

OHIO SCIENTIFIC

TECHNICAL

NEWSLETTER #23

November 30, 1979

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A NOTE ON HARDWARE/SOFTWARE CHANGES

The Tech newsletter has proven to be an excellent means of communication to the dealer body. However, many of you are probably concerned with the applicability of the various changes. A good rule of thumb is "If you don't have a problem, don't worry about the changes". To assist you in determining the importance of a change, the tech letters will now provide an applicability statement for each change.

The adaptive stepping rate change should be incorporated in all OS-65U and OS-65D system software. The WP-2 indentation fix should be incorporated in any WP-2 that will be using the indentation command. The addition to the cassette assembler should be passed on to any customer who owns a copy. The changes to the DMS-GENERAL LEDGER should be incorporated in all copies. The 542 changes should be implemented only if one is encountering a problem. The 527 changes should be incorporated if one encounters trouble or intends to use them in a Level III system. The change to the EDITOR should be made to all copies of EDITOR Version 1.0.

COMPRINT 912 PRINTER

Many of you are probably not aware of the fact that the OSI Comprint Printer is unique. Comprint has modified the printer for Ohio Scientific equipment. Use of a standard Comprint Printer with Ohio Scientific equipment will probably provide unsatisfactory results

COMPRINT 912 PRINTER

Paper for the Comprint Printer may be purchased through the following distributors: The following distributors stock and supply Comprint Printer paper.

West Coast

Applied Engineering, Inc.
1521 130th N.E.
Bellevue, WA 98005
(206)455-4922

Byte Industries
930 West Maude
Sunnyvale, CA 94086
(415)783-8272

Computerland Corp.
14400 Catalina Street
San Leandro, CA 94577
(415)895-9363

Microage
1425 W. 12th Place
Tempe, AZ 85281
(602)967-1421

Central

CMC Marketing
10611 Harwin Dr.
Suite #406
Houston, TX 77036
(713)995-4960

Data Applications
1300 East Arapaho Rd.
Suite 103
Richardson, TX 75081
(214)231-4846

High Technology, Inc.
1611 N.W. 23rd
Oklahoma City, OK 73106
(405)528-8008

East Coast

Computer Consumer
Marketing, Inc.
55 Union Avenue
Sudbury, MA 01776
(617)443-5128

Micro Distributors, Inc.
11716 Parklawn Drive
Rockville, MD 20852
(301)468-6450

New Adaptive Stepping Rate Operating Systems

Standard disk drives from Shugart and early Siemen's disk drives step at approximately 9 milliseconds per track. Recently, Siemen's introduced a revolutionary new higher step rate floppy disk/drive--the Siemen's D Series. These drives are capable of stepping speeds up to 3 milliseconds per track. This can tremendously improve the performance of the floppy disk drives in some applications. However, a serious drawback to the Siemen's D drives is that they will not step at 9 milliseconds reliably due to resonances in the motor construction.

Ohio Scientific's first fix for this problem required the modification of software for one stepping rate or the other; an extremely clumsy procedure. We have now developed a adaptive stepping rate patch which allows one standard operating system to be used in both types of drives. This adaptive operating system automatically switches stepping rates if seek problems are encountered. The patch to modify existing diskettes for the adaptive feature is listed in the following pages. This patch is present in all operating system diskettes from Ohio Scientific from December 3, 1979 on.

65U CHANGE FOR ADAPTIVE STEPPING RATE DETERMINATION

Problem: Most floppy disk drives operate properly with the 9 millisecond step rate in 65U. However, Siemens "D" series drives do not. They require a higher step rate.

Solution: Whenever a seek error occurs change the stepping rate from 9 to 5 ms or from 5 to 9 ms. This combined with the 2 retries on seek errors should prevent any seek error (#2) messages and minimize retries.

Enter this change:

Applicability: All OS-65U Systems.

