FIELD MAINTENANCE PRINT SET

TABLE OF CONTENTS

UNIT VARIATIONS COVERED BY THIS PRINT SET
RM05-AA
RM05-AB
RM05-AC
RM05-AD
RM05-BA
RM05-BB
RM05-BC
RM05-BD

THIS TABLE OF CONTE[illegible]

SECTION 1 - RM05 DISK DRIVE (WHICH INCORPORATES A CDC DISK DRIVE).

SECTION 2 - CDC DISK DRIVE DOCUMENTATION.

RM05
Field Maintenance Print Set

Digital Equipment Corporation
MP01075

SECTION 1

REV	CHG. NO.	DATE
A	RELEASED TO ECO CONTROL AT REV A	
B	RM05-CX 006 TF-18AUG81 HARDER W. Harder (per) 18Aug81	884

USED ON OPTION/MODEL: RM05

DRN.	DATE
W. Main	11 Sep 80
CHK'D	DATE
W. Main	11 Sep 80
PROJ. ENG.	DATE
[illegible]	[illegible]
FIELD SERV.	DATE
[illegible]	[illegible]

TITLE: RM05 DISK [illegible]

SIZE: B CODE: TC NUMBER: TC-RM05-0-1 REV. B

SHEET 1 OF 5

DIST.

DRB 124

TABLE OF CONTENTS - CONTINUED FROM PAGE 1

TITLE		SIZE	CODE	NUMBER	REV
RM05 DISK DRIVE	SHEET 2 OF 5	B	TC	RM05-0-1	B

CARD LOCATOR CHART

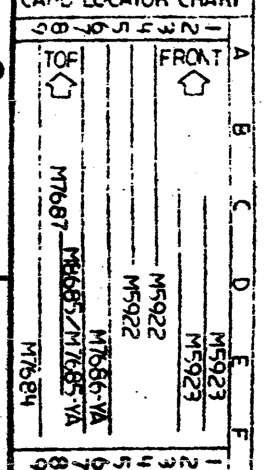


TABLE A

X INDICATES INSTALLING A JUMPER

S N BIT	JUMPER	RESULT S N BIT
1	X	
2		2
4	X	
8	X	
10		10
20		20
40		40
80	X	
100		100
200	X	
400	X	
800	X	
1000		1000
2000		2000
4000	X	
8000	X	
		3172 TOTAL

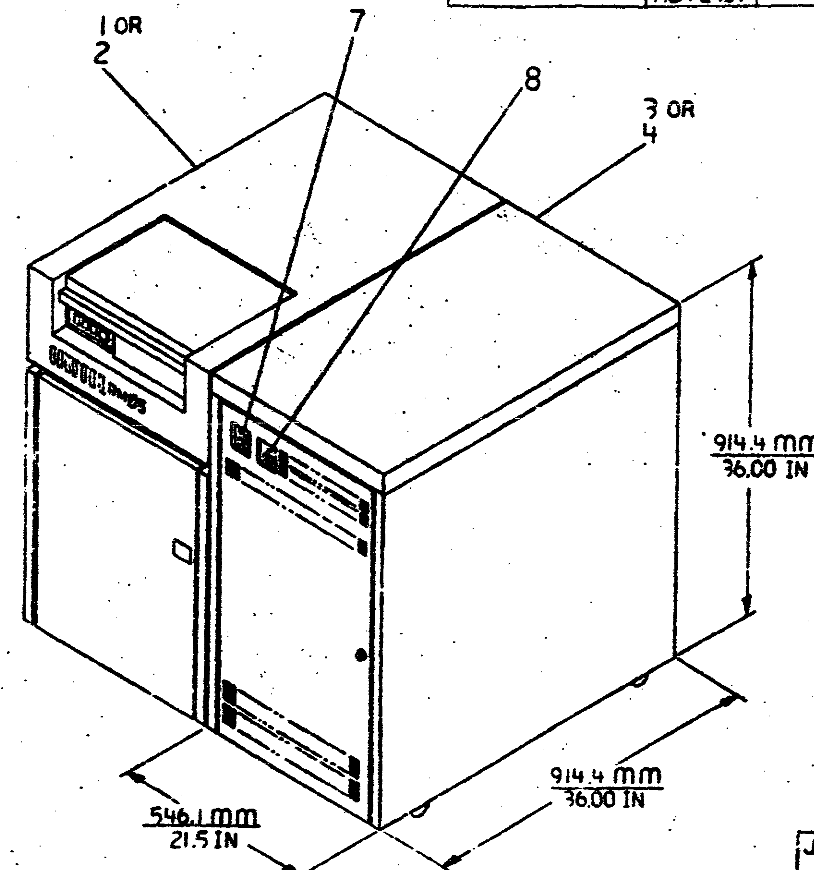
digital

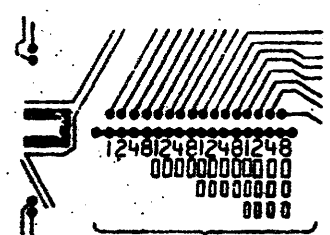
120 VOLT	1 PH	MODEL RM05-AA
60 HZ	2+G WIRE	CAB.
	24 AMP	S.N. CX-XXXXX

DETAIL G
SCALE: NONE
SEE NOTE 6

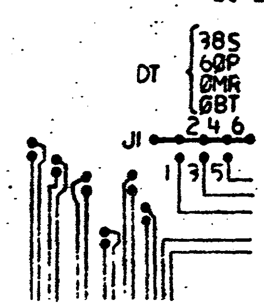
LEGEND

MODEL/OPTION NO	VOLTAGE	FREQUENCY	DESCRIPTION
RM05-AA	DRIVE 208V / MBA 120V	60 HZ	256 MBYTE DRIVE W/ SINGLE PORT MBA AND CABINET
RM05-AB	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/SINGLE PORT MBA CABINET
RM05-AC	DRIVE 208V / MBA 120V	60 HZ	256MBYTE DRIVE W/SINGLE PORT MBA (SECOND MBA)
RM05-AD	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/SINGLE PORT MBA (SECOND MBA)
RM05-BA	DRIVE 208V / MBA 120V	60 HZ	256MBYTE DRIVE W/DUAL PORT MBA AND CABINET
RM05-BB	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA AND CABINET
RM05-BC	DRIVE 208V / MBA 120V	60 HZ	256 MBYTE DRIVE W/DUAL PORT MBA (SECOND MBA)
RM05-BD	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA (SECOND MBA)





SEE NOTE 7
DETAIL H
SCALE: NONE



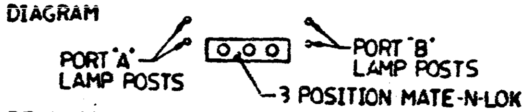
SEE NOTE 8
DETAIL J
SCALE: NONE

SEE NOTE 8

J1 JUMPER CONFIGURATION JUMPER INSERTED	
SINGLE PORT DRIVE TYPE REG	5-6 20027
DUAL PORT DRIVE TYPE REG	24027

NOTES:

1. REMOVE PART FROM MBA AND SET ASIDE. IT IS NOT USED IN THIS CONFIGURATION.
2. DELETED
3. DIAGRAM



4. DELETED
5. DELETED
6. MANUFACTURING ORGANIZATION TO COMPLETE LABLE INFORMATION ACCORDING TO DETAIL G. (DETAIL G SHOWS MODEL RM05-AA AS EXAMPLE ONLY).
7. THIRTY TWO WIREWRAP POSTS, IDENTIFIED AS J4 OF THE MASS BUS ADAPTER WIRED ASSEMBLY, ALLOW THE SERIAL NO. TO BE WIRED INTO THE BACKPLANE. THE 16 POST PAIRS ARE IDENTIFIED AS 1, 2, 4....2000, 4000, 8000 PROVIDING A BCD REPRESENTATION OF THE SERIAL NO.. THE LAST FOUR DIGITS OF THE DEC SERIAL NO. ARE TO BE USED AS THE WIRED SERIAL NO.. A JUMPER (1214314-00) MUST BE INSTALLED FOR EACH LOGIC ZERO IN THE WIRED SERIAL NO.. FOR EXAMPLE IF THE SERIAL NO. IS 3172, IT IS WIRED PER DETAIL "H" AND TABLE "A".
8. THE MASS BUS ADAPTER MUST HAVE THE FOLLOWING JUMPERS INSTALLED ON J1 OF THE WIRED ASSY. SEE DETAIL "J" AND JUMPER CONFIGURATION.
9. DELETED
10. DELETED
11. TERMINATORS ARE ALWAYS INSTALLED IN J2 AND J6 OF THE MBA BACKPLANE ONLY ON THE LAST MBA IN A SERIES.
12. THIS ITEM SUPPLIED WITH CABINET AND MBA ASSY, D.P. (7017748-00) OR CABINET AND MBA ASSY, S.P. (7017613-00).
13. TO UPGRADE A SINGLE PORT MBA IN THE FIELD, ORDER 1 DUAL ACCESS KIT (C-AD-RM05-C-0) PER EACH MBA.

CAUTION: OFF-SHEET PARTS LIST EXISTS. SEE K-PL-RM05-0-DBP (Z1187).

DESCRIPTION | DWG./PART NO. | ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

NEXT HIGHER ASSY.

FIRST USED ON: RM05

TITLE: RM05 DISK DRIVE ASSEMBLY

SIZE: D | CODE: UA | NUMBER: RM05-0-0 | REV.: D

CARD LOCATOR CHART

TOP / FRONT

M7687, M8685/M7685-YA, M7686-YA, M5922, M5922, M5923, M5923, M7684

TABLE A

X INDICATES INSTALLING A JUMPER

S N BIT	JUMPER	RESULT S N BIT
1	X	
2		2
4	X	
8	X	
10		10
20		20
40		40
80	X	
100		100
200	X	
400	X	
800	X	
1000		1000
2000		2000
4000	X	
8000	X	
		3172 TOTAL

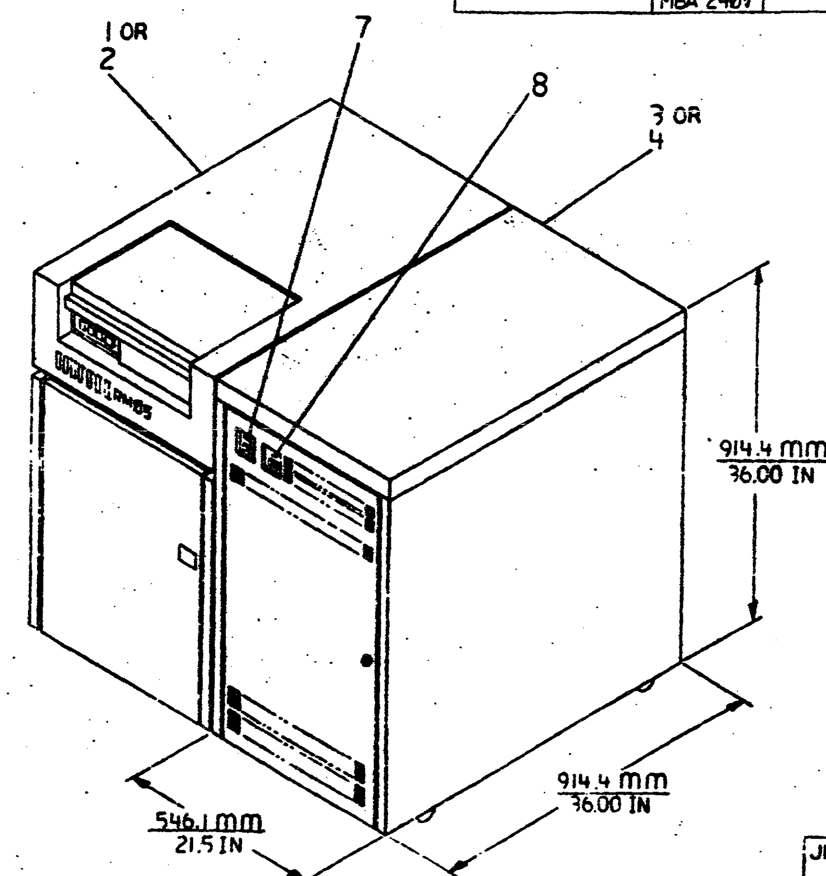
d	i	g	i	t	a	l

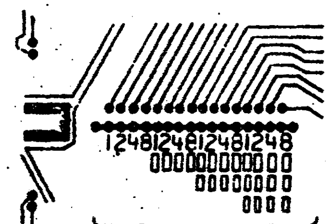
120 VOLT 60 HZ	1 PH 2+G WIRE 24 AMP	MODEL	RM05-AA
		CAB. S.N.	CX-XXXXX

DETAIL G
SCALE: NONE
SEE NOTE 6

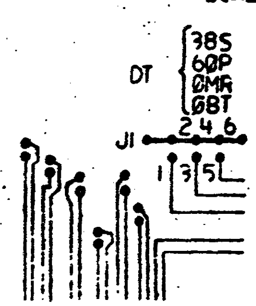
LEGEND

MODEL/OPTION NO	VOLTAGE	FREQUENCY	DESCRIPTION
RM05-AA	DRIVE 208V / MBA 120V	60 HZ	256 MBYTE DRIVE W/ SINGLE PORT MBA AND CABINET
RM05-AB	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/SINGLE PORT MBA CABINET
RM05-AC	DRIVE 206V / MBA 120V	60 HZ	256 MBYTE DRIVE W/SINGLE PORT MBA (SECOND MBA)
RM05-AD	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/SINGLE PORT MBA (SECOND MBA)
RM05-BA	DRIVE 205V / MBA 120V	60 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA AND CABINET
RM05-BB	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA AND CABINET
RM05-BC	DRIVE 208V / MBA 120V	60 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA (SECOND MBA)
RM05-BD	DRIVE 220V / MBA 240V	50 HZ	256 MBYTE DRIVE W/ DUAL PORT MBA (SECOND MBA)





SEE NOTE 7
DETAIL H
SCALE: NONE



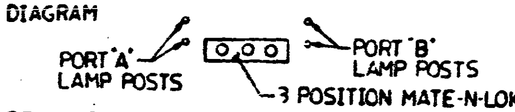
SEE NOTE 8
DETAIL J
SCALE: NONE

SEE NOTE 8

J1 JUMPER CONFIGURATION JUMPER INSERTED	
SINGLE PORT DRIVE TYPE REG	5-6 20027
DUAL PORT DRIVE TYPE REG	24027

NOTES:

1. REMOVE PART FROM MBA AND SET ASIDE. IT IS NOT USED IN THIS CONFIGURATION.
2. DELETED
3. DIAGRAM



4. DELETED
5. DELETED
6. MANUFACTURING ORGANIZATION TO COMPLETE LABLE INFORMATION ACCORDING TO DETAIL G. (DETAIL G SHOWS MODEL RM05-AA AS EXAMPLE ONLY).
7. THIRTY TWO WIREWRAP POSTS, IDENTIFIED AS J4 OF THE MASS BUS ADAPTER WIRED ASSEMBLY, ALLOW THE SERIAL NO. TO BE WIRED INTO THE BACKPLANE. THE 16 POST PAIRS ARE IDENTIFIED AS 1, 2, 4....2000, 4000, 8000 PROVIDING A BCD REPRESENTATION OF THE SERIAL NO.. THE LAST FOUR DIGITS OF THE DEC SERIAL NO. ARE TO BE USED AS THE WIRED SERIAL NO.. A JUMPER (1214314-00) MUST BE INSTALLED FOR EACH LOGIC ZERO IN THE WIRED SERIAL NO.. FOR EXAMPLE IF THE SERIAL NO. IS 3172, IT IS WIRED PER DETAIL 'H' AND TABLE 'A'.
8. THE MASS BUS ADAPTER MUST HAVE THE FOLLOWING JUMPERS INSTALLED ON J1 OF THE WIRED ASSY. SEE DETAIL 'J' AND JUMPER CONFIGURATION.
9. DELETED
10. DELETED
11. TERMINATORS ARE ALWAYS INSTALLED IN J2 AND J6 OF THE MBA BACKPLANE ONLY ON THE LAST MBA IN A SERIES.
12. THIS ITEM SUPPLIED WITH CABINET AND MBA ASSY. D.P. (7017748-00) OR CABINET AND MBA ASSY. S.P. (7017613-00).
13. TO UPGRADE A SINGLE PORT MBA IN THE FIELD, ORDER 1 DUAL ACCESS KIT (C-AD-RM05-C-0) PER EACH MBA.

CAUTION: OFF-SHEET PARTS LIST EXISTS. SEE K-PL- RM05-0-DBP (Z1187).

FIRST USED ON: RM05

TITLE: RM05 DISK DRIVE ASSEMBLY

MATERIAL: SEE PARTS LIST

DO NOT SCALE DWG

SIZE: D   CODE: UA   NUMBER: RM05-0-0   REV.: D

LABEL ELECTRICAL DATA
3613209-02
UPPER MBA

UL LABEL
7416197-00

CSA LABEL
3613211-00

SEE DETAIL G
SHEET 1

7 OR 8 OR
9 OR 10

3 OR 4 REF OR
5 OR 6 REF

LABEL ELECTRICAL DATA
3613209-00
LOWER MBA

1 REF
OR
2 REF

SEE DETAIL N

DETAIL N
SCALE: NONE

SEE DETAIL C

SEE NOTE 11

SEE DETAIL L

RM05-AC
OR
RM05-AD
OR
RM05-BC
OR
RM05-BD

SEE DETAIL K

60 POSITION
'A' CABLE
PLUGS TO
M7684 MODULE

26 POSITION
'B' CABLE
PLUGS TO M7687 MODULE

RM05-AA
OR
RM05-AB
OR
RM05-BA
OR
RM05-BB

SEE DETAIL R
SEE DETAIL M

AC POWER CABLE

CHASSIS TO
FRAME GND
SEE DETAILS L & M

VIEW D-D
SCALE: NONE

S1
(ACCEPTS P10)

PORT 'B' LAMP POSITION
(ACCEPTS P12) TWO WIRE
WRAP POSTS IN BACKPLANE

PORT 'A' LAMP POSITION
(ACCEPTS P11) TWO WIRE
WRAP POST IN BACKPLANE

J6 PORT 'B' OUT

J2
PORT 'A' OUT

SEE NOTE 3

J9
POWER SEQUENCE OUT

J8
POWER SEQUENCE IN

J3
PORT 'A' IN

J5
DC POWER IN
FROM P.S. J9

J7
PORT 'B' IN

DETAIL C
SCALE: NONE

CHASSIS TO
FRAME GND

DETAIL L
SCALE: NONE
SEE NOTE 12

¼ TURN FASTENER
REMOVES PANEL

SEE
DETAIL B

P1 FROM
MBA CABINET
(SHOWN PLUGGED
INTO IJ3)

P1 FROM
MBA CABINET
(SHOWN PLUGGED
INTO IJ2)

I/O CABLE
26 POSITION

CONNECTION PANEL
IN DRIVE

I/O CABLE
60 POSITION

VIEW A-A

CHA I
IJ3
IJ4
IJ2
CHA II
IIJ3
IIJ4
IIJ2

I/O CABLE
60 CONDUCTOR

I/O CABLE
26 CONDUCTOR

CONNECTION PANEL

DETAIL B

DETAIL R
SCALE: NONE
SEE NOTE 12

SEE NOTE 12

CHASSIS TO
FRAME GND
SEE DETAIL L

FRAME TO
FRAME GND

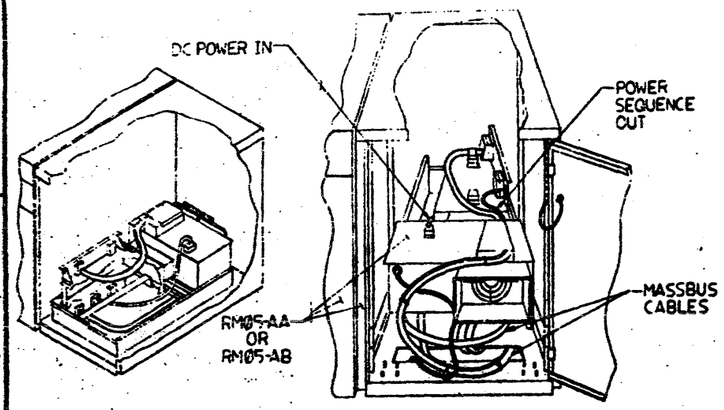
DETAIL M
SCALE: NONE

DETAIL K
SCALE: NONE
2 PLACES
(FRONT & REAR DOOR)

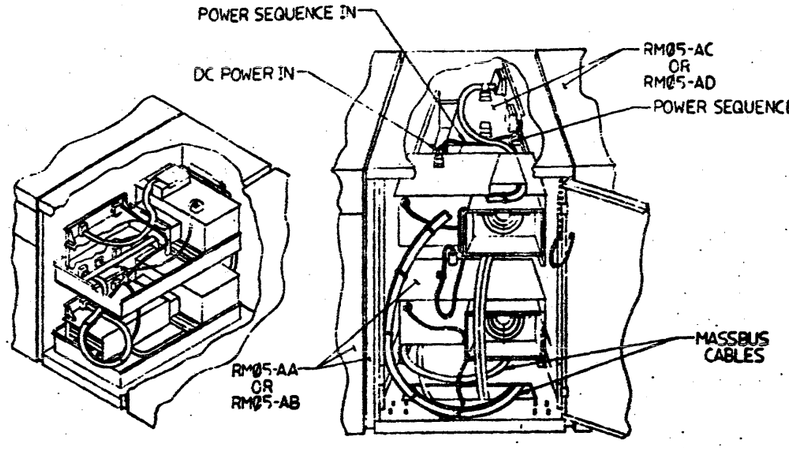
TITLE
RM05 DISK DRIVE ASSY

SIZE D | CODE UA | DOCUMENT NUMBER RM05-0-0 | REV D

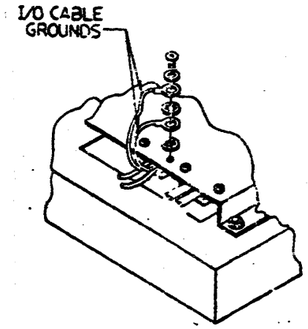
SCALE: —— | SHEET 1 OF 1



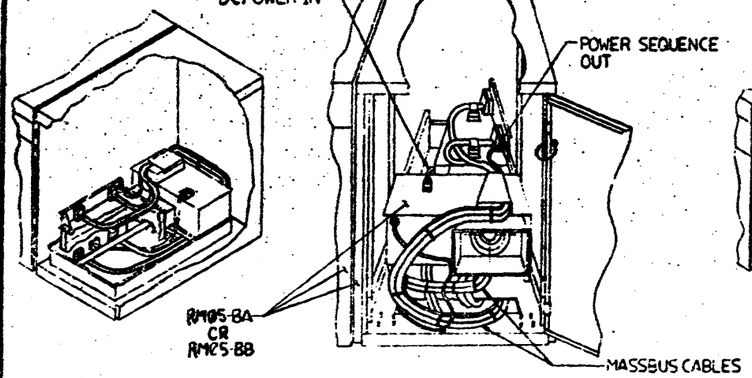
ONE MBA-SINGLE PORT
SEE D-AD-7017613-0-0



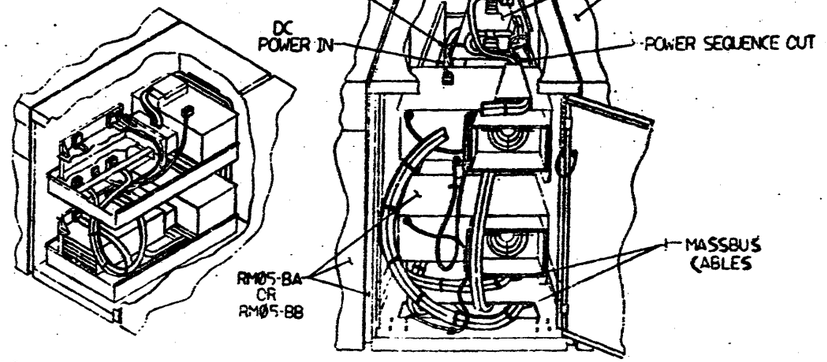
TWO MBA'S-SINGLE PORT
SEE D-AD-7017613-0-0
AND D-AD-7017606-0-0



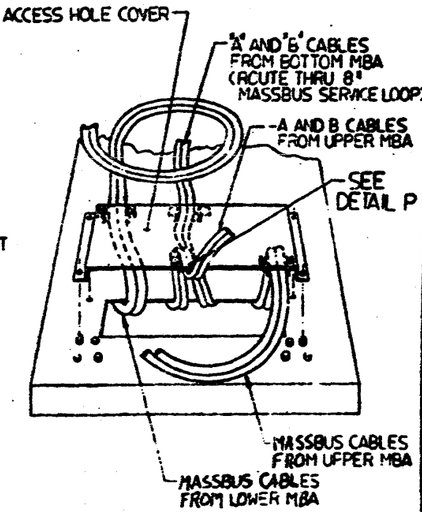
DETAIL P
SCALE: NONE



ONE MBA-DUAL PORT
SEE D-AD-7017748-0-0



TWO MBA'S - DUAL PORT
SEE D-AD-7017748-0-0
AND D-AD-7017747-0-0



CABLE MOUNTING TO ACCESS HOLE COVER

REVISION HISTORY		
DATE	ECO NUMBER	REV.

TITLE: RM05 DISK DRIVE ASSEMBLY

SIZE	CODE	DOCUMENT NUMBER	REV.
D	JA	RM05-0-0	D

SCALE: —— SHEET 3 OF 4

CABLE CHART RMØ5—AC/AD

CABLE APPEARS ON DRAWING NO.	DESCRIPTION	FROM	TO	REMARKS
D-AD-7018322-0-0	JUMPER, POWER SEQUENCE			SEE NOTE 1
D-AD-7017607-0-0 D-AD-7017608-0-0	POWER SEQUENCE CABLE	J9 LOWER MBA	J8 UPPER MBA	
D-AD-7017747-0-0	MASS BUS CABLE, PORT 'A'	J2 LOWER MBA	J3 UPPER MBA	
D-AD-7018322-0-0	60 CONDUCTOR I/O CABLE	J1 ON M7684	IJ3 ON DISK DRIVE	
D-AD-7018322-0-0	26 CONDUCTOR I/O CABLE	J1 ON M7687	IJ2 ON DISK DRIVE	
D-AD-7018322-0-0	LINE CORD, AC INPUT	BACK OF POWER SUPPLY, UPPER MBA	J1 ON POWER SUPPLY, LOWER MBA	

CABLE CHART RMØ5 — BA/BB

D-AD-7018322-0-0	JUMPER, POWER SEQUENCE		PLUGS INTO J8 ON LOWER MBA	
D-AD-7017748-0-0	MASS BUS CABLE, PORT 'A'	HOST SYSTEM OR PREVIOUS MBA	J3 LOWER MBA	
D-AD-7018322-0-0	60 CONDUCTOR I/O CABLE	J1 ON M7684	IJ3 ON DISK DRIVE	
D-AD-7018322-0-0	26 CONDUCTOR I/O CABLE	J1 ON M7687	IJ2 ON DISK DRIVE	
D-AD-7018322-0-0	LINE CORD, AC INPUT	BACK OF POWER SUPPLY, LOWER MBA	WALL SOCKET	
D-AD-7017748-0-0	MASS BUS CABLE, PORT 'B'	HOST SYSTEM	J7 LOWER MBA	
D-AD-7017605-0-0	DUAL PORT HARNESS ASSEMBLY	J1 SWITCH PANEL ASSEMBLY	P11 TO PORT 'A' LAMP POSTS P12 TO PORT 'B' LAMP POSTS P10 TO 3PIN MATE-IN-LOK, MOUNTED IN SWITCH POSITION	SEE NOTE 3

CABLE CHART RMØ5 — AA/AB

D-AD-7018322-0-0	JUMPER, POWER SEQUENCE		PLUG INTO J8 ON LOWER MBA	
D-AD-7017613-0-0	MASS BUS CABLE PORT 'A'	HOST SYSTEM OR PREVIOUS MBA	J3 LOWER MBA	
D-AD-7018322-0-0	60 CONDUCTOR I/O CABLE	J1 ON M7684	IJ3 ON DISK DRIVE	
D-AD-7018322-0-0	26 CONDUCTOR I/O CABLE	J1 ON M7687	IJ2 ON DISK DRIVE	
D-AD-7018322-0-0	LINE CORD, AC INPUT	BACK OF POWER SUPPLY, LOWER MBA	WALL SOCKET	

CABLE CHART RMØ5-BC/BD

CABLE APPEARS ON DRAWING NO.	DESCRIPTION	FROM	TO	REMARKS
D-AD-7018322-0-0	JUMPER, POWER SEQUENCE			SEE NOTE 1
D-AD-7017747-0-0 D-AD-7017748-0-0	POWER SEQUENCE CABLE	J9 LOWER MBA	J8 UPPER MBA	
D-AD-7017747-0-0	MASS BUS CABLE PORT 'A'	J2 LOWER MBA	J3 UPPER MBA	
D-AD-7018322-0-0	60 CONDUCTOR I/O CABLE	J1 ON M7684	IJ3 ON DISK DRIVE	
D-AD-7018322-0-0	26 CONDUCTOR I/O CABLE	J1 ON M7687	IJ2 ON DISK DRIVE	
D-AD-7018322-0-0	LINE CORD, AC INPUT	BACK OF POWER SUPPLY, UPPER MBA	J1 ON POWER SUPPLY, LOWER MBA	
D-AD-7017747-0-0	MASS BUS CABLE, PORT 'B'	J6 LOWER MBA	J7 UPPER M2A	
D-AD-7017605-0-0	DUAL PORT HARNESS ASSY	J1 SWITCH PANEL ASSEMBLY	P11 TO PORT 'A' LAMP POSTS P12 TO PORT 'B' LAMP POSTS P10 TO 3PIN MATE-IN-LOK LOCATION IN SWITCH POSITION	SEE NOTE 3

REVISION HISTORY

DATE	ECO NUMBER	REV

TITLE RMØ5
DISK DRIVE ASSEMBLY

DOCUMENT NUMBER: D UA RMØ5-Ø-Ø REV D

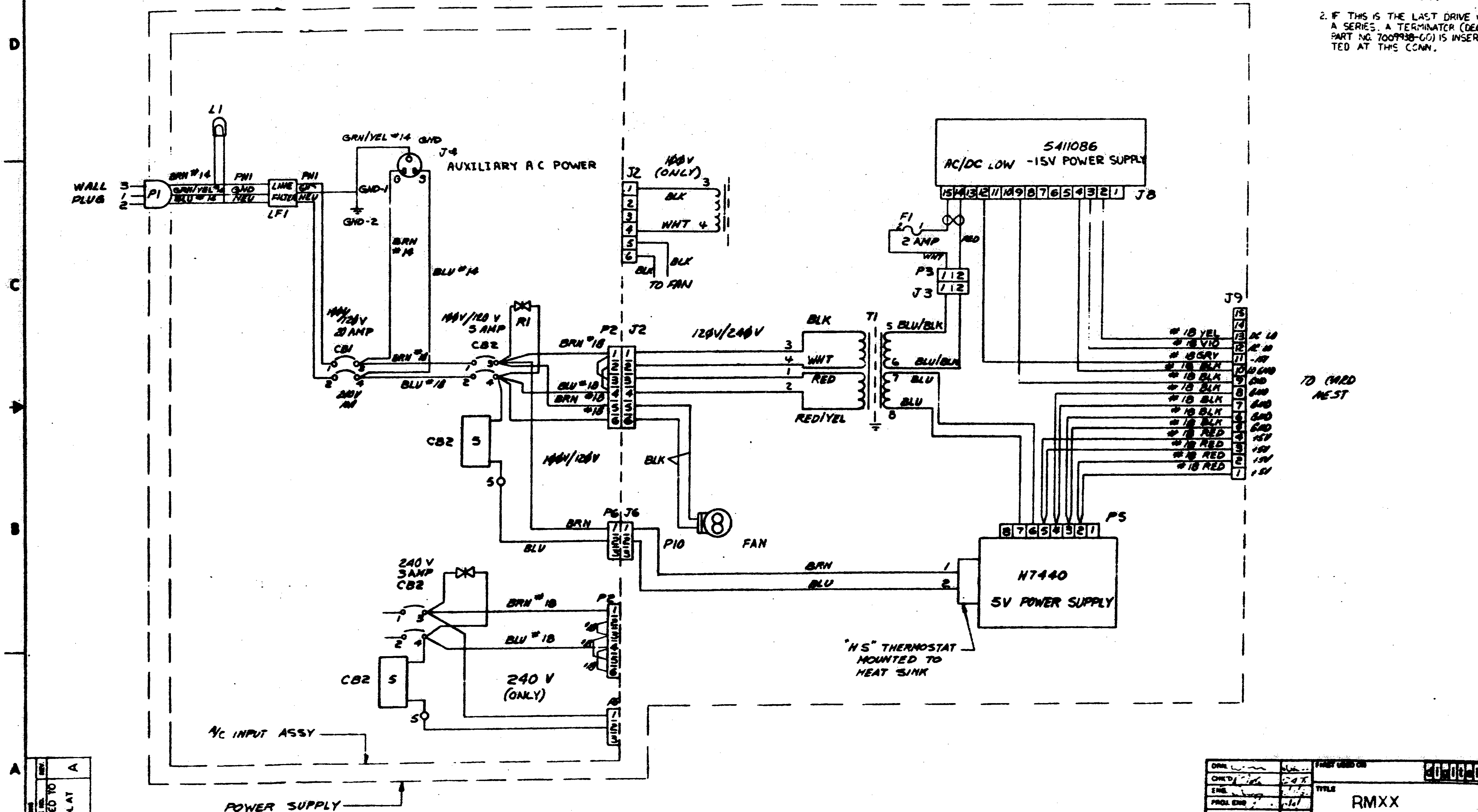
SCALE: NONE SHEET 4 OF 4

AUTOMATED BY PRTLST.3L(40)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION AA	AB	AC	AD	BA	BB	BC	BD
1	1	D-AD-7017618-0-0	7017618-00	REWORK DRAWING, RM05 DISK DRIVE	1	-	1	-	1	-	1	-
2	2	D-AD-7017618-0-1	7017618-01	REWORK DRAWING, RM05 DISK DRIVE	-	1	-	1	-	1	-	1
3	3	D-AD-7017613-0-0	7017613-00	CABINET & MBA ASSY S.P. (60 HZ)	1	-	-	-	-	-	-	-
4	4	D-AD-7017613-0-0	7017613-01	CABINET & MBA ASSY S. P. (50 HZ)	-	1	-	-	-	-	-	-
5	5		7017748-00	CABINET & MBA ASSY D. P. (60HZ)	-	-	-	-	1	-	-	-
6	6		7017748-01	CABINET & MBA ASSY D. P. (50 HZ)	-	-	-	-	-	1	-	-
7	7		7017747-00	MBA ASSY, DUAL PORT (60 HZ)	-	-	-	-	-	-	1	-
8	8		7017747-01	MBA ASSY, DUAL PORT (50 HZ)	-	-	-	-	-	-	-	1
9	9		7017606-00	MBA ASSY, SINGLE PORT (60HZ)	-	-	1	-	-	-	-	-
10	10		7017606-01	MBA ASSY, SINGLE PORT (50HZ)	-	-	-	1	-	-	-	-
11	11		3017107-00	DISK PACK RM05P DATA	1	1	1	1	1	1	1	1

REVISION HISTORY			BASIC PART NO: RM05										
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: M. ENGLE	DATE: 05-FEB-80		D	I	G	I	T	A	L
	INITIAL	*	SECTION, VARIATION INDEX	CHK'D: B. NICHOLS	DATE: 05-FEB-80	TITLE	PARTS LIST						
ME	RM05-CX002	A	[A] AA,AB,AC,AD,BA,BB, BC,BD			RM05 DISK DRIVE ASSEMBLY							
ME	RM05-CX003	B											
ME	RM05-CX004	C	[B]	DES.ENG.: A. CLARK	DATE: 05-FEB-80								
WH	RM05-CX05A	D				DOCUMENT NUMBER							
			[C]	RESP.ENG.: B. MONTERO	DATE: 05-FEB-80	SIZE	CODE	NUMBER		REV			
			[D]										
			[E]	MFG.ENG.: B. BASSETT	DATE: 05-FEB-80	K	PL	RM05-0-DBP		D			
			[F]	ASSEMBLY NUMBER: D-UA-RM05-0-0	TOP DOCUMENT NUMBER: # B-DD-RM05-0	FILE NAME: Z1187D.PLS				EDIT #: 35			


WALL PLUG
P1
L1
BRN #14
GRN/YEL #14
BLU #14
PN1
GND
NEU
LINE FILTER
LF1
GRN/YEL #14 GND
J4
AUXILIARY A C POWER
GND-1
GND-2
BRN #14
BLU #14
CB1
CB2
R1
BRN #18
BLU #18
P2
J2
120V/240V
BLK
WHT
RED
RED/YEL
T1
BLU/BLK
BLU
J2
(ONLY)
TO FAN
FAN
P10
P6 J6
BRN
BLU
H7440
5V POWER SUPPLY
PS
"HS" THERMOSTAT MOUNTED TO HEAT SINK
5411086
AC/DC LOW -15V POWER SUPPLY
J8
F1
2 AMP
WHT
RED
P3
J3
J9
#18 YEL
#18 VIO
#18 GRY
#18 BLK
#18 RED
TO CARD NEST
240 V 5AMP CB2
240 V (ONLY)
A/C INPUT ASSY
POWER SUPPLY

NOTES:

1. IF THIS IS THE FIRST DRIVE IN A SERIES, INSTALL JUMPER DEC # 7009490 IN J8.
2. IF THIS IS THE LAST DRIVE IN A SERIES, A TERMINATOR (DEC PART NO. 7009938-00) IS INSERTED AT THIS CONN.

TITLE	RMXX SYSTEM DIAGRAM
NEXT HIGHER ASSY	B-TC-RM03-0-1
SIZE	D
CODE	IC
NUMBER	RMXX-Ø-2
REV.	A
SHEET	1 OF 2

RELEASED TO ECO CONTROL AT REV A

MODULE	RM82/83	RM80	RM05
M7684	CS = R	YES	YES
M7685 M7685-YA M8685	CS = C YES YES	NO CS = D CS = B	NO CS = D CS = B
M7686 ~~M7686-YA~~	CS = J YES	NO YES	NO YES
M7687	CS = C	YES	YES
M5922	CS = E	YES	YES
M5923	CS = E	YES	YES
70-13398 BACK PLANE	WL = C WT = D	WL = D WT = E	WL = D WT = E

** IF DUAL PORT SWITCHES ARE LOCATED IN THE SLOT ON THE FRONT DOOR M7684-YA MUST BE USED.

BACKPLANE ASSY

J1
DRIVE TYPE
SEE NOTE 2

J3
PORT 'A' IN

J2
PORT 'A' OUT

J9 P9 — P5 J5
YEL #18 AWG
VIO #18 AWG
GRY #18 AWG
BLK #18 AWG
BLK #18 AWG
BLK #18 AWG
BLK #18 AWG
BLK #18 AWG
BLK #18 AWG
RED #18 AWG
RED #18 AWG
RED #18 AWG
RED #18 AWG

J1 M7684
M7685, M7685-YA, M8685
M7686, M7686-YA
M5922
M5922
M5923
M5923

60 POSITION I/O CABLE

J4
SERIAL NUMBER

RMXX DRIVE

POWER SUPPLY

J1 M7687 26
26 POSITION I/O CABLE

J7
PORT 'B' IN

SEE NOTE 2
J6
PORT 'B' OUT

GRN #22 AWG
BLK #22 AWG
FROM J9 PREVIOUS RMA (SEE NOTE 1)

POWER SEQUENCE CABLE P2 4 3 2 1 / 4 3 2 1 JB IN

POWER SEQUENCE CABLE J9 4 3 2 1 / 4 3 2 1 P1 OUT

60 PIN HDR #60
26 PIN HDR #26

GROUND STUD ON POWER SUPPLY

J10

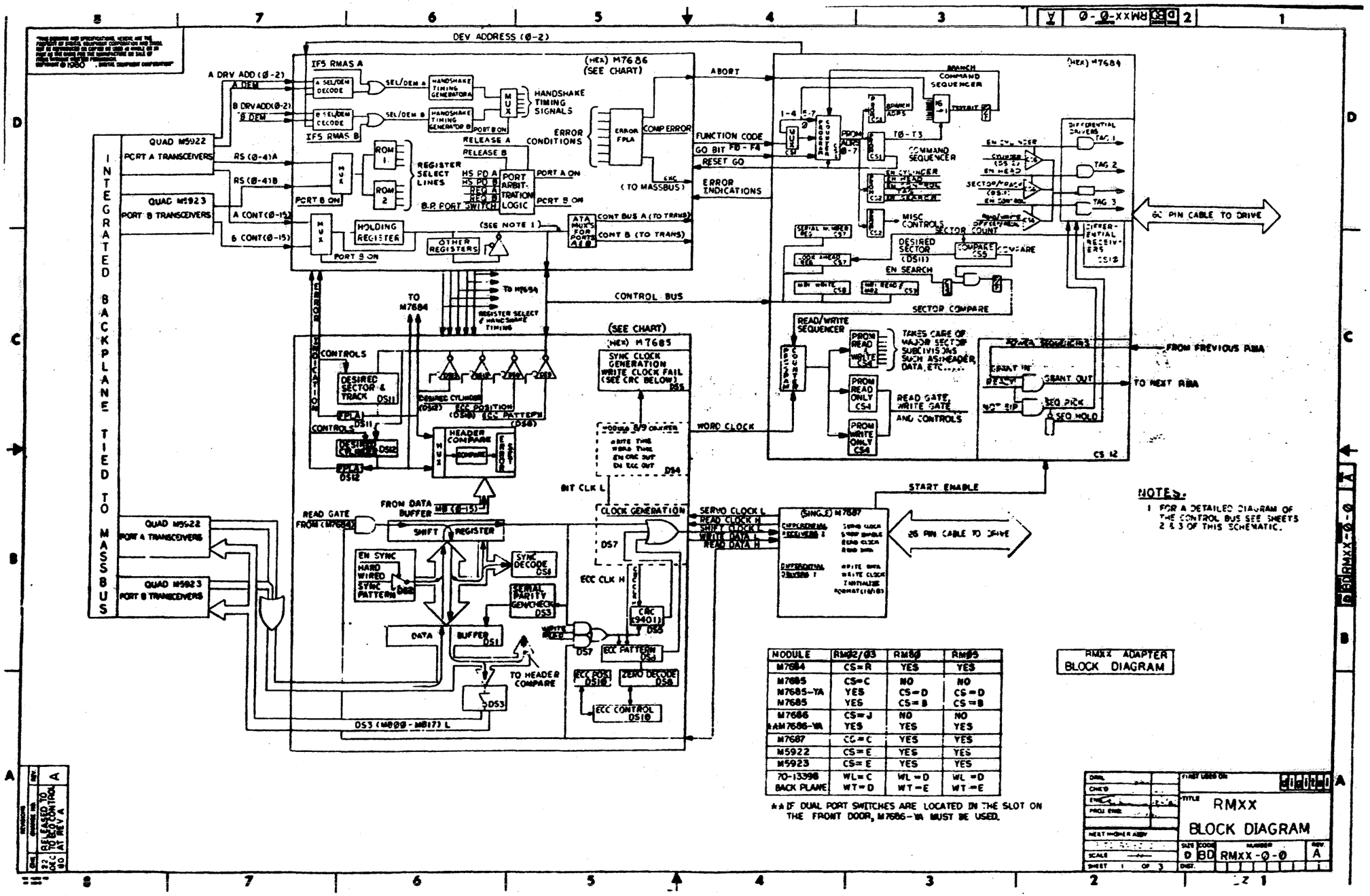
GROUND STUD ON DRIVE

BLK #22 AWG
GRN #22 AWG
TO JB NEXT RMA IN SERIES

REVISIONS		
ECR	CHANGE NO.	REV.

TITLE	SIZE	NUMBER	REV.
RMXX SYSTEM DIAGRAM	D	RMXX-Ø-2	A
SCALE: NONE	SHEET 2 OF 2		

DIC RMXX-Ø-2 A



MODULE	RM02/03	RM80	RM05
M7684	CS=R	YES	YES
M7685	CS=C	NO	NO
M7685-YA	YES	CS=D	CS=D
M7685	YES	CS=B	CS=B
M7686	CS=J	NO	NO
★★M7686-YA	YES	YES	YES
M7687	CS=C	YES	YES
M5922	CS=E	YES	YES
M5923	CS=E	YES	YES
70-13398 BACK PLANE	WL=C WT=D	WL=D WT=E	WL=D WT=E

★★ IF DUAL PORT SWITCHES ARE LOCATED IN THE SLOT ON THE FRONT DOOR, M7686-YA MUST BE USED.

RMXX ADAPTER BLOCK DIAGRAM

REV	DESCRIPTION	DATE	APPROVED
A	RELEASED TO ECO CONTROL AT REV A	22 JAN 80	

DRWN		FIRST USED ON	
CHK'D			
ENG		TITLE	RMXX
PROJ ENG			BLOCK DIAGRAM
NEXT HIGHER ASSY			
SCALE		SIZE D CODE BD NUMBER	RMXX-Ø-Ø REV A
SHEET 1 OF 3		DIST	

MASSBUS A

MASS C00-C15, MASS CPA FROM MASSBUS A

PORT A RECEIVERS M5922

PORT A ATTENTION REGISTER M7686-SH7

AA1 A CONT 00-07

AA1 ACONT 00-15, AA2 ACPA

2 LINE TO 1 LINE MULTIPLEX 17 BITS WIDE M7686-SH1

IF2 CONT 00-15, IF1 CPA

BUFFER & OTHER REGISTERS M7684 & M7685 & M7684

IF2 CONT 08-15

IF2 CONT 00-07

IF5 RM AS A L (SELECTS IF2 CONT 00-07 OR IF7 A ATA 00-07 L)

IF7 A ATA 00-07 L

2 LINE TO 1 LINE MULTIPLEX 8 BITS WIDE PORT A BITS 00-07 M7686-SH7

IF5 EN A TRANS H

PORT A TRANS-MITTERS M5922

MASS C00-C15, MASS CPA TO MASSBUS B

IF7 A CONT 00-07 OUT L

ABI B CONT 00-15, AB2 BCPA

IF4 PORT B ON H (SELECTS PORT A OR B)

IF7 B ATA 00-07 L

2 LINE TO 1 LINE MULTIPLEX 8 BITS WIDE PORT B BITS 00-07 M7686-SH7

IF7 B CONT 00-07 OUT L

PORT B TRANS-MITTERS M5923

MASS C00-C15, MASS CPA TO MASSBUS B

PORT B RECEIVERS M5923

PORT B ATTENTION REGISTER M7686-SH7

ABI B CONT 00-07

PARITY GENERATOR & CHECKER M7686-SH2

IF5 RM AS B L (SELECTS IF2 CONT 00-07 OR IF7 B ATA 00-07 L)

IF5 EN B TRANS H

MASS C00-C15, MASS CPA FROM MASSBUS B

IF2 ODD PARITY L

MASSBUS B

DUAL PORT CONTROL BUS PATH

REVISIONS

CHG	CHANGE NO.	REV.

TITLE: RMXX BLOCK DIAGRAM
SIZE: D | CODE: BD | NUMBER: RMXX-0-0 | REV: A
SCALE: —/— | SHEET 2 OF 3 | DWG.

CZ

SECTOR COUNT FROM DRIVE
STATUS+ERRORS FROM DRIVE
DEV ADDRESS LINES FROM DRIVE
R
LOOK AHEAD REG M7684
DRIVE STATUS REG M7686
DRIVE ERROR SIGNALS
ERROR + STATUS FROM LOGIC
A CONT (0-7) FOR RMAS (PORT A)
B CONT (0-7) FOR RMAS (PORT B)
DEV ADDRESS 0-2
HARDWIRED ON BACKPLANE
DRIVE TYPE REG M7686
SERIAL NUMBER REG M7684
RMDT
RMSN
RMLA
RMDS
LOGIC ERROR SIGNALS
ERROR REG #1 M7686
ERROR REG #2 M7686
CONTROL+STATUS REG #1 M7686
DVA F0-F4 GO
RMCSI
RMERI
RMER2
IF2 CONT 0-15
MUX 8:1
ATA F/F
BCD TO DECIMAL DECODER
ATA REG
ATA 0-7
THIS LOGIC IS DUPLICATED
ONE SECTION IS FOR PORT A AND ONE FOR PORT B
CONT OUT 0-7
IF2 CONT 0-7
M7685
TO MASSBUS DRIVERS
TO LOGIC
A CONT (0-15) PORT A
B CONT (0-15) PORT B
MUX
PORT B ON
IF2 CONT 0-15 (TRI STATE)
IF2 CONT 8-15
DISK ADDRESS REG M7685
RMDA
DESIRED CYLINDER REG M7685
RMDC
MAINT REG #1 WRITE M7684
RMMRI
TO LOGIC
MAINTENANCE REG #1+2 READ M7684
RMMRI + RMMR2
MR1 READ DATA (TO LOGIC)
MR2 READ DATA
ECC REG #1 M7685
RMECI
COUNT CONTROL
PRELOAD POSITION
ECC REG #2 M7685
FROM ECC LOGIC
OFFSET REG M7686
RMOF
TO LOGIC
HOLDING (BUF) REG M7686
RMHR
FPLA M7685
DECODES SECTOR/TRACK POSITION INFORMATION
MUX M7684
FPLA M7685
DECODES CYLINDER POSITION INFORMATION
COMPARE LOGIC M7685
ERROR CONDITION
CONTROL DATA
DRIVE BUS CONTROL
DRIVE BUS MUX (0-9) M7684
CYLINDER, TRACK AND CONTROL TO DRIVE

NOTES:
1. ▽ AND ▽ SIGNIFY DIFFERENTIAL RECEIVERS AND DRIVERS
2. ▽ SIGNIFY A SET OF TRI STATE DRIVERS WITH A COMMON ENABLE.

CONTROL BUS AND REGISTER FUNCTIONS

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: RMXX BLOCK DIAGRAM
SIZE: D
CODE: BD
NUMBER: RMXX-0-0
REV: A
SCALE:
SHEET 3 OF 3
DWG.

RMXX-0-0 D BD A

INDEX

SHEET	
1	INDEX
2	HANDSHAKE TIMING
3	TIMING FOR ALL COMMANDS (COMMAND SEQUENCER), (SH 1 OF 3)
4	TIMING FOR ALL COMMANDS (COMMAND SEQUENCER), (SH 2 OF 3)
5	TIMING FOR ALL COMMANDS (COMMAND SEQUENCER/DATA), (SH 3 OF 3)
6	START OF DATA COMMAND ON SECTOR X+1 FOLLOWING DATA COMMAND ON SECTOR X
7	BASIC DATA TIMING (CLOCK GENERATION)
8	DATA TIMING FOR WRITE HEADER AND DATA (FORMAT)
9	READ HEADER AND DATA AND READ DATA TIMING
10	TIMING FOR WRITE DATA OPERATION
11	TIMING FOR ECC DURING READ
12	TIMING FOR ECC CORRECTION

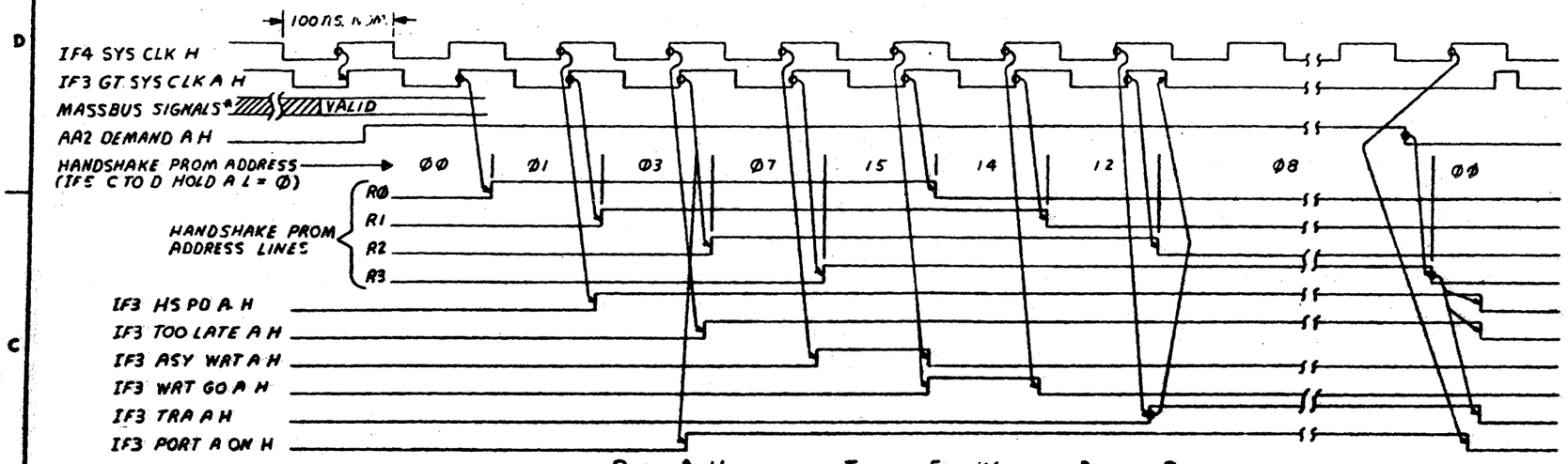
INDEX

RELEASED TO ECO CONTROL AT REV A

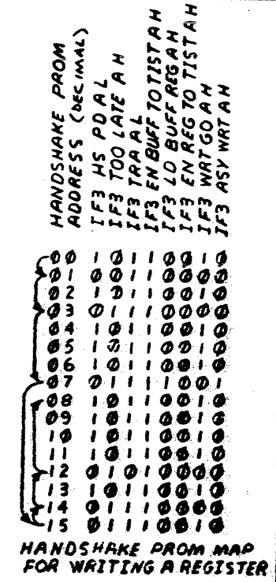
INTERFACE TIMING DIAGRAM

D TD RMXX-0-0 A

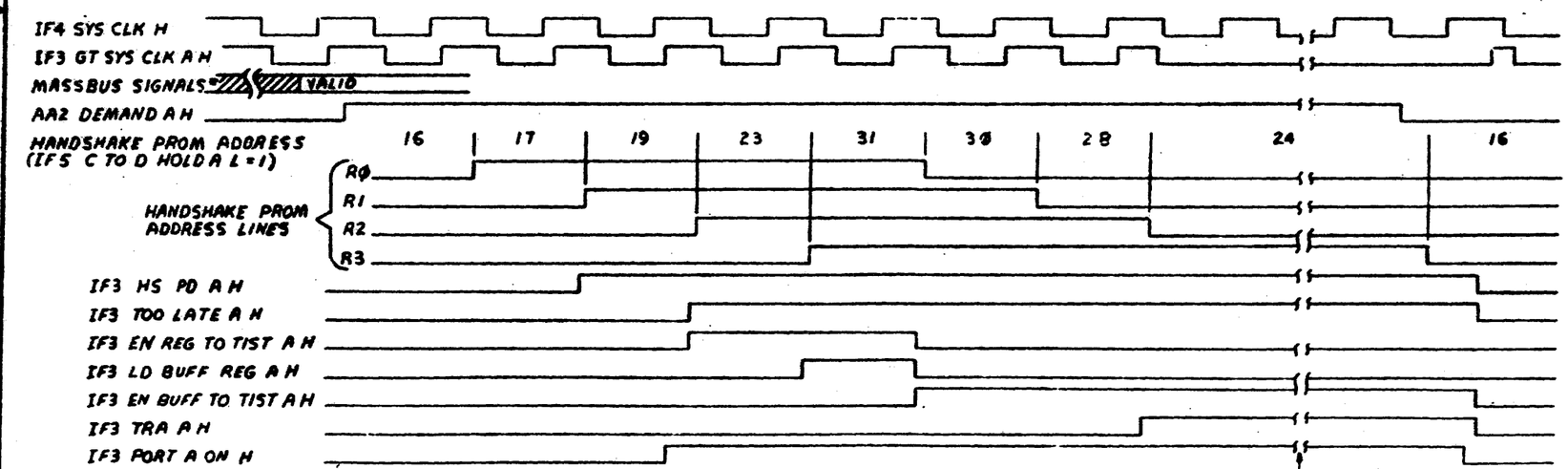
SHEET 1 OF 12



PORT A HANDSHAKE TIMING FOR WRITING RMXX REGISTERS



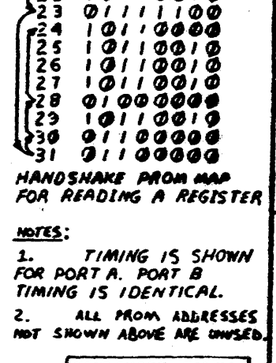
HANDSHAKE PROM MAP FOR WRITING A REGISTER



*MASSBUS SIGNALS REPRESENTED ARE AA1 ACONT ØØ-15, AA2 C TO D A H, AA2 DRV ADR 1M-2M-4M, AND AA2 REG SEL 1M-2M-4M-8M-16M.

PORT A HANDSHAKE TIMING FOR READING RMXX REGISTERS

TIME DURING WHICH CONTROLLER SEES ASSERTION OF TRANSFER (IF3 TRA A H) AND NEGATES DEMAND (AA2 DEMAND A H).



HANDSHAKE PROM MAP FOR READING A REGISTER

NOTES:

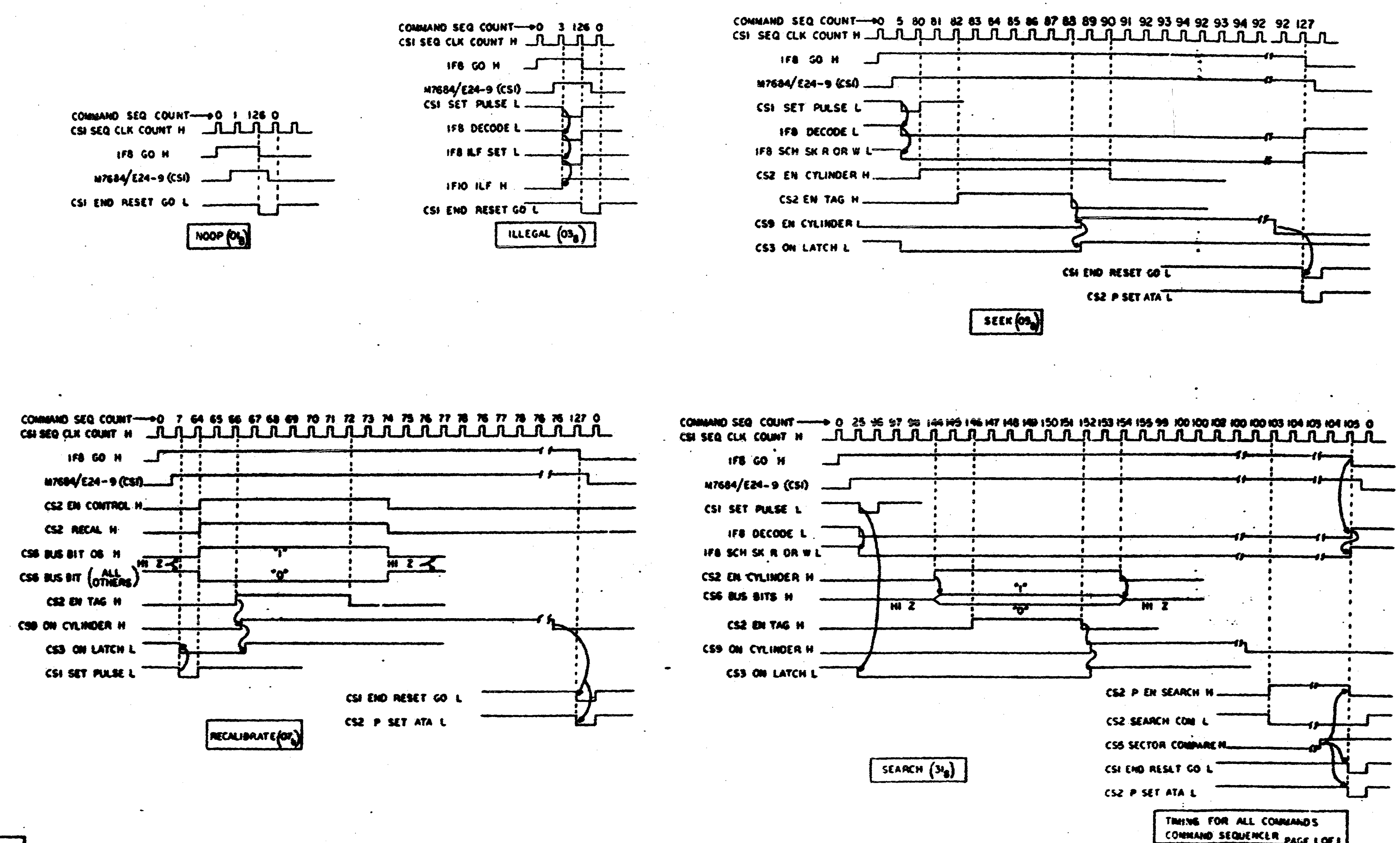
1. TIMING IS SHOWN FOR PORT A. PORT B TIMING IS IDENTICAL.
2. ALL PROM ADDRESSES NOT SHOWN ABOVE ARE UNUSED.

HANDSHAKE TIMING
SHEET 1 of 1

REVISIONS		
CHG	CHANGE NO.	REV.

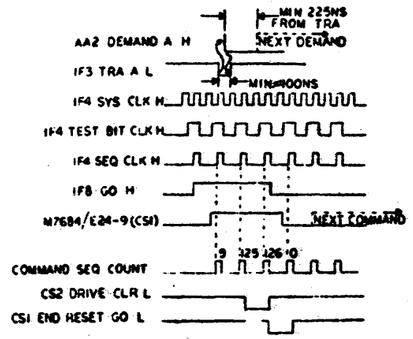
TITLE: INTERFACE TIMING DIAGRAM								SIZE: D	CODE: TD	NUMBER: RMXX-Ø-Ø	REV: A
SCALE: —/—	SHEET 2 OF 12							DIST.			

A.H

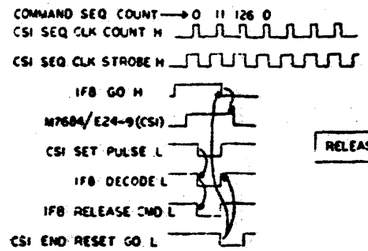


INTERFACE TIMING DIAGRAM

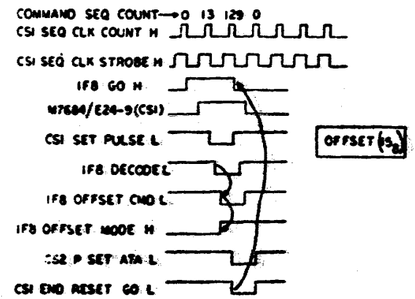
D TD RMXX-0-0 A



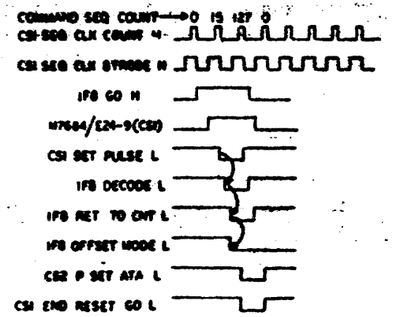
DRIVE CLEAR (11_8)



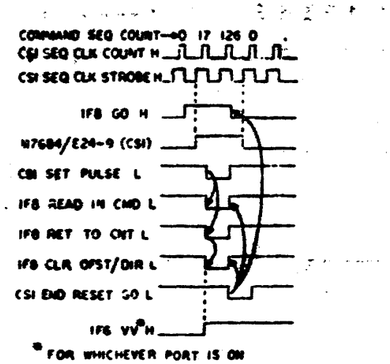
RELEASE (13_8)



OFFSET (15_8)

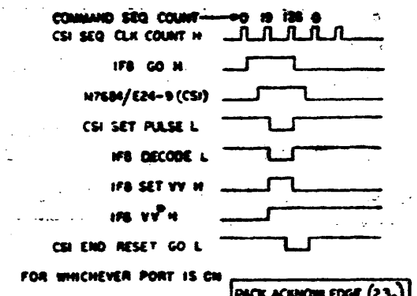


RETURN TO CENTERLINE (17_8)



* FOR WHICHEVER PORT IS ON

READ IN PRESET (21_8)



PACK ACKNOWLEDGE (23_8)

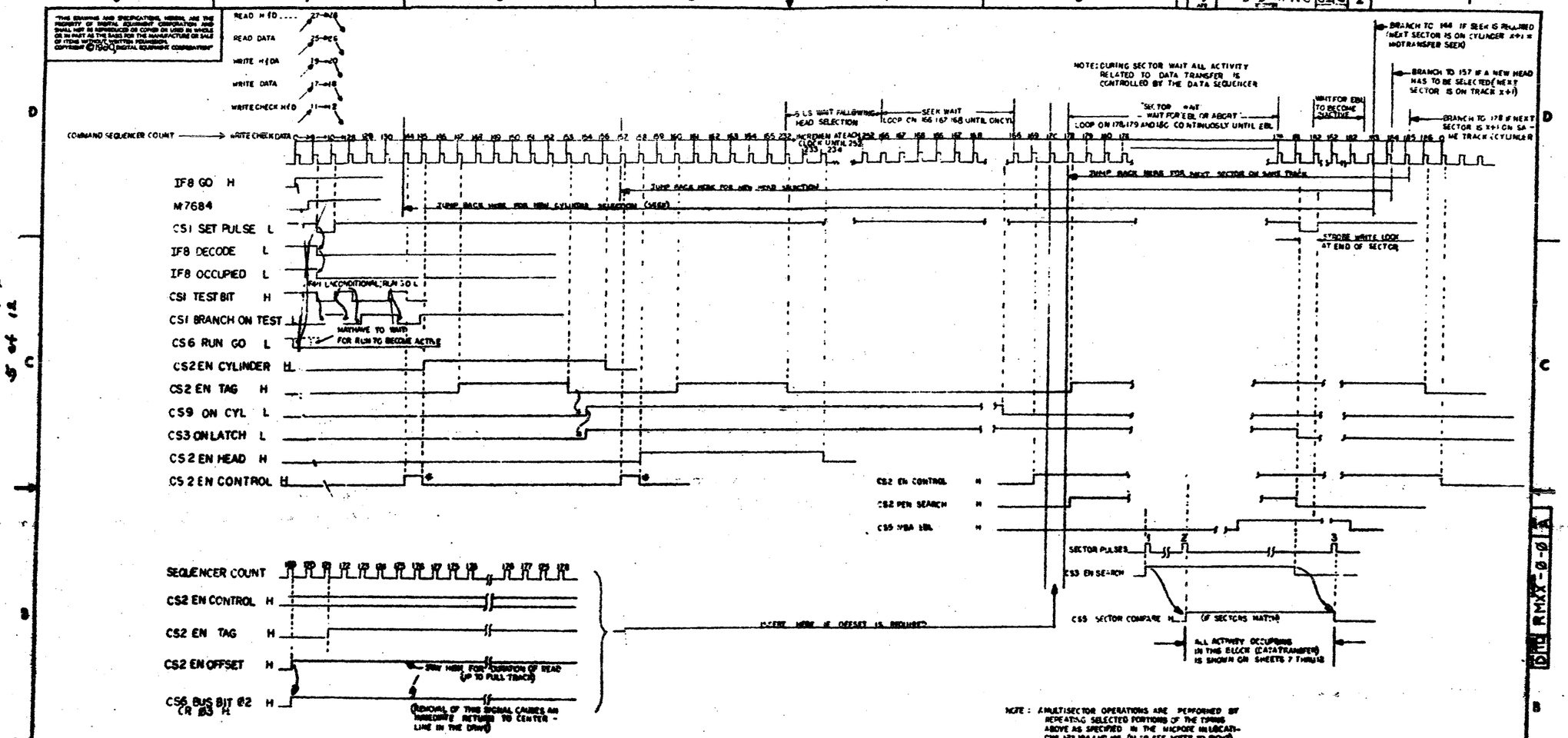
TIMING FOR ALL COMMANDS
COMMAND SEQUENCER PAGE 1 OF 1

REVISIONS		
CHG	CHANGE NO.	REV

TITLE	INTERFACE TIMING DIAGRAM	SIZE/CODE	NUMBER
		D TD	RMXX-Ø-Ø
SCALE	SHEET 4 OF 12	DIST.	REV. A

CZ 1

DW RMXX-0-0 A



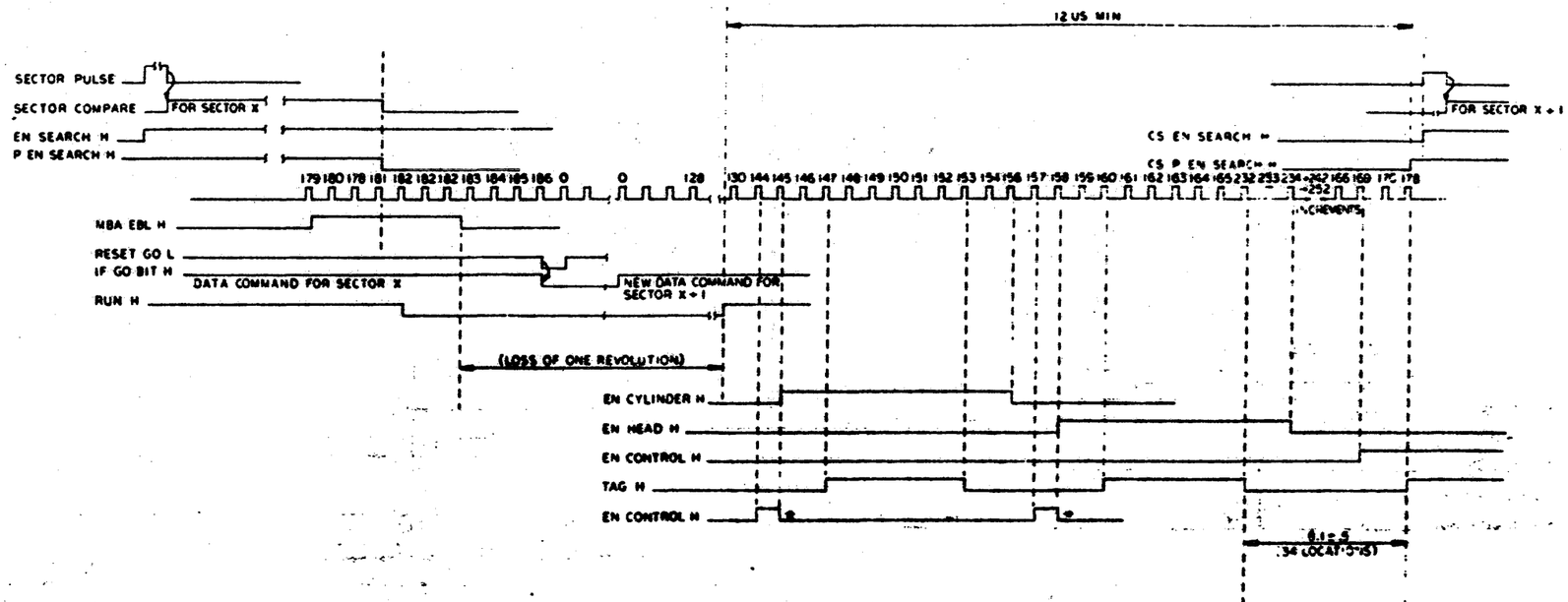
NOTE: A MULTISECTOR OPERATIONS ARE PERFORMED BY REPEATING SELECTED PORTIONS OF THE TIMING ABOVE AS SPECIFIED IN THE MICROPROGRAM ALLOCATIONS 183, 184 AND 185 (ALSO SEE NOTES TO RIGHT)

B. NON USEFUL EXCEPT DURING END-TRANSFER SEEKS WHERE IT EXTENDS EN CONTROL TO SATISFY HOLD REQUIREMENTS ON COMMAND BUS (AFTER DROPPING TAG)

TIMING FOR ALL COMMANDS (COMMAND SEQUENCER/DATA) SHEET 3 OF 3

REVISIONS		
CHR	CHANGE NO.	REV.

TITLE	SIZE	TYPE	NUMBER	REV.
INTERFACE TIMING DIAGRAM	D	TD	RMXX-0-0	A
SCALE	SHEET 3 OF 12		D.W.	



NOTES:

#1. NON USEFUL EXCEPT DURING MID-TRANSFER SEEKS WHERE IT EXTENDS EN CONTROL TO SATISFY HOLD REQUIREMENTS ON COMMAND BUS (AFTER DROPPING TAG).

TIMING FOR START OF DATA COMMAND ON SECTOR X + 1 IMMEDIATELY FOLLOWING DATA COMMAND ON SECTOR X AND OFFSET TIMING

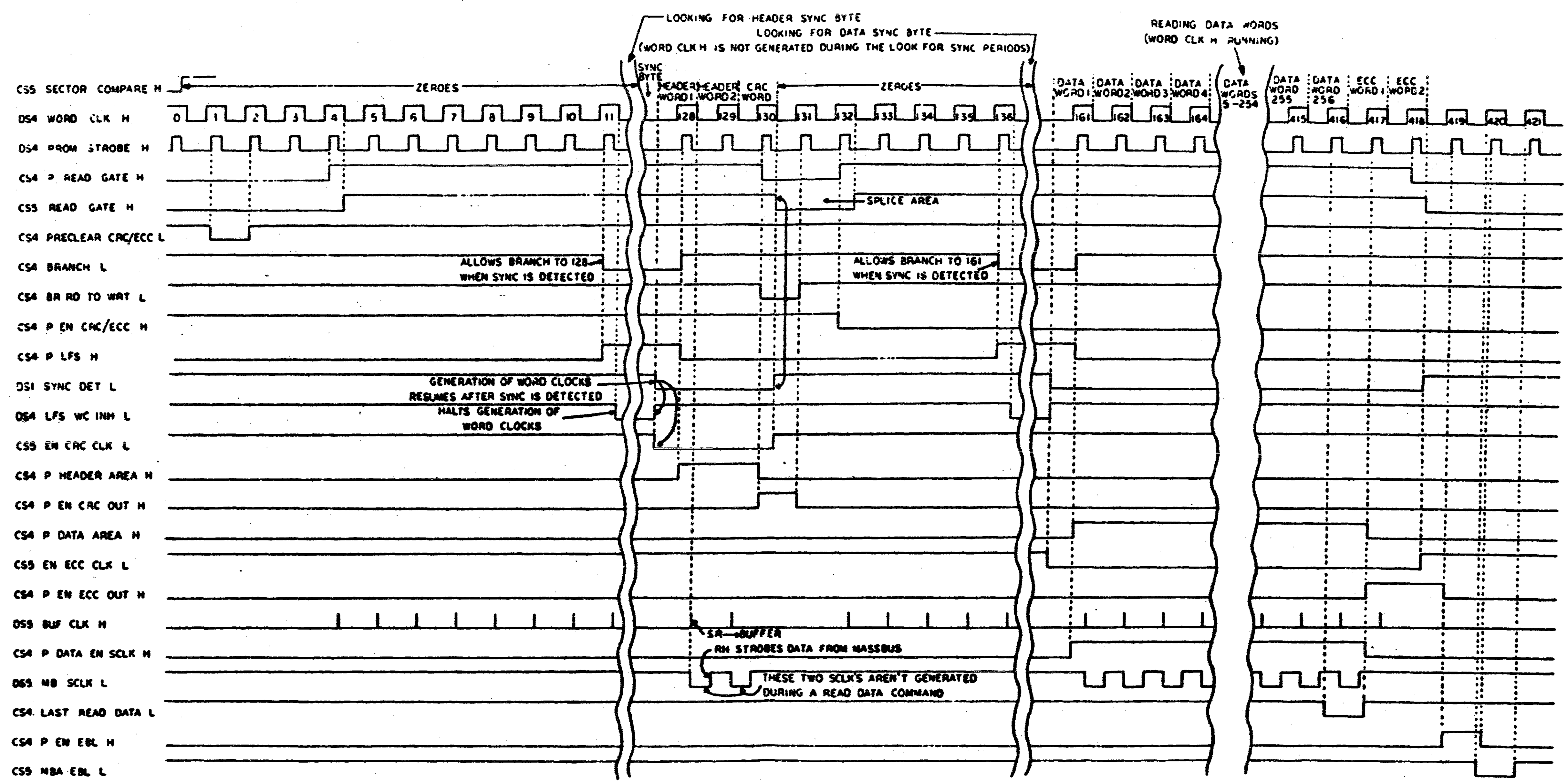
PAGE 1 OF 1

REVISION HISTORY		
DATE	ECO NUMBER	REV.

TITLE: INTERFACE TIMING DIAGRAM

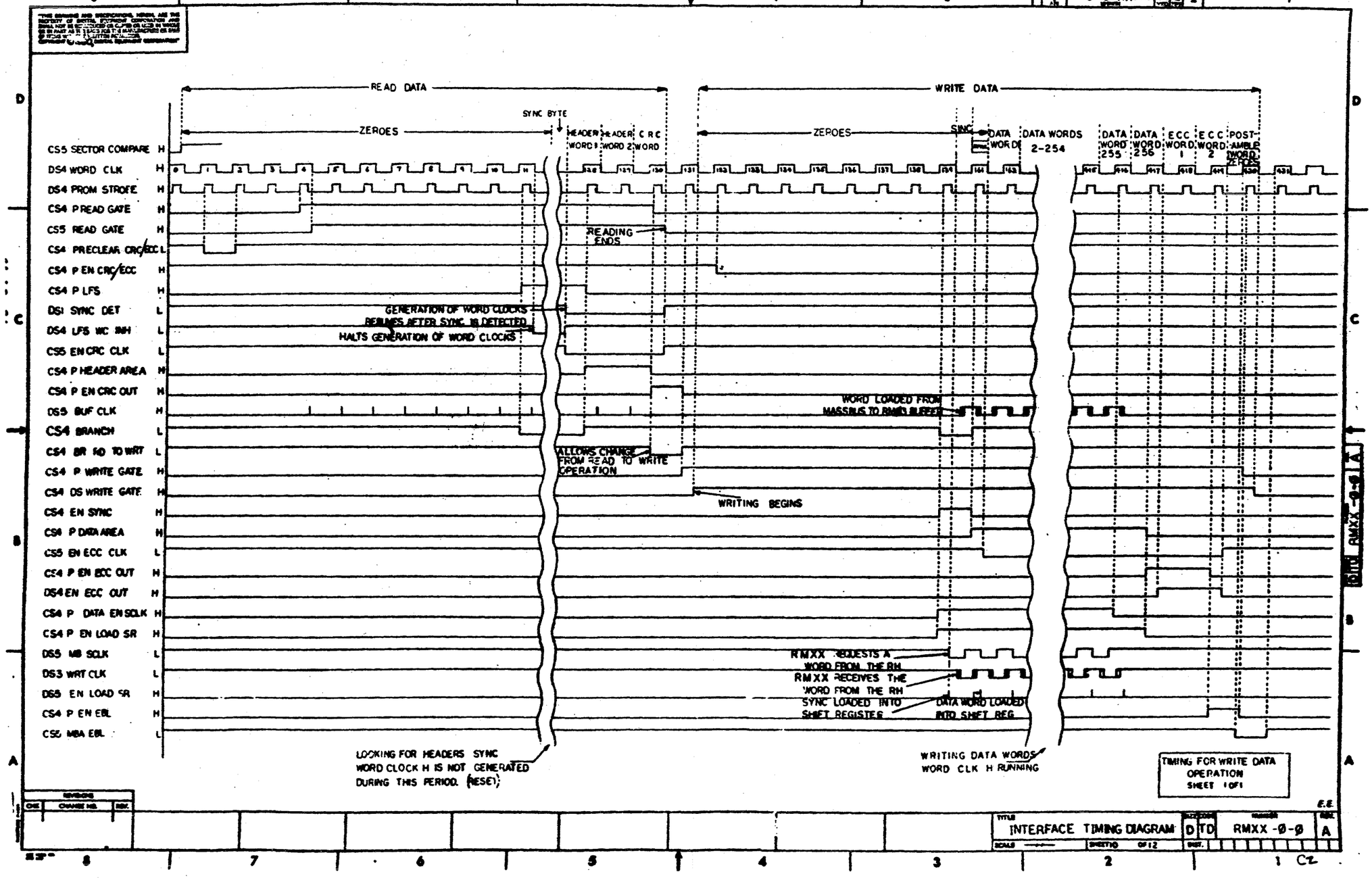
DOCUMENT NUMBER: DTD RMXX-0-0 REV A

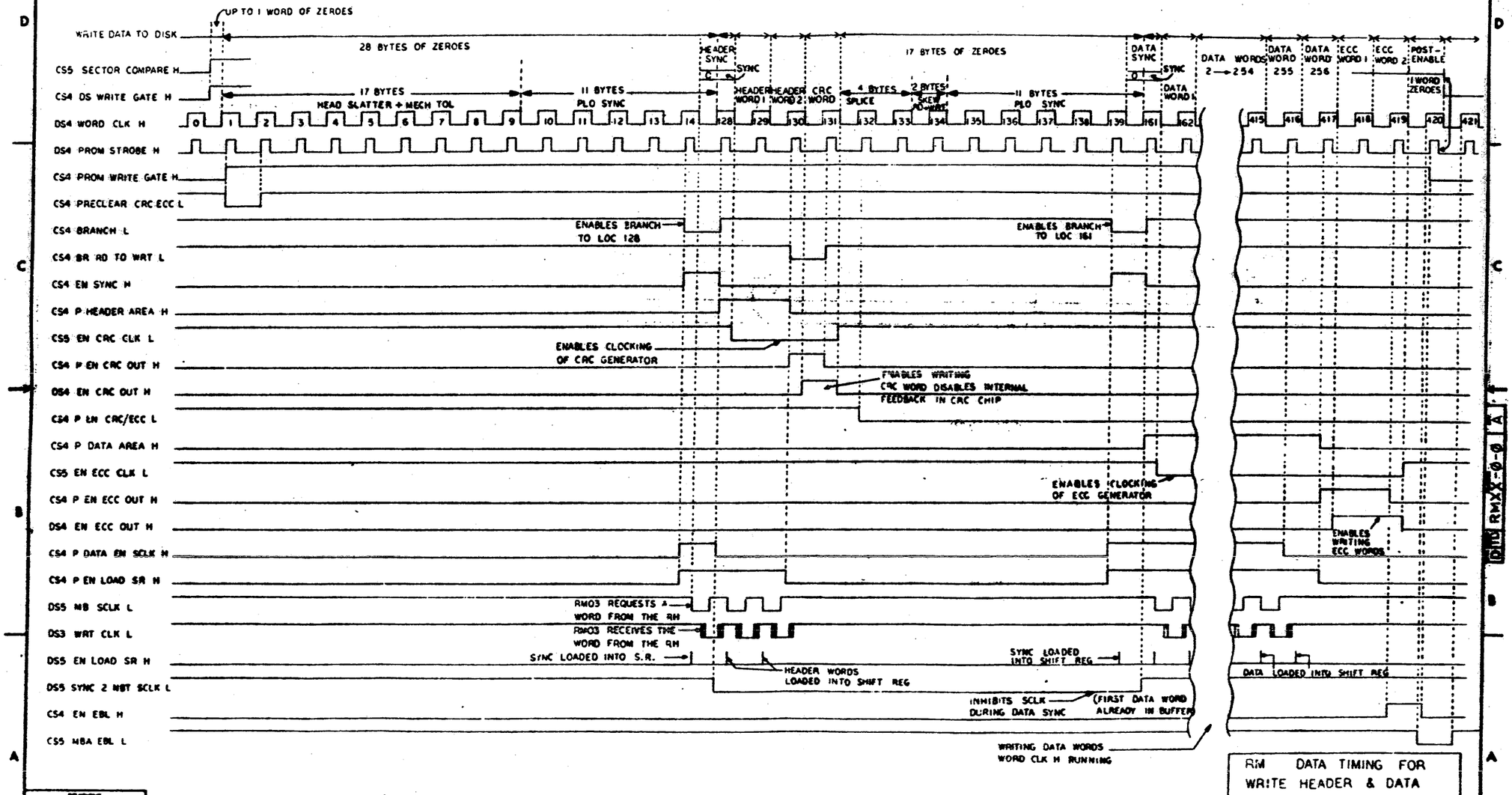
SCALE: — SHEET 5 OF 12



READ HEADER AND DATA AND READ DATA TIMING
PAGE 1 OF 1

TITLE	INTERFACE TIMING DIAGRAM	
SIZE: D	CODE: TD	NUMBER: RMXX-0-0
REV.	A	
SHEET	9 OF 12	


READ DATA
WRITE DATA
ZEROES
SYNC BYTE
HEADER WORD 1
HEADER WORD 2
CRC WORD
ZEROES
SYNC
DATA WORD 0
DATA WORDS 2-254
DATA WORD 255
DATA WORD 256
ECC WORD 1
ECC WORD 2
POST-AMBLE WORD ZEROS
CS5 SECTOR COMPARE H
DS4 WORD CLK H
DS4 PROM STROBE H
CS4 P READ GATE H
CS5 READ GATE H
CS4 P RECLEAR CRC/ECC L
CS4 P EN CRC/ECC H
CS4 P LFS H
DS1 SYNC DET L
DS4 LFS WC INH L
CS5 EN CRC CLK L
CS4 P HEADER AREA H
CS4 P EN CRC OUT H
DS5 BUF CLK H
CS4 BRANCH L
CS4 BR RD TO WRT L
CS4 P WRITE GATE H
CS4 DS WRITE GATE H
CS4 EN SYNC H
CS4 P DATA AREA H
CS5 EN ECC CLK L
CS4 P EN ECC OUT H
DS4 EN ECC OUT H
CS4 P DATA EN SCLK H
CS4 P EN LOAD SR H
DS5 MB SCLK L
DS3 WRT CLK L
DS5 EN LOAD SR H
CS4 P EN EBL H
CS5 MBA EBL L
GENERATION OF WORD CLOCKS RESUMES AFTER SYNC IS DETECTED
HALTS GENERATION OF WORD CLOCKS
READING ENDS
ALLOWS CHARGE FROM READ TO WRITE OPERATION
WRITING BEGINS
WORD LOADED FROM MASSBUS TO RMXX BUFFER
RMXX REQUESTS A WORD FROM THE RH
RMXX RECEIVES THE WORD FROM THE RH
SYNC LOADED INTO SHIFT REGISTER
DATA WORD LOADED INTO SHIFT REG
LOOKING FOR HEADERS SYNC WORD CLOCK H IS NOT GENERATED DURING THIS PERIOD (RESET)
WRITING DATA WORDS WORD CLK H RUNNING
TIMING FOR WRITE DATA OPERATION SHEET 1 OF 1
INTERFACE TIMING DIAGRAM
RMXX -0-0
A

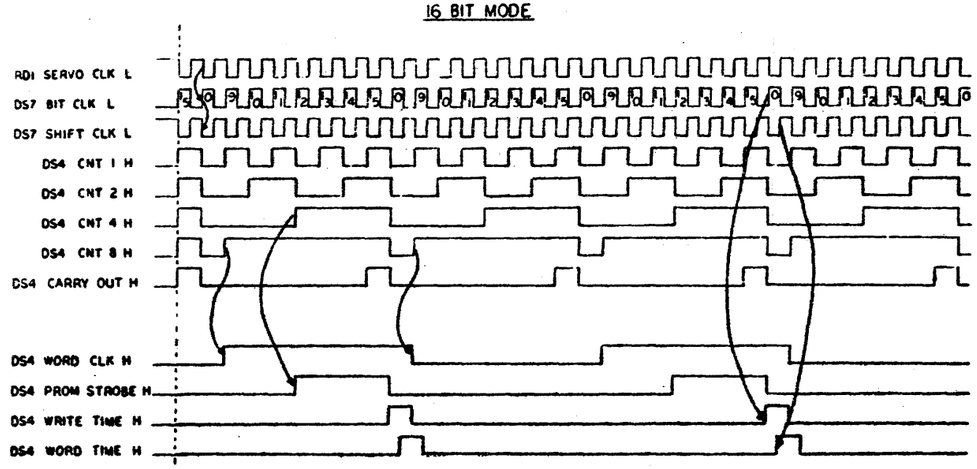


REVISIONS		
CHR	CHANGE NO.	REV.

