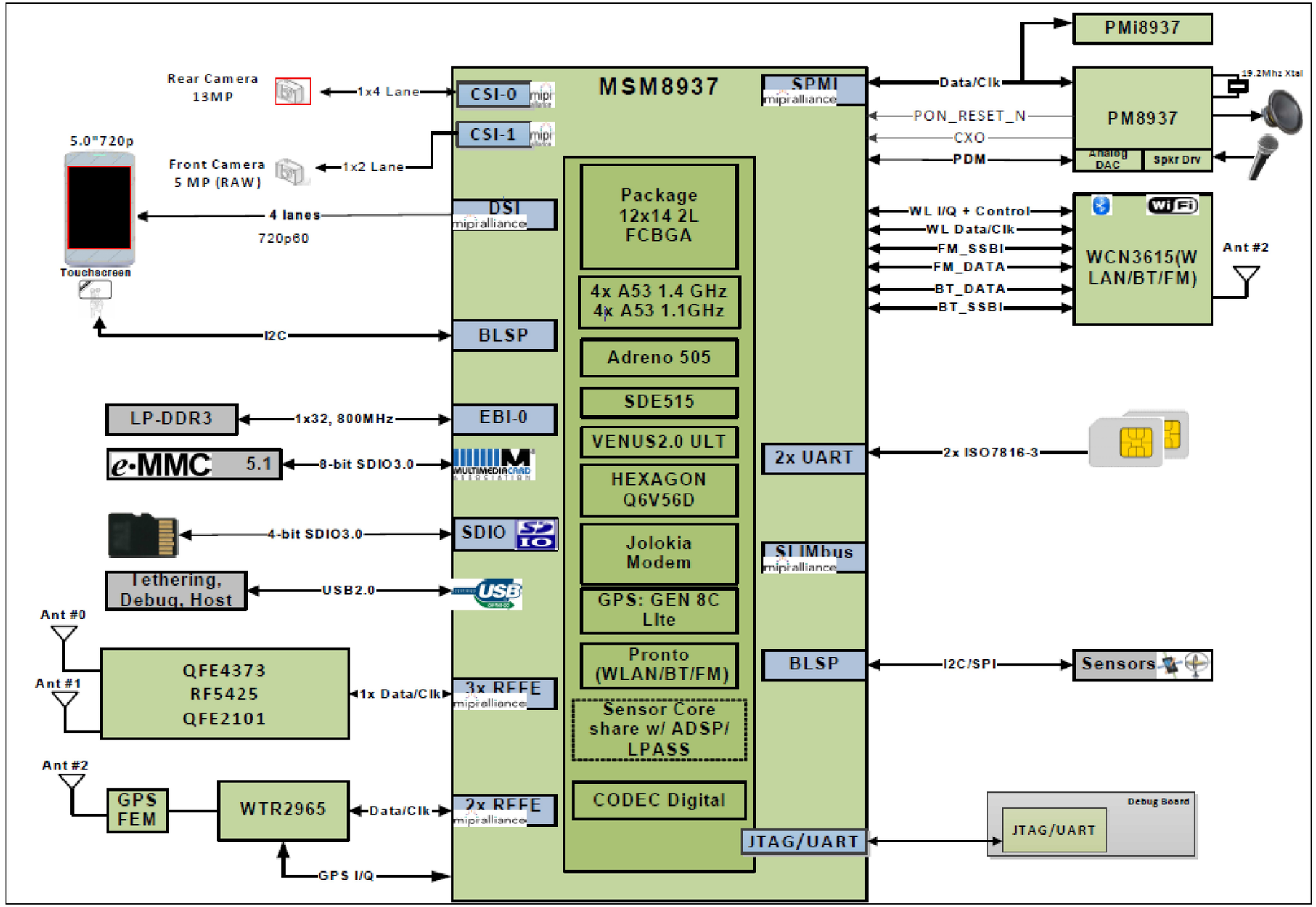


Block Diagram

Title
Sheet
Size Name Rev
Date: Sheet of

MSM8937 GPIO Configuration

GPIO_0	NC	GPIO_41	SCAM_ID	GPIO_82	FM_DATA
GPIO_1	NC	GPIO_42	ACCL_INT1_N	GPIO_83	BT_CTL
GPIO_2	NC	GPIO_43	ALSP_INT_N	GPIO_84	BT_DATA
GPIO_3	WDOG_DISABLE	GPIO_44	MAG_RST_N	GPIO_85	NC
GPIO_4	UART_MSM_TX	GPIO_45	NC	GPIO_86	NC
GPIO_5	UART_MSM_RX	GPIO_46	NC	GPIO_87	NC
GPIO_6	NC	GPIO_47	NC	GPIO_88	NC
GPIO_7	NC	GPIO_48	NC	GPIO_89	NC
GPIO_8	NC	GPIO_49	UIM_BATT_ALM	GPIO_90	NC
GPIO_9	NC	GPIO_50	NC	GPIO_91	KEY_VOL_UP_N
GPIO_10	TP_I2C_SDA	GPIO_51	UIM1_DATA	GPIO_92	NC
GPIO_11	TP_I2C_SCL	GPIO_52	UIM1_CLK	GPIO_93	NC
GPIO_12	NC	GPIO_53	UIM1_RESET	GPIO_94	NC
GPIO_13	NC	GPIO_54	NC	GPIO_95	NC
GPIO_14	SENSOR_I2C_SDA	GPIO_55	UIM2_DATA	GPIO_96	NC
GPIO_15	SENSOR_I2C_SCL	GPIO_56	UIM2_CLK	GPIO_97	NC
GPIO_16	NC	GPIO_57	UIM2_RESET	GPIO_98	NC
GPIO_17	NC	GPIO_58	NC	GPIO_99	NC
GPIO_18	NC	GPIO_59	NC	GPIO_100	RFFE1_CLK
GPIO_19	NC	GPIO_60	LCD_RST_N	GPIO_101	RFFE1_DATA
GPIO_20	ACC_SPI_MOSI	GPIO_61	LCD_ID	GPIO_102	NC
GPIO_21	ACC_SPI_MISO	GPIO_62	NC	GPIO_103	NC
GPIO_22	ACC_SPI_CS	GPIO_63	APP_BOOT_FROM_ROM	GPIO_104	NC
GPIO_23	ACC_SPI_CLK	GPIO_64	TP_RST_N	GPIO_105	GRFC1_SEL
GPIO_24	LCD_TE0	GPIO_65	TP_INT_N	GPIO_106	NC
GPIO_25	NC	GPIO_66	GP_PDM_A0	GPIO_107	GRFC3_SEL
GPIO_26	CAM_MCLK0	GPIO_67	SDCARD_DET_N	GPIO_108	NC
GPIO_27	NC	GPIO_68	NC	GPIO_109	GRFC5_SEL
GPIO_28	CAM_MCLK2	GPIO_69	CDC_PDM_CLK	GPIO_110	GRFC6_SEL
GPIO_29	CAM_I2C_SDA0	GPIO_70	CDC_PDM_SYNC	GPIO_111	GRFC7_SEL
GPIO_30	CAM_I2C_SCL0	GPIO_71	CDC_PDM_TX	GPIO_112	GRFC8_SEL
GPIO_31	NC	GPIO_72	CDC_PDM_RX0	GPIO_113	GRFC9_SEL
GPIO_32	NC	GPIO_73	CDC_PDM_RX1	GPIO_114	GRFC10_SEL
GPIO_33	NC	GPIO_74	CDC_PDM_RX2	GPIO_115	GRFC11_SEL
GPIO_34	FLASH_STROBE_NOW	GPIO_75	BT_SSBI	GPIO_116	GRFC12_SEL
GPIO_35	MCAM1_PWDN	GPIO_76	WL_CMD_DATA_2	GPIO_117	NC
GPIO_36	NC	GPIO_77	WL_CMD_DATA_1	GPIO_118	EXT_GPS_LNA_EN
GPIO_37	FORCE_USB_BOOT	GPIO_78	WL_CMD_DATA_0	GPIO_119	CH0_GSM_TX_PHASE_D0
GPIO_38	NC	GPIO_79	WL_CMD_SET	GPIO_120	RFFE5_CLK
GPIO_39	SCAM_PWDN	GPIO_80	WL_CMD_CLK	GPIO_121	RFFE5_DATA
GPIO_40	SCAM_RST_N	GPIO_81	FM_SSBI	GPIO_122	NC
GPIO_123	NC				
GPIO_124	NC				
GPIO_125	NC				
GPIO_126	NC				
GPIO_127	NC				
GPIO_128	NC				
GPIO_129	NC				
GPIO_130	NC				
GPIO_131	NC				
GPIO_132	NC				
GPIO_133	NC				

PMI8937 MPP Configuration

MPP_1	NC
MPP_2	GREEN_LED
MPP_4	FLASH_STROBE_NOW

PM8937 GPIO/MPP Configuration

GPIO_1	NC	MPP_1	VDD_PX_BIAS_MPP_1
GPIO_2	SDCARD_DET_N	MPP_2	NC
GPIO_3	UIM_BATT_ALM	MPP_3	VREF_DAC_MPP_3
GPIO_4	NC	MPP_4	QUIET_THERM
GPIO_5	NC		
GPIO_6	NC		
GPIO_7	NC		
GPIO_8	NC		

