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# PHOTOGRAPHY WITH NANODRONE

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***Abstract*—Developments and modifications play a vital role in the technological advancements. Since last few years the aerial vehicles or drones have been a trending topic considering photography. Because of its wide range of applications and the day to day advancements in their feature drones have gained more popularity.**
**In this paper, you will see how to build a Photography with nano drone, which can able to capture photo, video, flip image this application helps to make the rescuing process easy and safe, drones are implemented to extinguish the fire, disaster management, Agriculture, Aerial hotography, Movie production, measuring the scale of natural disaster, getting a glimpse of the unknown lands etc.**

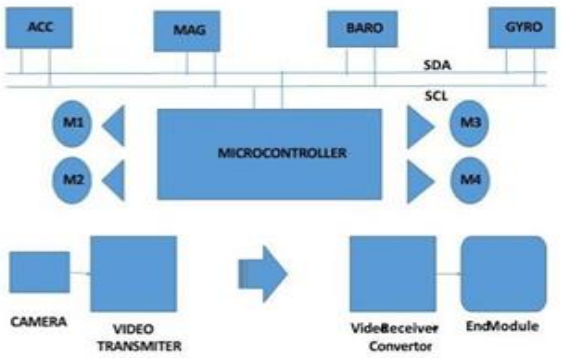
## I. INTRODUCTION

Drones have been a handy gadget to get the high quality photography anywhere even from height and used for intelligence and anti-terrorist outcomes. Today the drones are much more versatile and are moving the industry [1] ahead in its reach for activities as rescuing process easy and safe, drones are implemented to prevent from fire, measuring the different scale of natural disaster, disaster management, Agriculture, Aerial photography, Movie production, getting a glimpse of the unknown lands etc. [1] and even drone racing.

## II. WORKING OF MODULE

This project make use of android mobile phone Drone control. The control commands available are more than PLUTO modules.
For user has to install an application on her/his this the android mobile. Then user needs to turn on the Wi-Fi in the mobile. The wireless communication techniques used to control the Drone is Wi-Fi technology.
User can use various commands like move forward, reverse, left, right using these commands and various rotation or motion like roll, pitch, yaw these commands and motions which are sent from the android mobile.
Drone has a Wi-Fi receiver unit which receives the commands and gives it to the micro-controller circuit to control motors. The micro-controller then passes the signal to the motor driver IC's circuit to operate the motors.

## III. BLOCK DIAGRAM




**WI-FI Model (ESP8266)**

In the Internet of Things industry ESP8266EX delivers highly integrated Wi-Fi solution to meet users updating demands for compact design, systematic power usage and attested performance. ESP8266EX has complete and free standing Wi-Fi networking capabilities. This can also perform either as an alone application or as the slave to a host MCU. Also, ESP8266EXcan be applied to any micro-controller design as a Wi-Fi adaptor through SPI / SDIO or I2C / UART interfaces. ESP8266EX is designed with antenna switches, RF balun, power amplifier, low noise receive amplifier, filters and power management system. The compact design of the module minimizes the PCB size and requires minimal external circuitries. It can be interfaced and connected with external sensors and other devices through the GPIOs. Software Development Kit (SDK) can also provides sample codes for various applications.

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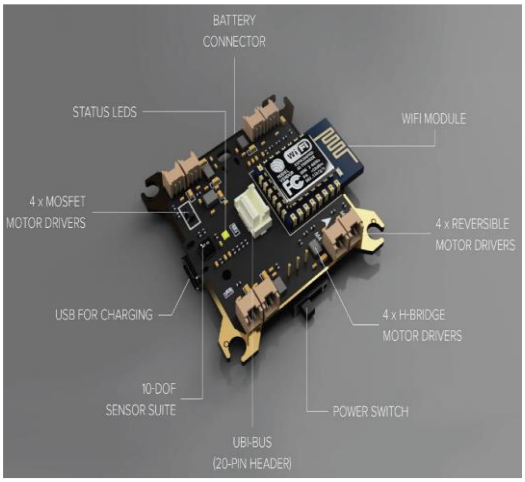
**Flight Controller:**

This is the cental part of the drone that means brain. The motors, sensors and battery is connected to the flight controller. Any of the open source flight controllers can be used. These flight controllers come pre-programmed but their firmware could be tinkered using any open source SDK like Cygnus, Beta Flight or Clean Flight. Also depending on the type of controller you might need to add in additional sensors for a stable flight of the drone.




**Sensor**

**1. Accelerometer:**

Accelerometers are used to determine the orientation of the drone in flight

**2. Gyro Sensor:**

Gyro sensors are the devices that sense angular velocity also known as angular rate sensors or angular velocity sensors, are

3. **Magnetometer**:

A magnetometer is an instrument that measures magnetism—either magnetization of magnetic material like a Ferro magnet, or the strength and, the direction of magnetic field at a point in space.

**4. Barometer:**

Barometer measures air pressure. This air pressure is used to measure the height of the drone above the MSL.

The barometer measures the air pressure and calculates the relative height of the drone.

**5. Displacements are used**

- Horizontal Motion
- Side Motion
- Vertical Motion

**Pluto Battery :-**

**Battery**

Batteries are devices that provide electricity by means of electrochemical cells inside them. Batteries are now a days utilized in every field, ranging from military to civil, industrial to agricultural, cars to drones

- Battery - LiPo (Lithium – ion polymer battery)
- Voltage – 3.7 V
- Current – 380 mA
- C – Rating – 25 C

**Motor**

Motors are machines which convert electrical energy to mechanical energy. Drones require motors to create necessary thrust during flight. In drones, small Direct Current (DC) motors are used to achieve flight.

## IV. CONCLUSION

With so many drone innovations in the world a drone can able to capture photo, video, flip image this application helps to make the rescuing process easy and safe, drones are implemented to extinguish the fire, disaster management, Agriculture, Aerial hotography, Movie production, measuring the scale of natural disaster, getting a glimpse of the unknown lands etc. The drone developed here is able capture photo, video, flip image which can be used in many application in safety & security domain for the nation.

## V. APPLICATION

Aerial Photography.:-Pictures taken by drones provide a customization level that could not have been achieved using traditional photography methods. With drone pictures & videos can be shouted from great height with high quality.

Security and Surveillance:- Drone surveillance helps gathering of information about a target as captured from a distance or altitude. Of course, drone use in this wide-ranging industry (or area), at country boarder for protection and safety of nation. Also helps in military pupose.

Ambulance Drone :- Helpful for medical emergency response and supply delivery. The drone tracks emergency mobile calls in accident or in any cririca essential and uses GPS to navigate to the emergency site for right care.

Agriculture :- An agricultural drone is an unmanned aerial vehicle used to help optimize agriculture operations, increase crop production, and monitor crop growth. Sensors and digital imaging capabilities can give farmers a richer picture of their fields.

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