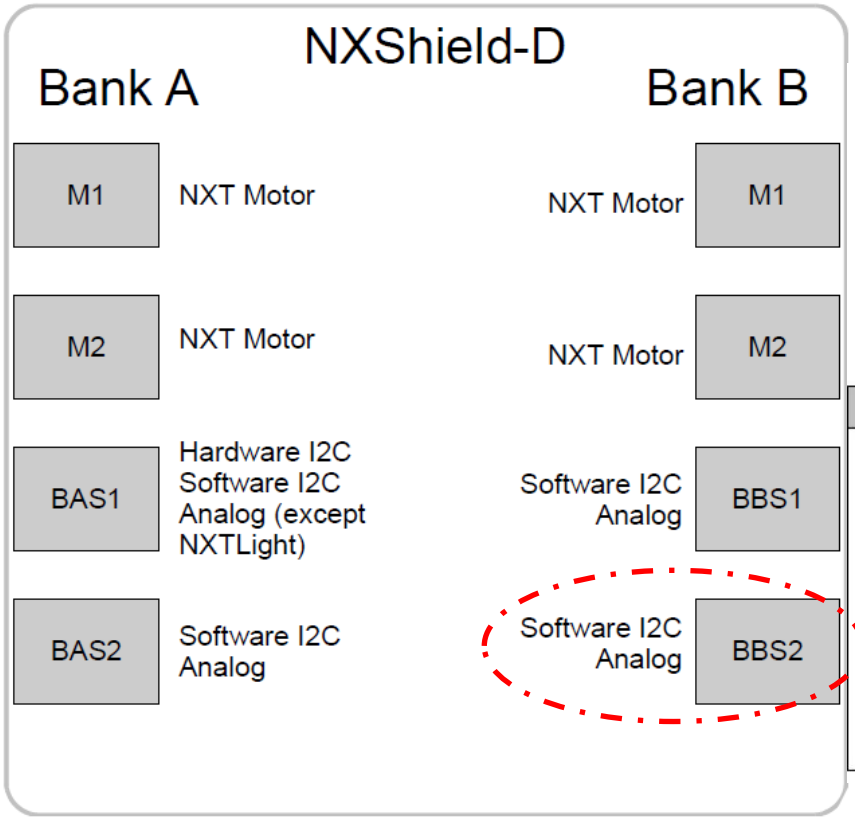
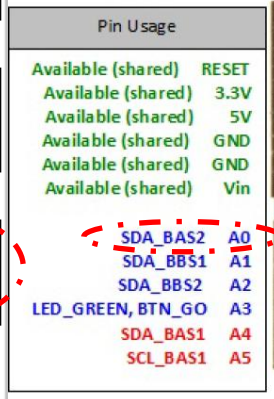
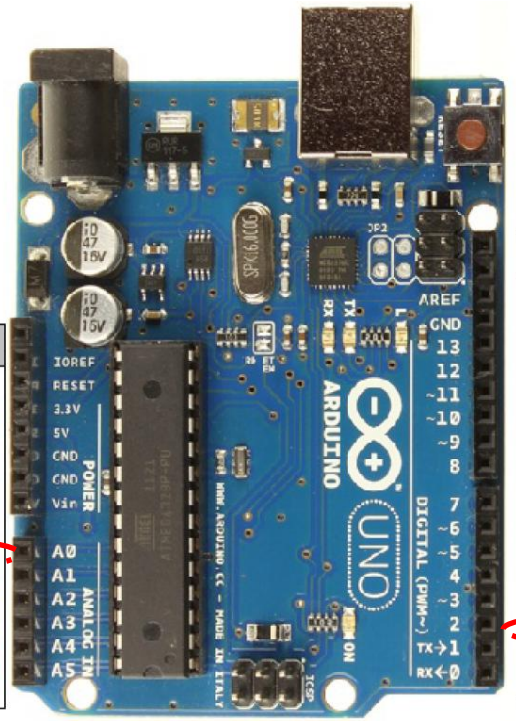
NXShield + Arduino + Bluetooth Remote control

