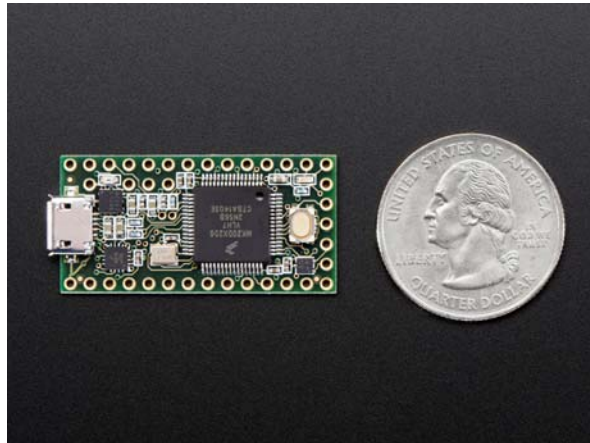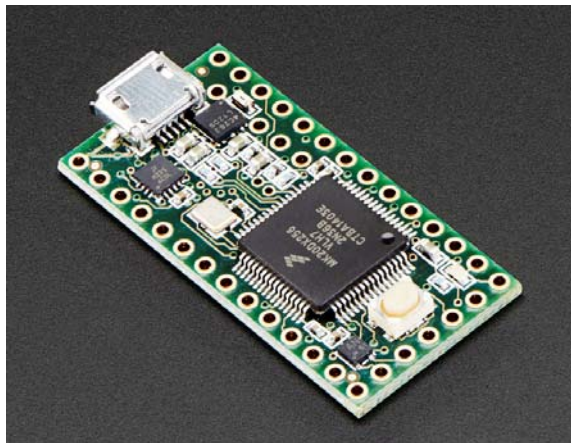# Teensy 3.2 + header

PRODUCT ID: 2756

Description

Teensy 3.2 is a small, breadboard-friendly development board designed by Paul Stoffregen and PJRC. Teensy 3.2 brings a low-cost 32 bit ARM Cortex-M4 platform to hobbyists, students and engineers, using an adapted version of the Arduino IDE (Teensyduino) or programming directly in C language. Teensy 3.2 is an upgrade over 3.1! Teensy 3.2 is a drop-in replacement upgrade for 3.1 and can run any sketches designed for 3.1.

This latest version of this complete USB-based microcontoller development system now adds a more powerful 3.3V regulator, as well as accepts a wider voltage input range. This board has the same size, shape and pinout as well as full compatibility with all shields and add-on boards made for the Teensy 3.1, plus double the Flash memory as the Teensy 3.0.

Let's get started!

Please note: Teensy 3 and 2 are not official Arduino-brand products. Although the Teensyduino IDE has been adapted so that many simple Arduino projects will work with the Teensy, there will still be a lot of libraries and shields that will not work with this device! If you're new to microcontrollers, we suggest going with a classic Arduino UNO since all Arduino projects, examples and libraries will work with it.

Once headers are installed they can be fitted into 0.6" wide sockets

Technical Specifications:

- 32 bit ARM Cortex-M4 72MHz CPU (M4 = DSP extensions) Here is Freescale's reference manual for the chip (warning 1227 pages) as well as the Datasheet and User Guide!
- http://cache.freescale.com/files/32bit/doc/ref_manual/K20P64M50SF0RM.pdf
- http://cache.freescale.com/files/32bit/doc/data_sheet/K20P64M50SF0.pdf
- http://cache.freescale.com/files/32bit/doc/quick_ref_guide/KQRUG.pdf
- 256K Flash Memory, 64K RAM, 2K EEPROM
- 21* High Resolution Analog Inputs (13 bits usable, 16 bit hardware)
- 34* Digital I/O Pins (21 shared with analog)
- 12 PWM outputs
- 1 12-bit DAC output
- 8 Timers for intervals/delays, separate from PWM
- USB with dedicated DMA memory transfers
- CAN bus
- 3 UARTs (serial ports)
- SPI, I2C, I2S, IR modulator
- I2S (for high quality audio interface)
- Real Time Clock (with user-added 32.768 crystal and battery)
- 16 general purpose DMA channels (separate from USB)
- Touch Sensor Inputs

Technical Details

- Dimensions: 18mm x 37mm x 4mm / 1.4" x 0.7"
- Teensy 3 schematic https://cdn-shop.adafruit.com/product-files/2756/2756+schem.gif

Teensy 3.2 Back Side

Additional pins and features available on the back side

SCL1 SDA1 TX2 PWM

A18 A19 A20 Touch Touch

29 30 31 32 33 3.3V A13 A11 A10 AREF VUSB

Cut to separate VIN from VUSB, if using a battery charger or external power for USB Device mode.

DAC/A14
Program
GND
3.3V
VBat

Teensy 3.2

USB Signals

Use 3V coin cell for Real Time Clock.

28 27 26 25 24 GND A12

A17 A16 A15 Touch

RX2 PWM

Reset

Add 32.768 kHz Crystal for Real Time Clock.

Add 150 μF Capacitor for USB Host mode.

For solutions to the most common issues
and technical support, please visit:

www.pjrc.com/help

Teensy 3.2 System Requirements:
PC computer with Windows 7, 8, 10 or later
or Ubuntu Linux 12.04 or later
or Macintosh OS-X 10.7 or later
USB Micro-B Cable

7 14833 87955 8

Welcome to Teensy 3.2

32 Bit Arduino-Compatible Microcontroller

To begin using Teensy, please visit the website & click Getting Started.

www.pjrc.com/teensy

Digital Pins
digitalRead
digitalWrite
pinMode

Analog Pins
analogRead
analogReference
analogReadRes

PWM Pins
analogWrite
analogWriteRes

Touch Sense Pins
touchRead

Serial Ports
Serial1
Serial2
Serial3

I²C Port
Wire Library

SPI Port
SPI Library

PWM PWM PWM PWM Touch Touch Touch Touch Touch
CS CS CS SCK SCK
Touch Touch RX1 SCL0 SDA0 SDA0 SCL0
Vin (3.6 to 6.0 volts)
AGND
3.3V (250 mA max)
A9 A8 A7 A6 A5 A4 A3 A2 A1 A0 (LED)
23 22 21 20 19 18 17 16 15 14 13

A14/DAC
Program
GND
3.3V
VBat

GND 0 1 2 3 4 5 6 7 8 9 10 11 12
RX1 TX1 TX1 RX3 TX3 RX2 TX2
TX RX DOUT DIN CS CS DOUT DIN
Touch Touch PWM PWM PWM PWM PWM PWM

All digital pins have Interrupt capability.

CAN Bus