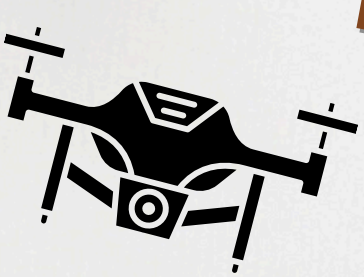
User Manual

WELCOME TO THE FUTURE OF PLAY!

BRIEF INTRODUCTION TO THE TOY'S MULTIFUNCTIONALITY

“3-in-1 Compact Mini Drone Toy”



Welcome

Thank you for choosing our 3-in-1 Compact Mini Drone Toy! This innovative toy combines fun and learning, showcasing the marvels of engineering and creativity.

With its seamless transitions between Drone Mode (Air), Car Mode (Terrain), and Boat Mode (Water), it offers endless adventures—soaring through skies, cruising terrains, and gliding on water.

Designed to spark curiosity and teach versatility, this toy encourages creativity and exploration. Get ready for thrilling stunts, exciting challenges, and imaginative play.

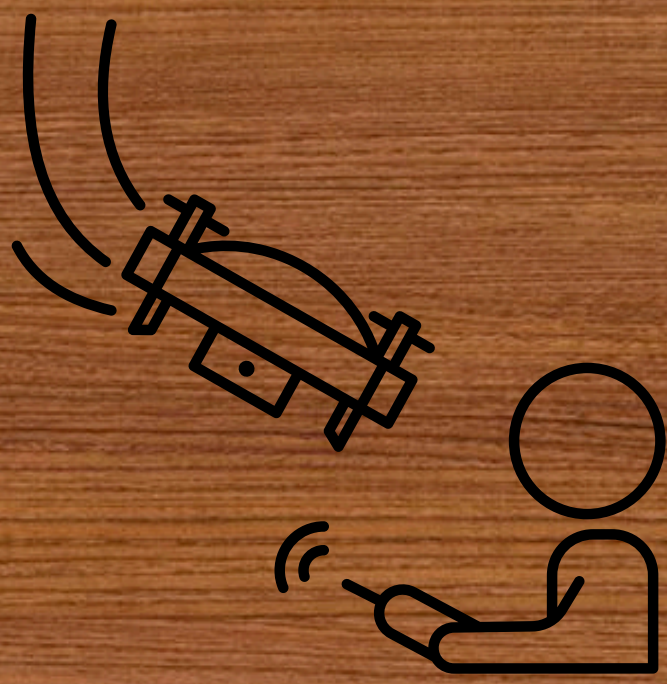
So,Let the adventure begin!

KEY FEATURES :-

1. 3-IN-1 FUNCTIONALITY: DRONE, CAR, AND BOAT

2. INTERACTIVE FEATURES

3. User-Friendly Design



4. Durable Build

5. Upgradeable Design

THE 3-IN-1 COMPACT MINI DRONE TOY IS BUILT TO PROVIDE FUN, LEARNING, AND INNOVATION, MAKING IT A PERFECT COMPANION FOR ALL YOUR ADVENTURES!

BOX CONTENTS :-

1.) 1 X 3-IN-1 COMPACT MINI DRONE TOY.

2.) 1 X REMOTE CONTROL.

3.) 1 X USB CHARGER.

4.) 1 X USER MANUAL.

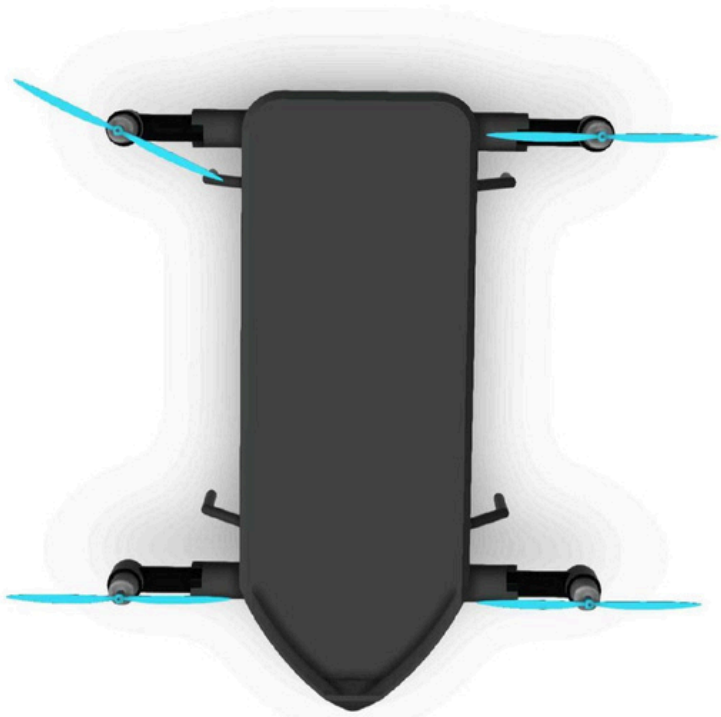
5.) SPARE PROPELLERS (X4).

6.) CASTER WHEELS (X4).

