

1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

M42C MLB

11/27/2006 POST RAMP WITH LOCKED BOOTROM

REV	ZONE	ECN	DESCRIPTION OF CHANGE	CK APPD DATE	ENG APPD DATE
C		474680	PRODUCTION RELEASED	11/27/06	?

Page	(.csa)	Contents	DRI	Sync	Date
1	1	Table of Contents	RX	N/A	N/A
2	2	SYSTEM BLOCK DIAGRAM	RX	MASTER	5/23/05
3	3	Power Block Diagram	MK	POWER	06/30/2005
4	4	CONFIGURATION OPTIONS	RX	SMC	07/18/2005
5	5	FUNC TEST 1 OF 2	RX	TP	07/25/2005
6	6	SIGNAL ALIAS /RESET	RX	ENET	08/19/2005
7	7	CPU 1 OF 2-FSB	RX	MASTER	05/03/2005
8	8	CPU 2 OF 2-PWR/GND	MK	MASTER	05/03/2005
9	9	CPU DECAPS & VID<>	MK	SMC	08/19/2005
10	10	CPU MISC1-TEMP SENSOR	ES	ENET	08/19/2005
11	11	CPU ITP700FLEX DEBUG	RX	MASTER	5/23/05
12	12	NB CPU Interface	MK	NB	07/25/2005
13	13	NB PEG / Video Interfaces	DK	NB	07/25/2005
14	14	NB Misc Interfaces	RX	NB	08/15/2005
15	15	NB DDR2 Interfaces	LT	NB	07/25/2005
16	16	NB Power 1	DK	NB	07/25/2005
17	17	NB Power 2	DK	NB	07/25/2005
18	18	NB Grounds	DK	NB	07/25/2005
19	19	NB (GM) Decoupling	DK	NB	06/22/2005
20	20	NB Config Straps	DK	NB	06/28/2005
21	21		RX	SB	08/05/2005
22	22		RX	ENET	11/16/2005
23	23		RX	ENET	11/28/2005
24	24		RX	SB	08/05/2005
25	25		RX	SB	06/28/2005
26	26	SB Misc	RX	NB	07/26/2005
27	27	M42 SMBUS CONNECTIONS	ES	ENET	08/30/2005
28	28	DDR2 SO-DIMM Connector A	LT	MEMORY	06/20/2005
29	29	DDR2 SO-DIMM Connector B	LT	MEMORY	06/20/2005
30	30	Memory Active Termination	LT	MEMORY	06/20/2005
31	31	Memory Vtt Supply	LT	(MASTER)	(MASTER)
32	32	CLOCKS	DK	CLOCK	06/03/2005
33	33	CLOCK TERMINATION	DK	CLOCK	06/06/2005
34	34	PATA CONNECTOR	ES	ENET	11/01/2005
35	35	SATA CONNECTOR	ES	ENET	11/14/2005
36	36	ETHERNET CONTROLLER	ES	ENET	12/06/2005
37	37	ETHERNET CONNECTOR	ES	ENET	11/14/2005
38	38	FIREWIRE CONTROLLER	ES	ENET	08/30/2005
39	39	FIREWIRE PORT	ES	ENET	11/16/2005
40	40	CONNECTOR MISC	ES	ENET	11/16/2005
41	41	IR CONTROLLER	ES	ENET	11/09/2005
42	42		ES	ENET	11/01/2005
43	43		ES	ENET	08/19/2005
44	44	BLUETOOTH INTERFACE	MK	ENET	08/29/2005
45	45	SMC	MK	SMC	08/18/2005
46	46	SMC SUPPORT	LD	SMC	08/23/2005
47	47	LPC+ Debug Connector	MK	NB	06/30/2005
48	48	CPU Current & Voltage Sense	ES	ENET	08/30/2005

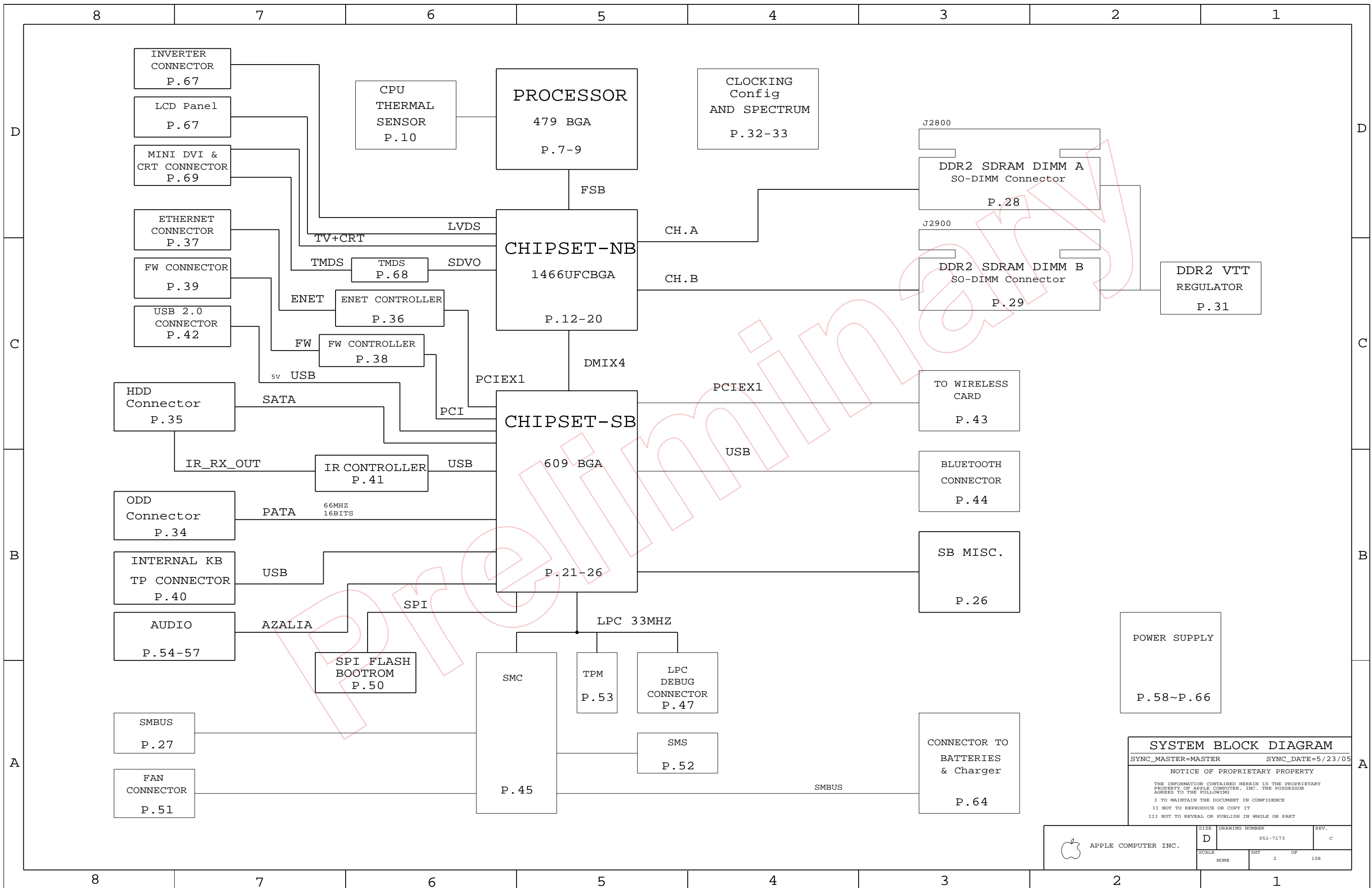
Page	(.csa)	Contents	DRI	Sync	Date
49	49	TEMPERATURE SENSE	RX	ENET	11/09/2005
50	50	SPI BOOTROM	ES	MASTER	5/23/05
51	51	Fan	MK	ENET	11/10/2005
52	52	SMS	RX	SMC	08/23/2005
53	53	TPM	DK	SMC	07/18/2005
54	54	AUDIO: CODEC	DK	M42AUDIO	08/05/2006
55	55	AUDIO: SPEAKER AMP	DK	M42AUDIO	08/05/2006
56	56	AUDIO: JACK	DK	M42AUDIO	08/05/2006
57	57	AUDIO: JACK TRANSLATORS	MK	M42AUDIO	08/05/2006
58	58	IMVP6 CPU VCore Regulator	MK	POWER	07/13/2005
59	59	5V / 3.3V Power Supply	MK	POWER	07/13/2005
60	60	2.5V/1.2V Regulator	MK	ENET	12/06/2005
61	61	1.8V Supply	MK	POWER	07/13/2005
62	62	1.5V / 1.05V Power Supply	MK	POWER	07/13/2005
63	63	S3/S0 FETS, G3H SUPPLY	MK	ENET	08/30/2005
64	64	Power Conn / Alias	MK	ENET	11/16/2005
65	65	DC-In & Battery Connectors	MK	POWER	07/13/2005
66	66	PBUS Supply/Battery Charger	ES	SMC	08/19/2005
67	67	INVERTER, LVDS, TMDS	DK	GRAPHIC	06/06/2005
68	68	EXTERNAL TMDS	DK	GRAPHIC	06/06/2005
69	69	MINI-DVI CONNECTOR		EUGENE	05/21/05
70	70	Cross Reference Page			
71	71	Cross Reference Page			
72	72	Cross Reference Page			
73	73	Cross Reference Page			
74	74	Cross Reference Page			
75	75	Cross Reference Page			
76	76	Cross Reference Page			
77	77	Cross Reference Page			
78	78	Cross Reference Page			

EE DRIS:
 RX-RAYMOND XU
 DK-DINESH KUMAR
 RC-RAY CHANG
 MK-MARC KLINGELHOFER
 LT-LAWRENCE TAN
 ES-ERIC SMITH
 LD-LINDA DUNN

Schematic / PCB #'s

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
051-7173	1	SCHEM, MACBOOK, MLB	SCH	
820-1889	1	PCB#, MACBOOK, MLB	PCB	

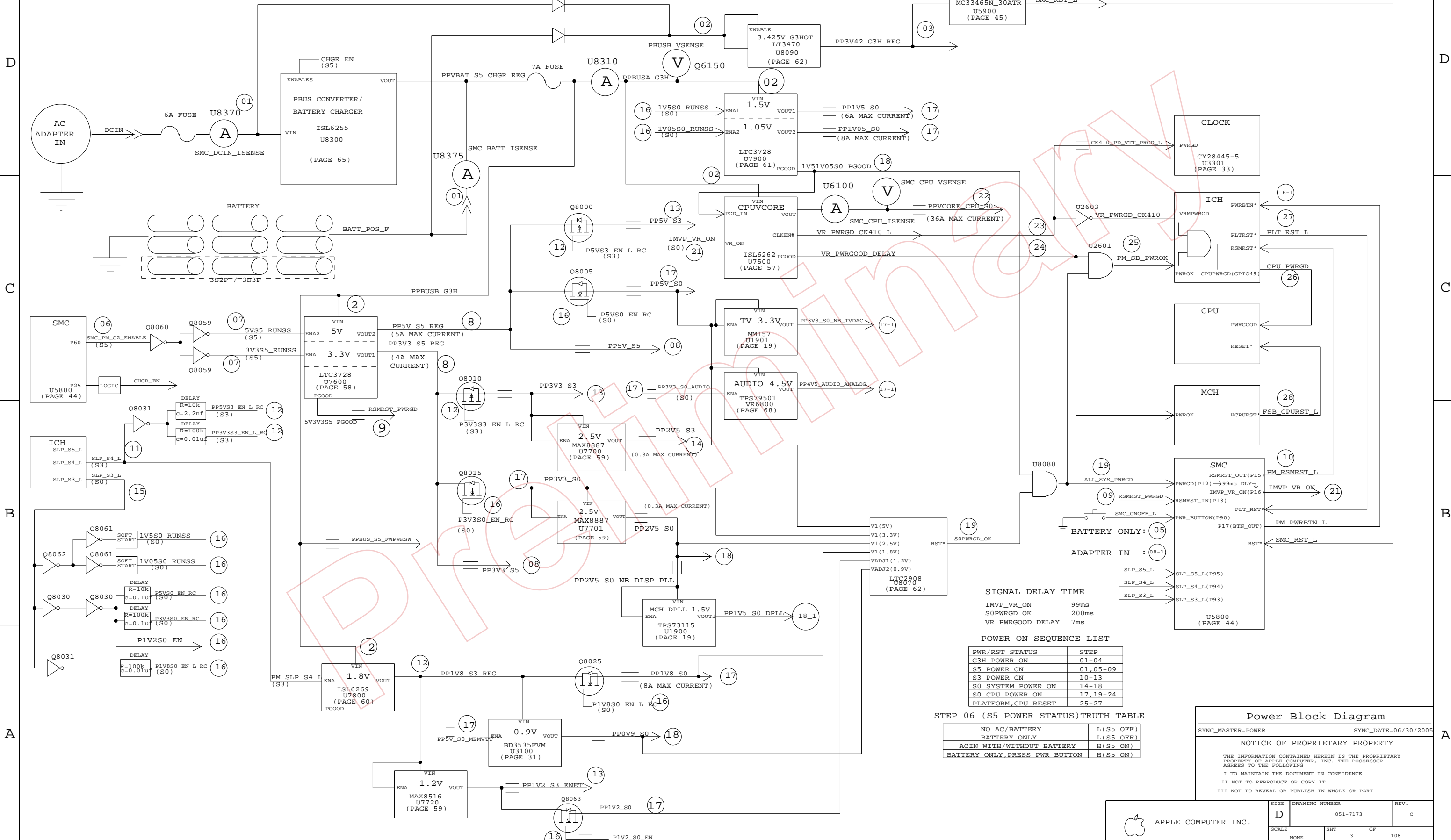
DIMENSIONS ARE IN MILLIMETERS		METRIC		Apple Computer Inc.	
XX :	_____	DRAPTER	/	DESIGN CK	/
X.XX :	_____	ENG APPD	/	MFG APPD	/
X.XXX :	_____	QA APPD	/	DESIGNER	/
ANGLES :	_____	RELEASE	/	SCALE	NONE
DO NOT SCALE DRAWING		MATERIAL/FINISH NOTED AS APPLICABLE		SIZE	D
THIRD ANGLE PROJECTION		DRAWING NUMBER		051-7173	REV. C
					SHT 1 OF 108



SYSTEM BLOCK DIAGRAM
 SYNC_MASTER=MASTER SYNC_DATE=5/23/05
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	2	108	

M42A POWER SYSTEM ARCHITECTURE



SIGNAL DELAY TIME

IMVP_VR_ON	99ms
SOPWRGD_OK	200ms
VR_PWRGOOD_DELAY	7ms

POWER ON SEQUENCE LIST

PWR/RST STATUS	STEP
G3H POWER ON	01-04
S5 POWER ON	01,05-09
S3 POWER ON	10-13
S0 SYSTEM POWER ON	14-18
S0 CPU POWER ON	17,19-24
PLATFORM,CPU RESET	25-27

STEP 06 (S5 POWER STATUS) TRUTH TABLE

NO AC/BATTERY	L(S5 OFF)
BATTERY ONLY	L(S5 OFF)
ACIN WITH/WITHOUT BATTERY	H(S5 ON)
BATTERY ONLY,PRESS PWR BUTTON	H(S5 ON)

Power Block Diagram

SYNC_MASTER=POWER SYNC_DATE=06/30/2005

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Page Notes

Power aliases required by this page:
(NONE)

Signal aliases required by this page:
(NONE)

BOM options provided by this page:
(NONE)

BOM OPTION

BOMOPTION	M42A GOOD ST MICRO 630-7795 EVT	M42A BETTER ST MICRO 630-7796 EVT	M42A BEST KIONIX 630-7799 EVT	M42A GOOD KIONIX 630-7798 EVT	M42A BETTER KIONIX 630-7736 EVT	M42A BEST ST MICRO 630-7797 EVT
1V51V05S0_CONT						
1V51V05S0_SKIP	v	v	v	v	v	v
5V3V3S3_CONT						
5V3V3S3_SKIP	v	v	v	v	v	v
ACCEL_KIONIX			v	v	v	
ACCEL_ST	v	v				v
INVERTER_BUF	v	v	v	v	v	v
INVERTER_UNBUF						
ITP						
LEMENU	v	v	v	v	v	v
MEMVIT_EN_PU	v	v	v	v	v	v
NBCFG_DMI_REVERSE						
NBCFG_DMI_X2						
NBCFG_DYN_ODT_DISABLE						
NBCFG_PEG_REVERSE						
NBCFG_SDVO_AND_PCIE						
NBCFG_VCC_1V5						
NO_REBOOT_MODE						
USB_C_OC_PU	v	v	v	v	v	v
USB_D_OC_PU	v	v	v	v	v	v
USB_E_OC_PU	v	v	v	v	v	v
GOOD	v			v		
BETTER		v			v	
BEST			v			v
M42A_PGM	v	v	v	v	v	v
ONEWIRE_PULLUP	v	v	v	v	v	v
ONEWIRE_PULLUP_OLD						
ONEWIRE_PU_PROT	v	v	v	v	v	v
ONEWIRE_PU_ACOK						
ONEWIRE_PWRCTL	v	v	v	v	v	v
ONEWIRE_ALWAYSON						
3V3_IND_2MM8	v	v	v	v	v	v
3V3_IND_3MM						
NORMAL	v	v		v	v	
FANCY			v			v
STANDOFF	v	v	v	v	v	v
FET_FDN6296	v	v	v	v	v	v
FET_STL8NH3LL						
GOOD-ST	v					
BETTER-ST		v				
BEST-KIONIX			v			
GOOD-KIONIX				v		
BETTER-KIONIX					v	
BEST-ST						v
TPM						
PVT-DIMM						
POST-RAMP-DIMM35	v	v	v	v	v	v
M42						
M42A	v	v	v	v	v	v

BOARD STACK-UP AND CONSTRUCTION

Top	SIGNAL
2	GROUND
3	SIGNAL(High Speed)
4	SIGNAL(High Speed)
5	GROUND
6	POWER
7	POWER
8	GROUND
9	SIGNAL(High Speed)
10	SIGNAL(High Speed)
11	GROUND
BOTTOM	SIGNAL

MLB STACKUP		
LAYER	THICKNESS (MM)	TRACE WIDTH (MM)
CONFORMAL_COAT	0.018	
L1 SIGNAL(TOP)	0.047	0.1
L1-L2	0.07	
L2 GROUND	0.014	---
L2-L3	0.076	
L3 SIGNAL	0.014	0.079
L3-L4	0.156	
L4 SIGNAL	0.014	0.079
L4-L5	0.076	
L5 GND	0.014	---
L5-L6	0.07	
L6 POWER	0.031	---
L6-L7	0.076	
L7 POWER	0.031	---
L7-L8	0.07	
L8 GROUND	0.014	---
L8-L9	0.076	
L9 SIGNAL	0.014	0.1
L9-L10	0.156	
L10 SIGNAL	0.014	0.1
L10-L11	0.076	
L11 GROUND	0.014	0.1
L11-L12	0.07	
L12 SIGNAL(BOTTOM)	0.047	0.1
CONFORMAL_COAT	0.018	
TOTAL	1.276	---

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
337S3387	1	IC, MEMOM, CPU B2 DC 1.83GHZ, 479 PGA	U0700	GOOD
337S3389	1	IC, MEMOM, CPU B2 DC 2.0GHZ, 479 PGA	U0700	BETTER
337S3389	1	IC, MEMOM, CPU B2 DC 2.0GHZ, 479 PGA	U0700	BEST

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
338S0268	1	IC, FW32306, 1394A LIME, BGA, 129P	U4400	LEMENU
338S0270	1	IC, 88E8053, GIGABIT ENET XCVR, 64P QFN, NO	U4101	LEMENU
359S0109	1	IC, SLOBLP436, CLOCK GEN, 68PIN QFN	U3301	LEMENU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
341S1942	1	IC, 16MBIT 8-PIN SPI SERIAL FLASH, 802CE	U6301	M42A_PGM
341S1797	1	IC, EEPROM, SERIAL IIC, 8KBIT, 808	U4102	M42A_PGM
341S1946	1	IC, SMC, 176P BGA, MS8/2116	U5800	M42A_PGM
341S1890	1	IC, PSOC-W/USB, 56P, MLP, CY8C24794	U5100	M42A_PGM

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:WES	CRITICAL	GOOD-ST
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:WET	CRITICAL	BETTER-ST
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:WEW	CRITICAL	BEST-KIONIX
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:WEV	CRITICAL	GOOD-KIONIX
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:W6V	CRITICAL	BETTER-KIONIX
826-4393	1	LBL, P/N LABEL, PCB, 28MMX6MM	EEE:WEU	CRITICAL	BEST-ST

CONFIGURATION OPTIONS

SYNC_MASTER=SMC SYNC_DATE=07/18/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	4		

Functional Test Points

Power Supply NO_TESTS

NO_TEST		
IMVP6_RBIAS	58	
IMVP6_COMP	58	
5VS5_RUNSS	59 63	
1V5S0_RUNSS	52 63	
1V8S3_COMP	61	
1V8S3_FSET	61	
TRUE 3V3S5_COMP		
TRUE 3V3S5_FSET		
TRUE 1V05S0_COMP		
TRUE 1V05S0_FSET		
TRUE P3V42G3H_FB	63	

CLOCK NO_TESTS

NO_TEST		
TRUE CK410_CPU0_N	32 33	
TRUE CK410_CPU0_P	32 33	
TRUE CK410_CPU1_N	32 33	
TRUE CK410_CPU1_P	32 33	
TRUE CK410_CPU2_ITP_SRC10_N	32 33	
TRUE CK410_CPU2_ITP_SRC10_P	32 33	
TRUE CK410_DOT96_27M_N	32 33	
TRUE CK410_DOT96_27M_P	32 33	
TRUE CK410_LVDS_N	32 33	
TRUE CK410_LVDS_P	32 33	
TRUE CK410_PCI4_CLK_SPN		
TRUE CK410_PCI4_CLK	32 33	
TRUE CK410_SRC1_N_SPN	6	
TRUE CK410_SRC1_P_SPN	6	
TRUE CK410_SRC2_N	32 33	
TRUE CK410_SRC2_P	32 33	
TRUE CK410_SRC3_N_SPN	6	
TRUE CK410_SRC3_P_SPN	6	
TRUE CK410_SRC4_N	32 33	
TRUE CK410_SRC4_P	32 33	
TRUE CK410_SRC5_N	32 33	
TRUE CK410_SRC5_P	32 33	
TRUE CK410_SRC6_N	32 33	
TRUE CK410_SRC6_P	32 33	
TRUE CK410_SRC7_N_SPN	6	
TRUE CK410_SRC7_P_SPN	6	
TRUE CK410_SRC8_N	32 33	
TRUE CK410_SRC8_P	32 33	
TRUE CK410_SRC_CLKRE01_L_SPN	6	
TRUE CK410_SRC_CLKRE03_L_SPN	6	
TRUE CK410_SRC_CLKRE08_L	32 33	

FIREWARE NO_TESTS

NO_TEST		
TRUE FW_B_TPA_N_SPN	6	
TRUE FW_B_TPA_P_SPN	6	
TRUE FW_B_TPBIAS_SPN	6	
TRUE FW_B_TPB_N_SPN	6	
TRUE FW_B_TPB_P_SPN	6	
TRUE FW_C_TPA_N_SPN	6	
TRUE FW_C_TPA_P_SPN	6	
TRUE FW_C_TPBIAS_SPN	6	
TRUE FW_C_TPB_N_SPN	6	
TRUE FW_C_TPB_P_SPN	6	

LVDS NO_TESTS

NO_TEST		
TRUE LVDS_B_CLK_N_SPN	6	
TRUE LVDS_B_CLK_P_SPN	6	
TRUE LVDS_B_DATA_N0_SPN	6	
TRUE LVDS_B_DATA_N1_SPN	6	
TRUE LVDS_B_DATA_N2_SPN	6	
TRUE LVDS_B_DATA_P1_SPN	6	
TRUE LVDS_B_DATA_P2_SPN	6	

ETHERNET NO_TESTS

NO_TEST		
TRUE ENET_MDI_TRAN_P<2>	37	
TRUE ENET_MDI_TRAN_N<2>	37	
TRUE ENET_MDI_TRAN_P<3>	37	

NO_TEST		
TRUE SMC_FAN_3_TACH	45 46	
TRUE ALS_LEFT	45 46	

Fan Connectors

FUNC_TEST		
TRUE =PP5V_S0_FAN_RT	51 64	
TRUE FAN_RT_PWM	51	
TRUE FAN_RT_TACH	51	
TRUE =PP3V3_S0_FAN_RT	51 64	
TRUE SMC_FAN_1_CTL	45 51	
TRUE SMC_FAN_1_TACH	45 51	

LPC+ Debug Connector

FUNC_TEST		
TRUE =PP3V42_G3H_LPCPLUS	47 64	
TRUE =PP5V_S0_LPCPLUS	47 64	
TRUE LPC_AD<0>	21 45 47 53	
TRUE LPC_AD<1>	21 45 47 53	
TRUE LPC_FRAME_L	21 46 47 53	
TRUE PM_CLKRUN_L	23 38 46 47 53	
TRUE BOOT_LPC_SPI_L	22 45 47	
TRUE SMC_TMS	45 46 47	
TRUE DEBUG_RST_L	26 47	
TRUE SMC_TRST_L	45 47	
TRUE SMC_TDO	45 46 47	
TRUE SMC_MD1	45 47	
TRUE SMC_TX_L	45 46 47	
TRUE FWH_INIT_L	5 21 47	
TRUE PCI_CLK_PORT80_LPC	33 47	
TRUE LPC_AD<2>	21 45 47 53	
TRUE LPC_AD<3>	21 45 47 53	
TRUE INT_SERIRO	23 45 47 53	
TRUE PM_SUS_STAT_L	23 45 46 47 53	
TRUE SMC_TDI	45 46 47	
TRUE SMC_TCK	45 46 47	
TRUE SMC_RST_L	45 46 47	
TRUE SMC_NMI	45 47	
TRUE SMC_RX_L	45 46 47	
TRUE SV_SET_UP	23 47	

Other Func Test Points

FUNC_TEST		
TRUE =PP1V05_S0_REG	52 64	
SMBus FUNC_TEST		
TRUE SMBUS_SMC_MLB_SCL	27	
TRUE SMBUS_SMC_MLB_SDA	27	
FIREWIRE FUNC_TEST		
TRUE PPFW_SWITCH	39	
SLEEP_LED_FUNC_TEST		
TRUE SYS_LED_ANODE	35 46	
SMC FUNC_TEST		
TRUE SMC_LID	40 45 46 65	
TRUE SMC_MANUAL_RST_L	46	
TRUE SMC_CPU_VSENSE	45 48	
Power Supply FUNC_TEST		
TRUE ALL_SYS_PWRGD	26 45 63	
TRUE PPVCORE_CPU_S0	64	
TRUE PP1V05_S0	64	
TRUE PP1V5_S0	64	
TRUE PP1V8_S0	64	
TRUE PP2V5_S0	64	
TRUE PP3V3_S0	64	
TRUE PP5V_S0	64	
TRUE PP1V2_S3	64	
TRUE PP1V8_S3	64	
TRUE PP2V5_S3	64	
TRUE PP3V3_S3	64	
TRUE PP5V_S3	64	
TRUE PP3V3_S5	64	
TRUE PP5V_S5	64	
TRUE PP3V42_G3H	64	
TRUE PPBUSA_G3H	64	
TRUE PPBUSB_G3H	64	
TRUE PP18V5_G3H	64	
TRUE PP0V9_S0	64	

Battery Digital Connector

FUNC_TEST		
TRUE SMC_BS_ALRT_L	45 46 65	
TRUE SMBUS_BATT_SCL_F	65	
TRUE SMBUS_BATT_SDA_F	65	
TRUE BATT_IN	65	
TRUE BATT_POS	65	
TRUE BATT_NEG	65	

Audio FUNC_TEST

FUNC_TEST		
TRUE PP5V_S0_AUDIO_PWR		
TRUE PP5V_S0_AUDIO		
TRUE GND_AUDIO_PWR	64	
TRUE GND_AUDIO_CODEC	64	
TRUE ACZ_SDATAIN<0>	21 64	
TRUE ACZ_SDATAOUT	21 64	
TRUE ACZ_BITCLK	21 64	
TRUE ACZ_RST_L	21 54 57	
TRUE ACZ_SYNC	21 64	

Battery FUNC_TEST

FUNC_TEST		
TRUE SMC_BATT_ISET	45 66	
TRUE SMC_BATT_CHG_EN	45 46 66	
TRUE SMC_BC_ACOK	45 46 65 66	
TRUE SMC_PS_ON	39 45 46 65	
TRUE SMC_BATT_TRICKLE_EN_L	45 46 66	
TRUE SYS_ONEWIRE	45 46 65	

USB FUNC_TEST

FUNC_TEST		
TRUE TP_USBP_E	6	
TRUE TP_USBN_E	6	
TRUE TP_USBP_F	6	
TRUE TP_USBN_F	6	

DC-JACK FUNC_TEST

FUNC_TEST		
TRUE ACIN_ENABLE_GATE	65	

Battery charger FUNC_TEST

FUNC_TEST		
TRUE PPVBAT_G3H_CHGR_OUT	66	

INVERTER CONNECTOR FUNC_TEST

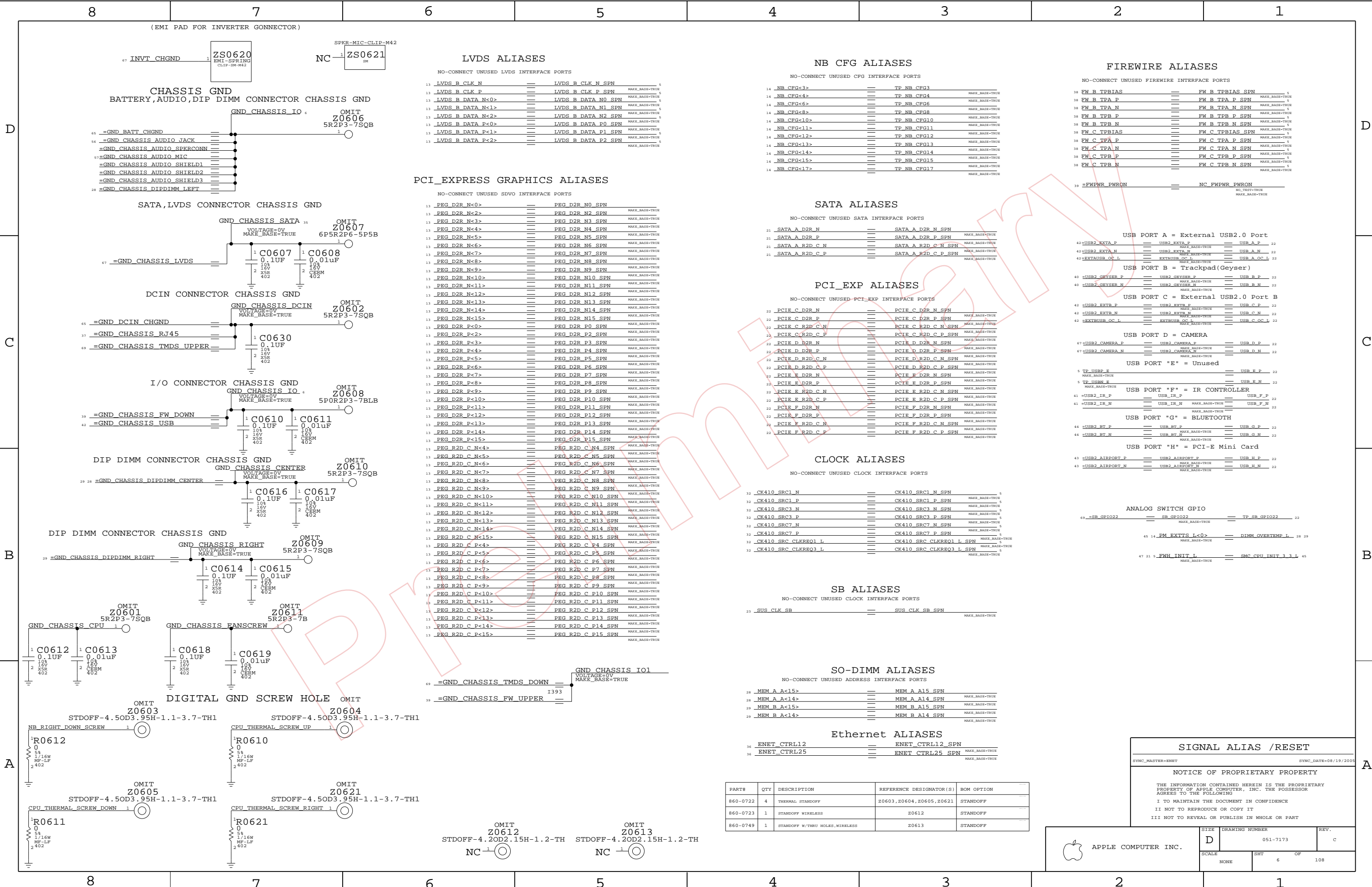
FUNC_TEST		
TRUE PPBUS_ALL_INV_CONN	67	
TRUE INV_GND	67	
TRUE PP5V_INV_F	67	
TRUE INV_BKLIGHT_PWM_L	67	

FUNC TEST 1 OF 2

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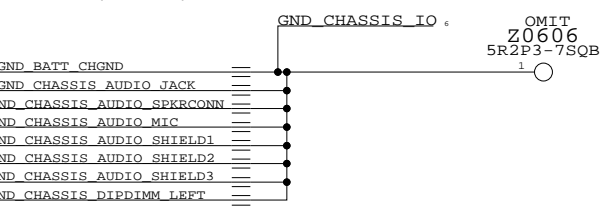
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	5		



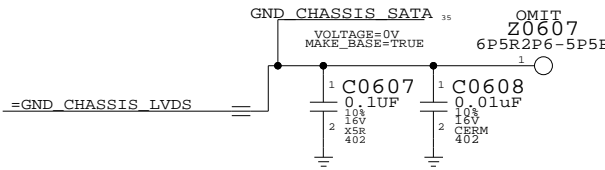
(EMI PAD FOR INVERTER CONNECTOR)



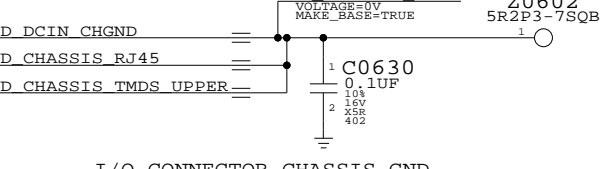
CHASSIS GND
BATTERY, AUDIO, DIP DIMM CONNECTOR CHASSIS GND



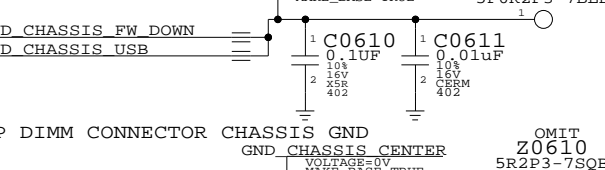
SATA, LVDS CONNECTOR CHASSIS GND



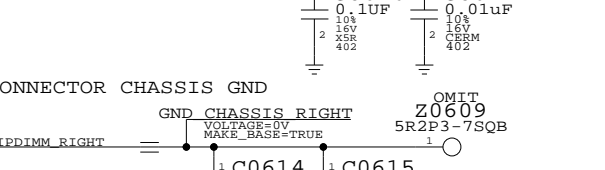
DCIN CONNECTOR CHASSIS GND



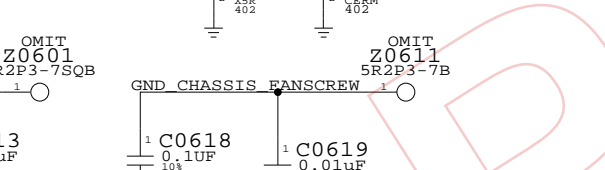
I/O CONNECTOR CHASSIS GND



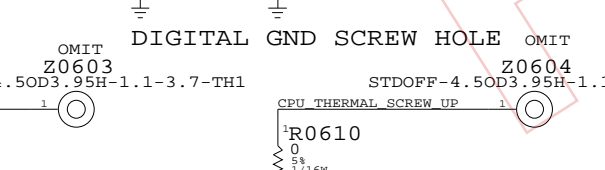
DIP DIMM CONNECTOR CHASSIS GND



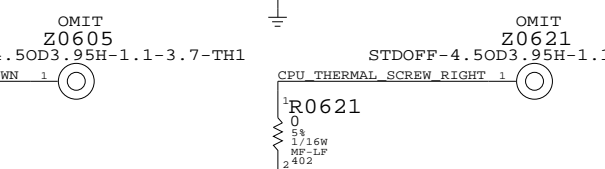
DIP DIMM CONNECTOR CHASSIS GND



DIP DIMM CONNECTOR CHASSIS GND



DIP DIMM CONNECTOR CHASSIS GND



LVDS ALIASES

NO-CONNECT UNUSED LVDS INTERFACE PORTS

13	LVDS B CLK N	LVDS B CLK N SPN	MAKE_BASE=TRUE	5
13	LVDS B CLK P	LVDS B CLK P SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA N<0>	LVDS B DATA N0 SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA N<1>	LVDS B DATA N1 SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA N<2>	LVDS B DATA N2 SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA P<0>	LVDS B DATA P0 SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA P<1>	LVDS B DATA P1 SPN	MAKE_BASE=TRUE	5
13	LVDS B DATA P<2>	LVDS B DATA P2 SPN	MAKE_BASE=TRUE	5

PCI EXPRESS GRAPHICS ALIASES

NO-CONNECT UNUSED SDVO INTERFACE PORTS

13	PEG D2R N<0>	PEG D2R N0 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<2>	PEG D2R N2 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<3>	PEG D2R N3 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<4>	PEG D2R N4 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<5>	PEG D2R N5 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<6>	PEG D2R N6 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<7>	PEG D2R N7 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<8>	PEG D2R N8 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<9>	PEG D2R N9 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<10>	PEG D2R N10 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<11>	PEG D2R N11 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<12>	PEG D2R N12 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<13>	PEG D2R N13 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<14>	PEG D2R N14 SPN	MAKE_BASE=TRUE	5
13	PEG D2R N<15>	PEG D2R N15 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<0>	PEG D2R P0 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<2>	PEG D2R P2 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<3>	PEG D2R P3 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<4>	PEG D2R P4 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<5>	PEG D2R P5 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<6>	PEG D2R P6 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<7>	PEG D2R P7 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<8>	PEG D2R P8 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<9>	PEG D2R P9 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<10>	PEG D2R P10 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<11>	PEG D2R P11 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<12>	PEG D2R P12 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<13>	PEG D2R P13 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<14>	PEG D2R P14 SPN	MAKE_BASE=TRUE	5
13	PEG D2R P<15>	PEG D2R P15 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<4>	PEG R2D C N4 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<5>	PEG R2D C N5 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<6>	PEG R2D C N6 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<7>	PEG R2D C N7 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<8>	PEG R2D C N8 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<9>	PEG R2D C N9 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<10>	PEG R2D C N10 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<11>	PEG R2D C N11 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<12>	PEG R2D C N12 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<13>	PEG R2D C N13 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<14>	PEG R2D C N14 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C N<15>	PEG R2D C N15 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<4>	PEG R2D C P4 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<5>	PEG R2D C P5 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<6>	PEG R2D C P6 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<7>	PEG R2D C P7 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<8>	PEG R2D C P8 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<9>	PEG R2D C P9 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<10>	PEG R2D C P10 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<11>	PEG R2D C P11 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<12>	PEG R2D C P12 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<13>	PEG R2D C P13 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<14>	PEG R2D C P14 SPN	MAKE_BASE=TRUE	5
13	PEG R2D C P<15>	PEG R2D C P15 SPN	MAKE_BASE=TRUE	5

NB CFG ALIASES

NO-CONNECT UNUSED CFG INTERFACE PORTS

14	NB_CFG<3>	TP_NB_CFG3	MAKE_BASE=TRUE	5
14	NB_CFG<4>	TP_NB_CFG4	MAKE_BASE=TRUE	5
14	NB_CFG<6>	TP_NB_CFG6	MAKE_BASE=TRUE	5
14	NB_CFG<8>	TP_NB_CFG8	MAKE_BASE=TRUE	5
14	NB_CFG<10>	TP_NB_CFG10	MAKE_BASE=TRUE	5
14	NB_CFG<11>	TP_NB_CFG11	MAKE_BASE=TRUE	5
14	NB_CFG<12>	TP_NB_CFG12	MAKE_BASE=TRUE	5
14	NB_CFG<13>	TP_NB_CFG13	MAKE_BASE=TRUE	5
14	NB_CFG<14>	TP_NB_CFG14	MAKE_BASE=TRUE	5
14	NB_CFG<15>	TP_NB_CFG15	MAKE_BASE=TRUE	5
14	NB_CFG<17>	TP_NB_CFG17	MAKE_BASE=TRUE	5

FIREWIRE ALIASES

NO-CONNECT UNUSED FIREWIRE INTERFACE PORTS

38	FW_B_TPBIAIS	FW_B_TPBIAIS_SPN	MAKE_BASE=TRUE	5
38	FW_B_TPA_P	FW_B_TPA_P_SPN	MAKE_BASE=TRUE	5
38	FW_B_TPA_N	FW_B_TPA_N_SPN	MAKE_BASE=TRUE	5
38	FW_B_TPB_P	FW_B_TPB_P_SPN	MAKE_BASE=TRUE	5
38	FW_B_TPB_N	FW_B_TPB_N_SPN	MAKE_BASE=TRUE	5
38	FW_C_TPBIAIS	FW_C_TPBIAIS_SPN	MAKE_BASE=TRUE	5
38	FW_C_TPA_P	FW_C_TPA_P_SPN	MAKE_BASE=TRUE	5
38	FW_C_TPA_N	FW_C_TPA_N_SPN	MAKE_BASE=TRUE	5
38	FW_C_TPB_P	FW_C_TPB_P_SPN	MAKE_BASE=TRUE	5
38	FW_C_TPB_N	FW_C_TPB_N_SPN	MAKE_BASE=TRUE	5
39	FWPWR_PWRON	NC_FWPWR_PWRON	MAKE_BASE=TRUE	5

SATA ALIASES

NO-CONNECT UNUSED SATA INTERFACE PORTS

21	SATA_A_D2R_N	SATA_A_D2R_N_SPN	MAKE_BASE=TRUE	5
21	SATA_A_D2R_P	SATA_A_D2R_P_SPN	MAKE_BASE=TRUE	5
21	SATA_A_R2D_C_N	SATA_A_R2D_C_N_SPN	MAKE_BASE=TRUE	5
21	SATA_A_R2D_C_P	SATA_A_R2D_C_P_SPN	MAKE_BASE=TRUE	5

PCI_EXP ALIASES

NO-CONNECT UNUSED PCI_EXP INTERFACE PORTS

22	PCIE_C_D2R_N	PCIE_C_D2R_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_C_D2R_P	PCIE_C_D2R_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_C_R2D_C_N	PCIE_C_R2D_C_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_C_R2D_C_P	PCIE_C_R2D_C_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_D_D2R_N	PCIE_D_D2R_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_D_D2R_P	PCIE_D_D2R_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_D_R2D_C_N	PCIE_D_R2D_C_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_D_R2D_C_P	PCIE_D_R2D_C_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_E_D2R_N	PCIE_E_D2R_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_E_D2R_P	PCIE_E_D2R_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_E_R2D_C_N	PCIE_E_R2D_C_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_E_R2D_C_P	PCIE_E_R2D_C_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_F_D2R_N	PCIE_F_D2R_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_F_D2R_P	PCIE_F_D2R_P_SPN	MAKE_BASE=TRUE	5
22	PCIE_F_R2D_C_N	PCIE_F_R2D_C_N_SPN	MAKE_BASE=TRUE	5
22	PCIE_F_R2D_C_P	PCIE_F_R2D_C_P_SPN	MAKE_BASE=TRUE	5

CLOCK ALIASES

NO-CONNECT UNUSED CLOCK INTERFACE PORTS

32	CK410_SRC1_N	CK410_SRC1_N_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC1_P	CK410_SRC1_P_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC3_N	CK410_SRC3_N_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC3_P	CK410_SRC3_P_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC7_N	CK410_SRC7_N_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC7_P	CK410_SRC7_P_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC_CLKREQ0_L	CK410_SRC_CLKREQ0_L_SPN	MAKE_BASE=TRUE	5
32	CK410_SRC_CLKREQ3_L	CK410_SRC_CLKREQ3_L_SPN	MAKE_BASE=TRUE	5

SB ALIASES

NO-CONNECT UNUSED SB INTERFACE PORTS

23	SUS_CLK_SB	SUS_CLK_SB_SPN	MAKE_BASE=TRUE	5
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SO-DIMM ALIASES

NO-CONNECT UNUSED ADDRESS INTERFACE PORTS

28	MEM_A_A<15>	MEM_A_A15_SPN	MAKE_BASE=TRUE	5
28	MEM_A_A<14>	MEM_A_A14_SPN	MAKE_BASE=TRUE	5
29	MEM_B_A<15>	MEM_B_A15_SPN	MAKE_BASE=TRUE	5
29	MEM_B_A<14>	MEM_B_A14_SPN	MAKE_BASE=TRUE	5

Ethernet ALIASES

36	ENET_CTRL12	ENET_CTRL12_SPN	MAKE_BASE=TRUE	5
36	ENET_CTRL25	ENET_CTRL25_SPN	MAKE_BASE=TRUE	5

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
860-0722	4	THERMAL STANDOFF	Z0603, Z0604, Z0605, Z0621	STANDOFF
860-0723	1	STANDOFF WIRELESS	Z0612	STANDOFF
860-0749	1	STANDOFF W/THERM HOLES, WIRELESS	Z0613	STANDOFF

