

VERTEX SYSTEM 4.0

01/22/16
04-S28-2014

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

D

D

C

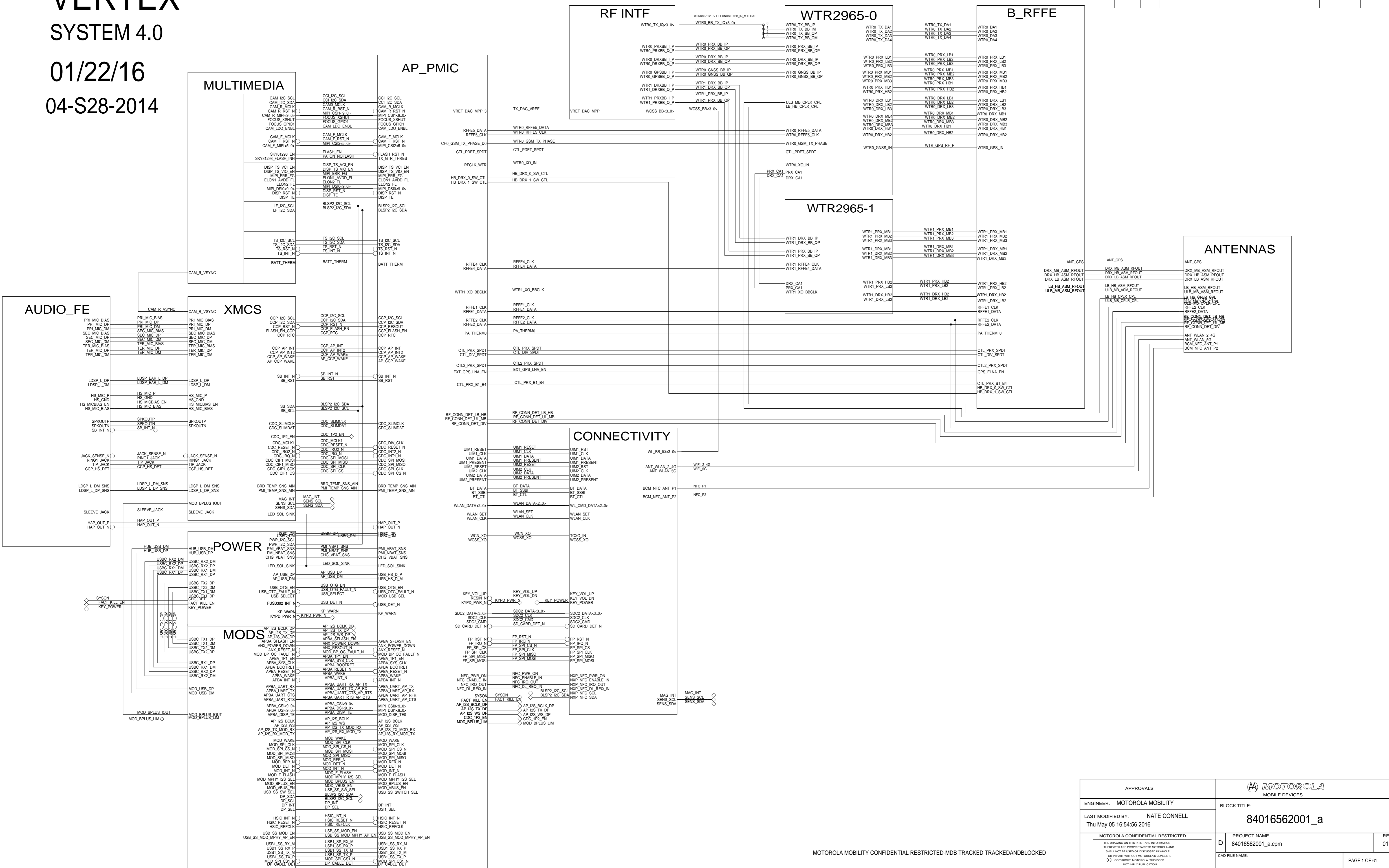
C

B

B

A

A



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:	MOTOROLA MOBILITY	BLOCK TITLE:	84016562001_a
LAST MODIFIED BY:	NATE CONNELL	PROJECT NAME:	84016562001_a.cpm
	Thu May 05 16:54:56 2016	REV	01
MOTOROLA CONFIDENTIAL RESTRICTED		CAD FILE NAME:	
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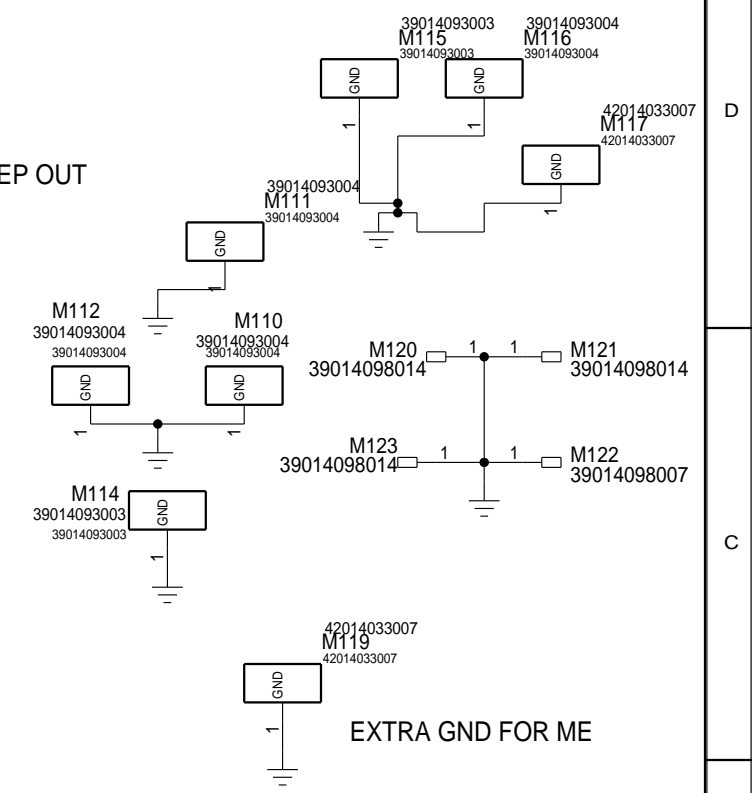
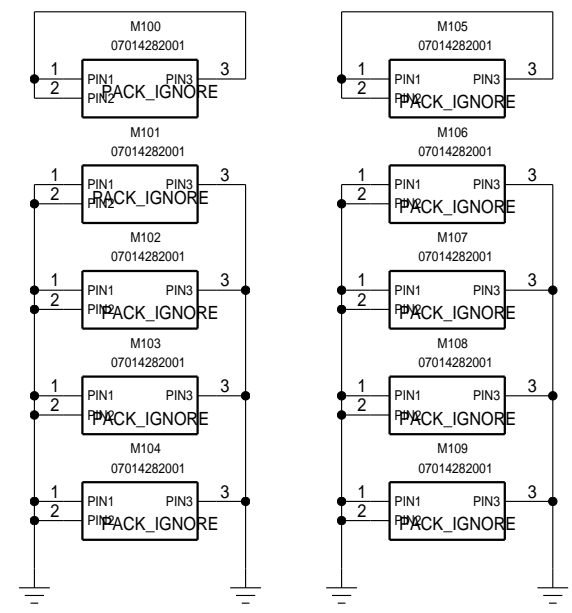
MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

VERTEX ME/SHIELDS

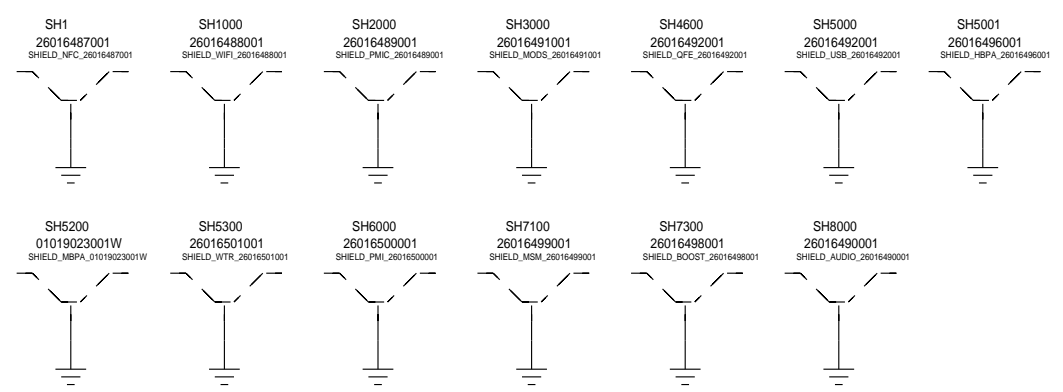
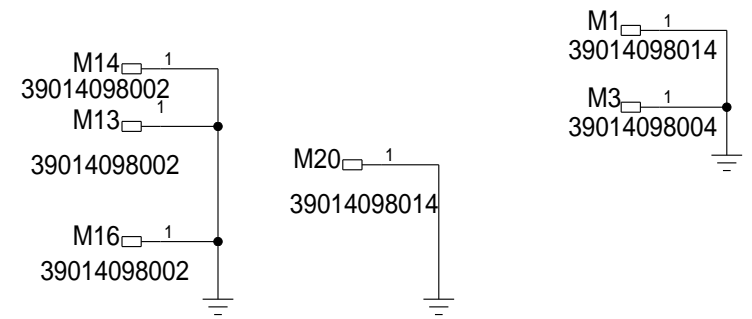
JANUS REFERENCE DESIGNATOR RANGES BY BLOCK

- 000 - 499: ANTENNA
- 500 - 599: USER INPUT
- 600 - 799: POWER
- 1000-2999: MSM8852 + PM8952
- 3000-3049, 3100-3149: WTR2955
- 3050-3099, 3150-3199: CA_WTR2955
- 3200-3999: MSM8952 + PM8952
- 4000-4499: CONNECTIVITY
- 4500-4999: AUDIO FE
- 5000-5499: DISPLAY
- 5500-5999: CAMERA
- 6000-6999: XMCS
- 7000-8999: RFFE

PLACE M100 AND M105 NEAR DIVERSITY ANTENNA KEEP OUT



UNIVERSAL GROUND CONTACTS



MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

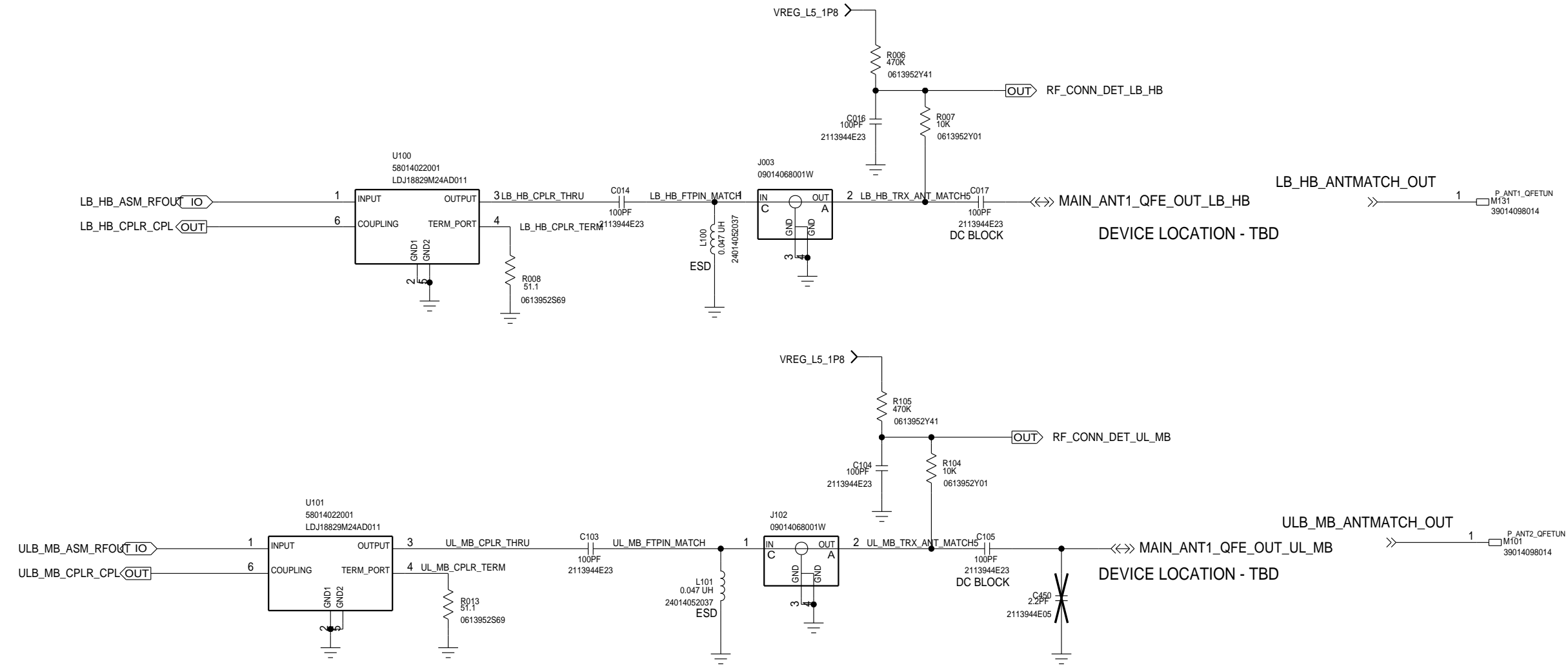
APPROVALS	 MOTOROLA MOBILE DEVICES	
ENGINEER:	BLOCK TITLE:	
LAST MODIFIED BY:	84016562001_a	
MOTOROLA CONFIDENTIAL RESTRICTED	PROJECT NAME	REV
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	CAD FILE NAME:	PAGE 2 OF 61

ANT: ANTENNA
REF:100-130

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPR.

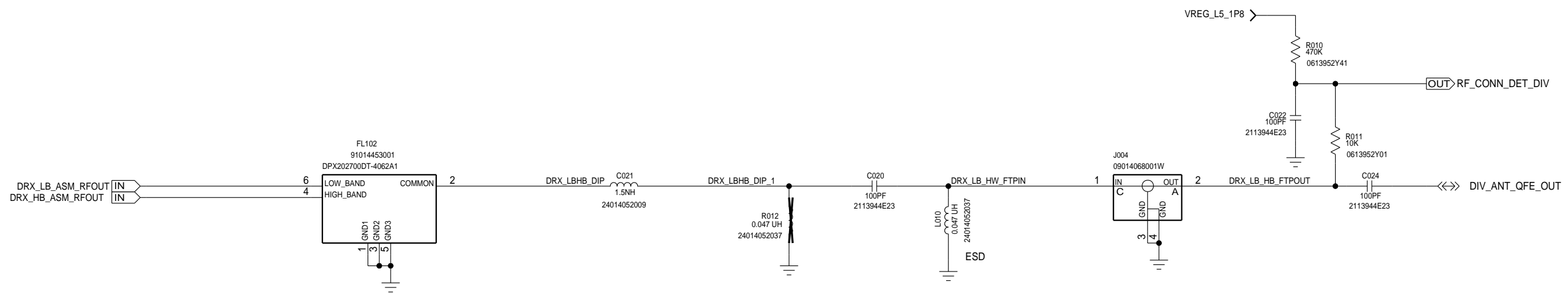
MAIN ANTENNA

DEVICE LOCATION - BOTTOM RIGHT
(GSM/UTMS/LTE)

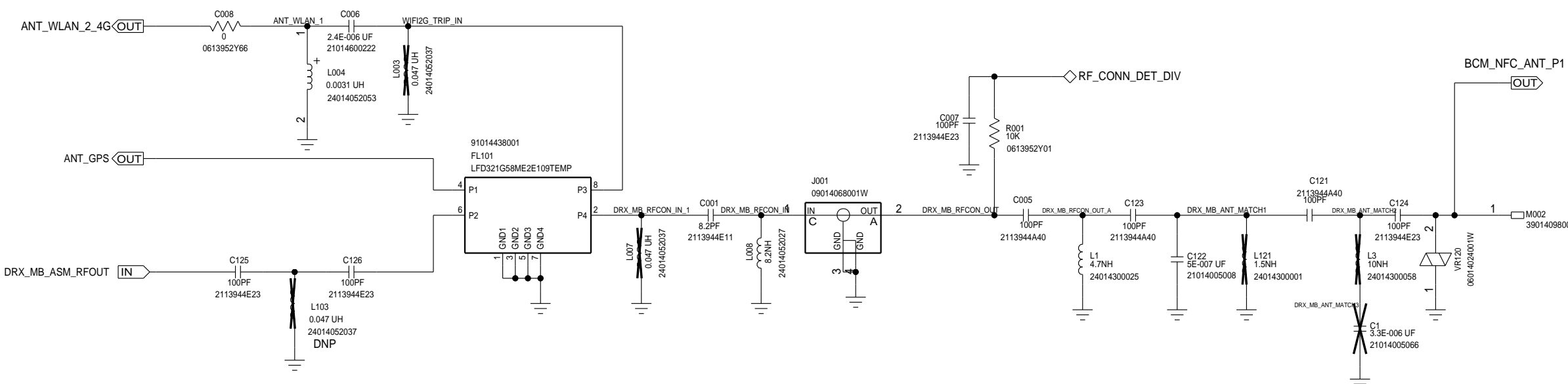


DRX LOW / HIGH BAND ANTENNA

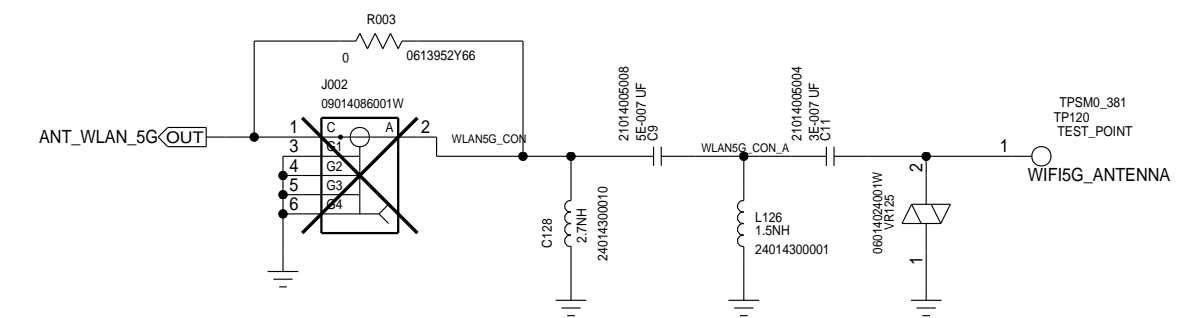
DEVICE LOCATION - TOP LEFT
(GSM/UTMS/LTE)



DRX MID BAND/GPS/BT/WLAN ANTENNA



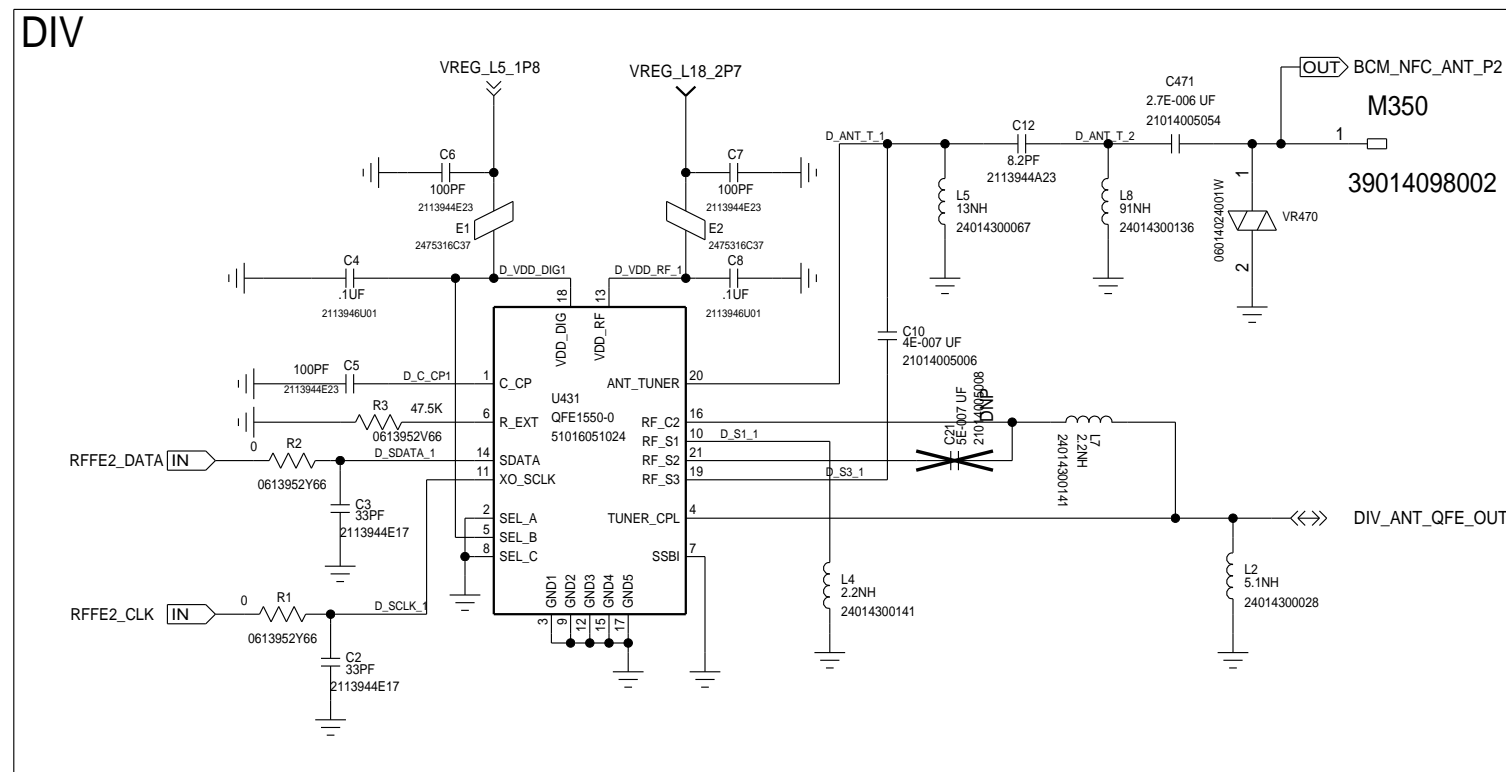
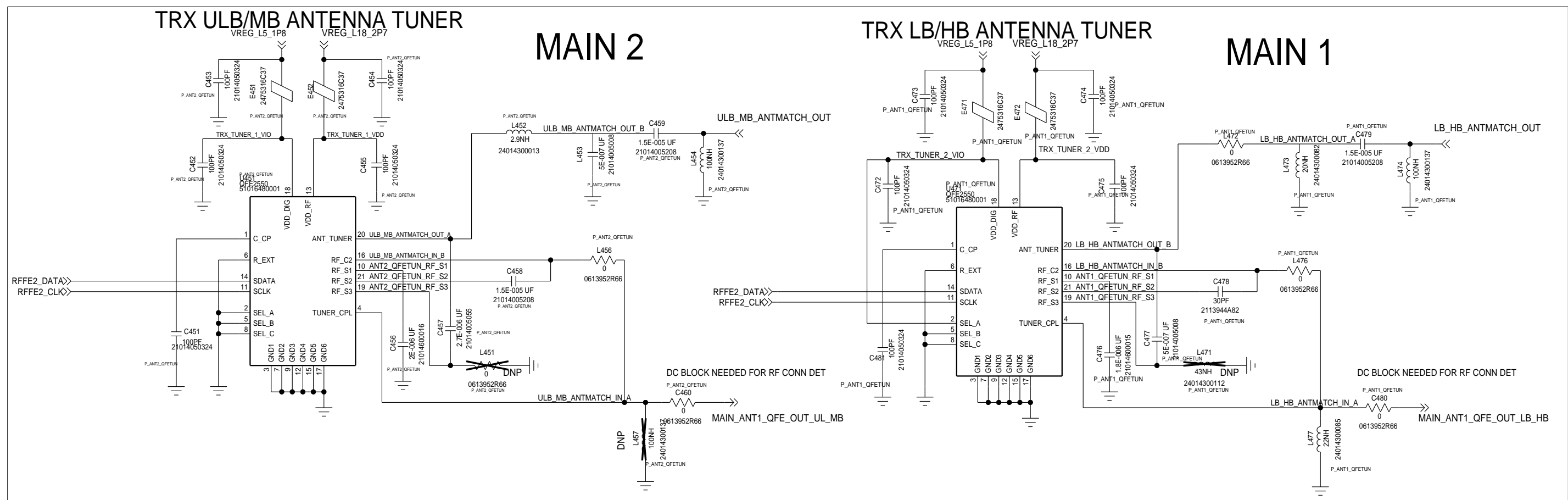
WIFI 5G ANTENNA



APPROVALS		 MOBILE DEVICES	
ENGINEER: ADDISON ANTENNA TEAM		BLOCK TITLE:	
LAST MODIFIED BY: LEO		antennas	
Fri Jun 17 10:55:11 2016		PROJECT NAME	
MOTOROLA CONFIDENTIAL RESTRICTED		C	84016562001_a.cpm
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		REV 01	
		PAGE 3 of 61	

ANT: QCOM TUNERS

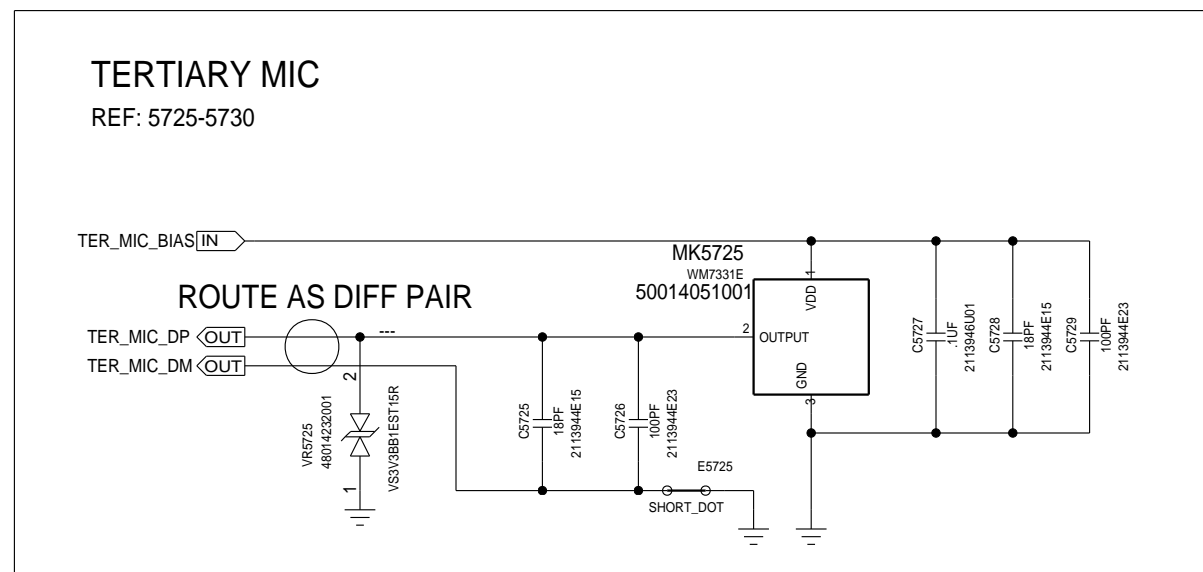
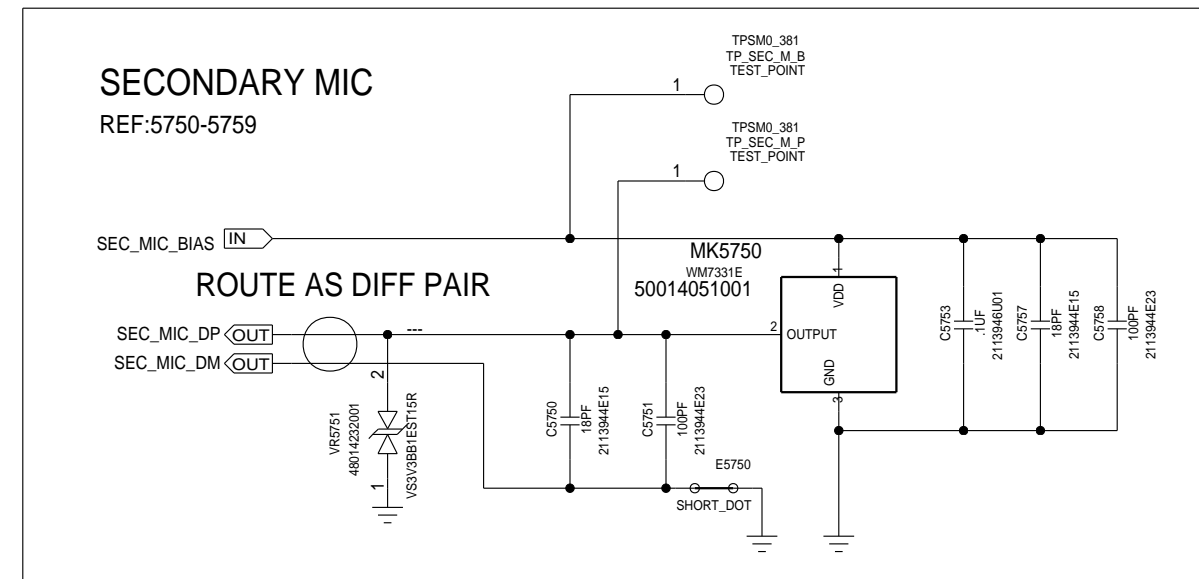
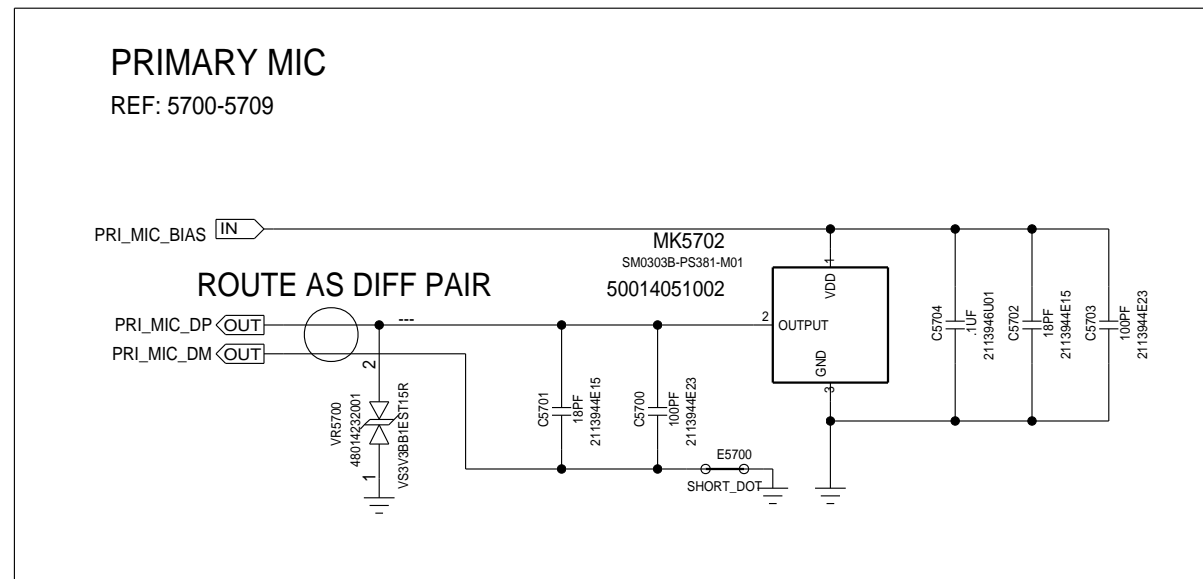
REFDES: 400-499



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: ADDISON ANTENNA TEAM		BLOCK TITLE:	
LAST MODIFIED BY: LEO Thu May 05 16:54:55 2016		antennas	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 4 OF 61	

