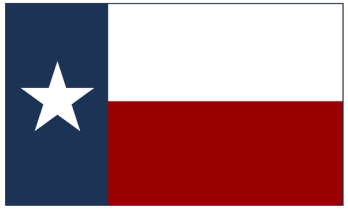
PDF PAGE	CSA PAGE	CONTENTS	SYNC MASTER	DATE
2	2	H5P JTAG, USB ,PLL	N/A	N/A
3	3	H5P GPIO & CONTROL	N/A	N/A
4	4	H5P IO POWER	N/A	N/A
5	5	H5P SOC/CPU/SRAM PWR	N/A	N/A
6	6	H5P W/ NAND	N/A	N/A
7	7	H5P VIDEO	N/A	N/A
8	8	BUTTON FLEX B2B	N/A	N/A
9	9	L81 AUDIO CODEC	N/A	N/A
10	10	CG FLEX B2B	N/A	N/A
11	12	AGATHA PMU(1/2)	N/A	N/A
12	13	AGATHA PMU(2/2)	N/A	N/A
13	14	CHESTNUT + BACKLIGHT DRIVER	N/A	N/A
14	15	SPKR AMP + LED DRIVER	N/A	N/A
15	16	TRISTAR	N/A	N/A
16	17	DOCKFLEX B2B	N/A	N/A
17	18	D404 (TOUCH B2B, DRIVER ICS)	N/A	N/A
18	19	LCM CONNECTOR	N/A	N/A
19	20	OSCAR + SENSORS	N/A	N/A
20	21	CAM0 CONNECTOR	N/A	N/A
21	22	BATT B2B, TPS, PD FEATURES	N/A	N/A
22	23	RADIO_MLB HIERARCH. SYMBOL	N/A	N/A

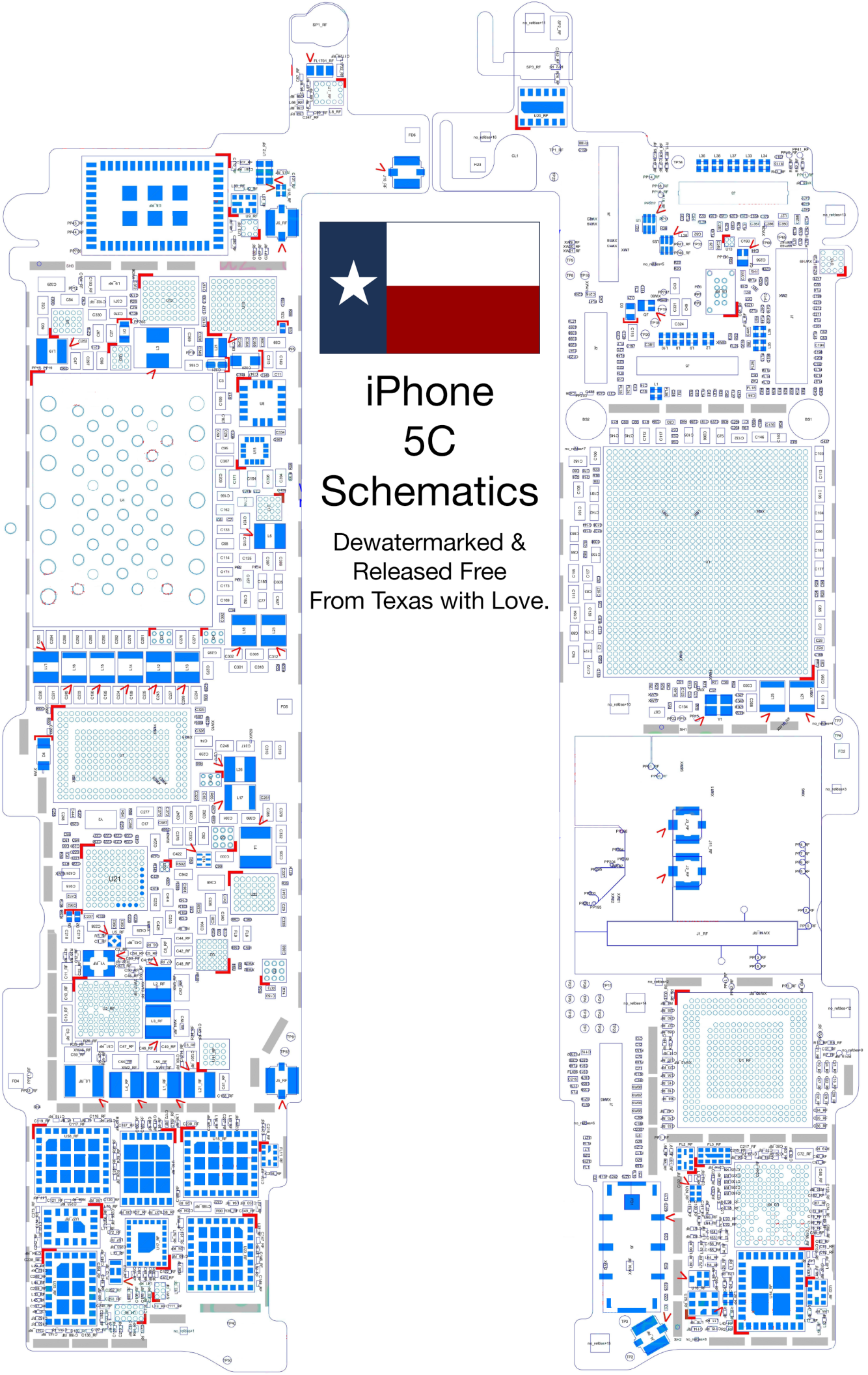
SCH 051-0143
BRD 820-3581

BOM 639-4501



iPhone 5C Schematics

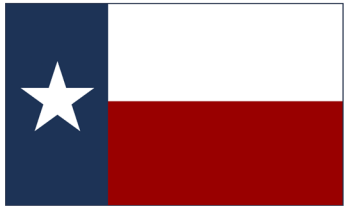
Dewatermarked &
Released Free
From Texas with Love.


iPhone
5C
Schematics
Dewatermarked &
Released Free
From Texas with Love.

PDF PAGE	CSA PAGE	CONTENTS	SYNC MASTER	DATE
2	2	H5P JTAG, USB ,PLL	N/A	N/A
3	3	H5P GPIO & CONTROL	N/A	N/A
4	4	H5P IO POWER	N/A	N/A
5	5	H5P SOC/CPU/SRAM PWR	N/A	N/A
6	6	H5P W/ NAND	N/A	N/A
7	7	H5P VIDEO	N/A	N/A
8	8	BUTTON FLEX B2B	N/A	N/A
9	9	L81 AUDIO CODEC	N/A	N/A
10	10	CG FLEX B2B	N/A	N/A
11	12	AGATHA PMU(1/2)	N/A	N/A
12	13	AGATHA PMU(2/2)	N/A	N/A
13	14	CHESTNUT + BACKLIGHT DRIVER	N/A	N/A
14	15	SPKR AMP + LED DRIVER	N/A	N/A
15	16	TRISTAR	N/A	N/A
16	17	DOCKFLEX B2B	N/A	N/A
17	18	D404 (TOUCH B2B, DRIVER ICS)	N/A	N/A
18	19	LCM CONNECTOR	N/A	N/A
19	20	OSCAR + SENSORS	N/A	N/A
20	21	CAM0 CONNECTOR	N/A	N/A
21	22	BATT B2B, TPS, PD FEATURES	N/A	N/A
22	23	RADIO_MLB HIERARCH. SYMBOL	N/A	N/A

SCH 051-0143
BRD 820-3581

BOM 639-4501

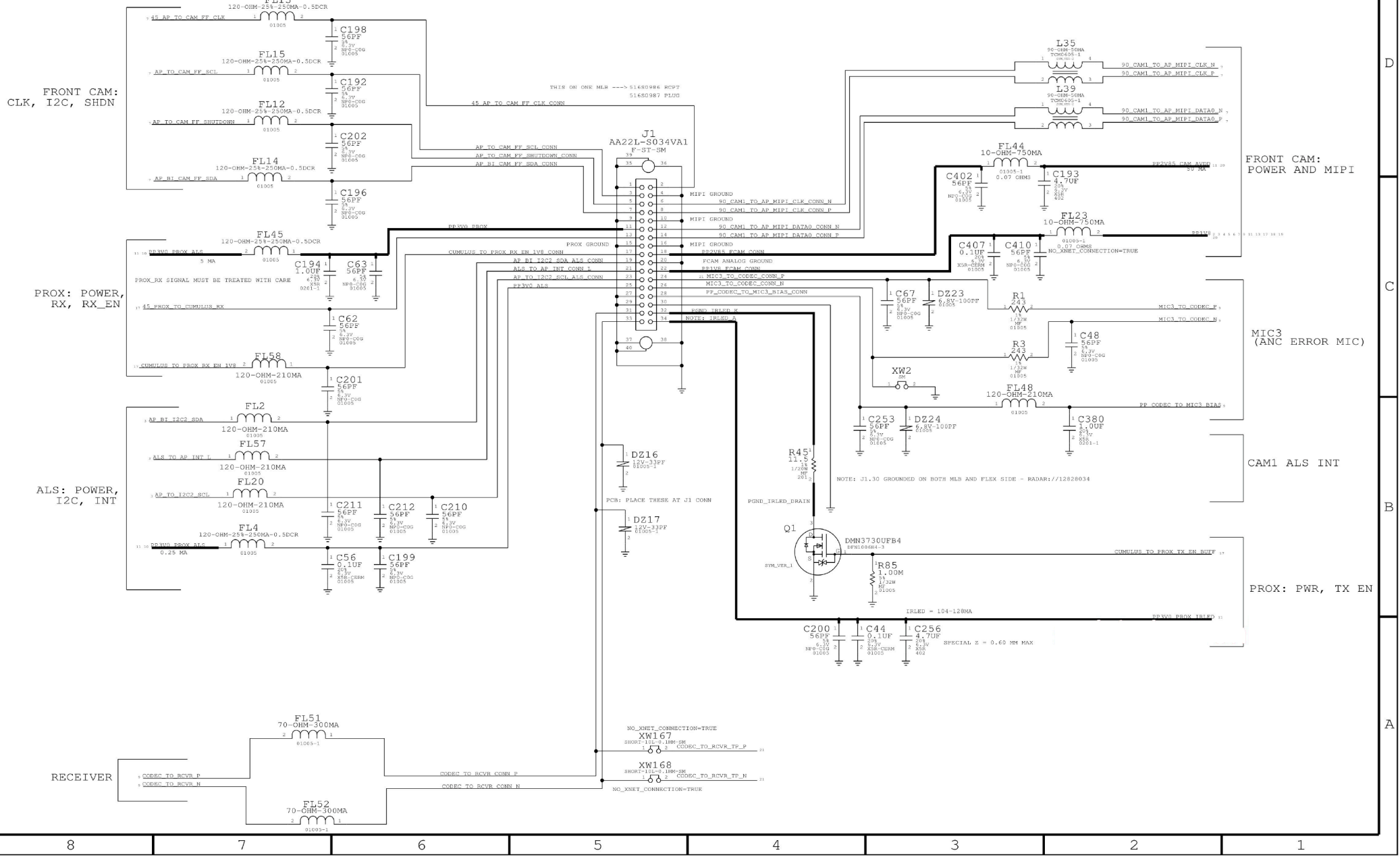


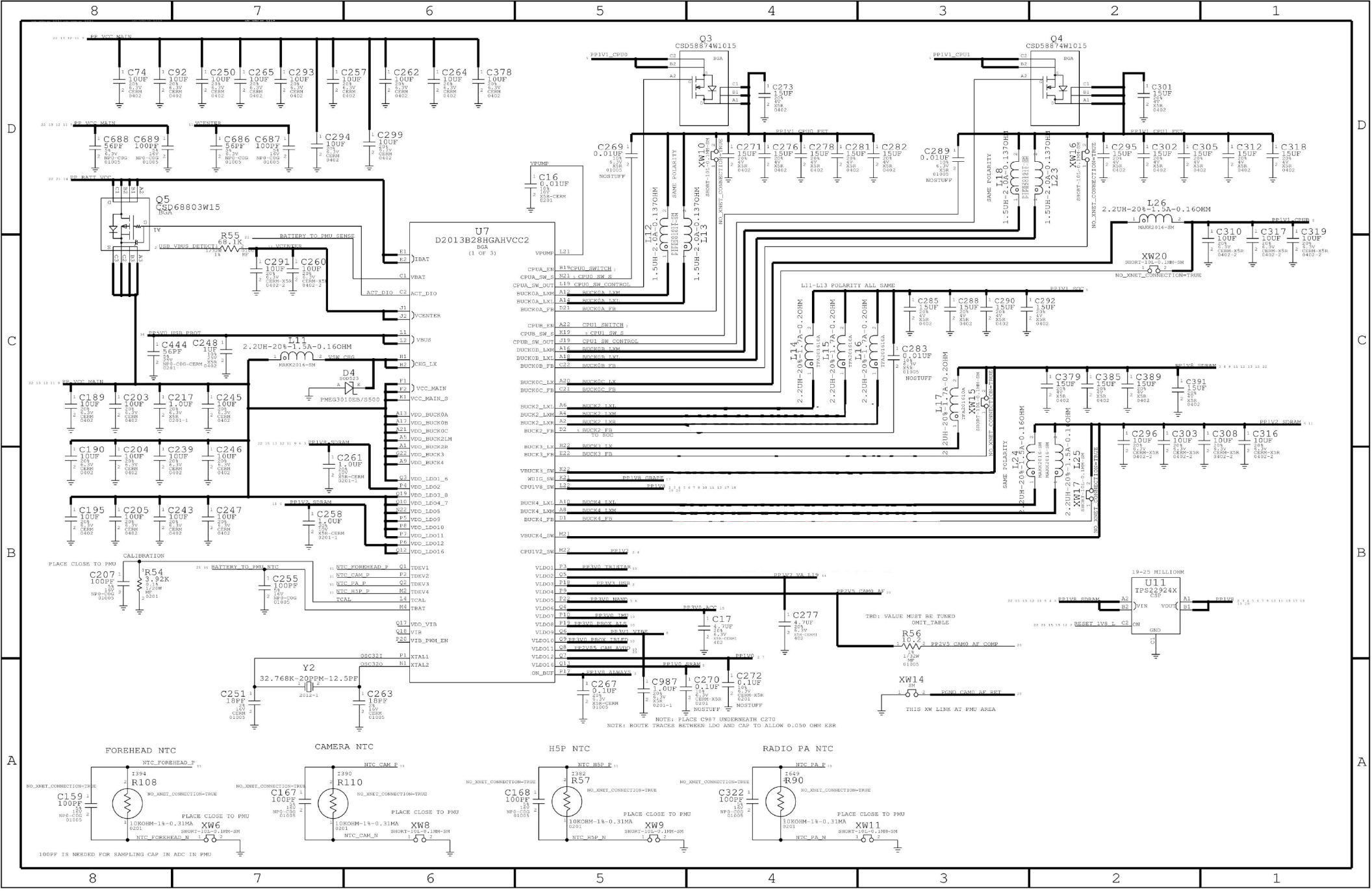
iPhone 5C Schematics

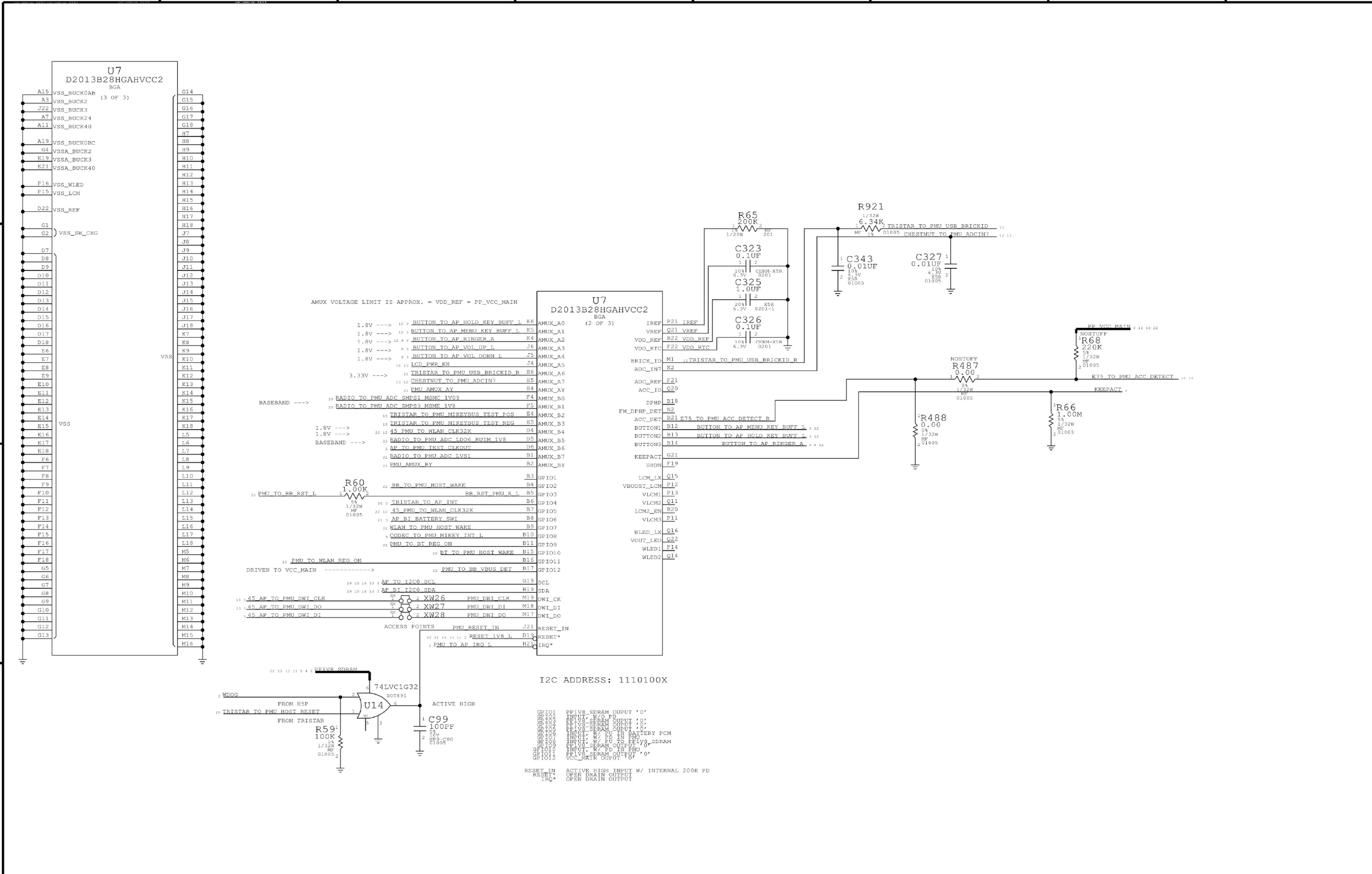
Dewatermarked &
Released Free
From Texas with Love.

CG FLEX B2B

(FF CAM, PROX, ALS, RECEIVER, ANC ERROR MIC)



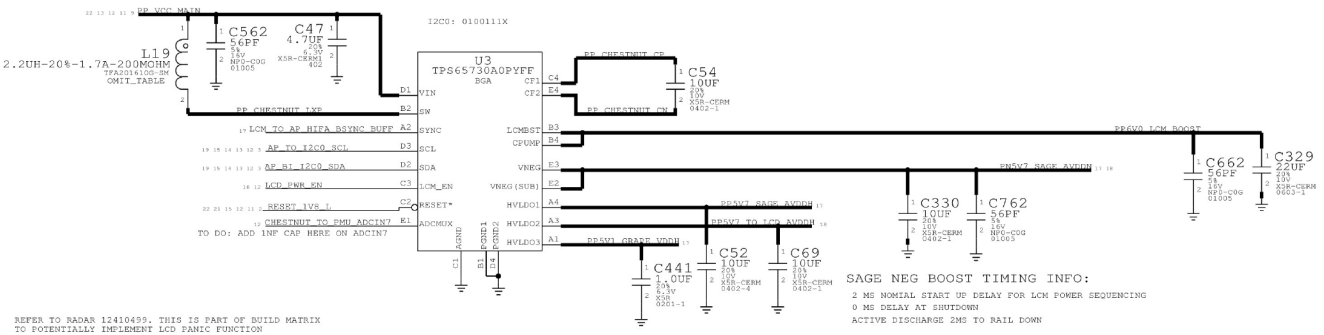

U7
D2013B28HGAHVCC2
BGA
(1 OF 3)
Q3
CSD58874W1015
Q4
CSD58874W1015
Q5
CSD68803W15
L11
2.2UH-20%-1.5A-0.16OHM
L12
1.5UH-2.0A-0.137OHM
L13
1.5UH-2.0A-0.137OHM
L18
1.5UH-2.0A-0.137OHM
L23
1.5UH-2.0A-0.137OHM
L26
2.2UH-20%-1.5A-0.16OHM
L14
2.2UH-20%-1.7A-0.20HM
L15
2.2UH-20%-1.7A-0.20HM
L16
2.2UH-20%-1.7A-0.20HM
L17
2.2UH-20%-1.7A-0.20HM
L24
2.2UH-20%-1.5A-0.16OHM
L25
2.2UH-20%-1.5A-0.16OHM
D4
S500523
PMEG3010EB/S500
Y2
32.768K-20PPM-12.5PF
U11
TPS22924X
R55
68.1K
R54
3.92K
R56
10.2
R108
R110
R57
R90
FOREHEAD NTC
CAMERA NTC
H5P NTC
RADIO PA NTC
CALIBRATION
PLACE CLOSE TO PMU
NO_XNET_CONNECTION=TRUE
SAME POLARITY
L11-L13 POLARITY ALL SAME
TBD: VALUE MUST BE TUNED OMIT_TABLE
THIS XW LINK AT PMU AREA
NOTE: PLACE C987 UNDERNEATH C270
NOTE: ROUTE TRACES BETWEEN LDO AND CAP TO ALLOW 0.050 OHM ESR
100PF IS NEEDED FOR SAMPLING CAP IN ADC IN PMU



