電子おもちゃ

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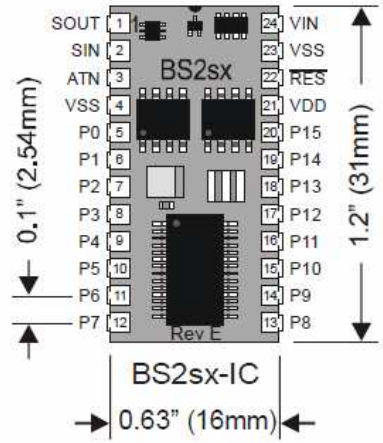
電子おもちゃ支援情報

- http://neuro.sfc.keio.ac.jp/kenkyukai/toy.html をクリックします。
- “はじめに”をクリックします。
- basic stamp download をクリック、ダウンロードし、インストールする。

一番簡単な開発環境

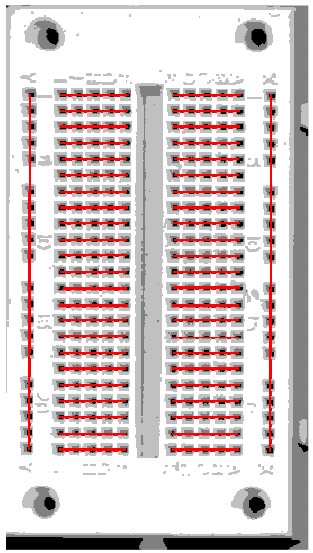
- Basic Stamp for Windows, Mac, Linux
- USB-RS232c ケーブル　1200円 （秋月）

