iJRASET
International Journal For Research in Applied Science and Engineering Technology

# INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

**Volume:** 6 **Issue:** X **Month of publication:** October 2018

**DOI:**

www.ijraset.com

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
*ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 6.887*
*Volume 6 Issue X, Oct 2018- Available at www.ijraset.com*

# Development of Data Logger System

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***Abstract: This paper aims to develop a system which can record data and send this data to receiver through Wi-Fi. Through this device we can measure any physical or environmental parameters like temperature, pressure, soil moisture, rainfall etc, and store the data for the period of time. In the old version, the data logger is physically connected to the computer. The system proposed in this paper is an advanced solution for monitoring the physical or environmental parameters at a particular place and display the information anywhere in the world. The technology behind this is Internet of Things (IoT). The system deals with monitoring and recording physical or environmental parameters and sends the information to the receiver. The data collected from this system can be accessible in the internet from anywhere in the world.***
***Keywords: Data Logger, ESP32, Wi-Fi, USB Host, IOT.***

## I. INTRODUCTION

In today's world there are many systems whose data is needed to be continuously collected. This data should be in form of log by which time, occurrence and other specifications can be collected at one place. All of this information is collected manually on field which consumes both time and workforce.

In some situation it is not possible to retrieve this data because of extreme environment or remote location. Our project is to create a system which will be an IOT based system, so it will send all the collected data at the addressed email or network from where it can be collected at one place. This system also has a USB module to increase storage or in case of emergency retrieval. The system has its own interface which provides the user a smooth experience.

## II. LITERATURE SURVEY

1) *Title:* Design and implementation of data storage system using USB flash drive in a microcontroller-based data logger.
a) *Author:* Oka Mahendra | Djohar Syamsi | Ade Ramdan | Marcella astrid
b) *Abstract:* USB Flash Drives are commonly used as a storage medium, the use of them for a remote microcontroller base data logger is still rare. The aim of this paper is to design and implement of storage system using a USB Flash Dive to increase the storage capacity of data logger. This data logger is made by using Master-Slave configuration. A master board handles the entire processes which includes data acquisition, storage, and communication. The data storage system board acts as a slave which uses ALFAT OEM board and a USB Flash Drive.
2) *Title:* A Smart Data Logger for Enhancing Data Communication in Wi-Fi Based Mobile System.
a) *Author:* Abu Asaduzzaman |Kishore K. Chidella | Fadi N. Sibai
b) *Abstract:* In a WSN system there will be chances of loss of data due to communication error among receivers and data processors. In this paper a smart data logger is introduced to enhanced the accuracy of data logging. The proposed system also checks if any receiver is not functioning properly by using monitoring mechanism. If a receiver is detected inactive, the corresponding data will be stored in the newly proposed data logger. The data logger proposed in this paper is implemented by using advanced RISC machines processor and Wi-Fi technology. In addition, the proposed system is flexible, power saving, enhance security, and reduce cost.
3) *Title:* Smart Wireless Temperature Data Logger Using IEEE 802.15.4/ZigBee Protocol.
a) *Author:* Vivek Kumar Sehgal | Nitin | Durg Singh Chauhan | Rohit Sharma
b) *Abstract:* This paper proposed a portable wireless data acquisition system for temperature measurement in real time process dynamics. This paper proposes an 8-bit embedded platform for a sensor network interface using the 802.15.4, ZigBee protocol, which is specially designed for the sensor network. This wireless data logger senses and monitors the variations in the local temperature thereby transmitting the data within the range to an assigned embedded processor-based server. Monitored temperature is displayed on an LCD on assigned server and simultaneously on a computer.

