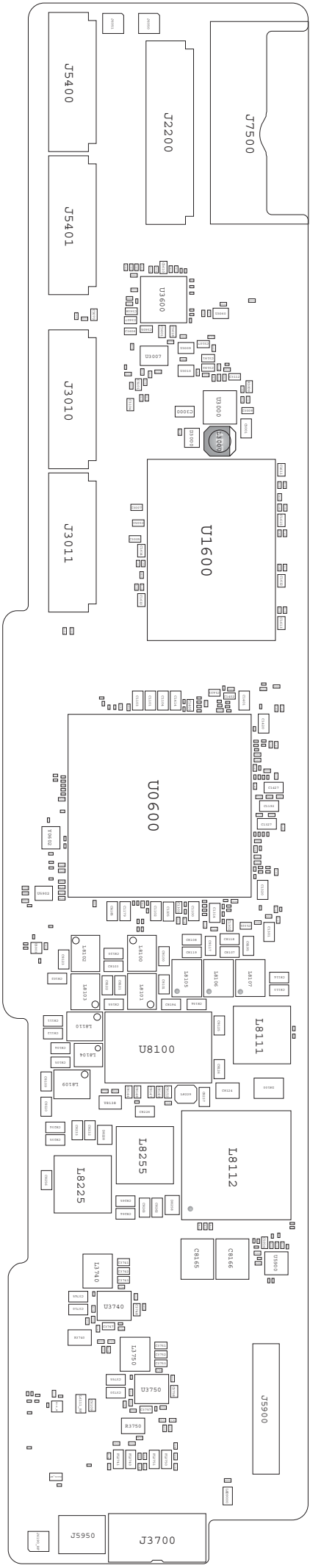


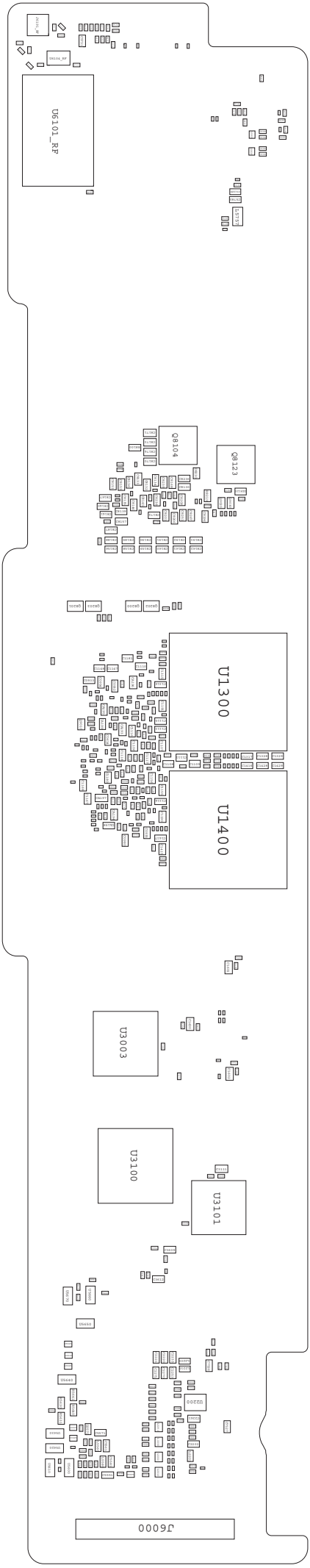
RECOMMENDED MATING FLANGE FOR CAMERA WINDOW 14.0

METRIC		Apple Inc.	
DATE	04/05/13	REVISED	04/05/13
DESCRIPTION	IPAD WI-FI + CELLULAR (4TH GENERATION)		
SIZE	X-X	14.2	
	X-XX	15.0	
	X-XXX	16.0	
	XX-XXX	18.0	
	XXX-XXX	20.0	
	XXXX-XXX	25.0	
	XXXXX-XXX	30.0	
	XXXXXX-XXX	35.0	
	XXXXXXX-XXX	40.0	
	XXXXXXXX-XXX	45.0	
	XXXXXXXXX-XXX	50.0	
	XXXXXXXXXX-XXX	55.0	
	XXXXXXXXXX-XXX	60.0	
	XXXXXXXXXX-XXX	65.0	
	XXXXXXXXXX-XXX	70.0	
	XXXXXXXXXX-XXX	75.0	
	XXXXXXXXXX-XXX	80.0	
	XXXXXXXXXX-XXX	85.0	
	XXXXXXXXXX-XXX	90.0	
	XXXXXXXXXX-XXX	95.0	
	XXXXXXXXXX-XXX	100.0	
	XXXXXXXXXX-XXX	105.0	
	XXXXXXXXXX-XXX	110.0	
	XXXXXXXXXX-XXX	115.0	
	XXXXXXXXXX-XXX	120.0	
	XXXXXXXXXX-XXX	125.0	
	XXXXXXXXXX-XXX	130.0	
	XXXXXXXXXX-XXX	135.0	
	XXXXXXXXXX-XXX	140.0	
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	XXXXXXXXXX-XXX	980.0	
	XXXXXXXXXX-XXX	985.0	
	XXXXXXXXXX-XXX	990.0	
	XXXXXXXXXX-XXX	995.0	
	XXXXXXXXXX-XXX	1000.0	

820-3249-TOP MLB



820-3249-BOT MLB



- 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.

iPad 4th Gen

LAST_MODIFIED=Thu Jul 26 10:29:36 2012

PDF CSA CONTENTS

	PDF CSA	CONTENTS	SYNC MASTER	DATE	(SYSTEM DBT)
1	1	Table of Contents	N/A	N/A	(AWANDA)
2	2	BLOCK DIAGRAM: SYSTEM	N/A	N/A	(AWANDA)
3	4	BOM TABLES	N/A	N/A	(AWANDA)
4	6	AP: MAIN	N/A	N/A	(TERRY)
5	7	AP: I/OS	N/A	N/A	(AWANDA)
6	8	AP: NAND	N/A	N/A	(TERRY)
7	9	AP: TV, DP, MIPI	N/A	N/A	(TERRY)
8	10	AP: DDR	N/A	N/A	(TERRY)
9	11	AP: POWER	N/A	N/A	(TERRY)
10	12	AP: MISC & ALIASES	N/A	N/A	(TERRY)
11	13	DDR 0 AND 1	N/A	N/A	(TERRY)
12	14	DDR 2 AND 3	N/A	N/A	(TERRY)
13	16	NAND	N/A	N/A	(AWANDA)
14	21	ALIASES	N/A	N/A	(AWANDA)
15	22	VIDEO: EDP CONNECTOR	N/A	N/A	(JOB)
16	30	GRAPE: GROUNDHOG, CONN, BOOST	N/A	N/A	(AWANDA)
17	31	GRAPE: Z1, Z2	N/A	N/A	(AWANDA)
18	36	AUDIO: L81 CODEC	N/A	N/A	(TERRY)
19	37	AUDIO: SPEAKER AMP	N/A	N/A	(TERRY)
20	54	SENSOR FLEX CONN	N/A	N/A	(MARK)
21	55	SENSOR CONN FILTERS 1	N/A	N/A	(MARK)
22	56	SENSOR CONN FILTERS 2	N/A	N/A	(MARK)
23	57	E75 DOCK SUPPORT	N/A	N/A	(JOB)
24	58	IO FLEX CONN	N/A	N/A	(JOB)
25	59	TRISTAR	N/A	N/A	(JOB)
26	60	CONNECTOR: CELLULAR	N/A	N/A	(AWANDA)
27	61	WIFI/BT	N/A	N/A	(MATT)
28	75	POWER: BATTERY CONNECTOR	MODHVT	12/06/2011	(MODHVT)
29	81	PMU: ADRIANA PAGE 1	MODHVT	12/06/2011	(MODHVT)
30	82	PMU: ADRIANA PAGE 2	MODHVT	12/06/2011	(MODHVT)

PDF CSA CONTENTS

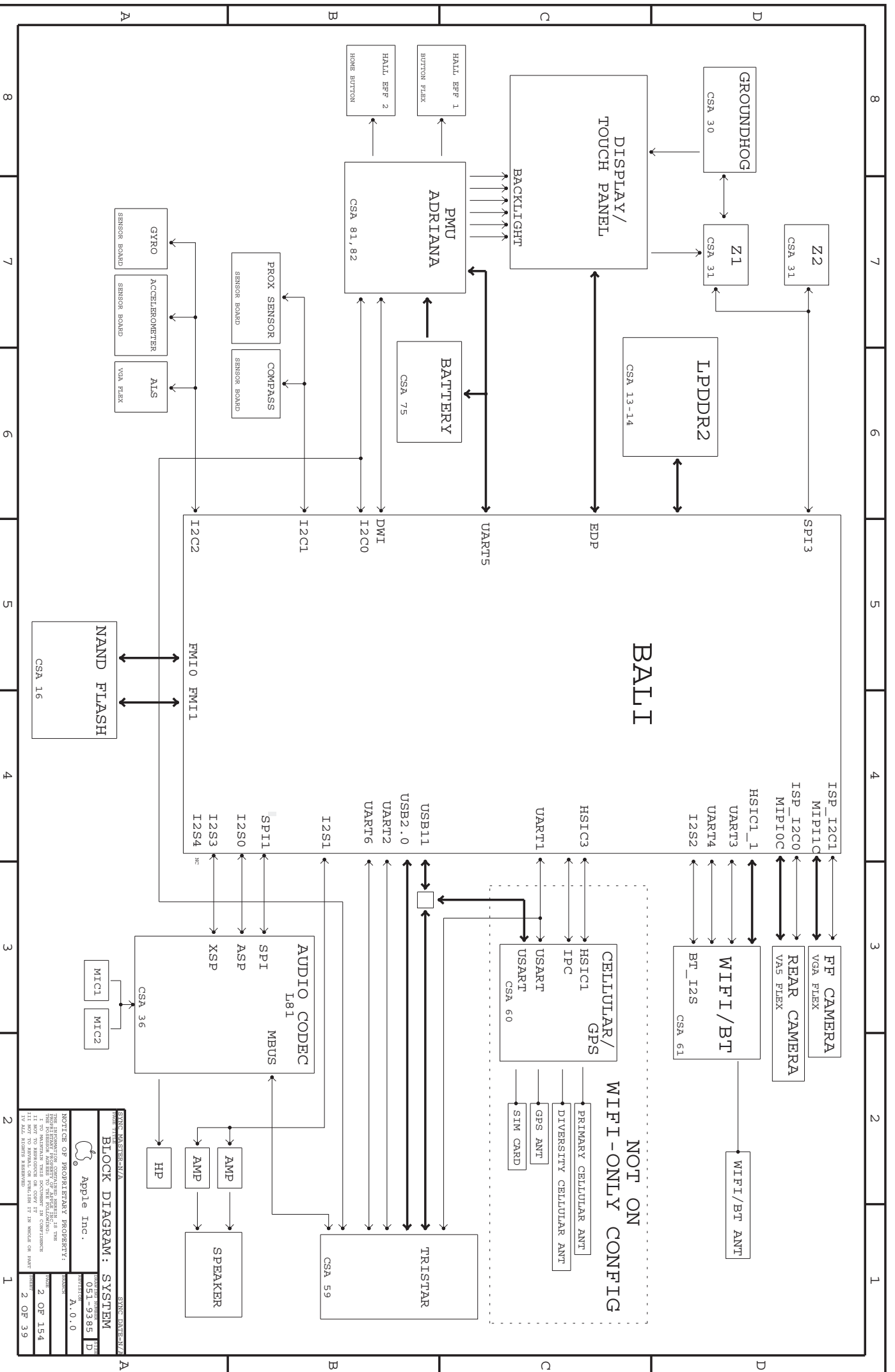
	PDF CSA	CONTENTS	SYNC MASTER	DATE	(SYSTEM DBT)
31	83	PMU: ADRIANA PAGE 3	MODHVT	12/06/2011	(MODHVT)
32	90	DEBUG/MISC.	MIB	11/09/2011	(AWANDA)
33	93	TEST/HOLES/FIDUCIALS	N/A	N/A	(AWANDA)
34	121	POWER ALIASES	N/A	N/A	(MODHVT)
35	150	CONSTRAINTS: MIB RULES	MIB	11/09/2011	(AWANDA)
36	151	CONSTRAINTS: LOW SPEED BUS	MIB	11/09/2011	(AWANDA)
37	152	CONSTRAINTS: DISPLAY/AUDIO	MIB	11/09/2011	(AWANDA)
38	153	CONSTRAINTS: DDR/FMI	MIB	11/09/2011	(AWANDA)
39	154	CONSTRAINTS: POWER / GND	MIB	11/09/2011	(AWANDA)

REV	ECN	DESCRIPTION OF REVISION	CR APPD	DATE
A	0001544595	PRODUCTION RELEASED		2012-07-26

DATE: 12/06/2011
TIME: 10:29:36
DRAWING: X140 MIB

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051-9385
A.0.0
1 OF 154
1 OF 39



**NOT ON
WIFI-ONLY CONFIG**

SYMC MASTER/SLAVE		SYMC DATE/TIME	
BLOCK DIAGRAM: SYSTEM			
DATE	TIME	DATE	TIME
05/11/05	09:38:51	10/11/05	10:15:4
VERSION	PROJECT	VERSION	PROJECT
A.0.0		2 OF 154	
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173 AND 174 ARE RESERVED.			

Page Notes

Power Alliance required by this page:
 (XMM)
 Global Alliance required by this page:
 (XMM)
 Row option provided by this page:

BOM OPTIONS
 ATTRIBUTES
 1000 COMP13
 1000 COMP14
 1000 COMP15
 1000 COMP16
 1000 COMP17
 1000 COMP18
 1000 COMP19
 1000 COMP20
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 1000 COMP41
 1000 COMP42
 1000 COMP43
 1000 COMP44
 1000 COMP45
 1000 COMP46
 1000 COMP47
 1000 COMP48
 1000 COMP49
 1000 COMP50

BOM GROUP	BOM OPTIONS
BASIC	COMMON, ALTERNATE

MECHANICAL PARTS

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460
SOC/PMU	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
AUDIO	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
QIARRE	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
MEMOXX	1	MEMOIC, 1, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460

BARCODE LABEL/EPCRC CODES

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460
SOC/PMU	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
AUDIO	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
QIARRE	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
MEMOXX	1	MEMOIC, 1, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460

SCH AND BOARD P/N

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460
SOC/PMU	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
AUDIO	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
QIARRE	1	PMUIC, LANBER, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460
MEMOXX	1	MEMOIC, 1, 100V, 6MLA, X144	PMU_P1440	CATEGORY	MEMO_A_1460

SOC

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

PMU

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

SDRAM

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

NAND

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

16GB FLASH CONFIGURATIONS

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

32GB FLASH CONFIGURATIONS

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

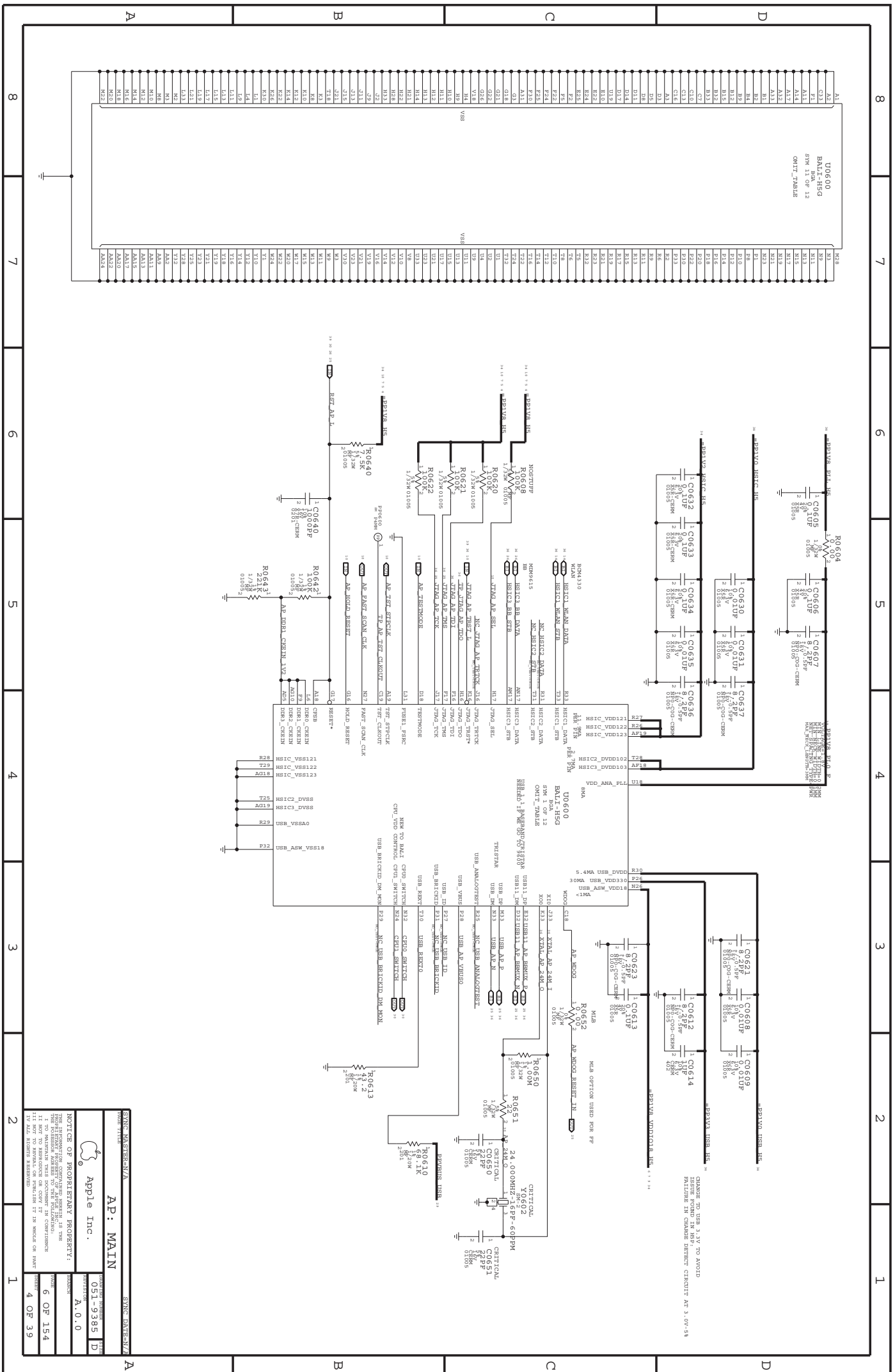
64GB FLASH CONFIGURATIONS

PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

128GB FLASH CONFIGURATIONS

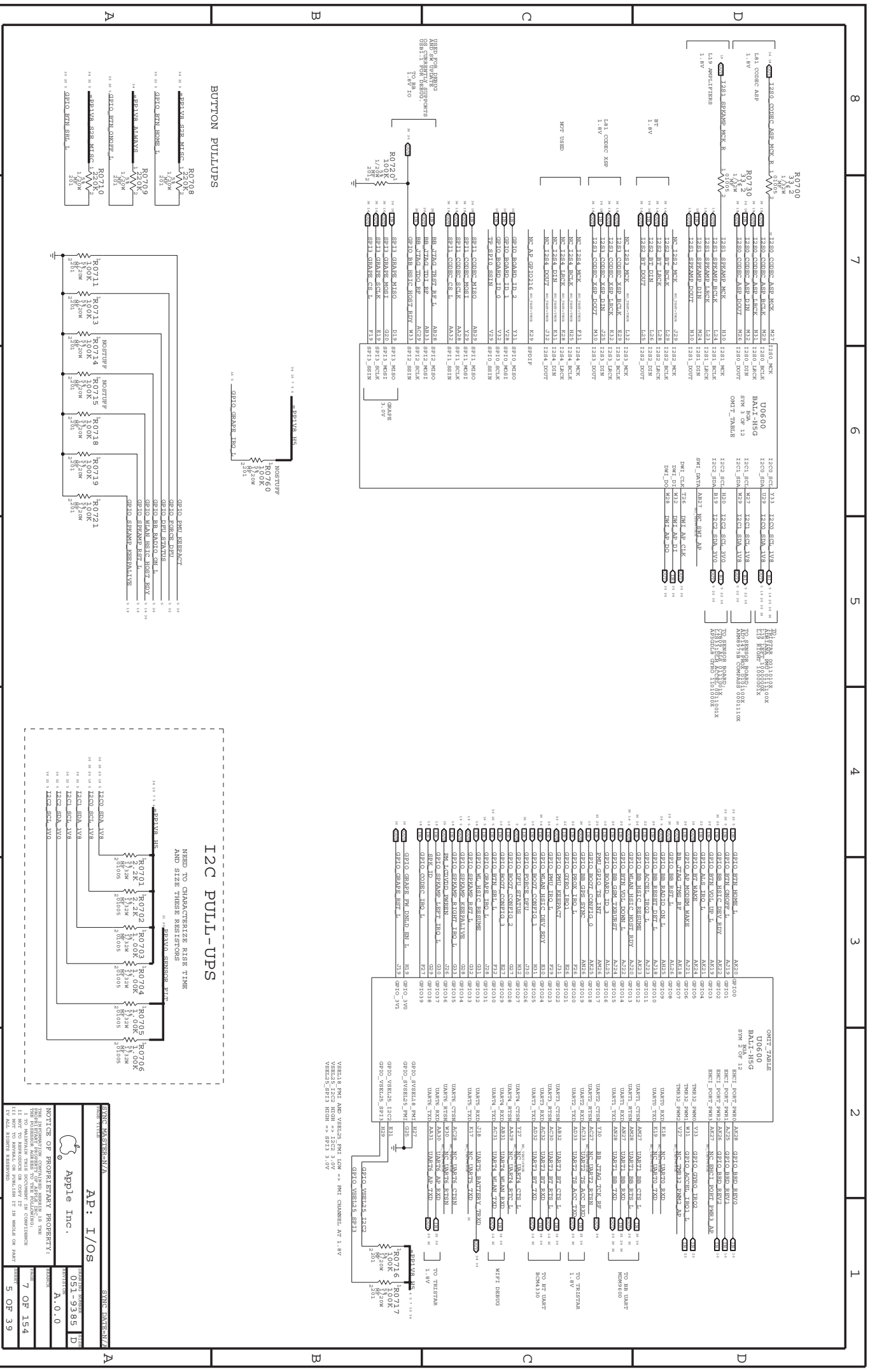
PART	QTY	DESCRIPTION	REFERENCE DESIGNATOR (S)	CATEGORY	BOM OPTION
MEMO	1	MEMO FOR 439-3716 OMLA A 1460	MEMO_P1460	CATEGORY	MEMO_A_1460