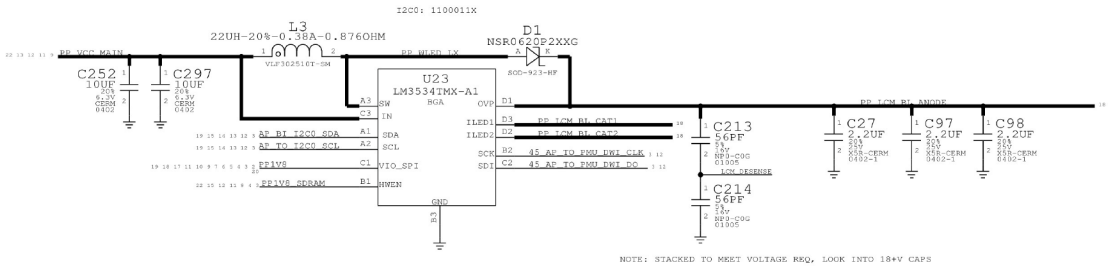
U7
D2013B28HGAHVCC2
BGA
(3 OF 3)
VSS_BUCK0AB
VSS_BUCK2
VSS_BUCK3
VSS_BUCK24
VSS_BUCK40
VSS_BUCK0BC
VSSA_BUCK2
VSSA_BUCK3
VSSA_BUCK40
VSS_WLED
VSS_LCM
VSS_REF
VSS_SW_CHG
VSS
U7
D2013B28HGAHVCC2
BGA
(2 OF 3)
AMUX VOLTAGE LIMIT IS APPROX. = VDD_REF = PP_VCC_MAIN
BUTTON_TO_AP_HOLD_KEY_BUFF_L
BUTTON_TO_AP_MENU_KEY_BUFF_L
BUTTON_TO_AP_RINGER_A
BUTTON_TO_AP_VOL_UP_L
BUTTON_TO_AP_VOL_DOWN_L
LCD_PWR_EN
TRISTAR_TO_PMU_USB_BRICKID_R
CHESTNUT_TO_PMU_ADCIN7
PMU_AMUX_AY
RADIO_TO_PMU_ADC_SMPS1_MSMC_1V05
RADIO_TO_PMU_ADC_SMPS3_MSME_1V8
TRISTAR_TO_PMU_MIKEYBUS_TEST_POS
TRISTAR_TO_PMU_MIKEYBUS_TEST_NEG
45_PMU_TO_WLAN_CLK32K
RADIO_TO_PMU_ADC_LDO6_RUIM_1V8
AP_TO_PMU_TEST_CLKOUT
RADIO_TO_PMU_ADC_LVS1
PMU_AMUX_BY
BASEBAND --->
1.8V --->
3.33V --->
R60
1.00K
PMU_TO_BB_RST_L
BB_TO_PMU_HOST_WAKE
BB_RST_PMU_R_L
TRISTAR_TO_AP_INT
45_PMU_TO_WLAN_CLK32K
AP_BI_BATTERY_SWI
WLAN_TO_PMU_HOST_WAKE
CODEC_TO_PMU_MIKEY_INT_L
PMU_TO_BT_REG_ON
BT_TO_PMU_HOST_WAKE
PMU_TO_WLAN_REG_ON
DRIVEN TO VCC_MAIN
PMU_TO_BB_VBUS_DET
AP_TO_I2C0_SCL
AP_BI_I2C0_SDA
45_AP_TO_PMU_DWI_CLK
45_AP_TO_PMU_DWI_DO
45_AP_TO_PMU_DWI_DI
XW26
XW27
XW28
PMU_DWI_CLK
PMU_DWI_DI
PMU_DWI_DO
ACCESS POINTS
PMU_RESET_IN
RESET_1V8_L
PMU_TO_AP_IRQ_L
AMUX_A0 … AMUX_A7
AMUX_AY
AMUX_B0 … AMUX_B7
AMUX_BY
GPIO1 … GPIO12
SCL
SDA
DWI_CK
DWI_DI
DWI_DO
RESET_IN
RESET*
IRQ*
IREF
VREF
VDD_REF
VDD_RTC
BRICK_ID
ADC_IN7
ADC_REF
ACC_ID
DPHP
FW_DPHP_DET
ACC_DET
BUTTON1
BUTTON2
BUTTON3
KEEPACT
SHDN
LCM_LX
VBOOST_LCM
VLCM1
VLCM2
LCM2_EN
VLCM3
WLED_LX
VOUT_LED
WLED1
WLED2
R65
200K
C323
0.1UF
C325
1.0UF
C326
0.1UF
R921
6.34K
TRISTAR_TO_PMU_USB_BRICKID
CHESTNUT_TO_PMU_ADCIN7
C343
0.01UF
C327
0.01UF
TRISTAR_TO_PMU_USB_BRICKID_R
E75_TO_PMU_ACC_DETECT_R
BUTTON_TO_AP_MENU_KEY_BUFF_L
BUTTON_TO_AP_HOLD_KEY_BUFF_L
BUTTON_TO_AP_RINGER_A
PP_VCC_MAIN
NOSTUFF
R68
220K
NOSTUFF
R487
0.00
E75_TO_PMU_ACC_DETECT
KEEPACT
R488
0.00
R66
1.00M
PP1V8_SDRAM
74LVC1G32
SOT891
U14
WDOG
FROM H5P
TRISTAR_TO_PMU_HOST_RESET
FROM TRISTAR
ACTIVE HIGH
R59
100K
C99
100PF
I2C ADDRESS: 1110100X
GPIO1 PP1V8_SDRAM OUPUT '0'
GPIO2 INPUT, W/O PD
GPIO3 PP1V8_SDRAM OUPUT '0'
GPIO4 PP1V8_SDRAM OUPUT '0'
GPIO5 PP1V8_SDRAM OUPUT '0'
GPIO6 INPUT, W/ PU IN BATTERY PCM
GPIO7 INPUT, W/ PD IN PMU
GPIO8 INPUT, W/ PU TO PP1V8_SDRAM
GPIO9 PP1V8_SDRAM OUTPUT '0'
GPIO10 INPUT, W/ PD IN PMU
GPIO11 PP1V8_SDRAM OUTPUT '0'
GPIO12 VCC_MAIN OUPUT '0'
RESET_IN ACTIVE HIGH INPUT W/ INTERNAL 200K PD
RESET* OPEN DRAIN OUTPUT
IRQ* OPEN DRAIN OUTPUT

CHESTNUT, BACKLIGHT DRIVER

D404 DISPLAY PMU (INTERSIL CHESTNUT, 338S1168) (TI CHESTNUT, 338S1172)



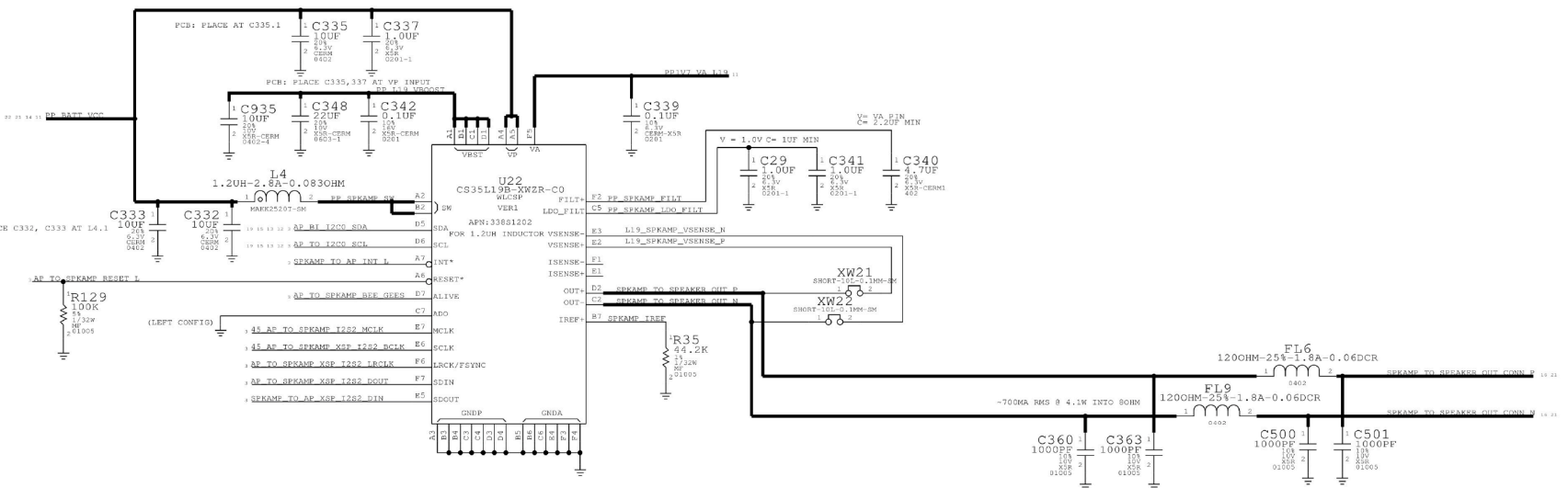
D404 BACKLIGHT DRIVER



SPEAKER AMP, LED DRIVER

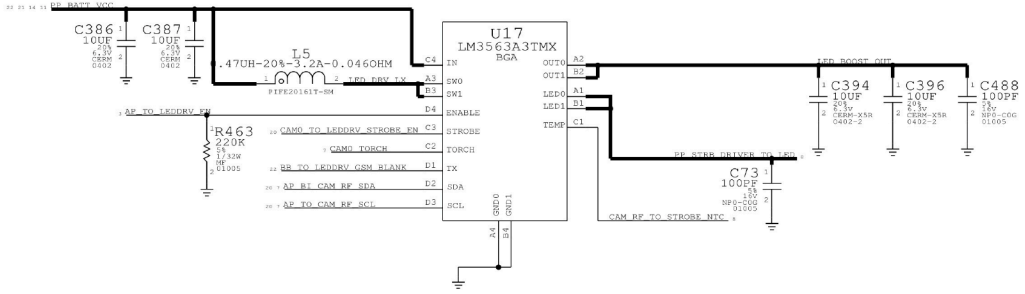
SPEAKER AMP L19

I2C ADDRESS: 1000000X

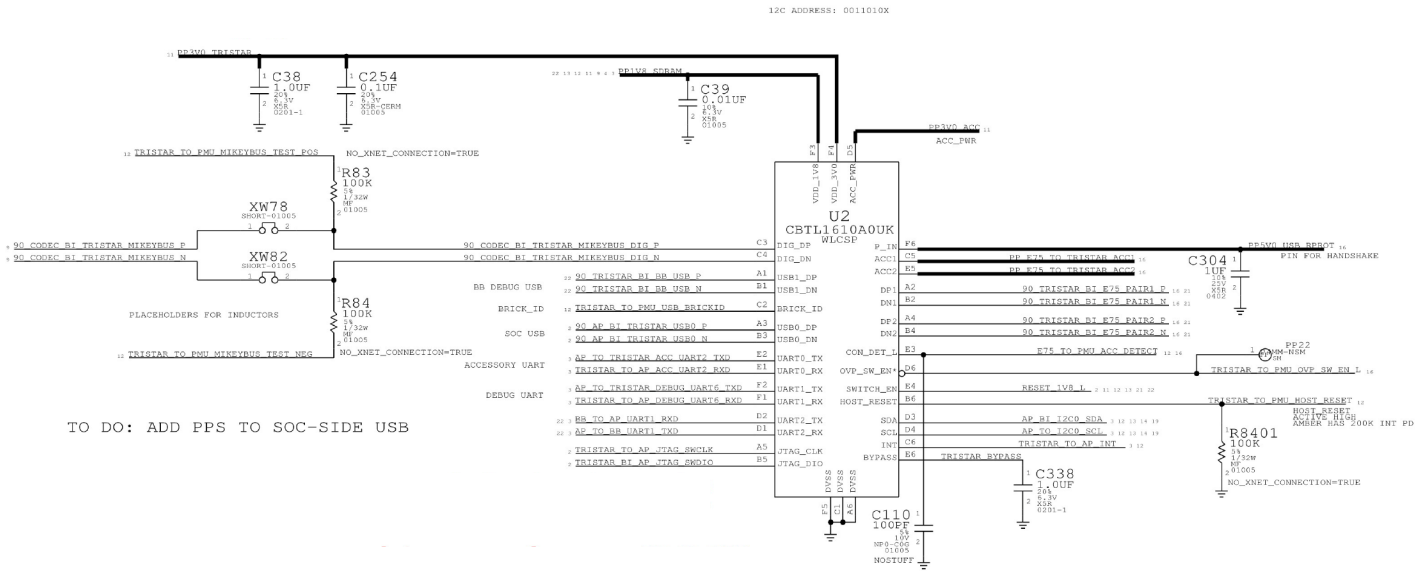


LED DRIVER

I2C ADDRESS: 1100011X

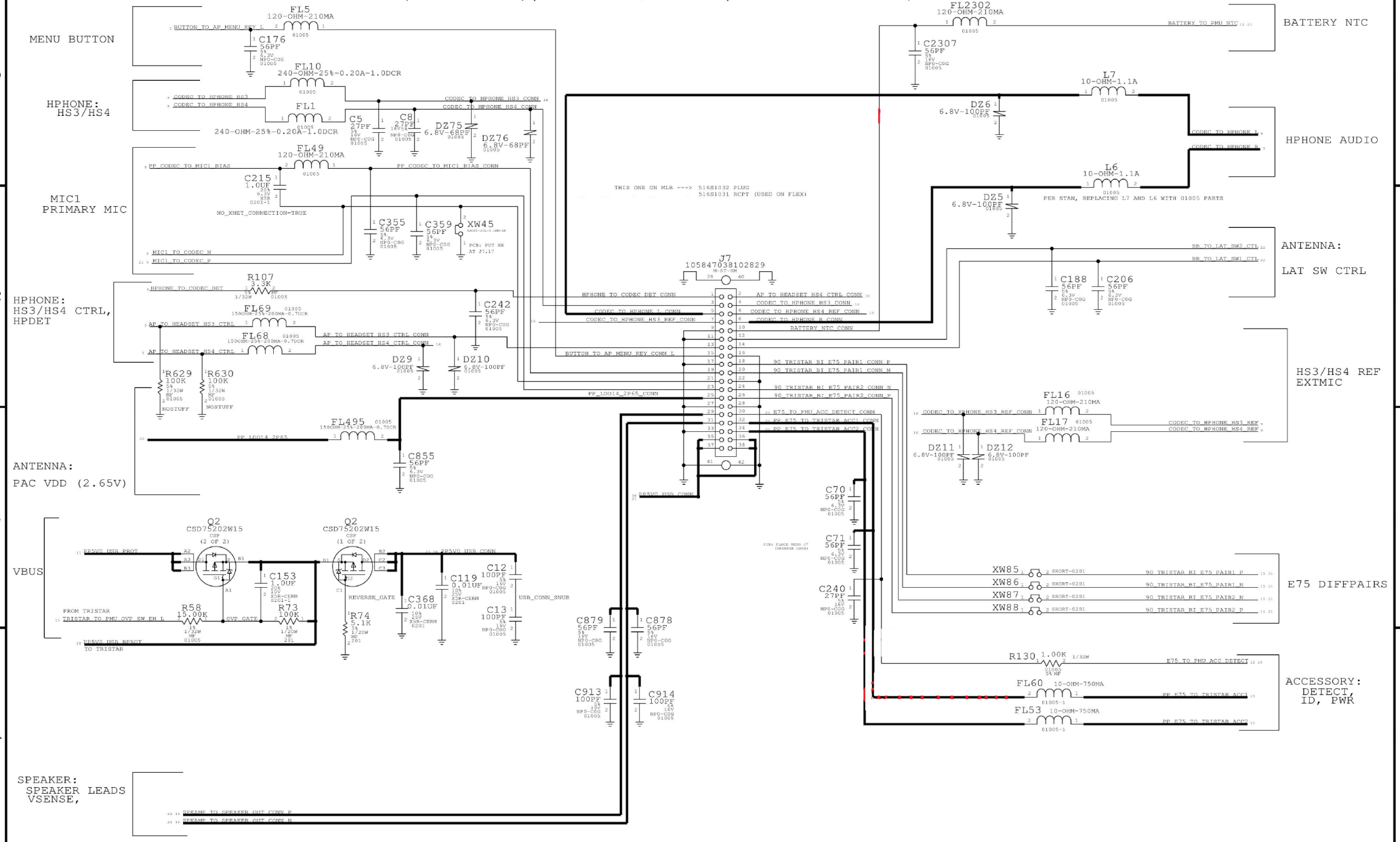


TRISTAR

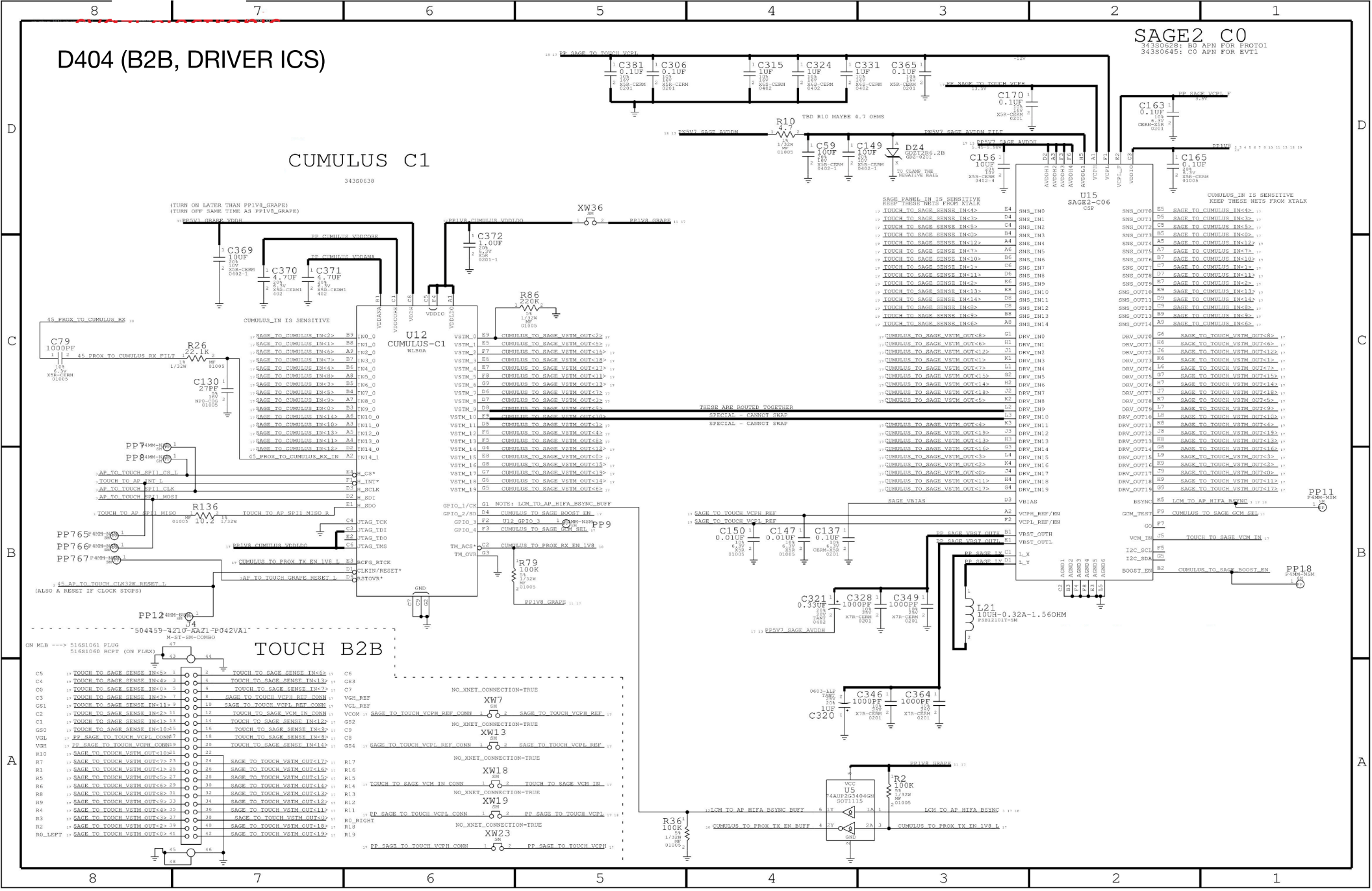


TO DO: ADD PPS TO SOC-SIDE USB

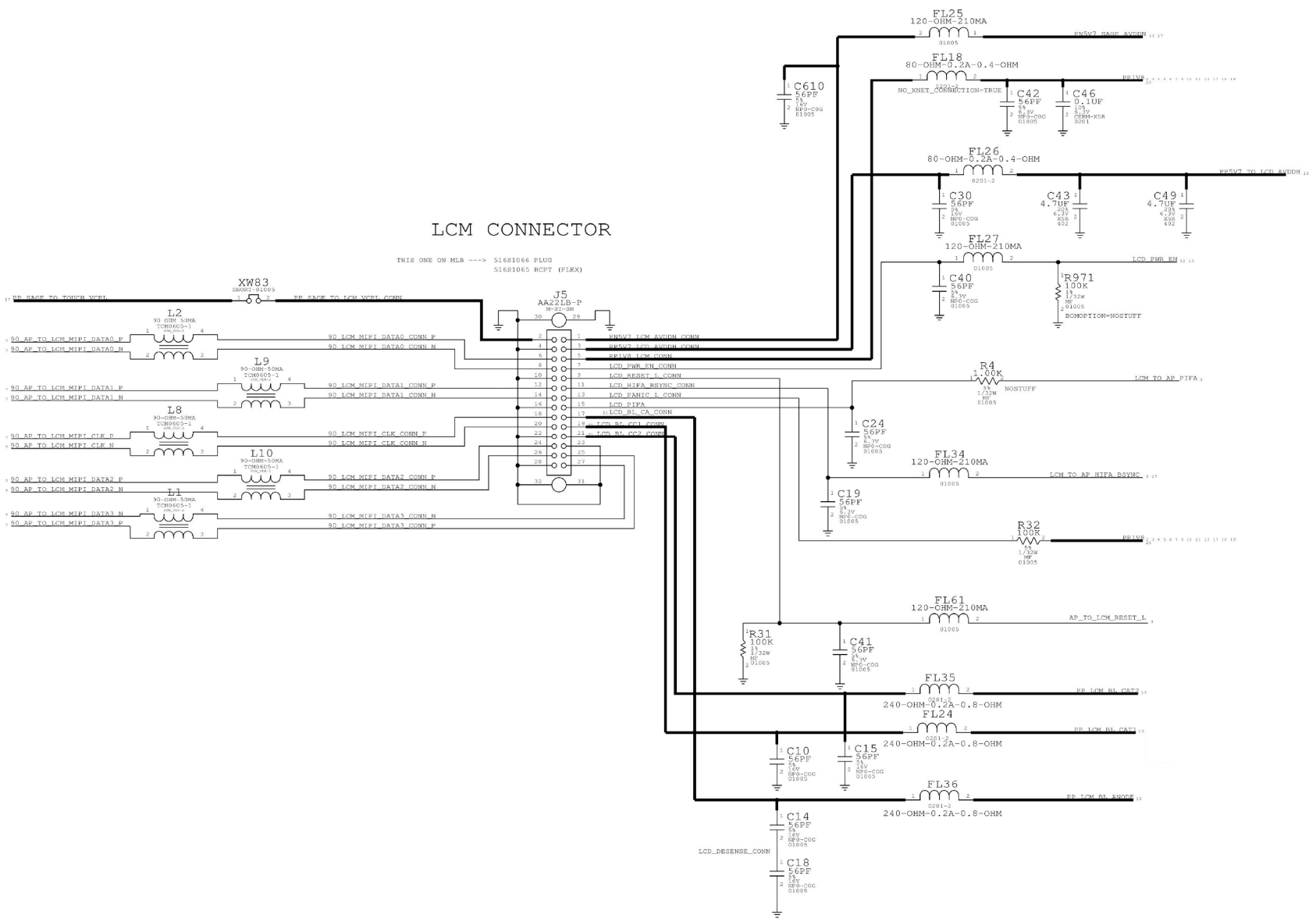
DOCKFLEX B2B (USB VBUS, MENU BTN, SPEAKER, HP, HP EXTMIC, NAVAJO, ANTENNA PAC/LAT SW CTRL, MIC1 (VOICE MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)