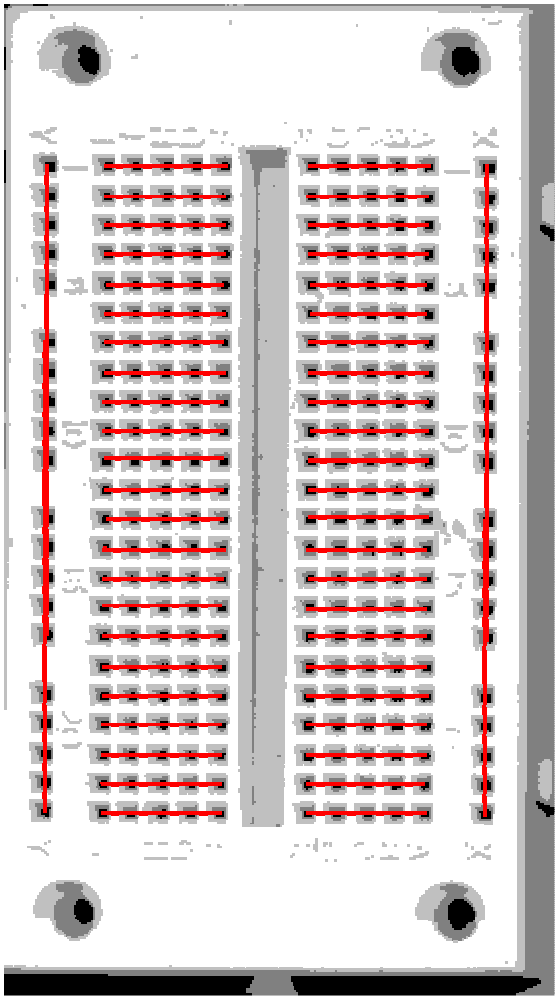
- BS2 3900円 （秋月）
- BS2SX　4700円 （秋月）

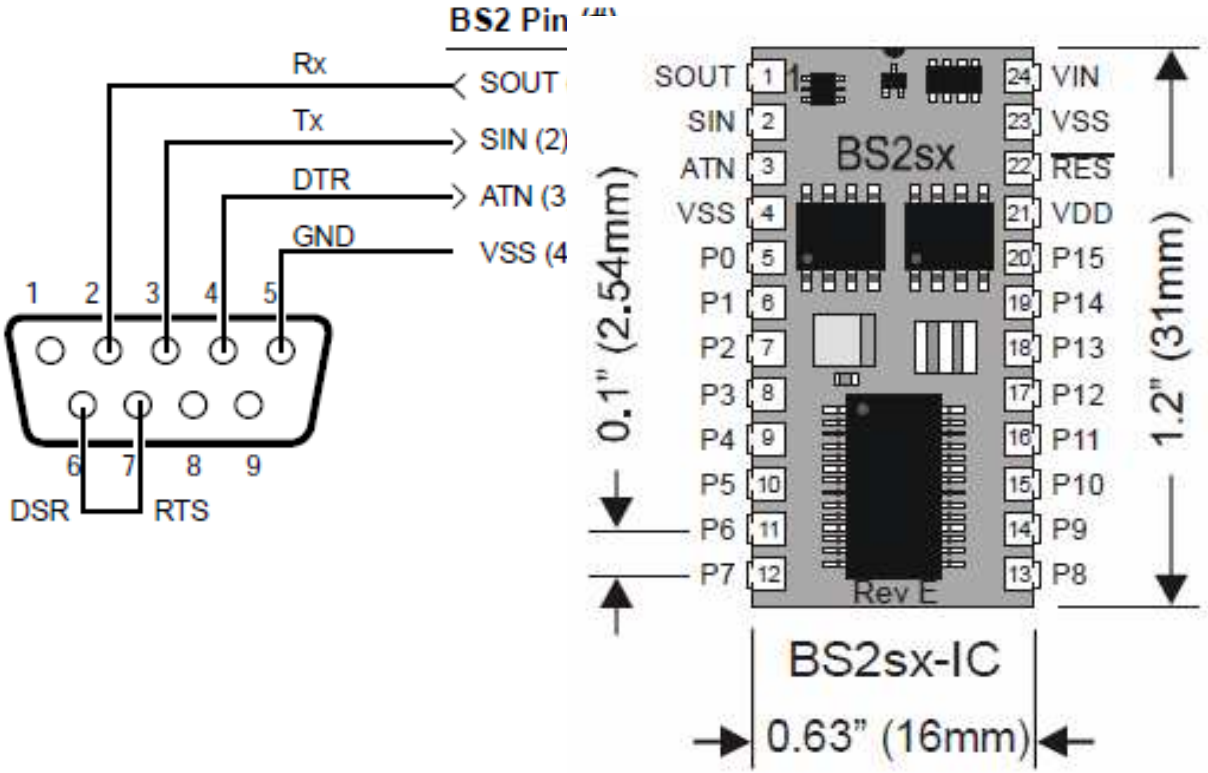


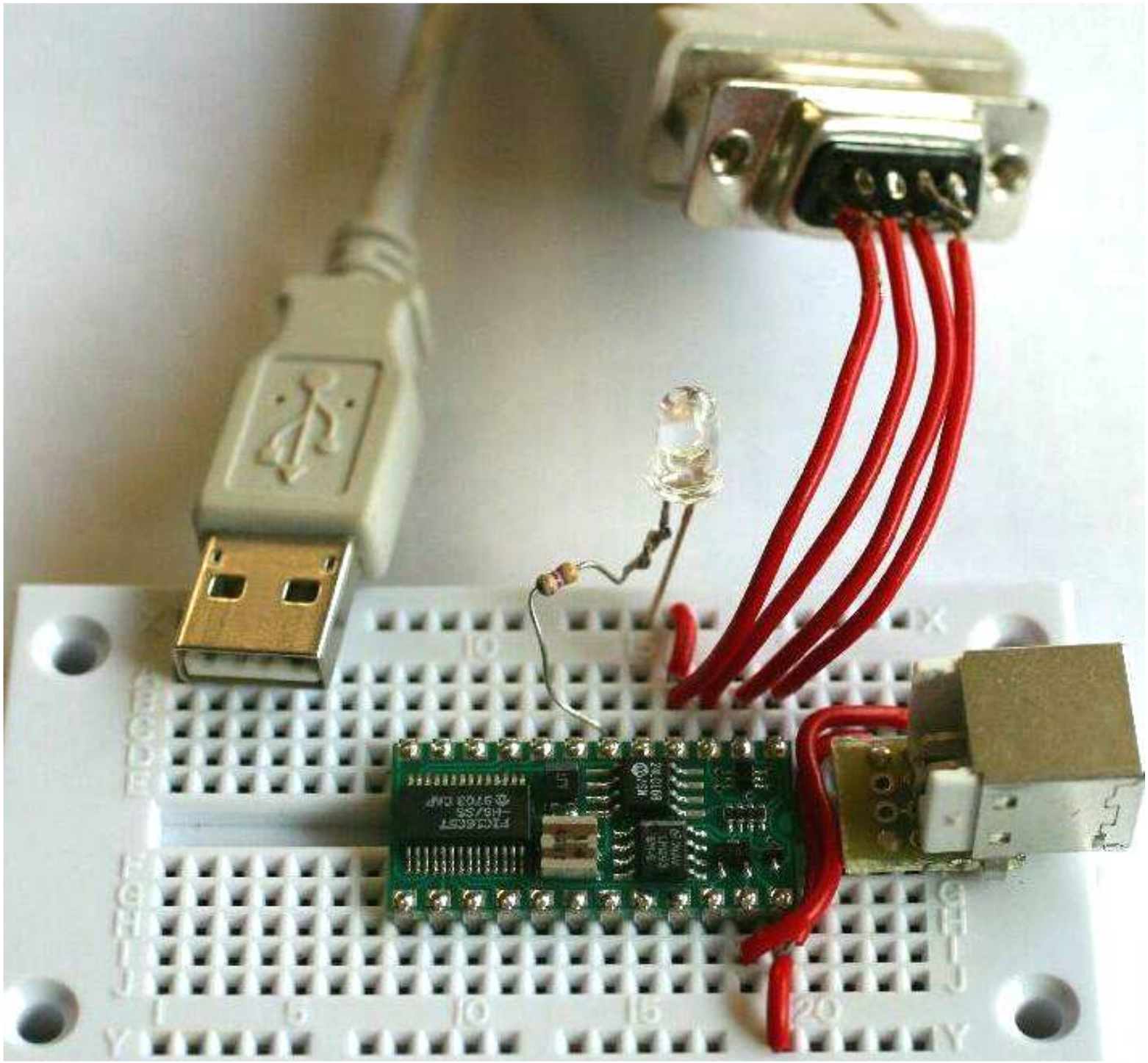
USB-RS232c

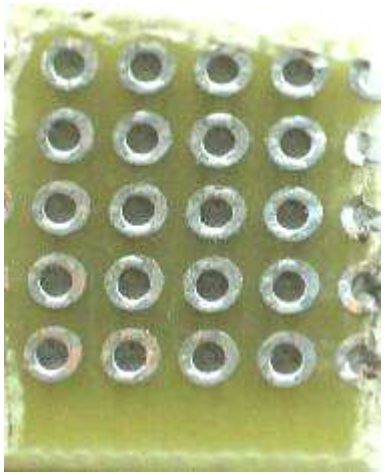
ブレッドボード

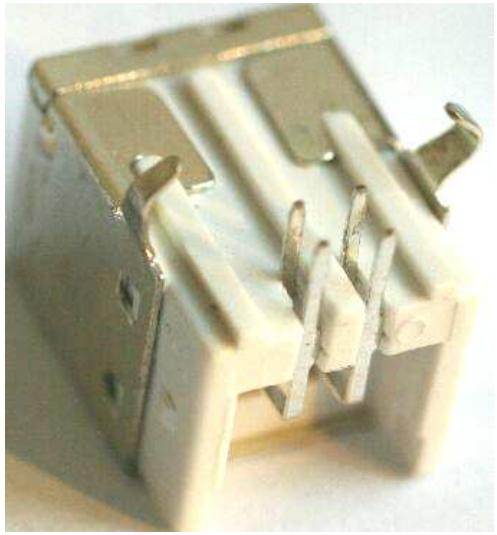


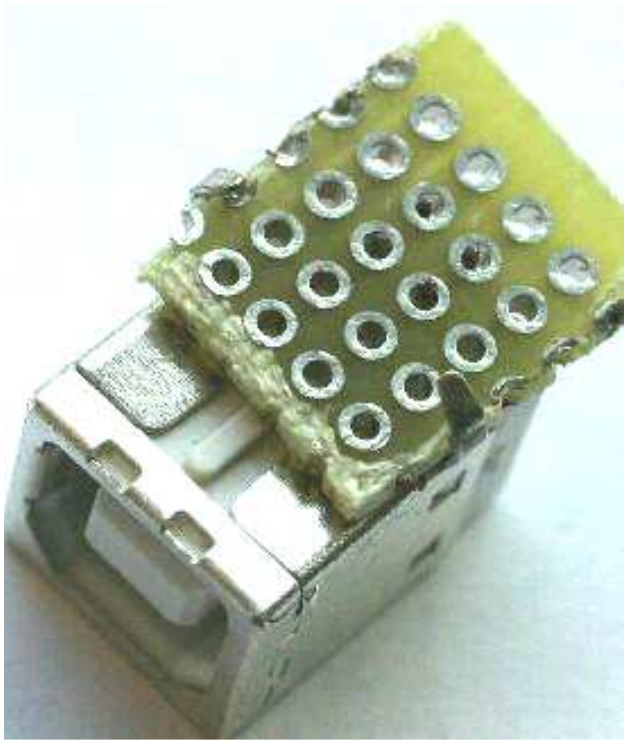


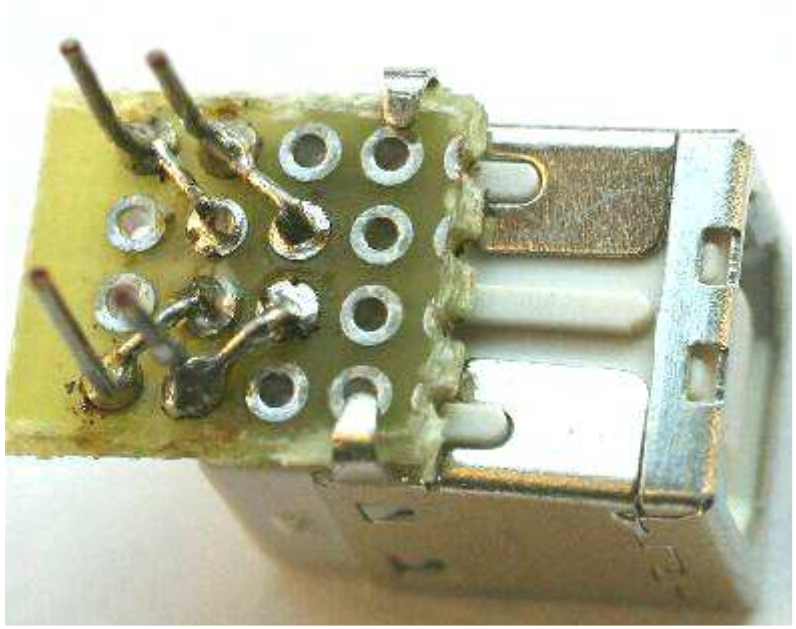

BS2 Pin
Rx
SOUT
Tx
SIN (2)
DTR
ATN (3
GND
VSS (4
1 2 3 4 5
6 7 8 9
DSR
RTS
SOUT 1
SIN 2
ATN 3
VSS 4
P0 5
P1 6
P2 7
P3 8
P4 9
P5 10
P6 11
P7 12
24 VIN
23 VSS
22 RES
21 VDD
20 P15
19 P14
18 P13
17 P12
16 P11
15 P10
14 P9
13 P8
BS2sx