7.) 3.7 V Battery (600 mah)

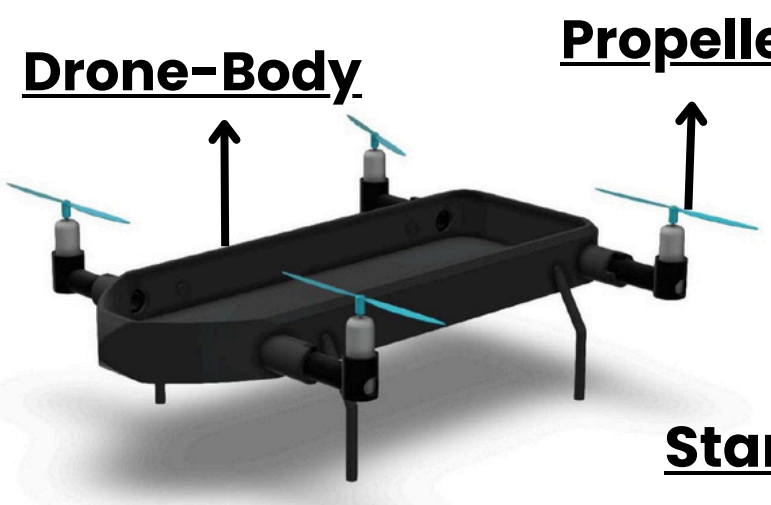
OPERATING MODES :-

Drone Mode (Air) :-



Top-View

Switching to Drone Mode:

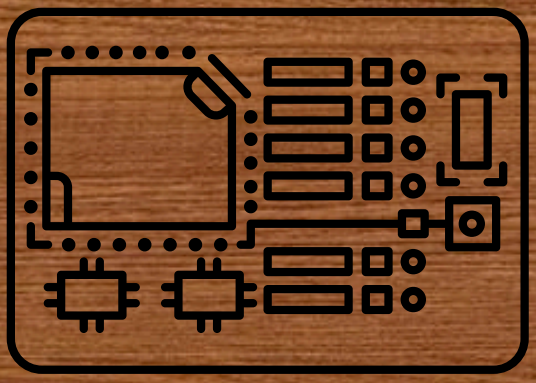


Front-View

OPERATING MODES :-

1.) Ensure Proper Connection

Ensure a stable connection by powering on, pairing, and keeping the drone within range for smooth flight control. A proper connection enhances responsiveness and prevents signal loss.



2.) Power ON the Toy to enable the NRF Module :-

- Power on the toy and the remote control.
- Activate the NRF module by flipping the NRF Power Switch (refer to the diagram in the User Manual).
- Confirm the NRF module status using the LED indicator (steady light indicates it is active).

4.) **Adjust the orientation of the motors (Propellers)** :-

- Ensure the motors are positioned perpendicular to the ground to provide optimal thrust.
- Double-check that propellers are securely attached.

5.) **Remove Unnecessary Components :-**

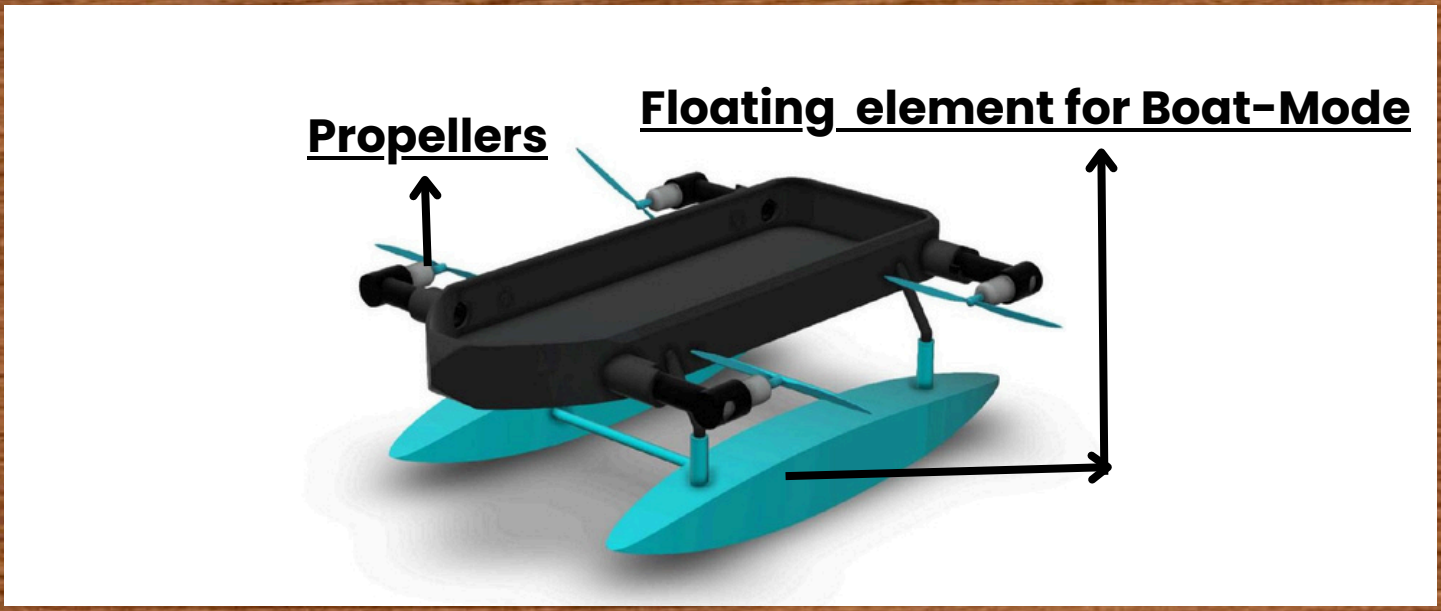
- Detach any accessories not required for Drone Mode, including:
- Flotation attachments for Boat Mode.
- Wheels or casters for Car Mode.

6.) **Take Off and Fly :-**

- Gradually increase the throttle to lift the toy off the ground.
- Use the remote control to navigate, ascend, hover, and perform stunts such as flips and yawing.

OPERATING MODES :-

Boat-Mode (Water):-



Switching to Boat Mode:

1) Prepare the Toy :-

- Place the toy on a flat surface and power it off so as to attach the attachment required for Boat-Mode.
- Ensure all components, especially propellers, are clean and debris-free.

4) Activate Boat Mode :-

- Power on the toy and select Boat Mode on the controller.
- Test the throttle to confirm proper functionality before placing it in water.

