



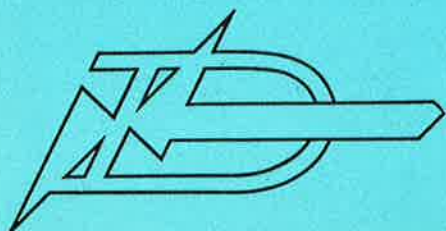
# NORD

## COMPUTER SYSTEMS

NORD-20

VOLUME I

LOGIC DIAGRAMS AND LISTS



A/S NORSK DATA-ELEKTRONIKK

Erich Mogensøns vei 38, Oslo 5

NORD-20

VOLUME I

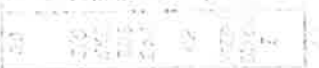
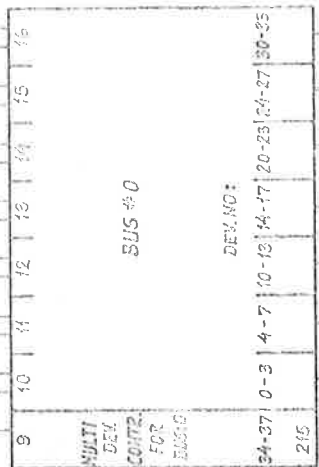
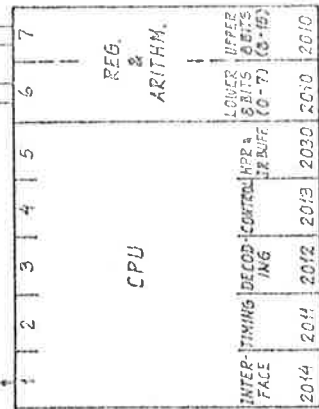
LOGIC DIAGRAMS AND LISTS

# TABLE OF CONTENTS

| TITLE                          | CARD NO. | DRWG. NO. |
|--------------------------------|----------|-----------|
| NORD 20 SYSTEM                 |          | 2B29      |
| MEMORY CONTROL                 | 2002     | 3A02      |
| LOAD MODULE                    | 2009     | 3A09      |
| REGISTERS & ARITHMETIC         | 2010     | 3A10      |
| TIMING                         | 2011     | 3A11      |
| DECODING                       | 2012     | 3A12      |
| CONTROL                        | 2013     | 3A13      |
| INTERFACE                      | 2014     | 3A14      |
| MULTI-DEVICE CONTROL           | 2015     | 3A15      |
| SYNCHRONOUS MODEM CONTROL      | 216      | 3A16      |
| ACM/I/O                        | 217      | 3A17      |
| ACM/DCH.                       | 2018     | 3A18      |
| DUAL DUPLEX S.S. BUFFER        | 2019     | 3A19      |
| DUPLEX REA/PFA BUFFER          | 2020     | 3A20      |
| QUAD.LINE DRIVER/RECEIVER      | 221      | 3A21      |
| X-MITTER                       | 222      | 3A22      |
| RECEIVER                       | 223      | 3A23      |
| TTL DIGITAL IN/OUT             | 224      | 3A24      |
| TIMING UNIT                    | 225      | 3A25      |
| I/O BUFFER FOR CDC 1700        | 228      | 3A28      |
| I/O CHANNEL                    | 229      | 3A29      |
| IR BUFFER & MPR                | 2030     | 3A30      |
| IOTD BUFFER                    | 2032     | 3A32      |
| IOTE DISTRIBUTOR NORD-20       | 2033     |           |
| STORAGE CONTROL 2B/CDC 1700    | 7224     | 3B24      |
| ADDR.& DATA REG. 2B-CDC 1700   | 7225     | 3B25      |
| ADDR & DATA REG. 2B-CDC 1700   | 7226     | 3B26      |
| INTERFACE NORD-2B TIL WIRETEST | 7227     | 3B27      |
| TTY MODEM BUFFER               | 8214     | 5A14      |
| POWER FAILURE & RTC            | 8215     | 5A15      |
| CARD READER BUFFER             | 8219     | 5A19      |
| NORD-20 MAINTENANCE CONTROL    | 8233     | 5A33      |
| NORD-20 MAINTENANCE INTERFACE  | 8234     | 5A34      |
| LISTS                          |          |           |

RESTART  
A  
LOAD  
SUPPLY

TOTD  
BUS

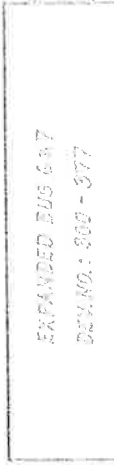
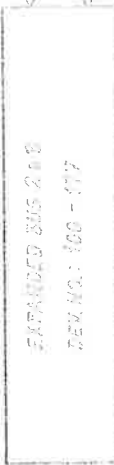


DEVICES

DEVICES

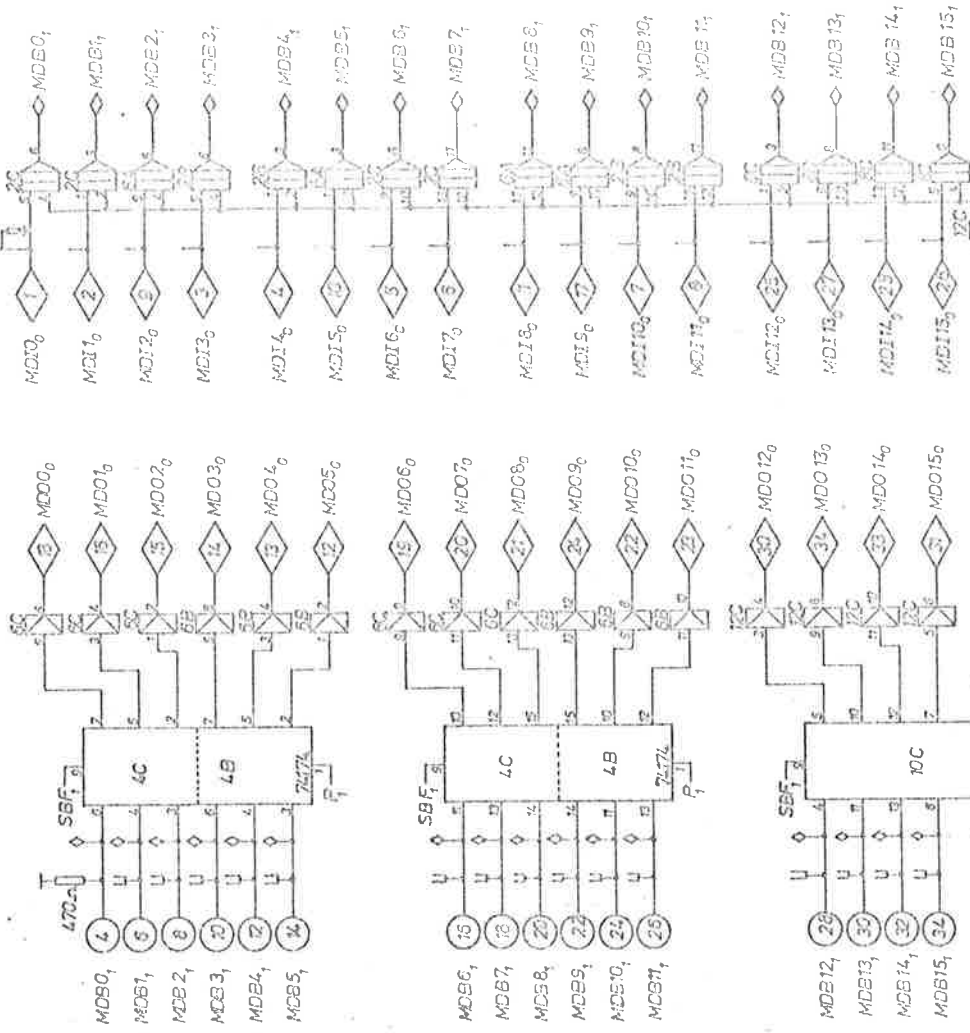
DEVICES

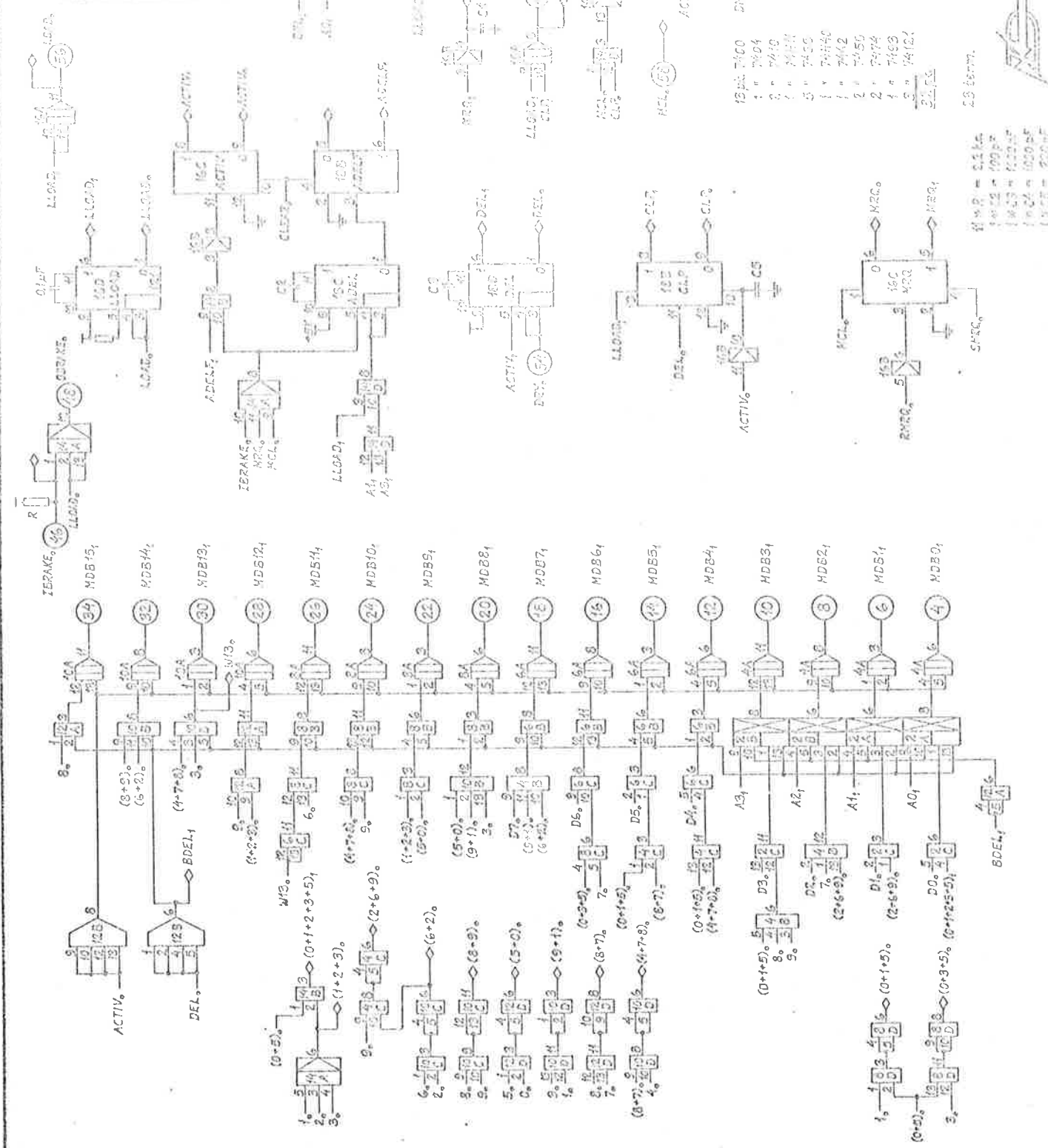
| NO-NO | TYPE                       | QTY | DESCRIPTION |
|-------|----------------------------|-----|-------------|
| 2030E | STANDARD CABLE             | 1   |             |
| 2030F | CARD EDGE (FULL WIRE)      | 1   |             |
| 2030G | POWER SUPPLIES (EV 5 10V)  | 2   |             |
| 2030H | FLUORESCENT LIGHTS         | 1   |             |
| 2030I | INTERFACER                 | 1   |             |
| 2030J | TIMING                     | 1   |             |
| 2030K | DECODING                   | 1   | CPU         |
| 2030L | CONTROL                    | 1   |             |
| 2030M | TR BUFFER                  | 1   |             |
| 2030N | REG. & ARITHM.             | 2   |             |
| 2030O | MULTI DEV. CONTR.          | 1   |             |
| 2030P | MEM. CONTR.                | 1   |             |
| 2030Q | COMPLETE MEM. CASE         | 1   |             |
| 2030R | CHI CONTROL MODULE         | 1   |             |
| 2030S | CHI STORAGE MODULE         | 1   |             |
| 2030T | MEM. PROTECTION            | 1   |             |
| 2030U | LOG. MODULE                | 1   |             |
| 2030V | SYNCHRONOUS NONEN INTERFAC | 1   |             |
| 2030W | ACH. I/O. Y. ACH           | 1   |             |
| 2030X | ACH. SER.                  | 1   |             |
| 2030Y | DUAL DUTY BUS BUFFER       | 1   |             |
| 2030Z | EXPLICIT TRIP BUFFER       | 1   |             |
| 2031A | QUAD LINES/IN/RECEIVER     | 1   |             |
| 2031B | X-MUTTER                   | 1   |             |
| 2031C | CDC RECEIVER               | 1   |             |
| 2031D | STOR. CONTR.               | 1   |             |
| 2031E | ADDS/DATA REG. 1           | 1   |             |
| 2031F | "                          | 1   |             |
| 2031G | "                          | 1   |             |
| 2031H | PLUS/PLUS CONTR.           | 1   |             |
| 2031I | CDC 1700 110 TUFF          | 1   |             |
| 2031J | NOSE-1 TYPE 110 CHANNEL    | 1   |             |
| 2031K | TOTD BUFFER                | 1   |             |
| 2031L | DATA EXPANDER              | 1   |             |
| 2031M | I/O EXPANDER               | 1   |             |
| 2031N | TOTD BUFFER                | 1   |             |
| 2031O | REG. & POW. FAIL           | 1   |             |
| 2031P | TTL DIS. IN/OUT            | 1   |             |
| 2031Q | REAL TIME UNIT             | 1   |             |



