DSI2598+課堂1

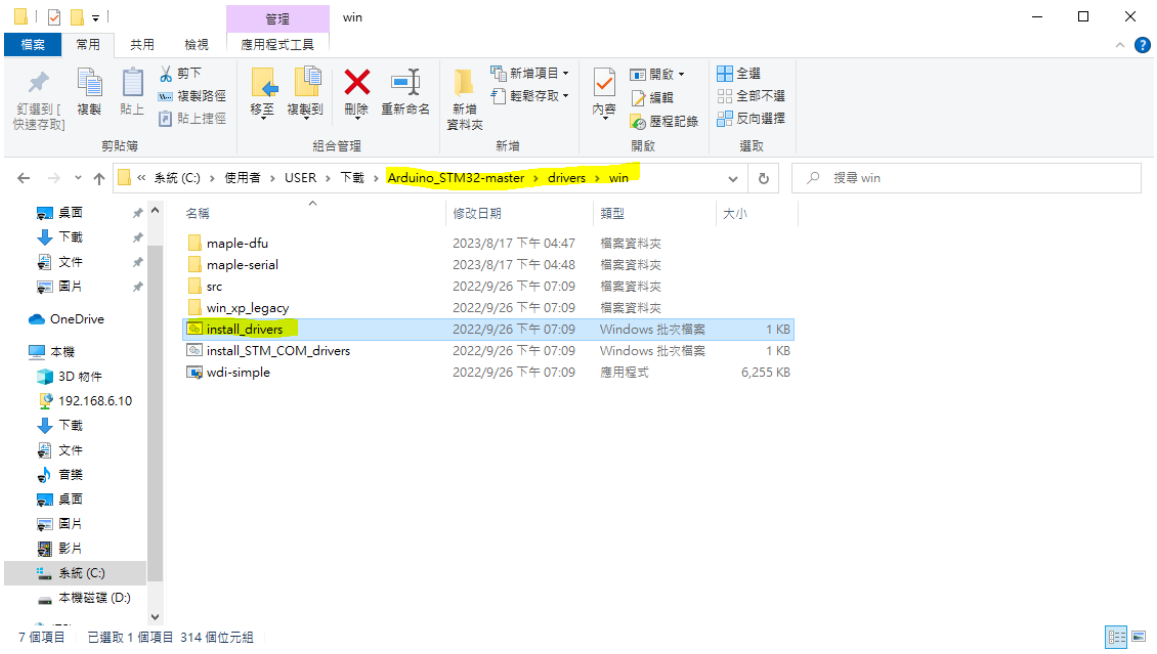
安裝驅動與配置IDE

1. 下載驅動

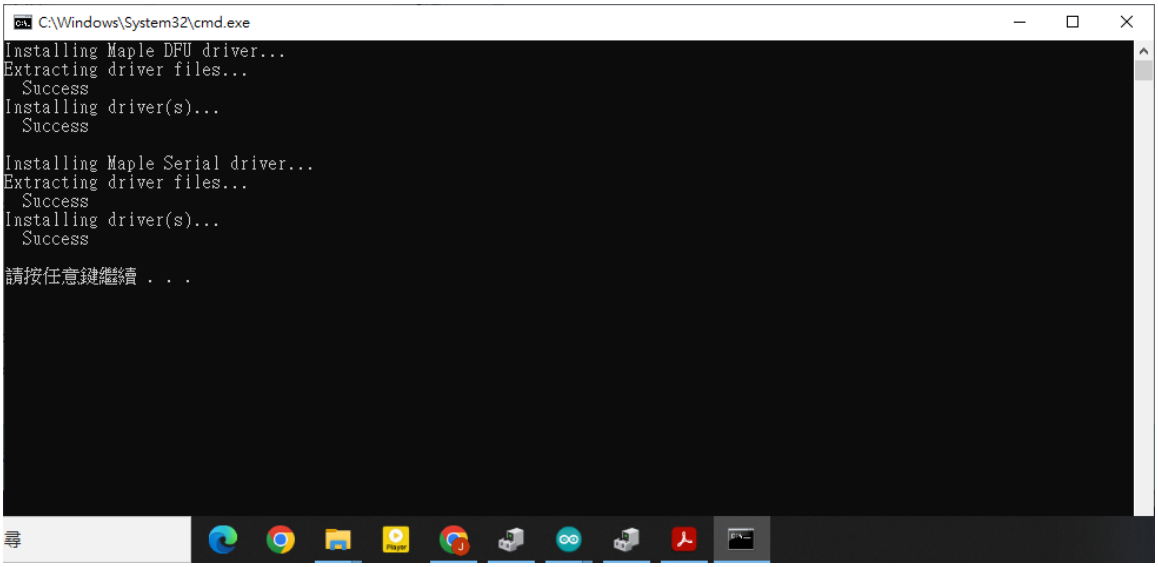
   https://github.com/rogerclarkmelbourne/Arduino_STM32

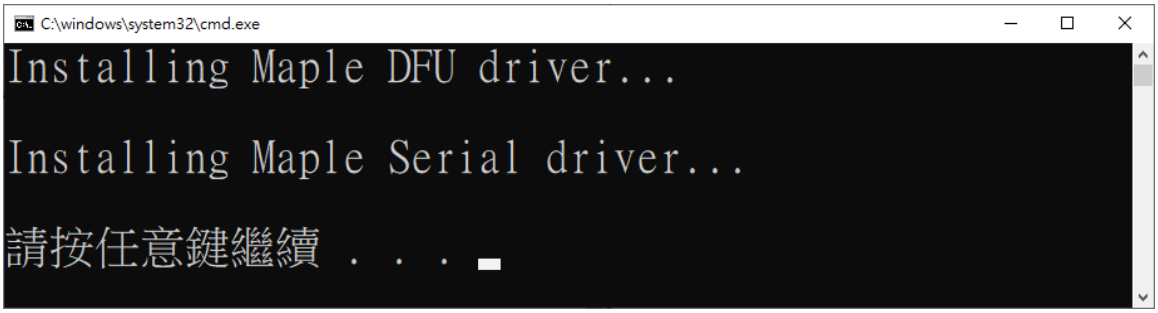
2. 安裝驅動(檔案應該會跟我不一樣，但沒關係，找到此檔案安裝即可)

