

Questions and Tasks for Lecture 2

Question 2-1: In the register summary are four portpins listed for PORTB. Where is the fourth portpin? Why is it not displayed in the schematic?

(Hints: Use the Device's Data Book for the complete schematic and to find out why PB3 is not listed here.)

Questions and Tasks for Lecture 2, Continued

Question 2-2: Here the ATtiny24 is shown and discussed. There is another controller named ATtiny24A. What are the differences between those two types in respect to

- a) Memory sizes (Flash, SRAM, EEPROM),**
- b) Operating voltages,**
- c) Clock frequencies,**
- d) Electrical characteristics.**

(Hint: Use the Data Books for these two types provided by Microchip)

Questions and Tasks for Lecture 2, Continued

Question 2-3: There are LEDs available that can light in two different colors (e.g. red and green), but they only have two pins. What can be done to attach such a LED

a) to two output pins, or

b) to a single output pin

of an AVR at 5 Volt operating voltage?

(Hint for b: The forward voltage of LEDs is approximately 2 Volt. Also consider the voltage drops when current is sourced/sinked!)

Bonus question: What would be necessary to have the LED lighting with 20% intensity in red and 80% intensity in green?