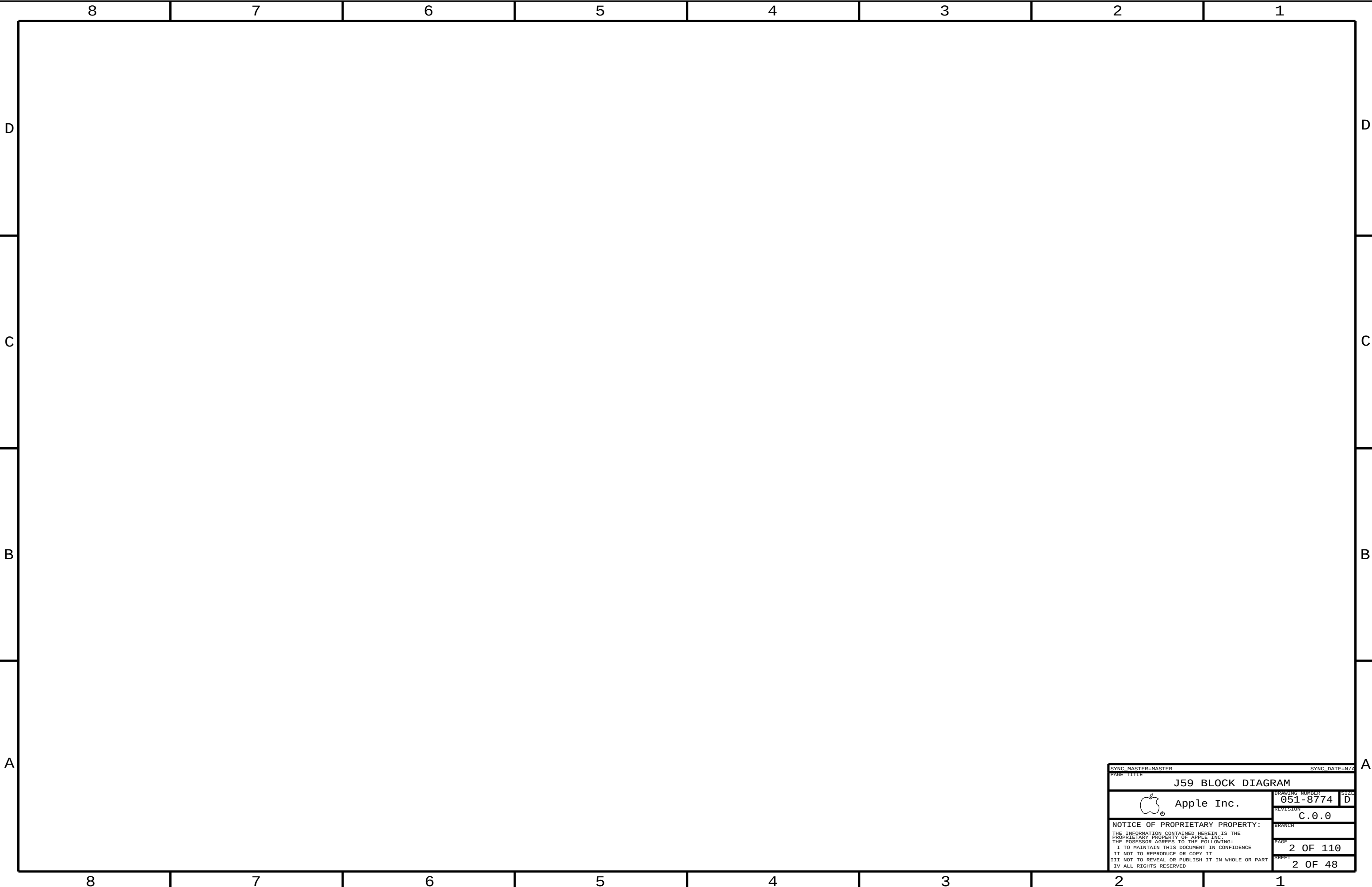




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		PAGE	2 OF 110
		SHEET	2 OF 48

BOM NUMBER	BOM NAME	BOM OPTIONS
639-1575	PCBA, MLB, J59	BASIC
085-2422	PCBA, MLB, DEV, J59	DEVELOPMENT

BOM GROUP	BOM OPTIONS
BASIC	COMMON, ALTERNATE, T29HV:P12V, BIT_BANG_I2C, ENET_WAKE:PCIE, PIUSB_REV:B, PRODUCTION

Module Parts

PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
338S0945	1	IC, T29-PRQ, 220 FCBGA, 15X15MM	U3600	CRITICAL	
338S0753	1	IC, FW643-E, 1394B PHY/ONCI LINK/PCI-E, 12	U4100	CRITICAL	
343S0549	1	IC, ASIC, GBIT ENET, QFN-48, 6X6, BCM57761 B0	U3900	CRITICAL	
338S0977	1	PCI EXPRESS TO USB 2.0 HOST CONTROLLER (REV B)	U4600	CRITICAL	

FLASH	PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
RAW: 335S0550	341T0376	1	IC, EEPROM, 359 PRIMARY, SPI, 32KBIT, MLP8	U3690	CRITICAL	
RAW: 335S0800	341T0331	1	ENET FLASH, C-IV, NO SD, 359	U3990	CRITICAL	
RAW: 335S0559	341T0375	1	IC, EEPROM, FW643-E2 GUID, I2C, 2KBIT, MLP8	U4290	CRITICAL	
RAW: 337S4115	341T0385	1	IC, MCU, S28, LPC1114, 32KB/8KB, HVQFN33, 359	U5000	CRITICAL	
RAW: 337S4115	341T0385	1	IC, PRGRMD, LPC1114, T29 SUPER MCU, HVQFN33	U9330	CRITICAL	
RAW: 337S3558	341T0378	1	IC, PRGRMD, LPC2144, 359 SYSTEM MCU	U2617	CRITICAL	
RAW: 353S2320	341T0369	1	IC, PRGRMD, PNX6151, AUDIO/HID, TFBGA88	U1400	CRITICAL	

ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S0977	376S0859		ALL	DIODESINC ALT FET
376S0972	376S0612		ALL	ROHM ALT FET
377S0107	377S0066		ALL	ON SEMI ALT RCLAMP
155S0431	155S0289		L1204	ALTERNATE CM CHOKE
376S1029	376S0953		ALL	ALTERNATE DC/DC FET
376S1030	376S0801		ALL	ALTERNATE DC/DC FET
376S1017	376S0612		ALL	ALTERNATE TOSH SS FET
377S0124	377S0057		ALL	ALTERNATE VARISTOR
152S1483	152S1376		ALL	ALTERNATE INDUCTOR
155S0691	155S0183		ALL	ALT BEAD FOR BL FILT
128S0262	128S0220		ALL	ADDS KEMET TO SANYO
138S0684	138S0660		ALL	ADDS MURATA TO TAIYO
155S0571	155S0309		ALL	ALTERNATE FERRITE
353S3477	353S3207		ALL	ALTERNATE FAB U9410

Schematic / PCB / EEEE #'s

PART NUMBER	QTY	DESCRIPTION	REFERENCE DES	CRITICAL	BOM OPTION
820-2997	1	PCBF, MLB, J59	PCB1	CRITICAL	
051-8774	1	SCH, MLB, J59	SCH1	CRITICAL	
825-7122	1	MLB LABEL, 48.0MM X 4.8MM	[EEEE_DHMY]	CRITICAL	

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SYNC DATE=N/A

PAGE TITLE

BOM Configuration & Misc

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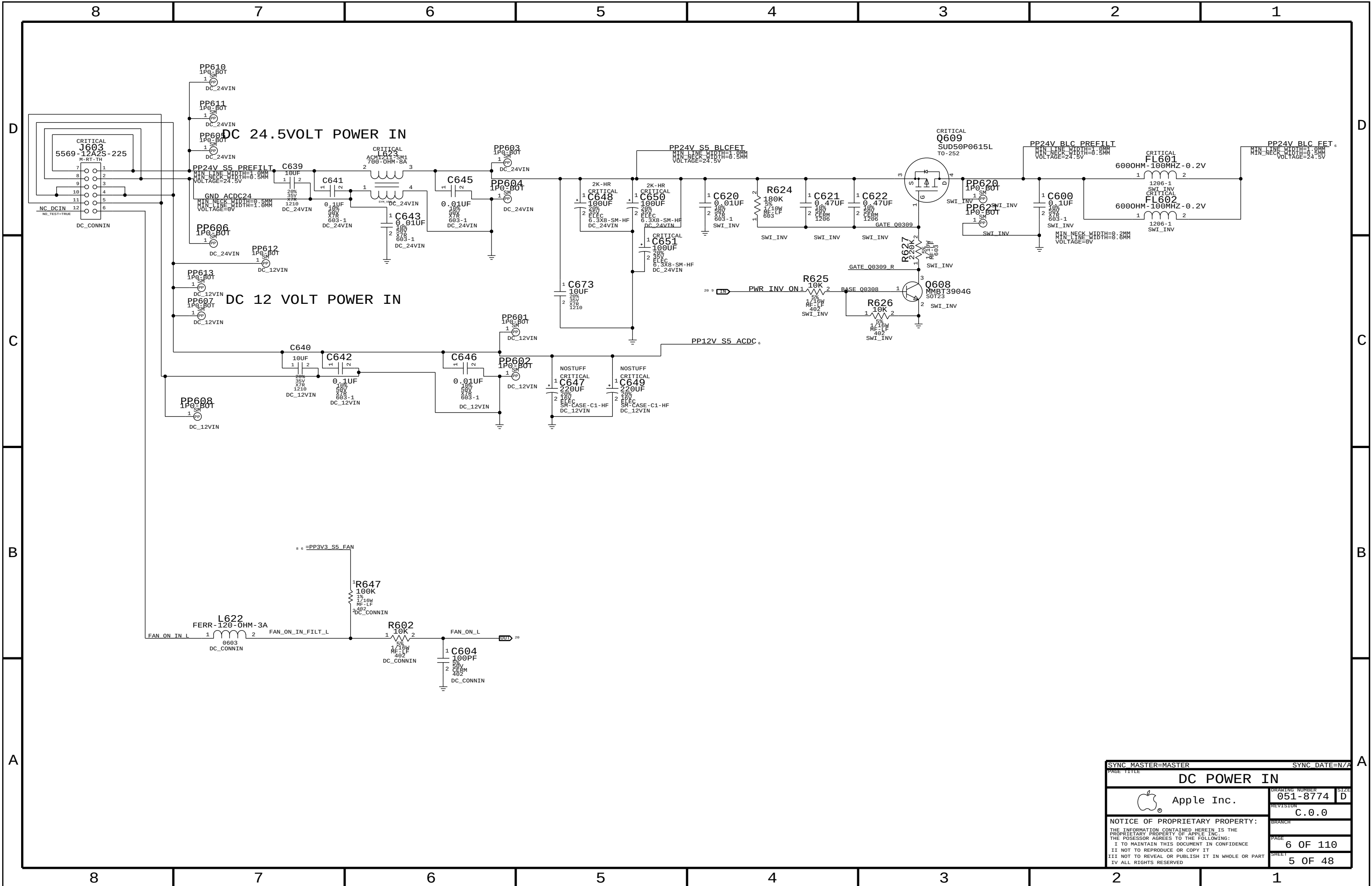
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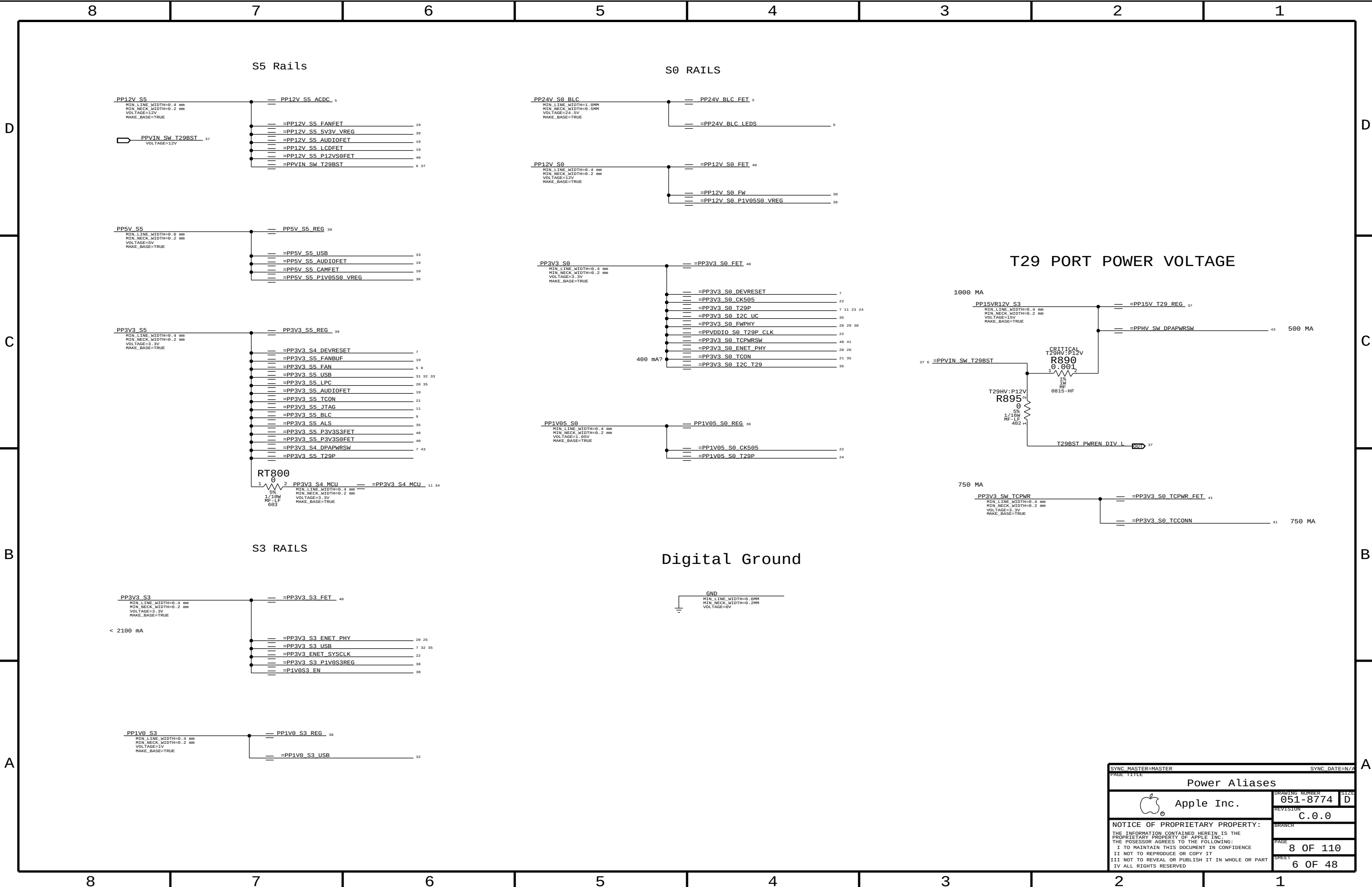
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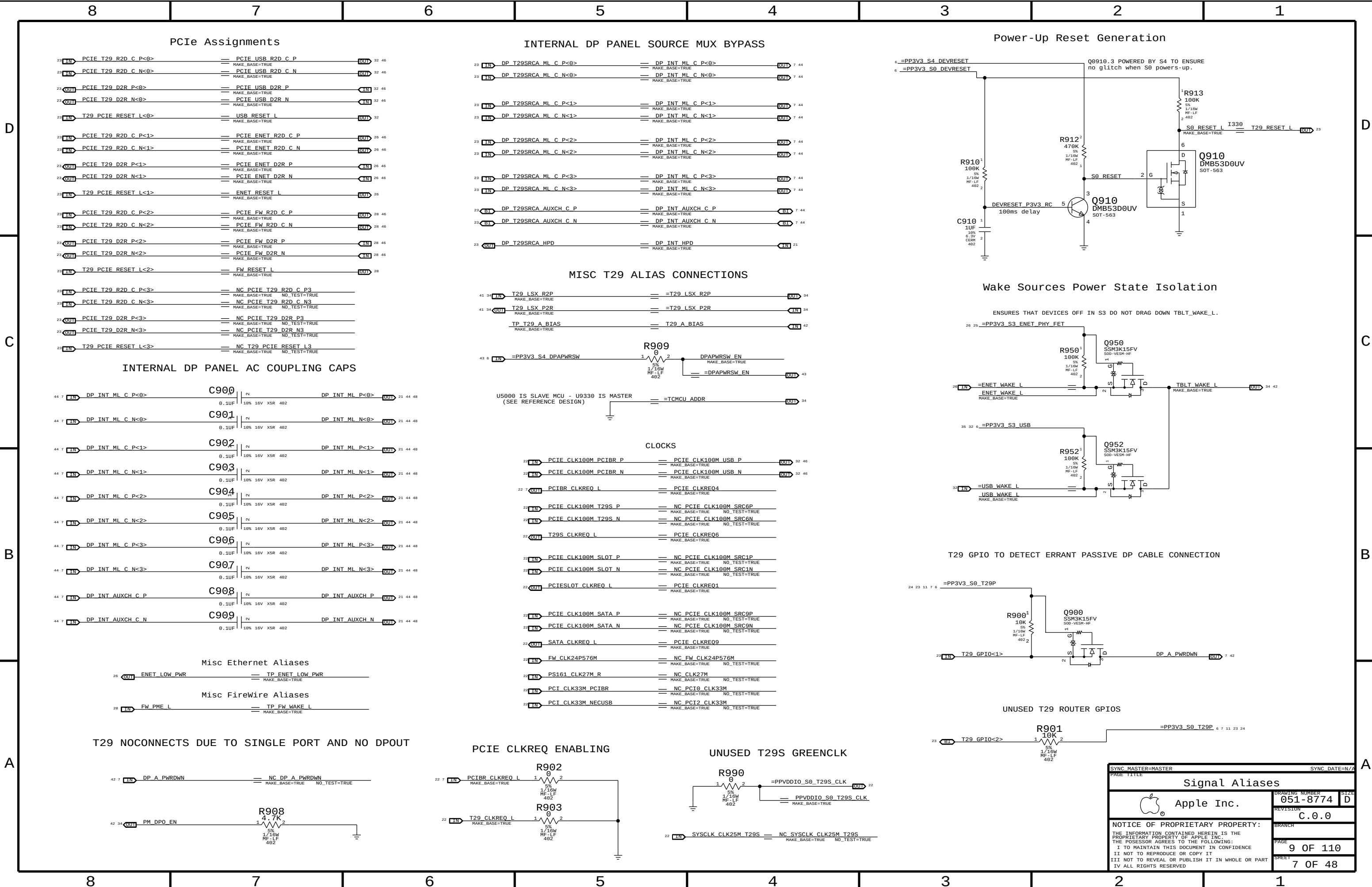
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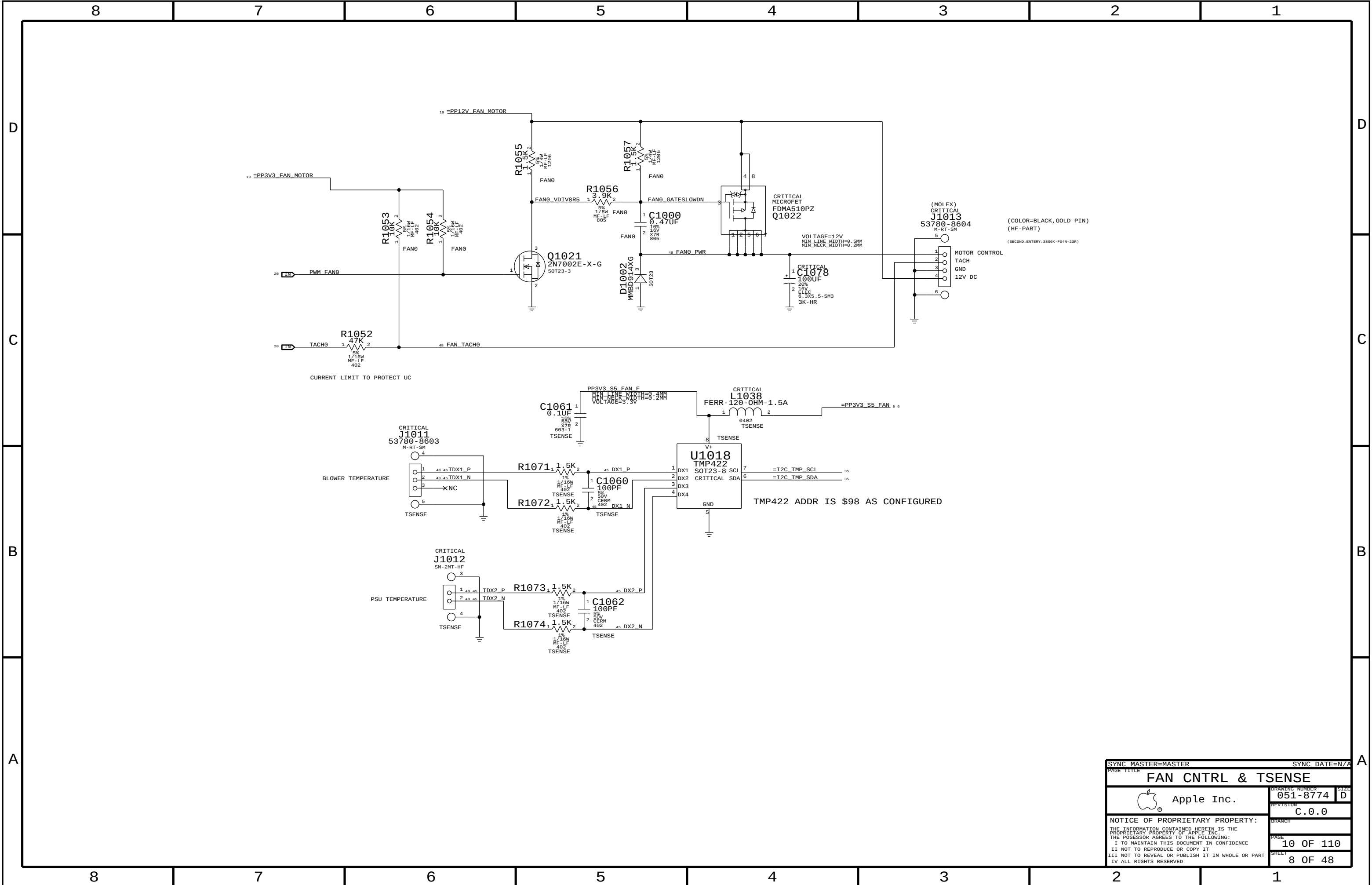
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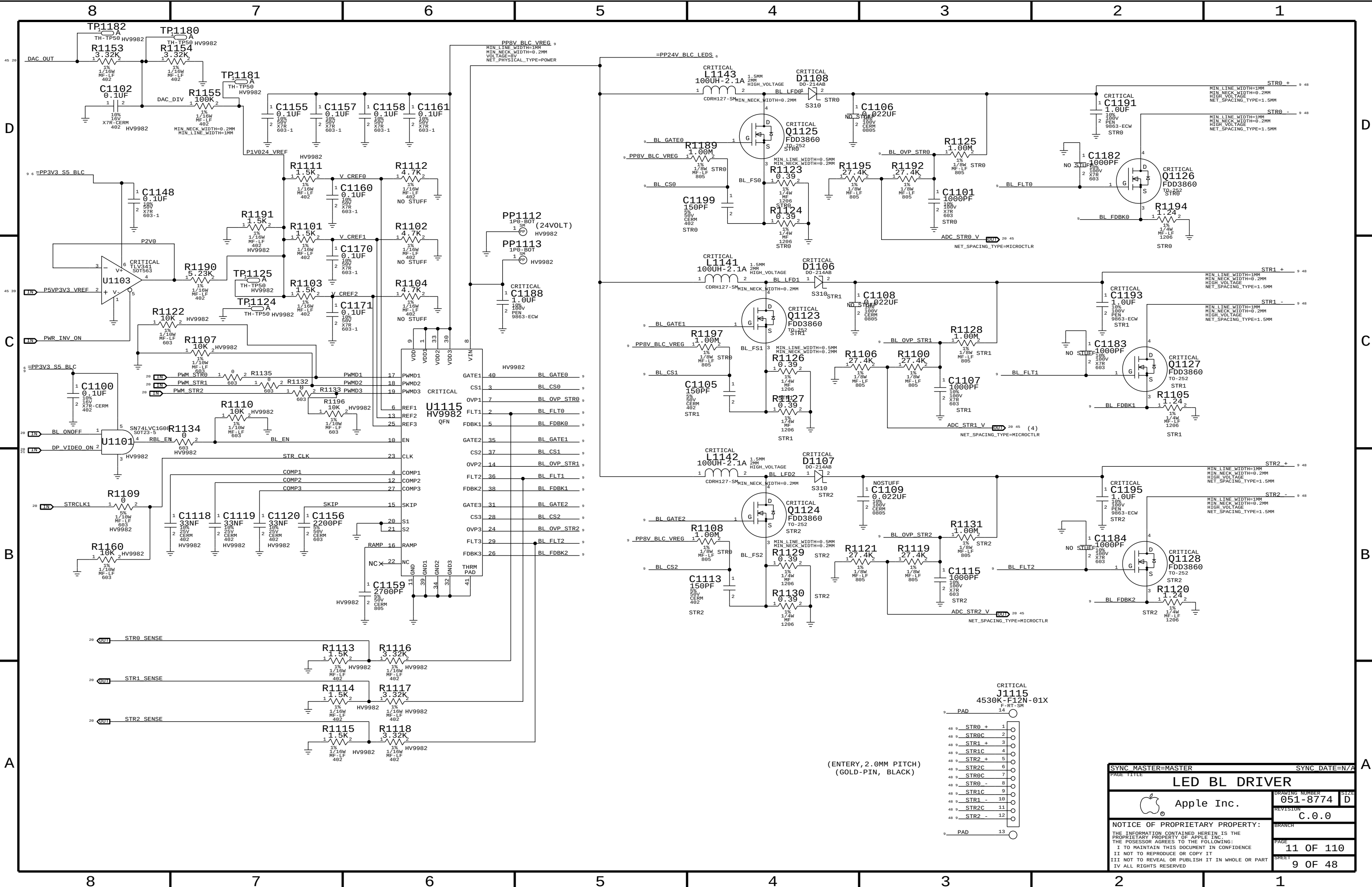