   zip檔解壓縮>drivers>wins>install_drivers

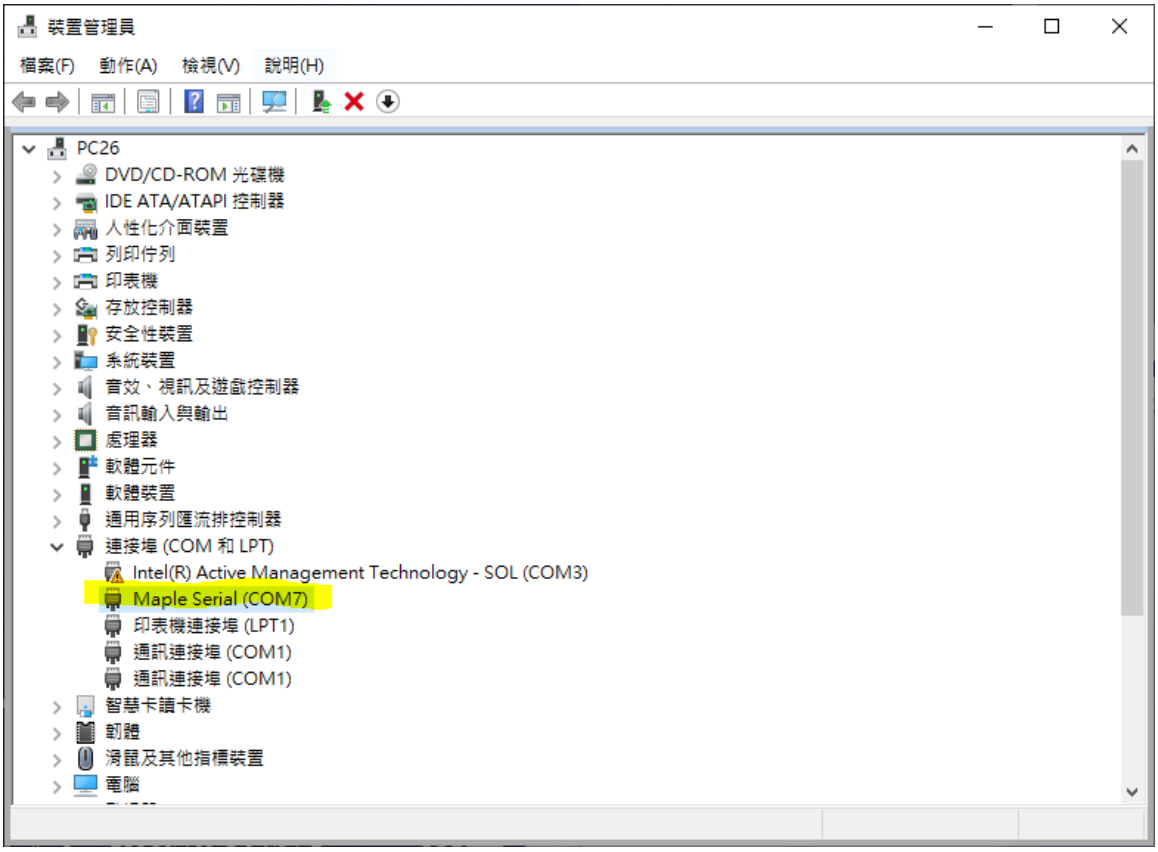


3. 安裝完成



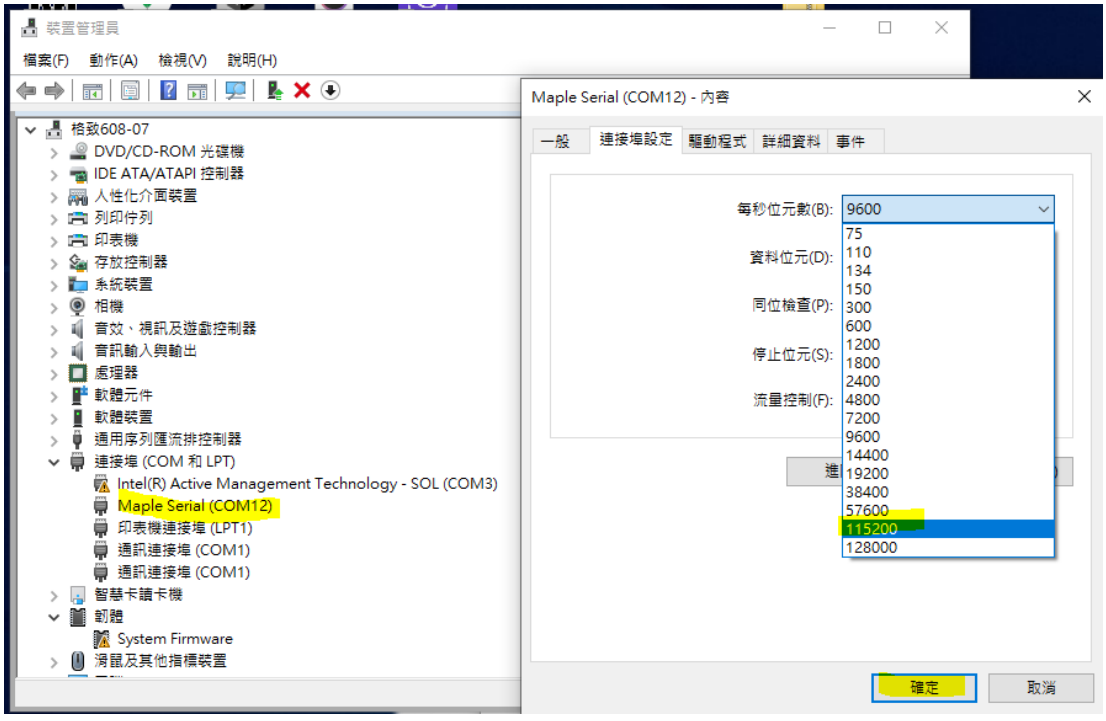


4. 打開裝置管理員查看`Maple Serial`

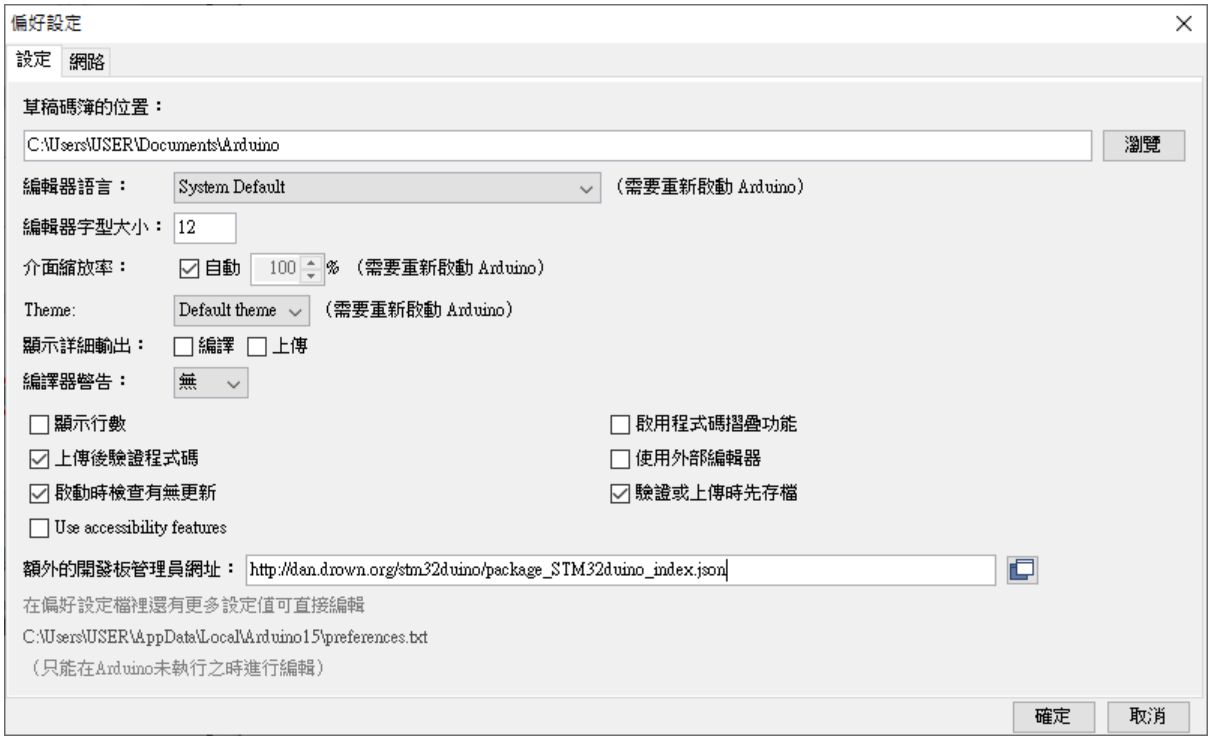


▼ 更改傳輸速率，加快傳輸動作