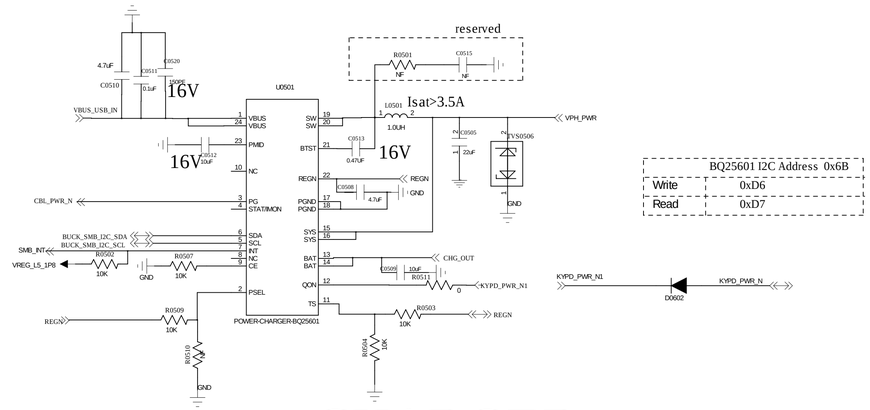
GPIO MAP

Title

Sheet

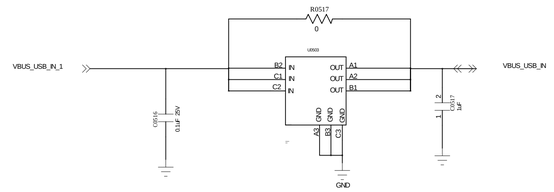
Size | Name | Rev

Date: | Sheet of

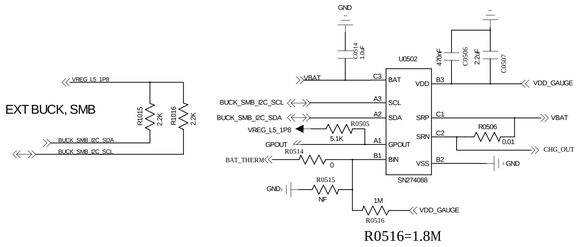


BQ25601 I2C Address 0x6B	
Write	0xD6
Read	0xD7

CHARGER



OVP

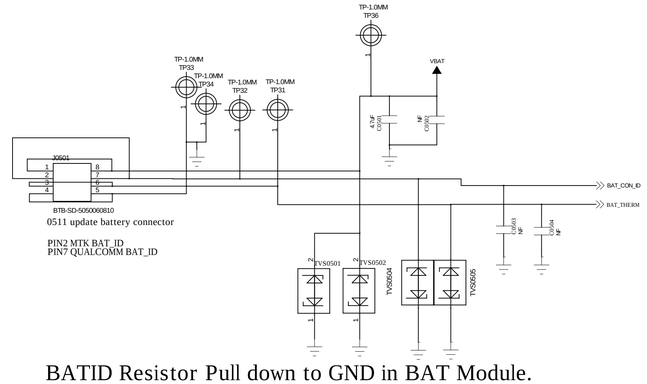


R0516=1.8M

BIN pin connected to battery NTC resistor

SN274088 I2C Address 0x55	
Write	0xAA
Read	0xAB

FUEL GAUGE



0511 update battery connector

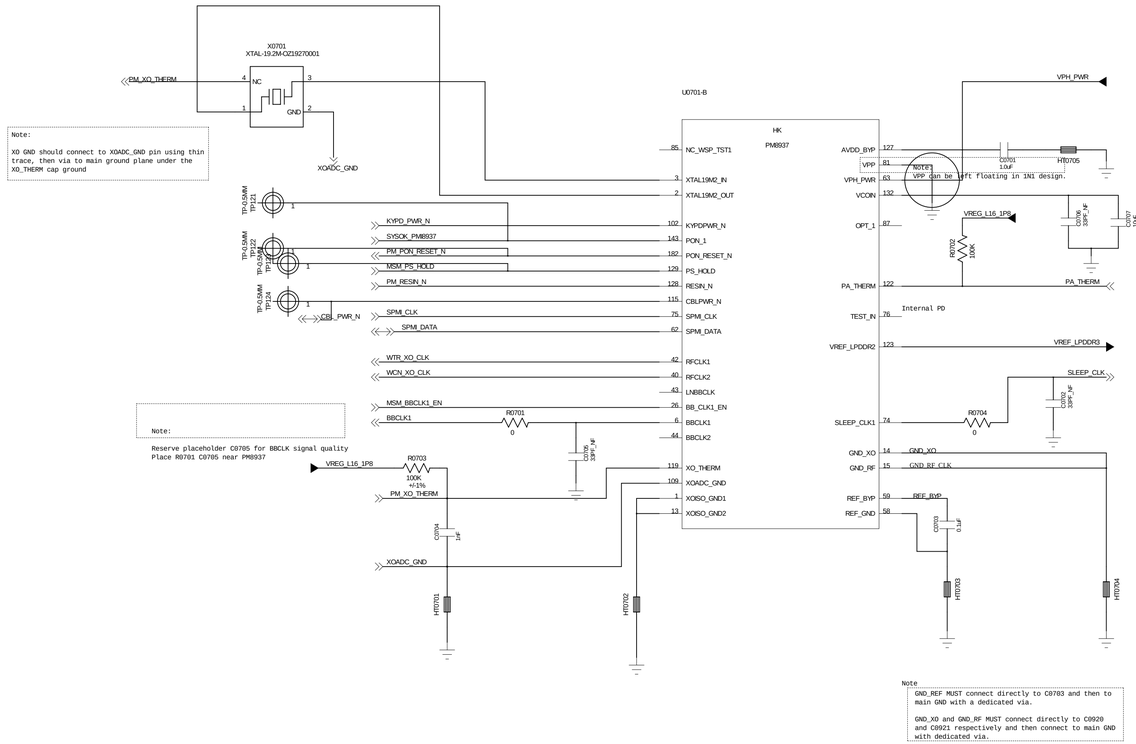
PIN2 MTK BAT_ID
PIN7 QUALCOMM BAT_ID

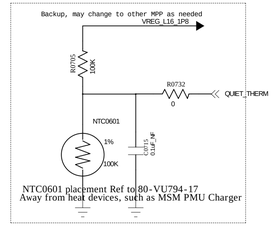
BATID Resistor Pull down to GND in BAT Module.
BAT_THERM NTC(68K B=4250) Pull down to GND in BAT Module.

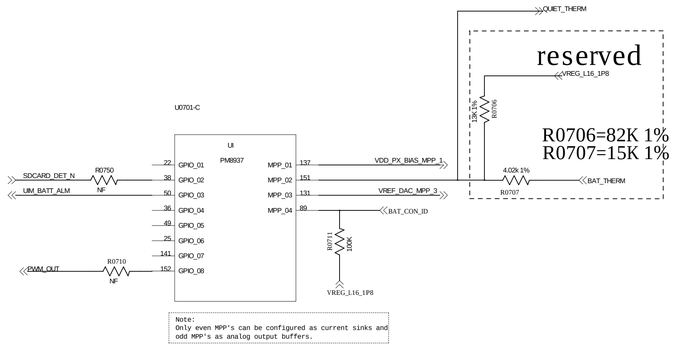
BATTERY CONNECTOR

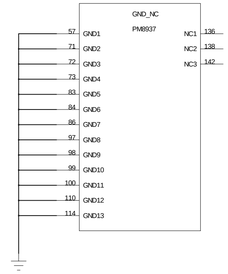
PMI8937 CHARGER

Title	
Sheet	
Size	Name / Rev
Date:	Sheet of





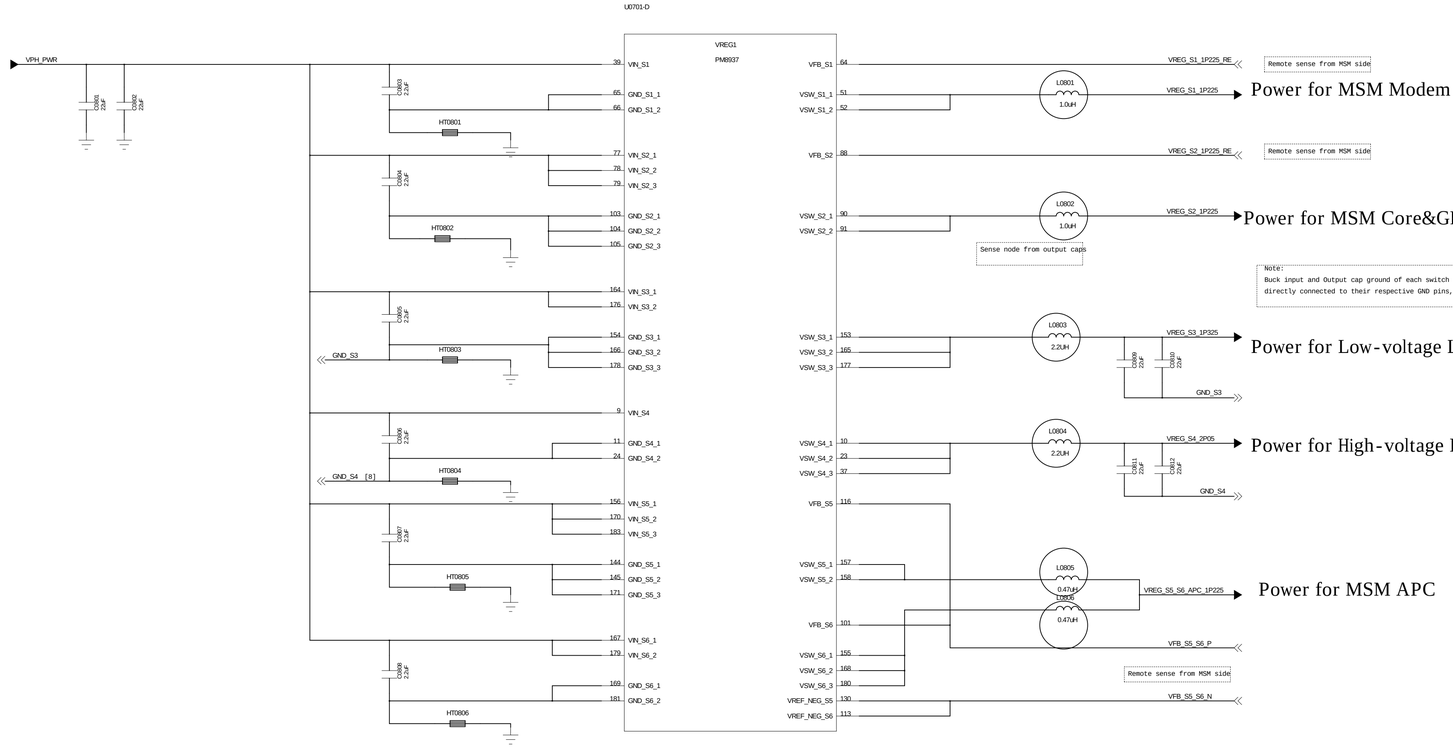




PM8937 Control and MPP/Clock

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Sheet
Size | Name | Rev
Date: | Sheet of



