

ADC Lab

Example1:

We want to display the corresponding ADC values in the Serial Monitor.
Connect Joystick of the kit as the following:

- Connect 5V to 5V of Arduino
- Connect GND to GND of Arduino
- Connect X to PC0(A0)
- Connect Y to PC1(A1)

Then display on serial monitor ADC results

Serial.begin(9600) used to open UART and set baud rate to 9600.

Serial.println("X-axis = " + String(reading)) to print ADC on serial monitor

Steps:

1. Initialize adc:
 - ✓ Make ADC Ref=VCC (AREF = AVcc)
 - ✓ Enable ADC
 - ✓ Set prescaler by 128 so $Freq_{ADC} = \frac{16000000}{128} = 125000$
2. ADC Read function:
 - ✓ Select the corresponding channel 0~7.
 - ✓ Start single conversion by write '1' to ADSC.
 - ✓ Wait for conversion to complete.
 - ✓ Return ADC read value.
3. Main:
 1. Initialize ADC.
 2. Read adc value at PC0.
 3. Read adc value at PC1.

Example2:

Do the same above using interrupt