SIMULATOR

Drone Simulator

Disconnect
Mode B
Flight
Drive
Open
Save
Rec
Play
Add
Delete
Delete All
Shift
Space
W
A
S
D
Trim
Image Flow
Motor
Measurement
Sensor
LED

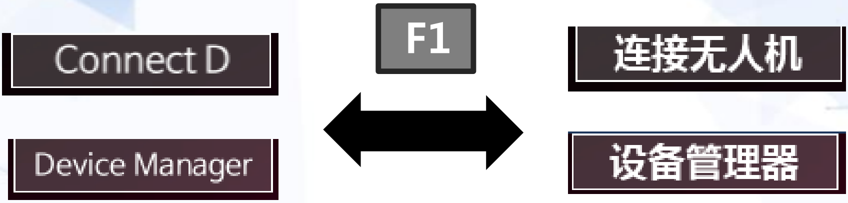
Robot Edutainment Company
ROBOLINK

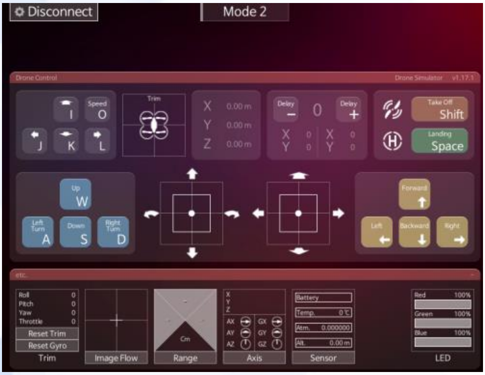
Drone Simulator

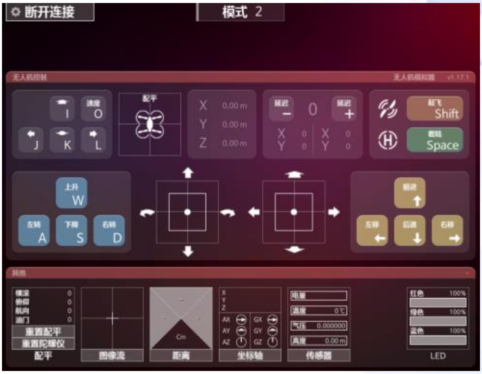
Default Description

0. Language support (Chinese)

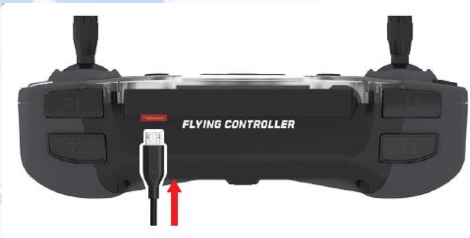
The 'drone simulator' supports Chinese language by pressing 'F1' on any screen.


Connect D
Device Manager
F1
连接无人机
设备管理器


Disconnect
Mode 2
Drone Control
Drone Simulator v1.17.1
Trim
Take Off Shift
Landing Space
Up W
Left Turn A
Down S
Right Turn D
Forward
Left
Backward
Right
etc.
Reset Trim
Reset Gyro
Trim
Image Flow
Range
Axis
Sensor
LED

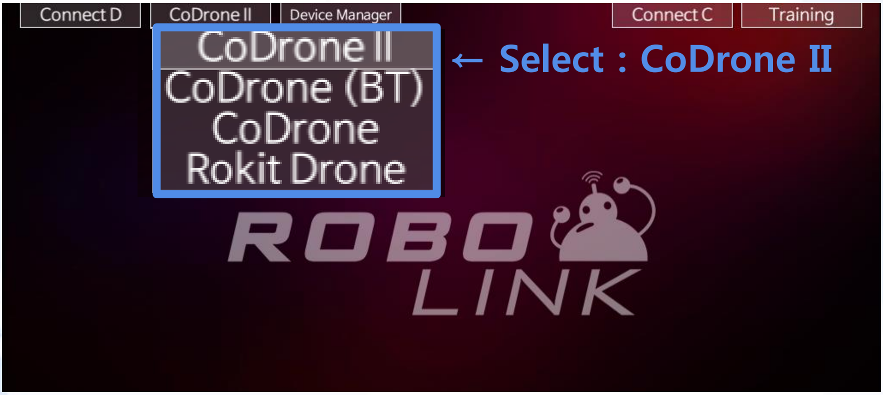

断开连接
模式 2
配平
Shift
Space
W
A
S
D
重置配平
重置陀螺仪
配平
图像流
距离
坐标轴
传感器
LED

1. Connection


FLYING CONTROLLER

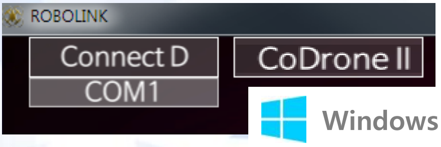
(1) Connecting PC to Controller, and Run " Drone Simulator "

(2) Select Drone mode (Check the " Codrone II "


Connect D
CoDrone II
Device Manager
Connect C
Training
CoDrone II
CoDrone (BT)
CoDrone
Rokit Drone
ROBO LINK

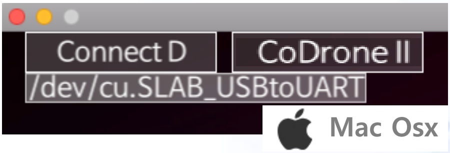
← Select : CoDrone II

(3) Connect the communication port.


ROBOLINK
Connect D
CoDrone II

COM1

Windows


Connect D
CoDrone II

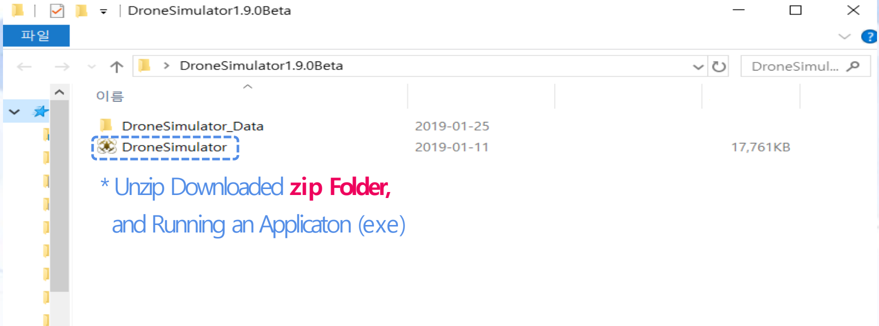
/dev/cu.SLAB_USBtoUART

Mac Osx

※ The number of ports varies from computer to computer.

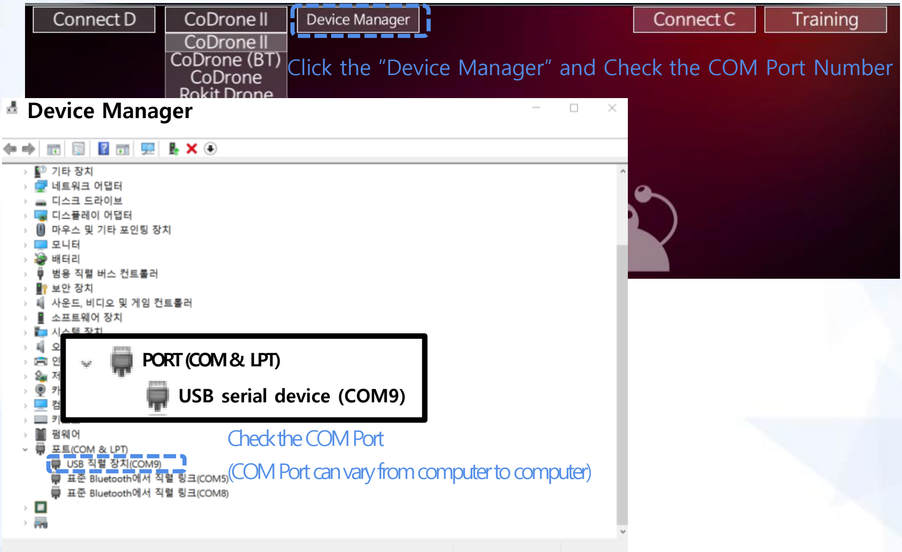
2. Drone Simulator connected

(1) Running a drone simulator


DroneSimulator1.9.0Beta
파일
DroneSimulator1.9.0Beta
DroneSimul...
이름
DroneSimulator_Data 2019-01-25
DroneSimulator 2019-01-11 17,761KB

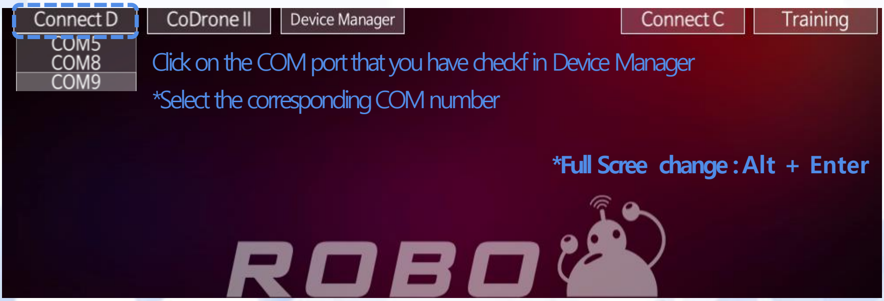
* Unzip Downloaded **zip Folder,**
and Running an Applicaton (exe)

(2) Check & Connect the COM port


Connect D
CoDrone II
CoDrone II
CoDrone (BT)
CoDrone
Rokit Drone
Device Manager
Connect C
Training
Device Manager
기타 장치
네트워크 어댑터
디스크 드라이브
디스플레이 어댑터
마우스 및 기타 포인팅 장치
모니터
배터리
범용 직렬 버스 컨트롤러
보안 장치
사운드, 비디오 및 게임 컨트롤러
소프트웨어 장치
시스템 장치
펌웨어
포트(COM & LPT)
USB 직렬 장치(COM9)
표준 Bluetooth에서 직렬 링크(COM5)
표준 Bluetooth에서 직렬 링크(COM8)
PORT (COM & LPT)
USB serial device (COM9)

Click the "Device Manager" and Check the COM Port Number

Check the COM Port
(COM Port can vary from computer to computer)


Connect D
COM5
COM8
COM9
CoDrone II
Device Manager
Connect C
Training
ROBO

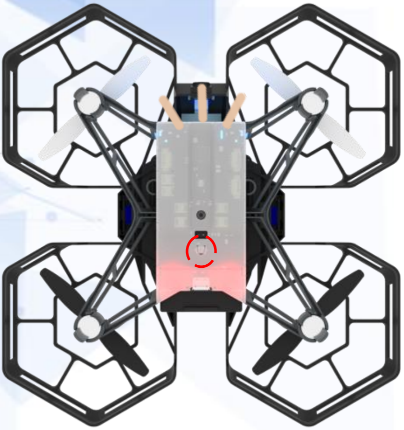
Click on the COM port that you have checkf in Device Manager
*Select the corresponding COM number

