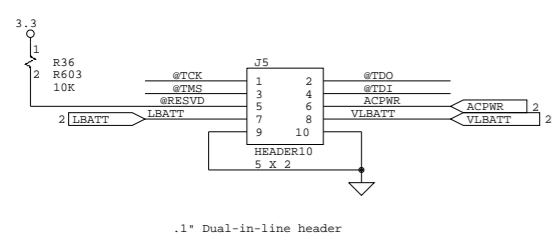
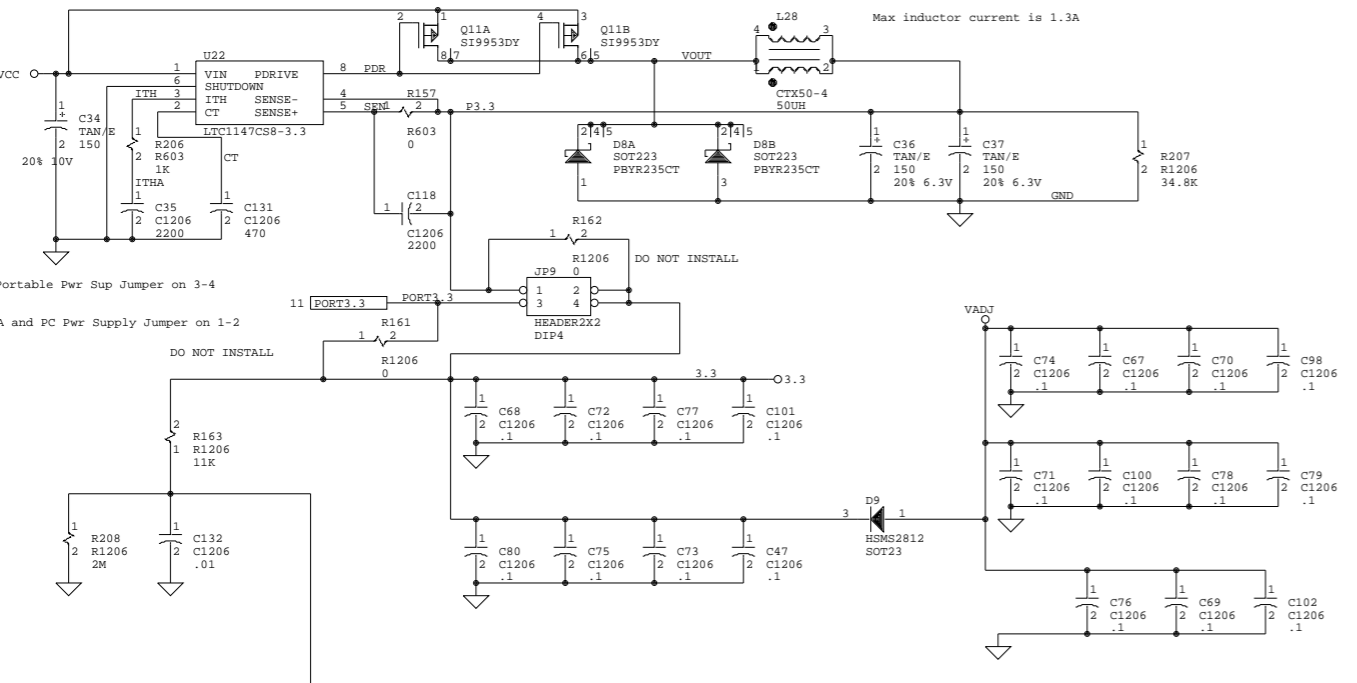


* = Plastic pin locator

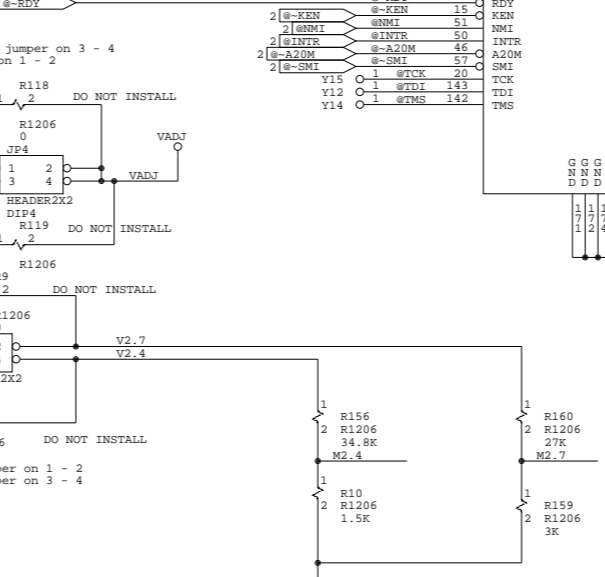
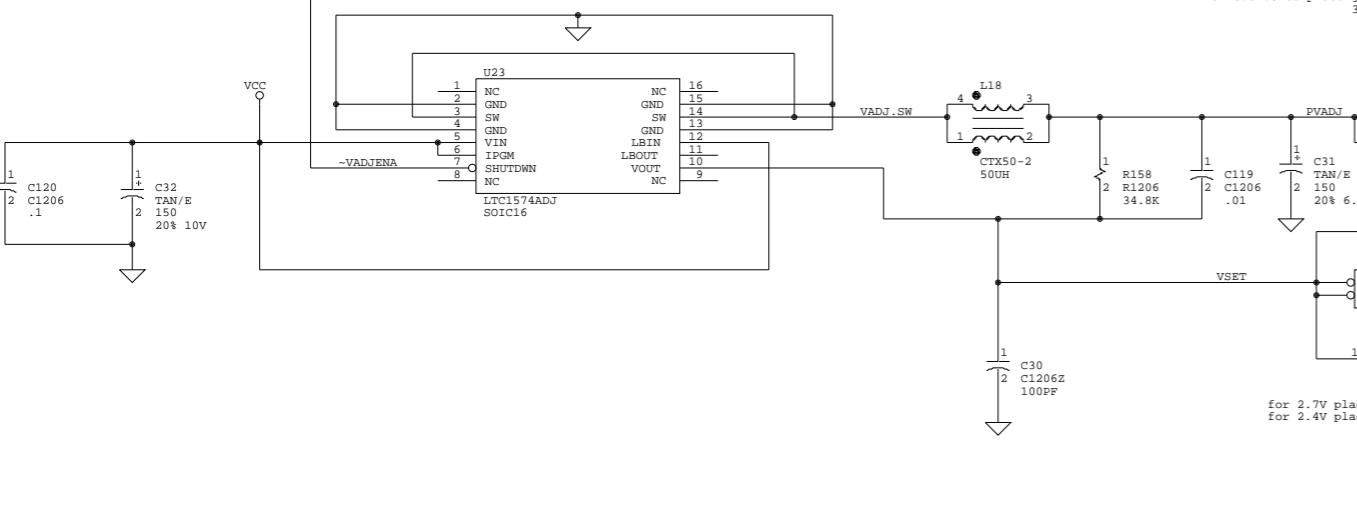
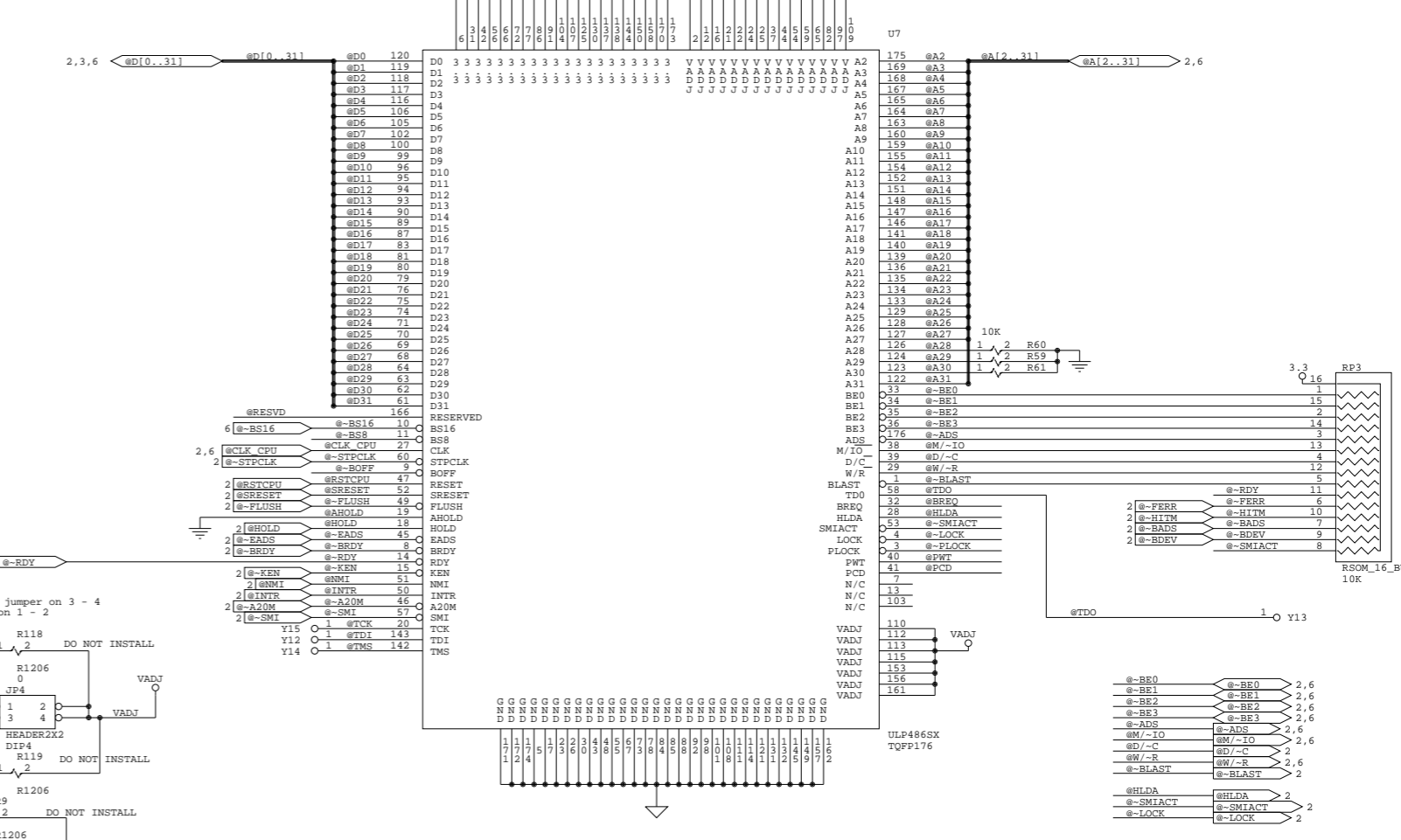


