

### Abstract Truth Detecting Mat

Although this three zone floor mat can't really detect lies, it can detect movement (nervousness). The mat will be placed in front of an interactive talking Christmas Tree (another contest project). The subject's body language (movement on the mat) will be factored into responses generated by the talking tree.

This is a very basic implementation of the MC33794 using the E-Field Evaluation Module. Using only the E-Field Evaluation Module, a PC, Coax Cable, and aluminum foil (figure #1) a working detector can be quickly placed in operation.

After connecting the module to the PC with a serial cable and establishing communication with the appropriate sensor (sensor #4 in my case), a few lines of BASIC code are needed to retrieve data from the sensor.

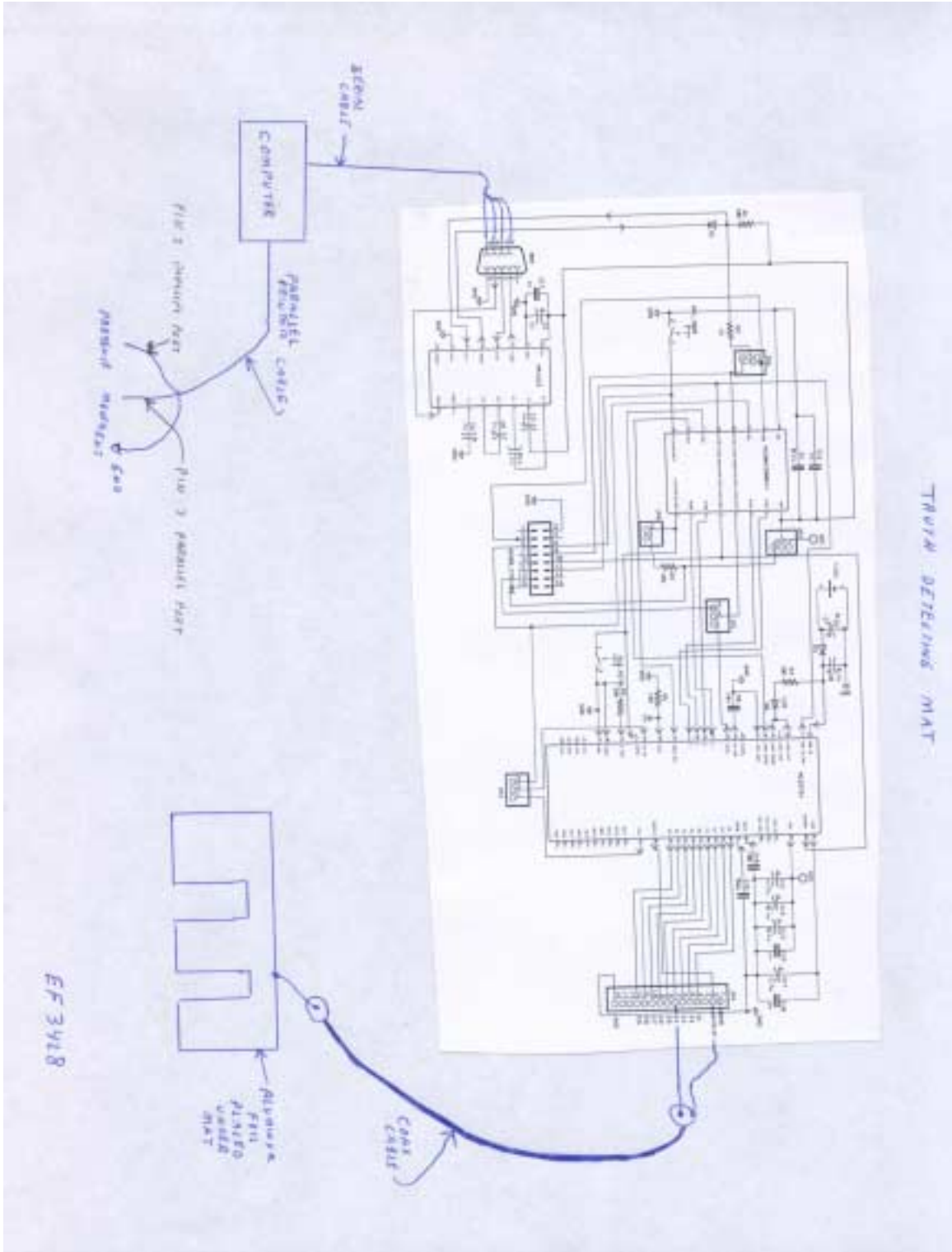
PRINT#1,"x" causes the sensor to obtain a value.

INPUT#1,A\$ retrieves the value (in hex). The "INPUT#1,A\$" statement must be issued twice as the first return is an acknowledgement of the print command sent.

