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APPLICATION OF MICROCONTROLLER IN INFORMATION SYSTEM

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ABSTRACT:
The present paper describes how the microcontroller works in the information system. In last 40 years a silent but rapid revolution as far as electronics computing communication and control are concerned. Proof of this statement would be available in mobile handset, MP 3 player, automatic washing machine, microwave oven, portable digital blood pressure measurement and many more medical instruments, billing system in STD phone etc. This list is enormous and growing exponteally. All these are possible because of usage of Microcontroller and having a PC which involves from microprocessor. Temperature is certainly among the most commonly measured parameters in industry, science, and academia. Recently, the growth of wireless instrumentation technology, along with some clever innovations, has provided new ways to apply temperature measurement sensors combined with personal computers to collect, tabulate, and analyze the data obtained.

Keywords – Microcontroller, Temperature controller, CAN, flags, Buffer

INTRODUCTION:-

Processor are16-bit and 32-bit fixed- and floating-point processors include ARM based processors , ARM 9 family and Cortex-A8 processor-based microprocessors, video processors,[1] OMAP™ mobile applications processors, digital signal processors (DSP) and microcontrollers (MCUs).Microcontrollers have only been with us for a few decades but their impact (direct or indirect) on our lives is profound [2].Usually these are supposed to be just data processors performing exhaustive numeric operations. But their presence is unnoticed at most of the places like supermarkets, Weighing Scales, etc.

What inside them makes these machines smart? The answer is microcontroller. Creating applications for the microcontrollers is different than any other development job in electronics and computing [3]. Before selecting a particular device for an application, it is important to understand what the different options and features are and what they can mean with regard to developing the application. It is to introduce the concept of microcontrollers, how it differs from microprocessors and different type of commercial microcontrollers available as well as their applications.

DESCRIPTION: Fig(1.1) is a Block diagram of wireless temperature monitoring

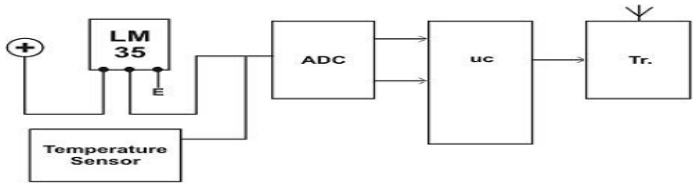

Fig (1.1) **:-** Block diagram of wireless temperature monitoring

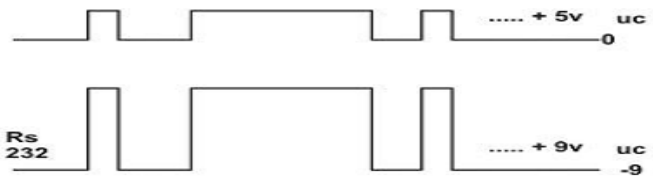

Fig (1.2) **:-** Clock cycle

This block diagram contains the wireless transmitter section. This section has microcontroller as a transmitter module, temperature sensor LM 35, ADC 0804.Each and every module in the transmitter section will be controlled by the Microcontroller. The Temperature sensor LM35 senses the temperature as analog signal, by the use of ADC 0804 these analog signals will be converted to digital and it will be transfer to the microcontroller. Microcontroller processes that digital signal and then transmits the digital signal through the Wireless Transmitter module as an analog signal [6].