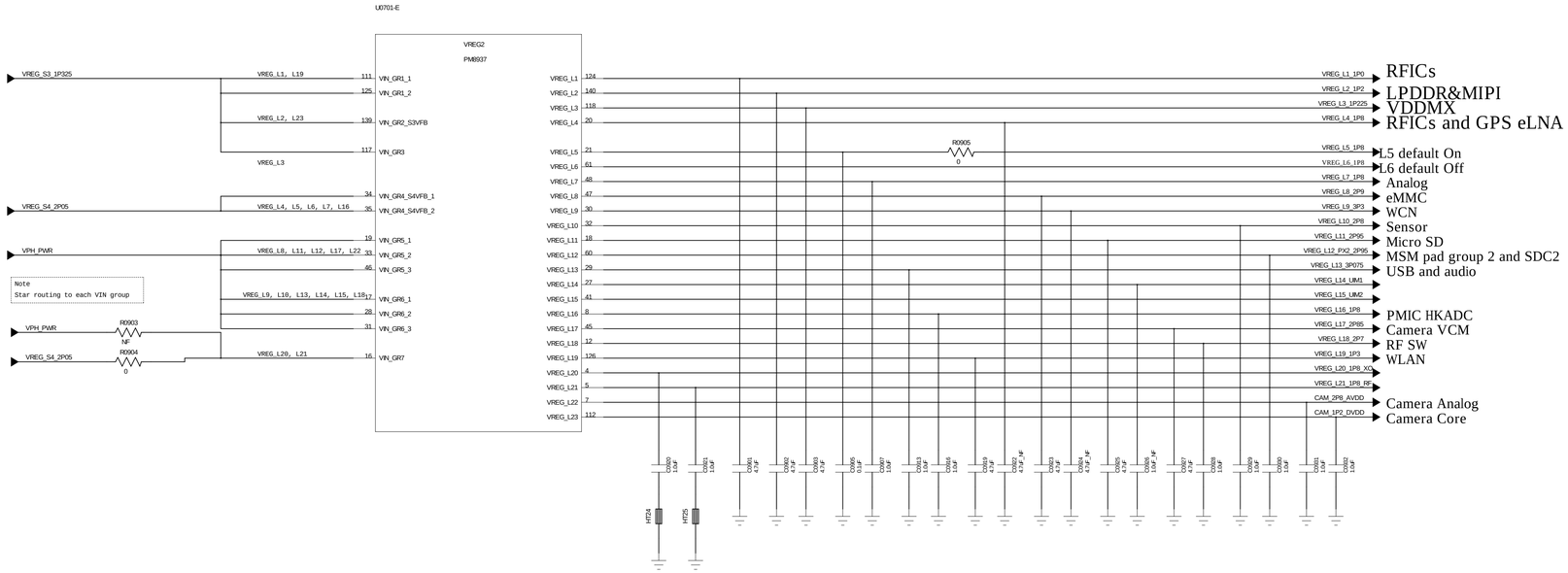
PM8937 Buck converter

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

Size | Name | Rev

Date: | Sheet of

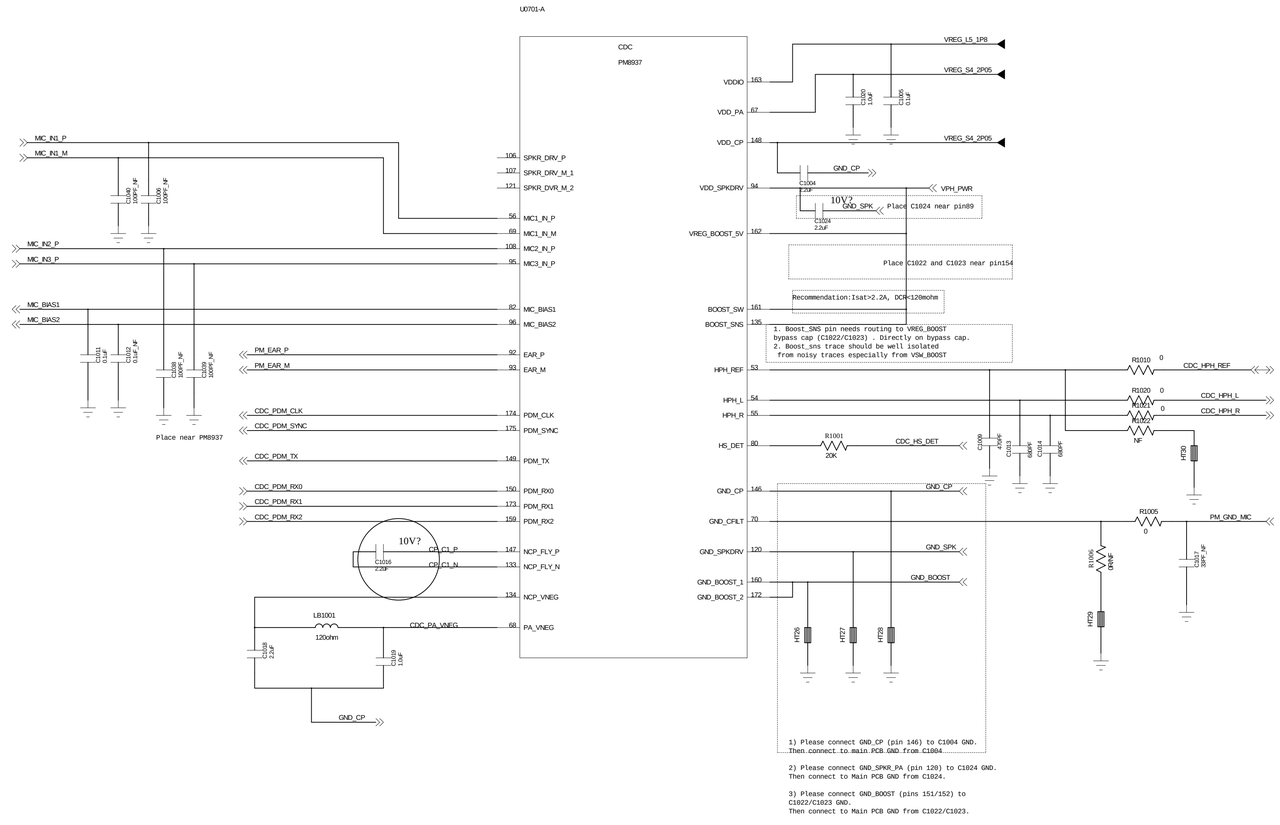


PSEUDO CAPLESS LDOs
L4*, L6, L8*, L9*, L10, L11*, L12, L14, L15, L17*, L18, L22, L23
L4*, L8*, L9*, L11*, L17*, still need validation as Pseudo-capless
L5, L7, L13, L16 have internal PMIC Loads and require local CAPs.

PM8937 LDO circuits

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Size | Name | Rev
Date: | Sheet | of



PM8937 Codec

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

Sheet

Size | Name | Rev

Date: | Sheet of

Note: WCSS_XO signal required only for 5GHZ.
When using WCN3615 connect pin BD13 to GND.

U1101-A

CONTROL

BD13 WCSS_XO
BBCLK1 AA40 CXO
MSM_BBCLK1_EN W40 CXO_EN
SLEEP_CLK AB40 SLEEP_CLK
TP-0.5MM TP1151
C1104 0.047UF
PM_PON_RESET_N AH37 RESIN_N
MSM_RESOUT_N B44 RESOUT_N
T37 MODE_0
U38 MODE_1
MSM_PS_HOLD Y39 PS_HOLD
JTAG_RESOUT_N Y3 SRST_N
JTAG_TCK AB3 TCK
JTAG_TDI AB1 TDI
JTAG_TDO Y1 TDO
JTAG_TMS AC2 TMS
JTAG_TRST_N AA2 TRST_N
VREF_LPDDR3 G14 VREF_EBI0_CH0_CA
C1102 0.1uF
AF39 VSSX_0_1
R2 PLL_TEST_SE
R40 ATEST0
T39 ATEST1

If eMMC 4.51 or earlier is used,
configure the unused MSM SDC1_RCLK pin to internal pull-down to prevent the bus from floating.

SDC1_RCLK L38 SDC1_RCLK
SDC1_CLK G38 SDC1_CLK_1 0 R1101 SDC1_CLK
SDC1_CMD H39 SDC1_CMD
Note: Place R1101 on CLK lines close to MSM

SDC1_DATA_0 G40 SDC1_DATA_0
SDC1_DATA_1 H37 SDC1_DATA_1
SDC1_DATA_2 E38 SDC1_DATA_2
SDC1_DATA_3 J40 SDC1_DATA_3
SDC1_DATA_4 F37 SDC1_DATA_4
SDC1_DATA_5 F39 SDC1_DATA_5
SDC1_DATA_6 J38 SDC1_DATA_6
SDC1_DATA_7 K37 SDC1_DATA_7

SDC2_CLK W4 SDC2_CLK_1 0 R1102 SDC2_SDCARD_CLK
SDC2_CMD U4 SDC2_SDCARD_CMD
SDC2_DATA_0 W2 SDC2_SDCARD_D0
SDC2_DATA_1 V1 SDC2_SDCARD_D1
SDC2_DATA_2 V3 SDC2_SDCARD_D2
SDC2_DATA_3 U2 SDC2_SDCARD_D3
Note: Place R1102 on CLK lines close to MSM

USB2_HS_DM AE40 R1105 300 USB_PMI_DM
USB2_HS_DP AD39 R1106 300 USB_PMI_DP
Note: 90ohm Diff Imp routing for USB

USB2_HS_ID AB39 R1104 0 USB_ID
USB2_HS_TXRTUNE AC38 R1103 200 +/-1%
USB2_HS_VBUS AC40
Note: Place R1103 close to MSM pin

PMIC_SPMI_CLK AH39 SPMI_CLK
PMIC_SPMI_DATA AG40 SPMI_DATA

MIPI_DSI0_DCDC AF9

C1101 1u 10V
C1103 1u 10V
Note: Place C1101 C1102 close to MSM
Ensure continuous GND return path with 50 ¦, Z0.

L1101 (MPL1608S2R2MHT):
IND-MUTIL-LAYER-2.2UH,+/-20%-750MA 0603

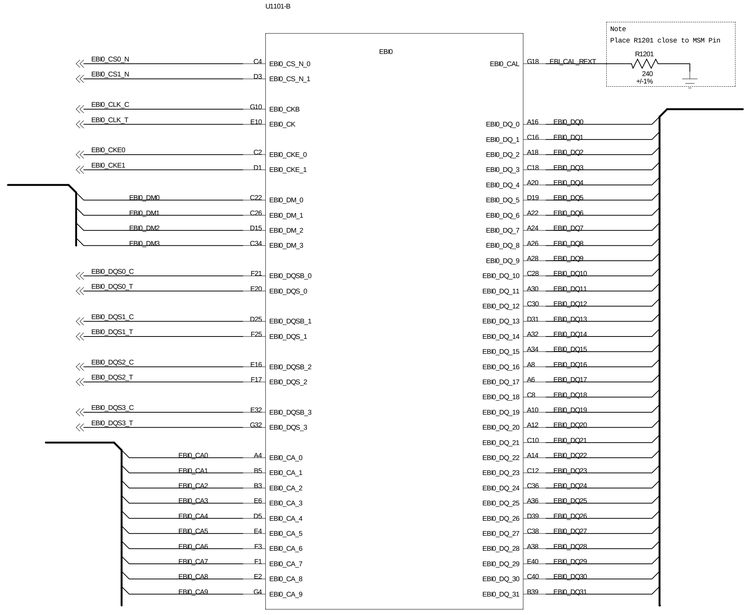
Note
MIPI_DSI can be configured as DCDC or LDO mode.
When configured as LDO mode, pin AF9 should be left floating and L1101 should be DNI.

DC-DC mode ¨C For better power ~3 mA lower

MSM8937 Control

QUALCOMM Technologies,Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Sheet
Size Name Rev
Date: Sheet of



MSM8937 EBI

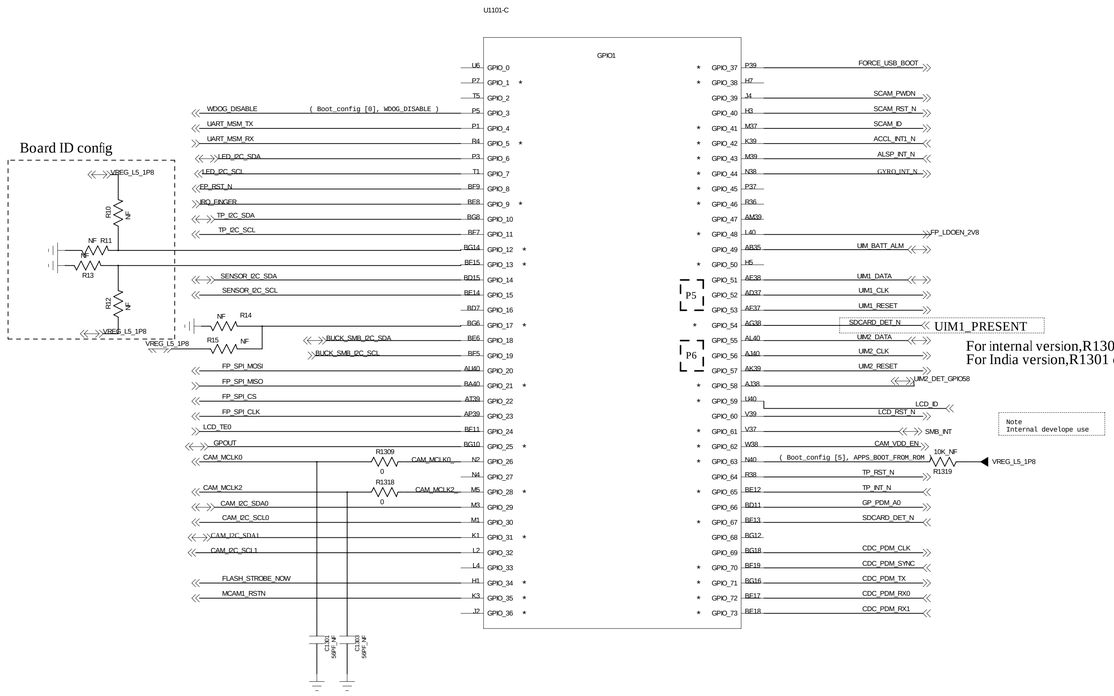
QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

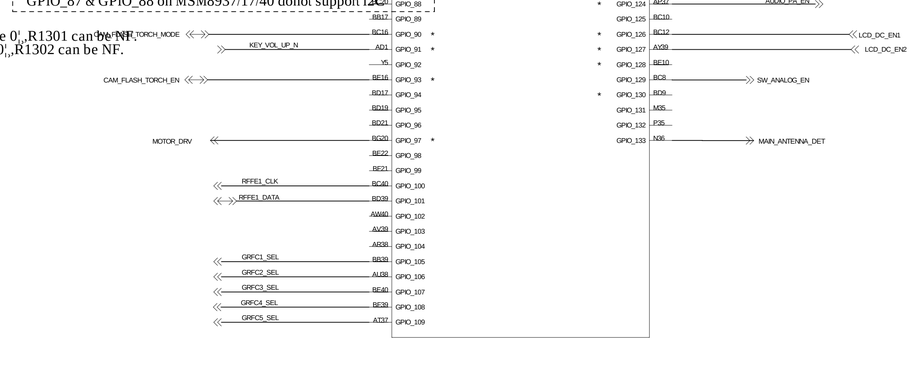
Title

Size | Name | Rev

Date: | Sheet of

Note: Asterisks (*) indicate modem power management (MPM) wake-up pins



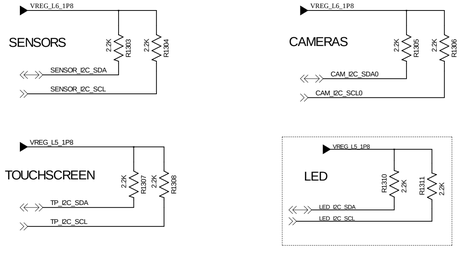


GPIO_87 & GPIO_88 on MSM8937/17/40 donot support I2C

For internal version,R1302 can be 0',,R1301 can be NF,,
For India version,R1301 can be 0',,R1302 can be NF.