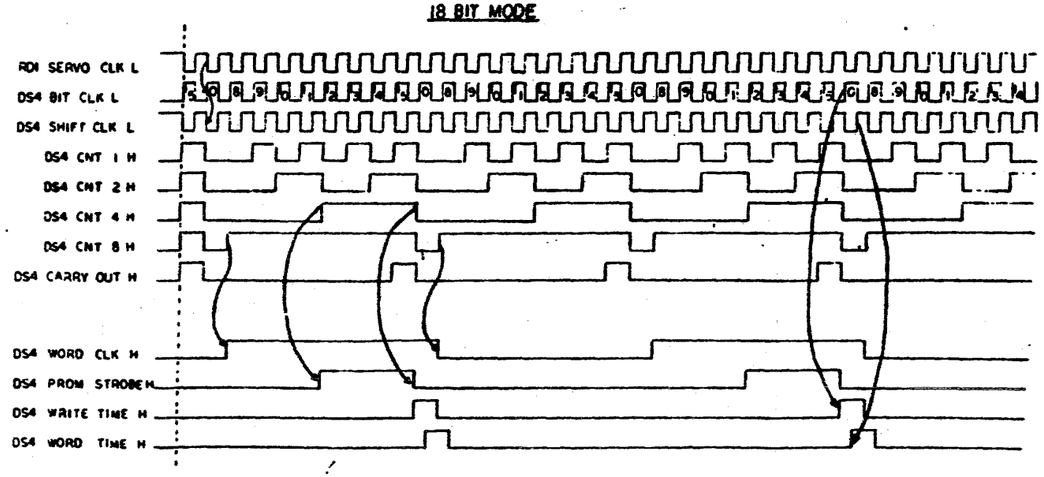
TITLE	SIZE	CODE	NUMBER	REV.
INTERFACE TIMING DIAGRAM	D	TD	RMXX-Ø-Ø	A
SCALE —	SHEET 5 OF 12		DIST.	

DEC RMXX-Ø-Ø A

16 BIT MODE



18 BIT MODE



NOTE

1. THESE TIMING DIAGRAMS DESCRIBE THE BASIC DATA TIMING GENERATED ON THE M7685 MODULE (SHEET DS4).
2. THE NUMBER ENCLOSED UNDER THE LEADING EDGE OF THE SIGNAL DS7 BIT CLOCK L (_59_) INDICATES THE COUNT VALUE OF E6 PRODUCED BY THE LEADING EDGE OF THAT PULSE.

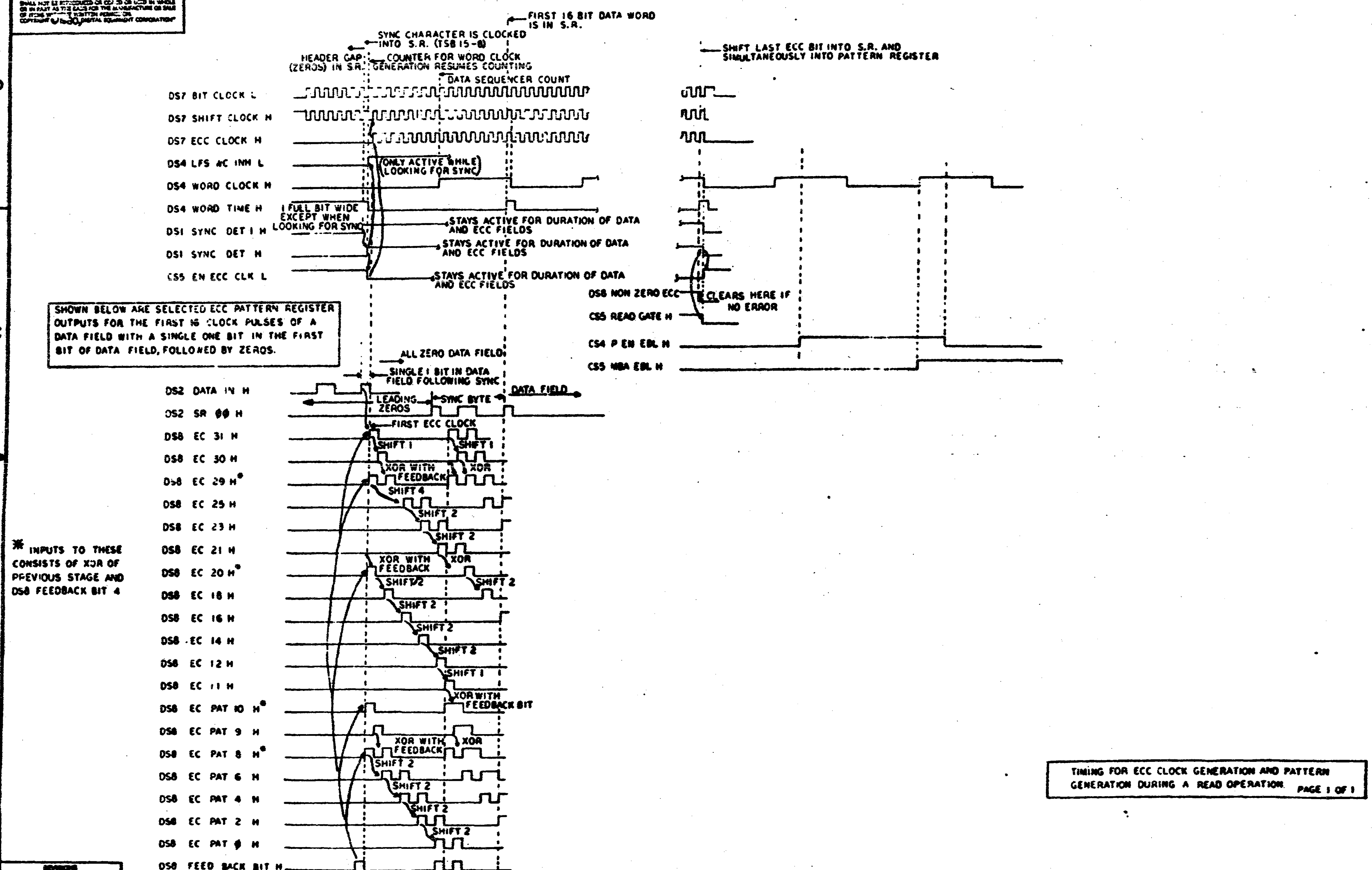
BASIC DATA TIMING (CLOCK GENERATION) PAGE 1 OF 1

DIR RMXX-0-0 A

REVISIONS		
ORIG	CHANGE NO.	REV.

TITLE	INTERFACE TIMING DIAGRAM	SIZE/CODE D TD	NUMBER RMXX-0-0 REV. A
SCALE	SHEET 7 OF 12	ENGR.	

CZ



FIRST 16 BIT DATA WORD IS IN S.R.
SYNC CHARACTER IS CLOCKED INTO S.R. (TSB 15-8)
HEADER GAP (ZEROS) IN S.R.
COUNTER FOR WORD CLOCK GENERATION RESUMES COUNTING
DATA SEQUENCER COUNT
SHIFT LAST ECC BIT INTO S.R. AND SIMULTANEOUSLY INTO PATTERN REGISTER
DS7 BIT CLOCK L
DS7 SHIFT CLOCK H
DS7 ECC CLOCK H
DS4 LFS AC INH L
(ONLY ACTIVE WHILE LOOKING FOR SYNC)
DS4 WORD CLOCK H
DS4 WORD TIME H
1 FULL BIT WIDE EXCEPT WHEN LOOKING FOR SYNC
DS1 SYNC DET 1 H
DS1 SYNC DET H
CS5 EN ECC CLK L
STAYS ACTIVE FOR DURATION OF DATA AND ECC FIELDS
DS8 NON ZERO ECC
CLEARS HERE IF NO ERROR
CS5 READ GATE H
CS4 P EN EBL H
CS5 MBA EBL H
SHOWN BELOW ARE SELECTED ECC PATTERN REGISTER OUTPUTS FOR THE FIRST 16 CLOCK PULSES OF A DATA FIELD WITH A SINGLE ONE BIT IN THE FIRST BIT OF DATA FIELD, FOLLOWED BY ZEROS.
ALL ZERO DATA FIELD
SINGLE 1 BIT IN DATA FIELD FOLLOWING SYNC
DATA FIELD
LEADING ZEROS
SYNC BYTE
FIRST ECC CLOCK
DS2 DATA IN H
DS2 SR 00 H
DS8 EC 31 H
DS8 EC 30 H
DS8 EC 29 H*
DS8 EC 25 H
DS8 EC 23 H
DS8 EC 21 H
DS8 EC 20 H*
DS8 EC 18 H
DS8 EC 16 H
DS8 EC 14 H
DS8 EC 12 H
DS8 EC 11 H
DS8 EC PAT 10 H*
DS8 EC PAT 9 H
DS8 EC PAT 8 H*
DS8 EC PAT 6 H
DS8 EC PAT 4 H
DS8 EC PAT 2 H
DS8 EC PAT 0 H
DS8 FEED BACK BIT H
SHIFT 1
XOR WITH FEEDBACK
XOR
SHIFT 4
SHIFT 2
SHIFT 1
XOR WITH FEEDBACK BIT
* INPUTS TO THESE CONSISTS OF XOR OF PREVIOUS STAGE AND DS8 FEEDBACK BIT 4
TIMING FOR ECC CLOCK GENERATION AND PATTERN GENERATION DURING A READ OPERATION
PAGE 1 OF 1

TITLE: INTERFACE TIMING DIAGRAM

D | TD | RMXX-0-0 | REV. A

SHEET 11 OF 12

TIMING FOR ECC HARD ERROR DETECTION

NOTES: (1) THE POSITION REGISTER IS PARALLEL RELOADED TO:

- (a) 64066(8) FOR 16 BIT MODE.
- (b) 66066(8) FOR 18 BIT MODE.

(2) THE END OF FIELD COUNT FOR THE POSITION REGISTER IS:

- (a) 10040(8) FOR 16 BIT MODE.
- (b) 11040(8) FOR 18 BIT MODE.

ECC CORRECTION
SHEET 1 of 1

REVISIONS		
CHG	CHANGE NO.	REV

/

TITLE INTERFACE
TIMING DIAGRAM
SCALE —//—
SHEET 12 OF 12

SIZE	CODE	NUMBER	REV.
D	TD	RMXX-0-0	A

DIST

1CZ

INDEX

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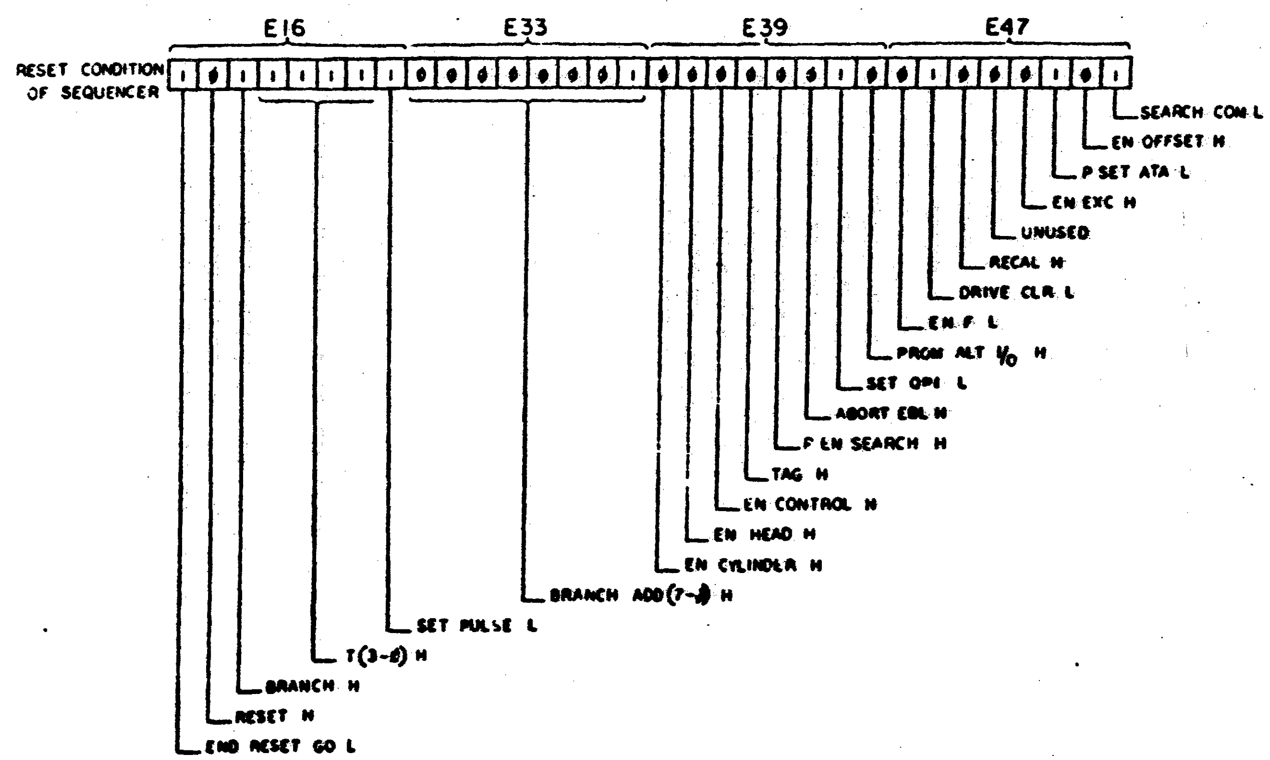
RELEASED TO ECO CONTROL AT REV A

RMXX FLOW DIAGRAMS

B-TC-RM03-0-1

SHEET 1 OF 13

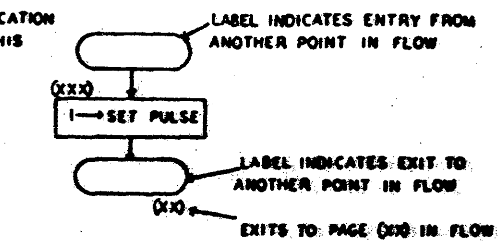
D FD RMXX-Ø-Ø REV. A



TEST CODE	BRANCH CONDITION
∅∅	OCCUPIED L
∅1	ON CYLINDER L
∅2	ABORT L
∅3	UNIT READY L
∅4	NOT USED
∅5	F 4 L
∅6	ON LATCH L
∅7	RUN AND GO L
1∅	MBA EBL L
11	SECTOR COMPARE L
12	OFFSET MODE L
13	DATA COMMAND L
14	SEEK REQUIRED L
15	NEW TRACK REQUIRED L
16	CONTINUE L
17	UNCONDITIONAL BRANCH

NOTE:

1. (XXX) IS ROM LOCATION IN OCTAL OF THIS MICROWORD



2. EXAMPLE 1→SET PULSE, MEANS ASSERT THE SIGNAL "SET PULSE L"
3. PROM I/O IS NOT SHOWN IN FLOWS.
   ALL OTHER SIGNALS ASSERTED DURING ANY MICROCODE WORD ARE SHOWN IN THE FLOW FOR THAT WORD.
4. ALL ADDRESSES, BRANCH ADDRESSES AND TEST CODES SHOWN IN THE FLOWS ARE IN OCTAL.

CONTROL SEQUENCER
RESET CONDITION AND
BRANCH CODES PAGE 1 OF 1

RMXX FLOW DIAGRAMS D FD RMXX-∅-∅ A

SHEET 2 OF 13

CZ

START

25¢
1 — BRANCH
17 — TEST CODE
1 — BR ADDR
1 — EN F

(UNIT READY=0) OR (V.V.=0) OR (COMP ERR=1) → ERROR START (2)

FC 1/41
FC 3/43
FC 5/45
FC 7/47
FC 11/51
FC 13/53
FC 15/55
FC 17/57
FC 21/61
FC 23/63
PACK ACK
FC 25/65
FC 27/67
FC 31/71
FC 33/73
FC 35/75
FC 37/77

@03
1 — BRANCH
17 — TEST CODE
176 — BR ADDR
1 — SET PULSE
END (3)

@07
1 — BRANCH
5 — TEST CODE
100 — BR ADDR
1 — SET PULSE
F4=0
@10
1 — RESET
1 — END RESET GO
START (1)
RECAL (3)

@13
1 — BRANCH
5 — TEST CODE
176-BR. ADDR
1 — SET PULSE
@14
1 — BRANCH
17 — TEST CODE
200-BR. ADDR
END (3)

@17
1 — BRANCH
5 — TEST CODE
177-BR. ADDR.
1 — SET PULSE
F4=0
@20
1 — RESET
1 — END RESET GO
START (1)
ATA (3)

@23
1 — BRANCH
5 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
@24
1 — BRANCH
17 — TEST CODE
200-BR. ADDR.
END (3)

@27
1 — BRANCH
17 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
END (3)

@33
1 — BRANCH
5 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
@34
1 — BRANCH
17 — TEST CODE
200-BR. ADDR.
END (3)

@37
1 — BRANCH
17 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
END (3)

@01
1 — BRANCH
17 — TEST CODE
176 — BR ADDR
1 — SET PULSE
END (3)

@03
1 — BRANCH
5 — TEST CODE
120 — BR ADDR
1 — SET PULSE
F4=0
@06
1 — RESET
1 — END RESET GO
START (1)
SEEK (3)

@11
1 — BRANCH
5 — TEST CODE
175-BR. ADDR.
1 — SET PULSE
F4=0
@12
1 — BRANCH
17 — TEST CODE
200-BR. ADDR.
DRV CLR (3)

@15
1 — BRANCH
5 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
F4=0
@16
1 — RESET
1 — END RESET GO
START (1)
ATA (3)

PRESET

@21
1 — BRANCH
5 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
F4=0
@22
1 — BRANCH
17 — TEST CODE
200-BR. ADDR.
END (3)

@25
1 — BRANCH
17 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
END (3)

@31
1 — BRANCH
5 — TEST CODE
140-BR. ADDR.
1 — SET PULSE
F4=0
@32
1 — BRANCH
17 — TEST CODE
200-BR. ADDR.
SEARCH (4)

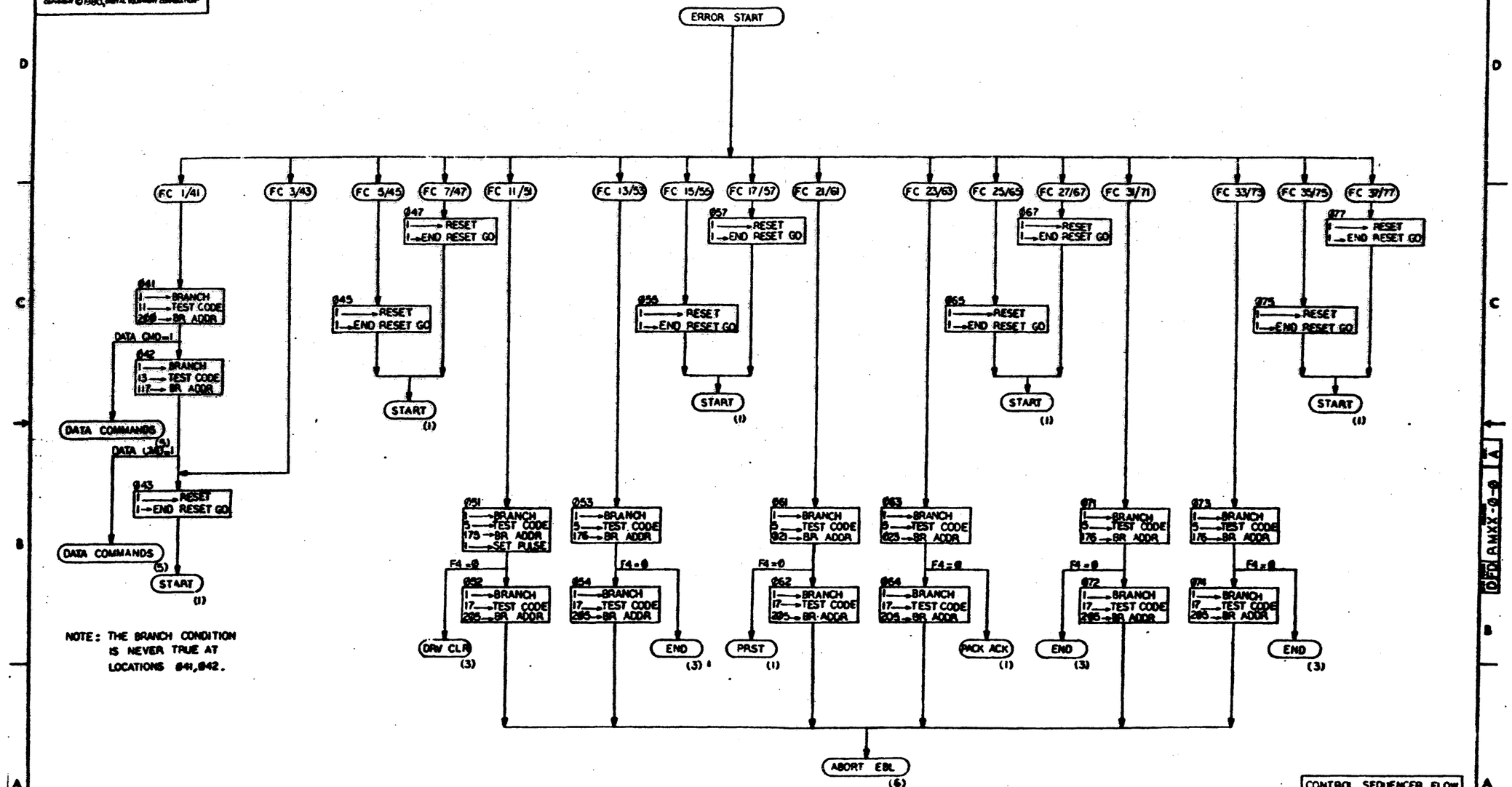
@35
1 — BRANCH
17 — TEST CODE
176-BR. ADDR.
1 — SET PULSE
END (3)

DATA COMMANDS (5)

CONTROL SEQUENCER FLOW
START PAGE 1 OF 6

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	RMXX FLOW DIAGRAMS	SIZE/CODE	DFD RMXX-0-0 REV. A
SCALE		SHEET 3 OF 13	DWG.



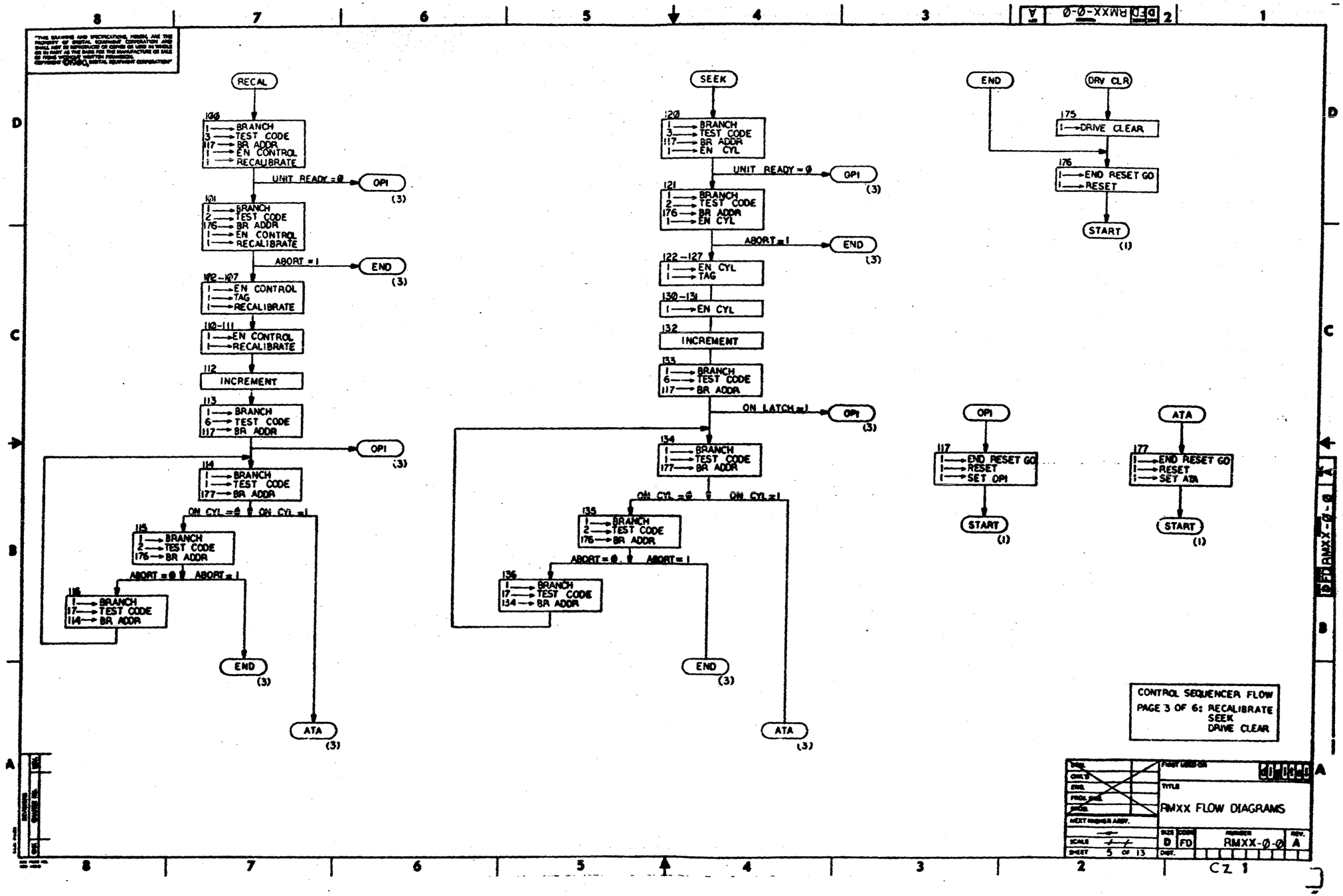
NOTE: THE BRANCH CONDITION IS NEVER TRUE AT LOCATIONS @41,@42.

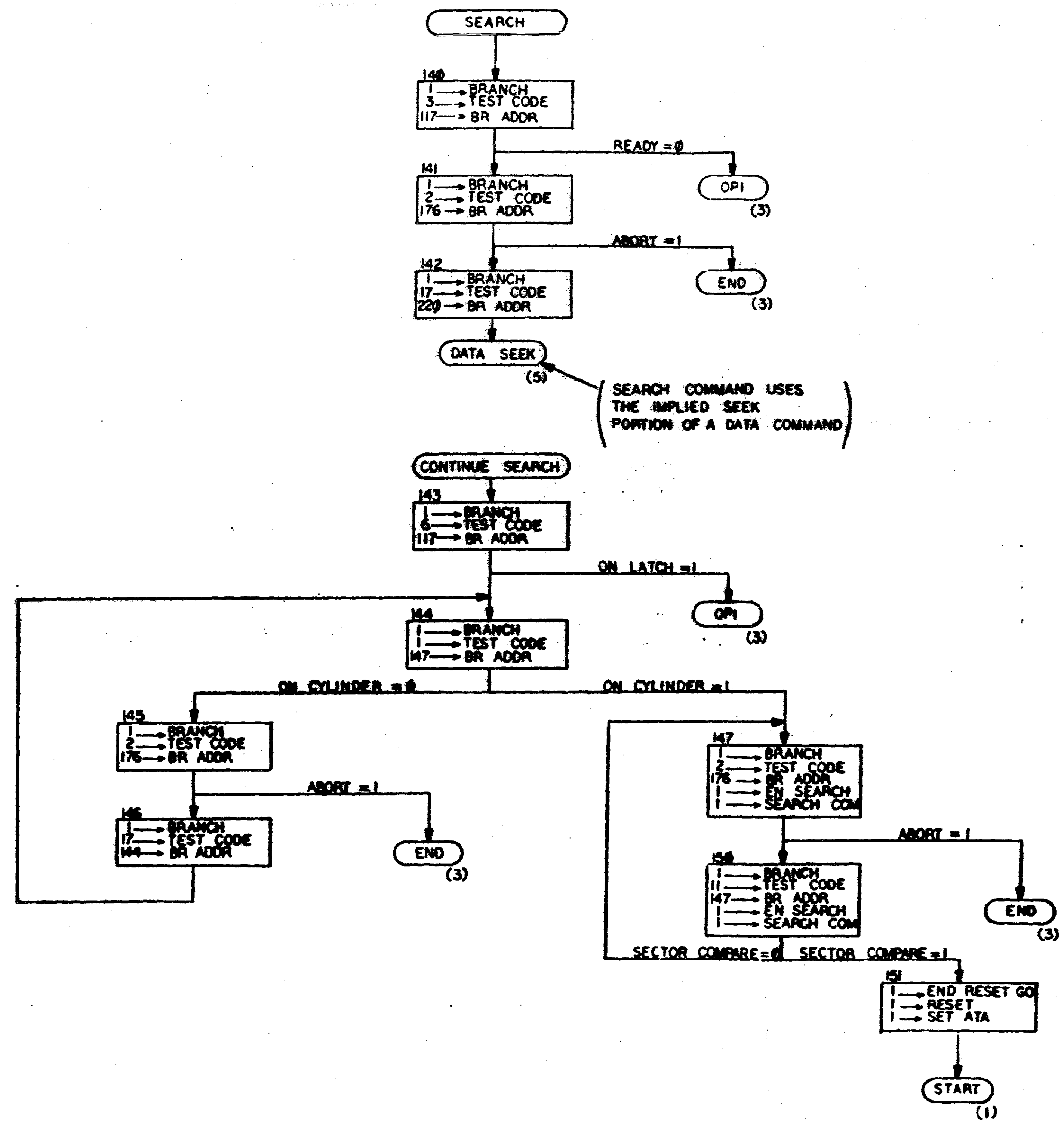
CONTROL SEQUENCER FLOW
PAGE 2 OF 6: ERROR START

REVISIONS		
CHK	CHANGE NO.	REV

TITLE: RMXX FLOW DIAGRAMS	SIZE: D	CODE: FD	NUMBER: RMXX-Ø-Ø REV: A
SCALE: —	SHEET 4 OF 13	DWG.	

DFD RMXX-Ø-Ø A


RECAL
100
1 → BRANCH
3 → TEST CODE
117 → BR ADDR
1 → EN CONTROL
1 → RECALIBRATE
UNIT READY = 0
OPI
(3)
101
1 → BRANCH
2 → TEST CODE
176 → BR ADDR
1 → EN CONTROL
1 → RECALIBRATE
ABORT = 1
END
(3)
102-107
1 → EN CONTROL
1 → TAG
1 → RECALIBRATE
110-111
1 → EN CONTROL
1 → RECALIBRATE
112
INCREMENT
113
1 → BRANCH
6 → TEST CODE
117 → BR ADDR
OPI
(3)
114
1 → BRANCH
1 → TEST CODE
177 → BR ADDR
ON CYL = 0
ON CYL = 1
115
1 → BRANCH
2 → TEST CODE
176 → BR ADDR
ABORT = 0
ABORT = 1
116
1 → BRANCH
17 → TEST CODE
114 → BR ADDR
END
(3)
ATA
(3)
SEEK
120
1 → BRANCH
3 → TEST CODE
117 → BR ADDR
1 → EN CYL
UNIT READY = 0
OPI
(3)
121
1 → BRANCH
2 → TEST CODE
176 → BR ADDR
1 → EN CYL
ABORT = 1
END
(3)
122-127
1 → EN CYL
1 → TAG
130-131
1 → EN CYL
132
INCREMENT
133
1 → BRANCH
6 → TEST CODE
117 → BR ADDR
ON LATCH = 1
OPI
(3)
134
1 → BRANCH
1 → TEST CODE
177 → BR ADDR
ON CYL = 0
ON CYL = 1
135
1 → BRANCH
2 → TEST CODE
176 → BR ADDR
ABORT = 0
ABORT = 1
136
1 → BRANCH
17 → TEST CODE
134 → BR ADDR
END
(3)
ATA
(3)
END
DRV CLR
175
1 → DRIVE CLEAR
176
1 → END RESET GO
1 → RESET
START
(1)
OPI
117
1 → END RESET GO
1 → RESET
1 → SET OPI
START
(1)
ATA
177
1 → END RESET GO
1 → RESET
1 → SET ATA
START
(1)
CONTROL SEQUENCER FLOW
PAGE 3 OF 6: RECALIBRATE
SEEK
DRIVE CLEAR
TITLE
RMXX FLOW DIAGRAMS
SIZE D
CODE FD
NUMBER RMXX-0-0
REV. A
SHEET 5 OF 13
RMXX-0-0
REV A



CONTROL SEQUENCER FLOW
PAGE 4 OF 6: SEARCH

RMXX FLOW DIAGRAMS

D FD RMXX-Ø-Ø A

SHEET 6 OF 13

DATA COMMANDS

200
1 → BRANCH
3 → TEST CODE
204 → BR ADDR
1 → EN EXC

READY = Ø → DATA OPI (6)

201
1 → BRANCH
2 → TEST CODE
205 → BR ADDR
1 → EN EXC

ABORT = 1 → ABORT EBL (6)

202
1 → BRANCH
7 → TEST CODE
220 → BR ADDR
1 → EN EXC

RUN AND GO = Ø → 203
1 → BRANCH
17 → TEST CODE
201 → BR ADDR
1 → EN EXC

DATA SEEK

RUN AND GO = 1

220
1 → BRANCH
2 → TEST CODE
205 → BR ADDR
1 → EN EXC
1 → EN CNTR

ABORT = 1 → ABORT EBL (6)

221,222
1 → BRANCH
2 → TEST CODE
205 → BR ADDR
1 → EN CYL

ABORT = 1 → ABORT EBL (6)

223-230
1 → EN CYL
1 → TAG

231
1 → EN CYL

232
1 → BRANCH
Ø → TEST CODE
234 → BR ADDR
1 → EN CYL

OCCUPIED = Ø | OCCUPIED = 1

233
1 → BRANCH
17 → TEST CODE
143 → BR ADDR

CONTINUE SEARCH (4)

234 (5)

HEAD

234
1 → BRANCH
6 → TEST CODE
240 → BR ADDR

ON LATCH = 1 → DATA OPI (6)

235
1 → SET PULSE
1 → EN CNTR

236-237
1 → EN HEAD
1 → TAG

240-244
1 → EN HEAD
1 → TAG

245
1 → BRANCH
17 → TEST CODE
350 → BR ADDR
1 → EN HEAD
1 → TAG

350-351
1 → EN HEAD

352-373
INCREMENT
(5US WAIT)

374
1 → BRANCH
17 → TEST CODE
246 → BR ADDR

246
1 → BRANCH
1 → TEST CODE
251 → BR ADDR

ON CYL = Ø | ON CYL = 1

247
1 → BRANCH
2 → TEST CODE
205 → BR ADDR

ABORT = 1 → ABORT EBL (6)

250
1 → BRANCH
17 → TEST CODE
246 → BR ADDR

251
1 → EN CONTROL
1 → EN OFFSET

252
1 → BRANCH
12 → TEST CODE
262 → BR ADDR
1 → EN CONTROL
1 → EN OFFSET

OFFSET = 1 | OFFSET = Ø

DATA OFFSET (6)

262 (5)

262

262
10 → BRANCH
265 → TEST CODE
1 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN SEARCH
1 → EN OFFSET
1 → EN EXC

MBA EBL = Ø → 263
1 → BRANCH
2 → TEST CODE
205 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN SEARCH
1 → EN OFFSET
1 → EN EXC

ABORT = 1 → ABORT EBL (6)

264
1 → BRANCH
17 → TEST CODE
262 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN SEARCH
1 → EN OFFSET
1 → EN EXC

265
1 → EN CONTROL
1 → TAG
1 → EN OFFSET
1 → EN EXC
1 → SET PULSE

MBA EBL = 1 → 266
1 → BRANCH
10 → TEST CODE
266 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN OFFSET
1 → EN EXC

267
1 → BRANCH
14 → TEST CODE
220 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN OFFSET
1 → EN EXC

DATA SEEK (5) ← SEEK REQUIRED = 1

270
1 → BRANCH
15 → TEST CODE
235 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN OFFSET
1 → EN EXC

HEAD (5) ← NEW TRACK ROD = 1

271
1 → BRANCH
16 → TEST CODE
262 → BR ADDR
1 → EN CONTROL
1 → TAG
1 → EN OFFSET

CONTINUE = 1

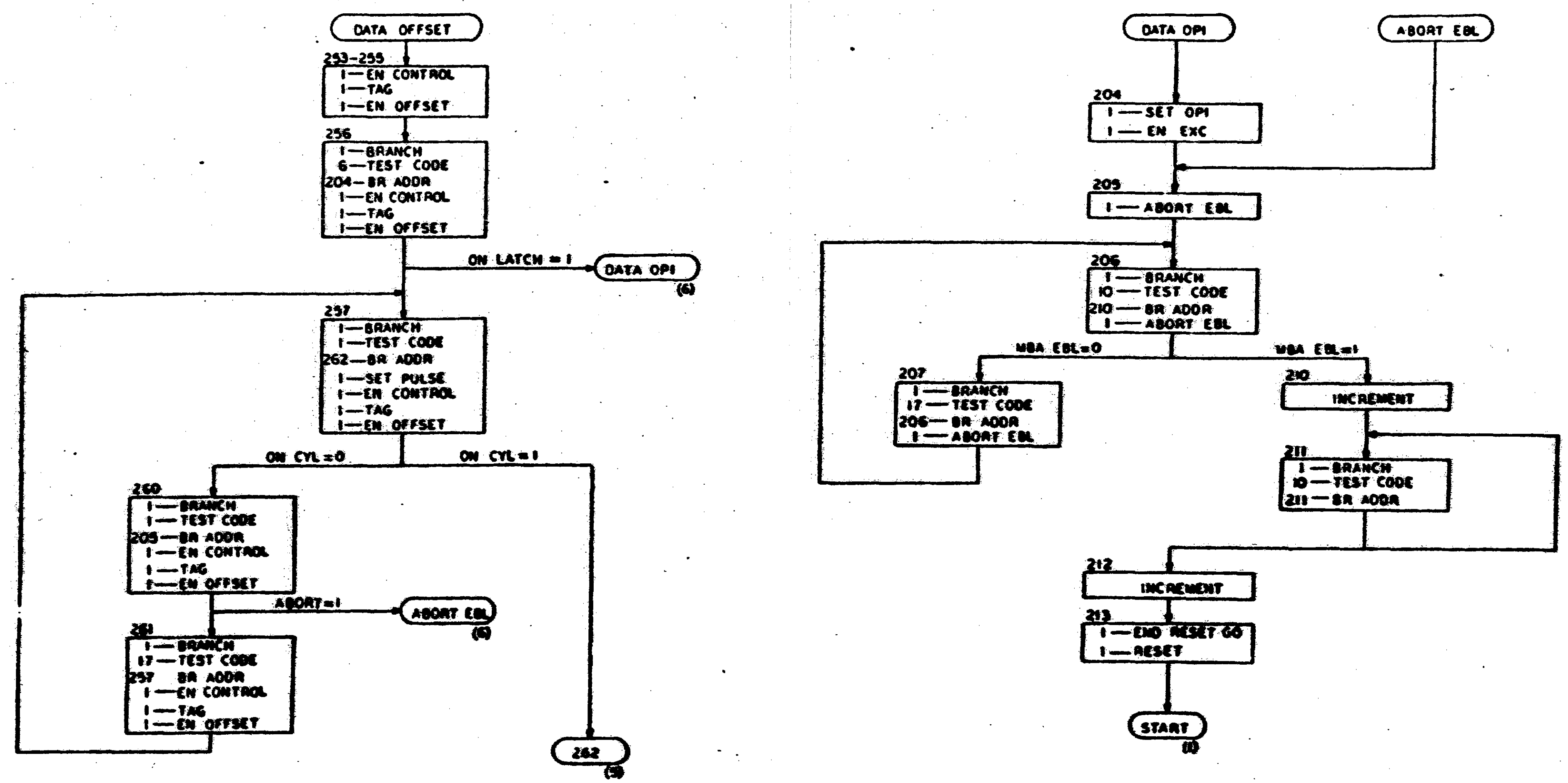
272
1 → RESET GO
1 → EN CONTROL
1 → EN OFFSET

START

CONTROL SEQUENCER FLOW
PAGE 5 OF 6 DATA COMMANDS

DRW.		FIRST USED ON	
CHK'D			
ENG.		TITLE	
PROJ. ENG.		RMXX FLOW DIAGRAMS	
APPD.			
NEXT HIGHER ASSY.			
SCALE		SIZE D / CODE FD / NUMBER RMXX-Ø-Ø / REV. A	
SHEET 7 OF 15		DIST.	

CZ 1



CONTROL SEQUENCER FLOW
DATA OPI
DATA OFFSET
ABORT EBL
PAGE 6 OF 6

RMXX FLOW DIAGRAMS | D | FD | RMXX-Ø-Ø | A

SHEET 6 OF 13

C7

BRANCH ADDRESS (7-0) H
EN CYLINDER H
EN HEAD H
EN CONTROL H
TAG H
P EN SEARCH H
ABORT ENB H
SET OPI L
PROM ALT I/O H
EN F L
DRIVE CLR L
RECAL H
-UNUSED-
EN EXC H
P SET ATA L
EN OFFSET H
SEARCH COM L
END RESET GO L
RESET H
BRANCH H
T (3-0) H
SET PULSE L

DEC LOC	OCT LOC									
0	000	START		BR	TO (FUNCTION CODE-F4)	101111111	001	00000001	10000010	01000101
1	001	NO-OP	X	BR	TO 126	101111110	176	01111110	00000011	11000101
2	002	X	X	RST		01000001	000	00000000	00000000	11000101
3	003			BR	TO 126	101111110	176	01111110	00000011	11000101
4	004	SEEK	X	RST		01000001	000	00000000	00000000	11000101
5	005			BRT	TO 80 IF F4 IS 0	10101010	120	01010000	00000011	11000101
6	006	RECAL	X	RST		01000001	000	00000000	00000010	11000101
7	007			BRT	TO 64 IF F4 IS 0	10101010	100	01000000	00000011	11000101
8	010	DR CLR	WRT CHK DATA	RST		01000001	000	00000000	00000010	11000101
9	011			BRT	TO 125 IF F4 IS 0	10101010	175	01111101	00000011	11000101
10	012	RELEASE	WRT CHK H&D	BR	TO 128	101111111	200	10000000	00000010	11000101
11	013			BRT	TO 126 IF F4 IS 0	10101010	176	01111110	00000011	11000101
12	014	OFFSET	X	BR	TO 128	101111111	200	10000000	00000010	11000101
13	015			BRT	TO 127 IF F4 IS 0	10101010	177	01111111	00000011	11000101
14	016	RTC	X	RST		01000001	000	00000000	00000010	11000101
15	017			BRT	TO 127 IF F4 IS 0	10101010	177	01111111	00000011	11000101
16	020	READ IN PRESET	WRITE DATA	RST		01000001	000	00000000	00000010	11000101
17	021			BRT	TO 126 IF F4 IS 0	10101010	176	01111110	00000011	11000101
18	022	PACK ACK	WRITE H&D	BR	TO 128	101111111	200	10000000	00000010	11000101
19	023			BRT	TO 126 IF F4 IS 0	10101010	176	01111110	00000011	11000101
20	024	X	X	BR	TO 128	101111111	200	10000000	00000010	11000101
21	025			BR	TO 126	101111110	176	01111110	00000011	11000101
22	026	X	X	RST		01000001	000	00000000	00000000	11000101
23	027			BR	TO 126	101111110	176	01111110	00000011	11000101
24	030	SEARCH	READ DATA	RST		01000001	000	00000000	00000010	11000101
25	031			BRT	TO 96 IF F4 IS 0	10101010	140	01100000	00000011	11000101
26	032	X	READ H&D	BR	TO 128	101111111	200	10000000	00000010	11000101
27	033			BRT	TO 126 IF F4 IS 0	10101010	176	01111110	00000011	11000101
28	034	X	X	BR	TO 128	101111111	200	10000000	00000010	11000101
29	035			BR	TO 126	101111110	176	01111110	00000011	11000101
30	036	X	X	RST		01000001	000	00000000	00000000	11000101
31	037			BR	TO 126	101111110	176	01111110	00000011	11000101

ALL COMMANDS START IN THIS BLOCK IF: IF9 SEQ SKIP L IS HIGH AND CS8 UNIT READY H IS HIGH
EXAMPLE:
PACK ACKNOWLEDGE (23_8=19)
START: 0 BR 23_8
19 BRT 126
126 RST

X = ILLEGAL

32	040	NO-OP	X	RST		01000001	000	00000000	00000000	11000101
33	041			BRT(INC)*	TO 128 IF DATA CMND	10111011	207	10000010	00000011	11000101
34	042	X	X	BRT(INC)*	TO 79 IF DATA CMND	10110111	117	01001111	00000010	11000101
35	043			RST		01000001	000	00000000	00000011	11000101
36	044	SEEK	X			01000001	000	00000000	00000000	11000101
37	045					01000001	000	00000000	00000011	11000101
38	046	RECAL	X			01000001	000	00000000	00000000	11000101
39	047					01000001	000	00000000	00000011	11000101
40	050	DR CLR	WRT CHK DATA			01000001	000	00000000	00000000	11000101
41	051			BRT	TO 125 IF F4 IS 0	10101010	175	01111101	00000011	11000101
42	052	RELEASE	WRT CHK H&D	BR	TO 133	101111111	205	10000101	00000010	11000101
43	053			BRT	TO 126 IF F4 IS 0	10101011	176	01111110	00000011	11000101
44	054	OFFSET	X	BR	TO 133	101111111	205	10000101	00000010	11000101
45	055			RST		01000001	000	00000000	00000011	11000101
46	056	RTC	X			01000001	000	00000000	00000000	11000101
47	057					01000001	000	00000000	00000011	11000101
48	060	READ IN PRESET	WRITE DATA			01000001	000	00000000	00000000	11000101
49	061			BRT	TO 17 IF F4 IS 0	10101011	021	00010001	00000011	11000101
50	062	PACK ACK	WRITE H&D	BR	TO 133	101111111	205	10000101	00000010	11000101
51	063			BRT	TO 19 IF F4 IS 0	10101011	023	00010011	00000011	11000101
52	064	X	X	BR	TO 133	101111111	205	10000101	00000010	11000101
53	065			RST		01000001	000	00000000	00000011	11000101
54	066	X	X			01000001	000	00000000	00000000	11000101
55	067					01000001	000	00000000	00000011	11000101
56	070	SEARCH	READ DATA			01000001	000	00000000	00000000	11000101
57	071			BRT	TO 126 IF F4 IS 0	10101011	176	01111110	00000011	11000101
58	072	X	READ H&D	BR	TO 133	101111111	205	10000101	00000010	11000101
59	073			BRT	TO 126 IF F4 IS 0	10101011	176	01111110	00000011	11000101
60	074	X	X	BR	TO 133	101111111	205	10000101	00000010	11000101
61	075			RST		01000001	000	00000000	00000011	11000101
62	076	X	X			01000001	000	00000000	00000000	11000101
63	077					01000001	000	00000000	00000011	11000101
						23-01988 AT E16		23-02988 AT E33	23-03988 AT E39	23-00884 AT E47

ALL COMMANDS START IN THIS BLOCK IF: IF9 SEQ SKIP L IS LOW
EXAMPLE:
PACK ACKNOWLEDGE
START:
0 BR 19+32
51 BR 19
19 BRT 126
126 RST

* BRANCHING WILL NEVER OCCUR, IT WILL ALWAYS BE INCREMENTED

PIN NUMBERS FOR DATA OUTPUTS

17	16	15	14	10	9	8	7

CONTROL SEQUENCER ROM LISTINGS PAGE 1 OF 4

RMXX FLOW DIAGRAMS

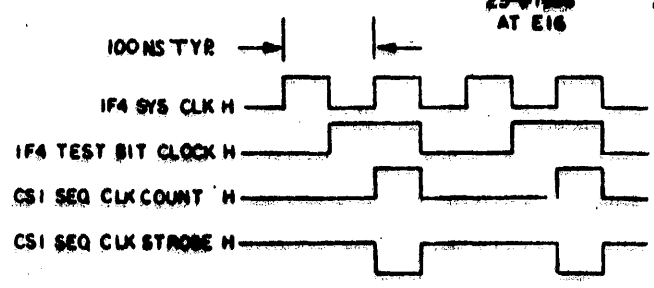
DFD RMXX-0-0 A

DFD RMXX-0-0 A

Column assignments (data outputs): END RESET GO L, RESET H, BRANCH H, T (3-0) H, SET PULSE L; BRANCH ADDR (7-0) H; EN CYLINDER H, EN HEAD H, EN CONTROL H, TAG H, P EN SEARCH H, ABORT EBL H, SET OPI L, PROM ALT VØ H; EN F L, DRIVE CLR L, RECAL H, UNUSED, EN EXC H, P SET ATA L, EN OFFSET H, SEARCH COM L

DEC LOC	OCT LOC								
64	100	RECALIBRATE	BRT	TO 79 IF NOT UNIT RDY	10100111	117	01001111	00100010	11100101
65	101		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00100011	11100101
66	102		INC		10000001	000	00000000	00110010	11100101
67	103				10000001	000	00000000	00110011	11100101
68	104				10000001	000	00000000	00110010	11100101
69	105				10000001	000	00000000	00110011	11100101
70	106				10000001	000	00000000	00110010	11100101
71	107				10000001	000	00000000	00110011	11100101
72	110				10000001	000	00000000	00100010	11100101
73	111				10000001	000	00000000	00100011	11100101
74	112				10000001	000	00000000	00000010	11000101
75	113		BRT	TO 79 IF ON LATCH SET	10101101	117	01001111	00000011	11000101
76	114		BRT	TO 127 IF ON CYL ACTIVE	10100011	177	01111111	00000010	11000101
77	115		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00000011	11000101
78	116		BR	TO 76	10111111	114	01001100	00000010	11000101
79	117		RST		01000001	000	00000000	00000001	11000101
80	120	SEEK	BRT	TO 79 IF NOT UNIT RDY	10100111	117	01001111	10000010	11000101
81	121		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	10000011	11000101
82	122		INC		10000001	000	00000000	10010010	11000101
83	123				10000001	000	00000000	10010011	11000101
84	124				10000001	000	00000000	10010010	11000101
85	125				10000001	000	00000000	10010011	11000101
86	126				10000001	000	00000000	10010010	11000101
87	127				10000001	000	00000000	10010011	11000101
88	130				10000001	000	00000000	10000010	11000101
89	131				10000001	000	00000000	10000011	11000101
90	132				10000001	000	00000000	00000010	11000101
91	133		BRT	TO 79 IF ON LATCH SET	10101101	117	01001111	00000011	11000101
92	134		BRT	TO 127 IF ON CYL ACTIVE	10100011	177	01111111	00000010	11000101
93	135		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00000011	11000101
94	136		BR	TO 92	10111111	134	01011100	00000010	11000101
95	137		RST		01000001	000	00000000	00000001	11000101
96	140	SEARCH	BRT	TO 79 IF NOT UNIT RDY	10100111	117	01001111	00000010	11000101
97	141		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00000011	11000101
98	142		BR	TO 144 (#)	10111111	220	10010000	00000010	11000101 (#SEEK PORTION OF DATA SEQ)
99	143		BRT	TO 79 IF ON LATCH SET	10101101	117	01001111	00000011	11000101
100	144		BRT	TO 103 IF ON CYL ACTIVE	10100011	147	01100111	00000010	11000101
101	145		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00000011	11000101
102	146		BR	TO 100	10111111	144	01100100	00000010	11000101
103	147		BRT	TO 126 IF ABORT ACTIVE	10100101	176	01111110	00001011	11000100
104	150		BRT	TO 103 IF NOT SECT COMP	10110011	147	01100111	00001010	11000100
105	151		RST	(SET ATTENTION)	01000001	000	00000000	00000011	11000000
106	152				01000001	000	00000000	00000000	11000101
107	153				01000001	000	00000000	00000001	11000101
108	154				01000001	000	00000000	00000000	11000101
109	155				01000001	000	00000000	00000001	11000101
110	156				01000001	000	00000000	00000000	11000101
111	157				01000001	000	00000000	00000001	11000101
112	160				01000001	000	00000000	00000000	11000101
113	161				01000001	000	00000000	00000001	11000101
114	162				01000001	000	00000000	00000000	11000101
115	163				01000001	000	00000000	00000001	11000101
116	164				01000001	000	00000000	00000000	11000101
117	165				01000001	000	00000000	00000001	11000101
118	166				01000001	000	00000000	00000000	11000101
119	167				01000001	000	00000000	00000001	11000101
120	170				01000001	000	00000000	00000000	11000101
121	171				01000001	000	00000000	00000001	11000101
122	172				01000001	000	00000000	00000000	11000101
123	173				01000001	000	00000000	00000001	11000101
124	174				01000001	000	00000000	00000000	11000101
125	175	DRIVE CLR	INC		10000001	000	00000000	00000011	10000101
126	176	END	RST		01000001	000	00000000	00000010	11000101
127	177	END AND ATA	RST		01000001	000	00000000	00000011	11000001
					23-01988 AT E16		23-02088 AT E33	23-02388 AT E39	23-02388 AT E47

T4-T0		TEST CONDITION	ACTIVE LEVEL
0000	0	OCCUPIED	L
0001	1	ON CYL	L
0010	2	ABORT	L
0011	3	UNIT READY	H
0100	4		
0101	5	F4	H
0110	6	ON LATCH	L
0111	7	RUN AND GO	
1000	8	MBA EBL	L
1001	9	SECTOR COMPARE	H
1010	10	OFFSET MODE	H
1011	11	DATA CMD	L
1100	12	SEEK REQUIRED	L
1101	13	NEW TRACK RQD	L
1110	14	CONTINUE	L
1111	15	UNCONDITIONAL	GND



PIN NUMBERS FOR DATA OUTPUTS

17	16	15	14	10	9	8	7

CONTROL SEQUENCER ROM LISTINGS PAGE 2 OF 4

RMXX FLOW DIAGRAMS — DFD RMXX-0-0 A — CZ 1

DEC LOC	OCT LOC		SEQUENCER INSTRUCTION		END R	RESET H	BRANCH H	T (3-0) H	SET PULSE L	BRANCH ADDRESS (7-0) H	EN CYLINDER H	EN HEAD H	EN CONTROL H	TAG H	P EN SEARCH H	ABORT EBL H	SET OPI L	PROM ALT I/O H	EN F L	DRIVE CLR L	RECAL H	-UNUSED-	EN EXC H	P SET ATA L	EN OFFSET H	SEARCH COM L	
128	200		BRT TO OPI IF (READY)	3	1	0	1	1	204	10000100	0	0	0	0	0	0	1	1	1	0	1						
129	201		BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
130	202		BRT TO SEEK IF (RUN AND GO)	7	1	0	1	0	220	10010000	0	0	0	0	0	0	1	1	1	0	1						
131	203		BRT 201	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	0	1	0	1						
132	204	ØPI	INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
133	205	ABORT	INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	1	1	0	1						
134	206		BRT TO +2 IF (MBA EBL)	8	1	0	1	1	210	10001000	0	0	0	0	0	0	1	1	1	0	1						
135	207		BR TO -1	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
136	210		INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
137	211		BRT TO SELF IF (MBA EBL)	8	1	0	1	1	211	10001001	0	0	0	0	0	0	1	1	1	0	1						
138	212		RST		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
139	213				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	1	0						
140	214				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
141	215				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
142	216				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
143	217				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
144	220	SEEK	BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
145	221		BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
146	222		INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
147	223				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
148	224				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
149	225				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
150	226				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
151	227				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
152	230				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
153	231				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
154	232		BRT TO 234 IF (OCCUPIED)	0	1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
155	233		BR TO 143₈ SEARCH	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
156	234		BRT TO OPI IF (ON LATCH)	6	1	0	1	0	1	10000001	0	0	0	0	0	0	1	0	1	0	1						
157	235	HEAD	INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
158	236				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
159	237				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
160	240				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
161	241				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
162	242				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
163	243				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
164	244				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
165	245		BR TO 5ΔS WAIT	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
166	246	SEEK WAIT	BRT TO OFFSET IF (ON CYLINDER)	1	1	0	1	0	251	10101001	0	0	0	0	0	0	1	0	1	0	1						
167	247		BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
168	250		BR TO SEEK WAIT	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
169	251	OFFSET	INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
170	252		BRT TO SECT WAIT IF (OFST ACTIVE)	10	1	0	1	0	1	10000001	0	0	0	0	0	0	1	0	1	0	1						
171	253		INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
172	254				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
173	255				1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
174	256		BRT TO OPI IF (ON LATCH)	6	1	0	1	0	1	10000001	0	0	0	0	0	0	1	0	1	0	1						
175	257	OFST WAIT	BRT TO SECT WAIT IF (ON CYL)	1	1	0	1	0	262	10110010	0	0	0	0	0	0	1	0	1	0	1						
176	260		BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
177	261		BR TO OFST WAIT	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
178	262	SECTOR	BRT TO CONT IF (MBA EBL)	8	1	0	1	1	257	10101111	0	0	0	0	0	0	1	1	0	0	1						
179	263	WAIT	BRT TO ABORT IF (ABORT)	2	1	0	1	0	205	10000101	0	0	0	0	0	0	1	0	1	0	1						
180	264		BRT TO SECTOR WAIT	15	1	0	1	1	1	10000001	0	0	0	0	0	0	1	1	0	0	1						
181	265	CONTINUE	INC		1	0	0	0	0	10000001	0	0	0	0	0	0	0	0	1	0	1						
182	266		BRT TO SELF IF (MBA EBL)	8	1	0	1	1	266	10110110	0	0	0	0	0	0	1	1	1	0	1						
183	267		BRT TO SEEK IF (SEEK REQ)	12	1	0	1	1	220	10010000	0	0	0	0	0	0	1	1	1	0	1						
184	270		BRT TO HEAD IF (TRACK REQ)	13	1	0	1	1	235	10011101	0	0	0	0	0	0	1	1	1	0	1						
185	271		BRT TO SECT WAIT IF (CONTINUE)	14	1	0	1	1	262	10110010	0	0	0	0	0	0	1	0	1	0	1						
186	272		INC		1	0	0	0	0	10000001	0	0	0	0	0	0	1	0	1	0	1						
187	273		RST		1	1	0	0	0	11000001	0	0	0	0	0	0	0	0	1	0	1						
188	274				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
189	275				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
190	276				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
191	277				0	1	0	0	0	01000001	0	0	0	0	0	0	0	0	1	0	1						
					23-01988 AT E16					23-02088 AT E33				23-02388 AT E39						23-00888 AT E47							

ISSUE SEEK

SELECT HEAD AND WAIT 5ΔS FOR HEADSETTLING

WAIT FOR ON CYLINDER

ISSUE OFFSET AND WAIT FOR ON CYLINDER IF OFFSET MODE IS ACTIVE

LOOP ON THESE 3 LOCATIONS FOR THE ENTIRE DURATION OF SECTOR SEARCH AND SINGLE SECTOR DATA TRANSFER (UNTIL EBL)

WAIT FOR END OF EBL

DECISION:
1-GO DO A SEEK
2-GO DO A HEAD SELECT
3-GO DO NEXT SECTOR SEARCH & TRANSFER
4-RESET GO

FUNCTIONALLY UNUSED LOCATIONS

PIN NUMBERS FOR DATA OUTPUTS

17	16	15	14	10	9	8	7

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Column labels:

- 23-01988 at E16 (bits left to right): END RESET GO L; RESET H; BRANCH H; T (3-0) H; SET PULSE L
- 23-02088 at E33 (bits): BRANCH ADDRESS (7-0) H
- 23-02388 at E39 (bits left to right): EN CYLINDER H; EN HEAD H; EN CONTROL H; TAG H; P EN SEARCH H; ABORT EBL H; SET OPI L; PROM ALT I/O H
- 23-00888 at E47 (bits left to right): EN F L; DRIVE CLR L; RECAL H; -UNUSED-; EN EXC H; P SET ATA L; EN OFFSET H; SEARCH COM L

DEC LOC	OCT LOC					23-01988 AT E16		23-02088 AT E33	23-02388 AT E39	23-00888 AT E47
192	300		RST	FUNCTIONALLY UNUSED LOCATIONS		01000001	000	00000000	00000000	11000101
193	301					01000001	000	00000000	00000001	11000101
194	302					01000001	000	00000000	00000000	11000101
195	303					01000001	000	00000000	00000001	11000101
196	304					01000001	000	00000000	00000000	11000101
197	305					01000001	000	00000000	00000001	11000101
198	306					01000001	000	00000000	00000000	11000101
199	307					01000001	000	00000000	00000001	11000101
200	310					01000001	000	00000000	00000000	11000101
201	311					01000001	000	00000000	00000001	11000101
202	312					01000001	000	00000000	00000000	11000101
203	313					01000001	000	00000000	00000001	11000101
204	314					01000001	000	00000000	00000000	11000101
205	315					01000001	000	00000000	00000001	11000101
206	316					01000001	000	00000000	00000000	11000101
207	317					01000001	000	00000000	00000001	11000101
208	320					01000001	000	00000000	00000000	11000101
209	321					01000001	000	00000000	00000001	11000101
210	322					01000001	000	00000000	00000000	11000101
211	323					01000001	000	00000000	00000001	11000101
212	324					01000001	000	00000000	00000000	11000101
213	325					01000001	000	00000000	00000001	11000101
214	326					01000001	000	00000000	00000000	11000101
215	327					01000001	000	00000000	00000001	11000101
216	330					01000001	000	00000000	00000000	11000101
217	331					01000001	000	00000000	00000001	11000101
218	332					01000001	000	00000000	00000000	11000101
219	333					01000001	000	00000000	00000001	11000101
220	334					01000001	000	00000000	00000000	11000101
221	335					01000001	000	00000000	00000001	11000101
222	336					01000001	000	00000000	00000000	11000101
223	337					01000001	000	00000000	00000001	11000101
224	340					01000001	000	00000000	00000000	11000101
225	341					01000001	000	00000000	00000001	11000101
226	342					01000001	000	00000000	00000000	11000101
227	343					01000001	000	00000000	00000001	11000101
228	344					01000001	000	00000000	00000000	11000101
229	345					01000001	000	00000000	00000001	11000101
230	346					01000001	000	00000000	00000000	11000101
231	347					01000001	000	00000000	00000001	11000101
232	350	5 MICRO WAIT	INC	WAIT PERIOD FOLLOWING HEAD SELECTION		10000001	000	00000000	00000010	11000101
233	351					10000001	000	00000000	00000011	11000101
234	352					10000001	000	00000000	00000010	11000101
235	353					10000001	000	00000000	00000011	11000101
236	354					10000001	000	00000000	00000010	11000101
237	355					10000001	000	00000000	00000011	11000101
238	356					10000001	000	00000000	00000010	11000101
239	357					10000001	000	00000000	00000011	11000101
240	360					10000001	000	00000000	00000010	11000101
241	361					10000001	000	00000000	00000011	11000101
242	362					10000001	000	00000000	00000010	11000101
243	363					10000001	000	00000000	00000011	11000101
244	364					10000001	000	00000000	00000010	11000101
245	365					10000001	000	00000000	00000011	11000101
246	366					10000001	000	00000000	00000010	11000101
247	367					10000001	000	00000000	00000011	11000101
248	370					10000001	000	00000000	00000010	11000101
249	371					10000001	000	00000000	00000011	11000101
250	372					10000001	000	00000000	00000010	11000101
251	373					10000001	000	00000000	00000011	11000101
252	374		BR	TO 246_8 UNCONDITIONALLY	15	10111111	246	10100110	00000010	11000101
253	375		RST			01000001	000	00000000	00000001	11000101
254	376		RST.			01000001	000	00000000	00000000	11000101
255	377		RST			01000001	000	00000000	00000001	11000101

PIN NUMBERS FOR DATA OUTPUTS

17	16	15	14	10	9	8	7

CONTROL SEQUENCER
ROM LISTINGS
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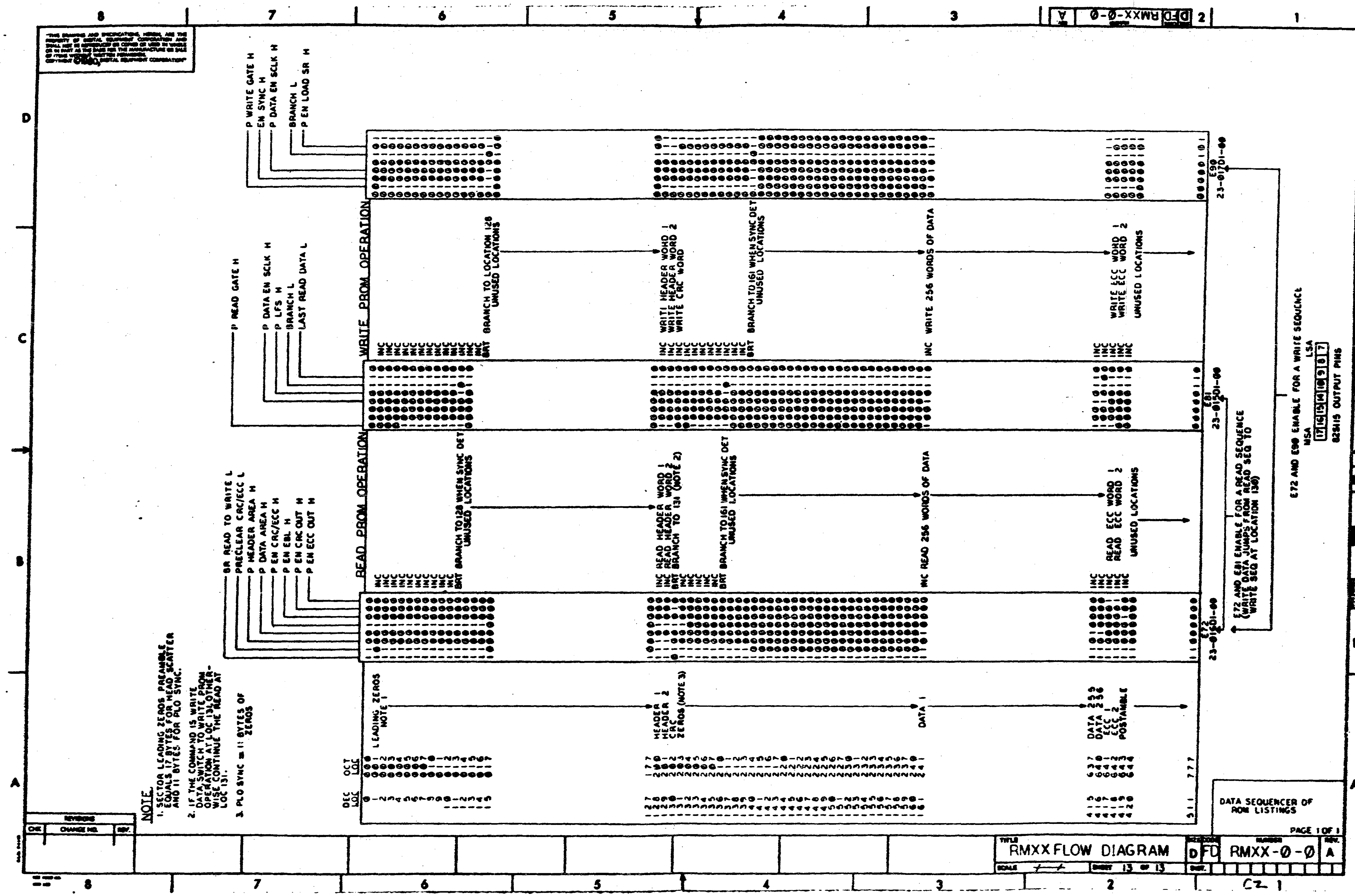
C2



WRITE PROM OPERATION
P WRITE GATE H
EN SYNC H
P DATA EN SCLK H
BRANCH L
P EN LOAD SR H
BRANCH TO LOCATION 128
UNUSED LOCATIONS
WRITE HEADER WORD 1
WRITE HEADER WORD 2
WRITE CRC WORD
BRANCH TO 161 WHEN SYNC DET
UNUSED LOCATIONS
WRITE 256 WORDS OF DATA
WRITE ECC WORD 1
WRITE ECC WORD 2
UNUSED LOCATIONS
E90
23-017D1-00
E72 AND E90 ENABLE FOR A WRITE SEQUENCE
MSA
LSA
82S115 OUTPUT PINS
READ PROM OPERATION
P READ GATE H
P DATA EN SCLK H
P LFS H
BRANCH L
LAST READ DATA L
E81
23-015D1-00
BR READ TO WRITE L
PRECLEAR CRC/ECC L
P HEADER AREA H
P DATA AREA H
P EN CRC/ECC H
P EN EBL H
P EN CRC OUT H
P EN ECC OUT H
BRANCH TO 128 WHEN SYNC DET
UNUSED LOCATIONS
READ HEADER WORD 1
READ HEADER WORD 2
BRANCH TO 131 (NOTE 2)
BRANCH TO 161 WHEN SYNC DET
UNUSED LOCATIONS
READ 256 WORDS OF DATA
READ ECC WORD 1
READ ECC WORD 2
UNUSED LOCATIONS
E72
23-016D1-00
E72 AND E81 ENABLE FOR A READ SEQUENCE (WRITE DATA JUMPS FROM READ SEQ TO WRITE SEQ AT LOCATION 130)
LEADING ZEROS NOTE 1
HEADER 1
HEADER 2
CRC
ZEROS (NOTE 3)
DATA 1
DATA 255
DATA 256
ECC 1
ECC 2
POSTAMBLE
OCT LOC
DEC LOC
NOTE
1. SECTOR LEADING ZEROS PREAMBLE EQUALS 17 BYTES FOR HEAD SCATTER AND 11 BYTES FOR PLO SYNC.
2. IF THE COMMAND IS WRITE DATA, SWITCH TO WRITE PROM OPERATION AT LOC 131, OTHERWISE CONTINUE THE READ AT LOC 131.
3. PLO SYNC = 11 BYTES OF ZEROS
DATA SEQUENCER OF ROM LISTINGS
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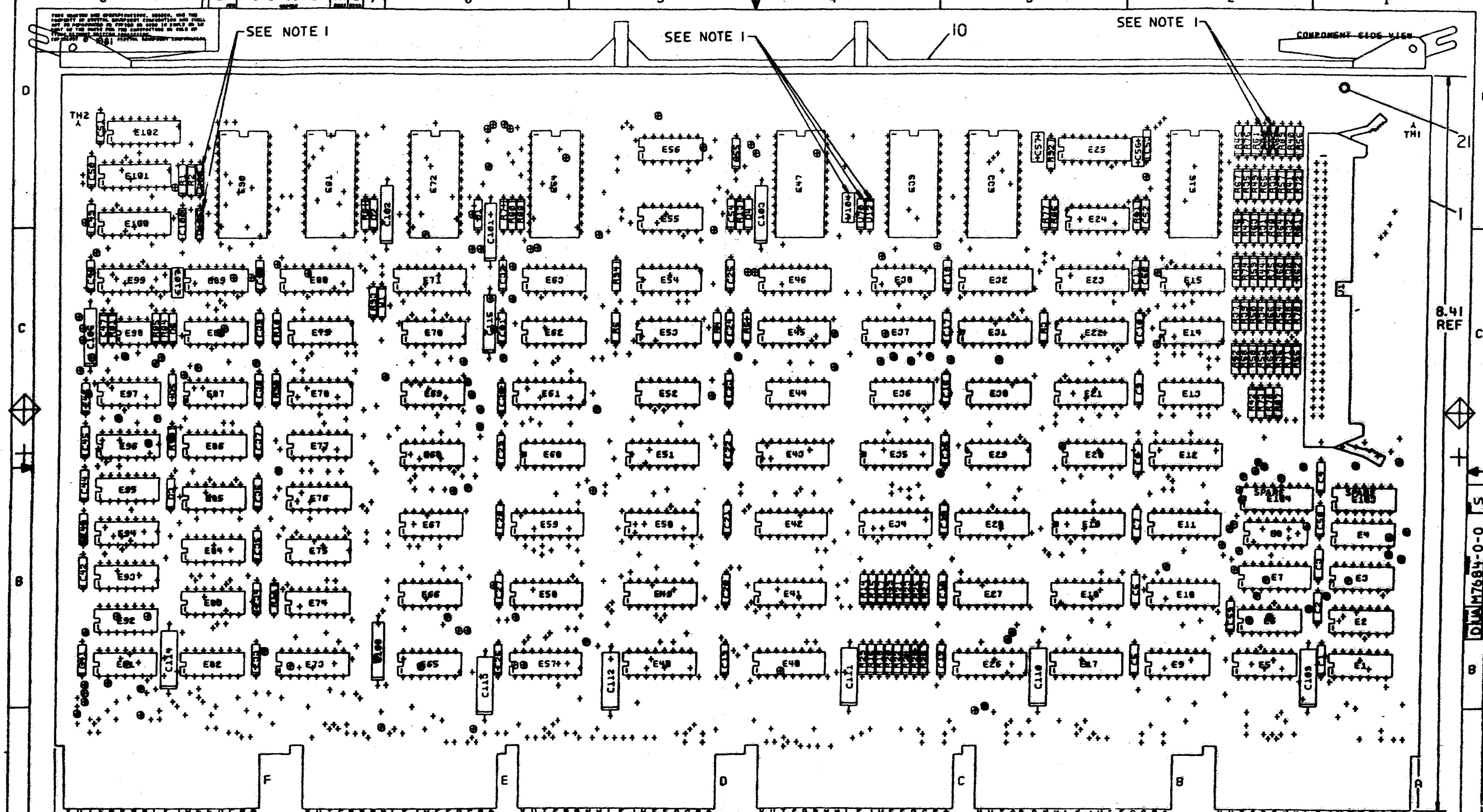


NOTES:

1. R82, R83, U80, U105, U12, U70 & U104 ARE NOT USED.
2. E103 & E104 ARE SPARES.

STEP & REPEAT	+ Y AXIS ______ STEP ___ TIMES
	+ X AXIS ______ STEP ___ TIMES

REV	CHANGE NO
S	REVISED & REDRAWN RN 8SEP81 M7684CX014 P. RAIKUNEN

ETCH REV. E-PI

SIGNATURES	DATE
DRN.	
CHK'D.	
MECH. ENG.	
PROJ. ENG.	
PROD.	
SCALE 2/1	
SHT. 1 OF 1	

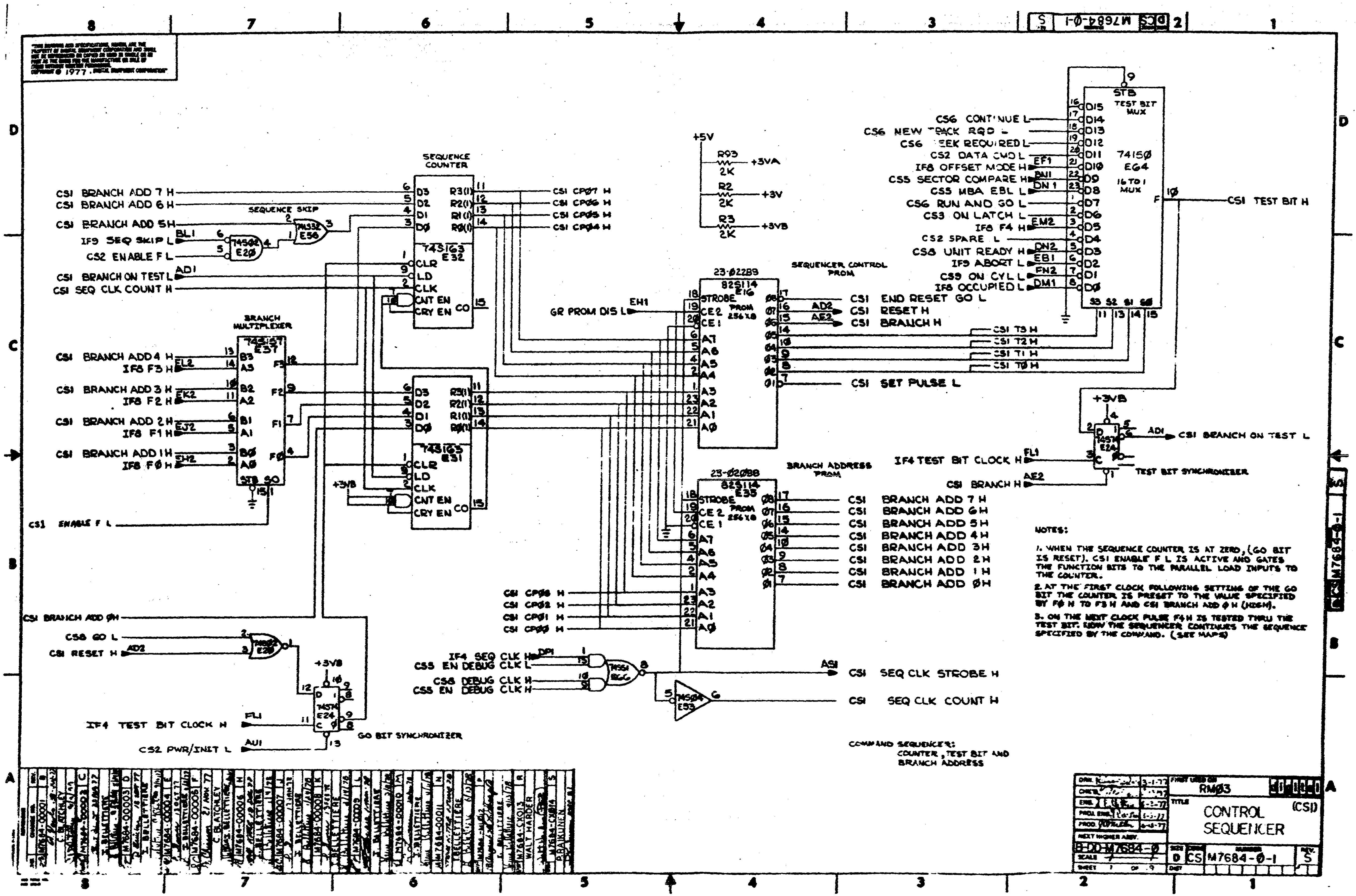
digital

TITLE CONTROL SEQUENCER

SIZE	CODE	NUMBER	REV
D	UA	M7684-0-0	S

NEXT HIGHER ASSY. B-DP M7684

WO#291818E


COPYRIGHT © 1977, DIGITAL EQUIPMENT CORPORATION
SEQUENCE COUNTER
74163 E32
74163 E31
SEQUENCE SKIP
BRANCH MULTIPLEXER
74157 E37
CSI BRANCH ADD 7 H
CSI BRANCH ADD 6 H
CSI BRANCH ADD 5 H
IF9 SEQ SKIP L
CS2 ENABLE F L
CSI BRANCH ON TEST L
CSI SEQ CLK COUNT H
CSI CPØ7 H
CSI CPØ6 H
CSI CPØ5 H
CSI CPØ4 H
CSI BRANCH ADD 4 H
IF8 F3 H
CSI BRANCH ADD 3 H
IF8 F2 H
CSI BRANCH ADD 2 H
IF8 F1 H
CSI BRANCH ADD 1 H
IF8 FØ H
CSI ENABLE F L
CSI BRANCH ADD ØH
CS8 GO L
CSI RESET H
IF4 TEST BIT CLOCK H
CS2 PWR/INIT L
GO BIT SYNCHRONIZER
+5V
R93 2K +3VA
R2 2K +3V
R3 2K +3VB
SEQUENCER CONTROL PROM
23-Ø22B9 82S114 E16 PROM 256X8
GR PROM DIS L
CSI END RESET GO L
CSI RESET H
CSI BRANCH H
CSI T3 H
CSI T2 H
CSI T1 H
CSI TØ H
CSI SET PULSE L
BRANCH ADDRESS PROM
23-Ø2ØB8 82S114 E35 PROM 256X8
CSI BRANCH ADD 7 H
CSI BRANCH ADD 6 H
CSI BRANCH ADD 5 H
CSI BRANCH ADD 4 H
CSI BRANCH ADD 3 H
CSI BRANCH ADD 2 H
CSI BRANCH ADD 1 H
CSI BRANCH ADD Ø H
CSI CPØ3 H
CSI CPØ2 H
CSI CPØ1 H
CSI CPØØ H
IF4 SEQ CLK H
CS5 EN DEBUG CLK L
CS6 DEBUG CLK H
CS5 EN DEBUG CLK H
CSI SEQ CLK STROBE H
CSI SEQ CLK COUNT H
TEST BIT MUX
74150 E64 16 TO 1 MUX
CS6 CONTINUE L
CS6 NEW TRACK RQD L
CS6 SEEK REQUIRED L
CS2 DATA CMD L
IF8 OFFSET MODE H
CS5 SECTOR COMPARE H
CS5 MBA EBL L
CS6 RUN AND GO L
CS3 ON LATCH L
IF8 F4 H
CS2 SPARE L
CS8 UNIT READY H
IF9 ABORT L
CS9 ON CYL L
IF8 OCCUPIED L
CSI TEST BIT H
+3VB
CSI BRANCH ON TEST L
IF4 TEST BIT CLOCK H
CSI BRANCH H
TEST BIT SYNCHRONIZER
NOTES:
1. WHEN THE SEQUENCE COUNTER IS AT ZERO, (GO BIT IS RESET). CSI ENABLE F L IS ACTIVE AND GATES THE FUNCTION BITS TO THE PARALLEL LOAD INPUTS TO THE COUNTER.
2. AT THE FIRST CLOCK FOLLOWING SETTING OF THE GO BIT THE COUNTER IS PRESET TO THE VALUE SPECIFIED BY FØ H TO F3 H AND CSI BRANCH ADD Ø H (HIGH).
3. ON THE NEXT CLOCK PULSE F4 H IS TESTED THRU THE TEST BIT. NOW THE SEQUENCER CONTINUES THE SEQUENCE SPECIFIED BY THE COMMAND. (SEE MAPS)
COMMAND SEQUENCER: COUNTER, TEST BIT AND BRANCH ADDRESS
RMØ3
CONTROL SEQUENCER (CSI)
D CS M7684-Ø-1
S
B-DD-M7684-Ø
SHEET 7 OF 9

TAG CONTROLS

23-02388-00

825114 E39 PROM 256X8

CSI SEQ CLK STROBE H
GR PROM DIS L
CSI CP07 H
CSI CP06 H
CSI CP05 H
CSI CP04 H
CSI CP03 H
CSI CP02 H
CSI CP01 H
CSI CP00 H

CS2 EN CYLINDER H
CS2 EN HEAD H
CS2 EN CONTROL H
CS2 TAG H
CS2 PEN SEARCH H
CS2 ABORT ESL H
CS2 SET OPI L
CS2 PROM ALT 1/0 H

MISCELLANEOUS PROM

23-00888-00

825114 E47 PROM 256X8

CS2 ENABLE F L
CS2 DRIVE CLR L
CS2 RECAL H
CS2 START RUN TO H
CS2 EN EXC H
CS2 P SET ATA L
CS2 EN OFFSET H
CS2 SEARCH COM L

COMMAND DECODE

82S23 E48 PROM 32X8

IF8 F0 H
IF8 F1 H
IF8 F2 H
IF8 F3 H
IF8 F4 H
IF8 GO H
CS2 ENABLE F L

+5V
R5 2K
R4 2K
R6 2K
R34 2K
R80 2K

CS2 FORMAT H
CS2 RD HDR DATA CMD H
CS2 SET IVC H
CS2 DATA CMD L
CS2 SPARE L

+5V
R1 33K

LOSS OF SYSTEM CLOCK DETECTOR (3 MICROSECONDS)

C136 .33 mF

IF4 SEQ CLK H
CS8 GO L
CS2 PROM ALT 1/0 H
IF8 GO H
CS5 EN DEBUG CLK L

CS2 SYS CLK VALID H (NOT USED)
CS2 LSC SET L

DAB, EAB, FAB
AAB, BAB, CAB
ECB, ET1, FCB, FT1
CCB, CT1, DCB, DT1
ACB, AT1, BCB, BT1

+5V

C109 THRU C114 10 mF

C1 THRU C93 .047 mF

C115 1 mF

C78 THRU C89 .047 mF

RD1 -5V

COMMAND SEQUENCER: DRIVE CONTROLS (TR4) AND COMMAND DECODES

TITLE	SIZE	DWG CODE	NUMBER	REV
CONTROL SEQUENCER (CS2)	D	CS	M7684-0-1	S
SCALE —	SHEET 2 OF 19			

+3VA

ENABLE SEARCH

CS3 RTC T.O. L
CS3 FMT CHANGE L
CS2 P EN SEARCH H — BMI

74LS11 E54

74LS74 E69

CS3 EN SEARCH H

CS8 SECT PULSE H
CS8 INDEX H — FRI

74S32 E84

CS3 MBA CLR L — DT2

74S04 E30

CS3 INDEX L

74S40 E89

BPI

CS3 SECT/INDEX L

CS3 SECT/INDEX H

CS1 SET PULSE L

74S04 E76

74LS74 E65

CS3 ON LATCH L

NOTE: DETECTS TRANSITION (HIGH) OF ON CYLINDER FOLLOWING INITIATION OF A SEEK OR OFFSET IN THE DRIVE. THIS SIGNAL IS USED FOR A TEST FUNCTION BY THE COMMAND SEQUENCER.

