

## Android controlled scrolling LED message display

The project aims at designing a LED based scrolling message display controlled from an Android mobile phone. The proposed system makes use of Bluetooth technology to communicate from Android phone to LED display board.

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Android boasts a healthy array of connectivity options, including Wi-Fi, Bluetooth, and wireless data over a cellular connection (for example, GPRS, EDGE (Enhanced Data rates for GSM Evolution), and 3G). Android provides access to a wide range of useful libraries and tools that can be used to build rich applications. In addition, Android includes a full set of tools that have been built from the ground up alongside the platform providing developers with high productivity and deep insight into their applications.

The main controlling device of the whole system is a Microcontroller. Bluetooth modem and buzzer are interfaced to Microcontroller. The message sent through predefined application from user Android mobile phone is received by the Bluetooth modem. Bluetooth modem feeds this information to microcontroller which process it and displays it on the LED display. Also, the Microcontroller horns a buzzer for every new message. To perform this intelligent task, Microcontroller is loaded with an intelligent program written using embedded 'C' language.

### The main objectives of the project are:

1. Development of Android based LED display.
2. Usage of Bluetooth technology.
3. Scrolling the message.
4. Alerting regarding new message through buzzer.

**The project provides learning's on the following advancements:**

1. Wireless Bluetooth technology.
2. Bluetooth modem interfacing with Microcontroller.
3. Embedded C programming.
4. PCB designing.

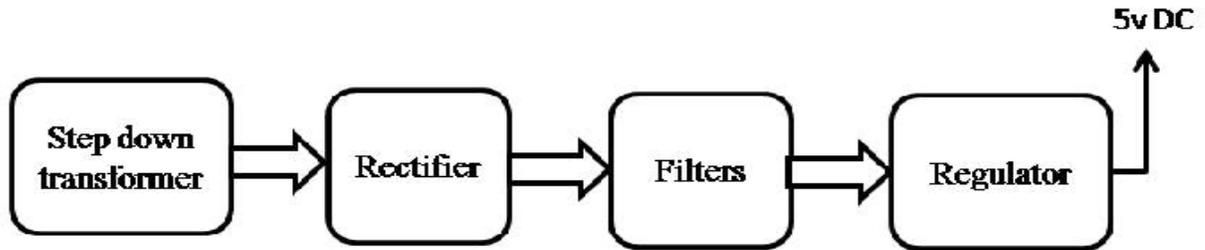
**The major building blocks of this project are:**

1. Regulated Power Supply.
2. Microcontroller.
3. Scrolling LED display with driver.
4. LED indicators.
5. Reset.
6. Buzzer with driver.
7. Bluetooth modem.
8. Crystal oscillator.

**Software's used:**

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

**Regulated Power Supply:**



**Block diagram:**

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