SYNCH MASTER/SLAVE
 BOM TABLES
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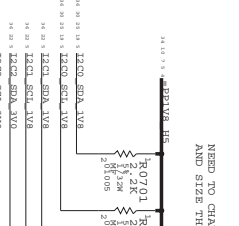
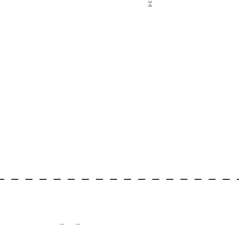
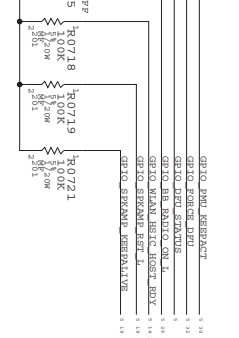
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 6 OF 154
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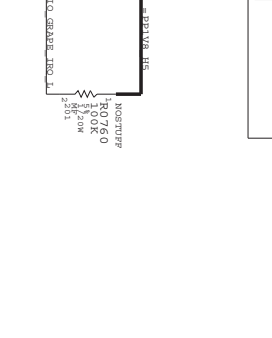
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BUTTON PULLUPS



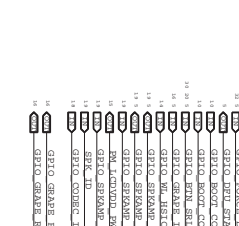
I2C PULL-UPS
 NEED TO CHARACTERIZE RISE TIME
 AND SIZE THESE RESISTORS

NOT USED



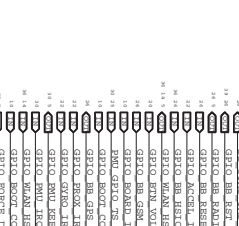
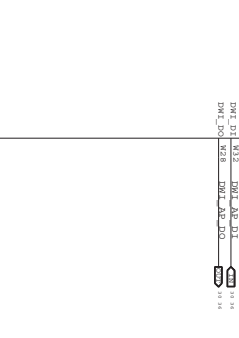
I2C PULL-UPS
 NEED TO CHARACTERIZE RISE TIME
 AND SIZE THESE RESISTORS

GPIO PULL-UPS



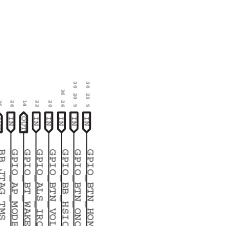
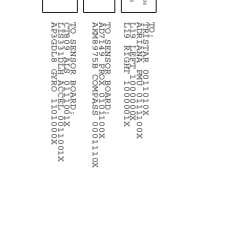
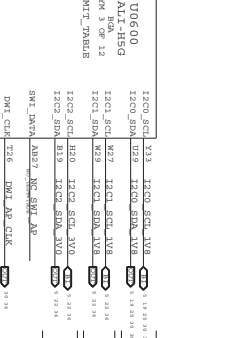
I2C PULL-UPS
 NEED TO CHARACTERIZE RISE TIME
 AND SIZE THESE RESISTORS