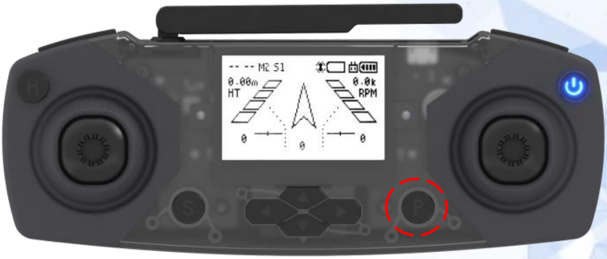
***Full Scree change : Alt + Enter**

3. Pairing

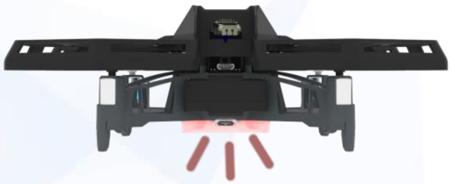
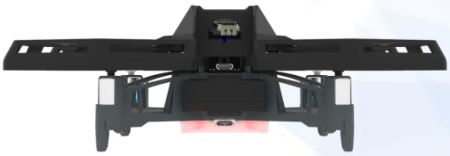
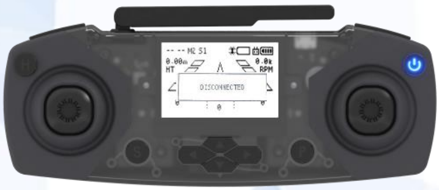
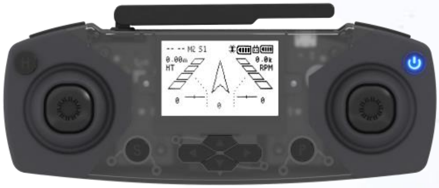
(1) Controllers and Pairings

- Push the Button(red circle) under The Drone for 4 Seconds
- The frone LED (yellow) will blink , At this time, Press the 'P' Button on the controller





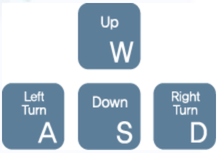
(2) Check the pairing status of 'Drone' and Controller

NO Pairing	Paired
 Red LED on the back of drones bllink	 Red LED on the back of drones is on
 The phrase 'DISCONNECTED' in displayed	 The phrase 'DISCONNECTED' is not displayed and is shown as in the image above

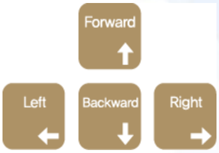
4. Running the Drone Simulator

First press '**take-off' Button (shift)** to take off the drone. And use W (rising), S (falling) A (left Turning), and D (right turn) among the keys **W, S, A, D**, You can also fly in desired direction with the rudder (↑ ↓ ← →)

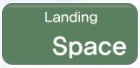
* Mode B 기준


Up
W
Left Turn
A
Down
S
Right Turn
D

Altitude · Rotation

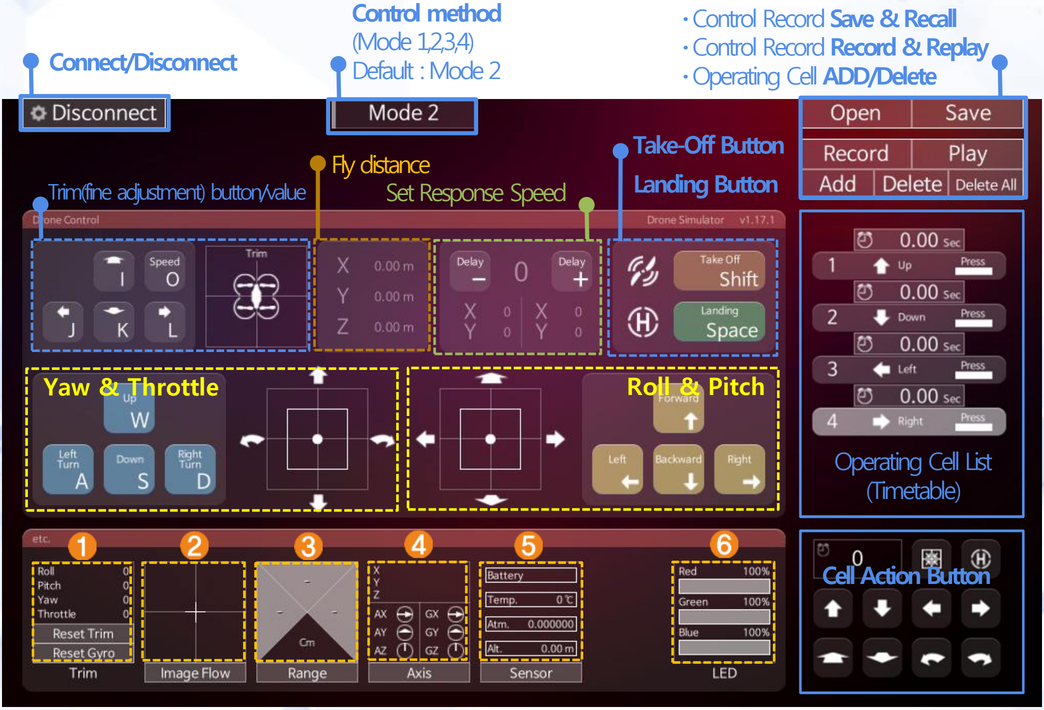

Forward
Left
Backward
Right

Front · rear · left · right Move


Landing
Space

<Space bar> **1회** : Landing / **2회** : Emergency Landing

- Be sure to familiarize yourself with the 'Emergency Landing' Method' and fly.



Connect/Disconnect

Control method
(Mode 1,2,3,4)
Default : Mode 2

- Control Record **Save & Recall**
- Control Record **Record & Replay**
- Operating Cell **ADD/Delete**

Trim(fine adjustment) button/value

Fly distance

Set Response Speed

Take-Off Button

Landing Button

Yaw & Throttle

Roll & Pitch

Operating Cell List
(Timetable)

Cell Action Button

Disconnect
Mode 2
Open
Save
Record
Play
Add
Delete
Delete All
Drone Control
Drone Simulator v1.17.1
Speed
I
O
J
K
L
Trim
X 0.00 m
Y 0.00 m
Z 0.00 m
Delay
0
Delay
X 0
Y 0
X 0
Y 0
Take Off
Shift
Landing
Space
0.00 Sec
1 Up Press
0.00 Sec
2 Down Press
0.00 Sec
3 Left Press
0.00 Sec
4 Right Press
Up
W
Left Turn
A
Down
S
Right Turn
D
Forward
Left
Backward
Right
etc.
1
2
3
4
5
6
Roll 0
Pitch 0
Yaw 0
Throttle 0
Reset Trim
Reset Gyro
Trim
Image Flow
Cm
Range
X
Y
Z
AX
AY
AZ
GX
GY
GZ
Axis
Battery
Temp. 0℃
Atm. 0.000000
Alt. 0.00 m
Sensor
Red 100%
Green 100%
Blue 100%
LED
0

(1) Trim(trim) Value Monitor

(2) Image Flow Sensor Output

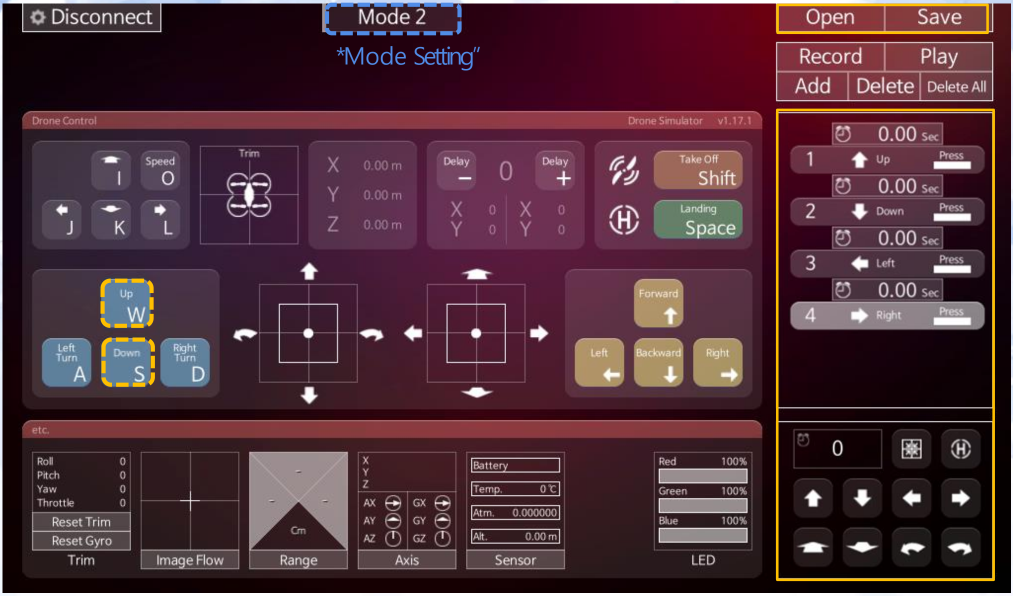
(3) 3-Directon IR Range (sensor) Value

(4) Acceleration·gyro sensor(IMU)
X, Y, Z : Acceleration sensor value
AX, AY, AZ : Angle of Drone (Rotation)
GX, GY, GZ : gyro sensor value(Gyroscope)

(5) Battery Residue / Drone Temperature / Barometric Pressure Value / elevation value

(6) Drone LED color Setting

5. Drone Simulator Operation Cell Recording


Disconnect
Mode 2
*Mode Setting"
Open
Save
Record
Play
Add
Delete
Delete All
Drone Control
Drone Simulator v1.17.1
Speed
I
O
J
K
L
Trim
X 0.00 m
Y 0.00 m
Z 0.00 m
Delay
0
Delay
X 0
Y 0
X 0
Y 0
Take Off
Shift
Landing
Space
Up
W
Left Turn
A
Down
S
Right Turn
D
Forward
Left
Backward
Right
0.00 Sec
1 Up Press
0.00 Sec
2 Down Press
0.00 Sec
3 Left Press
0.00 Sec
4 Right Press
etc.
Roll 0
Pitch 0
Yaw 0
Throttle 0
Reset Trim
Reset Gyro
Trim
Image Flow
Cm
Range
X
Y
Z
AX
AY
AZ
GX
GY
GZ
Axis
Battery
Temp. 0℃
Atm. 0.000000
Alt. 0.00 m
Sensor
Red 100%
Green 100%
Blue 100%
LED
0

(1) When you press the "Rec" button in the upper right corner of the screen, the control value is remembered.

