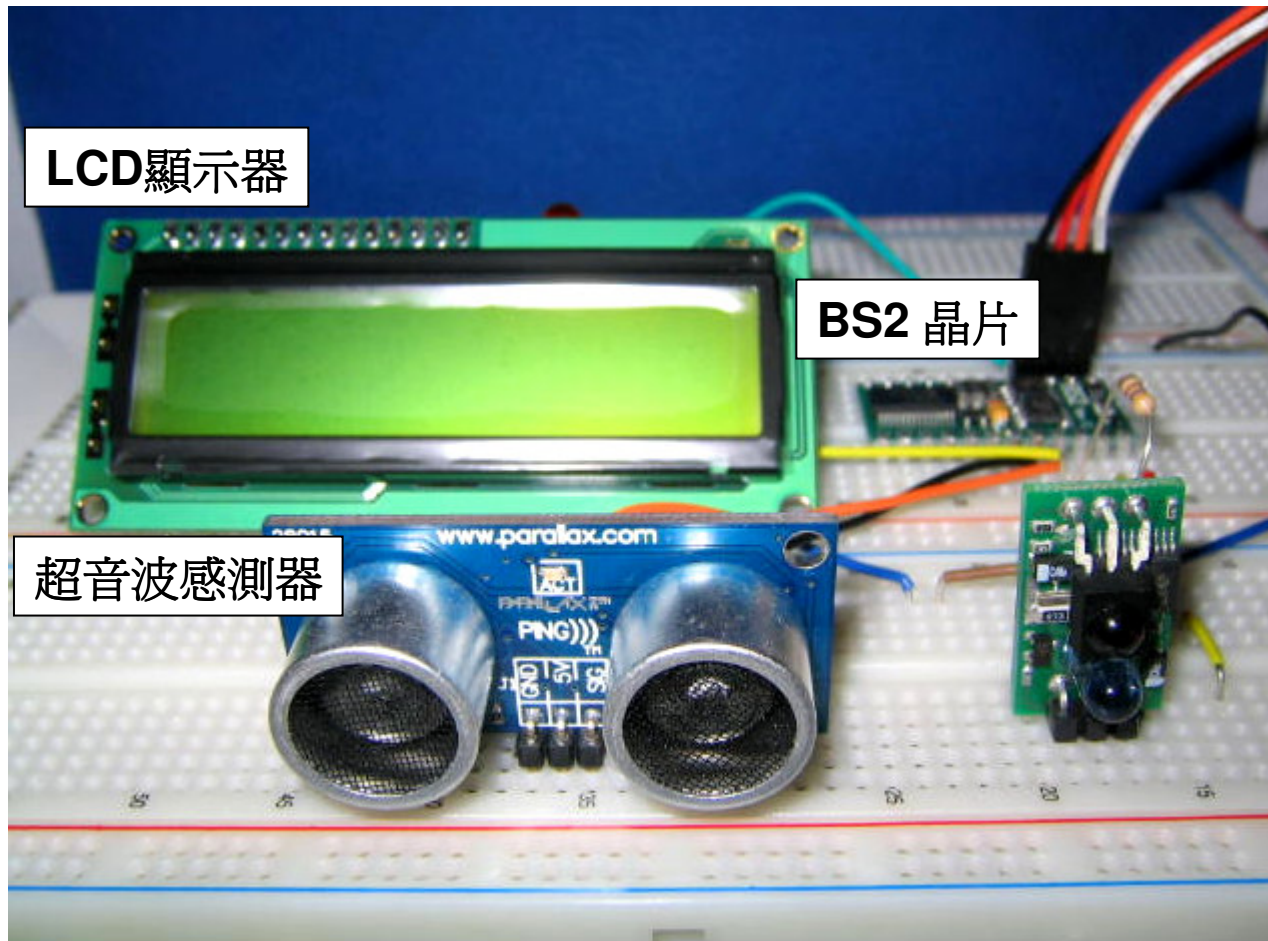


LCD顯示器

BS2 晶片

超音波感測器



Step1 test Ultrasonic Rang Finder

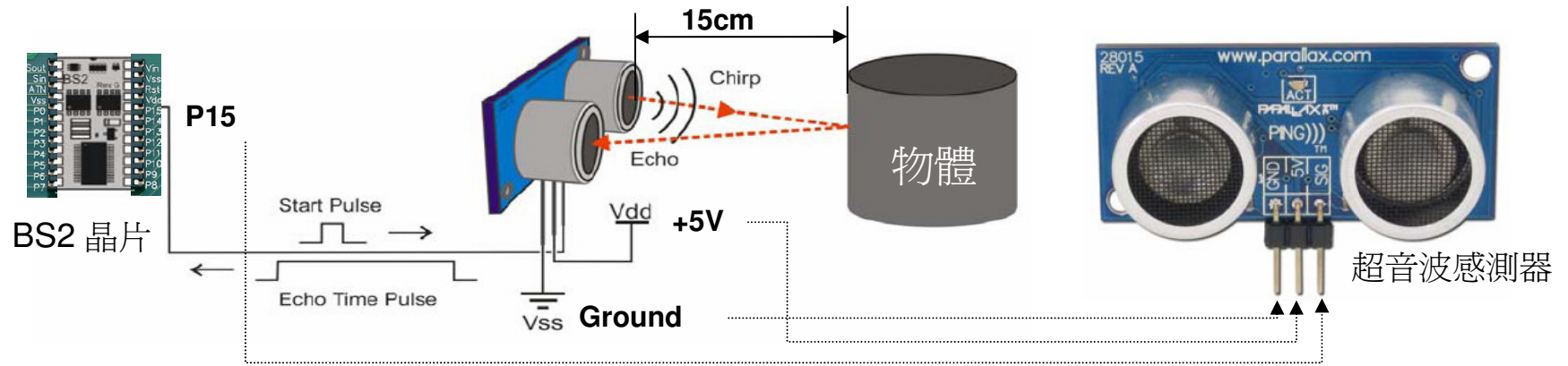


Figure1 Ping))) Sensor 電路接線圖

步驟

- 1-1 建立超音波感測器的迴路，如圖1。
- 1-2 將感測物體至於感測器前方15cm處。
- 1-3 於BASIC Stamp Editor 中鍵入 如圖2之程式。
- 1-4 Debug Terminal 將出現15cm 之訊息。

Figure2 BASIC Stamp Editor



Untitled1

```
' ($STAMP BS2)
' ($PBASIC 2.0)

time VAR Word

DO
PULSOUT 15, 5
PULSIN 15, 1, time
DEBUG HOME, "time = ", DEC5 time
time = time ** 2251
DEBUG CR, "Distance = ", DEC4 time, " cm"
PAUSE 100
LOOP
```

..... PING))) is connected to I/O pin P15 of the Stamp

..... 2251 with the ** operator for the time to centimeter conversion.

..... display the centimeter value.

Debug Terminal #1

Com Port: COM6 Baud Rate: 9600 Parity: None Data Bits: 8 Flow Control: Off

TX DTR RTS
 RX DSR CTS

```
time = 00447
Distance = 0015 cm
```

Macros... Pause Clear Close Echo Off

More about the **SEROUT** command:

The minimal version of the **SEROUT** command's syntax looks like this:

SEROUT *Pin*, *BaudMode*, [*DataItem*, {*DataItem*, ...}]

In `LcdTestMessage.bs2`, the **Pin** argument has to be 14 since the LCD's RX (receive data) pin is connected to BASIC Stamp I/O pin P14.

The **BaudMode** argument is a value that instructs the BASIC Stamp on how fast to send the serial data, and it determines some of the serial signal characteristics as well. The BASIC Stamp Editor's Help program has tables that give the **Baudmode** values for common baud rates and signals. It turns out that 84 is the **BaudMode** argument for 9600 bits per second (bps), 8 data bits, no parity, true signal.