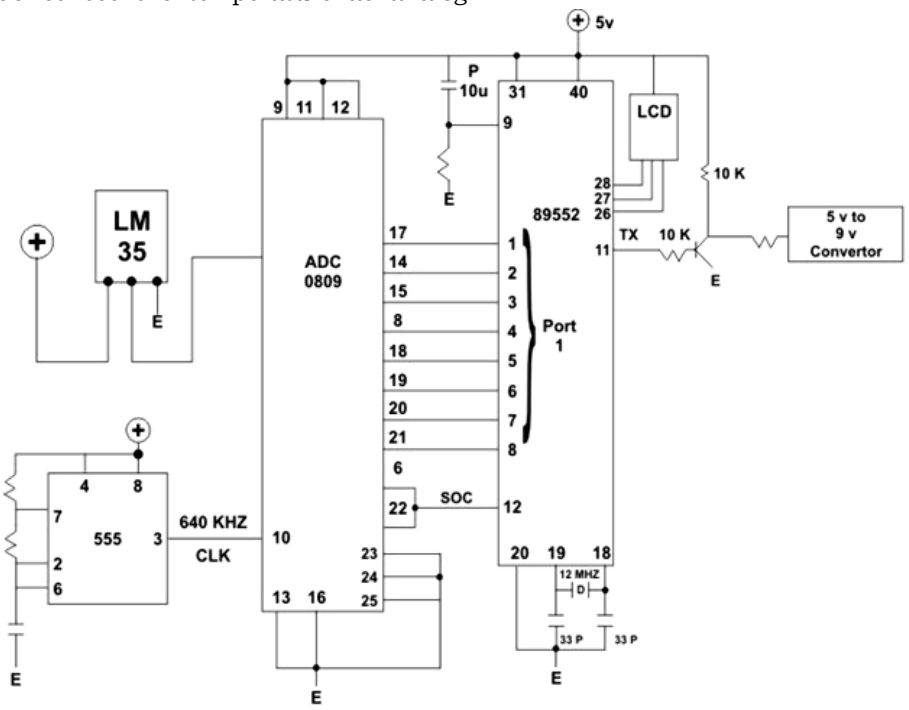

Fig (2.1) Transmitter Circuit using Microcontroller.

TRANSMITTER CIRCUIT:

The transmitter module (TX433N) was interfaced to the microcontroller through the encoder IC HT12E.[3] It was used to modulate the digital data coming from the encoder IC into RF radio frequency signal by ASK modulation technique and transmitted via RF out antenna pin1, When a command was send from the µC, the encoder encodes the address and data bits upon getting transmission enable signal from the µC and send serially to the transmitter module Din pin2, the transmitter module converted the digital signal into RF signal and transmitted via wireless media. The wireless transmitter module can be used to transmit data at up to 3 KHz from any standard CMOS/TTL source. The module had been made very simple to operate and offers low current consumption (typ. 11mA). Data can be supplied directly from a microprocessor or encoding device, thus keeping the component count down and ensuring a low hardware cost.

TX1-433.92MHz was used in that module to transmit the data from the protected area. When the data had been received from the controller it then transmits the data at the frequency of 433.92MHz. The module was made very simple to operate, requiring only two connections. The module was also very efficient, used only 2.3mA which means that it may be driven directly from an encoder I/C or microcontroller. The output impedance had been designed to give optimum performance when coupled with a small antenna such as a tuned loop or short whip. The modules were compatible with the AM Receiver modules.

CONCLUSION:

In this system temperature sensor was used to detect a room temperature at a particular distance and transmit it through a wireless medium to a remote room. The output signal from the temperature sensor was digitized with ADC and fed to an embedded microcontroller 8051. The

microcontroller was used to process the digital signal and the RF Transmitter module transmitted the data through a wireless medium at a frequency range of 433.92 MHz to a Receiver. A wireless temperature control based on embedded microcontroller had been demonstrated successfully. The performance of the wireless system was evaluated and compared with that of wired based temperature control. Its major advantage is that it does not require any physical wire to retrieve information from the sensor. This thesis can be extended further by adding more sensors and repeaters to make it possible to read temperatures from different locations. This is required in certain applications where temperatures from more rooms need to be monitored.

REFERENCES:

A. A. Mass, 1993 Microwave Mixers, Artech House, Inc., pp. 21–33

Ahsan Aziz. 2004 Channel estimation for a wcdma rake receiver. Application Note AN 2253, Free scale Semiconduntor, November

Balster E. J., Scarpino, F. A., and W. W SmarI, 2000 "Wavelet Transform for Real- Time Image Compression Using FPGAs," 12th IASTED International Conference on Parallel and Distributed Computing and Systems, Las Vegas, Nevada,

D. D. Siljak, 1969 Nonlinear systems, Wiley, New York, pp. 48–53

Elliot, C. T. Jordan, N. T. Hall, R. S. Philips, T.J.jones, C. L. and Best, 2008 pp. 54–77, IR sensor systems used for security level.

J. Heiskala and J. Terry. OFDM wireless LANs 2002: "A theo redical and practical guide." Sams Publishing,

M. J. Hedau, M. P. Dhore, P. B. Dahikar, 2011 "Application of Wireless Signal Simulation Via Cell-Phone "International Conference on circuit system and simulation, , pp. 92 – 95, Vol.7IACSIT Press, Singapore

M. J. Hedau, P. B. Dahikar, 2010 "Vector Architectures : The Multitasking , pp.55 – 62, Hislopia Journal 3 (1), ISSN-0976-2124

M. J. Hedau, M.P.Dhore, P. B. Dahikar, 2012 "Application of microcontroller in Technical communication , pp.191– 194, International journal of Emerging technology And application in engineering, technology and science. Vol5

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