Port Overview

PORT Name	Port Description
PORTB	• Microcontroller Pins: PB0-PB7 • 8 pins total, only PB0-PB5 are connected to Uno R3 header pins • PB6 and PB7 are dedicated to the external clock crystal • Functions: digital I/O, SPI interface, timer PWM (Pulse Width Modulation) outputs
PORTC	• Microcontroller Pins: PC0-PC6 • 7 pins, only PC0-PC5 are exposed • PC6 is a RESET pin (used to restart the chip) • Functions: ADC inputs, I2C communication, digital I/O
PORTD	• Microcontroller Pins: PD0-PD7 • Functions: UART (serial communication), external interrupts, timer PWM (Pulse Width Modulation), digital I/O

Pin Overview

Port B Pins

MCU Pin Name	Arduino Function	Arduino Header Pin
PB0	Digital 8	D8
PB1	Digital 9 (PWM)	D9
PB2	Digital 10 (PWM,SS)	D10
PB3	Digital 11 (PWM, MOSI)	D11
PB4	Digital 12 (MISO)	D12
PB5	Digital 13 (SCK / onboard LED)	D13
PB6	XTAL1 (Crystal input)	Not exposed to headers
PB7	XTAL2 (Crystal output)	Not exposed to headers

Port C Pins

MCU Pin Name	Arduino Function	Arduino Header Pin
PC0	Analog 0	A0
PC1	Analog 1	A1
PC2	Analog 2	A1
PC3	Analog 3	A2
PC4	Analog 4 (A4 / SDA)	A3
PC5	Analog 5 (A5 / SCL)	A4
PC6	RESET	RESET

Port D Pins

MCU Pin Name	Arduino Function	Arduino Header Pin
PD0	Digital 0 (RX)	D0
PD1	Digital 1 (TX)	D1
PD2	Digital 2	D2
PD3	Digital 3 (PWM)	D3
PD4	Digital 4	D4
PD5	Digital 5 (PWM)	D5
PD6	Digital 6 (PWM)	D6
PD7	ADC Power	D7

Other pins

MCU Pin Name	Arduino Function	Arduino Header Pin
AVCC	ADC Power	+5V
AREF	Analog Reference	AREF
GND	Ground	GND
VCC	Power +5V	+5V