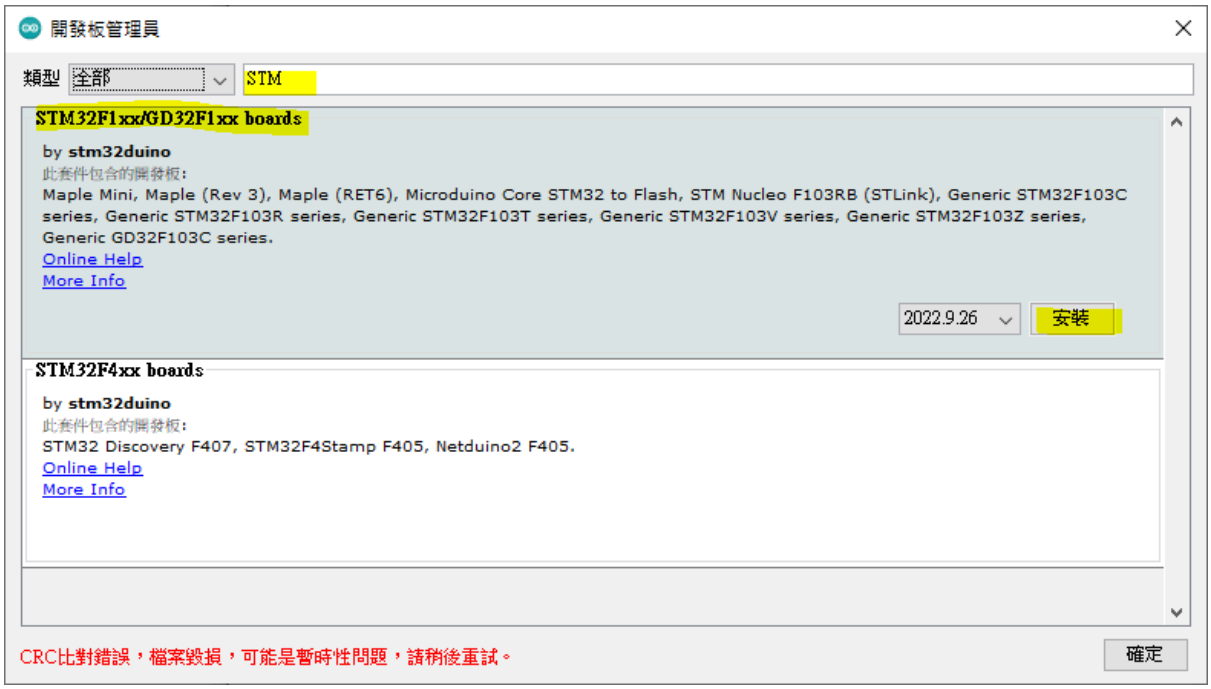
點選裝置>右鍵>內容

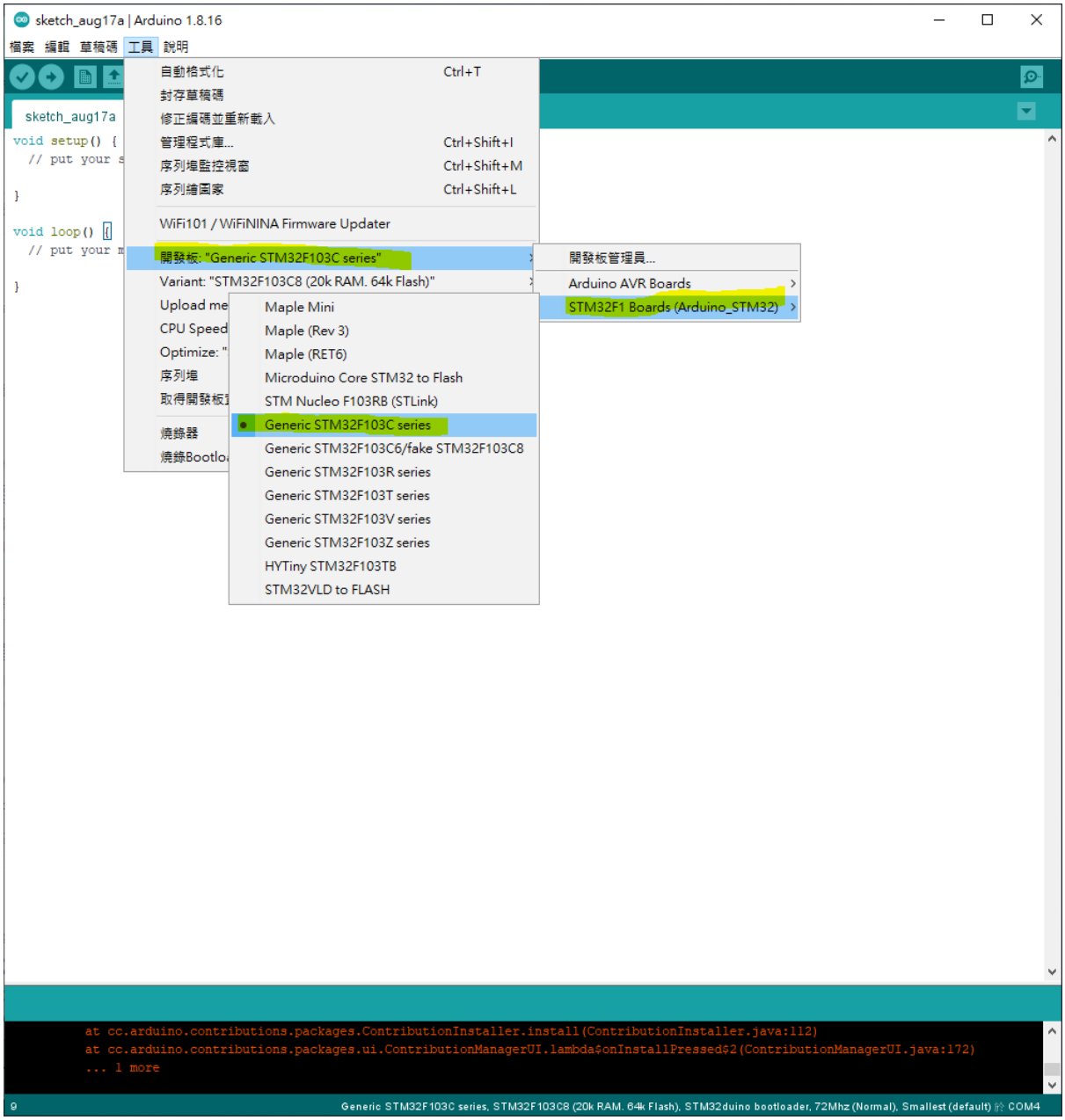


5. 打開Arduino IDE



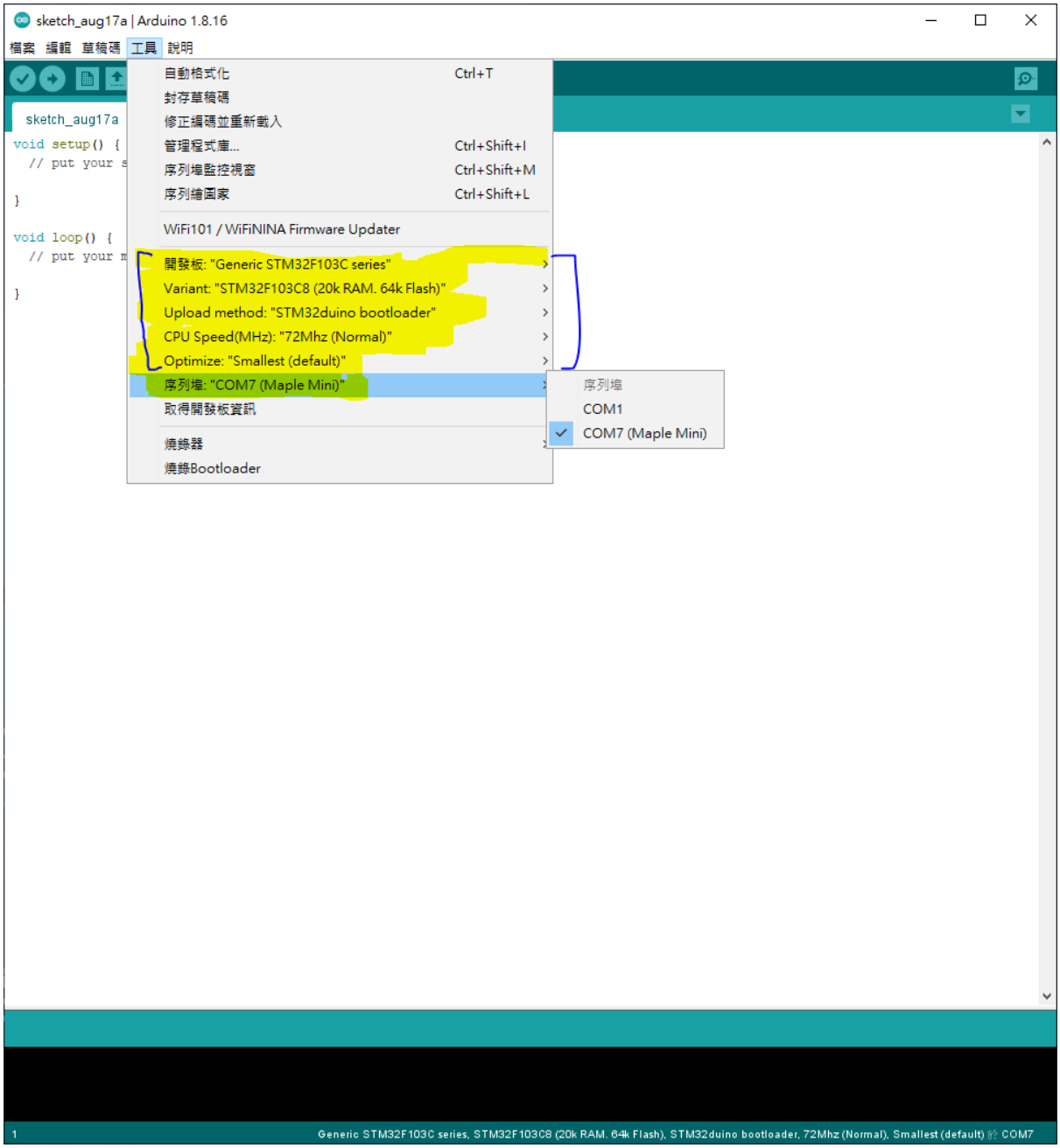

```
http://dan.drown.org/stm32duino/package_STM32duino_index.json
```