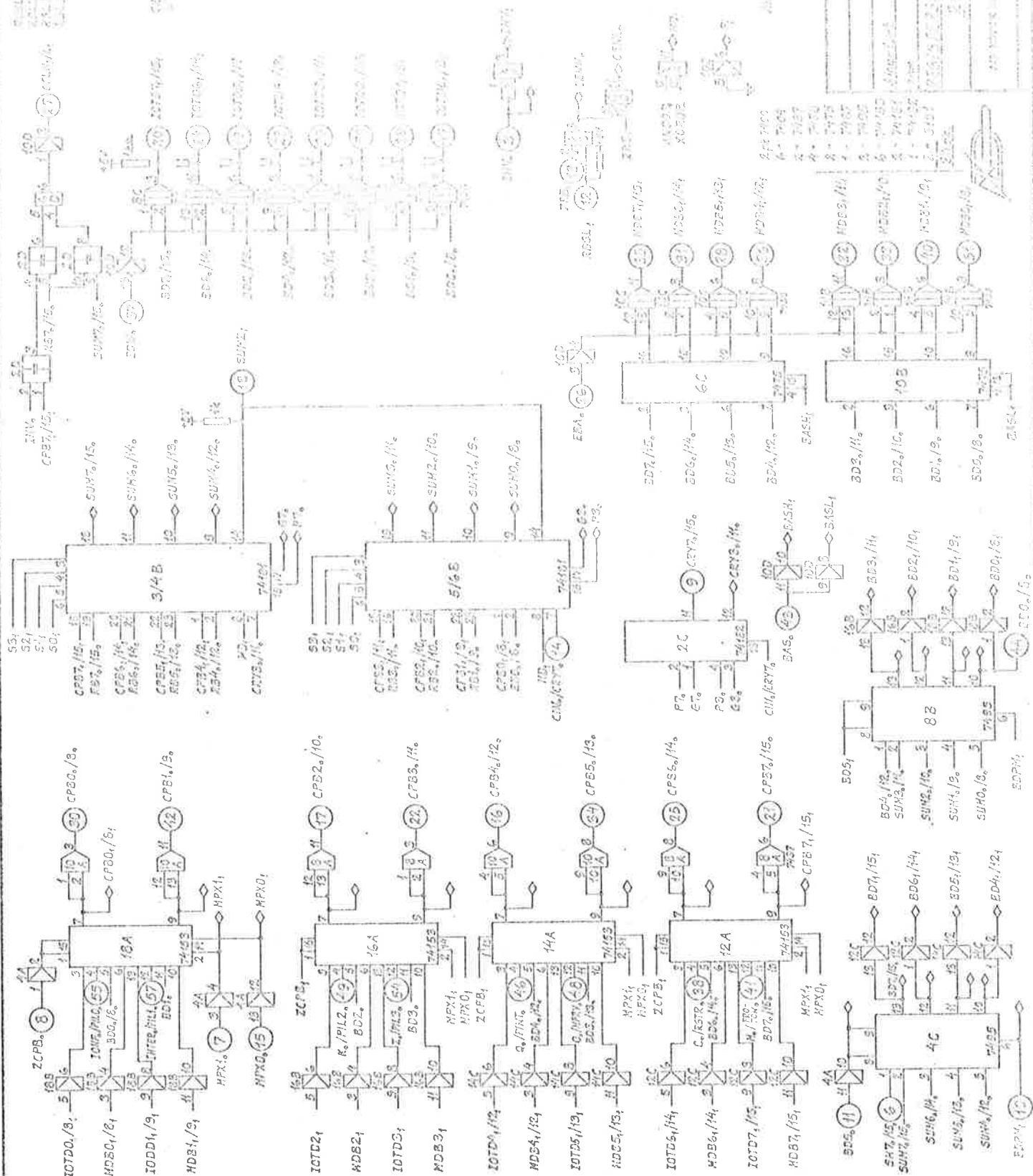
ARMED-RO SYSTEM

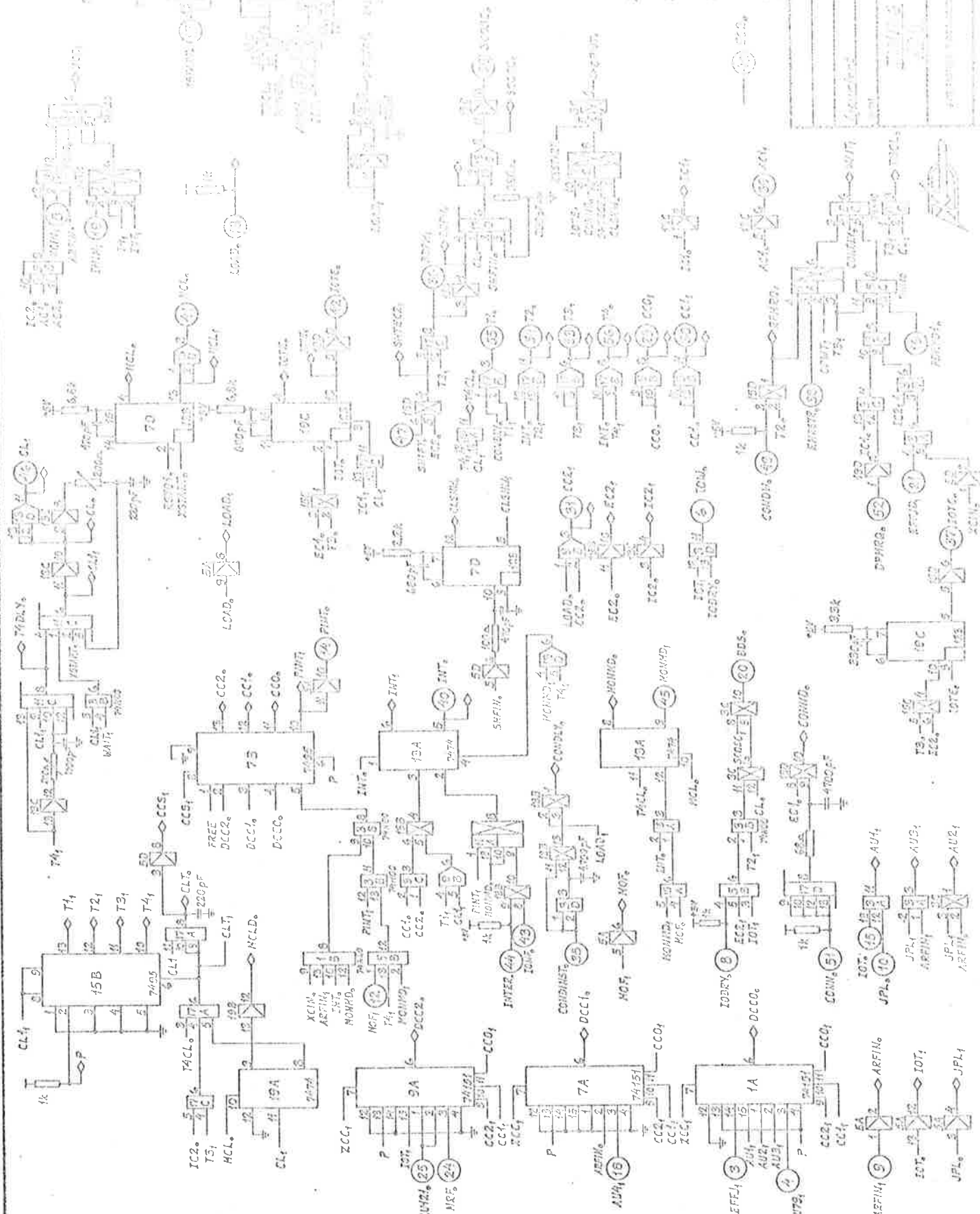
ARMED-RO SYSTEM

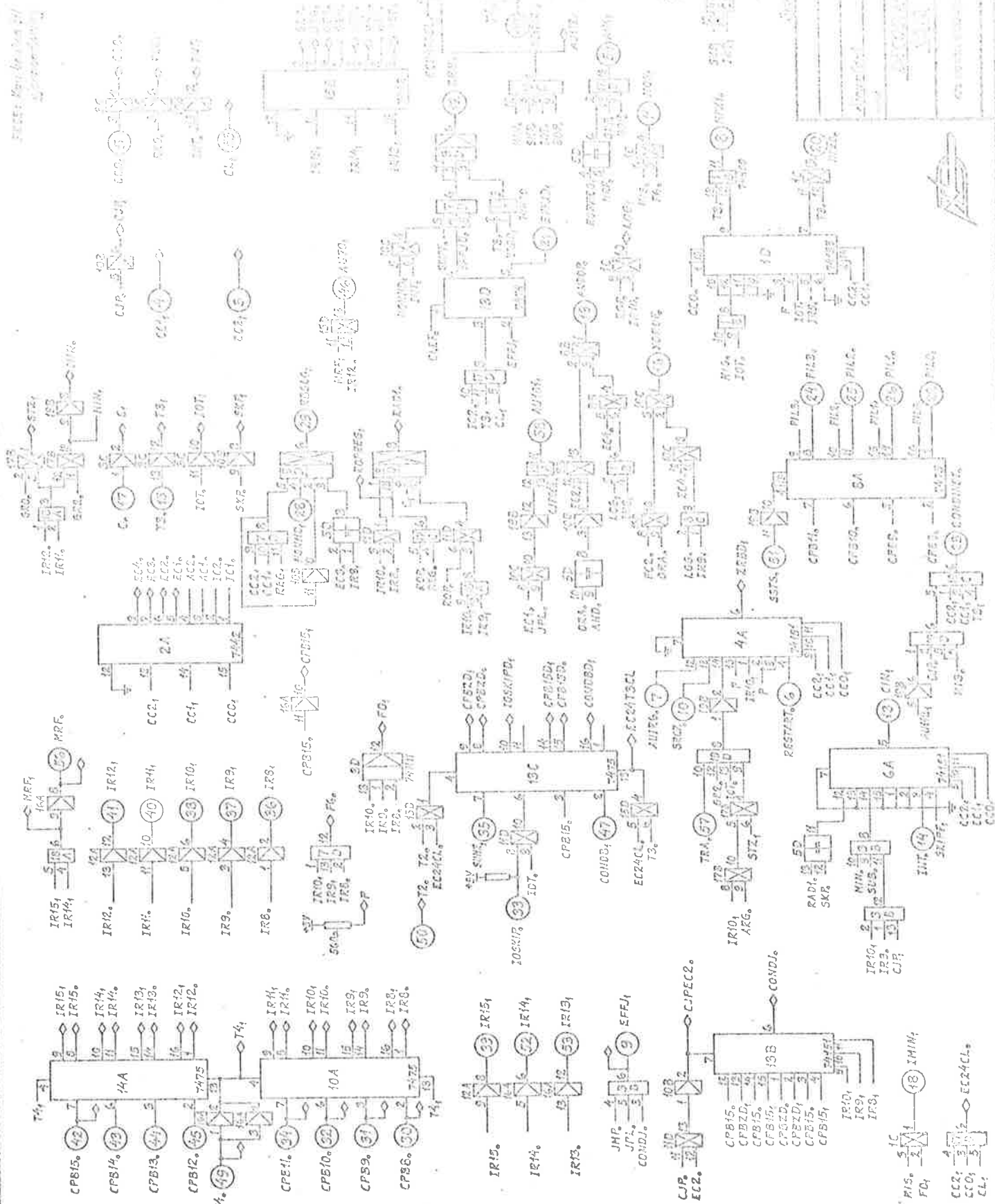


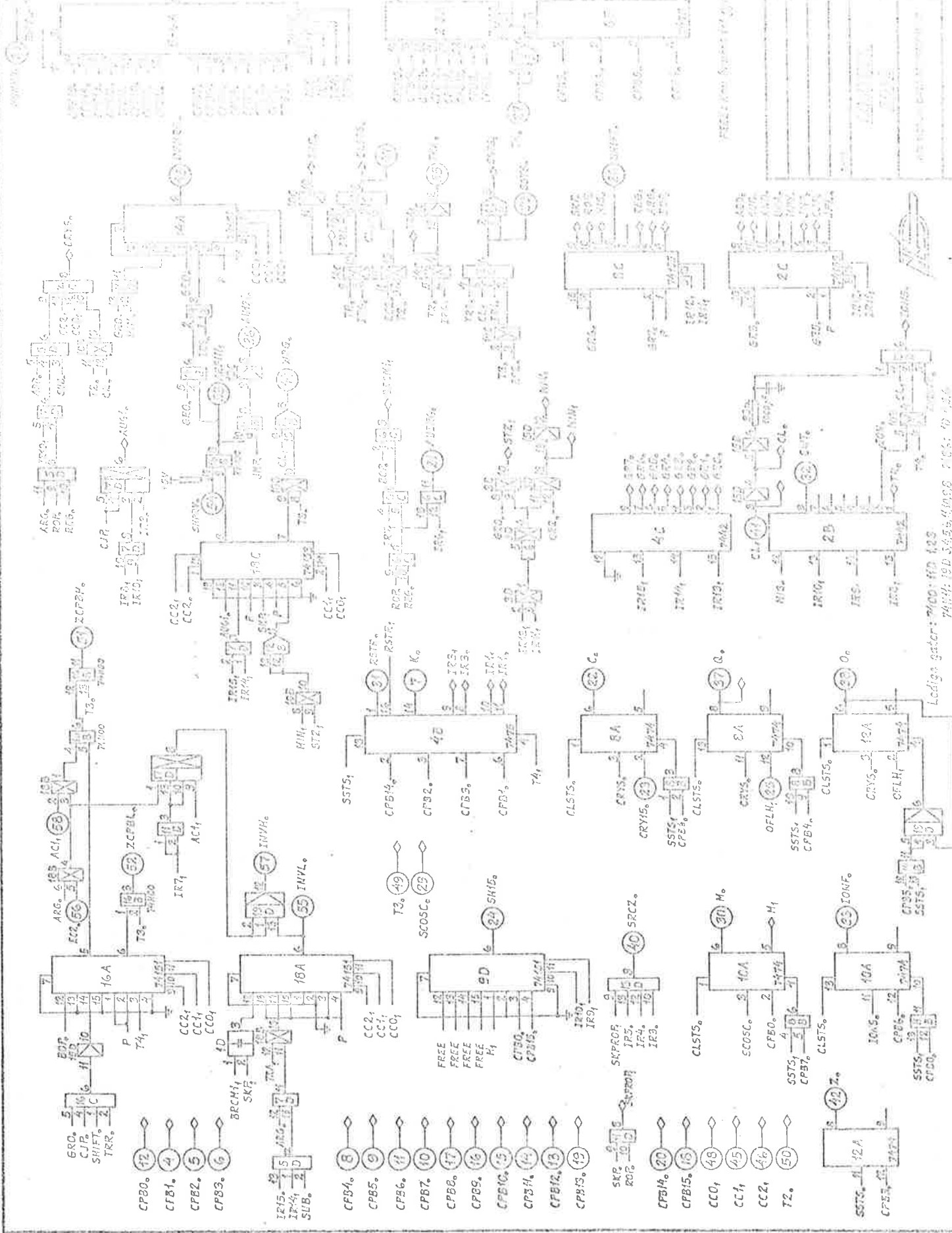


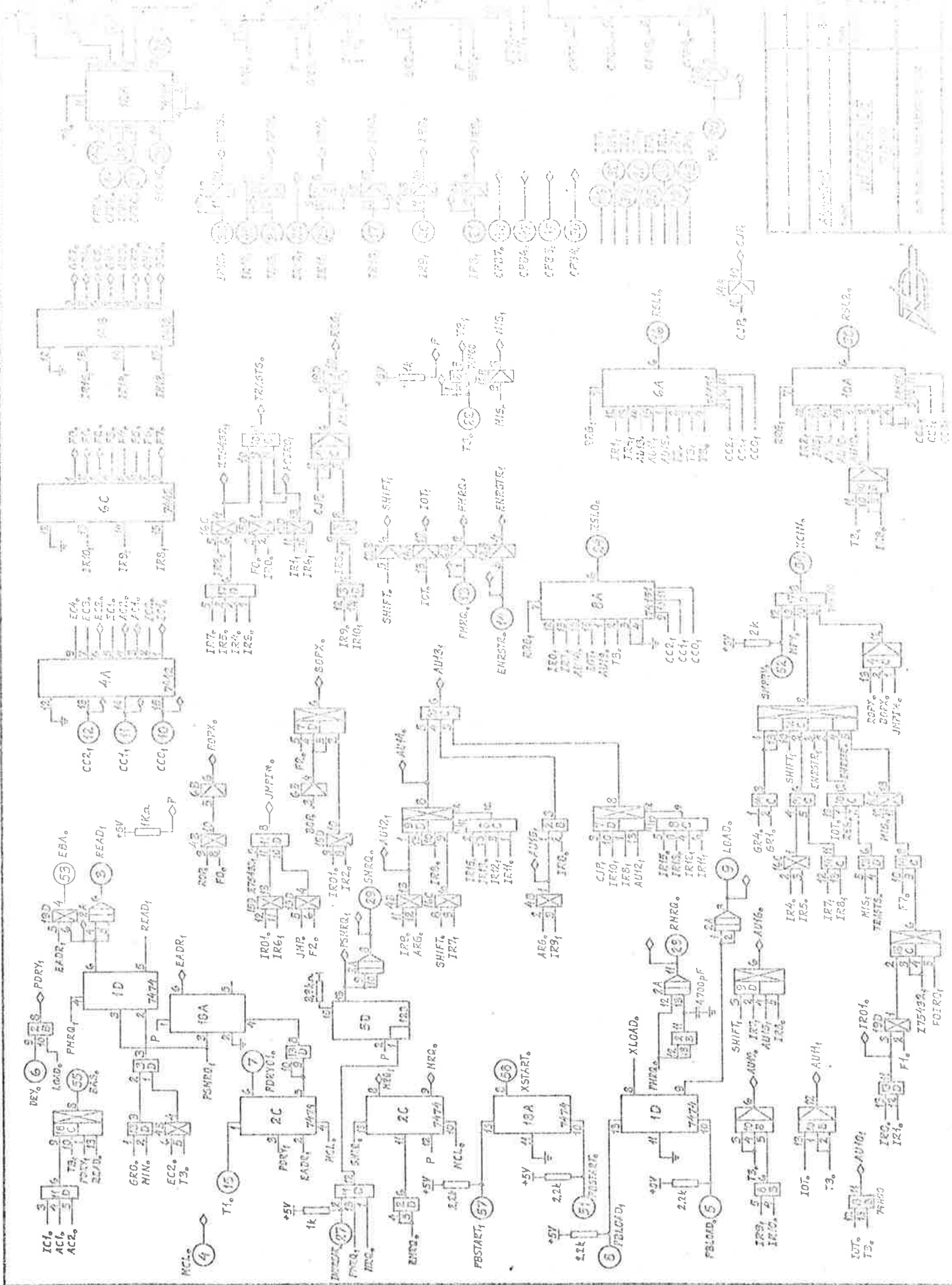
| Component | Value |
|-----------|-------|
| IZRAVE    | 100   |
| MDS       | 100   |
| DEL       | 100   |
| ACTIVE    | 100   |
| PASSIVE   | 100   |
| ...       | ...   |

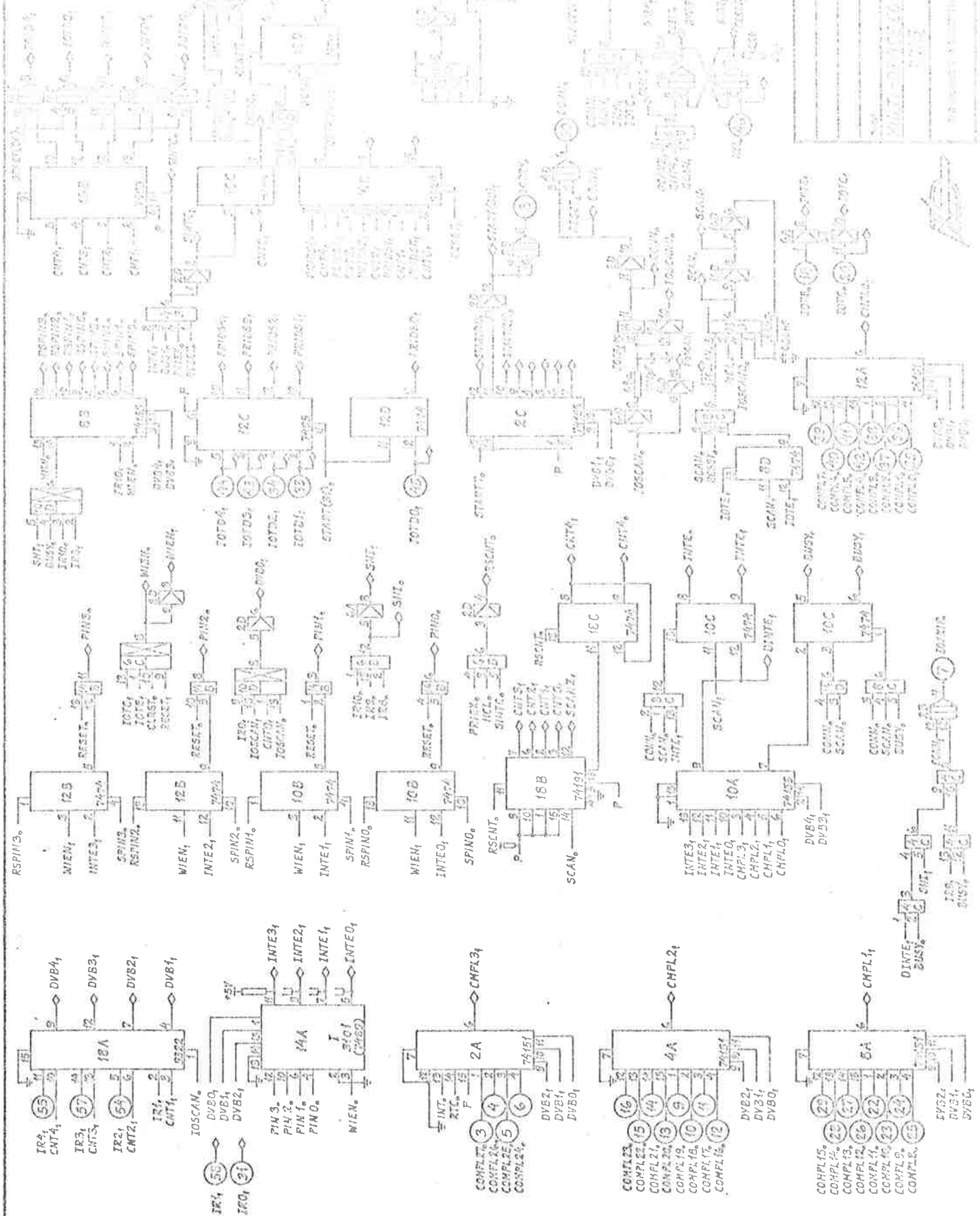




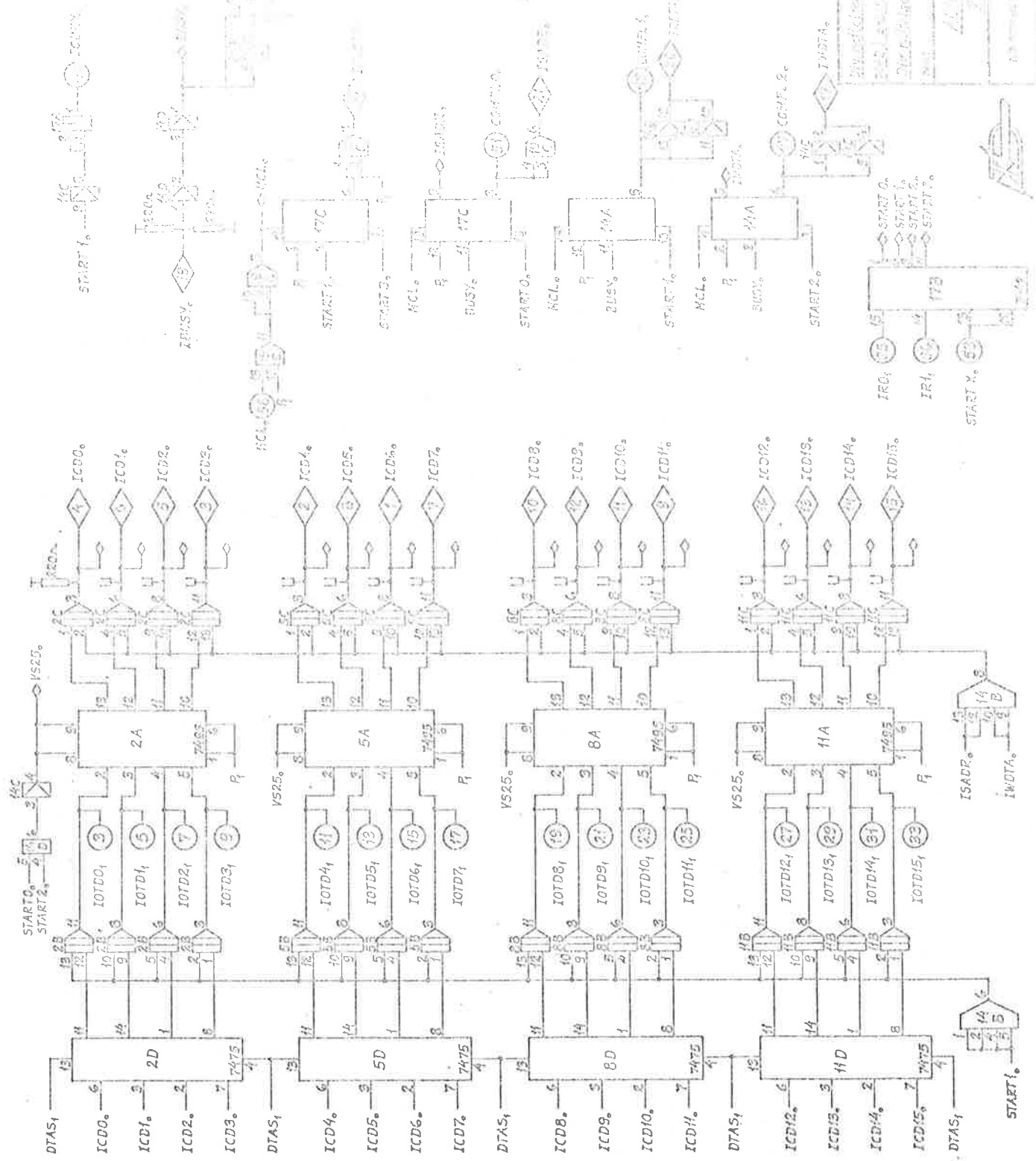






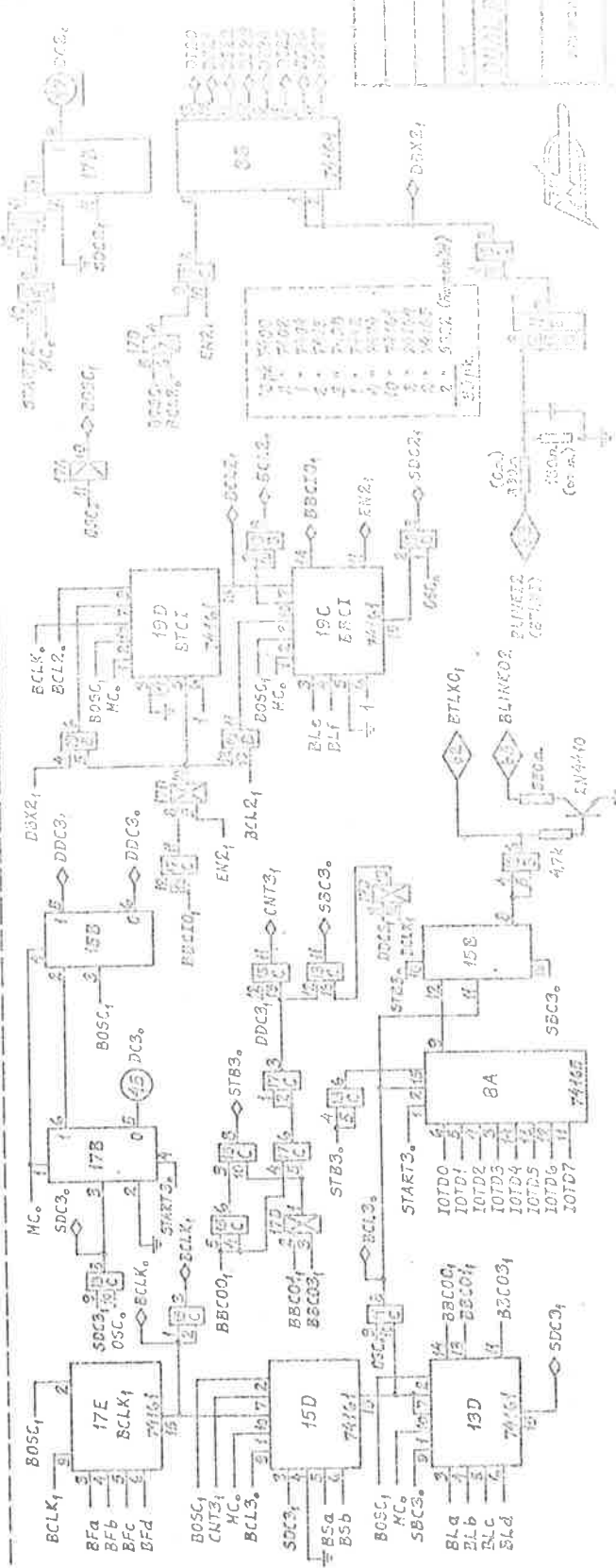
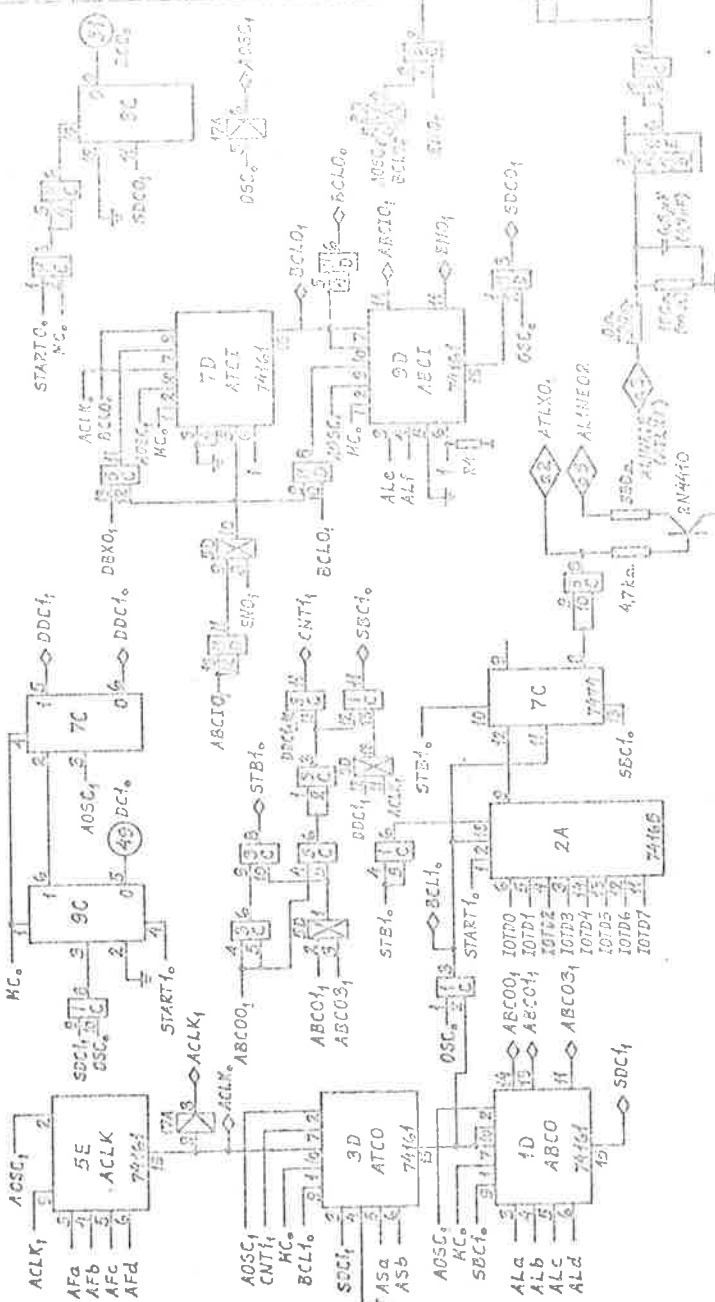




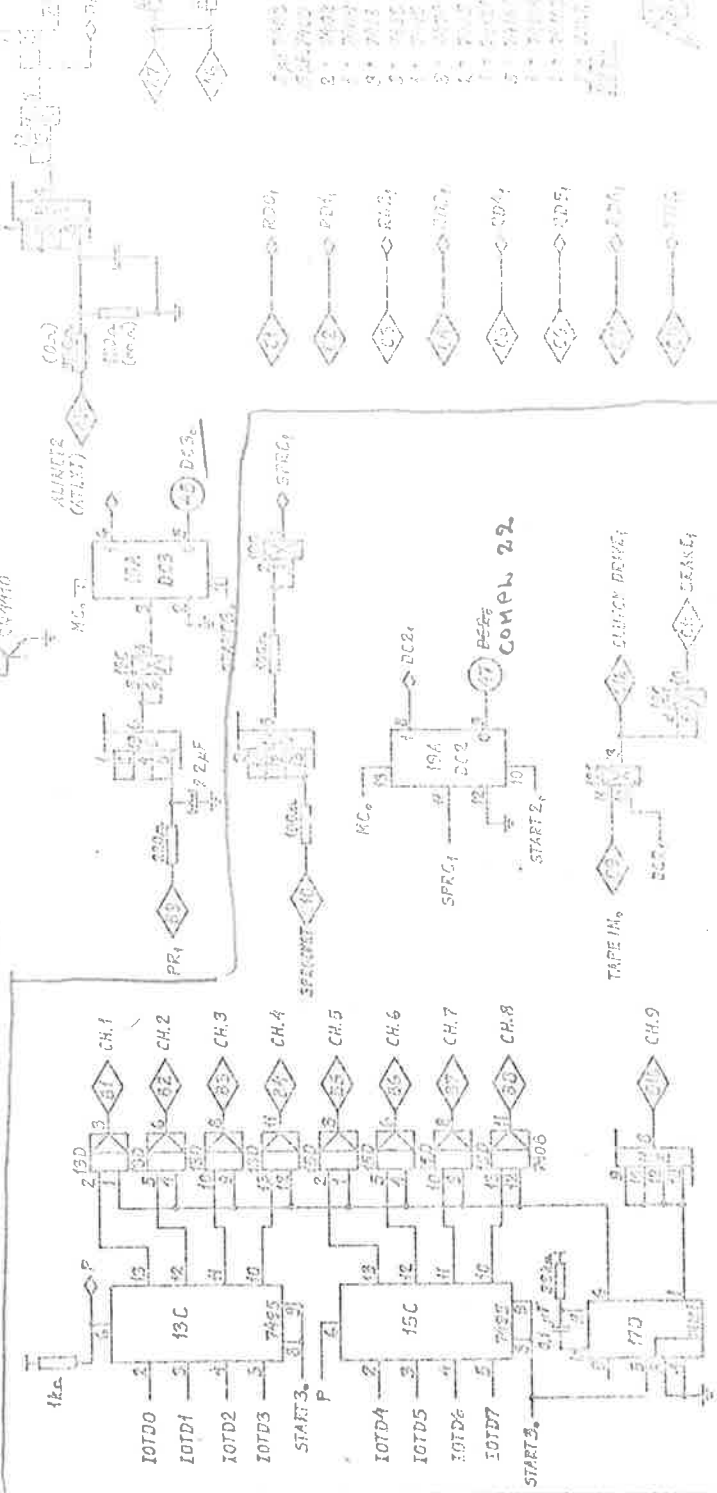
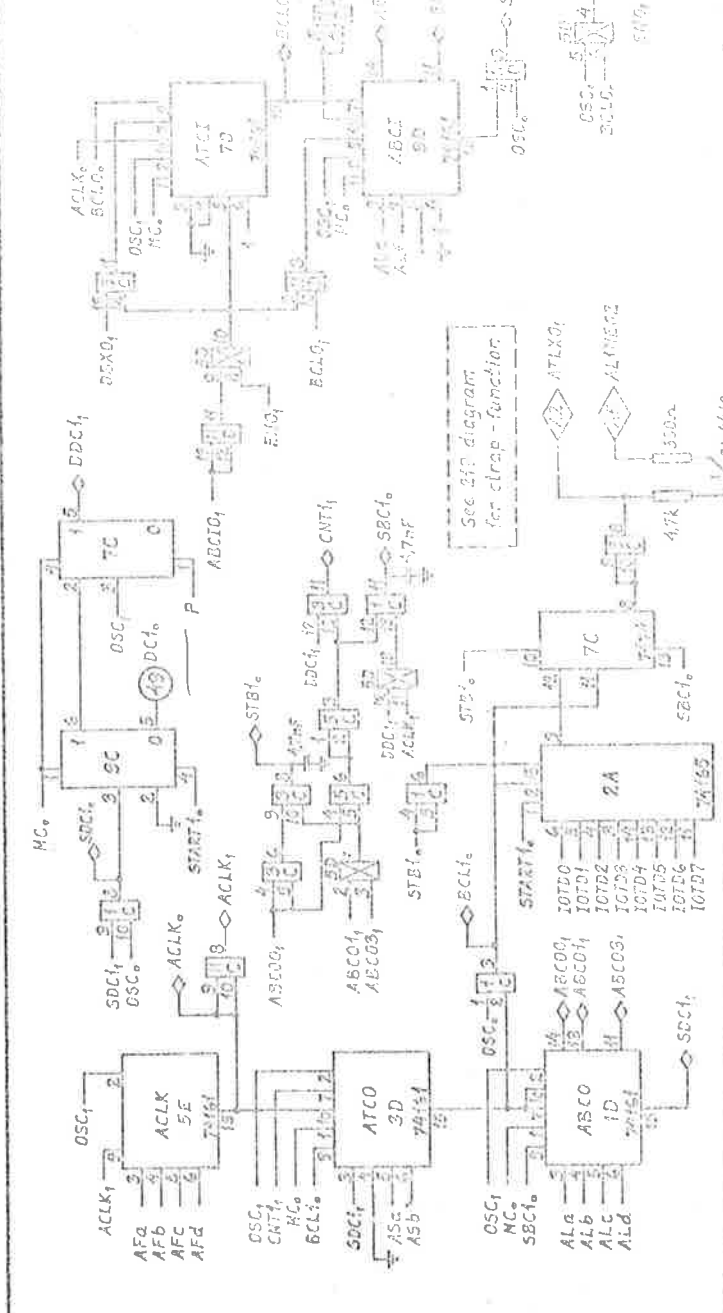