I2C PULL-UP RESISTORS

Note: Ensure SW sets these GPIOs (Sensor, CTP and Camera I2C bus) to inout pull down when the peripherals are powered off to eliminate leakage.



Depth CAMERAS

Note: Do not have pull-ups on the following GPIOs unless intend for boot or secure- boot related configurations:
GPIO_91, 107, 109

GPIO	BOOT_CONFIG
GPIO_3	BOOT_CONFIG[0]/WDOG_DISABLE
GPIO_111	BOOT_CONFIG[1]
GPIO_112	BOOT_CONFIG[2]
GPIO_88	BOOT_CONFIG[3]

BOOT_CONFIG[3:1]	BOOT_CONFIG
0b000	SDC1 -> SDC2 -> USB2.0
0b010	SDC1
0b100	SDC2-> SDC1

Default Boot Config (0b000) is SDC1(eMMC)

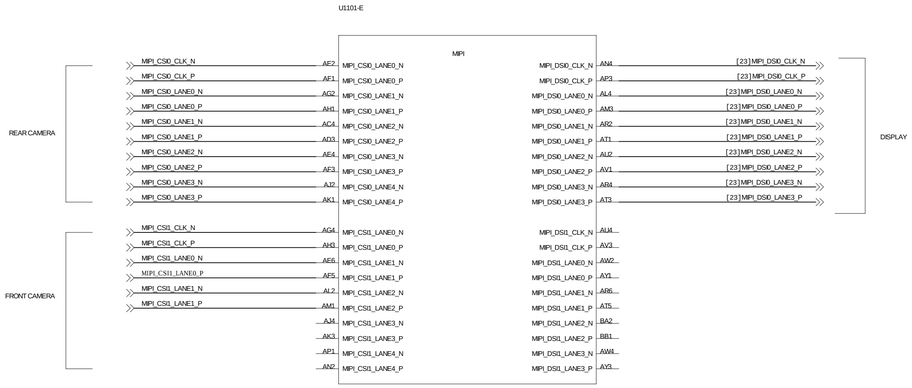
MSM8937 GPIO

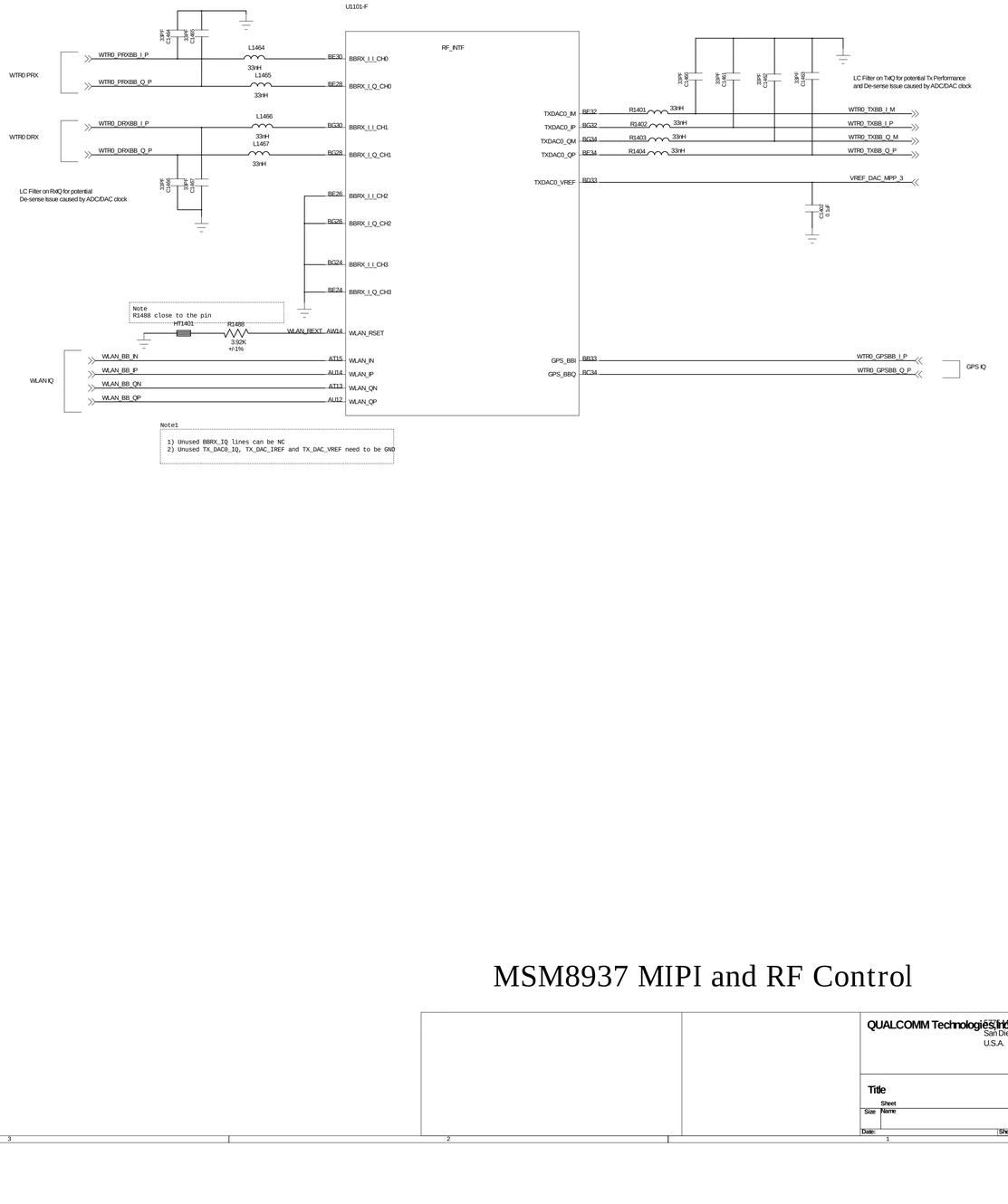
QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

Size | Name | Rev

Date: | Sheet of





Note: If best EMI practices are followed for MIPI CSI/DSI signals, there is no need for common mode choke filters. You may choose to have placeholders for common mode depending upon your design constraints.
Extreme care must be taken that no stubs are created by doing so.

MSM8937 MIPI and RF Control

QUALCOMM Technologies,Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Sheet
Size | Name | Rev
Date: | Sheet of

Power for on-chip memory

U1101-G

PWR1

VREG_L3_1P225 (VDD_MX) → AU30 VDDMX_TXDAC0
C1301 4.7uF; C1304 1uF

Cap depend on PDN simulation
C1307 2.2uF; C1308 1uF; C1309 2.2uF; C1310 0.1uF

VDDMX_1_1 Y34; VDDMX_1_2 K9; VDDMX_1_3 K33; VDDMX_1_4 M9; VDDMX_1_5 P19; VDDMX_1_6 T11; VDDMX_1_7 T17; VDDMX_1_8 T19; VDDMX_1_9 U06; VDDMX_1_10 V13; VDDMX_1_11 V35; VDDMX_1_12 Y13; VDDMX_1_13 Y15; VDDMX_1_14 AB15; VDDMX_1_15 AD19; VDDMX_1_16 AD21; VDDMX_1_17 AE13; VDDMX_1_18 AE15; VDDMX_1_19 AH33; VDDMX_1_20 AJ32; VDDMX_1_21 AK29; VDDMX_1_22 AK31; VDDMX_1_23 AL30; VDDMX_1_24 AM33 — NA; VDDMX_1_25 AN34; VDDMX_1_26 AP9; VDDMX_1_27 AP17; VDDMX_1_28 AP21; VDDMX_1_29 AP25; VDDMX_1_30 AT9; VDDMX_1_31 AT21; VDDMX_1_32 AT33

R1502 0 — VREG_L6_1P8
QFPROM_BLOW_VDD Y17 ← C1302 0.1uF

VDDPX_VBIAS_SDC V5 ← C1303 0.1uF; C1311 0.1uF
VDDPX_VBIAS_UIM AN40 → VDD_PX_BIAS_MPP_1

NA: VDD_APC_1 M27; VDD_APC_2 N26; VDD_APC_3 N28; VDD_APC_4 P27; VDD_APC_5 P31; VDD_APC_6 P33; VDD_APC_7 R26; VDD_APC_8 R32; VDD_APC_9 T33; VDD_APC_10 U28; VDD_APC_11 U30; VDD_APC_12 U32; VDD_APC_13 V27; VDD_APC_14 V29; VDD_APC_15 W30; VDD_APC_16 Y29; VDD_APC_17 Y31; VDD_APC_18 AA26; VDD_APC_19 AA30; VDD_APC_20 AB25; VDD_APC_21 AB31; VDD_APC_22 AC26; VDD_APC_23 AC32; VDD_APC_24 AD25; NA: VDD_APC_25 AD27; VDD_APC_26 AE28; VDD_APC_27 AE27; VDD_APC_28 AF29; VDD_APC_29 AG28; VDD_APC_30 AG32; VDD_APC_31 AH27; NA: VDD_APC_32 AH31; VDD_APC_33 AJ26; VDD_APC_34 AJ30; VDD_APC_35 AL34; VDD_APC_36 AM35; VDD_APC_37 AM37; VDD_APC_38 AN36; VDD_APC_39 AN38

(VDD_APC) Cap depend on PDN simulation
C1540 0.1uF; C1541 0.1uF; C1542 2.2uF_AF

VREG_S5_S6_APC_1P225 → HTR1504 → VER_S5_S6_P; HTR1505 → VER_S5_S6_N
C1550 22uF; C1543 22uF; C1544 22uF; C1545 22uF
Dedicated VIA to Main GND

C1536 0.1uF; C1537 0.1uF; C1538 1uF; C1539 0.1uF_AF

Note:
HTR1504/HTR1505 are used to help show that the sense Bulk caps
C1560/C1566/C1544/C1545
are close to the MSM and the sense line feeding back to
the PMIC should be placed after the caps.

Note:
HTR1501 are used to help show that the sense Bulk caps C1567/C1557/C1558
are close to the MSM and the sense line feeding back to
the PMIC should be placed after the caps.