GPIO PULL-UPS



I2C PULL-UPS
 NEED TO CHARACTERIZE RISE TIME
 AND SIZE THESE RESISTORS

GPIO PULL-UPS

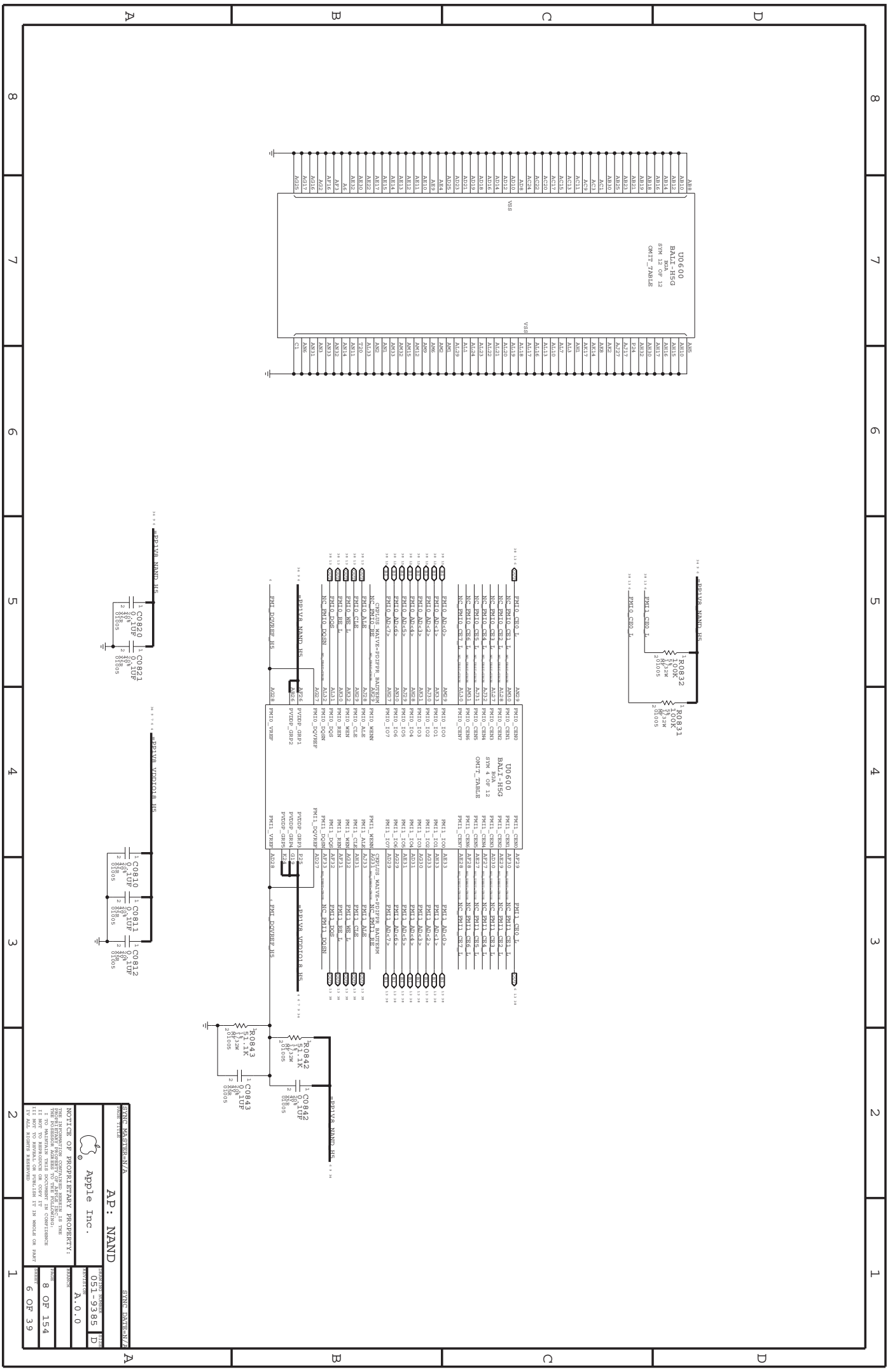


I2C PULL-UPS
 NEED TO CHARACTERIZE RISE TIME
 AND SIZE THESE RESISTORS

Component	Value	Pin	Pin
R0700	100K	GPIO_0	GPIO_0
R0701	100K	GPIO_1	GPIO_1
R0702	100K	GPIO_2	GPIO_2
R0703	100K	GPIO_3	GPIO_3
R0704	100K	GPIO_4	GPIO_4
R0705	100K	GPIO_5	GPIO_5
R0706	100K	GPIO_6	GPIO_6
R0707	100K	GPIO_7	GPIO_7
R0708	100K	GPIO_8	GPIO_8
R0709	100K	GPIO_9	GPIO_9
R0710	100K	GPIO_10	GPIO_10
R0711	100K	GPIO_11	GPIO_11
R0712	100K	GPIO_12	GPIO_12
R0713	100K	GPIO_13	GPIO_13
R0714	100K	GPIO_14	GPIO_14
R0715	100K	GPIO_15	GPIO_15
R0716	100K	GPIO_16	GPIO_16
R0717	100K	GPIO_17	GPIO_17
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R0797	100K	GPIO_97	GPIO_97
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SYNC MASTER/SLAVE
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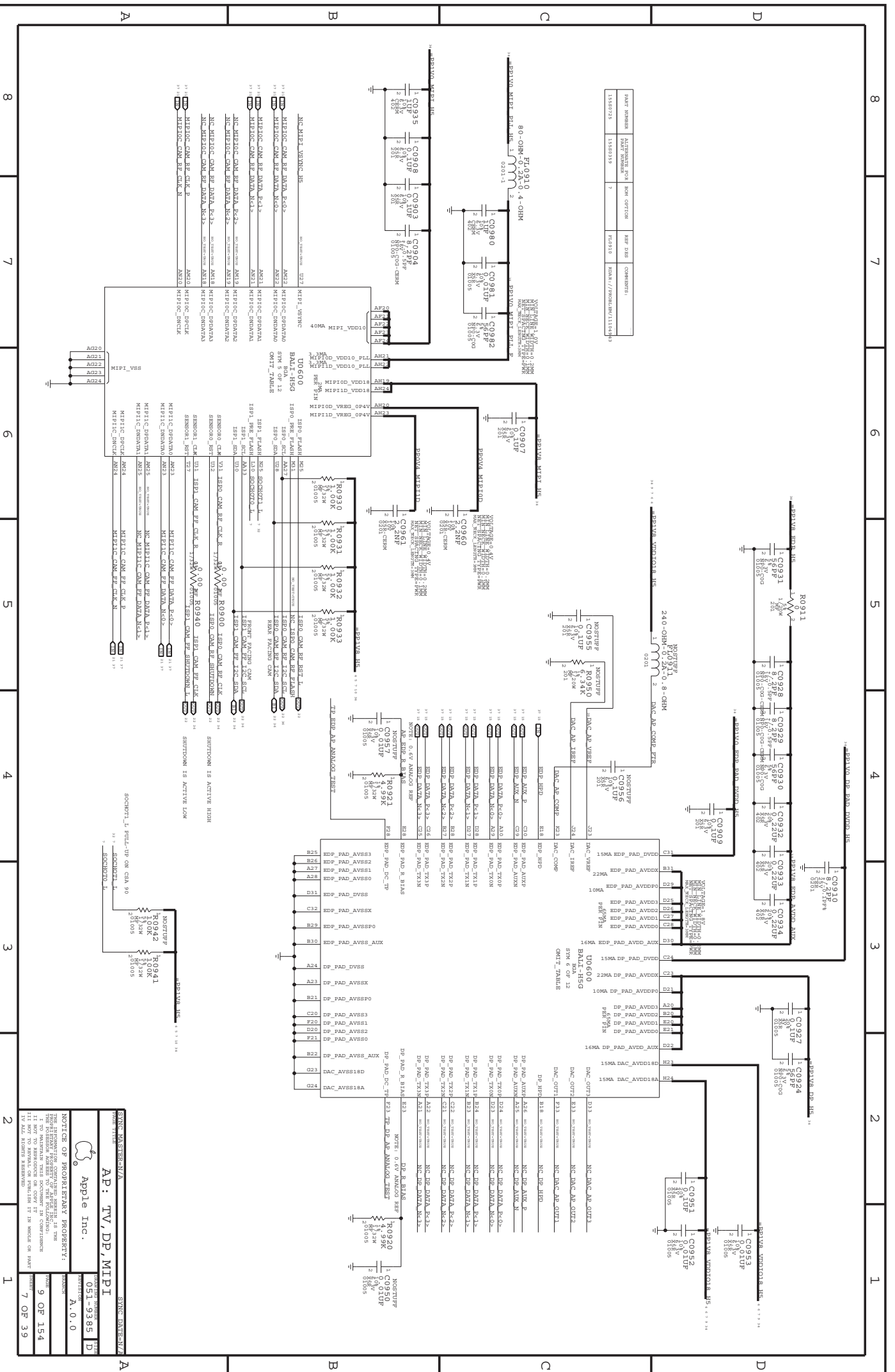
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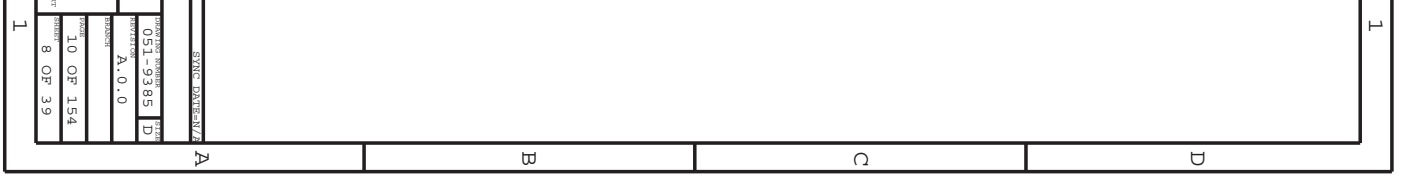
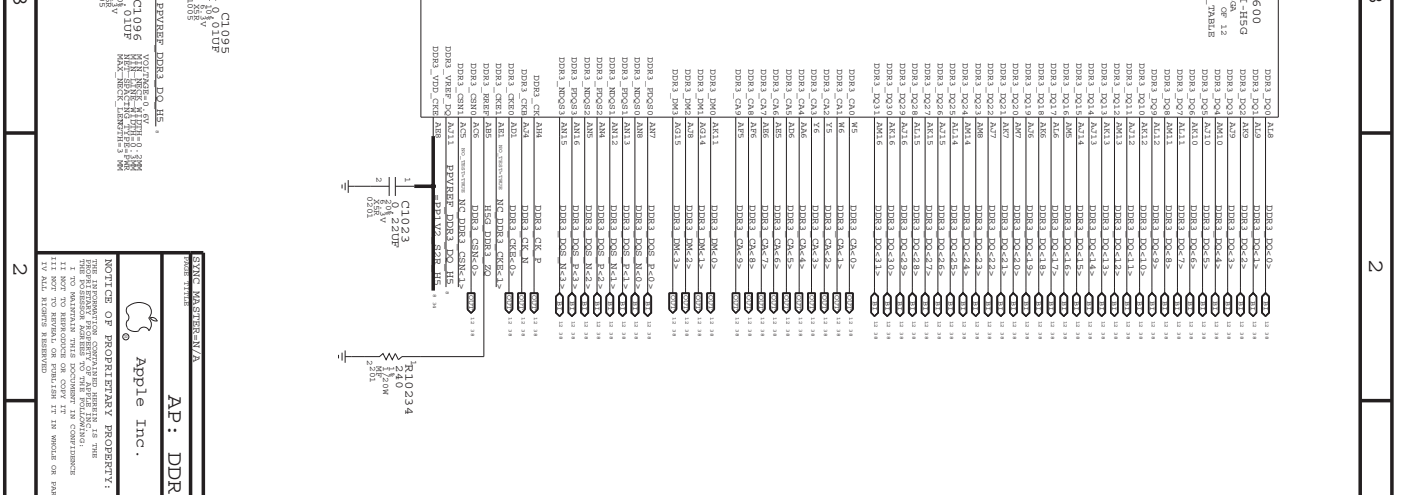
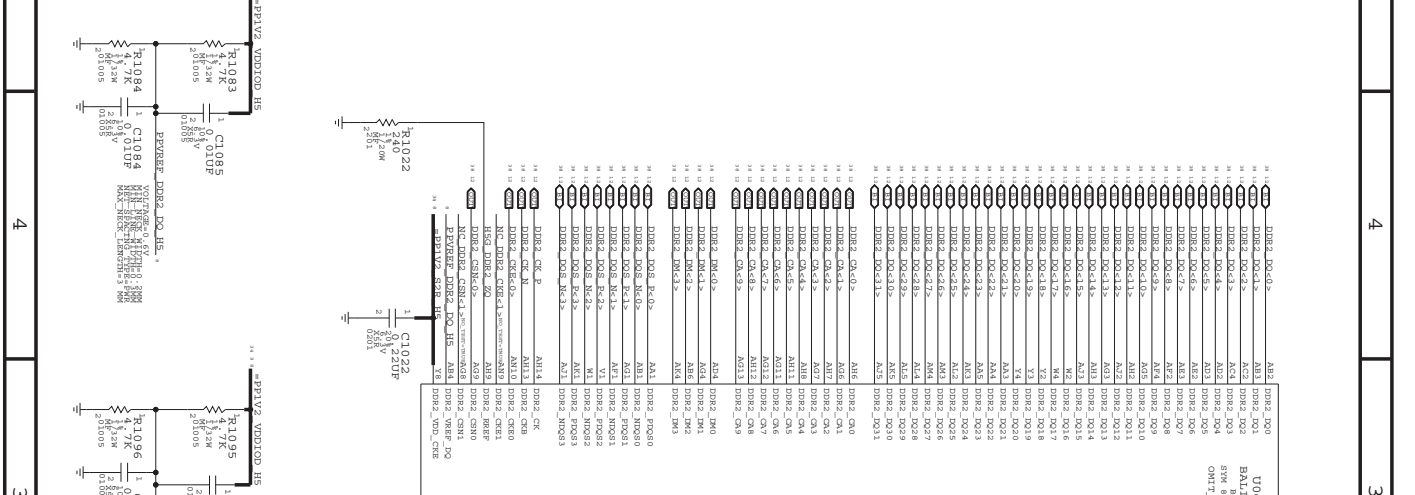
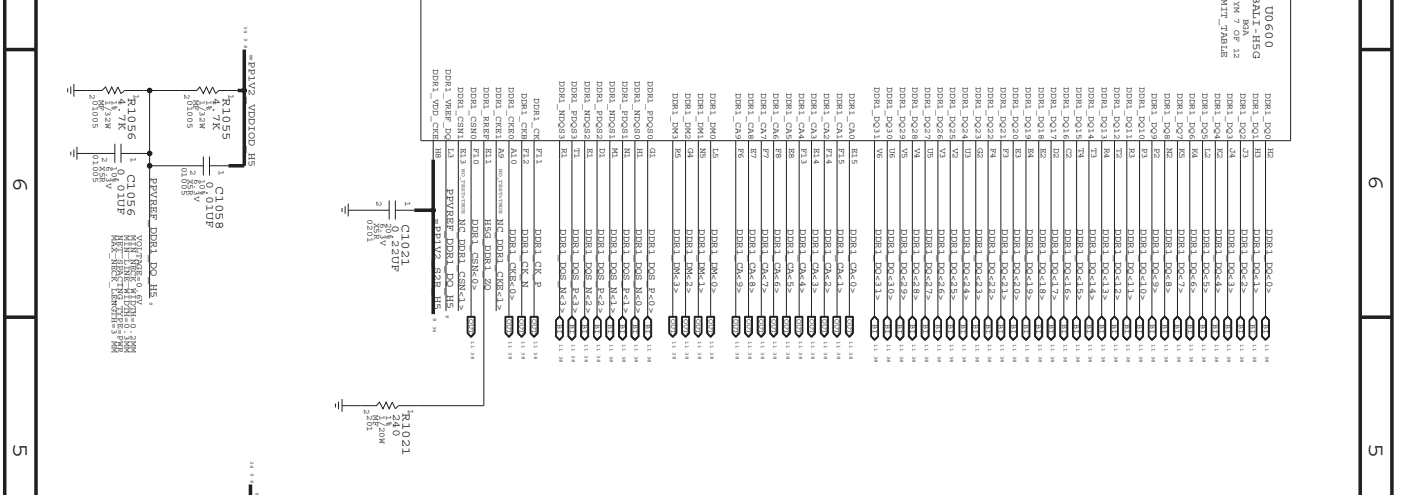
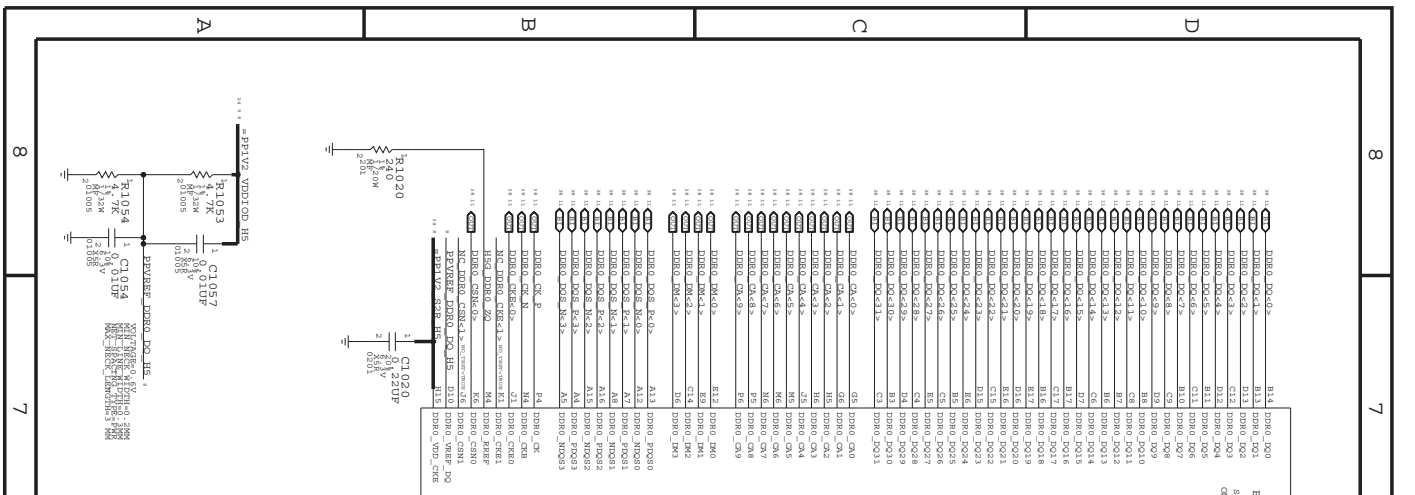
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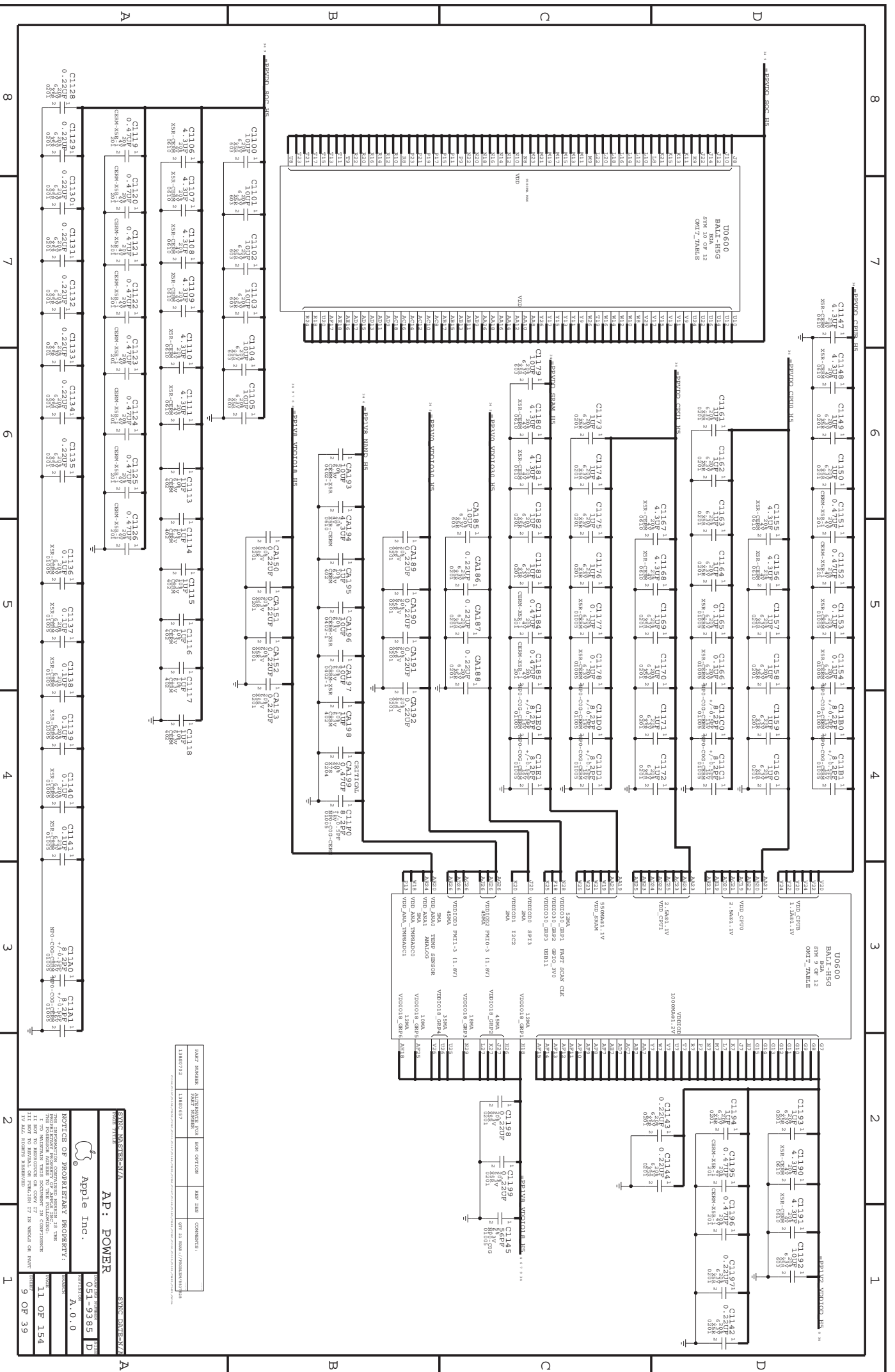
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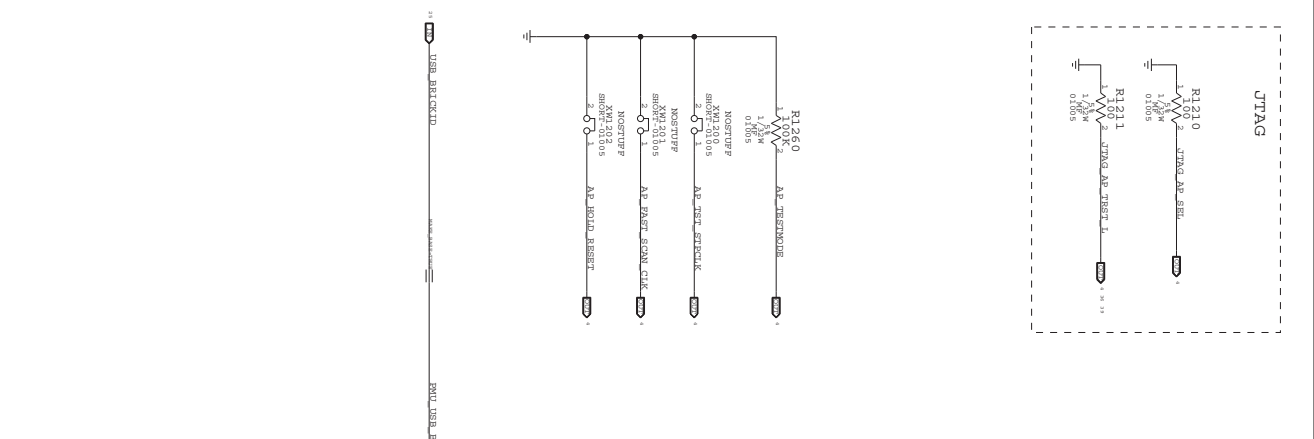
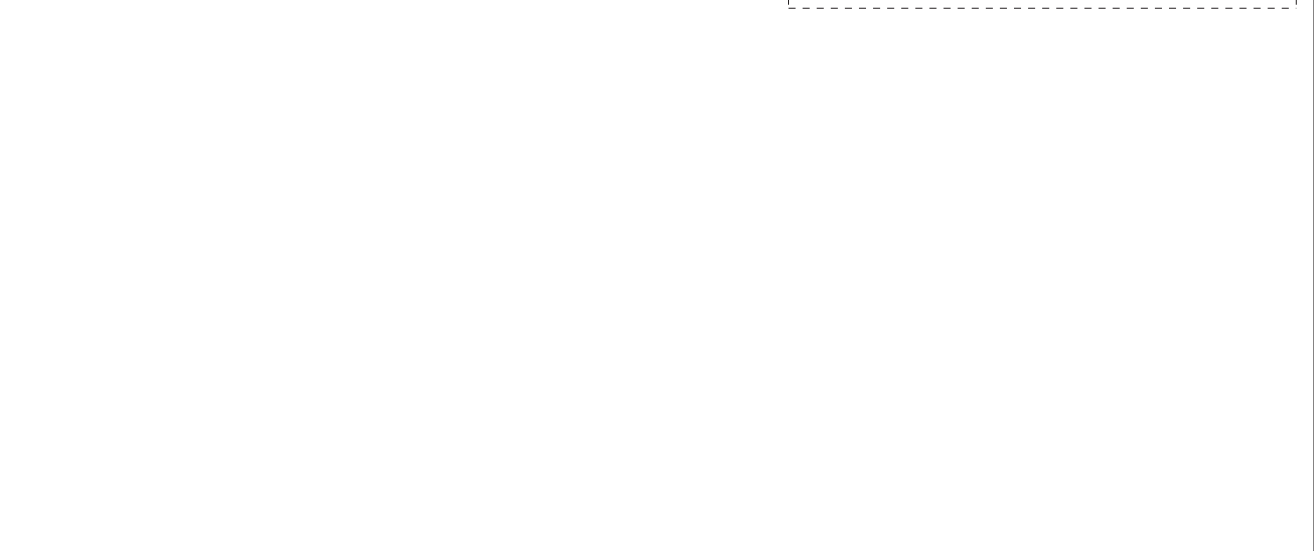
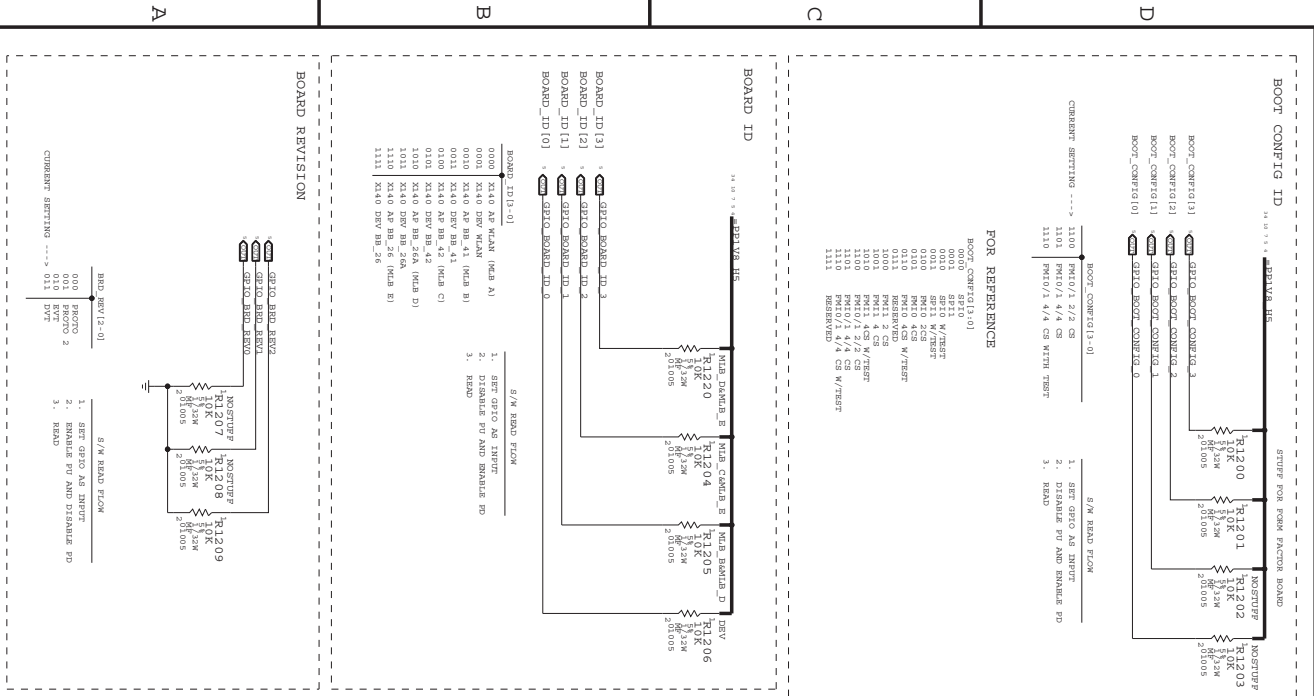
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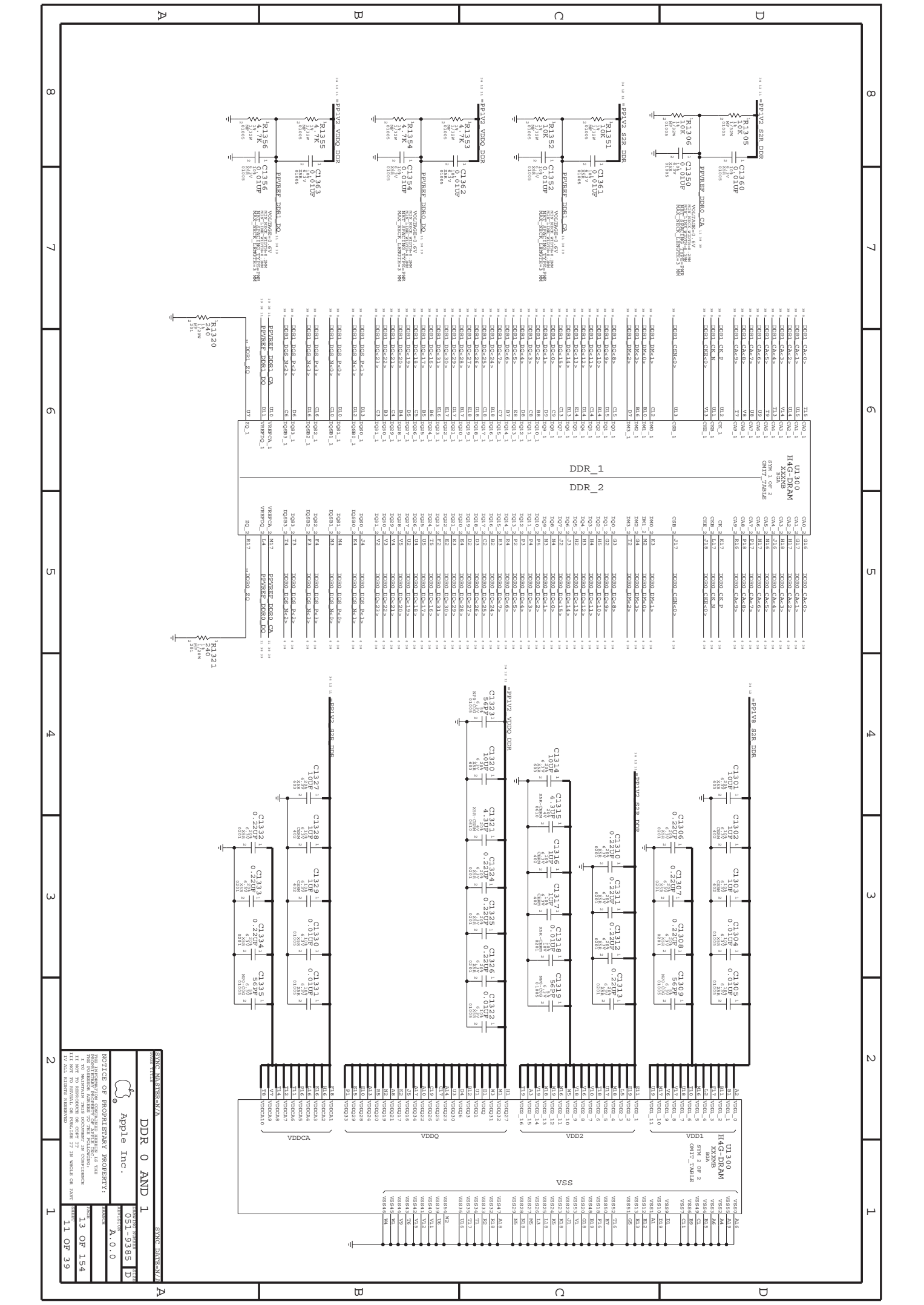
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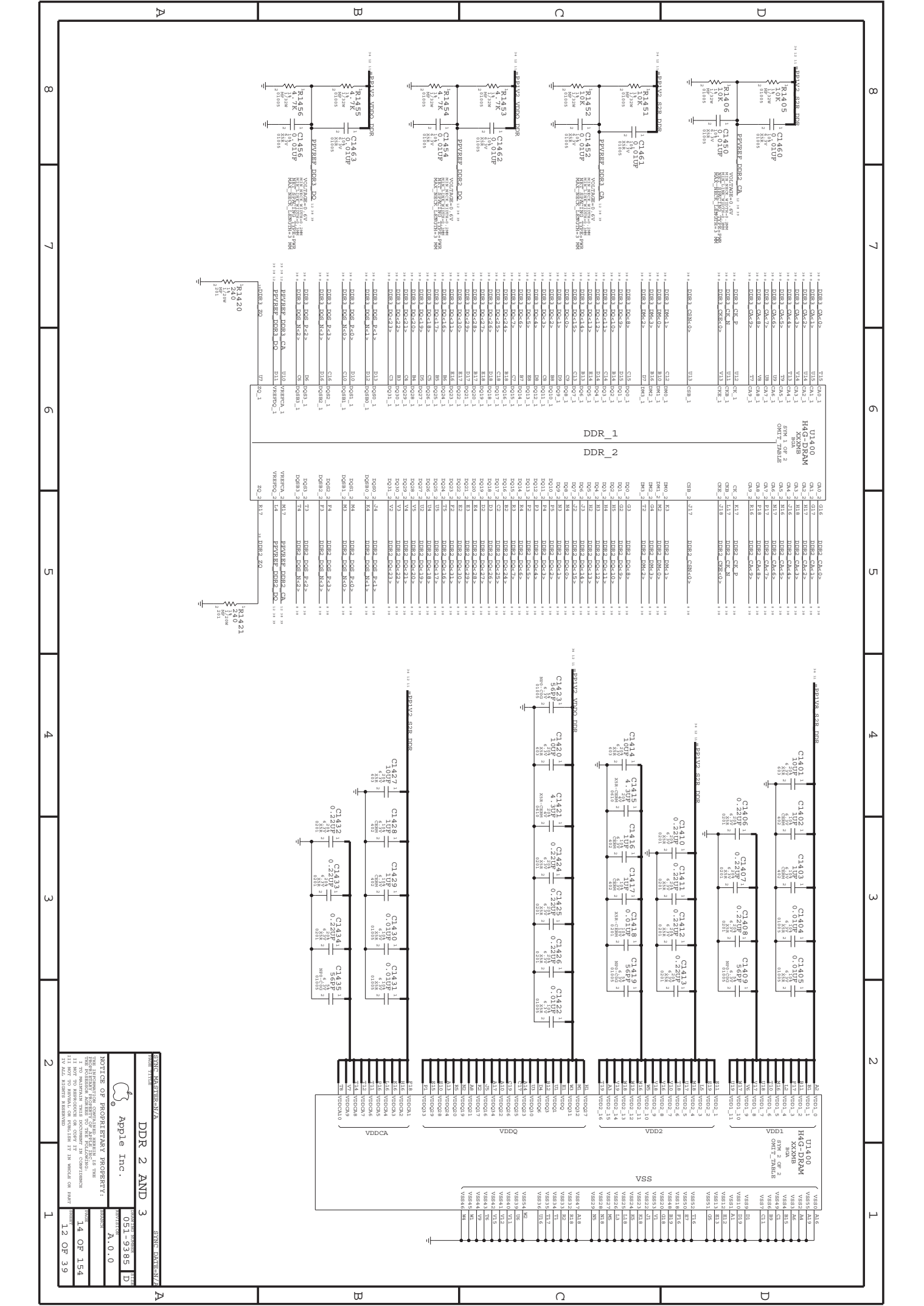
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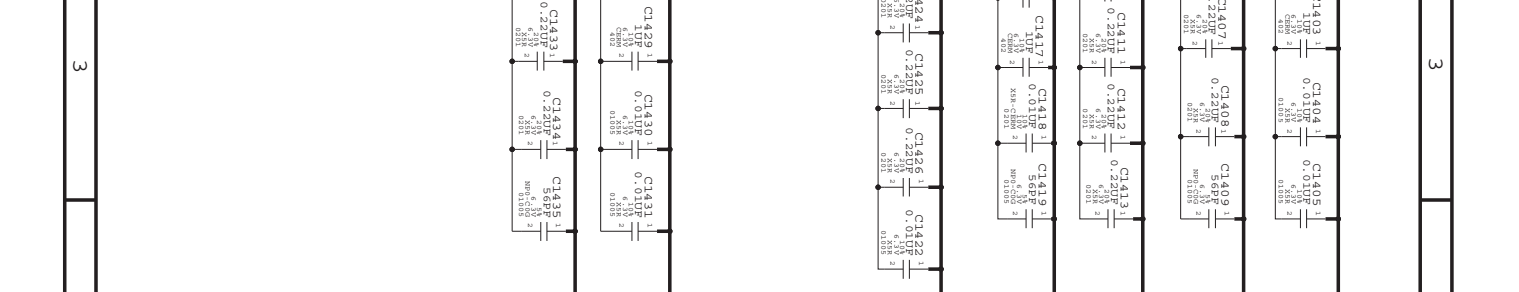
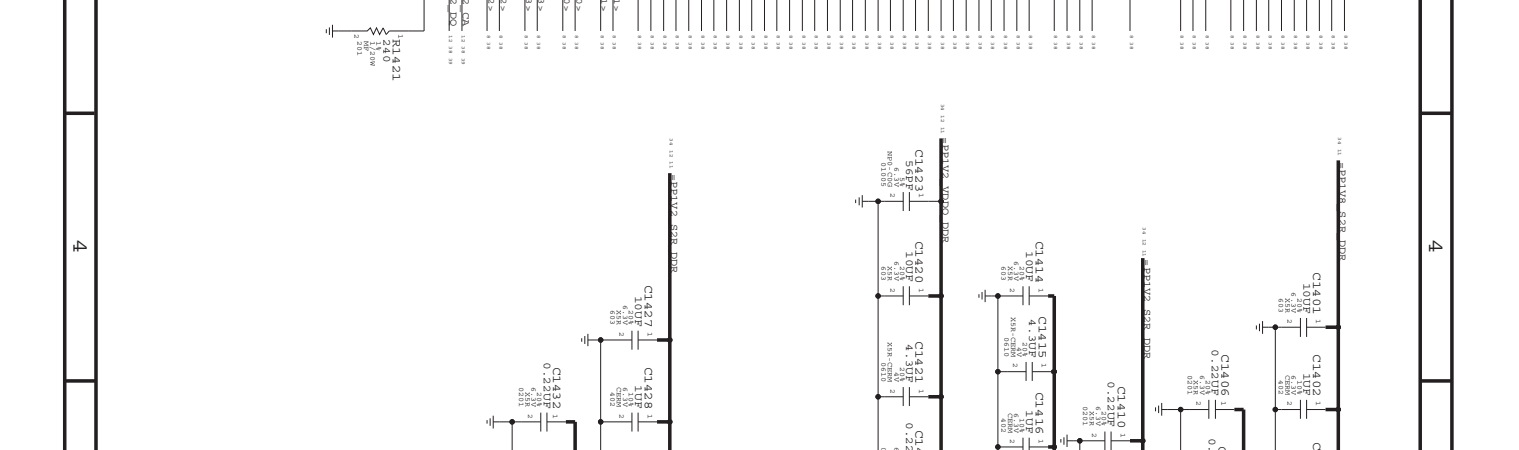
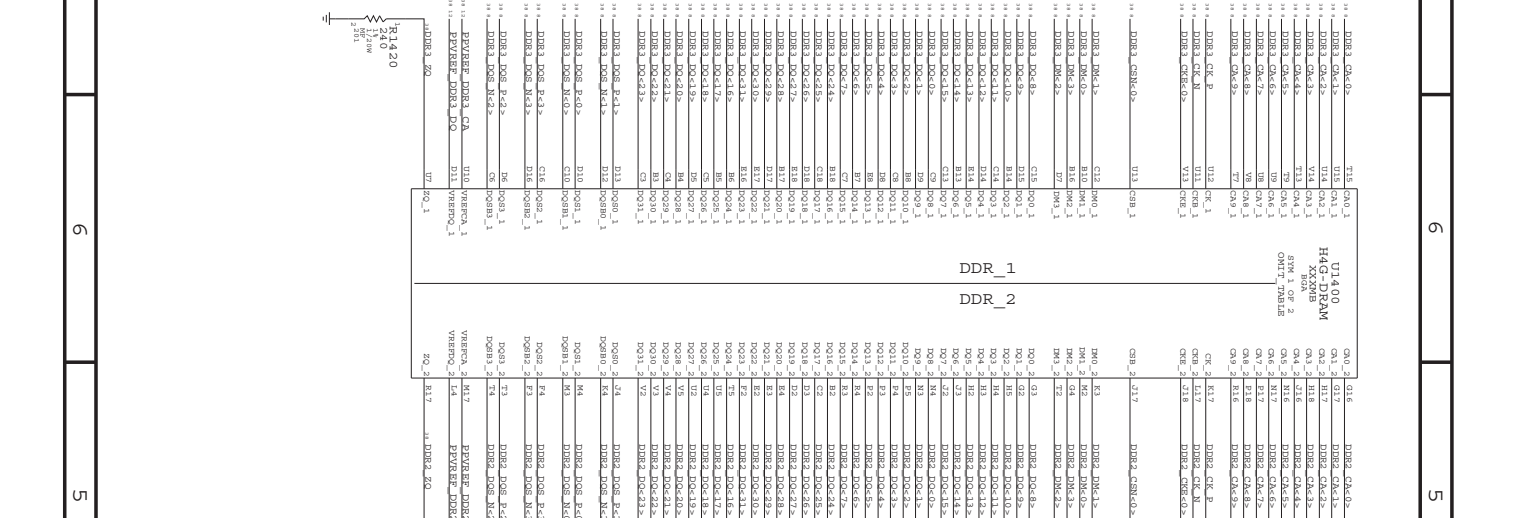
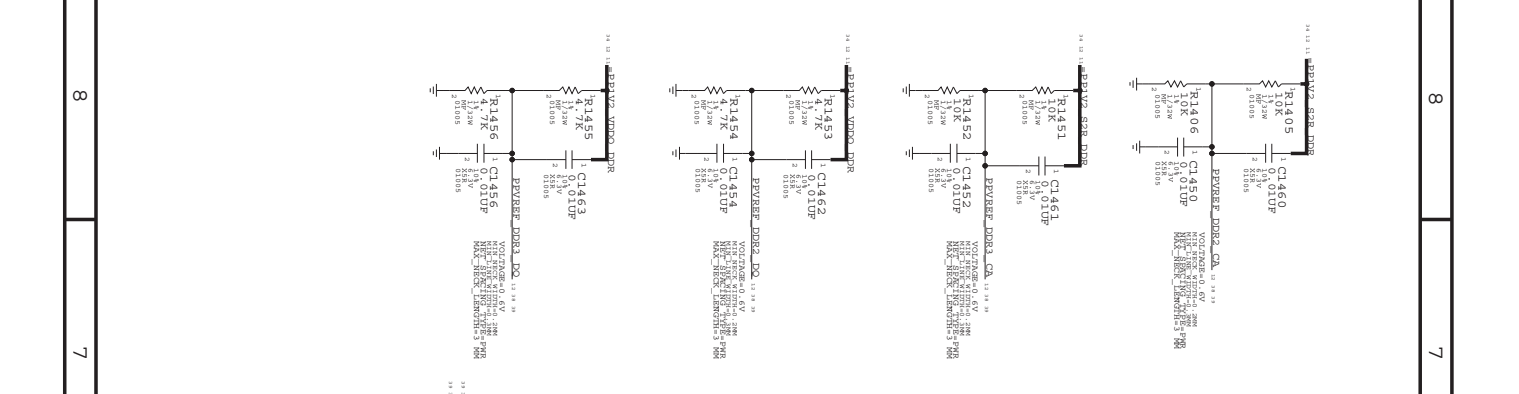
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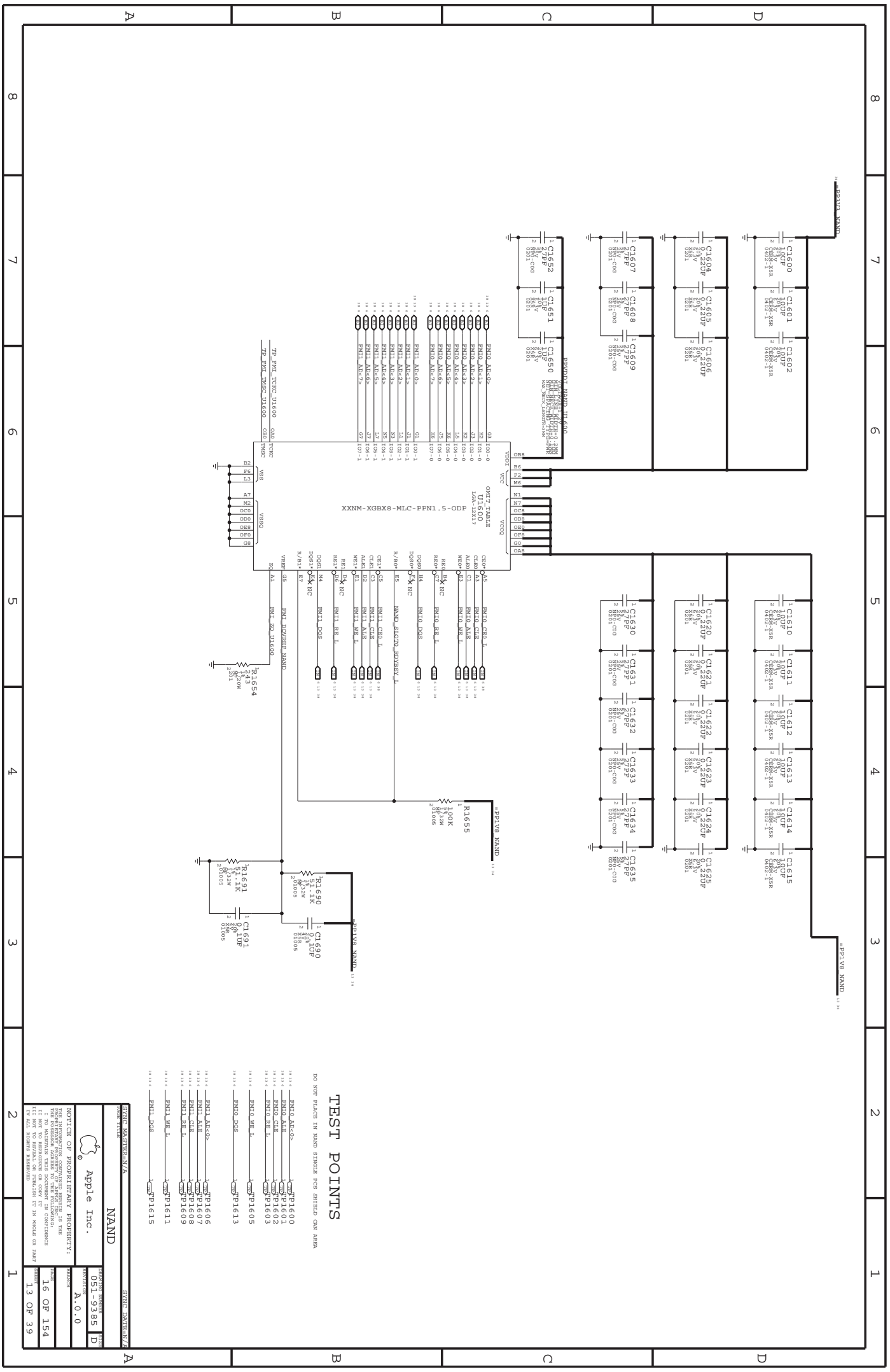
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DDR1_2	SRV	2	DDR1_2	SRV	2
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DDR1_4	U1300	1	DDR1_4	U1300	1
DDR1_5	H407DRAM	1	DDR1_5	H407DRAM	1
DDR1_6	SRV	2	DDR1_6	SRV	2
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DDR1_8	U1300	1	DDR1_8	U1300	1
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DDR1_13	H407DRAM	1	DDR1_13	H407DRAM	1
DDR1_14	SRV	2	DDR1_14	SRV	2
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DDR1_16	U1300	1	DDR1_16	U1300	1
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DDR1_169	H407DRAM	1	DDR1_169	H407DRAM	1
DDR1_170	SRV	2	DDR1_170	SRV	2
DDR1_171	OMIT_TABLE	1	DDR1_171	OMIT_TABLE	1
DDR1_172	U1300	1	DDR1_172	U1300	1
DDR1_173	H407DRAM	1	DDR1_173	H407DRAM	1
DDR1_174	SRV	2	DDR1_174	SRV	2
DDR1_175	OMIT_TABLE	1	DDR1_175	OMIT_TABLE	1
DDR1_176	U1300	1	DDR1_176	U1300	1
DDR1_177	H407DRAM	1	DDR1_177	H407DRAM	1
DDR1_178	SRV	2	DDR1_178	SRV	2
DDR1_179	OMIT_TABLE	1	DDR1_179	OMIT_TABLE	1
DDR1_180	U1300	1	DDR1_180	U1300	1
DDR1_181	H407DRAM	1	DDR1_181	H407DRAM	1
DDR1_182	SRV	2	DDR1_182	SRV	2
DDR1_183	OMIT_TABLE	1	DDR1_183	OMIT_TABLE	1
DDR1_184	U1300	1	DDR1_184	U1300	1
DDR1_185	H407DRAM	1	DDR1_185	H407DRAM	1
DDR1_186	SRV	2	DDR1_186	SRV	2
DDR1_187	OMIT_TABLE	1	DDR1_187	OMIT_TABLE	1
DDR1_188	U1300	1	DDR1_188	U1300	1
DDR1_189	H407DRAM	1	DDR1_189	H407DRAM	1
DDR1_190	SRV	2	DDR1_190	SRV	2
DDR1_191	OMIT_TABLE	1	DDR1_191	OMIT_TABLE	1
DDR1_192	U1300	1	DDR1_192	U1300	1
DDR1_193	H407DRAM	1	DDR1_193	H	