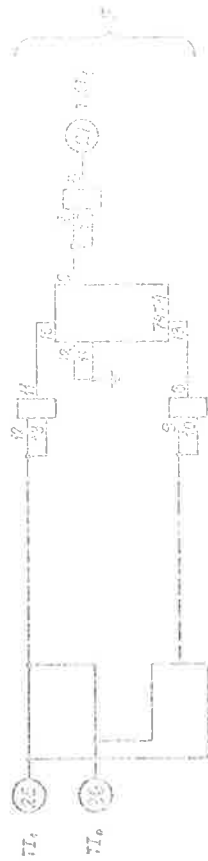
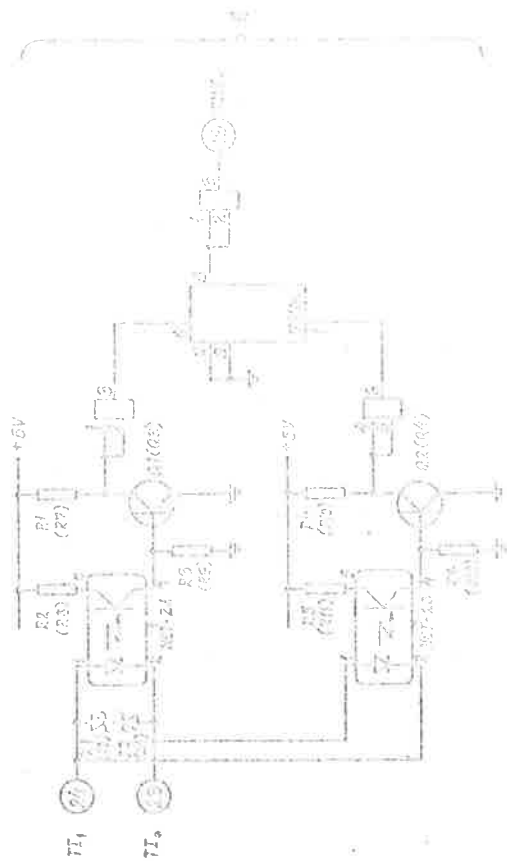
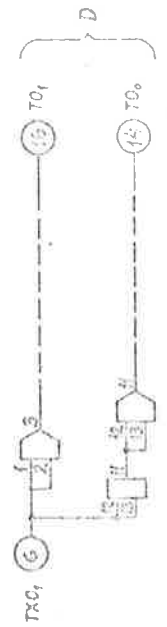
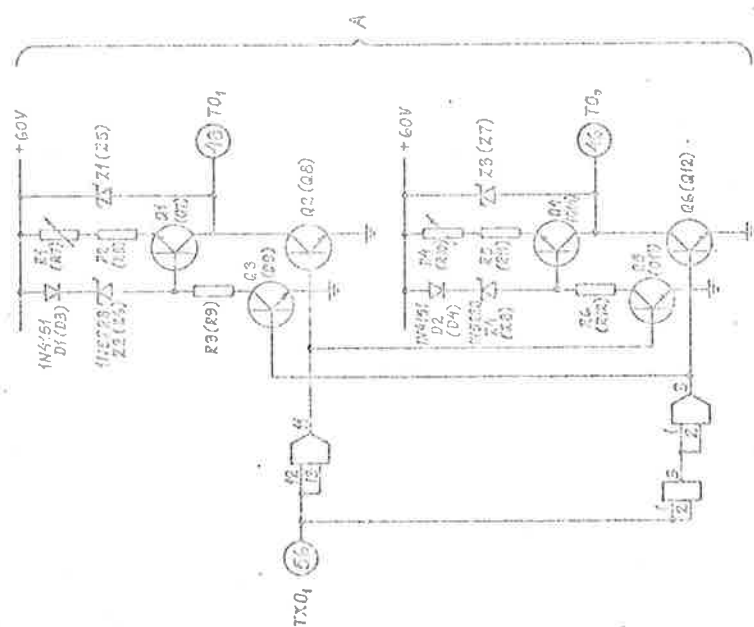
STOPPIT: 1 1/4 2  
 YSA: 0 SDCX1 0  
 XSA: 1 SDCX2 0

ANTENNA: 5 6 7 8  
 SDCX1 0  
 SDCX2 0  
 SDCX3 0  
 SDCX4 0  
 SDCX5 0  
 SDCX6 0  
 SDCX7 0  
 SDCX8 0  
 SDCX9 0  
 SDCX10 0  
 SDCX11 0  
 SDCX12 0  
 SDCX13 0  
 SDCX14 0  
 SDCX15 0  
 SDCX16 0  
 SDCX17 0  
 SDCX18 0  
 SDCX19 0  
 SDCX20 0  
 SDCX21 0  
 SDCX22 0  
 SDCX23 0  
 SDCX24 0  
 SDCX25 0  
 SDCX26 0  
 SDCX27 0  
 SDCX28 0  
 SDCX29 0  
 SDCX30 0  
 SDCX31 0  
 SDCX32 0  
 SDCX33 0  
 SDCX34 0  
 SDCX35 0  
 SDCX36 0  
 SDCX37 0  
 SDCX38 0  
 SDCX39 0  
 SDCX40 0  
 SDCX41 0  
 SDCX42 0  
 SDCX43 0  
 SDCX44 0  
 SDCX45 0  
 SDCX46 0  
 SDCX47 0  
 SDCX48 0  
 SDCX49 0  
 SDCX50 0  
 SDCX51 0  
 SDCX52 0  
 SDCX53 0  
 SDCX54 0  
 SDCX55 0  
 SDCX56 0  
 SDCX57 0  
 SDCX58 0  
 SDCX59 0  
 SDCX60 0  
 SDCX61 0  
 SDCX62 0  
 SDCX63 0  
 SDCX64 0  
 SDCX65 0  
 SDCX66 0  
 SDCX67 0  
 SDCX68 0  
 SDCX69 0  
 SDCX70 0  
 SDCX71 0  
 SDCX72 0  
 SDCX73 0  
 SDCX74 0  
 SDCX75 0  
 SDCX76 0  
 SDCX77 0  
 SDCX78 0  
 SDCX79 0  
 SDCX80 0  
 SDCX81 0  
 SDCX82 0  
 SDCX83 0  
 SDCX84 0  
 SDCX85 0  
 SDCX86 0  
 SDCX87 0  
 SDCX88 0  
 SDCX89 0  
 SDCX90 0  
 SDCX91 0  
 SDCX92 0  
 SDCX93 0  
 SDCX94 0  
 SDCX95 0  
 SDCX96 0  
 SDCX97 0  
 SDCX98 0  
 SDCX99 0  
 SDCX100 0

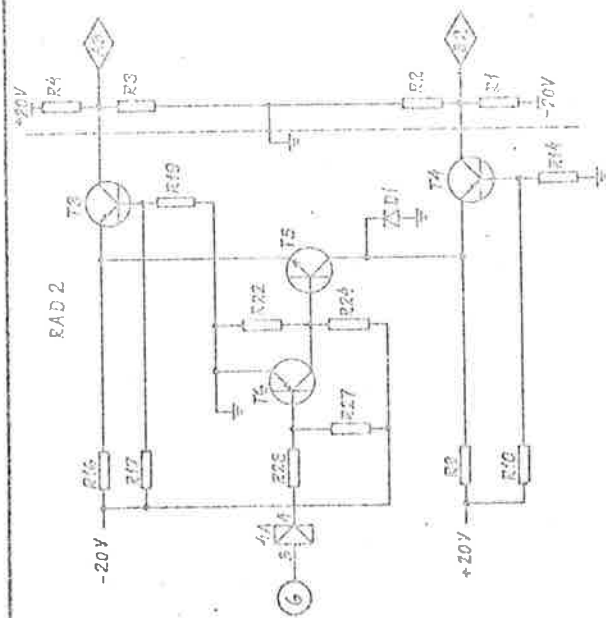


START0 → DKE  
START1 → INT  
START2 → M2N  
START3 → M2A

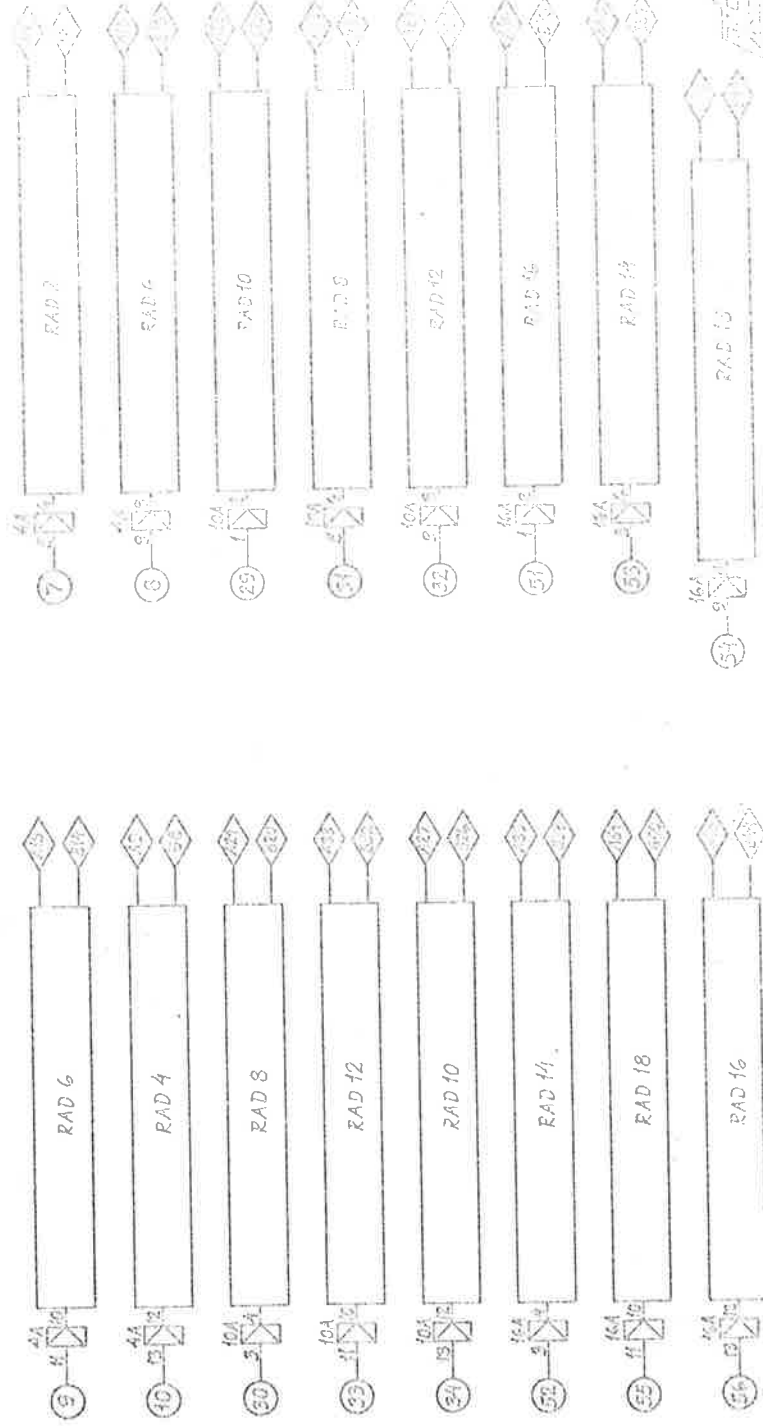
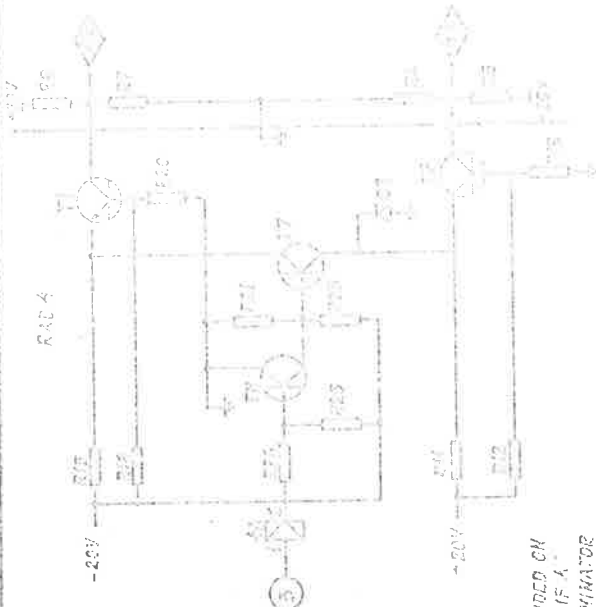


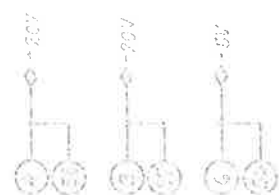
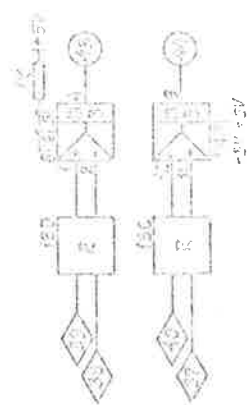
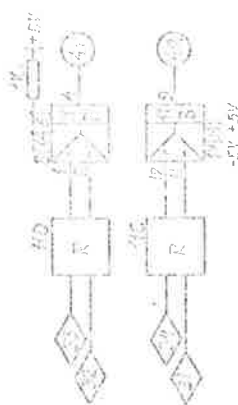
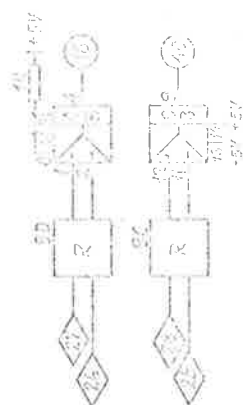
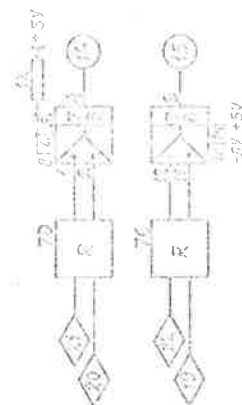
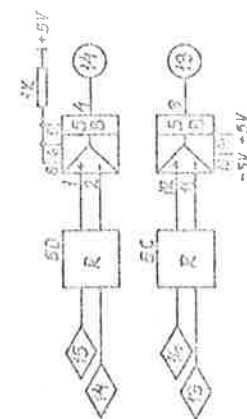
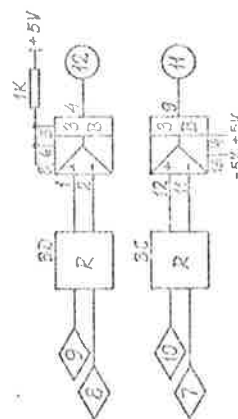
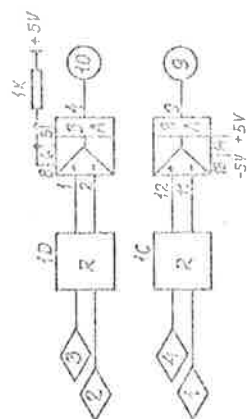
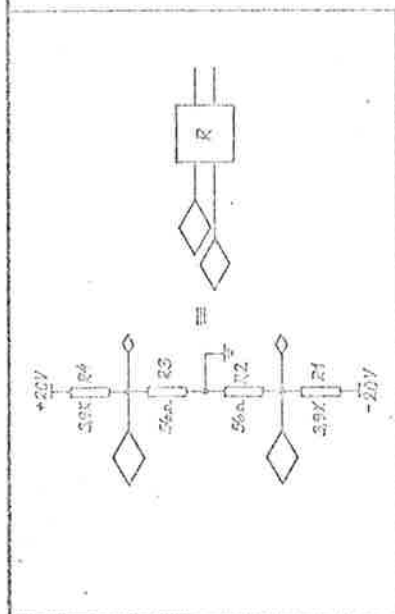


100

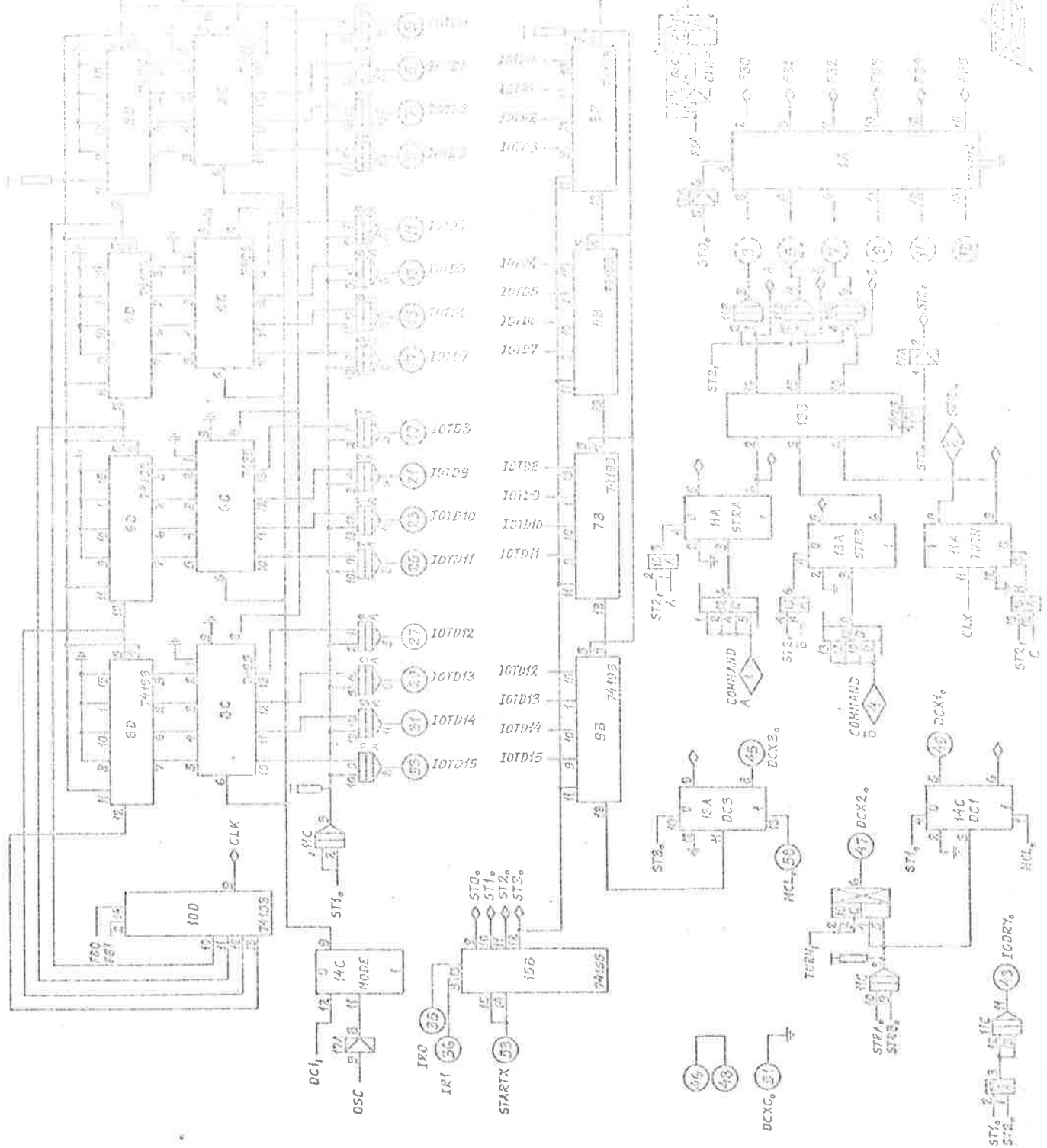


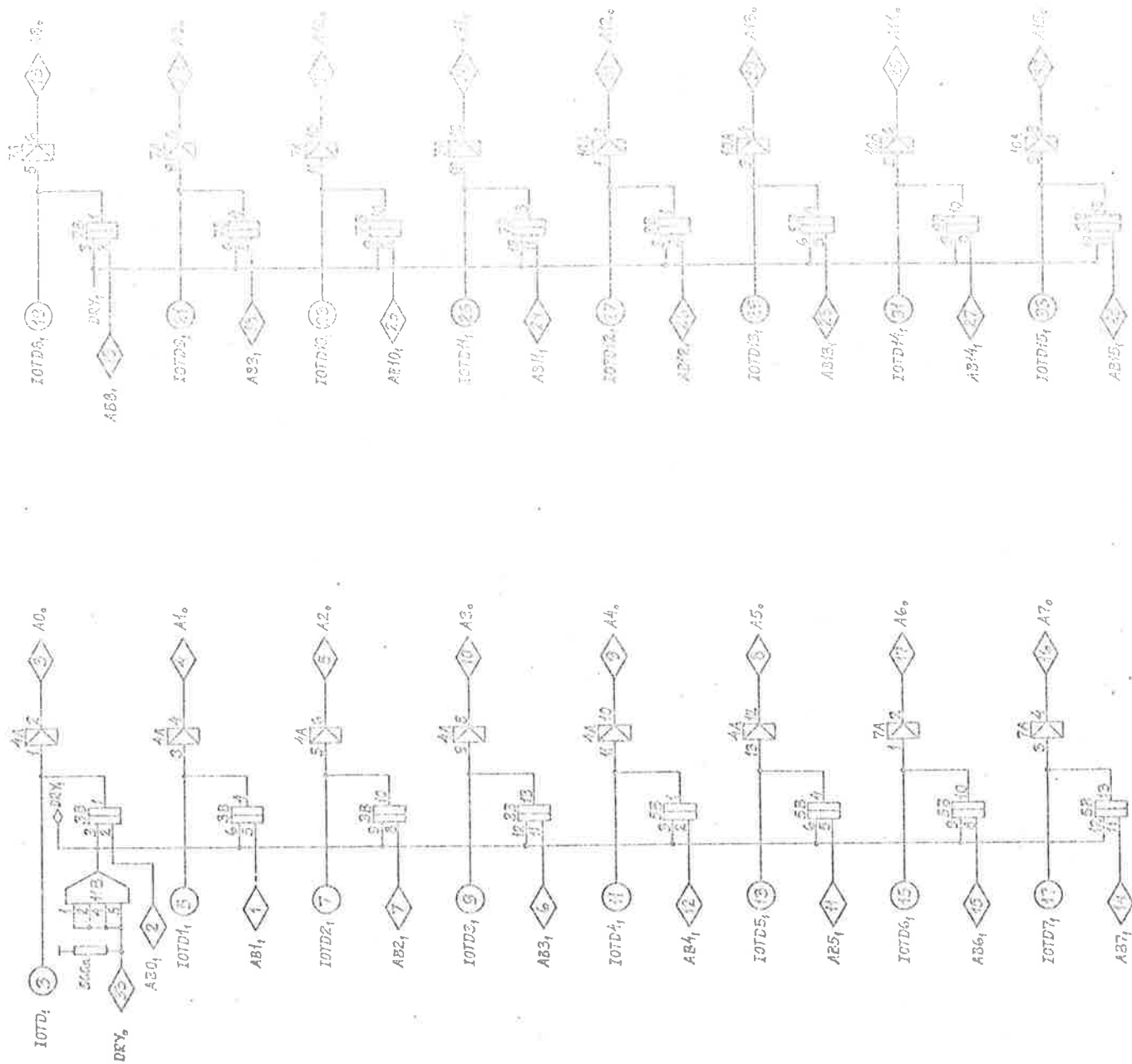
NOTE:  
R1-R8 IS NOT INCLUDED ON  
THE CIRCUIT BOARD IF A  
STANDARD CDC TERMINATOR  
IS USED.