燒錄完成記得重新開啟Arduino ide才會有COM後面的括號附註

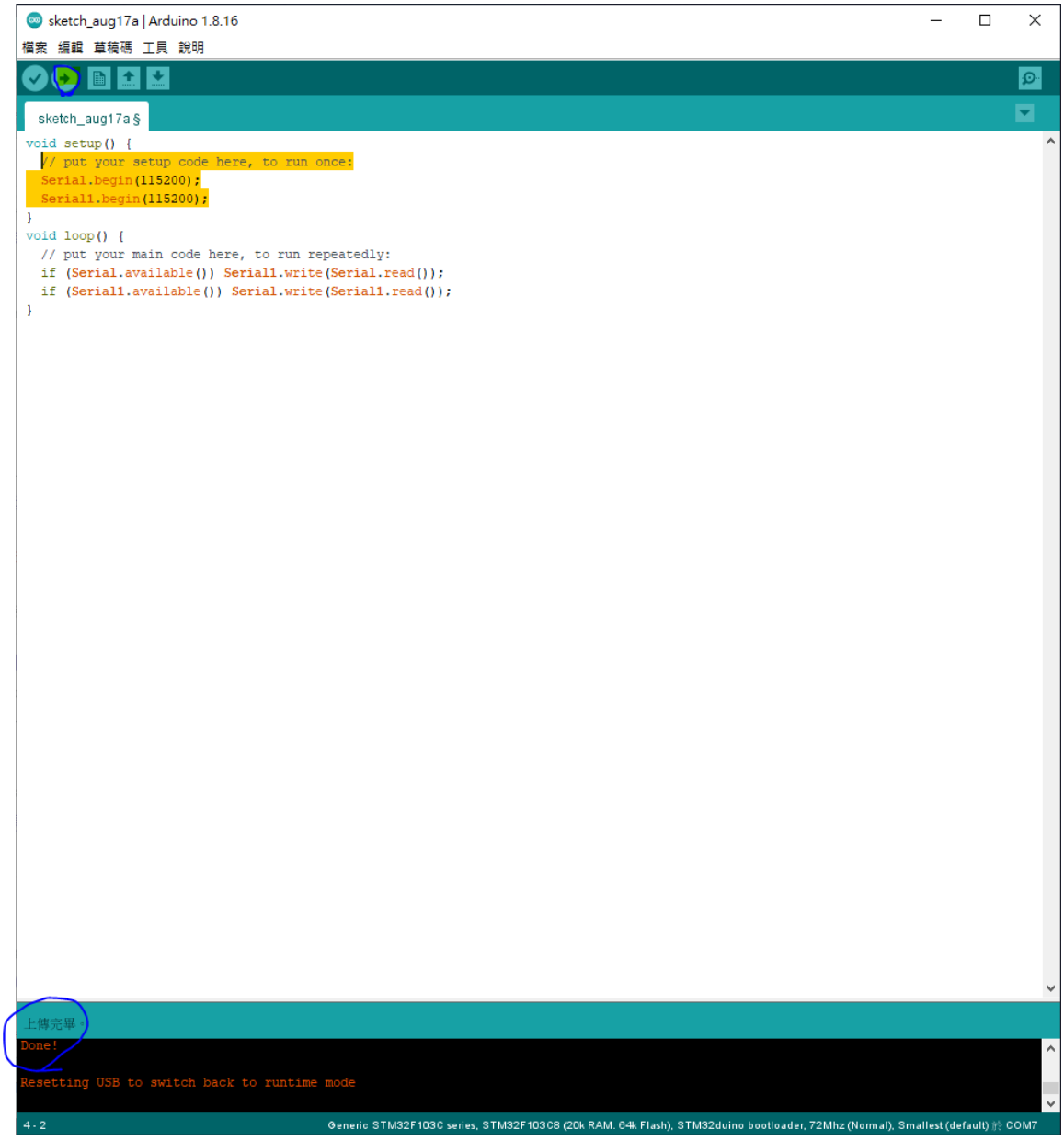
!!下面資料勿動!!亂改導致燒錄有問題會需要重新燒錄!!



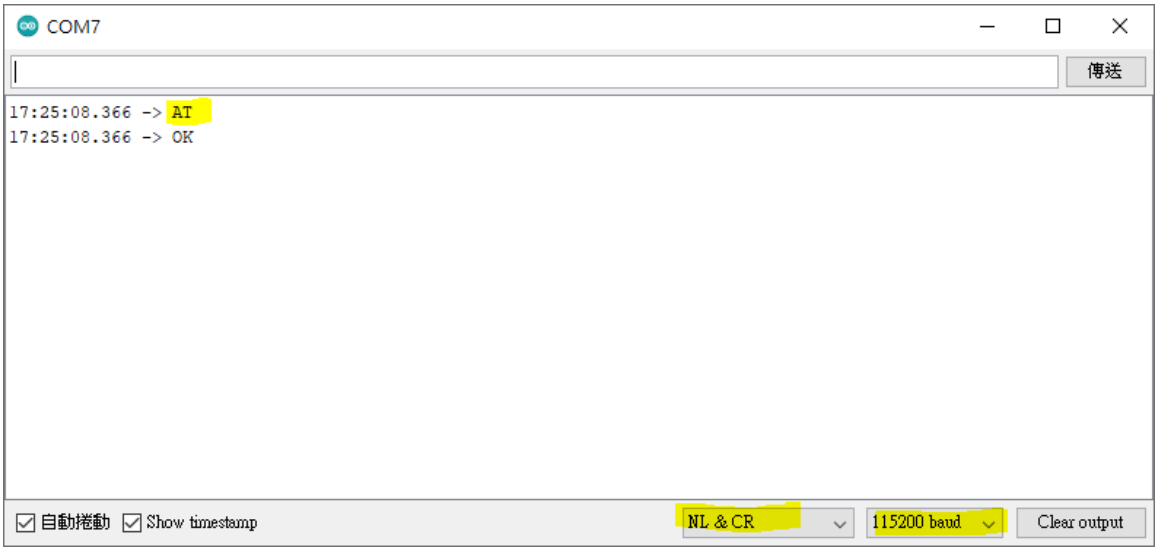
使用AT command

1. 將下面程式燒錄

```
void setup() {
  // put your setup code here, to run once:
  Serial.begin(115200);
  Serial1.begin(115200);
}
void loop() {
  // put your main code here, to run repeatedly:
  if (Serial.available()) Serial1.write(Serial.read());
  if (Serial1.available()) Serial.write(Serial1.read());
}
```


sketch_aug17a | Arduino 1.8.16
檔案 編輯 草稿碼 工具 說明
sketch_aug17a §
void setup() {
// put your setup code here, to run once:
Serial.begin(115200);
Serial1.begin(115200);
}
void loop() {
// put your main code here, to run repeatedly:
if (Serial.available()) Serial1.write(Serial.read());
if (Serial1.available()) Serial.write(Serial1.read());
}
上傳完畢.
Done!
Resetting USB to switch back to runtime mode
4 - 2
Generic STM32F103C series, STM32F103C8 (20k RAM. 64k Flash), STM32duino bootloader, 72Mhz (Normal), Smallest (default) 於 COM7

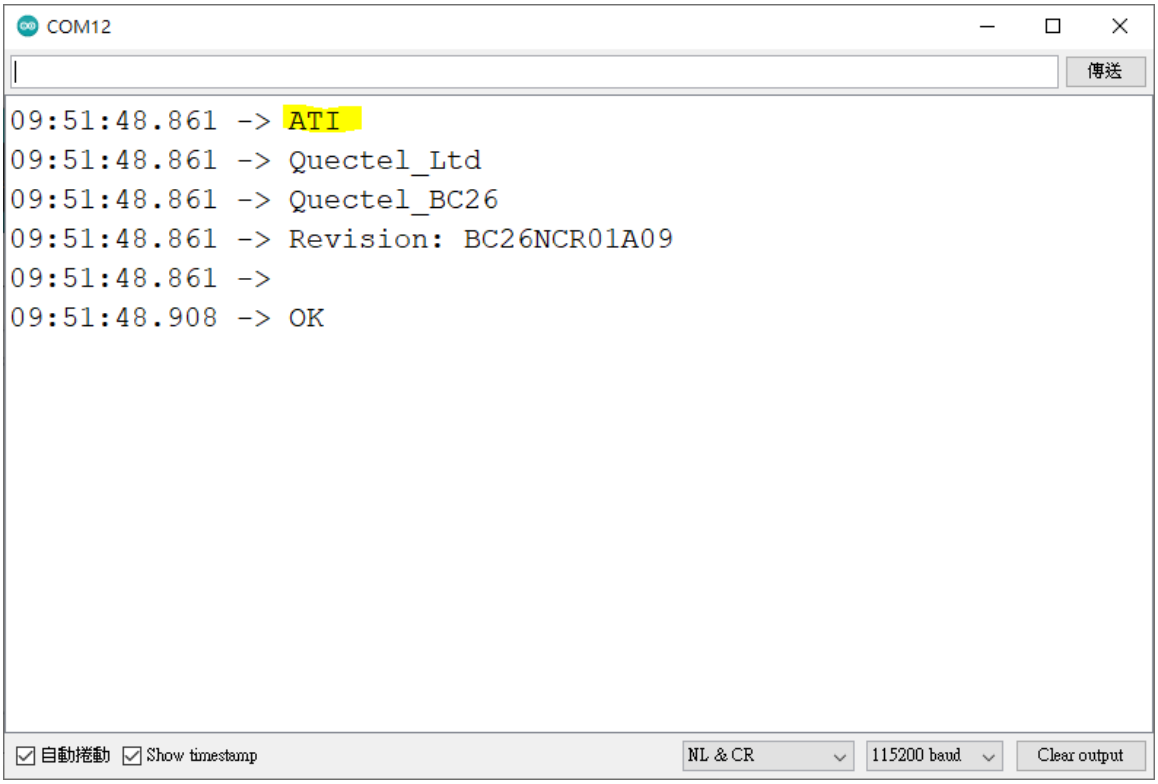
2. 測試AT功能




```
AT
```

3. 測試AT與顯示版本(未確認)