CS9 ON CYLINDER L — FN2

+3VB

CS2 DRIVE CLR L
IF6 INIT A/B L — ED2
CS4 POWER OK H — EL1

74LS04 E94

74S37 E88

CS3 MBA CLR L — DT2

CS1 END RESET GO L
IF11 LSC L — FH2
CS2 LSC SET L — FH2

74LS32 E56

74S11 E78

CS3 RESET GO L — EP2

CS4 POWER OK H — EL1
IF6 INIT A/B L — ED2

74S08 E46

CS3 PWR/INIT L — AU1

CS1 SET PULSE L

74S04 E36

CS3 SET PULSE H — AF1

IF6 F2 H — EK2

74LS04 E36

CS3 F2 L

CS5 OCCUPIED H
CS8 WRT PROT H — EJ1
CS3 SET PULSE H — AF1

74LS08 E52

CS3 WLE SET L — EE1

CS2 EN CYLINDER H — BF1

74LS04 E36

CS3 ENABLE CYL L

CS2 EN HEAD H — BJ1

74LS04 E36

CS3 ENABLE HEAD L

CS2 EN CONTROL H — BE1

74LS04 E36

CS3 ENABLE CNT L

+5V

R8 30K

RETURN TO CENTERLINE TIME OUT

C102 .68μF

D2 DG64

74123 E71

CS3 RTC T. O. L

NOTE: INHIBITS SEARCH FOR THE DURATION OF A RETURN TO CENTER LINE (RTC) BY THE POSITIONER. (4 MILLISECONDS)

IF8 OFFSET MODE H — EF1
CS2 EN CONTROL H — BE1

74S10 E25

+3VA

+5V

R91 30K

C56 .68μF

FORMAT BIT EDGE DETECTOR

74123 E85

CS4 POWER OK H — EL1

+5V

R92 30K

C57 .68μF

74123 E25

CS3 FMT CHANGE L

NOTE: INHIBITS SEARCH UNTIL NEXT INDEX PULSE FOLLOWING A CHANGE IN FORMAT.

IF8 FMT 16 H — CF2

74S10 E25

+3VB

CS3 INDEX L
CS2 SET OPI L
CS6 RUN TIME OUT L

74LS11 E54

CS3 OPI SET L — ED1

+5V

W1 IS IN FOR DMA ONLY

R7 30K

C101 .68μF — W1

D1 DG64

SEARCH TIME OUT (50 MILLISECONDS)

CS8 SRCH TO DIS H

74123 E71

74S74 E65

CS2 P EN SEARCH H — BMI
CS3 RESET GO L — EP2

74LS08 E76

CS5 SECTOR COMPARE L

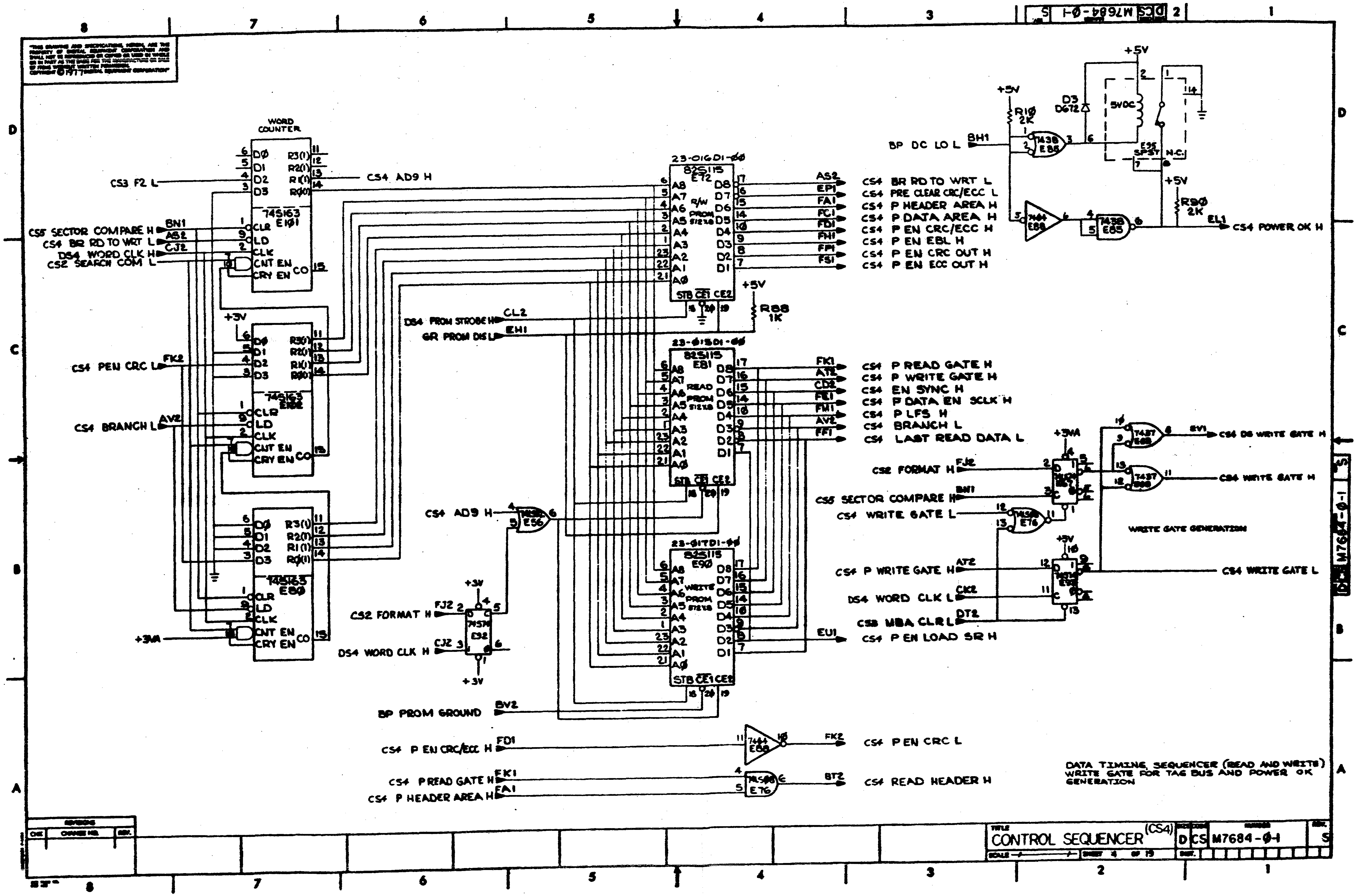
SEARCH ENABLE AND INHIBITS, OPI, CLEAR GENERATION, WLE AND ENABLES TO TRI-STATE MUX'S FOR TAG BUS

REVISIONS		
CHG	CHANGE NO.	INIT.

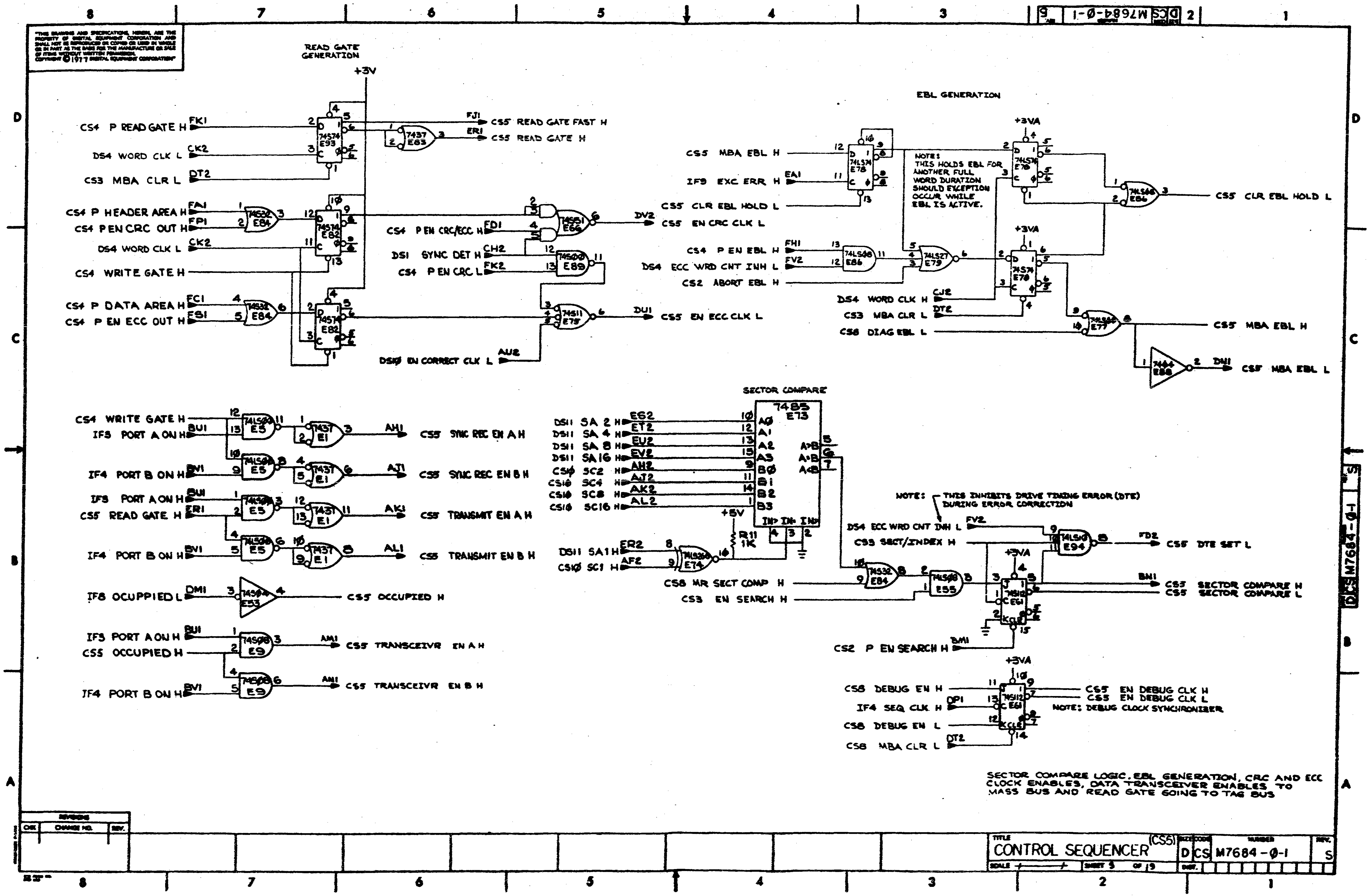
TITLE: CONTROL SEQUENCER (CS3)

SIZE D | CODE CS | NUMBER M7684-0-1 | REV. NS

SCALE — | SHEET 3 OF 19



D CS M7684-Ø-1 S
WORD COUNTER
74S163 E1Ø1
74S163 E1Ø2
74S163 E8Ø
CS3 F2 L
CS5 SECTOR COMPARE H
CS4 BR RD TO WRT L
DS4 WORD CLK H
CS2 SEARCH COM L
CS4 AD9 H
CS4 PEN CRC L
CS4 BRANCH L
+3VA
23-Ø16D1-ØØ
82S115 E72
R/W PROM 512X8
CS4 BR RD TO WRT L
CS4 PRE CLEAR CRC/ECC L
CS4 P HEADER AREA H
CS4 P DATA AREA H
CS4 P EN CRC/ECC H
CS4 P EN EBL H
CS4 P EN CRC OUT H
CS4 P EN ECC OUT H
DS4 PROM STROBE H
GR PROM DIS L
23-Ø15D1-ØØ
82S115 E81
READ PROM 512X8
CS4 P READ GATE H
CS4 P WRITE GATE H
CS4 EN SYNC H
CS4 P DATA EN SCLK H
CS4 P LFS H
CS4 BRANCH L
CS4 LAST READ DATA L
23-Ø17D1-ØØ
82S115 E9Ø
WRITE PROM 512X8
CS4 P EN LOAD SR H
CS2 FORMAT H
DS4 WORD CLK H
BP PROM GROUND
CS4 P EN CRC/ECC H
CS4 P EN CRC L
CS4 P READ GATE H
CS4 P HEADER AREA H
CS4 READ HEADER H
BP DC LO L
5VDC
CS4 POWER OK H
CS6 DS WRITE GATE H
CS4 WRITE GATE H
CS2 FORMAT H
CS5 SECTOR COMPARE H
CS4 WRITE GATE L
WRITE GATE GENERATION
CS4 P WRITE GATE H
DS4 WORD CLK L
CS8 MBA CLR L
CS4 WRITE GATE L
DATA TIMING SEQUENCER (READ AND WRITE) WRITE GATE FOR TAG BUS AND POWER OK GENERATION
CONTROL SEQUENCER (CS4)
D CS M7684-Ø-1 S
SHEET 4 OF 19


READ GATE GENERATION
CS4 P READ GATE H
DS4 WORD CLK L
CS3 MBA CLR L
CS5 READ GATE FAST H
CS5 READ GATE H
CS4 P HEADER AREA H
CS4 P EN CRC OUT H
CS4 WRITE GATE H
CS4 P DATA AREA H
CS4 P EN ECC OUT H
CS4 P EN CRC/ECC H
DS1 SYNC DET H
CS4 P EN CRC L
CS5 EN CRC CLK L
CS5 EN ECC CLK L
DS10 EN CORRECT CLK L
EBL GENERATION
CS5 MBA EBL H
IF9 EXC ERR H
CS5 CLR EBL HOLD L
NOTE: THIS HOLDS EBL FOR ANOTHER FULL WORD DURATION SHOULD EXCEPTION OCCUR WHILE EBL IS ACTIVE.
CS4 P EN EBL H
DS4 ECC WRD CNT INH L
CS2 ABORT EBL H
DS4 WORD CLK H
CS3 MBA CLR L
CS8 DIAG EBL L
CS5 CLR EBL HOLD L
CS5 MBA EBL H
CS5 MBA EBL L
CS4 WRITE GATE H
IF5 PORT A ON H
CS5 SYNC REC EN A H
IF4 PORT B ON H
CS5 SYNC REC EN B H
IF5 PORT A ON H
CS5 READ GATE H
CS5 TRANSMIT EN A H
IF4 PORT B ON H
CS5 TRANSMIT EN B H
IF8 OCCUPIED L
CS5 OCCUPIED H
IF5 PORT A ON H
CS5 OCCUPIED H
CS5 TRANSCEIVR EN A H
IF4 PORT B ON H
CS5 TRANSCEIVR EN B H
SECTOR COMPARE
DS11 SA 2 H
DS11 SA 4 H
DS11 SA 8 H
DS11 SA16 H
CS10 SC2 H
CS10 SC4 H
CS10 SC8 H
CS10 SC16 H
DS11 SA1 H
CS10 SC1 H
CS8 MR SECT COMP H
CS3 EN SEARCH H
NOTE: THIS INHIBITS DRIVE TIMING ERROR (DTE) DURING ERROR CORRECTION
DS4 ECC WRD CNT INH L
CS3 SECT/INDEX H
CS5 DTE SET L
CS5 SECTOR COMPARE H
CS5 SECTOR COMPARE L
CS2 P EN SEARCH H
CS8 DEBUG EN H
IF4 SEQ CLK H
CS8 DEBUG EN L
CS8 MBA CLR L
CS5 EN DEBUG CLK H
CS5 EN DEBUG CLK L
NOTE: DEBUG CLOCK SYNCHRONIZER
SECTOR COMPARE LOGIC, EBL GENERATION, CRC AND ECC CLOCK ENABLES, DATA TRANSCEIVER ENABLES TO MASS BUS AND READ GATE GOING TO TAG BUS
CONTROL SEQUENCER (CS5)
D CS M7684-0-1 S
SHEET 5 OF 19

+5V
R13 27K
C103 3.3uf
D4 D664
T4123 E46
-3VB
74S74 E70
CS6 RUN TIME OUT L (2Ø MILLISECONDS)
CS6 RUN AND GO L
CS5 ØCCUPIED H
74LS08 E39
74S04 E38
CS3 RESET GO L
EP2

IF8 GO H
SA2 RUN H
CS3 RESET GO L
EN2
EC1
EP2
74S08 E68
FL2
CS6 RUN AND GO H
CS6 RUN AND GO L
NOTE: FOLLOWING THE SETTING OF THE GO BIT, THIS SIGNAL ENABLES THE COMMAND SEQUENCER TO PROCEED WITH THE DATA SEQUENCE.

+3VB
DS12 LST SECT TRK H
FE2
74S74 E36
AA1
CS6 SEEK REQUIRED H
CS6 SEEK REQUIRED L
NOTE: COMMAND SEQUENCER TESTS THIS LINE AT THE END OF EACH SECTOR OF DATA TRANSFERRED TO DETERMINE WHETHER OR NOT TO STEP THRU A CYLINDER TAG SEQUENCE.
CS5 MBA EBL H
CS4 CONTINUE H
CS3 MBA CLR L
AC1
DT2
74S08 E44
DS11 LST SECT H
FF2
+3VB
AB1
CS6 NEW TRACK RQD H
CS6 NEW TRACK RQD L
AR1
NOTE: COMMAND SEQUENCER TESTS THIS LINE AT THE END OF EACH SECTOR OF DATA TRANSFERRED TO DETERMINE WHETHER OR NOT TO STEP THRU A HEAD "A6 SEQUENCE.

IF9 EXC ERR H
EA1
CS6 MB EXCEPTION H (NOT USED)
CS6 MB EXCEPTION L
CS1 SET PULSE L
SA2 RUN H
IF9 ABORT L
EC1
EB1
74S08 E65
AC1
CS6 CONTINUE H
CS6 CONTINUE L
CS5 MBA EBL L
CS3 MBA CLR L
DN1
DT2

DS12 DC1 H
DS12 DC2 H
DS12 DC4 H
DS12 DC8 H
DS12 DC16 H
DS12 DC32 H
BD2
BE2
BF2
BH2
BJ2
BK2
DM8097 E17
CS6 BUS BIT ØØ H
CS6 BUS BIT Ø1 H
CS6 BUS BIT Ø2 H
CS6 BUS BIT Ø3 H
CS6 BUS BIT Ø4 H
CS6 BUS BIT Ø5 H
CS3 ENABLE CYL L

DS11 TA 1 H
DS11 TA 2 H
DS11 TA 4 H
DS11 TA 8 H
DS11 TA 16 H
DP2
DR2
DS2
BR1
BS1
DM8097 E26
TRISTATE MULTIPLEXING OF SECTOR/TRACK, CYLINDER ADDRESS AND COMMANDS FOR TAG BUS.
CS3 ENABLE HEAD L

CS4 WRITE GATE H
CS5 READ GATE H
ER1
IF8 OFF DIR H
EN1
74S08 E55
74S04 E56
DM8097 E18
CS6 BUS BIT Ø6 H
CS6 BUS BIT Ø7 H
IF8 OFFSET MODE H
CS2 EN OFFSET H
EF1
74LS08 E58

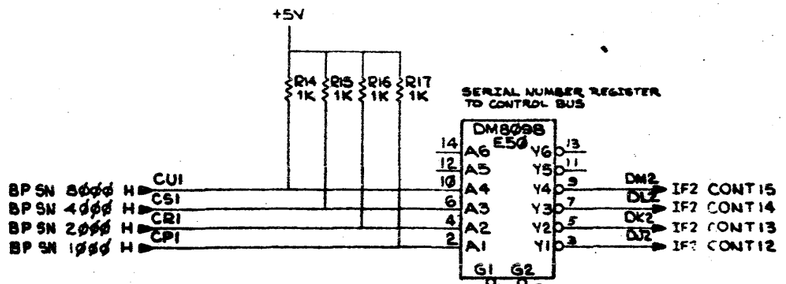
DS12 DC64 H
DS12 DC128 H
DS12 DC256 H
DS12 DC512 H
BL2
BM2
BN2
BP2
DM8097 E27
CS6 BUS BIT Ø8 H
CS6 BUS BIT Ø9 H
CS2 RECAL H
DM8097 E28
CS3 ENABLE CNT L

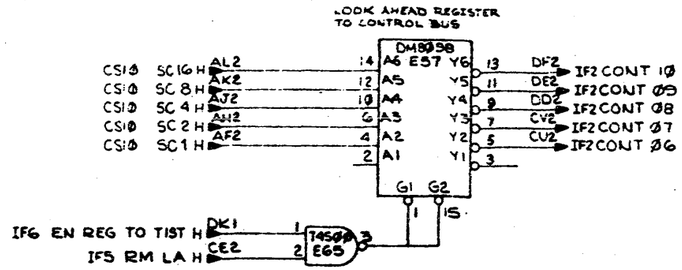
CONTROLS FOR MULTI SECTOR, MULTI TRACK, MULTI CYLINDER DATA TRANSFER AND TRISTATE MULTIPLEXING OF SECTOR/TRACK, CYLINDER ADDRESS AND COMMANDS FOR TAG BUS

REVISIONS		
CHG	CHANGE NO.	REV.

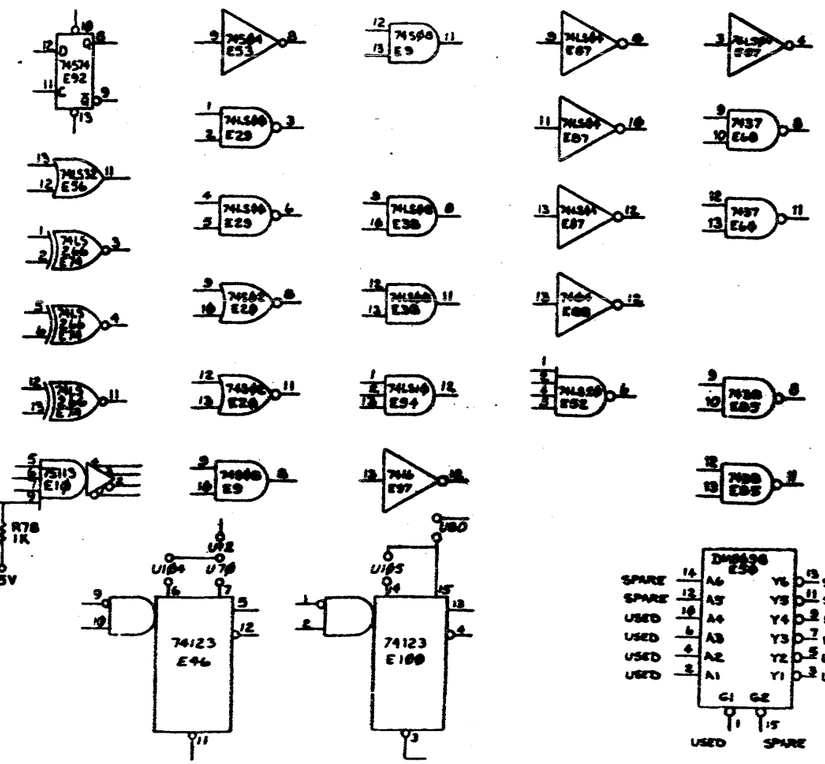
TITLE: CONTROL SEQUENCER (CS6)
SIZE D | CODE CS | NUMBER M7684-Ø-1 | REV S
SCALE — | SHEET 6 OF 19

NOTE: ALL ETCH REV B MODULES AND A LIMITED NUMBER OF ETCH REV C MODULES CONTAIN 560HM PULL UPS, R14 THRU R29. ECO NO. 6 WAS NOT RETROACTIVE.





SPARES

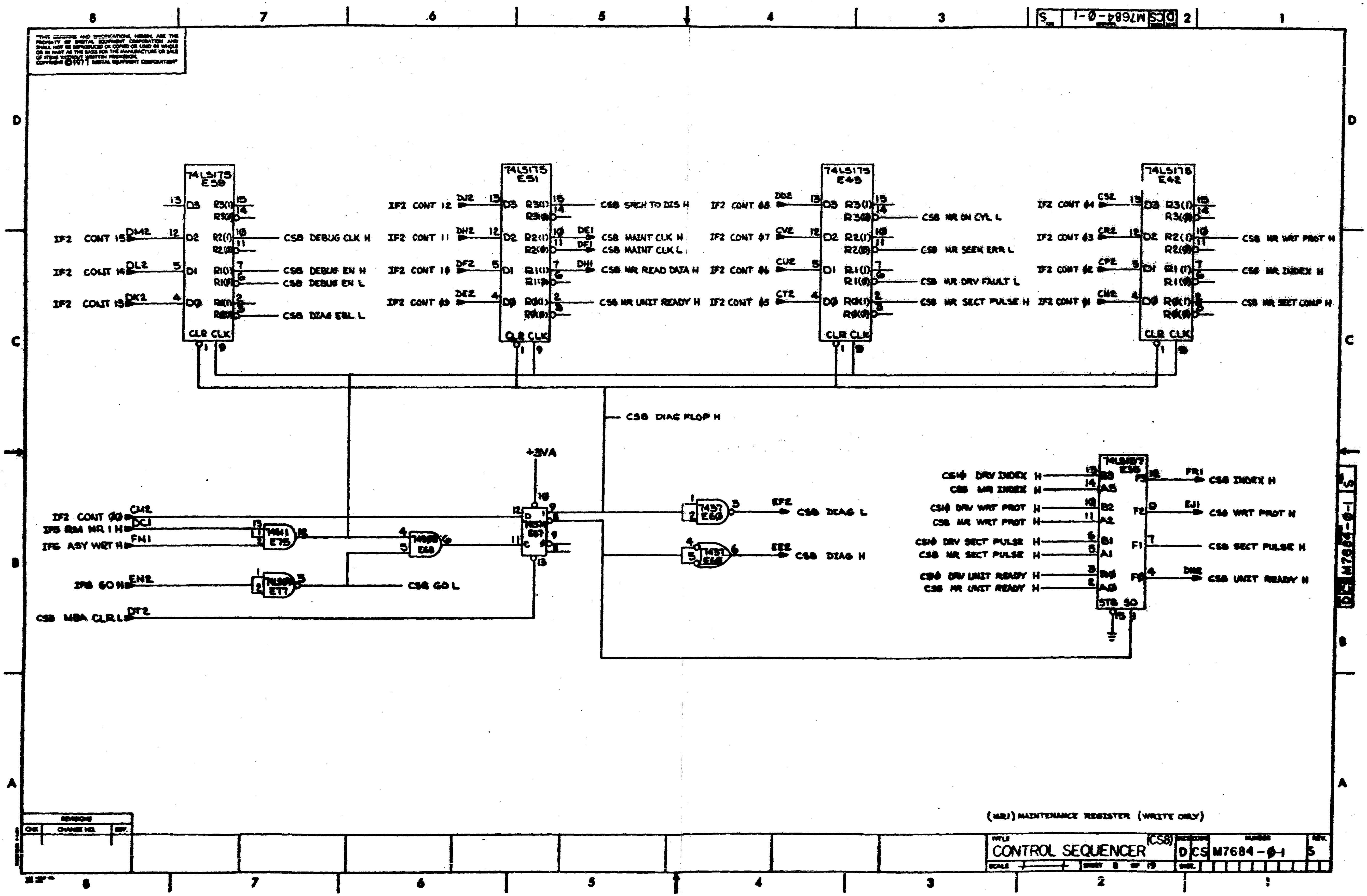


REGISTERS: SERIAL NUMBER & LOOK AHEAD

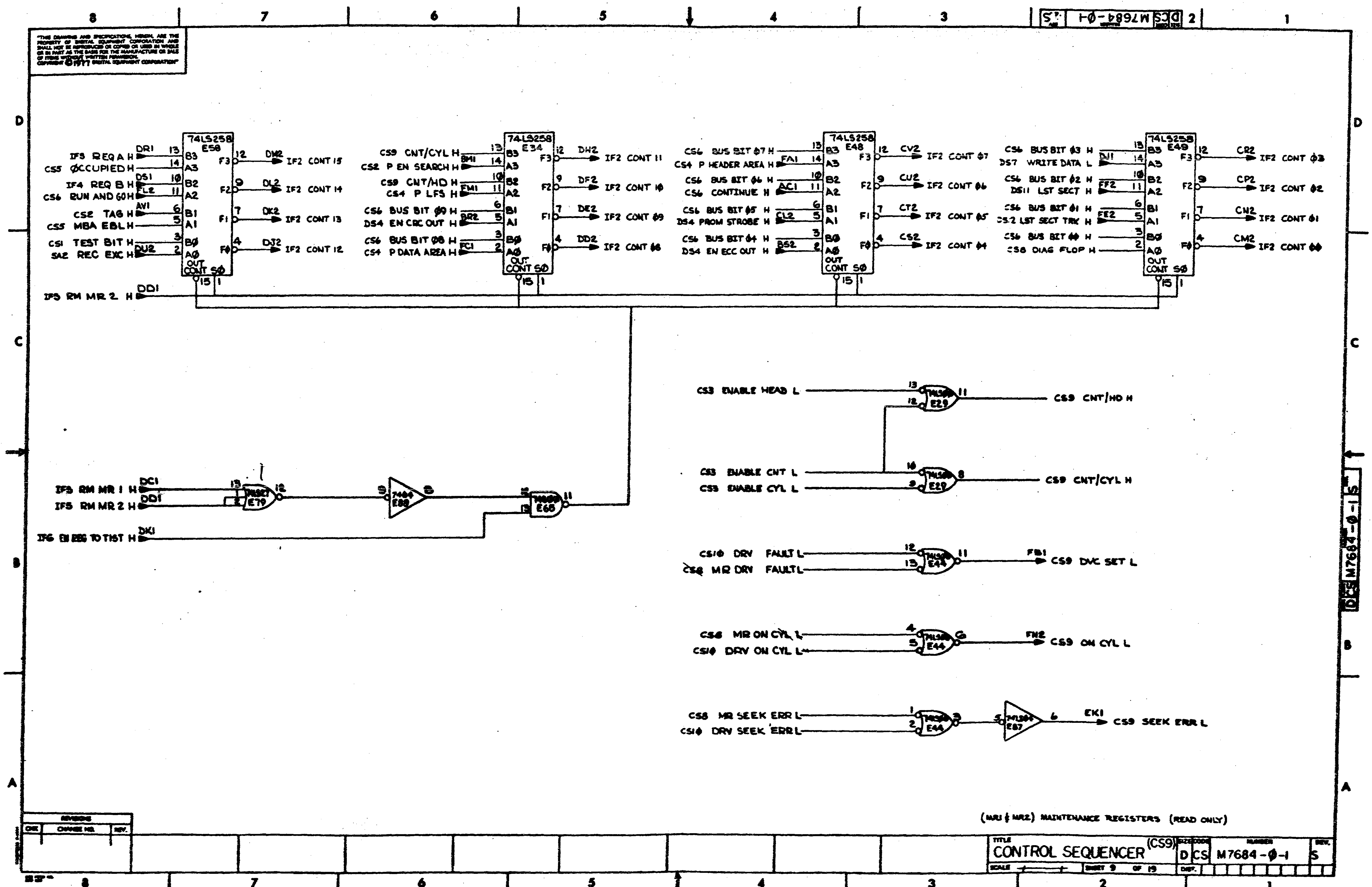
REVISIONS		
ECR	CHANGE NO.	REV.

TITLE: CONTROL SEQUENCER (CS7)	SIZE: D	CODE: CS	NUMBER: M7684-0-1	REV: S
SCALE: —	SHEET 7 OF 19			

M7684-0-1 S



74LS175 E59
IF2 CONT 15
IF2 CONT 14
IF2 CONT 13
CSB DEBUG CLK H
CSB DEBUG EN H
CSB DEBUG EN L
CSB DIAG EBL L
74LS175 E51
IF2 CONT 12
IF2 CONT 11
IF2 CONT 10
IF2 CONT 09
CSB SRCH TO DIS H
CSB MAINT CLK H
CSB MAINT CLK L
CSB MR READ DATA H
CSB MR UNIT READY H
74LS175 E45
IF2 CONT 08
IF2 CONT 07
IF2 CONT 06
IF2 CONT 05
CSB MR ON CYL L
CSB MR SEEK ERR L
CSB MR DRV FAULT L
CSB MR SECT PULSE H
74LS175 E42
IF2 CONT 04
IF2 CONT 03
IF2 CONT 02
IF2 CONT 01
CSB MR WRT PROT H
CSB MR INDEX H
CSB MR SECT COMP H
CSB DIAG FLOP H
+3VA
IF2 CONT 00
IFB RM WR 1 H
IFB ASY WRT H
IFB GO H
CSB MBA CLR L
CSB GO L
CSB DIAG L
CSB DIAG H
CS10 DRV INDEX H
CSB MR INDEX H
CS10 DRV WRT PROT H
CSB MR WRT PROT H
CS10 DRV SECT PULSE H
CSB MR SECT PULSE H
CS10 DRV UNIT READY H
CSB MR UNIT READY H
CSB INDEX H
CSB WRT PROT H
CSB SECT PULSE H
CSB UNIT READY H
(MR1) MAINTENANCE REGISTER (WRITE ONLY)
CONTROL SEQUENCER (CSB)
D CS M7684-0-1 5


74LS258 E58
IF5 REQ A H
CS5 ØCCUPIED H
IF4 REQ B H
CS6 RUN AND GO H
CS2 TAG H
CS5 MBA EBL H
CS1 TEST BIT H
SA2 REC EXC H
IF2 CONT 15
IF2 CONT 14
IF2 CONT 13
IF2 CONT 12
74LS258 E34
CS9 CNT/CYL H
CS2 P EN SEARCH H
CS9 CNT/HD H
CS4 P LFS H
CS6 BUS BIT Ø9 H
DS4 EN CRC OUT H
CS6 BUS BIT Ø8 H
CS4 P DATA AREA H
IF2 CONT 11
IF2 CONT 10
IF2 CONT Ø9
IF2 CONT Ø8
74LS258 E48
CS6 BUS BIT Ø7 H
CS4 P HEADER AREA H
CS6 BUS BIT Ø6 H
CS6 CONTINUE H
CS6 BUS BIT Ø5 H
DS4 PROM STROBE H
CS6 BUS BIT Ø4 H
DS4 EN ECC OUT H
IF2 CONT Ø7
IF2 CONT Ø6
IF2 CONT Ø5
IF2 CONT Ø4
74LS258 E49
CS6 BUS BIT Ø3 H
DS7 WRITE DATA L
CS6 BUS BIT Ø2 H
DS11 LST SECT H
CS6 BUS BIT Ø1 H
CS12 LST SECT TRK H
CS6 BUS BIT Ø0 H
CS8 DIAG FLOP H
IF2 CONT Ø3
IF2 CONT Ø2
IF2 CONT Ø1
IF2 CONT Ø0
IF5 RM MR 2 H
IF5 RM MR 1 H
IF5 RM MR 2 H
IF6 EN REG TO TEST H
CS3 ENABLE HEAD L
CS9 CNT/HD H
CS3 ENABLE CNT L
CS3 ENABLE CYL L
CS9 CNT/CYL H
CS10 DRV FAULT L
CS8 MR DRV FAULT L
CS9 DVC SET L
CS8 MR ON CYL L
CS10 DRV ON CYL L
CS9 ON CYL L
CS8 MR SEEK ERR L
CS10 DRV SEEK ERR L
CS9 SEEK ERR L
(MR1 & MR2) MAINTENANCE REGISTERS (READ ONLY)
CONTROL SEQUENCER (CS9)
D CS M7684-Ø-1 S
SHEET 9 OF 19

+5V R86 1K

J1
Y, 22, AB, AC, AD, AE, AJ, AK, PP, RR, AF, AH, JJ, HH, LL, KK

R39 56 R62 4.64K 1%
R46 56 R31 56 R63 4.64K 1%
R47 56 R32 56 R64 4.64K 1%
R48 56 R33 56 R65 4.64K 1%
R49 56 R34 56 R66 4.64K 1%
R50 56 R35 56 R67 4.64K 1%
R51 56 R36 56 R68 4.64K 1%
R52 56 R37 56 R69 4.64K 1%
R53 56

75H78 E3 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E4 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E15 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E14 (pins 2, 1, 5, 6, 4, 9, 11, 12)

BD1 → CS1Ø PLUG EN H
BA1 → CS1Ø DEV ADS 1H
BB1 → CS1Ø DEV ADS 2 H
BC1 → CS1Ø DEV ADS 4 H
CS1Ø DRV INDEX H
CS1Ø DRV SECT PULSE H
CS1Ø DRV FAULT L
CS1Ø DRV SEEK ERR L

CS8 DIAG L EF2

+5V R87 1K

J1
SS, TT, NN, MM, AJ, AP, AL, AA, EE, FF, UU, VV, WW, XX, AT, AU

R38 56 R76 4.64K 1%
R54 56 R39 56 R71 4.64K 1%
R55 56 R40 56 R89 4.64K 1%
R56 56 R41 56 R72 4.64K 1%
R57 56 R42 56 R73 4.64K 1%
R58 56 R43 56 R74 4.64K 1%
R59 56 R44 56 R75 4.64K 1%
RGØ 56 R45 56 R76 4.64K 1%
RG1 56

75H78 E13 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E8 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E2 (pins 2, 1, 5, 6, 4, 9, 11, 12)
75H78 E6 (pins 2, 1, 5, 6, 4, 9, 11, 12)

CS1Ø DRV UNIT READY H
CS1Ø DRV ON CYL L
CS8 DIAG L EF2
CS1Ø DRV WRT PROT H
AF2 → CS1Ø SC1 H
AH2 → CS1Ø SC2 H
AJ2 → CS1Ø SC4 H
AK2 → CS1Ø SC8 H
AL2 → CS1Ø SC16 H
RECEIVED SECTOR COUNT

STATUS BUS FROM DRIVE INTERFACE (G4 PIN CONN)

REVISIONS		
ORIG	CHANGE NO.	REV.

TITLE: CONTROL SEQUENCER (CSIØ)					
SCALE: —	SHEET 10 OF 19	D	CS	M7684-Ø-1	S

+5V
R77
1K

CS2 EN CYLINDER H BF1
CS11 TAG EN H
CS6 BUS BIT Ø0 H
CS2 EN CONTROL H BE1
CS11 TAG EN H
CS6 BUS BIT Ø1 H
CS2 EN HEAD H BJ1
CS11 TAG EN H
CS6 BUS BIT Ø2 H
CS6 BUS BIT Ø3 H
CS6 BUS BIT Ø4 H

75113 E22 — +TAG 1 / -TAG 1 — J1 B, A
75113 E22 — +BIT Ø / -BIT Ø — J1 H, J
75113 E21 — +TAG 3 / -TAG 3 — J1 F, E
75113 E21 — +BIT 1 / -BIT 1 — J1 K, L
75113 E19 — +TAG 2 / -TAG 2 — J1 C, D
75113 E19 — +BIT 2 / -BIT 2 — J1 M, N
75113 E11 — +BIT 3 / -BIT 3 — J1 R, P
75113 E11 — +BIT 4 / -BIT 4 — J1 T, S

CS8 DIAG L EF2

IF8 GO H EN2
CS2 TAG H AV1
74LS11 E54 — CS11 TAG EN H

+5V
R78
1K

CS6 BUS BIT Ø5 H
CS6 BUS BIT Ø6 H
CS6 BUS BIT Ø7 H
CS6 BUS BIT Ø8 H
CS6 BUS BIT Ø9 H
CS12 POWER SEQ PICK L
CS12 POWER SEQ HOLD L

75113 E7 — +BIT 5 / -BIT 5 — J1 V, U
75113 E7 — +BIT 6 / -BIT 6 — J1 X, W
75113 E12 — +BIT 7 / -BIT 7 — J1 Z, Y
75113 E12 — +BIT 8 / -BIT 8 — J1 BB, AA
75113 E10 — +BIT 9 / -BIT 9 — J1 DD, CC
J1 AR, AS

TAG BUS TO DRIVE INTERFACE (60 PIN CONN)

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE: CONTROL SEQUENCER (CS11)
SIZE D | CODE CS | NUMBER M7684-0-1 | REV. S
SCALE — | SHEET 11 OF 19 | DWG.

FS2 CS12 GRANT OUT L

+5V
E91 SPDT
5V DC
D5 D672
BP GRANT IN L FT2
CS12 DRV UP TO SPEED L
CS12 SEQ CLR H

+5V
R81 6.8 MEG Ω
C106 3.3 μf
C107 .01μf
555 E98 2.5 SEC
CTL VTH DCG
R

+5V
R84 3.3K
D6 D664
CS12 HOLD PICK H
7416 E97
FU2
CS12 SIP L

CS8 UNIT READY H DNZ
7416 E87
CS12 DRV RDY (1) L
BP GRANT IN L FT2
74LS27 E96
CS12 UP TO SPEED H
CS12 DRV RDY (1) H
CS12 HOLD L
74LS27 E79
CS12 HOLD PICK H

+3V
CS12 DRV RDY (1) H
74S112 E99
+5V
R83 1K
7416 E97
CS12 DRVUP TO SPEED L
CS12 DRV RDY (1) L
CS12 UP TO SPEED H

CS12 PICK INHT H
+5V
R79 6.8K
BP GRANT IN L FT2
74LS27 E96
CS12 SEQ CLR H
74S08 E89
7416 E97
CS12 POWER SEQ PICK L

74S112 C99
CS12 HOLD L
7416 E97
CS12 POWER SEQ HOLD L

RDI START ENABLE H FU1
CS4 POWER OK H EL1
74LS08 E86
CS12 SEQ CLR L
7416 E97
CS12 SEQ CLR H

CS12 SIP L FU2
CS12 HOLD PICK H
74LS27 E96
CS12 PICK INHT H

POWER UP SEQUENCE

REVISIONS		
ECR	CHANGE NO.	REV.

TITLE	SIZE/CODE	NUMBER	REV.
CONTROL SEQUENCER (CS12)	D CS	M7684-0-1	S
SCALE —	SHEET 12 OF 19	DIST.	

AAI	CS6 SEEK REQUIRED H
ABI	CS6 NEW TRACK REQ'D H
ACI	CS6 CONTINUE H
ADI	CSI BRANCH ON TEST L
AEI	SPARE
AFI	CS3 SET PULSE H
AHI	CS5 SYNC REC EN A H
AJI	CS5 SYNC REC EN B H
AKI	CS5 TRANSMIT EN A H
ALI	CS5 TRANSMIT EN B H
AMI	CS5 TRNSCEIVR EN A H
ANI	CS5 TRNSCEIVR EN B H
API	SPARE
ARI	CS6 NEW TRACK REQD L
ASI	CSI SEQ CLK STROBE H
ATI	GND
AUI	CS3 PWR/INIT L
AVI	CS2 TAG H

BAI	CS8 DEV ADS 1 H
BBI	CS8 DEV ADS 2 H
BCI	CS8 DEV ADS 4 H
BDI	CS8 PLUG EN H
BEI	CS2 EN CONTROL H
BFI	CS2 EN CYLINDER H
BHI	BP DC LO L
BJI	CS2 EN HEAD H
BKI	(NOT USED) IF8 DECODE L
BLI	IF9 SEQ SKIP L
BMI	CS2 P EN SEARCH H
BNI	CS5 SECTOR COMPARE H
BPI	CS3 SECT/INDEX L
BRI	DSII TA 8 H
BSI	DSII TA 16 H
BTI	GND
BUI	IF3 PORT A ON H
BVI	IF4 PORT B ON H

CAI	BP SN 01 H
CBI	BP SN 02 H
CCI	BP SN 04 H
CDI	BP SN 08 H
CEI	BP SN 10 H
CFI	BP SN 20 H
CHI	BP SN 40 H
CJI	BP SN 80 H
CKI	BP SN 100 H
CLI	BP SN 200 H
CMI	BP SN 400 H
CNI	BP SN 800 H
CPI	BP SN 1000 H
CRI	BP SN 2000 H
CSI	BP SN 4000 H
CTI	GND
CUI	BP SN 8000 H
CVI	SPARE

DAI	CS2 RD HDR DATA CMD H
DBI	IF5 RM SN H
DCI	IF5 RM SN 1 H
DDI	IF5 RM SN 2 H
DEI	CS8 MAINT CLK H
DFI	CS8 MAINT CLK L
DHI	CS8 MR READ DATA H
DJI	DS7 WRITE DATA L
DKI	IF6 EN REG TO TIST H
DLI	SPARE
DMI	IF8 OCCUPIED L
DNI	CS5 MBA EBL L
DPI	IF4 SEQ CLK H
DRI	IF3 REQ A H
DSI	IF4 REQ B H
DTI	GND
DUI	CS5 EN ECC CLOCK L
DVI	CS6 MB EXCEPTION L

EAI	IF9 EXC ERR H
EBI	IF9 ABORT L
ECI	SA2 [illegible] H
EDI	CS3 OPI SET L
EEI	CS3 WLE SET L
EFI	IF8 OFFSET MODE H
EHI	GR PROM DIS L
EJI	CS8 WRT PROT H
EKI	CS9 SEEK ERR L
ELI	CS4 POWER OK H
EMI	RDI -5V
ENI	IF8 OFF DIR H
EPI	CS4 PRECLEAR CRC/ECC L
ERI	CS5 READ GATE H
ESI	SPARE
ETI	GND
EUI	CS4 P EN LOAD SR H
EVI	CS4 DS WRITE GATE H

FAI	CS4 P HEADER AREA H
FBI	CS9 DVC SET L
FCI	CS4 P DATA AREA H
FDI	CS4 P EN CRC/ECC H
FEI	CS4 P DATA EN SCLK H
FFI	CS4 LAST READ DATA L
FHI	CS4 P EN EBL H
FJI	CS5 READ GATE FAST H
FKI	CS4 P READ GATE H
FLI	IF4 TEST BIT CLOCK H
FMI	CS4 P LFS H
FNI	IF6 ASY WRT H
FPI	CS4 P EN CRC OUT H
FRI	CS8 INDEX H
FSI	CS4 P EN ECC OUT H
FTI	GND
FUI	RDI START ENABLE H
FVI	SPARE

AA2	+5V
AB2	-15V
AC2	GND
AD2	CSI RESET H
AE2	CSI BRANCH H
AF2	CSI0 SC 1 H
AH2	CSI0 SC 2 H
AJ2	CSI0 SC 4 H
AK2	CSI0 SC 8 H
AL2	CSI0 SC 16 H
AM2	SPARE
AN2	SPARE
AP2	SPARE
AR2	SPARE
AS2	CS4 BR RD TO WRT L
AT2	CS4 P WRITE GATE H
AU2	DSI0 EN CORRECT CLK L
AV2	CS4 BRANCH L

BA2	+5V
BB2	-15V
BC2	GND
BD2	DSI2 DC 1 H
BE2	DSI2 DC 2 H
BF2	DSI2 DC 4 H
BH2	DSI2 DC 8 H
BJ2	DSI2 DC 16 H
BK2	DSI2 DC 32 H
BL2	DSI2 DC 64 H
BM2	DSI2 DC 128 H
BN2	DSI2 DC 256 H
BP2	DSI2 DC 512 H
BR2	DS4 EN CRC OUT H
BS2	DS4 EN ECC OUT H
BT2	CS4 READ HEADER H
BU2	CS2 P SET ATA L
BV2	BP PROM GROUND

CA2	+5V
CB2	-15V
CC2	GND
CD2	CS4 EN SYNC H
CE2	IF5 RM LA H
CF2	IF8 FMT 16 H
CH2	DSI SYNC DET H
CJ2	DS4 WORD CLK H
CK2	DS4 WORD CLK L
CL2	DS4 PROM STROBE H
CM2	IF2 CONT 00
CN2	IF2 CONT 01
CP2	IF2 CONT 02
CR2	IF2 CONT 03
CS2	IF2 CONT 04
CT2	IF2 CONT 05
CU2	IF2 CONT 06
CV2	IF2 CONT 07

DA2	+5V
DB2	-15V
DC2	GND
DD2	IF2 CONT 08
DE2	IF2 CONT 09
DF2	IF2 CONT 10
DH2	IF2 CONT 11
DJ2	IF2 CONT 12
DK2	IF2 CONT 13
DL2	IF2 CONT 14
DM2	IF2 CONT 15
DN2	CS8 UNIT READY H
DP2	DSII TA1 H
DR2	DSII TA2 H
DS2	DSII TA4 H
DT2	CS3 [illegible] CLR L
DU2	SA2 [illegible] EXC H
DV2	CS5 EN CRC CLOCK L

EA2	+5V
EB2	-15V
EC2	GND
ED2	IF6 INIT A/B L
EE2	CS8 DIAG H
EF2	CS8 DIAG L
EH2	IF8 F0 H
EJ2	IF8 F1 H
EK2	IF8 F2 H
EL2	IF8 F3 H
EM2	IF8 F4 H
EN2	IF8 GO H
EP2	CS3 RESET GO L
ER2	DSII SA 1 H
ES2	DSII SA 2 H
ET2	DSII SA 4 H
EU2	DSII SA 8 H
EV2	DSII SA 16 H

FA2	+5V
FB2	-15V
FC2	GND
FD2	CS5 DTE SET L
FE2	DSI2 LST SECT TRK H
FF2	DSII LST SECT H
FH2	IFII LSC L
FJ2	CS2 FORMAT H
FK2	CS4 P EN CRC L
FL2	CS6 RUN AND GO H
FM2	CS2 LSC SET L
FN2	CS9 DVC CYL L
FP2	CS2 EN EXC H
FR2	CS2 SET IVC H
FS2	CSI2 GRANT OUT L
FT2	BP GRANT IN L
FU2	CSI2 SIP L
FV2	DS4 LCC WRD CNT INH L

I/O SIGNAL LIST

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: CONTROL SEQUENCER (CS 13)
SIZE D | CODE CS | NUMBER M7684-0-1 | REV S
SCALE | SHEET 13 OF 19 | DIST.

DEC PART NUMBER: 23-015D1
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-3-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 4

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	000	000	006	06	00000110	32	020	040	006	06	00000110
1	001	001	006	06	00000110	33	021	041	006	06	00000110
2	002	002	006	06	00000110	34	022	042	006	06	[illegible]
3	003	003	206	06	00000110	35	023	043	006	06	00000110
4	004	004	206	86	10000110	36	024	044	006	06	00000110
5	005	005	206	86	10000110	37	025	045	006	06	00000110
6	006	006	206	86	10000110	38	026	046	006	06	00000110
7	007	007	206	86	10000110	39	027	047	006	06	00000110
8	008	010	206	86	10000110	40	028	050	006	06	00000110
9	009	011	206	86	10000110	41	029	051	006	06	00000110
10	00A	012	206	86	10000110	42	02A	052	006	06	00000110
11	00B	013	212	8A	10001010	43	02B	053	006	06	00000110
12	00C	014	006	06	00000110	44	02C	054	006	06	00000110
13	00D	015	006	06	00000110	45	02D	055	006	06	00000110
14	00E	016	006	06	[illegible]	46	02E	056	006	06	00000110
15	00F	017	006	06	00000110	47	02F	057	006	06	00000110
16	010	020	006	06	00000110	48	030	060	006	06	00000110
17	011	021	006	06	00000110	49	031	061	006	06	00000110
18	012	022	006	06	00000110	50	032	062	006	06	00000110
19	013	023	006	06	00000110	51	033	063	006	06	00000110
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-015D1
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-3-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 3 OF 4

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-015D1
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-3-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 4

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-015D1
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-3-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 4 OF 4

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

READ CONTROLS FROM AT E81 (CS4)

TITLE
512 X 8
ROM/PROM PATTERN SPEC
23-015D1

REVISIONS
CHK | CHANGE NO. | REV.

TITLE: CONTROL SEQUENCER (CS 14)
SIZE: D | CODE: CS | NUMBER: M7684-0-1 | REV.: S
SCALE | SHEET 14 OF 19 | DIST.

DEC PART NUMBER: 23-016D1 — ORIGINATOR: IRENE BELLETTIERE — BINARY DATA "1" = HIGH — SHEET 1 OF 4
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF 3C) — DATE ORIGINATED: 5-4-77 — BINARY DATA "0" = LOW

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	000	000	310	C8	11001000	32	020	040	200	80	10000000	64	040	100	200	80	10000000	96	060	140	200	80	10000000
1	001	001	210	88	10001000	33	021	041	200	80	10000000	65	041	101	200	80	10000000	97	061	141	200	80	10000000
2	002	002	310	C8	11001000	34	022	042	200	80	10000000	66	042	102	200	80	10000000	98	062	142	200	80	10000000
3	003	003	310	C8	11001000	35	023	043	200	80	10000000	67	043	103	200	80	10000000	99	063	143	200	80	10000000
4	004	004	310	C8	11001000	36	024	044	200	80	10000000	68	044	104	200	80	10000000	100	064	144	200	80	10000000
5	005	005	310	C8	11001000	37	025	045	200	80	10000000	69	045	105	200	80	10000000	101	065	145	200	80	10000000
6	006	006	310	C8	11001000	38	026	046	200	80	10000000	70	046	106	200	80	10000000	102	066	146	200	80	10000000
7	007	007	310	C8	11001000	39	027	047	200	80	10000000	71	047	107	200	80	10000000	103	067	147	200	80	10000000
8	008	010	310	C8	11001000	40	028	050	200	80	10000000	72	048	110	200	80	10000000	104	068	150	200	80	10000000
9	009	011	310	C8	11001000	41	029	051	200	80	10000000	73	049	111	200	80	10000000	105	069	151	200	80	10000000
10	00A	012	310	C8	11001000	42	02A	052	200	80	10000000	74	04A	112	200	80	10000000	106	06A	152	200	80	10000000
11	00B	013	310	C8	11001000	43	02B	053	200	80	10000000	75	04B	113	200	80	10000000	107	06B	153	200	80	10000000
12	00C	014	310	C8	11001000	44	02C	054	200	80	10000000	76	04C	114	200	80	10000000	108	06C	154	200	80	10000000
13	00D	015	310	C8	11001000	45	02D	055	200	80	10000000	77	04D	115	200	80	10000000	109	06D	155	200	80	10000000
14	00E	016	310	C8	11001000	46	02E	056	200	80	10000000	78	04E	116	200	80	10000000	110	06E	156	200	80	10000000
15	00F	017	200	80	10000000	47	02F	057	200	80	10000000	79	04F	117	200	80	10000000	111	06F	157	200	80	10000000
16	010	020	200	80	10000000	48	030	060	200	80	10000000	80	050	120	200	80	10000000	112	070	160	200	80	10000000
17	011	021	200	80	10000000	49	031	061	200	80	10000000	81	051	121	200	80	10000000	113	071	161	200	80	10000000
18	012	022	200	80	10000000	50	032	062	200	80	10000000	82	052	122	200	80	10000000	114	072	162	200	80	10000000
19	013	023	200	80	10000000	51	033	063	200	80	10000000	83	053	123	200	80	10000000	115	073	163	200	80	10000000
20	014	024	200	80	10000000	52	034	064	200	80	10000000	84	054	124	200	80	10000000	116	074	164	200	80	10000000
21	015	025	200	80	10000000	53	035	065	200	80	10000000	85	055	125	200	80	10000000	117	075	165	200	80	10000000
22	016	026	200	80	10000000	54	036	066	200	80	10000000	86	056	126	200	80	10000000	118	076	166	200	80	10000000
23	017	027	200	80	10000000	55	037	067	200	80	10000000	87	057	127	200	80	10000000	119	077	167	200	80	10000000
24	018	030	200	80	10000000	56	038	070	200	80	10000000	88	058	130	200	80	10000000	120	078	170	200	80	10000000
25	019	031	200	80	10000000	57	039	071	200	80	10000000	89	059	131	200	80	10000000	121	079	171	200	80	10000000
26	01A	032	200	80	10000000	58	03A	072	200	80	10000000	90	05A	132	200	80	10000000	122	07A	172	200	80	10000000
27	01B	033	200	80	10000000	59	03B	073	200	80	10000000	91	05B	133	200	80	10000000	123	07B	173	200	80	10000000
28	01C	034	200	80	10000000	60	03C	074	200	80	10000000	92	05C	134	200	80	10000000	124	07C	174	200	80	10000000
29	01D	035	200	80	10000000	61	03D	075	200	80	10000000	93	05D	135	200	80	10000000	125	07D	175	200	80	10000000
30	01E	036	200	80	10000000	62	03E	076	200	80	10000000	94	05E	136	200	80	10000000	126	07E	176	200	80	10000000
31	01F	037	200	80	10000000	63	03F	077	200	80	10000000	95	05F	137	200	80	10000000	127	07F	177	200	80	10000000

DEC PART NUMBER: 23-016D1 — ORIGINATOR: IRENE BELLETTIERE — BINARY DATA "1" = HIGH — SHEET 2 OF 4
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF 3C) — DATE ORIGINATED: 5-4-77 — BINARY DATA "0" = LOW

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	080	200	350	E8	11101000	160	0A0	240	200	80	10000000	192	0C0	300	320	D0	11010000	224	0E0	340	320	D0	11010000
129	081	201	350	E8	11101000	161	0A1	241	320	D0	11010000	193	0C1	301	320	D0	11010000	225	0E1	341	320	D0	11010000
130	082	202	112	4A	01001010	162	0A2	242	320	D0	11010000	194	0C2	302	320	D0	11010000	226	0E2	342	320	D0	11010000
131	083	203	310	C8	11001000	163	0A3	243	320	D0	11010000	195	0C3	303	320	D0	11010000	227	0E3	343	320	D0	11010000
132	084	204	300	C0	11000000	164	0A4	244	320	D0	11010000	196	0C4	304	320	D0	11010000	228	0E4	344	320	D0	11010000
133	085	205	300	C0	11000000	165	0A5	245	320	D0	11010000	197	0C5	305	320	D0	11010000	229	0E5	345	320	D0	11010000
134	086	206	300	C0	11000000	166	0A6	246	320	D0	11010000	198	0C6	306	320	D0	11010000	230	0E6	346	320	D0	11010000
135	087	207	300	C0	11000000	167	0A7	247	320	D0	11010000	199	0C7	307	320	D0	11010000	231	0E7	347	320	D0	11010000
136	088	210	300	C0	11000000	168	0A8	250	320	D0	11010000	200	0C8	310	320	D0	11010000	232	0E8	350	320	D0	11010000
137	089	211	300	C0	11000000	169	0A9	251	320	D0	11010000	201	0C9	311	320	D0	11010000	233	0E9	351	320	D0	11010000
138	08A	212	300	C0	11000000	170	0AA	252	320	D0	11010000	202	0CA	312	320	D0	11010000	234	0EA	352	320	D0	11010000
139	08B	213	300	C0	11000000	171	0AB	253	320	D0	11010000	203	0CB	313	320	D0	11010000	235	0EB	353	320	D0	11010000
140	08C	214	200	80	10000000	172	0AC	254	320	D0	11010000	204	0CC	314	320	D0	11010000	236	0EC	354	320	D0	11010000
141	08D	215	200	80	10000000	173	0AD	255	320	D0	11010000	205	0CD	315	320	D0	11010000	237	0ED	355	320	D0	11010000
142	08E	216	200	80	10000000	174	0AE	256	320	D0	11010000	206	0CE	316	320	D0	11010000	238	0EE	356	320	D0	11010000
143	08F	217	200	80	10000000	175	0AF	257	320	D0	11010000	207	0CF	317	320	D0	11010000	239	0EF	357	320	D0	11010000
144	090	220	200	80	10000000	176	0B0	260	320	D0	11010000	208	0D0	320	320	D0	11010000	240	0F0	360	320	D0	11010000
145	091	221	200	80	10000000	177	0B1	261	320	D0	11010000	209	0D1	321	320	D0	11010000	241	0F1	361	320	D0	11010000
146	092	222	200	80	10000000	178	0B2	262	320	D0	11010000	210	0D2	322	320	D0	11010000	242	0F2	362	320	D0	11010000
147	093	223	200	80	10000000	179	0B3	263	320	D0	11010000	211	0D3	323	320	D0	11010000	243	0F3	363	320	D0	11010000
148	094	224	200	80	10000000	180	0B4	264	320	D0	11010000	212	0D4	324	320	D0	11010000	244	0F4	364	320	D0	11010000
149	095	225	200	80	10000000	181	0B5	265	320	D0	11010000	213	0D5	325	320	D0	11010000	245	0F5	365	320	D0	11010000
150	096	226	200	80	10000000	182	0B6	266	320	D0	11010000	214	0D6	326	320	D0	11010000	246	0F6	366	320	D0	11010000
151	097	227	200	80	10000000	183	0B7	267	320	D0	11010000	215	0D7	327	320	D0	11010000	247	0F7	367	320	D0	11010000
152	098	230	200	80	10000000	184	0B8	270	320	D0	11010000	216	0D8	330	320	D0	11010000	248	0F8	370	320	D0	11010000
153	099	231	200	80	10000000	185	0B9	271	320	D0	11010000	217	0D9	331	320	D0	11010000	249	0F9	371	320	D0	11010000
154	09A	232	200	80	10000000	186	0BA	272	320	D0	11010000	218	0DA	332	320	D0	11010000	250	0FA	372	320	D0	11010000
155	09B	233	200	80	10000000	187	0BB	273	320	D0	11010000	219	0DB	333	320	D0	11010000	251	0FB	373	320	D0	11010000
156	09C	234	200	80	10000000	188	0BC	274	320	D0	11010000	220	0DC	334	320	D0	11010000	252	0FC	374	320	D0	11010000
157	09D	235	200	80	10000000	189	0BD	275	320	D0	11010000	221	0DD	335	320	D0	11010000	253	0FD	375	320	D0	11010000
158	09E	236	200	80	10000000	190	0BE	276	320	D0	11010000	222	0DE	336	320	D0	11010000	254	0FE	376	320	D0	11010000
159	09F	237	200	80	10000000	191	0BF	277	320	D0	11010000	223	0DF	337	320	D0	11010000	255	0FF	377	320	D0	11010000

DEC PART NUMBER: 23-016D1 — ORIGINATOR: IRENE BELLETTIERE — BINARY DATA "1" = HIGH — SHEET 3 OF 4
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF 3C) — DATE ORIGINATED: 5-4-77 — BINARY DATA "0" = LOW

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
256	100	400	320	D0	11010000	288	120	440	320	D0	11010000	320	140	500	320	D0	11010000	352	160	540	320	D0	11010000
257	101	401	320	D0	11010000	289	121	441	320	D0	11010000	321	141	501	320	D0	11010000	353	161	541	320	D0	11010000
258	102	402	320	D0	11010000	290	122	442	320	D0	11010000	322	142	502	320	D0	11010000	354	162	542	320	D0	11010000
259	103	403	320	D0	11010000	291	123	443	320	D0	11010000	323	143	503	320	D0	11010000	355	163	543	320	D0	11010000
260	104	404	320	D0	11010000	292	124	444	320	D0	11010000	324	144	504	320	D0	11010000	356	164	544	320	D0	11010000
261	105	405	320	D0	11010000	293	125	445	320	D0	11010000	325	145	505	320	D0	11010000	357	165	545	320	D0	11010000
262	106	406	320	D0	11010000	294	126	446	320	D0	11010000	326	146	506	320	D0	11010000	358	166	546	320	D0	11010000
263	107	407	320	D0	11010000	295	127	447	320	D0	11010000	327	147	507	320	D0	11010000	359	167	547	320	D0	11010000
264	108	410	320	D0	11010000	296	128	450	320	D0	11010000	328	148	510	320	D0	11010000	360	168	550	320	D0	11010000
265	109	411	320	D0	11010000	297	129	451	320	D0	11010000	329	149	511	320	D0	11010000	361	169	551	320	D0	11010000
266	10A	412	320	D0	11010000	298	12A	452	320	D0	11010000	330	14A	512	320	D0	11010000	362	16A	552	320	D0	11010000
267	10B	413	320	D0	11010000	299	12B	453	320	D0	11010000	331	14B	513	320	D0	11010000	363	16B	553	320	D0	11010000
268	10C	414	320	D0	11010000	300	12C	454	320	D0	11010000	332	14C	514	320	D0	11010000	364	16C	554	320	D0	11010000
269	10D	415	320	D0	11010000	301	12D	455	320	D0	11010000	333	14D	515	320	D0	11010000	365	16D	555	320	D0	11010000
270	10E	416	320	D0	11010000	302	12E	456	320	D0	11010000	334	14E	516	320	D0	11010000	366	16E	556	320	D0	11010000
271	10F	417	320	D0	11010000	303	12F	457	320	D0	11010000	335	14F	517	320	D0	11010000	367	16F	557	320	D0	11010000
272	110	420	320	D0	11010000	304	130	460	320	D0	11010000	336	150	520	320	D0	11010000	368	170	560	320	D0	11010000
273	111	421	320	D0	11010000	305	131	461	320	D0	11010000	337	151	521	320	D0	11010000	369	171	561	320	D0	11010000
274	112	422	320	D0	11010000	306	132	462	320	D0	11010000	338	152	522	320	D0	11010000	370	172	562	320	D0	11010000
275	113	423	320	D0	11010000	307	133	463	320	D0	11010000	339	153	523	320	D0	11010000	371	173	563	320	D0	11010000
276	114	424	320	D0	11010000	308	134	464	320	D0	11010000	340	154	524	320	D0	11010000	372	174	564	320	D0	11010000
277	115	425	320	D0	11010000	309	135	465	320	D0	11010000	341	155	525	320	D0	11010000	373	175	565	320	D0	11010000
278	116	426	320	D0	11010000	310	136	466	320	D0	11010000	342	156	526	320	D0	11010000	374	176	566	320	D0	11010000
279	117	427	320	D0	11010000	311	137	467	320	D0	11010000	343	157	527	320	D0	11010000	375	177	567	320	D0	11010000
280	118	430	320	D0	11010000	312	138	470	320	D0	11010000	344	158	530	320	D0	11010000	376	178	570	320	D0	11010000
281	119	431	320	D0	11010000	313	139	471	320	D0	11010000	345	159	531	320	D0	11010000	377	179	571	320	D0	11010000
282	11A	432	320	D0	11010000	314	13A	472	320	D0	11010000	346	15A	532	320	D0	11010000	378	17A	572	320	D0	11010000
283	11B	433	320	D0	11010000	315	13B	473	320	D0	11010000	347	15B	533	320	D0	11010000	379	17B	573	320	D0	11010000
284	11C	434	320	D0	11010000	316	13C	474	320	D0	11010000	348	15C	534	320	D0	11010000	380	17C	574	320	D0	11010000
285	11D	435	320	D0	11010000	317	13D	475	320	D0	11010000	349	15D	535	320	D0	11010000	381	17D	575	320	D0	11010000
286	11E	436	320	D0	11010000	318	13E	476	320	D0	11010000	350	15E	536	320	D0	11010000	382	17E	576	320	D0	11010000
287	11F	437	320	D0	11010000	319	13F	477	320	D0	11010000	351	15F	537	320	D0	11010000	383	17F	577	320	D0	11010000

DEC PART NUMBER: 23-016D1 — ORIGINATOR: IRENE BELLETTIERE — BINARY DATA "1" = HIGH — SHEET 4 OF 4
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF 3C) — DATE ORIGINATED: 5-4-77 — BINARY DATA "0" = LOW

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
384	180	600	320	D0	11010000	416	1A0	640	320	D0	11010000	448	1C0	700	300	C0	11000000	480	1E0	740	300	C0	11000000
385	181	601	320	D0	11010000	417	1A1	641	301	C1	11000001	449	1C1	701	300	C0	11000000	481	1E1	741	300	C0	11000000
386	182	602	320	D0	11010000	418	1A2	642	301	C1	11000001	450	1C2	702	300	C0	11000000	482	1E2	742	300	C0	11000000
387	183	603	320	D0	11010000	419	1A3	643	304	C4	11000100	451	1C3	703	300	C0	11000000	483	1E3	743	300	C0	11000000
388	184	604	320	D0	11010000	420	1A4	644	300	C0	11000000	452	1C4	704	300	C0	11000000	484	1E4	744	300	C0	11000000
389	185	605	320	D0	11010000	421	1A5	645	300	C0	11000000	453	1C5	705	300	C0	11000000	485	1E5	745	300	C0	11000000
390	186	606	320	D0	11010000	422	1A6	646	300	C0	11000000	454	1C6	706	300	C0	11000000	486	1E6	746	300	C0	11000000
391	187	607	320	D0	11010000	423	1A7	647	300	C0	11000000	455	1C7	707	300	C0	11000000	487	1E7	747	300	C0	11000000
392	188	610	320	D0	11010000	424	1A8	650	300	C0	11000000	456	1C8	710	300	C0	11000000	488	1E8	750	300	C0	11000000
393	189	611	320	D0	11010000	425	1A9	651	300	C0	11000000	457	1C9	711	300	C0	11000000	489	1E9	751	300	C0	11000000
394	18A	612	320	D0	11010000	426	1AA	652	300	C0	11000000	458	1CA	712	300	C0	11000000	490	1EA	752	300	C0	11000000
395	18B	613	320	D0	11010000	427	1AB	653	300	C0	11000000	459	1CB	713	300	C0	11000000	491	1EB	753	300	C0	11000000
396	18C	614	320	D0	11010000	428	1AC	654	300	C0	11000000	460	1CC	714	300	C0	11000000	492	1EC	754	300	C0	11000000
397	18D	615	320	D0	11010000	429	1AD	655	300	C0	11000000	461	1CD	715	300	C0	11000000	493	1ED	755	300	C0	11000000
398	18E	616	320	D0	11010000	430	1AE	656	300	C0	11000000	462	1CE	716	300	C0	11000000	494	1EE	756	300	C0	11000000
399	18F	617	320	D0	11010000	431	1AF	657	300	C0	11000000	463	1CF	717	300	C0	11000000	495	1EF	757	300	C0	11000000
400	190	620	320	D0	11010000	432	1B0	660	300	C0	11000000	464	1D0	720	300	C0	11000000	496	1F0	760	300	C0	11000000
401	191	621	320	D0	11010000	433	1B1	661	300	C0	11000000	465	1D1	721	300	C0	11000000	497	1F1	761	300	C0	11000000
402	192	622	320	D0	11010000	434	1B2	662	300	C0	11000000	466	1D2	722	300	C0	11000000	498	1F2	762	300	C0	11000000
403	193	623	320	D0	11010000	435	1B3	663	300	C0	11000000	467	1D3	723	300	C0	11000000	499	1F3	763	300	C0	11000000
404	194	624	320	D0	11010000	436	1B4	664	300	C0	11000000	468	1D4	724	300	C0	11000000	500	1F4	764	300	C0	11000000
405	195	625	320	D0	11010000	437	1B5	665	300	C0	11000000	469	1D5	725	300	C0	11000000	501	1F5	765	300	C0	11000000
406	196	626	320	D0	11010000	438	1B6	666	300	C0	11000000	470	1D6	726	300	C0	11000000	502	1F6	766	300	C0	11000000
407	197	627	320	D0	11010000	439	1B7	667	300	C0	11000000	471	1D7	727	300	C0	11000000	503	1F7	767	300	C0	11000000
408	198	630	320	D0	11010000	440	1B8	670	300	C0	11000000	472	1D8	730	300	C0	11000000	504	1F8	770	300	C0	11000000
409	199	631	320	D0	11010000	441	1B9	671	300	C0	11000000	473	1D9	731	300	C0	11000000	505	1F9	771	300	C0	11000000
410	19A	632	320	D0	11010000	442	1BA	672	300	C0	11000000	474	1DA	732	300	C0	11000000	506	1FA	772	300	C0	11000000
411	19B	633	320	D0	11010000	443	1BB	673	300	C0	11000000	475	1DB	733	300	C0	11000000	507	1FB	773	300	C0	11000000
412	19C	634	320	D0	11010000	444	1BC	674	300	C0	11000000	476	1DC	734	300	C0	11000000	508	1FC	774	300	C0	11000000
413	19D	635	320	D0	11010000	445	1BD	675	300	C0	11000000	477	1DD	735	300	C0	11000000	509	1FD	775	300	C0	11000000
414	19E	636	320	D0	11010000	446	1BE	676	300	C0	11000000	478	1DE	736	300	C0	11000000	510	1FE	776	300	C0	11000000
415	19F	637	320	D0	11010000	447	1BF	677	300	C0	11000000	479	1DF	737	300	C0	11000000	511	1FF	777	300	C0	11000000

COMMON READ/WRITE CONTROLS PROM AT E72 (CS4)

DEC/PROM PATTERN SPEC
23-016D1

REVISIONS: CHK. | CHANGE NO. | REV.

TITLE: CONTROL SEQUENCER (CS15) — SIZE: D — CODE: CS — NUMBER: M7684-0-1 — REV: S
SHEET 15 OF 19

DEC PART NUMBER: 23-017D1 ORIGINATOR: IRENE BALLETTI
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATA ORIGINATED: 5-4-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 4

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	000	000	105	45	01000101	32	020	040	004	04	00000100
1	001	001	105	45	01000101	33	021	041	004	04	00000100
2	002	002	105	45	01000101	34	022	042	004	04	00000100
3	003	003	105	45	01000101	35	023	043	004	04	00000100
4	004	004	105	45	01000101	36	024	044	004	04	00000100
5	005	005	105	45	01000101	37	025	045	004	04	00000100
6	006	006	105	45	01000101	38	026	046	004	04	00000100
7	007	007	105	45	01000101	39	027	047	004	04	00000100
8	008	010	105	45	01000101	40	028	050	004	04	00000100
9	009	011	105	45	01000101	41	029	051	004	04	00000100
10	00A	012	105	45	01000101	42	02A	052	004	04	00000100
11	00B	013	105	45	01000101	43	02B	053	004	04	00000100
12	00C	014	105	45	01000101	44	02C	054	004	04	00000100
13	00D	015	105	45	01000101	45	02D	055	004	04	00000100
14	00E	016	163	73	01110011	46	02E	056	004	04	00000100
15	00F	017	004	04	00000100	47	02F	057	004	04	00000100
16	010	020	004	04	00000100	48	030	060	004	04	00000100
17	011	021	004	04	00000100	49	031	061	004	04	00000100
18	012	022	004	04	00000100	50	032	062	004	04	00000100
19	013	023	004	04	00000100	51	033	063	004	04	00000100

[illegible]

DEC PART NUMBER: 23-017D1 ORIGINATOR: IRENE BALLETTI
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATA ORIGINATED: 5-4-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 4

[illegible]

DEC PART NUMBER: 23-017D1 ORIGINATOR: IRENE BALLETTI
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATA ORIGINATED: 5-4-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 3 OF 4

[illegible]

DEC PART NUMBER: 23-017D1 ORIGINATOR: IRENE BALLETTI
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATA ORIGINATED: 5-4-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 4 OF 4

[illegible]

WRITE CONTROL ROM AT E30 (CS4)

TITLE
512 X 8
ROM/PROM PATTERN SPEC
23-017D1

REVISIONS: CHK | CHANGE NO. | REV.

TITLE: CONTROL SEQUENCER (CS16)
SIZE: D | CODE: CS | NUMBER: M7684-0-1 | REV: S
SCALE | SHEET 16 OF 19

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-2-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	305	C5	11000101
1	01	001	305	C5	11000101
2	02	002	305	C5	11000101
3	03	003	305	C5	11000101
4	04	004	305	C5	11000101
5	05	005	305	C5	11000101
6	06	006	305	C5	11000101
7	07	007	305	C5	11000101
8	08	010	305	C5	11000101
9	09	011	305	C5	11000101
10	0A	012	305	C5	11000101
11	0B	013	305	C5	11000101
12	0C	014	305	C5	11000101
13	0D	015	305	C5	11000101
14	0E	016	305	C5	11000101
15	0F	017	305	C5	11000101
16	10	020	305	C5	11000101
17	11	021	305	C5	11000101
18	12	022	305	C5	11000101
19	13	023	305	C5	11000101
20	14	024	305	C5	11000101
21	15	025	305	C5	11000101
22	16	026	305	C5	11000101
23	17	027	305	C5	11000101
24	18	030	305	C5	11000101
25	19	031	305	C5	11000101
26	1A	032	305	C5	11000101
27	1B	033	305	C5	11000101
28	1C	034	305	C5	11000101
29	1D	035	305	C5	11000101
30	1E	036	305	C5	11000101
31	1F	037	305	C5	11000101
32	20	040	305	C5	11000101
33	21	041	305	C5	11000101
34	22	042	305	C5	11000101
35	23	043	305	C5	11000101
36	24	044	305	C5	11000101
37	25	045	305	C5	11000101
38	26	046	305	C5	11000101
39	27	047	305	C5	11000101
40	28	050	305	C5	11000101
41	29	051	305	C5	11000101
42	2A	052	305	C5	11000101
43	2B	053	305	C5	11000101
44	2C	054	305	C5	11000101
45	2D	055	305	C5	11000101
46	2E	056	305	C5	11000101
47	2F	057	305	C5	11000101
48	30	060	305	C5	11000101
49	31	061	305	C5	11000101
50	32	062	305	C5	11000101
51	33	063	305	C5	11000101
52	34	064	305	C5	11000101
53	35	065	305	C5	11000101
54	36	066	305	C5	11000101
55	37	067	305	C5	11000101
56	38	070	305	C5	11000101
57	39	071	305	C5	11000101
58	3A	072	305	C5	11000101
59	3B	073	305	C5	11000101
60	3C	074	305	C5	11000101
61	3D	075	305	C5	11000101
62	3E	076	305	C5	11000101
63	3F	077	305	C5	11000101
64	40	100	345	E5	11100101
65	41	101	345	E5	11100101
66	42	102	345	E5	11100101
67	43	103	345	E5	11100101
68	44	104	345	E5	11100101
69	45	105	345	E5	11100101
70	46	106	345	E5	11100101
71	47	107	345	E5	11100101
72	48	110	345	E5	11100101
73	49	111	345	E5	11100101
74	4A	112	305	C5	11000101
75	4B	113	305	C5	11000101
76	4C	114	305	C5	11000101
77	4D	115	305	C5	11000101
78	4E	116	305	C5	11000101
79	4F	117	305	C5	11000101
80	50	120	305	C5	11000101
81	51	121	305	C5	11000101
82	52	122	305	C5	11000101
83	53	123	305	C5	11000101
84	54	124	305	C5	11000101
85	55	125	305	C5	11000101
86	56	126	305	C5	11000101
87	57	127	305	C5	11000101
88	58	130	305	C5	11000101
89	59	131	305	C5	11000101
90	5A	132	305	C5	11000101
91	5B	133	305	C5	11000101
92	5C	134	305	C5	11000101
93	5D	135	305	C5	11000101
94	5E	136	305	C5	11000101
95	5F	137	305	C5	11000101
96	60	140	305	C5	11000101
97	61	141	305	C5	11000101
98	62	142	305	C5	11000101
99	63	143	305	C5	11000101
100	64	144	305	C5	11000101
101	65	145	305	C5	11000101
102	66	146	305	C5	11000101
103	67	147	304	C4	11000100
104	68	150	304	C4	11000100
105	69	151	300	C0	11000000
106	6A	152	305	C5	11000101
107	6B	153	305	C5	11000101
108	6C	154	305	C5	11000101
109	6D	155	305	C5	11000101
110	6E	156	305	C5	11000101
111	6F	157	305	C5	11000101
112	70	160	305	C5	11000101
113	71	161	305	C5	11000101
114	72	162	305	C5	11000101
115	73	163	305	C5	11000101
116	74	164	305	C5	11000101
117	75	165	305	C5	11000101
118	76	166	305	C5	11000101
119	77	167	305	C5	11000101
120	78	170	305	C5	11000101
121	79	171	305	C5	11000101
122	7A	172	305	C5	11000101
123	7B	173	305	C5	11000101
124	7C	174	305	C5	11000101
125	7D	175	205	85	10000101
126	7E	176	305	C5	11000101
127	7F	177	301	C1	11000001

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 5-2-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	335	DD	11011101
129	81	201	315	CD	11001101
130	82	202	315	CD	11001101
131	83	203	315	CD	11001101
132	84	204	315	CD	11001101
133	85	205	305	C5	11000101
134	86	206	305	C5	11000101
135	87	207	305	C5	11000101
136	88	210	305	C5	11000101
137	89	211	305	C5	11000101
138	8A	212	305	C5	11000101
139	8B	213	305	C5	11000101
140	8C	214	305	C5	11000101
141	8D	215	305	C5	11000101
142	8E	216	305	C5	11000101
143	8F	217	305	C5	11000101
144	90	220	315	CD	11001101
145	91	221	305	C5	11000101
146	92	222	305	C5	11000101
147	93	223	305	C5	11000101
148	94	224	305	C5	11000101
149	95	225	305	C5	11000101
150	96	226	305	C5	11000101
151	97	227	305	C5	11000101
152	98	230	305	C5	11000101
153	99	231	305	C5	11000101
154	9A	232	305	C5	11000101
155	9B	233	305	C5	11000101
156	9C	234	305	C5	11000101
157	9D	235	305	C5	11000101
158	9E	236	305	C5	11000101
159	9F	237	305	C5	11000101
160	A0	240	305	C5	11000101
161	A1	241	305	C5	11000101
162	A2	242	305	C5	11000101
163	A3	243	305	C5	11000101
164	A4	244	305	C5	11000101
165	A5	245	305	C5	11000101
166	A6	246	305	C5	11000101
167	A7	247	305	C5	11000101
168	A8	250	305	C5	11000101
169	A9	251	307	C7	11000111
170	AA	252	307	C7	11000111
171	AB	253	307	C7	11000111
172	AC	254	307	C7	11000111
173	AD	255	307	C7	11000111
174	AE	256	307	C7	11000111
175	AF	257	307	C7	11000111
176	B0	260	307	C7	11000111
177	B1	261	317	CF	11001111
178	B2	262	317	CF	11001111
179	B3	263	317	CF	11001111
180	B4	264	317	CF	11001111
181	B5	265	317	CF	11001111
182	B6	266	317	CF	11001111
183	B7	267	307	C7	11000111
184	B8	270	307	C7	11000111
185	B9	271	305	C5	11000101
186	BA	272	305	C5	11000101
187	BB	273	305	C5	11000101
188	BC	274	305	C5	11000101
189	BD	275	305	C5	11000101
190	BE	276	305	C5	11000101
191	BF	277	305	C5	11000101
192	C0	300	305	C5	11000101
193	C1	301	305	C5	11000101
194	C2	302	305	C5	11000101
195	C3	303	305	C5	11000101
196	C4	304	305	C5	11000101
197	C5	305	305	C5	11000101
198	C6	306	305	C5	11000101
199	C7	307	305	C5	11000101
200	C8	310	305	C5	11000101
201	C9	311	305	C5	11000101
202	CA	312	305	C5	11000101
203	CB	313	305	C5	11000101
204	CC	314	305	C5	11000101
205	CD	315	305	C5	11000101
206	CE	316	305	C5	11000101
207	CF	317	305	C5	11000101
208	D0	320	305	C5	11000101
209	D1	321	305	C5	11000101
210	D2	322	305	C5	11000101
211	D3	323	305	C5	11000101
212	D4	324	305	C5	11000101
213	D5	325	305	C5	11000101
214	D6	326	305	C5	11000101
215	D7	327	305	C5	11000101
216	D8	330	305	C5	11000101
217	D9	331	305	C5	11000101
218	DA	332	305	C5	11000101
219	DB	333	305	C5	11000101
220	DC	334	305	C5	11000101
221	DD	335	305	C5	11000101
222	DE	336	305	C5	11000101
223	DF	337	305	C5	11000101
224	E0	340	305	C5	11000101
225	E1	341	305	C5	11000101
226	E2	342	305	C5	11000101
227	E3	343	305	C5	11000101
228	E4	344	305	C5	11000101
229	E5	345	305	C5	11000101
230	E6	346	305	C5	11000101
231	E7	347	305	C5	11000101
232	E8	350	305	C5	11000101
233	E9	351	305	C5	11000101
234	EA	352	305	C5	11000101
235	EB	353	305	C5	11000101
236	EC	354	305	C5	11000101
237	ED	355	305	C5	11000101
238	EE	356	305	C5	11000101
239	EF	357	305	C5	11000101
240	F0	360	305	C5	11000101
241	F1	361	305	C5	11000101
242	F2	362	305	C5	11000101
243	F3	363	305	C5	11000101
244	F4	364	305	C5	11000101
245	F5	365	305	C5	11000101
246	F6	366	305	C5	11000101
247	F7	367	305	C5	11000101
248	F8	370	305	C5	11000101
249	F9	371	305	C5	11000101
250	FA	372	305	C5	11000101
251	FB	373	305	C5	11000101
252	FC	374	305	C5	11000101
253	FD	375	305	C5	11000101
254	FE	376	305	C5	11000101
255	FF	377	305	C5	11000101

COMMAND SEQUENCER MISCELLANEOUS AT E47 (CS2)

[illegible]
256 X 8
ROM/PROM PATTERN SPEC
23-[illegible]

DEC PART NUMBER: 23-00388
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 12-6-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	002	02	00000010
1	01	001	003	03	00000011
2	02	002	000	00	00000000
3	03	003	003	03	00000011
4	04	004	000	00	00000000
5	05	005	003	03	00000011
6	06	006	002	02	00000010
7	07	007	003	03	00000011
8	08	010	002	02	00000010
9	09	011	003	03	00000011
10	0A	012	002	02	00000010
11	0B	013	003	03	00000011
12	0C	014	002	02	00000010
13	0D	015	003	03	00000011
14	0E	016	002	02	00000010
15	0F	017	003	03	00000011
16	10	020	002	02	00000010
17	11	021	003	03	00000011
18	12	022	002	02	00000010
19	13	023	003	03	00000011
20	14	024	002	02	00000010
21	15	025	003	03	00000011
22	16	026	000	00	00000000
23	17	027	003	03	00000011
24	18	030	000	00	00000000
25	19	031	003	03	00000011
26	1A	032	002	02	00000010
27	1B	033	003	03	00000011
28	1C	034	002	02	00000010
29	1D	035	003	03	00000011
30	1E	036	000	00	00000000
31	1F	037	003	03	00000011
32	20	040	000	00	00000000
33	21	041	003	03	00000011
34	22	042	002	02	00000010
35	23	043	003	03	00000011
36	24	044	000	00	00000000
37	25	045	003	03	00000011
38	26	046	000	00	00000000
39	27	047	003	03	00000011
40	28	050	000	00	00000000
41	29	051	003	03	00000011
42	2A	052	002	02	00000010
43	2B	053	003	03	00000011
44	2C	054	002	02	00000010
45	2D	055	003	03	00000011
46	2E	056	000	00	00000000
47	2F	057	003	03	00000011
48	30	060	000	00	00000000
49	31	061	003	03	00000011
50	32	062	002	02	00000010
51	33	063	003	03	00000011
52	34	064	002	02	00000010
53	35	065	003	03	00000011
54	36	066	000	00	00000000
55	37	067	003	03	00000011
56	38	070	000	00	00000000
57	39	071	003	03	00000011
58	3A	072	002	02	00000010
59	3B	073	003	03	00000011
60	3C	074	002	02	00000010
61	3D	075	003	03	00000011
62	3E	076	000	00	00000000
63	3F	077	003	03	00000011
64	40	100	042	22	00100010
65	41	101	043	23	00100011
66	42	102	062	32	00110010
67	43	103	063	33	00110011
68	44	104	062	32	00110010
69	45	105	063	33	00110011
70	46	106	062	32	00110010
71	47	107	063	33	00110011
72	48	110	042	22	00100010
73	49	111	043	23	00100011
74	4A	112	002	02	00000010
75	4B	113	003	03	00000011
76	4C	114	002	02	00000010
77	4D	115	003	03	00000011
78	4E	116	002	02	00000010
79	4F	117	001	01	00000001
80	50	120	202	82	10000010
81	51	121	203	83	10000011
82	52	122	222	92	10010010
83	53	123	223	93	10010011
84	54	124	222	92	10010010
85	55	125	223	93	10010011
86	56	126	222	92	10010010
87	57	127	223	93	10010011
88	58	130	202	82	10000010
89	59	131	203	83	10000011
90	5A	132	002	02	00000010
91	5B	133	003	03	00000011
92	5C	134	002	02	00000010
93	5D	135	003	03	00000011
94	5E	136	002	02	00000010
95	5F	137	001	01	00000001
96	60	140	002	02	00000010
97	61	141	003	03	00000011
98	62	142	002	02	00000010
99	63	143	003	03	00000011
100	64	144	002	02	00000010
101	65	145	003	03	00000011
102	66	146	002	02	00000010
103	67	147	013	0B	00001011
104	68	150	012	0A	00001010
105	69	151	003	03	00000011
106	6A	152	000	00	00000000
107	6B	153	001	01	00000001
108	6C	154	000	00	00000000
109	6D	155	001	01	00000001
110	6E	156	000	00	00000000
111	6F	157	001	01	00000001
112	70	160	000	00	00000000
113	71	161	001	01	00000001
114	72	162	000	00	00000000
115	73	163	001	01	00000001
116	74	164	000	00	00000000
117	75	165	001	01	00000001
118	76	166	000	00	00000000
119	77	167	001	01	00000001
120	78	170	000	00	00000000
121	79	171	001	01	00000001
122	7A	172	000	00	00000000
123	7B	173	001	01	00000001
124	7C	174	000	00	00000000
125	7D	175	003	03	00000011
126	7E	176	002	02	00000010
127	7F	177	003	03	00000011

DEC PART NUMBER: 23-00388
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC)
ORIGINATOR: IRENE PELLETTIERE
DATE ORIGINATED: 12-6-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	003	03	00000011
129	81	201	002	02	00000010
130	82	202	003	03	00000011
131	83	203	002	02	00000010
132	84	204	001	01	00000001
133	85	205	006	06	00000110
134	86	206	007	07	00000111
135	87	207	007	07	00000111
136	88	210	002	02	00000010
137	89	211	003	03	00000011
138	8A	212	002	02	00000010
139	8B	213	003	03	00000011
140	8C	214	000	00	00000000
141	8D	215	001	01	00000001
142	8E	216	000	00	00000000
143	8F	217	001	01	00000001
144	90	220	042	22	00100010
145	91	221	203	83	10000011
146	92	222	202	82	10000010
147	93	223	223	93	10010011
148	94	224	222	92	10010010
149	95	225	223	93	10010011
150	96	226	222	92	10010010
151	97	227	223	93	10010011
152	98	230	222	92	10010010
153	99	231	203	83	10000011
154	9A	232	202	82	10000010
155	9B	233	003	03	00000011
156	9C	234	002	02	00000010
157	9D	235	043	23	00100011
158	9E	236	102	42	01000010
159	9F	237	103	43	01000011
160	A0	240	122	52	01010010
161	A1	241	123	53	01010011
162	A2	242	122	52	01010010
163	A3	243	123	53	01010011
164	A4	244	122	52	01010010
165	A5	245	123	53	01010011
166	A6	246	002	02	00000010
167	A7	247	003	03	00000011
168	A8	250	002	02	00000010
169	A9	251	043	23	00100011
170	AA	252	042	22	00100010
171	AB	253	063	33	00110011
172	AC	254	062	32	00110010
173	AD	255	063	33	00110011
174	AE	256	062	32	00110010
175	AF	257	063	33	00110011
176	B0	260	062	32	00110010
177	B1	261	063	33	00110011
178	B2	262	072	3A	00111010
179	B3	263	073	3B	00111011
180	B4	264	072	3A	00111010
181	B5	265	063	33	00110011
182	B6	266	062	32	00110010
183	B7	267	063	33	00110011
184	B8	270	062	32	00110010
185	B9	271	063	33	00110011
186	BA	272	042	22	00100010
187	BB	273	043	23	00100011
188	BC	274	000	00	00000000
189	BD	275	001	01	00000001
190	BE	276	000	00	00000000
191	BF	277	001	01	00000001
192	C0	300	000	00	00000000
193	C1	301	001	01	00000001
194	C2	302	000	00	00000000
195	C3	303	001	01	00000001
196	C4	304	000	00	00000000
197	C5	305	001	01	00000001
198	C6	306	000	00	00000000
199	C7	307	001	01	00000001
200	C8	310	000	00	00000000
201	C9	311	001	01	00000001
202	CA	312	000	00	00000000
203	CB	313	001	01	00000001
204	CC	314	000	00	00000000
205	CD	315	001	01	00000001
206	CE	316	000	00	00000000
207	CF	317	001	01	00000001
208	D0	320	000	00	00000000
209	D1	321	001	01	00000001
210	D2	322	000	00	00000000
211	D3	323	001	01	00000001
212	D4	324	000	00	00000000
213	D5	325	001	01	00000001
214	D6	326	000	00	00000000
215	D7	327	001	01	00000001
216	D8	330	000	00	00000000
217	D9	331	001	01	00000001
218	DA	332	000	00	00000000
219	DB	333	001	01	00000001
220	DC	334	000	00	00000000
221	DD	335	001	01	00000001
222	DE	336	000	00	00000000
223	DF	337	001	01	00000001
224	E0	340	000	00	00000000
225	E1	341	001	01	00000001
226	E2	342	000	00	00000000
227	E3	343	001	01	00000001
228	E4	344	000	00	00000000
229	E5	345	001	01	00000001
230	E6	346	000	00	00000000
231	E7	347	001	01	00000001
232	E8	350	102	42	01000010
233	E9	351	103	43	01000011
234	EA	352	002	02	00000010
235	EB	353	003	03	00000011
236	EC	354	002	02	00000010
237	ED	355	003	03	00000011
238	EE	356	002	02	00000010
239	EF	357	003	03	00000011
240	F0	360	002	02	00000010
241	F1	361	003	03	00000011
242	F2	362	002	02	00000010
243	F3	363	003	03	00000011
244	F4	364	002	02	00000010
245	F5	365	003	03	00000011
246	F6	366	002	02	00000010
247	F7	367	003	03	00000011
248	F8	370	002	02	00000010
249	F9	371	003	03	00000011
250	FA	372	002	02	00000010
251	FB	373	003	03	00000011
252	FC	374	002	02	00000010
253	FD	375	001	01	00000001
254	FE	376	000	00	00000000
255	FF	377	001	01	00000001

TAG CONTROLS AT E39 (CS2)

[illegible]
256 X 8
ROM/PROM PATTERN SPEC
23-00388

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CONTROL SEQUENCER (CS17)	D	CS	M7684-0-1	S
SCALE	SHEET 17 OF 19		DIST.	