Rev E
0.1" (2.54mm)
1.2" (31mm)
BS2sx-IC
0.63" (16mm)











HEX FORMAT

```
:10202E00216E016A0162215D217F218C017F01C336
:10203E000126011602294002 2AAD0172022A9A02D5
:10204E0029D00229D6022A1402287D02284302270B
 ^ ^   ^ ^                                ^
 | |   | |                                |
 | |   | |       checksum-----------------+
 | |   | +-------data bytes
 | |   +---------record type (00=data, 01=end of file)
 | +-------------address for this line of data
 +---------------number of bytes of data in this line

Line #1: 16 bytes  @  0x202E to 0x203D  (8238 to 8253)
Line #2: 16 bytes  @  0x203E to 0x204D  (8254 to 8269)
Line #2: 16 bytes  @  0x204E to 0x205D  (8270 to 8285)
```

```
:10246200464C5549442050524F46494C4500464C33
||||||||||                              CC->Checksum
||||||||DD->Data
|||||||TT->Record Type
|||AAAA->Address
|LL->Record Length
:->Colon
```

where:

- **10** is the number of data bytes in the record.
- **2462** is the address where the data are to be located in memory
- **00** is the record type 00 (a data record).
- **464C...464C** is the data.
- **33** is the checksum of the record.

```
:00000001FF
```

where:

