

# VERTEX

## SYSTEM 4.0

01/22/16

04-S28-2014

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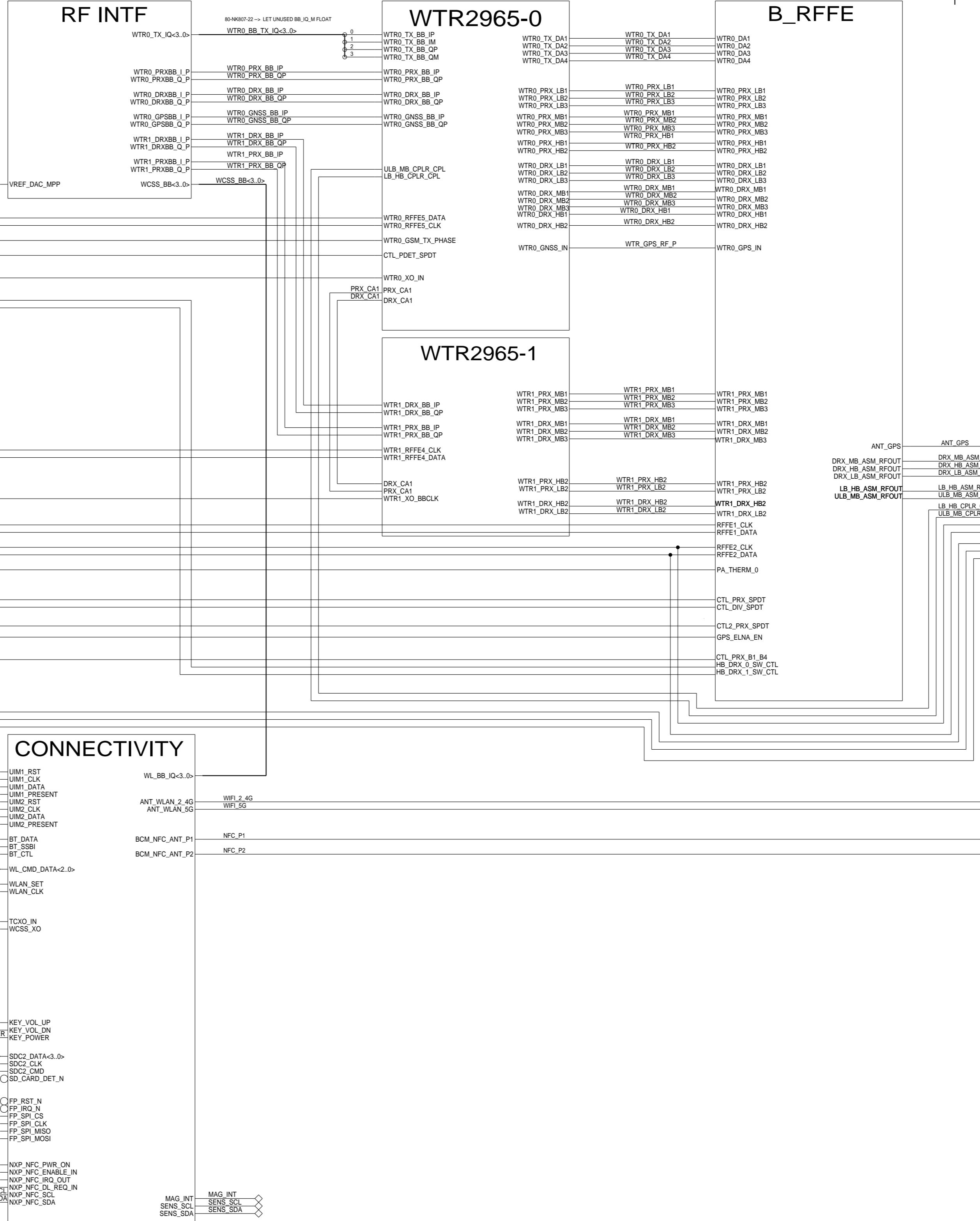
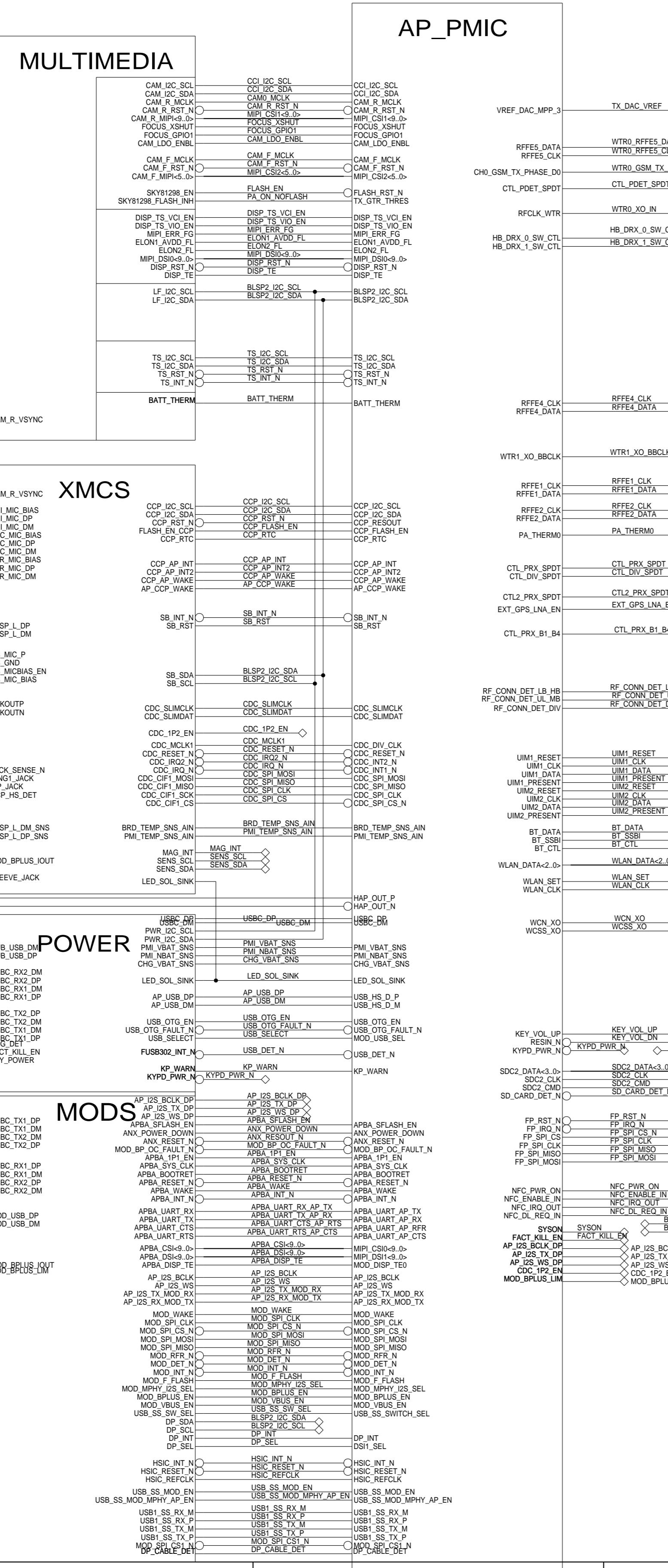
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REVISIONS

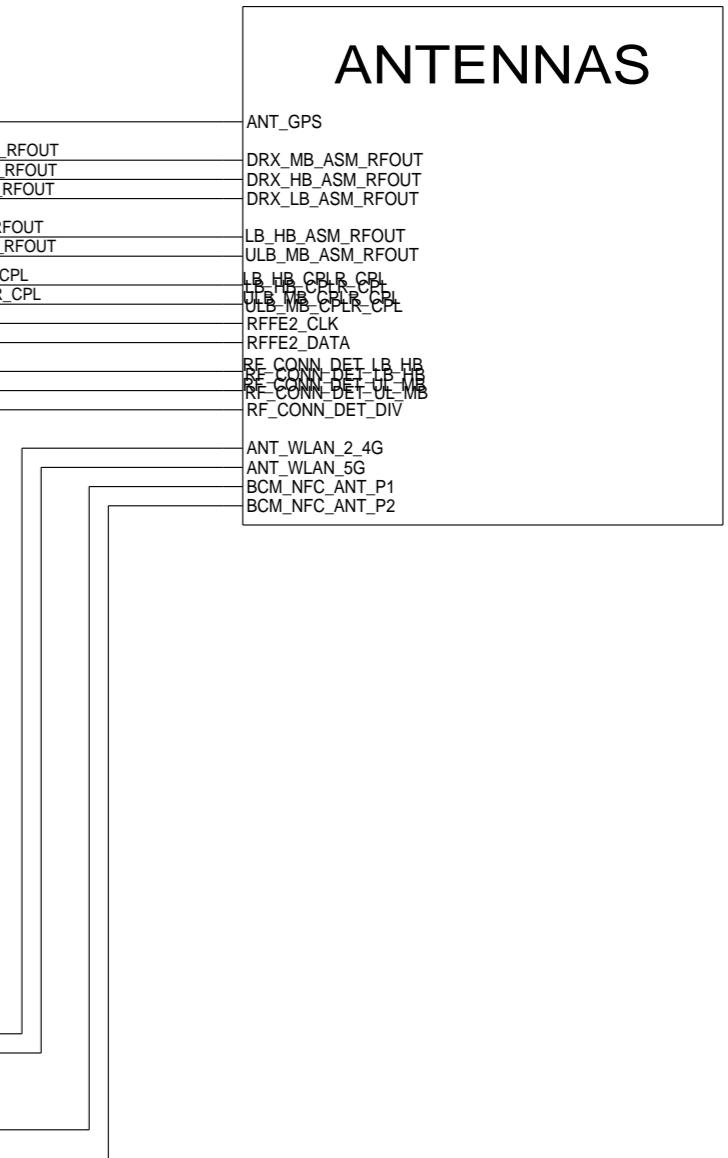
ZONE	LTR	DESCRIPTION	DATE	APPROVED



APPROVALS	MOTOROLA MOBILE DEVICES	
ENGINEER: MOTOROLA MOBILITY	BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL	84016562001_a	
Thu May 05 16:54:56 2016		
MOTOROLA CONFIDENTIAL RESTRICTED	PROJECT NAME	REV
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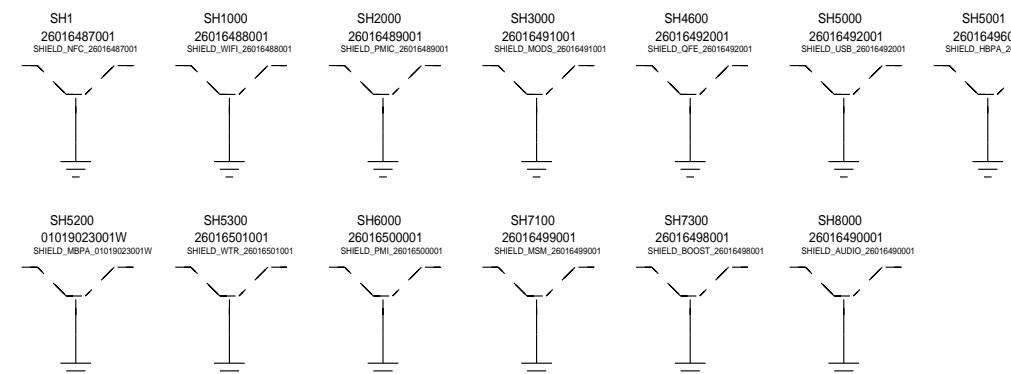
## ANTENNAS



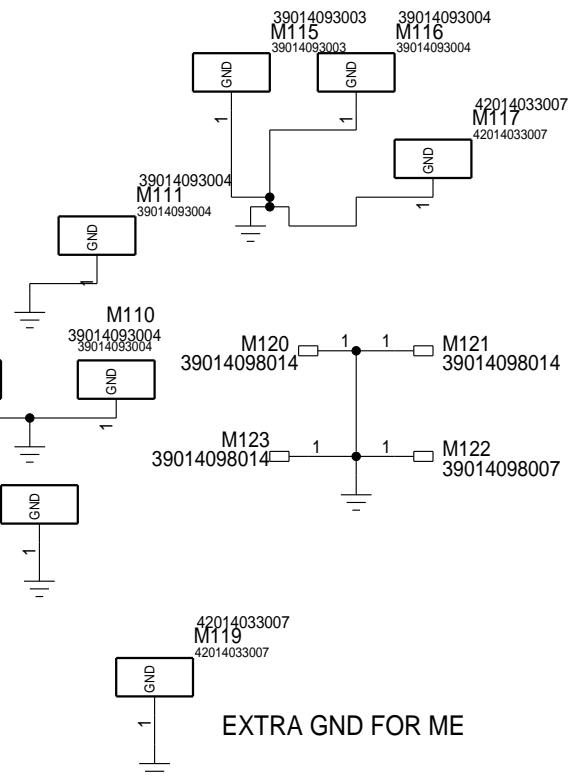
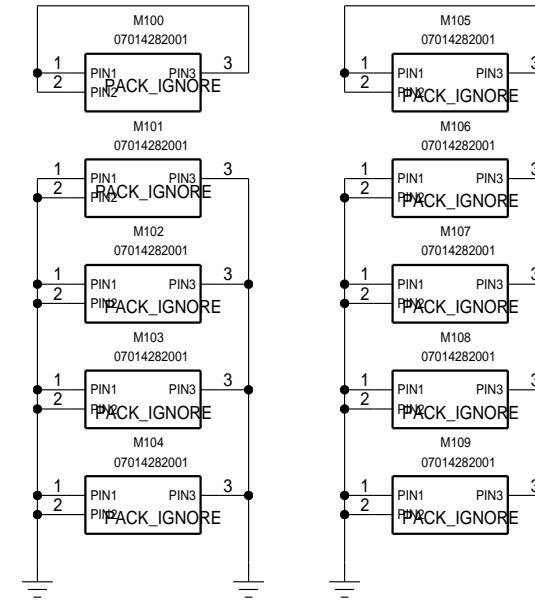
# VERTEX ME/SHIELDS

## 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

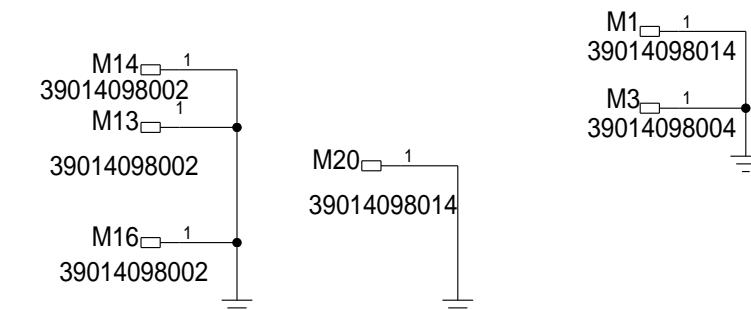


PLACE M100 AND M105 NEAR DIVERSITY ANTENNA KEEP OUT



EXTRA GND FOR ME

## UNIVERSAL GROUND CONTACTS



MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

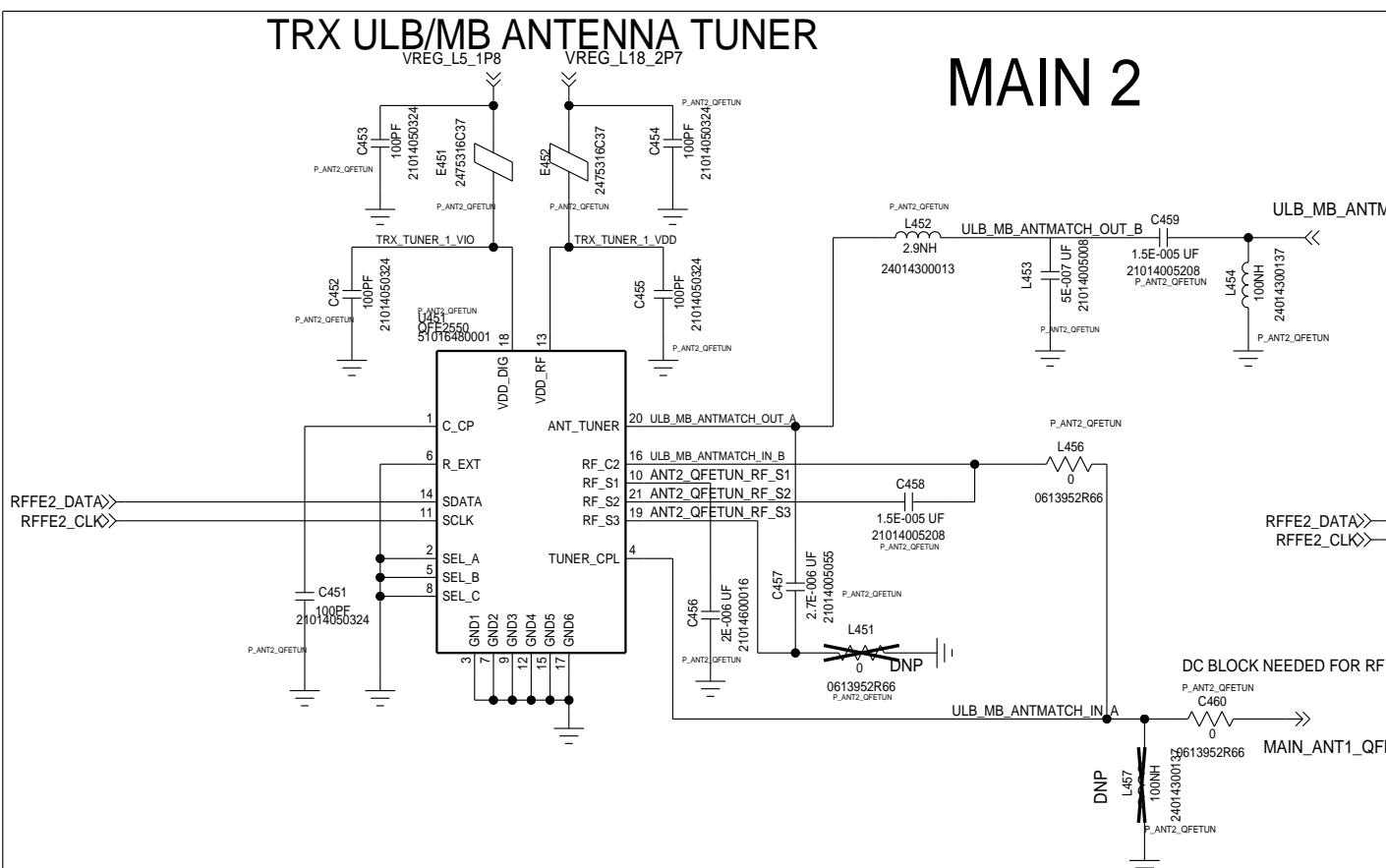
APPROVALS	 <b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER:	BLOCK TITLE:	
LAST MODIFIED BY: Fri Jun 17 10:51:06 2016	<b>84016562001_a</b>	
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CAD FILE NAME:		REV 01
PAGE 2 OF 61		



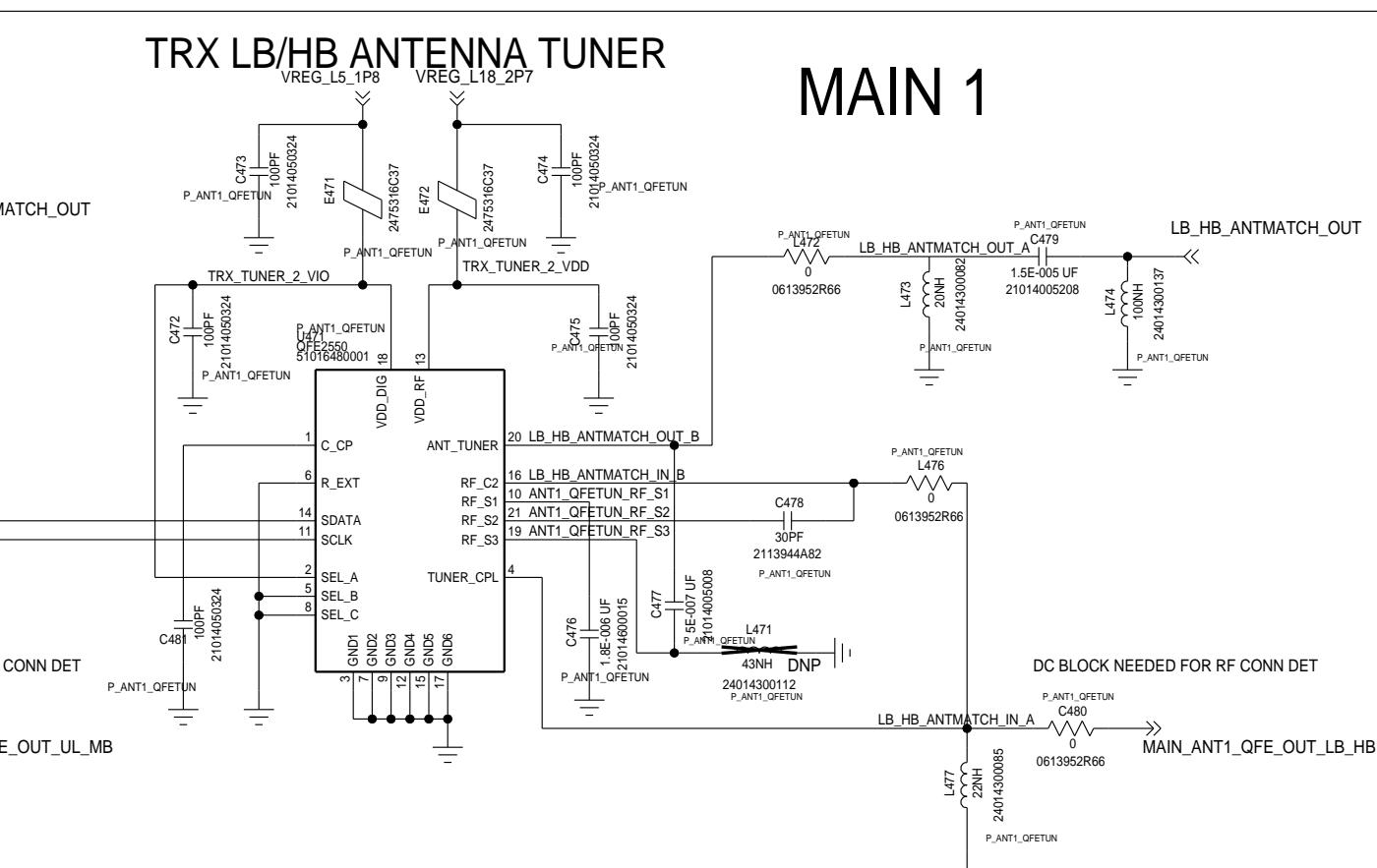
## ANT: QCOM TUNERS

REFDES: 400-499

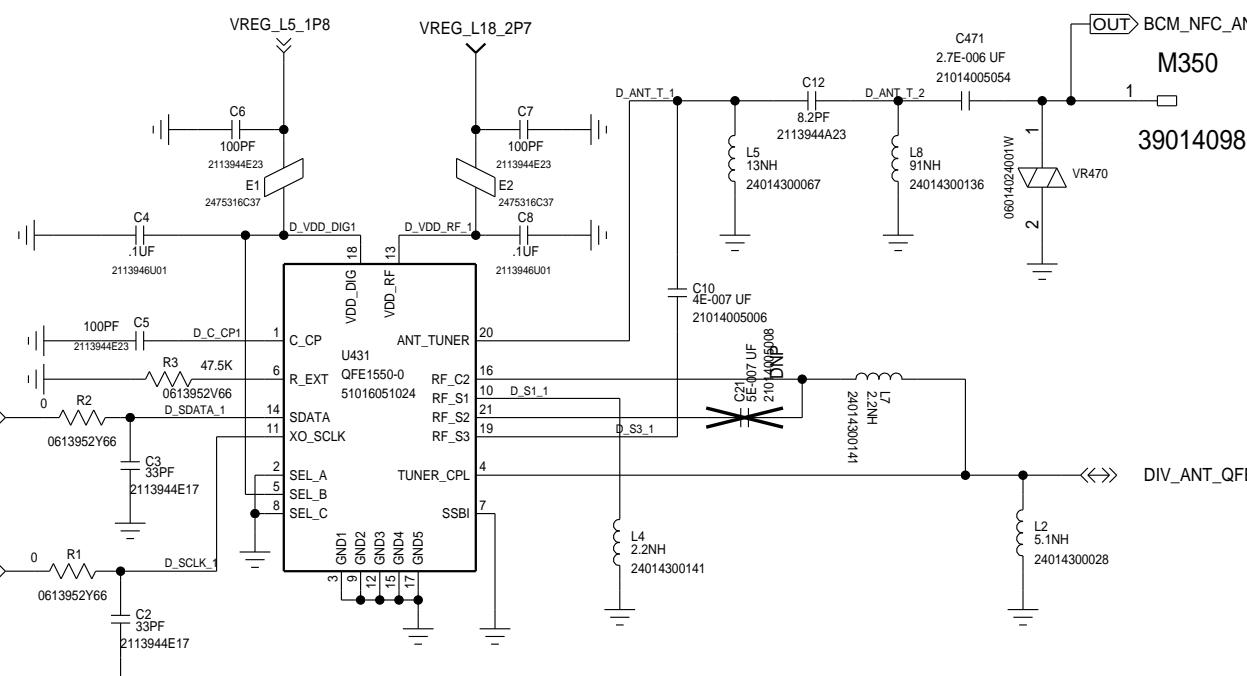
# TRX ULB/MB ANTENNA TUNER



## TRX LB/HB ANTENNA TUNE



DIV



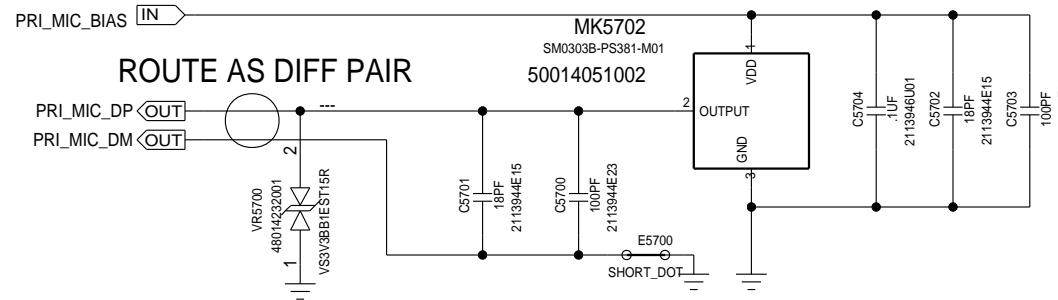
APPROVALS		 <b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: ADDISON ANTENNA TEAM		BLOCK TITLE:  <b>antennas</b>	
LAST MODIFIED BY: LEO Thu May 05 16:54:55 2016			
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		CAD FILE NAME:	REV 01
		PAGE 4 OF 61	

# AFE: MICS

REF: 5700-5799

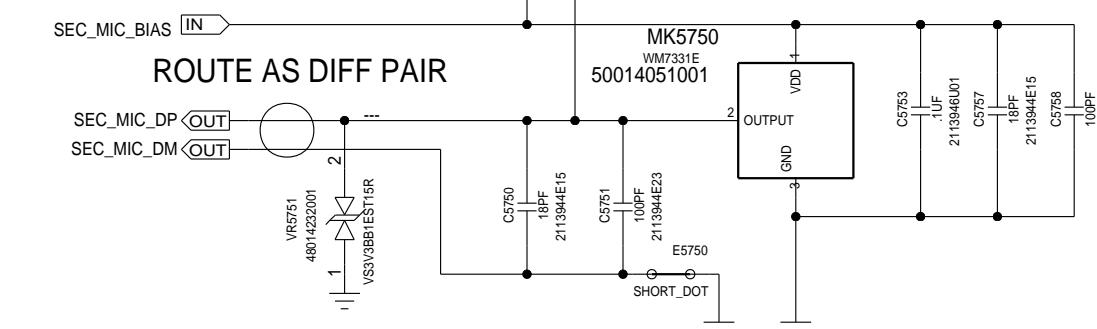
## PRIMARY MIC

REF: 5700-5709



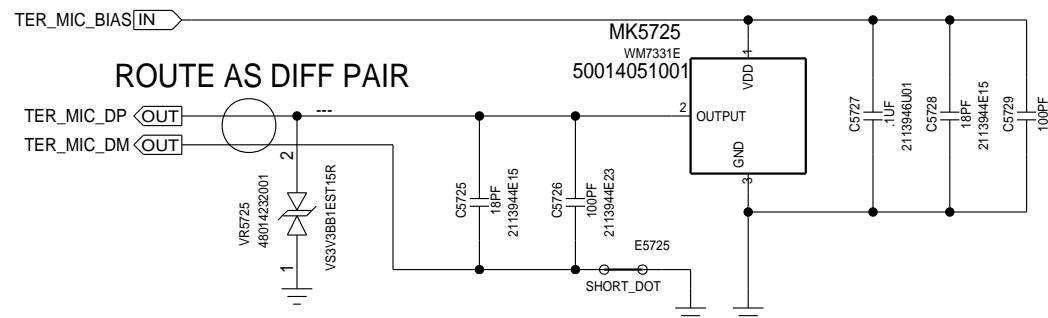
## SECONDARY MIC

REF: 5750-5759



## TERTIARY MIC

REF: 5725-5730



### APPROVALS

**MOTOROLA**  
MOBILE DEVICES

ENGINEER: DENNIS BUDNICK

LAST MODIFIED BY: NATE CONNELL  
Mon Jun 06 20:52:01 2016

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BLOCK TITLE:

**audio\_fe**

PROJECT NAME  
**B 84016562001\_a.cpm**

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01

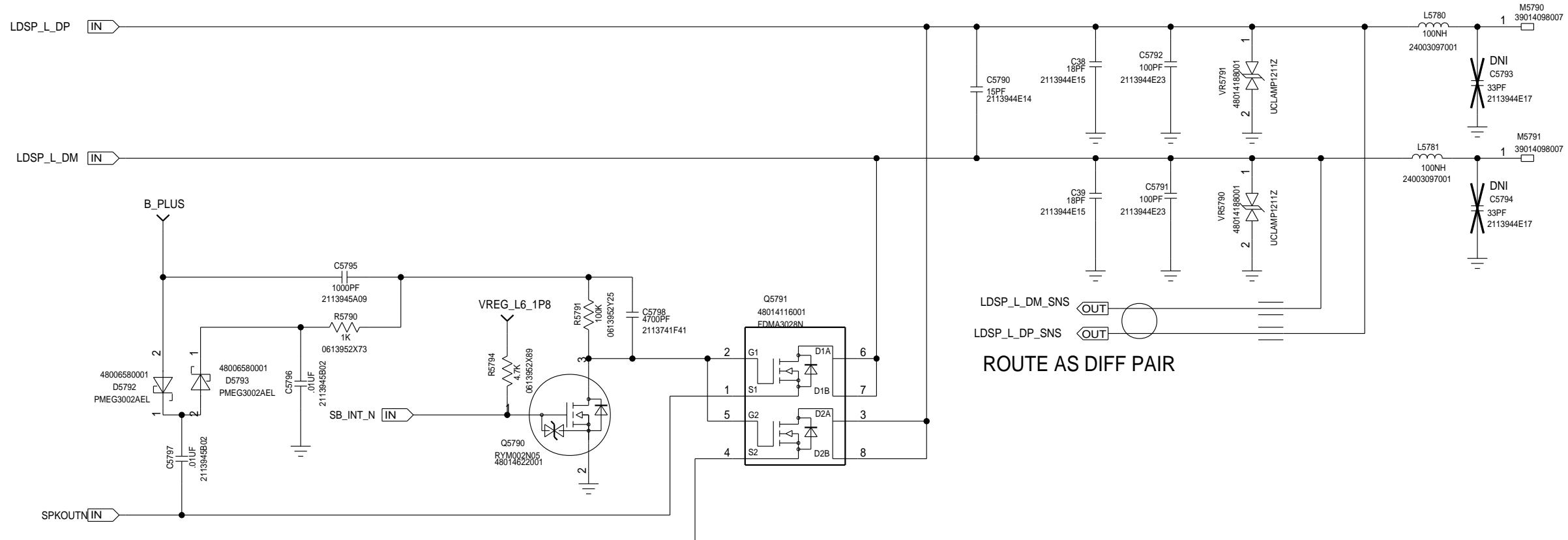
CAD FILE NAME:

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# AFE: SPEAKERS

## LOUDSPEAKER/EAR PIECE

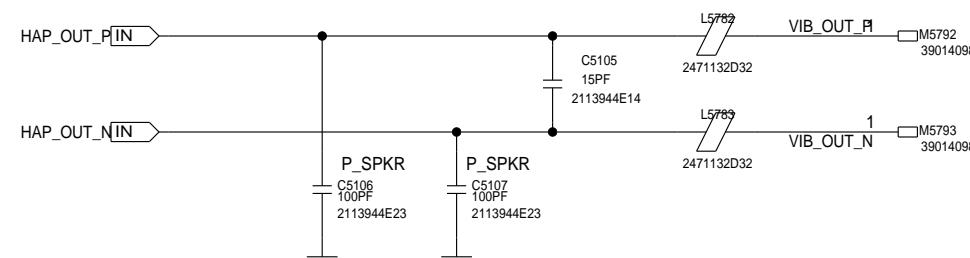
REF:5790-5799



ROUTE AS DIFF PAIR

## LINEAR VIBRATOR

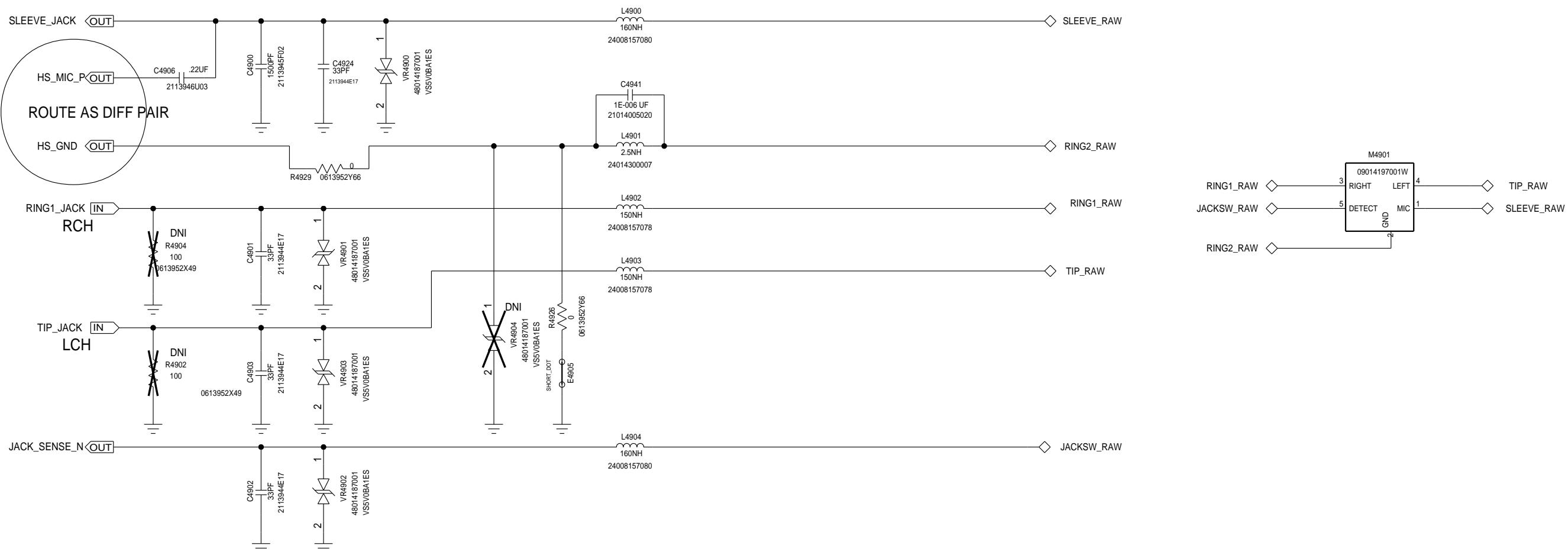
REF 5100-5119



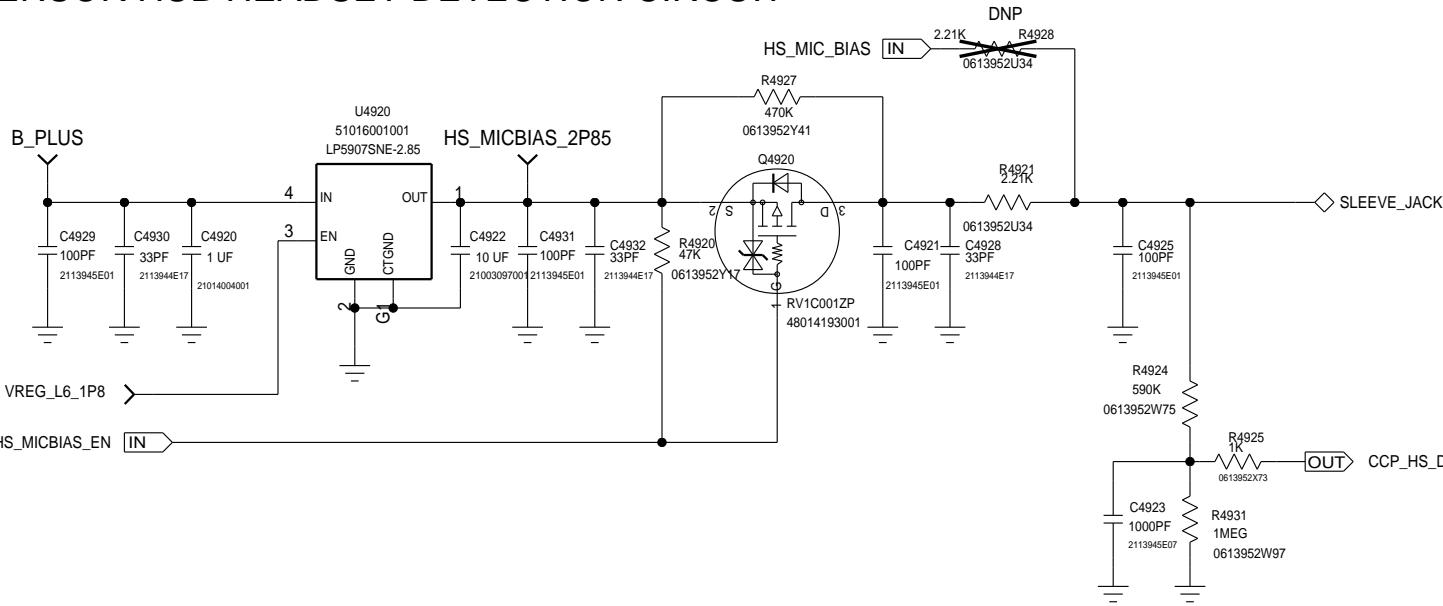
APPROVALS	<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: DENNIS BUDNICK	BLOCK TITLE:	<b>audio_fe</b>
LAST MODIFIED BY: TIM MILLER Fri Jun 17 10:55:14 2016		
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CAD FILE NAME:	PAGE 6 OF 61	

# AFE: 3.5MM HEADSET

3.5MM HSJ  
REF:4900-4949



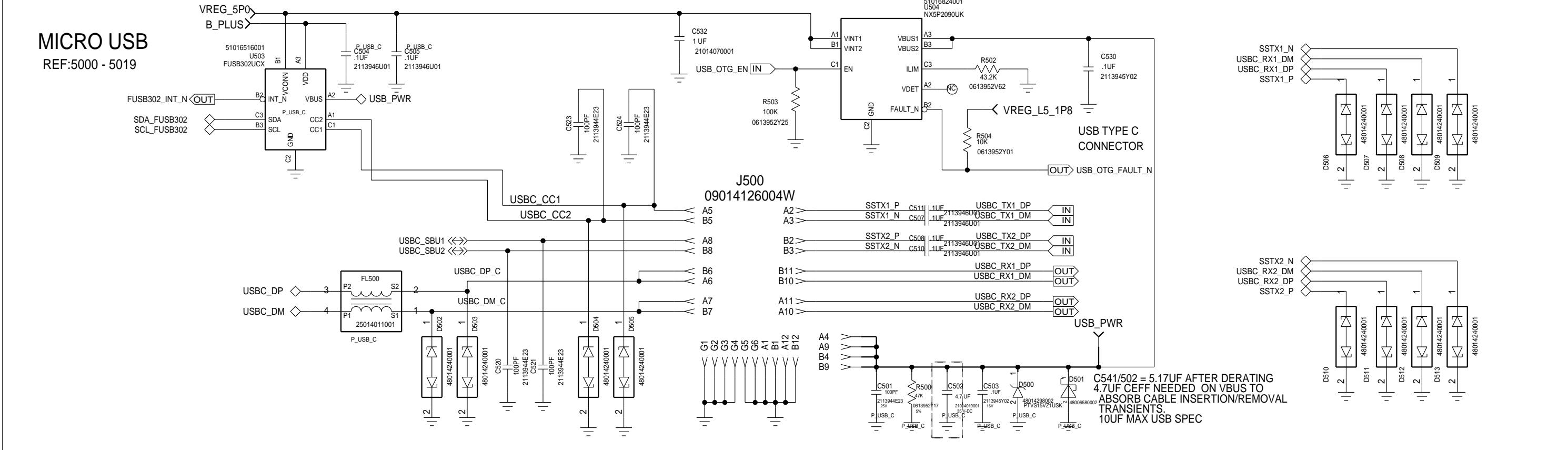
## SENSOR HUB HEADSET DETECTION CIRCUIT



APPROVALS	MOTOROLA MOBILE DEVICES	
ENGINEER: MMI	BLOCK TITLE:	audio_fe
LAST MODIFIED BY: MMI	Tue May 24 15:06:44 2016	
MOTOROLA CONFIDENTIAL RESTRICTED		REV 01
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B 84016562001_a.cpm		

# PWR: USB-C

REF:5000 - 5219



## APPROVALS

**MOTOROLA**  
MOBILE DEVICES

ENGINEER: RICH NG

BLOCK TITLE:

**power**LAST MODIFIED BY: NATE CONNELL  
Tue May 31 11:44:37 2016

MOTOROLA CONFIDENTIAL RESTRICTED

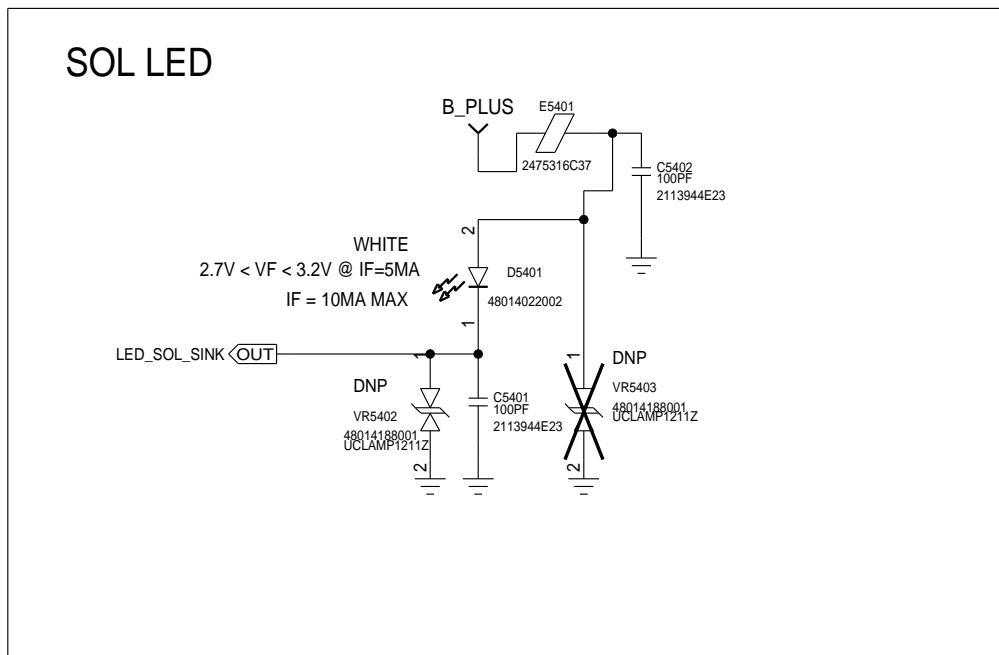
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CAD FILE NAME:

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# PWR: LIGHTING



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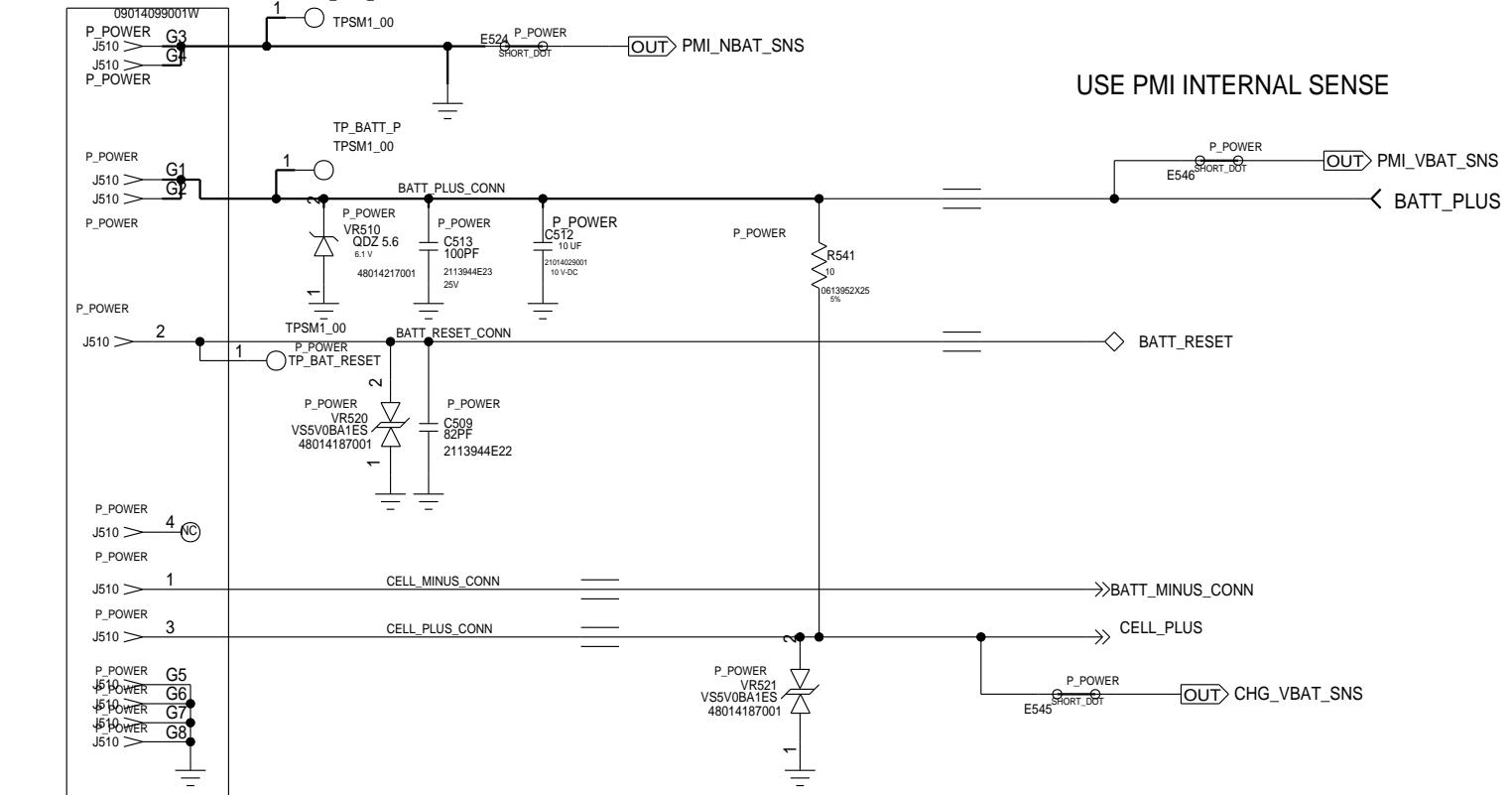
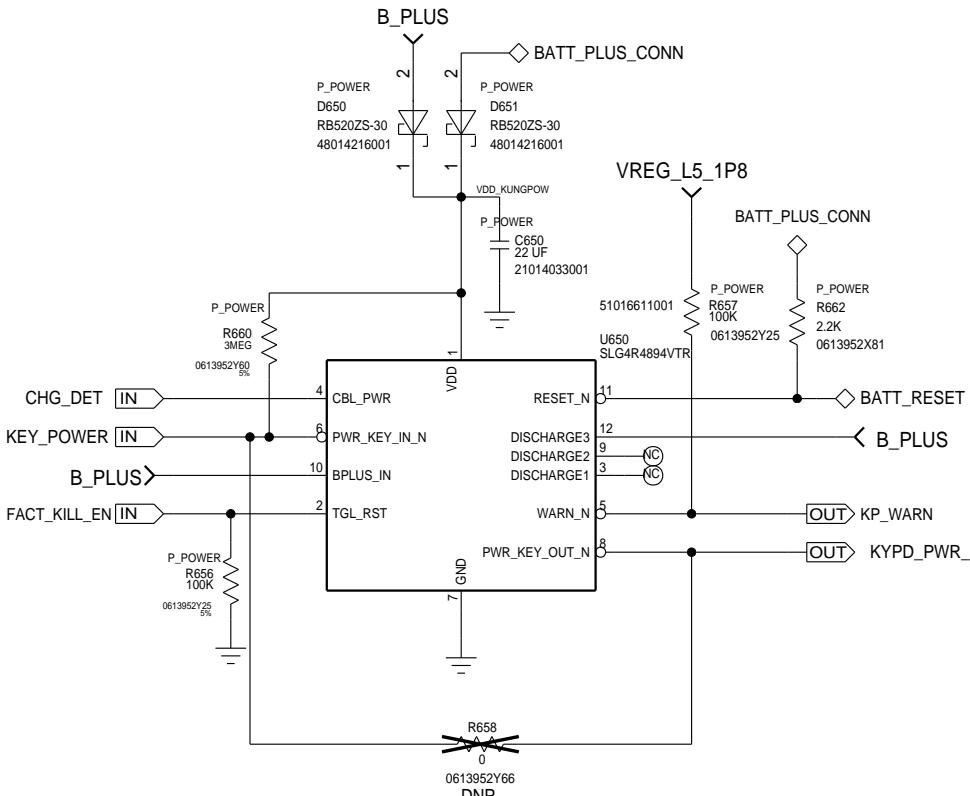
APPROVALS	 <b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER:	BLOCK TITLE:  <b>power</b>	
LAST MODIFIED BY: TIM MILLER Thu May 05 16:54:50 2016		
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# PWR: BATT

REF:5000 - 5219

BATTERY BLOCK  
REF:5200 - 5209  
PARALLEL BATTERY BLOCK FOR BATTERY ELIMINATOR

## KUNG KOW LITE BATTERY DISCONNECT



## APPROVALS

MOTOROLA  
MOBILE DEVICES

ENGINEER: RICH NG

BLOCK TITLE:

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

power

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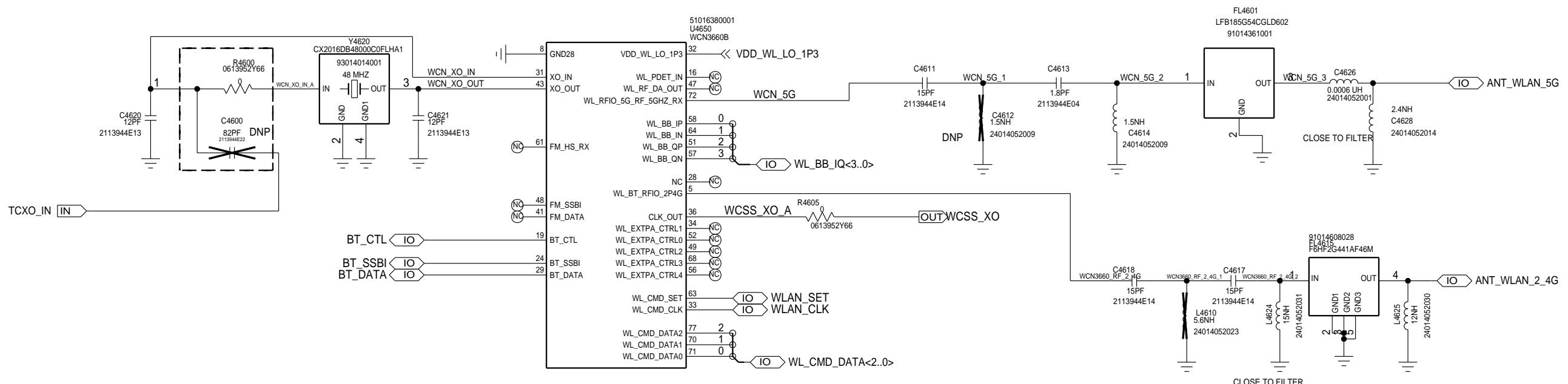
CAD FILE NAME:

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

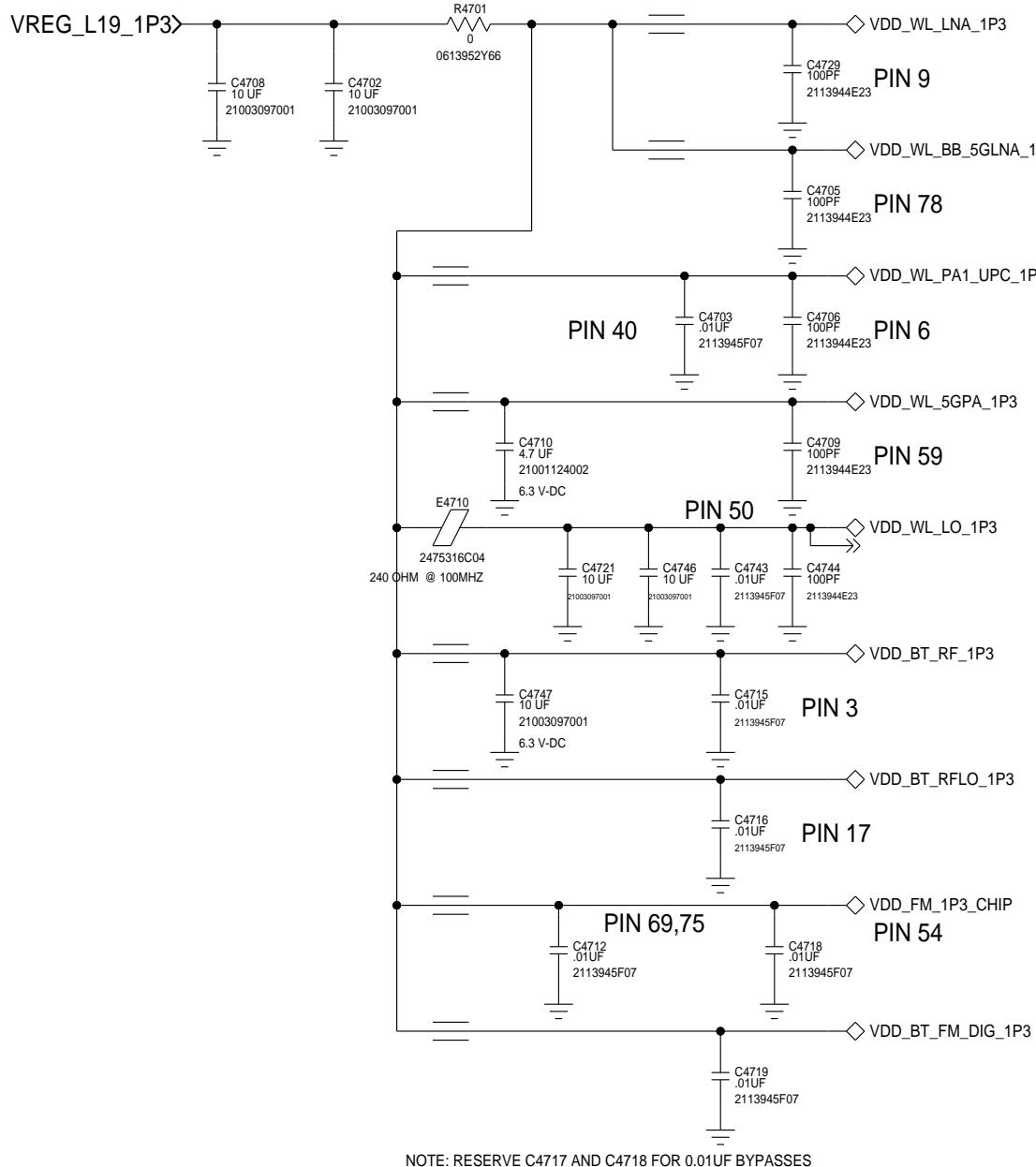
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REF 4700-4799

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## BT\_FM\_WLAN\_1P3

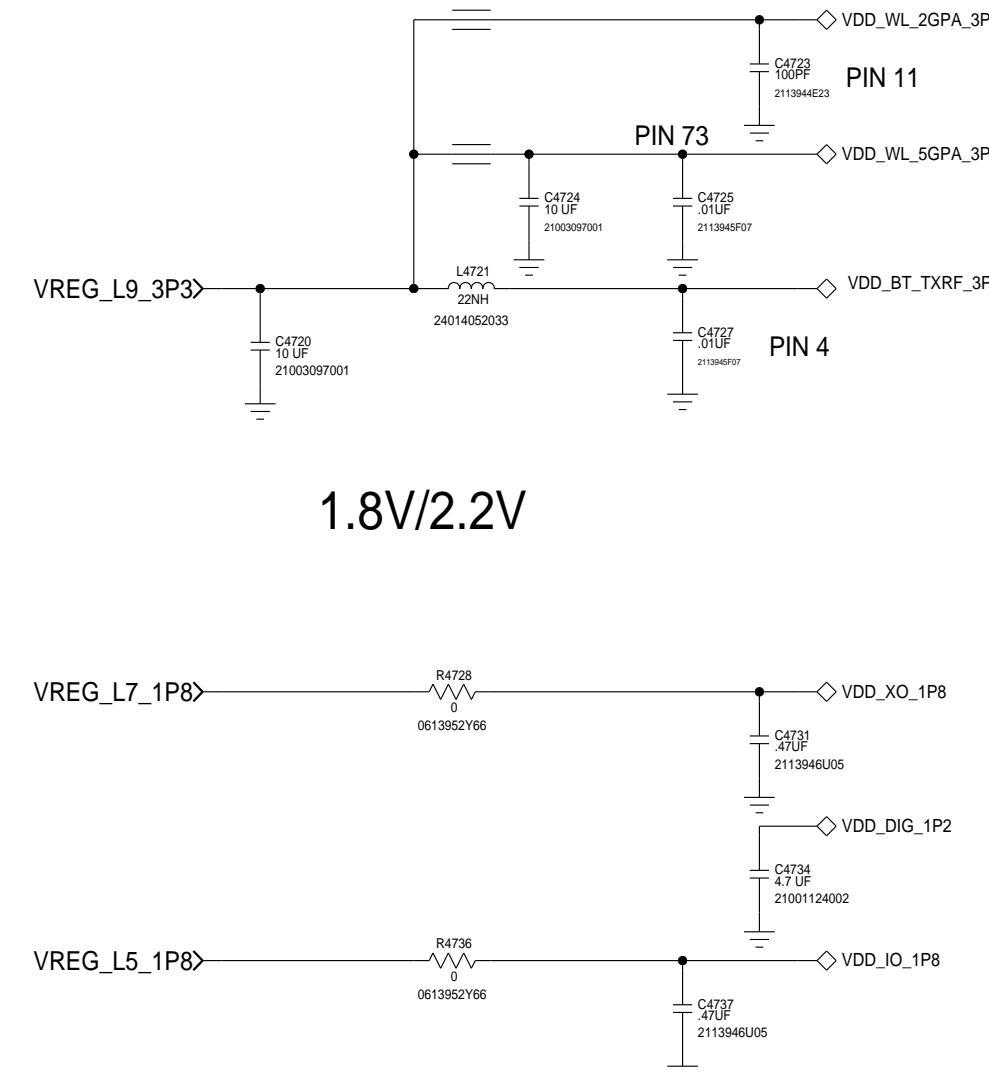


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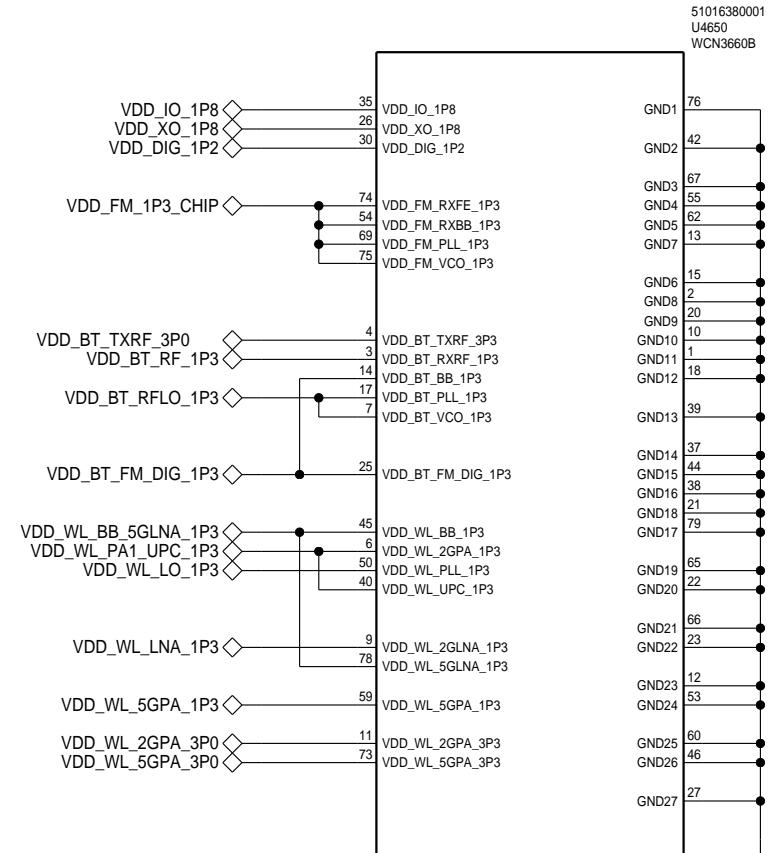
BASED ON 80-WL006-44 REV C