D404 (B2B, DRIVER ICS)



LCM B2B

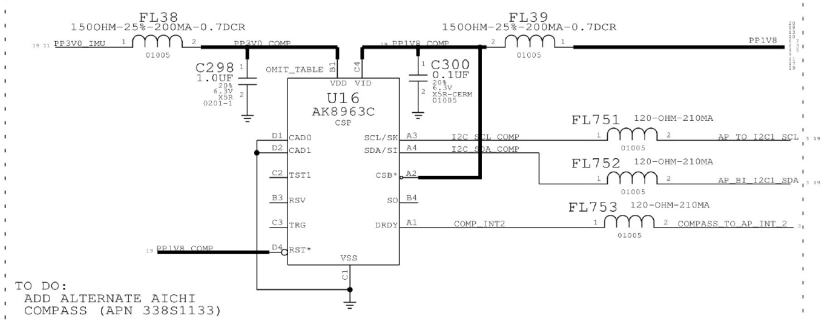

LCM CONNECTOR
THIS ONE ON MLB ---> 51681066 PLUG
51681065 RCPT (FLEX)
J5
AA22LB-P
M-92-3M
XW83
SHORT-01005
PP_SAGE_TO_TOUCH_VCEL
PP_SAGE_TO_LCM_VCEL_CONN
L2
L9
L8
L10
L1
90_OHM_50MA
TCM0605-1
90_AP_TO_LCM_MIPI_DATA0_P
90_AP_TO_LCM_MIPI_DATA0_N
90_AP_TO_LCM_MIPI_DATA1_P
90_AP_TO_LCM_MIPI_DATA1_N
90_AP_TO_LCM_MIPI_CLK_P
90_AP_TO_LCM_MIPI_CLK_N
90_AP_TO_LCM_MIPI_DATA2_P
90_AP_TO_LCM_MIPI_DATA2_N
90_AP_TO_LCM_MIPI_DATA3_N
90_AP_TO_LCM_MIPI_DATA3_P
90_LCM_MIPI_DATA0_CONN_P
90_LCM_MIPI_DATA0_CONN_N
90_LCM_MIPI_DATA1_CONN_P
90_LCM_MIPI_DATA1_CONN_N
90_LCM_MIPI_CLK_CONN_P
90_LCM_MIPI_CLK_CONN_N
90_LCM_MIPI_DATA2_CONN_P
90_LCM_MIPI_DATA2_CONN_N
90_LCM_MIPI_DATA3_CONN_N
90_LCM_MIPI_DATA3_CONN_P
PP5V7_LCM_AVDDN_CONN
PP5V7_LCM_AVDDN_CONN
PP1V8_LCM_CONN
LCD_PWR_EN_CONN
LCD_RESET_L_CONN
LCD_HIFA_RSYNC_CONN
LCD_PANIC_L_CONN
LCD_PIFA
LCD_BL_CA_CONN
LCD_BL_CC1_CONN
LCD_BL_CC2_CONN
LCD_DESENSE_CONN
FL25
120-OHM-210MA
01005
PP5V7_SAGE_AVDDN
FL18
80-OHM-0.2A-0.4-OHM
0201-2
NO_XNET_CONNECTION=TRUE
PP1V8
C610
56PF
5%
16V
NP0-C0G
01005
C42
56PF
5%
6.3V
NP0-C0G
01005
C46
0.1UF
10%
6.3V
CERM-X5R
0201
FL26
80-OHM-0.2A-0.4-OHM
0201-2
PP5V7_TO_LCD_AVDDH
C30
56PF
5%
16V
NP0-C0G
01005
C43
4.7UF
20%
6.3V
X5R
402
C49
4.7UF
20%
6.3V
X5R
402
FL27
120-OHM-210MA
01005
LCD_PWR_EN
C40
56PF
5%
6.3V
NP0-C0G
01005
R971
100K
5%
1/32W
MF
01005
BOMOPTION=NOSTUFF
R4
1.00K
5%
1/32W
MF
01005
NOSTUFF
LCM_TO_AP_PIFA
C24
56PF
5%
6.3V
NP0-C0G
01005
FL34
120-OHM-210MA
01005
LCM_TO_AP_HIFA_RSYNC
C19
56PF
5%
6.3V
NP0-C0G
01005
R32
100K
5%
1/32W
MF
01005
PP1V8
FL61
120-OHM-210MA
01005
AP_TO_LCM_RESET_L
R31
100K
5%
1/32W
MF
01005
C41
56PF
5%
6.3V
NP0-C0G
01005
FL35
0201-2
240-OHM-0.2A-0.8-OHM
PP_LCM_BL_CAT2
FL24
0201-2
240-OHM-0.2A-0.8-OHM
PP_LCM_BL_CAT1
C10
56PF
5%
6.3V
NP0-C0G
01005
C15
56PF
5%
16V
NP0-C0G
01005
FL36
0201-2
240-OHM-0.2A-0.8-OHM
PP_LCM_BL_ANODE
C14
56PF
5%
6.3V
NP0-C0G
01005
C18
56PF
5%
16V
NP0-C0G
01005

SENSORS

THIS PART OUTSIDE OF SHIELD

COMPASS

COMPASS DEVICE: 338S1014
COMPASS INTERPOSER: 998-5120

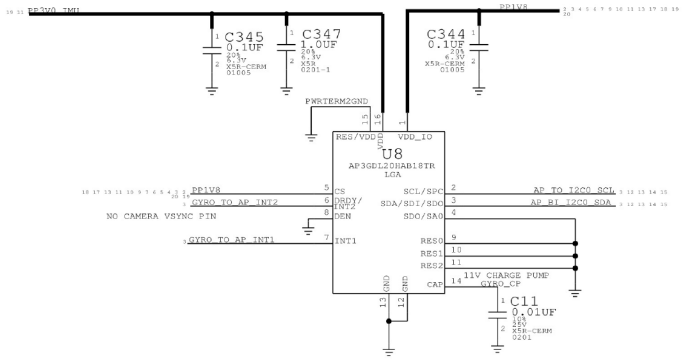


TO DO:
ADD ALTERNATE AICHI
COMPASS (APN 338S1133)

THESE PARTS INSIDE OF SHIELD

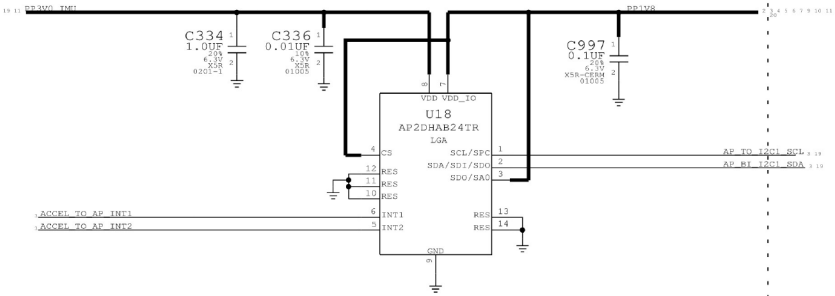
GYRO

AP3GDL20HAB, APN 338S1192

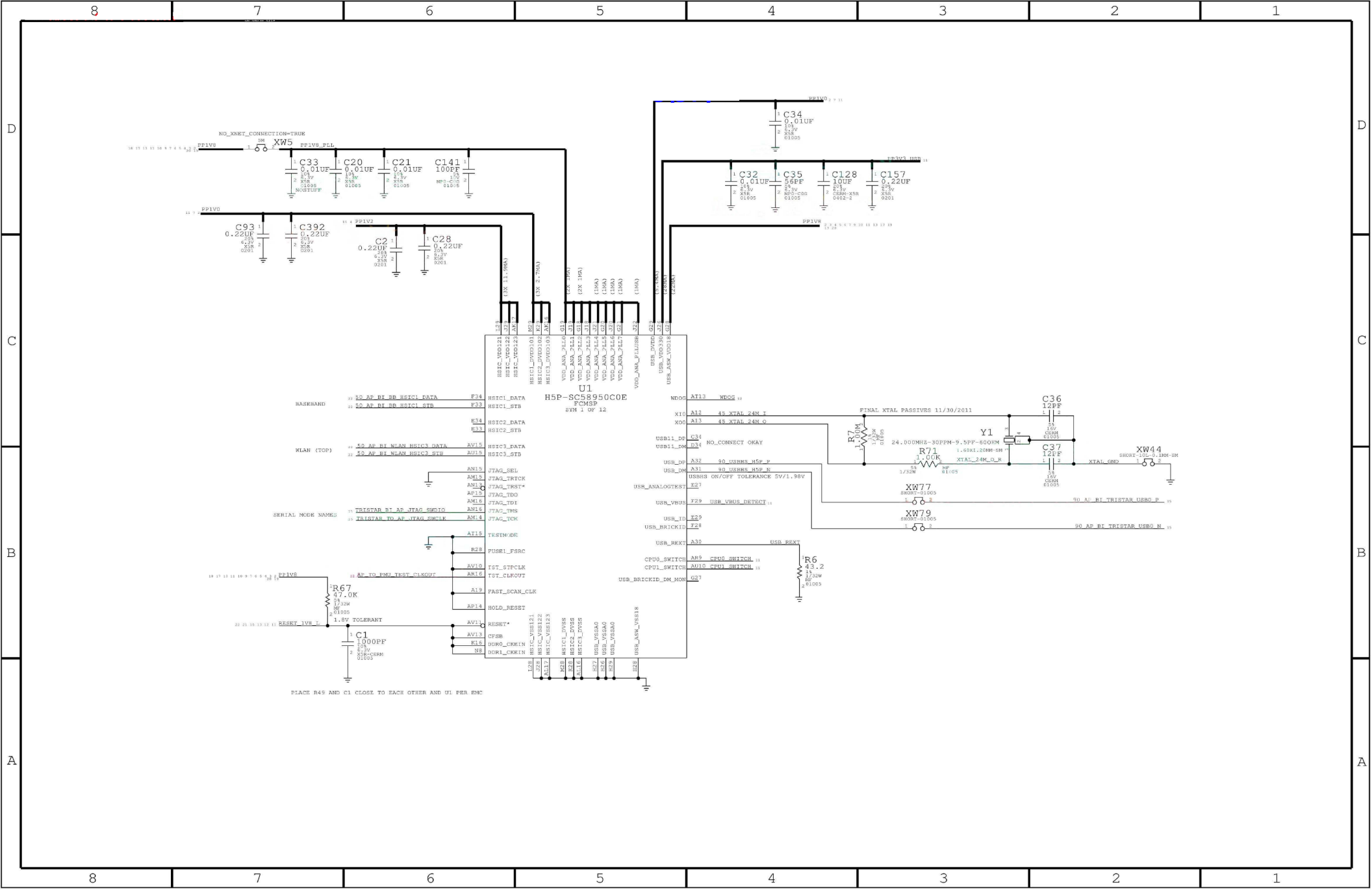


ACCELEROMETER

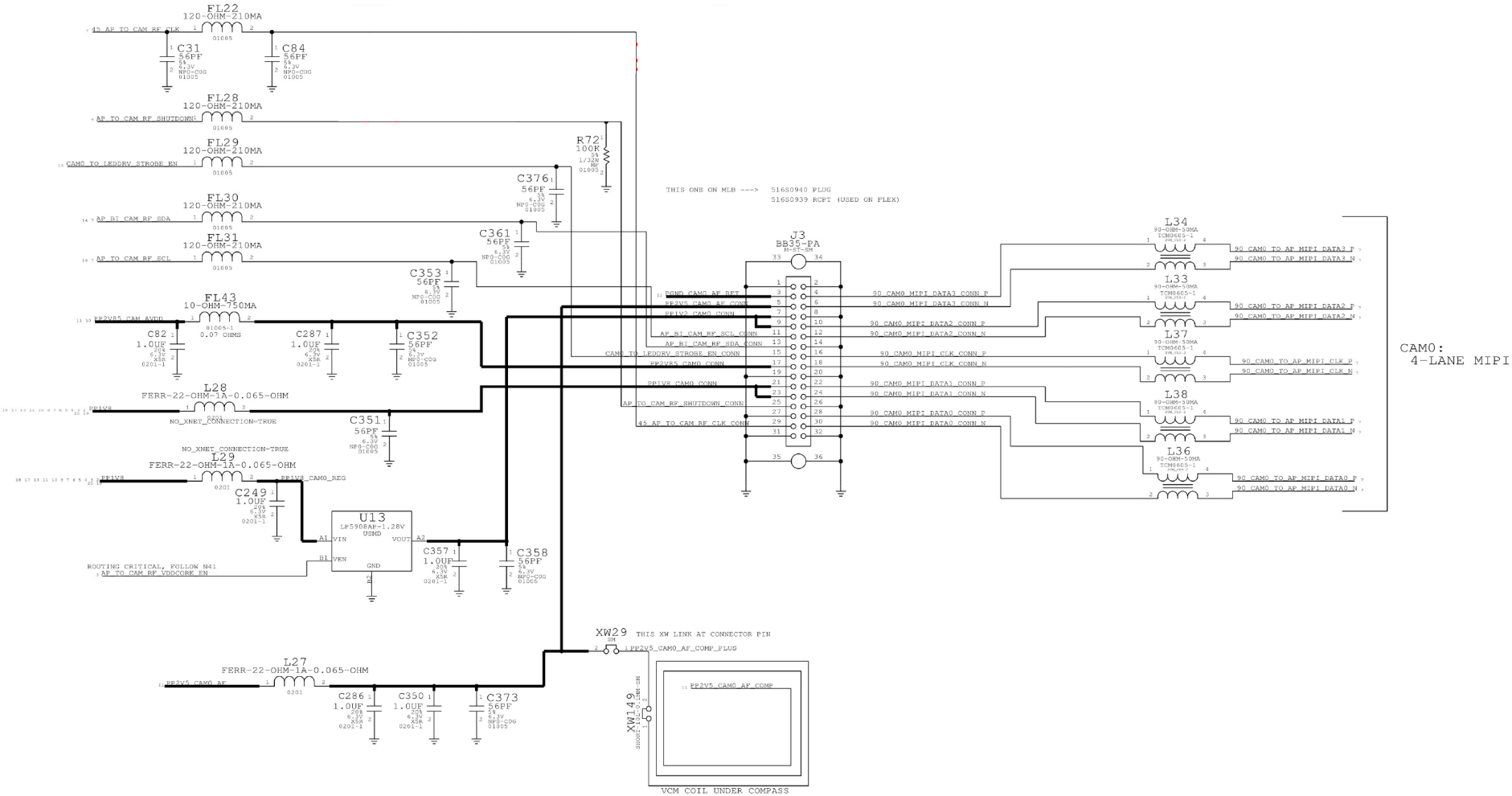
AP2DHAB, APN 338S1191



TO DO: VERIFY CONNECTIONS ON ACCEL (CS, SDO PINS)

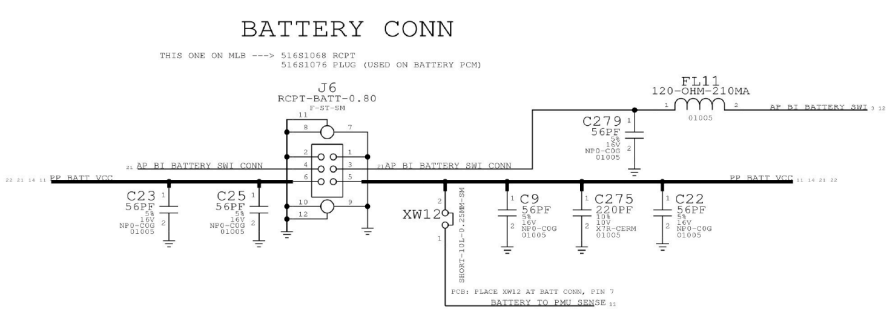

NO_XNET_CONNECTION=TRUE
XW5
PP1V8
PP1V8_PLL
C33 0.01UF
C20 0.01UF
C21 0.01UF
C141 100PF
C93 0.22UF
C392 0.22UF
C2 0.22UF
C28 0.22UF
PP1V0
PP1V2
C34 0.01UF
C32 0.01UF
C35 56PF
C128 10UF
C157 0.22UF
PP3V3_USB
U1
H5P-SC58950C0E
FCMSP
SYM 1 OF 12
BASEBAND
WLAN (TOP)
SERIAL MODE NAMES
50_AP_BI_BB_HSIC1_DATA
50_AP_BI_BB_HSIC1_STB
50_AP_BI_WLAN_HSIC3_DATA
50_AP_BI_WLAN_HSIC3_STB
TRISTAR_BI_AP_JTAG_SWDIO
TRISTAR_TO_AP_JTAG_SWCLK
AP_TO_PMU_TEST_CLKOUT
RESET_1V8
HSIC1_DATA
HSIC1_STB
HSIC2_DATA
HSIC2_STB
HSIC3_DATA
HSIC3_STB
JTAG_SEL
JTAG_TRTCK
JTAG_TRST*
JTAG_TDO
JTAG_TDI
JTAG_TMS
JTAG_TCK
TESTMODE
FUSE1_FSRC
TST_STPCLK
TST_CLKOUT
FAST_SCAN_CLK
HOLD_RESET*
RESET*
CFSB
DDR0_CKEIN
DDR1_CKEIN
USB11_DP
USB11_DM
NO_CONNECT OKAY
USB_DP
USB_DM
90_USBHS_H5P_P
90_USBHS_H5P_N
USBHS ON/OFF TOLERANCE 5V/1.98V
USB_ANALOGTEST
USB_VBUS
USB_VBUS_DETECT
USB_ID
USB_BRICKID
USB_REXT
CPU0_SWITCH
CPU1_SWITCH
USB_BRICKID_DM_MON
WDOG
XI0
XO0
48_XTAL_24M_I
48_XTAL_24M_O
FINAL XTAL PASSIVES 11/30/2011
Y1
24.000MHZ-30PPM-9.5PF-60OHM
C36 12PF
C37 12PF
R7 1.00M
R71 1.00K
XTAL_GND
XW44
XW77
XW79
90_AP_BI_TRISTAR_USB0_P
90_AP_BI_TRISTAR_USB0_N
R67 47.0K
1.8V TOLERANT
C1 1000PF
R6 43.2
PLACE R49 AND C1 CLOSE TO EACH OTHER AND U1 PER EMC

CAM0: MAIN CAMERA CONNECTOR

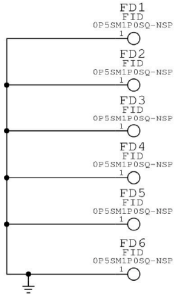


BATT CONN, TPS, STANDOFFS/SHIELDS/FIDUCIALS

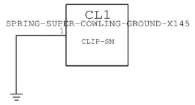
BATTERY CONN



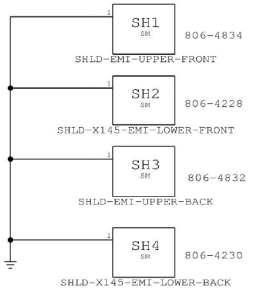
FIDUCIALS



COWLING UPPER LEFT



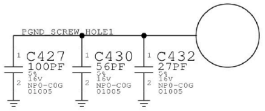
SHIELDS



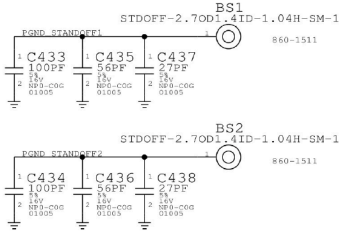
AC COUPLED SCREW HOLES + STANDOFFS

(ON NORTH END OF SINGLE BRD, TO MITIGATE COMPASS RETURN CURRENTS)

SCREW HOLES

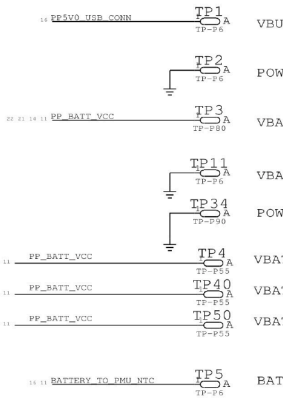


STANDOFFS

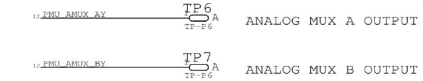


TESTPOINTS

POWER TP



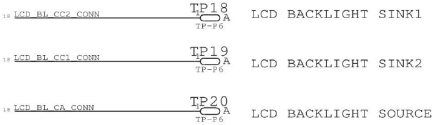
SUPER TP



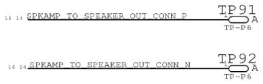
RESET

DFU

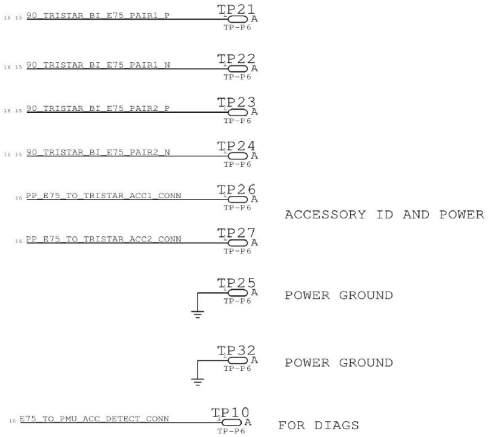
LCM BACKLIGHT



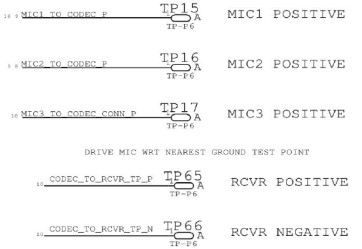
SPKAMP OUTPUT TP



E75 - USB/UART/ID/POWER

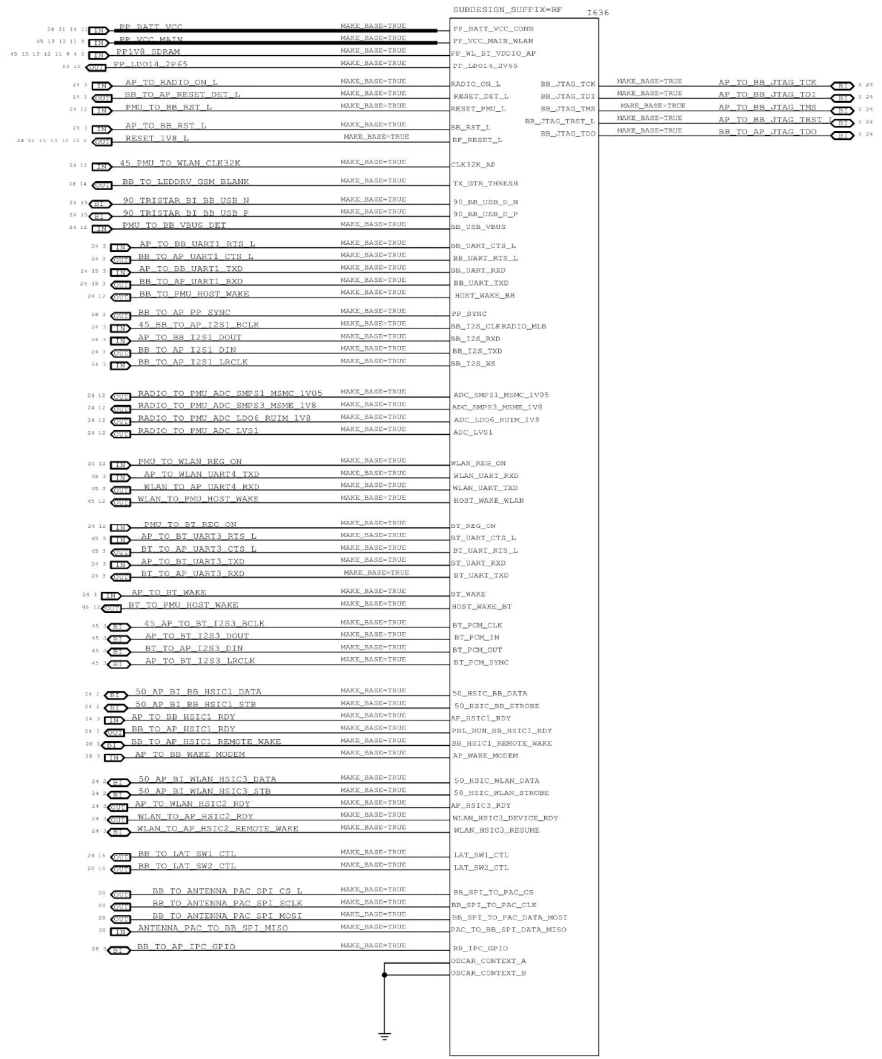


MIC AUDIO



RADIO_MLB HIERARCHICAL SYMBOL

AP/RADIO INTERFACE



PDF PAGE	CSA PAGE	CONTENTS
2	2	AP INTERFACE & DEBUG CONNECTORS
3	3	PMU (1 0F 2)
4	4	PMU (2 OF 2)
5	5	BASEBAND (1 OF 2)
6	6	BASEBAND (2 OF 2)
7	7	RF TRANSCEIVER (1 0F 2)
8	8	RF TRANSCEIVER (2 OF 2)
9	9	RX MATCHING
10	10	TX INTERSTAGE FILTERS
11	11	BAND 1/34/39/38/40 TX
12	12	BAND 2/3 PAD
13	13	BAND 7/20 PAD
14	14	BAND 5/8 PAD
15	15	2G PA
16	16	PA DCDC CONVERTER
17	17	PRIMARY ASM
18	18	RX DIVERSITY
19	19	GPS
20	20	ANTENNA FEEDS
21	21	SWITCH LOGIC
22	22	BLANK
23	23	WIFI/BT