AFE: MICS

REF: 5700-5799

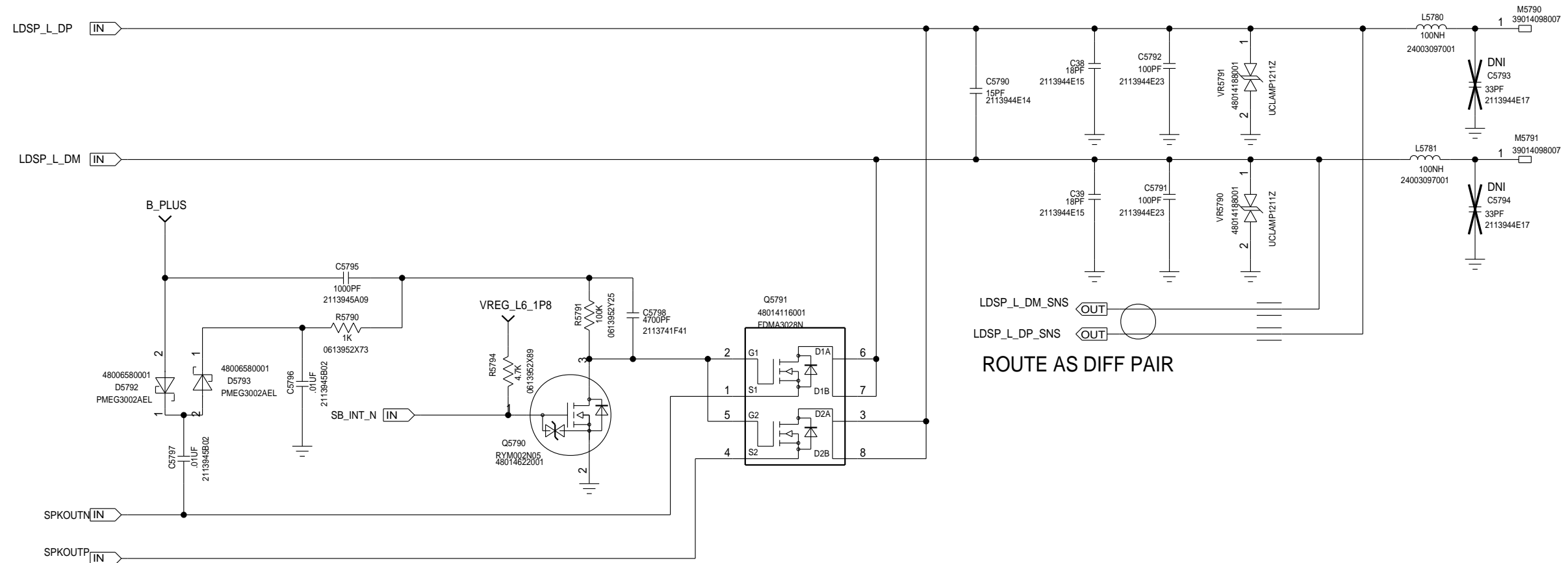


APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: DENNIS BUDNICK		BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL Mon Jun 06 20:52:01 2016		audio_fe	
MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		PROJECT NAME	REV
		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 5 OF 61	

AFE: SPEAKERS

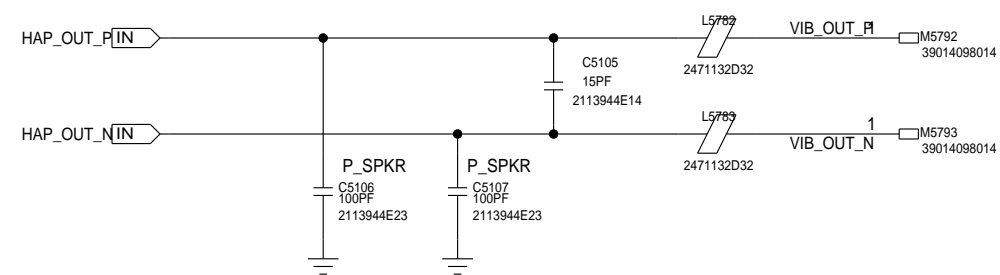
LOUDSPEAKER/EAR PIECE

REF:5790-5799



LINEAR VIBRATOR

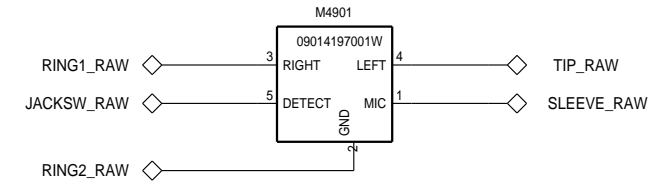
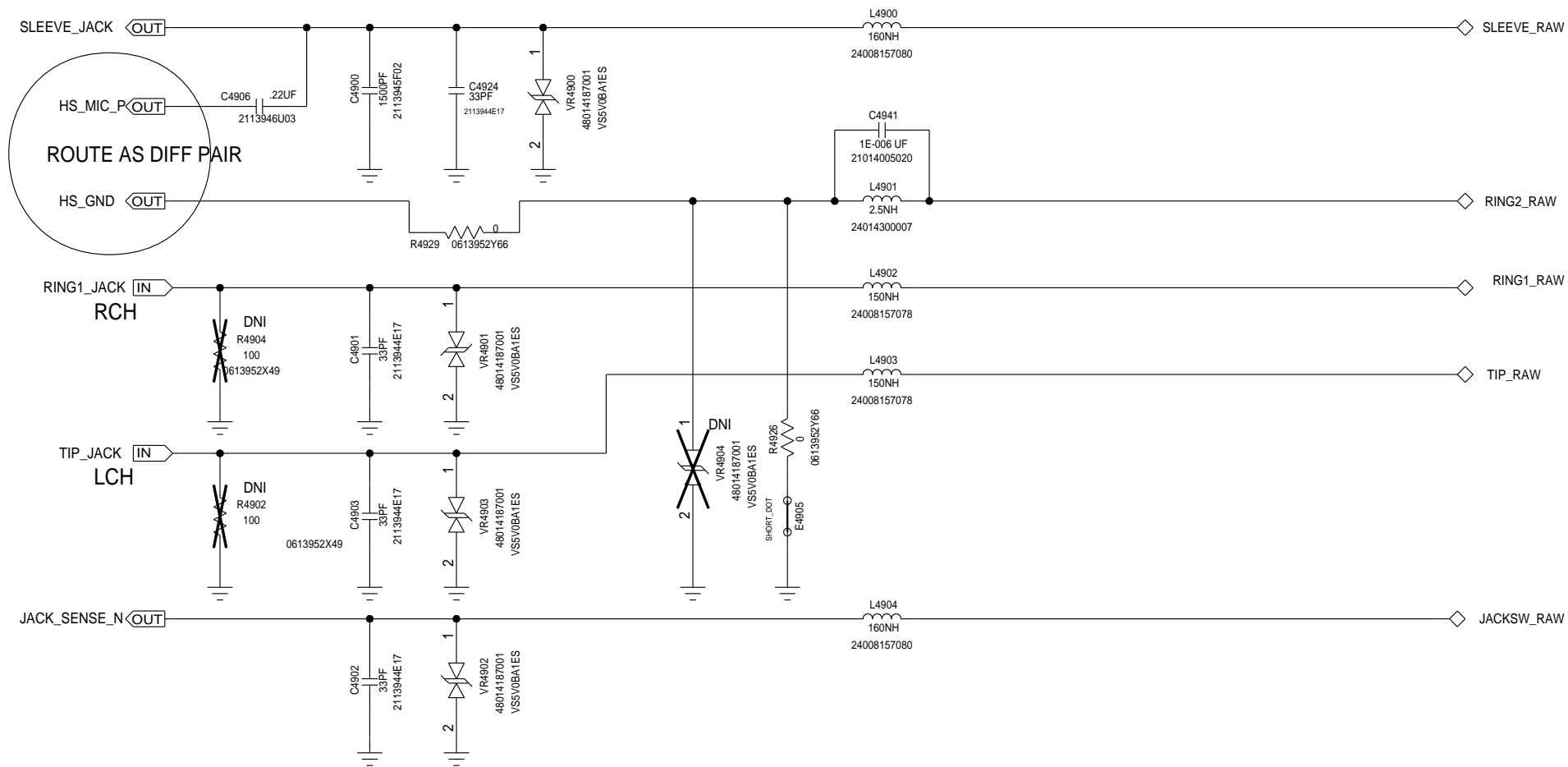
REF 5100-5119



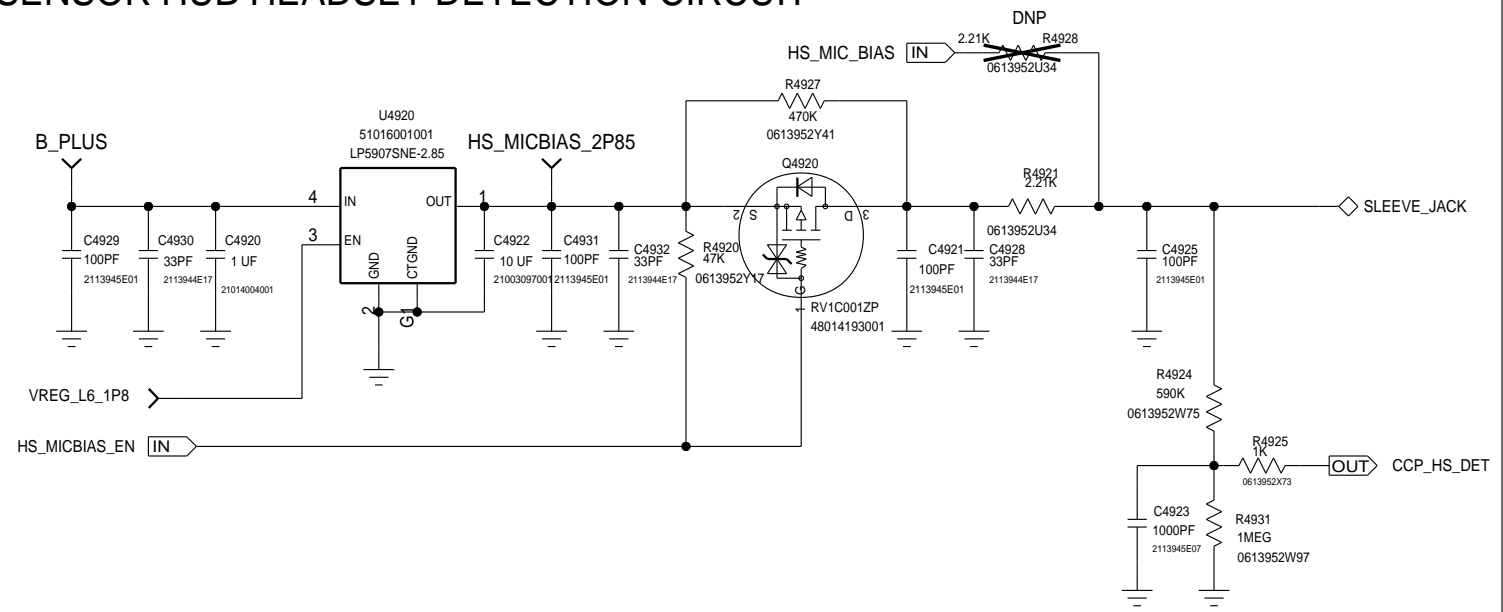
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ENGINEER: DENNIS BUDNICK		BLOCK TITLE: audio_fe	
LAST MODIFIED BY: TIM MILLER Fri Jun 17 10:55:14 2016		PROJECT NAME B 84016562001_a.cpm	REV 01
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		PAGE 6 OF 61	

AFE: 3.5MM HEADSET

3.5MM HSJ
REF:4900-4949



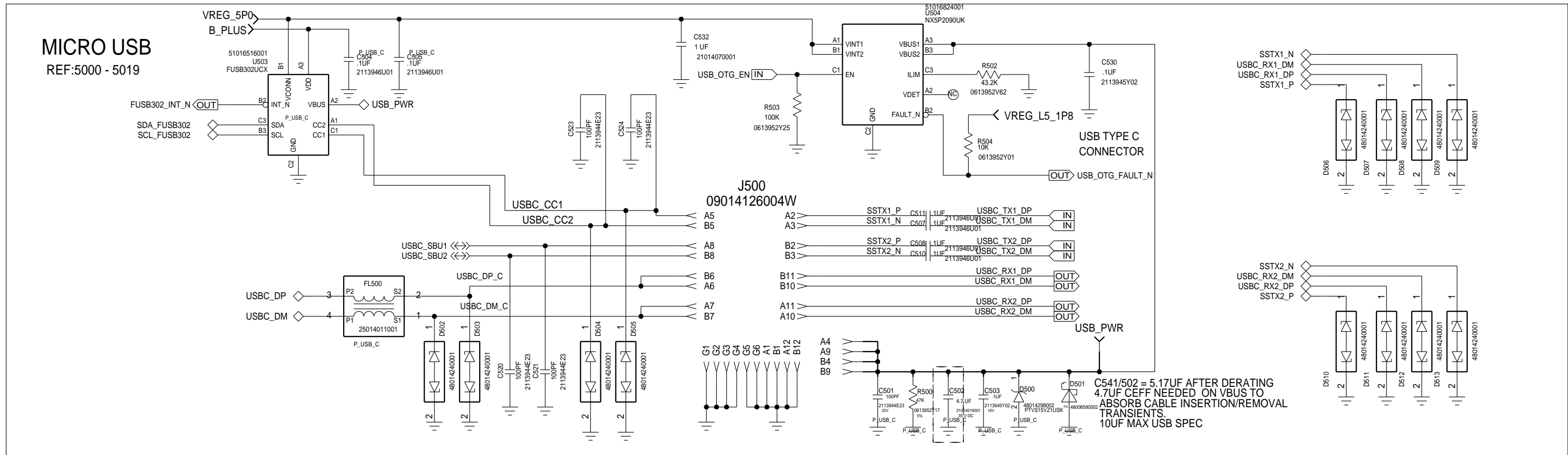
SENSOR HUB HEADSET DETECTION CIRCUIT



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: audio_fe	
LAST MODIFIED BY: MMI Tue May 24 15:06:44 2016		PROJECT NAME B 84016562001_a.cpm	REV 01
MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		CAD FILE NAME: PAGE 7 OF 61	

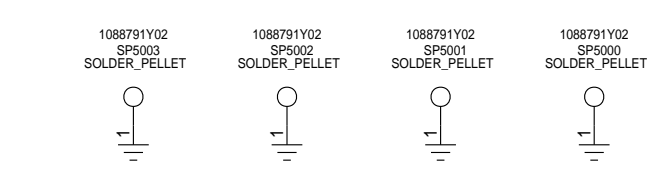
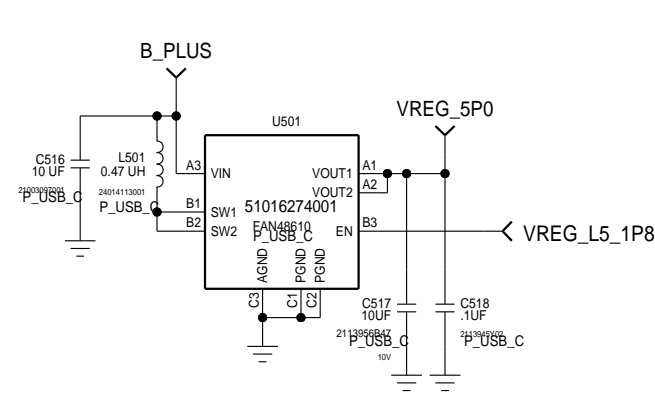
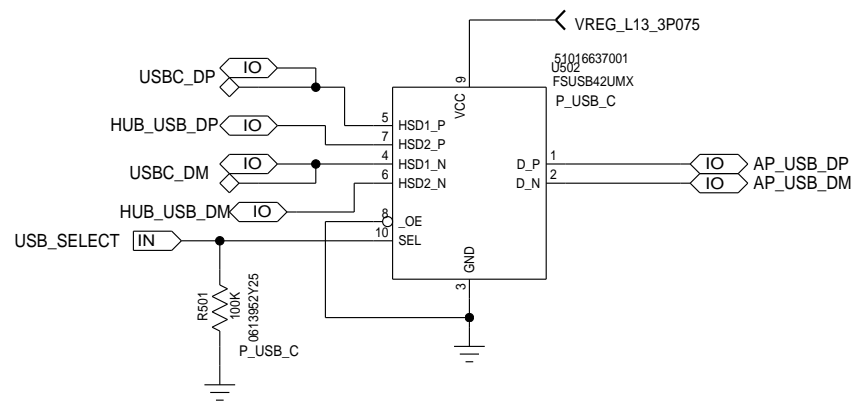
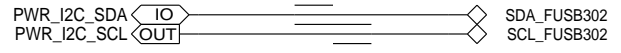
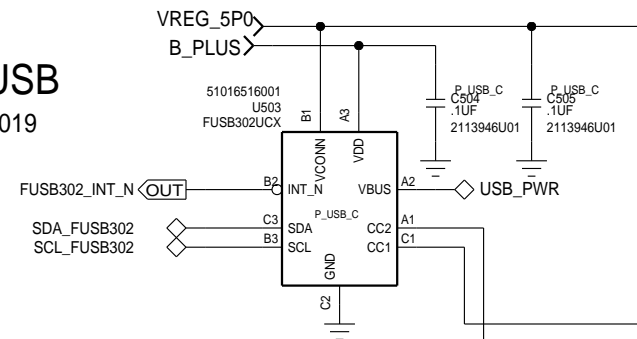
PWR: USB-C

REF:5000 - 5219



MICRO USB

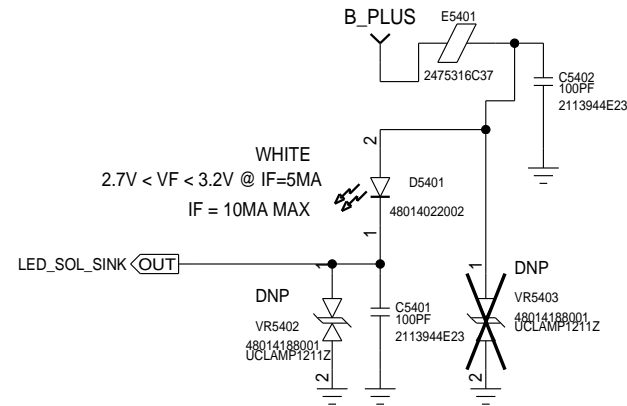
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: RICH NG		BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL Tue May 31 11:44:37 2016		power	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 8 OF 61	

PWR: LIGHTING

SOL LED



MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: TIM MILLER Thu May 05 16:54:50 2016		power	
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CAD FILE NAME:			PAGE 9 OF 61

PWR: BATT

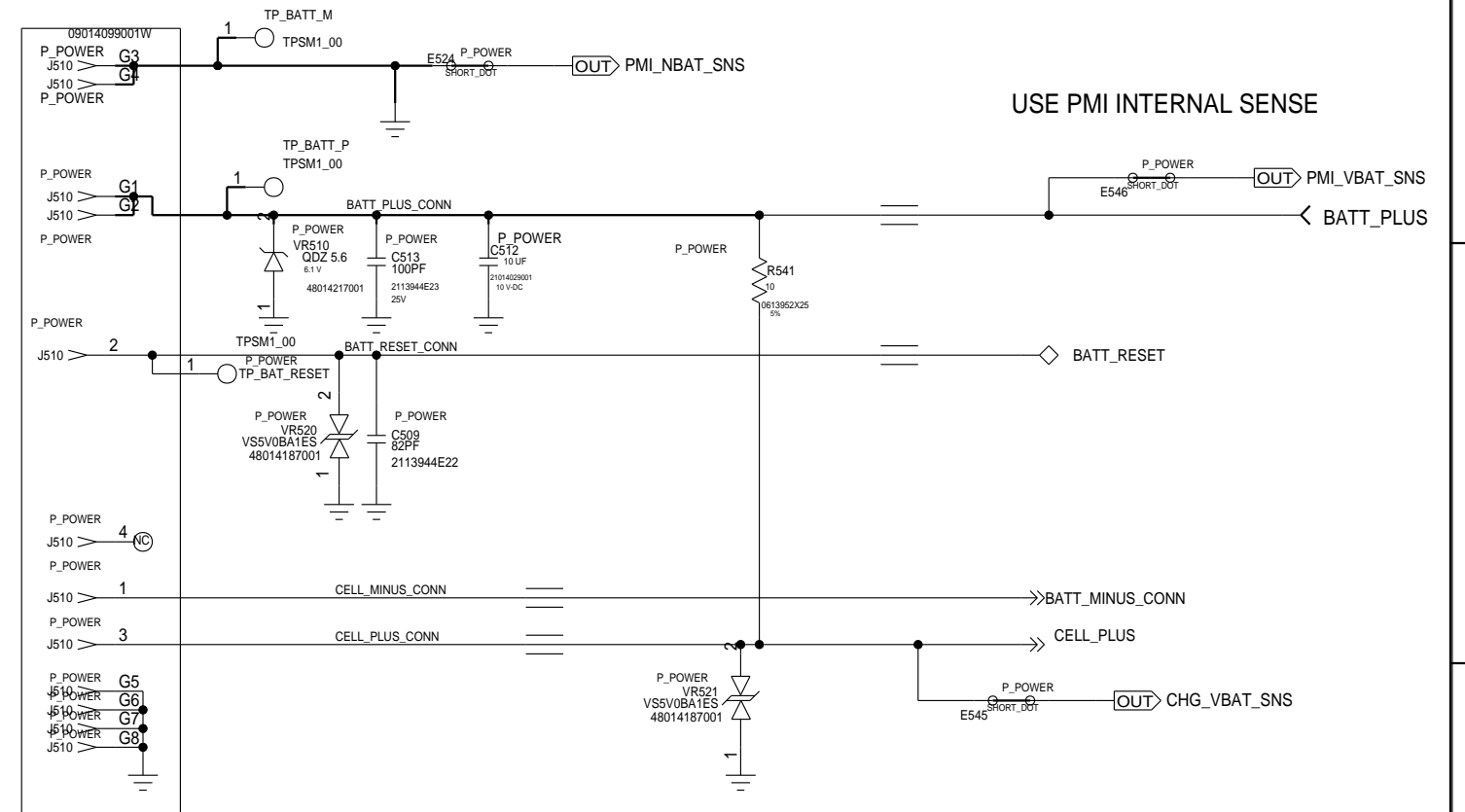
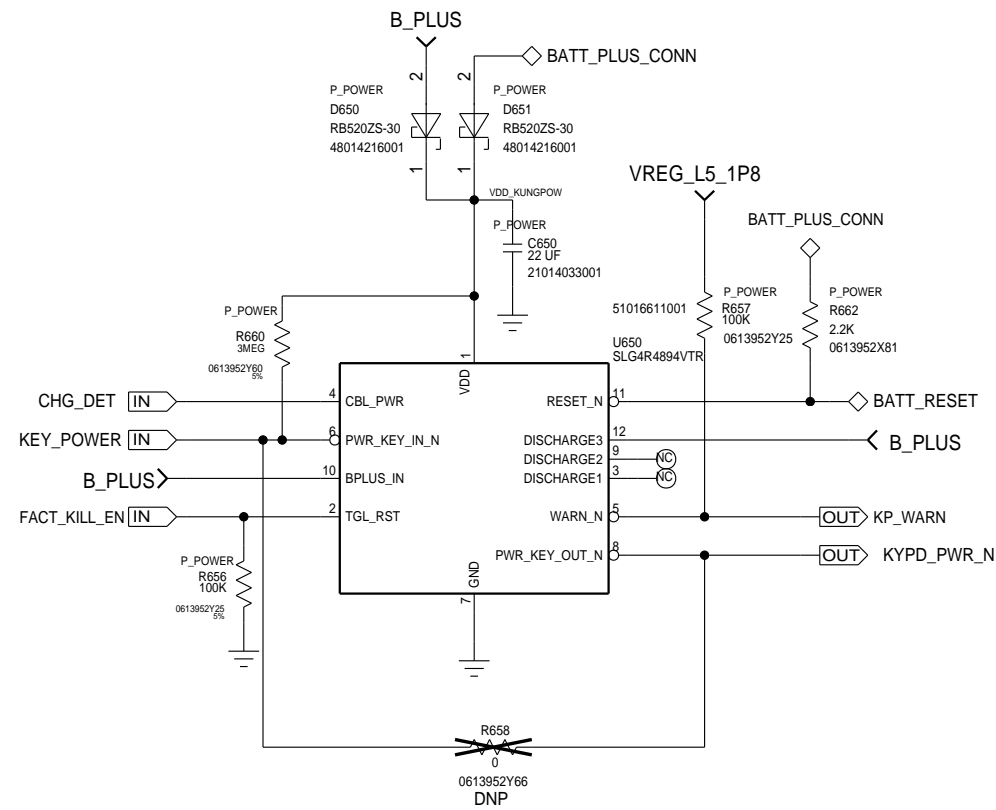
REF:5000 - 5219

BATTERY BLOCK

REF:5200 - 5209

PARALLEL BATTERY BLOCK FOR BATTERY ELIMINATOR

KUNG KOW LITE BATTERY DISCONNECT



USE PMI INTERNAL SENSE

APPROVALS

ENGINEER: RICH NG

LAST MODIFIED BY: NATE CONNELL
Thu May 05 16:54:51 2016

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BLOCK TITLE:

power

PROJECT NAME

B 84016562001_a.cpm

CAD FILE NAME:

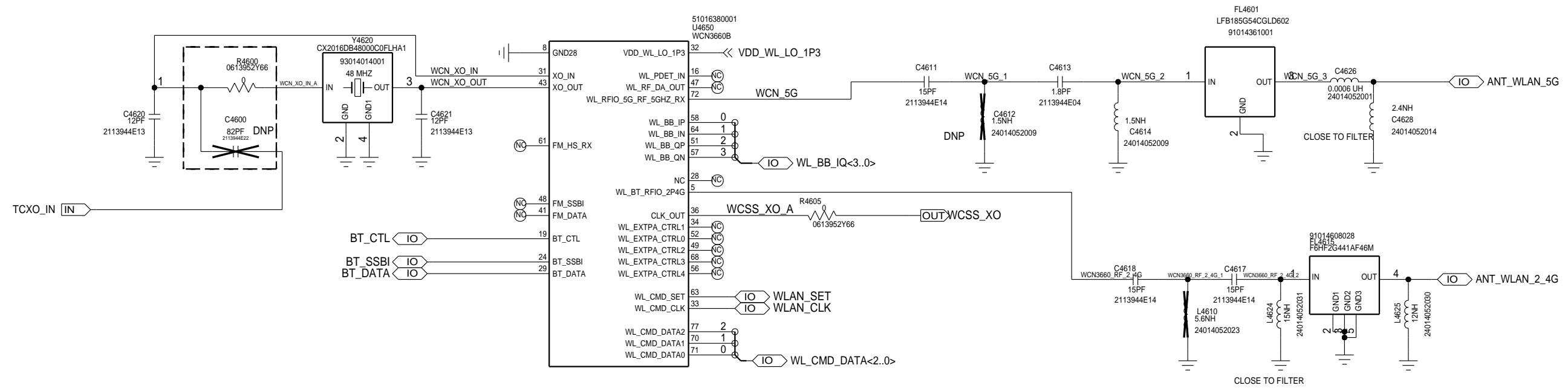
REV

01

WCN3660B RF/CTRL

REF 4600-4699

NEED TO CHECK PIN47 CONNECTION



2.4G/5G: DNP-C4600, PLACE-Y4620, C4621, R4600, R4605, ALL 5G RF PATH

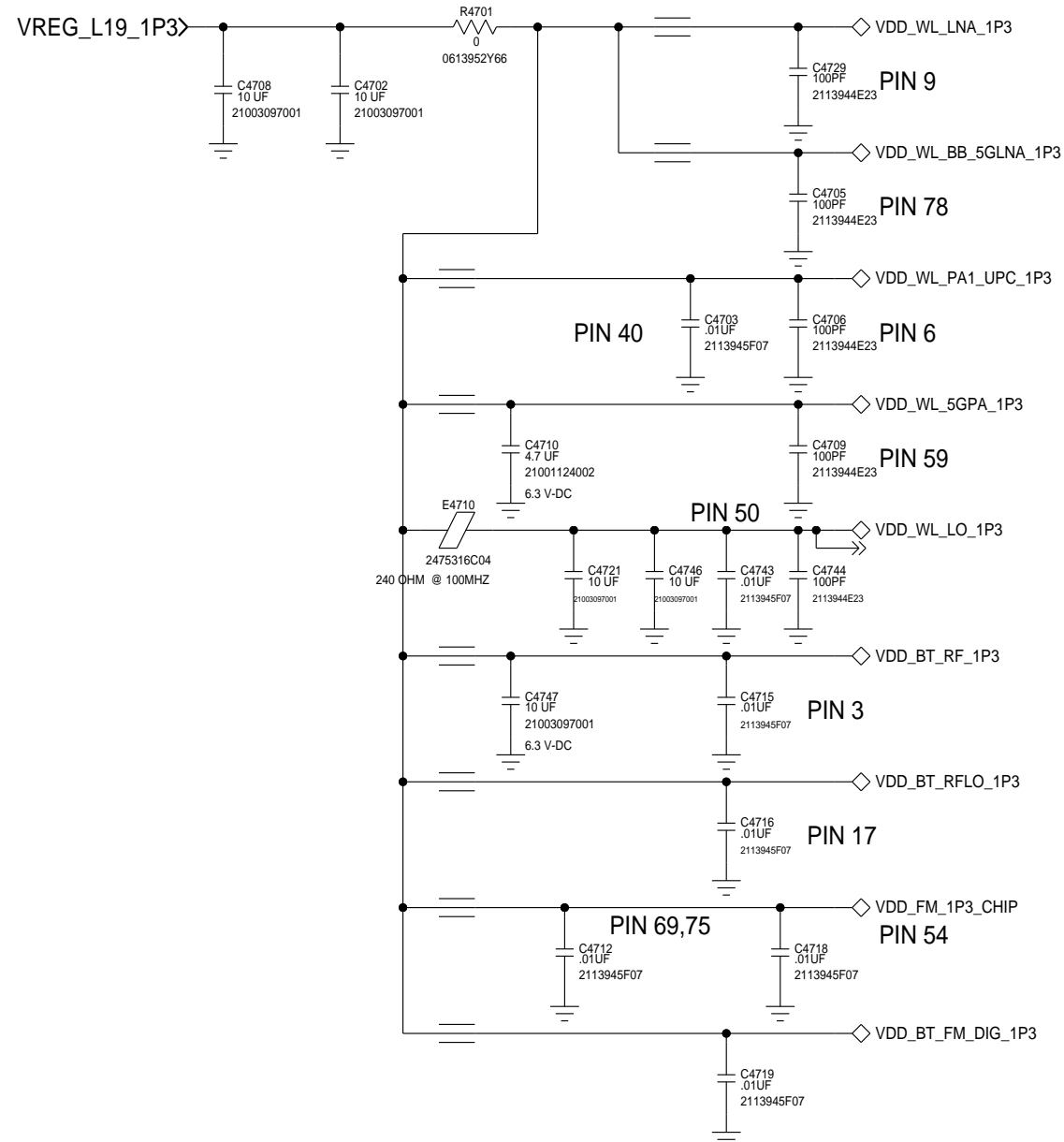
BASED ON 80-WL006-44 REV C

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FROEHLING Thu May 05 16:54:45 2016		connectivity	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 11 OF 61	