## WLBT\_3.0V



C

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APPROVALS	
ENGINEER:	BLOCK TITLE:
LAST MODIFIED BY: FROEHLING	connectivity
Thu May 05 16:54:45 2016	

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MOBILE DEVICES

PROJECT NAME	B 84016562001_a.cpm	REV 01
CAD FILE NAME:		
PAGE 12 OF 61		

# CONN: UIM1/UIM2/SDCARD

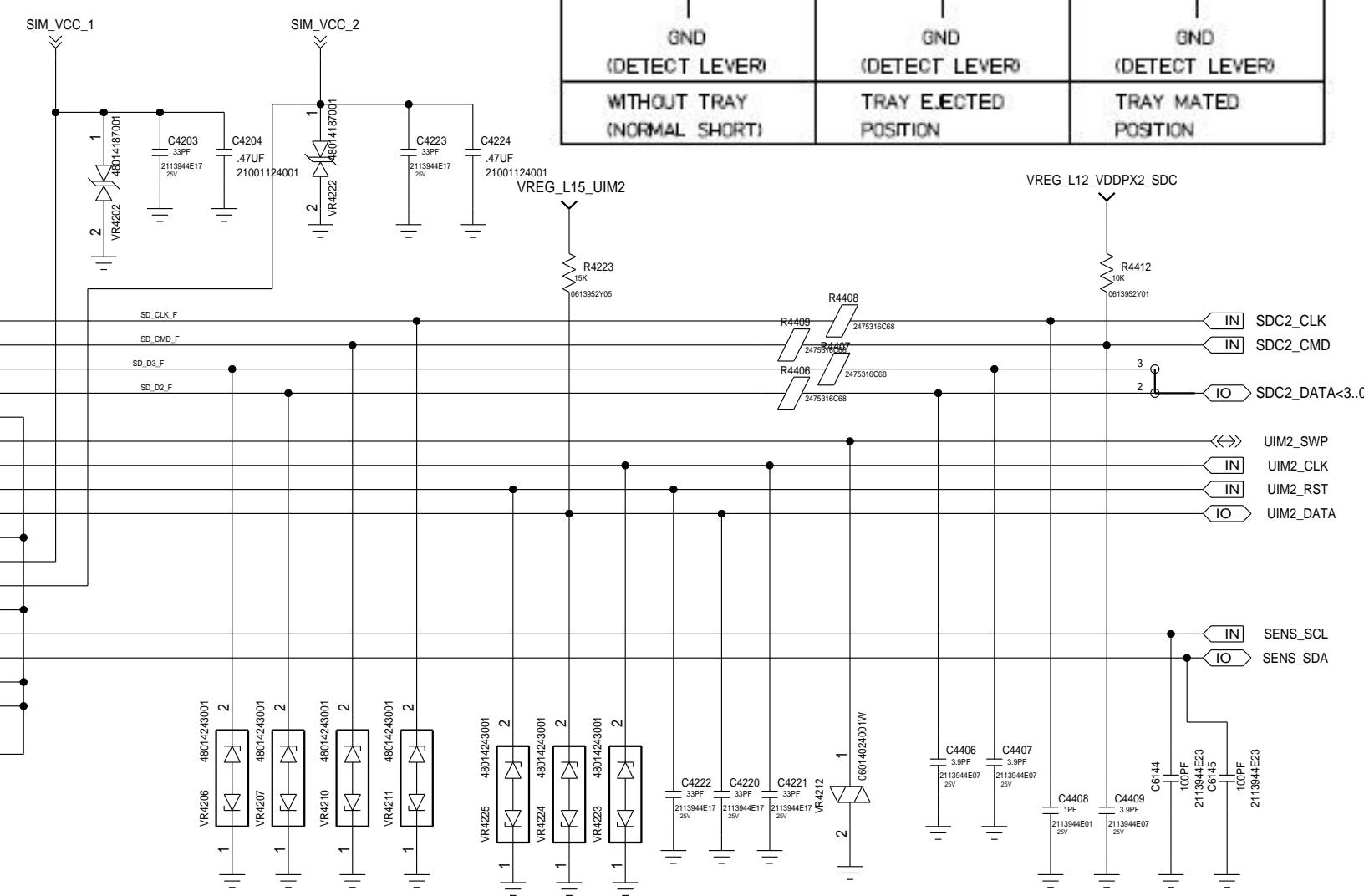
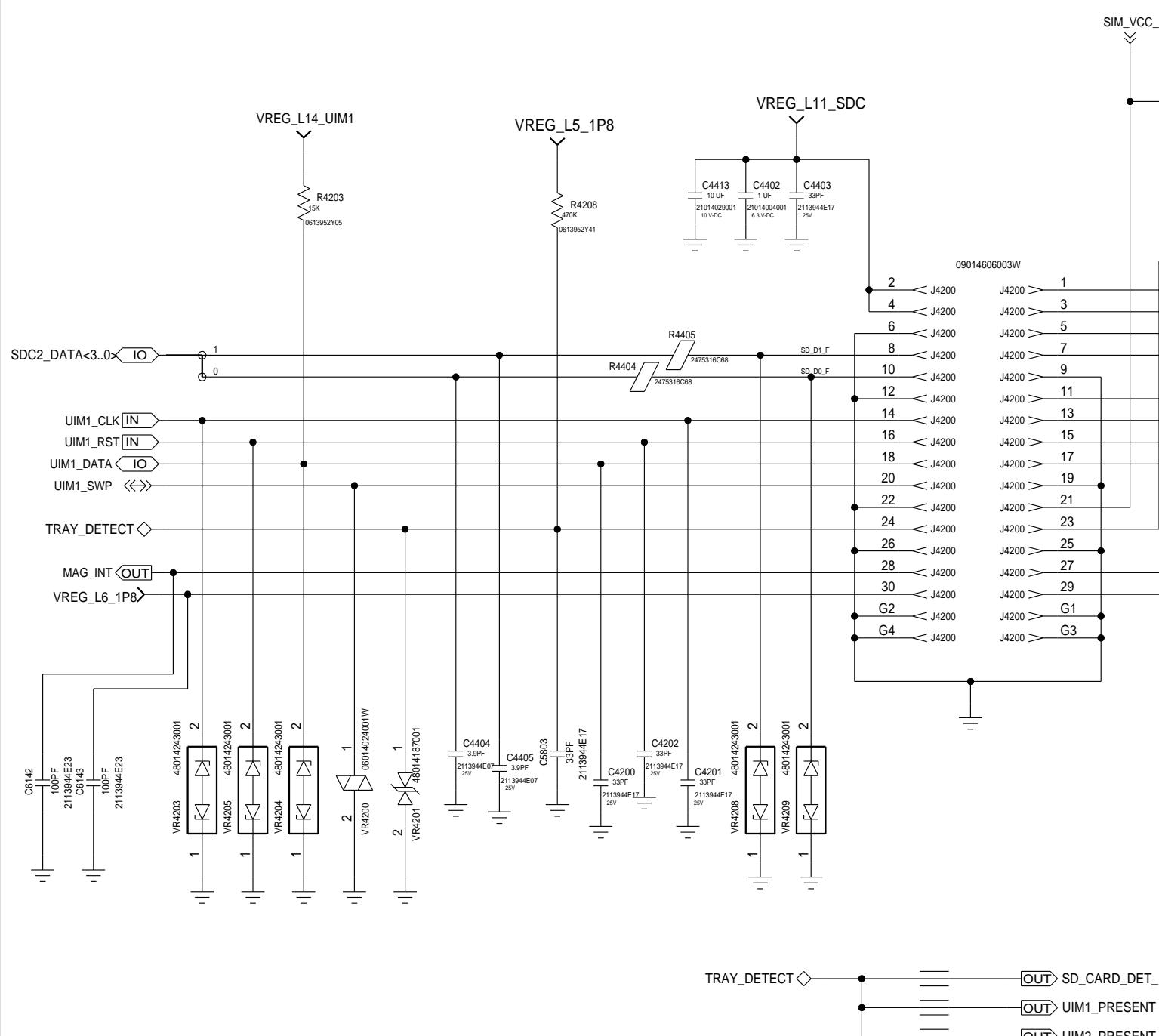
REF:4200-4219

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TRAY DETECT PIN DEFINITION		
TRAY DETECT PIN (DETECT SWITCH)	TRAY DETECT PIN (DETECT SWITCH)	TRAY DETECT PIN (DETECT SWTCH)
GND	GND	GND
(DETECT LEVER)	(DETECT LEVER)	(DETECT LEVER)
WITHOUT TRAY (NORMAL SHORT)	TRAY EJECTED POSITION	TRAY MATED POSITION

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APPROVALS

ENGINEER: FROEHLING

LAST MODIFIED BY: FROEHLING

Thu May 19 10:36:49 2016

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**MOTOROLA**  
MOBILE DEVICES

BLOCK TITLE:

**connectivity**

PROJECT NAME  
**B 84016562001\_a.cpm**

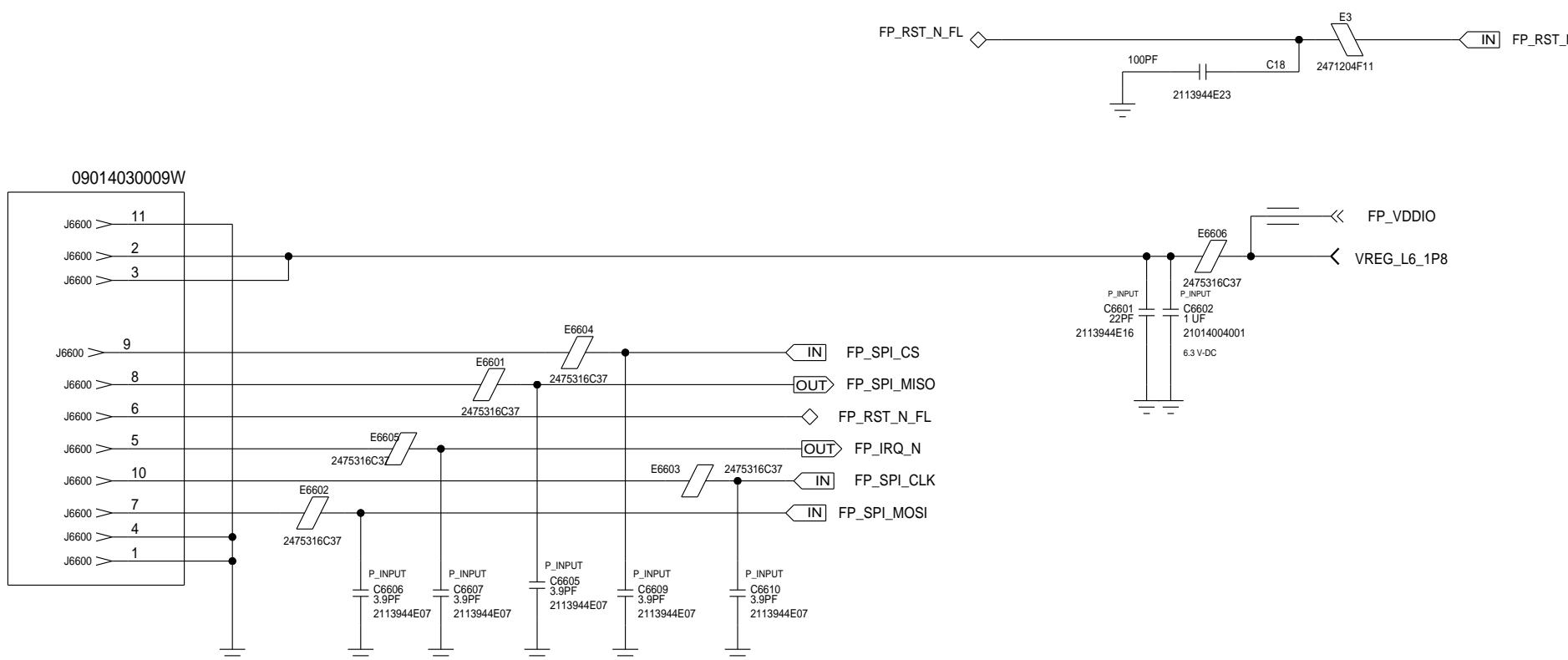
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PAGE 13 OF 61

# USR: FPC

REF: 6600 - 6699



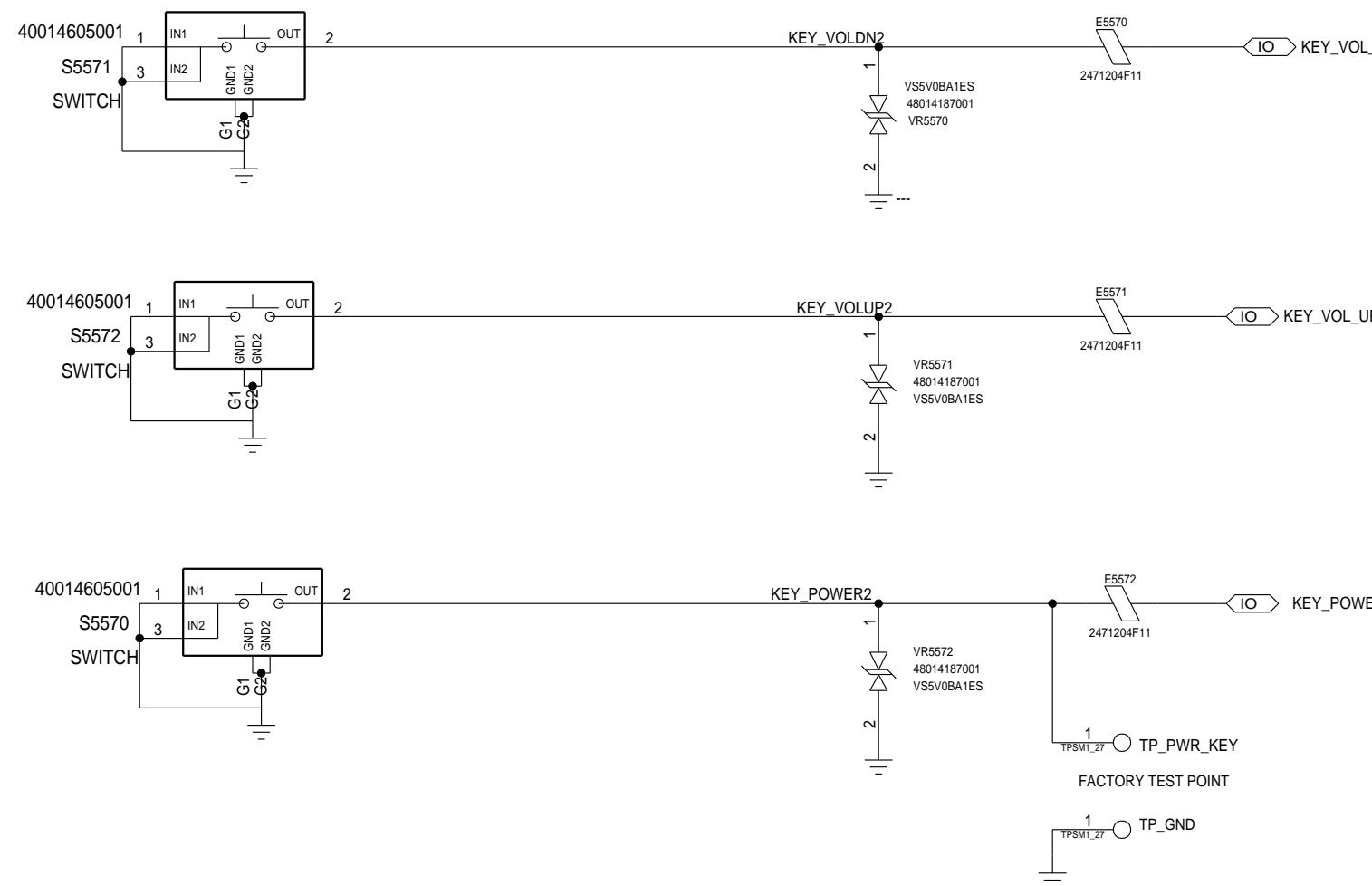
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ENGINEER: NATE CONNELL	BLOCK TITLE: <b>connectivity</b>	
LAST MODIFIED BY: NATE CONNELL Thu May 05 16:54:47 2016		
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# SIDE KEY & BATT THERM CONN

REF:5570-5579

## MECHANICAL KEYS

VOL\_UP/DOWN/GND TPS NEED P0 BRINGUP ONLY



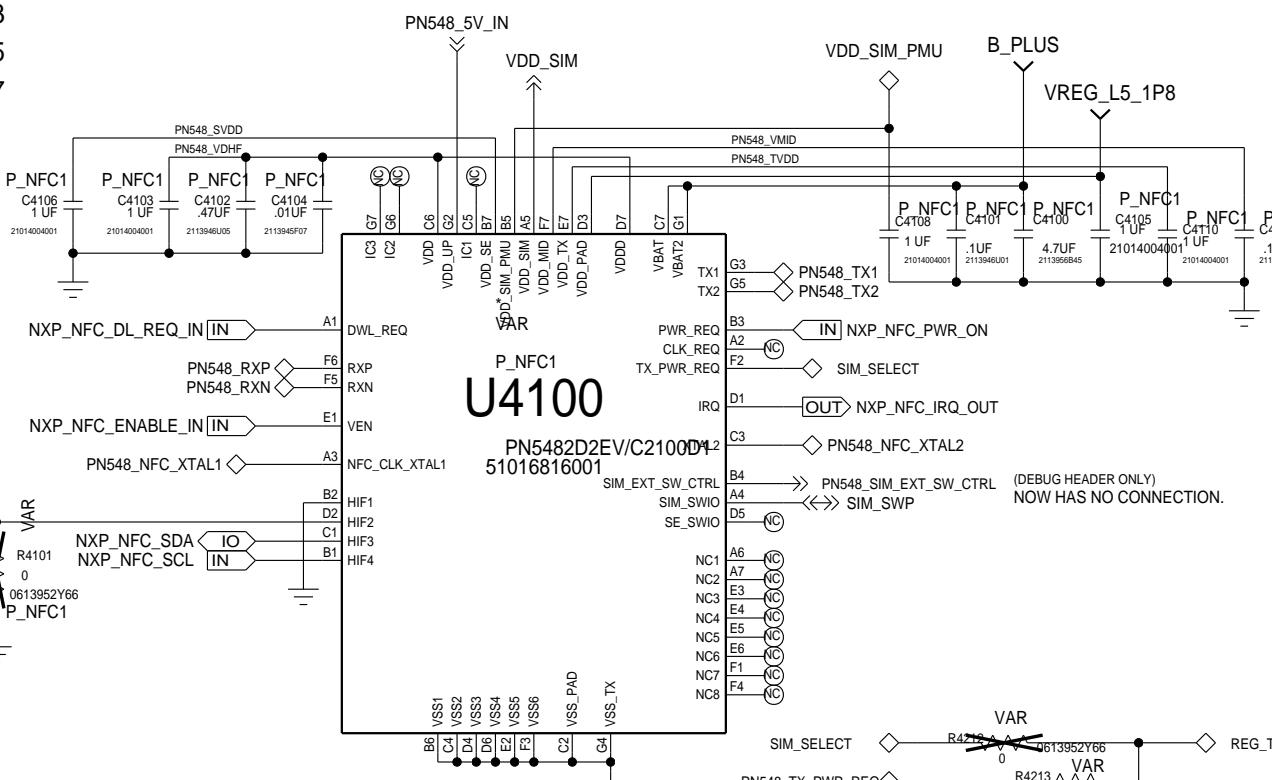
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ENGINEER: NATE CONNELL	BLOCK TITLE: <b>connectivity</b>	
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# CONN: NXP NFC

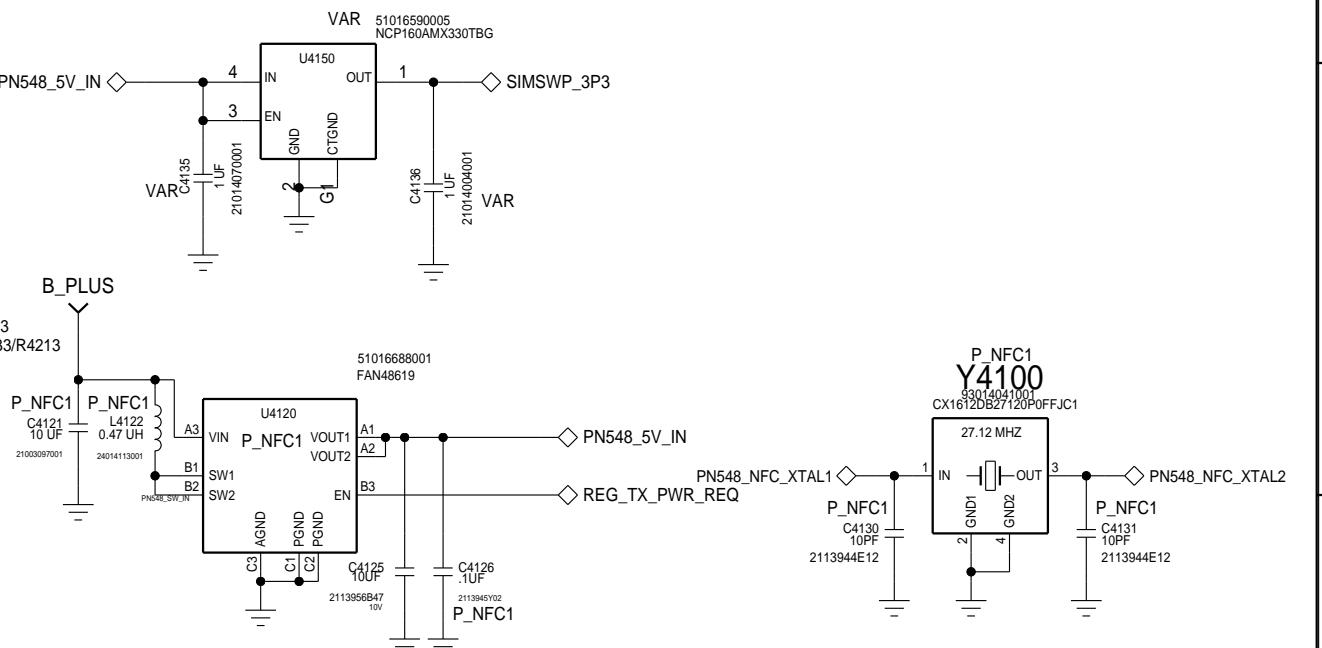
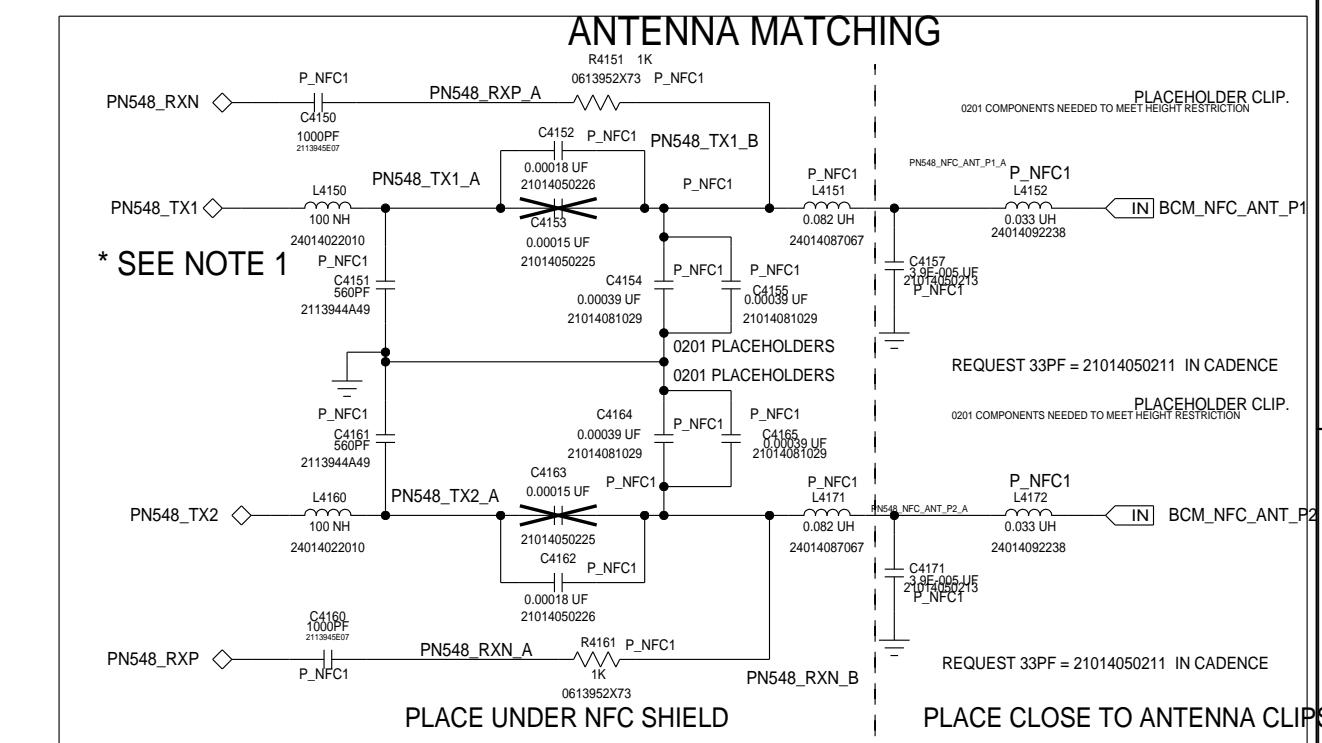
REF: 4100-4199

## 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)
VDD_SIM_PMU Vreg_L14_UIM1 4Z-4Y0	Vreg_L15_UIM2 4Z-4Y1	No power from PMU 4Z-4Y0-Open 4Z-4Y1-Open
VDD_SIM 3Z-3Y0-1Y0-Open	No connect	No connect SIM_VCC1 SIM_VCC2
SIM_VCC_1 Vreg_L14_UIM1 1Z-1Y1	Vreg_L14_UIM1 1Z-1Y1	VDD_SIM 1Z-1Y0-3Y0-3Z Not connected 1Z-1Y0-3Y0-Open
SIM_VCC_2 Vreg_L15_UIM2 2Z-2Y1	Vreg_L15_UIM2 2Z-2Y1	Not connected 2Z-2Y0-3Y1-Open 2Z-2Y0-3Y1-3Z
UIM1_SWP SIM_SWP	Not connected	SIM_SWP Not connected
UIM2_SWP Not connected	Not connected	SIM_SWP Not connected

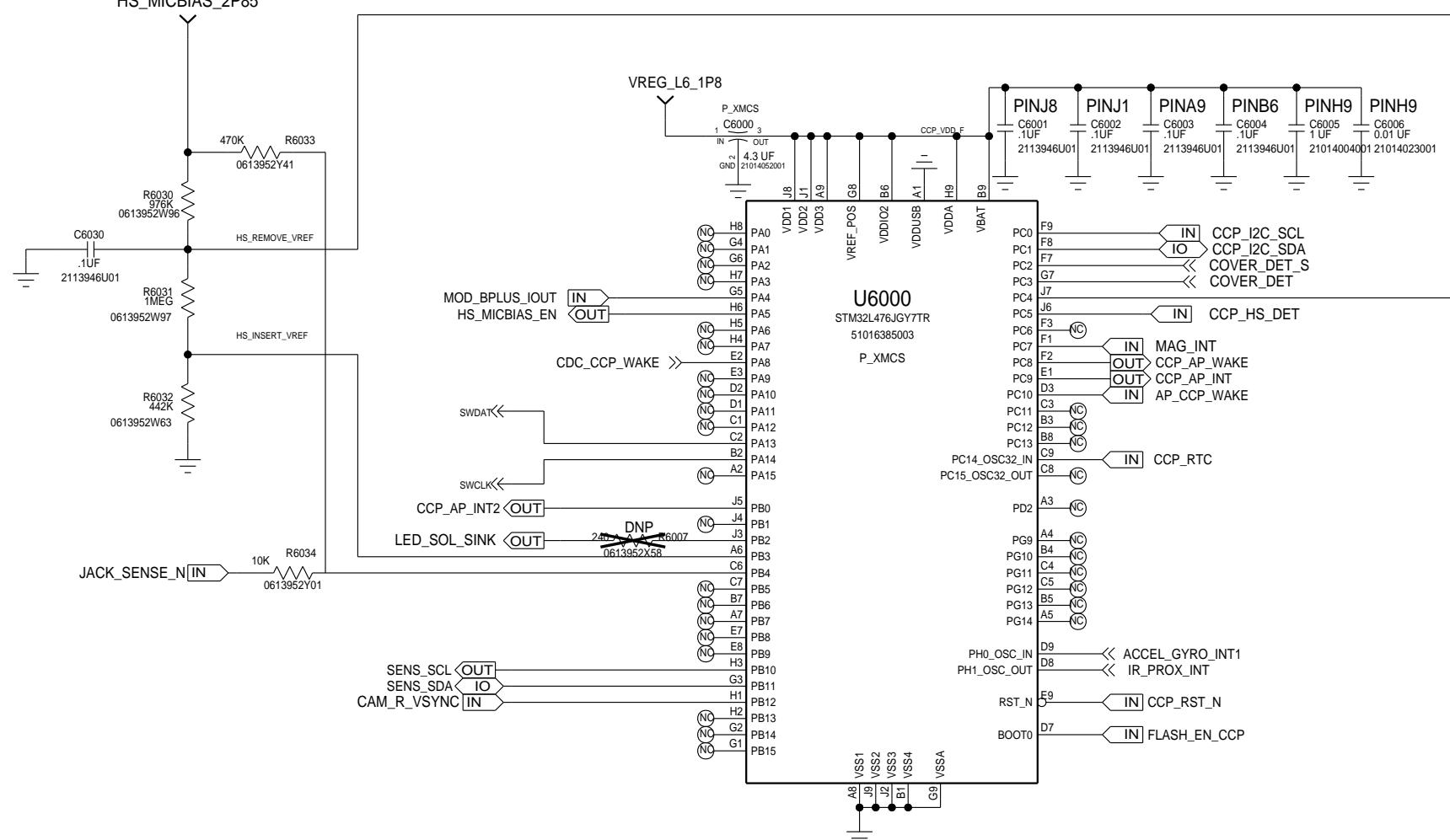
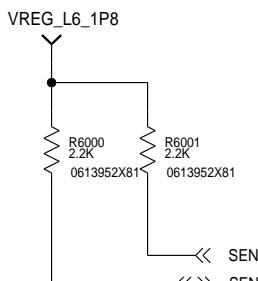