1" Dual-in-line header

J2 LEFT	J1 TOP	J3 Right	J4 Bottom
1 @PDT	1 @-ADS	1 GND	1 GND
2 @PDT	2 @A2	2 @A25	2 @D16
3 @D/-C	3 GND	3 @A27	3 GND
4 @PDT	4 @A3	4 @A28	4 @D17
5 GND	5 @A4	5 @A29	5 @D18
6 @-BE2	6 @A5	6 @A30	6 GND
7 @-BE1	7 @A6	7 @A31	7 @D19
8 @PWR	8 @A7	8 @A32	8 @D20
9 GND	9 @A8	9 @A33	9 @D21
10 @HDA	10 @A9	10 @A34	10 @D22
11 @HDA	11 @A10	11 @A35	11 @D23
12 @HDA	12 @A11	12 @A36	12 @D24
13 @HDA	13 @A12	13 @A37	13 @D25
14 @HDA	14 @A13	14 @A38	14 @D26
15 @HDA	15 @A14	15 @A39	15 @D27
16 @HDA	16 @A15	16 @A40	16 @D28
17 @HDA	17 @A16	17 @A41	17 @D29
18 @HDA	18 @A17	18 @A42	18 @D30
19 @HDA	19 @A18	19 @A43	19 @D31
20 @HDA	20 @A19	20 @A44	20 @D32
21 @HDA	21 @A20	21 @A45	21 @D33
22 @HDA	22 @A21	22 @A46	22 @D34
23 @HDA	23 @A22	23 @A47	23 @D35
24 @HDA	24 @A23	24 @A48	24 @D36
25 @HDA	25 @A24	25 @A49	25 @D37
26 @HDA	26 @A25	26 @A50	26 @D38
27 @HDA	27 @A26	27 @A51	27 @D39
28 @HDA	28 @A27	28 @A52	28 @D40
29 @HDA	29 @A28	29 @A53	29 @D41
30 @HDA	30 @A29	30 @A54	30 @D42
31 @HDA	31 @A30	31 @A55	31 @D43
32 @HDA	32 @A31	32 @A56	32 @D44
33 @HDA	33 @A32	33 @A57	33 @D45
34 @HDA	34 @A33	34 @A58	34 @D46
35 @HDA	35 @A34	35 @A59	35 @D47
36 @HDA	36 @A35	36 @A60	36 @D48
37 @HDA	37 @A36	37 @A61	37 @D49
38 @HDA	38 @A37	38 @A62	38 @D50
39 @HDA	39 @A38	39 @A63	39 @D51
40 @HDA	40 @A39	40 @A64	40 @D52



Portable Pwr Sup Jumper on 3-4
ISA and PC Pwr Supply Jumper on 1-2



NOTES:
VCC is the +5 Volt Plane
Signals starting with @ are 3.3V signals
VCCP = +3.3V, VCC = VADJ for ULP 486SX Processor

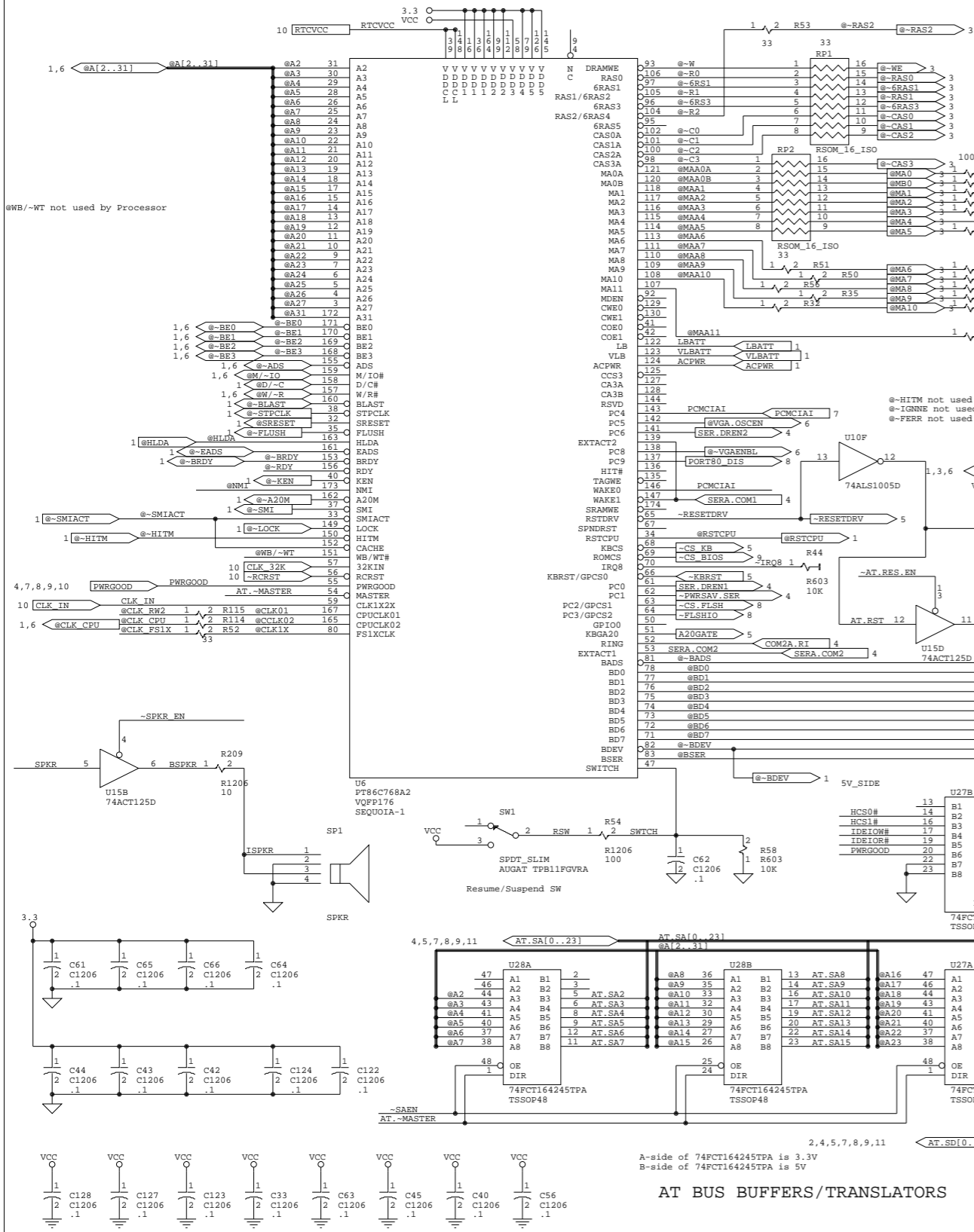
- link
- humredw.sch
- humdram.sch
- humser.sch
- humkb.sch
- humvga.sch
- humcard2.sch
- humffs.sch
- humbb.sch
- humck.sch
- humisa2.sch

Although RadiSys has verified this design to be functional. Neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

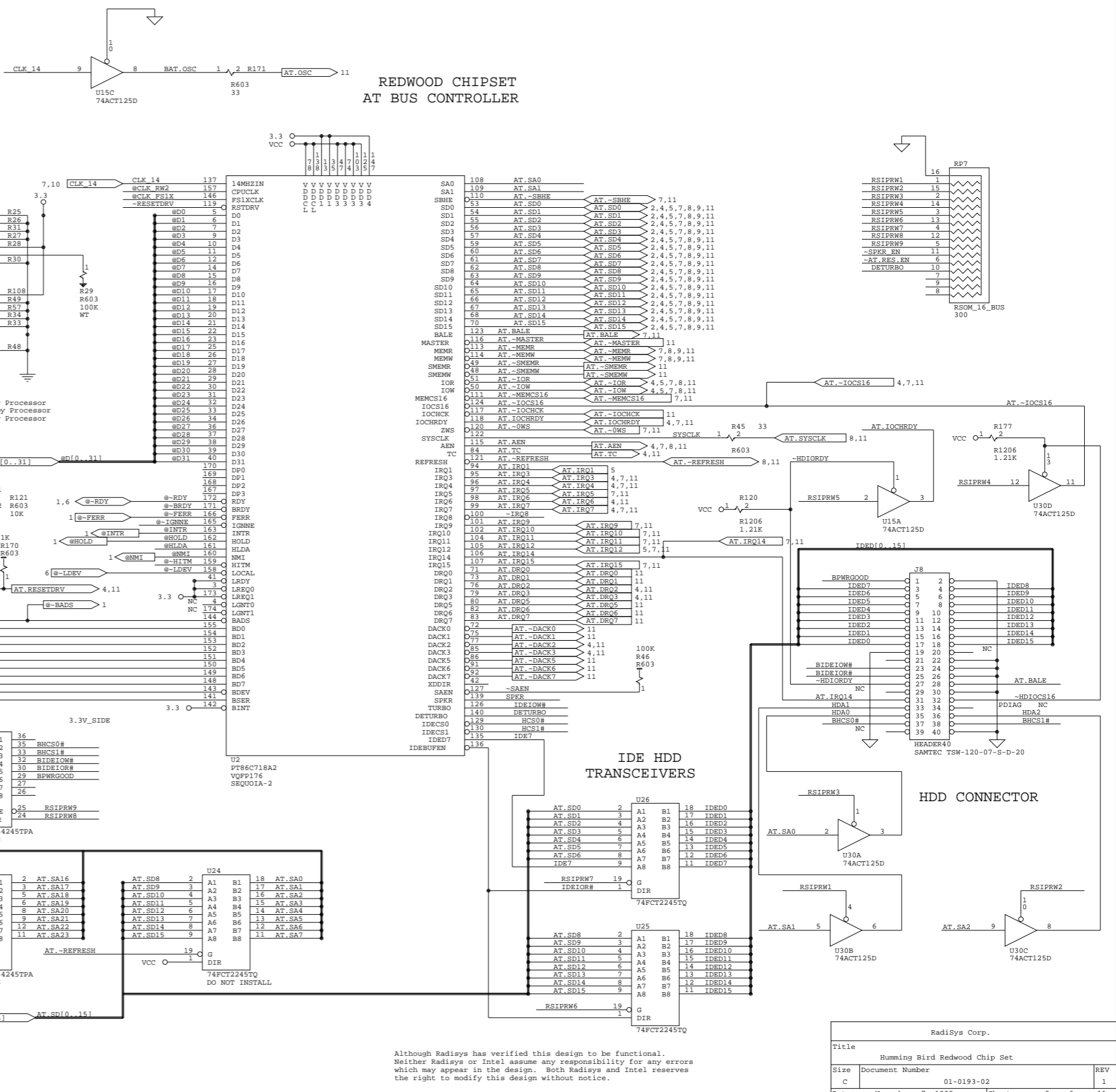
RadiSys Corp.		
Title	Humming Bird Eval BD CPU	
Size	Document Number	REV
C	01-0193-02	1
Date:	September 28, 1995	Sheet 1 of 11

