

## ARDUINO 4-DIGIT 0.5" 7 SEGMENT DISPLAY MODULE

This project will help you to easily develop an Arduino compatible project that requires 4 x 7-segment 0.5" displays. The project consists of an Atmega328 microcontroller, 4 x BC847 NPN transistors to drive the common cathode displays. All displays are used in multiplexing configurations. The circuit operates with 5V DC and consumes a few milliamps. Arduino code is provided to test the board. The code is pretty simple, it will read 0 to 5V on analog pin A0 and display 0 to 1000 display, basically 0 to 5V mapping to 0-1000. Users may write their own code to read an analog voltage from sensor or other source and display it on the 4 x 7-segment displays.

The new Atmega328 chip requires a bootloader and Arduino firmware, follow the link below to learn more about programming and bootloader burning.  
<https://www.arduino.cc/en/Tutorial/BuiltInExamples/ArduinoToBreadboard>

### Arduino Compatible Hardware Contains

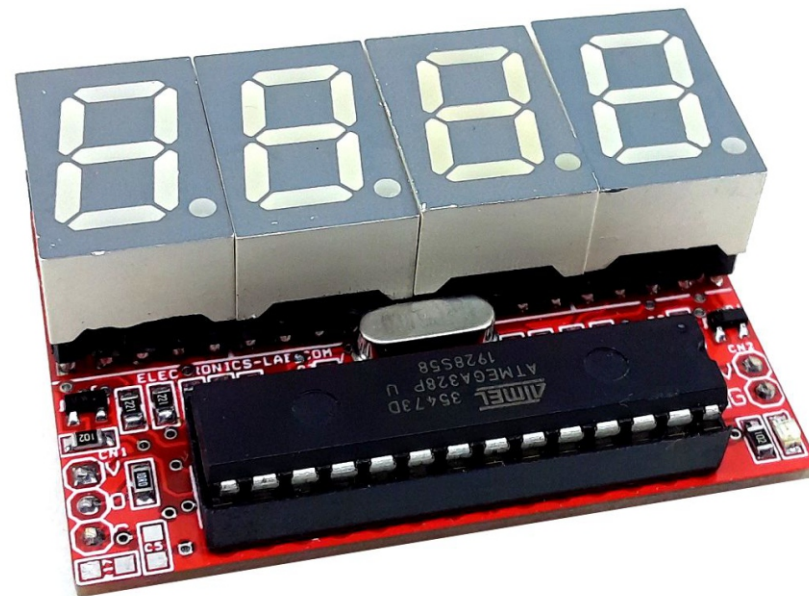
- Atmega328 Micro-controller
- 4 Digit 0.5 Inch 7 Segment Display, Common Cathode
- 4 X BC847 Transistors to drive Display Common Cathode for Multiplexing
- CN1: Arduino Programming and Boot-Loader
- CN1: 3 Pin Connector to Connect LM35 Temperature Sensor or Analog Input
- Current Limiting Resistors for 7 segment display and other components

### Applications

- 4 Digit Counter
- 4 Digit Thermometer
- Voltmeter
- Current Meter
- Sensor Value Display- Analog Voltage Reading
- 4 Digit Score Board
- Gaming

### Features

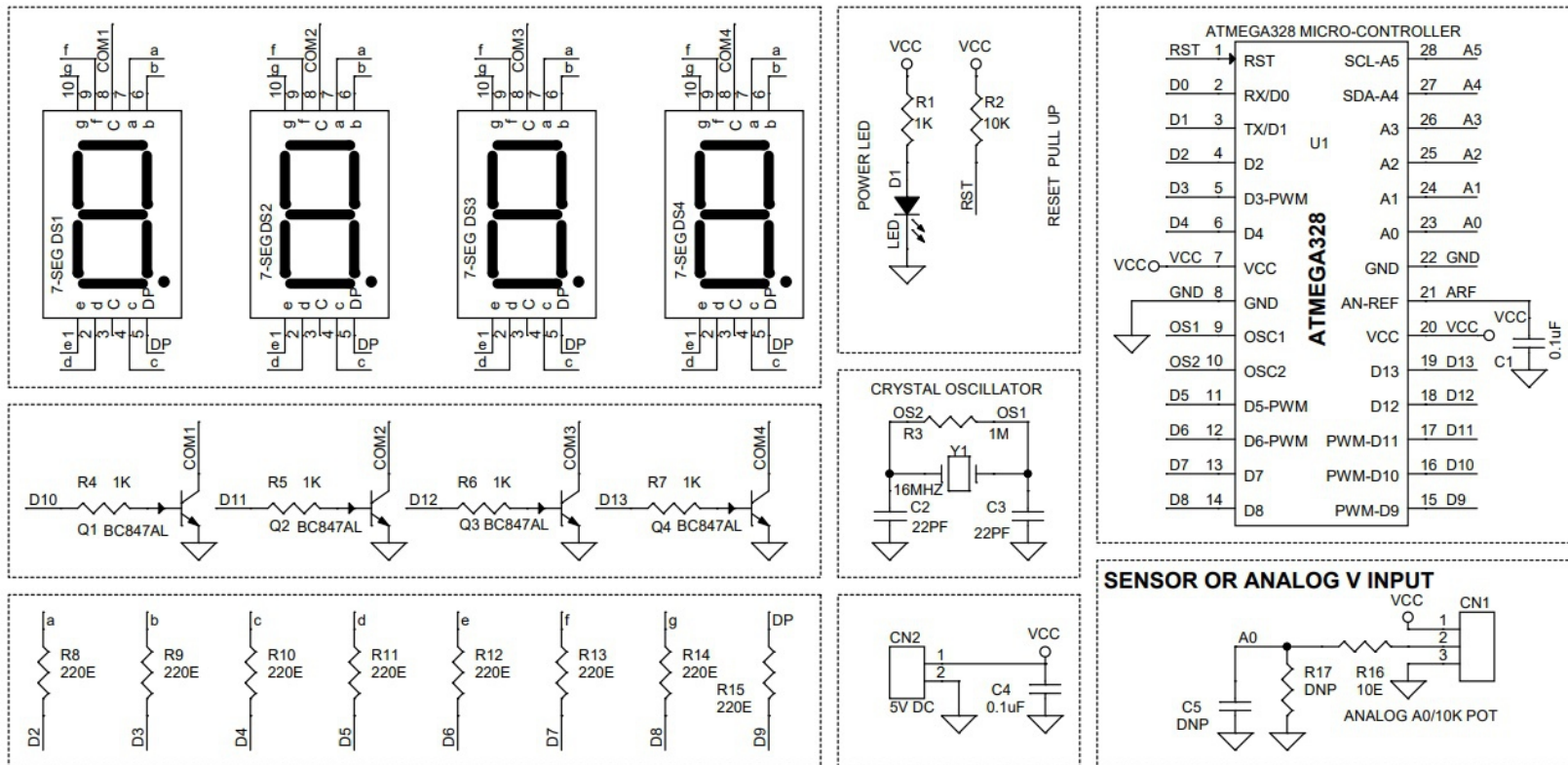
- Supply 5V DC, can be optimized for 3.3V Operations
- LM35 Temperature Sensor or Analog Input A0
- Compact Hardware
- PCB Dimensions 51.28 X 34.93 mm