NOTE: Make changes twice on all (FD) diskettes. Once with offset C00 and once with offset - 2AFD. Make changes once with offset C00 on (HD) diskettes. (effective date 11/16/79)

RUN"CHANGE", "PASS

DISK CHANGE UTILITY

MODE: HEX(H), DEC(D) ? H

UNIT ? A

ADDRESS OFFSET ? C00

ADDRESS ? 31B1

000031B1 " 22 ? 2A

000031B2 E4 ? /

000031B3 14 ? /

000031B4 F0 ? /

000031B5 (28 ? /

000031B6 A9 ? D0

000031B7 02 ? 27

000031B8 H 48 ? ●

ADDRESS ? 31DF

000031DF H 48 ? AD

000031E0 J 4A ? 77

000031E1 J 4A ? 2E

000031E2 J 4A ? 49

000031E3 J 4A ? 0C

000031E4 AA ? 8D

000031E5 H 68 ? 77

65U CHANGE FOR ADAPTIVE STEPPING RATE DETERMINATION cont.

000031E6) 29 ? 2E
000031E7 0F ? A9
000031E8 18 ? 02
000031E9 I 69 ? D0
000031EA 0A ? CD
000031EB CA ? ●

ADDRESS ? 3164
00003164 02 ? 04
00003165 86 ? ●

IF MAKING A CHANGE ON HARD DISK SYSTEM, PROCEED TO
STEP INDICATED BY THE ARROW.

ADDRESS ? ●
ADDRESS OFFSET ? -2AFD
ADDRESS ? 31B1
000031B1 " 22 ? 2A
000031B2 E4 ? /
000031B3 14 ? /
000031B4 F0 ? /
000031B5 (28 ? /
000031B6 A9 ? D0
000031B7 02 ? 27
000031B8 H 48 ? ●

ADDRESS ? 31DF
000031DF H 48 ? AD
000031E0 J 4A ? 77
000031E1 J 4A ? 2E
000031E2 J 4A ? 49
000031E3 J 4A ? 0C
000031E4 AA ? 8D
000031E5 H 68 ? 77
000031E6) 29 ? 2E
000031E7 0F ? A9
000031E8 18 ? 02
000031E9 I 69 ? D0
000031EA 0A ? CD
000031EB CA ? ●

ADDRESS ? 3164
00003164 02 ? 04
00003165 86 ? X

OK
CLOSE

OK

65D & WP-2 CHANGE FOR ADAPTIVE STEPPING RATE

Problem: Most floppy disk drives operate properly with the 8 millisecond step rate in 65D. However, Siemens "D" series drives require a higher step rate.

Solution: Whenever a seek error occurs have the software change its stepping speed from 8 to 3 ms (or from 3 to 8 ms). Also add seek retry logic to 65D. The alternating step rates plus the retries should prevent any seek error (#5) messages and minimize retries. The changes required are shown on the following pages.

Applicability: All OS-65D systems for 8" drives.
(Effective date 11/26/79)

Instructions: Boot OS-65D, then bring in the extended monitor. Now call the disc copy utility in and GO at 0200. Select number two from the menu-ENTER a "R4200 <CR>" then exit and return to the extended monitor. Enter the changes as shown of the following pages. After inserting the changes, GO at 0200. Select number two from the menu and enter "W4200/2200,8 <CR>". If making this change to WP-2, insert the WP-2 diskette just before the execution of the "R4200 <CR>" statement.

48C4	A9	48F7	48	492A	01	4882	20
48C5	05	48F8	20	492B	2C	4883	07
48C6	85	48F9	98	492C	10	4887	29
48C7	F5	48FA	29	492D	C0		
48C8	20	48FB	68	492E	F0	4971	20
48C9	2B	48FC	90	492F	FB	4972	07
48CA	27	48FD	F9	4930	AD	4973	29