REDWOOD CHIP SET
DRAM CONTROLLER

Programming of MA0-MA11 lines
At Rising edge of PWRGOOD
@MA0A LOW implies 160 Pin Pkg
@MA1 High implies 386, low implies 486
@MA4 High implies Intel Processor with L1 WB
@MA4 Low implies other CPUs
@MA11 Low implies internal RTC, High implies External



REDWOOD CHIPSET
AT BUS CONTROLLER



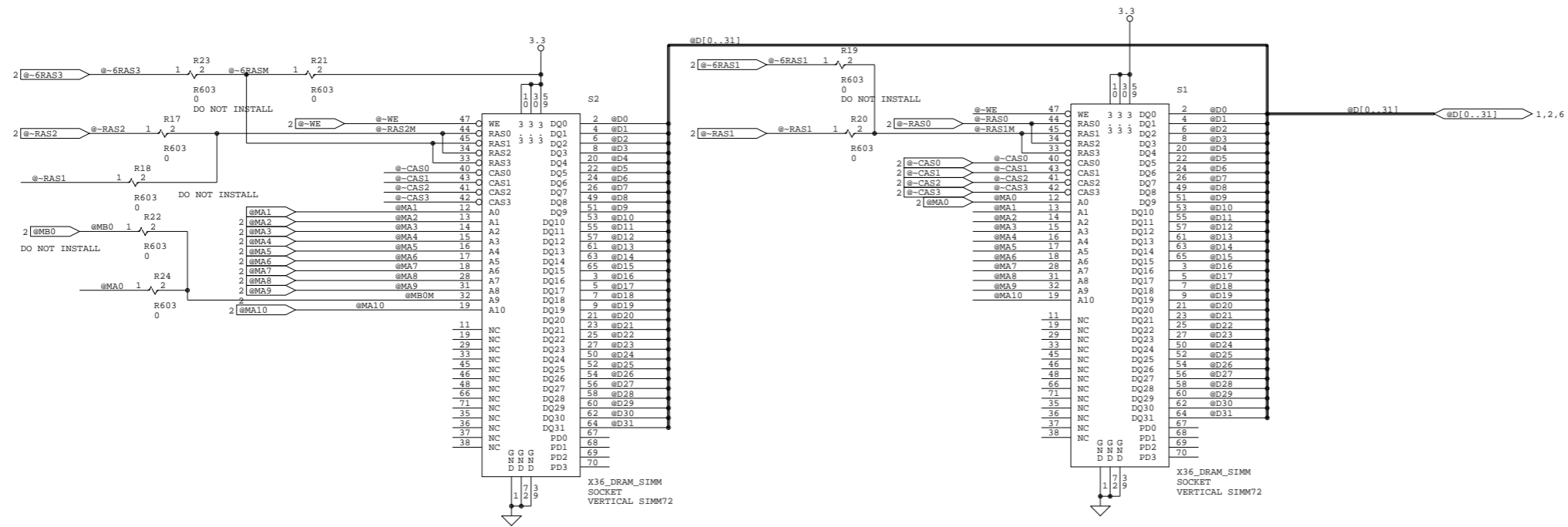
U4, U5, U7, U12 Power Supply is both +3.3 and +5V
U6, U8, U9, U10, U11, U16 Power Supply is +5 Volts
VCC Plane is + 5 Volts

A-side of 74FCT164245TPA is 3.3V
B-side of 74FCT164245TPA is 5V

AT BUS BUFFERS/TRANSLATORS

Although RadiSys has verified this design to be functional, neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

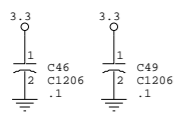
RadiSys Corp.			
Title	Humming Bird Redwood Chip Set		
Size	Document Number	01-0193-02	REV 1
C	Date:	November 7, 1995	Sheet 2 of 11



FLASH DRAM SOCKET
Socket Closest to Processor

DRAM SOCKET
Socket Closest to Edge of Board

Power Supply for SIMM Sockets is +3.3 Volts



RadiSys Corp.			
Title HUMBIRD DRAM			
Size	Document Number		REV
C	01-0193-02		1
Date:	September 28, 1995	Sheet	3 of 12

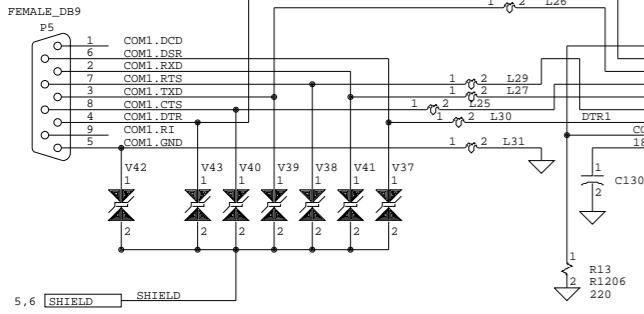
Although RadiSys has verified this design to be functional, Neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

DTE PORT		DCE PORT	
OUT TXD	-->	IN TXD	
IN RXD	<--	OUT RXD	
OUT RTS	-->	IN RTS	
IN CTS	<--	OUT CTS	
OUT DTR	-->	IN DTR	
IN DSR	<--	OUT DSR	

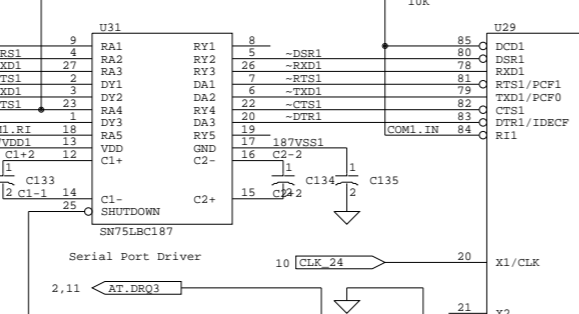
On a DCE Port the RXD/TXD, CTS/RTS, and DTR/DSR are swapped. Thus the RXD signal from a DCE port is an output and the TXD signal is an input.

The COM1.DCD and COM1.RI are outputs normally from a standard modem.

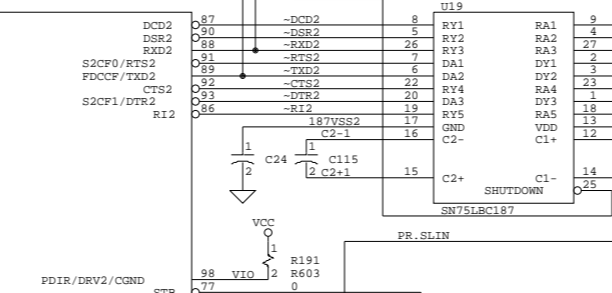
DCE SERIAL PORT



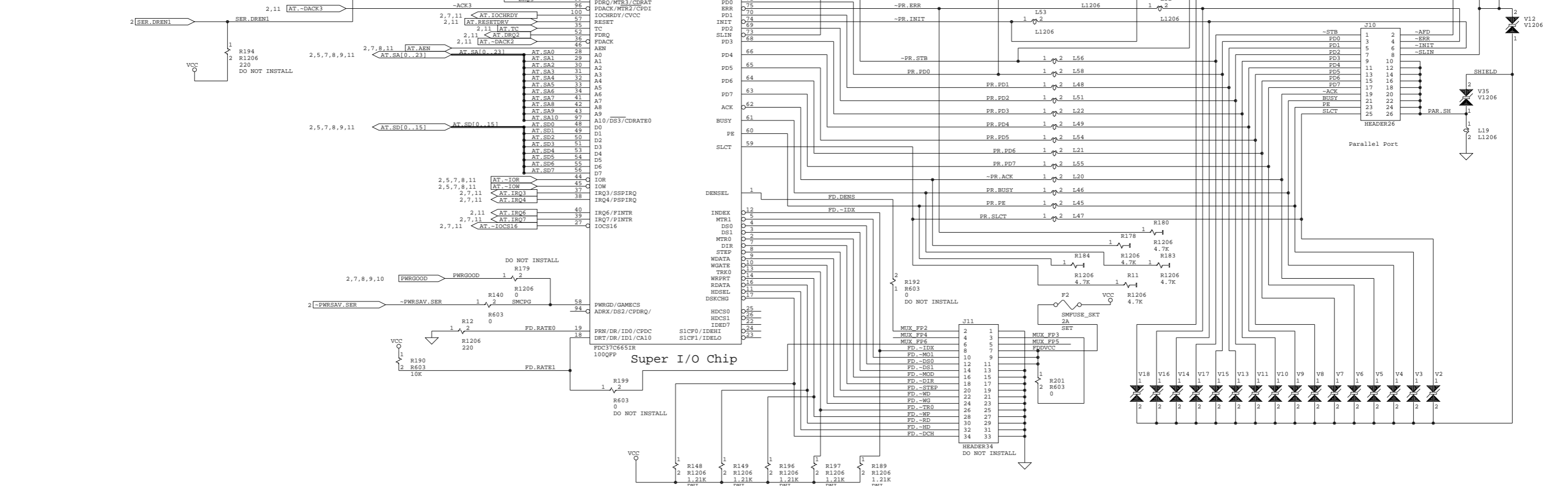
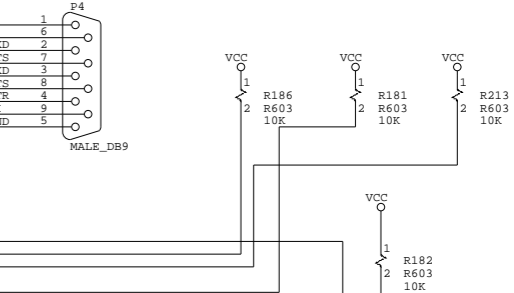
COM1 SERIAL PORT DRIVER