SIGNAL ALIAS /RESET

SYNC_MASTER=ENET SYNC_DATE=08/19/2005

NOTICE OF PROPRIETARY PROPERTY

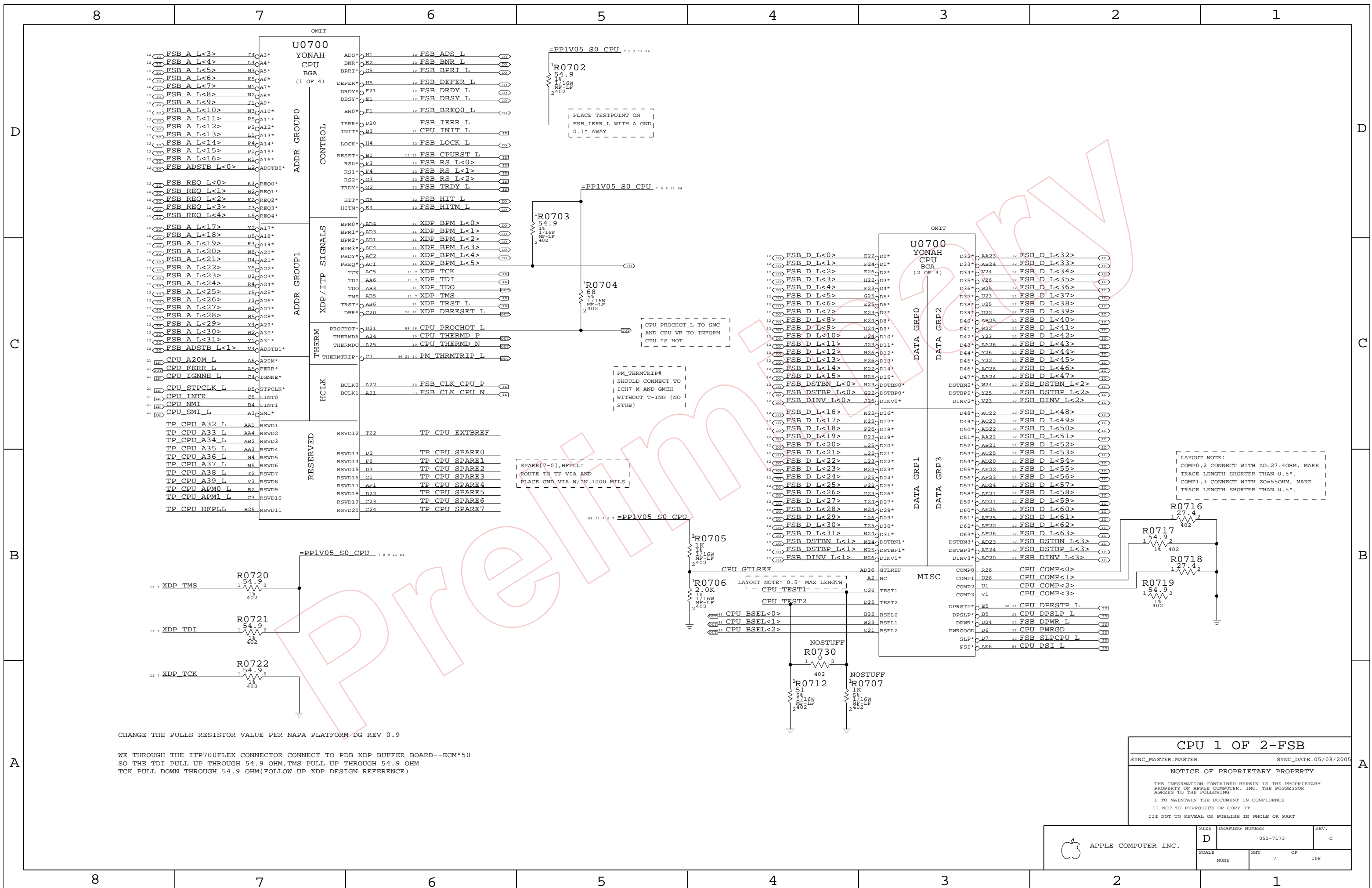
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SCALE	SHT	OF	108
NONE	6		



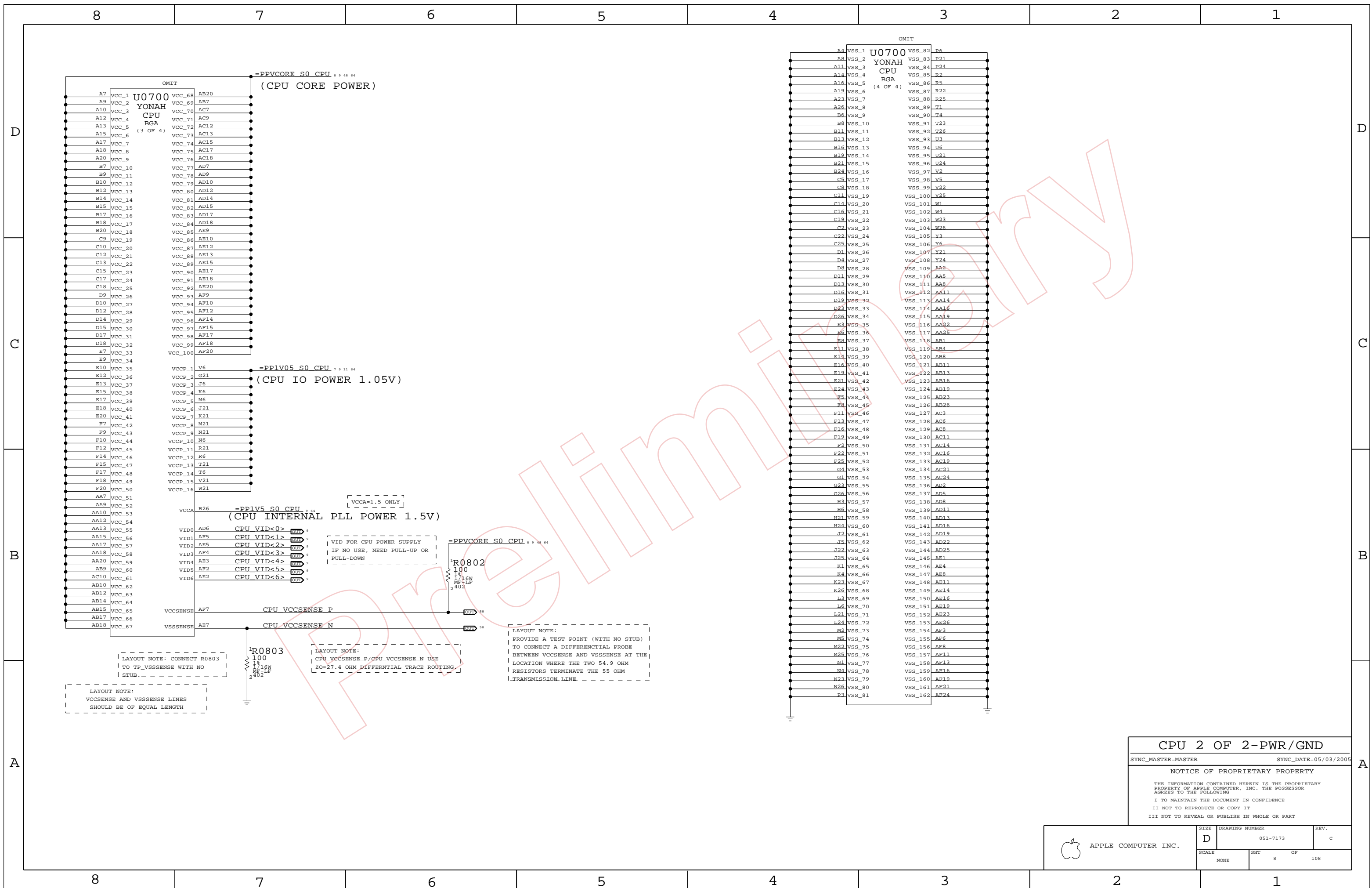
CHANGE THE PULLS RESISTOR VALUE PER NAPA PLATFORM DG REV 0.9

WE THROUGH THE ITP700FLEX CONNECTOR CONNECT TO PDB XDP BUFFER BOARD--ECM*50 SO THE TDI PULL UP THROUGH 54.9 OHM, TMS PULL UP THROUGH 54.9 OHM TCK PULL DOWN THROUGH 54.9 OHM(FOLLOW UP XDP DESIGN REFERENCE)

CPU 1 OF 2-FSB
 SYNC_MASTER=MASTER SYNC_DATE=05/03/2005

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SCALE	SHEET		OF
NONE	7		108



OMIT
=PPVCORE_S0_CPU (CPU CORE POWER)

OMIT
=PP1V05_S0_CPU (CPU IO POWER 1.05V)

VCCA=1.5 ONLY
=PP1V5_S0_CPU (CPU INTERNAL PLL POWER 1.5V)

VID FOR CPU POWER SUPPLY
IF NO USE, NEED PULL-UP OR PULL-DOWN

LAYOUT NOTE:
PROVIDE A TEST POINT (WITH NO STUB) TO CONNECT A DIFFERENTIAL PROBE BETWEEN VCCSENSE AND VSSSENSE AT THE LOCATION WHERE THE TWO 54.9 OHM RESISTORS TERMINATE THE 55 OHM TRANSMISSION LINE.

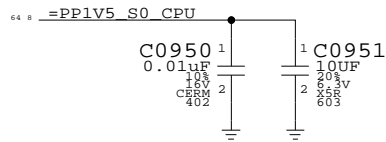
LAYOUT NOTE:
CONNECT R0803 TO TP_VSSSENSE WITH NO STUB.

LAYOUT NOTE:
CPU_VCCSENSE_P/CPU_VCCSENSE_N USE ZO=27.4 OHM DIFFERENTIAL TRACE ROUTING.

CPU 2 OF 2-PWR/GND
 SYNC_MASTER=MASTER SYNC_DATE=05/03/2005
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT OF		REV.
NONE	8 OF 108		

VCCA DECOUPLING
(CPU INTERNAL PLL POWER 1.5V)



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
138S0603	138S0602	?	ALL	USE SAMSUNG AND MURATA ONLY
138S0606	138S0602	?	ALL	USE TAIYO

CPU CORE VID<> SETTINGS

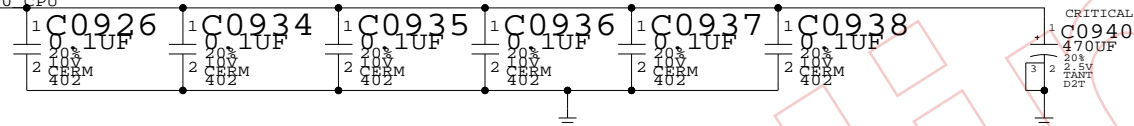
EN CPU VID<6>	R0921	1	0	MF-LP402	58 CPU VID R<6>
EN CPU VID<5>	R0922	1	0	MF-LP402	58 CPU VID R<5>
EN CPU VID<4>	R0923	1	0	MF-LP402	58 CPU VID R<4>
EN CPU VID<3>	R0924	1	0	MF-LP402	58 CPU VID R<3>
EN CPU VID<2>	R0925	1	0	MF-LP402	58 CPU VID R<2>
EN CPU VID<1>	R0926	1	0	MF-LP402	58 CPU VID R<1>
EN CPU VID<0>	R0927	1	0	MF-LP402	58 CPU VID R<0>

R0921~R0927 FOR CPU VOLTAGE MANUAL SETTING

VCCP CORE DECOUPLING
(CPU IO POWER 1.05V)

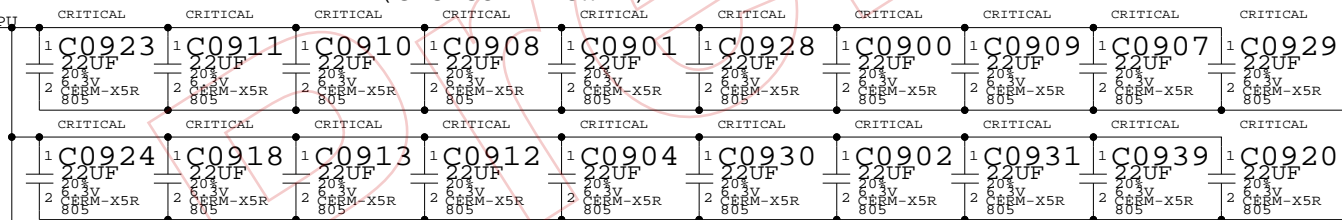
THIS 470UF FOR CPU, GMCH FSB BUS 1.05V

PLACE NEAR THE NORTH BRIDGE
ON BOTTOM SIDE



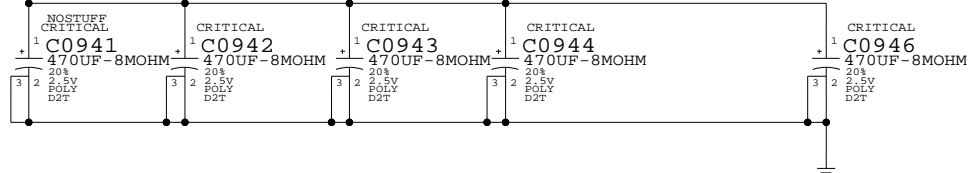
VCC CORE DECOUPLING
(CPU CORE POWER)

PLACE NEAR THE CPU
ON BOTTOM SIDE
(10 PCS ON NORTH SIDE
10 PCS ON SOUTH SIDE)



IF WE USE LOW ESL CAP, THEN WE CAN USE 20 PCS 22UF CAP

(2 PCS ON NORTH SIDE
2 PCS ON SOUTH SIDE)



	MIN	TYP	MAX
DUAL CORE SV CPU	VCCHFM 1.1625		1.30
	VCCLFM TBD		TBD
SINGLE CORE SV CPU	VCCHFM 1.1625		1.30
	VCCLFM TBD		TBD
DUAL CORE LV CPU	VCCHFM 1.0		1.1625
	VCCLFM TBD		TBD
ULV CPU	VCCHFM TBD		TBD
	VCCLFM TBD		TBD

UNIT: V

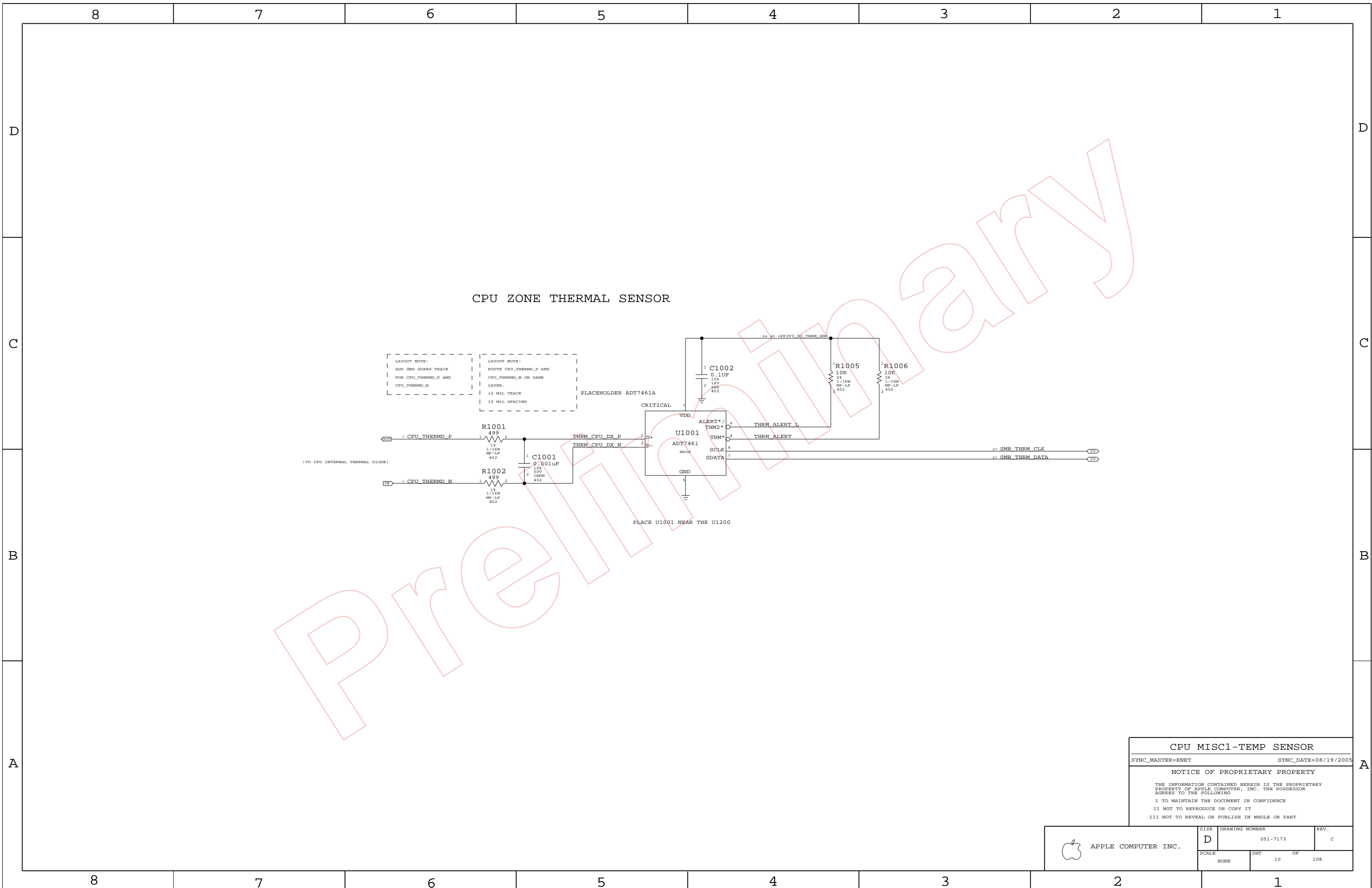
- # ALL PROCESSOR DEFAULT VCORE FOR INITIAL POWER UP IS 1.2V
- # TWO PROCESSORS AT THE SAME FREQUENCY MAY HAVE DIFFERENT SETTING WITH THE VID RANGE (VCORE VOLTAGE)!
- # REFER TO YONAH PROCESSOR EMTS REV 1.0
- # VCCHFM: VCORE AT HIGHEST FREQUENCY MODE
- # VCCLFM: VCORE AT LOWEST FREQUENCY MODE

CPU DECAPS & VID<>

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SCALE	SHT	OF	REV.
NONE	9	108	




CPU MISC1-TEMP SENSOR

SYNC_MASTER=ENET SYNC_DATE=08/19/2005

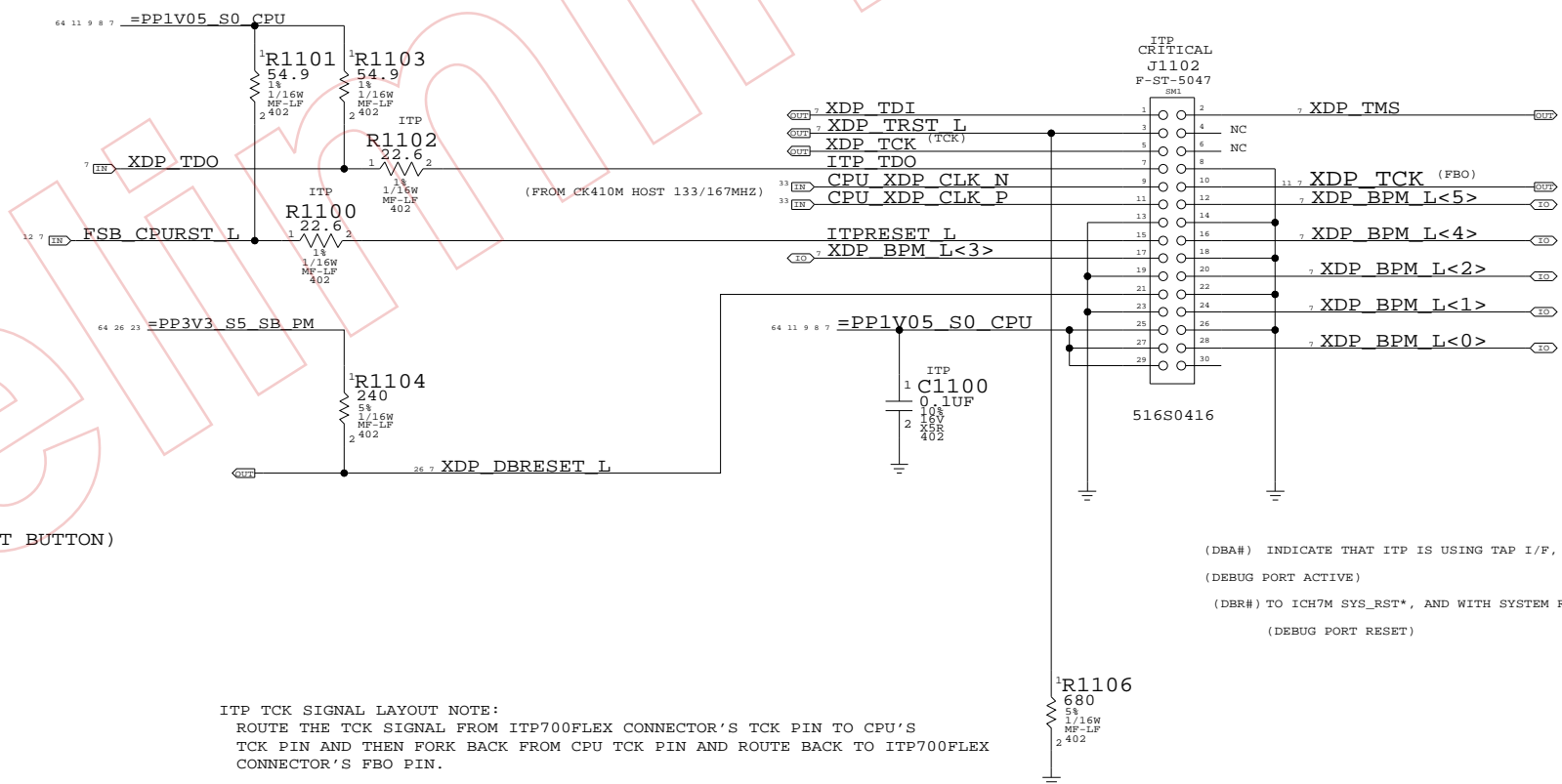
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SCALE	SHT	OF	REV.
NONE	10	108	

CPU ITP700FLEX DEBUG SUPPORT



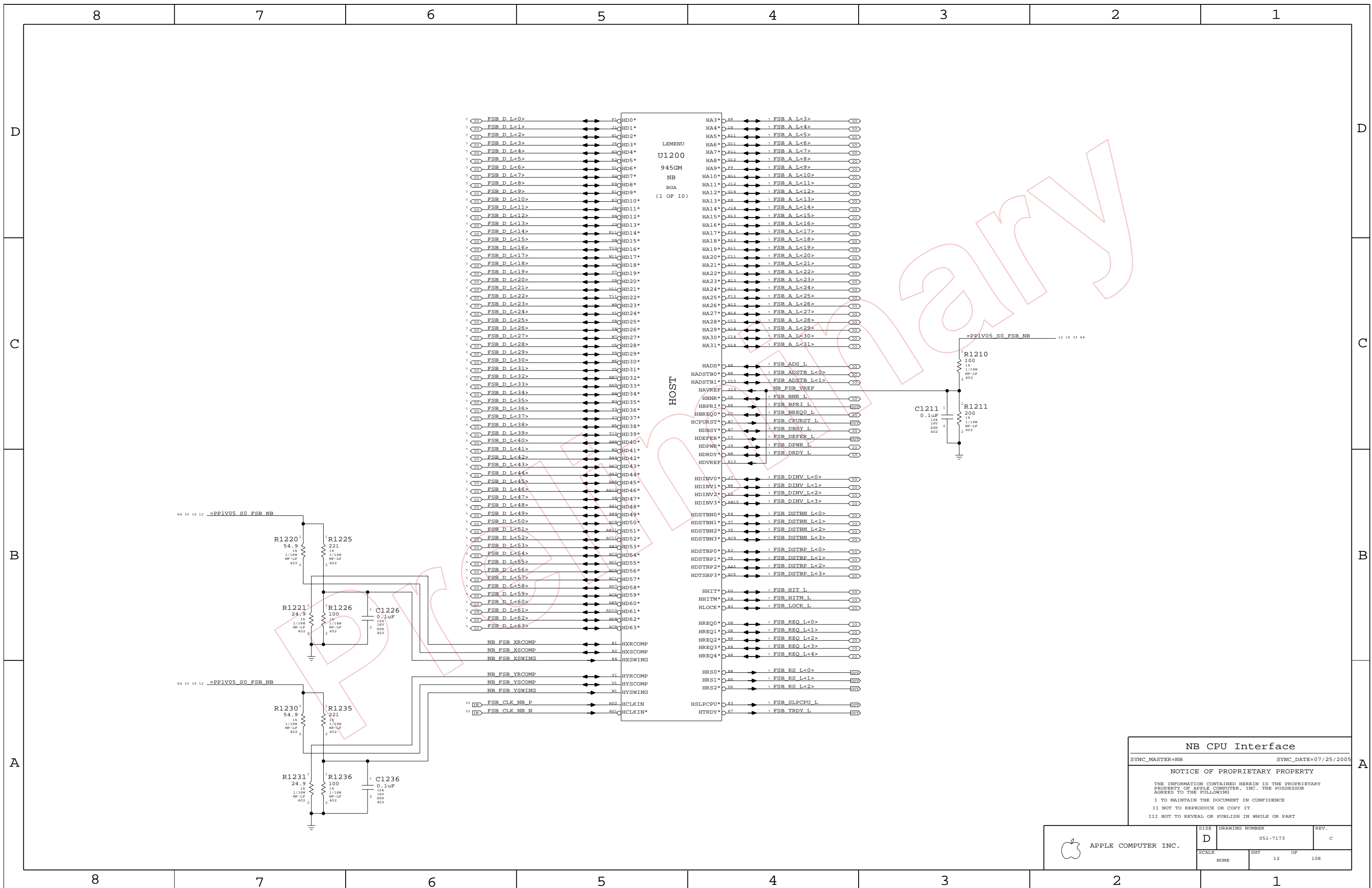
(AND WITH RESET BUTTON)

(DBA#) INDICATE THAT ITP IS USING TAP I/F, NC IN 945GM CHIPSET SYSTEM.
 (DEBUG PORT ACTIVE)
 (DBR#) TO ICH7M SYS_RST*, AND WITH SYSTEM RESET LOGIC
 (DEBUG PORT RESET)

ITP TCK SIGNAL LAYOUT NOTE:
 ROUTE THE TCK SIGNAL FROM ITP700FLEX CONNECTOR'S TCK PIN TO CPU'S
 TCK PIN AND THEN FORK BACK FROM CPU TCK PIN AND ROUTE BACK TO ITP700FLEX
 CONNECTOR'S FBO PIN.

CPU ITP700FLEX DEBUG
 SYNC_MASTER=MASTER SYNC_DATE=5/23/05
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SCALE	SHT	OF	REV.
NONE	11	108	



NB CPU Interface

SYNC_MASTER=NB SYNC_DATE=07/25/2005

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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. C
	SCALE NONE	SHEET 12	OF 108

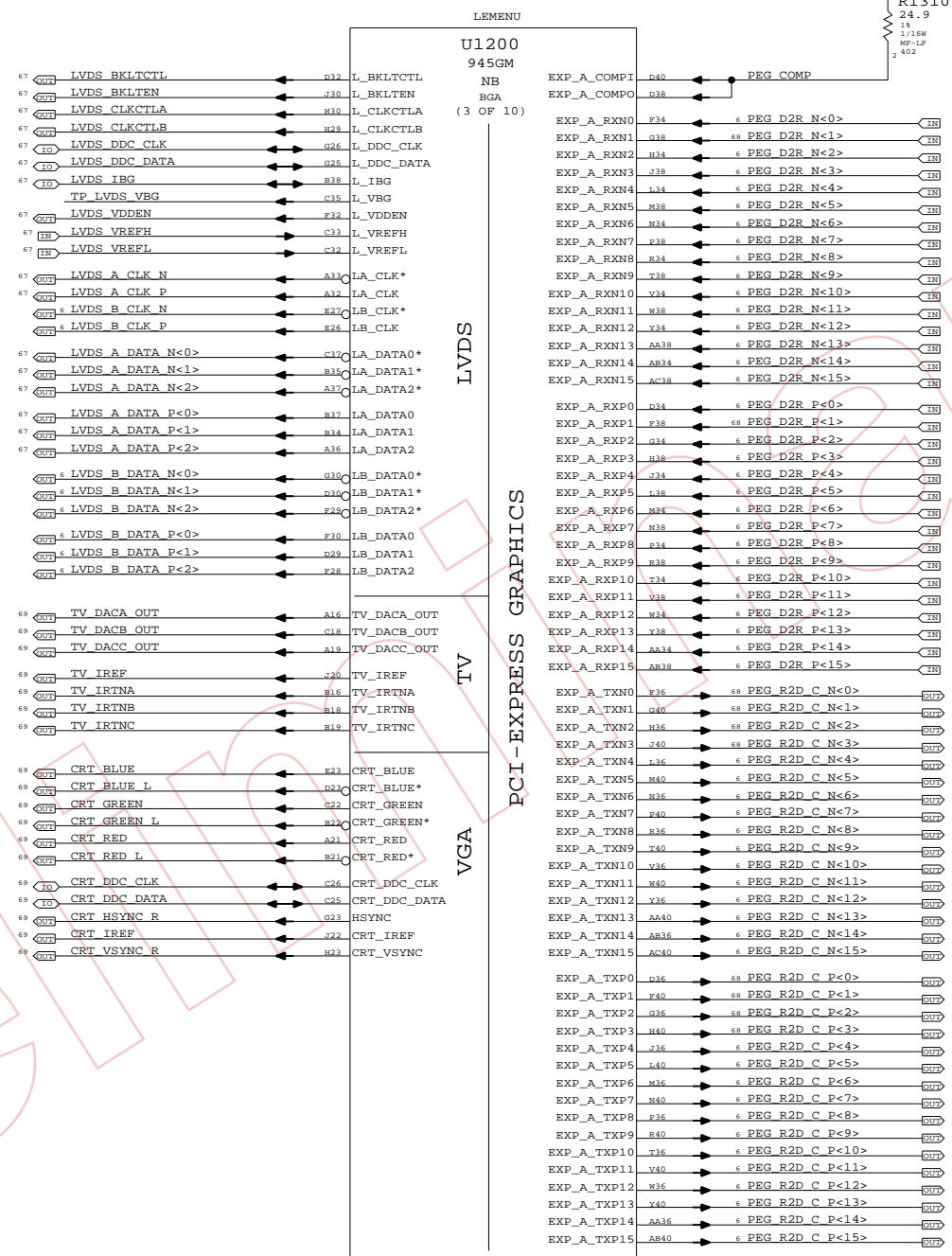
LVDS Disable
 Can leave all signals NC if LVDS is not implemented
 Tie VCC_TXLVDS and VCCA_LVDS to GND. If SDVO is used
 VCCD_LVDS must remain powered with proper decoupling.
 Otherwise, tie VCCD_LVDS to GND also.

TV-Out Signal Usage:
 Composite: DACA only
 S-Video: DACB & DACC only
 Component: DACA, DACB & DACC

Unused DAC outputs must remain powered, but can omit
 filtering components. Unused DAC outputs should
 connect to GND through 75-ohm resistors.

TV-Out Disable
 Tie DACx_OUT, IRTNx, and IREF to 1.5V power rail.
 Tie VCCD_TVDAC, VCCD_QTVDAC, VCCA_TVDACx, and
 VCCA_TVVBG to 1.5V power rail. Tie VSSA_TVVBG to GND.

CRT Disable
 Tie R/R#/G/G#/B/B# and IREF to VCC Core rail, tie
 HSYNC and VSYNC to GND. Tie VCCA_CRTDAC to VCC Core
 rail, and tie VSSA_CRTDAC and VCC_SYNC to GND.



SDVO Alternate Function

SDVO_TVCLKIN#
 SDVO_INT#
 SDVO_FLDSTALL#

SDVO_TVCLKIN
 SDVO_INT
 SDVO_FLDSTALL

SDVOB_RED#
 SDVOB_GREEN#
 SDVOB_BLUE#
 SDVOB_CLKN
 SDVOC_RED#
 SDVOC_GREEN#
 SDVOC_BLUE#
 SDVOC_CLKN

SDVOB_RED
 SDVOB_GREEN
 SDVOB_BLUE
 SDVOB_CLKP
 SDVOC_RED
 SDVOC_GREEN
 SDVOC_BLUE
 SDVOC_CLKP

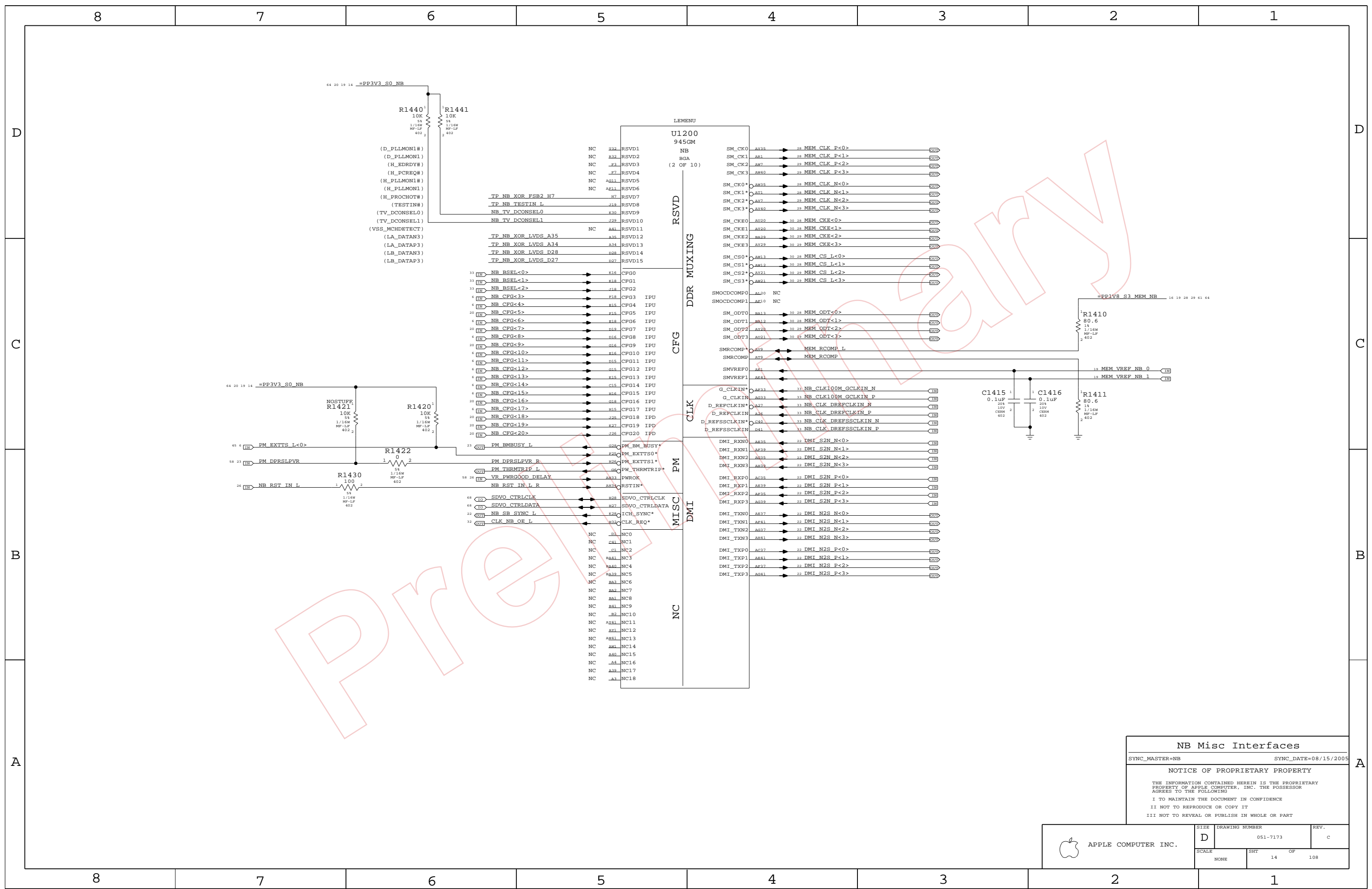
NB PEG / Video Interfaces

SYNC_MASTER=NB SYNC_DATE=07/25/2005

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	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	13	108	



NB Misc Interfaces

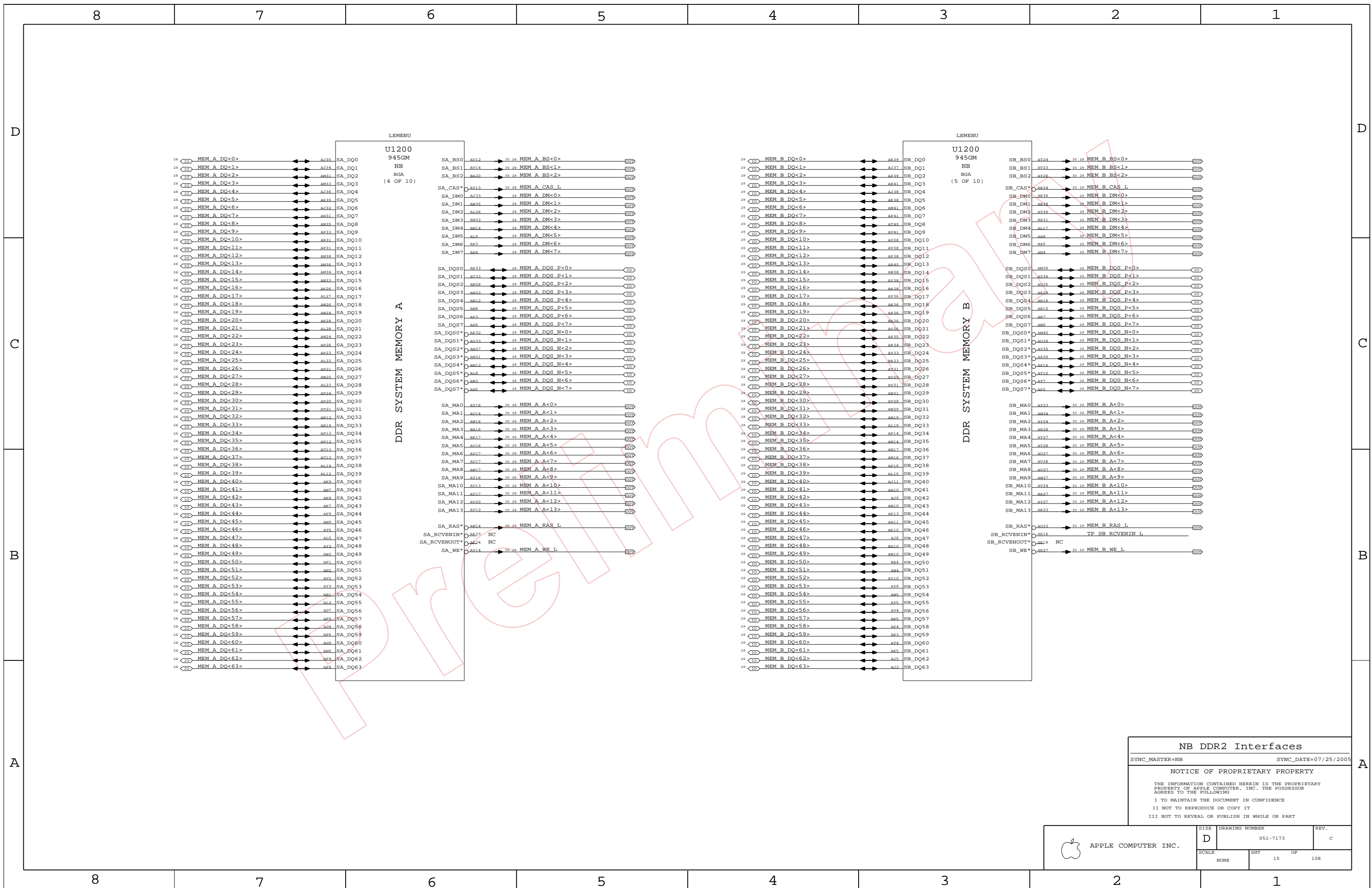
SYNC_MASTER=NB SYNC_DATE=08/15/2005

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SCALE	SHT	OF	REV.
NONE	14	108	



NB DDR2 Interfaces

SYNC_MASTER=NB SYNC_DATE=07/25/2005

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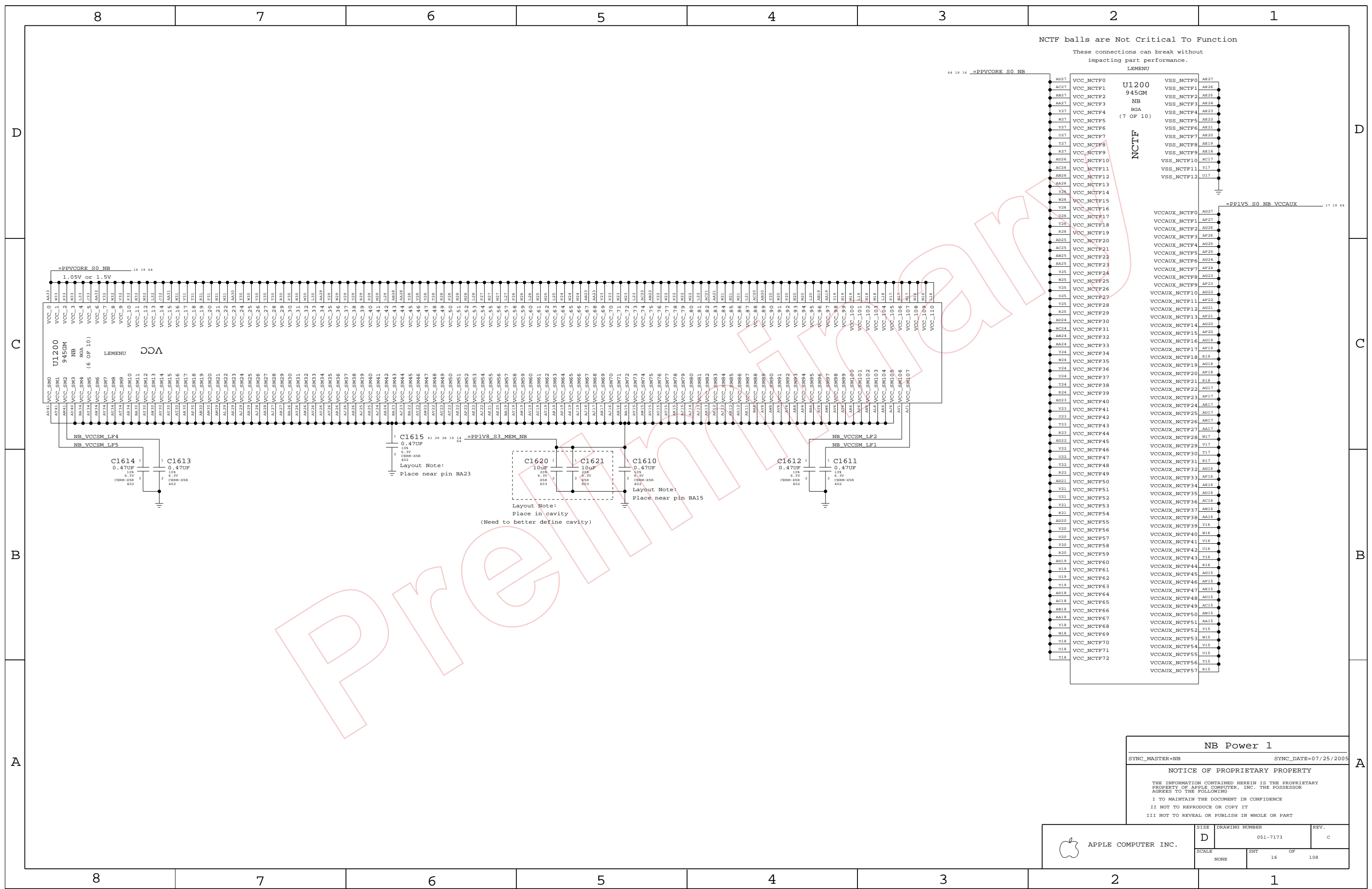
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SCALE	SHT	OF	108
NONE	15		



NCTF balls are Not Critical To Function
 These connections can break without impacting part performance.

