

## Video Recording Using FPV Camera In Airphibian Robot

Krupali Burute<sup>1</sup>, Mayuri Bansode<sup>2</sup>, Shreyas Naik<sup>3</sup>, Suraj Mhaske<sup>4</sup>, Dr. Bhavin Shah<sup>5</sup>

<sup>1</sup>(Electronics And Telecommunication Department, Atharva College Of Engineering, India)

<sup>2</sup>(Electronics And Telecommunication Department, Atharva College Of Engineering, India)

<sup>3</sup>(Electronics And Telecommunication Department, Atharva College Of Engineering, India)

<sup>4</sup>(Electronics And Telecommunication Department, Atharva College Of Engineering, India)

<sup>5</sup>(Electronics And Telecommunication Department, Atharva College Of Engineering, India)

**Abstract :** This Paper Is A Arrangement Of The Outline Procedure And Comprehension Of The Security Plays A Vital Role In Day To Day Life. For This Monitoring Of Environment Is Necessary. So Monitoring Of Object As Well As People Is Needed In Every Place At Every Time Implementing Such System Which Covers Large Amount Of Financial Cost For Hardware Device Also It Consumes Large Space Solution To This Problem Is Using FPV Camera On Airphibian Robot FPV Camera Cover Large With Resolution Of 320X240 QUGA.FPV Camera Perform Image Processing Such As AWB (Auto While Balance) AE (Automatic Experience) And AGC (Automatic Gain Control) For The Video Signal Coming Security Plays A Vital Role In Day To Day Life. For This Monitoring Of Environment Is Necessary. So Monitoring Of Object As Well As People Is Needed In Every Place At Every Time Implementing Such System Which Covers Large Amount Of Financial Cost For Hardware Device Also It Consumes Large Space Solution To This Problem Is Using FPV Camera On Airphibian Robot FPV Camera Cover Large With Resolution Of 320X240 QUGA.FPV Camera Perform Image Processing Such As AWB (Auto While Balance) AE (Automatic Experience) And AGC (Automatic Gain Control) For The Video Signal Coming

**Keywords** – FPV Transmitter And Receiver, OSD, Battery

### I. INTRODUCTION

A Security Robot Would Require Certain Components Such As A GPS Module, High Resolution Cameras, Radios For Satellite Introduction – Surveillance Is The Process Of Monitoring The Circumstances As An Area Or Person Surveillance By Human Is Time Consuming Cannot (Over Large Area Fast Tracking.) By Using High Resolution Appropriate Sensor It Is Possible To Gain Information About The Particular Location Remotely Due To Frequent Attacking And Natural Calamities There Is Need Of Strong Security And Surveillance System.

The System Such As Cloud Circuit Television (CCTV) Surveillance And Surveillance Alarm Is Rising Rapidly In The Market. People Has High Demand For Such System With Improvement And With Some Advancement This System Can Keep An Eye On Particular Place At Anytime From Anywhere. Such Surveillance Can Be Achieved By Airphibian Surveillance Robot. Airphibian Robot Has Light In Weight So Camera Required For It Should Be Light In Weight And Small In Size. So FPV Camera Is Efficient And Convenient For Such Kind Operation. Airphibian Robot Had Light In Weight So Camera Required Fit Is Should Be Light In Weight And Small In Size. So Focus Camera Is Efficient And Convenient For Such Kind Of Operations.

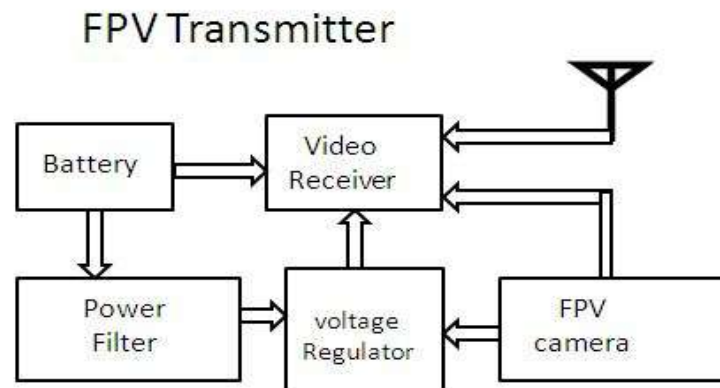
### II. LITERATURE SURVEY :

