ATmega Evaluation KIT User Manual V2.0

ATmega Evaluation KIT Launchpad edition User Manual v2.0 2019

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ATmega Evaluation KIT REV5 System Introduction

1.1 Product Overview

ATmega Evaluation KIT is a multifunctional MEGA32/16 microcontroller development platform which has been carefully designed and developed by AMIT Learning Research and Development Team.

With this product, beginners in the embedded systems track will have all the necessary resources that would enable them to fully master AVR Family microcontroller programming technology in the shortest time possible. It is particularly suitable for self-learning for students and/or hobbyists.

The following points may illustrate how your choice was wise.

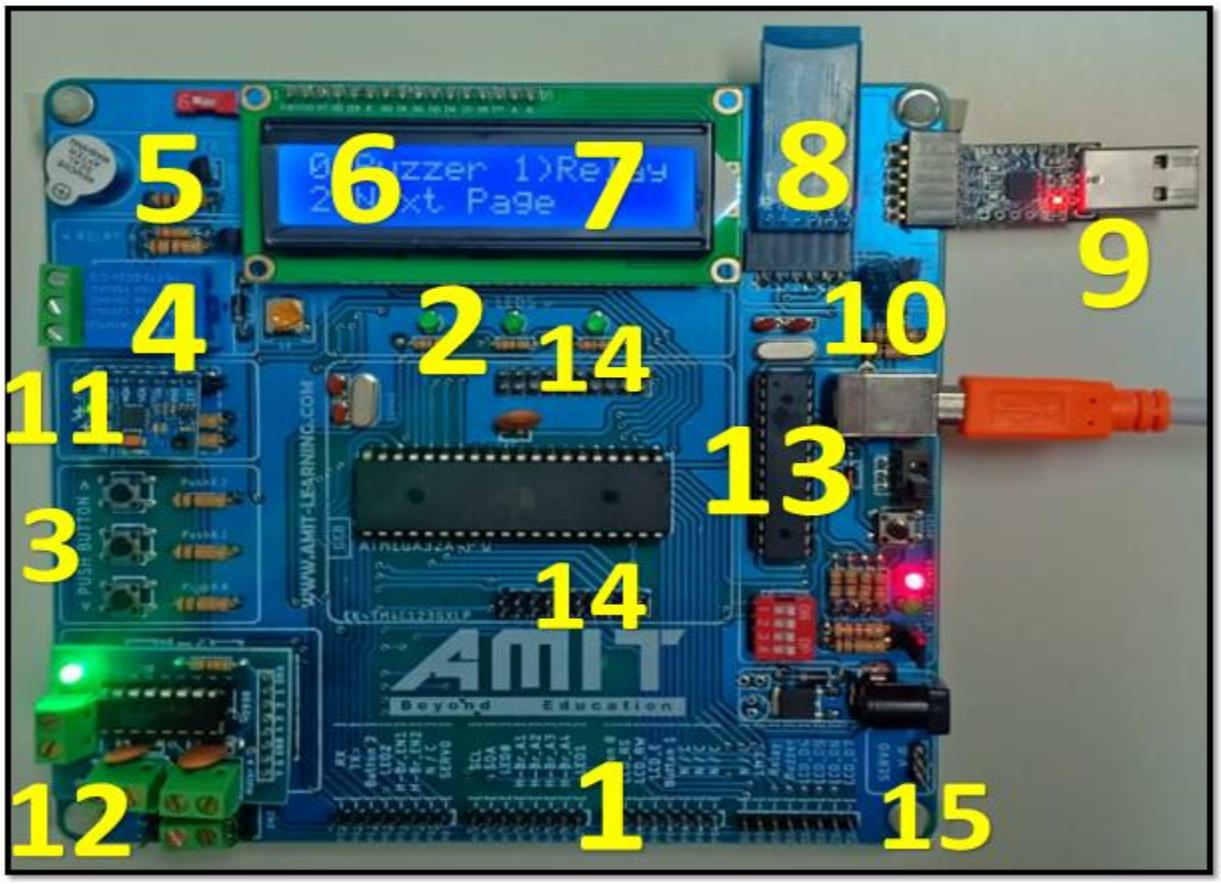
• Optimized modular design

• Superior production technology

• Low selling prices

• Comprehensive technical guidance

• Perfect after service



1.2 Board Resource Introduction

1) General Input / Output Module.