WCN3660B POWER

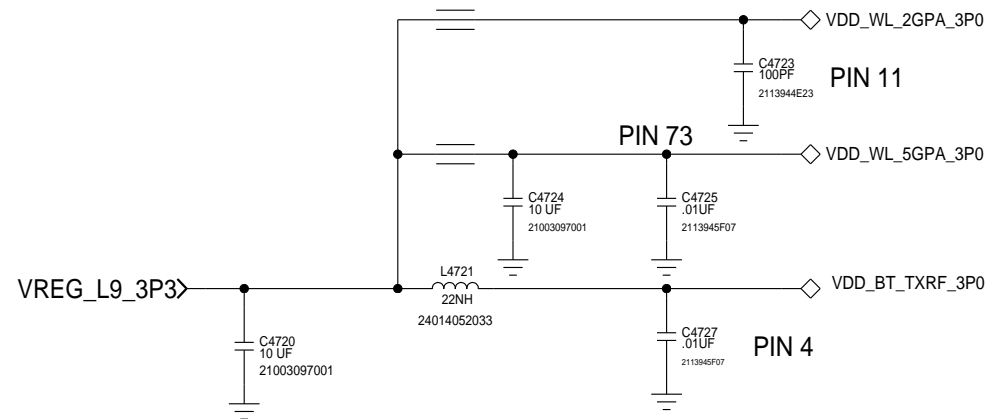
REF 4700-4799

BT_FM_WLAN_1P3

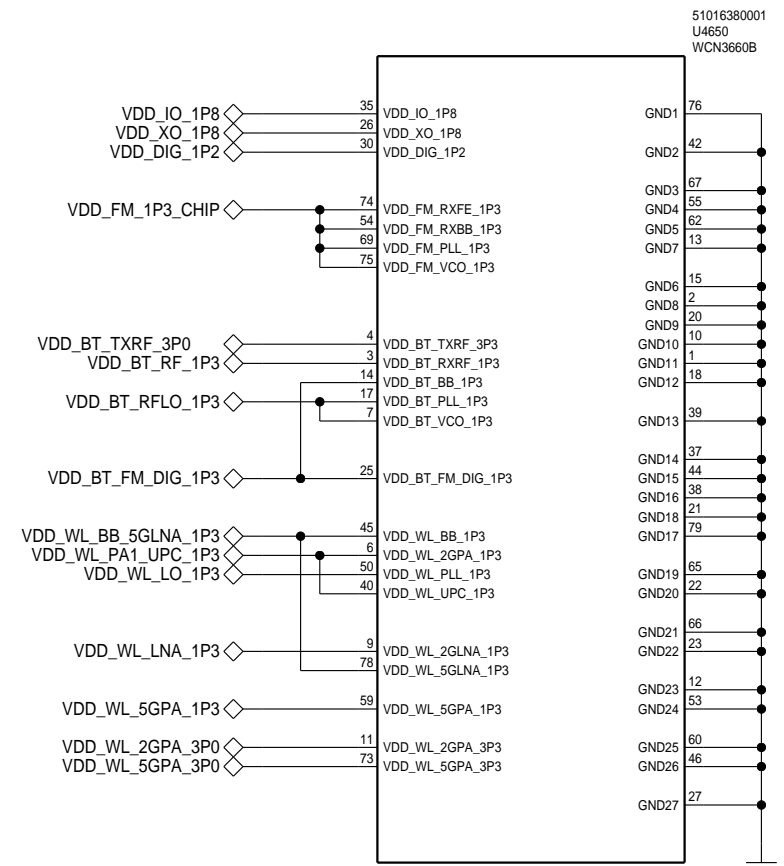
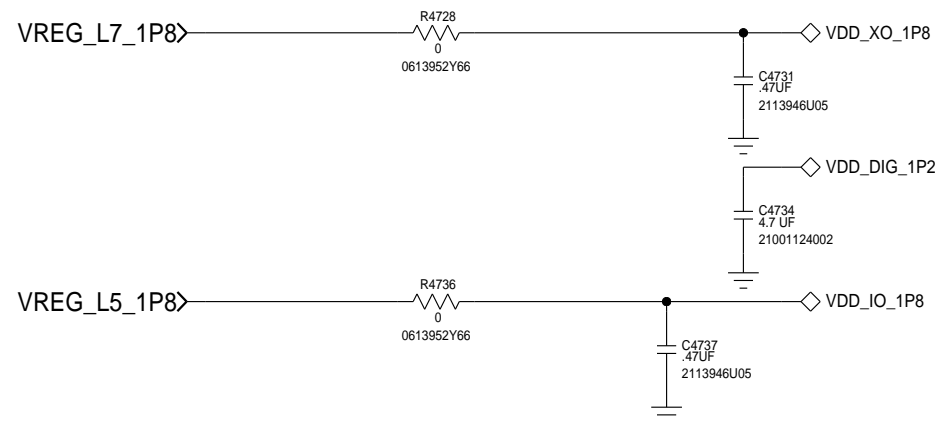


NOTE: RESERVE C4717 AND C4718 FOR 0.01UF BYPASSES

WLBT_3.0V



1.8V/2.2V

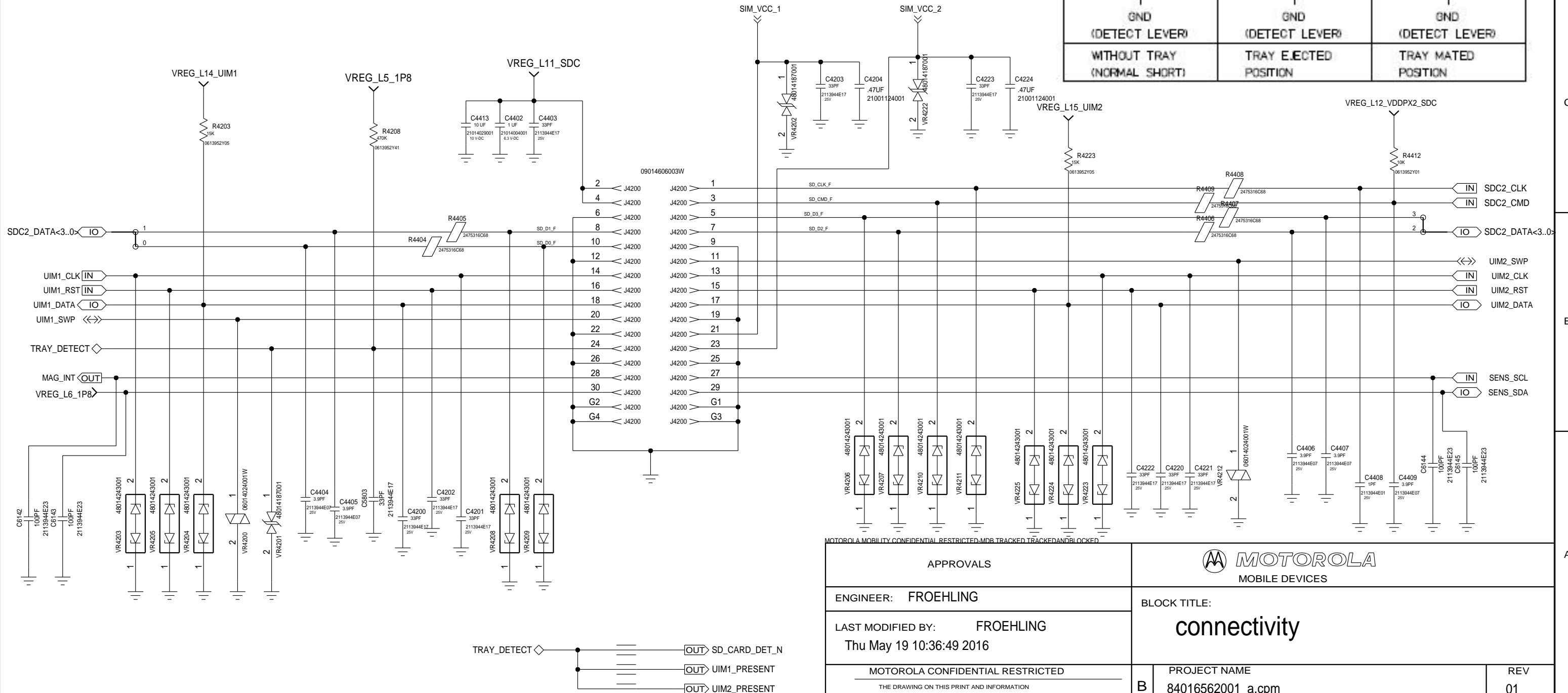
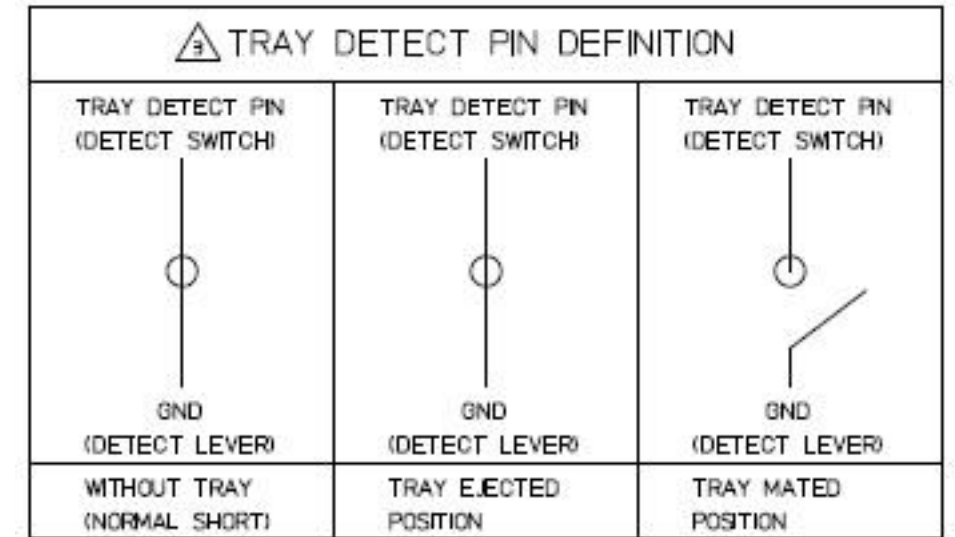


BASED ON 80-WL006-44 REV C

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FROEHLING Thu May 05 16:54:45 2016		connectivity	
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CAD FILE NAME:		PAGE 12 OF 61	

CONN: UIM1/UIM2/SDCARD

REF:4200-4219

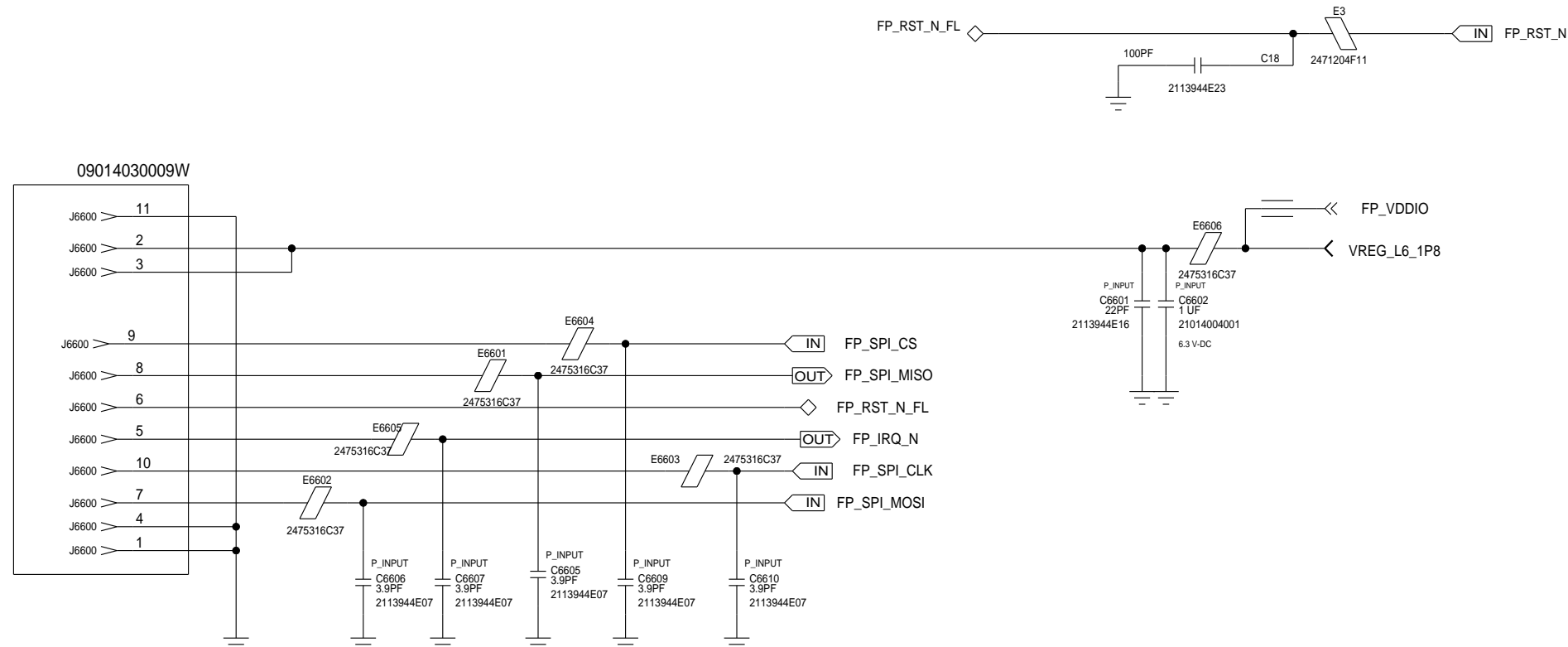


NOTE 1: USE 24.9K PULL-UP TO SUPPORT HOT SWAP WITH FREEZE-IO FEATURE.
 NOTE 2: UIM_PWR BYPASS OF 0.33UF RECOMMENDED BY NFC IC SUPPLIER, PLACE NEAR CONNECTOR.

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: FROEHLING		BLOCK TITLE:	
LAST MODIFIED BY: FROEHLING Thu May 19 10:36:49 2016		connectivity	
MOTOROLA CONFIDENTIAL RESTRICTED		PROJECT NAME	REV
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CAD FILE NAME:		PAGE 13 OF 61	

USR: FPC

REF: 6600 - 6699



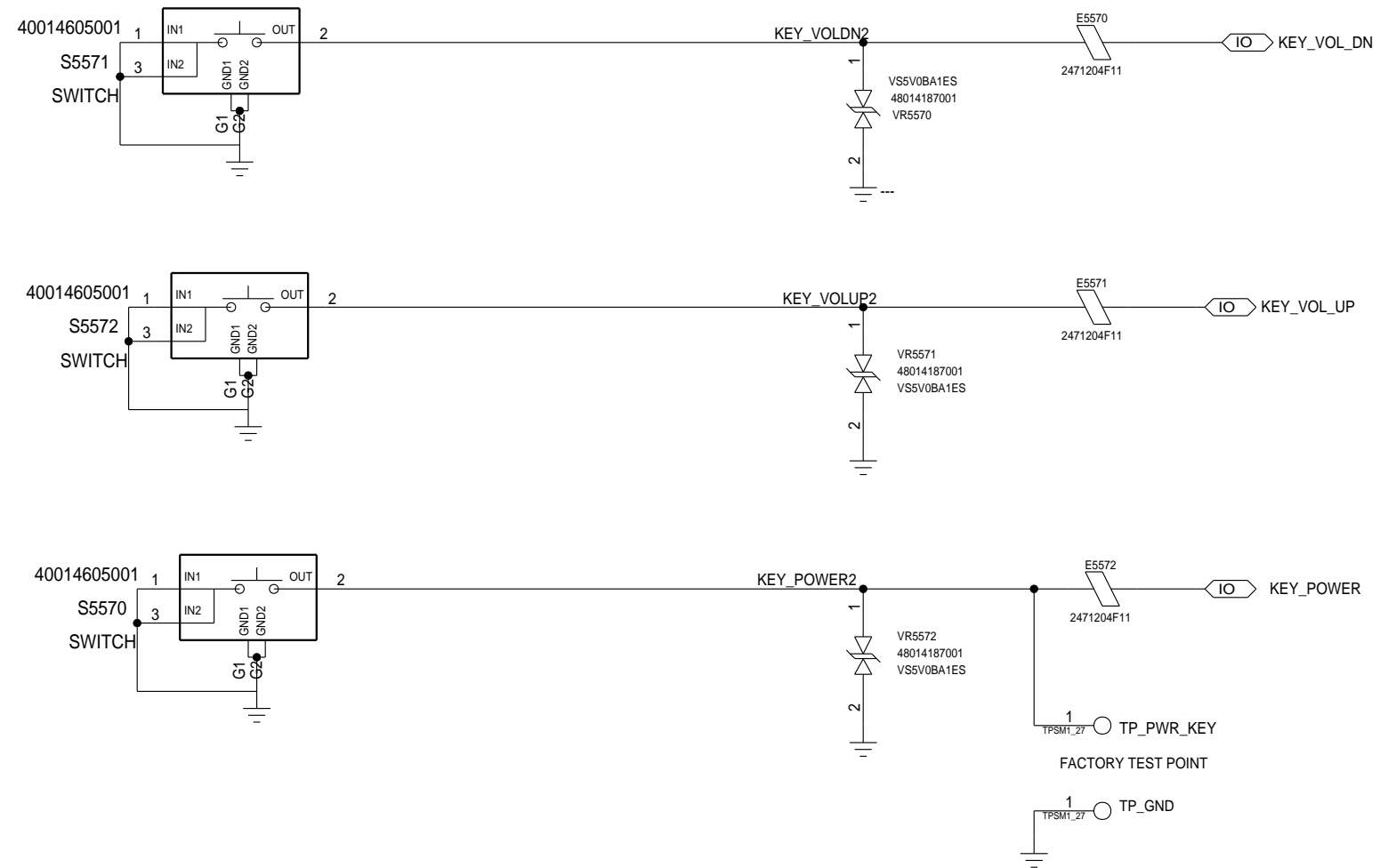
APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: NATE CONNELL		BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL Thu May 05 16:54:47 2016		connectivity	
MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		PROJECT NAME	REV
		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 14 OF 61	

SIDE KEY & BATT THERM CONN

REF:5570-5579

MECHANICAL KEYS

VOL_UP/DOWN/GND TPS NEED P0 BRINGUP ONLY



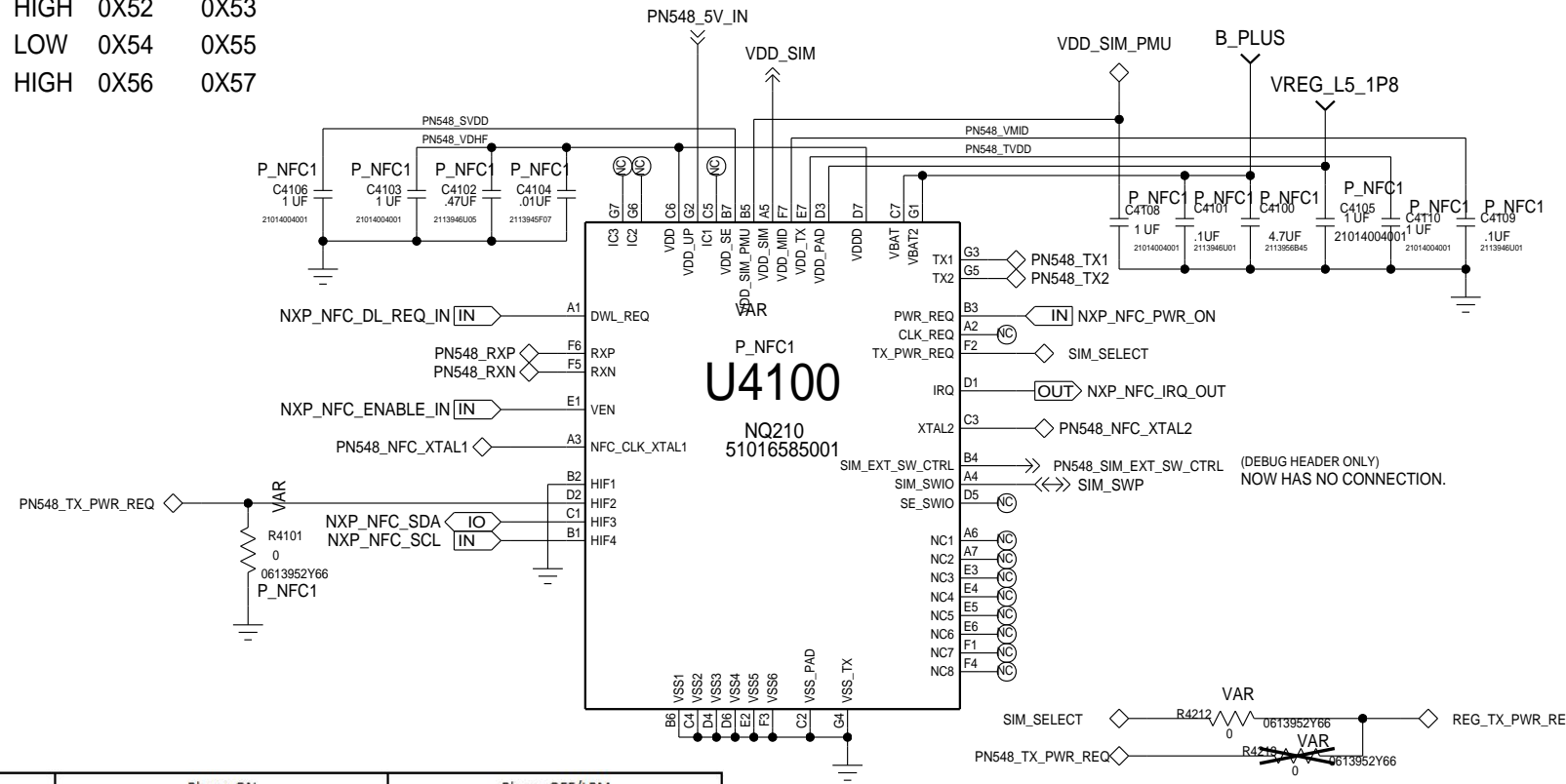
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ENGINEER: NATE CONNELL		BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL Thu May 05 16:54:48 2016		connectivity	
MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		PROJECT NAME	REV
		B 84016562001_a.cpm	01
		CAD FILE NAME:	
		PAGE 15 OF 61	

CONN: NXP NFC

REF: 4100-4199

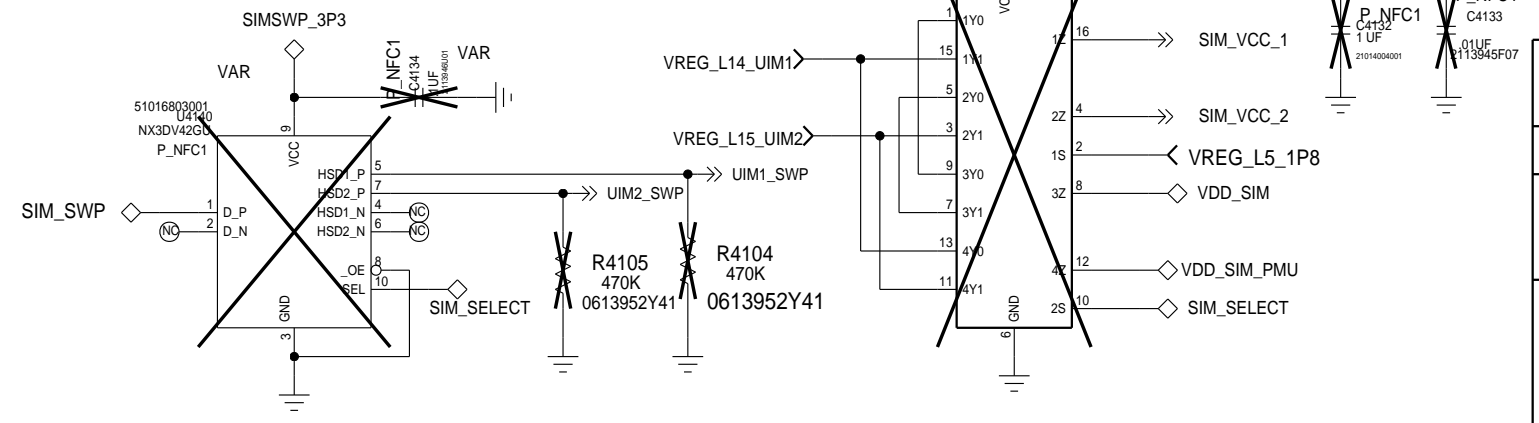
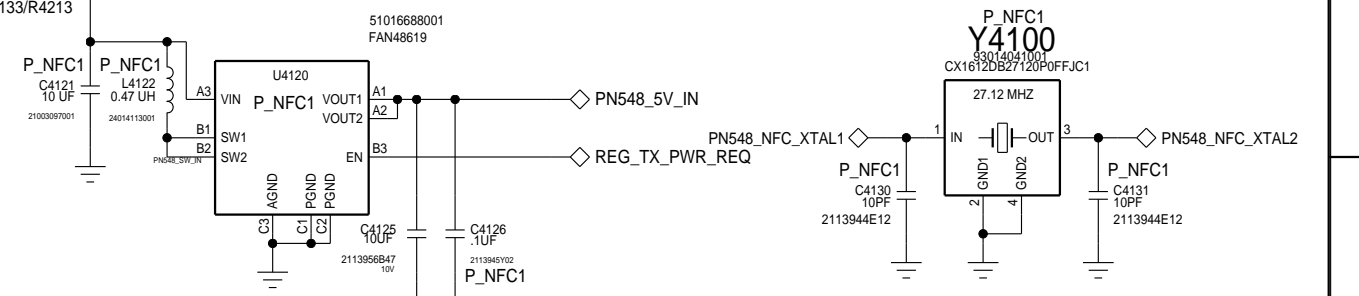
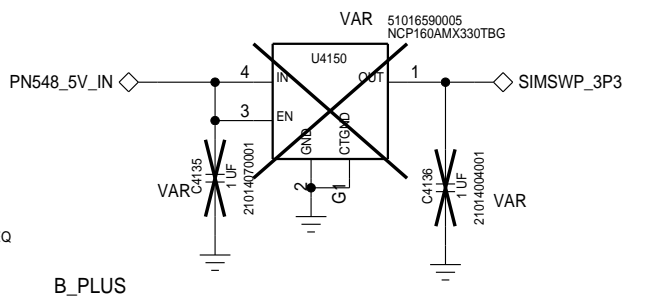
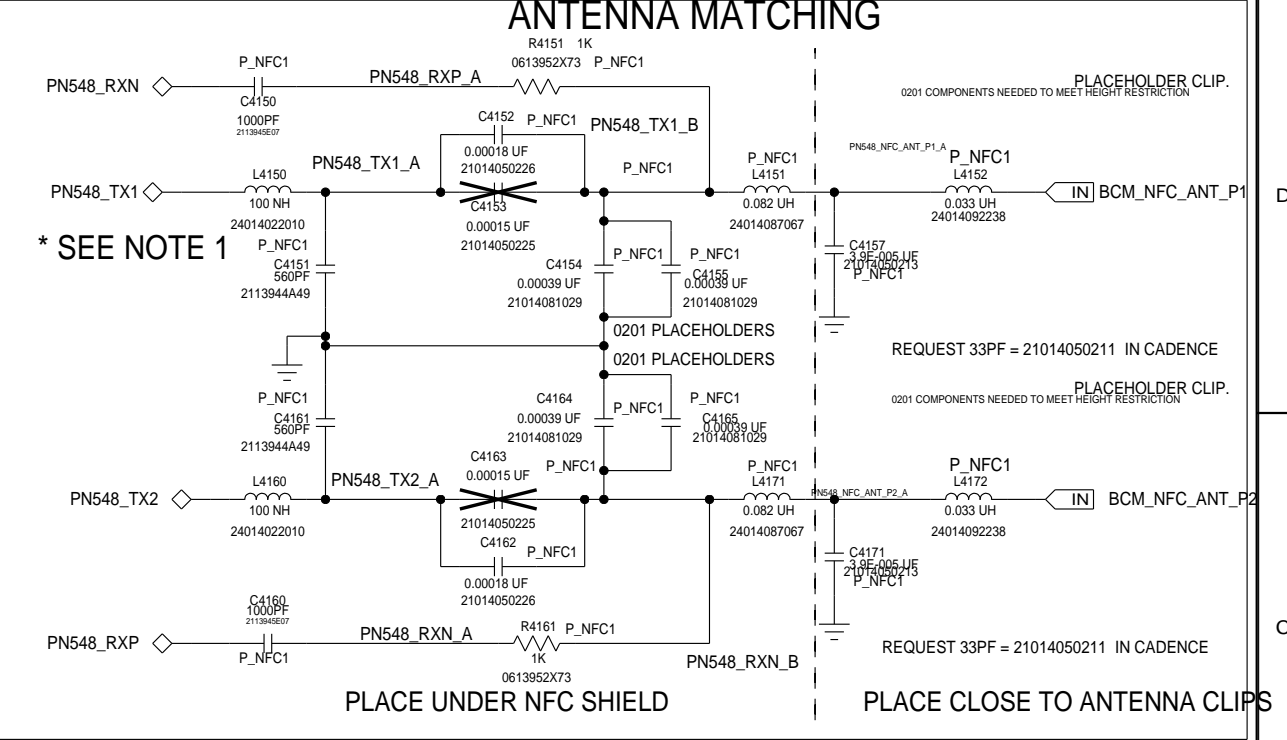
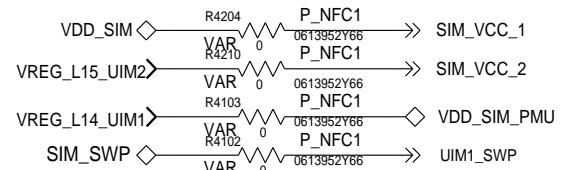
PN548 I2C ADDRESS MAP

HIF2	HIF1	WRITE	READ
LOW	LOW	0X50	0X51
LOW	HIGH	0X52	0X53
HIGH	LOW	0X54	0X55
HIGH	HIGH	0X56	0X57



	Phone ON (Vreg_L5_1p8 = HIGH)		Phone OFF/LPM (Vreg_L5_1p8 = LOW)	
	SIM_Select (LOW = SIM 1)	SIM_Select (High = SIM 2)	SIM_Select (LOW = SIM 1)	SIM_Select (High = SIM 2)
VDD_SIM_PMU	Vreg_L14_UIM1 4Z-4Y0	Vreg_L15_UIM2 4Z-4Y1	No power from PMU 4Z-4Y0-Open	No power from PMU 4Z-4Y1-Open
VDD_SIM	No connect	No connect	SIM_VCC1	SIM_VCC2
SIM_VCC_1	Vreg_L14_UIM1 1Z-1Y1	Vreg_L15_UIM1 1Z-1Y1	3Z-3Y0-1Y0-1Z	3Z-3Y1-2Y0-2Z
SIM_VCC_2	Vreg_L15_UIM2 2Z-2Y1	Vreg_L15_UIM2 2Z-2Y1	Not connected	VDD_SIM
UIM1_SWAP	SIM_SWAP	Not connected	SIM_SWAP	Not connected
UIM2_SWAP	Not connected	SIM_SWAP	Not connected	SIM_SWAP

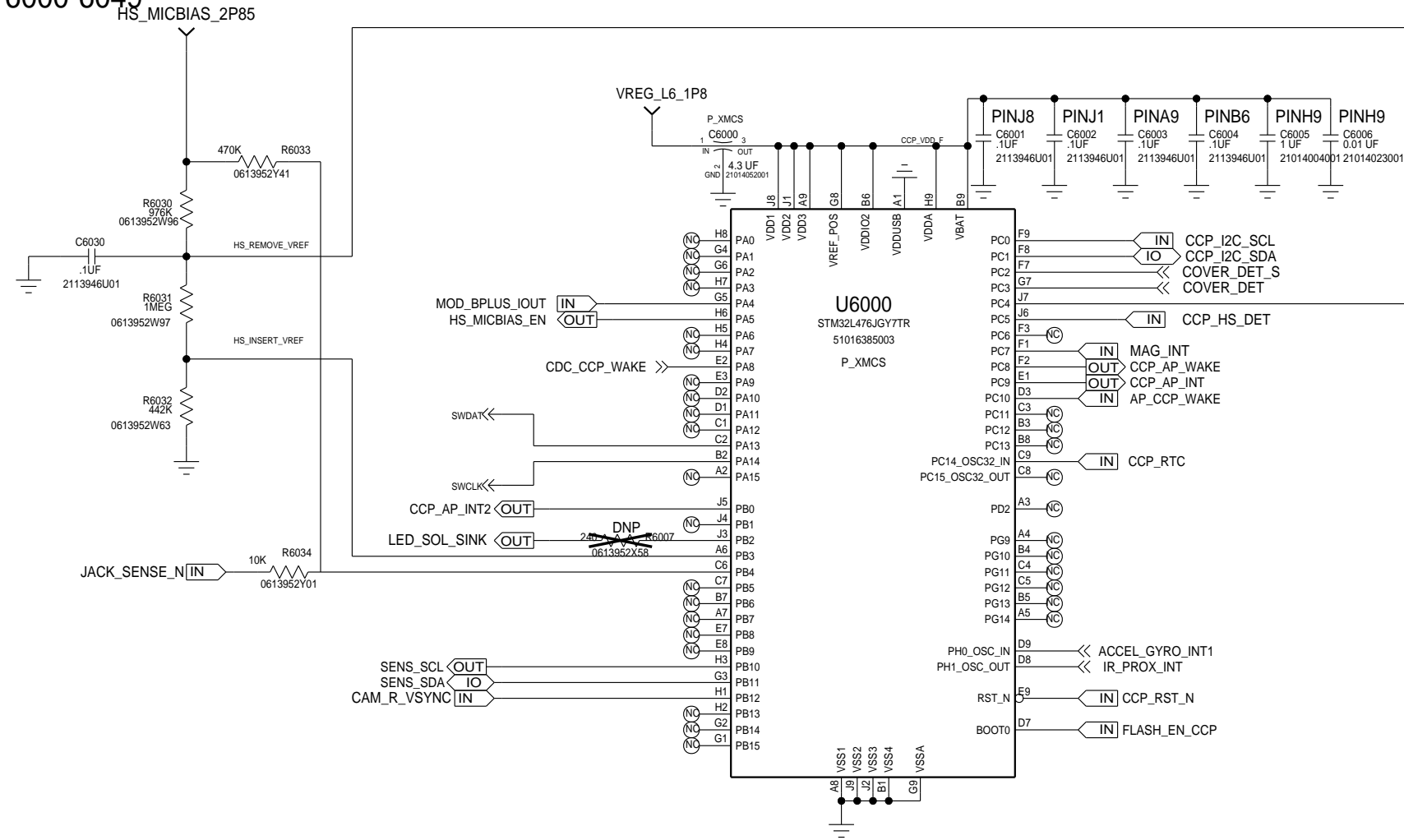
CHINA: DNP - R4101/R4102/R4103/R4204/R4210/R4212, PLACE - U4130/U4140/C4132/C4133/R4213
OTHER SKUS: PLACE - R4101/R4102/R4103/R4204/R4210/R4212, DNP - U4130/U4140/C4132/C4133/R4213



