

Sooxma's Android phone temperature data logger over Bluetooth

The project aims in designing a system which makes logging of temperature into Android mobile phone possible. The logging of temperature is done wirelessly through Bluetooth feature present in Android phone. Here in the project the temperature data can be continuously monitored using the Android mobile phone.

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.

Bluetooth is an open standard specification for a radio frequency (RF)-based, short-range connectivity technology that promises to change the face of computing and wireless communication. It is designed to be an inexpensive, wireless networking system for all classes of portable devices, such as laptops, PDAs (personal digital assistants), and mobile phones. It also will enable wireless connections for desktop computers, making connections between monitors, printers, keyboards, and the CPU cable-free.

The controlling device of the whole system is a Microcontroller. Bluetooth module, Temperature sensor and LCD display are interfaced to the Microcontroller. Temperature data is fed as input through temperature sensor to the Microcontroller. The Microcontroller processes this data and transmits over Bluetooth, which will be received and logged to Android phone. Also, Microcontroller displays this information on the LCD display. In achieving the task the controller is loaded with a program written using Embedded 'C' language.

The main objectives of the project are:

1. Logging of temperature wirelessly into mobile phone.
2. Usage of Android touchscreen smart phone in performing the task.
3. Bluetooth wireless transmission.
4. Display of temperature on LCD display.

The project provides exposure to following technologies:

1. Google's Android open source technology.
2. Bluetooth wireless technology.
3. Temperature sensor characteristics.
4. Interfacing temperature sensor to Microcontroller.
5. Interfacing Bluetooth module to Microcontroller.
6. Embedded C programming.
7. PCB designing.

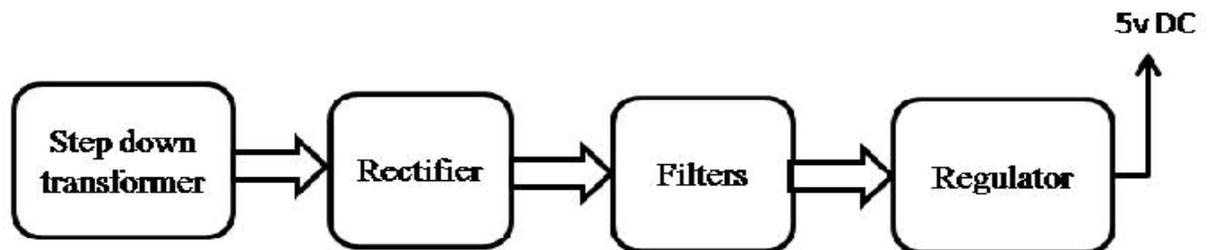
The major building blocks of the project are:

1. Regulated Power Supply.
2. Microcontroller.
3. Android smart phone.
4. Bluetooth module.
5. Temperature sensor.
6. LCD display with driver.
7. Crystal oscillator.
8. Reset.
9. LED indicators.

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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