DICENTRA SCHEMATICS

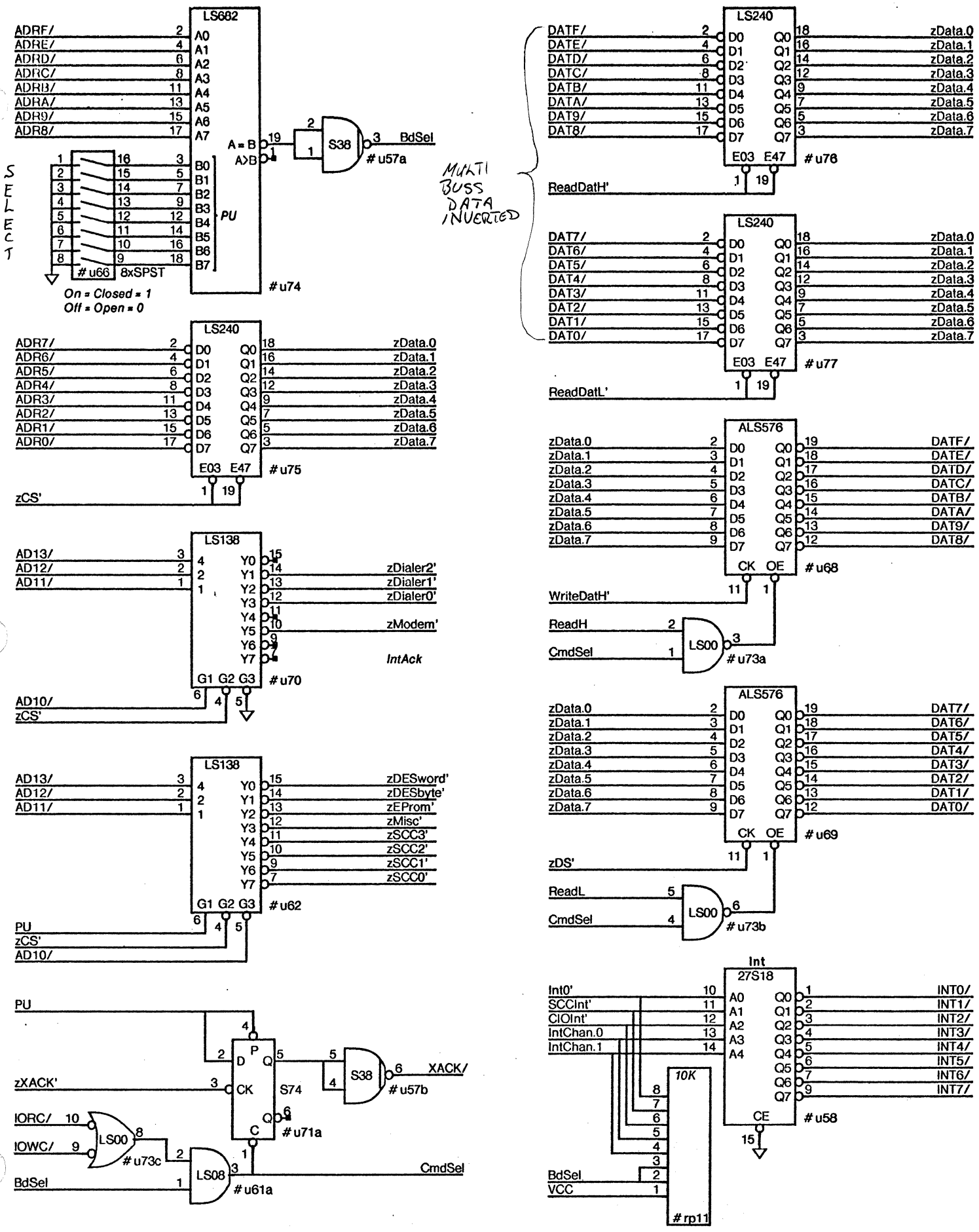
Miscellaneous Board

Table of contents

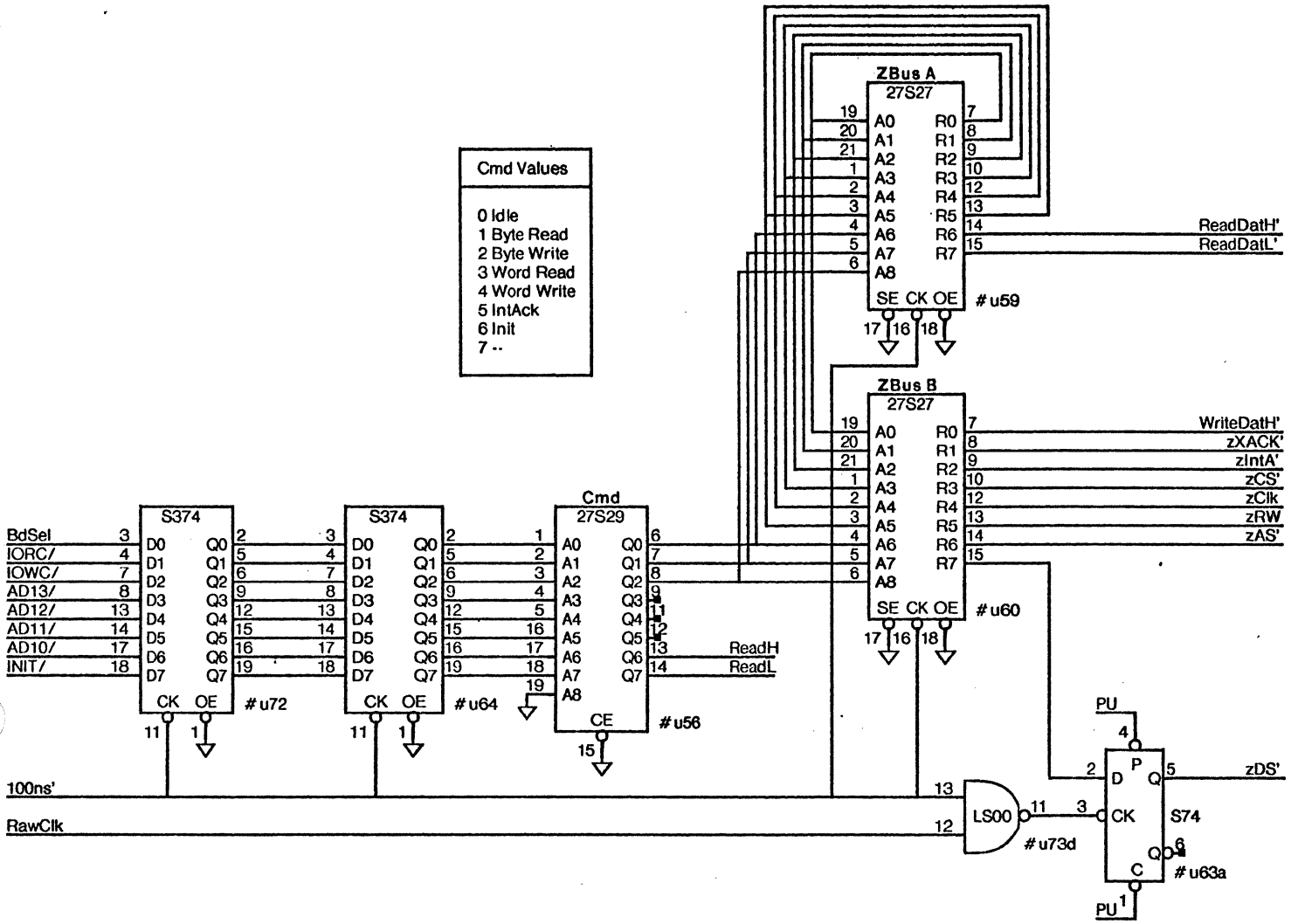
These drawings use the following [SIL] User.cm parameters:

0: Helvetica10
1: Helvetica7
2: Template64
3: Gates32
5: Dicentra.lb5
6: Dicentra.lb6
7: Dicentra.lb7
8: Dicentra.lb8
A: Dicentra.Analyze
Y: 712

All files are kept on [Indigo]<Dicentra>



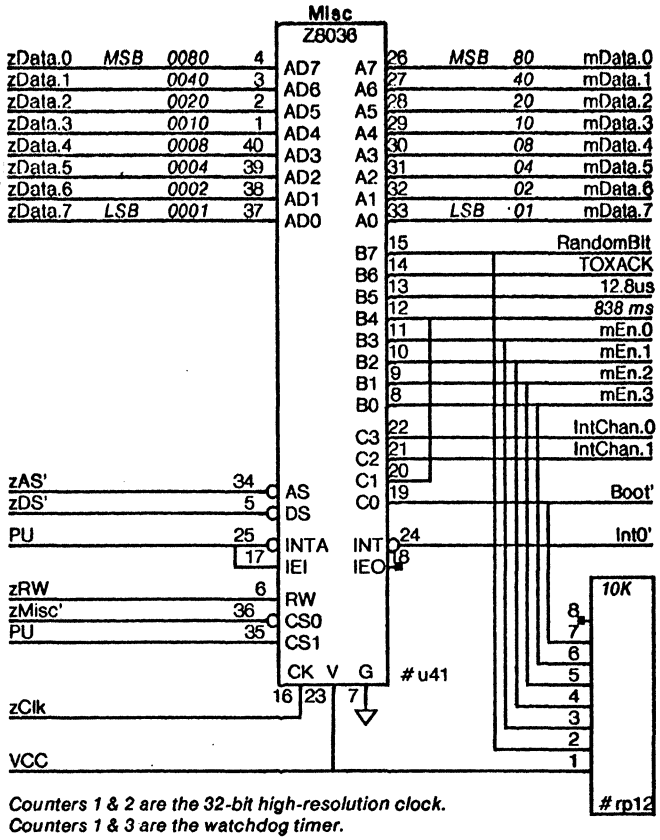
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Multibus Interface	DMisc01.sil	David Boggs	D	2/20/84	01

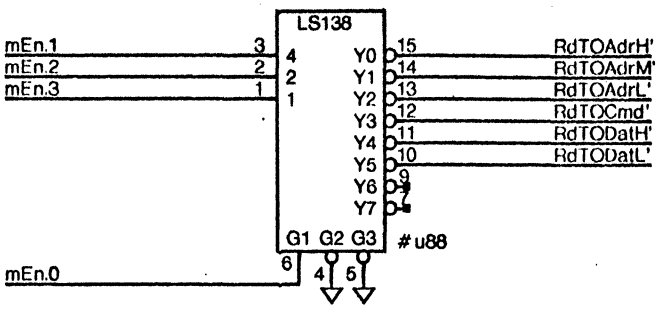


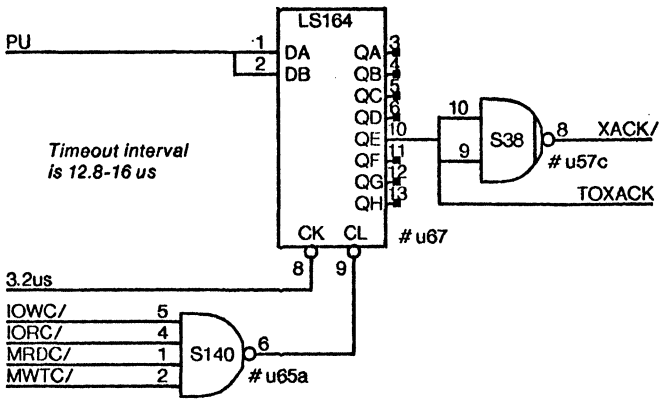
AD10 = 0			AD10 = 1		
AD11-13	ZBus device	Wd Adr	AD11-13	ZBus device	Wd Adr
0	IntAck	01000	0	SCC0	09000
1	—		1	SCC1	19000
2	Modem	21000	2	SCC2	29000
3	—		3	SCC3	39000
4	Dialer0	41000	4	Misc	49000
5	Dialer1	51000	5	EProm	59000
6	Dialer2	61000	6	DES byte	69000
7	—		7	DES word	79000

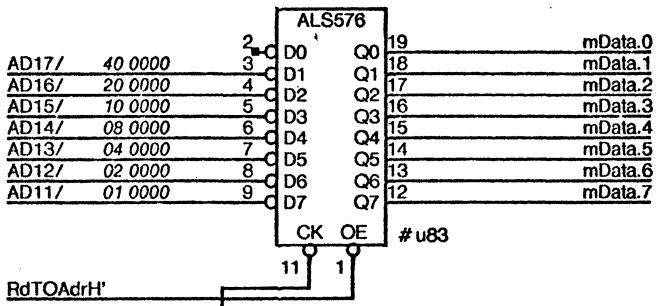
Word Addresses above are for normal switch settings.
See DMisc16.sil for timing and state diagrams.
Writing IntAck or referencing a nonexistant ZBus device causes a Multibus timeout.

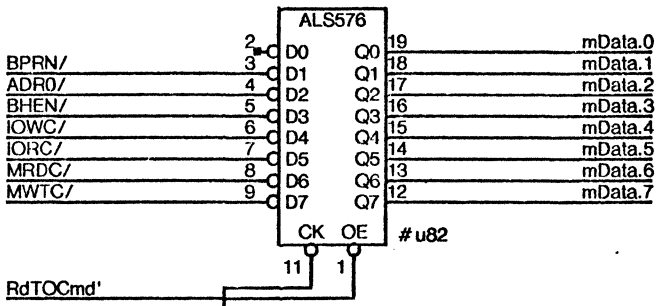
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Multibus/ZBus Coupler	DMisc02.sil	Hal Murray	D	3/16/85	02

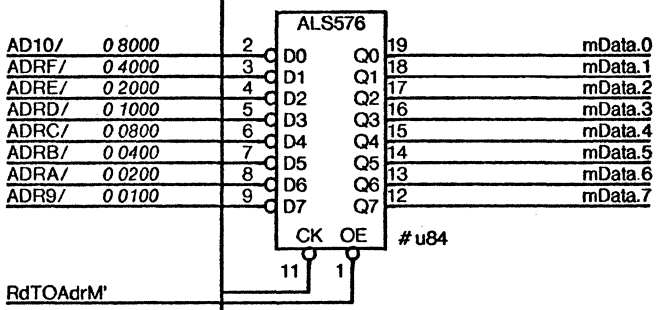


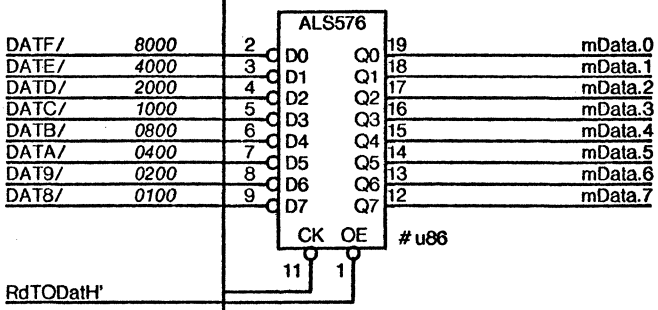


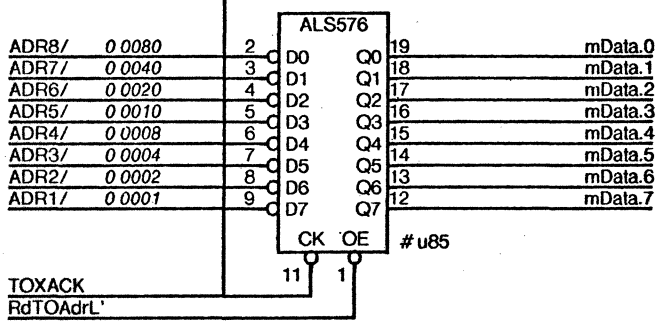


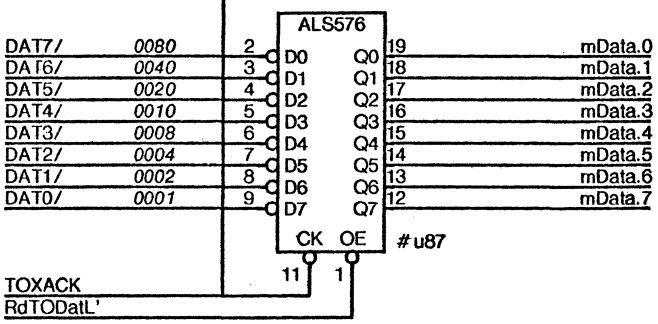




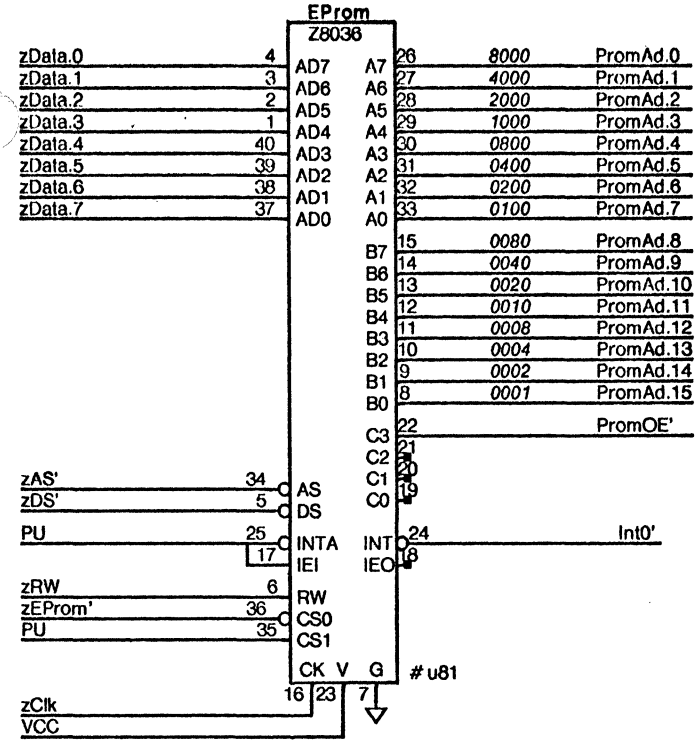




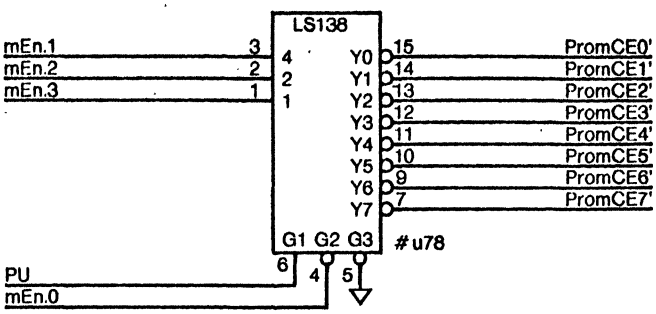


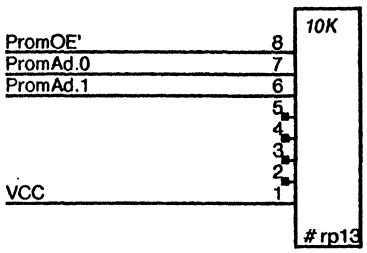


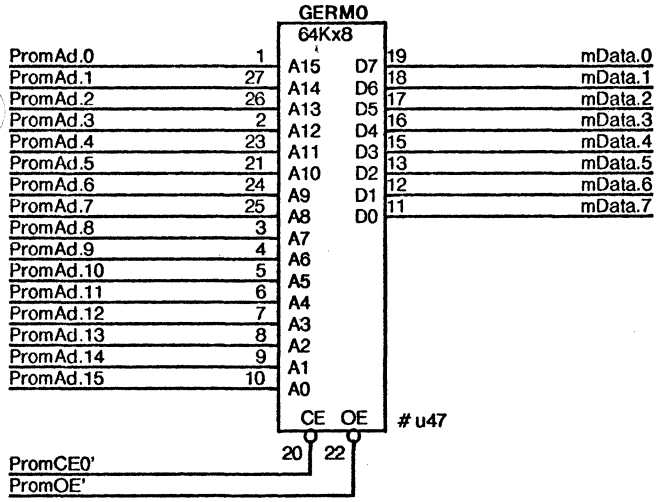
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Multibus Timeout	DMisc03.sil	Boggs/Murray	D	3/16/85	03

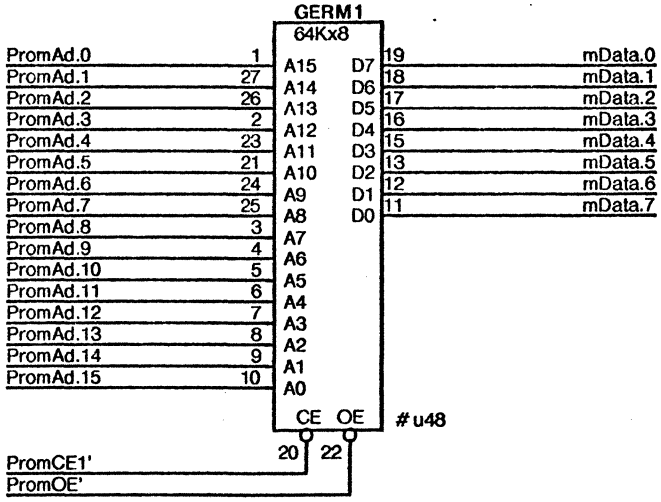


The process clock is in here.





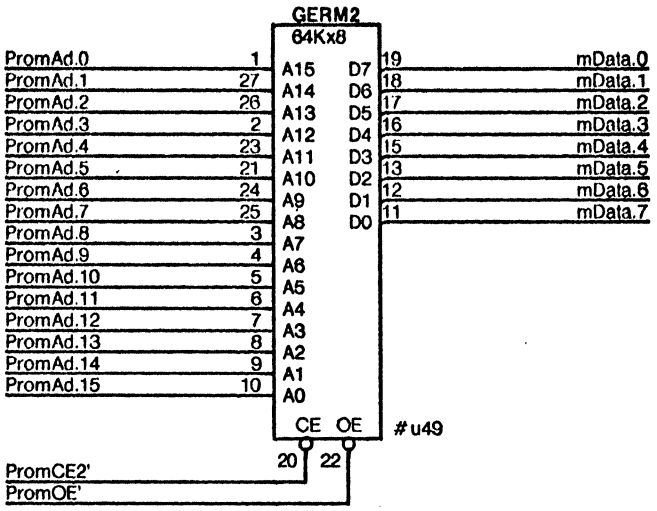


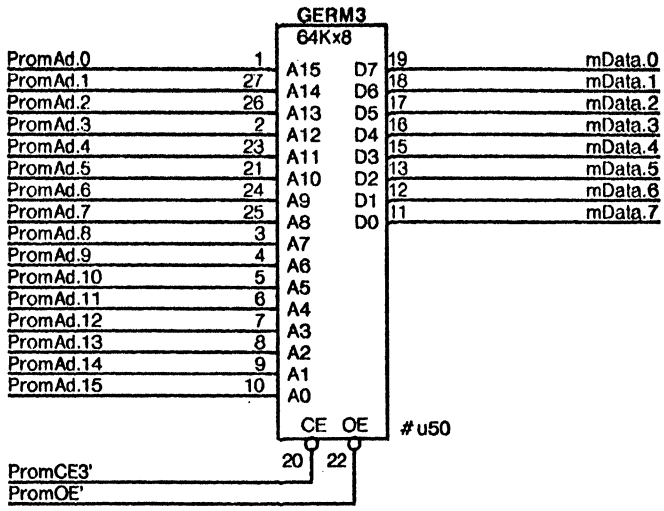


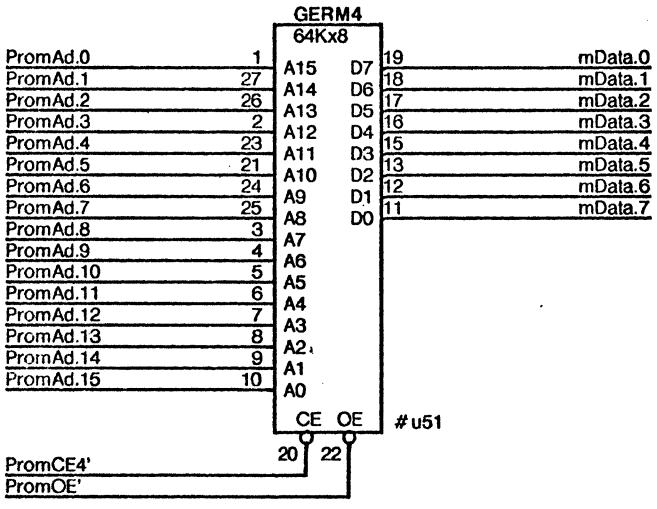
Pin	PromAd	27512	27256	27128	2764	2816
1	0	A15	VPP *	VPP	VPP	
27	1	A14	A14	PGM' *	PGM' *	
26	2	A13	A13	A13	n.c.	VCC
2	3	A12	A12	A12	A12	
23	4	A11	A11	A11	A11	PGM' *

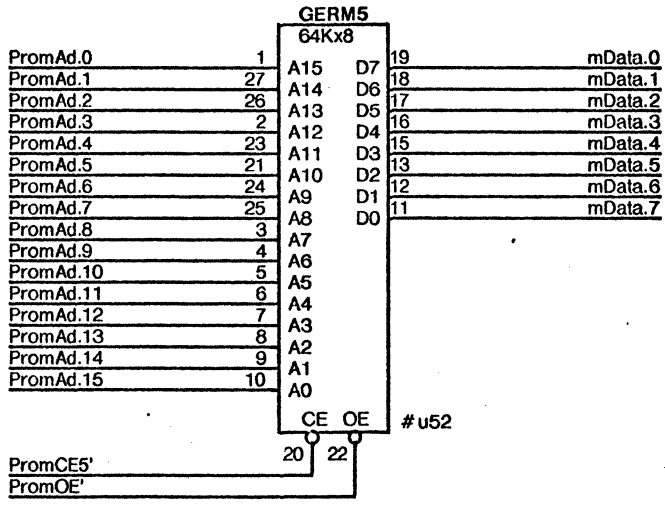
VPP & PGM' must be high except when writing an EEPROM.
To write an EEProm, hold PromOE' high and pulse low the starred signal.

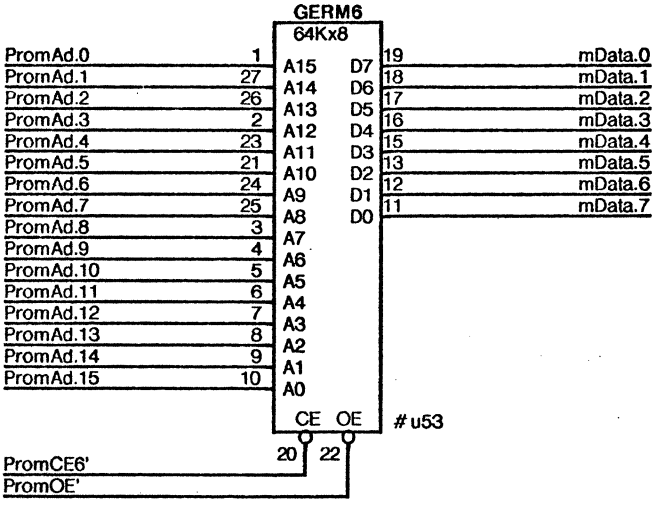
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	EProm Control & Banks 0&1	DMisc04.sil	Boggs/Murray	D	3/16/85	04

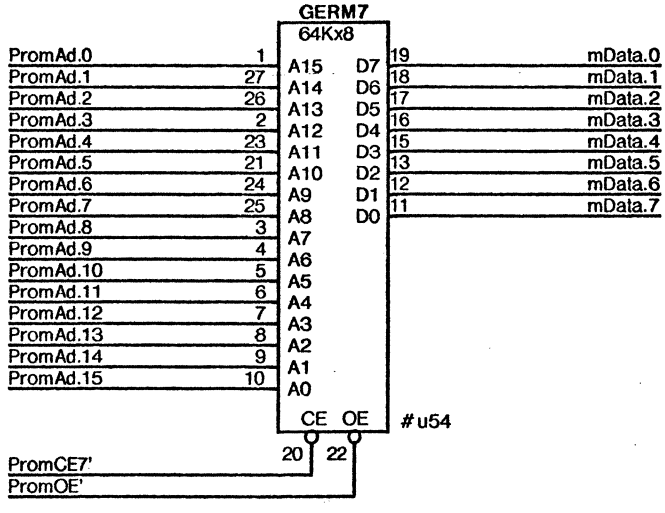




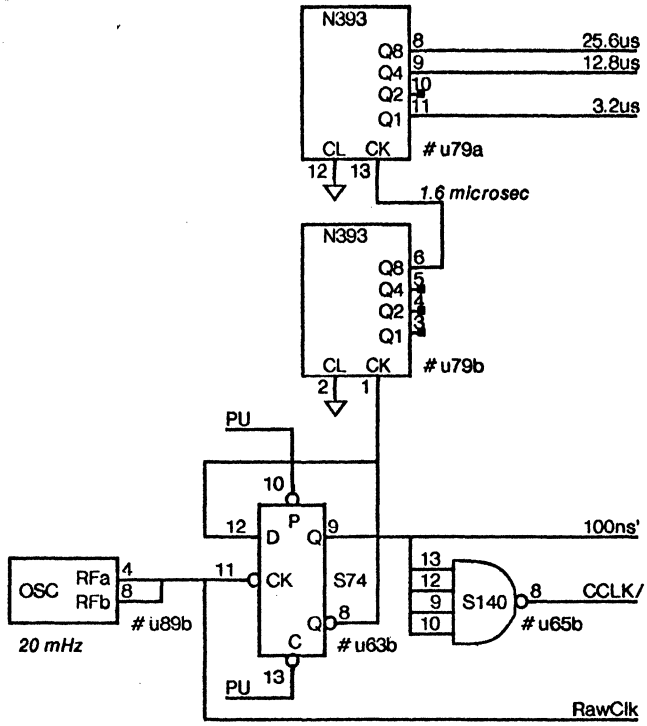


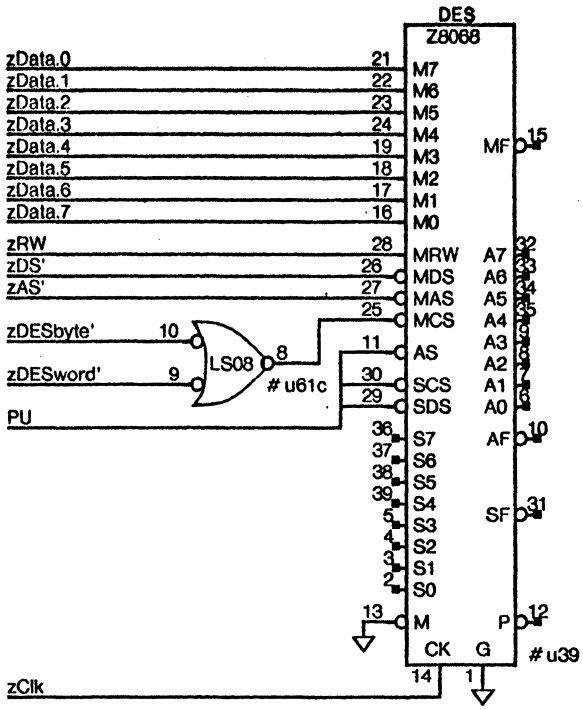


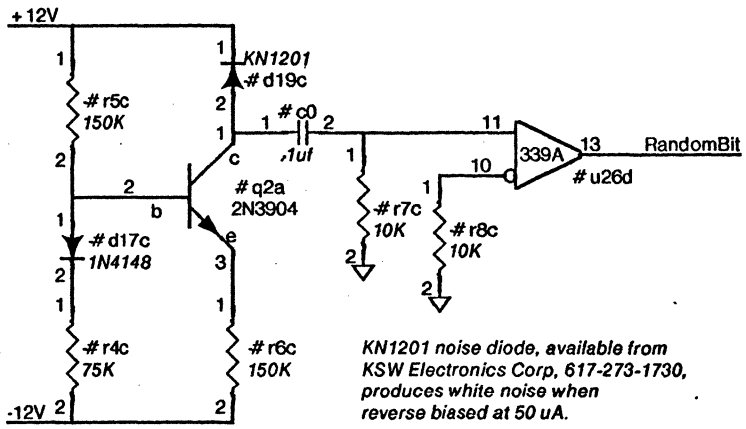


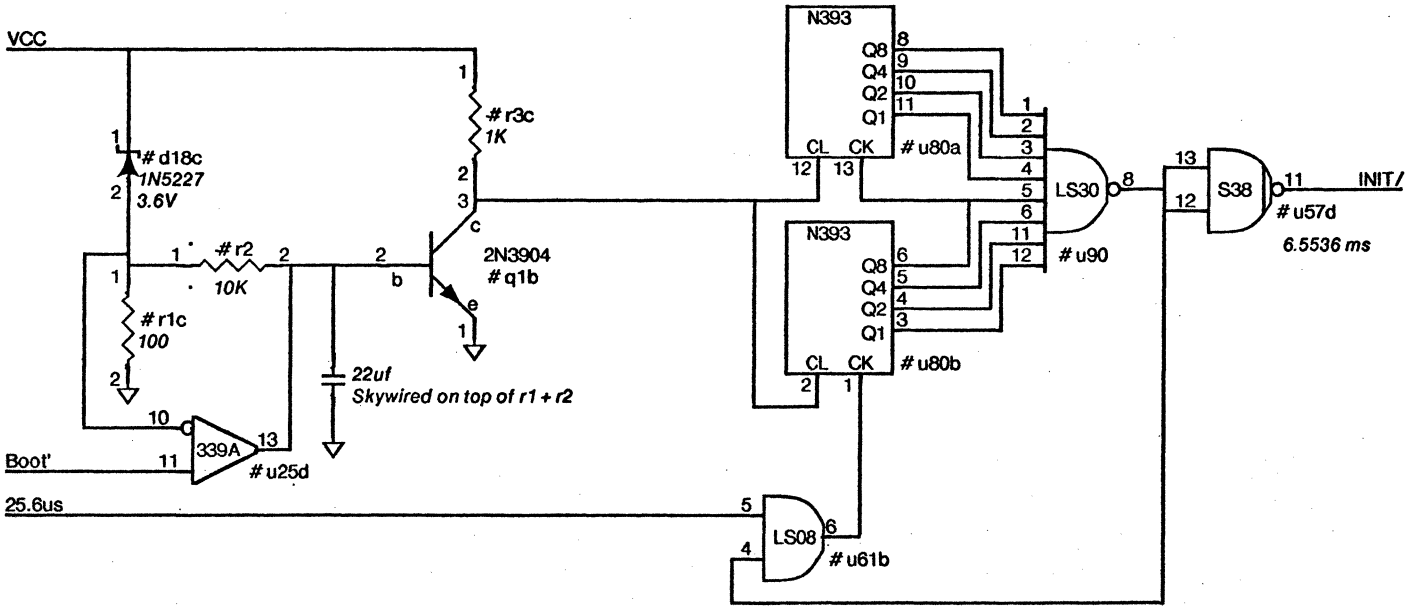


XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	EProm Banks 2-7	DMiscO5.sil	David Boggs	D	10/31/83	05