3) **Secure Components :-**

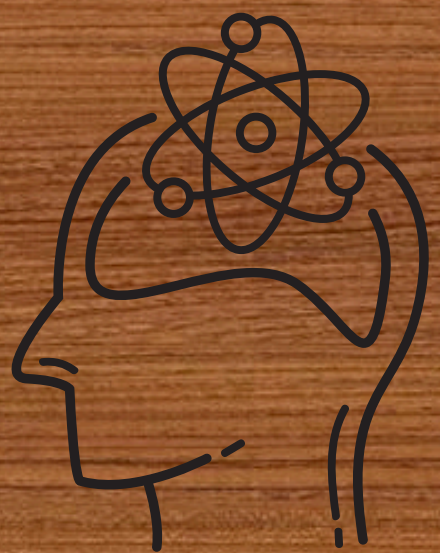
Check that all parts are tightly fastened and waterproofing seals are intact.

4) **Adjust propellers :-**

- Rotate the front and back propellers to face each other in the inward direction .
- The front propellers will be used for Forward - motion and the back propellers will be used for Backward-motion.
- Ensure the propellers are securely aligned to prevent slippage during operation.

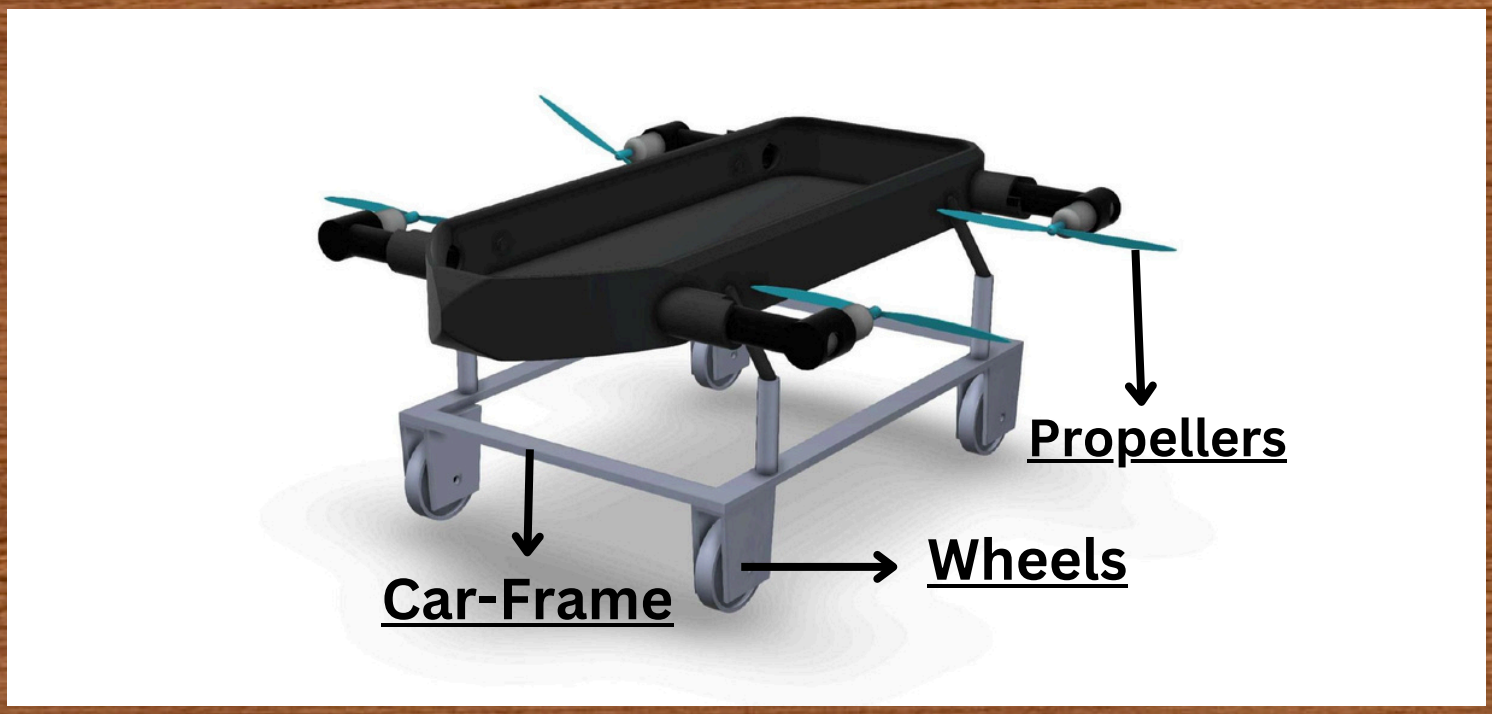
5) **Launch The Toy :-**

Place the toy in calm water and use the controller to navigate.



OPERATING MODES :-

Car-Mode (Terrain):-



Switching to Car- Mode:

1) Prepare the Toy :-

- Place the toy on a flat surface and power it off so as to attach the attachment required for Boat-Mode.
- Ensure all components, especially propellers, are clean and debris-free.

2) Activate Wheels :-

Ensure the wheels are properly aligned and securely attached for smooth movement on land.

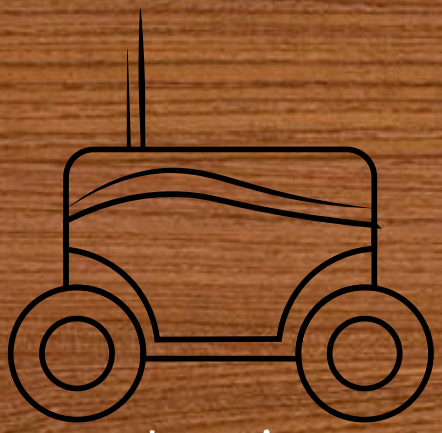
OPERATING MODES :-

3) Adjust propellers :-

- Rotate the front and back propellers to face each other in the inward direction .
- The front propellers will be used for Forward - motion and the back propellers will be used for Backward-motion.
- Ensure the propellers are securely aligned to prevent slippage during operation.

