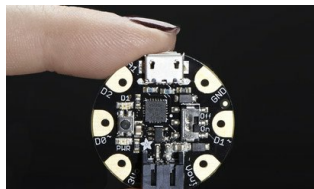Fire up that next gig or party fire horns!

MAY WE ALSO SUGGEST...

5V 1A (1000mA) USB port
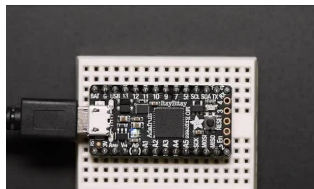

USB DIY Slim Connector

Adafruit GEMMA v2 -

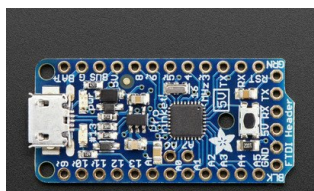Adafruit Trinket - Mini

USB A/Micro Cable - 2m

Adafruit ItsyBitsy M0

Adafruit Trinket M0 - for use

Arduino Pro Mini 328 -

Adafruit Pro Trinket - 5V

USB Mini-B Breakout Board

Adafruit ItsyBitsy 32u4 - 3V

Arduino Pro Mini 328 -

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ENGINEERED IN NYC Adafruit ®

"Confusion and clutter are the failure of design, not the attributes of information" - Edward Tufte

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4.9 ★★★★★
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