D CS M7684-0-1 S

DEC PART NUMBER: 23-01988 ORIGINATOR: IRENE BELLETTIERE
LEFT COLUMN OF BIN DATA IS MSB (PIN 11 OF IC) DATE ORIGINATED: 8-25-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	277	BF	10111111	32	20	040	101	41	01000001	64	40	100	247	A7	10100111	96	60	140	247	A7	10100111
1	01	001	276	BE	10111110	33	21	041	267	B7	10110111	65	41	101	245	A5	10100101	97	61	141	245	A5	10100101
2	02	002	101	41	01000001	34	22	042	247	A7	10100111	66	42	102	201	81	10000001	98	62	142	277	BF	10111111
3	03	003	276	BE	10111110	35	23	043	101	41	01000001	67	43	103	201	81	10000001	99	63	143	255	AD	10101101
4	04	004	101	41	01000001	36	24	044	101	41	01000001	68	44	104	201	81	10000001	100	64	144	243	A3	10100011
5	05	005	252	AA	10101010	37	25	045	101	41	01000001	69	45	105	201	81	10000001	101	65	145	245	A5	10100101
6	06	006	101	41	01000001	38	26	046	101	41	01000001	70	46	106	201	81	10000001	102	66	146	277	BF	10111111
7	07	007	252	AA	10101010	39	27	047	101	41	01000001	71	47	107	201	81	10000001	103	67	147	245	A5	10100101
8	08	010	101	41	01000001	40	28	050	101	41	01000001	72	48	110	201	81	10000001	104	68	150	263	B3	10110011
9	09	011	252	AA	10101010	41	29	051	252	AA	10101010	73	49	111	201	81	10000001	105	69	151	101	41	01000001
10	0A	012	277	BF	10111111	42	2A	052	277	BF	10111111	74	4A	112	201	81	10000001	106	6A	152	101	41	01000001
11	0B	013	252	AA	10101010	43	2B	053	253	AB	10101011	75	4B	113	255	AD	10101101	107	6B	153	101	41	01000001
12	0C	014	277	BF	10111111	44	2C	054	277	BF	10111111	76	4C	114	243	A3	10100011	108	6C	154	101	41	01000001
13	0D	015	252	AA	10101010	45	2D	055	101	41	01000001	77	4D	115	245	A5	10100101	109	6D	155	101	41	01000001
14	0E	016	101	41	01000001	46	2E	056	101	41	01000001	78	4E	116	277	BF	10111111	110	6E	156	101	41	01000001
15	0F	017	252	AA	10101010	47	2F	057	101	41	01000001	79	4F	117	101	41	01000001	111	6F	157	101	41	01000001
16	10	020	101	41	01000001	48	30	060	101	41	01000001	80	50	120	247	A7	10100111	112	70	160	101	41	01000001
17	11	021	252	AA	10101010	49	31	061	253	AB	10101011	81	51	121	245	A5	10100101	113	71	161	101	41	01000001
18	12	022	277	BF	10111111	50	32	062	277	BF	10111111	82	52	122	201	81	10000001	114	72	162	101	41	01000001
19	13	023	252	AA	10101010	51	33	063	253	AB	10101011	83	53	123	201	81	10000001	115	73	163	101	41	01000001
20	14	024	277	BF	10111111	52	34	064	277	BF	10111111	84	54	124	201	81	10000001	116	74	164	101	41	01000001
21	15	025	276	BE	10111110	53	35	065	101	41	01000001	85	55	125	201	81	10000001	117	75	165	101	41	01000001
22	16	026	101	41	01000001	54	36	066	101	41	01000001	86	56	126	201	81	10000001	118	76	166	101	41	01000001
23	17	027	276	BE	10111110	55	37	067	101	41	01000001	87	57	127	201	81	10000001	119	77	167	101	41	01000001
24	18	030	101	41	01000001	56	38	070	101	41	01000001	88	58	130	201	81	10000001	120	78	170	101	41	01000001
25	19	031	252	AA	10101010	57	39	071	253	AB	10101011	89	59	131	201	81	10000001	121	79	171	101	41	01000001
26	1A	032	277	BF	10111111	58	3A	072	277	BF	10111111	90	5A	132	201	81	10000001	122	7A	172	101	41	01000001
27	1B	033	252	AA	10101010	59	3B	073	253	AB	10101011	91	5B	133	255	AD	10101101	123	7B	173	101	41	01000001
28	1C	034	277	BF	10111111	60	3C	074	277	BF	10111111	92	5C	134	243	A3	10100011	124	7C	174	101	41	01000001
29	1D	035	276	BE	10111110	61	3D	075	101	41	01000001	93	5D	135	245	A5	10100101	125	7D	175	201	81	10000001
30	1E	036	101	41	01000001	62	3E	076	101	41	01000001	94	5E	136	277	BF	10111111	126	7E	176	101	41	01000001
31	1F	037	276	BE	10111110	63	3F	077	101	41	01000001	95	5F	137	101	41	01000001	127	7F	177	101	41	01000001

DEC PART NUMBER: 23-03080 ORIGINATOR: IRENE BELLETTIERE
LEFT COLUMN OF BIN DATA IS MSB (PIN 7 OF IC) DATE ORIGINATED: 8-25-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	001	01	00000001	32	20	040	000	00	00000000	64	40	100	117	4F	01001111	96	60	140	117	4F	01001111
1	01	001	176	7E	01111110	33	21	041	200	80	10000000	65	41	101	176	7E	01111110	97	61	141	176	7E	01111110
2	02	002	000	00	00000000	34	22	042	117	4F	01001111	66	42	102	000	00	00000000	98	62	142	220	90	10010000
3	03	003	176	7E	01111110	35	23	043	000	00	00000000	67	43	103	000	00	00000000	99	63	143	117	4F	01001111
4	04	004	000	00	00000000	36	24	044	000	00	00000000	68	44	104	000	00	00000000	100	64	144	147	67	01100111
5	05	005	120	50	01010000	37	25	045	000	00	00000000	69	45	105	000	00	00000000	101	65	145	176	7E	01111110
6	06	006	000	00	00000000	38	26	046	000	00	00000000	70	[illegible]	106	000	00	00000000	102	66	146	144	64	01100100
7	07	007	100	40	01000000	39	27	047	000	00	00000000	71	[illegible]	107	000	00	00000000	103	67	147	176	7E	01111110
8	08	010	000	00	00000000	40	28	050	000	00	00000000	72	48	110	000	00	00000000	104	68	150	147	67	01100111
9	09	011	175	7D	01111101	41	29	051	175	7D	01111101	73	49	111	000	00	00000000	105	69	151	000	00	00000000
10	0A	012	200	80	10000000	42	2A	052	205	85	10000101	74	4A	112	000	00	00000000	106	6A	152	000	00	00000000
11	0B	013	176	7E	01111110	43	2B	053	176	7E	01111110	75	4B	113	117	4F	01001111	107	6B	153	000	00	00000000
12	0C	014	200	80	10000000	44	2C	054	205	85	10000101	76	4C	114	177	7F	01111111	108	6C	154	000	00	00000000
13	0D	015	177	7F	01111111	45	2D	055	000	00	00000000	77	4D	115	176	7E	01111110	109	6D	155	000	00	00000000
14	0E	016	000	00	00000000	46	2E	056	000	00	00000000	78	4E	116	114	4C	01001100	110	6E	156	000	00	00000000
15	0F	017	177	7F	01111111	47	2F	057	000	00	00000000	79	4F	117	000	00	00000000	111	6F	157	000	00	00000000
16	10	020	000	00	00000000	48	30	060	000	00	00000000	80	50	120	117	4F	01001111	112	70	160	000	00	00000000
17	11	021	176	7E	01111110	49	31	061	021	11	00010001	81	51	121	176	7E	01111110	113	71	161	000	00	00000000
18	12	022	200	80	10000000	50	32	062	205	85	10000101	82	52	122	000	00	00000000	114	72	162	000	00	00000000
19	13	023	176	7E	01111110	51	33	063	023	13	00010011	83	53	123	000	00	00000000	115	73	163	000	00	00000000
20	14	024	200	80	10000000	52	34	064	205	85	10000101	84	54	124	000	00	00000000	116	74	164	000	00	00000000
21	15	025	176	7E	01111110	53	35	065	000	00	00000000	85	55	125	000	00	00000000	117	75	165	000	00	00000000
22	16	026	000	00	00000000	54	36	066	000	00	00000000	86	56	126	000	00	00000000	118	76	166	000	00	00000000
23	17	027	176	7E	01111110	55	37	067	000	00	00000000	87	57	127	000	00	00000000	119	77	167	000	00	00000000
24	18	030	000	00	00000000	56	38	070	000	00	00000000	88	58	130	000	00	00000000	120	78	170	000	00	00000000
25	19	031	140	60	01100000	57	39	071	176	7E	01111110	89	59	131	000	00	00000000	121	79	171	000	00	00000000
26	1A	032	200	80	10000000	58	3A	072	205	85	10000101	90	5A	132	000	00	00000000	122	7A	172	000	00	00000000
27	1B	033	176	7E	01111110	59	3B	073	176	7E	01111110	91	5B	133	117	4F	01001111	123	7B	173	000	00	00000000
28	1C	034	200	80	10000000	60	3C	074	205	85	10000101	92	5C	134	177	7F	01111111	124	7C	174	000	00	00000000
29	1D	035	176	7E	01111110	61	3D	075	000	00	00000000	93	5D	135	176	7E	01111110	125	7D	175	000	00	00000000
30	1E	036	000	00	00000000	62	3E	076	000	00	00000000	94	5E	136	134	5C	01011100	126	7E	176	000	00	00000000
31	1F	037	176	7E	01111110	63	3F	077	000	00	00000000	95	5F	137	000	00	00000000	127	7F	177	000	00	00000000

DEC PART NUMBER: 23-01988 ORIGINATOR: IRENE BELLETTIERE
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATE ORIGINATED: 8-25-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	247	A7	10100111	160	A0	240	201	81	10000001	192	C0	300	101	41	01000001	224	E0	340	101	41	01000001
129	81	201	245	A5	10100101	161	A1	241	201	81	10000001	193	C1	301	101	41	01000001	225	E1	341	101	41	01000001
130	82	202	257	AF	10101111	162	A2	242	201	81	10000001	194	C2	302	101	41	01000001	226	E2	342	101	41	01000001
131	83	203	277	BF	10111111	163	A3	243	201	81	10000001	195	C3	303	101	41	01000001	227	E3	343	101	41	01000001
132	84	204	201	81	10000001	164	A4	244	201	81	10000001	196	C4	304	101	41	01000001	228	E4	344	101	41	01000001
133	85	205	201	81	10000001	165	A5	245	277	BF	10111111	197	C5	305	101	41	01000001	229	E5	345	101	41	01000001
134	86	206	201	81	10110001	166	A6	246	243	A3	10100011	198	C6	306	101	41	01000001	230	E6	346	101	41	01000001
135	87	207	277	BF	10111111	167	A7	247	245	A5	10100101	199	C7	307	101	41	01000001	231	E7	347	101	41	01000001
136	88	210	201	81	10000001	168	A8	250	277	BF	10111111	200	C8	310	101	41	01000001	232	E8	350	201	81	10000001
137	89	211	201	81	10110001	169	A9	251	201	81	10000001	201	C9	311	101	41	01000001	233	E9	351	201	81	10000001
138	8A	212	201	81	10000001	170	AA	252	265	B5	10110101	202	CA	312	101	41	01000001	234	EA	352	201	81	10000001
139	8B	213	101	41	01000001	171	AB	253	201	81	10000001	203	CB	313	101	41	01000001	235	EB	353	201	81	10000001
140	8C	214	101	41	01000001	172	AC	254	201	81	10000001	204	CC	314	101	41	01000001	236	EC	354	201	81	10000001
141	8D	215	101	41	01000001	173	AD	255	201	81	10000001	205	CD	315	101	41	01000001	237	ED	355	201	81	10000001
142	8E	216	101	41	01000001	174	AE	256	255	AD	10101101	206	CE	316	101	41	01000001	238	EE	356	201	81	10000001
143	8F	217	101	41	01000001	175	AF	257	242	A2	10100010	207	CF	317	101	41	01000001	239	EF	357	201	81	10000001
144	90	220	245	A5	10100101	176	B0	260	245	A5	10100101	208	D0	320	101	41	01000001	240	F0	360	201	81	10000001
145	91	221	245	A5	10100101	177	B1	261	277	BF	10111111	209	D1	321	101	41	01000001	241	F1	361	201	81	10000001
146	92	222	201	81	10000001	178	B2	262	261	B1	10110001	210	D2	322	101	41	01000001	242	F2	362	201	81	10000001
147	93	223	201	81	10000001	179	B3	263	245	A5	10100101	211	D3	323	101	41	01000001	243	F3	363	201	81	10000001
148	94	224	201	81	10000001	180	B4	264	277	BF	10111111	212	D4	324	101	41	01000001	244	F4	364	201	81	10000001
149	95	225	201	81	10000001	181	B5	265	200	80	10000000	213	D5	325	101	41	01000001	245	F5	365	201	81	10000001
150	96	226	201	81	10000001	182	B6	266	261	B1	10110001	214	D6	326	101	41	01000001	246	F6	366	201	81	10000001
151	97	227	201	81	10000001	183	B7	267	271	B9	10111001	215	D7	327	101	41	01000001	247	F7	367	201	81	10000001
152	98	230	201	81	10000001	184	B8	270	273	BB	10111011	216	D8	330	101	41	01000001	248	F8	370	201	81	10000001
153	99	231	[illegible]	[illegible]	[illegible]	185	B9	271	275	BD	10111101	217	D9	331	101	41	01000001	249	F9	371	201	81	10000001
154	9A	232	277	BF	10111111	186	BA	272	[illegible]	[illegible]	[illegible]	218	DA	332	101	41	01000001	250	FA	372	201	81	10000001
155	9B	233	255	AD	10101101	187	BB	273	[illegible]	[illegible]	[illegible]	219	DB	333	101	41	01000001	251	FB	373	201	81	10000001
156	9C	234	200	80	10000000	188	BC	274	101	41	01000001	220	DC	334	101	41	01000001	252	FC	374	277	BF	10111111
157	9D	235	201	81	10000001	189	BD	275	101	41	01000001	221	DD	335	101	41	01000001	253	FD	375	101	41	01000001
158	9E	236	201	81	10000001	190	BE	276	101	41	01000001	222	DE	336	101	41	01000001	254	FE	376	101	41	01000001
159	9F	237	201	81	10000001	191	BF	277	101	41	01000001	223	DF	337	101	41	01000001	255	FF	377	101	41	01000001

DEC PART NUMBER: 23-03080 ORIGINATOR: IRENE BELLETTIERE
LEFT COLUMN OF BIN DATA IS MSB (PIN 17 OF IC) DATE ORIGINATED: 8-25-77
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW
SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	204	84	10000100	160	A0	240	000	00	00000000	192	C0	300	000	00	00000000	224	E0	340	000	00	00000000
129	81	201	205	85	10000101	161	A1	241	000	00	[illegible]	193	C1	301	000	00	00000000	225	E1	341	000	00	00000000
130	82	202	220	90	10010000	162	A2	242	000	00	[illegible]	194	C2	302	000	00	00000000	226	E2	342	000	00	00000000
131	83	203	201	81	10000001	163	A3	243	000	00	00000000	195	C3	303	000	00	00000000	227	E3	343	000	00	00000000
132	84	204	000	00	00000000	164	A4	244	000	00	00000000	196	C4	304	000	00	00000000	228	E4	344	000	00	00000000
133	85	205	000	00	00000000	165	A5	245	350	E8	11101000	197	C5	305	000	00	00000000	229	E5	345	000	00	00000000
134	86	206	210	88	10001000	166	A6	246	251	A9	10101001	198	C6	306	000	00	00000000	230	E6	346	000	00	00000000
135	87	207	[illegible]	[illegible]	[illegible]	167	A7	247	205	85	10000101	199	C7	307	000	00	00000000	231	E7	347	000	00	00000000
136	88	210	000	00	00000000	168	A8	250	246	A6	10100110	200	C8	310	000	00	00000000	232	E8	350	000	00	00000000
137	89	211	211	89	10001001	169	A9	251	000	00	00000000	201	C9	311	000	00	00000000	233	E9	351	000	00	00000000
138	8A	212	000	00	00000000	170	AA	252	262	B2	10110010	202	CA	312	000	00	[illegible]	234	EA	352	000	00	00000000
139	8B	213	000	00	[illegible]	171	AB	253	000	00	00000000	203	CB	313	000	00	[illegible]	235	EB	353	000	00	00000000
140	8C	214	000	00	[illegible]	172	AC	254	000	00	00000000	204	CC	314	000	00	00000000	236	EC	354	000	00	00000000
141	8D	215	000	00	00000000	173	AD	255	000	00	00000000	205	CD	315	000	00	00000000	237	ED	355	000	00	00000000
142	8E	216	000	00	00000000	174	AE	256	204	84	10000100	206	CE	316	000	00	00000000	238	EE	356	000	00	00000000
143	8F	217	000	00	00000000	175	AF	257	262	B2	10110010	207	CF	317	000	00	00000000	239	EF	357	000	00	00000000
144	90	220	204	84	10000100	176	B0	260	205	85	10000101	208	D0	320	000	00	00000000	240	F0	360	000	00	00000000
145	91	221	205	85	10000101	177	B1	261	257	AF	10101111	209	D1	321	000	00	00000000	241	F1	361	000	00	00000000
146	92	222	000	00	00000000	178	B2	262	266	B6	10110110	210	D2	322	000	00	00000000	242	F2	362	000	00	00000000
147	93	223	000	00	00000000	179	B3	263	205	85	10000101	211	D3	323	000	00	00000000	243	F3	363	000	00	00000000
148	94	224	000	00	00000000	180	B4	264	262	B2	10110010	212	D4	324	000	00	00000000	244	F4	364	000	00	00000000
149	95	225	000	00	00000000	181	B5	265	000	00	00000000	213	D5	325	000	00	00000000	245	F5	365	000	00	00000000
150	96	226	000	00	00000000	182	B6	266	266	B6	10110110	214	D6	326	000	00	00000000	246	F6	366	000	00	00000000
151	97	227	000	00	00000000	183	B7	267	220	90	10010000	215	D7	327	000	00	00000000	247	F7	367	000	00	00000000
152	98	230	000	00	00000000	184	B8	270	235	9D	10011101	216	D8	330	000	00	00000000	248	F8	370	000	00	00000000
153	99	231	000	00	00000000	185	B9	271	262	B2	10110010	217	D9	331	000	00	00000000	249	F9	371	000	00	00000000
154	9A	232	234	9C	10011100	186	BA	272	000	00	00000000	218	DA	332	000	00	00000000	250	FA	372	000	00	00000000
155	9B	233	143	63	01100011	187	BB	273	000	00	00000000	219	DB	333	000	00	00000000	251	FB	373	000	00	00000000
156	9C	234	204	84	10000100	188	BC	274	000	00	00000000	220	DC	334	000	00	00000000	252	FC	374	[illegible]	[illegible]	[illegible]
157	9D	235	000	00	00000000	189	BD	275	000	00	00000000	221	DD	335	000	00	00000000	253	FD	375	000	00	00000000
158	9E	236	000	00	00000000	190	BE	276	000	00	00000000	222	DE	336	000	00	00000000	254	FE	376	000	00	00000000
159	9F	237	000	00	00000000	191	BF	277	000	00	00000000	223	DF	337	000	00	00000000	255	FF	377	000	00	00000000

SEQUENCER CONTROL PROM AT E16 (CS1)

256 X 8
ROM/PROM PATTERN SPEC
23-01988

BRANCH ADDRESS AT E33 (CS1)

256 X 8
ROM/PROM PATTERN SPEC
23-03080

REVISIONS

CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
CONTROL SEQUENCER (CS18)	D	CS	M7684-0-1	S

SCALE | SHEET 18 OF 19

S M7684-0-1 CS D
D CS M7684-0-1 S

DEC PART NUMBER: 23-304A1
LEFT COLUMN OF BIN DATA IS MSB (PIN 9 OF [illegible])

ORIGINATOR: IRENE PELLETIERE
DATE ORIGINATED: 4-29-77

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 1 OF 1

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	017	0F	00001111
1	01	01	013	0B	00001011
2	02	02	013	0B	00001011
3	03	03	013	0B	00001011
4	04	04	017	0F	00001111
5	05	05	013	0B	00001011
6	06	06	013	0B	00001011
7	07	07	013	0B	00001011
8	08	10	017	0F	00001111
9	09	11	017	0F	00001111
10	0A	12	013	0B	00001011
11	0B	13	013	0B	00001011
12	0C	14	013	0B	00001011
13	0D	15	013	0B	00001011
14	0E	16	013	0B	00001011
15	0F	17	013	0B	00001011
16	10	20	013	0B	00001011
17	11	21	013	0B	00001011
18	12	22	013	0B	00001011
19	13	23	013	0B	00001011
20	14	24	003	03	00000011
21	15	25	003	03	00000011
22	16	26	013	0B	00001011
23	17	27	013	0B	00001011
24	18	30	003	03	00000011
25	19	31	002	02	00000010
26	1A	32	013	0B	00001011
27	1B	33	013	0B	00001011
28	1C	34	003	03	00000011
29	1D	35	001	01	00000001
30	1E	36	013	0B	00001011
31	1F	37	013	0B	00001011

COMMAND DECODE AT E45 (CS2)

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-304A1

REVISIONS

CHK	CHANGE NO.	REV.

TITLE: CONTROL SEQUENCER (CS19)

SIZE: D | CODE: CS | NUMBER: M7684-0-1 | REV.: S

SCALE | SHEET 19 OF 19

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-MD-5012484-0-0	5012484-00	M7684	1	
2	2		1012784-00	.047 MFD 50V +80-20% CER	58	C1-C55,C58-C60
3	3		1005306-00	*** THIS ITEM IS NOT USED ***	-	
4	4		1005334-00	3.3MFD 20V 10% S.TANT	3	C103,C106,C115
5	5		1009964-00	.68 MFD 35V 10% S.TANT	1	C102
6	6		1000042-00	1000.0 MMF 100V 5%200PPM MICA	2	C56,C57
7	7		1001631-00	390.0 MMF 100V 5%200PPM MICA	1	C100
8	8		1100114-00	D 664 QS\75PCB PIV= 25V SP	4	D1,D2,D4,D6
9	9		1105275-00	D 672 TR= 15NS PIV= 60V SI	2	D3,D5
10	10		1216988-02	HANDLE,MODULE,HEX TWO EJECTORS	1	
11	11		1302602-00	56.0 .25 W 5.0 % CC	32	R30-R61
12	12		1300365-00	1.0 K .25 W 5.0 % CC	23	R11,R14-R29,R77,R78,R85-R88
13	13		1302388-00	2.0 K .25 W 5.0 % CC	10	R2-R6,R10,R90,R93,R94,R80
14	14		1302394-00	30.0 K .25 W 5.0 % CC	4	R7,R8,R91,R92
15	15		1313349-00	33.0 K .25 W 5.0 % CC	1	R1
16	16		1305346-00	27.0 K .25 W 5.0 % CC	1	R13
17	17		1304856-00	4.64 K .25 W 1.0 % RN55D-F10	16	R62-R76,R89
18	18		1301423-00	6.80 K .25 W 5.0 % CC	1	R79
19	19		1302666-00	*** THIS ITEM IS NOT USED ***	-	
20	20		1300439-00	3.30 K .25 W 5.0 % CC	1	R84
21	21		9000024-01	EYELET,ROLL FLANGE .1210DX .192	12	
22	22		23008B8-00	B8-01	1	E47
23	23		1910091-00	DEC 7437 AND GATE-QUAD 2IN,BU	3	E1,E60,E83
24	24		1911219-00	7438 NAND GATE-QUAD 2IN,B	1	E85
25	25		1909928-00	7416 INVERTER GATE-HEX 1I	1	E97
26	26		1910224-00	DEC 7485 COMPARATOR-4BIT	1	E73
27	27		1910436-00	DEC 74123 ONE SHOT-DUAL,RETRIG	4	E25,E46,E71,E100
28	28		1910153-00	DEC 74150 MUX 1 OF 16	1	E64
29	29		1910268-01	DEC 75107B-01 RECEIVER,LINE,DUA	8	E2,E3,E4,E6,E8,E13,E14,E15
30	30		1911341-00	75113 DRIVER,LINE,DUAL,MA	7	E7,E10,E11,E12,E19,E21,E22

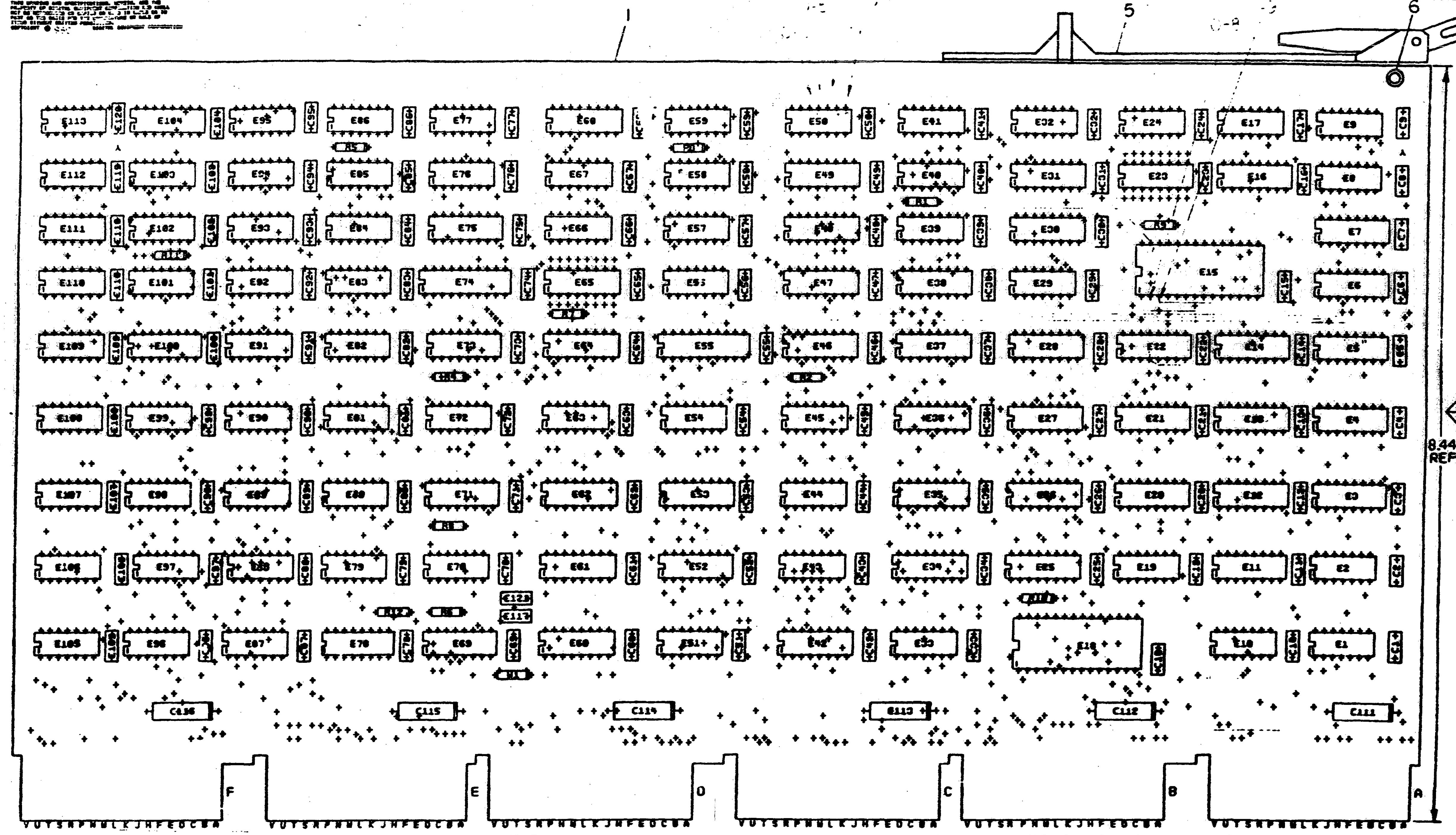
REVISION HISTORY			BASIC PART NO: M7684										
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: JVV	DATE: 13-FEB-78		D	I	G	I	T	A	L
IB	00008	K	SECTION.VARIATION INDEX	CHK'D: RSW	DATE: 13-FEB-78	TITLE PARTS LIST							
KIT	00009	L	[A] 00			CONTROL SEQUENCER							
CL	00010	M	[B]										
--	00011	N	[C]	DES.ENG: I.BELLETTIER	DATE: 13-FEB-78								
BHF	ML012	P	[D]			DOCUMENT NUMBER							
WH	M7684-CX013	R	[E]										
WH	M7684-CX014	S	[F]	RESP.ENG.: I.BELLETTIERE	DATE: 13-FEB-78	SIZE CODE NUMBER REV							
WH			[H]										
			[J]										
			[K]	MFG.ENG.: J.MILLER	DATE: 13-FEB-78	K PL M7684-0-DBP S							
			[L]										
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME: EDIT #							
			[N]	D-UA-M7684-0-0	# B-DD-M7684-0	Z1028S.PLS 27							

AUTOMATED BY PRTLST.1D(10)

P A R T S L I S T

LINE ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
31 31		1911527-00	8097 BUFFER GATE-HEX 2INP	5	E17,E18,E26,E27,E28
32 32		1914087-00	8098 BUFFER GATE-HEX 2IN,	4	E40,E41,E50,E57
33 33		1910532-00	74S00 NAND GATE-QUAD 2IN	2	E65,E89
34 34		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	E20
35 35		1910534-00	74S04 INVERTER GATE-HEX 1I	1	E53
36 36		1912389-00	74S08 AND GATE-QUAD 2IN,PO	2	E9,E68
37 37		1910537-00	74S11 AND GATE-TRIPLE 3INP	1	E75
38 38		1911712-00	74S51 AND-OR GATE-INVERT D	1	E66
39 39		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	5	E24,E70,E82,E92,E93
40 40		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	3	E23,E61,E99
41 41		1910548-00	74S157 MUX 1 OF 2 (QUAD)	1	E37
42 42		1914082-00	74S163 COUNTER,SYNCH UP/DOW	5	E31,E32,E80,E101,E102
43 43		1913340-00	74S32 OR GATE-QUAD 2IN	1	E84
44 44		1912847-00	LS157 MUX 1 OF 2(QUAD)	1	E35
45 45		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	3	E5,E29,E77
46 46		1912803-00	74LS04 INVERTER GATE,HEX	2	E30,E87
47 47		1912805-00	LS08 AND GATE-QUAD 2IN,PO	5	E38,E44,E55,E76,E86
48 48		1912807-00	LS10 NAND GATE-TRIPLE 3IN	1	E94
49 49		1912808-00	LS11 AND GATE-TRIPLE 3IN	1	E54
50 50		1912810-00	LS20 NAND GATE-DUAL 4IN	1	E52
51 51		1912813-00	LS27 NOR GATE-TRIPLE 3IN	2	E79,E96
52 52		1912816-00	LS32 OR GATE-QUAD 2IN,POS	1	E56
53 53		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	6	E36,E62,E63,E67,E69,E78
54 54		1912853-00	LS175 FF-D QUAD	4	E42,E43,E51,E59
55 55		1911944-00	555CN TIMER,FUNCT.BLOCK	1	E98
56 56		23017D1-00	D1-02	1	E90
57 60		1912859-00	LS258 MUX 1 OF 2 (DUAL),	4	E34,E48,E49,E58
58 58		1912862-00	LS266 X-NOR GATE-QUAD,OPN,	1	E74
59 59		23022B8-00	B8-01	1	E16
60 60		23016D1-00	D1-02	1	E72
61 61		23204A1-00	A1-03,A1-04,A1-05	1	E45
62 62		1209941-11	*** THIS ITEM IS NOT USED ***	-	
63 63		23015D1-00	D1-02	1	E81
64 64		1909686-00	7404 INVERTER GATE-HEX 1I	1	E88
65 65		1214224-00	RLY,REED, 15V COIL,SPDT	1	E91
66 66		9105740-55	*** THIS ITEM IS NOT USED ***	-	
67 67		9107256-11	*** THIS ITEM IS NOT USED ***	-	
68 68		23020B8-00	B8-01	1	E33
69 69		23023B8-00	B8-01	1	E39
70 70		1214413-00	RLY,REED, 5V COIL,SPST	1	E95
71 71		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	1	W1
72 72		1005965-00	*** THIS ITEM IS NOT USED ***	-	
73 73		1001610-00	.01 MFD 50V +80-20% Z5U CER	1	C107
74 74		1017472-00	10 MFD 35V +50-10% AL EL	8	C101,C108-C114
75 75		1312934-00	6.80 M .25 W 5.0 % CC	1	R81
76 76		1216832-04	HEADER 60POS WITH LATCHES	1	J1

D	I	B	I	T	A	L	TITLE	SECTION	SIZE	CODE	DOCUMENT NUMBER	REV
							CONTROL SEQUENCER	A OF A	K	PL	M7684-0-DBP	S



NOTES:

1. [illegible] HOLES, C[illegible] [illegible] MAYNARD ONLY.
2. W1 IS IN FOR [illegible]M02, OUT FOR [illegible]M03.
3. E23 AND E65 ARE SPARE IC LOCATIONS.

CHG	CHANGE NO.	REV
		E
	M7685 YA C[illegible] P. FAMUMIN	

ETCH REV. CP1

P.C. DESIGN DATA BASE REV. CL1 & CM1

SIGNATURES	DATE
DRN.	
CHK'D	
ENG.	
PROJ. ENG.	
PROD.	

SCALE 2:1

SHT. 1 OF 2

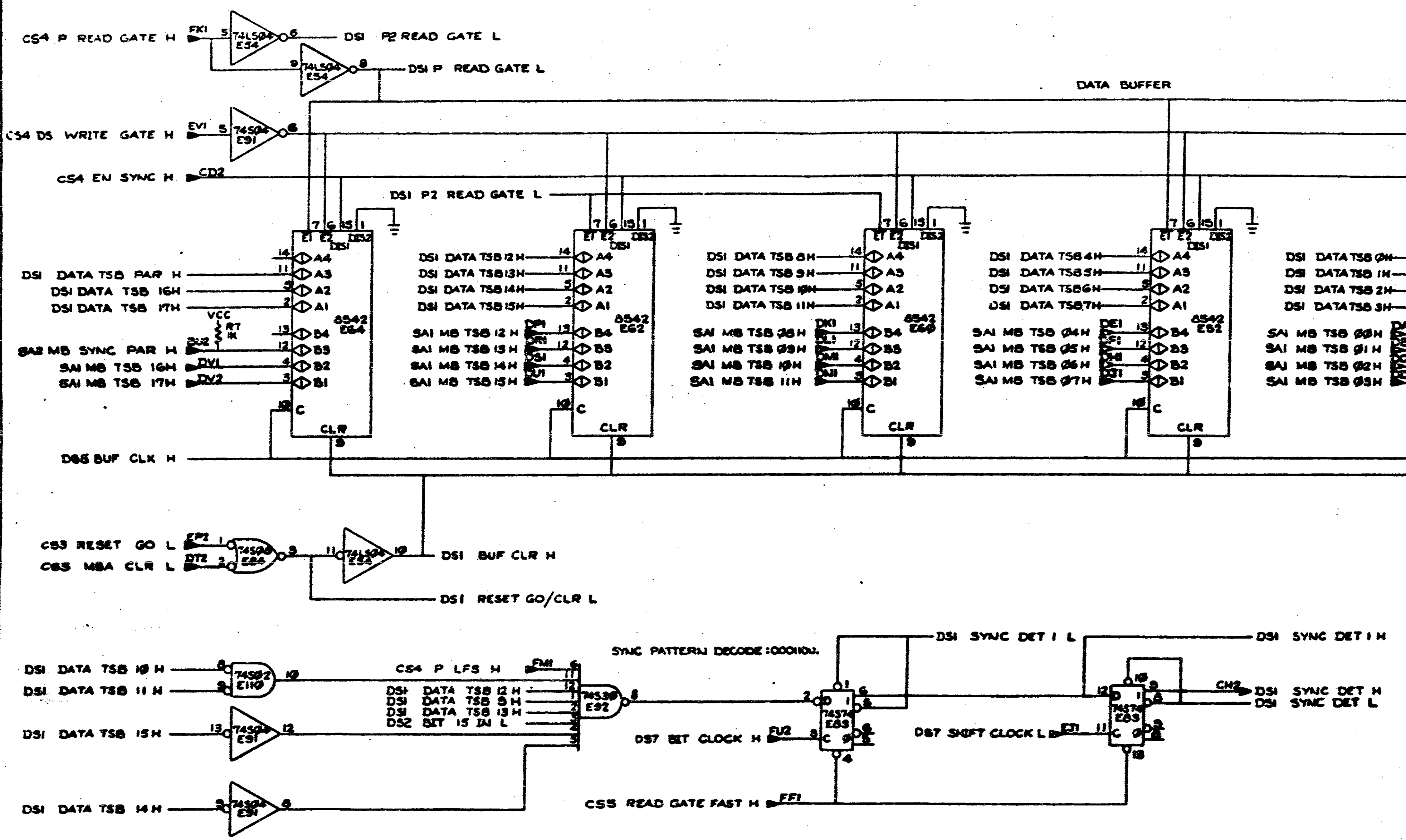
NEXT HIGHER ASSY. B-00-M7685-YA

digital

TITLE DATA SEQUENCER

SIZE	CODE	NUMBER	REV
D	UA	M7685-YA-0	E

CZ1 MS#29H10


CS4 P READ GATE H
DSI P2 READ GATE L
DSI P READ GATE L
DATA BUFFER
CS4 DS WRITE GATE H
DSI WRITE GATE L
CS4 EN SYNC H
DSI DATA TSB PAR H
DSI DATA TSB 16H
DSI DATA TSB 17H
SAI MB SYNC PAR H
SAI MB TSB 16H
SAI MB TSB 17H
DSI DATA TSB 12H
DSI DATA TSB 13H
DSI DATA TSB 14H
DSI DATA TSB 15H
SAI MB TSB 12 H
SAI MB TSB 13 H
SAI MB TSB 14 H
SAI MB TSB 15 H
DSI DATA TSB 8H
DSI DATA TSB 9H
DSI DATA TSB 10H
DSI DATA TSB 11H
SAI MB TSB 08H
SAI MB TSB 09H
SAI MB TSB 10H
SAI MB TSB 11H
DSI DATA TSB 4H
DSI DATA TSB 5H
DSI DATA TSB 6H
DSI DATA TSB 7H
SAI MB TSB 04H
SAI MB TSB 05H
SAI MB TSB 06H
SAI MB TSB 07H
DSI DATA TSB 0H
DSI DATA TSB 1H
DSI DATA TSB 2H
DSI DATA TSB 3H
SAI MB TSB 00H
SAI MB TSB 01H
SAI MB TSB 02H
SAI MB TSB 03H
8642
DSS BUF CLK H
CS3 RESET GO L
CS3 MBA CLR L
DSI BUF CLR H
DSI RESET GO/CLR L
DSI DATA TSB 10 H
DSI DATA TSB 11 H
DSI DATA TSB 15 H
DSI DATA TSB 14 H
CS4 P LFS H
DSI DATA TSB 12 H
DSI DATA TSB 9 H
DSI DATA TSB 13 H
DS2 BIT 15 IN L
SYNC PATTERN DECODE :000100.
DS7 BIT CLOCK H
DSI SYNC DET 1 L
DS7 SHIFT CLOCK L
DSI SYNC DET 1 H
DSI SYNC DET H
DSI SYNC DET L
CS5 READ GATE FAST H

NOTES: A. THE DATA FLOW IS AS FOLLOWS, (FOR 8642)

1. READ : DATA GOES IN ON THE A INPUTS COMING FROM THE SHIFT REGISTER AND GOES OUT TO THE MASSBUS DRIVERS THRU THE B INPUTS.
2. WRITE : DATA GOES IN FROM THE MASSBUS ON THE B INPUTS AND GOES OUT TO THE SHIFT REGISTER (PARALLEL LOAD INPUTS) THRU THE A INPUTS.

B. SYNC DETECT H SETS AT THE SAME TIME AS THE SYNC IS CLOCKED INTO SR BITS 15 TO 8.

DATA BUFFER AND SYNC DETECT

FIRST USED ON	RMØ5
TITLE	DATA SEQUENCER (DSI)
NEXT HIGHER ASSY.	B-DD-M7685-YA
SIZE	D
CODE	CS
NUMBER	M7685-YA-1
REV.	D
SHEET	OF 5

CZ 1

SHIFT REGISTER

DS2 EN SYNC L
DS5 EN LOAD SR H
CS4 EN SYNC H
CD2
74S86 E76
74S00 E67
74LS04 E54
DS2 EN SI H
DS2 EN SØ L
DS2 EN SYNC L

DS2 DATA IN H
DS5 I5 BIT L
DS5 I6 BIT H
DS2 SR I7 H
DS2 SR I6 H
74S51 E93
DS1 DATA TSB I7 H
DS1 DATA TSB I6 H
CS5 READ GATE H
RDI RD DATA H
DS2 EN SØ L
DS2 EN SI H
CS5 MBA CLR L
DS7 SHIFT CLOCK H
74S194 E75
74S04 E76

DS1 P2 READ GATE L
DS2 BIT I5 IN L
DS1 DATA TSB ØH
DS1 DATA TSB 1H
DS1 DATA TSB 2H
DS1 DATA TSB 3H
DS1 DATA TSB 4H
DS1 DATA TSB 5H
DS1 DATA TSB 6H
DS1 DATA TSB 7H
+3V B
74S299 E74
74S04 E51
DS7 SHIFT CLOCK H

DS1 P READ GATE L
DS2 SR ØØH
DS1 DATA TSB ØH
DS1 DATA TSB 1H
DS1 DATA TSB 2H
DS1 DATA TSB 3H
DS1 DATA TSB 4H
DS1 DATA TSB 5H
DS1 DATA TSB 6H
DS1 DATA TSB 7H
74S299 E56
DS7 SHIFT CLOCK H

NOTES: A. WHILE E74 IS BEING LOADED WITH THE SYNC PATTERN, E56 IS IN A HOLD MODE AND REMAINS ALL ZEROS. THE ENTIRE WORD (SYNC + 8 ZERO BITS) IS THEN SHIFTED OUT.

B. LOADING OF THE SHIFT REGISTER OCCURS ON THE HIGH GOING EDGE OF THE CLOCK WHILE SI IS HIGH. (DS4 WRITE TIME H IS ACTIVE.)

SYNC PATTERN GENERATION

DSB PARITY ODD L
+3V C
DS1 DATA TSB PAR H
DS1 DATA TSB I5H
DS1 DATA TSB I4H
DS1 DATA TSB I3H
DS1 DATA TSB I2H
4027 E71

DS2 SR I7 H
DS2 SR I6 H
+3V B
DS1 DATA TSB I7 H
DS1 DATA TSB I6 H
DS1 DATA TSB I1H
DS1 DATA TSB ØH
DS1 DATA TSB 5H
DS1 DATA TSB 4H
4027 E72

DS1 P2 READ GATE L
DS2 EN SYNC L
DS1 P2 READ GATE L

+5V ALL A2 PINS
C1 THRU C8, C115, C119, C129 .1µF
C111 THRU C116 6.8µF
ALL C2 & T1 PINS

REVISIONS		
DIST	CHANGE NO.	REV.

SHIFT REGISTER AND SYNC PATTERN GENERATION (WRITE)

TITLE					
DATA SEQUENCER (DS2)					
SCALE	SHEET 2 OF 15	DATE CODE		NUMBER	REV.
		D	CS	M7685-YA-1	D

CZ 1

D-CS-M7685-YA-1 2 of 15

CS5 EN CRC CLOCK L
DS2 FMT 18H
SAI MB TSB 17H
SAI MB TSB 16H
SAI MB TSB 15H
SAI MB TSB 14H
SAI MB TSB 13H
SAI MB TSB 12H
SAI MB TSB 11H
SAI MB TSB 10H
SAI MB TSB 09H
SAI MB TSB 08H
SAI MB TSB 07H
SAI MB TSB 06H
SAI MB TSB 05H
SAI MB TSB 04H
SAI MB TSB 03H
SAI MB TSB 02H
SAI MB TSB 01H
SAI MB TSB 00H

DS3 MB17L
DS3 MB16L
DS3 MB15L
DS3 MB14L
DS3 MB13L
DS3 MB12L
DS3 MB11L
DS3 MB10L
DS3 MB09L
DS3 MB08L
DS3 MB07L
DS3 MB06L
DS3 MB05L
DS3 MB04L
DS3 MB03L
DS3 MB02L
DS3 MB01L
DS3 MB00L

+5V
RS 1K
+3V B
DS2 EN SYNC L
CS4 P EN LOAD SR H
DS4 WORD TIME H
CS4 DS WRITE GATE H
DS3 EN PAR GEN H
DS4 WORD TIME L
DS3 EN PAR GEN L
DS3 EN PAR CHECK H

DS1 SYNC DET 1 L
CS4 P LFS H
DS7 BIT CLOCK L
DS4 WORD TIME H
DS7 ECC INPUT DATA L
DS1 SYNC DET L
DS3 EN PAR GEN L
DS7 CRC INPUT DATA H
DS4 WORD TIME L
DS3 PARITY ODD H
DS3 PARITY ODD L

DS3 EN PAR CHECK H
DS3 SYNC PAR SET L

CS8 TRNSCEIVR EN A H
SAE WRT CLK A H
CS9 TRNSCEIVR EN B H
SBE WRT CLK B H
DS5 WRT CLK L

+3V C
WRITE PARITY BIT STORED
DS1 DATA TSB PAR H
DS4 WORD TIME L
IF8 FMT 16H
DS8 FMT 16 H
CS3 MBA CLR L
DS3 PARITY ODD H
DS4 WRITE TIME L
DS1 RESET GO/CLR L

REVISIONS		
CHK	CHANGE NO.	REV.

PARITY & DATA BUS (DS3)

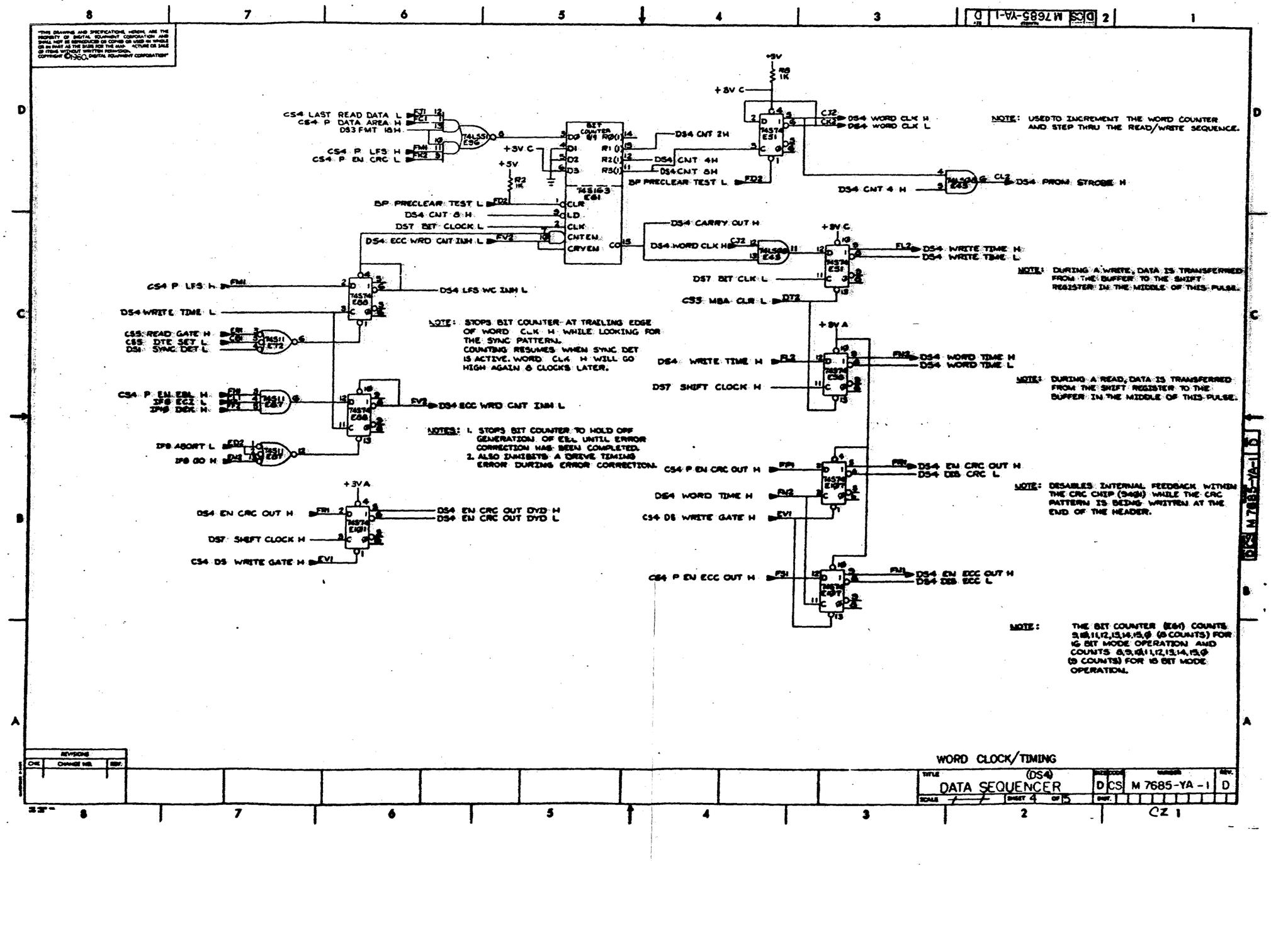
TITLE DATA SEQUENCER

SCALE — SHEET 3 OF 5

SIZE D CS NUMBER M 7685-YA-1 REV D

DIST.

CZ 1



WORD CLOCK/TIMING

TITLE: DATA SEQUENCER (DS4)
SIZE: D | CODE: CS | NUMBER: M 7685-YA-1 | REV: D
SCALE: 1/1 | SHEET 4 OF 15

REVISIONS: CHG | CHANGE NO. | REV.

+3VA

DS2 EN SYNC L
CS2 FORMAT H

74S74 E36

DS5 SYNC 2 NBT SCLK L

NOTE: INHIBITS MAKING A REQUEST FOR DATA DURING WRITING OF THE SYNC BYTE PRECEDING THE DATA FIELD (THE FIRST REQUEST FOR DATA IS MADE WHILE WRITING SYNC BYTE PRECEDING THE HEADER FIELD)

DS5 SYNC 2 NBT SCLK L
CS4 P DATA EN SCLK H
CS4 P HEADER AREA H
IF8 F0 H

74LS32 E56

DS4 WORD TIME L

74S74 E79

DS5 MB SCLK H
DS5 MB SCLK L

DS4 CNT 2 H
DS4 WORD CLK H
CS3 MBA CLR L

74S00 E63
74S08 E84

CS4 DS WRITE GATE H
CS4 P EN LOAD SR H
DS4 WRITE TIME H

74S11 E87

DS5 EN LOAD SR H

CS4 P READ GATE H
DS4 WORD TIME H
DS7 SHIFT CLOCK L

74S19 E97

DS3 WRT CLK L

74S08 E63

DS5 BUF CLK H

DS4 DIS CRC L

+3VA

DS7 CRC INPUT DATA H
DS7 CRC CLOCK L

9401 E90 CRC GENERATOR CHECKER

DS5 CRC OUTPUT H
DS5 CRC ER H

DS5 CRC DONE H
CS4 P EN CRC OUT H

74S20 E58

DS5 HCRC SET L

CS4 PRECLEAR CRC/ECC L
CS3 MBA CLR L

74LS00 E81

74S00 E58

DS5 CLEAR ECC L

74S02 E34

DS5 CLEAR ECC A L

DS5 WRT CLK L
CS3 MBA CLR L
IF8 F2 H

74LS00 E43

74S74 E74

WRITE CLOCK FAIL

DS4 WORD TIME H

74LS20 E81

DS5 WCF SET L

DS1 SYNC DET 1 L
IF8 F2 H

74LS00 E81

CS4 P EN CRC L
DS3 FMT 16 H

74S10 E97

DS5 16 BIT L
DS3 16 BIT H

CS4 P EN CRC OUT H

74LS74 E79

DS3 CRC DONE H

DS4 WORD TIME L

CS2 FORMAT H

74LS04 E44

74LS00 E43

CS3 SECT/INDEX L

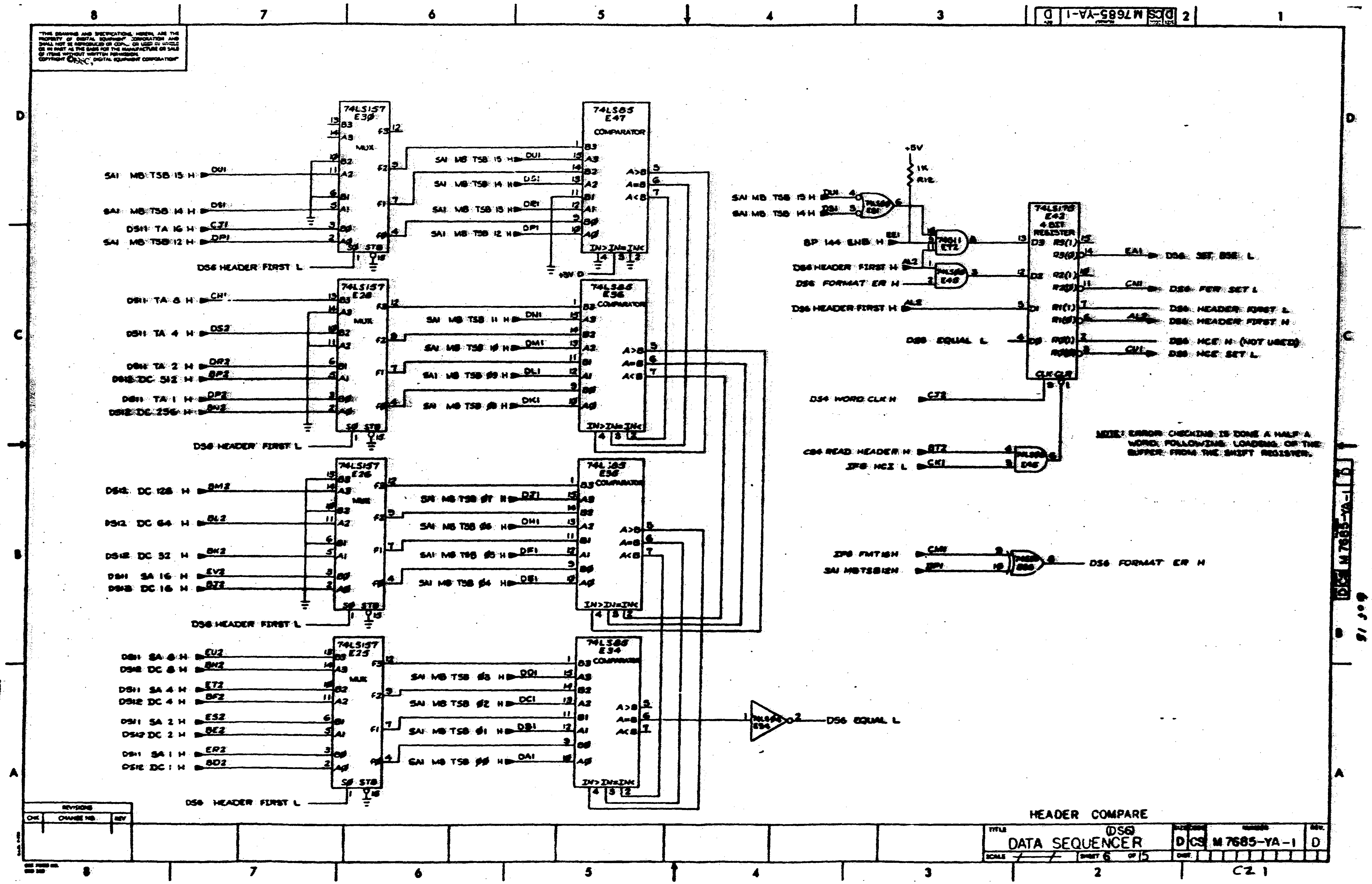
NOTE: ENABLES COMMAND SEQUENCER TO ABORT IF THERE IS AN ERROR IN THE HEADER (INDICATES ENTIRE CRC HAS BEEN READ) AND ENABLES CHECKING FOR A CRC ERROR.

REVISIONS		
ECO	CHANGE NO.	REV.

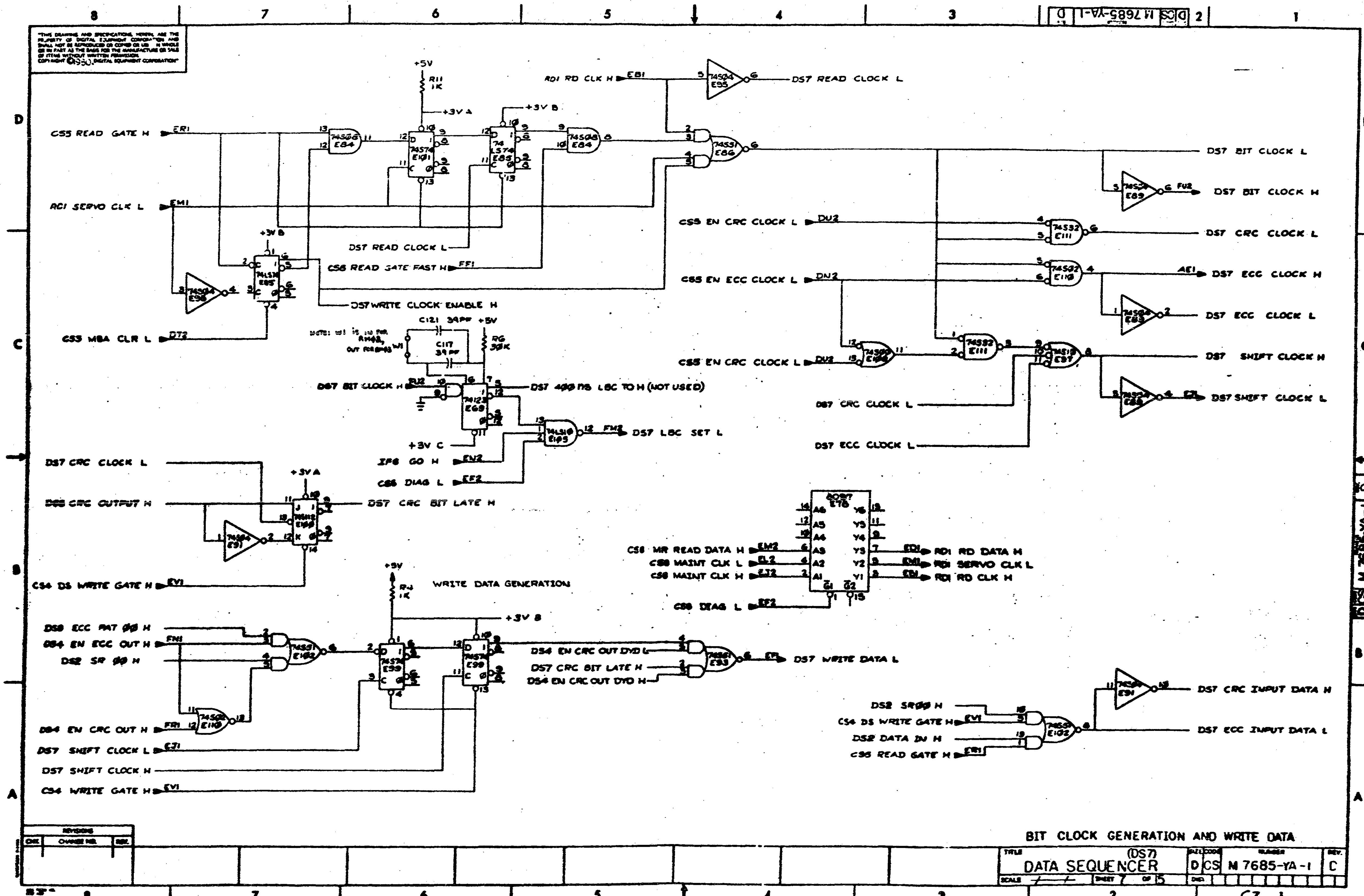
SCLK/CRC/WCF

TITLE		SIZE	CODE	NUMBER	REV.
(DS5) DATA SEQUENCER		D	CS	M 7685-YA-1	D
SCALE	SHEET 5 OF 15	DIST.			

CZ 1



74LS157 E30
74LS85 E47 COMPARATOR
74LS157 E28
74LS85 E56 COMPARATOR
74LS157 E26
74LS85 E36 COMPARATOR
74LS157 E25
74LS85 E34 COMPARATOR
74LS175 E42 4 BIT REGISTER
DS6 HEADER FIRST L
DS6 EQUAL L
DS6 SET BSE L
DS6 FER SET L
DS6 HEADER FIRST L
DS6 HEADER FIRST H
DS6 HCE H (NOT USED)
DS6 HCE SET L
DS4 WORD CLK H
DS4 READ HEADER H
DS6 FORMAT ER H
+5V
NOTE: ERROR CHECKING IS DONE A HALF A WORD FOLLOWING LOADING OF THE BUFFER FROM THE SHIFT REGISTER.
HEADER COMPARE
(DS6)
DATA SEQUENCER
D CS M7685-YA-1 D
D-CS-M7685-YA-1
6 of 15



M 7685-YA-1
+5V
R11 1K
+3V A
+3V B
RD1 RD CLK H
DS7 READ CLOCK L
CS5 READ GATE H
RC1 SERVO CLK L
DS7 BIT CLOCK L
DS7 BIT CLOCK H
CS5 EN CRC CLOCK L
DS7 CRC CLOCK L
CS5 EN ECC CLOCK L
DS7 ECC CLOCK H
DS7 ECC CLOCK L
DS7 READ CLOCK L
CS6 READ GATE FAST H
DS7 WRITE CLOCK ENABLE H
CS3 MBA CLR L
C121 39PF
C117 39PF
R6 39K
DS7 BIT CLOCK H
DS7 400 NS LBC TO H (NOT USED)
DS7 LBC SET L
+3V C
IF6 GO H
CS6 DIAG L
CS5 EN CRC CLOCK L
DS7 CRC CLOCK L
DS7 ECC CLOCK L
DS7 SHIFT CLOCK H
DS7 SHIFT CLOCK L
DS7 CRC CLOCK L
DS6 CRC OUTPUT H
DS7 CRC BIT LATE H
CS4 DS WRITE GATE H
CS6 MR READ DATA H
CS6 MAINT CLK L
CS6 MAINT CLK H
CS6 DIAG L
RD1 RD DATA H
RD1 SERVO CLK L
RD1 RD CLK H
+5V
R4 1K
WRITE DATA GENERATION
+3V B
DS6 ECC PAT 00 H
DS4 EN ECC OUT H
DS2 SR 00 H
DS4 EN CRC OUT DYD L
DS7 CRC BIT LATE H
DS4 EN CRC OUT DYD H
DS7 WRITE DATA L
DS4 EN CRC OUT H
DS7 SHIFT CLOCK L
DS7 SHIFT CLOCK H
CS4 WRITE GATE H
DS2 SR00 H
CS4 DS WRITE GATE H
DS2 DATA IN H
CS6 READ GATE H
DS7 CRC INPUT DATA H
DS7 ECC INPUT DATA L
BIT CLOCK GENERATION AND WRITE DATA
DATA SEQUENCER (DS7)
D CS M 7685-YA-1 C
SHEET 7 OF 15

ECC PATTERN REGISTER

DS8 EC 21 H
DS8 EC 30 H
DS7 ECC INPUT DATA L
DS4 EN ECC OUT H
DS8 ECC PAT Ø8 H
DS4 DES ECC L
74S37 E111
74S08 E66
74S08 E67
74LS175 E104
74S08 E77
DS8 EC 20 H
DS8 EC 29 H
DS8 EC 30 H
DS8 EC 31 H
DS8 EC 29 H
74LS164 E112 R7(1)
DS8 EC 21 H
DS8 EC 22 H
DS8 EC 23 H
DS8 EC 24 H
DS8 EC 25 H
DS8 EC 26 H
DS8 EC 27 H
DS8 EC 28 H
74LS164 E103 R7(1)
DS8 EC 12 H
DS8 EC 13 H
DS8 EC 14 H
DS8 EC 15 H
DS8 EC 16 H
DS8 EC 17 H
DS8 EC 18 H
DS8 EC 19 H
DS8 EC 28 H
74LS175 E68
DS8 ECC PAT Ø8 H
DS8 ECC PAT Ø9 H
DS8 ECC PAT 10 H
DS8 EC. 11 H
DS8 EC 12 H
DS7 ECC CLOCK H
DS8 CLEAR ECC L
DS8 ECC FEEDBACK SET H
DS8 EC 11 H
DCK SET L
DS8 DCK SET L
DS8 NON ZERO ECC H
ZP8 ECC L
DS7 SHIFT CLOCK L
DS8 CLEAR ECC L
DATA CHECK GENERATION
DS8 EN CORRECTION H
DS8 ECC PAT Ø8 H
74LS164 E39
DS8 ECC PAT Ø0 H
DS8 ECC PAT Ø1 H
DS8 ECC PAT Ø2 H
DS8 ECC PAT Ø3 H
DS8 ECC PAT Ø4 H
DS8 ECC PAT Ø5 H
DS8 ECC PAT Ø6 H
DS8 ECC PAT Ø7 H
+5V
R3 1K
BP TEST L
AVE

ECC PATTERN REGISTER AND DCK GENERATION

REVISIONS		
CHG	CHANGE NO.	BY

TITLE	DATA SEQUENCER (DS8)		
SCALE	SHEET 8 OF 15	SIZE D	CODE CS
		NUMBER M 7685-YA-1	REV D

74LS00 E1 · 74LS00 E1 · 74LS00 E1 · 74LS02 E24 · 74LS02 E103 · 74LS86 E46 · 74LS32 E111

74LS10 E105 · 74LS20 E41 · 74LS20 E80 · 74LS11 E72 · 74LS27 E50

74LS04 E17 · 74LS04 E17 · 74LS04 E17 · 74LS04 E44 · 74LS04 E54

74LS04 E93 · 74LS04 E93 · 74LS04 E55 · 74LS04 E85 · 74LS125 E65

ECC PATTERN TO CONTROL BUS

8038 E38

DS8 ECC PAT Ø0 H	A6	Y6 → CH2 → IF2 CONT Ø0
DS8 ECC PAT Ø1 H	A5	Y5 → CH2 → IF2 CONT Ø1
DS8 ECC PAT Ø2 H	A4	Y4 → CP2 → IF2 CONT Ø2
DS8 ECC PAT Ø3 H	A3	Y3 → CR2 → IF2 CONT Ø3
DS8 ECC PAT Ø4 H	A2	Y2 → CS2 → IF2 CONT Ø4
DS8 ECC PAT Ø5 H	A1	Y1 → CT2 → IF2 CONT Ø5

IF8 EN REG TO TEST H — EE2
IF5 RM EC2 H — AV1
74S00 E36

8038 E51

DS8 ECC PAT Ø6 H	A6	Y6 → CU2 → IF2 CONT Ø6
DS8 ECC PAT Ø7 H	A5	Y5 → CV2 → IF2 CONT Ø7
DS8 ECC PAT Ø8 H	A4	Y4 → DD2 → IF2 CONT Ø8
DS8 ECC PAT Ø9 H	A3	Y3 → DE2 → IF2 CONT Ø9
DS8 ECC PAT 10 H	A2	Y2 → DF2 → IF2 CONT 10
	A1	Y1 → CU2 → IF2 CONT Ø6

ECC POSITION TO CONTROL BUS

8038 E40

DSIØ ECC POS N 11H	A6	Y6 → CH2 → IF2 CONT 11
DSIØ ECC POS N 10H	A5	Y5 → DF2 → IF2 CONT 10
DSIØ ECC POS N Ø9H	A4	Y4 → DE2 → IF2 CONT Ø9
DSIØ ECC POS N Ø8H	A3	Y3 → DD2 → IF2 CONT Ø8
DSIØ ECC POS N Ø7H	A2	Y2 → CV2 → IF2 CONT Ø7
DSIØ ECC POS N Ø6H	A1	Y1 → CU2 → IF2 CONT Ø6

8038 E37

DSIØ ECC POS N Ø5 H	A6	Y6 → CT2 → IF2 CONT Ø5
DSIØ ECC POS N Ø4 H	A5	Y5 → CS2 → IF2 CONT Ø4
DSIØ ECC POS N Ø3 H	A4	Y4 → CR2 → IF2 CONT Ø3
DSIØ ECC POS N Ø2 H	A3	Y3 → CP2 → IF2 CONT Ø2
DSIØ ECC POS N Ø1 H	A2	Y2 → CM2 → IF2 CONT Ø1
DSIØ ECC POS N ØØ H	A1	Y1 → CM2 → IF2 CONT ØØ

IF5 RM EC1 H — AU1
74S00 E36

DS9 EC1 TO CONT L

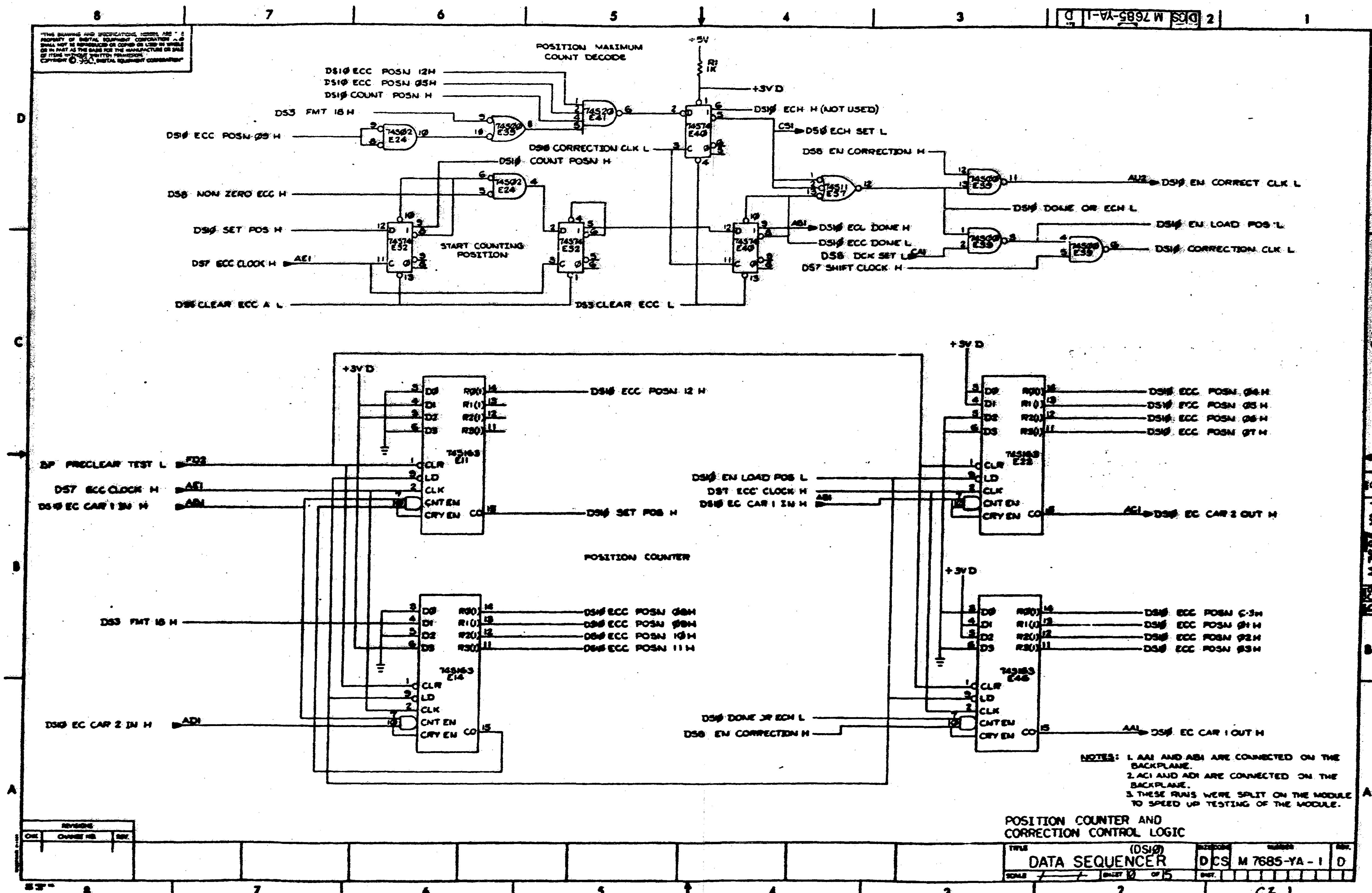
NOTE: A. SEE DSIS FOR BIT 12 OF POSITION REGISTER TO CONTROL BUS.

REVISIONS		
CHR	CHANGE NO.	REV.

POSITION AND PATTERN GATED TO CONTROL BUS

TITLE: DATA SEQUENCER (DS9)				
SCALE: —	SHEET 9 OF 15	D	CS	M7685-YA-1 C

CZ1



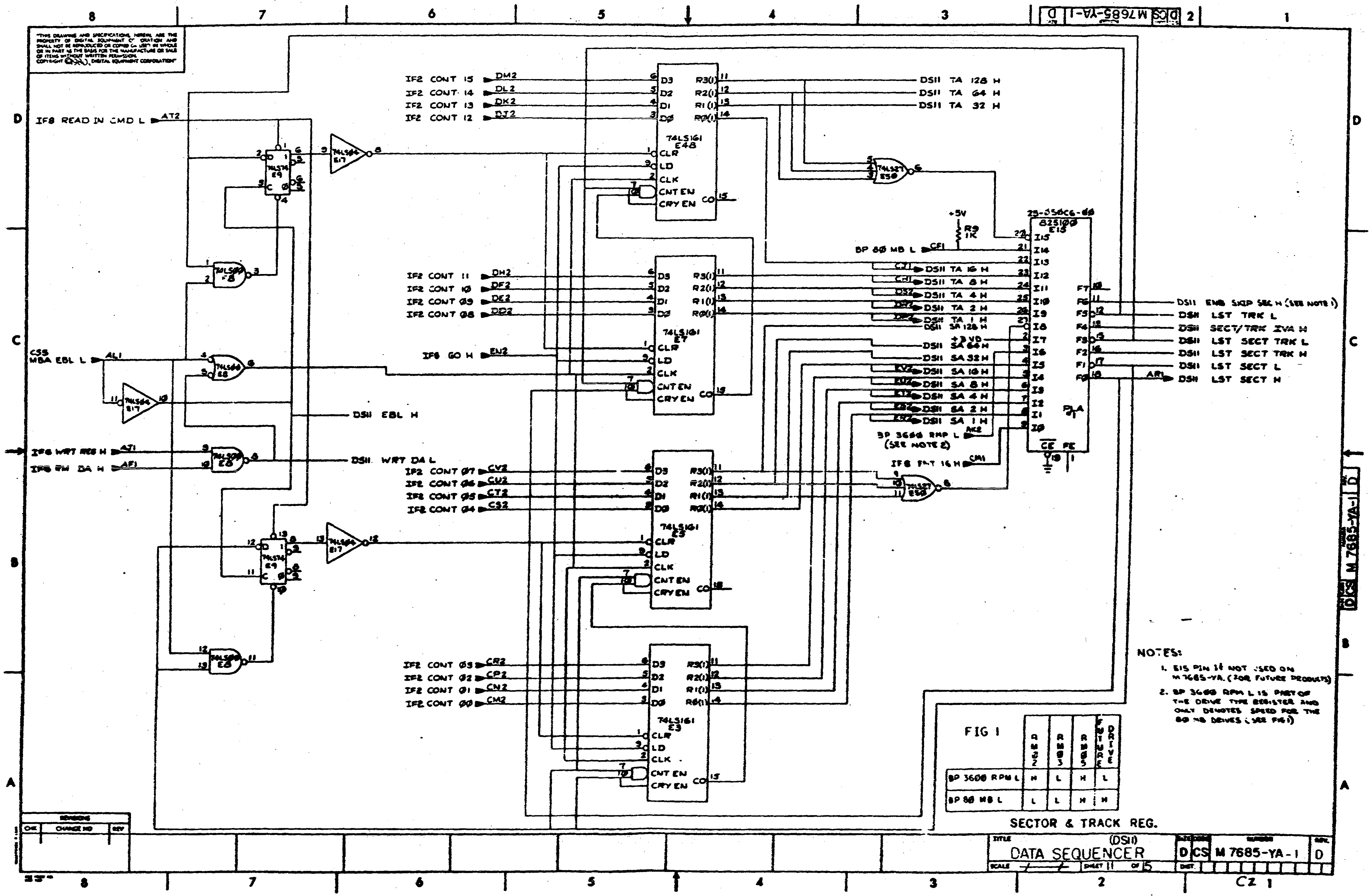
POSITION MAXIMUM COUNT DECODE
START COUNTING POSITION
POSITION COUNTER
DS1Ø ECC POSN 12H
DS1Ø ECC POSN Ø5H
DS1Ø COUNT POSN H
DS3 FMT 16H
DS1Ø ECC POSN Ø5 H
DS1Ø ECH H (NOT USED)
DS1Ø ECH SET L
DS8 CORRECTION CLK L
DS8 EN CORRECTION H
DS8 NON ZERO ECC H
DS1Ø SET POS H
DS7 ECC CLOCK H
DS1Ø EN CORRECT CLK L
DS1Ø DONE OR ECH L
DS1Ø ECL DONE H
DS1Ø ECC DONE L
DS8 DCK SET L
DS7 SHIFT CLOCK H
DS1Ø EN LOAD POS L
DS1Ø CORRECTION CLK L
DS8 CLEAR ECC A L
DS3 CLEAR ECC L
DSP PRECLEAR TEST L
DS1Ø EC CAR 1 IN H
DS1Ø ECC POSN 12 H
DS1Ø SET POS H
DS1Ø EN LOAD POS L
DS7 ECC CLOCK H
DS1Ø ECC POSN Ø4 H
DS1Ø ECC POSN Ø5 H
DS1Ø ECC POSN Ø6 H
DS1Ø ECC POSN Ø7 H
DS1Ø EC CAR 2 OUT H
DS3 FMT 16 H
DS1Ø ECC POSN Ø8H
DS1Ø ECC POSN Ø9H
DS1Ø ECC POSN 10H
DS1Ø ECC POSN 11H
DS1Ø EC CAR 2 IN H
DS1Ø DONE OR ECH L
DS8 EN CORRECTION H
DS1Ø ECC POSN Ø3H
DS1Ø ECC POSN Ø1H
DS1Ø ECC POSN Ø2H
DS1Ø ECC POSN Ø3H
DS1Ø EC CAR 1 OUT H

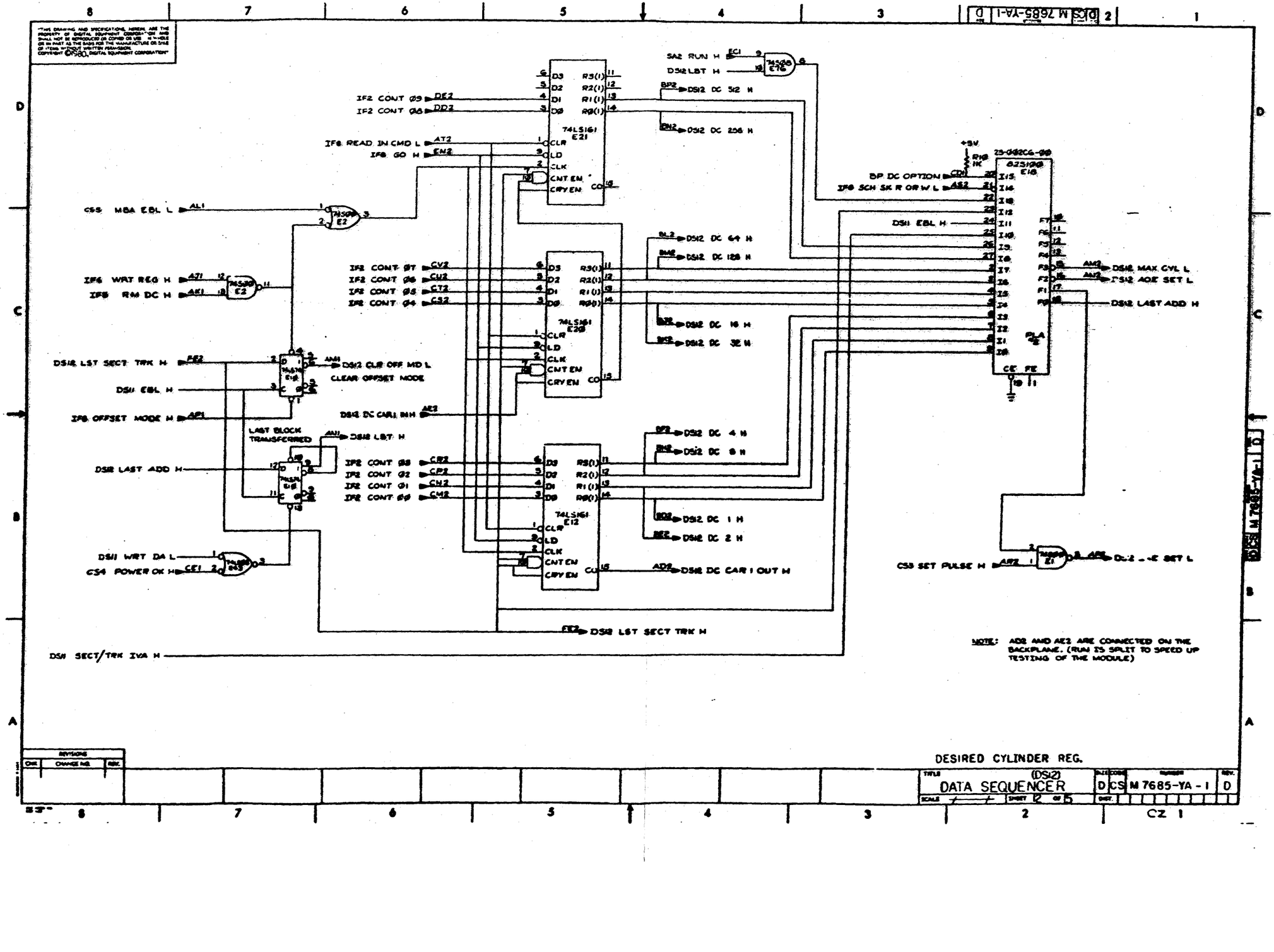
NOTES:
1. AA1 AND AB1 ARE CONNECTED ON THE BACKPLANE.
2. AC1 AND AD1 ARE CONNECTED ON THE BACKPLANE.
3. THESE RUNS WERE SPLIT ON THE MODULE TO SPEED UP TESTING OF THE MODULE.