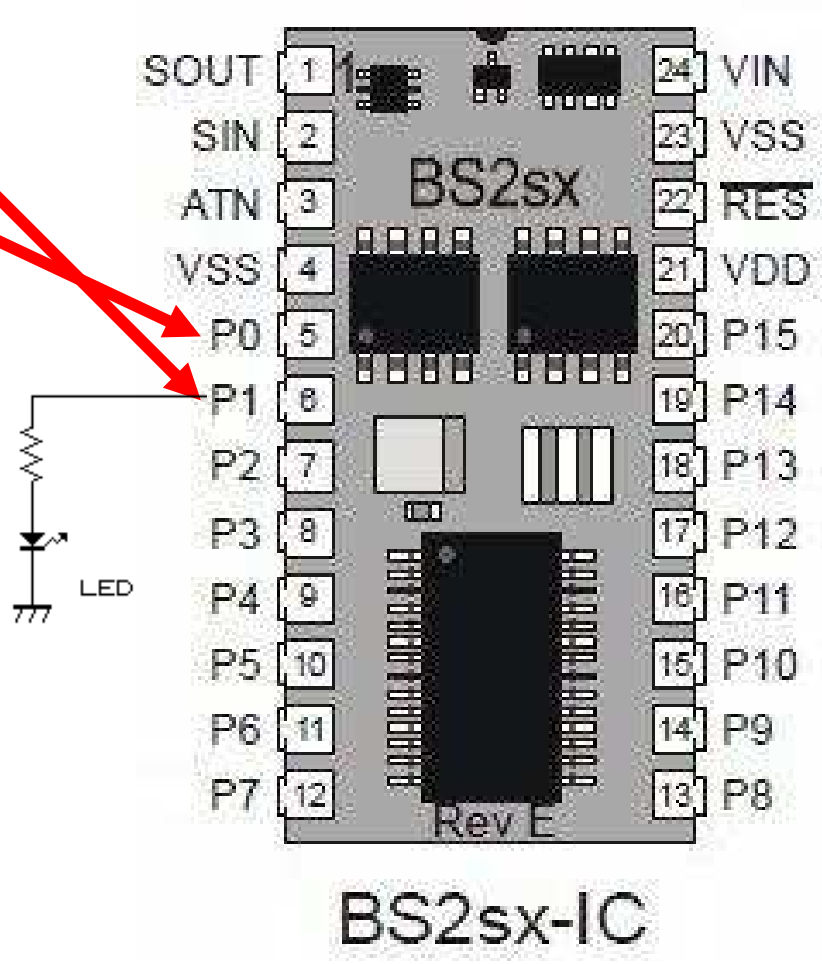
- **00** is the number of data bytes in the record.
- **0000** is the address where the data are to be located in memory. Th address in end-of-file records is meaningless and is ignored. An addre of 0000h is typical.
- **01** is the record type 01 (an end-of-file record).
- **FF** is the checksum of the record and is calculated as 01h + NOT(00h + 00h + 00h + 01h).

Basic stamp programming

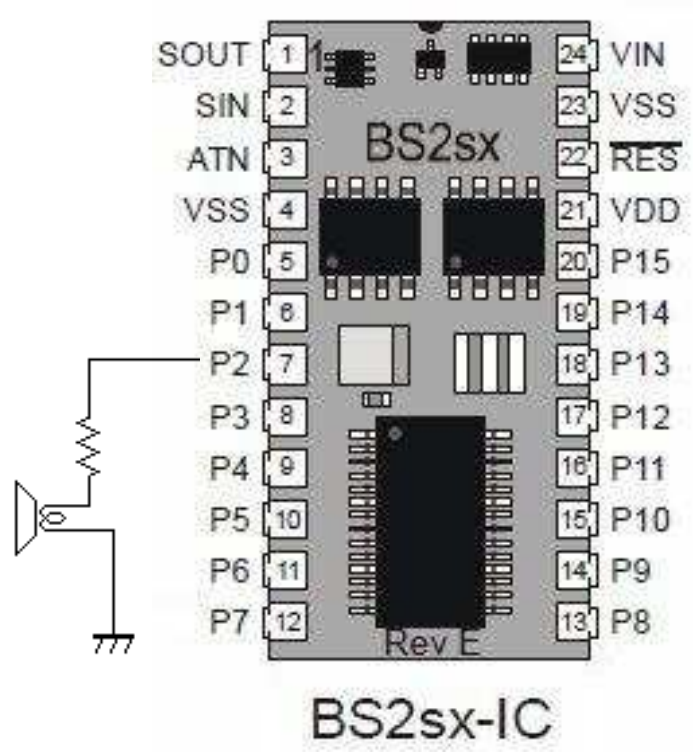
- Basic stamp softwareをダウンロードし、インストールする。
- Basic stamp editorを起動する。
- プログラムを書く。
- Stamp chipを選択する。（directive/stamp)
- Stamp portを選択する。（directive/port)
- Runボタンをクリックする。（programは自動的にbasic stampに転送されます。）