65D & WP-2 CHANGE FOR ADAPTIVE STEPPING RATE

48CB	20	48FE	C5	4931	11
48CC	B0	48FF	F9	4932	C0
48CD	28	4900	D0	4933	70
48CE	C9	4901	F5	4934	E6
48CF	43	4902	C5	4935	90
48D0	D0	4903	FB	4936	04
48D1	F9	4904	D0	4937	D1
48D2	20	4905	E1	4938	FE
48D3	B0	4906	60	4939	D0
48D4	28	4907	48	493A	E0
48D5	C9	4908	20	493B	91
48D6	57	4909	C4	493C	FE
48D7	D0	490A	28	493D	C8
48D8	F5	490B	20	493E	D0
48D9	20	490C	B0	493F	E9
48DA	B0	490D	28	4940	E6
48DB	28	490E	C9	4941	FF
48DC	45	490F	76	4942	CA
48DD	FA	4910	D0	4943	D0
48DE	F0	4911	F9	4944	E4
48DF	0B	4912	20	4945	38
48E0	A9	4913	B0	4946	60
48E1	05	4914	28	4947	AD
48E2	C6	4915	CD	4948	A3
48E3	F5	4916	5E	4949	26
48E4	10	4917	26	494A	49
48E5	61	4918	F0	494B	0B
48E6	CD	4919	03	494C	8D
48E7	A9	491A	68	494D	A3
48E8	0A	491B	18	494E	26
48E9	D0	491C	60	494F	20
48EA	D6	491D	20	4950	63
48EB	85	491E	B0	4951	26
48EC	F9	491F	28	4952	20
48ED	20	4920	AA	4953	D1
48EE	B0	4921	8D	4954	26
48EF	28	4922	5F	4955	4C
48F0	AD	4923	26	4956	C8
48F1	5E	4924	A0	4957	28
48F2	26	4925	00		
48F3	E9	4926	68		
48F4	01	4927	69		
48F5	F0	4928	FE		
48F6	0F	4929	A9		

WP-2 CORRECTION

This change corrects irregular left margin using a parallel or serial word processing printer and "X on".

1) Boot WP-2

2) Type:

EXXX<CR>

3) Enter:

RE M<CR>

4) On a serial system enter:

L ØBA5 EAEAR

L Ø12E 2547R

G

On a video system enter:

.ØBA5

/EA<CR>

EA

.2547

.G

5) A "A*" should now appear on the screen

6) Now enter:

SAVE Ø5,1=Ø2ØØ/B<CR>

7) The correction is now stored on diskette.

CASSETTE ASSEMBLER/C-IP, C-2P
HOLD, BREAK ADDITION

NOTE: C-2P code in parenthesis

- 1) Load Assembler
- 2) After the question "INIZ" appears on the screen, hit the BREAK key.
- 3) Enter the monitor by typing "M"
- 4) Using the monitor, enter the following (C-2P code in parenthesis).

0222	48	(48)	PATCH	PHA		Save Output Char
0223	A9FE	(A901)	P1	LDA	#\$FE	
0225	203902	(203902)		JSR	STABIT	CNTRL ?
0228	700B	(500B)		BVS	OUT	No-
022A	A9FB	(A904)		LDA	#\$FB	Yes-
022C	203902	(203902)		JSR	STABIT	C ?
022F	70F2	(50F2)		BVS	P1	No - hold during CNTRL
0231	68	(68)		PLA		Clear stack
0232	4C6011	(4C6011)		JMP	\$1160	Restart Assembler
0235	68	(68)	OUT	PLA		Char to output
0236	4CEEFF	(4CEEFF)		JMP	OUT	Go output
0239	8D00DF	(8D00DF)	STABIT	STA	\$DF00	To KB
023C	2C00DF	(2C00DF)		BIT	\$DF00	Test bit 6 → V
023F	60	(60)		RTS		
1333	4C2202	(4C2202)		JMP	PATCH	

- 5) Restart the assembler by executing a GO TO \$1300.
- 6) Initialize the assembler.
- 7) Pressing the control key will hold the output of the assembler until the control key is released.
- 8) Pressing the control and "C" Keys will abort a listing or assembly.

OS-DMS GENERAL LEDGER

The following changes apply to 10/79 and earlier releases of the OS-DMS General Ledger.

To insert the changes:

- 1) Load the program e.g. LOAD"GLEDTM <CR>
- 2) Insert the changes
- 3) Save the program e.g.
SAVE"GLEDTM","PASS <CR>

Problem

1. Occasionally when searching for data, the computer will either not find the data or it will take an unusual amount of time.
2. After any printer activity the computer scrolls two sheets of paper. This can be changed to one sheet of paper as shown below.