NCTF

VCC

VCCAUX

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

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VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

VCCNCTF

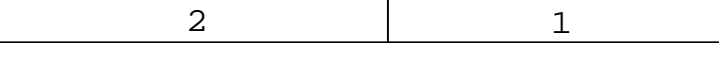
VCCNCTF

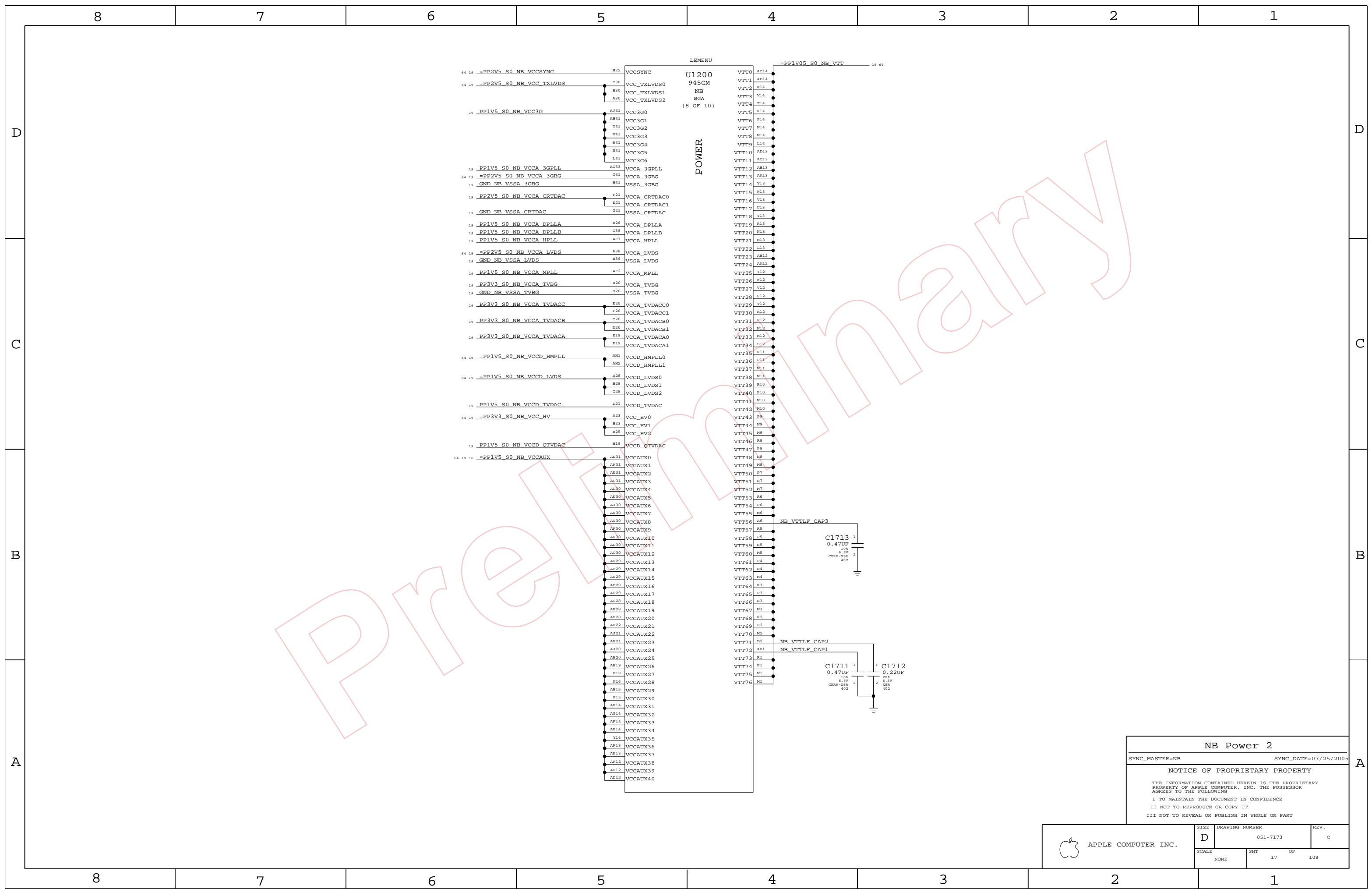
VCCNCTF

VCCNCTF

NB Power 1
 SYNC_MASTER=NB SYNC_DATE=07/25/2005
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SCALE	DRAWING NUMBER		REV.
	D	051-7173	
NONE	SHT	OF	108
	16		





Pre-release

NB Power 2

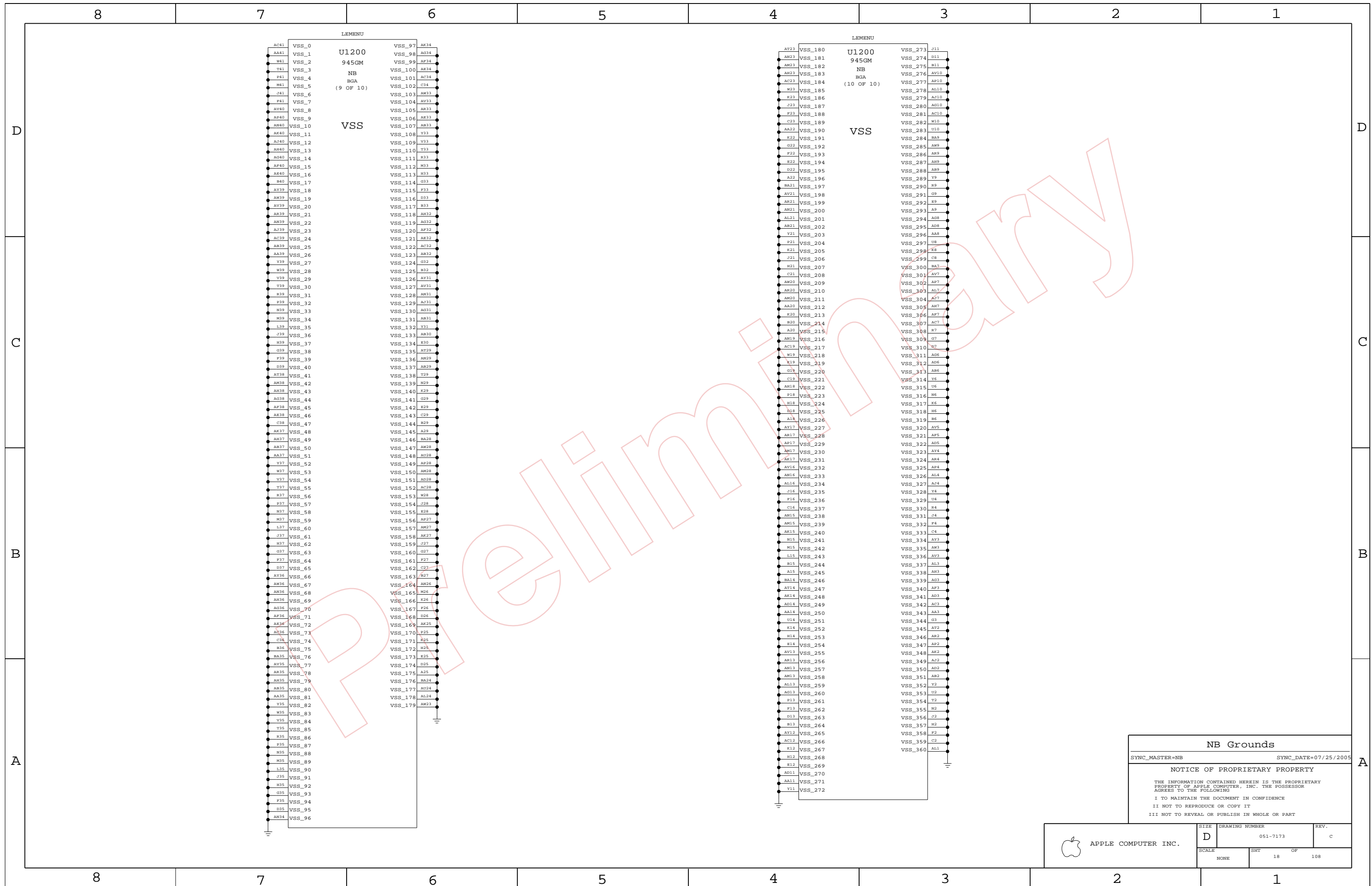
SYNC_MASTER=NB SYNC_DATE=07/25/2005

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	SCALE NONE	SHEET 17	OF 108



NB Grounds

SYNC_MASTER=NB SYNC_DATE=07/25/2005

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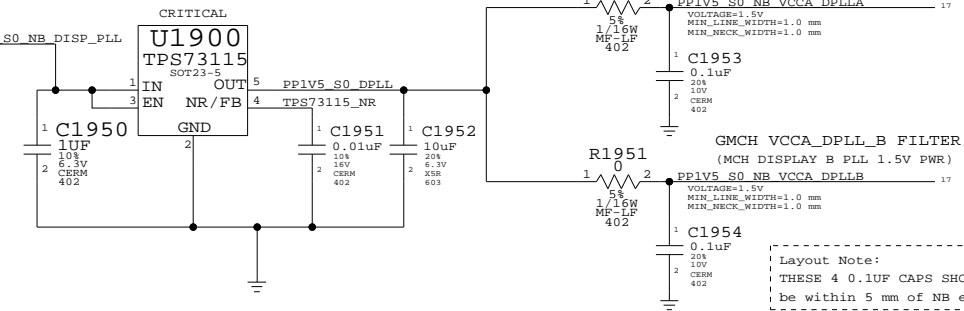
APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. c
	SCALE NONE	SHEET 18	OF 108

Power Interface

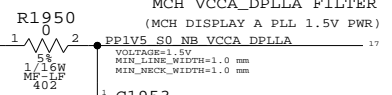
These are the power signals that leave the NB "block"

- PP1V05_S0_FSB_NB 12 33 64
- PPVCORE_S0_NB 16 19 64
- PP1V05_S0_NB 19 64
- PP1V05_S0_NB_VTT 17 19 64
- PP1V5_S0_NB 19 64
- PP1V5_S0_NB_PCIE 13 64
- PP1V5_S0_NB_PLL 13 64
- PP1V5_S0_NB_TV DAC 19 64
- PP1V5_S0_NB_VCCD_HMPLL 17 64
- PP1V5_S0_NB_VCCD_LVDS 17 19 64
- PP1V5_S0_NB_VCCAUX 16 17 19 64
- PP1V8_S3_MEM_NB 14 16 28 29 61 64
- PP2V5_S0_NB_CRTDAC 19 64
- PP2V5_S0_NB_VCCSYNC 17 19 64
- PP2V5_S0_NB_VCC_TXLVDS 17 19 64
- PP2V5_S0_NB_VCCA_3GBG 17 19 64
- PP2V5_S0_NB_VCCA_LVDS 17 19 64
- PP3V3_S0_NB 14 20 64
- PP3V3_S0_NB_VCC_HV 17 19 64
- PP5V_S0_NB_TV DAC 19 64

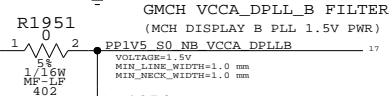
MCH DISPLAY PLL POWER LDO



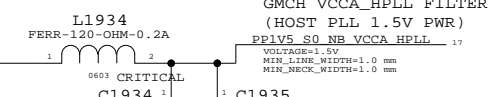
MCH VCCA_DPLL FILTER
(MCH DISPLAY A PLL 1.5V PWR)



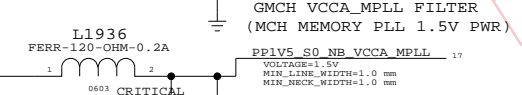
GMCH VCCA_DPLL_B FILTER
(MCH DISPLAY B PLL 1.5V PWR)



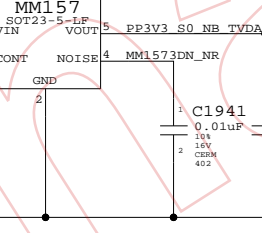
GMCH VCCA_HPLL FILTER
(HOST PLL 1.5V PWR)



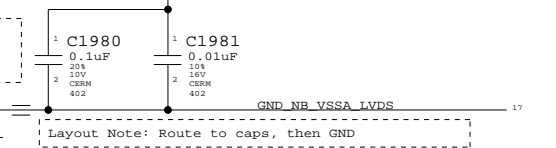
GMCH VCCA_MPLL FILTER
(MCH MEMORY PLL 1.5V PWR)



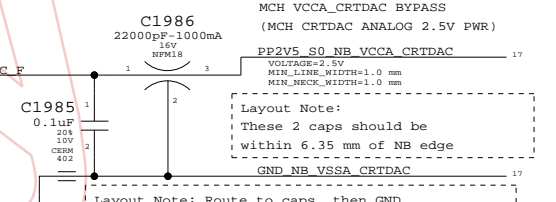
CRITICAL U1901 MM157



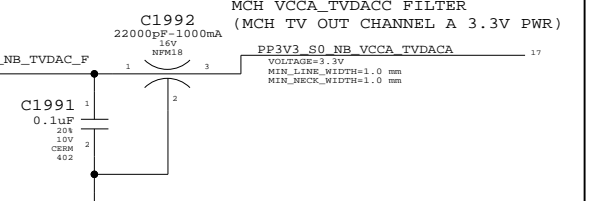
MCH VCCA_LVDS FILTER
(MCH LVDS ANALOG 2.5V PWR)



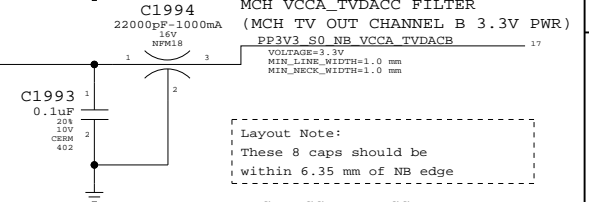
MCH VCCA_CRTDAC BYPASS
(MCH CRTDAC ANALOG 2.5V PWR)



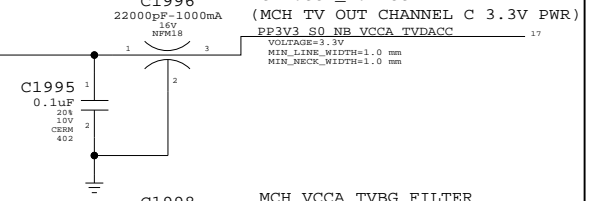
MCH VCCA_TV DAC FILTER
(MCH TV OUT CHANNEL A 3.3V PWR)



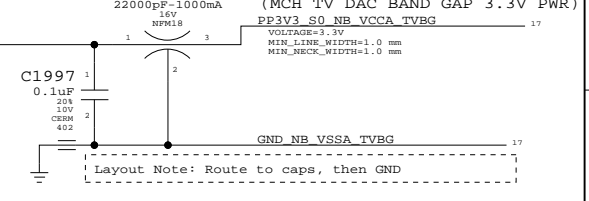
MCH VCCA_TV DAC FILTER
(MCH TV OUT CHANNEL B 3.3V PWR)



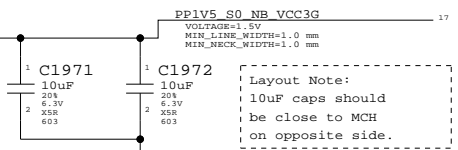
MCH VCCA_TV DAC FILTER
(MCH TV OUT CHANNEL C 3.3V PWR)



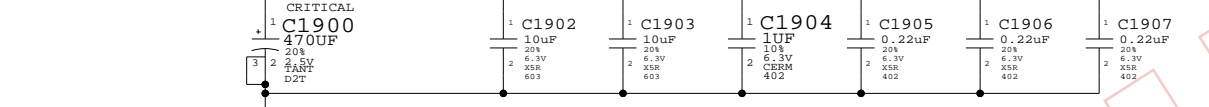
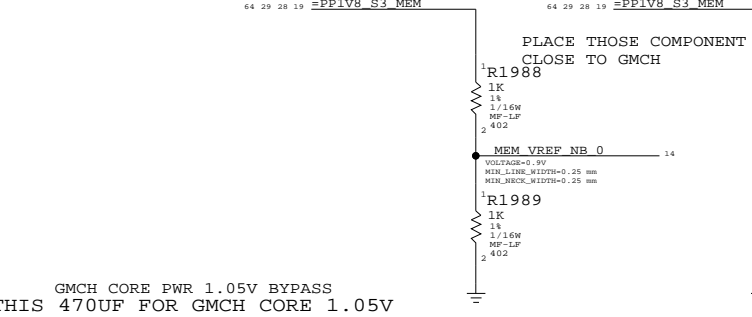
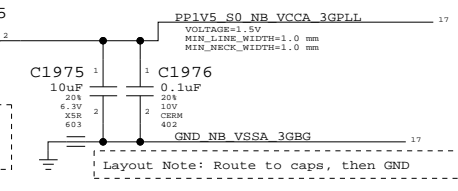
MCH VCCA_TV BG FILTER
(MCH TV DAC BAND GAP 3.3V PWR)



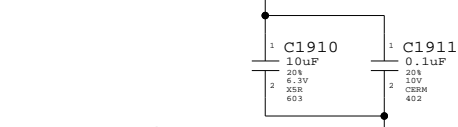
GMCH VCC3G FILTER
(PCI-E/DMI ANALOG 1.5V PWR)



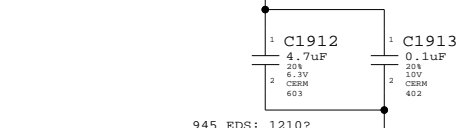
GMCH VCCA_3GPLL FILTER
(3GIO PLL 1.5V PWR)



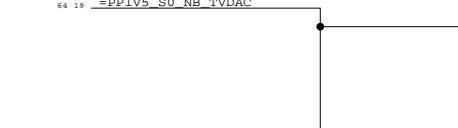
GMCH VCCD_LVDS BYPASS
(MCH LVDS DIGITAL 1.5V PWR)



GMCH VCCD_LVDS BYPASS
(MCH LVDS DATA/CLK TX 2.5V PWR)



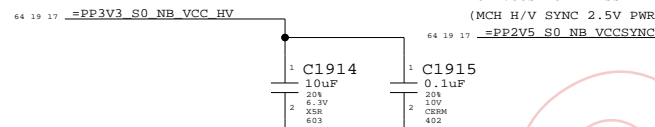
GMCH VCCD_TV DAC FILTER
(MCH TV DAC DEDICATED PWR 1.5V)



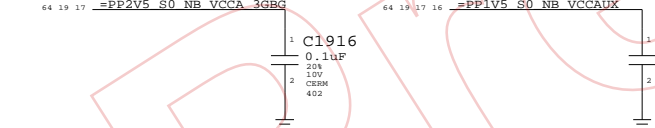
GMCH VCCD_QTV DAC FILTER
(MCH TV DAC DIGITAL QUIET 1.5V PWR)



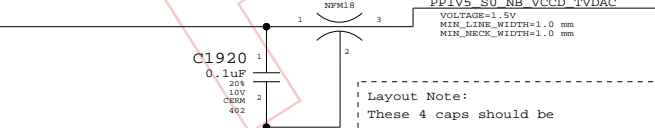
MCH VCCD_LVDS BYPASS
(MCH HV BUFFER 3.3V PWR)



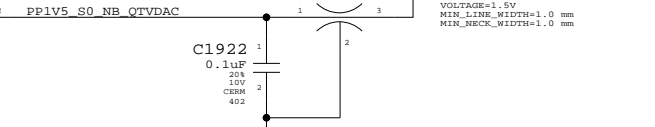
MCH VCCA_3GBG BYPASS
(MCH PCIe/DMI BAND GAP 2.5V PWR)



MCH VCCA_3GBG BYPASS
(MCH DDR DLL&IO, FSB HSI0&IO PWR 1.5V)



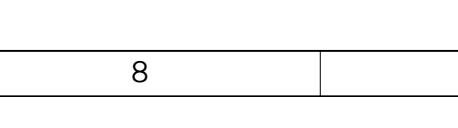
MCH VCCA_3GBG BYPASS
(MCH TV DAC BAND GAP 3.3V PWR)



GMCH VCCAUX FILTER
(MCH DDR DLL&IO, FSB HSI0&IO PWR 1.5V)

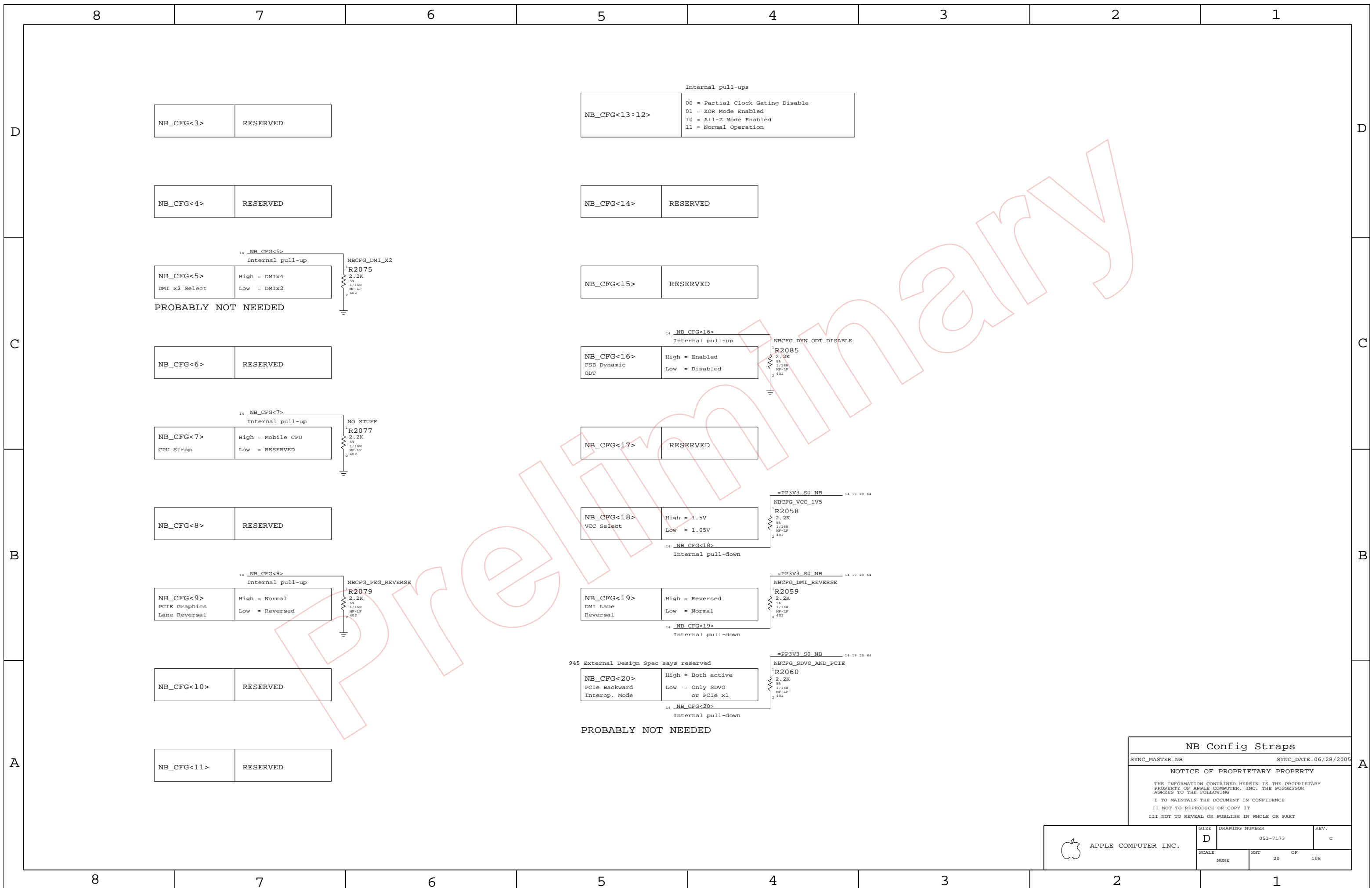


GMCH VCCAUX FILTER
(MCH TV DAC BAND GAP 3.3V PWR)



NB (GM) Decoupling		
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	D	051-7173	C
SCALE	SHEET	OF	TOTAL
NONE	19	19	108



Internal pull-ups

NB_CFG<13:12>	00 = Partial Clock Gating Disable 01 = XOR Mode Enabled 10 = All-Z Mode Enabled 11 = Normal Operation
---------------	--

NB_CFG<14>	RESERVED
------------	----------

NB_CFG<15>	RESERVED
------------	----------

NB_CFG<16>	High = Enabled Low = Disabled
------------	----------------------------------

NB_CFG<17>	RESERVED
------------	----------

NB_CFG<18>	High = 1.5V Low = 1.05V
------------	----------------------------

NB_CFG<19>	High = Reversed Low = Normal
------------	---------------------------------

945 External Design Spec says reserved

NB_CFG<20>	High = Both active Low = Only SDVO or PCIe x1 Interop. Mode
------------	--

NB_CFG<3>	RESERVED
-----------	----------

NB_CFG<4>	RESERVED
-----------	----------

NB_CFG<5>	High = DMIX4 Low = DMIX2
-----------	-----------------------------

PROBABLY NOT NEEDED

NB_CFG<6>	RESERVED
-----------	----------

NB_CFG<7>	High = Mobile CPU Low = RESERVED
-----------	-------------------------------------

NB_CFG<8>	RESERVED
-----------	----------

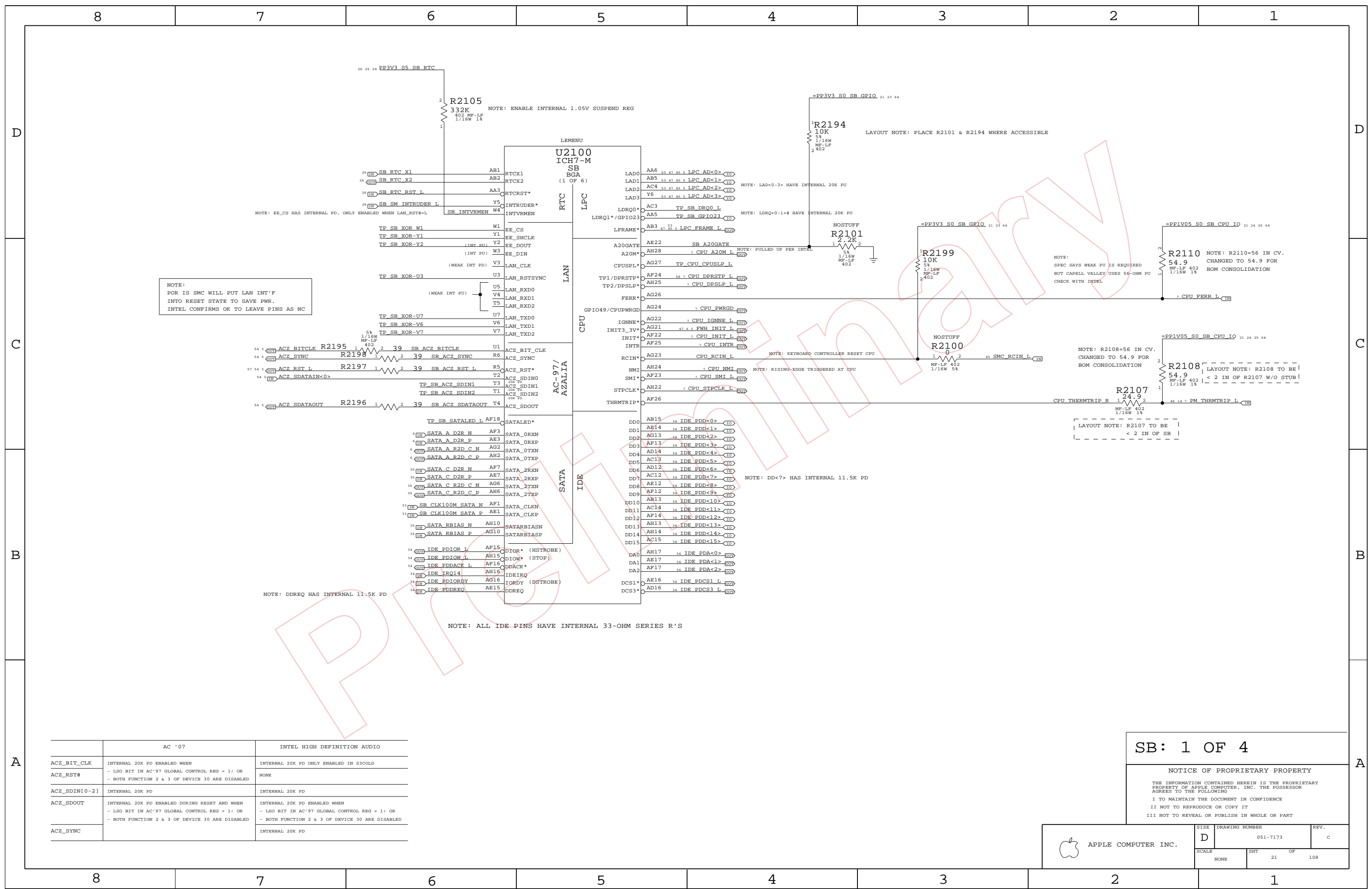
NB_CFG<9>	High = Normal Low = Reversed
-----------	---------------------------------

NB_CFG<10>	RESERVED
------------	----------

NB_CFG<11>	RESERVED
------------	----------

NB Config Straps
 SYNC_MASTER=NB SYNC_DATE=06/28/2005
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	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	20	108	



NOTE:
POR IS SMC WILL PUT LAN INTI'F
INTO RESET STATE TO SAVE PWR.
INTEL CONFIRMS OK TO LEAVE PINS AS NC

NOTE: ER_CS HAS INTERNAL PD, ONLY ENABLED WHEN LAN_RST#L

NOTE: LAD<0-3> HAVE INTERNAL 20K PU

NOTE: LDRQ<0-1># HAVE INTERNAL 20K PU

NOTE: PULLED UP PER INTEL

NOTE:
SPEC SAYS WEAK PU IS REQUIRED
BUT CAPELL VALLEY USES 56-OHM PU
CHECK WITH INTEL

NOTE: R2108=56 IN CV.
CHANGED TO 54.9 FOR
BOM CONSOLIDATION

LAYOUT NOTE: R2107 TO BE
< 2 IN OF SB

NOTE: DD<7> HAS INTERNAL 11.5K PD

NOTE: DDREQ HAS INTERNAL 11.5K PD

NOTE: ALL IDE PINS HAVE INTERNAL 33-OHM SERIES R'S

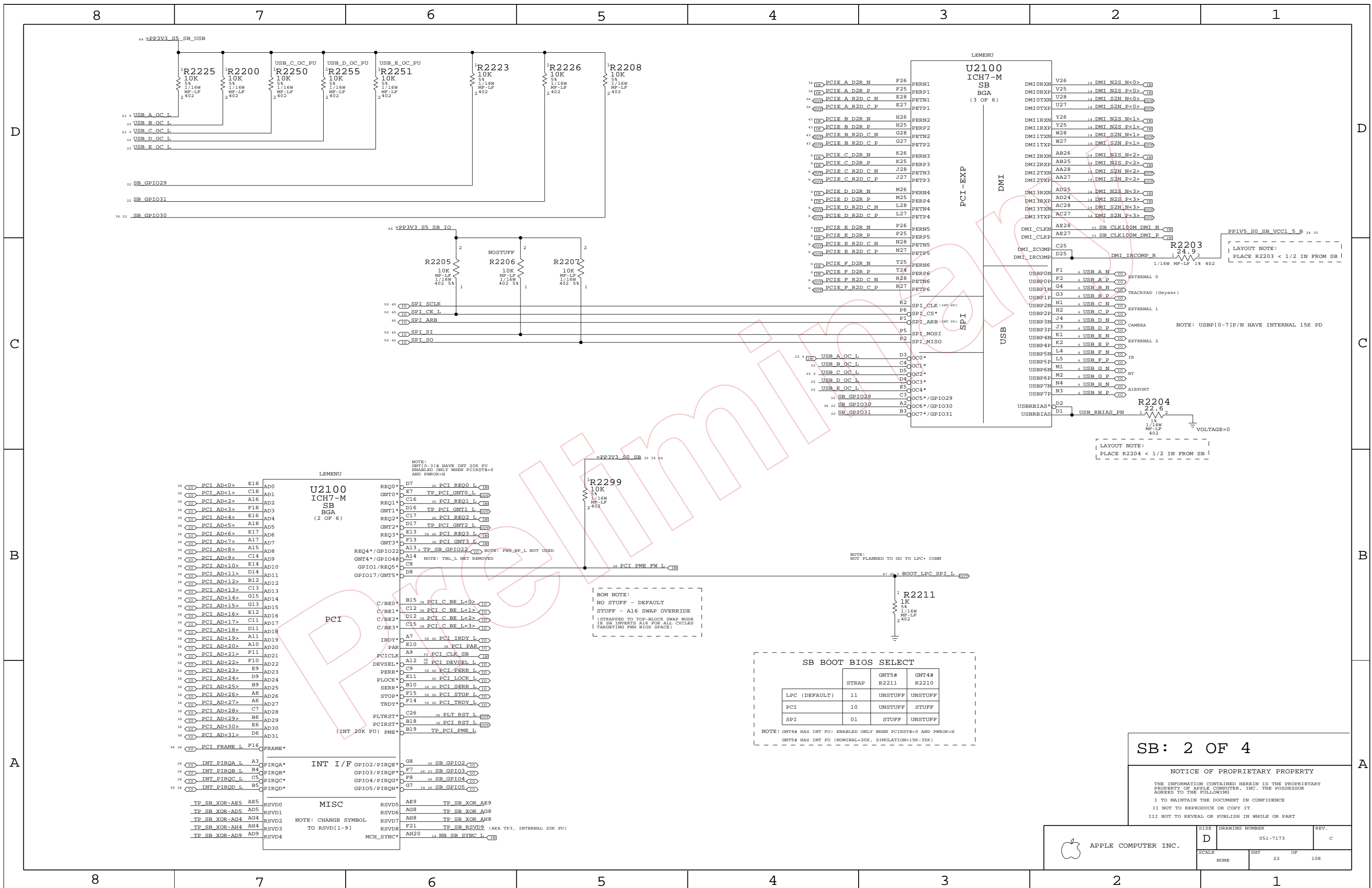
	AC '07	INTEL HIGH DEFINITION AUDIO
ACZ_BIT_CLK	INTERNAL 20K PD ENABLED WHEN - LSO BIT IN AC'97 GLOBAL CONTROL REG = 1; OR	INTERNAL 20K PD ONLY ENABLED IN S3COLD
ACZ_RST#	NONE	NONE
ACZ_SDIN[0-2]	INTERNAL 20K PD	INTERNAL 20K PD
ACZ_SDOUT	INTERNAL 20K PD ENABLED DURING RESET AND WHEN - LSO BIT IN AC'97 GLOBAL CONTROL REG = 1; OR - BOTH FUNCTION 2 & 3 OF DEVICE 30 ARE DISABLED	INTERNAL 20K PD ENABLED WHEN - LSO BIT IN AC'97 GLOBAL CONTROL REG = 1; OR - BOTH FUNCTION 2 & 3 OF DEVICE 30 ARE DISABLED
ACZ_SYNC	INTERNAL 20K PD	INTERNAL 20K PD

SB: 1 OF 4

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SCALE	SHT	OF	REV.
NONE	21	108	



LAYOUT NOTE:
PLACE R2203 < 1/2 IN FROM SB !

LAYOUT NOTE:
PLACE R2204 < 1/2 IN FROM SB !

BOM NOTE:
NO STUFF - DEFAULT
STUFF - A16 SWAP OVERRIDE
(STRAPPED TO TOP-BLOCK SWAP MODE
IF SB INVERTS A16 FOR ALL CYCLES
(TARGETING FWB BIOS SPACE))

SB BOOT BIOS SELECT

	STRAP	GNT5# R2211	GNT4# R2210
LPC (DEFAULT)	11	UNSTUFF	UNSTUFF
PCI	10	UNSTUFF	STUFF
SPI	01	STUFF	UNSTUFF

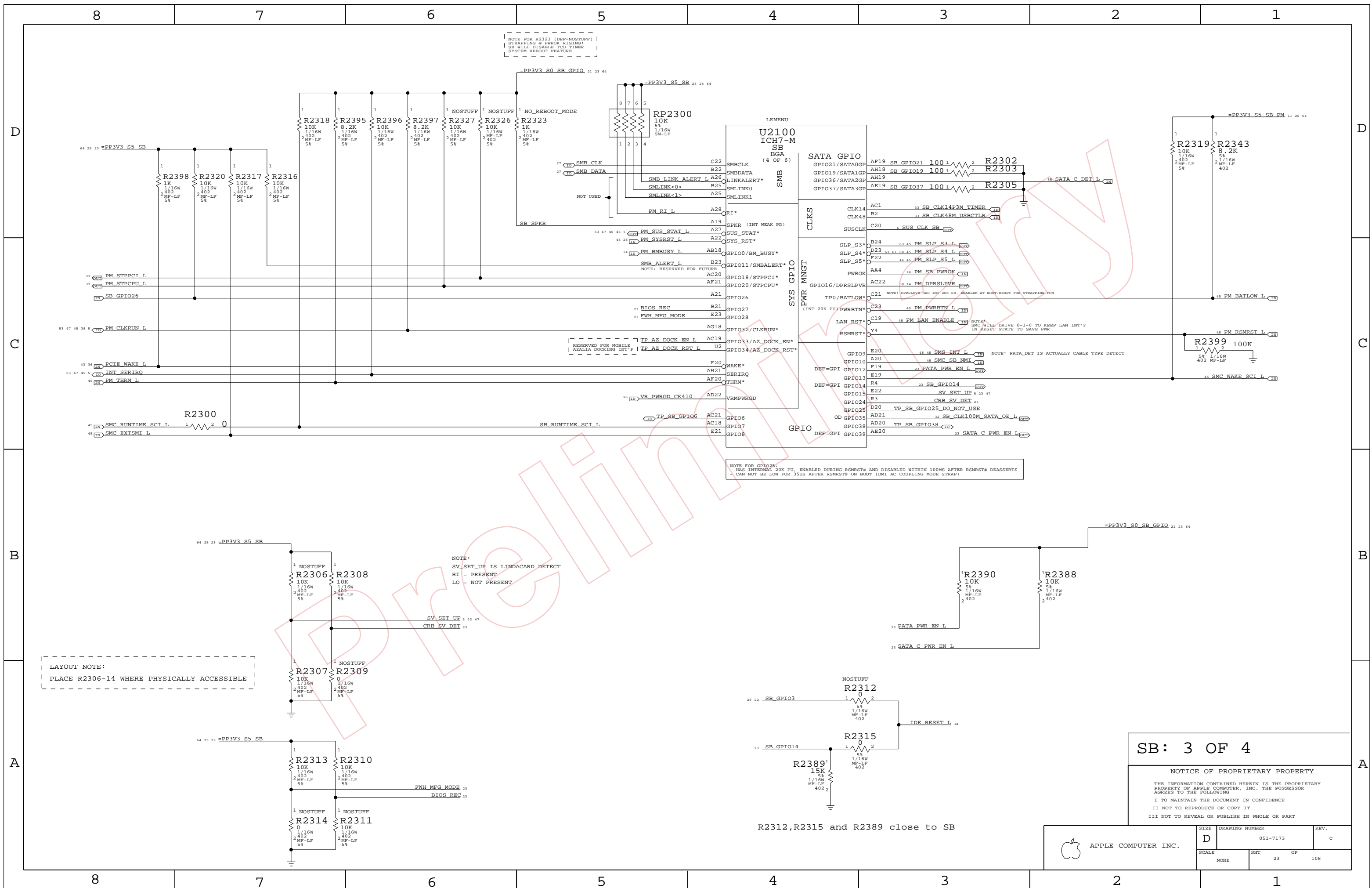
NOTE: GNT4# HAS INT PU: ENABLED ONLY WHEN PCIRST#=0 AND FW0K#-H
GNT5# HAS INT PU (NOMINAL=20K, SIMULATION=15K-35K)

SB: 2 OF 4

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SCALE	SHT	OF	108
NONE	22		



NOTE FOR R2323 (DEF-NOSTUFF) | STRAPPING & PWROK RISING: SB WILL DISABLE TOO TIMER SYSTEM REBOOT FEATURE

NOTE FOR GPIO25:
 * HAS INTERNAL 20K PU, ENABLED DURING RSMRST# AND DISABLED WITHIN 100MS AFTER RSMRST# DEASSERTS
 * CAN NOT BE LOW FOR 35US AFTER RSMRST# ON BOOT (EMI AC COUPLING MODE STRAP)

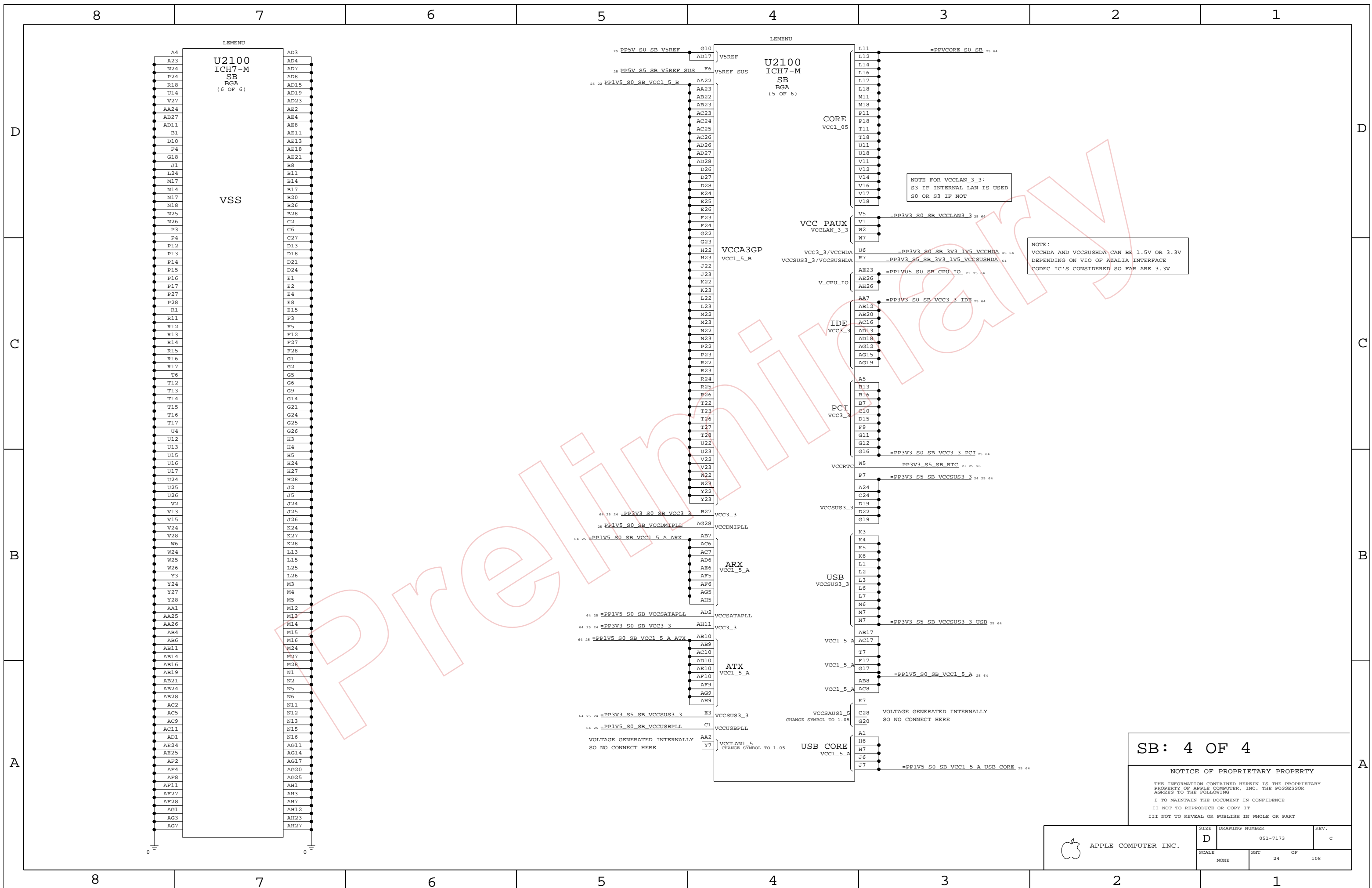
LAYOUT NOTE:
 PLACE R2306-14 WHERE PHYSICALLY ACCESSIBLE

SB: 3 OF 4

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R2312, R2315 and R2389 close to SB

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	23		



NOTE FOR VCCLAN_3_3:
S3 IF INTERNAL LAN IS USED
S0 OR S3 IF NOT

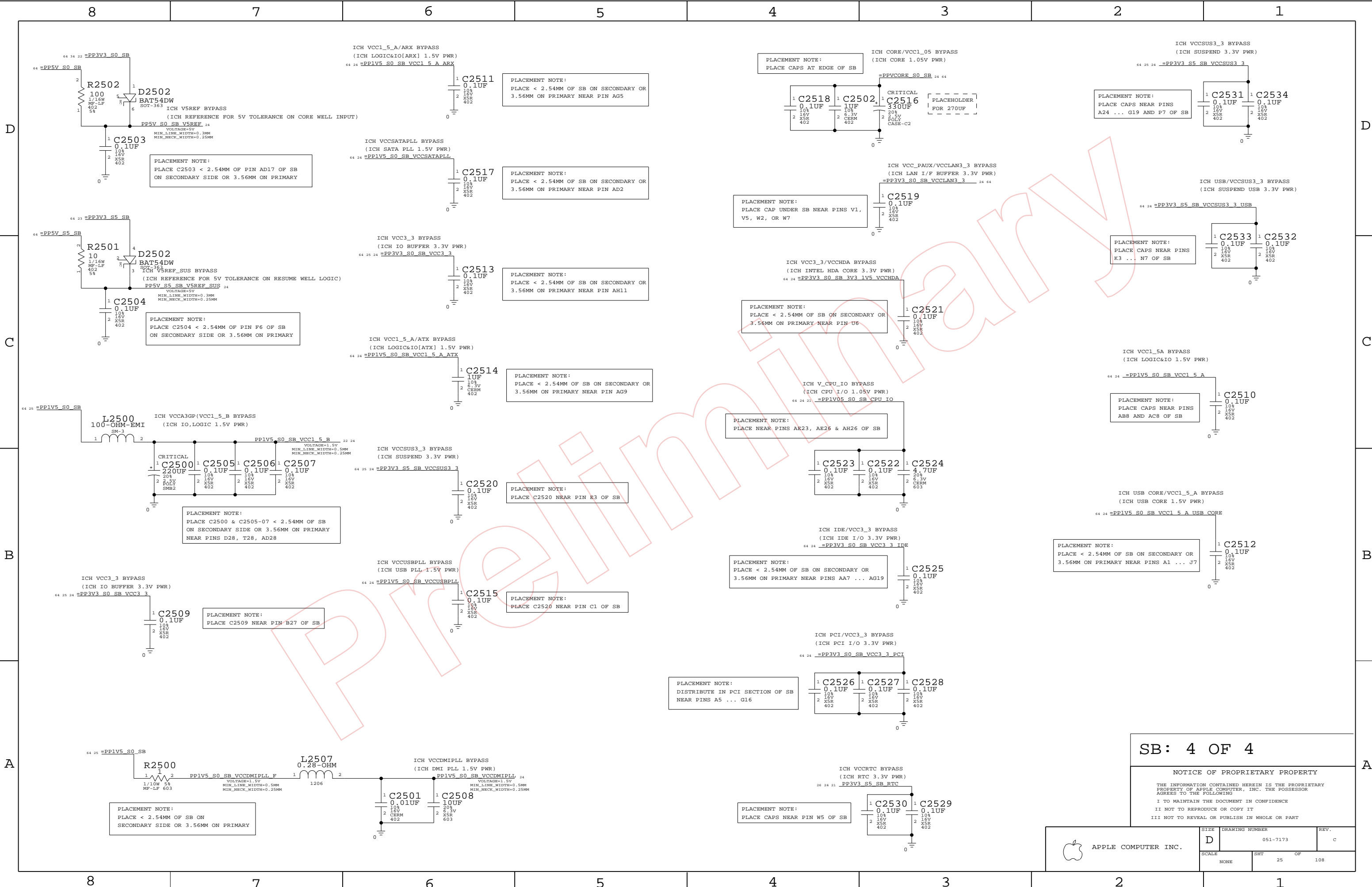
NOTE:
VCCCHDA AND VCCSUS3_3 CAN BE 1.5V OR 3.3V
DEPENDING ON VIO OF AZALIA INTERFACE
CODER IC'S CONSIDERED SO FAR ARE 3.3V