SCH :951-3301
BOM :639-4501
BOARD :820-3581

AP INTERFACE & DEBUG CONNECTORS

AP CONNECTIONS

IN = FROM AP
OUT = TO AP

PROBE POINTS

PROBE POINTS NEAR AP

DEBUG CONNECTOR

J1_RF
AXE654124
M-RT-SM

BOOT OPTIONS	BOOT_CONFIG SW REGISTER VALUE	GPIO/BOOT_CONFIG CONFIGURATION							
			6	5	4	3	2	1	0
		47	48	49	50	51	52	53	54	55
BOOT_DEFAULT_OPTION	0X00	X	0	0	0	0	0	0	X
BOOT_NAND_OPTION	0X01	X	1	0	0	0	0	1	X
BOOT_HSIC_OPTION	0X02	X	1	0	0	0	1	0	X
BOOT_USB_OPTION	0X03	X	1	0	0	0	1	1	X
ENABLE SAHARA PROTOCOL	0X08	X	1	0	0	1	0	X	X	X

J2_RF
MM4829-2702
F-ST-SM

J3_RF
MM4829-2702
F-ST-SM

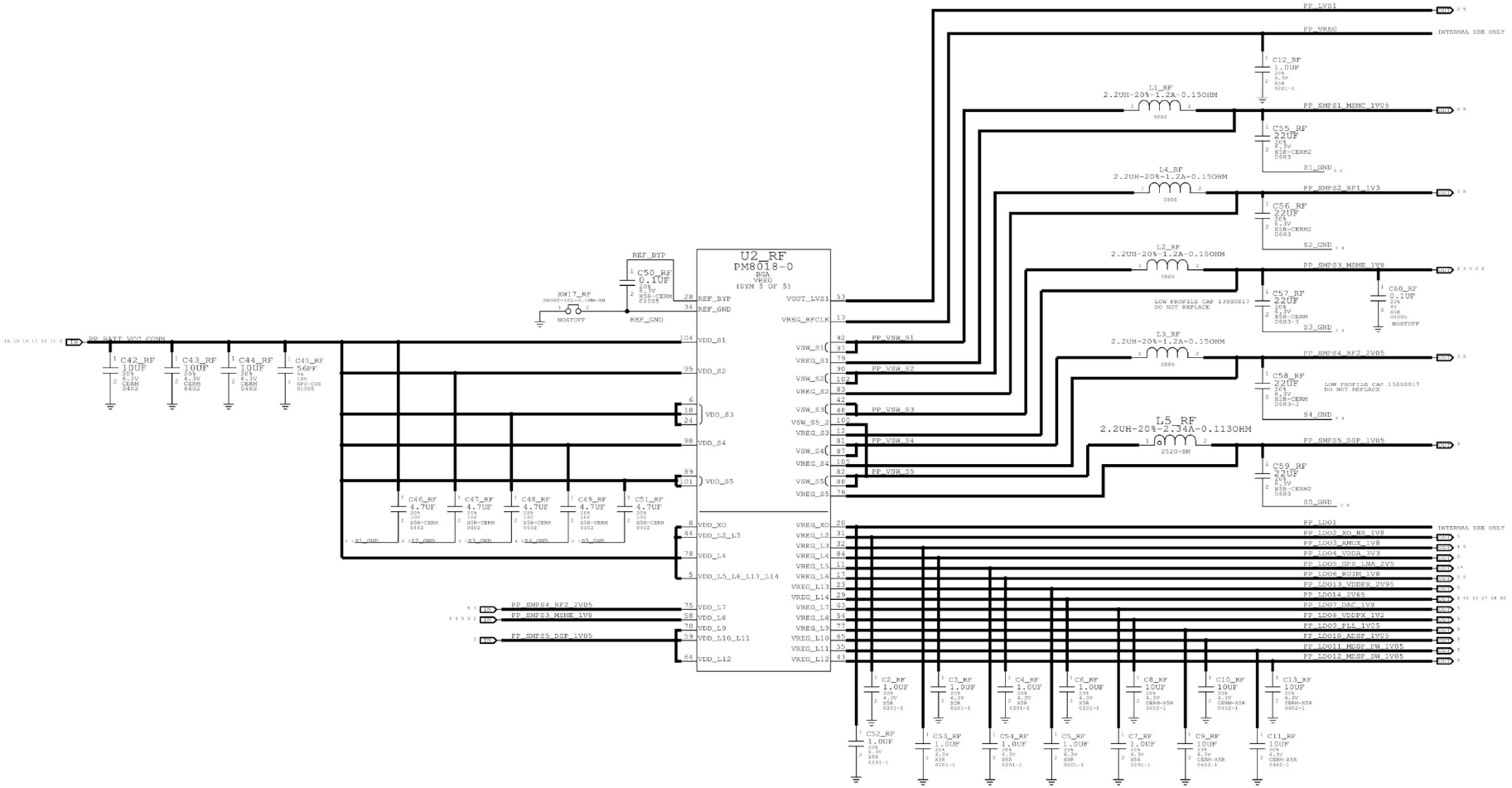
SIM CARD CONNECTOR

J11_RF
SIM-CARD-N48
F-ST-SM

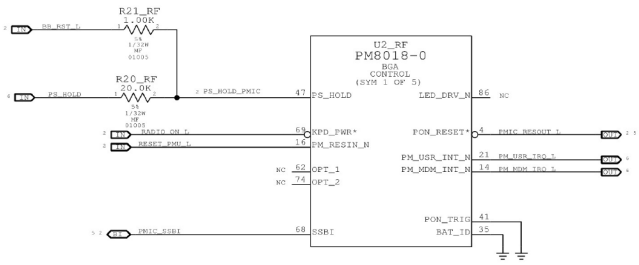
SIM CARD ESD PROTECTION

U5_RF
TPD4E101DPWR
SON4

PMU (1 OF 2)

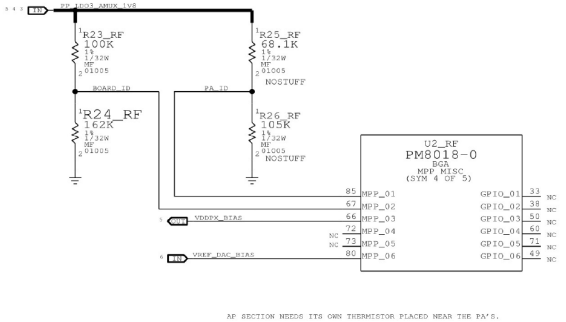

U2_RF
PM8018-0
BGA
VREG
(SYM 5 OF 5)
REF_BYP
REF_GND
VOUT_LVS1
VREG_RFCLK
VSW_S1
VREG_S1
VSW_S2
VREG_S2
VSW_S3
VSW_S5_2
VREG_S3
VSW_S4
VREG_S4
VSW_S5
VREG_S5
VDD_S1
VDD_S2
VDD_S3
VDD_S4
VDD_S5
VDD_XO
VDD_L2_L3
VDD_L4
VDD_L5_L6_L13_L14
VDD_L7
VDD_L8
VDD_L9
VDD_L10_L11
VDD_L12
VREG_XO
VREG_L2
VREG_L3
VREG_L4
VREG_L5
VREG_L6
VREG_L13
VREG_L14
VREG_L7
VREG_L8
VREG_L9
VREG_L10
VREG_L11
VREG_L12
PP_VSW_S1
PP_VSW_S2
PP_VSW_S3
PP_VSW_S4
PP_VSW_S5
PP_LVS1
PP_VREG
PP_SMPS1_MSMC_1V05
PP_SMPS2_RF1_1V3
PP_SMPS3_MSMS_1V8
PP_SMPS4_RF2_2V05
PP_SMPS5_DSP_1V05
PP_LDO1
PP_LDO2_XO_HS_1V8
PP_LDO3_AMUX_1V8
PP_LDO4_VDDA_3V3
PP_LDO5_GPS_LNA_2V5
PP_LDO6_RUIM_1V8
PP_LDO13_VDDPX_2V95
PP_LDO14_2V65
PP_LDO7_DAC_1V8
PP_LDO8_VDDPX_1V2
PP_LDO9_PLL_1V05
PP_LDO10_ADSP_1V05
PP_LDO11_MDSP_FW_1V05
PP_LDO12_MDSP_SW_1V05
INTERNAL USE ONLY
L1_RF
2.2UH-20%-1.2A-0.15OHM
L2_RF
2.2UH-20%-1.2A-0.15OHM
L3_RF
2.2UH-20%-1.2A-0.15OHM
L4_RF
2.2UH-20%-1.2A-0.15OHM
L5_RF
2.2UH-20%-2.34A-0.113OHM
LOW PROFILE CAP 138S0817
DO NOT REPLACE
MOSTUFF
PP_BATT_VCC_CONN

PMU (2 OF 2)

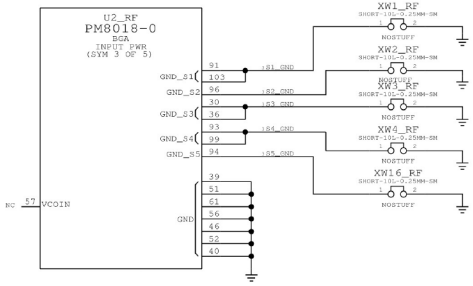


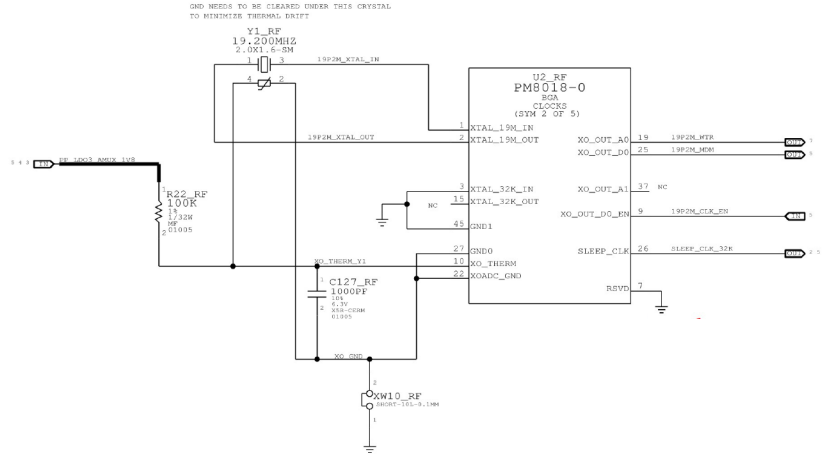
PA_ID	CONFIG
1.1V	MAV7 APAC
1.3V	MAV7 EU
1.5V	MAV7.3 APAC
1.7V	MAV7.3 EU

BOARD_ID	REVISION
0.1V	UNUSED
0.3V	UNUSED
0.5V	UNUSED
0.7V	PROTO1
0.9V	PROTO2
1.1V	EVT1
1.3V	E1C
1.5V	EVT2
1.7V	DVT/PVT

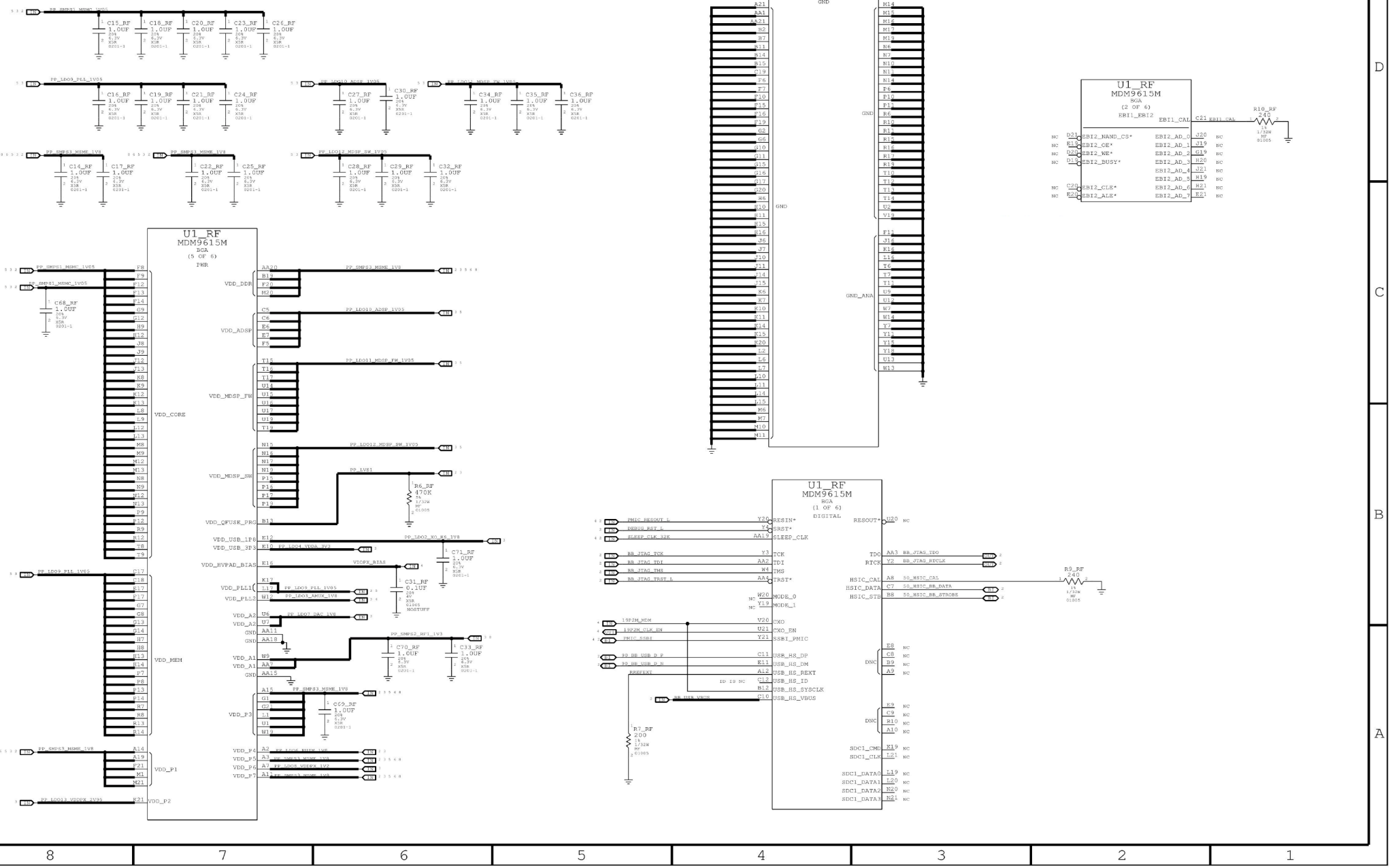


AP SECTION NEEDS ITS OWN THERMISTOR PLACED NEAR THE PA'S.

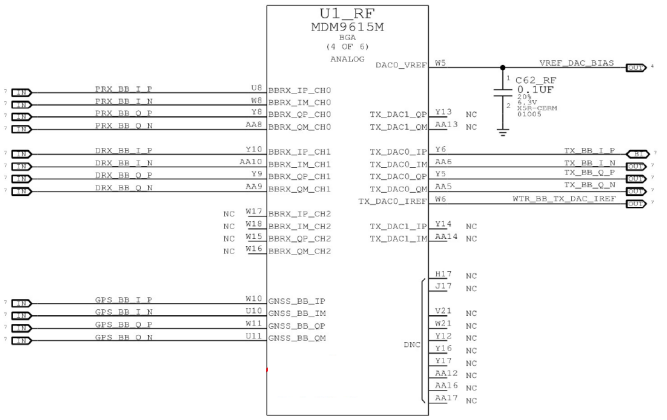


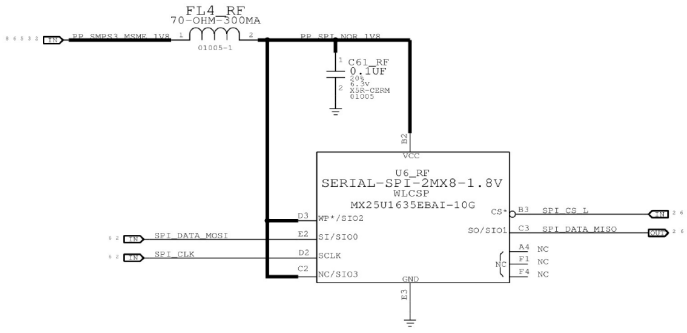


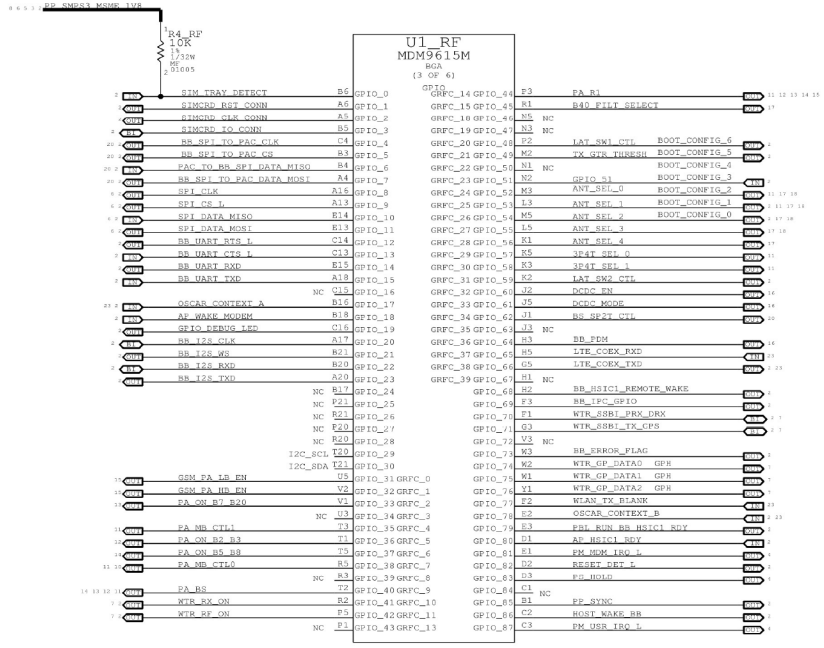
BASEBAND (1 OF 2)



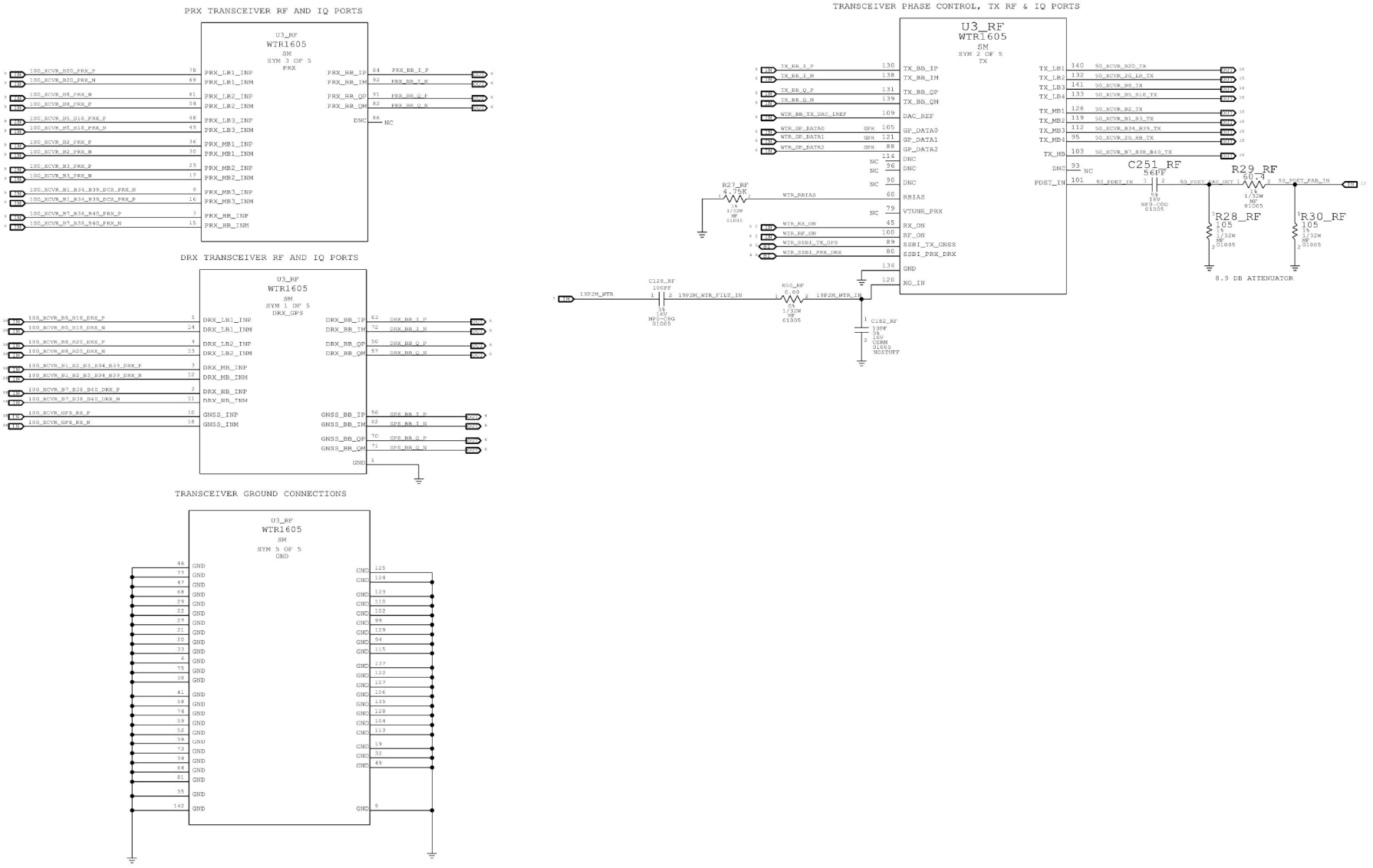
BASEBAND (2 OF 2)

