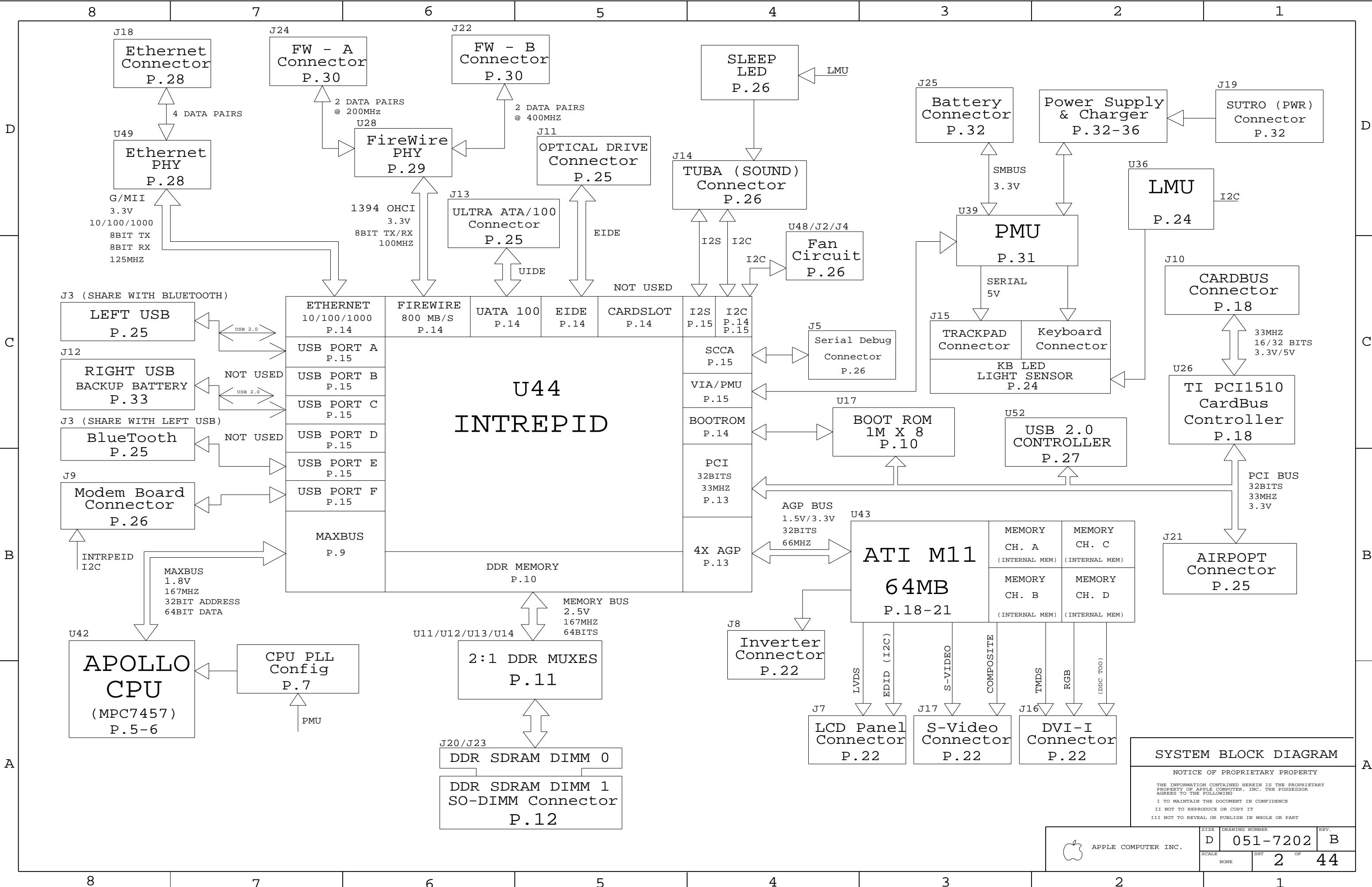


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SYSTEM BLOCK DIAGRAM

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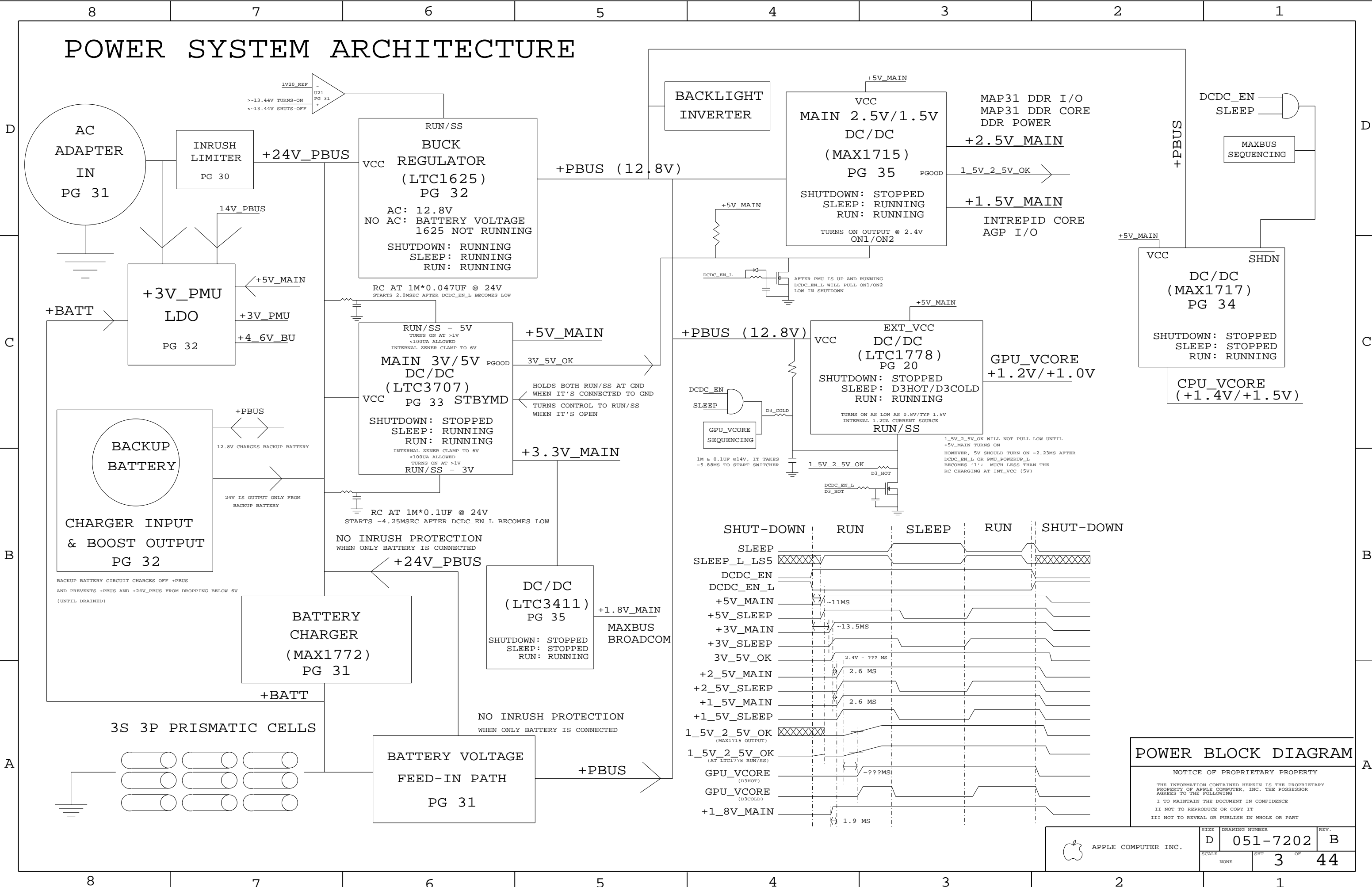
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	D	051-7202	B
SCALE	NONE	SHT	2 OF 44



PCB SPECS

THICKNESS : 1.2 MM / 0.047 IN
1/2 OZ CU THICKNESS: 0.7 MILS
1.0 OZ CU THICKNESS: 1.4 MILS

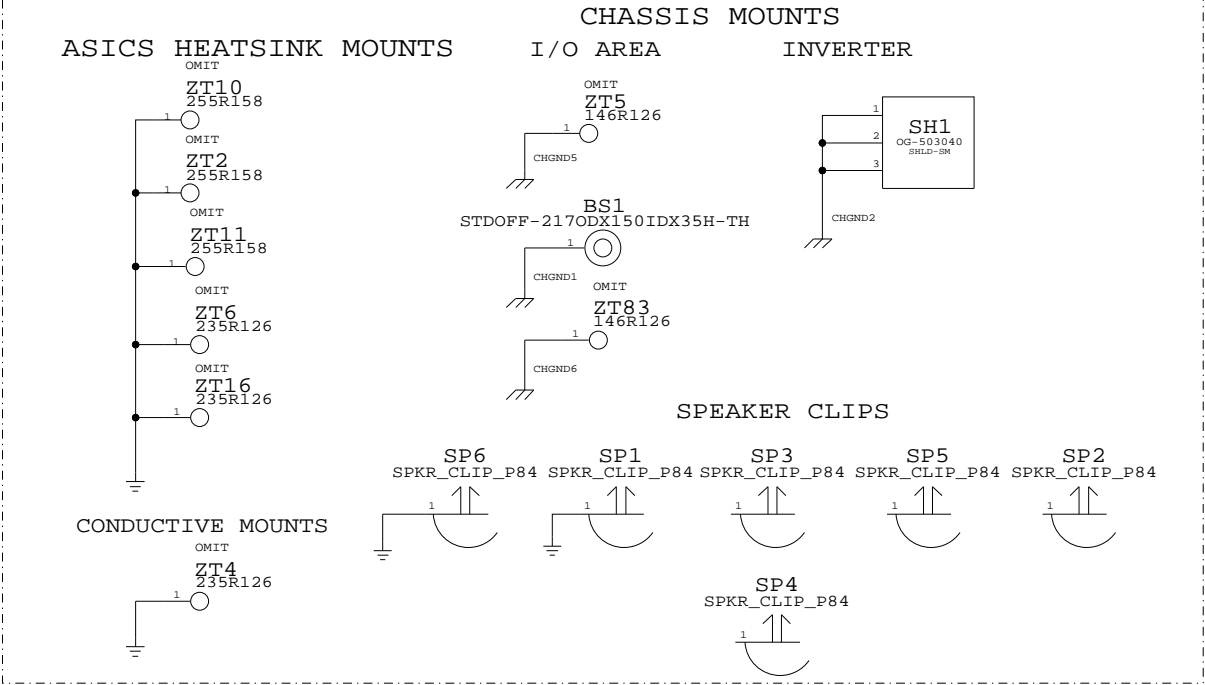
IMPEDANCE : 50 OHMS +/- 10%
DIELECTRIC: FR-4
LAYER COUNT: 12
SIGNAL TRACE WIDTH: 4 MILS
SIGNAL TRACE SPACING: 4 MILS
PREPREG THICKNESS: 2-3 MILS

SEE PCB CAD FILES FOR MORE SPECIFIC INFO.

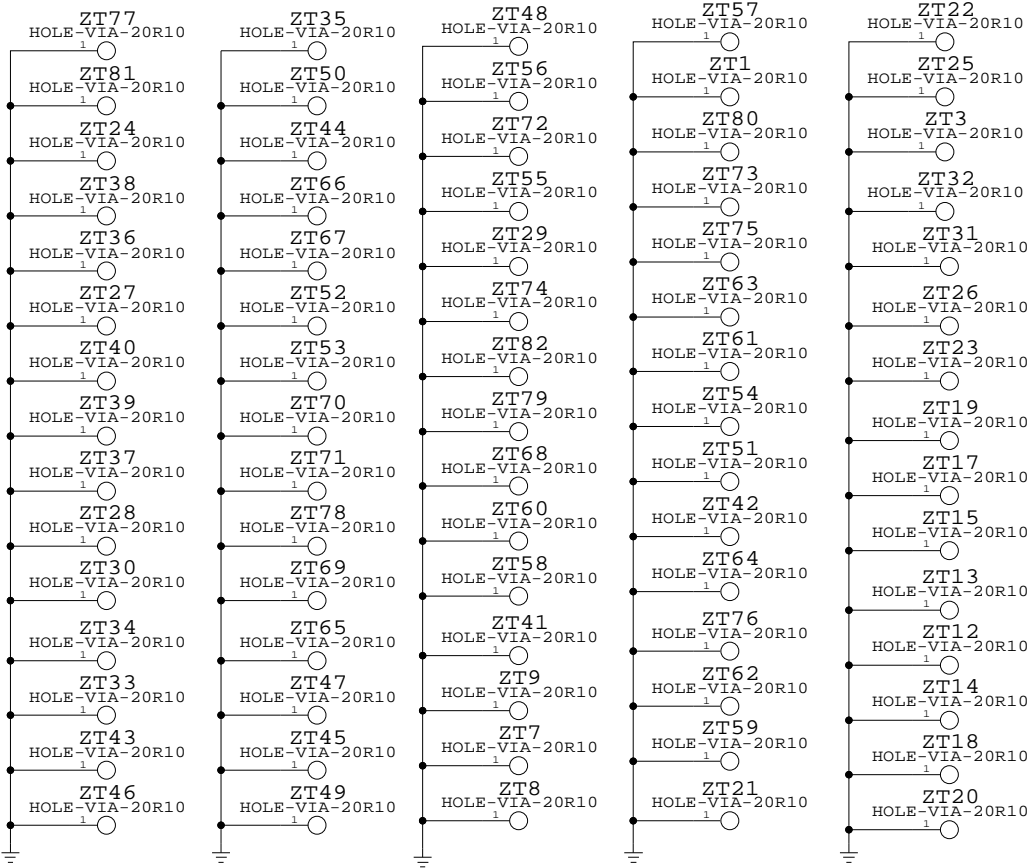
BOARD STACK-UP AND CONSTRUCTION

20R10 TH VIA OR VIA IN PAD		
1	SIGNAL (1/3 OZ + COPPER PLATING)	
2	PREPREG (3MIL)	GROUND (1/2 OZ)
3	LAMINATE (4MIL)	SIGNAL (1/2 OZ)
4	PREPREG (3MIL)	SIGNAL (1/2 OZ)
5	LAMINATE (4MIL)	GROUND (1/2 OZ)
6	PREPREG (2MIL)	CUT POWER PLANE(1 OZ)
7	LAMINATE (3MIL)	CUT POWER PLANE(1 OZ)
8	PREPREG (2MIL)	GROUND (1/2 OZ)
9	LAMINATE (4MIL)	SIGNAL (1/2 OZ)
10	PREPREG (3MIL)	SIGNAL (1/2 OZ)
11	LAMINATE (4MIL)	GROUND (1/2 OZ)
12	PREPREG (3MIL)	SIGNAL (1/3 OZ + COPPER PLATING)

