CINEMATRONICS
INCORPORATED

CINEMATRONICS SERVICE BULLETIN NO. 84-2 April 23, 1984

Subject: Modifying Early Cinematronics Main Logic, No Revision (80-12035-01), for use with LD-V1000

Many people have requested the information required to modify a Cinematronics Main Logic Board, designed for the PR-7820 Laser Disc Player (logic board serial number less than 6,000), so that it will drive an LD-V1000 Laser Disc Player. Printed on the reverse side of this sheet are the instructions for this modification.

The modification accomplishes two things. First, it rearranges the input to U-20 (74LS244). Secondly, it converts the ready line from an output to an input. The differences can be seen schematically by comparing the disc interface section of the revision E schematics and revision K schematics in your manual.

This modification requires revision E or F Dragon's Lair PROM's or any version of Space Ace PROM's. Additionally, a dipswitch must be set to the proper option when the game is powered up. Refer to the GAME SETTING OPTIONS for proper dipswitch settings. To reconnect board for use with PR-7820, replace wire marked ⚠ , remove wire from J1 pin 2 to U14 pin 6 and change the dipswitch settings.

When Cinematronics ships a main board, it is configured as requested by the customer. However, it is always a good idea to check the board's configuration before installing it in a game. Please do not attempt this modification unless you have qualified technical personnel. ~~If you damage an assembly attempting to modify it, you will be required to pay full price for a replacement.~~

If you have any questions concerning this modification, please feel free to call Cinematronics' Technical Support at (619) 562-7000 in California or toll free (800) 854-2666 outside of California.

RSM/rlc

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MAGICOM MAIN LOGIC SCHEMATIC REVISIONS

A. Original release.

B. R3: Was 1K; became 300.

D0 on U20 incorrectly shown as Pin 8. Changed to Pin 18 on 6/23/83.

C. Addition of capacitor C63, 220pf disc between U24, Pin 3 and ground. 6/27/83.

D. C54: Was 0.001uf disc. Became 0.1uf disc on 6/29/83.

C63: Was 220pf disc. Became 0.001uf disc on 6/29/83

74LS244 inserted between 4MHz signal and U1 (Z80), Pin 6. U 17, Pins 13and 7 used - these were formerly a spare gate. 6/29/83.

E. C40, 0.01 disc tied between U22, Pin 2 and ground is deleted.

74LS244 inserted between Q1 collector and U22, Pins 1 and 2. U17, Pins 11 and 9 used - these were formerly a spare gate.

U1(Z80), Pin 25 cut from U7 (MC68705P5), Pin 9.
U1(Z80),Pin 25 tied to R48 (new addition) 4.7K ¼W 5% resistor. Other side of R48 tied to +5V.

U18(74LS245), Pin 19 cut from U7(68705), Pin 14.
U18, Pin 19 tied to +5V.

U17(74LS244), Pin 17 cut from U7, Pin 19.
U17, Pin 17 tied to +5V.

U23(74LS244), Pin 1 cut from U22(74LS00), Pin 11.
U23, Pin 1 tied to ground.

All of "E" above were effective on 7/8/83.

F. Deletion of the following effective 7/8/83:

U5 74LS244
U6 74LS393
U12 74LS244
U13 74LS393
U17 74LS244
U18 74LS245

Substitute U23 for U17 (74LS244) for clock signal into Z80 (U1, Pin 6 from U23, Pin 7) and reset signal into U22, Pins 1 and 2 from U23, Pin 9 effective 7/8/83.

G. C63: Was 0.001uf disc. Became 470pf effective 9/5/83.

H. Reset signal sent from U23, Pin 9 to U16, Pin 1 to cure false coin count on power up.

I. Reference letter not used.

J. Correct pin out for inputs on U20(74LS244) effective 9/16/83.

K. C63: Was 470pf disc; became 330pf disc.
C17: Was 330pf mica; became 330pf disc.

Addition of U31(74LS74) to divide clock.

Y1: Was 4.000MHz; became 16.000MHz.
U24: Was 74LS04; became 74S04.