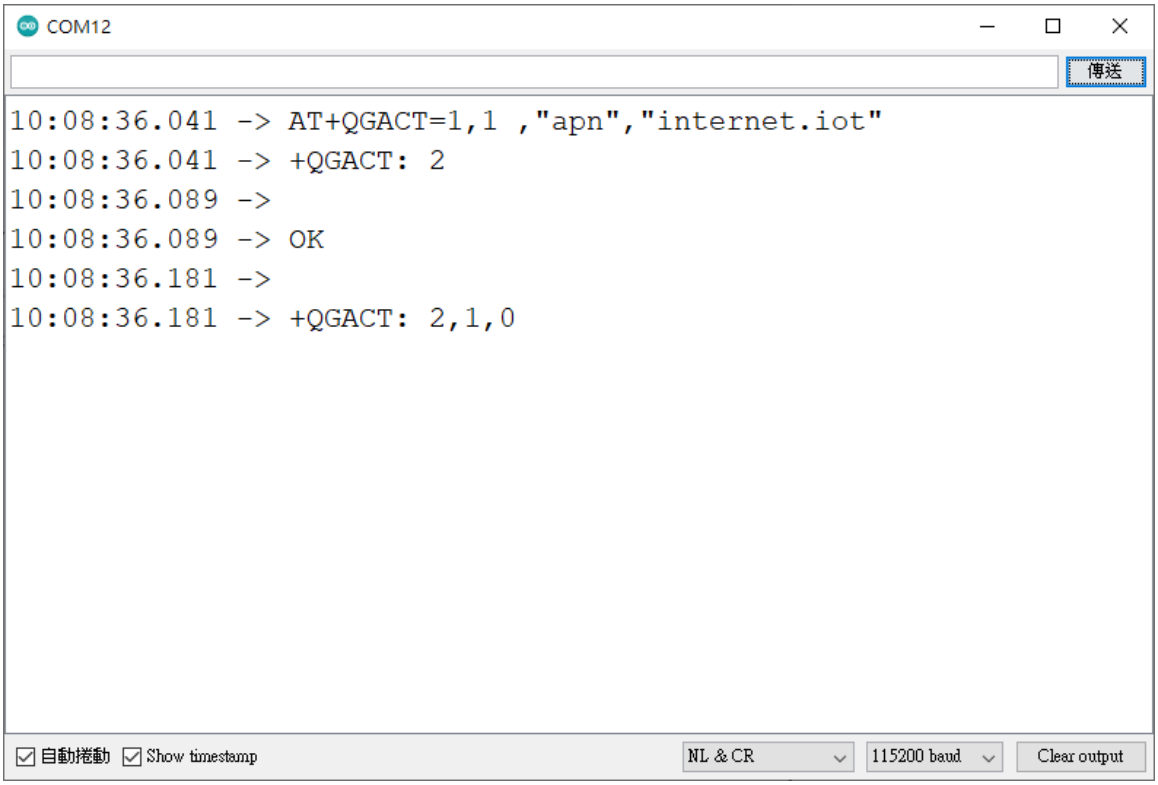
```
ATI
```



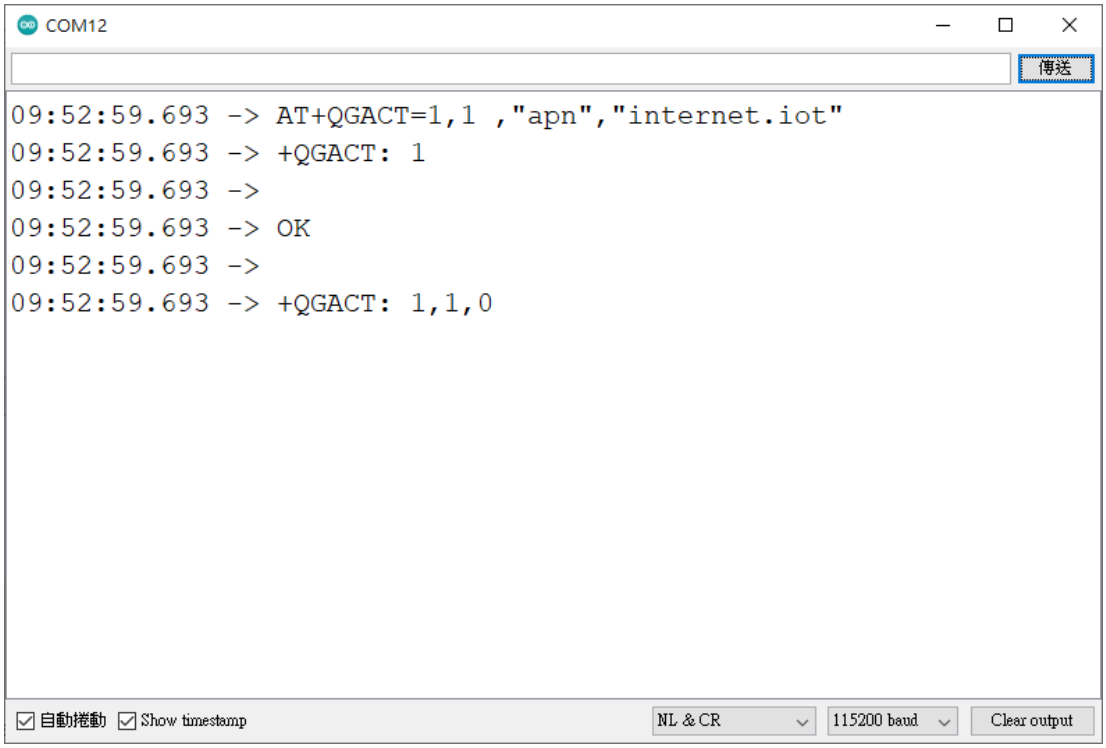
APN設定

1. 啟用 APN

```
AT+QGACT=1,1 ,"apn","internet.iot"
```



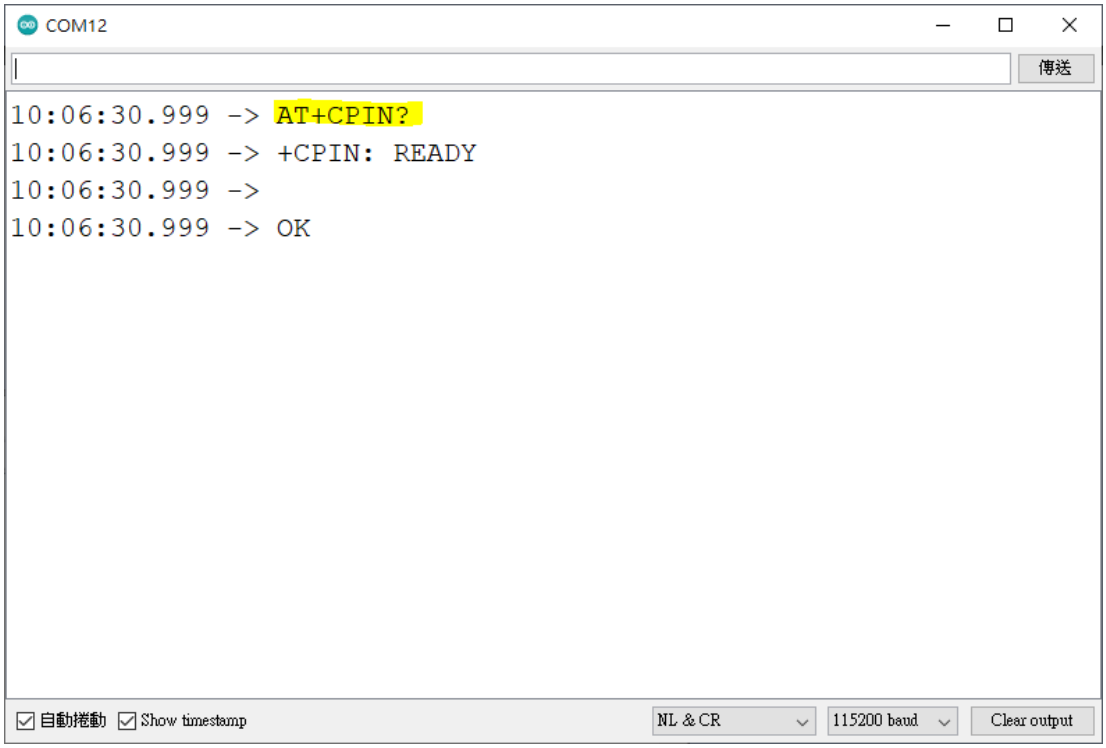
▼ 錯誤：未插入SIM卡



▼ SIM卡插入狀態查詢

```
AT+CPIN?
```

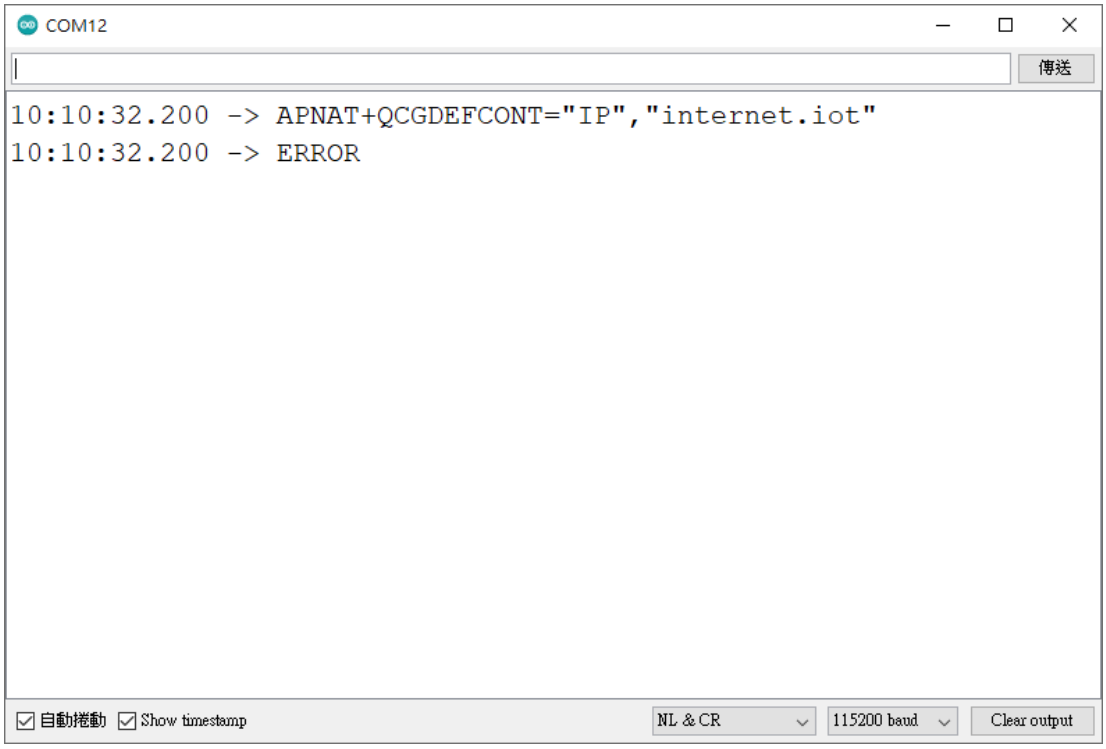
READY：表示有找到SIM卡回覆
ERROR：表示沒有SIM卡