BOARD HOLES



GROUND VIAS



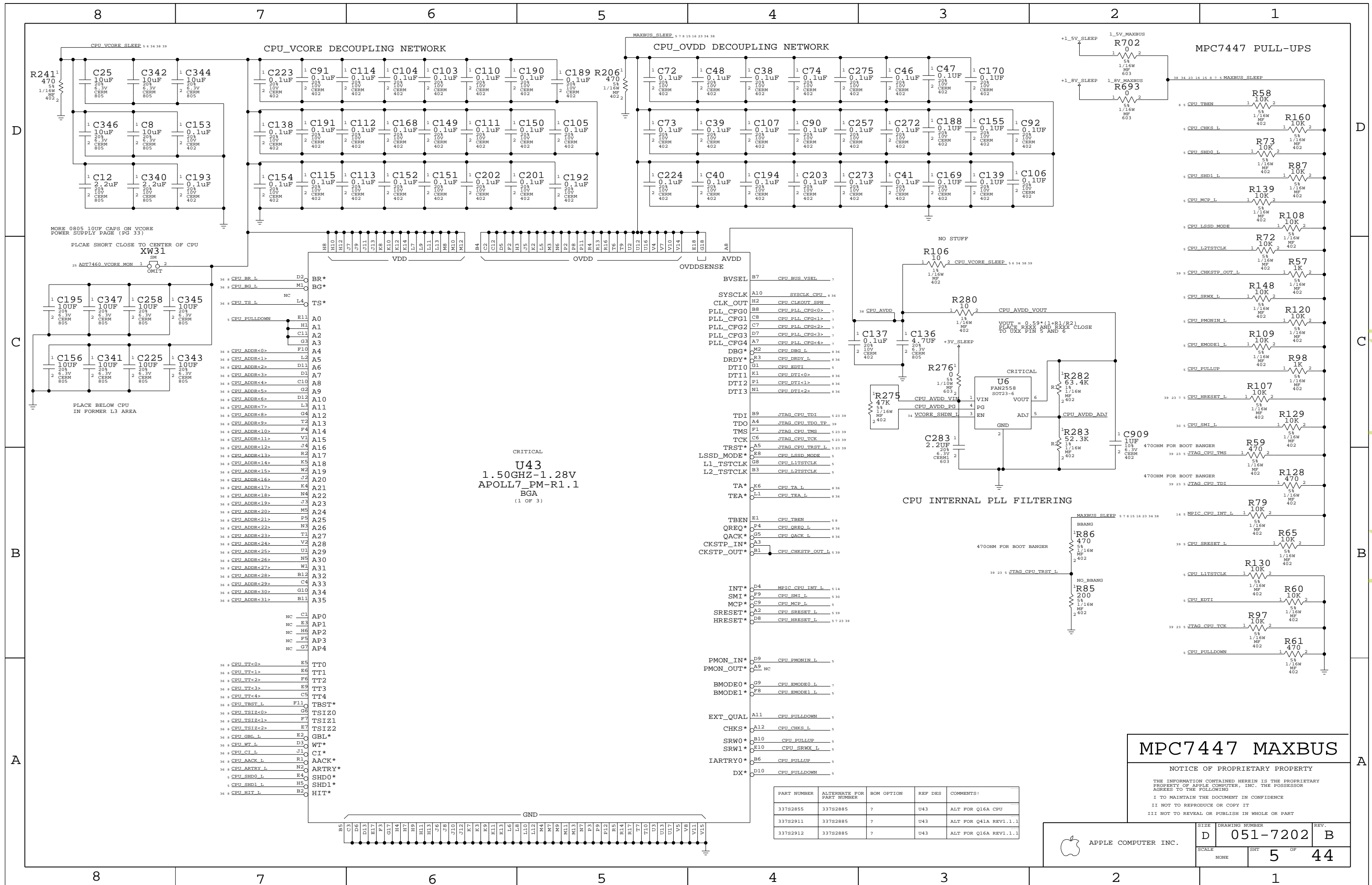
BOARD INFORMATION

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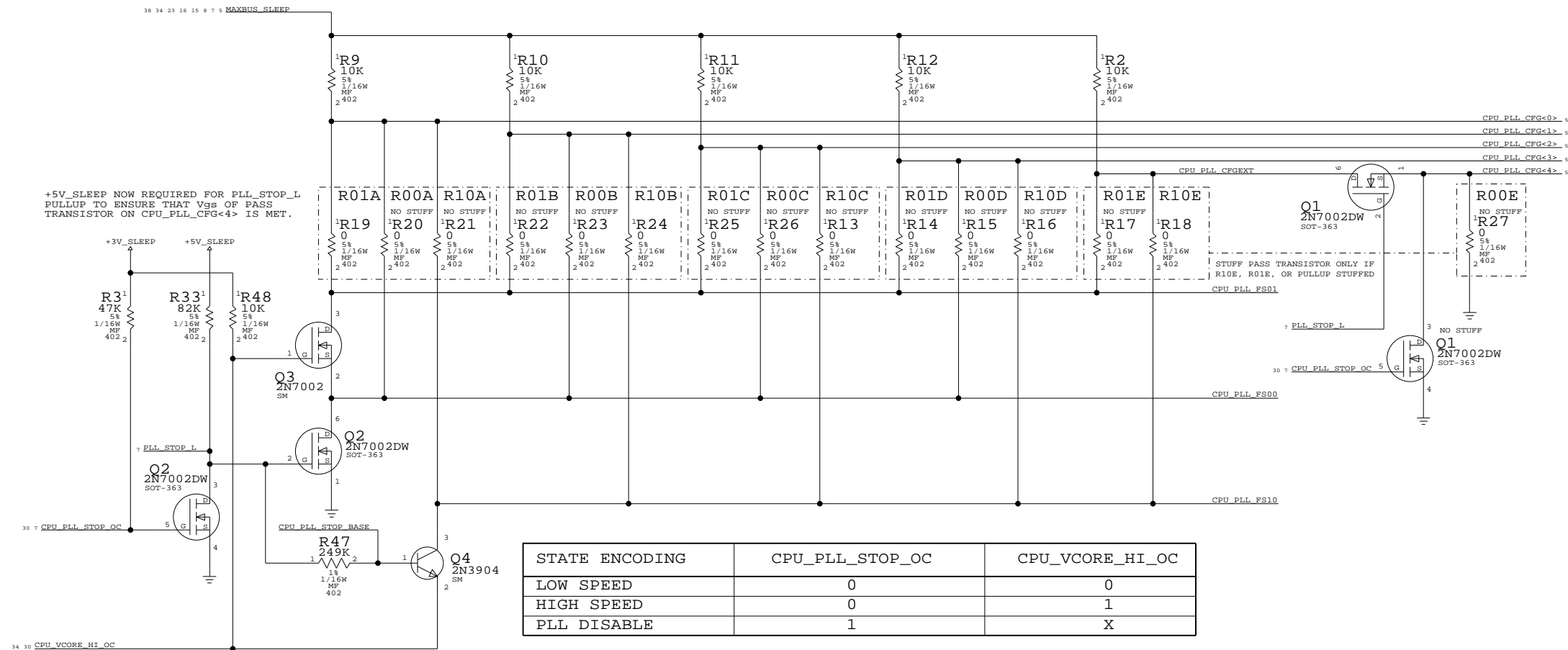


APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	OF
NONE	4	44

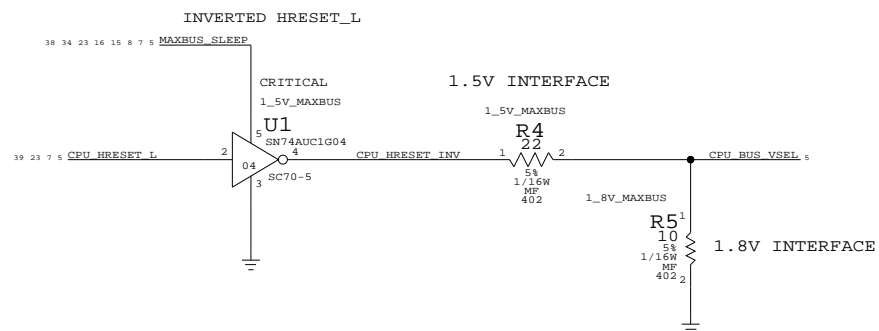


CPU PLL CONFIG CIRCUITRY



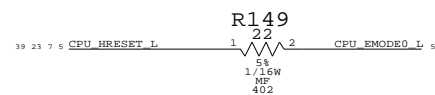
CPU CONFIGURATION

MAXBUS VSEL



DESKTOP HAD PROBLEM USING
INVERTER TO INVERT HRESET_L
NEED TO CHARACTERIZE

BUSTYPE SELECT



APOLLO ONLY SUPPORTS MAXBUS

SIGNAL	TIED	APPLICATION
CPU_EMODE0_L (PROCESSOR)	HIGH	60X BUS MODE
	CPU_HRESET_L	MAX BUS MODE
CPU_BUS_VSEL (PROCESSOR)	CPU_HRESET_L	2.5V INTERFACE
	LOW	1.8V INTERFACE
	CPU_HRESET_INV	1.5V INTERFACE

CPU FREQUENCY CONFIGURATION

APOLLO 7

MULTIPLIER	CORE FREQUENCY (AT BUS FREQUENCY) 167MHZ 133MHZ	CPU_PLL_CFG
(Bus-to-Core)	(MHZ)	4 0123 E ABCD HEX
0.0X	PLL OFF	0 1111 0F
1.0X	PLL BYPASS	0 0011 03
2.0X	333 267	0 0100 04
3.0X	500 400	0 1000 08
4.0X	667 533	0 1010 0A
5.0X	833 667	0 1011 0B
5.5X	917 733	0 1001 09
6.0X	1000 800	0 1101 0D
6.5X	1083 867	0 0101 05
7.0X	1167 933	0 0010 02
7.5X	1250 1000	0 0001 01
8.0X	1333 1067	0 1100 0C
8.5X	1417 1133	0 0110 06
9.0X	1500 1200	1 0111 17
9.5X	1583 1267	0 0111 07
10.0X	1667 1333	1 1010 1A
10.5X	1750 1400	1 1000 18
11.0X	1833 1467	1 1001 19
11.5X	1917 1533	0 0000 00
12.0X	2000 1600	1 1011 1B
12.5X	2083 1667	1 1111 1F
13.0X	2167 1733	1 0101 15
13.5X	2250 1800	0 1110 0E
14.0X	2333 1867	1 1100 1C
15.0X	2500 2000	1 0001 11
16.0X	2667 2133	1 1101 1D
17.0X	2833 2267	1 0000 10
18.0X	3000 2400	1 0010 12
20.0X	3333 2667	1 0011 13
21.0X	3500 2800	1 0100 14
24.0X	4000 3200	1 0110 16
28.0X	4667 3733	1 1110 1E

CPU CONFIGURATION

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SIZE	DRAWING NUMBER
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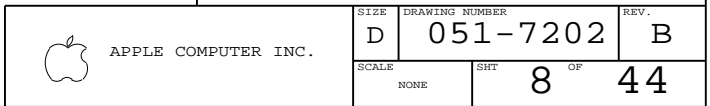
APPLE COMPUTER INC.

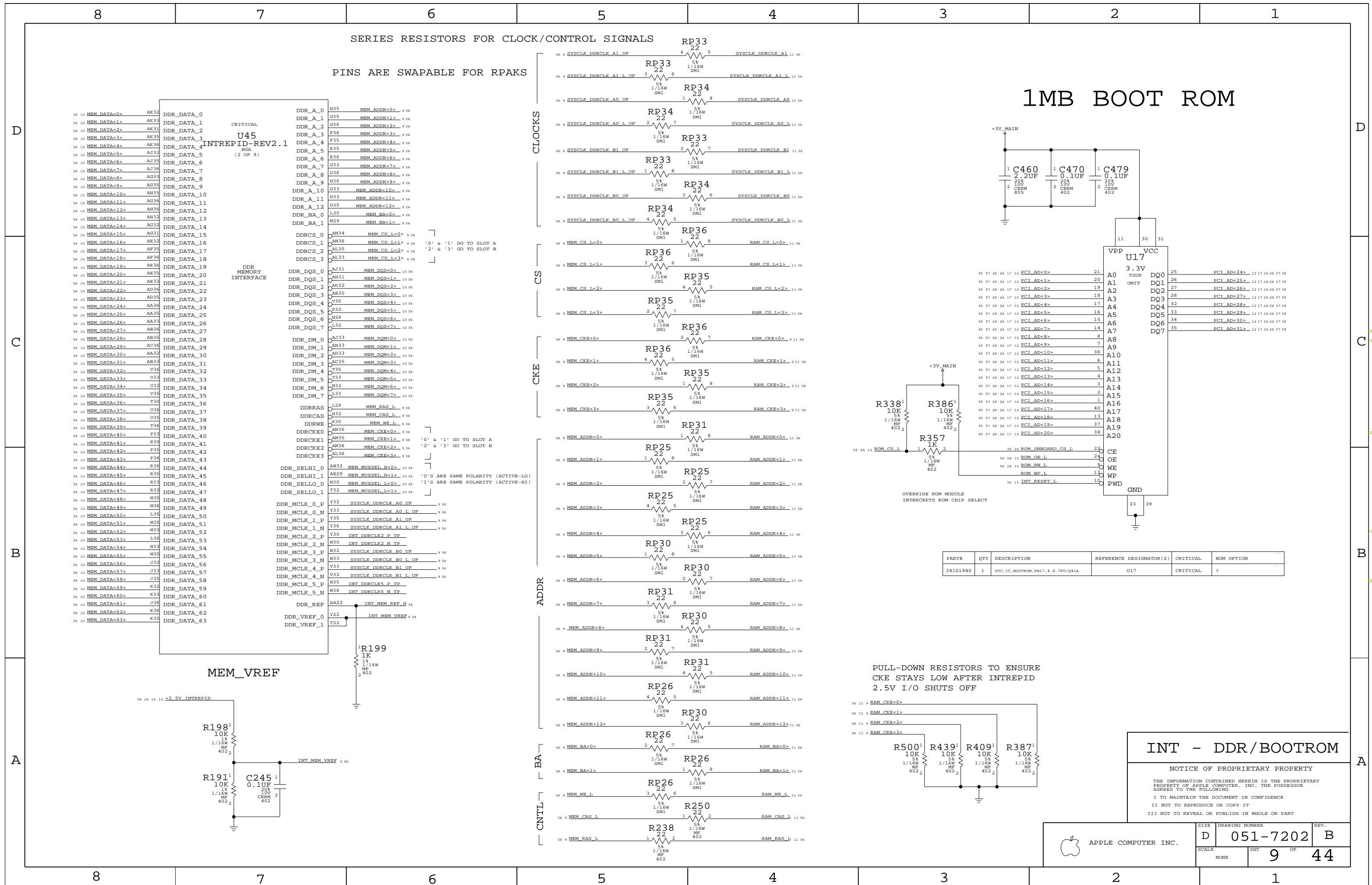
SIZE	DRAWING NUMBER	REV.
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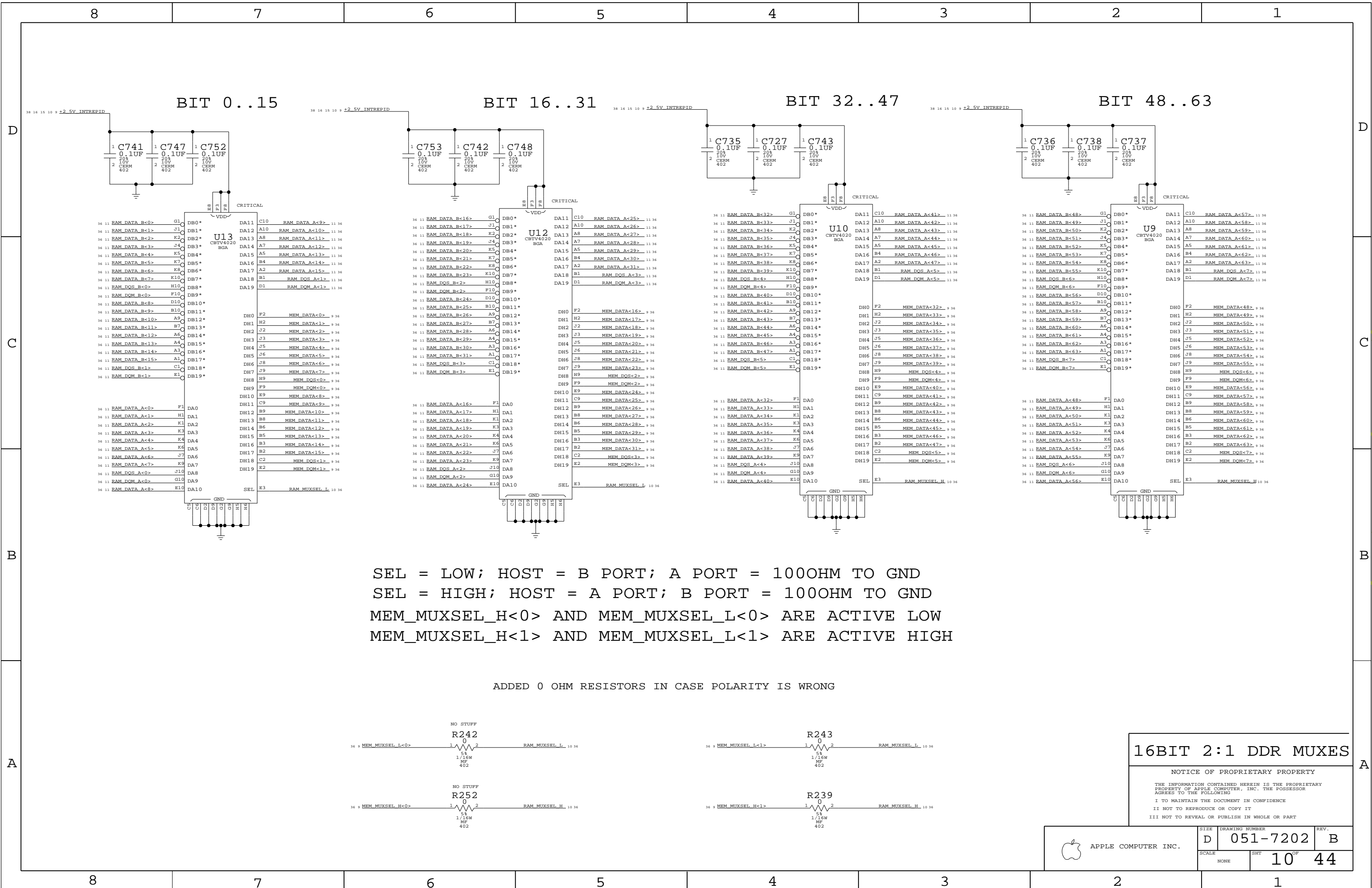
D	051-7202	B
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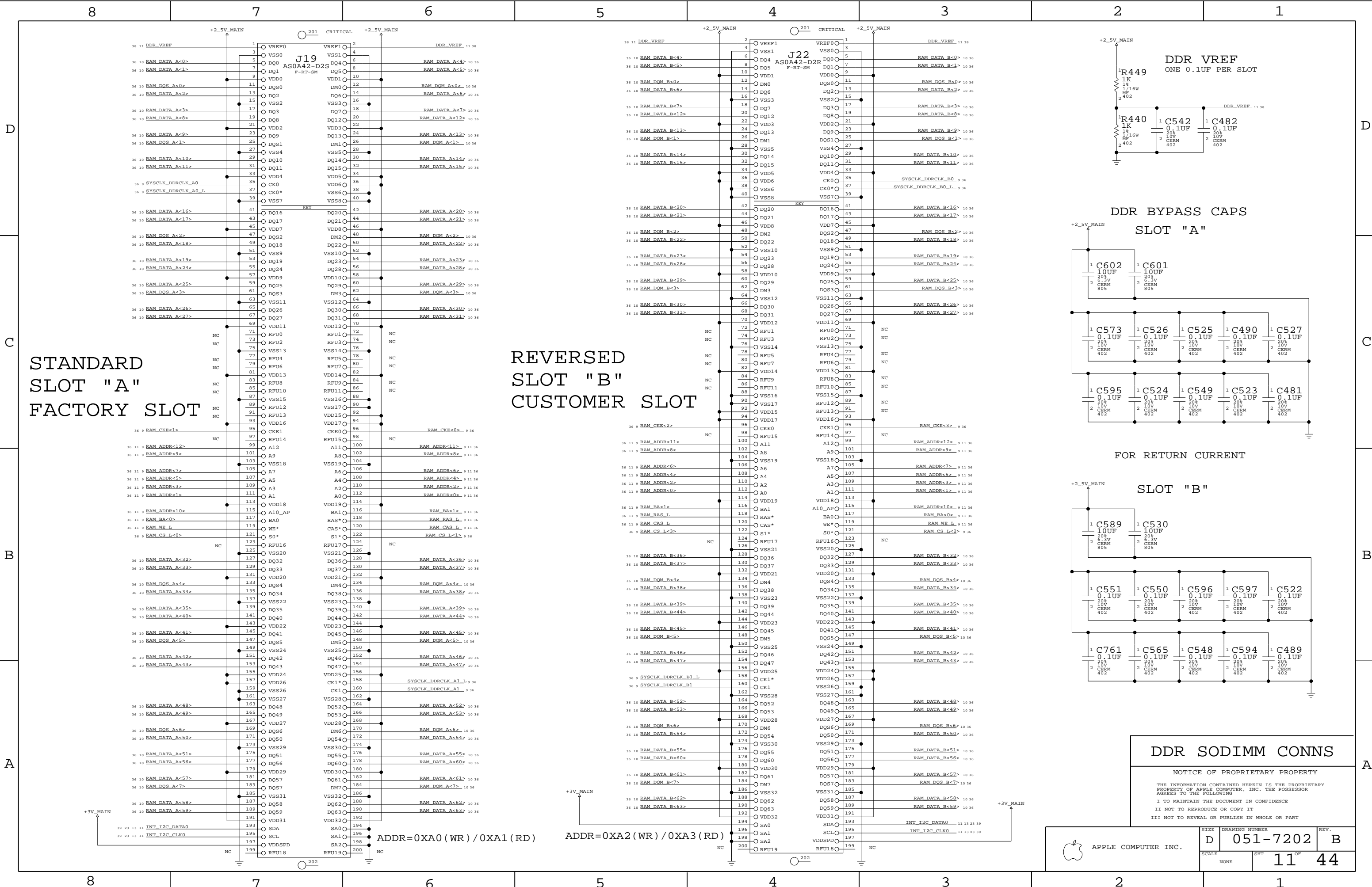
SCALE	SHT	7	OF	44
NONE				

