ATmega Evaluation KIT User Manual V2.0

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Prepared By: AMIT Learning

ATmega Evaluation KIT Launchpad edition User Manual v2.0

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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

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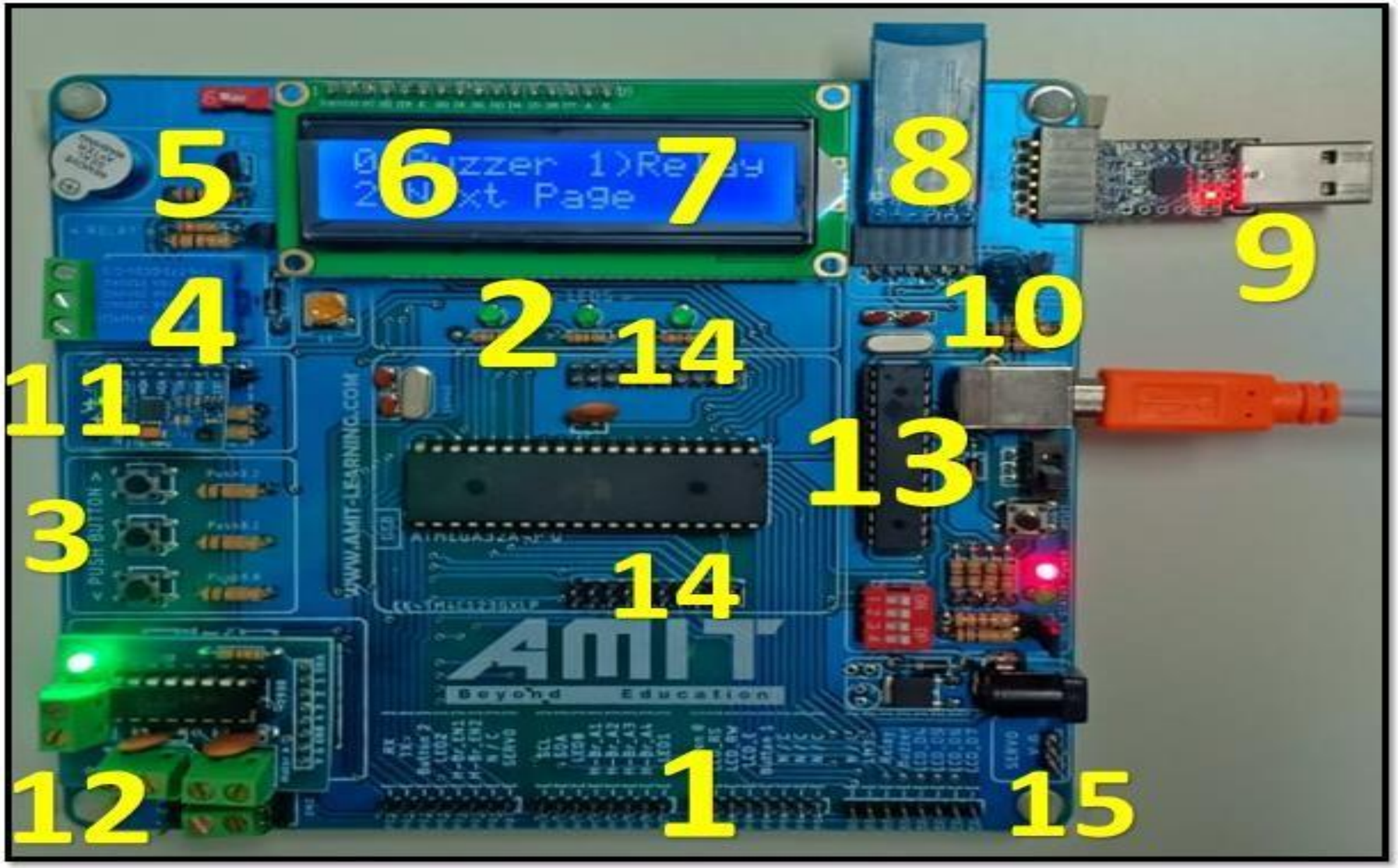
1.2 Board Resource Introduction



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.
7) UART to be connected to Bluetooth Module.
8) UART to be connected to USB to TTL.
9) ADC1 connected with Temperature Sensor LM35
10) I2C connected with External EEPROM and also to be connected with Compass Sensor.
11) H-Bridge to be connected with Motors
12) SPI Programmer Module
13) Headers for Tiva C
14) Servo Motor