Program

GLEDTM	5300	RPTR=X:INDEX <1> =BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)	(1)
	50082	FOR I=1 TO PEEK(15908):PRINT#DV:NEXTI	(2)
GLBLDM	5300	RPTR=X:INDEX <1> =BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)	(1)
	5091	X1=INDEX(1)	
	5400	INDEX <1> = X1+LEN (H\$)	(1)
	50085	FOR I=1 TO PEEK (15908):PRINT#DV:NEXT I	(2)
GLEDBL	5300	RPTR=X:INDEX <1> =BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)	(1)
	5091	X1=INDEX(1)	(1)
	5400	INDEX <1> =X1+LEN(H\$)	(1)
	50085	FOR I=1 TO PEEK (15908):PRINT#DV:NEXTI	(2)
GLPOST	5331	GOSUB 10000:REM READ REC	
	5300	RPTR=X:INDEX <1> =BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)	(1)
	50085	FOR I=1 TO PEEK (15908):PRINT#DV:NEXTI	(2)
GLINPT	5091	X1=INDEX(1)	(1)
	5300	RPTR=X:INDEX <1> =BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)	(1)
	5400	INDEX <1> = XL+LEN(H\$)	(1)
	50088	FOR I=1 TO PEEK (15908):PRINT#DV:NEXT I	(2)

OS-DMS GENERAL LEDGER cont.

GLCPST 5091 X1=INDEX(1) (1)
 5300 RPTR=X:INDEX <1>=BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G) (1)
 5400 INDEX <1> = X1+LEN(H\$) (1)
50085 FOR I=1 TO PEEK (15908):PRINT#DV:NEXTI (2)

GLINST 5300 RPTR=X:INDEX <1>=BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G)
 5091 X1=INDEX(1) (1)
 5400 INDEX <1> = XL+LEN(H\$) (1)

GLCEDT 5091 X1=INDEX(1) (1)
 5300 RPTR=X:INDEX <1>=BODF+((RPTR-1)*RL)+FP(G):INPUT%1,FC\$(G) (1)
 5400 INDEX <1> = X1+LEN(H\$) (1)

542 REVISION B CHANGES

The following pages depict modifications to the 542 REV B polled keyboard.

The first change improves keyboard reliability when operating at 2 mhz.

The second modification corrects possible erratic audio generation.

Diagram I: (effective date 11/26/79)

Add 220 pf capacitor from U7.4 to ground

Diagram II: (effective date 11/7/79)

Activity	Location
Cut Trace	C.S. 410.13
Add Jumper	N.C. side - U10.13 to U8.11
Add Jumper	N.C. side - U8.10 to U8.9
Add Jumper	N.C. side - U8.8 to U10.11

*Note:

U10.13 nomenclature implies IC-U10, pin 13

C.S. - component side of board

N.C. - non-component (foil side) of board

CM 2-B (527)
4K RAM BOARD FOR LEVEL III

The following changes should provide increased reliability of the CM 2-B Board at 2 mhz. (Diagram III & IV, effective 11/16/79).

CM-7, CM-8, CM-9 (527)

Diagrams V and VI show modifications to provide increased reliability of the 527 Board at 2Mhz. The changes also facilitate the use of 527 Boards in a partitioned memory system. (effective date 11/16/79)

OS-65U EDITOR V1.0

This change corrects a possible problem with INPUT statements INPUTING from a specific device.

1) Load the EDITOR program

2) Type:

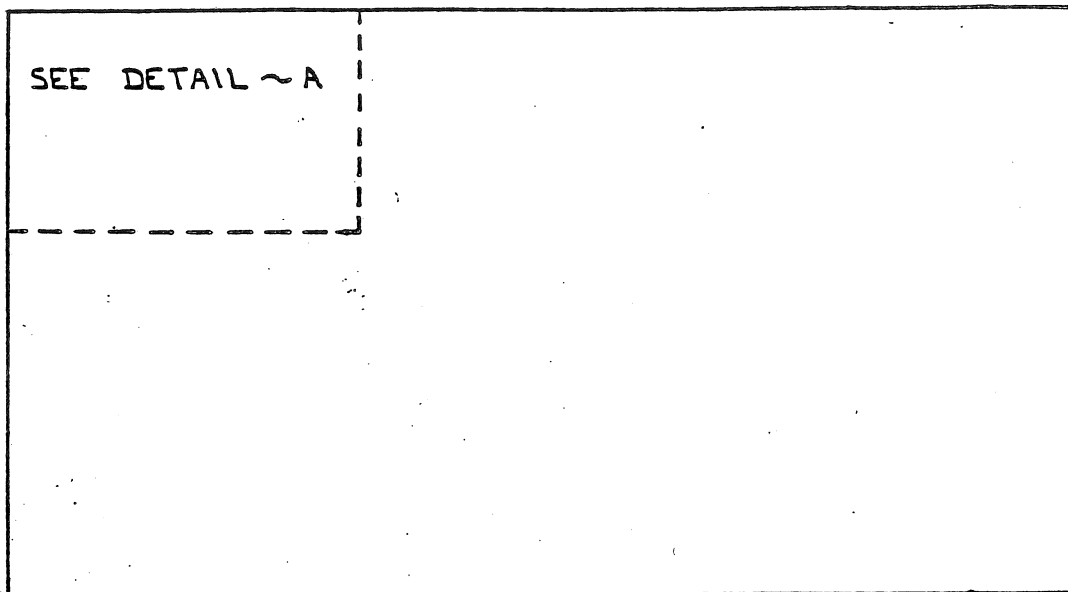
POKE 24760,72: POKE 24761, 32<CR>

POKE 24762,8 : POKE 24763, 40<CR>

3) Now enter:

SAVE "EDITOR", "PASS"<CR>

4) The EDITOR must be RUN to make the change effective.