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LED BL DRIVER

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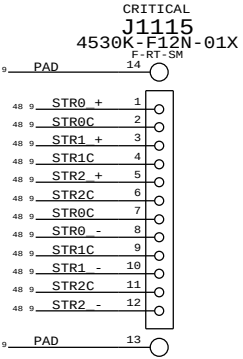
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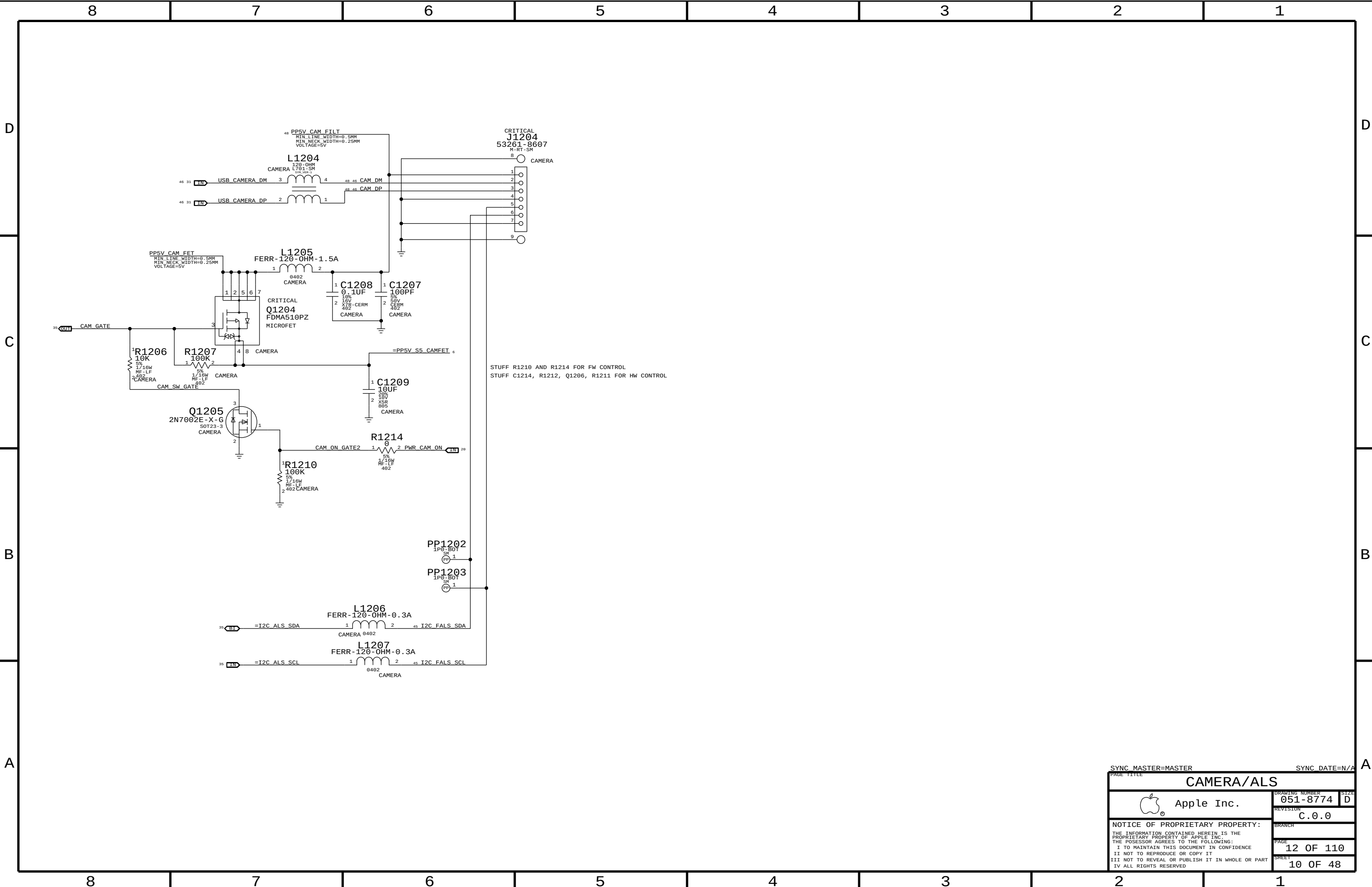
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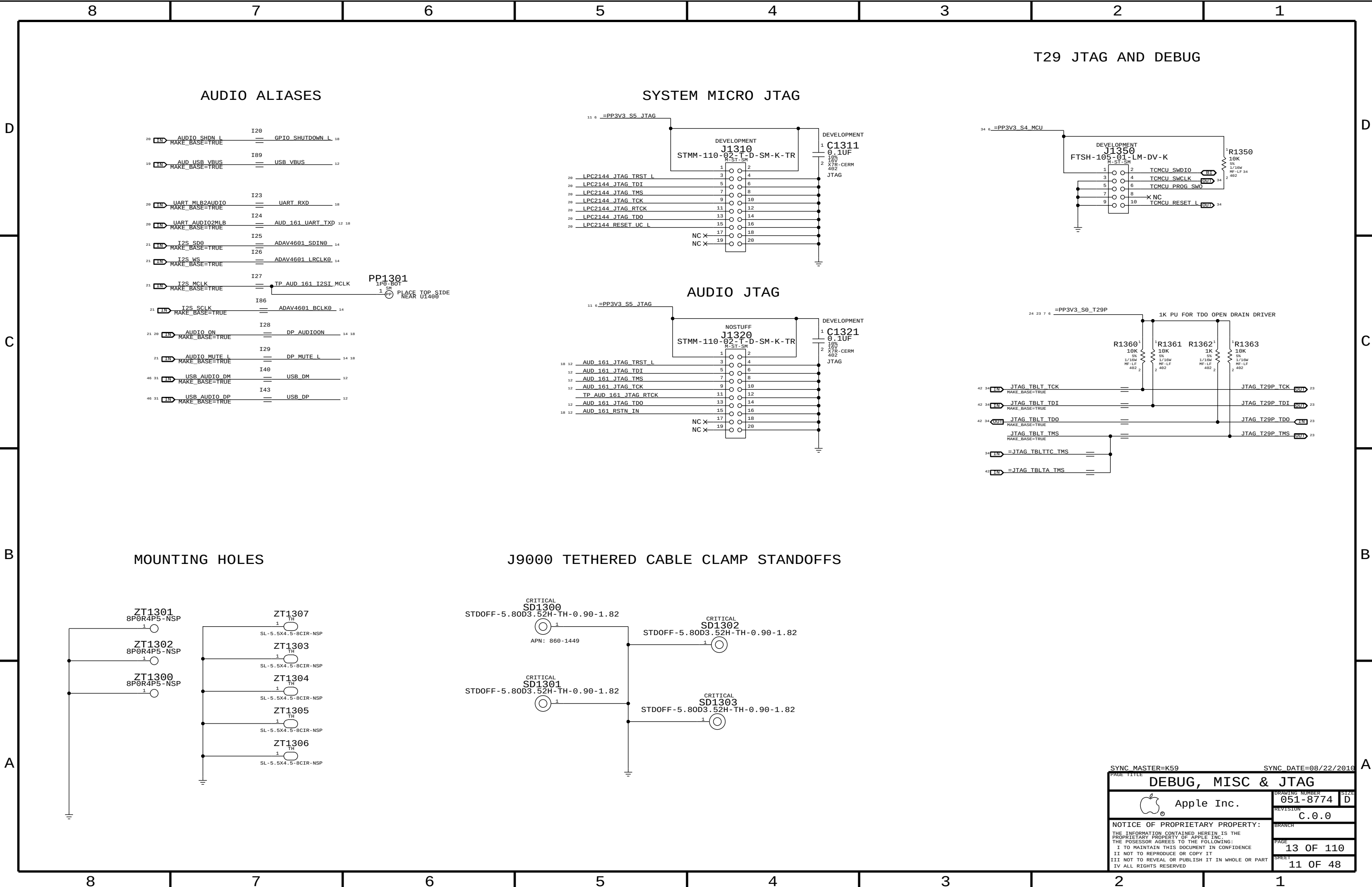
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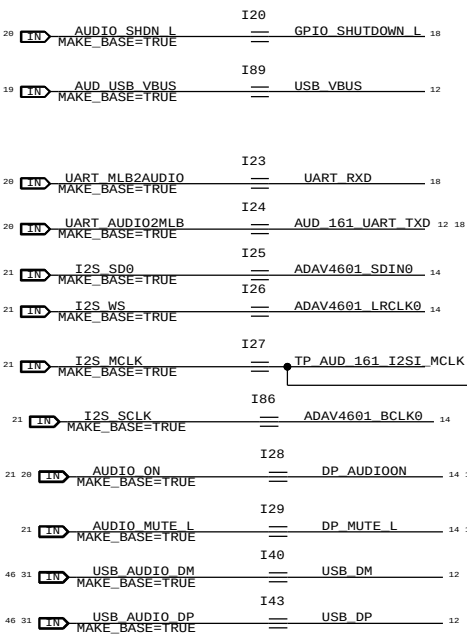


(ENTRY, 2.0MM PITCH)
(GOLD-PIN, BLACK)

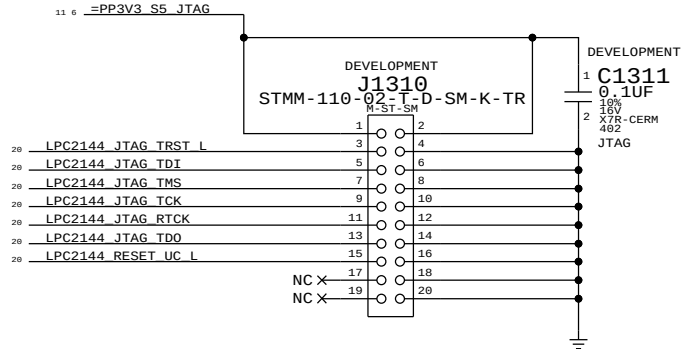




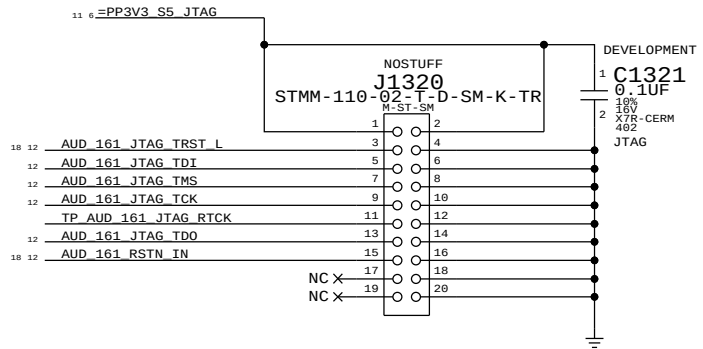
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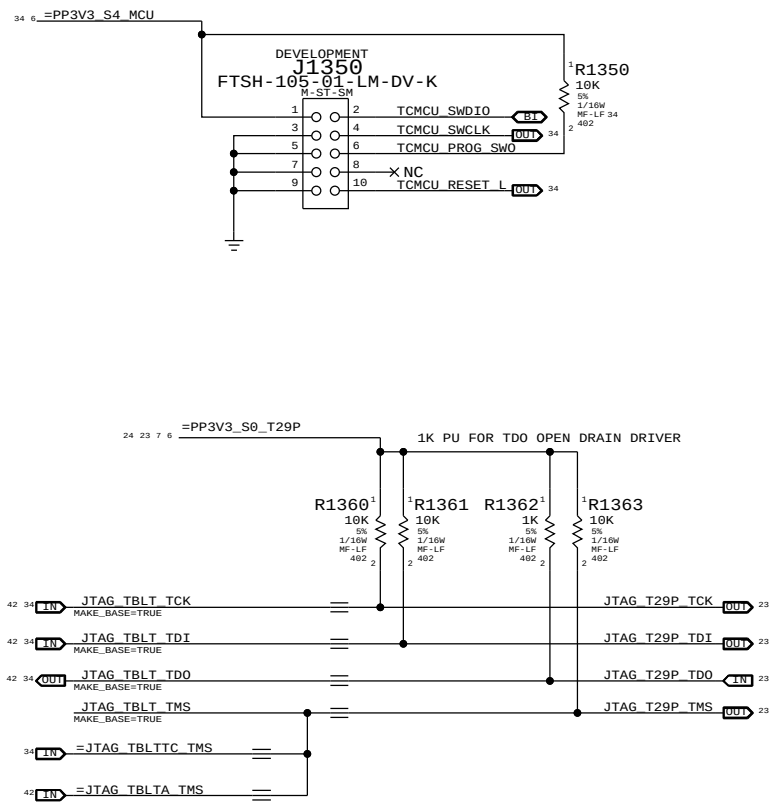
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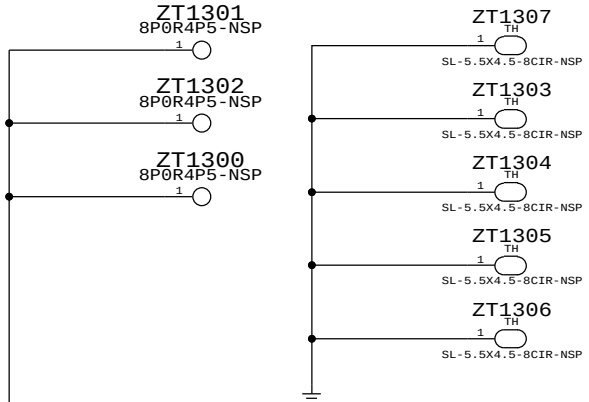
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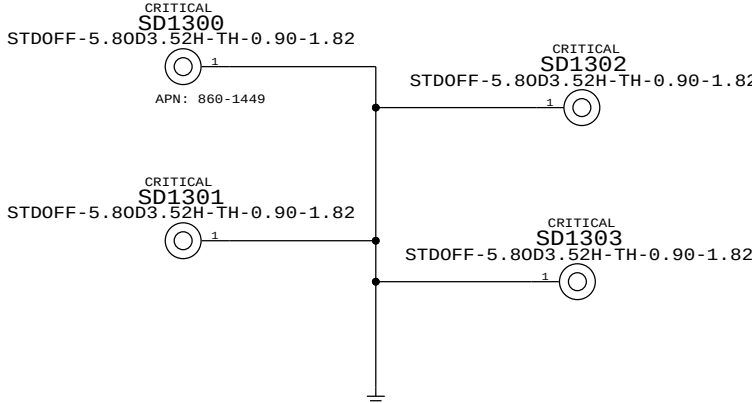
T29 JTAG AND DEBUG