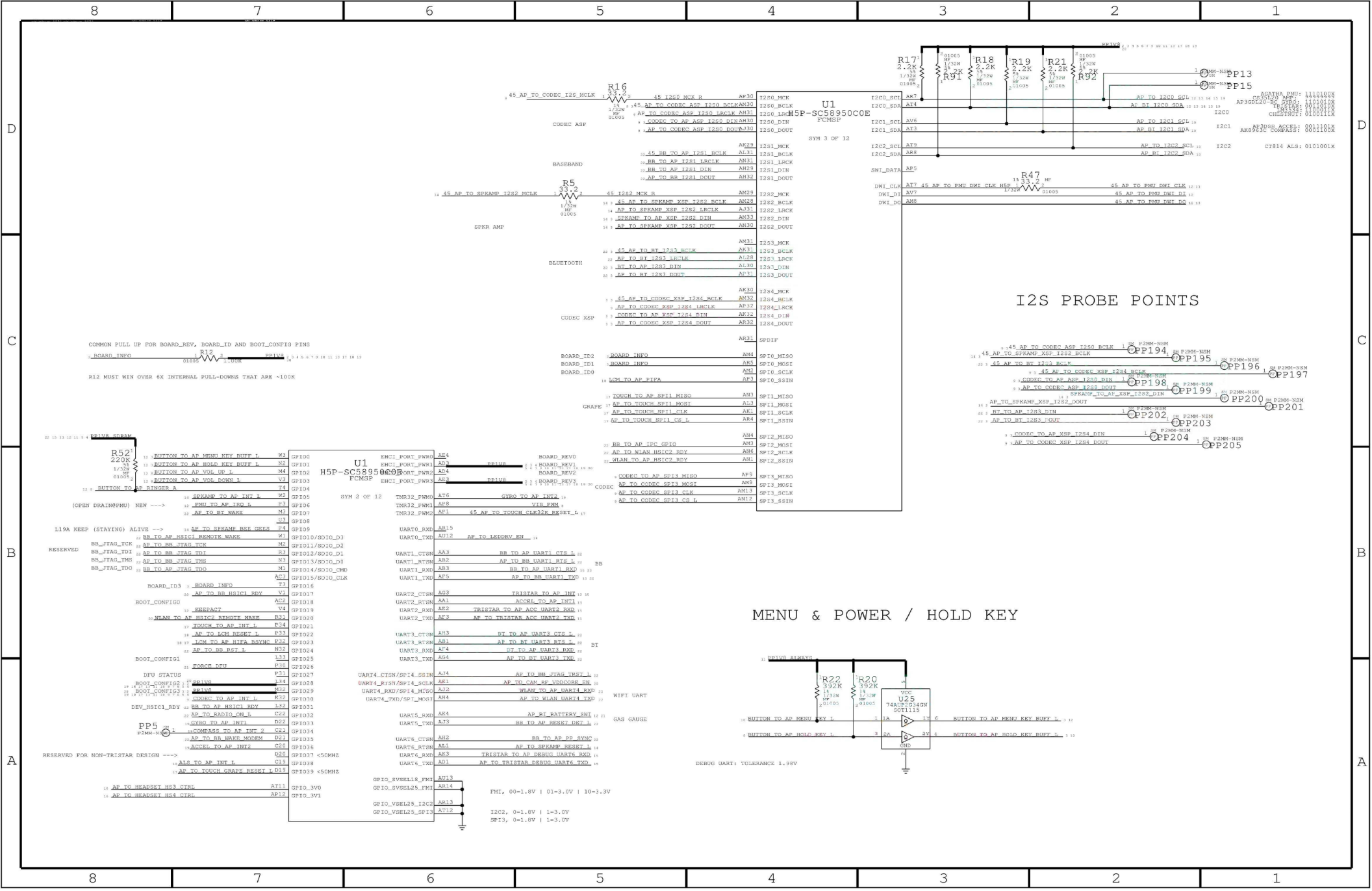




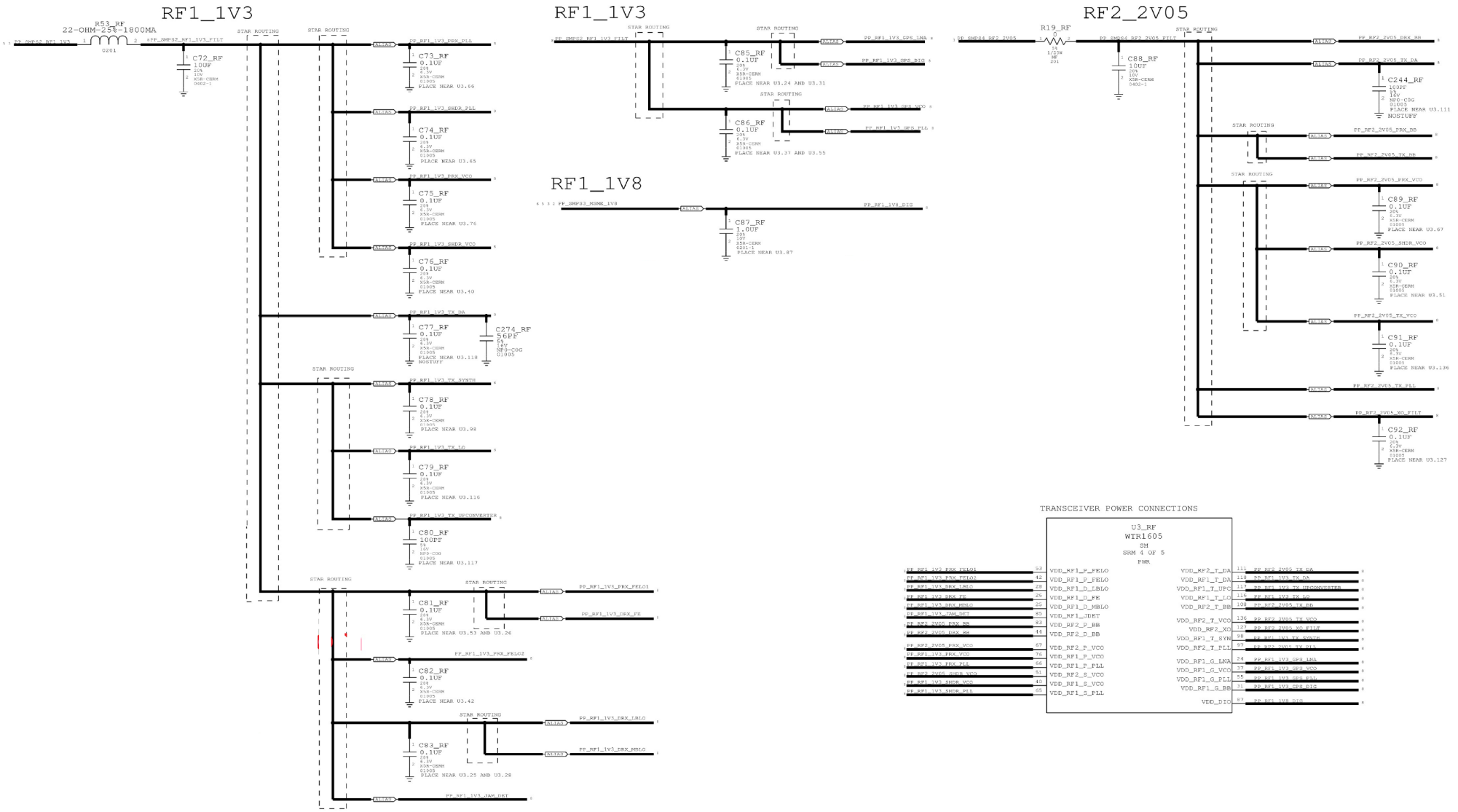


RF TRANSCEIVER (1 OF 2)

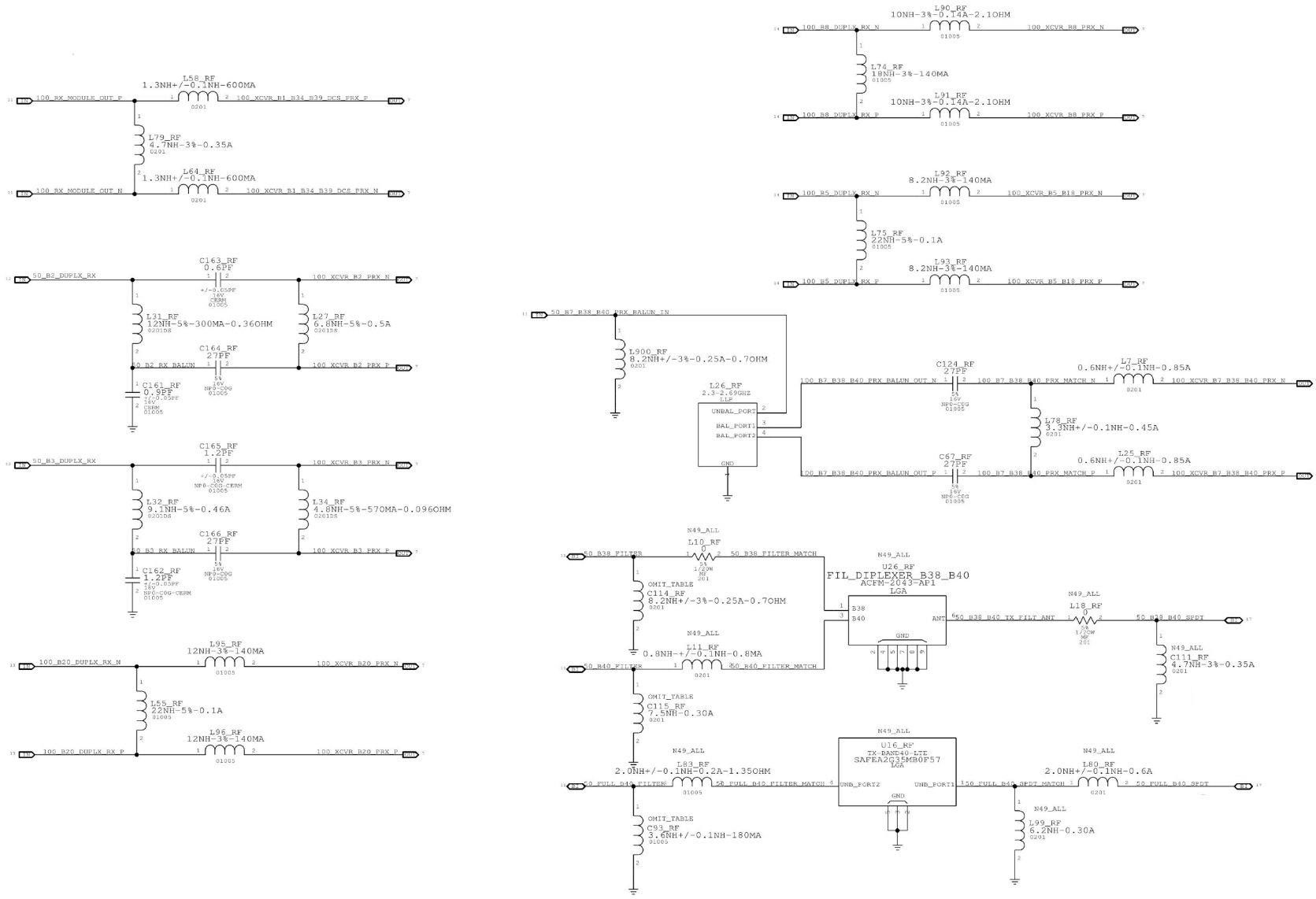



I2S PROBE POINTS
MENU & POWER / HOLD KEY
U1
H5P-SC58950C0E
FCMSP
SYM 3 OF 12
SYM 2 OF 12
R16
33.2
R5
33.2
R12
1.00K
R17
2.2K
R18
2.2K
R19
2.2K
R21
2.2K
R91
R92
R47
33.2
R52
220K
PP5
U25
74AUP2G34GN
SGT1115
R22
392K
R20
392K
PP13
PP15
PP194
PP195
PP196
PP197
PP198
PP199
PP200
PP201
PP202
PP203
PP204
PP205
COMMON PULL UP FOR BOARD_REV, BOARD_ID AND BOOT_CONFIG PINS
R12 MUST WIN OVER 6X INTERNAL PULL-DOWNS THAT ARE ~100K
CODEC ASP
BASEBAND
SPKR AMP
BLUETOOTH
CODEC XSP
GRAPE
CODEC
BB
BT
WIFI UART
GAS GAUGE
RESERVED
RESERVED FOR NON-TRISTAR DESIGN
L19A KEEP (STAYING) ALIVE
(OPEN DRAIN@PMU) NEW
DEBUG UART: TOLERANCE 1.98V
FMI, 00=1.8V | 01=3.0V | 10=3.3V
I2C2, 0=1.6V | 1=3.0V
SPI3, 0=1.8V | 1=3.0V

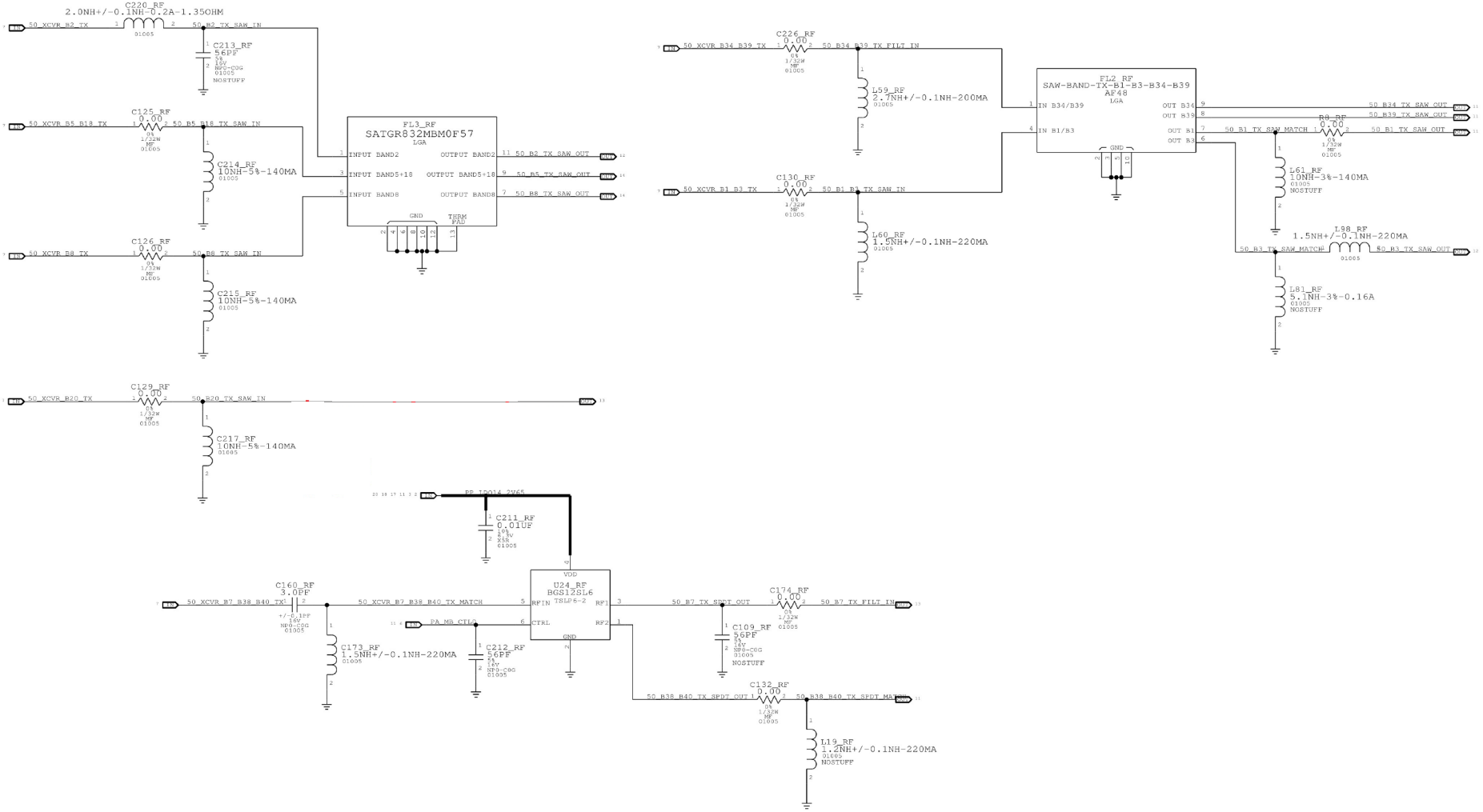
RF TRANSCEIVER (2 OF 2)



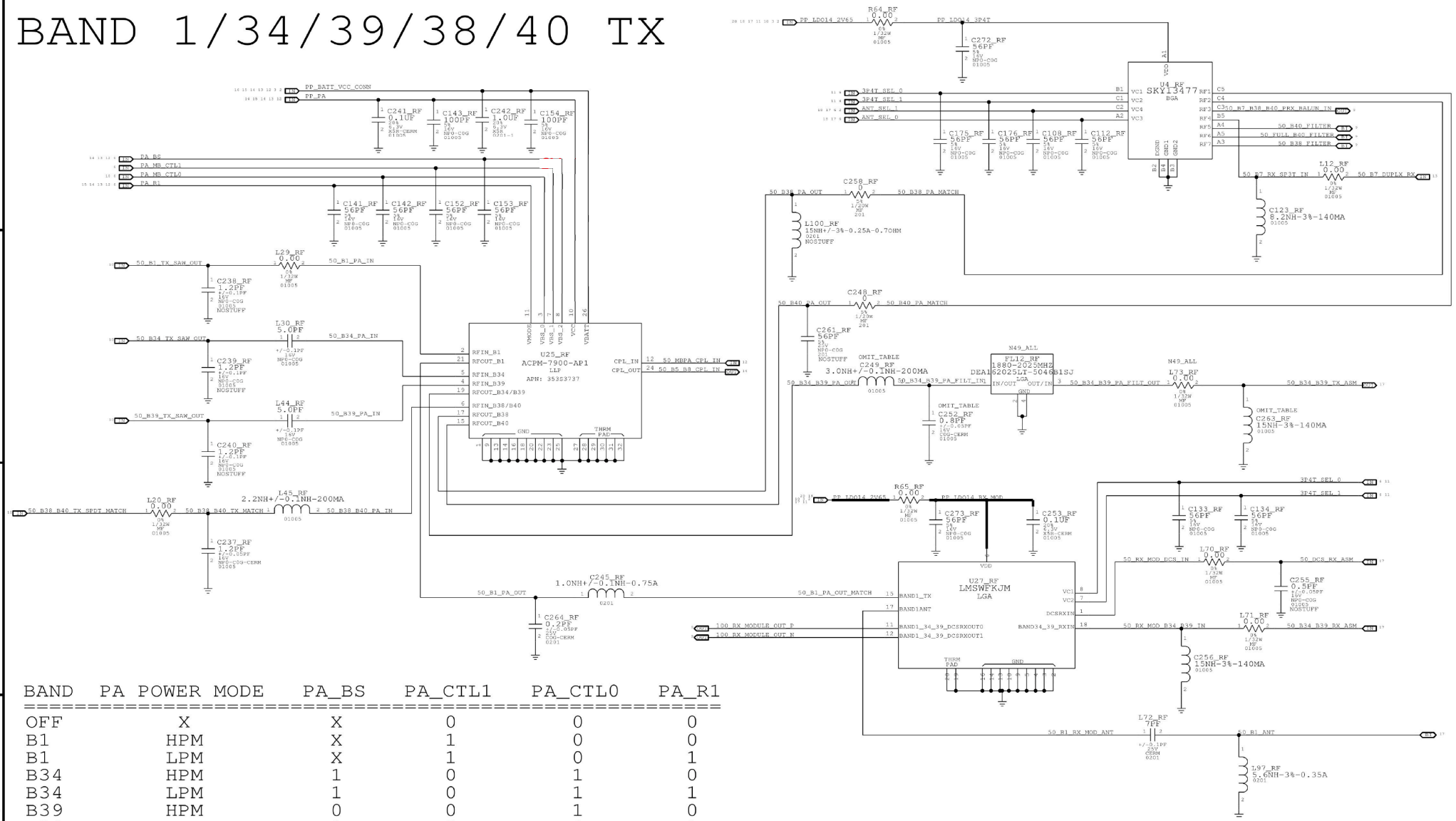
RX MATCHING


L58_RF
1.3NH+/-0.1NH-600MA
100_RX_MODULE_OUT_P
100_XCVR_B1_B34_B39_DCS_PRX_P
L79_RF
4.7NH-3%-0.35A
L64_RF
1.3NH+/-0.1NH-600MA
100_RX_MODULE_OUT_N
100_XCVR_B1_B34_B39_DCS_PRX_N
C163_RF
0.6PF
50_B2_DUPLX_RX
100_XCVR_B2_PRX_N
L31_RF
12NH-5%-300MA-0.36OHM
L27_RF
6.8NH-5%-0.5A
C164_RF
27PF
50_B2_RX_BALUN
100_XCVR_B2_PRX_P
C161_RF
0.9PF
C165_RF
1.2PF
50_B3_DUPLX_RX
100_XCVR_B3_PRX_N
L32_RF
9.1NH-5%-0.46A
L34_RF
4.8NH-5%-570MA-0.096OHM
C166_RF
27PF
50_B3_RX_BALUN
100_XCVR_B3_PRX_P
C162_RF
1.2PF
L95_RF
12NH-3%-140MA
100_B20_DUPLX_RX_N
100_XCVR_B20_PRX_N
L55_RF
22NH-5%-0.1A
L96_RF
12NH-3%-140MA
100_B20_DUPLX_RX_P
100_XCVR_B20_PRX_P
L90_RF
10NH-3%-0.14A-2.1OHM
100_B8_DUPLX_RX_N
100_XCVR_B8_PRX_N
L74_RF
18NH-3%-140MA
L91_RF
10NH-3%-0.14A-2.1OHM
100_B8_DUPLX_RX_P
100_XCVR_B8_PRX_P
L92_RF
8.2NH-3%-140MA
100_B5_DUPLX_RX_N
100_XCVR_B5_B18_PRX_N
L75_RF
22NH-5%-0.1A
L93_RF
8.2NH-3%-140MA
100_B5_DUPLX_RX_P
100_XCVR_B5_B18_PRX_P
50_B7_B38_B40_PRX_BALUN_IN
L900_RF
8.2NH+/-3%-0.25A-0.7OHM
L26_RF
2.3-2.69GHZ
LLP
UNBAL_PORT
BAL_PORT1
BAL_PORT2
GND
C124_RF
27PF
100_B7_B38_B40_PRX_BALUN_OUT_N
100_B7_B38_B40_PRX_MATCH_N
L7_RF
0.6NH+/-0.1NH-0.85A
100_XCVR_B7_B38_B40_PRX_N
L78_RF
3.3NH+/-0.1NH-0.45A
C67_RF
27PF
100_B7_B38_B40_PRX_BALUN_OUT_P
100_B7_B38_B40_PRX_MATCH_P
L25_RF
0.6NH+/-0.1NH-0.85A
100_XCVR_B7_B38_B40_PRX_P
N49_ALL
L10_RF
50_B38_FILTER
50_B38_FILTER_MATCH
U26_RF
FIL_DIPLEXER_B38_B40
ACFM-2043-AP1
LGA
B38
B40
ANT
50_B38_B40_TX_FILT_ANT
L18_RF
50_B38_B40_SPDT
C111_RF
4.7NH-3%-0.35A
OMIT_TABLE
C114_RF
8.2NH+/-3%-0.25A-0.7OHM
L11_RF
0.8NH+/-0.1NH-0.8MA
50_B40_FILTER
50_B40_FILTER_MATCH
C115_RF
7.5NH-0.30A
U16_RF
TX-BAND40-LTE
SAFEA2G35MB0F57
UNB_PORT2
UNB_PORT1
L83_RF
2.0NH+/-0.1NH-0.2A-1.35OHM
50_FULL_B40_FILTER
50_FULL_B40_FILTER_MATCH
50_FULL_B40_SPDT_MATCH
L80_RF
2.0NH+/-0.1NH-0.6A
50_FULL_B40_SPDT
C93_RF
3.6NH+/-0.1NH-180MA
L99_RF
6.2NH-0.30A

