

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.

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
A	000080153	PRODUCTION RELEASED		2010-03-23

N90 SINGLE_BRD PVT

Fri Apr 16 15:07:25 2010

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H3P ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S0123	339S0108	?	U52	H3P + ELFIDA 512MB
339S0126	339S0108	?	U52	H3P + HYNIX 512MB

L9 (STROBE) ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1173	152S0979	?	L9	

VIDEO BUFFER ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
353S2684	353S2493	?	U9	INTERSIL BUFFER

G3_RF ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0371	197S0349	?	G3_RF	
197S0364	197S0349	?	G3_RF	

FL1_RF ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
155S0452	155S0435	?	FL1_RF	

G2_RF ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0334	197S0292	?	G2_RF	

Y1_RF ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0329	197S0299	?	Y1_RF	
197S0369	197S0299	?	Y1_RF	

Y2_RF ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0342	197S0297	?	Y2_PMU	

L2_PMU ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1172	152S0928	?	L2_PMU	

L7_PMU ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1051	152S0927	?	L7_PMU	

LCD BL DRIVER ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S0769	376S0768	?	Q1_PMU	LCD BL FET DRIVER

Y1_PMU ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0329	197S0299	?	Y1_PMU	
197S0369	197S0299	?	Y1_PMU	

PMU POWER IND ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
607-6810	607-6809	?	L1_L3_L16_L18_PMU	CYNTEC INDUCTORS
197S0369	197S0299	?	Y1_PMU	

SCH & PCB BOM CALLOUT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-7921	1	N90_SCHEMATIC_TOP	SCH	Y	?
820-2548	1	N90_SINGLE_BOARD	PCB	Y	?

H3P BOM CALLOUT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S0108	1	H3P WITH 512MB SAMSUNG DDR	U52	Y	?

BB MEMORY BOM CALLOUT

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
341S2509	1	BB_MEM_PROGRAMMED	U4_RF	Y	BB_MEM

N90 EEE BOM LABELS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
825-2029	1	EEE FOR 630-9941 (16G)	EEE_6LU	Y	GOOD_MURATA
825-2029	1	EEE FOR 639-0609 (32G)	EEE_D7F	Y	BETTER_MURATA
825-2029	1	EEE FOR 639-0607 (64G)	EEE_D7D	Y	BEST_MURATA
825-2029	1	EEE FOR 639-0648 (16G)	EEE_DFM	Y	GOOD_USI
825-2029	1	EEE FOR 639-0437 (32G)	EEE_BA0	Y	BETTER_USI
825-2029	1	EEE FOR 639-0608 (64G)	EEE_D7E	Y	BEST_USI

NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0682	1	16GB SAMSUNG 35NM FLASH WLG52	U1	Y	GOOD_MURATA
335S0665	1	32GB SAMSUNG 35NM FLASH TLGA52	U1	Y	BETTER_MURATA
335S0707	1	64GB SAMSUNG 35NM FLASH LGA52	U1	Y	BEST_MURATA
117S0161	2	64GB NAND CE7 CE8 JUMPERS	R101, R102	Y	BEST_MURATA
335S0682	1	16GB SAMSUNG 35NM FLASH WLG52	U1	Y	GOOD_USI
335S0665	1	32GB SAMSUNG 35NM FLASH TLGA52	U1	Y	BETTER_USI
335S0707	1	64GB SAMSUNG 35NM FLASH LGA52	U1	Y	BEST_USI
117S0161	2	64GB NAND CE7 CE8 JUMPERS	R101, R102	Y	BEST_USI

WIFI/BT BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
339S0092	1	MURATA WIFI_BT MODULE	U2_RF	Y	GOOD_MURATA
117S0161	1	MURATA ID RESISTOR	R47_RF	Y	GOOD_MURATA
339S0092	1	MURATA WIFI_BT MODULE	U2_RF	Y	BETTER_MURATA
117S0161	1	MURATA ID RESISTOR	R47_RF	Y	BETTER_MURATA
339S0092	1	MURATA WIFI_BT MODULE	U2_RF	Y	BEST_MURATA
117S0161	1	MURATA ID RESISTOR	R47_RF	Y	BEST_MURATA
339S0091	1	USI WIFI_BT MODULE	U2_RF	Y	GOOD_USI
117S0161	1	USI ID RESISTOR	R46_RF	Y	GOOD_USI
339S0091	1	USI WIFI_BT MODULE	U2_RF	Y	BETTER_USI
117S0161	1	USI ID RESISTOR	R46_RF	Y	BETTER_USI
339S0091	1	USI WIFI_BT MODULE	U2_RF	Y	BEST_USI
117S0161	1	USI ID RESISTOR	R46_RF	Y	BEST_USI

PMU POWER IND CALLOUT

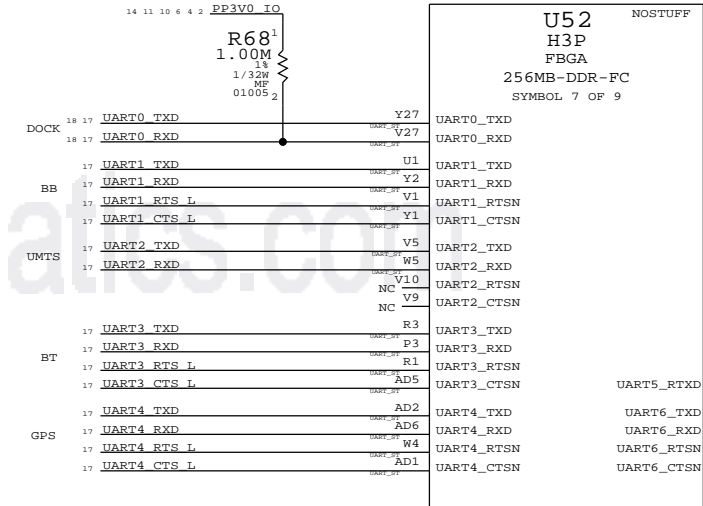
PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
607-6809	1	POWER INDUCTORS	L1_L3_L16_L18_PMU	Y	?

MCO 056-3008
 BRD 820-2548
 SCH 051-7921
 BOM 639-0648 (16GB, USI)
 BOM 630-9941 (16GB, MURATA)
 BOM 639-0437 (32GB, USI)
 BOM 639-0609 (32GB, MURATA)
 BOM 639-0608 (64GB, USI)
 BOM 639-0607 (64GB, MURATA)

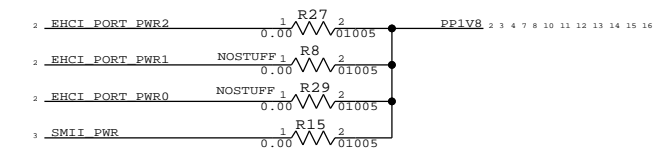
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U52 H3P 256MB-DDR-FC FBGA SYMBOL 6 OF 9		NOSTUFF	
13 11 MENU KEY_BUFF_L	F6	GPIO0	
18 16 13 11 HOLD KEY_L	B6	GPIO1	
18 13 10 VOL UP_L	B7	GPIO2	
18 13 10 VOL_DWN_L	D9	GPIO3	
18 13 11 10 RINGER_A	D5	GPIO4	
12 GYRO_INT2	A6	GPIO5	
17 WLAN_RESET_L	A7	GPIO6	
17 BT_WAKE	B9	GPIO7	
17 BT_RESET_L	E6	GPIO8	
17 5 RADIO_ON	A9	GPIO9	
17 BB_RESET_L	C5	GPIO10	
17 BB_RESET_DET_L	C9	GPIO11	
17 IPC_SRDY	C6	GPIO12	
17 PMU_IRO_L	D6	GPIO13	
9 CODEC_RESET_L	F5	GPIO14	
NC - DIF_MIC_SEL	E5	GPIO15	
13 AUDIENCE_RESET_L	F9	GPIO16	
9 JTAG_TRSTN_GPIO	F3	GPIO17	
9 CODEC_INT_L	F4	GPIO18	
11 KEEPACT	C10	GPIO19	
15 GRAPE_RESET_L	F10	GPIO20	
18 NIMBUS_INT_L	E10	GPIO21	
15 LCD_RESET_L	A4	GPIO22	
15 LCD_HIPA	B4	GPIO23	
10 COMPASS_BRD_INT	E4	GPIO24	
NC - GPIO25_CONFIG1	E2	GPIO25	
14 FORCE_DFU	D10	GPIO26	
NC - DFU_STATUS	E9	GPIO27	
9 GPIO28_CONFIG2	L2	GPIO28	
9 GPIO29_CONFIG3	G1	GPIO29	
17 GPS_RESET_AP_L	G2	GPIO30	
17 GPS_STANDBY_AP_L	F3	GPIO31	
17 GPS_INTR_L	R3	GPIO32	
12 GYRO_INT1	A3	GPIO33	
16 CAM_VGA_SHUTDOWN_L	B2	GPIO34	
42		GPIO35	
12 ACCEL_INT1_L	L1	GPIO36	
16 ALS_INT_L	H1	GPIO37	
12 ACCEL_INT2_L	E1	GPIO38	
6 VIDEO_AMP_EN_3V0	W24	GPIO_3V0	
NC - SEL_SECURE_BOOT_3V0	W25	GPIO_3V1	

TODO: DO WE NEED A SERIES R HERE (THERE IS ONE ON DEV2)



```
BOARD_REV[3:0] = {EHCI_PORT_PWR2, EHCI_PORT_PWR1, EHCI_PORT_PWR0, SMII_PWR}
1111 PROTO0
1110 PROTO1
1101 PROTO2
1100 EVT1
1011 EVT2
1010 EVT2 COMBUTON
1001 DVT <---SELECTED
```



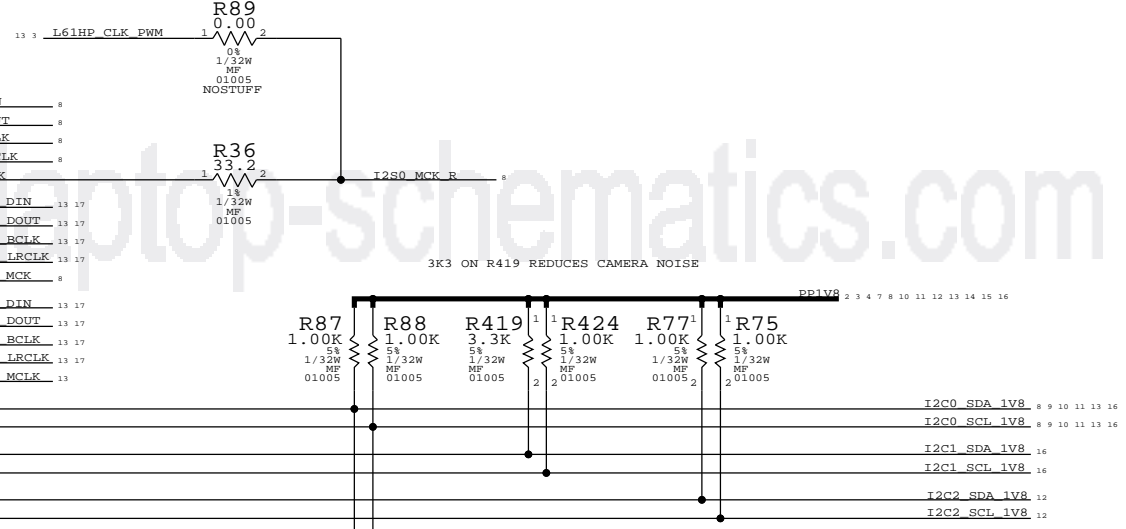
```
BOARD_ID[0:2] = {SPI0_SCLK, SPI0_MOSI, SPI0_MISO}
000 N90 MLB <---SELECTED
100 N90 DEV
010 XXX AP
110 XXX DEV
001 XXX AP
101 XXX DEV
```

NOTE: NO COMPONENTS REQIOERD!

```
FLOAT=LOW, PULLUP=HIGH
BOOT_CONFIG[3:0] = {GPIO29_CONFIG3, GPIO28_CONFIG2, GPIO25_CONFIG1, CODEC_INT_L}
0000 SPI0
0001 SPI3
0010 SPI0 W/TEST
0011 SPI3 W/TEST
0100 FMIO 2CS
0101 FMIO 4CS
0110 FMIO 4CS W/TEST
0111 RESERVED
1000 FMIO 2 CS
1001 FMIO 4 CS
1010 FMIO 4CS W/TEST
1100 FMIO/1 2/2 CS
1101 FMIO/1 4/4 CS <---SELECTED
1110 FMIO/1 4/4 CS W/TEST
1111 RESERVED
```

U52 H3P FBGA 256MB-DDR-FC SYMBOL 5 OF 9		NOSTUFF	
17 WLAN_SDIO_DATA<3:0>	J24	SDIO0_DATA0	
	J25	SDIO0_DATA1	
	J26	SDIO0_DATA2	
	J27	SDIO0_DATA3	
17 WLAN_SDIO_CMD	K25	SDIO0_CMD	
17 WLAN_SDIO_CLK	J21	SDIO0_CLK	
	V4	SPI0_SCLK	
	W7	SPI0_MOSI	
	V6	SPI0_MISO	
	W3	SPI0_SSIN	
18 SPI1_SCLK	SPI1_ST V3	SPI1_SCLK	
18 SPI1_MOSI	SPI1_ST W8	SPI1_MOSI	
18 SPI1_MISO	SPI1_ST U2	SPI1_MISO	
15 SPI1_CS_L	SPI1_ST V2	SPI1_SSIN	
17 SPI2_SCLK	SPI1_ST AA2	SPI2_SCLK	
17 SPI2_MOSI	SPI1_ST AA1	SPI2_MOSI	
17 SPI2_MISO	SPI1_ST V7	SPI2_MISO	
17 SPI2_MRDY	SPI1_ST W6	SPI2_SSIN	