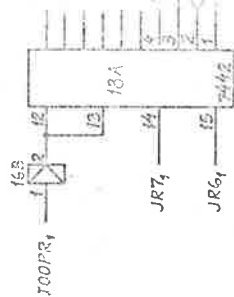
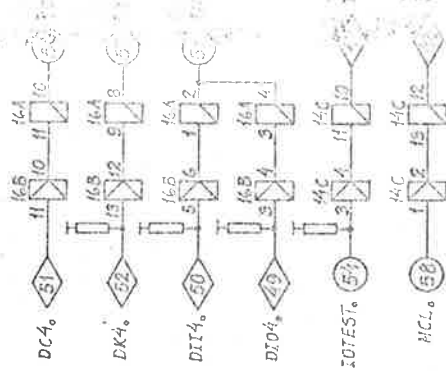
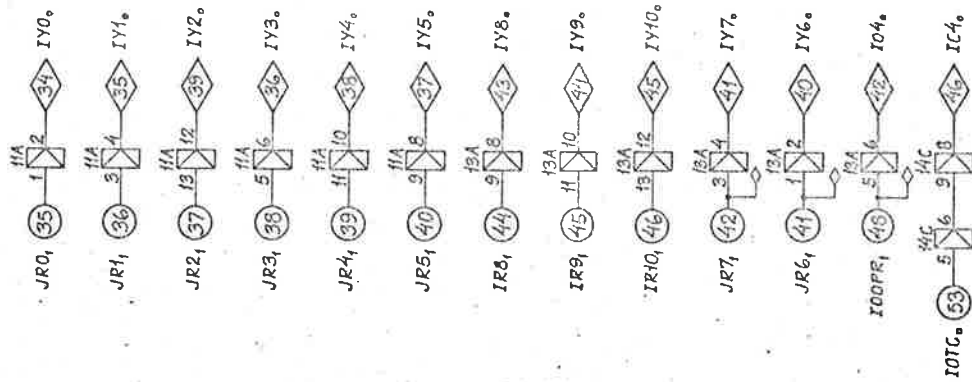
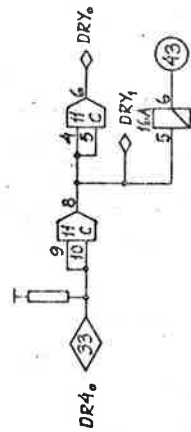
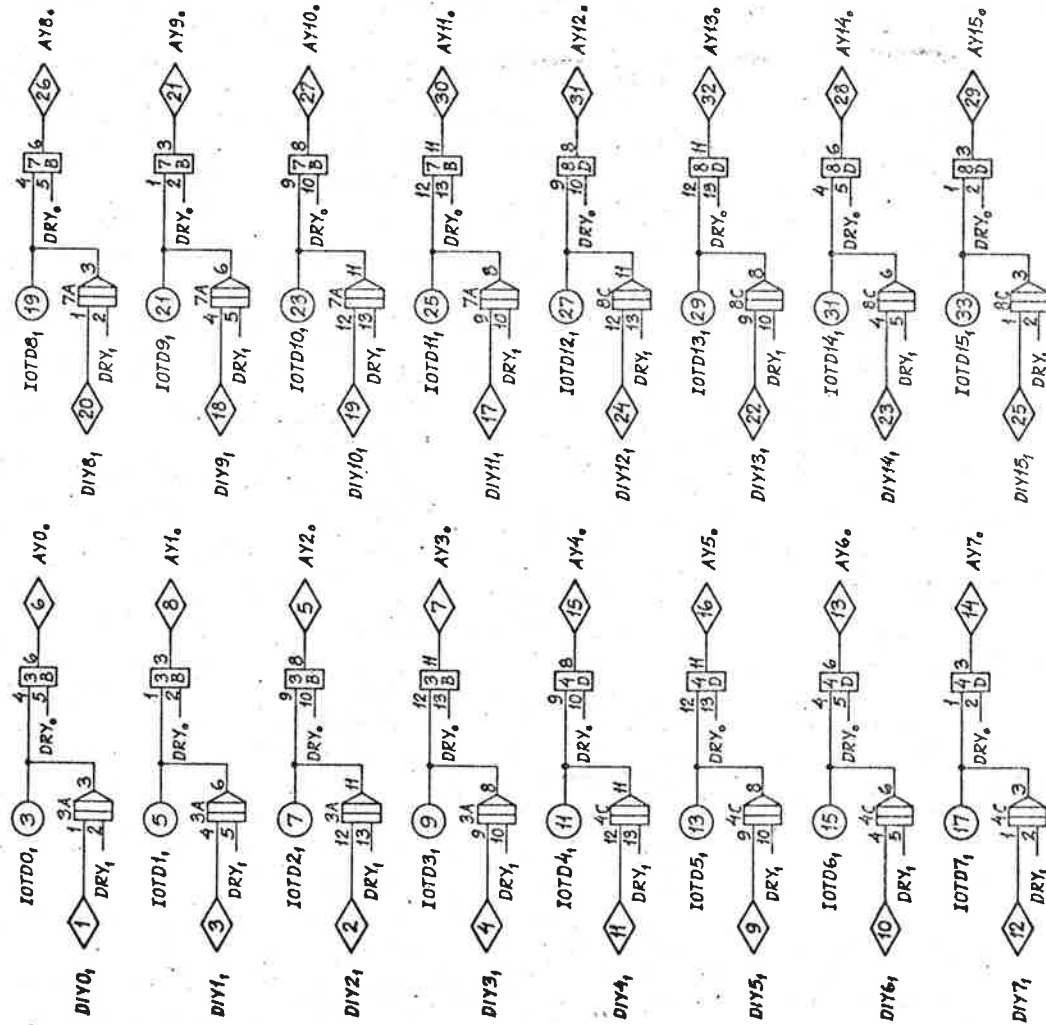












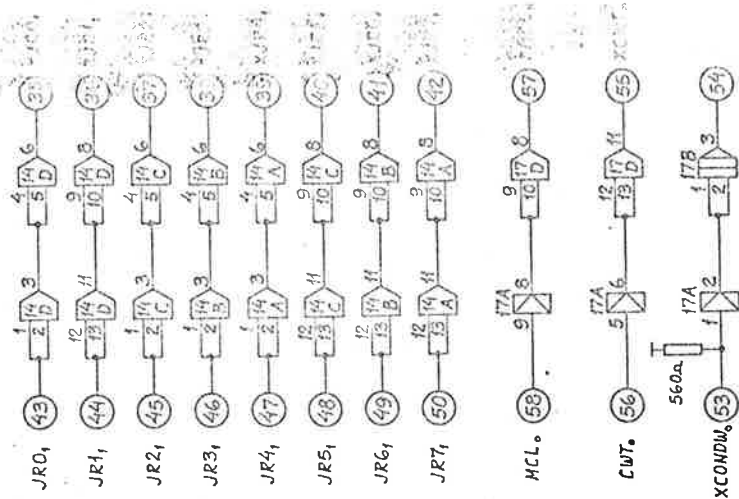
4pk 7400N  
4pk 7404N  
1pk 7406N  
1pk 7437H  
4pk 7438N  
1pk 7442N  
15pk

35 term.

|                           |
|---------------------------|
| 110 CHANNEL               |
| 22                        |
| 65 KODON DATA ELECTRONICS |



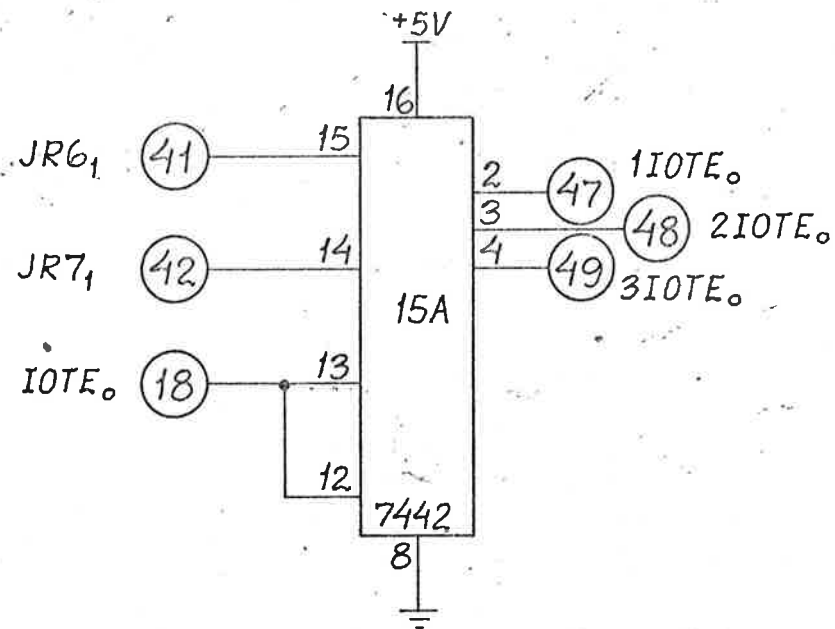




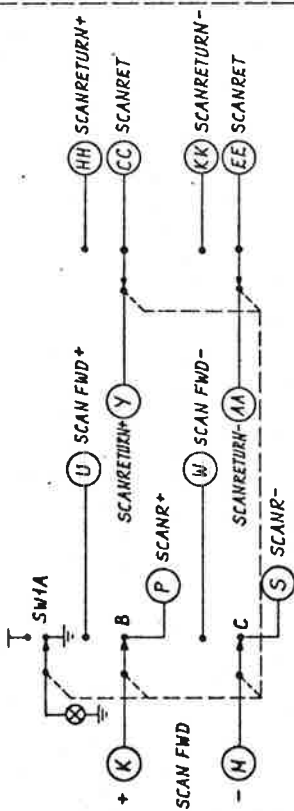
18 stk. 560a

56 term.

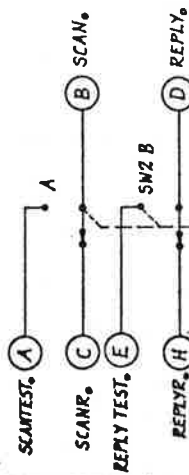
[illegible]



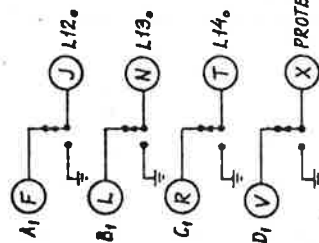
|                          |         |                 |      |
|--------------------------|---------|-----------------|------|
| DRAWN BY <i>Eeml</i>     | Remarks | Replacement for | Date |
| APPROVED BY, <i>I.B.</i> |         | Replaced by     | Date |
| DATE <i>8.2.72</i>       |         |                 |      |



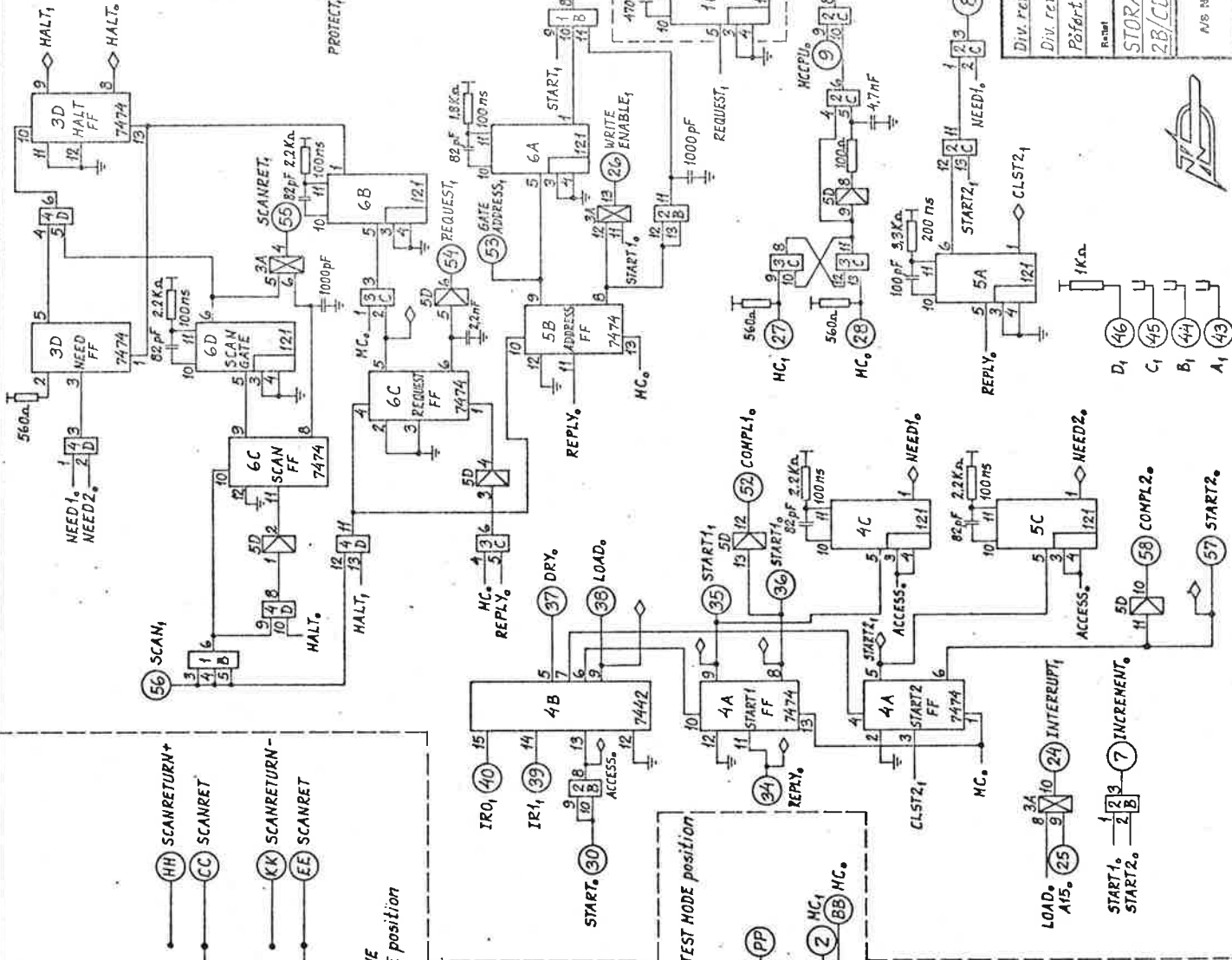
SW1 - ONLINE/OFFLINE  
SW1 shown in ONLINE position



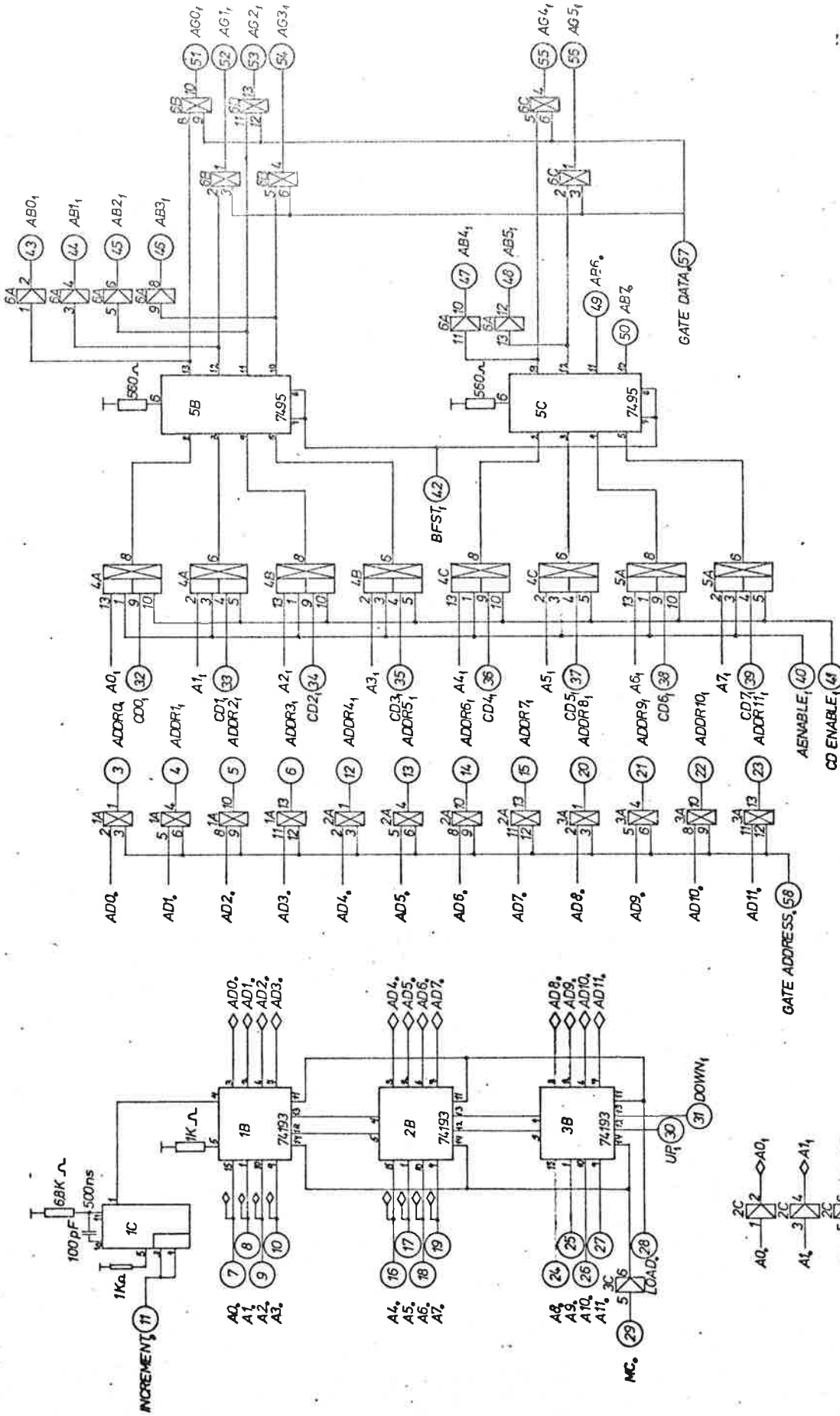
SW2 - TEST MODE  
SW2 shown in OFF TEST MODE position



PANEL



|                           |         |
|---------------------------|---------|
| Div. rettelse             | 24.1.72 |
| Div. rettelse             | 11.1.72 |
| Påføit term.nr.           | 6.1.72  |
| Rev.                      | Rev.    |
| STORAGE CONTROL           |         |
| 2B/CDC 1700 7224          |         |
| AVS NORSK DATA-ELEKTRONIK |         |

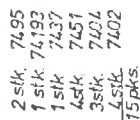


3 stk 74193  
1 stk 74121  
1 stk 7404  
5 stk 7402  
2 stk 7495  
4 stk 7450  
18 pins

56 Terminals

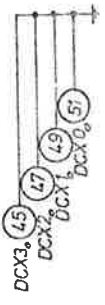
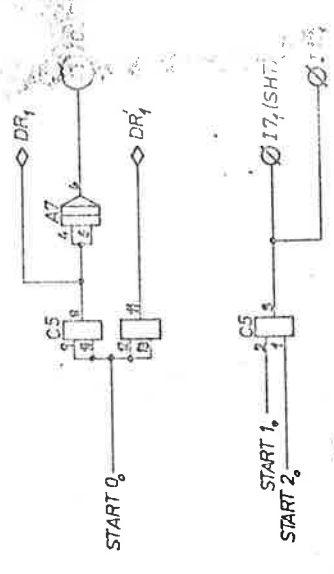
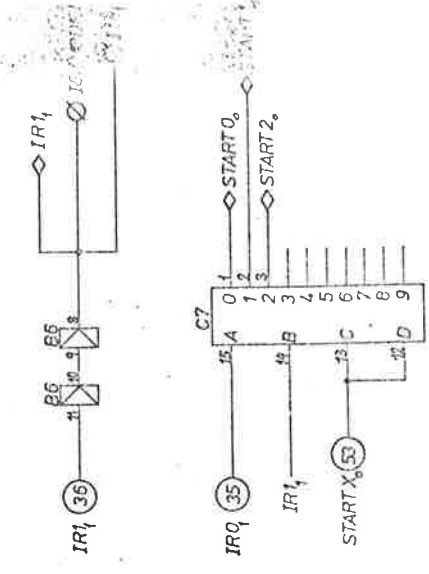
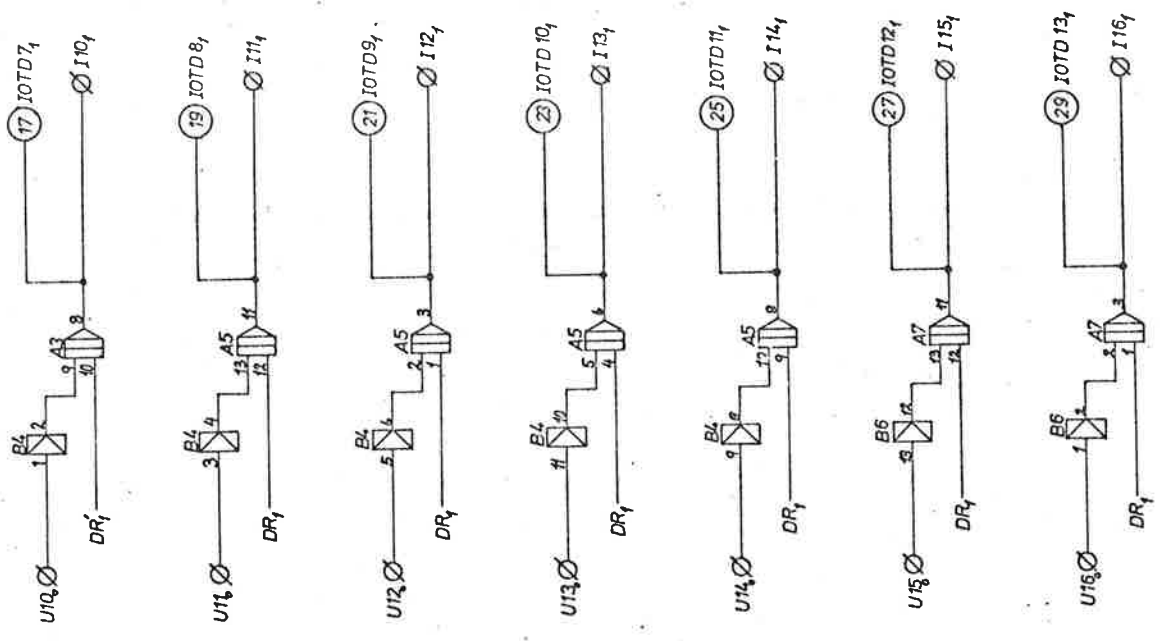
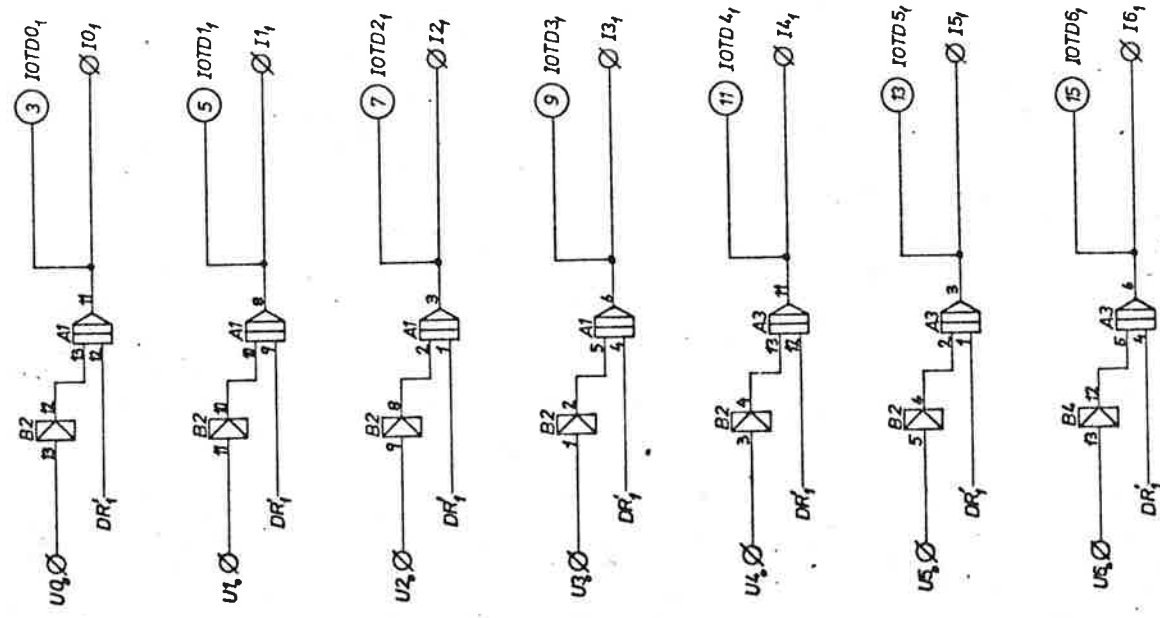
|                                   |         |         |         |
|-----------------------------------|---------|---------|---------|
| Div. rettelse                     | 8.10.75 | 5.7.75  | 1.10.75 |
| Perfekt adresse og term           | 5.7.75  | 1.10.75 | 1.10.75 |
| Revis                             | 1.10.75 | 1.10.75 | 1.10.75 |
| ADDRESS & DATA REGISTERS 4B - CDC | 1700    | 1725    | 1725    |
| A/B NOTEN DATA-ELEKTRONIK         |         |         |         |





|                            |                                                    |        |  |
|----------------------------|----------------------------------------------------|--------|--|
|                            | Rattet                                             | 571971 |  |
|                            | Dato                                               |        |  |
|                            | Beskrivelse                                        |        |  |
| Påført pakkes og termin    | ADD & DATA REGS<br>NORD 2B - CD1700<br><i>1226</i> |        |  |
| A/N NORSK DATA-ELEKTRONIKK |                                                    |        |  |