**Aditya V. Jadhav & Et Al., In His Research Titled "Continuous RF Monitoring "**, Found That The Effect Of EMF On Human Health Is The Subject Of Recent Interest Of Study. Prolonged Exposure From EMF Sources Such As FM Radio, Microwave Oven, Mobile Handsets, Base Transceiver Station (BTS), Etc. Are Said To Cause Impairments In Human Health. The Number Of Mobile Users In India Has Recently Crossed 100 Cr. Which Is Around 79% Of Total Population. This Has Led To An Increase In The RF Radiations In The Country. We, With The Help Of A Quad-Band Antenna, AMB-8057-SW02, Intend To Continuously Monitor Radio Frequency Radiation Levels In Our College Surrounding Located In Sion (E), Mumbai. Analysis And Results Of The Same, For Reference Are Displayed On Our Website. Such Continuous RF Monitoring For Multiple Bands At The Same Time Has Never Been Attempted Before In India. This Will Create Awareness Among The Society About Radiation Levels In The Environment And Its Effects On Human Health.[2]

**Homagni Saha & Et Al. In His Research Titled "Conceptual Design Of An Underwater Robot",** Found That A Conceptual Design And Preliminary Analysis Of An Underwater Autonomous Vehicle With A Primary Aim Of High Mobility And Localization Capability In Unknown Environments Autonomously.

The Entire Mechanical And Electronic Design Considerations Are Elucidated And The General Data Acquisition System Which Includes The Image Processing System Is Also Described. The Effectiveness Of The Design Is Validated Using Solid Works Simulation And Motion Analysis. Focus Has Also Been Given On Underwater Stability Of The System As A Whole.

### III. FPV TRANSMITTER



**Figure.1** FPV Transmitter

Fpv Camera Transmitting Was Omi Directional Linaer Polarized Antenna .It Was 5.8ghz .There Are Fpv Antenna:

- Linear Polarized Omi Directional Antenna
- Linear Polarized Directional Antenna
- Circular Polarized Omi Directional Antenna
- Circular Polarized Directional Antenna

There Are Two Main Factor That Decided Video Transmission And That's Frequency And Output Power Level. Transmitting Frequency:

There Are Four Different Frequency Band Used For Analog Video

- 900 Mhz
- 1.2Ghz And 1.3ghz
- 2.3 And 2.4 Ghz
- 5.8ghz

Lower Fre8quency Is Better For Signal That Penetrate Through Object Such As Trees, Tall Building.900 Mhz Is The Best Frequency .As Low Frequency Travel Long Distance.One Factor Must Be Kept In Mind Transmitting Power Should Not Exceed More Than 500 To 600 MW Maximum With Good Directional Antenna. The Signal Can Cover Up To 20 Km Even On 5.8 Ghz. Transmitting And Received Channel Is Not Same.

Transmitter Uses Different Channel (5.740, 5.780, 5.800, 5.820, 5.840, 5.860ghz)

The Transmitting And Receiving Channel Is Not Same. On That Page I Go On About Something Many Refer To As A Receiving Wire Tracker. This Is A Progressed And Rather Exorbitant FPV Ground Station Add-On Where Directional Ground Station Recipient Radio Wires Are Utilized As A Part Of Conjunction With Flying Machine Trackers.[6]

The Directional Radio Wire Is On A Mechanized Following Mount And It Will Chase After The Flying Machine In The Sky So The High Increase Directional Reception Apparatus Is Constantly Pointed At The Air Ship. Presently You Won't Need To Stress Over Straying Outside Of The Directional "Tuning In" Zone Which Would Thump Out Your Video Picture. Once More, This Is An Exceptionally Progressed FPV Choice That You Won't Consider For Your Starting Strides Into FPV, However I Did At Any Rate Need To Specify It.[9] A Superior And Less Complex Arrangement As I Would See It On The Off Chance That You Are Searching For Long Range Utilizing Higher Increase Directional Reception Apparatuses Is To Utilize A Decent Variety Setup. Multi Assorted Variety Is Normally Going To Be More Affordable And Less Complex To Use With Various Long Range Directional Receiving Wires Watching Out Finished A Bigger Territory Of The Sky Over A Reception Apparatus Tracker Framework That Needs To Chase After The Air Ship In The Sky. The Two Frameworks (Radio Wire Trackers, And Multi Assorted Variety) At The End Of The Day Give Comparative Gathering Comes About By Utilizing Altogether Different Means.[11]

### IV. Fpv Reciver

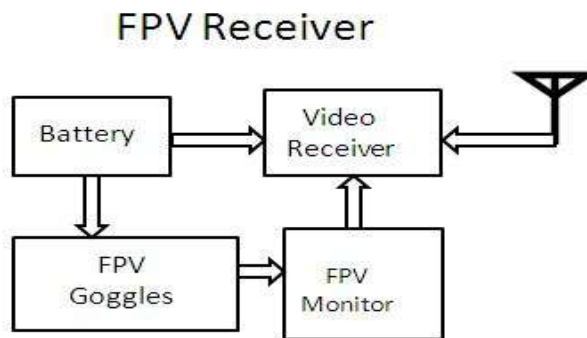


Figure 1. FPV Receiver

Fpv Ground Station Can Be Simple Or Complicated As Per Requirement Of Receiver Video Set Consist Of

