HONG KONG INNOVATIVE & ROBOTIC SOCIETY





Union 簡易說明

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Ver Union 1.0

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1. <u>藍牙設定</u>

1.1. 硬件設定

藍牙	Union (Arduino Mega 2560)
RX	TX1 (18)
TX	RX1 (19)
Vcc/5V/V	V
GND	G



Figure 1.1.a 正確藍牙接線

1.2.連線

開啟 Arduino IDE, 點選 Tools, 設定 Board 為 Arduino Mega 2560 or Mega ADK

if with with the stand Arduino Unio Arduino Duemilancoe w/ ATmega128 Arduino Duemilancoe w/ ATmega18 Arduino Duemilancoe w/ ATmega188 Arduino Duemilancoe w/ ATmega188 Arduino Nano w/ ATmega188 Arduino Duemilancoe w/ ATmega188 Arduino Nano w/ ATmega188 Arduino Duemilancoe w/ ATmega188 Arduino Nano w/ ATmega188 Arduino Nano w/ ATmega188 Arduino Nano w/ ATmega188 Arduino Nini w/ ATmega188 Arduino Striv ATmega188 Arduino Nini w/ ATmega188 Arduino Striv ATmega188 Arduino Striv ATmega188 Arduino Striv ATmega188 Arduino W/ ATmega188 Arduino Pro e Pro Mini (31, Mitty w/ ATmega188 Arduino Pro e Pro Mini (31, Mitty w/ ATmega188 Arduino Pro e Pro Mini (31, Mitty w/ ATmega188 Arduino Nor or Def w/ ATmega188 Arduino Nor or Def w/ ATmega188 Arduino Nor or Def w/ ATmega188 Arduino Nor or	Archive Ske Fix Encodin Serial Moni	ketch ing & Reload nitor Ctrl+Shift+M	
	<pre>states and states and states</pre>	t Ctrl+Shilt+M	Arduino Uno Arduino Duemilanove w/ ATmega108 Arduino Nano w/ ATmega108 Arduino Nano w/ ATmega108 Arduino Nano w/ ATmega108 Arduino Maga (ATmega1280) Arduino Esplora Arduino Mini w/ ATmega108 Arduino Mini w/ ATmega108 Arduino Mini w/ ATmega108 Arduino BT+ ATmega108 Arduino BT+ ATmega108 Arduino BT+ ATmega108 Arduino BT+ ATmega108 Arduino BT+ OT+ Mini (3), 16 MHz) w/ ATmega108 Arduino BT+ OT+ Mini (3), 16 MHz) w/ ATmega108 Arduino Nor Other w/ ATmega108 Arduino Nor Other w/ ATmega108 Arduino Robot Control



於 Arduino IDE 輸入以下 code,複製並貼上即可。

```
#define BT Serial1
void setup()
{
BT.begin(115200);
Serial.begin(9600);
}
void loop(){
if (Serial.available() > 0)
{
  BT.write(Serial.read());
 }
if (BT.available() > 0)
{
  Serial.write(BT.read());
 }
}
```

用 USB 線連接機械人和電腦,待安裝驅動程式及 upload。



Figure 1.2.c 連接 Arduino



請勿 拔除 usb 線。

	٩
	Done uploading.
F	Binary sketch size: 1,628 bytes (c
	se s
使用 Serial Monitor,右上角的	的按鈕 ,其間 <i>請勿</i> 拔除 usb 線。

開啟視窗後更改右下角選項為 No line ending 和 9600 (此數值與應程式中

Serial.begin 的數值相同)。如果



Figure 1.2.d 選取 baud rate

如果 BT.begin(115200) 沒有回應,可嘗試 BT.begin(9600)

輸入 AT 後按 enter , Serial Monitor 會彈出 OK 回應,方可更改設定。

更改名字: AT+NAME YourName

e.g: AT+NAMExyz (名字為 xyz)

更改密碼: AT+PINYourPW

e.g: AT+PIN1234* (密碼為 1234)

*密碼需為4位數字

成功後會出現 "OK"回應

2. 控制機械人

1.1.上載程式至機械人

到本會網扯,按資源下載,選擇適當型號,<u>http://www.hkirs.org/download/union-2</u>

下載 Arduino program。(請使用 google chrome 或 firefox 等瀏覽器)