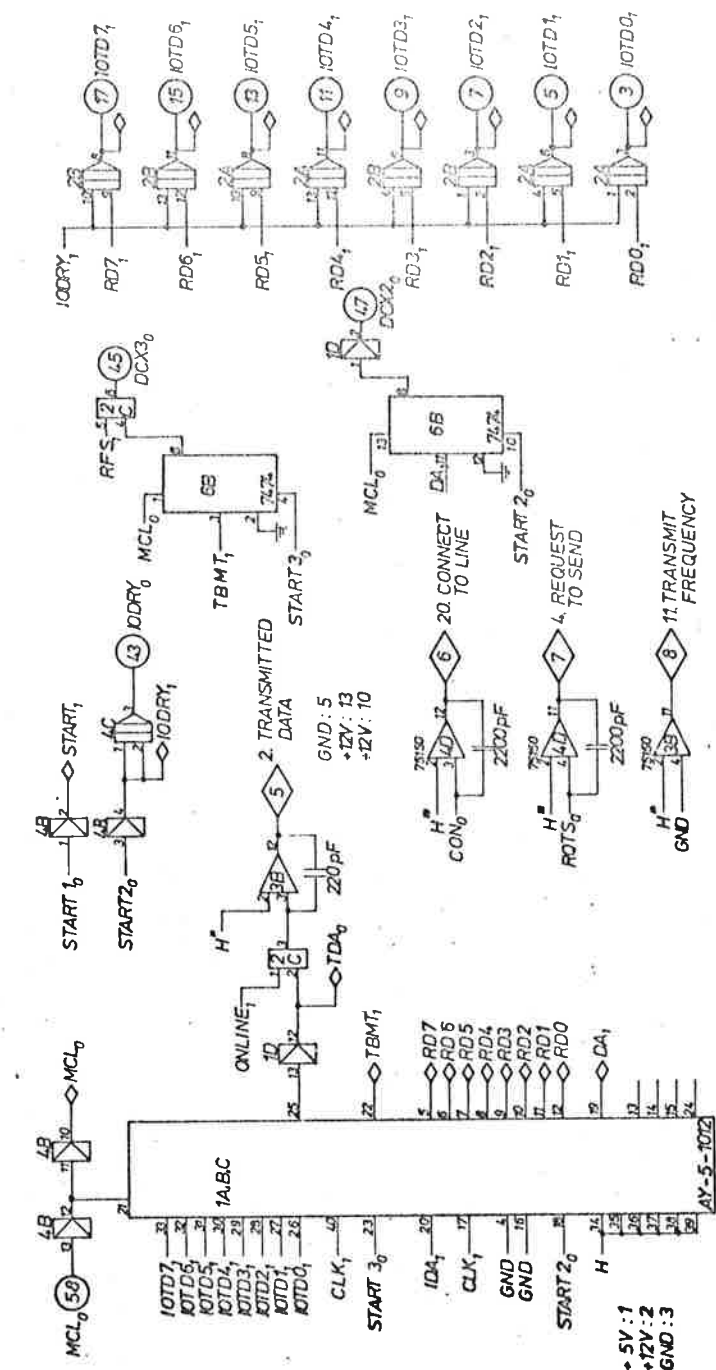
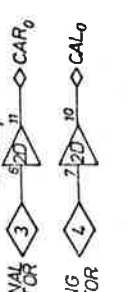
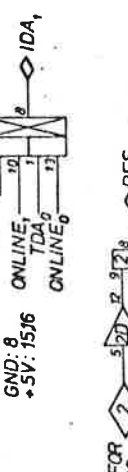
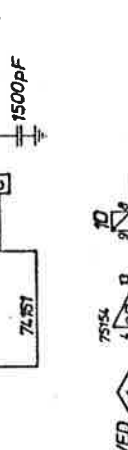
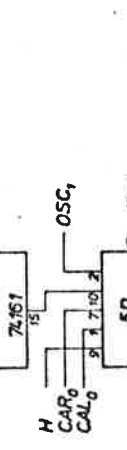
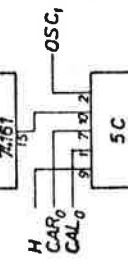
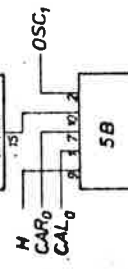
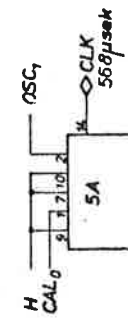
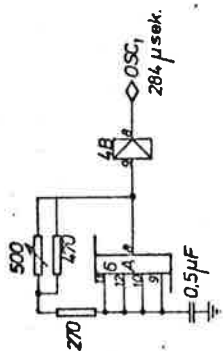




DWR: 0 - INPUT  
1 - SHIFT  
2 - STROBE

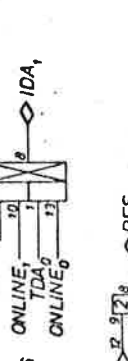
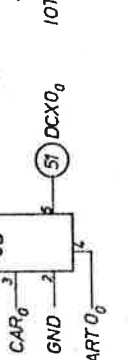
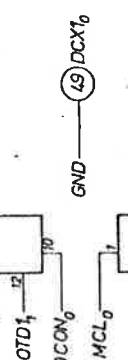
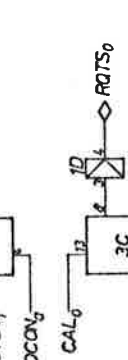
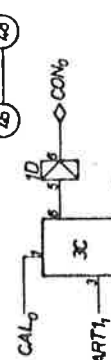
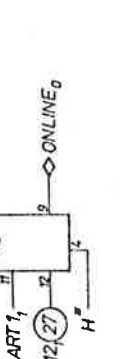
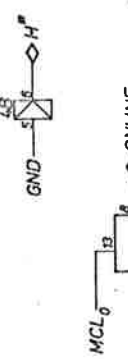
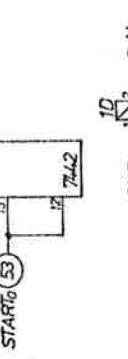
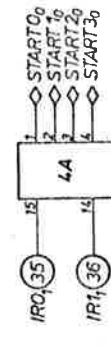
|                      |   |
|----------------------|---|
| Div relaiser         | 5 |
| Interface NORD-2B    |   |
| TIL WIRE - TEST 7227 |   |
| NORD DATA-ELEKTRONIK |   |





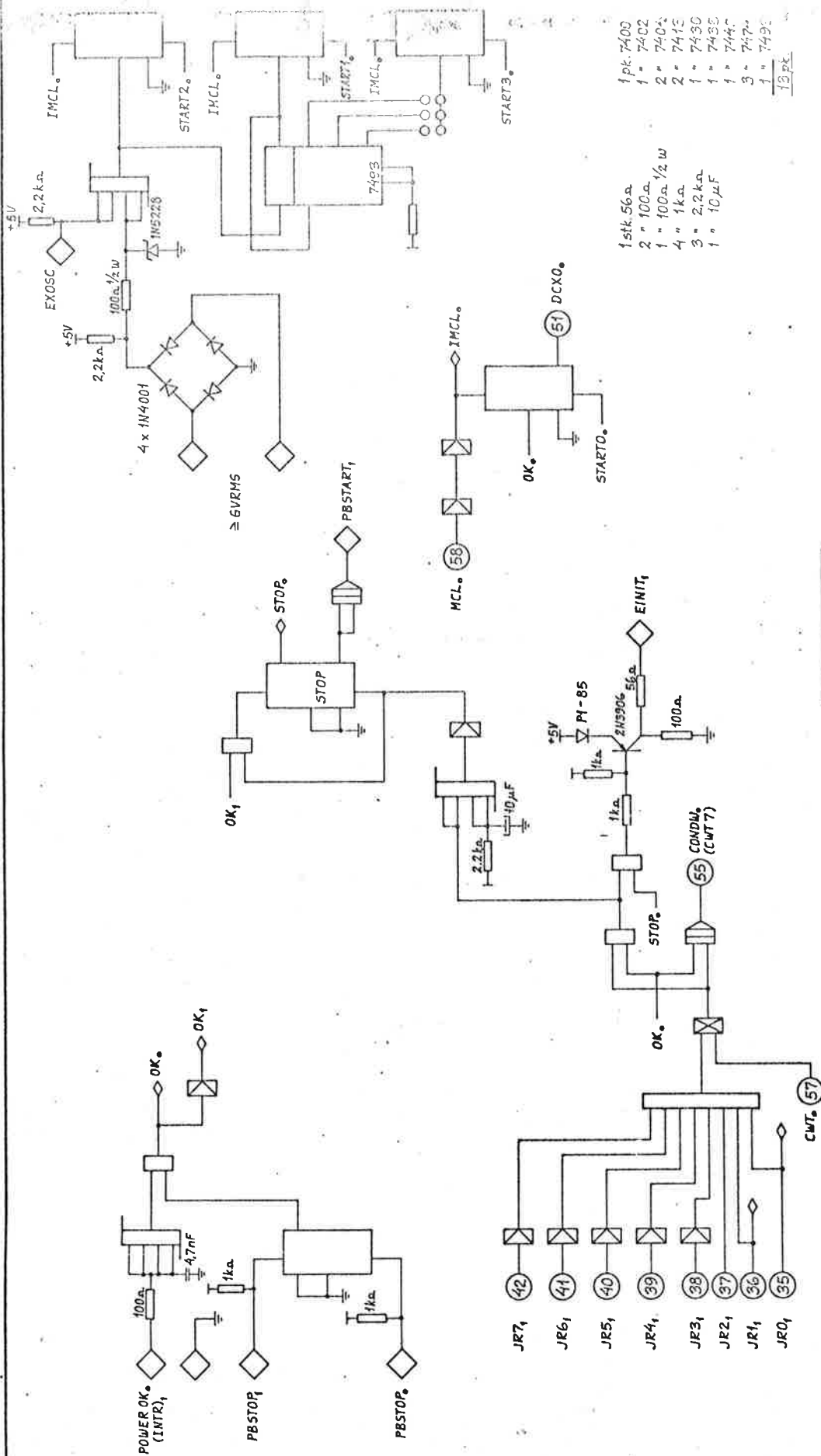
- 1pk 7400
- 211 7404
- 111 7413
- 311 7438
- 111 7442
- 111 7450
- 211 7474
- 411 7475
- 211 75150
- 111 75154
- 111 AY-5-1012

- 4stk 2200pF
- 1stk 270Ω
- 1stk 500Ω
- 1stk 1500pF
- 1stk 0.5μF

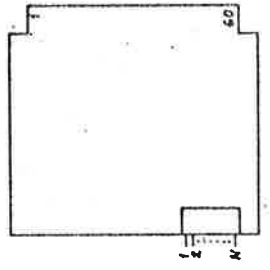


|                             |        |
|-----------------------------|--------|
| 7474 pk. internet : pos. 6B | 8.3.72 |
| Alauför                     | 2.3.72 |
| Post                        |        |
| TTY MODEM                   |        |
| BUFFER 8214                 |        |
| A/S HORSK DATA-ELEKTRONIK   | 5474   |



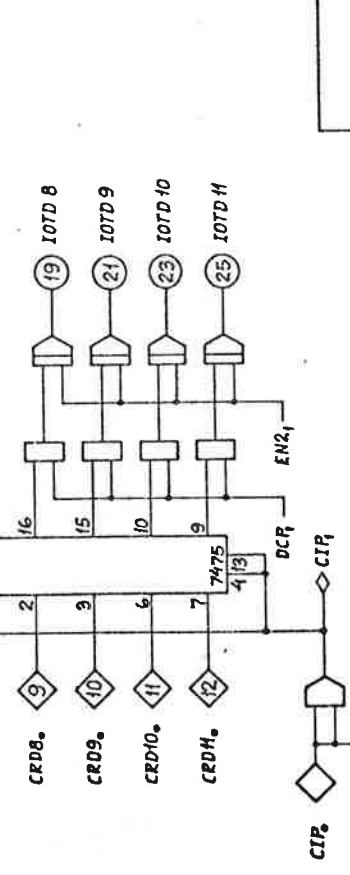
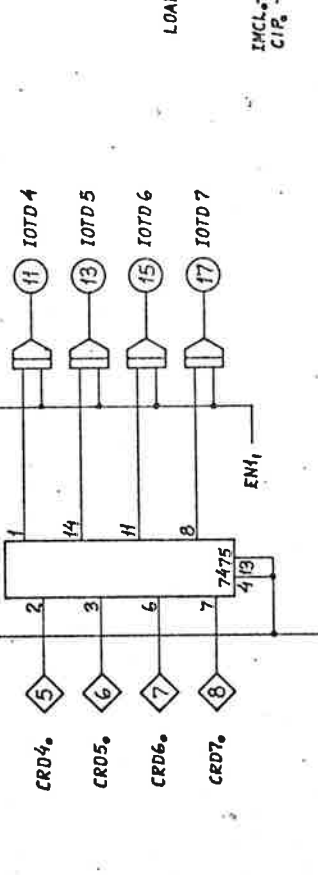
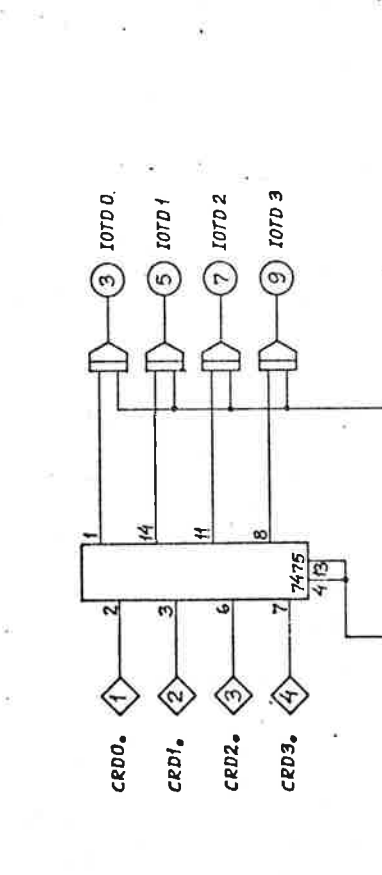
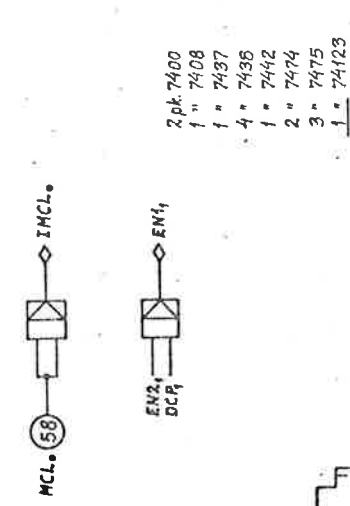
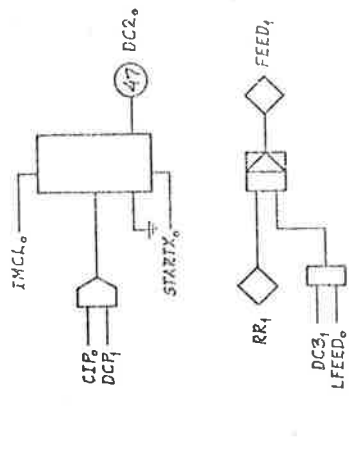
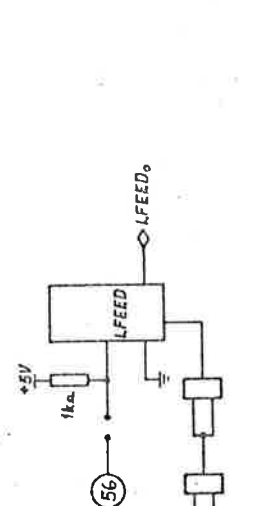
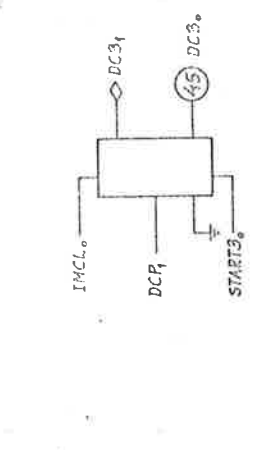
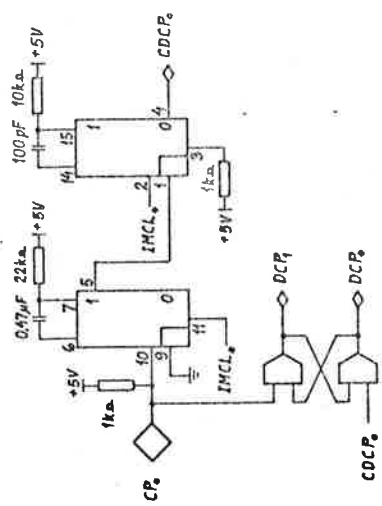
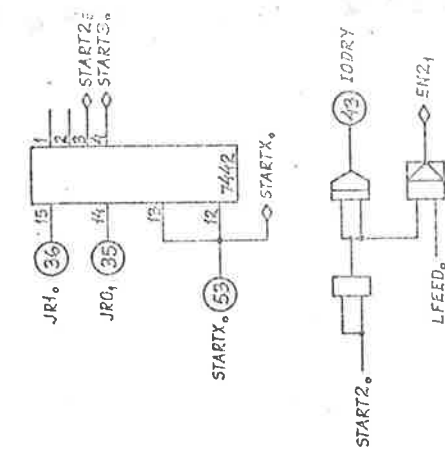


- 1pk 7403  
 1" 7402  
 2" 7404  
 2" 7415  
 1" 7430  
 1" 7438  
 1" 7442  
 3" 7474  
 1" 7493  
18pk
- 1stk 56 $\Omega$   
 2" 100 $\Omega$   
 1" 100 $\Omega$  1/2W  
 4" 1k $\Omega$   
 3" 2.2k $\Omega$   
 1" 10 $\mu F$



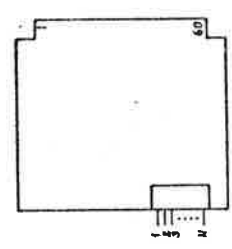
|     |     |
|-----|-----|
| 1   | 1   |
| 2   | 2   |
| 3   | 3   |
| 4   | 4   |
| ... | ... |





- 2pk 7400
- 1" 7408
- 1" 7437
- 4" 7435
- 1" 7442
- 2" 7474
- 3" 7475
- 1" 74123
- 15pk

- 1stk 22ka
- 1" 10ka
- 3" 1ka
- 1" 0.47μF
- 1" 100pF



|                            |     |     |
|----------------------------|-----|-----|
| Rev                        | Doc | Rev |
|                            |     |     |
| CARD READER BUFFER         |     |     |
| 8212                       |     |     |
| AND MICRO DATA-ELECTRONICS |     |     |

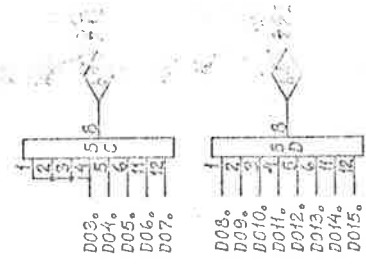
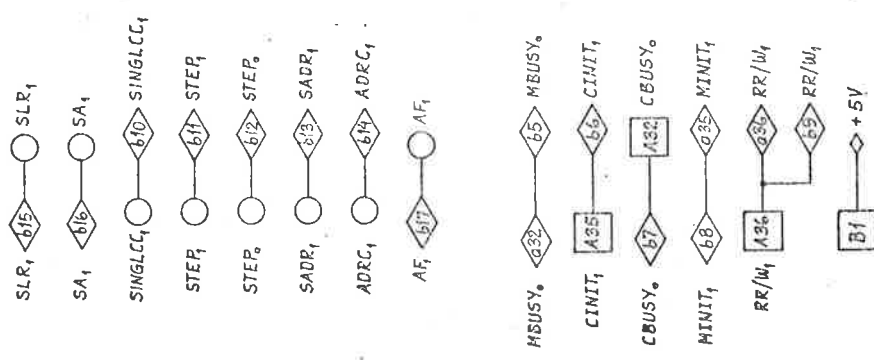
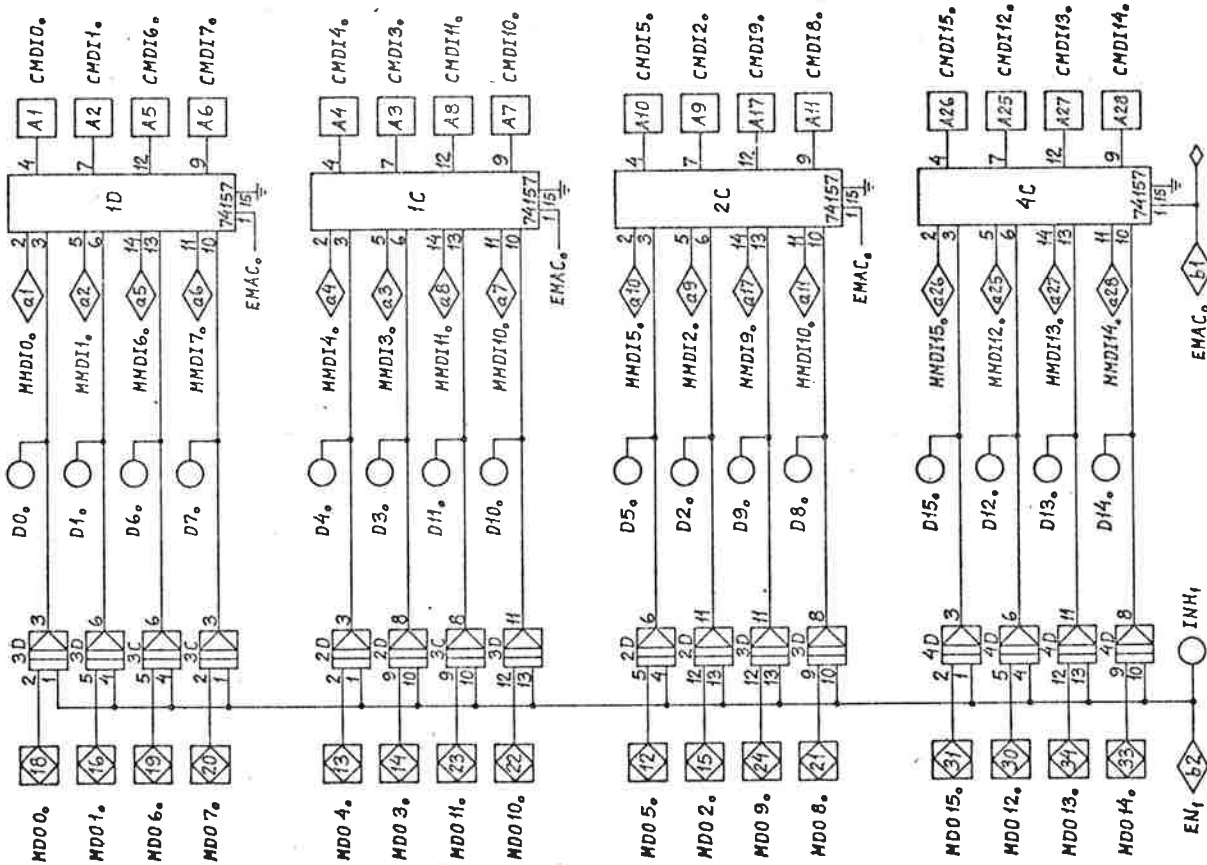




| 15K. | 1000 | 1500 | 2200 | 2700 | 5000 |
|------|------|------|------|------|------|
| 1    | 1    | 1    | 1    | 1    | 1    |
| 3    | 3    | 3    | 3    | 3    | 3    |
| 1    | 1    | 1    | 1    | 1    | 1    |
| 1    | 1    | 1    | 1    | 1    | 1    |

|  |                                  |                            |
|--|----------------------------------|----------------------------|
|  | NORD-20 MAINTENANCE CONTROL 8233 | A/D WORKS DATA-ELECTRONICS |
|--|----------------------------------|----------------------------|



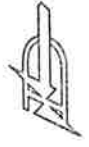


4 pk 7409  
2 " 7420  
4 " 74157 (30 pins)  
10 pk

2 stk 16 pin Berg connectors  
1 " 10 " Berg connector  
1 " 18 " Berg connector

Female Berg connector  
Male Berg connector  
Direct connection  
Specific connection

|                            |       |         |
|----------------------------|-------|---------|
| Rev'd                      | Drawn | Checked |
| NORD-20 MAINTENANCE        |       |         |
| INTERFACE 8234             |       |         |
| A/B POINT DATA-ELECTRONICS |       |         |



THIS IS THE LOCATION LIST FOR THE SYSTEM NORD-20 (DATE: 40272.1)  
 .....  
 MODULE LOCATION LIST  
 .....