FRONT VIEW OF MODEL 542 REV B

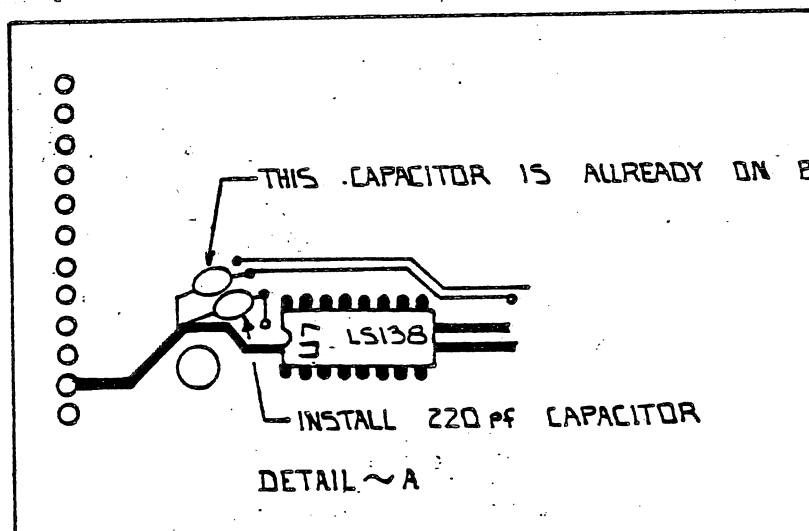
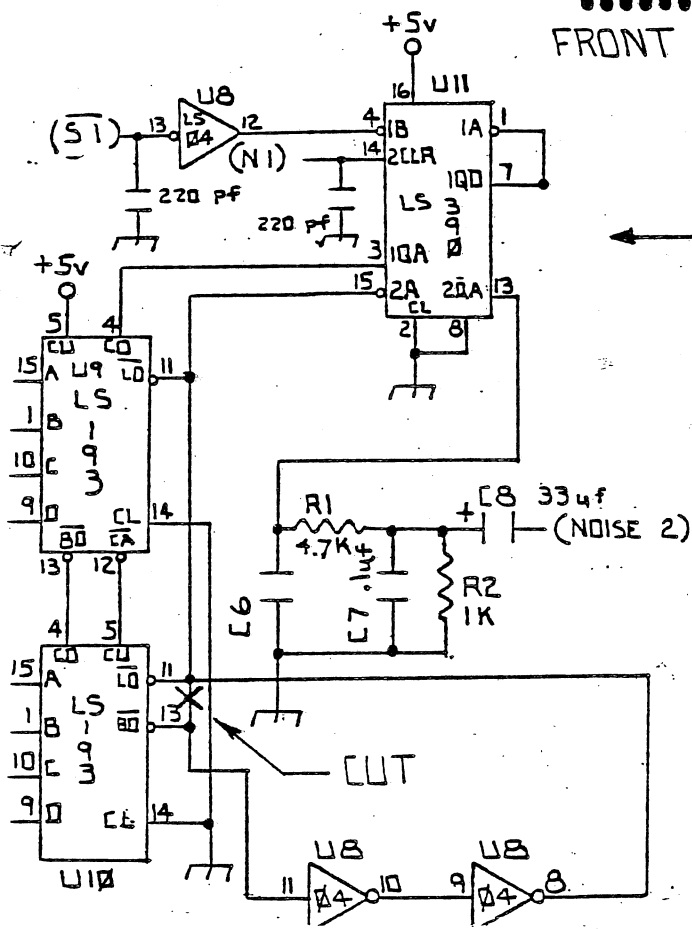
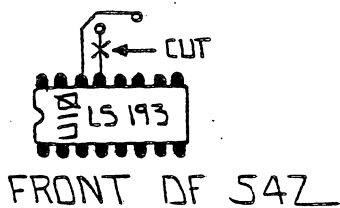
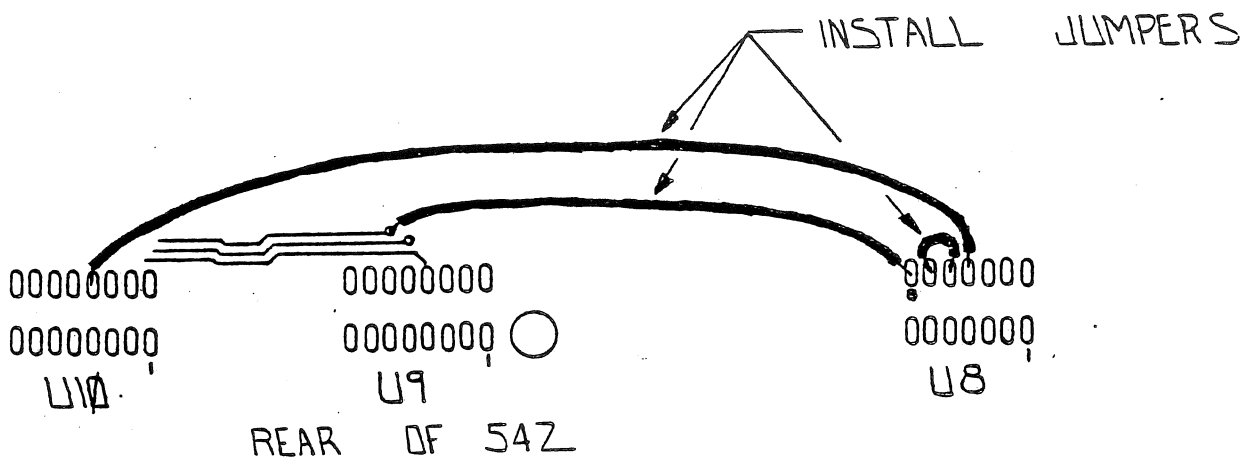