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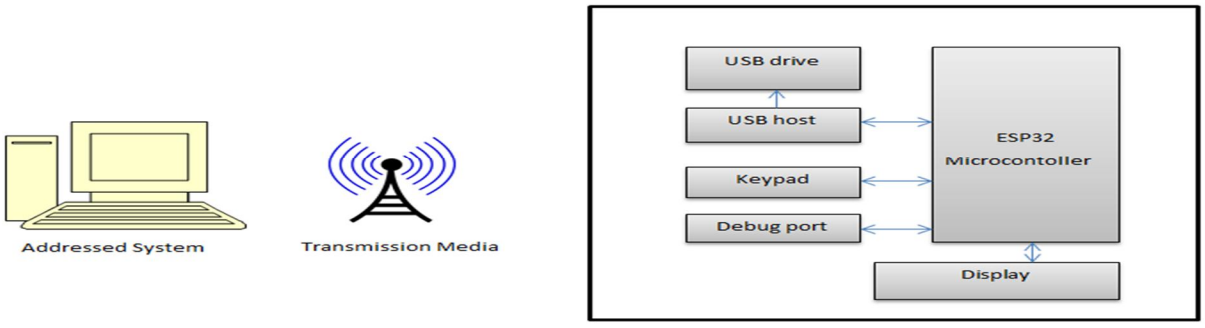
## III. METHODOLOGY

The project is to create a system which collects the data from field and stores it in the form of log. This data is stored on USB drive for more storage and quick access, we install this system on any Hazardous working fields (coal mines, Natural gas fields, extreme weather condition) to reinforce the safety. The collected log is sent to addressed email or other networks where it would be collected easily without physical interactions. To make this possible we use esp32 microcontroller which has built in Wi-Fi for communication purposes.




Block Diagram

### *A. Proposed work*

Proposed system has been in different aspects of development in previous various projects. Collection of data related to the temperature has been collected on large scale and has proven excellent results. The system mentioned in this paper has different approach for retrieval of data, which is by addressed email and the USB drive which is on the system itself, which ensures the safety of data collected just in case of wireless failure. This USB drive also increases the storage and easy detachment which ensures quick access to the data and better functioning.

*1) Advantages*

*a)* Once setup it continues with the work of data logging automatically without human intervention.
*b)* It can be used in remote and hazardous areas where manual retrieval is not always possible.
*c)* Data collected is accurate as there is no possibility of any sort of human errors
*d)* Data collected by the data logger helps to understand scientific aspects with help of proper plots or graph
*e)* There is no loss of data as it has secondary storage (USB) which also provide better storage capacity.

*2) Disadvantages*

*a)* Hardware modifications are required for data collection of different system.
*b)* It cannot be used for small tasks because compared cost is more.

## IV. CONCLUSION

The proposed system will be able to record data and store it directly in pen drive as storage unit and send the same in precise log format to addressed receiver. Stored data is transferred wirelessly or by wired media via debug port. No data loss is done while wireless failure hence proving its reliability also makes easy to collect data in extreme conditions without any issues.

## REFERENCES

[1] Design and Implementation of data storage system using USB Flash drive in microcontroller based data logger. Oka Mahendra ; Djohar Syamsi ; Ade Ramdan ; Marcella Astri
[2] A Smart Data Logger for Enhancing Data Communication in Wi-Fi Based Mobile System. Abu Asaduzzaman |Kishore K. Chidella | Fadi N. Siba
[3] Smart Wireless Temperature Data Logger Using IEEE 802.15.4/ZigBee Protocol. Vivek Kumar Sehgal | Nitin | Durg Singh Chauhan | Rohit Sharma
[4] Wi-Fi based wireless data logger.Vikram Kamadal | Manjula N Harihar
[5] IOT Based Data Logger System for weather monitoring using Wireless Sensor Networks. Kondamudi Siva Sai Ram | A.N.P.S.Gupta
[6] Design of Data Logger with Multiple SD Cards.N.N.Mahzan | S.Z.Mohammad Noor | M.Z.Mohd Rodzi
[7] Data logger management software design for maintenance and utility in remote Devi Munandar | Djohar Syamsi
[8] Design and implementation of data logger using lossless data compression method for Internet of Things Febrian Hadiatna | Hilwadi Hindersah | Desta Yolanda | Muhammad Agus Triawan