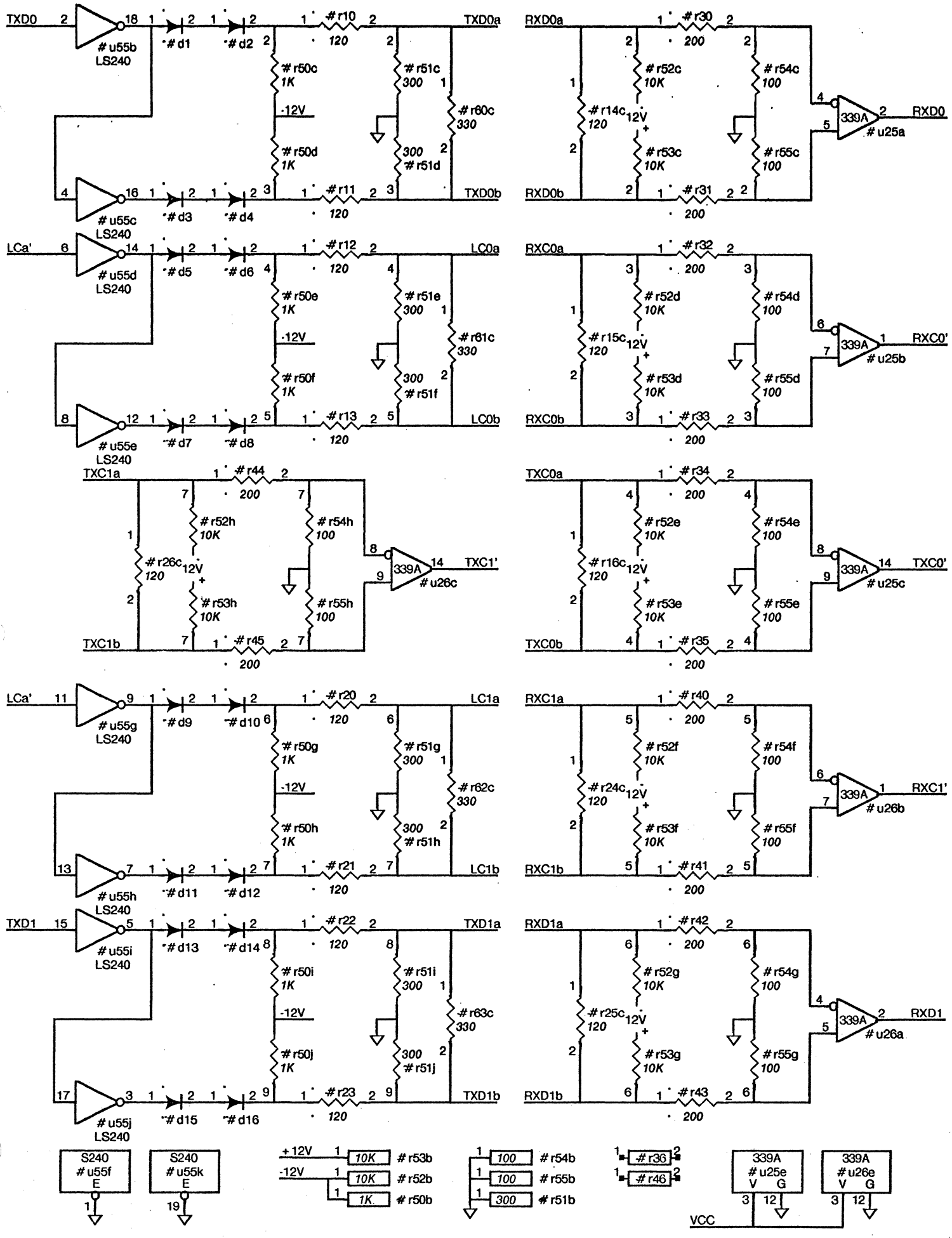




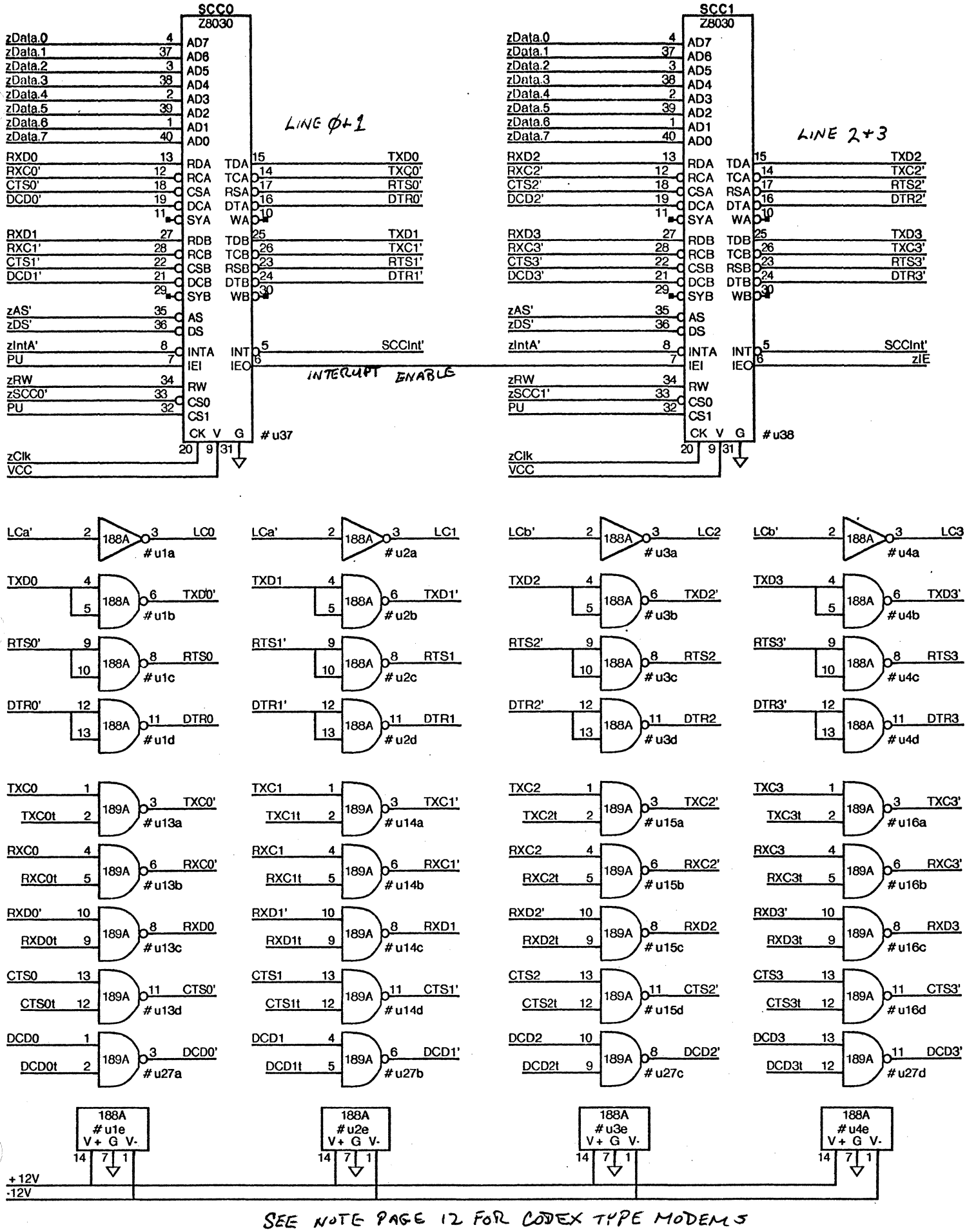




XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Clocks, Init, DES & Random # Gen	DMisc06.sil	Hal Murray	D	3/16/85	06

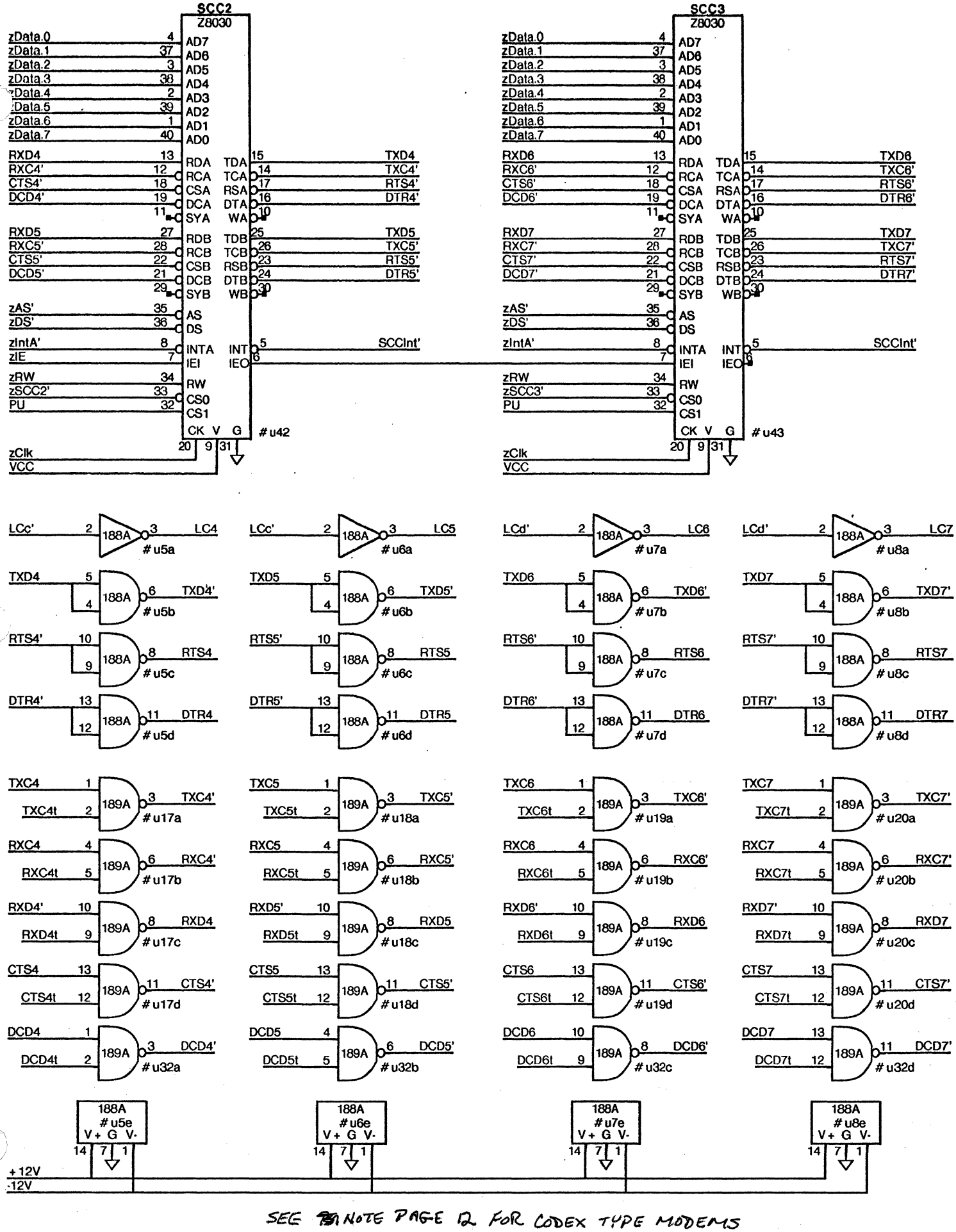


XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	V.35 Interfaces 0&1	DMiscO7.sil	Boggs/Murray	D	3/16/85	07



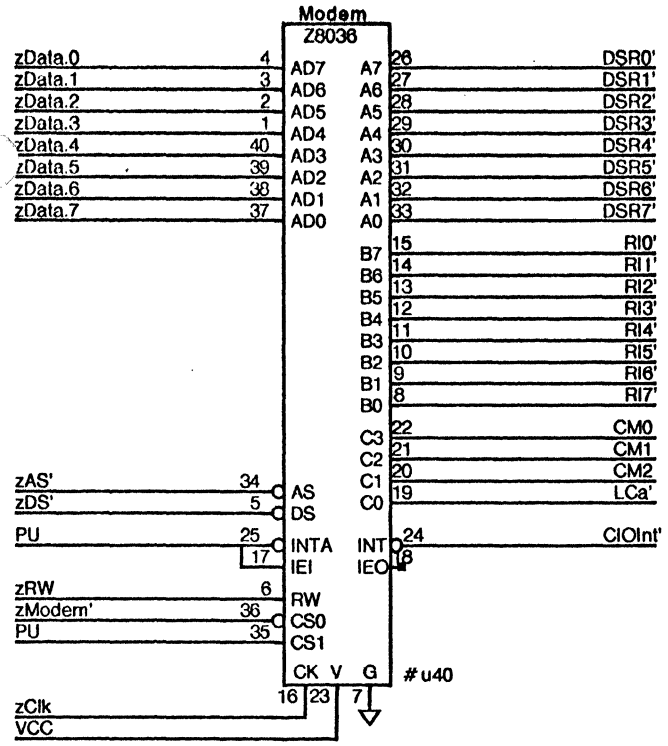
SEE NOTE PAGE 12 FOR CODEX TYPE MODEMS

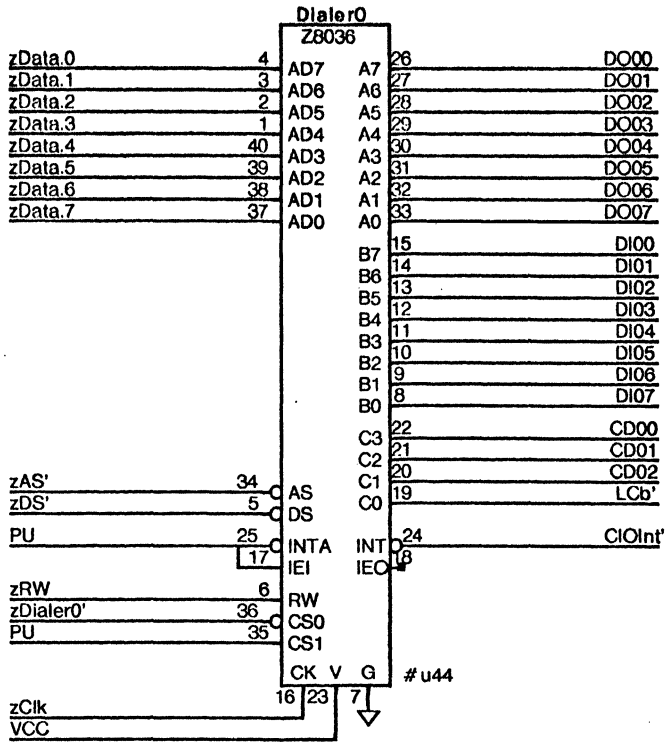
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	RS232 Interfaces 0-3	DMisc08.sil	David Boggs	D	10/31/83	08

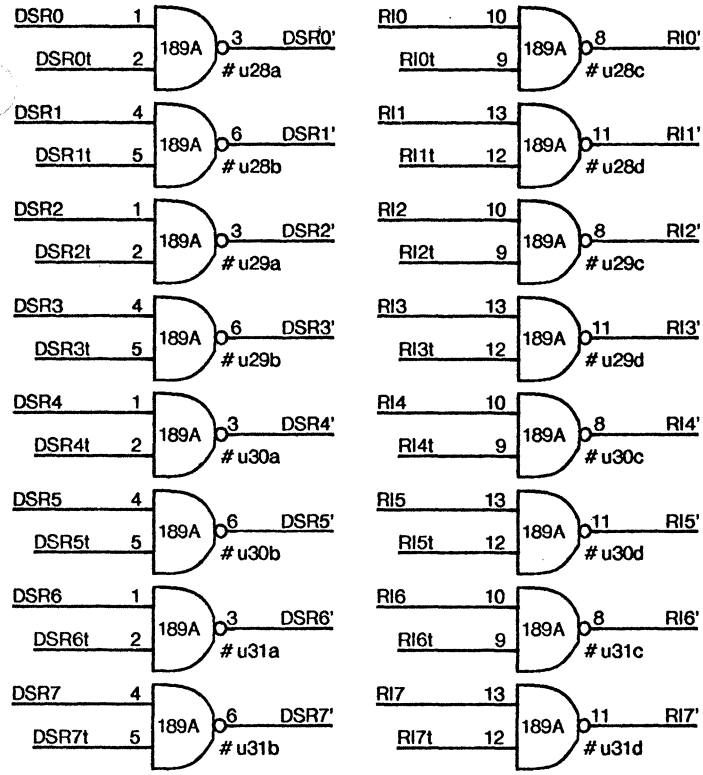


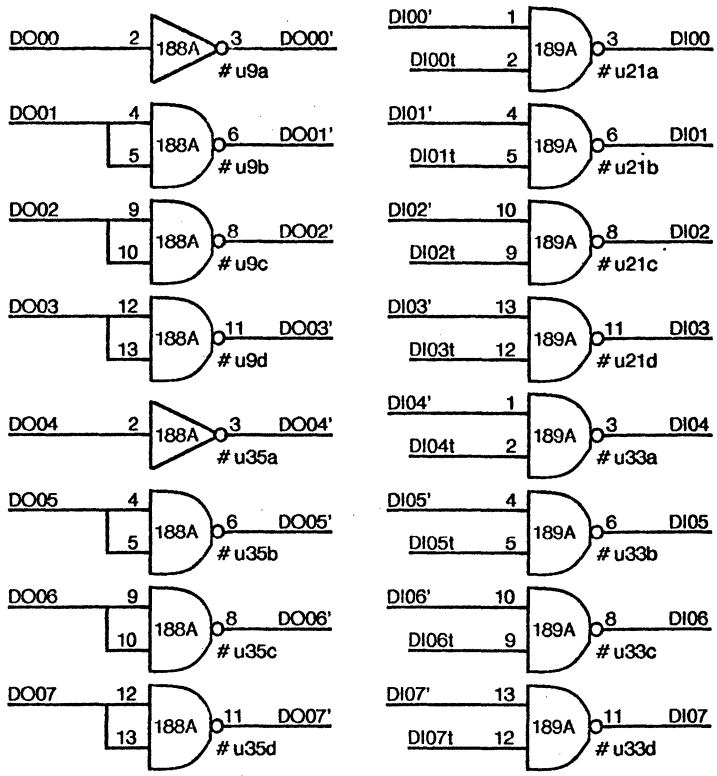
SEE ~~FN~~ NOTE PAGE 12 FOR CODEX TYPE MODEMS

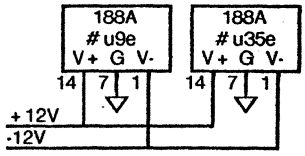
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	RS232 Interfaces 4-7	DMisc09.sil	David Boggs	D	10/31/83	09



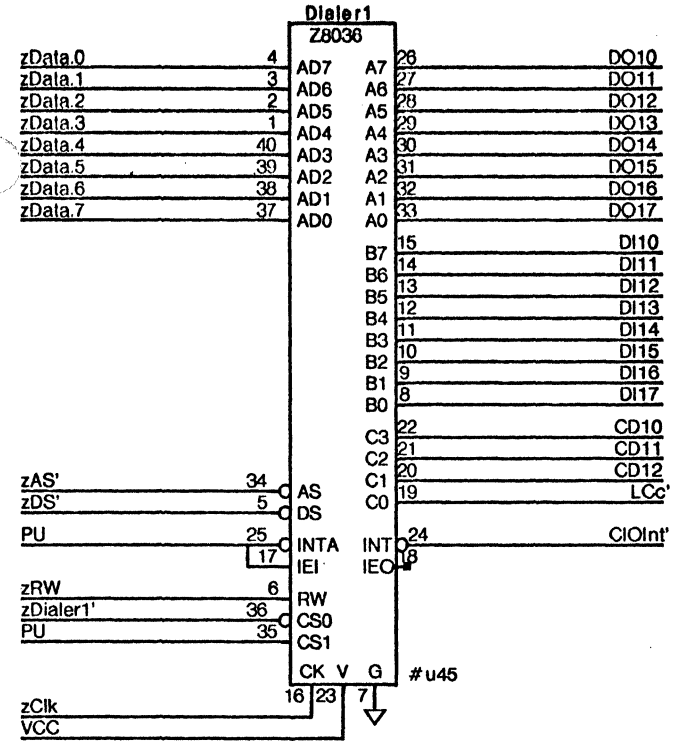


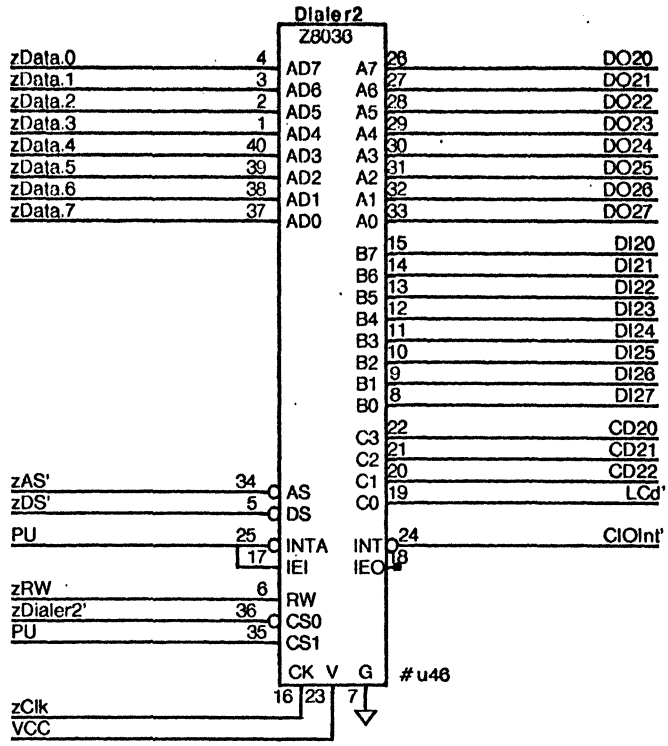






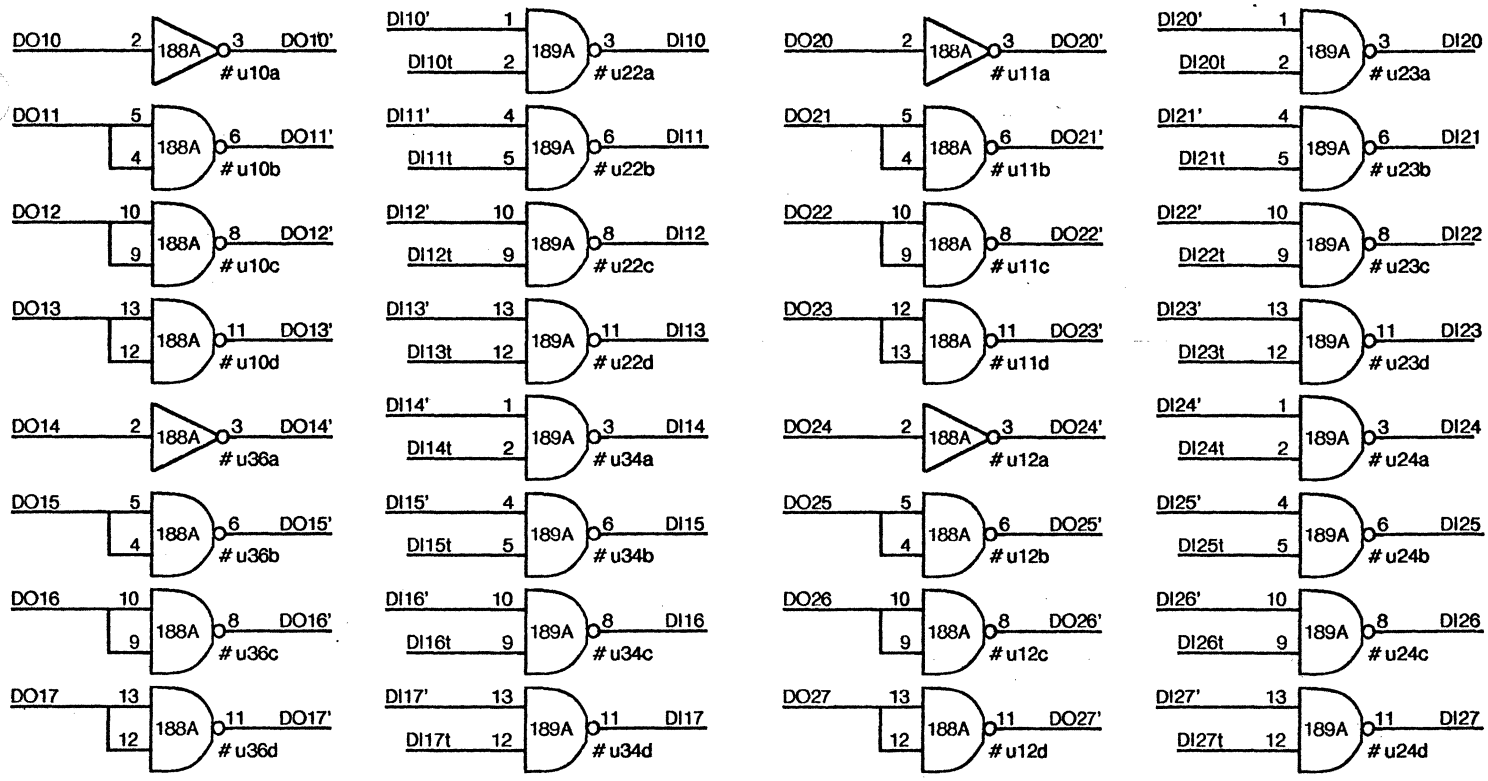
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Modem Status & Dialer 0	DMisc10.sil	David Boggs	D	10/31/83	10



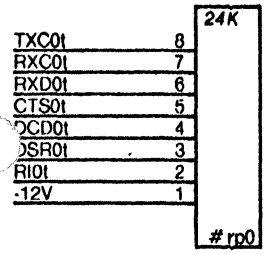


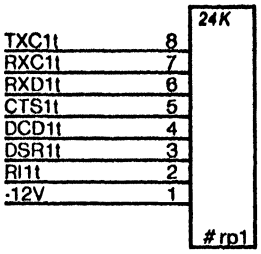
NB: On the initial artwork, pins 12 and 13 were reversed on u22, u23, u24, and u34.
Boards marked Rev DA have pins 5 and 6 swapped too.

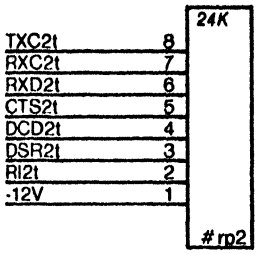
This page shows them the way they should be.

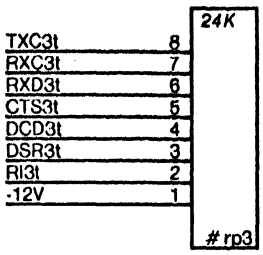


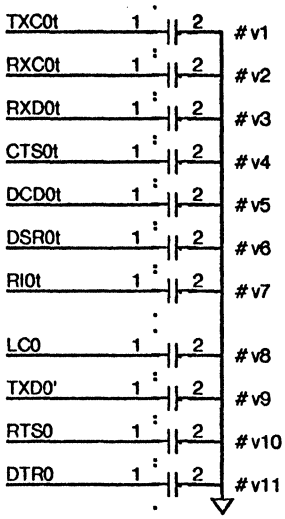
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Dialers 1&2	DMisc11.sil	Hal Murray	D	12/14/84	11

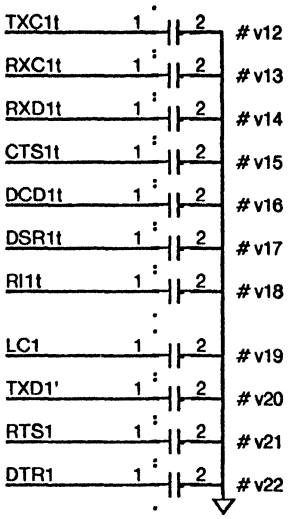


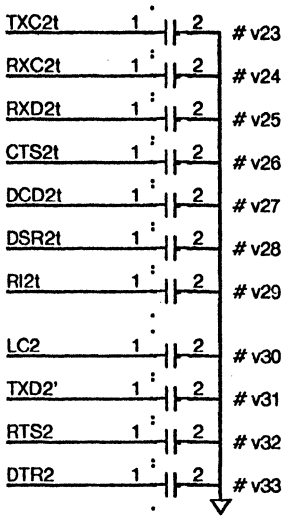


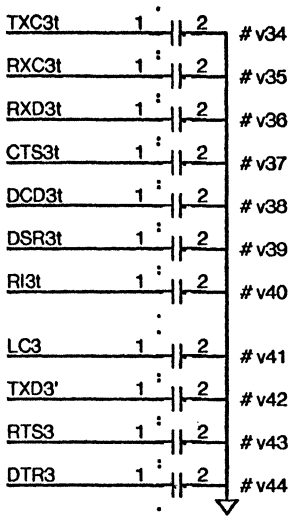




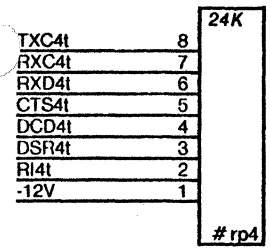


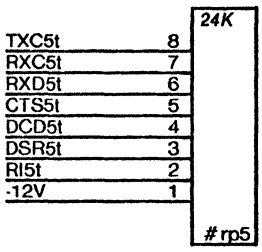


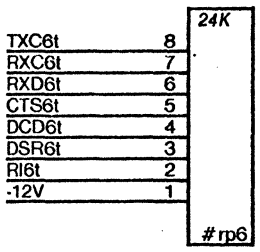


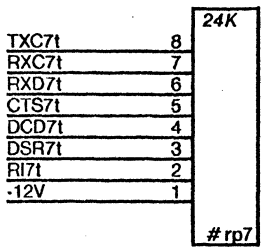


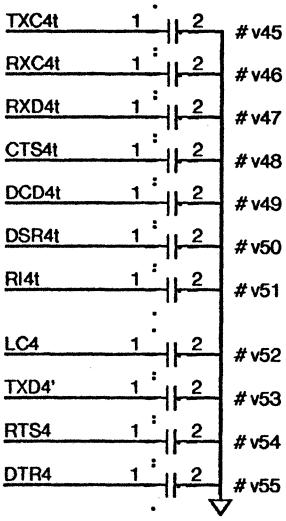
24K SIPs would match the DLion, but they are hard to get. 22K gives a 4V threshold. That works for most gear. Codex 9600 series modems are the only known problem. Unfortunately, Xerox has a lot of them. Yank the SIP if you are interfacing to one.