	1
--	---









STANDARD
SLOT "A"
FACTORY SLOT

REVERSED
SLOT "B"
CUSTOMER SLOT

DDR VREF
ONE 0.1UF PER SLOT

DDR BYPASS CAPS
SLOT "A"

FOR RETURN CURRENT

SLOT "B"

DDR SODIMM CONNCS

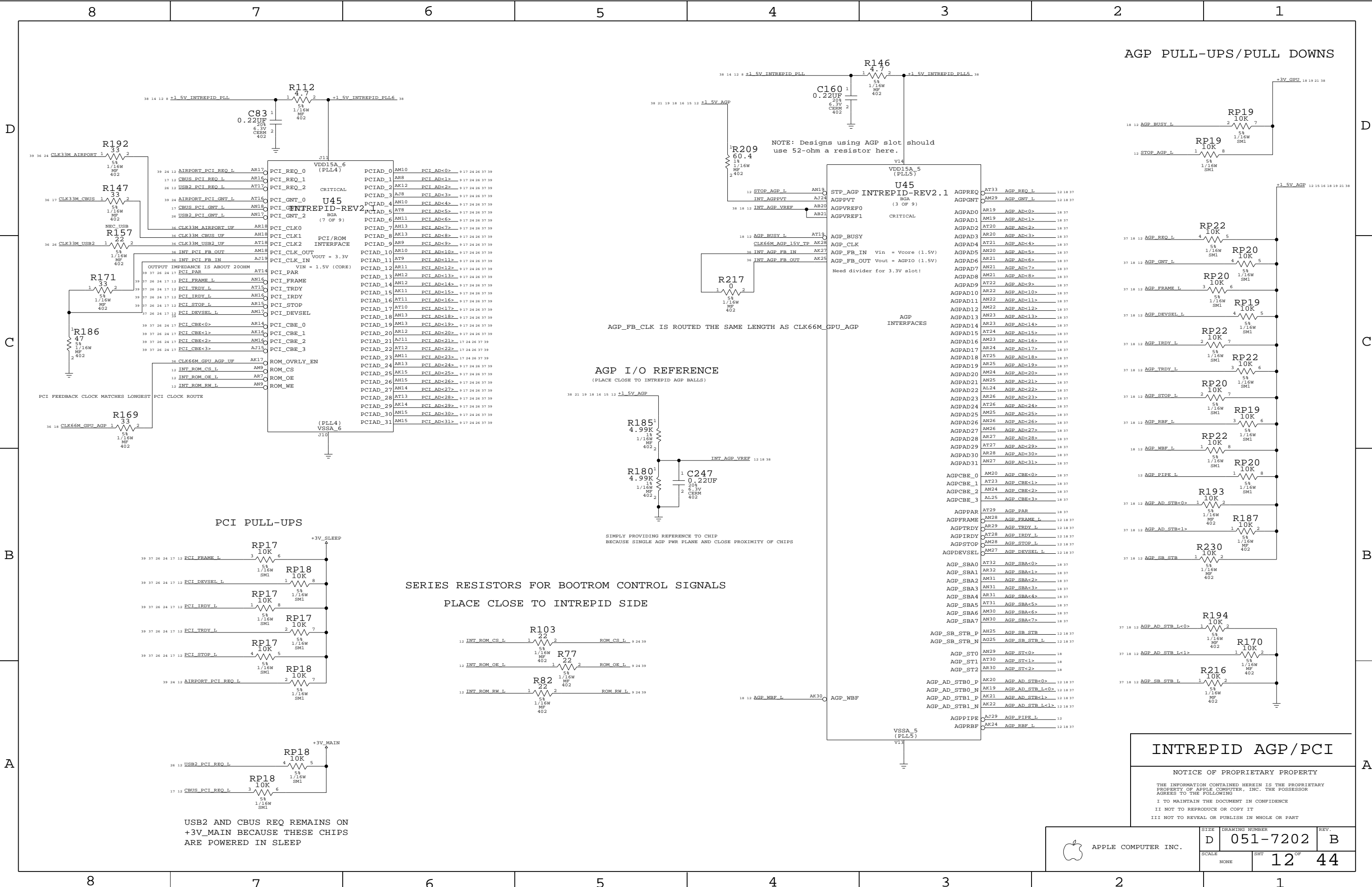
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SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	11 ^{OF} 44
NONE		



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INTREPID AGP/PCI

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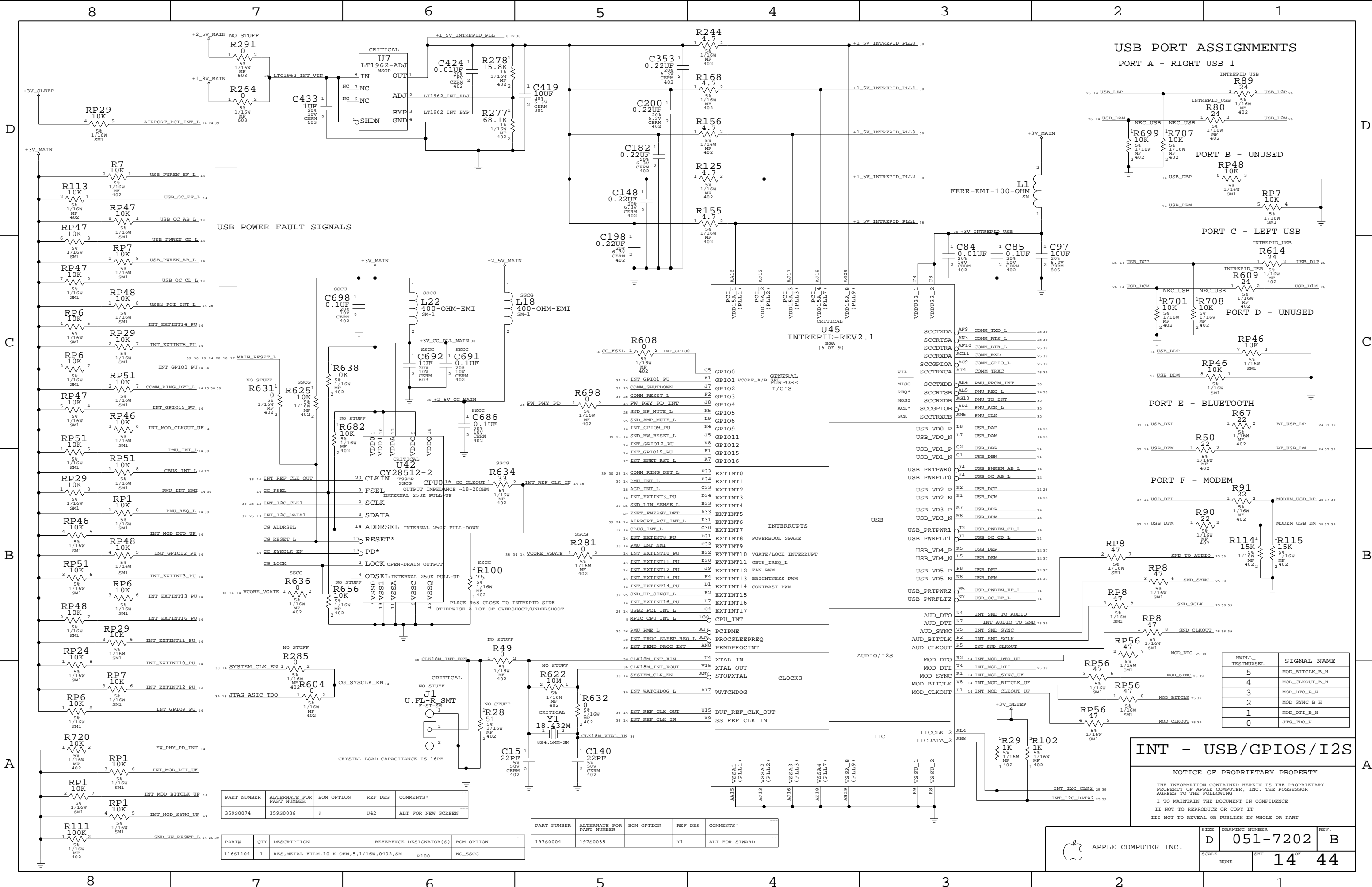
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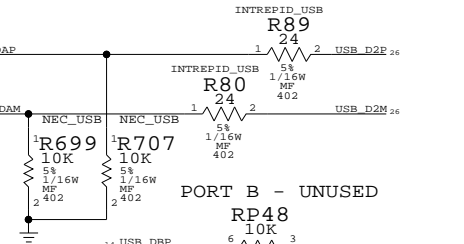
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7202	B
SCALE	SHT		12 OF 44
	NONE		

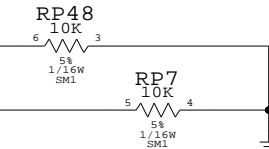


USB PORT ASSIGNMENTS

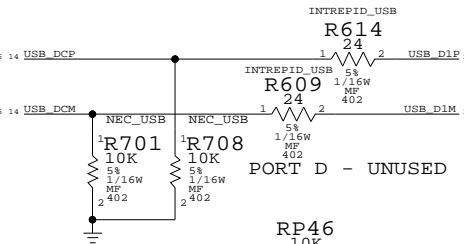
PORT A - RIGHT USB 1



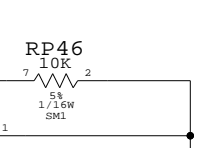
PORT B - UNUSED



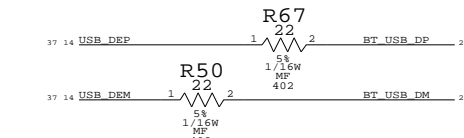
PORT C - LEFT USB



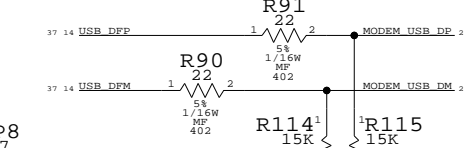
PORT D - UNUSED



PORT E - BLUETOOTH



PORT F - MODEM



HWPLL TESTMUXSEL	SIGNAL NAME
5	MOD_BITCLK_B_H
4	MOD_CLKOUT_B_H
3	MOD_DTO_B_H
2	MOD_SYNC_B_H
1	MOD_DTI_B_H
0	JTAG_TDO_H

INT - USB/GPIOS/I2S

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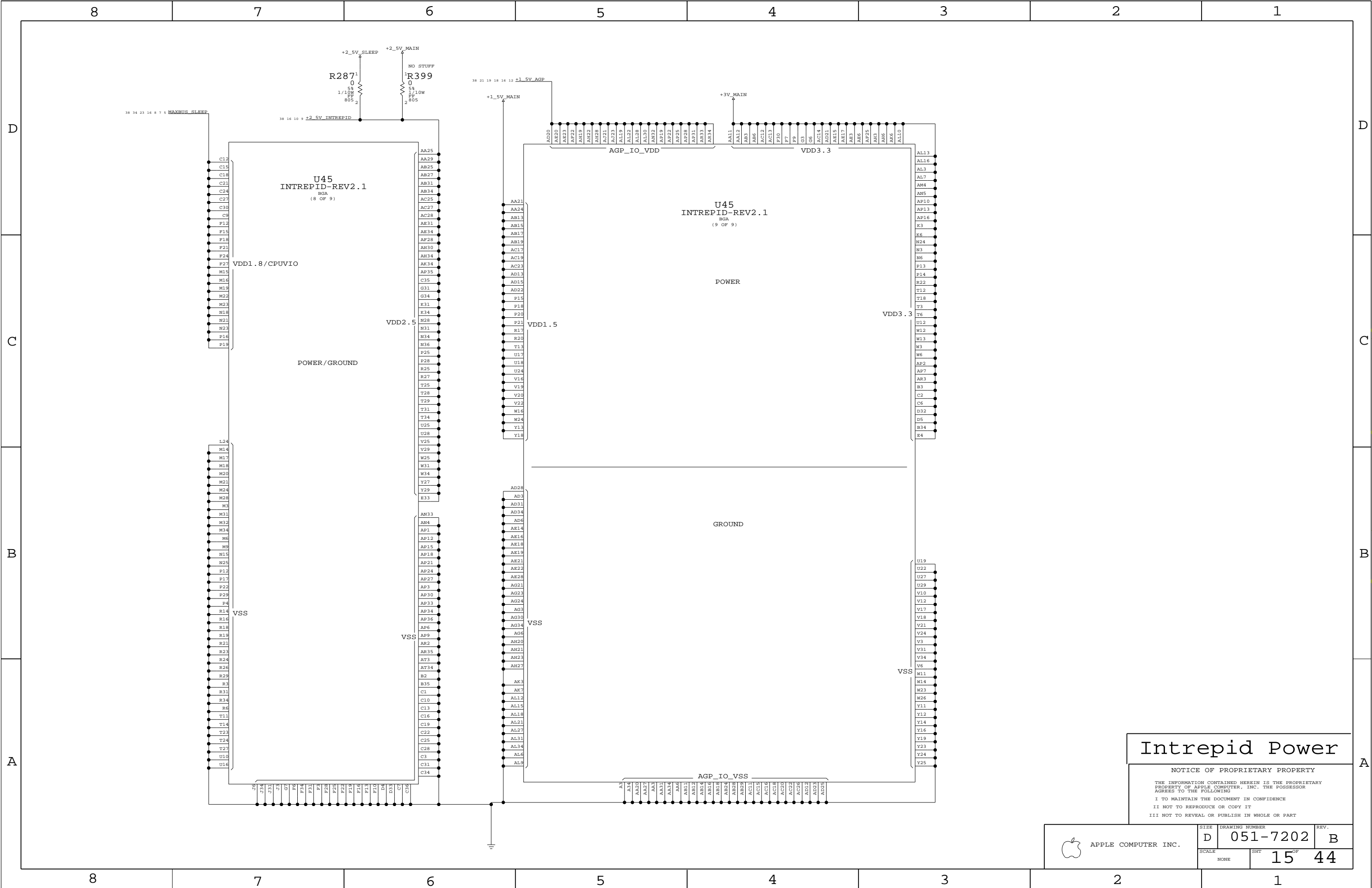
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
359S0074	359S0086	?	U42	ALT FOR NEW SCREEN

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
116S1104	1	RES,METAL FILM,10 K OHM,5,1/16W,0402,SM	R100	NO_SSCG

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0004	197S0035		Y1	ALT FOR SIWARD

APPLE COMPUTER INC.

SIZE	D	DRAWING NUMBER	051-7202	REV.	B
SCALE	NONE	SHT	14	OF	44



Intrepid Power

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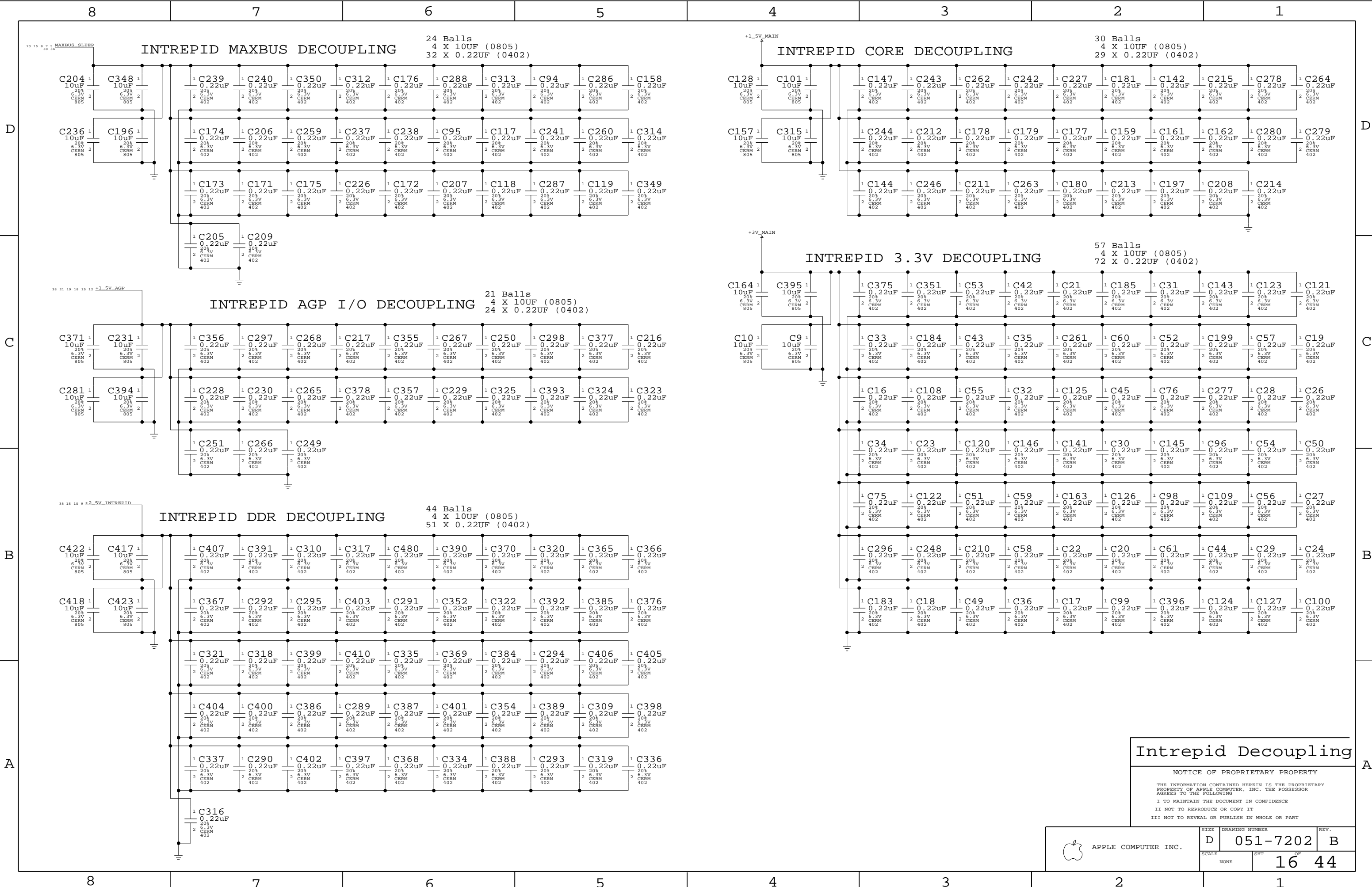
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	D	051-7202	B
SCALE	SHT		
	15 OF 44		