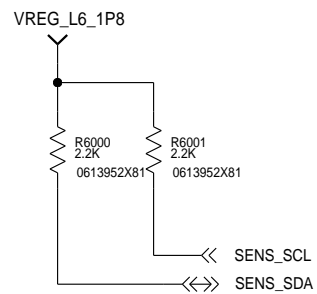
APPROVALS	
ENGINEER: FROEHLING	
LAST MODIFIED BY: FROEHLING Thu May 19 12:03:57 2016	BLOCK TITLE: connectivity
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	REV 01
	CAD FILE NAME: PAGE 16 OF 61

XMCS: CCP

REF: 6000-6049



I2C SUPPORT



TESTPOINTS

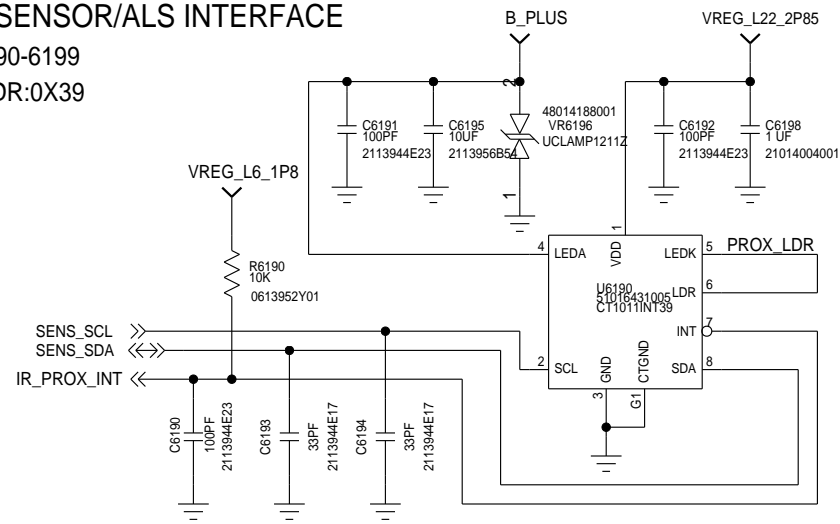
APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: JOHN GORSICA		BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL Thu May 05 16:54:41 2016		xmcs	
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		CAD FILE NAME:	
		PAGE 17 OF 61	

XMCS: SENSORS

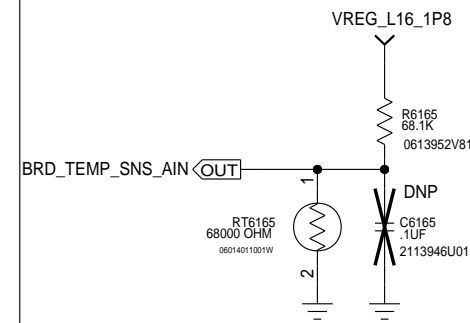
REF: 6100-6199

PROX SENSOR/ALS INTERFACE

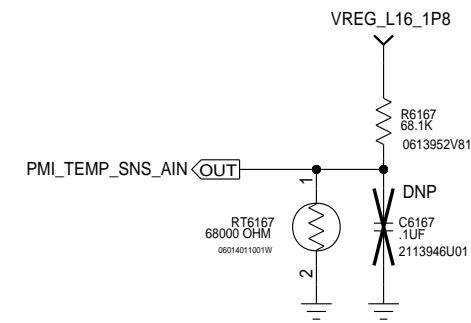
REF:6190-6199
I2C ADDR:0X39



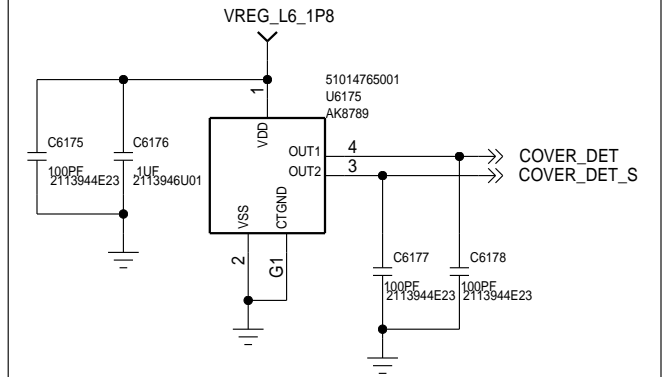
BOARD TEMP SENSOR



CHRG TEMP SENSOR

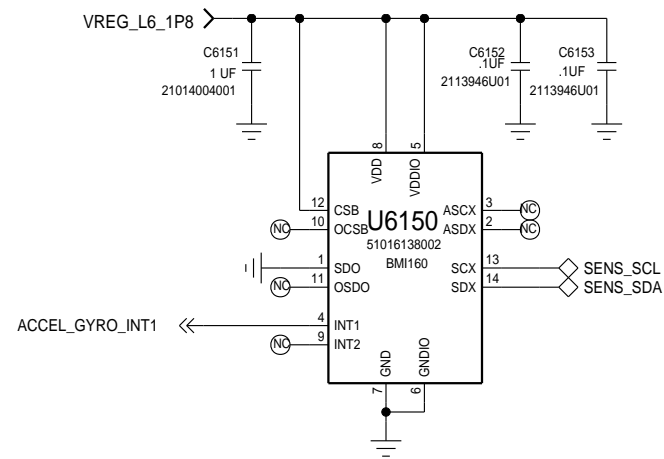


HALL EFFECT SENSOR



ACCELEROMETER+GYRO

REF:6150-6159
I2C ADDR: 0X??



PRODUCTS MUST FOLLOW BUNKER HILL PCB ORIENTATION

MAGNETOMETER

REF:6140-6149
I2C ADDR: 0X0C

MOVED TO SIM FLEX PCB FROM DVT2

JOHN GORSICA/NATE CONNELL
APPROVALS



ENGINEER: HUNG PHAM

BLOCK TITLE:

LAST MODIFIED BY: HUNG PHAM
Wed Jun 01 10:59:04 2016

xmcs

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84016562001_a.cpm

REV
01

CAD FILE NAME:

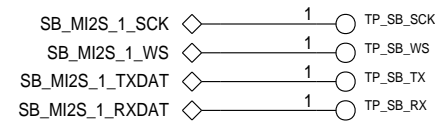
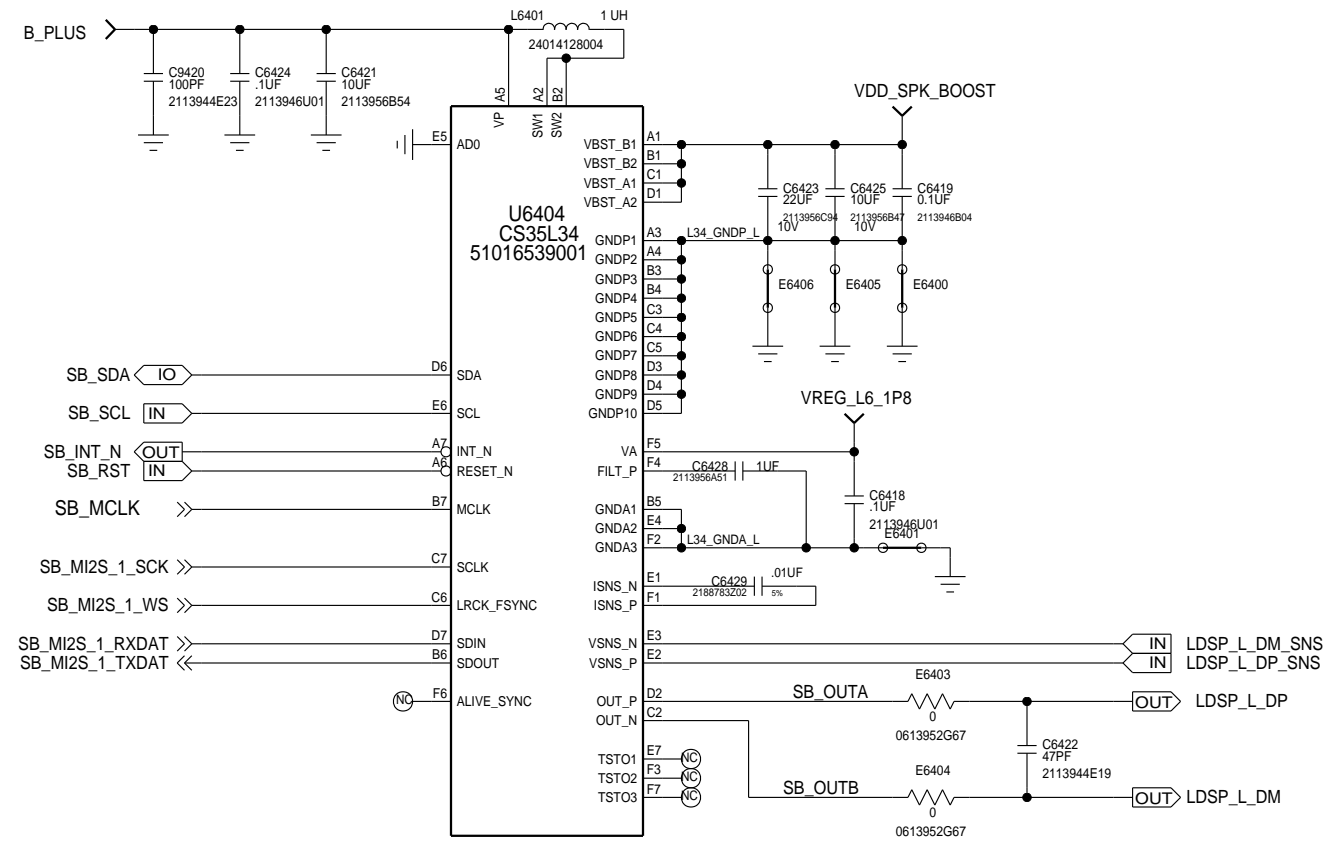
PAGE 18 OF 61

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XMCS: SMART BOOST WATTSON

REF 6400-6499

*** BOOST IC I2C ADD. 0X80



APPROVALS		MOTOROLA MOBILE DEVICES	
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LAST MODIFIED BY: Mon May 23 19:04:04 2016		xmcs	
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		CAD FILE NAME:	
		PAGE 19 OF 61	

XMCS: CIRRUS CODEC

REF 6250-6299

*** CODEC I2C ADD. 0X34

D

C

B

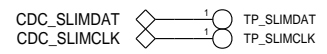
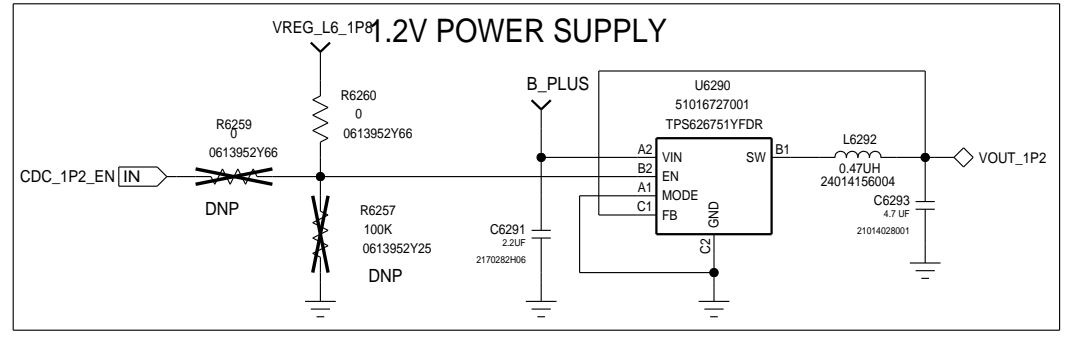
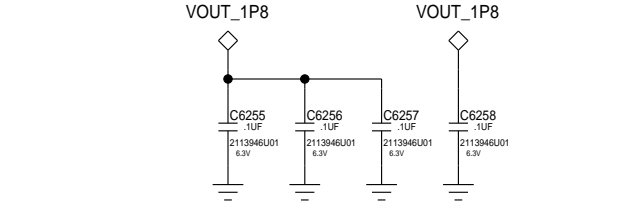
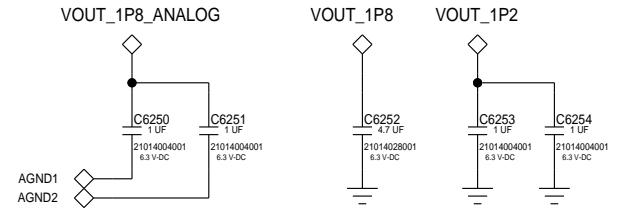
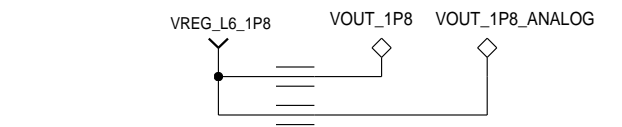
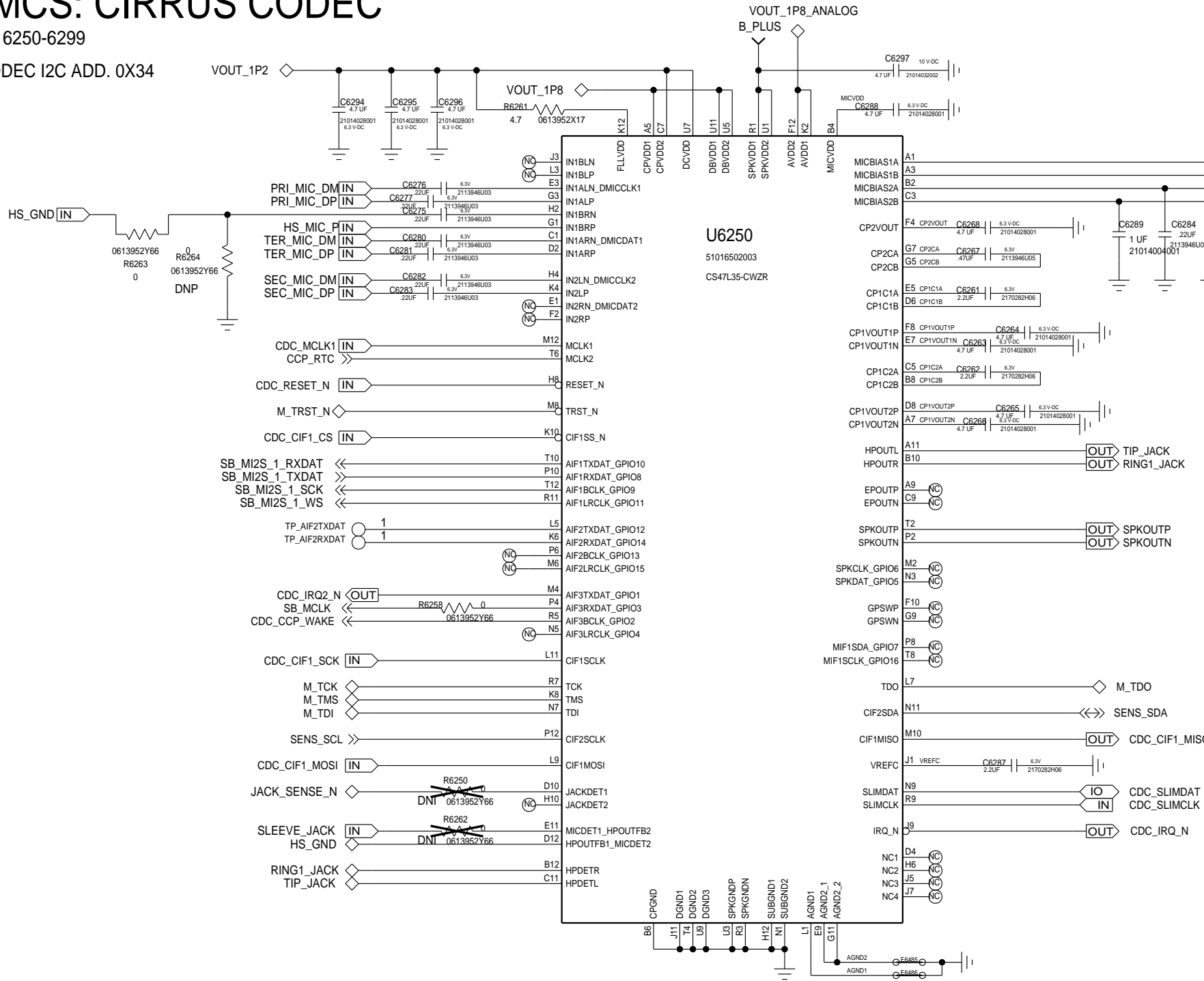
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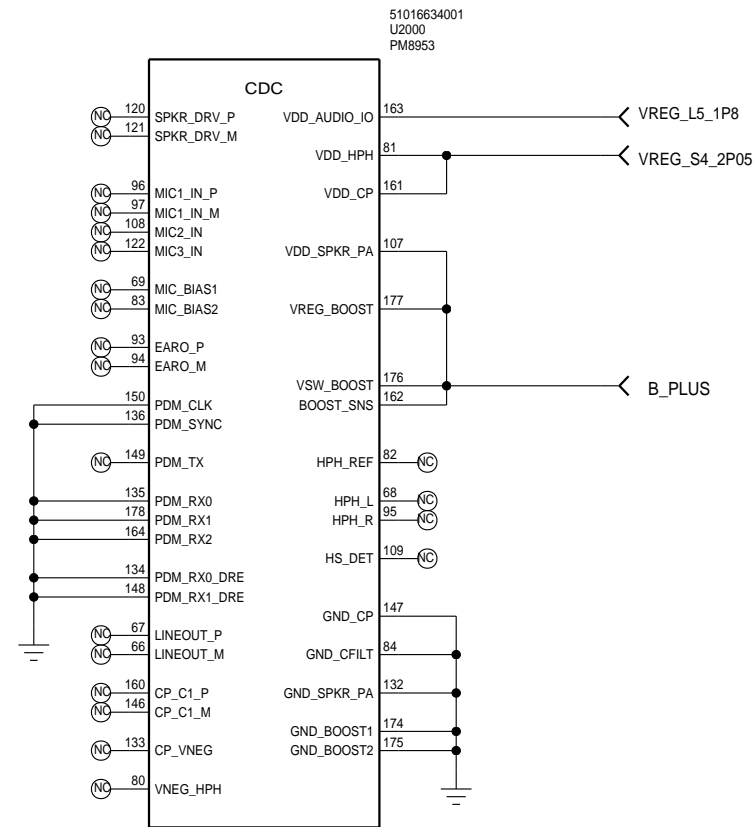
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Tue May 24 15:07:05 2016		xmcs	
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CAD FILE NAME:		PAGE 20 OF 61	

XMCS: PMIC CODEC

REF 2500-2579



APPROVALS		 MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:43 2016		xmcs	
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		CAD FILE NAME:	
		PAGE 21 OF 61	

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XMCS: IR GESTURES

REF 6500-6549

D

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MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

APPROVALS		 MOTOROLA MOBILE DEVICES	
ENGINEER: MATT MOTTIER		BLOCK TITLE:	
LAST MODIFIED BY: UDI ELRAN Mon Dec 28 15:04:31 2015		xmcs	
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		CAD FILE NAME:	PAGE 22 OF 61

8

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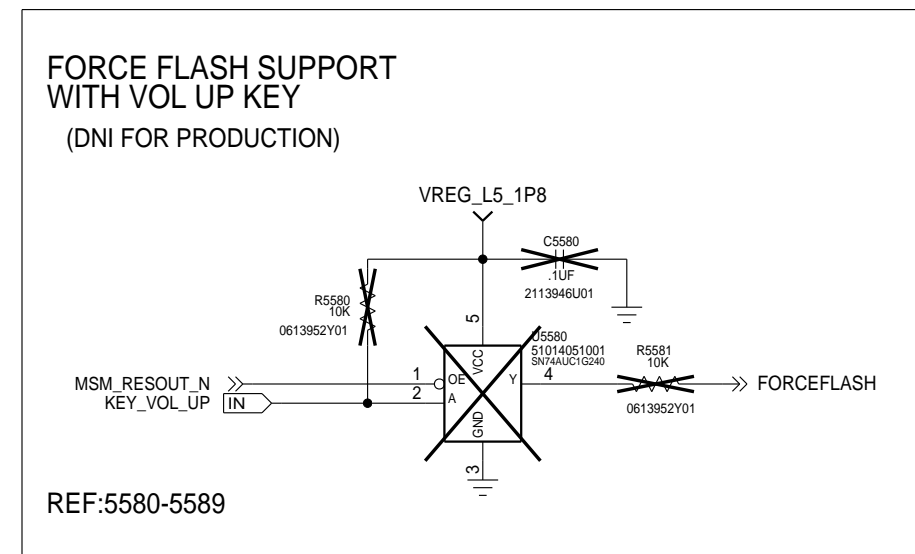
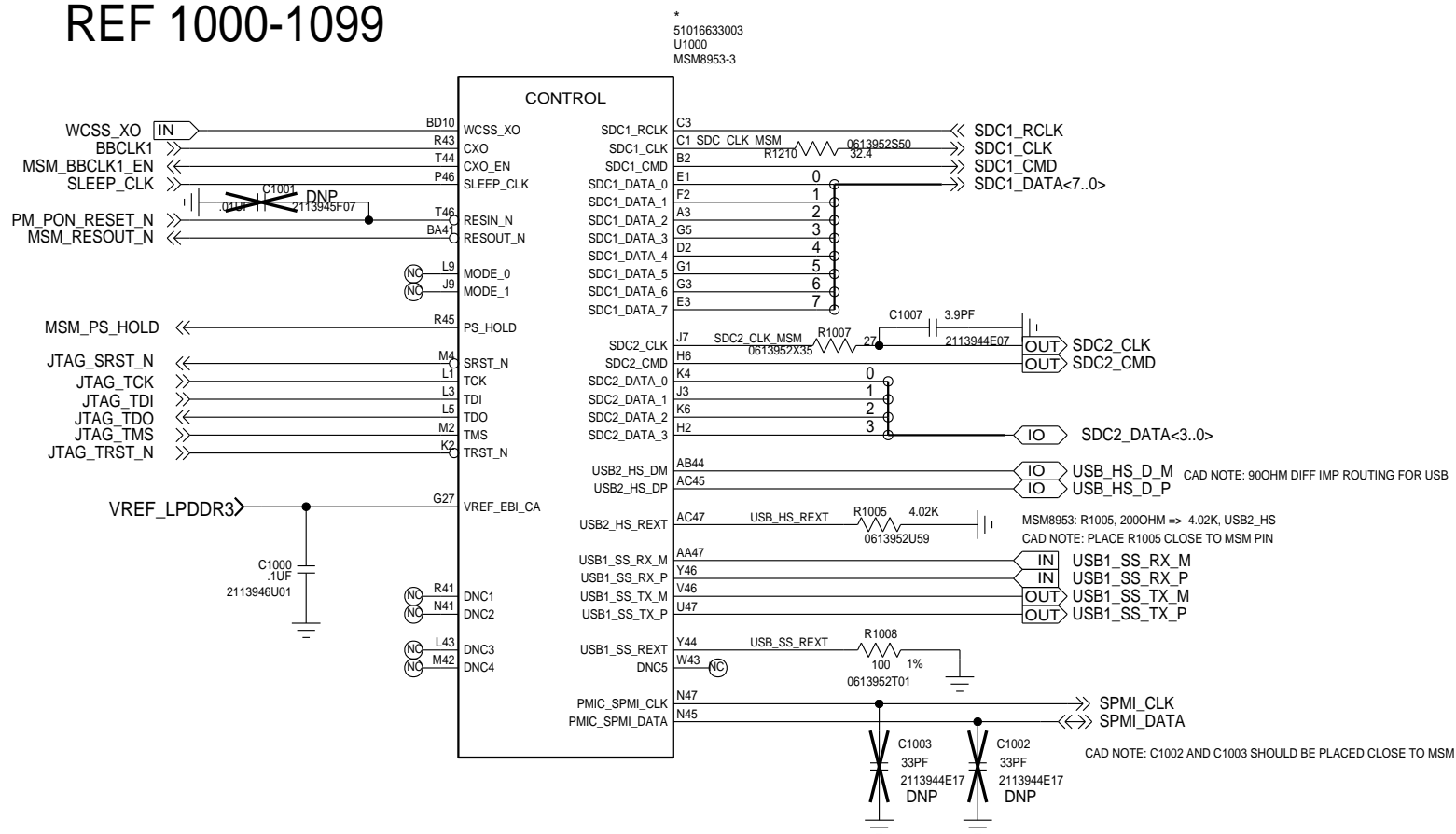
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2

1

MSM: CTRL

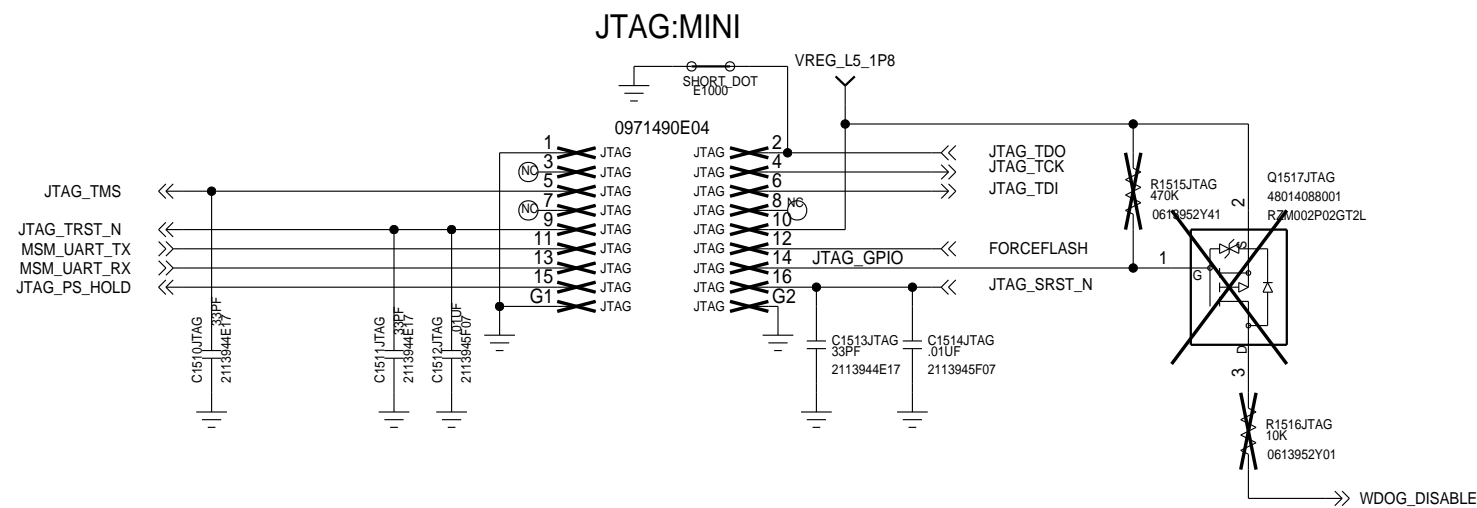
REF 1000-1099



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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 23 OF 61	

MSM: DEBUG

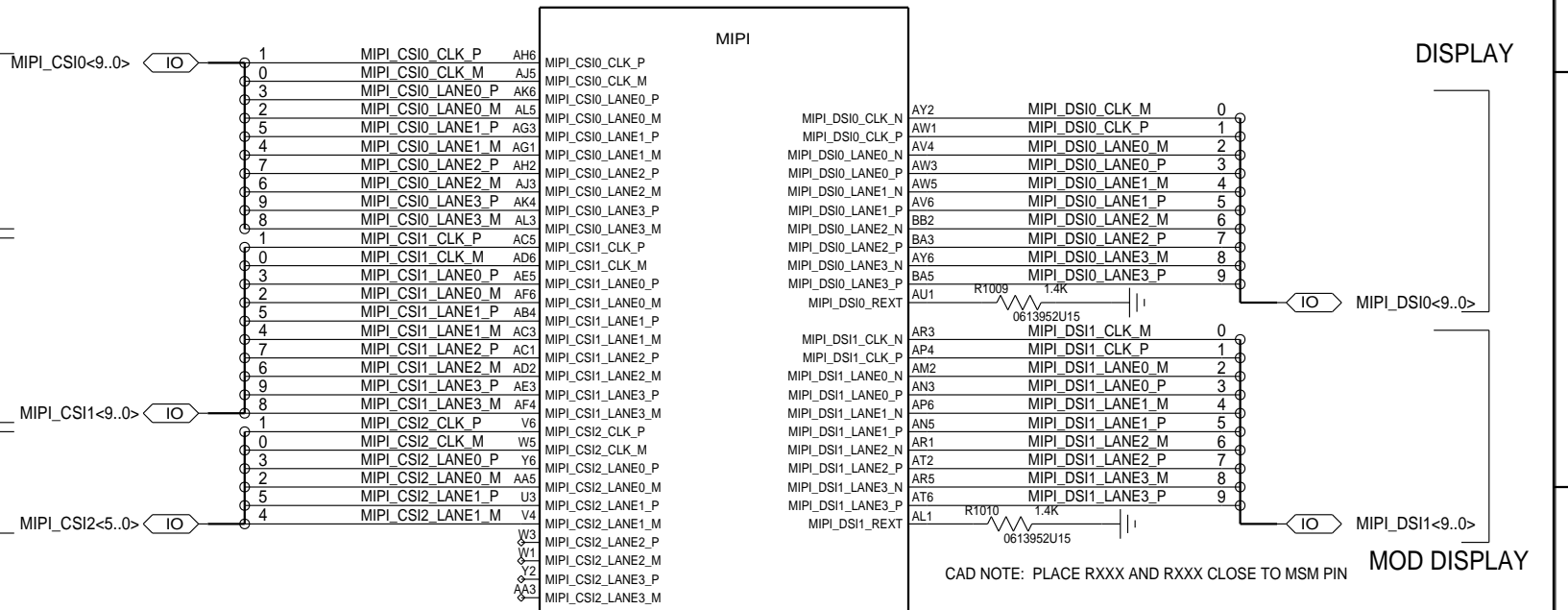
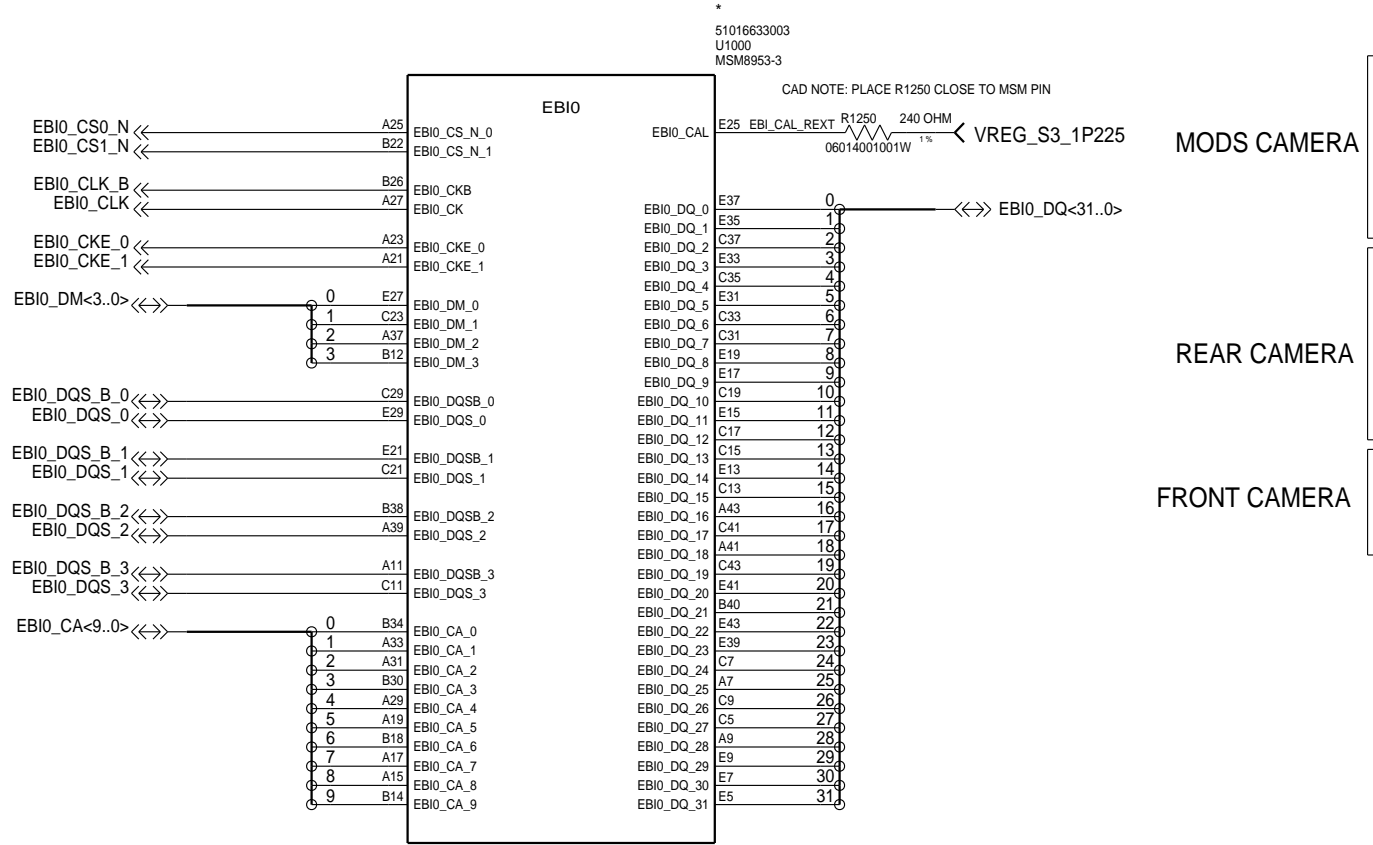
REF 1000-1099