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TEST POINTS

DO NOT PLACE IN NAND SINGLE PER SHEET OR ASBA

- H111 EMTD.AND-C- CP16600
- H111 EMTD.AND-C- CP16601
- H111 EMTD.AND-C- CP16602
- H111 EMTD.AND-C- CP16603
- H111 EMTD.WR.L- CP16605
- H111 EMTD.DOS- CP16613
- H111 EMTD.AND-C- CP16606
- H111 EMTD.AND-C- CP16607
- H111 EMTD.AND-C- CP16608
- H111 EMTD.AND-C- CP16609
- H111 EMTD.WR.L- CP16611
- H111 EMTD.DOS- CP16615

PART NUMBER/A
NAND
 PART NUMBER
 051-2385 1D
 REVISION
 A.0.0
 DATE
 16 OF 154
 SHEET
 13 OF 39

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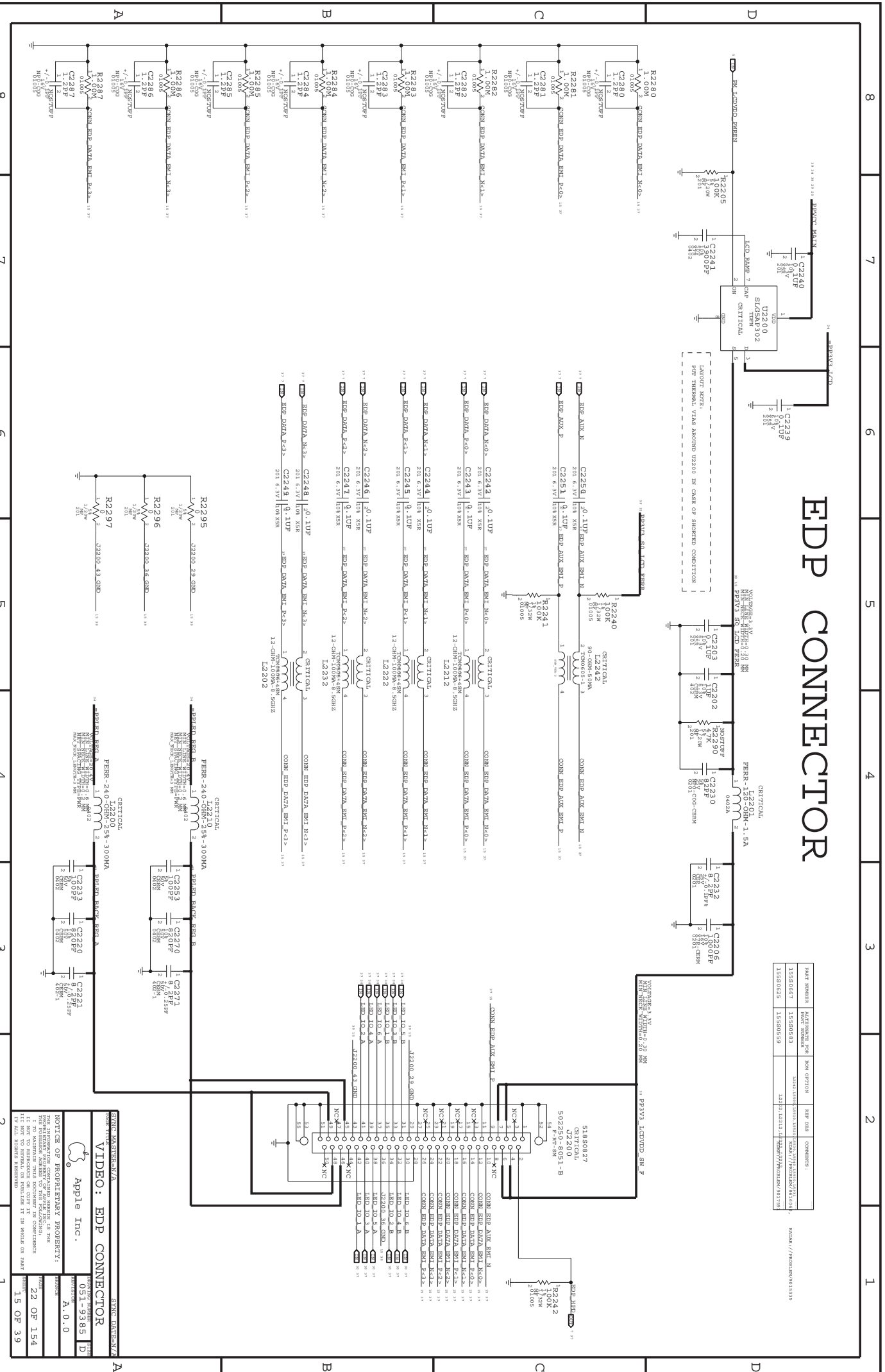
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EDP CONNECTOR

PART NUMBER	ALTERNATE P/N	NON OPTION	REV. DATE	COMMENTS
15180067	15180083		12/20/12	INITIAL RELEASE
15180082	15180059		12/20/12	INITIAL RELEASE

MODEL: //PROMB09153135

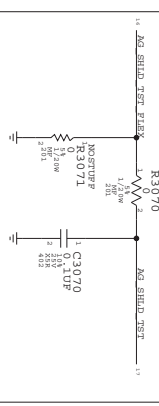


VIDEO: EDP CONNECTOR
 DATE: 05/19/85
 VERSION: A.0.0
 PAGE: 22 OF 154
 OF: 15 OF 39

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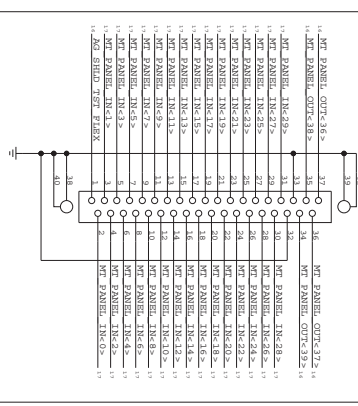


CONNECTORS TO GRAPE FLEX



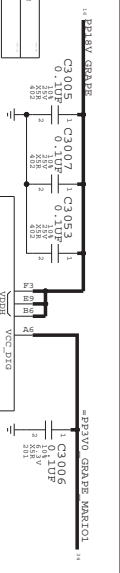
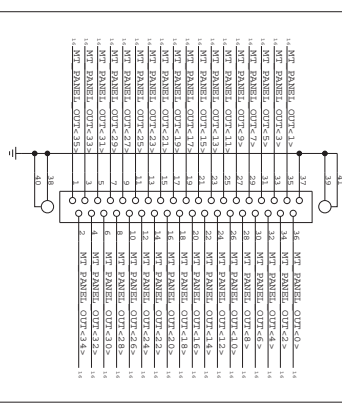
**P/N 5180828
MATRES WITH LEFTMOST GRAPE FLEX TAIL**

502250-8037-B
U3010

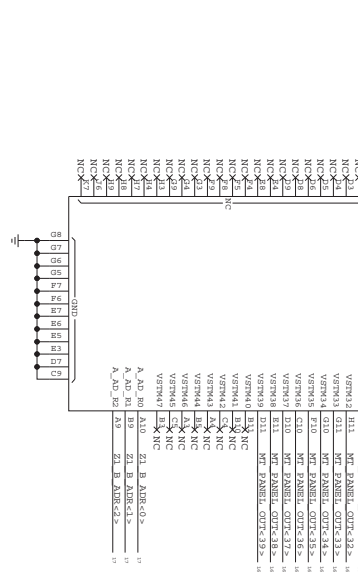
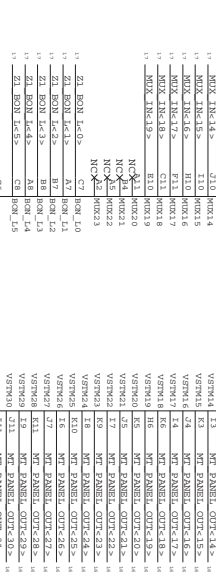
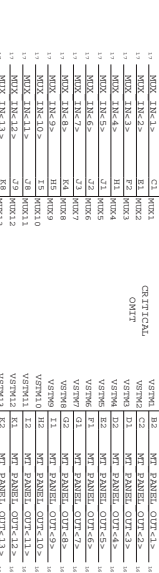


MATRES WITH RIGHTMOST GRAPE FLEX TAIL

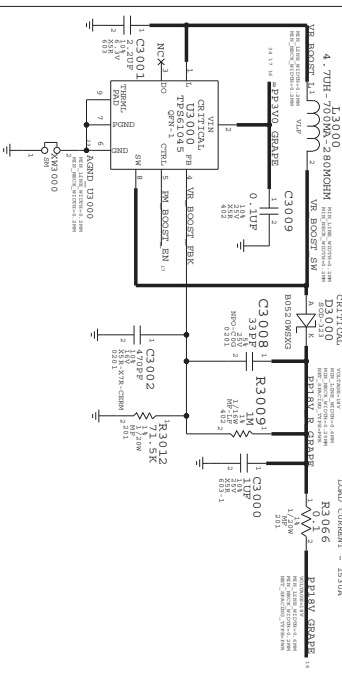
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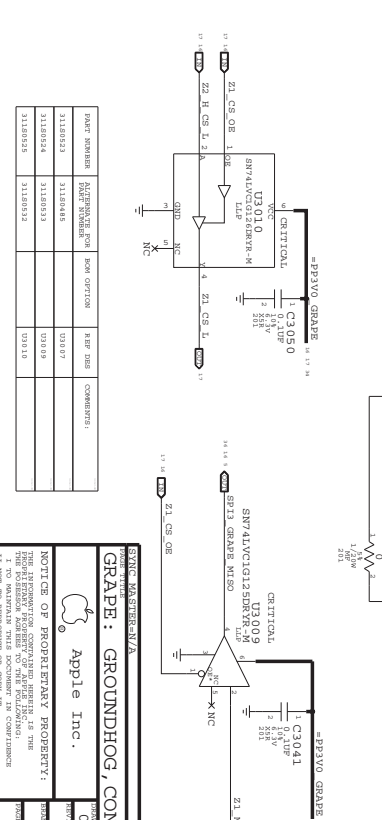
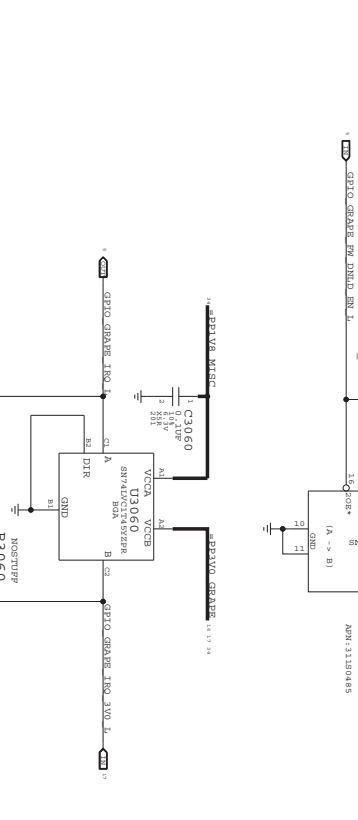
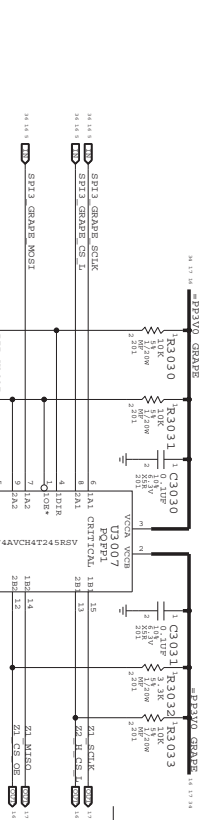
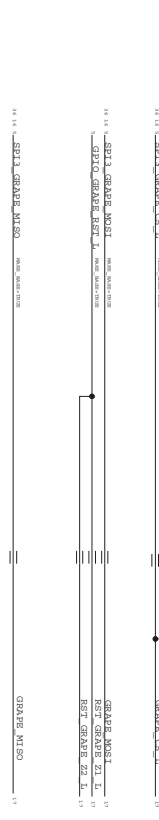
P31V0 GRAPE MAIN I/O