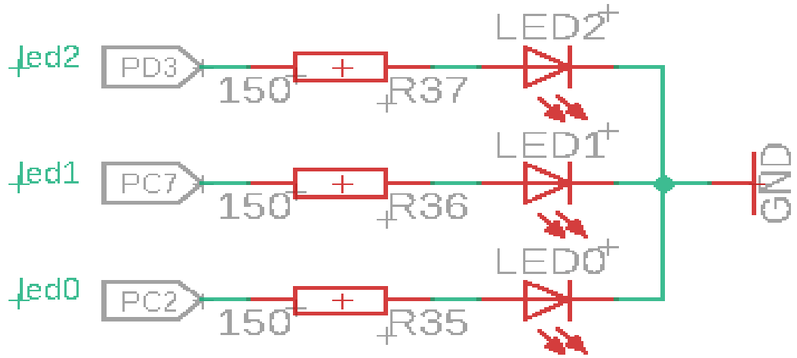
Chapter 2: Modules Details “ LED & Buzzer “

Three- LED

LED0→PORTC .2

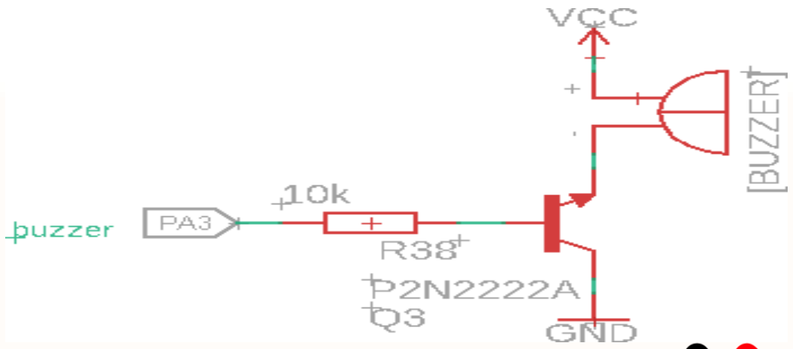
LED1→PORTC .7

LED2→PORTD .3



Buzzer

Buzzer→PORTA .3



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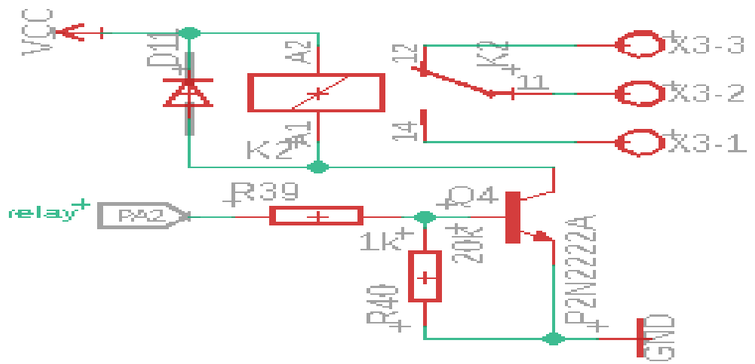
Chapter 2: Modules Details “ Relay & Push Button”

RELAY

Relay_EN→PORTA

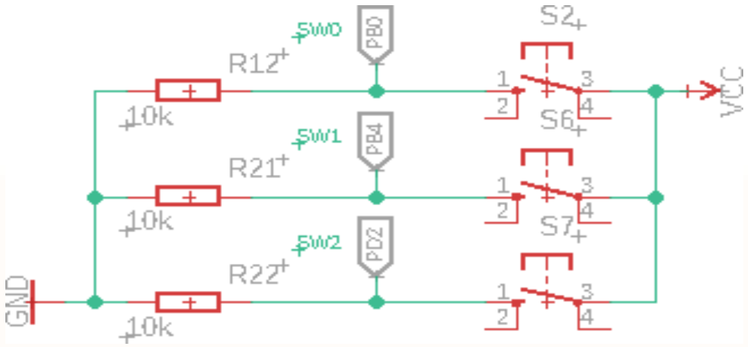


Push button

Button0→PORTD.0

Button1→ PORTD.1

Button2→ PORTD.2



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Chapter 2: Modules Details “ **7 Segment** “

7 segment Display

DATA LINES:

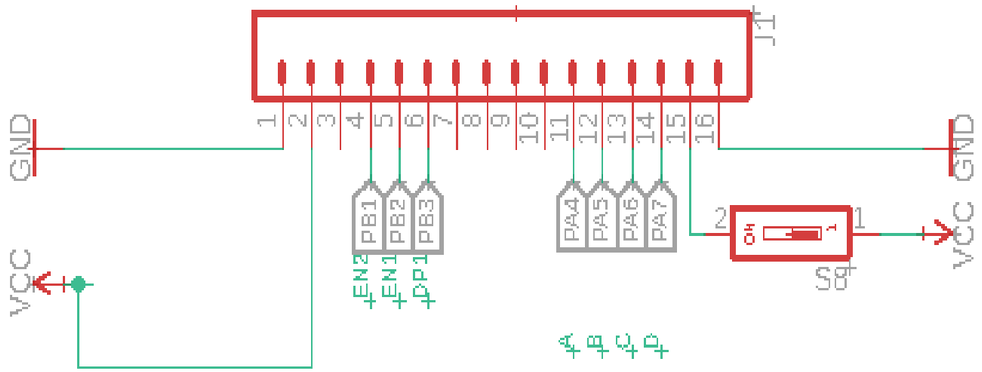
- 7SEG_A→PORTA .4
- 7SEG_B→PORTA .5
- 7SEG_C→PORTA .6
- 7SEG_D→PORTA .7

DECIMAL POINT:

- 7SEG_DP→PORTB .3

ENABLE LINES

- 7SEG_EN1→PORTB .1
- 7SEG_EN2→PORTB .2



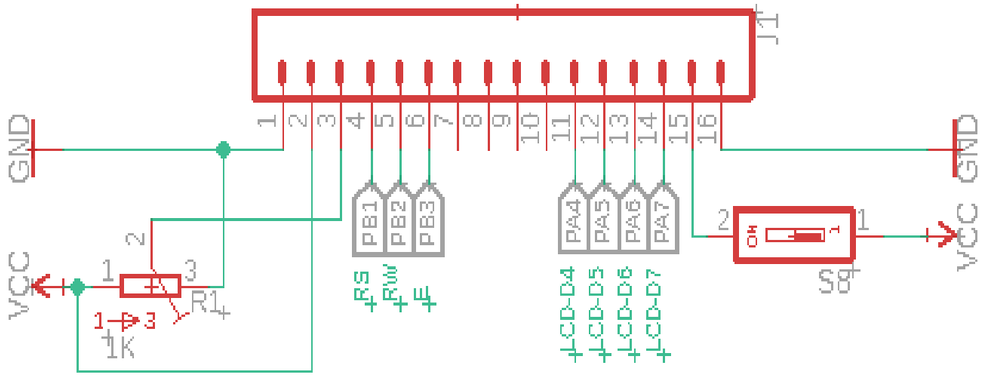
Chapter 2: Modules Details “ **16*2 CHARACTER LCD** “

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

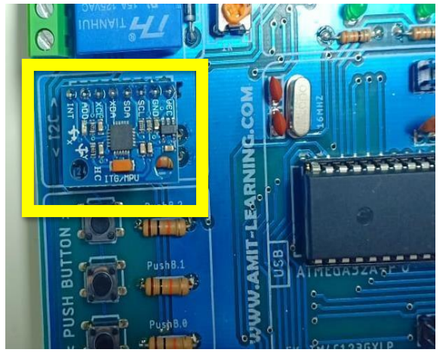


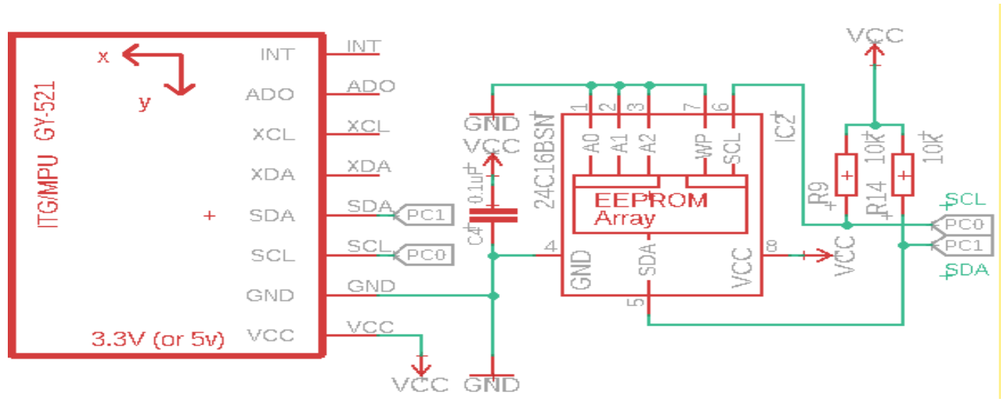
Chapter 2: Modules Details “12C EEPROM Module & Temperature “

