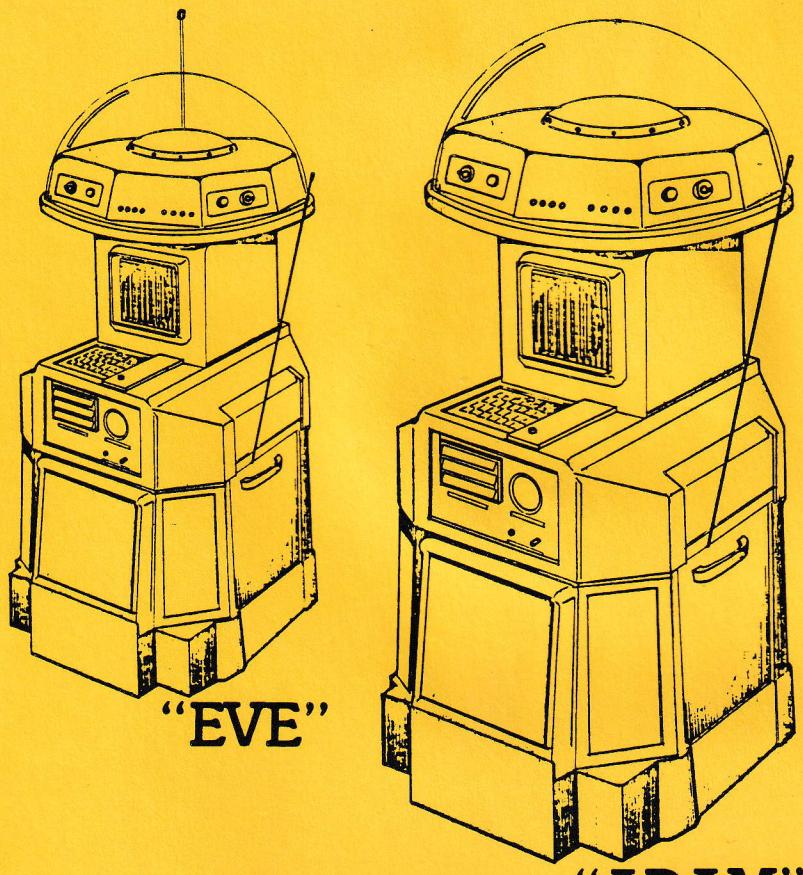
INTRODUCING

ADAM AND EVE ROBOT SHOW



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"ADAM"

GO BEYOND COMPUTERS WITH "SERBOT™"

MEET THE CUTE, LOVEABLE SERBOTS™ WITH DYNAMIC PERSONALITIES. THEY CAN ENTERTAIN YOU BY SINGING, DANCING, PLAYING GAMES AND TELLING JOKES. ADAM AND EVE WOULD LIKE TO PERFORM FOR YOU AT SALES PROMOTIONS, OFFICE PARTIES, NITE CLUBS AND ANY OTHER ENTERTAINING OCCASSION.

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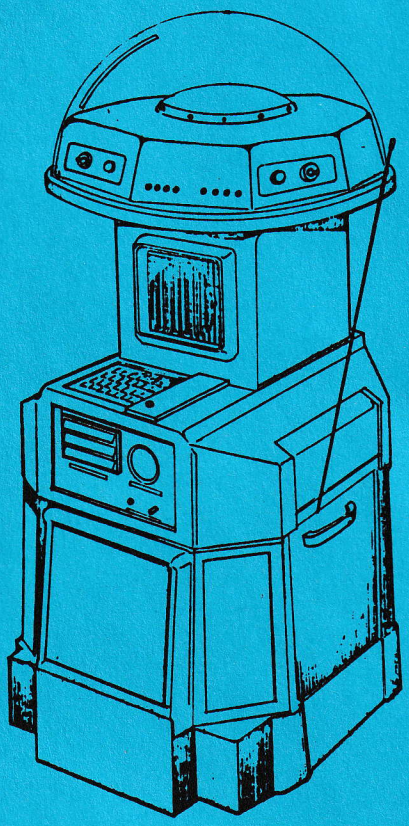
GO BEYOND COMPUTERS

INTRODUCING

SERBOT™



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- Guards your home or office and challenges intruders
- Entertains throughout the day
- Will awaken you in the morning and tell time and date
- Remind you of your appointments
- Easily modify his personality as you desire
- 34 inches high and weights approximately 30 pounds.