** BACKUP IN CASE I2S0_MCK DOES NOT WORK



3K3 ON R419 REDUCES CAMERA NOISE

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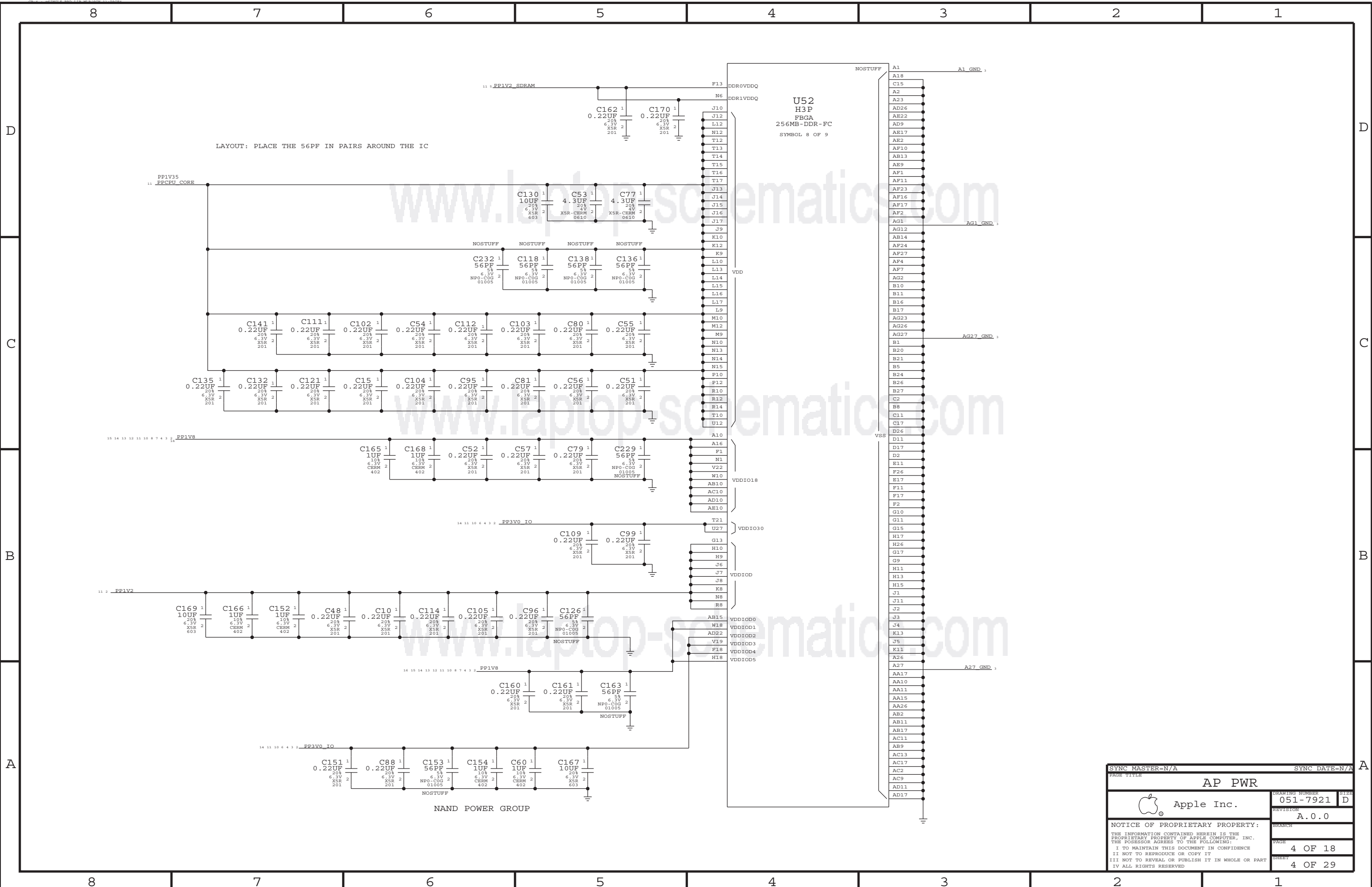
H3 GPIO, UART, SPI, I2S, I2C, SDIO

Apple Inc.

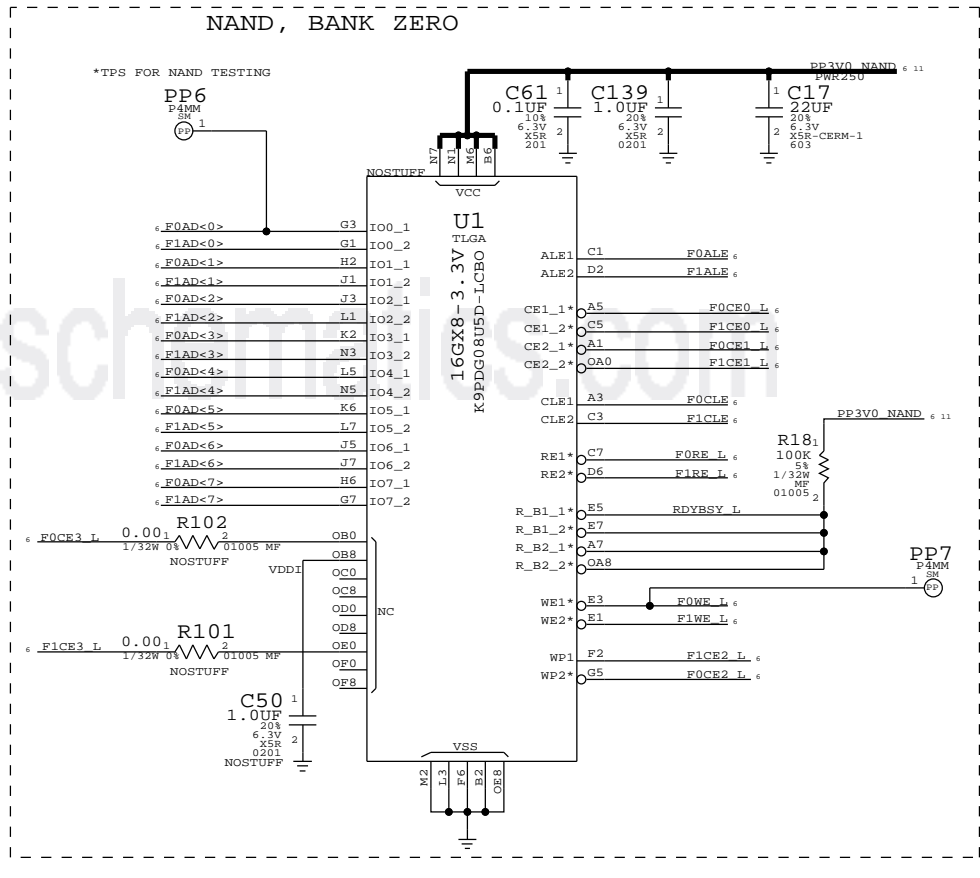
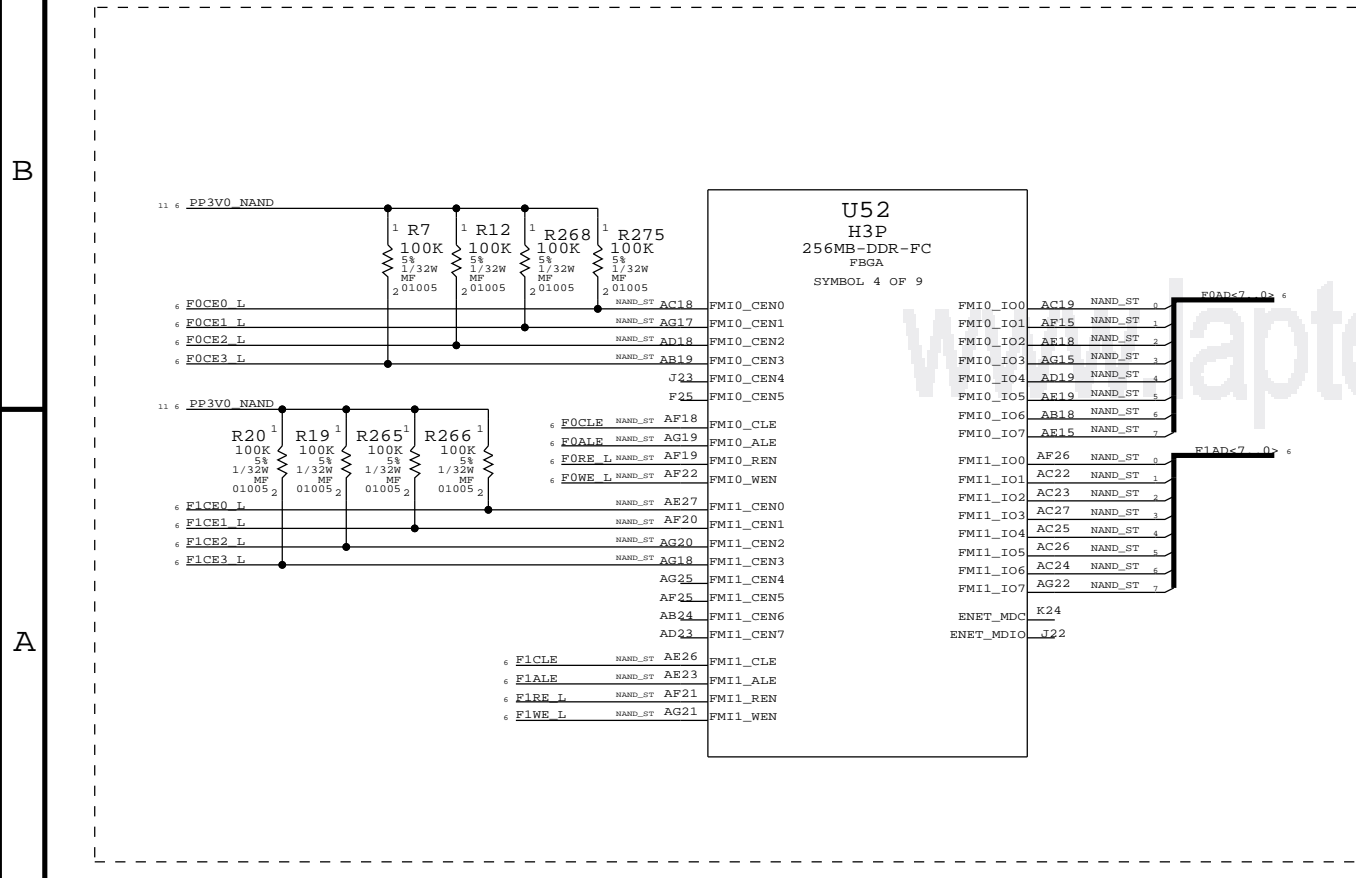
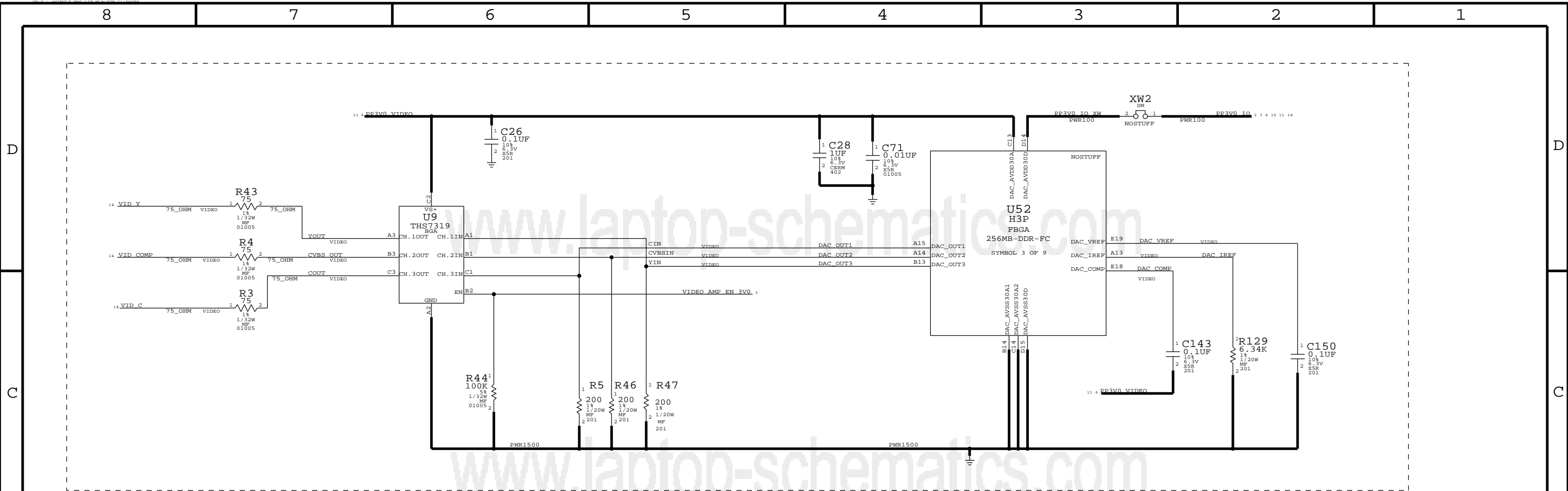
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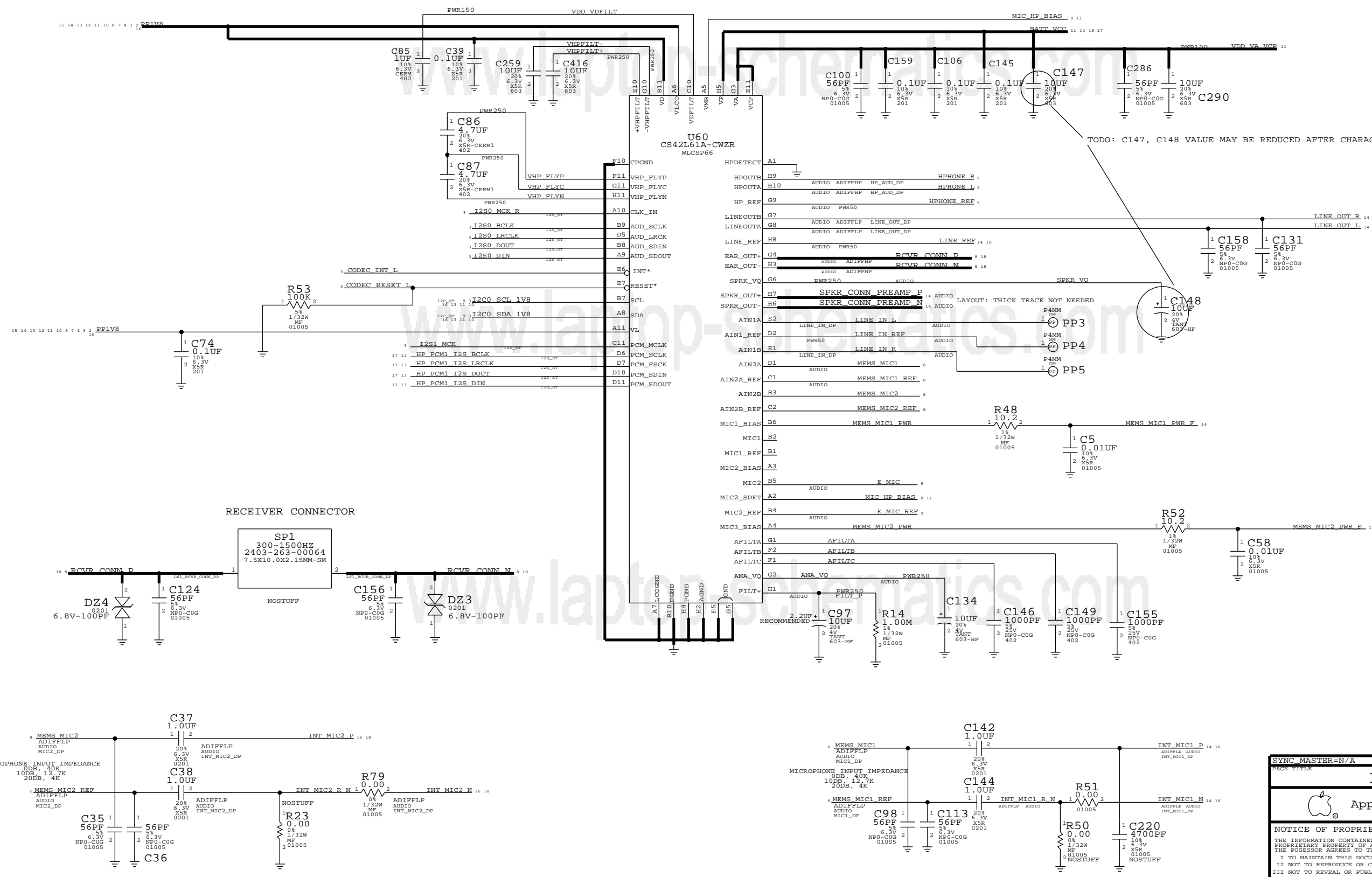