2) 3 LEDs.

3) 3 Switches.

4) Relay Module.

5) Buzzer.

6) Or 7) LCD or 7-Segments.

8) UART to be connected to Bluetooth Module.

9) UART to be connected to USB to TTL.

10) ADC1 connected with Temperature Sensor LM35

11) I2C connected with External EEPROM and also to be connected with Compass Sensor.

12) H-Bridge to be connected with Motors

13) SPI Programmer Module

14) Headers for Tiva C

15) Servo Motor

Chapter 2: ATmega Evaluation KIT System Functional Modules Details

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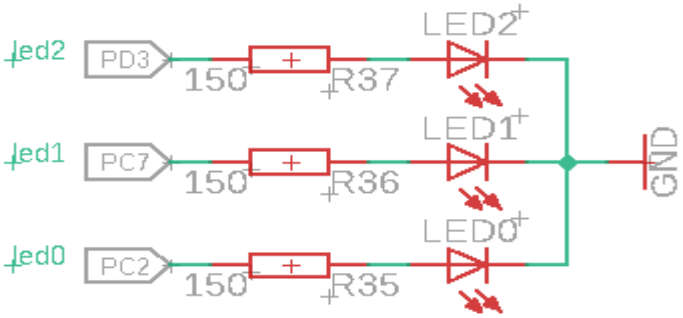
1.3 Products Pin Diagram:

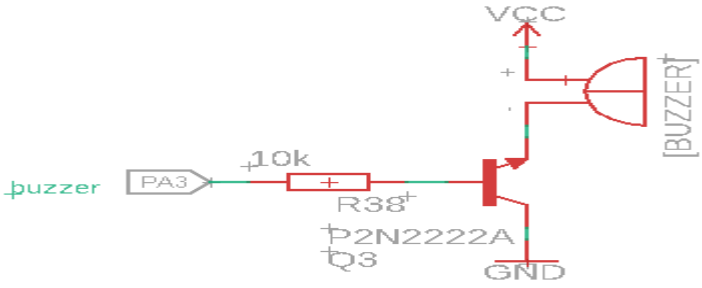
• Three- LED

- LED0→PORTC .2
- LED1→PORTC .7
- LED2→PORTD .3



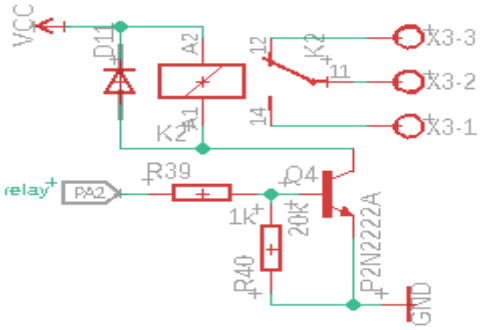
• Buzzer

- Buzzer→PORTA .3



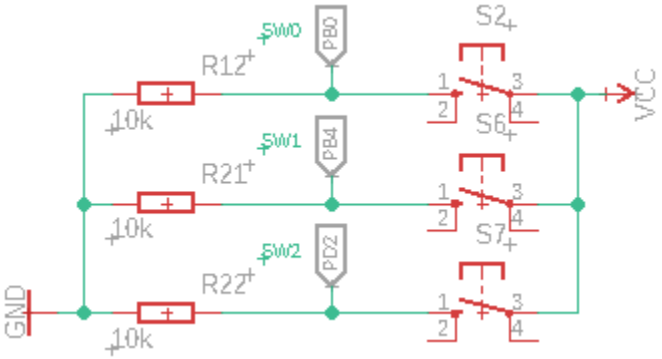
• RELAY

- Relay_EN→PORTA .2

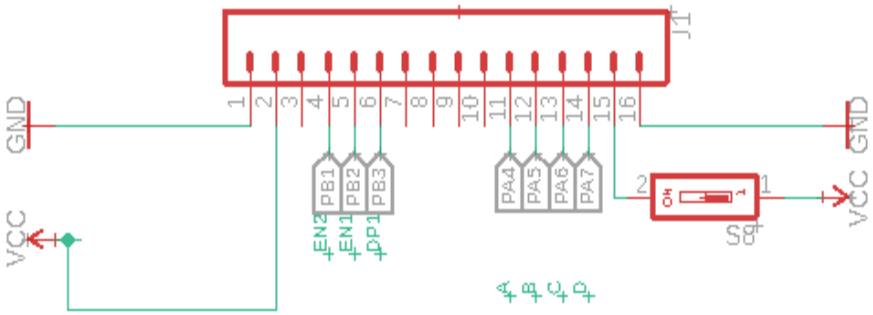


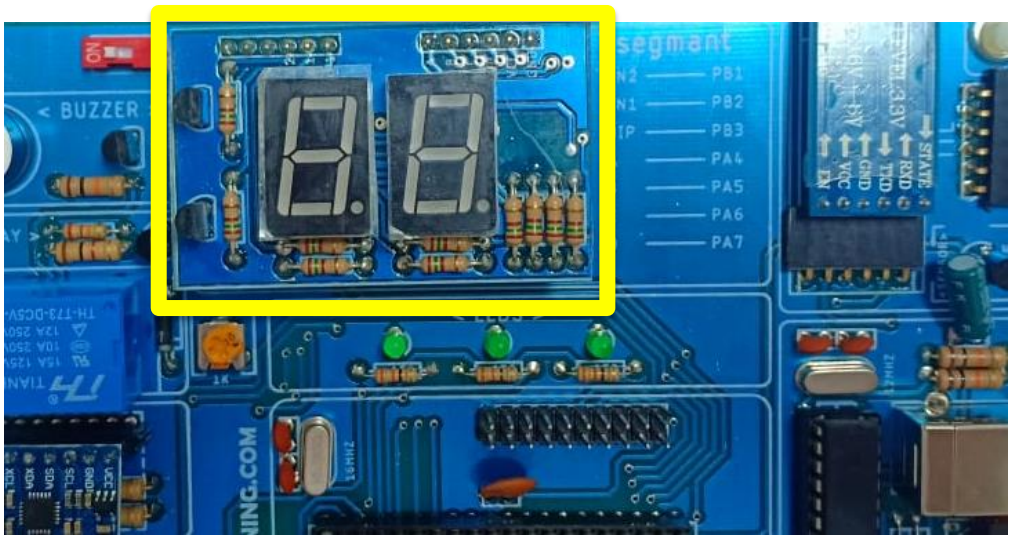
• Pushbutton

- Button0→PORTD.0
- Button1→ PORTD.1
- Button2→ PORTD.2



- **7 Segment Display**
  - DATA LINES:
    - 7SEG_A→PORTA .4
    - 7SEG_B→PORTA .5
    - 7SEG_C→PORTA .6
    - 7SEG_D→PORTA .7
  - DECIMAL POINT:
    - 7SEG_DP→PORTB .3
  - ENABLE LINES
    - 7SEG_EN1→PORTB .1
    - 7SEG_EN2→PORTB .2