Intrepid Decoupling


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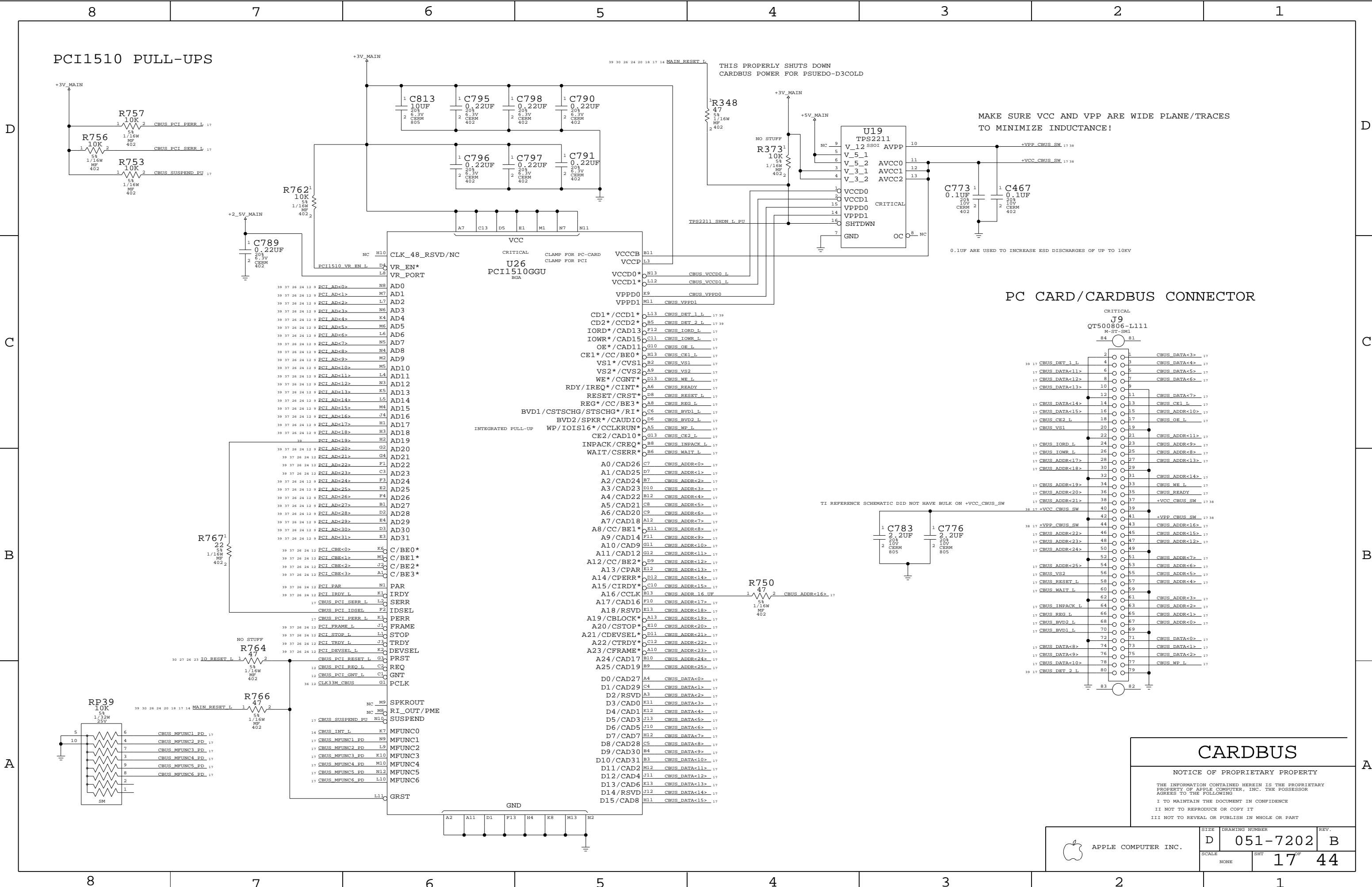
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	D	051-7202	B
SCALE		SHT	OF
NONE		16	44



PCI1510 PULL-UPS

MAKE SURE VCC AND VPP ARE WIDE PLANE/TRACES TO MINIMIZE INDUCTANCE!

PC CARD/CARDBUS CONNECTOR

CARDBUS

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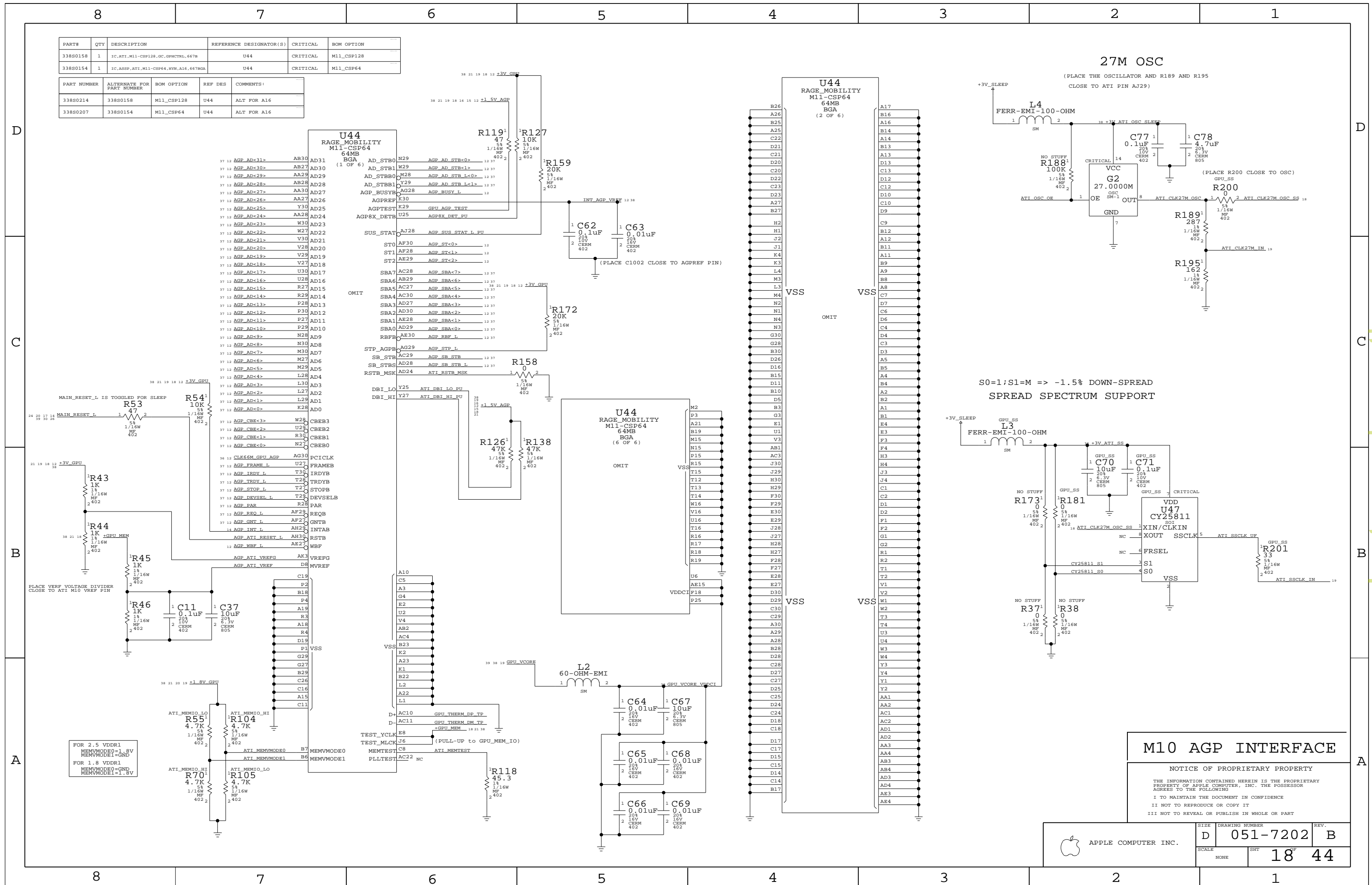
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SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	
NONE	17 ^F	44



[illegible]

Schematic diagram of the **SIL1162 DVI TRANSMITTER** circuit, showing connections to various components and power supplies.

Power Supplies:

- +3V_SLEEP** (Pin 8)
- +3V_GPU_SI** (Pin 20)
- +3V_SI_AVCC** (Pin 38)
- +3V_SI_PLLVCC** (Pin 38)
- +3V_SI_VCC** (Pin 38)
- +1.8V_GPU** (Pin 18, 19, 21, 38)

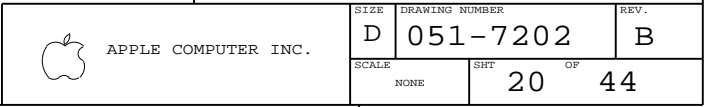
Key Components:

- Resistors:** R41, R235, R237, R233, R232, R231, R224, R222, R212, R202, R199, R188, R110, R100, R99, R88, R87, R86, R85, R84, R83, R82, R81, R80, R79, R78, R77, R76, R75, R74, R73, R72, R71, R70, R69, R68, R67, R66, R65, R64, R63, R62, R61, R60, R59, R58, R57, R56, R55, R54, R53, R52, R51, R50, R49, R48, R47, R46, R45, R44, R43, R42, R41, R40, R39, R38, R37, R36, R35, R34, R33, R32, R31, R30, R29, R28, R27, R26, R25, R24, R23, R22, R21, R20, R19, R18, R17, R16, R15, R14, R13, R12, R11, R10, R9, R8, R7, R6, R5, R4, R3, R2, R1, R0.
- Capacitors:** C130, C132, C165, C131, C133, C129, C128, C255, C233, C218, C205, C218, C219, C220, C221, C222, C223, C224, C225, C226, C227, C228, C229, C230, C231, C232, C233, C234, C235, C236, C237, C238, C239, C240, C241, C242, C243, C244, C245, C246, C247, C248, C249, C250, C251, C252, C253, C254, C255, C256, C257, C258, C259, C260, C261, C262, C263, C264, C265, C266, C267, C268, C269, C270, C271, C272, C273, C274, C275, C276, C277, C278, C279, C280, C281, C282, C283, C284, C285, C286, C287, C288, C289, C290, C291, C292, C293, C294, C295, C296, C297, C298, C299, C300.
- Inductors:** L13, L14, L15.
- ICs:** U5 (SIL1162), U6 (SIL1162).

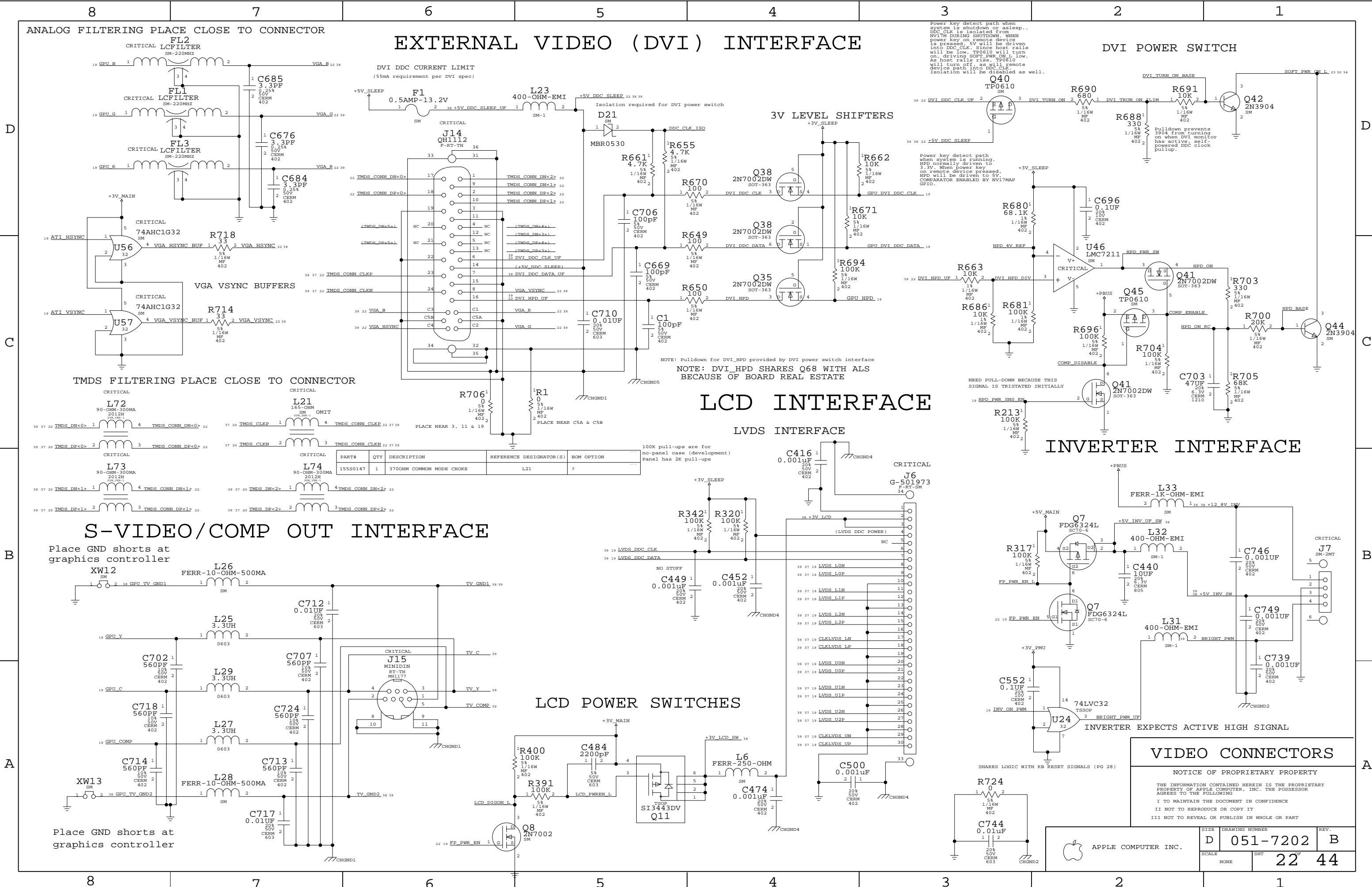
Connections:

- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).
- EXT_TMSDS** (Pin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,

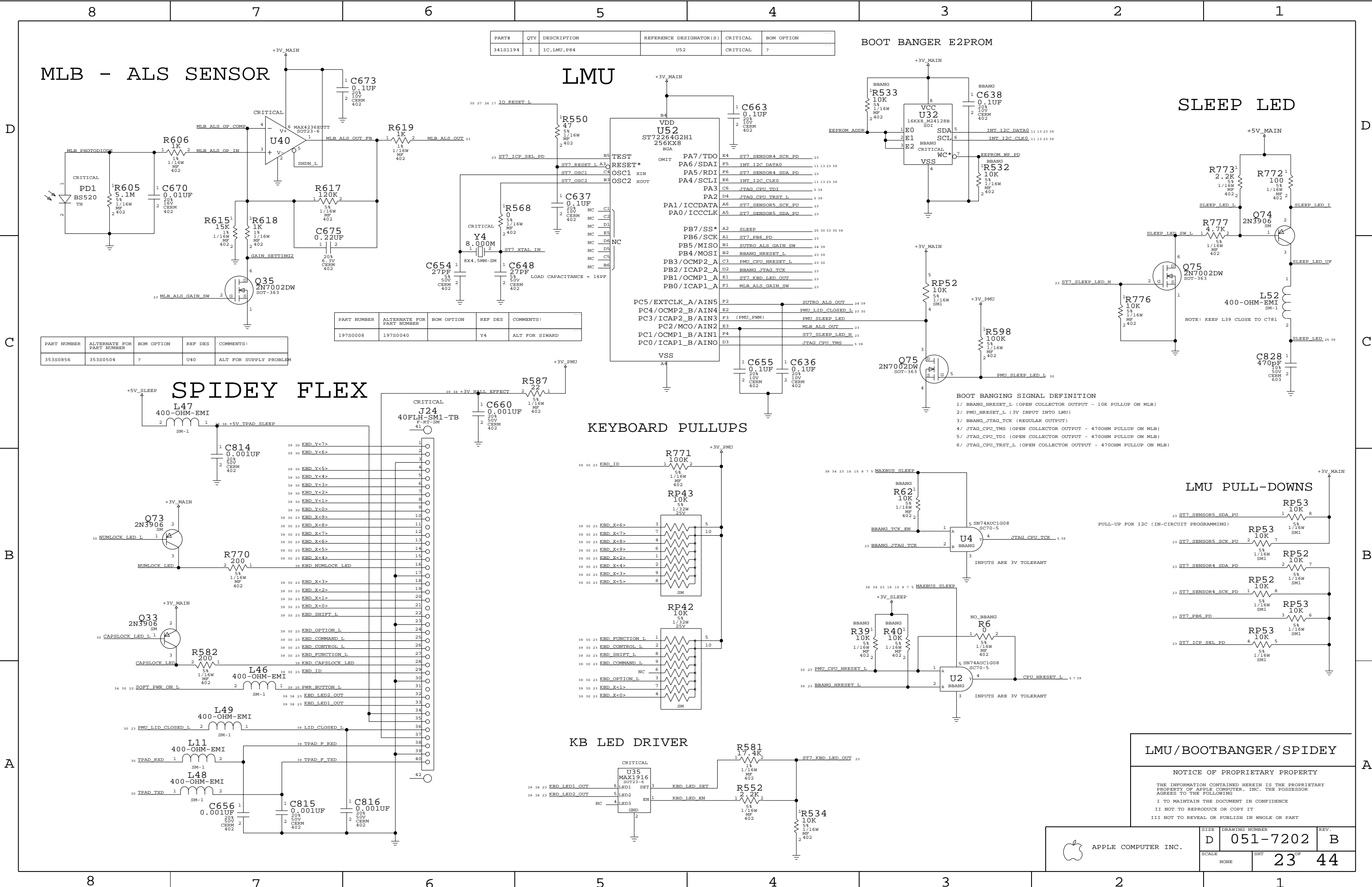
 APPLE COMPUTER INC.	SIZE	DRAWING NUMBER		REV.
	D	051-7202		B
	SCALE	SHT	OF	
	NONE	20	44	



EXTERNAL VIDEO (DVI) INTERFACE



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MLB - ALS SENSOR

LMU

BOOT BANGER E2PROM

SLEEP LED

SPIDEY FLEX

KEYBOARD PULLUPS

LMU PULL-DOWNS

KB LED DRIVER

LMU/BOOTBANGER/SPIDEY

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SIZE	D	DRAWING NUMBER	051-7202	REV.	B
SCALE	NONE	SHT	23	OP	44

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
341S1194	1	IC, LMU, P84	U52	CRITICAL	?