U1101-H

PWR2

VREG_S2_1P225_RF → HTR1501 → VREG_S2_1P225
Cap depend on PDN simulation
C1547 22uF; C1548 22uF; C1549 22uF_AF; C1564 2.2uF; C1565 10uF_AF; C1566 1uF; C1553 0.1uF_AF
Dedicated VIA to Main GND

C1545 0.1uF; C1546 0.1uF_AF; C1547 0.1uF_AF; C1548 0.1uF_AF; C1549 0.1uF_AF; C1550 0.1uF

(VDD_CX)
VDDCX_1_1 K35; VDDCX_1_2 P9; VDDCX_1_3 P11; VDDCX_1_4 P15; VDDCX_1_5 P17; VDDCX_1_6 P25; VDDCX_1_7 R34; VDDCX_1_8 T9; VDDCX_1_9 T23; VDDCX_1_10 T25; VDDCX_1_11 V9; VDDCX_1_12 V15; VDDCX_1_13 V17; VDDCX_1_14 V25; VDDCX_1_15 V9; VDDCX_1_16 Y11; VDDCX_1_17 Y21; VDDCX_1_18 Y23; VDDCX_1_19 Y25; VDDCX_1_20 AA32; VDDCX_1_21 AB13; VDDCX_1_22 AB21; VDDCX_1_23 AB23; VDDCX_1_24 AD13; VDDCX_1_25 AD15; VDDCX_1_26 AD23; VDDCX_1_27 AE26; VDDCX_1_28 AE19; VDDCX_1_29 AE21; VDDCX_1_30 AE23; VDDCX_1_31 AE25; VDDCX_1_32 AG26; VDDCX_1_33 AK11; VDDCX_1_34 AK13; VDDCX_1_35 AM11; VDDCX_1_36 AP11; VDDCX_1_37 AP23; VDDCX_1_38 AP25; VDDCX_1_39 AT23; VDDCX_1_40 AV33

(VDD_PX1) (LPDDR) → VREG_L2_1P2
VDDPX_1_1 H27; VDDPX_1_2 J12; VDDPX_1_3 J14; VDDPX_1_4 J16; VDDPX_1_5 J18; VDDPX_1_6 J20; VDDPX_1_7 J22; VDDPX_1_8 J28; VDDPX_1_9 J30
C1512 0.1uF; C1513 0.1uF; C1514 0.1uF; C1515 0.1uF; C1516 1uF; C1517 2.2uF; C1518 1uF

VDDPX_2 W6 → VREG_L12_PX2_2P95
C1540

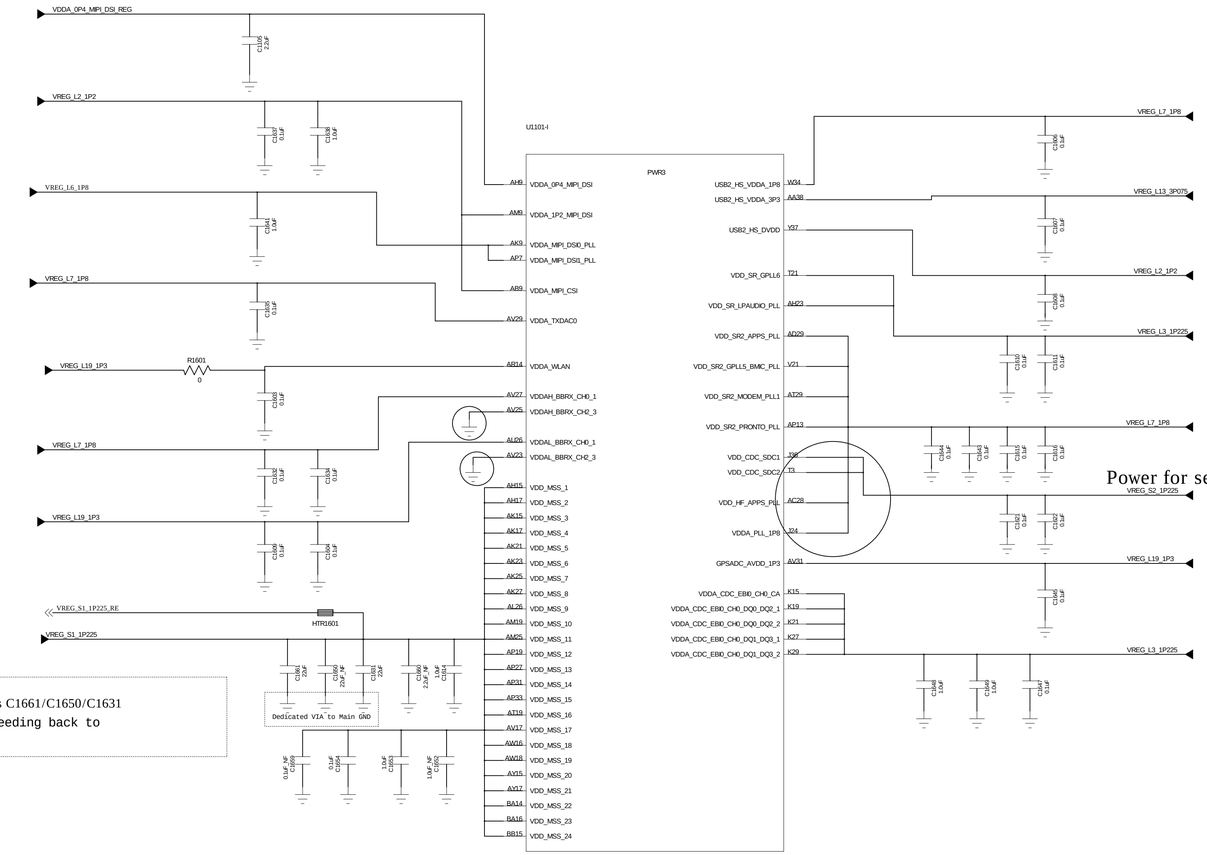
(VDD_PX3)(IO)
VDDPX_3_1 AD35; VDDPX_3_2 AH35; VDDPX_3_3 AW10; VDDPX_3_4 BA36; VDDPX_3_5 BB21; VDDPX_3_6 K11; VDDPX_3_7 K31; VDDPX_3_8 T7; VDDPX_3_9 V7
C1532 0.1uF; C1533 0.1uF; C1534 0.1uF; C1535 1uF
R1506 0 — VREG_L5_1P8
For current measurement
C1542 0.1uF; C1543 0.1uF; C1544 0.1uF; C1545 0.1uF

VDDPX_5 AC36 → VREG_L14_UIM1 (UIM1)
VDDPX_6 AE36 → VREG_L15_UIM2 (UIM2)
VDDPX_7 AG34 → VREG_L5_1P8 (eMMC)
C1550 0.1uF; C1551 0.1uF; C1552 0.1uF

MSM8937 POWER1

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Sheet
Size | Name | Rev
Date: | Sheet of



Note:
HTR1601 are used to help show that the sense Bulk caps C1661/C1650/C1631 are close to the MSM and the sense line feeding back to the PMIC should be placed after the caps.

Power for secure digital calibration delay circuits

MSM8937 POWER2

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Size | Name | Rev
Date: | Sheet | of

U1101-L

GND3

AR5	VSSX_0_154	VSSX_0_204	AW8
AB17	VSSX_0_155	VSSX_0_205	AW12
AB19	VSSX_0_156	VSSX_0_206	AW20
AB33	VSSX_0_157	VSSX_0_207	AW22
AC5	VSSX_0_158	VSSX_0_208	AW34
AC8	VSSX_0_159	VSSX_0_209	AY5
AD5	VSSX_0_160	VSSX_0_210	AY7
AD17	VSSX_0_161	VSSX_0_211	AY9
AD33	VSSX_0_162 NA	VSSX_0_212	AY11
AE30	VSSX_0_163	VSSX_0_213	AY13
AE32	VSSX_0_164 NA	VSSX_0_214	AY19
AE12	VSSX_0_165	VSSX_0_215	AY21
AF31	VSSX_0_166	VSSX_0_216	AY23
AF33	VSSX_0_167	VSSX_0_217	AY33
AG30	VSSX_0_168	VSSX_0_218	AY35
AH5	VSSX_0_169	VSSX_0_219	BA8
AH11	VSSX_0_170	VSSX_0_220	BA10
AH13	VSSX_0_171	VSSX_0_221	BA12
AH19	VSSX_0_172	VSSX_0_222	BA18
AH25	VSSX_0_173	VSSX_0_223	BA20
AH29	VSSX_0_174	VSSX_0_224	BA22
AJ28	VSSX_0_175	VSSX_0_225	BB7
AJ34	VSSX_0_176	VSSX_0_226	BB9
AJ36	VSSX_0_177	VSSX_0_227	BB11
AK19	VSSX_0_178	VSSX_0_228	BB13
AK33	VSSX_0_179	VSSX_0_229	BB35
AK35	VSSX_0_180	VSSX_0_230	BC6
AK37	VSSX_0_181	VSSX_0_231	BC14
AL28	VSSX_0_182	VSSX_0_232	BD23
AL36	VSSX_0_183	VSSX_0_233	BF1
AL38	VSSX_0_184	VSSX_0_234	BF23
AM15	VSSX_0_185	VSSX_0_235	BG2
AM17	VSSX_0_186	VSSX_0_236	BG22
AM21	VSSX_0_187	VSSX_0_237	BG40
AM23	VSSX_0_188		
AM27	VSSX_0_189		
AM29	VSSX_0_190		
AP15	VSSX_0_191		
AT7	VSSX_0_192		
AT25	VSSX_0_193		
AT35	VSSX_0_194		
AU6	VSSX_0_195		
AU32	VSSX_0_196		
AV5	VSSX_0_197		
AV7	VSSX_0_198		
AV9	VSSX_0_199		
AV11	VSSX_0_200		
AV19	VSSX_0_201		
AV21	VSSX_0_202		
AV35	VSSX_0_203		

U1101-J

GND1

AK7	VSSX_0_2	VSSX_0_32	AA34
AN8	VSSX_0_3	VSSX_0_33	AB37
AH7	VSSX_0_4	VSSX_0_34	AD27
AK5	VSSX_0_5	VSSX_0_35	AB27
AM5	VSSX_0_6		
AM7	VSSX_0_7	VSSX_0_36	L20
AP5	VSSX_0_8	VSSX_0_37	V19
AW30	VSSX_0_9	VSSX_0_38	AJ22
AY29	VSSX_0_10	VSSX_0_39	AH21
BB31	VSSX_0_11		
BC32	VSSX_0_12	VSSX_0_40	AC30
BD31	VSSX_0_13	VSSX_0_41	AB29
BE31	VSSX_0_14		
BE33	VSSX_0_15	VSSX_0_42	V23
BE35	VSSX_0_16	VSSX_0_43	L22
AV13	VSSX_0_17	VSSX_0_44	AB28
		VSSX_0_45	AP29
AW28	VSSX_0_18	VSSX_0_46	AN14
AY27	VSSX_0_19	VSSX_0_47	AM13
BC28	VSSX_0_20		
BC30	VSSX_0_21	VSSX_0_48	K23
BD27	VSSX_0_22	VSSX_0_49	H23
BD29	VSSX_0_23		
BE27	VSSX_0_24		
BE29	VSSX_0_25	VSSX_0_50	M23
AY25	VSSX_0_26		
BC24	VSSX_0_27		
BC26	VSSX_0_28		
BD25	VSSX_0_29		
BE25	VSSX_0_30	VSSX_0_51	AW32
		VSSX_0_52	BD35
AT27	VSSX_0_31	VSSX_0_53	AT31