COM2 Serial Port Driver



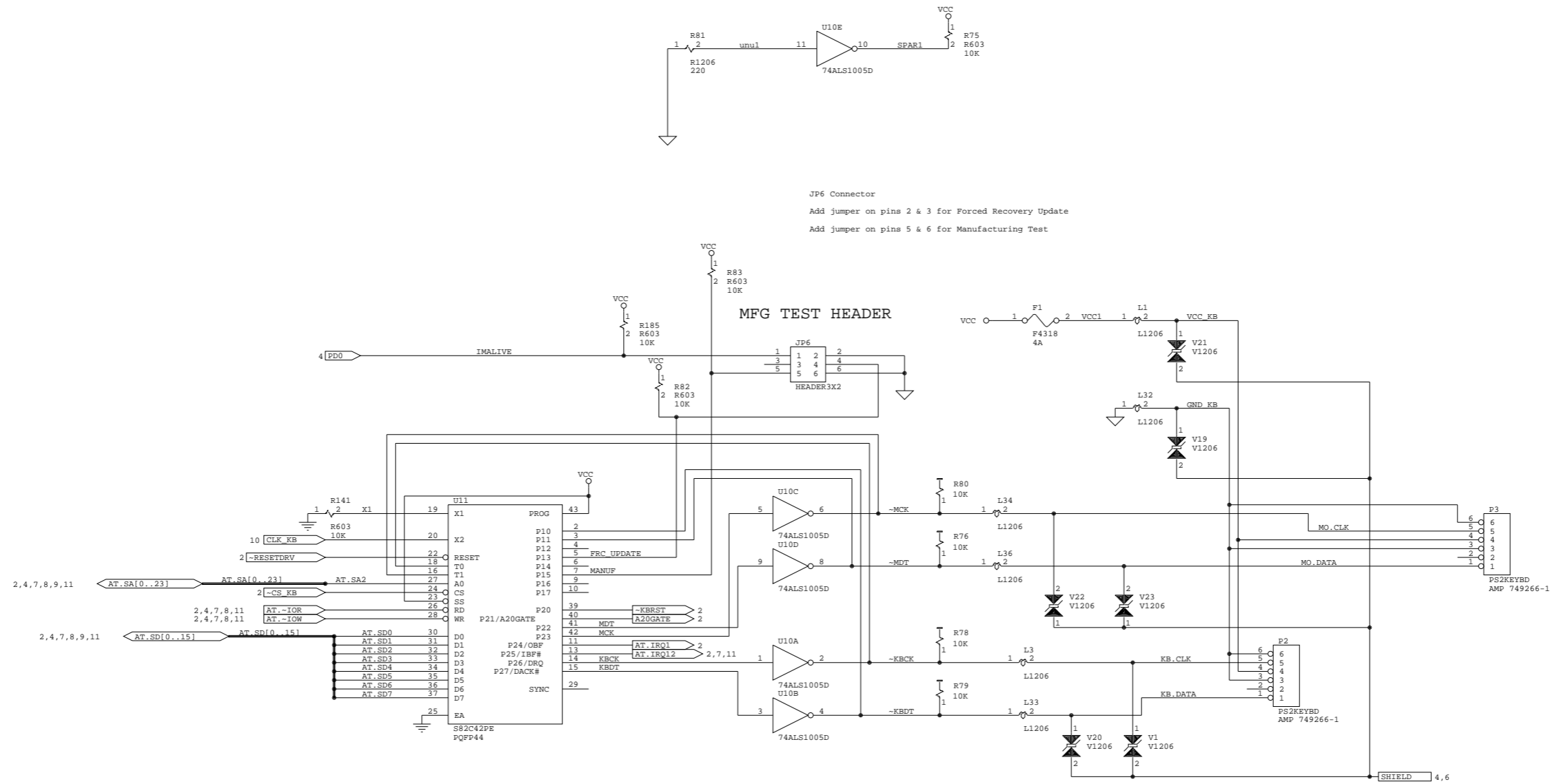
DTE SERIAL PORT



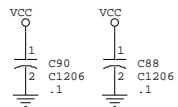
U13,U14,U15 Power Supply = +5 Volts
VCC is +5 Volt Plane

Although RadiSys has verified this design to be functional. Neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

RadiSys Corporation			
Title	Humming Bird Serial ports		
Size	Document Number	01-0193-02	REV 1
C	Date:	September 28, 1995	Sheet 4 of 11

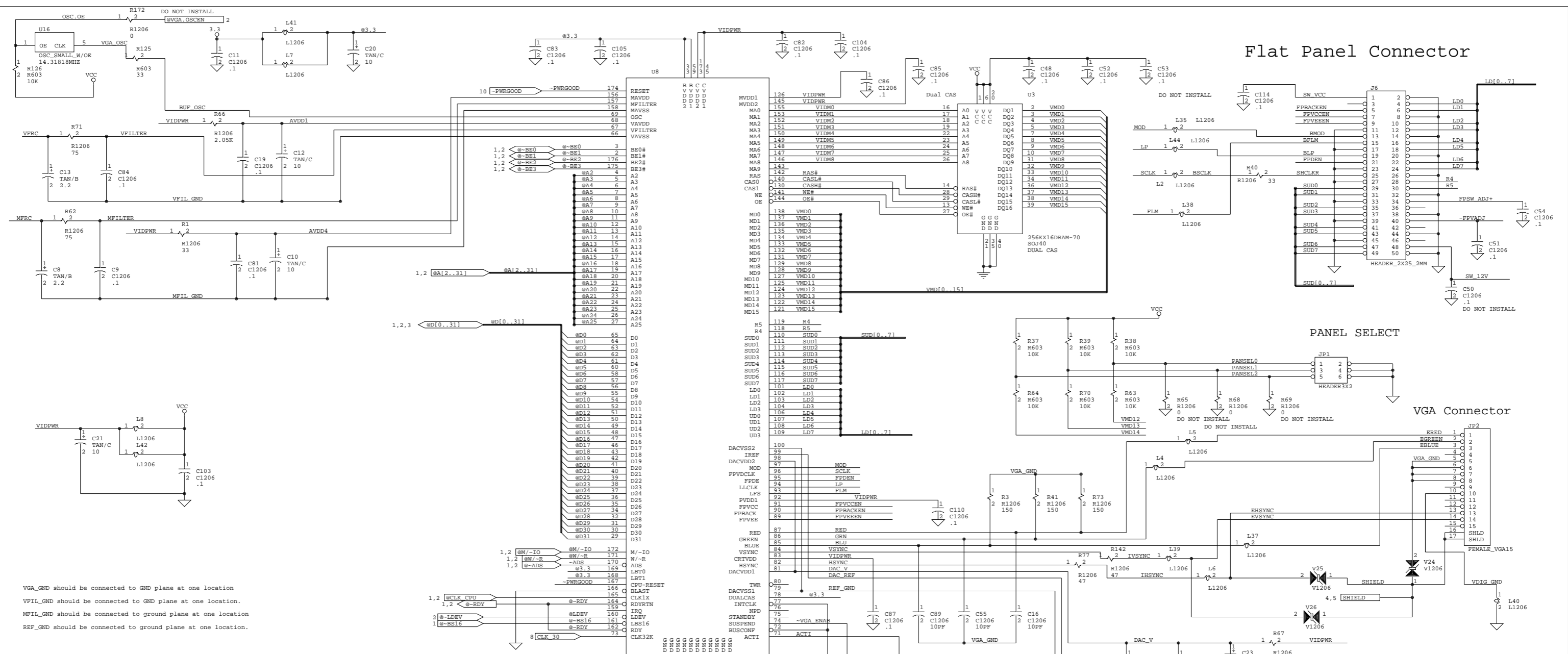


U16 Power Supply = +5 Volts
 U17 Power Supply = +5 Volts
 VCC Plane is + 5 Volts



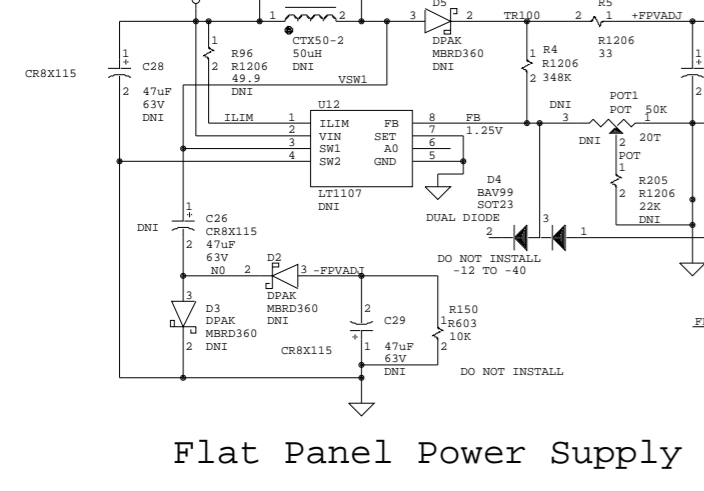
Although RadiSys has verified this design to be functional, Neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

RadiSys Corp.		
Title	Humming Bird Keyboard/Mouse	
Size	Document Number	REV
C	01-0193-02	1
Date:	September 28, 1995	Sheet 5 of 11

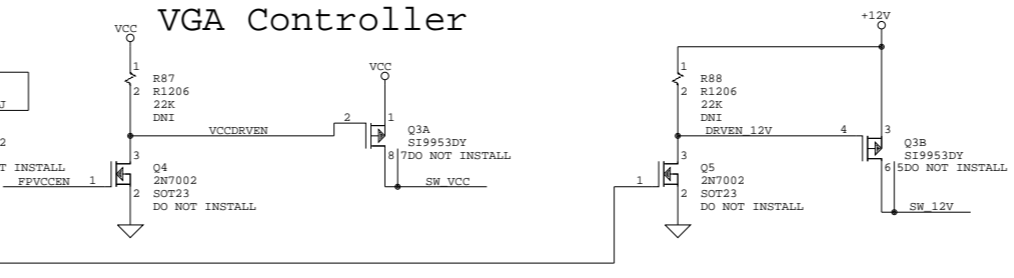


VGA_GND should be connected to GND plane at one location
 VFIL_GND should be connected to GND plane at one location.
 MFIL_GND should be connected to ground plane at one location
 REF_GND should be connected to ground plane at one location.