Addition of R29 between U29, Pin 4 and C24.
Addition of R50 between U30, Pin 4 and C50.

These two additions allow option for U29 and 30 with the following components:

		LM383	CA2002
R49, R50	=	0 ohm jumper	2.2 ohm, ¼W 5%
C24, C50	=	0.2 disc	0.1 disc

Addition of Jumper W1, when installed allows board to be used with Pioneer 7820 disc player with proper software. (For Works with Both 7820 & LD-1000

Deleted: U7 MC68705

Addition (reinstallation) U6, 74LS393
U13, 74LS393
U6, Pins 2 and 12, and U13, Pins 2 and 12 all grounds.

U6, Pin 6 tied to U26, Pin 11 (RTC).

U13, Pin 13 tied to U26, Pin 5 (GI CLK)

All of "K" above effective 10/10/83.

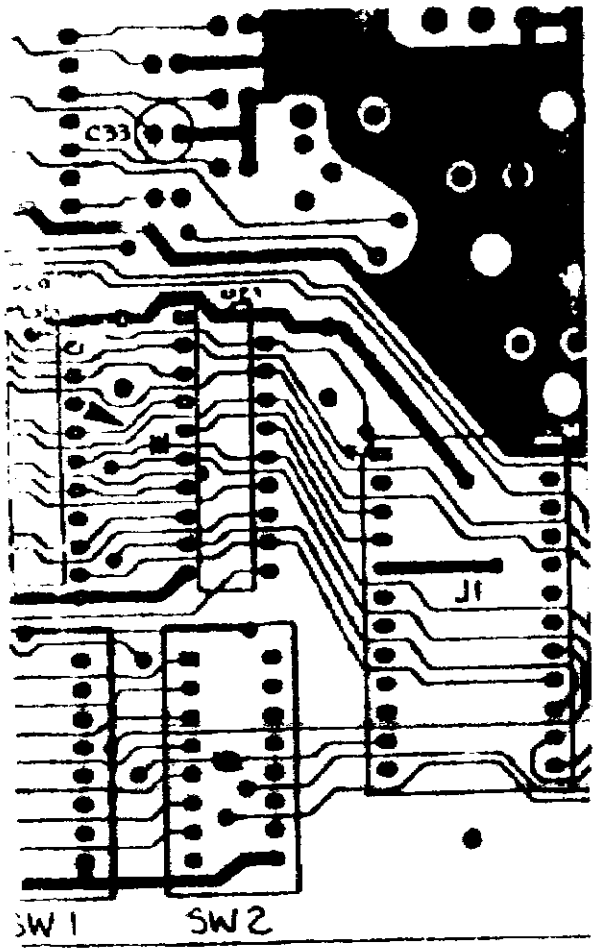
"K" revision schematic is for "C" revision printed circuit board used with LDV-1000 laser disc player.

CONVERSION

EARLY STARCOM MAIN LOGIC, NO REVISION (80-12035-01)
FOR USE WITH
PIONEER LDV 1000 LASER DISC PLAYER

R33

MPONENT
DE



COMPONENT SIDE:

REMOVE R33 (220 Ω, ¼W)
REMOVE C33 (1 μF, ELECT. RAD.)
ETCH CUT (REFERENCE ►)
BETWEEN U20 AND U21
NEAR U21 PIN 5, TRACE
CONNECTS TO U20 PIN 15