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Electronic Design
and
Marketing Consultants

BEN A. ROBINSON
INVENTOR

9193 Chesapeake Drive
San Diego, California 92123
(619) 565-8887
1-800-23-ROBOT

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LIGHTIN' UP™
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GAME FINDER™
SERBOT™

NNOTRONICS

ROFFICE CORRESPONDENCE

AARI

FROM : BEN A. ROBINSON JR.

SUBJECT: HERO JR. "FOLLOW ME"

DATE : MARCH 10,1986

==========

DEAR MIKE:

PLEASE REVIEW THIS HARDWARD AND SOFTWARE INFORMATION ON HERO JR.

I WOULD LIKE TO INSTALL "FOLLOW ME" HARDWARD AND PROGRAM ON MY FIVE (5) SERBOTS (MOD. HERO JR.).

PLEASE CALL AT 800-23ROBOT OR I WILL CALL YOU NEXT WEEK.

THANK YOU,
BEN A. ROBINSON JR.

May 28, 1986

Ben Robinson
Innotronics
9193 Chesapeake Drive
San Diego, CA 92123

Dear Ben,

This is a statement for all work performed to date for implementing dual sonar "follow-me" onto the Hero Jr. robot.

Telephone consulting time prior to May 21 trip - 2 hours

Work time - Wednesday, May 21 - 7 hours

Work time - Thursday, May 22 - 6 hours

Total work time - 15 hours @ $40.00/hour = $600.00

Other expenses and credits:
$13.50 for San Jose Airport parking (3 days)
$ 5.00 for lunch Thursday (no charge for meals Friday)

($17.00) credit for parking ticket received Friday

These items essentially cancel, so we'll call the final bill $600.00 even.

When the time comes, I'd be happy to either implement the program in Basic or to outline the latest follow algorithm for Bill to implement.

Other notes... I left a pair of swim trunks in your shower. If you could easily send them here I'd appreciate it.

When I get a chance, I'd like to try out the two ultrasonics I got directly from Polaroid for range and repeatability. If they work well, we might be best off to simply use two off-the-shelf units instead of fooling around with the Heath versions. (A transducer and driver board together only cost $40.00 from Polaroid.) Until then, putting trim pots on the critical gain resistors (and doing a lot of tweaking) is probably your only hope so far to get good ultrasonic data.

That's all for now...

Yours,

INNOTRONICS
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San Diego, CA 92123
~~(714) 268-3002~~