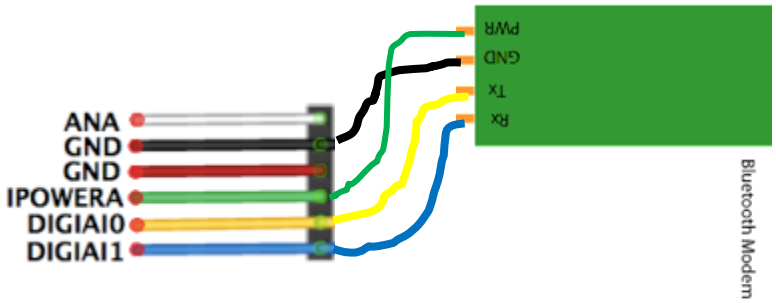
利用BBS2 I2C介面收發藍芽訊號



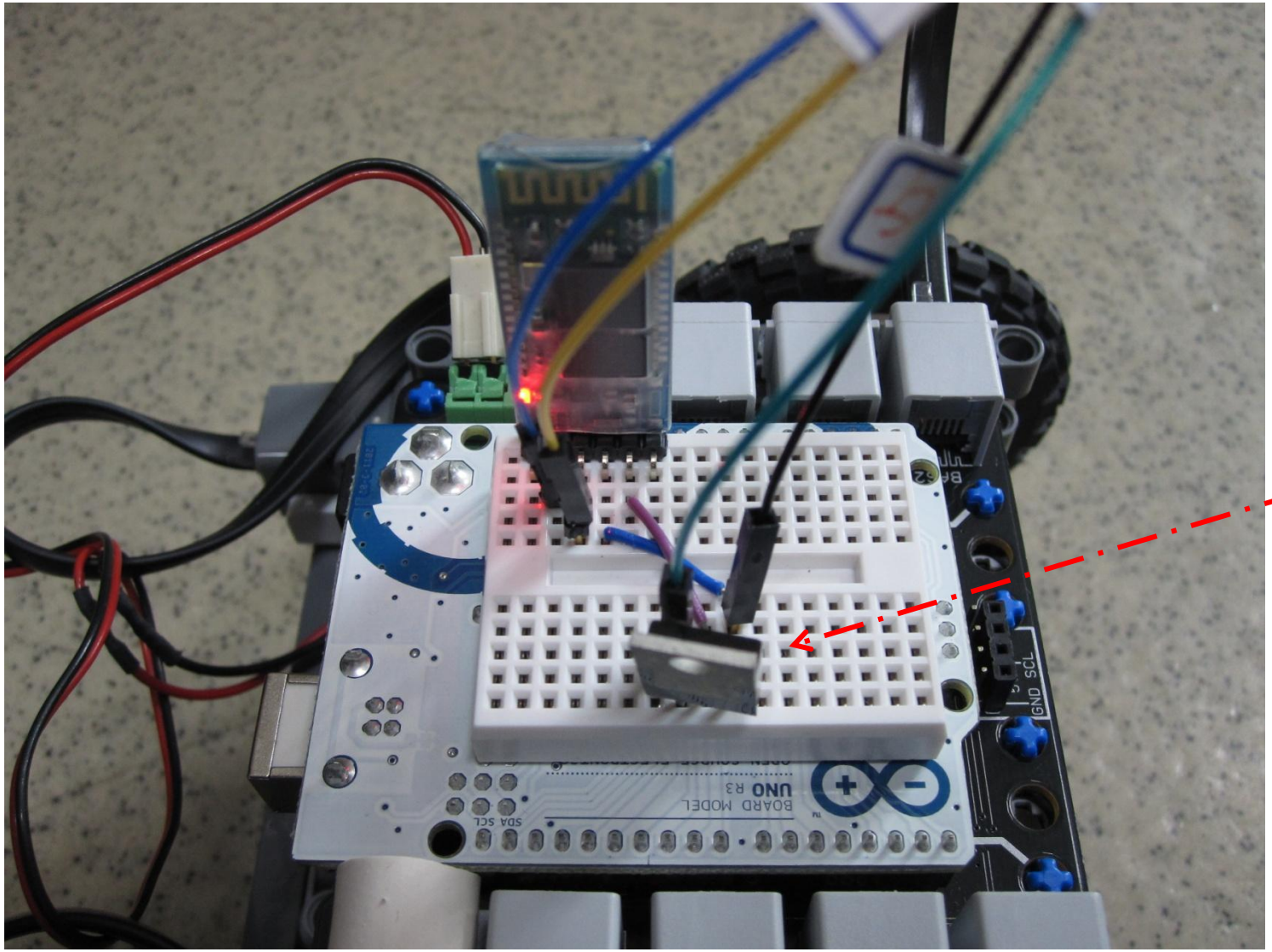




NXT訊號線→



在UNO背板貼上小塊麵包板，置放藍芽模組及接出的NXT訊號線



註:因為本藍芽模組吃3.3V，因此加上5V→3.3V整壓IC，若可直接吃5V就不需要。

Arduino 藍芽程式

```
 This example code is in the public domain.
 */
#include <SoftwareSerial.h>
#include <Wire.h>
#include <NXShield.h>
#define powera 50
#define powerb 50

NXShield          nxshield;

SoftwareSerial I2CBT= SoftwareSerial(2, A0);  //pin2 is RX, A0 is TX
void setup() {
  Serial.begin(9600);
  I2CBT.begin(57600);
  pinMode(A0, OUTPUT);
  //pinMode(2, OUTPUT );
  nxshield.init( SH_HardwareI2C );
 // nxshield.init( SH_SoftwareI2C );
    //
    // Wait until user presses GO button to continue the program
    //
  Serial.println ("Press GO button to continue");
  nxshield.waitForButtonPress(BTN_GO);
```

使用軟體串列通訊(UART)

將Arduino 數位第2腳宣告為串列接收(RX)，類比第0腳宣告為串列發射(TX)，此串列通訊物件名為 I2CBT

配合藍芽模組baud rate設定，宣告軟體串列通訊baud rate

將類比輸入改為輸出屬性

Arduino 藍芽程式

```
void loop() {
  //digitalWrite(2, HIGH);
  byte cmmd[20];
  int insize;
  while(1){
    if ((insize=(I2CBT.available()))>0){
       Serial.print("input size = ");
       Serial.println(insize);
       for (int i=0; i<insize; i++)
         Serial.print(cmmd[i]=char(I2CBT.read()));
       Serial.println("  ");
    }
      switch (cmmd[0]) {
        case 102: //"f"
          //Move Forward
              Serial.println( "run unlimited Forward" );
              nxshield.bank_a.motorRunUnlimited(SH_Motor_1, SH_Direction_Forward, powera);
              nxshield.bank_b.motorRunUnlimited(SH_Motor_1, SH_Direction_Forward, powerb);
          break;
        case 98: //"b":
          //Move Backward
              Serial.println( "run unlimited Backward" );
              nxshield.bank_a.motorRunUnlimited(SH_Motor_1, SH_Direction_Reverse, powera);
              nxshield.bank_b.motorRunUnlimited(SH_Motor_1, SH_Direction_Reverse, powerb);
          break;f
```

