

**Controlling a 7 - Segment Display Using a PIC  
Microcontroller and 7 – Segment Driver**

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**11/07/2008**

**Application Notes**

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## **Executive Summary:**

One universal requirement for most of the digital devices is an image numeric display. A seven segment display, which is also known as seven segment indicator is an electronic device that are used to display decimal values. These devices are used in digital meters, digital clocks, watches, house hold appliances and other electric parts for displaying numerical information. These are implemented in many circuit applications to perform a desired task. This application note will describe how to design a circuit to display the any of the ten decimal digits from 0 – 9 using a PIC microcontrollers and drivers [1].

## **Keywords:**

Dual digit 7 segment Display, 18f4520 PIC Microcontroller, BCD to 7 – segment driver, switch

## **Objective:**

The purpose of this document is for the reader to get familiar on how to operate dual digit 7 segment display using a microcontroller with the help of driver. This document will help to identify the pins of parts and design will be discussed along with some factors that should be taken into account.

## **Introduction:**

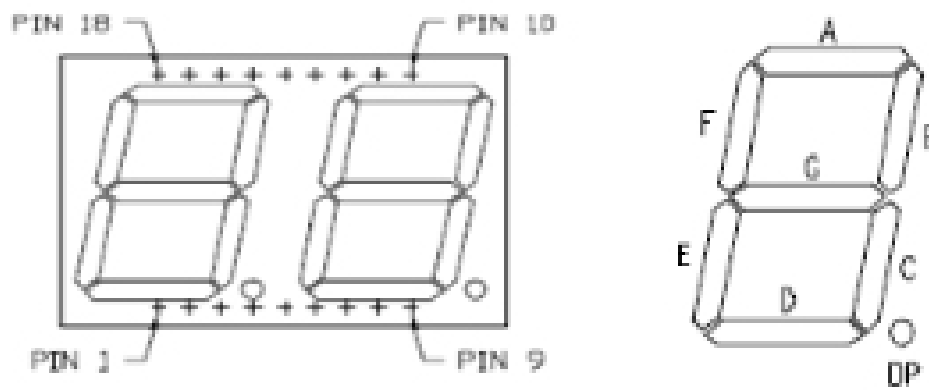
An 18f4520 PIC microcontroller is used to display decimal values on the 7 segment display. Using the data pins on the PIC we can send the information to driver data pins to display the decimal values as an output.

## **Hardware:**

Before I explain the design process, I want to discuss about the parts that I will be using and their pin structure.

In the present market there are different parts available with same functionality, but the basic idea of functionality is same for all the parts. The parts you might be using may have different pin structure, so it would be good idea to check the datasheet to identify the right pins before you start with your designing process. In this particular example, I used a LDD-C814RI dual digit 7 segment display. Following picture shows detailed information about the pins.

**a) Dual Digit 7 Segment Display [2]**



- PIN 16 – DIGIT 1 – A
- PIN 15 – DIGIT 1 – B
- PIN 3 – DIGIT 1 – C
- PIN 2 – DIGIT 1 – D
- PIN 1 – DIGIT 1 – E
- PIN 18 – DIGIT 1 – F
- PIN 17 – DIGIT 1 – G
- PIN 4 – DIGIT 1 – 1st Decimal point
- PIN 14 – DIGIT 1 – Ground

- PIN 11 – DIGIT 2 – A
- PIN 10 – DIGIT 2 – B
- PIN 8 – DIGIT 2 – C
- PIN 6 – DIGIT 2 – D
- PIN 5 – DIGIT 2 – E
- PIN 12 – DIGIT 2 – F
- PIN 7 – DIGIT 2 – G
- PIN 9 – DIGIT 2 – 2<sup>nd</sup> Decimal point
- PIN 13 – DIGIT 2 – Ground

Internal structure (wiring) of the above mentioned dual 7 segment display. In other words functional diagram