SB: 4 OF 4

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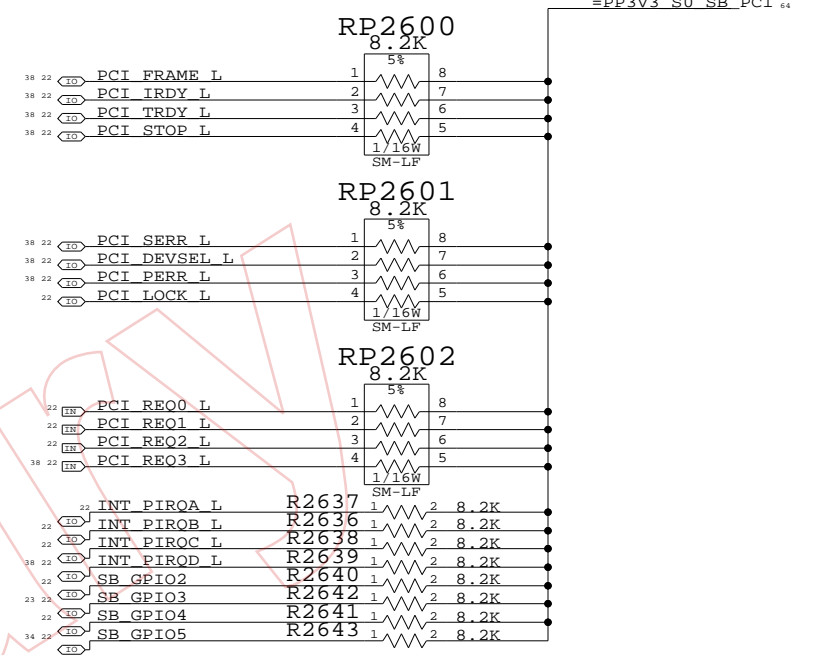
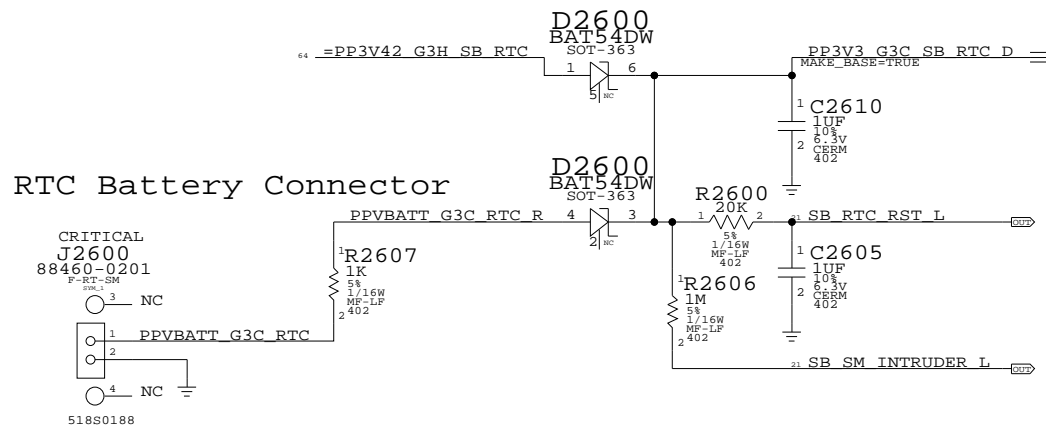
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	108
NONE	24		



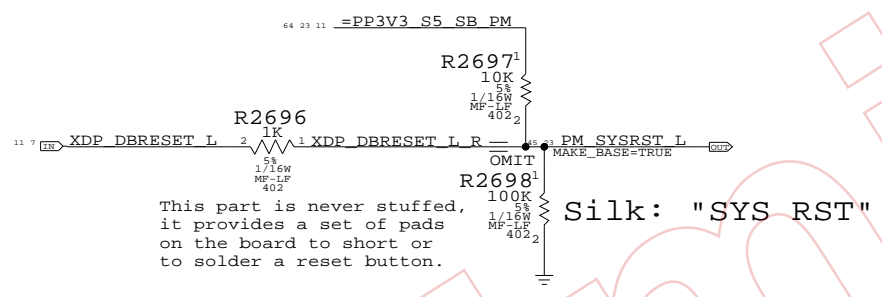
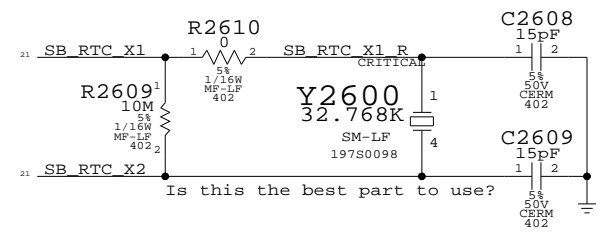
SB: 4 OF 4

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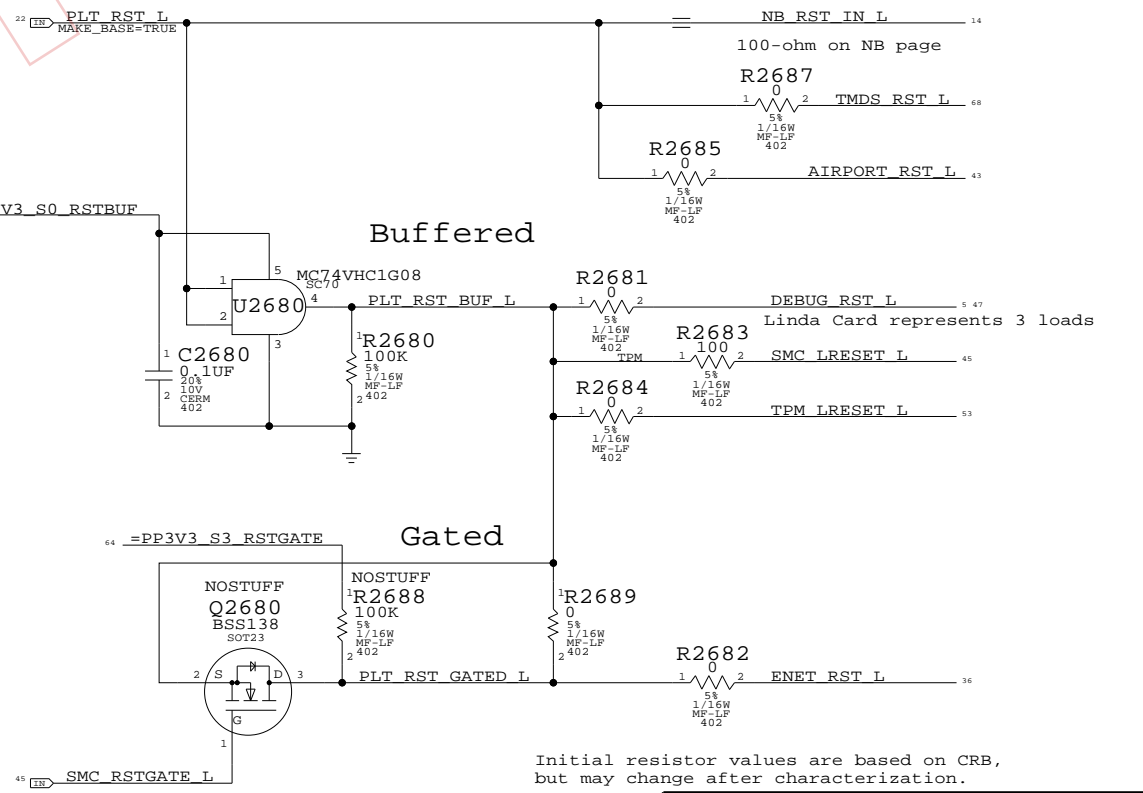
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	25		



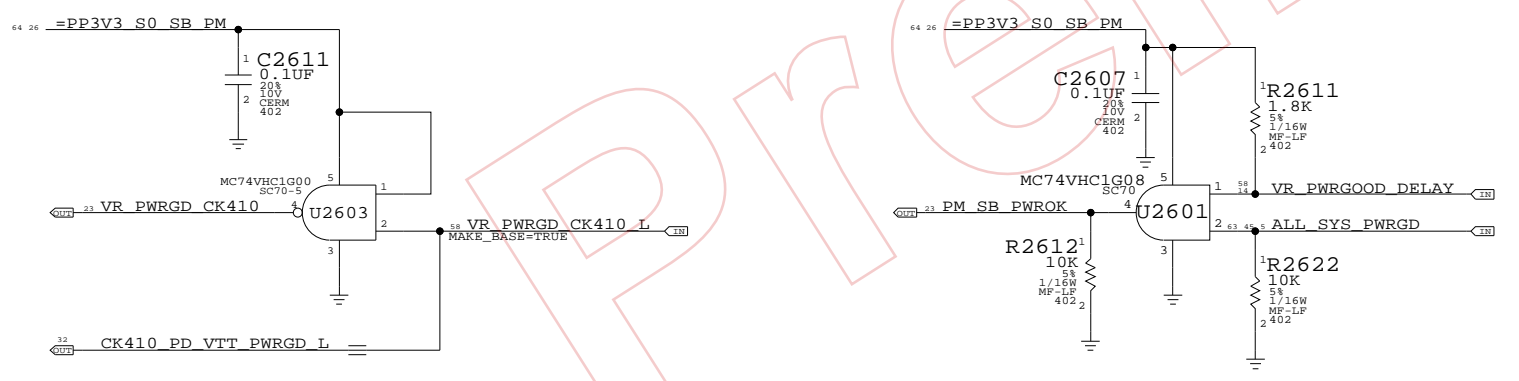
SB RTC Crystal Circuit



Platform Reset Connections
Unbuffered



Initial resistor values are based on CRB, but may change after characterization.



SB Misc		
SYNC_MASTER=NB	SYNC_DATE=07/26/2005	
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	26		

8

7

6

5

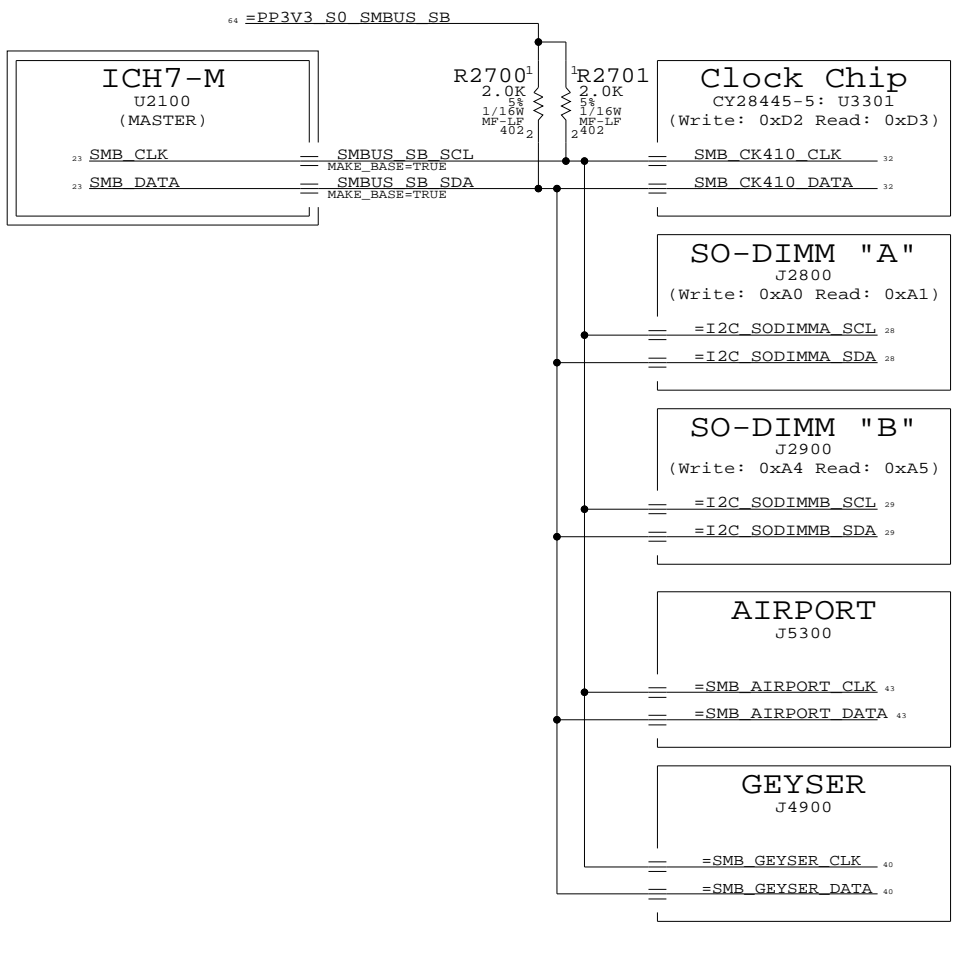
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3

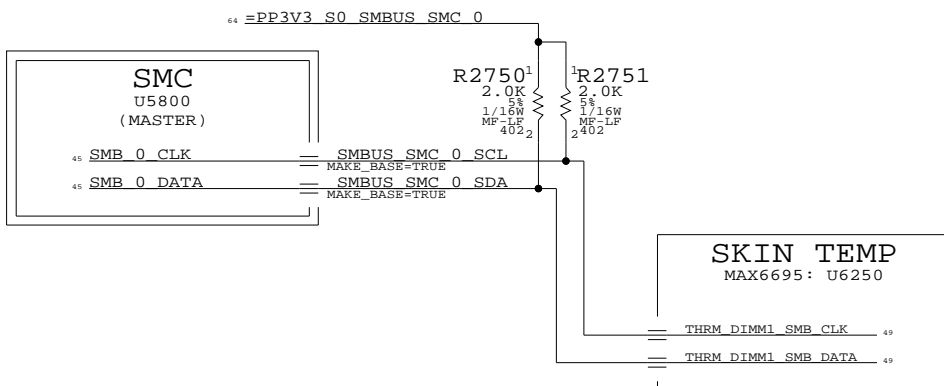
2

1

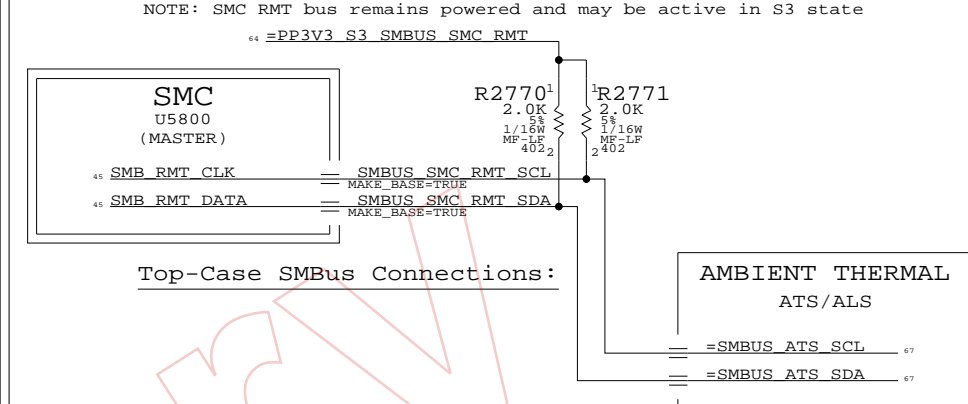
ICH7-M SMBus Connections



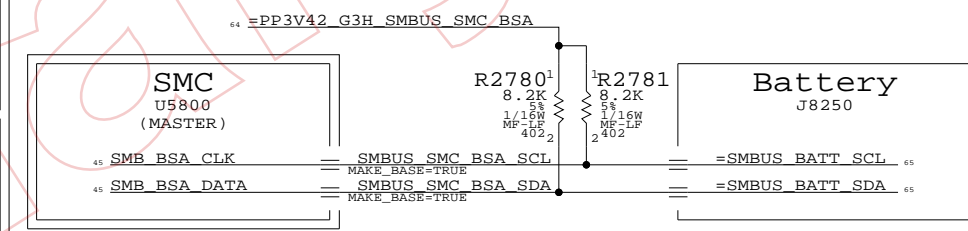
SMC "0" SMBus Connections



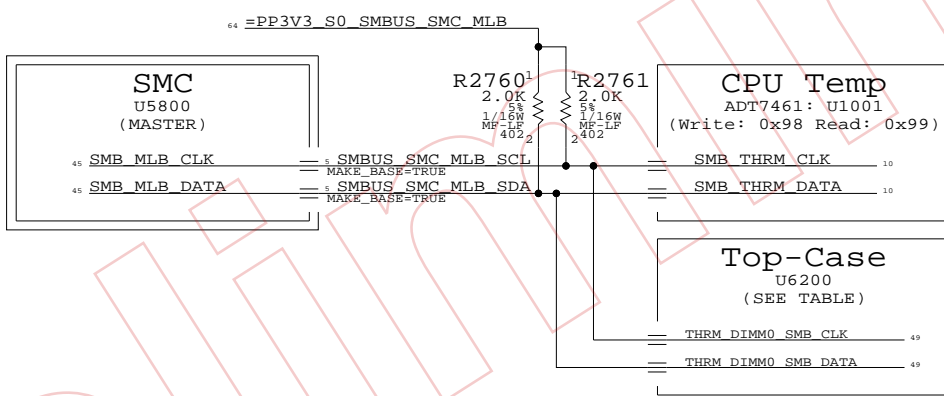
SMC "RMT" SMBus Connections



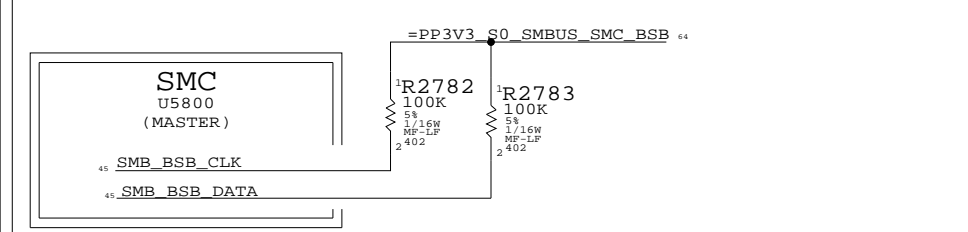
SMC "Battery A" SMBus Connections



SMC "MLB" SMBus Connections



SMC "Battery B" SMBus Connections



PRELIMINARY

M42 SMBUS CONNECTIONS

SYNC_MASTER=ENET SYNC_DATE=08/30/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	27	108	

8

7

6

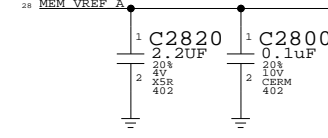
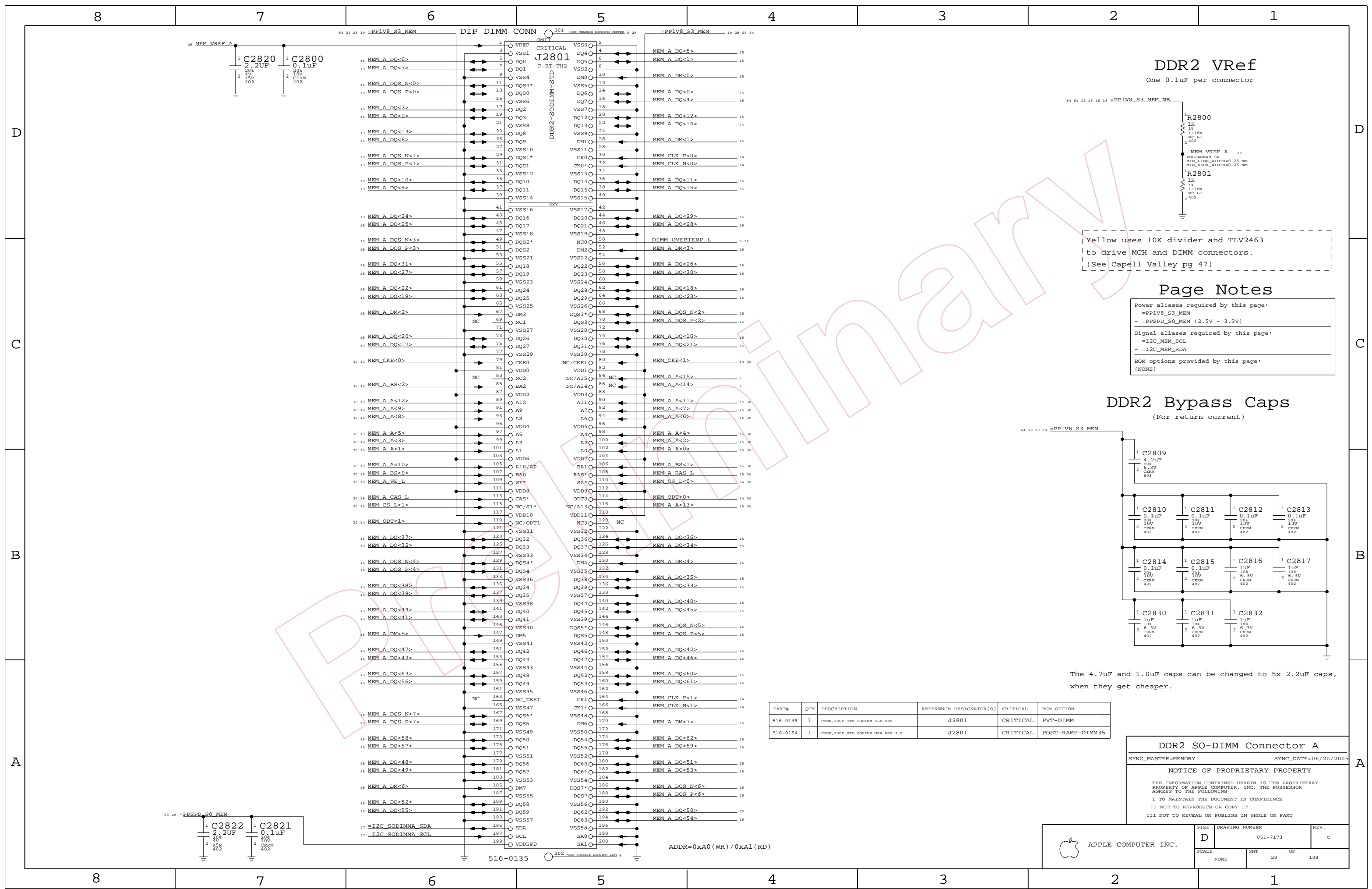
5

4

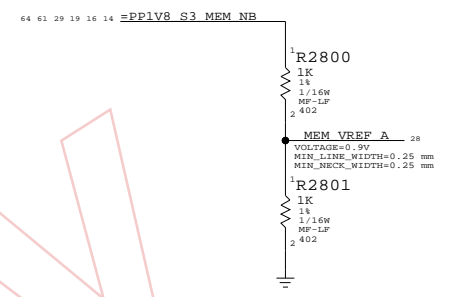
3

2

1



DDR2 Vref
One 0.1uF per connector

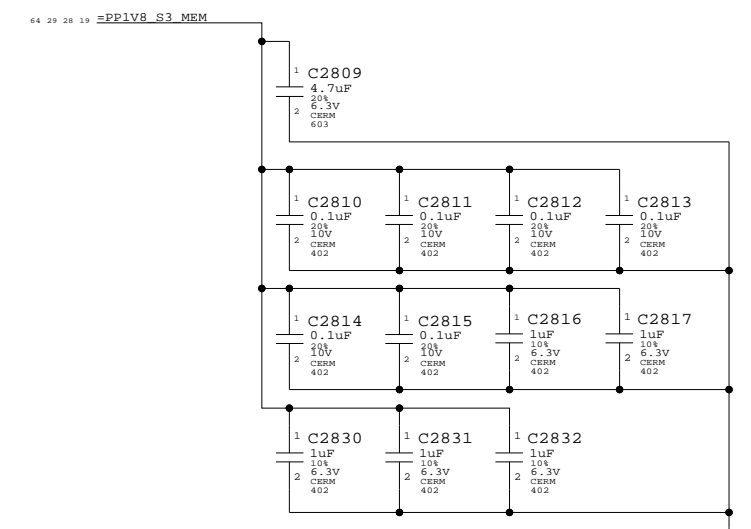


Yellow uses 10K divider and TLV2463 to drive MCH and DIMM connectors. (See Capell Valley pg 47)

Page Notes

- Power aliases required by this page:
 - =PP1V8_S3_MEM
 - =PPSPD_S0_MEM (2.5V - 3.3V)
- Signal aliases required by this page:
 - =I2C_MEM_SCL
 - =I2C_MEM_SDA
- BOM options provided by this page:
 - (NONE)

DDR2 Bypass Caps (For return current)



The 4.7uF and 1.0uF caps can be changed to 5x 2.2uF caps, when they get cheaper.

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
516-0149	1	CONN.200P STD SODIMM OLD REV	J2801	CRITICAL	PVT-DIMM
516-0154	1	CONN.200P STD SODIMM NEW REV 3.5	J2801	CRITICAL	POST-RAMP-DIMM35

DDR2 SO-DIMM Connector A

SYNC_MASTER=MEMORY SYNC_DATE=06/20/2005

NOTICE OF PROPRIETARY PROPERTY

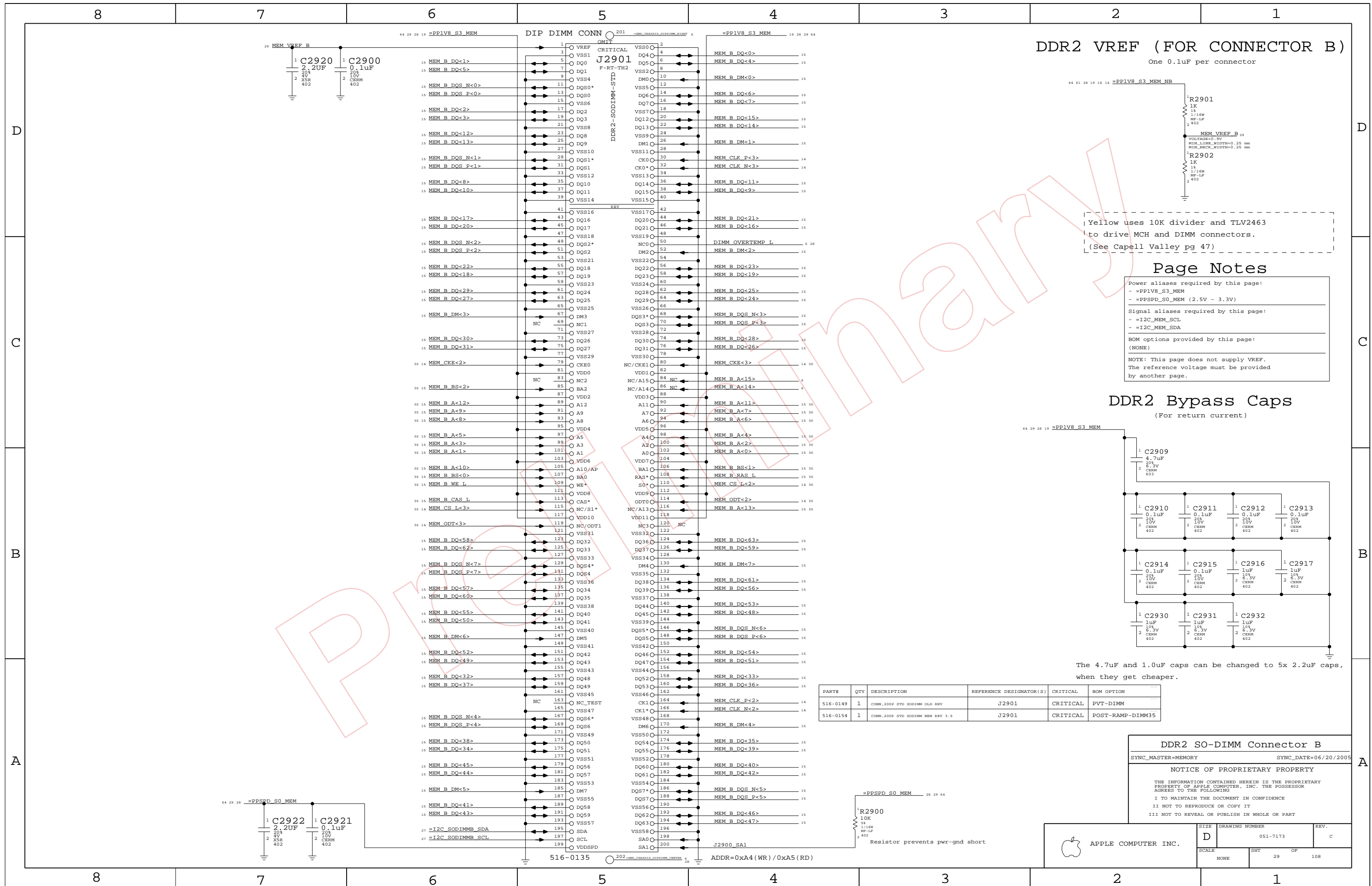
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	28		

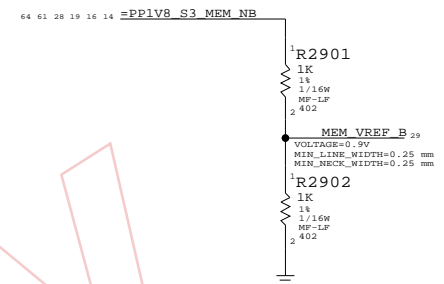
ADDR=0xA0 (WR) / 0xA1 (RD)

516-0135



DDR2 VREF (FOR CONNECTOR B)

One 0.1uF per connector



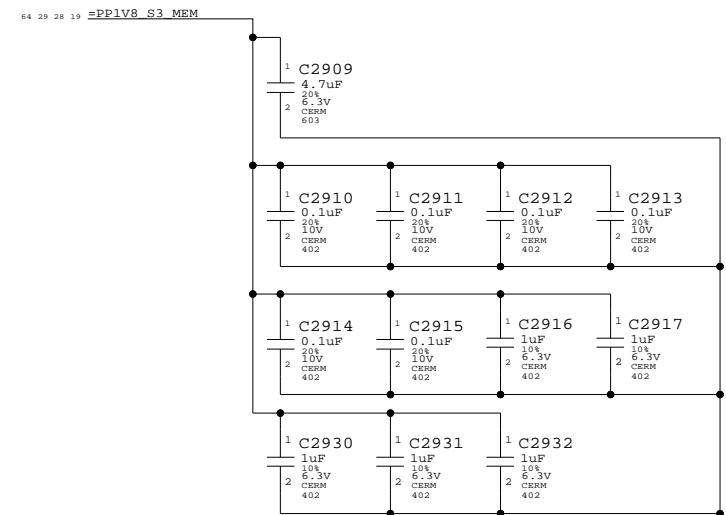
Yellow uses 10K divider and TLV2463 to drive MCH and DIMM connectors. (See Capell Valley pg 47)

Page Notes

- Power aliases required by this page:
- =PP1V8_S3_MEM
 - =PPSPD_S0_MEM (2.5V - 3.3V)
- Signal aliases required by this page:
- =I2C_MEM_SCL
 - =I2C_MEM_SDA
- BOM options provided by this page:
- (NONE)
- NOTE: This page does not supply VREF. The reference voltage must be provided by another page.

DDR2 Bypass Caps

(For return current)



The 4.7uF and 1.0uF caps can be changed to 5x 2.2uF caps, when they get cheaper.

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
516-0149	1	CONN,200P STD SODIMM OLD REV	J2901	CRITICAL	PVT-DIMM
516-0154	1	CONN,200P STD SODIMM NEW REV 1.5	J2901	CRITICAL	POST-RAMP-DIMM35

DDR2 SO-DIMM Connector B

SYNC_MASTER=MEMORY SYNC_DATE=06/20/2005

NOTICE OF PROPRIETARY PROPERTY

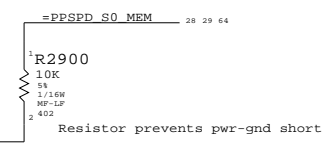
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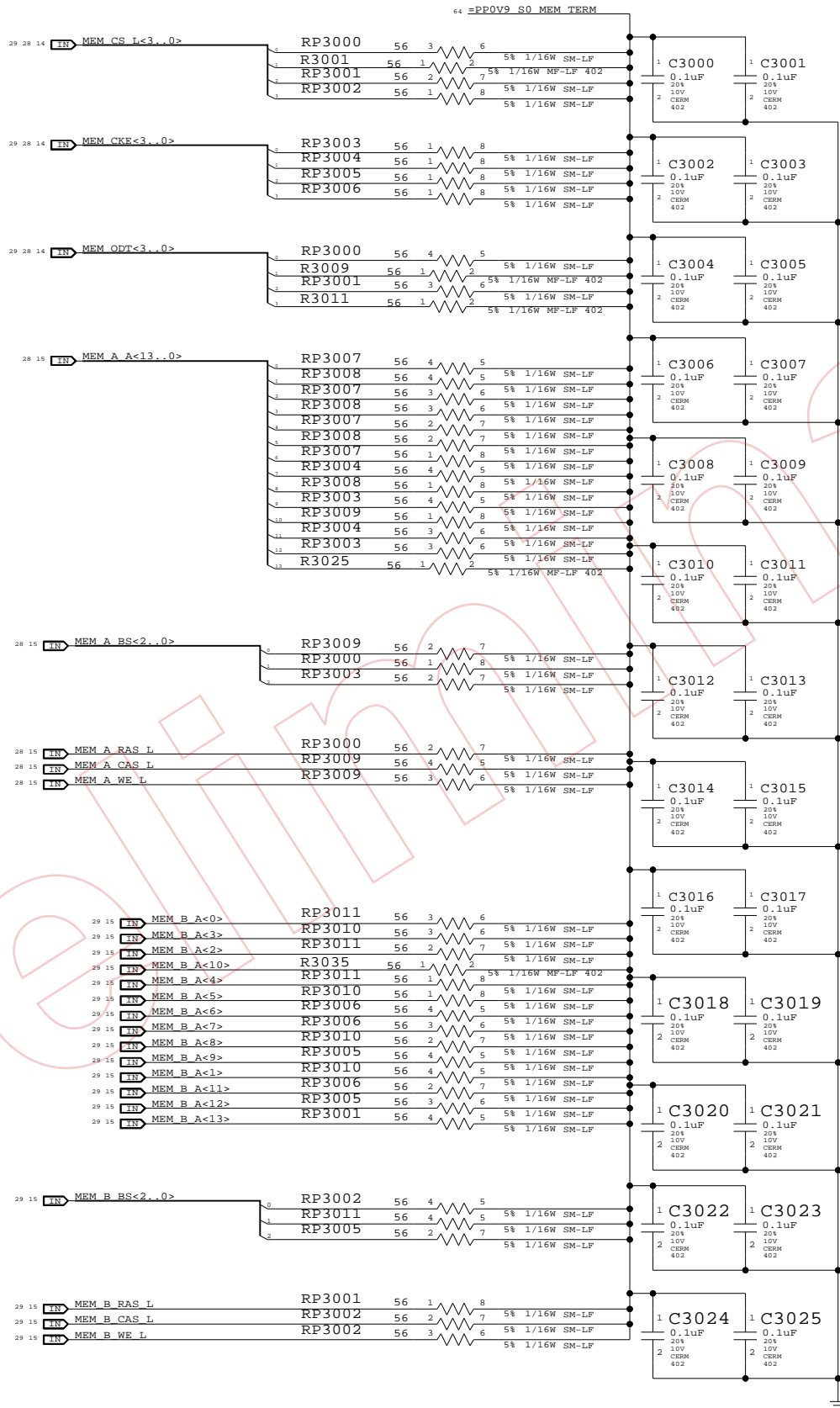
III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	
NONE	29	108	



516-0135 ADDR=0xA4 (WR) / 0xA5 (RD)

One cap for each side of every RPAK, one cap for every two discrete resistors
BOMOPTION shown at the top of each group applies to every part below it



LAYOUT NOTE: PLACE ONE CAP CLOSE TO EVERY TWO PULLUP RESISTORS TERMINATED TO PP0V9_S0_MEM_TERM

PRELIMINARY

Memory Active Termination

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	30	108	

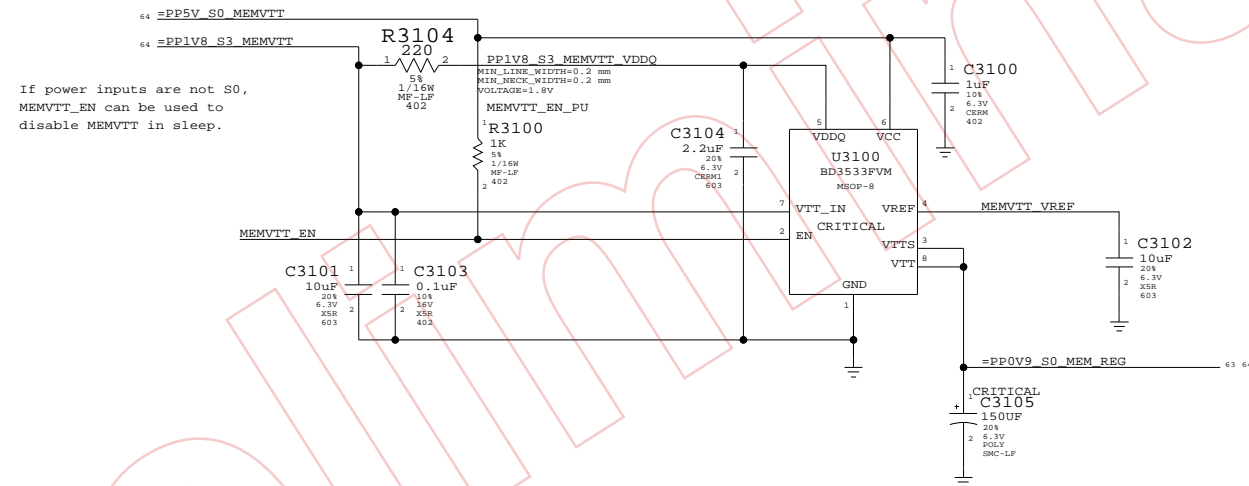
Page Notes

Power aliases required by this page:
 - =PP5V_S0_MEMVTT
 - =PP1V8_S0_MEMVTT
 - =PP0V9_S0_MEMVTT_LDO

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)

DDR2 Vtt Regulator



Pre-release

Memory Vtt Supply

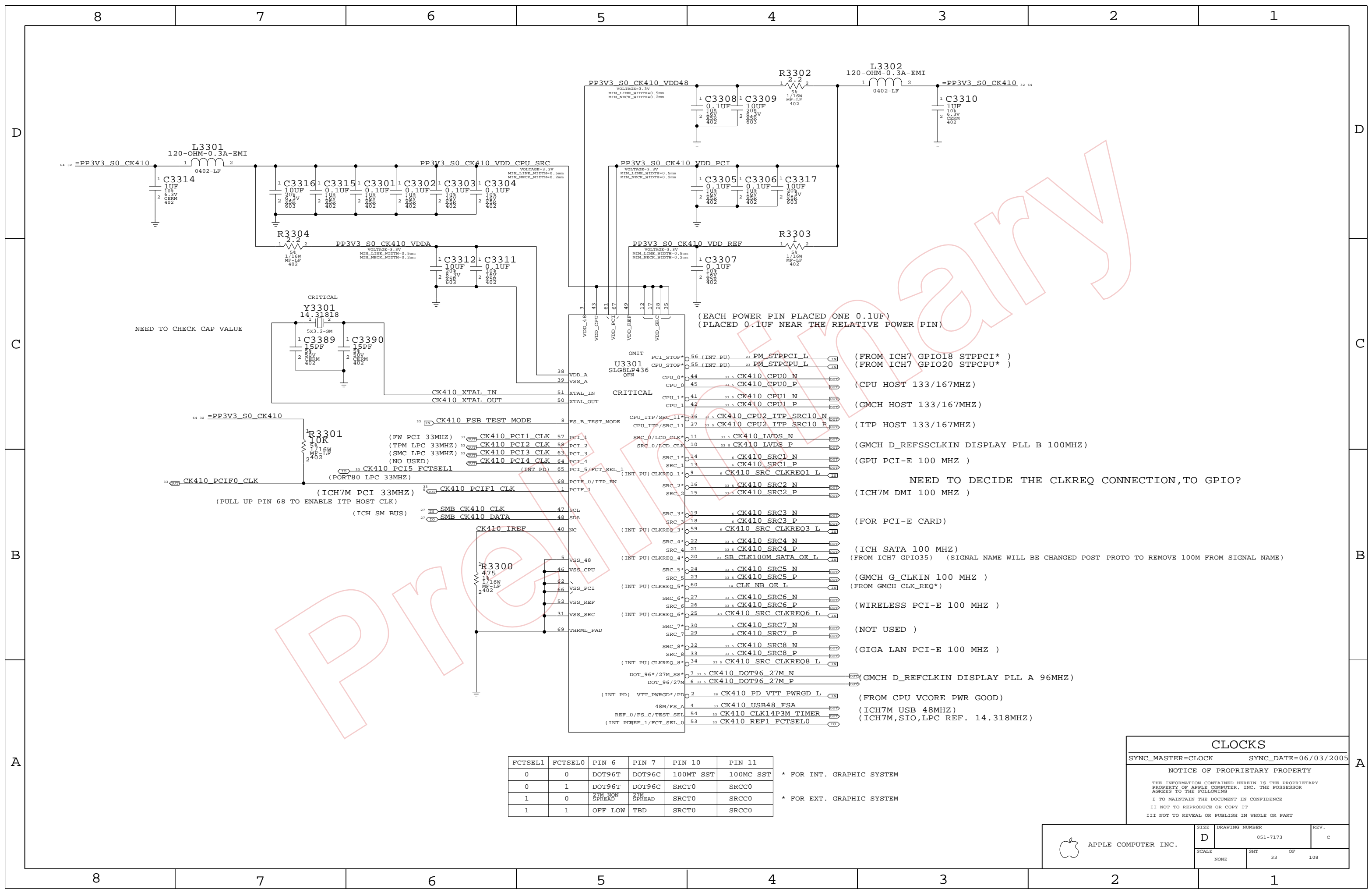
SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. c
	SCALE NONE	SHT 31	OF 108



NEED TO CHECK CAP VALUE

(EACH POWER PIN PLACED ONE 0.1UF)
(PLACED 0.1UF NEAR THE RELATIVE POWER PIN)

(FROM ICH7 GPIO18 STPPCI*)
(FROM ICH7 GPIO20 STPCPU*)

(CPU HOST 133/167MHZ)

(GMCH HOST 133/167MHZ)

(ITP HOST 133/167MHZ)

(GMCH D_REFSSCLKIN DISPLAY PLL B 100MHZ)

(GPU PCI-E 100 MHZ)

NEED TO DECIDE THE CLKREQ CONNECTION, TO GPIO?
(ICH7M DMI 100 MHZ)

(FOR PCI-E CARD)

(ICH SATA 100 MHZ)
(FROM ICH7 GPIO35) (SIGNAL NAME WILL BE CHANGED POST PROTO TO REMOVE 100M FROM SIGNAL NAME)

(GMCH G_CLKIN 100 MHZ)
(FROM GMCH CLK_REQ*)

(WIRELESS PCI-E 100 MHZ)

(NOT USED)

(GIGA LAN PCI-E 100 MHZ)

(GMCH D_REFCLKIN DISPLAY PLL A 96MHZ)

(FROM CPU VCORE PWR GOOD)

(ICH7M USB 48MHZ)
(ICH7M,SIO,LPC REF. 14.318MHZ)

FCTSEL1	FCTSEL0	PIN 6	PIN 7	PIN 10	PIN 11
0	0	DOT96T	DOT96C	100MT_SST	100MC_SST
0	1	DOT96T	DOT96C	SRCT0	SRCC0
1	0	27M NON SPREAD	27M SPREAD	SRCT0	SRCC0
1	1	OFF LOW	TBD	SRCT0	SRCC0

* FOR INT. GRAPHIC SYSTEM

* FOR EXT. GRAPHIC SYSTEM

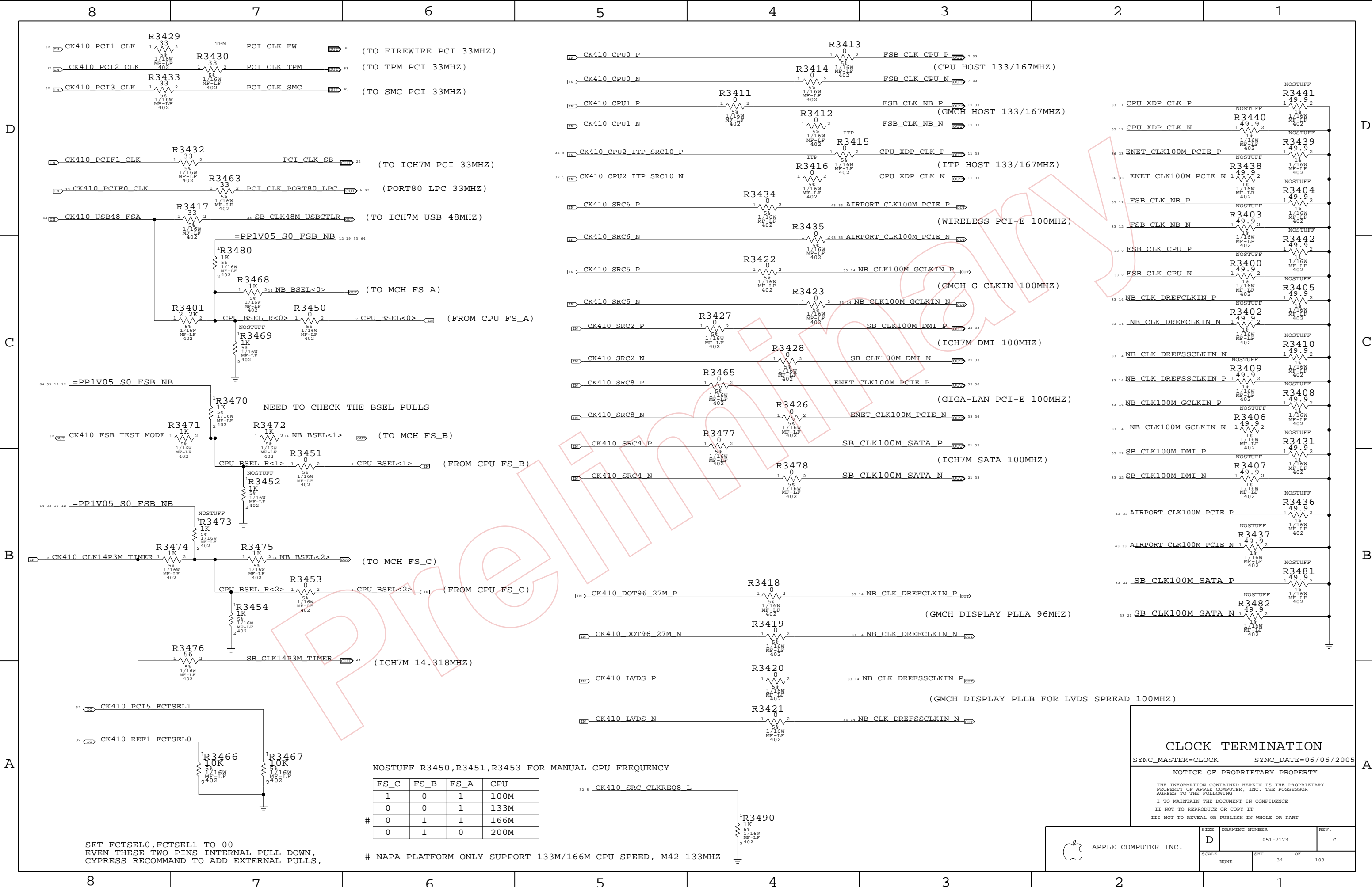
CLOCKS

SYNC_MASTER=CLOCK SYNC_DATE=06/03/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	108
NONE	33		