(2) When the "Stop" Button is Pressed and the "Replay" Button is pressed, the entered control value is automatically executed

※ The trajectory may change depending on the environment of the drone

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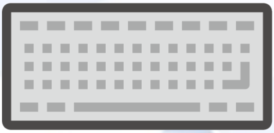
When you control a drone on a PC, you can control it with a keyboard

The control standard is MODE2. (Check mode2 at the top of the screen)

Keyboard Shortcuts Guide



Rise : W Key

Fall : S key

Left Turn : A key

Right Turn : D key

forward : ↑ key

Reverse : ↓ key

Left-hand Movement : ← key

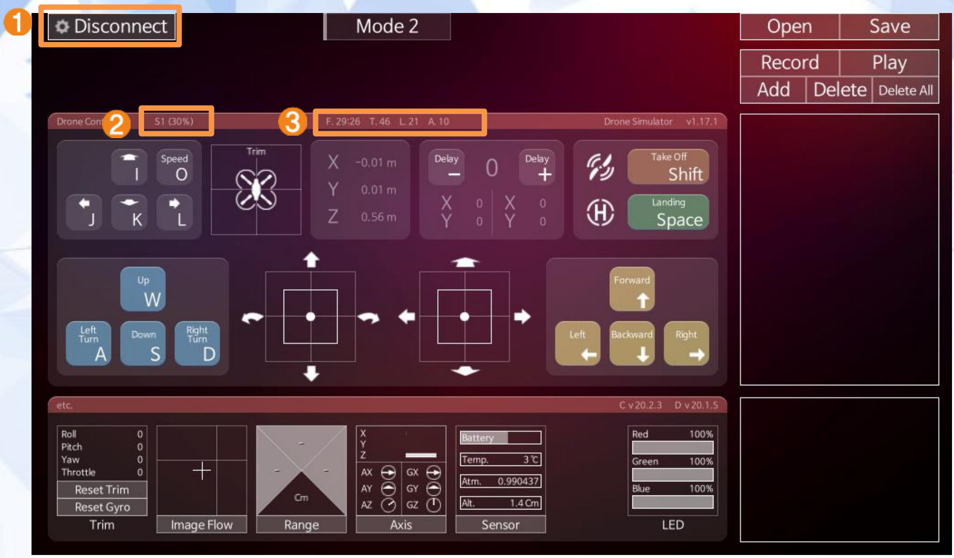
Right-hand Mobement : → key

TAKE-OFF : Shift key

Landing : Space bar key

Emetgency Landing
: Space bar (Two consecutive hits)

6. Additional Information


1
Disconnect
Mode 2
Open
Save
Record
Play
Add
Delete
Delete All
Drone Con
2
S1 (30%)
3
F. 29:26 T. 46 L. 21 A. 10
Drone Simulator v1.17.1
Speed
I
O
J
K
L
Trim
X -0.01 m
Y 0.01 m
Z 0.56 m
Delay
0
Take Off
Shift
Landing
Space
Up
W
Left Turn
A
Down
S
Right Turn
D
Forward
Left
Backward
Right
etc.
C v20.2.3 D v20.1.5
Roll 0
Pitch 0
Yaw 0
Throttle 0
Reset Trim
Reset Gyro
Trim
Image Flow
Cm
Range
AX
AY
AZ
GX
GY
GZ
Axis
Battery
Temp. 3℃
Atm. 0.990437
Alt. 1.4Cm
Sensor
Red 100%
Green 100%
Blue 100%
LED

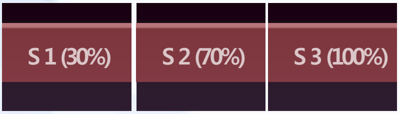
(1) Communications Status Monitor

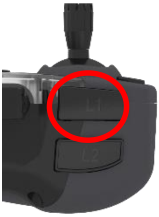
Once connected to the drone, the cogwheel rotates.

※ The cogwheel rotates 5 degrees each time the 'drone & manipulator' communicates. If the rotation is slow or does not rotate, there is a problem with the communication status, and it checks.

(2) Drone Motor Speed

Speed can be changed by pressing the left back (R1) button of the controller with the drone connected.

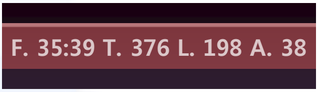

S 1 (30%)
S 2 (70%)
S 3 (100%)



(3) Flight Information Display

If the drone is connected,

You can confirm by pressing F9.

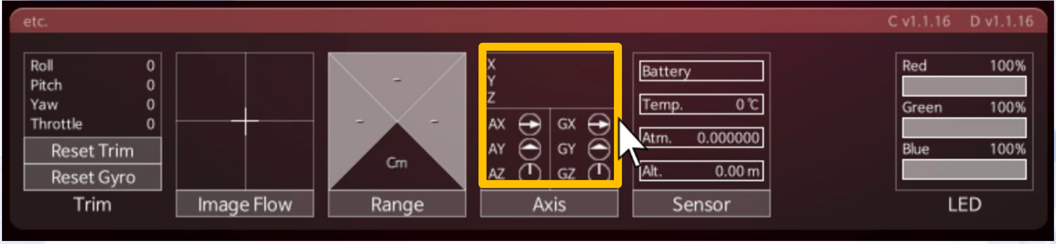

F. 35:39 T. 376 L. 198 A. 38

FLIGHT TIME	00 : 35 : 39
TAKEOFF	376
LANDING	198
ACCIDENT	38

F9

A Game Using Sensor Values

Click on the Axis box at the bottom and you will see the screen below.


etc.
C v1.1.16
D v1.1.16
Reset Trim
Reset Gyro
Trim
Image Flow
Cm
Range
X
Y
Z
AX
AY
AZ
GX
GY
GZ
Axis
Sensor
LED

Roll 0
Pitch 0
Yaw 0
Throttle 0

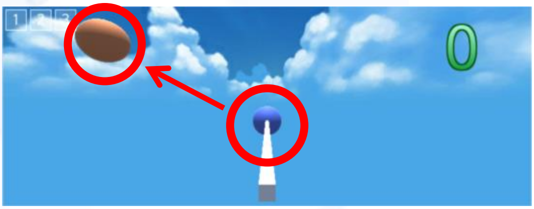
Battery
Temp. 0℃
Atm. 0.000000
Alt. 0.00 m

Red 100%
Green 100%
Blue 100%

Operate the following simulator using the drone's gyro sensor.

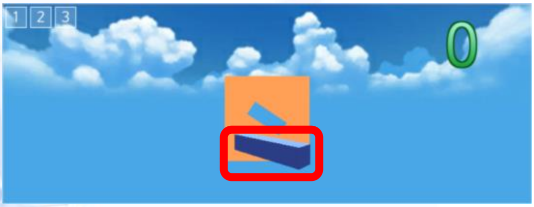
This simulator can learn about 'sensors'.

You can select a simulator by clicking 1,2,3 in the upper left corner.



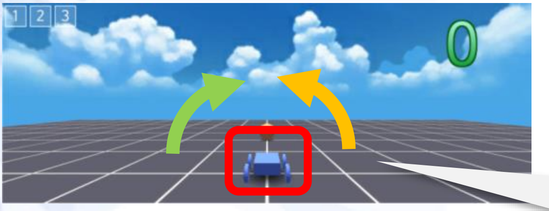
1

Move the drone and hit the ball to score.



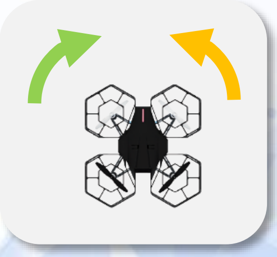
2

Move the drone, pass the oncoming box, and you score.



3

Move the drone, steer the car, eat the ball, and score.



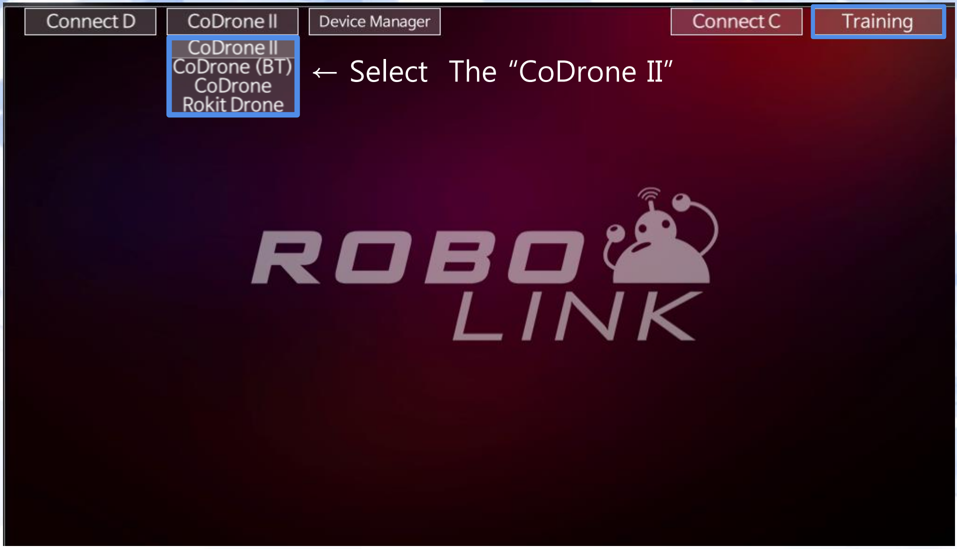
※ Before you start the game, make sure the drone and the pilot are in the same direction, and then re-engaged the battery.

(It matches the AZ value of the drone with the pilot.)

Drone Simulator

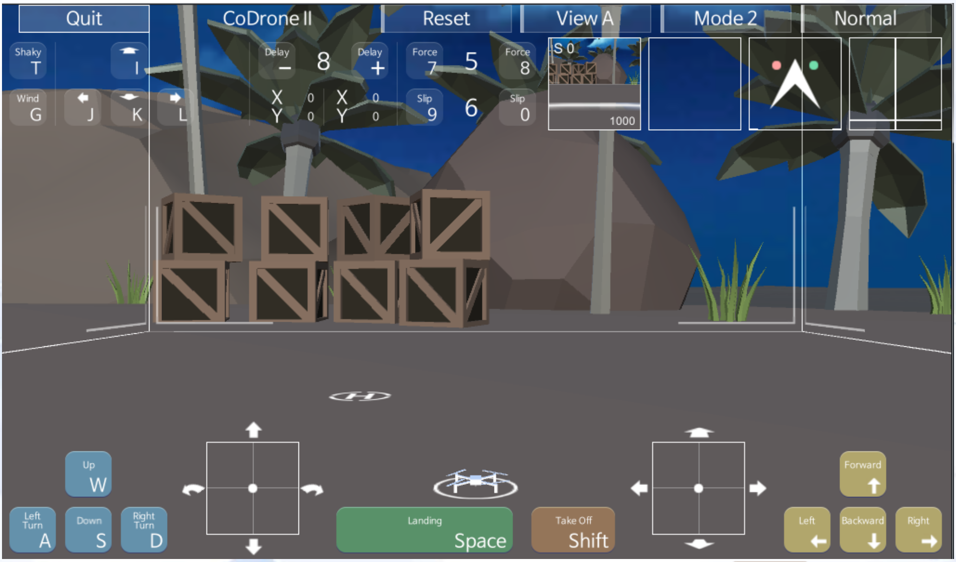
“Virtual Flight Exercise”

1. Starting


Connect D
CoDrone II
Device Manager
Connect C
Training
CoDrone II
CoDrone (BT)
CoDrone
Rokit Drone
ROBO LINK

← Select The "CoDrone II"

Press the " Training " button in the upper right corner of the screen, You can enter virtual flight practice mode where you can learn how to control a drone before you manipulate the actual drone.