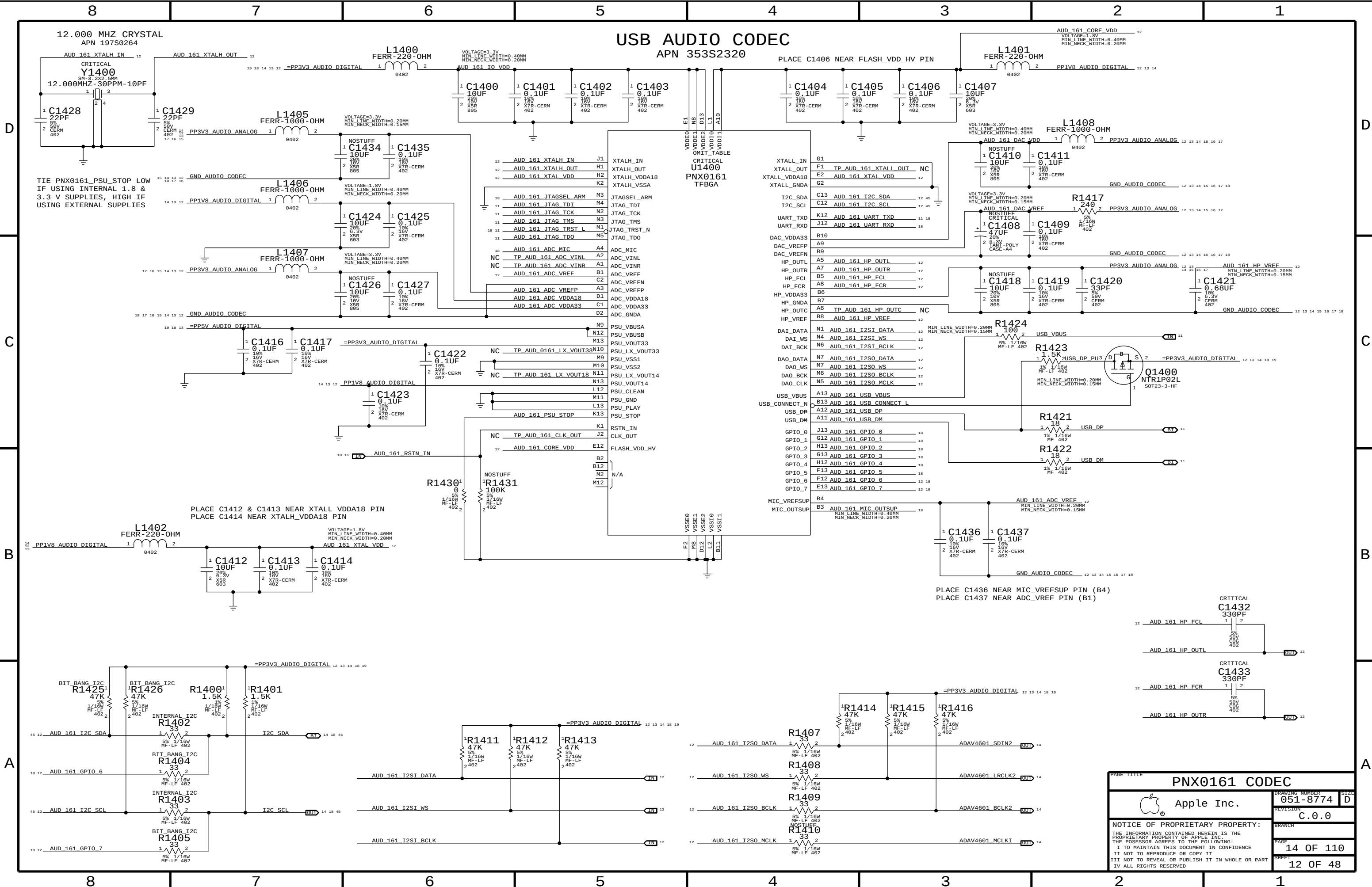
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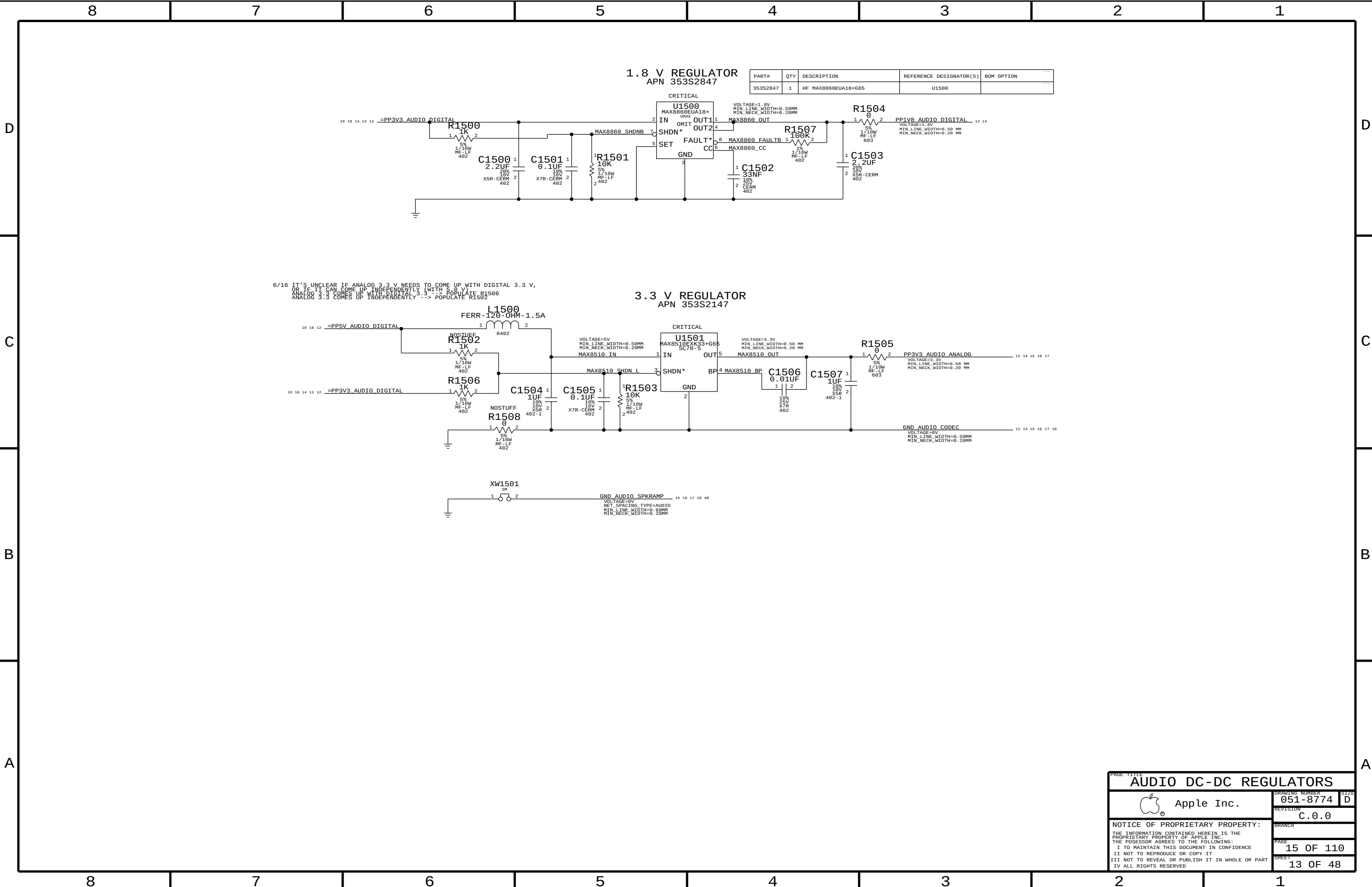


J9000 TETHERED CABLE CLAMP STANDOFFS



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PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S2847	1	HF MAX8860EUA18+G65	U1500	

AUDIO DC-DC REGULATORS

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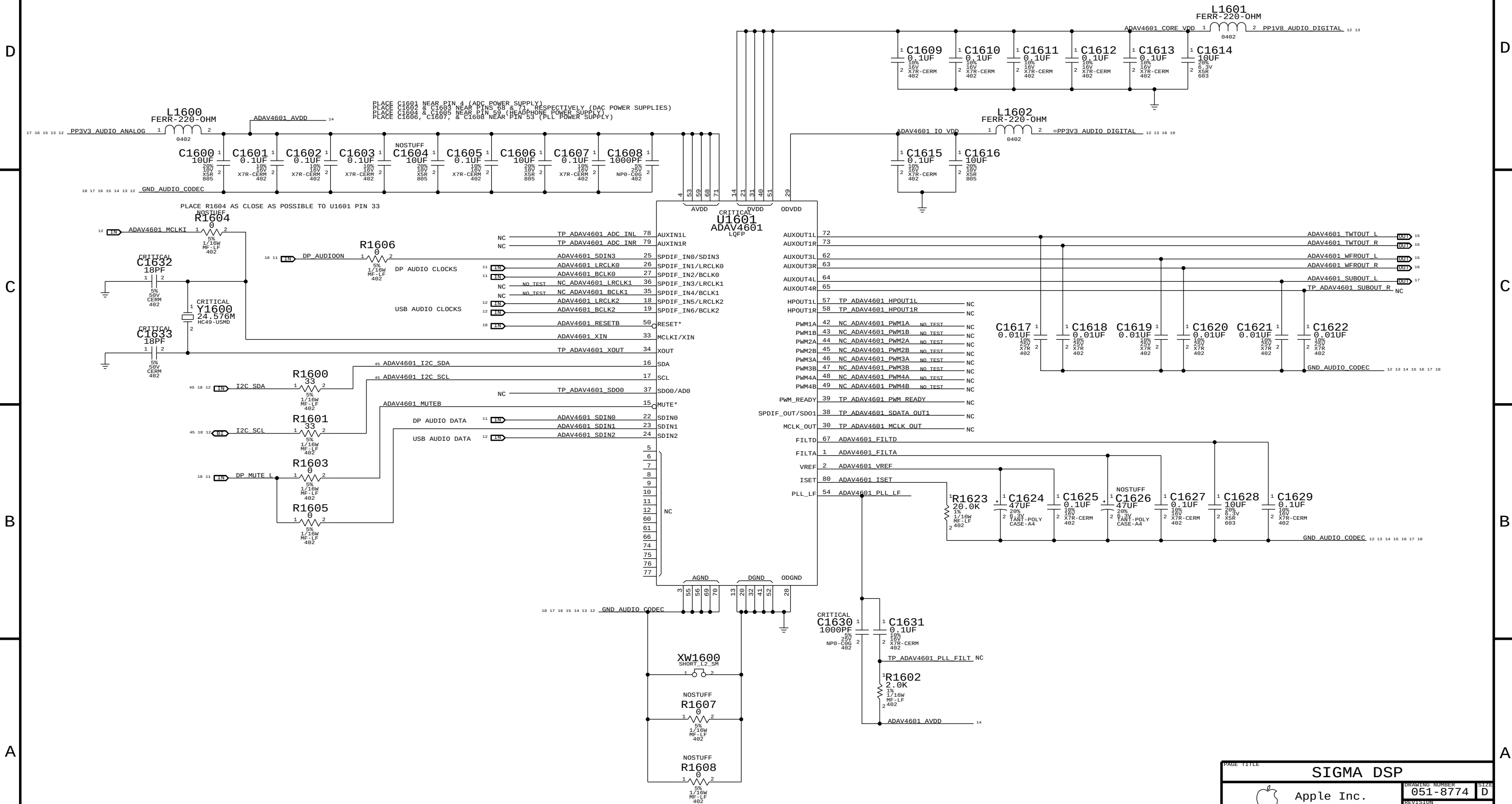
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AUDIO SIGNAL PROCESSOR
APN 337S3285



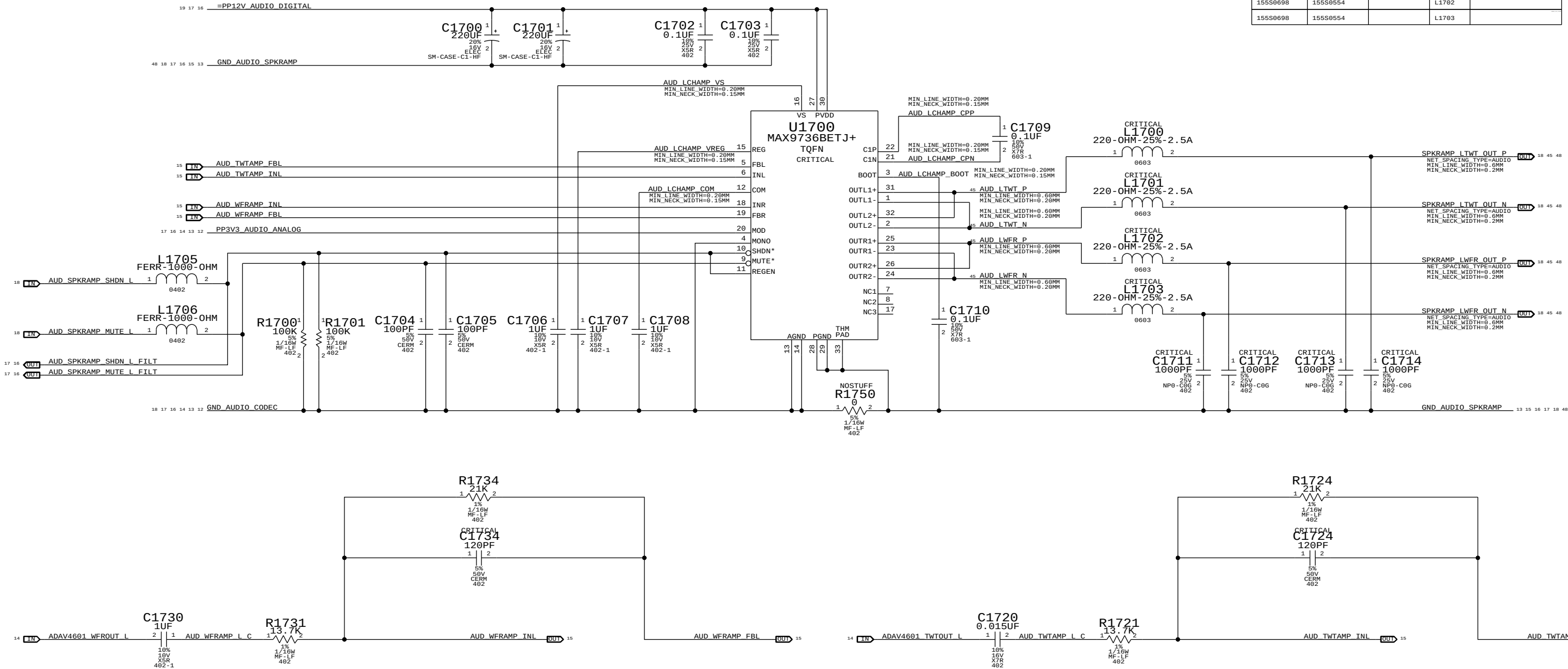
GND CONNECTIONS WERE ADDED TO ADDRESS EMI CONCERNS ON K59

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LEFT SPEAKER AMP

GAIN = 7.36 V/V (+17.33 DB)
FC = ~774 HZ (TWEETER), ~12 HZ (WOOFER)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S0698	155S0554		L1700	
155S0698	155S0554		L1701	
155S0698	155S0554		L1702	
155S0698	155S0554		L1703	



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LEFT SPEAKER AMP

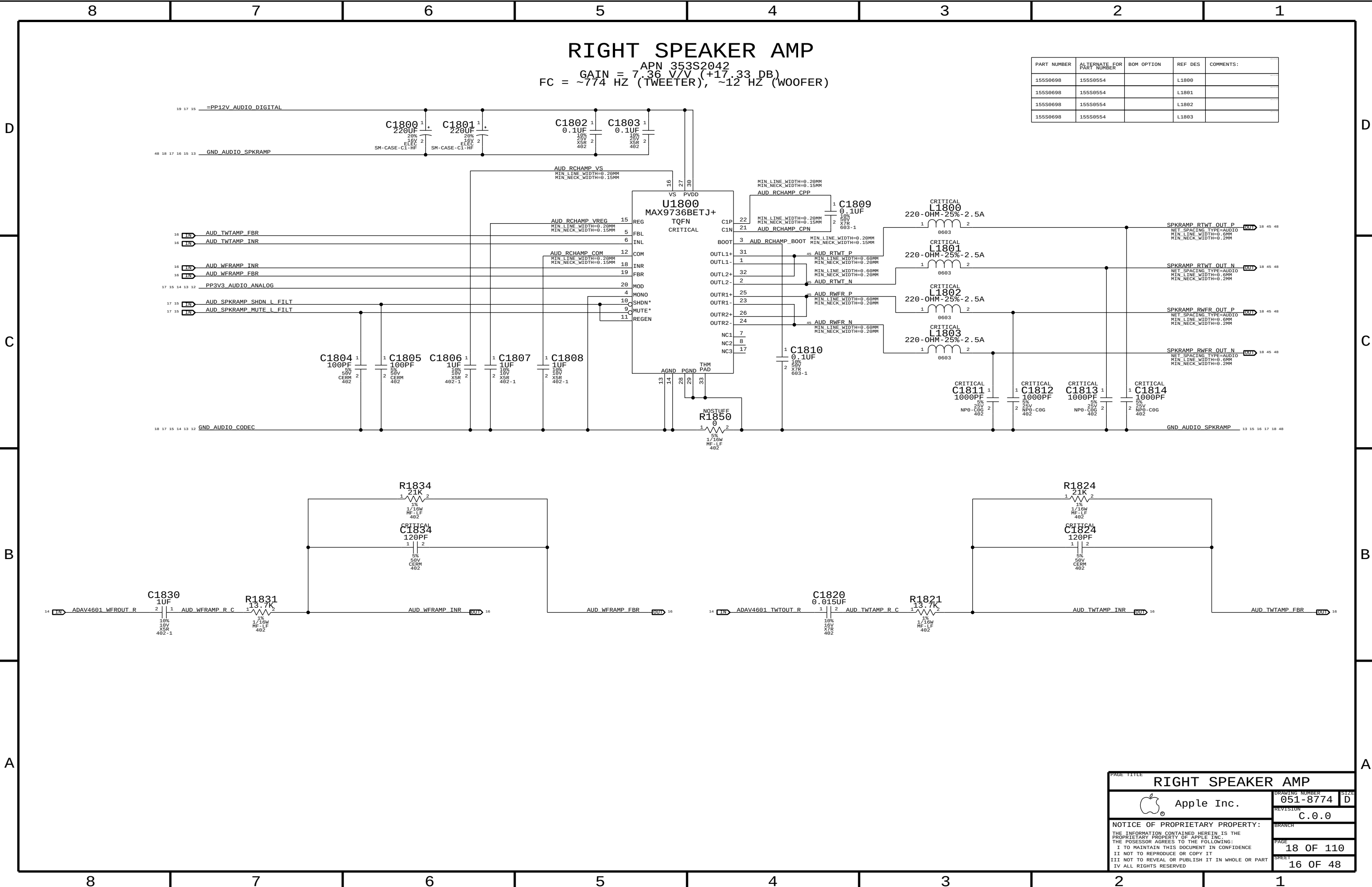
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RIGHT SPEAKER AMP

APN 353S2042

GAIN = 7.36 V/V (+17.33 DB)

FC = ~774 HZ (TWEETER), ~12 HZ (WOOFER)

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
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155S0698	155S0554		L1801	
155S0698	155S0554		L1802	
155S0698	155S0554		L1803	

RIGHT SPEAKER AMP

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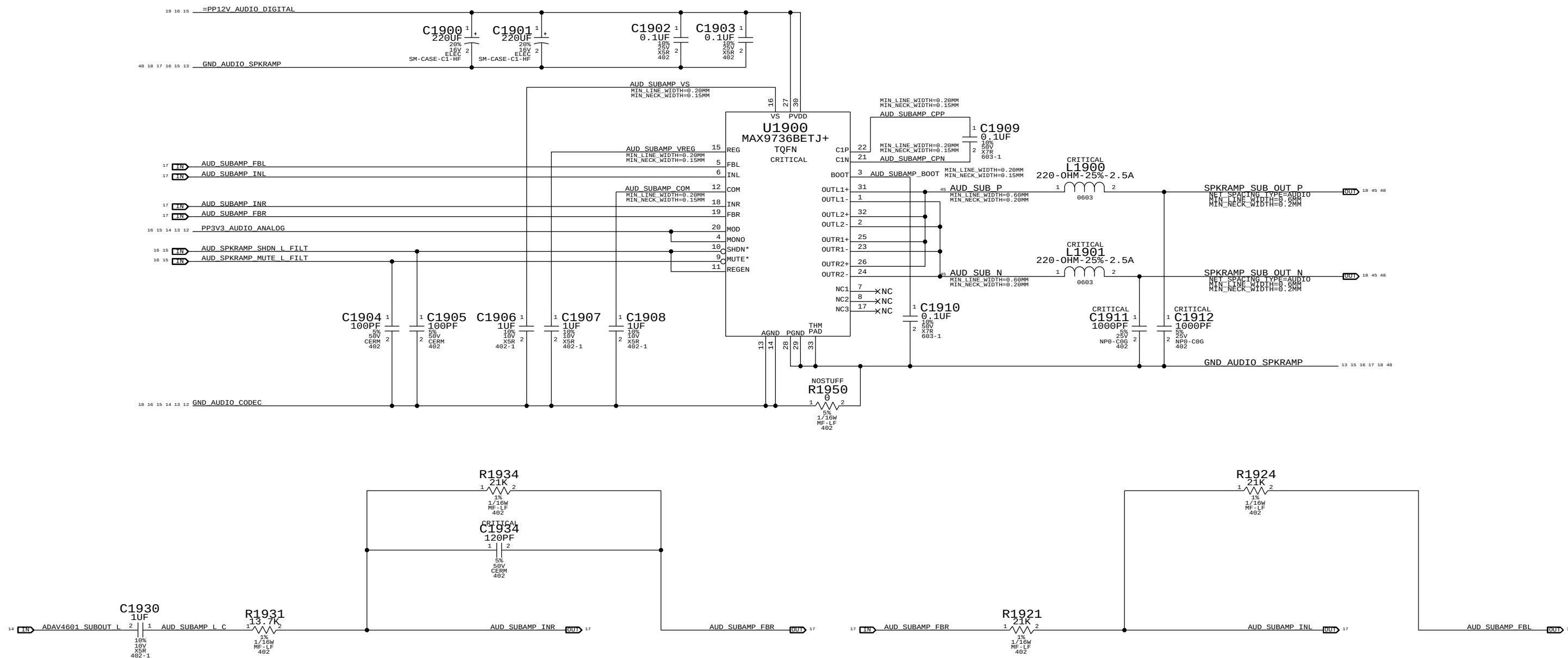
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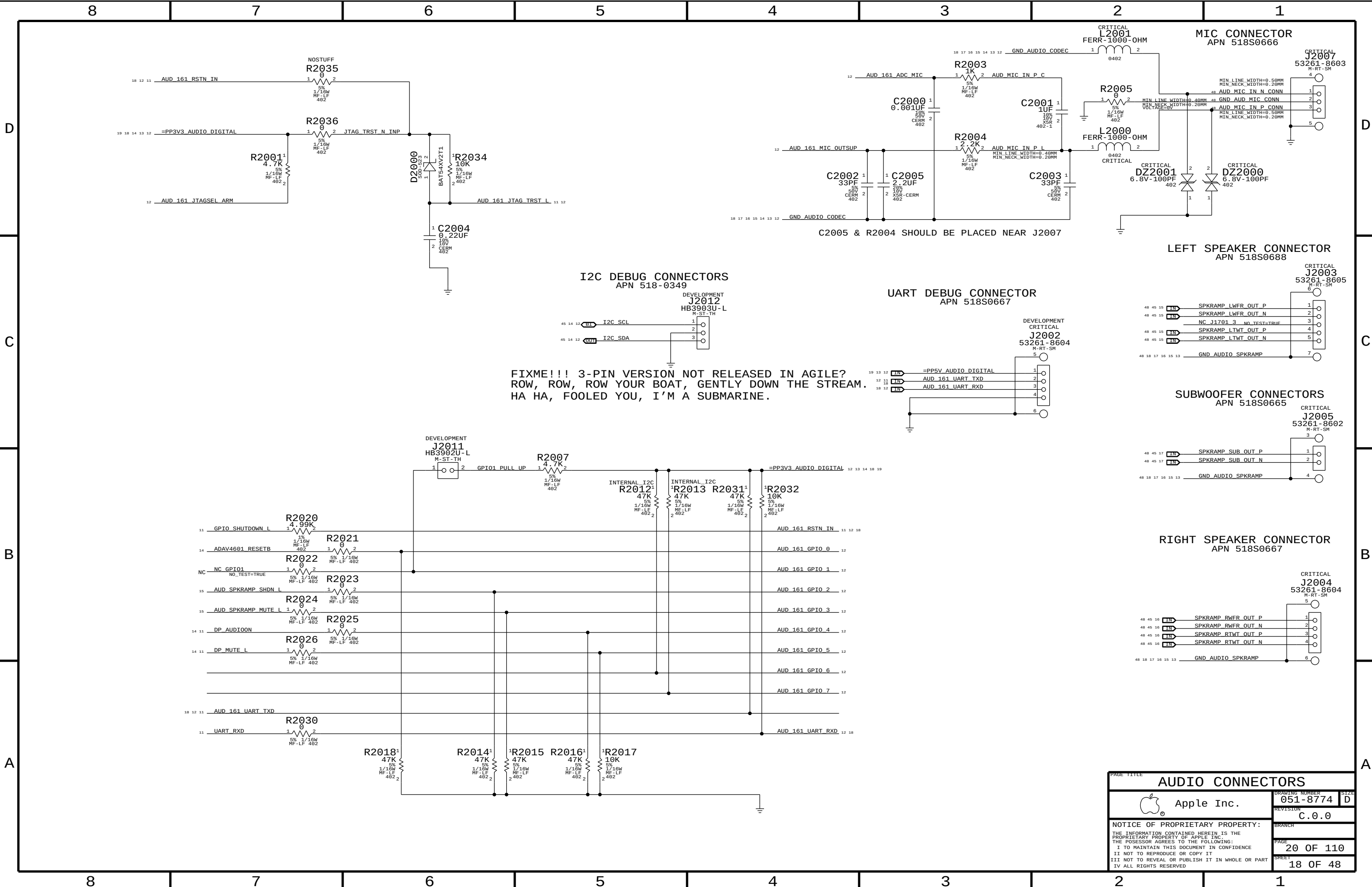
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FC = ~12 HZ (+17.33 DB))