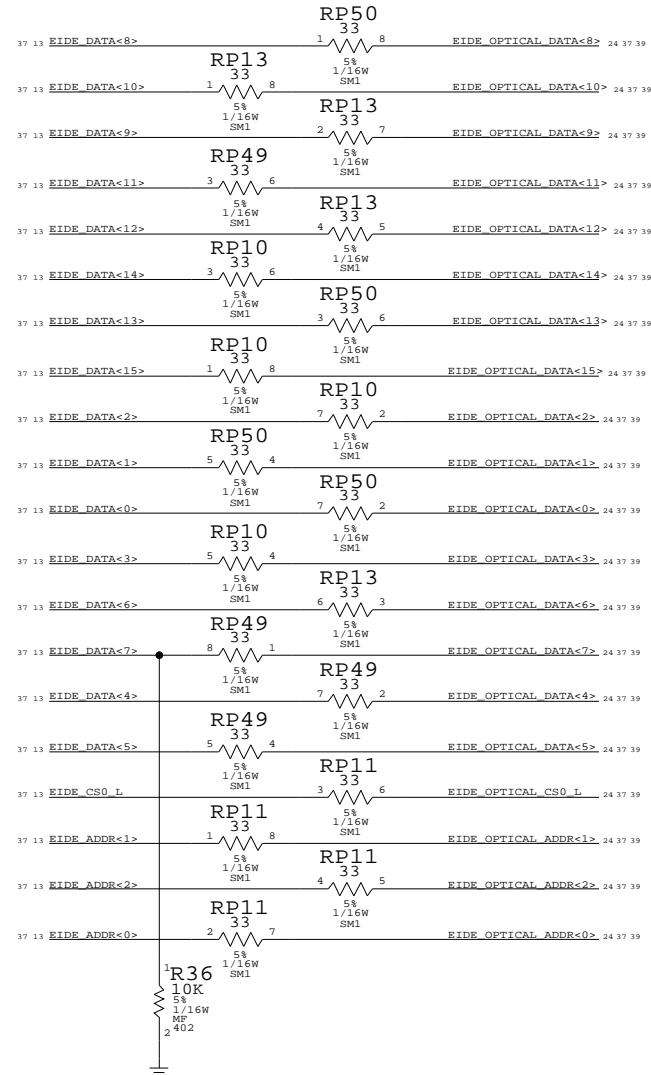
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0008	197S0040		Y4	ALT FOR SIWARD

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S0856	353S0504	?	U40	ALT FOR SUPPLY PROBLEM

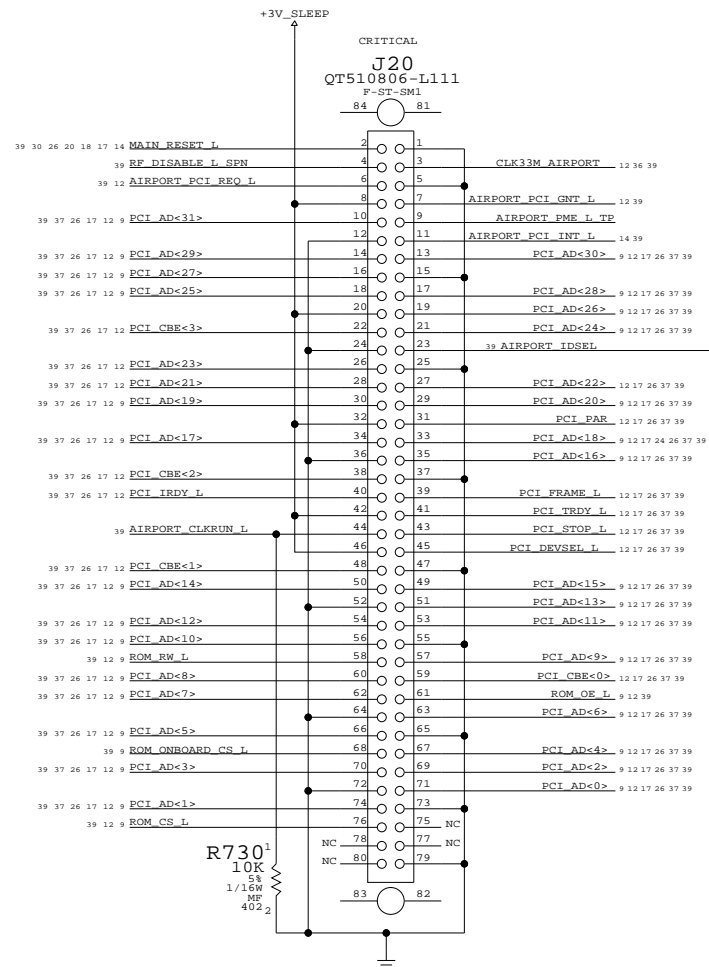
- BOOT BANGING SIGNAL DEFINITION
- 1/ BBANG_HRESET_L (OPEN COLLECTOR OUTPUT - 10K PULLUP ON MLB)
 - 2/ PMU_HRESET_L (3V INPUT INTO LMU)
 - 3/ BBANG_JTAG_TCK (REGULAR OUTPUT)
 - 4/ JTAG_CPU_TMS (OPEN COLLECTOR OUTPUT - 470OHM PULLUP ON MLB)
 - 5/ JTAG_CPU_TDI (OPEN COLLECTOR OUTPUT - 470OHM PULLUP ON MLB)
 - 6/ JTAG_CPU_TRST_L (OPEN COLLECTOR OUTPUT - 470OHM PULLUP ON MLB)

HARD DRIVE INTERFACE (UATA100)

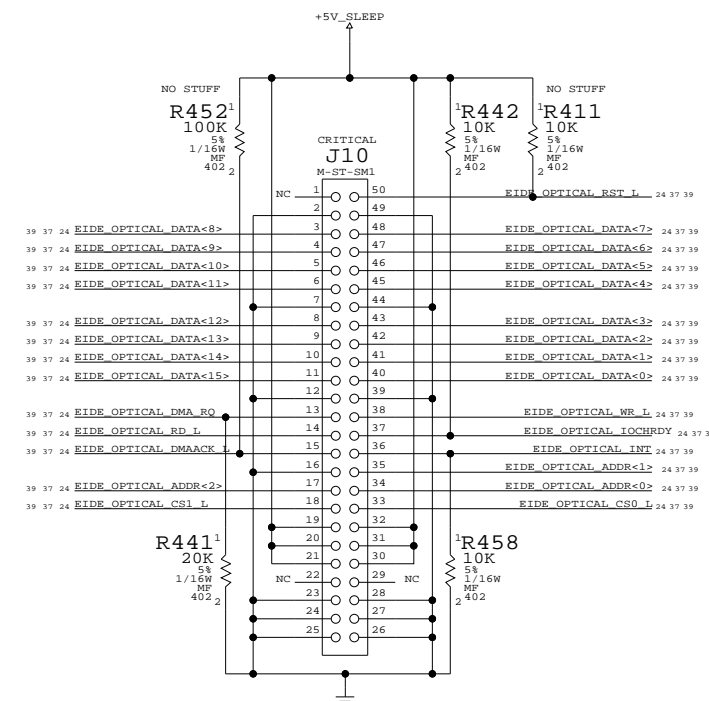
EIDE SERIES TERMINATION
PLACE TERMINATORS NEAR INTREPID



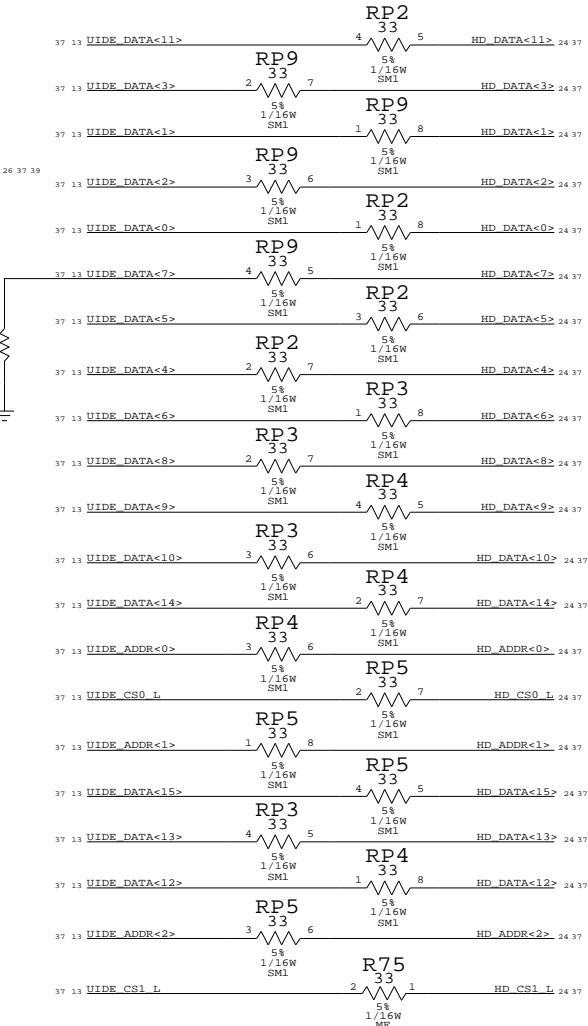
WIRELESS INTERFACE



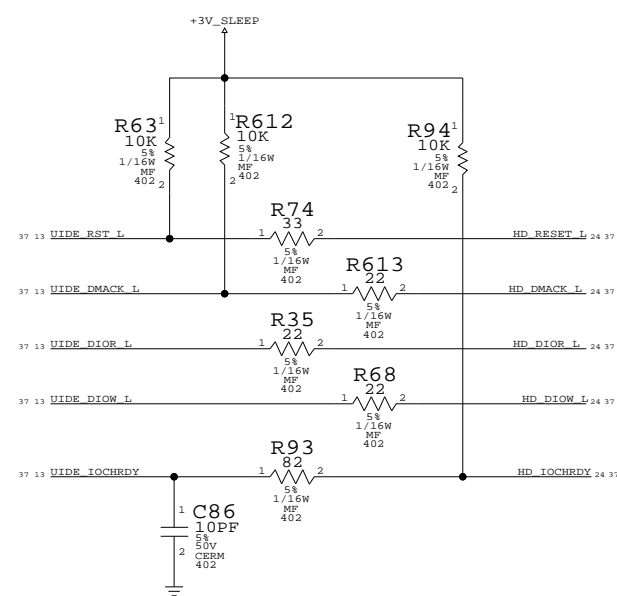
OPTICAL DRIVE INTERFACE (EIDE)



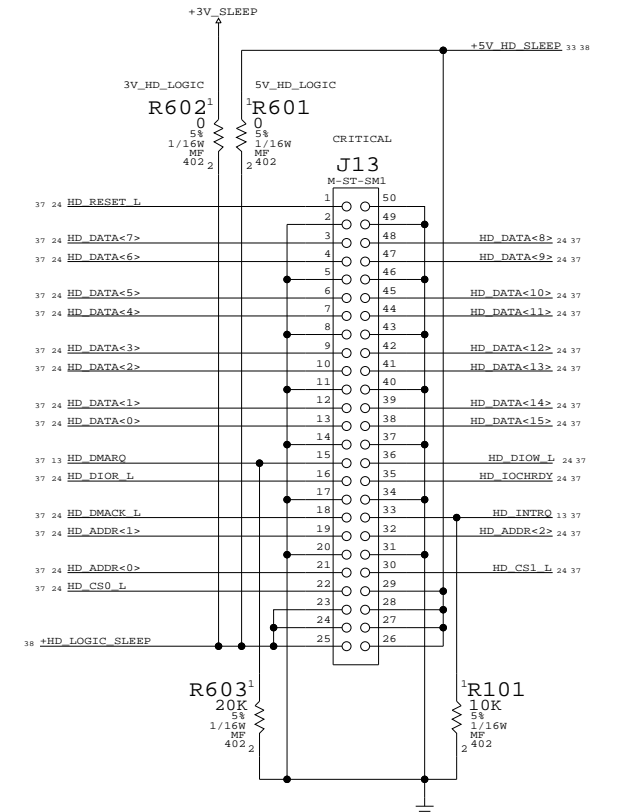
PLACE SERIES R CLOSE TO INTERPID



PLACE PULLUP RESISTORS CLOSE TO INTREPID

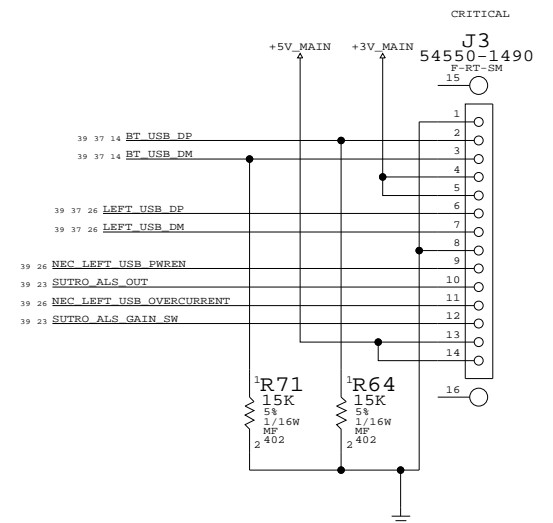


IOCHRDY - UATA100 REQUIRES PULL-UP TO 3.3V



ANY SEQUENCING REQUIREMENT BETWEEN
+5V_HD_SLEEP AND +3V_SLEEP?

BLUETOOTH/LEFT-SIDE USB



INTERNAL I/O CONNECTORS

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SIZE	DRAWING NUMBER	REV.
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D	051-7202	B
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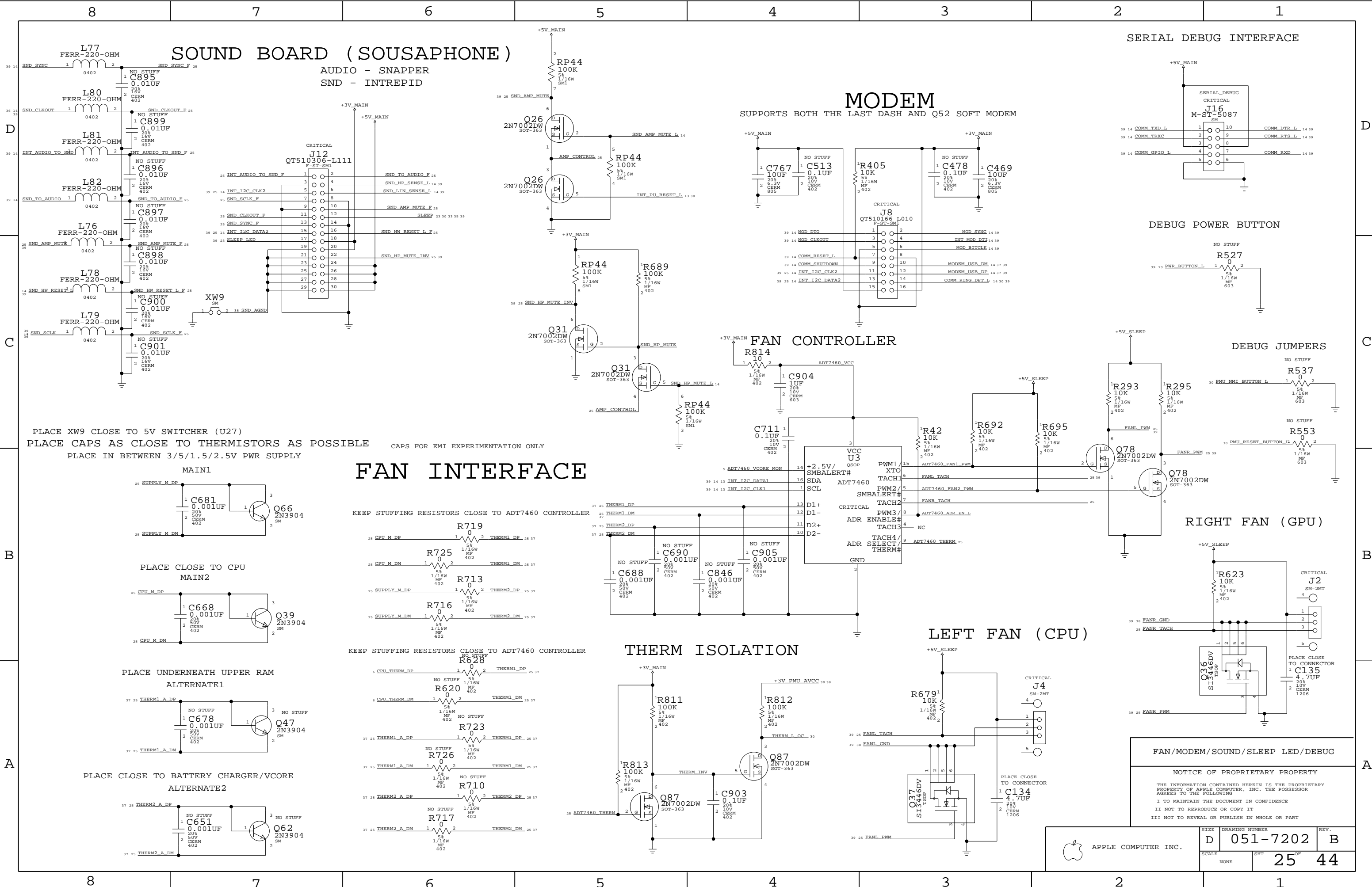
P	051 / 202	D
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SCALE	SHT	24 ^{OF}	44
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NONE	21	11
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[illegible]

1



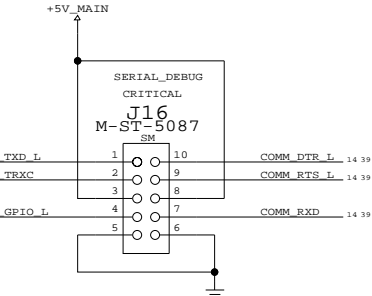
SOUND BOARD (SOUSAPHONE)