DIAGRAM I



SEE SHEET 1 OF 3 FROM 54Z SCHEMATICS DATED 15 AUG 1979

OHIO SCIENTIFIC

product name/number
PULLED KEYBOARD 54Z REV B

date

revision

page

status

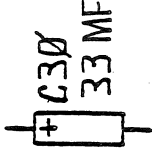
sheet of

OSI
MODEL
527 - CM2
©1978 AIP

8T26

C14

DI



8T26

A9

C13

L5138

C9

C19

L504

DIP

L510

EIP

C25

L504

EII

L504

FIP

W1
W2
W3



L5138

F9

C24

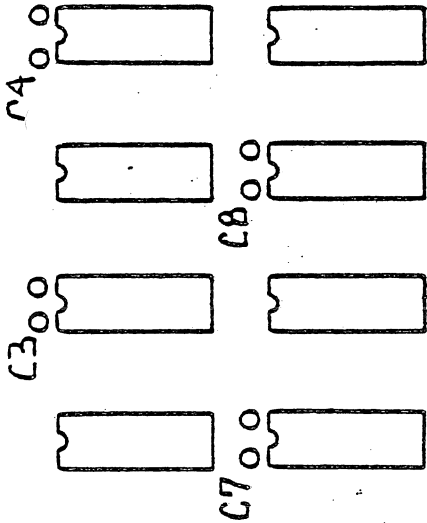
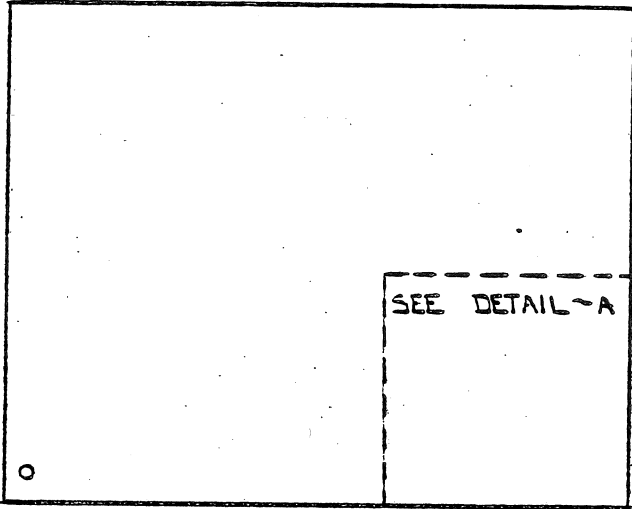
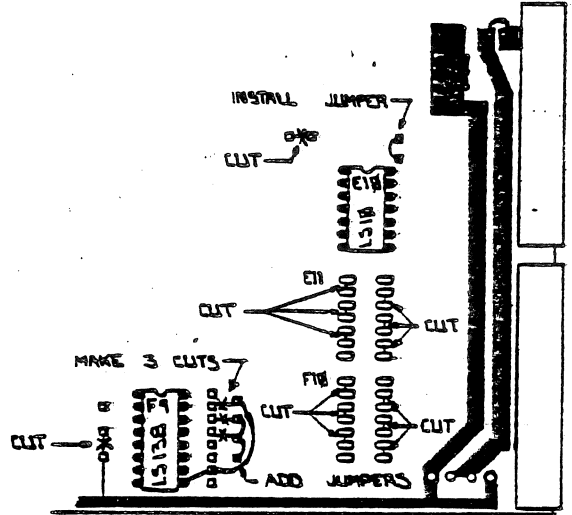