POSITION COUNTER AND CORRECTION CONTROL LOGIC

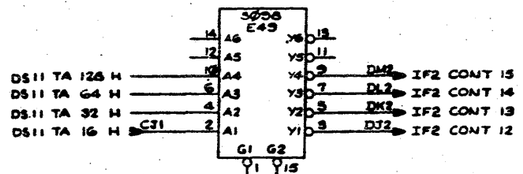
TITLE	SIZE	CODE	NUMBER	REV.
DATA SEQUENCER (DS1Ø)	D	CS	M 7685-YA-1	D

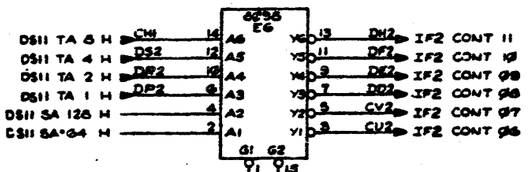
SHEET 1Ø OF 15

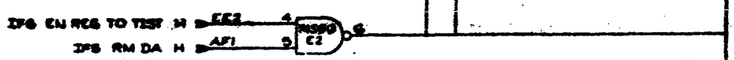

IF8 READ IN CMD L
IF2 CONT 15
IF2 CONT 14
IF2 CONT 13
IF2 CONT 12
74LS161 E48
DSII TA 128 H
DSII TA 64 H
DSII TA 32 H
74LS27 E50
IF2 CONT 11
IF2 CONT 10
IF2 CONT 09
IF2 CONT 08
74LS161 E7
IF8 GO H
CSS MBA EBL L
DSII EBL H
IF8 WRT RES H
IF8 RW DA H
DSII WRT DA L
IF2 CONT 07
IF2 CONT 06
IF2 CONT 05
IF2 CONT 04
74LS161 E3
IF2 CONT 03
IF2 CONT 02
IF2 CONT 01
IF2 CONT 00
74LS161 E3
74LS74 E9
74LS04 E17
74LS00 E8
+5V
R9 1K
BP 80 MB L
23-050C6-00 825100 E15
DSII TA 16 H
DSII TA 8 H
DSII TA 4 H
DSII TA 2 H
DSII TA 1 H
DSII SA 128 H
DSII SA 64 H
DSII SA 32 H
DSII SA 16 H
DSII SA 8 H
DSII SA 4 H
DSII SA 2 H
DSII SA 1 H
BP 3600 RMP L (SEE NOTE 2)
IF8 PNT 16 H
PLA 1
DSII ENB SKIP SEC H (SEE NOTE 1)
DSII LST TRK L
DSII SECT/TRK IVA H
DSII LST SECT TRK L
DSII LST SECT TRK H
DSII LST SECT L
DSII LST SECT H
NOTES:
1. E15 PIN 18 NOT USED ON M7685-YA. (FOR FUTURE PRODUCTS)
2. BP 3600 RPM L IS PART OF THE DRIVE TYPE REGISTER AND ONLY DENOTES SPEED FOR THE 80 MB DRIVES (SEE FIG 1)
FIG 1
RM02
RM03
RM05
FUTURE DRIVE
BP 3600 RPM L
H
L
H
L
BP 80 MB L
L
L
H
H
SECTOR & TRACK REG.
DATA SEQUENCER
(DSII)
D CS M 7685-YA-1 D
SHEET 11 OF 15

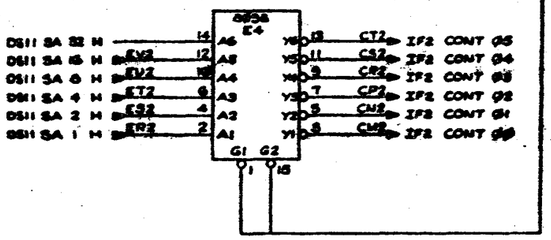


SECTOR/TRACK TO CONTROL BUS

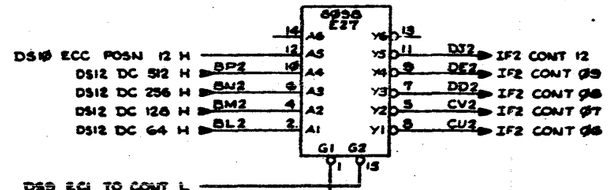




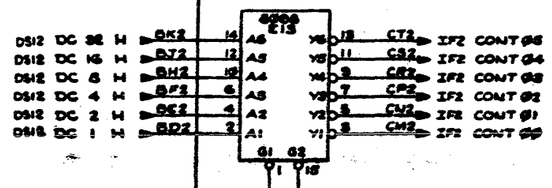


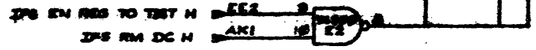


DESIRED CYLINDER TO CONTROL BUS



DS9 ECI TO CONT L





REVISIONS		
CHG	CHANGE NO.	REV.

SECT/TRACK/DC
GATED TO CONTROL BUS

TITLE		SIZE	CODE	NUMBER	REV.
DATA SEQUENCER	(DSI3)	D	CS	M7685-YA-1	D
SCALE	SHEET 13 OF 15				

CZ1

Pin	Signal	Pin	Signal	Pin	Signal
AA1	DS1Ø EC CAR 1 OUT H	BA1	DS3 MB ØØ L	CA1	DS8 DCK SET L
AB1	DS1Ø EC CAR 1 IN H	BB1	DS3 MB Ø1 L	CB1	CS5 DTE SET L
AC1	DS1Ø EC CAR 2 OUT H	BC1	DS3 MB Ø2 L	CC1	CS3 SECT/INDEX L
AD1	DS1Ø EC CAR 2 IN H	BD1	DS3 MB Ø3 L	CD1	BP DC OPTION
AE1	DS7 ECC CLOCK H	BE1	DS3 MB Ø4 L	CE1	CS4 POWER OK H
AF1	IF5 RM DA H	BF1	DS3 MB Ø5 L	CF1	BP 8Ø MB L
AH1	SPARE	BH1	DS3 MB Ø6 L	CH1	DS11 TA 8 H
AJ1	IF6 WRT REG H	BJ1	DS3 MB Ø7 L	CJ1	DS11 TA 16 H
AK1	IF5 RM DC H	BK1	DS3 MB Ø8 L	CK1	IF8 HC1 L
AL1	CS5 MBA EBL L	BL1	DS3 MB Ø9 L	CL1	IF8 EC1 L
AM1	DS12 CLR OFF MD L	BM1	DS3 MB 1Ø L	CM1	IF8 FMT 16 H
AN1	DS12 LBT H	BN1	DS3 MB 11 L	CN1	DS6 FER SET L
AP1	IF8 OFFSET MODE H	BP1	DS3 MB 12 L	CP1	DS5 WCF SET L
AR1	DS11 LST SECT H	BR1	DS3 MB 13 L	CR1	DS5 MB SCLK L
AS1	DS1Ø ECC DONE H	BS1	DS3 MB 14 L	CS1	DS1Ø ECH SET L
AT1	GND	BT1	GND	CT1	GND
AU1	IF5 RM EC1 H	BU1	DS3 MB 15 L	CU1	DS6 HCE SET L
AV1	IF5 RM EC2 H	BV1	DS3 MB 16 L	CV1	DS5 HCRC SET L

Pin	Signal	Pin	Signal	Pin	Signal
DA1	SA1 MB TSB ØØ H	EA1	DS8 SET BSE L	FA1	CS4 P HEADER AREA H
DB1	SA1 MB TSB Ø1 H	EB1	RO1 RD CLK H	FB1	SPARE
DC1	SA1 MB TSB Ø2 H	EC1	SA2 RUN H	FC1	CS4 P DATA AREA H
DD1	SA1 MB TSB Ø3 H	ED1	RO1 RD DATA H	FD1	DS6 CRC DONE H
DE1	SA1 MB TSB Ø4 H	EE1	BP 144 ENB H	FE1	CS4 P DATA EN SCLK H
DF1	SA1 MB TSB Ø5 H	EF1	DS7 WRITE DATA L	FF1	CS5 READ GATE FAST H
DH1	SA1 MB TSB Ø6 H	EH1	SPARE	FH1	CS4 P EN EBL H
DJ1	SA1 MB TSB Ø7 H	EJ1	DS7 SHIFT CLOCK L	FJ1	CS4 LAST READ DATA L
DK1	SA1 MB TSB Ø8 H	EK1	SPARE	FK1	CS4 P READ GATE H
DL1	SA1 MB TSB Ø9 H	EL1	SPARE	FL1	SPARE
DM1	SA1 MB TSB 1Ø H	EM1	RO1 SERVO CLK L	FM1	CS4 P LFS H
DN1	SA1 MB TSB 11 H	EN1	SPARE	FN1	DS4 EN ECC OUT H
DP1	SA1 MB TSB 12 H	EP1	DS3 SYNC PAR SET H	FP1	CS4 P EN CRC OUT H
DR1	SA1 MB TSB 13 H	ER1	CS6 READ GATE H	FR1	DS4 EN CRC OUT H
DS1	SA1 MB TSB 14 H	ES1	CS4 PRECLEAR CRC/ECC L	FS1	CS4 P EN ECC OUT H
DT1	GND	ET1	GND	FT1	GND
DU1	SA1 MB TSB 15 H	EU1	CS6 P EN LOAD SR H	FU1	SPARE
DV1	SA1 MB TSB 16 H	EV1	CS4 DS WRITE GATE H	FV1	SPARE

Pin	Signal	Pin	Signal	Pin	Signal
AA2	+5V	BA2	+5V	CA2	+5V
AB2	−15V	BB2	−15V	CB2	−15V
AC2	GND	BC2	GND	CC2	GND
AD2	DS12 DC CAR 1 OUT H	BD2	DS12 DC 1 H	CD2	CS4 EN SYNC H
AE2	DS12 DC CAR 1 IN H	BE2	DS12 DC 2 H	CE2	SB2 WRT CLK B H
AF2	SPARE	BF2	DS12 DC 4 H	CF2	SA2 WRT CLK A H
AH2	SPARE	BH2	DS12 DC 8 H	CH2	DS8 SYNC DET H
AJ2	SPARE	BJ2	DS12 DC 16 H	CJ2	DS4 WORD CLK H
AK2	BP 36ØØ RPM	BK2	DS12 DC 32 H	CK2	DS4 WORD CLK L
AL2	DS8 HEADER FIRST H	BL2	DS12 DC 64 H	CL2	DS4 PROM STROBE H
AM2	DS12 MAX CYL L	BM2	DS12 DC 128 H	CM2	IF2 CONT ØØ
AN2	DS12 AOE SET L	BN2	DS12 DC 256 H	CN2	IF2 CONT Ø1
AP2	DS12 IAE SET L	BP2	DS12 DC 512 H	CP2	IF2 CONT Ø2
AR2	CS3 SET PULSE H	BR2	CS5 TRNSCEIVR EN B H	CR2	IF2 CONT Ø3
AS2	IF8 SCH SK R OR W L	BS2	CS5 TRNSCEIVR EN A H	CS2	IF2 CONT Ø4
AT2	IF8 READ IN CMD L	BT2	CS4 READ HEADER H	CT2	IF2 CONT Ø5
AU2	DS1Ø EN CORRECT CLK L	BU2	SA2 MB SYNC PAR H	CU2	IF2 CONT Ø6
AV2	BP TEST L	BV2	DS3 MB 17 L	CV2	IF2 CONT Ø7

Pin	Signal	Pin	Signal	Pin	Signal
DA2	+5V	EA2	+5V	FA2	+5V
DB2	−15V	EB2	−15V	FB2	−15V
DC2	GND	EC2	GND	FC2	GND
DD2	IF2 CONT Ø8	ED2	IF8 ABORT L	FD2	BP PRECLEAR TEST L
DE2	IF2 CONT Ø9	EE2	IF8 EN REG TO TEST H	FE2	DS12 LST SECT TRK H
DF2	IF2 CONT 1Ø	EF2	CS8 DIAG L	FF2	IF1Ø DCK H
DH2	IF2 CONT 11	EH2	IF8 FØ H	FH2	DS6 CRC ER H
DJ2	IF2 CONT 12	EJ2	CS8 MAINT CLK H	FJ2	CS2 FORMAT H
DK2	IF2 CONT 13	EK2	IF8 F2 H	FK2	CS4 P EN CRC L
DL2	IF2 CONT 14	EL2	CS8 MAINT CLK L	FL2	DS4 WRITE TIME H
DM2	IF2 CONT 15	EM2	CS8 MB READ DATA H	FM2	DS7 BC SET L
DN2	CS5 EN ECC CLOCK L	EN2	IF8 GO H	FN2	DS4 WORD TIME H
DP2	DS11 TA 1 H	EP2	CS3 RESET GO L	FP2	SPARE
DR2	DS11 TA 2 H	ER2	DS11 SA 1 H	FR2	DS3 EN PAR GEN H
DS2	DS11 TA 4 H	ES2	DS11 SA 2 H	FS2	DS3 EN PAR CHECK H
DT2	CS3 MBA CLR L	ET2	DS11 SA 4 H	FT2	DS3 PARITY ODD H
DU2	CS5 EN CRC CLOCK L	EU2	DS11 SA 8 H	FU2	DS7 BIT CLOCK H
DV2	SA1 MB TSB 17 H	EV2	DS11 SA 16 H	FV2	DS4 ECC WRD CNT INH L

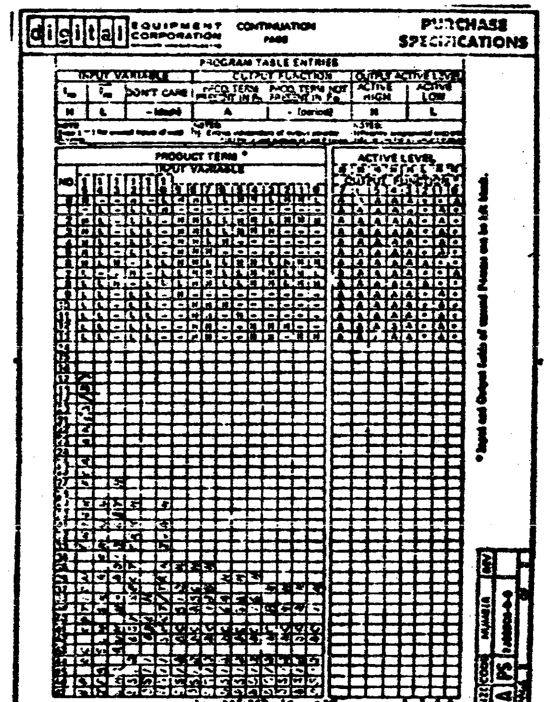
I/O SIGNAL LIST (DS14)

DATA SEQUENCER

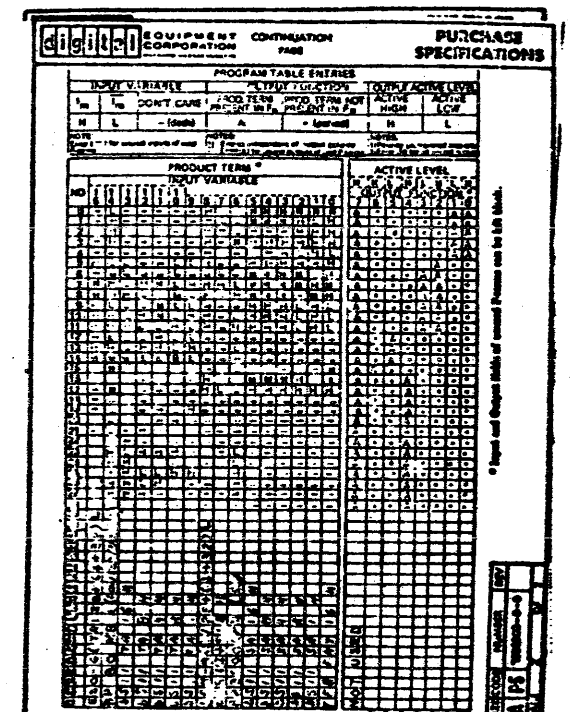
D CS M 7685-YA-1 D

SHEET 14 OF 15

CZ 1



23-002C6 : FPLA AT E18
CYLINDER ADDRESS DECODE



23-050C6 FPLA AT E15
TRACK/SECTOR ADDRESS DECODE

¥ ALWAYS HIGH FOR M7685-YA. THIS PIN IS FOR FUTURE PRODUCTS.

¥¥ BP 3600 RPM L IS PART OF THE DRIVE TYPE REG AND ONLY DENOTES SPEED FOR 88 MB DRIVES (SEE FIG 1).

FIG 1

	RM02	RM03	RM05	FUTURE DRIVE
BP 3600 RPM L	H	L	H	L
BP 80 MB L	L	L	H	H

TITLE	SIZE	CODE	NUMBER	REV.
DATA SEQUENCER	D	CS	M7685-YA-1	D

SCALE — SHEET 15 OF 15

C21

AUTOMATED BY PRTLST.3L(40)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION YA	REFERENCE DESIGNATOR
1	1	D-MD-5012485-0-0	5012485-00	M7685	1	
2	2		1001610-01	.01 MFD 100V -20+80 Z5U DISC	113	C1-C110,C118-C120
3	3		1017472-00	10 MFD 35V +50-10% AL EL	6	C111-C116
4	4		1000010-00	39.0 MMF 100V 5%200PPM DM15S	2	C117,C121
5	5		1210711-02	HANDLE,MODULE,HEX	1	
6	6		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
7	7		1300365-00	1.0 K .25 W 5.0 % CC	11	R1-R5,R7,R8,R9,R10,R11,R12
8	8		1302394-00	30.0 K .25 W 5.0 % CC	1	R6
9	9		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	2	E8,E81
10	10		1910532-00	74S00 NAND GATE-QUAD 2IN	7	E1,E2,E39,E56,E63,E67,E109
11	11		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	E110
12	12		1912803-00	LS04 INVERTER GATE-HEX 1I	5	E17,E19,E33,E44,E54
13	13		1910534-00	74S04 INVERTER GATE-HEX 1I	3	E89,E91,E95
14	14		1912805-00	LS08 AND GATE-QUAD 2IN,PO	2	E43,E45
15	15		1912389-00	74S08 AND GATE-QUAD 2IN,PO	3	E76,E84,E106
16	16		1910536-00	74S10 NAND GATE-TRIPLE 3IN	2	E97,E108
17	17		1910537-00	74S11 AND GATE-TRIPLE 3INP	3	E57,E72,E87
18	18		1912801-00	LS02 NOR-GATE-QUAD 2IN	1	E24
19	19		1910539-00	74S20 NAND GATE-DUAL 4INPU	2	E41,E80
20	20		1914086-00	74S30 NAND GATE-POS 8IN	2	E59,E92
21	21		1913340-00	74S32 OR GATE-QUAD 2IN	1	E111
22	22		1912820-00	LS51 A-O-I GATE 2-WIDE 2I	1	E96
23	23		1911712-00	74S51 AND-OR GATE-INVERT D	3	E86,E93,E102
24	24		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	12	E32,E40,E51,E58,E70,E82,E83,E88
					CONT	E98,E99,E101,E107
25	25		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	4	E9,E10,E79,E85
26	26		1912828-00	LS85 COMPARATOR,4BIT MAGN	4	E34,E35,E36,E47
27	27		1912096-00	DEC 74S86 XOR GATE,QUAD 2IN	2	E66,E77
28	28		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	1	E100
29	29		1910436-00	DEC 74123 ONE SHOT-DUAL,RETRIG	1	E69

REVISION HISTORY			BASIC PART NO: M7685
ENG	ECO NUMBER	REV	SECTION A OF A
RPd 26Feb80	INITIAL	D	SECTION.VARIATION INDEX
			[A] YA
			[B]
			[C]
			[D]
			[E]
			[F]
			[H]
			[J]
			[K]
			[L]
			[M]
			[N]

DRN: K. DAVIS	DATE: 6-FEB-80	D I B I G I T A L
CHK'D: R. MICHAUD	DATE: 21-FEB-80	TITLE PARTS LIST
		DATA SEQUENCER
DES.ENG: C.DUNIGAN	DATE: 21-FEB-80	
RESP.ENG.: C. DUNIGAN	DATE: 21-FEB-80	DOCUMENT NUMBER
MFG.ENG.: D. CLARLIN	DATE: 21-FEB-80	SIZE: K / CODE: PL / NUMBER: M7685-YA-DBP / REV: D
ASSEMBLY NUMBER: D-UA-M7685-YA-0	TOP DOCUMENT NUMBER: #B-DD-M7685-YA	FILE NAME: Z1189D.PLS / EDIT #: 8

AUTOMATED BY PRTLST,3L(40)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION YA	REFERENCE DESIGNATOR
30	30		1912847-00	LS157 MUX 1 OF 2(QUAD)	4	E25,E26,E28,E30
31	31		1914082-00	74S163 COUNTER,SYNCH UP/DOW	5	E11,E14,E22,E46,E61
32	32		1912850-00	LS164 SHIFT REG. 8BIT SERI	3	E29,E103,E112
33	33		1912853-00	LS175 FF-D QUAD	3	E42,E68,E104
34	34		1910552-00	74S194 SHIFT REG.,4BIT RIGH	1	E75
35	35		1914085-00	74S260 NOR GATE-DUAL,POS	2	E94,E113
36	36		1914084-00	74S299 SHIFT REG.,8BIT RIGH	2	E55,E74
37	37		1911527-00	8097 BUFFER GATE-HEX 2INP	3	E71,E73,E78
38	38		1914087-00	8098 BUFFER GATE-HEX 2IN,	9	E4,E6,E13,E16,E27,E31,E37,E38,
					CONT	E49
39	39		1914083-00	8542 REGISTER,I/O-QUAD,TR	5	E52,E53,E60,E62,E64
40	40		1913474-00	9401 GENERATOR/CHECKER CR	1	E90
41	41		1912807-00	LS10 NAND GATE-TRIPLE 3IN	1	E105
42	42		1912849-00	LS161 COUNTER,SYNCHR,4BIT	7	E3,E5,E7,E12,E20,E21,E48
43	43		23050C6-00	C6-01	1	E15
44	44		1912813-00	LS27 NOR GATE-TRIPLE 3IN	1	E50
45	45		23002C6-00	C6-01	1	E18
46	46		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	1	W1
47	47		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	

DIGITAL	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
	DATA SEQUENCER	K	FL	M7685-YA-DBP	D

COMPONENT SIDE VIEW

15.688 REF

3.410 REF

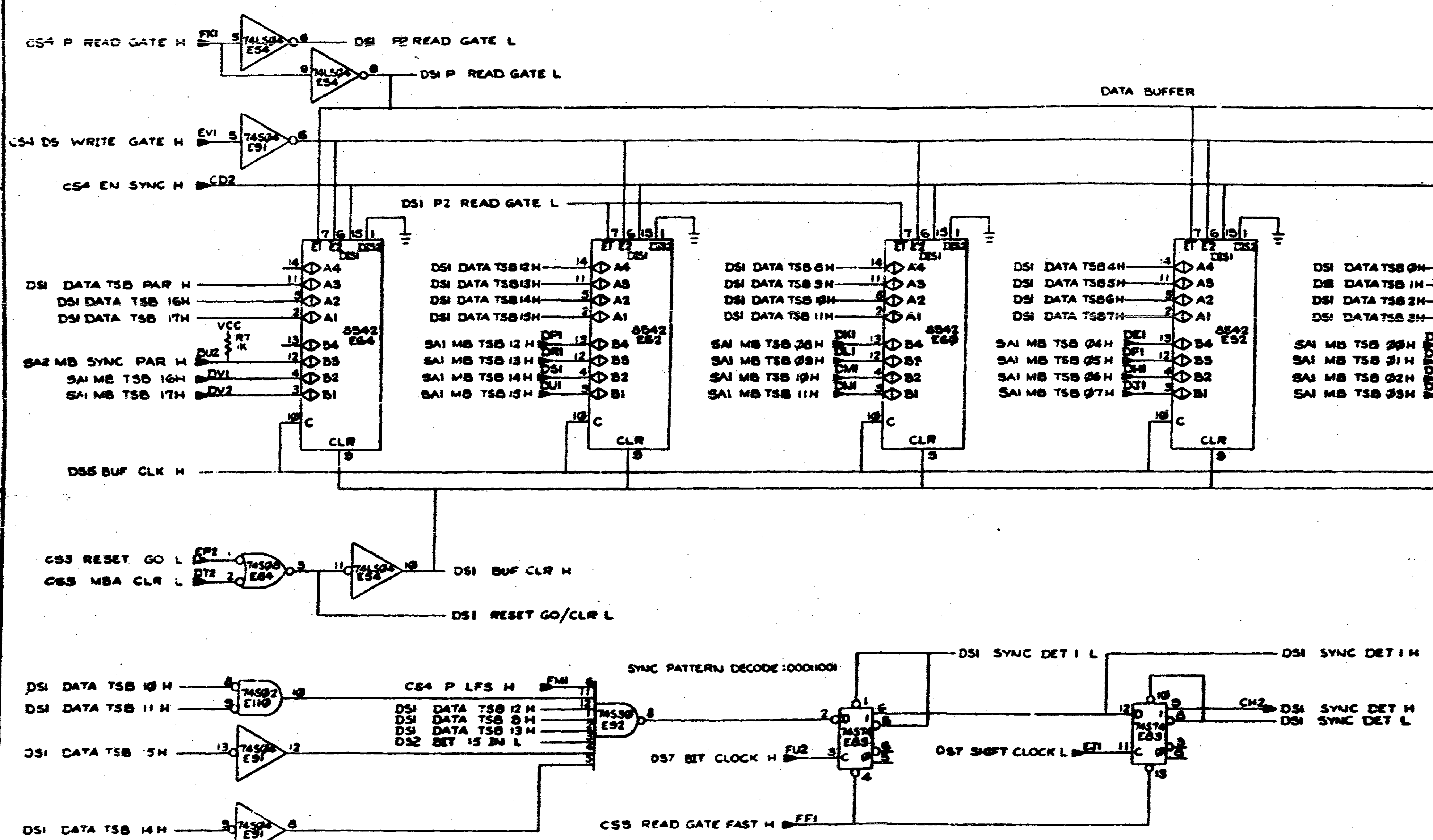
I-1 I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16 I-17 I-18 I-19 I-20

NOTES:

STOP @	+ Y PASS = -0-	STOP -0- TIMES = -0-
REPEAT	+ X PASS = -0-	STOP -0- TIMES = -0-

CHG	CHANGE NO.	BY
	0	

ETCH REV. 0
P.C. DESIGN DATA BASE



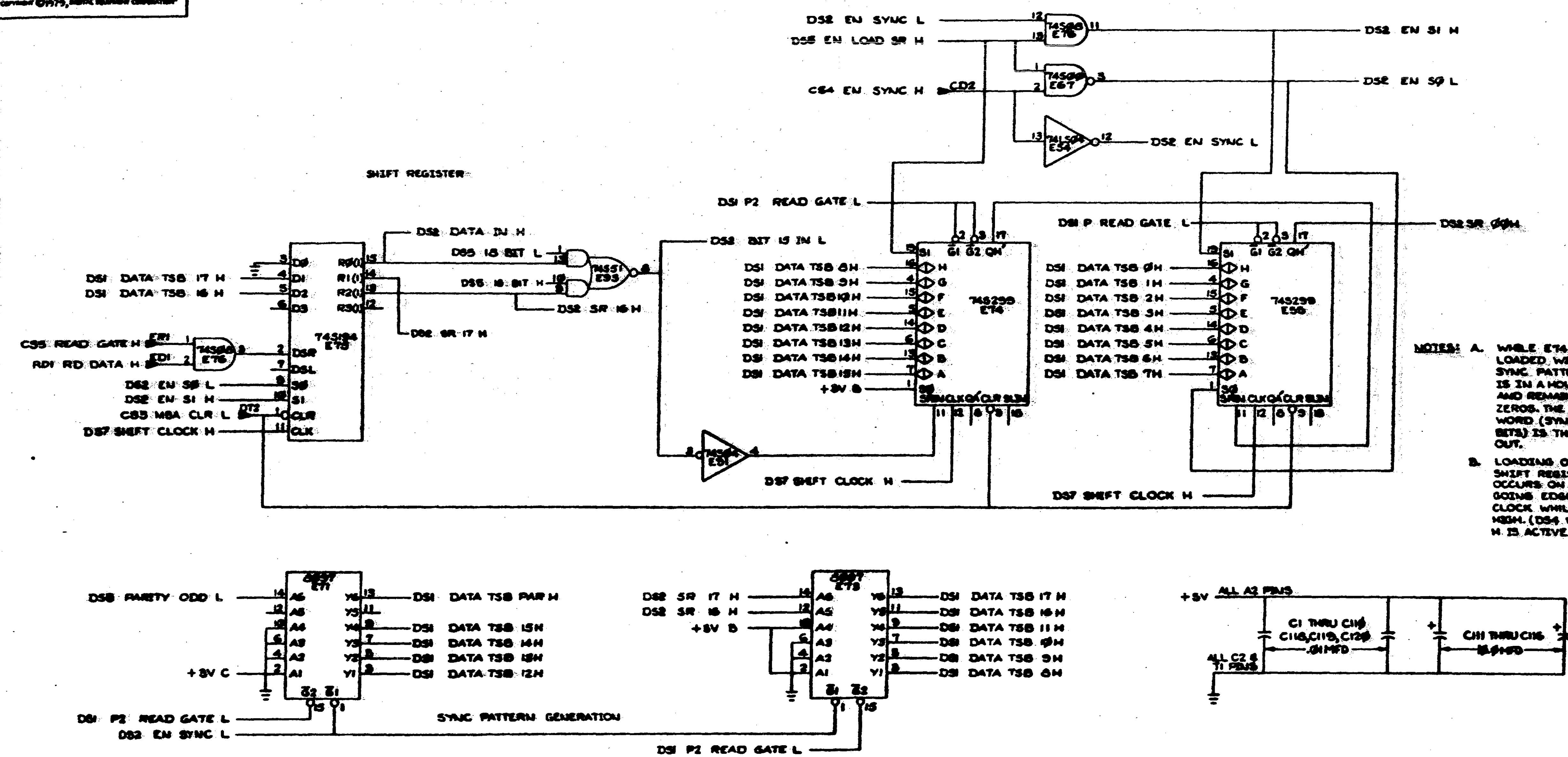
NOTES: A. THE DATA FLOW IS AS FOLLOWS, (FOR 8542)

1. READ : DATA GOES IN ON THE A INPUTS COMING FROM THE SHIFT REGISTER AND GOES OUT TO THE MASSBUS DRIVERS THRU THE B INPUTS.
2. WRITE : DATA GOES IN FROM THE MASSBUS ON THE B INPUTS AND GOES OUT TO THE SHIFT REGISTER (PARALLEL LOAD INPUTS) THRU THE A INPUTS.

B. SYNC DETECT H SETS AT THE SAME TIME AS THE SYNC IS CLOCKED INTO SR BITS 15 TO 8.

DATA BUFFER AND SYNC DETECT

FIRST USED ON	RM03
TITLE	DATA SEQUENCER (DSI)
NEXT HIGHER ASSY.	8-DD-M8685-0
SIZE	D
CODE	CS
NUMBER	M8685-0-1
REV.	9
SHEET	OF 5


SHIFT REGISTER
DS2 EN SYNC L
DS5 EN LOAD SR H
CS4 EN SYNC H
DS2 EN S1 H
DS2 EN SØ L
DS2 EN SYNC L
DS1 P2 READ GATE L
DS1 P READ GATE L
DS2 SR ØØH
DS2 DATA IN H
DS5 18 BIT L
DS5 18 BIT H
DS2 SR 16 H
DS2 SR 17 H
DS2 BIT 15 IN L
DS1 DATA TSB 17 H
DS1 DATA TSB 16 H
CS5 READ GATE H
RD1 RD DATA H
DS2 EN SØ L
DS2 EN S1 H
CS5 MBA CLR L
DS7 SHIFT CLOCK H
74S194 E75
74S00 E76
74S51 E53
74S04 E51
74S298 E74
74S298 E56
DS1 DATA TSB 8H
DS1 DATA TSB 9H
DS1 DATA TSB 10H
DS1 DATA TSB 11H
DS1 DATA TSB 12H
DS1 DATA TSB 13H
DS1 DATA TSB 14H
DS1 DATA TSB 15H
+5V B
DS1 DATA TSB ØH
DS1 DATA TSB 1H
DS1 DATA TSB 2H
DS1 DATA TSB 3H
DS1 DATA TSB 4H
DS1 DATA TSB 5H
DS1 DATA TSB 6H
DS1 DATA TSB 7H
DS7 SHIFT CLOCK H
DS8 PARITY ODD L
+5V C
DS1 P2 READ GATE L
DS2 EN SYNC L
SYNC PATTERN GENERATION
DS1 DATA TSB PAR H
DS1 DATA TSB 15H
DS1 DATA TSB 14H
DS1 DATA TSB 13H
DS1 DATA TSB 12H
DS2 SR 17 H
DS2 SR 16 H
+5V B
DS1 P2 READ GATE L
DS1 DATA TSB 17 H
DS1 DATA TSB 16 H
DS1 DATA TSB 11 H
DS1 DATA TSB 10H
DS1 DATA TSB 9H
DS1 DATA TSB 8H
8097 E71
8097 E73
+5V
ALL A2 PINS
C1 THRU C10, C118, C119, C120 .01MFD
C111 THRU C116 15.0MFD
ALL C2 & T1 PINS

NOTES:

A. WHILE E74 IS BEING LOADED WITH THE SYNC PATTERN, E56 IS IN A HOLD MODE AND REMAINS ALL ZEROS. THE ENTIRE WORD (SYNC + 8 ZERO BITS) IS THEN SHIFTED OUT.

B. LOADING OF THE SHIFT REGISTER OCCURS ON THE HIGH GOING EDGE OF THE CLOCK WHILE S1 IS HIGH. (DS4 WRITE TIME H IS ACTIVE.)

SHIFT REGISTER AND SYNC PATTERN GENERATION (WRITE)

TITLE	(DS2) DATA SEQUENCER
SIZE	D
CODE	CS
NUMBER	M8685-Ø-1
REV.	B
SCALE	—
SHEET	2 OF 15

CS5 EN CRC CLOCK L
DS3 FMT 18H
SAI MB TSB 17H
SAI MB TSB 16H
SAI MB TSB 15H
SAI MB TSB 14H
SAI MB TSB 13H
SAI MB TSB 12H
SAI MB TSB 11H
SAI MB TSB 10H
SAI MB TSB 09H
SAI MB TSB 08H
SAI MB TSB 07H
SAI MB TSB 06H
SAI MB TSB 05H
SAI MB TSB 04H
SAI MB TSB 03H
SAI MB TSB 02H
SAI MB TSB 01H
SAI MB TSB 00H

DS3 MB17L
DS3 MB16L
DS3 MB15L
DS3 MB14L
DS3 MB13L
DS3 MB12L
DS3 MB11L
DS3 MB10L
DS3 MB09L
DS3 MB08L
DS3 MB07L
DS3 MB06L
DS3 MB05L
DS3 MB04L
DS3 MB03L
DS3 MB02L
DS3 MB01L
DS3 MB00L

+5V
R5 1K
+3V B
DS2 EN SYNC L
CS4 P EN LOAD SR H
DS4 WORD TIME H
CS4 DS WRITE GATE H
FR2 DS3 EN PAR GEN H
DS3 EN PAR GEN L
+3V B
DS4 WORD TIME L
FS2 DS3 EN PAR CHECK H

DS1 SYNC DET 1 L
CS4 P LFS H
DS7 BIT CLOCK L
DS4 WORD TIME H
DS7 ECC INPUT DATA L
DS1 SYNC DET L
DS3 EN PAR GEN L
DS7 CRC INPUT DATA H
DS4 WORD TIME L
ET2 DS3 PARITY ODD H
DS3 PARITY ODD L

DS3 EN PAR CHECK H
EP1 DS3 SYNC PAR SET H

CS6 TRNSCEIVR EN A H
SA6 WRT CLK A H
CS5 TRNSCEIVR EN B H
SB6 WRT CLK B H
DS5 WRT CLK L

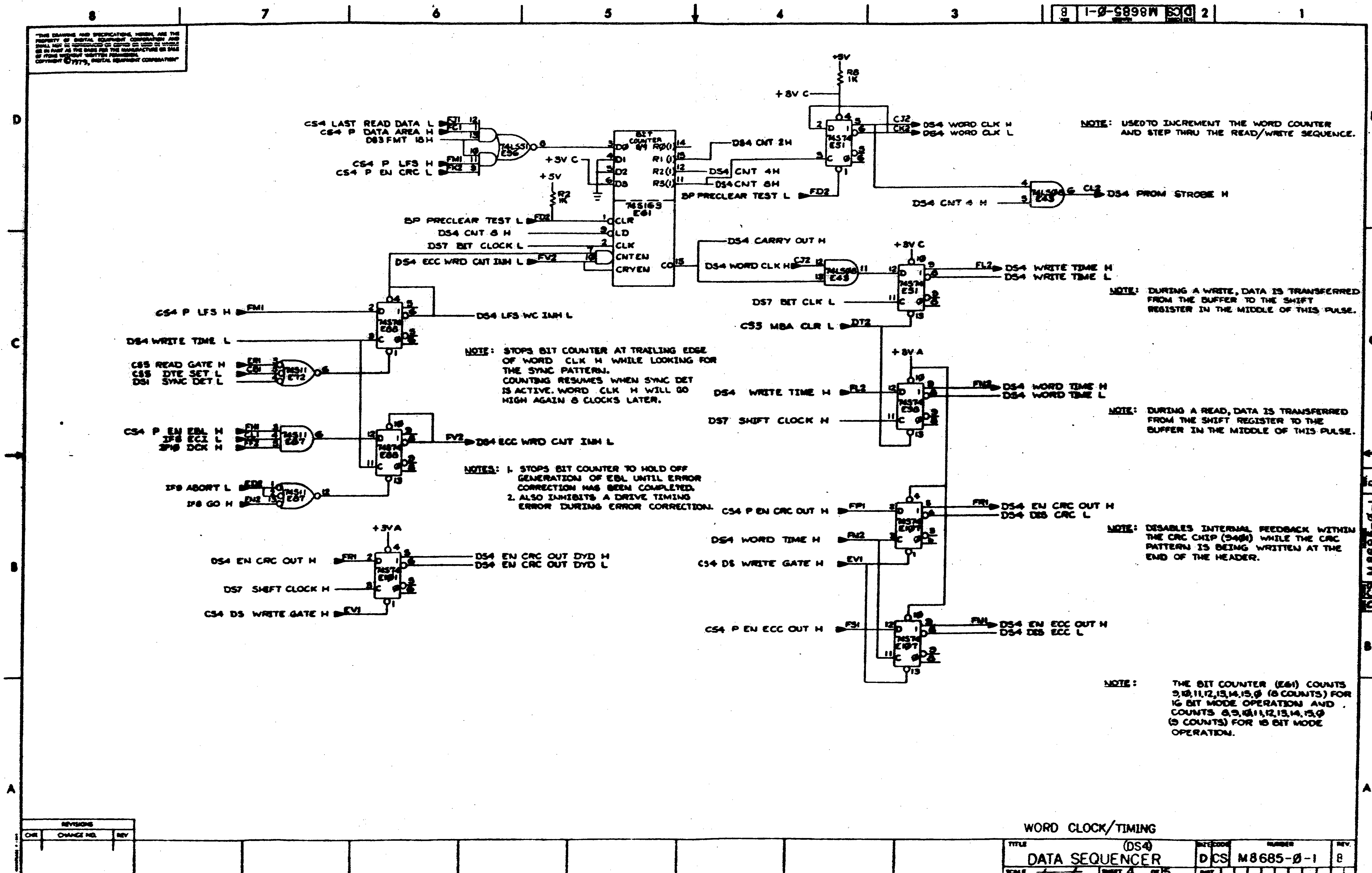
+3V C
WRITE PARITY BIT STORED
DS1 DATA TSB PAR H
DS4 WORD TIME L
IF8 FMT 16H
DS3 FMT 16 H
CS3 MBA CLR L
DS3 PARITY ODD H
DS4 WRITE TIME L
DS1 RESET GO/CLR L

REVISIONS

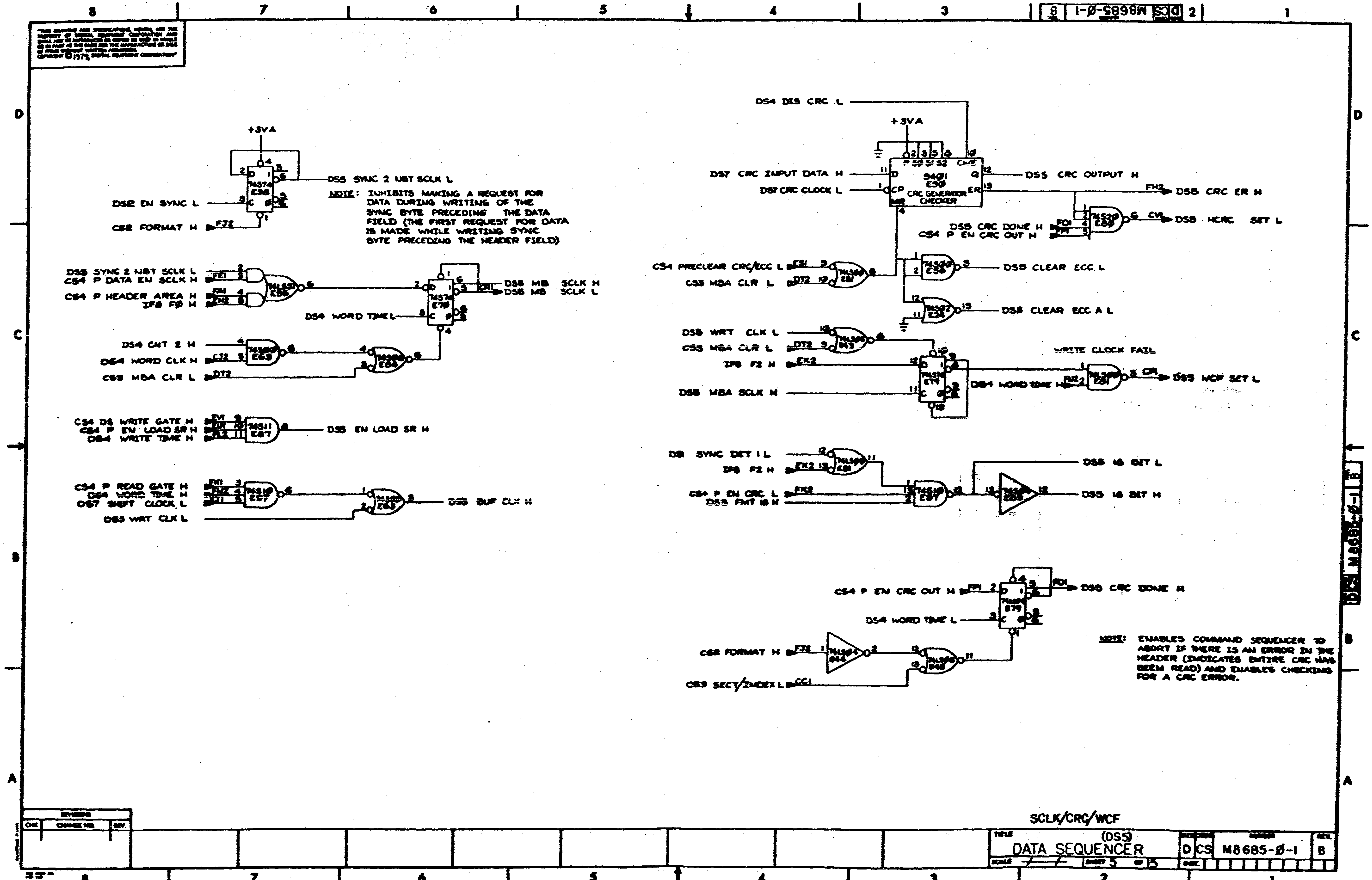
ORIG	CHANGE NO.	REV

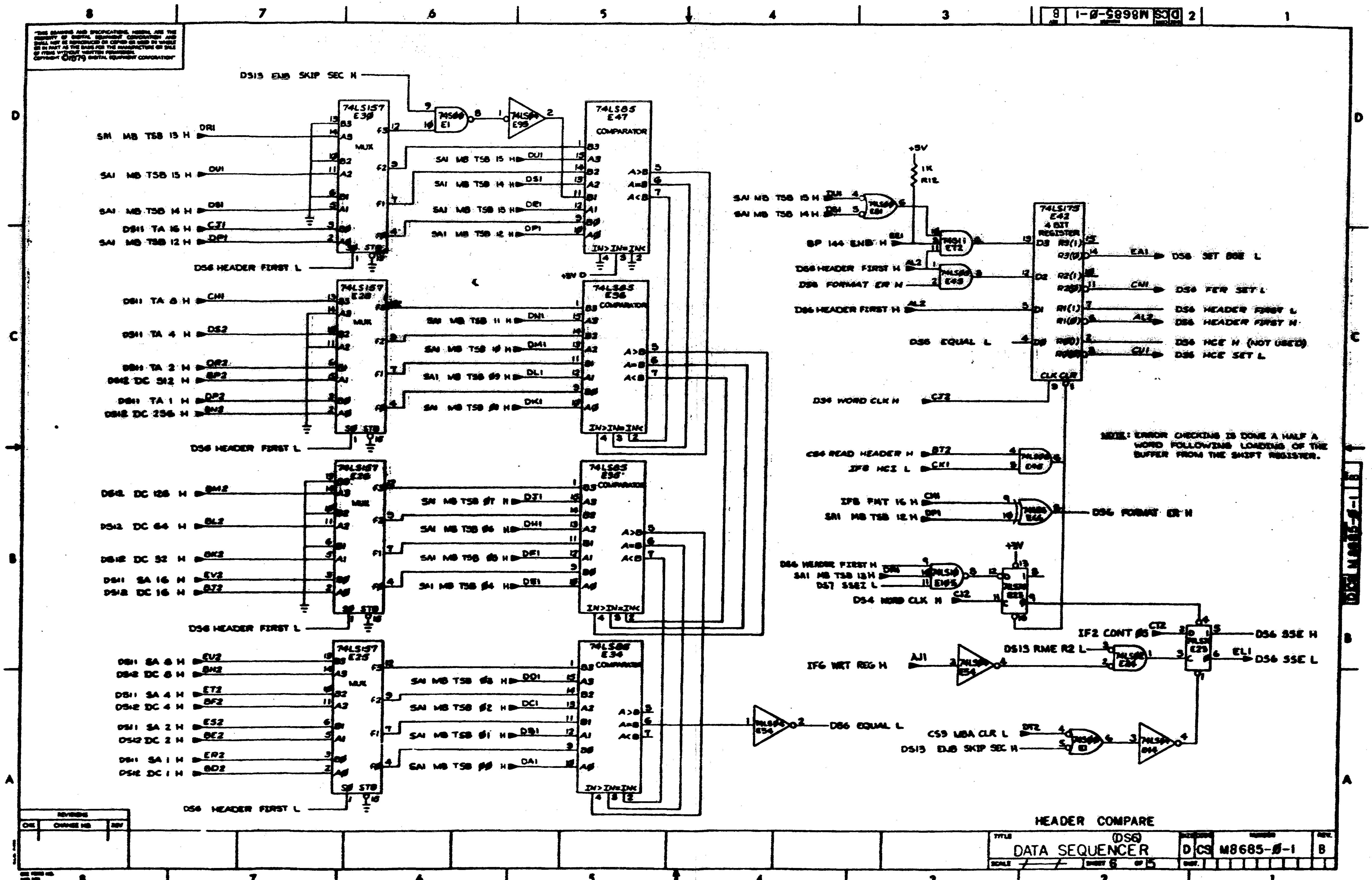
PARITY & DATA BUS

TITLE DATA SEQUENCER (DS3)
SCALE — SHEET 3 OF 15
SIZE D | CODE CS | NUMBER M8685-0-1 | REV E
DSC M8685-0-1



NOTE: USED TO INCREMENT THE WORD COUNTER AND STEP THRU THE READ/WRITE SEQUENCE.
NOTE: STOPS BIT COUNTER AT TRAILING EDGE OF WORD CLK H WHILE LOOKING FOR THE SYNC PATTERN. COUNTING RESUMES WHEN SYNC DET IS ACTIVE. WORD CLK H WILL GO HIGH AGAIN 8 CLOCKS LATER.
NOTES: 1. STOPS BIT COUNTER TO HOLD OFF GENERATION OF EBL UNTIL ERROR CORRECTION HAS BEEN COMPLETED.
2. ALSO INHIBITS A DRIVE TIMING ERROR DURING ERROR CORRECTION.
NOTE: DURING A WRITE, DATA IS TRANSFERRED FROM THE BUFFER TO THE SHIFT REGISTER IN THE MIDDLE OF THIS PULSE.
NOTE: DURING A READ, DATA IS TRANSFERRED FROM THE SHIFT REGISTER TO THE BUFFER IN THE MIDDLE OF THIS PULSE.
NOTE: DISABLES INTERNAL FEEDBACK WITHIN THE CRC CHIP (9401) WHILE THE CRC PATTERN IS BEING WRITTEN AT THE END OF THE HEADER.
NOTE: THE BIT COUNTER (E61) COUNTS 9,10,11,12,13,14,15,0 (8 COUNTS) FOR 16 BIT MODE OPERATION AND COUNTS 8,9,10,11,12,13,14,15,0 (9 COUNTS) FOR 18 BIT MODE OPERATION.
CS4 LAST READ DATA L
CS4 P DATA AREA H
DS3 FMT 18 H
CS4 P LFS H
CS4 P EN CRC L
BP PRECLEAR TEST L
DS4 CNT 8 H
DS7 BIT CLOCK L
DS4 ECC WRD CNT INH L
DS4 CNT 2H
DS4 CNT 4H
DS4 CNT 8H
DS4 WORD CLK H
DS4 WORD CLK L
DS4 PROM STROBE H
DS4 CNT 4 H
DS4 CARRY OUT H
DS4 WRITE TIME H
DS4 WRITE TIME L
DS7 BIT CLK L
CS3 MBA CLR L
DS4 LFS WC INH L
DS4 WRITE TIME L
CS5 READ GATE H
CS5 DTE SET L
DS1 SYNC DET L
CS4 P EN EBL H
IF8 ECI L
IF10 DCK H
IF8 ABORT L
IF8 GO H
DS4 WORD TIME H
DS4 WORD TIME L
DS7 SHIFT CLOCK H
CS4 P EN CRC OUT H
DS4 EN CRC OUT H
DS4 DIS CRC L
CS4 DS WRITE GATE H
CS4 P EN ECC OUT H
DS4 EN ECC OUT H
DS4 DIS ECC L
DS4 EN CRC OUT DYD H
DS4 EN CRC OUT DYD L
WORD CLOCK/TIMING
(DS4) DATA SEQUENCER
D CS M8685-0-1 B
SHEET 4 OF 15


NOTE: INHIBITS MAKING A REQUEST FOR DATA DURING WRITING OF THE SYNC BYTE PRECEDING THE DATA FIELD (THE FIRST REQUEST FOR DATA IS MADE WHILE WRITING SYNC BYTE PRECEDING THE HEADER FIELD)
NOTE: ENABLES COMMAND SEQUENCER TO ABORT IF THERE IS AN ERROR IN THE HEADER (INDICATES ENTIRE CRC HAS BEEN READ) AND ENABLES CHECKING FOR A CRC ERROR.
WRITE CLOCK FAIL
DS5 SYNC 2 NBT SCLK L
DS5 MB SCLK H
DS5 MB SCLK L
DS5 EN LOAD SR H
DS5 BUF CLK H
DS5 CRC OUTPUT H
DS5 CRC ER H
DS5 HCRC SET L
DS5 CLEAR ECC L
DS5 CLEAR ECC A L
DS5 WCF SET L
DS5 16 BIT L
DS5 16 BIT H
DS5 CRC DONE H
SCLK/CRC/WCF
(DS5)
DATA SEQUENCER
D CS M8685-Ø-1 B
SHEET 5 OF 15



DS15 ENB SKIP SEC H
SAI MB TSB 15 H
SAI MB TSB 14 H
DS11 TA 16 H
SAI MB TSB 12 H
DS6 HEADER FIRST L
74LS157 E30
MUX
74LS00 E1
74LS04 E98
74LS85 E47
COMPARATOR
DS11 TA 8 H
DS11 TA 4 H
DS11 TA 2 H
DS12 DC 512 H
DS11 TA 1 H
DS12 DC 256 H
74LS157 E28
74LS85 E35
SAI MB TSB 11 H
SAI MB TSB 10 H
SAI MB TSB 09 H
SAI MB TSB 08 H
DS12 DC 128 H
DS12 DC 64 H
DS12 DC 32 H
DS11 SA 16 H
DS12 DC 16 H
74LS157 E26
74LS85 E36
SAI MB TSB 07 H
SAI MB TSB 06 H
SAI MB TSB 05 H
SAI MB TSB 04 H
DS11 SA 8 H
DS12 DC 8 H
DS11 SA 4 H
DS12 DC 4 H
DS11 SA 2 H
DS12 DC 2 H
DS11 SA 1 H
DS12 DC 1 H
74LS157 E25
74LS85 E34
SAI MB TSB 03 H
SAI MB TSB 02 H
SAI MB TSB 01 H
SAI MB TSB 00 H
DS6 EQUAL L
+5V
1K
R12
SAI MB TSB 13 H
BP 144 ENB H
DS6 HEADER FIRST H
DS6 FORMAT ER H
74LS175 E42
4 BIT REGISTER
DS6 SET BSE L
DS6 FER SET L
DS6 HEADER FIRST L
DS6 HEADER FIRST H
DS6 HCE H (NOT USED)
DS6 HCE SET L
DS4 WORD CLK H
NOTE: ERROR CHECKING IS DONE A HALF A WORD FOLLOWING LOADING OF THE BUFFER FROM THE SHIFT REGISTER.
CS4 READ HEADER H
IF8 HCI L
IF8 FMT 16 H
SAI MB TSB 12 H
DS6 FORMAT ER H
DS7 SSEI L
DS4 WORD CLK H
IF2 CONT 05
DS13 RME R2 L
IF6 WRT REG H
DS6 SSE H
DS6 SSE L
CS9 MBA CLR L
DS15 ENB SKIP SEC H
HEADER COMPARE
DATA SEQUENCER (DS6)
D CS M8685-Ø-1 B
SHEET 6 OF 15

+5V
R11 1K
+3V A
+3V B
RDI RD CLK H EB1
74S04 E95
DS7 READ CLOCK L
CS5 READ GATE H ER1
74S08 E84
74S74 E101
74S74 E96
74S08 E84
74S51 E86
DS7 BIT CLOCK L
74S04 E89
FU2
DS7 BIT CLOCK H
RDI SERVO CLK L EM1
+3V B
74LS74 E85
74S04 E98
DS7 READ CLOCK L
CS6 READ GATE FAST H FF1
DS7 WRITE CLOCK ENABLE H
CS5 EN CRC CLOCK L DU2
74S32 E111
DS7 CRC CLOCK L
74S02 E110
AE1
DS7 ECC CLOCK H
74S04 E88
DS7 ECC CLOCK L
CS5 MBF CLR L DT2
NOTE: W1 IS IN FOR RM02, OUT FOR RM03.
C121 39PP +5V
W1
C117 39PF
RG 39K
CS5 EN CRC CLOCK L DU2
74S08 E90
74S32 E111
74S10 E97
DS7 SHIFT CLOCK H
DS7 BIT CLOCK H FU2
74123 E69
DS7 400 NS LBC TO H (NOT USED)
DS7 CRC CLOCK L
DS7 ECC CLOCK L
74S04 E88
DS7 SHIFT CLOCK L FJ2
74LS00 E105
FM2
DS7 LBC SET L
+3V C
IF8 GO H EN2
CS8 DIAG L EF2
DS7 CRC CLOCK L
+3V A
DS8 CRC OUTPUT H
74LS113 E100
74S04 E91
DS7 CRC BIT LATE H
CS4 DS WRITE GATE H EV1
+3V
R4 1K
WRITE DATA GENERATION
+3V B
DS8 ECC PAT ØØ H
DS4 EN ECC OUT H FN1
DS2 SR ØØ H
74S51 E102
74LS74 E99
74S74 E99
DS4 EN CRC OUT DYD L
DS7 CRC BIT LATE H
DS4 EN CRC OUT DYD H
74S02 E93
FP1
DS7 WRITE DATA L
DS4 EN CRC OUT H FR1
74S08 E110
DS7 SHIFT CLOCK L EJ1
DS7 SHIFT CLOCK H
CS4 WRITE GATE H EV1
DS7 SSEI L
CS8 MR READ DATA H EM2
CS8 MAINT CLK L EL2
CS8 MAINT CLK H EJ2
CS8 DIAG L EF2
DS13 ENA RBG TO TST L
DS13 RMOF L
74S138 E78
74LS32 E111
DE2
IF2 CONT Ø9
FD1
RDI RD DATA H
EM1
RDI SERVO CLK L
EB1
RDI RD CLK H
IF2 CONT Ø9 DE2
DS13 RMOF L
DS6 WRT ENG L
74S62 E110
74LS74 E46
DS7 SSEI H
DS7 SSEI L
+3V
IF8 READ IN CMD L AT2
DS11 ENB SKIP SBC H
CS6 NRM TRACK RED L
74S11 E72
DS2 SRØØ H
CS4 DS WRITE GATE H EV1
DS2 DATA IN H
CS5 READ GATE H ER1
74S51 E102
74S04 E91
DS7 CRC INPUT DATA H
DS7 ECC INPUT DATA L

REVISIONS
CHK | CHANGE NO | REV

BIT CLOCK GENERATION AND WRITE DATA

TITLE DATA SEQUENCER (DS7)
SIZE D | CODE CS | NUMBER M8685-Ø-1 | REV. B
SCALE 1-1 | SHEET 7 OF 15

DEC M8685-Ø-1 B

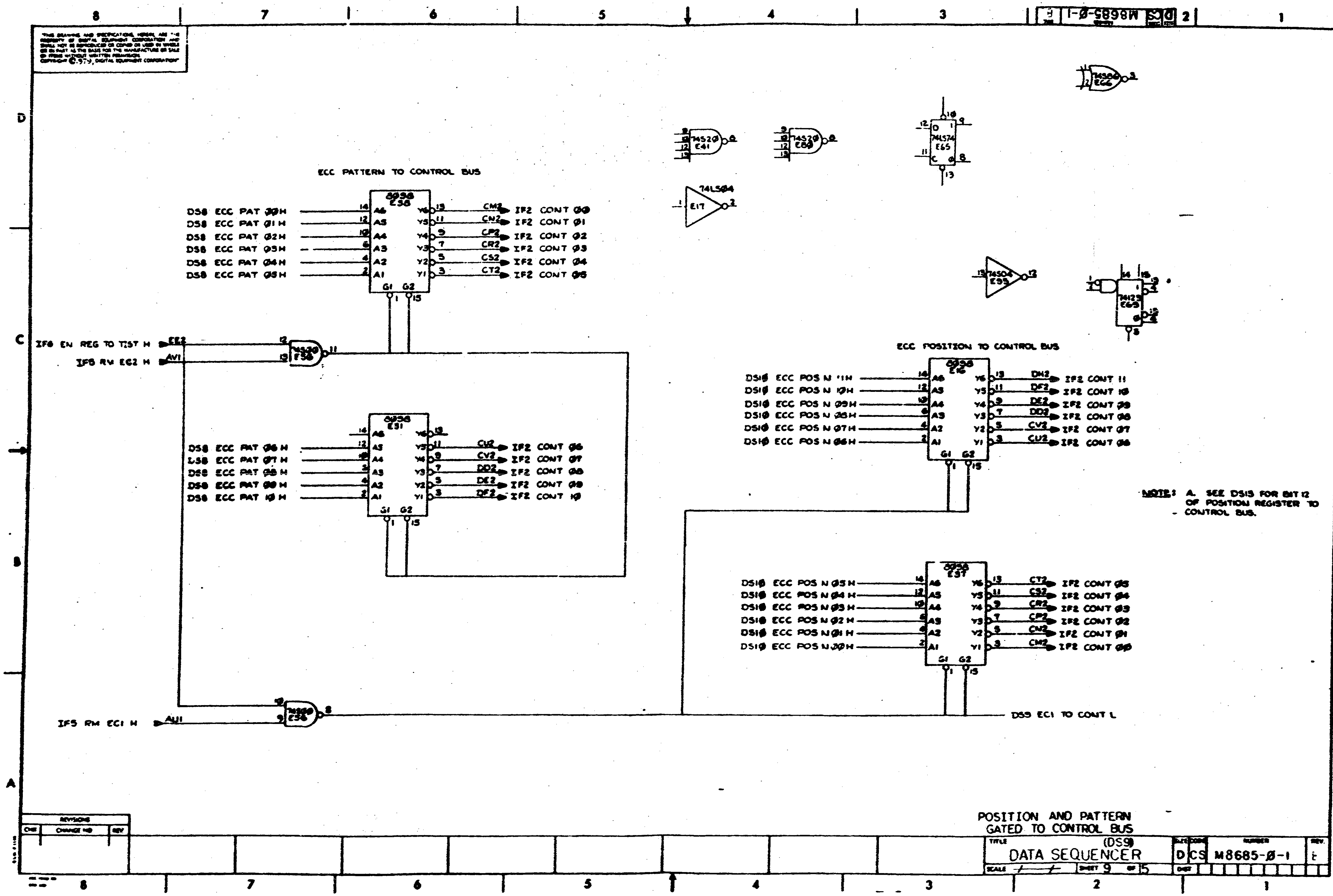
ECC PATTERN REGISTER

DS8 EC 21 H
DS8 EC 30 H
DS7 ECC INPUT DATA L
DS4 EN ECC OUT H
DS8 ECC PAT 00 H
DS4 DES ECC L
DS7 ECC CLOCK H
DS8 CLEAR ECC L
74LS175 E104
74LS164 E112
74LS164 E108
74LS175 E68
DS8 EC 20 H
DS8 EC 29 H
DS8 EC 31 H
DS8 EC 29 H
DS8 EC 21 H
DS8 EC 22 H
DS8 EC 23 H
DS8 EC 24 H
DS8 EC 25 H
DS8 EC 26 H
DS8 EC 27 H
DS8 EC 28 H
DS8 EC 12 H
DS8 EC 13 H
DS8 EC 14 H
DS8 EC 15 H
DS8 EC 16 H
DS8 EC 17 H
DS8 EC 18 H
DS8 EC 19 H
DS8 ECC PAT 00 H
DS8 ECC PAT 01 H
DS8 ECC PAT 10 H
DS8 EC 11 H
DS8 ECC FEEDBACK BIT H
DS8 DCK SET L
DS8 EC 11 H
DS8 EC 20 H
DS8 EC 21 H
DS8 EC 22 H
DS8 EC 23 H
DS8 EC 24 H
DS8 EC 25 H
DS8 EC 26 H
DS8 EC 27 H
DS8 EC 28 H
DS8 EC 29 H
DS8 EC 30 H
DS8 EC 31 H
DS8 EC 12 H
DS8 EC 13 H
DS8 EC 14 H
DS8 EC 15 H
DS8 EC 16 H
DS8 EC 17 H
DS8 EC 18 H
DS8 EC 19 H
BP TEST L
+5V
R3 1K
DS8 EN CORRECTION H
JP8 EC1 L
DS8 DCK SET L
DS8 NON ZERO ECC H
JP8 F2 H
CS4 P EN EBL H
DS7 SHIFT CLOCK L
DS5 CLEAR ECC L
DS8 EN CORRECTION H
DS8 ECC PAT 08 H
DS8 DCK SET L
DATA CHECK GENERATION
74LS164 E29
DS8 ECC PAT 08 H
DS8 ECC PAT 09 H
DS8 ECC PAT 02 H
DS8 ECC PAT 03 H
DS8 ECC PAT 04 H
DS8 ECC PAT 05 H
DS8 ECC PAT 06 H
DS8 ECC PAT 07 H

ECC PATTERN REGISTER
AND DCK GENERATION

REVISIONS		
ORIG	CHANGE NO.	REV

TITLE		SIZE	NUMBER	REV
DATA SEQUENCER (DS8)		D	CS M8685-0-1	B
SCALE	SHEET 8 OF 15			



ECC PATTERN TO CONTROL BUS
DS8 ECC PAT Ø0 H
DS8 ECC PAT Ø1 H
DS8 ECC PAT Ø2 H
DS8 ECC PAT Ø3 H
DS8 ECC PAT Ø4 H
DS8 ECC PAT Ø5 H
8838 E58
IF2 CONT Ø0
IF2 CONT Ø1
IF2 CONT Ø2
IF2 CONT Ø3
IF2 CONT Ø4
IF2 CONT Ø5
IF0 EN REG TO TST H
IF5 RM EC2 H
DS8 ECC PAT Ø6 H
DS8 ECC PAT Ø7 H
DS8 ECC PAT Ø8 H
DS8 ECC PAT Ø9 H
DS8 ECC PAT 10 H
8838 E51
IF2 CONT Ø6
IF2 CONT Ø7
IF2 CONT Ø8
IF2 CONT Ø9
IF2 CONT 10
IF5 RM EC1 H
74LS20 E41
74LS20 E60
74LS74 E65
74LS04 E17
74S04 E55
74S04 E66
74125 E65
ECC POSITION TO CONTROL BUS
DS10 ECC POS N 11 H
DS10 ECC POS N 10 H
DS10 ECC POS N Ø9 H
DS10 ECC POS N Ø8 H
DS10 ECC POS N Ø7 H
DS10 ECC POS N Ø6 H
8838 E6
IF2 CONT 11
IF2 CONT 10
IF2 CONT Ø9
IF2 CONT Ø8
IF2 CONT Ø7
IF2 CONT Ø6
NOTE: A. SEE DS15 FOR BIT 12 OF POSITION REGISTER TO CONTROL BUS.
DS10 ECC POS N Ø5 H
DS10 ECC POS N Ø4 H
DS10 ECC POS N Ø3 H
DS10 ECC POS N Ø2 H
DS10 ECC POS N Ø1 H
DS10 ECC POS N Ø0 H
8838 E57
IF2 CONT Ø5
IF2 CONT Ø4
IF2 CONT Ø3
IF2 CONT Ø2
IF2 CONT Ø1
IF2 CONT Ø0
DS9 EC1 TO CONT L
POSITION AND PATTERN GATED TO CONTROL BUS
(DS9) DATA SEQUENCER
D CS M8685-Ø-1
SHEET 9 OF 15

POSITION MAXIMUM COUNT DECODE

DS1Ø ECC POSN 12H
DS1Ø ECC POSN ØSH
DS1Ø COUNT POSN H
DS3 FMT 18 H
DSØ ECC POSN Ø9 H
DS8 CORRECTION CLK L
DS1Ø COUNT POSN H
DS8 NON ZERO ECC H
DSØ SET POS H
DS7 ECC CLOCK H
DS8 CLEAR ECC A L
DS8 CLEAR ECC L
START COUNTING POSITION
+5V
+3V D
DSØ ECH H (NOT USED)
DSØ ECH SET L
DS8 EN CORRECTION H
DSØ DONE OR ECH L
DSØ ECC DONE H
DSØ ECC DONE L
DS8 DCK SET L
DS7 SHIFT CLOCK H
DSØ EN CORRECT CLK L
DSØ EN LOAD POS L
DSØ CORRECTION CLK L

+3V D
DSØ ECC POSN 12 H
DSØ SET POS H
DSØ EC CAR 1 IN H
DSØ EC CAR 2 IN H
DP PRECLEAR TEST L
DS7 ECC CLOCK H
DSØ EN LOAD POS L
DSØ ECC POSN Ø4 H
DSØ ECC POSN Ø5 H
DSØ ECC POSN Ø6 H
DSØ ECC POSN Ø7 H
DSØ EC CAR 2 OUT H

POSITION COUNTER

DS3 FMT 18 H
DSØ EC CAR 2 IN H
DSØ ECC POSN Ø8 H
DSØ ECC POSN Ø9 H
DSØ ECC POSN Ø1 H
DSØ ECC POSN Ø2 H
DSØ ECC POSN Ø3 H
DSØ EC CAR 1 OUT H

NOTES: 1. AAI AND ABI ARE CONNECTED ON THE BACKPLANE.
2. ACI AND ADI ARE CONNECTED ON THE BACKPLANE.
3. THESE RUNS WERE SPLIT ON THE MODULE TO SPEED UP TESTING OF THE MODULE.

POSITION COUNTER AND CORRECTION CONTROL LOGIC

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	SIZE	NUMBER	REV.
(DSIØ) DATA SEQUENCER	D	DCS M8685-Ø-1	B
SCALE —	SHEET Ø OF 5	DWG.	

DCS M8685-Ø-1 B

IF8 READ IN CMD L AT2

CSS MBA EBL L AL1

IF8 WRT REG H AT1

IF8 RV DA H AF1

DSII EBL H

DSII WRT DA L

IF2 CONT 15 DM2
IF2 CONT 14 DL2
IF2 CONT 13 DK2
IF2 CONT 12 DJ2

74LS161 E48
D3 D2 D1 D0 R3(1) R2(1) R1(1) R0(1) CLR LD CLK CNT EN CRY EN CO

IF2 CONT 11 DH2
IF2 CONT 10 DF2
IF2 CONT 09 DE2
IF2 CONT 08 DD2

IF8 GO H EM2

74LS161 E7

IF2 CONT 07 CV2
IF2 CONT 06 CU2
IF2 CONT 05 CT2
IF2 CONT 04 CS2

74LS161 E3

IF2 CONT 03 CR2
IF2 CONT 02 CP2
IF2 CONT 01 CN2
IF2 CONT 00 CM2

74LS161 E3

DSII TA 128 H
DSII TA 64 H
DSII TA 32 H

74LS27 E58

+5V
R9 1K

BP 80 MB L CF1

CF1 DSII TA 16 H
CH1 DSII TA 8 H
DS2 DSII TA 4 H
DM2 DSII TA 2 H
DF2 DSII TA 1 H

DSII SA 128 H
DSII SA 64 H
DSII SA 32 H
BP 5686 RPH L AK2
EV2 DSII SA 16 H
EU2 DSII SA 8 H
ET2 DSII SA 4 H
ES2 DSII SA 2 H
ER2 DSII SA 1 H

IF8 FMT 16 H CH1

74LS32 E56

DS7 SSEI L
DS6 SSE L

74LS08 E1

25-056C6-00 8251-80 E15
I15 I14 I13 I12 I11 I10 I9 I8 I7 I6 I5 I4 I3 I2 I1 I0 CE PE
FT FG FS F4 F3 F2 F1 F0 PLA

DSII ENB SKIP SEC H
DSII LST TRK L
DSII SECT/TRK IVA H
DSII LST SECT TRK L
DSII LST SECT TRK H
DSII LST SECT L
AR1 DSII LST SECT H

SECTOR & TRACK REG.

REVISIONS		
ONE	CHANGE NO	REV

TITLE		SIZE	CODE	NUMBER	REV
DATA SEQUENCER	(DSII)	D	CS	M8685-0-1	E
SCALE	SHEET 11 OF 15				

M8685-0-1

NOTE: FOR AN RM80, A JUMPER MUST BE ADDED TO THE BACKPLANE FROM CD1 TO CC2.

SA2 RUN H
DSI2 LST H
74S00 E76
BP8 DSI2 DC 512 H
BN2 DSI2 DC 256 H
IF8 CONT Ø9 DE2
IF2 CONT Ø8 DD2
IF8 READ IN CMD L AT2
IF8 GO H EN2
74LS161 E21
CLR
LD
CLK
CNT EN
CRY EN
CO
+5V
R19 1K
CD1
BP DC OPTION B
IF8 SCH SK R OR W L AE2
DSII EBL H
25-Ø38C6-Ø9
8251Ø9 E18
I15 I14 I13 I12 I11 I10 I9 I8 I7 I6 I5 I4 I3 I2 I1 I0
F7 F6 F5 F4 F3 F2 F1 F0
AM2 DSI2 MAX CYL L
AN2 DSI2 AOE SET L
DSI2 LAST ADD H
CE FE
FB,A Ø/2
CS8 MBA EBL L AL1
IF6 WRT REG H AT1
IF8 RM DC H AK1
7450 E2
IF2 CONT Ø7 CV2
IF2 CONT Ø6 CU2
IF2 CONT Ø5 CT2
IF2 CONT Ø4 CS2
74LS161 E20
BL2 DSI2 DC 64 H
BM2 DSI2 DC 128 H
BR2 DSI2 DC 16 H
BN2 DSI2 DC 32 H
DSI2 LST SECT TRK H FE2
DSI2 CLR OFF MID L AM2
CLEAR OFFSET MODE
DSII EBL H
IF8 OFFSET MODE H AP1
DSI2 DC CARI BIH AE2
LAST BLOCK TRANSFERRED
DSII LST H AN2
DSI2 LAST ADD H
IF2 CONT Ø3 CR2
IF2 CONT Ø2 CP2
IF2 CONT Ø1 CN2
IF2 CONT Ø0 CM2
74LS161 E12
BP2 DSI2 DC 4 H
BN2 DSI2 DC 8 H
BB2 DSI2 DC 1 H
BE2 DSI2 DC 2 H
AD2 DSI2 DC CAR I OUT H
DSII WRT DA L
CS4 POWER OK H CE1
7450 E5
FE2 DSI2 LST SECT TRK H
DSII SECT/TRK IVA H
CS3 SET PULSE H AR2
7450 E1
AP2 DSI2 IAE SET L

NOTE: AD2 AND AE2 ARE CONNECTED ON THE BACKPLANE. (RUN IS SPLIT TO SPEED UP TESTING OF THE MODULE)

DESIRED CYLINDER REG.

REVISIONS		
ECR	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA SEQUENCER (DSI2)	D	CS	M8685-Ø-1	B
SCALE — SHEET 12 OF 15				

SECTOR/TRACK TO CONTROL BUS

DS6 SSE H
DS11 TA 128 H
DS11 TA 64 H
DS11 TA 32 H
DS11 TA 16 H
C31
DS13 ENA REG TO TST L
DS13 RMER2 L
74LS27 E50
74LS04 E95
8256 E49
CT2 IF2 CONT 05
DM2 IF2 CONT 15
DL2 IF2 CONT 14
DK2 IF2 CONT 13
DJ2 IF2 CONT 12

DS11 TA 8 H
DS11 TA 4 H
DS11 TA 2 H
DS11 TA 1 H
DS11 SA 128 H
DS11 SA 64 H
CH1
DS2
DM2
DP2
8256 E6
DH2 IF2 CONT 11
DF2 IF2 CONT 10
DE2 IF2 CONT 09
DD2 IF2 CONT 08
CV2 IF2 CONT 07
CU2 IF2 CONT 06

IP6 EN REG TO TEST H
IF5 RM DA H
EE2
AF1
74LS00 E2
74LS04 E95
DS13 ENA REG TO TST L

DS11 SA 32 H
DS11 SA 16 H
DS11 SA 8 H
DS11 SA 4 H
DS11 SA 2 H
DS11 SA 1 H
EV2
EU2
ET2
ES2
ER2
8256 E4
CT2 IF2 CONT 05
CS2 IF2 CONT 04
CR2 IF2 CONT 03
CP2 IF2 CONT 02
CM2 IF2 CONT 01
CM2 IF2 CONT 00

DESIRED CYLINDER TO CONTROL BUS

DS10 ECC POSN 12 H
DS12 DC 512 H
DS12 DC 256 H
DS12 DC 128 H
DS12 DC 64 H
BP2
BN2
BM2
BL2
8256 E27
DJ2 IF2 CONT 12
DE2 IF2 CONT 09
DD2 IF2 CONT 08
CV2 IF2 CONT 07
CU2 IF2 CONT 06
DS9 ECI TO CONT L

DS12 DC 32 H
DS12 DC 16 H
DS12 DC 8 H
DS12 DC 4 H
DS12 DC 2 H
DS12 DC 1 H
BK2
BJ2
BH2
BF2
BE2
BD2
8256 E13
CT2 IF2 CONT 05
CS2 IF2 CONT 04
CR2 IF2 CONT 03
CP2 IF2 CONT 02
CU2 IF2 CONT 01
CM2 IF2 CONT 00

IF6 EN REG TO TEST H
IF5 RM DC H
EE2
AK1
74LS00 E2

IF5 RM ER2 H
AF2
74LS04 E17
R13 1.8K
DS13 RMER2 L

IF5 RM OF H
AH2
74LS04 E17
R14 1.8K
DS13 RMOF L

REVISIONS		
ONE	CHANGE NO.	REV

SECT/TRACK/DC GATED TO CONTROL BUS (DS13)

TITLE	SIZE	CODE	NUMBER	REV.
DATA SEQUENCER	D	CS	M8685-0-1	E

SCALE — SHEET 13 OF 15 — DWG.