REF_GND and VGA_GND connected together and connected at one point to GND



Flat Panel Power Supply



VIDPWR Plane is Filtered +5 Volts

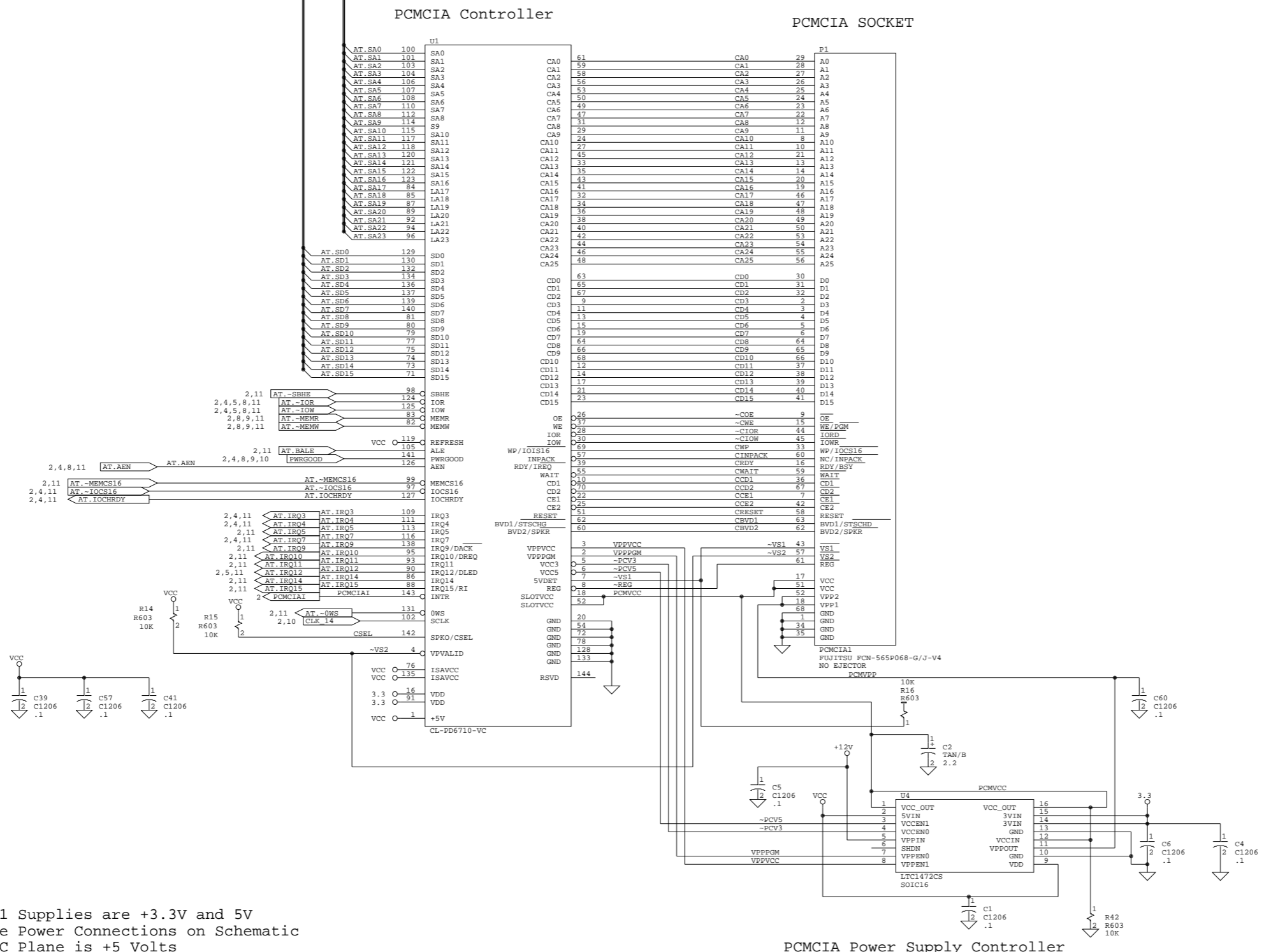
U18, U19, U30, U32 Power Supply = +5 Volts

VCC Power Supply = +5 Volt Plane

Although Radisyas has verified this design to be functional. Neither Radisyas or Intel assume any responsibility for any errors which may appear in the design. Both Radisyas and Intel reserves the right to modify this design without notice.

RADISYS CORPORATION			
Title	Humming Bird Video Display		
Size	Document Number	01-0193-02	REV
Date:	September 28, 1995	Sheet	6 of 11

2,4,5,8,9,11 AT_SA[0..23] AT_SA[0..23]
 2,4,5,8,9,11 AT_SD[0..15] AT_SD[0..15]

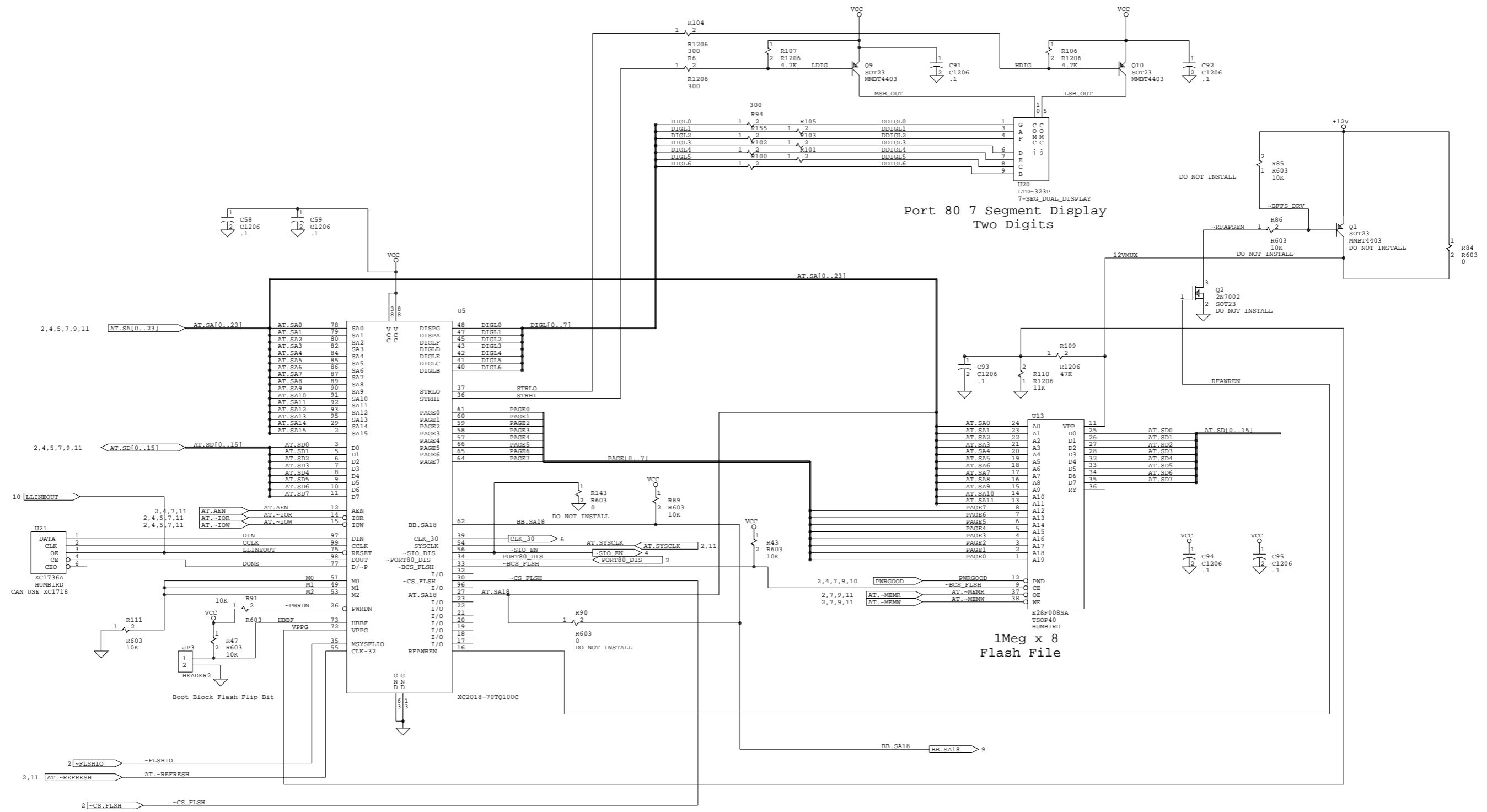


U21 Supplies are +3.3V and 5V
 See Power Connections on Schematic
 VCC Plane is +5 Volts

PCMCIA Power Supply Controller

Although RadiSys has verified this design to be functional, neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

RadiSys Corporation		
Title	Humming Bird PCMCIA CKTS	
Size	Document Number	REV
C	01-0193-02	
Date:	September 28, 1995	Sheet 7 of 11