D

D

C

C

B

B

A

A

R3429
CK410_PCI1_CLK (TO FIREWIRE PCI 33MHZ)
R3430
CK410_PCI2_CLK (TO TPM PCI 33MHZ)
R3433
CK410_PCI3_CLK (TO SMC PCI 33MHZ)

R3413
CK410_CPU0_P (CPU HOST 133/167MHZ)
R3414
CK410_CPU0_N (CPU HOST 133/167MHZ)
R3411
CK410_CPU1_P (GMCH HOST 133/167MHZ)
R3412
CK410_CPU1_N (GMCH HOST 133/167MHZ)

R3441
CPU_XDP_CLK_P
R3440
CPU_XDP_CLK_N
R3439
ENET_CLK100M_PCIE_P
R3438
ENET_CLK100M_PCIE_N

R3432
CK410_PCIF1_CLK (TO ICH7M PCI 33MHZ)
R3463
CK410_PCIF0_CLK (PORT80 LPC 33MHZ)
R3417
CK410_USB48_FSA (TO ICH7M USB 48MHZ)

R3415
CK410_CPU2_ITP_SRC10_P (ITP HOST 133/167MHZ)
R3416
CK410_CPU2_ITP_SRC10_N (ITP HOST 133/167MHZ)
R3434
CK410_SRC6_P (WIRELESS PCI-E 100MHZ)
R3435
CK410_SRC6_N (WIRELESS PCI-E 100MHZ)

R3404
FSB_CLK_NB_P
R3403
FSB_CLK_NB_N
R3442
FSB_CLK_CPU_P
R3400
FSB_CLK_CPU_N

R3480
R3468
R3401
R3450
R3469
=PP1V05_S0_FSB_NB
CPU_BSEL_R<0> (FROM CPU FS_A)

R3422
CK410_SRC5_P (GMCH G_CLKIN 100MHZ)
R3423
CK410_SRC5_N (GMCH G_CLKIN 100MHZ)
R3427
CK410_SRC2_P (ICH7M DMI 100MHZ)
R3428
CK410_SRC2_N (ICH7M DMI 100MHZ)

R3405
NB_CLK_DREFCLKIN_P
R3402
NB_CLK_DREFCLKIN_N
R3410
NB_CLK_DREFSSCLKIN_N
R3409
NB_CLK_DREFSSCLKIN_P

R3471
CK410_FSB_TEST_MODE (TO MCH FS_B)
R3451
CPU_BSEL_R<1> (FROM CPU FS_B)
R3452
R3473
R3474
CK410_CLK14P3M_TIMER (TO MCH FS_C)

R3465
CK410_SRC8_P (GIGA-LAN PCI-E 100MHZ)
R3426
CK410_SRC8_N (GIGA-LAN PCI-E 100MHZ)
R3477
CK410_SRC4_P (ICH7M SATA 100MHZ)
R3478
CK410_SRC4_N (ICH7M SATA 100MHZ)

R3408
NB_CLK100M_GCLKIN_P
R3406
NB_CLK100M_GCLKIN_N
R3431
SB_CLK100M_DMI_P
R3407
SB_CLK100M_DMI_N

R3453
CPU_BSEL_R<2> (FROM CPU FS_C)
R3454
R3475
CK410_CLK14P3M_TIMER (ICH7M 14.318MHZ)
R3476
SB_CLK14P3M_TIMER (ICH7M 14.318MHZ)

R3418
CK410_DOT96_27M_P (GMCH DISPLAY PLLA 96MHZ)
R3419
CK410_DOT96_27M_N (GMCH DISPLAY PLLA 96MHZ)
R3420
CK410_LVDS_P (GMCH DISPLAY PLLB FOR LVDS SPREAD 100MHZ)
R3421
CK410_LVDS_N (GMCH DISPLAY PLLB FOR LVDS SPREAD 100MHZ)

R3436
AIRPORT_CLK100M_PCIE_P
R3437
AIRPORT_CLK100M_PCIE_N
R3481
SB_CLK100M_SATA_P
R3482
SB_CLK100M_SATA_N

R3466
CK410_PCI5_FCTSEL1
R3467
CK410_REF1_FCTSELO

NOSTUFF R3450,R3451,R3453 FOR MANUAL CPU FREQUENCY

FS_C	FS_B	FS_A	CPU
1	0	1	100M
0	0	1	133M
0	1	1	166M
0	1	0	200M

NAPA PLATFORM ONLY SUPPORT 133M/166M CPU SPEED, M42 133MHZ

SET FCTSEL0,FCTSEL1 TO 00
EVEN THESE TWO PINS INTERNAL PULL DOWN,
CYPRESS RECOMMAND TO ADD EXTERNAL PULLS,

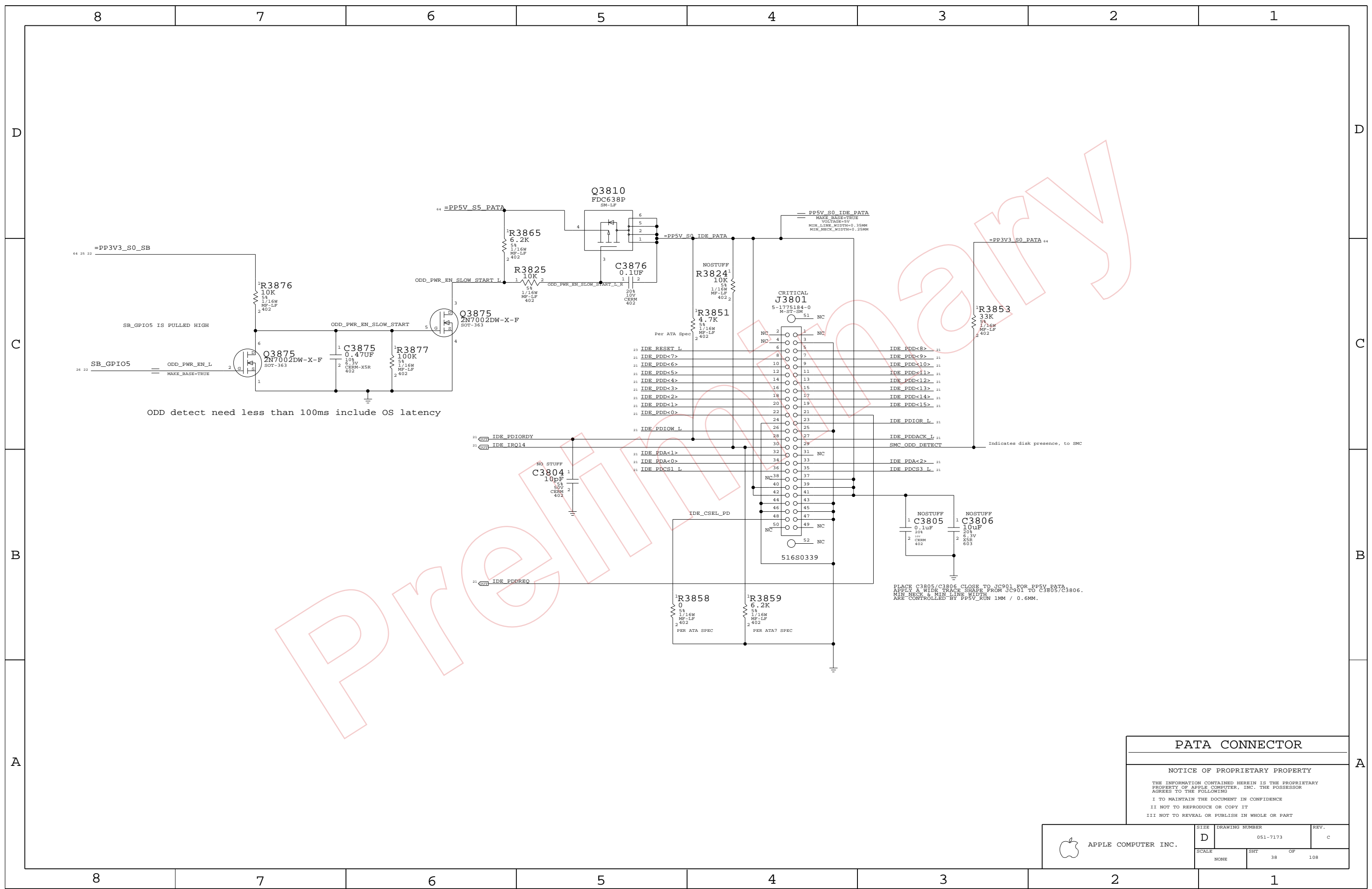
CLOCK TERMINATION

SYNC_MASTER=CLOCK SYNC_DATE=06/06/2005

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	D	051-7173	C
SCALE	SHT	OF	108
NONE	34		



PATA CONNECTOR

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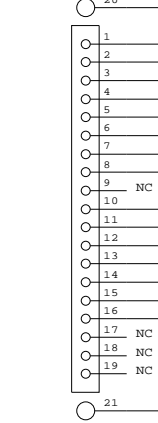
III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. c
	SCALE NONE	SHEET 38	OF 108

SATA CONNECTOR

518S0390

CRITICAL
J3901
20247-019E
F-ST-20

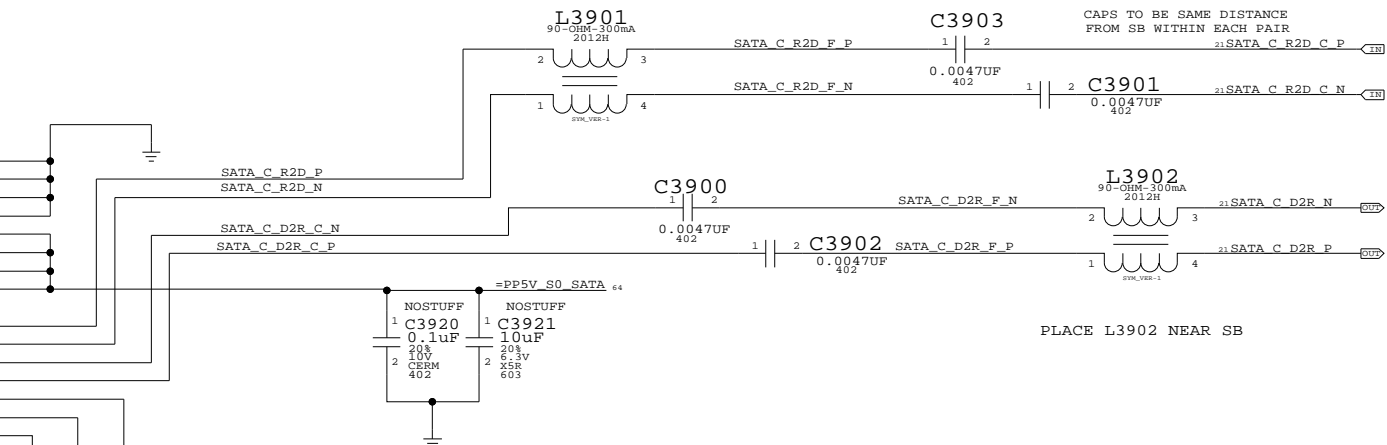


GND_CHASSIS_SATA

Place L3901 near J3901

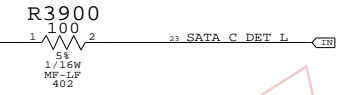
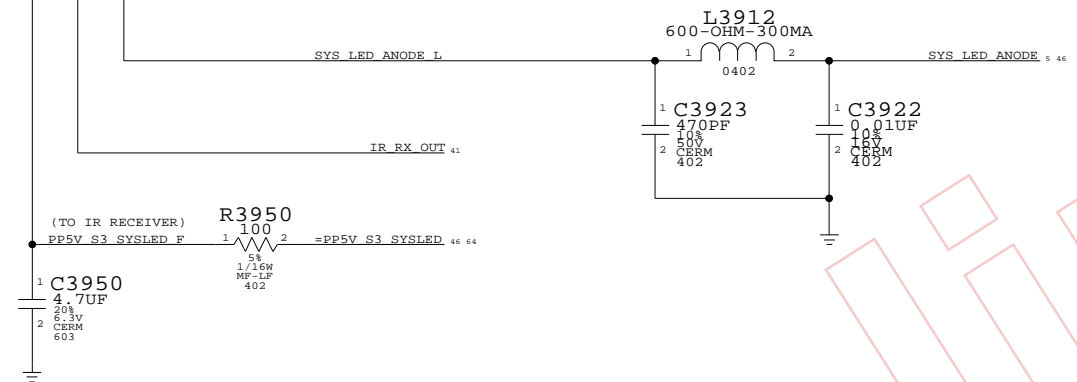
VALUE=3900PF IN REFERENCE SCHEM

CAPS TO BE SAME DISTANCE FROM SB WITHIN EACH PAIR

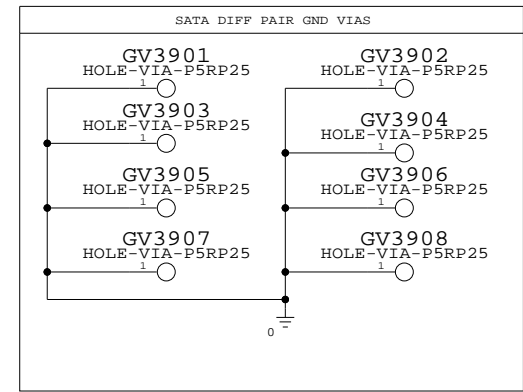
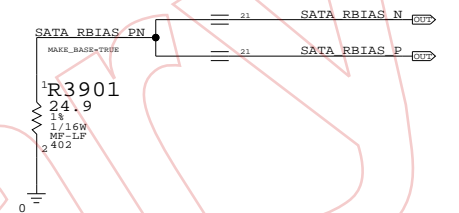


PLACE L3902 NEAR SB

SYSTEM (SLEEP) LED FILTER



PLACE NEAR ICH7 PIN



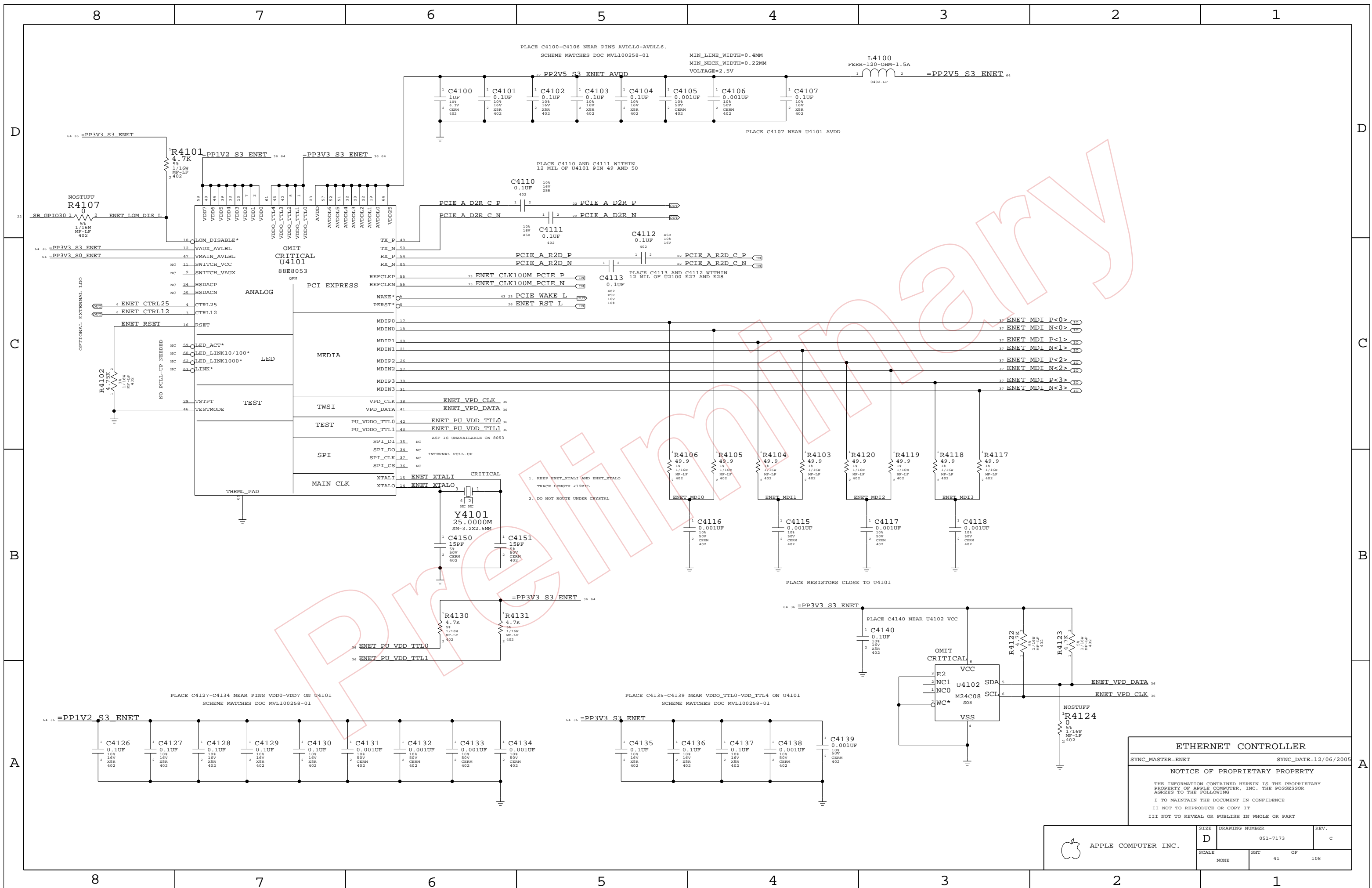
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
155S0227	155S0164	?	L3901, L3902	KEEP MAG. LAYER IN BOM

SATA CONNECTOR

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	D	051-7173	c
SCALE	SHT	OF	108
NONE	39		



8 7 6 5 4 3 2 1

D

D

C

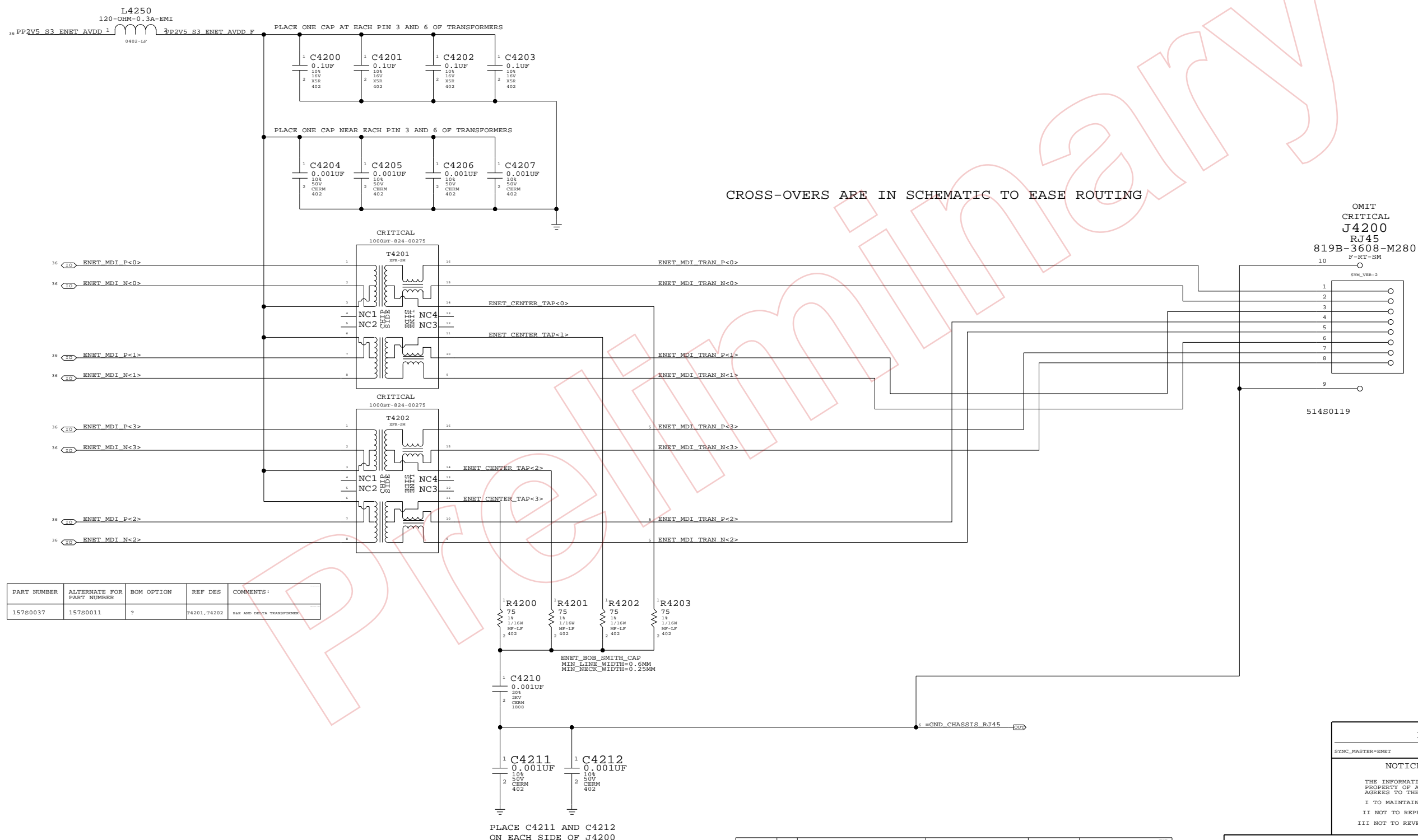
C

B

B

A

A



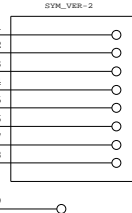
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
157S0037	157S0011	?	T4201, T4202	SEE AND CHECK TRANSFORMER

ENET_BOB_SMITH_CAP
MIN LINE WIDTH=0.6MM
MIN NECK WIDTH=0.25MM

PLACE C4211 AND C4212
ON EACH SIDE OF J4200

CROSS-OVERS ARE IN SCHEMATIC TO EASE ROUTING

OMIT
CRITICAL
J4200
RJ45
819B-3608-M280
F-RT-SM



514S0119

ETHERNET CONNECTOR
SYNC_MASTER=ENET SYNC_DATE=11/14/2005
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PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514S0143	1	CONN, SP RJ-45 JACK, MIDDLEPLANE, BK3, LP	J4200	CRITICAL	NORMAL
514S0144	1	CONN, SP RJ-45 JACK, MIDDLEPLANE, BLACK, LP	J4200	CRITICAL	FANCY

APPLE COMPUTER INC.

SIZE D	DRAWING NUMBER 051-7173	REV. C
SCALE NONE	SHT 42	OF 108

8 7 6 5 4 3 2 1

PAGE NOTES

INPUT
=PP3V3_S0_FW - 3.3V POWER FOR FIREWIRE (MOBILE: OFF DURING SLEEP)
=PP3V3_S0_PCI - 3.3V POWER FOR PCI FIREWIRE (MOBILE: OFF DURING SLEEP)
PCI_GNT3_L - PCI GRANT FROM SB
PCI_CLK_FW - NEED TO REFERENCE TO ALIAS PAGE
PCI_RST_L - PCI RESET FROM SB
FW_PCO - FIREWIRE POWER CLASS IDENTIFIER

INPUT/OUTPUT

PCI_AD<0..31>, PCI_C_BE_L<0..3>, PCI_FRAME_L, PCI_IRDY_L, PCI_TRDY_L,
PCI_DEVSEL_L, PCI_STOP_L, PCI_PAR, PCI_PERR_L, PCI_SERR_L
FW_A_TPA_P/N, FW_A_TPB_P/N, FW_A_TPBIAS - PORT 0 FIREWIRE DIFF PAIRS
FW_B_TPA_P/N, FW_B_TPB_P/N, FW_B_TPBIAS - PORT 1 FIREWIRE DIFF PAIRS
FW_C_TPA_P/N, FW_C_TPB_P/N, FW_C_TPBIAS - PORT 2 FIREWIRE DIFF PAIRS

OUTPUT

PCI_REQ3_L - PCI REQUEST TO SB
PM_CLKRUN_L - CLOCK-RUN PCI PROTOCOL
INT_PIRQD_L - INTERRUPT TO SB
PCI_PME_FW_L - DEDICATED PME FOR FIREWIRE (SB GPIO1)

PAGE HISTORY

5/19/2005 - FIRST REVISION OF PAGE
6/20/2005 - BGA VERSION OF FW323-06 ADDED
6/21/2005 - CHANGED INT* TO INT_PIRQD (PER ARCHITECTURAL DEFINITION)
6/21/2005 - CHANGED PCI_ID TO AD19 (PER ARCHITECTURAL DEFINITION)
6/21/2005 - CHANGED REQ/GNT TO REQ3/GNT3 (PER ARCHITECTURAL DEFINITION)
6/22/2005 - ADDED 510K PULL-DOWN ON RST* AND REMOVED CONNECTION TO PLT_RST_L
6/22/2005 - CHANGED CLK_PME DIFF PAIR NAMES TO BE RE-USE COMPLIANT
6/22/2005 - REMOVED CONSTRAINT SETS AS THEY WILL BE MANAGED ON BOARD SIDE
6/22/2005 - CHANGED CLK_PME DIFF PAIR NAMES TO BE RE-USE COMPLIANT
6/22/2005 - REMOVED C4421 - REDUNDANT
6/22/2005 - BRING OUT PCO CONNECTION TO BE CONNECTED ON PORT PAGE
7/26/2005 - CONNECTED PIN E10 TO GND

MOBILE TURNS OFF CONTROLLER POWER DURING SLEEP
0.001A DURING SLEEP

D

D

C

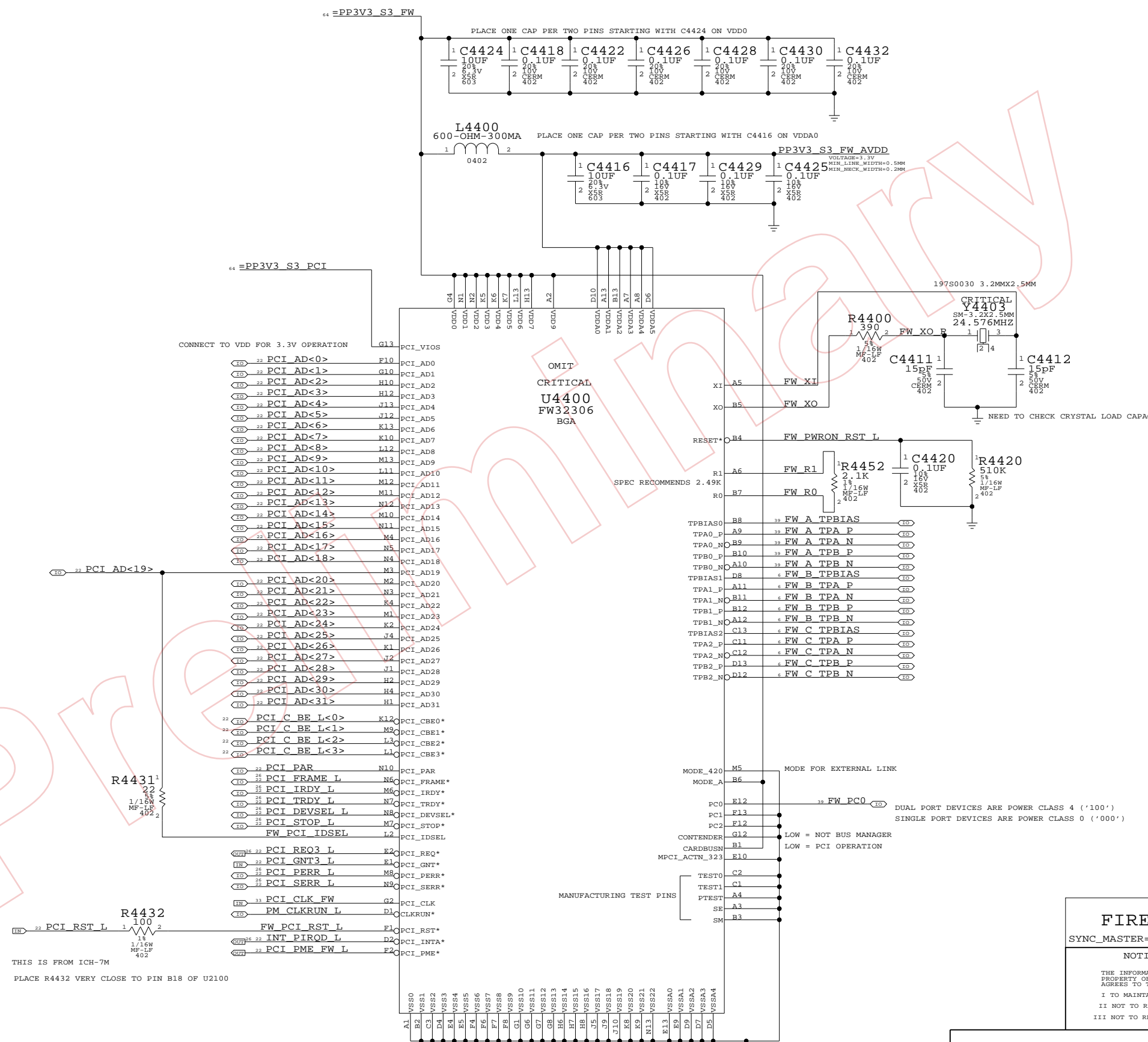
C

B

B

A

A



THIS IS FROM ICH-7M
PLACE R4432 VERY CLOSE TO PIN B18 OF U2100

FIREWIRE CONTROLLER
SYNC_MASTER=ENET SYNC_DATE=08/30/2005

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Table with columns for SCALE, SHEET, OF, DRAWING NUMBER, and REV. Includes Apple logo and 'APPLE COMPUTER INC.' text.

Page Notes

INPUT:
 =PPBUS_S5_FWPWRSM - PORT POWER
 =PP3V3_S5_FW - DIGITAL POWER
 =GND_CHASSIS_FW_PORT0 - CHASSIS GROUND
 =FWPWR_PWRON - ADDITIONAL POWER CONTROL

INPUT/OUTPUT:
 FW_TPA0_P/N,FW_TPB0_P/N,FW_TPB1A0 - FIREWIRE DIFF PAIRS

OUTPUT:
 FW_PCO - POWER CLASS IDENTIFIER (SINGLE PORT - TIE LOW)

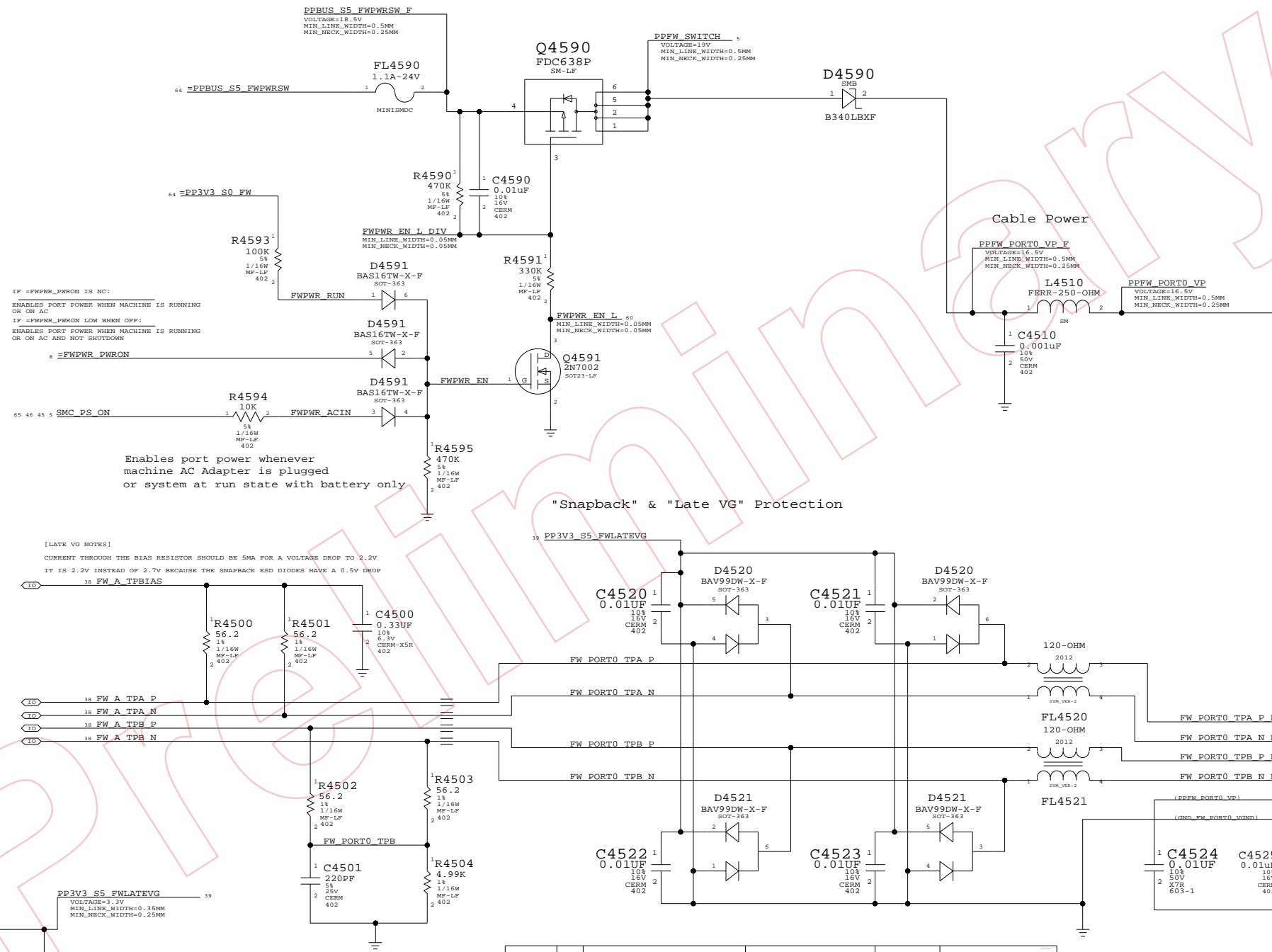
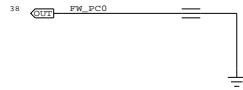
PAGE HISTORY

5/19/05 - INITIAL REVISION
 6/22/05 - CHANGED DIFF PAIR NAMES TO MATCH REUSE
 6/22/05 - REMOVED CONSTRAINTS BECAUSE USING ALLEGRO CONST MANAGER
 6/22/05 - CONNECTED FW_PCO FOR SINGLE PORT
 7/26/05 - UPDATED LATE-VG POWER RAIL CIRCUIT FROM M1
 7/26/05 - CHANGED CONNECTOR PORT NAMING TO PORT0
 7/26/05 - SWITCHED TO 514-0124 FOR FIRE-PROTD CONNECTOR
 7/26/05 - REMOVED R4520 - IT HASN'T BEEN STUFFED FOR MANY PRODUCTS
 7/26/05 - CHANGED FL4590 TO 1.1A VERSION
 7/26/05 - REMOVED ETHERNET LOW-POWER MODE CIRCUIT
 7/26/05 - UPDATED SIGNAL NAMES FOR FW PORT POWER ENABLE

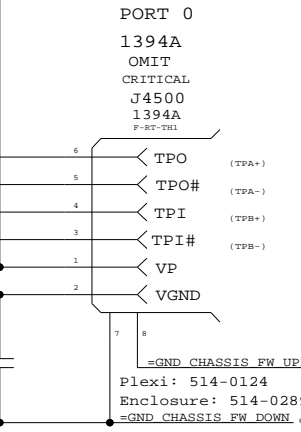
1394b implementation based on Apple
 FireWire Design Guide (FWDG 0.6, 5/14/03)

PORT POWER CLASS

0 FOR SINGLE PORT
 1 FOR DUAL PORT



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514-0359	1	CONN,6P 1394A RCPT,MIDPLANE,MQ3_LF	J4500	CRITICAL	NORMAL
514-0316	1	CONN,6P 1394A RCPT,MIDPLANE,BLACK_LF	J4500	CRITICAL	FANCY



FIREWIRE PORT

SYNC_MASTER=ENET SYNC_DATE=11/16/2005

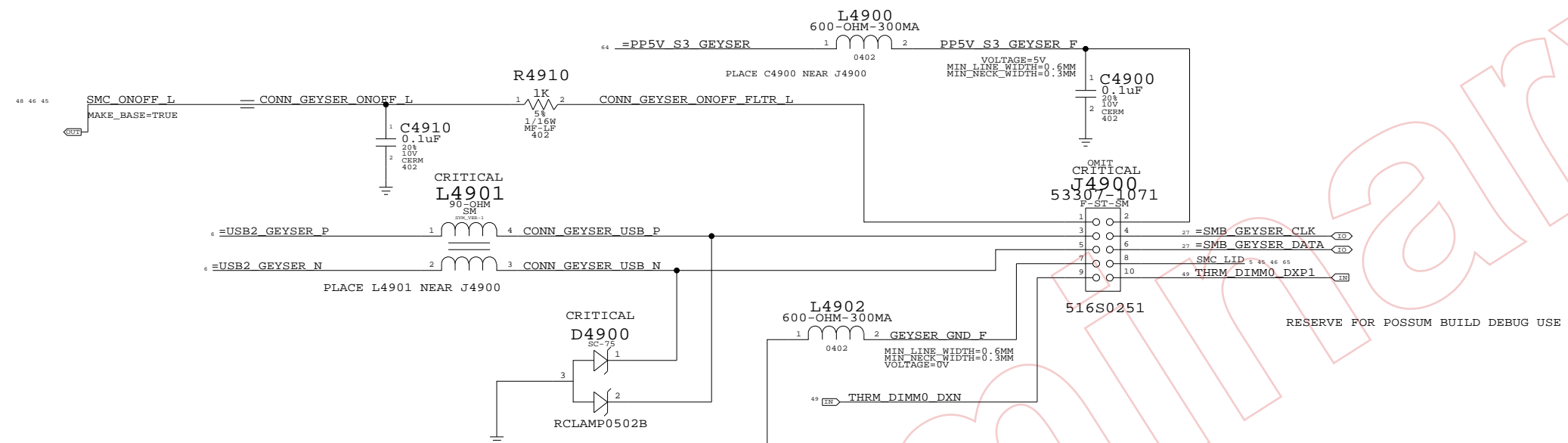
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	D	051-7173	C
SCALE	SHT	OF	108
NONE	45		

GEYSER AND DIMMO REMOTE TEMP SENSORS

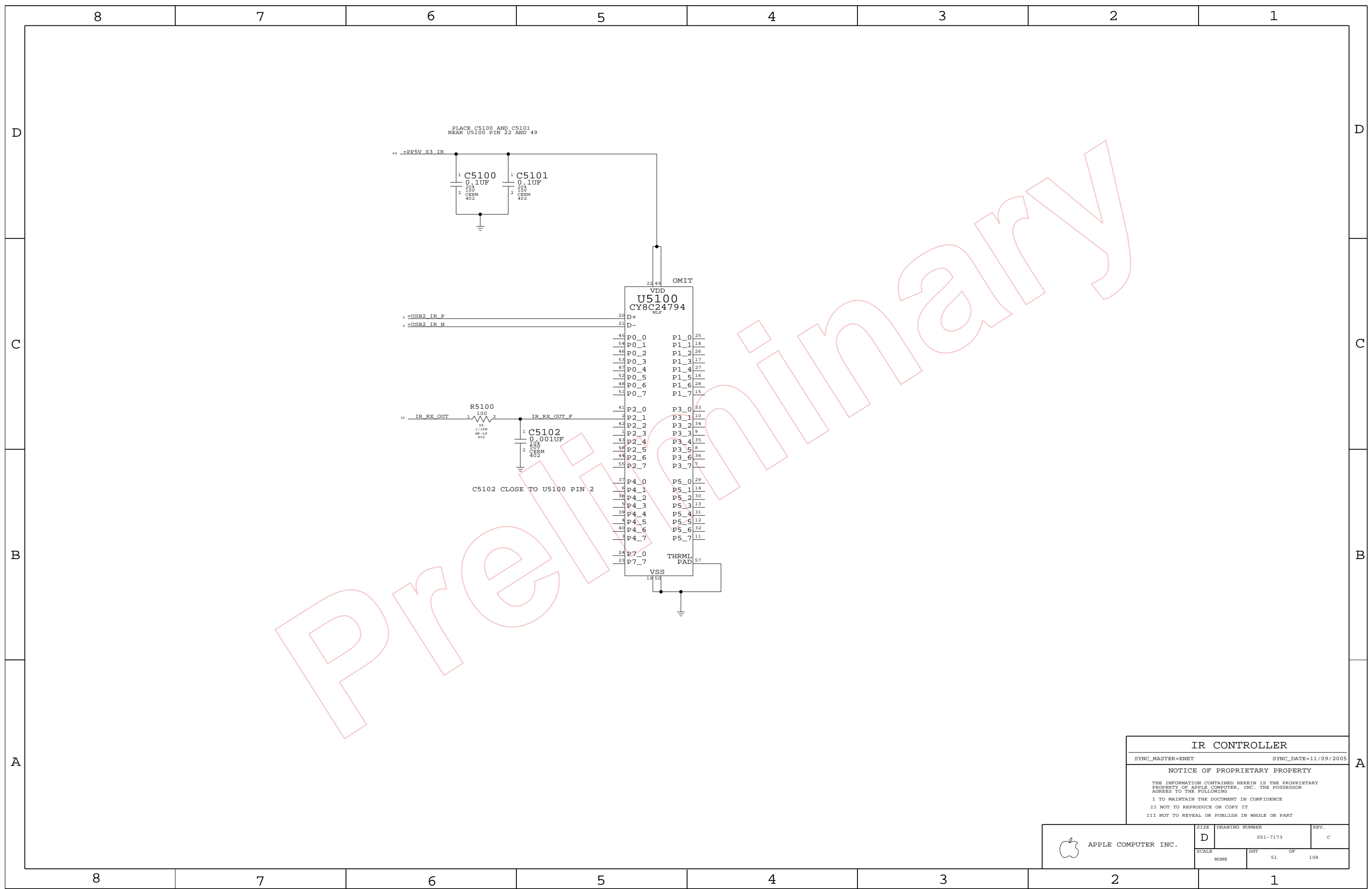


PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
516S0482	1	ACES 88646-1071-NS	J4900	CRITICAL	NORMAL
516S0482	1	ACES 88646-1071-NS	J4900	CRITICAL	FANCY

Preliminary

CONNECTOR MISC
 SYNC_MASTER=ENET SYNC_DATE=11/16/2005
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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. c
	SCALE NONE	SHEET 49	OF 108