DCS M8685-0-1

AA1	DS0 EC CAR 1 OUT H
AB1	DS1 EC CAR 1 IN H
AC1	DS0 EC CAR 2 OUT H
AD1	DS1 EC CAR 2 IN H
AE1	DS7 ECC CLOCK H
AF1	IF5 RM DA H
AH1	CS6 NEW TRK RQD L
AJ1	IF6 WRT REQ H
AK1	IF5 RM DC H
AL1	CS0 MBA EBL L
AM1	DS2 CLR OFF MB L
AN1	DS2 LBT H
AP1	IF8 OFFSET MODE H
AR1	DSH LST SECT H
AS1	DSH ECC DONE H
AT1	GND
AU1	IF5 RM EC1 H
AV1	IF5 RM EC2 H

BA1	DS3 MB Ø0 L
BB1	DS3 MB Ø1 L
BC1	DS3 MB Ø2 L
BD1	DS3 MB Ø3 L
BE1	DS3 MB Ø4 L
BF1	DS3 MB Ø5 L
BH1	DS3 MB Ø6 L
BJ1	DS3 MB Ø7 L
BK1	DS3 MB Ø8 L
BL1	DS3 MB Ø9 L
BM1	DS3 MB 10 L
BN1	DS3 MB 11 L
BP1	DS3 MB 12 L
BR1	DS3 MB 13 L
BS1	DS3 MB 14 L
BT1	GND
BU1	DS3 MB 15 L
BV1	DS3 MB 16 L

CA1	DS8 DCK SET L
CB1	CS5 DTE SET L
CC1	CS3 SECT/INDEX L
CD1	BP DC OPTION
CE1	CS4 POWER OK H
CF1	BP Ø0 MB L
CH1	DSH TA Ø H
CJ1	DSH TA 16 H
CK1	IF8 HCI L
CL1	IF8 ECI L
CM1	IF8 FMT 16 H
CN1	DS8 FER SET L
CP1	DS5 WCF SET L
CR1	DS5 MB SCLK L
CS1	DSH ECH SET L
CT1	GND
CU1	DS6 HCE SET L
CV1	DS5 HCRC SET L

DA1	SAI MB TSB Ø0 H
DB1	SAI MB TSB Ø1 H
DC1	SAI MB TSB Ø2 H
DD1	SAI MB TSB Ø3 H
DE1	SAI MB TSB Ø4 H
DF1	SAI MB TSB Ø5 H
DH1	SAI MB TSB Ø6 H
DJ1	SAI MB TSB Ø7 H
DK1	SAI MB TSB Ø8 H
DL1	SAI MB TSB Ø9 H
DM1	SAI MB TSB 10 H
DN1	SAI MB TSB 11 H
DP1	SAI MB TSB 12 H
DR1	SAI MB TSB 13 H
DS1	SAI MB TSB 14 H
DT1	GND
DU1	SAI MB TSB 15 H
DV1	SAI MB TSB 16 H

EA1	DS6 SET BSE L
EB1	RDI RD CLK H
EC1	SA2 RUN H
ED1	RDI RD DATA H
EE1	BP 144 ENB H
EF1	DS7 WRITE DATA L
EH1	SPARE
EJ1	DS7 SHIFT CLOCK L
EK1	SPARE
EL1	DS6 SSE L
EM1	RDI ERVD CLK L
EN1	SPARE
EP1	DS3 SYNC PAR SET H
ER1	CS6 READ GATE H
ES1	CS6 PRECLEAR CRC/ECC L
ET1	GND
EU1	CS4 P EN LOAD SR H
EV1	CS4 DS WRITE GATE H

FA1	CS4 P HEADER AREA H
FB1	SPARE
FC1	CS4 P DATA AREA H
FD1	DS5 CRC DONE H
FE1	CS4 P DATA EN SCLK H
FF1	CS5 READ GATE FAST H
FH1	CS4 P EN EBL H
FJ1	CS4 LAST READ DATA L
FK1	CS4 P READ GATE H
FL1	SPARE
FM1	CS4 P LFS H
FN1	DS4 EN ECC OUT H
FP1	CS4 P EN CRC OUT H
FR1	DS4 EN CRC OUT H
FS1	CS4 P EN ECC OUT H
FT1	GND
FU1	SPARE
FV1	SPARE

AA2	+5V
AB2	-15V
AC2	GND
AD2	DS2 DC CAR 1 OUT H
AE2	DS2 DC CAR 1 IN H
AF2	IF5 RM ER2 H
AH2	IF5 RM OF L
AJ2	SPARE
AK2	BP 3600 RPM L
AL2	DS8 HEADER FIRST H
AM2	DS2 MAX CYL L
AN2	DS2 AOE SET L
AP2	DS2 IAE SET L
AR2	CS3 SET PULSE H
AS2	IF8 SCH SK R OR W L
AT2	IF8 READ IN GND L
AU2	DS0 EN CORRECT CLK L
AV2	BP TEST L

BA2	+5V
BB2	-15V
BC2	GND
BD2	DS2 DC 1 H
BE2	DS2 DC 2 H
BF2	DS2 DC 4 H
BH2	DS2 DC 8 H
BJ2	DS2 DC 16 H
BK2	DS2 DC 32 H
BL2	DS2 DC 64 H
BM2	DS2 DC 128 H
BN2	DS2 DC 256 H
BP2	DS2 DC 512 H
BR2	CS5 TRNSCEIVR EN B H
BS2	CS5 TRNSCEIVR EN A H
BT2	CS4 READ HEADER H
BU2	SA2 MB SYNC PAR H
BV2	DS3 MB 17 L

CA2	+5V
CB2	-15V
CC2	GND
CD2	CS4 EN SYNC H
CE2	SA2 WRT CLK B H
CF2	SA2 WRT CLK A H
CH2	DB SYNC DET H
CJ2	DS4 WORD CLK H
CK2	DS4 WORD CLK L
CL2	DB4 PROM STROBE H
CM2	IF2 CONT Ø0
CN2	IF2 CONT Ø1
CP2	IF2 CONT Ø2
CR2	IF2 CONT Ø3
CS2	IF2 CONT Ø4
CT2	IF2 CONT Ø5
CU2	IF2 CONT Ø6
CV2	IF2 CONT Ø7

DA2	+5V
DB2	-15V
DC2	GND
DD2	IF2 CONT Ø8
DE2	IF2 CONT Ø9
DF2	IF2 CONT 10
DH2	IF2 CONT 11
DJ2	IF2 CONT 12
DK2	IF2 CONT 13
DL2	IF2 CONT 14
DM2	IF2 CONT 15
DN2	CS6 EN ECC CLOCK L
DP2	DSH TA 1 H
DR2	DSH TA 2 H
DS2	DSH TA 4 H
DT2	CS3 MBA CLR L
DU2	CS5 EN CRC CLOCK L
DV2	SAI MB TSB 17 H

EA2	+5V
EB2	-15V
EC2	GND
ED2	IF9 ABORT L
EE2	IF8 EN REG TO TIST H
EF2	CS8 DIAG L
EH2	IF8 F0 H
EJ2	CS8 MAINT CLK H
EK2	IF8 F2 H
EL2	CS8 MAINT CLK L
EM2	CS8 MR READ DATA H
EN2	IF8 S0 H
EP2	CS3 RESET S0 L
ER2	DSH SA 1 H
ES2	DSH SA 2 H
ET2	DSH SA 4 H
EU2	DSH SA 8 H
EV2	DSH SA 16 H

FA2	+5V
FB2	-15V
FC2	GND
FD2	BP PRECLEAR TEST L
FE2	DS2 LST SECT TRK H
FF2	IF0 DCK H
FH2	DS5 CRC ER H
FJ2	CS2 FORMAT H
FK2	CS4 P EN CRC L
FL2	DS4 WRITE TIME H
FM2	DS7 LBC SET L
FN2	DS4 WORD TIME H
FP2	SPARE
FR2	DS3 EN PAR GEN H
FS2	DS3 EN PAR CHECK H
FT2	DS3 PARITY ODD H
FU2	DS7 BIT CLOCK H
FV2	DS4 ECC WRD CNT INH L

REVISIONS		
CHG	CHANGE NO	REV

I/O SIGNAL LIST

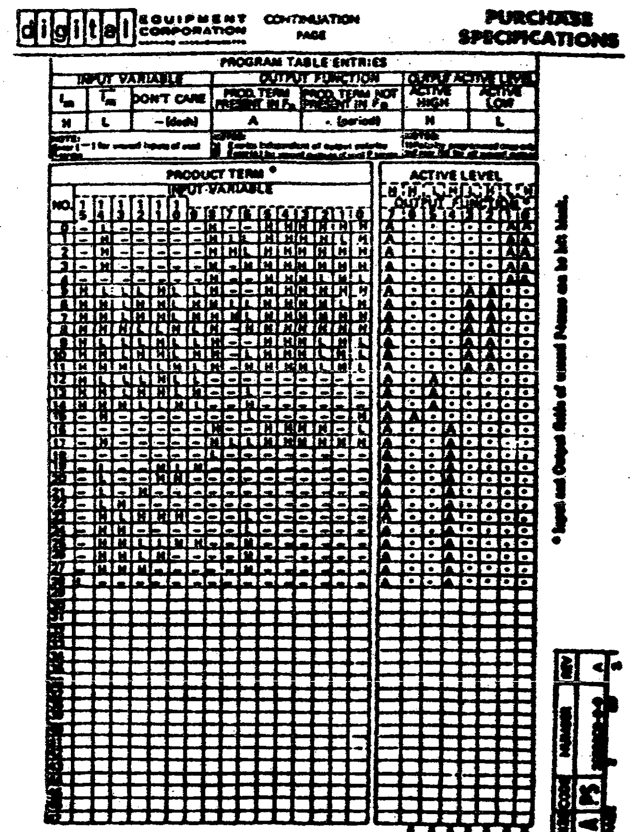
TITLE DATA SEQUENCER (DS14)

SIZE D CODE CS NUMBER M8685-0-1 REV F

SCALE — SHEET 14 OF 15

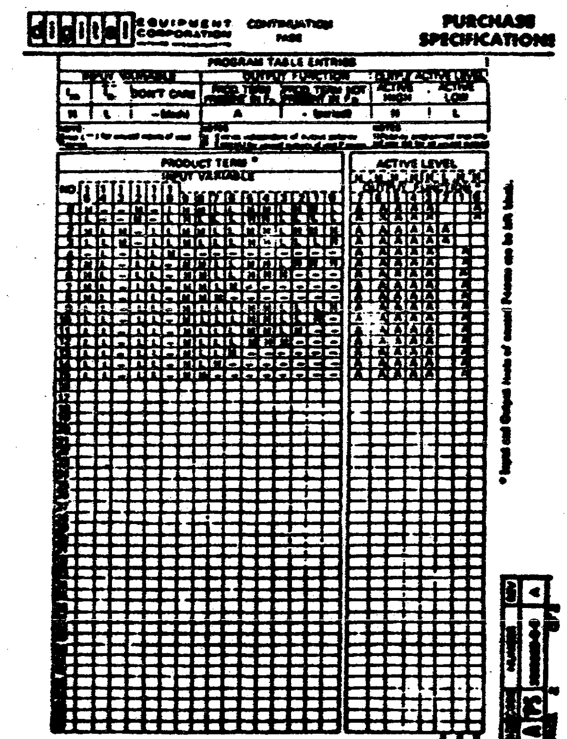
DST

23-050C6: FPLA AT E15 TRACK/SECTOR ADDRESS DECODER



- DS11 LST SECT H (PIN 18)
- DS11 LST SECT L (PIN 17)
- DS11 LST SECT TRK H (PIN 16)
- DS11 LST SECT TRK L (PIN 15)
- DS11 SECT/TRK IVA H (PIN 13)
- DS11 LST TRK L (PIN 12)
- DS11 ENB SKIP SEC H

23-038C6: FPLA AT E18 CYLINDER ADDRESS DECODE



- DS12 LAST ADD H (PIN 18)
- NO TITLE (DECODE OF INVALID ADDRESSES HIGH ACTIVE ON PIN 17)
- DS12 AOE SET L (ADDRESS OVERFLOW ERROR = AOE ON PIN 6)

TITLE: DATA SEQUENCER

SIZE	CODE	NUMBER	REV
D	CS	M8685-0-1	B

SHEET 15 OF 15

AUTOMATED BY PRTLST.3L(35)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-MD-5014029-0-0	5014029-00	DRILL AND ETCH BRD	1	
2	2		1000010-00	39.0 MMF 100V 5%200PPM MICA	2	C117,C121
3	3		1001610-00	.01 MFD 50V +80-20% 25U CER	113	C1-C110,C118-C120
4	4		1017472-00	10 MFD 35V +50-10% AL EL	6	C111-C116
5	5		1210711-02	/REPLACED BY 12-16988-02	1	
6	6		1300365-00	1.0 K .25 W 5.0 % CC	11	R1-R5,R7-R12
7	7		1300398-00	1.80 K .25 W 5.0 % CC	2	R13,R14
8	8		1302394-00	30.0 K .25 W 5.0 % CC	1	R6
9	9		1910436-00	DEC 74123 ONE SHOT-DUAL,RETRIG	1	E69
10	10		1910532-00	74S00 NAND GATE-QUAD 2IN	7	E1,E2,E39,E56,E63,E67,E109
11	11		1910534-00	74S04 INVERTER GATE-HEX 1I	3	E89,E91,E95
12	12		1910536-00	74S10 NAND GATE-TRIPLE 3IN	2	E97,E108
13	13		1910537-00	74S11 AND GATE-TRIPLE 3INP	3	E57,E87,E72
14	14		1910539-00	74S20 NAND GATE-DUAL 4INPU	2	E41,E80
15	15		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	12	E32,E40,E51,E58,E70,E82,E83,E88,
					CONT	E98,E101,E107,E99
16	16		1910545-00	74S112 FF-JK DUAL,EDGE TRIG	1	E100
17	17		1910552-00	74S194 SHIFT REG.,4BIT RIGH	1	E75
18	18		1911527-00	8097 BUFFER GATE-HEX 2INP	3	E71,E73,E78
19	19		1911712-00	74S51 AND-OR GATE-INVERT D	3	E86,E93,E102
20	20		1912096-00	DEC 74S86 XOR GATE,QUAD 2IN	2	E66,E77
21	21		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	1	E110
22	22		1912389-00	74S08 AND GATE-QUAD 2IN,PO	3	E76,E84,E104
23	23		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	2	E8,E81
24	24		1912801-00	LS02 NOR-GATE-QUAD 2IN	1	E24
25	25		1912803-00	LS04 INVERTER GATE-HEX 1I	5	E17,E19,E33,E44,E54
26	26		1912805-00	LS08 AND GATE-QUAD 2IN,PO	2	E43,E45
27	27		1912807-00	LS10 NAND GATE-TRIPLE 3IN	1	E105
28	28		1912813-00	LS27 NOR GATE-TRIPLE 3IN	1	E50
29	29		1912820-00	LS51 A-O-I GATE 2-WIDE 2I	1	E96

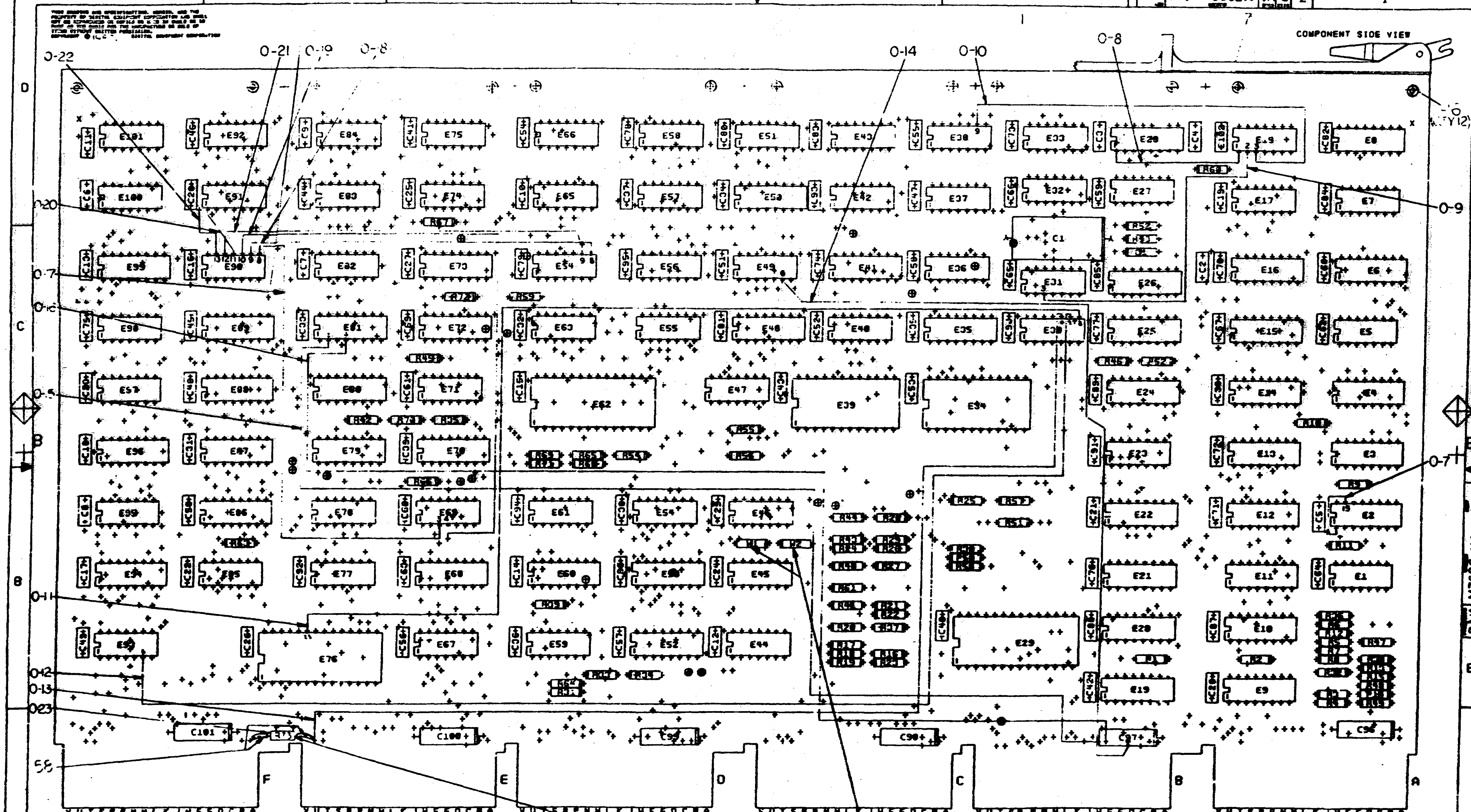
REVISION HISTORY			BASIC PART NO: M8685
ENG	ECO NUMBER	REV	SECTION A OF A
SW	INITIAL	A	SECTION.VARIATION INDEX
	M8685-CX001B	B	[A] 00
			[B]
			[C]
			[D]
			[E]
			[F]
			[H]
			[J]
			[K]
			[L]
			[M]
			[N]

RPM 15 Sep 80

DRN: DON BILODEAU	DATE: 8-AUG-79	D I G I T A L
CHK'D: DON BILODEAU	DATE: 8-AUG-79	TITLE PARTS LIST
		DATA SEQUENCER
DES.ENG: S. WITHROW	DATE: 8-AUG-79	
RESP.ENG.: S. WITHROW	DATE: 2 NOV 79	DOCUMENT NUMBER
MFG.ENG.: A. MORGAN	DATE: 14 DEC 79	SIZE: K / CODE: PL / NUMBER: M8685-0-DBP / REV: B
ASSEMBLY NUMBER: D-UA-M8685-0-0	TOP DOCUMENT NUMBER: * B-DD-M8685-0	FILE NAME: Z0912B.PLS / EDIT #: 18

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
30	30		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	6	E9,E10,E23,E65,E79,E85
31	31		1912828-00	LS85 COMPARATOR,4BIT MAGN	4	E34-E36,E47
32	32		1912847-00	LS157 MUX 1 OF 2(QUAD)	4	E25,E26,E28,E30
33	33		1912849-00	LS161 COUNTER,SYNCHR,4BIT	7	E3,E5,E7,E12,E20,E21,E48
34	34		1912850-00	LS164 SHIFT REG. 8BIT SERI	3	E29,E103,E112
35	35		1912853-00	LS175 FF-D QUAD	3	E42,E68,E104
36	36		1913340-00	74S32 OR GATE-QUAD 2IN	1	E111
37	37		1913474-00	9401 GENERATOR/CHECKER CR	1	E90
38	38		1914082-00	74S163 COUNTER,SYNCH UP/DOW	5	E11,E14,E22,E46,E61
39	39		1914083-00	8542 REGISTER,I/O-QUAD,TR	5	E52,E53,E60,E62,E64
40	40		1914084-00	74S299 SHIFT REG.,8BIT RIGH	2	E55,E74
41	41		1914085-00	74S260 NOR GATE-DUAL,POS	2	E94,E113
42	42		1914086-00	74S30 NAND GATE-POS 8IN	2	E59,E92
43	43		1914087-00	8098 BUFFER GATE-HEX 2IN,	9	E4,E6,E13,E16,E27,E31,E37,E38,
					CONT	E49
44	44		23050C6-00	C6-01	1	E15
45	45		23038C6-00	C6-01	1	E18
46	46		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
47	47		9009185-00	JUMPER, WIRE, INSULATED, BLACK B	1	W1
48	48		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
49	49		9009157-00	ADH,LIQ.RM.TEMP CURING COLORLESS	A/R	

DIGITAL	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
	DATA SEQUENCER SECTION A OF A	K	PL	M8685-0-DBP	B



NOTES:

1. E HOLES .0?5 (+.00G -.0045) MAYNARD ONLY.
2. ?1 MUST BE INSTALLED AND W2 MUST BE REMOVED AFTER GR TEST.
3. COMPONENT E73 IS HAND INSERTED.

SIGNATURES	DATE
DRN.	
CHK D.	
ENG.	
PROJ.ENG.	
PROD.	
SCALE: 2/1	
SHT. 1 OF 1	

ETCH REV.

P.C. DESIGN DATA BASE REV 12?56 C-F1

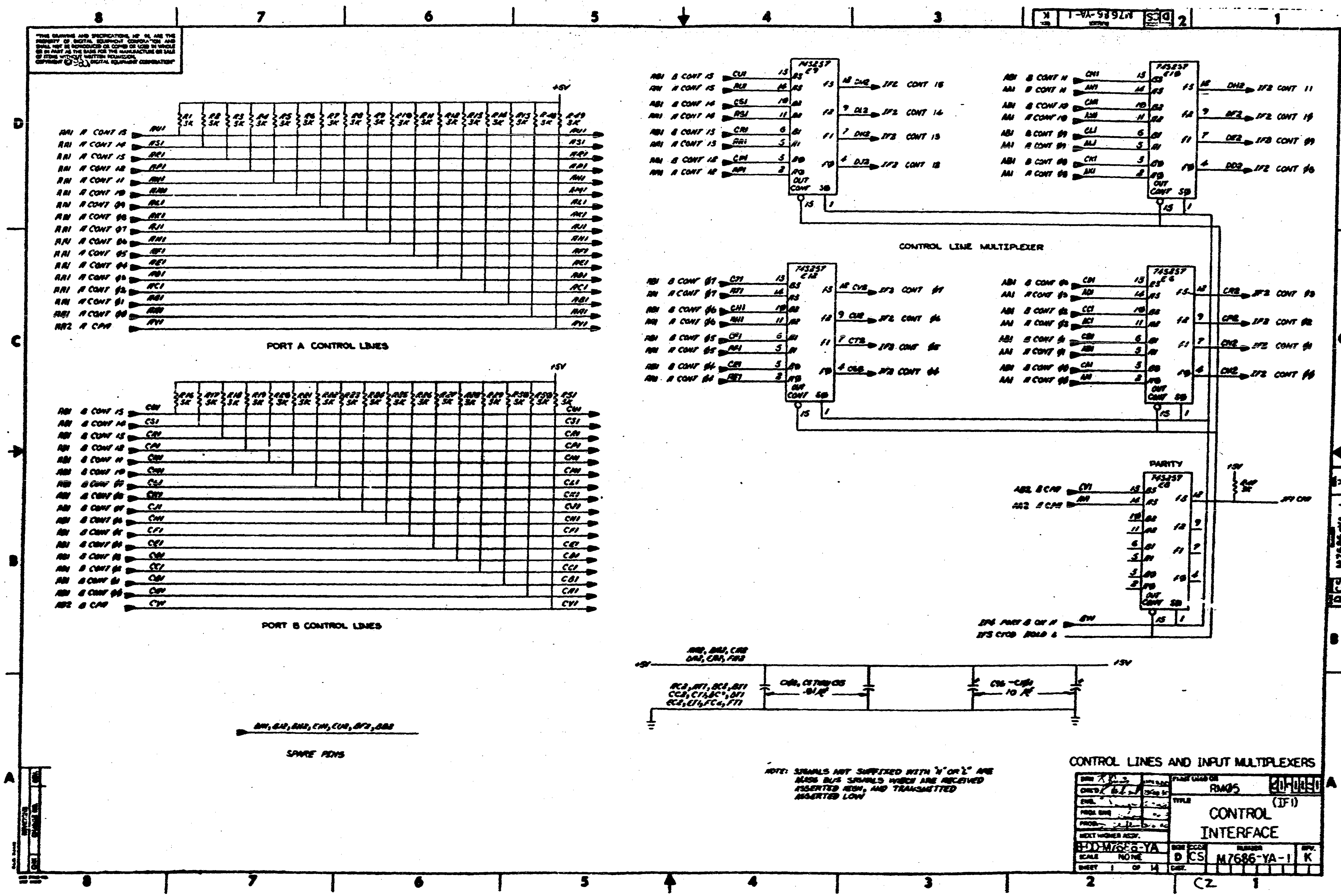
NEXT HIGHER ASSY. F-(D)-M7686-YA

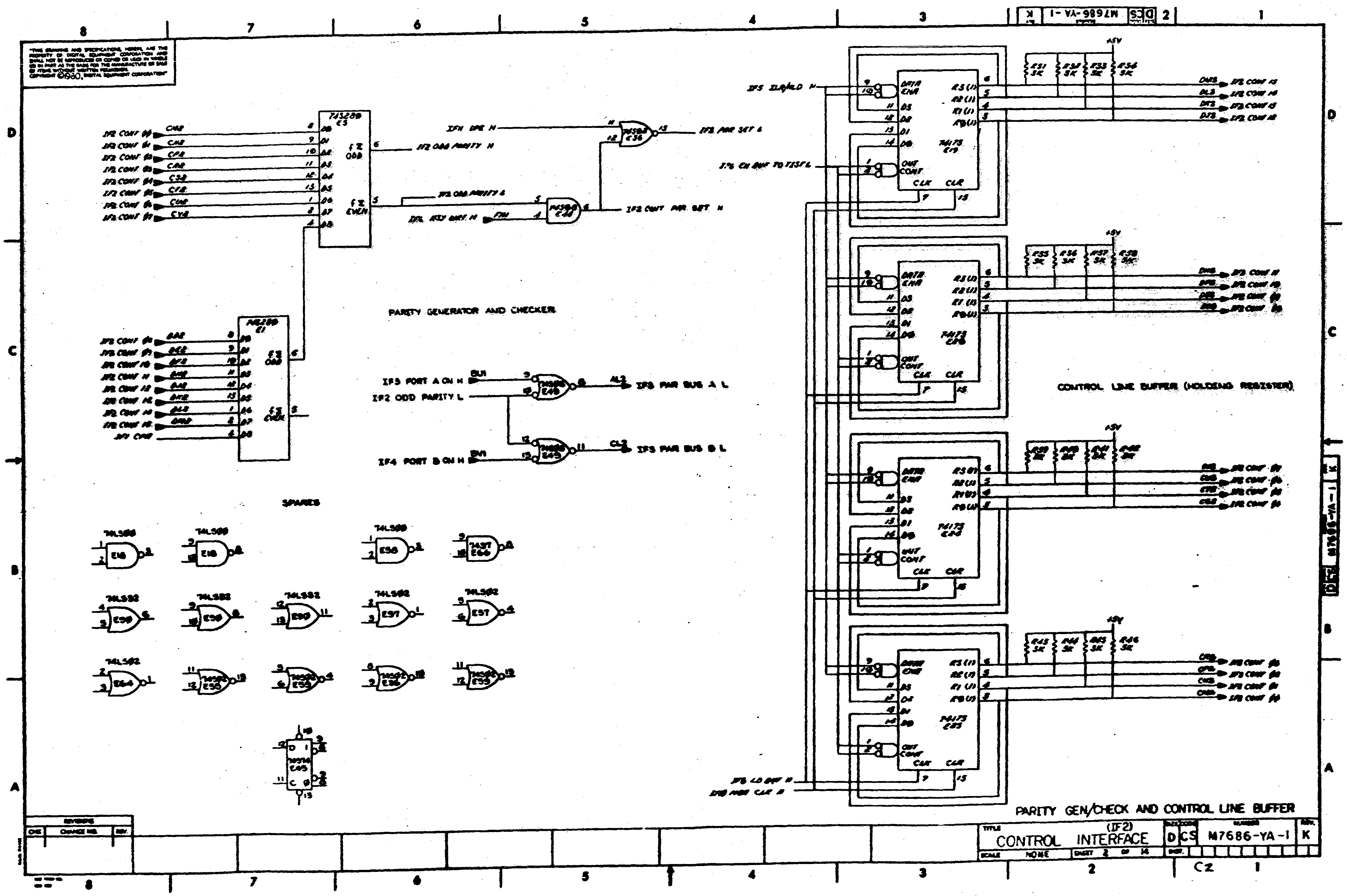
digital

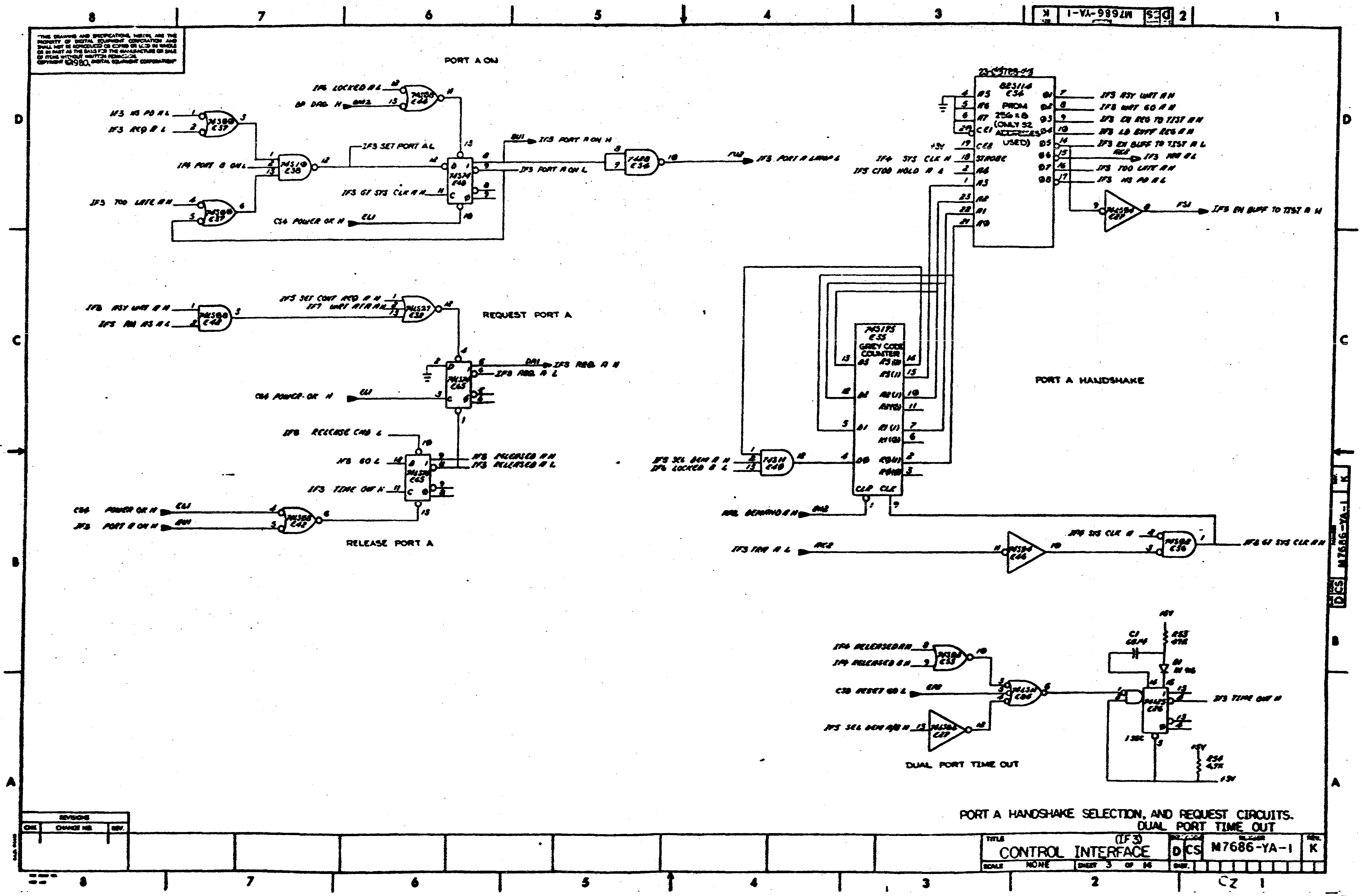
TITLE CONTROL INTERFACE

SIZE	CODE	NUMBER	REV
D	UA	M7686-YA-0	K

1 MS# 291102


PORT A CONTROL LINES
PORT B CONTROL LINES
CONTROL LINE MULTIPLEXER
PARITY
SPARE PINS
NOTE: SIGNALS NOT SUFFIXED WITH "A" OR "B" ARE MASS BUS SIGNALS WHICH ARE RECEIVED ASSERTED HIGH, AND TRANSMITTED ASSERTED LOW
CONTROL LINES AND INPUT MULTIPLEXERS
RM05
CONTROL (IF1)
INTERFACE
M7686-YA-1
K


PARITY GENERATOR AND CHECKER
IF3 PORT A ON H
IF2 ODD PARITY L
IF4 PORT B ON H
IF3 PAR BUS A L
IF3 PAR BUS B L
SPARES
CONTROL LINE BUFFER (HOLDING REGISTER)
PARITY GEN/CHECK AND CONTROL LINE BUFFER
(IF2)
CONTROL INTERFACE
D CS M7686-YA-1 K
NONE


PORT A ON
REQUEST PORT A
RELEASE PORT A
PORT A HANDSHAKE
GREY CODE COUNTER
PROM 256 x 8 (ONLY 32 ADDRESSES USED)
DUAL PORT TIME OUT
PORT A HANDSHAKE SELECTION, AND REQUEST CIRCUITS.
DUAL PORT TIME OUT
CONTROL INTERFACE (IF3)
D CS M7686-YA-1 K
NONE
3 OF 16

PORT B ON

REQUEST PORT B

RELEASE PORT B

PORT B HANDSHAKE

PORT B HANDSHAKE SELECTION, AND REQUEST CIRCUITS. SYSTEM CLOCK.

SYSTEM CLOCK

TITLE		DWG NO	REV
CONTROL INTERFACE (IF4)		D CS M7686-YA-I	K
SCALE NONE	SHEET 4 OF 16	SIZE	

M7686-YA-I K

PORT A ON

REQUEST PORT A

RELEASE PORT A

PORT A HANDSHAKE

DUAL PORT TIME OUT

PORT A HANDSHAKE SELECTION, AND REQUEST CIRCUITS.
DUAL PORT TIME OUT

REVISIONS		
CHG	CHANGE NO.	REV.

TITLE	CONTROL INTERFACE (IF 3)				
SCALE	NONE	SHEET 3 OF 14	SIZE D	CS	M7686-YA-1 REV K

PORT B CNI

REQUEST PORT B

RELEASE PORT B

PORT B HANDSHAKE

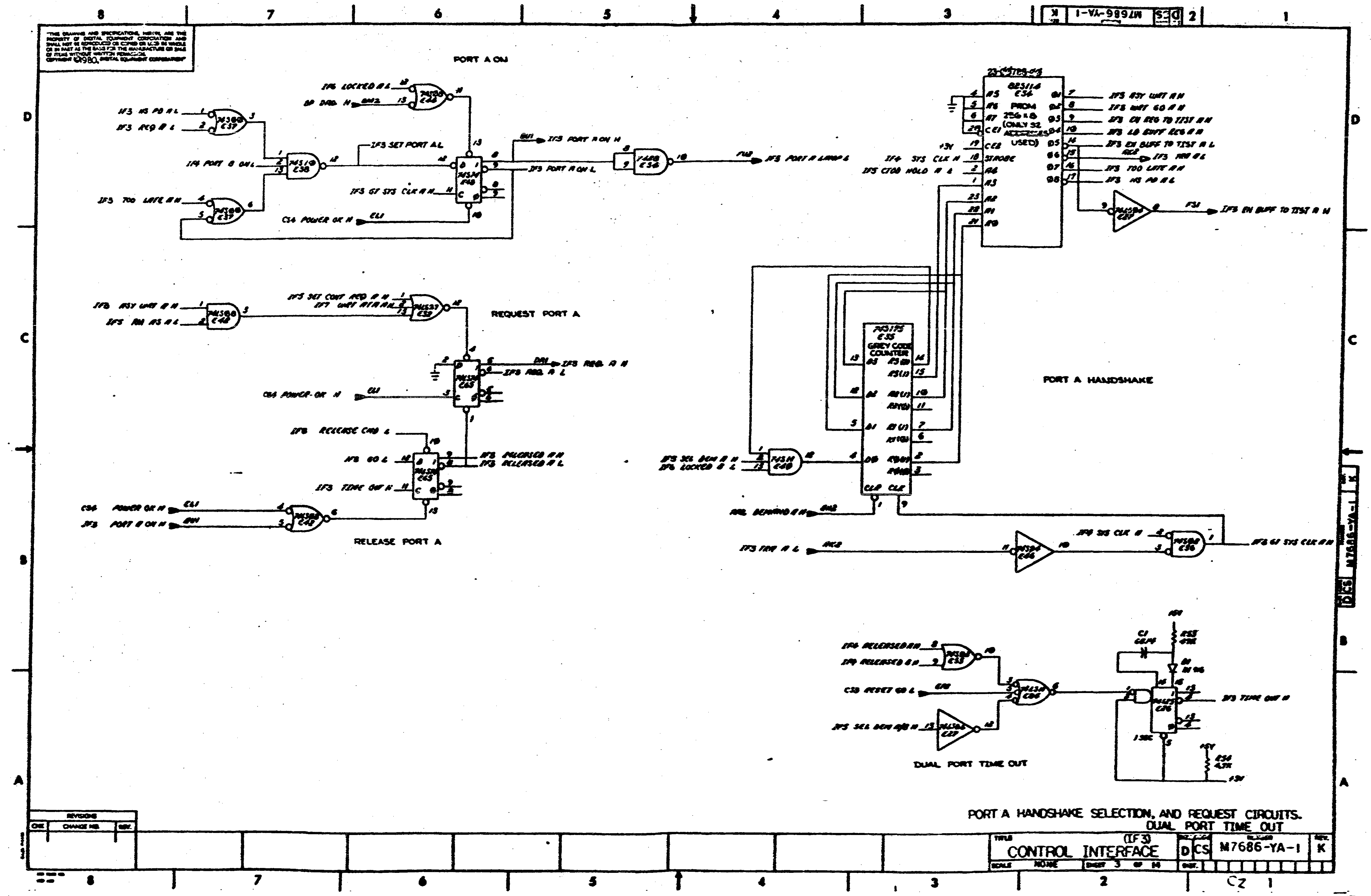
SYSTEM CLOCK

PORT B HANDSHAKE SELECTION, AND REQUEST CIRCUITS. SYSTEM CLOCK.

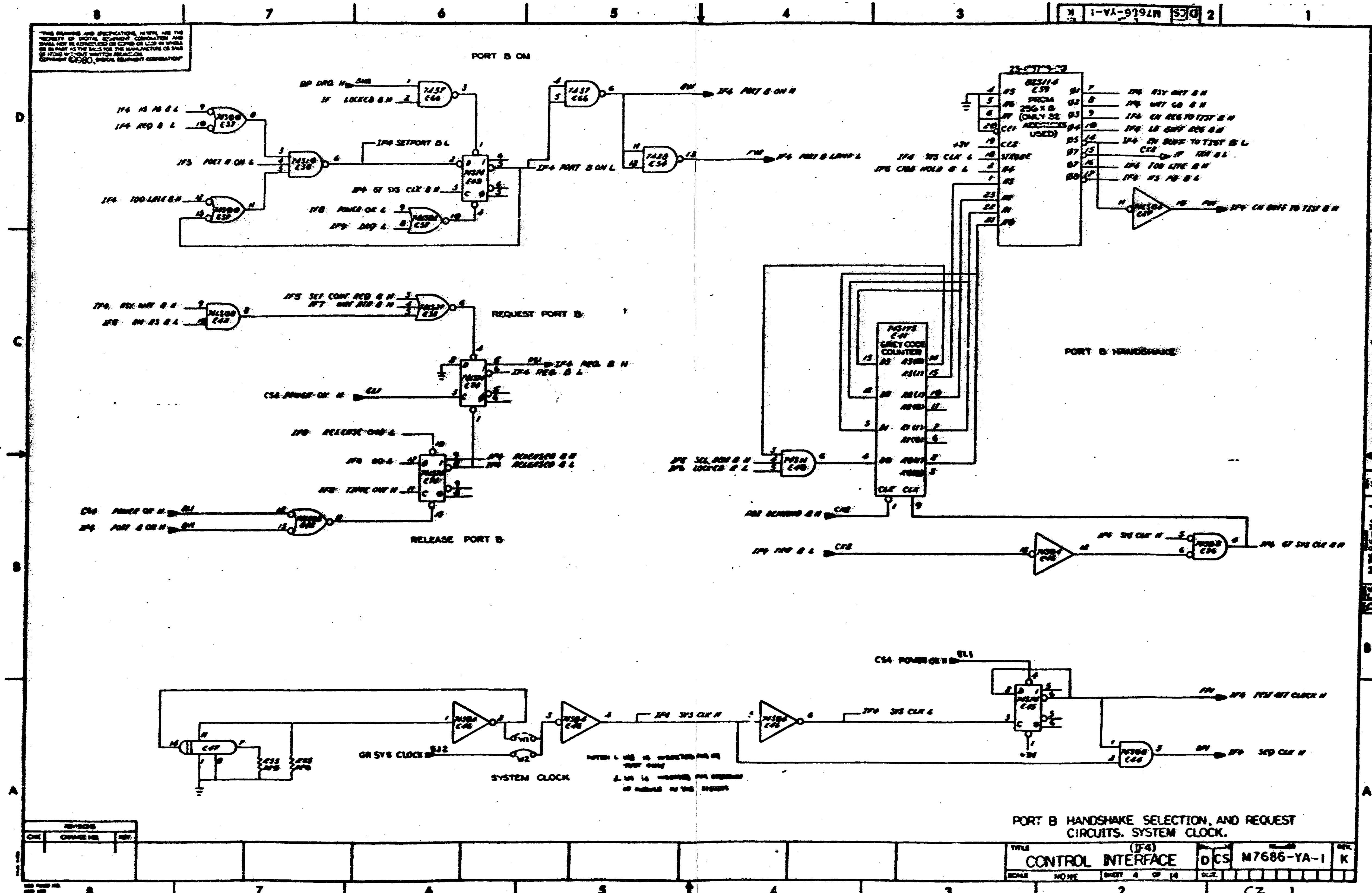
REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	CONTROL INTERFACE (IF4)				
SCALE	NONE	SHEET 4 OF 14	D	CS	M7686-YA-1
					K

M7686-YA-1 D CS K



PORT A ON
REQUEST PORT A
RELEASE PORT A
PORT A HANDSHAKE
DUAL PORT TIME OUT
GREY CODE COUNTER
PROM
PORT A HANDSHAKE SELECTION, AND REQUEST CIRCUITS.
DUAL PORT TIME OUT
(IF3)
CONTROL INTERFACE
D CS M7686-YA-1 K
SCALE NONE SHEET 3 OF 14


PORT B ON
REQUEST PORT B
RELEASE PORT B
PORT B HANDSHAKE
GREY CODE COUNTER
PROM
GR SYS CLOCK
SYSTEM CLOCK
PORT B HANDSHAKE SELECTION, AND REQUEST CIRCUITS. SYSTEM CLOCK.
(IF4)
CONTROL INTERFACE
D CS M7686-YA-1 K
NONE
SHEET 4 OF 14

DRIVE A: ADDRESS COMPARATOR FOR PORT A

PORT A CONTROL BUS TRANSFER DIRECTION

REGISTER SELECT MULTIPLEXER

DUAL PORT MULTIPLEXER

REGISTER ADDRESS DECODER

DRIVE ADDRESS COMPARATOR FOR PORT B

PORT B CONTROL BUS TRANSFER DIRECTION

ATTENTION REGISTER CONTROL AND SET REQUEST PLA.

DRIVE SELECTION AND TRANSFER DIRECTION CIRCUITS. REGISTER SELECT AND SIGNAL MULTIPLEXERS. REGISTER DECODER. ATTENTION REGISTER CONTROL AND SET REQUEST PLA.

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	CONTROL INTERFACE (IF5)		SIZE	NUMBER	REV
			D	M7686-YA-1	K
SCALE	NONE	SHEET 5 OF 14	DWG		

LOCKED ON PORT OR
PROGRAMMABLE MODE SELECTOR

IF6 LOCKED A H

IF6 LOCKED A L

IF6 LOCKED B H

IF6 LOCKED B L

VOLUME VALID BITS

UNIT READY
EDGE DETECTOR

DUAL PORT MULTIPLEXER FOR HANDSHAKE
SIGNALS, ATTENTION AND VOLUME VALID.

INIT, ATTENTION AND RMR SET PLA

IF6 LOCKED A H

IF6 LOCKED B H

IF6 SET ATA B L

IF6 SET ATA A L

IF6 ERR AIA B H

SINGLE/DUAL PORT SELECTION. VOLUME VALID BITS.
UNIT READY EDGE DETECTOR. DUAL PORT
MULTIPLEXER. ATTENTION AND RMR SET PLA.
DUAL/SINGLE PORT SELECTION. SIGNAL MULTIPLEXERS.
UNIT READY CIRCUIT.

REVISIONS		
CHG	CHANGE NO.	DEV.

TITLE	SIZE	CODE	NUMBER	REV.
CONTROL INTERFACE (IF6)	D	CS	M7686-YA-1	K
SCALE NONE	SHEET 6 OF 14			

PORT A ATTENTION ADDRESS SELECTOR

PORT B ATTENTION ADDRESS SELECTOR

CONTROL/ATTENTION OUTPUT MULTIPLEXER (BITS 00-07)

PORT A WRITE ATTENTION

PORT B WRITE ATTENTION

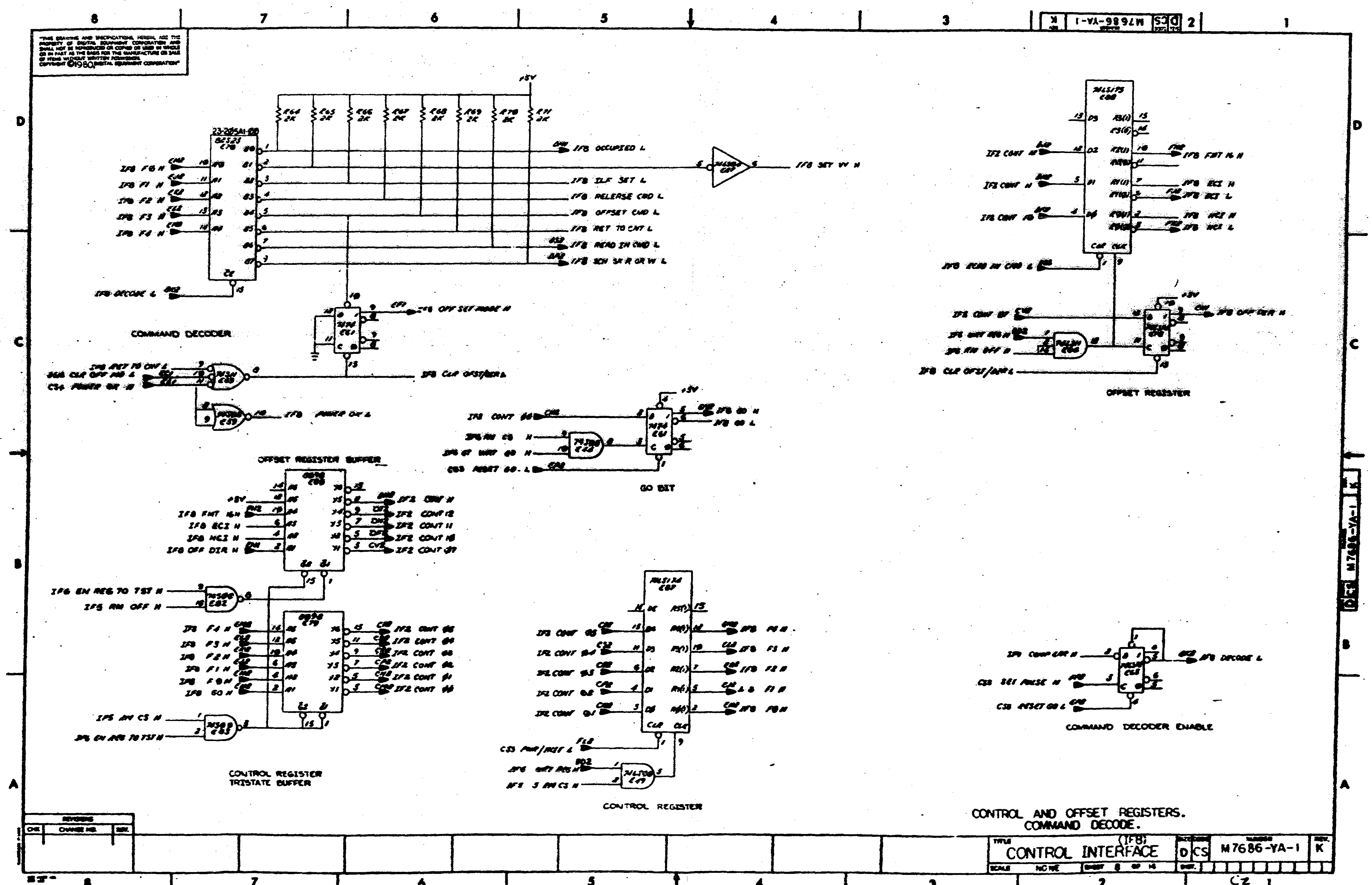
ATTENTION A

ATTENTION B

ATTENTION REGISTERS AND MULTIPLEXERS

REVISIONS		
CHG	CHANGE NO	REV

TITLE	CONTROL INTERFACE (IF7)			SIZE	DOCUMENT NUMBER	REV.
SCALE	NONE	SHEET 7 OF 14		D	CS M7686-YA-1	K



CONTROL AND OFFSET REGISTERS.
COMMAND DECODE.

(IFB) CONTROL INTERFACE

D CS M7686-YA-1 K

DRIVE STATUS REGISTER TRISTATE BUFFER

DRIVE TYPE REGISTER

CLASS B ERRORS

ERROR SUMMARY AND ABORT PLA

DRIVE STATUS AND DRIVE TYPE REGISTERS.
ERROR SUMMARY.

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	CONTROL INTERFACE (IF9)			SIZE	NUMBER / REV.
				D	CS M7686-YA-1 K
SCALE	NONE	SHEET 9 OF 14		DWG.	

DATA CHECK

UNSAFE

OPERATION INCOMPLETE

DRIVE TIMING ERROR

WRITE LOCK ERROR

INVALID ADDRESS ERROR

ADDRESS OVERFLOW ERROR

HEADER CRC ERROR

HEADER COMPARE ERROR

ECC HARD ERROR

WRITE CLOCK FAIL

FORMAT ERROR

PARITY ERROR

RECEIVER MODIFICATION REFUSED

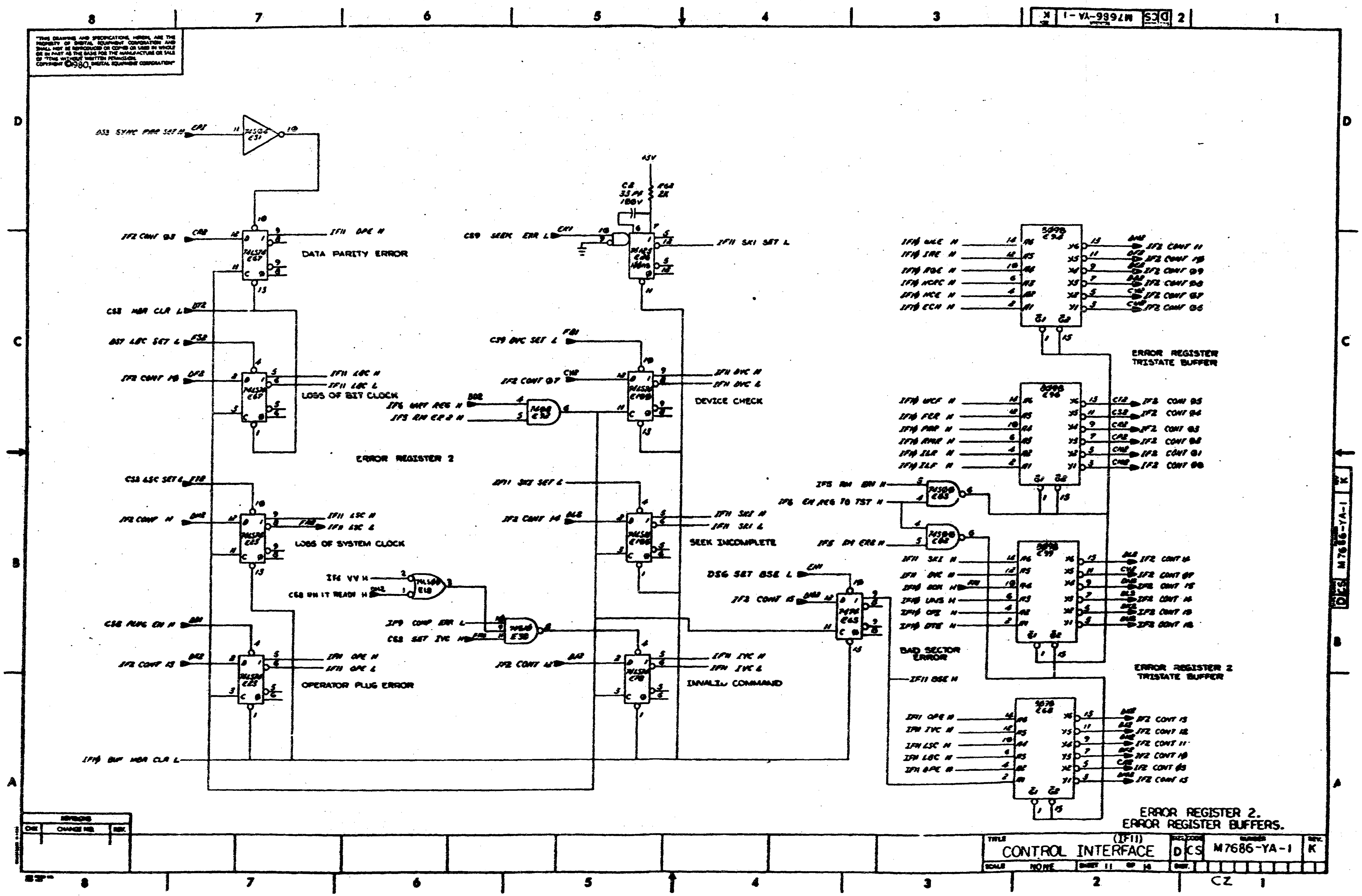
ILLEGAL FUNCTION

ILLEGAL REGISTER

ERROR REGISTER 1 (IF10)

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE: CONTROL INTERFACE			DEC/CS	NUMBER: M7686-YA-1
SCALE: NONE	SHEET 10 OF 14			REV: K



ERROR REGISTER 2.
ERROR REGISTER BUFFERS.

CONTROL INTERFACE (IFII) | D | CS | M7686-YA-1 | K

SCALE NONE

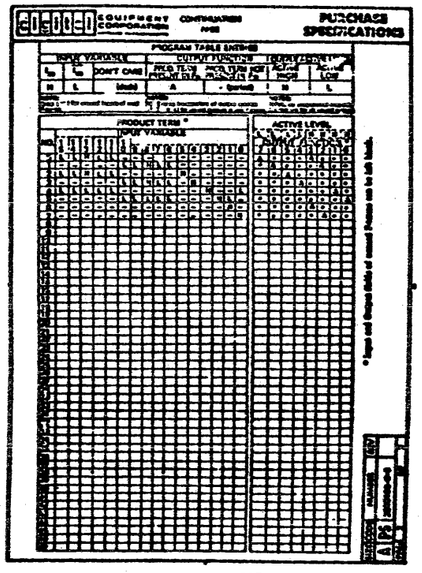
AA1	AA1 A CONT Ø0	BA1	CS8 DEV ADS 1 H	CA1	AB1 B CONT ØØ	DA1	IF7 B CONT ØØ OUT L	EA1	IF9 EXC ERR H	FA1	IF1Ø DCK H
AB1	AA1 A CONT Ø1	BB1	CS8 DEV ADS 2 H	CB1	AB1 B CONT Ø1	DB1	IF7 B CONT Ø1 OUT L	EB1	IF9 ABORT L	FB1	CS9 DVC SET L
AC1	AA1 A CONT Ø2	BC1	CS8 DEV ADS 4 H	CC1	AB1 B CONT Ø2	DC1	IF7 B CONT Ø2 OUT L	EC1	DS12 CLR OFF MD L	FC1	GND
AD1	AA1 A CONT Ø3	BD1	CS8 PLUG EN H	CD1	AB1 B CONT Ø3	DD1	IF7 B CONT Ø3 OUT L	ED1	CS3 OP1 SET L	FD1	MASS FAIL B H
AE1	AA1 A CONT Ø4	BE1	AA2 A REG SEL 1 H	CE1	AB1 B CONT Ø4	DE1	IF7 B CONT Ø4 OUT L	EE1	CS3 WLE SET L	FE1	DS1Ø ECC DONE H
AF1	AA1 A CONT Ø5	BF1	AA2 A REG SEL 2 H	CF1	AB1 B CONT Ø5	DF1	IF7 B CONT Ø5 OUT L	EF1	IF8 OFFSET MODE H	FF1	DS8 DCK SET L
AH1	AA1 A CONT Ø6	BH1	AA2 A REG SEL 4 H	CH1	AB1 B CONT Ø6	DH1	IF7 B CONT Ø6 OUT L	EH1	DS6 SET BSE L	FH1	DS5 HCRC SET L
AJ1	AA1 A CONT Ø7	BJ1	AA2 A REG SEL 8 H	CJ1	AB1 B CONT Ø7	DJ1	IF7 B CONT Ø7 OUT L	EJ1	CS8 WRT PROT H	FJ1	DS6 HCE SET L
AK1	AA1 A CONT Ø8	BK1	AA2 A REG SEL 16 H	CK1	AB1 B CONT Ø8	DK1	IF6 EN REG TO TIST H	EK1	CS8 SEEK ERR H	FK1	DS1Ø ECH SET L
AL1	AA1 A CONT Ø9	BL1	AB2 B REG SEL 1 H	CL1	AB1 B CONT Ø9	DL1	DS6 SSE L	EL1	CS4 POWER OK H	FL1	DS5 WCF SET L
AM1	AA1 A CONT 1Ø	BM1	AB2 B REG SEL 2 H	CM1	AB1 B CONT 1Ø	DM1	IF8 OCCUPIED L	EM1	IF5 RM LA H	FM1	DS6 FER SET L
AN1	AA1 A CONT 11	BN1	AB2 B REG SEL 4 H	CN1	AB1 B CONT 11	DN1	CS5 MBA EBL L	EN1	IF8 OFF DIR H	FN1	IF8 ASY WRT H
AP1	AA1 A CONT 12	BP1	AB2 B REG SEL 8 H	CP1	AB1 B CONT 12	DP1	IF4 SEQ CLK H	EP1	DS3 SYNC PAR SET H	FP1	IF4 TEST BIT CLOCK H
AR1	AA1 A CONT 13	BR1	AB2 B REG SEL 16 H	CR1	AB1 B CONT 13	DR1	IF3 REQ A H	ER1	IF5 RM EC1 H	FR1	CS2 SET WC H
AS1	AA1 A CONT 14	BS1	BP LOCK PORT A L	CS1	AB1 B CONT 14	DS1	IF4 REQ B H	ES1	IF5 RM EC2 H	FS1	IF3 EN BUF TO TIST A H
AT1	GND	BT1	GND	CT1	GND	DT1	GND	ET1	GND	FT1	GND
AU1	AA1 A CONT 15	BU1	IF3 PORT A ON H	CU1	AB1 B CONT 15	DU1	AA2 INIT A H	EU1	DS5 CRC DONE H	FU1	IF4 EN BUF TO TIST B H
AV1	AA2 A CPA	BV1	IF4 PORT B ON H	CV1	AB2 B CPA	DV1	AB2 INIT B H	EV1	CS2 RD HDR DATA CMD H	FV1	BP AC LO L

AA2	+5V	BA2	+5V	CA2	+5V	DA2	+5V	EA2	+5V	FA2	+5V
AB2	-15V	BB2	-15V	CB2	-15V	DB2	-15V	EB2	-15V	FB2	-15V
AC2	GND	BC2	GND	CC2	GND	DC2	GND	EC2	GND	FC2	GND
AD2	AA2 DRV ADR A1 H	BD2	IF6 WRT REG H	CD2	AB2 DRV ADR B 1 H	DD2	IF2 CONT Ø8	ED2	IF8 INIT A/B L	FD2	CS5 DTE SET L
AE2	AA2 DRV ADR A2 H	BE2	IF5 MBA SEL A L	CE2	AB2 DRV ADR B 2 H	DE2	IF2 CONT Ø9	EE2	IF5 RM SN H	FE2	IF5 RM DA H
AF2	AA2 DRV ADR A4 H	BF2	IF5 RM ER2 H	CF2	AB2 DRV ADR B 4 H	DF2	IF2 CONT 1Ø	EF2	IF5 RM MR 1 H	FF2	DS12 AOE SET L
AH2	AA2 DEMAND A H	BH2	IF5 RM OF H	CH2	AB2 DEMAND B H	DH2	IF2 CONT 11	EH2	IF8 FØ H	FH2	IF8 FMT 16 H
AJ2	AA2 CTOD A H	BJ2	GR SYS CLOCK	CJ2	AB2 CTOD B H	DJ2	IF2 CONT 12	EJ2	IF8 F1 H	FJ2	IF8 EC1 L
AK2	IF3 TRA A L	BK2	IF8 DECODE L	CK2	IF4 TRA B L	DK2	IF2 CONT 13	EK2	IF8 F2 H	FK2	IF8 HC1 L
AL2	IF3 PAR BUS A L	BL2	IF9 SEQ SKP L	CL2	IF3 PAR BUS B L	DL2	IF2 CONT 14	EL2	IF8 F3 H	FL2	CS3 PWR/INIT L
AM2	IF7 A CONT ØØ OUT L	BM2	BP DRQ H	CM2	IF2 CONT ØØ	DM2	IF2 CONT 15	EM2	IF8 F4 H	FM2	IF5 RM MR2 H
AN2	IF7 A CONT Ø1 OUT L	BN2	BP 8Ø MB L	CN2	IF2 CONT Ø1	DN2	CS8 UNIT READY H	EN2	IF8 GO H	FN2	CS8 ON CYL L
AP2	IF7 A CONT Ø2 OUT L	BP2	BP 36ØØ RPM L	CP2	IF2 CONT Ø2	DP2	IF8 SCH SK R OR W L	EP2	CS3 RESET GO L	FP2	CS3 SET PULSE H
AR2	IF7 A CONT Ø3 OUT L	BR2	IF7 ATA A L	CR2	IF2 CONT Ø3	DR2	DS11 LBT H	ER2	CS8 RUN AND GO H	FR2	IF11 LSC L
AS2	IF7 A CONT Ø4 OUT L	BS2	IF7 ATA B L	CS2	IF2 CONT Ø4	DS2	IF8 READ IN CMD L	ES2	CS2 EN EXC H	FS2	DS7 LBC SET L
AT2	IF7 A CONT Ø5 OUT L	BT2	BP LOCK PORT B L	CT2	IF2 CONT Ø5	DT2	CS3 MBA CLR L	ET2	IF5 RM DC H	FT2	CS2 LSC SET L
AU2	IF7 A CONT Ø6 OUT L	BU2	CS2 P SET ATA L	CU2	IF2 CONT Ø6	DU2	SA2 REC EXC H	EU2	SPARE	FU2	IF3 PORT A LAMP L
AV2	IF7 A CONT Ø7 OUT L	BV2	IF5 EN A TRANS H	CV2	IF2 CONT Ø7	DV2	IF5 EN B TRANS H	EV2	DS12 IAE SET L	FV2	- IF4 PORT B LAMP L

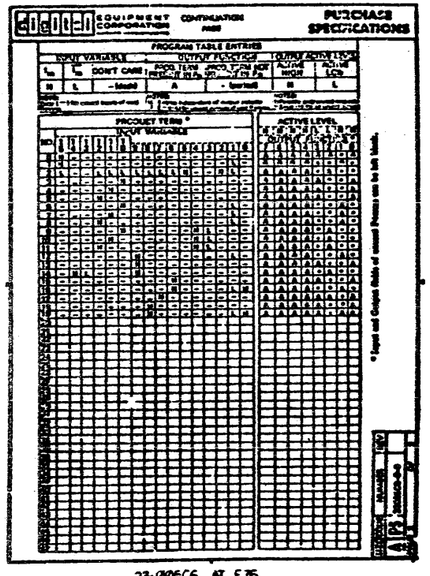
(I/O SIGNAL LIST)

TITLE: CONTROL INTERFACE (IF12)	SIZE: D	CODE: CS	NUMBER: M7686-YA-1	REV: K
SCALE: NONE	SHEET 12 OF 14			

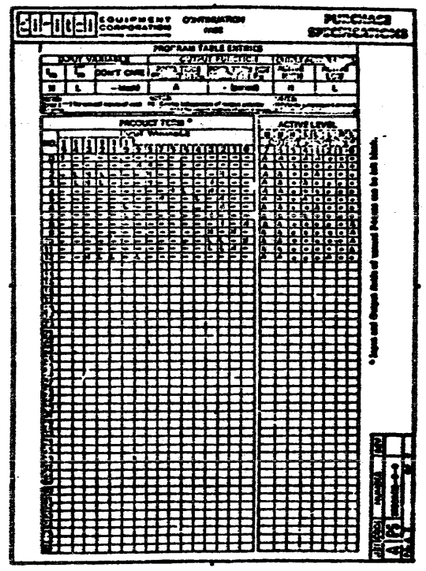
CZ



23-004C6 AT E29
ATTENTION REGISTER CONTROL
AND SET REQUEST



23-005C6 AT E76
ERROR SUMMARY AND ABORT



23-006C6 AT E62
INIT, ATTENTION AND RWR SET

REVISIONS		
ZONE	CHANGE NO.	REV

TITLE	CONTROL INTERFACE		
SIZE	CODE	NUMBER	REV
D	CS	M7686-YA-1	K
SCALE		SHEET 13 OF 14	

DCS M7686-YA-1 K

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

DEC PART NUMBER: 23-[illegible]A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	377	FF	11111111
1	01	01	373	FB	11111011
2	02	02	177	7F	01111111
3	03	03	337	DF	11011111
4	04	04	377	FF	11111111
5	05	05	367	F7	11110111
6	06	06	357	EF	11101111
7	07	07	337	DF	11011111
8	08	10	230	98	10011000
9	09	11	375	FD	11111101
10	0A	12	373	FB	11111011
11	0B	13	373	FB	11111011
12	0C	14	177	7F	01111111
13	0D	15	373	FB	11111011
14	0E	16	373	FB	11111011
15	0F	17	373	FB	11111011
16	10	20	373	FB	11111011
17	11	21	373	FB	11111011
18	12	22	373	FB	11111011
19	13	23	373	FB	11111011
20	14	24	176	7E	01111110
21	15	25	176	7E	01111110
22	16	26	373	FB	11111011
23	17	27	373	FB	11111011
24	18	30	136	5E	01011110
25	19	31	136	5E	01011110
26	1A	32	373	FB	11111011
27	1B	33	373	FB	11111011
28	1C	34	176	7E	01111110
29	1D	35	176	[illegible]	01111110
30	1E	36	373	FB	11111011
31	1F	37	373	FB	11111011

ORIGINATOR: [illegible]
DATE ORIGINATED: [illegible]

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-[illegible]A1 AT E78

COMMAND DECODE

DEC PART NUMBER: 23-[illegible]A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	[illegible]	[illegible]	[illegible]
1	01	01	[illegible]	[illegible]	[illegible]
2	02	02	[illegible]	[illegible]	[illegible]
3	03	03	[illegible]	[illegible]	[illegible]
4	04	04	[illegible]	[illegible]	[illegible]
5	05	05	[illegible]	[illegible]	[illegible]
6	06	06	[illegible]	[illegible]	[illegible]
7	07	07	[illegible]	[illegible]	[illegible]
8	08	10	001	01	00000001
9	09	11	002	02	00000010
10	0A	12	004	04	00000100
11	0B	13	020	10	00010000
12	0C	14	[illegible]	[illegible]	[illegible]
13	0D	15	[illegible]	[illegible]	[illegible]
14	0E	16	040	20	00100000
15	0F	17	100	40	01000000
16	10	20	[illegible]	[illegible]	[illegible]
17	11	21	[illegible]	[illegible]	[illegible]
18	12	22	[illegible]	[illegible]	[illegible]
19	13	23	[illegible]	[illegible]	[illegible]
20	14	24	[illegible]	[illegible]	[illegible]
21	15	25	[illegible]	[illegible]	[illegible]
22	16	26	[illegible]	[illegible]	[illegible]
23	17	27	[illegible]	[illegible]	[illegible]
24	18	30	[illegible]	[illegible]	[illegible]
25	19	31	[illegible]	[illegible]	[illegible]
26	1A	32	[illegible]	[illegible]	[illegible]
27	1B	33	[illegible]	[illegible]	[illegible]
28	1C	34	[illegible]	[illegible]	[illegible]
29	1D	35	[illegible]	[illegible]	[illegible]
30	1E	36	[illegible]	[illegible]	[illegible]
31	1F	37	[illegible]	[illegible]	[illegible]

ORIGINATOR: [illegible]
DATE ORIGINATED: [illegible]

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-[illegible]A1 AT E81

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-[illegible]A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	[illegible]	[illegible]	[illegible]
1	01	01	[illegible]	[illegible]	[illegible]
2	02	02	[illegible]	[illegible]	[illegible]
3	03	03	[illegible]	[illegible]	[illegible]
4	04	04	[illegible]	[illegible]	[illegible]
5	05	05	[illegible]	[illegible]	[illegible]
6	06	06	[illegible]	[illegible]	[illegible]
7	07	07	[illegible]	[illegible]	[illegible]
8	08	10	[illegible]	[illegible]	[illegible]
9	09	11	[illegible]	[illegible]	[illegible]
10	0A	12	[illegible]	[illegible]	[illegible]
11	0B	13	[illegible]	[illegible]	[illegible]
12	0C	14	[illegible]	[illegible]	[illegible]
13	0D	15	[illegible]	[illegible]	[illegible]
14	0E	16	[illegible]	[illegible]	[illegible]
15	0F	17	[illegible]	[illegible]	[illegible]
16	10	20	[illegible]	[illegible]	[illegible]
17	11	21	[illegible]	[illegible]	[illegible]
18	12	22	[illegible]	[illegible]	[illegible]
19	13	23	[illegible]	[illegible]	[illegible]
20	14	24	[illegible]	[illegible]	[illegible]
21	15	25	[illegible]	[illegible]	[illegible]
22	16	26	[illegible]	[illegible]	[illegible]
23	17	27	[illegible]	[illegible]	[illegible]
24	18	30	[illegible]	[illegible]	[illegible]
25	19	31	[illegible]	[illegible]	[illegible]
26	1A	32	[illegible]	[illegible]	[illegible]
27	1B	33	[illegible]	[illegible]	[illegible]
28	1C	34	[illegible]	[illegible]	[illegible]
29	1D	35	[illegible]	[illegible]	[illegible]
30	1E	36	[illegible]	[illegible]	[illegible]
31	1F	37	[illegible]	[illegible]	[illegible]

ORIGINATOR: [illegible]
DATE ORIGINATED: [illegible]

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-[illegible]A1 AT E89

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: [illegible]
DATE ORIGINATED: [illegible]

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	[illegible]	[illegible]	[illegible]	32	20	040	[illegible]	[illegible]	[illegible]	64	40	100	[illegible]	[illegible]	[illegible]	96	60	140	[illegible]	[illegible]	[illegible]
1	01	001	[illegible]	[illegible]	[illegible]	33	21	041	[illegible]	[illegible]	[illegible]	65	41	101	[illegible]	[illegible]	[illegible]	97	61	141	[illegible]	[illegible]	[illegible]
2	02	002	[illegible]	[illegible]	[illegible]	34	22	042	[illegible]	[illegible]	[illegible]	66	42	102	[illegible]	[illegible]	[illegible]	98	62	142	[illegible]	[illegible]	[illegible]
3	03	003	[illegible]	[illegible]	[illegible]	35	23	043	[illegible]	[illegible]	[illegible]	67	43	103	[illegible]	[illegible]	[illegible]	99	63	143	[illegible]	[illegible]	[illegible]
4	04	004	[illegible]	[illegible]	[illegible]	36	24	044	[illegible]	[illegible]	[illegible]	68	44	104	[illegible]	[illegible]	[illegible]	100	64	144	[illegible]	[illegible]	[illegible]
5	05	005	[illegible]	[illegible]	[illegible]	37	25	045	[illegible]	[illegible]	[illegible]	69	45	105	[illegible]	[illegible]	[illegible]	101	65	145	[illegible]	[illegible]	[illegible]
6	06	006	[illegible]	[illegible]	[illegible]	38	26	046	[illegible]	[illegible]	[illegible]	70	46	106	[illegible]	[illegible]	[illegible]	102	66	146	[illegible]	[illegible]	[illegible]
7	07	007	[illegible]	[illegible]	[illegible]	39	27	047	[illegible]	[illegible]	[illegible]	71	47	107	[illegible]	[illegible]	[illegible]	103	67	147	[illegible]	[illegible]	[illegible]
8	08	010	[illegible]	[illegible]	[illegible]	40	28	050	[illegible]	[illegible]	[illegible]	72	48	110	[illegible]	[illegible]	[illegible]	104	68	150	[illegible]	[illegible]	[illegible]
9	09	011	[illegible]	[illegible]	[illegible]	41	29	051	[illegible]	[illegible]	[illegible]	73	49	111	[illegible]	[illegible]	[illegible]	105	69	151	[illegible]	[illegible]	[illegible]
10	0A	012	[illegible]	[illegible]	[illegible]	42	2A	052	[illegible]	[illegible]	[illegible]	74	4A	112	[illegible]	[illegible]	[illegible]	106	6A	152	[illegible]	[illegible]	[illegible]
11	0B	013	[illegible]	[illegible]	[illegible]	43	2B	053	[illegible]	[illegible]	[illegible]	75	4B	113	[illegible]	[illegible]	[illegible]	107	6B	153	[illegible]	[illegible]	[illegible]
12	0C	014	[illegible]	[illegible]	[illegible]	44	2C	054	[illegible]	[illegible]	[illegible]	76	4C	114	[illegible]	[illegible]	[illegible]	108	6C	154	[illegible]	[illegible]	[illegible]
13	0D	015	[illegible]	[illegible]	[illegible]	45	2D	055	[illegible]	[illegible]	[illegible]	77	4D	115	[illegible]	[illegible]	[illegible]	109	6D	155	[illegible]	[illegible]	[illegible]
14	0E	016	[illegible]	[illegible]	[illegible]	46	2E	056	[illegible]	[illegible]	[illegible]	78	4E	116	[illegible]	[illegible]	[illegible]	110	6E	156	[illegible]	[illegible]	[illegible]
15	0F	017	[illegible]	[illegible]	[illegible]	47	2F	057	[illegible]	[illegible]	[illegible]	79	4F	117	[illegible]	[illegible]	[illegible]	111	6F	157	[illegible]	[illegible]	[illegible]
16	10	020	[illegible]	[illegible]	[illegible]	48	30	060	[illegible]	[illegible]	[illegible]	80	50	120	[illegible]	[illegible]	[illegible]	112	70	160	[illegible]	[illegible]	[illegible]
17	11	021	[illegible]	[illegible]	[illegible]	49	31	061	[illegible]	[illegible]	[illegible]	81	51	121	[illegible]	[illegible]	[illegible]	113	71	161	[illegible]	[illegible]	[illegible]
18	12	022	[illegible]	[illegible]	[illegible]	50	32	062	[illegible]	[illegible]	[illegible]	82	52	122	[illegible]	[illegible]	[illegible]	114	72	162	[illegible]	[illegible]	[illegible]
19	13	023	[illegible]	[illegible]	[illegible]	51	33	063	[illegible]	[illegible]	[illegible]	83	53	123	[illegible]	[illegible]	[illegible]	115	73	163	[illegible]	[illegible]	[illegible]
20	14	024	[illegible]	[illegible]	[illegible]	52	34	064	[illegible]	[illegible]	[illegible]	84	54	124	[illegible]	[illegible]	[illegible]	116	74	164	[illegible]	[illegible]	[illegible]
21	15	025	[illegible]	[illegible]	[illegible]	53	35	065	[illegible]	[illegible]	[illegible]	85	55	125	[illegible]	[illegible]	[illegible]	117	75	165	[illegible]	[illegible]	[illegible]
22	16	026	[illegible]	[illegible]	[illegible]	54	36	066	[illegible]	[illegible]	[illegible]	86	56	126	[illegible]	[illegible]	[illegible]	118	76	166	[illegible]	[illegible]	[illegible]
23	17	027	[illegible]	[illegible]	[illegible]	55	37	067	[illegible]	[illegible]	[illegible]	87	57	127	[illegible]	[illegible]	[illegible]	119	77	167	[illegible]	[illegible]	[illegible]
24	18	030	[illegible]	[illegible]	[illegible]	56	38	070	[illegible]	[illegible]	[illegible]	88	58	130	[illegible]	[illegible]	[illegible]	120	78	170	[illegible]	[illegible]	[illegible]
25	19	031	[illegible]	[illegible]	[illegible]	57	39	071	[illegible]	[illegible]	[illegible]	89	59	131	[illegible]	[illegible]	[illegible]	121	79	171	[illegible]	[illegible]	[illegible]
26	1A	032	[illegible]	[illegible]	[illegible]	58	3A	072	[illegible]	[illegible]	[illegible]	90	5A	132	[illegible]	[illegible]	[illegible]	122	7A	172	[illegible]	[illegible]	[illegible]
27	1B	033	[illegible]	[illegible]	[illegible]	59	3B	073	[illegible]	[illegible]	[illegible]	91	5B	133	[illegible]	[illegible]	[illegible]	123	7B	173	[illegible]	[illegible]	[illegible]
28	1C	034	[illegible]	[illegible]	[illegible]	60	3C	074	[illegible]	[illegible]	[illegible]	92	5C	134	[illegible]	[illegible]	[illegible]	124	7C	174	[illegible]	[illegible]	[illegible]
29	1D	035	[illegible]	[illegible]	[illegible]	61	3D	075	[illegible]	[illegible]	[illegible]	93	5D	135	[illegible]	[illegible]	[illegible]	125	7D	175	[illegible]	[illegible]	[illegible]
30	1E	036	[illegible]	[illegible]	[illegible]	62	3E	076	[illegible]	[illegible]	[illegible]	94	5E	136	[illegible]	[illegible]	[illegible]	126	7E	176	[illegible]	[illegible]	[illegible]
31	1F	037	[illegible]	[illegible]	[illegible]	63	3F	077	[illegible]	[illegible]	[illegible]	95	5F	137	[illegible]	[illegible]	[illegible]	127	7F	177	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: [illegible]
DATE ORIGINATED: [illegible]

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 2 OF 2

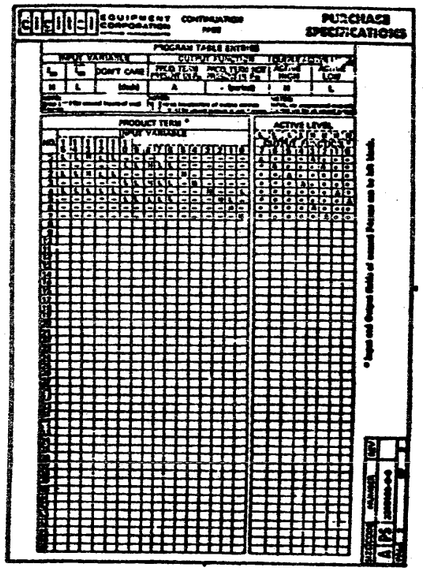
DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	[illegible]	[illegible]	[illegible]	160	A0	240	[illegible]	[illegible]	[illegible]	192	C0	300	[illegible]	[illegible]	[illegible]	224	E0	340	[illegible]	[illegible]	[illegible]
129	81	201	[illegible]	[illegible]	[illegible]	161	A1	241	[illegible]	[illegible]	[illegible]	193	C1	301	[illegible]	[illegible]	[illegible]	225	E1	341	[illegible]	[illegible]	[illegible]
130	82	202	[illegible]	[illegible]	[illegible]	162	A2	242	[illegible]	[illegible]	[illegible]	194	C2	302	[illegible]	[illegible]	[illegible]	226	E2	342	[illegible]	[illegible]	[illegible]
131	83	203	[illegible]	[illegible]	[illegible]	163	A3	243	[illegible]	[illegible]	[illegible]	195	C3	303	[illegible]	[illegible]	[illegible]	227	E3	343	[illegible]	[illegible]	[illegible]
132	84	204	[illegible]	[illegible]	[illegible]	164	A4	244	[illegible]	[illegible]	[illegible]	196	C4	304	[illegible]	[illegible]	[illegible]	228	E4	344	[illegible]	[illegible]	[illegible]
133	85	205	[illegible]	[illegible]	[illegible]	165	A5	245	[illegible]	[illegible]	[illegible]	197	C5	305	[illegible]	[illegible]	[illegible]	229	E5	345	[illegible]	[illegible]	[illegible]
134	86	206	[illegible]	[illegible]	[illegible]	166	A6	246	[illegible]	[illegible]	[illegible]	198	C6	306	[illegible]	[illegible]	[illegible]	230	E6	346	[illegible]	[illegible]	[illegible]
135	87	207	[illegible]	[illegible]	[illegible]	167	A7	247	[illegible]	[illegible]	[illegible]	199	C7	307	[illegible]	[illegible]	[illegible]	231	E7	347	[illegible]	[illegible]	[illegible]
136	88	210	[illegible]	[illegible]	[illegible]	168	A8	250	[illegible]	[illegible]	[illegible]	200	C8	310	[illegible]	[illegible]	[illegible]	232	E8	350	[illegible]	[illegible]	[illegible]
137	89	211	[illegible]	[illegible]	[illegible]	169	A9	251	[illegible]	[illegible]	[illegible]	201	C9	311	[illegible]	[illegible]	[illegible]	233	E9	351	[illegible]	[illegible]	[illegible]
138	8A	212	[illegible]	[illegible]	[illegible]	170	AA	252	[illegible]	[illegible]	[illegible]	202	CA	312	[illegible]	[illegible]	[illegible]	234	EA	352	[illegible]	[illegible]	[illegible]
139	8B	213	[illegible]	[illegible]	[illegible]	171	AB	253	[illegible]	[illegible]	[illegible]	203	CB	313	[illegible]	[illegible]	[illegible]	235	EB	353	[illegible]	[illegible]	[illegible]
140	8C	214	[illegible]	[illegible]	[illegible]	172	AC	254	[illegible]	[illegible]	[illegible]	204	CC	314	[illegible]	[illegible]	[illegible]	236	EC	354	[illegible]	[illegible]	[illegible]
141	8D	215	[illegible]	[illegible]	[illegible]	173	AD	255	[illegible]	[illegible]	[illegible]	205	CD	315	[illegible]	[illegible]	[illegible]	237	ED	355	[illegible]	[illegible]	[illegible]
142	8E	216	[illegible]	[illegible]	[illegible]	174	AE	256	[illegible]	[illegible]	[illegible]	206	CE	316	[illegible]	[illegible]	[illegible]	238	EE	356	[illegible]	[illegible]	[illegible]
143	8F	217	[illegible]	[illegible]	[illegible]	175	AF	257	[illegible]	[illegible]	[illegible]	207	CF	317	[illegible]	[illegible]	[illegible]	239	EF	357	[illegible]	[illegible]	[illegible]
144	90	220	[illegible]	[illegible]	[illegible]	176	B0	260	[illegible]	[illegible]	[illegible]	208	D0	320	[illegible]	[illegible]	[illegible]	240	F0	360	[illegible]	[illegible]	[illegible]
145	91	221	[illegible]	[illegible]	[illegible]	177	B1	261	[illegible]	[illegible]	[illegible]	209	D1	321	[illegible]	[illegible]	[illegible]	241	F1	361	[illegible]	[illegible]	[illegible]
146	92	222	[illegible]	[illegible]	[illegible]	178	B2	262	[illegible]	[illegible]	[illegible]	210	D2	322	[illegible]	[illegible]	[illegible]	242	F2	362	[illegible]	[illegible]	[illegible]
147	93	223	[illegible]	[illegible]	[illegible]	179	B3	263	[illegible]	[illegible]	[illegible]	211	D3	323	[illegible]	[illegible]	[illegible]	243	F3	363	[illegible]	[illegible]	[illegible]
148	94	224	[illegible]	[illegible]	[illegible]	180	B4	264	[illegible]	[illegible]	[illegible]	212	D4	324	[illegible]	[illegible]	[illegible]	244	F4	364	[illegible]	[illegible]	[illegible]
149	95	225	[illegible]	[illegible]	[illegible]	181	B5	265	[illegible]	[illegible]	[illegible]	213	D5	325	[illegible]	[illegible]	[illegible]	245	F5	365	[illegible]	[illegible]	[illegible]
150	96	226	[illegible]	[illegible]	[illegible]	182	B6	266	[illegible]	[illegible]	[illegible]	214	D6	326	[illegible]	[illegible]	[illegible]	246	F6	366	[illegible]	[illegible]	[illegible]
151	97	227	[illegible]	[illegible]	[illegible]	183	B7	267	[illegible]	[illegible]	[illegible]	215	D7	327	[illegible]	[illegible]	[illegible]	247	F7	367	[illegible]	[illegible]	[illegible]
152	98	230	[illegible]	[illegible]	[illegible]	184	B8	270	[illegible]	[illegible]	[illegible]	216	D8	330	[illegible]	[illegible]	[illegible]	248	F8	370	[illegible]	[illegible]	[illegible]
153	99	231	[illegible]	[illegible]	[illegible]	185	B9	271	[illegible]	[illegible]	[illegible]	217	D9	331	[illegible]	[illegible]	[illegible]	249	F9	371	[illegible]	[illegible]	[illegible]
154	9A	232	[illegible]	[illegible]	[illegible]	186	BA	272	[illegible]	[illegible]	[illegible]	218	DA	332	[illegible]	[illegible]	[illegible]	250	FA	372	[illegible]	[illegible]	[illegible]
155	9B	233	[illegible]	[illegible]	[illegible]	187	BB	273	[illegible]	[illegible]	[illegible]	219	DB	333	[illegible]	[illegible]	[illegible]	251	FB	373	[illegible]	[illegible]	[illegible]
156	9C	234	[illegible]	[illegible]	[illegible]	188	BC	274	[illegible]	[illegible]	[illegible]	220	DC	334	[illegible]	[illegible]	[illegible]	252	FC	374	[illegible]	[illegible]	[illegible]
157	9D	235	[illegible]	[illegible]	[illegible]	189	BD	275	[illegible]	[illegible]	[illegible]	221	DD	335	[illegible]	[illegible]	[illegible]	253	FD	375	[illegible]	[illegible]	[illegible]
158	9E	236	[illegible]	[illegible]	[illegible]	190	BE	276	[illegible]	[illegible]	[illegible]	222	DE	336	[illegible]	[illegible]	[illegible]	254	FE	376	[illegible]	[illegible]	[illegible]
159	9F	237	[illegible]	[illegible]	[illegible]	191	BF	277	[illegible]	[illegible]	[illegible]	223	DF	337	[illegible]	[illegible]	[illegible]	255	FF	377	[illegible]	[illegible]	[illegible]

TITLE
256 X 8
ROM/PROM PATTERN SPEC
23-[illegible]

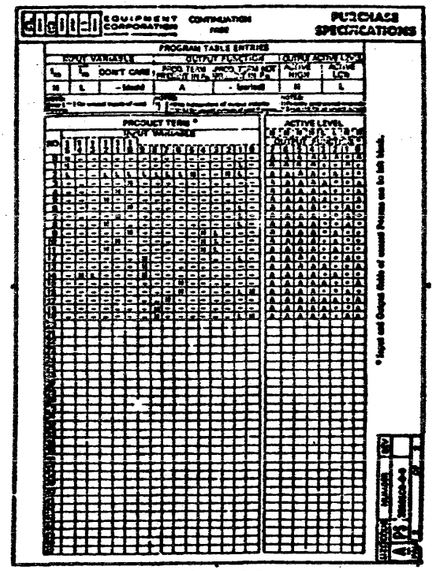
HANDSHAKE PROM AT E34 AND E39

REV	CHK	CHANGE NO

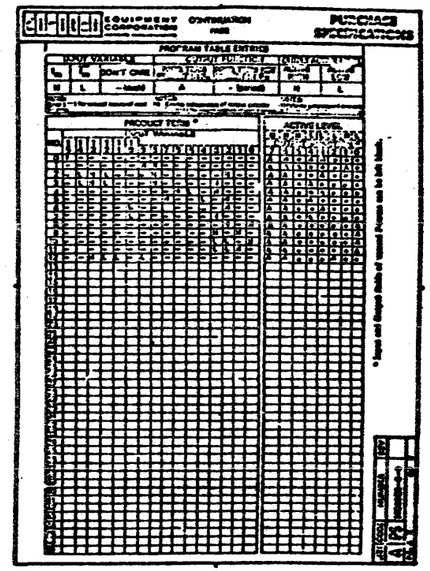
TITLE: CONTROL INTERFACE
SIZE: D | CODE: CS | NUMBER: M7686-YA-1 | REV: K
SCALE: — | SHEET 14 OF 14



23-004C6 AT E29
ATTENTION REGISTER CONTROL
AND SET REQUEST



23-005C6 AT E76
ERROR SUMMARY AND ABORT



23-006C6 AT E62
INIT, ATTENTION AND RMR SET

REVISIONS
ZONE | CHANGE NO. | REV

TITLE CONTROL INTERFACE
SIZE D | CODE CS | NUMBER M7686-YA-1 | REV K
SCALE — | SHEET 13 OF 14 | DIST

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

DEC PART NUMBER: 23-205A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ORIGINATOR: IRENE BELLETIERE
DATE ORIGINATED: 6-6-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-205A1 AT E78

COMMAND DECODE

DEC PART NUMBER: 23-207A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ORIGINATOR: IRENE BELLETIERE
DATE ORIGINATED: 5-2-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-207A1 AT E89

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-206A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ORIGINATOR: IRENE BELLETIERE
DATE ORIGINATED: 5-2-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-206A1 AT E81

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-007B0
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: IRENE BELLETIERE
DATE ORIGINATED: 6-29-77