| MODULE CODE: | MODULE NAME:     | LOCATION: | MODULE CODE: | MODULE NAME:     | LOCATION: |
|--------------|------------------|-----------|--------------|------------------|-----------|
| CO01         | 2013 CONTROL .01 | A04       | IN01         | 2014 INTERFC .01 | A01       |
| DC01         | 2012 DECODIN .01 | A03       | TI01         | 2011 TIMING .01  | A02       |
| DE01         | 2031 DMAEXP .01  | A26       | DC01         | 2012 DECODIN .01 | A03       |
| DE02         | 2031 DMAEXP .02  | A27       | CO01         | 2013 CONTROL .01 | A04       |
| DE03         | 2031 DMAEXP .03  | A28       | IR01         | 2030 IR BUFF .01 | A05       |
| EX01         | 2033 I/O EXP .01 | A30       | RA01         | 2010 REG*ARI .01 | A06       |
| EX02         | 2033 I/O EXP .02 | A31       | RA02         | 2010 REG*ARI .02 | A07       |
| EX03         | 2033 I/O EXP .03 | A32       | MC01         | 2002 MEMCONT .01 | A08       |
| ID01         | 2032 IOTE DI .01 | A29       | MU00         | 2015 MULTCON .00 | A09       |
| IN01         | 2014 INTERFC .01 | A01       | IO01         | STANDARD I/O .01 | A10       |
| IO01         | STANDARD I/O .01 | A10       | IO02         | STANDARD I/O .02 | A11       |
| IO02         | STANDARD I/O .02 | A11       | IO03         | STANDARD I/O .03 | A12       |
| IO03         | STANDARD I/O .03 | A12       | IO04         | STANDARD I/O .04 | A13       |
| IO04         | STANDARD I/O .04 | A13       | IO05         | STANDARD I/O .05 | A14       |
| IO05         | STANDARD I/O .05 | A14       | IO06         | STANDARD I/O .06 | A15       |
| IO06         | STANDARD I/O .06 | A15       | IO07         | STANDARD I/O .07 | A16       |
| IO07         | STANDARD I/O .07 | A16       | RB01         | RING BUFFER .01  | A17       |
| IO11         | STANDARD I/O .11 | A19       | MU01         | 2015 MULTCON .01 | A18       |
| IO12         | STANDARD I/O .12 | A20       | IO11         | STANDARD I/O .11 | A19       |
| IO13         | STANDARD I/O .13 | A21       | IO12         | STANDARD I/O .12 | A20       |
| IO14         | STANDARD I/O .14 | A22       | IO13         | STANDARD I/O .13 | A21       |
| IO15         | STANDARD I/O .15 | A23       | IO14         | STANDARD I/O .14 | A22       |
| IO16         | STANDARD I/O .16 | A24       | IO15         | STANDARD I/O .15 | A23       |
| IO17         | STANDARD I/O .17 | A25       | IO16         | STANDARD I/O .16 | A24       |
| IR01         | 2030 IR BUFF .01 | A05       | IO17         | STANDARD I/O .17 | A25       |
| LB01         | LOAD BUTTON .01  | LBUX      | DE01         | 2031 DMAEXP .01  | A26       |
| MC01         | 2002 MEMCONT .01 | A08       | DE02         | 2031 DMAEXP .02  | A27       |
| MU00         | 2015 MULTCON .00 | A09       | DE03         | 2031 DMAEXP .03  | A28       |
| MU01         | 2015 MULTCON .01 | A10       | ID01         | 2032 IOTE DI .01 | A29       |
| RA01         | 2010 REG*ARI .01 | A06       | EX01         | 2033 I/O EXP .01 | A30       |
| RA02         | 2010 REG*ARI .02 | A07       | EX02         | 2033 I/O EXP .02 | A31       |
| RB01         | RING BUFFER .01  | A17       | EX03         | 2033 I/O EXP .03 | A32       |
| RE01         | REST BUTTON .01  | RBUX      | LB01         | LOAD BUTTON .01  | LBUX      |
| TI01         | 2011 TIMING .01  | A02       | RE01         | REST BUTTON .01  | RBUX      |

\*\*\*\*\*  
MODULE LIST  
\*\*\*\*\*

THIS IS THE MODULE LIST FOR THE SYSTEM NORD-20 (DATE: 40272 )

MODULE: IN01 / 2014 INTERFC.01  
LOCATION: A01

1 11 CCI 1  
2 12 CC2 1  
3 13 PMRQ 0  
4 14 ENRSTR 0  
5 15 T1 0  
6 16 RSL1 0  
7 17 IR10 1  
8 18 PLOAD 1  
9 19 LOAD 0  
10 20 CCO 1  
11 21 IR9 1  
12 22 IR8 1  
13 23 IR12 1  
14 24 PSLD 0  
15 25 IR11 1  
16 26 IR4 1  
17 27 INBREAK 0  
18 28 RMRQ 0  
19 29W SMRQ 0  
20 30G RSL2 0

31 CPBD 0  
32 IR6 1  
33G IR2 1  
34G IR5 1  
35G IR3 1  
36 CPB1 0  
37 IR13 1  
38 IR15 1  
39 SCOSC 0  
40 T4 0

41 CPB2 0  
42G SCZ 1  
43G IRO 1  
44 CPB3 0  
45 IR14 1  
46G IR7 1  
47 CPB6 0  
48 CPB7 0  
49 CPB5 0  
50 CPB4 0  
51 PBSTART 0  
52 SMPRY 0  
53G EDA 0  
54G XCIN 0  
55G BAS 0  
56G JPL 0  
57 PBSTART 0  
58G XSTART 0  
59  
60

MODULE: T101 / 2011 TIMING .01  
LOCATION: A02

1 11 SCZ 1  
2 12 MOF 1  
3 13 LOAD 0  
4 14G PINT 0  
5 15 TOT 0  
6 16 PDY01 0  
7 17 XSTART 0  
8 18 AU4 1  
9 19 IMIN 1  
10 20G SDS 0  
11 21 EFFJ 1  
12 22G IOTE 1  
13 23G IOTE 0  
14 24 MRF 0  
15 25 AU121 0  
16 26G IOTE 0  
17 27G IOTE 0  
18 28 IRS 1  
19 29G CCO 1  
20 30G CCI 1

31G CC2 1  
32 IR6 1  
33 IR7 1  
34G T4CL 0  
35 CONDINST 0  
36G BPM 1  
37G IOTC 0  
38 ENRSTR 0  
39G ACI 1  
40G INT 0

41G MCL 0  
42G IOTE 0  
43 IONF 0  
44 INTER 0  
45G MONMD 1  
46G CL 1  
47 SHIFT 0  
48G EC2 0  
49 CONDW 0  
50 AU181 1  
51 CONN 0  
52 DPMRQ 0  
53G T3 0  
54G T2 0  
55G T1 0  
56G T4 0  
57G PMRQ 0  
58G SCOSC 0  
59  
60

MODULE: DC01 / 2012 DECODIN.01  
LOCATION: A03

1 11G MOF 1  
2 12G ZRB 0  
3 13G CIN 1  
4 14 INT 0  
5 15 T3 0  
6 16G XOROP 0  
7 17 C 0  
8 18G IMIN 1  
9 19G ANDOP 0  
10 20G HPX0 0  
11 21G EFFJ 1  
12 22G PILO 0  
13 23G CONDINST 0  
14 24G PIL3 0  
15 25G PIL2 0  
16 26G PIL1 0  
17 27 T4CL 0  
18 28 MONMD 1  
19 29G RBSLD 1  
20 30G CPB8 0  
21 CPB9 0  
22 CPB10 0  
23 10SKIP 0  
24 CPB11 0  
25 SUMZ 1  
26G IR8 1  
27G IR9 1  
28G IR10 1  
29G IR15 1  
30G IR11 1

41G IR12 1  
42 CPB15 0  
43 CPB14 0  
44 CPB13 0  
45 CPB12 0  
46G AU79 1  
47 CONDB 1  
48 RESTART 0  
49 T4 0  
50 T2 0  
51 SSTS 0  
52G IR14 1  
53G IR13 1  
54G AU4 1  
55 CL 1  
56G MRF 0  
57 TRA 0  
58G AU181 1  
59  
60

# MODULE: COO1 / 2013 CONTROL.01

LOCATION: A04

1 11 CPB6 0 21G AUIR6 0  
 2 12 CPB8 0 22G C 0  
 3G CONDB 1 13 CPB12 0 23 CRY15 0  
 4 CPB1 0 14 CPB11 0 24G SH15 0  
 5 CPB2 0 15 CPB10 0 25 OFLH 1  
 6 CPB3 0 16 CPB9 0 26G SHIFT 0  
 7G K 0 17 CPB8 0 27 T4 0  
 8 CPB4 0 18 CPB15 0 28 MONMD 1  
 9 CPB5 0 19 CPB13 0 29 SCOSC 0  
 10 CPB7 0 20 CPB14 0 30G M 0

31G RSTR 0  
 32G CWT 0  
 33G IONF 0  
 34G ENRSTR 0  
 35G TRA 0  
 36G AUI21 0  
 37G R 0  
 38G 0 0  
 39G SSTS 0  
 40G SRCZ 0

51G ZCBL 0  
 52G ZCBL 0  
 53G ARFIV 0  
 54G SPRV 0  
 55G INVL 0  
 56G EC2 0  
 57G INVH 0  
 58G AC1 1  
 59  
 60

41 CL 1  
 42G CL 1  
 43G DPMRQ 0  
 44G WRG 0  
 45 CCI 1  
 46 CC2 1  
 47G TRR 0  
 48 CCO 1  
 49 T3 0  
 50 T2 0

# MODULE: IRO1 / 2030 IR BUFF.01

LOCATION: A05

1 11 TRR 0 21G JRI 1  
 2 12 EC2 0 22G IRI2 1  
 3 CC2 1 13 SSTS 0 23 IRI1 1  
 4 CCI 1 14G PROTON 0 24  
 5 CCO 1 15G MPRV 0 25G JR2 1  
 6 T3 0 16G SHPRV 0 26G JR3 1  
 7 MCL 0 17 CPRO 0 27 CPB3 0  
 8 TRA C 18 CPB1 0 28 CPB4 0  
 9 PROTON 0 19 CPB2 0 29 CPB5 0  
 10 MONMD 1 20G JRO 1 30 CPB6 0

31 CPB7 0  
 32 CPB9 0  
 33G JR4 1  
 34G JR5 1  
 35 T4 0  
 36 CPB11 0  
 37G JR6 1  
 38G JR7 1  
 39 CPB10 0  
 40 CPB9 0

51G JRI1 1  
 52G ARIN 1  
 53G IRI2 1  
 54G CL 1  
 55G LOAPL 0  
 56G RUML 0  
 57G IRI4 1  
 58G IRI3 1  
 59  
 60

41 CPB12 0  
 42 CPB13 0  
 43 CPB14 0  
 44 CPB15 0  
 45G JR8 1  
 46G JR9 1  
 47  
 48  
 49 LOAD 0  
 50

# MODULE: RAQ1 / 2010 REG+ARI.01

LOCATION: A06

1 11 BDS 0 21G CPB7 0  
 2 12 RBSL 1 22G CPB3 0  
 3 ZRB 0 23W IOTD4 1  
 4 CIN 1 24W IOTD4 1  
 5 ANDOP 0 15 MPX0 0 25G CPB6 0  
 6 BD8 0 16G CPM4 0 26 EBA 0  
 7 MPX1 0 17G CPB2 0 27G OFL 1  
 8 ZCPBL 0 18W SUMZ 1 28W MDS 1  
 9G CRY7 0 19W IOTD5 1 29W IOTD1 1  
 10 BDPM 1 20W IOTD7 1 30G CPB0 0

31W MDS6 1  
 32W MDS3 1  
 33W MDS2 1  
 34G CPB5 0  
 35W MDS7 1  
 36W MDS4 1  
 37 IOW 0  
 38 C 0  
 39W IOTD3 1  
 40W MDS1 1

51W MDS0 1  
 52G RSL0 0  
 53G RSL1 0  
 54 Z 0  
 55 IONF 0  
 56 RSL2 0  
 57 INTER 0  
 58 WRG 0  
 59  
 60

41 M 0  
 42G CPB1 0  
 43 BAS 0  
 44G BDO 0  
 45 RDSLO 1  
 46 Q 0  
 47W IOTD0 1  
 48 0 0  
 49 K 0  
 50W IOTD2 1

# MODULE: RAQ2 / 2010 REG+ARI.02

LOCATION: A07

1 11 BDS 0 21G CPB15 0  
 2 12 RBSL 1 22G CPB11 0  
 3 ZRB 0 23W IOTD12 1  
 4 CRY7 0 24W IOTD14 1  
 5 ANDOP 0 15 MPX0 0 25G CPB14 0  
 6 SH15 0 16G CPB12 0 26 EBA 0  
 7 MPX1 0 17G CPB10 0 27G OFL 0  
 8 ZCPB8 0 18W SUMZ 1 28W MDS13 1  
 9G CRY15 0 19W IOTD13 1 29W IOTD9 1  
 10 BDPM 1 20W IOTD15 1 30G CPB8 0

31W MDS14 1  
 32W MDS11 1  
 33W MDS10 1  
 34G CPB13 0  
 35W MDS15 1  
 36W MDS12 1  
 37 IOW 0  
 38 RSTR 0  
 39W IOTD11 1  
 40W MDS9 1

51W MDS8 1  
 52G RSL0 0  
 53G RSL1 0  
 54G PIL3 0  
 55G PILO 0  
 56G RSL2 0  
 57G PIL1 0  
 58G WRG 0  
 59  
 60

41 PROTON 0  
 42G CPB9 0  
 43 BAS 0  
 44G BDE 0  
 45 RDSLO 1  
 46 PINT 0  
 47W IOTD8 1  
 48 MPRV 0  
 49 PIL2 0  
 50W IOTD10 1

MODULE: MCO1 / 2002 MEMCONT.01  
LOCATION: ACB

|            |             |              |              |              |             |
|------------|-------------|--------------|--------------|--------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I     | 51W SMRQ O  |
| 2          | 12W MDB4 I  | 22W MDB9 I   | 32W MDB14 I  | 42 JR7 I     | 52W SMRQ O  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY O  | 53W SMRQ O  |
| 4W MDB0 I  | 14W MDB5 I  | 24W MDB10 I  | 34W MDB15 I  | 44W RMRQ O   | 54W DRY O   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45           | 55W CONDW O |
| 6W MDB1 I  | 16W MDB6 I  | 26W MDB11 I  | 36 JR1 I     | 46 INBREAK O | 56W LOAD O  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47           | 57 CRT O    |
| 8W MDB2 I  | 18W MDB7 I  | 28W MDB12 I  | 38 JR3 I     | 48 INBREAK O | 58 MCL O    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49           | 59          |
| 10W MDB3 I | 20W MDB8 I  | 30W MDB13 I  | 40 JR5 I     | 50W READ I   | 60          |

MODULE: MU00 / 2015 MULTCON.00  
LOCATION: AC9

|             |            |            |             |               |             |
|-------------|------------|------------|-------------|---------------|-------------|
| 1           | 11 DC051 O | 21 JR9 I   | 31 JRO I    | 41 DC021 O    | 51G STARTO3 |
| 2           | 12 DC050 O | 22 DC033 O | 32W INTER O | 42 DC020 O    | 52G STARTO3 |
| 3 DC073 O   | 13 DC060 O | 23 DC032 O | 33 IOTD1 I  | 43 IOTD3 I    | 53G STARTO1 |
| 4 DC072 O   | 14 DC061 O | 24 DC031 O | 34 IOTD2 I  | 44 IOTC4 I    | 54 JR2 I    |
| 5 DC071 O   | 15 DC062 O | 25 DC030 O | 35 DC010 O  | 45 IOTD0 I    | 55 JR9 I    |
| 6 DC070 O   | 16 DC063 O | 26 DC040 O | 36 DC011 O  | 46 MCL O      | 56          |
| 7W IOSKIP O | 17 JR10 I  | 27 DC041 O | 37 DC012 O  | 47G STARTO7 O | 57 JR3 I    |
| 8W IODRY O  | 18 IOTEO O | 28 DC042 O | 38 DC013 O  | 48G STARTO6 O | 58 JR1 I    |
| 9 DC053 O   | 19 JR8 I   | 29 DC043 O | 39 DC023 O  | 49G STARTO5 O | 59          |
| 10 DC052 O  | 20 IOTC O  | 30R CONN O | 40 DC022 O  | 50G STARTO4 O | 60          |

MODULE: I001 / STANDARD I/O.01  
LOCATION: A10

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC010 O |
| 2          | 12W MDB4 I  | 22W MDB9 I   | 32W MDB14 I  | 42 JR7 I      | 52W SMRQ O  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY O   | 53 STARTO1  |
| 4W MDB0 I  | 14W MDB5 I  | 24W MDB10 I  | 34W MDB15 I  | 44W RMRQ O    | 54W DRY O   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC013 O   | 55W CONDW O |
| 6W MDB1 I  | 16W MDB6 I  | 26W MDB11 I  | 36 JR1 I     | 46 INBREAK O  | 56W LOAD O  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC012 O   | 57 CRT O    |
| 8W MDB2 I  | 18W MDB7 I  | 28W MDB12 I  | 38 JR3 I     | 48G INBREAK O | 58 MCL O    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC011 O   | 59          |
| 10W MDB3 I | 20W MDB8 I  | 30W MDB13 I  | 40 JR5 I     | 50W READ I    | 60          |

MODULE: I002 / STANDARD I/O.02  
LOCATION: A11

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC020 O |
| 2          | 12W MDB4 I  | 22W MDB9 I   | 32W MDB14 I  | 42 JR7 I      | 52W SMRQ O  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY O   | 53 STARTO2  |
| 4W MDB0 I  | 14W MDB5 I  | 24W MDB10 I  | 34W MDB15 I  | 44W RMRQ O    | 54W DRY O   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC023 O   | 55W CONDW O |
| 6W MDB1 I  | 16W MDB6 I  | 26W MDB11 I  | 36 JR1 I     | 46 INBREAK O  | 56W LOAD O  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC022 O   | 57 CRT O    |
| 8W MDB2 I  | 18W MDB7 I  | 28W MDB12 I  | 38 JR3 I     | 48G INBREAK O | 58 MCL O    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC021 O   | 59          |
| 10W MDB3 I | 20W MDB8 I  | 30W MDB13 I  | 40 JR5 I     | 50W READ I    | 60          |

# MODULE: 1003 / STANDARD I/O.03

LOCATION: A12

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC03D   |
| 2          | 12W M084 I  | 22W M089 I   | 32W M0814 I  | 42 JR7 I      | 52W SMRQ D  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY D   | 53 STARTD6  |
| 4W M080 I  | 14W M085 I  | 24W M0810 I  | 34W M0815 I  | 44W RMRQ D    | 54W DRY D   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC033 D   | 55W CONDR D |
| 6W M081 I  | 16W M086 I  | 26W M0811 I  | 36 JR1 I     | 46 O3SREAK D  | 56W LOAD D  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC032 D   | 57 CWT D    |
| 8W M082 I  | 18W M087 I  | 28W M0812 I  | 38 JR3 I     | 48G O2BREAK D | 58 MCL D    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC031 D   | 59          |
| 10W M083 I | 20W M088 I  | 30W M0813 I  | 40 JR5 I     | 50W READ I    | 60          |

# MODULE: 1004 / STANDARD I/O.04

LOCATION: A13

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC040 D |
| 2          | 12W M084 I  | 22W M089 I   | 32W M0814 I  | 42 JR7 I      | 52W SMRQ D  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY D   | 53 STARTD6  |
| 4W M080 I  | 14W M085 I  | 24W M0810 I  | 34W M0815 I  | 44W RMRQ D    | 54W DRY D   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC043 D   | 55W CONDR D |
| 6W M081 I  | 16W M086 I  | 26W M0811 I  | 36 JR1 I     | 46 O4BREAK D  | 56W LOAD D  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC042 D   | 57 CWT D    |
| 8W M082 I  | 18W M087 I  | 28W M0812 I  | 38 JR3 I     | 48G O3BREAK D | 58 MCL D    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC041 D   | 59          |
| 10W M083 I | 20W M088 I  | 30W M0813 I  | 40 JR5 I     | 50W READ I    | 60          |

# MODULE: 1005 / STANDARD I/O.05

LOCATION: A14

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC050 D |
| 2          | 12W M084 I  | 22W M089 I   | 32W M0814 I  | 42 JR7 I      | 52W SMRQ D  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY D   | 53 STARTD6  |
| 4W M080 I  | 14W M085 I  | 24W M0810 I  | 34W M0815 I  | 44W RMRQ D    | 54W DRY D   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC053 D   | 55W CONDR D |
| 6W M081 I  | 16W M086 I  | 26W M0811 I  | 36 JR1 I     | 46 O5BREAK D  | 56W LOAD D  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC052 D   | 57 CWT D    |
| 8W M082 I  | 18W M087 I  | 28W M0812 I  | 38 JR3 I     | 48G O4BREAK D | 58 MCL D    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC051 D   | 59          |
| 10W M083 I | 20W M088 I  | 30W M0813 I  | 40 JR5 I     | 50W READ I    | 60          |

# MODULE: 1006 / STANDARD I/O.06

LOCATION: A15

|            |             |              |              |               |             |
|------------|-------------|--------------|--------------|---------------|-------------|
| 1          | 11W IOTD4 I | 21W IOTD9 I  | 31W IOTD14 I | 41 JR6 I      | 51G DC060 D |
| 2          | 12W M084 I  | 22W M089 I   | 32W M0814 I  | 42 JR7 I      | 52W SMRQ D  |
| 3W IOTD0 I | 13W IOTD5 I | 23W IOTD10 I | 33W IOTD15 I | 43W IODRY D   | 53 STARTD6  |
| 4W M080 I  | 14W M085 I  | 24W M0810 I  | 34W M0815 I  | 44W RMRQ D    | 54W DRY D   |
| 5W IOTD1 I | 15W IOTD6 I | 25W IOTD11 I | 35 JRO I     | 45G DC063 D   | 55W CONDR D |
| 6W M081 I  | 16W M086 I  | 26W M0811 I  | 36 JR1 I     | 46 O6BREAK D  | 56W LOAD D  |
| 7W IOTD2 I | 17W IOTD7 I | 27W IOTD12 I | 37 JR2 I     | 47G DC062 D   | 57 CWT D    |
| 8W M082 I  | 18W M087 I  | 28W M0812 I  | 38 JR3 I     | 48G O5BREAK D | 58 MCL D    |
| 9W IOTD3 I | 19W IOTD8 I | 29W IOTD13 I | 39 JR4 I     | 49G DC061 D   | 59          |
| 10W M083 I | 20W M088 I  | 30W M0813 I  | 40 JR5 I     | 50W READ I    | 60          |

# MODULE: 1007 / STANDARD I/O.07

LOCATION: A16

|            |             |              |              |              |             |
|------------|-------------|--------------|--------------|--------------|-------------|
| 1          | 11W IOTD4 1 | 21W IOTD9 1  | 31W IOTD14 1 | 41 JRG 1     | 51G DC070 0 |
| 2          | 12W MDS4 1  | 22W MDS9 1   | 32W MDS14 1  | 42 JRG 1     | 52W SMRG 0  |
| 3W IOTD0 1 | 13W IOTD5 1 | 23W IOTD10 1 | 33W IOTD15 1 | 43W IODRY 0  | 53 START0 0 |
| 4W MDS0 1  | 14W MDS5 1  | 24W MDS10 1  | 34W MDS15 1  | 44W RMRQ 0   | 54W DRY 0   |
| 5W IOTD1 1 | 15W IOTD6 1 | 25W IOTD11 1 | 35 JRG 1     | 45G DC073 0  | 55W CONDR 0 |
| 6W MDS1 1  | 16W MDS6 1  | 26W MDS11 1  | 36 JRG 1     | 46 Q78REAK 0 | 56W LOAD 0  |
| 7W IOTD2 1 | 17W IOTD7 1 | 27W IOTD12 1 | 37 JRG 1     | 47G DC072 0  | 57 CWT 0    |
| 8W MDS2 1  | 18W MDS7 1  | 28W MDS12 1  | 38 JRG 1     | 48G DBREAK 0 | 58 MCL 0    |
| 9W IOTD3 1 | 19W IOTD8 1 | 29W IOTD13 1 | 39 JRG 1     | 49G DC071 0  | 59          |
| 10W MDS3 1 | 20W MDS8 1  | 30W MDS13 1  | 40 JRG 1     | 50W READ 1   | 60          |

# MODULE: RSG1 / RING BUFFER .01

LOCATION: A17

|             |              |              |              |            |             |
|-------------|--------------|--------------|--------------|------------|-------------|
| 1           | 11W IOTD4 1  | 21W IOTD9 1  | 31W IOTD14 1 | 41G JRG6 1 | 51 IODRY 0  |
| 2           | 12W IOTD5 1  | 22W IOTD10 1 | 32W IOTD15 1 | 42G JRG7 1 | 52W IODRY 0 |
| 3W IOTD0 1  | 13W IOTD6 1  | 23W IOTD11 1 | 33W IOTD16 1 | 43 JRG 1   | 53 ICOND8 0 |
| 4W IOTD1 1  | 14W IOTD7 1  | 24W IOTD12 1 | 34W IOTD17 1 | 44 JRG1 1  | 54W CONDR 0 |
| 5W IOTD2 1  | 15W IOTD8 1  | 25W IOTD13 1 | 35G JRG0 1   | 45 JRG2 1  | 55G ICR7 0  |
| 6W IOTD3 1  | 16W IOTD9 1  | 26W IOTD14 1 | 36G JRG1 1   | 46 JRG3 1  | 56 CRT 0    |
| 7W IOTD4 1  | 17W IOTD10 1 | 27W IOTD15 1 | 37G JRG2 1   | 47 JRG4 1  | 57G MCL 0   |
| 8W IOTD5 1  | 18W IOTD11 1 | 28W IOTD16 1 | 38G JRG3 1   | 48 JRG5 1  | 58 MCL 0    |
| 9W IOTD6 1  | 19W IOTD12 1 | 29W IOTD17 1 | 39G JRG4 1   | 49 JRG6 1  | 59          |
| 10W IOTD7 1 | 20W IOTD13 1 | 30W IOTD18 1 | 40G JRG5 1   | 50 JRG7 1  | 60          |

# MODULE: MU01 / 2015 MULTCON.01

LOCATION: A18

|             |            |            |             |               |               |
|-------------|------------|------------|-------------|---------------|---------------|
| 1           | 11 DC151 0 | 21 JRG 1   | 31 JRG0 1   | 41 DC121 0    | 51G START12 0 |
| 2           | 12 DC150 0 | 22 DC133 0 | 32W INTER 0 | 42 DC120 0    | 52G START11 0 |
| 3           | 13 DC160 0 | 23 DC132 0 | 33 IOTD1 1  | 43 IOTD3 1    | 53G START10 0 |
| 4           | 14 DC161 0 | 24 DC131 0 | 34 IOTD2 1  | 44 IOTD4 1    | 54 JRG2 1     |
| 5           | 15 DC162 0 | 25 DC130 0 | 35 DC110 0  | 45 IOTD0 1    | 55 JRG4 1     |
| 6           | 16 DC163 0 | 26 DC140 0 | 36 DC111 0  | 46 MCL 0      | 56 JRG3 1     |
| 7W IOSKIP 0 | 17 JRG0 1  | 27 DC141 0 | 37 DC112 0  | 47G START17 0 | 57 JRG1 1     |
| 8W IODRY 0  | 18 IOTD1 0 | 28 DC142 0 | 38 DC113 0  | 48G START16 0 | 58 JRG1 1     |
| 9 DC153 0   | 19 JRG1 1  | 29 DC143 0 | 39 DC123 0  | 49G START15 0 | 59            |
| 10 DC152 0  | 20 IOTC 0  | 30W CONN 0 | 40 DC122 0  | 50G START14 0 | 60            |