Preliminary

IR CONTROLLER

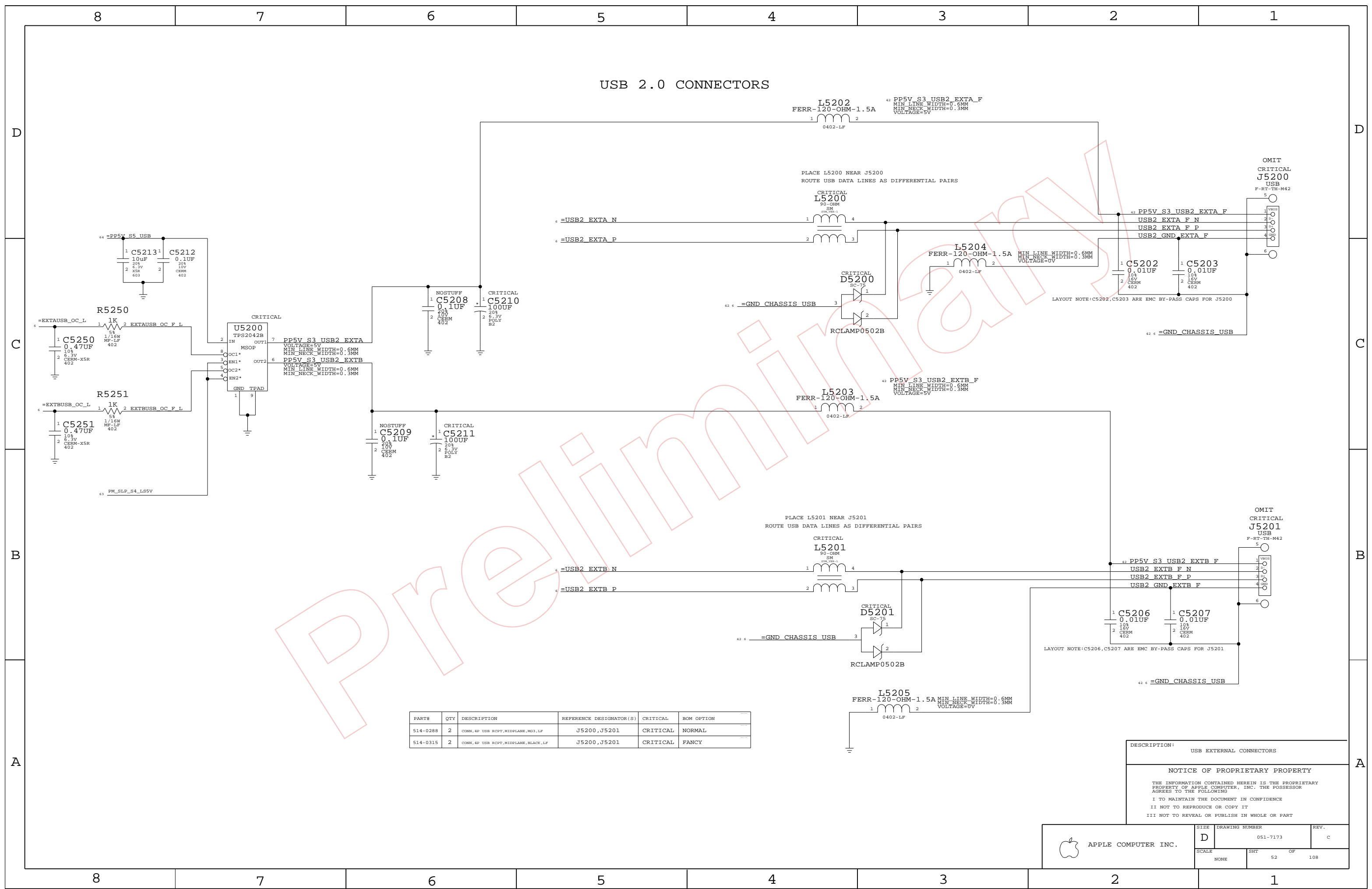
SYNC_MASTER=ENET SYNC_DATE=11/09/2005

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	SCALE NONE	SHEET 51	OF 108

USB 2.0 CONNECTORS

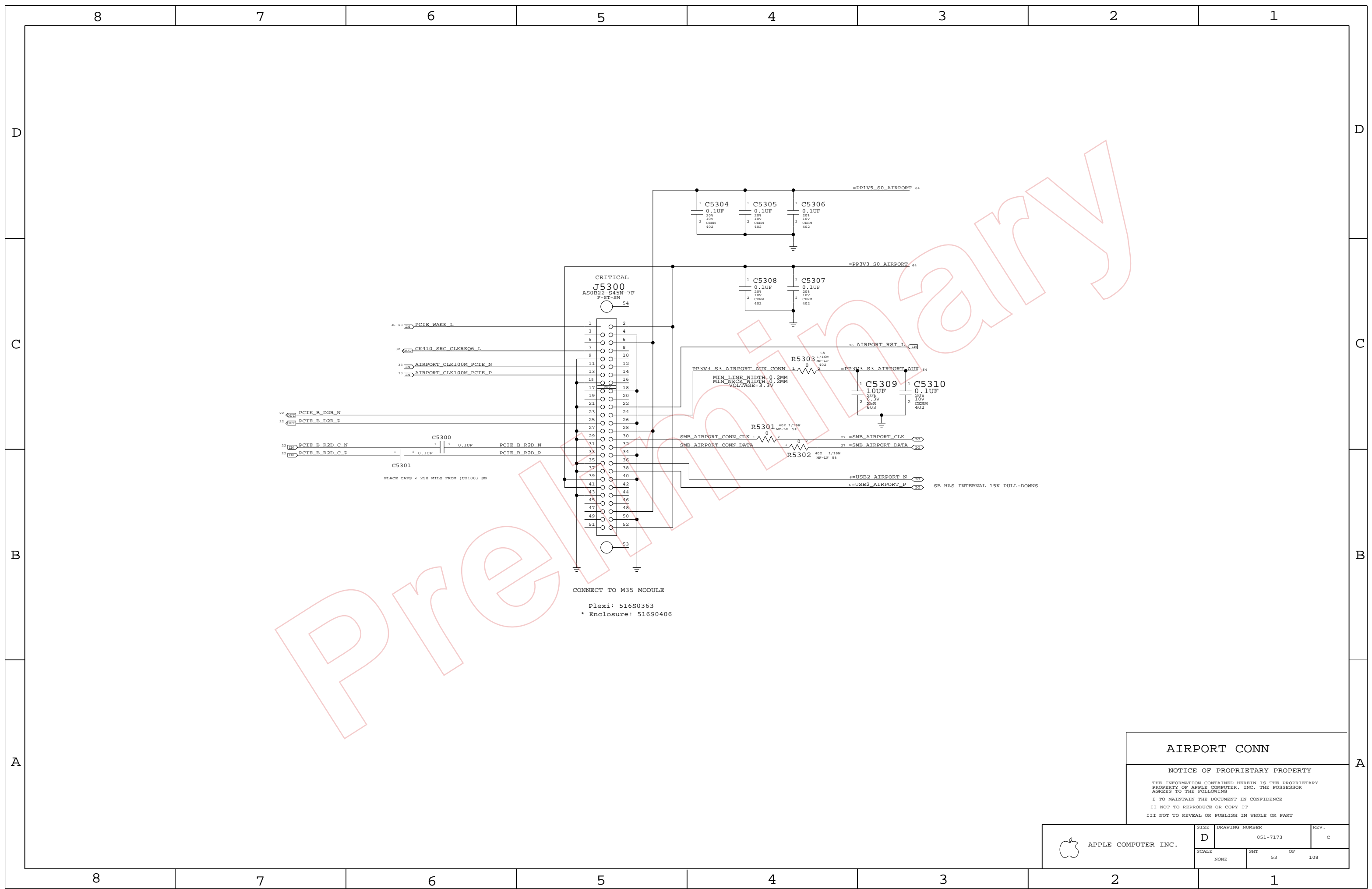


PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514-0288	2	CONN, 4P USB RCPT, MIDPLANE, W3, LF	J5200, J5201	CRITICAL	NORMAL
514-0315	2	CONN, 4P USB RCPT, MIDPLANE, BLACK, LF	J5200, J5201	CRITICAL	FANCY

DESCRIPTION:
USB EXTERNAL CONNECTORS

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SCALE	SHT	OF	REV.
NONE	52	108	

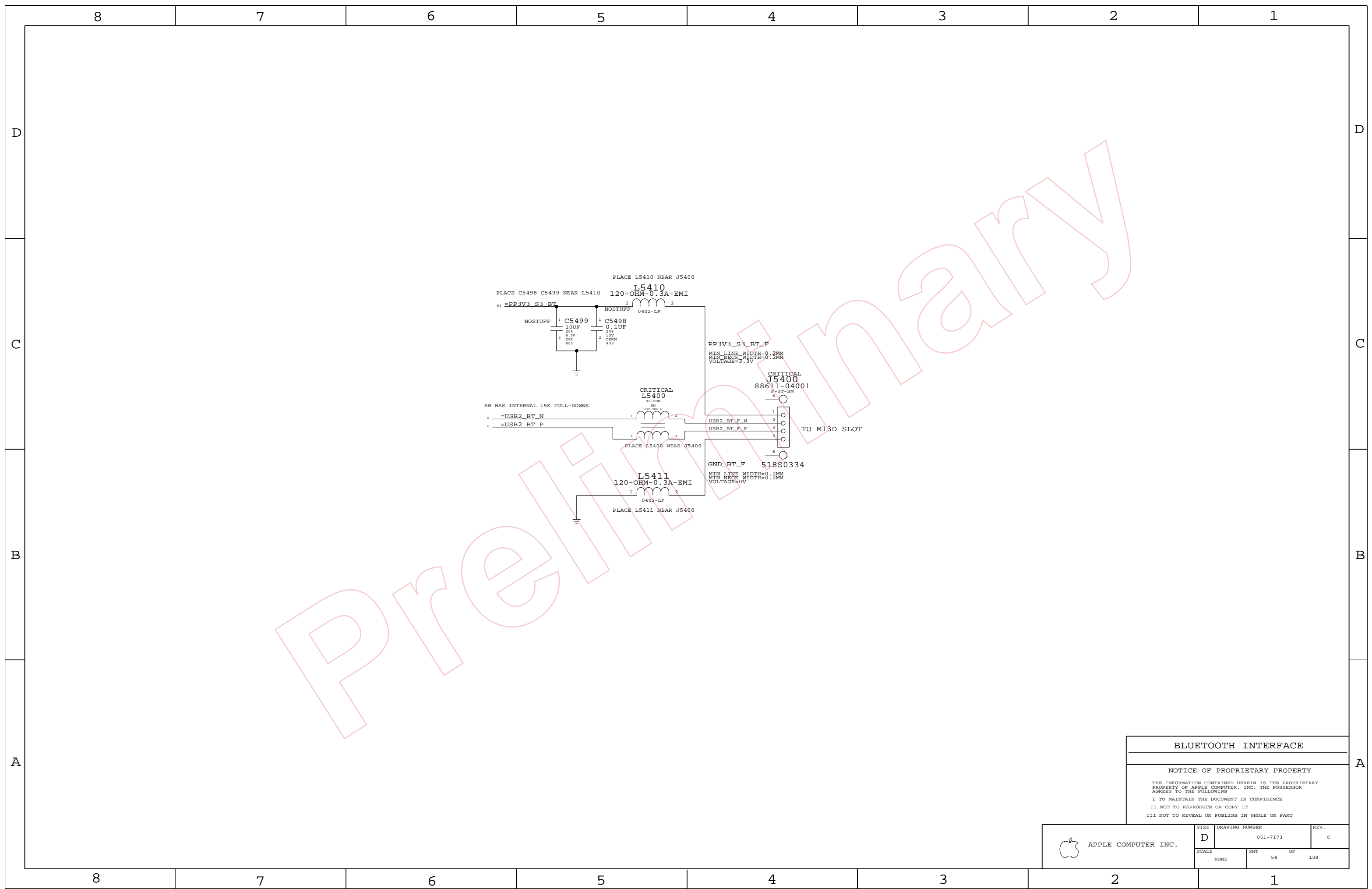


AIRPORT CONN

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	53	108	



Preiminary

BLUETOOTH INTERFACE

NOTICE OF PROPRIETARY PROPERTY

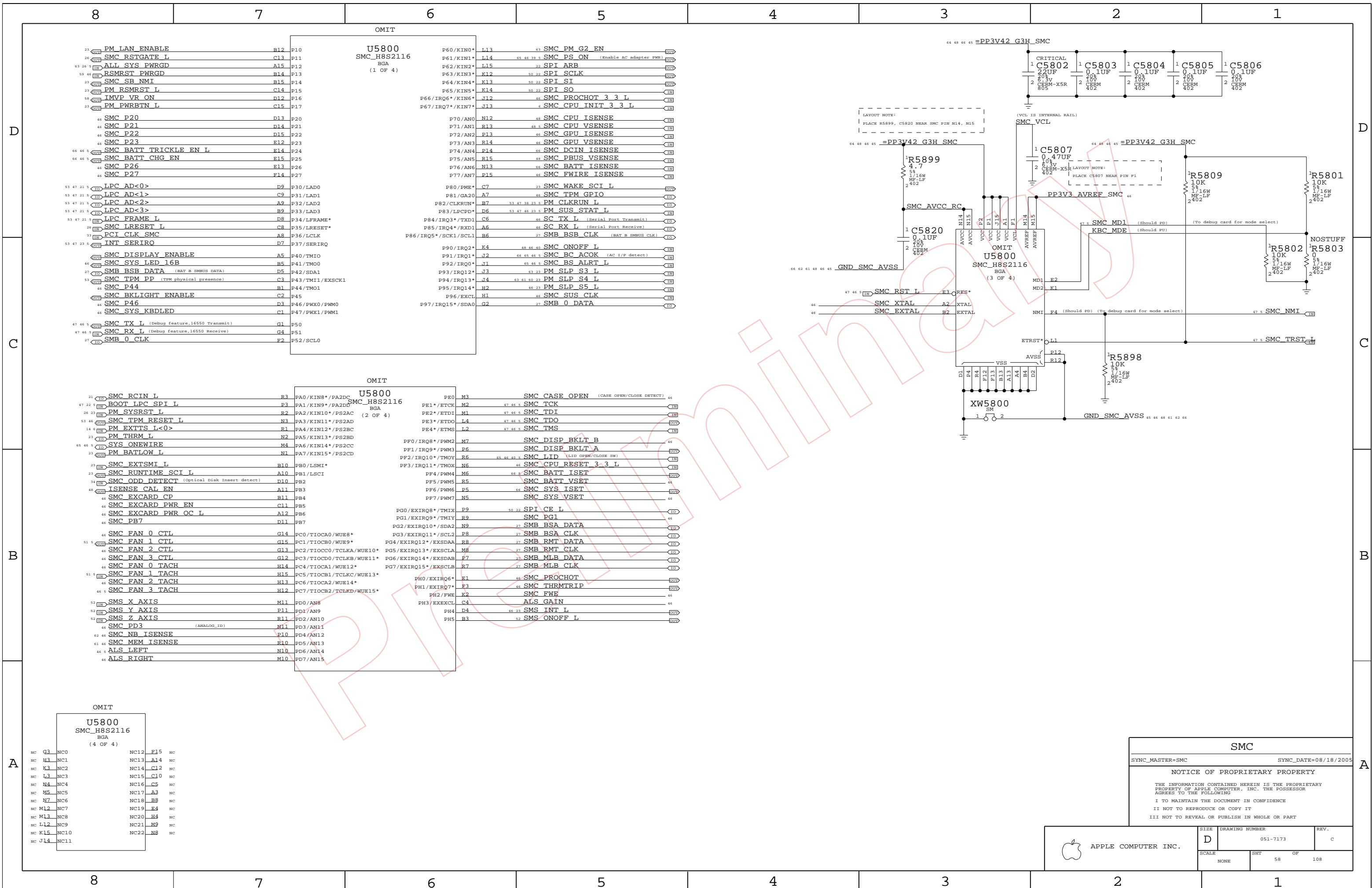
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE		SHT	OF
NONE		54	108



SMC

SYNC_MASTER=SMC SYNC_DATE=08/18/2005

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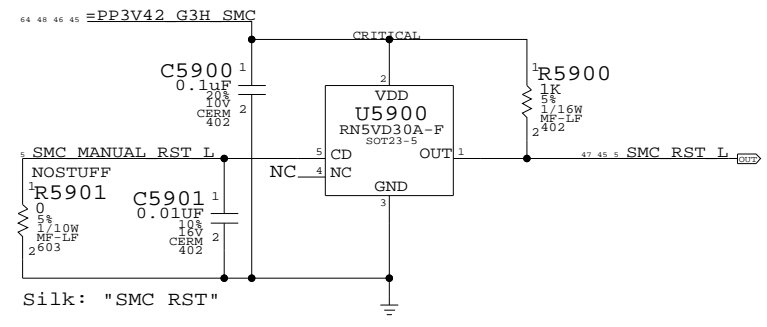
I TO MAINTAIN THE DOCUMENT IN CONFIDENCE

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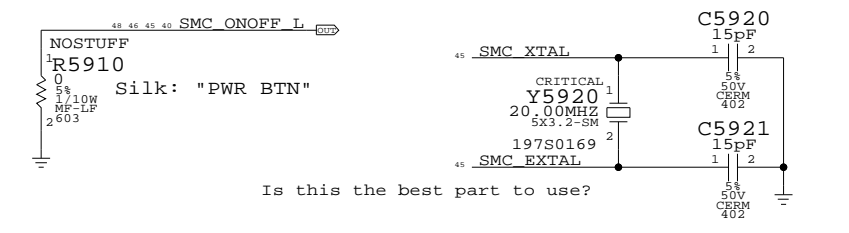
III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. C
	SCALE NONE	SHEET 58	OF 108

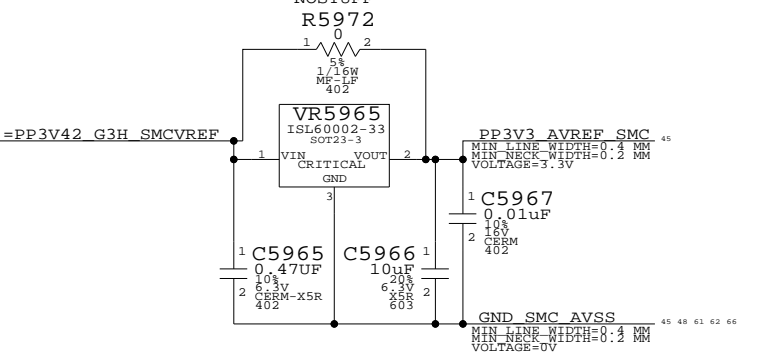
SMC Reset Button / Brownout Detect



Debug Power Button SMC Crystal Circuit

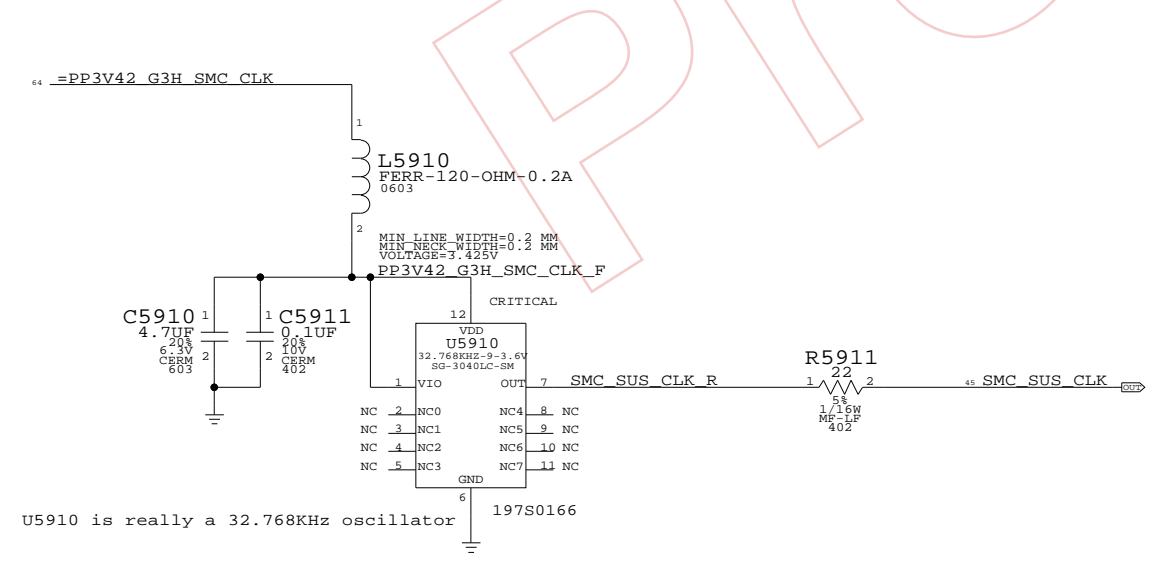


SMC AVREF Supply

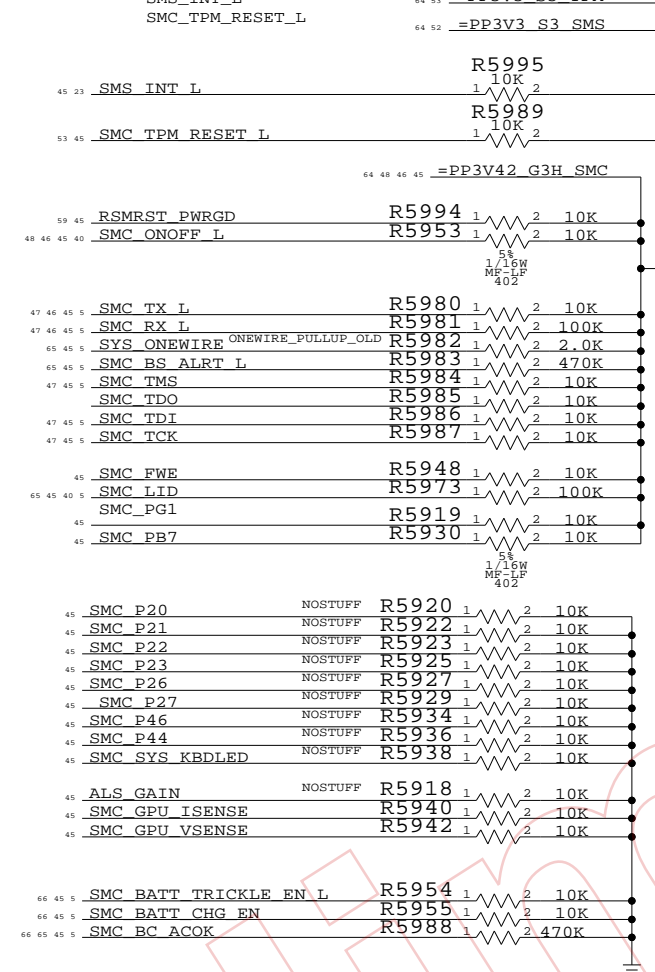


PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S1278	353S1381	?	VR5965	TI REF3133

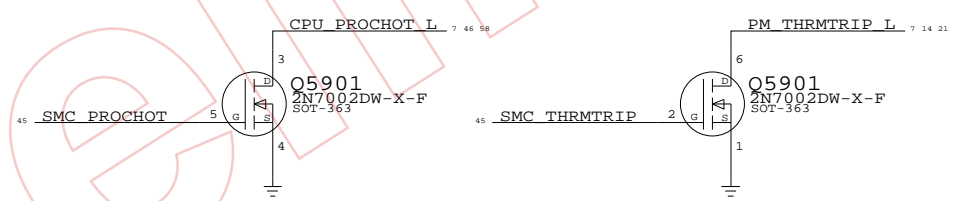
SMC G3HOT OSCILLATOR



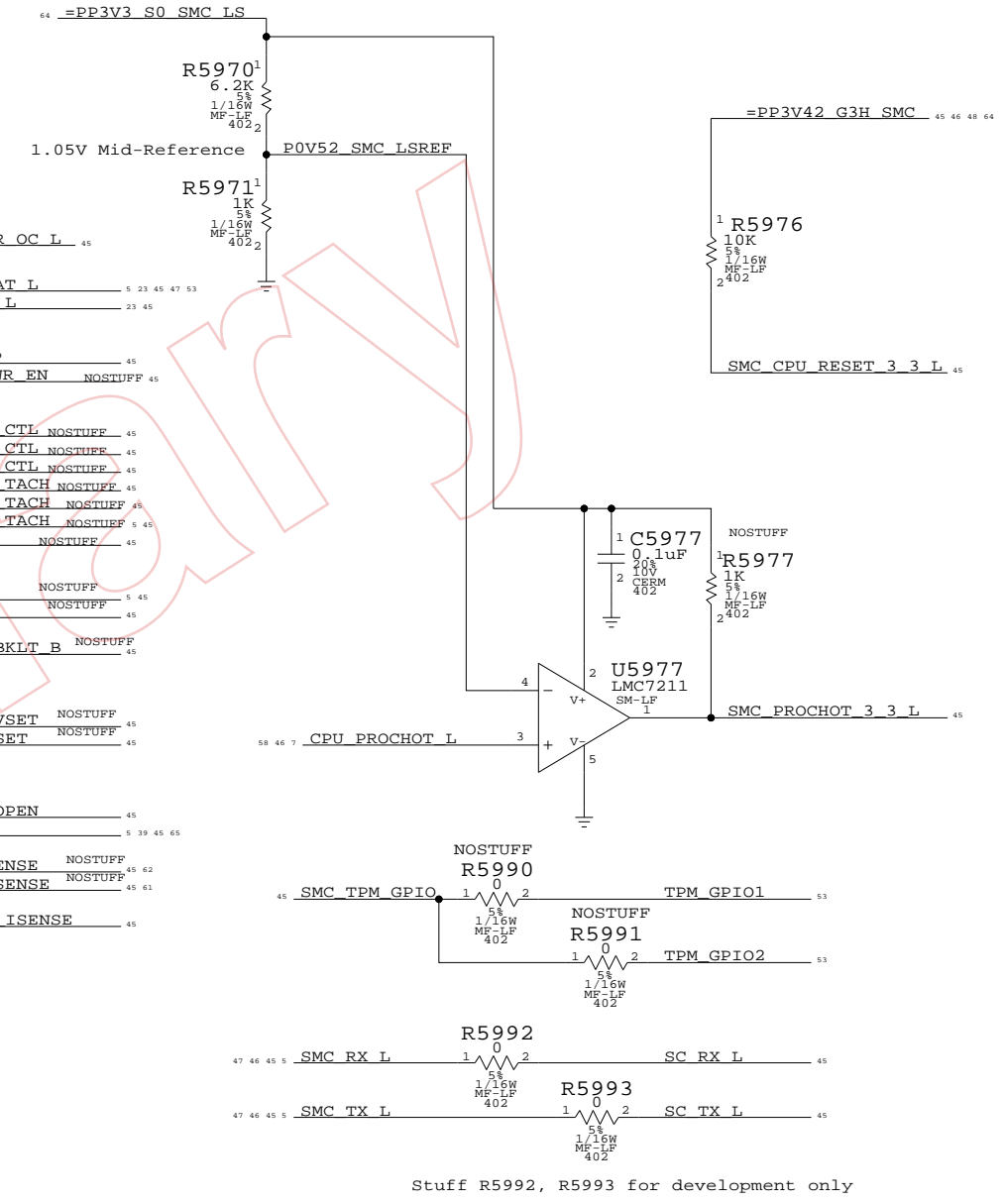
THESE NEED TO BE PULLED TO THE PROPER RAIL:
SMS_INT_L
SMS_TPM_RESET_L



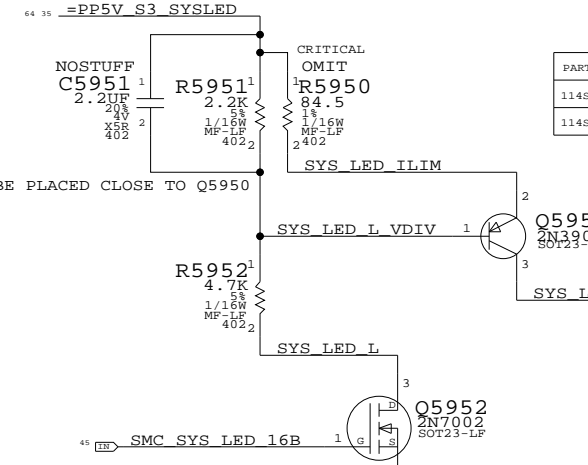
SMC 3.3V to 1.05V Level Shifting



SMC 1.05V to 3.3V Level Shifting



System (Sleep) LED Circuit



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
11480114	1	84.5, 1%, 1/16W, MF-LF, 402	R5950	NORMAL
11480126	1	115, 1%, 1/16W, MF-LF, 402	R5950	FANCY

SMC SUPPORT

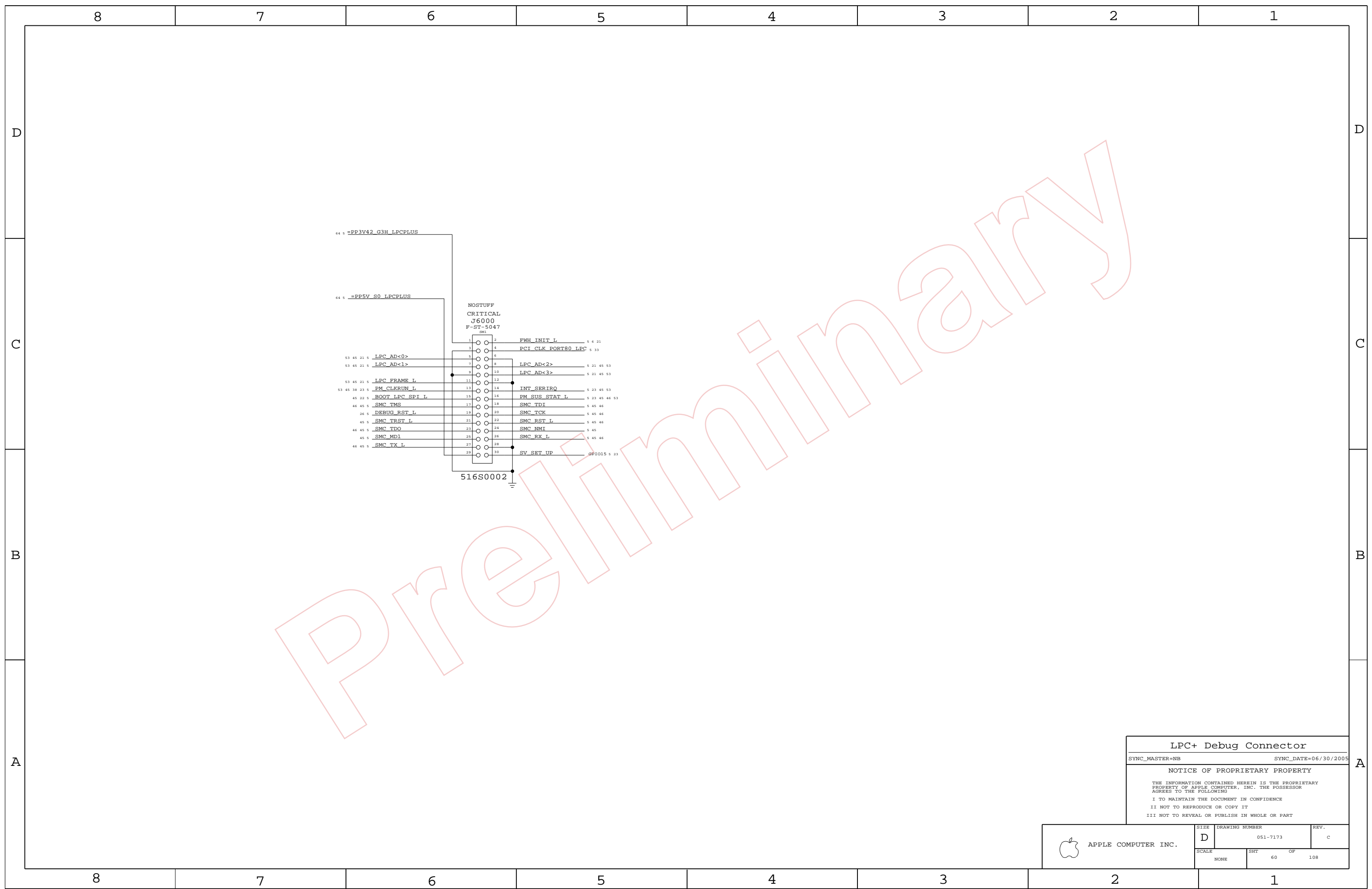
SYNC_MASTER=SMC SYNC_DATE=08/23/2005

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	D	051-7173	C
SCALE	SHT	OF	108
NONE	59		



LPC+ Debug Connector

SYNC_MASTER=NB SYNC_DATE=06/30/2005

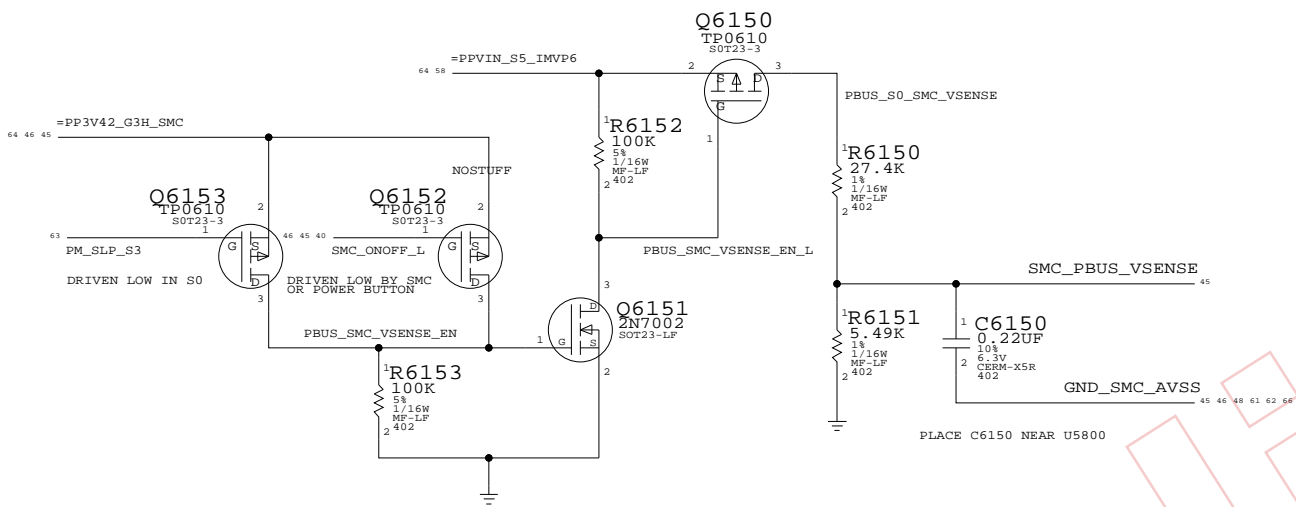
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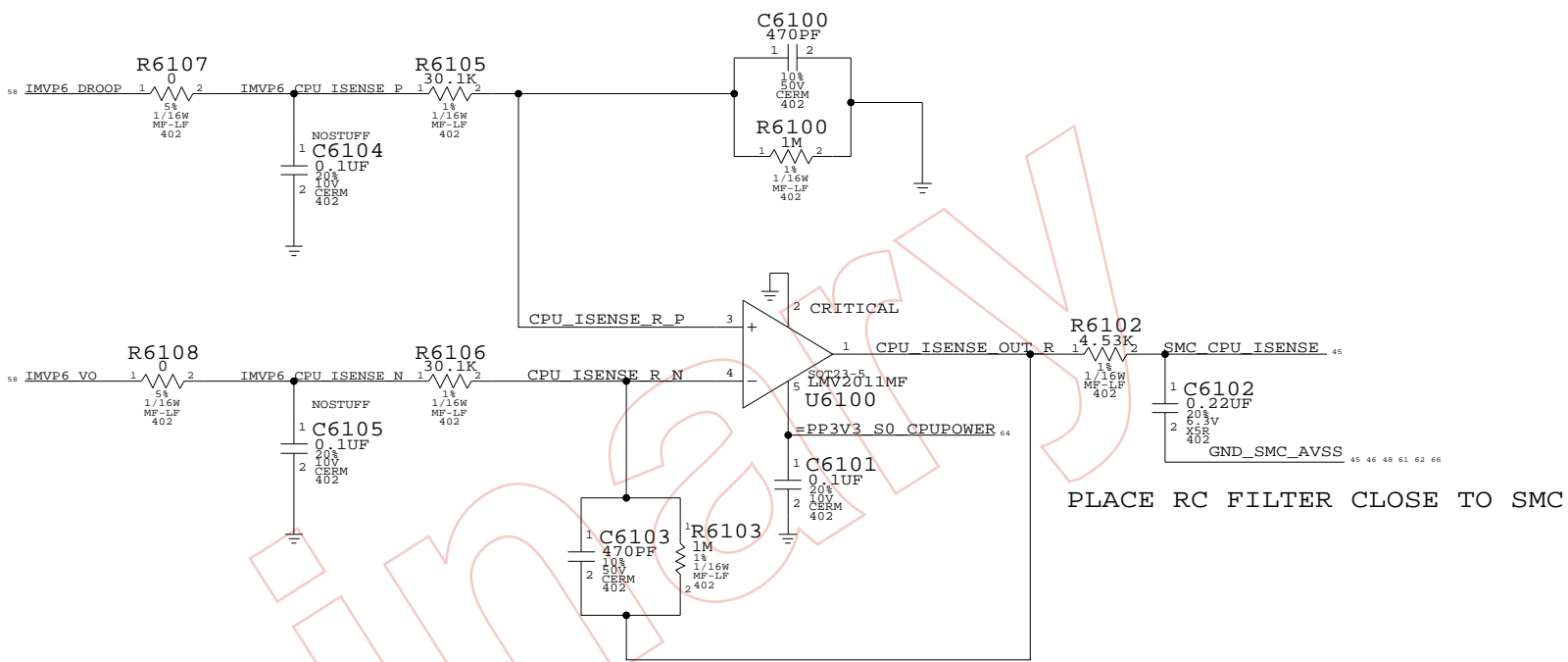
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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. c
	SCALE NONE	SHT 60	OF 108

PROCESSOR DCIN VOLTAGE SENSE

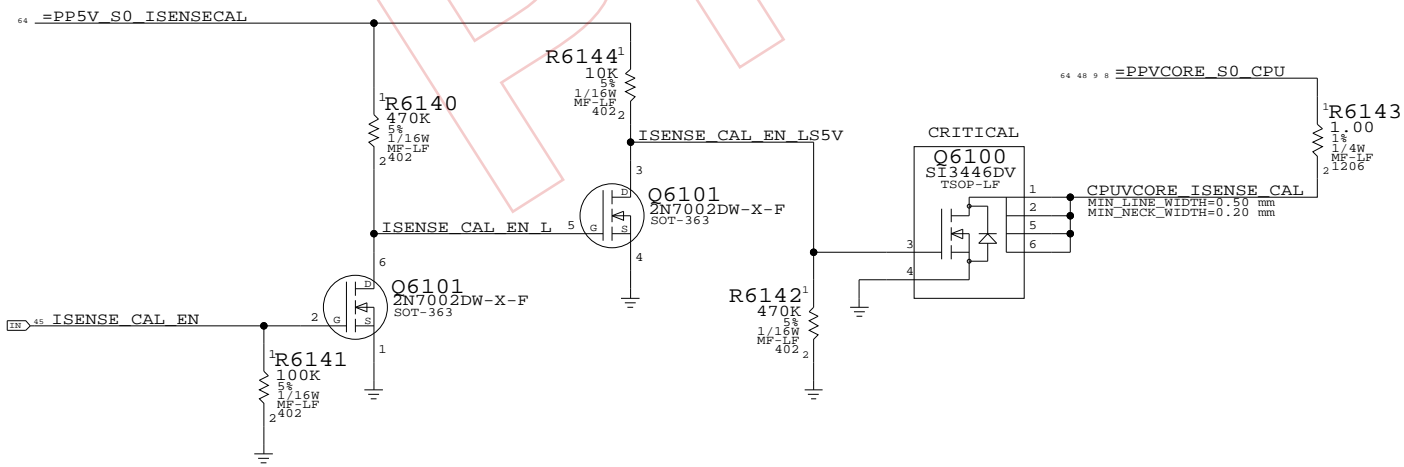


CPU CURRENT SENSE

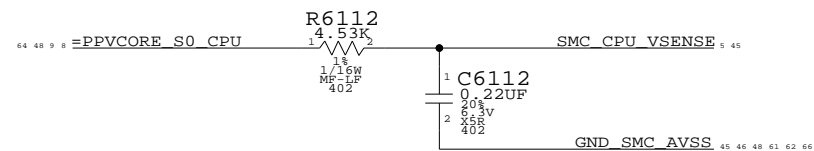


Current Sense Calibration Circuit

Switches in fixed load on power supplies to calibrate current sense circuits



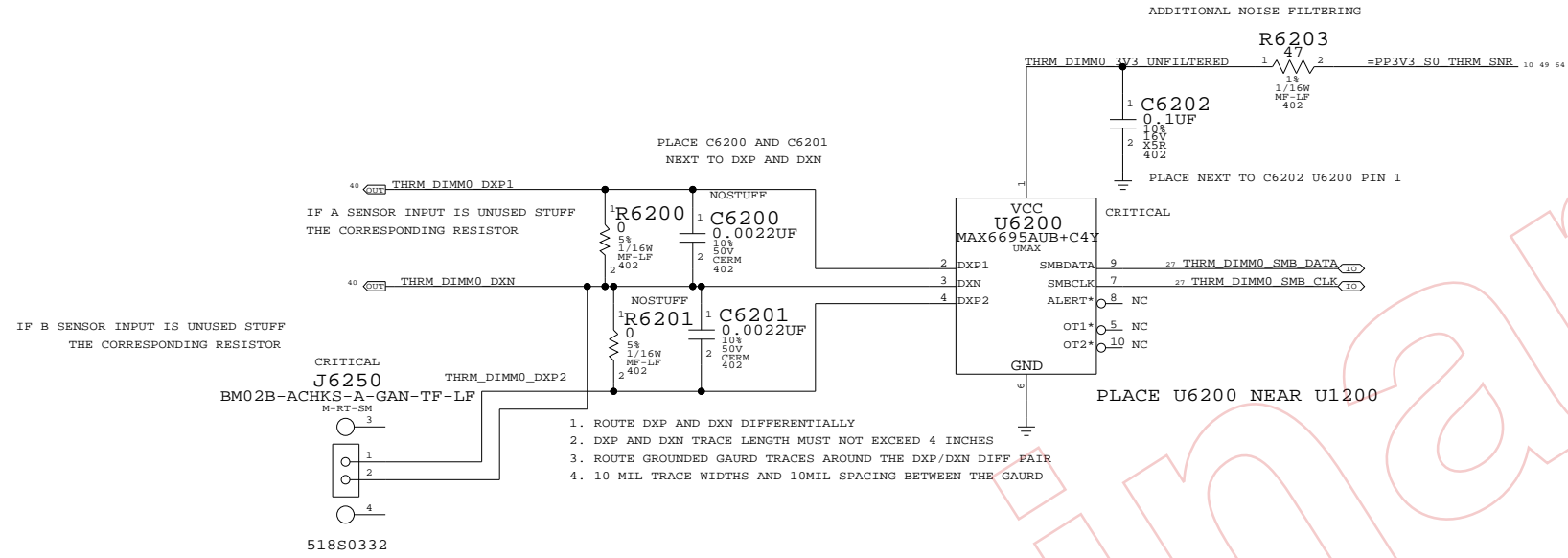
CPU VOLTAGE SENSE



CPU Current & Voltage Sense
 SYNC_MASTER=EMBT SYNC_DATE=08/30/2005
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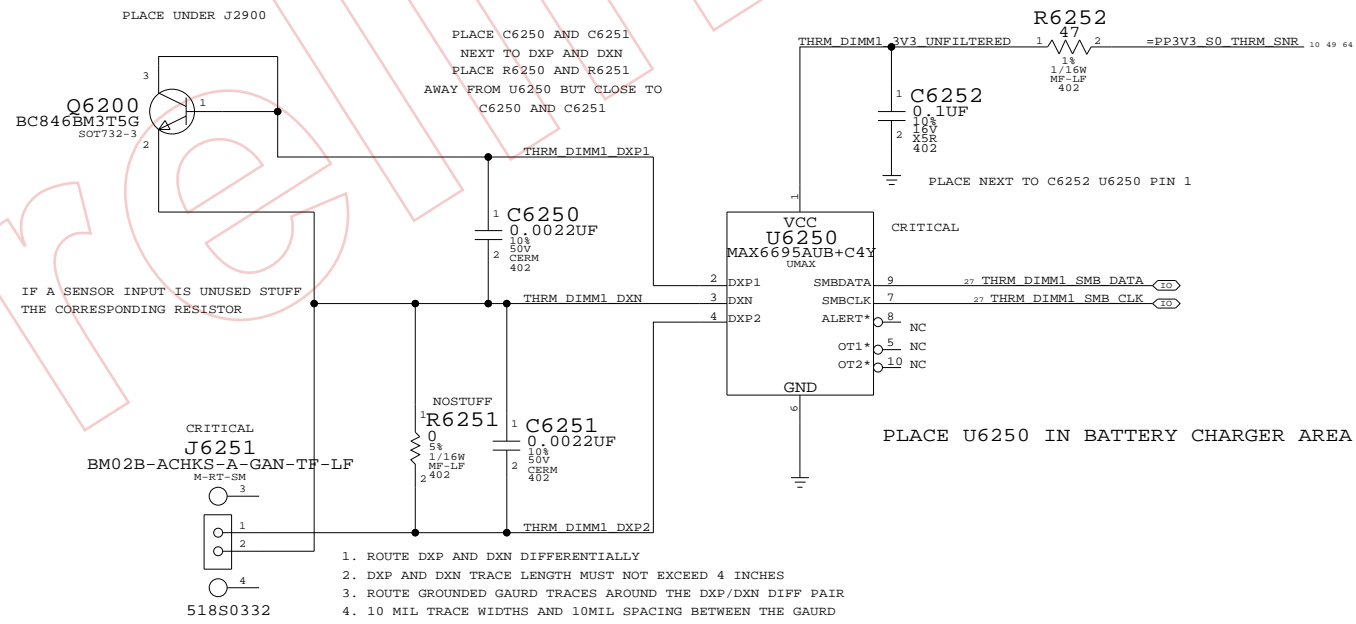
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	61	108	

DIMM0 TEMPERATURE ZONE



NOTE: REPLACE J6250 AND J6251 FROM 518S0332 TO 518S0452
 AFTER THIS CHANGE, THE SCHEAMTIC DOES NOT MATCH THE PCB ON THESE TWO LOCATIONS.

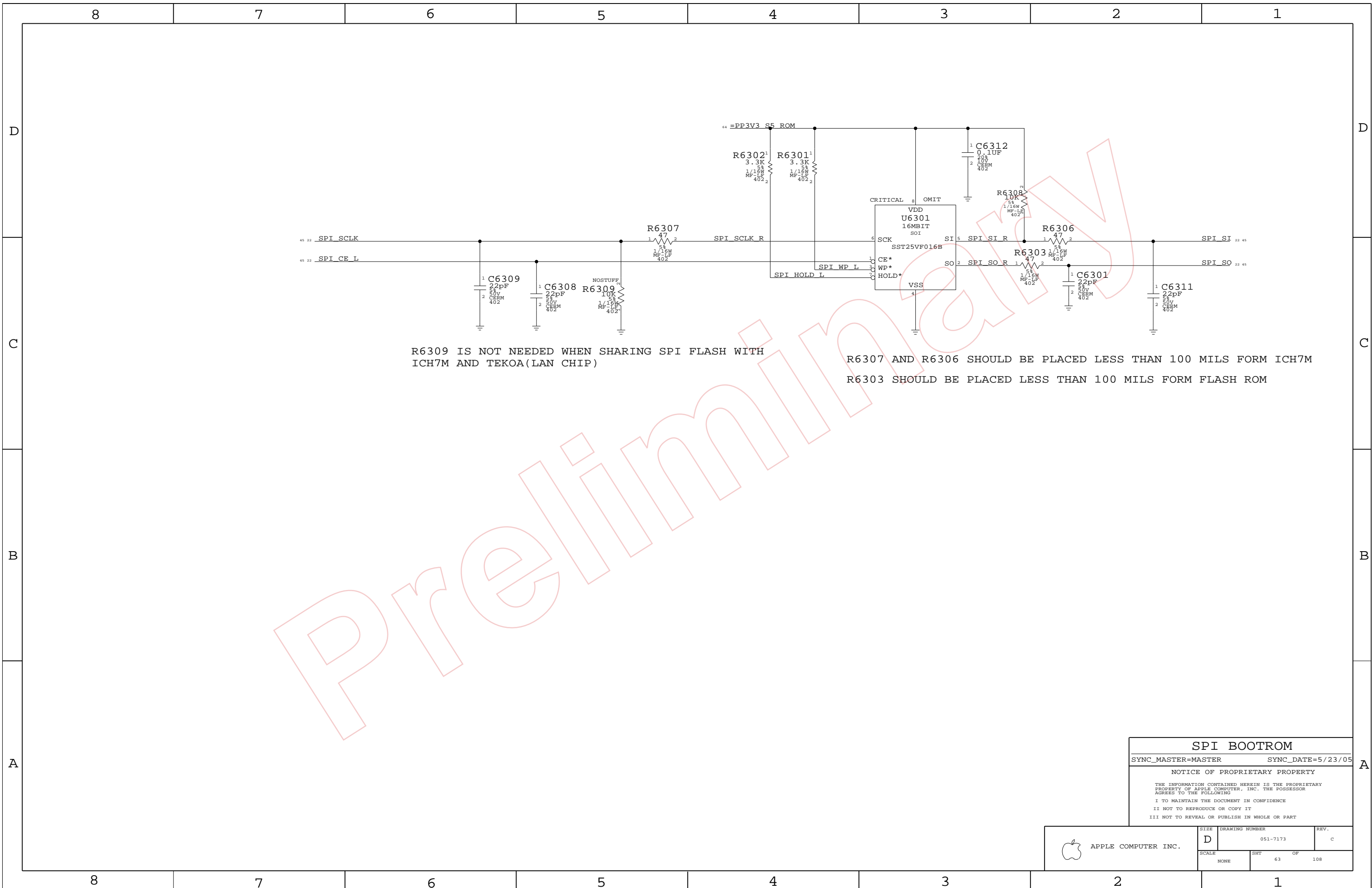
DIMM1 TEMPERATURE ZONE



NOTE: REPLACE J6250 AND J6251 FROM 518S0332 TO 518S0452
 AFTER THIS CHANGE, THE SCHEAMTIC DOES NOT MATCH THE PCB ON THESE TWO LOCATIONS.