APPROVALS		<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: FROEHLING		BLOCK TITLE: <b>connectivity</b>	
LAST MODIFIED BY: FROEHLING Thu May 19 12:03:57 2016		MOTOROLA CONFIDENTIAL RESTRICTED	
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**XMCS: CCP**

REF: 6000-6049

HS\_MICBIAS\_2P85

**I2C SUPPORT****TESTPOINTS**

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**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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# XMCS: SENSORS

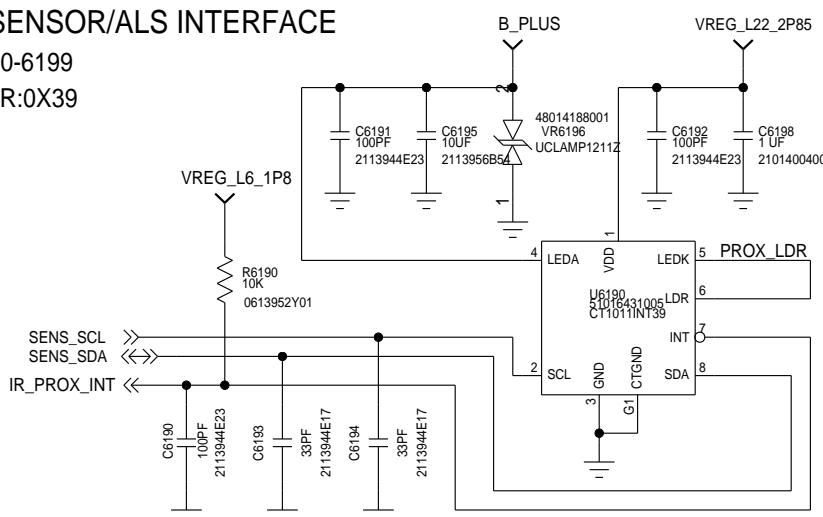
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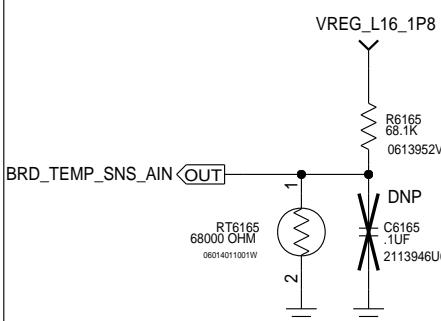
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REF:6190-6199

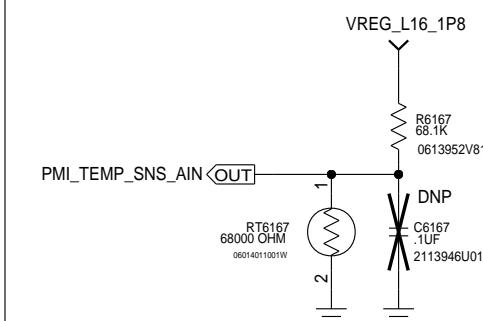
I2C ADDR:0X39



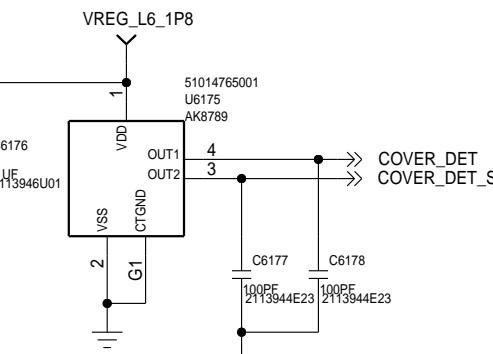
## BOARD TEMP SENSOR



## CHRG TEMP SENSOR



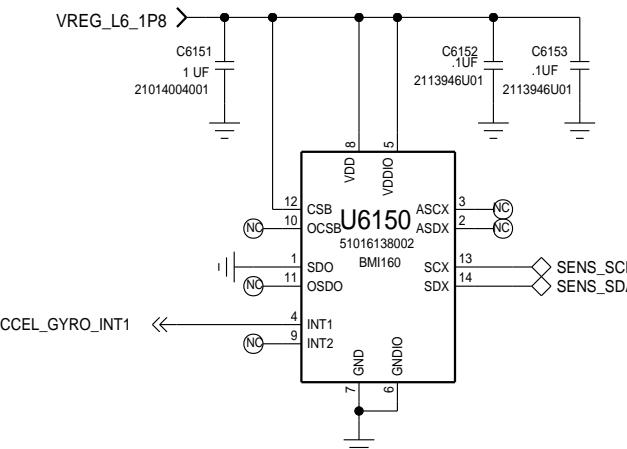
## HALL EFFECT SENSOR



## ACCELEROMETER+GYRO

REF:6150-6159

I2C ADDR: 0X??



## MAGNETOMETER

REF:6140-6149

I2C ADDR: 0X0C

MOVED TO SIM FLEX PCB FROM DVT2

PRODUCTS MUST FOLLOW BUNKER HILL PCB ORIENTATION

JOHN GORSTCA/NATE CONNELL  
APPROVALS

MOTOROLA  
MOBILE DEVICES

ENGINEER: HUNG PHAM

BLOCK TITLE:

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

xmcs

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01

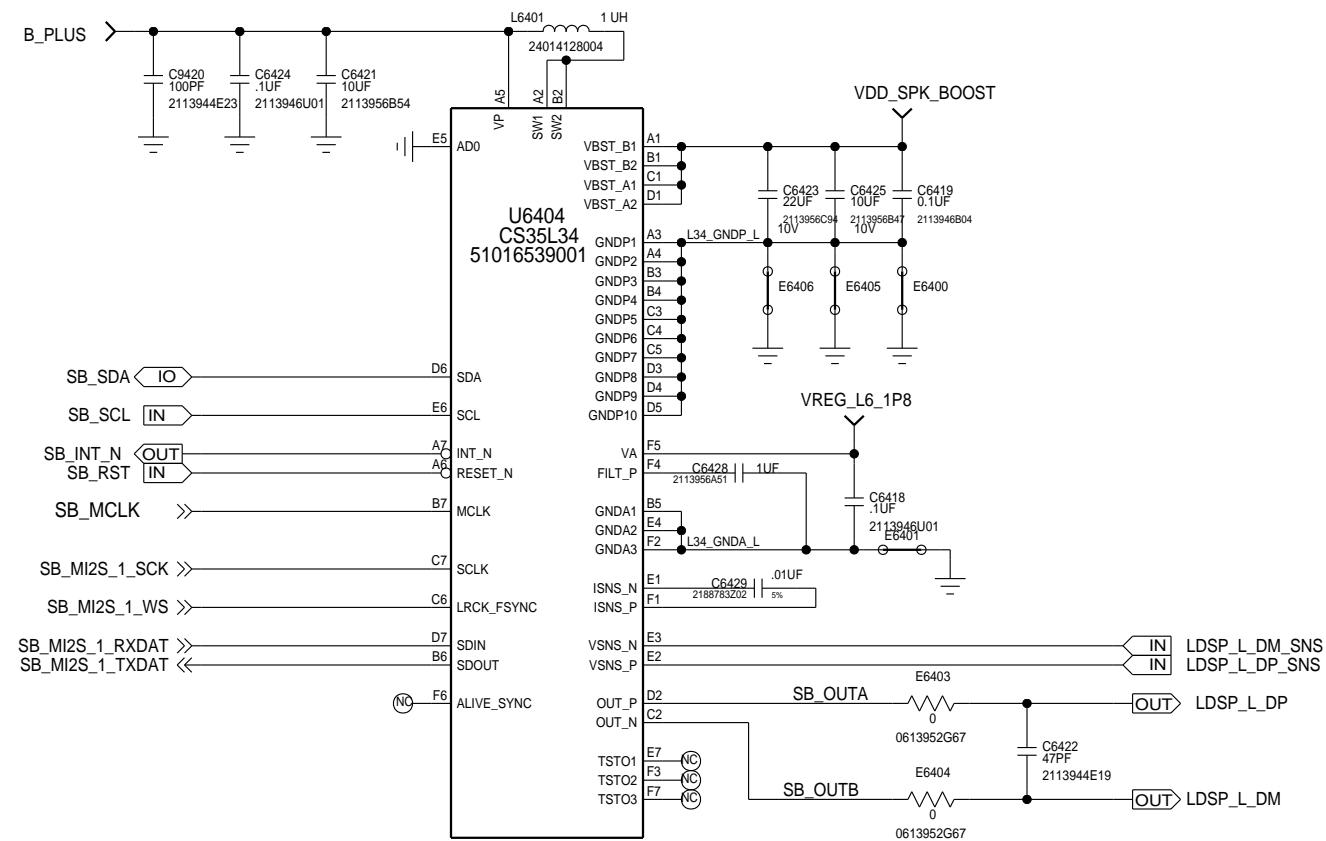
CAD FILE NAME:

PAGE 18 OF 61

# XMCS: SMART BOOST WATTSON

REF 6400-6499

\*\*\* BOOST IC I2C ADD. 0X80



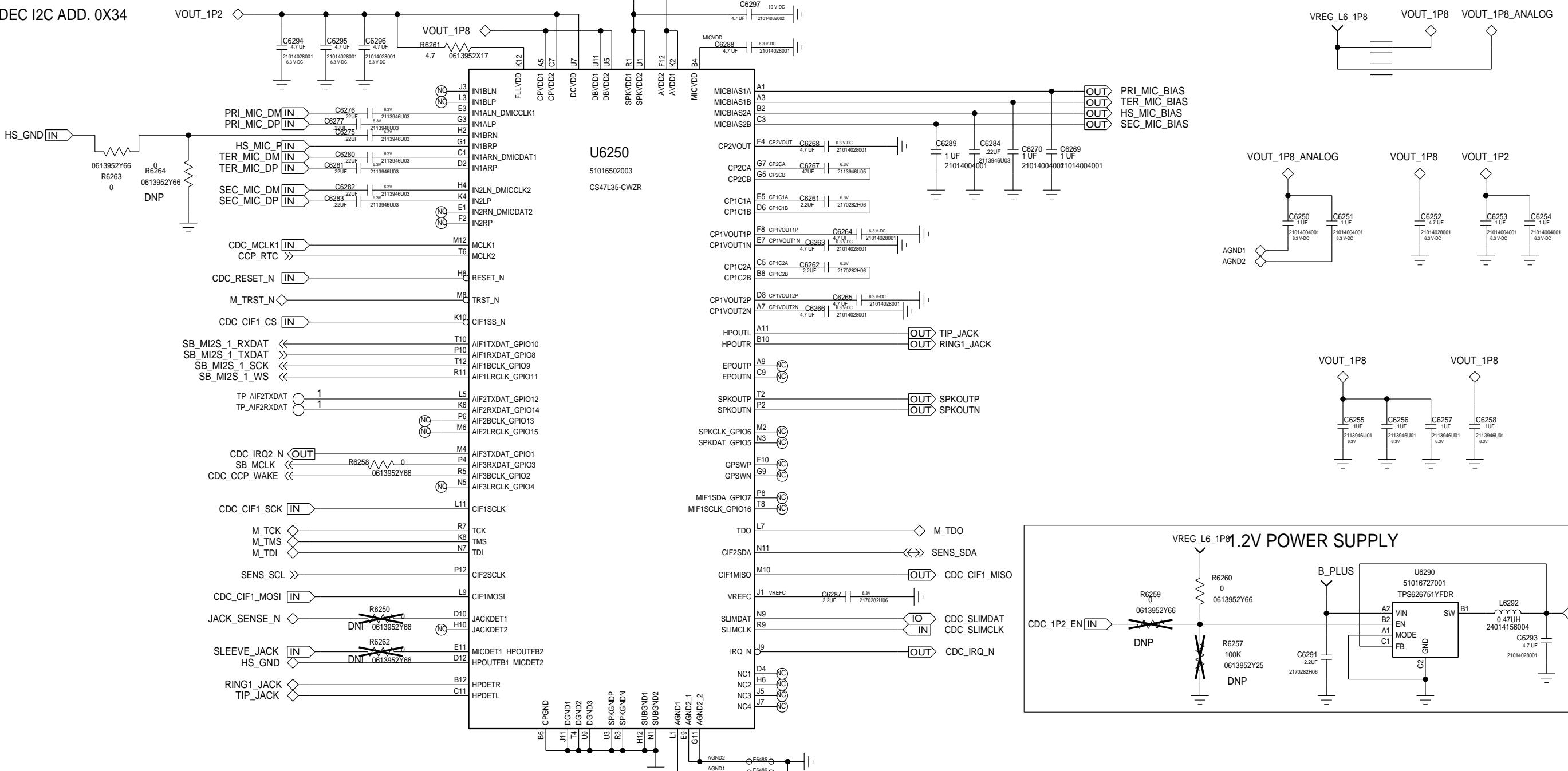
SB\_MI2S\_1\_SCK ◇ 1 TP\_SB\_SCK  
 SB\_MI2S\_1\_WS ◇ 1 TP\_SB\_WS  
 SB\_MI2S\_1\_TXDAT ◇ 1 TP\_SB\_TX  
 SB\_MI2S\_1\_RXDAT ◇ 1 TP\_SB\_RX

APPROVALS	MOTOROLA MOBILE DEVICES	
ENGINEER:	BLOCK TITLE:	
LAST MODIFIED BY: Mon May 23 19:04:04 2016	xmcs	
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# XMCS: CIRRUS CODEC

REF 6250-6299

\*\*\* CODEC I2C ADD. 0X34



## APPROVALS

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BLOCK TITLE:

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**Xmcs**

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REV  
01

CAD FILE NAME:

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# XMCS: PMIC CODEC

REF 2500-2579

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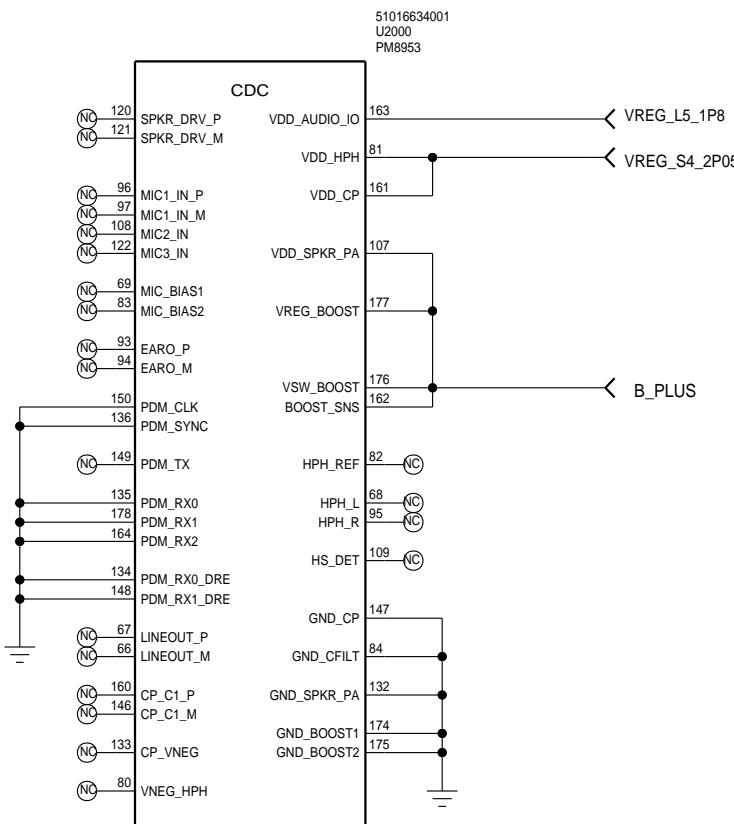
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CAD FILE NAME:		PAGE 21 OF 61

# XMCS: IR GESTURES

REF 6500-6549

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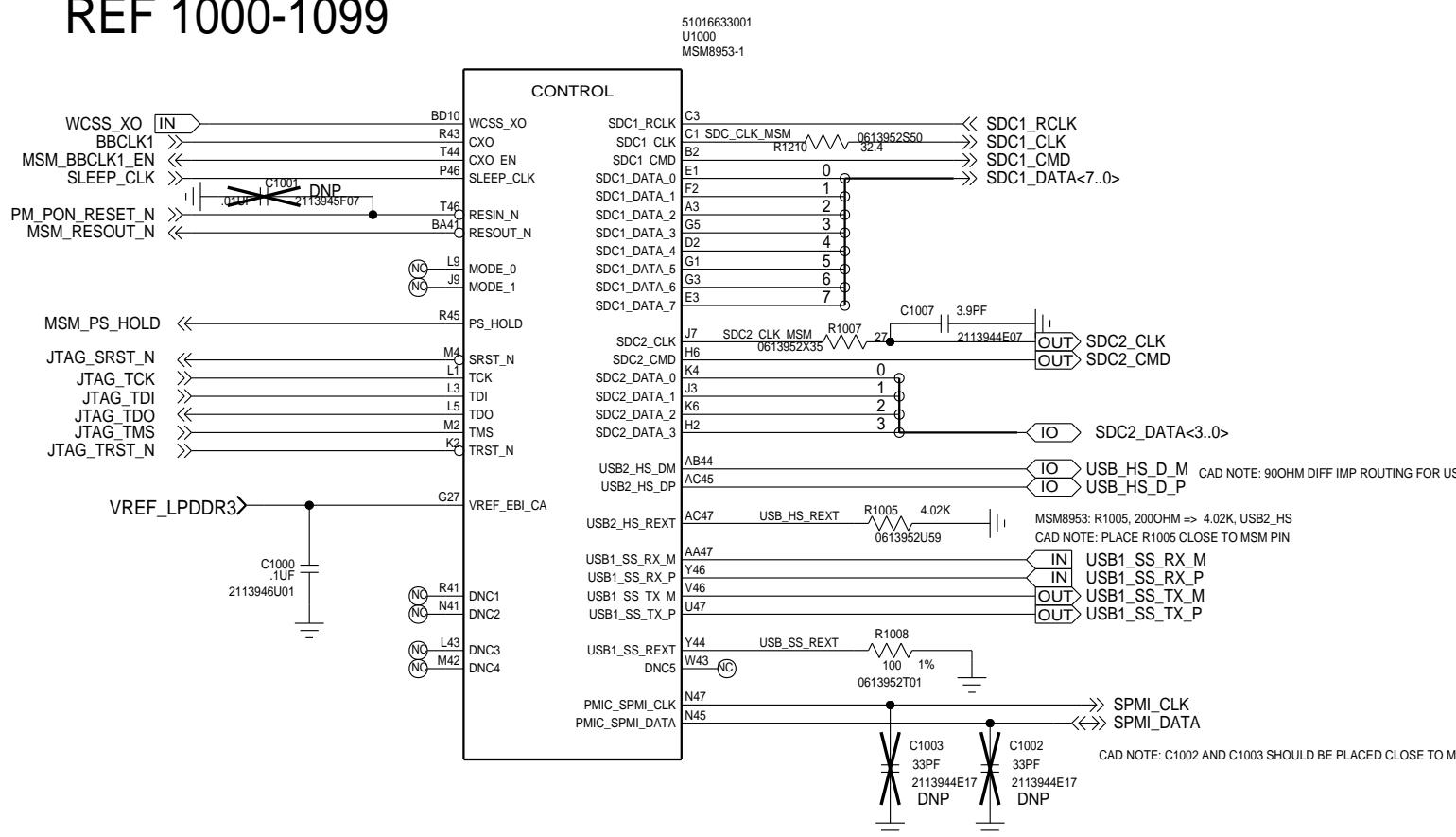
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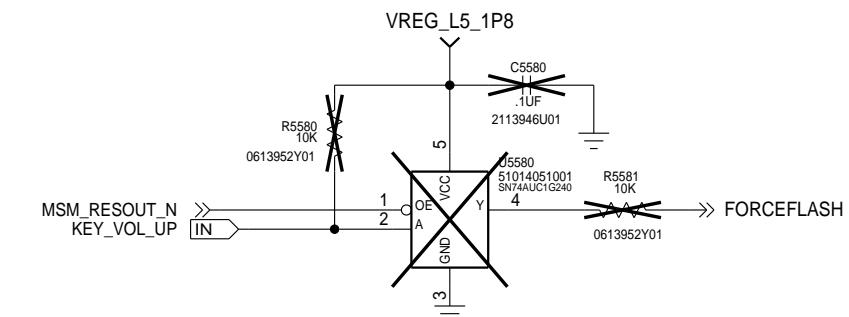
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ENGINEER: MATT MOTTIER	BLOCK TITLE:	
LAST MODIFIED BY: UDI ELRAN Mon Dec 28 15:04:31 2015	<b>xmcs</b>	
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	CAD FILE NAME: PAGE 22 OF 61	PAGE 22 OF 61

# MSM: CTRL

## REF 1000-1099



**FORCE FLASH SUPPORT  
WITH VOL UP KEY**  
**(DNI FOR PRODUCTION)**

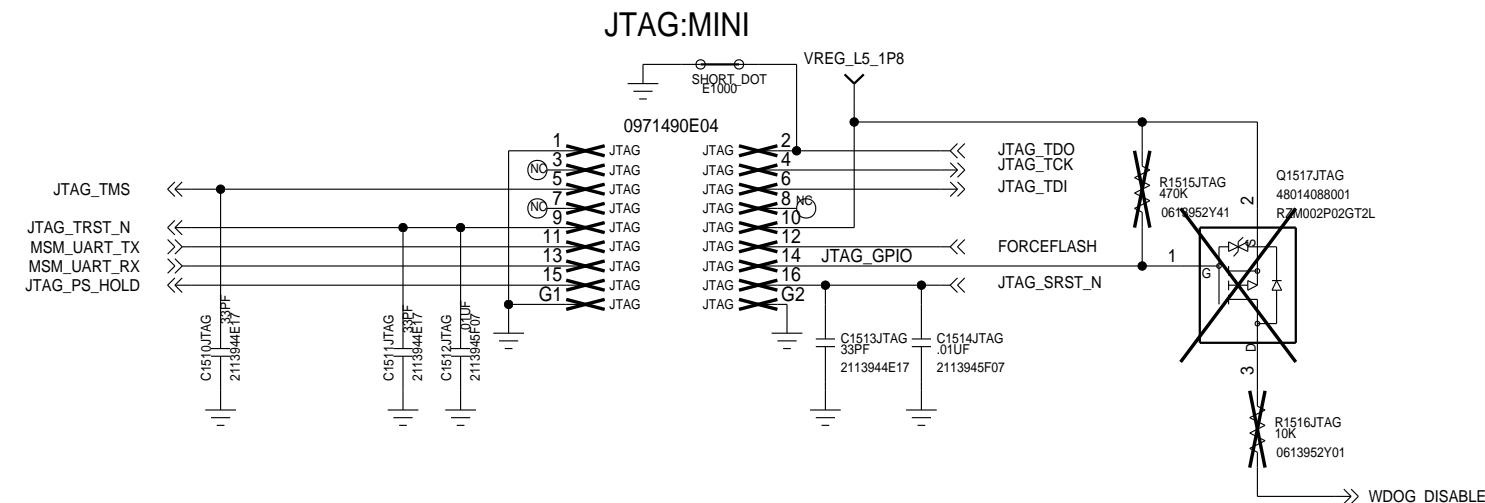


REF:5580-5589

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ENGINEER:	BLOCK TITLE:		
LAST MODIFIED BY: FAN021 Thu May 05 16:54:28 2016	ap_pmic		
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		CAD FILE NAME:	PAGE 23 OF 61

## MSM: DEBUG

REF 1000-1099



APPROVALS		 <b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021 Thu May 05 16:54:28 2016		ap_pmic	
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		CAD FILE NAME:	PAGE 24 OF 61

# MSM: MIPI/DSI/CSI/EBI0

## REF 1200-1299

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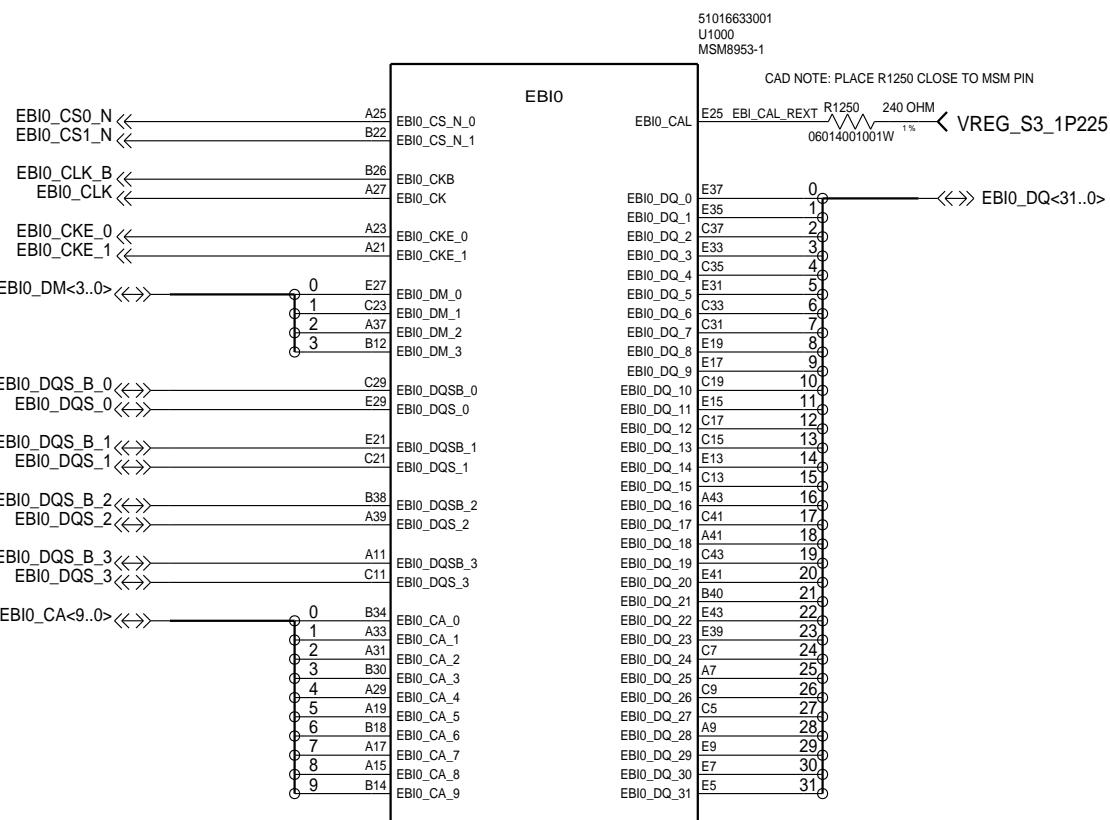
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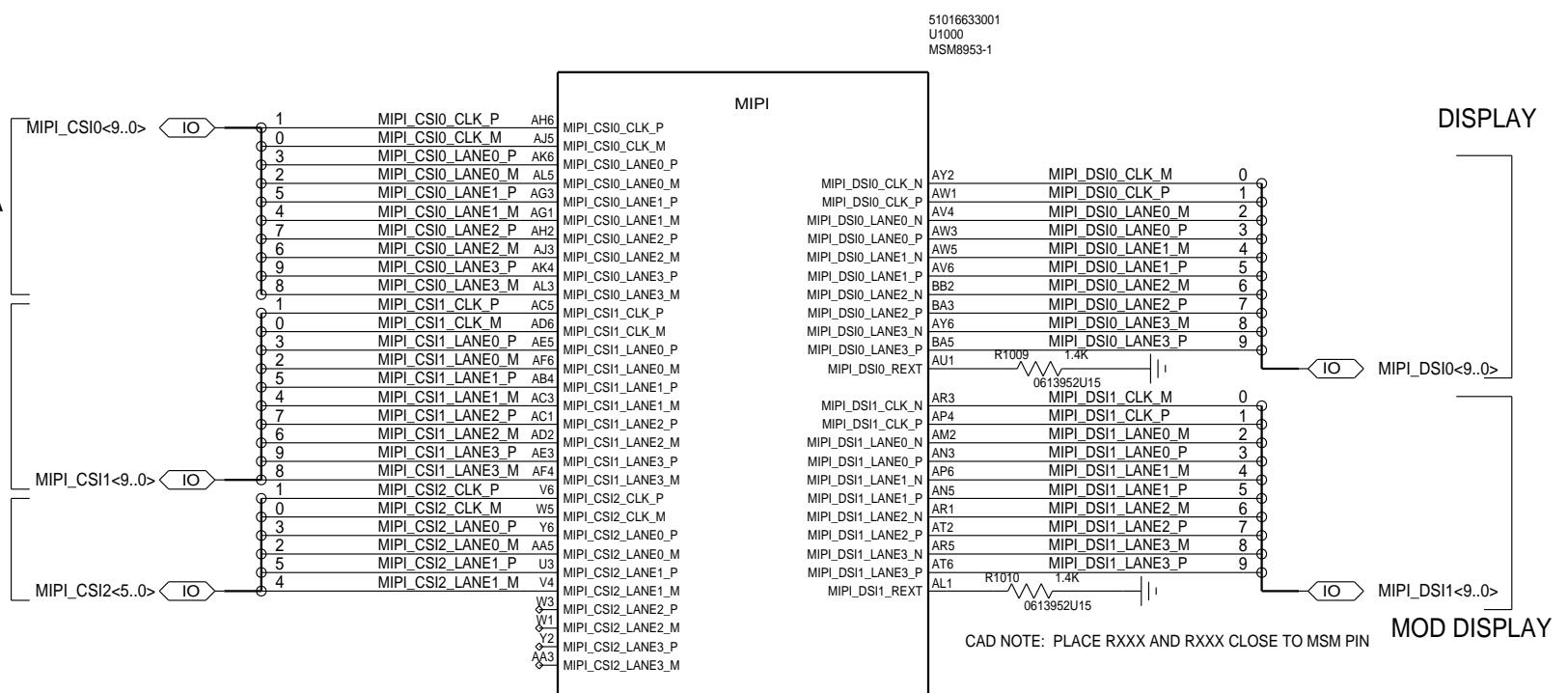
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MODS CAMERA  
REAR CAMERA  
FRONT CAMERA