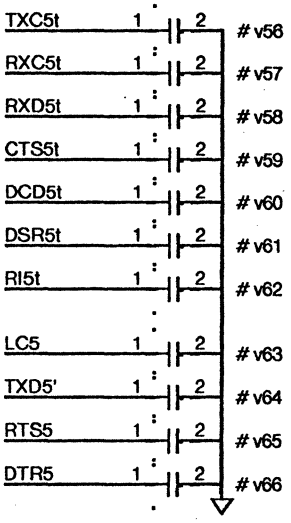


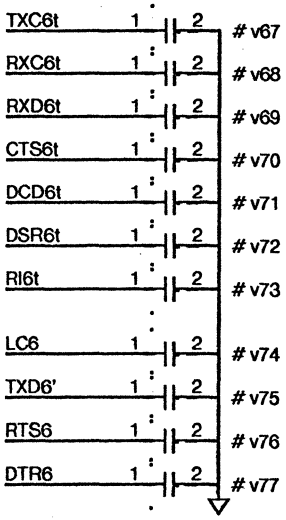


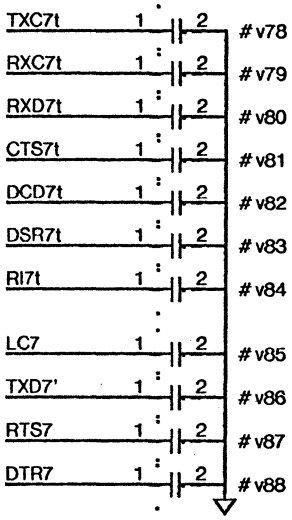




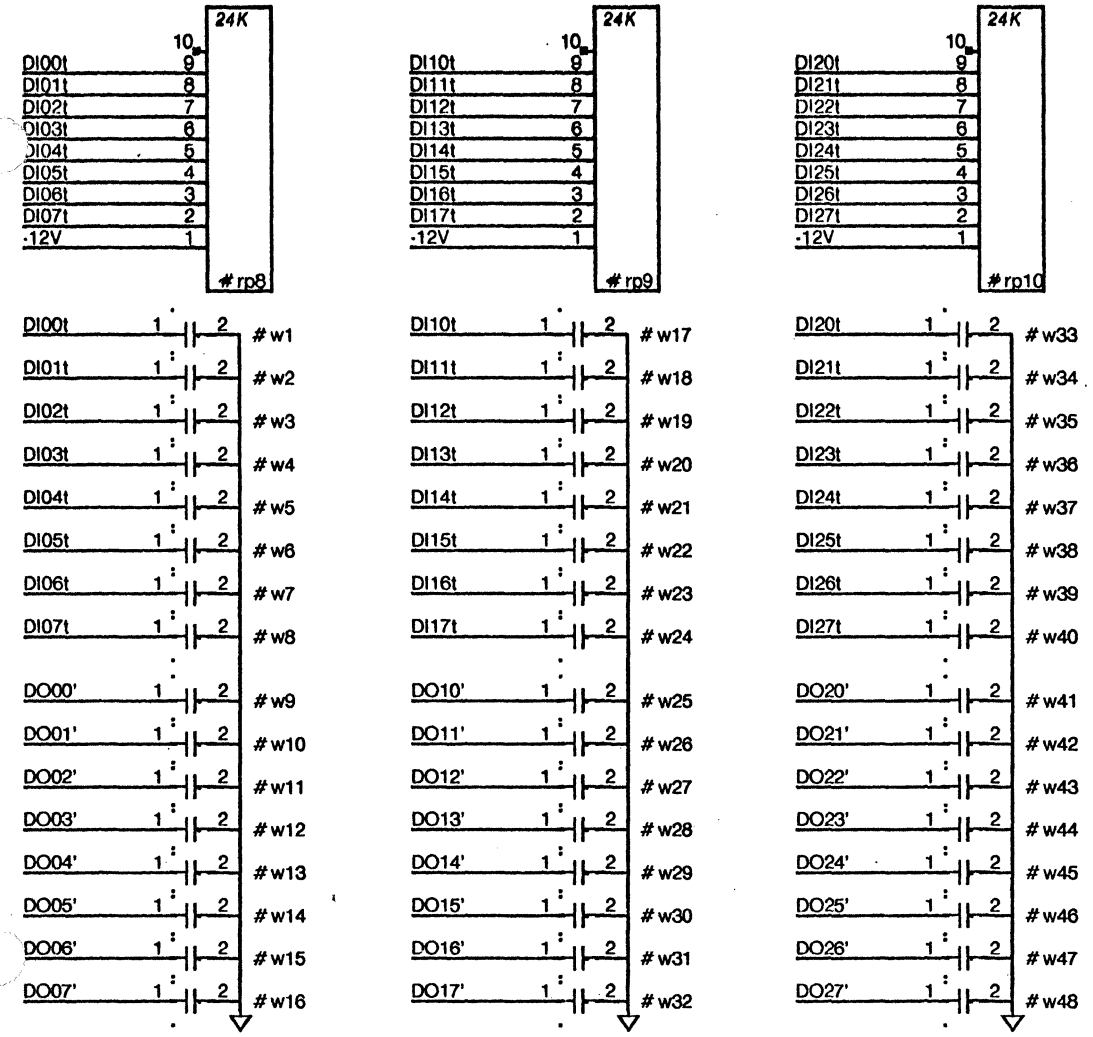


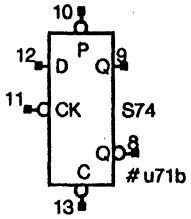


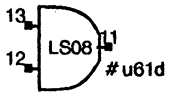


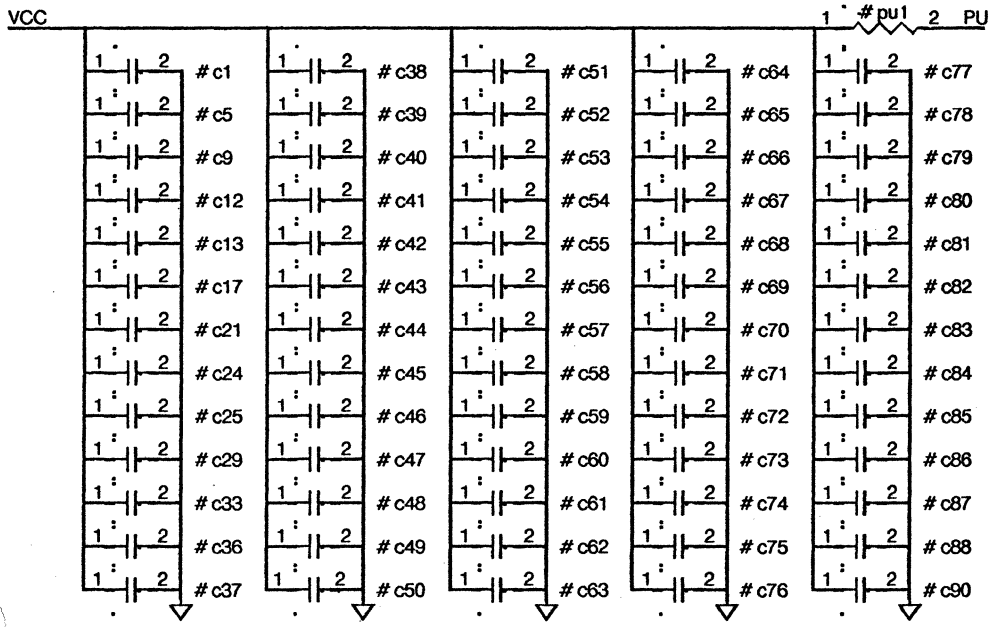


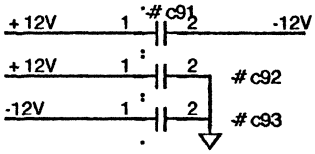
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	RS232 Junk	DMisc12.sil	Boggs/Murray 3/16/85	D	12/07/83	12



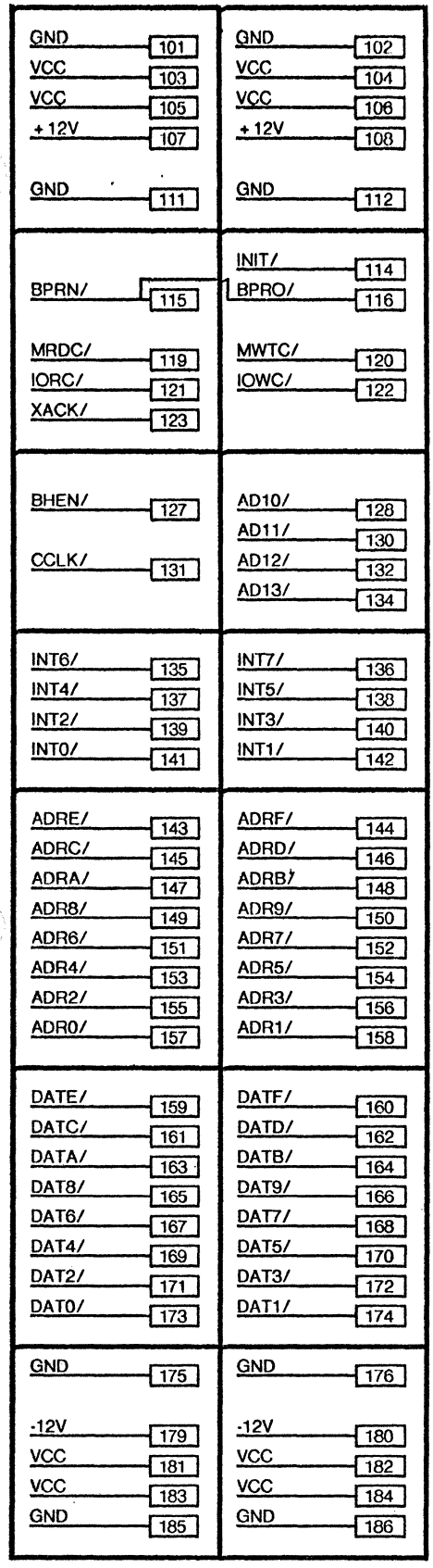


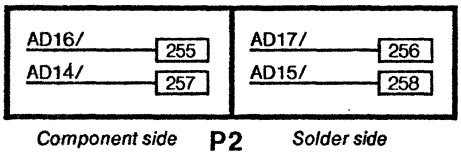


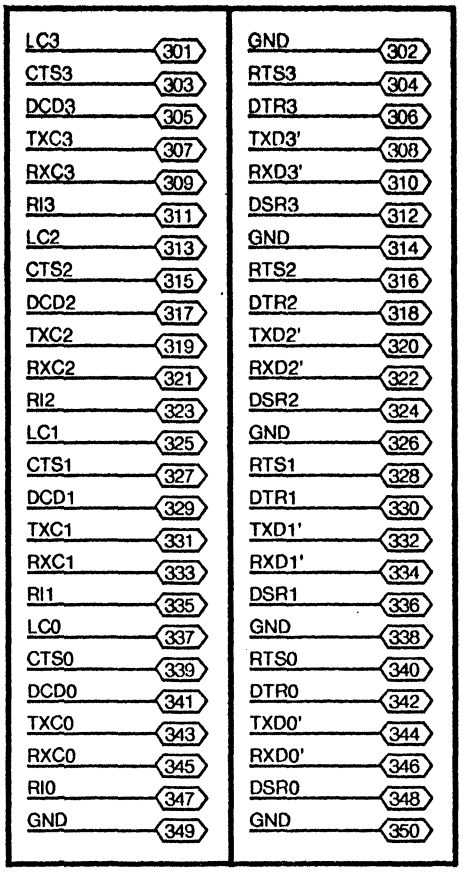


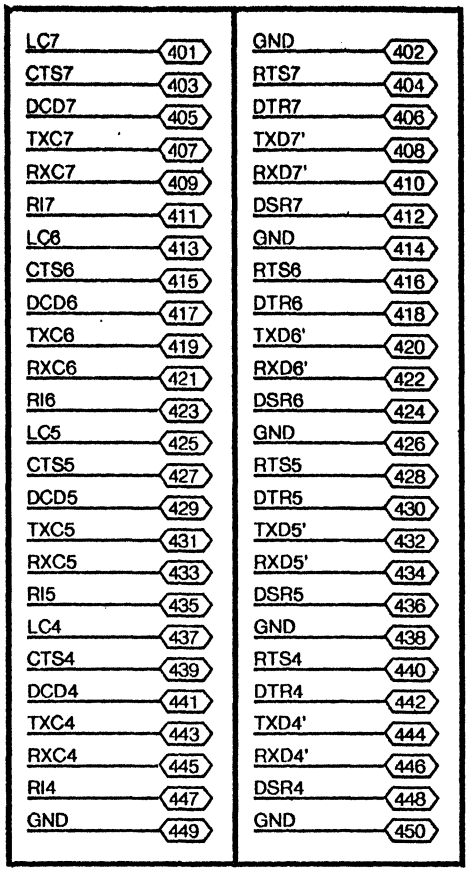


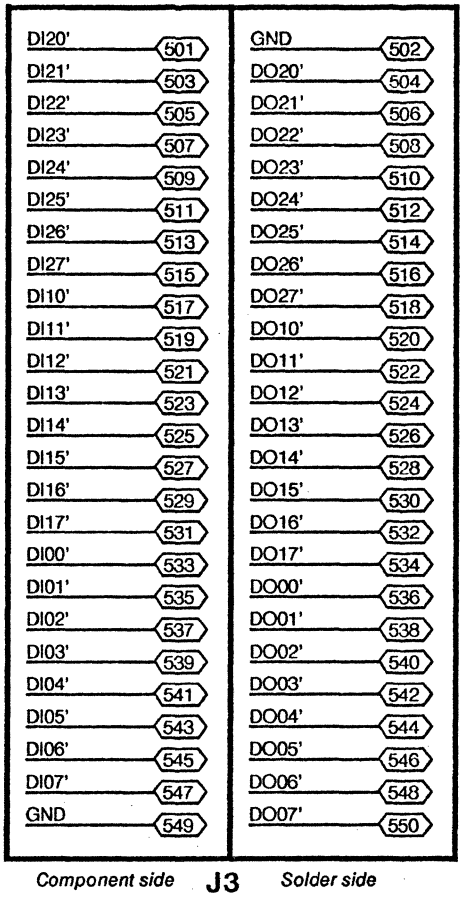
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Dialer Junk, Odds & Ends	DMisc13.sil	David Boggs	D	12/12/83	13

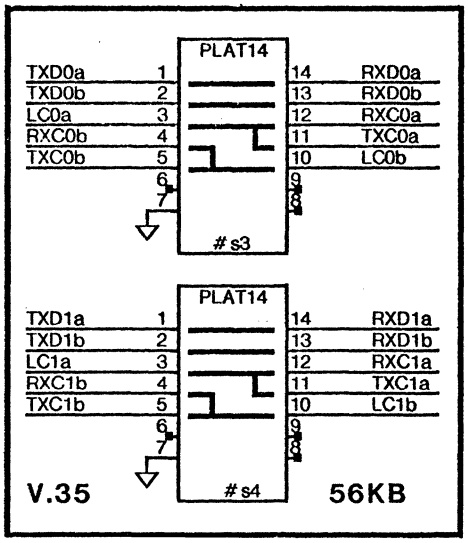


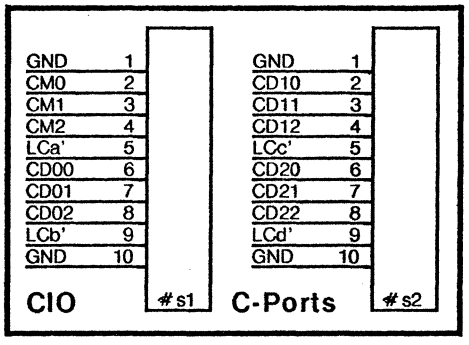






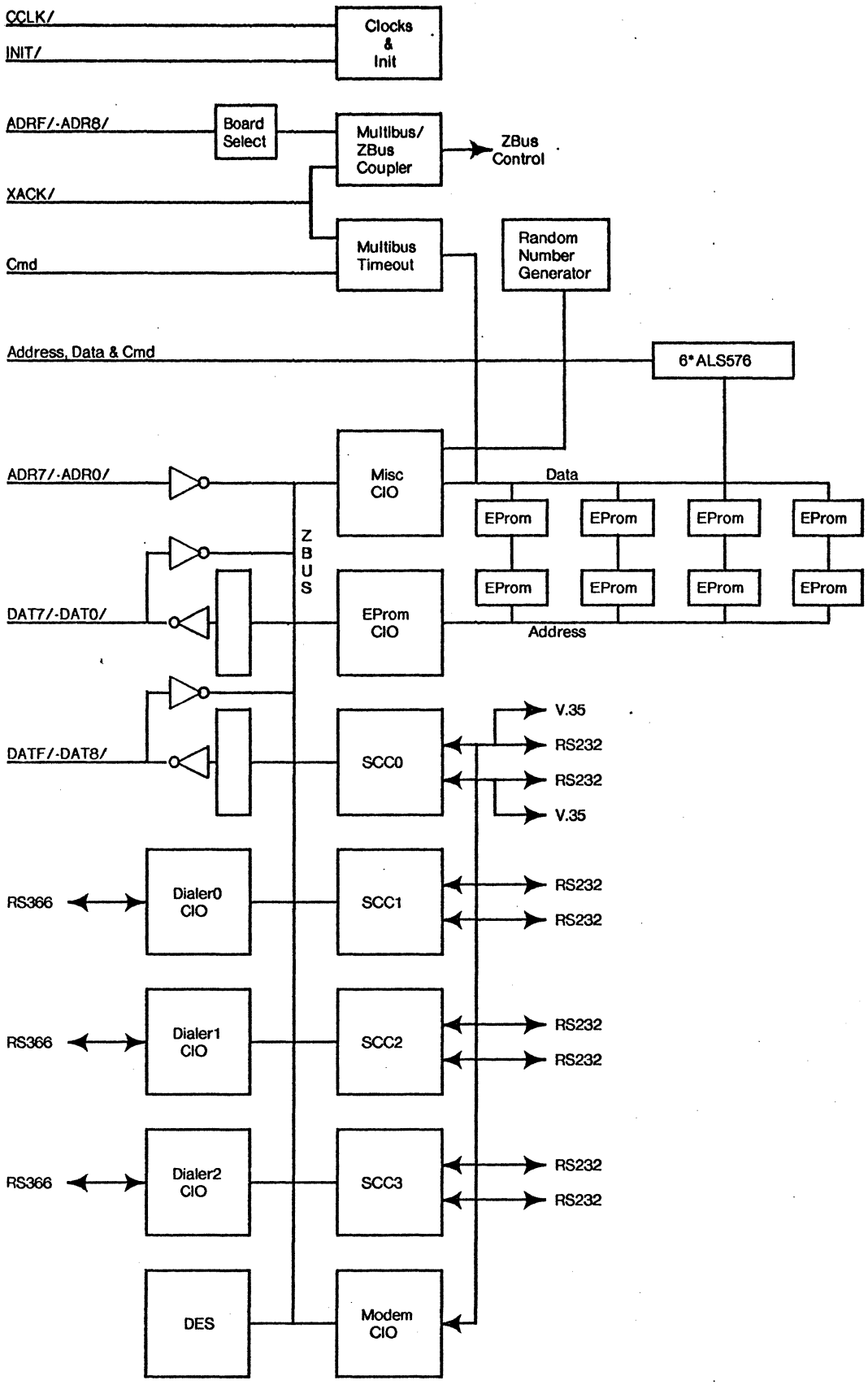




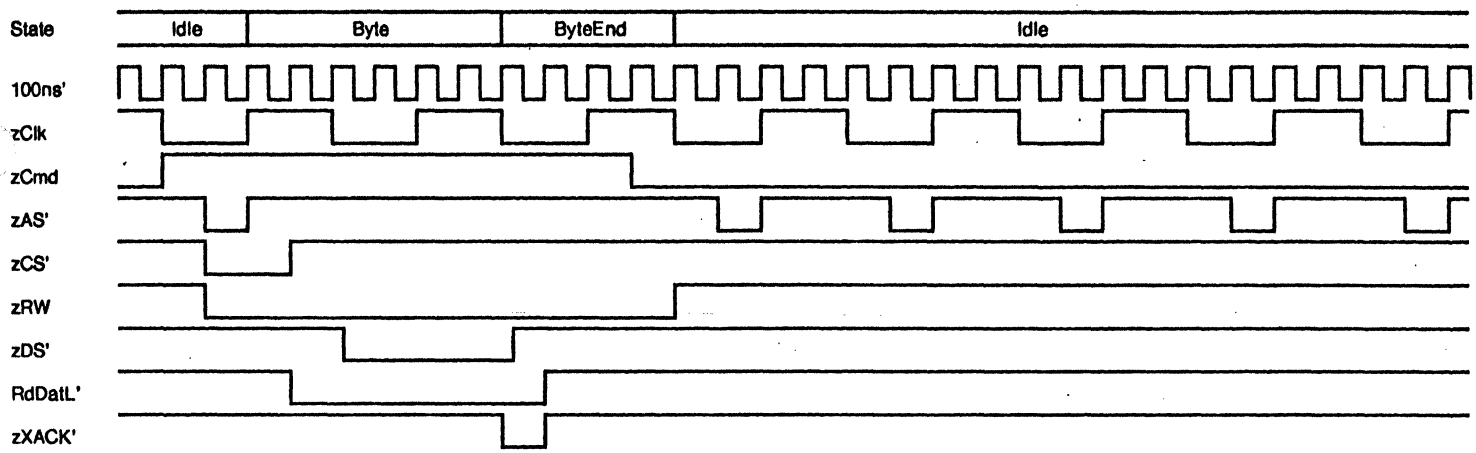


NB: The pin numbers on J1, J2, and J3 correspond to the Multibus specs.
The numbers on the 3M connectors are top/bottom reversed.
The numbers on the StitchWeld boards are top/bottom reversed.

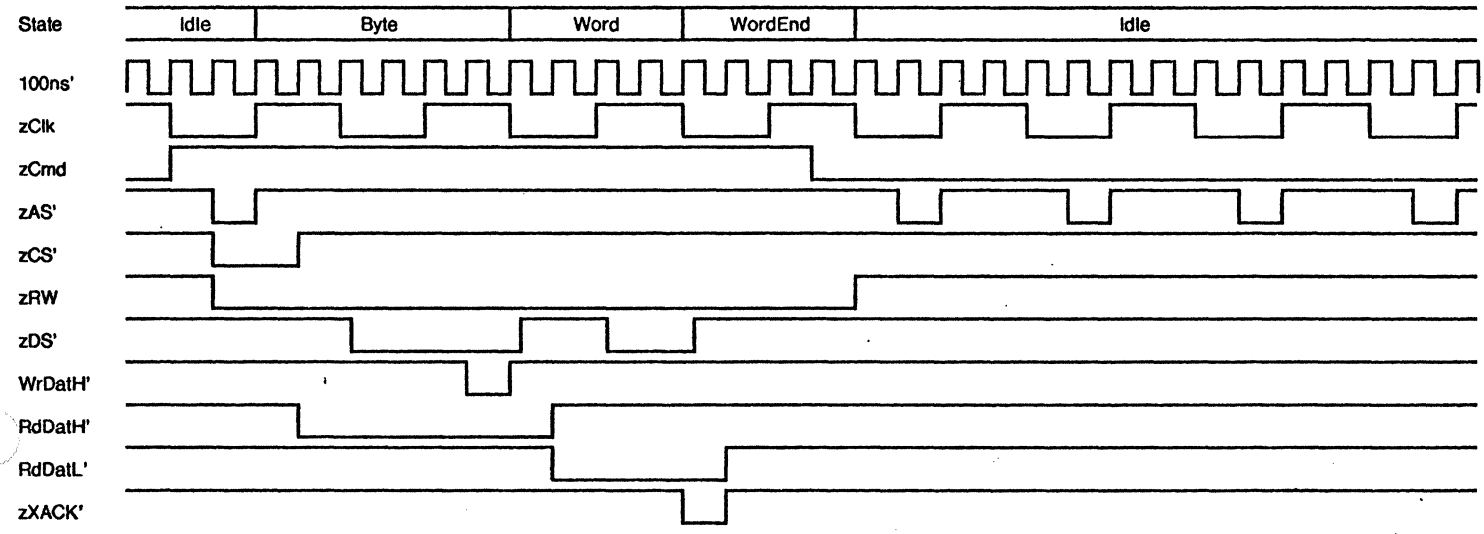
XEROX PARC	Project	Title	File	Designer	Rev	Date	Page
	Dicentra	Connectors	DMisc14.sil	Hal Murray	D	10/15/84	14



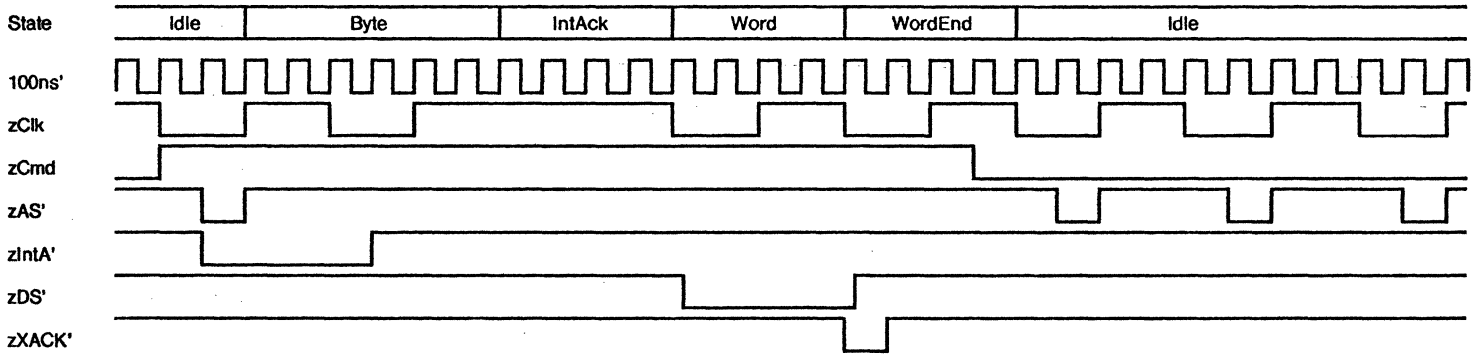
XEROX PARC	Project	Reference	File	Designer	Rev	Date	Page
	Dicentra	Block Diagram	DMisc15.sil	Boggs/Murray	D	3/16/85	15



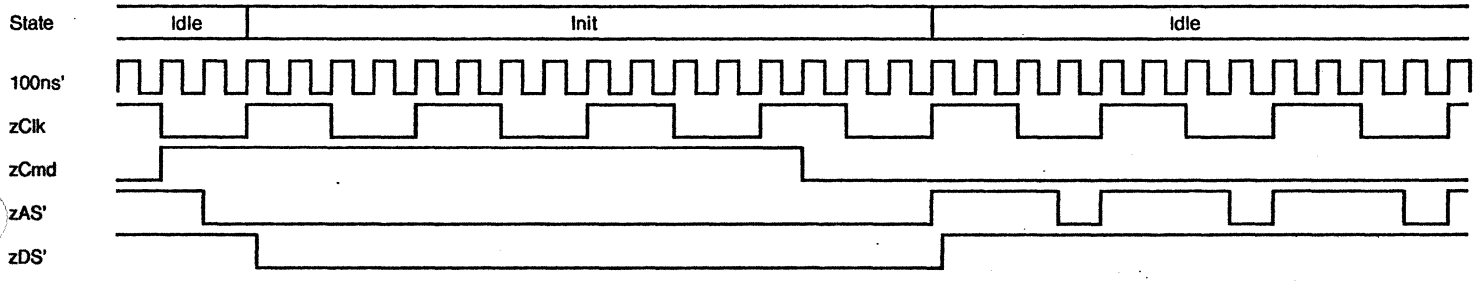
Byte Read or Write



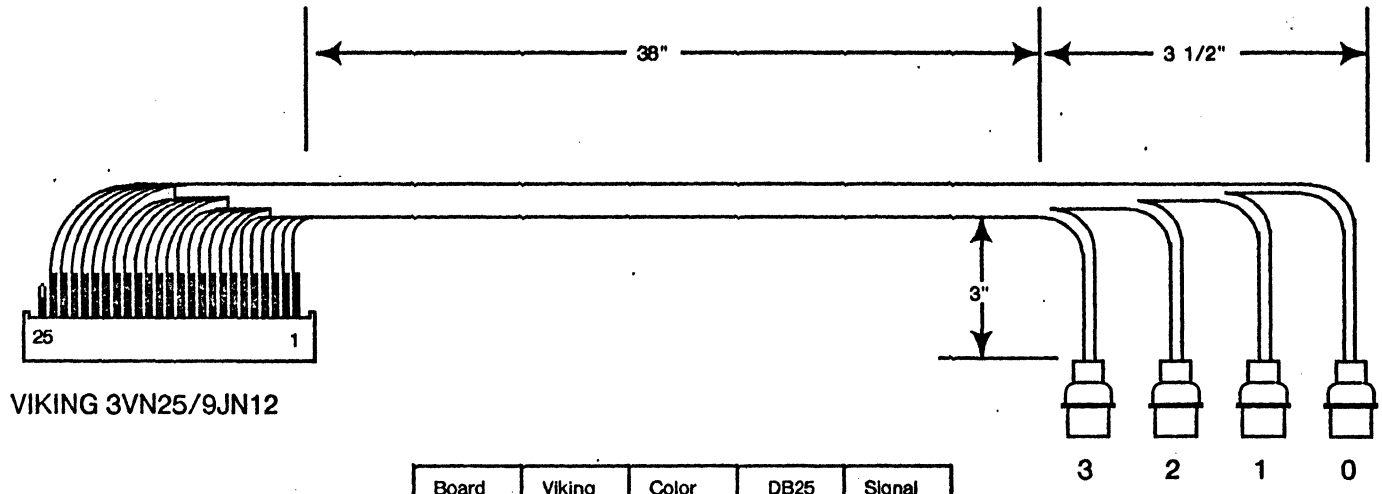
Word Read or Write



IntAck

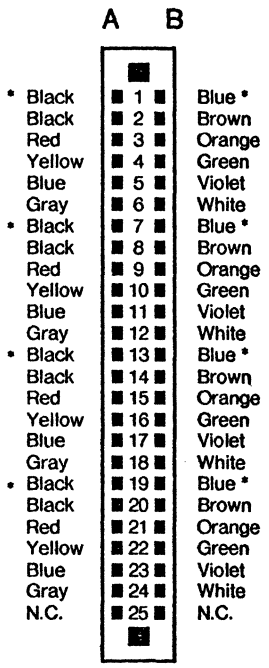


Init



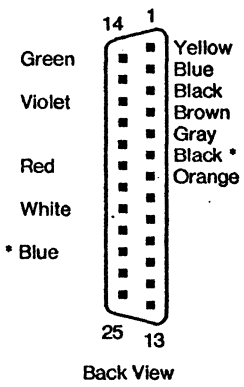
VIKING 3VN25/9JN12

DB25S



Board	Viking	Color	DB25	Signal
2	A1	Black]*	3-7	GND
1	B1	Blue]*	3-24	LC3
4	A2	Black	3-4	RTS3
3	B2	Brown	3-5	CTS3
6	A3	Red	3-20	DTR3
5	B3	Orange	3-8	DCD3
8	A4	Yellow	3-2	TXD3
7	B4	Green	3-15	TXC3
10	A5	Blue	3-3	RXD3
9	B5	Violet	3-17	RXC3
12	A6	Gray	3-6	DSR3
11	B6	White	3-22	RI3
14	A7	Black]*	2-7	GND
13	B7	Blue]*	2-24	LC2
16	A8	Black	2-4	RTS2
15	B8	Brown	2-5	CTS2
18	A9	Red	2-20	DTR2
17	B9	Orange	2-8	DCD2
20	A10	Yellow	2-2	TXD2
19	B10	Green	2-15	TXC2
22	A11	Blue	2-3	RXD2
21	B11	Violet	2-17	RXC2
24	A12	Gray	2-6	DSR2
23	B12	White	2-22	RI2
26	A13	Black]*	1-7	GND
25	B13	Blue]*	1-24	LC1
28	A14	Black	1-4	RTS1
27	B14	Brown	1-5	CTS1
30	A15	Red	1-20	DTR1
29	B15	Orange	1-8	DCD1
32	A16	Yellow	1-2	TXD1
31	B16	Green	1-15	TXC1
34	A17	Blue	1-3	RXD1
33	B17	Violet	1-17	RXC1
36	A18	Gray	1-6	DSR1
35	B18	White	1-22	RI1
38	A19	Black]*	0-7	GND
37	B19	Blue]*	0-24	LC0
40	A20	Black	0-4	RTS0
39	B20	Brown	0-5	CTS0
42	A21	Red	0-20	DTR0
41	B21	Orange	0-8	DCD0
44	A22	Yellow	0-2	TXD0
43	B22	Green	0-15	TXC0
46	A23	Blue	0-3	RXD0
45	B23	Violet	0-17	RXC0
48	A24	Gray	0-6	DSR0
47	B24	White	0-22	RI0
50	A25	—	—	GND
49	B25	—	—	GND

All wires are 26 ga. stranded
* => twisted pair

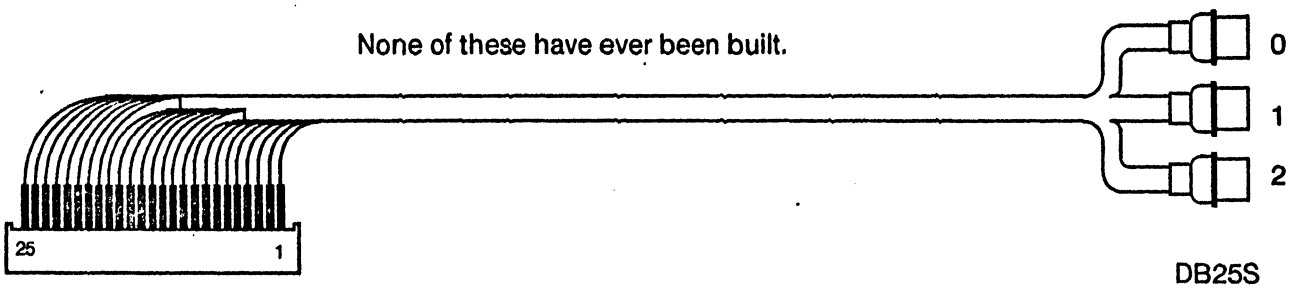


Back View

RS232 Loopback Plug

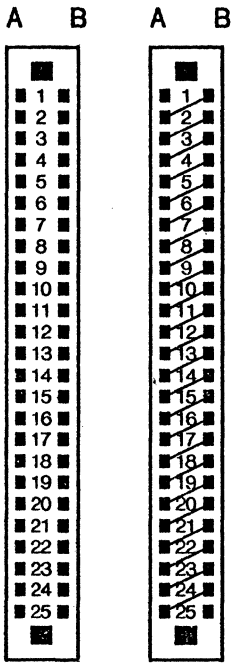
DB25P	Signals
2 to 3	TXD to RXD
24 to 15 & 17	LC to TXC & RXC
4 to 5	RTS to CTS
6 to 20	DSR to DTR

None of these have ever been built.