BOOST CONVERTER



P31V0 GRAPE MAIN I/O



PART NUMBER	MANUFACTURER	BOB OPTION	PART SIZE	COMMENTS
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2110044	2110044	0000	0000	
2110045	2110045	0000	0000	

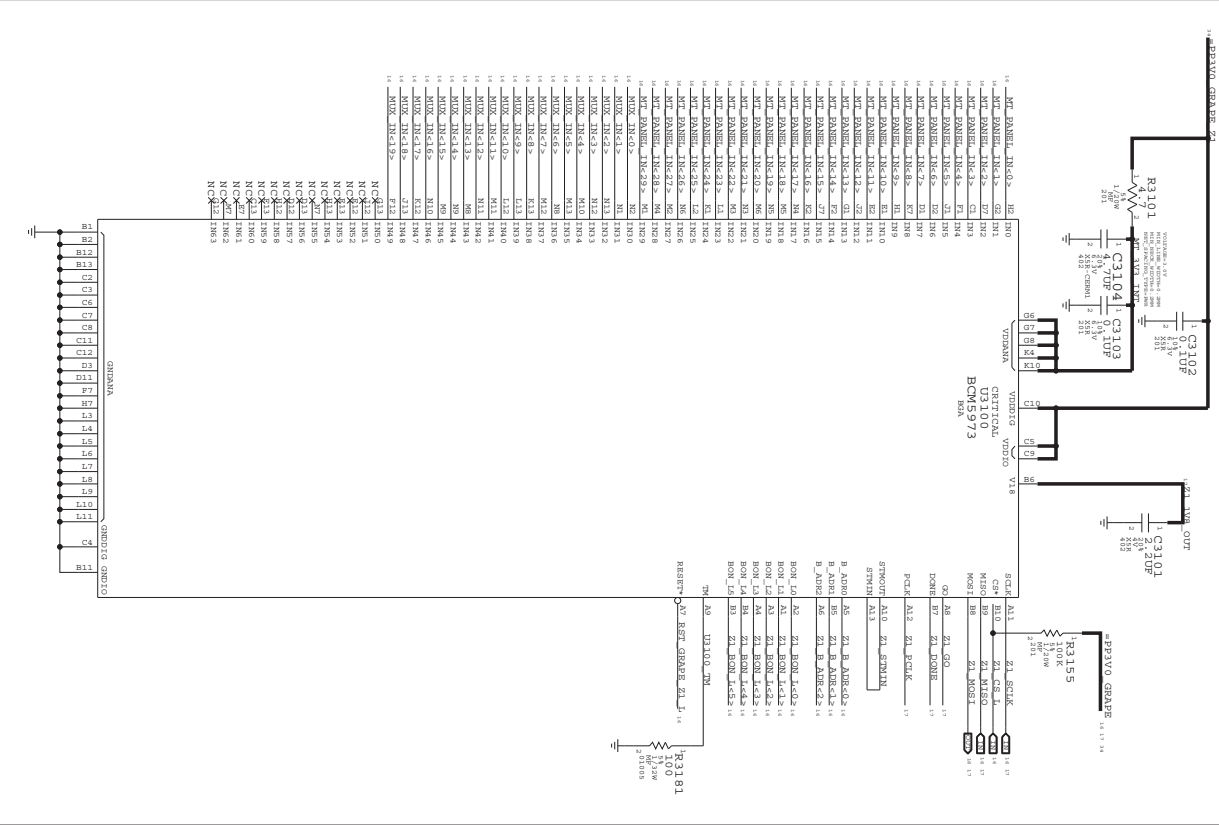
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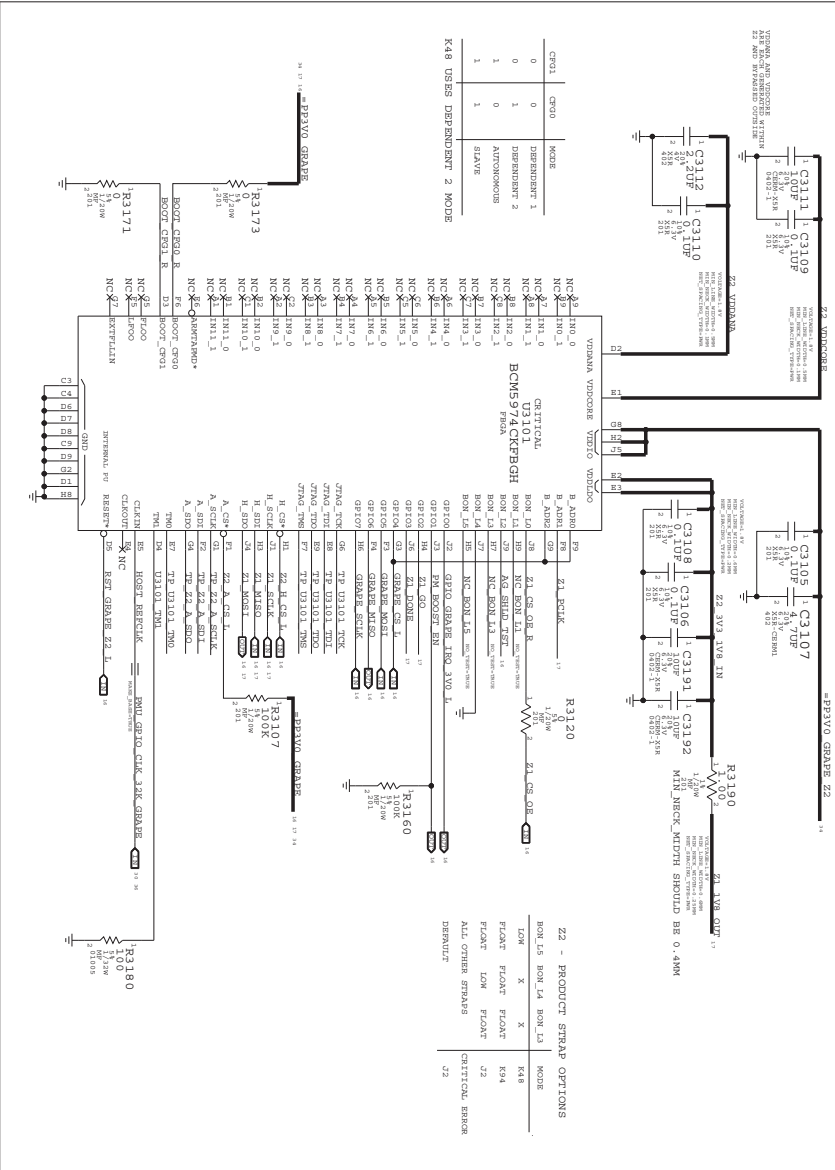
DATE: 05/23/85
VERSION: A.0.0
PAGE: 30 OF 154
REV: 16 OF 39

SYNCHRONIZATION DATA
GRAPE: GROUNDHOG, CONN, BOOST

ZEPHYR 1 + ASIC



ARM9 MCU (Z2 BASED)



CP01	CP02	MODE
0	0	DISCONNECT 1
1	0	DISCONNECT 2
1	0	ANTONOMOUS
1	1	SLAVE

K48 USES DEPENDENT 2 MODE

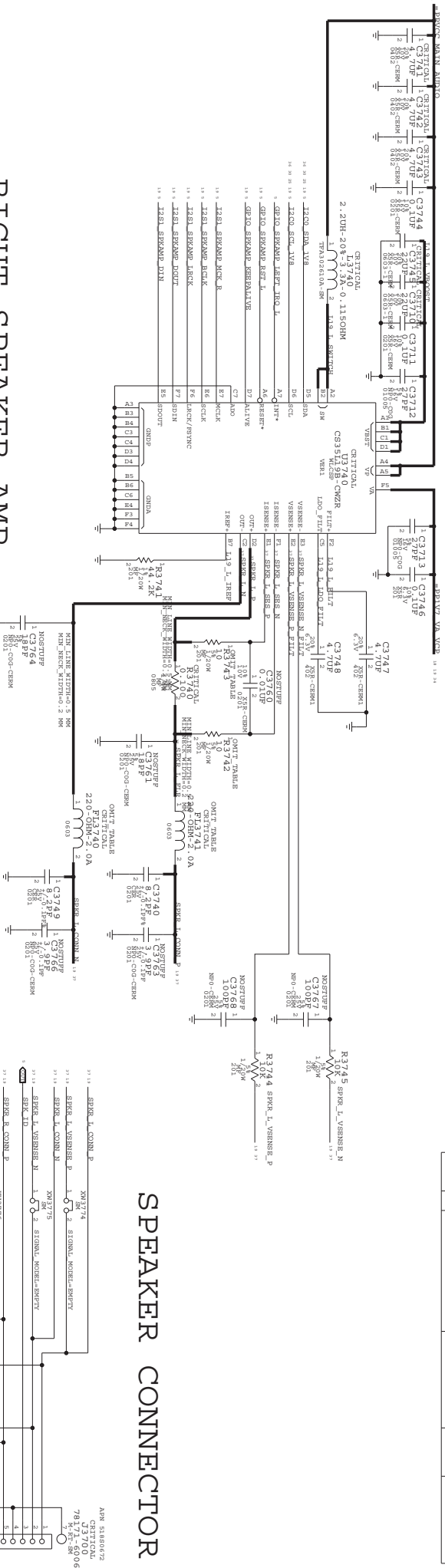
SYNCH MASTER/SLAVE

GRAPPE: Z1, Z2
 051-9385-1D
 A.0.0

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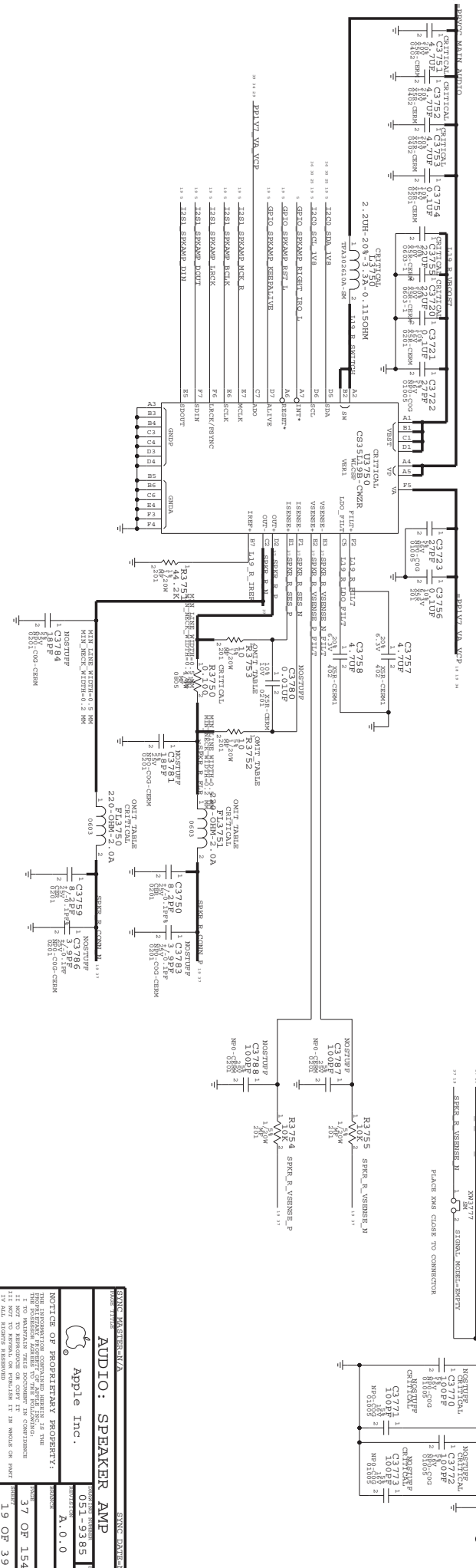
LEFT SPEAKER AMP

I2C ADDRESS: 1000000X



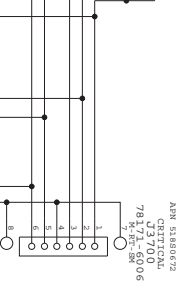
RIGHT SPEAKER AMP

I2C ADDRESS: 1000001X



NAME	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	NON-CRITICAL
1133882-1	4	800V 10% 2200µF 2.0mm x 5.0mm (L)		1	3
1133882-2	4	800V 10% 2200µF 2.0mm x 5.0mm (L)		1	3

SPEAKER CONNECTOR



Apple Inc.

AUDIO: SPEAKER AMP

051-9385 ID

A.0.0

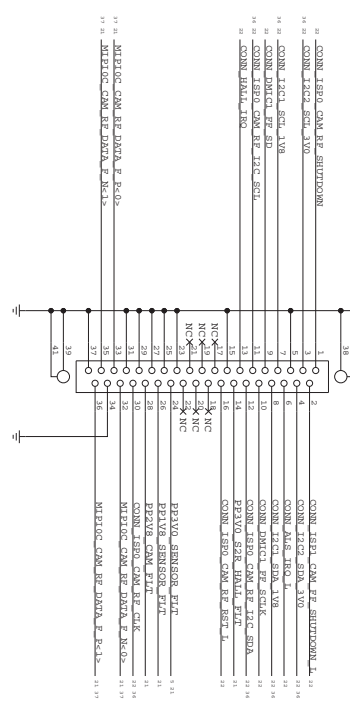
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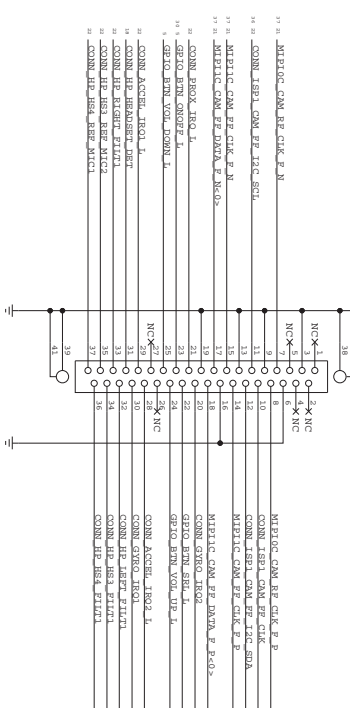
APN : 518S0828

0222 5400 37-B
 5022 5400 37-B
 PRT-SM



APN : 518S0828

0222 5400 37-B
 5022 5400 37-B
 PRT-SM



SENOR MASTER/VA

SENOR FLEX CONN

Apple Inc.

051 2385 10

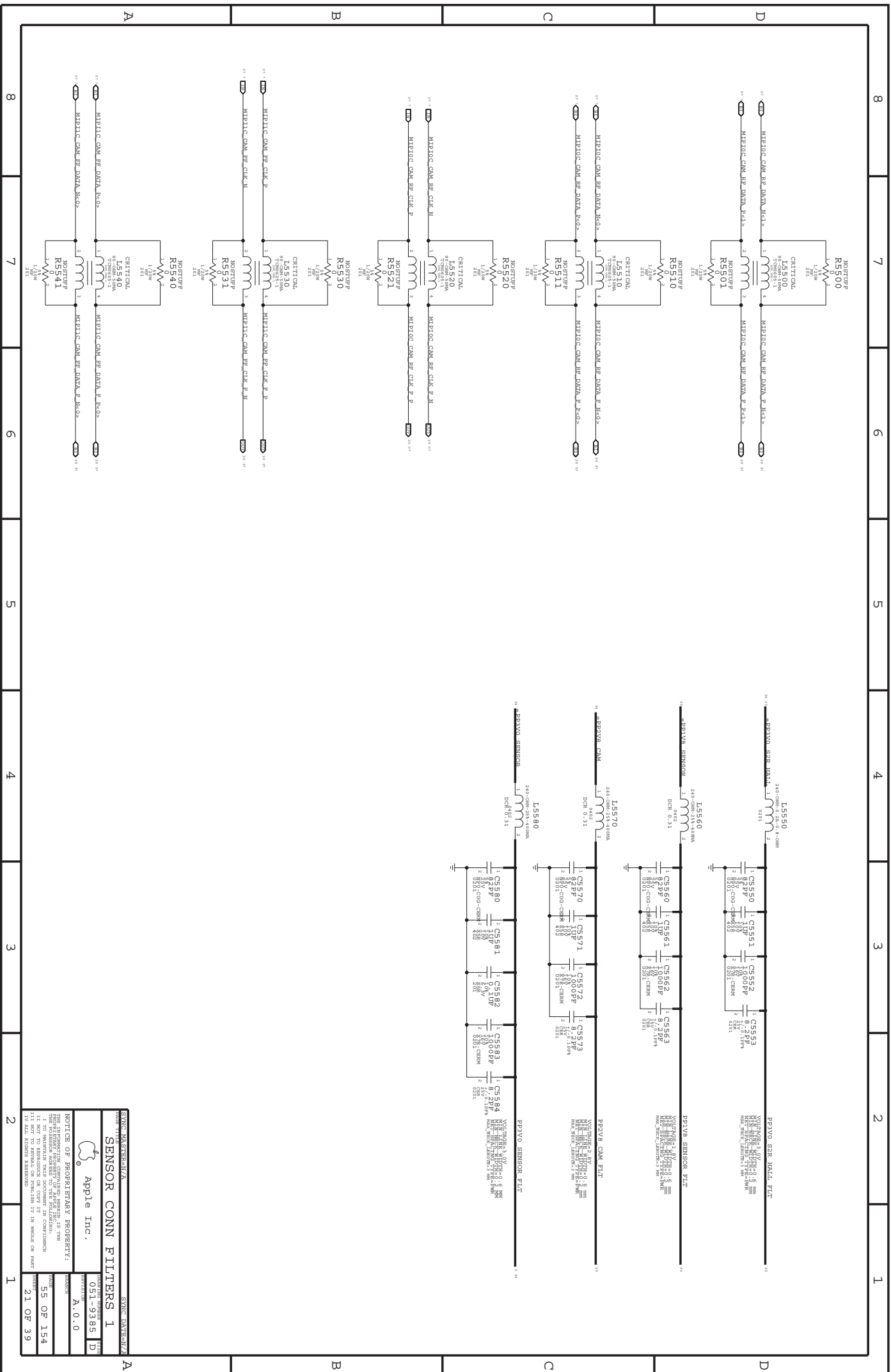
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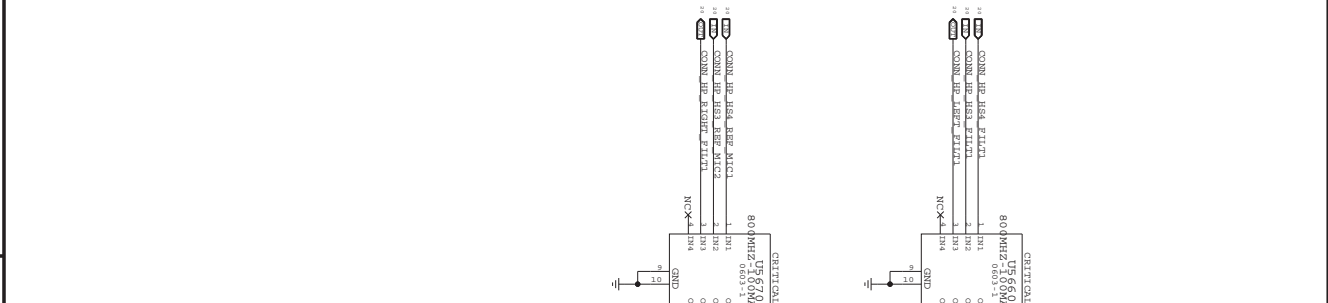
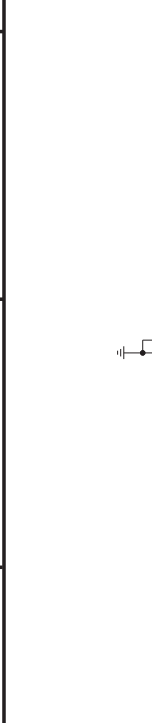
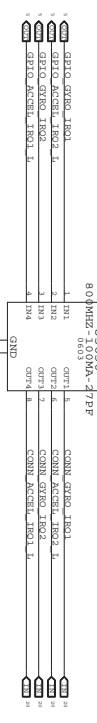
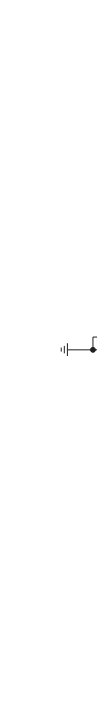
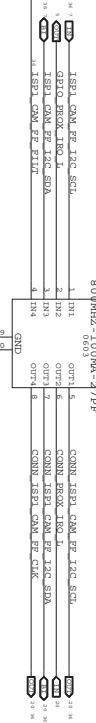
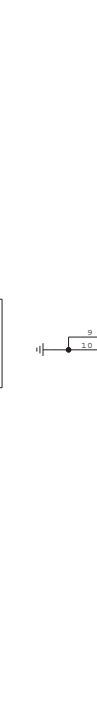
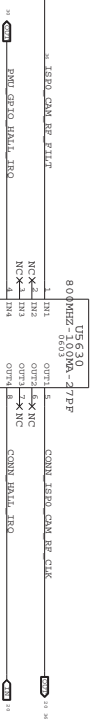
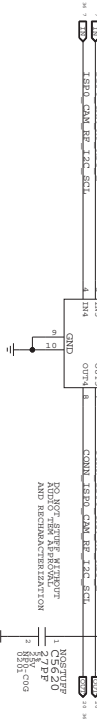
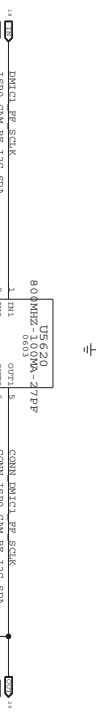
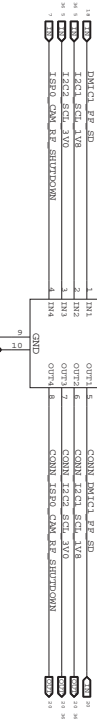
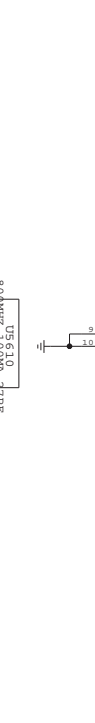
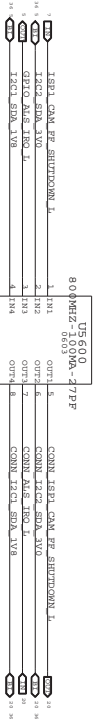
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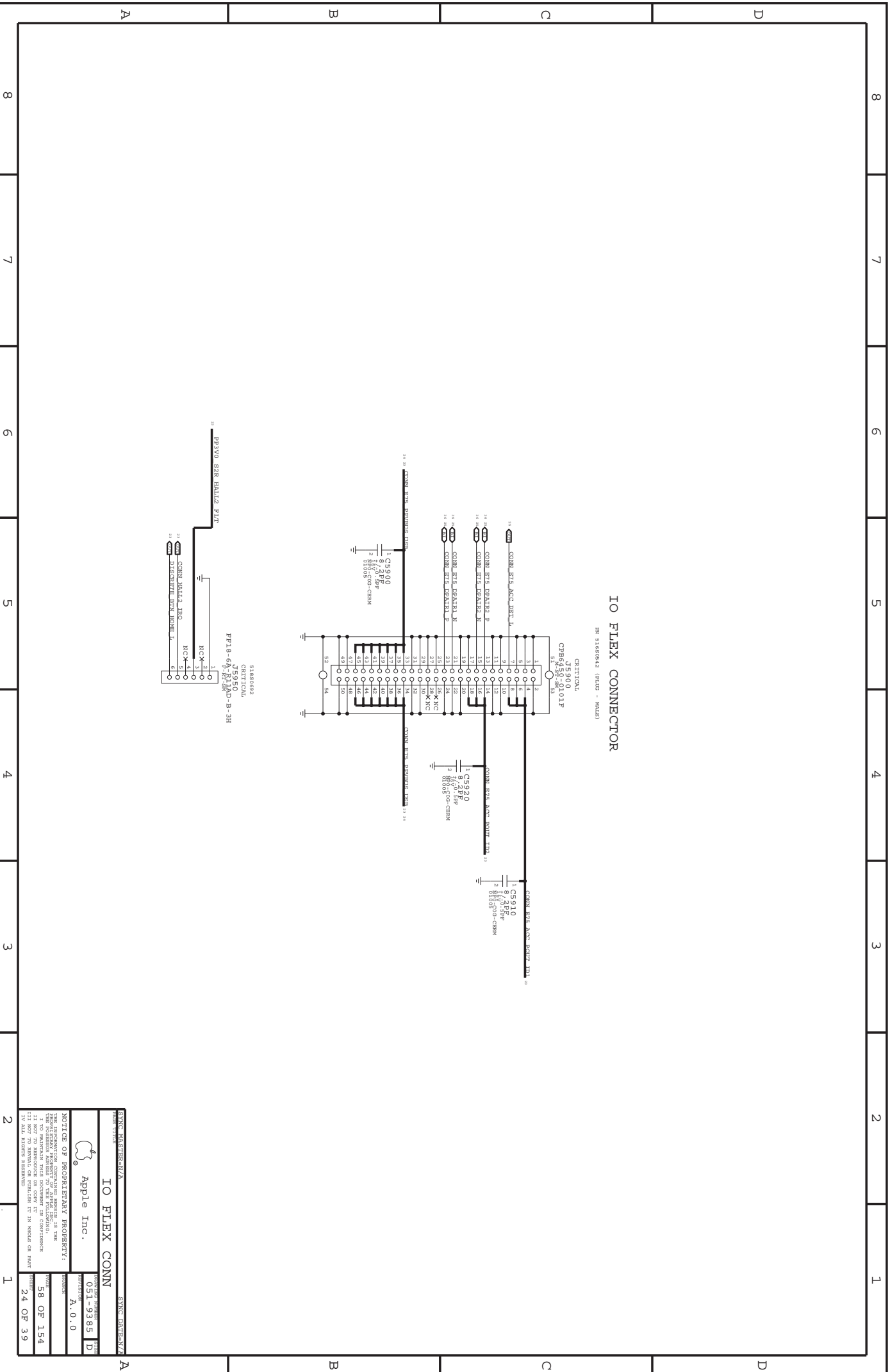