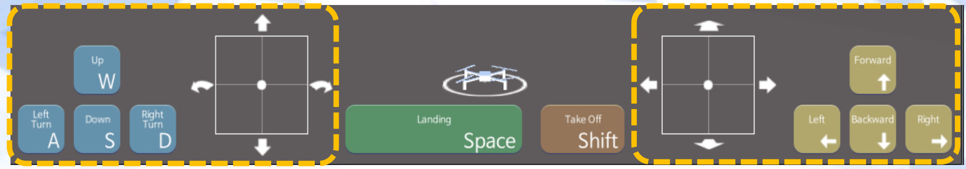

Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky
T
I
Wind
G
J
K
L
Delay
−
8
Delay
+
X 0
Y 0
X 0
Y 0
Force
7
5
Force
8
Slip
9
6
Slip
0
S 0
1000
Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

Like actual drones, virtual drones can operate after takeoff Take Off Shift

Let's push the take-off button for a second and fly the virtual drone into the air

2. Operation Key Description

Mode 2 **Left :** Rising/Fall Move /Rotation **Right** : Front/Reverse/Left/Right/Move

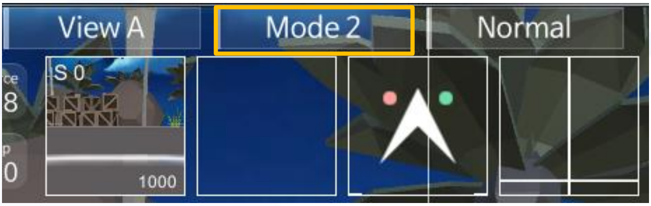

Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

The simulator controls the w,a,s,d keys with the left hand and the up,down,left, and right rudder keys with the right hand. To stop (land) a drone in flight, Press the landing key Landing Space for 1 second to use.

The mode used in this guidebook is usually a popular "MODE2" method.

Mode 2 **Left :** Rising/Fall Move /Rotation **Right** : Front/Reverse/Left/Right/Move

*If you click the icon on the controller without typing it on the keyboard, it will work.


View A
Mode 2
Normal
S 0
8
0
1000

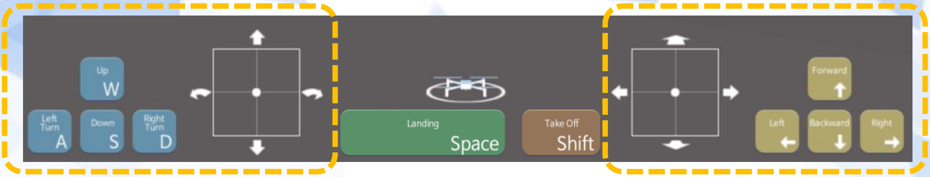
Click the mode button in the upper right corner to change the mode in order 1 → 2 → 3 → 4. While "Mode 2" is common, it can be operated by switching to an environment that is convenient for individuals to use.

Mode 1 Mode 2 Mode 3 Mode 4

3. Setting the control mode

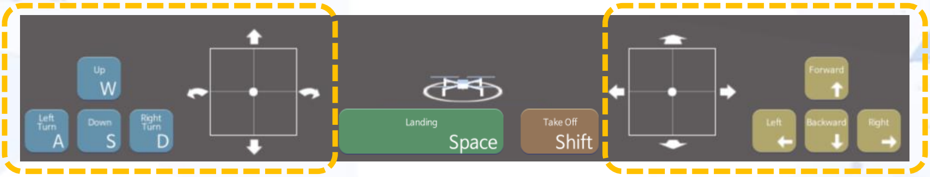
Mode **1**

Left : Front / Reverse Move /Rotation **Right** : Rising/Fall/Left/Right


Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

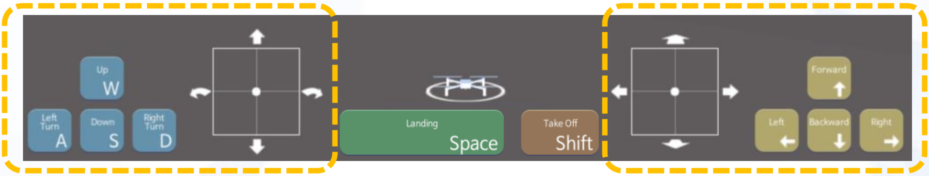
Mode **3**

Left : Front / Reverse Move /Left /Right **Right** : Rising/Fall/Rotation

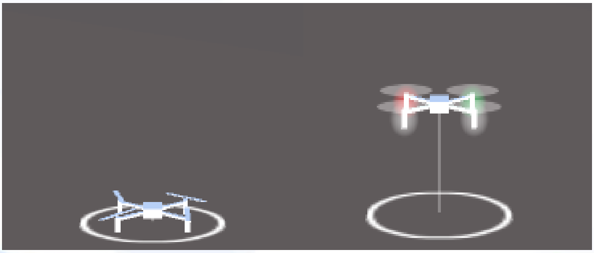

Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

Mode **4**

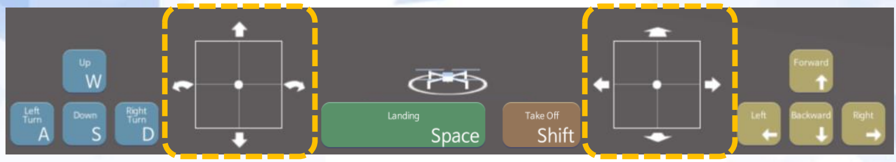
Left : Rising / Fall / Left /Right Move **Right** : Front/Reverse/Rotation


Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

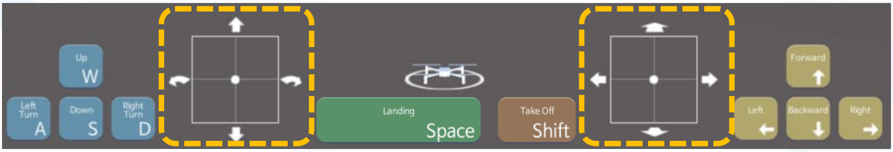
The landing drone cannot enter any action other than take-off.
Set the mode and press the take-off button.



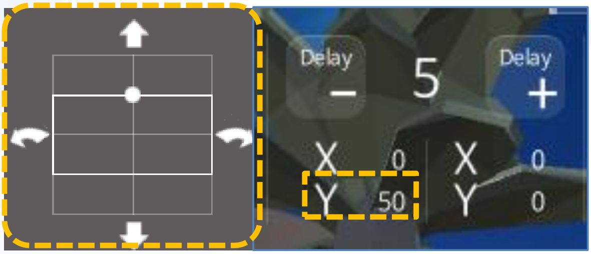
4. Setting up the steering environment – Set input Limit Values


Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

You can control the individual force applied to the drone. If the area representing maximum and minimum of UI is arbitrarily adjusted, it will not be subjected to more than a limited size.


Up
W
Left Turn
A
Down
S
Right Turn
D
Landing
Space
Take Off
Shift
Forward
Left
Backward
Right

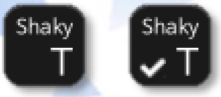
Clicking and dragging an area with the mouse or, After pressing the Ctrl key on the keyboard, you can change the W, A, S, and D keys or orientation keys.


Delay
−
5
Delay
+
X 0
Y 50
X 0
Y 0

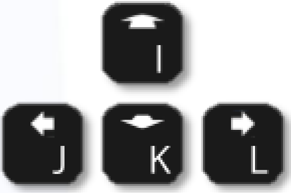
You can see that the UI at the top does not apply force over a limited size. It can be used, for example, when fine tuning is needed.

5. Manipulating – Trim Adjustment

Shaky

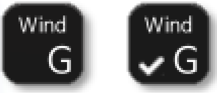


First Makes the drone "unstable.". It works with the 'T key' on the keyboard and can also be operated by clicking the button (UI) on the screen.
A single press of the button produces a "check" mark on the side of the button.
A one more press of the button removes the "check mark" and the drone flies in a steady flight.



The buttons above are four 'trimming' buttons.
You can fine-tune it with the I jk l key on your keyboard, and you can fine-tune it by clicking the UI icon on the screen.
Press the opposite direction that tilts to proceed with stabilization. Repeat this function to learn 'stabilize the drones'.

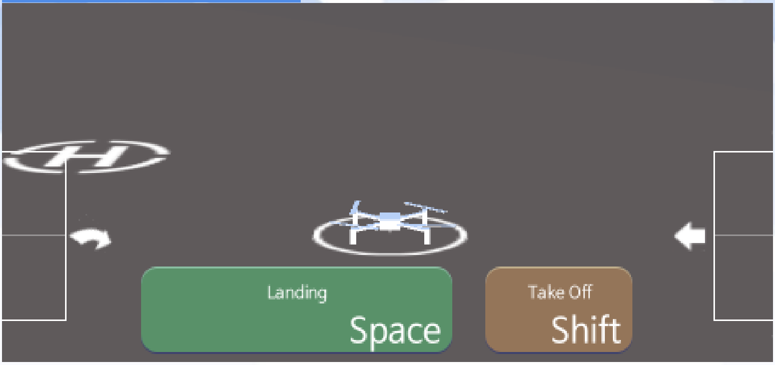
Wind



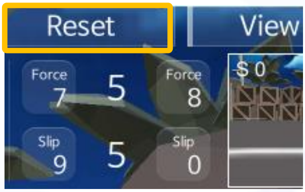
It creates a wind that pushes the drone away. Operate with the G key on the keyboard and click the button (UI) on the screen to operate.
A single press of the button produces a "check" mark on the side of the button.
The direction of the wind changes randomly when it is checked.
Using this function, we have a slightly more experienced control.

6. Manipulating – Landing Exercise

(1) Landing Exercise

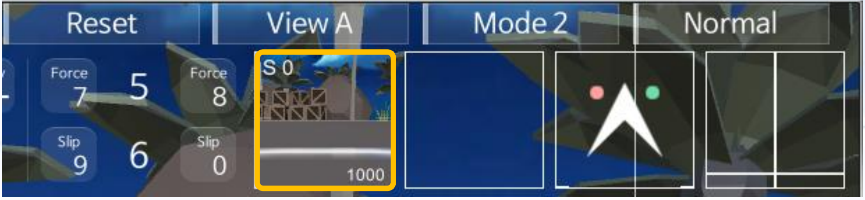

Landing
Space
Take Off
Shift

Move the drone to the landing position shown on the screen, and through this process you can practice landing. This exercise will learn the basic maneuverability of the drone, and when the drone is correctly lowered to the landing position, the next landing position will be displayed.

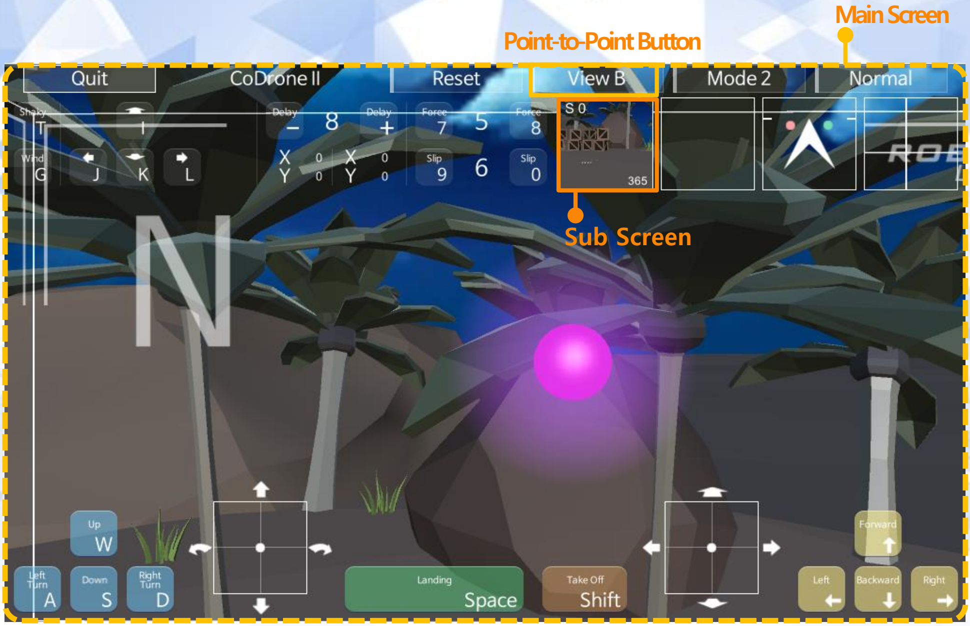

Reset
View
Force
7
5
Force
8
Slip
9
5
Slip
0
$ 0

If the drone flew too far and disappeared from the screen, Press the **Reset** button to move the drone to its first position. This function works by clicking the button (UI) on the screen.