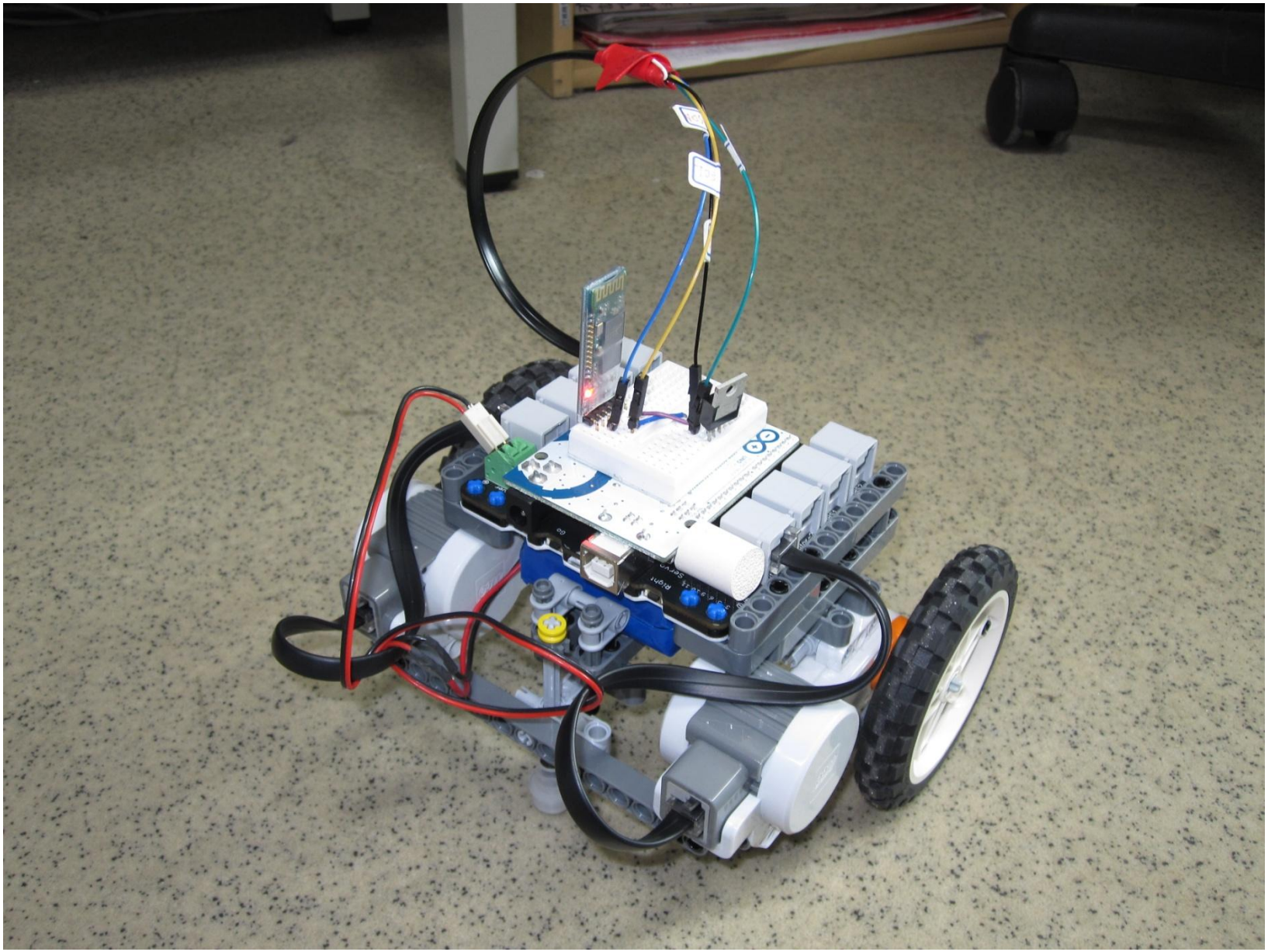
判斷是否有資料經由藍芽模組傳入