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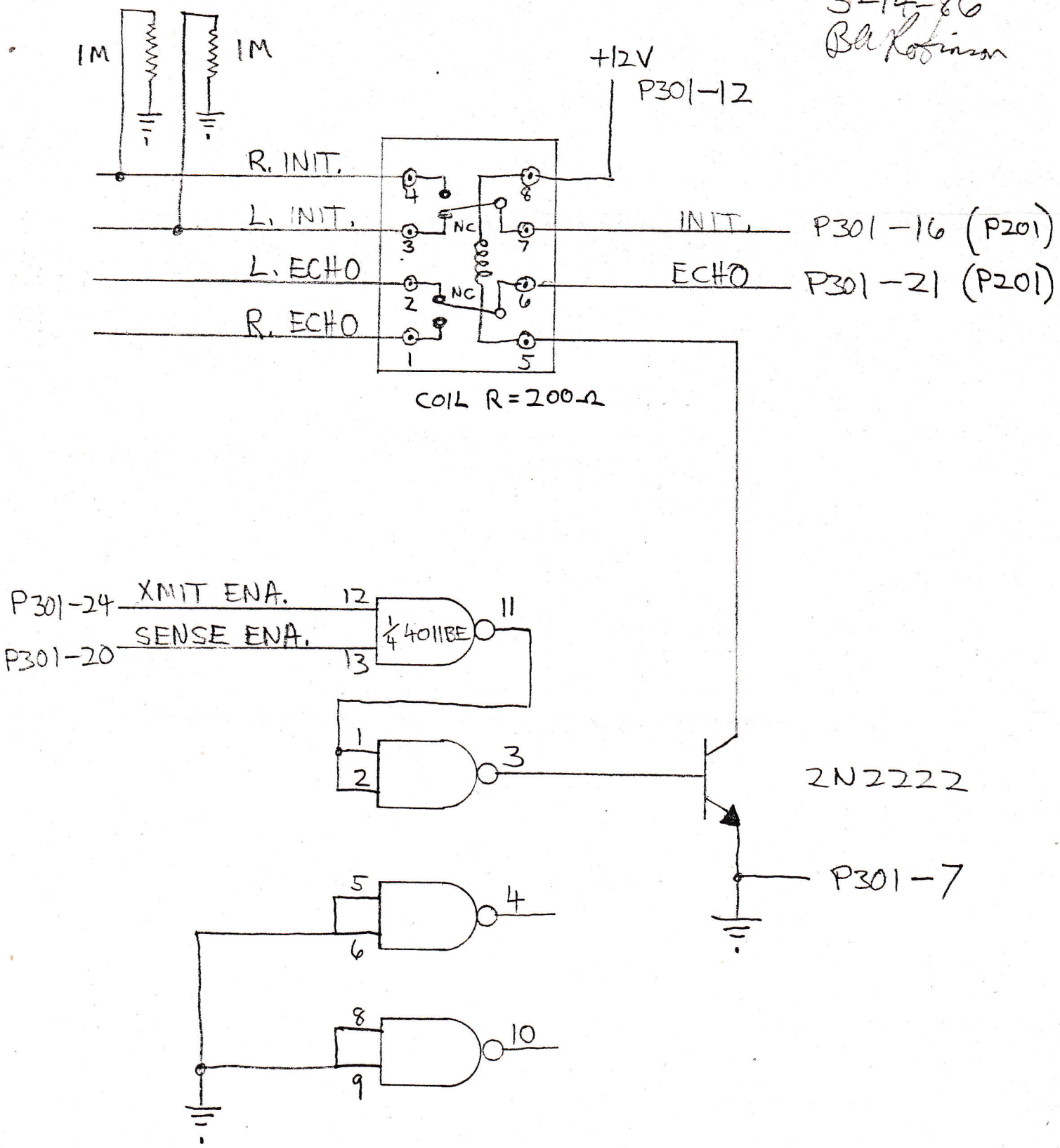
INNOVATIVE ELECTRONICS

5-14-86
Bob Robinson



SPIN.SCAN2.27

```
1 REM PROGRAM SPIN/SCAN
2 REM ROBOT GETS OUT OF A CORNER BY SPINNING & READING THE SONAR
5 D=220
6 REM KEEP P AS AN INTEGER BETWEEN 4 & 8.
7 P=6
10 POKE $800,$EC:POKE $801,$83
20 USER :REM CENTER STEERING
25 FOR I=1 TO D:NEXT I
30 M=$D821
40 DIM A(40)
200 POKE M,3
210 IF SON<20 THEN 250
220 IF EAR >200 THEN 250 :REM IF ROBOT BUMPS INTO SOMETHING
230 GOT 210
245 REM STOP DRIVE MOTOR
250 POKE M,128
255 SPE$B00A
260 BWD 10:REM BACKUP FOR ROOM TO SPIN
300 REM TURN WHEEL TO THE RIGHT
500 POKE $800,$ED:POKE $801,$0E:USER
505 FOR I=1 TO D:NEXT I
510 POKE M,3:REM TURN ON DRIVE MOTOR
520 FOR I=1 TO 36
525 REM P IS DELAY. IF ROBOT SPINS LESS THAN 360 MAKE P LARGER
530 FOR T=1 TO P:NEXT T
532 REM READ SONAR AND STORE IN ARRAY
535 A(I)=SON
540 NEXT I
550 POKE M,0:T=0
555 REM FIND LARGEST SON READING IN ARRAY
560 FOR I=1 TO 36
570 IF A(I)<=T THEN 590
575 T=A(I)
580 L=I
590 NEXT I
595 X=L*P*2:REM DELAY FOR RETURNING TO LARGEST SON READING
600 POKE M,3:REM TURN ON DRIVE MOTOR
605 FOR I=1 TO X:NEXT I
610 POKE M,0
611 REM STRAIGHTEN WHEEL
612 POKE $800,$ED:POKE $801,$27:USER
613 FOR I=1 TO D:NEXT I
614 SPE$A496
615 GOT 200
```