4) Activate car mode :-

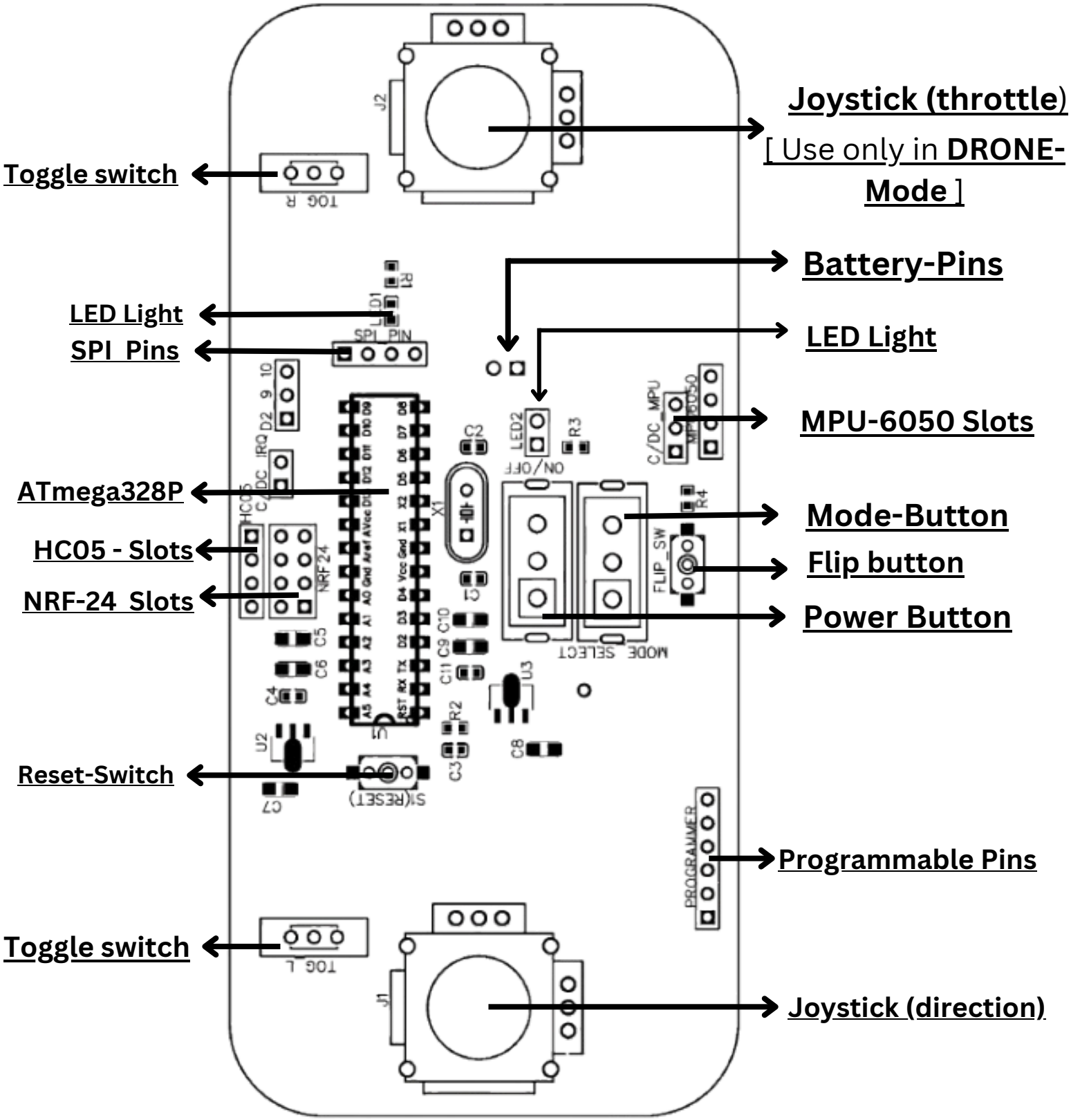
- Power on the toy and select Car Mode on the controller.
- Test the forward and reverse throttle to confirm smooth land operation.



5) Start Driving :-

- Place the toy on a flat, stable surface and navigate using the controller.
- Avoid steep slopes or rough terrain to protect the wheels and body.