用 Ctrl+a 選取所有內容,複製至 Arduino IDE。

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/* Hong Kong Innevative & Robotic Society Soccer-Union Standard Platfore (c)2016 HKRS wow.hkirs.org Powerde by Arduino Creative Commons (CC) BY SA		
This file is licensed under a Creative Commons (CC) Attribution Share-Alike license,which allows for both personal and commercial derivative works, as long as they credit us and release their designs under the same license.		
Credit: Ian Chung Sam Chan Charlie Chan		
V1: Initial release		
•/		
#include <softwareserial.h> SoftwareSerial btSerial(13,A3); // RX, TX</softwareserial.h>		
//declare SSD1366 finclude AHfreit 67X.h> #include Adhfruit 67X.h> #include Adhfruit 5SD1306.h> #define OLED JRESET # Addruit SSD1366 display(OLED.RESET);		
//Gyro variable and const const int 13642000 Address=105; const int 13642000 _Scale=500; int x6yro=0; int y6yro=0;	//(selectable 250(0.00875degree),500(0.0175degree) and 2000(0.07degree))	
<pre>//Constant setting // Voltage Monitor Setting const char batteryVoltagePin = 0; const float voltageDividerFactor = 0.01992;</pre>	//Assigns voltage monitor ADC to analog pin 0 // 20V/1023=0.01955V (measured resistor error -2.2% which is approximately equal 0.01912)	
// H-bridge Setting const char HA_E = 3; const char HA_D = 4;	//498Hz Pulse Width Modulation	

點選 Tools, 設定 Board 為 *Mega2560 / Mega ADK ,*用 USB 線連接機械人和電腦,然後 upload。

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car_poportional Eix Encoding & Reload				
art byte motori. Serial Monitor	Crida Shifta M			
nit byte motors	curronnerm			
nst byte U[1]=[Board	Arduino	Jno		
nit float targe Serial Port	Arduino I	Duemilanove w/ ATmega328		
nit float kp=2, Programmer	Arduino	Diecimila or Duemilanove w/ ATmega168		
nit float kind	Arduino	Nano w/ ATmega328		
nat error[2]=(D,D):	Arduino	Nano w/ ATmega168		
oat derivative:	Arduino I	dega 2560 or Mega ADK		
oat intergal;	Arduino	Mega (ATmega1280)		
mat distance[1];	Arduino	eonardo		
t carSpeed,	Arduino	splora		
id setup()	Arduino	dicro		
	Arduino	/lini w/ ATmega328		
Senal.begin(960B);	Arduino	/lini w/ ATmega168		
((Byte 180,1181,184)	Arduino	thernet		
pinkeds (motorL[i],OUTPUT);	Arduino	io		
pinMode (moterR[i],OUTFUT);	Arduino	3T w/ ATmega328		
}	Arduino	3T w/ ATmega168		
pinkode(U[0],CUTFUT);	LilyPad A	rduino USB		
pinkode(U[0]+1, NEUT_FULLUE);	LityPad A	rduino w/ Almegas28		
	LityPad A	rduino w/ Almega168		
	Arduino	To or Pro Mini (SV, 16 MHz) w/ Almega328		
(8 100p()	Arduino	To or Pro Mini (SV, 16 MHz) w/ Almega168		
peedCal();	Arduino	ro or Pro Mini (3.3%, 6 MHz) W/ ATmega328		
	Ardulas	G or older w/ ATmena168		
	Arduino	NG or older w/ ATmega108		
id carMov(int left, int right)	Arduino	Robot Control		
	Arduino	Robot Motor		
if(left>0)	Production			
(
digital@rite(metorL[1],LOS);				

3. 安裝手機遙控程式(僅限 Android

手機)

到本會網扯(<u>http://www.hkirs.org</u>),按資源下載,選擇適當型號,下載手機應用程式。

3.1.直接安裝

用手機進入網址, 選"download apk",下載及安裝應用程式。



3.2. QR code 安裝 (MIT APP INVENTOR 適用)

選"download source code (aia file)",下載 aia file。



利用 MIT APP INVENTOR 開啟 aia file,生產 QR code 作掃描並安裝。