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:28 2016		ap_pmic	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 24 OF 61	

MSM: MIPI/DSI/CSI/EBIO

REF 1200-1299



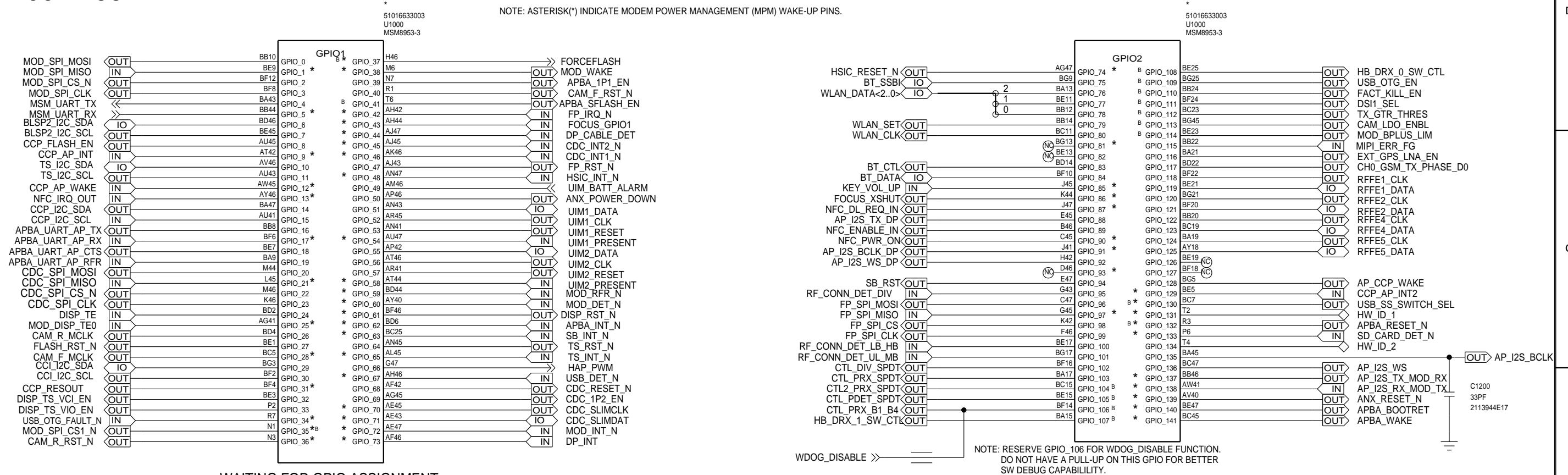
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ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: Thu May 05 16:54:29 2016		ap_pmic	
MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		PROJECT NAME B 84016562001_a.cpm	REV 01
		CAD FILE NAME:	
		PAGE 25 OF 61	

MSM: GPIO (0-141)

REF 1200-1299

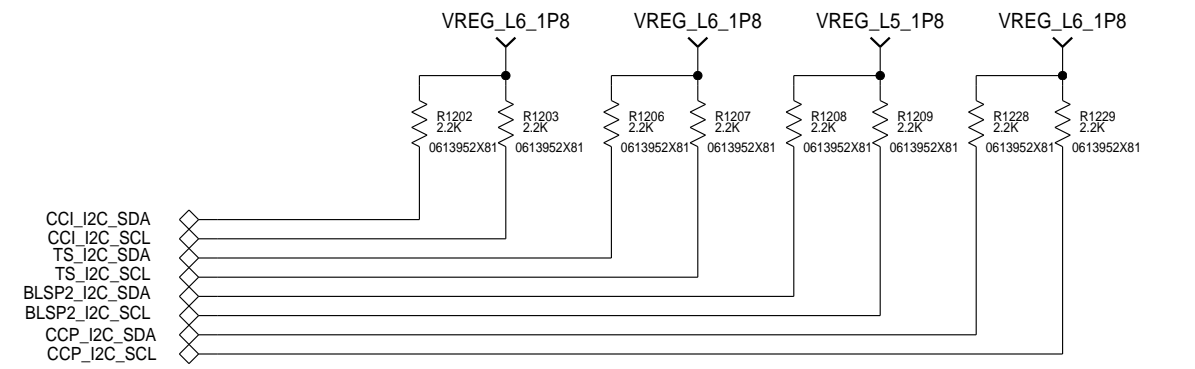
NOTE: DO NOT HAVE PULL-UPS ON THE FOLLOWING GPIOs UNLESS INTEND FOR BOOT OR SECURE BOOT RELATED CONFIGURATIONS:
GPIO_8, 9, 91, 107, 108, 109

NOTE: ASTERISK(*) INDICATE MODEM POWER MANAGEMENT (MPM) WAKE-UP PINS.



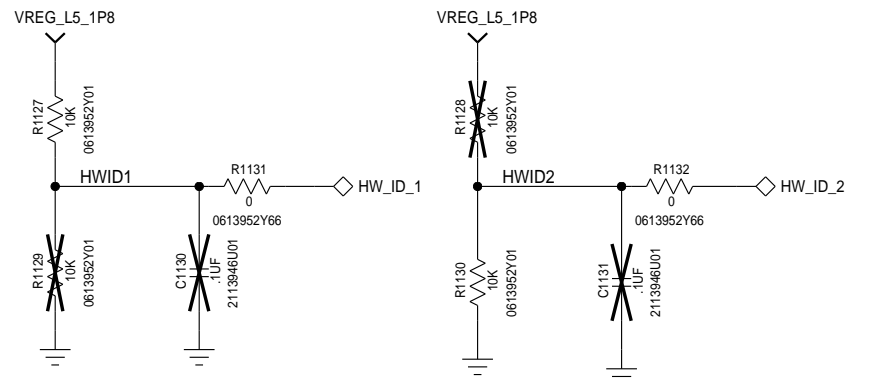
WAITING FOR GPIO ASSIGNMENT
NEED WAKABLE

I2C PULL-UP RESISTORS



MOT BOARD ID

FOR RUNTIME REVISION INFORMATION, REFER TO:
<https://sites.google.com/a/motorola.com/runtime-product-ids>



APPROVALS

ENGINEER:
LAST MODIFIED BY: FAN021
Thu Jun 02 11:51:16 2016



BLOCK TITLE:

ap_pmic

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PROJECT NAME

84016562001_a.cpm

REV

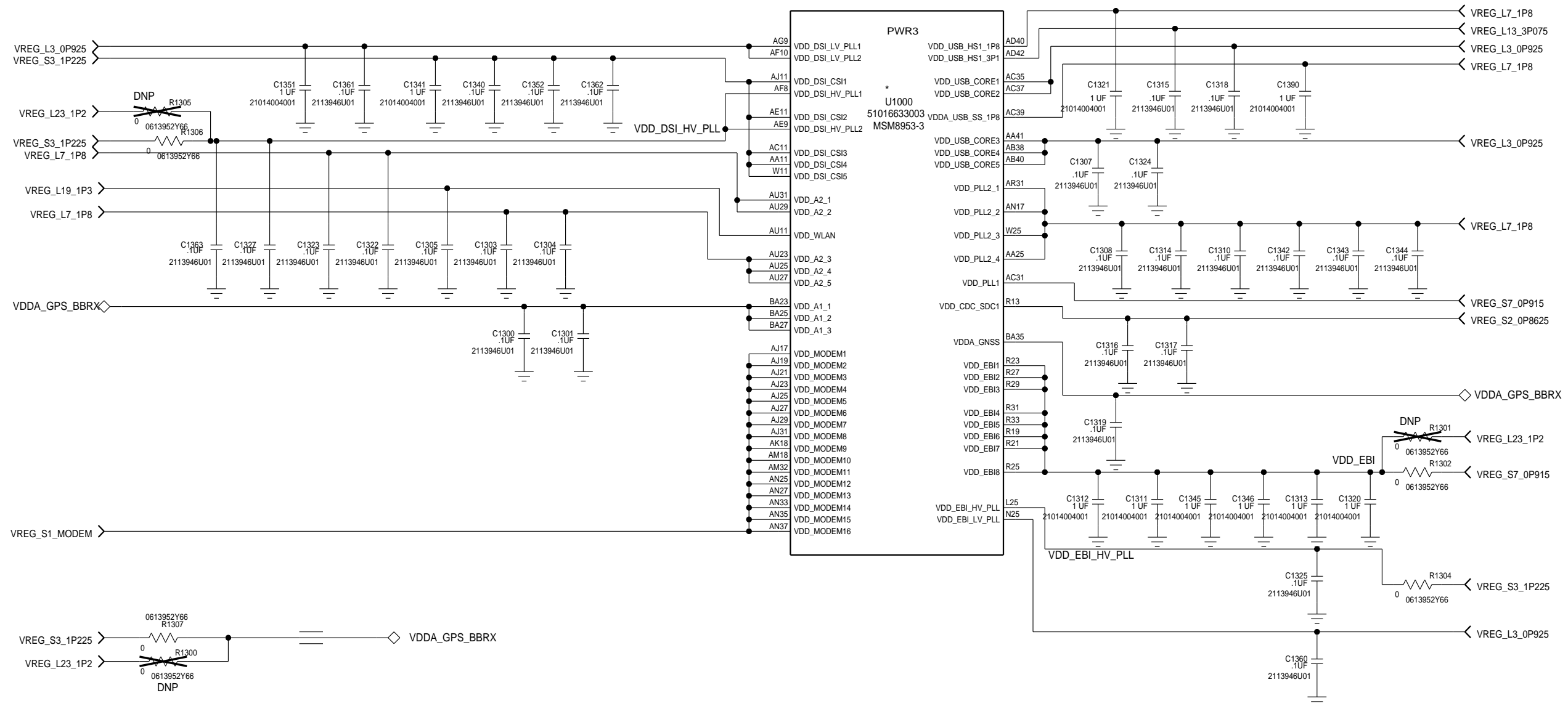
01

CAD FILE NAME:

MSM: PWR1

REF 1300-1399

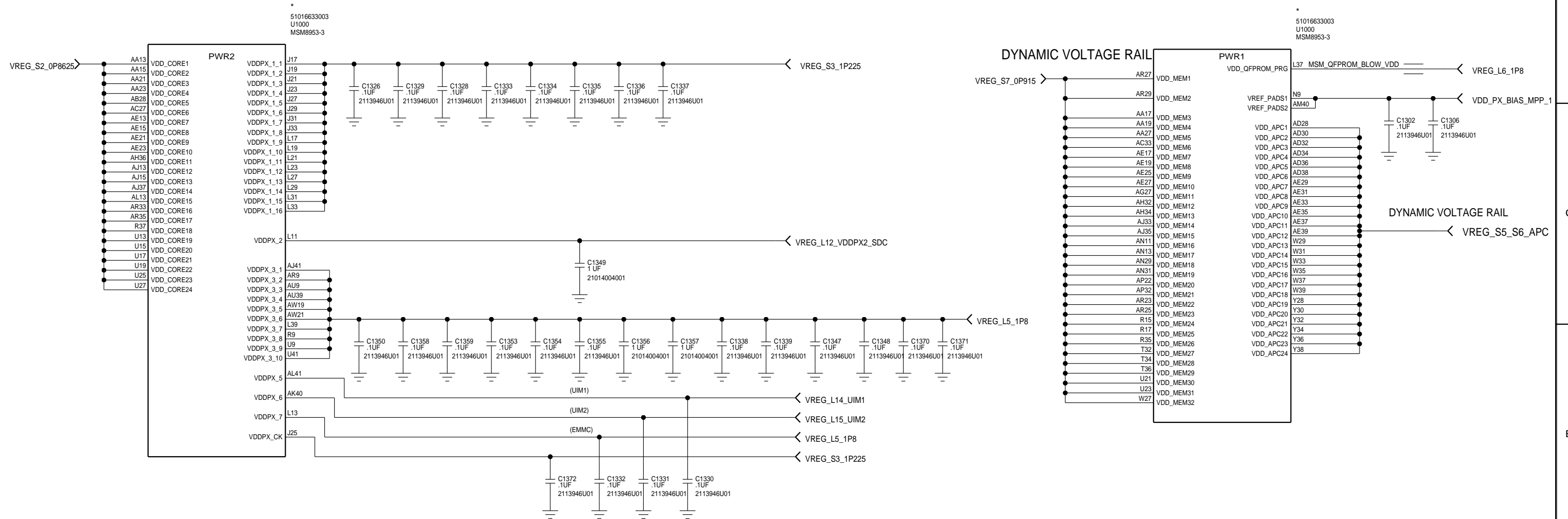
CAD NOTE: PLACE ONE DECAP NEAR PINS V5, V6 AND THE OTHER DECAP NEAR PIN R5



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:31 2016		ap_pmic	
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		CAD FILE NAME:	
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MSM: PWR2

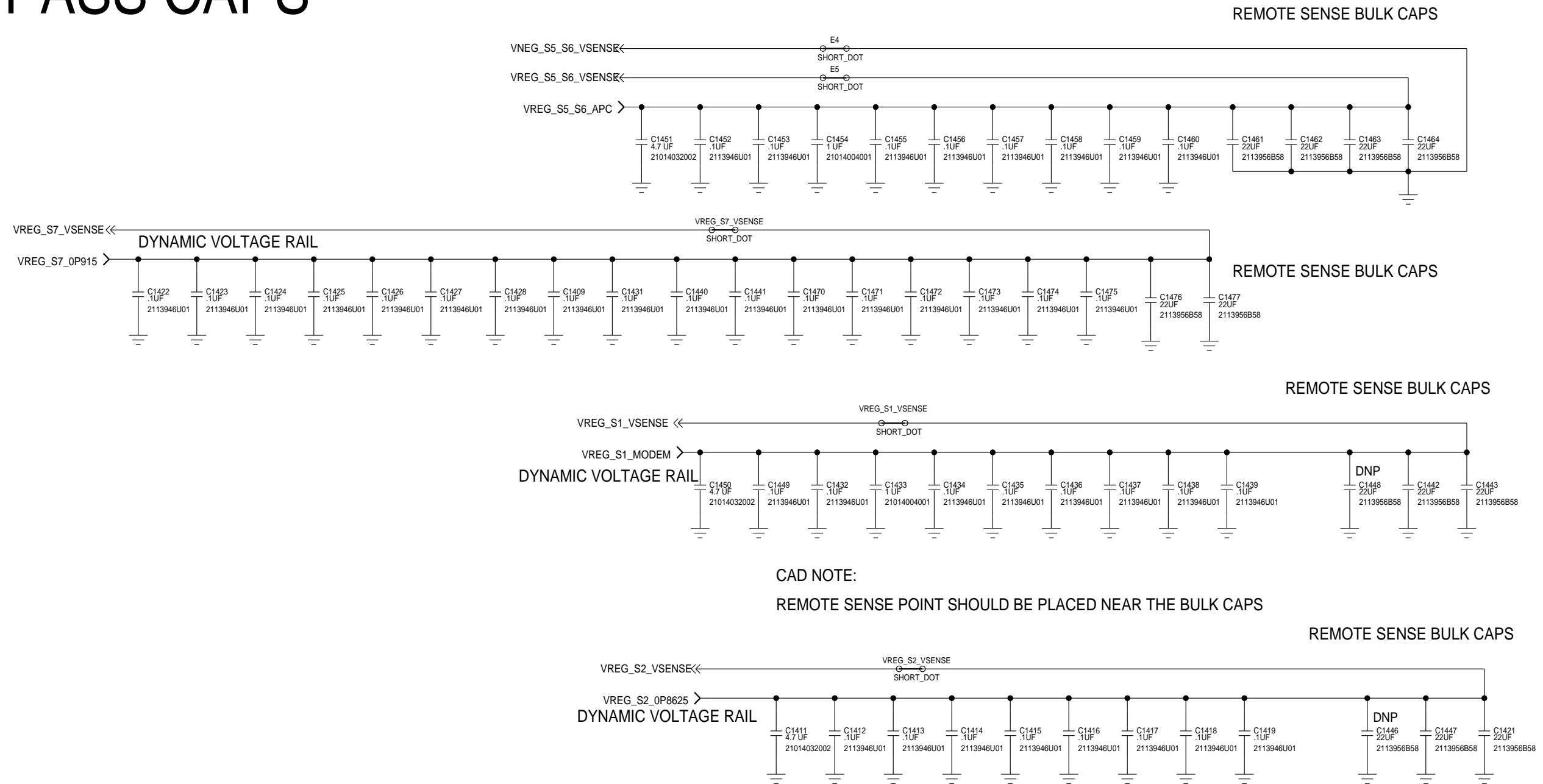
REF 1300-1399



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:32 2016		ap_pmic	
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		CAD FILE NAME:	PAGE 28 OF 61

MSM: BYPASS CAPS

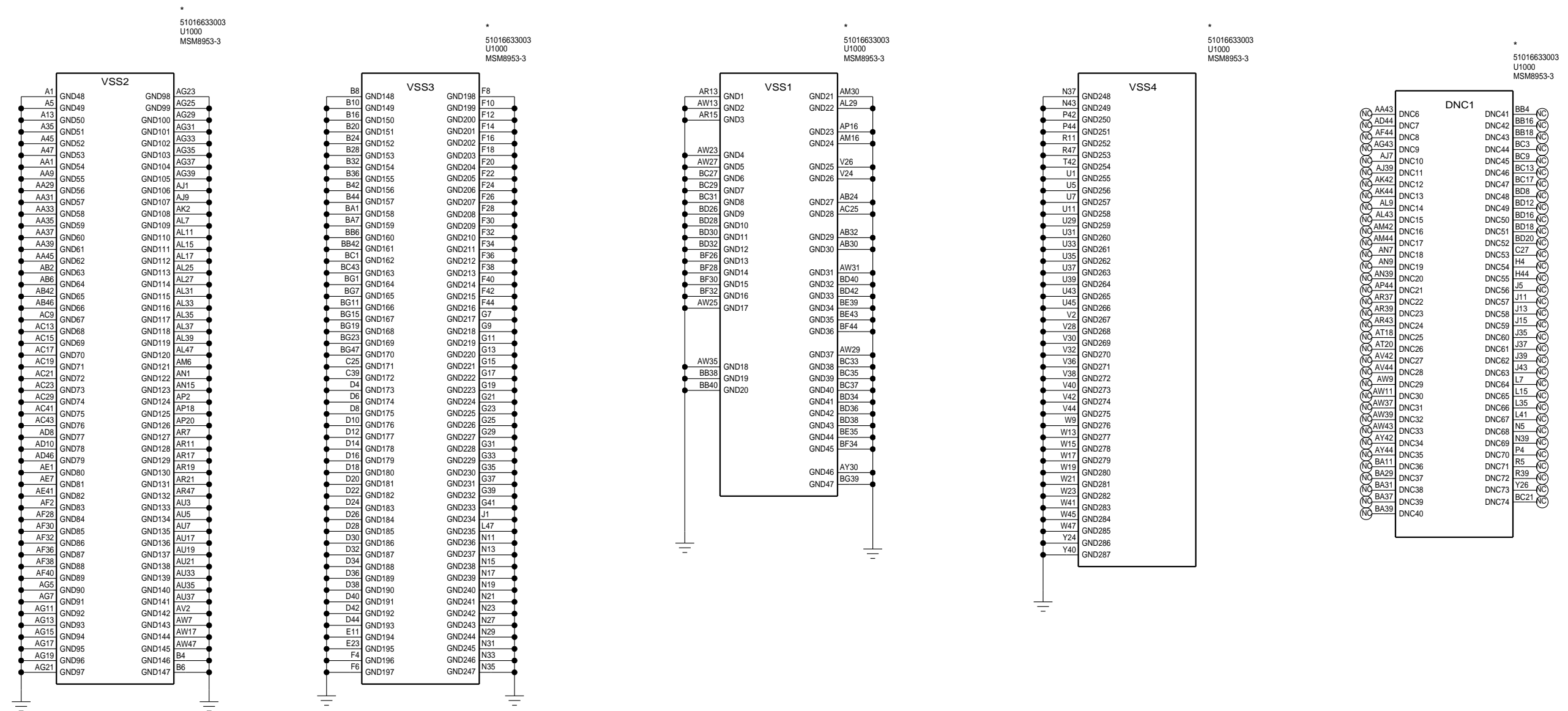
REF 1400-1499



CAD NOTE:
REMOTE SENSE POINT SHOULD BE PLACED NEAR THE BULK CAPS

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
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		CAD FILE NAME:	PAGE 29 OF 61

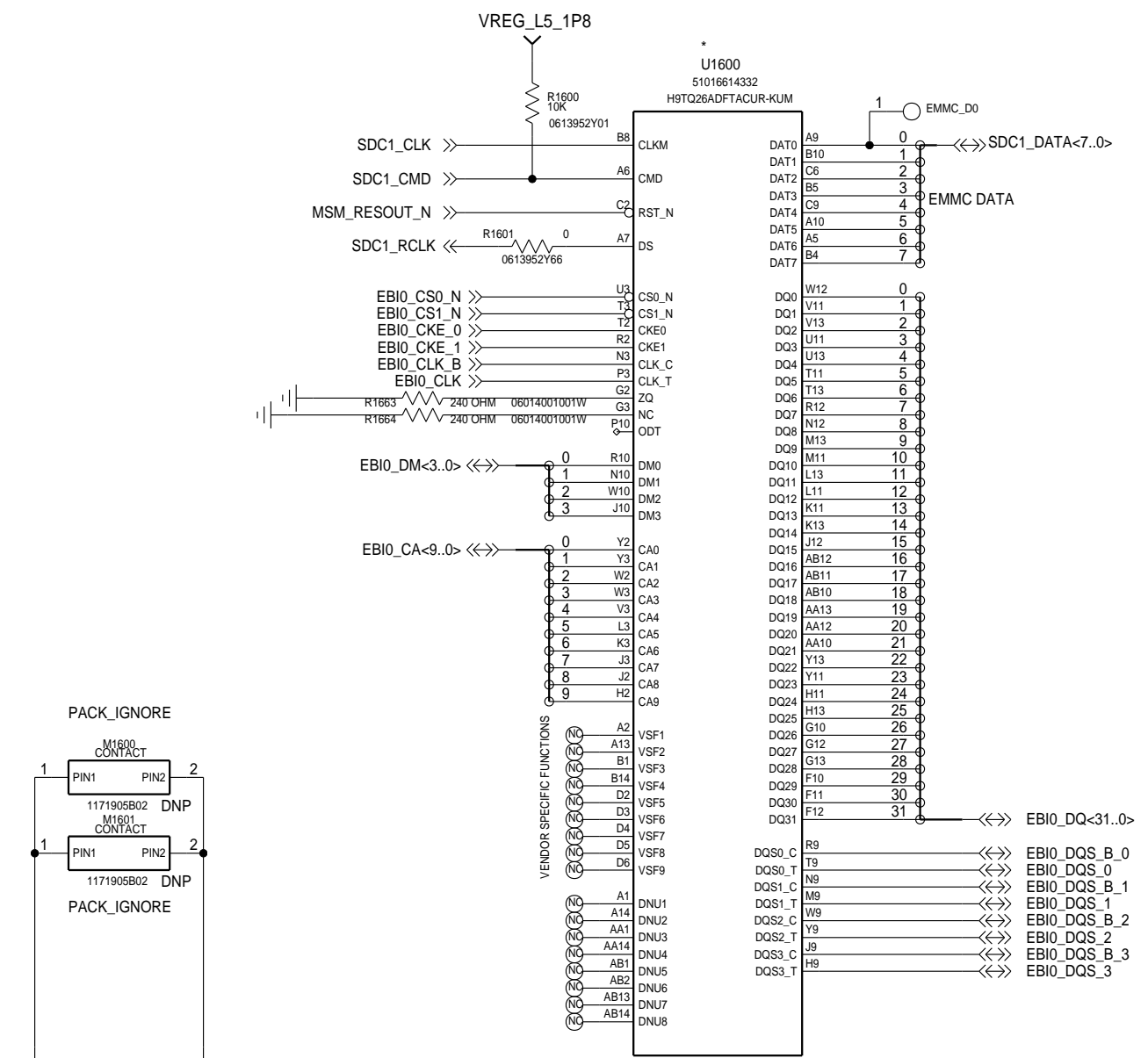
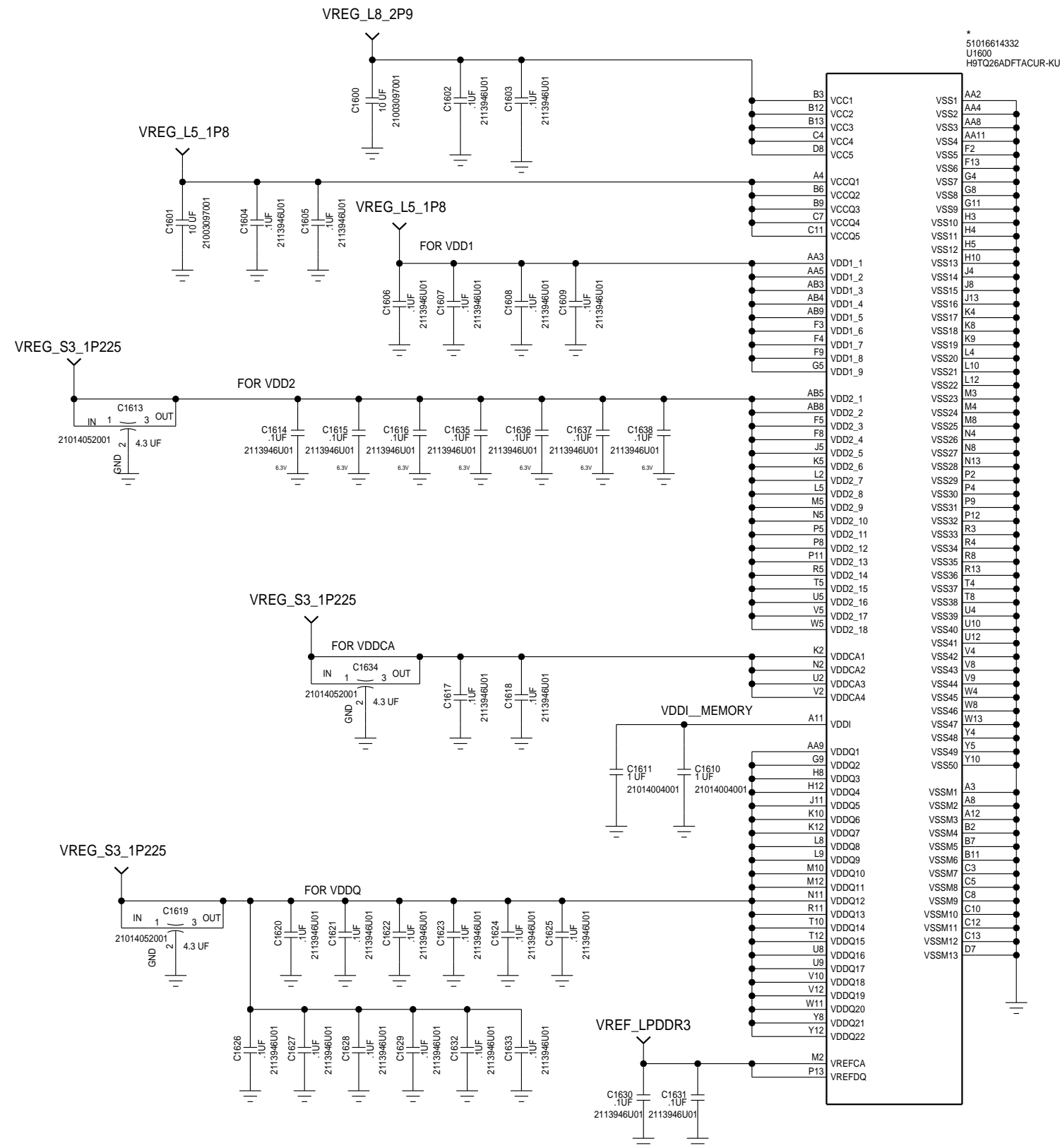
MSM: GROUND/DNC



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:34 2016		ap_pmic	
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		CAD FILE NAME:	
		PAGE 30 OF 61	