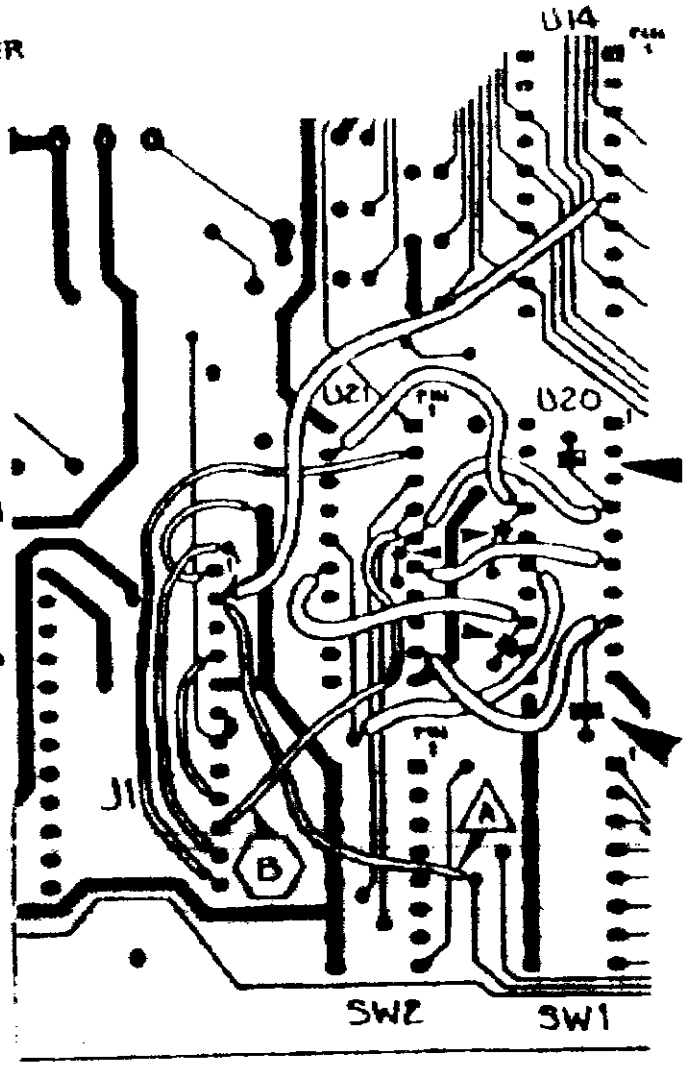
SOLDER SIDE:

DELETE WIRE (REFERENCE (A))
FROM J1 PIN 2 TO FEEDTHROUGH
MAKE 5 ETCH CUTS (REF. ►)
WIRE (REF. (B)) FROM J1 PIN 10
TO U21 PIN 5 WILL HAVE TO BE
MOVED ONTO PIN 5 IF CONNECTED
TO FEEDTHROUGH
ADD 7 WIRES

EXISTING WIRE
ADDED WIRE

FROM			
J1 PIN 2	to	U14 PIN 6	
U20 PIN 4	to	U21 PIN 5	
U20 PIN 6	to	U21 PIN 6	
U20 PIN 8	to	U21 PIN 9	
U20 PIN 13	to	U21 PIN 15	
U20 PIN 15	to	U21 PIN 16 OR FEEDTHROUGH AS SHOWN	
U20 PIN 17	to	U21 PIN 19	