The **DataItem** arguments can be the text between quotes like "**Text**". They can also be control characters like **CR**, **CLS**, or numbers with or without the formatters like **DEC**, **BIN**, and **?**.

You can learn lots more about the **SEROUT** command from either the BASIC Stamp Manual or the BASIC Stamp Editor's Help program (click Help and select Index).



Untitled1 | Untitled3 | Untitled4

```
' ($STAMP BS2)
' ($PBASIC 2.0)

' This program demonstrates fundamental techniques of driving
' BPI-216 serial LCDs in BASIC from the BASIC Stamp II. It assumes
' that the BPI-216 is connected to I/O pin P0 of the Stamp, and
' that it is set for 9600 bps.
' Start by defining some useful constants for the Backpack.
N9600 CON $4054 ' Baudmode-9600 bps inverted. Use $40F0 for BS2-SX.
I CON 254 ' Instruction prefix value.
CLR CON 1 ' LCD clear-screen instruction.
LINE2 CON 192 ' Address of 1st char of 2nd line.
L1_C7 CON 135 ' Address of line 1, character 7.
' Now clear the screen in case there's text left from a previous
' run of the program. Note that there's a 1-second PAUSE prior to
' sending any data to the Backpack. This gives the Backpack plenty
' of time to initialize the LCD after power up.

time VAR Word

DO
PULSOUT 15, 5
PULSIN 15, 1, time
PAUSE 500
SEROUT 0,n9600,[I,CLR] ' Clear the LCD screen.
PAUSE 1
time = time ** 2251
SEROUT 0, n9600,[CR, "Distance = ", DEC4 time, " cm"]
PAUSE 100
LOOP
```