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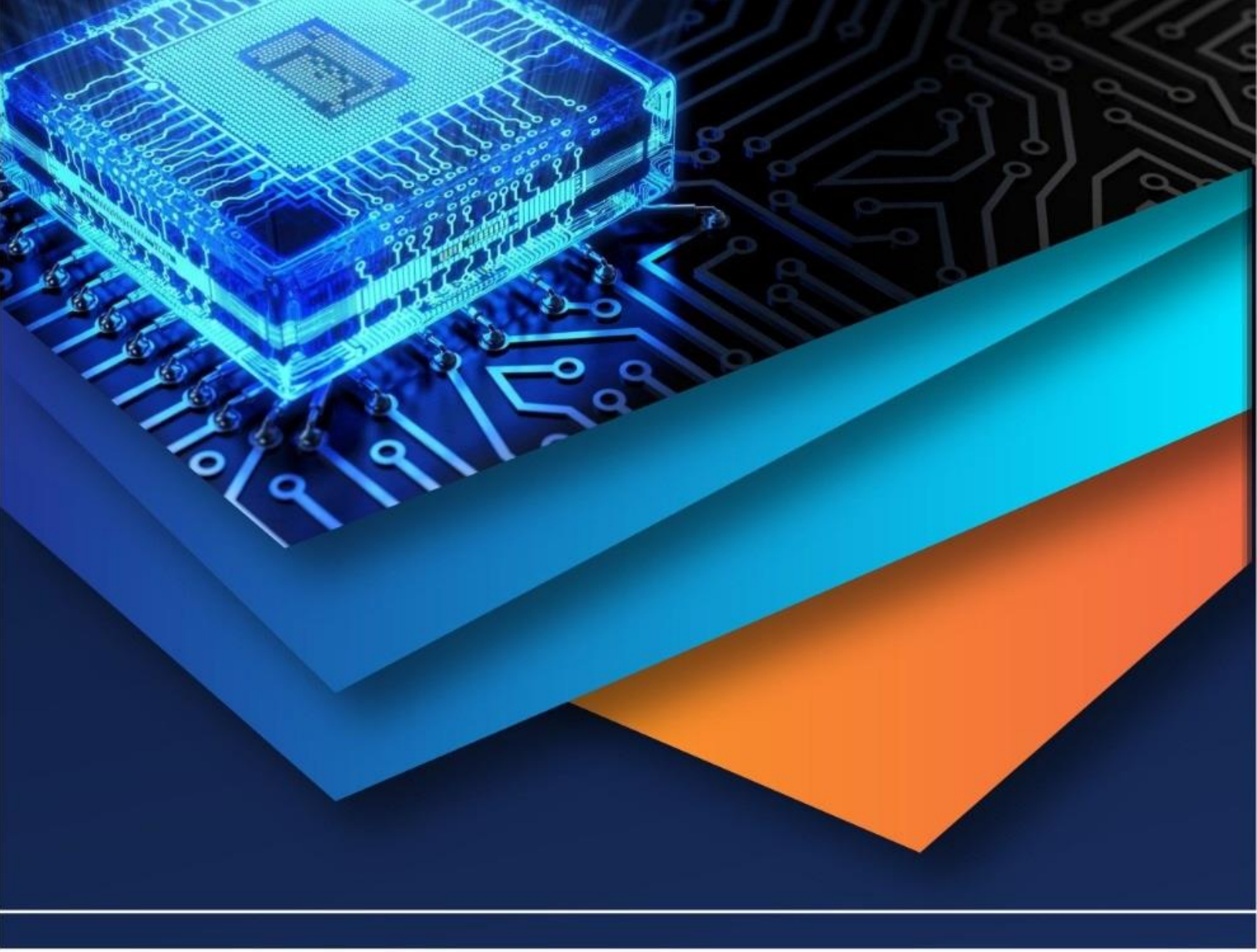

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