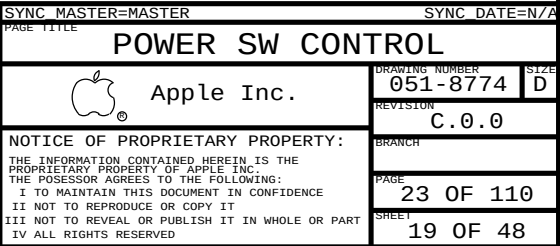
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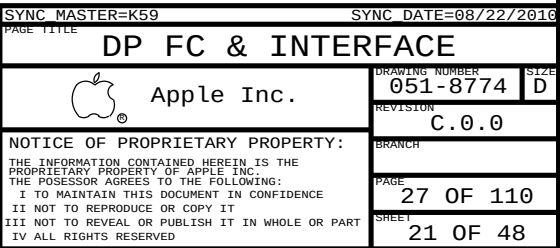


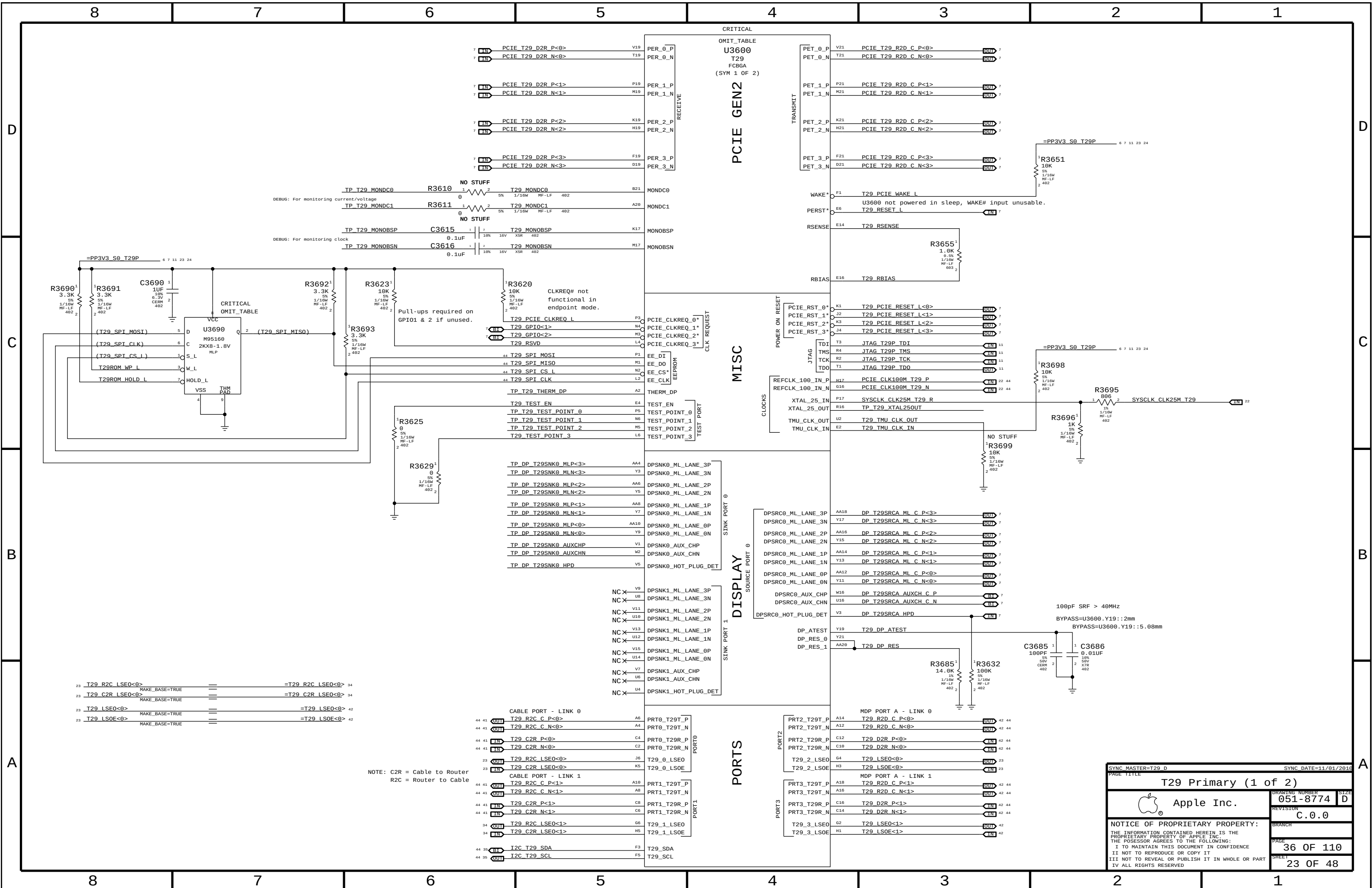
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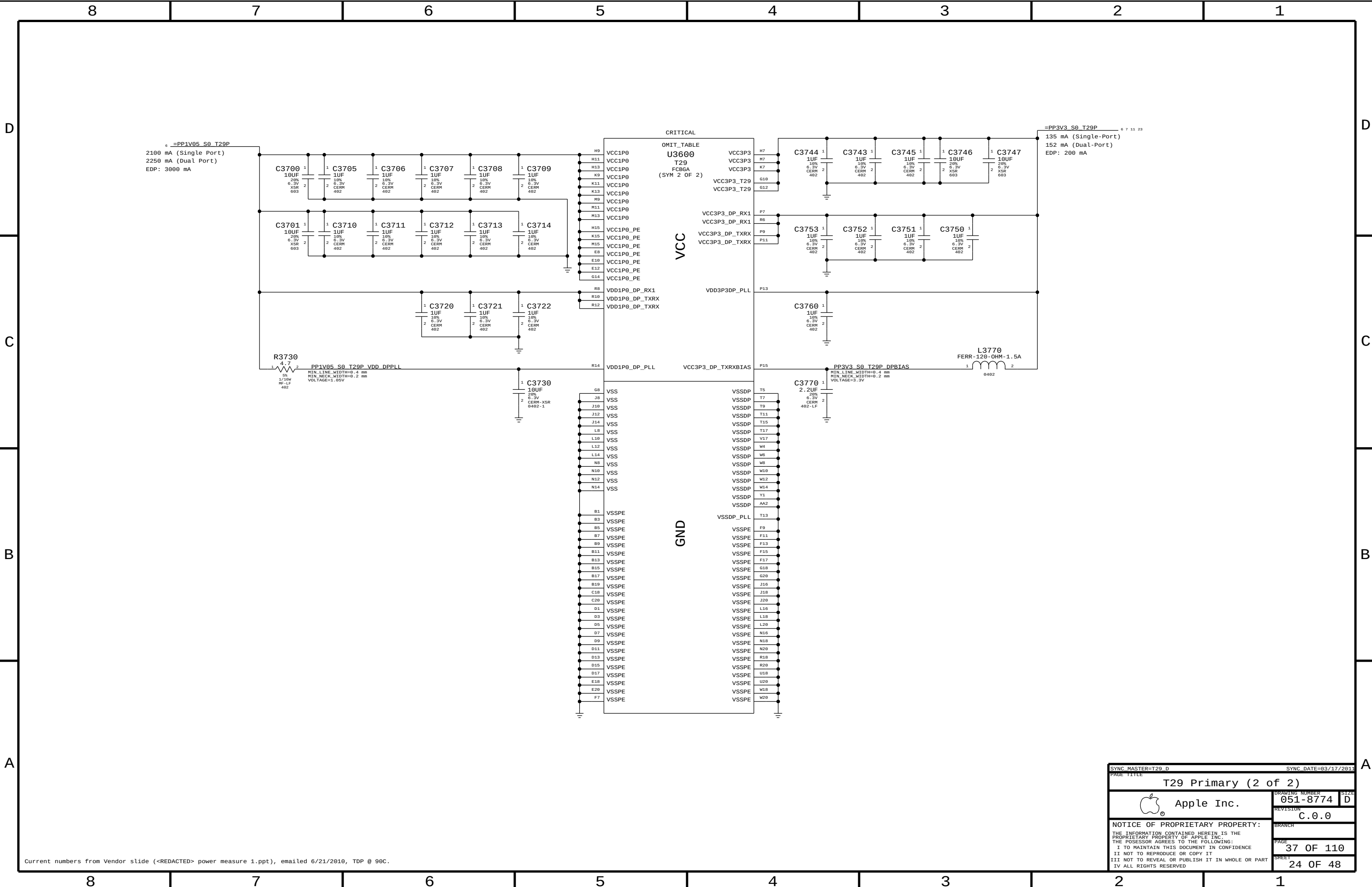


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Current numbers from Vendor slide (<REDACTED> power measure 1.ppt), emailed 6/21/2010, TDP @ 90C.

SYNC MASTER=T29_D

SYNC DATE=03/17/2011

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T29 Primary (2 of 2)

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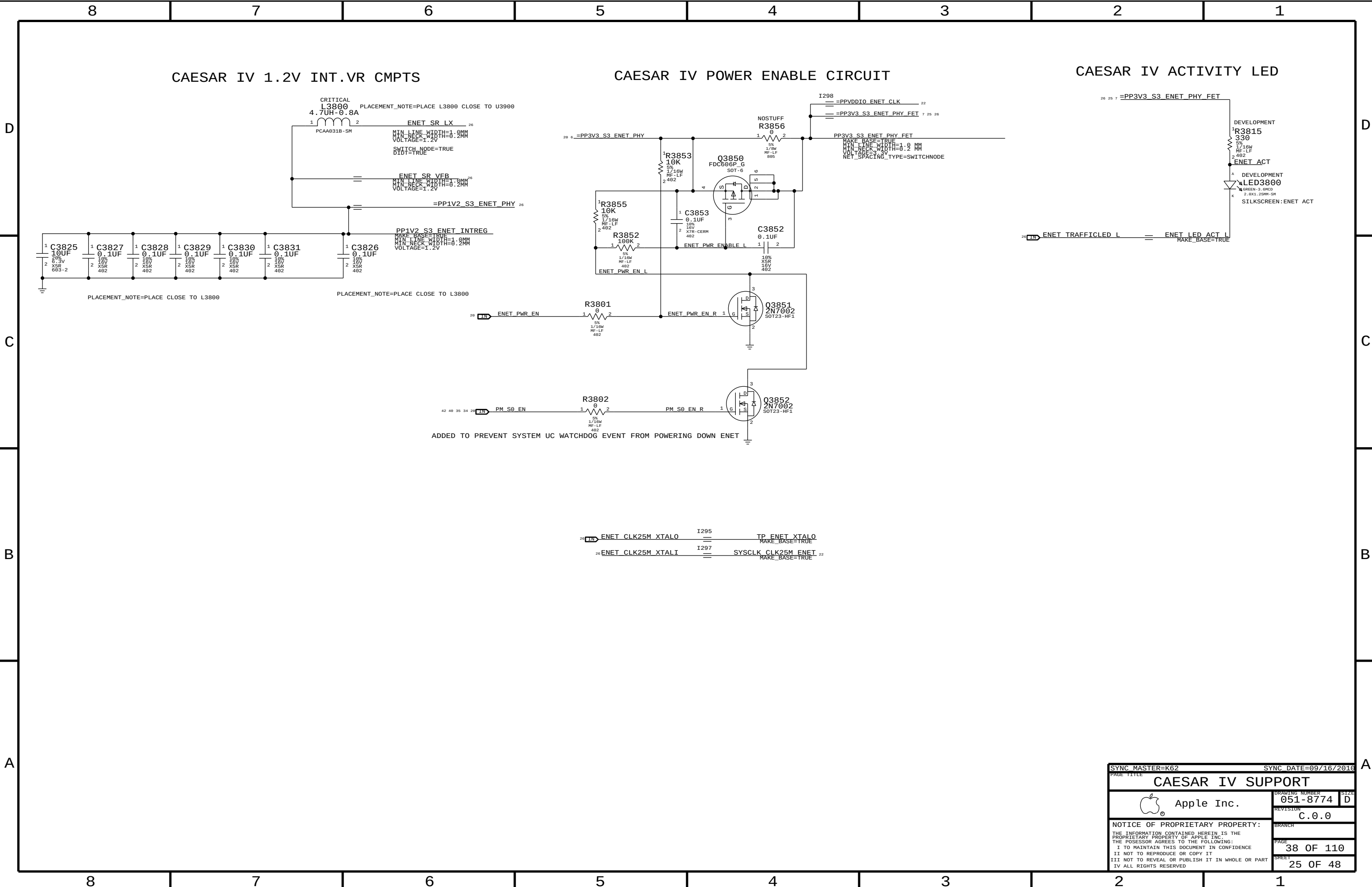
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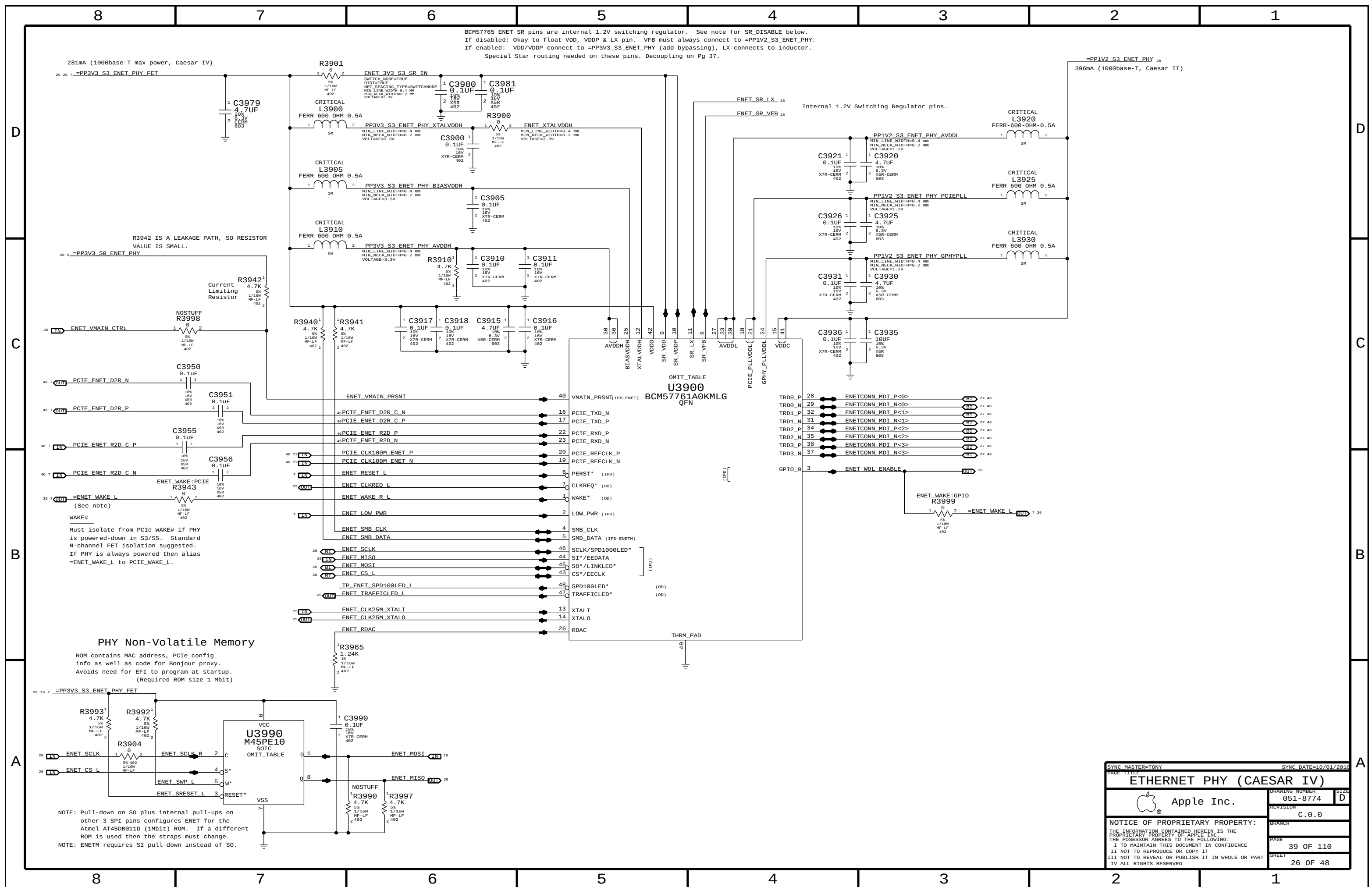
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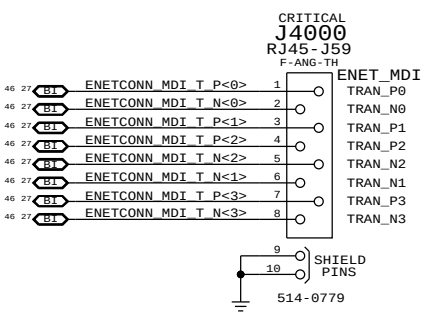
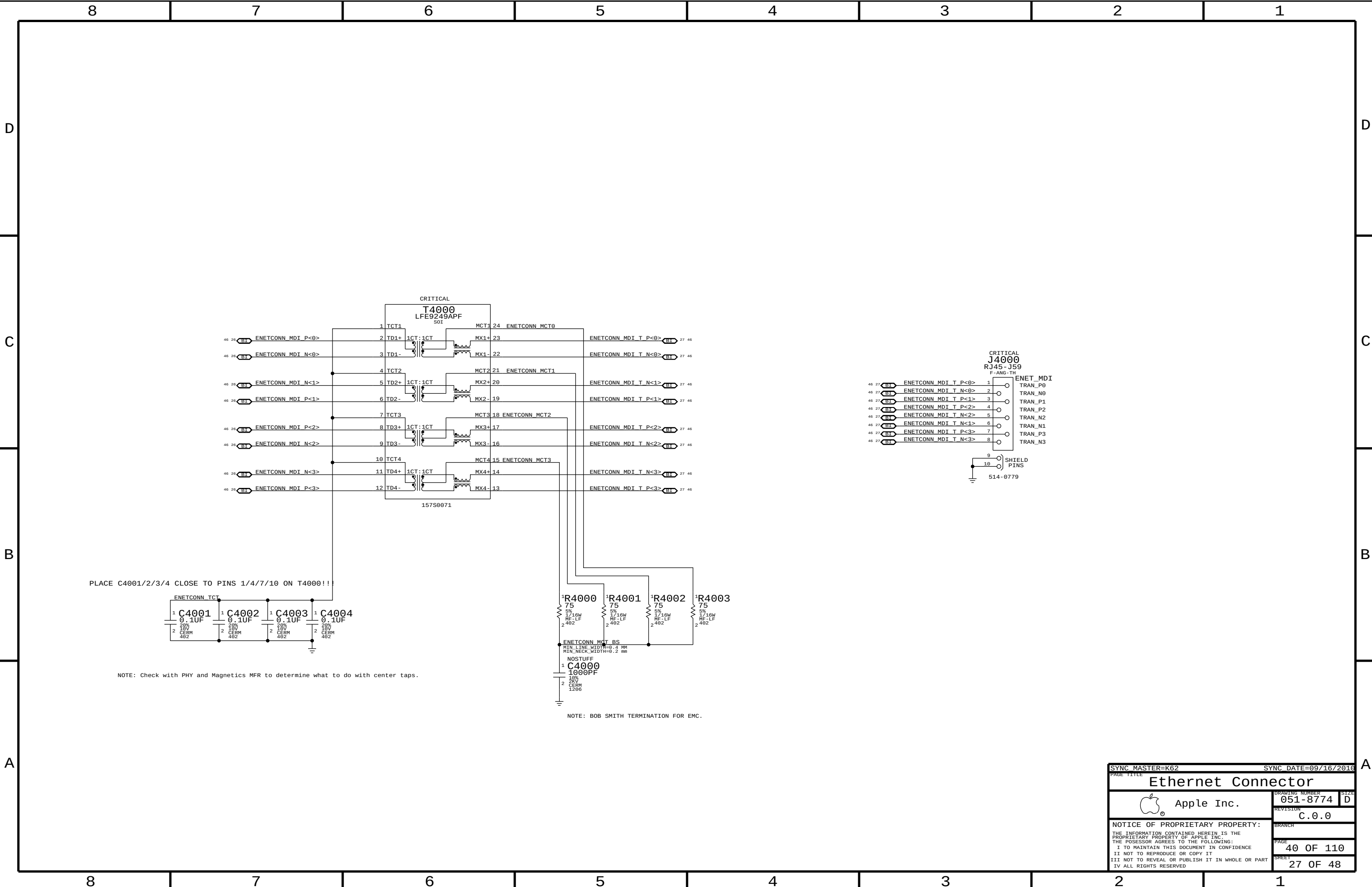
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PLACE C4001/2/3/4 CLOSE TO PINS 1/4/7/10 ON T4000!!!