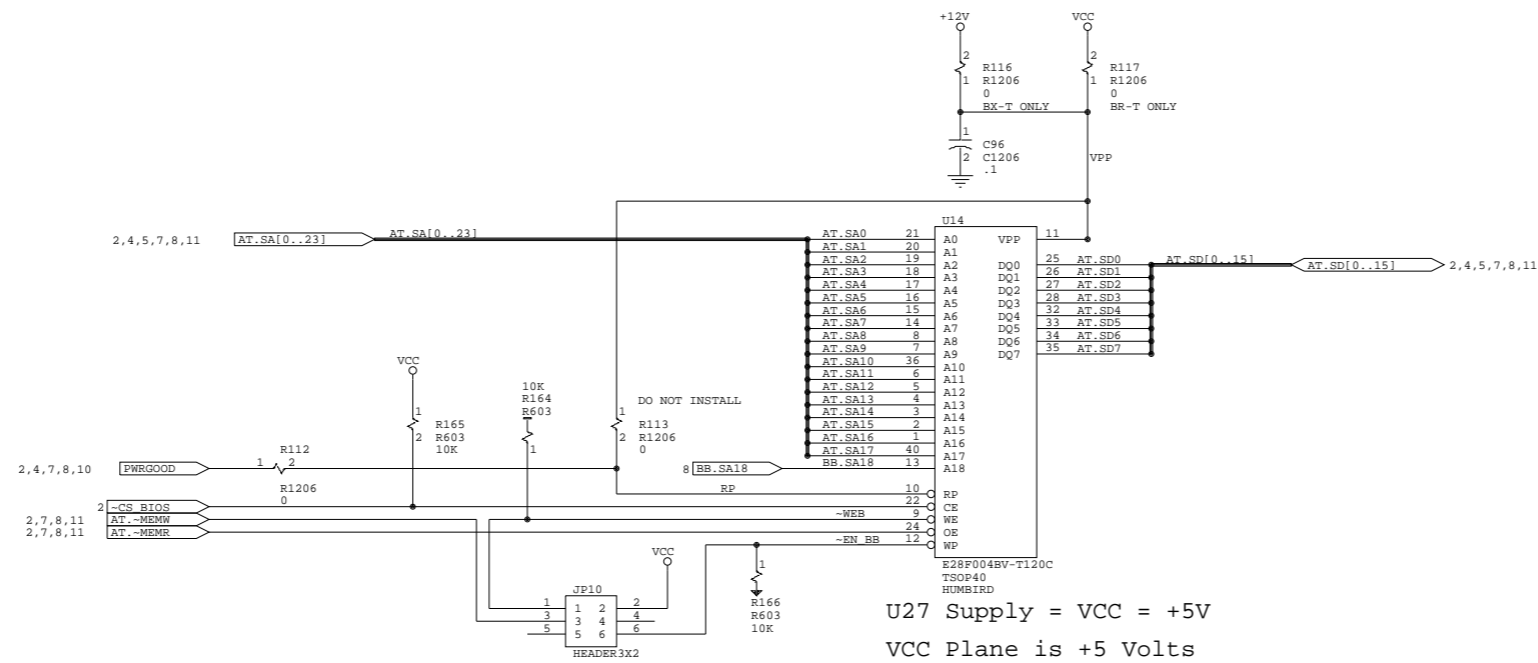


U23,U25,U31 Power Supply = +5 Volts
VCC Plane is +5 Volts



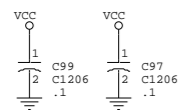
Although Radiays has verified this design to be functional. Neither Radiays or Intel assume any responsibility for any errors which may appear in the design. Both Radiays and Intel reserves the right to modify this design without notice.

Radiays Corporation		
Title Humming Bird HEB, Flash File		
Size	Document Number	REV
C	01-0193-02	
Date:	September 28, 1995	Sheet 8 of 11



U27 Supply = VCC = +5V
VCC Plane is +5 Volts

Jumpers	Comment
1-3	Write to Flash except Boot Block
1-3 & 2-6	Write to Flash and Boot Block

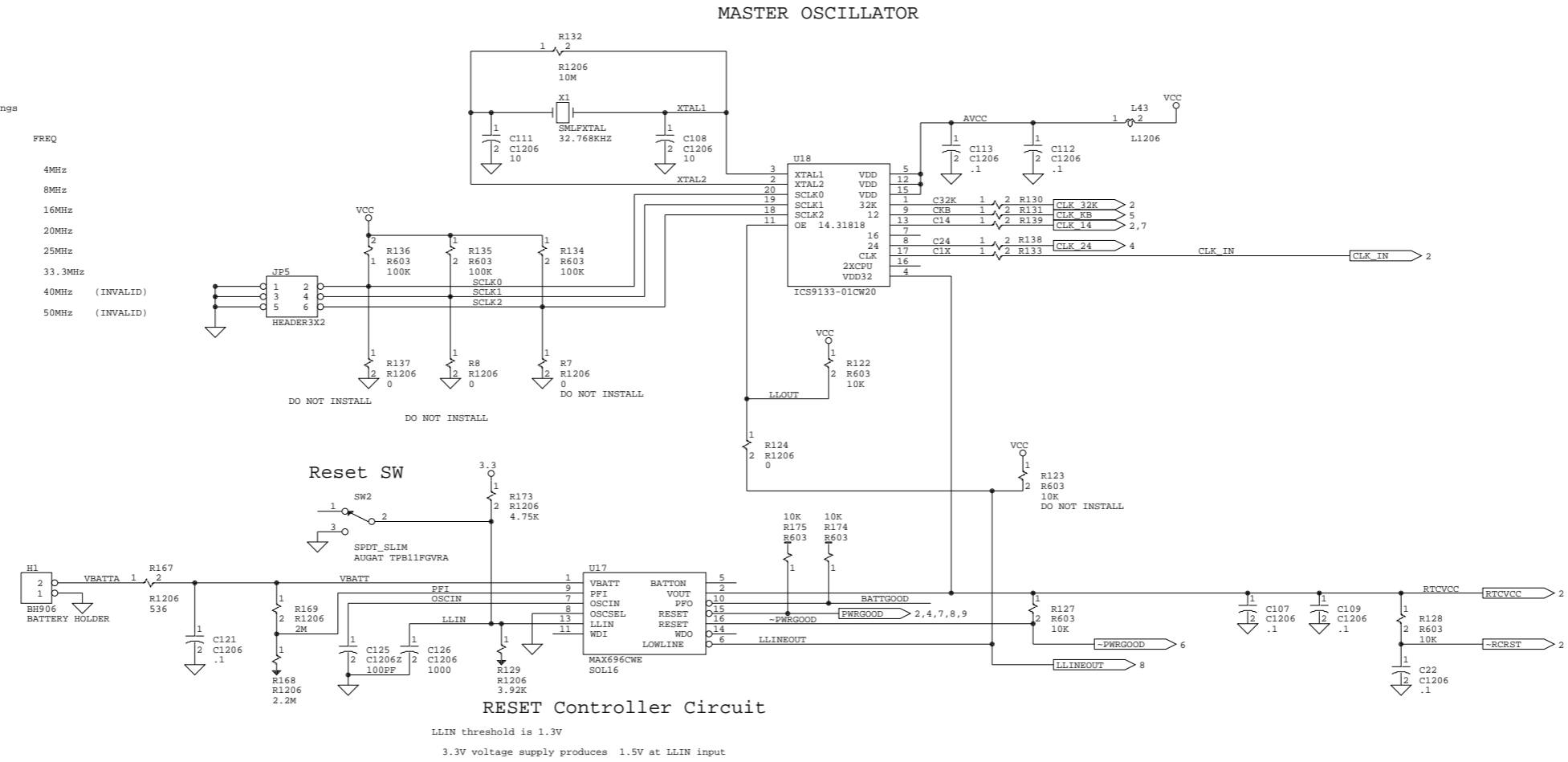


Although Radisys has verified this design to be functional. Neither Radisys or Intel assume any responsibility for any errors which may appear in the design. Both Radisys and Intel reserves the right to modify this design without notice.

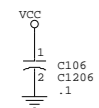
Radisys Corp.		
Title HBB DRAM and BOOT BLOCK FLASH		
Size C	Document Number 01-0193-02	REV 1
Date: September 28, 1995	Sheet 9	of 11

CPU Frequency vs Jumper Settings

SCLK2	SCLK1	SCLK0	FREQ			
0	IN	0	IN	0	IN	4MHz
0	IN	0	IN	1	OUT	8MHz
0	IN	1	OUT	0	IN	16MHz
0	IN	1	OUT	1	OUT	20MHz
1	OUT	0	IN	0	IN	25MHz
1	OUT	0	IN	1	OUT	33.3MHz
1	OUT	1	OUT	0	IN	40MHz (INVALID)
1	OUT	1	OUT	1	OUT	50MHz (INVALID)

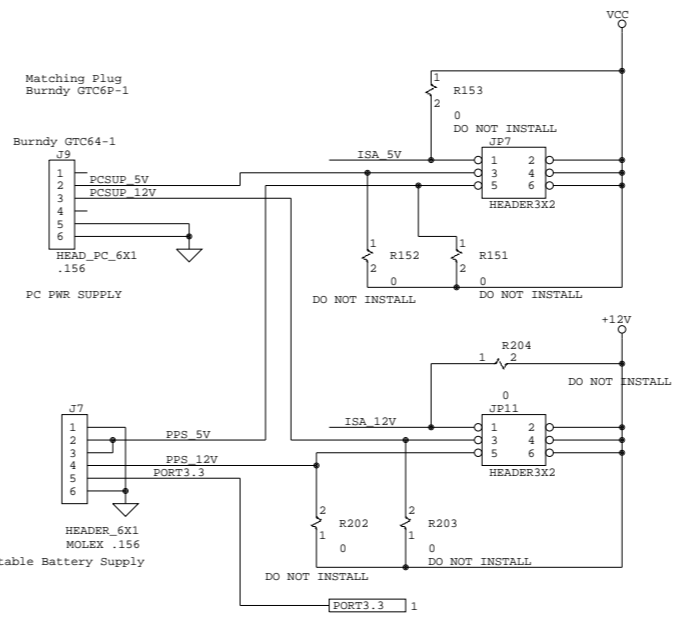
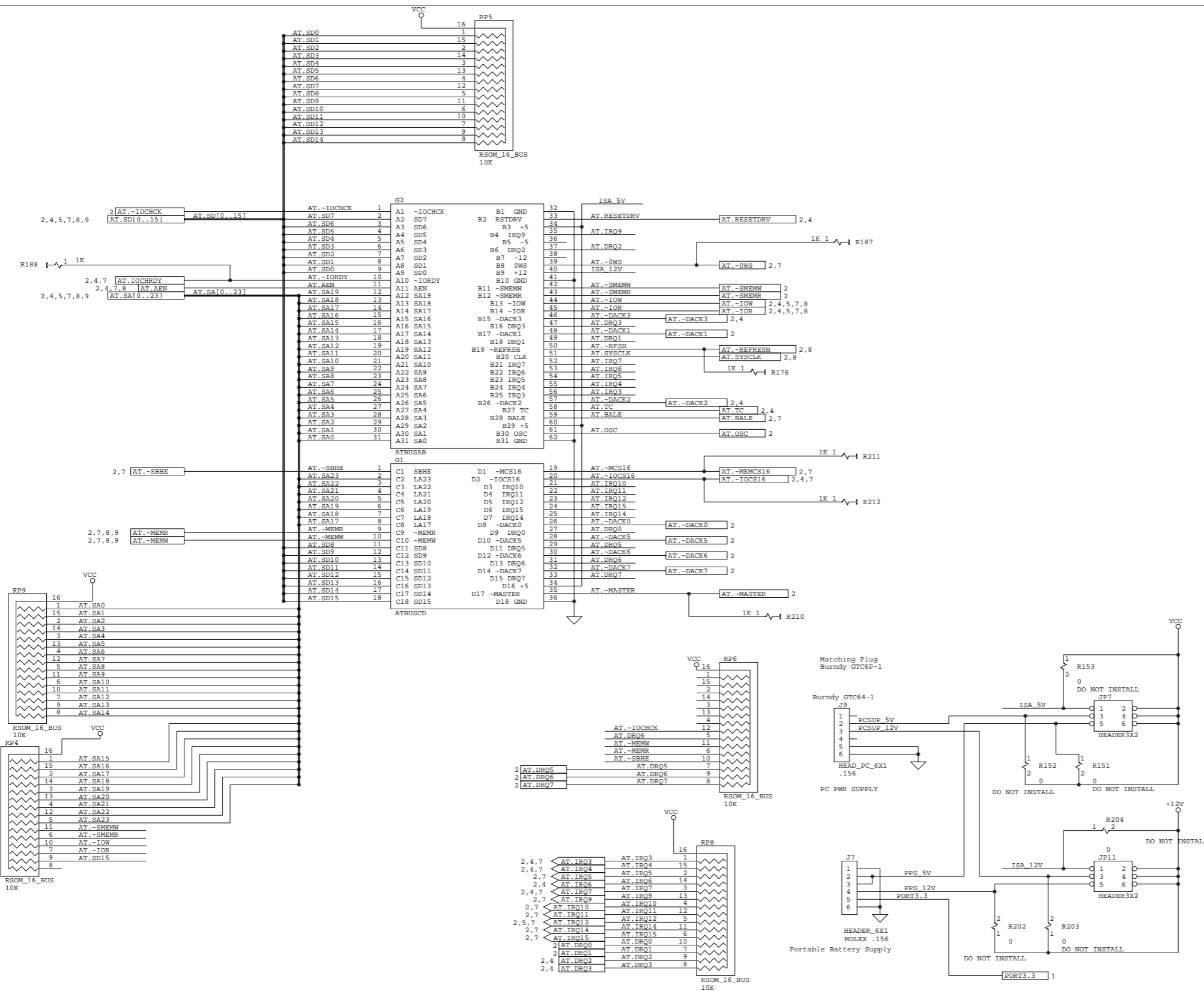