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-007B0
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: IRENE BELLETIERE
DATE ORIGINATED: 6-29-77

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TITLE
256 X 8
ROM/PROM PATTERN SPEC
23-007B0

HANDSHAKE PROM AT E34 AND E39

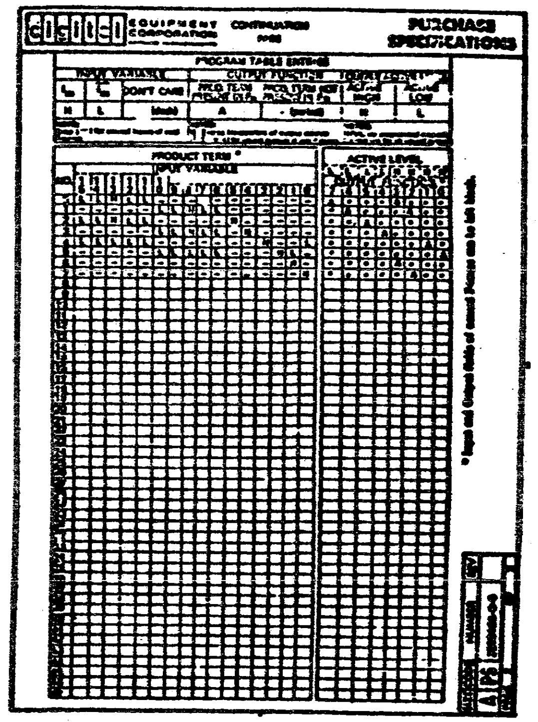
CHK	CHANGE NO	REV

TITLE: CONTROL INTERFACE

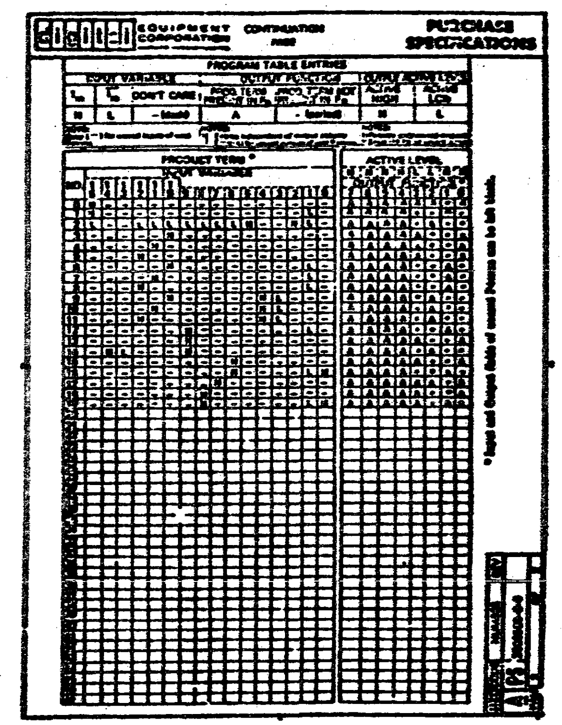
SIZE: D | CODE: CS | NUMBER: M7686-YA-1 | REV: K

SCALE: — | SHEET 14 OF 14

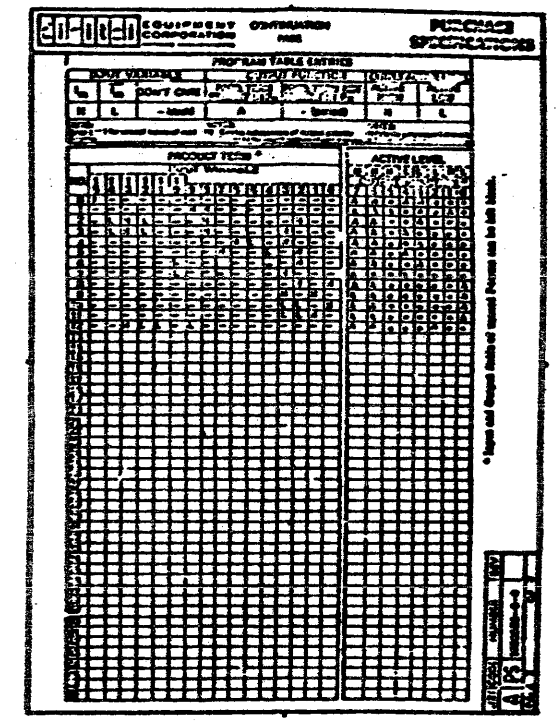
D CS M7686-YA-1 K



23-004C6 AT E29
ATTENTION REGISTER CONTROL
AND SET REQUEST



23-005C6 AT E76
ERROR SUMMARY AND ABORT



23-006C6 AT E62
INIT, ATTENTION AND RMR SET

TITLE	SIZE	CODE	NUMBER	REV
CONTROL INTERFACE	D	CS	M7686-YA - 1	K

SCALE — SHEET 13 OF 14

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

DEC PART NUMBER: 23-205A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	377	FF	11111111
1	01	01	373	FB	11111011
2	02	02	177	7F	01111111
3	03	03	337	DF	11011111
4	04	04	377	FF	11111111
5	05	05	367	F7	11110111
6	06	06	317	CF	11001111
7	07	07	337	DF	11011111
8	08	10	[illegible]	[illegible]	[illegible]
9	09	11	375	FD	11111101
10	0A	12	373	FB	11111011
11	0B	13	373	FB	11111011
12	0C	14	177	7F	01111111
13	0D	15	373	FB	11111011
14	0E	16	373	FB	11111011
15	0F	17	373	FB	11111011
16	10	20	373	FB	11111011
17	11	21	373	FB	11111011
18	12	22	373	FB	11111011
19	13	23	373	FB	11111011
20	14	24	176	7E	01111110
21	15	25	176	7E	01111110
22	16	26	373	FB	11111011
23	17	27	373	FB	11111011
24	18	30	136	5E	01011110
25	19	31	136	5E	01011110
26	1A	32	373	FB	11111011
27	1B	33	373	FB	11111011
28	1C	34	176	7E	01111110
29	1D	35	176	7E	01111110
30	1E	36	373	FB	11111011
31	1F	37	373	FB	11111011

ORIGINATOR: IRENE BELLEFICHE
DATE ORIGINATED: 6-6-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-205A1 AT E70

COMMAND DECODE

DEC PART NUMBER: 23-207A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	[illegible]	[illegible]	[illegible]
1	01	01	[illegible]	[illegible]	[illegible]
2	02	02	[illegible]	[illegible]	[illegible]
3	03	03	[illegible]	[illegible]	[illegible]
4	04	04	[illegible]	[illegible]	[illegible]
5	05	05	[illegible]	[illegible]	[illegible]
6	06	06	[illegible]	[illegible]	[illegible]
7	07	07	[illegible]	[illegible]	[illegible]
8	08	10	[illegible]	[illegible]	[illegible]
9	09	11	[illegible]	[illegible]	[illegible]
10	0A	12	[illegible]	[illegible]	[illegible]
11	0B	13	[illegible]	[illegible]	[illegible]
12	0C	14	[illegible]	[illegible]	[illegible]
13	0D	15	[illegible]	[illegible]	[illegible]
14	0E	16	[illegible]	[illegible]	[illegible]
15	0F	17	[illegible]	[illegible]	[illegible]
16	10	20	[illegible]	[illegible]	[illegible]
17	11	21	[illegible]	[illegible]	[illegible]
18	12	22	[illegible]	[illegible]	[illegible]
19	13	23	[illegible]	[illegible]	[illegible]
20	14	24	[illegible]	[illegible]	[illegible]
21	15	25	[illegible]	[illegible]	[illegible]
22	16	26	[illegible]	[illegible]	[illegible]
23	17	27	[illegible]	[illegible]	[illegible]
24	18	30	[illegible]	[illegible]	[illegible]
25	19	31	[illegible]	[illegible]	[illegible]
26	1A	32	[illegible]	[illegible]	[illegible]
27	1B	33	[illegible]	[illegible]	[illegible]
28	1C	34	[illegible]	[illegible]	[illegible]
29	1D	35	[illegible]	[illegible]	[illegible]
30	1E	36	[illegible]	[illegible]	[illegible]
31	1F	37	[illegible]	[illegible]	[illegible]

ORIGINATOR: IRENE BELLEFICHE
DATE ORIGINATED: 5-2-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-207A1 AT E89

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-206A1
LEFT COLUMN OF BIN DATA IS MSB

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	00	[illegible]	[illegible]	[illegible]
1	01	01	[illegible]	[illegible]	[illegible]
2	02	02	[illegible]	[illegible]	[illegible]
3	03	03	[illegible]	[illegible]	[illegible]
4	04	04	[illegible]	[illegible]	[illegible]
5	05	05	[illegible]	[illegible]	[illegible]
6	06	06	[illegible]	[illegible]	[illegible]
7	07	07	[illegible]	[illegible]	[illegible]
8	08	10	[illegible]	[illegible]	[illegible]
9	09	11	[illegible]	[illegible]	[illegible]
10	0A	12	[illegible]	[illegible]	[illegible]
11	0B	13	[illegible]	[illegible]	[illegible]
12	0C	14	[illegible]	[illegible]	[illegible]
13	0D	15	[illegible]	[illegible]	[illegible]
14	0E	16	[illegible]	[illegible]	[illegible]
15	0F	17	[illegible]	[illegible]	[illegible]
16	10	20	220	90	[illegible]
17	11	21	220	90	[illegible]
18	12	22	220	90	[illegible]
19	13	23	220	90	[illegible]
20	14	24	220	90	[illegible]
21	15	25	220	90	[illegible]
22	16	26	220	90	[illegible]
23	17	27	220	90	[illegible]
24	18	30	220	90	[illegible]
25	19	31	220	90	[illegible]
26	1A	32	220	90	[illegible]
27	1B	33	220	90	[illegible]
28	1C	34	220	90	[illegible]
29	1D	35	220	90	[illegible]
30	1E	36	220	90	[illegible]
31	1F	37	220	90	[illegible]

ORIGINATOR: IRENE BELLEFICHE
DATE ORIGINATED: 5-2-77

TITLE
32 X 8
ROM/PROM PATTERN SPEC
23-206A1 AT E81

REGISTER ADDRESS DECODE

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: IRENE BELLEFICHE
DATE ORIGINATED: 4-29-77

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 1 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
0	00	000	[illegible]	[illegible]	[illegible]	32	20	040	[illegible]	[illegible]	[illegible]	64	40	100	[illegible]	[illegible]	[illegible]	96	60	140	[illegible]	[illegible]	[illegible]
1	01	001	[illegible]	[illegible]	[illegible]	33	21	041	[illegible]	[illegible]	[illegible]	65	41	101	[illegible]	[illegible]	[illegible]	97	61	141	[illegible]	[illegible]	[illegible]
2	02	002	[illegible]	[illegible]	[illegible]	34	22	042	[illegible]	[illegible]	[illegible]	66	42	102	[illegible]	[illegible]	[illegible]	98	62	142	[illegible]	[illegible]	[illegible]
3	03	003	[illegible]	[illegible]	[illegible]	35	23	043	[illegible]	[illegible]	[illegible]	67	43	103	[illegible]	[illegible]	[illegible]	99	63	143	[illegible]	[illegible]	[illegible]
4	04	004	[illegible]	[illegible]	[illegible]	36	24	044	[illegible]	[illegible]	[illegible]	68	44	104	[illegible]	[illegible]	[illegible]	100	64	144	[illegible]	[illegible]	[illegible]
5	05	005	[illegible]	[illegible]	[illegible]	37	25	045	[illegible]	[illegible]	[illegible]	69	45	105	[illegible]	[illegible]	[illegible]	101	65	145	[illegible]	[illegible]	[illegible]
6	06	006	[illegible]	[illegible]	[illegible]	38	26	046	[illegible]	[illegible]	[illegible]	70	46	106	[illegible]	[illegible]	[illegible]	102	66	146	[illegible]	[illegible]	[illegible]
7	07	007	[illegible]	[illegible]	[illegible]	39	27	047	[illegible]	[illegible]	[illegible]	71	47	107	[illegible]	[illegible]	[illegible]	103	67	147	[illegible]	[illegible]	[illegible]
8	08	010	[illegible]	[illegible]	[illegible]	40	28	050	[illegible]	[illegible]	[illegible]	72	48	110	[illegible]	[illegible]	[illegible]	104	68	150	[illegible]	[illegible]	[illegible]
9	09	011	[illegible]	[illegible]	[illegible]	41	29	051	[illegible]	[illegible]	[illegible]	73	49	111	[illegible]	[illegible]	[illegible]	105	69	151	[illegible]	[illegible]	[illegible]
10	0A	012	[illegible]	[illegible]	[illegible]	42	2A	052	[illegible]	[illegible]	[illegible]	74	4A	112	[illegible]	[illegible]	[illegible]	106	6A	152	[illegible]	[illegible]	[illegible]
11	0B	013	[illegible]	[illegible]	[illegible]	43	2B	053	[illegible]	[illegible]	[illegible]	75	4B	113	[illegible]	[illegible]	[illegible]	107	6B	153	[illegible]	[illegible]	[illegible]
12	0C	014	[illegible]	[illegible]	[illegible]	44	2C	054	[illegible]	[illegible]	[illegible]	76	4C	114	[illegible]	[illegible]	[illegible]	108	6C	154	[illegible]	[illegible]	[illegible]
13	0D	015	[illegible]	[illegible]	[illegible]	45	2D	055	[illegible]	[illegible]	[illegible]	77	4D	115	[illegible]	[illegible]	[illegible]	109	6D	155	[illegible]	[illegible]	[illegible]
14	0E	016	[illegible]	[illegible]	[illegible]	46	2E	056	[illegible]	[illegible]	[illegible]	78	4E	116	[illegible]	[illegible]	[illegible]	110	6E	156	[illegible]	[illegible]	[illegible]
15	0F	017	[illegible]	[illegible]	[illegible]	47	2F	057	[illegible]	[illegible]	[illegible]	79	4F	117	[illegible]	[illegible]	[illegible]	111	6F	157	[illegible]	[illegible]	[illegible]
16	10	020	[illegible]	[illegible]	[illegible]	48	30	060	[illegible]	[illegible]	[illegible]	80	50	120	[illegible]	[illegible]	[illegible]	112	70	160	[illegible]	[illegible]	[illegible]
17	11	021	[illegible]	[illegible]	[illegible]	49	31	061	[illegible]	[illegible]	[illegible]	81	51	121	[illegible]	[illegible]	[illegible]	113	71	161	[illegible]	[illegible]	[illegible]
18	12	022	[illegible]	[illegible]	[illegible]	50	32	062	[illegible]	[illegible]	[illegible]	82	52	122	[illegible]	[illegible]	[illegible]	114	72	162	[illegible]	[illegible]	[illegible]
19	13	023	[illegible]	[illegible]	[illegible]	51	33	063	[illegible]	[illegible]	[illegible]	83	53	123	[illegible]	[illegible]	[illegible]	115	73	163	[illegible]	[illegible]	[illegible]
20	14	024	[illegible]	[illegible]	[illegible]	52	34	064	[illegible]	[illegible]	[illegible]	84	54	124	[illegible]	[illegible]	[illegible]	116	74	164	[illegible]	[illegible]	[illegible]
21	15	025	[illegible]	[illegible]	[illegible]	53	35	065	[illegible]	[illegible]	[illegible]	85	55	125	[illegible]	[illegible]	[illegible]	117	75	165	[illegible]	[illegible]	[illegible]
22	16	026	[illegible]	[illegible]	[illegible]	54	36	066	[illegible]	[illegible]	[illegible]	86	56	126	[illegible]	[illegible]	[illegible]	118	76	166	[illegible]	[illegible]	[illegible]
23	17	027	[illegible]	[illegible]	[illegible]	55	37	067	[illegible]	[illegible]	[illegible]	87	57	127	[illegible]	[illegible]	[illegible]	119	77	167	[illegible]	[illegible]	[illegible]
24	18	030	[illegible]	[illegible]	[illegible]	56	38	070	[illegible]	[illegible]	[illegible]	88	58	130	[illegible]	[illegible]	[illegible]	120	78	170	[illegible]	[illegible]	[illegible]
25	19	031	[illegible]	[illegible]	[illegible]	57	39	071	[illegible]	[illegible]	[illegible]	89	59	131	[illegible]	[illegible]	[illegible]	121	79	171	[illegible]	[illegible]	[illegible]
26	1A	032	[illegible]	[illegible]	[illegible]	58	3A	072	[illegible]	[illegible]	[illegible]	90	5A	132	[illegible]	[illegible]	[illegible]	122	7A	172	[illegible]	[illegible]	[illegible]
27	1B	033	[illegible]	[illegible]	[illegible]	59	3B	073	[illegible]	[illegible]	[illegible]	91	5B	133	[illegible]	[illegible]	[illegible]	123	7B	173	[illegible]	[illegible]	[illegible]
28	1C	034	[illegible]	[illegible]	[illegible]	60	3C	074	[illegible]	[illegible]	[illegible]	92	5C	134	[illegible]	[illegible]	[illegible]	124	7C	174	[illegible]	[illegible]	[illegible]
29	1D	035	[illegible]	[illegible]	[illegible]	61	3D	075	[illegible]	[illegible]	[illegible]	93	5D	135	[illegible]	[illegible]	[illegible]	125	7D	175	[illegible]	[illegible]	[illegible]
30	1E	036	[illegible]	[illegible]	[illegible]	62	3E	076	[illegible]	[illegible]	[illegible]	94	5E	136	[illegible]	[illegible]	[illegible]	126	7E	176	[illegible]	[illegible]	[illegible]
31	1F	037	[illegible]	[illegible]	[illegible]	63	3F	077	[illegible]	[illegible]	[illegible]	95	5F	137	[illegible]	[illegible]	[illegible]	127	7F	177	[illegible]	[illegible]	[illegible]

DEC PART NUMBER: 23-[illegible]
LEFT COLUMN OF BIN DATA IS MSB

ORIGINATOR: IRENE BELLEFICHE
DATE ORIGINATED: 4-29-77

BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW

SHEET 2 OF 2

DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT	DEC LOC	HEX LOC	OCT LOC	OCT DAT	HEX DAT	BIN DAT
128	80	200	[illegible]	[illegible]	[illegible]	160	A0	240	[illegible]	[illegible]	[illegible]	192	C0	300	[illegible]	[illegible]	[illegible]	224	E0	340	[illegible]	[illegible]	[illegible]
129	81	201	[illegible]	[illegible]	[illegible]	161	A1	241	[illegible]	[illegible]	[illegible]	193	C1	301	[illegible]	[illegible]	[illegible]	225	E1	341	[illegible]	[illegible]	[illegible]
130	82	202	[illegible]	[illegible]	[illegible]	162	A2	242	[illegible]	[illegible]	[illegible]	194	C2	302	[illegible]	[illegible]	[illegible]	226	E2	342	[illegible]	[illegible]	[illegible]
131	83	203	[illegible]	[illegible]	[illegible]	163	A3	243	[illegible]	[illegible]	[illegible]	195	C3	303	[illegible]	[illegible]	[illegible]	227	E3	343	[illegible]	[illegible]	[illegible]
132	84	204	[illegible]	[illegible]	[illegible]	164	A4	244	[illegible]	[illegible]	[illegible]	196	C4	304	[illegible]	[illegible]	[illegible]	228	E4	344	[illegible]	[illegible]	[illegible]
133	85	205	[illegible]	[illegible]	[illegible]	165	A5	245	[illegible]	[illegible]	[illegible]	197	C5	305	[illegible]	[illegible]	[illegible]	229	E5	345	[illegible]	[illegible]	[illegible]
134	86	206	[illegible]	[illegible]	[illegible]	166	A6	246	[illegible]	[illegible]	[illegible]	198	C6	306	[illegible]	[illegible]	[illegible]	230	E6	346	[illegible]	[illegible]	[illegible]
135	87	207	[illegible]	[illegible]	[illegible]	167	A7	247	[illegible]	[illegible]	[illegible]	199	C7	307	[illegible]	[illegible]	[illegible]	231	E7	347	[illegible]	[illegible]	[illegible]
136	88	210	[illegible]	[illegible]	[illegible]	168	A8	250	[illegible]	[illegible]	[illegible]	200	C8	310	[illegible]	[illegible]	[illegible]	232	E8	350	[illegible]	[illegible]	[illegible]
137	89	211	[illegible]	[illegible]	[illegible]	169	A9	251	[illegible]	[illegible]	[illegible]	201	C9	311	[illegible]	[illegible]	[illegible]	233	E9	351	[illegible]	[illegible]	[illegible]
138	8A	212	[illegible]	[illegible]	[illegible]	170	AA	252	[illegible]	[illegible]	[illegible]	202	CA	312	[illegible]	[illegible]	[illegible]	234	EA	352	[illegible]	[illegible]	[illegible]
139	8B	213	[illegible]	[illegible]	[illegible]	171	AB	253	[illegible]	[illegible]	[illegible]	203	CB	313	[illegible]	[illegible]	[illegible]	235	EB	353	[illegible]	[illegible]	[illegible]
140	8C	214	[illegible]	[illegible]	[illegible]	172	AC	254	[illegible]	[illegible]	[illegible]	204	CC	314	[illegible]	[illegible]	[illegible]	236	EC	354	[illegible]	[illegible]	[illegible]
141	8D	215	[illegible]	[illegible]	[illegible]	173	AD	255	[illegible]	[illegible]	[illegible]	205	CD	315	[illegible]	[illegible]	[illegible]	237	ED	355	[illegible]	[illegible]	[illegible]
142	8E	216	[illegible]	[illegible]	[illegible]	174	AE	256	[illegible]	[illegible]	[illegible]	206	CE	316	[illegible]	[illegible]	[illegible]	238	EE	356	[illegible]	[illegible]	[illegible]
143	8F	217	[illegible]	[illegible]	[illegible]	175	AF	257	[illegible]	[illegible]	[illegible]	207	CF	317	[illegible]	[illegible]	[illegible]	239	EF	357	[illegible]	[illegible]	[illegible]
144	90	220	[illegible]	[illegible]	[illegible]	176	B0	260	[illegible]	[illegible]	[illegible]	208	D0	320	[illegible]	[illegible]	[illegible]	240	F0	360	[illegible]	[illegible]	[illegible]
145	91	221	[illegible]	[illegible]	[illegible]	177	B1	261	[illegible]	[illegible]	[illegible]	209	D1	321	[illegible]	[illegible]	[illegible]	241	F1	361	[illegible]	[illegible]	[illegible]
146	92	222	[illegible]	[illegible]	[illegible]	178	B2	262	[illegible]	[illegible]	[illegible]	210	D2	322	[illegible]	[illegible]	[illegible]	242	F2	362	[illegible]	[illegible]	[illegible]
147	93	223	[illegible]	[illegible]	[illegible]	179	B3	263	[illegible]	[illegible]	[illegible]	211	D3	323	[illegible]	[illegible]	[illegible]	243	F3	363	[illegible]	[illegible]	[illegible]
148	94	224	[illegible]	[illegible]	[illegible]	180	B4	264	[illegible]	[illegible]	[illegible]	212	D4	324	[illegible]	[illegible]	[illegible]	244	F4	364	[illegible]	[illegible]	[illegible]
149	95	225	[illegible]	[illegible]	[illegible]	181	B5	265	[illegible]	[illegible]	[illegible]	213	D5	325	[illegible]	[illegible]	[illegible]	245	F5	365	[illegible]	[illegible]	[illegible]
150	96	226	[illegible]	[illegible]	[illegible]	182	B6	266	[illegible]	[illegible]	[illegible]	214	D6	326	[illegible]	[illegible]	[illegible]	246	F6	366	[illegible]	[illegible]	[illegible]
151	97	227	[illegible]	[illegible]	[illegible]	183	B7	267	[illegible]	[illegible]	[illegible]	215	D7	327	[illegible]	[illegible]	[illegible]	247	F7	367	[illegible]	[illegible]	[illegible]
152	98	230	[illegible]	[illegible]	[illegible]	184	B8	270	[illegible]	[illegible]	[illegible]	216	D8	330	[illegible]	[illegible]	[illegible]	248	F8	370	[illegible]	[illegible]	[illegible]
153	99	231	[illegible]	[illegible]	[illegible]	185	B9	271	[illegible]	[illegible]	[illegible]	217	D9	331	[illegible]	[illegible]	[illegible]	249	F9	371	[illegible]	[illegible]	[illegible]
154	9A	232	[illegible]	[illegible]	[illegible]	186	BA	272	[illegible]	[illegible]	[illegible]	218	DA	332	[illegible]	[illegible]	[illegible]	250	FA	372	[illegible]	[illegible]	[illegible]
155	9B	233	[illegible]	[illegible]	[illegible]	187	BB	273	[illegible]	[illegible]	[illegible]	219	DB	333	[illegible]	[illegible]	[illegible]	251	FB	373	[illegible]	[illegible]	[illegible]
156	9C	234	[illegible]	[illegible]	[illegible]	188	BC	274	[illegible]	[illegible]	[illegible]	220	DC	334	[illegible]	[illegible]	[illegible]	252	FC	374	[illegible]	[illegible]	[illegible]
157	9D	235	[illegible]	[illegible]	[illegible]	189	BD	275	[illegible]	[illegible]	[illegible]	221	DD	335	[illegible]	[illegible]	[illegible]	253	FD	375	[illegible]	[illegible]	[illegible]
158	9E	236	[illegible]	[illegible]	[illegible]	190	BE	276	[illegible]	[illegible]	[illegible]	222	DE	336	[illegible]	[illegible]	[illegible]	254	FE	376	[illegible]	[illegible]	[illegible]
159	9F	237	[illegible]	[illegible]	[illegible]	191	BF	277	[illegible]	[illegible]	[illegible]	223	DF	337	[illegible]	[illegible]	[illegible]	255	FF	377	[illegible]	[illegible]	[illegible]

TITLE
256 X 8
ROM/PROM PATTERN SPEC
23-[illegible]

HANDSHAKE PROM AT E34 AND E39

REV	CHANGE NO	CHK

TITLE: CONTROL INTERFACE
SIZE: D CODE: CS NUMBER: M7686-YA-1 REV: K
SHEET 4 OF 14

AUTOMATED BY PRTLST.3L(40) — P A R T S L I S T — SHEET A1 OF A2

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION YA	REFERENCE DESIGNATOR
1	1	D-MD-5012486-0-0	5012486-00	M7686	1	
2	2		1000082-00	68 MFD 15V 10% 150D S.TA	1	C1
3	3		1001610-01	.01 MFD 100V -20+80 Z5U DISC	92	C5-C95,C102
4	4		1017472-00	10 MFD 35V +50-10% AL EL	6	C96,C97,C98,C99,C100,C101
5	5		1000009-00	33.0 MMF 100V 5%200PPM DM15S	3	C2,C3,C4
6	6		1105275-00	D 672 TR= 15NS PIV= 60V SI	1	D1
7	7		1210711-02	HANDLE,MODULE,HEX	1	
8	8		1302388-00	2.0 K .25 W 5.0 % CC	14	R59,R61-R73
9	9		1300271-00	220.0 .25 W 5.0 % CC	2	R55,R56
10	10		1300432-00	3.0 K .25 W 5.0 % CC	51	R1-R51
11	11		1300447-00	4.70 K .25 W 5.0 % CC	1	R54
12	12		1302177-00	47.0 K .25 W 5.0 % CC	1	R53
13	13		1611300-00	DELAY= 10-125NS,5TAPS FAST RISE	1	E47
14	14		1910224-00	DEC 7485 COMPARATOR-4BIT	2	E2,E3
15	15		1910436-00	DEC 74123 ONE SHOT-DUAL,RETRIG	2	E26,E28
16	16		1910532-00	74S00 NAND GATE-QUAD 2IN	3	E37,E82,E83
17	17		1910534-00	74S04 INVERTER GATE-HEX 1I	2	E31,E44
18	18		1910536-00	74S10 NAND GATE-TRIPLE 3IN	1	E38
19	19		1910537-00	74S11 AND GATE-TRIPLE 3INP	2	E40,E69
20	20		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	3	E17,E43,E45
21	21		1910548-00	74S157 MUX 1 OF 2 (QUAD)	8	E13,E14,E16,E21,E48,E50,E52,E53
22	22		1910957-00	74S175 FF-D QUAD COMMON CLO	2	E35,E41
23	23		1911330-00	74173 FF-D QUAD,TRISTATE	4	E19,E20,E24,E25
24	24		1911573-00	74S280 PARITY GEN/CHKR,9BIT	2	E1,E5
25	25		1911641-00	SN 74S257 MUX,QUAD 2 TO 1	5	E6,E8,E9,E10,E12
26	26		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	4	E7,E36,E55,E59
27	27		1912389-00	74S08 AND GATE-QUAD 2IN,PO	3	E44,E49,E91
28	28		1912697-00	LS174 FF-D HEX W/CLEAR	1	E87
29	29		1912799-00	LS00 NAND-GATE-QUAD 2IN,P	3	E18,E30,E58
30	30		1912801-00	LS02 NOR-GATE-QUAD 2IN	3	E57,E64,E75

REVISION HISTORY			BASIC PART NO: M7686											
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: K. DAVIS	DATE: 6-FEB-80		D	I	G	I	T	A	L
22m 2 MAR 80	INITIAL	K	SECTION.VARIATION INDEX [A] YA	CHK'D: R. MICHAUD	DATE: 21-FEB-80	TITLE: PARTS LIST							
			[B]			CONTROL INTERFACE							
			[C]	DES.ENG: C. DUNIGAN	DATE: 21-FEB-80								
			[D]										
			[E]			DOCUMENT NUMBER							
			[F]	RESP.ENG.: C.DUNIGAN	DATE: 21-FEB-80								
			[H]			SIZE: K	CODE: PL	NUMBER: M7686-YA-DBP				REV: K	
			[J]										
			[K]	MFG.ENG.: D. CLAFLIN	DATE: 21-FEB-80								
			[L]										
			[M]	ASSEMBLY NUMBER: D-UA-M7686-YA-0	TOP DOCUMENT NUMBER: *B-DD-M7686-YA	FILE NAME: Z1188K.PLS						EDIT #: 13	
			[N]										

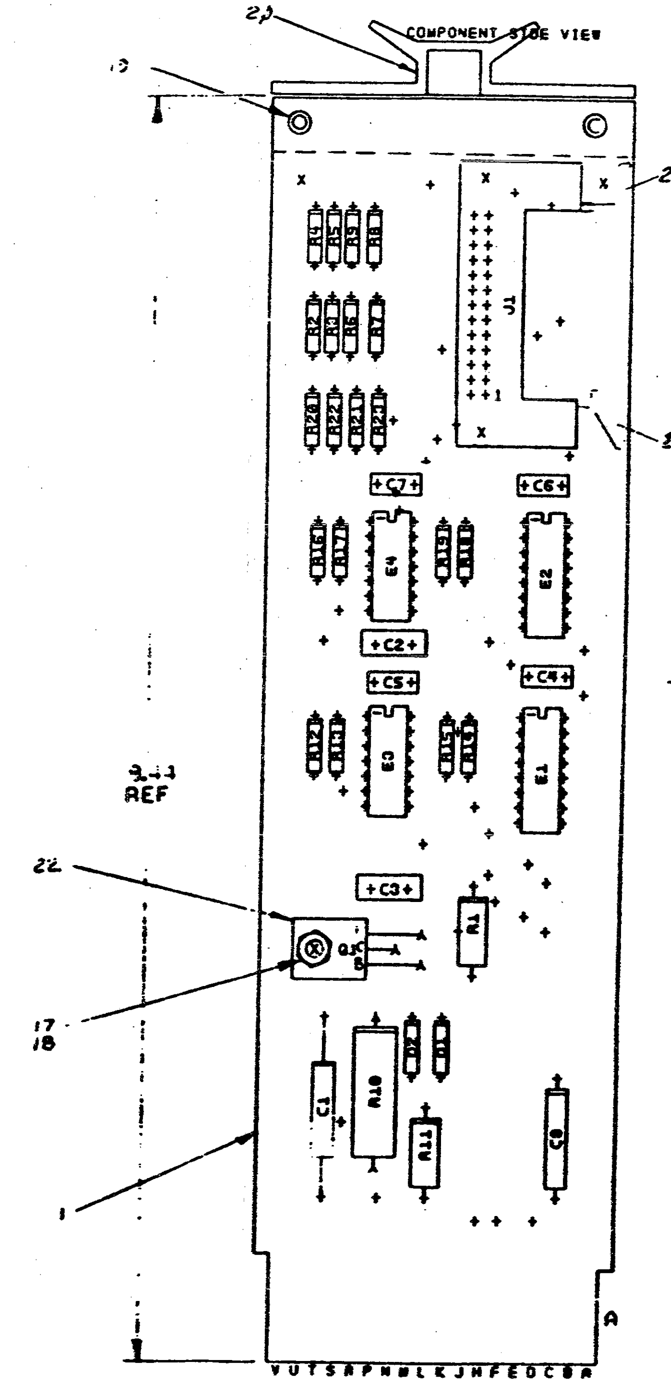
AUTOMATED BY PRTLST.3L(40)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION YA	REFERENCE DESIGNATOR
31	31		1912803-00	LS04 INVERTER GATE-HEX 1I	1	E27
32	32		1912805-00	LS08 AND GATE-QUAD 2IN,PO	1	E42
33	33		1912808-00	LS11 AND GATE-TRIPLE 3IN	1	E84
34	34		1912813-00	LS27 NOR GATE-TRIPLE 3IN	1	E32
35	35		1912819-00	LS42 DECODER,BCD-DECIMAL	2	E11,E15
36	36		1912824-00	LS74 FF-D DUAL,EDGE TRIGG	18	E23,E33,E51,E56,E63,E65,E67,E71,
					CONT	E74,E77,E78,E85,E93,E95,E97,E98,
					CONT	E100,E101
37	37		1912839-00	LS133 NAND GATE-POS	1	E86
38	38		1912844-00	LS151 MUX 1 OF 8 & DATA	2	E4,E22
39	39		1912853-00	LS175 FF-D QUAD	1	E88
40	40		1913312-00	7428P NOR GATE-QUAD 2IN POS	1	E54
41	41		23004C6-00	C6-01	1	E29
42	42		23007B8-00	B8-01	2	E34,E39
43	43		23206A1-00	A1-07	1	E81
44	44		23205A1-00	A1-03,A1-04,A1-05	1	E70
45	45		1914087-00	8098 BUFFER GATE-HEX 2IN,	9	E60,E68,E72,E73,E79,E80,E94,E96,
					CONT	E99
46	46		9000024-01	EYELET, ROLLED FLANGE, .121 OD X	12	
47	47		1912816-00	LS32 OR GATE-QUAD 2IN,POS	1	E90
48	48		1903547-00	7474 FF-D DUAL,EDGE TRIGG	1	E61
49	49		1910155-00	DEC 7408 AND GATE,POS.QUAD 2I	1	E92
50	50		1910091-00	DEC 7437 AND GATE-QUAD 2IN,BU	1	E66
51	51		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
52	52		1300496-00	15.0 K .25 W 5.0 % CC	2	R57,R58
53	53		23005C6-00	C6-01	1	E76
54	54		23207A1-00	A1-C7	1	E89
55	55		23006C6-00	C6-01	1	E62
56	56	SEE NOTE 1	9009185-00	JUMPER, WIRE, INSULATED, BLACK B	2	W1,W2
57	57		1300479-00	10.0 K .25 W 5.0 % CC	2	R52,R60
58	58		9107267-11	TUBING,THIN WALL,.034ID UL	A/R	

59 NOTE: NOTE 1: W1 (9009185-00) SHOULD NOT BE AUTOMATICALLY INSERTED.

D	I	G	I	T	A	L	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
							CONTROL INTERFACE	K	PL	M7686-YA-DBP	K
							SECTION A OF A				



NOTES:

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	

ETCH REV. CP2

P.C. DESIGN DATA BASE REV. CL2

SCALE 2/1

SHT. 1 OF 3

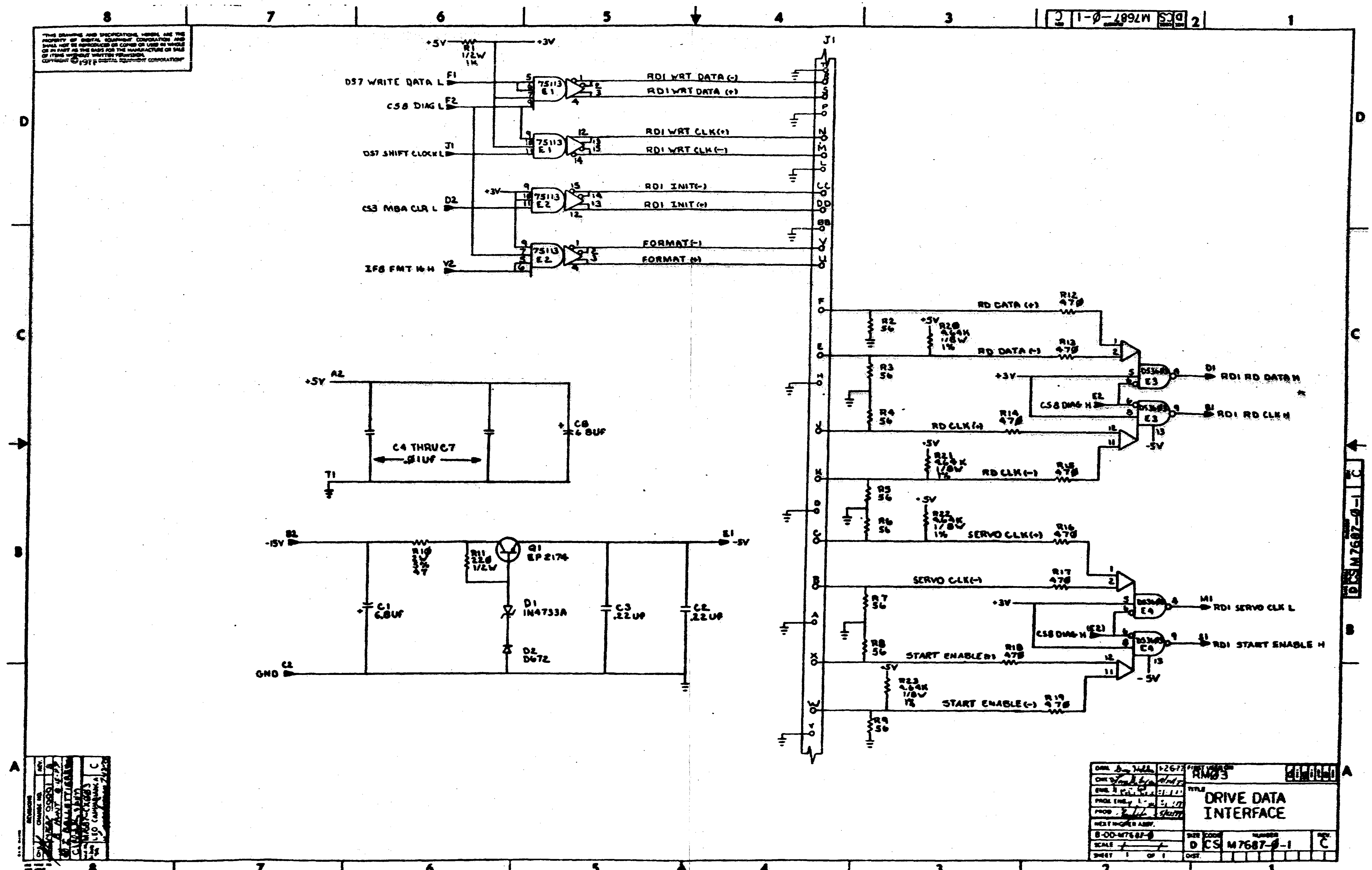
NEXT HIGHER ASSY. B GD-M7687-0

digital

TITLE DRIVE DATA INTERFACE

SIZE	CODE	NUMBER	REV
D	UA	M7687-0-0	C

MS# 214FA



DS7 WRITE DATA L
CS8 DIAG L
DS7 SHIFT CLOCK L
CS3 MBA CLR L
IF8 FMT 16 H
RDI WRT DATA (-)
RDI WRT DATA (+)
RDI WRT CLK (+)
RDI WRT CLK (-)
RDI INIT (-)
RDI INIT (+)
FORMAT (-)
FORMAT (+)
RD DATA (+)
RD DATA (-)
RD CLK (+)
RD CLK (-)
SERVO CLK (+)
SERVO CLK (-)
START ENABLE (+)
START ENABLE (-)
RDI RD DATA H
RDI RD CLK H
RDI SERVO CLK L
RDI START ENABLE H
C4 THRU C7 .01UF
RM03
DRIVE DATA INTERFACE
D CS M7687-0-1 C

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY JVV
DATE 12/16/76
CHECKED Lou Metzger
DATE 2/2/77
SECTION 1
ENG Irene Billettere
DATE 5/11/77
PROD
DATE 5/11/77
ISSUED SECTION 1

NOTES:
USED ON: OPTION / MODEL
RM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
	D-MD-5012487-0-0		DRILL & ETCH DRAWING	REF	
	D-UA-M7687-0-0		UNIT ASSY.	REF	
	B-DD-M7687-0		DWG. DIRECTORY	REF	
	D-CS-M7687-0-1		CIRCUIT SCHEMATIC	REF	
1		5012487	ETCHED DIRCUIT BOARD	1	
2		10-05306-00	CAP, 6.8 UF 10% 35V	2	C8,C1
3		10-10274-00	CAP, 0.22 UF 50V	2	C2,C3
4		10-01610-01	CAP, .01 UF 100V DISC	4	C4,C5,C6,C7
~~5~~		~~10-00002-00~~	~~CAP, 68UF 15V 10%~~	~~1~~	C1
6		11-05275-00	DIODE, D672	1	D2
7		11-09943-00	DIODE, IN4733A	1	D1
8		13-00274-00	RES, 220 ½W 5%	1	R11
9		13-00364-00	RES, 1K ½W 5%	1	R1
10		13-14023-00	RES, 47 2W 5%	1	R10
11		13-00316-00	RES, 470 ¼W 5%	8	R12 thru R19
12		13-02602-00	RES, 56 ¼W 5%	8	R2 thru R9
13		13-01802-00	RES 4.64K 1/8K 1% MF	4	R20 thru R23
14		15-12589-00	TRANS, PNP, 40W, 60V, 3A	1	Q1
15		19-11341-00	I.C. DEC 75113	2	E1,E2
16		19-14091-00	I.C. DS3603	2	E3,E4
17		90-06010-04	SCREW BHM#4-40 x 5-16 LG	1	

E.C.O. NO. CX0001 M7687-C CX0003

TITLE: DRIVE DATA INTERFACE

ASSY NO. D-UA M7687-0-0
SHEET 1 OF 2

SIZE B | CODE PL | NUMBER M7687-0-0 | REV. C
INSERTION PARTS LIST DATA BASE REV

EN-01140A-16-R270(3250) DRB 125

DIGITAL EQUIPMENT CORPORATION

PARTS LIST

MADE BY JVV DATE 12-16-76
CHECKED D Brennan DATE 15 APR 77
SECTION 1
ENG DATE Glenn Pelletier 5/11/77
PROD DATE 5/12/77
ISSUED SECTION 1

NOTES: USED ON / OPTION / MODEL RM03

ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	QUANTITY / VARIATION	REF DESIGNATION
18		90-06557-00	KEPNUT #4-40	1	
19		90-06732-00	EYELET	2	
20		90-08337-06	HANDLE, FLIP CHIP - MAGENTA	1	
21		12-09941-09	CONNECTOR 26 PIN	1	J1
22		90-08268-00	THERMAL COMPOUND	AR	
~~23~~		~~90-06004-00~~	~~SCREW BHM #2-56 x 7/16 LG~~	~~2~~	
~~24~~		~~90-06555-00~~	~~NUT, HEX~~	~~2~~	
~~25~~		~~90-06631-00~~	~~WASHER, INTLK #2~~	~~2~~	
26		12-09941-03	LATCH, LEFT	1	
27		12-09941-04	LATCH, RIGHT	1	

E.C.O. NO.

EN-01140A-16-R2761325A DRB L25

TITLE: DRIVE DATA INTERFACE

ASSY NO. D-UA-M7687-0-0
SHEET 2 OF 2

SIZE B | CODE PL | NUMBER M7687-0-0 | REV. C

INSERTION PARTS LIST DATA BASE REV

REWORK INSTRUCTIONS

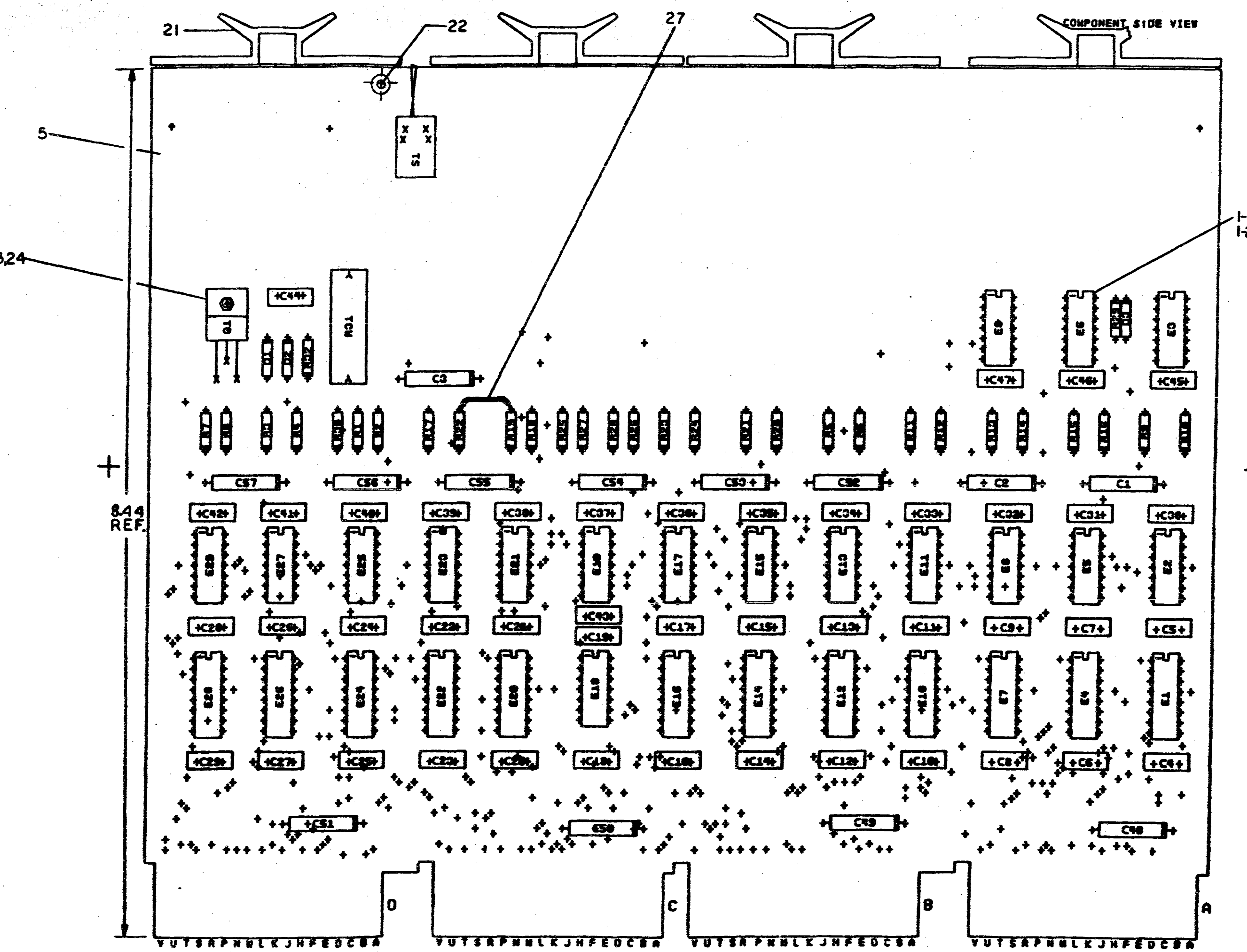
ECO # 1

COMPONENT DELETE SIDE 1:

1-1 DELETE E6 (P/N 1905686-00)

COMPONENT ADD SIDE 1:

1-2 ADD E6 (P/N 1911324-00)



NOTES:

CHG	CHANGE NO.	REV
	M5922-MILOO	D
	M5922-CR03	E

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE 2:1	
SHT. OF 3	
NEXT HIGHER ASSY.	

ETCH REV. D

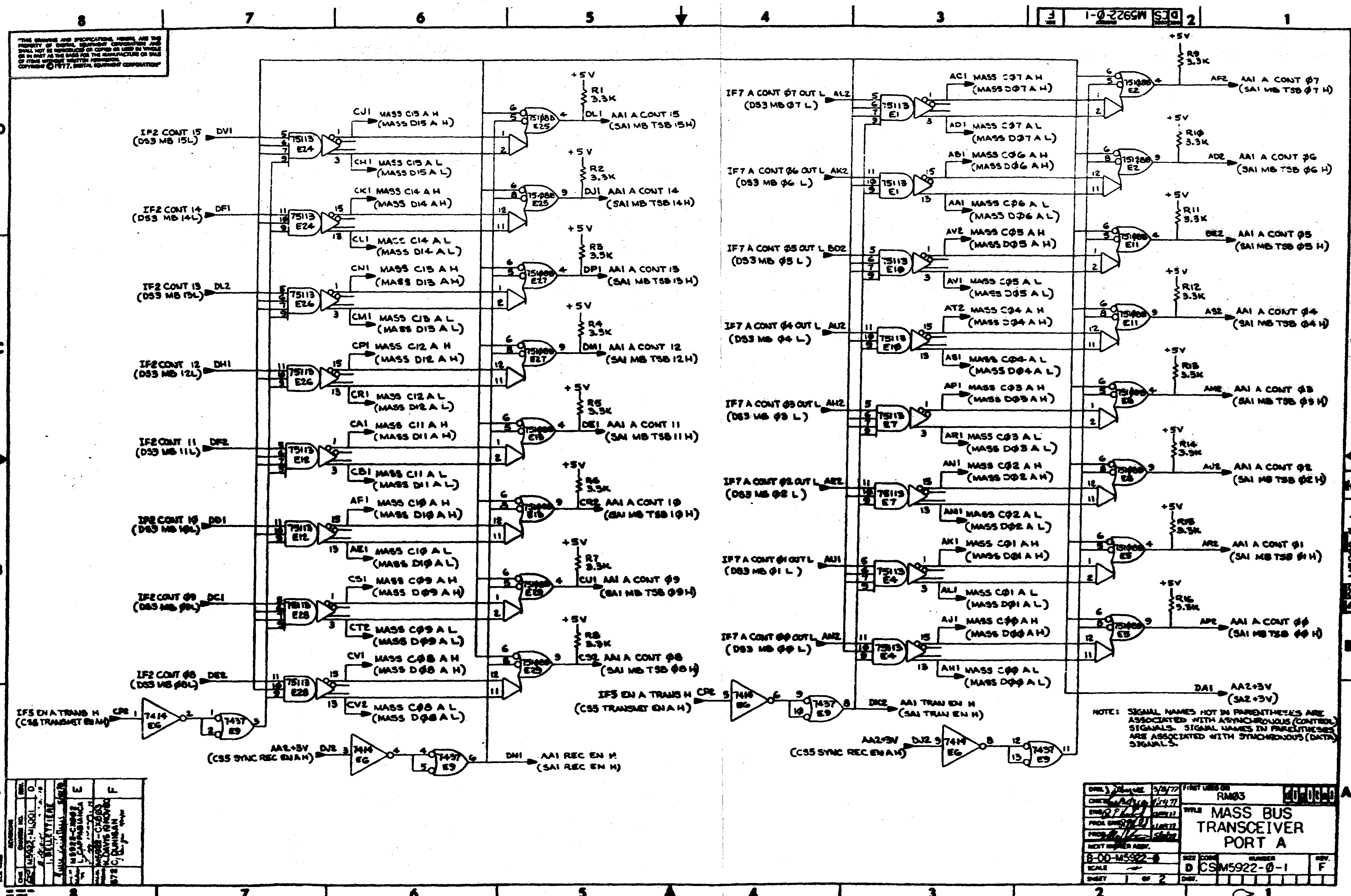
P.C. DESIGN DATA BASE REV. DL

digital

TITLE MASS BUS TRANSCEIVER PORT A

SIZE	CODE	NUMBER	REV
B	UA	M5922-0-0	E

CZ 1 MS# 104518



IF2 CONT 15 (DS3 MB 15L)
MASS CI5 A H (MASS DI5 A H)
MASS CI5 A L (MASS DI5 A L)
AA1 A CONT 15 (SA1 MB TSB 15H)
IF2 CONT 14 (DS3 MB 14L)
AA1 A CONT 14 (SA1 MB TSB 14H)
IF2 CONT 13 (DS3 MB 13L)
AA1 A CONT 13 (SA1 MB TSB 13 H)
IF2 CONT 12 (DS3 MB 12L)
AA1 A CONT 12 (SA1 MB TSB 12 H)
IF2 CONT 11 (DS3 MB 11L)
AA1 A CONT 11 (SA1 MB TSB 11 H)
IF2 CONT 10 (DS3 MB 10L)
AA1 A CONT 10 (SA1 MB TSB 10 H)
IF2 CONT Ø9 (DS3 MB Ø9L)
AA1 A CONT Ø9 (SA1 MB TSB Ø9H)
IF2 CONT Ø8 (DS3 MB Ø8L)
AA1 A CONT Ø8 (SA1 MB TSB Ø8H)
IF5 EN A TRANS H (CS5 TRANSMIT EN A H)
AA2+5V (CS5 SYNC REC EN A H)
AA1 REC EN H (SA1 REC EN H)
IF7 A CONT Ø7 OUT L (DS3 MB Ø7 L)
AA1 A CONT Ø7 (SA1 MB TSB Ø7 H)
IF7 A CONT Ø6 OUT L (DS3 MB Ø6 L)
AA1 A CONT Ø6 (SA1 MB TSB Ø6 H)
IF7 A CONT Ø5 OUT L (DS3 MB Ø5 L)
AA1 A CONT Ø5 (SA1 MB TSB Ø5 H)
IF7 A CONT Ø4 OUT L (DS3 MB Ø4 L)
AA1 A CONT Ø4 (SA1 MB TSB Ø4 H)
IF7 A CONT Ø3 OUT L (DS3 MB Ø3 L)
AA1 A CONT Ø3 (SA1 MB TSB Ø3 H)
IF7 A CONT Ø2 OUT L (DS3 MB Ø2 L)
AA1 A CONT Ø2 (SA1 MB TSB Ø2 H)
IF7 A CONT Ø1 OUT L (DS3 MB Ø1 L)
AA1 A CONT Ø1 (SA1 MB TSB Ø1 H)
IF7 A CONT ØØ OUT L (DS3 MB ØØ L)
AA1 A CONT ØØ (SA1 MB TSB ØØ H)
AA2+5V (SA2+5V)
AA1 TRAN EN H (SA1 TRAN EN H)
NOTE: SIGNAL NAMES NOT IN PARENTHESES ARE ASSOCIATED WITH ASYNCHRONOUS (CONTROL) SIGNALS. SIGNAL NAMES IN PARENTHESES ARE ASSOCIATED WITH SYNCHRONOUS (DATA) SIGNALS.
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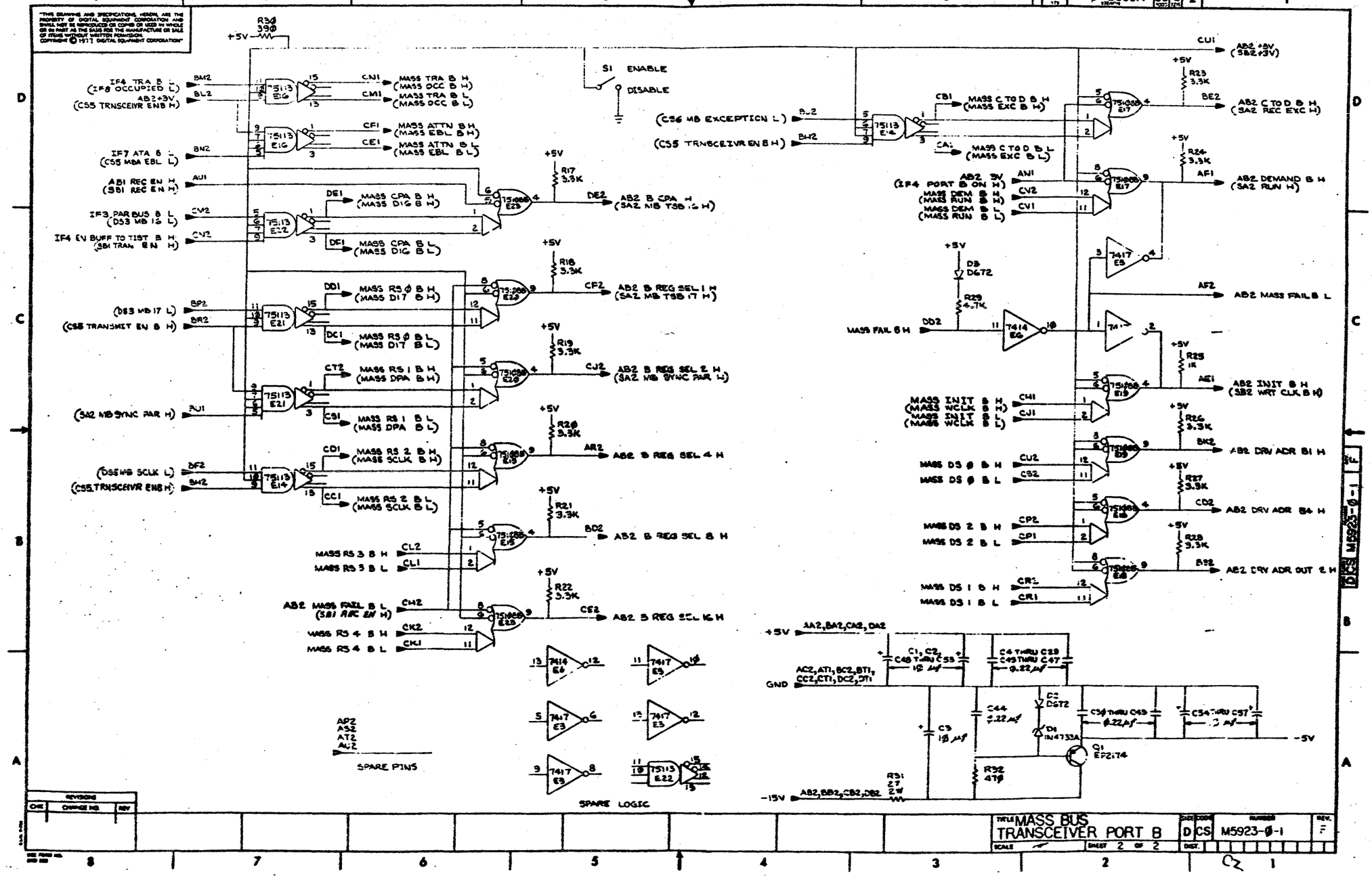
FIRST USED ON RM03
digital
TITLE MASS BUS TRANSCEIVER PORT A
B-DD-M5922-Ø
SIZE D
CS M5922-Ø-1
REV. F
SHEET 1 OF 2



REVISIONS		
CHK	CHANGE NO.	REV

TITLE MASS BUS TRANSCEIVER PORT B		DIGITAL DCS	NUMBER M5923-Ø-1	REV. F
SCALE	SHEET 2 OF 2	DIST.		

M5923-Ø-1 DCS

AUTOMATED BY PRTLST,20(16) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-CS-M5923-0-1		CIRCUIT SCHEMATIC	REF	
2	2	D-UA-M5923-0-0		UNIT ASSEMBLY	REF	
3	3	B-DD-M5923-0-0		DWG DIRECTORY	REF	
4	4	D-MD-5012533-0-0		DRILL AND ETCH DRAWING	REF	
5	5		5012533-00	M5923	1	
6	6		1017472-00	10 MFD 35V +50-10% AL EL	13	C1,C2,C3,C48-C57
7	7		1010274-00	.22 MFD 50V +80-20% Z5U CER	44	C4-C47
8	8		1105275-00	D 672 TR= 15NS PIV= 60V SI	2	D2,D3
9	9		1109943-00	1N 4733A VZ= 5.1 5% 1W Y	1	D1
10	10		1300316-00	470.0 .25 W 5.0 % CC	1	R32
11	11		1300439-00	3.30 K .25 W 5.0 % CC	27	R1-R24,R26,R27,R28
12	12		1300447-00	4.70 K .25 W 5.0 % CC	1	R29
13	13		1305624-00	27.0 2.0 W10.0 % CC	1	R31
14	14		1300309-00	390.0 .25 W 5.0 % CC	1	R30
15	15		1512589-00	PNP 40W SI 60 25	1	Q1
16	16		1911324-00	7414 INVERTER,HEX 1IN SCH	1	E6
17	17		1909929-00	7417 BUFFER GATE-HEX 1INP	1	E3
18	18		1910091-00	DEC 7437 AND GATE-QUAD 2IN,BU	1	E9
19	19		1910725-00	75108B RECEIVER,LINE,DUAL,	14	E2,E5,E8,E11,E13,E15,E17,E18,
					CONT	E19,E20,E23,E25,E27,E29
20	20		1911341-00	75113 DRIVER,LINE,DUAL,MA	12	E1,E4,E7,E10,E12,E14,E16,E21,
					CONT	E22,E24,E26,E28
21	21		9008337-06	HANDLE, FLIP CHIP, MAGENTA	4	
22	22		9006732-00	EYELET, ROLLED FLANGE, .121 OD X	8	
23	23		9006010-01	SCREW,PAN,PHIL 4-40X 5/16 SS	1	
24	24		9006557-00	NUT,KEP , 4-40X 1/4 AF	1	
25	25		9008268-00	COMPOUND, THERMAL JOINT	A/R	
26	26		1210209-00	SW,TOG,SPDT,.01A@6V,ON/ON,SUBMIN	1	S1
27	27		1300365-00	1.0 K .25 W 5.0 % CC	1	R25

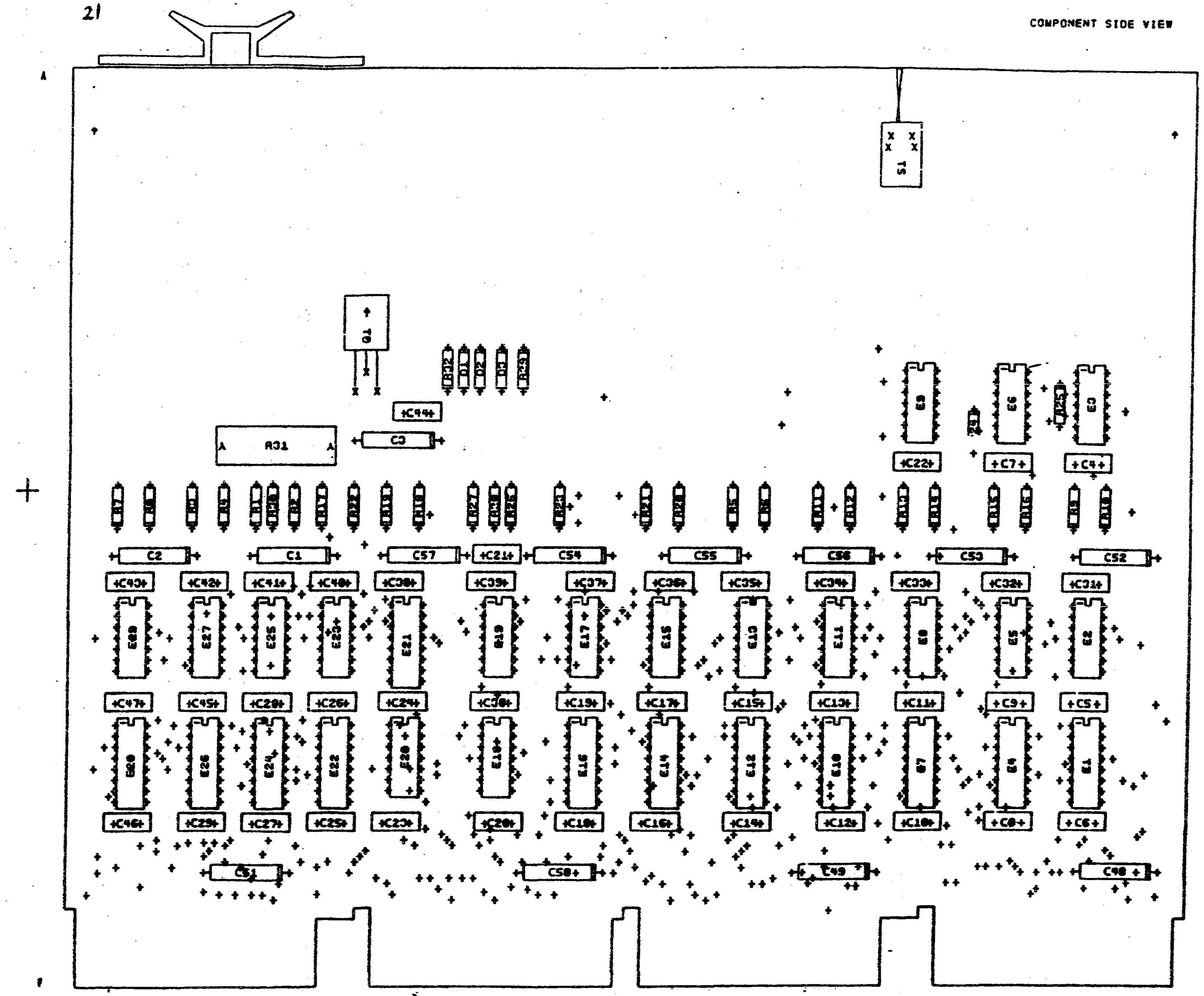
REVISION HISTORY			BASIC PART NO: M5923											
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: R SULLIVAN	DATE: 13-JUL-78		D	I	G	I	T	A	L
	INIT	D	SECTION.VARIATION INDEX	CHK'D: CB	DATE: 13-JUL-78	TITLE	PARTS LIST						
ER	00001	D	[A] 00			MASSBUS TRANCEIVER PORT B							
LC	M5923-CX002	E	[B]	DES.ENG: RE	DATE: 13-JUL-78								
CD	M5923-CX003	F	[C]			DOCUMENT NUMBER							
	W.M. 25 Nov 80		[D]	RESP.ENG.: R E	DATE: 13-JUL-78	SIZE	CODE	NUMBER		REV			
			[E]										
			[F]	MFG.ENG.: MH	DATE: 13-JUL-78	K	PL	M5923-0-DBP		F			
			[H]										
			[J]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME:		EDIT #					
			[K]	D-UA-M5923-0-0	RM03	Z0847F.PLS		6					
			[L]										
			[M]										
			[N]										

COMPONENT SIDE VIEW

21

23,24,25

I-1
I-2



REWORK INSTRUCTIONS

COMPONENT DELETE SIDE I:

I-1 DELETE E6 (P/N 1909686-00)

COMPONENT ADD SIDE I:

I-2 ADD E6 (P/N 1911324-00)

NOTES:

CHK	CHANGE NO	REV

ETCH REV.

P.C. DESIGN DATA BASE REV.

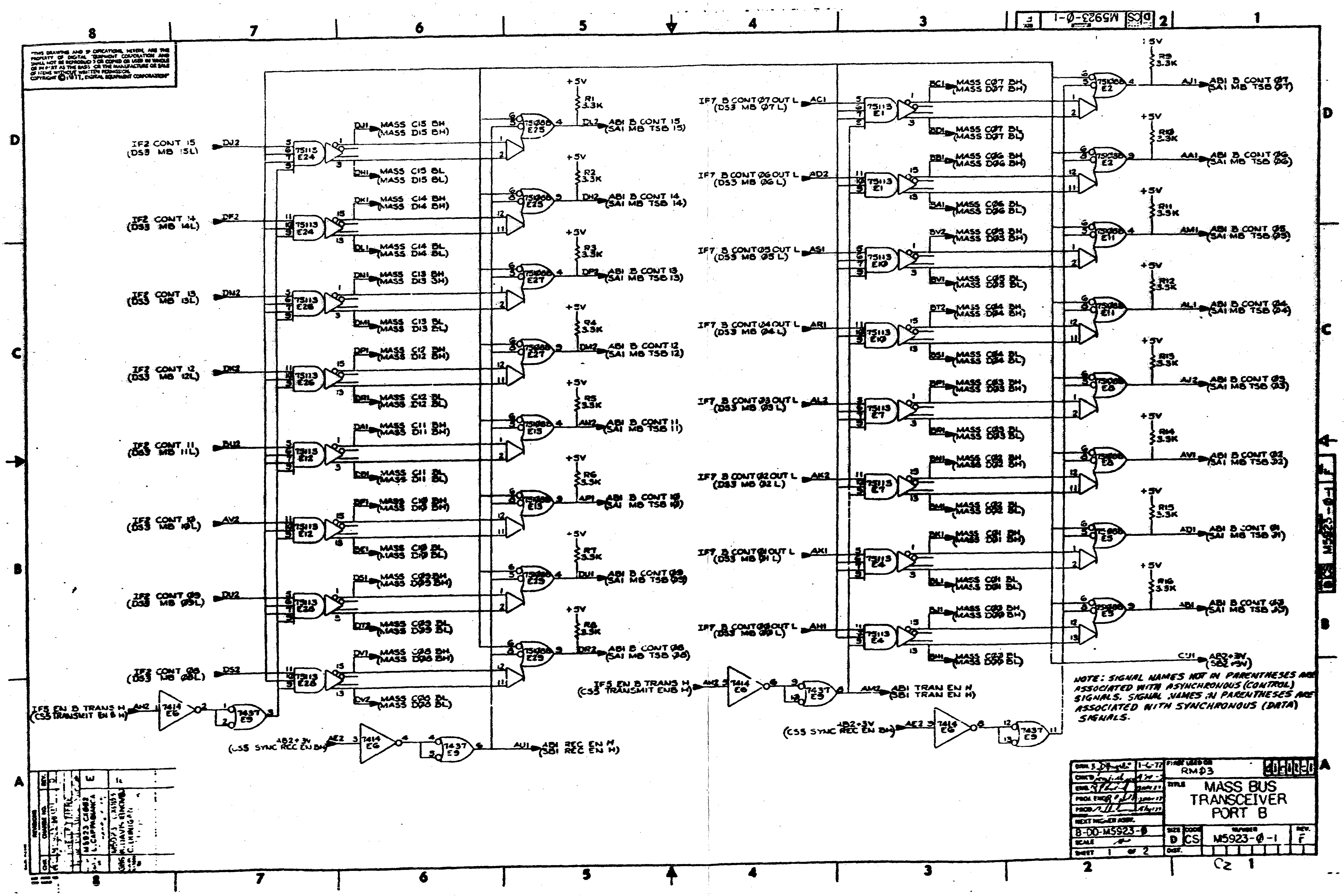
SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ.ENG.	
PROD.	
SCALE	
SHT. 1 OF 3	
NEXT HIGHER ASSY.	

digital

TITLE MASS BUS TRANSCEIVER PORT B

SIZE	CODE	NUMBER	REV
D	US	M5923-0-1	E

1 MS#


MASS BUS TRANSCEIVER PORT B
RMØ3
M5923-Ø-1
B-DD-M5923-Ø
NOTE: SIGNAL NAMES NOT IN PARENTHESES ARE ASSOCIATED WITH ASYNCHRONOUS (CONTROL) SIGNALS. SIGNAL NAMES IN PARENTHESES ARE ASSOCIATED WITH SYNCHRONOUS (DATA) SIGNALS.
IF2 CONT 15 (DS3 MB 15L)
IF2 CONT 14 (DS3 MB 14L)
IF2 CONT 13 (DS3 MB 13L)
IF2 CONT 12 (DS3 MB 12L)
IF2 CONT 11 (DS3 MB 11L)
IF2 CONT 10 (DS3 MB 10L)
IF2 CONT Ø9 (DS3 MB Ø9L)
IF2 CONT Ø8 (DS3 MB Ø8L)
IF5 EN B TRANS H (CS5 TRANSMIT EN B H)
(CS5 SYNC REC EN BH)
ABI REC EN H (SBI REC EN H)
ABI TRAN EN H (SBI TRAN EN H)
IF7 B CONT Ø7 OUT L (DS3 MB Ø7 L)
IF7 B CONT Ø6 OUT L (DS3 MB Ø6 L)
IF7 B CONT Ø5 OUT L (DS3 MB Ø5 L)
IF7 B CONT Ø4 OUT L (DS3 MB Ø4 L)
IF7 B CONT Ø3 OUT L (DS3 MB Ø3 L)
IF7 B CONT Ø2 OUT L (DS3 MB Ø2 L)
IF7 B CONT Ø1 OUT L (DS3 MB Ø1 L)
IF7 B CONT ØØ OUT L (DS3 MB ØØ L)
ABI B CONT 15 (SAI MB TSB 15)
ABI B CONT 14 (SAI MB TSB 14)
ABI B CONT 13 (SAI MB TSB 13)
ABI B CONT 12 (SAI MB TSB 12)
ABI B CONT 11 (SAI MB TSB 11)
ABI B CONT 10 (SAI MB TSB 10)
ABI B CONT Ø9 (SAI MB TSB Ø9)
ABI B CONT Ø8 (SAI MB TSB Ø8)
ABI B CONT Ø7 (SAI MB TSB Ø7)
ABI B CONT Ø6 (SAI MB TSB Ø6)
ABI B CONT Ø5 (SAI MB TSB Ø5)
ABI B CONT Ø4 (SAI MB TSB Ø4)
ABI B CONT Ø3 (SAI MB TSB Ø3)
ABI B CONT Ø2 (SAI MB TSB Ø2)
ABI B CONT Ø1 (SAI MB TSB Ø1)
ABI B CONT ØØ (SAI MB TSB ØØ)
+5V
3.3K
75113
75136
7414
7437

REWORK INSTRUCTIONS
COMPONENT DELETE SIDE 1:
1-1 DELETE E6 (P/N 1909686-00)
COMPONENT ADD SIDE 1:
1-2 ADD E6 (P/N 1911324-00)

21

23,24,25

COMPONENT SIDE VIEW

1-1
1-2

NOTES:

CHG	CHANGE NO	REV

ETCH REV.
P.C. DESIGN DATA BASE REV.

SIGNATURES	DATE
ORIG.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE	
SHT. 1 OF 3	
NEXT HIGHER ASSY.	

digital

TITLE MASS BUS TRANSCEIVER PORT B

SIZE D | CODE | NUMBER M5923-0? | REV F

MS#

IF2 CONT 15 (DS3 MB 15L)
IF2 CONT 14 (DS3 MB 14L)
IF2 CONT 13 (DS3 MB 13L)
IF2 CONT 12 (DS3 MB 12L)
IF2 CONT 11 (DS3 MB 11L)
IF2 CONT 10 (DS3 MB 10L)
IF2 CONT 09 (DS3 MB 09L)
IF2 CONT 08 (DS3 MB 08L)
IF5 EN B TRANS H (CS5 TRANSMIT ENB H)

MASS C15 BH (MASS D15 BH)
MASS C15 BL (MASS D15 BL)
MASS C14 BH (MASS D14 BH)
MASS C14 BL (MASS D14 BL)
MASS C13 BH (MASS D13 BH)
MASS C13 BL (MASS D13 BL)
MASS C12 BH (MASS D12 BH)
MASS C12 BL (MASS D12 BL)
MASS C11 BH (MASS D11 BH)
MASS C11 BL (MASS D11 BL)
MASS C10 BH (MASS D10 BH)
MASS C10 BL (MASS D10 BL)
MASS C09 BH (MASS D09 BH)
MASS C09 BL (MASS D09 BL)
MASS C08 BH (MASS D08 BH)
MASS C08 BL (MASS D08 BL)

+5V R1 3.3K — ABI B CONT 15 (SAI MB TSB 15)
+5V R2 3.3K — ABI B CONT 14 (SAI MB TSB 14)
+5V R3 3.3K — ABI B CONT 13 (SAI MB TSB 13)
+5V R4 3.3K — ABI B CONT 12 (SAI MB TSB 12)
+5V R5 3.3K — ABI B CONT 11 (SAI MB TSB 11)
+5V R6 3.3K — ABI B CONT 10 (SAI MB TSB 10)
+5V R7 3.3K — ABI B CONT 09 (SAI MB TSB 09)
+5V R8 3.3K — ABI B CONT 08 (SAI MB TSB 08)

ABI REC EN H (SBI REC EN H)

IF7 B CONT 07 OUT L (DS3 MB 07 L)
IF7 B CONT 06 OUT L (DS3 MB 06 L)
IF7 B CONT 05 OUT L (DS3 MB 05 L)
IF7 B CONT 04 OUT L (DS3 MB 04 L)
IF7 B CONT 03 OUT L (DS3 MB 03 L)
IF7 B CONT 02 OUT L (DS3 MB 02 L)
IF7 B CONT 01 OUT L (DS3 MB 01 L)
IF7 B CONT 00 OUT L (DS3 MB 00 L)
IF5 EN B TRANS H (CS5 TRANSMIT ENB H)

MASS C07 BH (MASS D07 BH)
MASS C07 BL (MASS D07 BL)
MASS C06 BH (MASS D06 BH)
MASS C06 BL (MASS D06 BL)
MASS C05 BH (MASS D05 BH)
MASS C05 BL (MASS D05 BL)
MASS C04 BH (MASS D04 BH)
MASS C04 BL (MASS D04 BL)
MASS C03 BH (MASS D03 BH)
MASS C03 BL (MASS D03 BL)
MASS C02 BH (MASS D02 BH)
MASS C02 BL (MASS D02 BL)
MASS C01 BH (MASS D01 BH)
MASS C01 BL (MASS D01 BL)
MASS C00 BH (MASS D00 BH)
MASS C00 BL (MASS D00 BL)

+5V R9 3.3K — ABI B CONT 07 (SAI MB TSB 07)
+5V R9 3.3K — ABI B CONT 06 (SAI MB TSB 06)
+5V R11 3.3K — ABI B CONT 05 (SAI MB TSB 05)
+5V R12 3.3K — ABI B CONT 04 (SAI MB TSB 04)
+5V R13 3.3K — ABI B CONT 03 (SAI MB TSB 03)
+5V R14 3.3K — ABI B CONT 02 (SAI MB TSB 02)
+5V R15 3.3K — ABI B CONT 01 (SAI MB TSB 01)
+5V R16 3.3K — ABI B CONT 00 (SAI MB TSB 00)

ABI TRAN EN H (SBI TRAN EN H)
ABI REC EN H (SBI REC EN H)

NOTE: SIGNAL NAMES NOT IN PARENTHESES ARE ASSOCIATED WITH ASYNCHRONOUS (CONTROL) SIGNALS. SIGNAL NAMES IN PARENTHESES ARE ASSOCIATED WITH SYNCHRONOUS (DATA) SIGNALS.

DRWN	1-6-77	FIRST USED ON	RM03
TITLE	MASS BUS TRANSCEIVER PORT B		
SIZE	CODE	NUMBER	REV
D	CS	M5923-03-1	F
SHEET 1 OF 2			

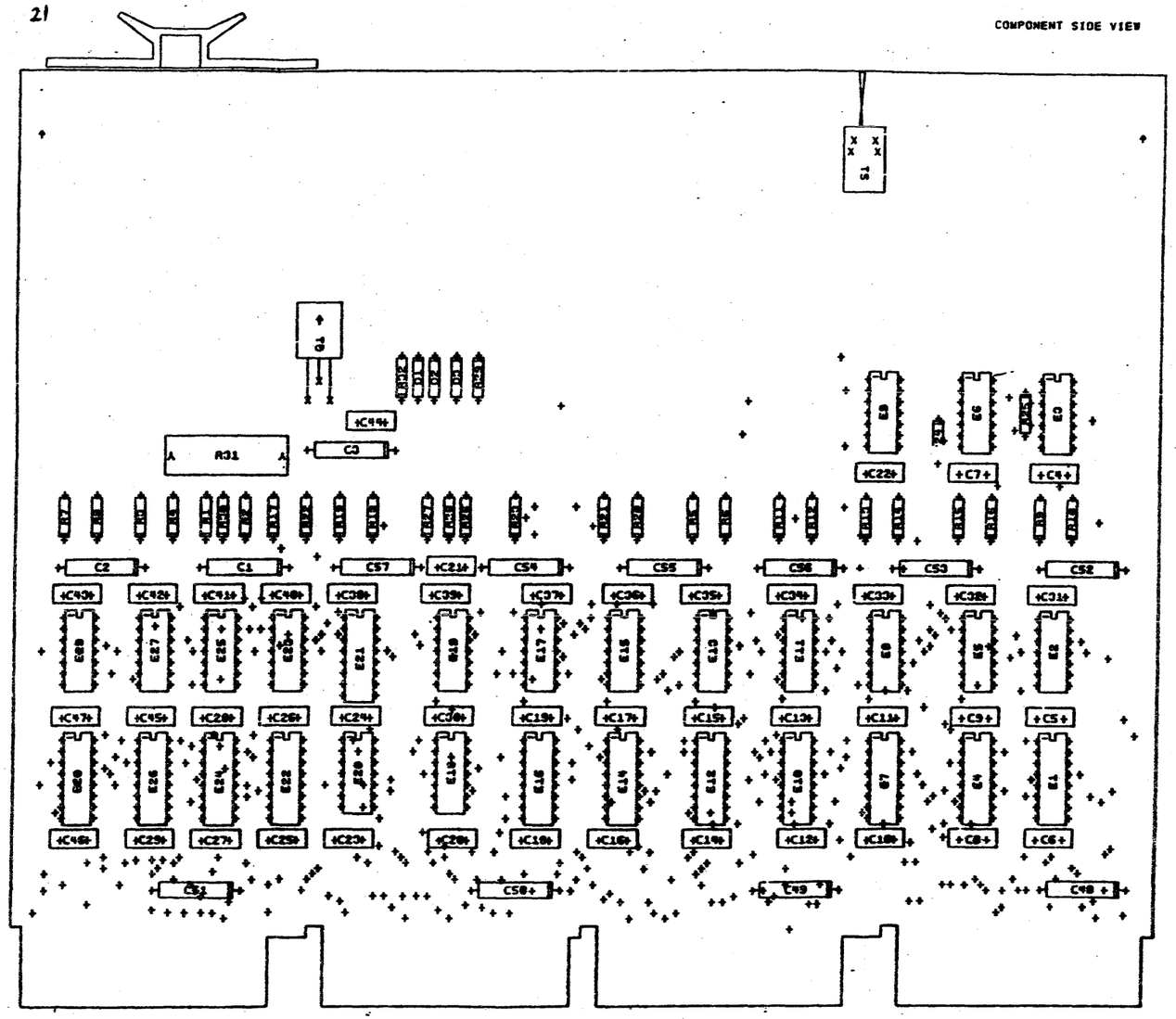
REWORK INSTRUCTIONS
COMPONENT DELETE SIDE 1:
1-1 DELETE E6 (P/N 1909686-00)
COMPONENT ADD SIDE 1:
1-2 ADD E6 (P/N 1911324-00)

21

23,24,25

COMPONENT SIDE VIEW

1-1
1-2



NOTES:

CHG	CHANGE NO.	REV

ECO# REV.
P.C. DESIGN DATA BASE REV.

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE	
SHT. 1 OF 3	
NEXT HIGHER ASSY.	

digital

TITLE MASS BUS TRANSCEIVER PORT B

SIZE	CODE	NUMBER	REV
D	119	M5923-0-1	E

1 MS#

IF2 CONT 15 (DS3 MB 15L)
IF2 CONT 14 (DS3 MB 14L)
IF2 CONT 13 (DS3 MB 13L)
IF2 CONT 12 (DS3 MB 12L)
IF2 CONT 11 (DS3 MB 11L)
IF2 CONT 10 (DS3 MB 10L)
IF2 CONT 09 (DS3 MB 09L)
IF2 CONT 08 (DS3 MB 08L)
IF5 EN B TRANS H (CS5 TRANSMIT ENB H)
(CS5 SYNC REC EN B H)

MASS C15 BH (MASS DI5 BH)
MASS C15 BL (MASS DI5 BL)
MASS C14 BH (MASS DI4 BH)
MASS C14 BL (MASS DI4 BL)
MASS C13 BH (MASS DI3 BH)
MASS C13 BL (MASS DI3 BL)
MASS C12 BH (MASS DI2 BH)
MASS C12 BL (MASS DI2 BL)
MASS C11 BH (MASS DI1 BH)
MASS C11 BL (MASS DI1 BL)
MASS C10 BH (MASS DI0 BH)
MASS C10 BL (MASS DI0 BL)
MASS C09 BH (MASS DO9 BH)
MASS C09 BL (MASS DO9 BL)
MASS C08 BH (MASS DO8 BH)
MASS C08 BL (MASS DO8 BL)

ADI B CONT 15 (SAI MB TSB 15)
ADI B CONT 14 (SAI MB TSB 14)
ADI B CONT 13 (SAI MB TSB 13)
ADI B CONT 12 (SAI MB TSB 12)
ADI B CONT 11 (SAI MB TSB 11)
ADI B CONT 10 (SAI MB TSB 10)
ADI B CONT 09 (SAI MB TSB 09)
ADI B CONT 08 (SAI MB TSB 08)
ADI REC EN H (SBI REC EN H)

IF7 B CONT 07 OUT L (DS3 MB 07 L)
IF7 B CONT 06 OUT L (DS3 MB 06 L)
IF7 B CONT 05 OUT L (DS3 MB 05 L)
IF7 B CONT 04 OUT L (DS3 MB 04 L)
IF7 B CONT 03 OUT L (DS3 MB 03 L)
IF7 B CONT 02 OUT L (DS3 MB 02 L)
IF7 B CONT 01 OUT L (DS3 MB 01 L)
IF7 B CONT 00 OUT L (DS3 MB 00 L)
IF5 EN B TRANS H (CS5 TRANSMIT ENB H)
(CS5 SYNC REC EN B H)

MASS C07 BH (MASS DO7 BH)
MASS C07 BL (MASS DO7 BL)
MASS C06 BH (MASS DO6 BH)
MASS C06 BL (MASS DO6 BL)
MASS C05 BH (MASS DO5 BH)
MASS C05 BL (MASS DO5 BL)
MASS C04 BH (MASS DO4 BH)
MASS C04 BL (MASS DO4 BL)
MASS C03 BH (MASS DO3 BH)
MASS C03 BL (MASS DO3 BL)
MASS C02 BH (MASS DO2 BH)
MASS C02 BL (MASS DO2 BL)
MASS C01 BH (MASS DO1 BH)
MASS C01 BL (MASS DO1 BL)
MASS C00 BH (MASS DO0 BH)
MASS C00 BL (MASS DO0 BL)

ADI TRAN EN H (SBI TRAN EN H)
AD2+3V (SB2 +3V)

ADI B CONT 07 (SAI MB TSB 07)
ADI B CONT 06 (SAI MB TSB 06)
ADI B CONT 05 (SAI MB TSB 05)
ADI B CONT 04 (SAI MB TSB 04)
ADI B CONT 03 (SAI MB TSB 03)
ADI B CONT 02 (SAI MB TSB 02)
ADI B CONT 01 (SAI MB TSB 01)
ADI B CONT 00 (SAI MB TSB 00)

NOTE: SIGNAL NAMES NOT IN PARENTHESES ARE ASSOCIATED WITH ASYNCHRONOUS (CONTROL) SIGNALS. SIGNAL NAMES IN PARENTHESES ARE ASSOCIATED WITH SYNCHRONOUS (DATA) SIGNALS.