NOTE: Check with PHY and Magnetics MFR to determine what to do with center taps.

NOTE: BOB SMITH TERMINATION FOR EMC.

SYNC MASTER=K62

SYNC DATE=09/16/2016

Ethernet Connector

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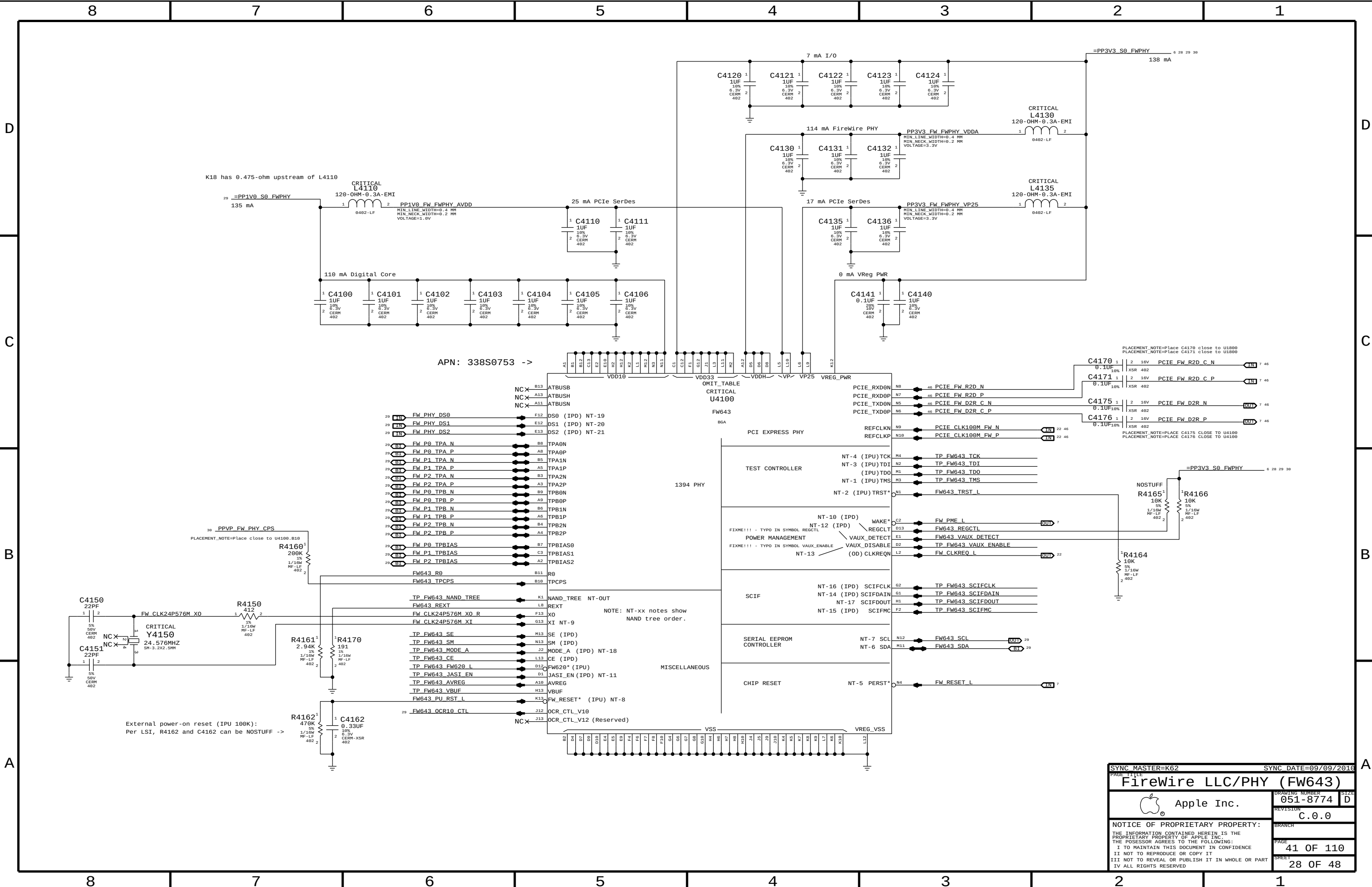
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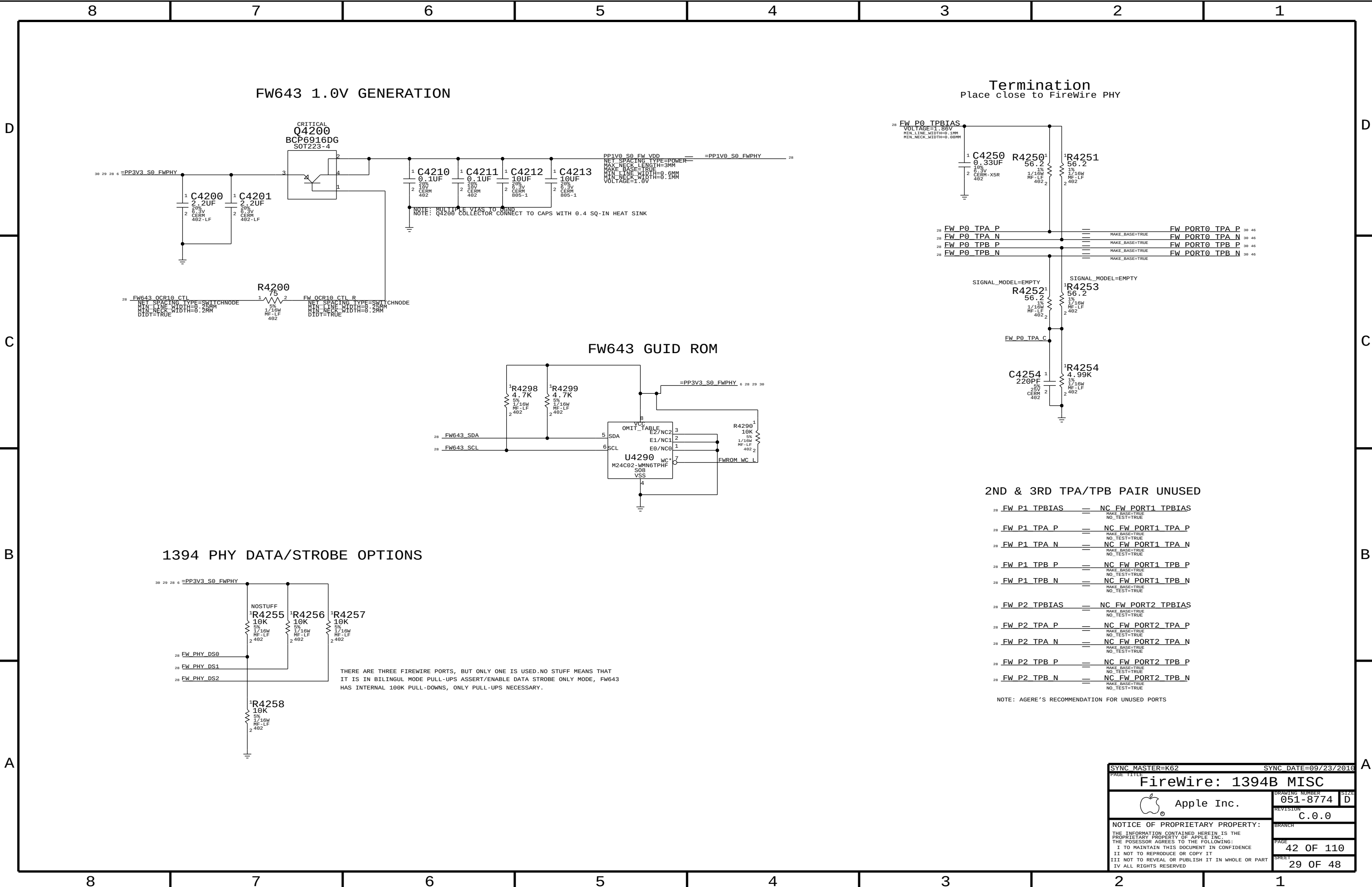
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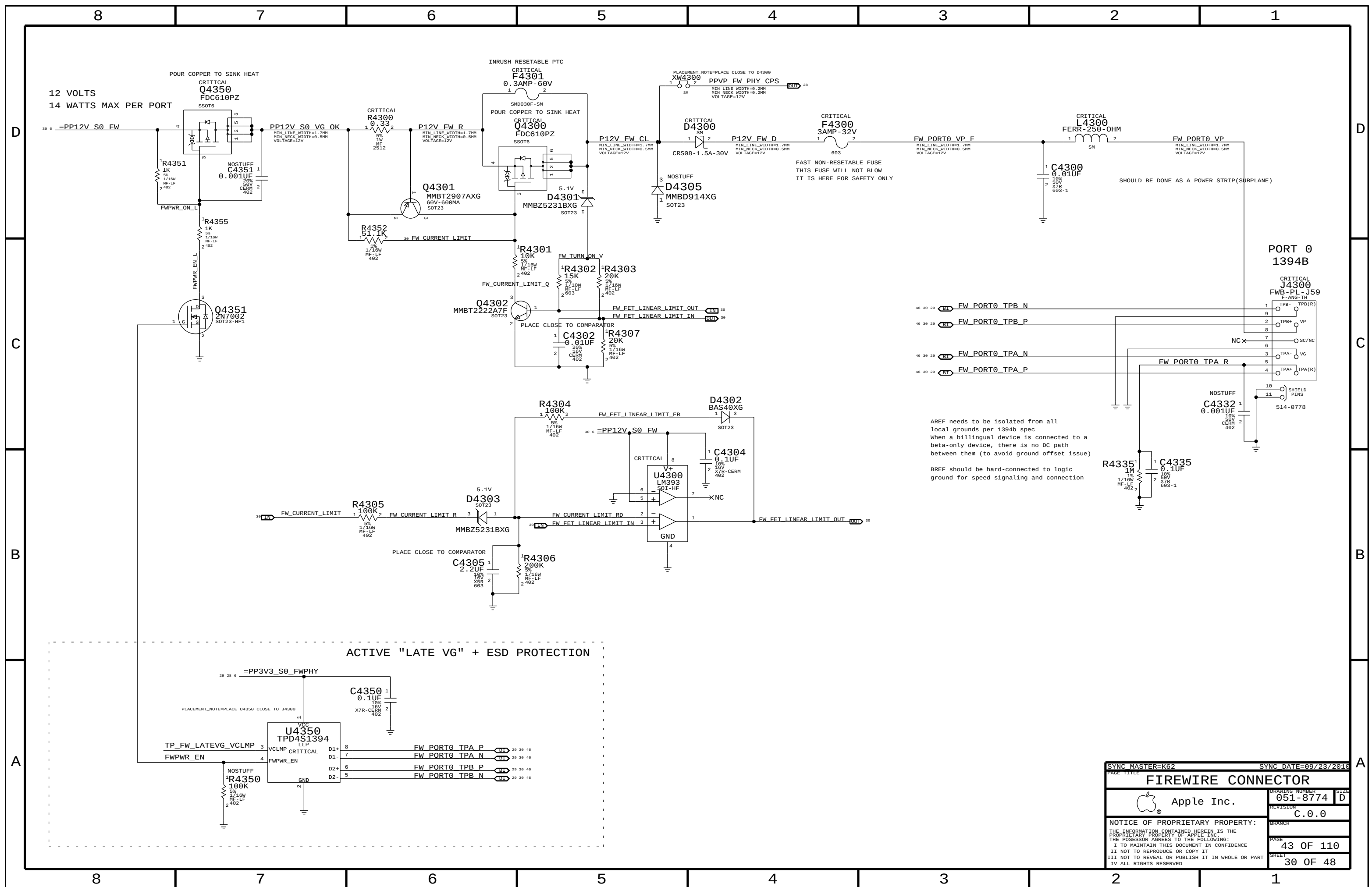
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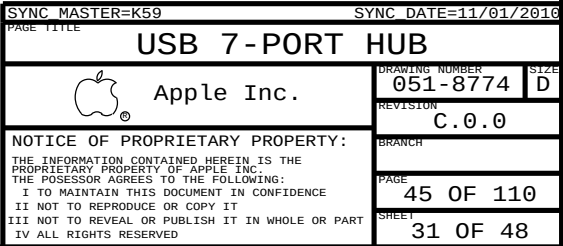
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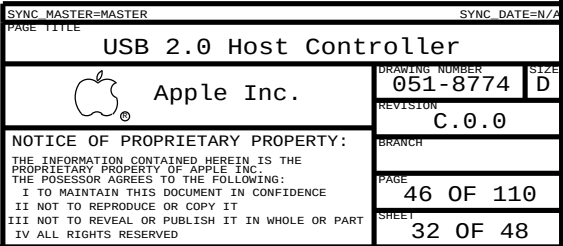
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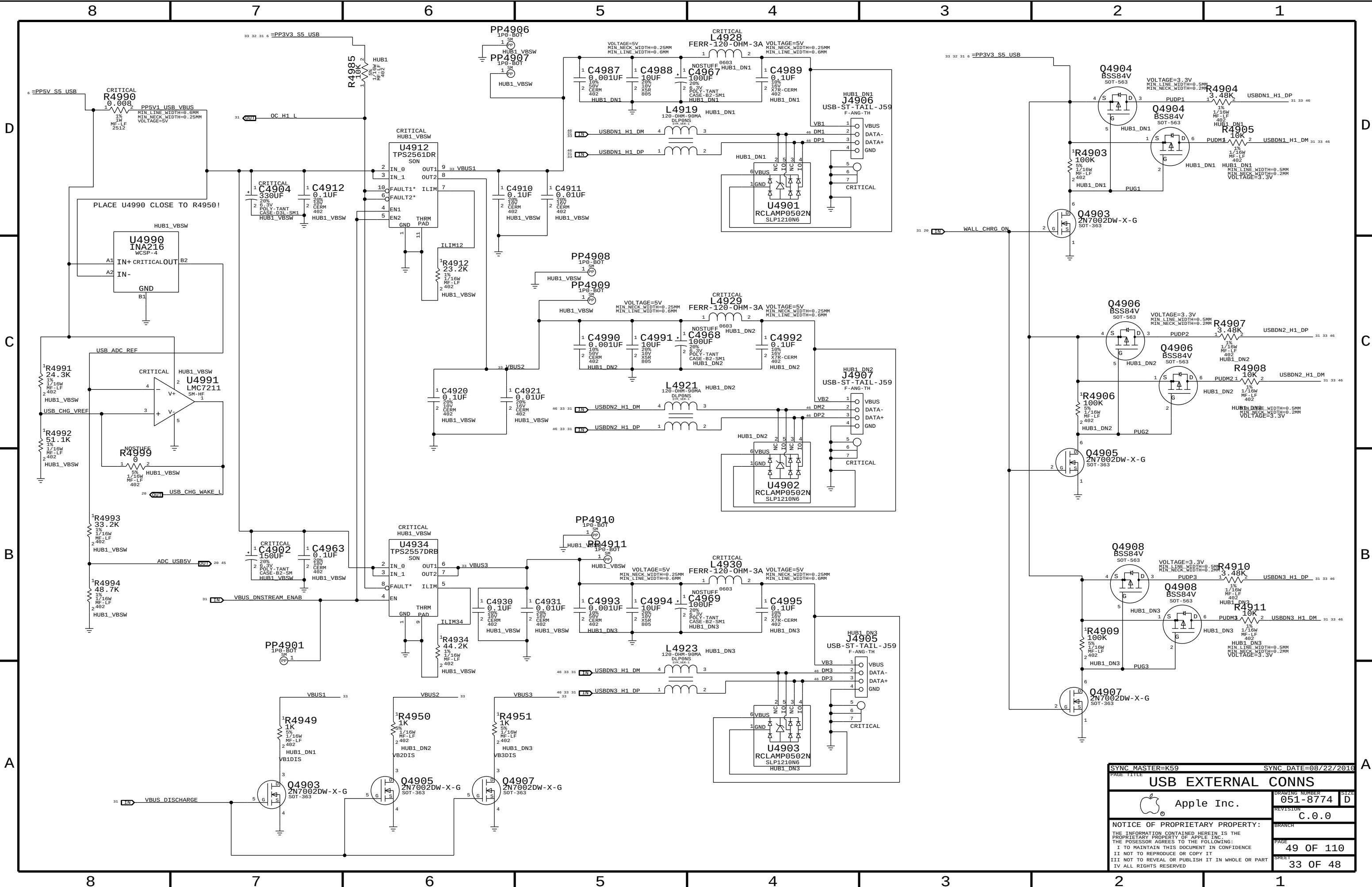