TEMPERATURE SENSE			
SYNC_MASTER=ENET	SYNC_DATE=11/09/2005		
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	62		



R6309 IS NOT NEEDED WHEN SHARING SPI FLASH WITH ICH7M AND TEKOA(LAN CHIP)

R6307 AND R6306 SHOULD BE PLACED LESS THAN 100 MILS FORM ICH7M
 R6303 SHOULD BE PLACED LESS THAN 100 MILS FORM FLASH ROM

SPI BOOTROM

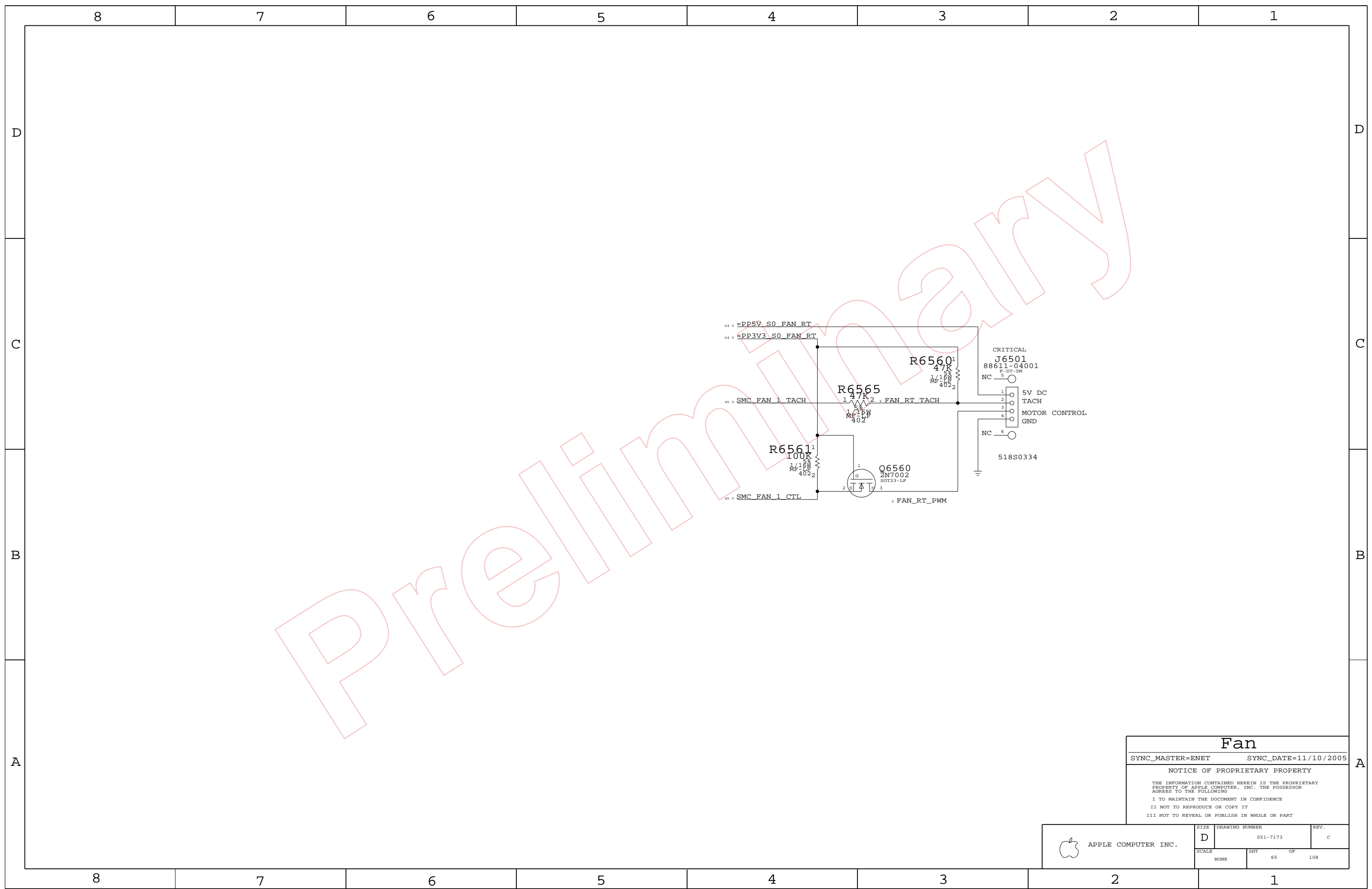
SYNC_MASTER=MASTER SYNC_DATE=5/23/05

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	D	051-7173	c
SCALE	SHT	OF	
NONE	63	108	



Preliminary

Fan

SYNC_MASTER=ENET SYNC_DATE=11/10/2005

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	D	051-7173	c
SCALE		SHT	OF
NONE		65	108

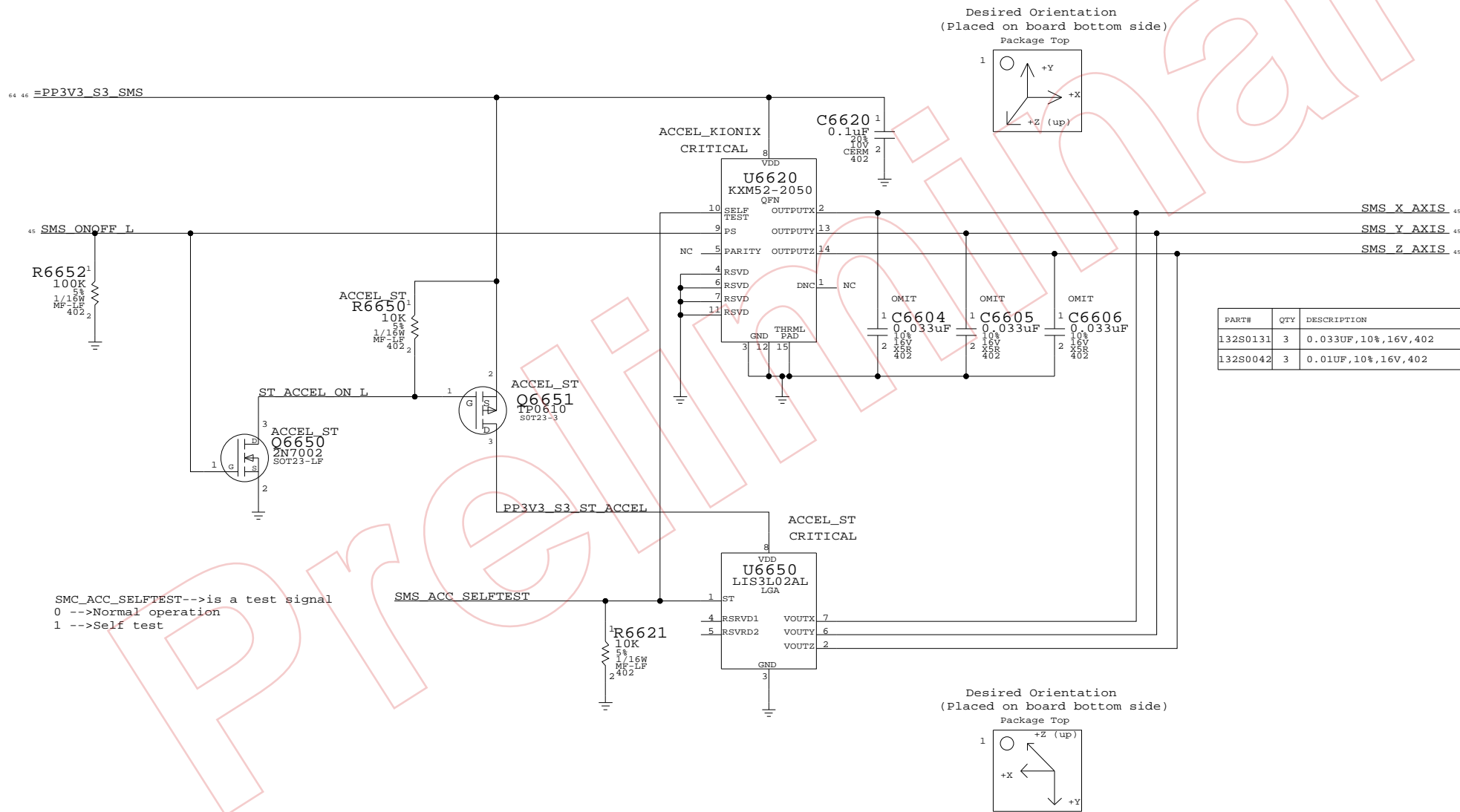
PAGE NOTES

INPUT
 =PP3V3_S3_SMS - 3.3V POWER FOR SMS (STAYS ALIVE IN SLEEP)
 SMS_ONOFF_L - CONNECT TO SMC TO BE ABLE TO PUT SMS INTO LOW-POWER MODE

OUTPUT
 SMS_ACC_*_AXIS - ACCELEROMETER OUTPUT TO SCU

PAGE HISTORY

5/19/2005 - FIRST REVISION OF PAGE
 7/26/2005 - REMOVED BOM TABLE AND UPDATED SYMBOL TO KXM52-2050
 7/26/2005 - CONNECTED PD PIN TO SMC'S SMS_ONOFF_L
 7/26/2005 -



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
132S0131	3	0.033UF,10%,16V,402	C6604,C6605,C6606		ACCEL_KIONIX
132S0042	3	0.01UF,10%,16V,402	C6604,C6605,C6606		ACCEL_ST

SMC_ACC_SELFTEST-->is a test signal
 0 -->Normal operation
 1 -->Self test

SMS

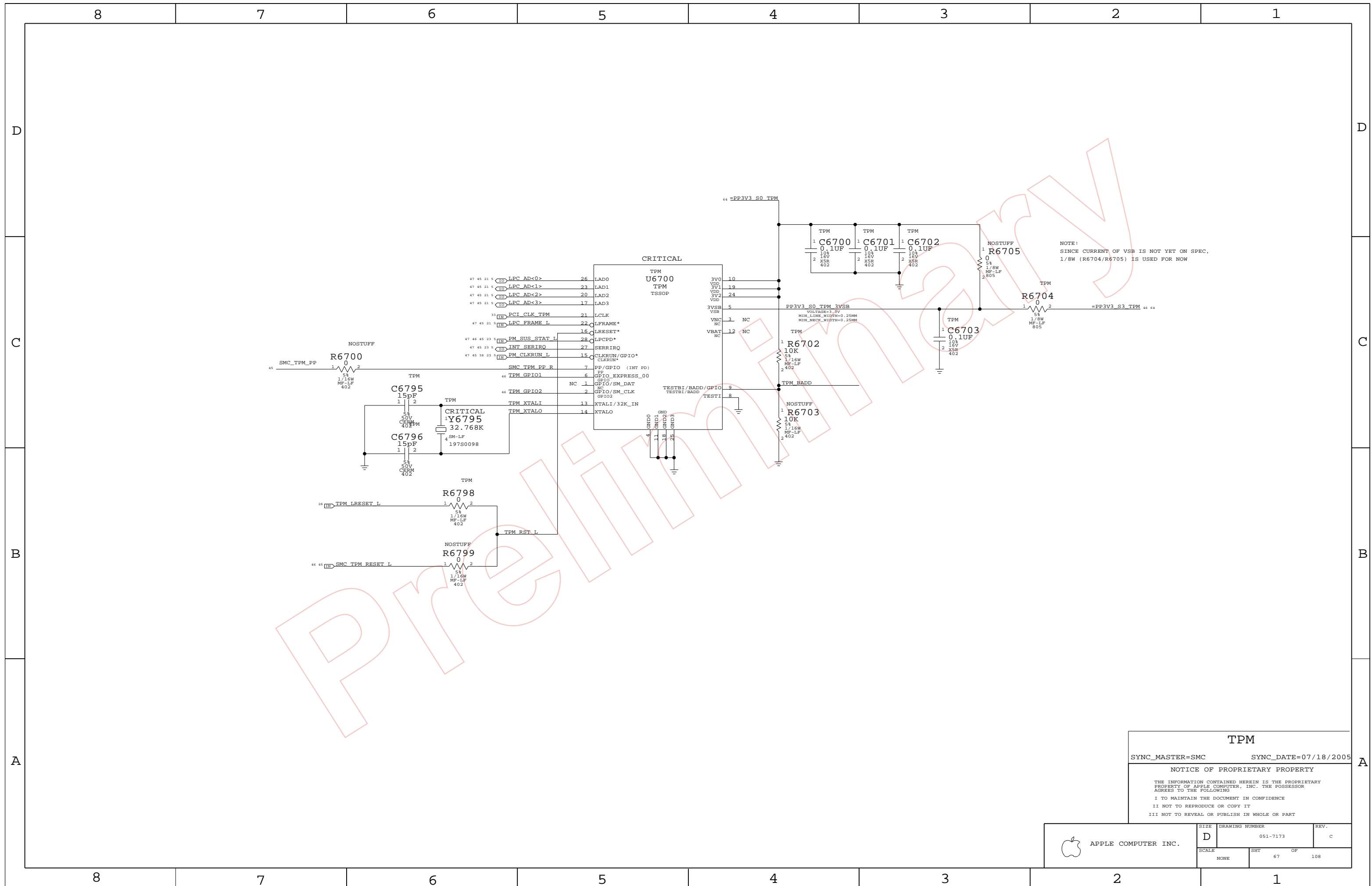
SYNC_MASTER=SMC SYNC_DATE=08/23/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	66	108	



NOTE:
SINCE CURRENT OF VSB IS NOT YET ON SPEC,
1/8W (R6704/R6705) IS USED FOR NOW

TPM

SYNC_MASTER=SMC SYNC_DATE=07/18/2005

NOTICE OF PROPRIETARY PROPERTY

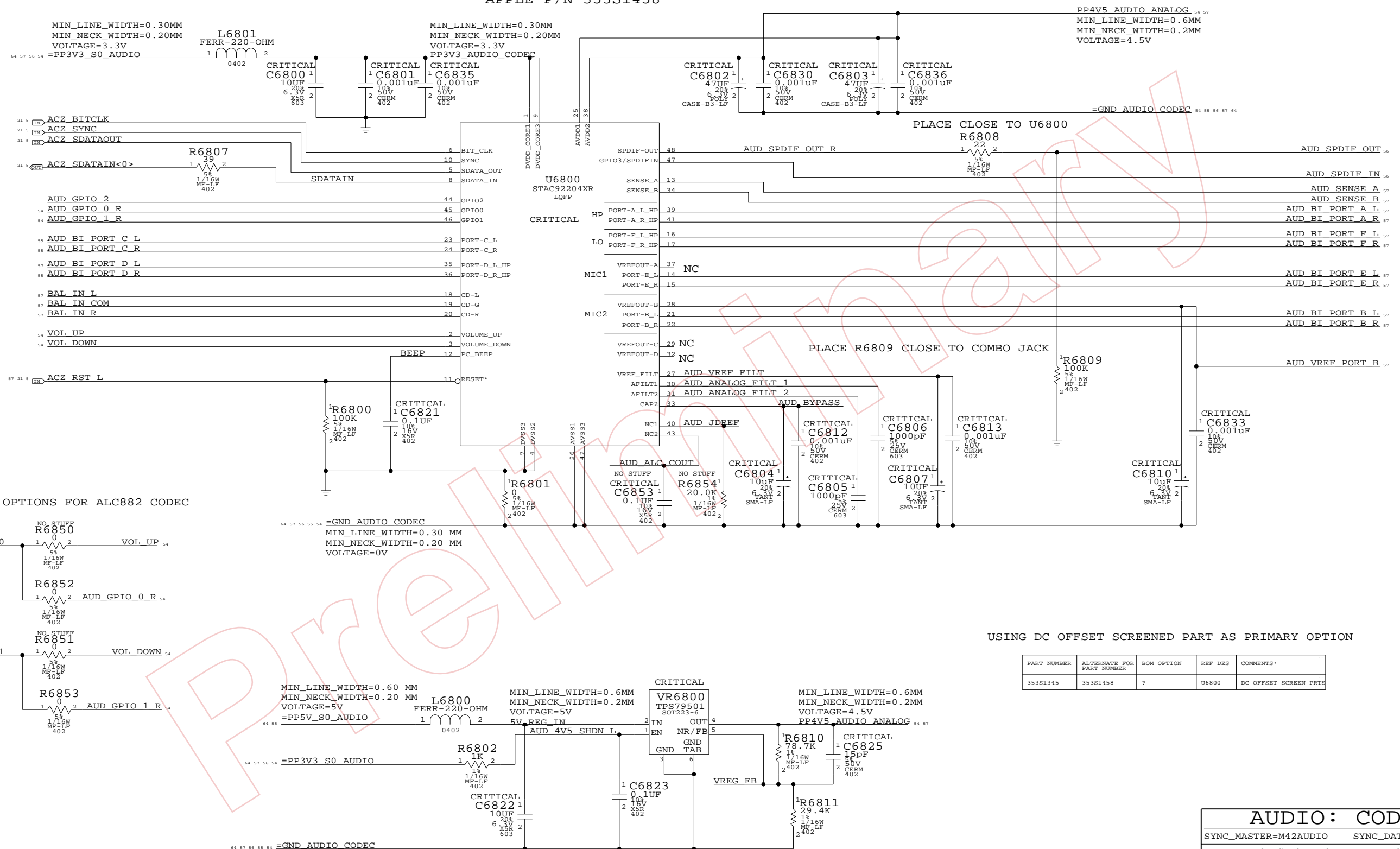
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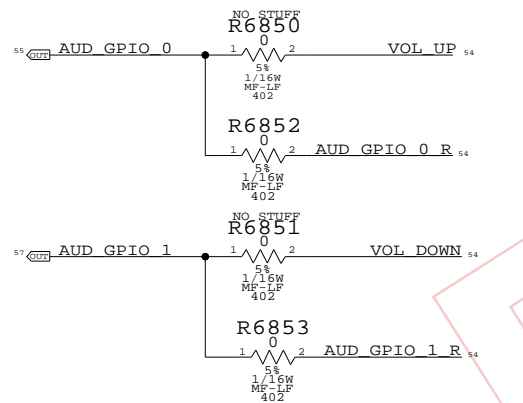
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	67	108	

AUDIO CODEC

APPLE P/N 353S1458



STUFFING OPTIONS FOR ALC882 CODEC



USING DC OFFSET SCREENED PART AS PRIMARY OPTION

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
353S1345	353S1458	?	U6800	DC OFFSET SCREEN PRTS

4.5V POWER SUPPLY FOR CODEC

AUDIO: CODEC

SYNC_MASTER=M42AUDIO SYNC_DATE=08/05/2006

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 APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	108
NONE	68		

SATELLITE & SUB TWEETER AMPLIFIER APN:353S1595

SATELLITE 442 Hz < FC < 736 Hz
 SUB 169 Hz < FC < 282 Hz

SPEAKER OUTPUT EMI FILTERS

D

D

C

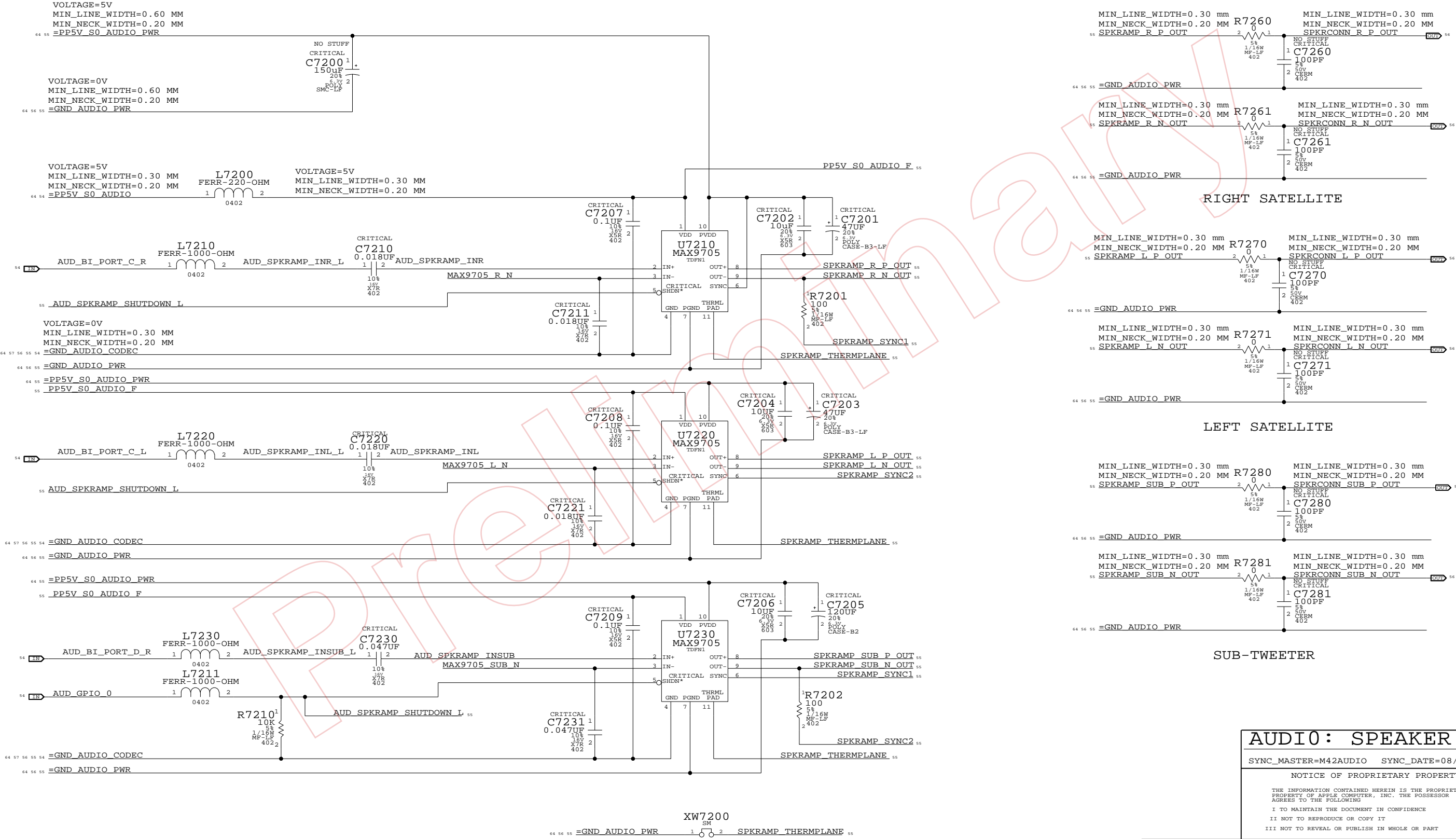
C

B

B

A

A



AUDIO: SPEAKER AMP
 SYNC_MASTER=M42AUDIO SYNC_DATE=08/05/2006

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SIZE	DRAWING NUMBER	REV.
D	051-7173	C
SCALE	SHT	OF
NONE	72	108

AUDIO JACK 1: LO/HP CONNECTOR, SPDIF TX

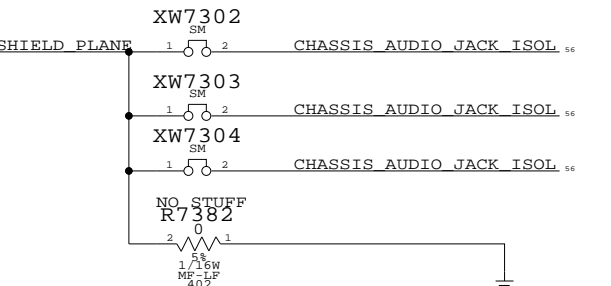
MIC CONNECTOR
APN:514S0392

CRITICAL
J7301
48227-0301
M-RT-SM1

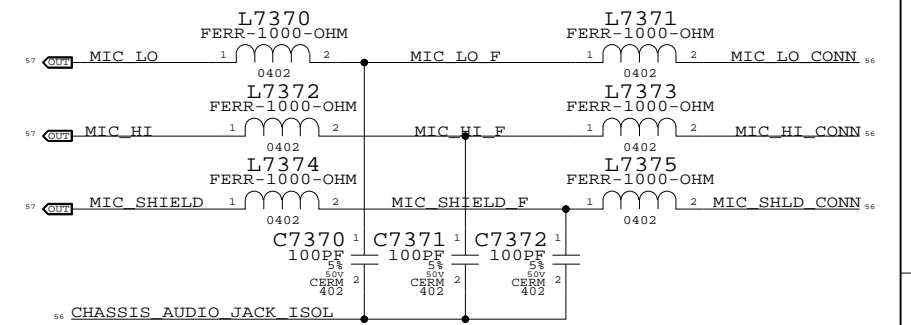
SPEAKER CONNECTOR
APN:518S0332

CRITICAL
J7302
88611-02001
F-ST-SM

AUDIO SHIELD FILL



MIC EMI FILTER



AUDIO JACK 2: LINE IN CONNECTOR, SPDIF RX

AUDIO: JACK

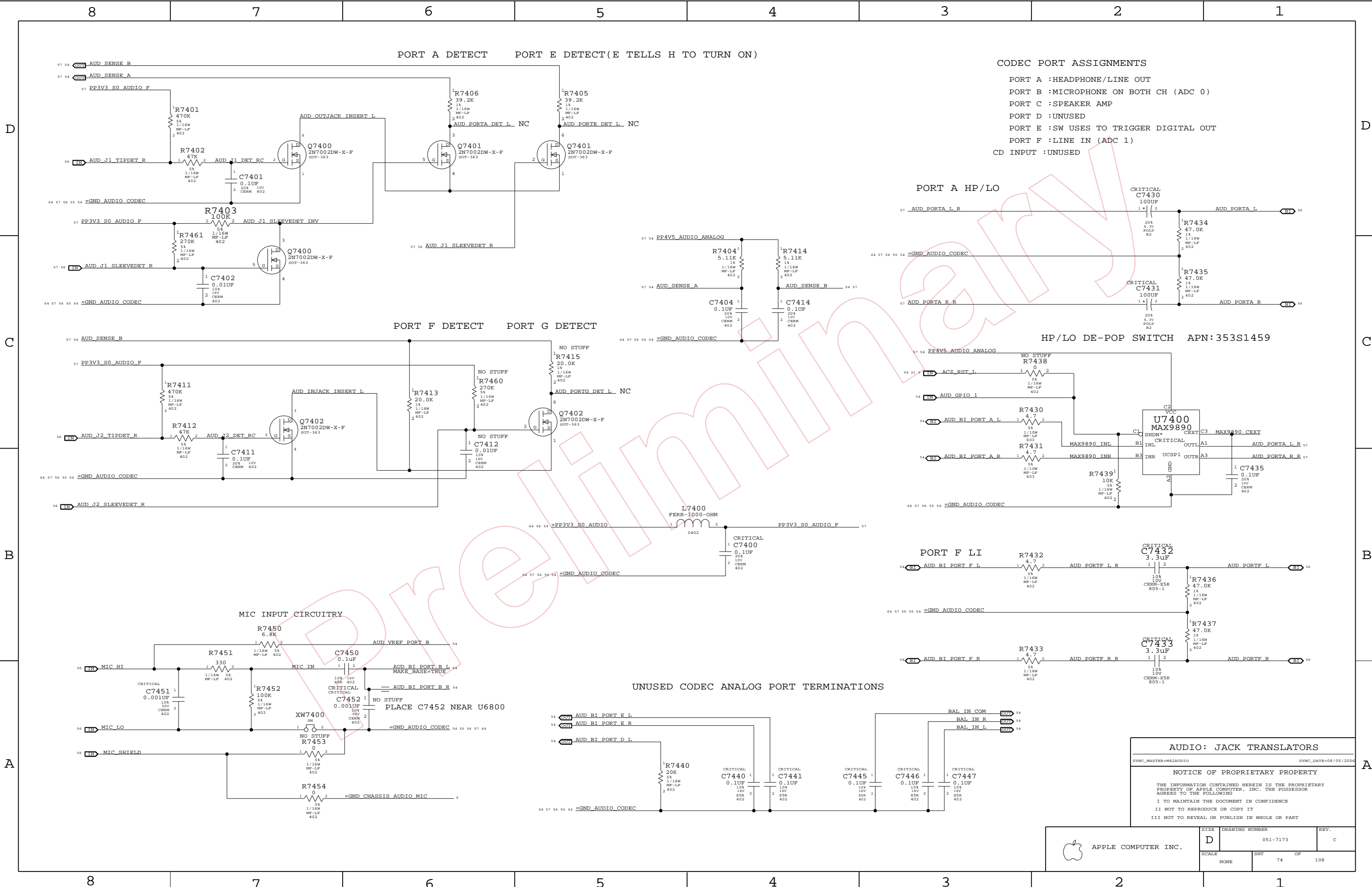
SYNC_MASTER=M42AUDIO SYNC_DATE=08/05/2006

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PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514-0290	1	CONN, 3.5MM COMBO AUDIO OUT, RA, M3, LF	J7300	CRITICAL	NORMAL
514-0291	1	CONN, 3.5MM COMBO AUDIO IN, RA, M3, LF	J7350	CRITICAL	NORMAL
514-0317	1	CONN, 3.5MM COMBO AUDIO OUT, RA, BLACK, LF	J7300	CRITICAL	FANCY
514-0318	1	CONN, 3.5MM COMBO AUDIO IN, RA, BLACK, LF	J7350	CRITICAL	FANCY

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	
NONE	73	108	



CODEC PORT ASSIGNMENTS

- PORT A : HEADPHONE/LINE OUT
- PORT B : MICROPHONE ON BOTH CH (ADC 0)
- PORT C : SPEAKER AMP
- PORT D : UNUSED
- PORT E : SW USES TO TRIGGER DIGITAL OUT
- PORT F : LINE IN (ADC 1)
- CD INPUT : UNUSED

HP/LO DE-POP SWITCH APN: 353S1459

AUDIO: JACK TRANSLATORS

SYNC_MASTER=M42AUDIO SYNC_DATE=08/05/2006

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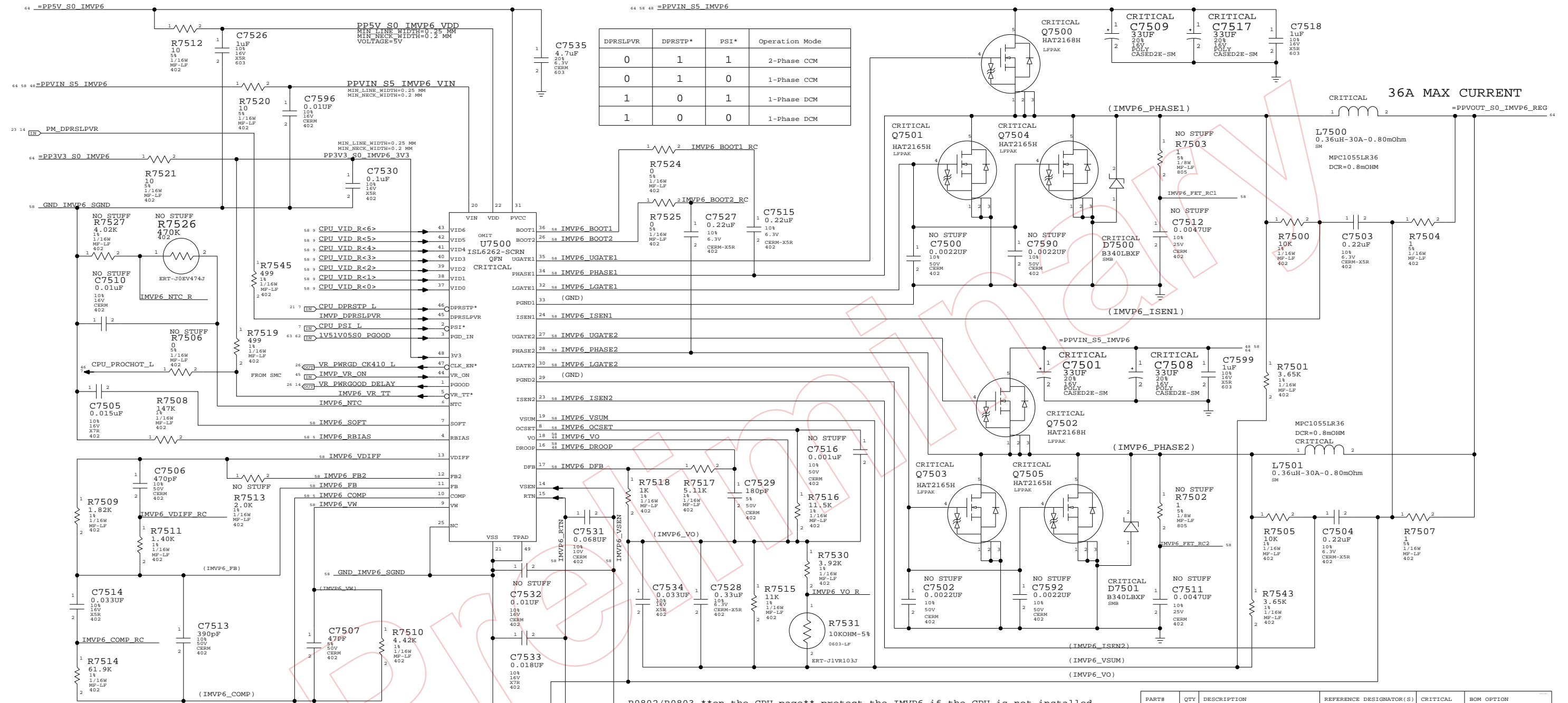
II NOT TO REPRODUCE OR COPY IT

III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	REV.
NONE	74	108	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
128S0093	128S0092	?	C7501_C7508	RENET T520V3300016AT0457650
128S0093	128S0092	?	C7509_C7517	RENET T520V3300016AT0457650

DPRSLPVR	DPRSTP*	PSI*	Operation Mode
0	1	1	2-Phase CCM
0	1	0	1-Phase CCM
1	0	1	1-Phase DCM
1	0	0	1-Phase DCM



Note 1: C7532, C7533 = 27.4 Ohm For Validating CPU Only.

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
353S1465	1	ISL6262	U7500		M42
353S1461	1	ISL9504	U7500		M42A

IMVP6 CPU VCore Regulator

Signal Name	MIN_LINE_WIDTH	MIN_NECK_WIDTH
IMVP6_PHASE1	1.5 MM	0.25 MM
IMVP6_BOOT1	0.25 MM	0.25 MM
IMVP6_UGATE1	1.5 MM	0.25 MM
IMVP6_LGATE1	1.5 MM	0.25 MM
IMVP6_ISEN1	0.25 MM	0.25 MM
IMVP6_FET_RC1	0.25 MM	0.25 MM
IMVP6_VSUM_R1	0.25 MM	0.25 MM
IMVP6_VO_R1	0.25 MM	0.25 MM
IMVP6_PHASE2	0.25 MM	0.25 MM
IMVP6_BOOT2	0.25 MM	0.25 MM
IMVP6_UGATE2	0.25 MM	0.25 MM
IMVP6_LGATE2	0.25 MM	0.25 MM
IMVP6_ISEN2	0.25 MM	0.25 MM
IMVP6_FET_RC2	0.25 MM	0.25 MM
IMVP6_VSUM_R2	0.25 MM	0.25 MM
IMVP6_VO_R2	0.25 MM	0.25 MM

Signal Name	MIN_LINE_WIDTH	MIN_NECK_WIDTH
IMVP6_OCSET	0.25 MM	0.20 MM
CPU_VID_R<0..6>	0.25 MM	0.20 MM
IMVP6_VSUM	0.25 MM	0.20 MM
GND_IMVP6_SGND	0.50 MM	0.20 MM
IMVP6_VO	0.25 MM	0.20 MM
IMVP6_DROOP	0.25 MM	0.20 MM
IMVP6_DFB	0.25 MM	0.20 MM
IMVP6_SOFT	0.25 MM	0.20 MM
IMVP6_RBIAS	0.25 MM	0.20 MM
IMVP6_VDIFF	0.25 MM	0.20 MM
IMVP6_FB2	0.25 MM	0.20 MM
IMVP6_FB	0.25 MM	0.20 MM
IMVP6_COMP	0.25 MM	0.20 MM
IMVP6_VW	0.25 MM	0.25 MM
CPU_VCCSENSE_P	0.25 MM	0.25 MM
CPU_VCCSENSE_N	0.25 MM	0.25 MM
IMVP6_RTIN	0.25 MM	0.25 MM
IMVP6_VSEN	0.25 MM	0.25 MM

IMVP6 CPU VCore Regulator

SYNC_MASTER=POWER SYNC_DATE=07/13/2005

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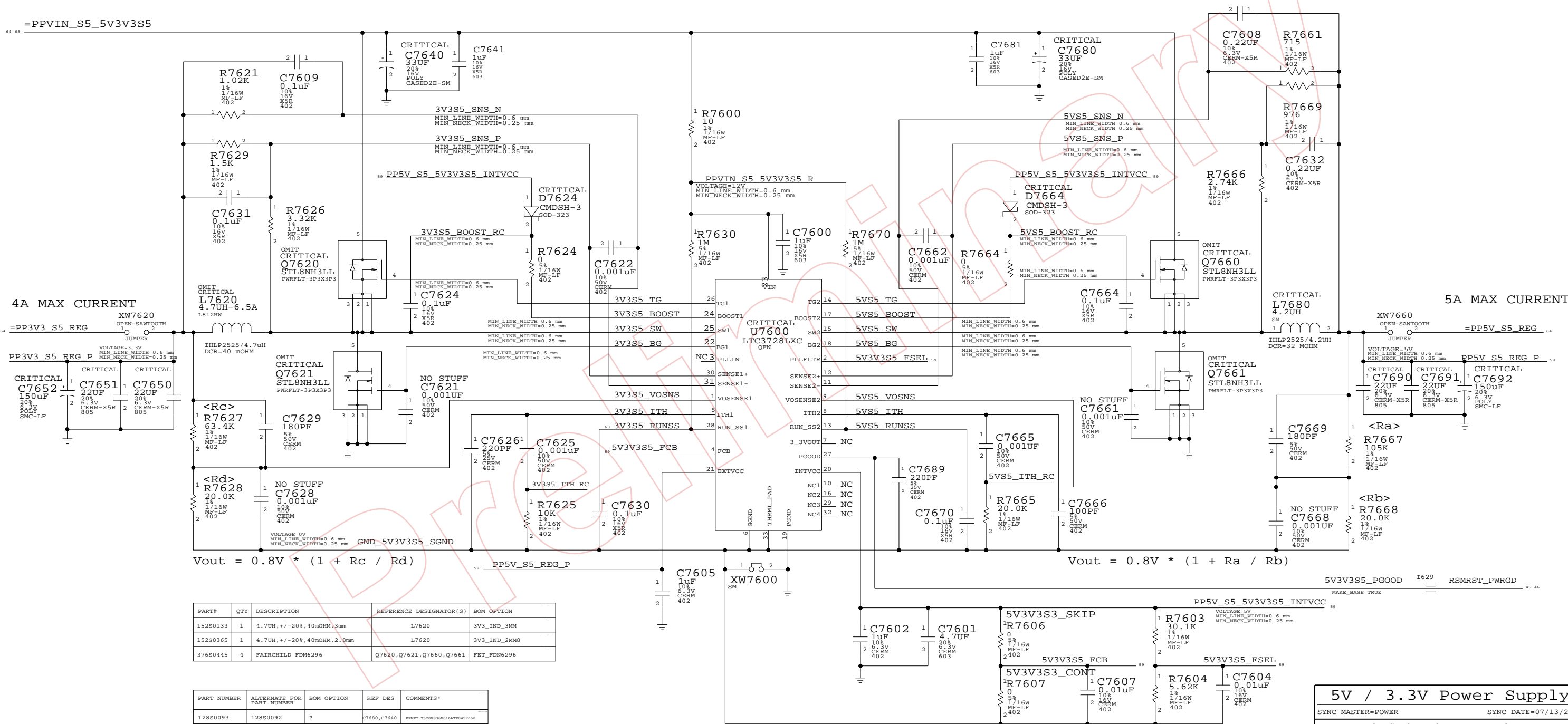
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APPLE COMPUTER INC.	SCALE	SHEET	OF	REV.
	NONE	75	108	C

5V / 3.3V POWER SUPPLY



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
15280133	1	4.7UH, +/-20%, 40mOHM, 3mm	L7620	3V3_IND_3MM
15280365	1	4.7UH, +/-20%, 40mOHM, 2.8mm	L7620	3V3_IND_2MM8
37680445	4	FAIRCHILD FDM6296	Q7620, Q7621, Q7660, Q7661	FET_FDM6296

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
12880093	12880092	?	C7680, C7640	RENET VS20V330M16ATE0487650
37680448	37680445	?	Q7620, Q7621	VISHAY SI7806ADN
37680448	37680445	?	Q7660, Q7661	VISHAY SI7806ADN

5V / 3.3V Power Supply

SYNC_MASTER=POWER SYNC_DATE=07/13/2005

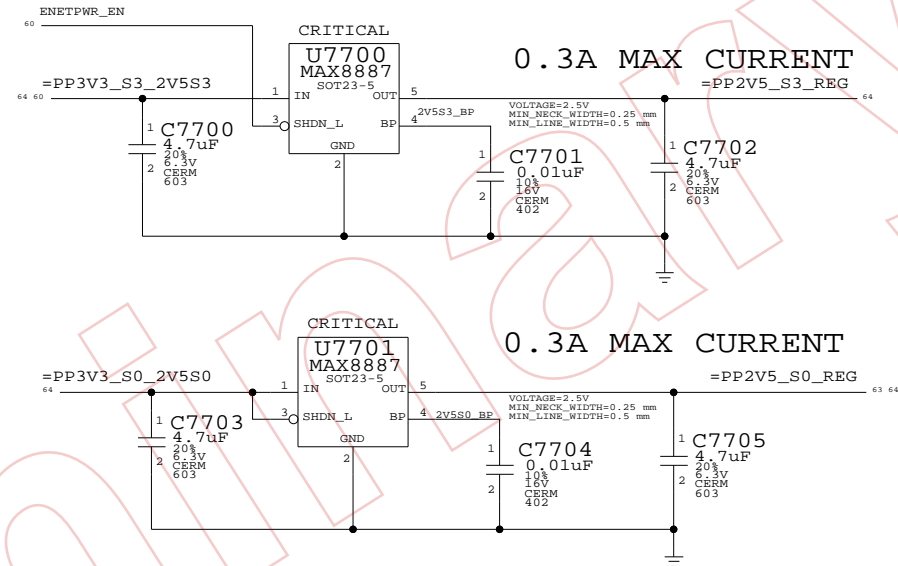
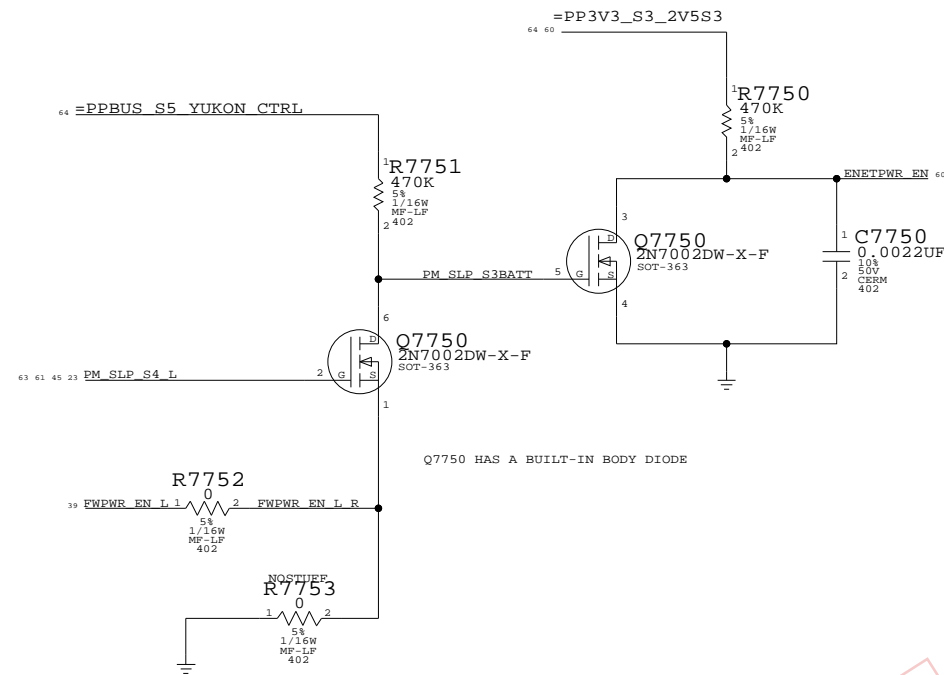
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	76		