(2) Practice reaching a fixed/free target

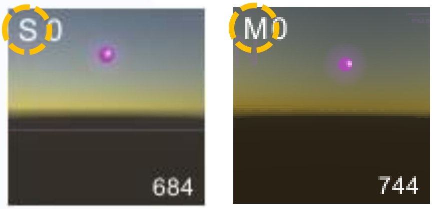

Reset
View A
Mode 2
Normal
Force
7
5
Force
8
Slip
9
6
Slip
0
S 0
1000

You can practice moving drones to the target (violet ball). At the top of the screen, the point of view of the drone is shown, and the numbers shown below indicate the distance to the target.
The distance to the numerically marked target, the location of the drone, and the target using the front view of the drone.
must be reached to
When the drone reaches the target, the top number is counted by one, and the next target is displayed.


Main Screen
Point-to-Point Button
Quit
CoDrone II
Reset
View B
Mode 2
Normal
S 0
365
Sub Screen
Shaky T
Wind G
J
K
L
Delay − 8
Delay +
Force 7
5
Force 8
Slip 9
6
Slip 0
X 0 Y 0
X 0 Y 0
N
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

Press the point-in-time conversion button to switch to View A ↔ View B.

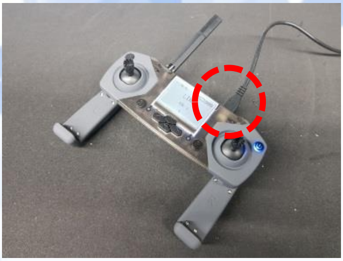
View A		View B	
	Main Screen:Pilot Point **Sub-screen**:drone Point		**Main Screen**:Drone Point **Sub-screen**:Pilot Point


S 0
684
M 0
744

Click on the sub-screen to change the purple target from S (Stay, Fixed) to M (Movement). When motion (M) occurs, the fixed (S) purple target moves freely within the space. Each time you click on the sub-screen, it changes to S ↔ M repeatedly.

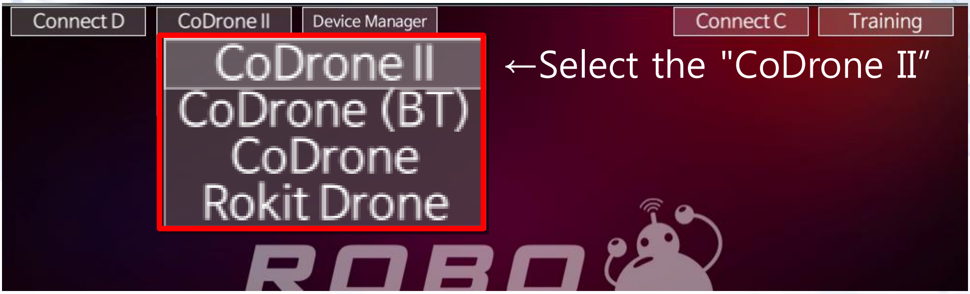
The number of times a target has been reached is counted next to the alphabet, and this function is aimed at learning more skilled manipulations.

7. To Simulate flying with a controller



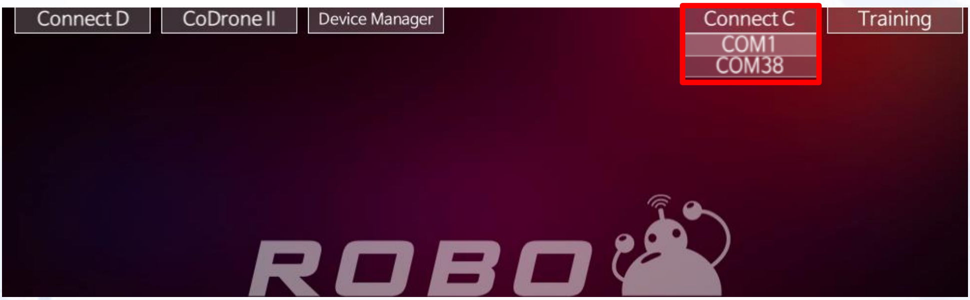
(1) Connect the PC and the controller, the drone. Run the simulator.

(2) Select the Drone MODE

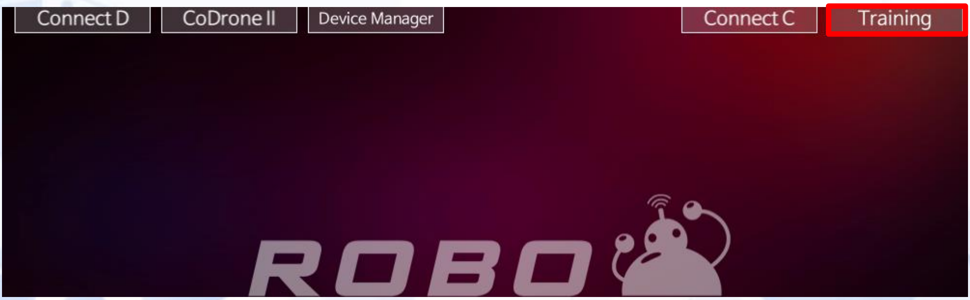

Connect D
CoDrone II
Device Manager
Connect C
Training
CoDrone II
CoDrone (BT)
CoDrone
Rokit Drone
ROBO

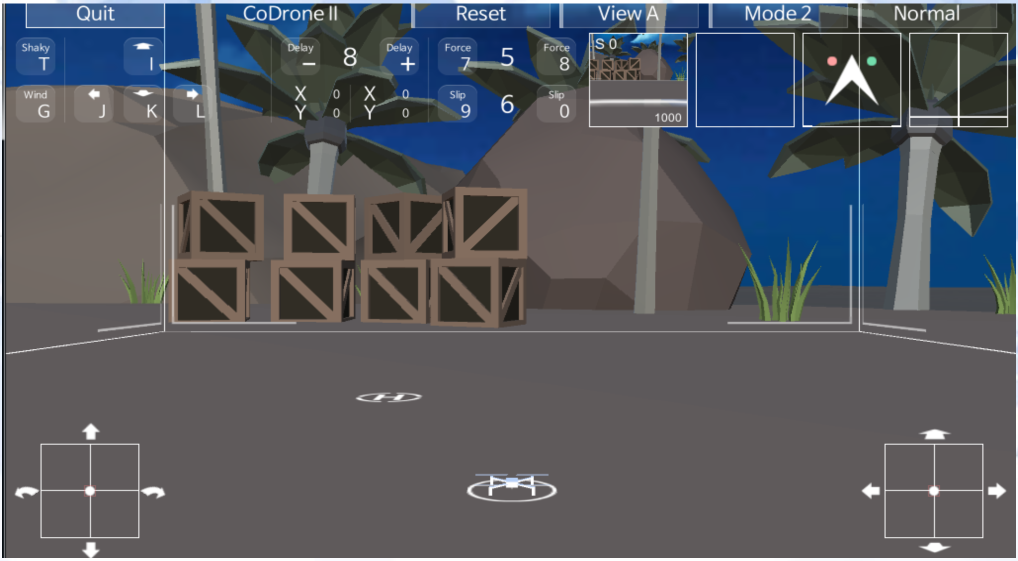
←Select the "CoDrone II"

(3) Select and click on the port to which the control is connected.


Connect D
CoDrone II
Device Manager
Connect C
COM1
COM38
Training
ROBO

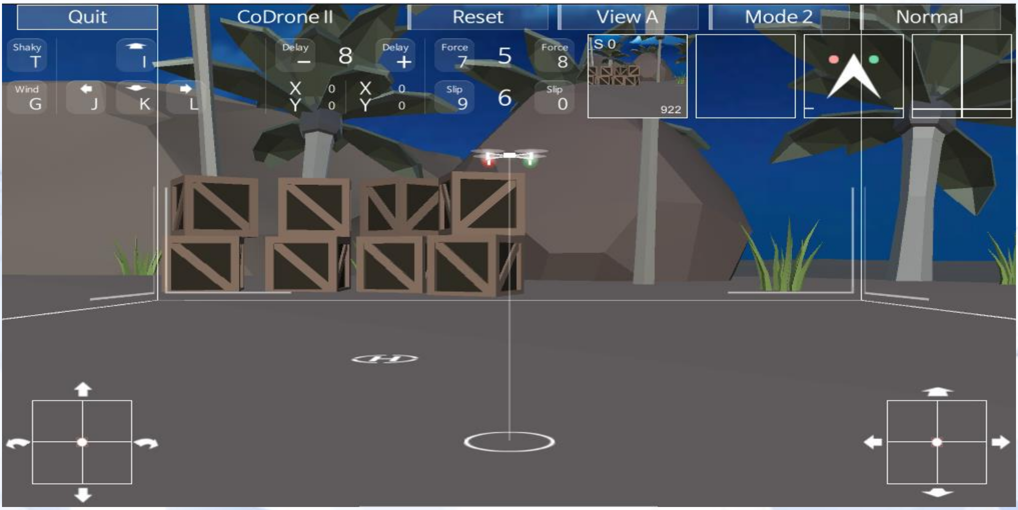
(4) Click the Training button to switch to the simulated flight screen


Connect D
CoDrone II
Device Manager
Connect C
Training
ROBO


Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky
T
I
Wind
G
J
K
L
Delay
8
Delay
Force
7
5
Force
8
X
Y
Slip
9
6
Slip
0
S 0
1000

(5) Hold the L1 button for more than 1 second to take off/land and control the drone with the controller.
(See Quick Guide for self-controlled methods)

※ Emergency landing: L1 + under the throttles (↓)

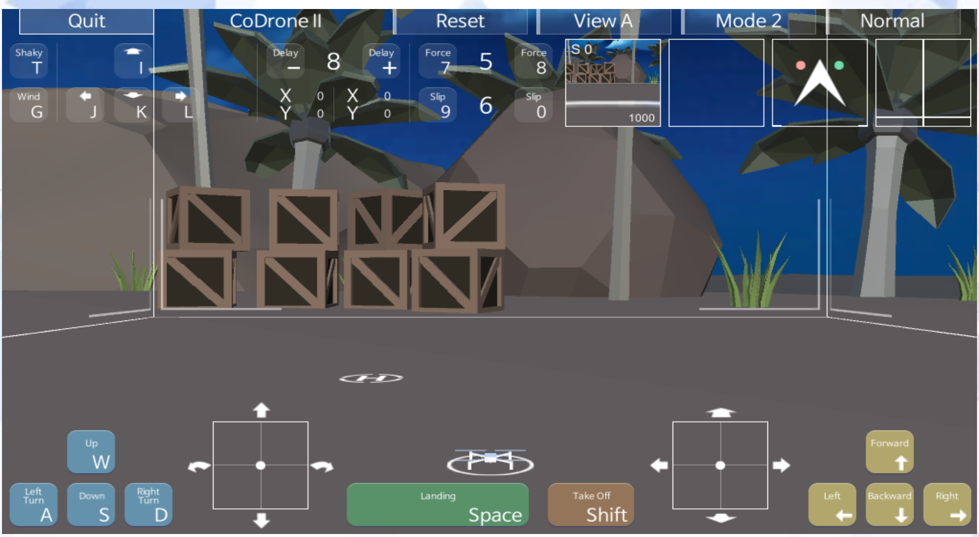

Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky
T
I
Wind
G
J
K
L
Delay
8
Delay
Force
7
5
Force
8
X
Y
Slip
9
6
Slip
0
S 0
922

(6) Other options for simulated flight are the same as for simulated flight with a keyboard.