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ANALOG VIDEO,H3 NAND, NAND	
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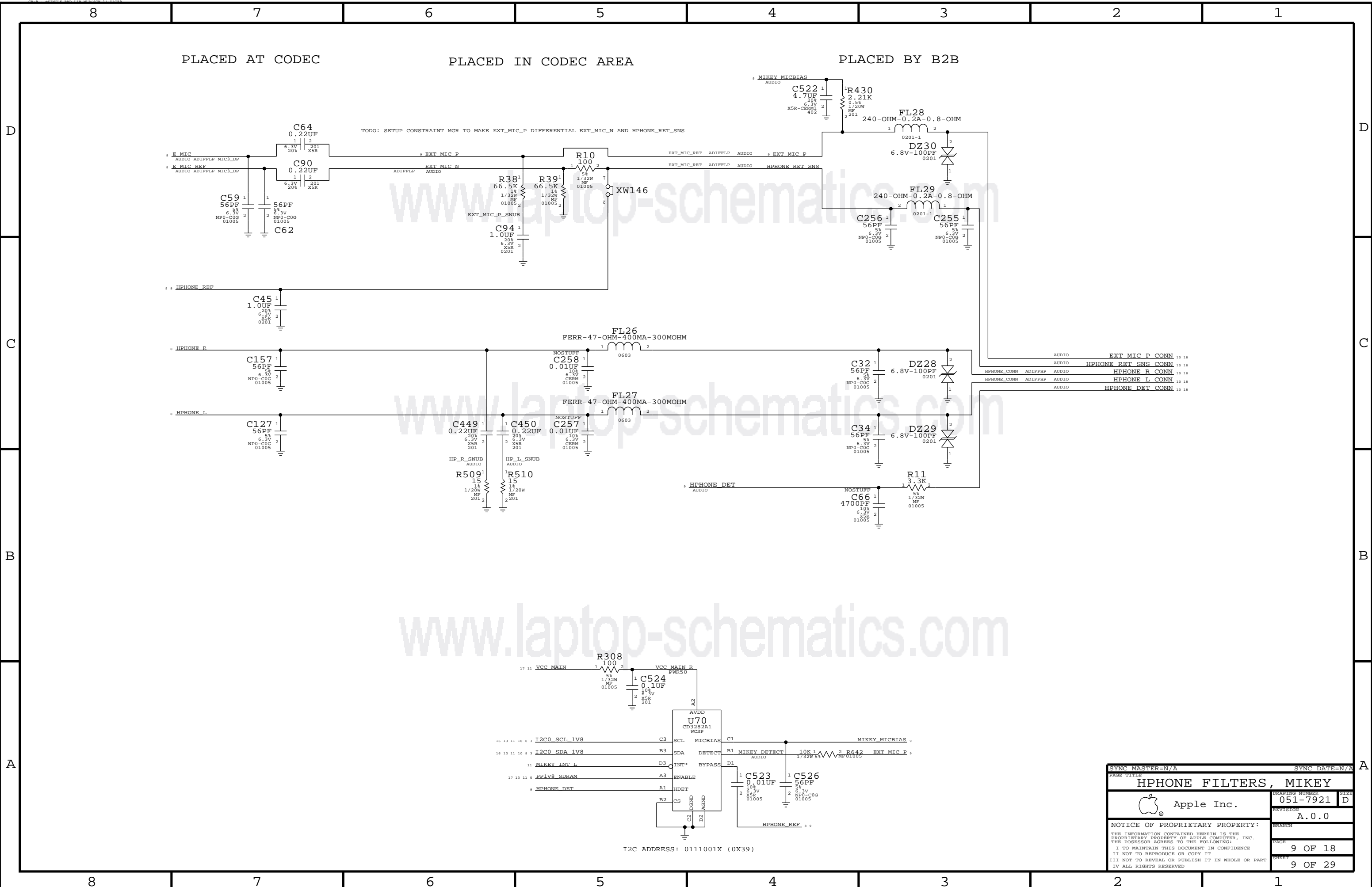
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L61 AUDIO INTERFACE

I2C ADDRESS: 1001010X



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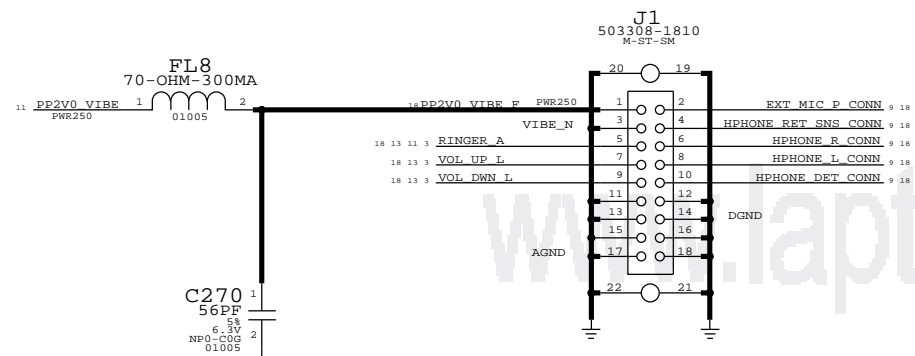
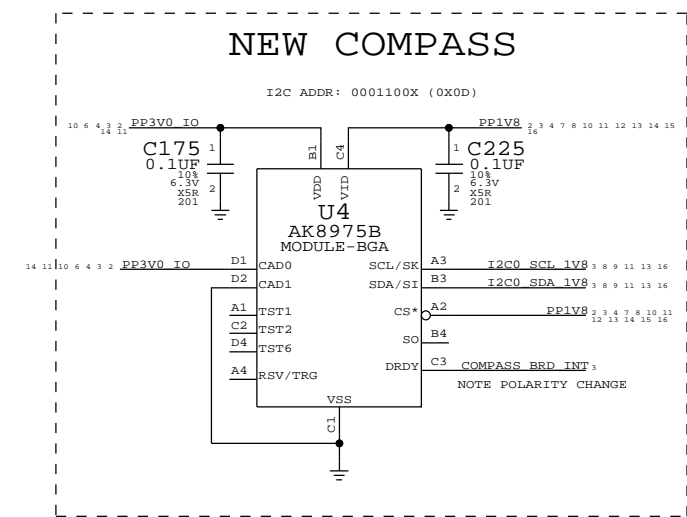


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HPHONE FILTERS, MIKEY			
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BUTTON FLEX CONNECTOR

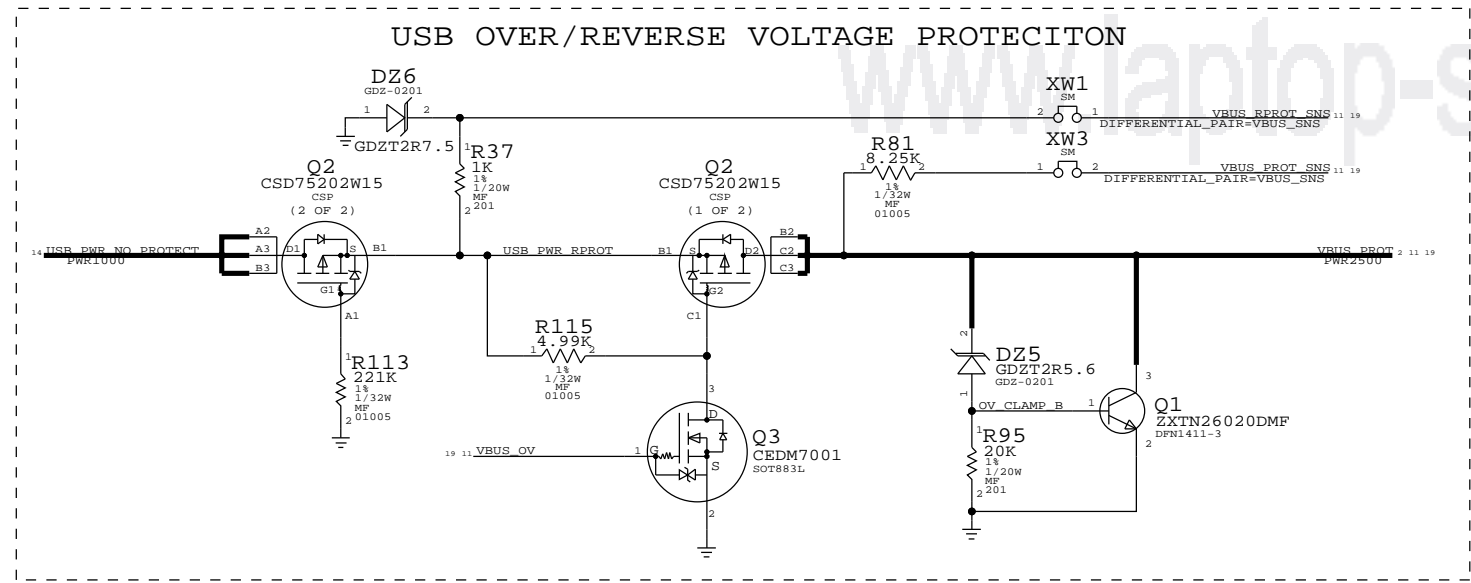
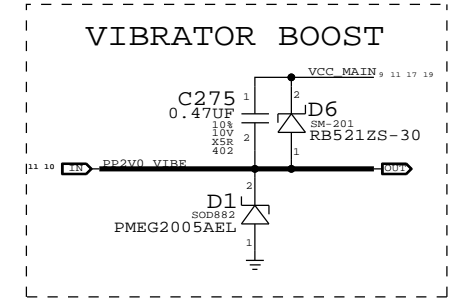
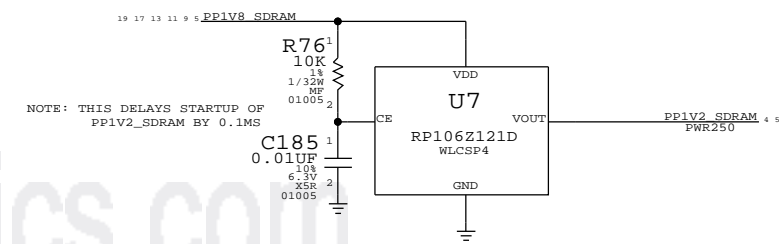
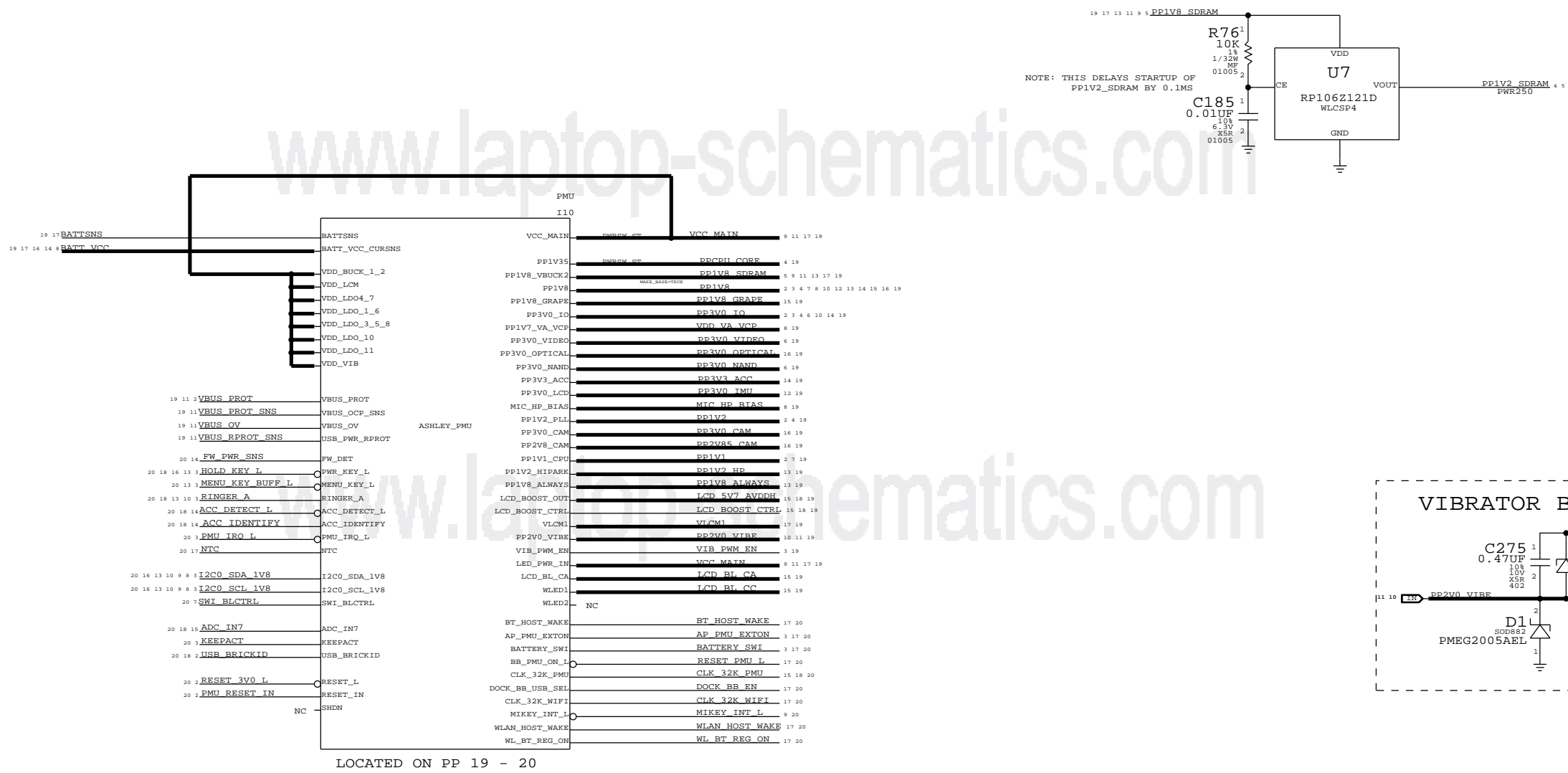
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BUTTON B2B, COMPASS	
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C

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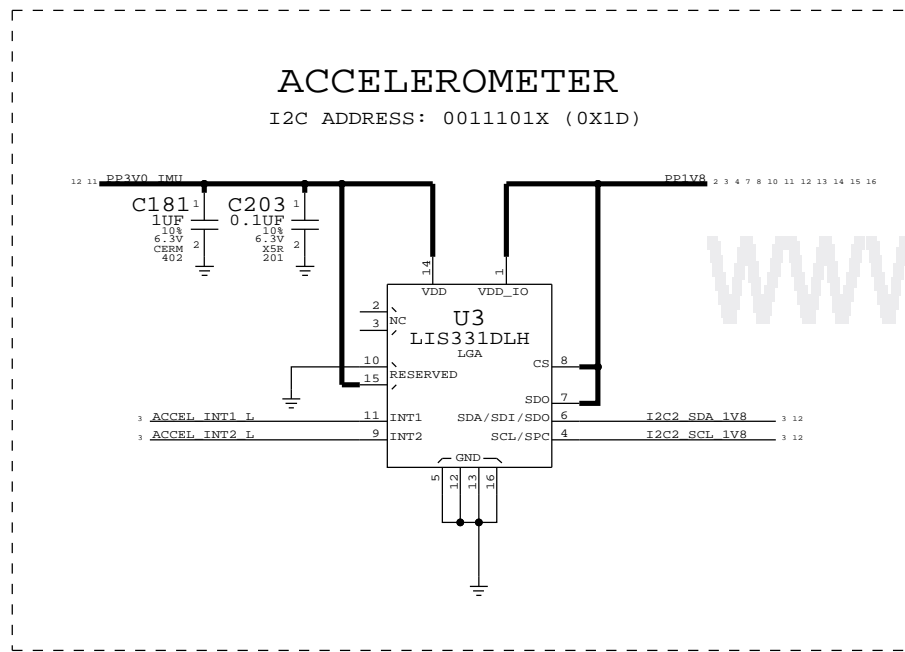
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ACCELEROMETER

