



Smart Dish Positioning System by Using Wi-Fi Module

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Abstract: *This project is designed to develop a dish positioning system which can operate by using cellphone or personal computer via Wi-Fi. Nowadays most of the people have dish connection at home and this connection requires an antenna to function. The main function or point of using a dish to receive signal from satellite and other broadcasting sources. In order to position of dish having the exact angle from satellite to receiving a maximum signal of particular frequency, it need to be adjusted manually and it is very difficult to handling dish. In order to overcome this difficulty to adjusting manually the dish position, this system help in adjusting the position of the dish through a simple and advance technology that is Wi-Fi technology.*

Keywords: *-Wi-Fi, dish, signal, satellite, cellphone, AVR microcontroller, Wi-Fi module*

I. Introduction:

This project is designed to develop a dish positioning system which can operate by using cellphone or conventional Wi-Fi system. This dish positioning system consist of two servo motor for operating the dish angle in horizontal and vertical position. This servo motor used to change dish position in accurate angle and also the accurate degree for receiving more signal for satellite. In this system Wi-Fi module is used and this Wi-Fi enable device act as a transmitter who'sreceived data by Wi-Fi ESP8266 module which is interface to a microcontroller of an AVR controller. This Wi-Fi module send coded data to the receiver to the output is then send to the microcontroller. The microcontroller sends control signal to the server motor. This code is followed by Wi-Fi enable device is a standard C code in microcontroller. This C code is used in programme to recognize the input code from the Wi-Fi module from the controller to develop appropriate the output signal from the server motor to operate and changing the dish position in accurate angle.

II. System development:

This system is designed to develop dish positioning system which can operate by advanced technology that using conventional Wi-Fi system.

