

```

1 ' MATLAB Connection - SendAndRecieve.bs2
2 '
3 ' -----[ Notes ]-----
4 '
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6 ' Date: 8-26-08
7 '
8 ' BASIC Stamp sends numerical information to MATLAB. MATLAB performs
9 ' mathematical opporations on this number. Then MATLAB sends this
10 ' information back to the BS2 which displays it.
11 '
12 ' -----[ Program ]-----
13 '
14 ' {$STAMP BS2}
15 ' {$PBASIC 2.5}
16 '
17 '
18 ' -----[ Variables/Constants/Pins ]-----
19
20 FreqDetectable    CON    3000
21 PiezoSp           PIN    4           ' Speaker
22
23 serData           VAR    Word
24 counter           VAR    Word    ' error tracker
25 looping           VAR    Word
26
27
28 sPin              CON    16           'Serial Pin - P16, Programming port
29 Baud              CON    84           'Baud mode for a rate of 9600, 8-N-1
30                  'BS2P, BS2SX use 240 for 9600, 8-N-1
31
32
33 ' -----[ Initialization ]-----
34
35 FREQOUT PiezoSp, 1500, FreqDetectable    'Signal program start/reset.
36
37 SEROUT sPin, Baud, [LF]                 'Send a lone LF to signal MATLAB start
38
39 counter = 0
40
41 ' -----[ Program Code ]-----
42
43
44 SEROUT sPin, Baud, ["This is your Boe-Bot", LF]
45
46
47 FOR looping = 3 TO 22
48
49     SEROUT sPin, Baud, [DEC looping, LF]
50
51     SerialIn:
52         SERIN sPin, Baud, [DEC serData]
53
54     Rest:
55         WRITE looping, serData
56
57
58 NEXT
59
60 END
61
62
63 ' -----[ Subroutines ]-----
64
65 ' I kept these subroutines because if an error occurs then one can use the
66 ' following commands below to find out where the error occurred.

```

```
67
68 'BadData: ' No parity is used so this command should never be exicuted.
69 '   counter = counter + 1
70 '   IF counter > 20 THEN GOTO Rest
71 '   GOTO SerialIn
72
73
74 'NoData:
75 '   counter = counter + 1
76 '   IF counter > 20 THEN GOTO Rest
77 '   GOTO SerialIn
```