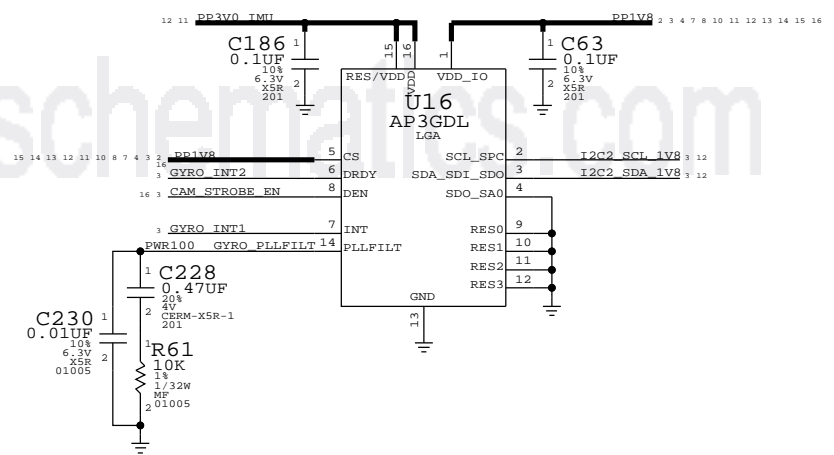
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GYRO

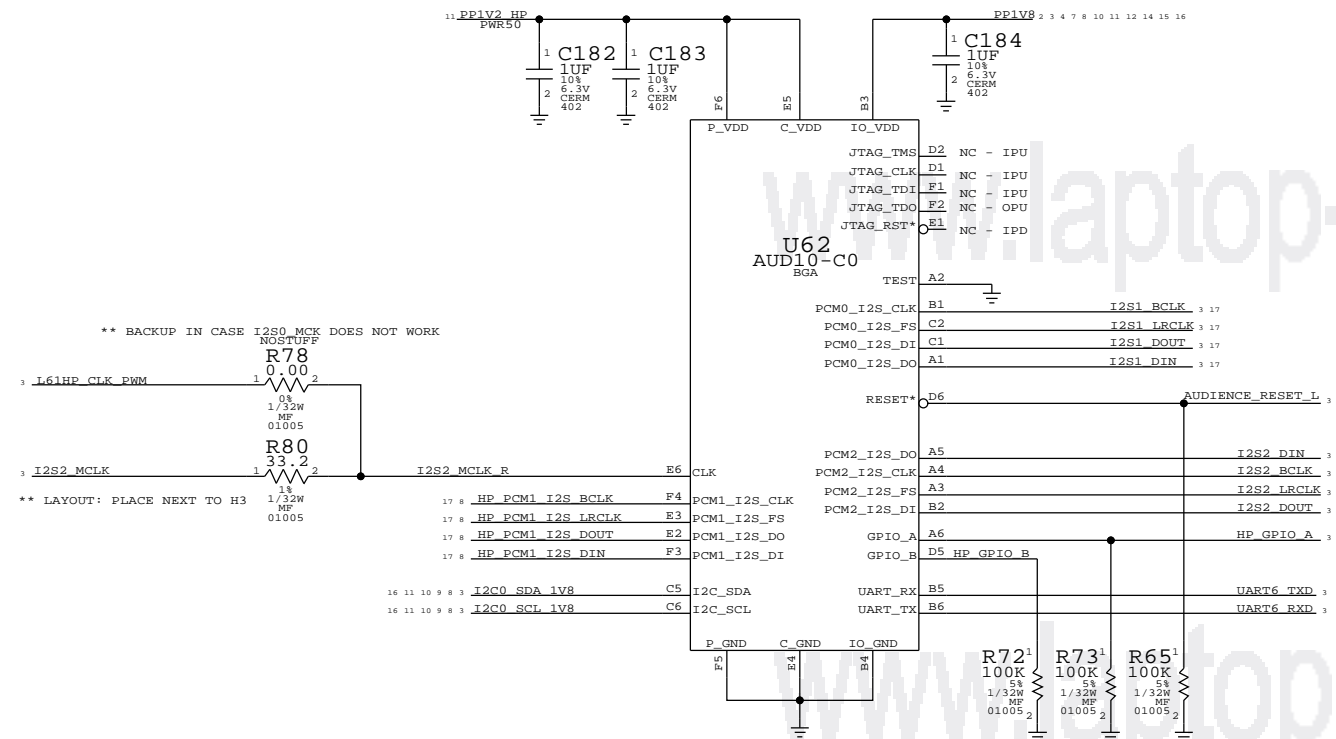


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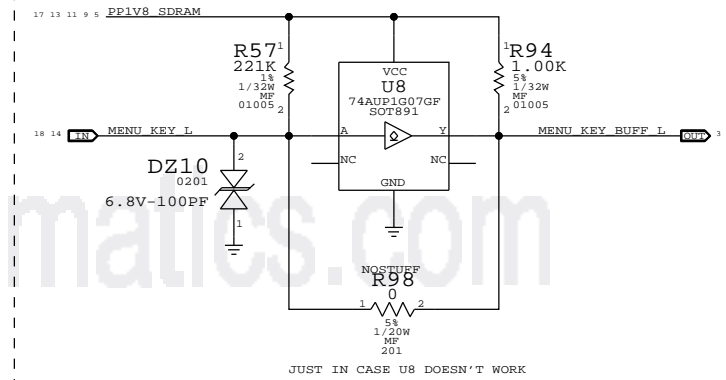
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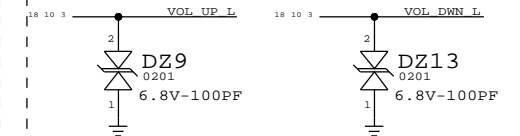


MENU KEY PU, ESD AND BUFFER

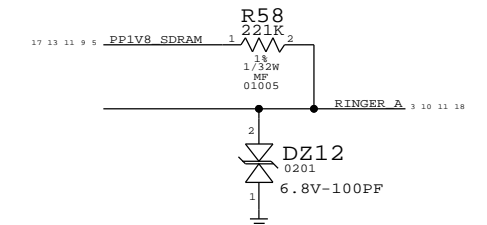
BUFFER IS NEEDED BECAUSE OF IT'S LOW V_{IH} AND LEAKAGE IT MUST BE OPEN DRAIN SO THAT WHEN PPIV8_SDRAM IS DOWN, MENU_KEY_BUFF_L IS PULLED LOW THROUGH R94 AND INTERNAL PULLDOWN IN ASHLEY.



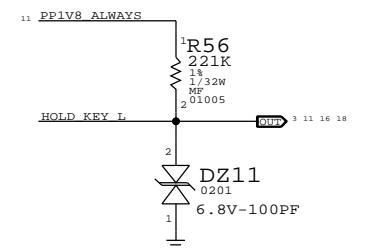
VOLUME SWITCH ESD



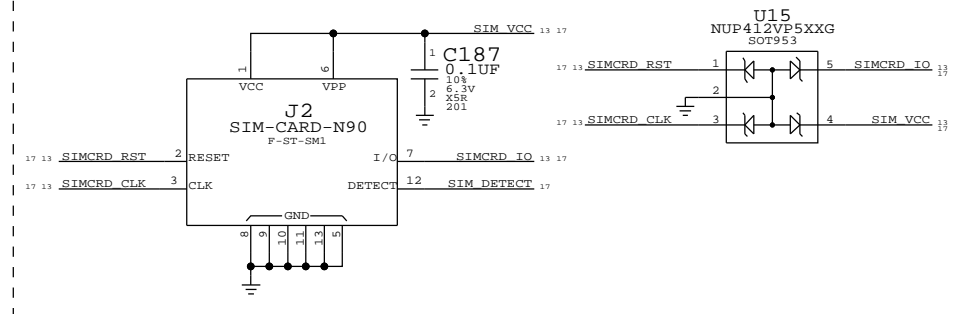
RINGER A/B SWITCH PU AND ESD



POWER/HOLD KEY PU AND ESD

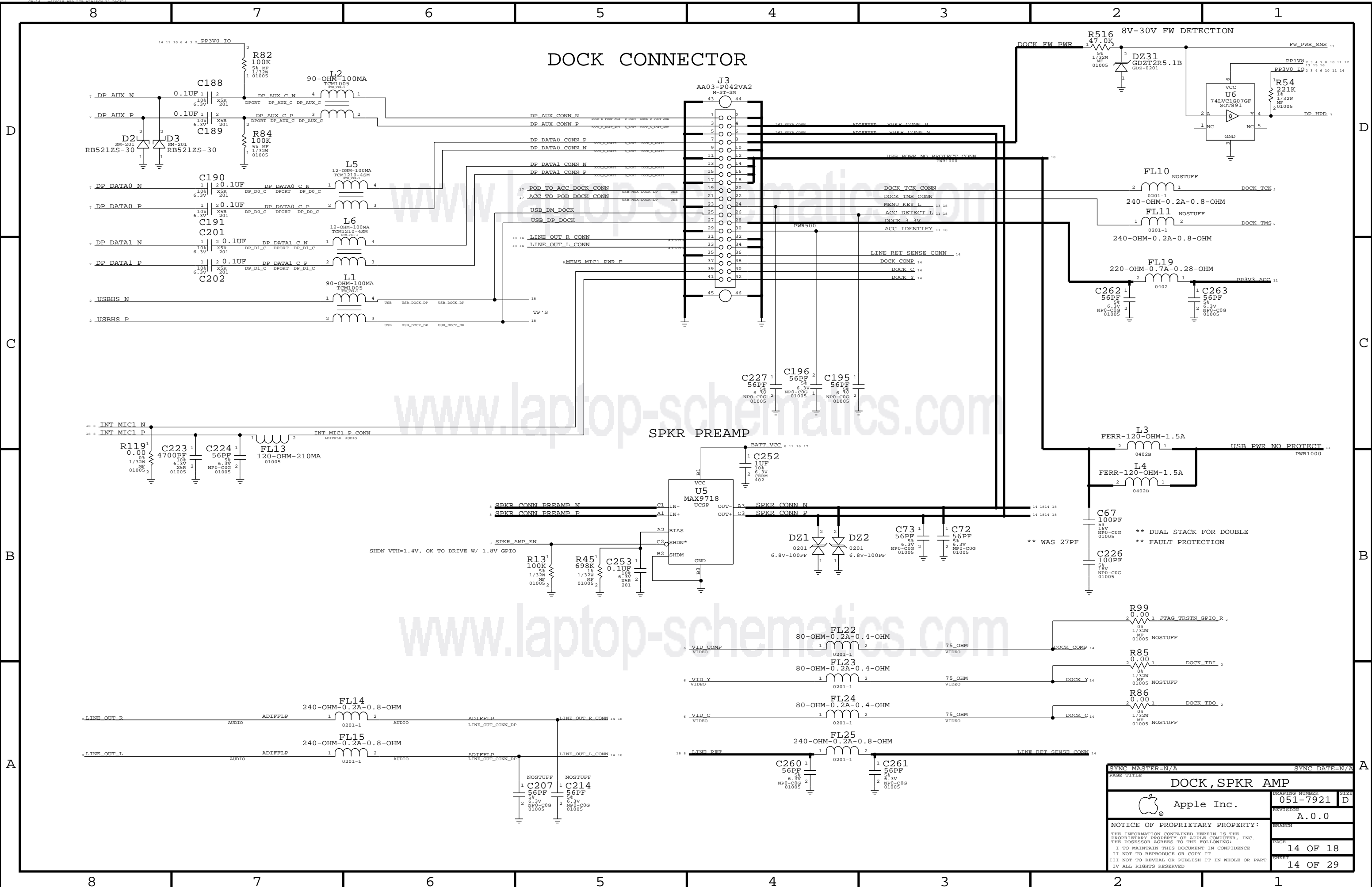


SIM CARD SLOT AND ESD



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DRAWING NUMBER 051-7921	SIZE D
REVISION A.0.0	BRANCH
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DOCK CONNECTOR

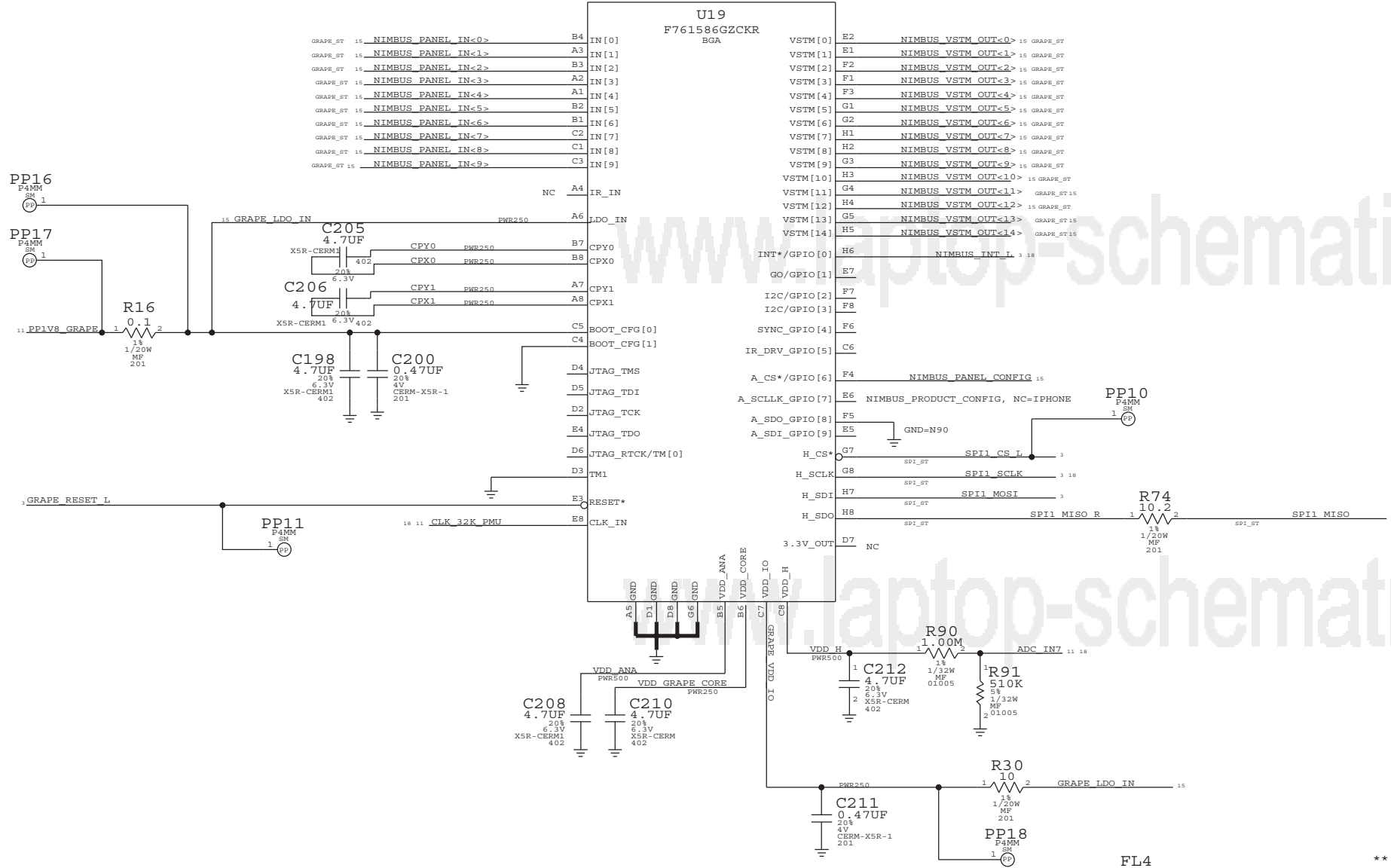
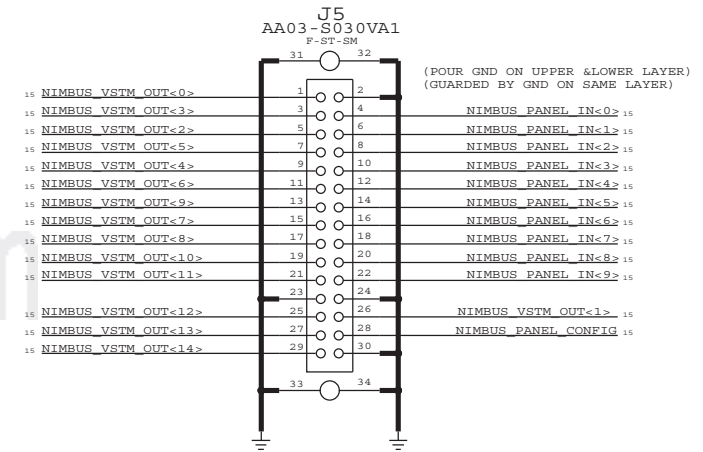