DB25S

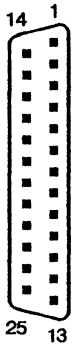
VIKING 3VN25/9JN12



Testing Plug

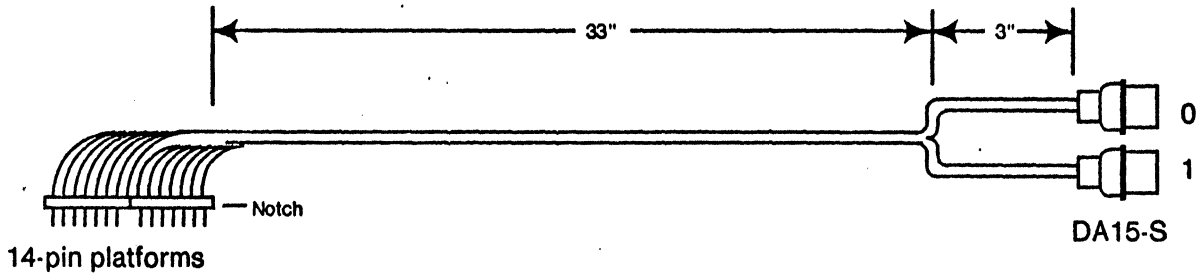
Board	Viking	Color	DB25	Signal
2	A1			GND
1	B1			DI20'
4	A2			DO20'
3	B2			DI21'
6	A3			DO21'
5	B3			DI22'
8	A4			DO22'
7	B4			DI23'
10	A5			DO23'
9	B5			DI24'
12	A6			DO24'
11	B6			DI25'
14	A7			DO25'
13	B7			DI26'
16	A8			DO26'
15	B8			DI27'
18	A9			DO27'
17	B9			DI10'
20	A10			DO10'
19	B10			DI11'
22	A11			DO11'
21	B11			DI12'
24	A12			DO12'
23	B12			DI13'
26	A13			DO13'
25	B13			DI14'
28	A14			DO14'
27	B14			DI15'
30	A15			DO15
29	B15			DI16'
32	A16			DO16'
31	B16			DI17'
34	A17			DO17'
33	B17			DI00'
36	A18			DO00'
35	B18			DI01'
38	A19			DO01'
37	B19			DI02'
40	A20			DO02'
39	B20			DI03'
42	A21			DO03'
41	B21			DI04'
44	A22			DO04'
43	B22			DI05'
46	A23			DO05'
45	B23			DI06'
48	A24			DO06'
47	B24			DI07'
50	A25			DO07'
49	B25			GND

All wires are 26 ga. stranded



Back View

XEROX PARC	Project	Reference	File	Designer	Rev	Date	Page
	Dicentra	RS366 Cable	DMisc18.sil	Hal Murray	D	12/14/84	18

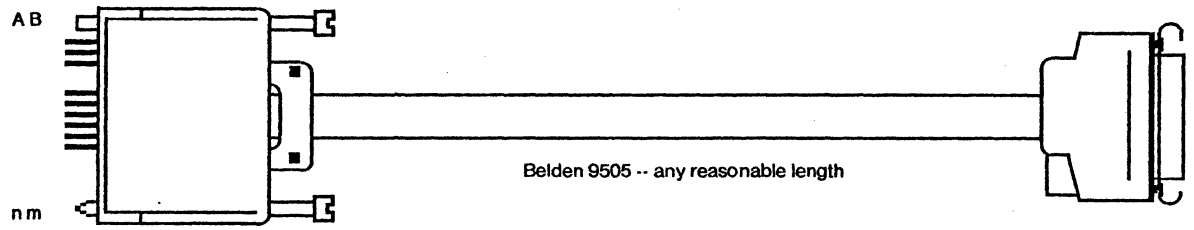


DIP	DA15	Signal
7	9	GND
1	15	TXDa
2	14	TXDb
14	8	RXDa
13	7	RXDb
11	5	TXCa
5	11	TXCb
12	6	RXCa
4	12	RXCb
3	13	LCa
10	4	LCb

Internal Cable

DIP	MRAC34S	DA15P	Signals
1 to 14	P to R	15 to 8	TXDa to RXDa
2 to 13	S to T	14 to 7	TXDb to RXDb
3 to 11 & 12	U to Y & V	13 to 5 & 6	LCa to TXCa & RXCa
10 to 5 & 4	W to a & X	4 to 11 & 12	LCb to TXCb & RXCb

Loopback Plugs



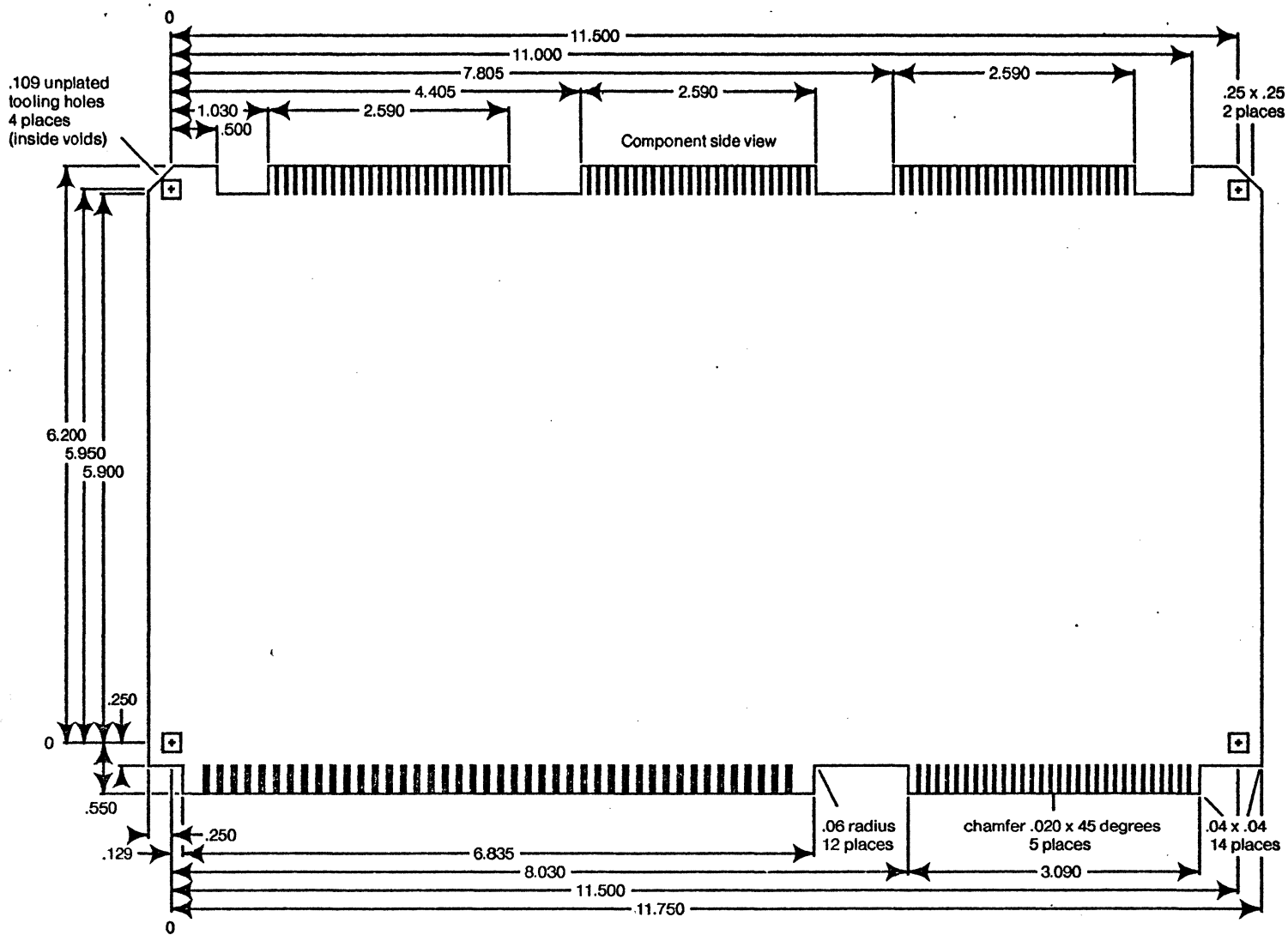
MRAC34	Color	DA15	Signal
B	Drain	9	GND
P	Red	15	TXDa
S	Black	14	TXDb
R	Yellow	8	RXDa
T	Black	7	RXDb
Y	Green	5	TXCa
a	Black	11	TXCb
V	Blue	6	RXCa
X	Black	12	RXCb
U	White	13	LCa
W	Black	4	LCb
C		—	RTS
D		—	CTS
E		—	DSR
H		—	DTR

External Cable

Qty	Manufacturer	Part Number	Description	Location
1	AMD	27S18	Prom 32*8 OC	U58
2	AMD	27S27	Prom 512*8	U59, U60
1	AMD	27S29	Prom 512*8	U56
2	Xicor	2816	EEProm 2K*8	
3	AMD	2764	EProm 8K*8	
1	TI	74LS00	IC	U73
1	TI	74LS08	IC	U61
1	TI	74LS30	IC	U90
1	TI	74S38	IC	U57
2	TI	74S74	IC	U63, U71
4	TI	74LS138	IC	U62, U70, U78, U88
1	TI	74S140	IC	U65
1	TI	74LS164	IC	U67
4	TI	74LS240	IC	U55, U75-U77
2	TI	74LS374	IC	U64, U72
2	TI	74393	IC	U79, U80
8	TI	74ALS576	IC	U68, U69, U82-U87
1	TI	74LS682	IC	U74
14	TI	75188	IC	U1-U12, U35, U36
20	TI	75189A	IC	U13-U24, U27-U34
4	Zilog	Z8030	IC - SCC	U37, U38, U42, U43
6	Zilog	Z8036	IC - CIO	U40, U41, U44-U46, U81
1	AMD	Z8068	IC - DES	U39
2	National	LM339A	IC	U25, U26
1	Motorola	K1115A	20Mhz oscillator	U89
2	Motorola	2N3904	NPN Transistor	Q1, Q2
17	Motorola	1N4148	Si Diode	D1-D17
1	Motorola	1N5227	Zener diode, 3.6V	D18
1	KSW Elect.	KN1201	Noise diode	D19

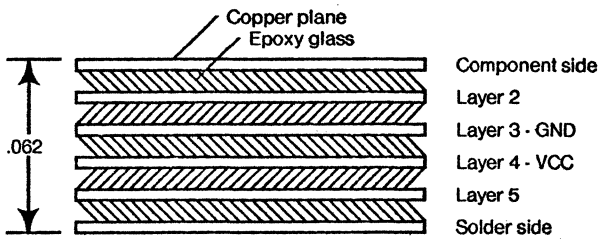
Qty	Manufacturer	Part Number	Description	Location
8	AB	108A223	7x22K SIP resistor	RP0-RP7
3	AB	110A223	9x22K SIP resistor	RP8-RP10
5	AB	108A103	7x10K SIP resistor	RP11-RP13
1	AB	410A102	9x1K SIP resistor	R50
1	AB	110A331	9x330 SIP resistor	R51
2	AB	108A101	7x100 SIP resistor	R54, R55
2	AB	314B201	7x200 DIP resistor	R30-R36
2	AB	314B121	7x120 DIP resistor	R40-R46
2	AB	BB1545	150K 1/8W 5%	R5, R6
1	AB	BB7535	75K 1/8W 5%	R4
3	AB	BB1035	10K 1/8W 5%	R2, R7, R8
2	AB	BB1025	1K 1/8W 5%	R3, PU1
4	AB	BB3315	330 1/8W 5%	R60-R63
1	AB	BB1015	100 1/8W 5%	R1
136	AVX	SR155C391MAA	390 pf radial cap	V1-V88, W1-W48
65	AVX	MD015E104ZAA	.1uf DIP capacitor	C0-C93
1			22uF@15V	Page 6
1	AMP	435640-5	8xSPST DIP switch	U66
11			40-pin DIP socket	U37-U46, U81
8	EMC	10628-01-445	28-pin DIP socket	U47-U54
2	EMC	10422-01-445	22-pin DIP socket	U59, U60
1	EMC	10320-01-445	20-pin DIP socket	U56 May need more if can't get TI parts
1	EMC	10316-01-445	16-pin DIP socket	U58
2	EMC	10314-01-445	14-pin DIP socket	S3, S4 Socket must take round pins.
2	Scanbe	S-203	Ejector & roll pin	
1	Xerox	DMisc-Rev-D	PC board	

Qty	Manufacturer	Part Number	Description	Location
				For each clump of 4 RS232 lines
1	Viking	3VN25/9JN12	Connector	2 per board
4	Cannon	DBC25S	Connector	
4	Cannon	D53018	Slide lock posts	
48	Cannon	030-1953-000	Crimp socket	
				For each clump of 3 RS366 dialers
1	Viking	3VN25/9JN12	Connector	1 per board
3	Cannon	DBC25S	Connector	
3	Cannon	D53018	Slide lock posts	
50	Cannon	030-1953-000	Crimp socket	
				For each V.35 internal cable - 2 lines
2	Augat	614-CG11	14 pin platform	1 per board
2	Cannon	DAC15S	Connector	
2	Cannon	D53018	Slide lock posts	
22	Cannon	030-1953-000	Crimp socket	
				For each V.35 external cable
1	Winchester	MRAC34PJTDH	Connector	
15	Winchester	100-2020P	Crimp pin	
1	Cannon	DAC15P	Connector	
11	Cannon	030-1952-000	Crimp pin	
2	Cannon	DA19678-1	DA15 straight hood	
2	Cannon	DA51220-1	DA15 slide lock	
	Belden	9505	5 pair cable	

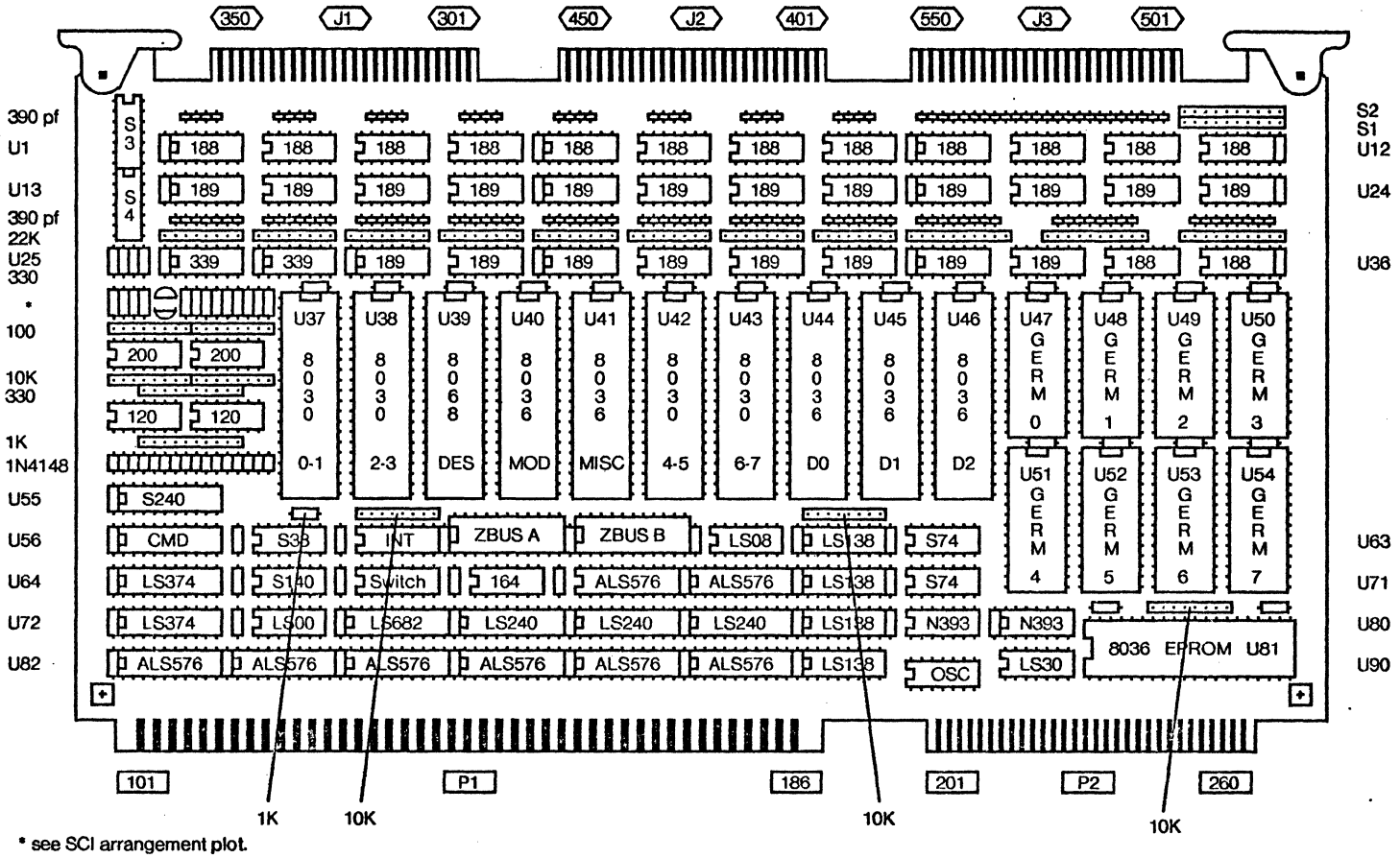


NOTES

1. All dimensions are in inches; drawing is not to scale.
   X.XXX is +- .005; X.XX is +- .01.
2. Except as noted, this printed board shall be made
   in accordance with IPC-ML-910 Class II.
3. Acceptability of the finished board will be judged
   in accordance with IPC-A-600.
4. Base material: 1 oz Cu on FR4
   in accordance with IPC-L-130.
5. Bonding agent: prepreg B-stage
   in accordance with IPC-L-110.
6. Solder mask: green epoxy
   in accordance with IPC-SM-840.
7. Silk screen: none
8. Plating: .000050 Au over .000200 Ni on contact fingers.
   .0003 Sn-Pb over .0010 Cu in holes and on traces.
9. Holes: 4 unplated holes, finished diameter .109.
   many unplated holes, finished diameter .031.
10. Pads: .050 components, connectors, and feedthrus.
11. Conductors: .010 wide, .010 spacing.



XEROX PARC	Project	Reference	File	Drawn by	Rev	Date	Page
	Dicentra	Fabrication Drawing	DMisc23.sil	Hal Murray	D	10/15/84	23



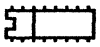
* see SCI arrangement plot.

Proms		
U56	27S29	Cmd
U58	27S18	Int
U59	27S27	ZBusA
U60	27S27	ZBusB

Socket S3, S4, Osc, Proms, Germs
Odd pins are on the component side
Even pins are on the solder side.
NB: The pin numbers for J1, J2, and J3 correspond to the Multibus specs.
The numbers on the 3M connectors are top/bottom reversed.
The numbers on the StitchWeld boards are top/bottom reversed.

Rework:
Swap pins 12-13 on U22, U23, U24, and U34
Swap pins 5-6 on U22, U23, U24, and U34 on boards marked Rev-DA

Normal Switches:
Bar is closed, on, 1



XEROX PARC	Project	Reference	File	Drawn by	Rev	Date	Page
	Dicentra	Assembly Drawing	DMisc-Rev-D.asm	Hal Murray	D	3/16/85	24

```
// DMisc-Proms.bcpl -- Dicentra Miscellaneous board Proms
// Last modified January 18, 1984  8:56 PM by Boggs

// To make a new .MB file:
//   *    Edit this file; then FTP it to the "Dicentra Proms" disk
//        type "BCPL DMiscProms.bcpl" to compile it
//        type "BLDR DMiscProms" to load it
//        type "DMiscProms" to run it and produce DMiscProms.mb

external [ Ws; OpenFile; Puts; Closes; Allocate; Free; sysZone ]

static [ memory; mbFile ]

structure String [ length byte; char↑1,1 byte ]

manifest [ high = 1; low = 0 ]

//---------------------------------------------------------------------------------------
let DMiscProms() be
//---------------------------------------------------------------------------------------
[
mbFile = OpenFile("DMisc-Proms.mb")

DoMemory("Cmd", 512, 8, Cmd)
DoMemory("Int", 32, 8, Int)
DoMemory("ZBus", 512, 24, ZBus)

Puts(mbFile, 0)  //0 = end of file
Closes(mbFile)
]

//---------------------------------------------------------------------------------------
and DoMemory(name, nAddr, nData, Proc) be
//---------------------------------------------------------------------------------------
// nAddr is number of addresses
// nData is number of output bits
[
Ws("*N"); Ws(name)

Puts(mbFile, 4)  //4 = define memory
memory = memory +1
Puts(mbFile, memory)
Puts(mbFile, nData)
if name>>String.length gr 1 then
   for i = 1 to name>>String.length-1 by 2 do
      Puts(mbFile, name>>String.char↑i lshift 8 + name>>String.char↑(i+1))
Puts(mbFile, (name>>String.length & 1) eq 0? 0,
 name>>String.char↑(name>>String.length) lshift 8)

Puts(mbFile, 2)  //2 = set current memory
Puts(mbFile, memory)
Puts(mbFile, 0)  //location counter

let data = Allocate(sysZone, (nData+15)/16)
for addr = 0 to nAddr-1 do
   [
   Puts(mbFile, 1)  //1 = memory contents
   Puts(mbFile, 0)  //source line number
   Proc(addr, data)
   for i = 0 to (nData+15)/16 -1 do Puts(mbFile, data!i)
   ]
Free(sysZone, data)
]
```

```
//-------------------------------------------------------------------------------------
and Cmd(addr, data) be
//-------------------------------------------------------------------------------------
[
manifest   // zCmd values
   [
   noCmd = 0
   byteRead = 1
   byteWrite = 2
   wordRead = 3
   wordWrite = 4
   intAck = 5
   init = 6
   ]

structure Addr:
   [
   blank bit 7
   BdSel bit
   IORC bit      //low true
   IOWC bit      //low true
   Adr bit 4     //low true
   INIT bit      //low true
   blank bit
   ]

structure Data:
   [
   zCmd bit 3
   blank bit 3
   ReadHigh bit
   ReadLow bit
   blank bit 8
   ]

let BdSel = addr<<Addr.BdSel eq high
let IORC = addr<<Addr.IORC eq low
let IOWC = addr<<Addr.IOWC eq low
let Adr = addr<<Addr.Adr xor 17b
let INIT = addr<<Addr.INIT eq low

let zCmd = noCmd
let ReadHigh = IORC & BdSel & Adr eq 15
let ReadLow = IORC & BdSel

if (IORC % IOWC) & BdSel then zCmd = selecton Adr into
   [
   case 0:  IORC? intAck, noCmd          //IntAck
   case 1:  IORC? byteRead, byteWrite    //SCC0
   case 2:  noCmd                        //Spare
   case 3:  IORC? byteRead, byteWrite    //SCC1
   case 4:  IORC? byteRead, byteWrite    //Modem
   case 5:  IORC? byteRead, byteWrite    //SCC2
   case 6:  noCmd                        //Spare
   case 7:  IORC? byteRead, byteWrite    //SCC3
   case 8:  IORC? byteRead, byteWrite    //Dialer0
   case 9:  IORC? byteRead, byteWrite    //Misc
   case 10: IORC? byteRead, byteWrite    //Dialer1
   case 11: IORC? byteRead, byteWrite    //EProm
   case 12: IORC? byteRead, byteWrite    //Dialer2
   case 13: IORC? byteRead, byteWrite    //DESByte
   case 14: noCmd                        //Spare
   case 15: IORC? wordRead, wordWrite    //DESWord
   ]
if INIT then zCmd = init  //overrides everything

data>>Data.zCmd = zCmd
data>>Data.ReadHigh = ReadHigh? high, low
data>>Data.ReadLow = ReadLow? high, low
]
```

```
//-------------------------------------------------------------------------------
and Int(addr, data) be
//-------------------------------------------------------------------------------
// This needs work before it is suitable for multiple Misc boards.
// IntChan bits are currently ignored.
[
structure Addr:
   [
   blank bit 11
   Int0 bit             //low true
   SCCInt bit           //low true
   CIOInt bit           //low true
   IntChan bit 2
   ]

structure Data:
   [
   IntOut0 bit          //low true
   IntOut1 bit          //low true
   IntOut2 bit          //low true
   IntOut3 bit          //low true
   IntOut4 bit          //low true
   IntOut5 bit          //low true
   IntOut6 bit          //low true
   IntOut7 bit          //low true
   blank bit 8
   ]

let Int0 = addr<<Addr.Int0 eq low
let SCCInt = addr<<Addr.SCCInt eq low
let CIOInt = addr<<Addr.CIOInt eq low
let IntChan = addr<<Addr.IntChan

data>>Data.IntOut0 = Int0? low, high
data>>Data.IntOut1 = high
data>>Data.IntOut2 = high
data>>Data.IntOut3 = high
data>>Data.IntOut4 = SCCInt? low, high
data>>Data.IntOut5 = high
data>>Data.IntOut6 = high
data>>Data.IntOut7 = CIOInt? low, high
]
```

```
//-------------------------------------------------------------------------------------
and ZBus(addr, data) be
//-------------------------------------------------------------------------------------
[
manifest
   [
   // zCmd values
   noCmd = 0
   byteRead = 1
   byteWrite = 2
   wordRead = 3
   wordWrite = 4
   intAck = 5
   init = 6

   // FSM states; 12 free: 52-63.
   idle0 = 0; idle1 = 1; idle2 = 2; idle3 = 3
   init0 = 4; init1 = 5; init2 = 6; init3 = 7
   byte0 = 8; byte1 = 9; byte2 = 10; byte3 = 11; byte4 = 12; byte5 = 13
   byteEnd = 14; byteEnd0 = 15; byteEnd1 = 16; byteEnd2 = 17; byteEnd3 = 18
   intAck0 = 19; intAck1 = 20; intAck2 = 21; intAck3 = 22
   word0 = 23; word1 = 24; word2 = 25; word3 = 26
   wordEnd = 27; wordEnd0 = 28; wordEnd1 = 29; wordEnd2 = 30; wordEnd3 = 31

   // 20 dally states implies 5 zClk cycles.
   // The sixth + 200 ns is in the idle loop and the AS part of the next ref.
   dallyFirst = 32; dallyLast = dallyFirst+19
   ]

structure Addr:
   [
   blank bit 7
   CurState bit 6
   zCmd bit 3
   ]

structure Data:
   [
   NextState bit 6
   ReadDatH bit          //low true
   ReadDatL bit          //low true
   WriteDatH bit         //low true
   zXACK bit             //low true
   zIntA bit             //low true
   zCS bit               //low true
   zClk bit              //voltage
   zRW bit               //voltage
   zAS bit               //low true
   zDS bit               //low true
   ]

let CurState = addr<<Addr.CurState
let zCmd = addr<<Addr.zCmd

let NextState = CurState
let ReadDatH, ReadDatL, WriteDatH = false, false, false
let zXACK, zIntA, zClk = false, false, nil
let zCS, zAS, zDS = false, false, false
let zRW = zCmd eq byteWrite % zCmd eq wordWrite? low, high
```

```
switchon CurState into
   [
   case idle0:
      [
      zClk = high
      NextState = idle1
      endcase
      ]
   case idle1:
      [
      zClk = high
      NextState = idle2
      endcase
      ]
   case idle2:
      [
      zClk = low
      NextState = idle3
      endcase
      ]
   case idle3:
      [
      zClk = low
      zAS = true
      switchon zCmd into
         [
         case noCmd: [ NextState = idle0; endcase ]
         case intAck: zIntA = true
         case byteRead: case byteWrite:
         case wordRead: case wordWrite:
            [
            zCS = true
            NextState = byte0
            endcase
            ]
         case init: [ NextState = init0; endcase ]
         default: docase noCmd
         ]
      endcase
      ]
```

```
case init0:
   [
   zClk = high
   zAS, zDS = true, true
   NextState = init1
   endcase
   ]
case init1:
   [
   zClk = high
   zAS, zDS = true, true
   NextState = init2
   endcase
   ]
case init2:
   [
   zClk = low
   zAS, zDS = true, true
   NextState = init3
   endcase
   ]
case init3:
   [
   zClk = low
   zAS, zDS = true, true
   NextState = zCmd eq init? init0, idle0
   endcase
   ]
```

```
case byte0:
   [
   zClk = high
   zCS = true
   if zCmd eq intAck then zIntA = true
   NextState = byte1
   endcase
   ]
case byte1:
   [
   zClk = high
   if zCmd eq intAck then zIntA = true
   if zCmd eq byteWrite then ReadDatL = true
   if zCmd eq wordWrite then ReadDatH = true
   NextState = byte2
   endcase
   ]
case byte2:
   [
   zClk = low
   if zCmd ne intAck then zDS = true
   if zCmd eq intAck then zIntA = true
   if zCmd eq byteWrite then ReadDatL = true
   if zCmd eq wordWrite then ReadDatH = true
   NextState = byte3
   endcase
   ]
case byte3:
   [
   zClk = low
   if zCmd ne intAck then zDS = true
   if zCmd eq byteWrite then ReadDatL = true
   if zCmd eq wordWrite then ReadDatH = true
   NextState = byte4
   endcase
   ]
case byte4:
   [
   zClk = high
   if zCmd ne intAck then zDS = true
   if zCmd eq byteWrite then ReadDatL = true
   if zCmd eq wordWrite then ReadDatH = true
   NextState = byte5
   endcase
   ]
case byte5:
   [
   zClk = high
   if zCmd ne intAck then zDS = true
   if zCmd eq byteWrite then ReadDatL = true
   if zCmd eq wordWrite then ReadDatH = true
   if zCmd eq wordRead then WriteDatH = true
   NextState = (zCmd eq wordRead % zCmd eq wordWrite)? word0, (zCmd eq intAck? intAck0, byteEnd)
   endcase
   ]
```

```
  case byteEnd:
     [
     zClk = low
     zXACK = true
     if zCmd eq byteWrite then ReadDatL = true
     NextState = byteEnd1
     endcase
     ]
  case byteEnd0:
     [
     zClk = low
     NextState = zCmd eq noCmd? dallyFirst+1, byteEnd1
     endcase
     ]
  case byteEnd1:
     [
     zClk = low
     zAS = true
     NextState = zCmd eq noCmd? dallyFirst+2, byteEnd2
     endcase
     ]
  case byteEnd2:
     [
     zClk = high
     NextState = zCmd eq noCmd? dallyFirst+3, byteEnd3
     endcase
     ]
  case byteEnd3:
     [
     zClk = high
     NextState = (zCmd eq noCmd % zCmd eq init)? dallyFirst, byteEnd0
     endcase
     ]

  case dallyFirst to dallyLast:  //dallyFirst is state 100000 binary
     [
     zClk = (CurState & 2) eq 2? high, low
     zAS = (CurState & 3) eq 1
     NextState = CurState eq dallyLast? idle2, CurState+1
     endcase
     ]
```

```
case intAck0:
   [
   zClk = low
   NextState = intAck1
   endcase
   ]
case intAck1:
   [
   zClk = low
   NextState = intAck2
   endcase
   ]
case intAck2:
   [
   zClk = high
   NextState = intAck3
   endcase
   ]
case intAck3:
   [
   zClk = high
   NextState = word0
   endcase
   ]
```

```
case word0:
   [
   zClk = low
   if zCmd eq intAck then zDS = true
   if zCmd eq wordWrite then ReadDatH = true
   NextState = word1
   endcase
   ]
case word1:
   [
   zClk = low
   if zCmd eq intAck then zDS = true
   if zCmd eq wordWrite then ReadDatL = true
   NextState = word2
   endcase
   ]
case word2:
   [
   zClk = high
   zDS = true
   if zCmd eq wordWrite then ReadDatL = true
   NextState = word3
   endcase
   ]
case word3:
   [
   zClk = high
   zDS = true
   if zCmd eq wordWrite then ReadDatL = true
   NextState = zCmd eq intAck? byteEnd, wordEnd
   endcase
   ]
```

```
   case wordEnd:
      [
      zClk = low
      zXACK = true
      if zCmd eq wordWrite then ReadDatL = true
      NextState = wordEnd1
      endcase
      ]
   case wordEnd0:
      [
      zClk = low
      NextState = zCmd eq noCmd? idle3, wordEnd1
      endcase
      ]
   case wordEnd1:
      [
      zClk = low
      zAS = true
      NextState = zCmd eq noCmd? idle0, wordEnd2
      endcase
      ]
   case wordEnd2:
      [
      zClk = high
      NextState = zCmd eq noCmd? idle1, wordEnd3
      endcase
      ]
   case wordEnd3:
      [
      zClk = high
      NextState = (zCmd eq noCmd % zCmd eq init)? idle2, wordEnd0
      endcase
      ]

   default: NextState = idle0
   ]

data>>Data.NextState = NextState
data>>Data.ReadDatH = ReadDatH? low, high
data>>Data.ReadDatL = ReadDatL? low, high
data>>Data.WriteDatH = WriteDatH? low, high
data>>Data.zXACK = zXACK? low, high
data>>Data.zIntA = zIntA? low, high
data>>Data.zCS = zCS? low, high
data>>Data.zClk = zClk
data>>Data.zRW = zRW
data>>Data.zAS = zAS? low, high
data>>Data.zDS = zDS? low, high
]
```

Page Numbers: Yes First Page: 1
Columns: 2 Edge Margin: .8" Between Columns: .0"
Heading:
DMisc-Rev-D.ps
COMPONENTS:

#:	1	3	4	7	12
~:	6	7	12	13	
188A:	8	9	10	11	
189A:	8	9	10	11	
27S18:	1				
27S27:	2				
27S29:	2				
2N3904:	6				
339A:	6	7			
64Kx8:	4	5			
8xSPST:	1				
ALS576:	1	3			
LS00:	1	2			
LS08:	1	6	13		
LS138:	1	3	4		
LS164:	3				
LS240:	1				
LS30:	6				
LS682:	1				
N393:	6				
OSC:	6				
PLAT14:	14				
S140:	3	6			
S240:	7				
S374:	2				
S38:	1	3	6		
S74:	1	2	6	13	
Z8030:	8	9			
Z8036:	3	4	10	11	
Z8068:	6				
~:	7	13	14		