SENIC PARTS/REV/A SENSOR CONN FILTERS 1		SENIC PARTS/REV/A SENSOR CONN FILTERS 1	
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PART NO. 051-2385	REV. A.0.0	PART NO. 051-2385	REV. A.0.0
DATE 55 OF 154	PAGE 21 OF 39	DATE 55 OF 154	PAGE 21 OF 39

PART NUMBER	ALTERNATE PART NUMBER	NON-OPTIONAL	REF DESG	COMMENTS
1580843	1580373	Y	HP_HSA_FILTER	MANUFACTURING PART NUMBER 1576488



<p>SENSE MASTER/SLAVE</p> <p>SENSOR CONN FILTERS 2</p> <p>Apple Inc.</p> <p>NOTICE OF PROPRIETARY PROPERTY:</p> <p>THIS DOCUMENT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION OF APPLE INC. IT IS THE PROPERTY OF APPLE INC. AND IS TO BE KEPT STRICTLY CONFIDENTIAL. IT IS TO BE MAINTAINED AS SUCH AND NOT TO BE DISCLOSED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF APPLE INC. THIS DOCUMENT IS UNCLASSIFIED AND FOR INTERNAL USE ONLY.</p> <p>DATE: 22 OF 39</p>	<p>SENSE DATE/TIME</p> <p>05 JUN 2015 15:44</p> <p>A.0.0</p> <p>56 OF 154</p> <p>22 OF 39</p>
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51886602 CRITICAL J5950

FP18-6R-22-330-B-3H

IO FLEX CONN

Apple Inc.

051-2385 1D

A.0.0

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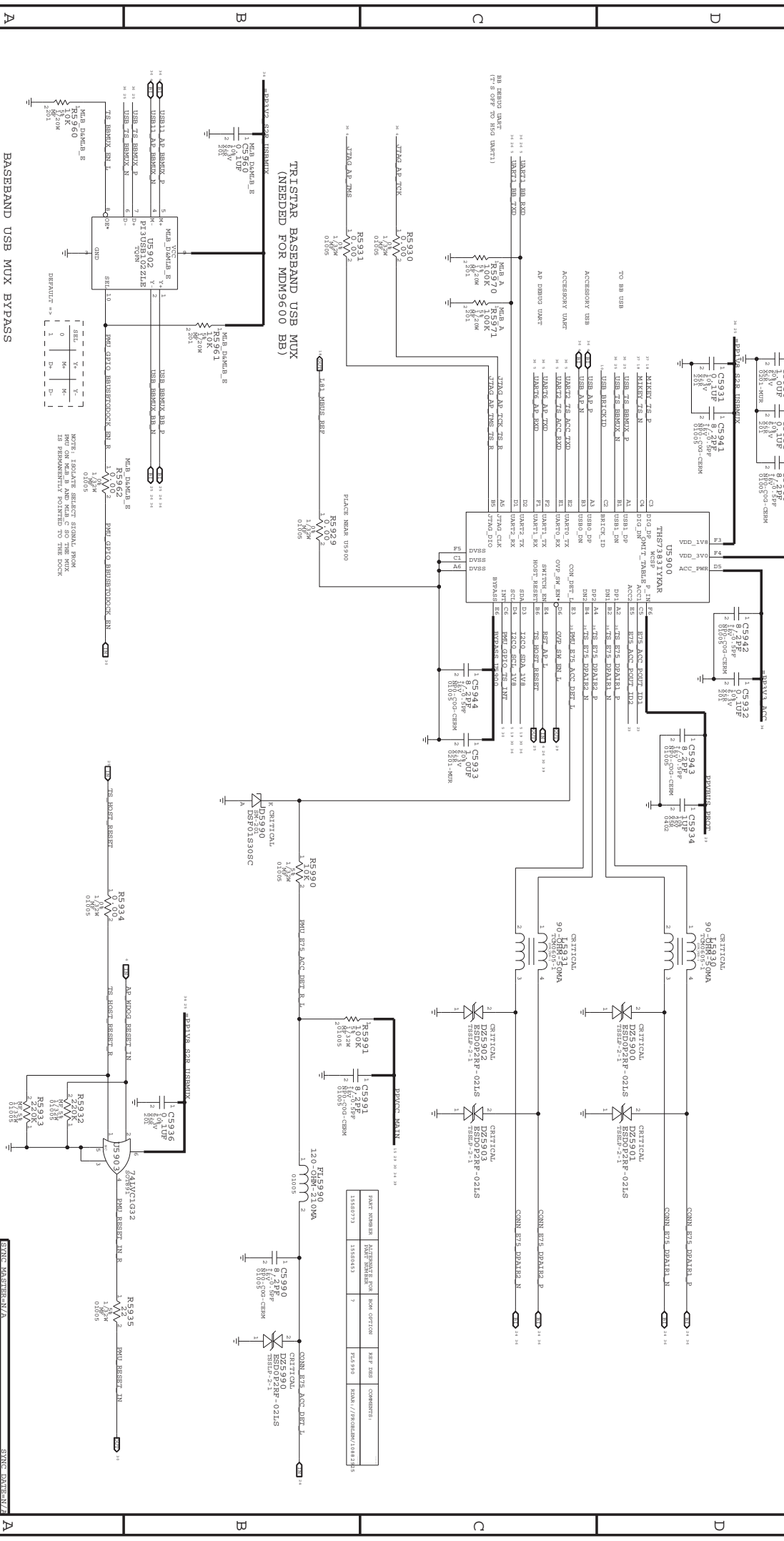
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8 7 6 5 4 3 2 1

TRISTAR

NAME	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	NON-OPTION
MATERIAL	1	DATE: INITIAL: SERIAL: A: 000000	U5900	CRITICAL	NON-OPTION



BASEBAND USB MUX BYPASS

TRISTAR BASEBAND USB MUX
(NEEDED FOR MDM9600 BB)

TRISTAR

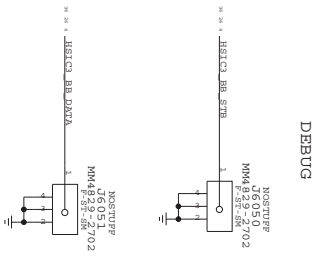
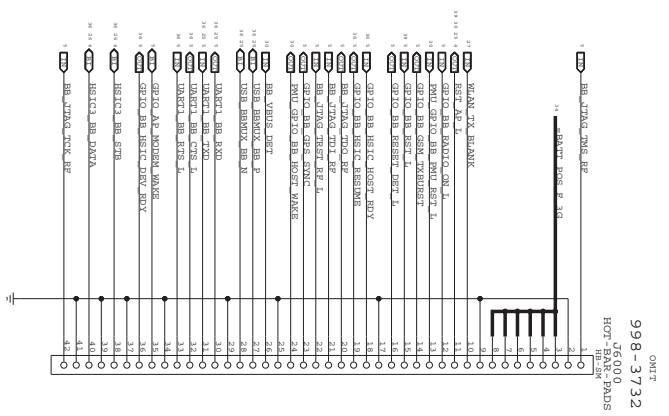
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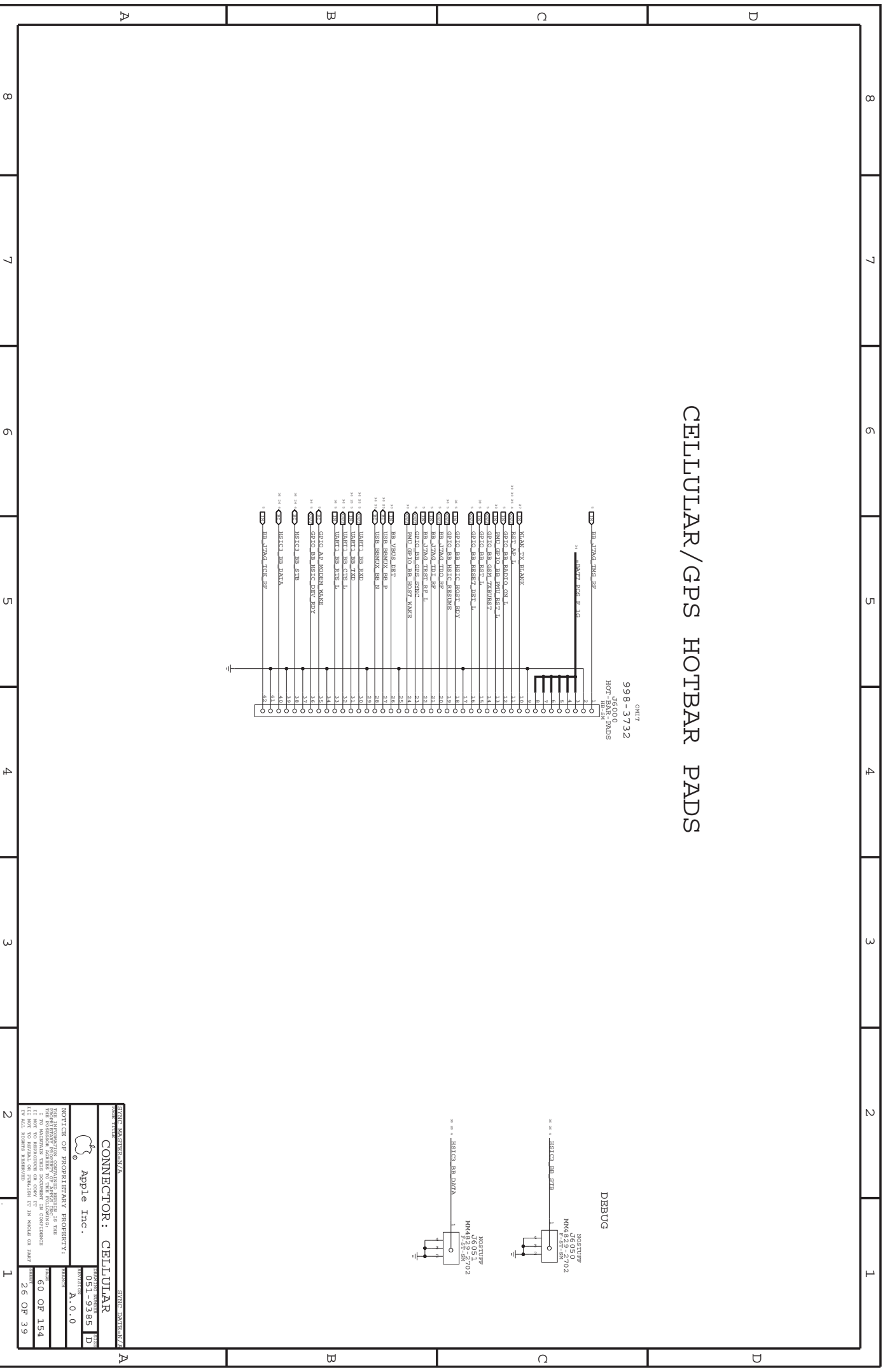
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8 7 6 5 4 3 2 1

CELLULAR/GPS HOTBAR PADS



CONNECTOR: CELLULAR	
SYNC PARTNER/A FROM PARTNER/A DATE: 05/19/05 VERSION: 051 2385 ID	SYNC PARTNER/A DATE: 05/19/05 VERSION: 051 2385 ID A.0.0
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DATE: 06/01/04 TIME: 15:44 BY: 26 OF 39	



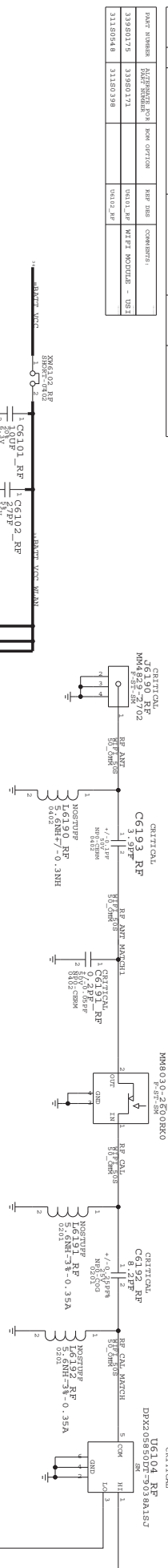
WiLAN/BT

CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN

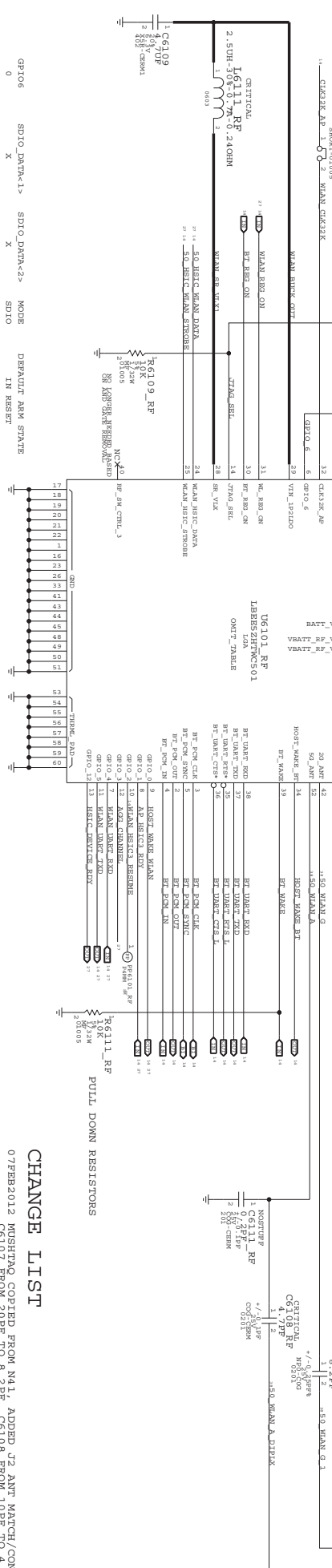
PART NUMBER	DESCRIPTION	REFERENCE DESIGNATOR (S)	COM. OPTION
33980171	WIFI MODULE - MIBMAN	U6101_RP	CRITICAL
33980175	WIFI MODULE - MIBMAN	U6101_RP	CRITICAL
31180948	WIFI MODULE - USB	U6101_RP	CRITICAL

ANTENNA CONNECTOR

CONDUCTED TEST PORT



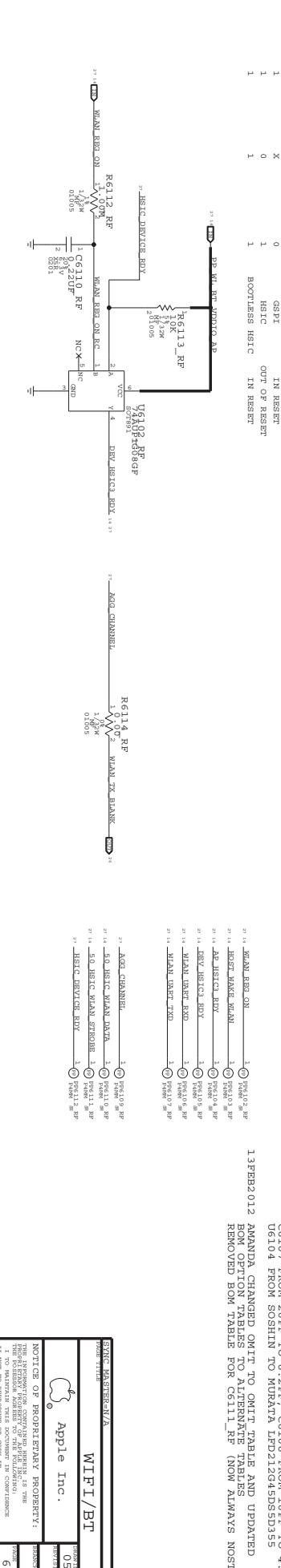
32K INTERRUPT TO AP



CHANGE LIST

07FEB2012 MUSTING COPIED FROM N41. ADDED U2 ANT MATCH/CONN
 U6101_RP FROM N41 TO U6101_RP FROM N41
 U6104 FROM SOSHIN TO WIFANDA LEPD212945D5D355 4.77P

13FEB2012 AMANDA CHANGED OMIT TABLE AND UPDATED
 BOM OPTION TABLES TO ALTERNATE TABLES
 REMOVED BOM TABLE FOR C6111_RP (NOW ALWAYS NOSTUFF)



ENGINE MASTER/DA

WIFI/BT

Apple Inc.