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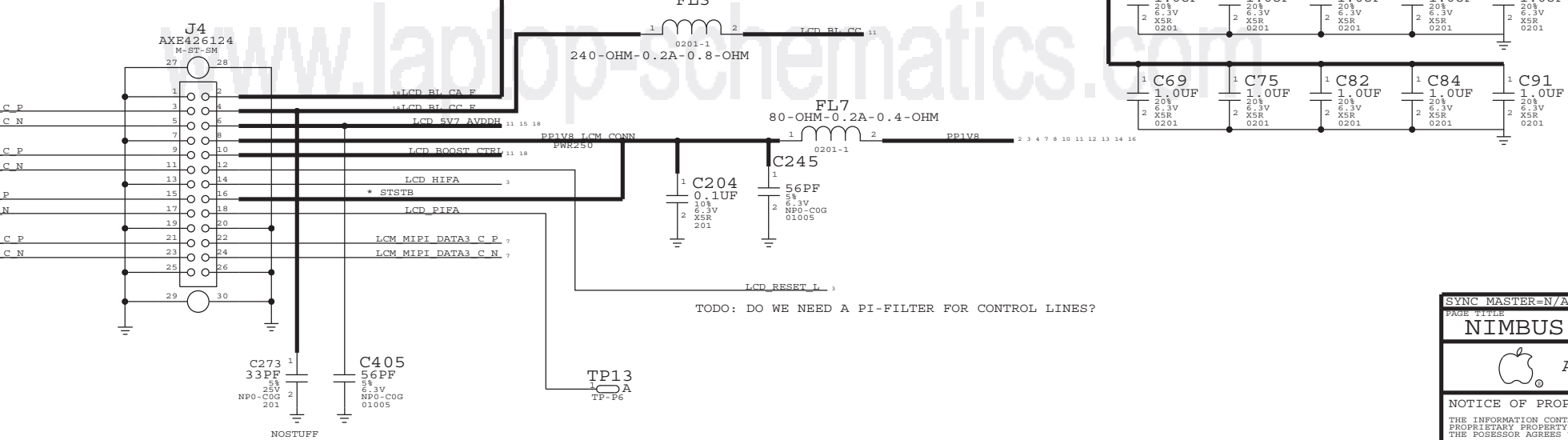
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		REVISION	A.0.0
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		SHEET	14 OF 29
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NIMBUS

GRAPE CONNECTOR N90 NIMBUS CONNECTOR



N90 LCD CONNECTOR



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C

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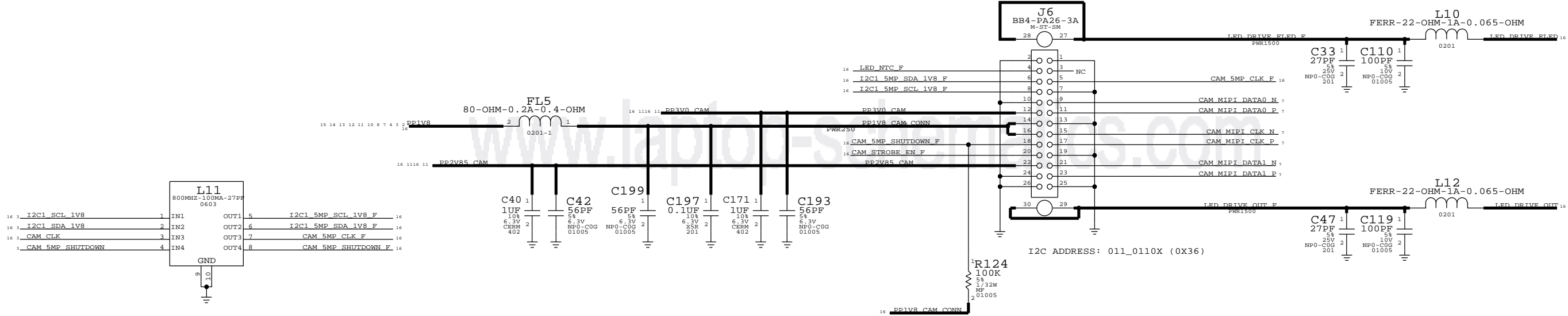
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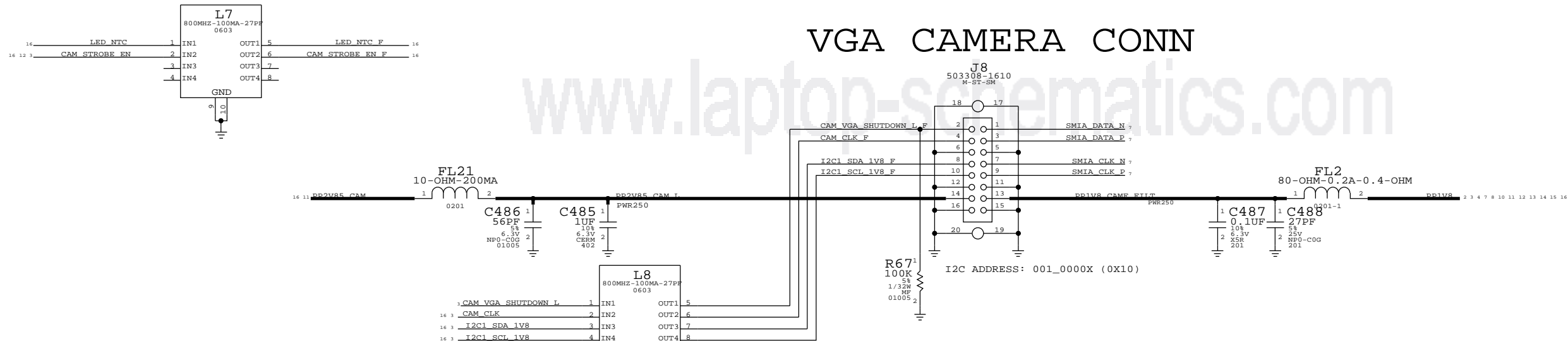
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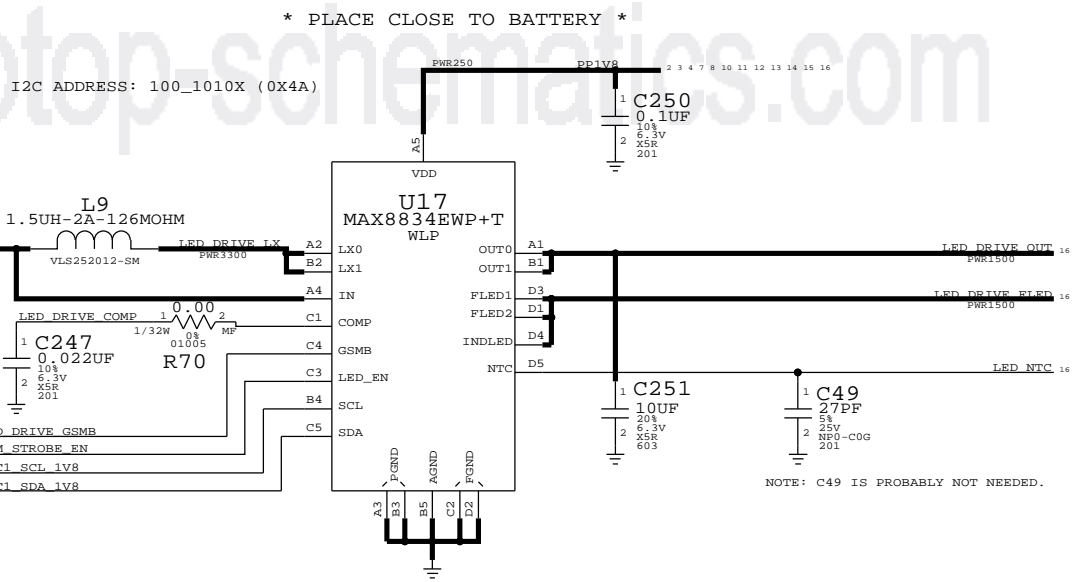
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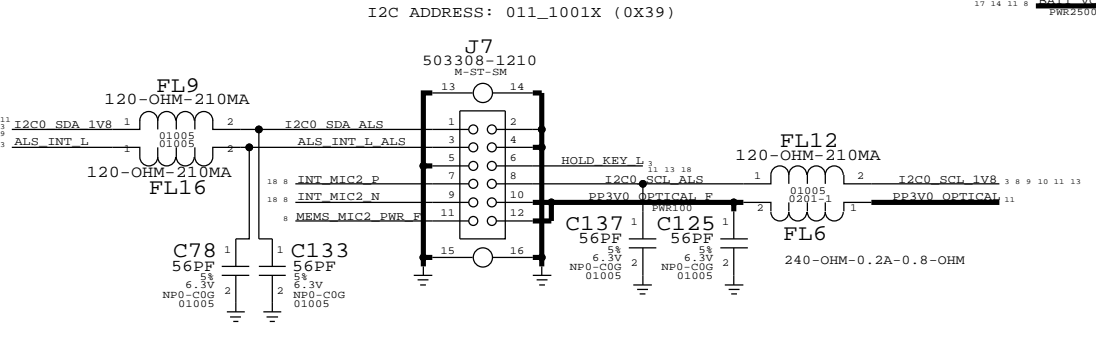
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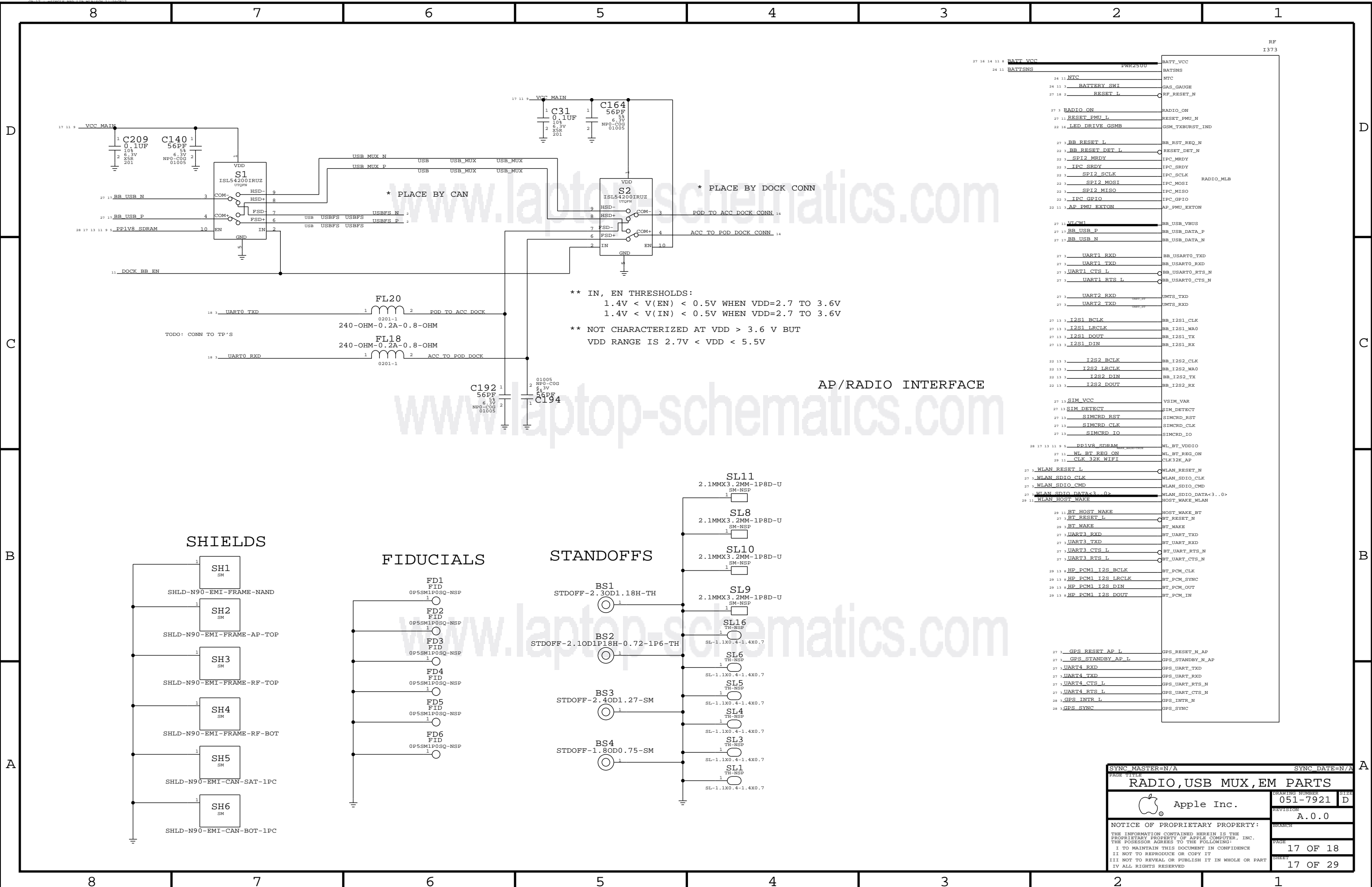
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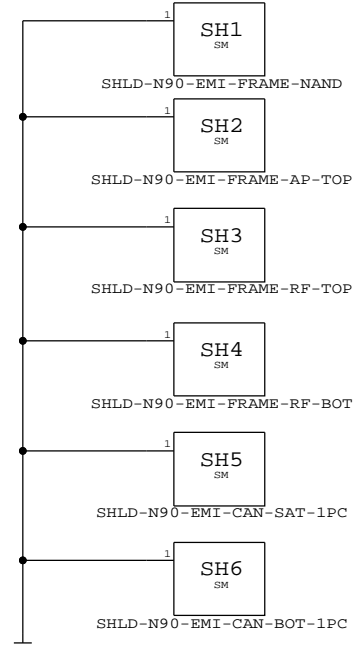
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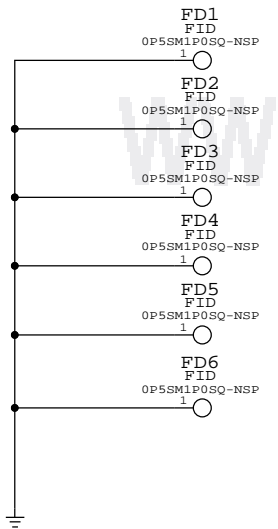
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CAMERA, STROBE, SENSOR B2B			
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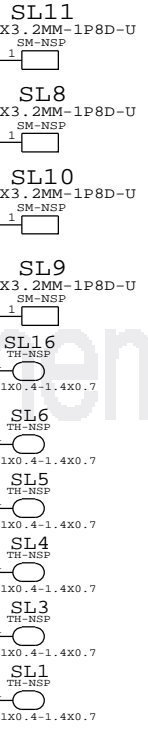
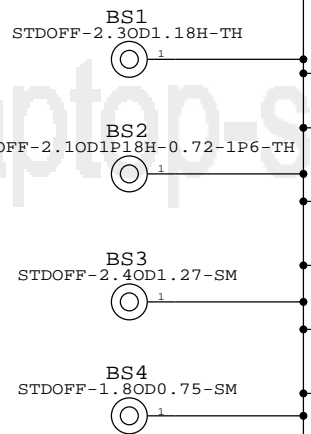
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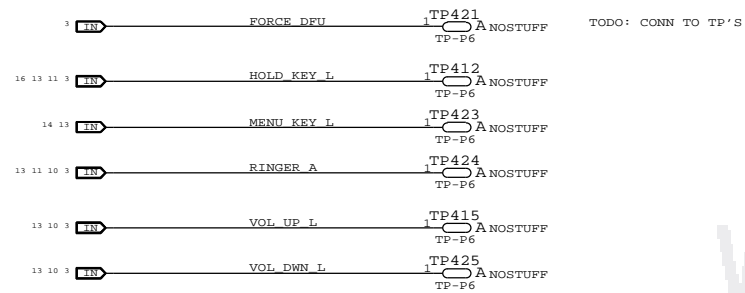