SIGNAL NAMES:

+:	1(1)	2(1)	3(1)	4(1)	5(1)	6(1)
	7(1)	8(1)	9(1)	10(1)	11(1)	12(1)
	13(1)	14(1)				
+12V:	6(1)	7(1)	8(1)	9(1)	10(1)	11(2)
	13(2)	14(2)				
-12V:	6(1)	7(1)	8(1)	9(1)	10(1)	11(2)
	12(8)	13(6)	14(2)			
100ns':	2(1)	6(1)				
12.8us:	3(1)	6(1)				
25.6us:	6(2)					
3.2us:	3(1)	6(1)				
AD10/:	1(2)	2(1)	3(1)	14(1)		
AD11/:	1(2)	2(1)	3(1)	14(1)		
AD12/:	1(2)	2(1)	3(1)	14(1)		
AD13/:	1(2)	2(1)	3(1)	14(1)		
AD14/:	3(1)	14(1)				
AD15/:	3(1)	14(1)				
AD16/:	3(1)	14(1)				
AD17/:	3(1)	14(1)				
ADR0/:	1(1)	3(1)	14(1)			
ADR1/:	1(1)	3(1)	14(1)			
ADR2/:	1(1)	3(1)	14(1)			
ADR3/:	1(1)	3(1)	14(1)			
ADR4/:	1(1)	3(1)	14(1)			
ADR5/:	1(1)	3(1)	14(1)			
ADR6/:	1(1)	3(1)	14(1)			
ADR7/:	1(1)	3(1)	14(1)			
ADR8/:	1(1)	3(1)	14(1)			
ADR9/:	1(1)	3(1)	14(1)			
ADRA/:	1(1)	3(1)	14(1)			
ADRB/:	1(1)	3(1)	14(1)			
ADRC/:	1(1)	3(1)	14(1)			
ADRD/:	1(1)	3(1)	14(1)			
ADRE/:	1(1)	3(1)	14(1)			
ADRF/:	1(1)	3(1)	14(1)			
BdSel:	1(3)	2(1)				
BHEN/:	3(1)	14(1)				
Boot':	3(1)	6(1)				
BPRN/:	3(1)	14(1)				
CCLK/:	6(1)	14(1)				
CD00:	10(1)	14(1)				
CD01:	10(1)	14(1)				
CD02:	10(1)	14(1)				
CD10:	11(1)	14(1)				
CD11:	11(1)	14(1)				
CD12:	11(1)	14(1)				
CD20:	11(1)	14(1)				
CD21:	11(1)	14(1)				
CD22:	11(1)	14(1)				
CIOInt':	1(1)	10(2)	11(2)			
CM0:	10(1)	14(1)				
CM1:	10(1)	14(1)				
CM2:	10(1)	14(1)				
CmdSel:	1(3)					
CTS0:	8(1)	14(1)				
CTS0':	8(2)					
CTS0t:	8(1)	12(2)				
CTS1:	8(1)	14(1)				
CTS1':	8(2)					
CTS1t:	8(1)	12(2)				

```
CTS2:          8(1)   14(1)
CTS2':         8(2)
CTS2t:         8(1)   12(2)
CTS3:          8(1)   14(1)
CTS3':         8(2)
CTS3t:         8(1)   12(2)
CTS4:          9(1)   14(1)
CTS4':         9(2)
CTS4t:         9(1)   12(2)
CTS5:          9(1)   14(1)
CTS5':         9(2)
CTS5t:         9(1)   12(2)
CTS6:          9(1)   14(1)
CTS6':         9(2)
CTS6t:         9(1)   12(2)
CTS7:          9(1)   14(1)
CTS7':         9(2)
CTS7t:         9(1)   12(2)
DAT0/:         1(2)    3(1)   14(1)
DAT1/:         1(2)    3(1)   14(1)
DAT2/:         1(2)    3(1)   14(1)
DAT3/:         1(2)    3(1)   14(1)
DAT4/:         1(2)    3(1)   14(1)
DAT5/:         1(2)    3(1)   14(1)
DAT6/:         1(2)    3(1)   14(1)
DAT7/:         1(2)    3(1)   14(1)
DAT8/:         1(2)    3(1)   14(1)
DAT9/:         1(2)    3(1)   14(1)
DATA/:         1(2)    3(1)   14(1)
DATB/:         1(2)    3(1)   14(1)
DATC/:         1(2)    3(1)   14(1)
DATD/:         1(2)    3(1)   14(1)
DATE/:         1(2)    3(1)   14(1)
DATF/:         1(2)    3(1)   14(1)
DCD0:          8(1)   14(1)
DCD0':         8(2)
DCD0t:         8(1)   12(2)
DCD1:          8(1)   14(1)
DCD1':         8(2)
DCD1t:         8(1)   12(2)
DCD2:          8(1)   14(1)
DCD2':         8(2)
DCD2t:         8(1)   12(2)
DCD3:          8(1)   14(1)
DCD3':         8(2)
DCD3t:         8(1)   12(2)
DCD4:          9(1)   14(1)
DCD4':         9(2)
DCD4t:         9(1)   12(2)
DCD5:          9(1)   14(1)
DCD5':         9(2)
DCD5t:         9(1)   12(2)
DCD6:          9(1)   14(1)
DCD6':         9(2)
DCD6t:         9(1)   12(2)
DCD7:          9(1)   14(1)
DCD7':         9(2)
DCD7t:         9(1)   12(2)
DI00:         10(2)
DI00':        10(1)   14(1)
DI00t:        10(1)   13(2)
DI01:         10(2)
DI01':        10(1)   14(1)
DI01t:        10(1)   13(2)
DI02:         10(2)
DI02':        10(1)   14(1)
DI02t:        10(1)   13(2)
DI03:         10(2)
DI03':        10(1)   14(1)
DI03t:        10(1)   13(2)
DI04:         10(2)
DI04':        10(1)   14(1)
DI04t:        10(1)   13(2)
DI05:         10(2)
DI05':        10(1)   14(1)
DI05t:        10(1)   13(2)
DI06:         10(2)
DI06':        10(1)   14(1)
DI06t:        10(1)   13(2)
DI07:         10(2)
DI07':        10(1)   14(1)
DI07t:        10(1)   13(2)
DI10:         11(2)
DI10':        11(1)   14(1)
DI10t:        11(1)   13(2)
DI11:         11(2)
DI11':        11(1)   14(1)
DI11t:        11(1)   13(2)
DI12:         11(2)
DI12':        11(1)   14(1)
DI12t:        11(1)   13(2)
DI13:         11(2)
DI13':        11(1)   14(1)
DI13t:        11(1)   13(2)
DI14:         11(2)
DI14':        11(1)   14(1)
DI14t:        11(1)   13(2)
DI15:         11(2)
DI15':        11(1)   14(1)
DI15t:        11(1)   13(2)
DI16:         11(2)
```

DI16':	11(1)	14(1)	
DI16t:	11(1)	13(2)	
DI17:	11(2)		
DI17':	11(1)	14(1)	
DI17t:	11(1)	13(2)	
DI20:	11(2)		
DI20':	11(1)	14(1)	
DI20t:	11(1)	13(2)	
DI21:	11(2)		
DI21':	11(1)	14(1)	
DI21t:	11(1)	13(2)	
DI22:	11(2)		
DI22':	11(1)	14(1)	
DI22t:	11(1)	13(2)	
DI23:	11(2)		
DI23':	11(1)	14(1)	
DI23t:	11(1)	13(2)	
DI24:	11(2)		
DI24':	11(1)	14(1)	
DI24t:	11(1)	13(2)	
DI25:	11(2)		
DI25':	11(1)	14(1)	
DI25t:	11(1)	13(2)	
DI26:	11(2)		
DI26':	11(1)	14(1)	
DI26t:	11(1)	13(2)	
DI27:	11(2)		
DI27':	11(1)	14(1)	
DI27t:	11(1)	13(2)	
DO00:	10(2)		
DO00':	10(1)	13(1)	14(1)
DO01:	10(2)		
DO01':	10(1)	13(1)	14(1)
DO02:	10(2)		
DO02':	10(1)	13(1)	14(1)
DO03:	10(2)		
DO03':	10(1)	13(1)	14(1)
DO04:	10(2)		
DO04':	10(1)	13(1)	14(1)
DO05:	10(2)		
DO05':	10(1)	13(1)	14(1)
DO06:	10(2)		
DO06':	10(1)	13(1)	14(1)
DO07:	10(2)		
DO07':	10(1)	13(1)	14(1)
DO10:	11(2)		
DO10':	11(1)	13(1)	14(1)
DO11:	11(2)		
DO11':	11(1)	13(1)	14(1)
DO12:	11(2)		
DO12':	11(1)	13(1)	14(1)
DO13:	11(2)		
DO13':	11(1)	13(1)	14(1)
DO14:	11(2)		
DO14':	11(1)	13(1)	14(1)
DO15:	11(2)		
DO15':	11(1)	13(1)	14(1)
DO16:	11(2)		
DO16':	11(1)	13(1)	14(1)
DO17:	11(2)		
DO17':	11(1)	13(1)	14(1)
DO20:	11(2)		
DO20':	11(1)	13(1)	14(1)
DO21:	11(2)		
DO21':	11(1)	13(1)	14(1)
DO22:	11(2)		
DO22':	11(1)	13(1)	14(1)
DO23:	11(2)		
DO23':	11(1)	13(1)	14(1)
DO24:	11(2)		
DO24':	11(1)	13(1)	14(1)
DO25:	11(2)		
DO25':	11(1)	13(1)	14(1)
DO26:	11(2)		
DO26':	11(1)	13(1)	14(1)
DO27:	11(2)		
DO27':	11(1)	13(1)	14(1)
DSR0:	10(1)	14(1)	
DSR0':	10(2)		
DSR0t:	10(1)	12(2)	
DSR1:	10(1)	14(1)	
DSR1':	10(2)		
DSR1t:	10(1)	12(2)	
DSR2:	10(1)	14(1)	
DSR2':	10(2)		
DSR2t:	10(1)	12(2)	
DSR3:	10(1)	14(1)	
DSR3':	10(2)		
DSR3t:	10(1)	12(2)	
DSR4:	10(1)	14(1)	
DSR4':	10(2)		
DSR4t:	10(1)	12(2)	
DSR5:	10(1)	14(1)	
DSR5':	10(2)		
DSR5t:	10(1)	12(2)	
DSR6:	10(1)	14(1)	
DSR6':	10(2)		
DSR6t:	10(1)	12(2)	
DSR7:	10(1)	14(1)	
DSR7':	10(2)		
DSR7t:	10(1)	12(2)	

```
DTR0:           8(1)   12(1)   14(1)
DTR0':          8(2)
DTR1:           8(1)   12(1)   14(1)
DTR1':          8(2)
DTR2:           8(1)   12(1)   14(1)
DTR2':          8(2)
DTR3:           8(1)   12(1)   14(1)
DTR3':          8(2)
DTR4:           9(1)   12(1)   14(1)
DTR4':          9(2)
DTR5:           9(1)   12(1)   14(1)
DTR5':          9(2)
DTR6:           9(1)   12(1)   14(1)
DTR6':          9(2)
DTR7:           9(1)   12(1)   14(1)
DTR7':          9(2)
GND:           14(26)
Gnd:            1(1)    2(1)    3(1)    4(1)    5(1)    6(1)
                7(1)    8(1)    9(1)   10(1)   11(1)   12(1)
               13(1)   14(1)
INIT/:          2(1)    6(1)   14(1)
Int0':          1(1)    3(1)    4(1)
INT0/:          1(1)   14(1)
INT1/:          1(1)   14(1)
INT2/:          1(1)   14(1)
INT3/:          1(1)   14(1)
INT4/:          1(1)   14(1)
INT5/:          1(1)   14(1)
INT6/:          1(1)   14(1)
INT7/:          1(1)   14(1)
IntChan.0:      1(1)    3(1)
IntChan.1:      1(1)    3(1)
IORC/:          1(1)    2(1)    3(2)   14(1)
IOWC/:          1(1)    2(1)    3(2)   14(1)
LC0:            8(1)   12(1)   14(1)
LC0a:           7(1)   14(1)
LC0b:           7(1)   14(1)
LC1:            8(1)   12(1)   14(1)
LC1a:           7(1)   14(1)
LC1b:           7(1)   14(1)
LC2:            8(1)   12(1)   14(1)
LC3:            8(1)   12(1)   14(1)
LC4:            9(1)   12(1)   14(1)
LC5:            9(1)   12(1)   14(1)
LC6:            9(1)   12(1)   14(1)
LC7:            9(1)   12(1)   14(1)
LCa':           7(2)    8(2)   10(1)   14(1)
LCb':           8(2)   10(1)   14(1)
LCc':           9(2)   11(1)   14(1)
LCd':           9(2)   11(1)   14(1)
mData.0:        3(7)    4(2)    5(6)
mData.1:        3(7)    4(2)    5(6)
mData.2:        3(7)    4(2)    5(6)
mData.3:        3(7)    4(2)    5(6)
mData.4:        3(7)    4(2)    5(6)
mData.5:        3(7)    4(2)    5(6)
mData.6:        3(7)    4(2)    5(6)
mData.7:        3(7)    4(2)    5(6)
mEn.0:          3(2)    4(1)
mEn.1:          3(2)    4(1)
mEn.2:          3(2)    4(1)
mEn.3:          3(2)    4(1)
MRDC/:          3(2)   14(1)
MWTC/:          3(2)   14(1)
PromAd.0:       4(4)    5(6)
PromAd.1:       4(4)    5(6)
PromAd.10:      4(3)    5(6)
PromAd.11:      4(3)    5(6)
PromAd.12:      4(3)    5(6)
PromAd.13:      4(3)    5(6)
PromAd.14:      4(3)    5(6)
PromAd.15:      4(3)    5(6)
PromAd.2:       4(3)    5(6)
PromAd.3:       4(3)    5(6)
PromAd.4:       4(3)    5(6)
PromAd.5:       4(3)    5(6)
PromAd.6:       4(3)    5(6)
PromAd.7:       4(3)    5(6)
PromAd.8:       4(3)    5(6)
PromAd.9:       4(3)    5(6)
PromCE0':       4(2)
PromCE1':       4(2)
PromCE2':       4(1)    5(1)
PromCE3':       4(1)    5(1)
PromCE4':       4(1)    5(1)
PromCE5':       4(1)    5(1)
PromCE6':       4(1)    5(1)
PromCE7':       4(1)    5(1)
PromOE':        4(4)    5(6)
PU:             1(2)    2(2)    3(3)    4(3)    6(3)    8(3)
                9(2)   10(4)   11(4)   13(1)
RandomBit:      3(1)    6(1)
RawClk:         2(1)    6(1)
RdTOAdrH':      3(2)
RdTOAdrL':      3(2)
RdTOAdrM':      3(2)
RdTOCmd':       3(2)
RdTODatH':      3(2)
RdTODatL':      3(2)
ReadDatH':      1(1)    2(1)
ReadDatL':      1(1)    2(1)
```

```
ReadH:          1(1)    2(1)
ReadL:          1(1)    2(1)
RI0:           10(1)   14(1)
RI0':          10(2)
RI0t:          10(1)   12(2)
RI1:           10(1)   14(1)
RI1':          10(2)
RI1t:          10(1)   12(2)
RI2:           10(1)   14(1)
RI2':          10(2)
RI2t:          10(1)   12(2)
RI3:           10(1)   14(1)
RI3':          10(2)
RI3t:          10(1)   12(2)
RI4:           10(1)   14(1)
RI4':          10(2)
RI4t:          10(1)   12(2)
RI5:           10(1)   14(1)
RI5':          10(2)
RI5t:          10(1)   12(2)
RI6:           10(1)   14(1)
RI6':          10(2)
RI6t:          10(1)   12(2)
RI7:           10(1)   14(1)
RI7':          10(2)
RI7t:          10(1)   12(2)
RTS0:           8(1)   12(1)   14(1)
RTS0':          8(2)
RTS1:           8(1)   12(1)   14(1)
RTS1':          8(2)
RTS2:           8(1)   12(1)   14(1)
RTS2':          8(2)
RTS3:           8(1)   12(1)   14(1)
RTS3':          8(2)
RTS4:           9(1)   12(1)   14(1)
RTS4':          9(2)
RTS5:           9(1)   12(1)   14(1)
RTS5':          9(2)
RTS6:           9(1)   12(1)   14(1)
RTS6':          9(2)
RTS7:           9(1)   12(1)   14(1)
RTS7':          9(2)
RXC0:           8(1)   14(1)
RXC0':          7(1)    8(2)
RXC0a:          7(1)   14(1)
RXC0b:          7(1)   14(1)
RXC0t:          8(1)   12(2)
RXC1:           8(1)   14(1)
RXC1':          7(1)    8(2)
RXC1a:          7(1)   14(1)
RXC1b:          7(1)   14(1)
RXC1t:          8(1)   12(2)
RXC2:           8(1)   14(1)
RXC2':          8(2)
RXC2t:          8(1)   12(2)
RXC3:           8(1)   14(1)
RXC3':          8(2)
RXC3t:          8(1)   12(2)
RXC4:           9(1)   14(1)
RXC4':          9(2)
RXC4t:          9(1)   12(2)
RXC5:           9(1)   14(1)
RXC5':          9(2)
RXC5t:          9(1)   12(2)
RXC6:           9(1)   14(1)
RXC6':          9(2)
RXC6t:          9(1)   12(2)
RXC7:           9(1)   14(1)
RXC7':          9(2)
RXC7t:          9(1)   12(2)
RXD0:           7(1)    8(2)
RXD0':          8(1)   14(1)
RXD0a:          7(1)   14(1)
RXD0b:          7(1)   14(1)
RXD0t:          8(1)   12(2)
RXD1:           7(1)    8(2)
RXD1':          8(1)   14(1)
RXD1a:          7(1)   14(1)
RXD1b:          7(1)   14(1)
RXD1t:          8(1)   12(2)
RXD2:           8(2)
RXD2':          8(1)   14(1)
RXD2t:          8(1)   12(2)
RXD3:           8(2)
RXD3':          8(1)   14(1)
RXD3t:          8(1)   12(2)
RXD4:           9(2)
RXD4':          9(1)   14(1)
RXD4t:          9(1)   12(2)
RXD5:           9(2)
RXD5':          9(1)   14(1)
RXD5t:          9(1)   12(2)
RXD6:           9(2)
RXD6':          9(1)   14(1)
RXD6t:          9(1)   12(2)
RXD7:           9(2)
RXD7':          9(1)   14(1)
RXD7t:          9(1)   12(2)
SCCInt':        1(1)    8(2)    9(2)
TOXACK:         3(4)
TXC0:           8(1)   14(1)
```

TXC0':	7(1)	8(2)				
TXC0a:	7(1)	14(1)				
TXC0b:	7(1)	14(1)				
TXC0t:	8(1)	12(2)				
TXC1:	8(1)	14(1)				
TXC1':	7(1)	8(2)				
TXC1a:	7(1)	14(1)				
TXC1b:	7(1)	14(1)				
TXC1t:	8(1)	12(2)				
TXC2:	8(1)	14(1)				
TXC2':	8(2)					
TXC2t:	8(1)	12(2)				
TXC3:	8(1)	14(1)				
TXC3':	8(2)					
TXC3t:	8(1)	12(2)				
TXC4:	9(1)	14(1)				
TXC4':	9(2)					
TXC4t:	9(1)	12(2)				
TXC5:	9(1)	14(1)				
TXC5':	9(2)					
TXC5t:	9(1)	12(2)				
TXC6:	9(1)	14(1)				
TXC6':	9(2)					
TXC6t:	9(1)	12(2)				
TXC7:	9(1)	14(1)				
TXC7':	9(2)					
TXC7t:	9(1)	12(2)				
TXD0:	7(1)	8(2)				
TXD0':	8(1)	12(1)	14(1)			
TXD0a:	7(1)	14(1)				
TXD0b:	7(1)	14(1)				
TXD1:	7(1)	8(2)				
TXD1':	8(1)	12(1)	14(1)			
TXD1a:	7(1)	14(1)				
TXD1b:	7(1)	14(1)				
TXD2:	8(2)					
TXD2':	8(1)	12(1)	14(1)			
TXD3:	8(2)					
TXD3':	8(1)	12(1)	14(1)			
TXD4:	9(2)					
TXD4':	9(1)	12(1)	14(1)			
TXD5:	9(2)					
TXD5':	9(1)	12(1)	14(1)			
TXD6:	9(2)					
TXD6':	9(1)	12(1)	14(1)			
TXD7:	9(2)					
TXD7':	9(1)	12(1)	14(1)			
VCC:	1(1)	3(1)	4(2)	6(1)	7(1)	8(2)
	9(2)	10(2)	11(2)	13(1)	14(8)	
WriteDatH':	1(1)	2(1)				
XACK/:	1(1)	3(1)	14(1)			
zAS':	2(1)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zClk:	2(1)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zCS':	1(3)	2(1)				
zData.0:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.1:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.2:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.3:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.4:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.5:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.6:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zData.7:	1(5)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zDESbyte':	1(1)	6(1)				
zDESword':	1(1)	6(1)				
zDialer0':	1(1)	10(1)				
zDialer1':	1(1)	11(1)				
zDialer2':	1(1)	11(1)				
zDS':	1(1)	2(1)	3(1)	4(1)	6(1)	8(2)
	9(2)	10(2)	11(2)			
zEProm':	1(1)	4(1)				
zIE:	8(1)	9(1)				
zIntA':	2(1)	8(2)	9(2)			
zMisc':	1(1)	3(1)				
zModem':	1(1)	10(1)				
zRW:	2(1)	3(1)	4(1)	6(1)	8(2)	9(2)
	10(2)	11(2)				
zSCC0':	1(1)	8(1)				
zSCC1':	1(1)	8(1)				
zSCC2':	1(1)	9(1)				
zSCC3':	1(1)	9(1)				
zXACK':	1(1)	2(1)				

-/2/J:

#c0 #c1 #c12 #c13 #c17 #c21 #c24 #c25
#c29 #c33 #c36 #c37 #c38 #c39 #c40 #c41
#c42 #c43 #c44 #c45 #c46 #c47 #c48 #c49
#c5 #c50 #c51 #c52 #c53 #c54 #c55 #c56
#c57 #c58 #c59 #c60 #c61 #c62 #c63 #c64
#c65 #c66 #c67 #c68 #c69 #c70 #c71 #c72
#c73 #c74 #c75 #c76 #c77 #c78 #c79 #c80
#c81 #c82 #c83 #c84 #c85 #c86 #c87 #c88
#c9 #c90 #c91 #c92 #c93 #d1 #d10 #d11
#d12 #d13 #d14 #d15 #d16 #d17 #d18 #d19
#d2 #d3 #d4 #d5 #d6 #d7 #d8 #d9
#pu1 #r1 #r10 #r11 #r12 #r13 #r14 #r15
#r16 #r2 #r20 #r21 #r22 #r23 #r24 #r25
#r26 #r3 #r30 #r31 #r32 #r33 #r34 #r35
#r36 #r4 #r40 #r41 #r42 #r43 #r44 #r45
#r46 #r5 #r6 #r60 #r61 #r62 #r63 #r7
#r8 #v1 #v10 #v11 #v12 #v13 #v14 #v15
#v16 #v17 #v18 #v19 #v2 #v20 #v21 #v22
#v23 #v24 #v25 #v26 #v27 #v28 #v29 #v3
#v30 #v31 #v32 #v33 #v34 #v35 #v36 #v37
#v38 #v39 #v4 #v40 #v41 #v42 #v43 #v44
#v45 #v46 #v47 #v48 #v49 #v5 #v50 #v51
#v52 #v53 #v54 #v55 #v56 #v57 #v58 #v59
#v6 #v60 #v61 #v62 #v63 #v64 #v65 #v66
#v67 #v68 #v69 #v7 #v70 #v71 #v72 #v73
#v74 #v75 #v76 #v77 #v78 #v79 #v8 #v80
#v81 #v82 #v83 #v84 #v85 #v86 #v87 #v88
#v9 #w1 #w10 #w11 #w12 #w13 #w14 #w15
#w16 #w17 #w18 #w19 #w2 #w20 #w21 #w22
#w23 #w24 #w25 #w26 #w27 #w28 #w29 #w3
#w30 #w31 #w32 #w33 #w34 #w35 #w36 #w37
#w38 #w39 #w4 #w40 #w41 #w42 #w43 #w44
#w45 #w46 #w47 #w48 #w5 #w6 #w7 #w8
#w9

10SIP/10/J1W:

#r50 #r51 #rp10 #rp8 #rp9 #s1 #s2

2N3904/3/J1W:

#q1 #q2

64Kx8/28/N6W:

#u47 #u48 #u49 #u50 #u51 #u52 #u53 #u54

74393/14/N:

#u79 #u80

74ALS576/20/N:

#u68 #u69 #u82 #u83 #u84 #u85 #u86 #u87

74LS00/14/N:

#u73

74LS08/14/N:

#u61

74LS138/16/N:

#u62 #u70 #u78 #u88

74LS164/14/N:

#u67

74LS240/20/N:

#u75 #u76 #u77

74LS30/14/N:

#u90

74LS682/20/N:

#u74

74S140/14/N:

#u65

74S240/20/N:

#u55

74S374/20/N:

#u64 #u72

74S38/14/N:

#u57

74S74/14/N:

#u63 #u71

75188/14/J:

#u1 #u10 #u11 #u12 #u2 #u3 #u35 #u36
#u4 #u5 #u6 #u7 #u8 #u9

75189/14/N:

#u13 #u14 #u15 #u16 #u17 #u18 #u19 #u20
#u21 #u22 #u23 #u24 #u27 #u28 #u29 #u30
#u31 #u32 #u33 #u34

8SIP/8/J1W:

#r52 #r53 #r54 #r55 #rp0 #rp1 #rp11 #rp12
#rp13 #rp2 #rp3 #rp4 #rp5 #rp6 #rp7

8xSPST/16/J:

#u68

AMD27S18/16/N:

#u58

AMD27S27/22/N4W:

#u59 #u60

AMD27S29/20/N:

#u56

AmZ8030/40/J6W:

#u37 #u38 #u42 #u43

AmZ8036/40/J6W:

#u40 #u41 #u44 #u45 #u46 #u81

AmZ8068/40/N6W:

#u39

LM339A/14/J:

#u25 #u26

OSCILLATOR/14/N:

#u89

PLAT14/14/J:

#s3 #s4

```
Universal
;File=DMisc-Rev-D.sil Rev=D Date=10/15/84 Page=00 Reference  MARKED BUILT
;File=DMisc01.sil Rev=D Date=2/20/84 Page=01  MARKED BUILT
;File=DMisc02.sil Rev=D Date=10/15/84 Page=02  MARKED BUILT
;File=DMisc03.sil Rev=D Date=12/12/83 Page=03  MARKED BUILT
;File=DMisc04.sil Rev=D Date=2/20/84 Page=04  MARKED BUILT
;File=DMisc05.sil Rev=D Date=10/31/83 Page=05  MARKED BUILT
;File=DMisc06.sil Rev=D Date=10/15/84 Page=06  MARKED BUILT
;File=DMisc07.sil Rev=D Date=12/12/83 Page=07  MARKED BUILT
;File=DMisc08.sil Rev=D Date=10/31/83 Page=08  MARKED BUILT
;File=DMisc09.sil Rev=D Date=10/31/83 Page=09  MARKED BUILT
;File=DMisc10.sil Rev=D Date=10/31/83 Page=10  MARKED BUILT
;File=DMisc11.sil Rev=D Date=10/15/84 Page=11  MARKED BUILT
;File=DMisc12.sil Rev=D Date=12/07/83 Page=12  MARKED BUILT
;File=DMisc13.sil Rev=D Date=12/12/83 Page=13  MARKED BUILT
;File=DMisc14.sil Rev=D Date=10/15/84 Page=14  MARKED BUILT
;File=DMisc15.sil Rev=D Date=2/20/84 Page=15 Reference  MARKED BUILT
;File=DMisc16.sil Rev=D Date=10/15/84 Page=16 Reference  MARKED BUILT
;File=DMisc17.sil Rev=D Date=10/15/84 Page=17 Reference  MARKED BUILT
;File=DMisc18.sil Rev=D Date=10/15/84 Page=18 Reference  MARKED BUILT
;File=DMisc19.sil Rev=D Date=10/15/84 Page=19 Reference  MARKED BUILT
;File=DMisc20.sil Rev=D Date=10/15/84 Page=20 Reference  MARKED BUILT
;File=DMisc21.sil Rev=D Date=10/15/84 Page=21 Reference  MARKED BUILT
;File=DMisc22.sil Rev=D Date=10/15/84 Page=22 Reference  MARKED BUILT
;File=DMisc23.sil Rev=D Date=10/15/84 Page=23 Reference  MARKED BUILT
; Implicitly generated wiring ...

#c0: (-/2/J) ;
#c1: (-/2/J) ;
#c12: (-/2/J) ;
#c13: (-/2/J) ;
#c17: (-/2/J) ;
#c21: (-/2/J) ;
#c24: (-/2/J) ;
#c25: (-/2/J) ;
#c29: (-/2/J) ;
#c33: (-/2/J) ;
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#c92: (-/2/J) ;
#c93: (-/2/J) ;
#d1: (-/2/J) ;
#d10: (-/2/J) ;
#d11: (-/2/J) ;
#d12: (-/2/J) ;
#d13: (-/2/J) ;
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#d14: (-/2/J) ;
#d15: (-/2/J) ;
#d16: (-/2/J) ;
#d17: (-/2/J) ;
#d18: (-/2/J) ;
#d19: (-/2/J) ;
#d2: (-/2/J) ;
#d3: (-/2/J) ;
#d4: (-/2/J) ;
#d5: (-/2/J) ;
#d6: (-/2/J) ;
#d7: (-/2/J) ;
#d8: (-/2/J) ;
#d9: (-/2/J) ;
#pu1: (-/2/J) ;
#q1: (2N3904/3/J1W) ;
#q2: (2N3904/3/J1W) ;
#r1: (-/2/J) ;
#r10: (-/2/J) ;
#r11: (-/2/J) ;
#r12: (-/2/J) ;
#r13: (-/2/J) ;
#r14: (-/2/J) ;
#r15: (-/2/J) ;
#r16: (-/2/J) ;
#r2: (-/2/J) ;
#r20: (-/2/J) ;
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#r22: (-/2/J) ;
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#r3: (-/2/J) ;
#r30: (-/2/J) ;
#r31: (-/2/J) ;
#r32: (-/2/J) ;
#r33: (-/2/J) ;
#r34: (-/2/J) ;
#r35: (-/2/J) ;
#r36: (-/2/J) ; 1,2
#r4: (-/2/J) ;
#r40: (-/2/J) ;
#r41: (-/2/J) ;
#r42: (-/2/J) ;
#r43: (-/2/J) ;
#r44: (-/2/J) ;
#r45: (-/2/J) ;
#r46: (-/2/J) ; 1,2
#r5: (-/2/J) ;
#r50: (10SIP/10/J1W) ; 10
#r51: (10SIP/10/J1W) ; 10
#r52: (8SIP/8/J1W) ; 8
#r53: (8SIP/8/J1W) ; 8
#r54: (8SIP/8/J1W) ; 8
#r55: (8SIP/8/J1W) ; 8
#r6: (-/2/J) ;
#r60: (-/2/J) ;
#r61: (-/2/J) ;
#r62: (-/2/J) ;
#r63: (-/2/J) ;
#r7: (-/2/J) ;
#r8: (-/2/J) ;
#rp0: (8SIP/8/J1W) ;
#rp1: (8SIP/8/J1W) ;
#rp10: (10SIP/10/J1W) ; 10
#rp11: (8SIP/8/J1W) ;
#rp12: (8SIP/8/J1W) ; 8
#rp13: (8SIP/8/J1W) ; 2,3,4,5
#rp2: (8SIP/8/J1W) ;
#rp3: (8SIP/8/J1W) ;
#rp4: (8SIP/8/J1W) ;
#rp5: (8SIP/8/J1W) ;
#rp6: (8SIP/8/J1W) ;
#rp7: (8SIP/8/J1W) ;
#rp8: (10SIP/10/J1W) ; 10
#rp9: (10SIP/10/J1W) ; 10
#s1: (10SIP/10/J1W) ;
#s2: (10SIP/10/J1W) ;
#s3: (PLAT14/14/J) ; 6,8,9
#s4: (PLAT14/14/J) ; 6,8,9
#u1: (75188/14/J) ;
#u10: (75188/14/J) ;
#u11: (75188/14/J) ;
#u12: (75188/14/J) ;
#u13: (75189/14/N) ;
#u14: (75189/14/N) ;
#u15: (75189/14/N) ;
#u16: (75189/14/N) ;
#u17: (75189/14/N) ;
#u18: (75189/14/N) ;
#u19: (75189/14/N) ;
#u2: (75188/14/J) ;
#u20: (75189/14/N) ;
#u21: (75189/14/N) ;
#u22: (75189/14/N) ;
#u23: (75189/14/N) ;
#u24: (75189/14/N) ;
#u25: (LM339A/14/J) ;
#u26: (LM339A/14/J) ;
#u27: (75189/14/N) ;
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#u28: (75189/14/N) ;
#u29: (75189/14/N) ;
#u3: (75188/14/J) ;
#u30: (75189/14/N) ;
#u31: (75189/14/N) ;
#u32: (75189/14/N) ;
#u33: (75189/14/N) ;
#u34: (75189/14/N) ;
#u35: (75188/14/J) ;
#u36: (75188/14/J) ;
#u37: (AmZ8030/40/J6W) ; 10,11,29,30
#u38: (AmZ8030/40/J6W) ; 10,11,29,30
#u39: (AmZ8068/40/N6W) ; 2,3,4,5,6,7,8,9,10,12,15,31,32,33,34,35,36,37,38,39
#u4: (75188/14/J) ;
#u40: (AmZ8036/40/J6W) ; 18
#u41: (AmZ8036/40/J6W) ; 18
#u42: (AmZ8030/40/J6W) ; 10,11,29,30
#u43: (AmZ8030/40/J6W) ; 6,10,11,29,30
#u44: (AmZ8036/40/J6W) ; 18
#u45: (AmZ8036/40/J6W) ; 18
#u46: (AmZ8036/40/J6W) ; 18
#u47: (64Kx8/28/N6W) ;
#u48: (64Kx8/28/N6W) ;
#u49: (64Kx8/28/N6W) ;
#u5: (75188/14/J) ;
#u50: (64Kx8/28/N6W) ;
#u51: (64Kx8/28/N6W) ;
#u52: (64Kx8/28/N6W) ;
#u53: (64Kx8/28/N6W) ;
#u54: (64Kx8/28/N6W) ;
#u55: (74S240/20/N) ;
#u56: (AMD27S29/20/N) ; 9,11,12
#u57: (74S38/14/N) ;
#u58: (AMD27S18/16/N) ;
#u59: (AMD27S27/22/N4W) ;
#u6: (75188/14/J) ;
#u60: (AMD27S27/22/N4W) ;
#u61: (74LS08/14/N) ; 11,12,13
#u62: (74LS138/16/N) ;
#u63: (74S74/14/N) ; 6
#u64: (74S374/20/N) ;
#u65: (74S140/14/N) ; 3,11
#u66: (8xSPST/16/J) ;
#u67: (74LS164/14/N) ; 3,4,5,6,11,12,13
#u68: (74ALS576/20/N) ;
#u69: (74ALS576/20/N) ;
#u7: (75188/14/J) ;
#u70: (74LS138/16/N) ; 7,9,11,15
#u71: (74S74/14/N) ; 6,8,9,10,11,12,13
#u72: (74S374/20/N) ;
#u73: (74LS00/14/N) ;
#u74: (74LS682/20/N) ; 1
#u75: (74LS240/20/N) ;
#u76: (74LS240/20/N) ;
#u77: (74LS240/20/N) ;
#u78: (74LS138/16/N) ;
#u79: (74393/14/N) ; 3,4,5,10
#u8: (75188/14/J) ;
#u80: (74393/14/N) ;
#u81: (AmZ8036/40/J6W) ; 18,19,20,21
#u82: (74ALS576/20/N) ; 2
#u83: (74ALS576/20/N) ; 2
#u84: (74ALS576/20/N) ;
#u85: (74ALS576/20/N) ;
#u86: (74ALS576/20/N) ;
#u87: (74ALS576/20/N) ;
#u88: (74LS138/16/N) ; 7,9
#u89: (OSCILLATOR/14/N) ; 1,2,3,5,6,9,10,11,12,13
#u9: (75188/14/J) ;
#u90: (74LS30/14/N) ; 9,10,13
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#v10: (-/2/J) ;
#v11: (-/2/J) ;
#v12: (-/2/J) ;
#v13: (-/2/J) ;
#v14: (-/2/J) ;
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#w45: (-/2/J) ;
#w46: (-/2/J) ;
#w47: (-/2/J) ;
#w48: (-/2/J) ;
#w5: (-/2/J) ;
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#w6: (-/2/J) ;
#w7: (-/2/J) ;
#w8: (-/2/J) ;
#w9: (-/2/J) ;
@

CALIBRATE: <1>   ; INSTALL welder nose, board wiring side up ...
    #TopRight {0,0}       #TopLeft {0,0}        #? {0,0}              #? {0,0}

+12V: <61> (1848)
    #r5.1i {68,144}       #d19.1i {132,144}     #u2.14i {108,224}     #u1.14i {172,224}
    #u3.14i {244,224}     #u4.14i {292,224}     #u6.14i {308,224}     #u5.14i {372,224}
    #u7.14i {444,224}     #u8.14i {492,224}     #c92.1i {492,316}     #c91.1i {524,316}
    #u35.14i {624,224}    #u10.14i {816,224}    #u36.14i {800,224}    #u12.14i {752,224}
    #r63.1i {728,144}     #u11.14i {736,224}    #u9.14i {640,224}     E108 {432,0}
    E107 {428,0}

-12V: <62> (2320)
    #rp10.1i {40,316}     #rp9.1i {36,316}      #rp8.1i {32,316}      E180 {208,4}
    E179 {204,4}          #r6.2o {128,144}      #r4.2o {112,144}      #u2.1i {96,224}
    #u1.1i {160,224}      #u3.1i {232,224}      #u4.1i {280,224}      #u6.1i {296,224}
    #u5.1i {360,224}      #u7.1i {432,224}      #u8.1i {480,224}      #u35.1i {512,224}
    #u9.1i {528,224}      #u11.1i {724,224}     #r62.1i {724,144}     #r60.1i {708,144}
    #u12.1i {740,224}     #u36.1i {788,224}     #u10.1i {804,224}     #rp0.1i {864,224}
    #rp1.1i {868,224}     #rp2.1i {872,224}     #rp3.1i {876,224}     #rp7.1i {880,224}
    #rp6.1i {884,224}     #rp5.1i {888,224}     #rp4.1i {892,224}     #c93.1i {508,316}
    #c91.2o {536,316}

100ns': <55> (324)
    #u65.13i {360,68}     #u65.12i {360,72}     #u65.10i {360,80}     #u65.9i {360,84}
    #u64.11i {312,100}    #u72.11i {296,100}    #u63.9o {280,84}      #u60.16i {264,88}
    #u59.16i {244,88}     #u73.13i {108,68}

12.8us: <567> (408)
    #u79.9o {840,84}      #u41.13o {460,112}

25.6us: <619> (684)
    #u61.5i {164,80}      #u79.8o {840,88}

3.2us: <592> (508)
    #u79.11o {840,76}     #u67.8i {344,88}

AD10/: <271> (476)
    #u84.2i {380,68}      #u72.17i {296,76}     #u62.5i {112,80}      #u70.6i {48,84}
    E128 {0,4}

AD11/: <259> (448)
    #u83.9i {364,96}      #u72.14i {296,88}     #u62.1i {112,64}      #u70.1i {48,64}
    E130 {8,4}

AD12/: <258> (436)
    #u83.8i {364,92}      #u72.13i {296,92}     #u62.2i {112,68}      #u70.2i {48,68}
    E132 {16,4}

AD13/: <257> (432)
    #u83.7i {364,88}      #u72.8i {284,92}      #u62.3i {112,72}      #u70.3i {48,72}
    E134 {24,4}

AD14/: <580> (436)
    E257 {4,8}            #u83.6i {364,84}

AD15/: <575> (428)
    E258 {8,8}            #u83.5i {364,80}

AD16/: <464> (216)
    E255 {508,4}          #u83.4i {364,76}

AD17/: <576> (428)
    E256 {0,8}            #u83.3i {364,72}

ADR0/: <390> (544)
    #u82.4i {444,76}      E157 {116,4}          #u75.17i {44,76}

ADR1/: <403> (520)
    #u85.9i {396,96}      #u75.15i {44,84}      E158 {120,4}

ADR2/: <399> (504)
    #u85.8i {396,92}      #u75.13i {44,92}      E155 {108,4}

ADR3/: <416> (528)
    #u85.7i {396,88}      #u75.11i {44,100}     E156 {112,4}

ADR4/: <404> (528)
    #u85.6i {396,84}      #u75.8i {32,92}       E153 {100,4}

ADR5/: <401> (520)
    #u85.5i {396,80}      E154 {104,4}          #u75.6i {32,84}

ADR6/: <375> (496)
    #u85.4i {396,76}      #u75.4i {32,76}       E151 {92,4}

ADR7/: <370> (496)
    #u85.3i {396,72}      E152 {96,4}           #u75.2i {32,68}

ADR8/: <371> (504)
    #u85.2i {396,68}      E149 {84,4}           #u74.17i {28,76}

ADR9/: <384> (504)
    #u84.9i {380,96}      #u74.15i {28,84}      E150 {88,4}

ADRA/: <380> (488)
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```
    #u84.8i {380,92}      #u74.13i {28,92}      E147 {76,4}

ADRB/: <393> (512)
    #u84.7i {380,88}      #u74.11i {28,100}     E148 {80,4}

ADRC/: <386> (512)
    #u84.6i {380,84}      #u74.8i {16,92}       E145 {68,4}

ADRD/: <381> (504)
    #u84.5i {380,80}      #u74.6i {16,84}       E146 {72,4}

ADRE/: <355> (480)
    #u84.4i {380,76}      #u74.4i {16,76}       E143 {60,4}

ADRF/: <351> (480)
    #u84.3i {380,72}      #u74.2i {16,68}       E144 {64,4}

BdSel: <53> (172)
    #u72.3i {284,72}      #u61.1i {164,64}      #rp11.2i {160,68}     #rp11.3i {160,72}
    #u67.3o {128,72}

BHEN/: <387> (144)
    E127 {508,0}          #u82.5i {444,80}

Boot': <317> (556)
    #rp12.7i {504,88}     #u41.19o {460,136}    #u25.11i {16,156}

BPRN/: <33> (92)
    #u82.3i {444,72}      E115 {460,0}          E116 {464,0}

CCLK/: <577> (432)
    E131 {12,4}           #u65.8o {360,88}

CD00: <294> (80)
    #s1.6i {544,336}      #u44.22o {584,296}

CD01: <293> (80)
    #s1.7i {544,340}      #u44.21o {584,300}

CD02: <244> (60)
    #s1.8i {544,344}      #u44.20o {560,300}

CD10: <538> (344)
    #s2.2i {540,320}      #u45.22o {860,296}

CD11: <537> (344)
    #s2.3i {540,324}      #u45.21o {860,300}

CD12: <527> (324)
    #s2.4i {540,328}      #u45.20o {836,300}

CD20: <452> (204)
    #s2.6i {540,336}      #u46.22o {704,296}

CD21: <451> (204)
    #s2.7i {540,340}      #u46.21o {704,300}

CD22: <433> (184)
    #s2.8i {540,344}      #u46.20o {680,300}

CIOInt': <68> (912)
    #u45.24o {860,288}    #u46.24o {704,288}    #u40.24o {612,288}    #u44.24o {584,288}
    #rp11.6i {160,84}     #u58.12i {156,80}

CM0: <312> (92)
    #s1.2i {544,320}      #u40.22o {612,296}

CM1: <311> (92)
    #s1.3i {544,324}      #u40.21o {612,300}

CM2: <275> (72)
    #s1.4i {544,328}      #u40.20o {588,300}

CmdSel: <72> (140)
    #u71.1i {212,64}      #u61.3o {164,72}      #u73.4i {96,76}       #u73.1i {96,64}

CTS0: <558> (380)
    C339 {332,40}         #u13.13i {140,228}

CTS0': <310> (92)
    #u13.11o {140,236}    #u37.18i {176,292}

CTS0t: <417> (896)
    #rp0.5i {864,240}     #u13.12i {140,232}    #v4.1i {48,304}

CTS1: <544> (348)
    C327 {284,40}         #u14.13i {124,228}

CTS1': <378> (136)
    #u14.11o {124,236}    #u37.22i {200,296}

CTS1t: <528> (880)
    #rp1.5i {868,240}     #v15.1i {608,304}     #u14.12i {124,232}

CTS2: <459> (212)
    C315 {236,40}         #u15.13i {260,228}

CTS2': <346> (112)
    #u15.11o {260,236}    #u38.18i {204,292}

CTS2t: <435> (748)
```

```
    #rp2.6i {872,240}     #v26.1i {752,304}     #u15.12i {260,232}

CTS3: <603> (276)
    C303 {188,40}         #u16.13i {276,228}

CTS3': <337> (108)
    #u16.11o {276,236}    #u38.22i {228,296}

CTS3t: <448> (744)
    #rp3.6i {876,240}     #v37.1i {400,308}     #u16.12i {276,232}

CTS4: <623> (320)
    C439 {220,44}         #u17.13i {356,228}

CTS4': <285> (76)
    #u17.11o {356,236}    #u42.18i {376,292}

CTS4t: <502> (812)
    #rp4.6i {892,240}     #u17.12i {356,232}    #v48.1i {160,304}

CTS5: <645> (352)
    C427 {172,44}         #u18.13i {340,228}

CTS5': <358> (120)
    #u18.11o {340,236}    #u42.22i {400,296}

CTS5t: <477> (684)
    #rp5.6i {888,240}     #v59.1i {496,304}     #u18.12i {340,232}

CTS6: <594> (520)
    C415 {124,44}         #u19.13i {460,228}

CTS6': <348> (112)
    #u19.11o {460,236}    #u43.18i {404,292}

CTS6t: <301> (516)
    #u19.12i {460,232}    #rp6.6i {884,240}     #v70.1i {864,304}

CTS7: <608> (584)
    C403 {76,44}          #u20.13i {476,228}

CTS7': <338> (108)
    #u20.11o {476,236}    #u43.22i {428,296}

CTS7t: <496> (676)
    #rp7.6i {880,240}     #u20.12i {476,232}    #v81.1i {288,308}

DAT0/: <212> (324)
    #u87.9i {412,96}      #u69.12o {208,96}     #u77.17i {192,76}     E173 {180,4}

DAT1/: <149> (316)
    #u87.8i {412,92}      #u69.13o {208,92}     #u77.15i {192,84}     E174 {184,4}

DAT2/: <139> (332)
    #u87.7i {412,88}      #u69.14o {208,88}     #u77.13i {192,92}     E171 {172,4}

DAT3/: <200> (348)
    #u87.6i {412,84}      #u69.15o {208,84}     #u77.11i {192,100}    E172 {176,4}

DAT4/: <218> (348)
    #u87.5i {412,80}      #u69.16o {208,80}     #u77.8i {180,92}      E169 {164,4}

DAT5/: <213> (332)
    #u87.4i {412,76}      #u69.17o {208,76}     #u77.6i {180,84}      E170 {168,4}

DAT6/: <199> (332)
    #u87.3i {412,72}      #u69.18o {208,72}     #u77.4i {180,76}      E167 {156,4}

DAT7/: <176> (316)
    #u87.2i {412,68}      #u69.19o {208,68}     #u77.2i {180,68}      E168 {160,4}

DAT8/: <215> (516)
    #u86.9i {428,96}      #u68.12o {92,96}      #u76.17i {76,76}      E165 {148,4}

DAT9/: <150> (516)
    #u86.8i {428,92}      #u68.13o {92,92}      #u76.15i {76,84}      E166 {152,4}

DATA/: <143> (508)
    #u86.7i {428,88}      #u68.14o {92,88}      #u76.13i {76,92}      E163 {140,4}

DATB/: <202> (528)
    #u76.11i {76,100}     #u68.15o {92,84}      E164 {144,4}          #u86.6i {428,84}

DATC/: <219> (532)
    #u86.5i {428,80}      #u68.16o {92,80}      #u76.8i {64,92}       E161 {132,4}

DATD/: <216> (516)
    #u76.6i {64,84}       #u68.17o {92,76}      E162 {136,4}          #u86.4i {428,76}

DATE/: <201> (500)
    #u86.3i {428,72}      #u68.18o {92,72}      #u76.4i {64,76}       E159 {124,4}

DATF/: <186> (492)
    #u86.2i {428,68}      #u68.19o {92,68}      #u76.2i {64,68}       E160 {128,4}

DCD0: <557> (380)
    C341 {340,40}         #u27.1i {144,224}

DCD0': <318> (96)
    #u27.3o {144,232}     #u37.19i {176,296}
```

```
DCD0t: <439> (916)
    #rp0.4i {864,236}     #u27.2i {144,228}     #v5.1i {32,304}

DCD1: <536> (344)
    C329 {292,40}         #u27.4i {144,236}

DCD1': <347> (112)
    #u27.6o {144,244}     #u37.21i {200,300}

DCD1t: <519> (856)
    #rp1.4i {868,236}     #v16.1i {624,304}     #u27.6i {144,240}

DCD2: <509> (288)
    C317 {244,40}         #u27.10i {156,240}

DCD2': <319> (96)
    #u27.8o {156,248}     #u38.19i {204,296}

DCD2t: <454> (844)
    #rp2.4i {872,236}     #v27.1i {736,304}     #u27.9i {156,244}

DCD3: <475> (228)
    C305 {196,40}         #u27.13i {156,228}

DCD3': <377> (136)
    #u27.11o {156,236}    #u38.21i {228,300}

DCD3t: <533> (868)
    #rp3.4i {876,236}     #v38.1i {416,308}     #u27.12i {156,232}

DCD4: <494> (264)
    C441 {228,44}         #u32.1i {312,224}

DCD4': <368> (128)
    #u32.3o {312,232}     #u42.19i {376,296}

DCD4t: <483> (832)
    #rp4.4i {892,236}     #u32.2i {312,228}     #v49.1i {144,304}

DCD5: <525> (324)
    C429 {180,44}         #u32.4i {312,236}

DCD5': <388> (144)
    #u32.6o {312,244}     #u42.21i {400,300}

DCD5t: <497> (708)
    #rp5.4i {888,236}     #v60.1i {512,304}     #u32.5i {312,240}

DCD6: <562> (388)
    C417 {132,44}         #u32.10i {324,240}

DCD6': <369> (128)
    #u32.8o {324,248}     #u43.19i {404,296}

DCD6t: <336> (672)
    #u32.9i {324,244}     #rp6.4i {884,236}     #v71.1i {848,304}

DCD7: <572> (424)
    C405 {84,44}          #u32.13i {324,228}

DCD7': <421> (168)
    #u32.11o {324,236}    #u43.21i {428,300}

DCD7t: <325> (656)
    #rp7.4i {880,236}     #u32.12i {324,232}    #v82.1i {304,308}

DI00: <254> (64)
    #u21.3o {544,232}     #u44.15o {560,280}

DI00': <614> (636)
    C533 {84,48}          #u21.1i {544,224}

DI00t: <443> (632)
    #rp8.9i {32,348}      #w1.1i {432,312}      #u21.2i {544,228}

DI01: <227> (48)
    #u21.6o {544,244}     #u44.14o {560,276}

DI01': <615> (640)
    C535 {92,48}          #u21.4i {544,236}

DI01t: <447> (616)
    #rp8.8i {32,344}      #w2.1i {416,312}      #u21.5i {544,240}

DI02: <161> (28)
    #u21.8o {556,248}     #u44.13o {560,272}

DI02': <616> (648)
    C537 {100,48}         #u21.10i {556,240}

DI02t: <426> (620)
    #rp8.7i {32,340}      #w3.1i {448,312}      #u21.9i {556,244}

DI03: <208> (36)
    #u21.11o {556,236}    #u44.12o {560,268}

DI03': <613> (628)
    C539 {108,48}         #u21.13i {556,228}

DI03t: <405> (628)
    #rp8.6i {32,336}      #w4.1i {480,312}      #u21.12i {556,232}
```

```
DI04: <321> (96)
    #u33.3o {496,232}     #u44.11o {560,264}

DI04': <602> (556)
    C641 {116,48}         #u33.1i {496,224}

DI04t: <356> (568)
    #rp8.6i {32,332}      #w5.1i {464,312}      #u33.2i {496,228}

DI05: <295> (80)
    #u33.6o {496,244}     #u44.10o {560,260}

DI05': <603> (560)
    C643 {124,48}         #u33.4i {496,236}

DI05t: <334> (616)
    #rp8.4i {32,328}      #w6.1i {528,312}      #u33.5i {496,240}

DI06: <245> (60)
    #u33.8o {508,248}     #u44.9o {560,256}

DI06': <605> (568)
    C645 {132,48}         #u33.10i {508,240}

DI06t: <297> (556)
    #rp8.3i {32,324}      #w7.1i {496,312}      #u33.9i {508,244}

DI07: <269> (68)
    #u33.11o {508,236}    #u44.8o {560,252}

DI07': <699> (548)
    C647 {140,48}         #u33.13i {508,228}

DI07t: <302> (572)
    #rp8.2i {32,320}      #w8.1i {512,312}      #u33.12i {508,232}

DI10: <256> (64)
    #u22.3o {820,232}     #u45.15o {836,280}

DI10': <634> (976)
    C517 {20,48}          #u22.1i {820,224}

DI10t: <422> (904)
    #u22.2i {820,228}     #w17.1i {736,312}     #rp9.9i {36,348}

DI11: <228> (48)
    #u22.6o {820,244}     #u45.14o {836,276}

DI11': <635> (980)
    C519 {28,48}          #u22.4i {820,236}

DI11t: <386> (888)
    #u22.5i {820,240}     #w18.1i {752,312}     #rp9.8i {36,344}

DI12: <162> (28)
    #u22.8o {832,248}     #u45.13o {836,272}

DI12': <636> (988)
    C521 {36,48}          #u22.10i {832,240}

DI12t: <430> (892)
    #u22.9i {832,244}     #w19.1i {720,312}     #rp9.7i {36,340}

DI13: <209> (36)
    #u22.11o {832,236}    #u45.12o {836,268}

DI13': <633> (968)
    C523 {44,48}          #u22.13i {832,228}

DI13t: <474> (900)
    #u22.12i {832,232}    #w20.1i {688,312}     #rp9.6i {36,336}

DI14: <323> (96)
    #u34.3o {772,232}     #u45.11o {836,264}

DI14': <627> (896)
    C525 {52,48}          #u34.1i {772,224}

DI14t: <402> (840)
    #u34.2i {772,228}     #w21.1i {704,312}     #rp9.5i {36,332}

DI15: <296> (80)
    #u34.6o {772,244}     #u45.10o {836,260}

DI15': <628> (900)
    C527 {60,48}          #u34.4i {772,236}

DI15t: <453> (824)
    #u34.5i {772,240}     #w22.1i {640,312}     #rp9.4i {36,328}

DI16: <247> (60)
    #u34.8o {784,248}     #u45.9o {836,256}

DI16': <629> (908)
    C529 {68,48}          #u34.10i {784,240}

DI16t: <429> (828)
    #u34.9i {784,244}     #w23.1i {672,312}     #rp9.3i {36,324}

DI17: <270> (68)
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    #u34.11o {784,236}    #u45.8o {836,252}

DI17': <626> (892)
    C631 {76,48}          #u34.12i {784,232}

DI17t: <463> (840)
    #u34.13i {784,228}    #w24.1i {656,312}     #rp9.2i {36,320}

DI20: <289> (76)
    #u23.3o {708,232}     #u46.15o {680,280}

DI20': <570> (420)
    C601 {468,44}         #u23.1i {708,224}

DI20t: <411> (940)
    #rp10.9i {40,348}     #w33.1i {784,312}     #u23.2i {708,228}

DI21: <246> (60)
    #u23.6o {708,244}     #u46.14o {680,276}

DI21': <573> (424)
    C603 {476,44}         #u23.4i {708,236}

DI21t: <376> (892)
    #rp10.8i {40,344}     #w34.1i {768,312}     #u23.5i {708,240}

DI22: <255> (64)
    #u23.8o {720,248}     #u46.13o {680,272}

DI22': <578> (432)
    C605 {484,44}         #u23.10i {720,240}

DI22t: <394> (924)
    #rp10.7i {40,340}     #u23.9i {720,244}     #w35.1i {800,312}

DI23: <276> (72)
    #u23.11o {720,236}    #u46.12o {680,268}

DI23': <568> (412)
    C607 {492,44}         #u23.13i {720,228}

DI23t: <441> (976)
    #rp10.6i {40,336}     #u23.12i {720,232}    #w36.1i {832,312}

DI24: <341> (108)
    #u24.3o {756,232}     #u46.11o {680,264}

DI24': <581> (436)
    C609 {500,44}         #u24.1i {756,224}

DI24t: <392> (940)
    #rp10.5i {40,332}     #w37.1i {816,312}     #u24.2i {756,228}

DI25: <313> (92)
    #u24.6o {756,244}     #u46.10o {680,260}

DI25': <584> (440)
    C611 {508,44}         #u24.4i {756,236}

DI25t: <445> (1000)
    #rp10.4i {40,328}     #u24.5i {756,240}     #w38.1i {880,312}

DI26: <322> (96)
    #u24.8o {768,248}     #u46.9o {680,256}

DI26': <631> (956)
    C613 {4,48}           #u24.10i {768,240}

DI26t: <395> (956)
    #rp10.3i {40,324}     #u24.9i {768,244}     #w39.1i {848,312}

DI27: <332> (104)
    #u24.11o {768,236}    #u46.8o {680,252}

DI27': <630> (936)
    C615 {12,48}          #u24.13i {768,228}

DI27t: <427> (992)
    #rp10.2i {40,320}     #u24.12i {768,232}    #w40.1i {864,312}

DMisc01.sil+1: <146> (24)
    #u73.3o {96,72}       #u68.1i {80,64}

DMisc01.sil+10: <195> (32)
    #u74.12i {28,96}      #u66.12o {12,80}

DMisc01.sil+11: <110> (20)
    #u74.14i {28,88}      #u66.11o {12,84}

DMisc01.sil+12: <147> (24)
    #u74.16i {28,80}      #u66.10o {12,88}

DMisc01.sil+13: <203> (36)
    #u74.18i {28,72}      #u66.9o {12,92}

DMisc01.sil+2: <43> (104)
    #u74.19o {28,68}      #u57.2i {128,68}      #u57.1i {128,64}

DMisc01.sil+3: <357> (120)
    #u73.6o {96,84}       #u69.1i {196,64}
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DMisc01.sil+4: <283> (76)
    #u61.2i {164,68}      #u73.8o {108,88}

DMisc01.sil+5: <30> (88)
    #u71.6o {212,80}      #u57.6i {128,80}      #u57.4i {128,76}

DMisc01.sil+6: <70> (12)
    #u74.3i {16,72}       #u66.16o {12,64}

DMisc01.sil+7: <75> (16)
    #u74.6i {16,80}       #u66.15o {12,68}

DMisc01.sil+8: <111> (20)
    #u74.7i {16,88}       #u66.14o {12,72}

DMisc01.sil+9: <148> (24)
    #u74.9i {16,96}       #u66.13o {12,76}

DMisc02.sil+1: <129> (48)
    #u60.19i {264,76}     #u59.19i {244,76}     #u59.7o {228,88}

DMisc02.sil+10: <130> (52)
    #u59.3i {228,72}      #u60.3i {248,72}      #u59.13o {244,100}

DMisc02.sil+11: <412> (164)
    #u63.3i {268,72}      #u73.11o {108,76}

DMisc02.sil+12: <124> (20)
    #u56.18i {328,72}     #u64.19o {312,68}

DMisc02.sil+13: <123> (20)
    #u56.17i {328,76}     #u64.16o {312,80}

DMisc02.sil+14: <122> (20)
    #u56.16i {328,80}     #u64.15o {312,84}

DMisc02.sil+15: <121> (20)
    #u56.6i {316,80}      #u64.12o {312,96}

DMisc02.sil+16: <204> (36)
    #u56.4i {316,76}      #u64.9o {300,96}

DMisc02.sil+17: <154> (28)
    #u56.3i {316,72}      #u64.6o {300,84}

DMisc02.sil+18: <153> (28)
    #u56.2i {316,68}      #u64.5o {300,80}

DMisc02.sil+19: <120> (20)
    #u56.1i {316,64}      #u64.2o {300,68}

DMisc02.sil+2: <132> (56)
    #u60.20i {264,72}     #u59.20i {244,72}     #u59.8o {228,92}

DMisc02.sil+20: <119> (20)
    #u64.3i {300,72}      #u72.2o {284,68}

DMisc02.sil+21: <118> (20)
    #u64.4i {300,76}      #u72.5o {284,80}

DMisc02.sil+22: <117> (20)
    #u64.7i {300,88}      #u72.6o {284,84}

DMisc02.sil+23: <116> (20)
    #u64.8i {300,92}      #u72.9o {284,96}

DMisc02.sil+24: <115> (20)
    #u64.13i {312,92}     #u72.12o {296,96}

DMisc02.sil+25: <114> (20)
    #u64.14i {312,88}     #u72.15o {296,84}

DMisc02.sil+26: <113> (20)
    #u64.17i {312,76}     #u72.16o {296,80}

DMisc02.sil+27: <112> (20)
    #u64.18i {312,72}     #u72.19o {296,68}

DMisc02.sil+3: <134> (64)
    #u60.21i {264,68}     #u59.21i {244,68}     #u59.9o {228,96}

DMisc02.sil+4: <131> (56)
    #u60.1i {248,64}      #u59.1i {228,64}      #u59.10o {228,100}

DMisc02.sil+5: <133> (60)
    #u59.2i {228,68}      #u60.2i {248,68}      #u59.12o {244,104}

DMisc02.sil+6: <137> (96)
    #u59.5i {228,80}      #u60.5i {248,80}      #u56.7o {316,88}

DMisc02.sil+7: <136> (96)
    #u59.4i {228,76}      #u60.4i {248,76}      #u56.6o {316,84}

DMisc02.sil+8: <135> (96)
    #u59.6i {228,84}      #u60.6i {248,84}      #u56.8o {316,92}

DMisc02.sil+9: <152> (28)
    #u63.2i {268,68}      #u60.15o {264,92}

DMisc03.sil+1: <3> (4)
    #u65.6o {348,84}      #u67.9i {344,84}
```

```
DMisc03.sil+2: <196> (32)
    #u41.20o {460,140}    #u41.12o {460,108}

DMisc06.sil+1: <101> (572)
    #u79.1i {828,64}      #u83.12i {280,72}     #u83.8o {280,88}

DMisc06.sil+10: <156> (28)
    #u80.3o {796,72}      #u90.12i {824,72}

DMisc06.sil+11: <155> (28)
    #u79.6o {828,84}      #u79.13i {840,68}

DMisc06.sil+12: <107> (984)
    #d18.2o {904,64}      #r1.1i {876,64}       #r2.1i {860,64}       #u25.10i {16,160}

DMisc06.sil+13: <104> (952)
    #r3.2o {856,64}       #u80.12i {808,72}     #u80.2i {796,68}      #q1.3i {0,152}

DMisc06.sil+14: <617> (652)
    #u61.6o {164,84}      #u80.1i {796,64}

DMisc06.sil+15: <106> (956)
    #r2.2o {872,64}       #u25.13o {16,148}     #q1.2i {0,148}

DMisc06.sil+16: <8> (24)
    #q2.2i {64,148}       #r5.2o {80,144}       #d17.1i {84,144}

DMisc06.sil+17: <4> (4)
    #r4.1i {100,144}      #d17.2o {96,144}

DMisc06.sil+18: <239> (60)
    #r6.1i {116,144}      #q2.3i {64,152}

DMisc06.sil+19: <78> (96)
    #d19.2o {144,144}     #q2.1i {64,144}       #c0.1i {48,144}

DMisc06.sil+2: <69> (704)
    #u57.13i {140,68}     #u57.12i {140,72}     #u61.4i {164,76}      #u90.8o {824,88}

DMisc06.sil+20: <217> (128)
    #c0.2o {60,144}       #r7.1i {148,144}      #u26.11i {176,156}

DMisc06.sil+21: <484> (248)
    #u61.8o {176,88}      #u39.25i {44,204}

DMisc06.sil+22: <125> (20)
    #r8.1i {180,144}      #u26.10i {176,160}

DMisc06.sil+3: <5> (4)
    #u90.4i {812,76}      #u80.11o {808,76}

DMisc06.sil+4: <71> (12)
    #u90.3i {812,72}      #u80.10o {808,80}

DMisc06.sil+6: <127> (20)
    #u90.2i {812,68}      #u80.9o {808,84}

DMisc06.sil+6: <158> (28)
    #u90.1i {812,64}      #u80.8o {808,88}

DMisc06.sil+7: <76> (36)
    #u80.13i {808,68}     #u90.5i {812,80}      #u80.6o {796,84}

DMisc06.sil+8: <126> (20)
    #u80.5o {796,80}      #u90.6i {812,84}

DMisc06.sil+9: <157> (28)
    #u80.4o {796,76}      #u90.11i {824,76}

DMisc07.sil+1: <57> (456)
    #d2.2o {256,144}      #r10.1i {260,144}     #r50.2i {708,148}

DMisc07.sil+10: <232> (584)
    #r55.7i {716,168}     #r45.2o {688,144}     #u26.9i {176,164}

DMisc07.sil+11: <100> (524)
    #u55.18o {704,152}    #u55.4i {692,156}     #d1.1i {196,144}

DMisc07.sil+12: <82> (332)
    #u55.14o {704,168}    #u55.8i {692,172}     #d5.1i {404,144}

DMisc07.sil+13: <81> (320)
    #d9.1i {420,144}      #u55.9o {692,176}     #u55.13i {704,172}

DMisc07.sil+14: <79> (96)
    #d13.1i {628,144}     #u55.5o {692,160}     #u55.17i {704,156}

DMisc07.sil+15: <220> (748)
    #u25.9i {16,164}      #r55.4i {716,156}     #r35.2o {744,144}

DMisc07.sil+16: <233> (768)
    #r34.2o {760,144}     #r54.4i {720,156}     #u25.8i {16,168}

DMisc07.sil+17: <335> (664)
    #r40.2o {808,144}     #r54.5i {720,160}     #u26.6i {164,164}

DMisc07.sil+18: <366> (684)
    #u26.7i {164,168}     #r55.5i {716,160}     #r41.2o {824,144}

DMisc07.sil+19: <391> (700)
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    #u26.6i {164,160}     #r55.6i {716,164}     #r43.2o {840,144}

DMisc07.sil+2: <214> (476)
    #r50.3i {708,152}     #r11.1i {276,144}     #d4.2o {240,144}

DMisc07.sil+20: <408> (720)
    #r42.2o {856,144}     #r54.6i {720,164}     #u26.4i {164,156}

DMisc07.sil+21: <440> (920)
    #r32.2o {904,144}     #r54.3i {720,152}     #u25.6i {4,164}

DMisc07.sil+22: <283> (792)
    #r55.3i {716,152}     #u25.7i {4,168}       #r33.2o {12,224}

DMisc07.sil+23: <308> (812)
    #r55.2i {716,148}     #u25.6i {4,160}       #r31.2o {28,224}

DMisc07.sil+24: <344> (832)
    #r30.2o {44,224}      #u25.4i {4,156}       #r54.2i {720,148}

DMisc07.sil+25: <206> (36)
    #d2.1i {244,144}      #d1.2o {208,144}

DMisc07.sil+26: <7> (4)
    #d4.1i {228,144}      #d3.2o {224,144}

DMisc07.sil+27: <593> (508)
    #d3.1i {212,144}      #u55.16o {704,160}

DMisc07.sil+28: <543> (348)
    #d7.1i {388,144}      #u55.12o {704,176}

DMisc07.sil+29: <160> (28)
    #d8.1i {372,144}      #d7.2o {400,144}

DMisc07.sil+3: <250> (400)
    #r13.1i {324,144}     #d8.2o {384,144}      #r50.6i {708,160}

DMisc07.sil+30: <241> (60)
    #d6.1i {356,144}      #d5.2o {416,144}

DMisc07.sil+31: <205> (36)
    #d10.1i {468,144}     #d9.2o {432,144}

DMisc07.sil+32: <6> (4)
    #d12.1i {452,144}     #d11.2o {448,144}

DMisc07.sil+33: <504> (280)
    #d11.1i {436,144}     #u55.7o {692,168}

DMisc07.sil+34: <303> (88)
    #d15.1i {612,144}     #u55.3o {692,152}

DMisc07.sil+35: <159> (28)
    #d16.1i {596,144}     #d15.2o {624,144}

DMisc07.sil+36: <240> (60)
    #d14.1i {580,144}     #d13.2o {640,144}

DMisc07.sil+4: <184> (380)
    #r12.1i {340,144}     #d6.2o {368,144}      #r50.4i {708,156}

DMisc07.sil+5: <54> (248)
    #d10.2o {480,144}     #r20.1i {484,144}     #r50.6i {708,164}

DMisc07.sil+6: <211> (268)
    #r50.7i {708,168}     #r21.1i {500,144}     #d12.2o {464,144}

DMisc07.sil+7: <248> (192)
    #r23.1i {548,144}     #d16.2o {608,144}     #r50.9i {708,176}

DMisc07.sil+8: <164> (172)
    #r22.1i {564,144}     #d14.2o {592,144}     #r50.8i {708,172}

DMisc07.sil+9: <282> (592)
    #r54.7i {720,168}     #r44.2o {672,144}     #u26.8i {176,168}

DMisc08.sil+1: <197> (32)
    #u38.7i {204,248}     #u37.6o {176,244}

DMisc09.sil+1: <198> (32)
    #u43.7i {404,248}     #u42.6o {376,244}

DO00: <340> (108)
    #u9.2i {528,228}      #u44.26o {584,280}

DO00': <372> (744)
    #w9.1i {576,312}      #u9.3o {528,232}      C536 {96,48}

DO01: <37> (96)
    #u44.27o {584,276}    #u9.5i {528,240}      #u9.4i {528,236}

DO01': <328> (720)
    #w10.1i {560,312}     #u9.6o {528,244}      C538 {104,48}

DO02: <22> (76)
    #u9.10i {540,240}     #u9.9i {540,244}      #u44.28o {584,272}

DO02': <272> (696)
    #w11.1i {544,312}     #u9.8o {540,248}      C540 {112,48}
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D003: <26> (84)
    #u9.13i {640,228}     #u9.12i {640,232}     #u44.29o {584,268}

D003': <547> (768)
    #u9.11o {640,236}     #w12.1i {268,316}     C542 {120,48}

D004: <339> (108)
    #u35.2i {512,228}     #u44.30o {584,264}

D004': <541> (736)
    #u35.3o {512,232}     #w13.1i {252,316}     C544 {128,48}

D005: <36> (96)
    #u44.31o {584,260}    #u35.5i {512,240}     #u35.4i {512,236}

D005': <532> (716)
    #u35.6o {512,244}     #w14.1i {204,316}     C546 {136,48}

D006: <23> (76)
    #u35.10i {524,240}    #u35.9i {524,244}     #u44.32o {584,256}

D006': <539> (716)
    #u35.8o {524,248}     #w15.1i {220,316}     C548 {144,48}

D007: <27> (84)
    #u35.13i {524,228}    #u35.12i {524,232}    #u44.33o {584,252}

D007': <546> (720)
    #u35.11o {524,236}    #w16.1i {236,316}     C550 {152,48}

D010: <343> (108)
    #u10.2i {804,228}     #u45.26o {860,280}

D010': <515> (1116)
    #u10.3o {804,232}     #w25.1i {592,312}     C520 {32,48}

D011: <40> (96)
    #u10.4i {804,236}     #u10.5i {804,240}     #u45.27o {860,276}

D011': <500> (1096)
    #u10.6o {804,244}     #w26.1i {608,312}     C522 {40,48}

D012: <25> (76)
    #u45.28o {860,272}    #u10.9i {816,244}     #u10.10i {816,240}

D012': <491> (1096)
    #u10.8o {816,248}     #w27.1i {624,312}     C524 {48,48}

D013: <29> (84)
    #u45.29o {860,268}    #u10.12i {816,232}    #u10.13i {816,228}

D013': <535> (1108)
    #u10.11o {816,236}    #w28.1i {124,316}     C526 {56,48}

D014: <342> (108)
    #u36.2i {788,228}     #u45.30o {860,264}

D014': <542> (1076)
    #u36.3o {788,232}     #w29.1i {140,316}     C528 {64,48}

D015: <38> (96)
    #u36.4i {788,236}     #u36.5i {788,240}     #u45.31o {860,260}

D015': <560> (1056)
    #u36.6o {788,244}     #w30.1i {188,316}     C530 {72,48}

D016: <24> (76)
    #u45.32o {860,256}    #u36.9i {800,244}     #u36.10i {800,240}

D016': <551> (1056)
    #u36.8o {800,248}     #w31.1i {172,316}     C532 {80,48}

D017: <28> (84)
    #u45.33o {860,252}    #u36.12i {800,232}    #u36.13i {800,228}

D017': <534> (1060)
    #u36.11o {800,236}    #w32.1i {156,316}     C534 {88,48}

D020: <278> (72)
    #u11.2i {724,228}     #u46.26o {704,280}

D020': <579> (1168)
    #w41.1i {16,316}      C504 {480,44}         #u11.3o {724,232}

D021: <15> (60)
    #u11.4i {724,236}     #u11.5i {724,240}     #u46.27o {704,276}

D021': <582> (1196)
    #w42.1i {0,316}       C506 {488,44}         #u11.6o {724,244}

D022: <17> (64)
    #u46.28o {704,272}    #u11.9i {736,244}     #u11.10i {736,240}

D022': <470> (668)
    #w43.1i {896,312}     #u11.8o {736,248}     C508 {496,44}

D023: <21> (72)
    #u11.13i {736,228}    #u11.12i {736,232}    #u46.29o {704,268}

D023': <574> (1092)
    #w44.1i {108,316}     C510 {504,44}         #u11.11o {736,236}
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DO24: <277> (72)
    #u12.2i {740,228}     #u46.30o {704,264}

DO24': <552> (1092)
    #u12.3o {740,232}     #w45.1i {92,316}      C512 {0,48}

DO25: <14> (60)
    #u12.4i {740,236}     #u12.5i {740,240}     #u46.31o {704,260}

DO25': <518> (1072)
    #u12.6o {740,244}     #w46.1i {44,316}      C514 {8,48}

DO26: <16> (84)
    #u46.32o {704,256}    #u12.9i {752,244}     #u12.10i {752,240}

DO26': <520> (1072)
    #u12.8o {752,248}     #w47.1i {60,316}      C516 {16,48}

DO27: <20> (72)
    #u46.33o {704,252}    #u12.12i {752,232}    #u12.13i {752,228}

DO27': <524> (1076)
    #u12.11o {752,236}    #w48.1i {76,316}      C518 {24,48}

DSR0: <585> (464)
    C348 {368,40}         #u28.1i {648,224}

DSR0': <300> (84)
    #u28.3o {648,232}     #u40.26o {612,280}

DSR0t: <468> (848)
    #rp0.3i {864,232}     #u28.2i {648,228}     #v6.1i {96,304}

DSR1: <595> (524)
    C336 {320,40}         #u28.4i {648,236}

DSR1': <268> (68)
    #u28.6o {648,244}     #u40.27o {612,276}

DSR1t: <398> (380)
    #rp1.3i {868,232}     #u28.5i {648,240}     #v17.1i {560,304}

DSR2: <598> (544)
    C324 {272,40}         #u29.1i {632,224}

DSR2': <243> (60)
    #u29.3o {632,232}     #u40.28o {612,272}

DSR2t: <389> (388)
    #rp2.3i {872,232}     #v28.1i {800,304}     #u29.2i {632,228}

DSR3: <610> (604)
    C312 {224,40}         #u29.4i {632,236}

DSR3': <222> (44)
    #u29.6o {632,244}     #u40.29o {612,268}

DSR3t: <488> (600)
    #rp3.3i {876,232}     #u29.5i {632,240}     #v39.1i {352,308}

DSR4: <597> (540)
    C448 {256,44}         #u30.1i {616,224}

DSR4': <207> (36)
    #u30.3o {616,232}     #u40.30o {612,264}

DSR4t: <506> (652)
    #rp4.3i {892,232}     #u30.2i {616,228}     #v50.1i {320,304}

DSR5: <609> (600)
    C436 {208,44}         #u30.4i {616,236}

DSR5': <128> (20)
    #u30.6o {616,244}     #u40.31o {612,260}

DSR5t: <505> (624)
    #rp5.3i {888,232}     #u30.5i {616,240}     #v61.1i {336,304}

DSR6: <620> (684)
    C424 {160,44}         #u31.1i {664,224}

DSR6': <288> (76)
    #u31.3o {664,232}     #u40.32o {612,256}

DSR6t: <472> (856)
    #rp6.3i {884,232}     #u31.2i {664,228}     #v72.1i {112,308}

DSR7: <623> (744)
    C412 {112,44}         #u31.4i {664,236}

DSR7': <242> (60)
    #u31.6o {664,244}     #u40.33o {612,252}

DSR7t: <471> (828)
    #rp7.3i {880,232}     #u31.5i {664,240}     #v83.1i {128,308}

DTR0: <280> (440)
    #v11.1i {176,304}     #u1.11o {172,236}     C342 {344,40}

DTR0': <11> (60)
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    #u1.13i {172,228}     #u1.12i {172,232}     #u37.16o {176,284}

DTR1: <559> (824)
    #v22.1i {480,304}     #u2.11o {108,236}     C330 {296,40}

DTR1': <50> (152)
    #u2.13i {108,228}     #u2.12i {108,232}     #u37.24o {200,288}

DTR2: <449> (904)
    #v33.1i {880,304}     #u3.11o {244,236}     C318 {248,40}

DTR2': <34> (96)
    #u3.13i {244,228}     #u3.12i {244,232}     #u38.16o {204,284}

DTR3: <315> (380)
    #v44.1i {272,308}     #u4.11o {292,236}     C306 {200,40}

DTR3': <46> (124)
    #u4.13i {292,228}     #u4.12i {292,232}     #u38.24o {228,288}

DTR4: <434> (468)
    #u5.11o {372,236}     #v55.1i {256,304}     C442 {232,44}

DTR4': <13> (60)
    #u42.16o {376,284}    #u5.12i {372,232}     #u5.13i {372,228}

DTR5: <408> (476)
    #v66.1i {400,304}     #u6.11o {308,236}     C430 {184,44}

DTR5': <52> (152)
    #u42.24o {400,288}    #u6.12i {308,232}     #u6.13i {308,228}

DTR6: <548> (820)
    #u7.11o {444,236}     #v77.1i {48,308}      C418 {136,44}

DTR6': <35> (96)
    #u43.16o {404,284}    #u7.12i {444,232}     #u7.13i {444,228}

DTR7: <553> (740)
    #u8.11o {492,236}     #v88.1i {192,308}     C406 {88,44}

DTR7': <47> (124)
    #u43.24o {428,288}    #u8.12i {492,232}     #u8.13i {492,228}

GND: <2> (-24240)
    #u22.7i {820,248}     #u34.7i {772,248}     #u24.7i {756,248}     #u23.7i {708,248}
    #u31.7i {664,248}     #u28.7i {648,248}     #u29.7i {632,248}     #u30.7i {616,248}
    #u21.7i {544,248}     #u33.7i {496,248}     #u20.7i {464,248}     #u19.7i {448,248}
    #u17.7i {344,248}     #u18.7i {328,248}     #u32.7i {312,248}     #u16.7i {264,248}
    #u15.7i {248,248}     #u27.7i {144,248}     #u13.7i {128,248}     #u14.7i {112,248}
    #u55.10i {692,180}    #u39.20i {20,220}     #u79.7i {828,88}      #u90.7i {812,88}
    #u80.7i {796,88}      #u89.7i {780,88}      #u53.14i {752,116}    #u54.14i {724,116}
    #u52.14i {696,116}    #u50.14i {668,116}    #u51.14i {640,116}    #u49.14i {612,116}
    #u78.8i {592,92}      #u48.14i {536,116}    #u47.14i {508,116}    #u88.8i {488,92}
    #u82.10i {444,100}    #u86.10i {428,100}    #u87.10i {412,100}    #u85.10i {396,100}
    #u84.10i {380,100}    #u83.10i {364,100}    #u65.7i {348,88}      #u67.7i {332,88}
    #u56.10i {316,100}    #u64.10i {300,100}    #u72.10i {284,100}    #u63.7i {268,88}
    #u60.11i {248,104}    #u59.11i {228,104}    #u71.7i {212,88}      #u69.10i {196,100}
    #u77.10i {180,100}    #u61.7i {164,88}      #u58.8i {144,92}      #u57.7i {128,88}
    #u62.8i {112,92}      #u73.7i {96,88}       #u68.10i {80,100}     #u76.10i {64,100}
    #u70.8i {48,92}       #u75.10i {32,100}     #u74.10i {16,100}     #s4.7i {564,340}
    #s3.7i {548,340}      #s1.1i {544,316}      #s2.1i {540,316}      #s1.10i {544,352}
    #s2.10i {540,352}     C549 {148,48}         C414 {120,44}         C350 {376,40}
    C449 {260,44}         C450 {264,44}         C426 {168,44}         C402 {72,44}
    C438 {216,44}         C302 {184,40}         C314 {232,40}         C326 {280,40}
    C502 {472,44}         C349 {372,40}         C338 {328,40}         E186 {228,4}
    E186 {232,4}          E176 {192,4}          E175 {188,4}          E112 {448,0}
    E111 {444,0}          E102 {408,0}          E101 {404,0}          #c92.2o {504,316}
    #c93.2o {520,316}     #c77.2o {296,316}     #c78.2o {376,316}     #c79.2o {392,316}
    #c80.2o {312,316}     #c81.2o {328,316}     #c82.2o {360,316}     #c83.2o {344,316}
    #c84.2o {424,316}     #c85.2o {440,316}     #c86.2o {456,316}     #c87.2o {472,316}
    #c88.2o {488,316}     #c90.2o {408,316}     #w1.2o {444,312}      #w2.2o {428,312}
    #w3.2o {460,312}      #w4.2o {492,312}      #w5.2o {476,312}      #w6.2o {540,312}
    #w7.2o {508,312}      #w8.2o {524,312}      #w9.2o {588,312}      #w10.2o {572,312}
    #w11.2o {556,312}     #w12.2o {280,316}     #w13.2o {264,316}     #w14.2o {216,316}
    #w15.2o {232,316}     #w16.2o {248,316}     #w17.2o {748,312}     #w18.2o {764,312}
    #w19.2o {732,312}     #w20.2o {700,312}     #w21.2o {716,312}     #w22.2o {652,312}
    #w23.2o {684,312}     #w24.2o {668,312}     #w25.2o {604,312}     #w26.2o {620,312}
    #w27.2o {636,312}     #w28.2o {136,316}     #w29.2o {152,316}     #w30.2o {200,316}
    #w31.2o {184,316}     #w32.2o {168,316}     #w33.2o {796,312}     #w34.2o {780,312}
    #w35.2o {812,312}     #w36.2o {844,312}     #w37.2o {828,312}     #w38.2o {892,312}
    #w39.2o {860,312}     #w40.2o {876,312}     #w41.2o {28,316}      #w42.2o {12,316}
    #w43.2o {908,312}     #w44.2o {120,316}     #w45.2o {104,316}     #w46.2o {56,316}
    #w47.2o {72,316}      #w48.2o {88,316}      #c64.2o {412,312}     #c65.2o {892,308}
    #c66.2o {876,308}     #c67.2o {44,312}      #c68.2o {28,312}      #c69.2o {908,308}
    #c70.2o {12,312}      #c71.2o {780,308}     #c72.2o {796,308}     #c73.2o {828,308}
    #c74.2o {812,308}     #c75.2o {860,308}     #c76.2o {844,308}     #c51.2o {396,312}
    #c52.2o {732,308}     #c53.2o {764,308}     #c54.2o {748,308}     #c55.2o {668,308}
    #c56.2o {364,312}     #c57.2o {700,308}     #c58.2o {684,308}     #c59.2o {108,312}
    #c60.2o {124,312}     #c61.2o {716,308}     #c62.2o {76,312}      #c63.2o {60,312}
    #c38.2o {380,312}     #c39.2o {348,312}     #c40.2o {492,308}     #c41.2o {508,308}
    #c42.2o {540,308}     #c43.2o {524,308}     #c44.2o {604,308}     #c45.2o {588,308}
    #c46.2o {556,308}     #c47.2o {572,308}     #c48.2o {652,308}     #c49.2o {636,308}
    #c50.2o {620,308}     #c1.2o {140,312}      #c5.2o {156,312}      #c9.2o {188,312}
    #c12.2o {172,312}     #c13.2o {236,312}     #c17.2o {204,312}     #c21.2o {220,312}
    #c24.2o {332,312}     #c25.2o {316,312}     #c29.2o {284,312}     #c33.2o {300,312}
    #c36.2o {252,312}     #c37.2o {268,312}     #v1.2o {12,304}       #v2.2o {908,224}
    #v3.2o {28,304}       #v4.2o {60,304}       #v5.2o {44,304}       #v6.2o {108,304}
    #v7.2o {76,304}       #v8.2o {92,304}       #v9.2o {236,304}      #v10.2o {220,304}
    #v11.2o {188,304}     #v12.2o {668,304}     #v13.2o {684,304}     #v14.2o {652,304}
    #v15.2o {620,304}     #v16.2o {636,304}     #v17.2o {572,304}     #v18.2o {604,304}
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    #v19.2o {588,304}     #v20.2o {444,304}     #v21.2o {460,304}     #v22.2o {492,304}
    #v23.2o {716,304}     #v24.2o {700,304}     #v25.2o {732,304}     #v26.2o {764,304}
    #v27.2o {748,304}     #v28.2o {812,304}     #v29.2o {780,304}     #v30.2o {796,304}
    #v31.2o {28,308}      #v32.2o {12,308}      #v33.2o {892,304}     #v34.2o {460,308}
    #v35.2o {476,308}     #v36.2o {444,308}     #v37.2o {412,308}     #v38.2o {428,308}
    #v39.2o {364,308}     #v40.2o {396,308}     #v41.2o {380,308}     #v42.2o {236,308}
    #v43.2o {252,308}     #v44.2o {284,308}     #v78.2o {268,308}     #v79.2o {348,308}
    #v80.2o {332,308}     #v81.2o {300,308}     #v82.2o {316,308}     #v83.2o {140,308}
    #v84.2o {156,308}     #v85.2o {188,308}     #v86.2o {172,308}     #v87.2o {220,308}
    #v88.2o {204,308}     #v67.2o {908,304}     #v68.2o {828,304}     #v69.2o {844,304}
    #v70.2o {876,304}     #v71.2o {860,304}     #v72.2o {124,308}     #v73.2o {108,308}
    #v74.2o {76,308}      #v75.2o {92,308}      #v76.2o {44,308}      #v77.2o {60,308}
    #v56.2o {476,304}     #v57.2o {556,304}     #v58.2o {540,304}     #v59.2o {508,304}
    #v60.2o {524,304}     #v61.2o {348,304}     #v62.2o {364,304}     #v63.2o {396,304}
    #v64.2o {380,304}     #v65.2o {428,304}     #v66.2o {412,304}     #v46.2o {204,304}
    #v46.2o {124,304}     #v47.2o {140,304}     #v48.2o {172,304}     #v49.2o {188,304}
    #v50.2o {332,304}     #v51.2o {316,304}     #v52.2o {284,304}     #v53.2o {300,304}
    #v54.2o {252,304}     #v55.2o {268,304}     #u10.7i {804,248}     #u36.7i {788,248}
    #u11.7i {724,248}     #u12.7i {740,248}     #u45.7i {836,248}     #u46.7i {680,248}
    #u40.7i {588,248}     #u9.7i {528,248}      #u35.7i {512,248}     #u44.7i {660,248}
    #u5.7i {360,248}      #u6.7i {296,248}      #u7.7i {432,248}      #u8.7i {480,248}
    #u43.31i {428,260}    #u42.31i {400,260}    #u1.7i {160,248}      #u2.7i {96,248}
    #u3.7i {232,248}      #u4.7i {280,248}      #u38.31i {228,260}    #u37.31i {200,260}
    #r54.1i {720,144}     #r55.1i {716,144}     #r51.1i {712,144}     #u26.12i {176,152}
    #u25.12i {16,152}     #u55.19i {704,148}    #u55.1i {692,144}     #u39.13i {20,192}
    #u39.1i {20,144}      #r8.2o {192,144}      #r7.2o {160,144}      #q1.1i {0,144}
    #r1.2o {888,64}       #u79.2i {828,68}      #u79.12i {840,72}     #u78.5i {692,80}
    #u81.7i {564,88}      #u88.6i {488,80}      #u88.4i {488,76}      #u41.7i {460,88}
    #u56.15i {328,84}     #u64.1i {300,64}      #u56.19i {328,68}     #u72.1i {284,64}
    #u60.17i {264,84}     #u60.18i {264,80}     #u59.17i {244,84}     #u59.18i {244,80}
    #u58.15i {156,68}     #u70.5i {48,80}       #u66.1i {0,64}        #u66.2i {0,68}
    #u66.3i {0,72}        #u66.4i {0,76}        #u66.5i {0,80}        #u66.6i {0,84}
    #u66.7i {0,88}        #u66.8i {0,92}

INIT/: <407> (392)
    #u57.11o {140,76}     #u72.18i {296,72}     E114 {456,0}

Int0': <67> (472)
    #u58.10i {156,88}     #rp11.8i {160,92}     #u41.24o {484,128}    #u81.24o {588,128}

INT0/: <397> (152)
    E141 {52,4}           #u58.1o {144,64}

INT1/: <396> (152)
    E142 {56,4}           #u58.2o {144,68}

INT2/: <420> (168)
    E139 {44,4}           #u58.3o {144,72}

INT3/: <419> (168)
    E140 {48,4}           #u58.4o {144,76}

INT4/: <432> (184)
    E137 {36,4}           #u58.5o {144,80}

INT5/: <431> (184)
    E138 {40,4}           #u58.6o {144,84}

INT6/: <446> (200)
    E135 {28,4}           #u58.7o {144,88}

INT7/: <458> (212)
    E136 {32,4}           #u58.9o {156,92}

IntChan.0: <64> (388)
    #u58.13i {156,76}     #rp11.5i {160,80}     #u41.22o {484,136}

IntChan.1: <65> (396)
    #u58.14i {156,72}     #rp11.4i {160,76}     #u41.21o {484,140}

IORC/: <260> (480)
    #u73.10i {108,80}     #u72.4i {284,76}      #u65.4i {348,76}      #u82.7i {444,88}
    E121 {484,0}

IOWC/: <281> (480)
    #u73.9i {108,84}      #u72.7i {284,88}      #u65.5i {348,80}      #u82.6i {444,84}
    E122 {488,0}

LC0: <400> (508)
    #v8.1i {80,304}       #u1.3o {160,232}      C337 {324,40}

LC0a: <225> (748)
    #r61.1i {308,144}     #r12.2o {352,144}     #r51.4i {712,156}     #s3.3i {548,324}

LC0b: <102> (732)
    #r61.2o {320,144}     #r13.2o {336,144}     #r51.5i {712,160}     #s3.10o {560,332}

LC1: <556> (924)
    #v19.1i {576,304}     #u2.3o {96,232}       C325 {276,40}

LC1a: <142> (484)
    #s4.3i {564,324}      #r20.2o {496,144}     #r62.1i {516,144}     #r51.6i {712,164}

LC1b: <98> (476)
    #s4.10o {576,332}     #r21.2o {512,144}     #r62.2o {528,144}     #r51.7i {712,168}

LC2: <444> (820)
    #v30.1i {784,304}     #u3.3o {232,232}      C313 {228,40}

LC3: <414> (456)
    #v41.1i {368,308}     #u4.3o {280,232}      C301 {180,40}
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LC4: <410> (480)
    #u5.3o {360,232}      #v52.1i {272,304}     C437 {212,44}

LC5: <409> (480)
    #v63.1i {384,304}     #u8.3o {296,232}      C425 {164,44}

LC6: <521> (760)
    #u7.3o {432,232}      #v74.1i {64,308}      C413 {116,44}

LC7: <555> (752)
    #u8.3o {480,232}      #v85.1i {176,308}     C401 {68,44}

LCa': <187> (892)
    #u2.2i {96,228}       #u1.2i {160,228}      #s1.6i {544,332}      #u40.19o {588,296}
    #u56.11i {704,180}    #u55.6i {692,164}

LCb': <230> (464)
    #u3.2i {232,228}      #u4.2i {280,228}      #u44.19o {560,296}    #s1.9i {544,348}

LCc': <262> (680)
    #u45.19o {836,296}    #s2.6i {540,332}      #u5.2i {360,228}      #u6.2i {296,228}

LCd': <229> (420)
    #u46.19o {680,296}    #s2.9i {540,348}      #u8.2i {480,228}      #u7.2i {432,228}

mData.0: <97> (472)
    #u83.19o {376,68}     #u84.19o {392,68}     #u85.19o {408,68}     #u87.19o {424,68}
    #u86.19o {440,68}     #u82.19o {456,68}     #u41.26o {484,120}    #u47.19o {532,100}
    #u48.19o {560,100}    #u49.19o {636,100}    #u51.19o {664,100}    #u50.19o {692,100}
    #u52.19o {720,100}    #u54.19o {748,100}    #u53.19o {776,100}

mData.1: <96> (456)
    #u83.18o {376,72}     #u84.18o {392,72}     #u85.18o {408,72}     #u87.18o {424,72}
    #u86.18o {440,72}     #u82.18o {456,72}     #u41.27o {484,116}    #u47.18o {532,104}
    #u48.18o {560,104}    #u49.18o {636,104}    #u51.18o {664,104}    #u50.18o {692,104}
    #u52.18o {720,104}    #u54.18o {748,104}    #u53.18o {776,104}

mData.2: <93> (440)
    #u83.17o {376,76}     #u84.17o {392,76}     #u85.17o {408,76}     #u87.17o {424,76}
    #u86.17o {440,76}     #u82.17o {456,76}     #u41.28o {484,112}    #u47.17o {532,108}
    #u48.17o {560,108}    #u49.17o {636,108}    #u51.17o {664,108}    #u50.17o {692,108}
    #u52.17o {720,108}    #u54.17o {748,108}    #u53.17o {776,108}

mData.3: <92> (432)
    #u83.16o {376,80}     #u84.16o {392,80}     #u85.16o {408,80}     #u87.16o {424,80}
    #u86.16o {440,80}     #u82.16o {456,80}     #u41.29o {484,108}    #u47.16o {532,112}
    #u48.16o {560,112}    #u49.16o {636,112}    #u51.16o {664,112}    #u50.16o {692,112}
    #u52.16o {720,112}    #u54.16o {748,112}    #u53.16o {776,112}

mData.4: <91> (432)
    #u83.15o {376,84}     #u84.15o {392,84}     #u85.15o {408,84}     #u87.15o {424,84}
    #u86.15o {440,84}     #u82.15o {456,84}     #u41.30o {484,104}    #u47.15o {532,116}
    #u48.15o {560,116}    #u49.15o {636,116}    #u51.15o {664,116}    #u50.15o {692,116}
    #u52.15o {720,116}    #u54.15o {748,116}    #u53.15o {776,116}

mData.5: <88> (400)
    #u83.14o {376,88}     #u84.14o {392,88}     #u85.14o {408,88}     #u87.14o {424,88}
    #u86.14o {440,88}     #u82.14o {456,88}     #u41.31o {484,100}    #u47.13o {508,112}
    #u48.13o {536,112}    #u49.13o {612,112}    #u51.13o {640,112}    #u50.13o {668,112}
    #u52.13o {696,112}    #u54.13o {724,112}    #u53.13o {752,112}

mData.6: <86> (392)
    #u83.13o {376,92}     #u84.13o {392,92}     #u85.13o {408,92}     #u87.13o {424,92}
    #u86.13o {440,92}     #u82.13o {456,92}     #u41.32o {484,96}     #u47.12o {508,108}
    #u48.12o {536,108}    #u49.12o {612,108}    #u51.12o {640,108}    #u50.12o {668,108}
    #u52.12o {696,108}    #u54.12o {724,108}    #u53.12o {752,108}

mData.7: <85> (392)
    #u83.12o {376,96}     #u84.12o {392,96}     #u85.12o {408,96}     #u87.12o {424,96}
    #u86.12o {440,96}     #u82.12o {456,96}     #u41.33o {484,92}     #u47.11o {508,104}
    #u48.11o {536,104}    #u49.11o {612,104}    #u51.11o {640,104}    #u50.11o {668,104}
    #u52.11o {696,104}    #u54.11o {724,104}    #u53.11o {752,104}

mEn.0: <163> (168)
    #u41.11o {460,104}    #u88.6i {488,84}      #rp12.3i {504,72}     #u78.4i {592,76}

mEn.1: <138> (168)
    #u41.10o {460,100}    #u88.3i {488,72}      #rp12.4i {504,76}     #u78.3i {592,72}

mEn.2: <165> (184)
    #u41.9o {460,96}      #u88.2i {488,68}      #rp12.5i {504,80}     #u78.2i {592,68}

mEn.3: <210> (192)
    #u41.8o {460,92}      #rp12.6i {504,84}     #u88.1i {488,64}      #u78.1i {592,64}

MRDC/: <362> (248)
    #u65.1i {348,64}      #u82.8i {444,92}      E119 {476,0}

MWTC/: <363> (256)
    #u65.2i {348,68}      #u82.9i {444,96}      E120 {480,0}

PromAd.0: <181> (356)
    #u53.1i {752,64}      #u54.1i {724,64}      #u52.1i {696,64}      #u50.1i {668,64}
    #u51.1i {640,64}      #u49.1i {612,64}      #rp13.7i {608,88}     #u81.26o {588,120}
    #u48.1i {536,64}      #u47.1i {508,64}

PromAd.1: <183> (380)
    #u47.27i {532,68}     #u48.27i {560,68}     #rp13.6i {608,84}     #u81.27o {588,116}
    #u49.27i {636,68}     #u51.27i {664,68}     #u50.27i {692,68}     #u52.27i {720,68}
    #u54.27i {748,68}     #u53.27i {776,68}
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PromAd.10: <176> (332)
    #u81.13o {564,112}   #u48.6i {536,80}    #u47.6i {508,80}    #u49.6i {612,80}
    #u51.6i {640,80}     #u50.6i {668,80}    #u52.6i {696,80}    #u54.6i {724,80}
    #u53.6i {752,80}

PromAd.11: <174> (292)
    #u47.6i {508,84}     #u48.6i {536,84}    #u81.12o {564,108}  #u49.6i {612,84}
    #u51.6i {640,84}     #u50.6i {668,84}    #u52.6i {696,84}    #u54.6i {724,84}
    #u53.6i {752,84}

PromAd.12: <170> (276)
    #u47.7i {508,88}     #u48.7i {536,88}    #u81.11o {564,104}  #u49.7i {612,88}
    #u51.7i {640,88}     #u50.7i {668,88}    #u52.7i {696,88}    #u54.7i {724,88}
    #u53.7i {752,88}

PromAd.13: <168> (260)
    #u47.8i {508,92}     #u48.8i {536,92}    #u81.10o {564,100}  #u49.8i {612,92}
    #u51.8i {640,92}     #u50.8i {668,92}    #u52.8i {696,92}    #u54.8i {724,92}
    #u53.8i {752,92}

PromAd.14: <166> (244)
    #u47.9i {508,96}     #u48.9i {536,96}    #u81.9o {564,96}    #u49.9i {612,96}
    #u51.9i {640,96}     #u50.9i {668,96}    #u52.9i {696,96}    #u54.9i {724,96}
    #u53.9i {752,96}

PromAd.15: <167> (260)
    #u53.10i {752,100}   #u54.10i {724,100}  #u52.10i {696,100}  #u50.10i {668,100}
    #u51.10i {640,100}   #u49.10i {612,100}  #u81.8o {564,92}    #u48.10i {536,100}
    #u47.10i {508,100}

PromAd.2: <178> (340)
    #u81.28o {588,112}   #u47.26i {532,72}   #u48.26i {560,72}   #u49.26i {636,72}
    #u51.26i {664,72}    #u50.26i {692,72}   #u52.26i {720,72}   #u54.26i {748,72}
    #u53.26i {776,72}

PromAd.3: <182> (364)
    #u81.29o {588,108}   #u48.2i {536,68}    #u47.2i {508,68}    #u49.2i {612,68}
    #u51.2i {640,68}     #u50.2i {668,68}    #u52.2i {696,68}    #u54.2i {724,68}
    #u53.2i {752,68}

PromAd.4: <173> (284)
    #u47.23i {532,84}    #u48.23i {560,84}   #u81.30o {588,104}  #u49.23i {636,84}
    #u51.23i {664,84}    #u50.23i {692,84}   #u52.23i {720,84}   #u54.23i {748,84}
    #u53.23i {776,84}

PromAd.5: <169> (260)
    #u47.21i {532,92}    #u48.21i {560,92}   #u81.31o {588,100}  #u49.21i {636,92}
    #u51.21i {664,92}    #u50.21i {692,92}   #u52.21i {720,92}   #u54.21i {748,92}
    #u53.21i {776,92}

PromAd.6: <172> (276)
    #u47.24i {532,80}    #u48.24i {560,80}   #u81.32o {588,96}   #u49.24i {636,80}
    #u51.24i {664,80}    #u50.24i {692,80}   #u52.24i {720,80}   #u54.24i {748,80}
    #u53.24i {776,80}

PromAd.7: <171> (276)
    #u47.25i {532,76}    #u48.25i {560,76}   #u81.33o {588,92}   #u49.25i {636,76}
    #u51.25i {664,76}    #u50.25i {692,76}   #u52.25i {720,76}   #u54.25i {748,76}
    #u53.25i {776,76}

PromAd.8: <180> (348)
    #u81.15o {564,120}   #u48.3i {536,72}    #u47.3i {508,72}    #u49.3i {612,72}
    #u51.3i {640,72}     #u50.3i {668,72}    #u52.3i {696,72}    #u54.3i {724,72}
    #u53.3i {752,72}

PromAd.9: <179> (340)
    #u81.14o {564,116}   #u48.4i {536,76}    #u47.4i {508,76}    #u49.4i {612,76}
    #u51.4i {640,76}     #u50.4i {668,76}    #u52.4i {696,76}    #u54.4i {724,76}
    #u53.4i {752,76}

PromCE0': <326> (100)
    #u47.20i {532,96}    #u78.15o {604,68}

PromCE1': <265> (68)
    #u48.20i {560,96}    #u78.14o {604,72}

PromCE2': <231> (52)
    #u49.20i {636,96}    #u78.13o {604,76}

PromCE3': <329> (104)
    #u50.20i {692,96}    #u78.12o {604,80}

PromCE4': <274> (72)
    #u51.20i {664,96}    #u78.11o {604,84}

PromCE5': <361> (124)
    #u52.20i {720,96}    #u78.10o {604,88}

PromCE6': <424> (176)
    #u53.20i {776,96}    #u78.9o {604,92}

PromCE7': <413> (164)
    #u54.20i {748,96}    #u78.7o {592,88}

PromOE': <177> (340)
    #u53.22i {776,88}    #u54.22i {748,88}   #u52.22i {720,88}   #u50.22i {692,88}
    #u51.22i {664,88}    #u49.22i {636,88}   #rp13.8i {608,92}   #u81.22o {588,136}
    #u48.22i {560,88}    #u47.22i {532,88}

PU: <63> (3116)
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```
    #u40.35i {612,244}    #u40.17i {588,288}    #u44.17i {660,288}    #u46.25i {704,284}
    #u45.17i {836,288}    #u45.25i {860,284}    #u45.35i {860,244}    #u46.35i {704,244}
    #u46.17i {680,288}    #u40.25i {612,284}    #u44.25i {584,284}    #u44.35i {584,244}
    #u81.25i {588,124}    #u81.36i {588,84}     #u78.6i {592,84}      #u41.35i {484,84}
    #u67.2i {332,68}      #u67.1i {332,64}      #u63.13i {280,68}     #u63.10i {280,80}
    #u63.4i {268,76}      #u71.4i {212,76}      #u62.6i {112,84}      #u39.30i {44,184}
    #u39.29i {44,188}     #u39.11i {20,184}     #u71.2i {212,68}      #u63.1i {268,64}
    #u81.17i {564,128}    #u41.25i {484,124}    #u41.17i {460,128}    #u43.32i {428,256}
    #u42.32i {400,256}    #u38.32i {228,256}    #u37.32i {200,256}    #u37.7i {176,248}
    #pu1.2o {92,312}

RandomBit: <324> (408)
    #rp12.2i {504,68}     #u41.15o {460,120}    #u26.13o {176,148}

RawClk: <151> (700)
    #u89.8o {792,88}      #u89.4o {780,76}      #u63.11i {280,76}     #u73.12i {108,72}

RdTOAdrH': <382> (140)
    #u83.1i {364,64}      #u88.15o {500,68}

RdTOAdrL': <353> (116)
    #u88.13o {500,76}     #u86.1i {396,64}

RdTOAdrM': <367> (128)
    #u88.14o {500,72}     #u84.1i {380,64}

RdTOCmd': <273> (72)
    #u88.12o {500,80}     #u82.1i {444,64}

RdTODatH': <309> (92)
    #u88.11o {500,84}     #u86.1i {428,64}

RdTODatL': <345> (112)
    #u88.10o {500,88}     #u87.1i {412,64}

ReadDatH': <80> (212)
    #u76.1i {64,64}       #u76.19i {76,68}      #u59.14o {244,96}

ReadDatL': <77> (92)
    #u77.1i {180,64}      #u77.19i {192,68}     #u59.15o {244,92}

ReadH: <490> (256)
    #u56.13o {328,92}     #u73.2i {96,68}

ReadL: <480> (240)
    #u56.14o {328,88}     #u73.6i {96,80}

RI0: <590> (496)
    C347 {364,40}         #u28.10i {660,240}

RI0': <331> (104)
    #u28.8o {660,248}     #u40.15o {588,280}

RI0t: <469> (876)
    #rp0.2i {864,228}     #u28.9i {660,244}     #v7.1i {64,304}

RI1: <596> (532)
    C335 {316,40}         #u28.13i {660,228}

RI1': <349> (112)
    #u28.11o {660,236}    #u40.14o {588,276}

RI1t: <383> (352)
    #rp1.2i {868,228}     #u28.12i {660,232}    #v18.1i {592,304}

RI2: <607> (576)
    C323 {268,40}         #u29.10i {644,240}

RI2': <292> (80)
    #u29.8o {644,248}     #u40.13o {588,272}

RI2t: <428> (364)
    #rp2.2i {872,228}     #v29.1i {768,304}     #u29.9i {644,244}

RI3: <612> (612)
    C311 {220,40}         #u29.13i {644,228}

RI3': <307> (88)
    #u29.11o {644,236}    #u40.12o {588,268}

RI3t: <479> (572)
    #rp3.2i {876,228}     #u29.12i {644,232}    #v40.1i {384,308}

RI4: <606> (572)
    C447 {252,44}         #u30.10i {628,240}

RI4': <236> (56)
    #u30.8o {628,248}     #u40.11o {588,264}

RI4t: <507> (664)
    #rp4.2i {892,228}     #u30.9i {628,244}     #v51.1i {304,304}

RI5: <611> (608)
    C435 {204,44}         #u30.13i {628,228}

RI5': <253> (64)
    #u30.11o {628,236}    #u40.10o {588,260}

RI5t: <495> (612)
    #rp5.2i {888,228}     #u30.12i {628,232}    #v62.1i {352,304}
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RI6: <622> (716)
    C423 {168,44}          #u31.10i {676,240}

RI6': <320> (96)
    #u31.8o {676,248}      #u40.9o {588,256}

RI6t: <473> (868)
    #rp6.2i {884,228}      #u31.9i {676,244}      #v73.1i {96,308}

RI7: <624> (752)
    C411 {108,44}          #u31.13i {676,228}

RI7': <330> (104)
    #u40.8o {588,252}      #u31.11o {676,236}

RI7t: <457> (816)
    #rp7.2i {880,228}      #u31.12i {676,232}     #v84.1i {144,308}

RTS0: <316> (464)
    #v10.1i {208,304}      #u1.8o {172,248}       C340 {336,40}

RTS0': <9> (52)
    #u1.10i {172,240}      #u1.9i {172,244}       #u37.17o {176,288}

RTS1: <563> (784)
    #v21.1i {448,304}      #u2.8o {108,248}       C328 {288,40}

RTS1': <48> (144)
    #u2.10i {108,240}      #u2.9i {108,244}       #u37.23o {200,292}

RTS2: <460> (516)
    #v32.1i {0,308}        #u3.8o {244,248}       C316 {240,40}

RTS2': <31> (88)
    #u3.10i {244,240}      #u3.9i {244,244}       #u38.17o {204,288}

RTS3: <360> (420)
    #v43.1i {240,308}      #u4.8o {292,248}       C304 {192,40}

RTS3': <44> (116)
    #u4.10i {292,240}      #u4.9i {292,244}       #u38.23o {228,292}

RTS4: <438> (464)
    #u5.8o {372,248}       #v54.1i {240,304}      C440 {224,44}

RTS4': <10> (52)
    #u42.17o {376,288}     #u5.9i {372,244}       #u5.10i {372,240}

RTS5: <415> (500)
    #v65.1i {416,304}      #u6.8o {308,248}       C428 {176,44}

RTS5': <49> (144)
    #u42.23o {400,292}     #u6.9i {308,244}       #u6.10i {308,240}

RTS6: <550> (832)
    #u7.8o {444,248}       #v76.1i {32,308}       C416 {128,44}

RTS6': <32> (88)
    #u43.17o {404,288}     #u7.9i {444,244}       #u7.10i {444,240}

RTS7: <540> (736)
    #u8.8o {492,248}       #v87.1i {208,308}      C404 {80,44}

RTS7': <45> (116)
    #u43.23o {428,292}     #u8.9i {492,244}       #u8.10i {492,240}

RXC0: <571> (424)
    C345 {356,40}          #u13.4i {128,236}

RXC0': <279> (296)
    #u37.12i {176,268}     #u13.6o {128,244}      #u25.1o {4,144}

RXC0a: <99> (512)
    #r32.1i {892,144}      #r15.1i {876,144}      #r52.3i {724,152}      #s3.12o {660,324}

RXC0b: <423> (1176)
    #r33.1i {0,224}        #s3.4i {548,328}       #r53.3i {728,152}      #r15.2o {888,144}

RXC0t: <237> (800)
    #u13.5i {128,240}      #rp0.7i {864,248}      #v2.1i {896,224}

RXC1: <564> (392)
    C333 {308,40}          #u14.4i {112,236}

RXC1': <354> (268)
    #u37.28i {200,272}     #u14.6o {112,244}      #u26.1o {164,144}

RXC1a: <89> (400)
    #r40.1i {796,144}      #r24.1i {780,144}      #r52.5i {724,160}      #s4.12o {576,324}

RXC1b: <141> (432)
    #r41.1i {812,144}      #r24.2o {792,144}      #r53.5i {728,160}      #s4.4i {564,328}

RXC1t: <489> (876)
    #rp1.7i {868,248}      #v13.1i {672,304}      #u14.5i {112,240}

RXC2: <456> (208)
    C321 {260,40}          #u15.4i {248,236}

RXC2': <266> (68)
    #u15.6o {248,244}      #u38.12i {204,268}
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RXC2t: <481> (744)
    #rp2.7i {872,248}     #v24.1i {688,304}     #u15.5i {248,240}

RXC3: <485> (248)
    C309 {212,40}         #u16.4i {264,236}

RXC3': <251> (64)
    #u16.6o {264,244}     #u38.28i {228,272}

RXC3t: <501> (740)
    #rp3.7i {876,248}     #v35.1i {464,308}     #u16.5i {264,240}

RXC4: <514> (292)
    C445 {244,44}         #u17.4i {344,236}

RXC4': <235> (66)
    #u17.6o {344,244}     #u42.12i {376,268}

RXC4t: <516> (852)
    #rp4.7i {892,248}     #u17.5i {344,240}     #v46.1i {112,304}

RXC5: <526> (324)
    C433 {196,44}         #u18.4i {328,236}

RXC5': <327> (100)
    #u18.6o {328,244}     #u42.28i {400,272}

RXC5t: <508> (680)
    #rp5.7i {888,248}     #v57.1i {544,304}     #u18.5i {328,240}

RXC6: <589> (492)
    C421 {148,44}         #u19.4i {448,236}

RXC6': <267> (68)
    #u19.6o {448,244}     #u43.12i {404,268}

RXC6t: <366> (656)
    #rp6.7i {884,248}     #v68.1i {816,304}     #u19.5i {448,240}

RXC7: <601> (556)
    C409 {100,44}         #u20.4i {464,236}

RXC7': <252> (64)
    #u20.6o {464,244}     #u43.28i {428,272}

RXC7t: <442> (620)
    #rp7.7i {880,248}     #u20.5i {464,240}     #v79.1i {336,308}

RXD0: <249> (296)
    #u25.2o {4,148}       #u13.8o {140,248}     #u37.13i {176,272}

RXD0': <569> (420)
    C346 {360,40}         #u13.10i {140,240}

RXD0a: <105> (952)
    #r30.1i {32,224}      #r14.1i {48,224}      #s3.14o {560,316}     #r52.2i {724,148}

RXD0b: <226> (980)
    #r31.1i {16,224}      #r14.2o {60,224}      #s3.13o {560,320}     #r53.2i {728,148}

RXD0t: <436> (908)
    #rp0.6i {864,244}     #u13.9i {140,244}     #v3.1i {16,304}

RXD1: <333> (244)
    #u26.2o {164,148}     #u14.8o {124,248}     #u37.27i {200,276}

RXD1': <561> (388)
    C334 {312,40}         #u14.10i {124,240}

RXD1a: <96> (456)
    #r25.1i {860,144}     #r42.1i {844,144}     #r52.6i {724,164}     #s4.14o {576,316}

RXD1b: <224> (472)
    #r25.2o {872,144}     #r43.1i {828,144}     #r53.6i {728,164}     #s4.13o {576,320}

RXD1t: <513> (864)
    #rp1.6i {868,244}     #v14.1i {640,304}     #u14.9i {124,244}

RXD2: <290> (80)
    #u15.8o {260,248}     #u38.13i {204,272}

RXD2': <450> (204)
    C322 {264,40}         #u15.10i {260,240}

RXD2t: <462> (732)
    #rp2.6i {872,244}     #v25.1i {720,304}     #u15.9i {260,244}

RXD3: <284> (76)
    #u16.8o {276,248}     #u38.27i {228,276}

RXD3': <492> (260)
    C310 {216,40}         #u16.10i {276,240}

RXD3t: <466> (728)
    #rp3.6i {876,244}     #v36.1i {432,308}     #u16.9i {276,244}

RXD4: <221> (44)
    #u42.13i {376,272}    #u17.8o {356,248}

RXD4': <517> (304)
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    C446 {248,44}          #u17.10i {356,240}

RXD4t: <512> (824)
    #rp4.6i {892,244}      #u17.9i {356,244}      #v47.1i {128,304}

RXD5: <305> (88)
    #u18.8o {340,248}      #u42.27i {400,276}

RXD5': <531> (336)
    C434 {200,44}          #u18.10i {340,240}

RXD5t: <486> (668)
    #rp5.6i {888,244}      #v68.1i {528,304}      #u18.9i {340,244}

RXD6: <291> (80)
    #u43.13i {404,272}     #u19.8o {460,248}

RXD6': <591> (504)
    C422 {152,44}          #u19.10i {460,240}

RXD6t: <352> (536)
    #u19.9i {460,244}      #rp8.6i {884,244}      #v69.1i {832,304}

RXD7: <286> (76)
    #u20.8o {476,248}      #u43.27i {428,276}

RXD7': <604> (568)
    C410 {104,44}          #u20.10i {476,240}

RXD7t: <466> (624)
    #rp7.6i {880,244}      #u20.9i {476,244}      #v80.1i {320,308}

SCCInt': <66> (404)
    #u43.5o {404,240}      #u42.5o {376,240}      #u38.5o {204,240}      #u37.5o {176,240}
    #rp11.7i {160,88}      #u58.11i {156,84}

TOXACK: <56> (360)
    #u57.9i {140,84}       #u57.10i {140,80}      #u67.10o {344,80}      #u83.11i {376,100}
    #u84.11i {392,100}     #u85.11i {408,100}     #u87.11i {424,100}     #u86.11i {440,100}
    #u82.11i {456,100}     #u41.14o {460,116}

TXC0: <566> (404)
    C343 {348,40}          #u13.1i {128,224}

TXC0': <314> (292)
    #u37.14o {176,276}     #u13.3o {128,232}      #u26.14o {16,144}

TXC0a: <84> (388)
    #r16.1i {764,144}      #r34.1i {748,144}      #r52.4i {724,156}      #s3.11o {560,328}

TXC0b: <90> (416)
    #r16.2o {776,144}      #r35.1i {732,144}      #r53.4i {728,156}      #s3.5i {548,332}

TXC0t: <455> (964)
    #rp0.8i {864,252}      #u13.2i {128,228}      #v1.1i {0,304}

TXC1: <554> (372)
    C331 {300,40}          #u14.1i {112,224}

TXC1': <379> (288)
    #u37.26o {200,280}     #u14.3o {112,232}      #u26.14o {176,144}

TXC1a: <83> (356)
    #r52.7i {724,168}      #r44.1i {660,144}      #r26.1i {644,144}      #s4.11o {576,328}

TXC1b: <140> (376)
    #r53.7i {728,168}      #r45.1i {676,144}      #r26.2o {656,144}      #s4.6i {564,332}

TXC1t: <499> (884)
    #rp1.8i {868,252}      #v12.1i {656,304}      #u14.2i {112,228}

TXC2: <437> (188)
    C319 {252,40}          #u15.1i {248,224}

TXC2': <304> (88)
    #u15.3o {248,232}      #u38.14o {204,276}

TXC2t: <467> (752)
    #rp2.8i {872,252}      #v23.1i {704,304}      #u15.2i {248,228}

TXC3: <482> (244)
    C307 {204,40}          #u16.1i {264,224}

TXC3': <298> (84)
    #u16.3o {264,232}      #u38.26o {228,280}

TXC3t: <498> (748)
    #rp3.8i {876,252}      #v34.1i {448,308}      #u16.2i {264,228}

TXC4: <510> (288)
    C443 {236,44}          #u17.1i {344,224}

TXC4': <287> (76)
    #u17.3o {344,232}      #u42.14o {376,276}

TXC4t: <478> (800)
    #rp4.8i {892,252}      #u17.2i {344,228}      #v45.1i {192,304}

TXC5: <522> (320)
    C431 {188,44}          #u18.1i {328,224}
```

```
TXC5': <359> (120)
    #u18.3o {328,232}     #u42.26o {400,280}

TXC5t: <461> (688)
    #rp5.8i {888,252}     #v56.1i {464,304}     #u18.2i {328,228}

TXC6: <588> (488)
    C419 {140,44}         #u19.1i {448,224}

TXC6': <306> (88)
    #u19.3o {448,232}     #u43.14o {404,276}

TXC6t: <261> (524)
    #u19.2i {448,228}     #rp6.8i {884,252}     #v67.1i {896,304}

TXC7: <600> (552)
    C407 {92,44}          #u20.1i {464,224}

TXC7': <299> (84)
    #u20.3o {464,232}     #u43.26o {428,280}

TXC7t: <511> (728)
    #rp7.8i {880,252}     #u20.2i {464,228}     #v78.1i {256,308}

TXD0: <58> (680)
    #u55.2i {692,148}     #u1.4i {160,236}      #u1.5i {160,240}      #u37.15o {176,280}

TXD0': <364> (516)
    #u1.6o {160,244}      #v9.1i {224,304}      C344 {352,40}

TXD0a: <144> (776)
    #r10.2o {272,144}     #r60.1i {292,144}     #r51.2i {712,148}     #s3.1i {548,316}

TXD0b: <103> (764)
    #r11.2o {288,144}     #r60.2o {304,144}     #r51.3i {712,152}     #s3.2i {548,320}

TXD1: <60> (776)
    #u2.4i {96,236}       #u2.5i {96,240}       #u37.25o {200,284}    #u55.15i {704,164}

TXD1': <565> (788)
    #u2.6o {96,244}       #v20.1i {432,304}     C332 {304,40}

TXD1a: <223> (412)
    #r51.8i {712,172}     #r22.2o {576,144}     #r63.1i {532,144}     #s4.1i {564,316}

TXD1b: <87> (396)
    #r51.9i {712,176}     #r23.2o {560,144}     #r63.2o {544,144}     #s4.2i {564,320}

TXD2: <18> (72)
    #u3.4i {232,236}      #u3.5i {232,240}      #u38.15o {204,280}

TXD2': <476> (508)
    #v31.1i {16,308}      #u3.6o {232,244}      C320 {256,40}

TXD3: <41> (100)
    #u38.25o {228,284}    #u4.5i {280,240}      #u4.4i {280,236}

TXD3': <360> (396)
    #v42.1i {224,308}     #u4.6o {280,244}      C308 {208,40}

TXD4: <12> (60)
    #u5.4i {360,236}      #u5.5i {360,240}      #u42.15o {376,280}

TXD4': <374> (440)
    #u5.6o {360,244}      #v53.1i {288,304}     C444 {240,44}

TXD5: <51> (152)
    #u6.4i {296,236}      #u6.5i {296,240}      #u42.25o {400,284}

TXD5': <373> (436)
    #v64.1i {368,304}     #u6.6o {296,244}      C432 {192,44}

TXD6: <19> (72)
    #u7.4i {432,236}      #u7.5i {432,240}      #u43.15o {404,280}

TXD6': <530> (744)
    #u7.6o {432,244}      #v75.1i {80,308}      C420 {144,44}

TXD7: <42> (100)
    #u8.4i {480,236}      #u8.5i {480,240}      #u43.25o {428,284}

TXD7': <529> (712)
    #u8.6o {480,244}      #v86.1i {160,308}     C408 {96,44}

VCC: <39> (18272)
    #u22.14i {832,224}    #u34.14i {784,224}    #u24.14i {768,224}    #u23.14i {720,224}
    #u31.14i {676,224}    #u28.14i {660,224}    #u29.14i {644,224}    #u30.14i {628,224}
    #u21.14i {556,224}    #u33.14i {508,224}    #u20.14i {476,224}    #u19.14i {460,224}
    #u17.14i {356,224}    #u18.14i {340,224}    #u32.14i {324,224}    #u16.14i {276,224}
    #u15.14i {260,224}    #u27.14i {156,224}    #u13.14i {140,224}    #u14.14i {124,224}
    #u55.20i {704,144}    #u39.40i {44,144}     #u79.14i {840,64}     #u90.14i {824,64}
    #u80.14i {808,64}     #u89.14i {792,64}     #u53.28i {776,64}     #u54.28i {748,64}
    #u52.28i {720,64}     #u50.28i {692,64}     #u51.28i {664,64}     #u49.28i {636,64}
    #u78.16i {604,64}     #u48.28i {560,64}     #u47.28i {532,64}     #u88.16i {500,64}
    #u82.20i {456,64}     #u86.20i {440,64}     #u87.20i {424,64}     #u85.20i {408,64}
    #u84.20i {392,64}     #u83.20i {376,64}     #u65.14i {360,64}     #u67.14i {344,64}
    #u56.20i {328,64}     #u64.20i {312,64}     #u72.20i {296,64}     #u63.14i {280,64}
    #u60.22i {264,64}     #u59.22i {244,64}     #u71.14i {224,64}     #u69.20i {208,64}
    #u77.20i {192,64}     #u61.14i {176,64}     #u58.16i {156,64}     #u57.14i {140,64}
    #u62.16i {124,64}     #u73.14i {108,64}     #u68.20i {92,64}      #u76.20i {76,64}
    #u70.16i {60,64}      #u75.20i {44,64}      #u74.20i {28,64}      E184 {224,4}
```