FIRST USED ON	RM03	
TITLE	MASS BUS TRANSCEIVER PORT B	
NEXT HIGHER ASSY.	8-00-M5923-0	
SIZE	CODE	NUMBER / REV.
D	CS	M5923-0-1 / F
SCALE		
SHEET 1 OF 2		

R30 390 +5V

S1 ENABLE / DISABLE

IF3 TRA A L (IF8 OCCUPIED L) CE2
AA2 3V (C55 TRSCEIVR ENA H) DH2
75113 E16
BN1 MASS TRA A H (MASS OCC A H)
BM1 MASS TRA A L (MASS OCC A L)

BF1 MASS ATTN A H (MASS EBL A H)
BE1 MASS ATTN A L (MASS EBL A L)
IF7 ATA A L (C65 MBA EBL L) CH2

AA1 REC EN H (SA1 REC EN H) DN1
IF3 PAR BUS A L (D53 MB 16 L) DD2
IF3 EN BUFF TO TISTA H (SA1 TRAN EN H) CN2
75113 E22
CE1 MASS CPA A H (MASS DIG A H)
CF1 MASS CPA A L (MASS DIG A L)
+5V R17 3.3K
75108B E23
DB1 AA2 A CPA H (SA2 MB T3B 16 H)

CD1 MASS RSØ A H (MASS DI7 A H)
(D53 MB 17 L) DD2
(C55 TRANSMIT ENA H) DS1
75113 E20
CC1 MASS RSØ A L (MASS DI7 A L)
+5V R18 3.3K
75108B E24
BU1 AA2 A REG SEL 1 H (SA2 MB T3B 17 H)

BT2 MASS RS1 A H (MASS DPA A H)
(SA2 MB SYNC PAR H) DR1
75113 E20
BS1 MASS RS1 A L (MASS DPA A L)
+5V R19 3.3K
75108B E21
CH2 AA2 A REG SEL 2 H (SA2 MB SYNC PAR H)

BD1 MASS RS2 A H (MASS SCLK A H)
(D55 MB SCLK L) DV2
(C55 TRNSCEIVR ENA H) DU1
75113 E19
BC1 MASS RS2 A L (MASS SCLK A L)
+5V R2Ø 3.3K
75108B E25
CR2 AA2 A REG SEL 4 H

+5V R21 3.3K
75108B E18
CL2 AA2 A REG SEL 8 H
MASS RS3 A H BL2
MASS RS3 A L BL1

AA2 MASS FAIL A L (SA1 REC EN H) CJ2
+5V R22 3.3K
75108B E19
CK2 AA2 A REG SEL 16 H
MASS RS4 A H BK2
MASS RS4 A L BK1

7414 E6 7417 E3
7417 E3 7417 E3
7417 E3
75113 E22

DN1 DP2 DR2 DU2
SPARE PINS

SPARE LOGIC

DA1 AA2 +3V (SA2 +3V)

(C56 MB EXCEPTION L) DT2
(C55 TRNSCEIVR ENA H) DU1
75113 E14
BB1 MASS C TO D A H (MASS EXC A H)
BA1 MASS C TO D A L (MASS EXC A L)
+5V R23 3.3K
75108B E17
BH2 AA2 C TO D A H (SA2 REC EXC H)

AA2 + 3V IF3 PORT A ON H) DM2
MASS DEM A H (MASS RUN A H) BV2
MASS DEM A L (MASS RUN A L) BV1
+5V R24 3.3K
75108B E17
BF2 AA2 DEMAND A H (SA2 RUN H)

+5V D3 DG72 R29 4.7K
MASS FAIL A H CD2
7414 E6
7417 E3
DK1 AA2 MASS FAIL A L

MASS INIT A H (MASS WCLK A H) BH1
MASS INIT A L (MASS WCLK A L) BJ1
+5V R25 1K
75108B E16
BJ2 AA2 INIT A H (SA2 WRT CLK A H)

MASS DSØ A H BU2
MASS DSØ A L BS2
+5V R26 3.3K
75108B E15
BH2 AA2 DRV ADR A 1 H

MASS DS8 A H BP2
MASS DS8 A L BP1
+5V R27 3.3K
75108B E15
CU2 AA2 DRV ADR A 4 H

MASS DS1 A H BR2
MASS DS1 A L BR1
+5V R28 3.3K
75108B E15
BH2 AA2 DRV ADR A 2 H

+5V AA2, BA2, CA2, DA2
GND AC2, AT1, BC2, BT1, CC2, CT1, DC2, DT1
C1, C2, C48 THRU C58 10 µf
C6 THRU C29, C45 THRU C47 .22 µf
C44 .22 µf
C3 10 µf
D2 DG72
D1 1N4733A
C56 THRU C43 .22 µf
C54 THRU C57 10 µf
-5V
Q1 EP2IT4
R92 47Ø
-15V AB2, BB2
R34 27 2W

REVISIONS		
ORIG	CHANGE NO.	REV.

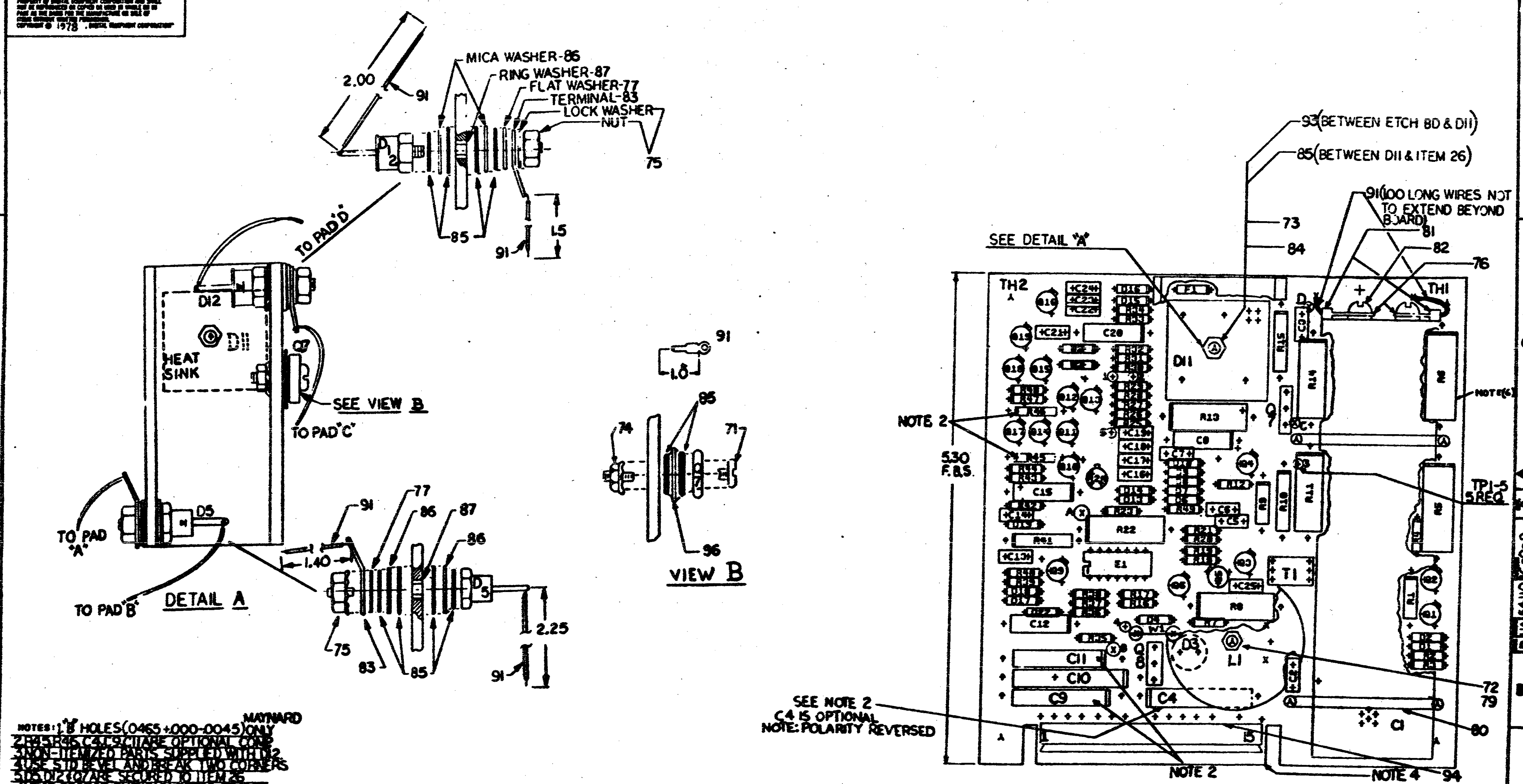
TITLE	SIZE/CODE	NUMBER	REV.
MASS BUS TRANSCEIVER PORT A	DCS	M5922-Ø-1	F
SCALE	SHEET 2 OF 2	DIST.	

C21

AUTOMATED BY PRTLST.2D(16) — P A R T S L I S T — SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-CS-M5922-0-1		CIRCUIT SCHEMATIC	REF	
2	2	D-UA-M5922-0-0		UNIT ASSEMBLY	REF	
3	3	B-DD-M5922-0-0		DWG. DIRECTORY	REF	
4	4	D-MD-5012462-0-0		DRILL & ETCH DWG.	REF	
5	5		5012462-00	M5922	1	
6	6		1017472-00	10 MFD 35V +50-10% AL EL	13	C1,C2,C3,C48-C57
7	7		1010274-00	.22 MFD 50V +80-20% Z5U CER	44	C4-C47
8	8		1105275-00	D 672 TR= 15NS PIV= 60V SI	2	D2,D3
9	9		1109943-00	1N 4733A VZ= 5.1 5% 1W Y	1	D1
10	10		1300316-00	470.0 .25 W 5.0 % CC	1	R32
11	11		1300439-00	3.30 K .25 W 5.0 % CC	27	R1-R24,R26,R27,R28
12	12		1300447-00	4.70 K .25 W 5.0 % CC	1	R29
13	13		1305624-00	27.0 2.0 W10.0 % CC	1	R31
14	14		1300309-00	390.0 .25 W 5.0 % CC	1	R30
15	15		1512589-00	PNP 40W SI 60 25	1	Q1
16	16		1911324-00	7414 INVERTER,HEX 1IN SCH	1	E6
17	17		1909929-00	7417 BUFFER GATE-HEX 1INP	1	E3
18	18		1910091-00	DEC 7437 AND GATE-QUAD 2IN,BU	1	E9
19	19		1910725-00	75108B RECEIVER,LINE,DUAL,	14	E2,E5,E8,E11,E13,E15,E17,E18, CONT E19,E21,E23,E25,E27,E29
20	20		1911341-00	75113 DRIVER,LINE,DUAL,MA	12	E1,E4,E7,E10,E12,E14,E16,E20, CONT E22,E24,E26,E28
21	21		9008337-06	HANDLE, FLIP CHIP, MAGENTA	4	
22	22		9006732-00	EYELET, ROLLED FLANGE, .121 OD X	8	
23	23		9006010-01	SCREW,PAN,PHIL 4-40X 5/16 SS	1	
24	24		9006557-00	NUT,KEP 4-40X 1/4 AF	1	
25	25		9008268-00	COMPOUND, THERMAL JOINT	A/R	
26	26		1210209-00	SW,TOG,SPDT,.01A@6V,ON/ON,SUBMIN	1	S1
27	27		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
28	28		1300365-00	1.0 K .25 W 5.0 % CC	1	R25

REVISION HISTORY			BASIC PART NO: M5922											
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: R. SULLIVAN	DATE: 17-JUL-78	D	I	G	I	T	A	L		
ER	00001	D	SECTION.VARIATION INDEX	CHK'D: C.BEVERLIE	DATE: 17-JUL-78	TITLE: PARTS LIST								
LC	M5922-CX002	E	[A] 00			MASS BUS TRANSCEIVER PORT A								
CD	M5922-CX003	F	[B]											
	c.m. 24 Nov 80		[C]	DES.ENG: RV	DATE: 17-JUL-78									
			[D]											
			[E]			DOCUMENT NUMBER								
			[F]	RESP.ENG.: RV	DATE: 17-JUL-78	SIZE	CODE	NUMBER					REV	
			[H]											
			[J]											
			[K]	MFG.ENG.: MR	DATE: 17-JUL-78	K	PL	M5922-0-DBP					F	
			[L]											
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME:							EDIT #	
			[N]	D-UA-M5922-0-0	RM03	Z0846F.PLS							6	



NOTES: 1. "B" HOLES (.0465 +.000 -.0045) ONLY MAYNARD
2. R45, R46, C4, C9, C11 ARE OPTIONAL COMP.
3. NON-ITEMIZED PARTS SUPPLIED WITH D12.
4. USE STD BEVEL AND BREAK TWO CORNERS
5. D5, D12 & Q7 ARE SECURED TO ITEM 26 (HEAT SINK) AS SHOWN IN DETAIL "A". THIS UNIT IS ATTACHED TO D11 USING ITEMS 85, 73, 84.
6. FOR YA ADD JUMPER ACROSS R6 PADS

REV.	CHANGE NO.	REVISIONS
A	RE-DRAWN ML9614	
B	7C 5411086 TW009	A. BARON

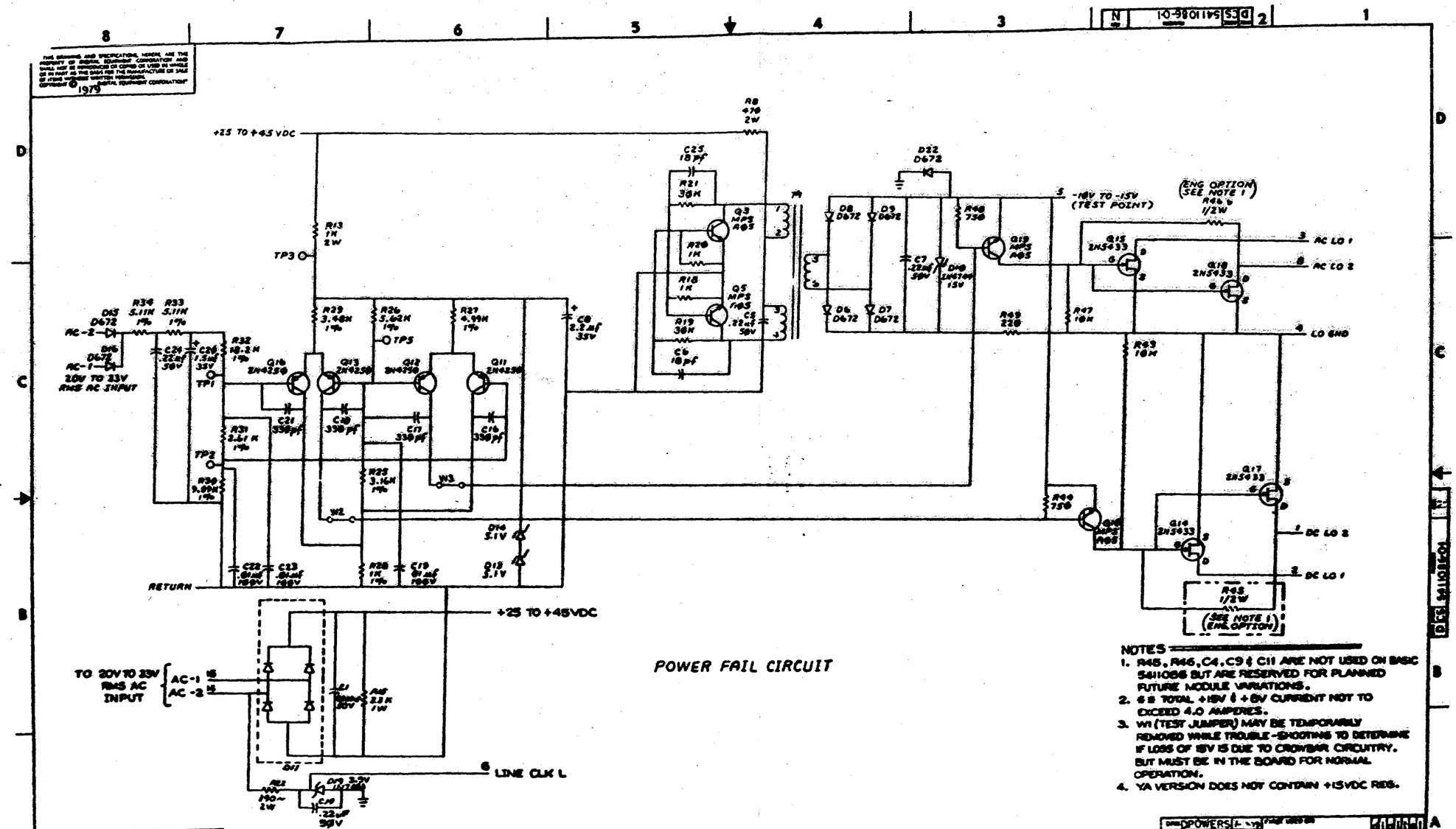
DRN STU EVANS	
CHK'D	
ENG.	2-6-78
PROJ. ENG.	2-6-78
PROD	2-6-78
NEXT HIGHER ASSY.	
SCALE 2/1	
SHEET 1 OF 2	

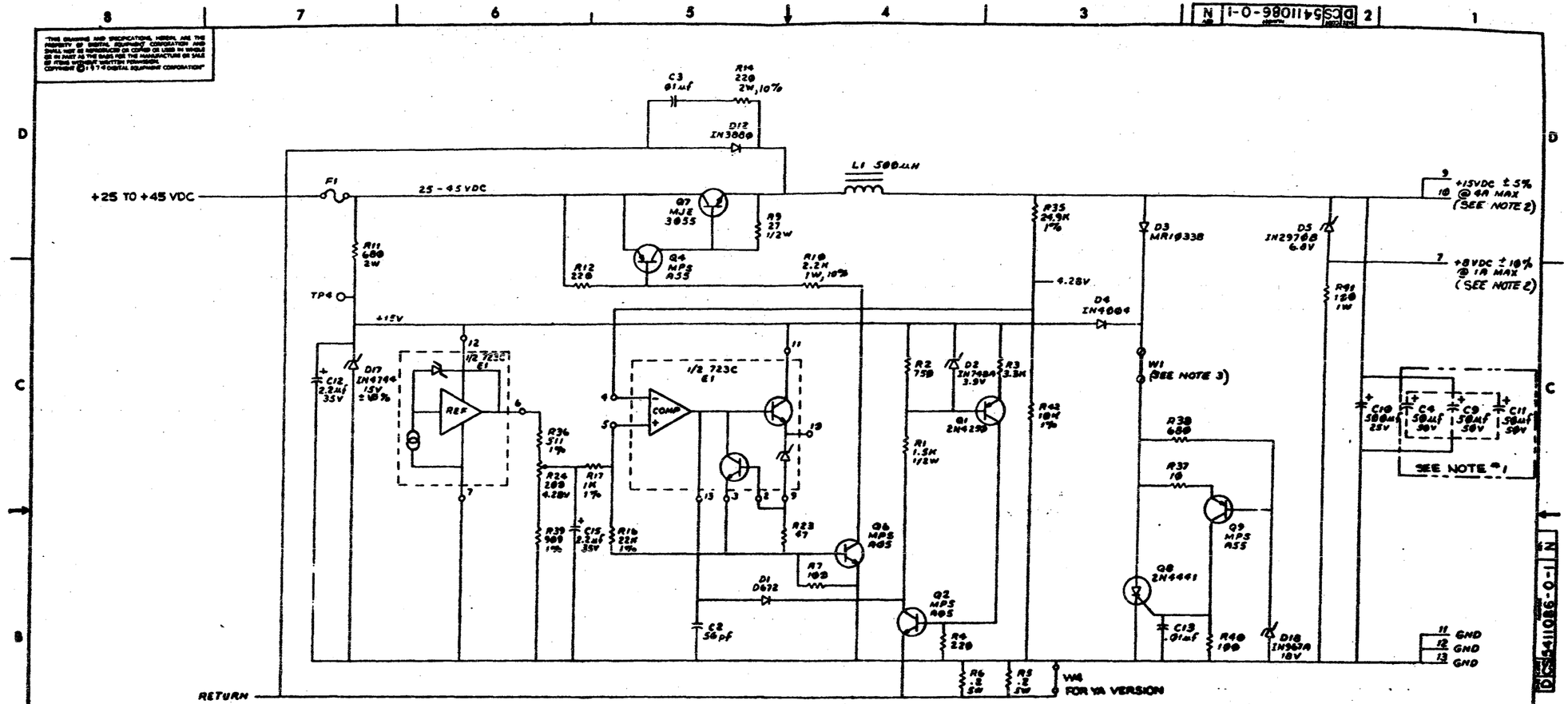
ETCH REV E-P3

TITLE: POWER LINE MON. +15V REGULATOR

SIZE	CODE	NUMBER	REV
D	UA	5411086-0-0	B

TW





15V REGULATOR
(SEE NOTE #4)

REVISIONS		
ONE	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
PWR. LINE MONITOR/15V REG.	D	CS	54111086-0-1	N
SCALE —	SHEET 2 OF 2			

TW

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	QTY PER VARIATION YA	REFERENCE DESIGNATOR
1	1	B-DD-5411086-0-0		DRAWING DIRECTORY	REF	REF	
2	2	D-UA-5411086-0-0		UNIT ASSEMBLY	REF	REF	
3	3	D-CS-5411086-0-1		CIRCUIT SCHEMATIC	REF	REF	
4	4		5011085-00	ETCH BRD 5411086	1	1	
5	5		1000012-00	56.0 MMF 100V 5%200PPM DM15S	1	0	C2
6	6		1000023-00	330.0 MMF 100V 5%200PPM DM15S	4	4	C16,C17,C18,C21
7	7		1001610-01	.01 MFD 100V -20+80 Z5U DISC	5	-	C3,C13,C19,C22,C23
			CONT		-	3	C19,C22,C23
8	8		1002431-00	2.2MFD 35V 10% 150S S.TA	3	-	C8,C12,C15
			CONT		-	1	C8
9	9		1002608-00	18.0 MMF 100V 5%200PPM DM15S	2	2	C6,C25
10	10		1009725-00	1.5MFD 35V 10% 150D S.TA	1	1	C20
11	11		1010274-01	.22 MFD 50V -20+80 Z5U CER	4	4	C5,C7,C14,C24
12	12		1010509-01	500 MFD 25V G% 6010 AL EL	1	0	C10
13	13		1010851-00	8400 MFD 50V G% 350 AL EL	1	1	C1
14	14		1100122-00	1N 748A VZ= 3.9 5%	2	-	D2,D19
			CONT		-	1	D19
15	15		1100134-00	1N 2970B VZ= 6.8 5% 10W M	1	0	D5
16	16		1103341-00	MR10330 PIV=300 I= 3A I44 SM	1	0	D3
17	17		1105275-00	D 672 TR= 15NS PIV= 60V SI	8	-	D1,D6,D7,D8,D9,D15,D16,D22
			CONT		-	7	D6,D7,D8,D9,D15,D16,D22
18	18		1105648-00	1N 4744 VZ= 15.0 10% 1W	2	-	D18,D17
			CONT		-	1	D18
19	19		1105796-00	1N 4004 PIV=400 I= 1A D041 SP	1	0	D4
20	20		1109440-00	1N 3880 PIV=100 I= 6A D04 SM	1	0	D12
21	21		1110068-00	1N 967A VZ= 18.0 10% .40W Y	1	0	D10
22	22		1110324-00	*** THIS ITEM IS NOT USED ***	-	-	
23	23		1110714-00	NS83514 PWR0400 I=20A (TRW)	1	1	D11
24	24		1105873-00	4N5=1AZ1 VZ= 5.1 1% .400W	2	2	D13,D14
25	25		1205747-00	FUSE, SUB-MINI, 5.000A, 125V, A	1	0	F1

REVISION HISTORY			BASIC PART NO: 5411086									
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: R PETERSON	DATE: 04-JAN-79		D	I	G	I	T	A	L
C.L	5411086-ML038	B	SECTION,VARIATION INDEX [A] 00,YA	CHK'D: J FERGUSON	DATE: 04-JAN-79	TITLE: PARTS LIST PWR, LINE MONITOR/15V REG,							
			[B]	DES,ENG: V BOAEN	DATE: 04-JAN-79								
			[C]										
			[D]										
			[E]			DOCUMENT NUMBER							
			[F]	RESP,ENG: V BOAEN	DATE: 04-JAN-79	SIZE	CODE	NUMBER				REV	
			[H]										
			[J]										
			[K]	MFG,ENG: R PETERSON	DATE: 04-JAN-79	K	PL	5411086-0-0SP				B	
			[L]										
			[M]	ASSEMBLY NUMBER: D-UA-5411086-0-0	TOP DOCUMENT NUMBER:			FILE NAME: Z02J38.PLS				EDIT #: 13	
			[N]										

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	YA	REFERENCE DESIGNATOR
			1211986-00	HEAT SINK FOR H742	1	0	
26	26		1300202-00	47.0 .25 W 5.0 % CC	1	0	R23
27	27		1300229-00	100.0 .25 W 5.0 % CC	2	0	R7,R40
28	28		1300232-00	100.0 1.0 W 5.0 % CC	1	0	R41
29	29		1300271-00	220.0 .25 W 5.0 % CC	3	-	R4,R12,R49
30	30		CONT		-	1	R49
31	31		1300278-00	220.0 2.0 W10.0 % CC	1	0	R14
32	32		1300348-00	680.0 2.0 W 5.0 % CC	1	0	R11
33	33		1300365-00	1.0 K .25 W 5.0 % CC	2	2	R18,R20
34	34		1300394-00	1.50 K .50 W 5.0 % CC	1	0	R1
35	35		1300420-00	2.20 K 1.0 W10.0 % CC	1	0	R10
36	36		1300437-00	3.30 K 1.0 W10.0 % CC	1	1	R15
37	37		1300439-00	3.30 K .25 W 5.0 % CC	1	0	R3
38	38		1300479-00	10.0 K .25 W 5.0 % CC	2	2	R43,R47
39	39		1301317-00	10.0 .25 W 5.0 % CC	1	0	R37
40	40		1301401-00	750.0 .25 W 5.0 % CC	3	-	R2,R44,R48
			CONT		-	2	R44,R48
41	41		1301424-00	680.0 .25 W 5.0 % CC	1	0	R38
42	42		1301808-00	22.0 K .25 W 5.0 % CC	1	0	R16
43	43		1301952-00	1.0 K 2.0 W 5.0 % CC	1	1	R13
44	44		1302253-00	27.0 .5W W 5.0 % CC	1	0	R9
45	45		1302394-00	30.0 K .25 W 5.0 % CC	2	2	R19,R21
46	46		1302411-00	511 1/4W 1% RN55D-F 100PPM	1	0	R36
47	47		1302685-00	909 1/4W 1% RN55D-F 100PPM	1	0	R39
48	48		1303045-00	3.16 K 1/4W 1% RN58D-F 100PPM	1	1	R25
49	49		1303062-00	470.0 2.0 W 5.0 % CC	1	1	R8
50	50		1303114-00	1.0 K 1/4W 1% RN55D-F 100PPM	2	-	R17,R28
			CONT		-	1	R28
51	51		1303303-00	2.61 K 1/4W 1% RN55D-F 100PPM	1	1	R31
52	52		1303312-00	10.0 K 1/4W 1% RN55D-F 100PPM	1	0	R42
53	53		1304854-00	5.11 K 1/4W 1% RN55D-F 100PPM	2	2	R33,R34
54	54		1304855-00	9.09 K 1/4W 1% RN55D-F 100PPM	1	1	R30
55	55		1305114-00	3.48 K 1/4W 1% RN55D-F 100PPM	1	1	R29
56	56		1305128-00	5.62 K 1/4W 1% RN55D-F 100PPM	1	1	R26
57	57		1305324-00	4.99 K 1/4W 1% RN55D-F 100PPM	1	1	R27
58	58		1305405-00	24.9 K 1/4W 1% RN55D-F 100PPM	1	0	R35
59	59		1309150-10	200 1/2W20% POT 0 TO 250	1	0	R24
60	60		1309412-00	18.2 K 1/4W 1% RN55D-F 100PPM	1	1	R32
61	61		1309884-00	.2 5W 5% WW	2	0	R5,R6
62	62		1510555-00	MJE3055 NPN 90WC 8I 60 20 Y	1	0	Q7
63	63		1510705-00	XA 05 NPN 500MW 8I 60 50 P	6	-	Q2,Q3,Q5,Q6,Q18,Q19
			CONT		-	4	Q3,Q5,Q18,Q19
64	64		1510706-00	XA 55 PNP 500MW 8I 60 50 P	2	0	Q4,Q9
65	65		1505867-00	2N 4441 SCR@ 50V & 8A	1	0	Q8
66	66		1509142-00	DEC4250 PNP 200MW 8I 40250	5	-	Q1,Q11,Q12,Q13,Q16
			CONT		-	4	Q11,Q12,Q13,Q16
67	67		1511686-00	DEC5433 FET N 350MW 10 25 1A	4	4	Q14,Q15,Q17,Q18
68	68		1511868-00	500 UH 20% 5A	1	0	L1

D	I	G	I	T	A	L	TITLE	SECTION A OF A
							PWR. LINE MONITOR/15V REG.	

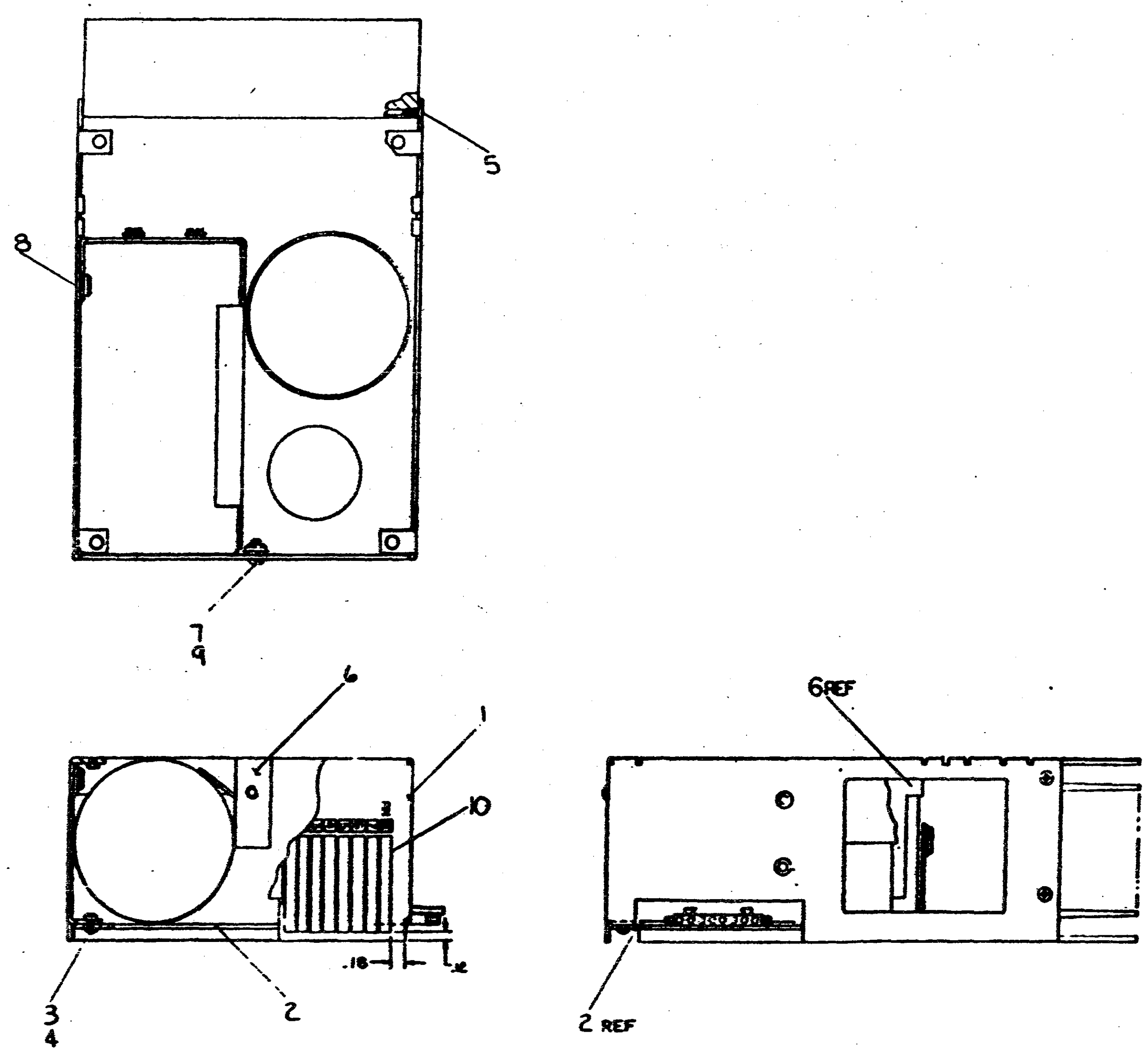
SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	8411986-0-DSP	B

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	QTY PER VARIATION YA	REFERENCE DESIGNATOR
69	69		1612026-00	PULSE XFMR RATIO 1:1:1 100UH	1	1	T1
70	70		1910415-00	723 VOLT REG VAR 2/17V	1	0	E1
71	71		9006012-01	SCREW,PAN ,PHIL, 4-40X 7/16	1	0	
72	72		9006020-01	SCREW,PAN ,PHIL, 6-32X 1/4	1	0	
73	73		9006027-01	SCREW,PAN ,PHIL, 6-32X 7/8	1	0	
74	74		9006557-00	NUT,KEP , 4-40X 1/4 AF	1	0	
75	75		9006565-00	NUT,KEP , 10-32X 3/8 AF	2	0	
76	76		9006635-00	WASHER,LOCK,INT,.318OD X .200ID	2	2	
77	77		9006666-00	WASHER, FLAT, .500 OD X .107 ID	2	0	
78	78		9006735-00	EYELET, FUNNEL FLANGE, .059 OD X	2	0	
79	79		9006851-00	SPACER, HEX, ALUM, 6-32, .250 X	1	0	
80	80		9007880-00	TIE, CABLE, SST-1.5M	4	4	
81	81		9007930-00	TERM RING 1POS INSULATED,22-16	2	2	
82	82		9008007-01	SCREW,PAN ,PHIL, 10-32X 1/4 S	2	2	
83	83		9008150-00	TERM LUG 1POS LOCKING,SOLDER	2	0	
84	84		9008185-00	NUT,KEP , 6-32X1/4 AF	1	0	
85	85		9008268-00	COMPOUND, THERMAL JOINT 8	A/R	0	
86	86		9008424-00	WASHER, FLAT, THERMAFILM, .562 O	4	0	
87	87		9008440-00	BUSHING, NYLON, .248 O.D. X .198	2	0	
88	88	BLANK			0	0	
89	89		1301888-00	390.0 2.W W10.0 % CC	1	1	R22
90	90		9009185-00 CONT	JUMPER, WIRE, INSULATED, BLACK B	3	- 3	W1,W2,W3 W4,W2,W3
91	91		9107360-00	WIRE,STRND,18AWG,IPVC UL1429	A/R	A/R	
92	92	A-SP-11/45-TR-2		MODULE TEST PROCEDURE	REF	REF	
93	93		9006713-00	WASHER, NYLON, FLAT #8 .437 OD	1	1	
94	94		7413721-00	SHIM .010 IN.	1	1	
95	95	A-SP-5411086-0-3		ENG. SPEC-AND TEST PROC.	REF	REF	
96	96		9009597-00	INSULATOR, THERMA-FILM 8	1	0	
97	97		9107560-01	*** THIS ITEM IS NOT USED ***	-	-	

D	I	G	I	T	A	L	TITLE	SECTION A OF A
							PWR. LINE MONITOR/15V REG.	

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	5411086-0-DSP	B

NOTE:
1. FOR INTERPLANT PACKAGING ORDER PACKAGING MATERIAL PER A-SP-3700074-0-0



SEE NOTE 1

QTY	DESCRIPTION	DWG/PART NO.	ITEM NO.
A/R	PACKAGING INSTRUCTIONS	A-SP-3700074-0-0	11
1	DECAL (H7440)	A-DC-7416945-9	10
1	WASHER, LOCK #6	9006633	9
1	SCREW, PHL F HD #6-32 X .18LG	9008020-2	8
1	SCREW, PHL PAN HD #6-32 X .25LG	9006020-1	7
1	CAPACITOR HOLDER	C-IA-7412388-0	6
4	SCREW, PHL FLAT HEAD #4 X .31 SELF-TAPPING	9009142-02	5
2	SCREW, PHL PAN HD #4-40 X .25	9008301-1	4
2	WASHER, LOCK #4	9006632	3
1	+5V REGULATOR BOARD	D-UA-5411793-YA-0	2
1	REGULATOR BRACKET	D-IA-5309756-09	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

QUANTITY & VARIATION

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

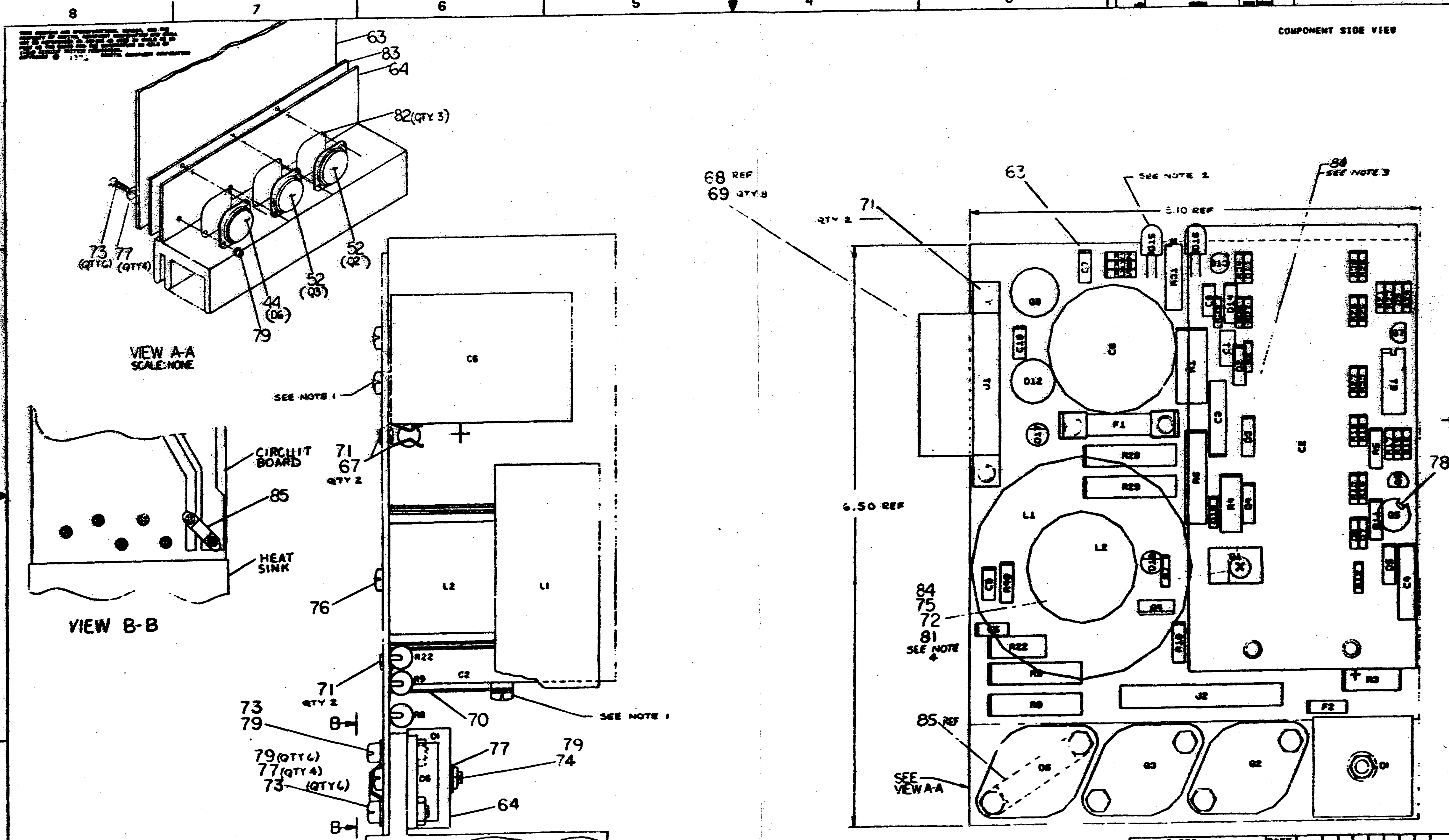
NEXT HIGHER ASSY: B-DD-H7440-0

SCALE 1/1

SHEET 1 OF 1

TITLE: H7440 POWER SUPPLY ASSEMBLY

SIZE	CODE	NUMBER	REV.
D	UA	H7440-0-0	B



NOTES:

1. MTG HARDWARE FOR C2 & C6 ARE SUPPLIED WITH THE CAPACITORS
2. FOR VA VARIATION SEE PARTS LIST
3. SLEEVE LEADS OF D1 & D4 [illegible] ITEM 80.
4. USE ITEM 81 COMPOUND UNDER Q3 D1.
5. TORQUE ALL HARDWARE TO 8 IN-LBS BEFORE SOLDERING COMPONENTS TO PC BOARD.

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	
SCALE 2/1	
SHT. OF	
NEXT HIGHER ASSY.	

digital

TITLE +5V REGULATOR POWER SUPPLY

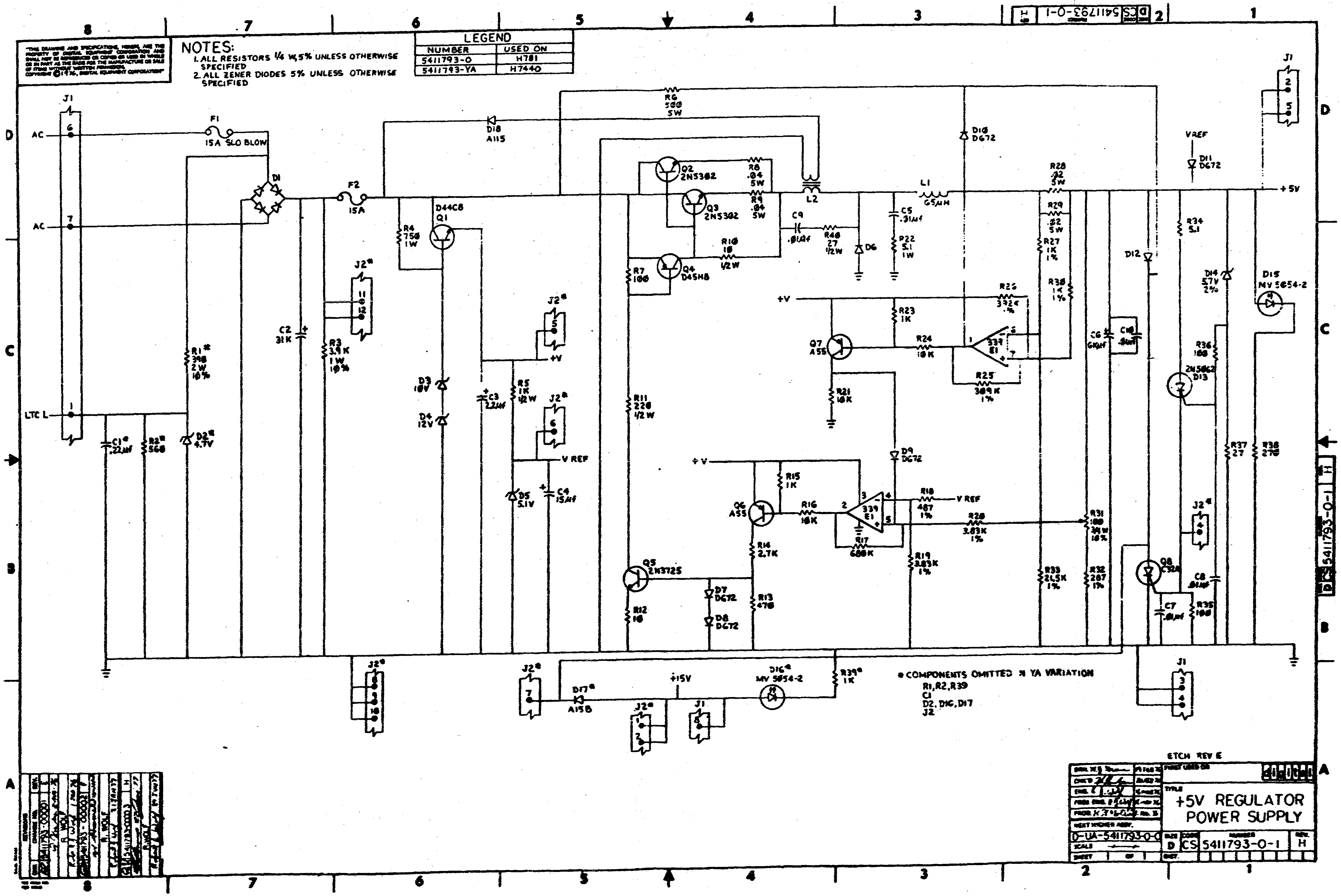
SIZE	CODE	NUMBER	REV
B	UA	5411793-0-0	H

ETCH REV E

1 MSB 50727

NOTES:
1. ALL RESISTORS 1/4 W, 5% UNLESS OTHERWISE SPECIFIED
2. ALL ZENER DIODES 5% UNLESS OTHERWISE SPECIFIED

LEGEND	
NUMBER	USED ON
5411793-0	H781
5411793-YA	H7440



J1
AC
LTC L
F1 15A SLO BLOW
D1
F2 15A
D18 A115
R6 500 5W
Q1 D44C8
R4 750 1W
C2 31K
R3 3.9K 1W 10%
R1* 390 2W 10%
C1* .22µf
R2* 560
D2* 4.7V
D3 18V
D4 12V
C3 2.2µf
R5 1K 1/2W
D5 5.1V
C4 15µf
+V
V REF
Q2 2N5302
Q3 2N5302
Q4 D45H8
Q5 2N3725
Q6 A55
Q7 A55
Q8 C32A
R7 100
R8 .04 5W
R9 .04 5W
R10 10 1/2W
R11 220 1/2W
R12 10
R13 470
R14 2.7K
R15 1K
R16 10K
R17 680K
R18 487 1%
R19 3.83K 1%
R20 3.83K 1%
R21 10K
R23 1K
R24 10K
R25 309K 1%
R28 .02 5W
R29 .02 5W
R27 1K 1%
R30 1K 1%
R31 100 3/4W 10%
R32 287 1%
R33 21.5K 1%
R34 5.1
R35 100
R36 100
R37 27
R38 270
R39* 1K
C9 .01µf
R40 27 1/2W
C5 .01µf
P22 5.1 1W
D6
L1 65µH
L2
D7 DG72
D8 DG72
D9 DG72
D10 DG72
D11 DG72
D12
D13 2N5062
D14 5.7V 2%
D15 MV 5054-2
D16* MV 5054-2
D17* A15B
C6 61µf
C7 .01µf
C8 .01µf
339 E1
+15V
+5V
VREF
J2*

* COMPONENTS OMITTED IN YA VARIATION
R1, R2, R39
C1
D2, D16, D17
J2

ETCH REV E

+5V REGULATOR POWER SUPPLY

D CS 5411793-0-1 REV. H

D-UA-5411793-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

ETCH REV E

MADE BY BOB WOLF — DATE 11/SEPT/75
CHECKED [illegible] — DATE 19 FEB 76
ENG [illegible] — DATE 16 MAR 76
PROD [illegible] — DATE [illegible]
SECTION 1 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION		5411793-0-0		5411793-YA	
1	D-CS-5411793-0-1	+5V REGULATOR POWER SUPPLY (C.S.)		REF		REF	
2	D-AH-5411793-0-5	ASSY/DRILLING HOLE LAYOUT		REF		REF	
3	B-MP-5411793-0-6	MODULE ECO HISTORY		REF		REF	
4	1301880-00	RES 390, 2W, 10%		1	R1	0	
5	1301890-00	RES 560, ½W, 5%	CC	1	R2	0	
6	1302927-00	RES 3.9K, 1W, 10%		1	R3	1	
7	1302385-00	RES 750, 1W, 5%	CC	1	R4	1	
8	1300364-00	RES 1K, ¼W, 5%	CC	1	R5	1	
9	1303169-00	RES 500, 5W		1	R6	1	
10	1300229-00	RES 100, ¼W, 5%	CC	3	R7 R35 R36	3	
11	1311362-00	RES .04, 5W 5%	CC	2	R8 R9	2	
12	1300168-00	RES 10, ¼W, 5%	CC	1	R10	1	
13	1300274-00	RES 220, ¼W, 5%	CC	1	R11	1	
14	1301317-00	RES 10 ½W 5%	CC	1	R12	1	
15	1300316-00	RES 470, ¼W, 5%	CC	1	R13	1	
16	1300426-00	RES 2.7K, ¼W, 5%	CC	1	R14	1	
17	1300365-00	RES 1K, ¼W, 5%	CC	3	R15 R23 R39	2	R15 R23
19	1310867-00	RES 680K, 1/4W, 5%	CC	1	R17	1	
19	1303114-00	RES 1K, ¼W, 1%	MF	2	R27 R30	2	
20	1311845-00	RES 487, 1/4W, 1%	MF	1	R18	1	
21	1309413-00	RES 3.83K, ¼W, 1%	MF	2	R19 R20	2	
22	1300479-00	RES 10K, ¼W, 5%	CC	3	R21 R16 R24	3	

TITLE: +5V REGULATOR POWER SUPPLY — ASSY NO. D-UA-5411793-0-0 — SHEET 1 OF 4 — SIZE A — CODE PL — NUMBER 5411793-0-0 — REV H — ECO NO 5411793-00003

DEC FORM DEC 16-(325)-1031-N870 DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

ETCH REV E

MADE BY BOB WOLF — DATE 11/SEPT/75
CHECKED [illegible] — DATE 19 FEB 76
ENG [illegible] — DATE 16 MAR 76
PROD [illegible] — DATE [illegible]
SECTION 1 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION		5411793-0-0		5411793-YA	
23	1302136-00	RES 5.1, 1W, 5%	CC	1	R22	1	
24	1305428-00	RES 309K, 1/4W, 1%	MF	1	R25	1	
25	1305426-00	RES 392K, 1/4W, 1%	MF	1	R26	1	
26	1310876-00	RES .02 5W, 3%		2	R28 R29	2	
27	1309143-04	RES 100, 3/4W, 10% POT		1	R31	1	
28	1305124-00	RES 287, ¼W, 1%	MF	[illegible]	R32	1	
29	1309422-00	RES 5.1, ¼W, 5%	CC	1	R34	1	
30	1301522-00	RES 27 ½W, 5%	CC	1	R37	1	
31	1301972-00	RES 270, ¼W, 5%	CC	1	R38	1	
32	1303155-00	RES 21.5K, 1/4W, 1%	MF	1	R33	1	
33	1010274-00	CAP .22UF, 50V		1	C1	0	
34	1010358-00	CAP 31K, UF, 50V		1	C2	1	
35	1002431-00	CAP 2.2UF, 35V 10%		1	C3	1	
36	1004812-00	CAP 15UF, 20V, 10%		1	C4	1	
37	1012794-00	CAP 6000UF, 10V		1	C5	1	
38	1001610-01	CAP .01UF 100V		5	C7 C8 C5 C9 C10	5	
39	1110714-00	DIODE RECTIFIER BRIDGE KSS3514		1	D1	1	
40	1110994-00	DIODE 5.1V, .4W, 5% ZENER 751A		1	D5	1	D5
41	1100125-00	DIODE 10V, .4W, 5% ZENER 758A		1	D3	1	
42	1110836-00	DIODE 12V, .4W, 5% ZENER 759A		1	D4	1	
43	1105275-00	DIODE DF72		5	D7 D9 D10 D11 D8	5	
44	1110715-00	DIODE RECTIFIER TO3		1	D6	1	

TITLE: +5V REGULATOR POWER SUPPLY — ASSY NO. D-UA-5411793-0-0 — SHEET 2 OF 4 — SIZE A — CODE PL — NUMBER 5411793-0-0 — REV H

DEC FORM DEC 16-(325)-1031-N870 DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

ETCH REV E

MADE BY BOB WOLF — DATE 11/SEPT/75
CHECKED [illegible] — DATE 19 FEB 76
ENG [illegible] — DATE 16 MAR 76
PROD [illegible] — DATE [illegible]
SECTION 1 — ISSUED SECT. 1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION		5411793-0-0		5411793-YA	
45	1103341-00	DIODE MR1033B		1	D12	1	
46	1110968-00	DIODE 2N5062 SCR		1	D13	1	
47	1111205-00	DIODE 5.7V, 2% 4W, ZENER		1	D14	1	
48	1110864-00	DIODE LED MV5054-2		2	D15 D16	1	D15
49	1110420-00	DIODE A15B		1	D17	0	
50	1112594-02	DIODE A115M		1	D18	1	
51	1510421-00	TRANS D44C8		1	Q1	1	
52	1510196-00	TRANS 2N5302		2	Q2 Q3	2	
53	1510708-00	TRANS D45H8		1	Q4	1	
54	1510959-00	TRANS 2N3725		1	Q5	1	
55	1510706-00	TRANS A55		2	Q6 Q7	2	
56	1510928-00	TRANS C32A		1	Q8	1	
57	1912108-00	I.C. LM 339		1	E1	1	
58	1212673-00	XFMR 65UH, 30A		1	L1	1	
59	1212672-00	XFMR 1:5		1	L2	1	
60	9007227-00	15A SLOW BLOW FUSE		1	F1	1	
61	1210929-00	15A PICO FUSE		1	F2	1	
62	1302253-00	RES. 27 Ω, 1/2 W, 5%	CC	1	R40	1	
63	5011792	ETCHED CIRCUIT BOARD		1		1	
64	1210737-01	HEAT SINK		1		1	
65	1100124-00	DIODE, 4.7V, 4W, 5% ZENER 750A		1	D2	0	
66	1212899	CONN 12 PIN		1	J2	0	

TITLE: +5V REGULATOR POWER SUPPLY — ASSY NO. D-UA-5411793-0-0 — SHEET 3 OF 4 — SIZE A — CODE PL — NUMBER 5411793-0-0 — REV H

DEC FORM DEC 16-(325)-1031-N870 DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

ETCH REV E

MADE BY BOB WOLF — DATE 9/11/75
CHECKED [illegible] — DATE 19 FEB 76
ENG [illegible] — DATE [illegible]
PROD [illegible] — DATE [illegible]
SECTION 1 — ISSUED SECT. 1

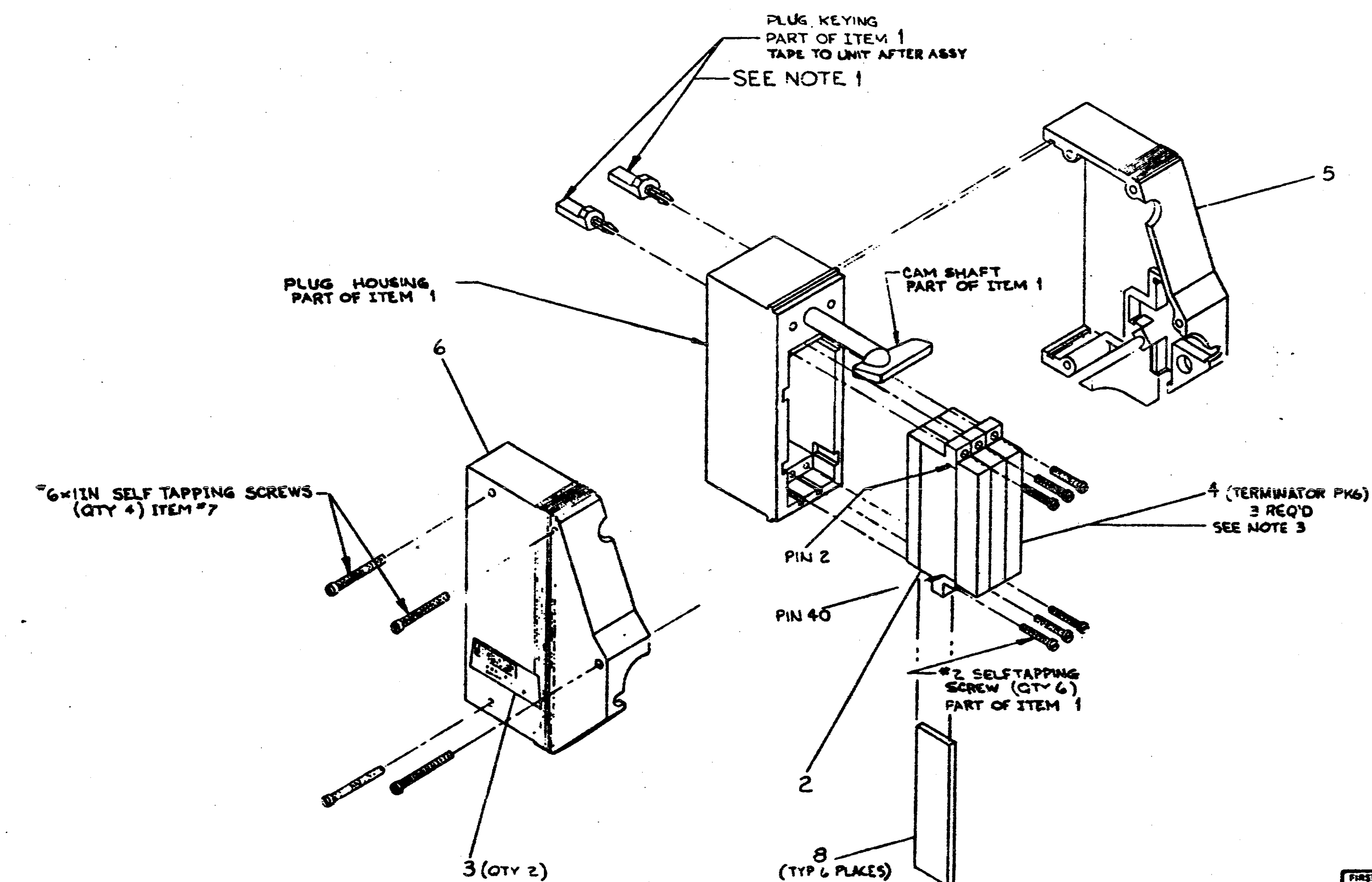
ITEM NO	DWG NO. / PART NO.	DESCRIPTION	5411793-0-0	5411793-YA	
67	9007203-00	FUSE CLIP	2	2	
68	1209340-00	CONN MATE-N LOCK 8 PIN SKT	1	1	J1
69	1209416-01	CONN CONTACT MATE-N-LOCK SKT W/PC 8 TAB	8	8	
70	C-MD-5309759-0-0	CAP STRAPS	2	2	
71	9009000-00	EYELETS GS-4-B	6	6	
-					
72	9006557-00	4-40 KEPNUT	1	1	
73	9007793-01	SCREW 6-32 x 9/16 PHL PAN HD	6	6	
74	9006027-01	SCREW 6-32 x 7/8 PHL PAN HD	8	8	
75	9006010-01	SCREW 4-40 x 7/16 PHL PAN HD	1	1	
76	9006047-01	SCREW 8-32 x 2 PHL PAN HD	1	1	
77	9006653-00	FLAT WASHER #6	5	5	
78	9007201-00	TRANSIPAD	1	1	
79	9008185-00	6-32 KEPNUT	7	7	
80	9107256-11	TUBING, THIN WALL, CLR	AR	AR	
81	9008268-00	COMPOUND, THERMAL	AR	AR	
82	1213071-02	WASHER, INSULATING TO3	1	1	
83	1213071-07	WASHER, INSULATING	1	1	
84	9009769	WASHER, RECT. MFG.	1	1	
85	1214074-01	JUMPER, MECHANICAL	1	1	

TITLE: +5V REGULATOR POWER SUPPLY — ASSY NO. D-UA-5411793-0-0 — SHEET 4 OF 4 — SIZE A — CODE PL — NUMBER 5411793-0-0 — REV H

DEC FORM DEC 16-(325)-1031-N870 DRA 110

NOTES:

1. PLUG KEYING, PLUG HOUSING, CAM SHAFT & MOUNTING HARDWARE ARE PART OF ITEM 1 (PLUG HOUSING & CAMSHAFT KIT).
2. ~~CUT JUMPER W2 ON H870 TERMINATOR MODULES.~~
3. PRIOR TO ASSY OF ITEM 4 TO ITEM 2, CUT OFF LEAD AT PIN 39. CUT FLUSH WITH TERMINATOR BODY.



QTY.	DESCRIPTION	PART NO.	ITEM NO
6	COVER, CONTACT	1211591-11	8
4	SELF THREAD SCREW #6×1	1211591-18	7
1	STRAIN RELIEF HOUSING R. H.	1211591-13	6
1	STRAIN RELIEF HOUSING L. H.	1211591-14	5
3	MASS BUS TERMINATOR	1313242	4
2	DECAL	A-DC 7412208-00	3
3	PLUG ASSY	1211591-07	2
1	PLUG HOUSING & CAM SHAFT	1211591-01	1

PARTS LIST

FIRST USED ON OPTION-MODEL: RPØ4

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES

MATERIAL: SEE PARTS LIST

NEXT HIGHER ASSY: E-UA-RPØ4-Ø-Ø

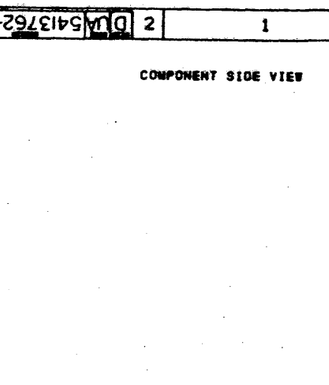
digital EQUIPMENT CORPORATION

TITLE: TERMINATOR PACK ASSY

SIZE	CODE	NUMBER	REV
D	AD	7009938-0-0	C

SHEET 1 OF 1

COMPONENT SIDE VIEW



NOTES: 1. R5 THRU R10,C1 ARE OPTIONAL COMPONENTS & ARE NOT TO BE INSTALLED AT ASSEMBLY.

CHG	CHANGE NO.	REV

ETCH REV. A
P.C. DESIGN DATA BASE REV. AL

SIGNATURES	DATE
DRN.	
CHK'D.	
ENG.	
PROJ. ENG.	
PROD.	

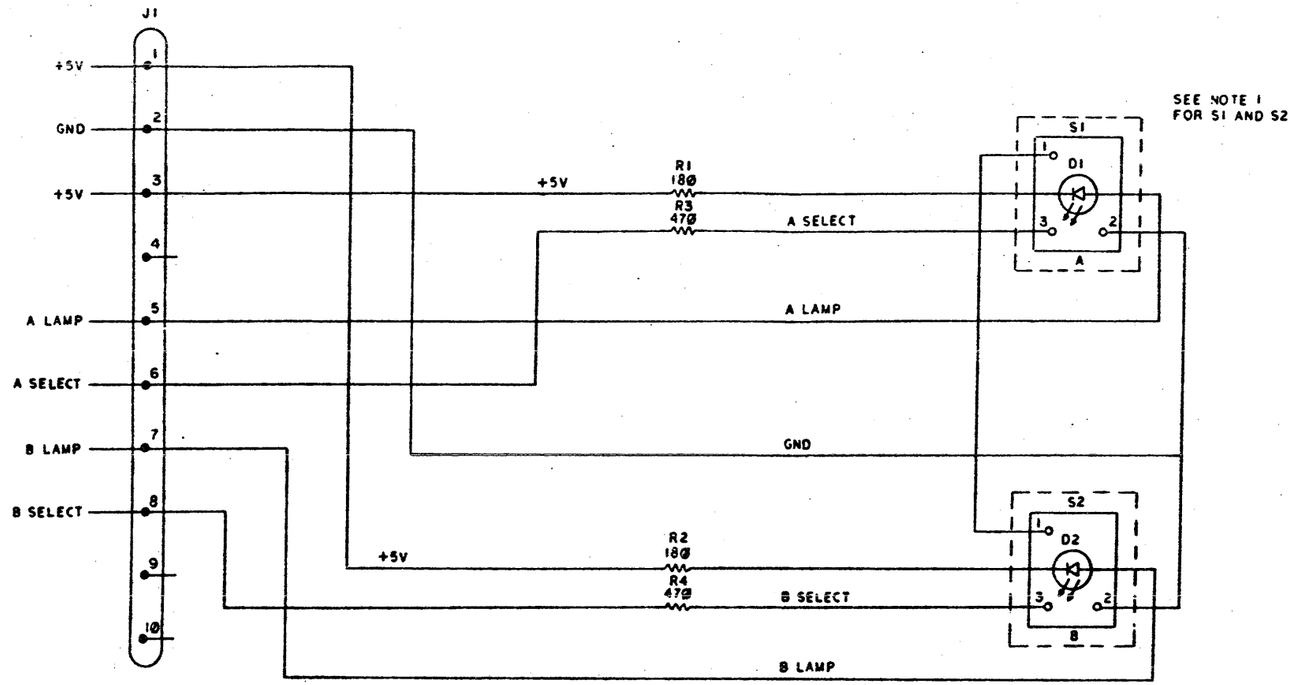
SCALE 2:1
SHT. 1 OF 1
NEXT HIGHER ASSY. B-00-5413762-0

digital

TITLE RM02/03 DUAL PORT SWITCH

SIZE	CODE	NUMBER	REV
D	UA	5413762-0-0	*

NOTE :
1. S1 AND S2 SOLDER TO BOARD AT HIGHER ASSY.



DRN.	
CHK'D	
ENGR.	
PROJ. ENGR.	
PROD.	
NEXT HIGHER ASSY.	B-DD-5413762-0
SCALE	
SHEET	1 OF 1

FIRST USED ON: RM02/03

TITLE: RM02/03 DUAL PORT SWITCH

SIZE	CODE	NUMBER	REV.
D	CS	5413762-0-1	*

DWG.

AUTOMATED BY PRTLST.3L(32) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-UA-5413762-0-0		UNIT ASSY	REF	
2	2	D-CS-5413762-0-1		SCHEMATIC DIAGRAM	REF	
3	3	D-MD-5013761-0-0		DRILL & ETCH DWG	REF	
4	4		5013761-00	DRILL & ETCH BRD	1	
5	5		1212965-01	HEADER.100 10POS RT ANGLE	1	J1
6	6		1301322-00	180.0 .25 W 5.0 % CC	2	R1,R2
7	7		1300316-00	470.0 .25 W 5.0 % CC	2	R3,R4
8	8	D-EC-5013761-0-0		ETCH CUT DWG	REF	

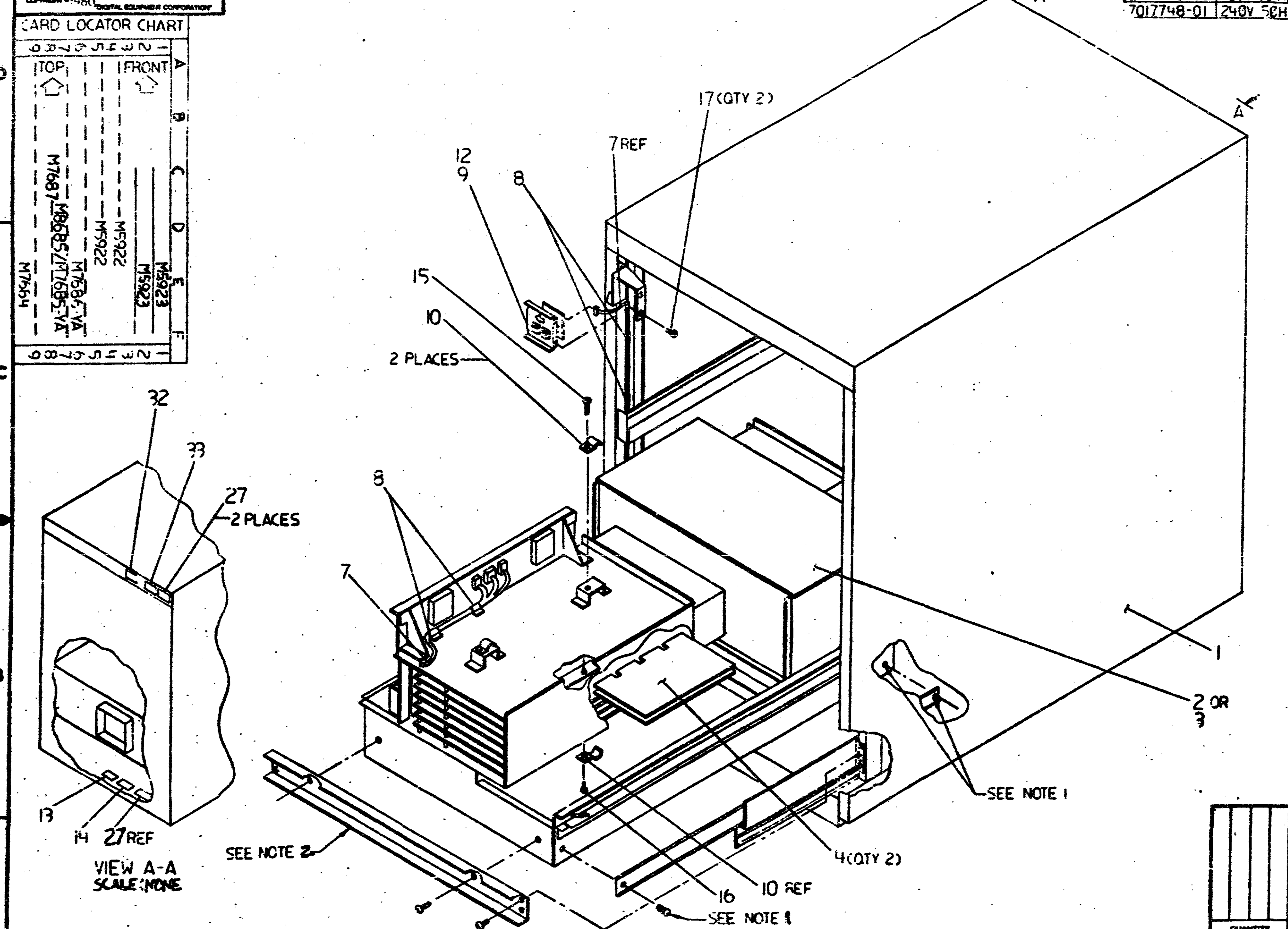
REVISION HISTORY			BASIC PART NO: 5413762												
ENG:	ECO NUMBER	REV	SECTION A OF A	DRN: BILL CASSIDY	DATE: 2-FEB-78		D	I	G	I	T	A	L
	INITIAL	*	SECTION.VARIATION INDEX	CHK'D: P.BOSSMAN	DATE: 19-JUN-79	TITLE: PARTS LIST							
			[A] 00			RM02/03 DUAL PORT SW							
			[B]										
			[C]	DES.ENG: LEO CAPPABIANCA	DATE: 06-JUN-79								
			[D]										
			[E]			DOCUMENT NUMBER							
			[F]	RESP.ENG.: L.CAPPABIANCA	DATE: 19-JUN-79								
			[H]			SIZE: K	CODE: PL	NUMBER: 5413762-0-DBP	REV: *				
			[J]										
			[K]	MFG.ENG.: C.STEINWEG	DATE: 09-AUG-79								
			[L]										
			[M]	ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER:	FILE NAME:	EDIT #:						
			[N]	D-UA-5413762-0-0	*B-DD-5413762-0	Z0213.PLS	5						

LEGEND	
NUMBER	VARIATION
7017748-00	120V 60HZ
7017748-01	240V 50HZ

NOTES:

1. AFTER MBA CHASSIS (ITEM 2 OR 3) IS MOUNTED TO SLIDES, USE TWO 8-32 SCREWS (9006036-01) TO HARD MOUNT SLIDES TO FRONT OF CHASSIS. THEN SLIDE CHASSIS OUT REAR OF CABINET (ITEM 1) AND INSTALL REMAINING TWO SCREWS IN REAR MOUNTING HOLES OF SLIDES AND CHASSIS. SCREWS SUPPLIED WITH ITEM 2 OR 3.
2. SHIPPING BRACKET AND SIX 10-32 SCREWS (9006073-01) ARE TO BE INSTALLED AFTER MBA CHASSIS IS INSTALLED IN CABINET. SCREWS SUPPLIED WITH ITEM 2 OR 3.
3. FOR CABLING AND GROUNDING CONFIGURATION SEE D-UA-RM05-0-0.
4. SHIP THE FOLLOWING ITEMS UNASSEMBLED WITH UNIT:

ITEM NO.	QTY	PART NO.	DESCRIPTION
5	2	7419781-25	BC06S REWORK
6	1	7009491-02	POWER SEQUENCE CABLE
18	1	7412827-12	GROUND STRAP
20	1	7017755-05	GROUND STRAP
30	1	9006568-00	5/16 KEP NUT
31	2	9006638-00	5/16 LOCKWASHER



CAUTION: OFF SHEET PARTS LIST EXISTS. SEE K-PL-7017748-0-DBP (Z1200)

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

DATE: 23 APR 80

TITLE: CABINET AND MBA ASSY DUAL PORT

digital

NEXT HIGHER ASSY: D-UA-RM05-0-0

SIZE D | CODE AD | NUMBER 7017748-0-0 | REV B

REVISION HISTORY: A — 7017748-CK886 M. ENGLE; B — RM05-CK89-A WEHRLE SNOW 80 W HAAPEN

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A1 OF A2

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION 00	01
1	1	D-AD-7017612-0-0	7017612-00	CABINET ASSY	1	1
2	2	D-AD-7018322-0-0	7018322-00	MBA CHASSIS ASSY (60 HZ)	1	-
3	3	D-AD-7018322-0-0	7018322-01	MBA CHASSIS ASSY (50 HZ)	-	1
4	4		M5923-00	MASS BUS TRANSCEIVER, PORT B	2	2
5	5	E-IA-7419781-0-0	7419781-25	BC06S (REWORK) 25 FT.	2	2
6	6	D-IA-7009491-0-0	7009491-02	POWER SEQUENCE CABLE	1	1
7	7	D-IA-7016548-0-0	7016548-01	DUAL PORT HARNESS ASSEMBLY (66 I	1	1
8	8		9008341-00	CLIP,PVC HARNESS, DESKLASP,1"WID	4	4
9	9	C-AD-7017599-0-0	7017599-00	SWITCH PANEL ASSY (UPPER)	1	1
10	10	B-MD-7418607-0-0	7418607-00	CLAMP CABLE	2	2
11	11		7009938-00	*** THIS ITEM IS NOT USED ***	-	-
12	12		3617187-01	LABEL,"PORT SELECT (LEFT)" FOR	1	1
13	13	A-DC-7416197-0-0	7416197-02	SILK SCREEN	1	1
14	14		3613211-00	DECAL,CLEAR PREPRINTED CSA 1-1/4	1	1
15	15		9006418-01	SCREW,TAPPING,TYPE TT,PAN ,PHIL,	1	1
16	16		9006036-01	SCREW,PAN,PHIL 8-32X 5/16 SS	1	1
17	17		9008020-01	SCREW,PAN,PHIL 6-32X 3/16 SS	2	2
18	18	D-IA-7412827-0-0	7412827-12	RK06 GROUND CABLE	1	1
19	19	C-IA-7017754-0-0	7017754-12	*** THIS ITEM IS NOT USED ***	-	-
20	20	C-IA-7017755-0-0	7017755-05	STRAP, GROUNDING (4' 0")	1	1
21	21	C-IA-7017756-0-0	7017756-06	*** THIS ITEM IS NOT USED ***	-	-
22	22		9006635-00	*** THIS ITEM IS NOT USED ***	-	-
23	23		9006565-00	*** THIS ITEM IS NOT USED ***	-	-
24	24		1214434-02	*** THIS ITEM IS NOT USED ***	-	-
25	25		1209456-01	*** THIS ITEM IS NOT USED ***	-	-
26	26		1209350-03	*** THIS ITEM IS NOT USED ***	-	-
27	27		3613209-00	LABEL,ELECTRICAL DATA	2	2
28	28		7017610-0J	*** THIS ITEM IS NOT USED ***	-	-
29	29		9006073-03	*** THIS ITEM IS NOT USED ***	-	-
30	30		9006568-00	NUT,KEP ,5/16-18 X1/2 AF	1	1

REVISION HISTORY			
ENG	ECO NUMBER	REV	SECTION A OF A
ME	7017748-CX001	A	SECTION. VARIATION INDEX
WH	RM05-CX05A	B	[A] 00,01
			[B]
			[C]
			[D]
			[E]
			[F]

BASIC PART NO: 7017748

DRN: M. ENGLE — DATE: 12-MAY-80

CHK'D: B. NICHOLS — DATE: 12-MAY-80

DES.ENG.: A. CLARK — DATE: 12-MAY-80

RESP.ENG.: B. MONTERO — DATE: 12-MAY-80

MFG.ENG.: C. STEINWEG — DATE: 12-MAY-80

ASSEMBLY NUMBER: D-AD-7017748-0-0

TOP DOCUMENT NUMBER: * B-DD-RM05-0

D	I	G	I	T	A	L

TITLE: PARTS LIST

CABINET & MBA ASSY DUAL PORT

DOCUMENT NUMBER

SIZE	CODE	NUMBER	REV
K	PL	7017748-0-DBP	B

FILE NAME: Z1200B.PLS — EDIT #: 7

AUTOMATED BY PRTLST.3P(44)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION 00	01
31	31		9006638-00	WASHER,LOCK-INT,.6000D X .326ID	3	3
32	32	A-DC-7416197-0-0	7416197-01	DECAL	1	1
33	33		3613211-01	DECAL,CLEAR PREPRINTED CSA 1-1/4	1	1

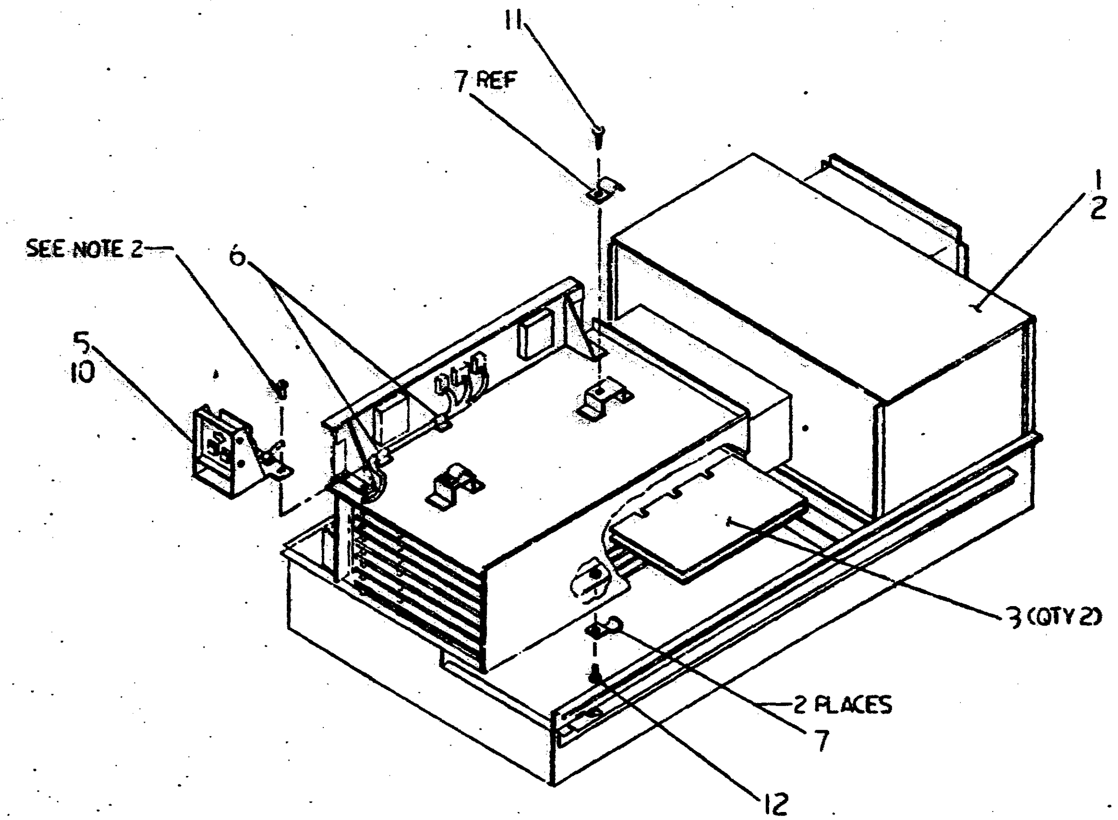
DIGITAL	TITLE	SIZE	CODE	DOCUMENT NUMBER	REV
	CABINET & MBA ASSY DUAL PORT SECTION A OF A	K	PL	7017748-0-DBP	B

LEGEND	
NUMBER	VARIATION
7017747-00	DUAL PORT,120V 60HZ
7017747-01	DUAL PORT,240V 50HZ

NOTES:

1. FOR CABLING AND GROUNDING CONFIGURATION SEE D-UA-RM05-0-0.
2. REMOVE EXISTING SCREWS FROM CARD CAGE BRACKET AND REPLACE, MOUNTING DUAL PORT SWITCH ASSEMBLY (ITEM 5) WHEN REQUIRED.
3. SHIP THE FOLLOWING ITEMS UNASSEMBLED WITH UNIT:

ITEM NO.	QTY	PART NO.	DESCRIPTION
4	2	7419781-04	BC06S REWORK
5	1	7017605-00	DUAL PORT SWITCH ASSY
9	1	7009491-00	POWER SEQUENCE CABLE
10	1	3617187-00	LABEL,PORT SELECT,RIGHT
13	1	7017755-05	GROUND STRAP
21	2	3613209-02	LABEL,ELECTRICAL DATA



CAUTION: OFF SHEET PARTS LIST EXISTS. SEE K-PL-7017747-0-DBP (Z1199).

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

22 APR 80

D-UA-RM05-0-0

TITLE: MBA ASSEMBLY, DUAL PORT

DOCUMENT NUMBER: D AD 7017747-0-0 REV B

REVISION HISTORY: 7017747-C3281 M. ENGLE A; B

AUTOMATED BY PRTLST.3N(42) — P A R T S L I S T — SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION 00	01
1	1	D-AD-7018322-0-0	7018322-00	MBA CHASSIS ASSY (60 HZ)	1	-
2	2	D-AD-7018322-0-0	7018322-01	MBA CHASSIS ASSY (50 HZ)	-	1
3	3		M5923-00	MASS BUS TRANSCEIVER, PORT B	2	2
4	4	C-MD-7419781-0-0	7419781-04	BC06S (REWORK) 4 FT.	2	2
5	5	C-IA-7017605-0-0	7017605-00	DUEL, PORT SWITCH ASSY	1	1
6	6		9008341-00	CLIP,PVC HARNESS, DESKLASP,1"WID	2	2
7	7	B-MD-7418607-0-0	7418607-00	CLAMP CABLE	2	2
8	8		7009938-00	*** THIS ITEM IS NOT USED ***	-	-
9	9	D-IA-7009491-0-0	7009491-00	CABLE	1	1
10	10		3617187-00	LABEL,"PORT SELECT (RIGHT)" FOR	1	1
11	11		9006418-01	SCREW,TAPPING,TYPE TT,PAN ,PHIL,	1	1
12	12		9006036-01	SCREW,PAN,PHIL 8-32X 5/16 SS	1	1
13	13	C-IA-7017755-0-0	7017755-05	STRAP, GROUNDING (4' 0")	1	1
14	14	C-IA-7017754-0-0	7017754-12	*** THIS ITEM IS NOT USED ***	-	-
15	15		9006565-00	*** THIS ITEM IS NOT USED ***	-	-
16	16		9006635-00	*** THIS ITEM IS NOT USED ***	-	-
17	17		1214434-02	*** THIS ITEM IS NOT USED ***	-	-
18	18		1209456-01	*** THIS ITEM IS NOT USED ***	-	-
19	19		1209350-03	*** THIS ITEM IS NOT USED ***	-	-
20	20	A-PI-3700589-0-0	3700589-00	PKG ASSY RM05 MASS BUS	REF	REF
21	21		3613209-02	LABEL,ELECTRICAL DATA	2	2

22 NOTE:	-	LEGEND
23 NOTE:	-	PART NUMBER — VARIATION
24 NOTE:	-	7017747-00 — 120V 60HZ
25 NOTE:	-	7017747-01 — 240V 50HZ

REVISION HISTORY			BASIC PART NO: 7017747											
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: M.ENGLE	DATE: 12-MAY-80		D	I	G	I	T	A	L
	INITIAL	*	SECTION, VARIATION INDEX	CHK'D: B. NICHOLS	DATE: 12-MAY-80	TITLE PARTS LIST							
GN	7017747-CX001	A	[A] 00,01			MBA ASSY,DUAL PORT							
WH	RM05-CX05A	B											
			[B]	DES.ENG.: A. CLARK	DATE: 12-MAY-80								
			[C]	RESP.ENG.: B. MONTERO	DATE: 12-MAY-80	DOCUMENT NUMBER							
			[D]			SIZE: K	CODE: PL	NUMBER: 7017747-0-DBP				REV: B	
			[E]	MFG.ENG.: C. STEINWEG	DATE: 12-MAY-80								
			[F]	ASSEMBLY NUMBER: D-AD-7017747-0-0	TOP DOCUMENT NUMBER: *B-DD-RM05-0	FILE NAME: Z1199B.PLS						EDIT #: 14	