STANDOFFS



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RADIO, USB MUX, EM PARTS			
DRAWING NUMBER		051-7921	SIZE
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GPIO

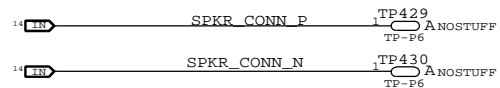


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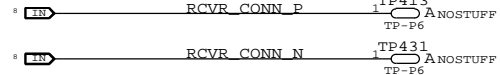


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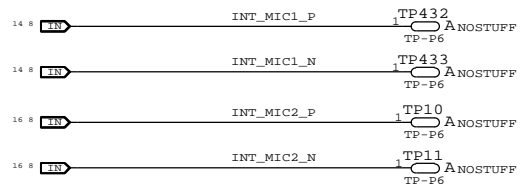
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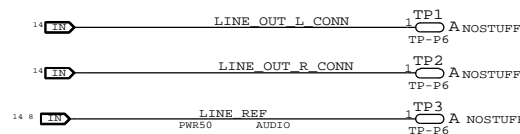
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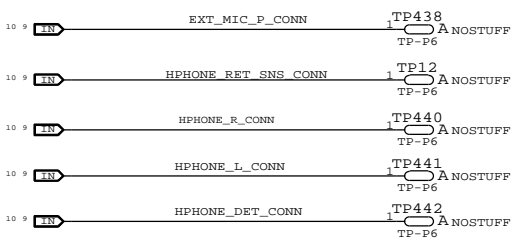
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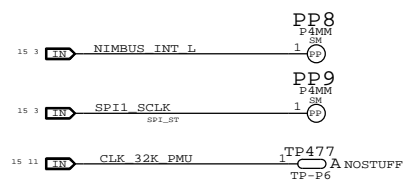
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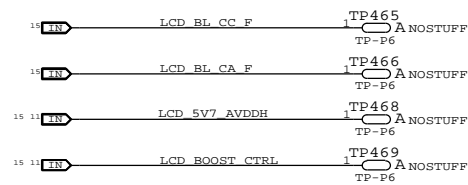
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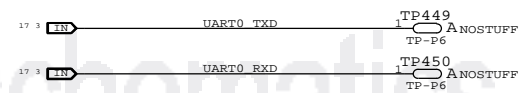
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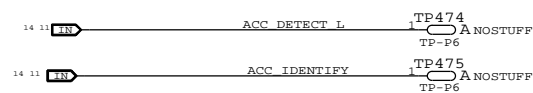
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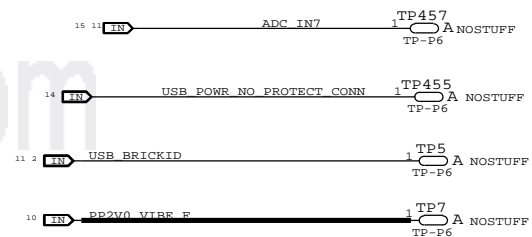
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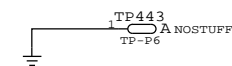
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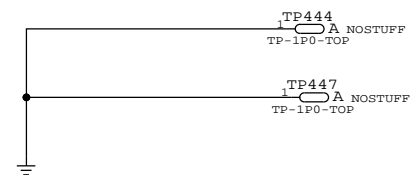
POWER



SIGNAL GND (SENSE)



POWER GND



RESET



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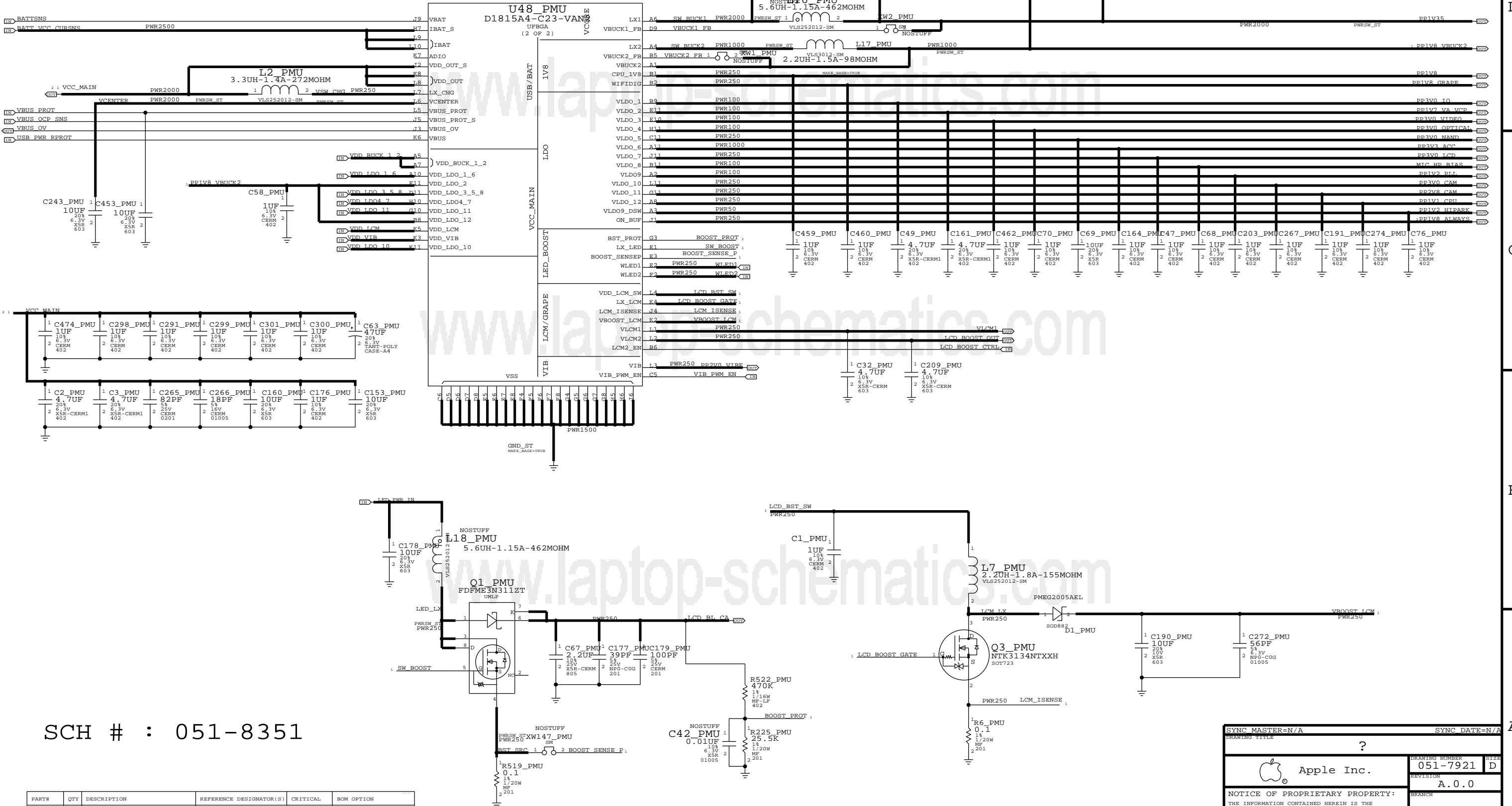
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3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

N90 ASHLEY_PMU SUB-DESIGN

Thu Mar 18 14:15:23 2010

REV	ECN	DESCRIPTION OF REVISION	CK APPD	DATE
A	0000880153	PRODUCTION RELEASED		2010-03-23

LAYOUT: PLACE XW1 AND XW2 REMOTELY BY AP



SCH # : 051-8351

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
607-6809	1	TDK POWER INDUCTORS	L1_PMU, L3_PMU, L16_PMU, L18_PMU	Y	?

SYNC MASTER=N/A		SYNC DATE=N/A	
?			
Apple Inc.		DRAWING NUMBER	SIZE
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		PAGE	1 OF 2
		SHEET	19 OF 29

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REV	ECN	DESCRIPTION OF REVISION	CK APPD DATE
A	0000880153	PRODUCTION RELEASED	2010-03-23

N90 (ICE3) HSPA RADIO

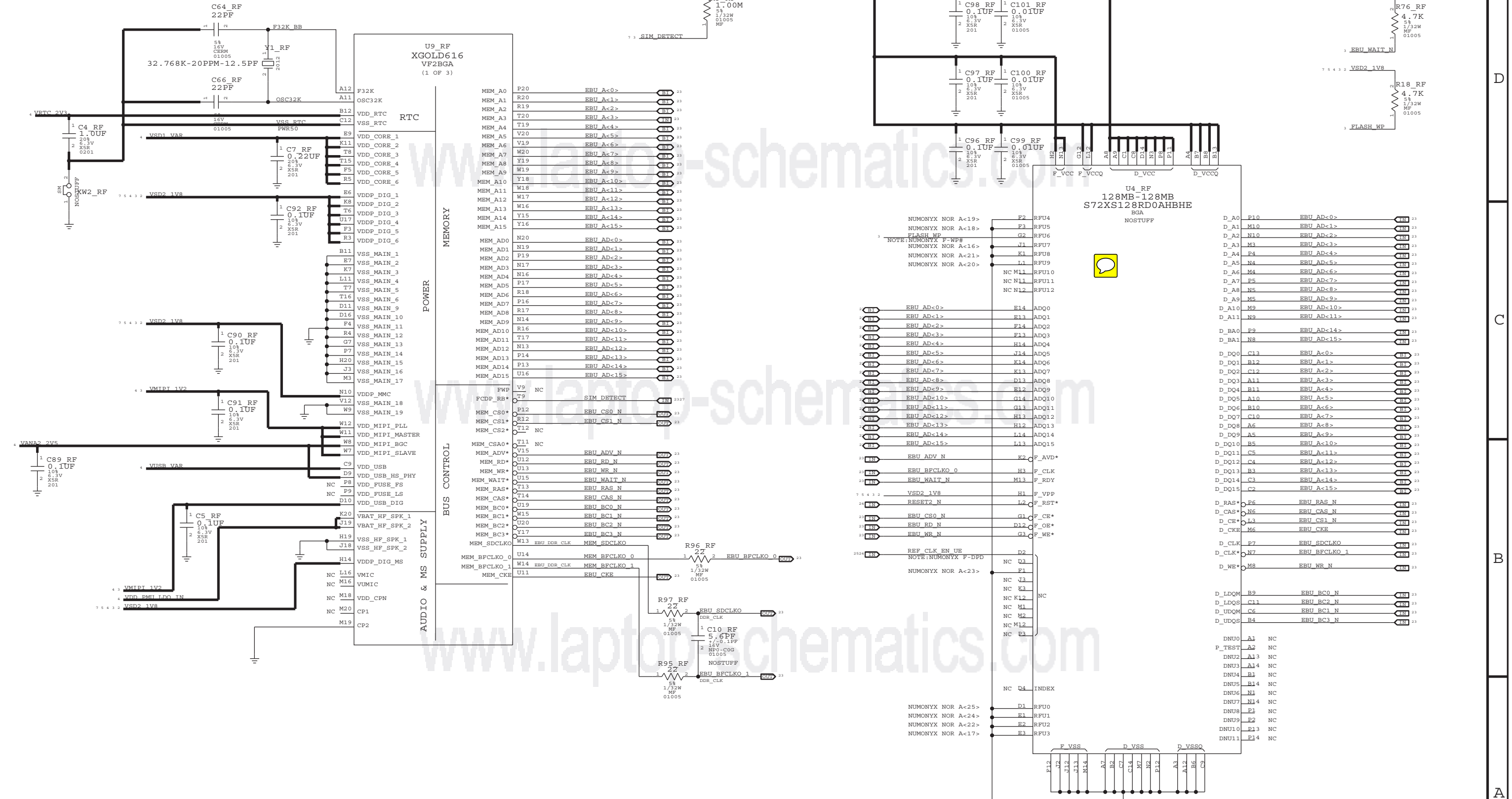
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PAGE	CONTENTS
02	BASEBAND I/O
03	BASEBAND + MEMORY
04	BASEBAND POWER SUPPLY
05	GSM & UMTS TRANSCEIVER
06	POWER AMPS AND RF FRONT END
07	SYSTEM CONNECTORS
08	A-GPS
09	WLAN/BLUETOOTH RADIO