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    E182 {216,4}        E181 {212,4}        E183 {220,4}        E105 {420,0}
    E106 {424,0}        E104 {416,0}        E103 {412,0}        #pu1.1i {80,312}
    #c37.1i {256,312}   #c36.1i {240,312}   #c33.1i {288,312}   #c29.1i {272,312}
    #c25.1i {304,312}   #c24.1i {320,312}   #c21.1i {208,312}   #c17.1i {192,312}
    #c13.1i {224,312}   #c12.1i {160,312}   #c9.1i {176,312}    #c5.1i {144,312}
    #c1.1i {128,312}    #c60.1i {608,308}   #c49.1i {624,308}   #c48.1i {640,308}
    #c47.1i {660,308}   #c46.1i {644,308}   #c45.1i {676,308}   #c44.1i {692,308}
    #c43.1i {612,308}   #c42.1i {628,308}   #c41.1i {496,308}   #c40.1i {480,308}
    #c39.1i {336,312}   #c38.1i {368,312}   #c63.1i {48,312}    #c62.1i {64,312}
    #c61.1i {704,308}   #c60.1i {112,312}   #c59.1i {96,312}    #c58.1i {672,308}
    #c57.1i {688,308}   #c56.1i {352,312}   #c55.1i {656,308}   #c54.1i {736,308}
    #c53.1i {752,308}   #c52.1i {720,308}   #c51.1i {384,312}   #c76.1i {832,308}
    #c75.1i {848,308}   #c74.1i {800,308}   #c73.1i {816,308}   #c72.1i {784,308}
    #c71.1i {768,308}   #c70.1i {0,312}     #c69.1i {896,308}   #c68.1i {16,312}
    #c67.1i {32,312}    #c66.1i {864,308}   #c65.1i {880,308}   #c64.1i {400,312}
    #c90.1i {396,316}   #c88.1i {476,316}   #c87.1i {460,316}   #c86.1i {444,316}
    #c85.1i {428,316}   #c84.1i {412,316}   #c83.1i {332,316}   #c82.1i {348,316}
    #c81.1i {316,316}   #c80.1i {300,316}   #c79.1i {380,316}   #c78.1i {364,316}
    #c77.1i {284,316}   #u45.23i {860,292}  #u46.23i {704,292}  #u40.23i {612,292}
    #u44.23i {584,292}  #u43.9i {404,256}   #u42.9i {376,256}   #u38.9i {204,256}
    #u37.9i {176,256}   #u26.3i {164,152}   #u25.3i {4,152}     #r3.1i {844,64}
    #d18.1i {892,64}    #rp13.1i {608,64}   #u81.23i {588,132}  #rp12.1i {504,64}
    #u41.23i {484,132}  #rp11.1i {160,64}