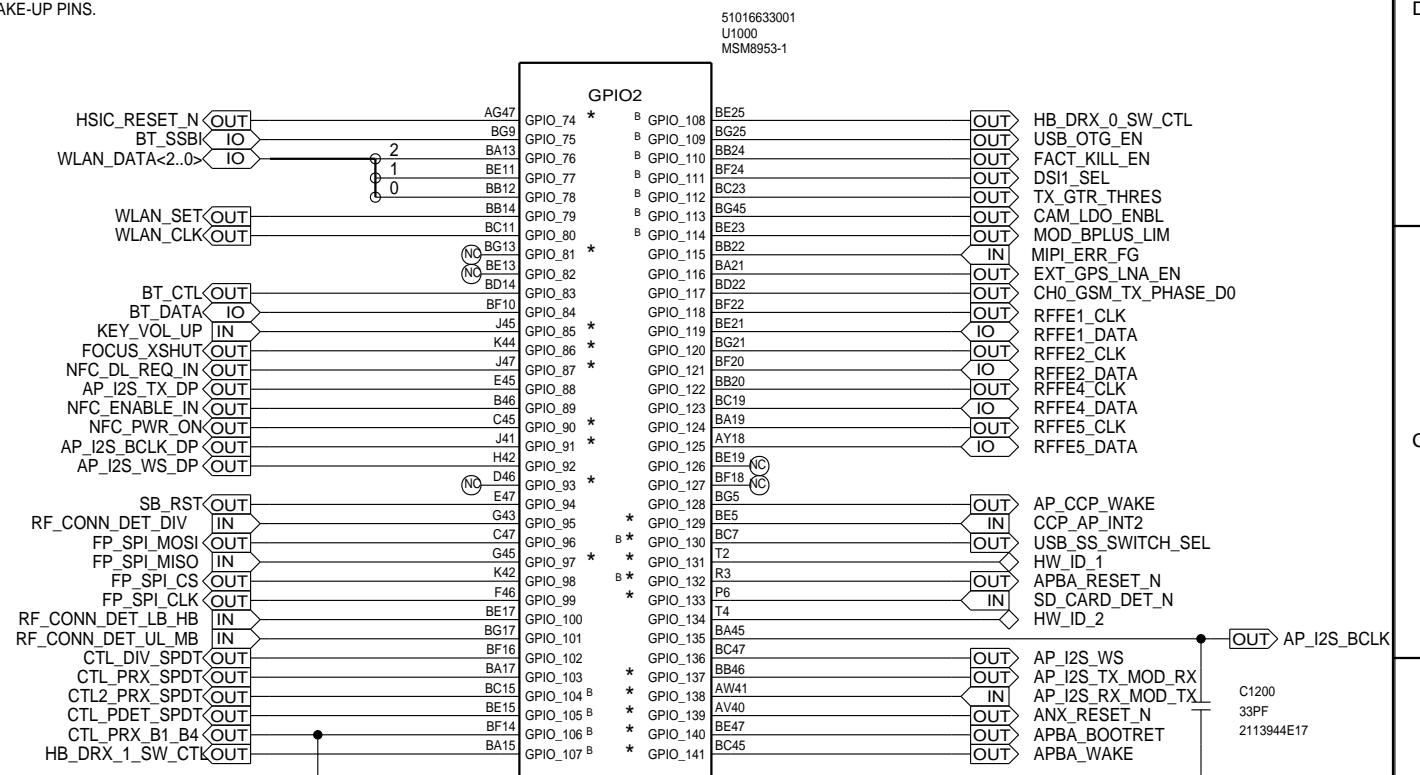
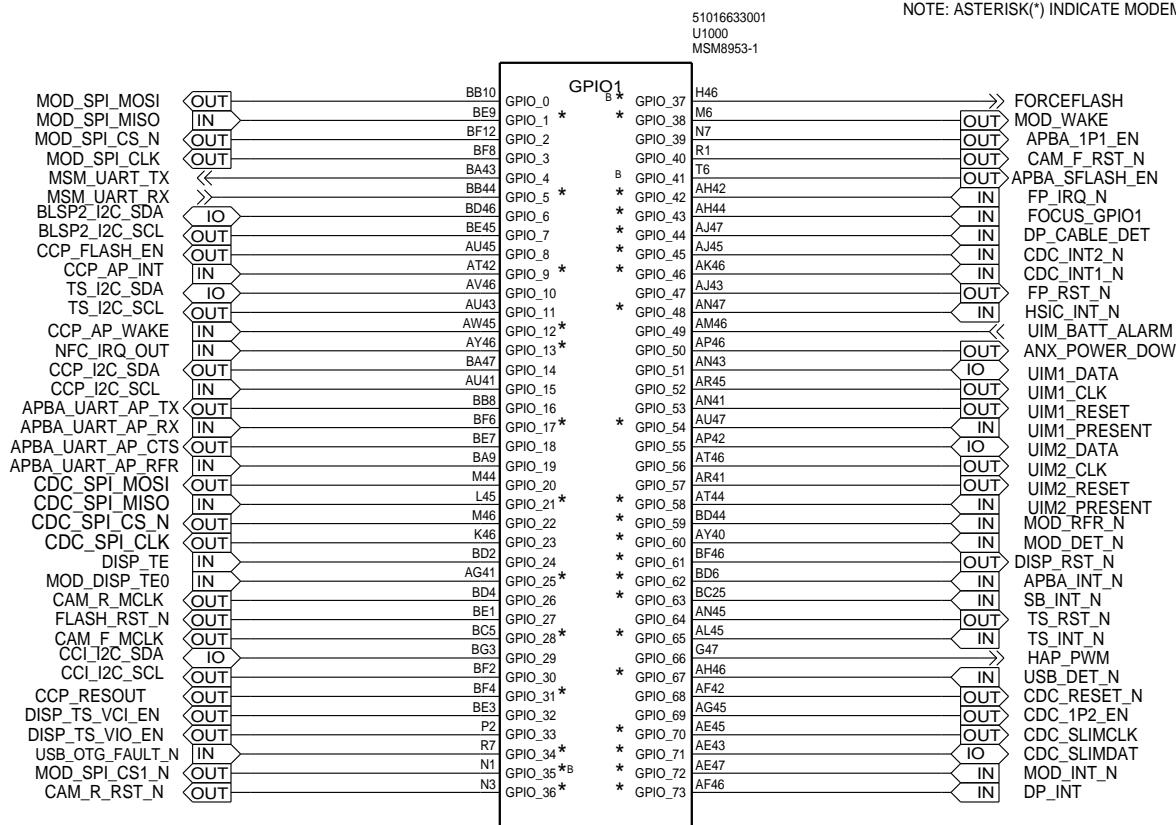


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ENGINEER:	BLOCK TITLE:	
LAST MODIFIED BY: Thu May 05 16:54:29 2016	ap_pmic	
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CAD FILE NAME:	PAGE 25 OF 61	

# MSM: GPIO (0-141)

REF 1200-1299

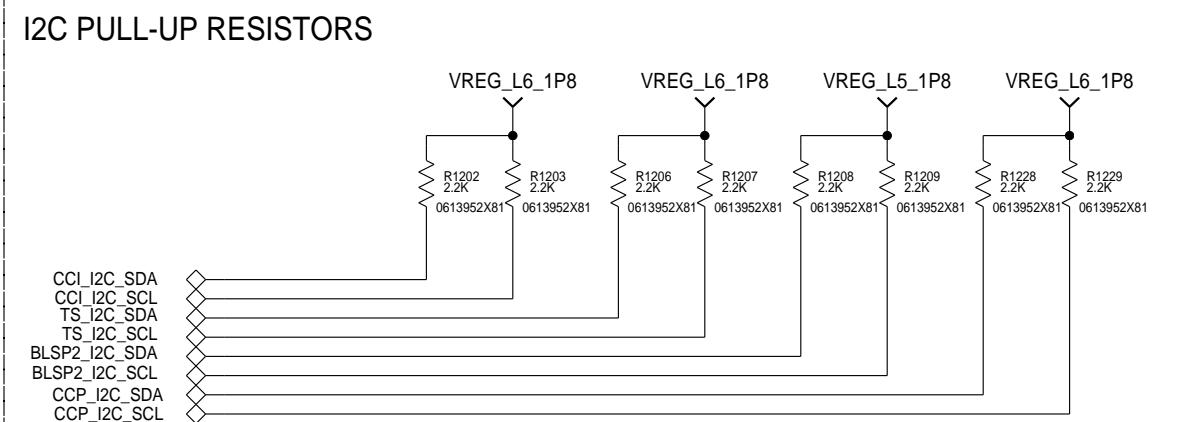
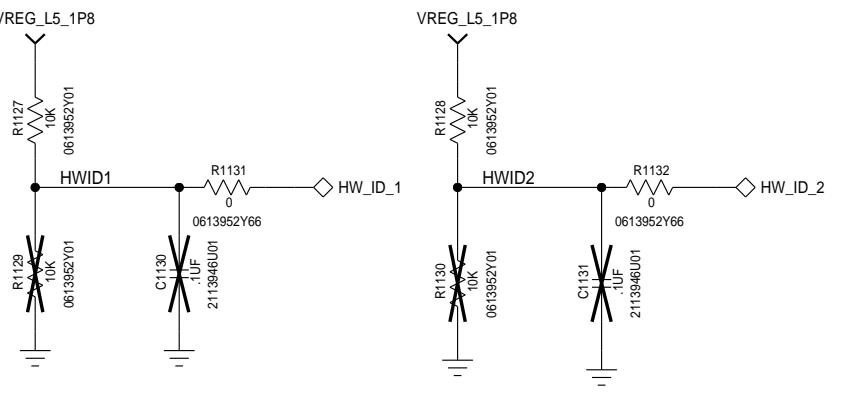
NOTE: DO NOT HAVE PULL-UPS ON THE FOLLOWING GPIOS UNLESS INTEND FOR BOOT OR SECURE BOOT RELATED CONFIGURATIONS:  
GPIO\_8, 9, 91, 107, 108, 109



NOTE: RESERVE GPIO\_106 FOR WDOG\_DISABLE FUNCTION.  
DO NOT HAVE A PULL-UP ON THIS GPIO FOR BETTER SW DEBUG CAPABILITY.

## MOT BOARD ID

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



## APPROVALS

**MOTOROLA**  
MOBILE DEVICES

ENGINEER:

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

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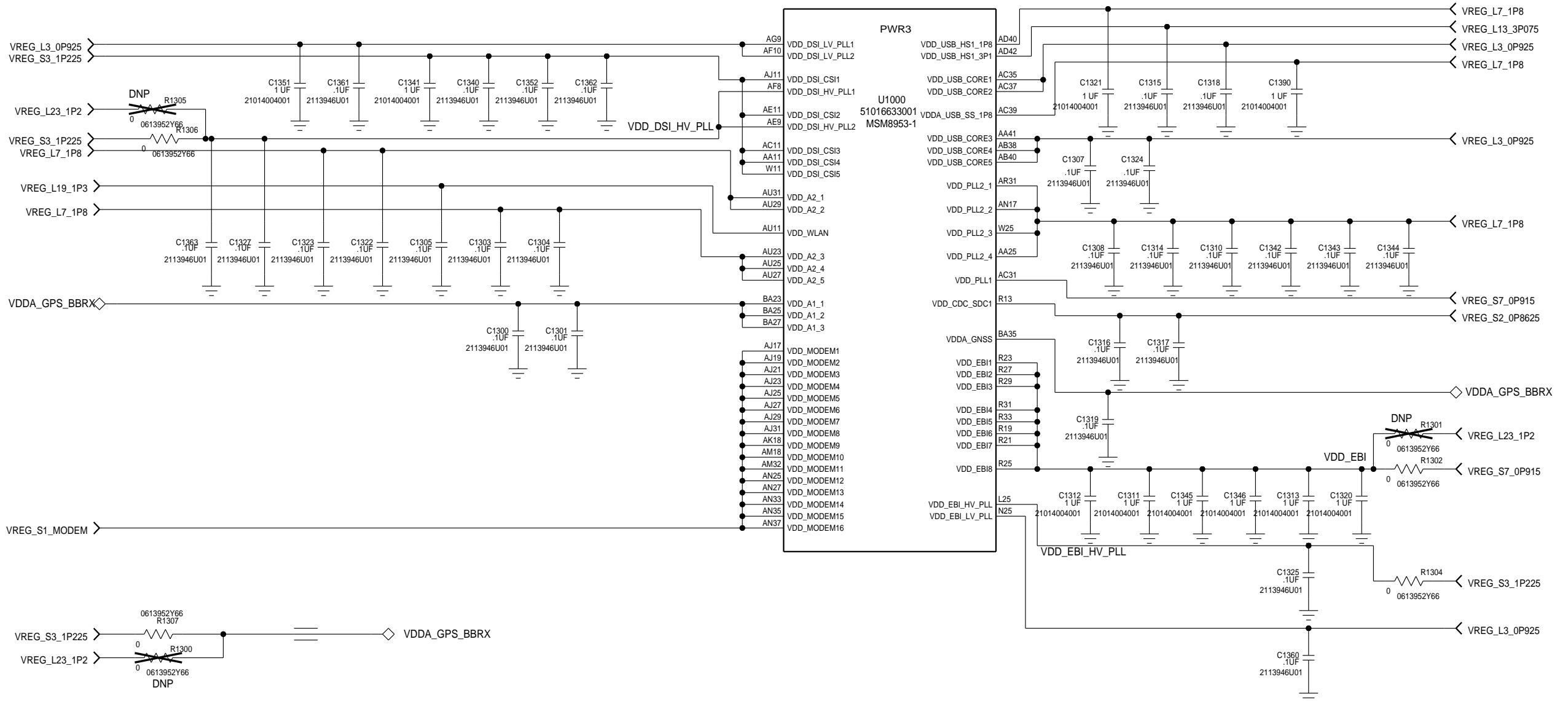
CAD FILE NAME:

PAGE 26 OF 61

# MSM: PWR1

## REF 1300-1399

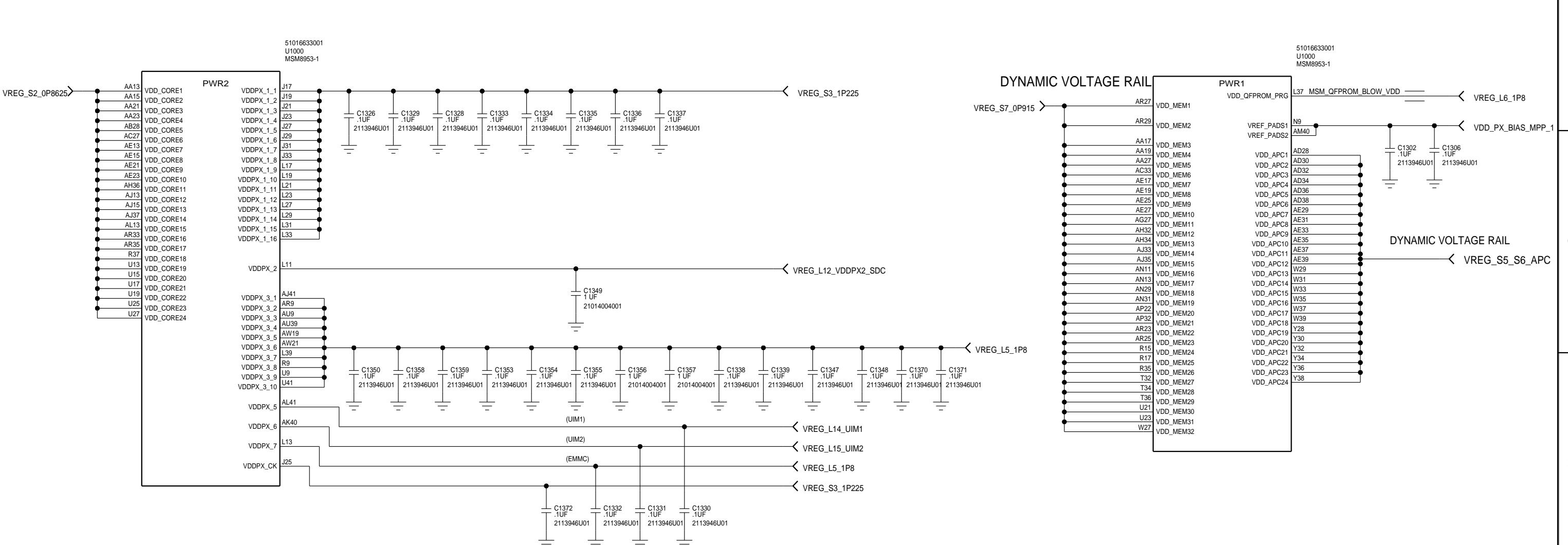
CAD NOTE: PLACE ONE DECAP NEAR PINS V5, V6 AND THE OTHER DECAP NEAR PIN R5



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B	84016562001_a.cpm	CAD FILE NAME:	PAGE 27 OF 61

# MSM: PWR2

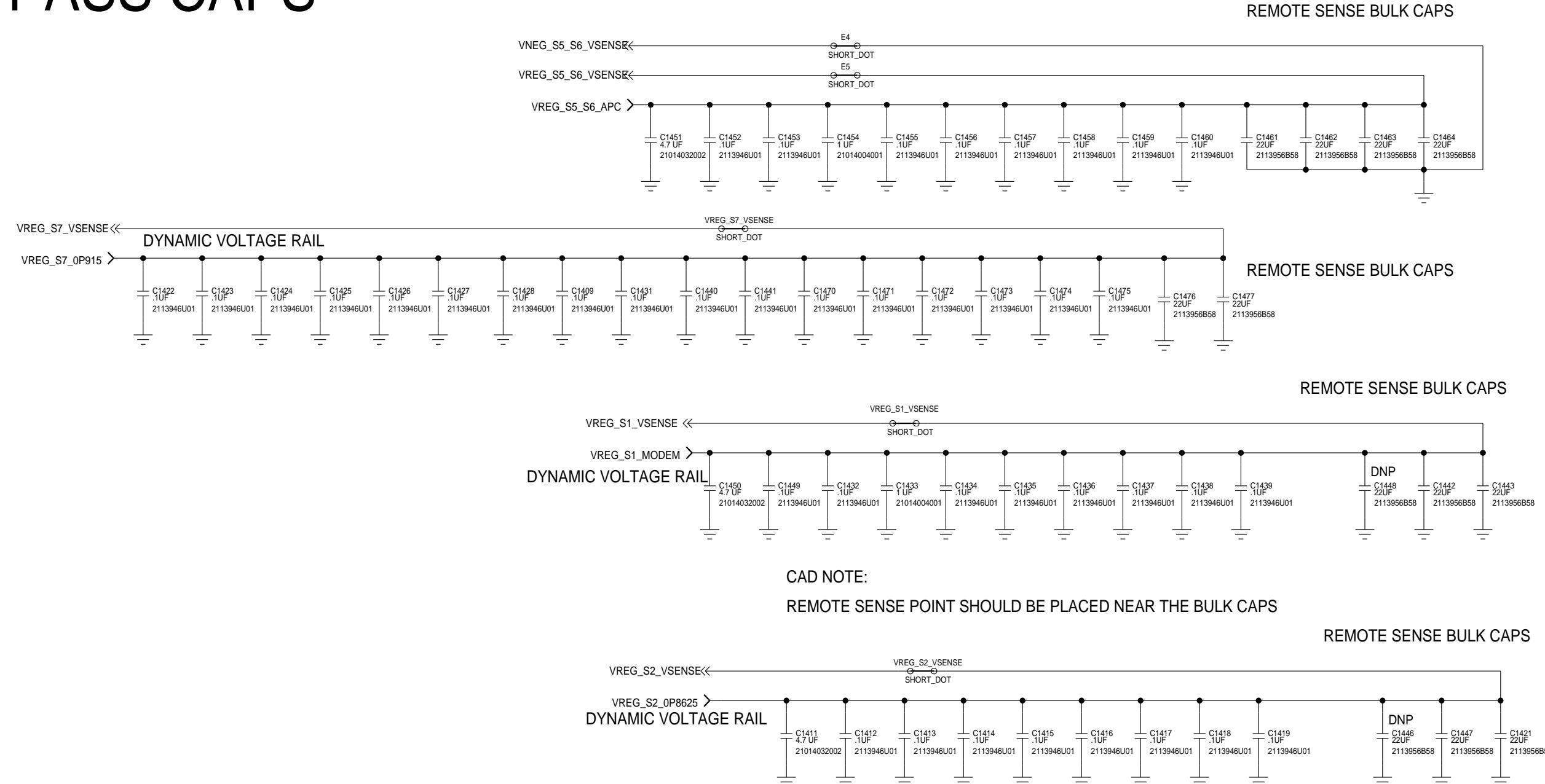
## REF 1300-1399



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ENGINEER:	BLOCK TITLE:	
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# MSM: BYPASS CAPS

## REF 1400-1499



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CAD FILE NAME:		PAGE 29 OF 61

# MSM: GROUND/DNC

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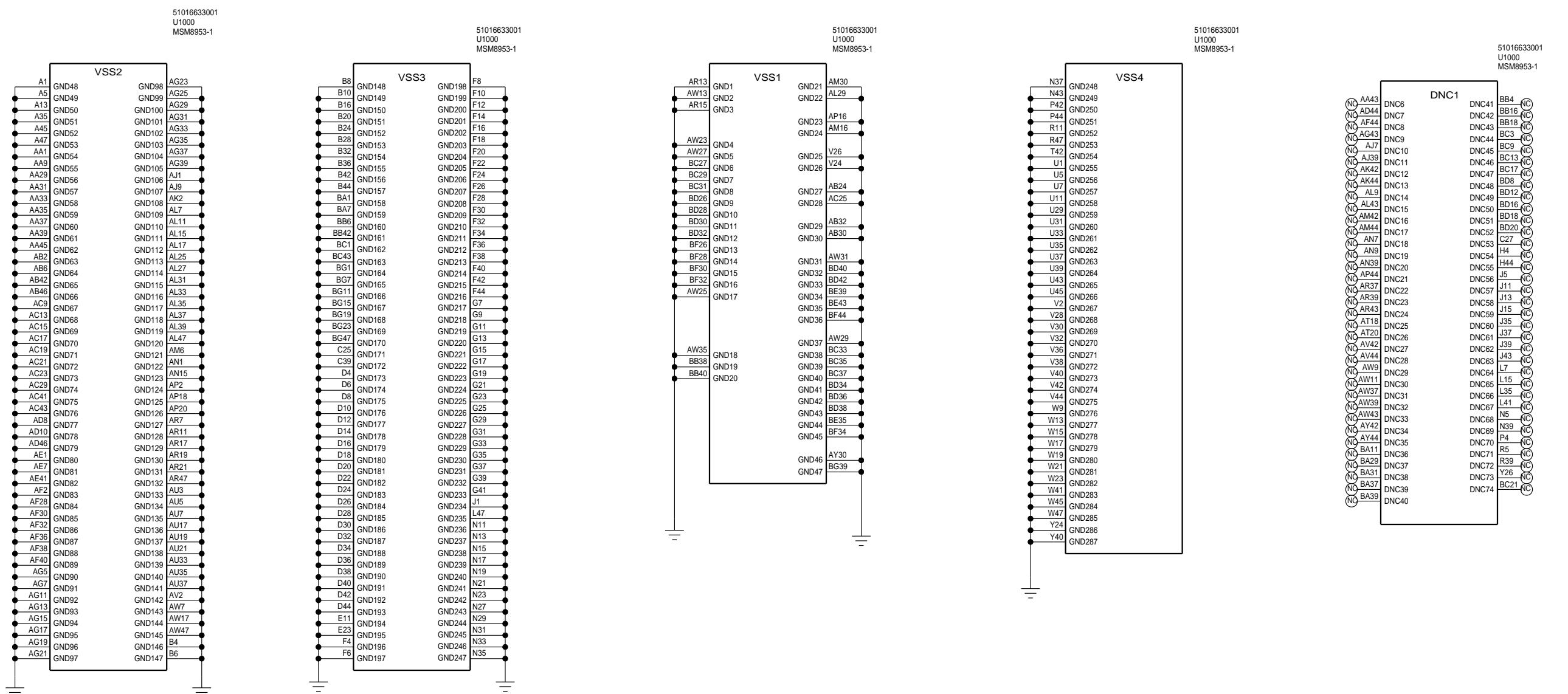
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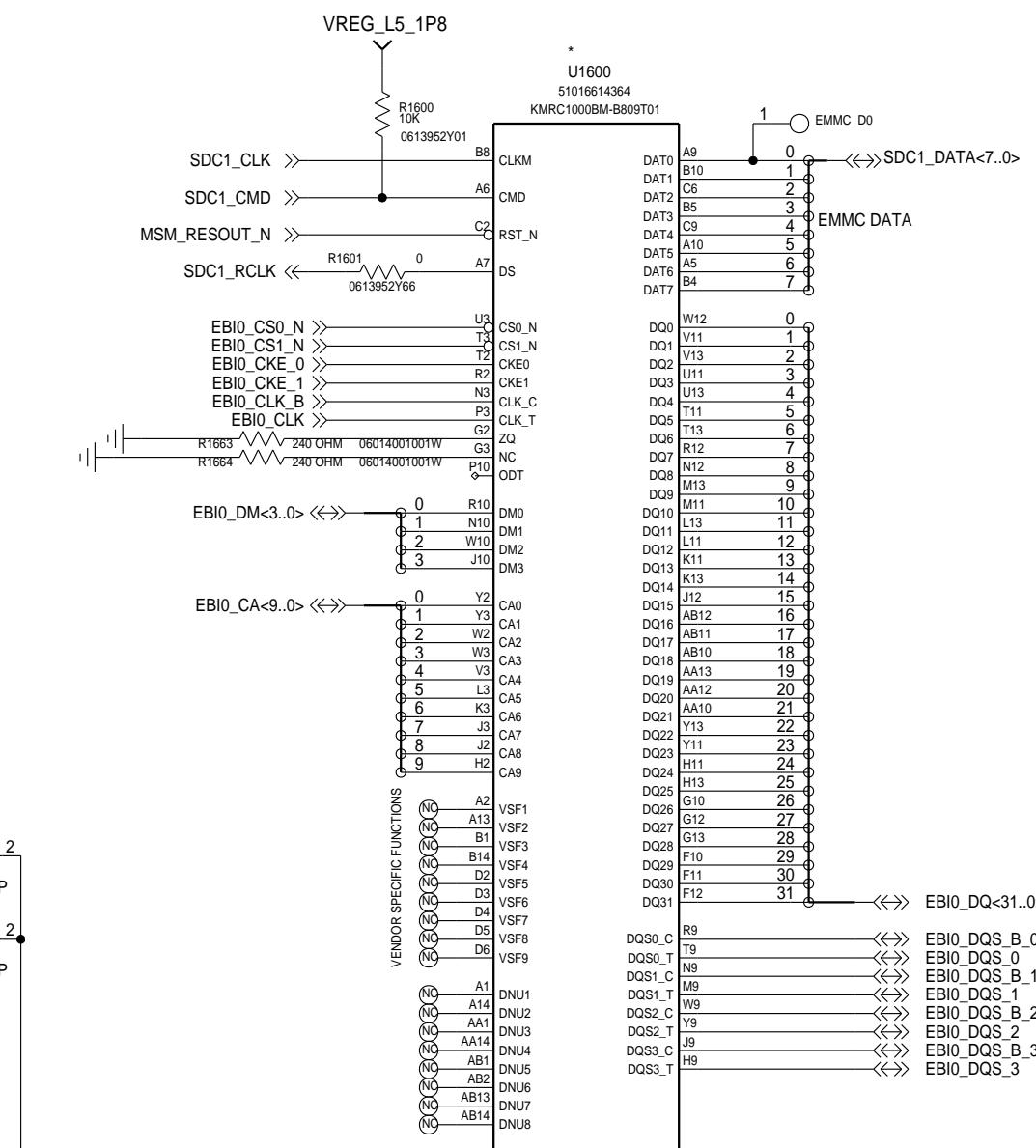
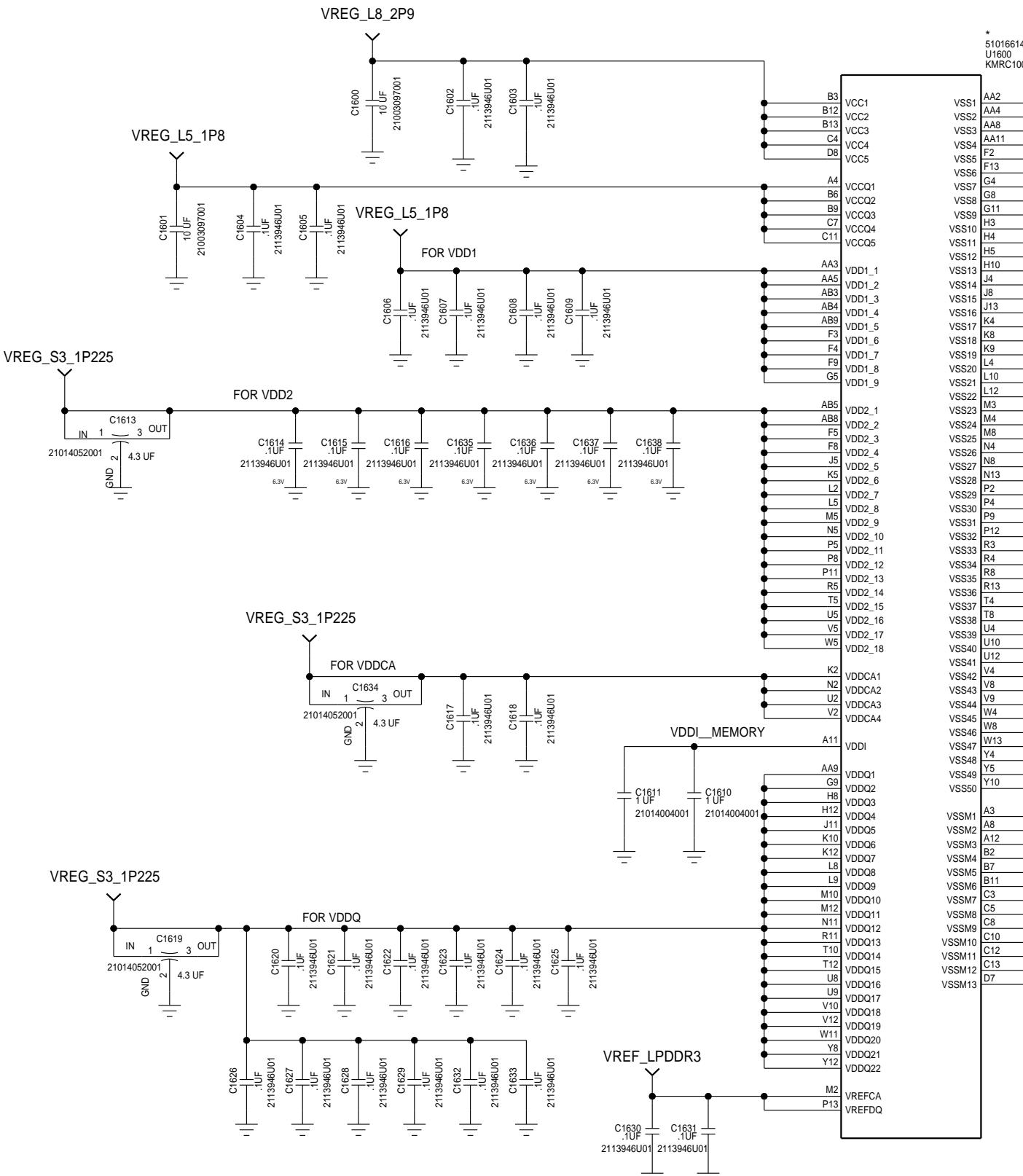
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APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER:		BLOCK TITLE:	
LAST MODIFIED BY: FAN021		ap_pmic	
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CAD FILE NAME:		PAGE 30 OF 61	