SOLDER SIDE



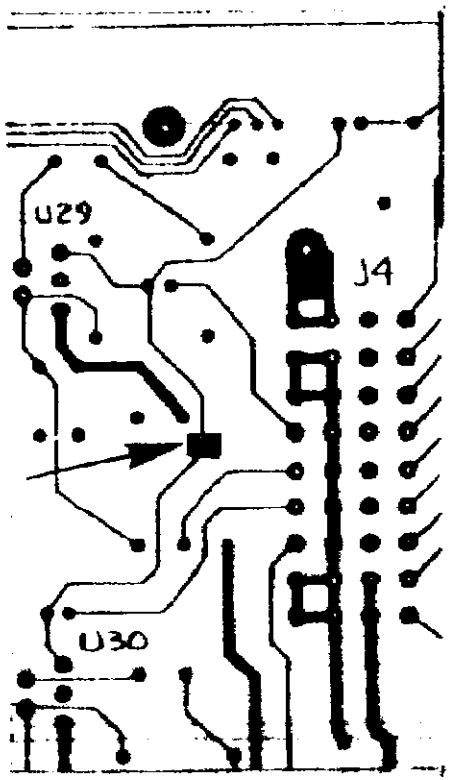
TRACE CUTS AND WIRE ADDS
STARCOM MAIN LOGIC

80-12035-02
REV C

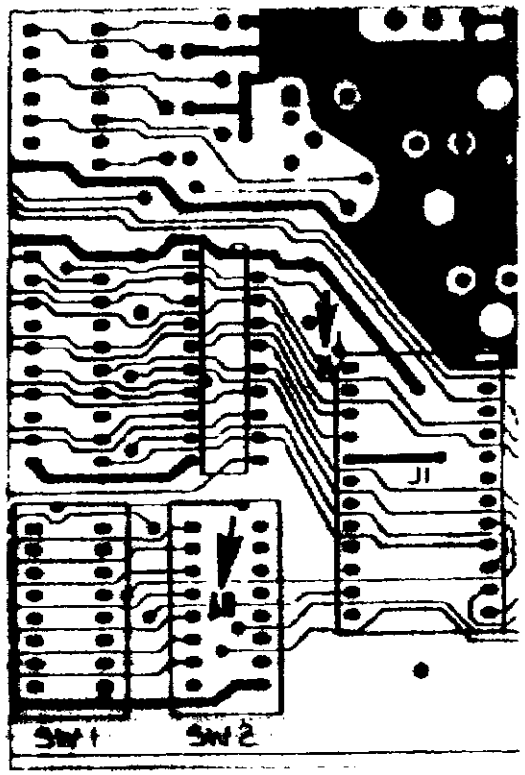
SHEET 1 OF 1
SCALE 2 to 1