051-2385 ID

A.0.0

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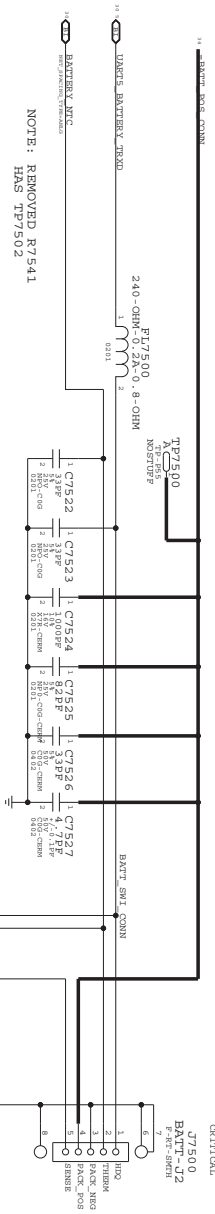
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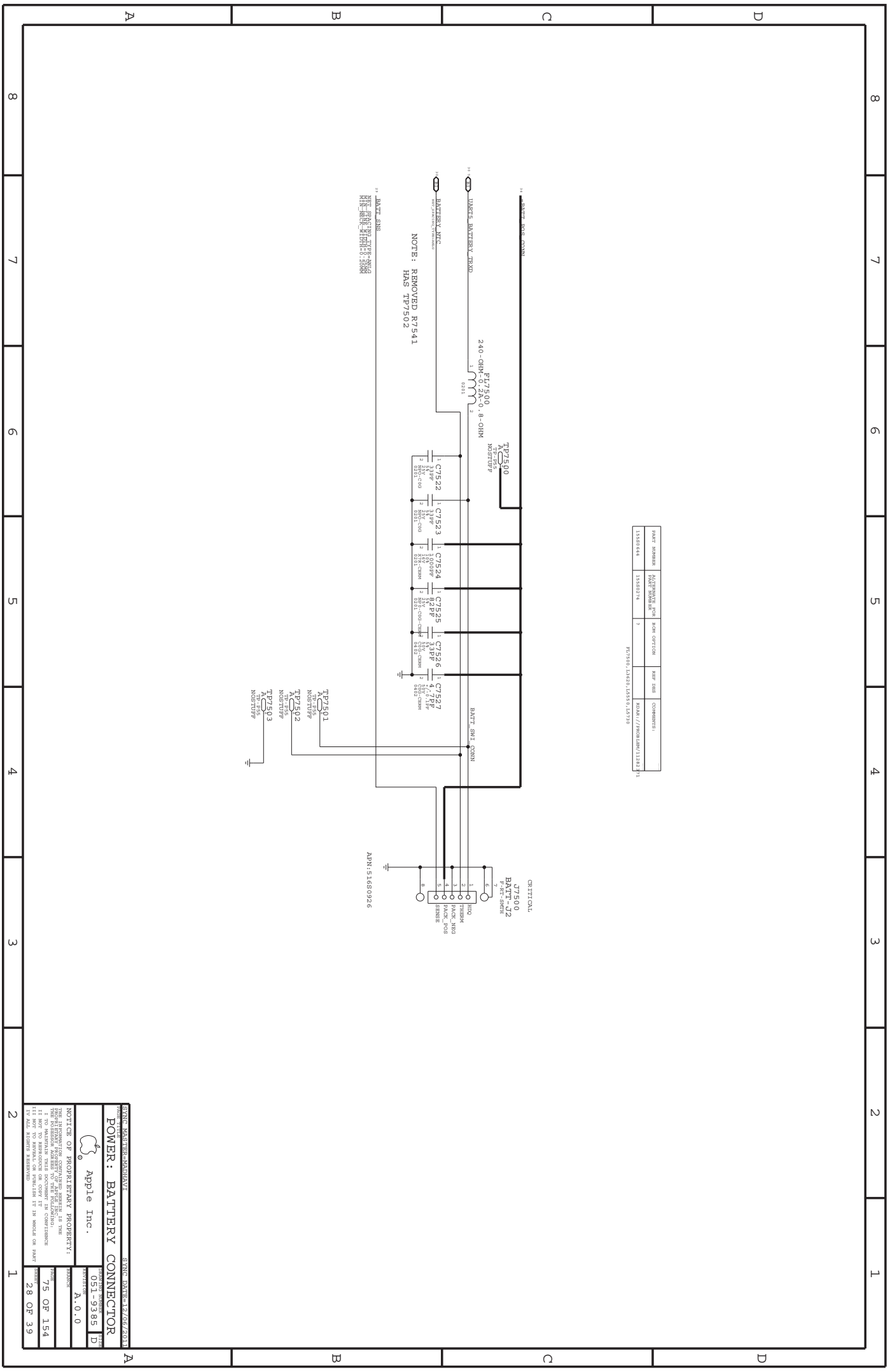
27 OF 39

PART NUMBER	DESCRIPTION	QTY	REVISION	DATE	BY
1585164	REWORK	1			
1585214	REWORK	1			

02/28/14 10:42:45 AM 5166926



NOTE: REMOVED R17541 HAS TP7502

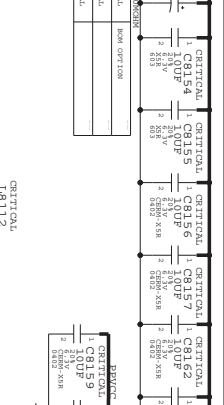


3392C-DAVEE-12/06/2011
POWER: BATTERY CONNECTOR
 Apple Inc.
 A.0.0
 75 OF 154
 28 OF 39

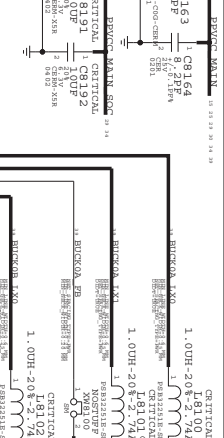
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VCC MAIN BYPASS
TOTAL CAPS = ~400UF
PLACE ONE 10UF CAP AT EACH VDD INPUT

QFN	DESCRIPTION	REFERENCE DESIGNATOR (S)	CRITICAL	NON CRITICAL
15318147	1.0UF, 20%, 250V, 7MA	15318147	CRITICAL	
15318148	1.0UF, 20%, 250V, 7MA	15318148	CRITICAL	
15318149	1.0UF, 20%, 250V, 7MA	15318149	CRITICAL	
15318150	1.0UF, 20%, 250V, 7MA	15318150	CRITICAL	
15318151	1.0UF, 20%, 250V, 7MA	15318151	CRITICAL	
15318152	1.0UF, 20%, 250V, 7MA	15318152	CRITICAL	
15318153	1.0UF, 20%, 250V, 7MA	15318153	CRITICAL	
15318154	1.0UF, 20%, 250V, 7MA	15318154	CRITICAL	
15318155	1.0UF, 20%, 250V, 7MA	15318155	CRITICAL	
15318156	1.0UF, 20%, 250V, 7MA	15318156	CRITICAL	
15318157	1.0UF, 20%, 250V, 7MA	15318157	CRITICAL	
15318158	1.0UF, 20%, 250V, 7MA	15318158	CRITICAL	
15318159	1.0UF, 20%, 250V, 7MA	15318159	CRITICAL	
15318160	1.0UF, 20%, 250V, 7MA	15318160	CRITICAL	
15318161	1.0UF, 20%, 250V, 7MA	15318161	CRITICAL	
15318162	1.0UF, 20%, 250V, 7MA	15318162	CRITICAL	
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15318169	1.0UF, 20%, 250V, 7MA	15318169	CRITICAL	
15318170	1.0UF, 20%, 250V, 7MA	15318170	CRITICAL	
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15318182	1.0UF, 20%, 250V, 7MA	15318182	CRITICAL	
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15318196	1.0UF, 20%, 250V, 7MA	15318196	CRITICAL	
15318197	1.0UF, 20%, 250V, 7MA	15318197	CRITICAL	
15318198	1.0UF, 20%, 250V, 7MA	15318198	CRITICAL	
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15318200	1.0UF, 20%, 250V, 7MA	15318200	CRITICAL	



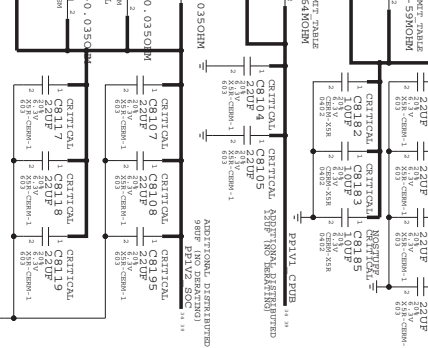
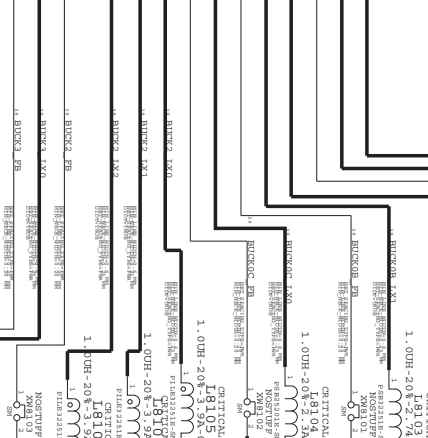
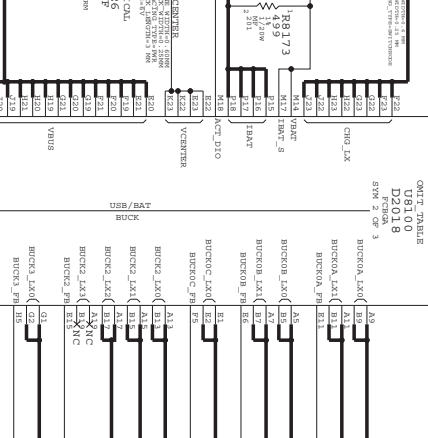
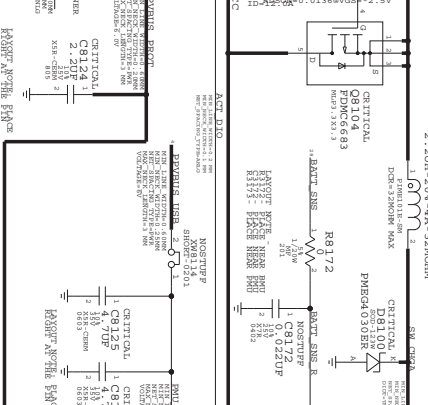
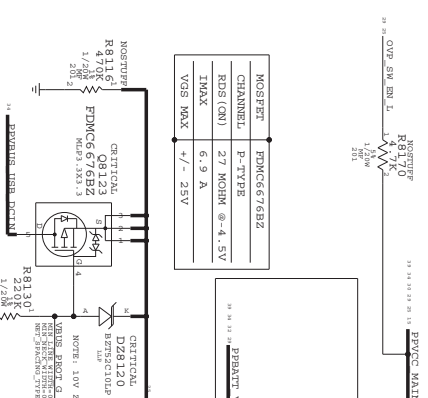
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15318205	1.0UF, 20%, 250V, 7MA	15318205	CRITICAL	
15318206	1.0UF, 20%, 250V, 7MA	15318206	CRITICAL	
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15318208	1.0UF, 20%, 250V, 7MA	15318208	CRITICAL	
15318209	1.0UF, 20%, 250V, 7MA	15318209	CRITICAL	
15318210	1.0UF, 20%, 250V, 7MA	15318210	CRITICAL	
15318211	1.0UF, 20%, 250V, 7MA	15318211	CRITICAL	
15318212	1.0UF, 20%, 250V, 7MA	15318212	CRITICAL	
15318213	1.0UF, 20%, 250V, 7MA	15318213	CRITICAL	
15318214	1.0UF, 20%, 250V, 7MA	15318214	CRITICAL	
15318215	1.0UF, 20%, 250V, 7MA	15318215	CRITICAL	
15318216	1.0UF, 20%, 250V, 7MA	15318216	CRITICAL	
15318217	1.0UF, 20%, 250V, 7MA	15318217	CRITICAL	
15318218	1.0UF, 20%, 250V, 7MA	15318218	CRITICAL	
15318219	1.0UF, 20%, 250V, 7MA	15318219	CRITICAL	
15318220	1.0UF, 20%, 250V, 7MA	15318220	CRITICAL	



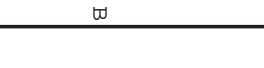
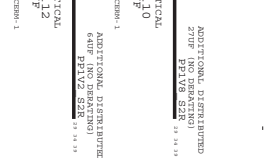
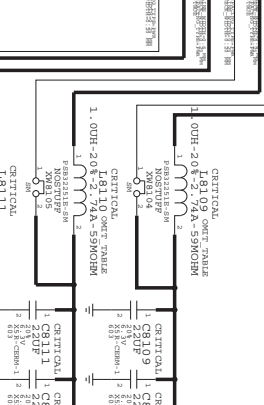
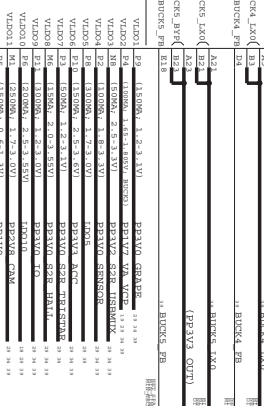
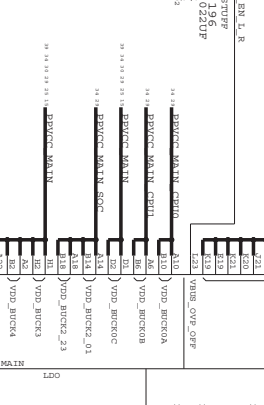
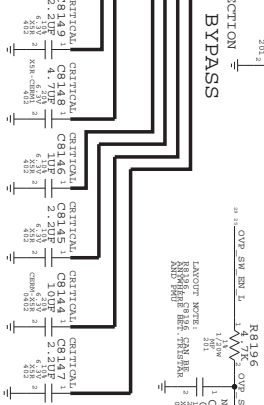
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15318223	1.0UF, 20%, 250V, 7MA	15318223	CRITICAL	
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15318225	1.0UF, 20%, 250V, 7MA	15318225	CRITICAL	
15318226	1.0UF, 20%, 250V, 7MA	15318226	CRITICAL	
15318227	1.0UF, 20%, 250V, 7MA	15318227	CRITICAL	
15318228	1.0UF, 20%, 250V, 7MA	15318228	CRITICAL	
15318229	1.0UF, 20%, 250V, 7MA	15318229	CRITICAL	
15318230	1.0UF, 20%, 250V, 7MA	15318230	CRITICAL	
15318231	1.0UF, 20%, 250V, 7MA	15318231	CRITICAL	
15318232	1.0UF, 20%, 250V, 7MA	15318232	CRITICAL	
15318233	1.0UF, 20%, 250V, 7MA	15318233	CRITICAL	
15318234	1.0UF, 20%, 250V, 7MA	15318234	CRITICAL	
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15318236	1.0UF, 20%, 250V, 7MA	15318236	CRITICAL	
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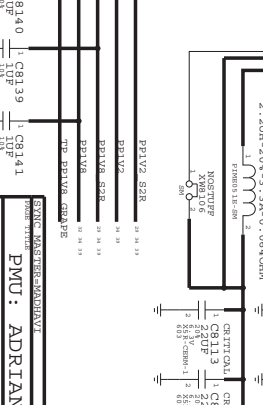
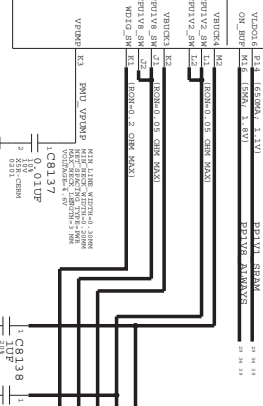
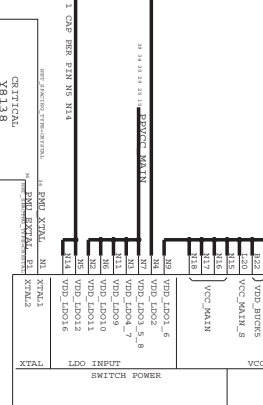
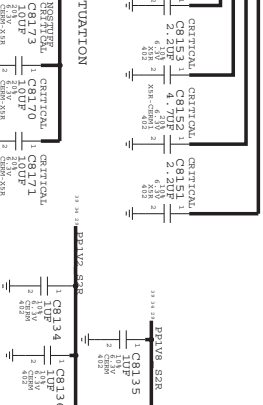
USB REVERSE VOLTAGE PROTECTION
LDO BYPASS



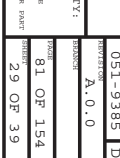
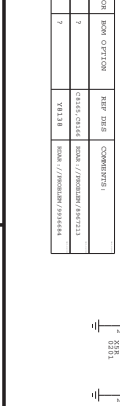
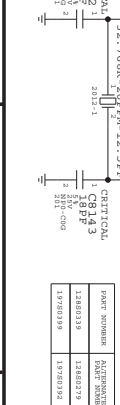
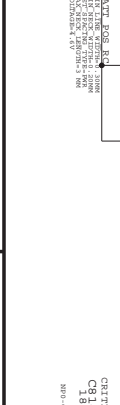
DEVIATION SENSE