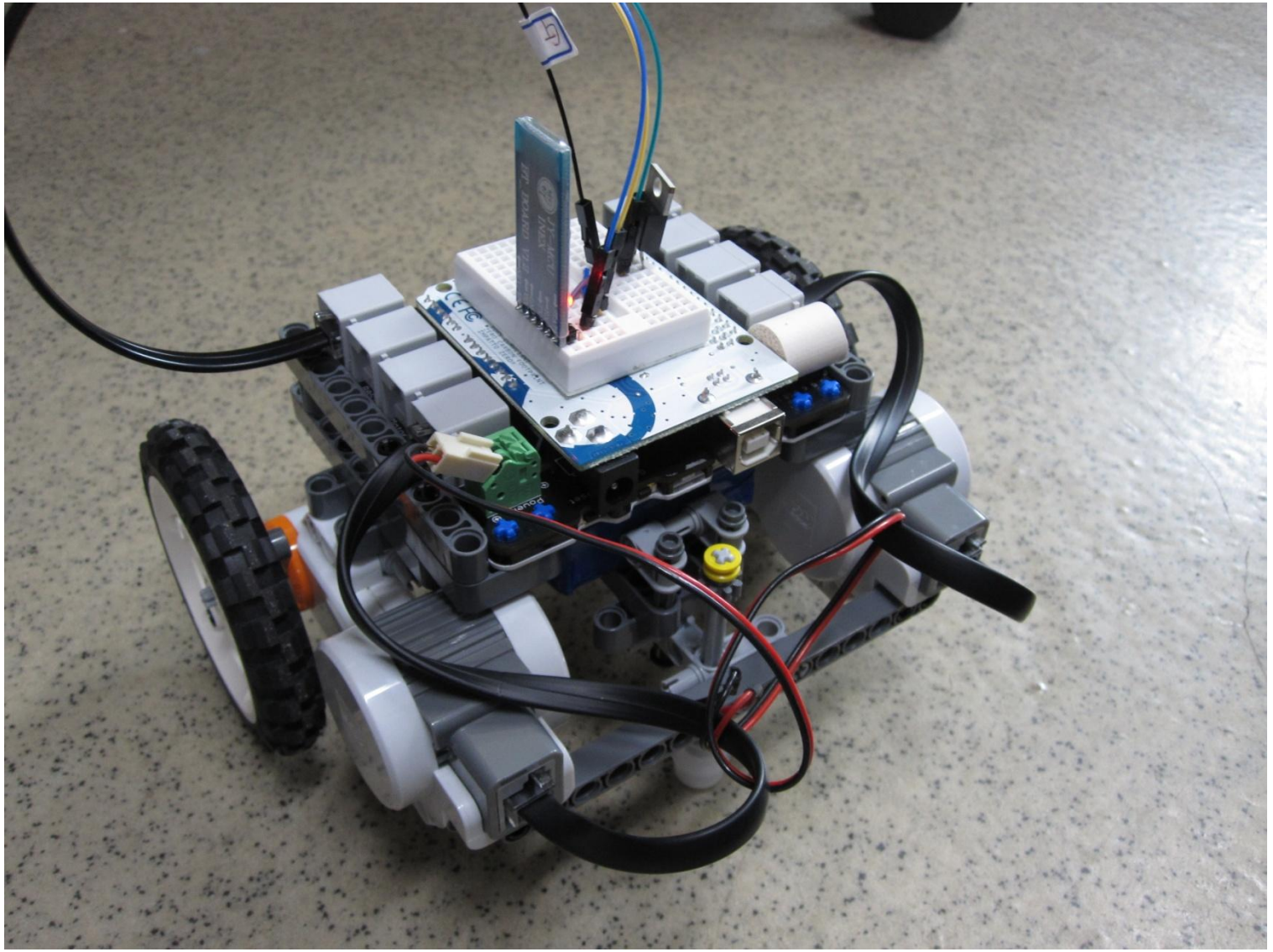
將資料依序放入byte串列cmm