# MEMORY: EMCP

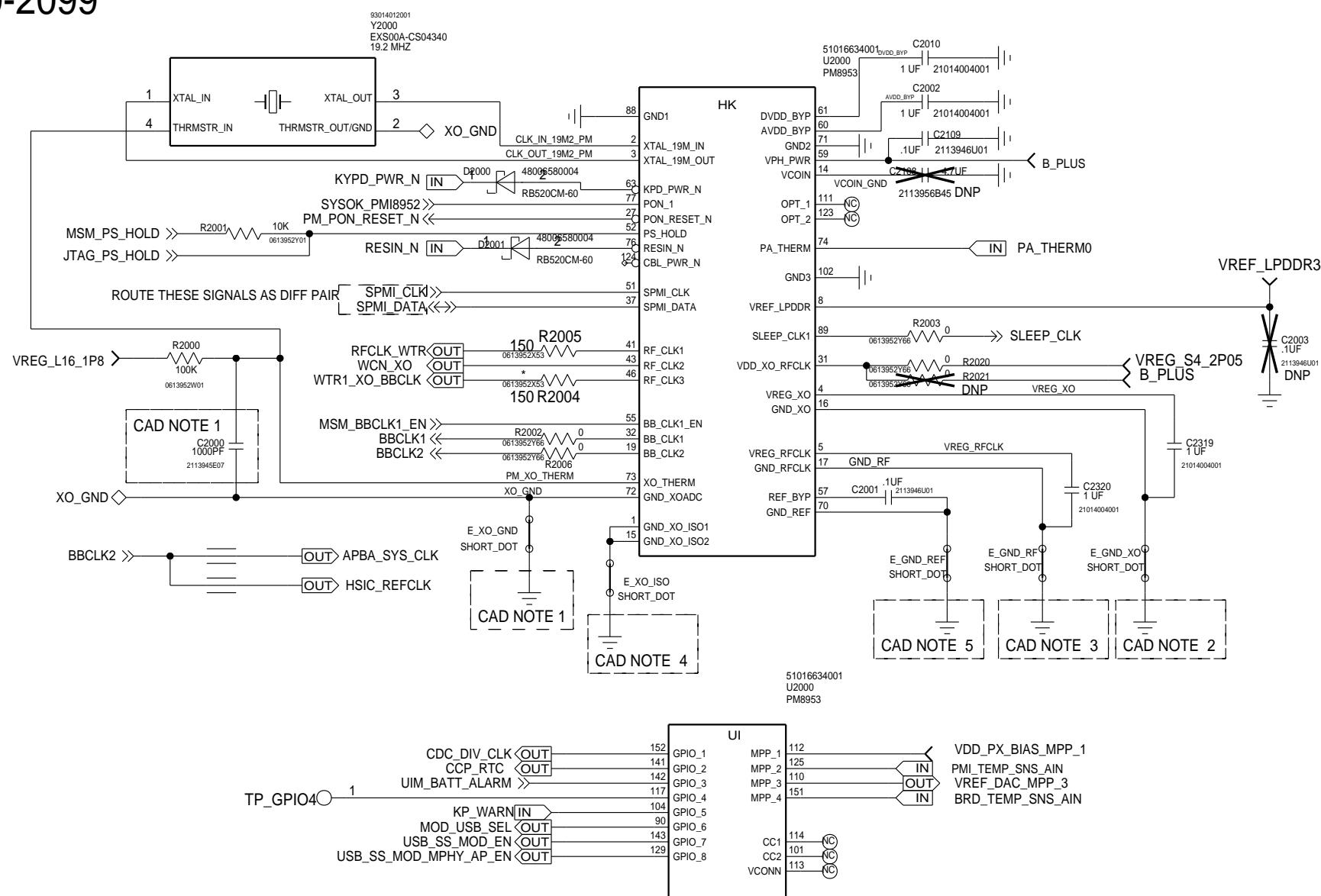
REF: 1600-1699 MCP: 16GB EMMC, 2GB LPDDR3



APPROVALS		<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: <b>ap_pmic</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:35 2016			
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CAD FILE NAME:		REV <b>01</b>	

# 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.

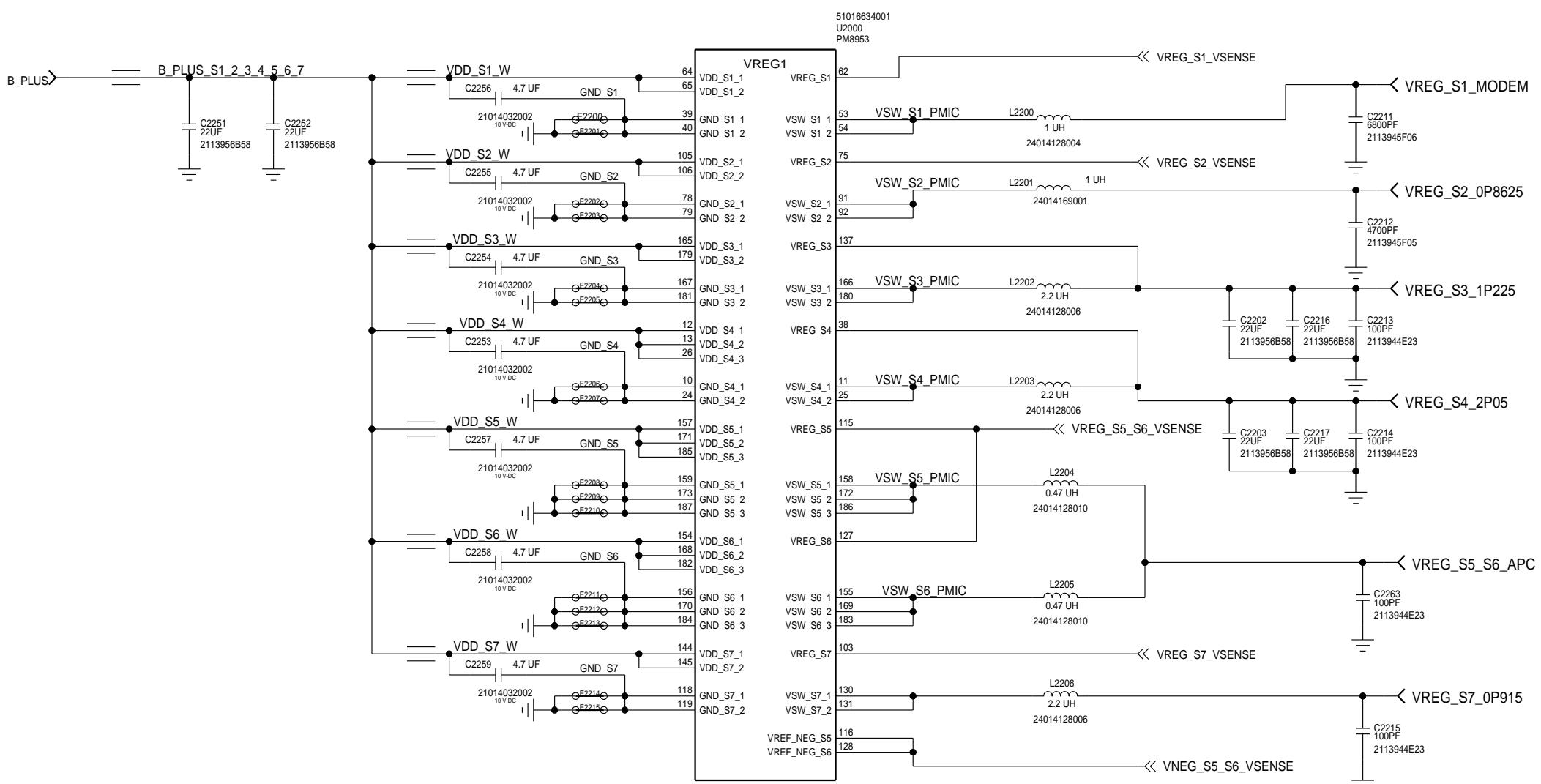
CAD NOTE 4 : CONNECT GND\_XO\_ISO TO MAIN GND PLANE USING DEDICATED VIA. DO NOT SHARE THIS GND WITH OTHER GROUNDS.

CAD NOTE 5 : CONNECT GND\_REF TO CAPACITOR C2001 GND AND THEN CONNECT TO MAIN GND PLANE USING DEDICATED VIA. DO NOT SHARE THIS GND WITH OTHER GND.

APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: <b>ap_pmic</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:35 2016			
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# PM8953: SMPS

REF: 2200-2299

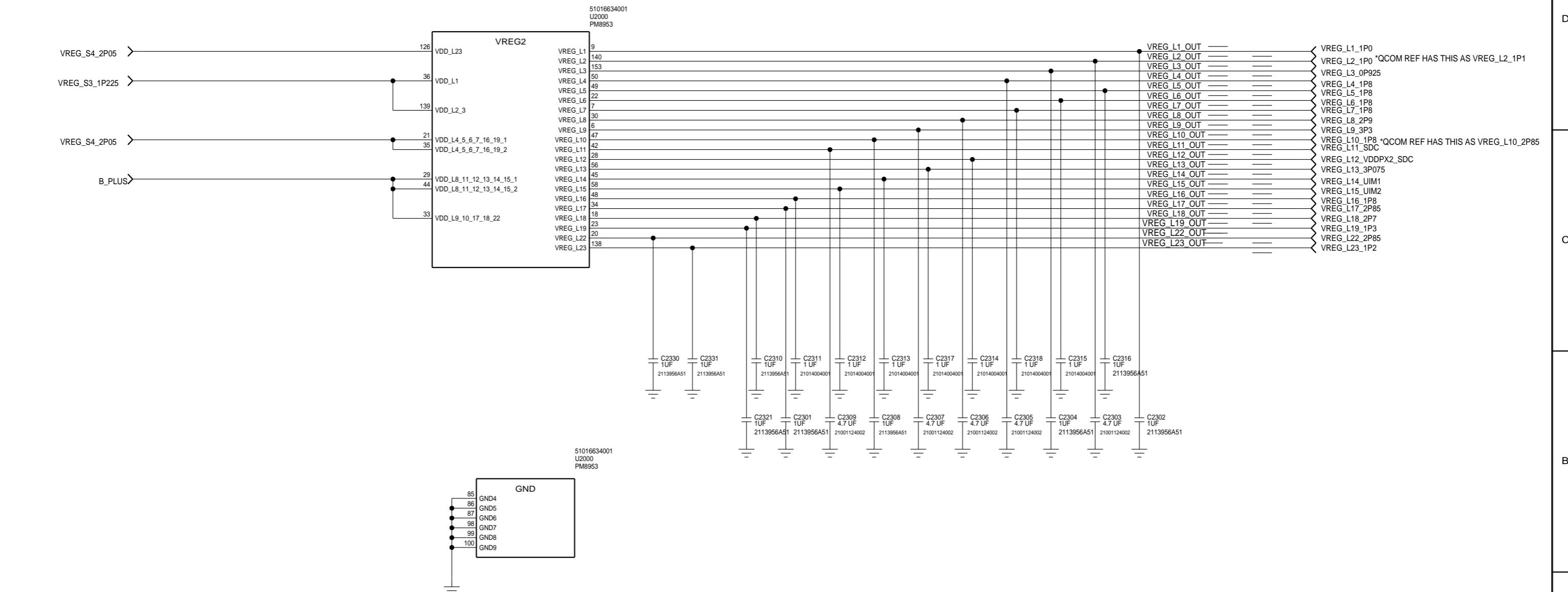


NOTE: PLACE INPUT CAPS CLOSE TO RESPECTIVE VIN PINS  
EACH CAP GND SHOULD BE STAR-ROUTED

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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			PAGE 33 OF 61

# PM8953: VREGS

REF: 2300-2399



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CAD FILE NAME:		PAGE 34 OF 61	

# PMI8952: CHARGING

## REF: 2400-2419

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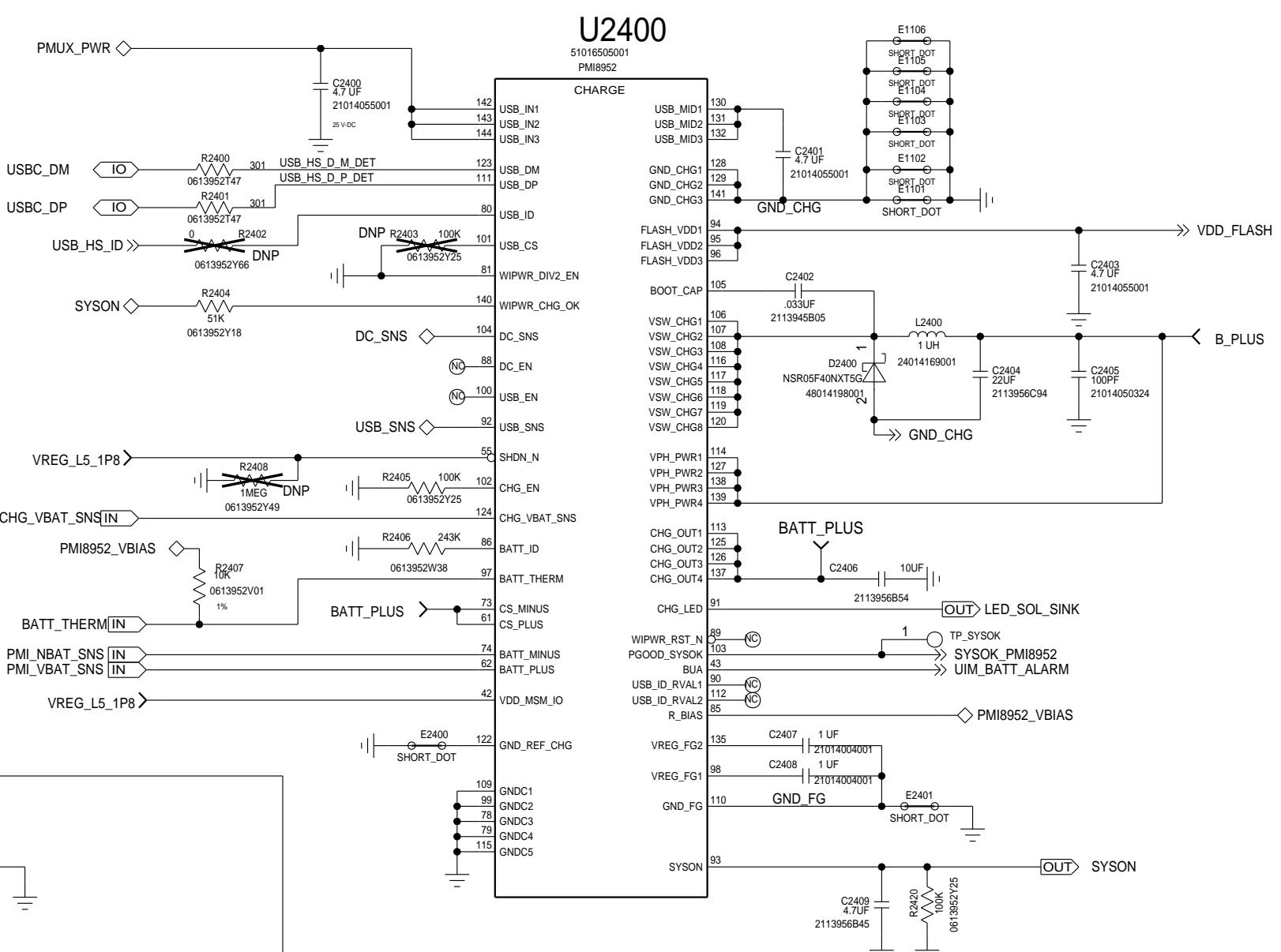
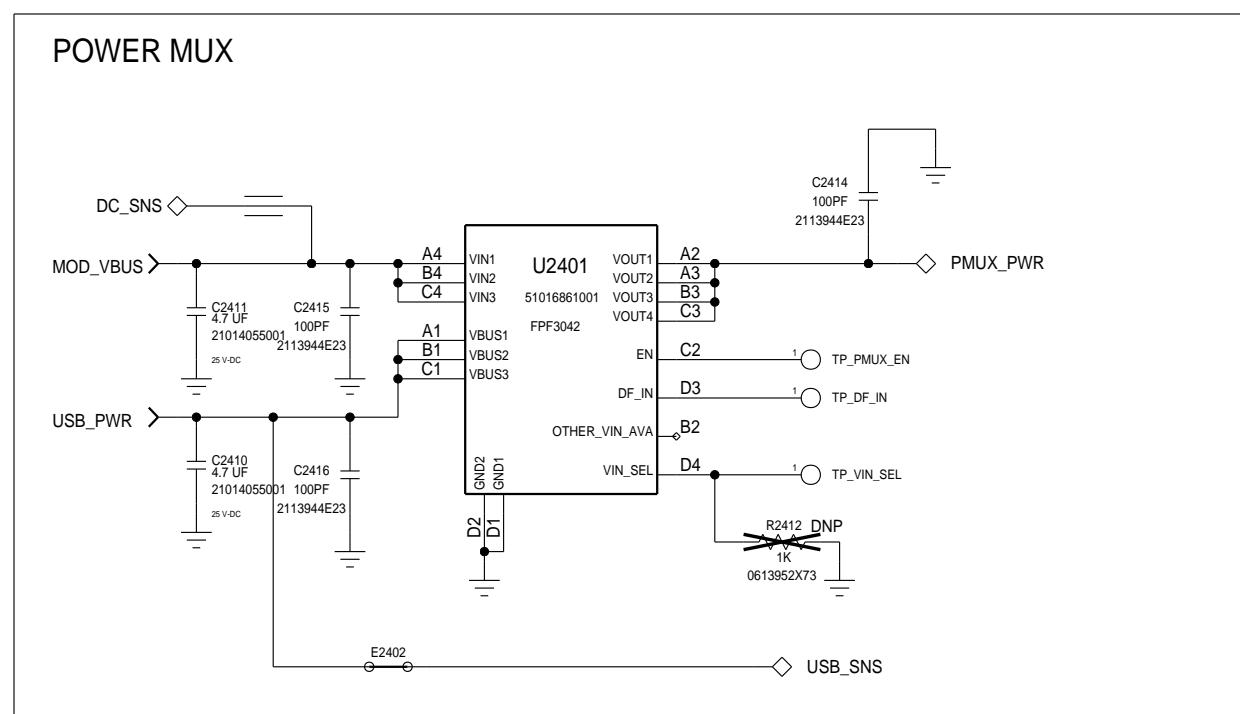
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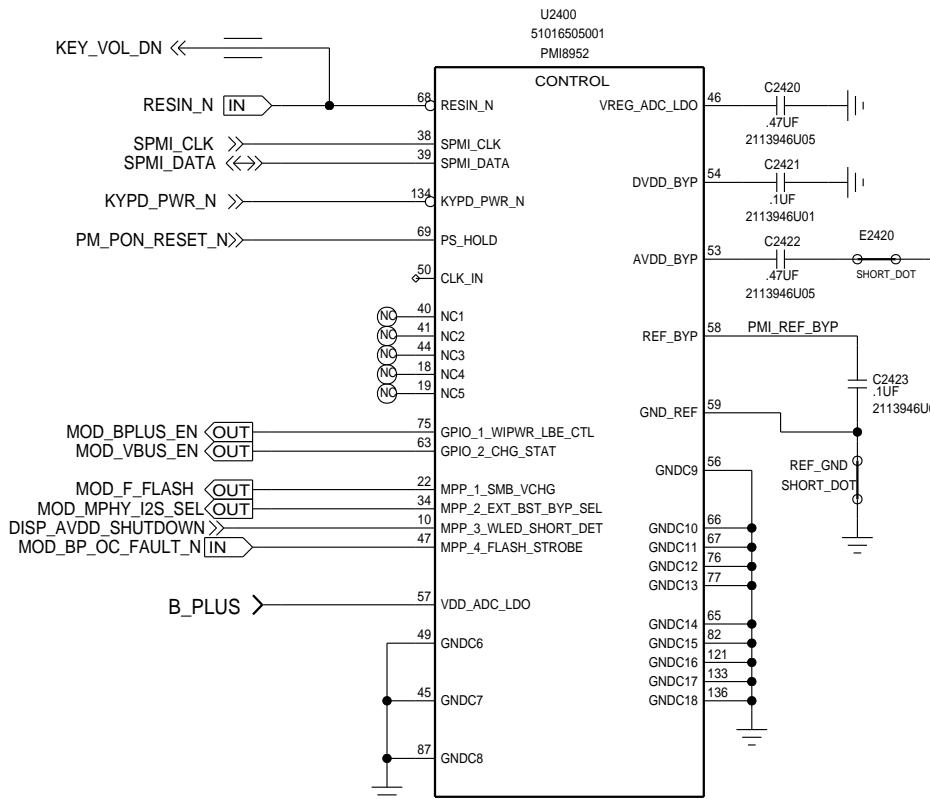
REV  
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CAD FILE NAME:

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# PMI8952: IO\_REF

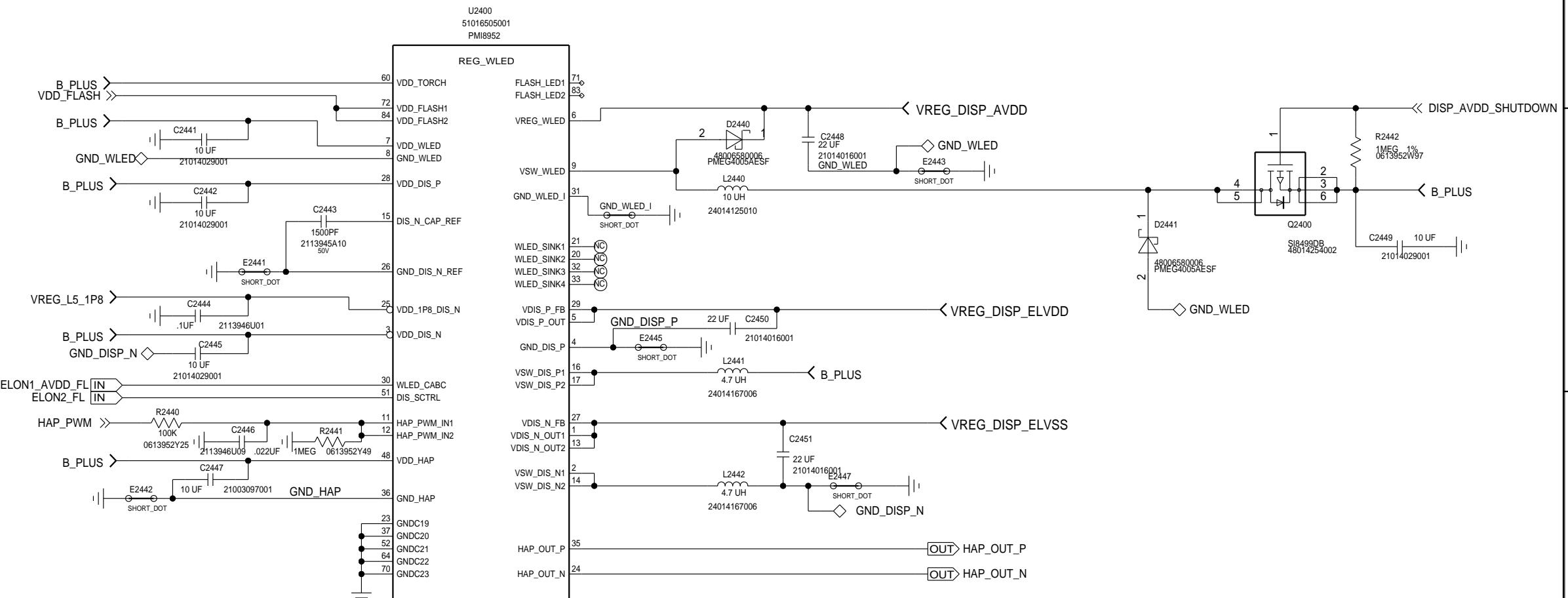
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LAST MODIFIED BY: MMI	Thu May 05 16:54:38 2016	
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CAD FILE NAME:		PAGE 36 OF 61

# PMI8952: REG WLED

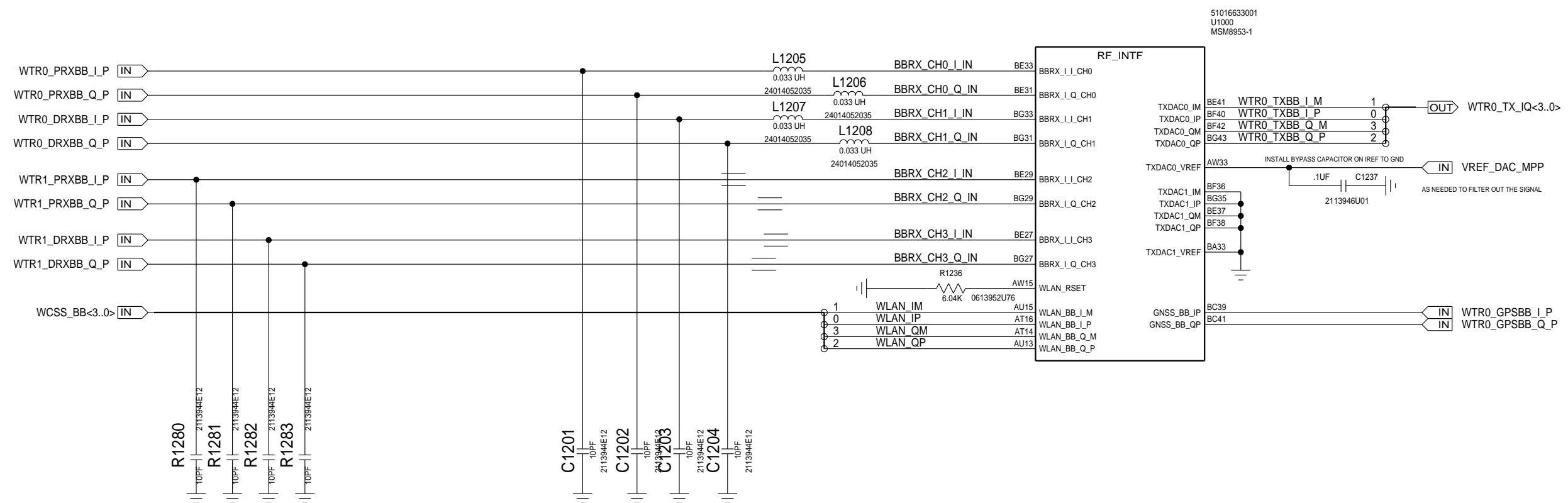
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APPROVALS		 <b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: <b>ap_pmic</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:39 2016			
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		CAD FILE NAME:	PAGE 37 OF 61

# MSM: RF INTERFACE

## REF 1200-1299



NEED TO APPLY LC FILTER FOR REDUCE B40 RX SPURS(QC 80-NP237-56)

L.C 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		 <b>MOTOROLA</b> MOBILE DEVICES		
ENGINEER:		BLOCK TITLE: <b>block_mdm9x25m_pm8019</b>		
LAST MODIFIED BY: FAN021 Thu May 05 16:54:27 2016				
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		CAD FILE NAME:		PAGE 38 OF 61