BOARD - 920-XXXX
 SCHEMATIC - 951-XXXX
 BOM - 630-XXXX

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BASEBAND MEMORY

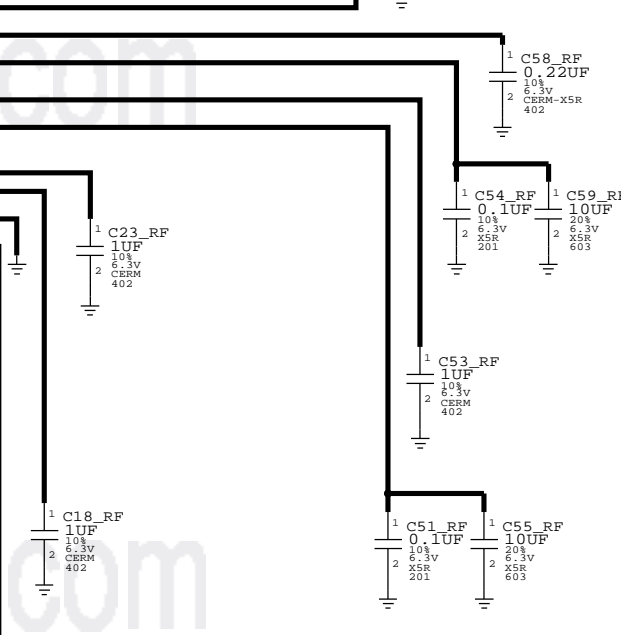
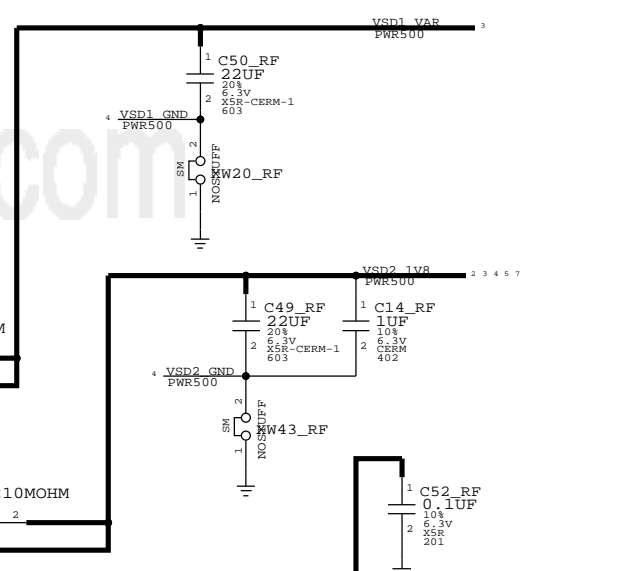
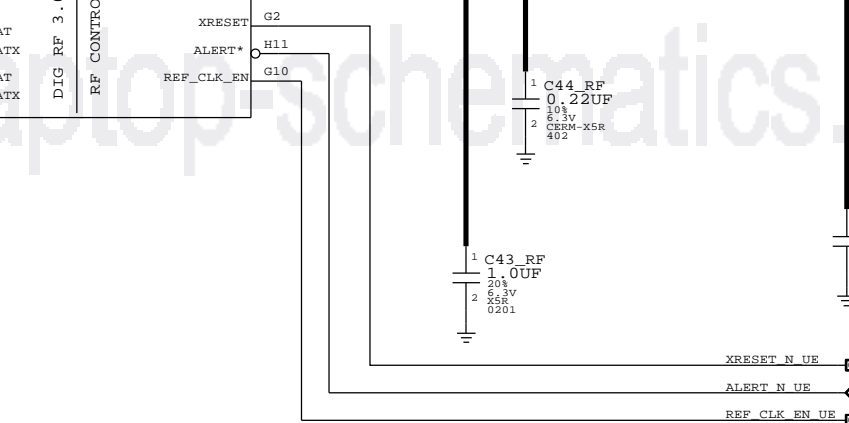
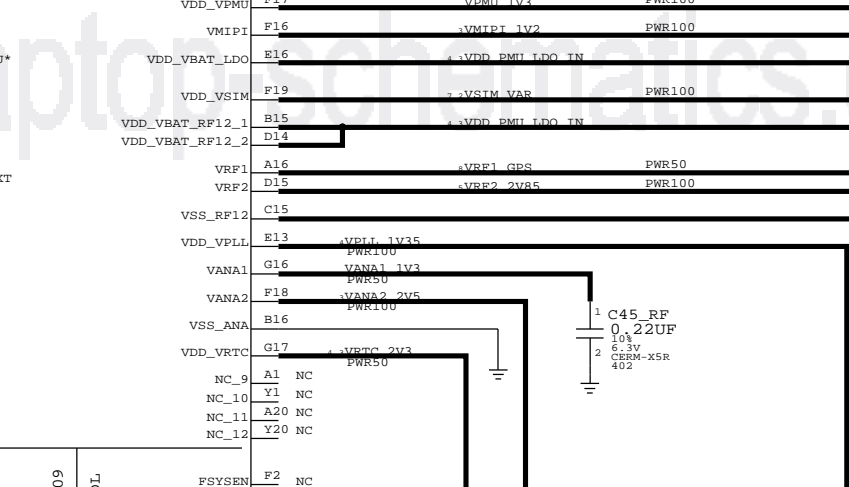
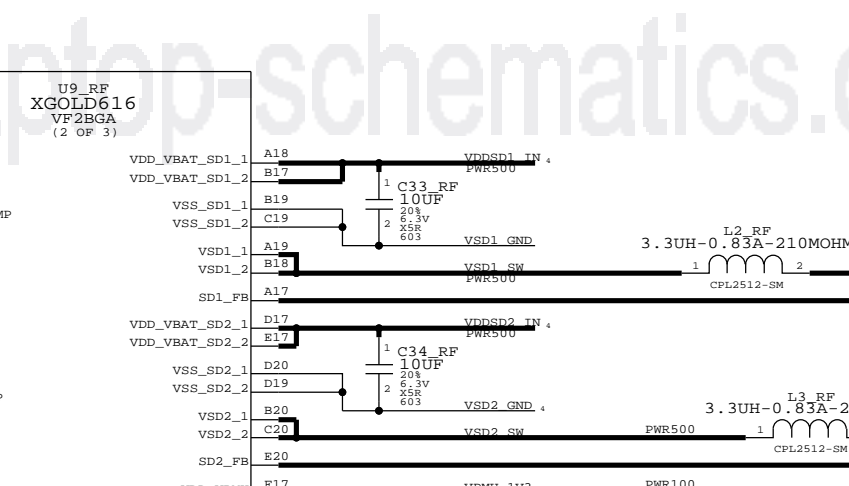
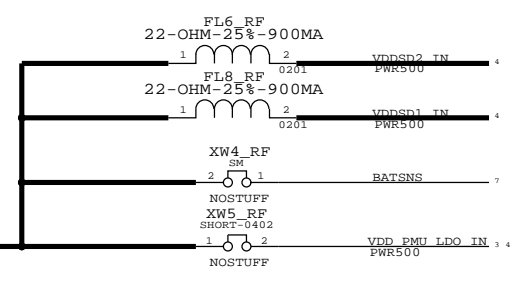
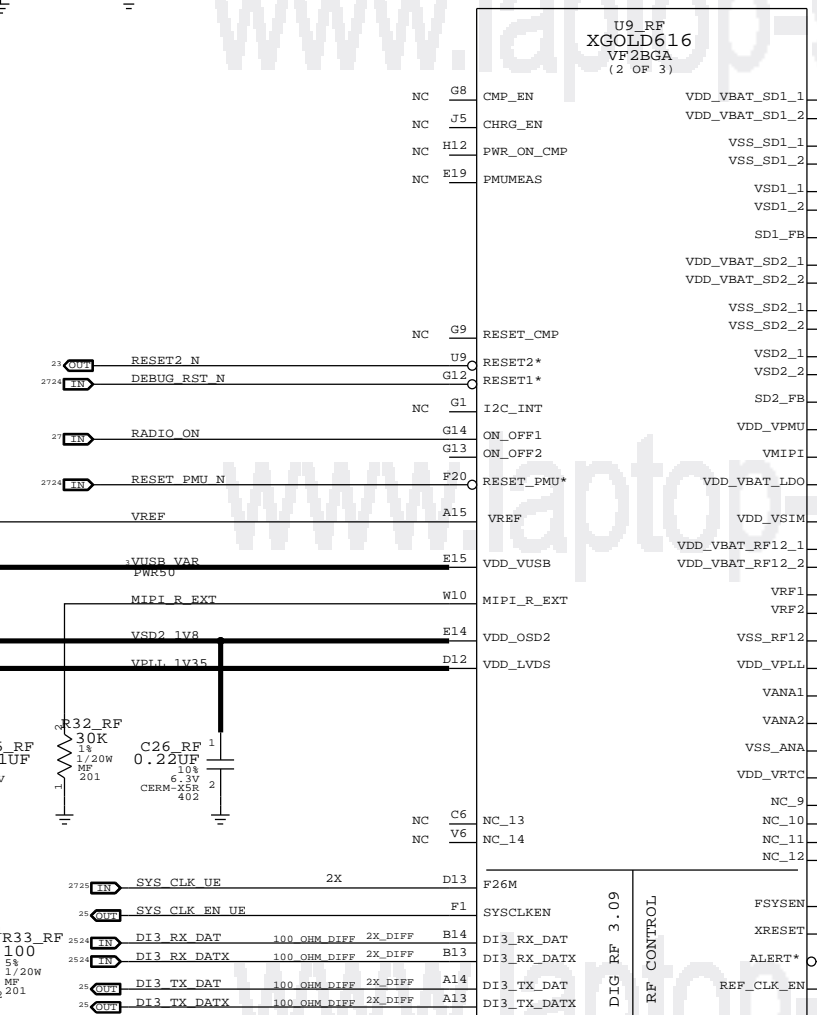
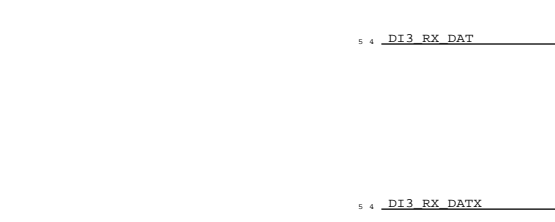
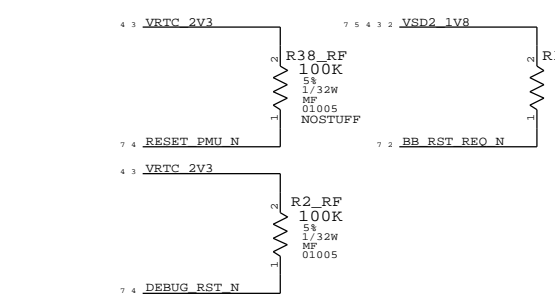
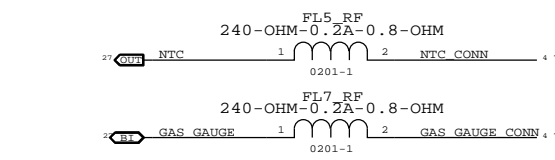
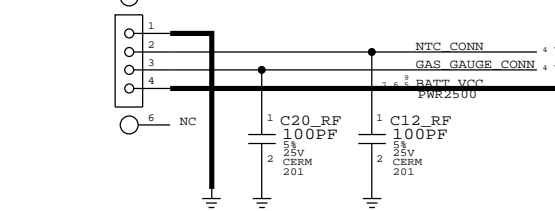


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BASEBAND POWER SUPPLY

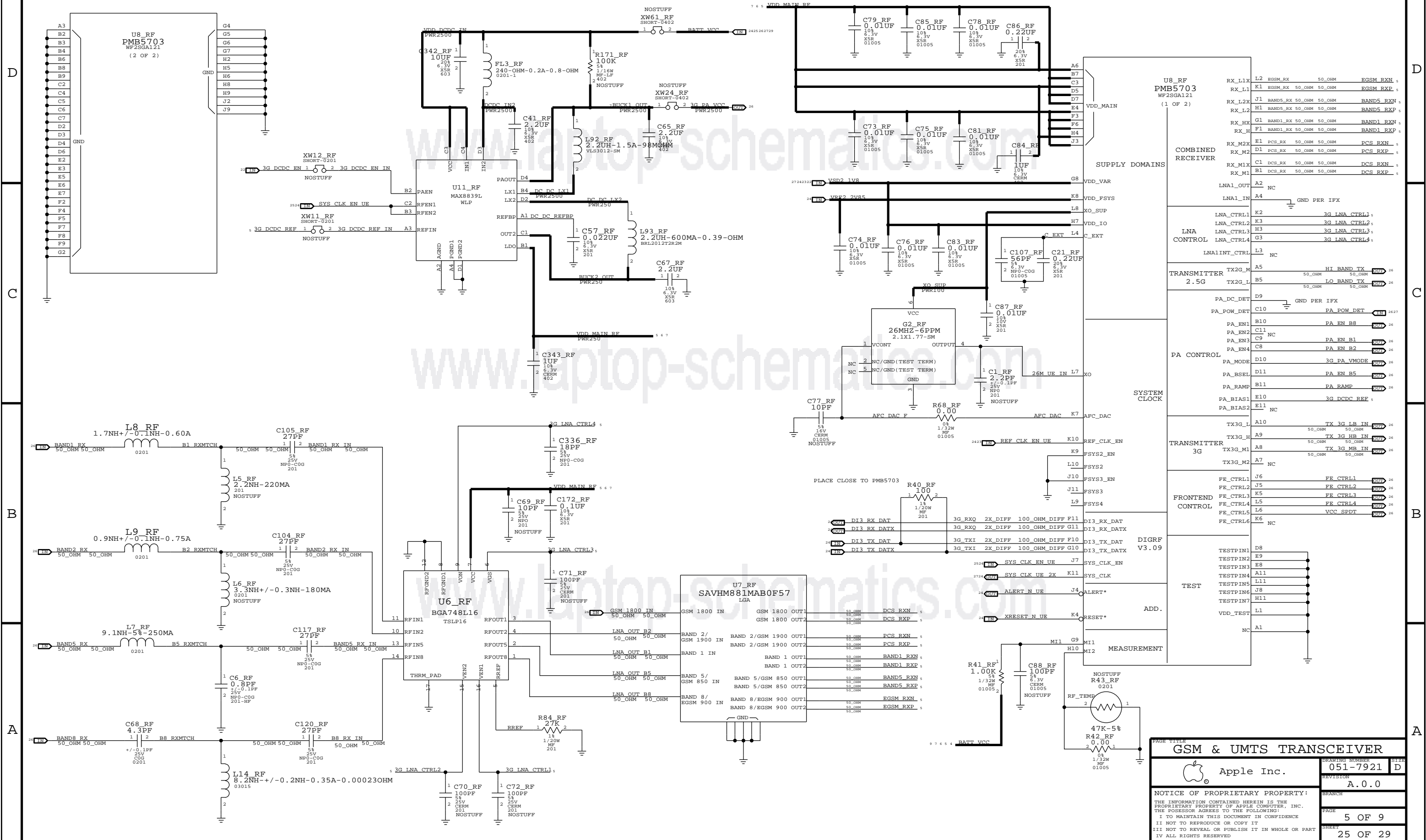
BATTERY CONNECTOR

J7_RF
WB22453-1401-7F
F-ST-SM



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GSM & UMTS TRANSCEIVER - SMARTI UE



GSM & UMTS TRANSCEIVER

Apple Inc.