TX INTERSTAGE FILTERS

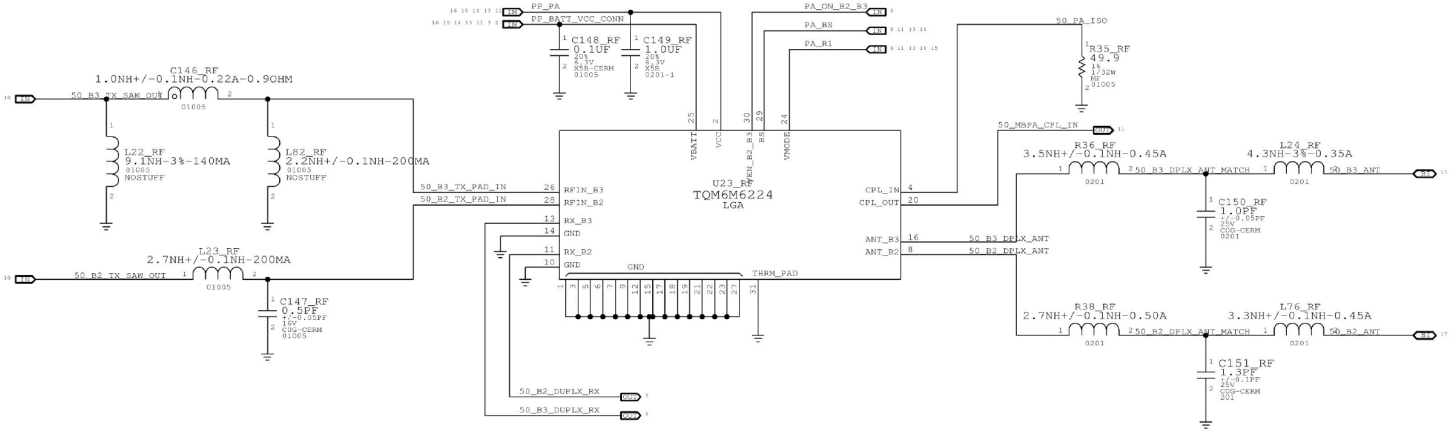


BAND 1/34/39/38/40 TX



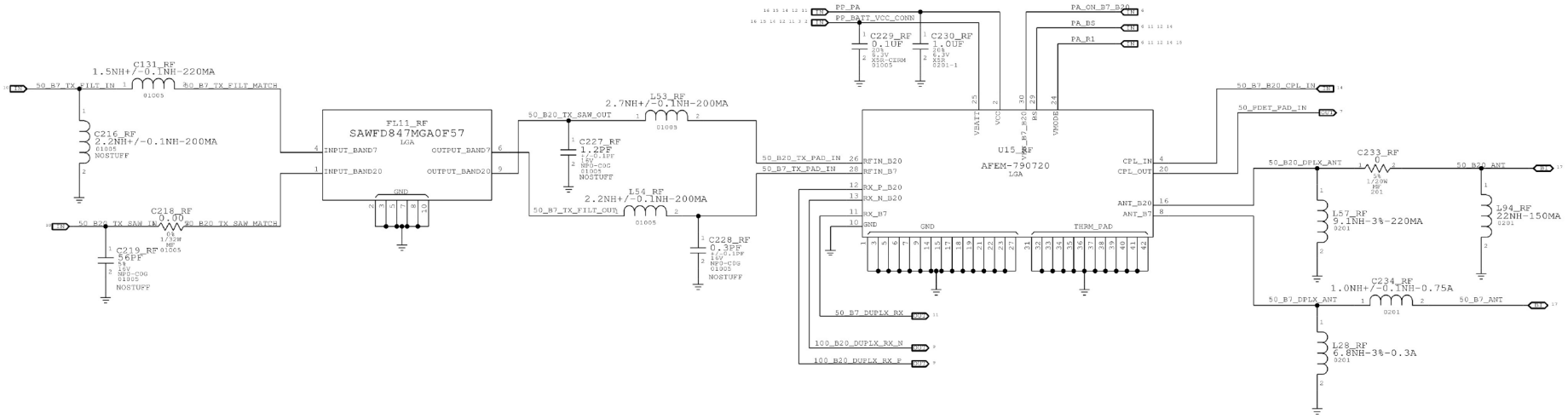
BAND	PA POWER MODE	PA_BS	PA_CTL1	PA_CTL0	PA_R1
OFF	X	X	0	0	0
B1	HPM	X	1	0	0
B1	LPM	X	1	0	1
B34	HPM	1	0	1	0
B34	LPM	1	0	1	1
B39	HPM	0	0	1	0
B39	LPM	0	0	1	1
B38	HPM	1	1	1	0
B38	LPM	1	1	1	1
B40	HPM	0	1	1	0
B40	LPM	0	1	1	1

BAND 2/3 PAD



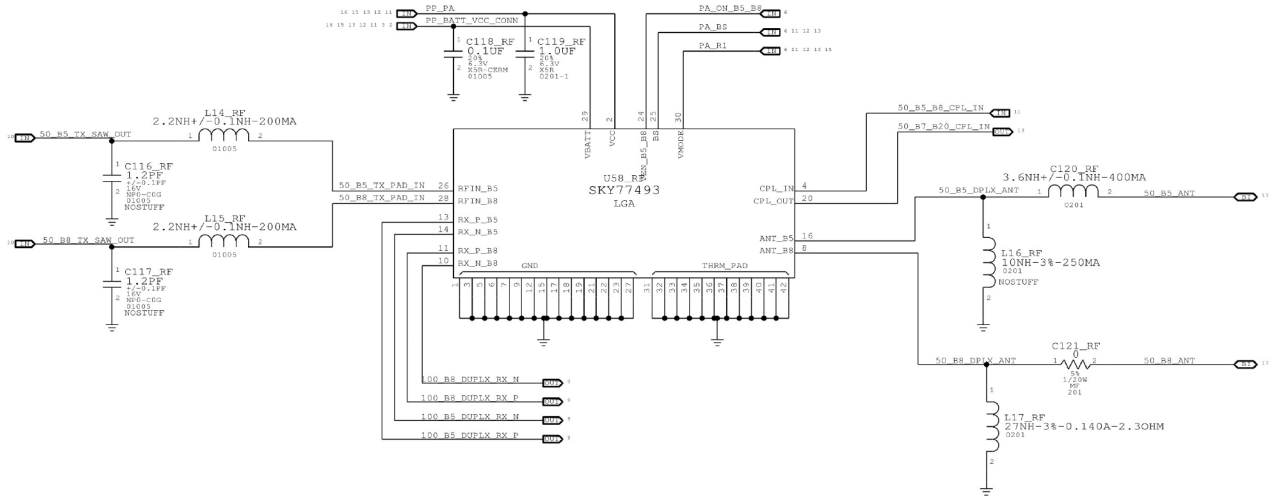
BAND	PA POWER MODE	PA_BS	PA_ON_B2_B3	PA_R1
OFF	X	X	0	X
B3	HPM	0	1	0
B3	LPM	0	1	1
B2	HPM	1	1	0
B2	LPM	1	1	1

BAND 20/7 PAD



BAND	PA POWER MODE	PA_BS	PA_ON_B20_B7	PA_R1
OFF	X	X	0	X
B20	HPM	0	1	0
B20	LPM	0	1	1
B7	HPM	1	1	0
B7	LPM	1	1	1

BAND 5/8 PAD

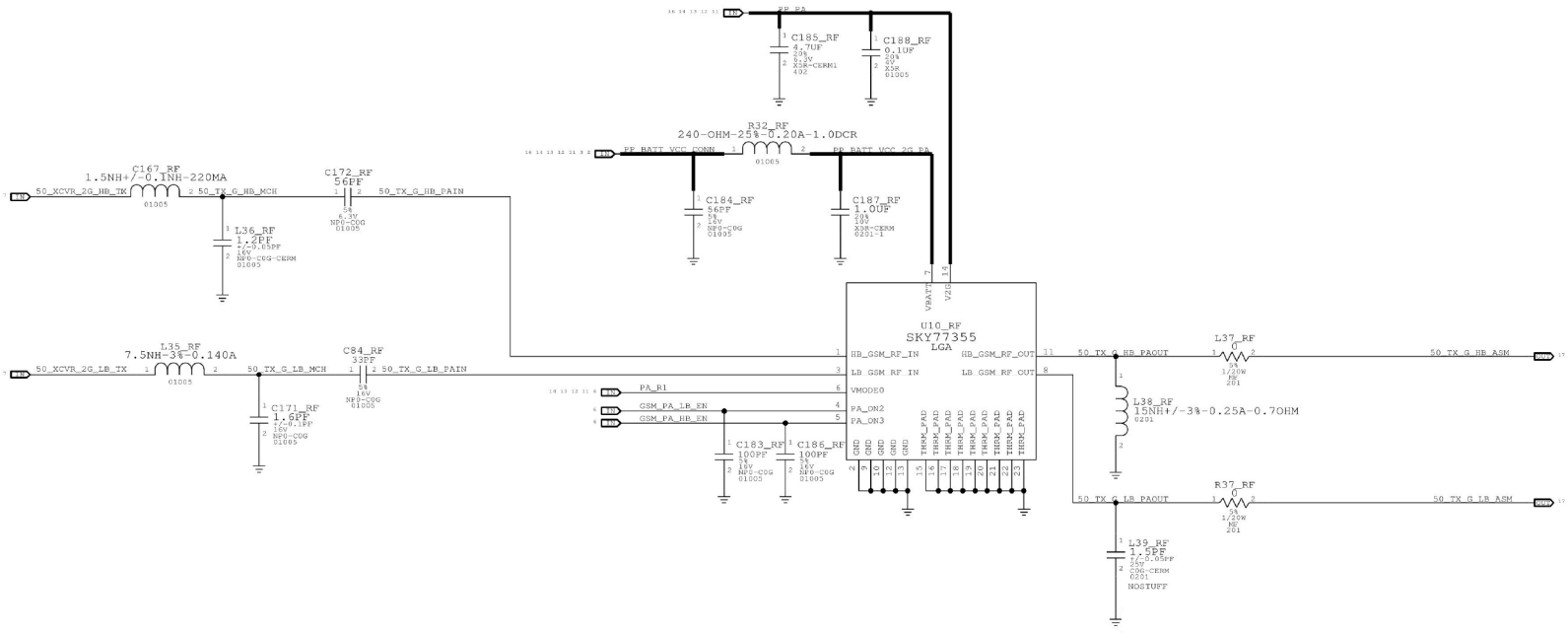


BAND	PA POWER MODE	PA_BS	PA_ON_B5_B8	PA_R1
OFF	X	X	0	X
B5	HPM	0	1	0
B5	LPM	0	1	1
B8	HPM	1	1	0
B8	LPM	1	1	1

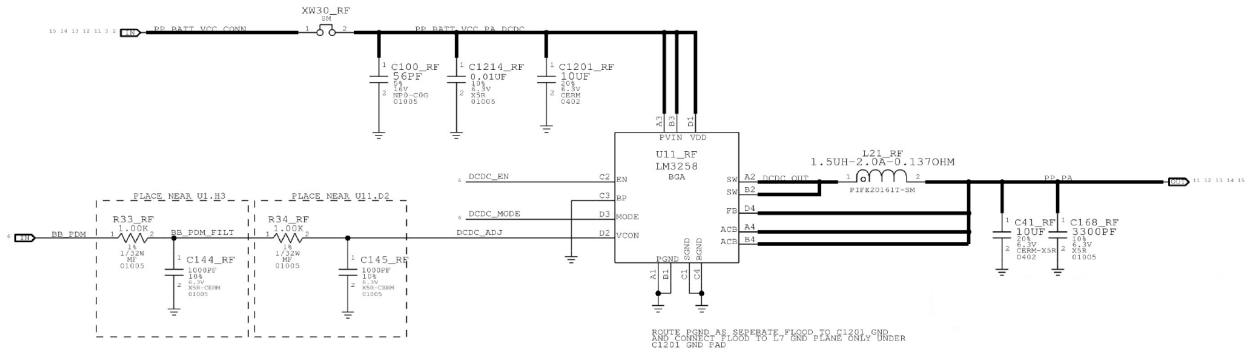
2G PA

2G PA GAIN MODES

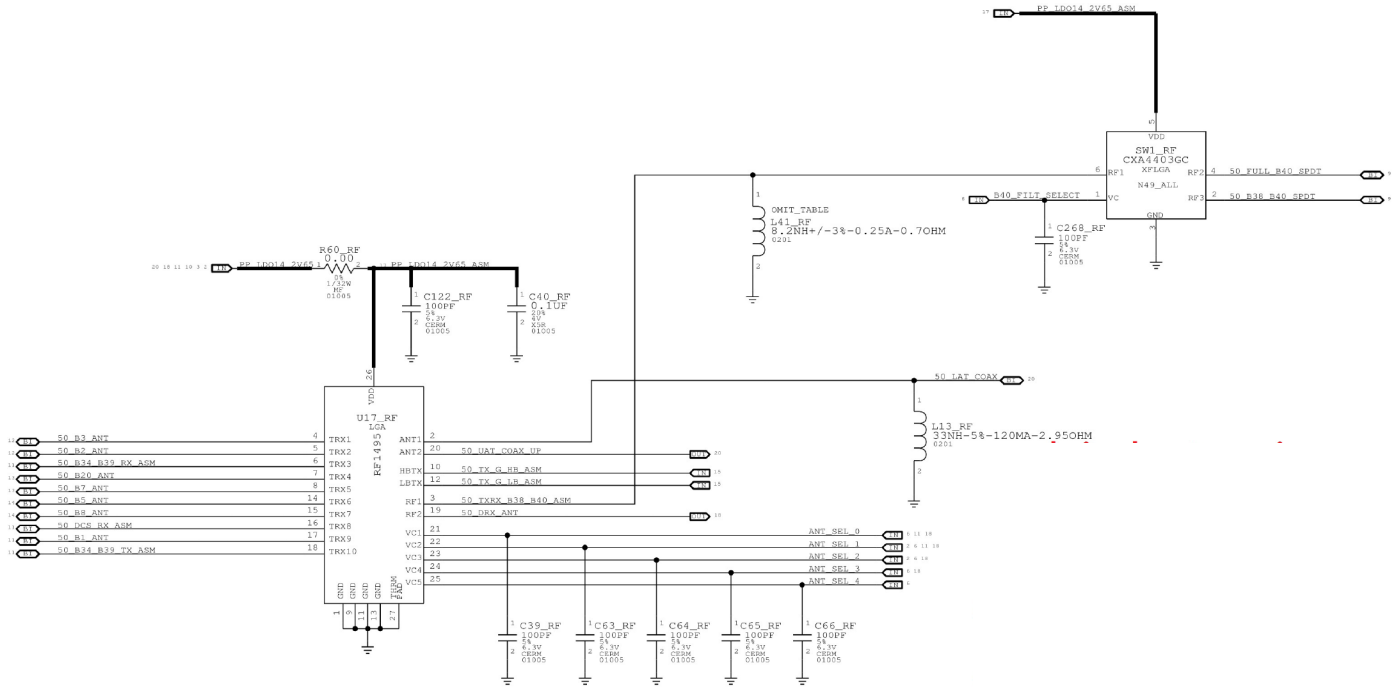
BAND	MODE	GAIN MODE	PA_R1	PCL RANGE
LOW BAND	GSM	ULTRA LOW	HIGH	16 TO 19
LOW BAND	GSM	LOW	HIGH	14 TO 15
LOW BAND	GSM	MEDIUM	LOW	7 TO 13
LOW BAND	GSM	HIGH	LOW	5 TO 6
HIGH BAND	GSM	ULTRA LOW	HIGH	10 TO 15
HIGH BAND	GSM	LOW	HIGH	7 TO 9
HIGH BAND	GSM	HIGH	LOW	0 TO 6
LOW BAND	EDGE	LOW	HIGH	15 TO 19
LOW BAND	EDGE	MEDIUM	LOW	10 TO 14
LOW BAND	EDGE	HIGH	LOW	8 TO 9
HIGH BAND	EDGE	LOW	HIGH	9 TO 15
HIGH BAND	EDGE	HIGH	LOW	2 TO 8