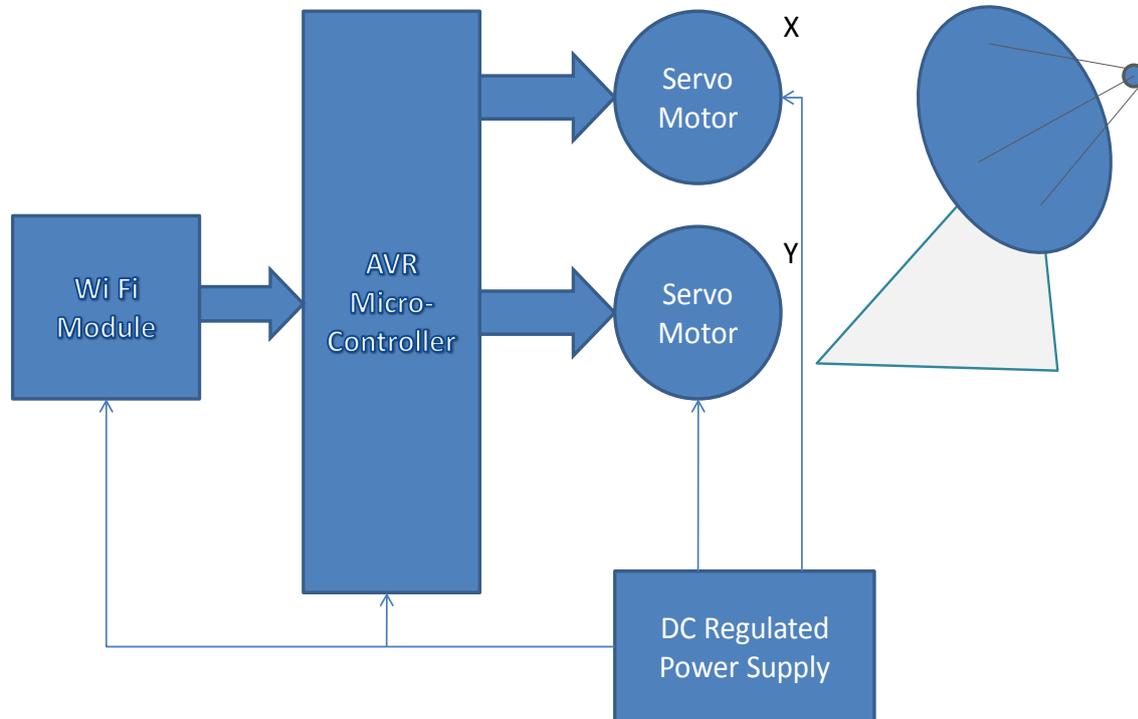


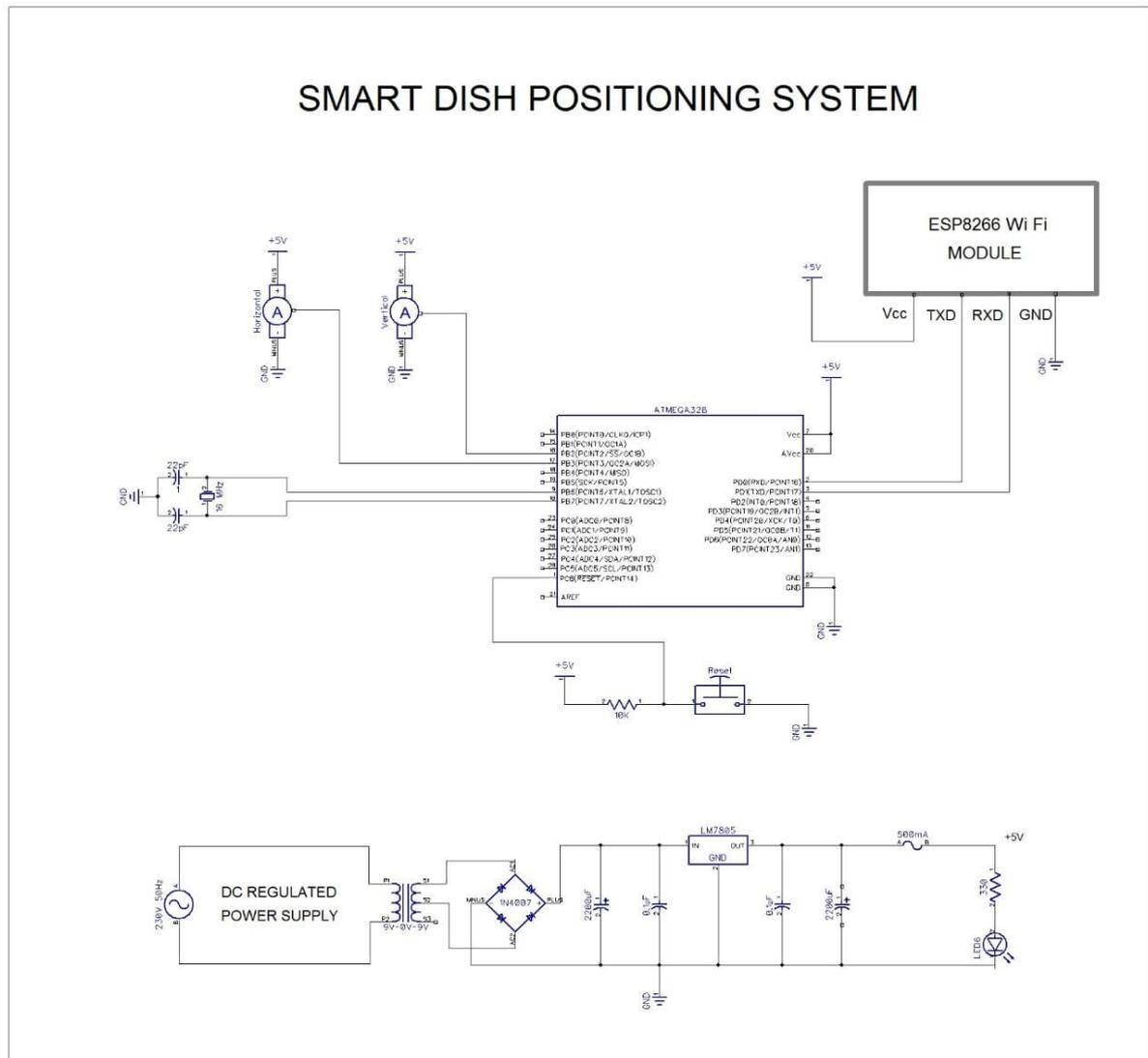
Diagram: - Smart dish positioning control system

Wifi module: -Wi-Fi module - The Wi-Fi module (ESP 8266) is the self contained SOC with integrated IP protocol stack that can gives any microcontroller access to your Wi-Fi network.

AVR microcontroller - AVR is a family of microcontroller. AVR microcontroller developed since 1996 by Atmel. These are modified Harvard architecture 8-bit RISC single chip microcontroller. AVR was the first microcontroller families to use on-chip flash memory for programme storage.

Servo motor - Servo motor is a rotor actuator or linear actuator that allow for control linear or angular position. This servo motor used to change the dish position in the above project.

Regulated power supply - A regulated power supply convert unregulated AC to a constant DC. A regulated power supply is used to ensure that the output remain constant even if the input changes



In the above system, DC power supply is given to all the equipment used in this system. The power supply performance of each and every electronic system depend on the power supply that energized the system.

In this system two sever motor is used to operate the dish position in horizontal and vertical angle and change dish angle for receiving maximum signal from satellite and other broadcasting sources. In the system Wi-Fi enabled device is used. It acts as a transmitter whose data is received by Wi-Fi ESP8266 module which interface the microcontroller of AVR family. The Wi-Fi module send coded data to the receiver which is send to the microcontroller. This microcontroller sends control signal to the server motor for changing the dish position. This code is followed by Wi-Fi enable device is a standard C code. This code is used in programme to recognized the input code from Wi-Fi module for controller to develop appropriate output signal for given to the server motor for receive a maximum signal of particular frequency from satellite or other broadcasting sourced. The dish is operating manually is very difficult to change dish position. For the dish position system advanced and new technology to change dish position.



III. Application:

1. This dish position is used in DTH where the signal are received directly from satellite.
2. The dish position control system is used on the top of the car where the media is accessed signal.
3. The position of the dish is used in GPS tracking system.
4. Military and aerospace embedded software application.

IV. Conclusion:

In this system, satellite positioning system has been developed. A satellite dish control system is critical to its tracking capabilities. It will be reducing the difficulty in adjusting the position of dish manually.

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