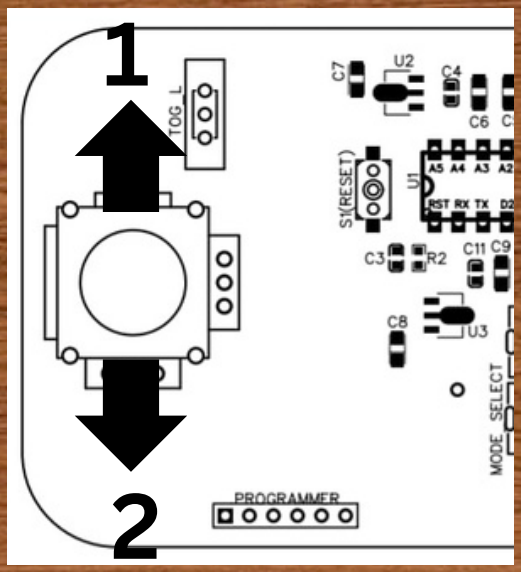
REMOTE CONTROLLER'S LAYOUT



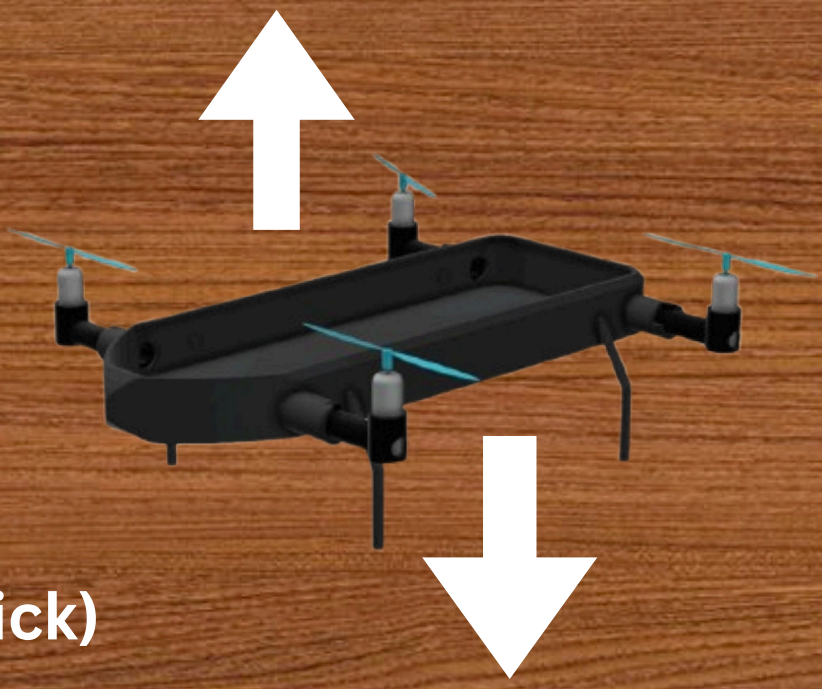
Tutorials to turn ON the toy

- Power ON the controller using the power button.
- Place the toy on a flat surface; it will automatically connect and be ready to fly or run as per the selected mode.
- Select the desired mode using the mode button.
- Use the joysticks according to the selected mode.
- To turn OFF, press and hold the Power Button.
- If the connection is lost or the toy malfunctions, press the Reset Button to reconnect.

Flight control :



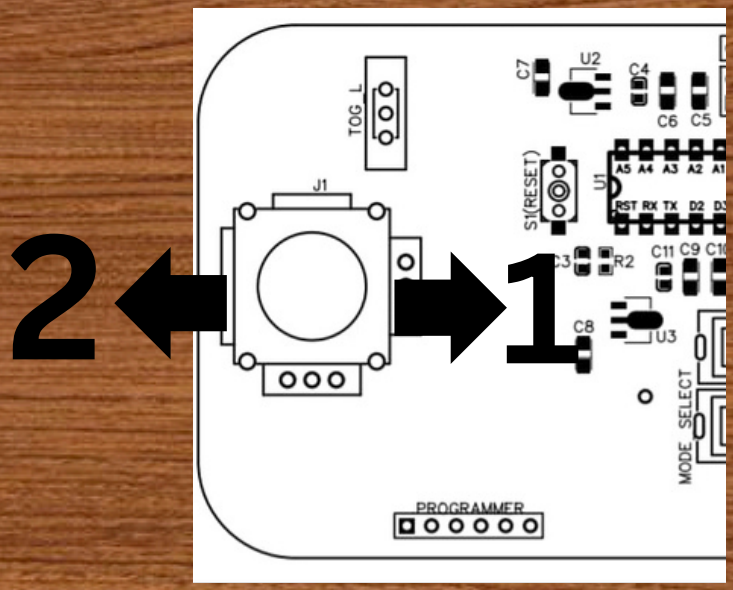
Upward (1)



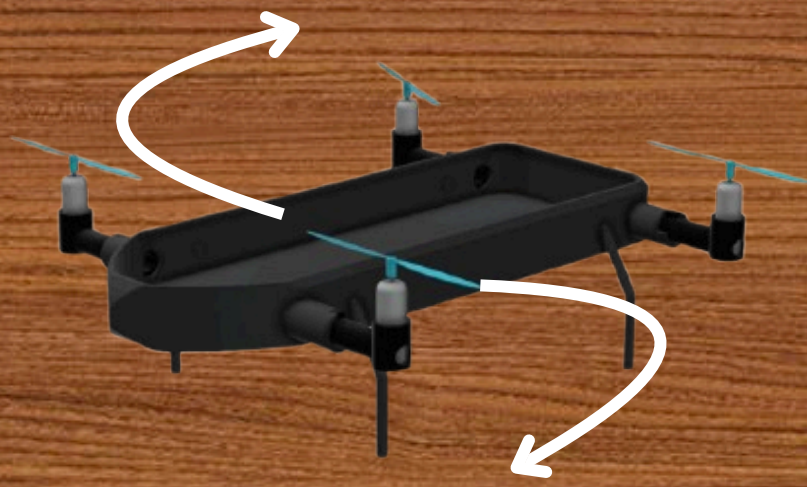
Throttle(Left Joystick)

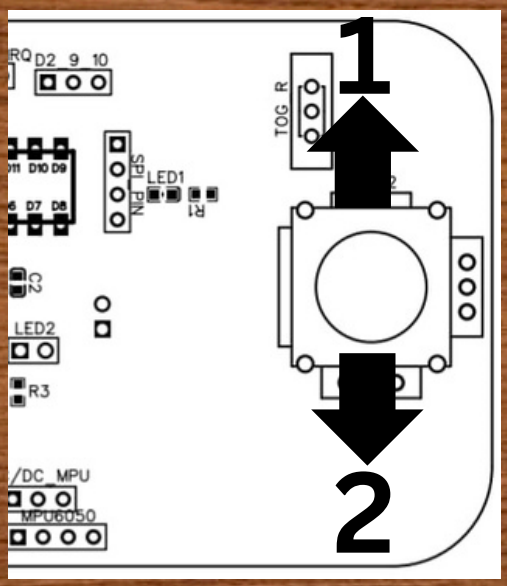
Downward (2)

Flight control :

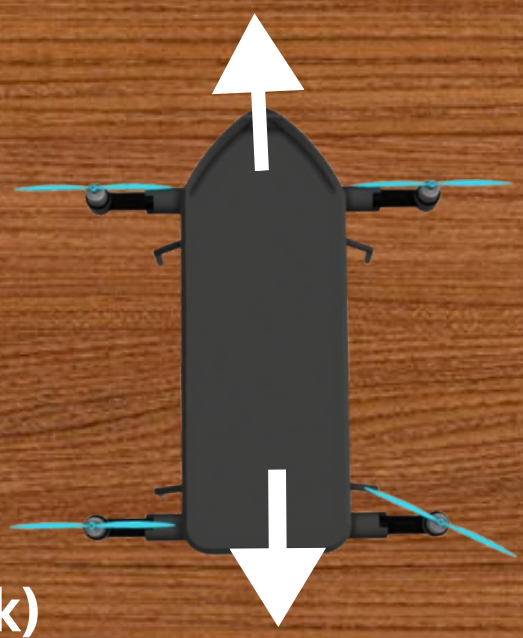


Rotation(Left Joystick)