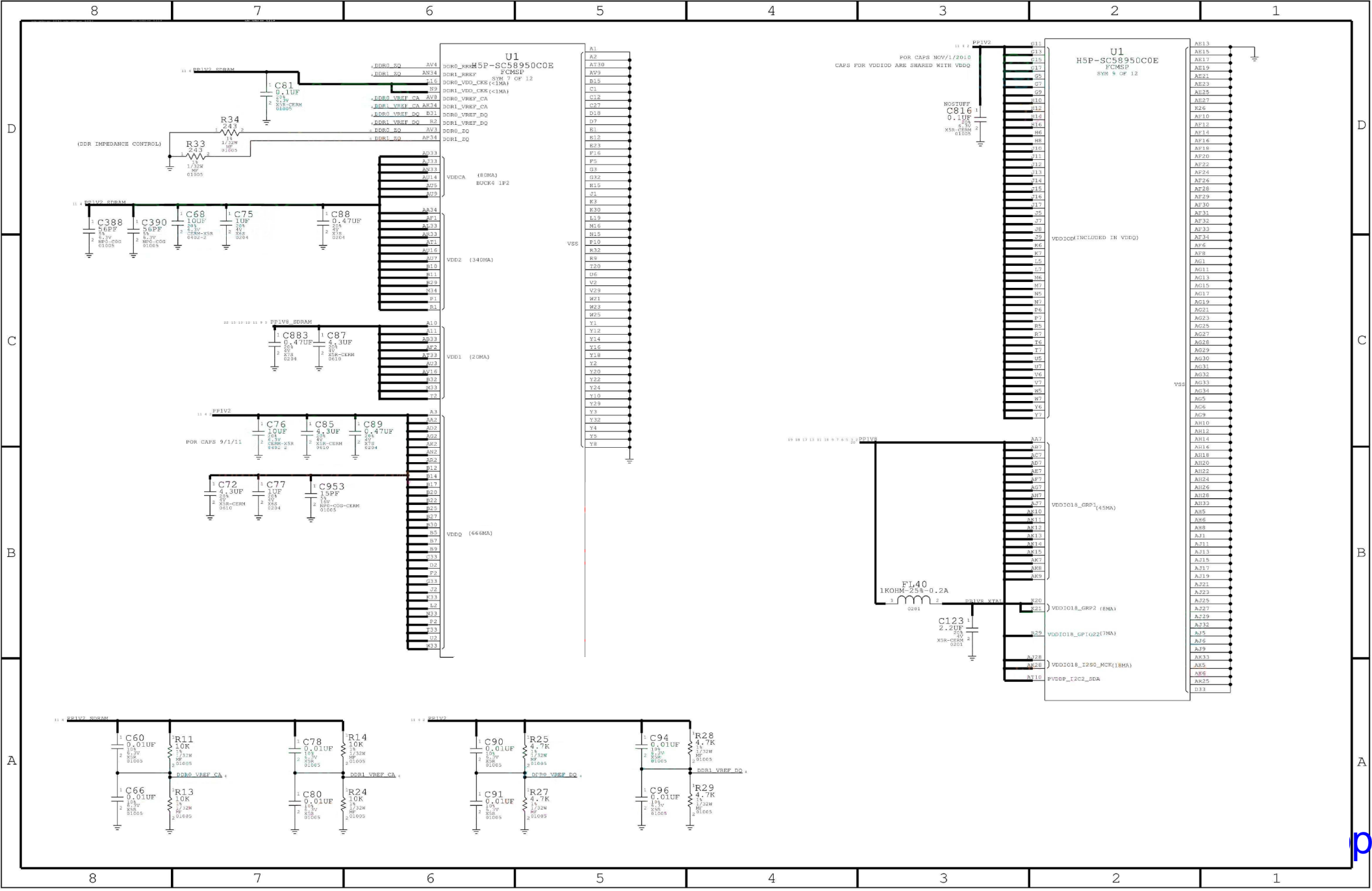


PA DC/DC CONVERTER

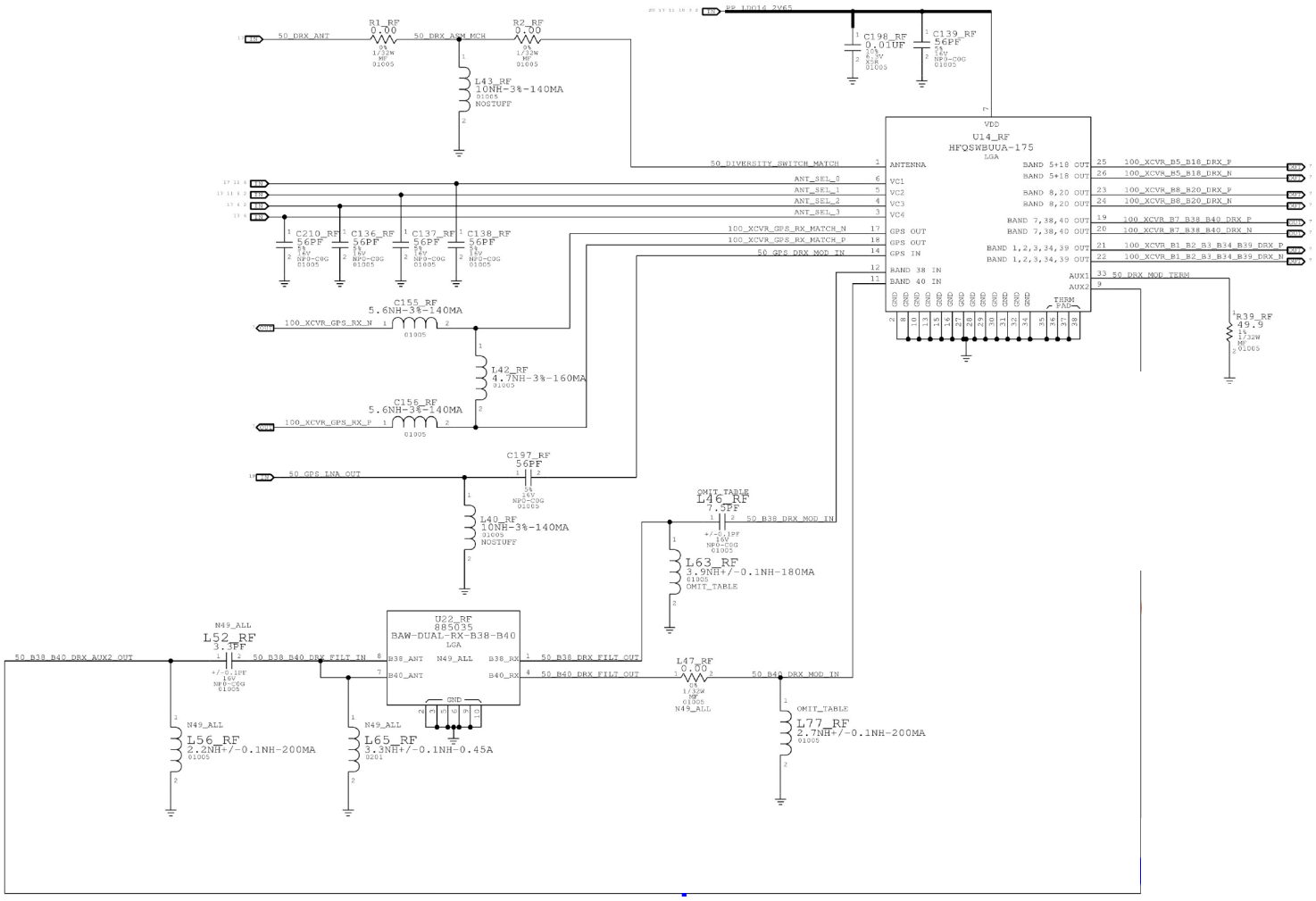


PRIMARY ASM

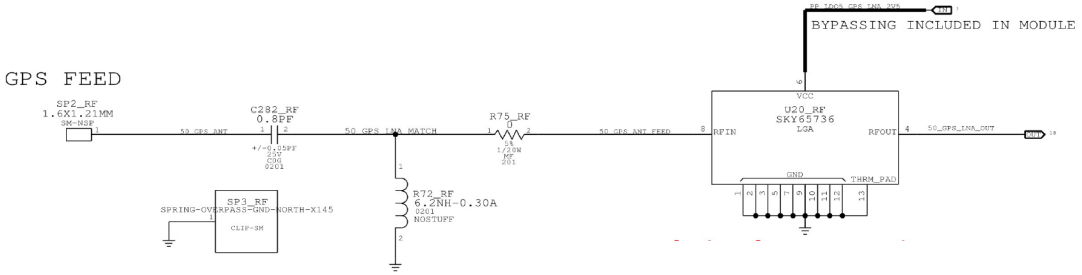

PP_LDO14_2V65_ASM
SW1_RF
CXA4403GC
XFLGA
N49_ALL
VDD
GND
RF1
RF2
RF3
VC
50_FULL_B40_SPDT
50_B38_B40_SPDT
B40_FILT_SELECT
OMIT_TABLE
L41_RF
8.2NH+/-3%-0.25A-0.7OHM
0201
C268_RF
100PF
5%
6.3V
CERM
01005
R60_RF
0.00
1/32W
MF
01005
C122_RF
100PF
C40_RF
0.1UF
50_LAT_COAX
L13_RF
33NH-5%-120MA-2.95OHM
U17_RF
LGA
RF1495
50_B3_ANT
50_B2_ANT
50_B34_B39_RX_ASM
50_B20_ANT
50_B7_ANT
50_B5_ANT
50_B8_ANT
50_DCS_RX_ASM
50_B1_ANT
50_B34_B39_TX_ASM
50_UAT_COAX_UP
50_TX_G_HB_ASM
50_TX_G_LB_ASM
50_TXRX_B38_B40_ASM
50_DRX_ANT
ANT_SEL_0
ANT_SEL_1
ANT_SEL_2
ANT_SEL_3
ANT_SEL_4
C39_RF
C63_RF
C64_RF
C65_RF
C66_RF


U1
H5P-SC58950C0E
FCMSP
SYM 7 OF 12
U1
H5P-SC58950C0E
FCMSP
SYM 9 OF 12
PP1V2_SDRAM
PP1V8_SDRAM
PP1V2
PP1V8
C81 0.1UF
R34 243
R33 243
(DDR IMPEDANCE CONTROL)
C388 56PF
C390 56PF
C68 10UF
C75 1UF
C88 0.47UF
C883 0.47UF
C87 4.3UF
C76 10UF
C85 4.3UF
C89 0.47UF
C72 4.3UF
C77 1UF
C953 15PF
POR CAPS 9/1/11
VDDCA (80MA)
BUCK4 1P2
VDD2 (340MA)
VDD1 (20MA)
VDDQ (666MA)
VSS
C816 0.1UF
NOSTUFF
POR CAPS NOV/1/2010
CAPS FOR VDDIOD ARE SHARED WITH VDDQ
VDDIOD (INCLUDED IN VDDQ)
FL40
1KOHM-25%-0.2A
C123 2.2UF
VDDIO18_GRP1 (45MA)
VDDIO18_GRP2 (8MA)
VDDIO18_GPIO22 (7MA)
VDDIO18_I2S0_MCK (18MA)
PVDDF_I2C2_SDA
C60 0.01UF
C66 0.01UF
R11 10K
R13 10K
C78 0.01UF
C80 0.01UF
R14 10K
R24 10K
DDR0_VREF_CA
DDR1_VREF_CA
C90 0.01UF
C91 0.01UF
R25 4.7K
R27 4.7K
DDR0_VREF_DQ
C94 0.01UF
C96 0.01UF
R28 4.7K
R29 4.7K
DDR1_VREF_DQ

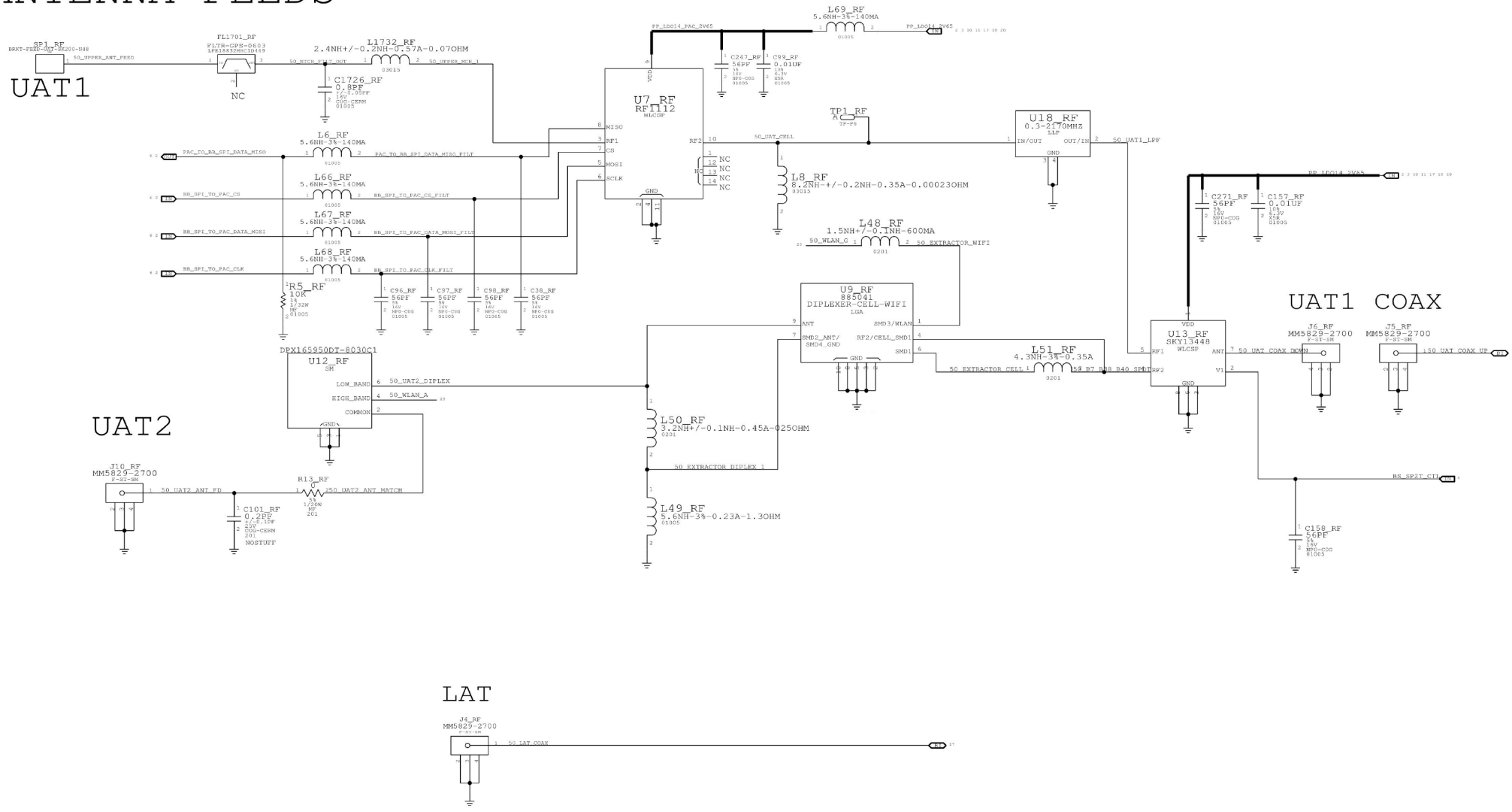
RX DIVERSITY



GPS


BYPASSING INCLUDED IN MODULE
GPS FEED
SP2_RF
1.6X1.21MM
SM-N3P
50_GPS_ANT
C282_RF
0.8PF
+/-0.05PF
250
0201
50_GPS_LNA_MATCH
R75_RF
0
1/20W
MF
201
50_GPS_ANT_FEED
VCC
U20_RF
SKY65736
LOA
RFIN
RFOUT
50_GPS_LNA_OUT
GND
THRM_PAD
SP3_RF
SPRING-OVERPASS-GND-NORTH-X145
CLIP-SM
R72_RF
6.2NH-0.30A
0201
NOSTUFF

ANTENNA FEEDS



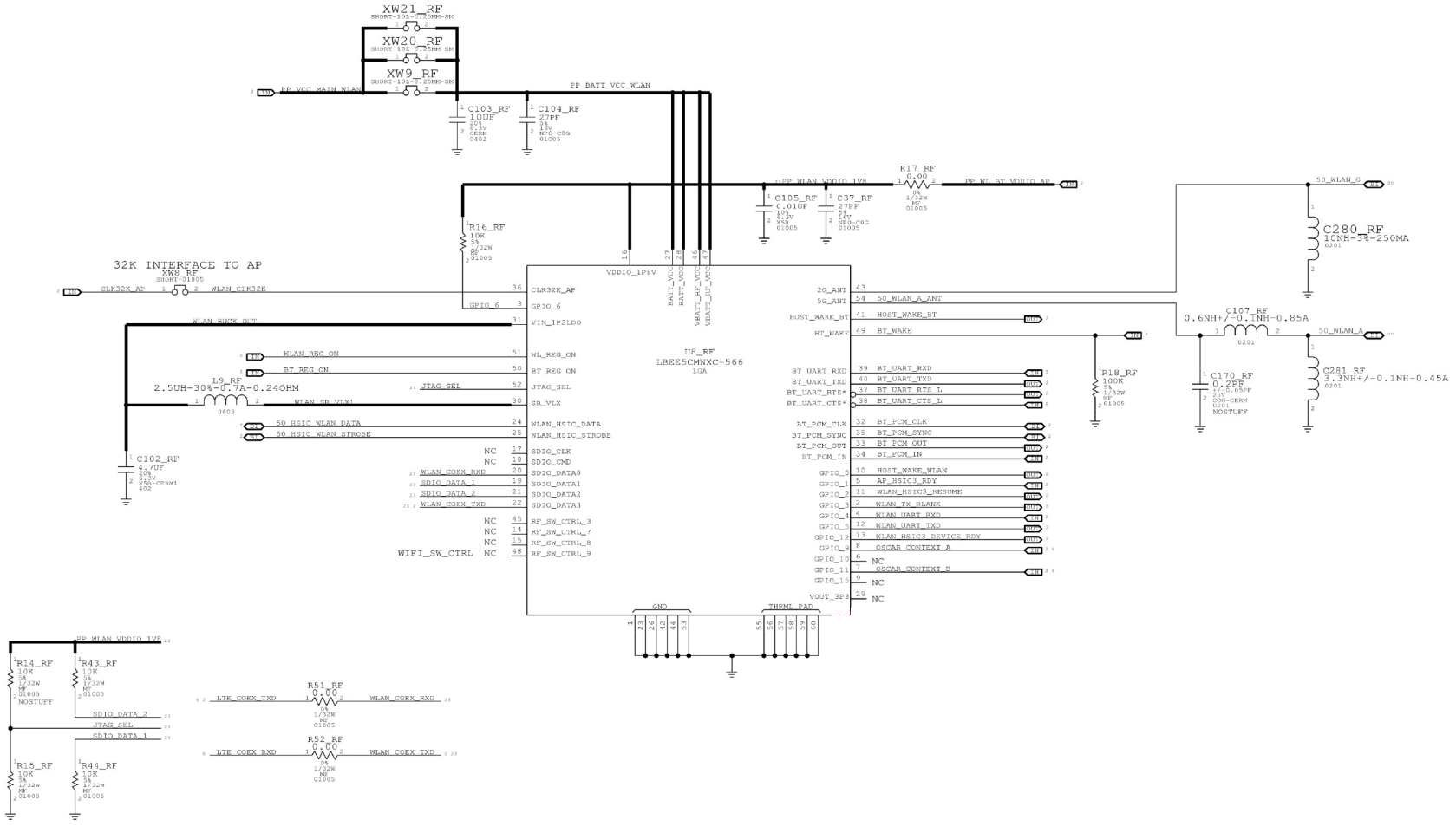
ANTENNA FEEDS (2 OF 2)

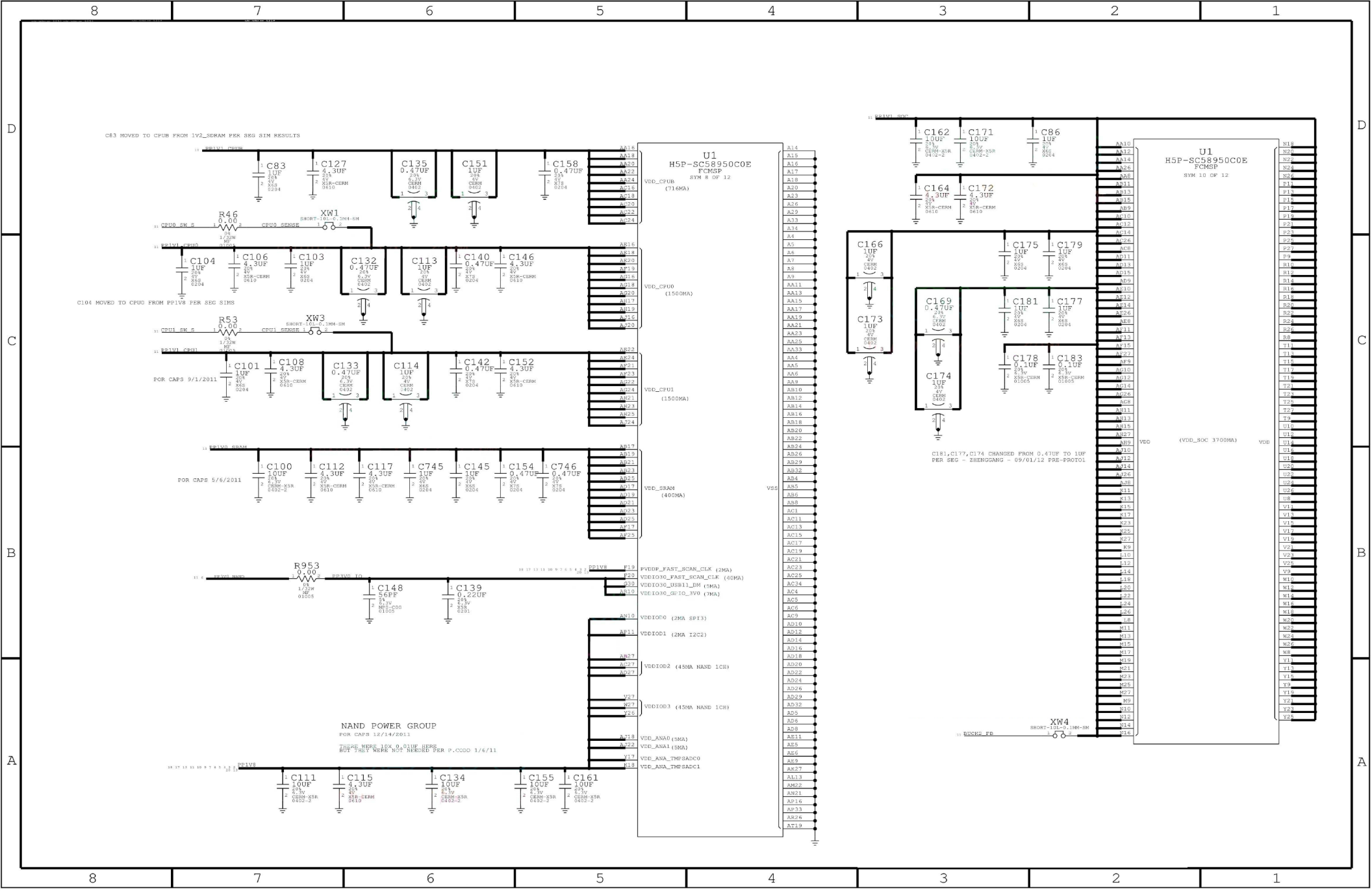
FRONT END LOGIC TABLE

BAND	ANT_SEL_0	ANT_SEL_1	ANT_SEL_2	ANT_SEL_3	ANT_SEL_4	PRX PATH	DRX PATH
GSM LB TX	LOW	HIGH	LOW	LOW	LOW	LAT	TERMINATED
GSM LB TX	LOW	HIGH	LOW	LOW	HIGH	UAT	TERMINATED
GSM HB TX	HIGH	HIGH	LOW	HIGH	LOW	LAT	TERMINATED
GSM HB TX	HIGH	HIGH	LOW	HIGH	HIGH	UAT	TERMINATED
B1	HIGH	HIGH	HIGH	HIGH	LOW	LAT	UAT
B1	HIGH	HIGH	HIGH	HIGH	HIGH	UAT	LAT
B2/B25, 1900RX	HIGH	LOW	LOW	HIGH	LOW	LAT	UAT
B2/B25, 1900RX	HIGH	LOW	LOW	HIGH	HIGH	UAT	LAT
B3	HIGH	HIGH	LOW	LOW	LOW	LAT	UAT
B3	HIGH	HIGH	LOW	LOW	HIGH	UAT	LAT
B5/B6/B18, 850RX	HIGH	LOW	LOW	LOW	LOW	LAT	UAT
B5/B6/B18, 850RX	HIGH	LOW	LOW	LOW	HIGH	UAT	LAT
B20	HIGH	LOW	HIGH	HIGH	LOW	LAT	UAT
B20	HIGH	LOW	HIGH	HIGH	HIGH	UAT	LAT
B34/B39 TX	LOW	LOW	HIGH	HIGH	LOW	LAT	TERMINATED
B34/B39 TX	LOW	LOW	HIGH	HIGH	HIGH	UAT	TERMINATED
B34 RX	LOW	LOW	LOW	HIGH	LOW	LAT	UAT
B34 RX	LOW	LOW	LOW	HIGH	HIGH	UAT	LAT
B39 RX	LOW	LOW	HIGH	LOW	LOW	LAT	UAT
B39 RX	LOW	LOW	HIGH	LOW	HIGH	UAT	LAT
B38/B40 TX	LOW	HIGH	HIGH	LOW	LOW	LAT	TERMINATED
B38/B40 TX	LOW	HIGH	HIGH	LOW	HIGH	UAT	TERMINATED
B38 RX	HIGH	LOW	HIGH	LOW	LOW	LAT	UAT
B38 RX	HIGH	LOW	HIGH	LOW	HIGH	UAT	LAT
B40 RX	HIGH	HIGH	HIGH	LOW	LOW	LAT	UAT
B40 RX	HIGH	HIGH	HIGH	LOW	HIGH	UAT	LAT
B7	LOW	HIGH	HIGH	HIGH	LOW	LAT	UAT
B7	LOW	HIGH	HIGH	HIGH	HIGH	UAT	LAT
B8, GSM900 RX	LOW	HIGH	LOW	HIGH	LOW	LAT	UAT
B8, GSM900 RX	LOW	HIGH	LOW	HIGH	HIGH	UAT	LAT
GSM1800 RX	LOW	LOW	LOW	LOW	LOW	LAT	TERMINATED
GSM1800 RX	LOW	LOW	LOW	LOW	HIGH	UAT	TERMINATED