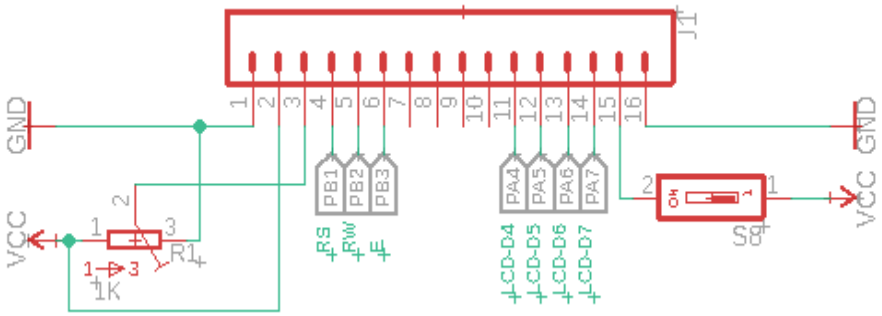
• **16X2 CHARACTER LCD**

▪ DATA LINES

- LCD_D4→PORTA .4
- LCD_D5→PORTA .5
- LCD_D6→PORTA .6
- LCD_D7→PORTA .7

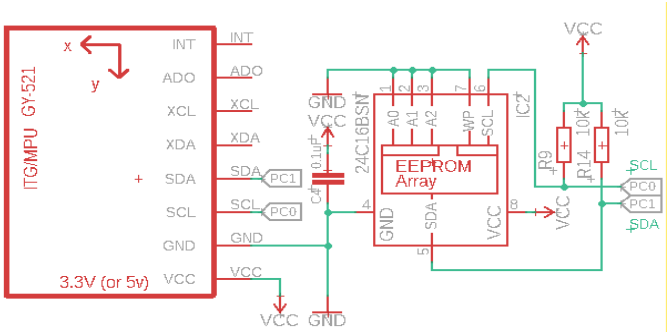
▪ CONTROL LINES

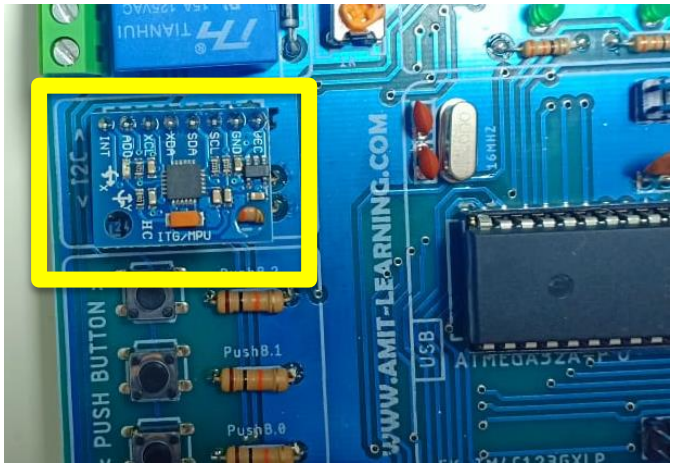
- LCD_RS →PORTB .1
- LCD_RW→PORTB .2
- LCD_E →PORTB .3