VCC Plane is +5 Volts
 U28 Power = +5 Volts
 U29 Power = +5 Volts



Although RadiSys has verified this design to be functional, neither RadiSys or Intel assume any responsibility for any errors which may appear in the design. Both RadiSys and Intel reserves the right to modify this design without notice.

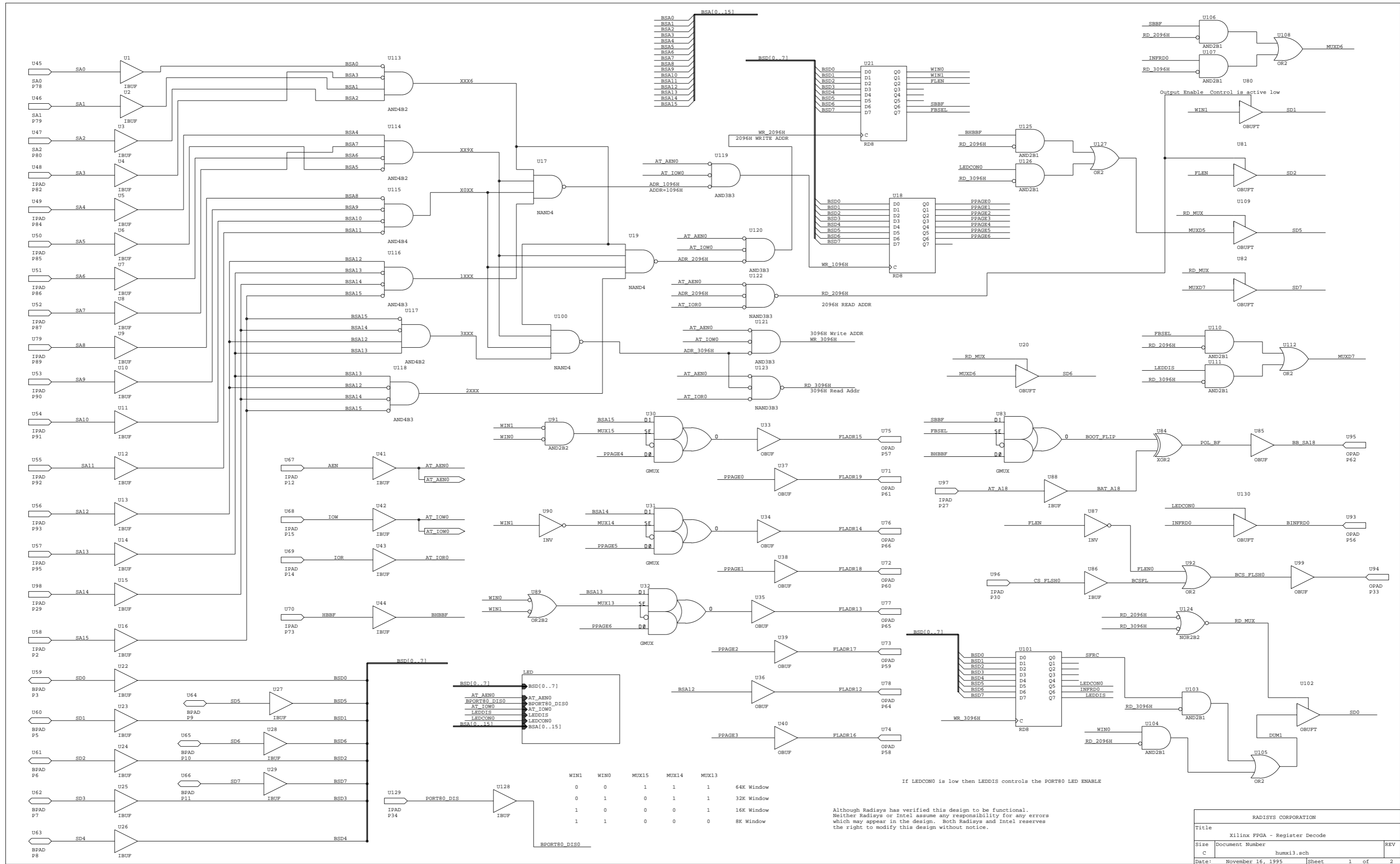
RadiSys Corp.		
Title	Humming Bird CLK/Reset Ckts	
Size	Document Number	REV
C	01-0193-02	1
Date:	September 28, 1995	Sheet 10 of 11



VCC Plane is + 5 Volts

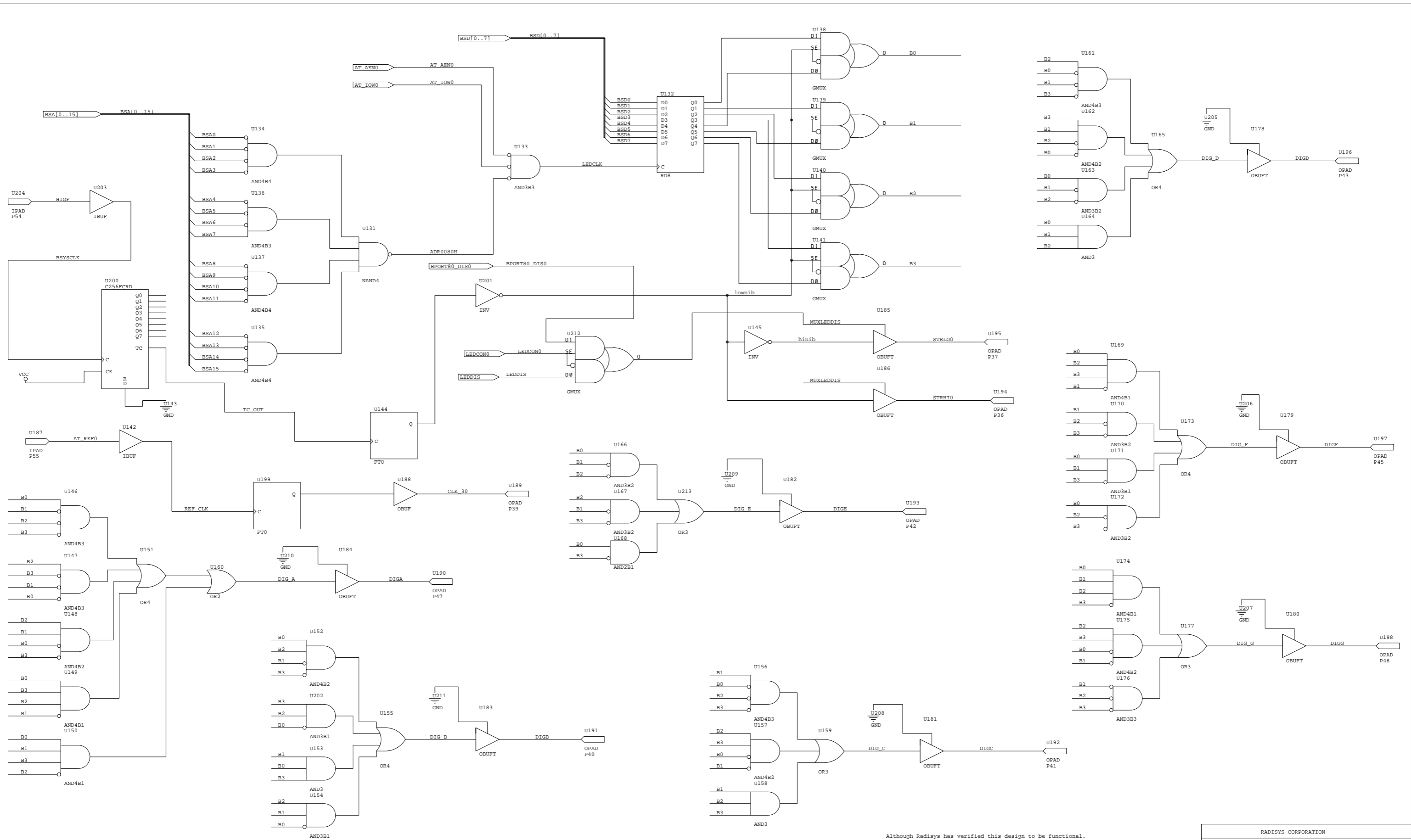
Although Radisys has verified this design to be functional. Neither Radisys or Intel assume any responsibility for any errors which may appear in the design. Both Radisys and Intel reserves the right to modify this design without notice.