2. 註冊APN

```
APNAT+QCGDEFCONT="IP","internet.iot"
```

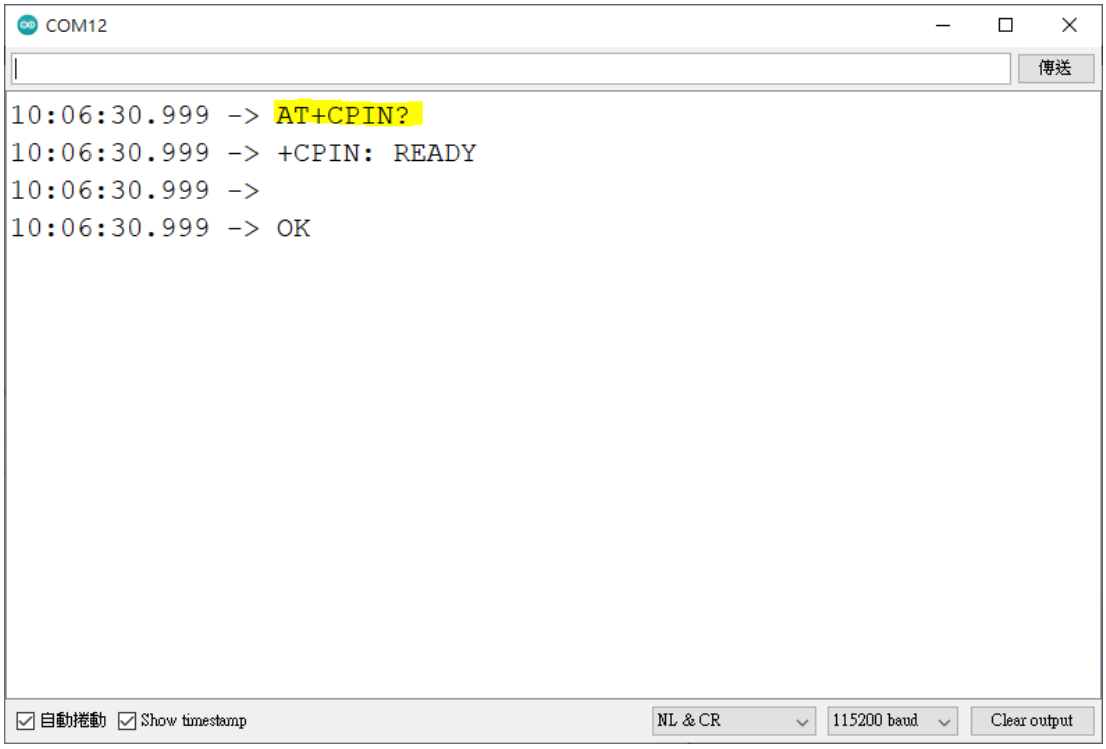
▼ 錯誤：註冊失敗



▼ APN狀態查詢

```
AT+CEREG?
```

+CEREG= 0,1：表示已經進入APN的網域。
+CEREG= 0,2：表示已經尚未註冊入APN的網域。
+CEREG= 0,0：表示沒有SIM卡。



▼ 訊號強度查詢

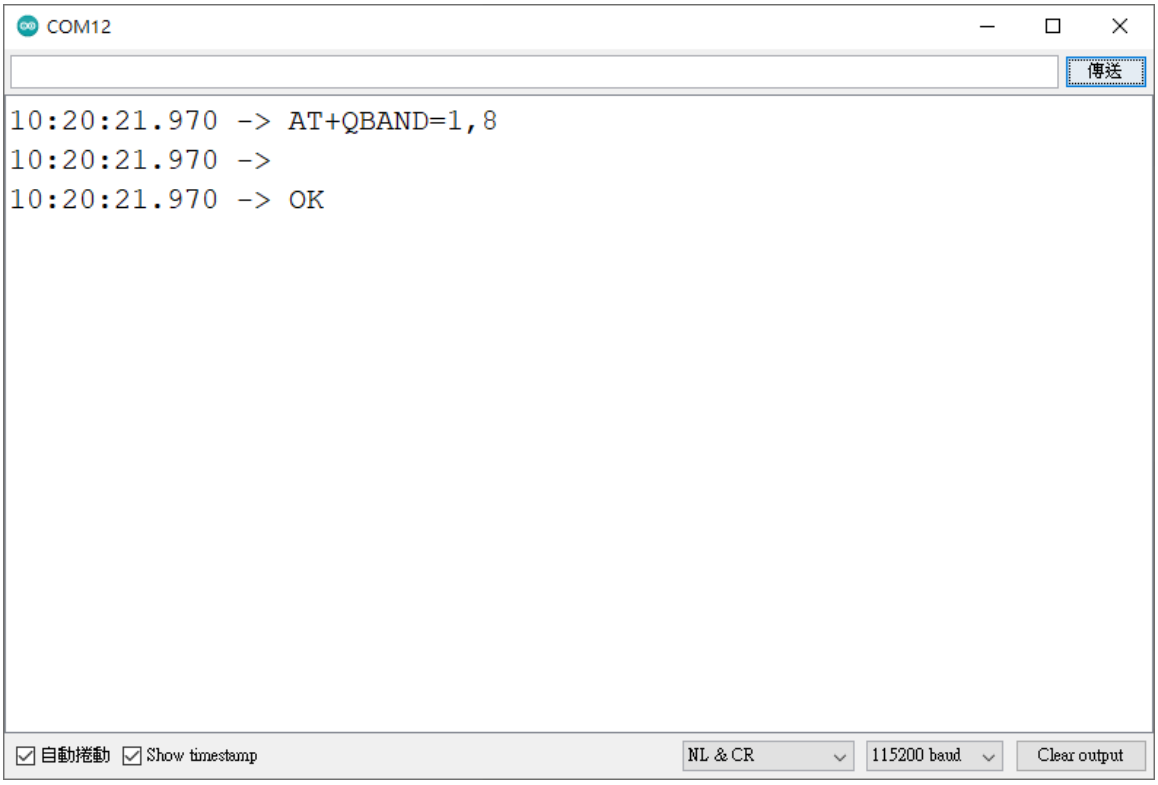
```
AT+CESQ
```

+CESQ ： xx, 0, 255, 255, 255