AUDIO - SNAPPER
SND - INTREPID

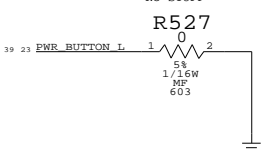
MODEM

SUPPORTS BOTH THE LAST DASH AND Q52 SOFT MODEM

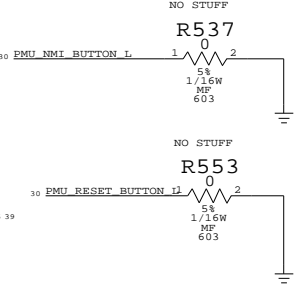
SERIAL DEBUG INTERFACE



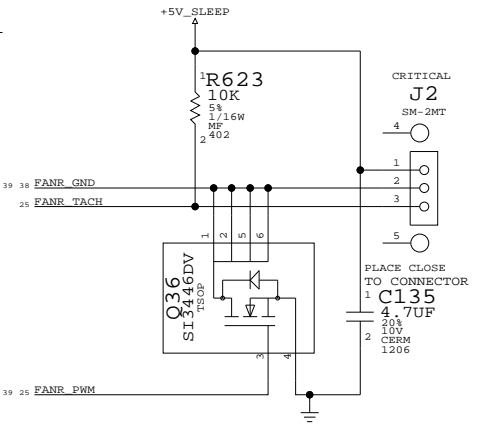
DEBUG POWER BUTTON



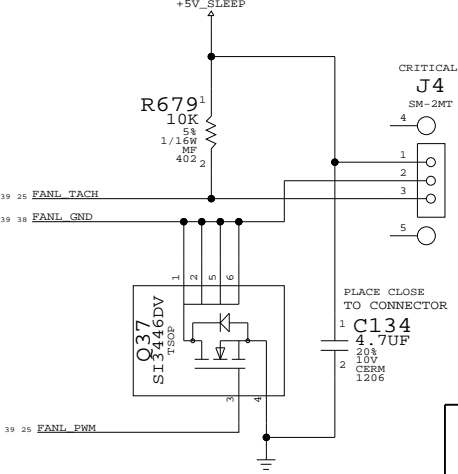
DEBUG JUMPERS



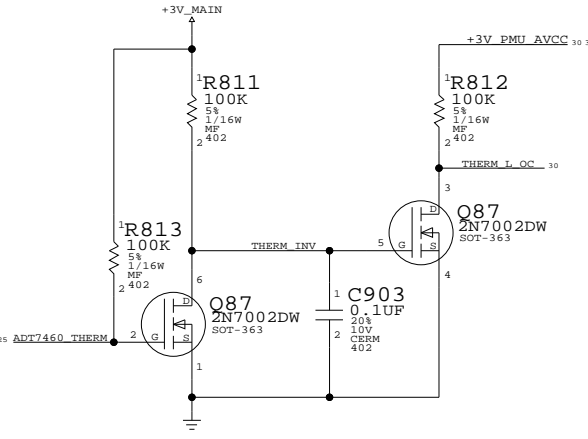
RIGHT FAN (GPU)



LEFT FAN (CPU)

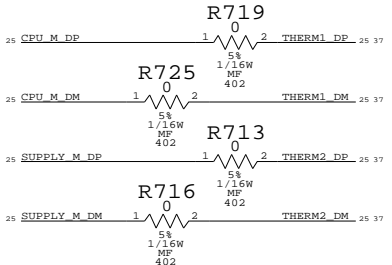


THERM ISOLATION

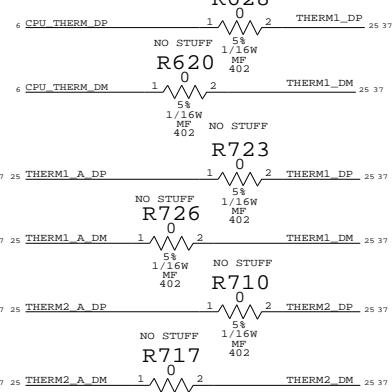


FAN INTERFACE

KEEP STUFFING RESISTORS CLOSE TO ADT7460 CONTROLLER

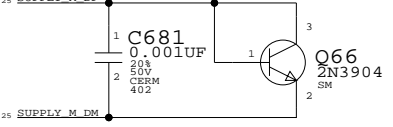


KEEP STUFFING RESISTORS CLOSE TO ADT7460 CONTROLLER

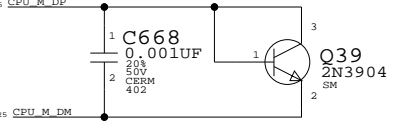


PLACE XW9 CLOSE TO 5V SWITCHER (U27)
PLACE CAPS AS CLOSE TO THERMISTORS AS POSSIBLE
PLACE IN BETWEEN 3/5/1.5/2.5V PWR SUPPLY

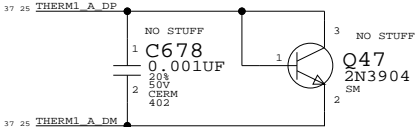
MAIN1



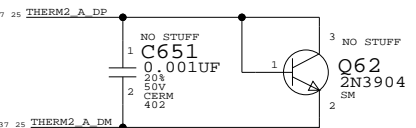
PLACE CLOSE TO CPU
MAIN2



PLACE UNDERNEATH UPPER RAM
ALTERNATE1



PLACE CLOSE TO BATTERY CHARGER/VCORE
ALTERNATE2



FAN/MODEM/SOUND/SLEEP LED/DEBUG

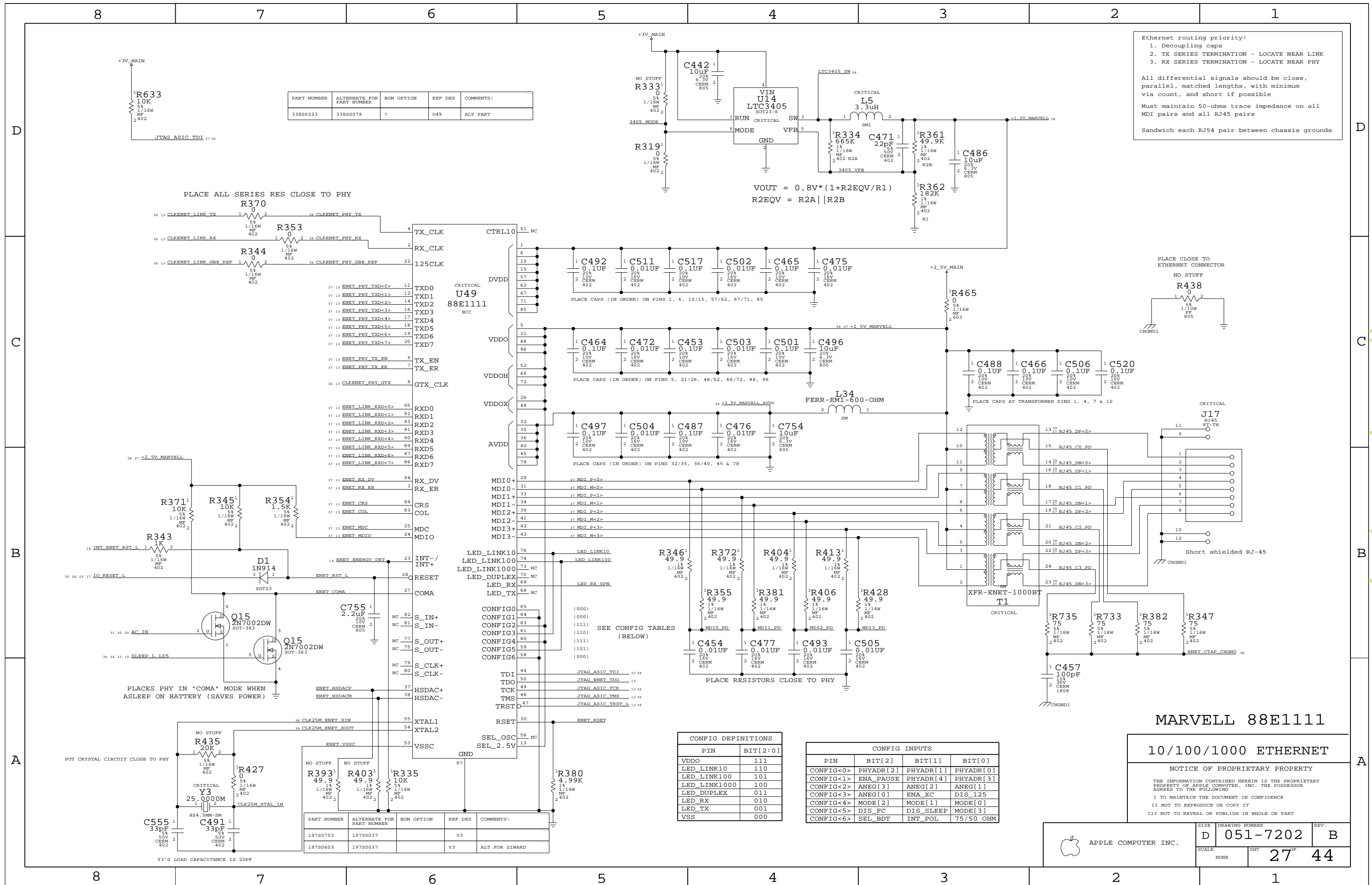
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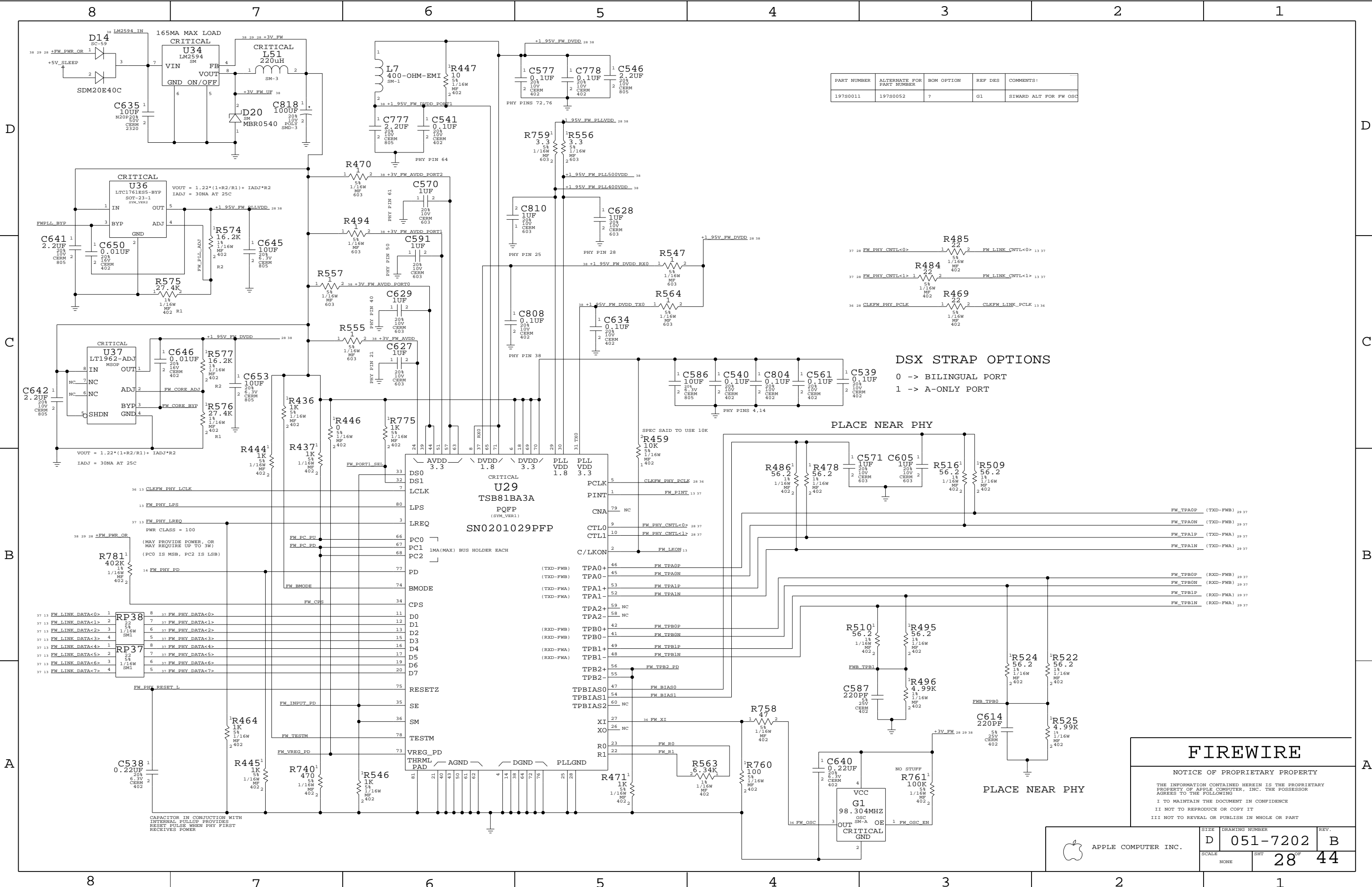
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SIZE	D	DRAWING NUMBER	051-7202	REV.	B
SCALE	NONE	SHT	25	COPIES	44





PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0011	197S0052	7	G1	SIWARD ALT FOR FW OSC

DSX STRAP OPTIONS

- 0 -> BILINGUAL PORT
- 1 -> A-ONLY PORT

PLACE NEAR PHY

PLACE NEAR PHY

FIREWIRE

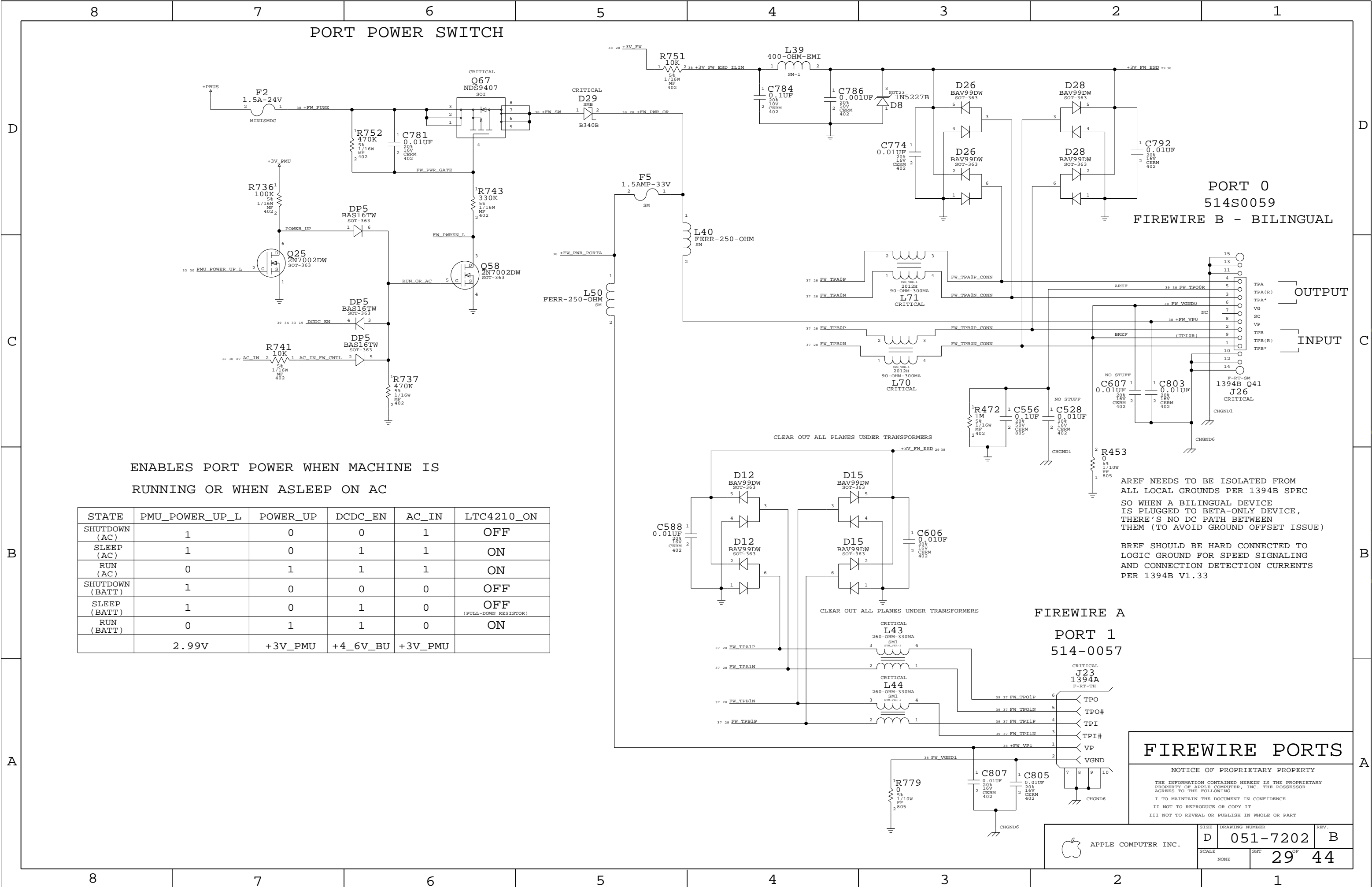
NOTICE OF PROPRIETARY PROPERTY

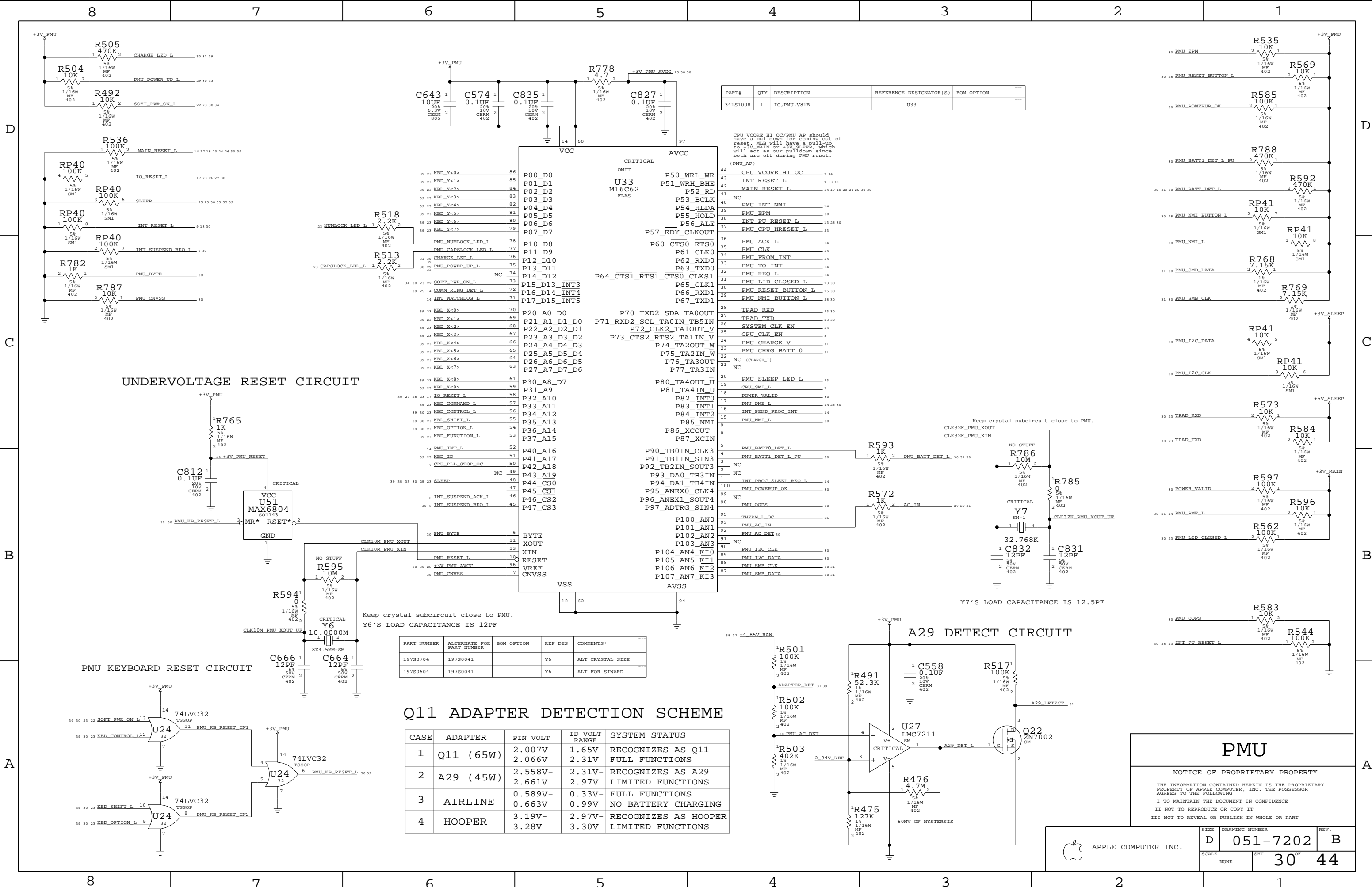
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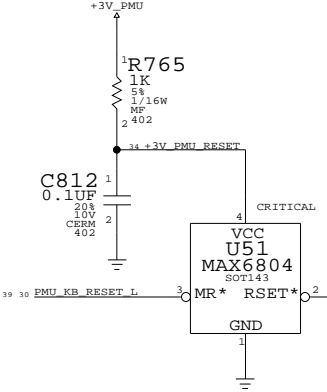
APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	
NONE	28	44