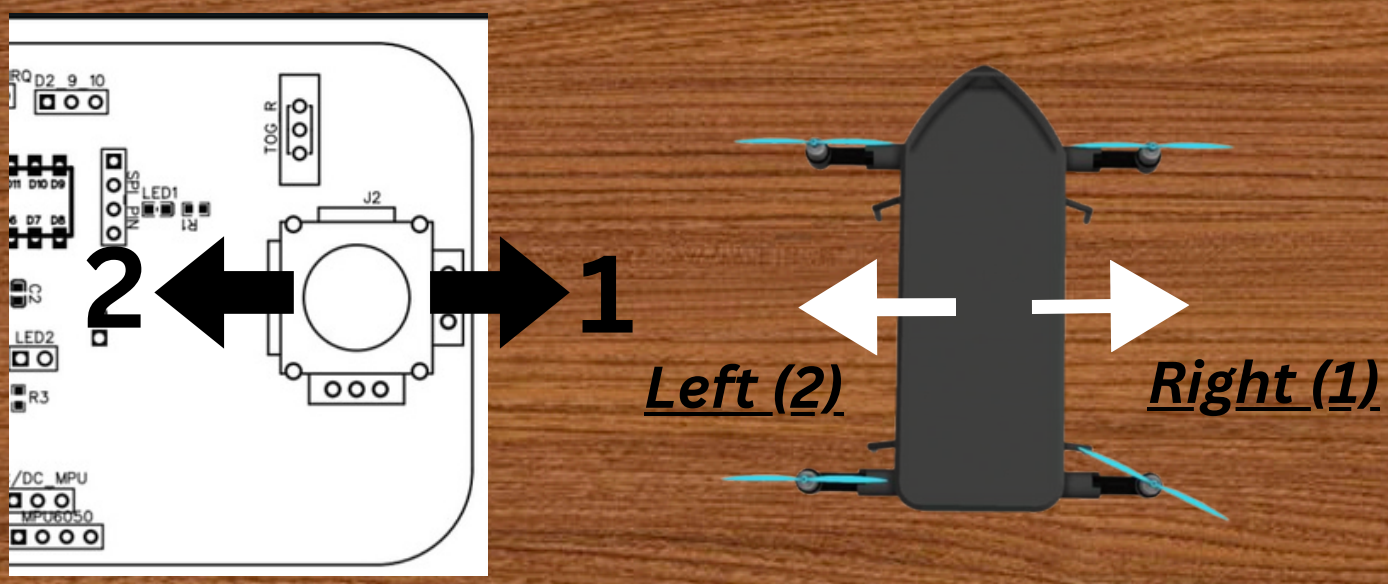




Forward and Backward(Right Joystick)



Flight control :

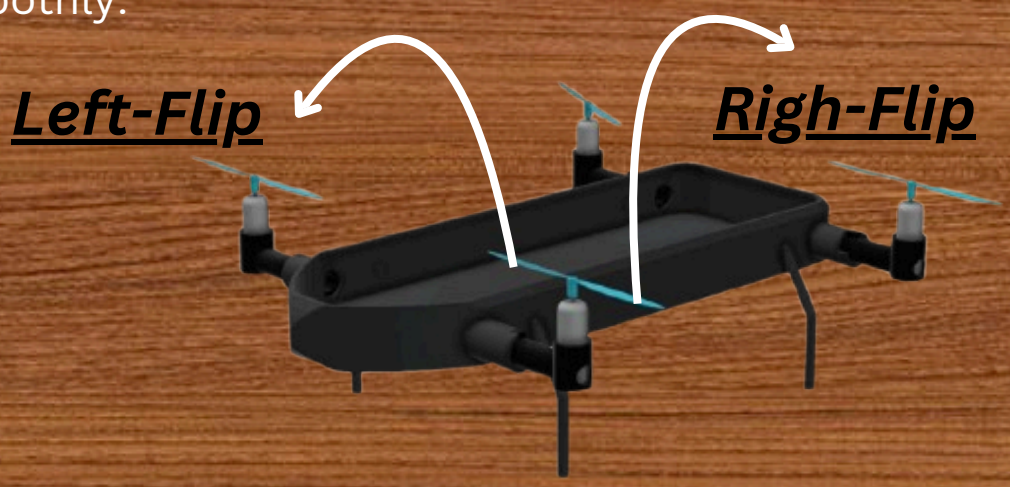


Left and Right(Right Joystick)

To perform FLIP stunt :-

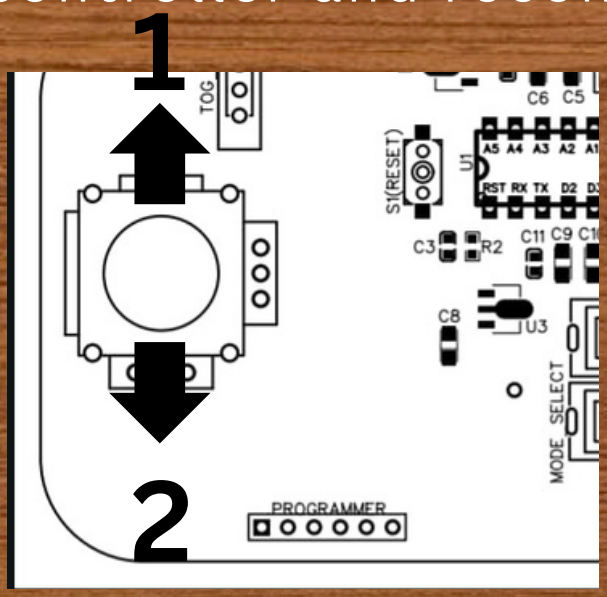
1.) Turn ON the Flip button on the remote controller to activate stunt mode.