YUKON POWER CONTROL

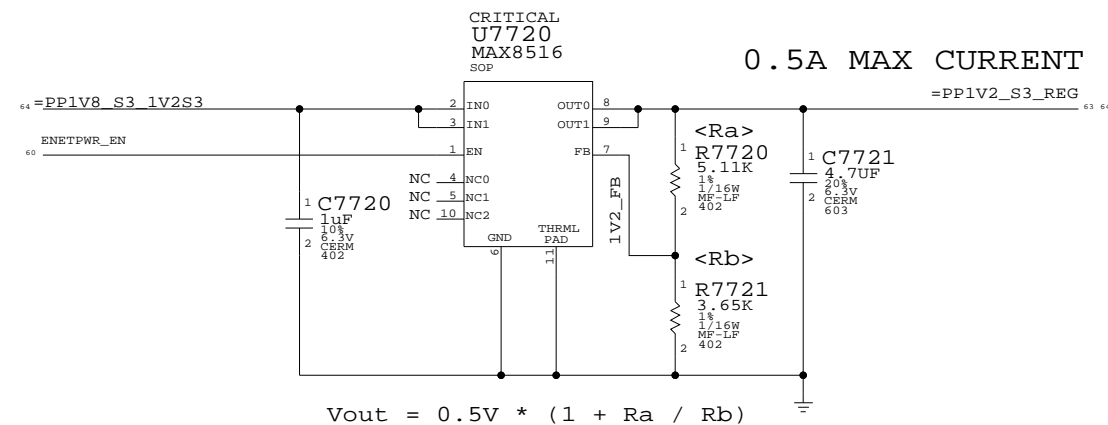
2.5V REGULATORS



1.2V REGULATOR

NAME	PM_SLP_S4_L	FWPWR_EN_L	PM_SLP_S3BATT	ENETPWR_EN
LOGIC	S3 S0	~S0 ~SMC_PS_ON		POWER YUKON
S3 ON BATTERY	TRUE (3.3V)	TRUE (PBUS 12.6V)	TRUE (PBUS 12.6V)	FALSE (0V)
S0 OR S3 ON AC	TRUE (3.3V)	FALSE (0V)	FALSE (0V)	TRUE (3.3V)
S5 ON AC	FALSE (0V)	TRUE (PBUS 12.6V)	TRUE (PBUS 12.6V)	FALSE (0V)
S5 ON BATT	FALSE (0V)	FALSE (0V)	TRUE (PBUS 12.6V)	FALSE (0V)

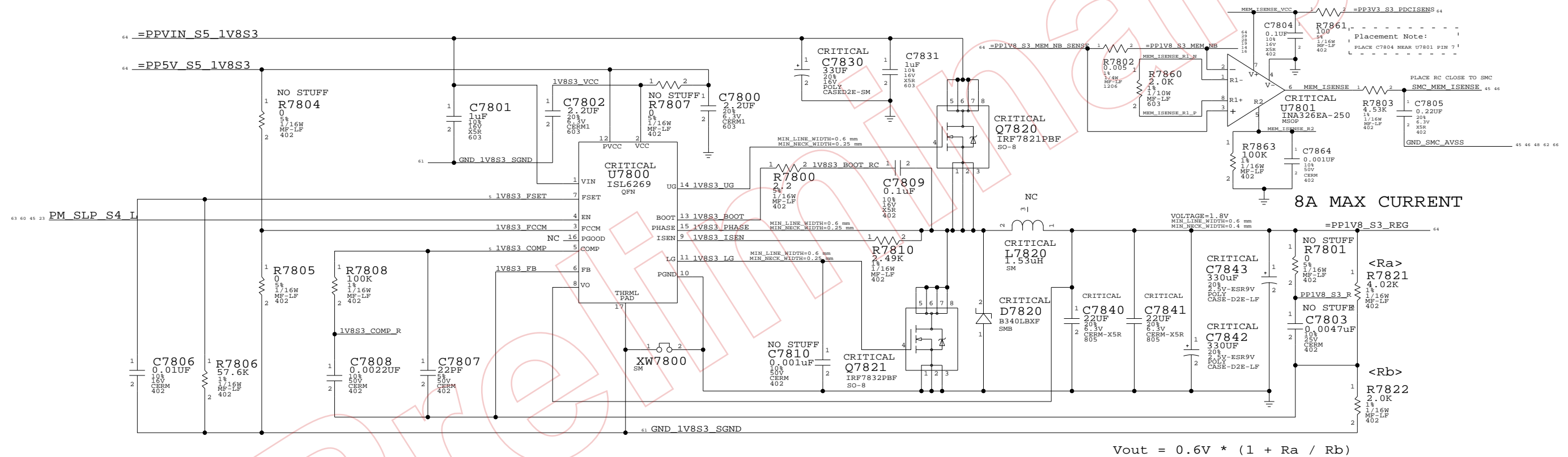
NOTE: IF CHANGE TO STUFFING R7753 THEN ENETPWR_EN IS BUFFERED PM_SLP_S4_L



2.5V/1.2V Regulator
 SYNC_MASTER=ENET SYNC_DATE=12/06/2005
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	108
NONE	77		

1.8V POWER SUPPLY



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
128S0093	128S0092	?	C7830	ERRY 7520V330M16AT00457450

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
128S0094	128S0060	?	C7842, C7843	PANASONIC KEPSX0D3311R
128S0095	128S0060	?	C7842, C7843	PANASONIC KEPSX0D3311E

1.8V Supply

SYNC_MASTER=POWER SYNC_DATE=07/13/2005

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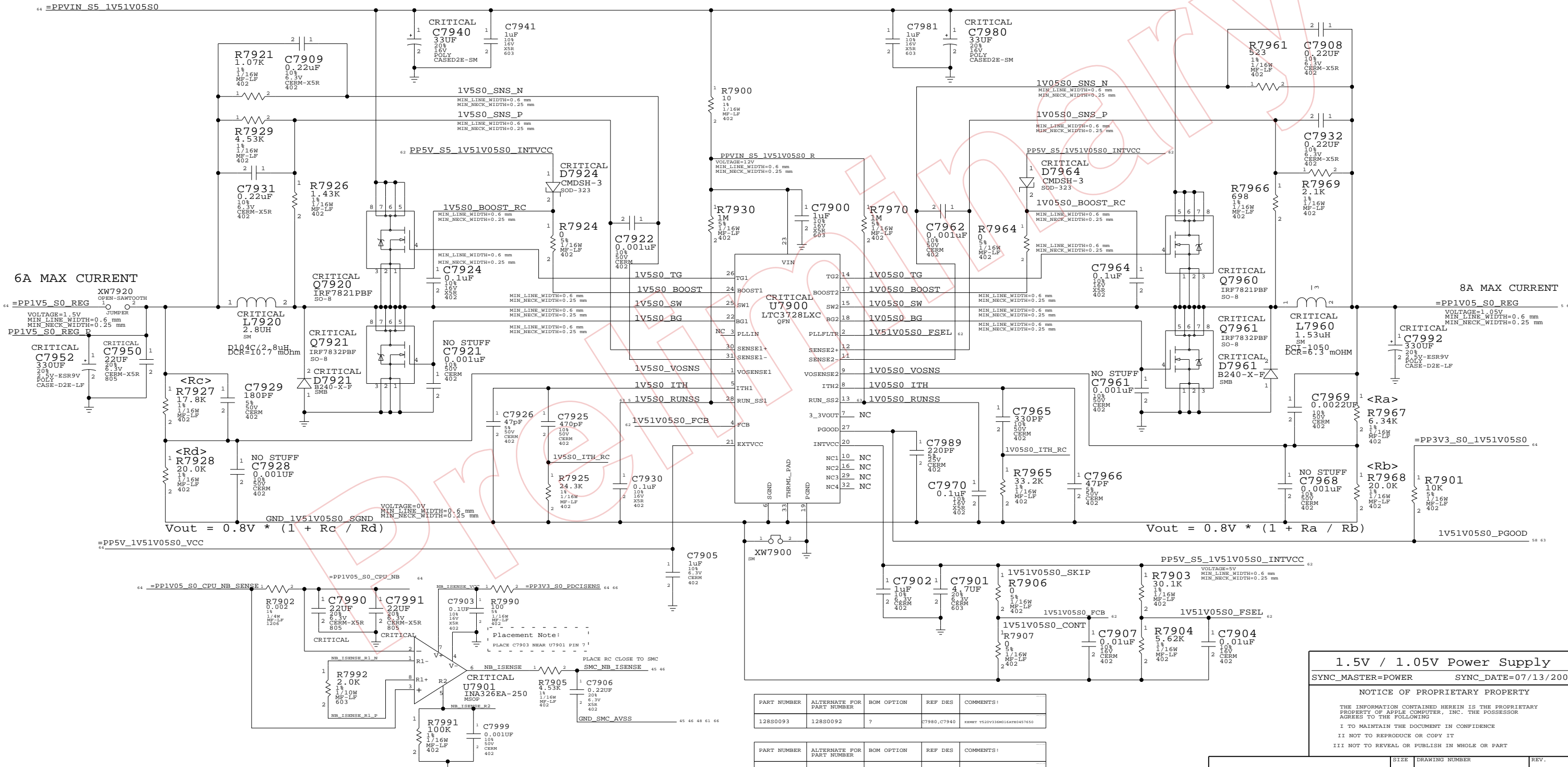
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	108
NONE	78		

1.5V/1.05V POWER SUPPLY



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
128S0093	128S0092	?	C7980, C7940	EXHIBIT 7520V33H001A480457450
128S0094	128S0060	?	C7952, C7992	PANASONIC EPEXK0D3311E
128S0095	128S0060	?	C7952, C7992	PANASONIC EPEXK0D3311E

1.5V / 1.05V Power Supply
 SYNC_MASTER=POWER SYNC_DATE=07/13/2005
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APPLE COMPUTER INC.

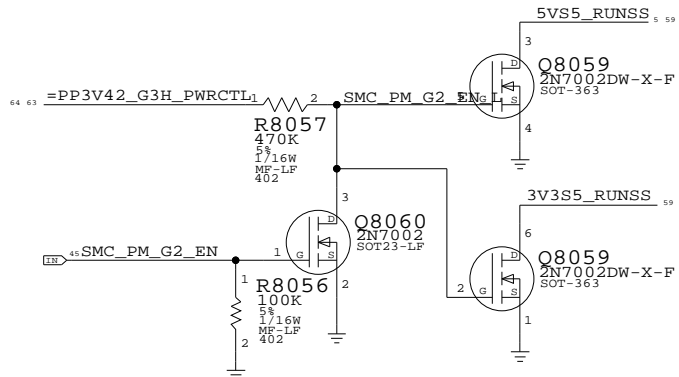
SCALE	SHT	OF	REV.
NONE	79	108	C

POWER CONTROL SIGNALS

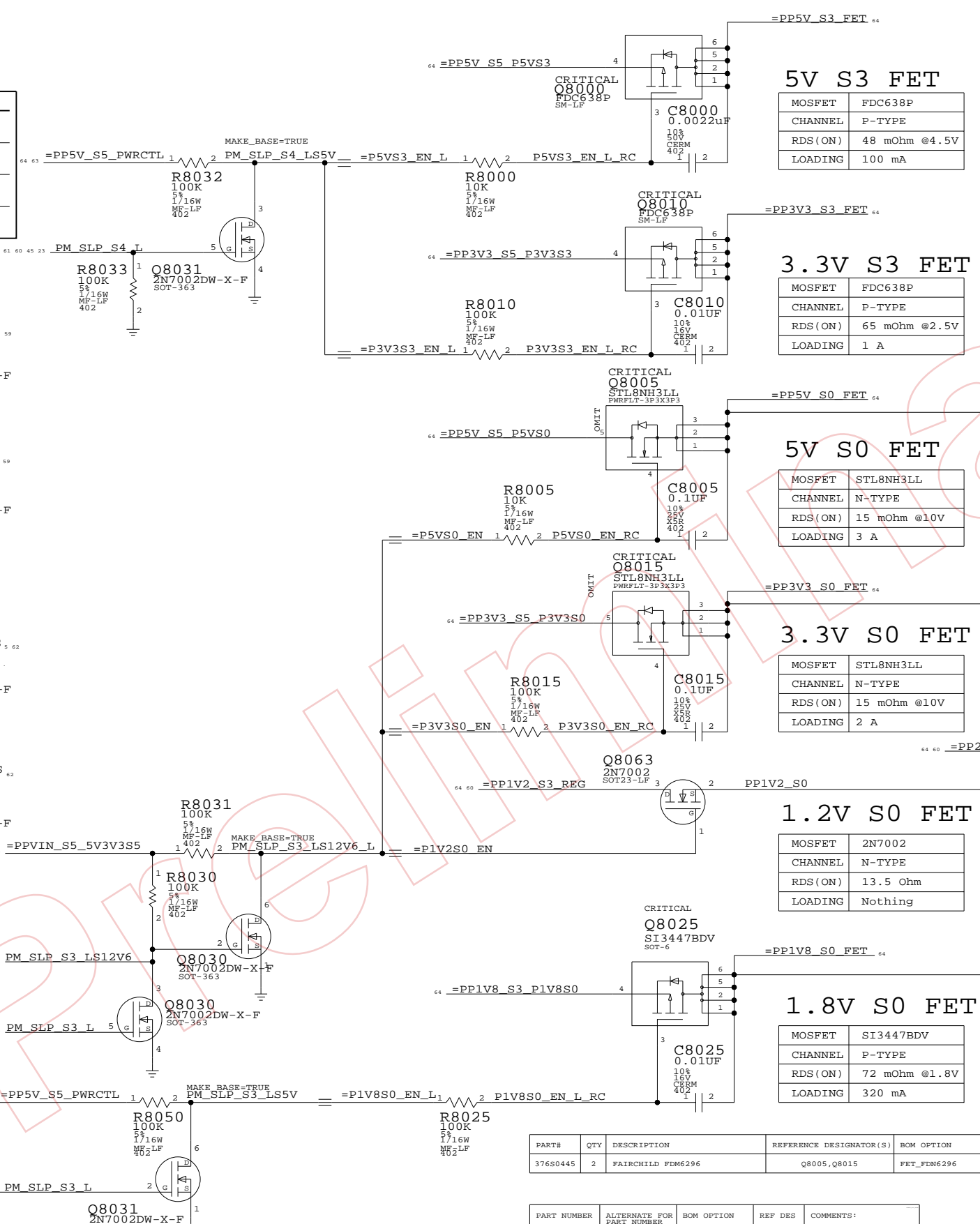
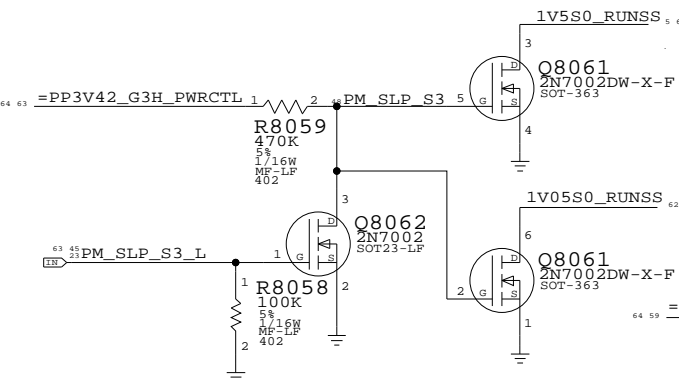
These rails are monitored by LTC2908

State	SMC_PM_G2_ENABLE	PM_SLP_S4_L	PM_SLP_S3_L
Run (S0)	1	1	1
Sleep (S3)	1	1	0
Soft-Off (S5)	1	0	0
Battery Off (G3Hot)	0	0	0

5V/3.3V S5 RUN/SS CONTROL

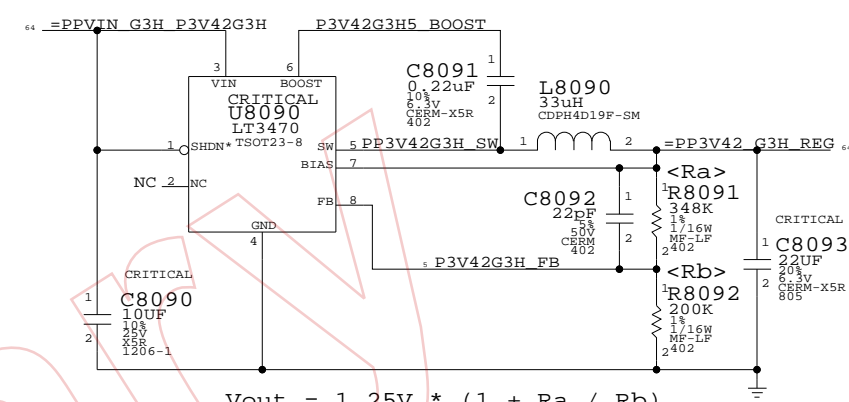


1.5V/1.05V S0 RUN/SS CONTROL

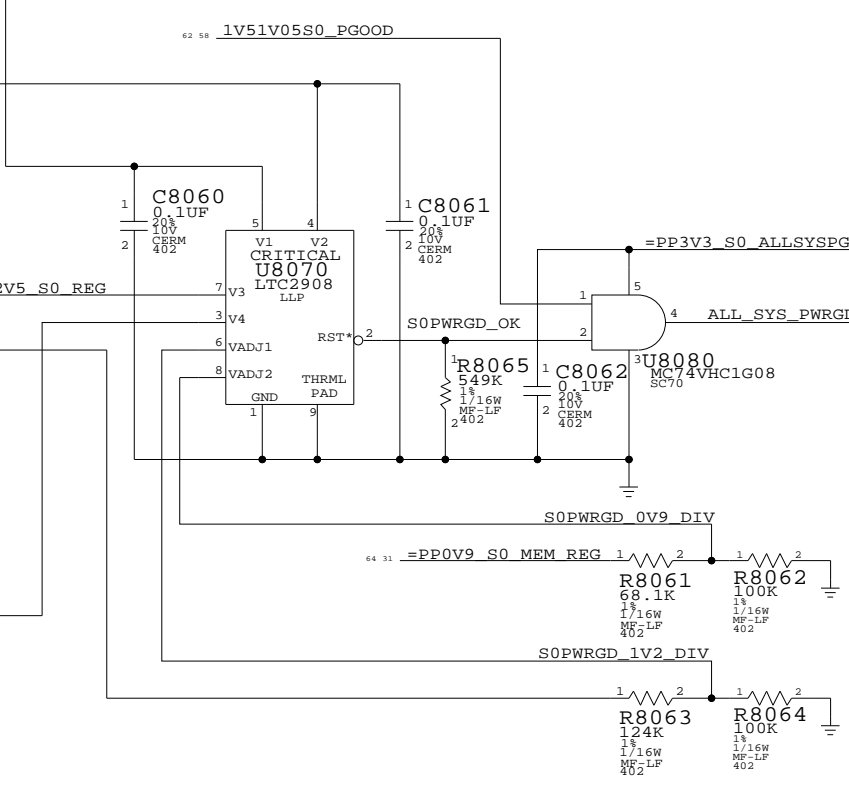


3.425V "G3Hot" SUPPLY

Supply needs to guarantee 3.31V delivered to SMC VRef generator



ALL SYSTEM PWRGD CIRCUIT



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
376S0445	2	FAIRCHILD FDM6296	Q8005, Q8015	FET_FDM6296

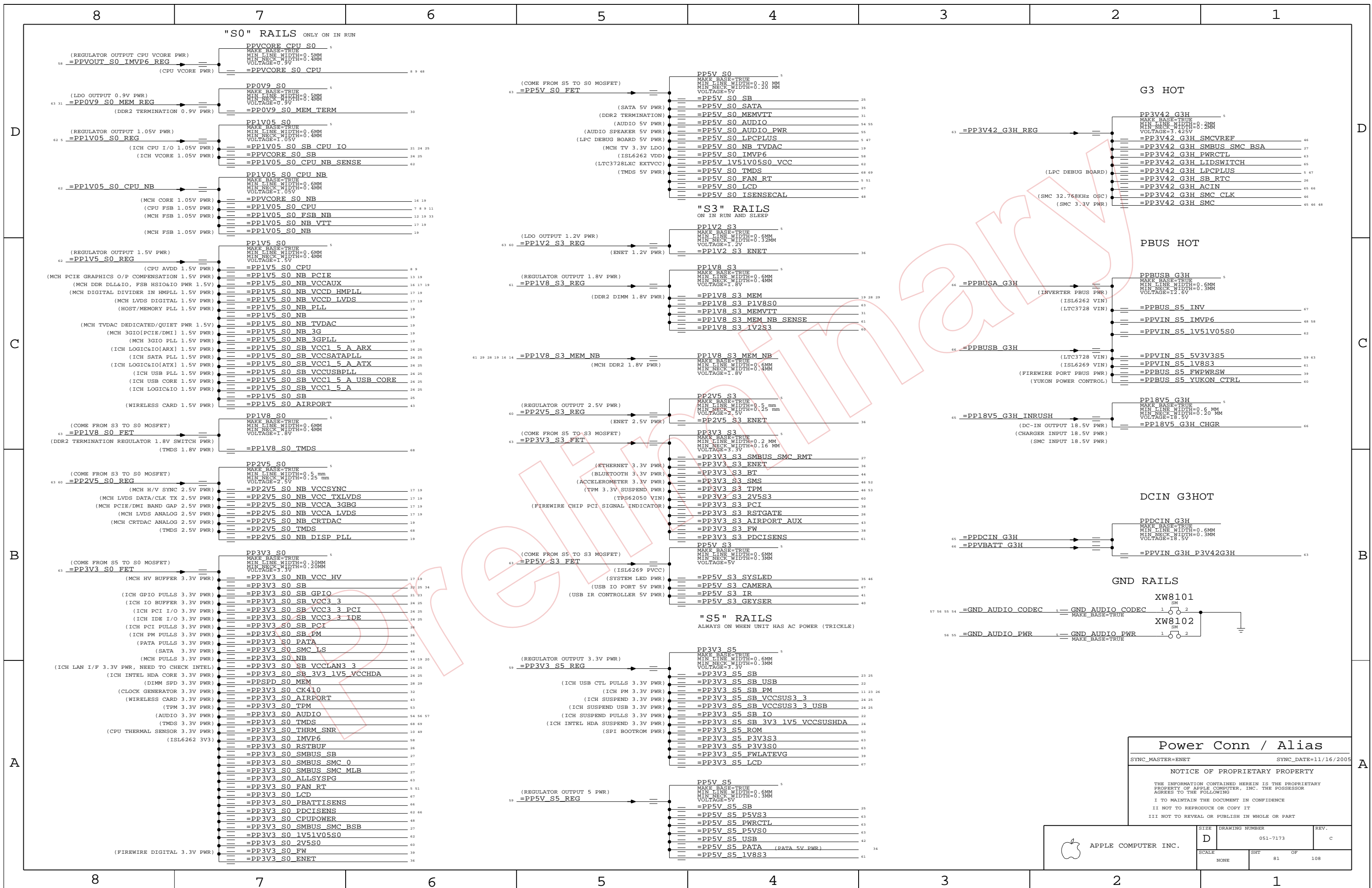
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S0448	376S0445	?	D8005, Q8015	VISHAY SI7806ADN

S3/S0 FETS, G3H SUPPLY

SYNC_MASTER=ENET SYNC_DATE=08/30/2005

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APPLE COMPUTER INC.	SIZE: D	DRAWING NUMBER: 051-7173	REV.: C
	SCALE: NONE	SHEET: 80	OF: 108



Power Conn / Alias

SYNC_MASTER=ENET SYNC_DATE=11/16/2005

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APPLE COMPUTER INC.	SCALE NONE	SHEET 81	OF 108	REV. C
	DRAWING NUMBER 051-7173			SIZE D

DC-JACK INTERFACE

8 7 6 5 4 3 2 1

D

D

C

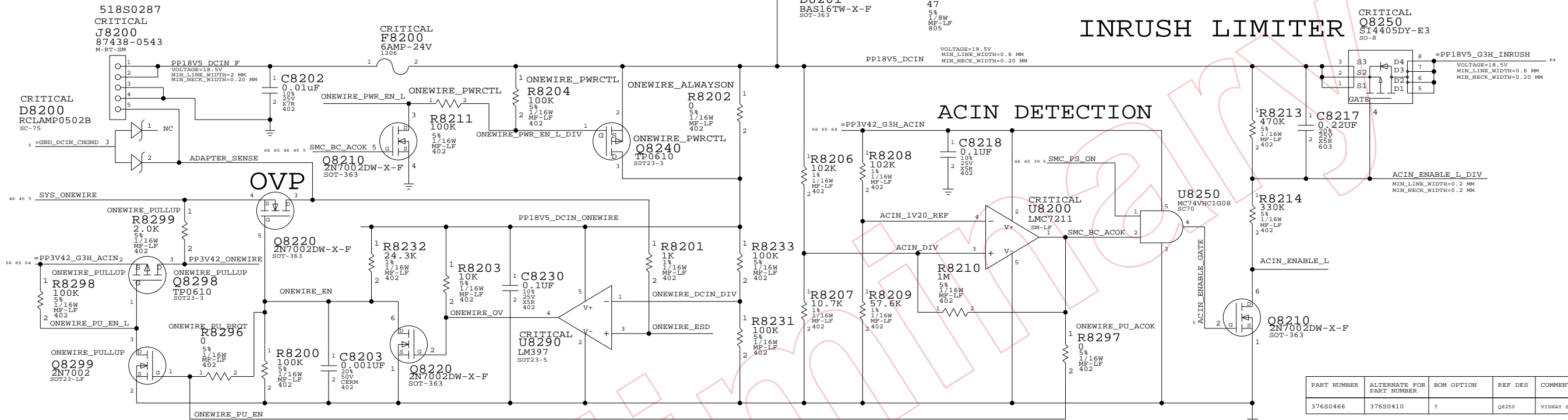
C

B

B

A

A



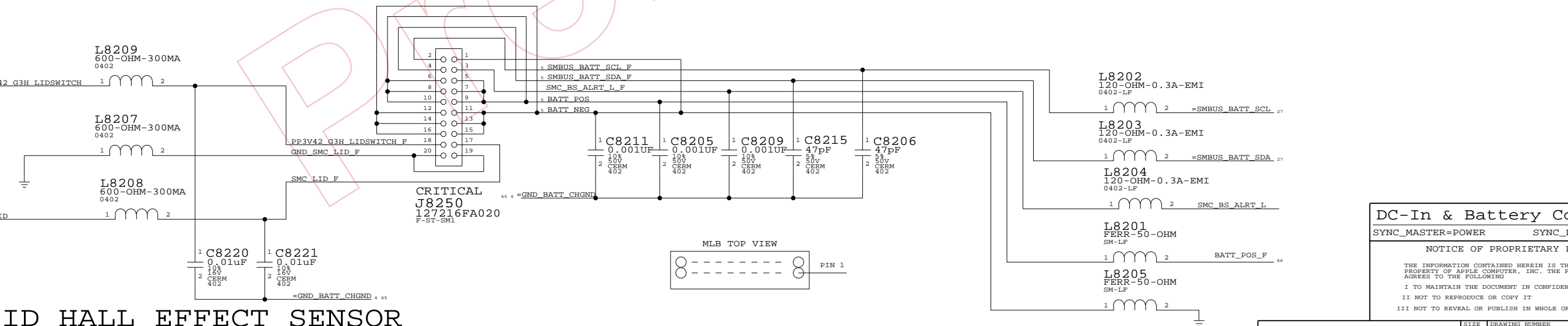
INRUSH LIMITER

ACIN DETECTION

OVP

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
376S0466	376S0410	?	Q8250	VISHAY SI4413ADY

BATTERY INTERFACE



LID HALL EFFECT SENSOR

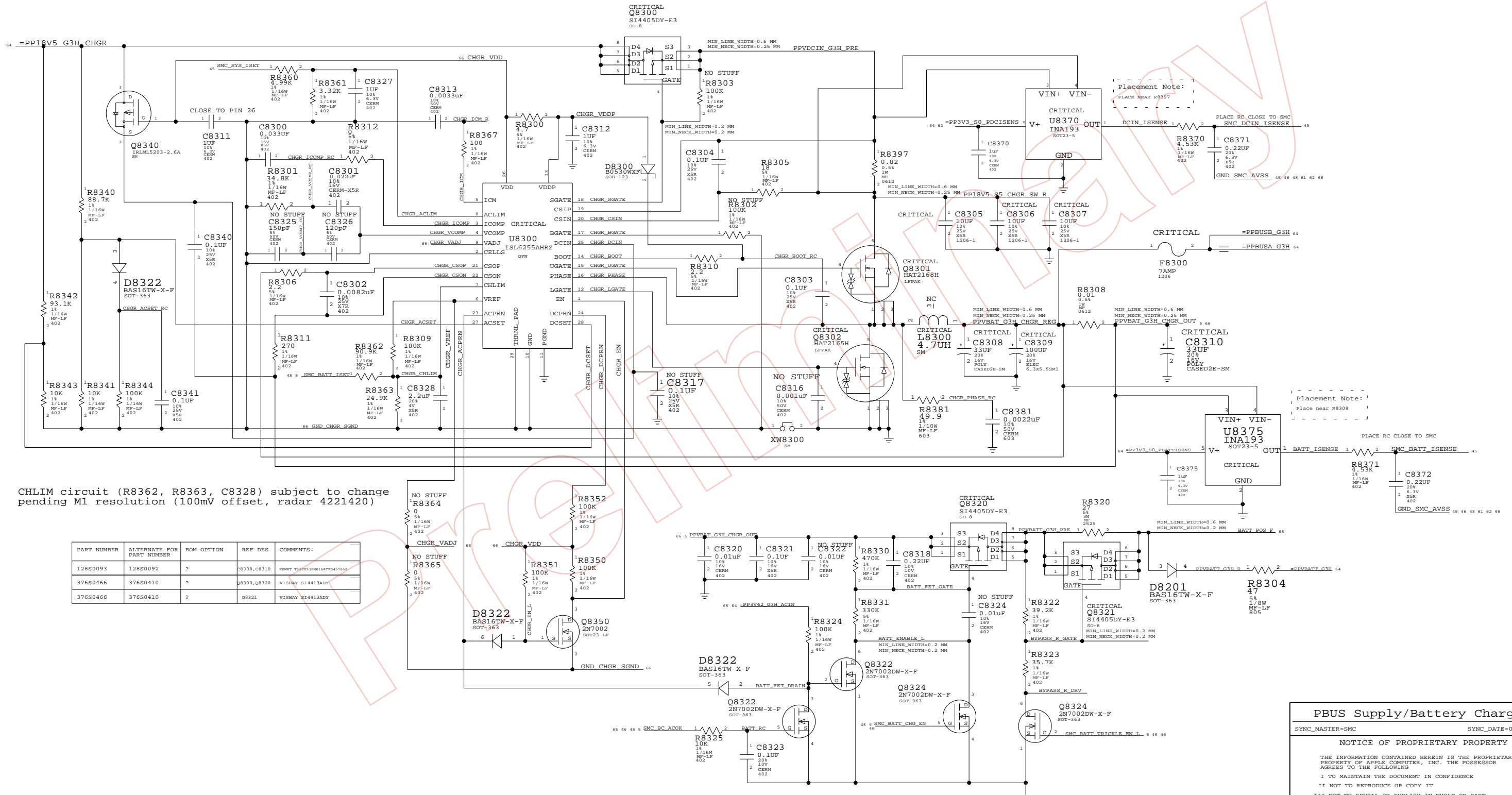
DC-In & Battery Connectors
 SYNC_MASTER=POWER SYNC_DATE=07/13/2005

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	c
SCALE	SHT	OF	REV.
NONE	82	108	

8 7 6 5 4 3 2 1

PBUS SUPPLY / BATTERY CHARGER

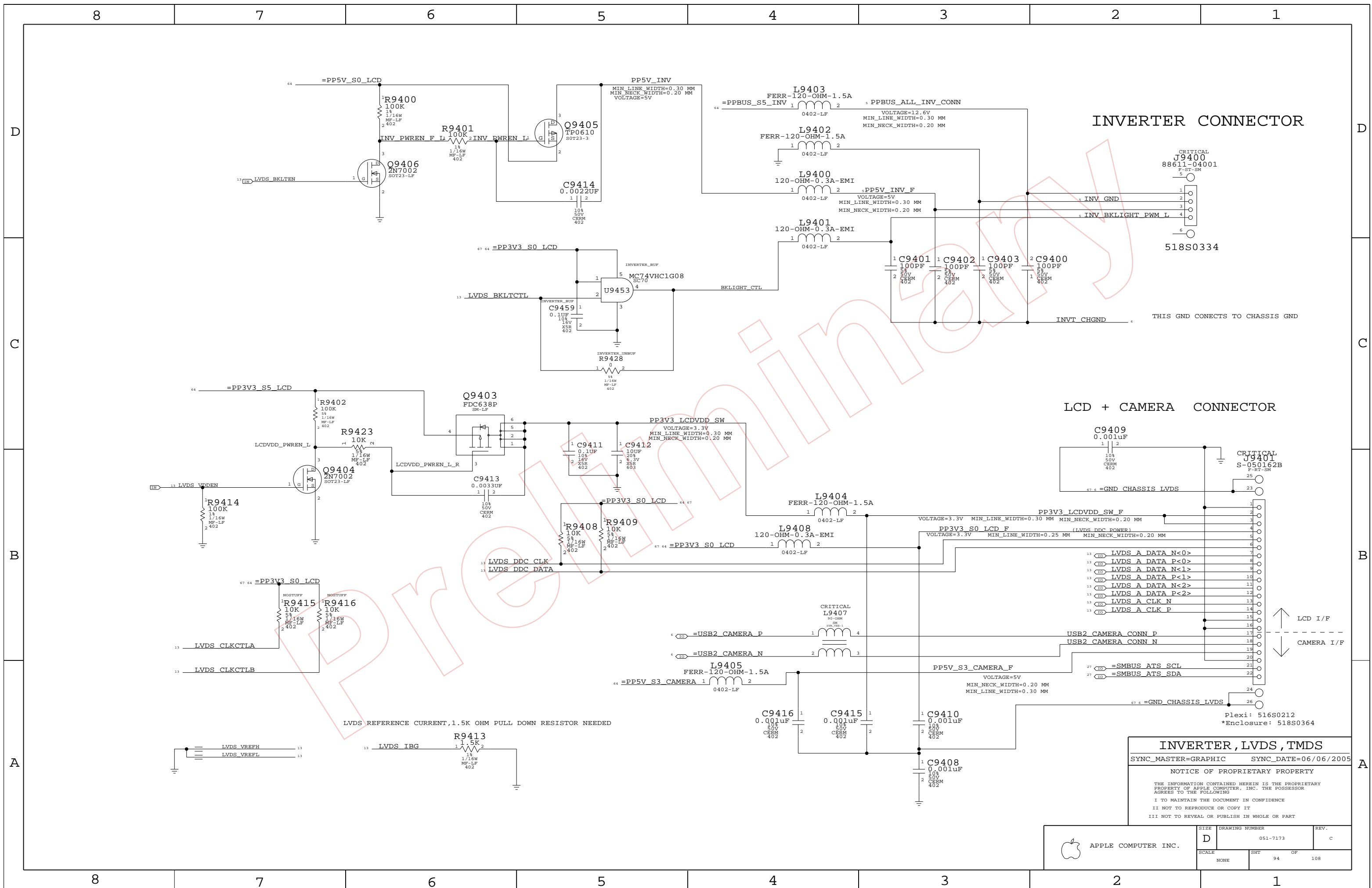


CHLIM circuit (R8362, R8363, C8328) subject to change pending M1 resolution (100mV offset, radar 4221420)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
128S0093	128S0092	?	C8308, C8310	KEMET T50V33M018AT040457650
376S0466	376S0410	?	Q8300, Q8320	VISHAY SI4413ADY
376S0466	376S0410	?	Q8321	VISHAY SI4413ADY

PBUS Supply/Battery Charger
 SYNC_MASTER=SMC SYNC_DATE=08/19/2005
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	83		



INVERTER CONNECTOR

LCD + CAMERA CONNECTOR

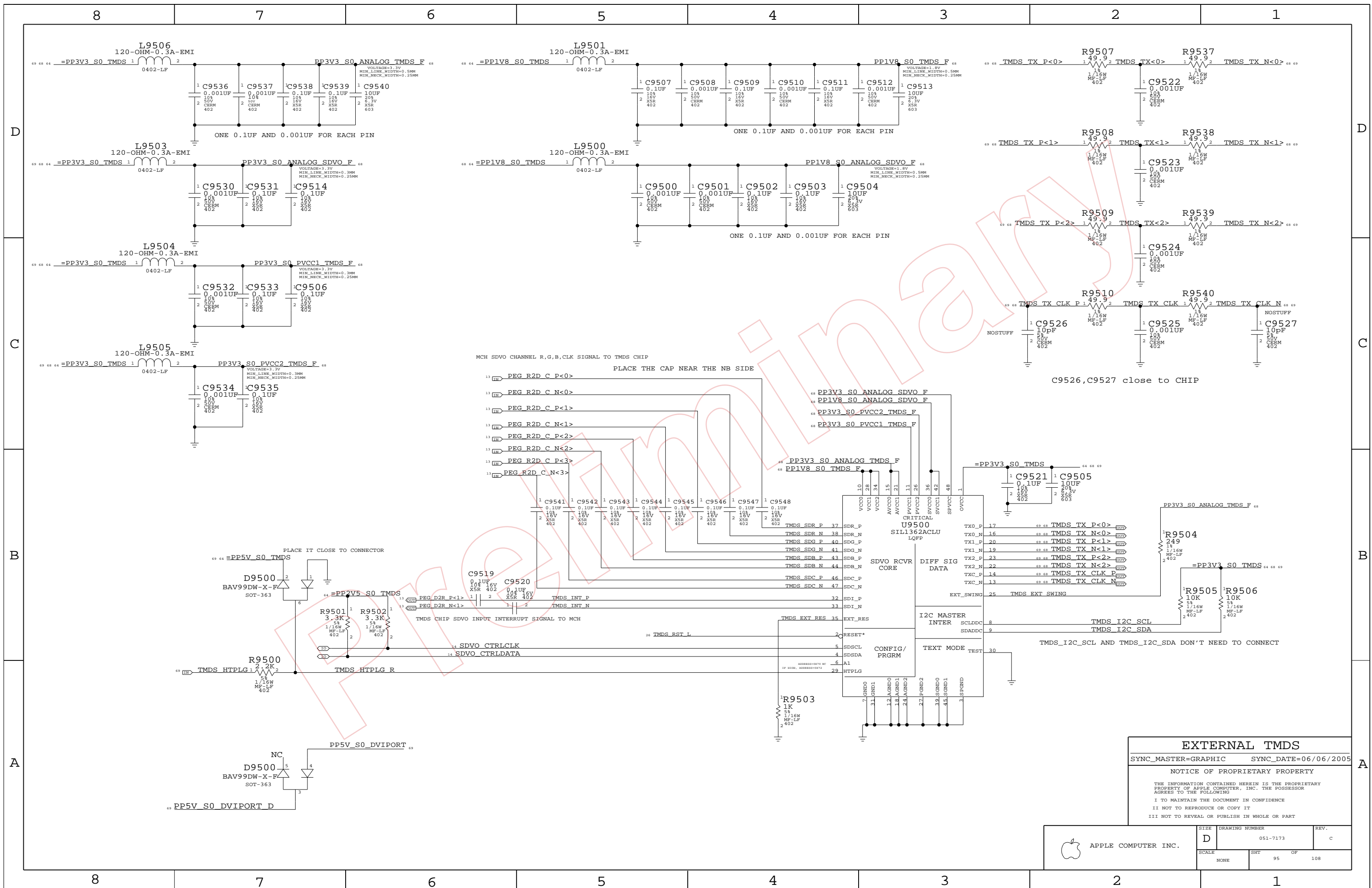
INVERTER, LVDS, TMDs
 SYNC_MASTER=GRAPHIC SYNC_DATE=06/06/2005
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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7173	REV. C
	SCALE NONE	SHEET 94	OF 108

Plexi: 516S0212
 *Enclosure: 518S0364

LVDS REFERENCE CURRENT, 1.5K OHM PULL DOWN RESISTOR NEEDED

THIS GND CONNECTS TO CHASSIS GND



MCH SDVO CHANNEL R,G,B,CLK SIGNAL TO TMDs CHIP
 PLACE THE CAP NEAR THE NB SIDE

C9526,C9527 close to CHIP

PLACE IT CLOSE TO CONNECTOR

TMDs_I2C_SCL AND TMDs_I2C_SDA DON'T NEED TO CONNECT

EXTERNAL TMDs
 SYNC_MASTER=GRAPHIC SYNC_DATE=06/06/2005
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	95		

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
15580227	15580164	?	REF: 15580164	KEEP MAG LAYER IN BOX

Video Connectors

EXTERNAL VIDEO (VGA) INTERFACE

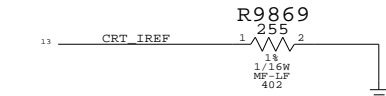
TMDS(MINI DVI) INTERFACE

Isolation required for DVI power switch

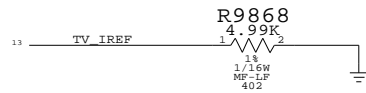
PLACE THE RESISTOR CLOSE TO GMCH AND THE CAP NEAR CONNECTOR

PLACE THE RESISTOR CLOSE TO GMCH AND THE CAP NEAR THE CONNECTOR

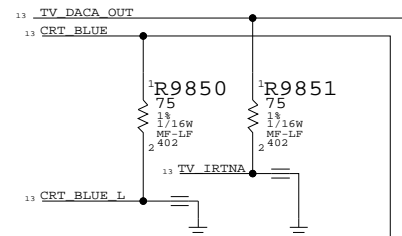
A 255 OHM 1% RESISTOR IS REQUIRED BETWEEN CRT_IREF AND GROUND



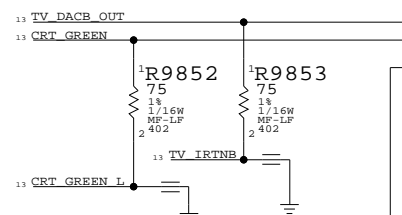
TV REFERENCE CURRENT, USES AN EXTERNAL RESISTOR OF 5K OHM 1% TO SET INTERNAL VOLTAGE LEVELS



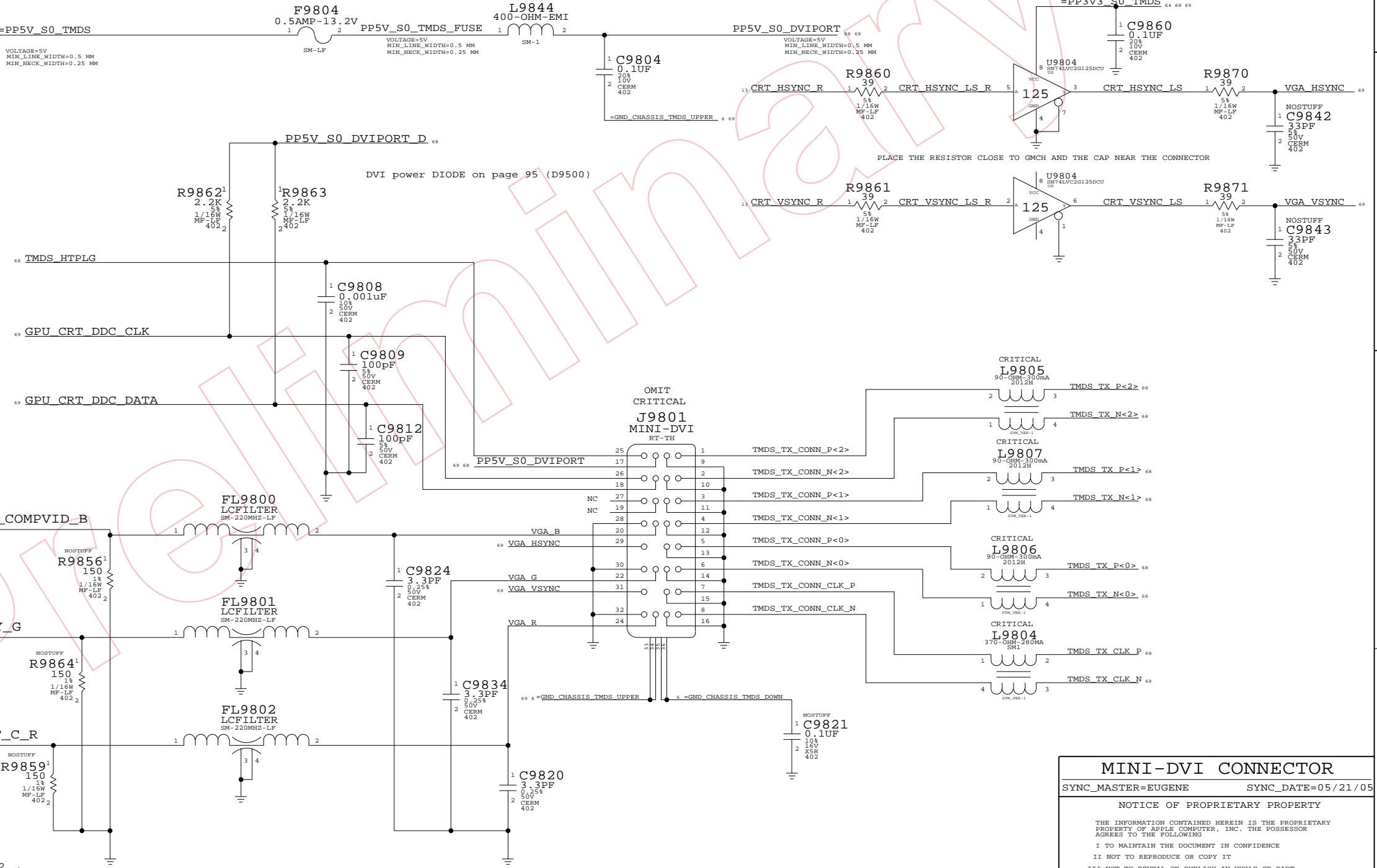
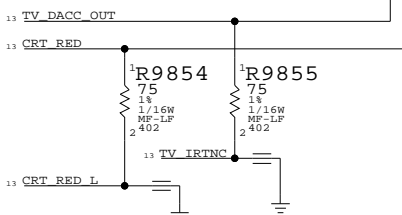
PLACE THE RESISTOR CLOSE TO GMCH



PLACE THE RESISTOR CLOSE TO GMCH



PLACE THE RESISTOR CLOSE TO GMCH



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514-0292	1	CONN, 32P MINI-DVI BCPT, RA, MG3, LF	J9801	CRITICAL	NORMAL
514-0319	1	CONN, 32P MINI-DVI BCPT, RA, BLACK, LF	J9801	CRITICAL	FANCY

MINI-DVI CONNECTOR
 SYNC_MASTER=EUGENE SYNC_DATE=05/21/05
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7173	C
SCALE	SHT	OF	108
NONE	98		

Table with 8 columns (8-1) and 5 rows (A-E) containing device names and pin configurations. Includes labels A, B, C, D and a large watermark 'A' in the center.