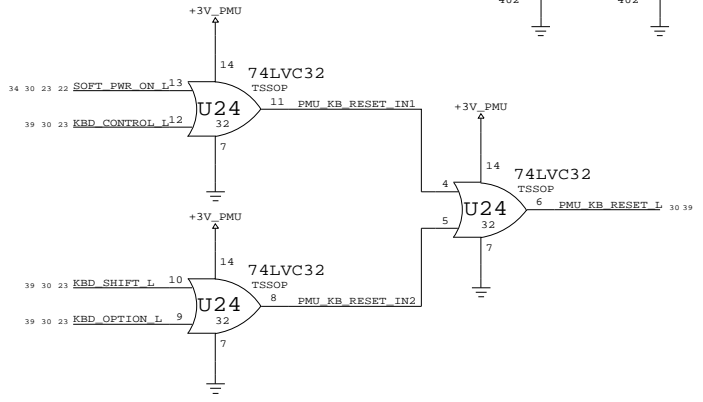




UNDERVOLTAGE RESET CIRCUIT



PMU KEYBOARD RESET CIRCUIT



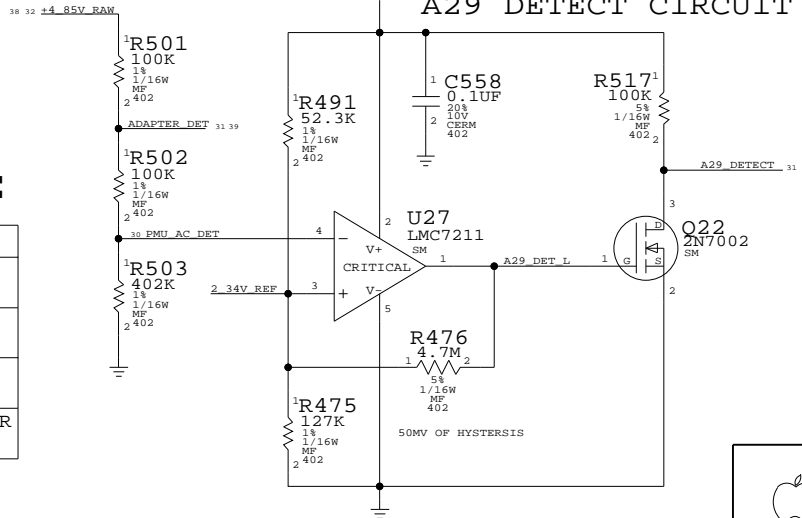
Keep crystal subcircuit close to PMU.
Y6'S LOAD CAPACITANCE IS 12PF

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0704	197S0041		Y6	ALT CRYSTAL SIZE
197S0604	197S0041		Y6	ALT FOR SIWARD

Q11 ADAPTER DETECTION SCHEME

CASE	ADAPTER	PIN VOLT	ID VOLT RANGE	SYSTEM STATUS
1	Q11 (65W)	2.007V-2.066V	1.65V-2.31V	RECOGNIZES AS Q11 FULL FUNCTIONS
2	A29 (45W)	2.558V-2.661V	2.31V-2.97V	RECOGNIZES AS A29 LIMITED FUNCTIONS
3	AIRLINE	0.589V-0.663V	0.33V-0.99V	FULL FUNCTIONS NO BATTERY CHARGING
4	HOOPER	3.19V-3.28V	2.97V-3.30V	RECOGNIZES AS HOOPER LIMITED FUNCTIONS

A29 DETECT CIRCUIT



PMU

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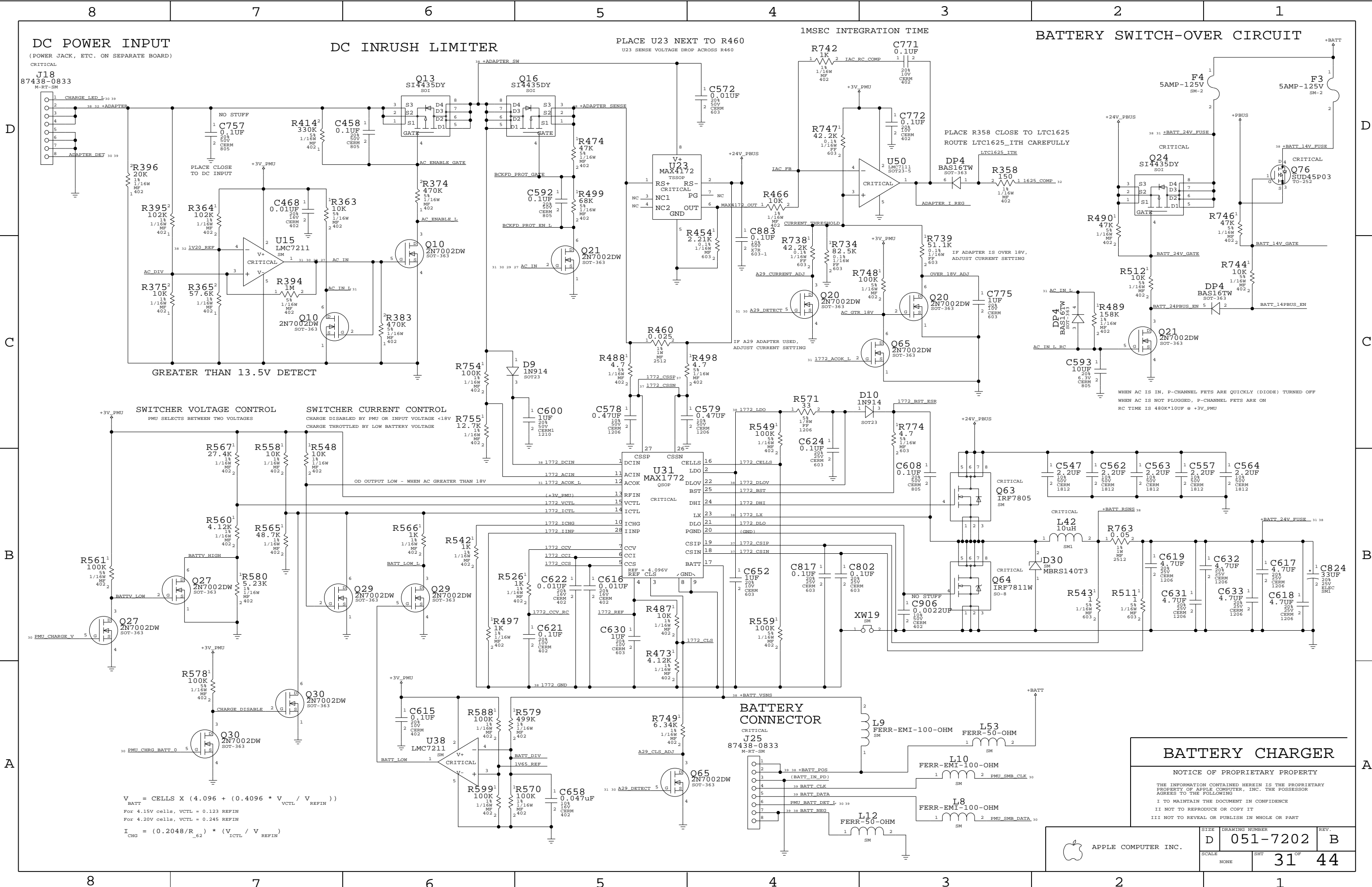
APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	
NONE	30 ^{OF}	44

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
341S1008	1	IC, PMU, V81B	U33	

CPU VCORE HI_OC/PMU_AP should have a pullup for coming out of reset. MLB will have a pull-up to +3V_MAIN or +3V_SLEEP, which will act as our pullup since both are off during PMU reset.
(PMU_AP)

44 CPU VCORE HI_OC	7 34
43 INT RESET L	9 13 30
42 MAIN RESET L	14 17 18 20 24 26 30 39
41 NC	
40 PMU INT NMI	14
39 PMU EPM	30
38 INT PU RESET L	13 25 30
37 PMU CPU HRESET L	23
36 PMU ACK L	14
35 PMU CLK	14
34 PMU FROM INT	14
33 PMU TO INT	14
32 PMU REQ L	14
31 PMU LID CLOSED L	23 30
30 PMU RESET BUTTON L	26 30
29 PMU NMI BUTTON L	26 30
28 TPAD_RXD	23 30
27 TPAD_TXD	23 30
26 SYSTEM CLK EN	14
25 CPU CLK EN	8
24 PMU CHARGE V	31
23 PMU CHRG BATT 0	31
22 NC (CHARGE_1)	
21 NC	
20 PMU_SLEEP_LED_L	23
19 CPU_SMI_L	5
18 POWER_VALID	30
17 PMU_PME_L	14 26 30
16 INT_PEND_PROC_INT	14
15 PMU_NMI_L	30
9	
8 CLK32K_PMU_XOUT	
5 PMU_BATT0_DET_L	
4 PMU_BATT1_DET_L_PU	30
3 NC	
2 NC	
1 INT_PROC_SLEEP_REQ_L	14
100 PMU_POWERUP_OK	30
99	
98 NC	
95 THERM_L_OC	25
93 PMU_AC_IN	
92 PMU_AC_DET_30	
91 NC	
90 PMU_I2C_CLK	30
89 PMU_I2C_DATA	30
88 PMU_SMB_CLK	30 31
87 PMU_SMB_DATA	30 31
P100_AN0	
P101_AN1	
P102_AN2	
P103_AN3	
P104_AN4_KI0	
P105_AN5_KI1	
P106_AN6_KI2	
P107_AN7_KI3	
P90_TB0IN_CLK3	
P91_TB1IN_SIN3	
P92_TB2IN_SOUT3	
P93_DA0_TB3IN	
P94_DA1_TB4IN	
P95_ANEX0_CLK4	
P96_ANEX1_SOUT4	
P97_ADRTRG_SIN4	
P80_TA4OUT_U	
P81_TA4IN_U	
P82_INT0	
P83_INT1	
P84_INT2	
P85_NMI	
P86_XCOUT	
P87_XCIN	
P70_TXD2_SDA_TA0OUT	
P71_RXD2_SCL_TA0IN_TB5IN	
P72_CLK2_TA1OUT_V	
P73_CTS2_RTS2_TA1IN_V	
P74_TA2OUT_W	
P75_TA2IN_W	
P76_TA3OUT	
P77_TA3IN	
P60_CTS0_RTS0	
P61_CLK0	
P62_RXD0	
P63_TXD0	
P64_CTS1_RTS1_CTS0_CLKS1	
P65_CLK1	
P66_RXD1	
P67_TXD1	
P57_RDY_CLKOUT	
P53_BCLK	
P54_HLDA	
P55_HOLD	
P56_ALE	
P51_WRH_BHE	
P52_RD	
P50_WRL_WR	
P07_D7	
P06_D6	
P05_D5	
P04_D4	
P03_D3	
P02_D2	
P01_D1	
P00_D0	



DC POWER INPUT

(POWER JACK, ETC. ON SEPARATE BOARD)

CRITICAL

J18 87438-0833

W-RT-SM

DC INRUSH LIMITER

PLACE U23 NEXT TO R460

U23 SENSE VOLTAGE DROP ACROSS R460

1MSEC INTEGRATION TIME

BATTERY SWITCH-OVER CIRCUIT

GREATER THAN 13.5V DETECT

SWITCHER VOLTAGE CONTROL

PMU SELECTS BETWEEN TWO VOLTAGES

SWITCHER CURRENT CONTROL

CHARGE DISABLED BY PMU OR INPUT VOLTAGE <18V

CHARGE THROTTLED BY LOW BATTERY VOLTAGE

OD OUTPUT LOW - WHEN AC GREATER THAN 18V

BATTERY CONNECTOR

CRITICAL

J25 87438-0833

M-RT-SM

BATTERY CHARGER

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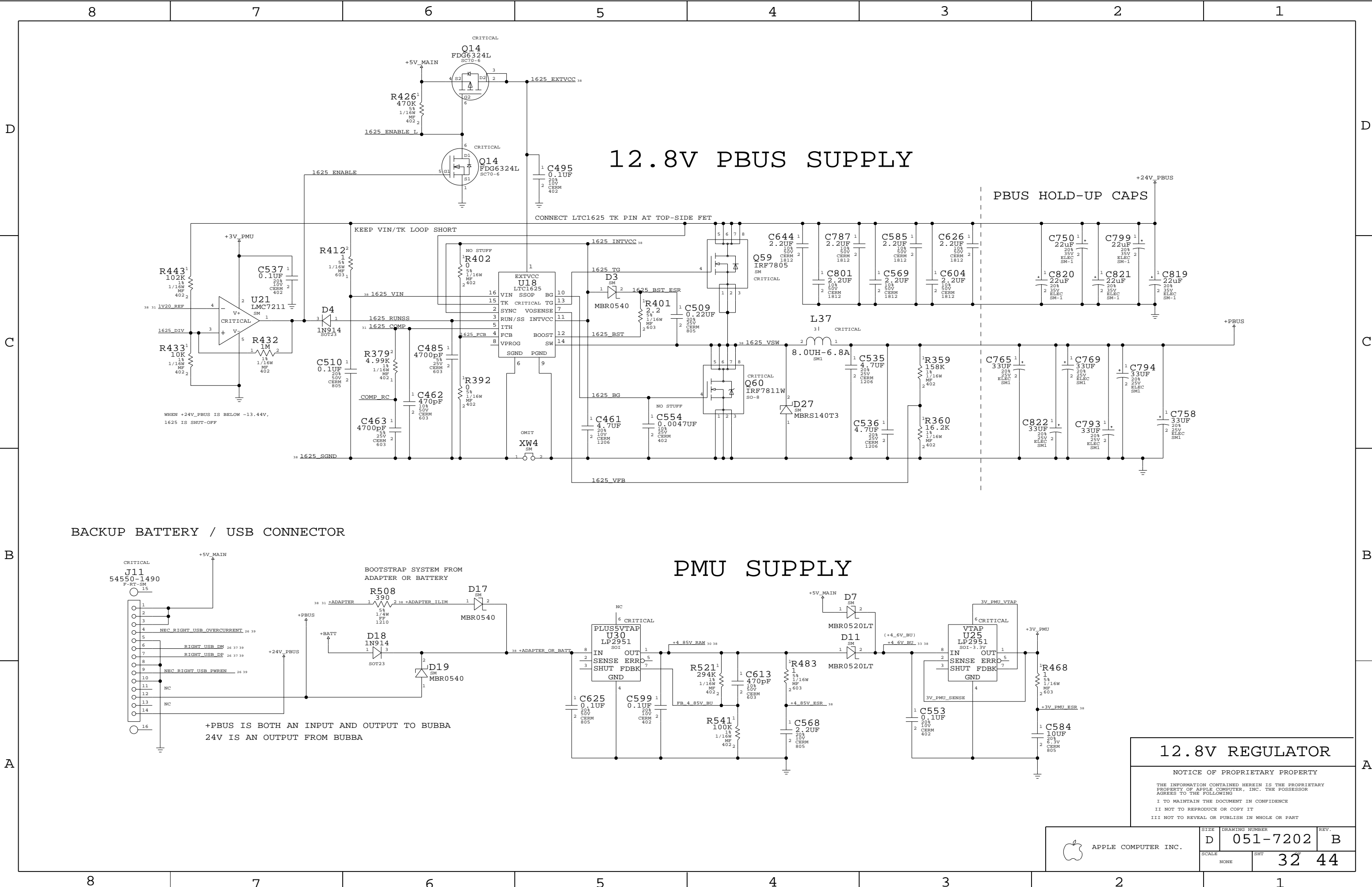
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$$V_{BATT} = CELLS \times (4.096 + (0.4096 \times \frac{V_{VCTL}}{V_{REFIN}}))$$

