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A Firefighting Quadcopter

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ABSTRACT: The goal of our group's project is to design and build an firefighting quadcopter. This means going through the process of bluiding a quadcopter in a need size.After deciding the size we wanted our quadcopter to be done.

I. INTRODUCTION

Nowadays, quad copter is using in many Field for many different purposes in many Countries quad copter is a device which is One Are developing day by day with the Addition of different Technology so it is vary In many fold I is happen to know
That quad copter is wing is military Field Cuttack & defer), agriculture field Taking photograph and videos, search &
Research, as an entertainment toy etc.
In our paper we see that quadcopter is playing a role in Department as a fire fighter.in this firefi ghting quad copter many
Advantages like water spraying Pipes and motor camera and remote Control, It help us to control thequadcopter and it can also play a Role of searching.

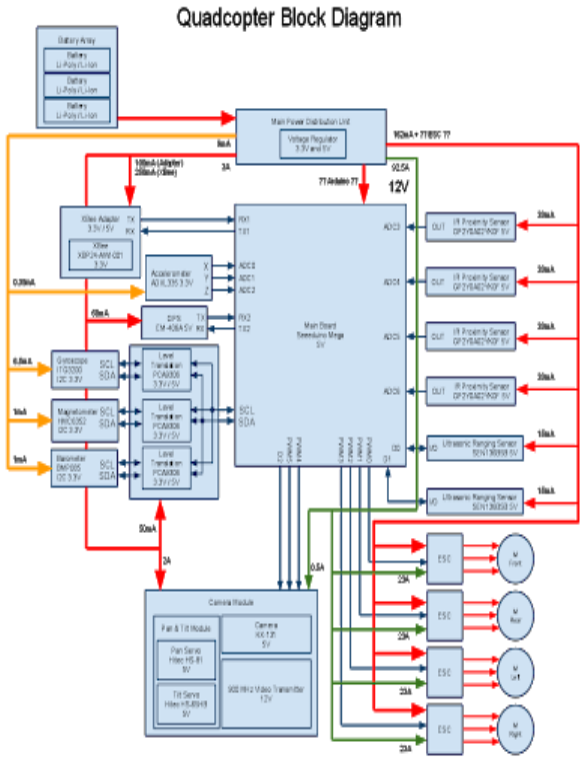
A. LITERATURE REVIEW:

Quad Copter is using to reduce The risc work of the humans. The Quad Copter helps humans To make a work easy and risc free If a building is got a short Circuit and it may lead to big Fire rise over the building and Collapse the building in that situations Fire fighting Quad copter will helps To control the fire with the help Of pipes, water and the fire fighting Quad copter will control the Fire till the fire mans arrives. Now a day many types of Drone is play a role in fire department As like our quad captor can also play a role in fire department with The low cost efficient.

B. ABOUT QUADCOPTER:

Quad copter is a simple flying machine, with the help of four arms (or) motor, attached to a propeller. It's also named as Drone (or) quad rotor (or) Multicolor. Three, six (or)
Eight arms multicomputer used in the same principle as quad copter,

In quad copter, two motors rotate in clockwise and other two rotors rotates in anticlockwise (or) counter clockwise, Quadcopter is made aerodynamically. The motors in quad copter Rotates in given vim. It can withstand 10- 20 min at a place.
Drone is totally different from helicopter (or) aircraft. The way lift & control.



C. THE PROPELLS:

Motar blade helps to control direction of it .

Drone is an old concept which is designed in 1920's, but now it is more advanced and also used for agriculture. etc ...

Drone can fly upto 3-5km high with the help of
remote sensor , which can be controllable.

4 propells were used in quadcoptes such that two rotates in clockwise direction and other two rotates in Anticlockwise direction. The main process of propells is to make drone fly and also controls the direction of drone.Propells makes drone to stand at a place.Quadcopter will not (or) won't fly in downward force.

D. FRAME:

Frame is used to cover the total body surface and
skeleton of the quadcopter According to drone size frame size varies. so suitable motors should be used and current rating to Esc.

E. PDB:

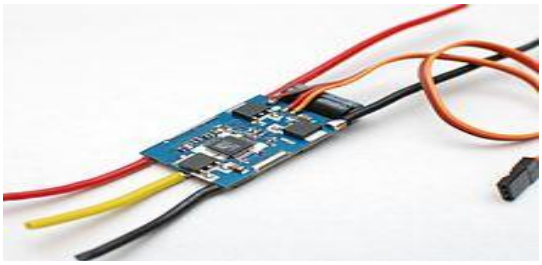
PDB - Power distribution board., which is connected to the battery. Power lead: PDB does same function as FCS and Escs. PDB component gives wide input range and stable output.Voltage depends on battery voltage which can be connected through FPU camera and other components

F. BATTERY:

Battery used in quadcopter is “Lipo Batteries" These batteries are used to store power. Is battery has high energy level also's high discharge rate. Battery range is in normal;
voltage [5.7V percell] which is in series 43 - 14.8V capacity is in MAW [less than now 2000MAW] ie 75c [C is discharge rate].
main advantage in battery is light weight because the high weight in battery leads the drone not to fly high.

G. ESC:

ESC - Electronic speed control.
Ese is the device used to control the flight, helps to translate non signal into phase detrical to determine the speed of motor ESC has 4 input terminals and also 2 signals entering from Fc. In ESC, Supply motor carries high
current . Ie [Positive and Negative current]. Both current used in PDB. ESC has 3 output terminals with wire of a bushless motor .



H. MOTOR:

Motor helps the drone to fly using propelles also
drains the battery power. Motor speed is denoted in kv because less the KV motor produces in high torque and high spin. 4 motors are attached in drone . Motor are the main source to get current from battery batteries.Maximum ampere drawn according to the motor spins**.**

I. PROPELLERS:

There are many type Propeller wise used in the quad copter. In drone four propeller. were forced it help to fly the drone. When houver propellers were fixed then the motor. Need more troque and Vp. and also Moton war hand to turn it drews more amps Due to combination of propellers. the Motor Can balance the drone.

J. FPV CAMERA:

A FPV camera used to visit all the surroundings.

It helps the pilot to see the clear footage, live stearming and record the footager in HD

K. FPU ANTENNA:

V7x requires an antenna to transmit signals which basically explains FPU antenna .Based on size, shape,direction and also linearity antenna's are varied.

II. SOFTWARE:

A. DRONE DEPLOY:

An easy software, both beginners as well as experts can use. Specalized with 2D and 3D modelings. It's easy to access which can also be supported with Mobile phone for easy accessing .

B. RIX4D:

RIX4D, software only used for advanced uses.

It takes high resolution capabilities and maker pixel clear. The drone camera takes high resolution map, that can be saved in different formats from a simple PDF.

to realistic 3 D images

III. WORKING

Quadcopter work under a principle of bernoulli's
.the four motor throttle and elevator the quadcopter.
By using the controller it transmitter the radio signals and the reciver recive the data.the elevator is created by rotating the rear two motors ata high speed compare to the front two motors.a rubber action is created by rotating in diagonal manner with high speed than the two other.

IV. APPLICATION OF QUADCOPTER:

A quadcopter is used in various places:
It is used in military for surveillance the opposite parties in a long distance and high manner.
It is used in supermarkets for home delivery for home need products.
Small size quadcopter are bluid for kids as toys.

V. CONCLUSION:

Its is very essential device nowadays for the modern generation of technogy.

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