date ~~SEP~~
11 JUNE 1983

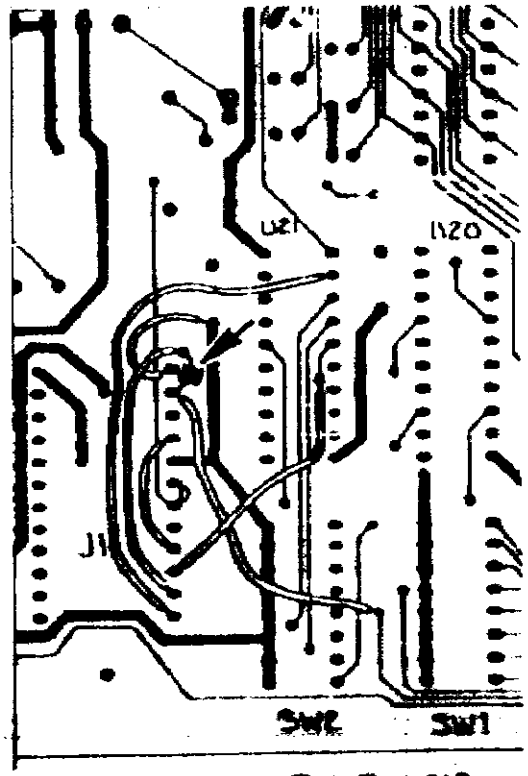
AUDIO AMP MOD
CONN. J1 MOD



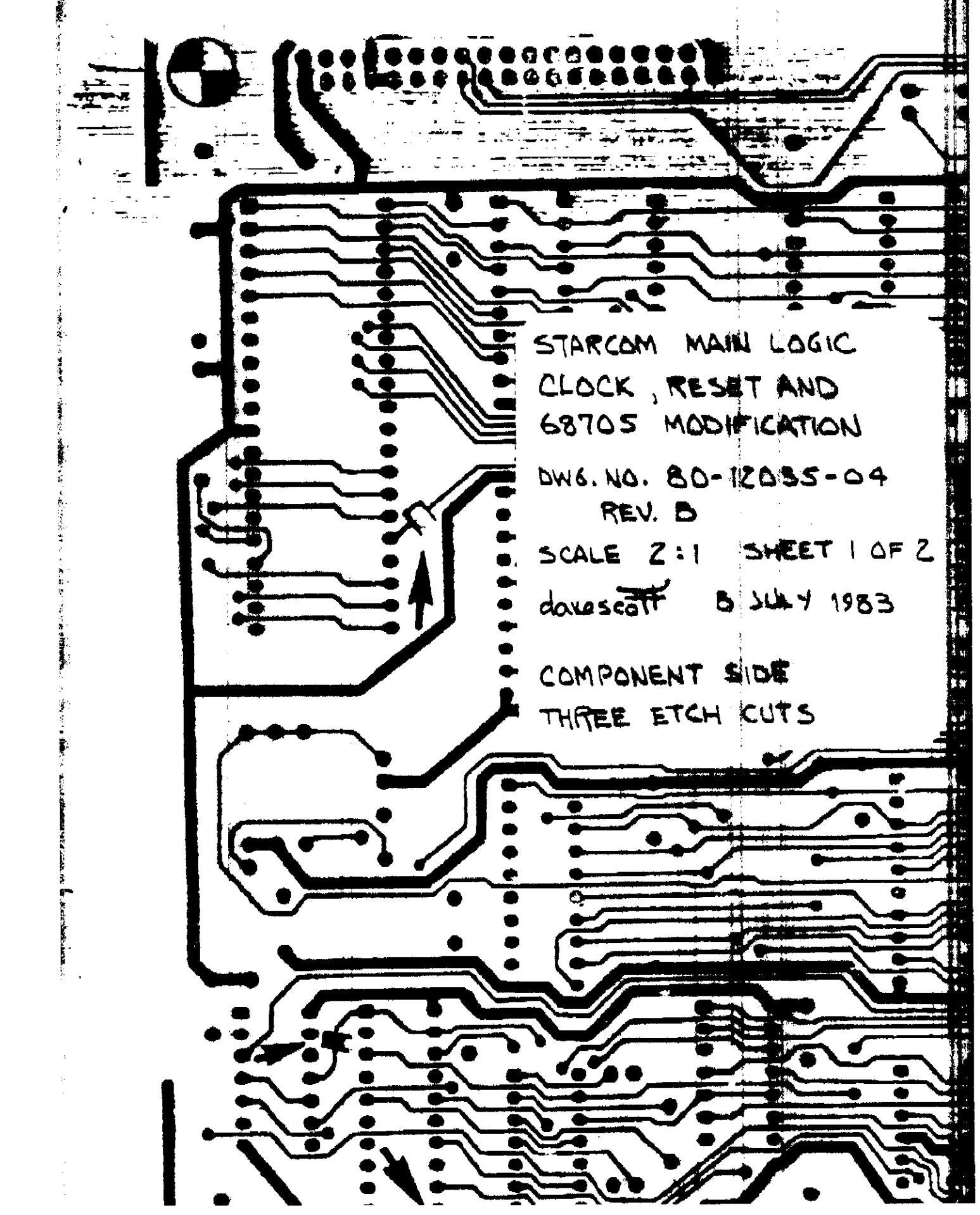
ETCH CUT BETWEEN
PIN 1 U29 AND PIN 1 U30
SOLDER SIDE