# CAM: POWER

REF:5500-5529

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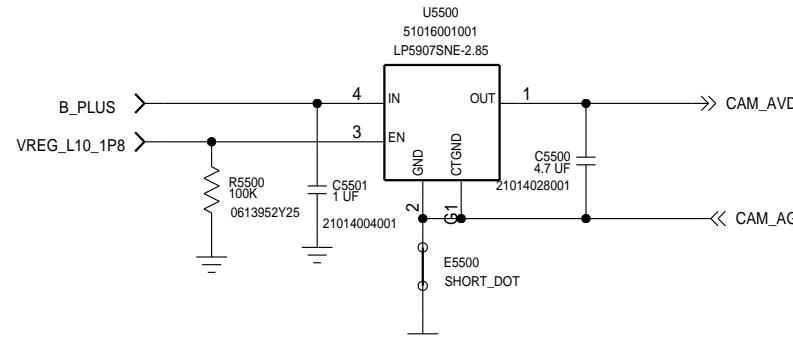
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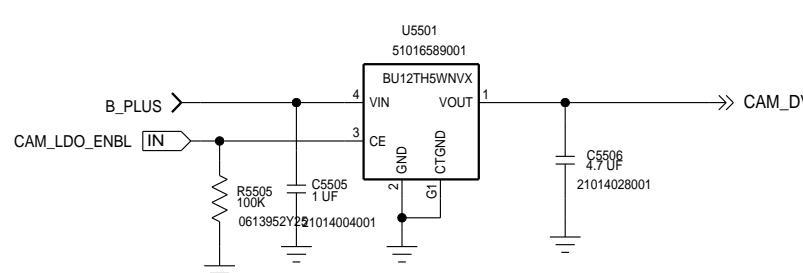
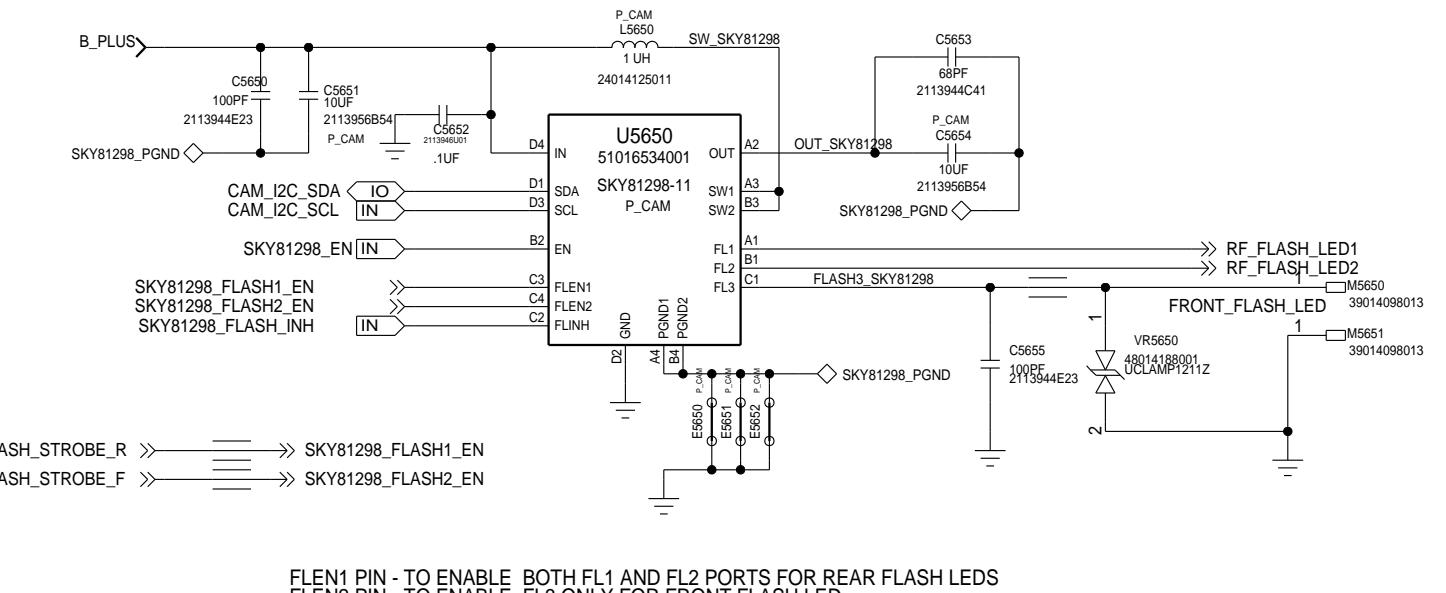
A

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ANALOG REGULATOR 2.85V



DIGITAL REGULATOR 1.2V

LED FLASH DRIVER FOR REAR AND FRONT IMAGERS  
REF:5650-5669

## APPROVALS

**MOTOROLA**  
MOBILE DEVICES

ENGINEER: MMI

BLOCK TITLE:

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

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PROJECT NAME  
**B 84016562001\_a.cpm**REV  
01

CAD FILE NAME:

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# CAM: REAR COMMON

REF:5530-5549

D

D

C

C

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B

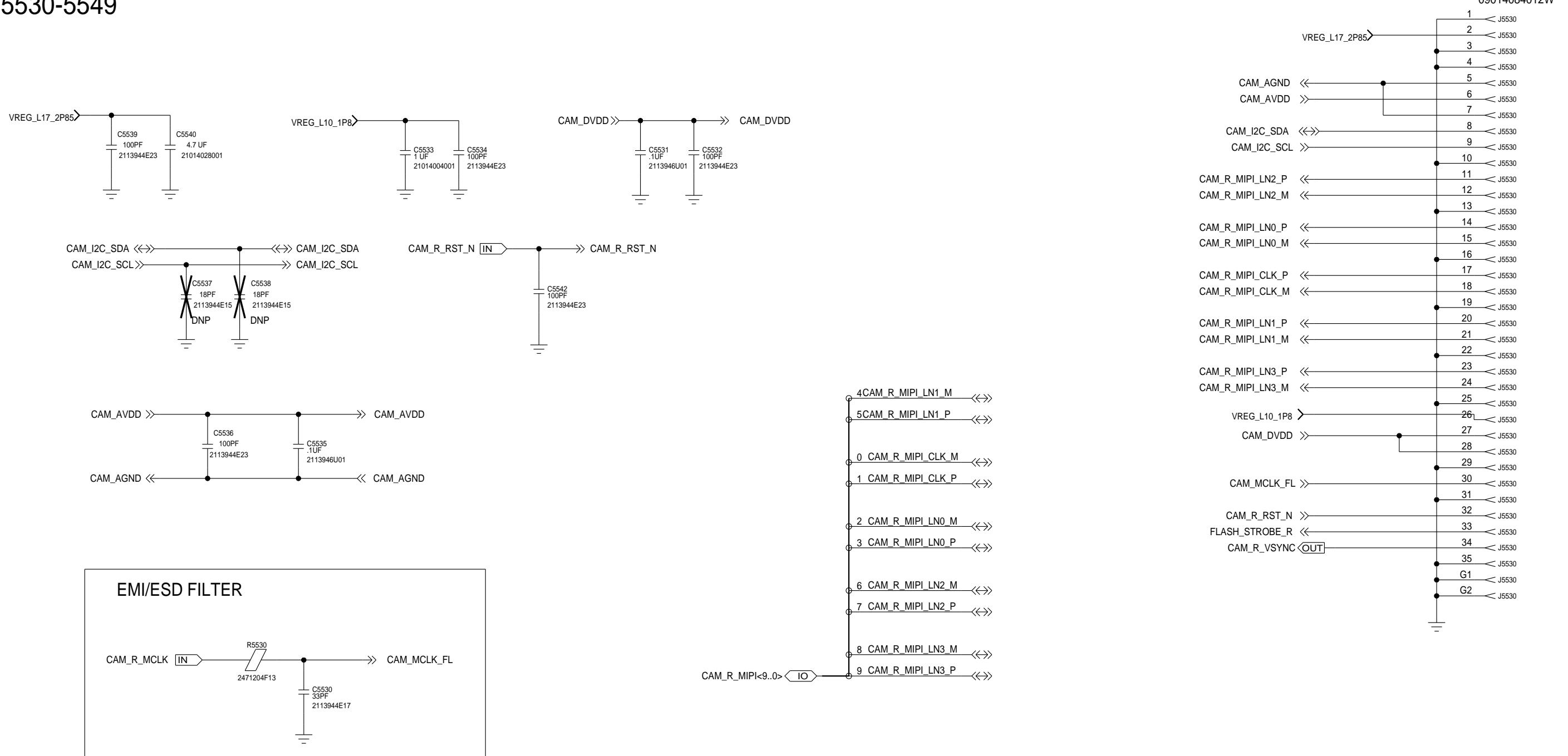
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APPROVALS	 MOTOROLA MOBILE DEVICES		
ENGINEER: JOHN KRAMER	BLOCK TITLE: <b>multimedia</b>		
LAST MODIFIED BY: AZIZ NOORI Mon Jan 04 09:46:49 2016			
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CAD FILE NAME:		PAGE 40 OF 61	

# CAM: REAR

REF:5530-5549

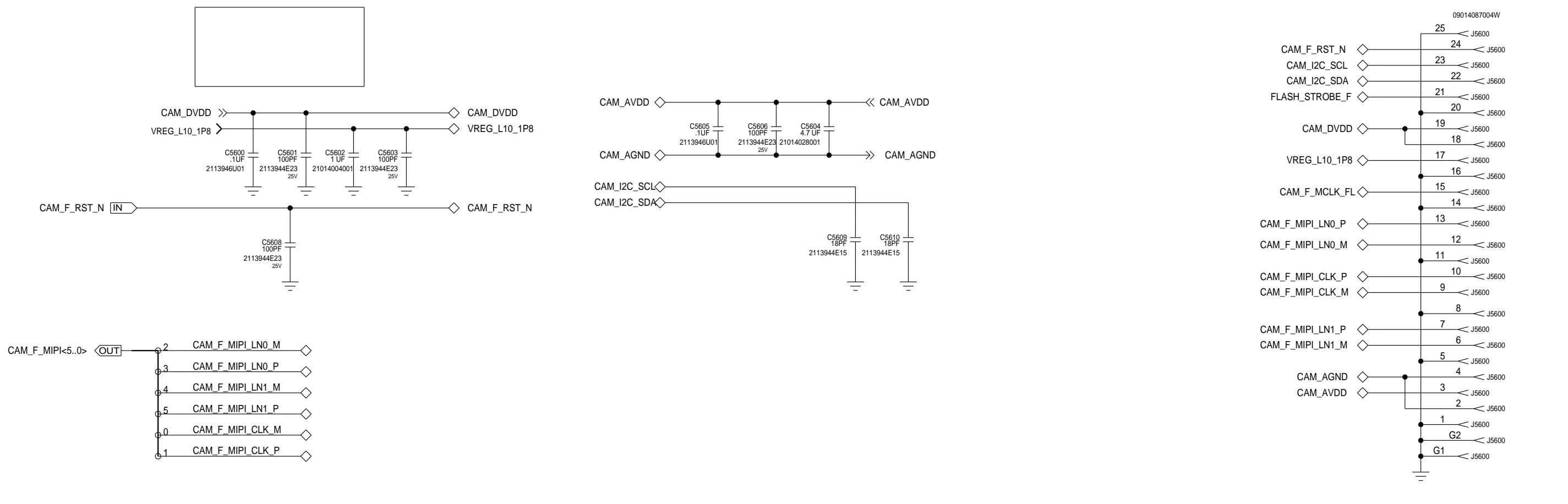


APPROVALS	<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: JOHN KRAMER	BLOCK TITLE: <b>multimedia</b>	
LAST MODIFIED BY: AZIZ NOORI Thu May 05 16:54:22 2016		
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CAD FILE NAME:	PAGE 41 OF 61	

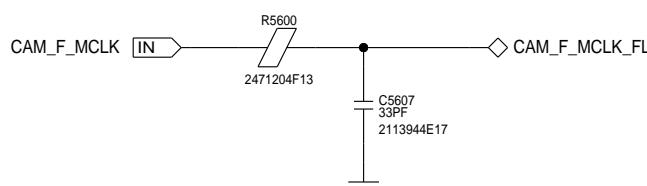
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REF 5600-5620

FF CAMERA CONNECTOR FRONT CAM I2C ADDR:



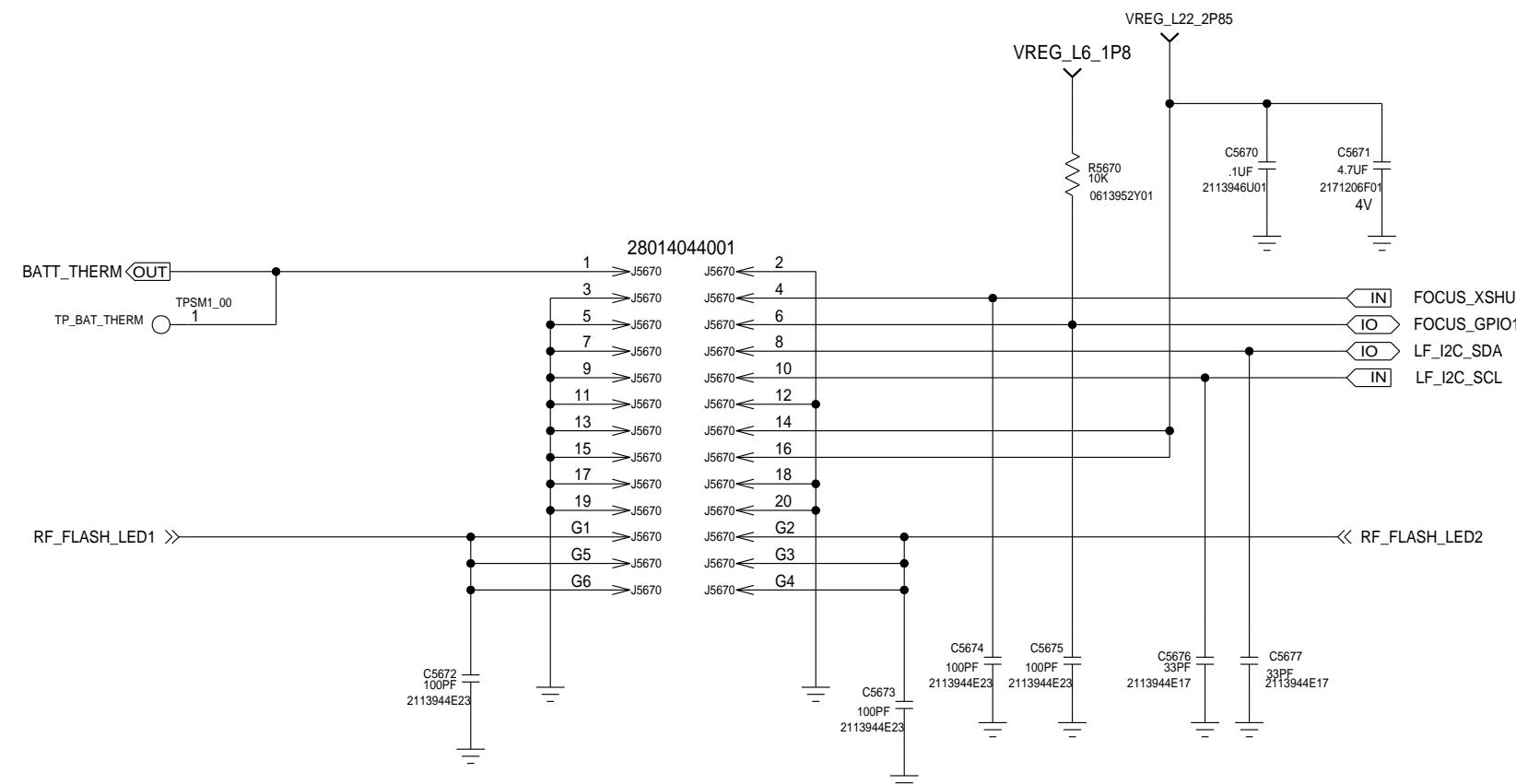
## EMI/ESD FILTER



APPROVALS	MOTOROLA MOBILE DEVICES	
ENGINEER: JOHN KRAMER	BLOCK TITLE:	
LAST MODIFIED BY: NATE CONNELL		multimedia
Thu May 05 16:54:23 2016		
MOTOROLA CONFIDENTIAL RESTRICTED	PROJECT NAME	REV
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	CAD FILE NAME:	PAGE 42 OF 61

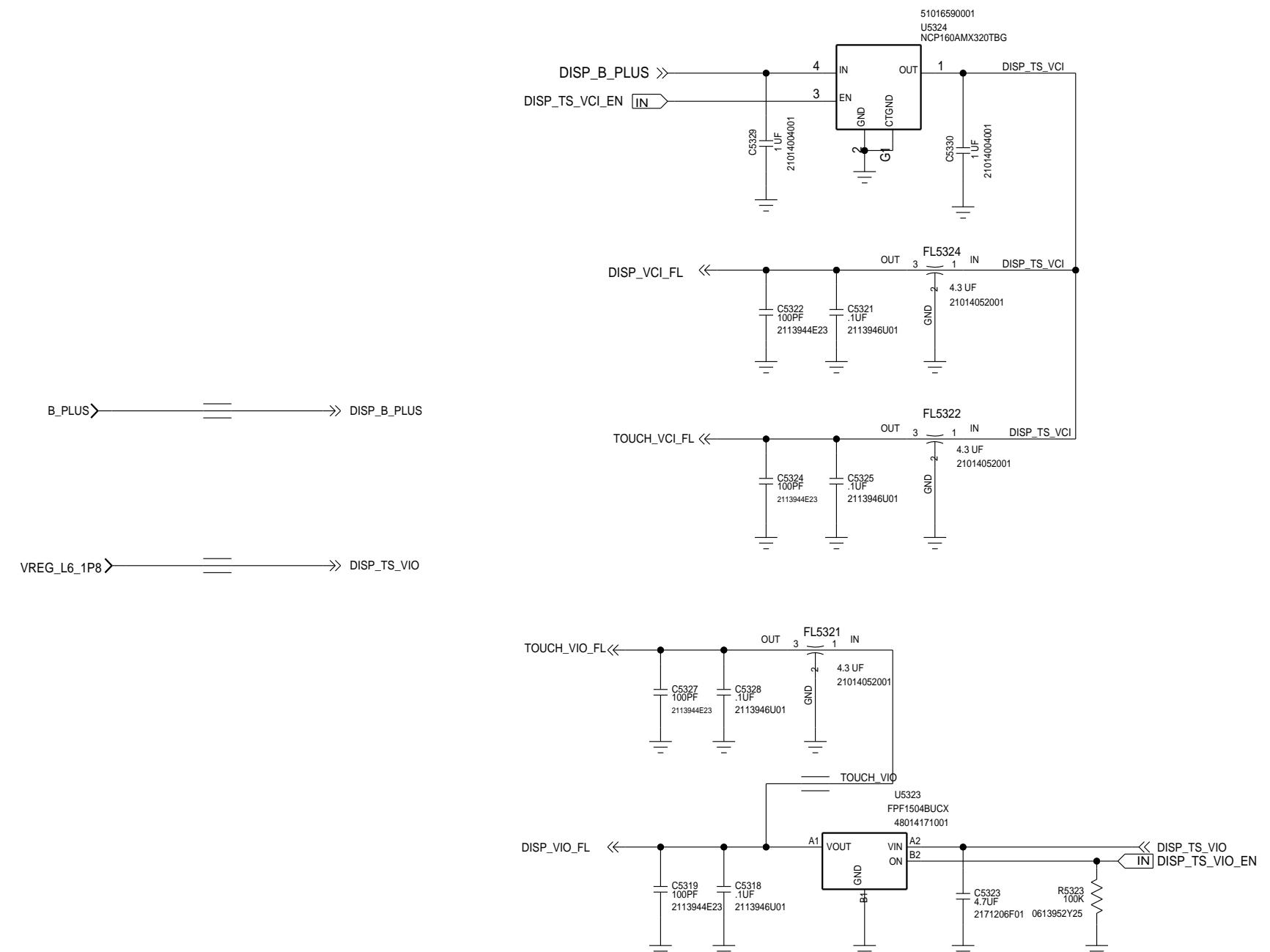
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REF:5670-5679



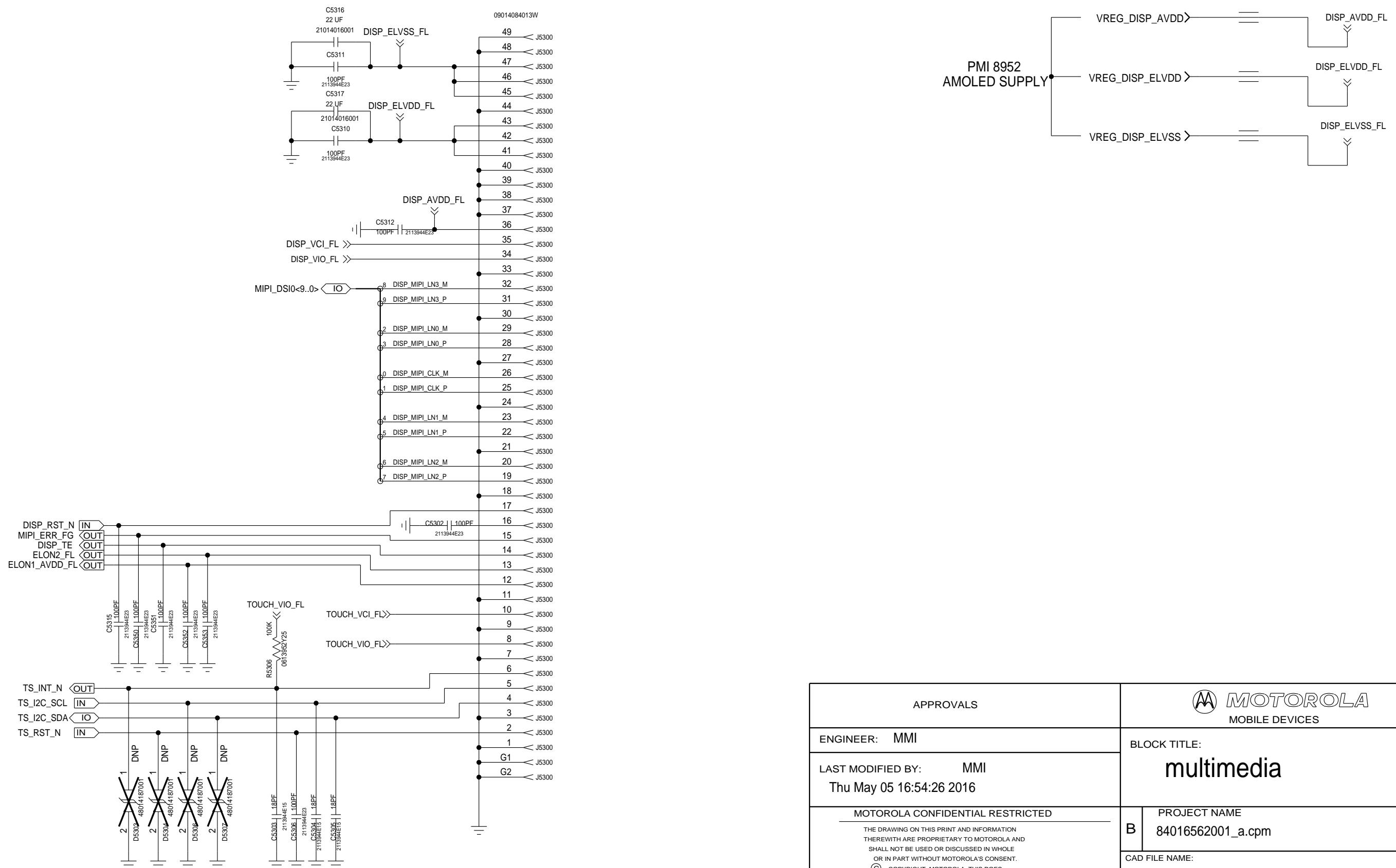
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ENGINEER: RICH WOLNY	BLOCK TITLE: <b>multimedia</b>	
LAST MODIFIED BY: HUNG PHAM Thu May 05 16:54:24 2016		
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	CAD FILE NAME:	PAGE 43 OF 61

# DISP: POWER



APPROVALS		<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: <b>multimedia</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:25 2016			
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# DISP: CONNECTOR



## APPROVALS

**MOTOROLA**  
MOBILE DEVICES

ENGINEER: MMI

BLOCK TITLE:

LAST MODIFIED BY: MMI  
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**multimedia**

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CAD FILE NAME:

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# RFFE:TRX ASM

LAST REF NO. C7072, L7026

REF 7000-7099

D

C

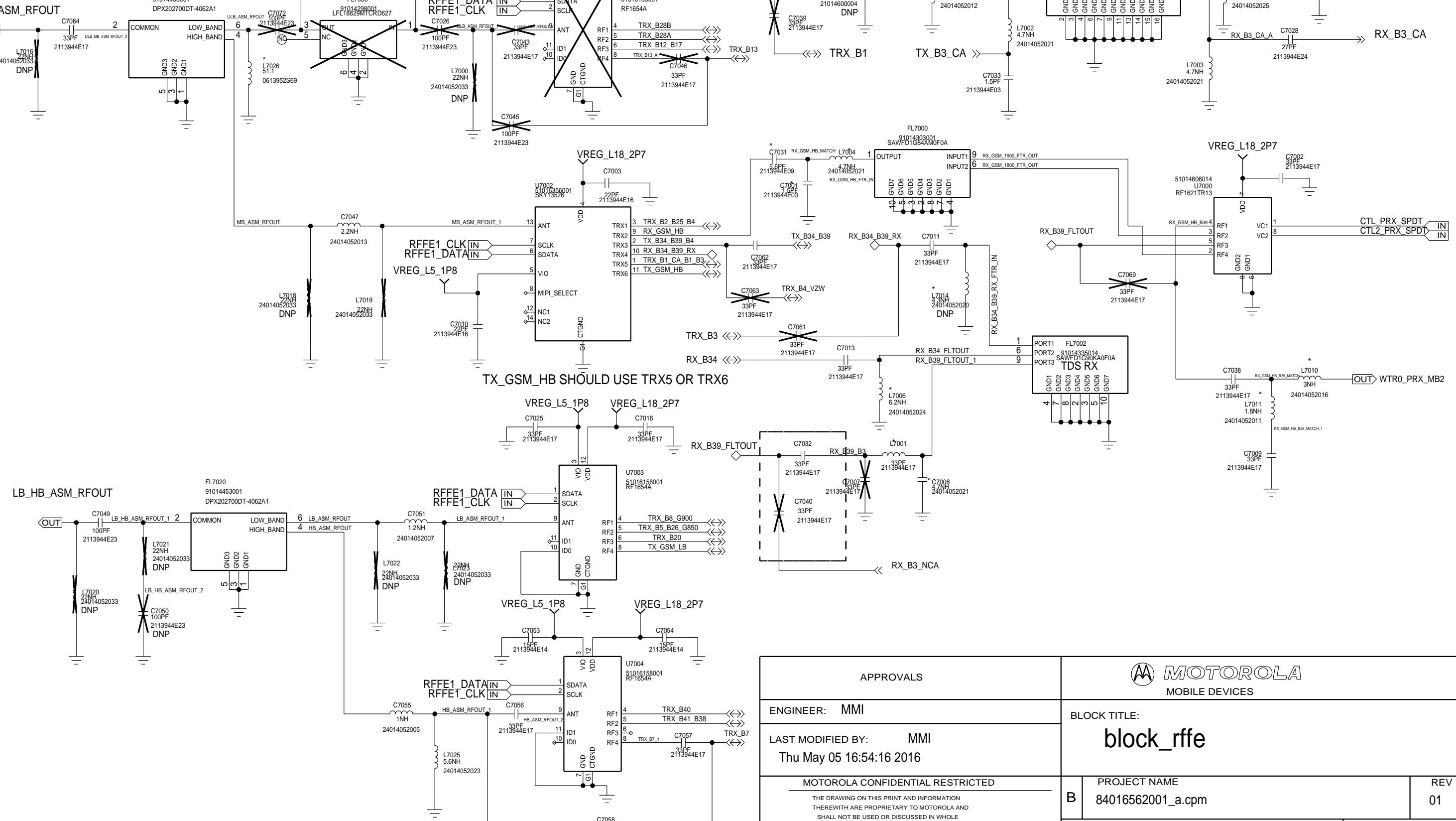
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B

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## APPROVALS

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MOBILE DEVICES

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CAD FILE NAME:

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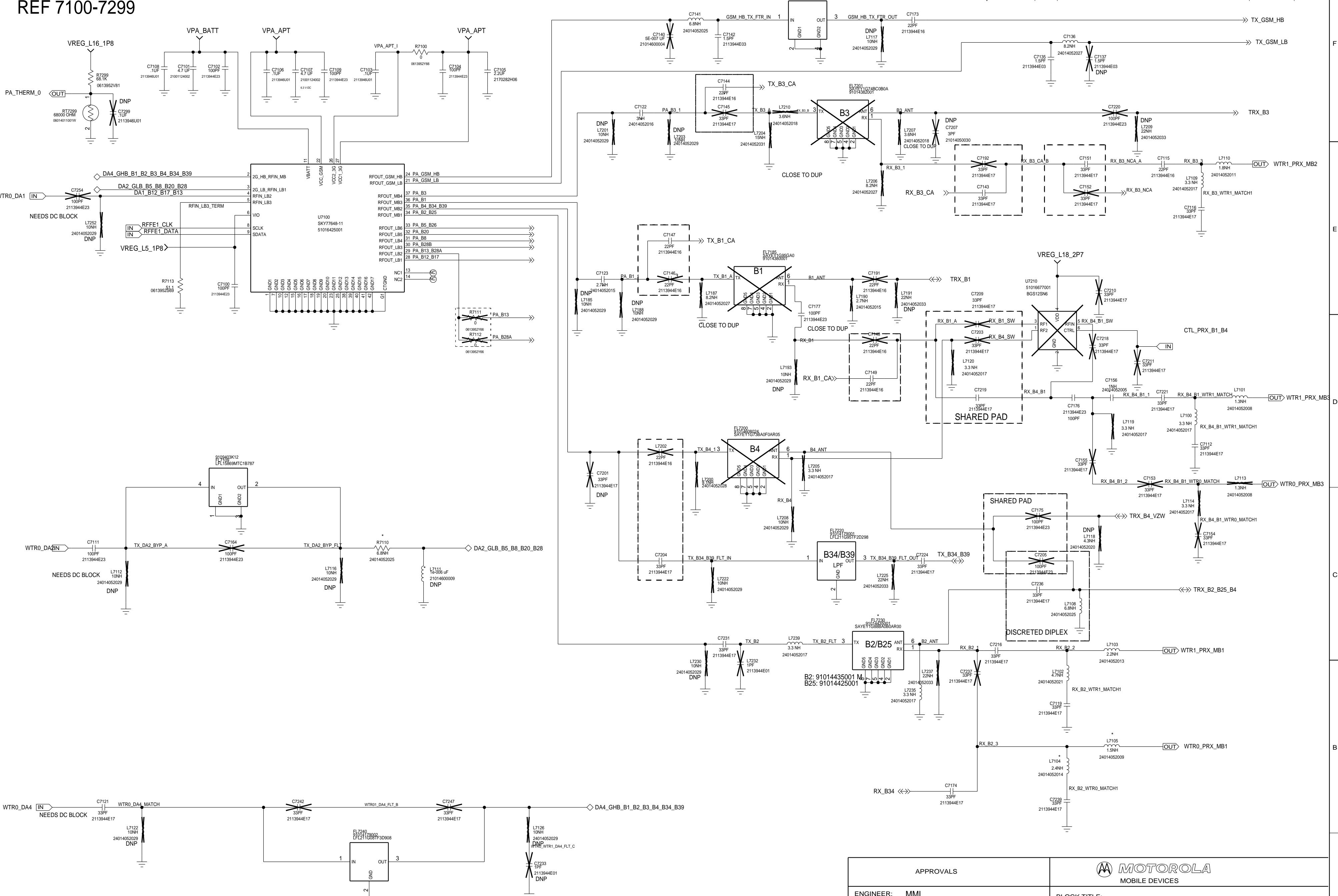
# RFFE:MMMBPA

LAST REF C7175, L7118, R7112

REF 7100-7299

REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPR.