U1101-K

GND2

A2	VSSX_0_54	VSSX_0_104	G8
A40	VSSX_0_55	VSSX_0_105	G12
B1	VSSX_0_56	VSSX_0_106	G28
B7	VSSX_0_57	VSSX_0_107	G36
B9	VSSX_0_58	VSSX_0_108	H11
B11	VSSX_0_59	VSSX_0_109	H13
B13	VSSX_0_60	VSSX_0_110	H19
B15	VSSX_0_61	VSSX_0_111	H29
B17	VSSX_0_62	VSSX_0_112	H31
B19	VSSX_0_63	VSSX_0_113	H35
B21	VSSX_0_64	VSSX_0_114	J8
B23	VSSX_0_65	VSSX_0_115	J10
B25	VSSX_0_66	VSSX_0_116	J26
B27	VSSX_0_67	VSSX_0_117	J32
B29	VSSX_0_68	VSSX_0_118	K5
B31	VSSX_0_69	VSSX_0_119	K7
B33	VSSX_0_70	VSSX_0_120	K25
B35	VSSX_0_71	VSSX_0_121	L36
B37	VSSX_0_72	VSSX_0_122	M7
C6	VSSX_0_73	VSSX_0_123 NA	M29
C14	VSSX_0_74	VSSX_0_124	M33
C20	VSSX_0_75	VSSX_0_125	N30
C24	VSSX_0_76	VSSX_0_126	N32
C32	VSSX_0_77	VSSX_0_127	P13
D7	VSSX_0_78	VSSX_0_128	P21
D9	VSSX_0_79	VSSX_0_129	P23
D11	VSSX_0_80	VSSX_0_130	P29
D13	VSSX_0_81	VSSX_0_131	P35
D17	VSSX_0_82	VSSX_0_132	R30
D21	VSSX_0_83	VSSX_0_133	T13
D23	VSSX_0_84	VSSX_0_134	T15
D27	VSSX_0_85	VSSX_0_135	T27
D29	VSSX_0_86	VSSX_0_136	T29
D33	VSSX_0_87	VSSX_0_137	T31
D35	VSSX_0_88	VSSX_0_138	T35
D37	VSSX_0_89	VSSX_0_139	U26
E8	VSSX_0_90	VSSX_0_140	U34
E18	VSSX_0_91	VSSX_0_141	V31
E22	VSSX_0_92	VSSX_0_142	V33
E24	VSSX_0_93	VSSX_0_143	W20
E26	VSSX_0_94	VSSX_0_144	W22
E28	VSSX_0_95	VSSX_0_145	W26
E30	VSSX_0_96	VSSX_0_146	W28
E34	VSSX_0_97	VSSX_0_147	W32
E36	VSSX_0_98	VSSX_0_148	Y7
F7	VSSX_0_99	VSSX_0_149	Y19
F13	VSSX_0_100	VSSX_0_150	Y27
F23	VSSX_0_101	VSSX_0_151	AA4
G2	VSSX_0_102	VSSX_0_152	AA6
G6	VSSX_0_103	VSSX_0_153	AA28

