

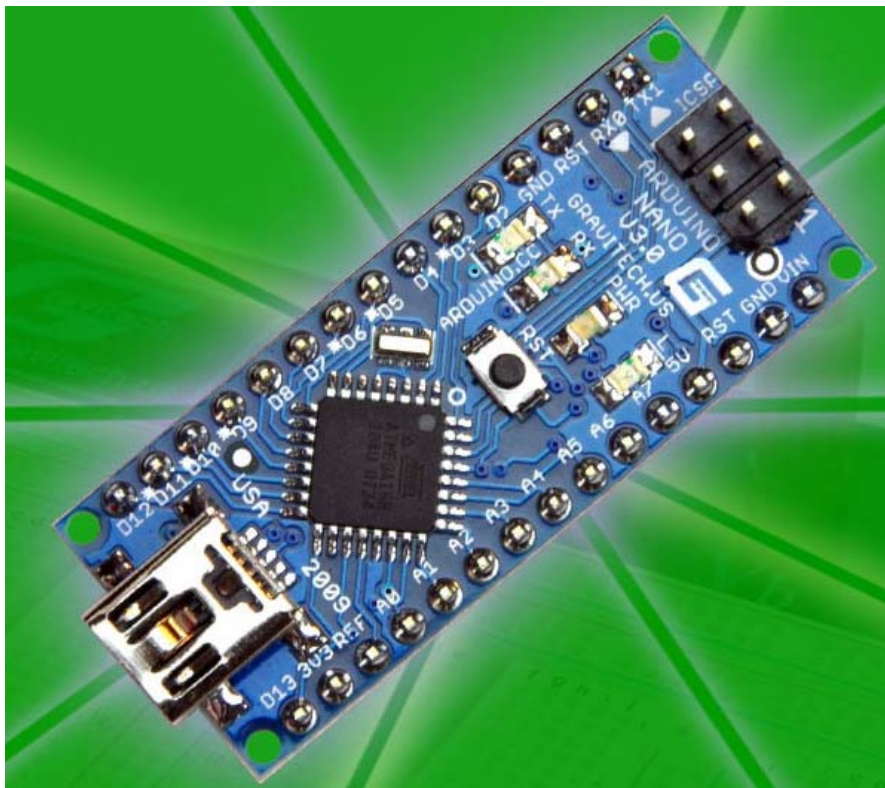
Atmel 8-bit AVR microcontroller 328P

Reference:

<https://www.theengineeringprojects.com/2018/06/introduction-to-arduino-nano.html>

Arduino Nano (V3.0)

User Manual



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More information:

www.arduino.cc

Rev 3.0

Arduino Nano Pin Layout

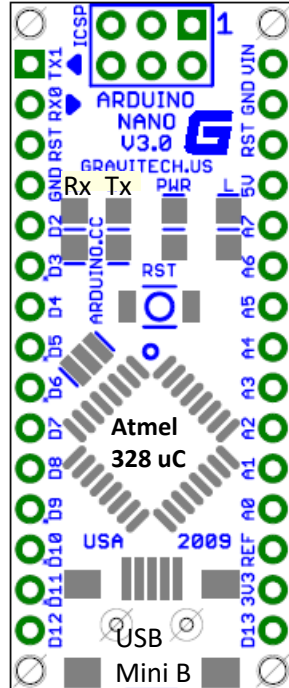
4 LED indicators: Rx, Tx, Pwr, LED (pin 13)

Green, Red, Red, Red

RESET[5] SCK[3] MISO[1]

GND[6] MOSI[4] VCC [2]

SPI HEADER



4.32 x 1.78 cm

30-DIP chip, 2.54mm/0.1" pin spacing

MAX 20mA source per I/O pin

MAX 200mA total source across all pins

I/O instructions

digitalRead()

digitalWrite()

analogRead()

analogWrite()

(30) **VIN** 7-12VDC unreg

(29) **GND**

(28) **RESET**

(27) **+5V** 5VDC regulated

(26) A7 A6/A7 are analogRead only

(25) A6 Analog Read is 10-bits (0-1023)