RIGHT/LEFT SONAR ALTERNATE

4-7-86
Bar.

```
>20 FWD 120          (IN.)

>30 REM L SONAR
40 IF SON <18 THEN GOTO 100    (IN.)

50 REM R SONAR

60 IF SON <18 THEN GOTO 200

70 GOTO 20


100 RIG 15                (DEGREE)

110 GOTO 50


200 LEF 15

210 GOTO 30
```

INNOTRONICS
9193 Chesapeake Drive
San Diego, Ca. 92123
(619) 565-8887

Michael J. Saari
1040 Ramona Street
Palo Alto, Ca. 94301

Mike , I know have the second (Right) sonar circuit board built-up. I still need to install the two sonar transrecievers in the robot.

Please review and comment on the enclosed circuit design and Basic program. Do you think this type of circuit would work, Left/Right sonar alternating and steering diodes?

I will find out why my 800 number doesn't work for you.

I will call you in a few days.

Sincerely,
Ben A. Robinson Jr.
Ben A. Robinson Jr.

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INNOVATIVE ELECTRONICS

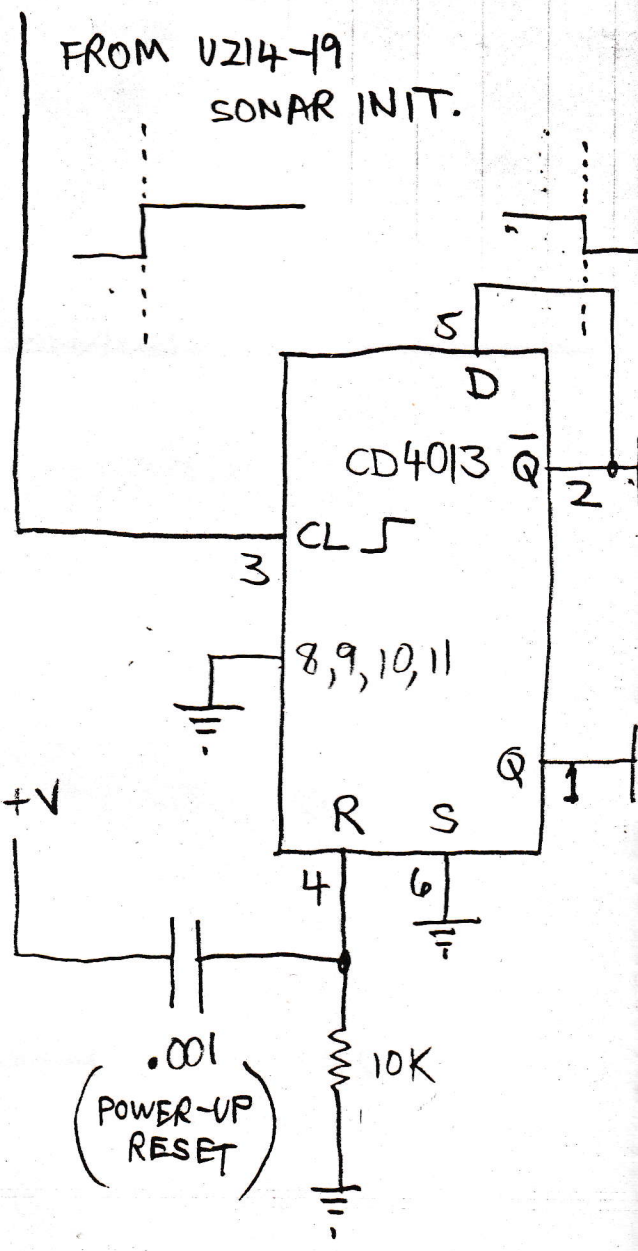
3-26-86

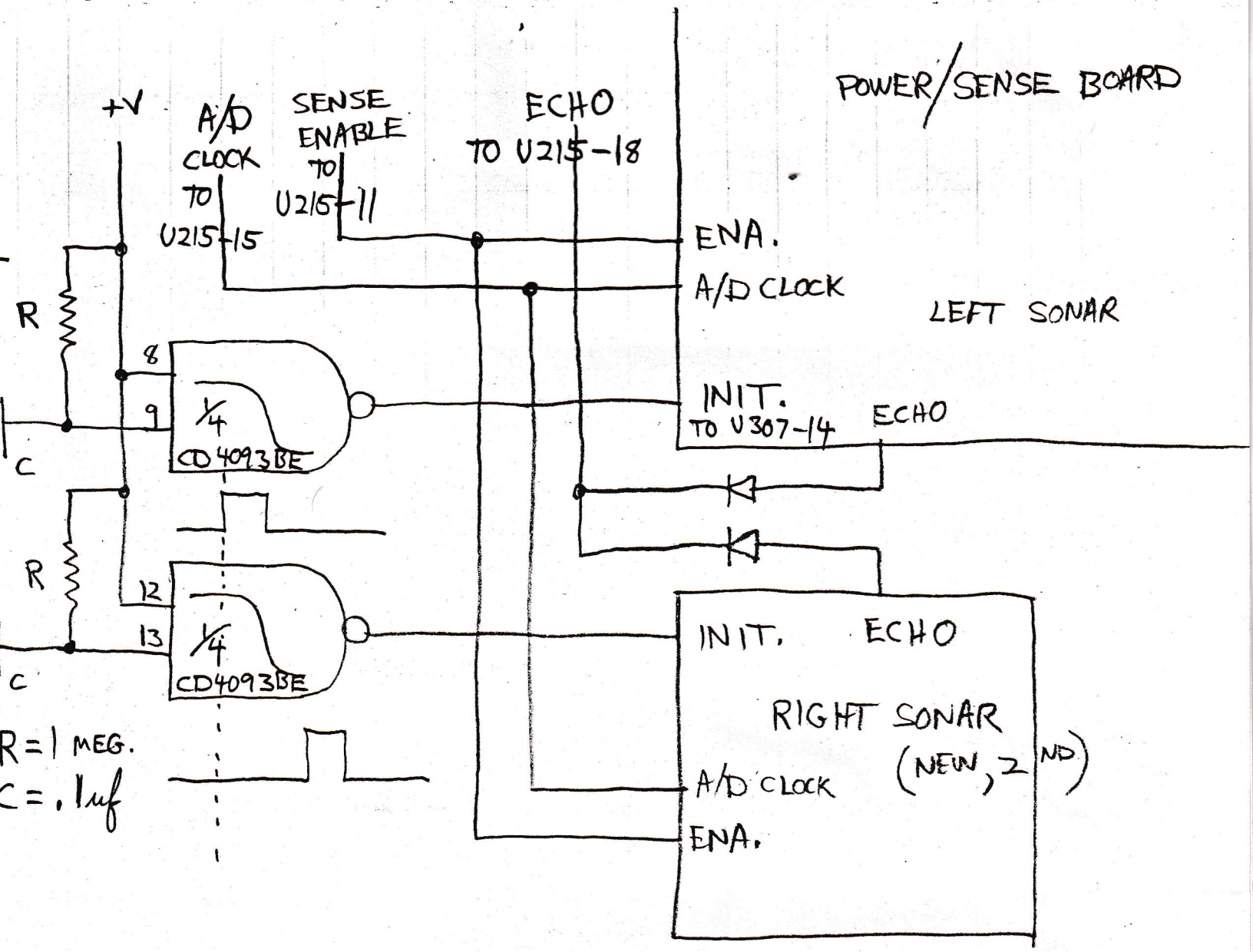
Mike:

Just a few notes:

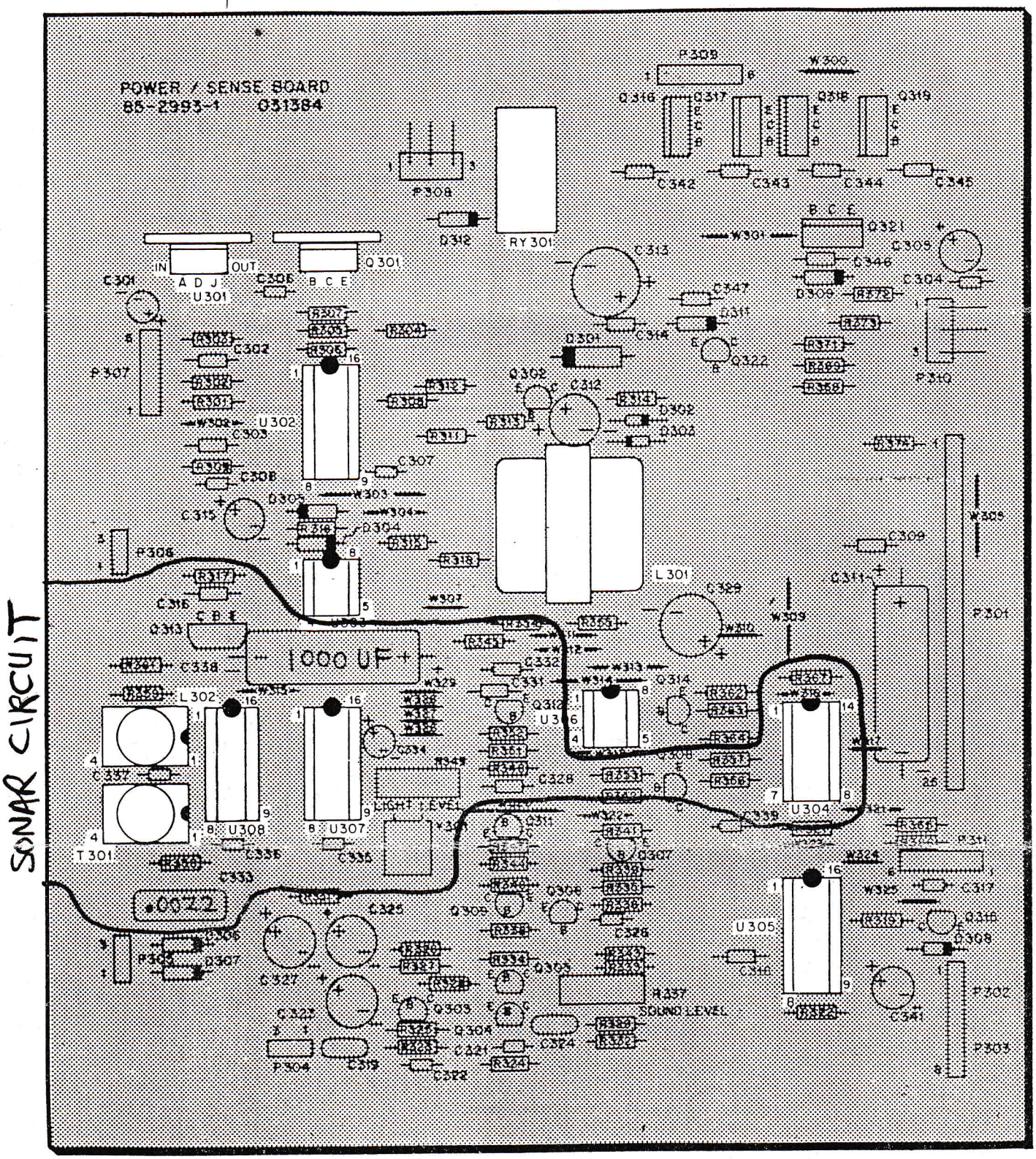
1. Will receive all parts for Sonar board with-in 10 days.
2. I should complete Sonar board in 2 weeks. (4-10)
3. Chick daul sonar position / location
   A. 5.25" center from floor
   B. 10.5" apart.
4. Alum. mat. for sonar brakets OK?