MEMORY: EMCP

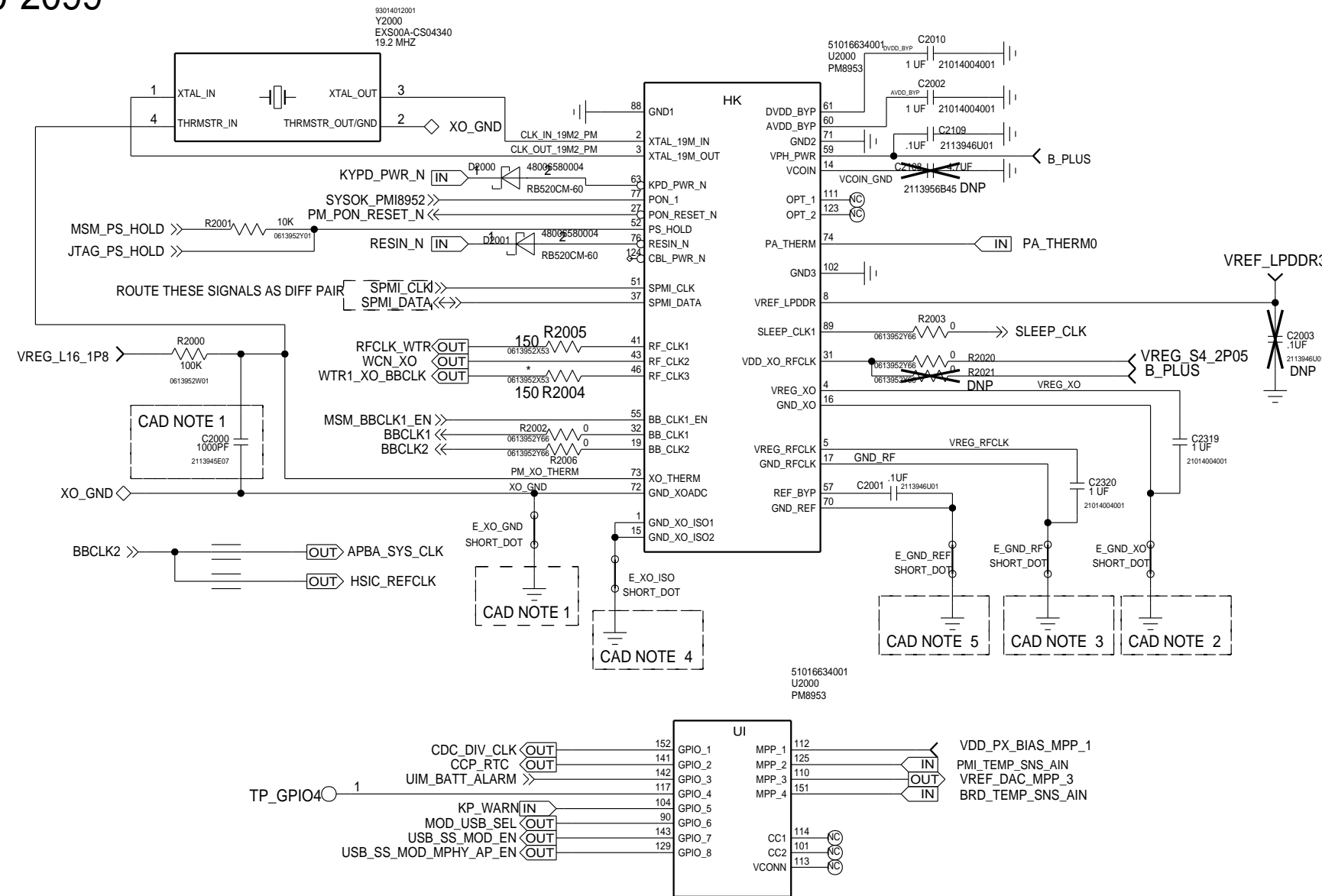
REF: 1600-1699 MCP: 16GB EMMC, 2GB LPDDR3



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:35 2016		ap_pmic	
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CAD FILE NAME:		PAGE 31 OF 61	

PM8953: HK/GHRG/LED/GPIO

REF: 2000-2099

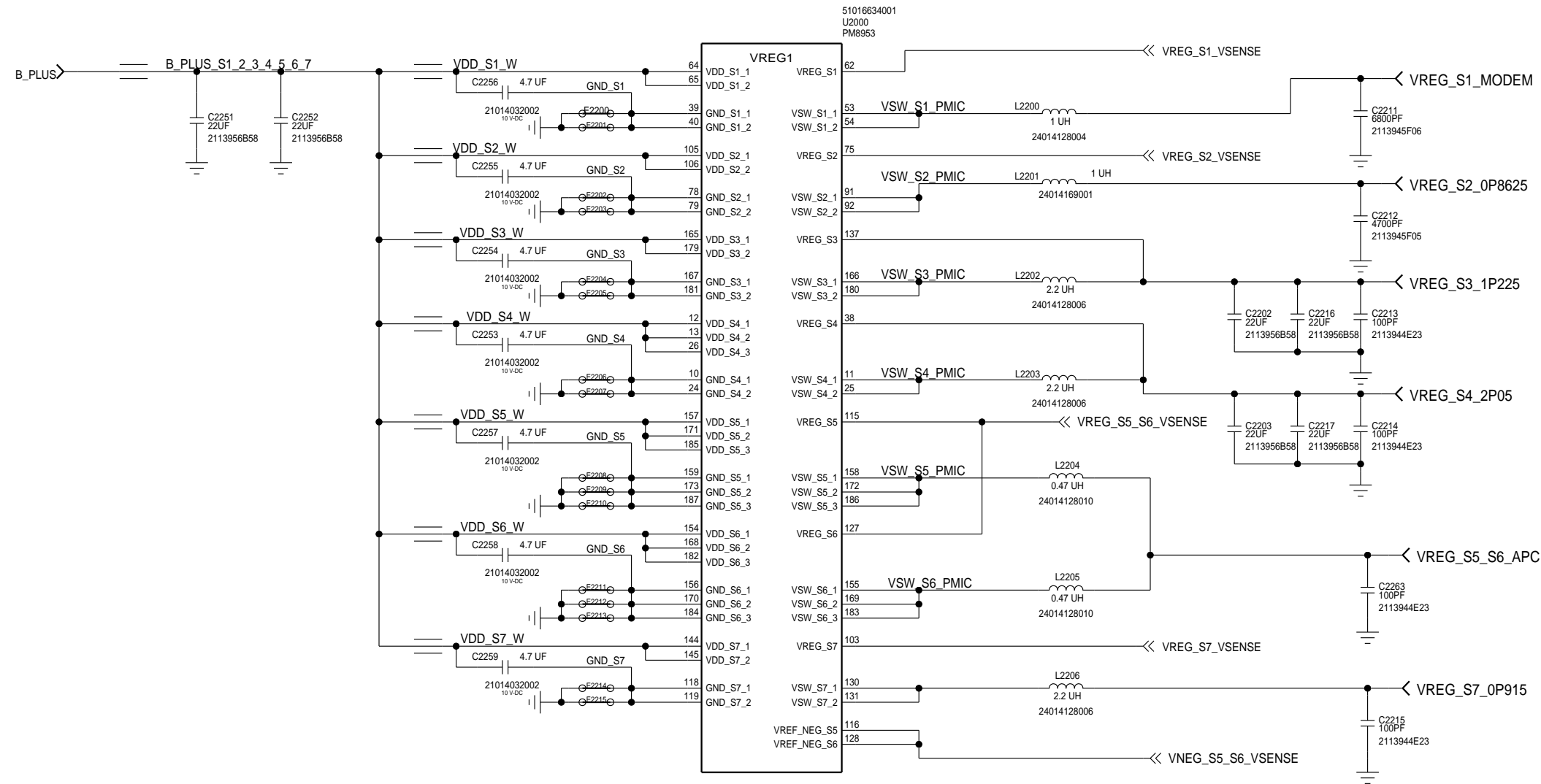


CAD NOTE 1 : PLACE C2000 CLOSER TO Y2000 AND CONNECT GND_XOADC TO CAP GND AND THEN CONNECT TO MAIN GND PLANE THROUGH DEDICATED VIA
 CAD NOTE 2 : CONNECT GND_XO TO C2319 CAP GND AND THEN CONNECT TO MAIN GND USING DEDICATED VIA.
 CAD NOTE 3 : CONNECT GND_RFCLK TO C2320 CAP GND AND THEN CONNECT TO MAIN GND PLANE USING DEDICATED VIA.
 CAD NOTE 4 : CONNECT GND_XO_ISO TO MAIN GND PLANE USING DEDICATED VIA. DO NOT SHARE THIS GND WITH OTHER GROUNDS.
 CAD NOTE 5 : CONNECT GND_REF TO CAPACITOR C2001 GND AND THEN CONNECT TO MAIN GND PLANE USING DEDICATED VIA. DON NOT SHARE THIS GND WITH OTHER GND.

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
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		CAD FILE NAME:	
		PAGE 32 OF 61	

PM8953: SMPS

REF: 2200-2299

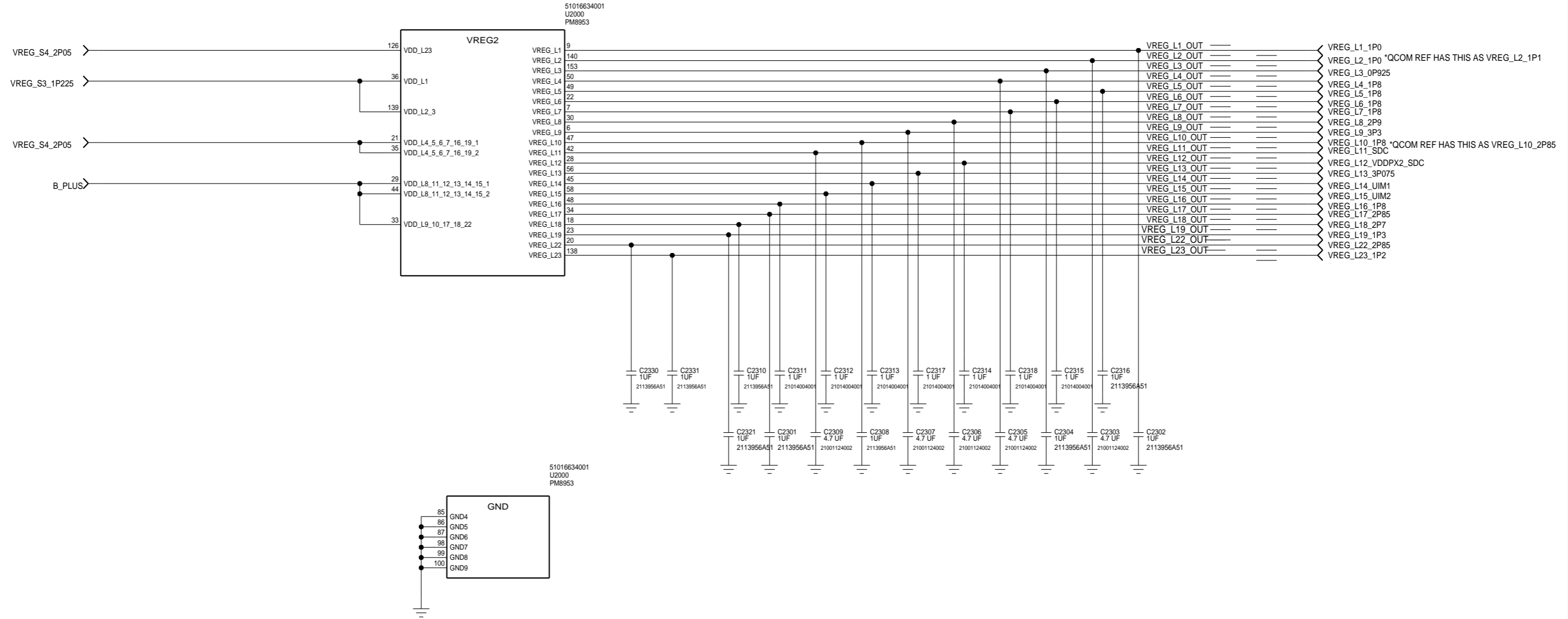


NOTE: PLACE INPUT CAPS CLOSE TO RESPECTIVE VIN PINS
EACH CAP GND SHOULD BE STAR-ROUTED

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Mon Jun 20 12:00:55 2016		ap_pmic	
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		CAD FILE NAME:	
		PAGE 33 OF 61	

PM8953: VREGS

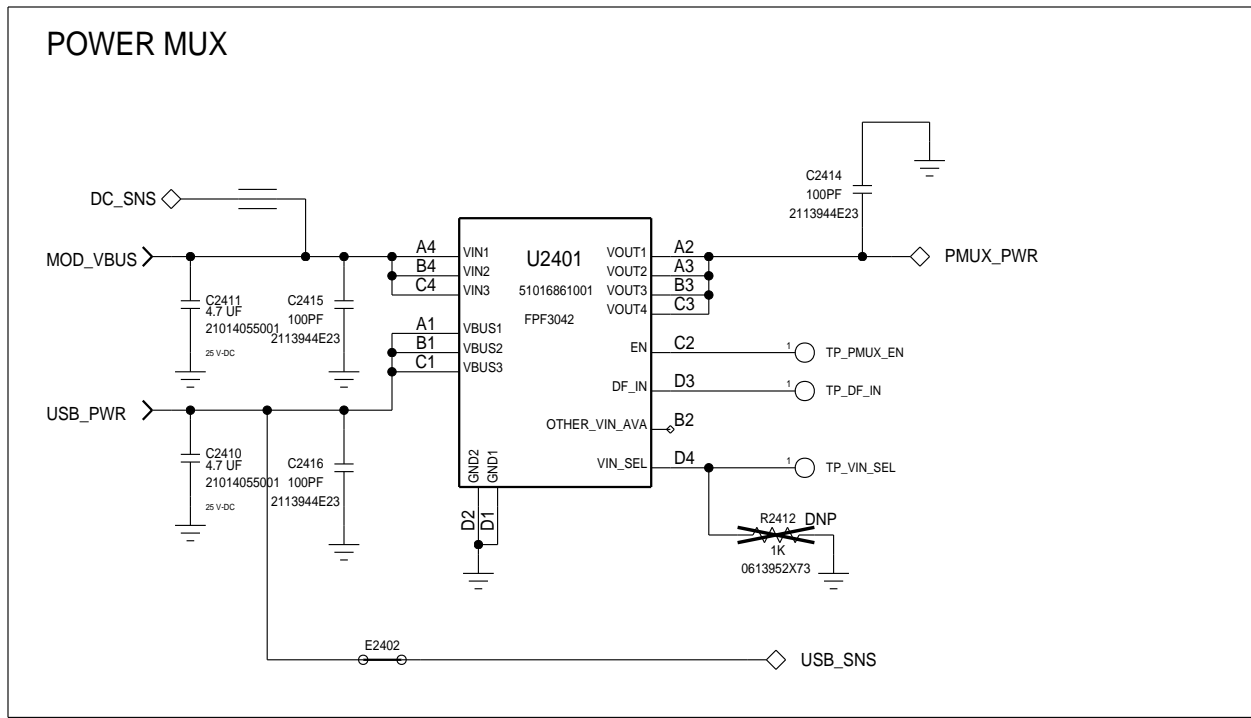
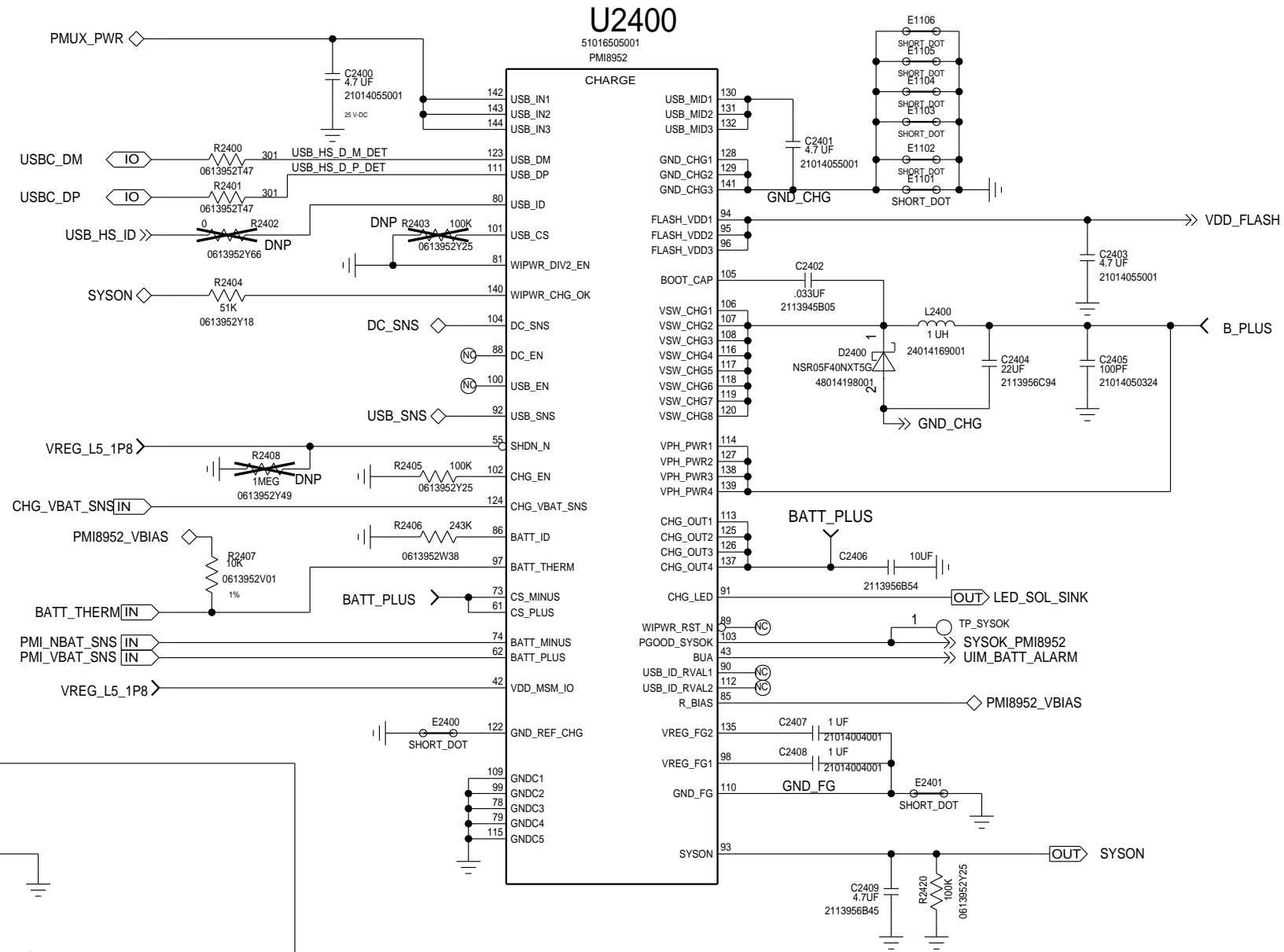
REF: 2300-2399



APPROVALS		 MOTOROLA MOBILE DEVICES	
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		CAD FILE NAME:	
		PAGE 34 OF 61	

PMI8952: CHARGING

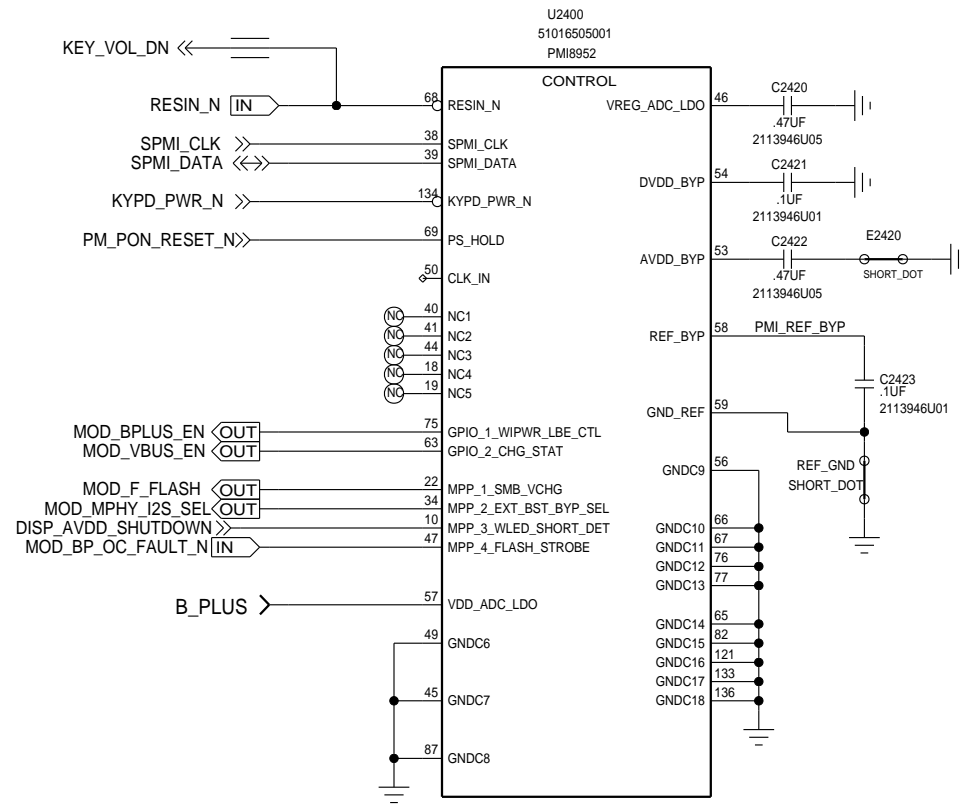
REF: 2400-2419



APPROVALS		MOTOROLA MOBILE DEVICES	
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		CAD FILE NAME:	
		PAGE 35 OF 61	

PMI8952: IO_REF

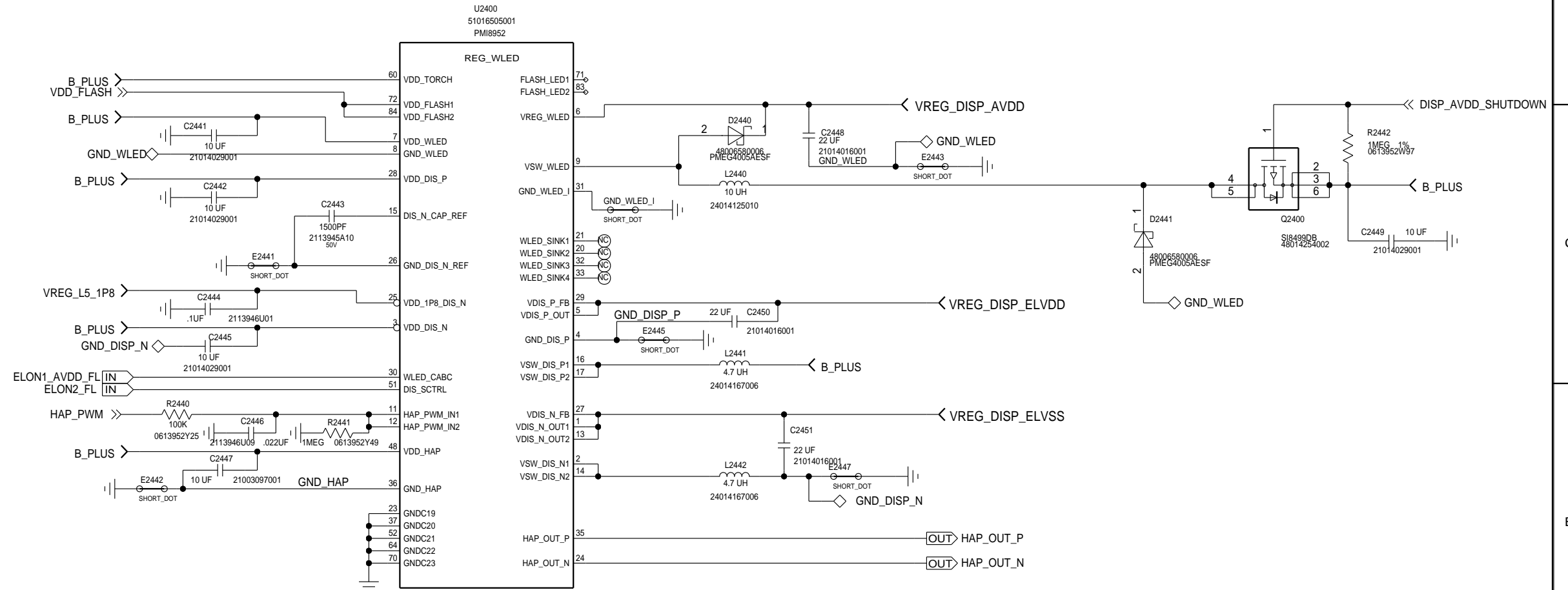
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		CAD FILE NAME:	
		PAGE 36 OF 61	

PMI8952: REG_WLED

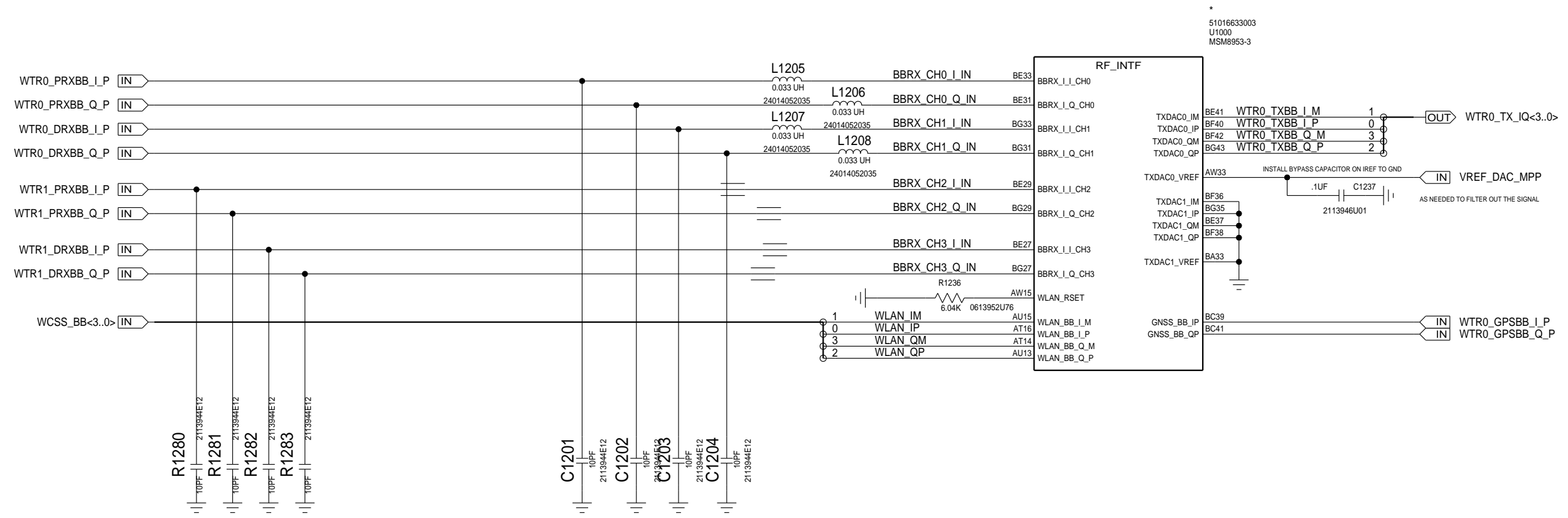
REF: 2440-2459



APPROVALS		MOTOROLA MOBILE DEVICES	
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		CAD FILE NAME:	PAGE 37 OF 61

MSM: RF INTERFACE

REF 1200-1299



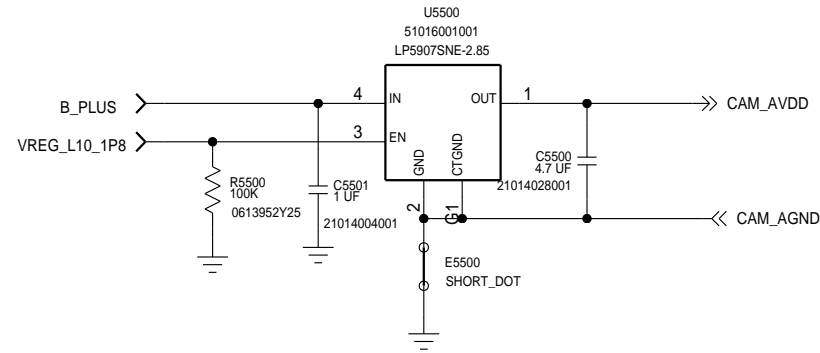
NEED TO APPLY LC FILTER FOR REDUCE B40 RX SPURS(QC 80-NP237-56)
 LC FILTER COULD BE PLACED ANYWHERE BETWEEN WTR BBRX_IQ AND MSM BBRX_IQ PINS
 BUT THE GND FOR SHUNT C SHOULD NOT BE SHARED WITH EITHER WTR OR MSM GND ON ANY LAYER.
 A DIRECT VIA FROM SHUNT C TO MAIN GND IS RECOMMENDED

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:27 2016		block_mdm9x25m_pm8019	
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		CAD FILE NAME:	
		PAGE 38 OF 61	