Photo #1, Truth Detecting Mat System



Figure #1

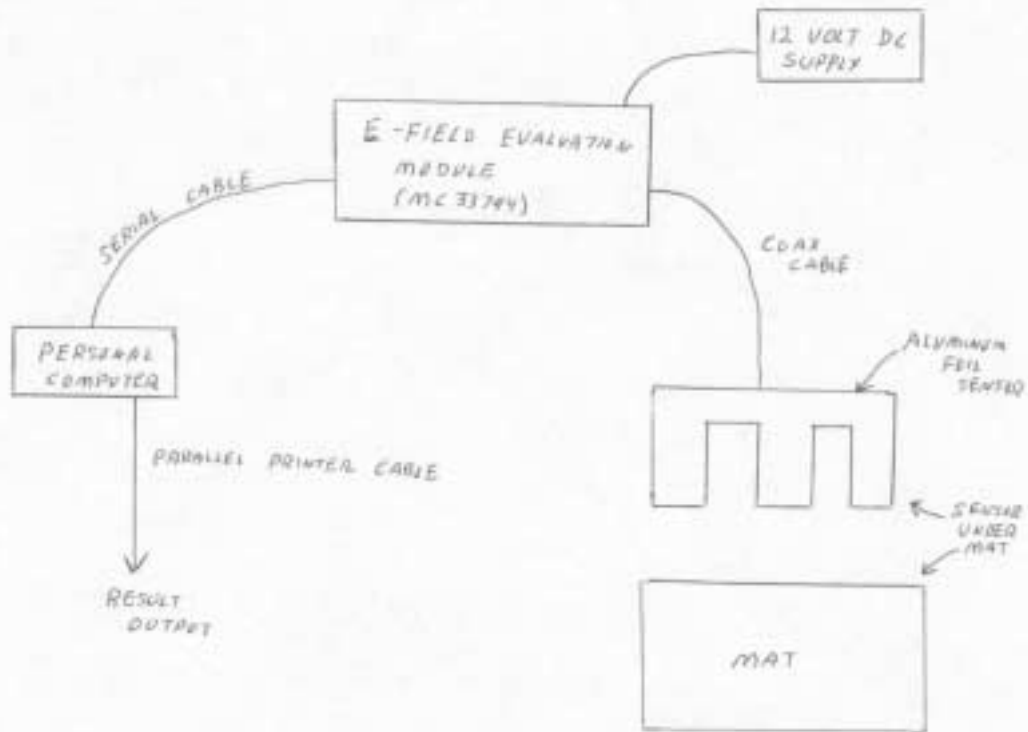


A piece of carpet should be placed on top of the aluminum foil sensor. With no human on the mat (given my aluminum foil configuration), the value returned from the sensor will be about “80” (after converting from hex to decimal). Stepping on the mat will lower the value to about “30”. Moving around will change the value—but it will be well below “80”. Any value below “78” is used to cause pin 2 of the parallel port to go high (object presence detected). If the value (less than 78) changes from read cycle to read cycle, pin 7 of the parallel port goes high (movement detected). Causing the parallel pins to change state is accomplished through the “OUT &H0378, Z” command where Z equals “0” for all low, “1” for pin 2 high, and “32” for pin 7 high.

With a little experimentation, it should be possible to easily detect certain different subjects (animal versus human, child versus adult etc.)

TRUTH DETECTING MAT  
(BLOCK DIAGRAM)

EF 3428



EF3428 code

```
5 OUT &H378,0
10 OPEN "com1:9600/n/8/1/rs/cs0,ds0" AS #1
15 PRINT#1, "d 1"
18 GOSUB 39
20 PRINT#1, "s 4"
22 GOSUB 39
30 PRINT#1, "x"
35 GOTO 200
39 GOSUB 100
40 INPUT#1, A$
50 PRINT A$
51 INPUT#1, A$
52 GOSUB 100
53 INPUT#1, A$
54 PRINT A$
```

```

55 RETURN
60 GOTO 30
100 FOR X = 1 TO 28000
110 NEXT X
120 RETURN
200 INPUT#1, A$
210 PRINT A$
230 GOSUB 100
240 INPUT#1, A$
242 GOSUB 500
243 GOSUB 1000
255 FOR X=1 TO 60000!
256 NEXT X
260 PRINT#1, "x"
270 GOSUB 100
280 INPUT#1, A$
290 PRINT A$
300 GOSUB 100
310 INPUT#1, A$
311 GOSUB 500
312 GOSUB 1000
330 FOR X=1 TO 30000
340 NEXT X
350 GOTO 30
500 B$= LEFT$(A$, I)
510 C$=RIGHT$(A$, I)
520 Z$=B$
530 GOSUB 700
540 B=Z
550 Z$=C$
560 GOSUB 700
570 C=Z
580 A=(B*16)+C
590 RETURN
700 IF Z$="0" THEN Z=0
710 IF Z$="1" THEN Z=1
720 IF Z$="2" THEN Z=2
730 IF Z$="3" THEN Z=3
740 IF Z$="4" THEN Z=4
750 IF Z$="5" THEN Z=5
760 IF Z$="6" THEN Z=6
770 IF Z$="7" THEN Z=7
780 IF Z$="8" THEN Z=8
790 IF Z$="9" THEN Z=9
800 IF Z$="A" THEN Z=10
810 IF Z$="B" THEN Z=11
820 IF Z$="C" THEN Z=12
830 IF Z$="D" THEN Z=13
840 IF Z$="E" THEN Z=14
850 IF Z$="F" THEN Z=15
860 RETURN
1000 IF A<78 THEN 1100
1010 OUT &H378, 0
1020 Q=80
1030 RETURN
1100 IF Q=A THEN 1200
1110 IF Q=80 THEN 1130
1120 Q=A
1125 OUT &H378, 33
1127 RETURN
1130 Q=A
1135 OUT &H378, 1
1140 RETURN
1200 OUT &H378, 1
1210 RETURN

```