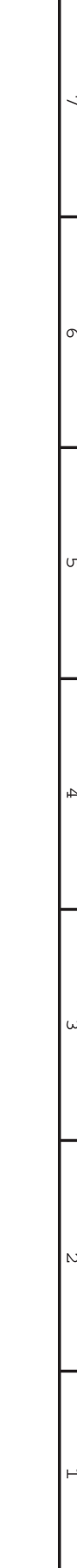
DEVIATION SENSE

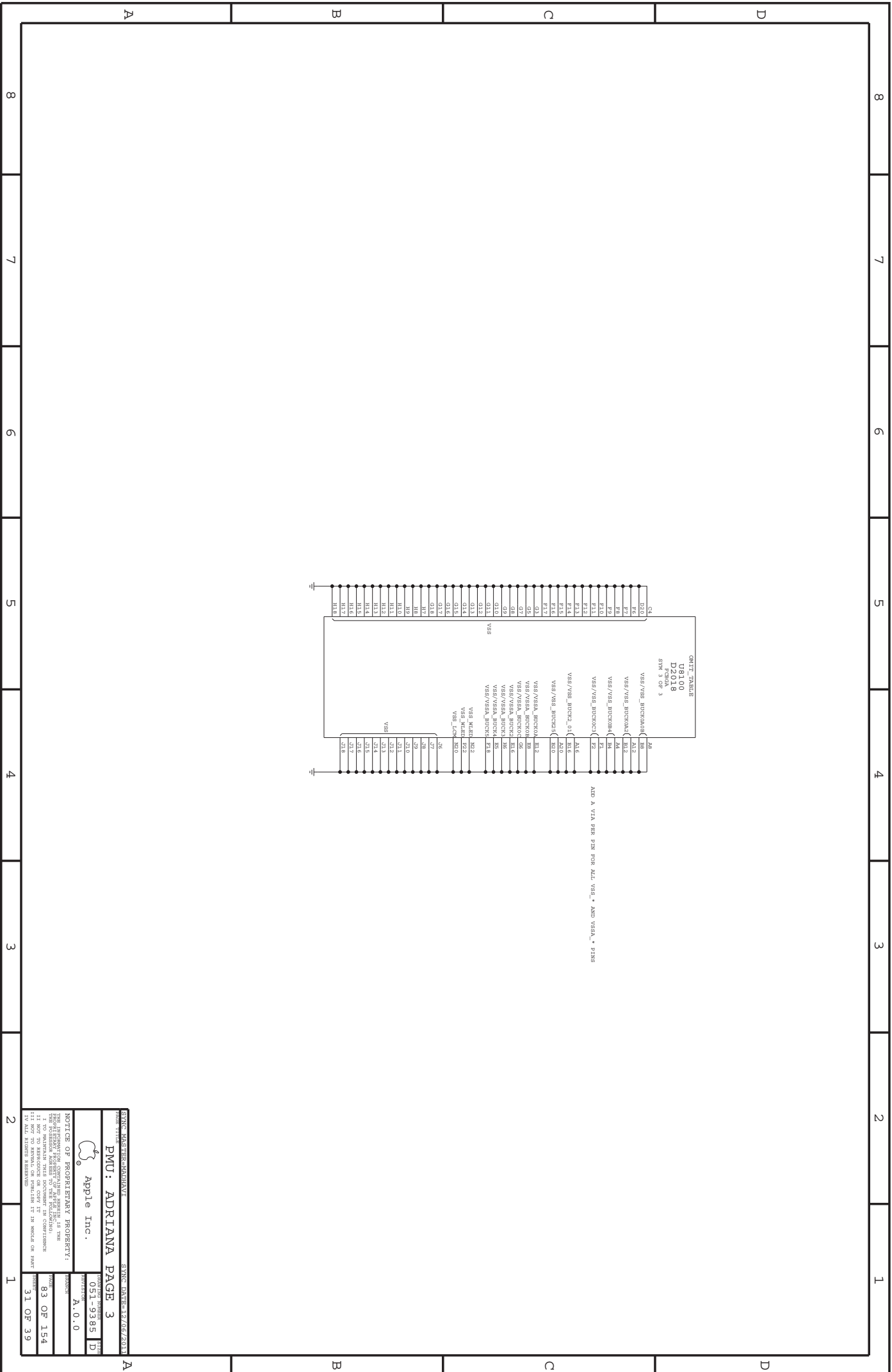



DEVIATION SENSE



NOTE: FOR NO BATTERY SITUATION

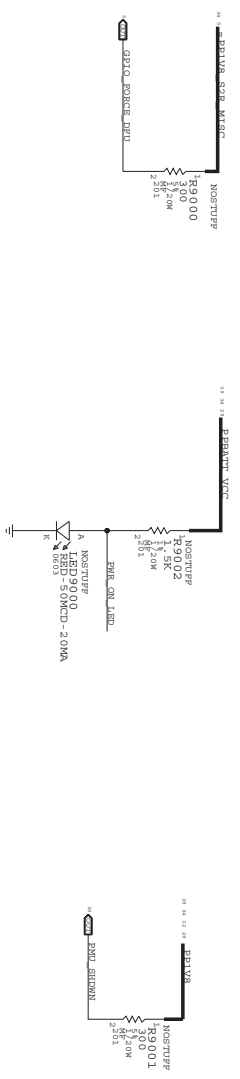




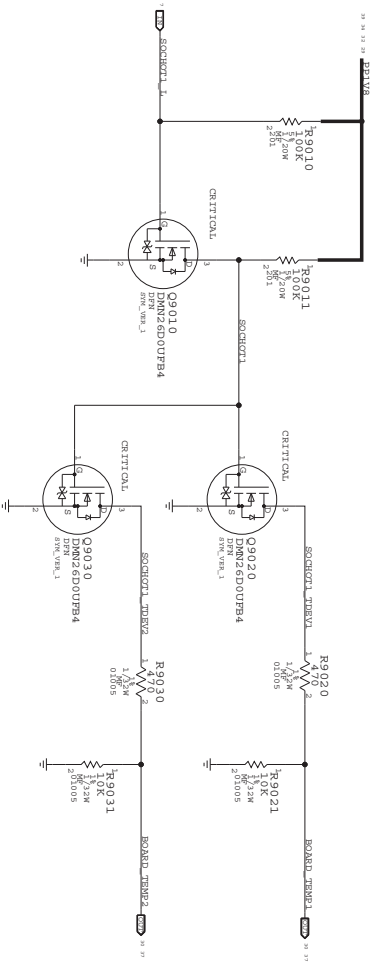

PMU : ADRIANA PAGE 3
 DATE: 05/19/2014 09:51:23
 VERSION: A.0.0
 83 OF 154
 31 OF 39

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DEBUG RESET ACCESS



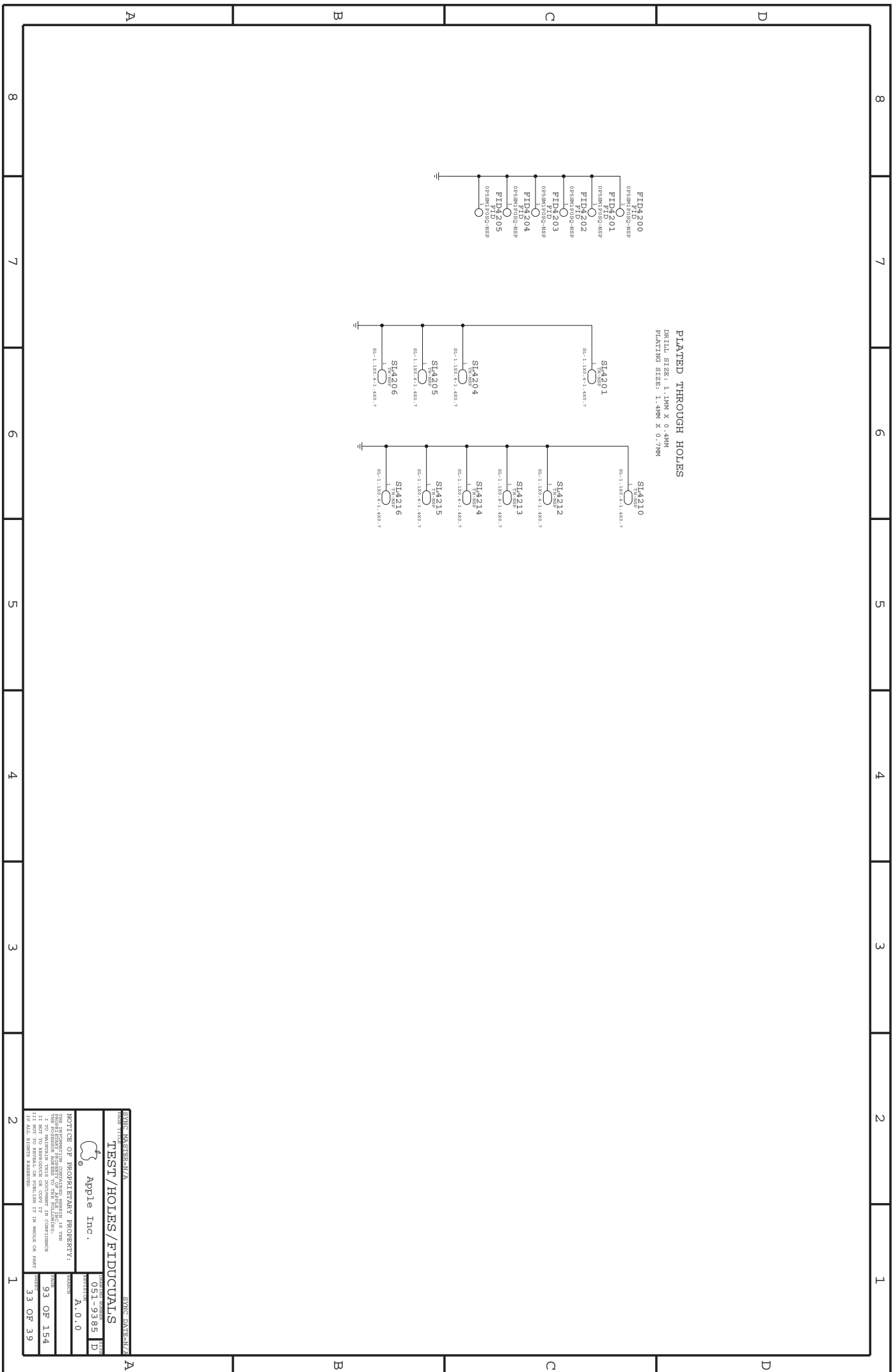
SOCHOT TO PMU TDEV1/TDEV2



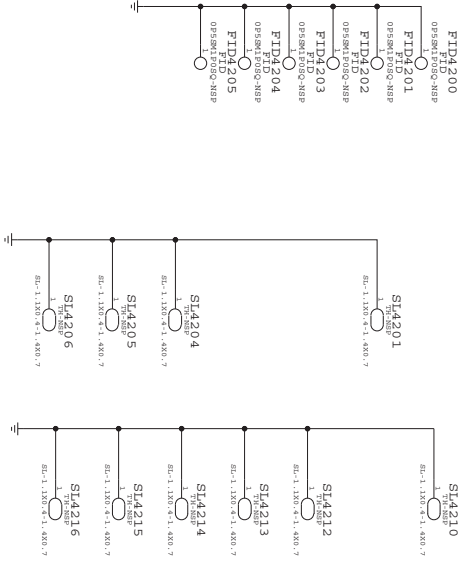
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 DATE: 051-2385 ID:
 REVISION: A.0.0
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8 7 6 5 4 3 2 1

A B C D



PLATED THROUGH HOLES
 DRILL SIZE: 1.1MM X 0.4MM
 PLATING SIZE: 1.4MM X 0.7MM



SYMC MASTER/VA		SYMC DATE/TM	
TEST/HOLES/FIDUCIALS			
Apple Inc.		05.1.93 09:39	
A.0.0		93 OF 154	
33 OF 39			

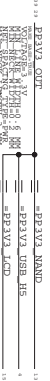
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POWER CONNECTIONS

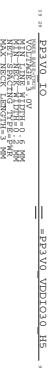
BUCK0A



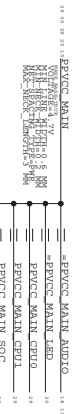
BUCK5



LDO9



CHARGER MAIN



BUCK0B



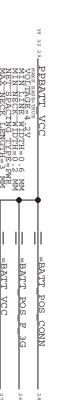
BACKLIGHT BOOST



LDO11



BATTERY

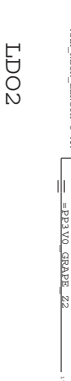


CENTIGRAPH BRAND
K14N

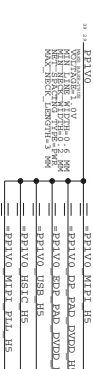
BUCK2



LDO1



LDO12



USB POWER INPUT



BUCK3



LDO3 (NO LONGER NEEDED)



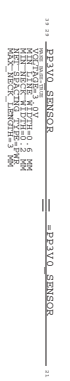
LDO16



BUCK4



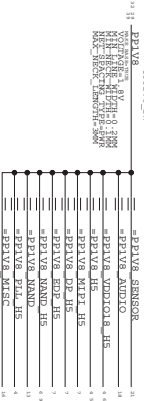
LDO4



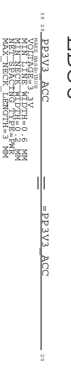
LDO17



BUCK3_SW



LDO6



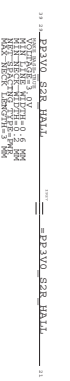
LDO7



BUCK4_SW



LDO8



SYNCHRONOUS/ASYNCHRONOUS

POWER ALIASES

SYNCHRONOUS/ASYNCHRONOUS

Apple Inc.

PART NUMBER: **A.0.0**
 IDENTIFICATION: **051-9385 ID**
 REVISION: **1.0**

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MLB CONSTRAINTS

BOARD LAYERS	BOARD AREAS	BOARD P4	BOARD P4
TOP, 1B2, 1B3, 1B4, 1B5, 1B6, 1B7, 1B8, 1B9, BOTTOM	NO. TYPE, R0A, R0A0-06, R0A_P4	16.2	16.2

PHYSICAL CONSTRAINTS

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
DIFFERENTIAL_PAIR	*	Y	+DRIVE/RT	+DRIVE/RT	12.7 MM	+DRIVE/RT	+DRIVE/RT

SINGLE-ENDED PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
45_OHM_9B	TOP_BOTTOM	Y	0.105 MM	0.055 MM	3.0 MM		
45_OHM_9B	1B2, 1B3	Y	0.055 MM	0.055 MM	3.0 MM		
45_OHM_9B	1B4, 1B7	Y	0.065 MM	0.055 MM	3.0 MM		
45_OHM_9B	1B5	Y	0.053 MM	0.055 MM	3.0 MM		
45_OHM_9B	1B6	Y	0.072 MM	0.055 MM	3.0 MM		
45_OHM_9B	1B8	Y	0.059 MM	0.055 MM	3.0 MM		

90 OHMS DIFFERENTIAL PAIR PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
90_OHM_DIFF	TOP_BOTTOM	Y	0.090 MM	0.090 MM	+STANDARD	0.170 MM	0.170 MM
90_OHM_DIFF	1B2, 1B3	Y	0.062 MM	0.062 MM	+STANDARD	0.130 MM	0.130 MM
90_OHM_DIFF	1B4, 1B7	Y	0.062 MM	0.062 MM	+STANDARD	0.130 MM	0.130 MM
90_OHM_DIFF	1B5, 1B8	Y	0.051 MM	0.051 MM	+STANDARD	0.130 MM	0.130 MM
90_OHM_DIFF	1B6	Y	0.052 MM	0.052 MM	+STANDARD	0.130 MM	0.130 MM

DDR 4S OHMS SINGLE-ENDED PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
DDR_4S_OHM_SE	TOP_BOTTOM	Y	0.105 MM	0.105 MM	3.0 MM		
DDR_4S_OHM_SE	1B2	Y	0.055 MM	0.055 MM	3.0 MM		
DDR_4S_OHM_SE	1B3	Y	0.065 MM	0.065 MM	3.0 MM		
DDR_4S_OHM_SE	1B4	Y	0.053 MM	0.053 MM	3.0 MM		
DDR_4S_OHM_SE	1B5, 1B8	Y	0.072 MM	0.072 MM	3.0 MM		
DDR_4S_OHM_SE	1B6	Y	0.055 MM	0.055 MM	3.0 MM		

DDR 90 OHMS DIFFERENTIAL PAIR PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
DDR_90_OHM_DIFF	TOP_BOTTOM	Y	0.090 MM	0.090 MM	+STANDARD	0.170 MM	0.170 MM
DDR_90_OHM_DIFF	1B2	Y	0.062 MM	0.062 MM	+STANDARD	0.130 MM	0.130 MM
DDR_90_OHM_DIFF	1B3	Y	0.062 MM	0.062 MM	+STANDARD	0.130 MM	0.130 MM
DDR_90_OHM_DIFF	1B4	Y	0.053 MM	0.053 MM	+STANDARD	0.130 MM	0.130 MM
DDR_90_OHM_DIFF	1B5, 1B8	Y	0.066 MM	0.066 MM	+STANDARD	0.130 MM	0.130 MM
DDR_90_OHM_DIFF	1B6	N	0.056 MM	0.056 MM	+STANDARD	0.130 MM	0.130 MM

WIFI PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
WIFI_5G8	TOP_BOTTOM	Y	0.245 MM	0.2 MM	+STANDARD		
WIFI_5G8	*	N	+STANDARD	+STANDARD	+STANDARD		
WIFI_2400	*	Y	0.110 MM	0.093 MM	+STANDARD		
WIFI_2400	*	Y	1.00 MM	0.100 MM	+STANDARD		

MISC PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
1.1_DIFFERENTIAL	*	Y	+STANDARD	+STANDARD	+STANDARD	0.08 MM	0.10 MM
SEPARATORS	*	Y	0.5 MM	0.20 MM	1.0 MM		
AUDIO_DIFFER	*	Y	0.1 MM	0.09 MM	1.0 MM	0.10 MM	0.10 MM
1B2	*	Y	0.1 MM	0.09 MM	1.0 MM	0.08 MM	0.08 MM
TOP_BOTTOM	*	Y	0.1 MM	0.09 MM	1.0 MM	0.08 MM	0.08 MM

BGA AREA PHYSICAL RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
BGA_PHY	*	Y	0.040 MM	0.040 MM	+STANDARD	0.075 MM	0.075 MM

TOP VERSION (USING SPACING RULE)

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
TOP_VERSION	*	Y	0.104 MM	0.104 MM	2	0.104	11/30/2011

SPACING CONSTRAINTS

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
DIFFERENTIAL_PAIR	*	Y	0.100 MM	0.100 MM	7		
STANDARD	*	+DRIVE/RT	+DRIVE/RT	+DRIVE/RT	7		
R0A_P4	*	Y	0.200 MM	0.200 MM	7		

REGULAR SPACING RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
1.1_1_SPACING	*	Y	0.050 MM	0.050 MM	2		
0.9B_1_SPACING	*	Y	0.080 MM	0.080 MM	2		
1.5_1_1_SPACING	*	Y	0.075 MM	0.075 MM	2		
2.1_1_1_SPACING	*	Y	0.100 MM	0.100 MM	2		
3.5_1_1_SPACING	*	Y	0.125 MM	0.125 MM	2		
4.1_1_1_SPACING	*	Y	0.150 MM	0.150 MM	2		
5.1_1_1_SPACING	*	Y	0.200 MM	0.200 MM	2		
0.9P_90K_1_SPACING	*	Y	0.075 MM	0.075 MM	2		
0.9P_90K_1_SPACING	*	Y	0.5 MM	0.5 MM	2		
0.9P_90K_1_SPACING	*	Y	0.64 MM	0.64 MM	2		
0.9P_90K_1_SPACING	*	Y	0.20 MM	0.20 MM	2		

POWER/GND SPACING RULES

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
POWER_GND_P1_SPACING	*	Y	0.1 MM	0.1 MM	3.0 MM		
POWER_GND_P2_SPACING	*	Y	0.1 MM	0.1 MM	3.0 MM		
POWER_GND_P3_SPACING	*	Y	0.1 MM	0.1 MM	3.0 MM		

POWER

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
POWER	*	Y	0.080 MM	0.080 MM	3.0 MM		
GND_P1	*	Y	0.080 MM	0.080 MM	3.0 MM		
GND_P2	*	Y	0.080 MM	0.080 MM	3.0 MM		
GND_P3	*	Y	0.080 MM	0.080 MM	3.0 MM		

MISC

PHYSICAL_RULE_ID	LAYER	DRIVE_DIRECTION	MINIMUM_LAYER_WIDTH	MAXIMUM_LAYER_WIDTH	MAXIMUM_LAYER_LENGTH	DIFFERENTIAL_PAIR_GAP	DIFFERENTIAL_PAIR_WIDTH
CLK	*	Y	0.1 MM	0.1 MM	3.0 MM		
GND	*	Y	0.1 MM	0.1 MM	3.0 MM		
SWITCHMODE	*	Y	0.1 MM	0.1 MM	3.0 MM		
ANALOG	*	Y	0.1 MM	0.1 MM	3.0 MM		

NOTES:
0.075 MM ~ 3 MIL
0.089 MM ~ 3.5 MIL
0.102 MM ~ 4 MIL
0.114 MM ~ 4.5 MIL
0.125 MM ~ 5 MIL
0.140 MM ~ 5.5 MIL
0.15 MM ~ 6 MIL
0.18 MM ~ 7 MIL
0.2 MM ~ 8 MIL
0.25 MM ~ 10 MIL
0.3 MM ~ 12 MIL
0.33 MM ~ 13 MIL
0.4 MM ~ 16 MIL
1.0 MM = 39.37 MIL

3-INC-DRAW-11/20/2011

CONSTRAINTS: MLB RULES

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A.0.0

8 Clock Signal Constraints

Table with columns: REF_TYPER, PHYSICAL, SWING, and REF_TYPER. Lists constraints for CLK_50BS, REF_FUNCING_TYPER, and CLK.

Table for UART constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for SPI constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for I2S constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for DWI constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for Electrical Constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

7

6

5

4

3

2

1

JTAG

Table for JTAG constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for I2C constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for XTAL constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for I2S constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for USB constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for HSIC constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for Electrical Constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for Electrical Constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

USB

Table for USB constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for HSIC constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for Electrical Constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

Table for Electrical Constraints, including REF_TYPER, PHYSICAL, SWING, and REF_TYPER columns.

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3

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1

A

B

C

D

PWR		PWR_PDU		PWR_PDU		PWR_PDU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	PWR			1	PWR		
2	PWR			2	PWR		
3	PWR			3	PWR		
4	PWR			4	PWR		
5	PWR			5	PWR		
6	PWR			6	PWR		
7	PWR			7	PWR		
8	PWR			8	PWR		
9	PWR			9	PWR		
10	PWR			10	PWR		
11	PWR			11	PWR		
12	PWR			12	PWR		
13	PWR			13	PWR		
14	PWR			14	PWR		
15	PWR			15	PWR		
16	PWR			16	PWR		
17	PWR			17	PWR		
18	PWR			18	PWR		
19	PWR			19	PWR		
20	PWR			20	PWR		

GND		GND_PU		GND_PU		GND_PU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	GND			1	GND		
2	GND			2	GND		
3	GND			3	GND		
4	GND			4	GND		
5	GND			5	GND		
6	GND			6	GND		
7	GND			7	GND		
8	GND			8	GND		
9	GND			9	GND		
10	GND			10	GND		
11	GND			11	GND		
12	GND			12	GND		
13	GND			13	GND		
14	GND			14	GND		
15	GND			15	GND		
16	GND			16	GND		
17	GND			17	GND		
18	GND			18	GND		
19	GND			19	GND		
20	GND			20	GND		

RST		RST_PU		RST_PU		RST_PU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	RST			1	RST		
2	RST			2	RST		
3	RST			3	RST		
4	RST			4	RST		
5	RST			5	RST		
6	RST			6	RST		
7	RST			7	RST		
8	RST			8	RST		
9	RST			9	RST		
10	RST			10	RST		
11	RST			11	RST		
12	RST			12	RST		
13	RST			13	RST		
14	RST			14	RST		
15	RST			15	RST		
16	RST			16	RST		
17	RST			17	RST		
18	RST			18	RST		
19	RST			19	RST		
20	RST			20	RST		

VOLTAGE		PWR_PDU		PWR_PDU		PWR_PDU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	VOLTAGE			1	VOLTAGE		
2	VOLTAGE			2	VOLTAGE		
3	VOLTAGE			3	VOLTAGE		
4	VOLTAGE			4	VOLTAGE		
5	VOLTAGE			5	VOLTAGE		
6	VOLTAGE			6	VOLTAGE		
7	VOLTAGE			7	VOLTAGE		
8	VOLTAGE			8	VOLTAGE		
9	VOLTAGE			9	VOLTAGE		
10	VOLTAGE			10	VOLTAGE		
11	VOLTAGE			11	VOLTAGE		
12	VOLTAGE			12	VOLTAGE		
13	VOLTAGE			13	VOLTAGE		
14	VOLTAGE			14	VOLTAGE		
15	VOLTAGE			15	VOLTAGE		
16	VOLTAGE			16	VOLTAGE		
17	VOLTAGE			17	VOLTAGE		
18	VOLTAGE			18	VOLTAGE		
19	VOLTAGE			19	VOLTAGE		
20	VOLTAGE			20	VOLTAGE		

ELECTRICAL_CONNECTION_REF		PWR_PDU		PWR_PDU		PWR_PDU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	ELECTRICAL_CONNECTION_REF			1	ELECTRICAL_CONNECTION_REF		
2	ELECTRICAL_CONNECTION_REF			2	ELECTRICAL_CONNECTION_REF		
3	ELECTRICAL_CONNECTION_REF			3	ELECTRICAL_CONNECTION_REF		
4	ELECTRICAL_CONNECTION_REF			4	ELECTRICAL_CONNECTION_REF		
5	ELECTRICAL_CONNECTION_REF			5	ELECTRICAL_CONNECTION_REF		
6	ELECTRICAL_CONNECTION_REF			6	ELECTRICAL_CONNECTION_REF		
7	ELECTRICAL_CONNECTION_REF			7	ELECTRICAL_CONNECTION_REF		
8	ELECTRICAL_CONNECTION_REF			8	ELECTRICAL_CONNECTION_REF		
9	ELECTRICAL_CONNECTION_REF			9	ELECTRICAL_CONNECTION_REF		
10	ELECTRICAL_CONNECTION_REF			10	ELECTRICAL_CONNECTION_REF		
11	ELECTRICAL_CONNECTION_REF			11	ELECTRICAL_CONNECTION_REF		
12	ELECTRICAL_CONNECTION_REF			12	ELECTRICAL_CONNECTION_REF		
13	ELECTRICAL_CONNECTION_REF			13	ELECTRICAL_CONNECTION_REF		
14	ELECTRICAL_CONNECTION_REF			14	ELECTRICAL_CONNECTION_REF		
15	ELECTRICAL_CONNECTION_REF			15	ELECTRICAL_CONNECTION_REF		
16	ELECTRICAL_CONNECTION_REF			16	ELECTRICAL_CONNECTION_REF		
17	ELECTRICAL_CONNECTION_REF			17	ELECTRICAL_CONNECTION_REF		
18	ELECTRICAL_CONNECTION_REF			18	ELECTRICAL_CONNECTION_REF		
19	ELECTRICAL_CONNECTION_REF			19	ELECTRICAL_CONNECTION_REF		
20	ELECTRICAL_CONNECTION_REF			20	ELECTRICAL_CONNECTION_REF		

ELECTRICAL_CONNECTION_REF		PWR_PDU		PWR_PDU		PWR_PDU	
REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF	REF_ID	TYPE	ABN_YEAR	PHYSICAL_MODEL_REF
1	ELECTRICAL_CONNECTION_REF			1	ELECTRICAL_CONNECTION_REF		
2	ELECTRICAL_CONNECTION_REF			2	ELECTRICAL_CONNECTION_REF		
3	ELECTRICAL_CONNECTION_REF			3	ELECTRICAL_CONNECTION_REF		
4	ELECTRICAL_CONNECTION_REF			4	ELECTRICAL_CONNECTION_REF		
5	ELECTRICAL_CONNECTION_REF			5	ELECTRICAL_CONNECTION_REF		
6	ELECTRICAL_CONNECTION_REF			6	ELECTRICAL_CONNECTION_REF		
7	ELECTRICAL_CONNECTION_REF			7	ELECTRICAL_CONNECTION_REF		
8	ELECTRICAL_CONNECTION_REF			8	ELECTRICAL_CONNECTION_REF		
9	ELECTRICAL_CONNECTION_REF			9	ELECTRICAL_CONNECTION_REF		
10	ELECTRICAL_CONNECTION_REF			10	ELECTRICAL_CONNECTION_REF		
11	ELECTRICAL_CONNECTION_REF			11	ELECTRICAL_CONNECTION_REF		
12	ELECTRICAL_CONNECTION_REF			12	ELECTRICAL_CONNECTION_REF		
13	ELECTRICAL_CONNECTION_REF			13	ELECTRICAL_CONNECTION_REF		
14	ELECTRICAL_CONNECTION_REF			14	ELECTRICAL_CONNECTION_REF		
15	ELECTRICAL_CONNECTION_REF			15	ELECTRICAL_CONNECTION_REF		
16	ELECTRICAL_CONNECTION_REF			16	ELECTRICAL_CONNECTION_REF		
17	ELECTRICAL_CONNECTION_REF			17	ELECTRICAL_CONNECTION_REF		
18	ELECTRICAL_CONNECTION_REF			18	ELECTRICAL_CONNECTION_REF		
19	ELECTRICAL_CONNECTION_REF			19	ELECTRICAL_CONNECTION_REF		
20	ELECTRICAL_CONNECTION_REF			20	ELECTRICAL_CONNECTION_REF		

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