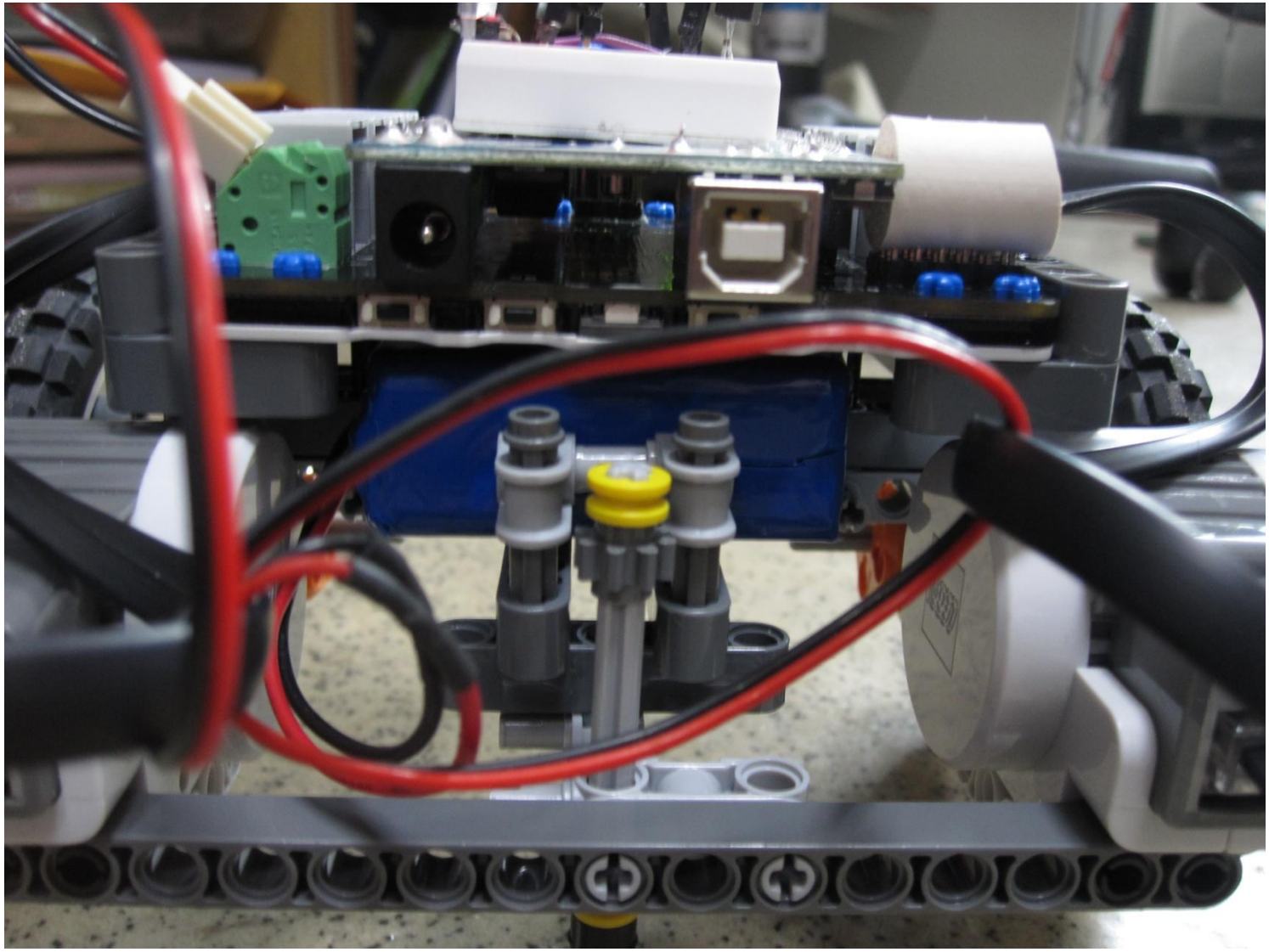
判斷由超級終端機送達之命令，f:前進，b:後退，l:左轉，r:右轉，其他鍵:停止