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C

B

A

D

C

B

A

D

C

B

A

D

C

B

A

D

C

B

A

D

C

B

A

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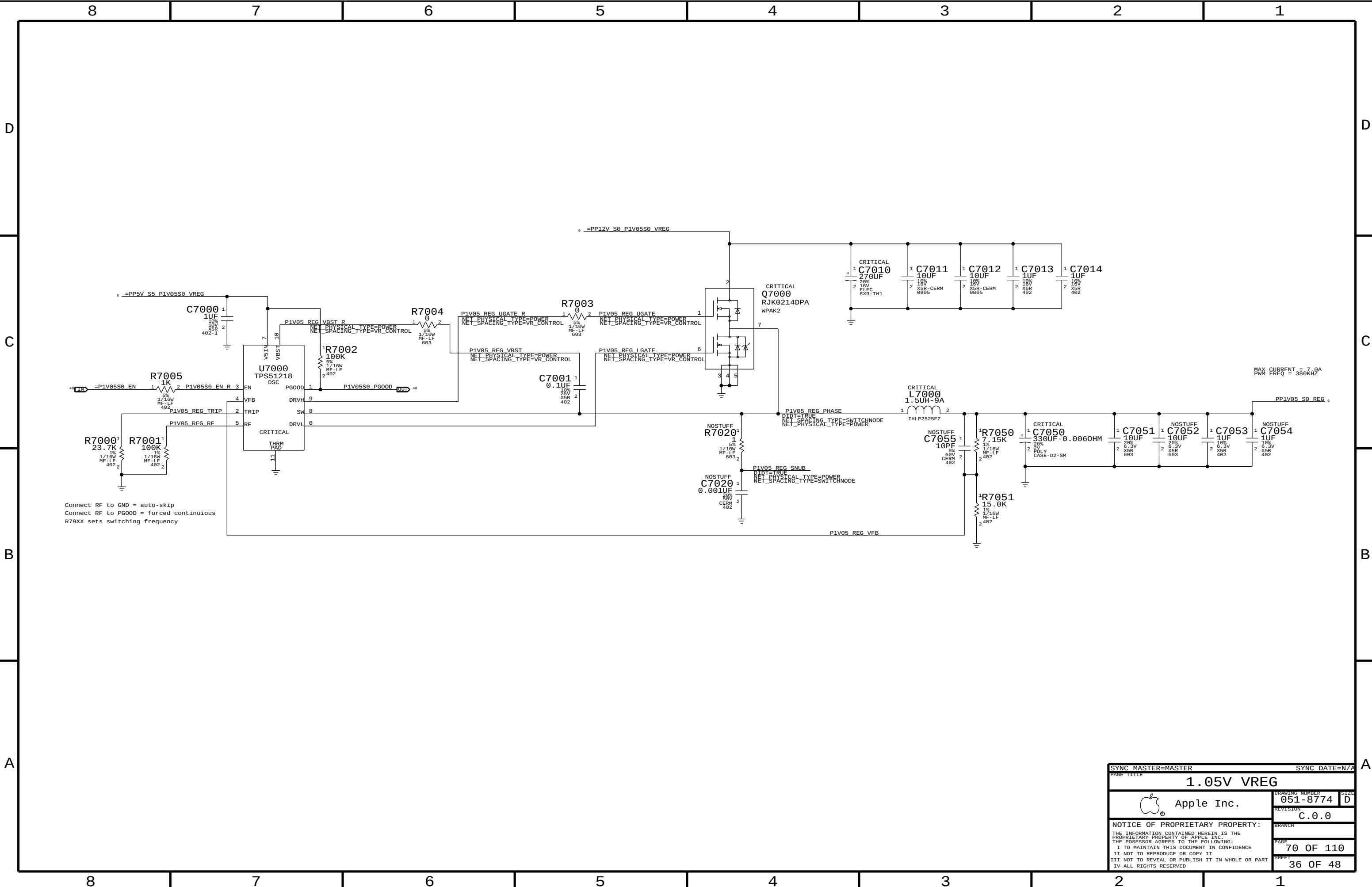
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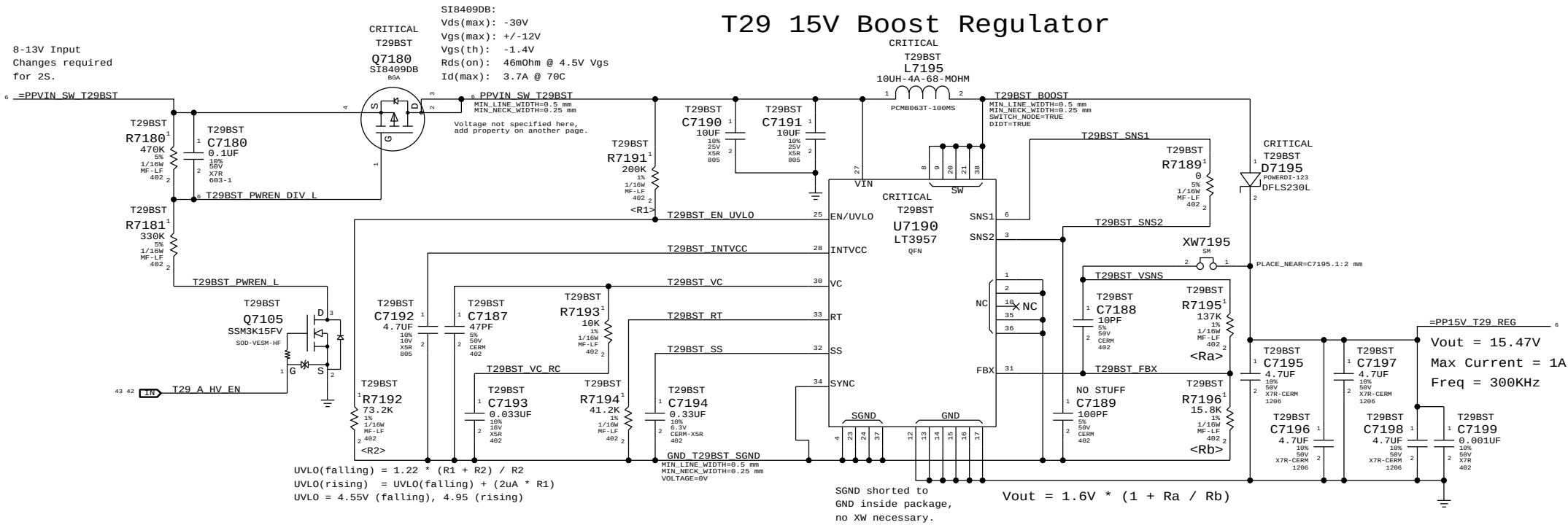


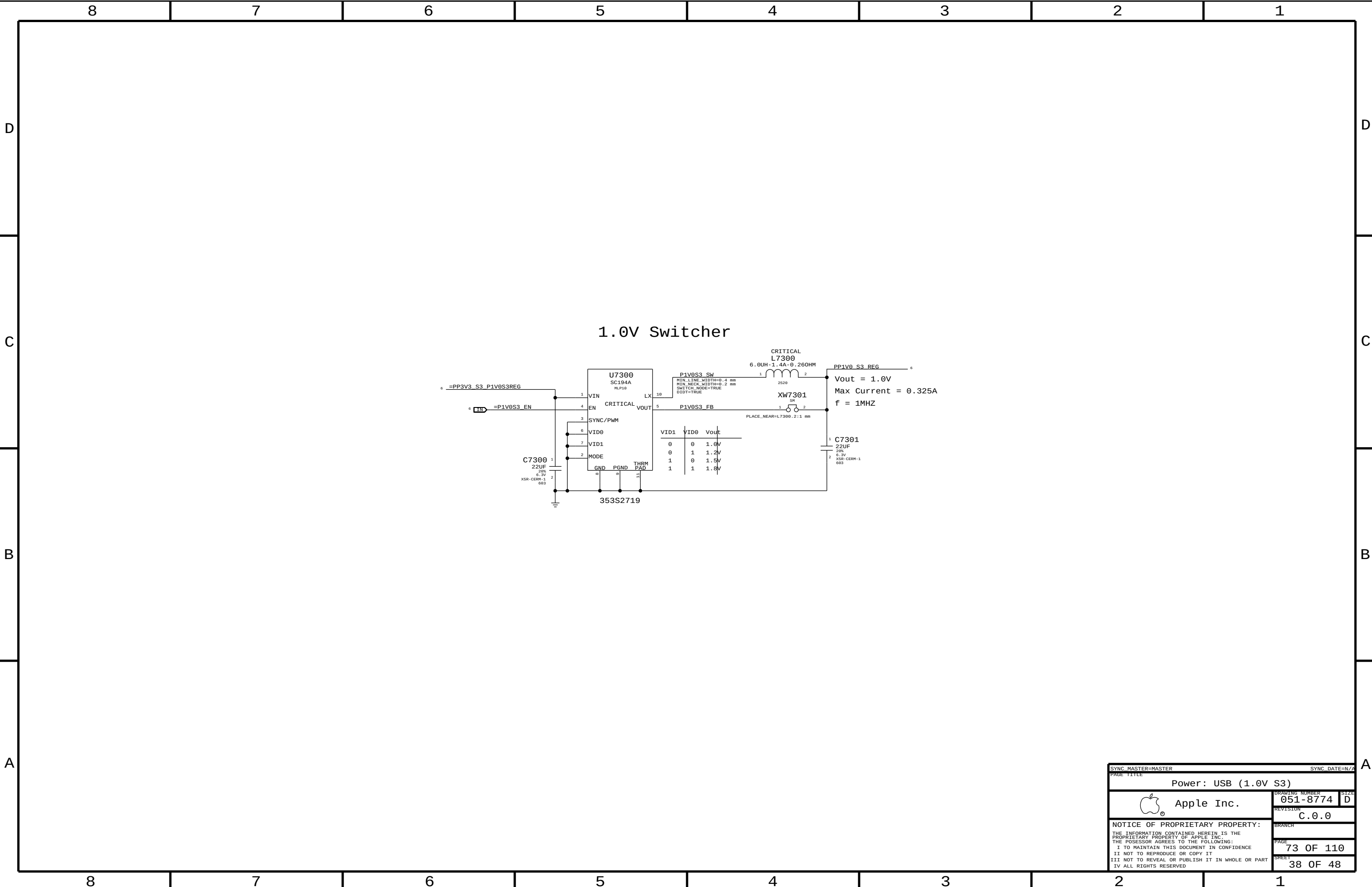
Page Notes

Power aliases required by this page:
- =PPVIN_SW_T29BST (8-13V Boost Input)
- =PP15V_T29_REG (15V Boost Output)

Signal aliases required by this page:
(NONE)

BOM options provided by this page:
T29BST - Stuffs 15V boost regulator





8 7 6 5 4 3 2 1

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8 7 6 5 4 3 2 1

T29 / Device Rails

PM_S3_EN
MAKE_BASE=TRUE

PM_S0_EN
MAKE_BASE=TRUE

REF DESIGN REQ 2.2K FOR QTY 2 MCUS

R7905
2.2K
5%
1/16W
MF-LF
402

R7906
2.2K
5%
1/16W
MF-LF
402

P3V3S3_EN

P12VS0_EN

P3V3S0_EN

P1V05S0_EN

PP3V3_S0_TCPWRSW

TCCONN_PWR_EN

Power Goods

P5V3V3S5_PG00D
MAKE_BASE=TRUE

TP_5V3V3S5_PG00D

P1V05S0_PG00D

CK505_PWRGD

S0_PG00D
MAKE_BASE=TRUE

3.3V S3 FET

RT7980

PP3V3_S5_P3V3S3FET
4753 mA

PP3V3_S5_P3V3S3FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7982
47K
5%
1/16W
MF-LF
402

C7981
0.033UF
10%
16V
X5R
402

R7980
33K
5%
1/16W
MF-LF
402

P3V3S3_EN_L

P3V3S3_SS

C7980
0.01UF
10%
16V
C0RM
402

Q7980
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

Q7989
SSM3K15FV
SOD-VESM-HF

P3V3S3_EN

3.3V S0 FET

RT7990

PP3V3_S5_P3V3S0FET
4557 mA
+1700 mA

PP3V3_S5_P3V3S0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7992
47K
5%
1/16W
MF-LF
402

P3V3S0_EN_L

R7990
33K
5%
1/16W
MF-LF
402

P3V3S0_SS

C7990
0.01UF
10%
16V
C0RM
402

Q7999
SSM6N37FEAPE
SOT563

P3V3S0_EN

Q7990
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

12V S0 FET

RT7995

PP12V_S5_P12VS0FET
2100 mA

PP12V_S5_P12VS0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=12V

R7996
47K
5%
1/16W
MF-LF
402

P12VS0_EN_DIV_L

R7995
33K
5%
1/16W
MF-LF
402

P12VS0_SS

C7996
0.033UF
10%
16V
X5R
402

C7995
0.01UF
10%
16V
C0RM
402

Q7999
SSM6N37FEAPE
SOT563

P12VS0_EN

Q7995
SI8409DB
P-Ch 30V/12V
Rds(ON) 46 mOhm @4.5V
Max Current 3.7 A @ 70C

Tweak R/C values as necessary!

P12VS0_EN_L

Power: Enables & PG00Ds

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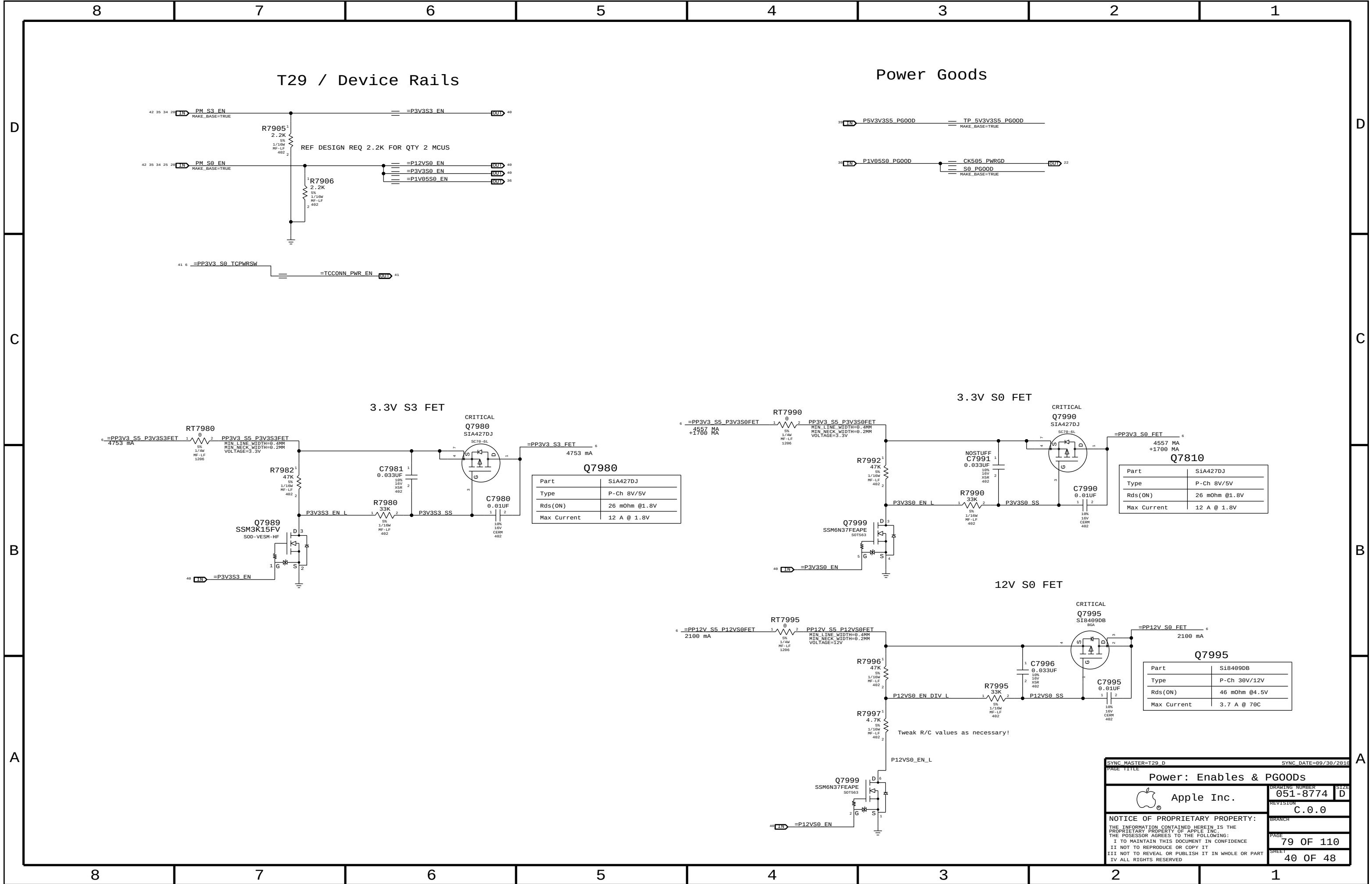
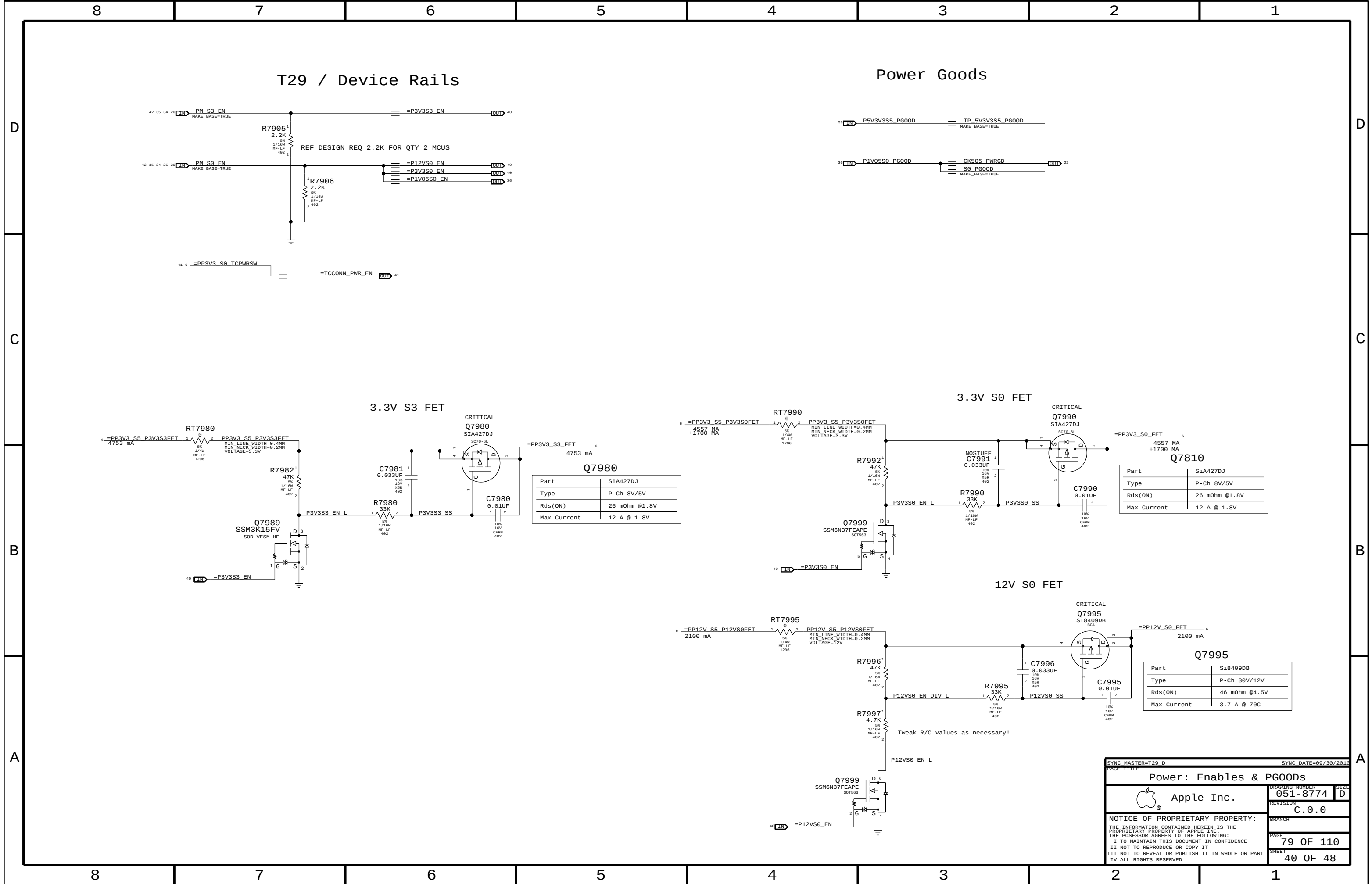
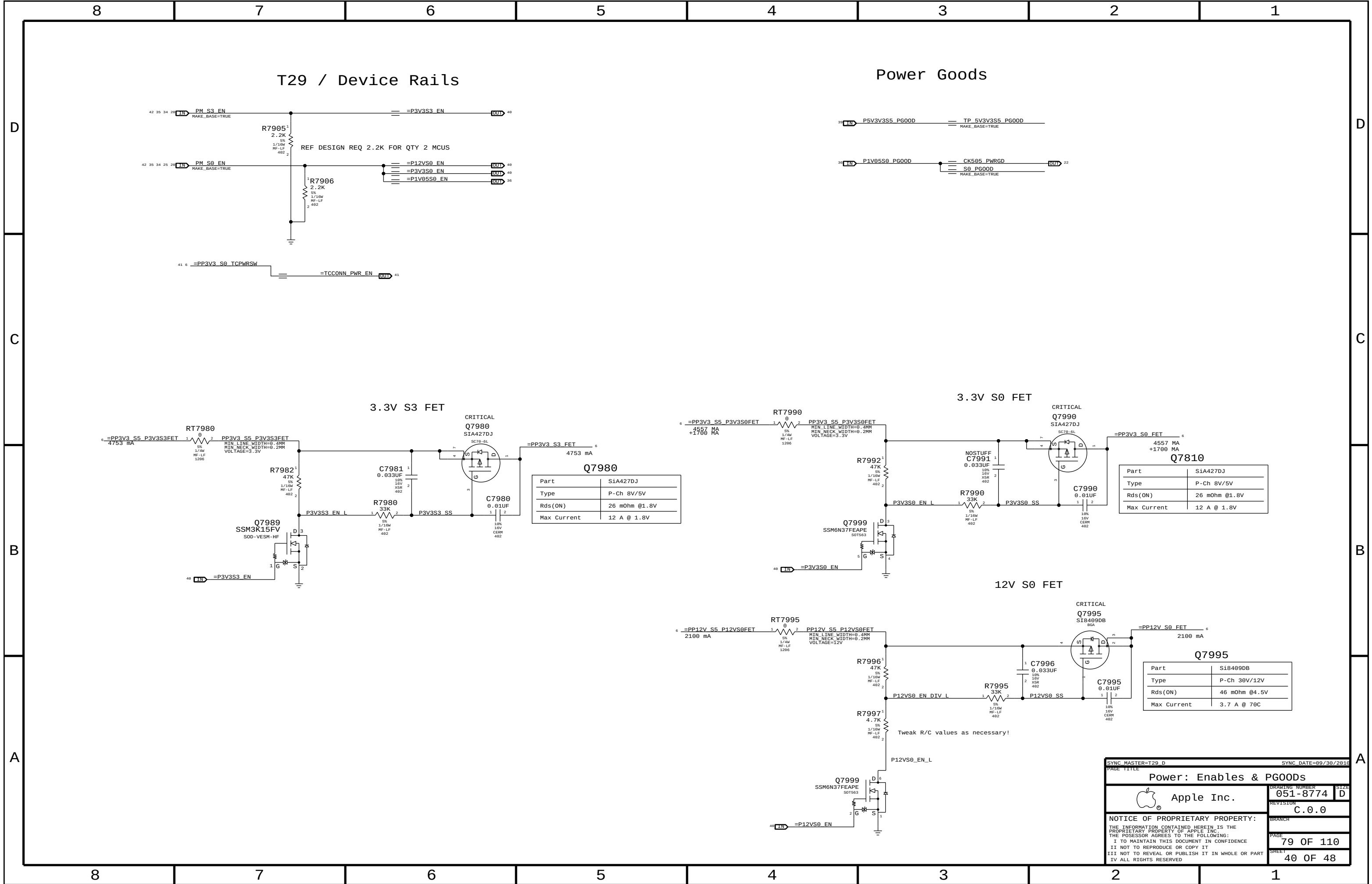
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8 7 6 5 4 3 2 1