For 4.15V cells, VCTL = 0.123 REFIN
For 4.20V cells, VCTL = 0.245 REFIN

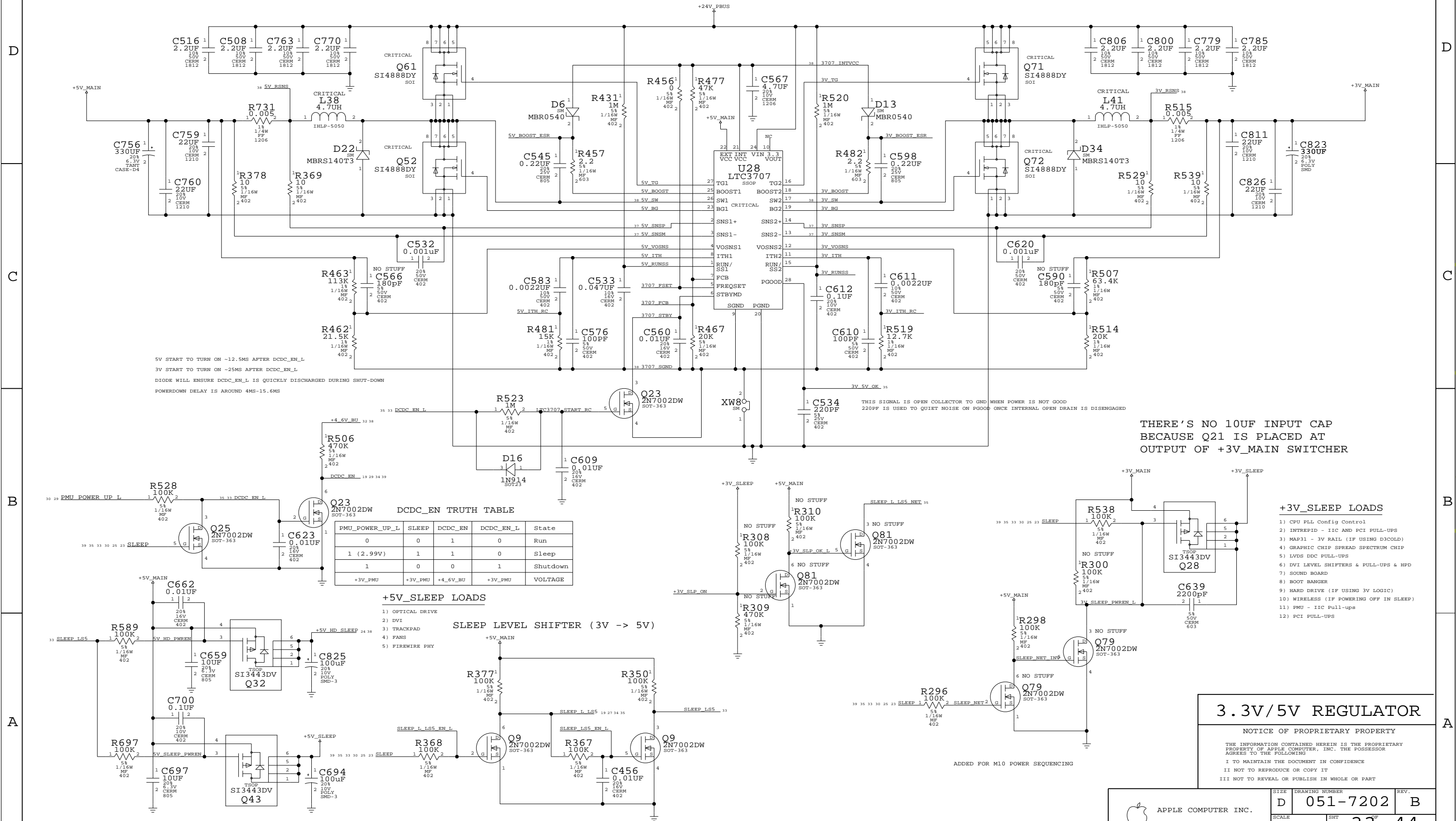
$$I_{CHG} = (0.2048/R_{g2}) \times (\frac{V_{ICTL}}{V_{REFIN}})$$

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7202	B
SCALE	NONE	SHT	31 OF 44



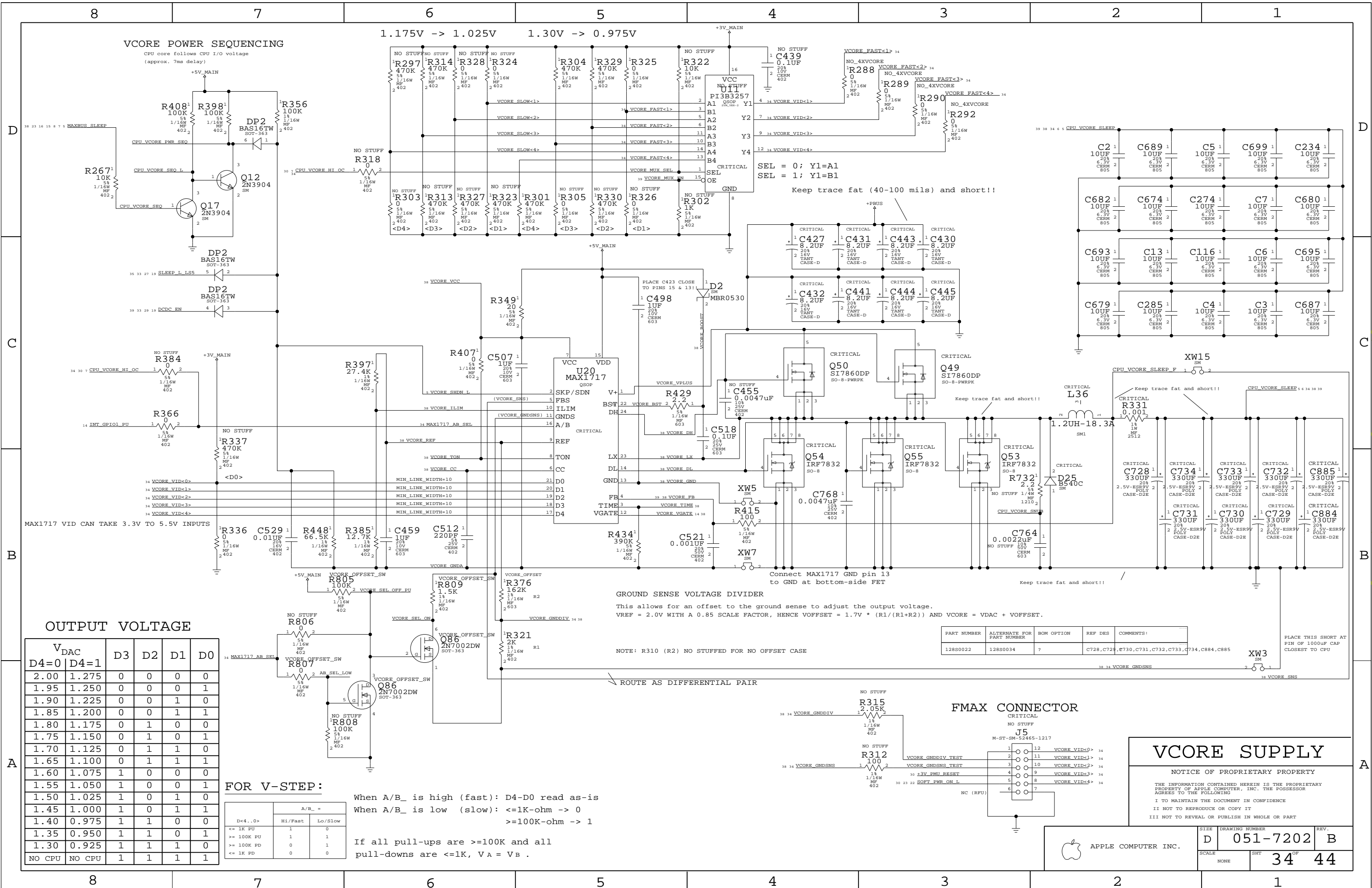
www.laptop-schematics.com

3.3V/5V MAIN SUPPLY



APPLE COMPUTER INC.

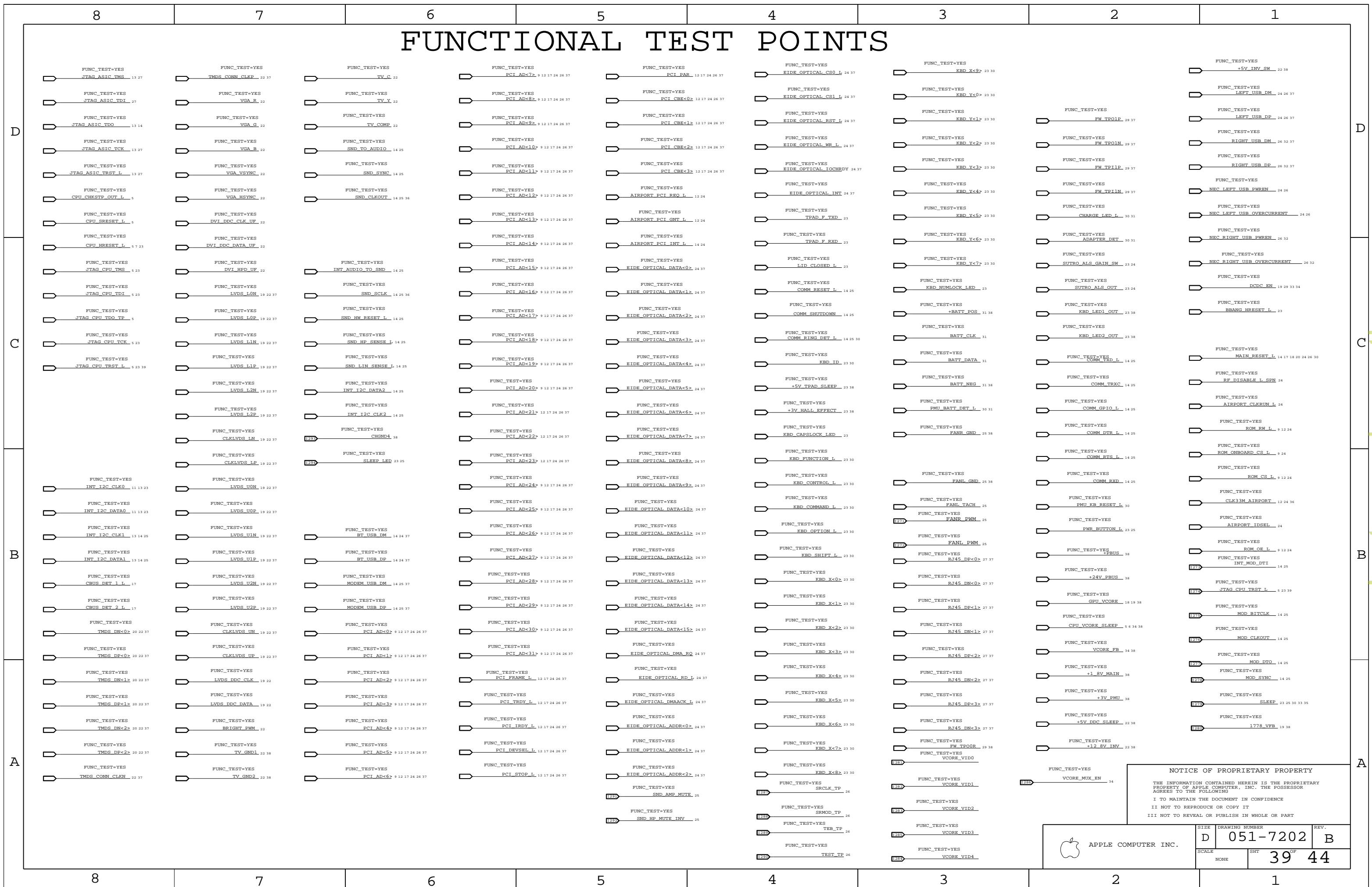
SIZE	DRAWING NUMBER	REV.
D	051-7202	B
SCALE	SHT	
NONE	33	44



[illegible]

8					7					6					5					4					3					2					1														
POWER NET CONSTRAINTS																																																	
GROUP					SIG_NAME					VOLTAGE					MIN_LINE_WIDTH					MIN_NECK_WIDTH					GROUP					SIG_NAME					VOLTAGE					MIN_LINE_WIDTH					MIN_NECK_WIDTH				
D	MAIN/SLEEP				+24V_PBUS					VOLTAGE=24V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10					LTC1625 14V SWITCHER					1625_VIN					VOLTAGE=24V					MIN_LINE_WIDTH=10					MIN_NECK_WIDTH=6				
					+BATT					VOLTAGE=12.6V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10										1625_VSM					VOLTAGE=12.8V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10				
					+PBUS					VOLTAGE=12.8V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10										1625_EXTVCC					VOLTAGE=5V					MIN_LINE_WIDTH=10					MIN_NECK_WIDTH=6				
					+5V_MAIN					VOLTAGE=5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10										1625_INTVCC					VOLTAGE=5V					MIN_LINE_WIDTH=10					MIN_NECK_WIDTH=6				
					+5V_SLEEP					VOLTAGE=5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10										1625_SGND					VOLTAGE=0V					MIN_LINE_WIDTH=10					MIN_NECK_WIDTH=6				
					+3V_MAIN					VOLTAGE=3.3V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10										1V20_REF					VOLTAGE=1.2V					MIN_LINE_WIDTH=15					MIN_NECK_WIDTH=10				
					+3V_SLEEP					VOLTAGE=3.3V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+3V_PMU					VOLTAGE=3.3V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+2.5V_MAIN					VOLTAGE=2.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+2.5V_SLEEP					VOLTAGE=2.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.8V_MAIN					VOLTAGE=1.8V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.8V_SLEEP					VOLTAGE=1.8V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.5V_MAIN					VOLTAGE=1.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.5V_SLEEP					VOLTAGE=1.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.5V_LDO					VOLTAGE=1.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+1.5V_SLEEP_VIN					VOLTAGE=1.5V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
	ADAPTER				+ADAPTER					VOLTAGE=24V					MIN_LINE_WIDTH=50					MIN_NECK_WIDTH=10																													
					+ADAPTER_SW					VOLTAGE=24V					MIN_LINE_WIDTH=50					MIN_NECK_WIDTH=10																													
					+ADAPTER_SENSE					VOLTAGE=24V					MIN_LINE_WIDTH=50					MIN_NECK_WIDTH=10																													
C	BATTERY CHARGER				+BATT_POS					VOLTAGE=16.8V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					BATT_NRG					VOLTAGE=0V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					1772_DCIN					VOLTAGE=24V					MIN_LINE_WIDTH=10																																		
					1772_LX					VOLTAGE=12.6V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													
					+BATT_14V_FUSE					VOLTAGE=12.6V					MIN_LINE_WIDTH=25					MIN_NECK_WIDTH=10																													

FUNCTIONAL TEST POINTS



8	7	6	5	4	3	2	1
REVISION HISTORY (051-6654)				REVISION HISTORY (051-7202)			
<div>12/11/03</div> <div>1) IMPORTED Q41 PRODUCTION RELEASE SCHEMATIC</div> <div>2) CHANGED CPU (U43) TO A7PM</div> <div>3) CHANGED PLL CONFIG SUFFIXING FOR NEW CPU</div> <div>4) CHANGED U44 TO R11-S1654 SYMBOL</div> <div>5) ADDED CPU_AVDD_LDO (U6)</div> <div>6) ADDED R284 AND R604 TO ADD OPTION FOR PD_L OF U42 (CLOCK CHIP) TO BE DRIVEN BY JTAG_ASIC_TDO FROM INTREPID</div> <div>7) ADDED R608 TO DISCONNECT INT_GP100 FROM CC_FSEL</div> <div>8) CHANGED JTAG_ASIC_TDO_TP TO JTAG_ASIC_TDO AND MOVED IT TO INTREPID'S TDO</div> <div>9) CHANGED JTAG_ASIC_TDI TO CONNECT TO ETHERNET PHY'S TDI</div> <div>12/15/03</div> <div>10) CHANGED PIN 4 (DCDC_EN) ON J11 TO NEC_RIGHT_USBOVERCURRENT</div> <div>11) CHANGED PIN 11 OF J11 TO NC</div> <div>12/16/03</div> <div>12) ADDED R633 AS PULLUP ON JTAG_ASIC_TDI</div> <div>13) CHANGED CPU_TEMP_DM TO CPU_THERM_DM</div> <div>14) CHANGED CPU_TEMP_DP TO CPU_THERM_DP</div> <div>15) CHANGED GPU_THERM_DP TO GPU_THERM_DP_TP</div> <div>16) CHANGED GPU_THERM_DM TO GPU_THERM_DM_TP</div> <div>17) FIXED MISSED CONNECTION WITH MAXBUS_SLEEP TO CPU</div> <div>12/17/03</div> <div>18) CHANGED R657 (EXTPLL_SDWN_POL_BOOT_STRAP) TO NO STUFF AND REMOVED NO STUFF FROM R153</div> <div>19) UPDATE DIFF NET SPACING TYPE PROPERTY ON POWER SUPPLY SENSE AND THERMAL DIODE DIFF PAIRS</div> <div>20) CHANGED FIREWIRE_OSCILLATOR (G1) TO NEW PREFERRED SUNNY PART</div> <div>12/18/03</div> <div>21) CHANGED MAX VIA COUNT ON ALL AGP STB NETS TO 5 TO CLEAR DRCS</div> <div>** RELEASED FOR EVT **</div> <div>2/10/04</div> <div>22) REMOVED XW11 - JUMPER ON 1.8V SWITCHER OUTPUT</div> <div>23) CHANGED R657 TO STUFFE AND R153 TO NO STUFF</div> <div>24) CHANGED CPU PLL CONFIG TO 9X HIGH AND 5X LOW</div> <div>** RELEASED FOR DVT **</div> <div>3/24/04</div> <div>25) REMOVED ALTERNATE BOM OPTION FROM ALTERNATE ETHERNET CRYSTALS</div> <div>3/29/04</div> <div>26) ADDED ALTERNATE FOR Q41A REV 1.1.1 CPU (U43)</div> <div>27) ADDED ALTERNATES FOR 128MB AND 64MB A16 M11 S</div> <div>28) CHANGED TMDS SERIES RPAKS TO 0 OHMS (RP57,RP27,RP32,RP28)</div> <div>29) ADDED ALTERNATE FOR ALS OP-AMP (U40)</div> <div>** RELEASED TO REV A **</div> <div>30) CHANGED TMDS TERMINATION R,C AND LS TO PRODUCTION VALUES</div> <div>** RELEASED TO REV A UNDER NEW PART NUMBER **</div> <div>7/6/05</div> <div>ADDED 338S0223 (88E1111 REV. B1) AS AN ALTERNATE OF 338S0079</div> <div>8/22/05</div> <div>REPLACED 740S0006 EITH 740S0018 (FUSE,1.5A,24V,SMD,LF)</div> <div>ADDED 128S0022 (220 UF) AS AN ALTERNATE OF 128S0034 (330 UF) FOR MPU VCORE CAPS</div> <div>ADDED LABELS WITH EEE</div> <div>** RELEASED TO 051-6654-C **</div>				<div>07/07/2006</div> <div>INITIAL DRAFT REV A FOR 17" Q41A SERVICE BOM (FROM 051-6654-C)</div> <div>1) CHANGED THE DOCUMENT TITLE INFO.</div> <div>2) CHANGED THE BOM OPTION FROM 341S1645 TO 341S1940 (PAGE-9).</div> <div>3) CHANGED THE BOM OPTION ALTERNATE FROM 338S0182/338S0183 TO 338S0214/338S0207 (PAGE-18).</div> <div>07/07/2006</div> <div>REVISED TO REV B WITH BELOW CHANGES:</div> <div>1) CORRECT THE TYPO 051-6654 TO 051-7202 IN BOM OPTION (PAGE-01).</div> <div>2) CHANGED THE 826- P/N BACK TO 826-4393 (PAGE-01).</div> <div>3) UPDATED THE REVISION TO REV B.</div>			
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<div>SCALE</div> <div>NONE</div>		<div>SHT</div> <div>40</div>	<div>OF</div> <div>44</div>				
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SCALE		SHT		
NONE			40 ^F	44

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