Basic stamp programming

```
' {$STAMP BS2}
begin:          ‘label
HIGH 1          ‘pin1を1にする
LOW 0           ‘pin0を0にする
PAUSE 1000      ‘1000ms休む
LOW 1           ‘pin1を0にする
HIGH 0          ‘pin0を1にする
PAUSE 1000      ‘1000ms休む
GOTO begin      ‘beginに戻る
```



Mary music

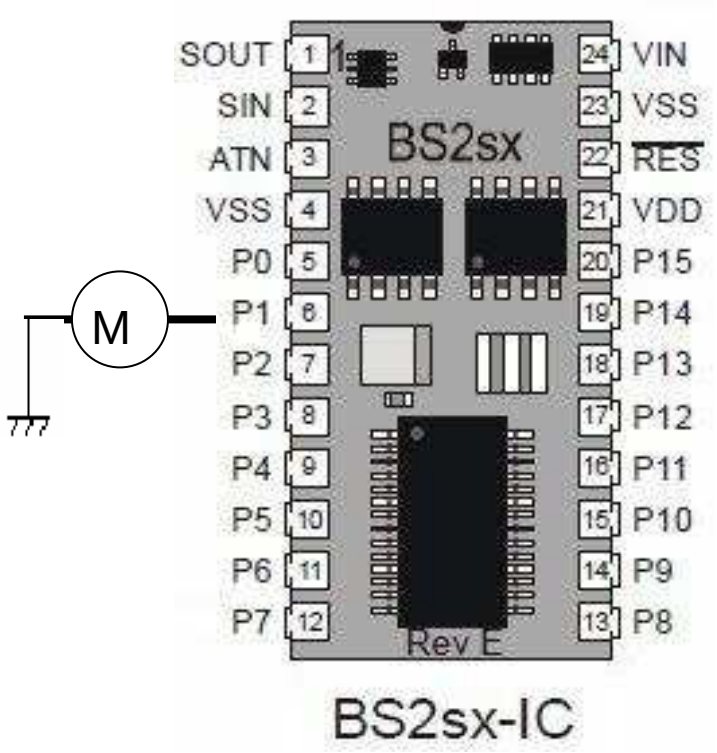


BS2sx-IC

```
begin:
i VAR Byte
f VAR Word
c CON 523*2
d CON 587*2
e CON 659*2
g CON 784*2
r CON 0
FOR i=0 TO 28
LOOKUP i,[e,d,c,d,e,e,e,r,d,d,d,r,e,g,g,r,e,d,c,d,e,e,e,e,d,d,e,d,c],f
FREQOUT 2,350,f,(f-8) MAX 32768
NEXT
PAUSE 2000
GOTO begin
```

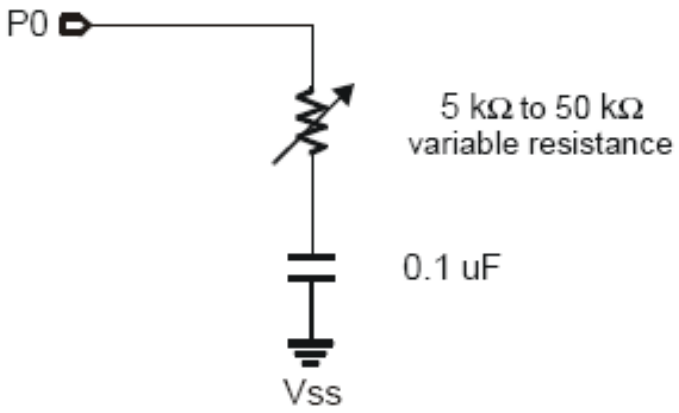
motor

```
a VAR Word
b VAR Word
a=1
b=100
start:
HIGH 1
PAUSE a
LOW 1
PAUSE b
GOTO start
```



BS2sx-IC

POTコマンド




```
SYMBOL  PotPin          = 0             ' pot connected to P0
SYMBOL  Scale           = 111           ' scale value for test circuit

SYMBOL  level           = B2            ' storage of pot "level"

Main:
  POT PotPin, Scale, level              ' read pot level
  DEBUG CLS, "Level = ", #level         ' display
  PAUSE 50                              ' short delay
  GOTO Main                             ' repeat forever
  END
```