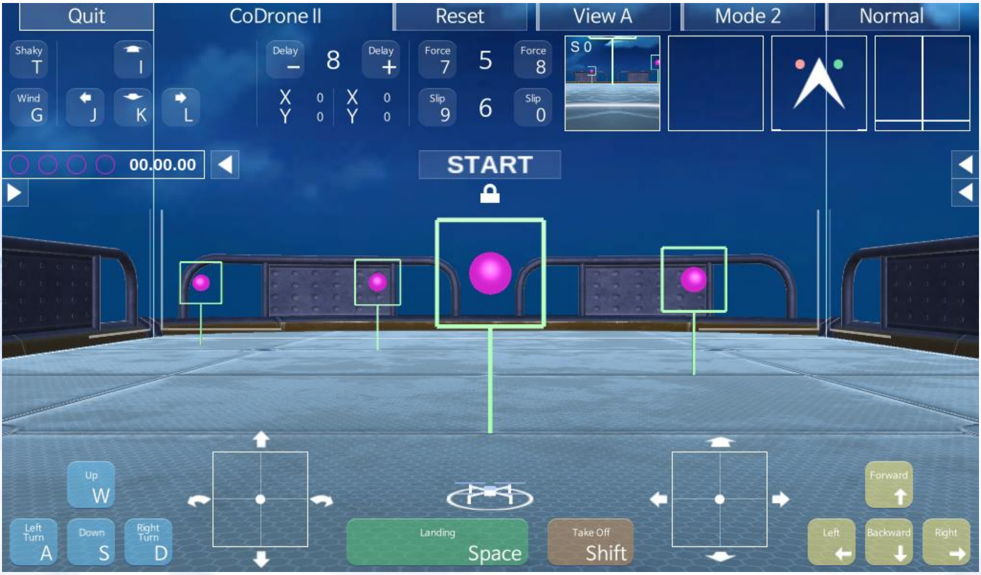
Drone Simulator

“Mini Game”

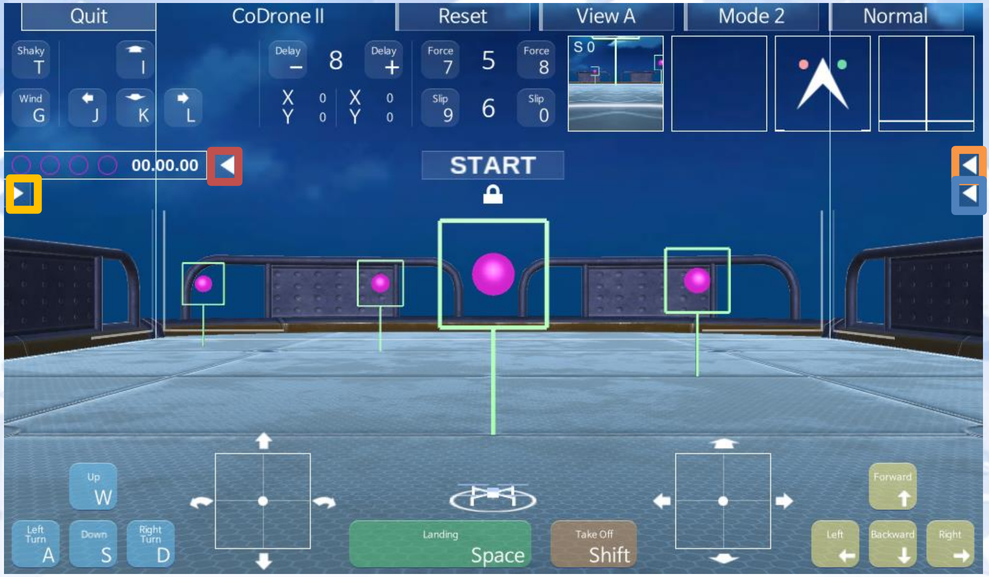
Mini game


Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay –
8
Delay +
Force 7
5
Force 8
Slip 9
6
Slip 0
S 0
1000
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

Press ' **F2** ' on the Training Mode screen as shown above.


Quit
CoDrone II
Reset
View A
Mode 2
Normal
00.00.00
START
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

The screen changes as shown above.

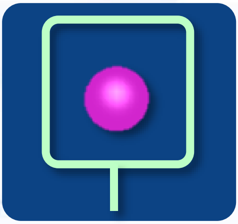

Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay –
8
Delay +
X 0
Y 0
X 0
Y 0
Force 7
5
Force 8
Slip 9
6
Slip 0
S 0
00.00.00
START
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

In the above mode, press the arrow ▶◀ ▶◀ at the end of the screen to turn the game on.

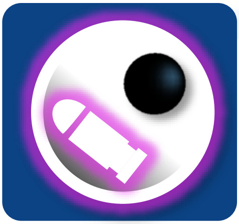
Press the START button to start the game.

※ On this screen, you must press START to operate the drone.

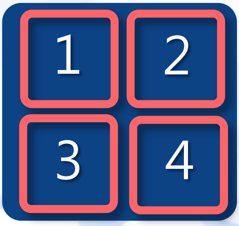
Game 1



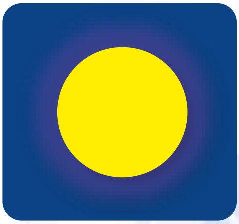
Game 3



Game 2



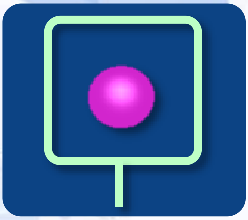
Game 4

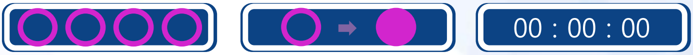


Mini - Games : Description

Game 1

View A View B





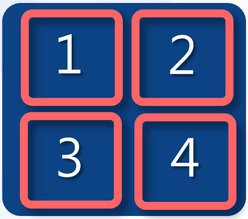
The first game is who collects the purple balls in the obstacle faster within the time limit.
When you eat a ball in an obstacle in a designated space with a drone, the ball is filled like the image above.

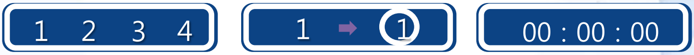
View A and View B

Two Views Supports

Game 2

View B

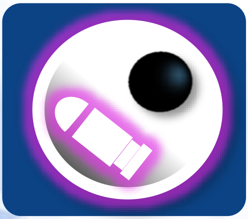


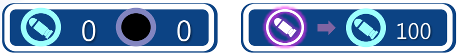


The second game is to see who will fly in a shorter time (1→2 → 3 → 4) in order of the aerial obstacles (No. 1, 3) and the floor obstacles (No. 2, 4).
If you pass or land through the obstacle, the left digit plate will be marked with a check mark, and obstacle number 3 will need to be changed to View B.

Game 3

View A View B

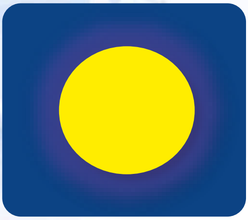


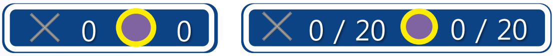


The third game is shooting game. When you eat the bullet icon , you load 100 bullets.
The bullet is fired automatically.
You can score if you hit the 'ink drop' with a bullet.
When the drone hits a black ball, the screen darkens and the game is over.

Game 4

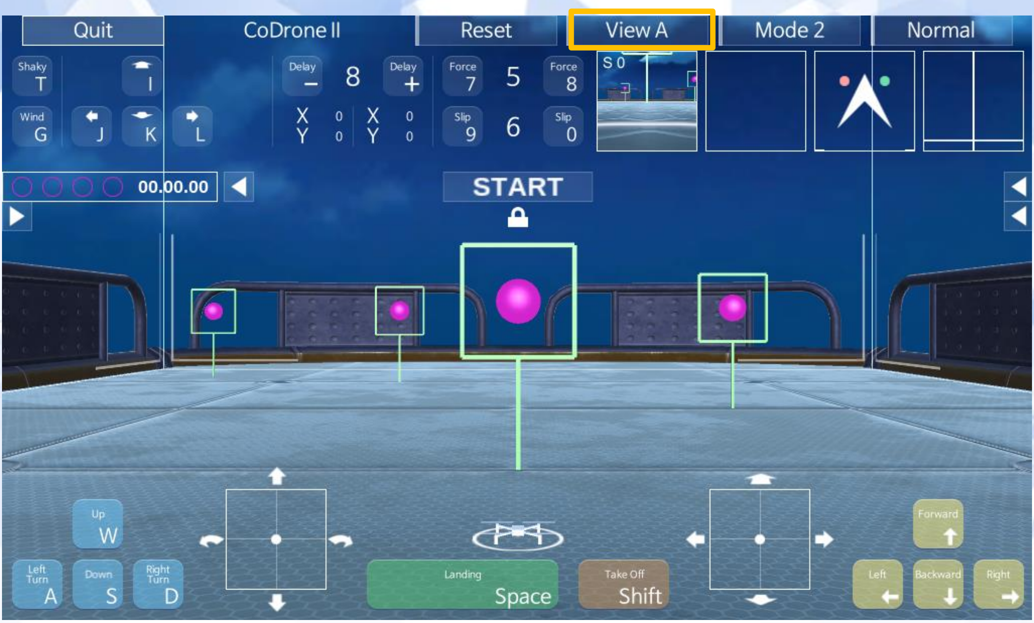
View B





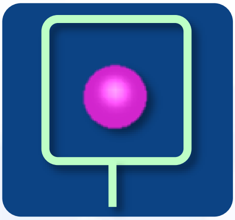
The fourth game is collecting yellow balls. If you control a drone and eat a yellow ball, you get a point.
In a short period of time, the ball will appear randomly and 'X Point' will be added '1 point' if you can't eat or eat late.
A total of 20 balls appear.