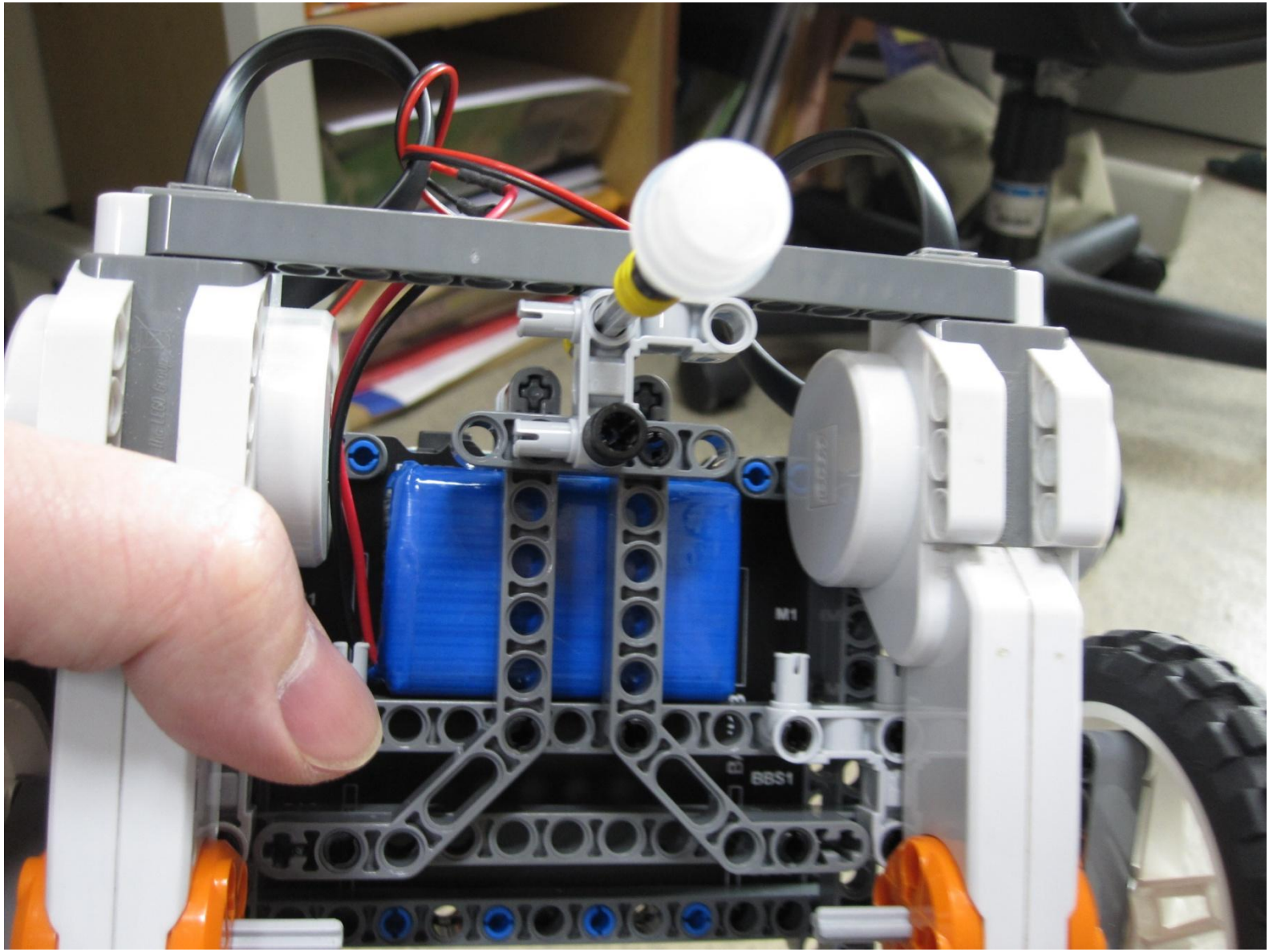
其他運用

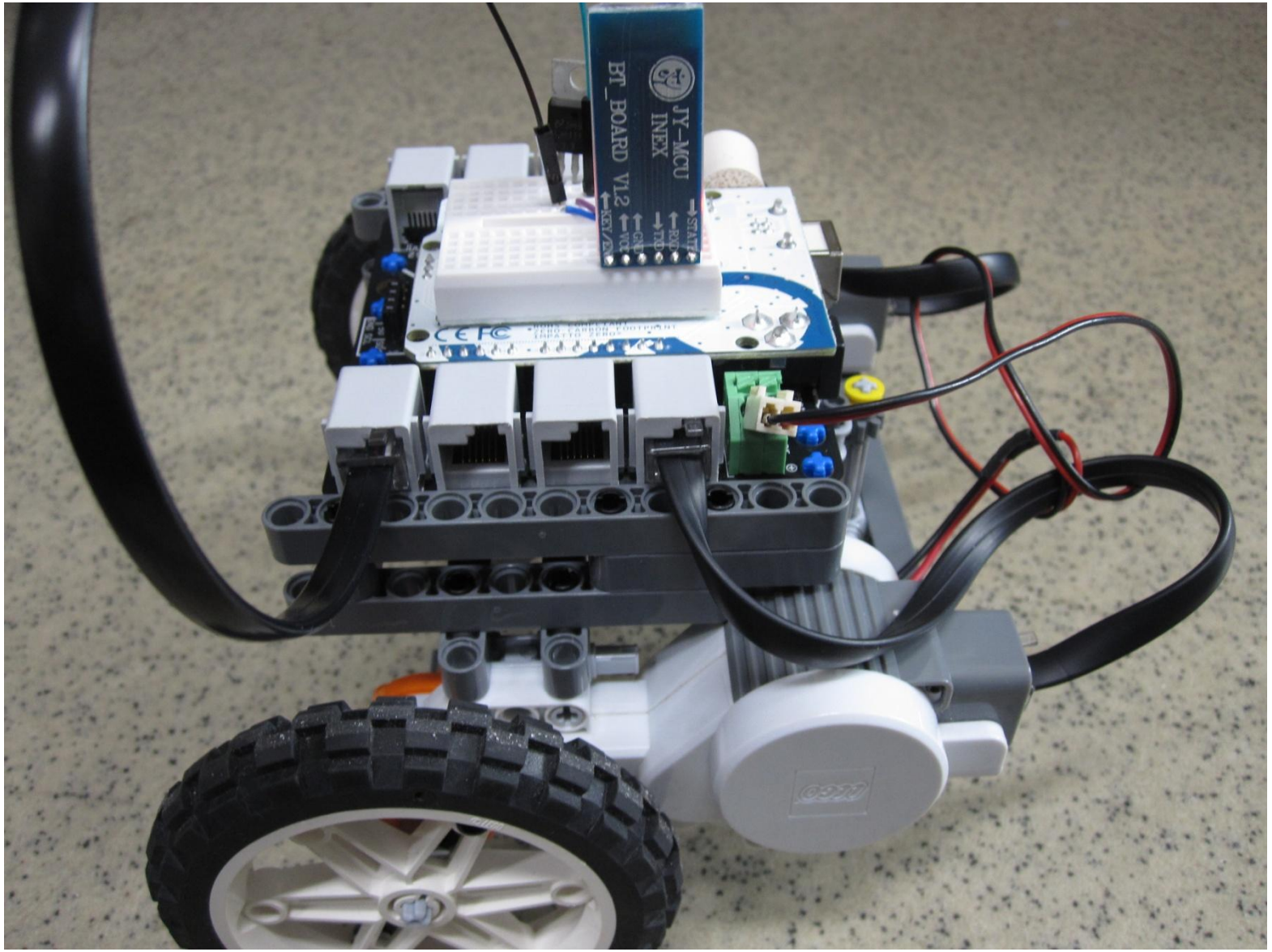
- 若要將**NXShield**感測器資料傳出，只要用I2CBT.write(data);指令即可。
- 另外Arduino也可藉由NXT訊號線，直接將外在訊號讀入，例如類比電壓，RC Time等。
- 其他透過I2C或UART介面的模組，例如RFID模組，也都可透過NXT訊號線加以控制及運用。
- 目前利用PC+USB藍芽+超級終端機送控制命令給NXShield→ Arduino
- 影片 : http://youtu.be/od3YqVtxA9I








M1
BBS1


JY-MCU
INEX
BT_BOARD V1.2