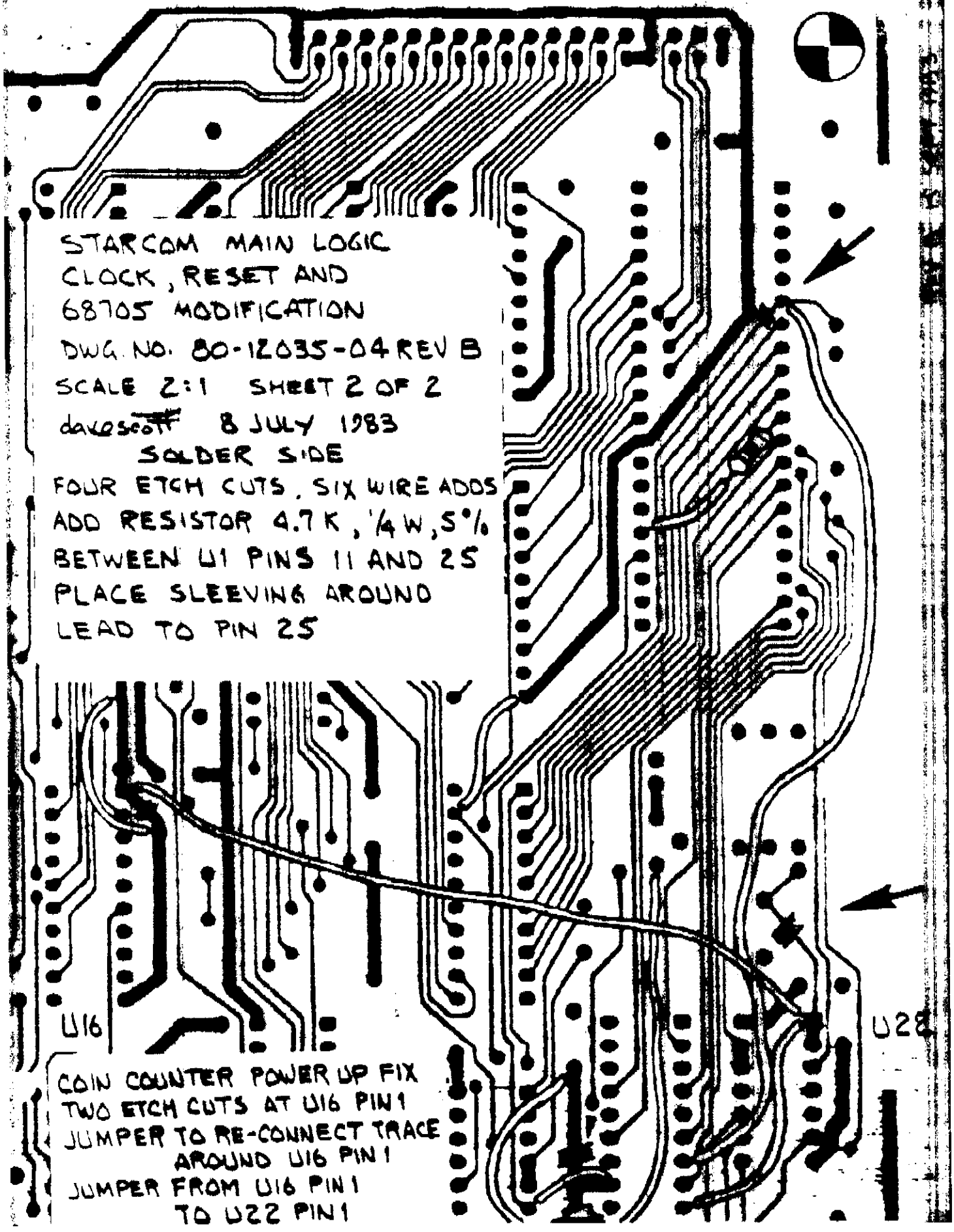


TWO ETCH CUTS ON COMPONENT SIDE
ONE NEAR J1 PIN 1
ONE AT SW2, MIDDLE



ETCH CUT ON SOLDER SIDE NEAR
J1 PIN 1
ADD SEVEN WIRES AT J1


STARCOM MAIN LOGIC
CLOCK, RESET AND
68705 MODIFICATION
DWG. NO. 80-12035-04
REV. B
SCALE 2:1 SHEET 1 OF 2
davescott 8 JULY 1983
COMPONENT SIDE
THREE ETCH CUTS


STARCOM MAIN LOGIC
CLOCK, RESET AND
68705 MODIFICATION
DWG NO. 80-12035-04 REV B
SCALE 2:1 SHEET 2 OF 2
dave scott 8 JULY 1983
SOLDER SIDE
FOUR ETCH CUTS, SIX WIRE ADDS
ADD RESISTOR 4.7 K, 1/4 W, 5%
BETWEEN U1 PINS 11 AND 25
PLACE SLEEVING AROUND
LEAD TO PIN 25
U16
U28
COIN COUNTER POWER UP FIX
TWO ETCH CUTS AT U16 PIN 1
JUMPER TO RE-CONNECT TRACE
AROUND U16 PIN 1
JUMPER FROM U16 PIN 1
TO U22 PIN 1