T29 / Device Rails

PM_S3_EN
MAKE_BASE=TRUE

PM_S0_EN
MAKE_BASE=TRUE

REF DESIGN REQ 2.2K FOR QTY 2 MCUS

R7905
2.2K
5%
1/16W
MF-LF
402

R7906
2.2K
5%
1/16W
MF-LF
402

=P3V3S3_EN

=P12VS0_EN

=P3V3S0_EN

=P1V05S0_EN

=PP3V3_S0_TCPWRSW

=TCCONN_PWR_EN

Power Goods

P5V3V3S5_PG00D
MAKE_BASE=TRUE

TP_5V3V3S5_PG00D

P1V05S0_PG00D

CK505_PWRGD

S0_PG00D
MAKE_BASE=TRUE

3.3V S3 FET

RT7980

PP3V3_S5_P3V3S3FET
4753 mA

PP3V3_S5_P3V3S3FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7982
47K
5%
1/16W
MF-LF
402

C7981
0.033UF
10%
16V
X5R
402

R7980
33K
5%
1/16W
MF-LF
402

P3V3S3_EN_L

P3V3S3_SS

C7980
0.01UF
10%
16V
CERN
402

Q7980
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

Q7989
SSM3K15FV
SOD-VESM-HF

=P3V3S3_EN

3.3V S0 FET

RT7990

PP3V3_S5_P3V3S0FET
4557 mA
+1700 mA

PP3V3_S5_P3V3S0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7992
47K
5%
1/16W
MF-LF
402

P3V3S0_EN_L

R7990
33K
5%
1/16W
MF-LF
402

P3V3S0_SS

C7990
0.01UF
10%
16V
CERN
402

Q7999
SSM6N37FEAPE
SOT563

=P3V3S0_EN

Q7990
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

12V S0 FET

RT7995

PP12V_S5_P12VS0FET
2100 mA

PP12V_S5_P12VS0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=12V

R7996
47K
5%
1/16W
MF-LF
402

P12VS0_EN_DIV_L

R7995
33K
5%
1/16W
MF-LF
402

P12VS0_SS

C7996
0.033UF
10%
16V
X5R
402

C7995
0.01UF
10%
16V
CERN
402

Q7999
SSM6N37FEAPE
SOT563

=P12VS0_EN

Q7995
SI8409DB
P-Ch 30V/12V
Rds(ON) 46 mOhm @4.5V
Max Current 3.7 A @ 70C

Tweak R/C values as necessary!

P12VS0_EN_L

Power: Enables & PG00Ds

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8 7 6 5 4 3 2 1

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A

8 7 6 5 4 3 2 1

T29 / Device Rails

PM_S3_EN
MAKE_BASE=TRUE

PM_S0_EN
MAKE_BASE=TRUE

REF DESIGN REQ 2.2K FOR QTY 2 MCUS

R7905
2.2K
5%
1/16W
MF-LF
402

R7906
2.2K
5%
1/16W
MF-LF
402

=P3V3S3_EN

=P12VS0_EN

=P3V3S0_EN

=P1V05S0_EN

=PP3V3_S0_TCPWRSW

=TCCONN_PWR_EN

Power Goods

P5V3V3S5_PG00D
MAKE_BASE=TRUE

TP_5V3V3S5_PG00D

P1V05S0_PG00D

CK505_PWRGD

S0_PG00D
MAKE_BASE=TRUE

3.3V S3 FET

RT7980

PP3V3_S5_P3V3S3FET
4753 mA

PP3V3_S5_P3V3S3FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7982
47K
5%
1/16W
MF-LF
402

C7981
0.033UF
10%
16V
X5R
402

R7980
33K
5%
1/16W
MF-LF
402

P3V3S3_EN_L

P3V3S3_SS

C7980
0.01UF
10%
16V
CERN
402

Q7980
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

Q7989
SSM3K15FV
SOD-VESM-HF

=P3V3S3_EN

3.3V S0 FET

RT7990

PP3V3_S5_P3V3S0FET
4557 mA
+1700 mA

PP3V3_S5_P3V3S0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=3.3V

R7992
47K
5%
1/16W
MF-LF
402

P3V3S0_EN_L

R7990
33K
5%
1/16W
MF-LF
402

P3V3S0_SS

C7990
0.01UF
10%
16V
CERN
402

Q7999
SSM6N37FEAPE
SOT563

=P3V3S0_EN

Q7990
SIA427DJ
P-Ch 8V/5V
Rds(ON) 26 mOhm @1.8V
Max Current 12 A @ 1.8V

12V S0 FET

RT7995

PP12V_S5_P12VS0FET
2100 mA

PP12V_S5_P12VS0FET
MIN LINE WIDTH=0.4MM
MIN NECK WIDTH=0.2MM
VOLTAGE=12V

R7996
47K
5%
1/16W
MF-LF
402

P12VS0_EN_DIV_L

R7995
33K
5%
1/16W
MF-LF
402

P12VS0_SS

C7996
0.033UF
10%
16V
X5R
402

C7995
0.01UF
10%
16V
CERN
402

Q7999
SSM6N37FEAPE
SOT563

=P12VS0_EN

Q7995
SI8409DB
P-Ch 30V/12V
Rds(ON) 46 mOhm @4.5V
Max Current 3.7 A @ 70C

Tweak R/C values as necessary!

P12VS0_EN_L

Power: Enables & PG00Ds

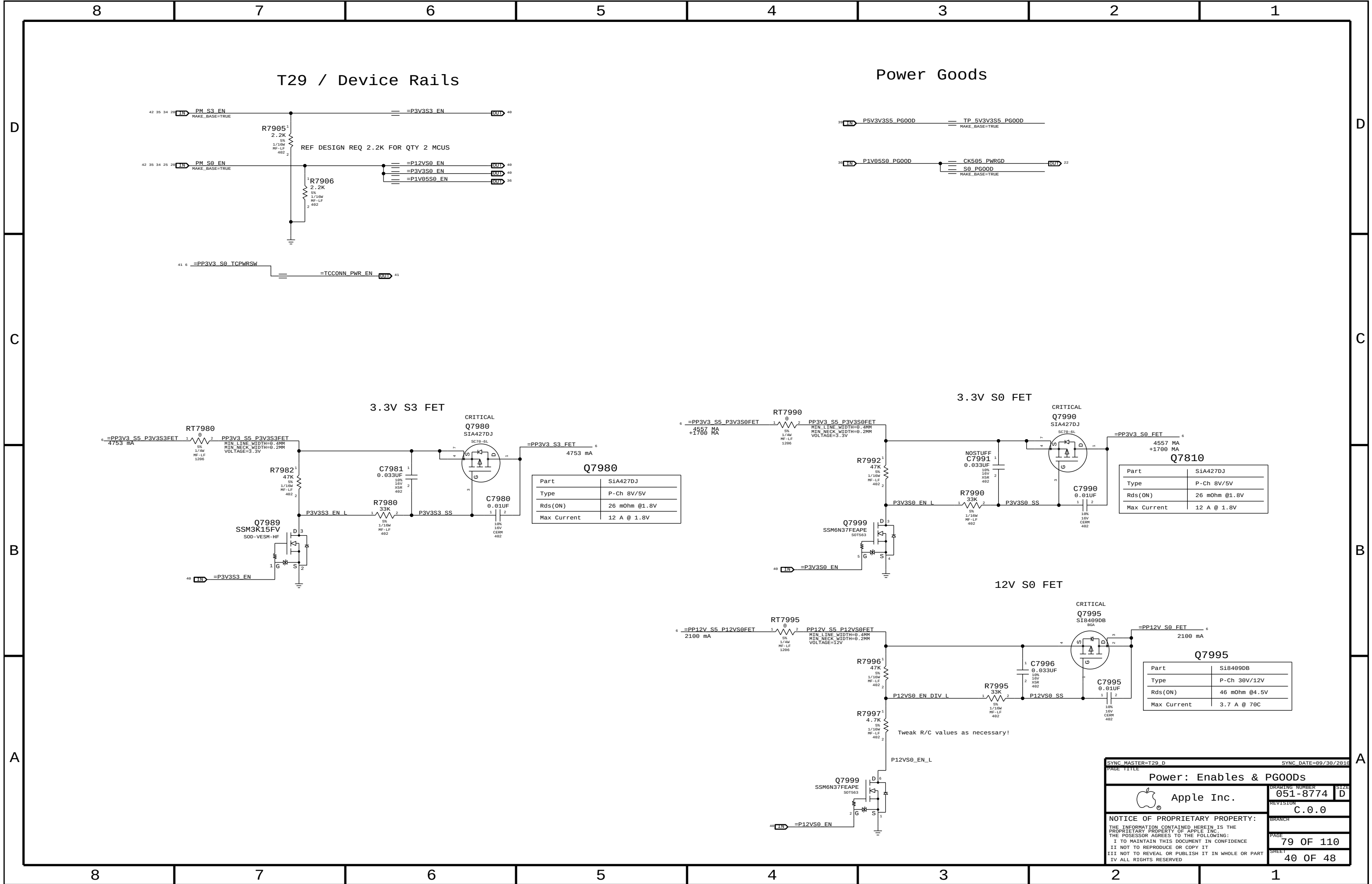
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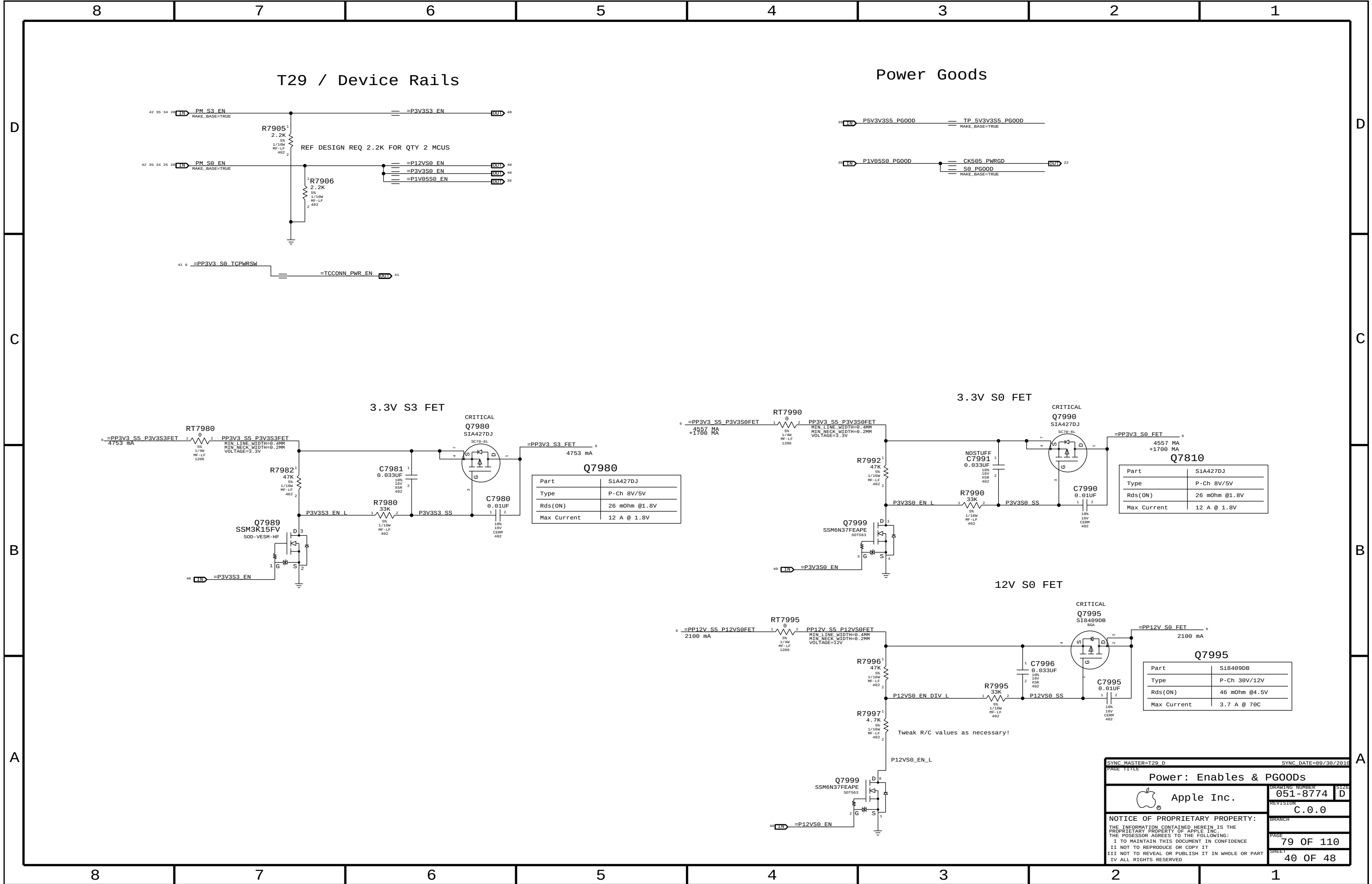
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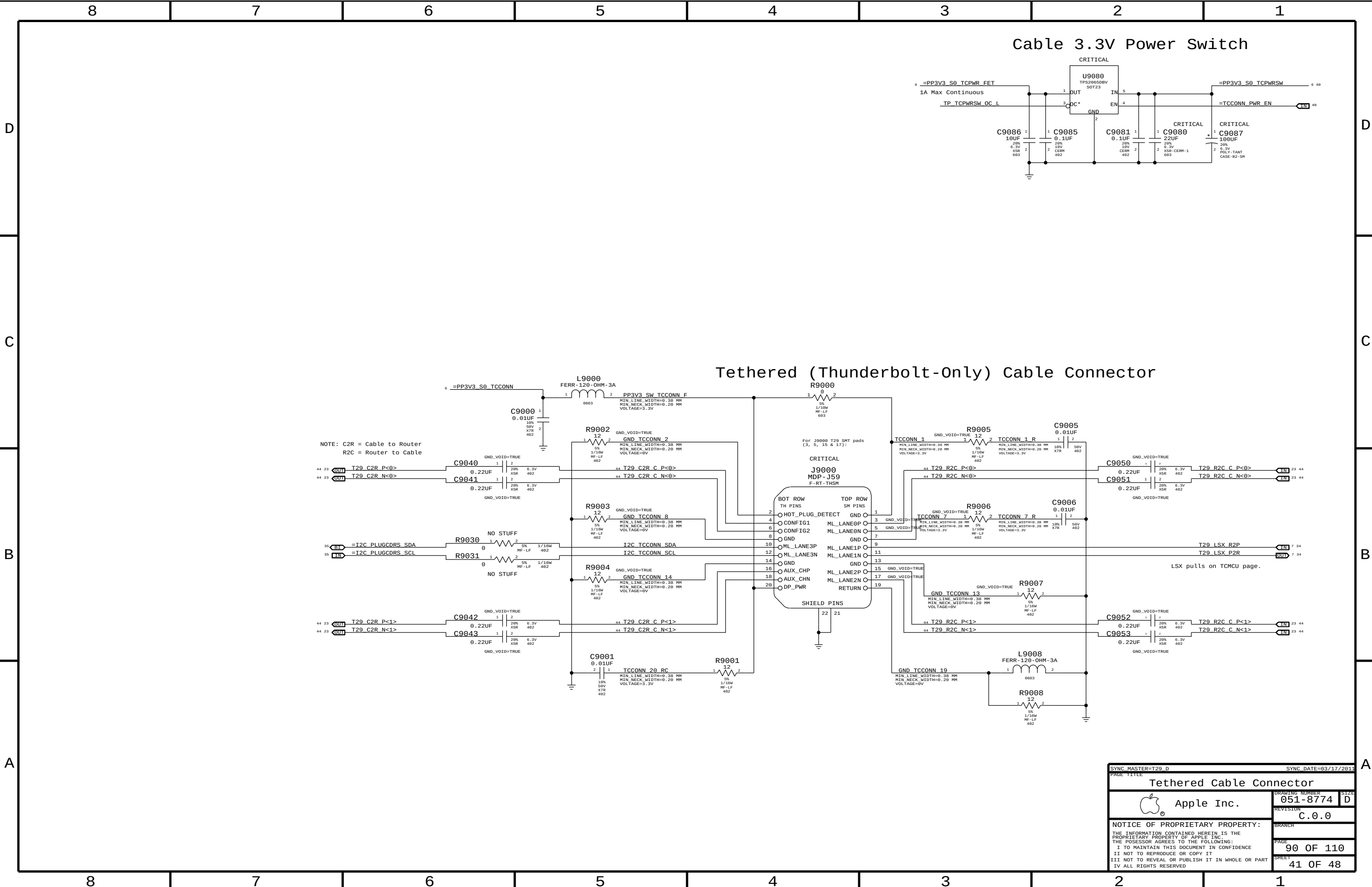
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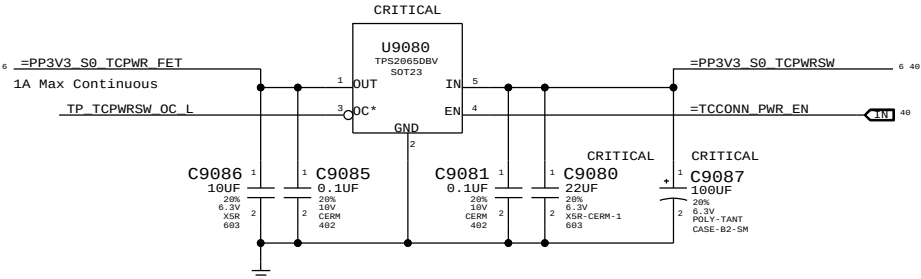
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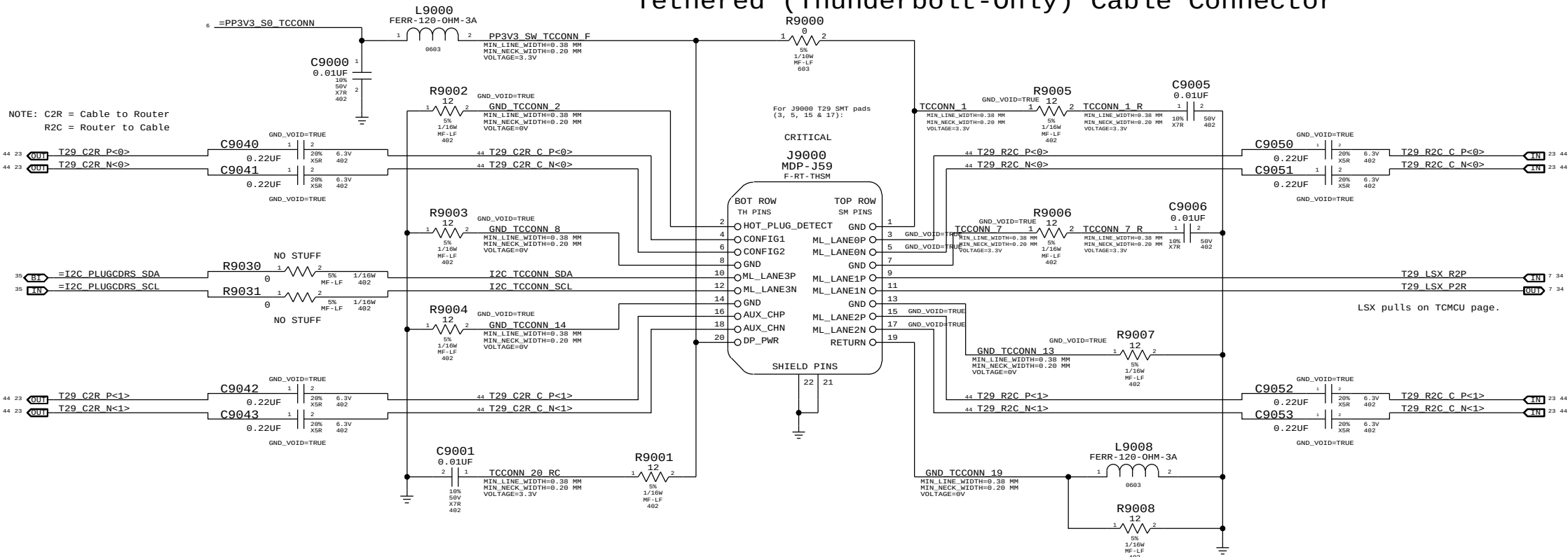
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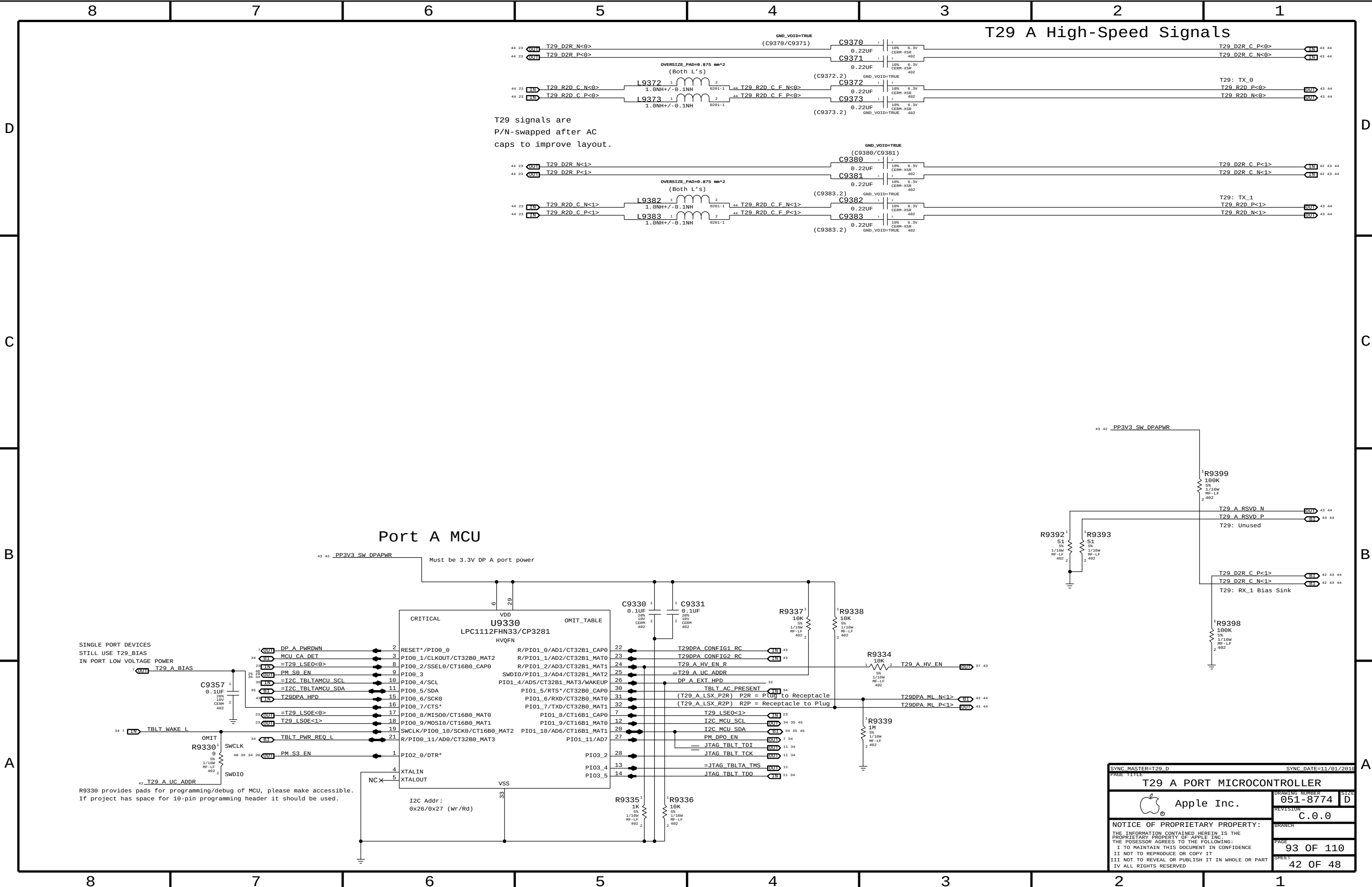
Cable 3.3V Power Switch



