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Identification Using WiFi Signal Transceiver in ID card

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ABSTRACT: This paper is about identification of an individual using a wifi ID system. This can be used to replace the currently used RFID system. In this paper we have used 8266 microcontroller for WIFI transmission and reception purpose. It's a hustle free and quick process in which the identification is done just with the presence of the individual with his id card.

KEYWORDS: ESP 8266, FTDA converter, ARDUINO.

I. INTRODUCTON

A wifi signal is almost found in every organization, this can be used not only for providing data but also for having a check of who is present within the provided wifi range at the given time. The currently used RFID is a comparatively short ranged and highly time consuming when compared to a wifi identification.

II. SYSTEM DESCRIPTION

The use of 8266 makes the work simple by handling all the basic TCP/IP work which is inbuilt on the chip. This is planned as an id card which can be worn as a regular id card which is used on a daily purpose. The size and weight of the card would be no higher than normal id card. The ID number is embedded in the controller so as to provide the id on receiving a wifi signal. The system is simple and efficiently designed with ESP 8266 and a battery source for the same. The 8266 has an inbuilt antenna for wifi transmission and reception purpose. The normal wifi signal is used for identifying the id within the campus (same wifi signal can be used to provide data in same campus). The normal wifi signal of 5 GHz frequency is used for input and output operation. The use of 8266 simplifies the design by supporting all the wifi properties. The size and properties of the 8266 is compact that it will suite well in the id card without any complex designing.



Fig 2. Picture of ESP8266

III. BLOCK DAGRAM

The above diagram shows the basic blocks of the system used. The block of id shows the embedded 8266 within it which helps for wifi purpose. The proposed system is quicker and simpler than currently used system. The output is obtained from the cmd window in the system which is connected with the wifi modem from which the wifi signal is produced for identification.

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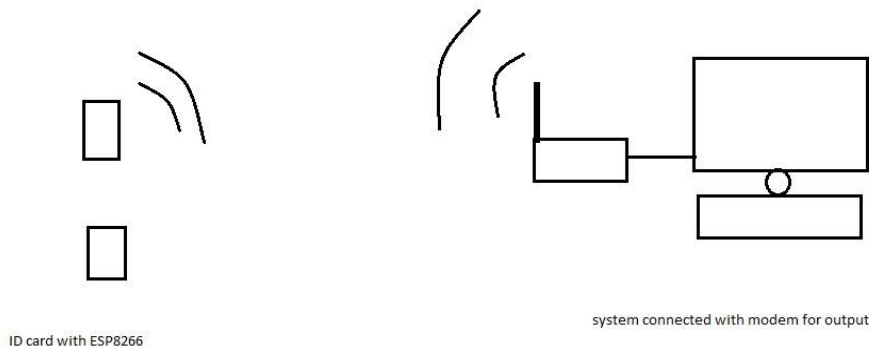


Fig 3. Block diagram of the system

IV. HARDWARE REQUIREMENT

The hardware components required for this is simple and less. This requires a ESP 8266 microcontroller and a battery source for 8266 which will be present in the ID card. For wifi signal a normal modem is used which produces a 5 GHz signal, this can also be the same modem which is present to provide wifi signal. For secured detection, the modem used for identification should be limited for this purpose alone and should be guarded with a proper pass code which will be provided to the ID card through proper embedding software.

V. SOFTWARE DESCRIPTION

The software used here s Arduino IDE which is used to dump the program on the ESP8266. The program dumped is embedded C. The program specifies the unique name of the person to whom the ID belongs. The program also specifies to which wifi network the id must be connected and the respective password of the same wifi network. Thus the id is supplied with the information of the student and the wifi signal networks for proper functioning.

VI. RESULT ANALYSIS

On providing the wifi signal the id card gets connected to the wifi system which is verified by checking the number of connected devices to the modem. The ID automatically connects to the wifi system since the name of the network and the password of the system is provided through the program dumped on the chip.

REFERENCES

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