# MODULE: I011 / STANDARD I/O.11

LOCATION: A19

|            |             |              |              |              |              |
|------------|-------------|--------------|--------------|--------------|--------------|
| 1          | 11W IOTD4 1 | 21W IOTD9 1  | 31W IOTD14 1 | 41 JRG6 1    | 51G DC110 0  |
| 2          | 12W MDS4 1  | 22W MDS9 1   | 32W MDS14 1  | 42 JRG7 1    | 52W SMRG 0   |
| 3W IOTD0 1 | 13W IOTD5 1 | 23W IOTD10 1 | 33W IOTD15 1 | 43W IODRY 0  | 53 START11 0 |
| 4W MDS0 1  | 14W MDS5 1  | 24W MDS10 1  | 34W MDS15 1  | 44W RMRQ 0   | 54W DRY 0    |
| 5W IOTD1 1 | 15W IOTD6 1 | 25W IOTD11 1 | 35 JRG0 1    | 45G DC113 0  | 55W ICOND8 0 |
| 6W MDS1 1  | 16W MDS6 1  | 26W MDS11 1  | 36 JRG1 1    | 46 IIBREAK 0 | 56W LOAD 0   |
| 7W IOTD2 1 | 17W IOTD7 1 | 27W IOTD12 1 | 37 JRG2 1    | 47G DC112 0  | 57 ICR7 0    |
| 8W MDS2 1  | 18W MDS7 1  | 28W MDS12 1  | 38 JRG3 1    | 48G DBREAK 0 | 58 MCL 0     |
| 9W IOTD3 1 | 19W IOTD8 1 | 29W IOTD13 1 | 39 JRG4 1    | 49G DC111 0  | 59           |
| 10W MDS3 1 | 20W MDS8 1  | 30W MDS13 1  | 40 JRG5 1    | 50W READ 1   | 60           |

MODULE: 1012 / STANDARD I/O.12  
LOCATION: A20

|             |              |               |               |               |              |
|-------------|--------------|---------------|---------------|---------------|--------------|
| 1           | 11W 110TD4 1 | 21W 110TD9 1  | 31W 110TD14 1 | 41 1JR6 1     | 51G DC120 0  |
| 2           | 12W M084 1   | 22W M089 1    | 32W M0814 1   | 42 1JR7 1     | 52W SMRG 0   |
| 3W 110TD0 1 | 13W 110TD5 1 | 23W 110TD10 1 | 33W 110TD15 1 | 43W 110DRY 0  | 53 START12 0 |
| 4W M080 1   | 14W M085 1   | 24W M0810 1   | 34W M0815 1   | 44W RMRQ 0    | 54W DRY 0    |
| 5W 110TD1 1 | 15W 110TD6 1 | 25W 110TD11 1 | 35 1JRO 1     | 45G DC123 0   | 55W 1CONDW 0 |
| 6W M081 1   | 16W M086 1   | 26W M0811 1   | 36 1JR1 1     | 46 1SREAK 0   | 56W LOAD 0   |
| 7W 110TD2 1 | 17W 110TD7 1 | 27W 110TD12 1 | 37 1JR2 1     | 47G DC122 0   | 57 1CAT 0    |
| 8W M082 1   | 18W M087 1   | 28W M0812 1   | 38 1JR3 1     | 48G 11SREAK 0 | 58 1MCL 0    |
| 9W 110TD3 1 | 19W 110TD8 1 | 29W 110TD13 1 | 39 1JR4 1     | 49G DC121 0   | 59           |
| 10W M083 1  | 20W M088 1   | 30W M0813 1   | 40 1JR5 1     | 50W READ 1    | 60           |

MODULE: 1013 / STANDARD I/O.13  
LOCATION: A21

|             |              |               |               |               |              |
|-------------|--------------|---------------|---------------|---------------|--------------|
| 1           | 11W 110TD4 1 | 21W 110TD9 1  | 31W 110TD14 1 | 41 1JR6 1     | 51G DC130 0  |
| 2           | 12W M084 1   | 22W M089 1    | 32W M0814 1   | 42 1JR7 1     | 52W SMRG 0   |
| 3W 110TD0 1 | 13W 110TD5 1 | 23W 110TD10 1 | 33W 110TD15 1 | 43W 110DRY 0  | 53 START13 0 |
| 4W M080 1   | 14W M085 1   | 24W M0810 1   | 34W M0815 1   | 44W RMRQ 0    | 54W DRY 0    |
| 5W 110TD1 1 | 15W 110TD6 1 | 25W 110TD11 1 | 35 1JRO 1     | 45G DC133 0   | 55W 1CONDW 0 |
| 6W M081 1   | 16W M086 1   | 26W M0811 1   | 36 1JR1 1     | 46 1SREAK 0   | 56W LOAD 0   |
| 7W 110TD2 1 | 17W 110TD7 1 | 27W 110TD12 1 | 37 1JR2 1     | 47G DC132 0   | 57 1CAT 0    |
| 8W M082 1   | 18W M087 1   | 28W M0812 1   | 38 1JR3 1     | 48G 12SREAK 0 | 58 1MCL 0    |
| 9W 110TD3 1 | 19W 110TD8 1 | 29W 110TD13 1 | 39 1JR4 1     | 49G DC131 0   | 59           |
| 10W M083 1  | 20W M088 1   | 30W M0813 1   | 40 1JR5 1     | 50W READ 1    | 60           |

MODULE: 1014 / STANDARD I/O.14  
LOCATION: A22

|             |              |               |               |               |              |
|-------------|--------------|---------------|---------------|---------------|--------------|
| 1           | 11W 110TD4 1 | 21W 110TD9 1  | 31W 110TD14 1 | 41 1JR6 1     | 51G DC140 0  |
| 2           | 12W M084 1   | 22W M089 1    | 32W M0814 1   | 42 1JR7 1     | 52W SMRG 0   |
| 3W 110TD0 1 | 13W 110TD5 1 | 23W 110TD10 1 | 33W 110TD15 1 | 43W 110DRY 0  | 53 START14 0 |
| 4W M080 1   | 14W M085 1   | 24W M0810 1   | 34W M0815 1   | 44W RMRQ 0    | 54W DRY 0    |
| 5W 110TD1 1 | 15W 110TD6 1 | 25W 110TD11 1 | 35 1JRO 1     | 45G DC143 0   | 55W 1CONDW 0 |
| 6W M081 1   | 16W M086 1   | 26W M0811 1   | 36 1JR1 1     | 46 14SREAK 0  | 56W LOAD 0   |
| 7W 110TD2 1 | 17W 110TD7 1 | 27W 110TD12 1 | 37 1JR2 1     | 47G DC142 0   | 57 1CAT 0    |
| 8W M082 1   | 18W M087 1   | 28W M0812 1   | 38 1JR3 1     | 48G 13SREAK 0 | 58 1MCL 0    |
| 9W 110TD3 1 | 19W 110TD8 1 | 29W 110TD13 1 | 39 1JR4 1     | 49G DC141 0   | 59           |
| 10W M083 1  | 20W M088 1   | 30W M0813 1   | 40 1JR5 1     | 50W READ 1    | 60           |

MODULE: 1015 / STANDARD I/O.15  
LOCATION: A23

|             |              |               |               |               |              |
|-------------|--------------|---------------|---------------|---------------|--------------|
| 1           | 11W 110TD4 1 | 21W 110TD9 1  | 31W 110TD14 1 | 41 1JR6 1     | 51G DC150 0  |
| 2           | 12W M084 1   | 22W M089 1    | 32W M0814 1   | 42 1JR7 1     | 52W SMRG 0   |
| 3W 110TD0 1 | 13W 110TD5 1 | 23W 110TD10 1 | 33W 110TD15 1 | 43W 110DRY 0  | 53 START15 0 |
| 4W M080 1   | 14W M085 1   | 24W M0810 1   | 34W M0815 1   | 44W RMRQ 0    | 54W DRY 0    |
| 5W 110TD1 1 | 15W 110TD6 1 | 25W 110TD11 1 | 35 1JRO 1     | 45G DC153 0   | 55W 1CONDW 0 |
| 6W M081 1   | 16W M086 1   | 26W M0811 1   | 36 1JR1 1     | 46 15SREAK 0  | 56W LOAD 0   |
| 7W 110TD2 1 | 17W 110TD7 1 | 27W 110TD12 1 | 37 1JR2 1     | 47G DC152 0   | 57 1CAT 0    |
| 8W M082 1   | 18W M087 1   | 28W M0812 1   | 38 1JR3 1     | 48G 14SREAK 0 | 58 1MCL 0    |
| 9W 110TD3 1 | 19W 110TD8 1 | 29W 110TD13 1 | 39 1JR4 1     | 49G DC151 0   | 59           |
| 10W M083 1  | 20W M088 1   | 30W M0813 1   | 40 1JR5 1     | 50W READ 1    | 60           |

# MODULE: IO16 / STANDARD I/O.16

LOCATION: A24

1 11W 110TD4 1  
2 12W M084 1  
3W 110TD0 1  
4W M080 1  
5W 110TD1 1  
6W M081 1  
7W 110TD2 1  
8W M082 1  
9W 110TD3 1  
10W M083 1

21W 110TD9 1  
22W M089 1  
23W 110TD10 1  
24W M0810 1  
25W 110TD11 1  
26W M0811 1  
27W 110TD12 1  
28W M0812 1  
29W 110TD13 1  
30W M0813 1

31W 110TD14 1  
32W M0814 1  
33W 110TD15 1  
34W M0815 1  
35 1JRO 1  
36 1JRI 1  
37 1JRI 1  
38 1JRI 1  
39 1JRI 1  
40 1JRS 1

41 1JR6 1  
42 1JR7 1  
43W 110DRY 0  
44W M08Q 0  
45G DC163 0  
46 168REAK 0  
47G DC162 0  
48G 158REAK 0  
49G DC161 0  
50W READ 1  
51G DC160 0  
52W M08Q 0  
53 START16 0  
54W DRY 0  
55W 1CONDA 0  
56W LOAD 0  
57 1CAT 0  
58 1MCL 0  
59  
60

# MODULE: IO17 / STANDARD I/O.17

LOCATION: A25

1 11W 110TD4 1  
2 12W M084 1  
3W 110TD0 1  
4W M080 1  
5W 110TD1 1  
6W M081 1  
7W 110TD2 1  
8W M082 1  
9W 110TD3 1  
10W M083 1

21W 110TD9 1  
22W M089 1  
23W 110TD10 1  
24W M0810 1  
25W 110TD11 1  
26W M0811 1  
27W 110TD12 1  
28W M0812 1  
29W 110TD13 1  
30W M0813 1

31W 110TD14 1  
32W M0814 1  
33W 110TD15 1  
34W M0815 1  
35 1JRO 1  
36 1JRI 1  
37 1JRI 1  
38 1JRI 1  
39 1JRI 1  
40 1JRS 1

41 1JR6 1  
42 1JR7 1  
43W 110DRY 0  
44W M08Q 0  
45G DC173 0  
46 178REAK 0  
47G DC172 0  
48G 168REAK 0  
49G DC171 0  
50W READ 1  
51G DC170 0  
52W M08Q 0  
53 START17 0  
54W DRY 0  
55W 1CONDA 0  
56W LOAD 0  
57 1CAT 0  
58 1MCL 0  
59  
60

# MODULE: DE01 / 2031 DMAEXP .01

LOCATION: A26

1 11W 110TD4 1  
2 12W M084 1  
3W 110TD0 1  
4W M080 1  
5W 110TD1 1  
6W M081 1  
7W 110TD2 1  
8W M082 1  
9W 110TD3 1  
10W M083 1

21W 110TD9 1  
22W M089 1  
23W 110TD10 1  
24W M0810 1  
25W 110TD11 1  
26W M0811 1  
27W 110TD12 1  
28W M0812 1  
29W 110TD13 1  
30W M0813 1

31W 110TD14 1  
32W M0814 1  
33W 110TD15 1  
34W M0815 1  
35 1JRO 1  
36 1JRI 1  
37 1JRI 1  
38 1JRI 1  
39 1JRI 1  
40 1JRS 1

41 1JR6 1  
42 1JR7 1  
43W 110DRY 0  
44W M08Q 0  
45W INTER 0  
46 378REAK 0  
47 -5V  
48G 178REAK 0  
49W 10SKIP 0  
50W READ 1  
51W CONN 0  
52W M08Q 0  
53 110TE 0  
54W DRY 0  
55W 1CONDA 0  
56W LOAD 0  
57 1CAT 0  
58 1MCL 0  
59  
60

# MODULE: DE02 / 2031 DMAEXP .02

LOCATION: A27

1 11W 110TD4 1  
2 12W M084 1  
3W 110TD0 1  
4W M080 1  
5W 110TD1 1  
6W M081 1  
7W 110TD2 1  
8W M082 1  
9W 110TD3 1  
10W M083 1

21W 110TD9 1  
22W M089 1  
23W 110TD10 1  
24W M0810 1  
25W 110TD11 1  
26W M0811 1  
27W 110TD12 1  
28W M0812 1  
29W 110TD13 1  
30W M0813 1

31W 110TD14 1  
32W M0814 1  
33W 110TD15 1  
34W M0815 1  
35 1JRO 1  
36 1JRI 1  
37 1JRI 1  
38 1JRI 1  
39 1JRI 1  
40 1JRS 1

41 1JR6 1  
42 1JR7 1  
43 110DRY 0  
44W M08Q 0  
45W INTER 0  
46 578REAK 0  
47 -5V  
48G 378REAK 0  
49W 10SKIP 0  
50W READ 1  
51W CONN 0  
52W M08Q 0  
53 210TE 0  
54W DRY 0  
55W 1CONDA 0  
56W LOAD 0  
57 1CAT 0  
58 1MCL 0  
59  
60

DE03 / 2031 DMAEXP .03

MODULE:  
LOCATION:

|    |              |               |               |                |              |
|----|--------------|---------------|---------------|----------------|--------------|
| 1  | 11W 110TD4 1 | 21W 110TD9 1  | 31W 110TD14 1 | 41 1JR6 1      | 51W CONN 0   |
| 2  | 12W M084 1   | 22W M089 1    | 32W M0814 1   | 42 1JR7 1      | 52W SHRQ 0   |
| 3  | 13W 110TD5 1 | 23W 110TD10 1 | 33W 110TD15 1 | 43W 110DRY 0   | 53 310TE 0   |
| 4  | 14W M085 1   | 24W M0810 1   | 34W M0815 1   | 44W SHRQ 0     | 54W DRY 0    |
| 5  | 15W 110TD6 1 | 25W 110TD11 1 | 35 1JRO 1     | 45W INTER 0    | 55W 1CONDR 0 |
| 6  | 16W M086 1   | 26W M0811 1   | 36 1JR1 1     | 46 77BREAK 0   | 56W LOAD 0   |
| 7  | 17W 110TD7 1 | 27W 110TD12 1 | 37 1JR2 1     | 47 -5V         | 57 1CAT 0    |
| 8  | 18W M087 1   | 28W M0812 1   | 38 1JR3 1     | 48G 578BREAK 0 | 58 1MCL 0    |
| 9  | 19W 110TD8 1 | 29W 110TD13 1 | 39 1JR4 1     | 49W 10SKIP 0   | 59           |
| 10 | 20W M088 1   | 30W M0813 1   | 40 1JR5 1     | 50W READ 1     | 60           |

MODULE:  
LOCATION:

|    |              |    |              |             |    |
|----|--------------|----|--------------|-------------|----|
| 1  | 11 110TD4 1  | 21 | 31 110TD14 1 | 41 1JR6 1   | 51 |
| 2  | 12 110TD5 1  | 22 | 32 110TD15 1 | 42 1JR7 1   | 52 |
| 3  | 13 110TD6 1  | 23 | 33 110TD16 1 | 43          | 53 |
| 4  | 14 110TD7 1  | 24 | 34 110TD17 1 | 44          | 54 |
| 5  | 15 110TD8 1  | 25 | 35 110TD18 1 | 45          | 55 |
| 6  | 16 110TD9 1  | 26 | 36 110TD19 1 | 46          | 56 |
| 7  | 17 110TD10 1 | 27 | 37 110TD20 1 | 47G 110TE 0 | 57 |
| 8  | 18 110TD11 1 | 28 | 38 110TD21 1 | 48G 210TE 0 | 58 |
| 9  | 19 110TD12 1 | 29 | 39 110TD22 1 | 49G 310TE 0 | 59 |
| 10 | 20 110TD13 1 | 30 | 40 110TD23 1 | 50          | 60 |

MODULE:  
LOCATION:

|    |              |              |              |             |              |
|----|--------------|--------------|--------------|-------------|--------------|
| 1  | 11 110TD4 1  | 21 110TD9 1  | 31 110TD14 1 | 41 1JR6 1   | 51W INTER 0  |
| 2  | 12 110TD5 1  | 22 110TD10 1 | 32 110TD15 1 | 42 1JR7 1   | 52           |
| 3  | 13 110TD6 1  | 23 110TD11 1 | 33 110TD16 1 | 43 110DRY 0 | 53 10TC 0    |
| 4  | 14 110TD7 1  | 24 110TD12 1 | 34 110TD17 1 | 44 JR8 1    | 54W 1CONDR 0 |
| 5  | 15 110TD8 1  | 25 110TD13 1 | 35 110TD18 1 | 45 JR9 1    | 55 1CAT 0    |
| 6  | 16 110TD9 1  | 26 110TD14 1 | 36 110TD19 1 | 46 JR10 1   | 56W CONN 0   |
| 7  | 17 110TD10 1 | 27 110TD15 1 | 37 110TD20 1 | 47 -5V      | 57W 10SKIP 0 |
| 8  | 18 110TD11 1 | 28 110TD16 1 | 38 110TD21 1 | 48 110TE 0  | 58 1MCL 0    |
| 9  | 19 110TD12 1 | 29 110TD17 1 | 39 110TD22 1 | 49          | 59           |
| 10 | 20 110TD13 1 | 30 110TD18 1 | 40 110TD23 1 | 50          | 60           |

MODULE:  
LOCATION:

|    |              |              |              |             |              |
|----|--------------|--------------|--------------|-------------|--------------|
| 1  | 11 110TD4 1  | 21 110TD9 1  | 31 110TD14 1 | 41 1JR6 1   | 51W INTER 0  |
| 2  | 12 110TD5 1  | 22 110TD10 1 | 32 110TD15 1 | 42 1JR7 1   | 52 10TC 0    |
| 3  | 13 110TD6 1  | 23 110TD11 1 | 33 110TD16 1 | 43 110DRY 0 | 53 1CONDR 0  |
| 4  | 14 110TD7 1  | 24 110TD12 1 | 34 110TD17 1 | 44 JR8 1    | 54W 1CAT 0   |
| 5  | 15 110TD8 1  | 25 110TD13 1 | 35 110TD18 1 | 45 JR9 1    | 55W CONN 0   |
| 6  | 16 110TD9 1  | 26 110TD14 1 | 36 110TD19 1 | 46 JR10 1   | 56W 10SKIP 0 |
| 7  | 17 110TD10 1 | 27 110TD15 1 | 37 110TD20 1 | 47 -5V      | 57 1MCL 0    |
| 8  | 18 110TD11 1 | 28 110TD16 1 | 38 110TD21 1 | 48 210TE 0  | 58           |
| 9  | 19 110TD12 1 | 29 110TD17 1 | 39 110TD22 1 | 49          | 59           |
| 10 | 20 110TD13 1 | 30 110TD18 1 | 40 110TD23 1 | 50          | 60           |

MODULE: EX03 / 2033 I/O EXP.03  
LOCATION: A32

|    |    |           |    |           |    |           |    |          |     |          |
|----|----|-----------|----|-----------|----|-----------|----|----------|-----|----------|
| 1  | 11 | 110TD4 1  | 21 | 110TD9 1  | 31 | 110TD14 1 | 41 | 1JR6 1   | 51W | INTER 0  |
| 2  | 12 | 110TD5 1  | 22 | 110TD10 1 | 32 | 110TD15 1 | 42 | 1JR7 1   | 52  |          |
| 3  | 13 | 110TD6 1  | 23 | 110TD11 1 | 33 | 1JR0 1    | 43 | 110DRY 0 | 53  | 10TC 0   |
| 4  | 14 | 110TD7 1  | 24 | 110TD12 1 | 34 | 1JR1 1    | 44 | JR8 1    | 54W | 1CONDW 0 |
| 5  | 15 | 110TD8 1  | 25 | 110TD13 1 | 35 | 1JR2 1    | 45 | JR9 1    | 55  | 1CWT 0   |
| 6  | 16 | 110TD9 1  | 26 |           | 36 | 1JR3 1    | 46 | JR10 1   | 56W | CONN 0   |
| 7  | 17 | 110TD10 1 | 27 |           | 37 | 1JR4 1    | 47 | -5V      | 57W | 10SKIP 0 |
| 8  | 18 | 110TD11 1 | 28 |           | 38 | 1JR5 1    | 48 | 310TE 0  | 58  | 1MCL 0   |
| 9  | 19 | 110TD12 1 | 29 |           | 39 | 1JR6 1    | 49 |          | 59  |          |
| 10 | 20 | 110TD13 1 | 30 |           | 40 | 1JR7 1    | 50 |          | 60  |          |

MODULE: LB01 / LOAD BUTTON .01  
LOCATION: LBUX

|    |          |
|----|----------|
| 1  | GND      |
| 2G | PBLOAD 1 |
| 3G | PBLOAD 0 |
| 4  | GND      |
| 5  | LOADL 0  |
| 6  | +5V      |

MODULE: RD01 / REST BUTTON .01  
LOCATION: RBUX

|    |           |
|----|-----------|
| 1  | GND       |
| 2G | PBSTART 0 |
| 3G | PBSTART 1 |
| 4  | GND       |
| 5  | RUNL 0    |
| 6  | +5V       |

END OF MODULE LIST

THIS IS THE SIGNAL NAME LIST FOR THE SYSTEM NORD-20

S I G N A L N A M E L I S T

**SIGNAL NAME**

## TERMINALS

LACK OF INPUT IS INDICATED BY A  
NUMBER OF OUTPUTS--N

|            |          |          |          |          |          |          |          |
|------------|----------|----------|----------|----------|----------|----------|----------|
| AC1 1      | A02 :39G | A04 :58  | A07 :5   | A07 :57  | A14 :57  | A15 :57  | A16 :57  |
| ANDOP 0    | A03 :19G | A06 :5   | A05 :52  |          |          |          |          |
| ARFIN 1    | A02 :9   | A04 :53G |          |          |          |          |          |
| AUIR6 0    | A03 :7   | A04 :21G |          |          |          |          |          |
| AUI121 0   | A02 :25  | A04 :26G |          |          |          |          |          |
| AUI181 1   | A02 :50  | A03 :58G |          |          |          |          |          |
| AU4 1      | A02 :18  | A03 :54G |          |          |          |          |          |
| AU79 1     | A02 :4   | A03 :46G |          |          |          |          |          |
| 8AS 0      | A01 :55G | A06 :43  | A07 :43  |          |          |          |          |
| BOPH 1     | A02 :36G | A06 :10  | A07 :10  |          |          |          |          |
| BOS 0      | A02 :20G | A06 :11  | A07 :11  |          |          |          |          |
| BOD 0      | A06 :44G |          |          |          |          |          |          |
| BOD 0      | A06 :6   | A07 :44G |          |          |          |          |          |
| C 0        | A03 :17  | A04 :22G | A06 :38  |          |          |          |          |
| CCO 1      | A01 :10  | A02 :29G | A03 :5   | A04 :48  | A05 :5   |          |          |
| CC1 1      | A01 :11  | A02 :30G | A03 :4   | A04 :45  | A05 :4   |          |          |
| CC2 1      | A01 :12  | A02 :31G | A03 :3   | A04 :46  | A05 :3   |          |          |
| CIN 1      | A03 :13G | A06 :14  |          |          |          |          |          |
| CL 1       | A02 :46G | A03 :55  | A04 :41  | A05 :54  |          |          |          |
| CONDB 1    | A03 :47  | A04 :3G  |          |          |          |          |          |
| CONDIRST 0 | A02 :35  | A03 :23G |          |          |          |          |          |
| CONOW 0    | A02 :49  | A06 :55W | A10 :55W | A11 :55W | A12 :55W | A13 :55W | A14 :55W |
|            | A17 :54W |          |          |          |          |          |          |
| CONN 0     | A02 :51  | A09 :30W | A18 :30W | A26 :51W | A27 :51W | A28 :51W | A30 :56W |
|            |          |          |          |          |          |          |          |
| CP90 G     | A01 :31  | A04 :12  | A05 :17  | A06 :30G |          |          |          |
| CP81 0     | A01 :36  | A04 :4   | A05 :18  | A06 :42G |          |          |          |
| CP810 0    | A03 :32  | A04 :15  | A05 :39  | A07 :17G |          |          |          |
| CP811 0    | A03 :34  | A04 :14  | A05 :36  | A07 :22G |          |          |          |
| CP812 0    | A03 :45  | A04 :13  | A05 :41  | A07 :16G |          |          |          |
| CP813 0    | A03 :44  | A04 :19  | A05 :42  | A07 :34G |          |          |          |
| CP814 0    | A03 :43  | A04 :20  | A05 :43  | A07 :25G |          |          |          |
| CP815 0    | A03 :42  | A04 :18  | A05 :44  | A07 :21G |          |          |          |
| CP82 0     | A01 :41  | A04 :5   | A05 :19  | A06 :17G |          |          |          |
| CP83 0     | A01 :44  | A04 :6   | A05 :27  | A06 :22G |          |          |          |
| CP84 0     | A01 :50  | A04 :8   | A05 :28  | A06 :16G |          |          |          |
| CP85 0     | A01 :49  | A04 :9   | A05 :29  | A06 :34G |          |          |          |
| CP86 0     | A01 :47  | A04 :11  | A05 :30  | A06 :25G |          |          |          |
| CP87 0     | A01 :46  | A04 :10  | A05 :31  | A06 :21G |          |          |          |
| CP88 0     | A03 :30  | A04 :17  | A05 :32  | A07 :30G |          |          |          |
| CP89 0     | A03 :31  | A04 :16  | A05 :40  | A07 :42G |          |          |          |
| CRY15 0    | A04 :23  | A07 :9G  |          |          |          |          |          |
| CRY7 0     | A06 :9G  | A07 :14  |          |          |          |          |          |
| CWT 0      | A04 :32G | A08 :57  | A10 :57  | A11 :57  | A12 :57  | A13 :57  | A14 :57  |
|            |          |          |          |          |          |          |          |
| DC010 0    | A17 :56  |          |          |          |          |          |          |
| DC011 0    | A09 :35  | A10 :51G |          |          |          |          |          |
| DC012 0    | A09 :36  | A10 :49G |          |          |          |          |          |
| DC013 0    | A09 :37  | A10 :47G |          |          |          |          |          |
| DC020 0    | A09 :38  | A10 :45G |          |          |          |          |          |
|            | A09 :42  | A11 :51G |          |          |          |          |          |