Tethered (Thunderbolt-Only) Cable Connector



SYNC MASTER=T29_D		SYNC DATE=03/17/2011	
PAGE TITLE			
Tethered Cable Connector			
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	051-8774		D
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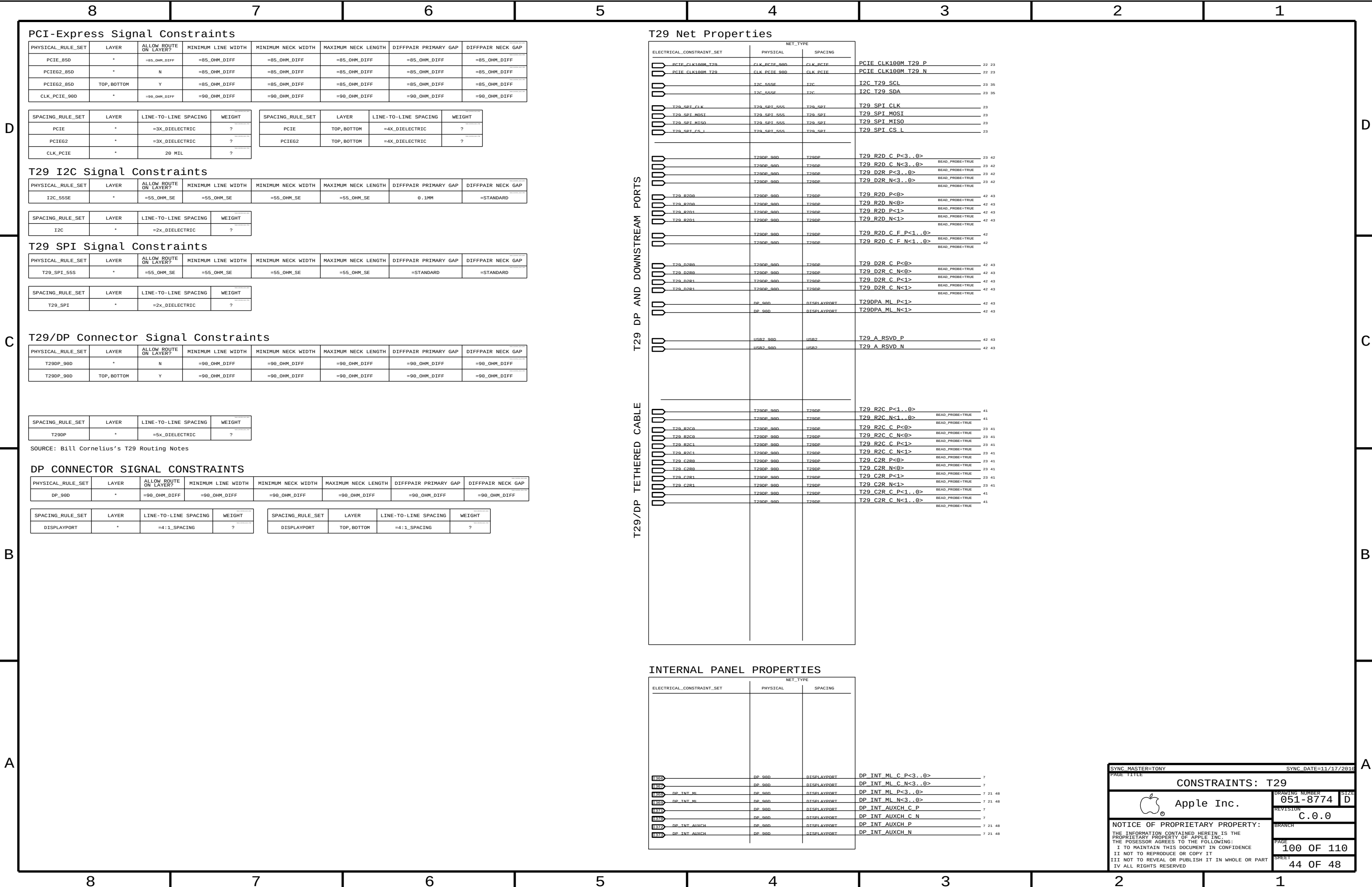


T29 A High-Speed Signals

T29 signals are
P/N-swapped after AC
caps to improve layout.

Port A MCU

SYNC MASTER=T29_D		SYNC DATE=11/01/2010	
PAGE TITLE		PAGE	
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IV ALL RIGHTS RESERVED			



Temp Sensor Constraints

PHYSICAL_RULE_SET	LAYER	ALLOW_ROUTE_ON_LAYER?	MINIMUM_LINE_WIDTH	MINIMUM_NECK_WIDTH	MAXIMUM_NECK_LENGTH	DIFFPAIR_PRIMARY_GAP	DIFFPAIR_NECK_GAP
TMPSNS_PAIR	*	=55_OHM_SE	=55_OHM_SE	=55_OHM_SE	20MM	0.25MM	0.10MM

SPACING_RULE_SET	LAYER	LINE-TO-LINE_SPACING	WEIGHT
TMPSNS	*	=2X_DIELECTRIC	?

AUDIO CONSTRAINTS

PHYSICAL_RULE_SET	LAYER	ALLOW_ROUTE_ON_LAYER?	MINIMUM_LINE_WIDTH	MINIMUM_NECK_WIDTH	MAXIMUM_NECK_LENGTH	DIFFPAIR_PRIMARY_GAP	DIFFPAIR_NECK_GAP
AUDIODIFF	*	Y	0.6 MM	0.2 MM	10 MM	0.2 MM	0.2 MM

SPACING_RULE_SET	LAYER	LINE-TO-LINE_SPACING	WEIGHT
AUDIO	*	0.2 MM	?

Temp Sensor Net Properties

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
E420	TMPSNS_PAIR	TMPSNS	DX1_P	8
E420	TMPSNS_PAIR	TMPSNS	DX1_N	8
E420	TMPSNS_PAIR	TMPSNS	TDX1_P	8 48
E420	TMPSNS_PAIR	TMPSNS	TDX1_N	8 48
E420	TMPSNS_PAIR	TMPSNS	DX2_P	8
E420	TMPSNS_PAIR	TMPSNS	DX2_N	8
E420	TMPSNS_PAIR	TMPSNS	TDX2_P	8 48
E420	TMPSNS_PAIR	TMPSNS	TDX2_N	8 48

Temp sensor routes

AUDIO NET PROPERTIES

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
E445	AUDIODIFF	AUDIO	AUD_LTWT_N	15
E445	AUDIODIFF	AUDIO	AUD_LTWT_P	15
E445	AUDIODIFF	AUDIO	AUD_LWFR_N	15
E445	AUDIODIFF	AUDIO	AUD_LWFR_P	15
E445	AUDIODIFF	AUDIO	AUD_RTWT_N	16
E445	AUDIODIFF	AUDIO	AUD_RTWT_P	16
E445	AUDIODIFF	AUDIO	AUD_RWFR_N	16
E445	AUDIODIFF	AUDIO	AUD_RWFR_P	16
E445	AUDIODIFF	AUDIO	AUD_SUB_N	17
E445	AUDIODIFF	AUDIO	AUD_SUB_P	17

SPEAKER NET PROPERTIES

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
E445	AUDIODIFF	AUDIO	SPKRAMP_LTWT_OUT_N	15 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_LTWT_OUT_P	15 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_LWFR_OUT_N	15 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_LWFR_OUT_P	15 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_RTWT_OUT_N	16 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_RTWT_OUT_P	16 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_RWFR_OUT_N	16 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_RWFR_OUT_P	16 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_SUB_OUT_N	17 18 48
E445	AUDIODIFF	AUDIO	SPKRAMP_SUB_OUT_P	17 18 48

I2C Net Properties

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
	I2C_55SE	I2C	I2C LPCREM_SDA	26 21
	I2C_55SE	I2C	I2C LPCREM_SCL	26 21
	I2C_55SE	I2C	DDC_SDA_FC	21 48
	I2C_55SE	I2C	DDC_SCL_FC	21 48
	I2C_55SE	I2C	SDA_FC	21 48
	I2C_55SE	I2C	SCL_FC	21 48
	I2C_55SE	I2C	SDA_SWREM	21
	I2C_55SE	I2C	SCL_SWREM	21
	I2C_55SE	I2C	I2C DP628_SDA	35
	I2C_55SE	I2C	I2C DP628_SCL	35
	I2C_55SE	I2C	I2C LPCLOC_SDA	26 35
	I2C_55SE	I2C	I2C LPCLOC_SCL	26 35
	I2C_55SE	I2C	I2C FALS_SDA	16
	I2C_55SE	I2C	I2C FALS_SCL	16
	I2C_55SE	I2C	I2C LPC1_SDA	35
	I2C_55SE	I2C	I2C LPC1_SCL	35
	I2C_55SE	I2C	I2C ALS_SCL	35 48
	I2C_55SE	I2C	I2C ALS_SDA	35 48
	I2C_55SE	I2C	I2C USBHOST_SCL	35
	I2C_55SE	I2C	I2C USBHOST_SDA	35

	I2C_55SE	I2C	ADAV4601_I2C_SDA	14
	I2C_55SE	I2C	ADAV4601_I2C_SCL	14
	I2C_55SE	I2C	I2C_SDA	12 14 18
	I2C_55SE	I2C	I2C_SCL	12 14 18
	I2C_55SE	I2C	AUD_161_I2C_SDA	12
	I2C_55SE	I2C	AUD_161_I2C_SCL	12

	I2C_55SE	I2C	I2C MCU_SCL	34 35 42
	I2C_55SE	I2C	I2C MCU_SDA	34 35 42

I2C pairs from LPC

Audio I2C pairs

MicroCtlr Net Properties

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
	MICROCTLR_55SE	MICROCTLR	ADC_STR0_V	9 28
	MICROCTLR_55SE	MICROCTLR	ADC_STR1_V	9 28
	MICROCTLR_55SE	MICROCTLR	ADC_STR2_V	9 28
	MICROCTLR_55SE	MICROCTLR	DAC_OUT	9 28
	MICROCTLR_55SE	MICROCTLR	ADC_USB5V	28 33
	MICROCTLR_55SE	MICROCTLR	P5VP3V3_VREF	9 39

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Ethernet MDI Constraints

[illegible]

SPACING_RULE_SET	LAYER	LINE-TO-LINE SPACING	WEIGHT
ENET_MDI	*	25 MIL	?

SOURCE: MCP73 Interface DG (DG-02974-001_v01), Section 2.7.4

PCIe Net Properties

ELECTRICAL_CONSTRAINT_SET	NET_TYPE		
	PHYSICAL	SPACING	
ENET	PCIE_850	PCIE	PCIE_ENET R2D P 26
ENET	PCIE_850	PCIE	PCIE_ENET R2D N 26
ENET	PCIE_ENET_R2D	PCIE	PCIE_ENET R2D C P 7 26
ENET	PCIE_ENET_R2D	PCIE	PCIE_ENET R2D C N 7 26
ENET	PCIE_ENET_D2R	PCIE	PCIE_ENET D2R P 7 26
ENET	PCIE_ENET_D2R	PCIE	PCIE_ENET D2R N 7 26
ENET	PCIE_850	PCIE	PCIE_ENET D2R C P 26
ENET	PCIE_850	PCIE	PCIE_ENET D2R C N 26
ENET	CLK_PCIE_90D	CLK_PCIE	PCIE_CLK109M_ENET_P 22 26
ENET	CLK_PCIE_90D	CLK_PCIE	PCIE_CLK109M_ENET_N 22 26

FireWire Interface Constraints

[illegible]

SPACING_RULE_SET	LAYER	LINE-TO-LINE SPACING	WEIGHT
FW_TP	*	=3:1_SPACING	?

FIREWIRE PCIE NET PROPERTIES

ELECTRICAL_CONSTRAINT_SET		NET_TYPE			
		PHYSICAL	SPACING		
		PCIE B50	PCIE	PCIE FW R2D P	28
		PCIE B50	PCIE	PCIE FW R2D N	28
		PCIE B50	PCIE	PCIE FW R2D C P	7 28
		PCIE B50	PCIE	PCIE FW R2D C N	7 28
		PCIE B50	PCIE	PCIE FW D2R P	7 28
		PCIE B50	PCIE	PCIE FW D2R N	7 28
		PCIE B50	PCIE	PCIE FW D2R C P	28
		PCIE B50	PCIE	PCIE FW D2R C N	28
		CLK PCIE 900	CLK PCIE	PCIE CLK100M FW P	22 28
		CLK PCIE 900	CLK PCIE	PCIE CLK100M FW N	22 28

USB 2.0 Interface Constraints

PHYSICAL_RULE_SET	LAYER	ALLOW ROUTE ON LAYER?	MINIMUM LINE WIDTH	MINIMUM NECK WIDTH	MAXIMUM NECK LENGTH	DIFFPAIR PRIMARY GAP	DIFFPAIR NECK GAP
USB2_90D	*	=90_OHM_DIFF	=90_OHM_DIFF	=90_OHM_DIFF	=90_OHM_DIFF	=90_OHM_DIFF	=90_OHM_DIFF

SPACING_RULE_SET	LAYER	LINE-TO-LINE SPACING	WEIGHT
USB2	*	=4:1_SPACING	?

USB PCIE NET PROPERTIES

ELECTRICAL_CONSTRAINT_SET		NET_TYPE		
		PHYSICAL	SPACING	
		PCIEG2_850	PCIEG2	PCIE USB D2R C P
		PCIEG2_850	PCIEG2	PCIE USB D2R C N
		PCIEG2_850	PCIEG2	PCIE USB R2D P
		PCIEG2_850	PCIEG2	PCIE USB R2D N
	PCIE_USB_R2D	PCIEG2_850	PCIEG2	PCIE USB R2D C P
	PCIE_USB_R2D	PCIEG2_850	PCIEG2	PCIE USB R2D C N
	PCIE_USB_D2R	PCIEG2_850	PCIEG2	PCIE USB D2R P
	PCIE_USB_D2R	PCIEG2_850	PCIEG2	PCIE USB D2R N
	PCIE_CLK100M_USB	CLK_PCIE_900	CLK_PCIE	PCIE_CLK100M_USB_P
	PCIE_CLK100M_USB	CLK_PCIE_900	CLK_PCIE	PCIE_CLK100M_USB_N
	PCIE_CLK100M_USB	CLK_PCIE_900	CLK_PCIE	PCIE_CLK100M_USB_C_P
	PCIE_CLK100M_USB	CLK_PCIE_900	CLK_PCIE	PCIE_CLK100M_USB_C_N

Ethernet MDI Net Properties

ELECTRICAL_CONSTRAINT_SET		NET_TYPE			
		PHYSICAL	SPACING		
EE500	ENET_MDI	ENET_MDI_100D	ENET_SPACING	ENETCONN MDI P<3..0>	26 27
EE500	ENET_MDI	ENET_MDI_100D	ENET_MDI	ENETCONN MDI N<3..0>	26 27
EE500	ENET_MDI	ENET_MDI_100D	ENET_MDI	ENETCONN MDI T P<3..0>	27
EE500		ENET_MDI_100D	ENET_MDI	ENETCONN MDI T N<3..0>	27

FireWire Net Properties

ELECTRICAL_CONSTRAINT_SET	NET_TYPE			
	PHYSICAL	SPACING		
 FW_PB_TPA	FW_1160	FW_TP	FW_PORT0_TPA_P	29 38
 FW_PB_TPA	FW_1160	FW_TP	FW_PORT0_TPA_N	29 38
 FW_PB_TPB	FW_1160	FW_TP	FW_PORT0_TPB_P	29 38
 FW_PB_TPB	FW_1160	FW_TP	FW_PORT0_TPB_N	29 38

USB Net Properties

NET_TYPE				
ELECTRICAL_CONSTRAINT_SET	PHYSICAL	SPACING		
	USB2_960	USB2	USB HUB UP DP31	
	USB2_960	USB2	USB HUB UP DM31	
	USB2_960	USB2	USB DEV DP31	
	USB2_960	USB2	USB DEV DM31	
	USB2_960	USB2	USB DEV F DP31	
	USB2_960	USB2	USB DEV F DM31	
	USB2_960	USB2	USB HOST DP31 32	
	USB2_960	USB2	USB HOST DM31 32	
	USB2_960	USB2	USBDN1_H1 DP31 33	
	USB2_960	USB2	USBDN1_H1 DM31 33	
	USB2_960	USB2	USBDN2_H1 DP31 33	
	USB2_960	USB2	USBDN2_H1 DM31 33	
	USB2_960	USB2	USBDN3_H1 DP31 33	
	USB2_960	USB2	USBDN3_H1 DM31 33	
	USB2_960	USB2	USB UC DP20 33	
	USB2_960	USB2	USB UC DM20 33	
	USB2_960	USB2	USB AUDIO DP11 33	
	USB2_960	USB2	USB AUDIO DM11 33	
	USB2_960	USB2	USB CAMERA DP10 33	
	USB2_960	USB2	USB CAMERA DM10 33	
	USB2_960	USB2	CAM DP10 48	
	USB2_960	USB2	CAM DM10 48	
		USB2_960	USB2	AUD_161 USB DP12
		USB2_960	USB2	AUD_161 USB DM12
USB2_960		USB2	DM133	
USB2_960		USB2	DP133	
USB2_960		USB2	DM233	
USB2_960		USB2	DP233	
USB2_960		USB2	DM333	
USB2_960		USB2	DP333	

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