12C EEPROM Module

SCL →PORTC.0

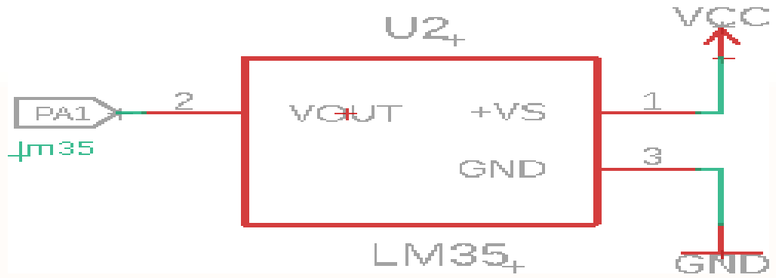
SDA→PORTC.1





ADC – Temperature LM35

ADC 1 →PORTA.1



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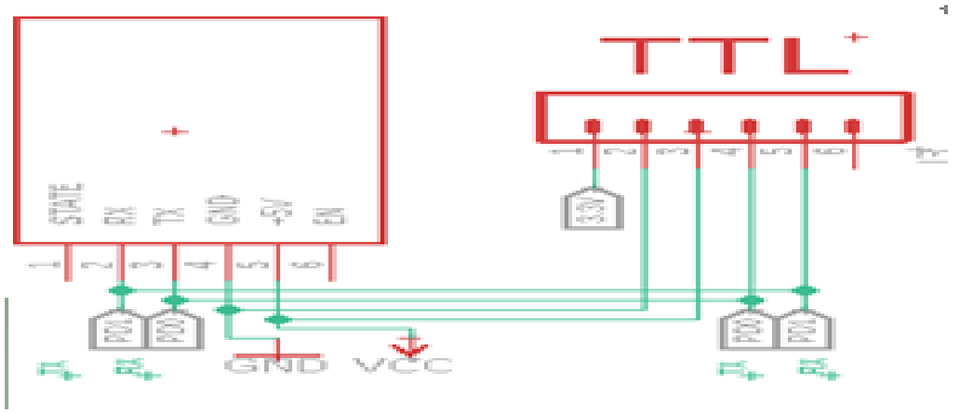
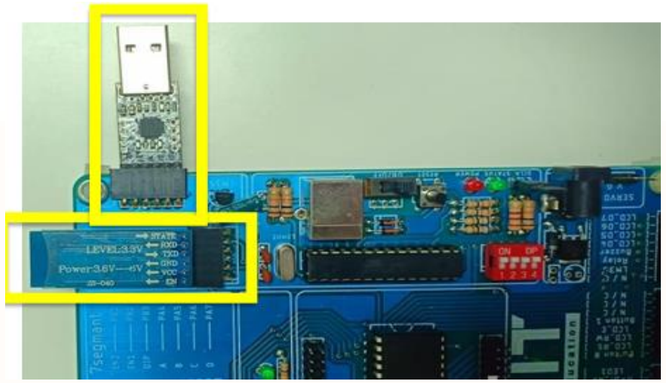
Chapter 2: Modules Details “**Bluetooth and TTL**“

UART – Bluetooth and TTL

Rx → PORTD.0

Tx → PORTD.1





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Chapter 2: Modules Details “**H.Bridge**“

H-Bridge pins

EN1 → PORTD.4

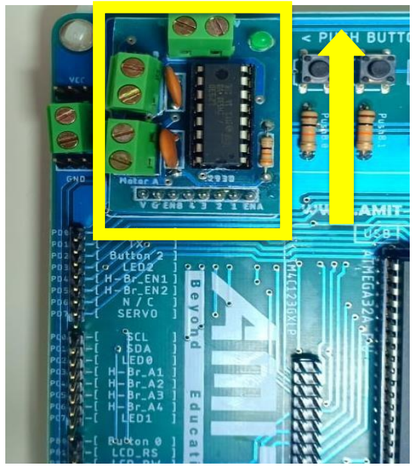
A1 → PORTC.3

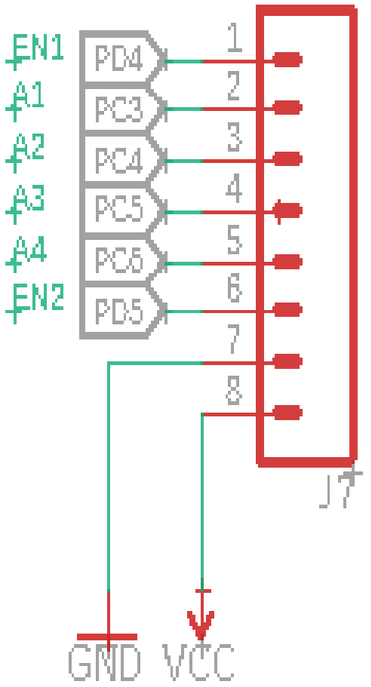
A2 → PORTC.4

A3 → PORTC.5

A4 → PORTC.6

EN2→ PORTD.5

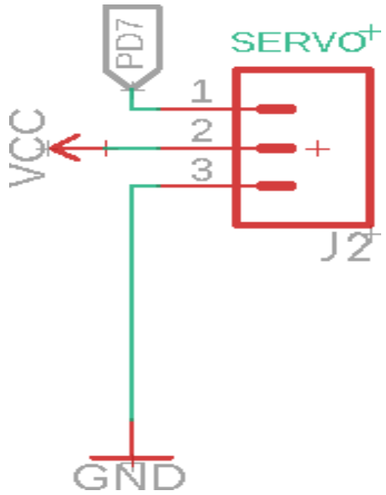




Chapter 2: Modules Details “**Servo Motor**“

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.