DC021 0 A09 :41 A11 :49G  
DC022 0 A09 :40 A11 :47G  
DC023 0 A09 :39 A11 :45G  
DC030 0 A09 :25 A12 :51G  
DC031 0 A09 :24 A12 :49G  
DC032 0 A09 :23 A12 :47G  
DC033 0 A09 :22 A12 :45G  
DC040 0 A09 :26 A13 :51G  
DC041 0 A09 :27 A13 :49G  
DC042 0 A09 :28 A13 :47G  
DC043 0 A09 :29 A13 :45G  
DC050 0 A09 :12 A14 :51G  
DC051 0 A09 :11 A14 :49G  
DC052 0 A09 :10 A14 :47G  
DC053 0 A09 :9 A14 :45G  
DC060 0 A09 :13 A15 :51G  
DC061 0 A09 :14 A15 :49G  
DC062 0 A09 :15 A15 :47G  
DC063 0 A09 :16 A15 :45G  
DC070 0 A09 :6 A16 :51G  
DC071 0 A09 :5 A16 :49G  
DC072 0 A09 :4 A16 :47G  
DC073 0 A09 :3 A16 :45G  
DC110 0 A18 :35 A19 :51G  
DC111 0 A18 :36 A19 :49G  
DC112 0 A18 :37 A19 :47G  
DC113 0 A18 :38 A19 :45G  
DC120 0 A18 :42 A20 :51G  
DC121 0 A18 :41 A20 :49G  
DC122 0 A18 :40 A20 :47G  
DC123 0 A18 :39 A20 :45G  
DC130 0 A18 :25 A21 :51G  
DC131 0 A18 :24 A21 :49G  
DC132 0 A18 :23 A21 :47G  
DC133 0 A18 :22 A21 :45G  
DC140 0 A18 :26 A22 :51G  
DC141 0 A18 :27 A22 :49G  
DC142 0 A18 :28 A22 :47G  
DC143 0 A18 :29 A22 :45G  
DC150 0 A18 :12 A23 :51G  
DC151 0 A18 :11 A23 :49G  
DC152 0 A18 :10 A23 :47G  
DC153 0 A18 :9 A23 :45G  
DC160 0 A18 :13 A24 :51G  
DC161 0 A18 :14 A24 :49G  
DC162 0 A18 :15 A24 :47G  
DC163 0 A18 :16 A24 :45G  
DC170 0 A18 :6 A25 :51G  
DC171 0 A18 :5 A25 :49G  
DC172 0 A18 :4 A25 :47G  
DC173 0 A18 :3 A25 :45G  
DPMRG 0 A02 :52 A04 :43G  
DRY 0 A01 :6 A08 :54W  
A10 :54W A11 :54W A12 :54W A13 :54W A14 :54W A15 :54W A16 :54W  
A21 :54W A22 :54W A23 :54W A24 :54W A25 :54W A26 :54W A27 :54W  
A28 :54W A06 :26 A07 :26  
A02 :48G A04 :56 A05 :12  
A02 :3 A03 :9G  
A02 :21 A03 :21G  
A01 :14 A02 :38 A04 :34G  
LBUX :1 LBUX :4 RBUX :1 RBUX :4  
A02 :19 A03 :18G  
EBA 0  
EC2 0  
EFFJ 1  
EFFJD 1  
ENRSTR 0  
G'D  
IMIN 1

INBREAK 0  
INT 0  
INTER 0  
  
INVH 0  
INVL 0  
IDRY 0  
  
ICNF 0  
IOSKIP 0  
  
IOT 0  
IOTC 0  
IOTD0 1  
IOTD1 1  
IOTD10 1  
IOTD11 1  
IOTD12 1  
IOTD13 1  
IOTD14 1  
IOTD15 1  
IOTD2 1  
IOTD3 1  
IOTD4 1  
IOTD5 1  
IOTD6 1  
IOTD7 1  
IOTD8 1  
IOTD9 1  
  
IOTE 0  
IOTED 0  
IOTEL 0  
IOTED 0  
IOTE3 0  
IOT 0  
IRO 1  
IR1 1  
IR10 1  
IR11 1  
IR12 1  
IR13 1  
IR14 1  
IR15 1  
IR2 1  
IR3 1  
IR4 1

AO1 :27 AOB :46 AOB :48 A10 :48G  
AO2 :40G AOB :14  
AO2 :44 AOB :57 AOB :32W A18 :32W A26 :45W A27 :45W A28 :45W A30 :51W A31 :51W  
A32 :51W  
AO4 :57G AOB :3  
AO4 :55G AOB :3  
AO2 :8 AOB :43W AOB :8W A10 :43W A11 :43W A12 :43W A13 :43W A14 :43W A15 :43W  
A16 :43W A17 :52W  
AO2 :43 AOB :33G AOB :55  
AO3 :33 AOB :7W A18 :7W A26 :49W A27 :49W A28 :49W A30 :57W A31 :57W A32 :57W  
  
AO1 :18G AOB :15 A18 :20 A30 :53 A31 :53 A32 :53  
AO2 :37G AOB :20 A18 :20 A30 :53 A31 :53 A32 :53  
AO6 :47W AOB :3W AOB :45 A10 :3W A11 :3W A12 :3W A13 :3W A14 :3W A15 :3W  
A16 :3W A17 :4W  
AO6 :29W AOB :5W AOB :33 A10 :5W A11 :5W A12 :5W A13 :5W A14 :5W A15 :5W  
A16 :5W A17 :6W  
AO7 :55W AOB :23W A10 :23W A11 :23W A12 :23W A13 :23W A14 :23W A15 :23W A16 :23W  
A17 :24W AOB :25W A10 :25W A11 :25W A12 :25W A13 :25W A14 :25W A15 :25W A16 :25W  
AO7 :39W AOB :27W A10 :27W A11 :27W A12 :27W A13 :27W A14 :27W A15 :27W A16 :27W  
AO7 :23W AOB :29W A10 :29W A11 :29W A12 :29W A13 :29W A14 :29W A15 :29W A16 :29W  
A17 :26W  
AO7 :19W AOB :31W A10 :31W A11 :31W A12 :31W A13 :31W A14 :31W A15 :31W A16 :31W  
A17 :30W  
AO7 :24W AOB :33W A10 :33W A11 :33W A12 :33W A13 :33W A14 :33W A15 :33W A16 :33W  
A17 :32W AOB :34W A10 :34W A11 :34W A12 :34W A13 :34W A14 :34W A15 :34W A16 :34W  
A17 :34W  
AO6 :50W AOB :7W AOB :34 A10 :7W A11 :7W A12 :7W A13 :7W A14 :7W A15 :7W  
A16 :7W A17 :8W  
AO6 :35W AOB :9W AOB :43 A10 :9W A11 :9W A12 :9W A13 :9W A14 :9W A15 :9W  
A16 :9W A17 :10W  
AO6 :23W AOB :11W AOB :44 A10 :11W A11 :11W A12 :11W A13 :11W A14 :11W A15 :11W  
A16 :11W A17 :12W  
AO6 :19W AOB :13W A10 :13W A11 :13W A12 :13W A13 :13W A14 :13W A15 :13W A16 :13W  
A17 :14W  
AO6 :24W AOB :15W A10 :15W A11 :15W A12 :15W A13 :15W A14 :15W A15 :15W A16 :15W  
A17 :16W  
AO6 :20W AOB :17W A10 :17W A11 :17W A12 :17W A13 :17W A14 :17W A15 :17W A16 :17W  
A17 :18W  
AO7 :47W AOB :19W A10 :19W A11 :19W A12 :19W A13 :19W A14 :19W A15 :19W A16 :19W  
AO7 :29W AOB :21W A10 :21W A11 :21W A12 :21W A13 :21W A14 :21W A15 :21W A16 :21W  
A17 :22W  
AO2 :42G A29 :18  
AO2 :23G AOB :18  
AO2 :22G A18 :18  
AO2 :26G  
AO2 :27G  
AO2 :6G AOB :37 AOB :37  
AO1 :43G  
AO1 :19G  
AO1 :17 AOB :38G  
AO1 :25 AOB :40G AOB :23  
AO1 :23 AOB :41G AOB :22  
AO1 :37 AOB :51G AOB :58  
AO1 :45 AOB :52G AOB :57  
AO1 :38 AOB :39G AOB :53  
AO1 :33G  
AO1 :35G  
AO1 :26G

[illegible]

|           |                                                                                  |                                                                         |
|-----------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| MD84 1    | A28 :10W                                                                         | AC8 :12W A10 :12W A11 :12W A12 :12W A13 :12W A14 :12W A15 :12W A16 :12W |
|           | AC6 :36W A20 :12W A21 :12W A22 :12W A23 :12W A24 :12W A25 :12W A26 :12W A27 :12W |                                                                         |
| MD85 1    | A28 :12W                                                                         | A08 :14W A10 :14W A11 :14W A12 :14W A13 :14W A14 :14W A15 :14W A16 :14W |
|           | AC6 :28W A20 :14W A21 :14W A22 :14W A23 :14W A24 :14W A25 :14W A26 :14W A27 :14W |                                                                         |
| MD86 1    | A28 :14W                                                                         | AC8 :16W A10 :16W A11 :16W A12 :16W A13 :16W A14 :16W A15 :16W A16 :16W |
|           | AC6 :31W A20 :16W A21 :16W A22 :16W A23 :16W A24 :16W A25 :16W A26 :16W A27 :16W |                                                                         |
| MD87 1    | A28 :16W                                                                         | AC8 :18W A10 :18W A11 :18W A12 :18W A13 :18W A14 :18W A15 :18W A16 :18W |
|           | AC6 :35W A20 :18W A21 :18W A22 :18W A23 :18W A24 :18W A25 :18W A26 :18W A27 :18W |                                                                         |
| MD88 1    | A28 :18W                                                                         | AC8 :20W A10 :20W A11 :20W A12 :20W A13 :20W A14 :20W A15 :20W A16 :20W |
|           | AC6 :39W A20 :20W A21 :20W A22 :20W A23 :20W A24 :20W A25 :20W A26 :20W A27 :20W |                                                                         |
| MD89 1    | A28 :20W                                                                         | AC8 :22W A10 :22W A11 :22W A12 :22W A13 :22W A14 :22W A15 :22W A16 :22W |
|           | AC6 :43W A20 :22W A21 :22W A22 :22W A23 :22W A24 :22W A25 :22W A26 :22W A27 :22W |                                                                         |
| MOF 1     | AC2 :12                                                                          | AC3 :11G                                                                |
| MONPD 1   | AC2 :45G A03 :28                                                                 | A05 :10                                                                 |
| MPRV 0    | AC5 :15G AC7 :48                                                                 |                                                                         |
| MPXD 0    | AC3 :20G A06 :15                                                                 | A07 :15                                                                 |
| MPX1 0    | AC3 :8G A05 :7                                                                   | A07 :7                                                                  |
| MRF 0     | AC2 :24                                                                          | AC3 :56G                                                                |
| O C       | AC4 :38G AC6 :48                                                                 |                                                                         |
| OFLH 0    | AC7 :27G                                                                         |                                                                         |
| OFLH 1    | AC4 :25                                                                          |                                                                         |
| OFLH 1    | AC6 :27G                                                                         |                                                                         |
| PBLOAD 0  | AC1 :5                                                                           | LBUX :3G                                                                |
| PBLOAD 1  | AC1 :8                                                                           | LBUX :2G                                                                |
| PBSTART 0 | AC1 :51                                                                          | RBUX :2G                                                                |
| PBSTART 1 | AC1 :57                                                                          | RBUX :3G                                                                |
| PDRYD1 0  | AC1 :7G A02 :16                                                                  |                                                                         |
| PIL0 0    | AC3 :22G A07 :55                                                                 |                                                                         |
| PIL1 0    | AC3 :26G A07 :57                                                                 |                                                                         |
| PIL2 0    | AC3 :25G A07 :49                                                                 |                                                                         |
| PIL3 0    | AC3 :24G A07 :54                                                                 |                                                                         |
| PINT 0    | AC2 :14G A07 :46                                                                 |                                                                         |
| PHRQ 0    | AC1 :13                                                                          | A02 :57G                                                                |
| PROTON 0  | AC5 :9                                                                           | AC5 :14G A07 :41                                                        |
| Q C       | AC4 :37G A06 :46                                                                 |                                                                         |
| RBSL 1    | AC6 :12                                                                          | A07 :12                                                                 |
| RBSLO 1   | AC3 :29G AC6 :45                                                                 | A07 :45                                                                 |
| READ 1    | AC1 :3W A08 :50W A10 :50W                                                        | A11 :50W A12 :50W A13 :50W A14 :50W A15 :50W A16 :50W                   |
|           | A19 :50W A20 :50W A21 :50W                                                       | A22 :50W A23 :50W A24 :50W A25 :50W A26 :50W A27 :50W                   |
| RESTART 0 | A28 :50W                                                                         |                                                                         |
| RMRQ 0    | AC2 :7G A03 :6                                                                   | A03 :48                                                                 |
|           | AC1 :28W AC8 :44W A10 :44W                                                       | A11 :44W A12 :44W A13 :44W A14 :44W A15 :44W A16 :44W                   |
|           | A19 :44W A20 :44W A21 :44W                                                       | A22 :44W A23 :44W A24 :44W A25 :44W A26 :44W A27 :44W                   |
| RSLO 0    | A28 :44W                                                                         |                                                                         |
| RSL1 0    | AC1 :24G A06 :52                                                                 | A07 :52                                                                 |
| RSL2 0    | AC1 :16G AC6 :53                                                                 | A07 :53                                                                 |
| RSTR 0    | AC1 :30G AC6 :56                                                                 | A07 :56                                                                 |
| RSTR 0    | AC4 :31G A07 :38                                                                 |                                                                         |
| RUNL 0    | AC5 :56G REUX :5                                                                 |                                                                         |
| SCOSC 0   | AC1 :39                                                                          | AC2 :58G A04 :29                                                        |
| SCZ 1     | AC1 :42G A02 :11                                                                 |                                                                         |
| SHIFT 0   | A02 :47                                                                          | A04 :26G                                                                |
| SH15 0    | AD4 :24G A07 :6                                                                  |                                                                         |
| SMPRV 0   | AC1 :52                                                                          | AC4 :54                                                                 |
| SMPRV 0   | AC1 :29W                                                                         | AC8 :52W A10 :52W A11 :52W A12 :52W A13 :52W A14 :52W A15 :52W A16 :52W |
| SMPRV 0   |                                                                                  |                                                                         |

SRCZ 0  
 SSTS 0  
 START01 0  
 START02 C  
 START03 0  
 START04 0  
 START05 C  
 START06 0  
 START07 0  
 START11 0  
 START12 0  
 START13 0  
 START14 C  
 START15 0  
 START16 0  
 START17 0  
 SUMZ 1  
 TRA 0  
 TRR 0  
 T1 0  
 T2 0  
 T3 0  
 T4 0  
 WRG C  
 XCIN 0  
 XOROP 0  
 XSTART 0  
 Z 0  
 ZCPBH 0  
 ZCPBL 0  
 ZR8 0  
 -5V  
 +5V  
 O1BREAK 0  
 O2BREAK 0  
 O3BREAK 0  
 O4BREAK 0  
 O5BREAK 0  
 O6BREAK 0  
 O7BREAK 0  
 ICOND 0  
 ICA 0  
 I1ODRY 0  
 I1OTD0 1  
 I1OTD1 1  
 I1OTD10 1  
 I1OTD11 1  
 I1OTD12 1  
 I1OTD13 1  
 I1OTD14 1  
 T4CL 0

A19 :52W A20 :52W A21 :52W A22 :52W A23 :52W A24 :52W A25 :52W A26 :52W A27 :52W  
 A28 :52W  
 A03 :10 A04 :40G  
 A03 :51 A04 :39G A05 :13  
 A09 :53G A10 :53  
 A09 :52G A11 :53  
 A09 :51G A12 :53  
 A09 :50G A13 :53  
 A09 :49G A14 :53  
 A09 :48G A15 :53  
 A09 :47G A16 :53  
 A18 :53G A19 :53  
 A18 :52G A20 :53  
 A18 :51G A21 :53  
 A18 :50G A22 :53  
 A18 :49G A23 :53  
 A18 :48G A24 :53  
 A18 :47G A25 :53  
 A03 :35 A06 :18W A07 :18W  
 A03 :57 A04 :35G A05 : 8  
 A04 :47G A05 :11  
 A01 :15 A02 :55G  
 A02 :54G A03 :50 A04 :50  
 A01 :22 A02 :53G A03 :15 A04 :49 A05 : 6  
 A01 :40 A02 :56G A03 :49 A04 :27 A05 :35  
 A04 :44G A06 :58 A07 :58  
 A01 :54G A02 : 5  
 A03 :16G A06 : 4 A07 : 4  
 A01 :58G A02 :17  
 A04 :42G A06 :54  
 A04 :51G A07 : 8  
 A04 :52G A06 : 8  
 A03 :12G A06 :13 A07 :13  
 A26 :47 A27 :47 A28 :47 A30 :47 A31 :47 A32 :47  
 LBUX : 6 RBUX : 6  
 A10 :46 A11 :48G  
 A11 :46 A12 :48G  
 A12 :46 A13 :48G  
 A13 :46 A14 :48G  
 A14 :46 A15 :48G  
 A15 :46 A16 :48G  
 A16 :46 A19 :48G  
 A17 :53 A19 :55W A20 :55W A21 :55W A22 :55W A23 :55W A24 :55W A25 :55W A26 :55W  
 A27 :55W A28 :55W A30 :54W A31 :54W A32 :54W  
 A17 :55G A19 :57 A20 :57 A21 :57 A23 :57 A24 :57 A25 :57 A26 :57  
 A27 :57 A28 :57 A30 :55 A31 :55 A32 :55  
 A26 :43W A27 :43 A28 :43W A30 :43 A31 :43 A32 :43  
 A17 :3W A18 :45 A19 :3W A20 :3W A21 :3W A22 :3W A23 :3W A24 :3W A25 :3W  
 A26 :3W A27 :3W A30 :3 A31 :3 A32 :3  
 A17 :5W A18 :33 A19 :5W A20 :5W A21 :5W A22 :5W A23 :5W A24 :5W A25 :5W  
 A26 :5W A27 :5W A28 :5W A30 :5 A31 :5 A32 :5  
 A17 :23W A19 :23W A20 :23W A21 :23W A22 :23W A23 :23W A24 :23W A25 :23W A26 :23W  
 A27 :23W A28 :23W A30 :23 A31 :23 A32 :23  
 A17 :25W A19 :25W A20 :25W A21 :25W A22 :25W A23 :25W A24 :25W A25 :25W A26 :25W  
 A27 :25W A28 :25W A30 :25 A31 :25 A32 :25  
 A17 :27W A19 :27W A20 :27W A21 :27W A22 :27W A23 :27W A24 :27W A25 :27W A26 :27W  
 A27 :27W A28 :27W A30 :27 A31 :27 A32 :27  
 A17 :29W A19 :29W A20 :29W A21 :29W A22 :29W A23 :29W A24 :29W A25 :29W A26 :29W  
 A27 :29W A28 :29W A30 :29 A31 :29 A32 :29  
 A17 :31W A19 :31W A20 :31W A21 :31W A22 :31W A23 :31W A24 :31W A25 :31W A26 :31W  
 A27 :31W A28 :31W A30 :31 A31 :31 A32 :31  
 A02 :34G A03 :27

110TD15 1 A17 :33W A19 :33W A20 :33W A21 :33W A22 :33W A23 :33W A24 :33W A25 :33W A26 :33W  
A27 :33W A28 :33W A30 :33 A31 :33 A32 :33  
110TD2 1 A17 : 7W A18 :34 A19 : 7W A20 : 7W A21 : 7W A22 : 7W A23 : 7W A24 : 7W A25 : 7W  
A26 : 7W A27 : 7W A28 : 7W A29 : 7W A30 : 7W A31 : 7W A32 : 7W  
110TD3 1 A17 : 9W A18 :43 A19 : 9W A20 : 9W A21 : 9W A22 : 9W A23 : 9W A24 : 9W A25 : 9W  
A26 : 9W A27 : 9W A28 : 9W A29 : 9W A30 : 9W A31 : 9W A32 : 9W  
110TD4 1 A17 :11W A18 :44 A19 :11W A20 :11W A21 :11W A22 :11W A23 :11W A24 :11W A25 :11W  
A26 :11W A27 :11W A28 :11W A29 :11W A30 :11W A31 :11W A32 :11W  
110TD5 1 A17 :13W A19 :13W A20 :13W A21 :13W A22 :13W A23 :13W A24 :13W A25 :13W A26 :13W  
A27 :13W A28 :13W A30 :13 A31 :13 A32 :13  
110TD6 1 A17 :15W A19 :15W A20 :15W A21 :15W A22 :15W A23 :15W A24 :15W A25 :15W A26 :15W  
A27 :15W A28 :15W A30 :15 A31 :15 A32 :15  
110TD7 1 A17 :17W A19 :17W A20 :17W A21 :17W A22 :17W A23 :17W A24 :17W A25 :17W A26 :17W  
A27 :17W A28 :17W A30 :17 A31 :17 A32 :17  
110TD8 1 A17 :19W A19 :19W A20 :19W A21 :19W A22 :19W A23 :19W A24 :19W A25 :19W A26 :19W  
A27 :19W A28 :19W A30 :19 A31 :19 A32 :19  
110TD9 1 A17 :21W A19 :21W A20 :21W A21 :21W A22 :21W A23 :21W A24 :21W A25 :21W A26 :21W  
A27 :21W A28 :21W A30 :21 A31 :21 A32 :21  
110TE 0 A26 :53 A29 :47G A30 :48  
1JRO 1 A17 :35G A19 :35 A20 :35 A21 :35 A22 :35 A23 :35 A24 :35 A25 :35 A26 :35  
A27 :35 A28 :35 A30 :35 A31 :35 A32 :35  
1JRI 1 A17 :36G A18 :58 A19 :36 A20 :36 A21 :36 A22 :36 A23 :36 A24 :36 A25 :36  
A26 :36 A27 :36 A28 :36 A29 :36 A30 :36 A31 :36 A32 :36  
1JR2 1 A17 :37G A18 :54 A19 :37 A20 :37 A21 :37 A22 :37 A23 :37 A24 :37 A25 :37  
A26 :37 A27 :37 A28 :37 A29 :37 A30 :37 A31 :37 A32 :37  
1JR3 1 A17 :38G A18 :57 A19 :38 A20 :38 A21 :38 A22 :38 A23 :38 A24 :38 A25 :38  
A26 :38 A27 :38 A28 :38 A29 :38 A30 :38 A31 :38 A32 :38  
1JR4 1 A17 :39G A18 :55 A19 :39 A20 :39 A21 :39 A22 :39 A23 :39 A24 :39 A25 :39  
A26 :39 A27 :39 A28 :39 A29 :39 A30 :39 A31 :39 A32 :39  
1JR5 1 A17 :40G A19 :40 A20 :40 A21 :40 A22 :40 A23 :40 A24 :40 A25 :40 A26 :40  
A27 :40 A28 :40 A30 :40 A31 :40 A32 :40  
1JR6 1 A17 :41G A19 :41 A20 :41 A21 :41 A22 :41 A23 :41 A24 :41 A25 :41 A26 :41  
A27 :41 A28 :41 A29 :41 A30 :41 A31 :41 A32 :41  
1JR7 1 A17 :42G A19 :42 A20 :42 A21 :42 A22 :42 A23 :42 A24 :42 A25 :42 A26 :42  
A27 :42 A28 :42 A29 :42 A30 :42 A31 :42 A32 :42  
1MCL 0 A17 :57G A18 :46 A19 :58 A20 :58 A21 :58 A22 :58 A23 :58 A24 :58 A25 :58  
A26 :58 A27 :58 A28 :58  
11BREAK 0 A19 :46 A20 :48G  
12BREAK 0 A20 :46 A21 :48G  
13BREAK 0 A21 :46 A22 :48G  
14BREAK 0 A22 :46 A23 :48G  
15BREAK 0 A23 :46 A24 :48G  
16BREAK 0 A24 :46 A25 :48G  
17BREAK 0 A25 :46 A26 :48G  
21OTE 0 A27 :53 A29 :48G A31 :48  
31OTE 0 A28 :53 A29 :49G A32 :48  
37BREAK 0 A26 :46 A27 :48G  
57BREAK 0 A27 :46 A28 :48G  
77BREAK 0 A28 :46