MSM8937 GND

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

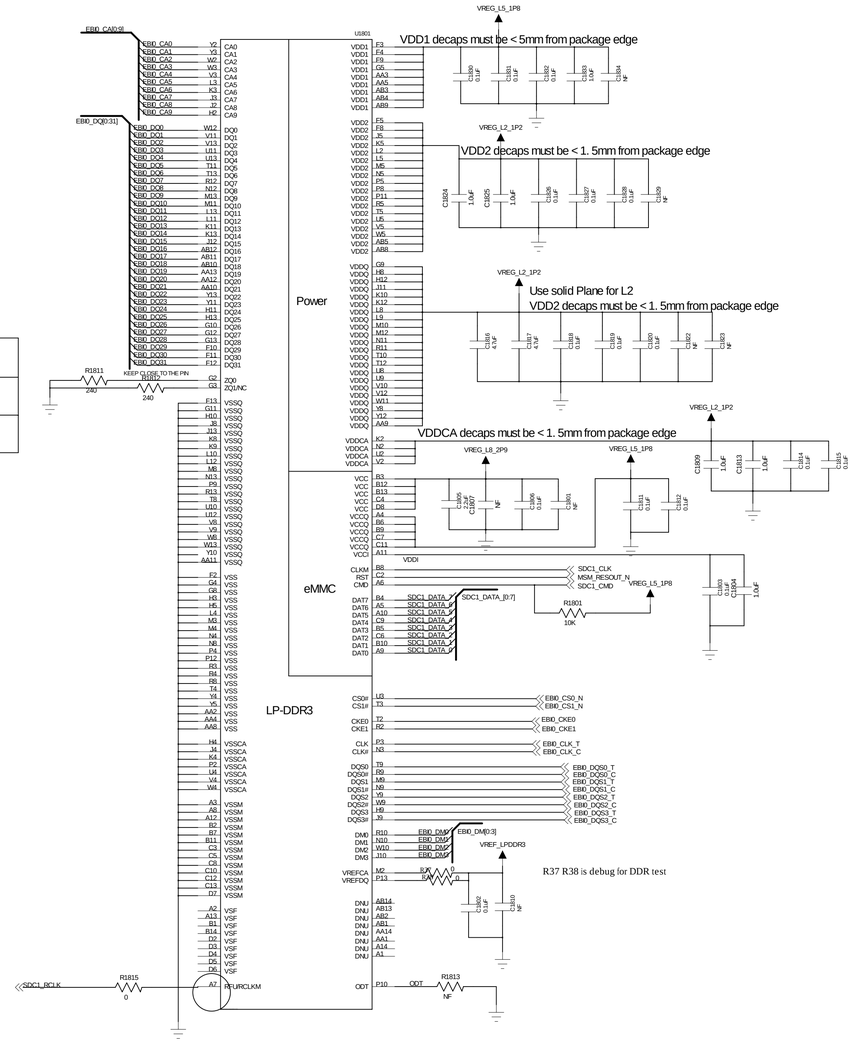
Title

Sheet

Size | Name | Rev

Date: | Sheet of

	MICRO/HYNIX	SAMSUNG
U1501.G3	ZQ1	NC
U1501.A7	RFU	RCLK



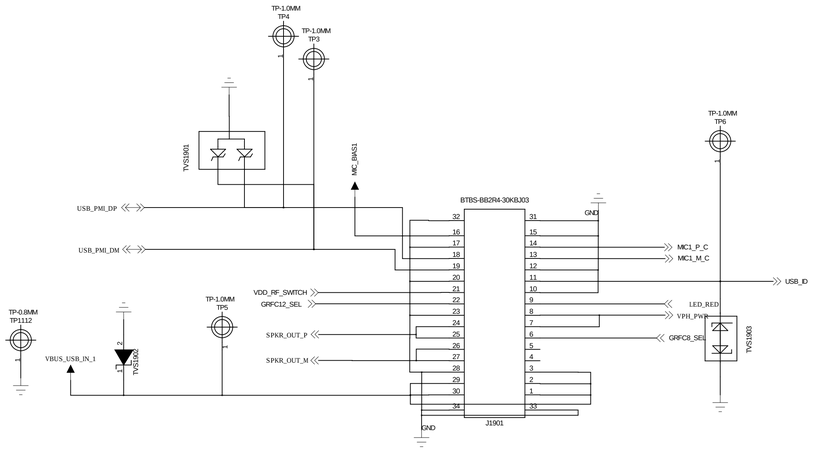
MEMORY:LPDDR3+EMMC

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

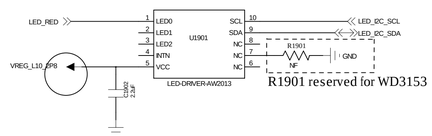
Title

Size | Name | Rev

Date: | Sheet | of



M-MIC+USB+RGB+SPK



R1901 reserved for WD3153

RGB

I2C Address	
Write	8B0x8A
Read	8B0x8B

Power on sequence: can be applied in any order

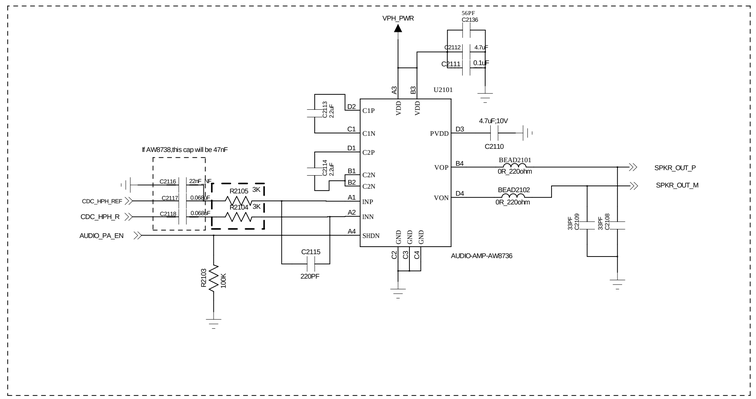
USB/SUB BOARD CONNECTOR

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

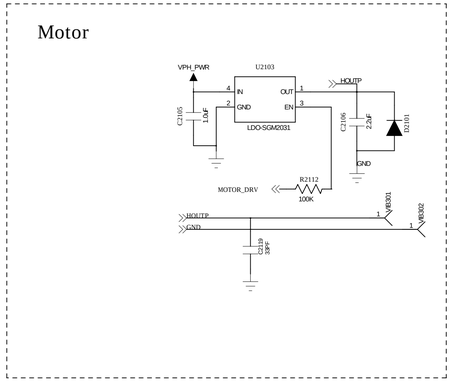
Title

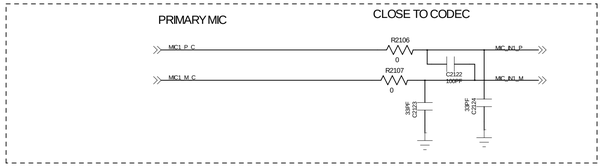
Size | Name | Rev

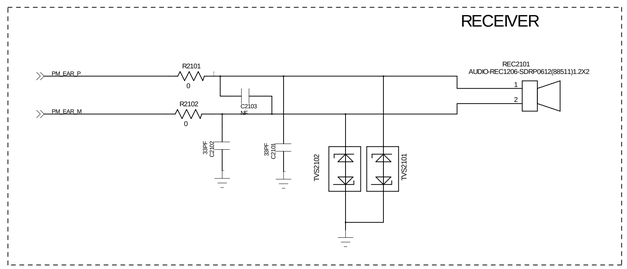
Date: | Sheet of

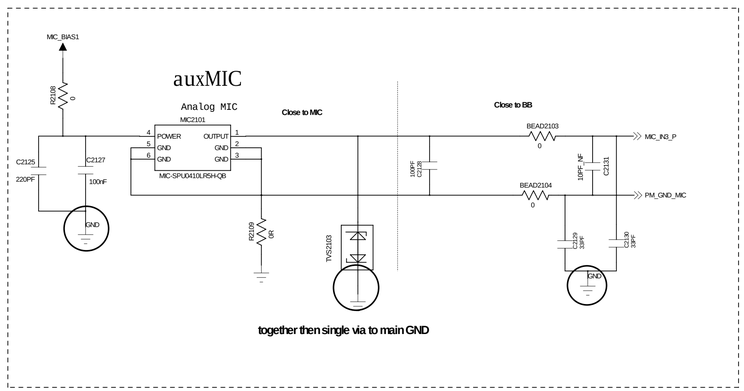


close to SPK









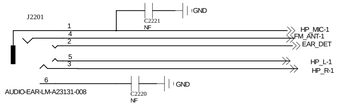
SECONDARY MIC/RECEIVER

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

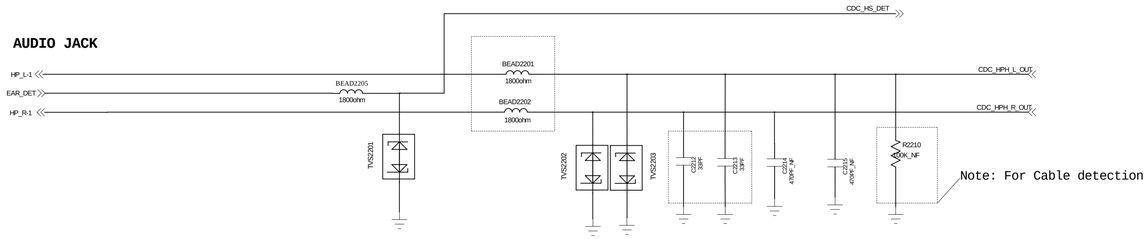
Size | Name | Rev

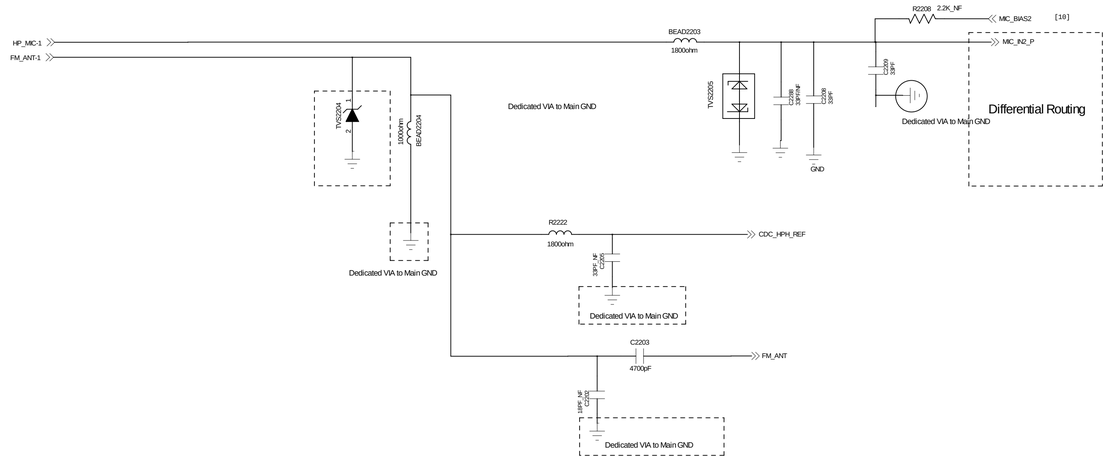
Date: | Sheet | of

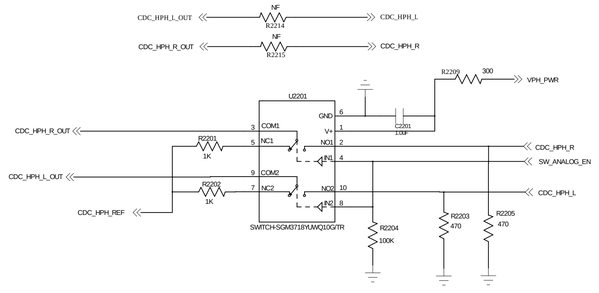


Note: Ferrite beads and their corresponding bypass capacitors on CDC_HPH_L, CDC_HPH_R and CDC_HPH_REF are needed to reduce noise generated by audio/FM concurrency

AUDIO JACK







IN=0, COM Connected to NC;
IN=1, COM Connected to NO;

EARPHONE

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

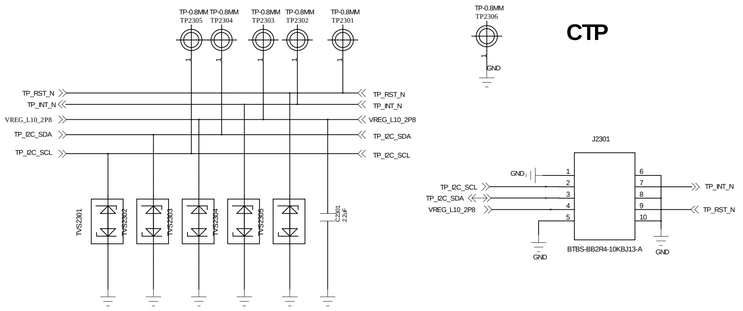
Title

Sheet

Size | Name | Rev

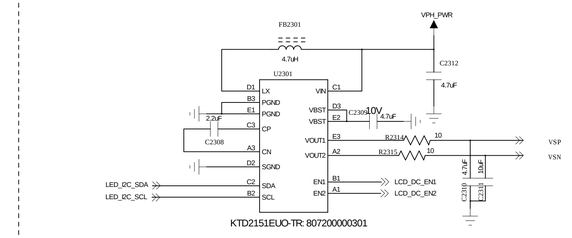
Date: | Sheet of

CTP



Power on sequence: Single Supply

FocalTech: FT5336		
I2C Address		
Write	0x70	It can be changed by FACTORY.
Read	0x71	

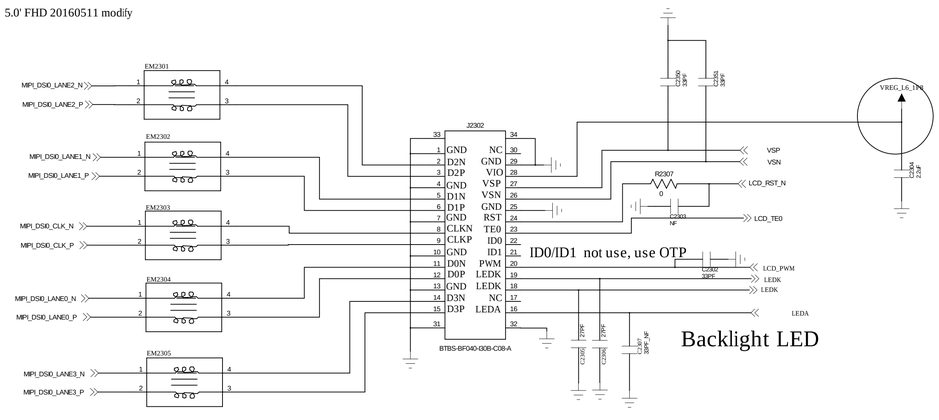


KTD2151EUO-TR: 807200000301

KTD2151& NT50358 powers ON with a default voltage of 5.0V
software can use without I2C

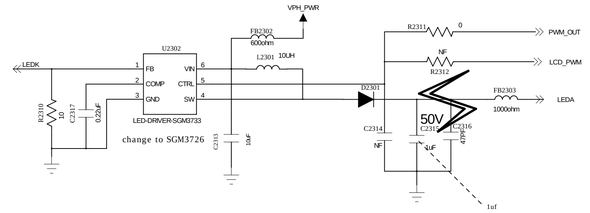
LCD

5.0' FHD 20160511 modify



Backlight LED

Note: If best EMI practices are followed for MIPI CSI/DSI signals, there is no need for common mode choke filters. You may choose to have placeholders for common mode depending upon your design constraints.
Extreme care must be taken that no stubs are created by doing so.



Backlight LED Driver

LCD interface and backlight

QUALCOMM Technologies,Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

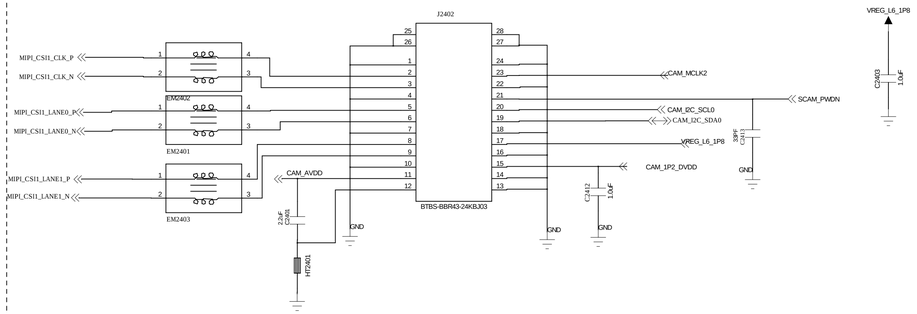
Size | Name | Rev

Date: | Sheet of

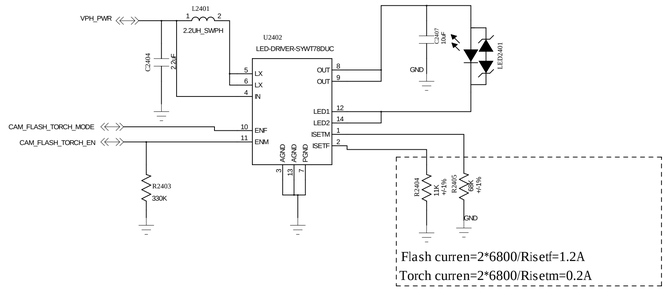
1	DGND	
2	MCP	
3	MCN	
4	DGND	
5	MDP0	
6	MDN0	
7	DGND	
8	MDP1	
9	MDN1	
10	DGND	
11	AVDD	2.8V
12	AGND	
13	DGND	
14	DGND	
15	DVDD	1.2V
16	DGND	
17	DOVDD	1.8V
18	DGND	
19	SDA	
20	SCL	
21	RESET	
22	DGND	
23	MCLK	
24	DGND	

FRONT_camera

0511 update conector



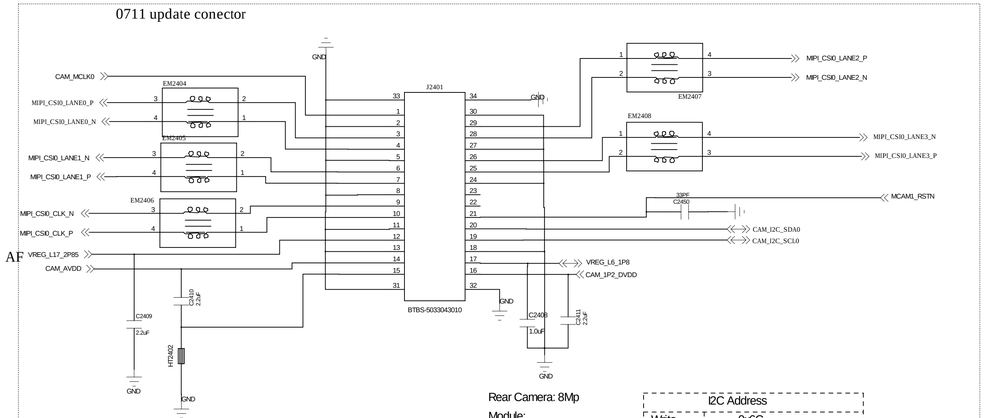
Main Camera / Sub Camera share power domain design
should double check the voltage level is compatible



FLASH LED DRIVER

PIN		
1	MCLK	
2	DGND	
3	MDP0	
4	MDN0	
5	DGND	
6	MDN1	
7	MDP1	
8	DGND	
9	MCN	
10	MCP	
11	DGND	
12	AF_Power	2.8V
13	AF_GND	
14	AVDD	2.8V
15	AGND	
16	DVDD	1.2V
17	DOVDD	1.8V
18	DGND	
19	SIO_C	
20	SIO_D	
21	RESET	
22	VPP	NC
23	AF_EN	NC
24	DGND	
25	MDP3	
26	MDN3	
27	DGND	
28	MDN2	
29	MDP2	
30	DGND	

0711 update conector



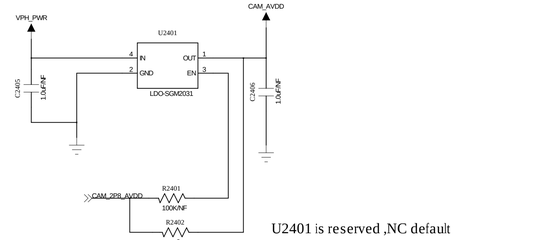
AF

Rear Camera: 8Mp
Module:
Sensor: OV8865

I2C Address	
Write	0x6C
Read	0x6D

Power on sequence: L6(DOVDD) must before L17(AVDD)

