

Check Polarity of connectors!!

Minimize track length between pins 1 and 5!!!

5V_RGB
5V_Ethernet
5V_Radio
5V_IRScanner
5V_Control

The diagram shows the pin connections for an ATmega328P microcontroller (IC7) in a breadboard setup. The microcontroller is represented by a yellow rectangle with pins numbered 1 to 28. The connections are as follows:

- Power and Ground:**
 - VCC (Pin 7) is connected to +5V.
 - AVCC (Pin 20) is connected to +5V.
 - AREF (Pin 21) is connected to a 2.1V reference voltage.
 - GND (Pin 22 and 28) is connected to ground.
- ICSP Header (Left):**
 - MISO (Pin 1) is connected to pin 1 of the ICSP header.
 - SCK (Pin 3) is connected to pin 3 of the ICSP header.
 - RESET (Pin 5) is connected to pin 5 of the ICSP header.
 - Pin 2 of the ICSP header is connected to pin 2 of the microcontroller.
 - Pin 4 of the ICSP header is connected to pin 4 of the microcontroller.
 - Pin 6 of the ICSP header is connected to pin 6 of the microcontroller.
- ICSP Header (Right):**
 - Pin 7 of the ICSP header is connected to pin 7 of the microcontroller.
 - Pin 8 of the ICSP header is connected to pin 8 of the microcontroller.
 - Pin 9 of the ICSP header is connected to pin 9 of the microcontroller.
 - Pin 10 of the ICSP header is connected to pin 10 of the microcontroller.
 - Pin 11 of the ICSP header is connected to pin 11 of the microcontroller.
 - Pin 12 of the ICSP header is connected to pin 12 of the microcontroller.
 - Pin 13 of the ICSP header is connected to pin 13 of the microcontroller.
 - Pin 14 of the ICSP header is connected to pin 14 of the microcontroller.
 - Pin 15 of the ICSP header is connected to pin 15 of the microcontroller.
 - Pin 16 of the ICSP header is connected to pin 16 of the microcontroller.
 - Pin 17 of the ICSP header is connected to pin 17 of the microcontroller.
 - Pin 18 of the ICSP header is connected to pin 18 of the microcontroller.
 - Pin 19 of the ICSP header is connected to pin 19 of the microcontroller.
 - Pin 20 of the ICSP header is connected to pin 20 of the microcontroller.
 - Pin 21 of the ICSP header is connected to pin 21 of the microcontroller.
 - Pin 22 of the ICSP header is connected to pin 22 of the microcontroller.
 - Pin 23 of the ICSP header is connected to pin 23 of the microcontroller.
 - Pin 24 of the ICSP header is connected to pin 24 of the microcontroller.
 - Pin 25 of the ICSP header is connected to pin 25 of the microcontroller.
 - Pin 26 of the ICSP header is connected to pin 26 of the microcontroller.
 - Pin 27 of the ICSP header is connected to pin 27 of the microcontroller.
 - Pin 28 of the ICSP header is connected to pin 28 of the microcontroller.
- External Components:**
 - A 16MHz crystal (X?) is connected between pins 23 and 24.
 - Two 22pF capacitors (C?) are connected from pins 23 and 24 to ground.
 - A 2.1V reference voltage (AREF) is connected to pin 21.

The schematic diagram illustrates the power and control connections for an XBee Radio module. The power supply section features a 5V_Radio input connected to an LM7833 voltage regulator, which provides a +3.3V output to the module's VCC pin. A 100nF capacitor (C7) is connected between the 5V and GND pins of the regulator. The AT mode section includes a 74LS125 monostable multivibrator (U7A) that generates a 220ns pulse (B2) to the RESET# pin of the XBee module. The XBee module's pinout is detailed, showing connections for VCC, GND, DTR, AT_DIN, DIN, CD/DOUT_EN/DO8, RESET#, RSSI_PWM, RESERVED07, RESERVED08, DTR/SLEEP_RQ/DIR, AT_DIO10, and VREF. The module is interfaced with an Arduino Uno via I2C (I2C_SDA, I2C_SCL) and Serial (DTR, GND, RxD, Tx, V_USB). A Bluetooth module (BLUETOOTHMOD_0X) is also connected to the AT_DIN and AT_DOUT pins of the XBee module.