(24) **A5** On 5V ref, each count is 4.9mV

(23) **A4** SCL **for I2C**

(22) A3 SDA

(21) A2

(20) A1 A0-A5 (pins 14-18) are digital or analog I/O

(19) A0

(18) **AREF**

(17) **3V3**

(16) D13 SCK (SPI clock). Also Internal LED

22 total I/O PINS

14 Digital only I/O pins (D0-D13)

6 Digital/Analog I/O pins (A0-A5) with PWM output
(simulated 8-bit analog out)

2 Analog read only pins (A6-A7)

Effectively 18 I/O lines:

D2-D13 (avoid D0/D1 RX/TX)

A0-A5 (avoid A6/A7 Analog Read only)

CLOCK SPEED = 16MHz

GREEN PINS are safe PWM 8-bit output (0-255)

PWM pins @ 490Hz: 9,10 (Timer 1)

@ 490Hz: 3,11 (Timer 2)

PWM pins @ 980Hz: 5,6 (Timer 0) ** shared

SPI uses SS/MOSI/MISO/SCK (D10-D13)

3 shared bus lines,

one SS line for each peripheral

SS LOW activates that peripheral

SS (peripheral select) **D9** (12)

for SPI **D10** (13)

MOSI (controller OUT) **D11** (14)

MISO (controller IN) **D12** (15)

Nano Documentation Sources:

Pinout Diagrams (annotated):

Original:

Pin Names & User Guide

<http://mathscitech.org/articles/electronics#nano>

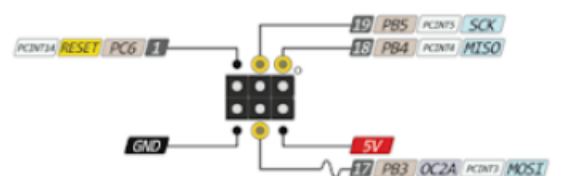
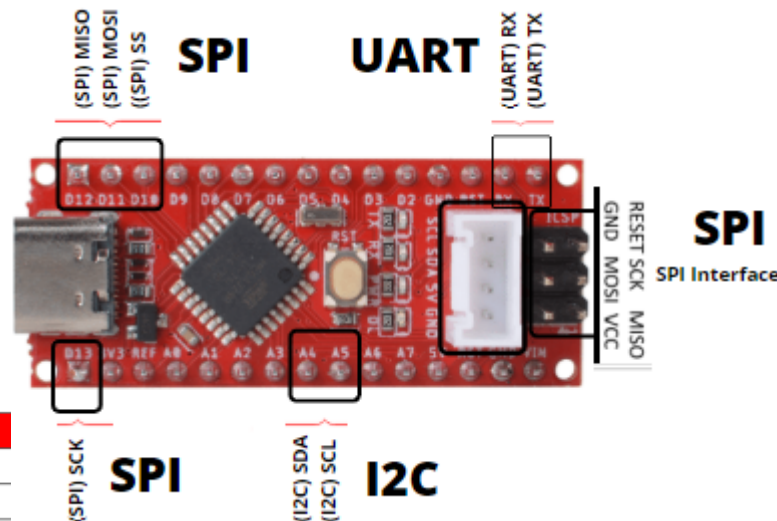
https://www.mouser.com/pdfdocs/Gravitech_Arduino_Nano3_0.pdf

<https://components101.com/microcontrollers/arduino-nano>

Frequency [Hz]	Prescaler	Setting
31373.55	1	0x01
3921.57	8	0x02
980.39	32	0x03
490.20	64	0x04
245.10	128	0x05
122.55	256	0x06
30.64	1024	0x07

TCCR2B = TCCR2B & 0b11111000 | setting;

Pin No.	Name	Type	Description
1-2, 5-16	D0-D13	I/O	Digital input/output port 0 to 13
3, 28	RESET	Input	Reset (active low)
4, 29	GND	PWR	Supply ground
17	3V3	Output	+3.3V output (from FTDI)
18	AREF	Input	ADC reference
19-26	A0-A7	Input	Analog input channel 0 to 7
27	+5V	Output or Input	+5V output (from on-board regulator) or +5V (input from external power supply)
30	VIN	PWR	Supply voltage



Arduino Nano Mechanical Drawing