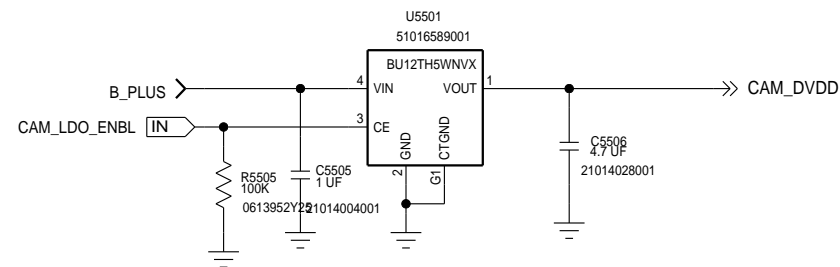
CAM: POWER

REF:5500-5529

ANALOG REGULATOR 2.85V

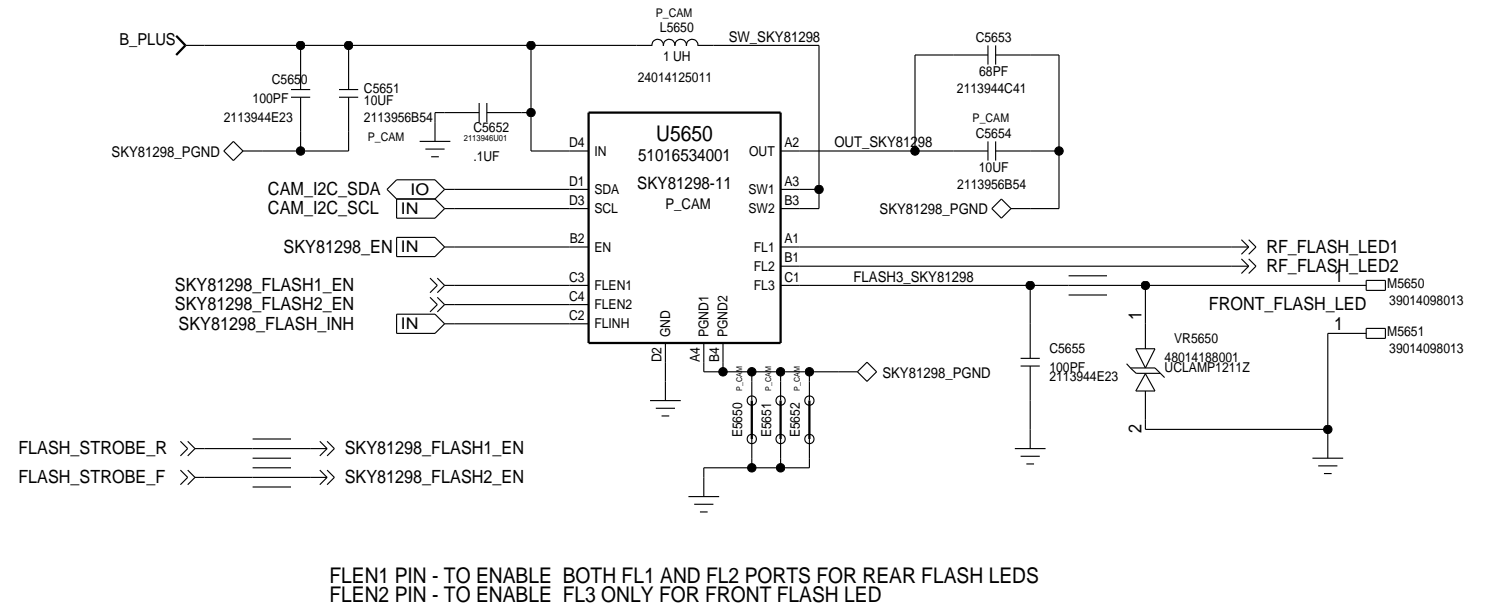


DIGITAL REGULATOR 1.2V



LED FLASH DRIVER FOR REAR AND FRONT IMAGERS

REF:5650-5669



APPROVALS

ENGINEER: MMI
 LAST MODIFIED BY: MMI
 Thu May 05 16:54:21 2016

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BLOCK TITLE:
multimedia

B	PROJECT NAME	REV
	84016562001_a.cpm	01

CAD FILE NAME: _____ PAGE 39 OF 61

CAM: REAR COMMON

REF:5530-5549

D

D

C


C

B

B

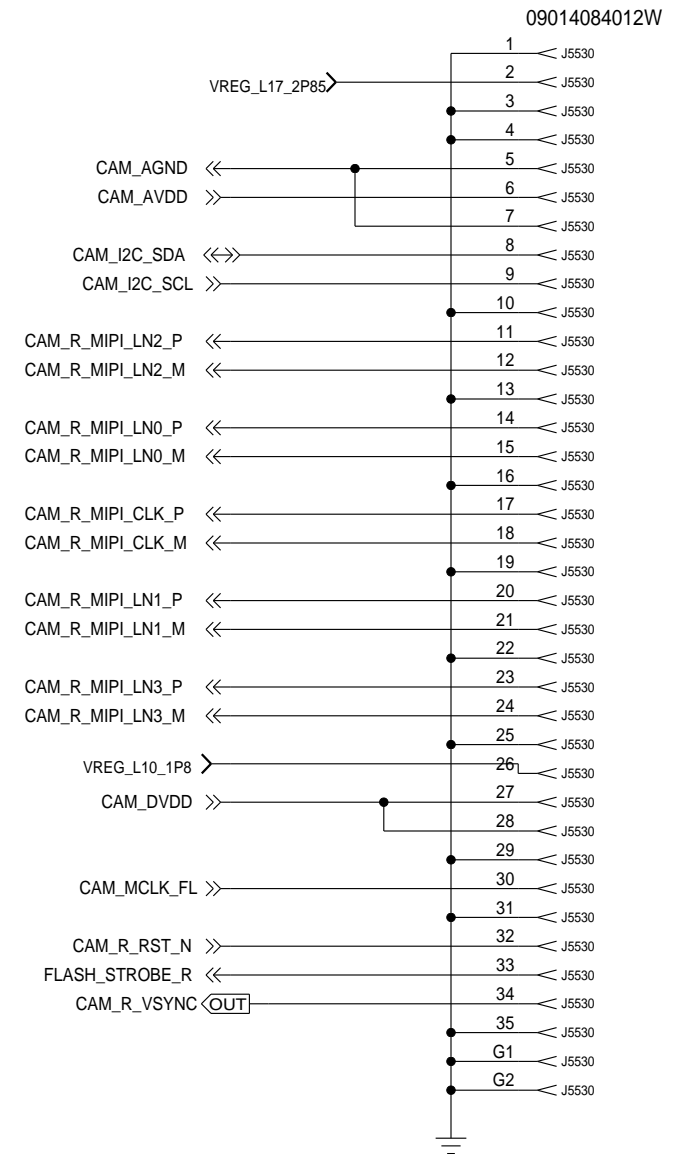
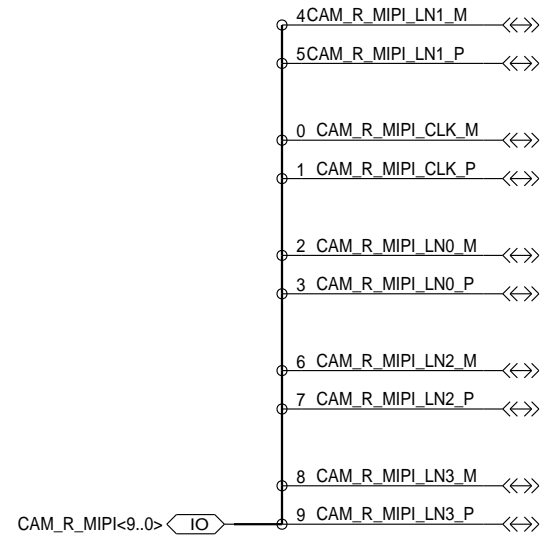
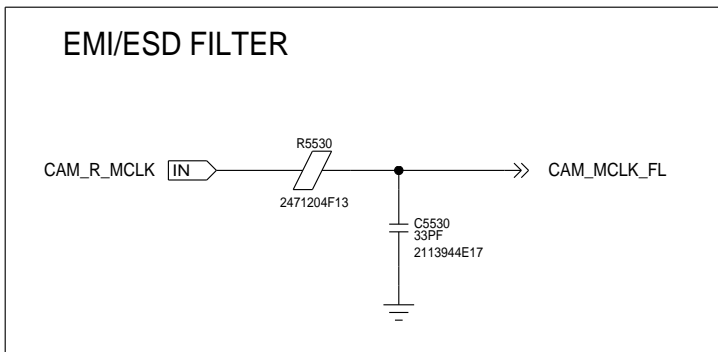
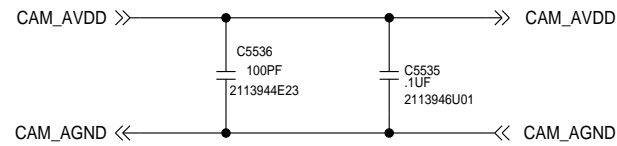
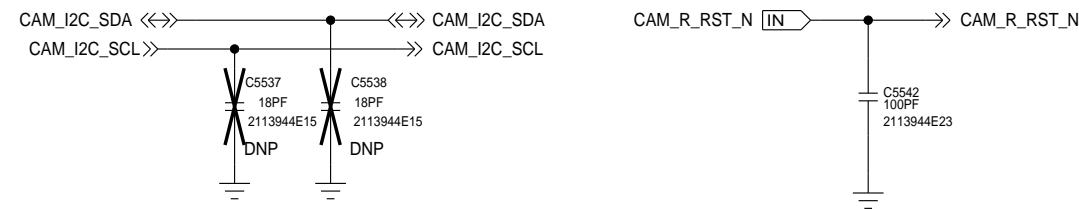
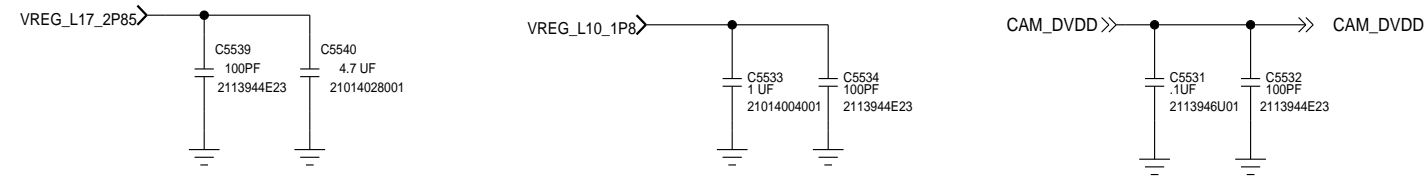
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APPROVALS		 MOTOROLA MOBILE DEVICES	
ENGINEER: JOHN KRAMER		BLOCK TITLE:	
LAST MODIFIED BY: AZIZ NOORI Mon Jan 04 09:46:49 2016		multimedia	
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		CAD FILE NAME:	PAGE 40 OF 61

CAM: REAR

REF:5530-5549

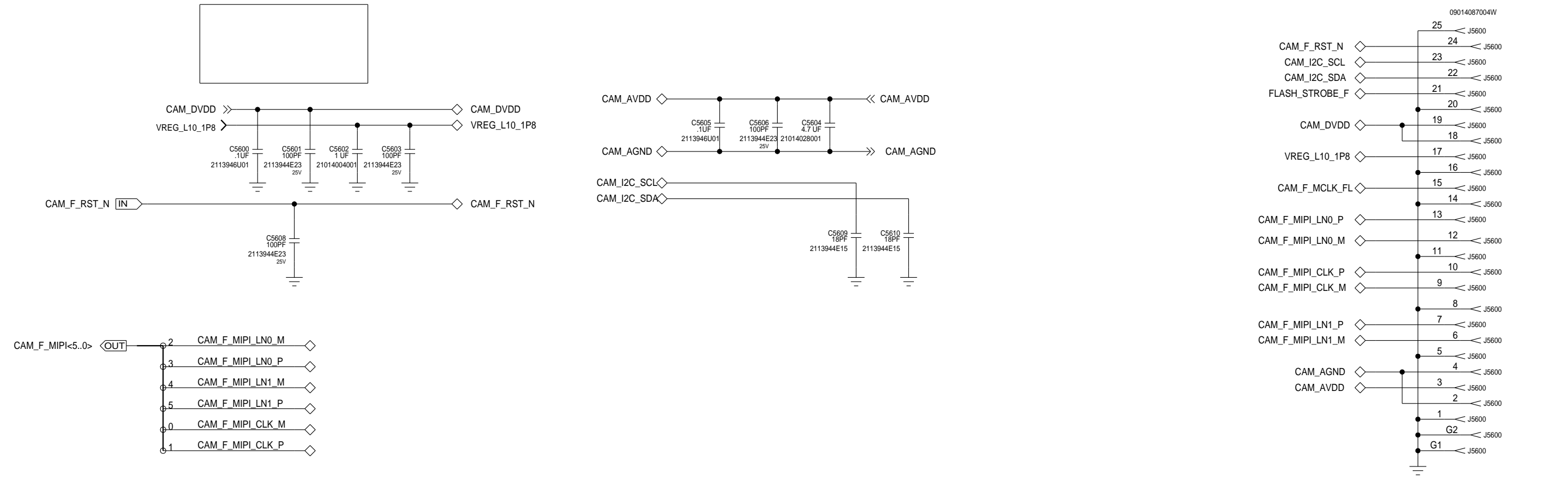


APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: JOHN KRAMER		BLOCK TITLE:	
LAST MODIFIED BY: AZIZ NOORI Thu May 05 16:54:22 2016		multimedia	
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		CAD FILE NAME:	PAGE 41 OF 61

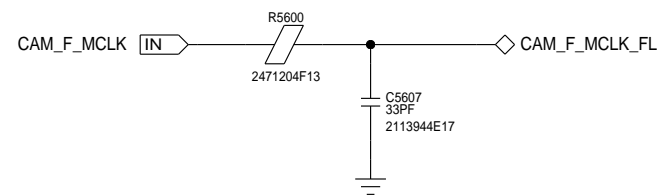
CAM: FRONT

REF 5600-5620

FF CAMERA CONNECTOR FRONT CAM I2C ADDR:



EMI/ESD FILTER



APPROVALS

ENGINEER: JOHN KRAMER

LAST MODIFIED BY: NATE CONNELL
Thu May 05 16:54:23 2016

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BLOCK TITLE:

multimedia

PROJECT NAME
84016562001_a.cpm

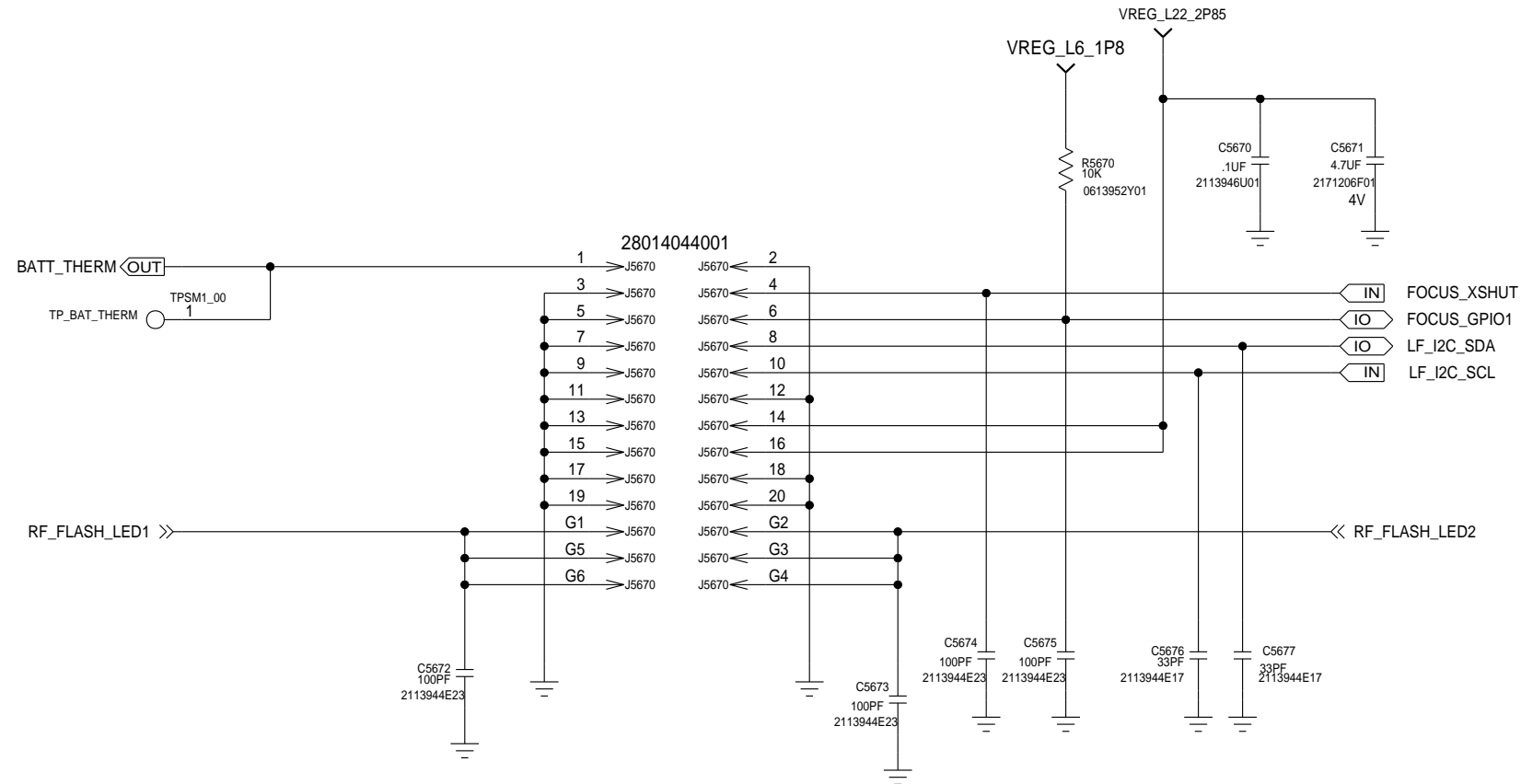
REV
01

CAD FILE NAME:

PAGE 42 OF 61

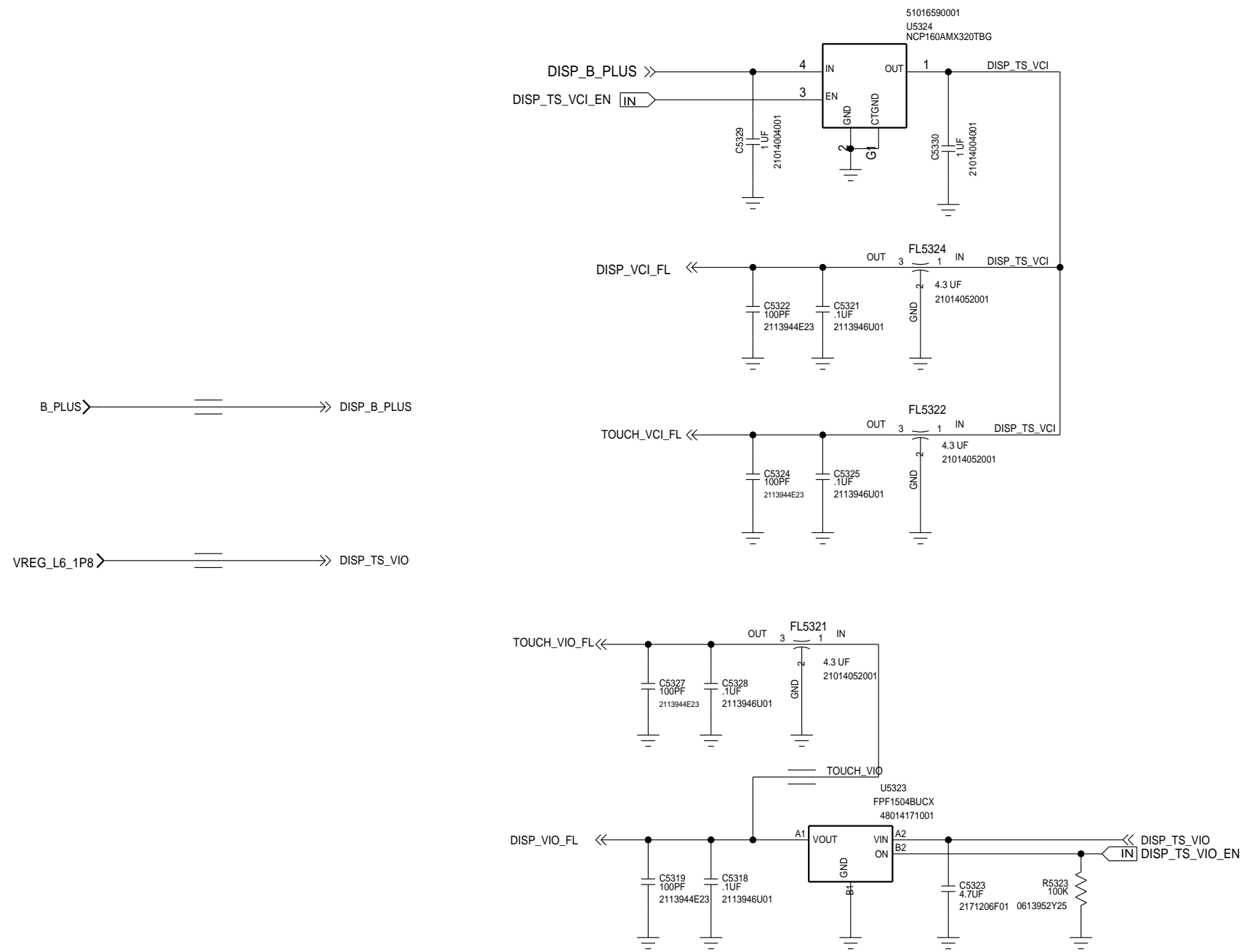
LASER FOCUS & FLASH CONN

REF:5670-5679



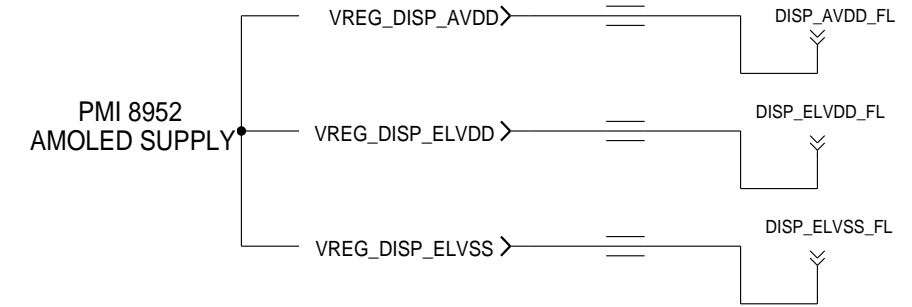
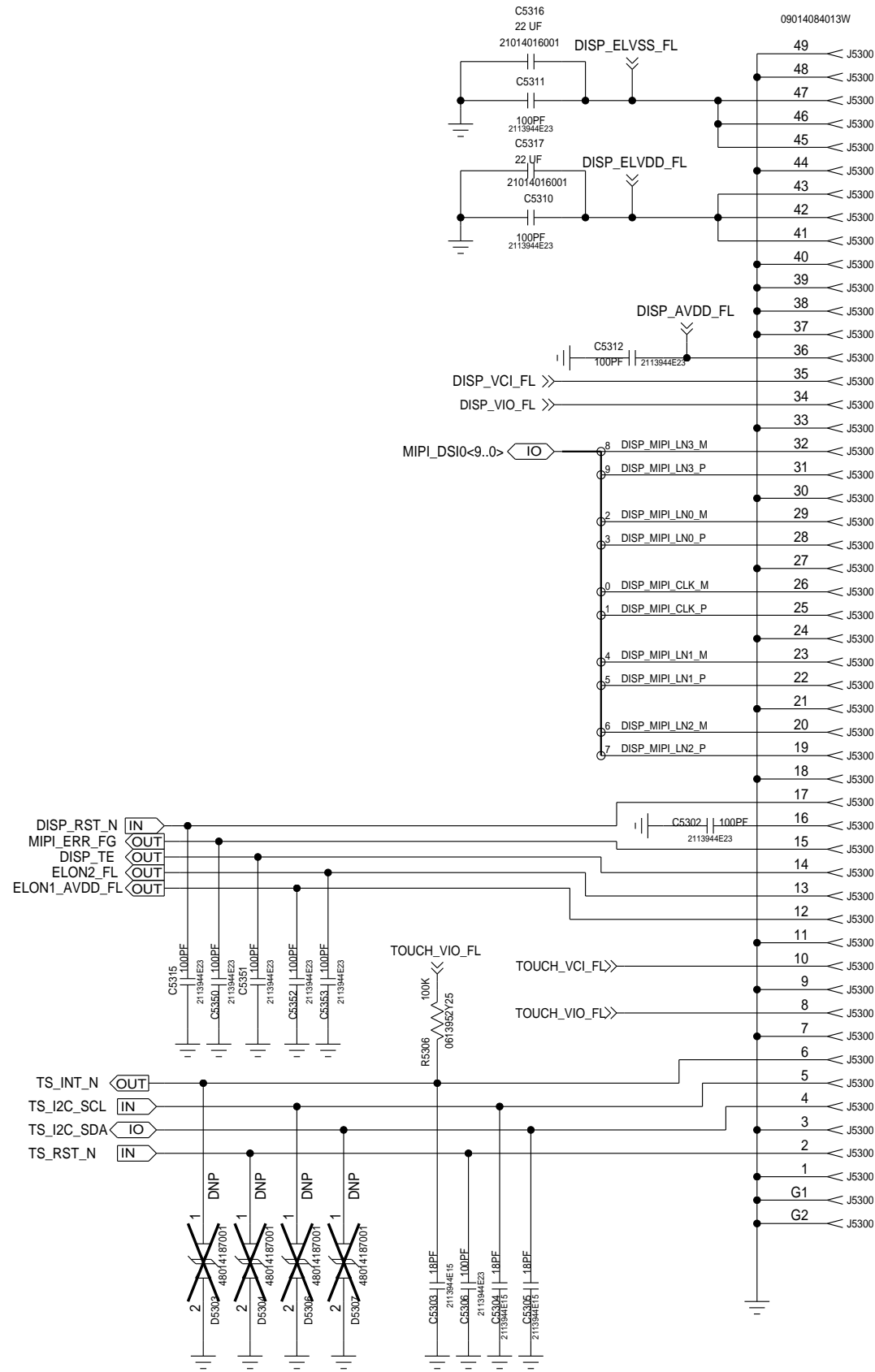
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ENGINEER: RICH WOLNY		BLOCK TITLE:	
LAST MODIFIED BY: HUNG PHAM Thu May 05 16:54:24 2016		multimedia	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 43 OF 61	

DISP: POWER



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:25 2016		multimedia	
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		CAD FILE NAME:	PAGE 44 OF 61

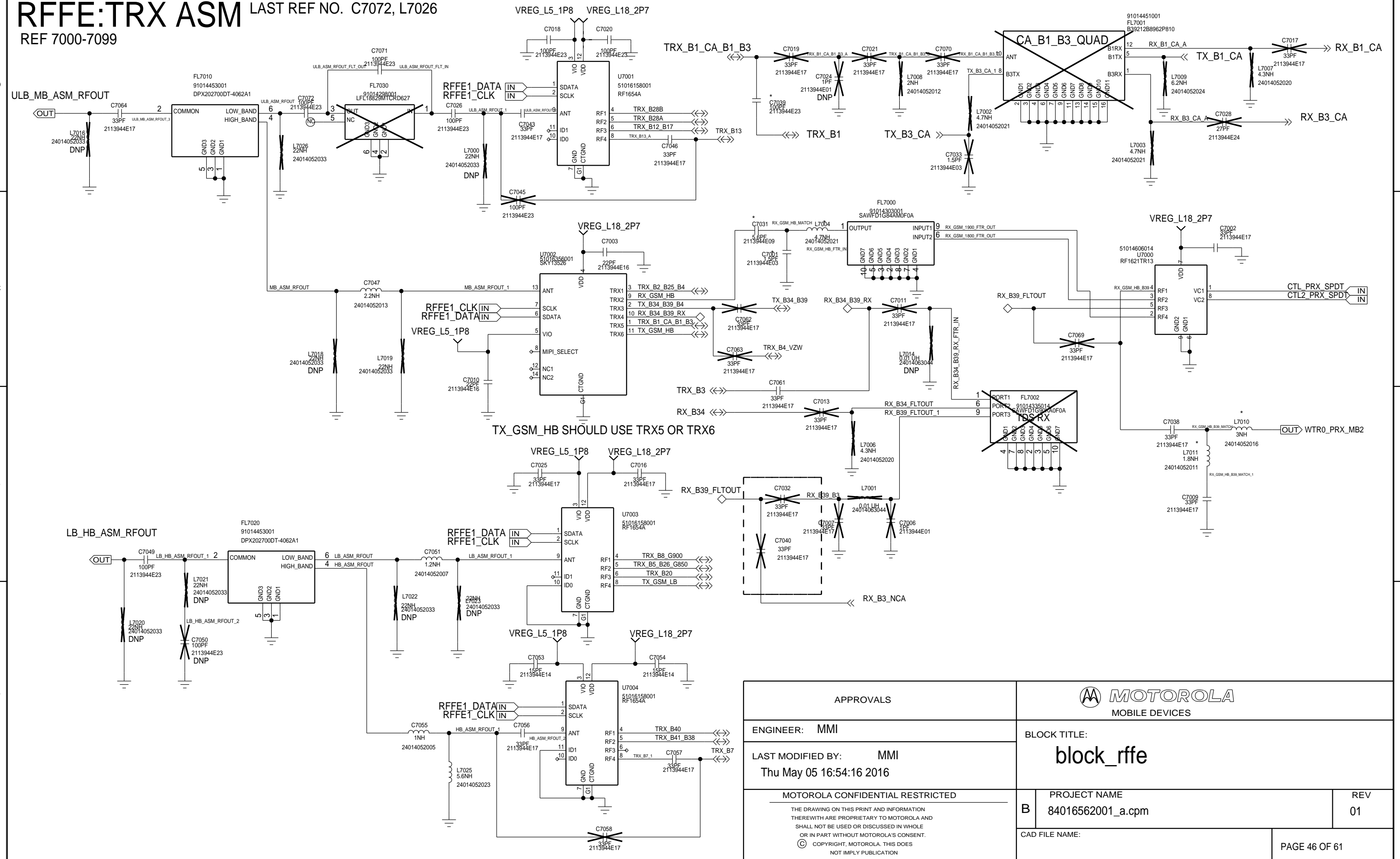
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:26 2016		multimedia	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 45 OF 61	

RFFE:TRX ASM

LAST REF NO. C7072, L7026
REF 7000-7099



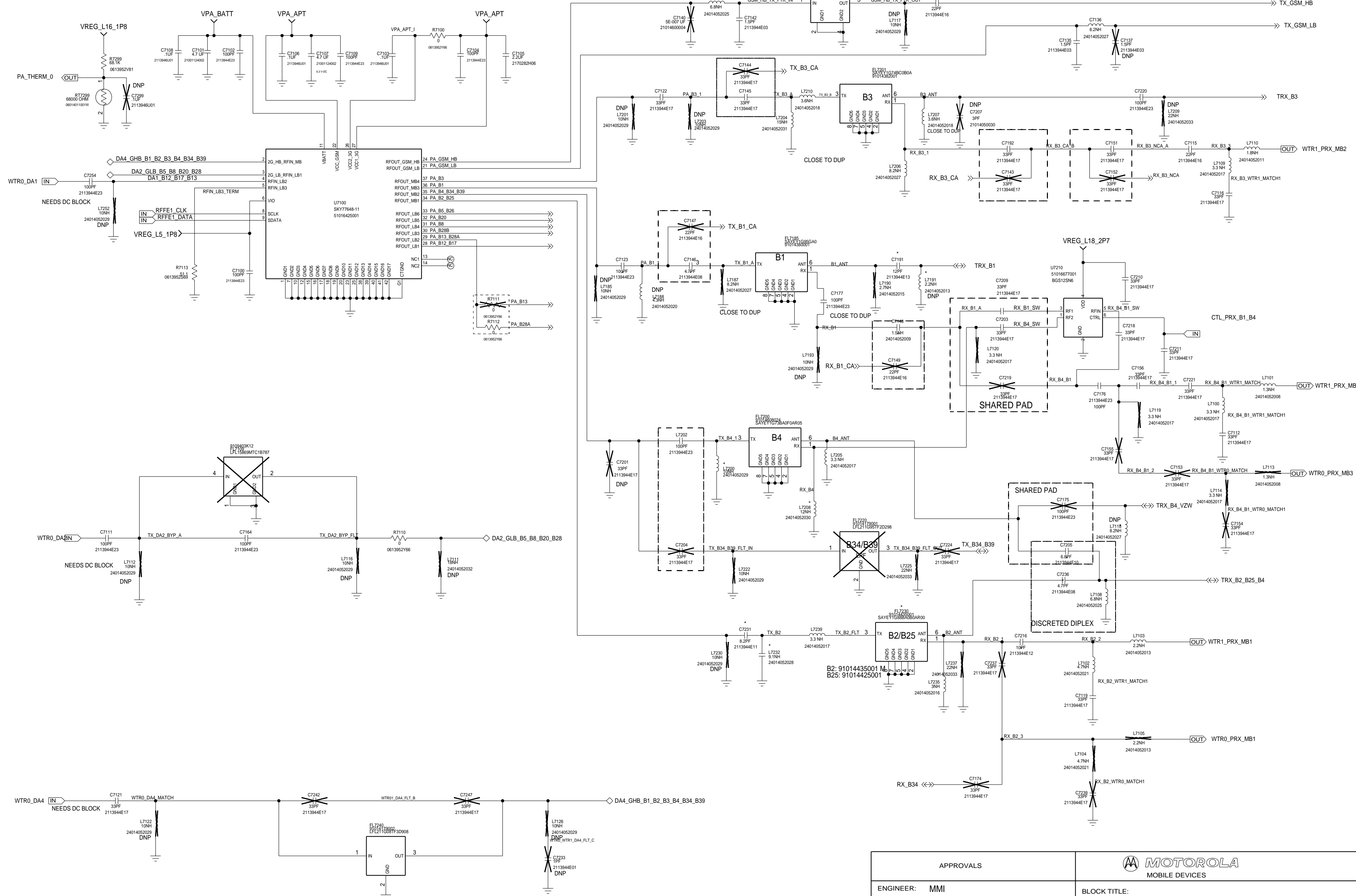
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ENGINEER: MMI	
LAST MODIFIED BY: MMI Thu May 05 16:54:16 2016	
MOTOROLA CONFIDENTIAL RESTRICTED	
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MOTOROLA MOBILE DEVICES	
BLOCK TITLE: block_rfe	
PROJECT NAME B 84016562001_a.cpm	REV 01
CAD FILE NAME:	
PAGE 46 OF 61	