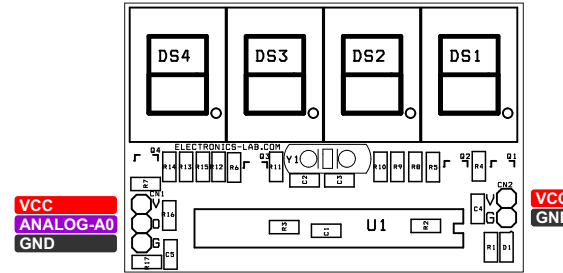




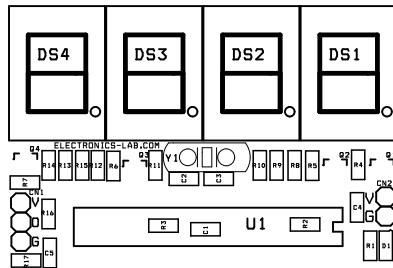
### Arduino Pins

- Digital Pin D10 Display 1 Common Cathode
- Digital Pin D11 Display 2 Common Cathode
- Digital Pin D12 Display 3 Common Cathode
- Digital Pin D13 Display 4 Common Cathode
- Digital Pin D2 Display Segment A
- Digital Pin D3 Display Segment B
- Digital Pin D4 Display Segment C
- Digital Pin D5 Display Segment D
- Digital Pin D6 Display Segment E
- Digital Pin D7 Display Segment F
- Digital Pin D8 Display Segment G
- Digital Pin D9 Display Segment DP
- Analog Pin A0 Analog Input from Sensor, LM35 Temperature Sensor

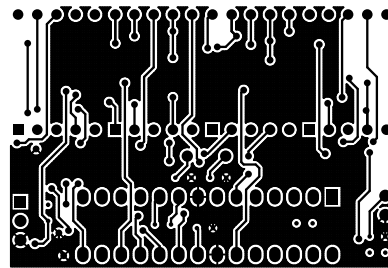




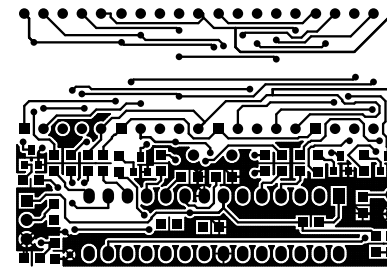
BOM						
NO	QNTY.	REF.	DESC	MANUFACTURER	SUPPLIER	SUPPLIER PART NO
1	1	CN1	3 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5316-ND
2	2	C1,C4	0.1uF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
3	2	C2,C3	22PF/50V SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
4	2	C5,R17	DNP			
5	4	DS1,DS2,DS3,DS4	0.5/0.56INCH 7 SEGMENT DISPLAY COMMON CATHODE	LUMEX OPTO	DIGIKEY	67-1467-ND
6	1	D1	LED SMD SIZE 0805	LITE ON INC	DIGIKEY	160-1427-1-ND
7	4	Q1,Q2,Q3,Q4	BC847AL	NEXPERIA	DIGIKEY	1727-2924-2-ND
8	5	R1,R4,R5,R6,R7	1K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
9	1	R2	10K 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
10	1	R3	1M 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
11	8	R8 To R15	220E 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
12	1	R16	10E 5% SMD SIZE 0805	MURATA/YAGEO	DIGIKEY	
13	1	U1	ATMEGA328 DIP 28	MICROCHIP	DIGIKEY	ATMEGA328-PU-ND
14	1	Y1	16MHZ	ECS INC	DIGIKEY	X1103-ND
15	1	CN2	2 PIN MALE HEADER PITCH 2.54MM	WURTH	DIGIKEY	732-5315-ND
16	1	SCKT	28 PIN DIP IC SOCKET	ON SHORE TECH	DIGIKEY	ED3050-5-ND



SILK SCREEN TOP



BOTTOM LAYER



TOP LAYER

PCB DIMENSIONS 51.28MM X 34.93MM