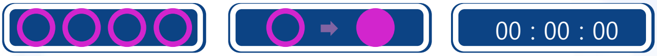
Point-in-time Transformation


Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay −
8
Delay +
X 0
Y 0
X 0
Y 0
Force 7
5
Force 8
Slip 9
6
Slip 0
S 0
00.00.00
START
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

Game 1

View A View B





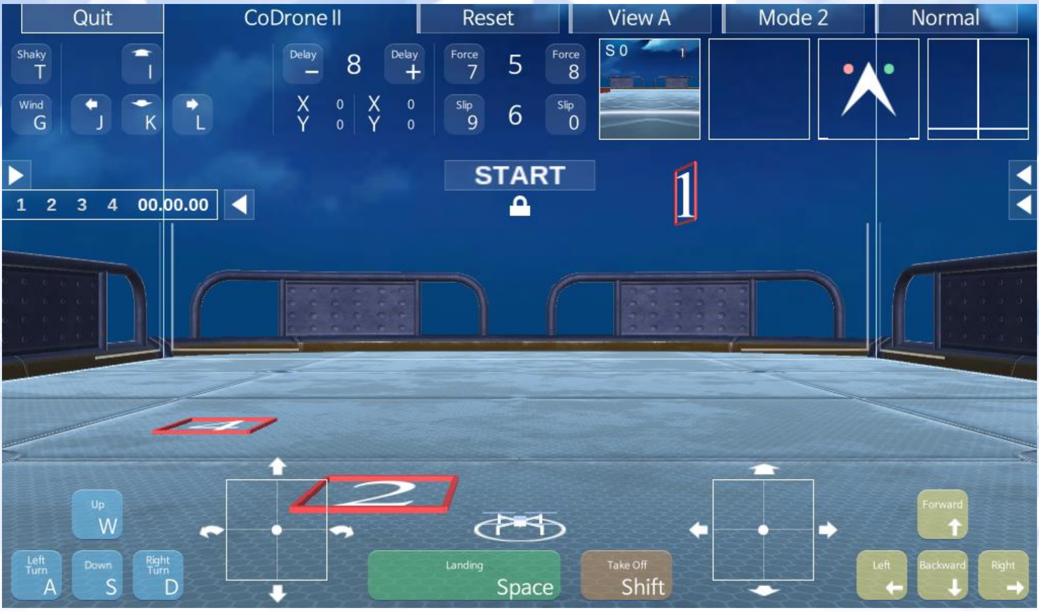
The first game is who collects the purple balls in the obstacle faster within the time limit.
When you eat a ball in an obstacle in a designated space with a drone, the ball is filled like the image above.

View A and View B

Two Views Supports

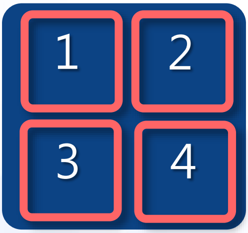
View A : **Pilot Point of View**

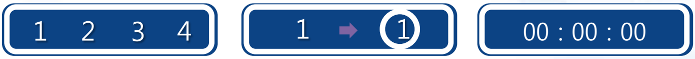
View B : **Drone Point of View**


Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay −
8
Delay +
Force 7
5
Force 8
Slip 9
6
Slip 0
X 0 Y 0
X 0 Y 0
S 0
1 2 3 4 00.00.00
START
1
4
2
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

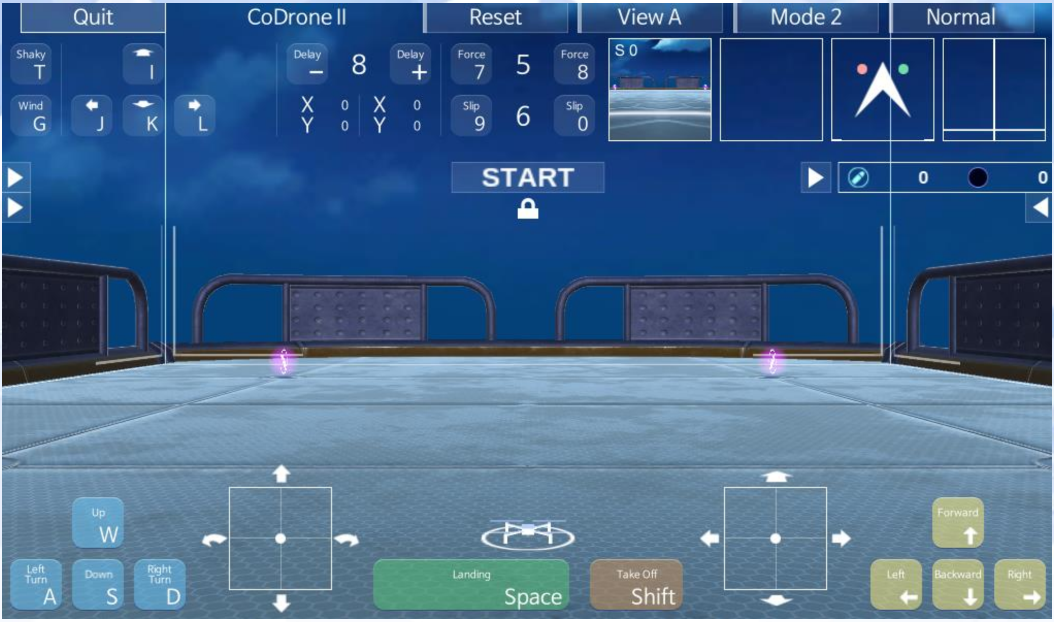
Game 2

View B



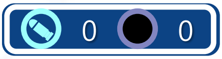

1 2 3 4
1 ➡ ①
00 : 00 : 00

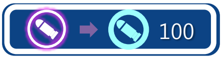
The second game is to see who will fly in a shorter time (1→2 → 3 → 4) in order of the aerial obstacles (No. 1, 3) and the floor obstacles (No. 2, 4).
If you pass or land through the obstacle, the left digit plate will be marked with a check mark, and obstacle number 3 will need to be changed to View B.


Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay −
8
Delay +
Force 7
5
Force 8
Slip 9
6
Slip 0
X 0
Y 0
X 0
Y 0
S 0
START
0
0
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

Game 3

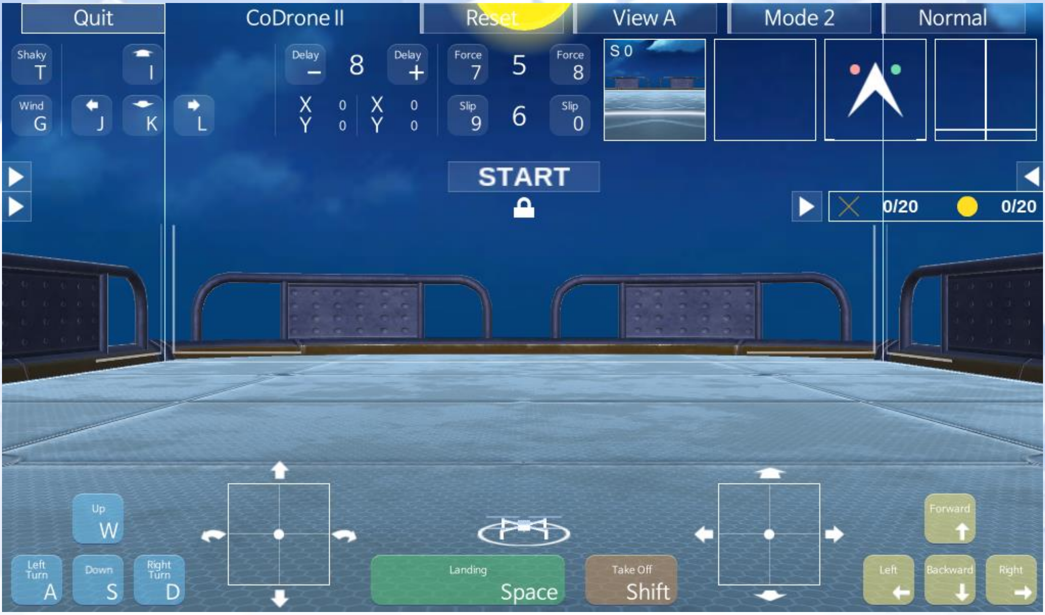
View A View B





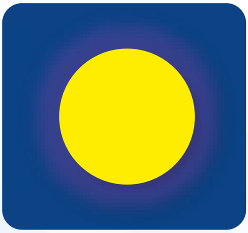
The third game is shooting game. When you eat the bullet icon ◎ , you load 100 bullets.
The bullet is fired automatically.
You can score if you hit the 'ink drop' with a bullet.
When the drone hits a black ball, the screen darkens and the game is over.

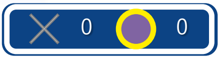
※ When the game is over, no ink drops appear.
You can no longer earn points.

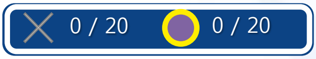

Quit
CoDrone II
Reset
View A
Mode 2
Normal
Shaky T
I
Wind G
J
K
L
Delay −
8
Delay +
X 0 Y 0
X 0 Y 0
Force 7
5
Force 8
Slip 9
6
Slip 0
S 0
START
0/20
0/20
Up W
Left Turn A
Down S
Right Turn D
Landing Space
Take Off Shift
Forward
Left
Backward
Right

Game 4

View B







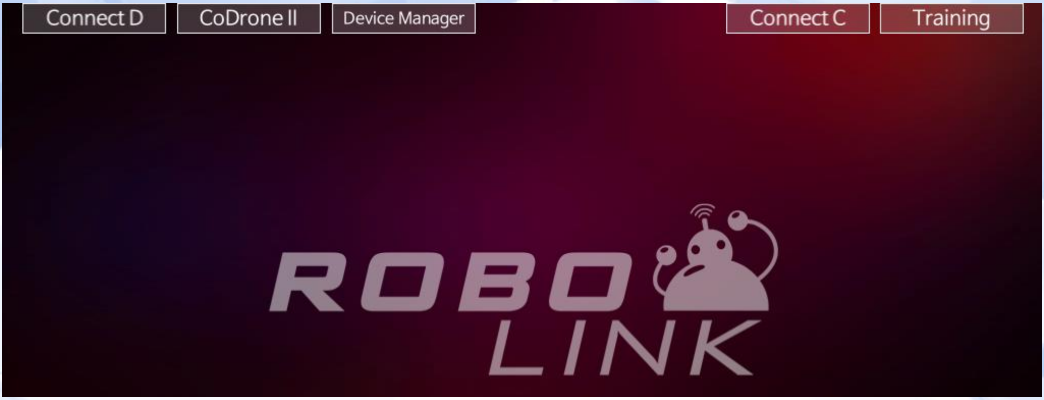
The fourth game is collecting yellow balls. If you control a drone and eat a yellow ball, you get a point.
In a short period of time, the ball will appear randomly and 'X Point' will be added '1 point' if you can't eat or eat late.
A total of 20 balls appear.