## APPROVALS

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MOBILE DEVICES

ENGINEER: MMI

LAST MODIFIED BY: MMI

Fri May 13 10:09:51 2016

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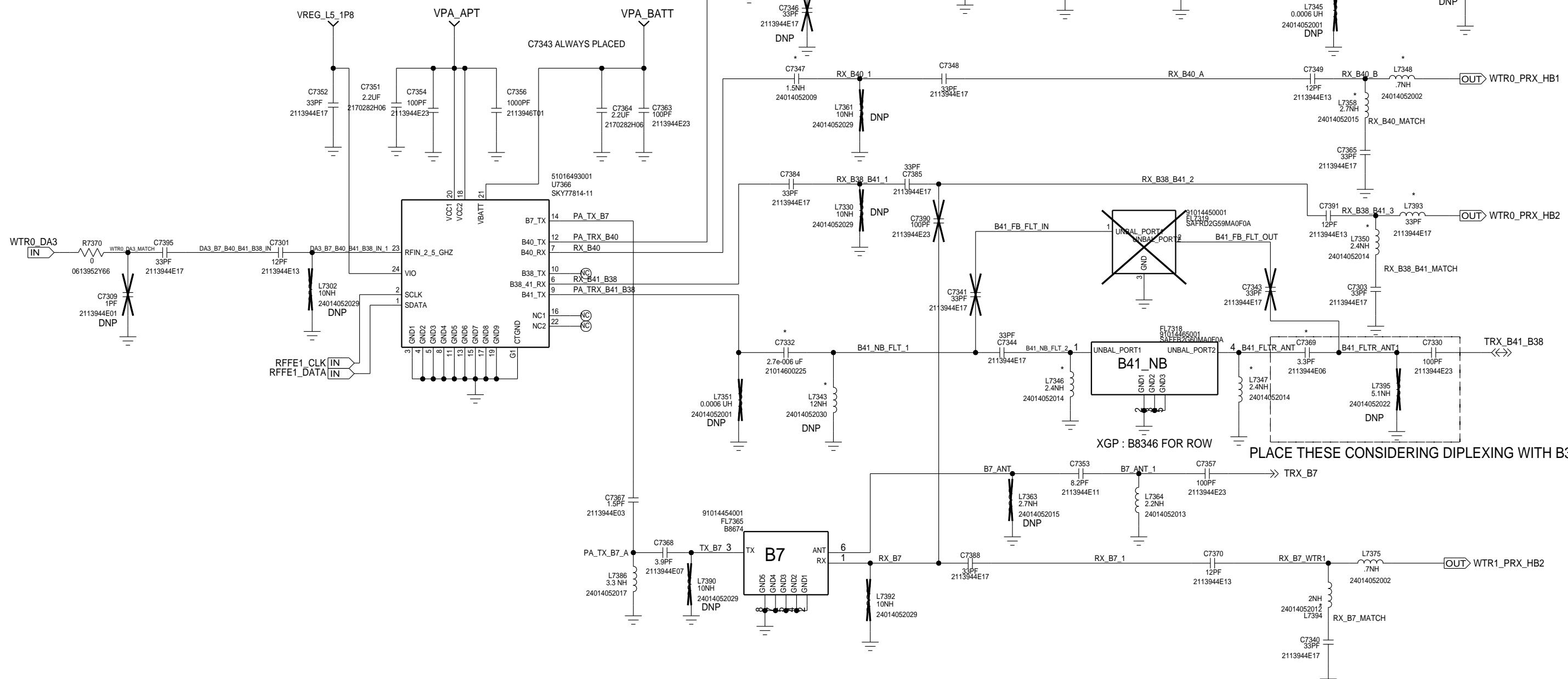
CAD FILE NAME:

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# RFFE:HBPA

REF 7300-7399

LAST REF NO. C7396, L7365, R7371

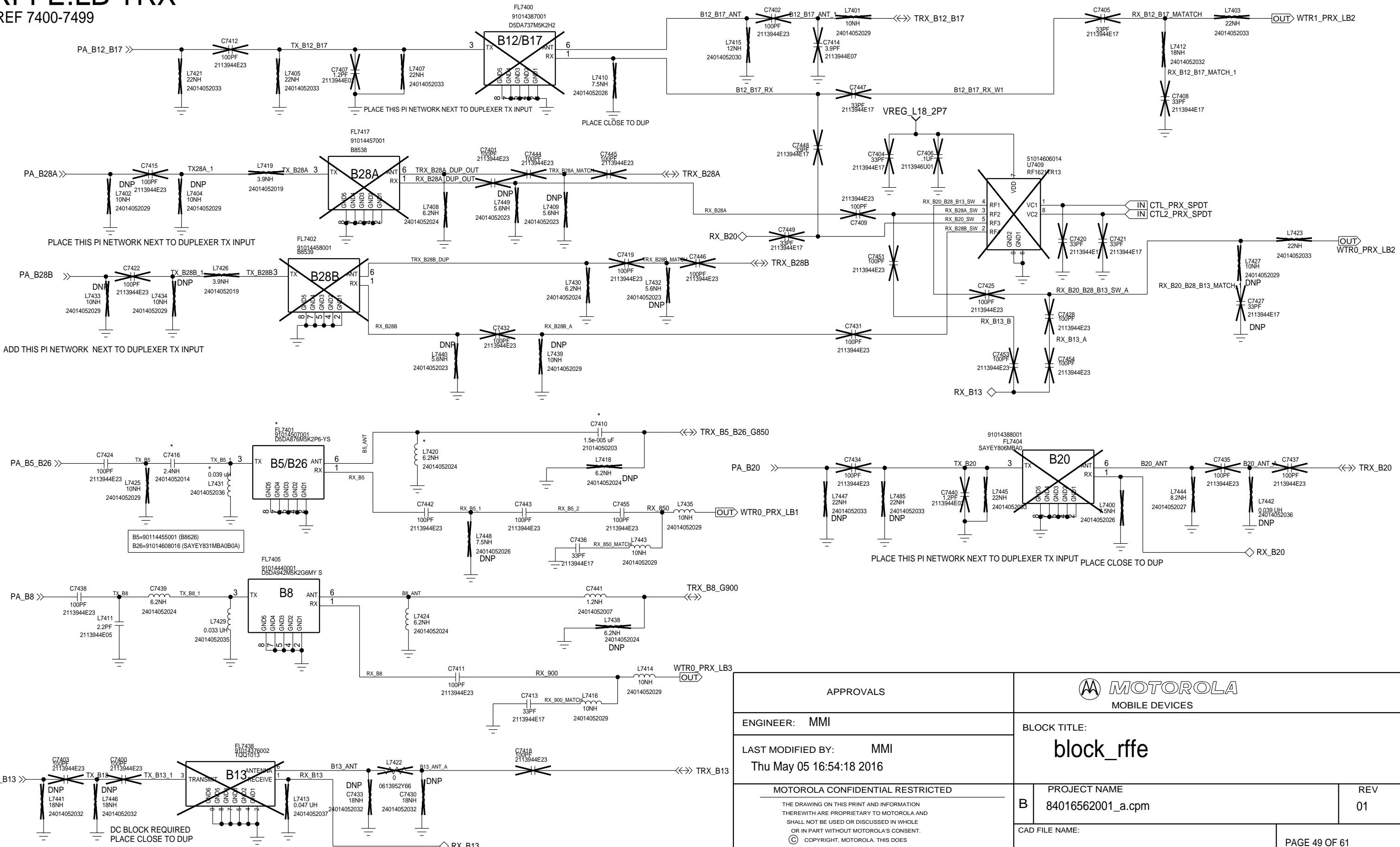


APPROVALS	<b>MOTOROLA MOBILE DEVICES</b>	
ENGINEER: MMI	BLOCK TITLE: <b>block_rffe</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:17 2016		
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**RFFE:LB TRX**

LAST REF NO, C7454, L7449, R7416

REF 7400-7499



## APPROVALS

**MOTOROLA**  
 MOBILE DEVICES

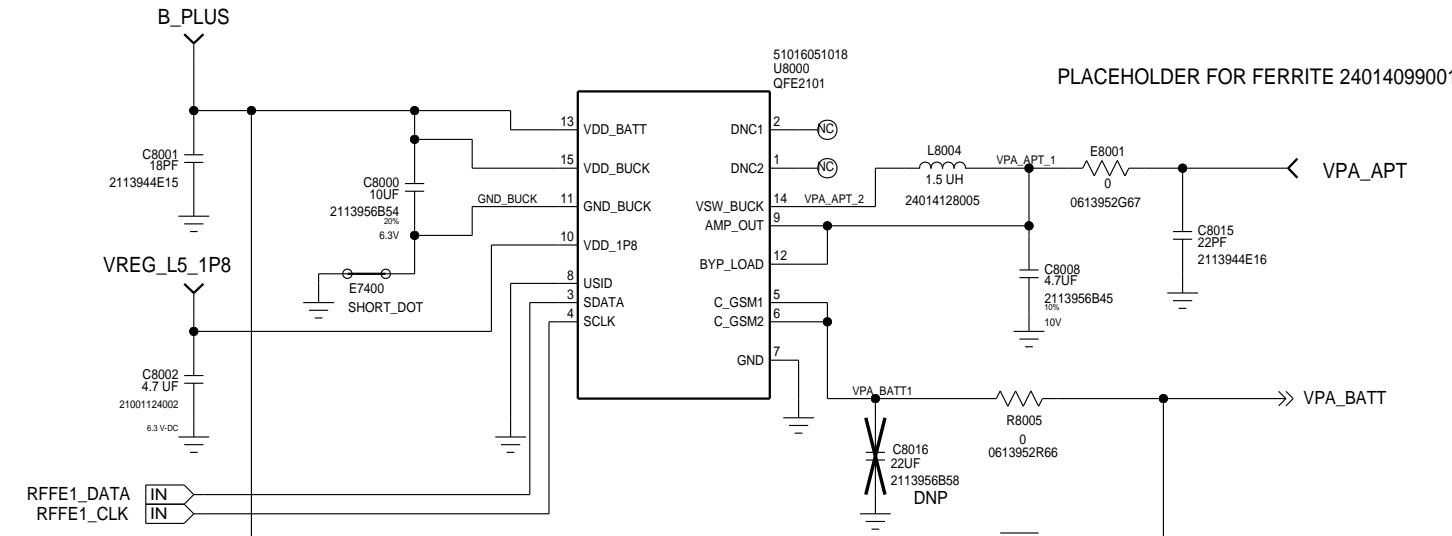
ENGINEER: MMI

LAST MODIFIED BY: MMI  
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**RFFE:QFE2101**  
REF 7400-7499



APPROVALS		MOTOROLA MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE: <b>block_rfe</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:19 2016			
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CAD FILE NAME:			PAGE 50 OF 61

# RFFE:DIVERSITY

REF 7500-7649  
LAST REF NO. C7627, L7566

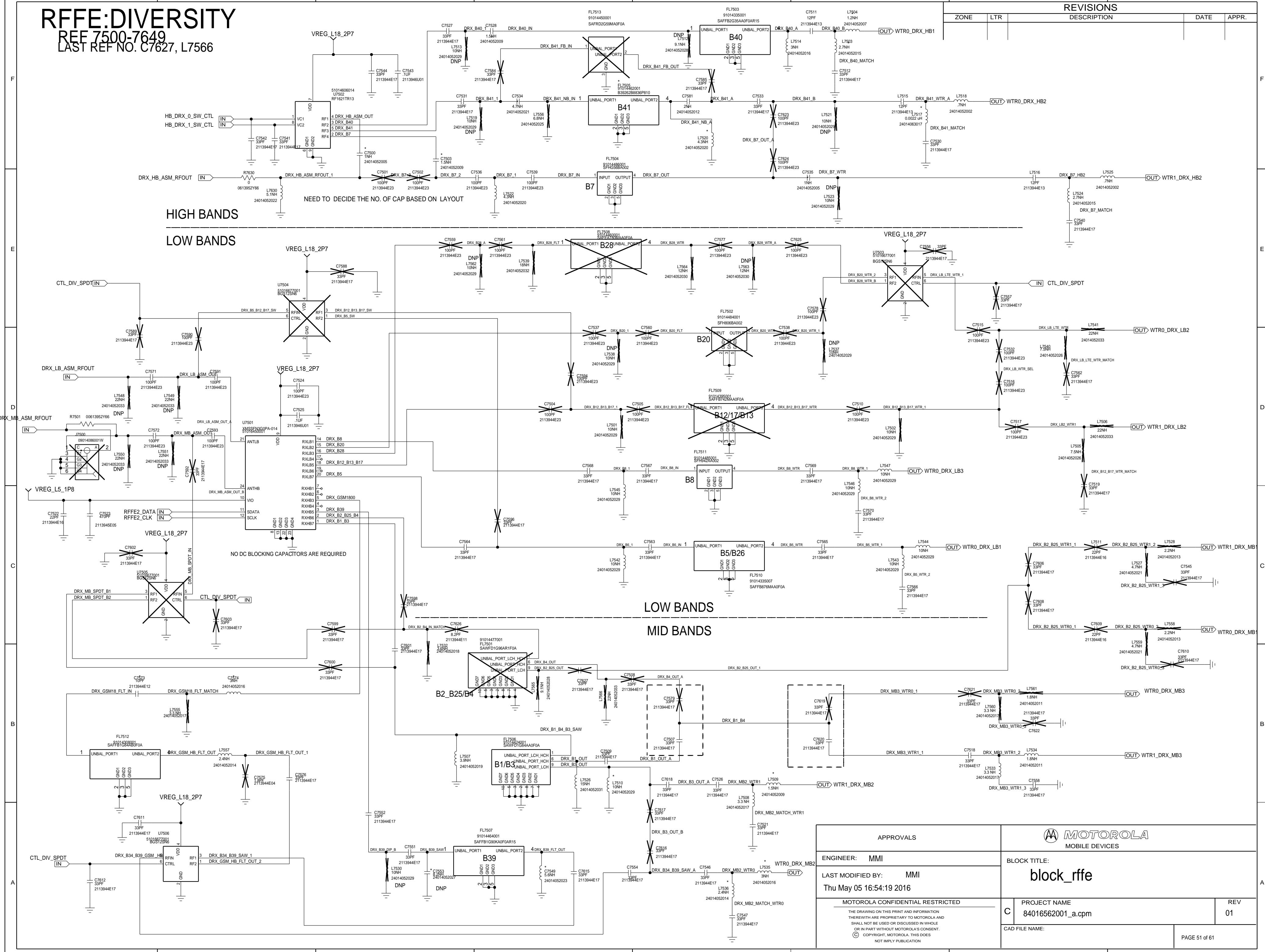
REVISIONS

ZONE	LTR	DESCRIPTION	DATE	APPR.

## HIGH BANDS

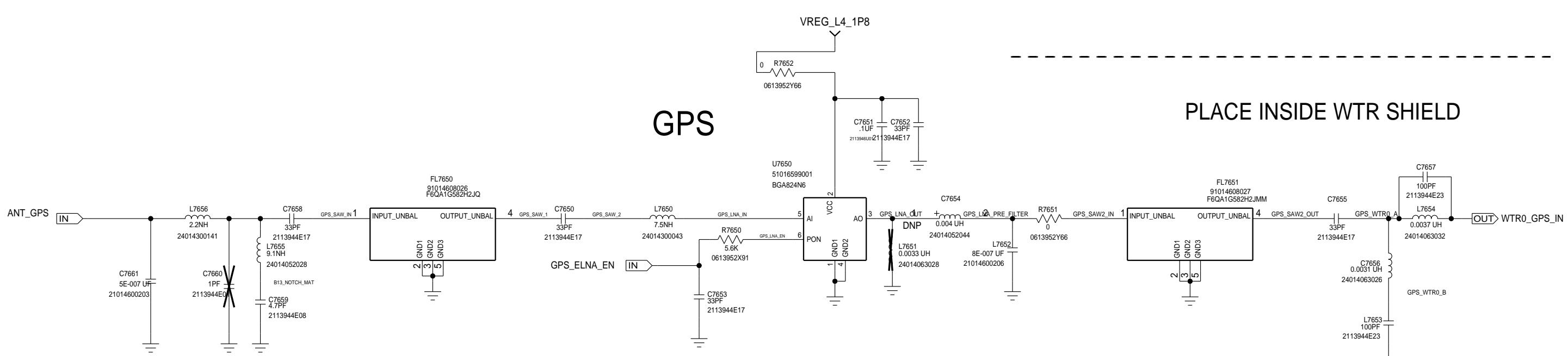
## LOW BANDS

NO DC BLOCKING CAPACITORS ARE REQUIRED



# RFFE: GPS

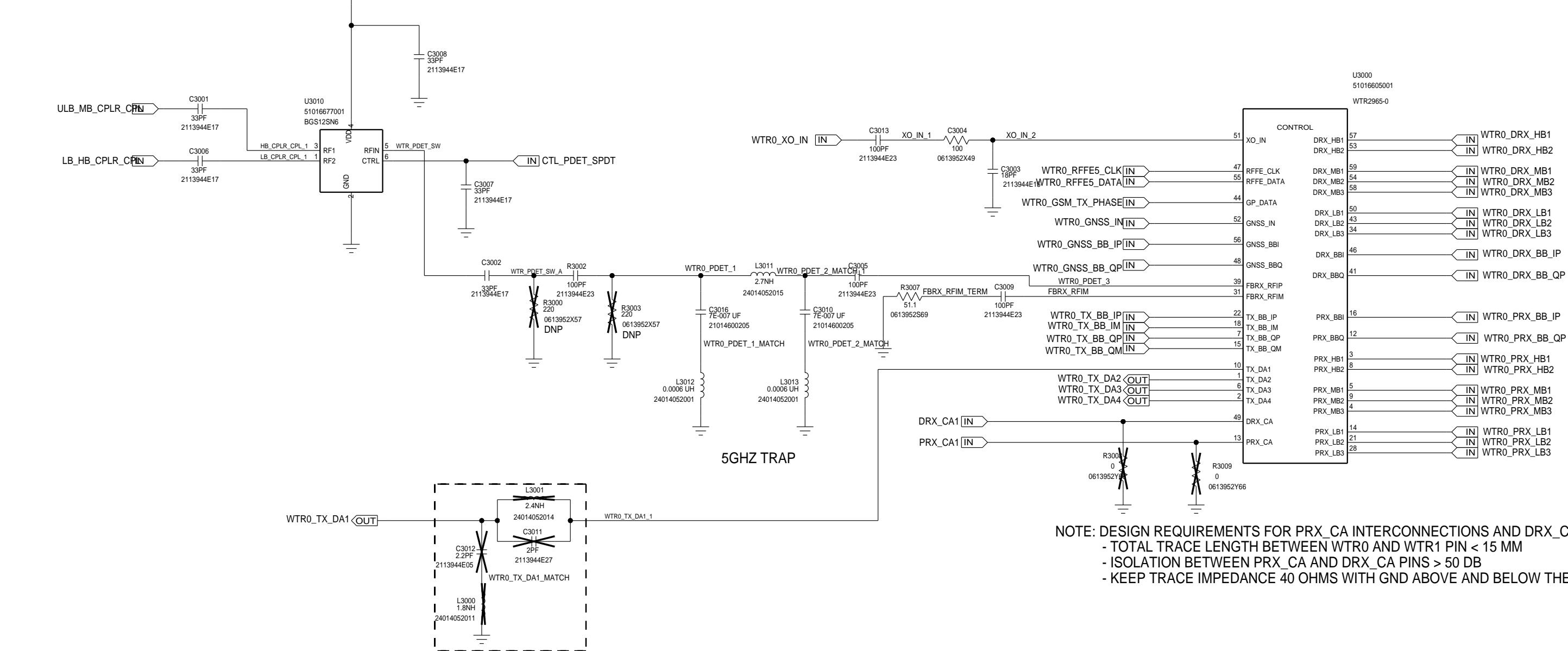
REF 7650-7699



APPROVALS		<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI		BLOCK TITLE:	
LAST MODIFIED BY: MMI Wed May 03 00:55:20 2018		<b>block_rffe</b>	
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# WTR2965 BB RF

REF 3000-3049



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

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

BASED ON 80-NP237-43 REV. A

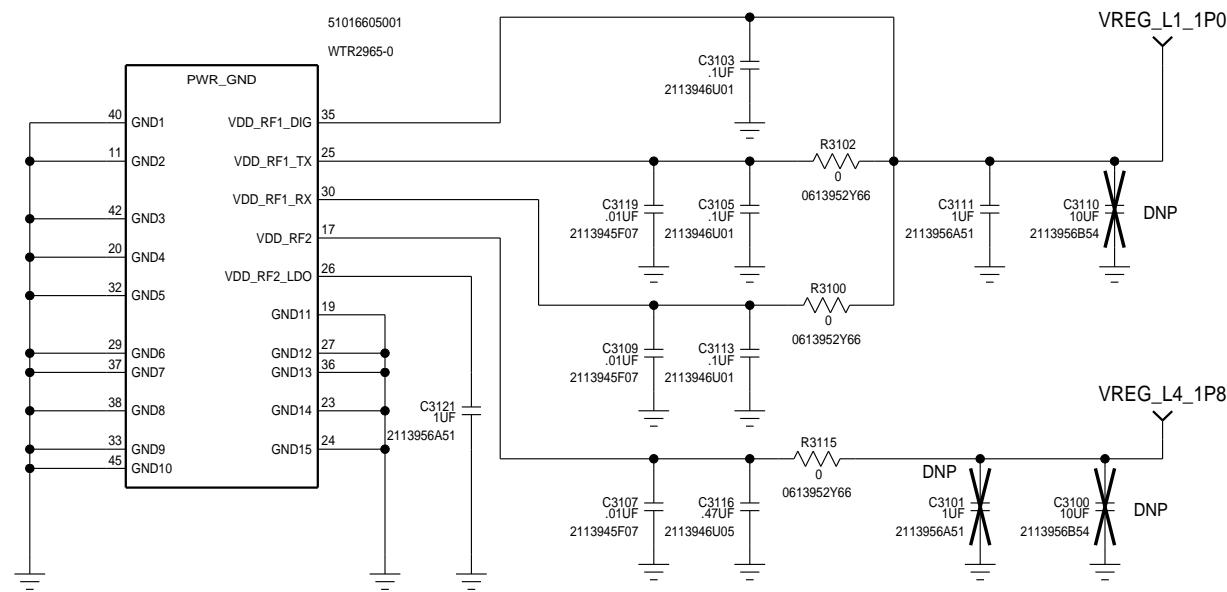
MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

APPROVALS	<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI	BLOCK TITLE: <b>blk_wtr2965</b>	
LAST MODIFIED BY: Thu May 05 16:54:10 2016		
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# WTR2965 POWER

REF 3100-3149

**U3000**



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

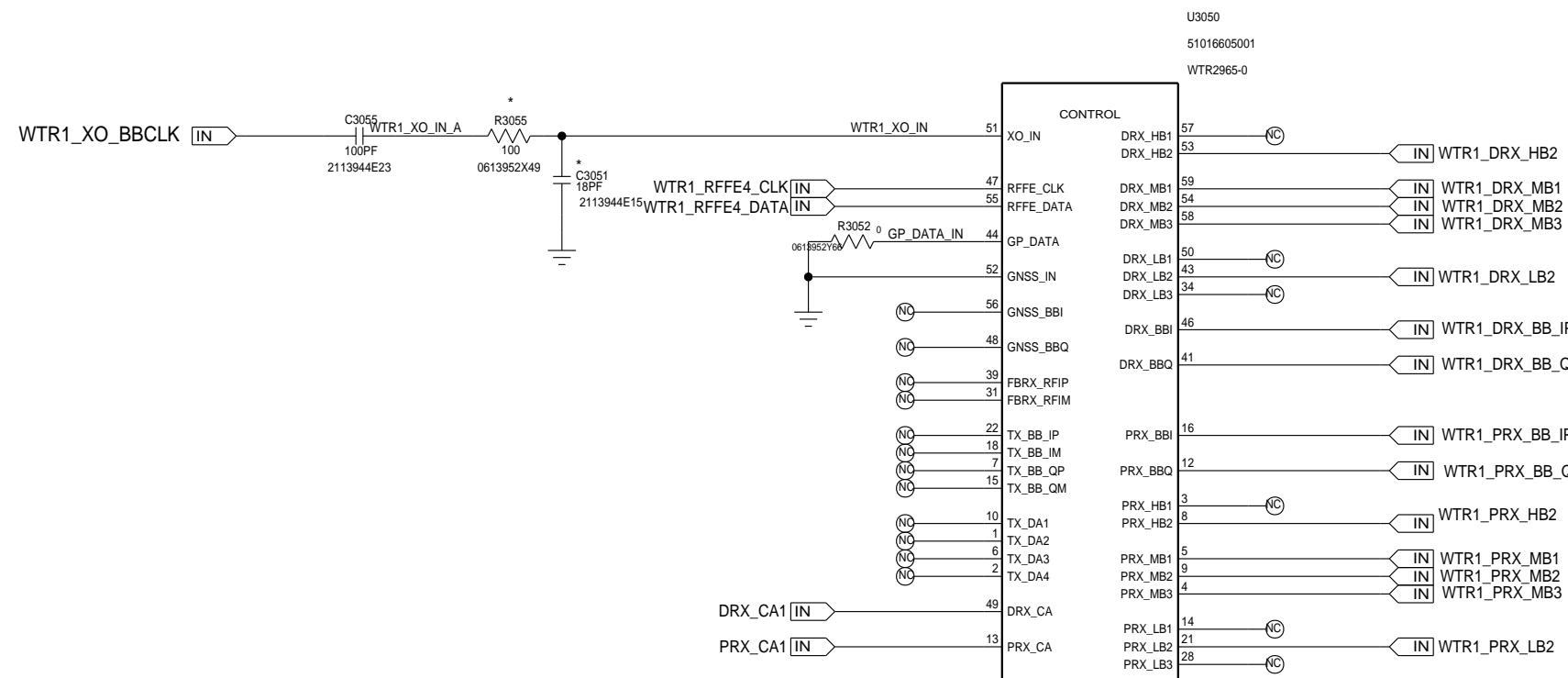
BASED ON 80-NL713-44 REV. A

MOTOROLA MOBILITY CONFIDENTIAL RESTRICTED-MDB TRACKED TRACKEDANDBLOCKED

APPROVALS	<b>MOTOROLA</b> MOBILE DEVICES	
ENGINEER: MMI	BLOCK TITLE: <b>blk_wtr2965</b>	
LAST MODIFIED BY: MMI Thu May 05 16:54:10 2016		
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CAD FILE NAME:		PAGE 59 OF 61

# CA\_WTR2965 BB RF

REF 3050-3099



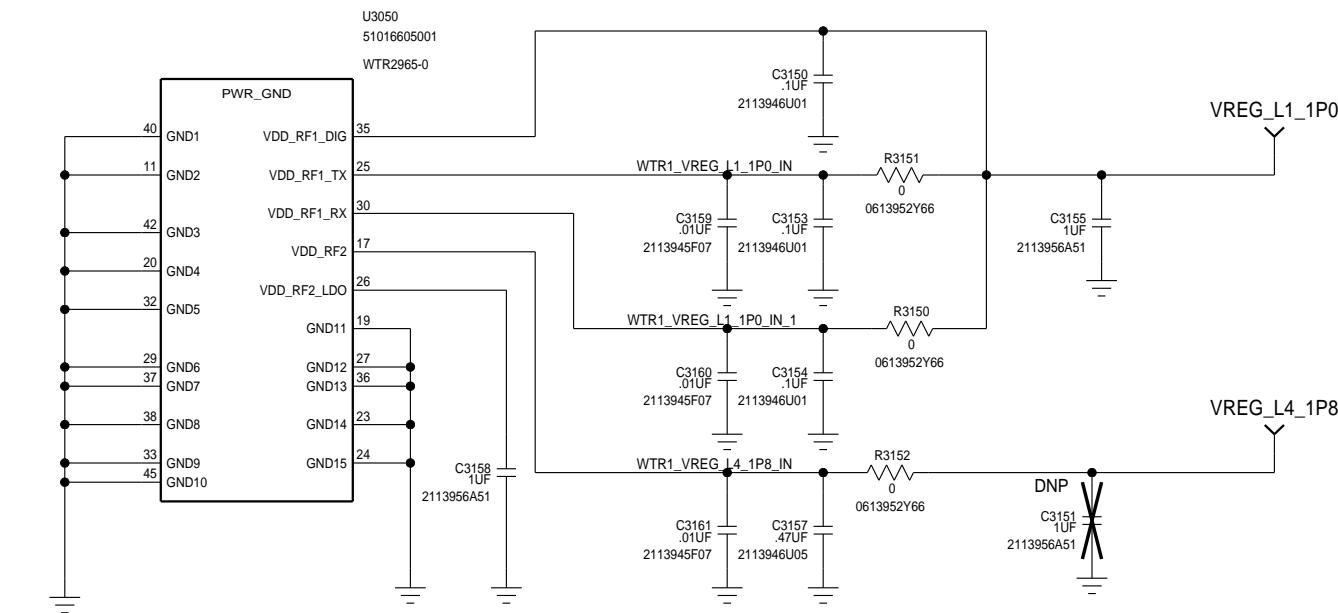
NOTE: DESIGN REQUIREMENTS FOR PRX\_CA INTERCONNECTIONS AND DRX\_CA INTERCONNECTIONS:

- 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:  ca_wtr2965	
LAST MODIFIED BY: Thu May 05 16:54:08 2016		
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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:  ca_wtr2965	
LAST MODIFIED BY: MMI Thu May 05 16:54:09 2016		
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	CAD FILE NAME:	PAGE 61 OF 61