Thank Ben Robinson

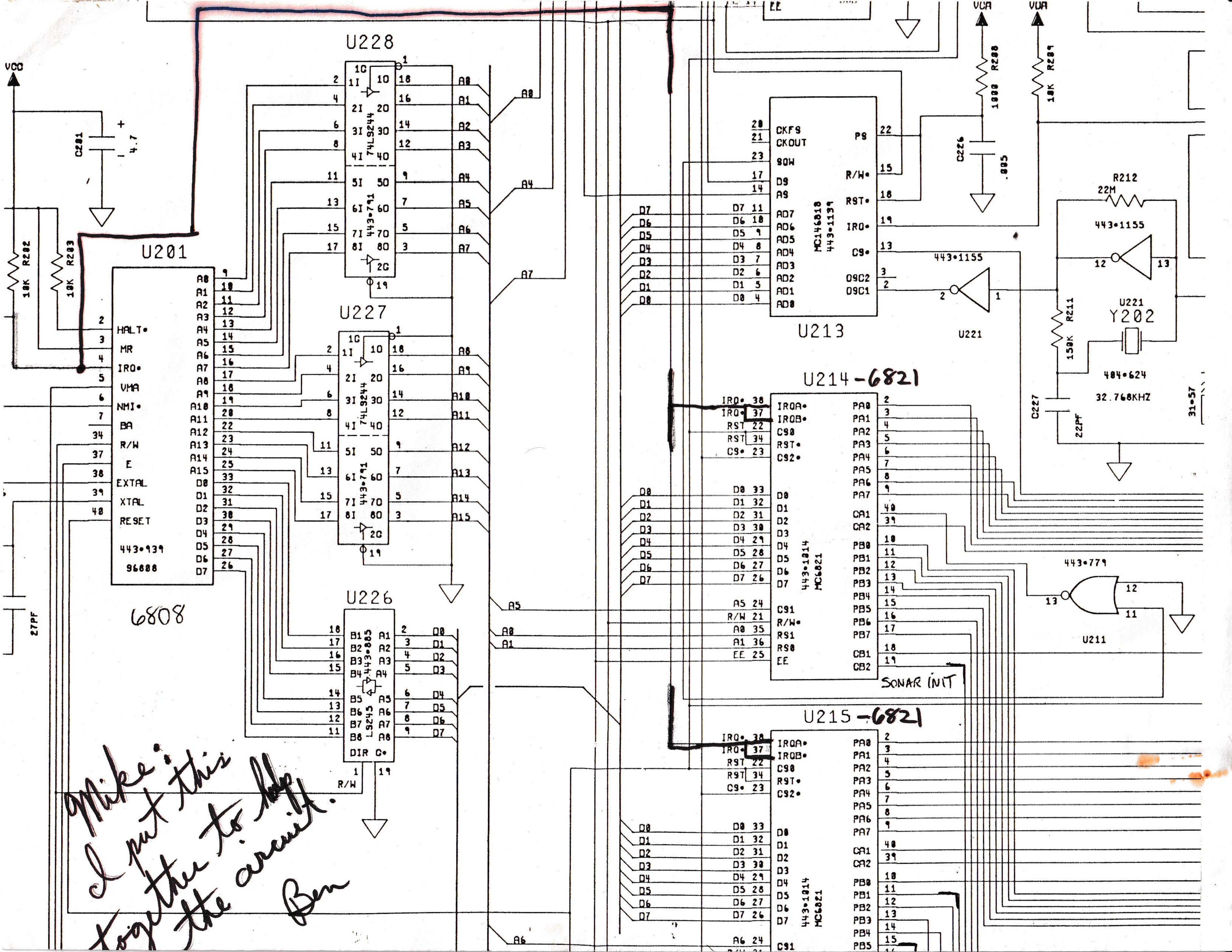

FROM U214-19
SONAR INIT.
5
D
CD4013
Q̄
2
CL
3
8,9,10,11
Q
1
+V
R
S
4
6
.001
(POWER-UP
RESET)
10K



4-7-86
B.A. Robinson Jr.



PICTORIAL 2-4


U201
6808
443•939
96808
U228
74LS244
443•791
U227
74LS244
443•791
U226
443•885
LS245
U213
MC146818
443•1139
U214 -6821
443•1014
MC6821
U215 -6821
443•1014
MC6821
U221
Y202
404•624
32.768KHZ
R212
22M
443•1155
R211
150K
C227
22PF
C226
.005
R288
1000
R289
10K
R282
10K
R283
10K
C201
4.7
27PF
443•779
U211
SONAR INIT
VCC
VCA
VUA
Mike:
I put this
together to help
the circuit.
Ben