2.) Use the Right Joystick to choose the flip direction and execute the motion smoothly.



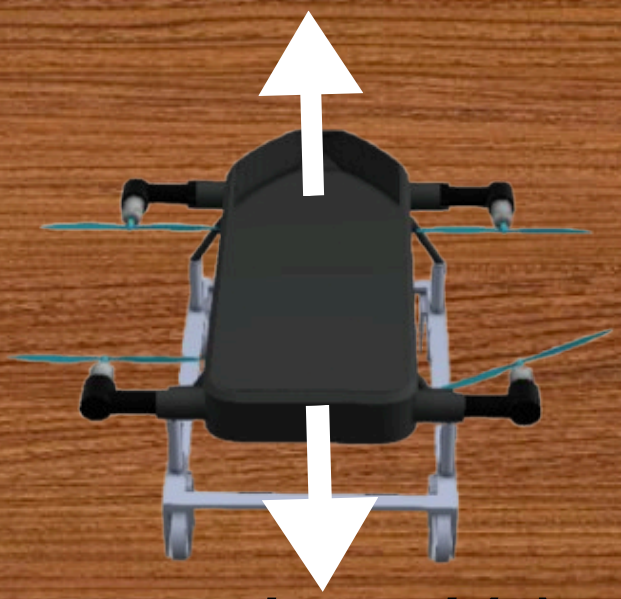
Car/boat control :-

- First, change the mode by turning the power off.
- Adjust the propeller direction accordingly.
- Select the desired mode (Car or Boat).
- Power ON the controller and reconnect to the toy.



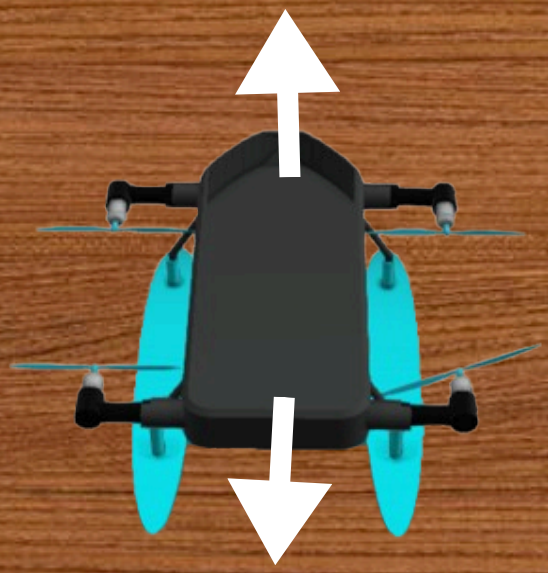
Forward and Backward(Left Joystick)

Forward (1)



Backward (2)

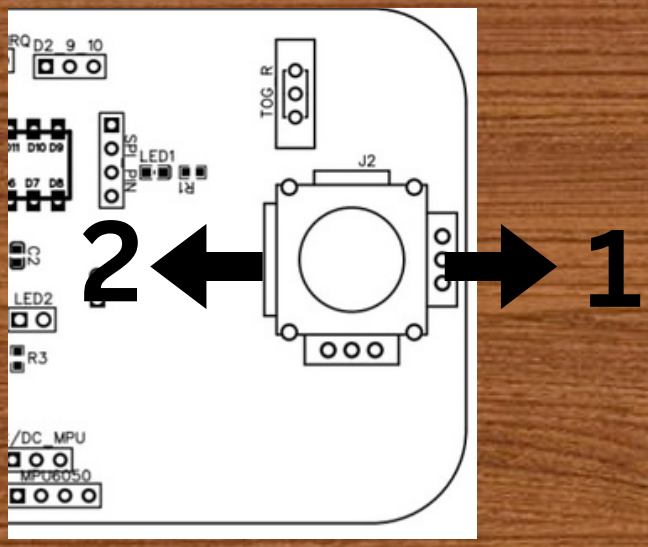
Forward (1)

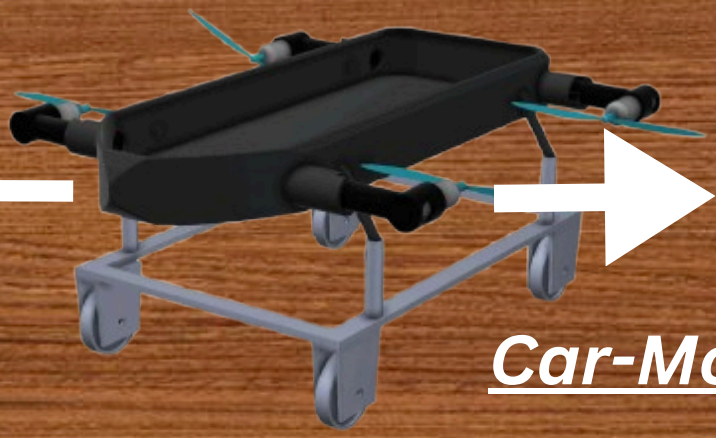


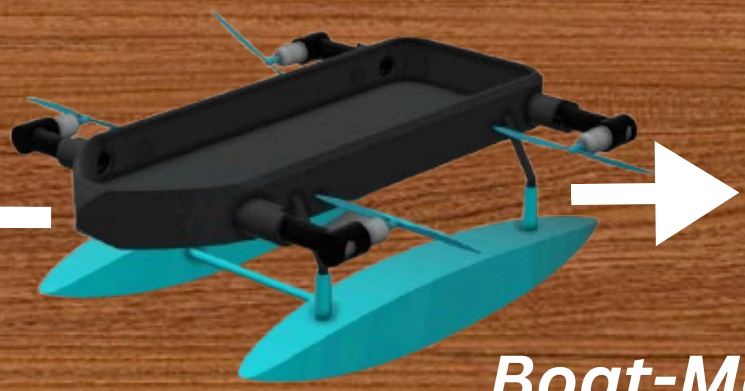
Backward (2)