RFFE:MMMBPA LAST REF C7175, L7118, R7112

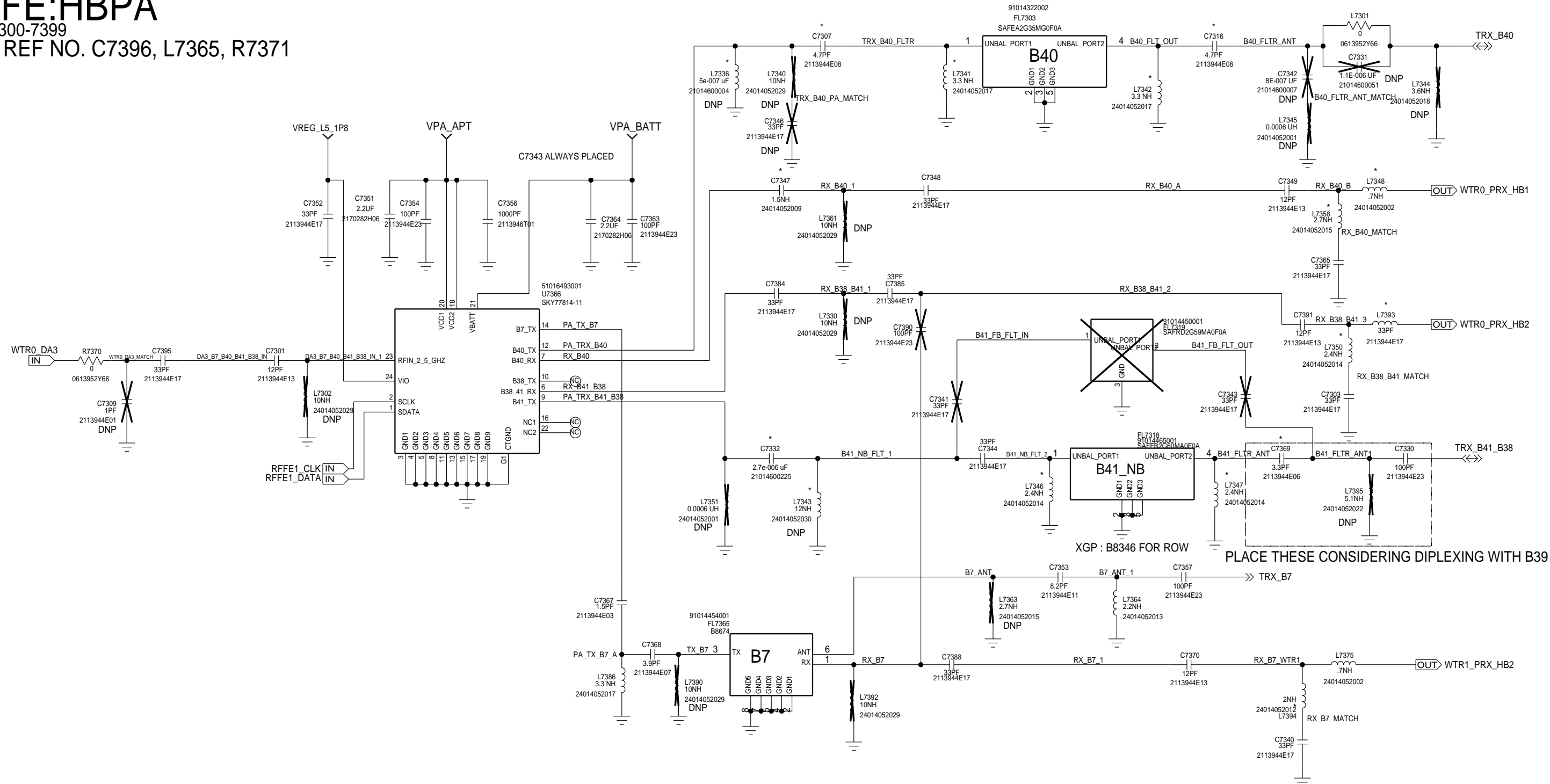
REF 7100-7299

REVISIONS			
ZONE	LTR	DESCRIPTION	DATE



APPROVALS		MOTOROLA MOBILE DEVICES	
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LAST MODIFIED BY: MMI Fri May 13 10:09:51 2016		PROJECT NAME: 84016562001_a.cpm	
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RFFE:HBPA
 REF 7300-7399
 LAST REF NO. C7396, L7365, R7371



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:17 2016		block_rfe	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 48 OF 61	

RFFE:LB TRX

REF 7400-7499

LAST REF NO, C7454, L7449, R7416

D

D

C

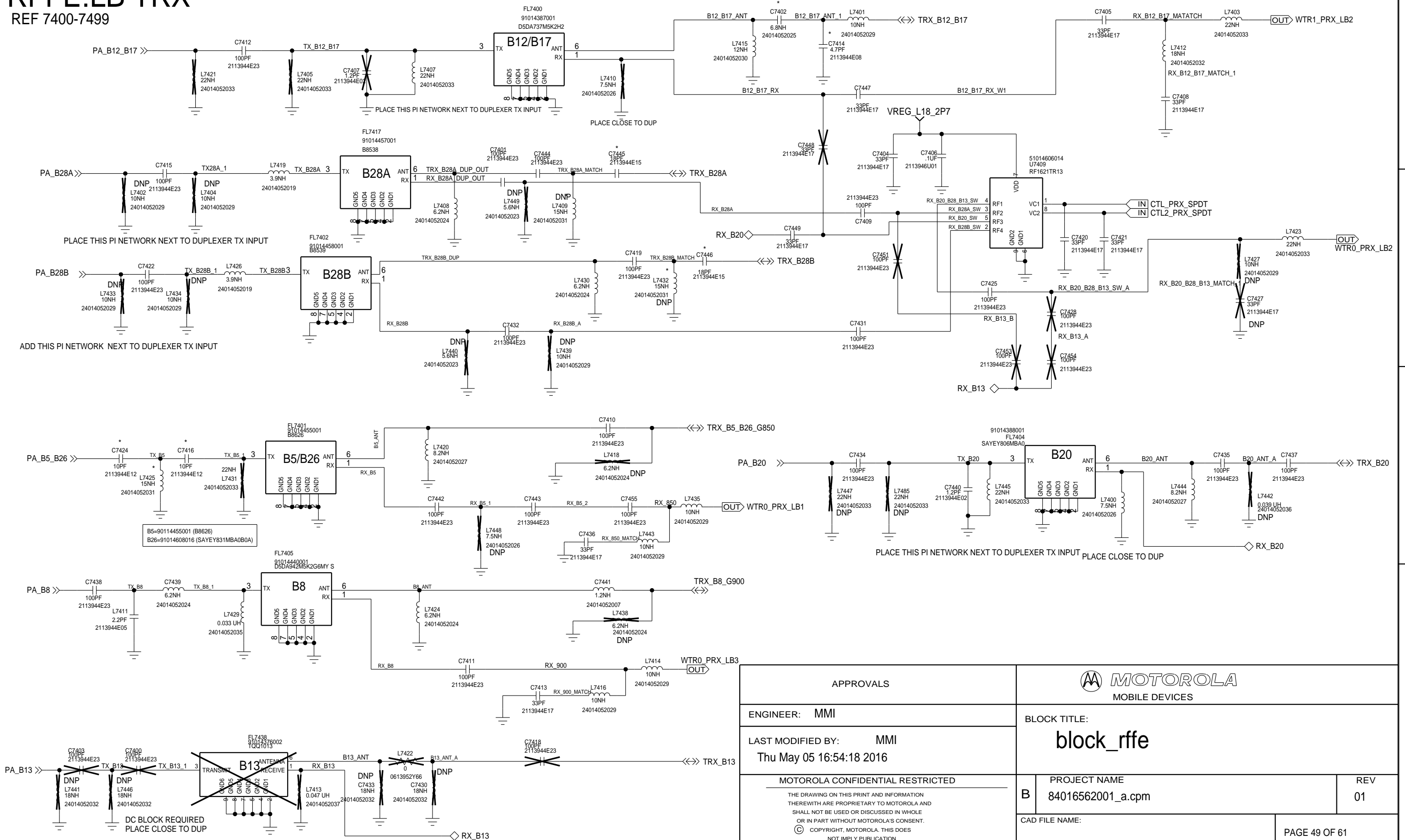
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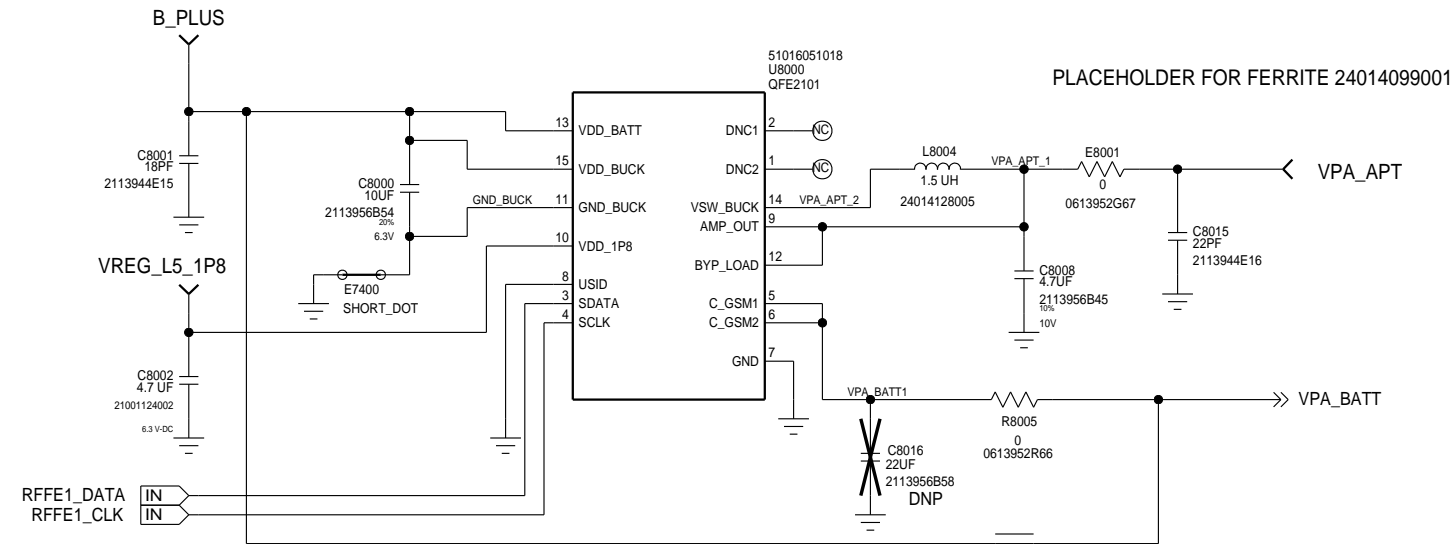
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:18 2016		block_rfe	
MOTOROLA CONFIDENTIAL RESTRICTED		PROJECT NAME	REV
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CAD FILE NAME:		PAGE 49 OF 61	

RFFE:QFE2101
REF 7400-7499



E7400 : DO NOT VIA DIRECTLY TO GROUND PLANE. KEEP ISOLATED ON SURFACE LAYER;

BYPASS OPTION FOR VPA_VBATT
DNP APPROPRIATELY

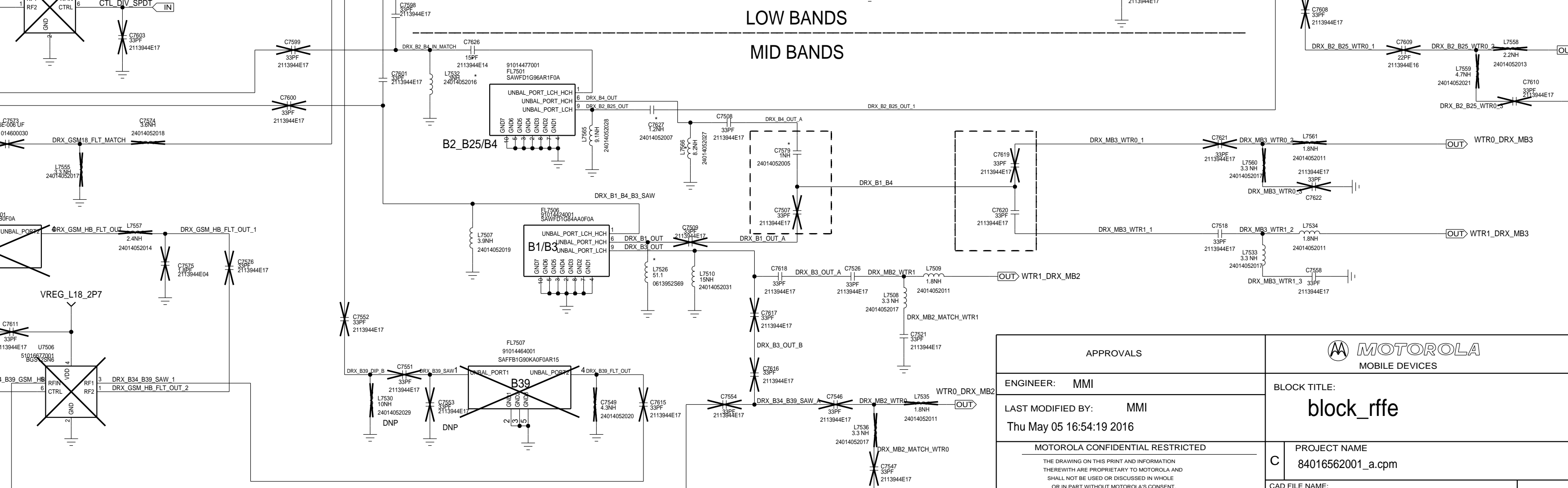
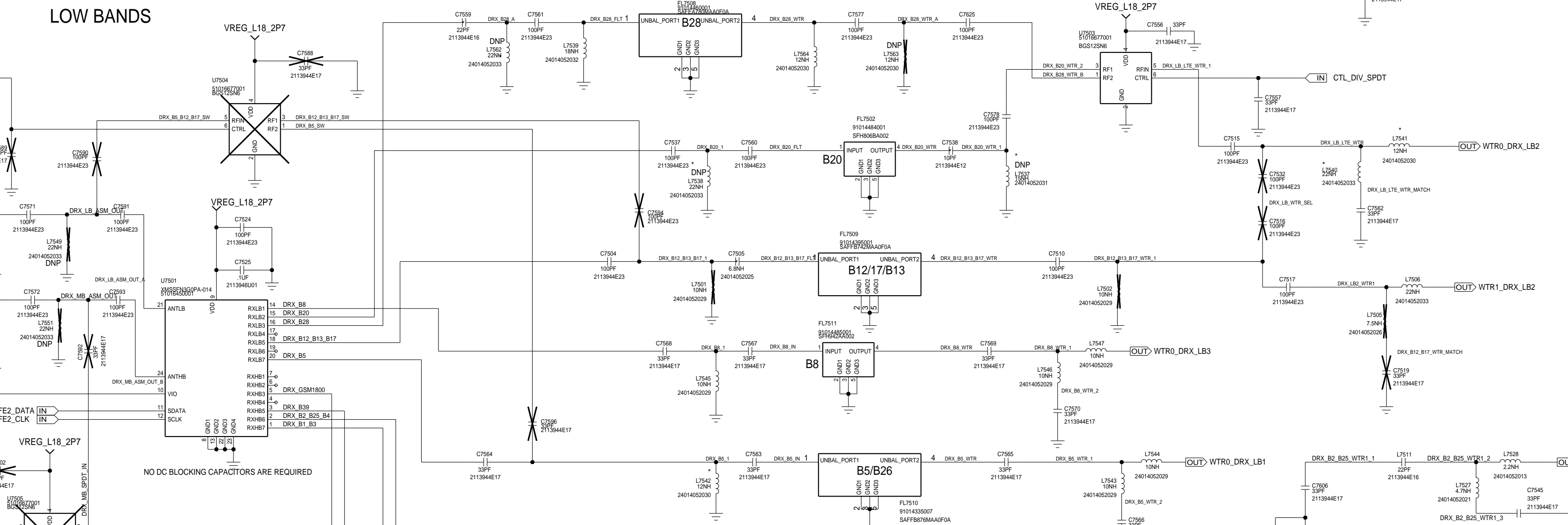
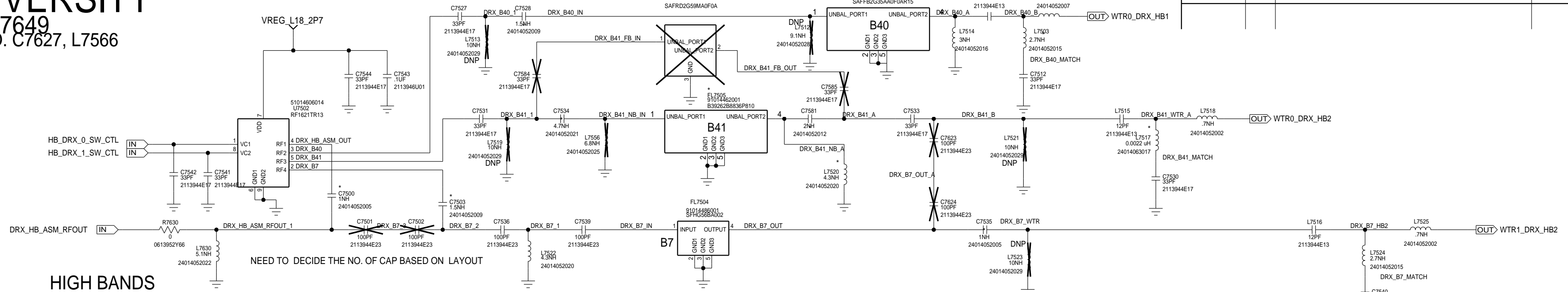
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LAST MODIFIED BY: MMI Thu May 05 16:54:19 2016		PROJECT NAME B 84016562001_a.cpm	
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		PAGE 50 OF 61	

RFFE: DIVERSITY

REF 7500-7649
LAST REF NO. C7627, L7566

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPR.

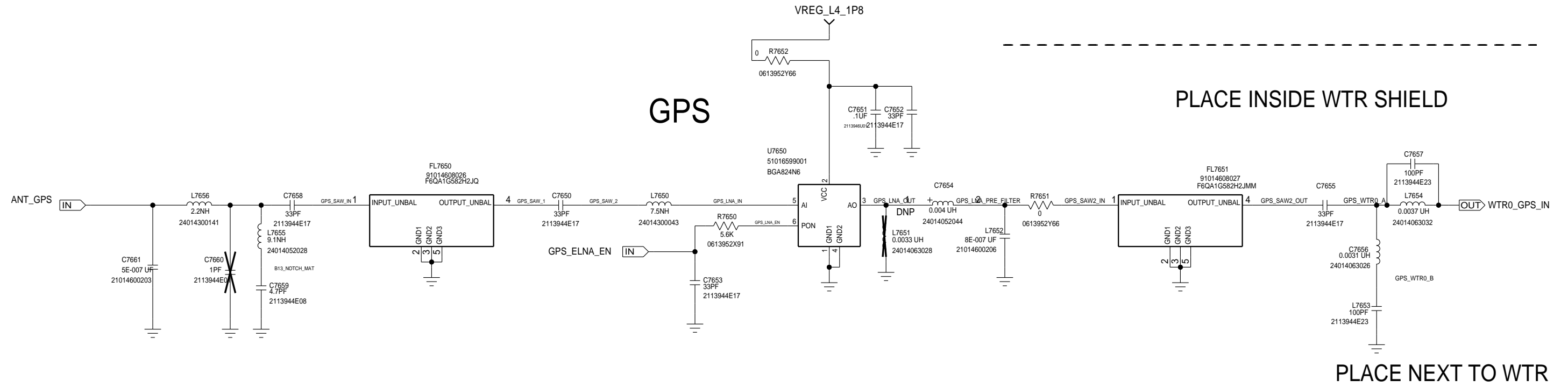


APPROVALS	
ENGINEER:	MMI
LAST MODIFIED BY:	MMI
Thu May 05 16:54:19 2016	
MOTOROLA CONFIDENTIAL RESTRICTED	
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BLOCK TITLE: block_rfe	
PROJECT NAME C 84016562001_a.cpm	REV 01
CAD FILE NAME:	

RFFE: GPS

REF 7650-7699



GPS

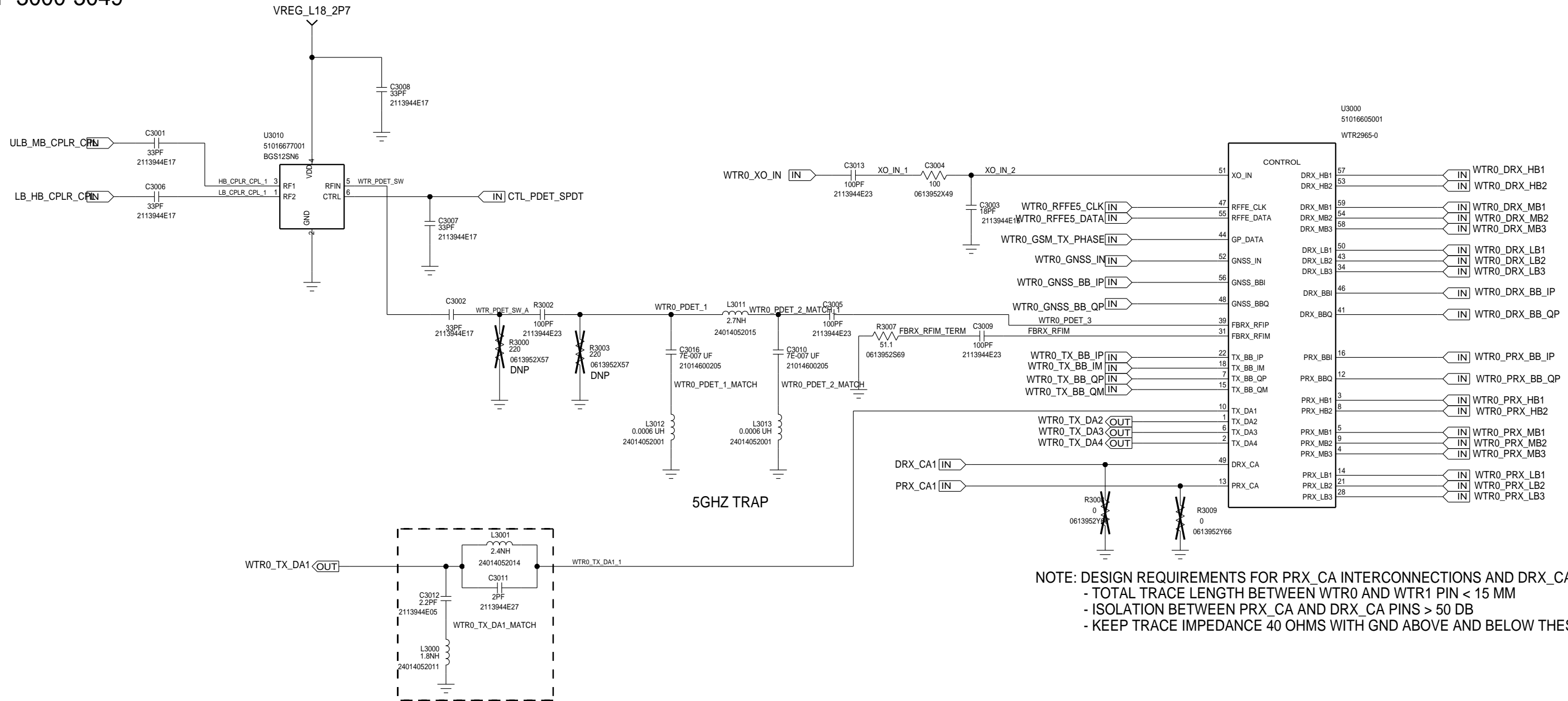
PLACE INSIDE WTR SHIELD

PLACE NEXT TO WTR

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI		block_rfe	
Wed May 03 08:55:28 2016 MOTOROLA CONFIDENTIAL RESTRICTED <small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		PROJECT NAME B 84016562001_a.cpm	REV 01
		CAD FILE NAME:	
		PAGE 52 OF 61	

WTR2965 BB RF

REF 3000-3049



NOTE: THIS LC NOTCH IS REQUIRED TO MEET 4FMOD SPECS IN B13 BAND.

BASED ON 80-NP237-43 REV. A

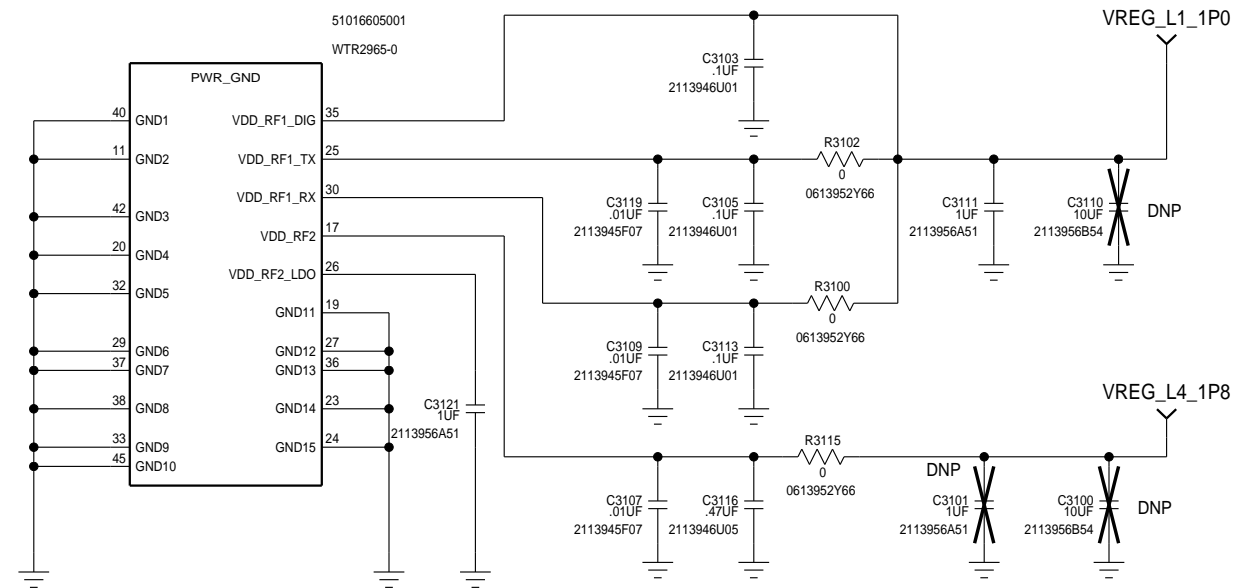
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: Thu May 05 16:54:10 2016		blk_wtr2965	
MOTOROLA CONFIDENTIAL RESTRICTED		PROJECT NAME	REV
<small>THE DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO MOTOROLA AND SHALL NOT BE USED OR DISCUSSED IN WHOLE OR IN PART WITHOUT MOTOROLA'S CONSENT. © COPYRIGHT, MOTOROLA. THIS DOES NOT IMPLY PUBLICATION</small>		B 84016562001_a.cpm	01
		CAD FILE NAME:	PAGE 58 OF 61

WTR2965 POWER

REF 3100-3149

U3000



NOTE: C3119, C3109, C3107 ARE PRIORITY 1 AND SHOULD BE PLACED CLOSEST TO VDD PINS.

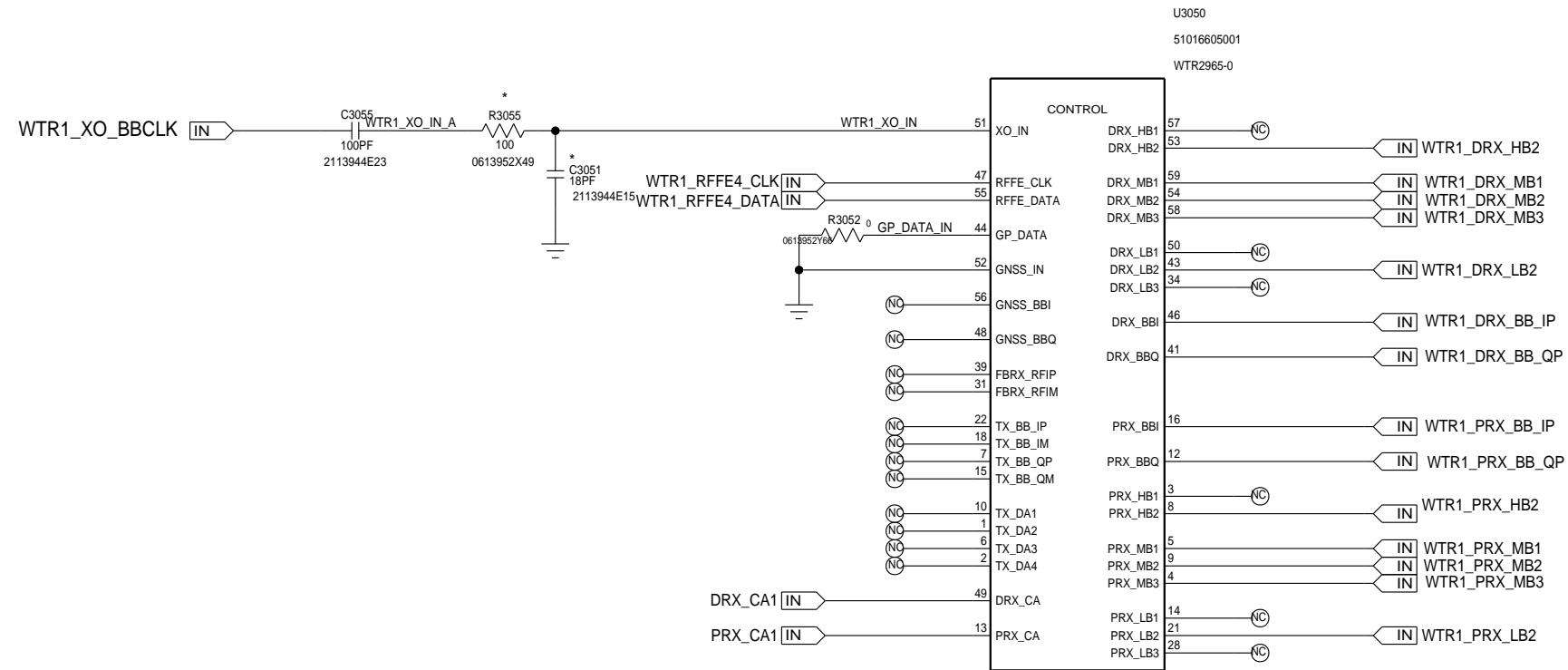
BASED ON 80-NL713-44 REV. A

MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:10 2016		blk_wtr2965	
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		B 84016562001_a.cpm	01
CAD FILE NAME:		PAGE 59 OF 61	

CA_WTR2965 BB RF

REF 3050-3099



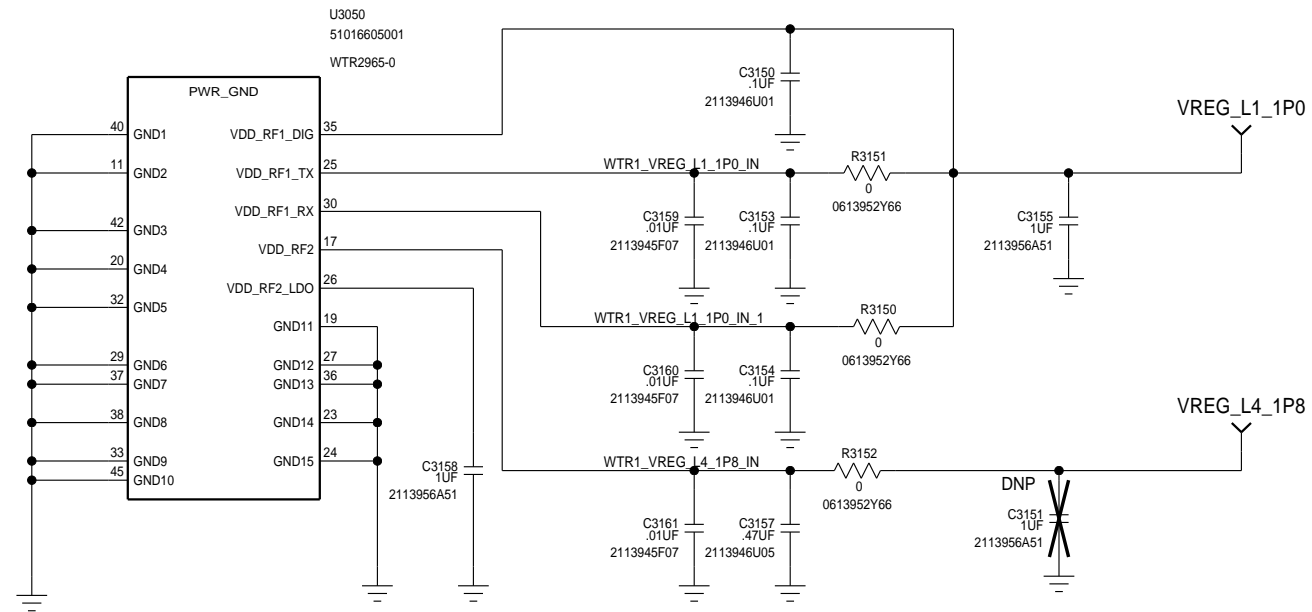
NOTE: DESIGN REQUIREMENTS FOR PRX_CA INTERCONNECTIONS AND DRX_CA INTERCONNECTIONS:

- TOTAL TRACE LENGTH BETWEEN WTR0 AND WTR1 PIN < 15 MM
- ISOLATION BETWEEN PRX_CA AND DRX_CA PINS > 50 DB
- KEEP TRACE IMPEDANCE 40 OHMS WITH GND ABOVE AND BELOW THESE TRACES


APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: Thu May 05 16:54:08 2016		ca_wtr2965	
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		CAD FILE NAME:	
		PAGE 60 OF 61	

CA_WTR2965 POWER

REF 3150-3199



NOTE: C3159, C3160, C3161 ARE PRIORITY 1 AND SHOULD BE PLACED CLOSEST TO VDD PINS.

APPROVALS		 MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Thu May 05 16:54:09 2016		ca_wtr2965	
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		CAD FILE NAME:	
		PAGE 61 OF 61	