xx：0~99，0 ：未有訊號，99 ：找不到訊號

3. 頻寬設定

```
AT+QBAND=1,8
```



4. 重新啟動模組

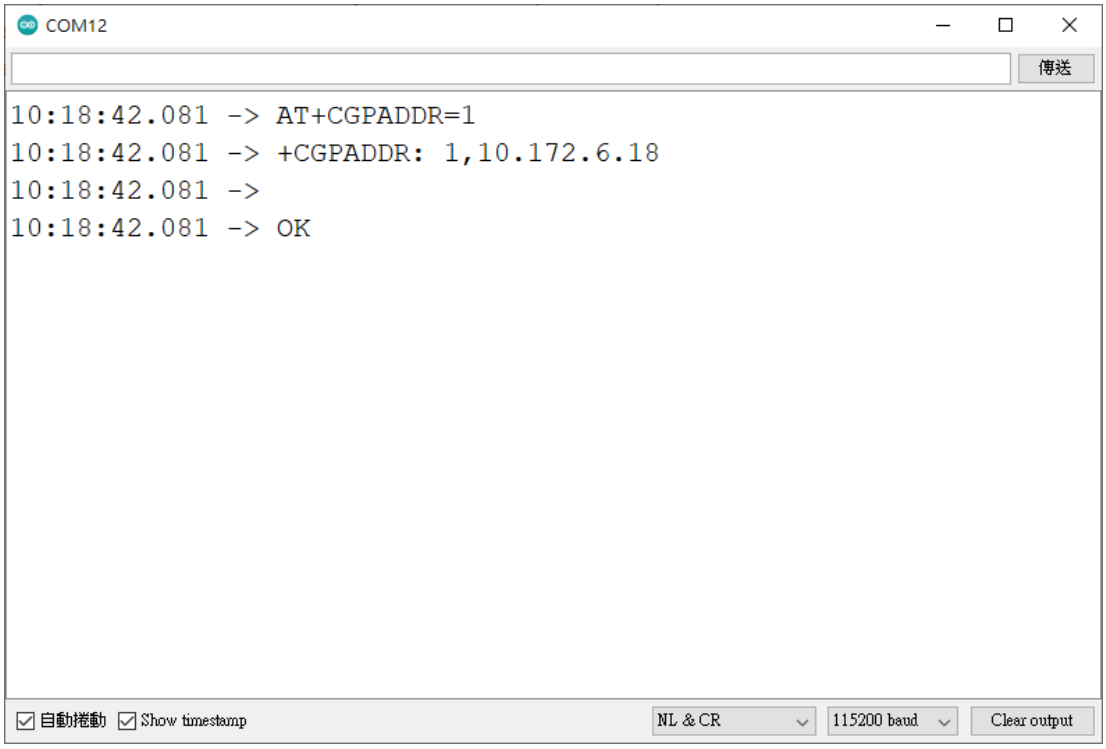
```
AT+QRST=1
```

5. 重啟後應能得到一組IP位址，代表sim卡與基地台連線(重啟後無法自動加入APN與獲取IP)

▼ IP查詢

```
AT+CGPADDR=1
```

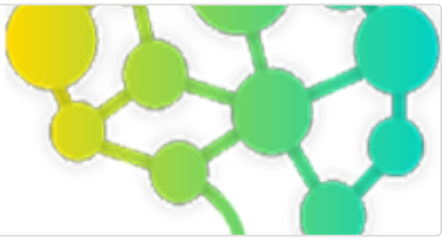
OK：尚未找到IP
+CGPADDR: 1,IP(四位)：表示已有IP說明：若設定期間連上網路會自動回傳IP位址
+IP : IP位址