DIAGRAM III

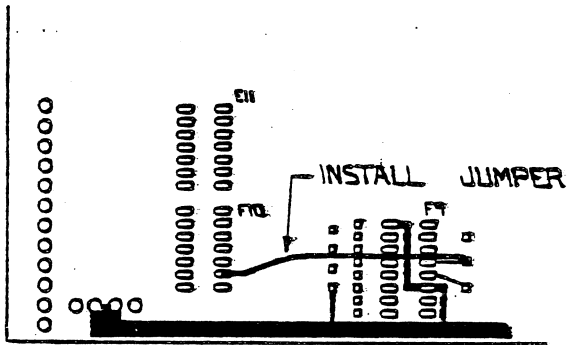




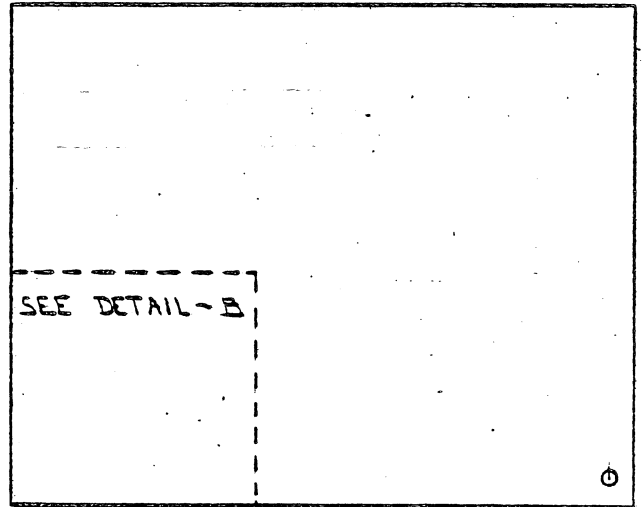
FRONT VIEW OF S27 BOARD



DETAIL - A



DETAIL - B



REAR VIEW OF S27 BOARD

RAM TYP. 48 PLACES

OSI
MODEL
527 - CM9
©1978

A10

LS126

A9

LS126

C14

LS04

D1

C30
33MF

C11

LS20

C19

LS04

D10

LS10

E10

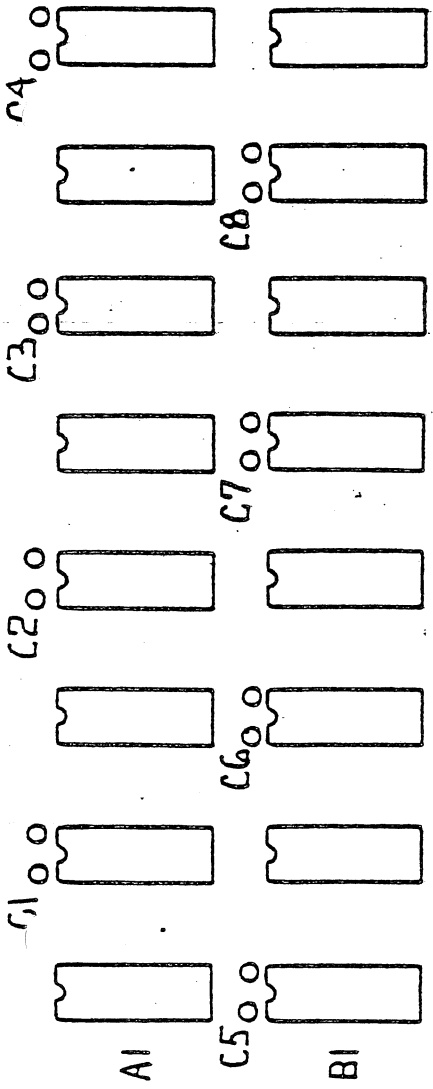
C25

LS04

E11

LS04

F10



C13
LS138

G9

C12

LS138

C11

LS138

C10

LS138

C9

LS138

SW1

C18

LS138

C17

LS138

C16

LS138

C15

LS138

G24

LS138

G8

C23

LS138

C22

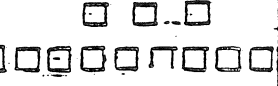
LS138

C21

LS138

C20

LS138



LS138

G9

C29

LS138

C28

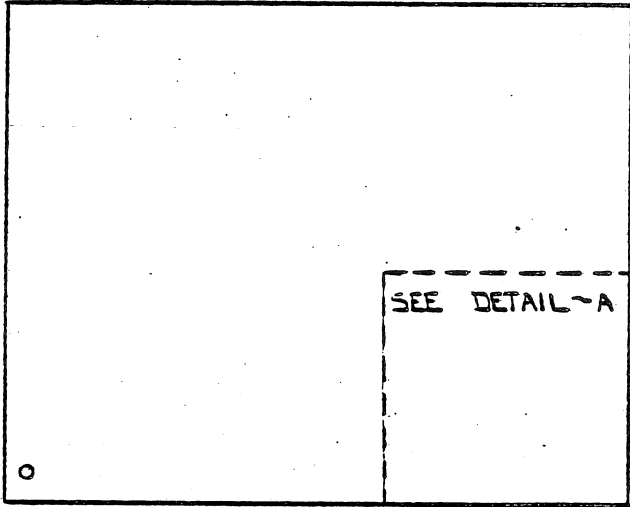
LS138

C27

LS138

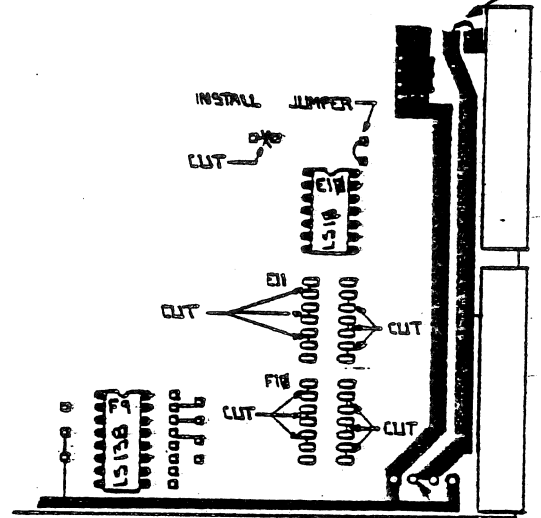
C26

LS138



FRONT VIEW OF S27 BOARD

REMOVE JUMPER WHEN USED IN E4P



DETAIL-A

INSTALL 4 PIN FEMALE MOLEX CONNECTOR WHEN USED IN E4P