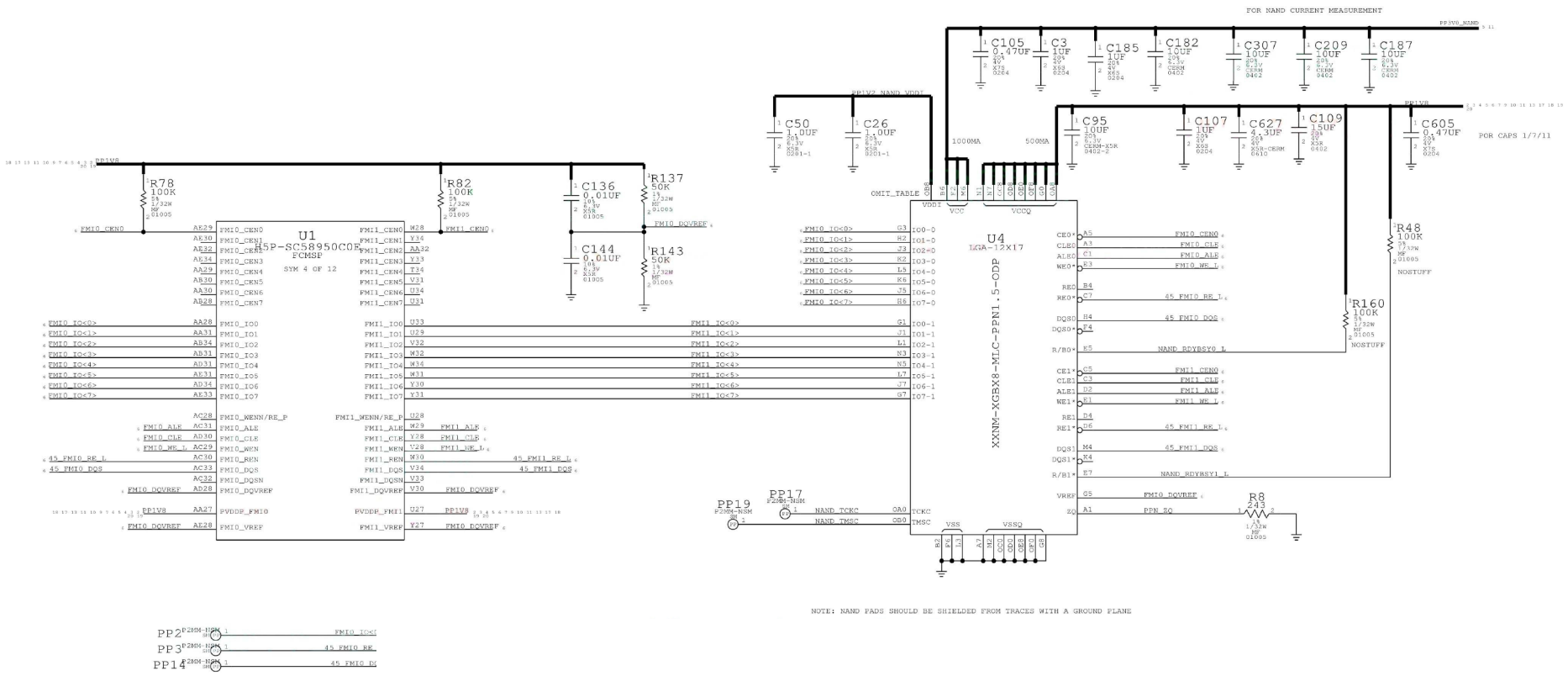
LAT = LOWER ANTENNA
UAT = UPPER ANTENNA

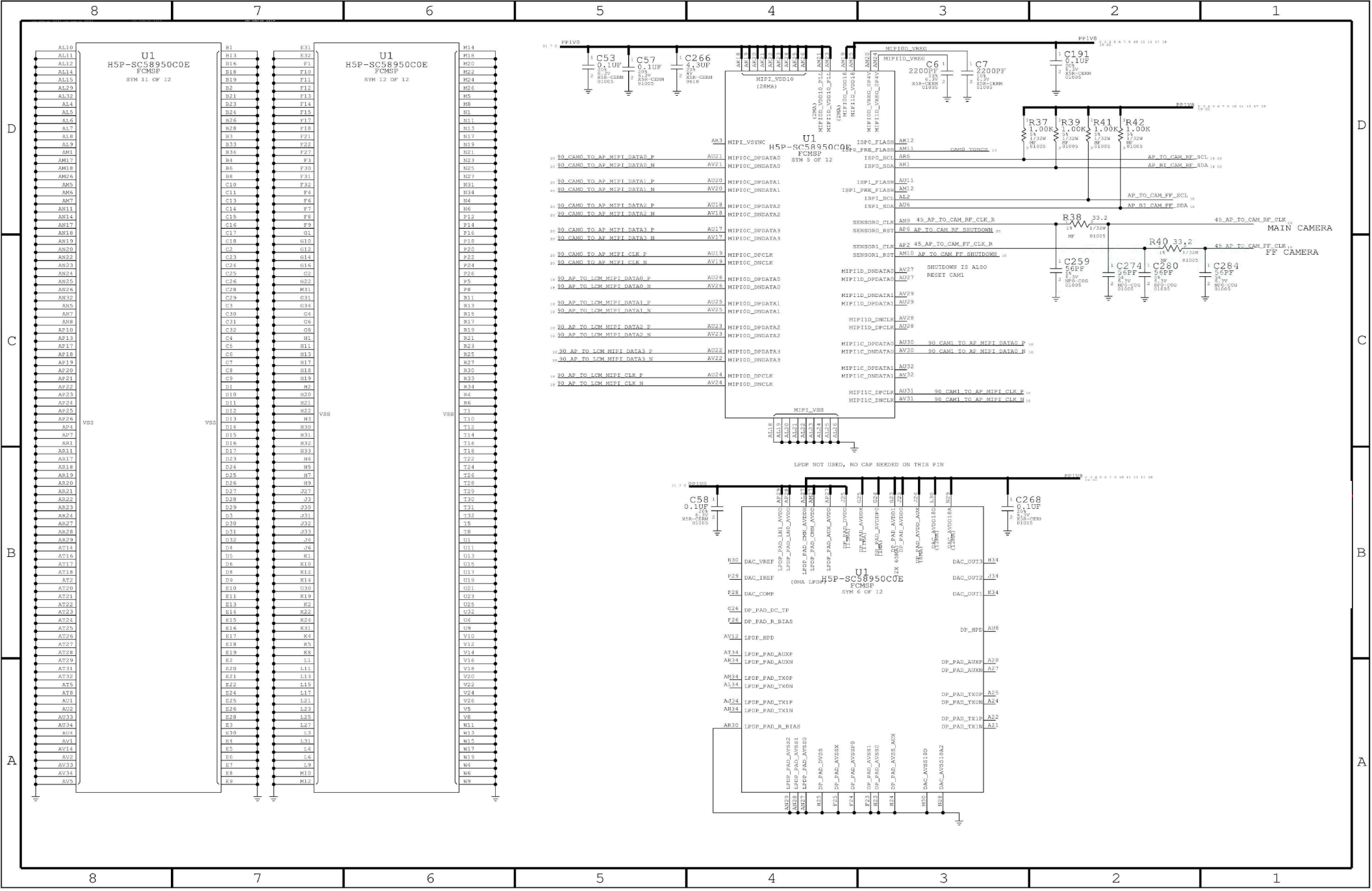
WLAN/BT


XW21_RF
XW20_RF
XW9_RF
PP_VCC_MAIN_WLAN
PP_BATT_VCC_WLAN
C103_RF 10UF
C104_RF 27PF
R16_RF 10K
R17_RF 0.00
PP_WLAN_VDDIO_1V8
PP_WL_BT_VDDIO_AP
C105_RF 0.01UF
C37_RF 27PF
32K INTERFACE TO AP
XW8_RF
CLK32K_AP
WLAN_CLK32K
GPIO_6
WLAN_BUCK_OUT
VIN_1P2LDO
WLAN_REG_ON
BT_REG_ON
JTAG_SEL
L9_RF 2.5UH-30%-0.7A-0.240HM
WLAN_SR_VLX
50_HSIC_WLAN_DATA
50_HSIC_WLAN_STROBE
C102_RF 4.7UF
U8_RF
LBEE5CMWXC-566
LGA
VDDIO_1P8V
BATT_VCC
VBAT_RF_VCC
WLAN_COEX_RXD
SDIO_DATA_1
SDIO_DATA_2
WLAN_COEX_TXD
WIFI_SW_CTRL
2G_ANT
5G_ANT
50_WLAN_A_ANT
HOST_WAKE_BT
BT_WAKE
BT_UART_RXD
BT_UART_TXD
BT_UART_RTS*
BT_UART_CTS*
BT_PCM_CLK
BT_PCM_SYNC
BT_PCM_OUT
BT_PCM_IN
HOST_WAKE_WLAN
AP_HSIC3_RDY
WLAN_HSIC3_RESUME
WLAN_TX_BLANK
WLAN_UART_RXD
WLAN_UART_TXD
WLAN_HSIC3_DEVICE_RDY
OSCAR_CONTEXT_A
OSCAR_CONTEXT_B
GND
THRML_PAD
R18_RF 100K
C107_RF 0.6NH+/-0.1NH-0.85A
C170_RF 0.2PF
C280_RF 10NH-3%-250MA
C281_RF 3.3NH+/-0.1NH-0.45A
50_WLAN_G
50_WLAN_A
R14_RF 10K
R43_RF 10K
R15_RF 10K
R44_RF 10K
R51_RF 0.00
R52_RF 0.00
LTE_COEX_TXD
LTE_COEX_RXD


C83 MOVED TO CPU0 FROM 1V2_SDRAM PER SEG SIM RESULTS
C104 MOVED TO CPU0 FROM PP1V8 PER SEG SIMS
POR CAPS 9/1/2011
POR CAPS 5/6/2011
C181,C177,C174 CHANGED FROM 0.47UF TO 1UF
PER SEG - ZHENGGANG - 09/01/12 PRE-PROTO1
NAND POWER GROUP
FOR CAPS 12/14/2011
THERE WERE 10X 0.01UF HERE
BUT THEY WERE NOT NEEDED PER P.CODD 1/6/11
U1
H5P-SC58950C0E
FCMSP
SYM 8 OF 12
SYM 10 OF 12
VDD_CPU0 (1500MA)
VDD_CPU1 (1500MA)
VDD_SRAM (400MA)
VDD_CPUB (716MA)
VDD (VDD_SOC 3700MA)
VSS
XW1
XW3
XW4
R46
R53
R953
C83
C127
C135
C151
C158
C104
C106
C103
C132
C113
C140
C146
C101
C108
C133
C114
C142
C152
C100
C112
C117
C745
C145
C154
C746
C148
C139
C111
C115
C134
C155
C161
C162
C171
C86
C164
C172
C166
C173
C175
C179
C169
C174
C181
C177
C178
C183

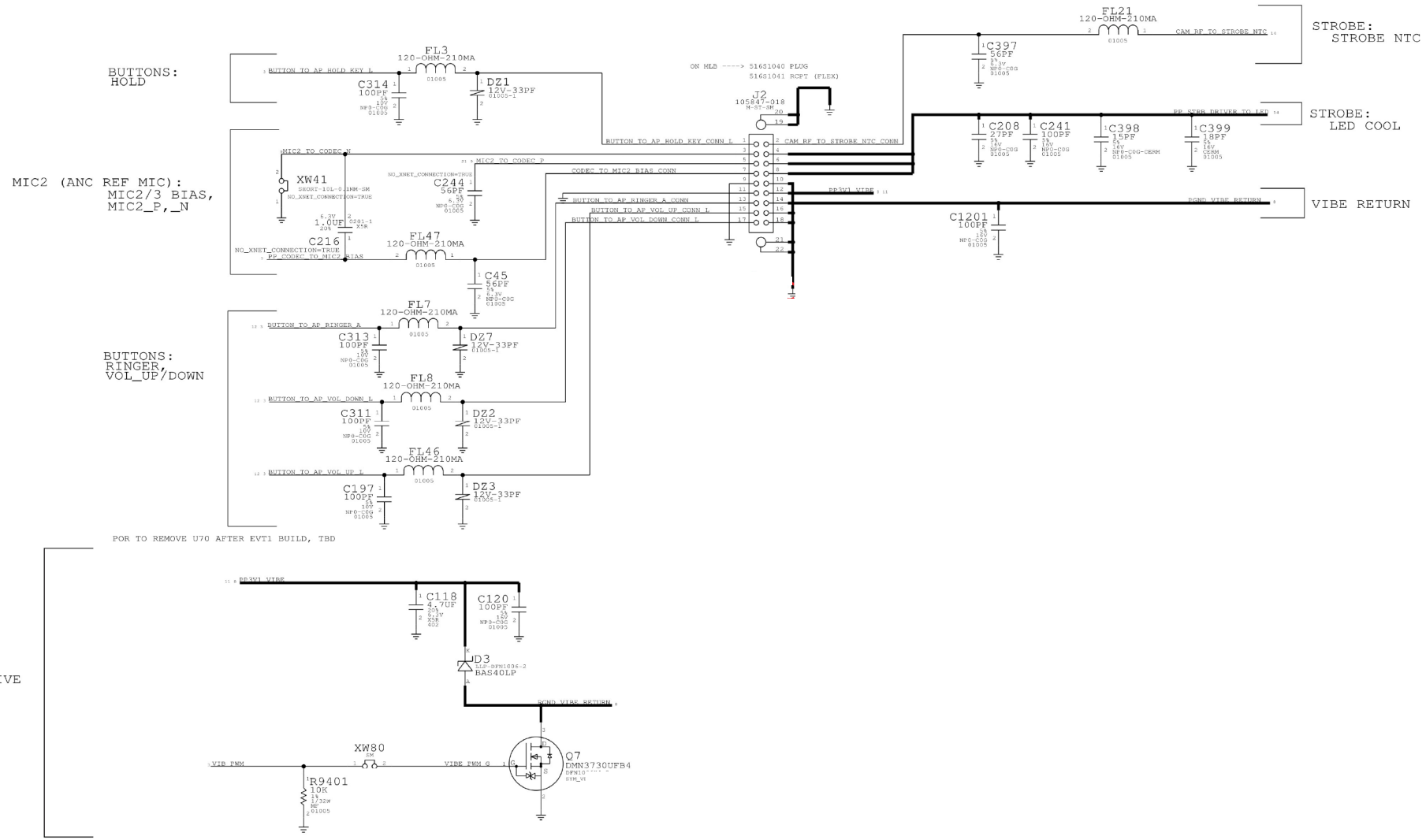
NAND

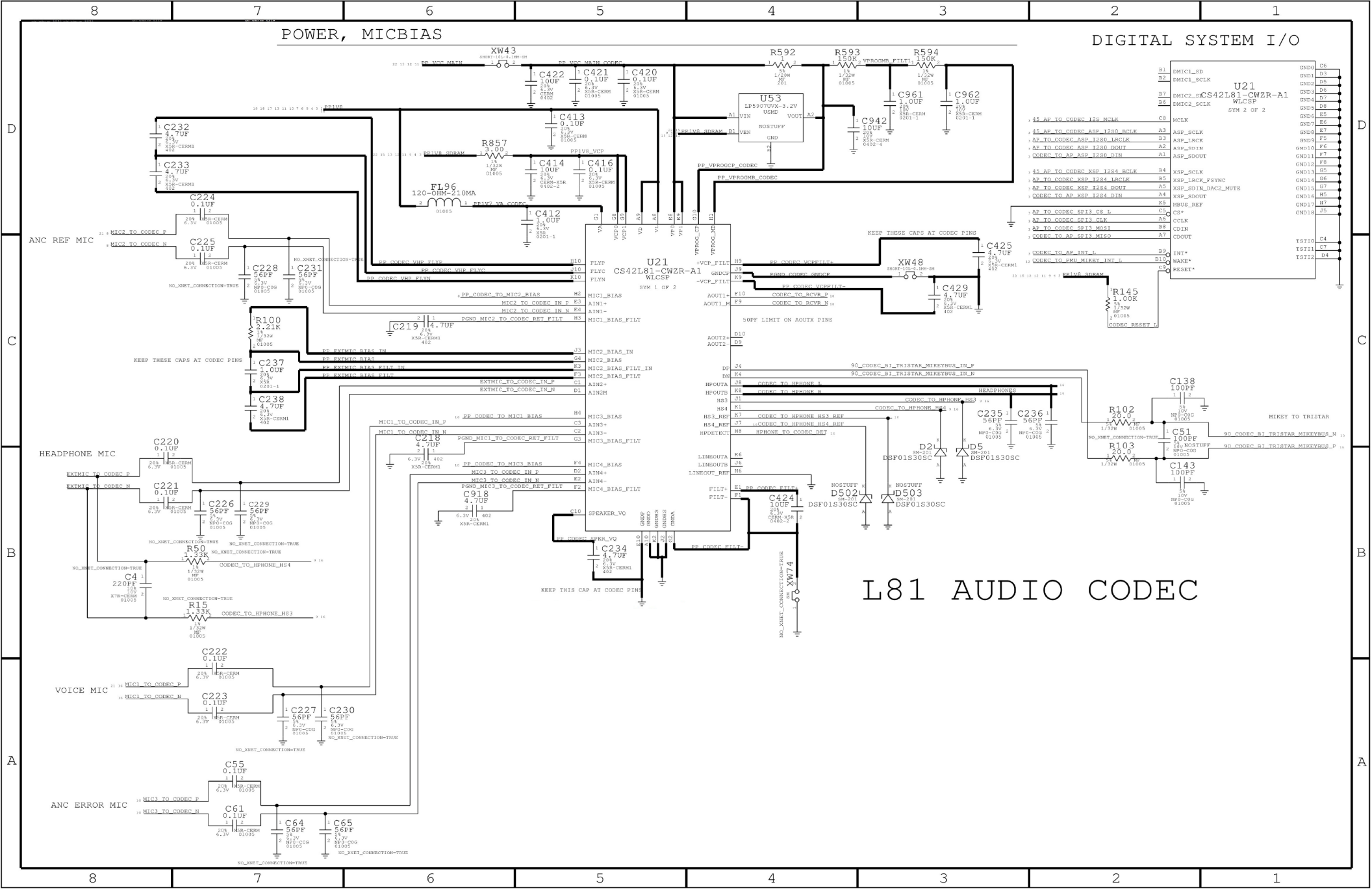

FOR NAND CURRENT MEASUREMENT
PP3V0_NAND
PP1V2_NAND_VDDI
PP1V8
C105 0.47UF
C3 1UF
C185 1UF
C182 10UF
C307 10UF
C209 10UF
C187 10UF
C50 1.0UF
C26 1.0UF
C95 1.0UF
C107 1UF
C627 4.3UF
C109 1.5UF
C605 0.47UF
POR CAPS 1/7/11
1000MA
500MA
OMIT_TABLE
R78 100K
R82 100K
C136 0.01UF
R137 50K
C144 0.01UF
R143 50K
R48 100K
NOSTUFF
R160 100K
NOSTUFF
R8 243
U1
H5P-SC58950C0E
FCMSP
SYM 4 OF 12
U4
LGA-12X17
XXNM-XGBX8-MLC-2PN1.5-ODP
PP19
PP17
PP2
PP3
PP14
NAND_TCKC
NAND_TMSC
NAND_RDYBSY0_L
NAND_RDYBSY1_L
PPN_ZQ
NOTE: NAND PADS SHOULD BE SHIELDED FROM TRACES WITH A GROUND PLANE


U1
H5P-SC58950C0E
FCMSP
SYM 11 OF 12
U1
H5P-SC58950C0E
FCMSP
SYM 12 OF 12
U1
H5P-SC58950C0E
FCMSP
SYM 5 OF 12
U1
H5P-SC58950C0E
FCMSP
SYM 6 OF 12
MIPI_VDD10
(28MA)
MIPI_VSS
LPDP NOT USED, NO CAP NEEDED ON THIS PIN
SHUTDOWN IS ALSO
RESET CAM1
MAIN CAMERA
FF CAMERA
90_CAM0_TO_AP_MIPI_DATA0_P
90_CAM0_TO_AP_MIPI_DATA0_N
90_CAM0_TO_AP_MIPI_DATA1_P
90_CAM0_TO_AP_MIPI_DATA1_N
90_CAM0_TO_AP_MIPI_DATA2_P
90_CAM0_TO_AP_MIPI_DATA2_N
90_CAM0_TO_AP_MIPI_DATA3_P
90_CAM0_TO_AP_MIPI_DATA3_N
90_CAM0_TO_AP_MIPI_CLK_P
90_CAM0_TO_AP_MIPI_CLK_N
90_AP_TO_LCM_MIPI_DATA0_P
90_AP_TO_LCM_MIPI_DATA0_N
90_AP_TO_LCM_MIPI_DATA1_P
90_AP_TO_LCM_MIPI_DATA1_N
90_AP_TO_LCM_MIPI_DATA2_P
90_AP_TO_LCM_MIPI_DATA2_N
90_AP_TO_LCM_MIPI_DATA3_P
90_AP_TO_LCM_MIPI_DATA3_N
90_AP_TO_LCM_MIPI_CLK_P
90_AP_TO_LCM_MIPI_CLK_N
90_CAM1_TO_AP_MIPI_DATA0_P
90_CAM1_TO_AP_MIPI_DATA0_N
90_CAM1_TO_AP_MIPI_CLK_P
90_CAM1_TO_AP_MIPI_CLK_N
45_AP_TO_CAM_RF_CLK_R
AP_TO_CAM_RF_SHUTDOWN
45_AP_TO_CAM_FF_CLK_R
AP_TO_CAM_FF_SHUTDOWN
CAM0_TOUCH
AP_TO_CAM_RF_SCL
AP_TO_CAM_RF_SDA
AP_TO_CAM_FF_SCL
AP_TO_CAM_FF_SDA
45_AP_TO_CAM_RF_CLK
45_AP_TO_CAM_FF_CLK

BUTTON FLEX

(VIBE DRIVER, BUTTONS, ANC REF MIC, STROBE, STROBE_NTC)




POWER, MICBIAS
DIGITAL SYSTEM I/O
L81 AUDIO CODEC
U21
CS42L81-CWZR-A1
WLCSP
SYM 1 OF 2
SYM 2 OF 2
U53
LP5907UVX-3.2V
USMD
XW43
XW48
XW74
FL96
120-OHM-210MA
R592
R593
150K
R594
150K
R857
3.00
R100
2.21K
R145
1.00K
R50
1.33K
R15
1.33K
R102
20.0
R103
20.0
D2
D5
DSF01S30SC
D502
D503
ANC REF MIC
HEADPHONE MIC
VOICE MIC
ANC ERROR MIC
KEEP THESE CAPS AT CODEC PINS
KEEP THIS CAP AT CODEC PIN
50PF LIMIT ON AOUTX PINS
HEADPHONES
MIKEY TO TRISTAR
PP_VCC_MAIN
PP1V8
PP1V8_SDRAM
PP1V2_VA_CODEC
PP_VPROCCP_CODEC
PP_VPROCMB_CODEC
PP_CODEC_VHP_FLYP
PP_CODEC_VHP_FLYC
PP_CODEC_VHP_FLYN
PP_CODEC_TO_MIC2_BIAS
PGND_MIC2_TO_CODEC_RET_FILT
PP_EXTMIC_BIAS_IN
PP_EXTMIC_BIAS
PP_EXTMIC_BIAS_FILT_IN
PP_EXTMIC_BIAS_FILT
EXTMIC_TO_CODEC_IN_P
EXTMIC_TO_CODEC_IN_N
PP_CODEC_TO_MIC1_BIAS
PGND_MIC1_TO_CODEC_RET_FILT
PP_CODEC_TO_MIC3_BIAS
PGND_MIC3_TO_CODEC_RET_FILT
PP_CODEC_SPKR_VO
PP_CODEC_FILT+
PP_CODEC_FILT-
PP_CODEC_VCPFILT+
PP_CODEC_VCPFILT-
CODEC_TO_RCVR_P
CODEC_TO_RCVR_N
CODEC_TO_HPHONE_L
CODEC_TO_HPHONE_R
CODEC_TO_HPHONE_HS3
CODEC_TO_HPHONE_HS4
HPHONE_TO_CODEC_DET
90_CODEC_BI_TRISTAR_MIKEYBUS_IN_P
90_CODEC_BI_TRISTAR_MIKEYBUS_IN_N
90_CODEC_BI_TRISTAR_MIKEYBUS_N
90_CODEC_BI_TRISTAR_MIKEYBUS_P
CODEC_RESET_L
NO_XNET_CONNECTION=TRUE
NO_XNET_CONNECTION=TRUE
NOSTUFF