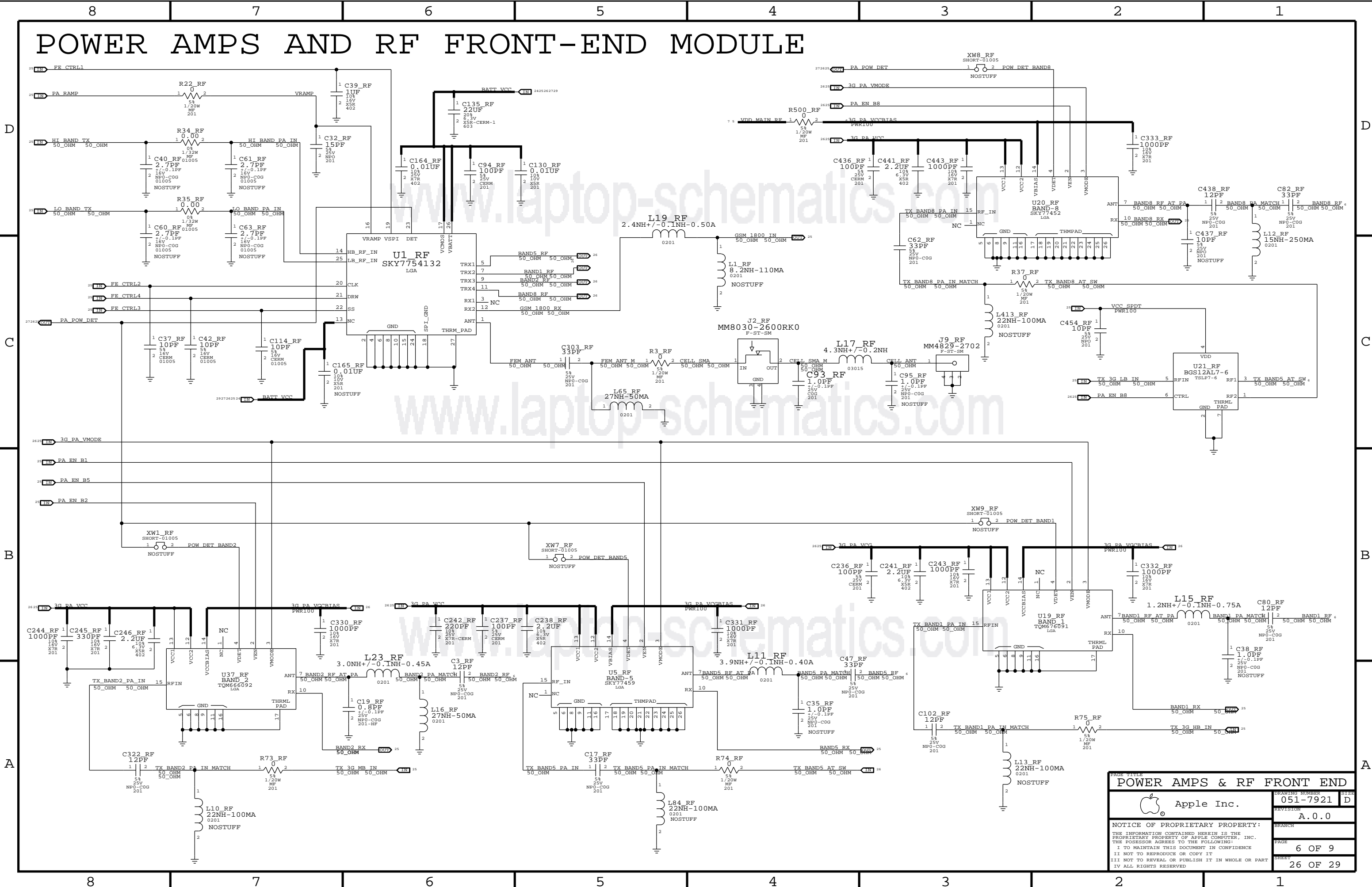
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POWER AMPS AND RF FRONT-END MODULE

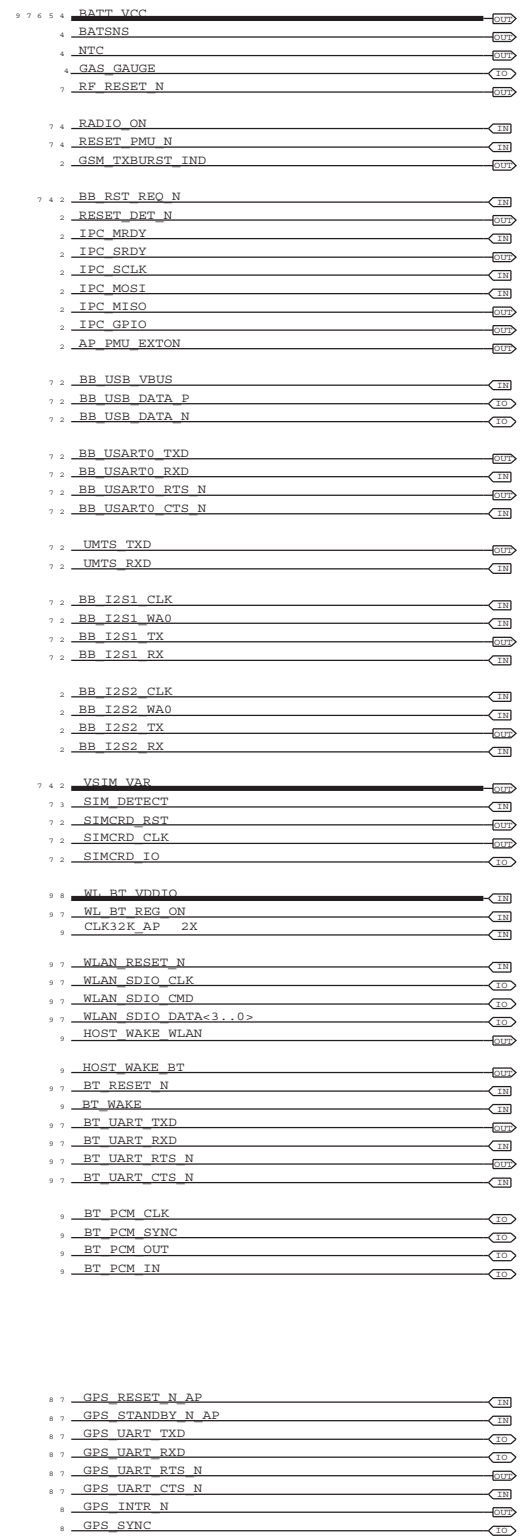


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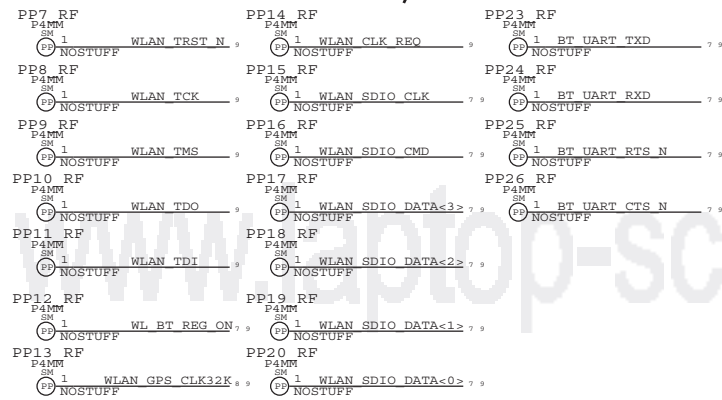
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SYSTEM CONNECTORS

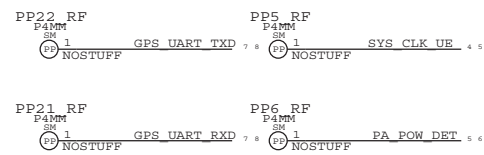
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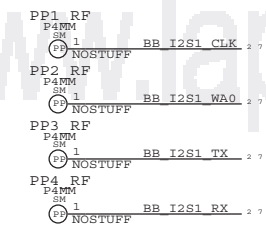
WLAN/BT



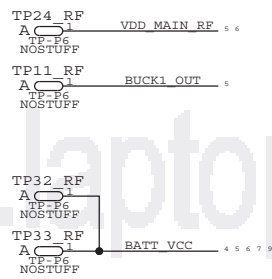
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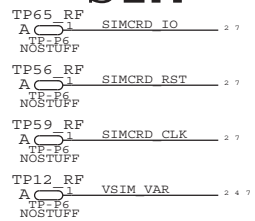
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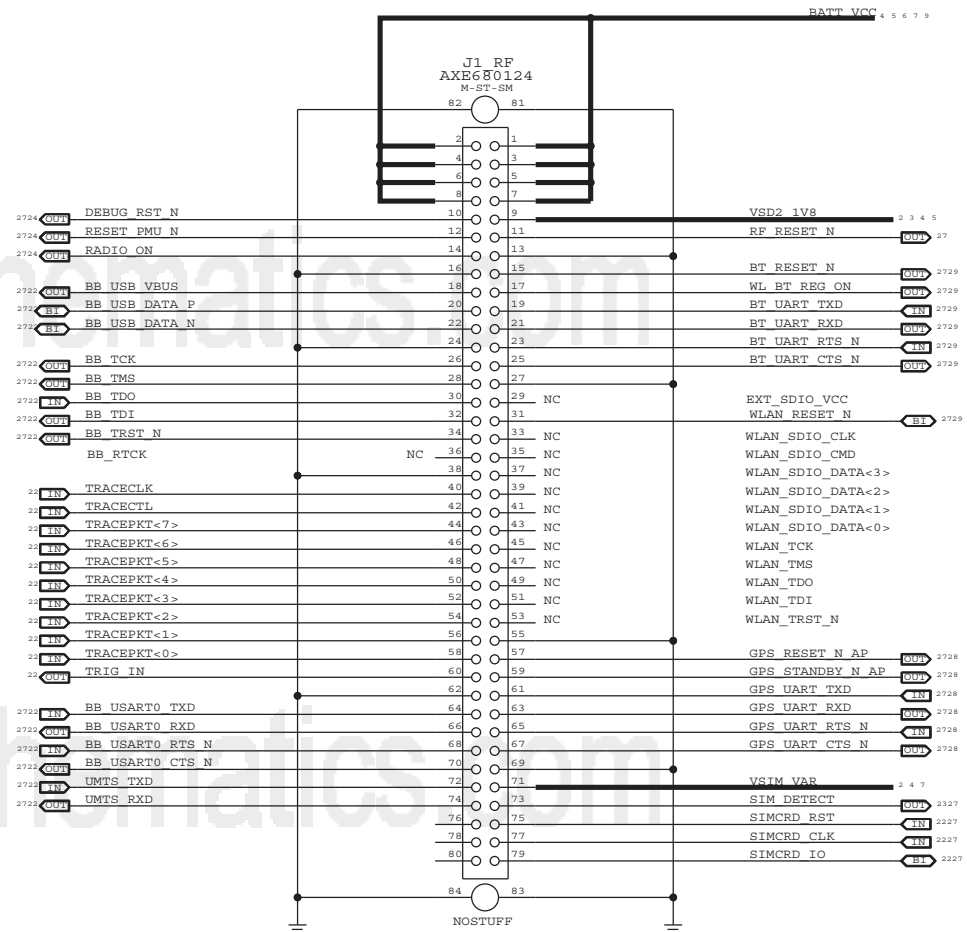
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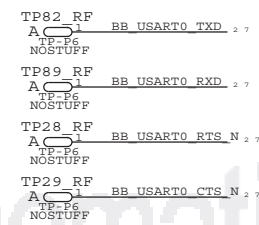
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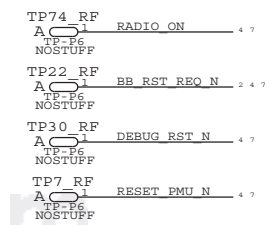
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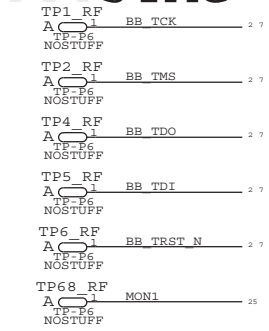
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CONTROL



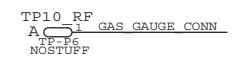
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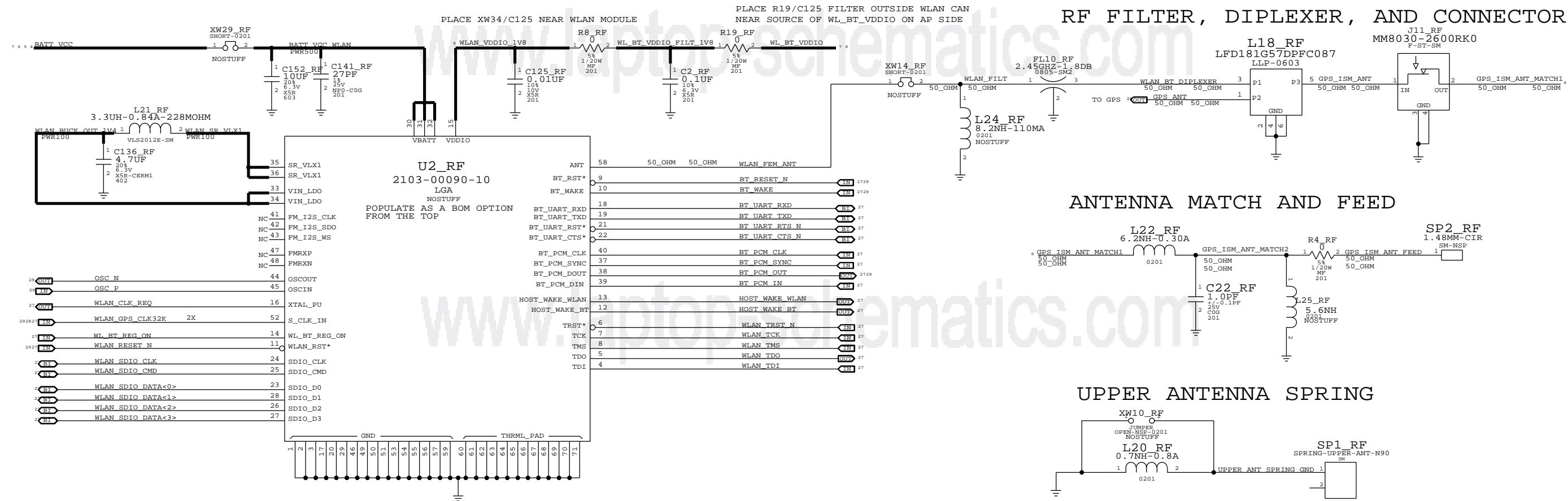


GAS GAUGE



SYSTEM & DEBUG CONNECTORS	
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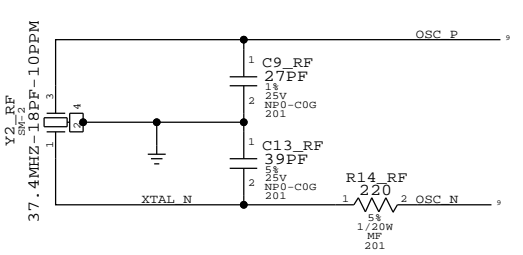
WLAN/BLUETOOTH/FM RADIO



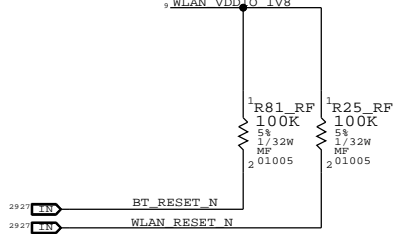
32K INTERFACE TO AP



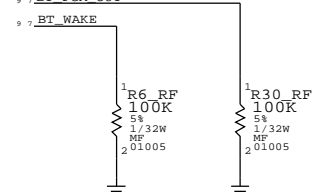
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PULL UP RESISTORS



PULL DOWN RESISTORS



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