- Video Receiver
  - Video Receiver Antenna
  - On Screen Display
- Receiver Can Be Choose On Following These Options
- Frequency
  - Video
  - Diversity

If You Already Fly With A 2.4 Ghz Radio System, Chances Are You Know About Diversity Or Have At Least Read About It, Even If You Didn't Know What It Did. Most 2.4 Ghz Radio System Receivers Have 2 Antenna Leads For Example And Having Two Antennas To "Listen" Improves Diversity So If The Radio Signal Was Not Strong, The Idea Is The Other One That Is Positioned Along A Different Axis Will Still Be Receiving Fine Allowing The Receiver To Use The Best/Strongest Signal.[4] To Improve RF Signal Reception Quality, Having More Than One Antenna Positioned Along A Different Axis Can Give You A Better RF Link As The Receiver Automatically Switches Back And Forth Between Antennas Constantly Selecting The One That Is Receiving The Best Overall Video Signal. Dual Diversity Would Be If You Used A Circular Polarized Directional Antenna Alongwith Circular Polarized Omni Directional Antenna At Your Ground Station[14].

On That Page I Go On About Something Many Refer To As A Receiving Wire Tracker. This Is A Progressed And Rather Expensive FPV Ground Station Add-On Where Directional Ground Station Beneficiary Receiving Wires Are Utilized As A Part Of Conjunction With Airplane Trackers. The Directional Radio Wire Is On A Mechanized Following Mount And It Will Chase After The Airplane In The Sky So The High Increase Directional Receiving Wire Is Constantly Pointed At The Flying Machine. Presently You Won't Need To Stress Over Straying Outside Of The Directional "Tuning In" Zone Which Would Thump Out Your Video Picture. Once More, This Is An Extremely Progressed FPV Alternative That You Won't Consider For Your Starting Strides Into FPV, Yet I Did In Any Event Need To Say Iteast Wanted To Mention The Diversity Topic. A Superior And More Straightforward Arrangement As I Would Like To Think On The Off Chance That You Are Searching For Long Range Utilizing Higher Increase Directional Reception Apparatuses Is To Utilize An Assorted Variety Setup. Multi Decent Variety Is Normally Going To Be More Affordable And More Straightforward To Use With Different Long Range Directional Reception Apparatuses Watching Out Finished A Bigger Region Of The Sky Over A Receiving Wire Tracker Framework That Needs To Chase After The Flying Machine In The Sky. The Two Frameworks (Radio Wire Trackers, And Multi Assorted Variety) As It Were Give Comparable Gathering Comes About By Utilizing Altogether Different Means.[12]

## V. WORKING PRINCIPLE

Recording Start/Stop Is Controlled With The Button. The Battery Provides Sufficient Power To Drive The Camera. You Will Need To Insert A Memory Card (Not Included) To Record HD Video. The Camera Can Be Used As An FPV Camera Whether Recording Or Not (Or Whether Has SD Card Or Not).During Recording Video Red Led Is Turn On . White Timer Was Standby, Red Timer Shows The Total Time The Camera Has Been Recording.[5]

A Video Transmitter (VTX) Is A Gadget That Is Associated With Your Camera And Transmits The Video Motion From Your Automaton Withdraw To You On The Ground Over The Wireless Transmissions Continuously. There Are Truly Many Video Transmitters Accessible Available Today Each With Its Recurrence, Control Levels And Radio Wires. Picking The Best FPV Video Transmitter (TX) For Your Automation.[7]

## VI. Applications

- Commercial Application.
- Traffic Monitoring And Management.
- Search And Rescue Operation.
- Temperature And Altitude Estimation.
- Crowd Management.
- Locating Forest Fire Or Frost Conditions In Farmlands.
- Weather Forecasting.
- Post Natural Disaster.
- Object Identification

## VII. ADVANTAGES:

- Cover Large Area
- Compact In Size
- It Perform AWB ,AF And AGC
- Fpv Camera Has Better Resolution Than HD Camera

## VIII. FUTURE SCOPE:

- Agriculture Survey
- Improved Safety For Construction Sites
- Using Night Vision Camera We Monitor On Dark Light
- Emergency Medical Delivery

## IX. CONCLUSION

Here We Conclude That FPV Camera Use In Airphibian Robot Gives Better Resolution And Higher Level Of Security Than Other HD Camera And With Some Added Features This Modulo Can Also Be Used In Water . Its Main Aim Is To Give Ongoing Sound/Video Transmission From Regions Which Are Physically In-Available By People. The Purposed Can Also Be Used For Delivery Of Product .And Also Use For Obstacle Detection And Avoidance As In The Initial Goal.

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