Car/boat control:

- Left and Right(Right Joystick)







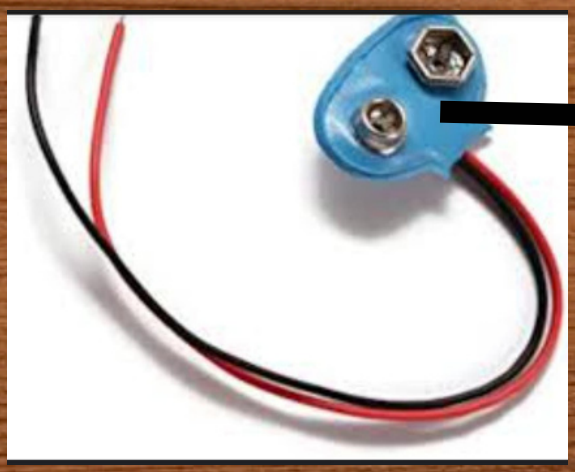
3-IN-1 MODE TOY

DRONE,BOAT and CAR--All-in-1

THE FUTURE IS HERE !!

BATTERY INSTALLATION AND CHARGING INSTRUCTION

- Use one 9V battery for the controller and connect it to the 9V battery connector provided on the PCB.
- Ensure the connector is firmly attached to avoid loose connections.
- The toy is powered by a rechargeable battery.
- Charging can be done using the provided charging module before operation.
- A USB charging cable is included for convenient charging.

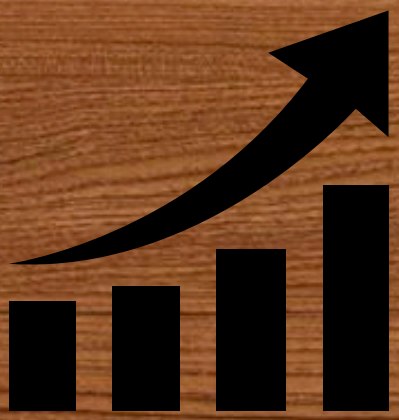


Battery Connector

Design Upgradation and Customisation !!

What We've Got for You!

If you're looking to modify or enhance your toy, dive into its advanced features for an even more immersive experience. The toy is designed to inspire creativity, allowing you to explore and build upon its core functionalities.



Design Upgradation and Customisation !!

- COMMUNICATION PROTOCOLS: REPLACE THE NRF24 WITH BLUETOOTH OR WI-FI FOR MODERNIZED CONTROLS.

- CAMERA MOUNTING: ADD CAMERA MODULES FOR LIVE VIDEO STREAMING DURING AIR AND WATER MODES.

- ADVANCED SENSORS: INTEGRATE MODULES LIKE LIDAR, ULTRASONIC, OR INFRARED FOR OBSTACLE DETECTION AND ENHANCED NAVIGATION.

- MICROCONTROLLER UPGRADES: SWITCH TO A MORE POWERFUL MICROCONTROLLER TO SUPPORT COMPLEX FUNCTIONALITIES.

- ENHANCING THE TOY WITH PATH-PLANNING ALGORITHMS TO ENABLE AUTOMATED NAVIGATION AND ROUTE OPTIMIZATION.

Mode.

Design Upgradation and Customisation !!

- PPM TRANSCEIVERS: PPM (PULSE POSITION MODULATION) TRANSCEIVERS PROVIDE PRECISE AND RELIABLE CONTROL, WIDELY USED IN RC SYSTEMS FOR SEAMLESS INTEGRATION.

- Automatic Mode Transition: Enable automatic transitions between air, land, and water modes using advanced sensors and algorithms, ensuring smooth adaptability during operation.

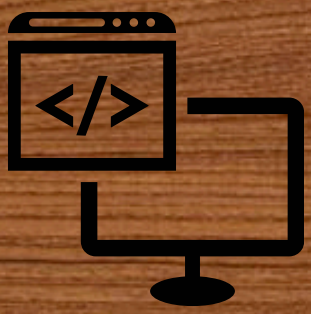
For helping you out !

For in-depth information on the toy's features, components, and electronics, check out our GitHub Repository link : - https://github.com/AdarshSharma24 and accompanying YouTube tutorials accessible through the given. These resources will guide you throughout.

CODING & SOFTWARE CUSTOMIZATION

To help you take your toy to the next level, we provide detailed coding specifications and programming instructions. All you need to do is follow the provided resources—no prior coding knowledge required! These include:

- Access to open-source code libraries compatible with the toy.
- Step-by-step guides to modify the code for new features like advanced sensors and upgraded communication protocols.
- Tutorials to integrate path-planning algorithms and additional functionality.
- Unlock the toy's potential, experiment with cutting-edge technologies, and embark on an exciting journey into robotics and engineering. Let your creativity and curiosity drive innovation!



Safety Precautions for Our 3-in-1 Drone Prototype

1.) Avoid Flammable Materials:

Keep the toy away from acetone-containing materials like nail polish remover.

2.) Proper Charging:

Use the provided voltage regulator; do not charge directly through an AC port.

3.) Ensure Attachments:

Use the correct attachments for each mode to prevent damage or accidents.

4.) Battery Life:

Current battery lasts 15 minutes; upgrades can extend it to 20–30 minutes. Avoid over-draining

Safety Precautions for Our 3-in-1 Drone Prototype

5.) RF Module:

The RF module automatically activates when the toy is powered on using the main power switch. Ensure the toy is turned on before operation.

6.) Operation Space:

Use the provided voltage regulator; do not charge directly through an AC port.

7.) Inspection:

Check for loose or damaged parts before each use and replace if needed.

8.) Avoid Overloading:

Do not attach excessive weights or components to the toy.

CUSTOMER-CARE

For any query or complaints/feedbacks,please contact us at:-

:- 9079494724

:- compactdronetoy@gmail.com

:- https://github.com/AdarshSharma24

THANK YOU!!