• **I2C EEPROM Module**

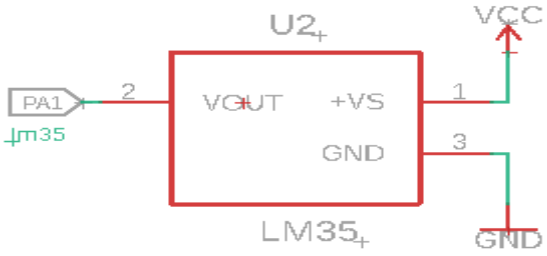
- SCL →PORTC.0
- SDA→PORTC.1



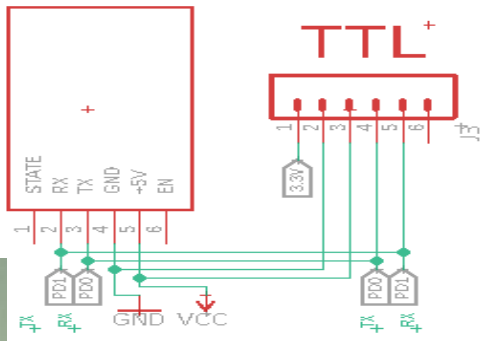


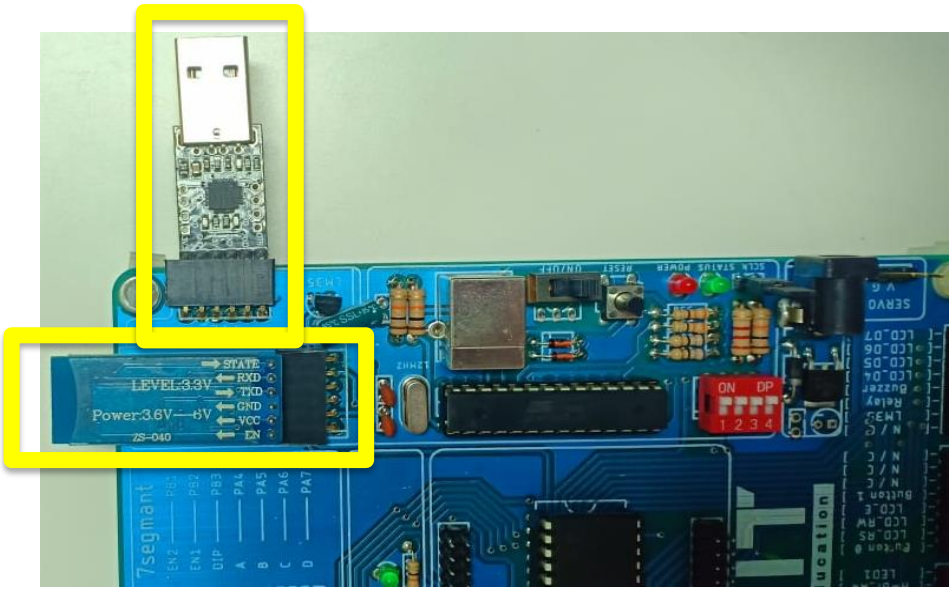
• **ADC - Temperature Sensor LM35**

- ADC 1 →PORTA.1

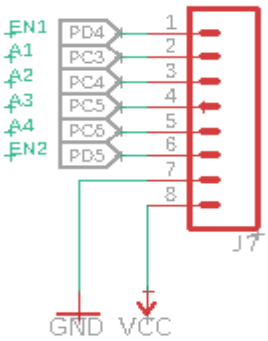


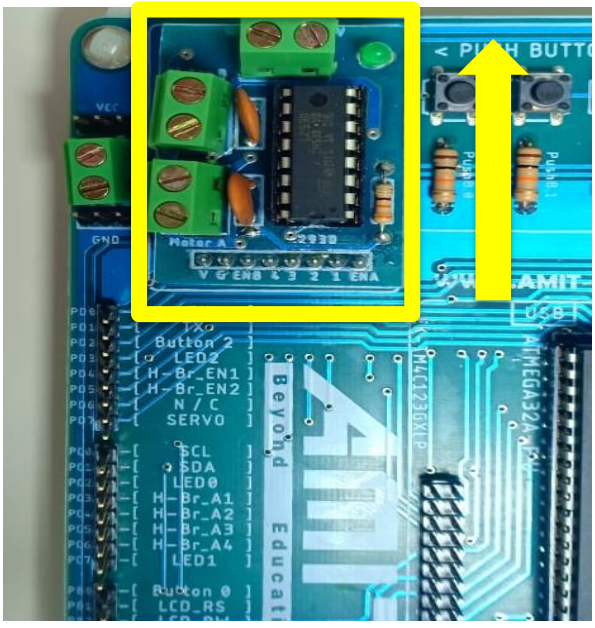
- **UART – Bluetooth and TTL**
  - Rx → PORTD.0
  - Tx → PORTD.1



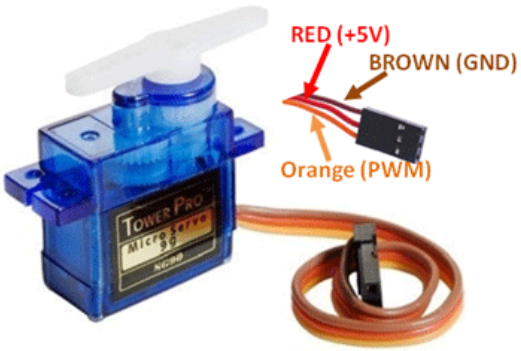


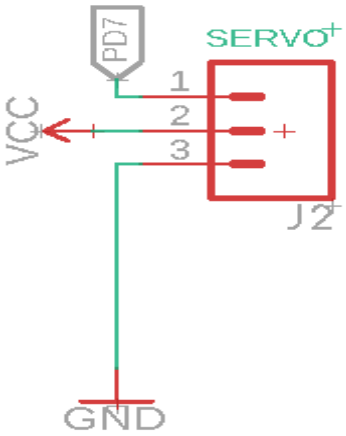
- **H-Bridge pins**
  - EN1 → PORTD.4
  - A1 → PORTC.3
  - A2 → PORTC.4
  - A3 → PORTC.5
  - A4 → PORTC.6
  - EN2→ PORTD.5





- **Servo pins**
  - Signal → PORTD.7





Caution

1- Please plug-in the External Module in the correct way as the previous images.

2- Make sure when you plug-in the external modules no pins is shifted right or left.

3- You can work only with the 7-Segment or the LCD so when you want to replace turn-off your power first.