WriteDatH': <418> (168)
    #u60.7o {248,88}    #u68.11i {92,100}

XACK/: <94> (456)
    #u57.6o {128,84}    #u57.8o {140,88}    E123 {492,0}

zAS': <190> (1692)
    #u39.27i {44,196}   #u37.35i {200,244}  #u38.35i {228,244}  #u60.14o {264,96}
    #u42.35i {400,244}  #u43.35i {428,244}  #u44.34i {584,248}  #u81.34i {588,88}
    #u41.34i {484,88}   #u40.34i {612,248}  #u46.34i {704,248}  #u45.34i {860,248}

zClk: <188> (1684)
    #u39.14i {20,196}   #u37.20i {176,300}  #u38.20i {204,300}  #u42.20i {376,300}
    #u43.20i {404,300}  #u60.12o {264,104}  #u41.16i {460,124}  #u81.16i {564,124}
    #u44.16i {560,284}  #u40.16i {588,284}  #u46.16i {680,284}  #u45.16i {836,284}

zCS': <73> (252)
    #u75.1i {32,64}     #u75.19i {44,68}    #u70.4i {48,76}     #u62.4i {112,76}
    #u60.10o {248,100}

zData.0: <69> (1504)
    #u77.18o {192,72}   #u69.2i {196,68}    #u68.2i {80,68}     #u76.18o {76,72}
    #u75.18o {44,72}    #u39.21i {44,220}   #u37.4i {176,236}   #u38.4i {204,236}
    #u43.4i {404,236}   #u42.4i {376,236}   #u41.4i {460,76}    #u81.4i {564,76}
    #u44.4i {560,236}   #u40.4i {588,236}   #u46.4i {680,236}   #u45.4i {836,236}

zData.1: <74> (1640)
    #u39.22i {44,216}   #u75.16o {44,80}    #u76.16o {76,80}    #u68.3i {80,72}
    #u69.3i {196,72}    #u77.16o {192,80}   #u37.37i {200,236}  #u38.37i {228,236}
    #u42.37i {400,236}  #u43.37i {428,236}  #u44.3i {560,232}   #u81.3i {564,72}
    #u41.3i {460,72}    #u40.3i {588,232}   #u46.3i {680,232}   #u45.3i {836,232}

zData.2: <109> (1728)
    #u41.2i {460,68}    #u77.14o {192,88}   #u69.4i {196,76}    #u68.4i {80,76}
    #u76.14o {76,88}    #u75.14o {44,88}    #u39.23i {44,212}   #u37.3i {176,232}
    #u38.3i {204,232}   #u42.3i {376,232}   #u43.3i {404,232}   #u44.2i {560,228}
    #u81.2i {564,68}    #u40.2i {588,228}   #u46.2i {680,228}   #u45.2i {836,228}

zData.3: <145> (1616)
    #u39.24i {44,208}   #u75.12o {44,96}    #u76.12o {76,96}    #u68.5i {80,80}
    #u69.5i {196,80}    #u77.12o {192,96}   #u37.38i {200,232}  #u38.38i {228,232}
    #u42.38i {400,232}  #u43.38i {428,232}  #u44.1i {560,224}   #u81.1i {564,64}
    #u41.1i {460,64}    #u40.1i {588,224}   #u46.1i {680,224}   #u45.1i {836,224}

zData.4: <191> (1712)
    #u39.19i {20,216}   #u75.9o {32,96}     #u76.9o {64,96}     #u68.6i {80,84}
    #u77.9o {180,96}    #u69.6i {196,84}    #u37.2i {176,228}   #u38.2i {204,228}
    #u42.2i {376,228}   #u43.2i {404,228}   #u44.40i {584,224}  #u81.40i {588,64}
    #u41.40i {484,64}   #u40.40i {612,224}  #u46.40i {704,224}  #u45.40i {860,224}

zData.5: <108> (1632)
    #u39.18i {20,212}   #u75.7o {32,88}     #u76.7o {64,88}     #u68.7i {80,88}
    #u77.7o {180,88}    #u69.7i {196,88}    #u37.39i {200,228}  #u38.39i {228,228}
    #u42.39i {400,228}  #u43.39i {428,228}  #u44.39i {584,228}  #u81.39i {588,68}
    #u41.39i {484,68}   #u40.39i {612,228}  #u46.39i {704,228}  #u45.39i {860,228}

zData.6: <194> (1900)
    #u37.1i {176,224}   #u38.1i {204,224}   #u69.8i {196,92}    #u77.5o {180,80}
    #u68.8i {80,92}     #u76.5o {64,80}     #u75.5o {32,80}     #u39.17i {20,208}
    #u42.1i {376,224}   #u43.1i {404,224}   #u44.38i {584,232}  #u81.38i {588,72}
    #u41.38i {484,72}   #u40.38i {612,232}  #u46.38i {704,232}  #u45.38i {860,232}

zData.7: <193> (1744)
    #u39.16i {20,204}   #u75.3o {32,72}     #u76.3o {64,72}     #u68.9i {80,96}
    #u69.9i {196,96}    #u77.3o {180,72}    #u37.40i {200,224}  #u38.40i {228,224}
    #u42.40i {400,224}  #u43.40i {428,224}  #u44.37i {584,236}  #u81.37i {588,76}
    #u41.37i {484,76}   #u40.37i {612,236}  #u46.37i {704,236}  #u45.37i {860,236}

zDESbyte': <238> (60)
    #u61.10i {176,80}   #u62.14o {124,72}

zDESword': <264> (68)
    #u61.9i {176,84}    #u62.15o {124,68}

zDialer0': <618> (684)
    #u44.36i {584,240}  #u70.12o {60,80}
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zDialer1': <632> (984)
    #u45.36i {860,240}    #u70.13o {60,76}

zDialer2': <625> (812)
    #u46.36i {704,240}    #u70.14o {60,72}

zDS': <192> (1736)
    #u45.5i {836,240}     #u46.5i {680,240}     #u40.5i {588,240}     #u41.5i {460,80}
    #u81.5i {664,80}      #u44.5i {560,240}     #u43.36i {428,240}    #u42.36i {400,240}
    #u38.36i {228,240}    #u37.36i {200,240}    #u69.11i {208,100}    #u63.5o {268,80}
    #u39.26i {44,200}

zEProm': <586> (468)
    #u81.36i {588,80}     #u62.13o {124,76}

zIE: <425> (176)
    #u42.7i {376,248}     #u38.6o {204,244}

zIntA': <186> (456)
    #u60.9o {248,96}      #u37.8i {176,252}     #u38.8i {204,252}     #u42.8i {376,252}
    #u43.8i {404,252}

zMisc': <549> (360)
    #u41.36i {484,80}     #u62.12o {124,80}

zModem': <621> (704)
    #u40.36i {612,240}    #u70.10o {60,88}

zRW: <189> (1676)
    #u39.28i {44,192}     #u37.34i {200,248}    #u38.34i {228,248}    #u60.13o {264,100}
    #u42.34i {400,248}    #u43.34i {428,248}    #u44.6i {560,244}     #u81.6i {664,84}
    #u41.6i {460,84}      #u40.6i {588,244}     #u46.6i {680,244}     #u45.6i {836,244}

zSCC0': <487> (252)
    #u37.33i {200,252}    #u62.7o {112,88}

zSCC1': <493> (264)
    #u38.33i {228,252}    #u62.9o {124,92}

zSCC2': <583> (440)
    #u42.33i {400,252}    #u62.10o {124,88}

zSCC3': <587> (472)
    #u43.33i {428,252}    #u62.11o {124,84}

zXACK': <234> (56)
    #u60.8o {248,92}      #u71.3i {212,72}
```