Arduino Uno to avr-gcc Migration Cheat Sheet

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Digital I/O Mapping

D0 (Rx)	PD0
D1 (Tx)	PD1
D2	PD2 (INT0)
D3 (PWM)	PD3 (INT1)
D4	PD4 (XCK/T0)
D5 (PWM)	PD5 (T1)
D6 (PWM)	PD6 (AIN0)
D7	PD7 (AIN2)
D8	PB0 (ICP1)
D9 (PWM)	PB1 (OC1A)
D10 (PWM)	PB2 (SS/OC1B)
D11 (PWM)	PB3 (MOSI/OC2)
D12	PB4 (MISO)
D13	PB5 (SCK)

Arduino UNO and ATmega328P microcontroller digital pin mapping.

Analog I/O Mapping

A0	PC0 (ADC0)
A1	PC1 (ADC1)
A2	PC2 (ADC2)
A3	PC3 (ADC3)
A4	PC4 (ADC4/SDA)
A5	PC5 (ADC5/SCL)

Arduino UNO and ATmega328P microcontroller analog pin mapping.

Alternative PIN Functions

PB0	PCINT0/CLKO/ICP1
PB1	OC1A/PCINT1
PB2	~SS/OC1B/PCINT2
PB3	(**) MOSI/OC2A/PCINT3

Alternative PIN Functions (cont)

PB4	(**) MISO/PCINT4
PB5	(**) SCK/PCINT5
PB6	(*) PCINT6/XTAL1/TOSC1
PB7	(*) PCINT7/XTAL2/TOSC2
PC0	ADC0/PCINT8
PC1	ADC1/PCINT9
PC2	ADC2/PCINT10
PC3	ADC3/PCINT11
PC4	ADC4/SDA/PCINT12
PC5	ADC5/SCL/PCINT13
PC6	(*) PCINT14/~RESET
PD0	PCINT16/RXD
PD1	PCINT17/TXD
PD2	PCINT18/INT0
PD3	PCINT19/OC2B/INT1
PD4	PCINT20/XCK/T0
PD5	PCINT6/XTAL1/TOSC1
PD6	PCINT22/OC0A/AIN0
PD7	PCINT23/AIN1

(*) Already reserved on Arduino UNO for crystal (16MHz) and RESET.
(**) Shared with programmer's connector (see AVR910).

Arduino UNO Q/A

What's the crystal frequency?

> 16MHz

What's the default serial baud rate?

> 9600 baud

I/O Addressing

PINB (0x03)	PINB0|PINB1|PINB2|PINB3|PINB4|PINB5|PINB6|PINB7
DDRB (0x04)	DDB0|DDB1|DDB2|DDB3|DDB0|DDB4|DDB5|DDB6|DDB7
PORTB (0x05)	PORTB0|PORTB1|PORTB2|PORTB3|PORTB4|PORTB5|PORTB6|PORTB7
PINC (0x06)	PINC0|PINC1|PINC2|PINC3|PINC4|PINC5|PINC6
DDRC (0x07)	DDC0|DDC1|DDC2|DDC3|DDC4|DDC5|DDC6
PORTC (0x08)	PORTC0|PORTC1|PORTC2|PORTC3|PORTC4|PORTC5|PORTC6
PIND (0x09)	PIND0|PIND1|PIND2|PIND3|PIND4|PIND5|PIND6|PIND7
DDRD (0x0A)	DDD0|DDD1|DDD2|DDD3|DDD4|DDD5|DDD6|DDD7
PORTD (0x0B)	PORTD0|PORTD1|PORTD2|PORTD3|PORTD4|PORTD5|PORTD6|PORTD7

Generic GPIO

GPIOR0 (0x1E)	GPIOR00|GPIOR01|GPIOR02|GPIOR03|GPIOR04|GPIOR05|GPIOR06|GPIOR07
GPIOR1 (0x2A)	GPIOR10|GPIOR11|GPIOR12|GPIOR13|GPIOR14|GPIOR15|GPIOR16|GPIOR17
GPIOR2 (0x2B)	GPIOR20|GPIOR21|GPIOR22|GPIOR23|GPIOR24|GPIOR25|GPIOR26|GPIOR27

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