

# Fabrication of Stun Gun Drone with Wireless Trigger for Security

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**Abstract**— The term "drone" usually refers to any unpiloted aircraft. Sometimes referred to as "Unmanned Aerial Vehicles" (UAVS), these crafts can carry out an impressive range of tasks, ranging from military operations to package delivery. The drone we design is equipped with a mobile stun gun, which can be used for crime control, defence, and security operations. This drone can be operated by a single pilot in a station by using a First-Person View (FPV) camera. This drone is equipped with a sophisticated stun gun which stuns the target sufficient to immobilize them. This enables police officials and other security personnel to ensure high level and a longer range of security and crime reduction. This drone will revolutionize the efficiency of security and defence departments.

**Keywords:** Drone, Stun Gun, Defense System, UAV, Security

## I. INTRODUCTION

This is an advanced technology with a great potential for electronic warfare systems and to enable civilian applications. UAV has been designed equipped with gun at the bottom. An unmanned aerial system ("UAS") is a "system whose components includes the necessary equipment, network, and personnel to control an unmanned aircraft."8 These systems normally include three basic components: the unmanned aircraft, the "ground control system," and the operator.9 Although many unmanned aircraft can be pre-programmed to fly autonomously, this Article will focus on drones controlled remotely, using a ground control station by an operator. Thus, the UAS that is the topic of this Article would include the unmanned aircraft, the control system, and a police officer (i.e., operator) that would be controlling the aircraft and deciding whether or not to deploy the weapons.

## II. CIRCUIT DIAGRAM FOR STUN GUN DRONE

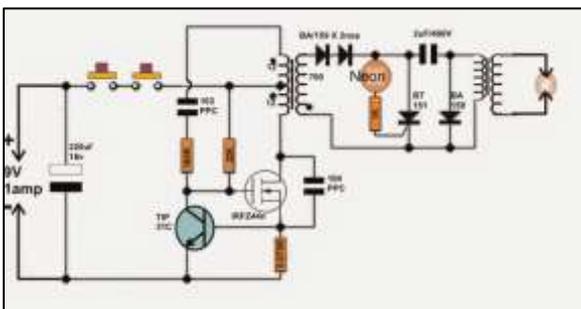


Fig. 1: Circuit Diagram

## III. BRUSHLESS MOTOR

KV is another essential parameter. more KV has more RPM and more power Higher KV motors would turn the propeller quicker with less torque and lower KV motors create higher torque with less rotation. Bigger props are matched with low KV motors, and smaller props with high KV motors It has T

value number of turnings. less T with high efficiency and high T value with less efficiency Better torque valve in a small design and there's no friction to take away from the motor's torque Less wear and tear also less heat, runs up to 50% cooler than brushed motor A 70% efficient motor produce 70% power and 30% heat. 90% efficient motor produce 90% power and 10% heat. It delivers quitter sound.

## IV. FLIGHT CONTROLLER

A circuit board with a range of sensors that detect movement of drone as well as user comment Mamba F405 FC with BEC based on the design of popular F4.main advantage is uses the more powerful STM32 processor for even faster loop time. low noise MPU6000 IMU connected via spi and esc It has 32bit processor for excellent performance It combines a 3-axis gyroscope and 3-axis accelerometer which help to keep drone in right place It supports Dshot600.



Fig. 2: MPU6000 Flight Controller

## V. CARBON FIBER FRAME

A special frame with large cell embossed on a plastic foundation made up of thermoplastic, nylon polyester and carbon fibre.250mm frame, arm thickness 4mm, top plate 3mm, bottom board 2mm It has light weight compare to 450mm frame and cost effective It is more relaxed, free way of flying, with no rules or boundaries imposed "Float" upside down in free fall, shoot narrow gaps, "wall ride", perform flips, loops, rolls and other maneuvers in smooth combos Weight is 180-220g only It is freestyle racing frame with high aerodynamic specification

## VI. TRANSMITTER AND RECEIVER

F-i6b utilizes the updated AFHDS 2A TX protocol.it has 6 native channels, can be expanded up to 10 channels This allows the full use of all 4 switches and 2 potentiometers Frequency range(RF Range) 2.4055-2.475GHz Band width(RF channel) 140 Antenna length 26mm, Range 1-1.5km

## VII. ELECTRONIC SPEED CONTROLLER

Electronic circuit controls and regulates the speed of motor also reversing of the motor dynamic braking (voltage and current rating 40A It offer high power, high frequency, resolution to a motor in extremely compact miniature

package A pilot controls into precise instruction sent to the motor to control movement It takes signal from FC and power from battery makes motor spin Which is the maximum amount of voltage the ESC can handle. maximum current draw of motor at 100%.

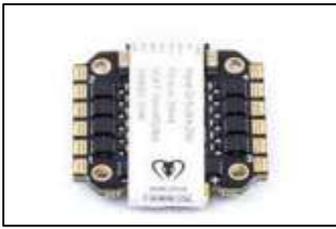


Fig. 3: Electronic Speed Controller

### VIII. BATTERY

Lithium polymer (Li-po) battery has self-protection circuits to keep voltage operating with in safe limits compare to lithium ion(Li-on) battery It has higher energy density In relation to their size, weight with higher voltage per cell typically 3.7v So you can get necessary power with fewer cells than other rechargeable, Capacity 1550mAh, 4 cell (14.8V), Weight 159g, Discharge rate 30C (max-45C), Endurance 10-12mins

### IX. STUN GUN DRONE WITH SHOOTING MECHANISM

Before switching ON the KK2.1.5 make sure the Transmitter is in ON condition. Do the receiver test that is making sure the Aileron, Elevator, Rudder, throttle, Aux pins are all equal to zero. At last, check if all the motors are rotating with equal speed or not if you are increasing the Throttle value. Make sure that the Lipo battery is fully charged up to 11.1V Lipo batteries are highly dangerous, there is a chance for it to explode if they are overcharged. So be careful while charging them. Don't leave it unattended while charging



Fig. 4: Stun Gun Drone

### X. WORKING PRINCIPLE

Quadcopter is a device with an intense mixture of electronics, mechanical and mainly on the principle of aviation. Quadcopter has four motors whose speed of rotation and the direction of rotation changes according to the user's desire to move the device in particular Direction take off motion, landing forward motion, backward motion right motion. The rotation of motor changes as per the transmitted signal send the form the four channel transmitter. The signal from micro controller goes to ESC which in turn controls the speed of

motor the program for which is written in the ATMEGA 16 chip.

### XI. CONCLUSION

There are many places where man has to risk his life for the surveillance in industries and public sector places like in horrible conditions unbearable by police, security watch man and defense sector. There are many people losing their lives. So the solution to this problem can be brought up by using a remote controlled aerial vehicle for surveillance and security using this the target or suspect can be capture easily and safely without killing. This project majorly finds its use in military and defense for surveillance at the border as a part of border security force and can reduce the loss of human lives by intimidating the soldiers about the target.

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