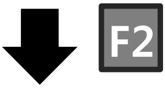
✕ : Number of Misses

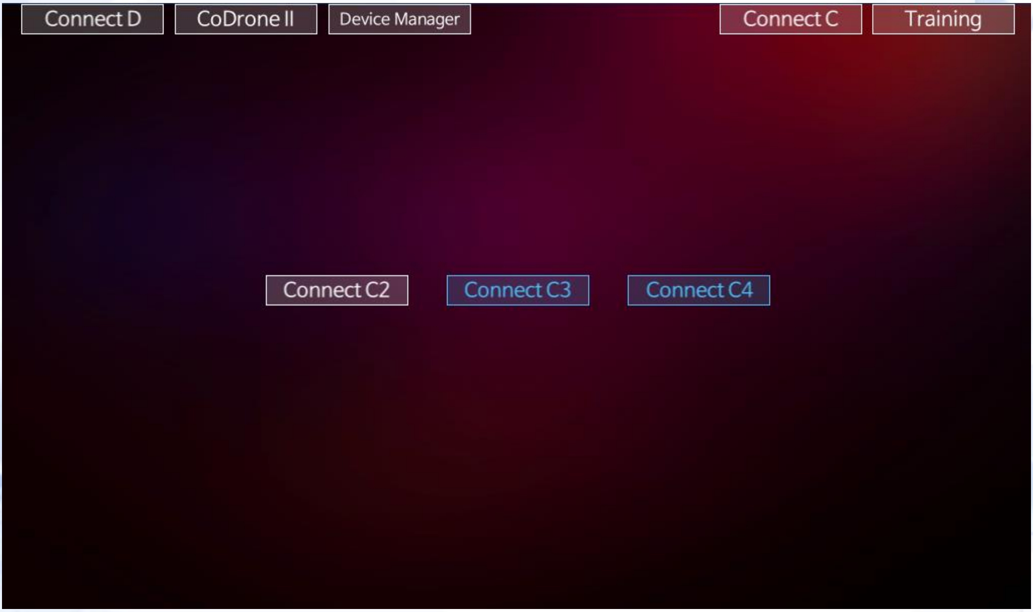
● : Number of acquisitions

Drone Simulator

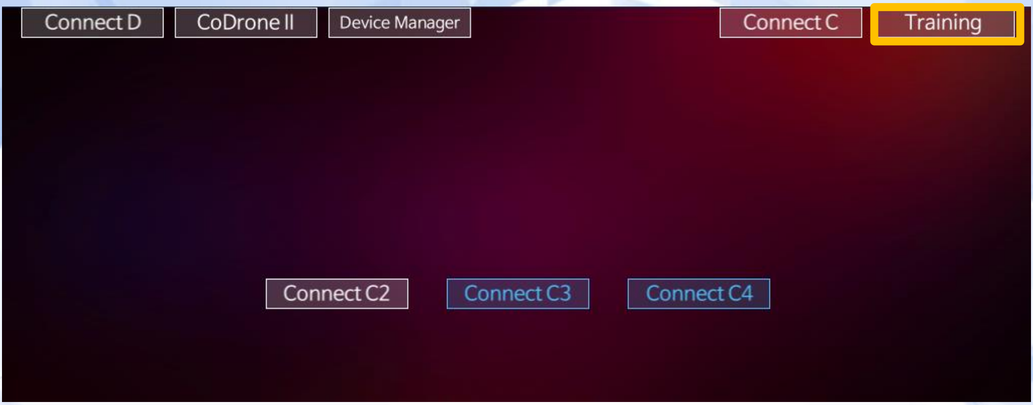
“Soccer Game”


Connect D
CoDrone II
Device Manager
Connect C
Training
ROBO LINK

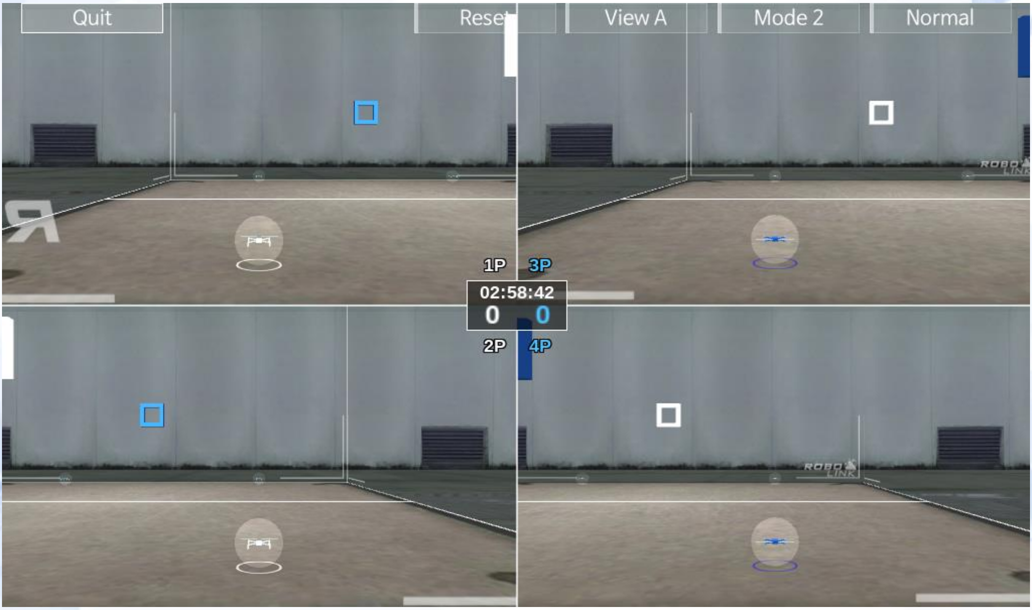



Connect D
CoDrone II
Device Manager
Connect C
Training
Connect C2
Connect C3
Connect C4

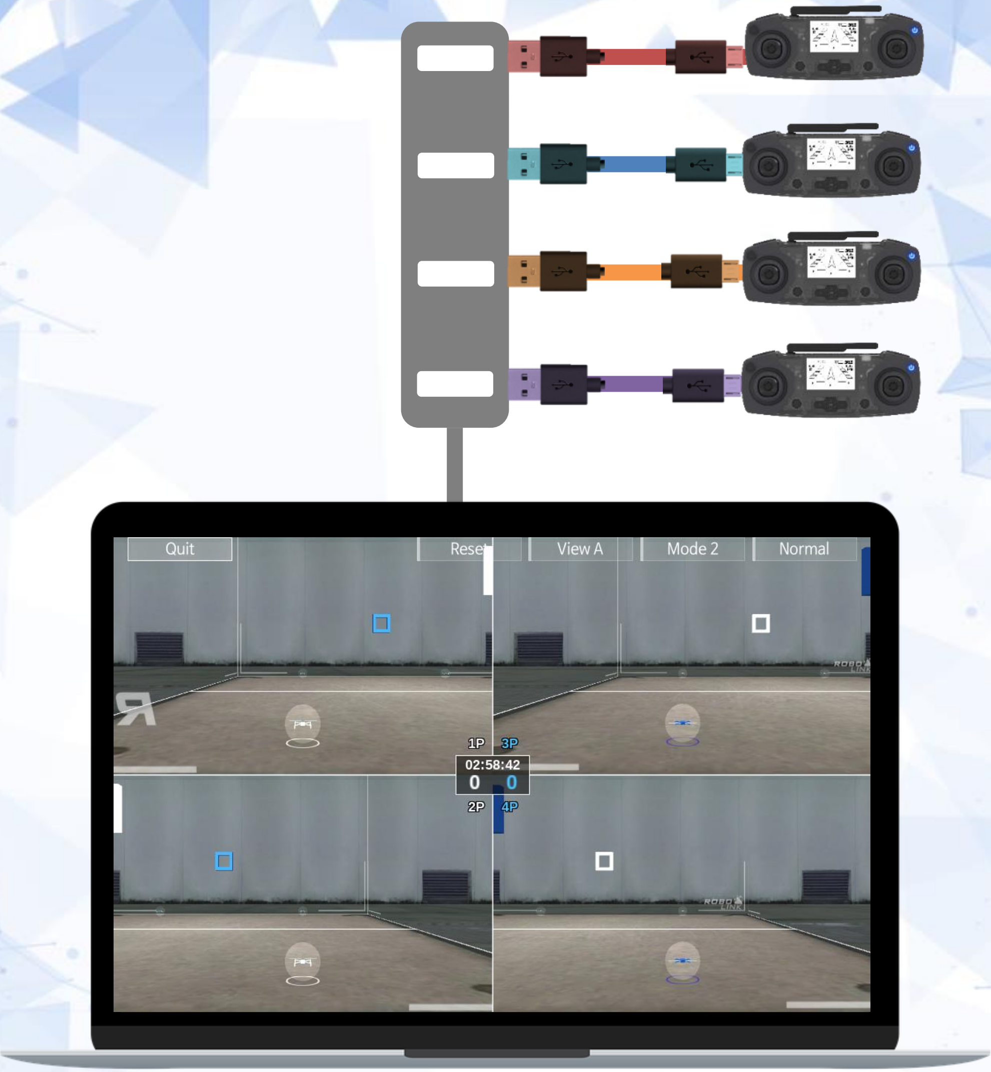
On the initial screen, press the 'F2' key to connect multiple controllers to a single PC using a multi-port.


Connect D
CoDrone II
Device Manager
Connect C
Training
Connect C2
Connect C3
Connect C4

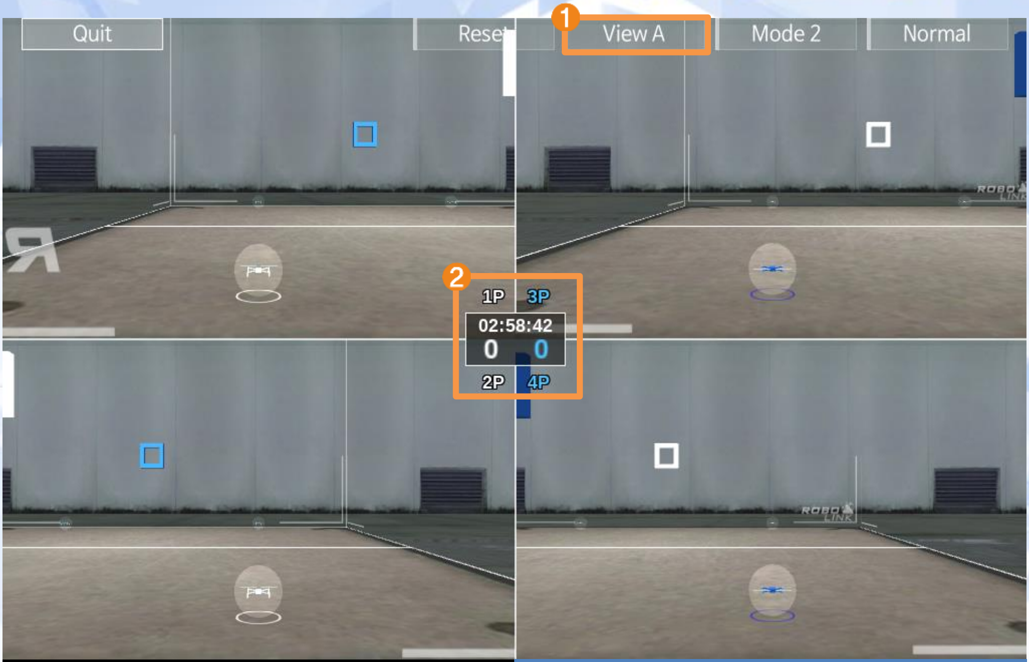
↓ F2


Quit
Reset
View A
Mode 2
Normal
1P
3P
02:58:42
0
0
2P
4P

After connection, you can enter training mode by pressing Training in the upper right corner, and then press the 'F2' key to enter soccer game mode.


Quit
Reset
View A
Mode 2
Normal
1P
3P
02:58:42
0
0
2P
4P

You can connect multiple controllers to enjoy soccer games on a single PC.



※ Team White (Left) : 1P 2P

※ Blue Team (Right) : 3P 4P

※ Game Rule

(1) **Switch View** : When you click and replace a **view**, all of the views in the window are replaced at the same time.

※ Even if you change the other control mode or headless mode, all drones will still be equipped with the same technology. It applies simultaneously.

(2) **Score/Time** : The time in the center shows the time remaining during the competition, and the white/blue numbers below mark each team's score.

(3) **Point score :** **White team** drives a drone into the opponent's **blue goalpost**, **Blue team** drives a drone into the opponent's **white goalpost**, and must pass in the right direction to score.

Even if you turn back and pass it in the right direction after scoring, you can't score, and you have to move to the center line point and go back inside the net to score.

※ Each score is 1 point and the total game time is 3 minutes.

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