

Arduino Nano

The diagram illustrates the internal circuitry of an Arduino Nano board, centered around the ATMEGA328P microcontroller (U1). The board features two headers: J1 (left) and J2 (right). J1 includes pins for D1/TX, D0/RX, RESET, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11/MISO, and D12/MISO. J2 includes pins for RESET, A7, A6, A5, A4, A3, A2, A1, A0, AREF, and D13/SCK. The ATMEGA328P is connected to these pins and has its own internal connections for VCC1, VCC2, AVCC, PD0(RXD), PD1(TXD), PD2(ND0), PD3(INT1), PD4(T0), PD5(T1), PD6(AIN0), PD7(AIN1), PB0(ICP), PB1(OC1), PB2(SS), PB3(MOSI), PB4(MISO), and PB5(SCK). The board also includes a 16MHz crystal (Y1) connected to PB7(XTAL2) and PB6(XTAL1), a 1K resistor (RP1D5) connected to VCC1, and a 4.7uF capacitor (C2) connected to VCC2. A 0.1uF capacitor (C1) is connected to AREF. The board is powered by a +5V regulator (U3) and a +5V auto selector (D1). The USB interface is handled by the FT232RL (U2), which is connected to the ATMEGA328P's TX, RX, and DTR pins. The USB interface also includes a 0.1uF capacitor (C4) connected to RX, a 0.1uF capacitor (C3) connected to TX, and a 0.1uF capacitor (C7) connected to VCC. The USB interface is connected to a USB-MINI-B/C connector (J3) and a USB cable. The board also includes two LEDs: a red LED (LED1) connected to D13/SCK and a green LED (LED2) connected to D12/MISO. The board is powered by a +5V regulator (U3) and a +5V auto selector (D1).

+5V REG

+5V AUTO SELECTOR

USB

ATMEGA328

RESET

LED1

LED2

J1

J2

J3

U1

U2

U3

D1

C1

C2

C3

C4

C7

C8

C9

RP1D5

RP1B7

RP1C6

RP2B7

RP2D5

RP2F8

Y1

LED3

LED4

LED5

LED6

LED7

LED8

LED9

LED10

LED11

LED12

LED13

LED14

LED15

LED16

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