範例一：Ideaschain 網站的HTTP上傳與下載

IDEAS Chain

https://iforum.ideaschain.com.tw/iforum/techmatch/solution.do?solution=33

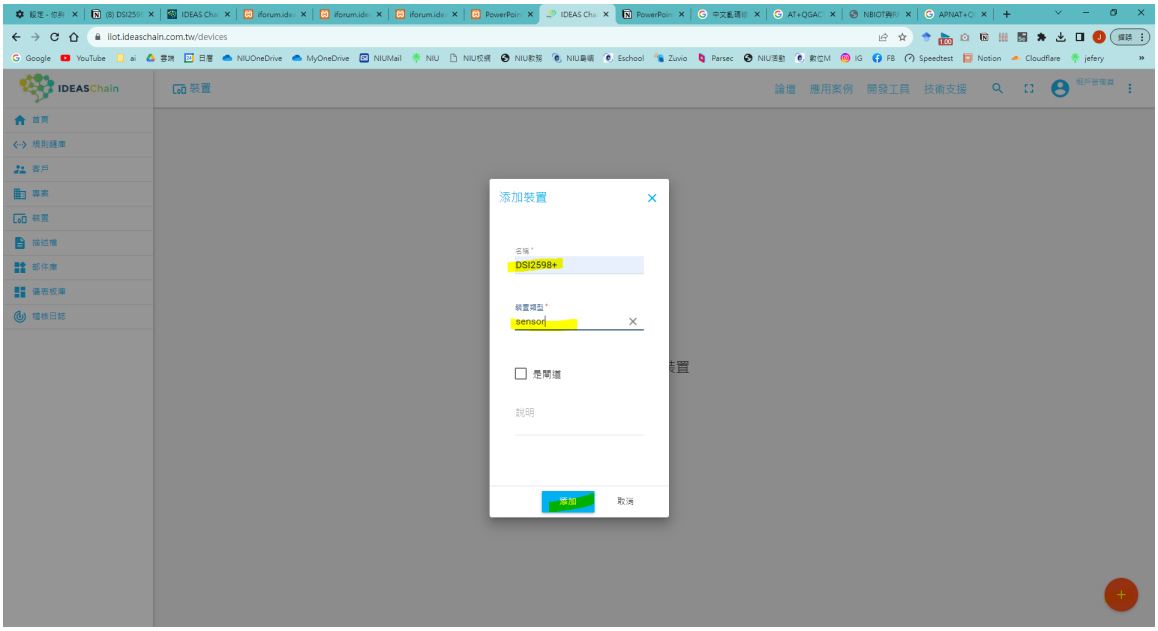


1. 進入**Ideaschain**數據平台

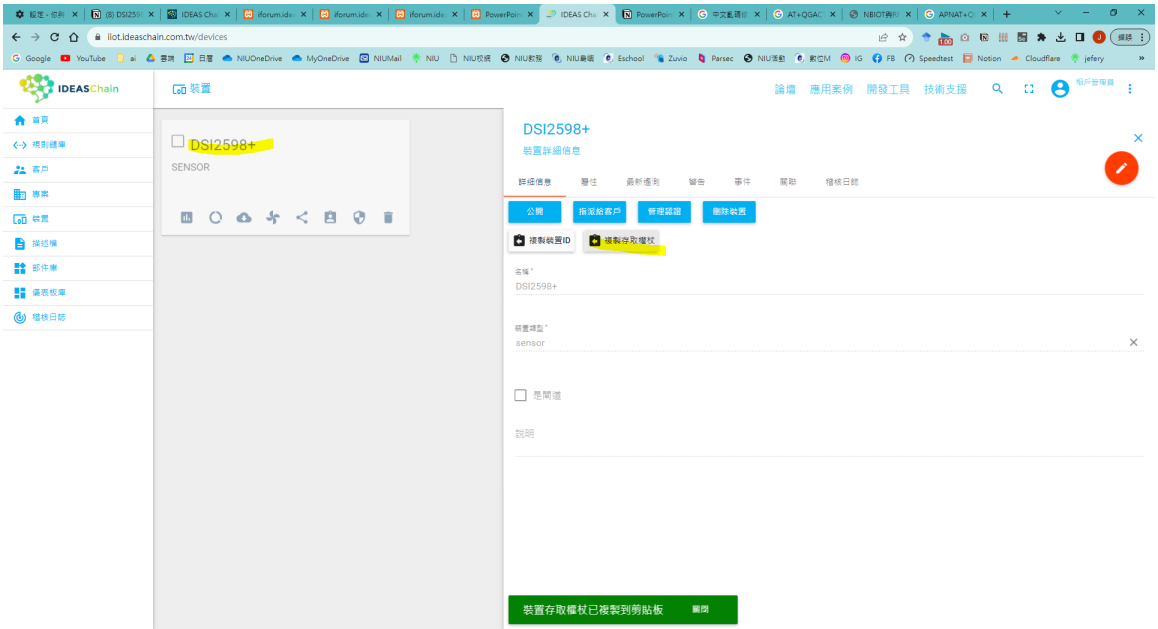
   https://iiot.ideaschain.com.tw/devices

2. 添加設備

   資料應該可以亂填



3. 複製存取權杖，以便將權杖資料貼上程式(**請不要用我的，自己註冊**)




```
L4ke8GEimjpc6gPbmu8E
```

4. 將Access Token**改成自己的數值**

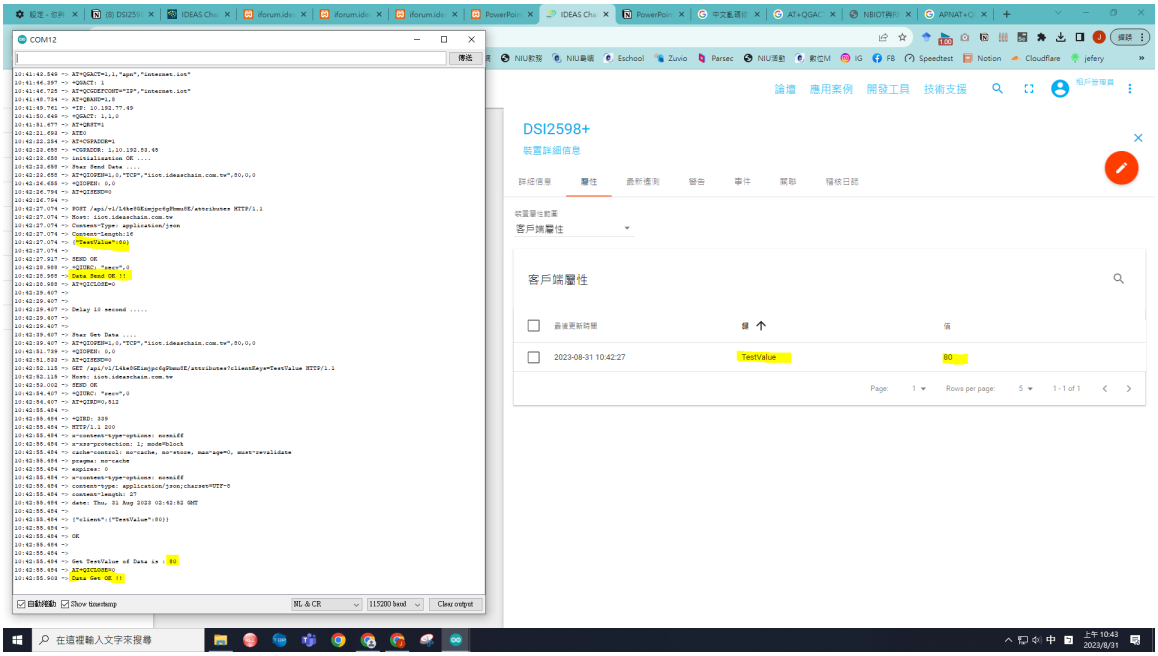
Ideaschain-HTTP §

```
#include "BC26-HTTP.h"

String Server_Name="iiot.ideaschain.com.tw";
String Access_Token="L4ke8GEimjpc6gPbmu8E";
String Attrib_Key="TestValue";
String Attrib_Data_String="telemetry";
String Attrib_Client_String="attributes";
String DATA_Attrib;
String DATA_Message;
byte Attrib_Mode=1;
int test_value= 80;

// ** iiot.ideaschain.com.tw/api/v1/$ACCESS_T
```

5. 編譯並上傳程式到DSI2598+
6. 確認資料上傳與下載成功



▼ 正確回傳資料

```
10:41:43.549 -> AT+QGACT=1,1,"apn","internet.iot"
10:41:46.397 -> +QGACT: 1
10:41:46.725 -> AT+QCGDEFCONT="IP","internet.iot"
10:41:48.734 -> AT+QBAND=1,8
10:41:49.761 -> +IP: 10.192.77.49
10:41:50.649 -> +QGACT: 1,1,0
```

```
10:41:51.677 -> AT+QRST=1
10:42:21.693 -> ATE0
10:42:22.254 -> AT+CGPADDR=1
10:42:23.658 -> +CGPADDR: 1,10.192.83.45
10:42:23.658 -> initialization OK ....
10:42:23.658 -> Star Send Data ....
10:42:23.658 -> AT+QIOPEN=1,0,"TCP","iiot.ideaschain.com.tw",80,0,0
10:42:26.655 -> +QIOPEN: 0,0
10:42:26.794 -> AT+QISEND=0
10:42:26.794 ->
10:42:27.074 -> POST /api/v1/L4ke8GEimjpc6gPbmu8E/attributes HTTP/1.1
10:42:27.074 -> Host: iiot.ideaschain.com.tw
10:42:27.074 -> Content-Type: application/json
10:42:27.074 -> Content-Length:16
10:42:27.074 -> {"TestValue":80}
10:42:27.074 ->
10:42:27.917 -> SEND OK
10:42:28.988 -> +QIURC: "recv",0
10:42:28.988 -> Data Send OK !!
10:42:28.988 -> AT+QICLOSE=0
10:42:29.407 ->
10:42:29.407 ->
10:42:29.407 -> Delay 10 second .....
10:42:29.407 ->
10:42:29.407 ->
10:42:39.407 -> Star Get Data ....
10:42:39.407 -> AT+QIOPEN=1,0,"TCP","iiot.ideaschain.com.tw",80,0,0
10:42:51.739 -> +QIOPEN: 0,0
10:42:51.833 -> AT+QISEND=0
10:42:52.115 -> GET /api/v1/L4ke8GEimjpc6gPbmu8E/attributes?clientKeys=TestValue HTTP/1.1
10:42:52.115 -> Host: iiot.ideaschain.com.tw
10:42:53.002 -> SEND OK
10:42:54.407 -> +QIURC: "recv",0
10:42:54.407 -> AT+QIRD=0,512
10:42:55.484 ->
10:42:55.484 -> +QIRD: 339
10:42:55.484 -> HTTP/1.1 200
10:42:55.484 -> x-content-type-options: nosniff
10:42:55.484 -> x-xss-protection: 1; mode=block
10:42:55.484 -> cache-control: no-cache, no-store, max-age=0, must-revalidate
10:42:55.484 -> pragma: no-cache
10:42:55.484 -> expires: 0
10:42:55.484 -> x-content-type-options: nosniff
10:42:55.484 -> content-type: application/json;charset=UTF-8
10:42:55.484 -> content-length: 27
10:42:55.484 -> date: Thu, 31 Aug 2023 02:42:52 GMT
10:42:55.484 ->
10:42:55.484 -> {"client":{"TestValue":80}}
10:42:55.484 ->
10:42:55.484 -> OK
10:42:55.484 ->
10:42:55.484 ->
10:42:55.484 -> Get TestValue of Data is : 80
10:42:55.484 -> AT+QICLOSE=0
10:42:55.903 -> Data Get OK !!
```

作業：

請自行增加其中的鍵與值，其中鍵為學號，值為學號後三碼，舉例來說B0942103與B1234007兩人一組，則需要產生兩個資料上傳到網站上

鍵	值
B0942103	103
B1234007	7

請截圖網站頁面與序列埠回傳數值，請截在同一張畫面(未符合格式者斟酌扣分)

範例截圖如下：