Radisys Corp.			
Title Humming Bird ISA Circuits			
Size	Document Number		REV
C	01-0193-02		0
Date:	September 28, 1995	Sheet	11 of 11



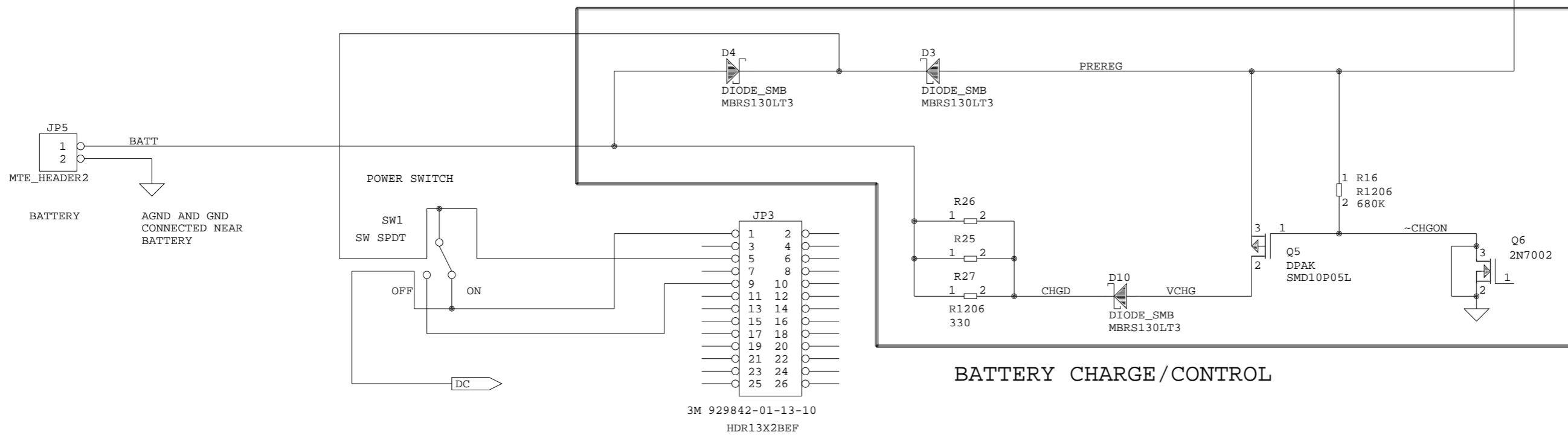
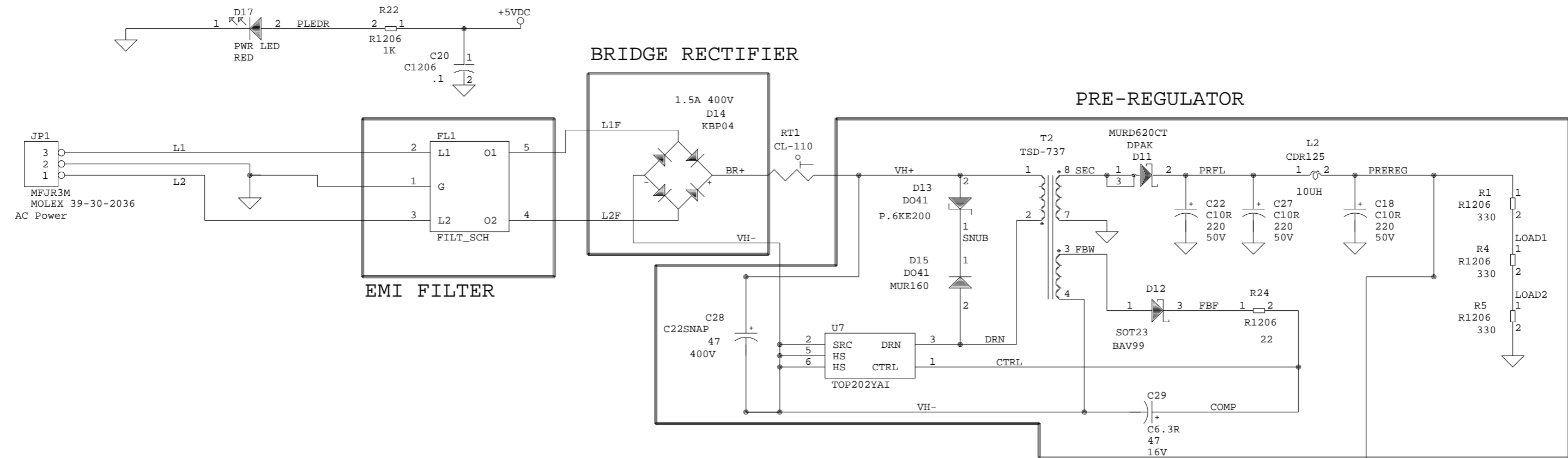
	WIN1	WIN0	MUX15	MUX14	MUX13	
0	0	0	1	1	1	64K Window
0	1	0	0	1	1	32K Window
1	0	0	0	0	1	16K Window
1	1	0	0	0	0	8K Window

Although Radisys has verified this design to be functional. Neither Radisys or Intel assume any responsibility for any errors which may appear in the design. Both Radisys and Intel reserves the right to modify this design without notice.

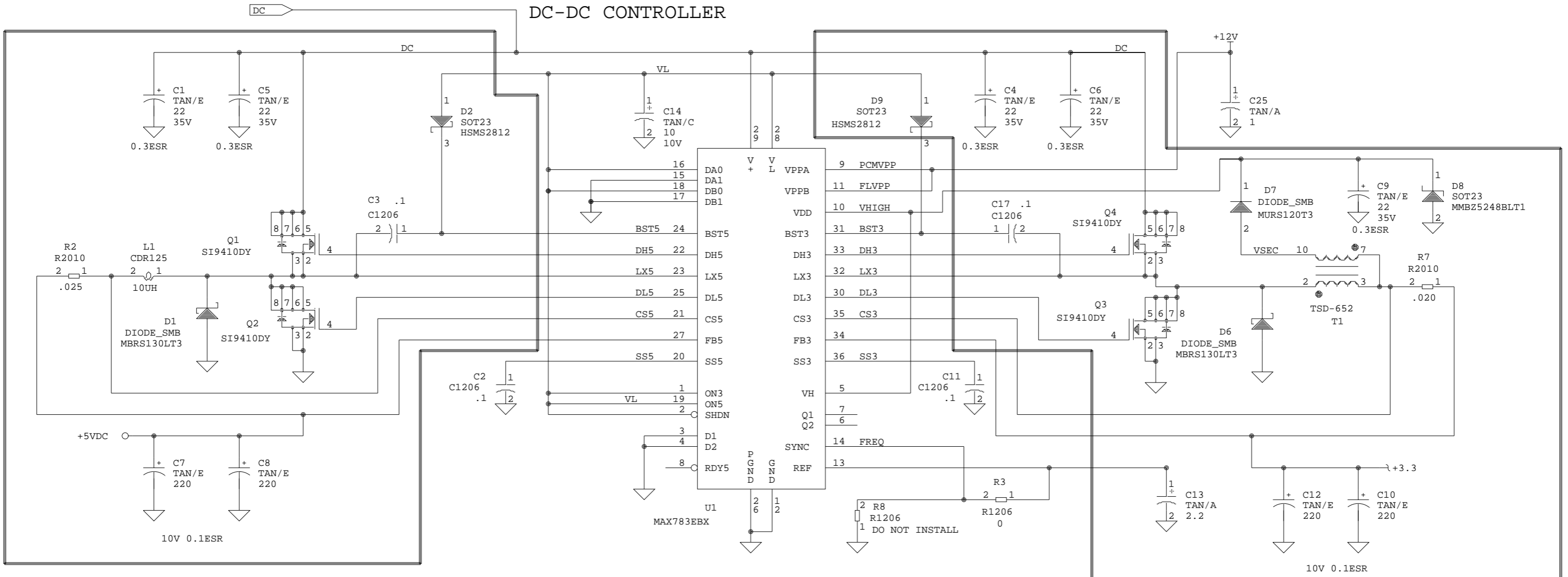


Although Radisys has verified this design to be functional. Neither Radisys or Intel assume any responsibility for any errors which may appear in the design. Both Radisys and Intel reserves the right to modify this design without notices.

RADISYS CORPORATION		
Title	Port 80 Display for HEB	
Size	Document Number	REV
C	PORT80.SCH	
Date:	November 16, 1995	Sheet 2 of 2

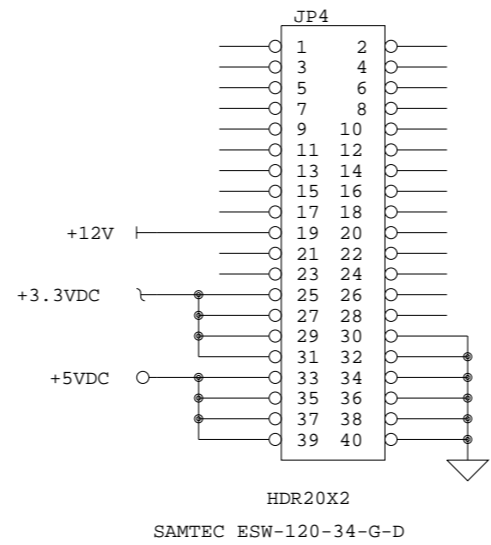


RadiSys Corporation		
Title Hummingbird Portable Power Supply		
Size B	Document Number SOURCE.SCH	REV 01
Date: November 2, 1995	Sheet 1	of 2



+5V CONTROL CIRCUITRY

+3.3V CONTROL CIRCUITRY



RadiSys Corporation		
Title Hummingbird Portable Power Supply		
Size B	Document Number CNTRL.SCH	REV 01
Date: November 1, 1995	Sheet 2	of 2