Main Camera



U2401 is reserved ,NC default

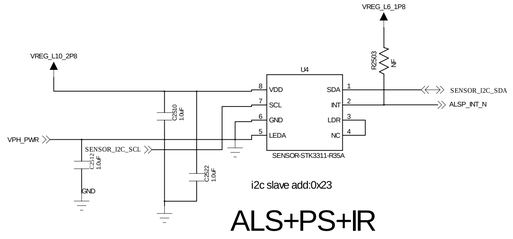
Main/Slave Camera and Flash

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

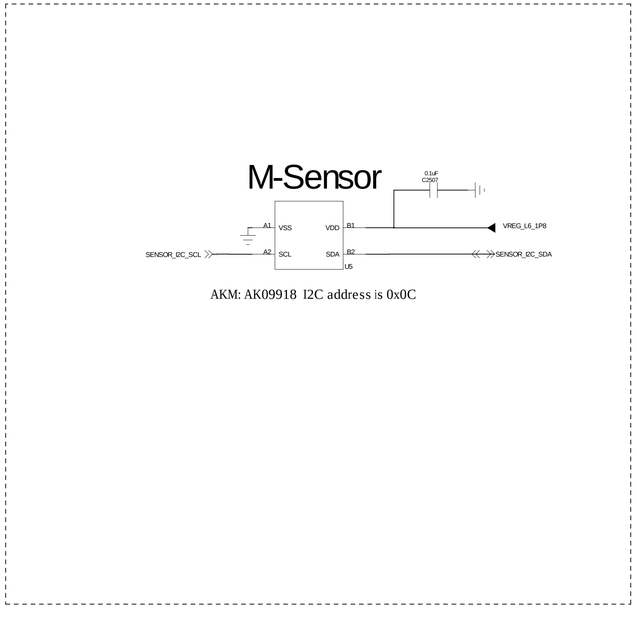
Size | Name | Rev

Date: | Sheet | of



i2c slave add:0x23

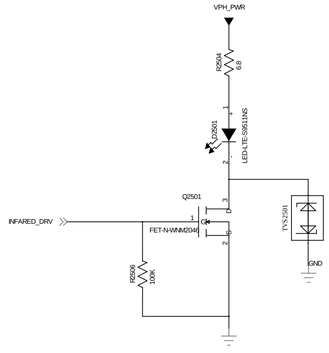
ALS+PS+IR



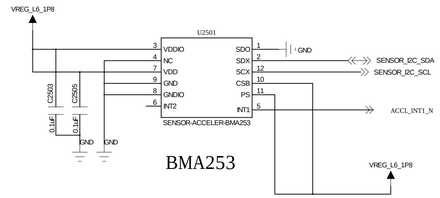
M-Sensor

AKM: AK09918 I2C address is 0x0C

INFARED LEDS



G-Sensor



BMA253

BMA253 SD0=0 7b0011000 0x18

SD0=1 7b0011001 0x69

SENSORS

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

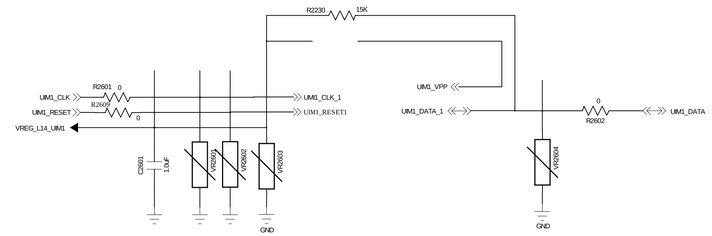
Title

Sheet

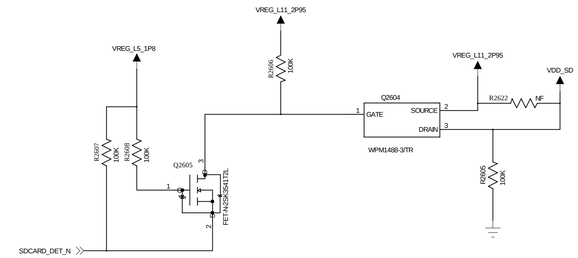
Size | Name | Rev

Date: | Sheet of

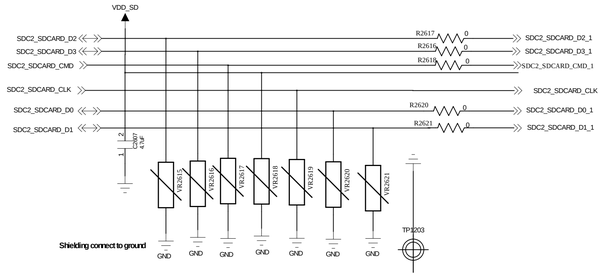
SIM1



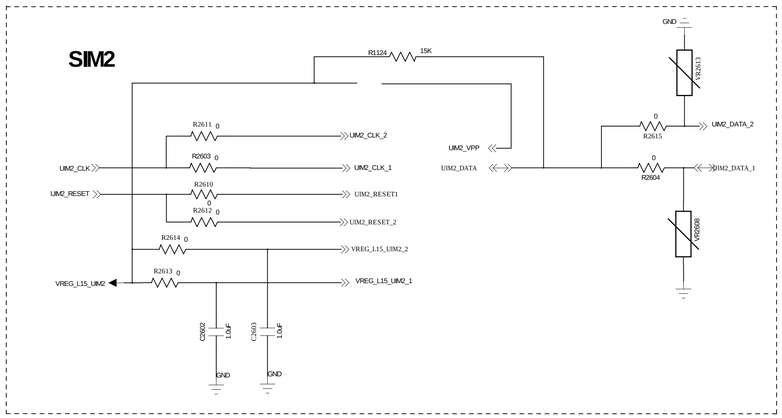
Vout=3.0V,Ilim=1A

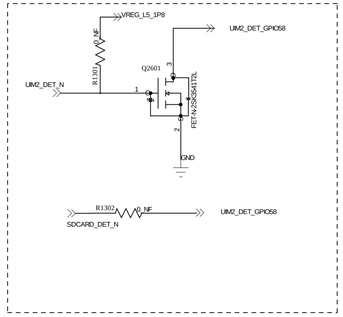


SD CARD



SIM2

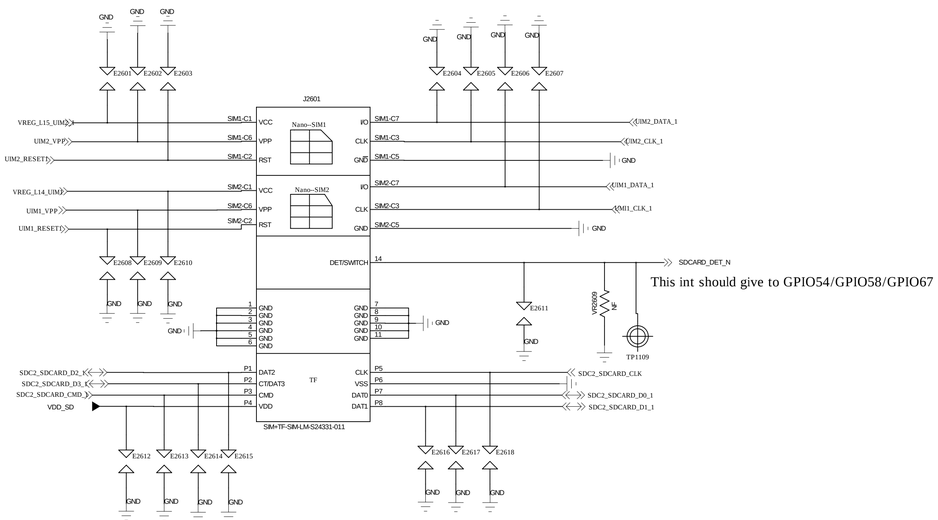




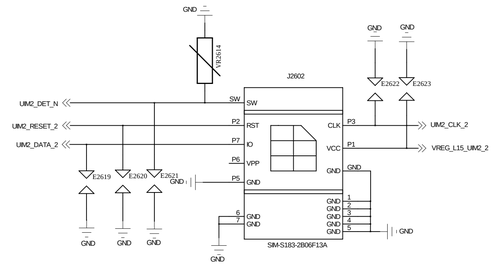
NOTE:

For internal version,ONLY use J2601:
R2603/R2610/R2613/R2604 can be 0¦¸, R2611/R2612/R2614/R2615 can be NF,
R1301 can be 0¦¸,,Q2601 NF;R1302 NF

For India version:
R2611/R2612/R2614/R2615 can be 0¦¸,,R2603/R2610/R2613/R2604 can be NF.
Q2601 mount;R1301 NF ;R1302 100K



This int should give to GPIO54/GPIO58/GPIO67



For internal version,R2603/R2610/R2613/R2604 can be 0¦¸,, R2611/R2612/R2614/R2615 can be NF,
For India version,R2611/R2612/R2614/R2615 can be 0¦¸,,R2603/R2610/R2613/R2604 can be NF.

SIM/TF card

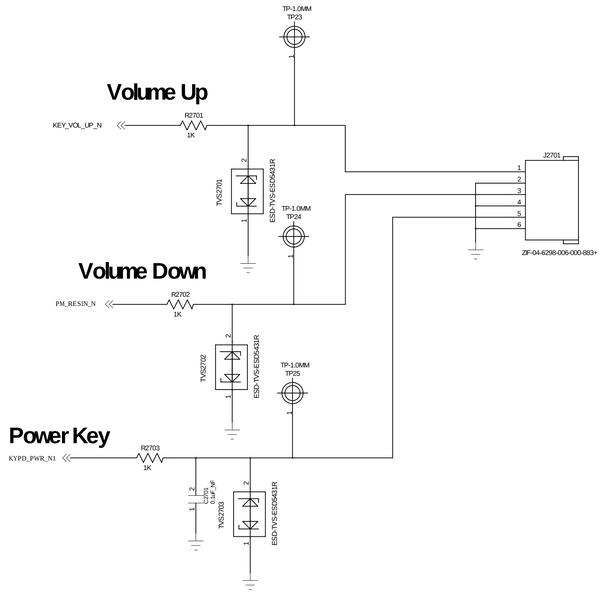
QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

Size | Name | Rev

Date: | Sheet of

Signal	Description
KEY_VOL_UP_N	Volume Up
PM_RESIN_N1	Volume Down
KYPD_PWR_N1	PWER_ON
PM_RESIN_N1 + KYPD_PWR_N1	Hardware Reset



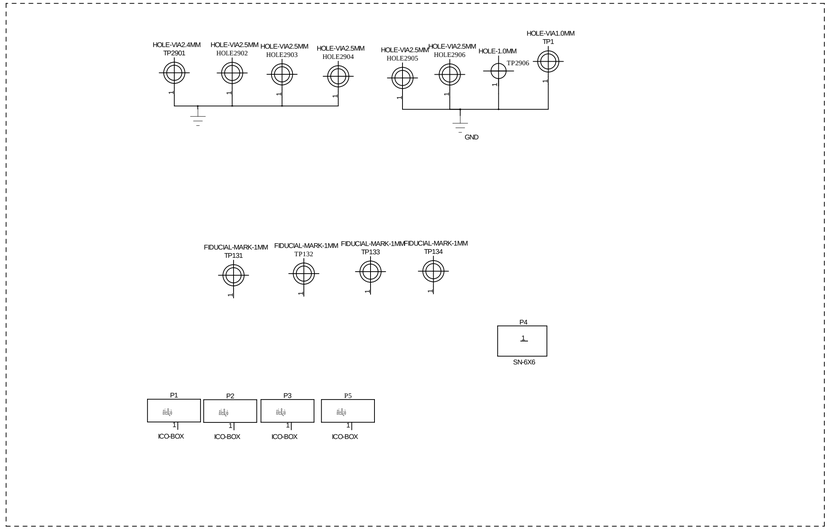
Keypad/LED/Status indicator

QUALCOMM Technologies Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

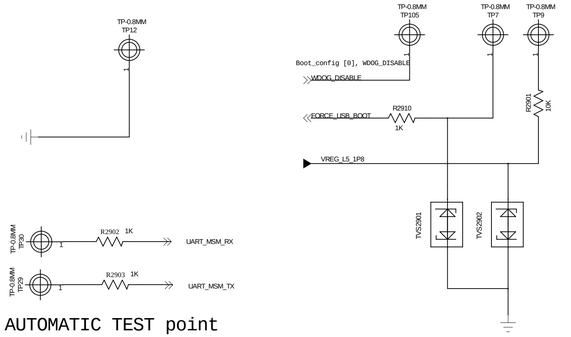
Title

Size | Name | Rev

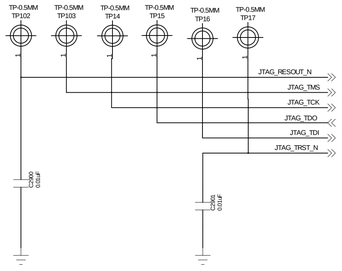
Date: | Sheet | of



Test Point



PCBA AUTOMATIC TEST point



JTAG CONNECTOR

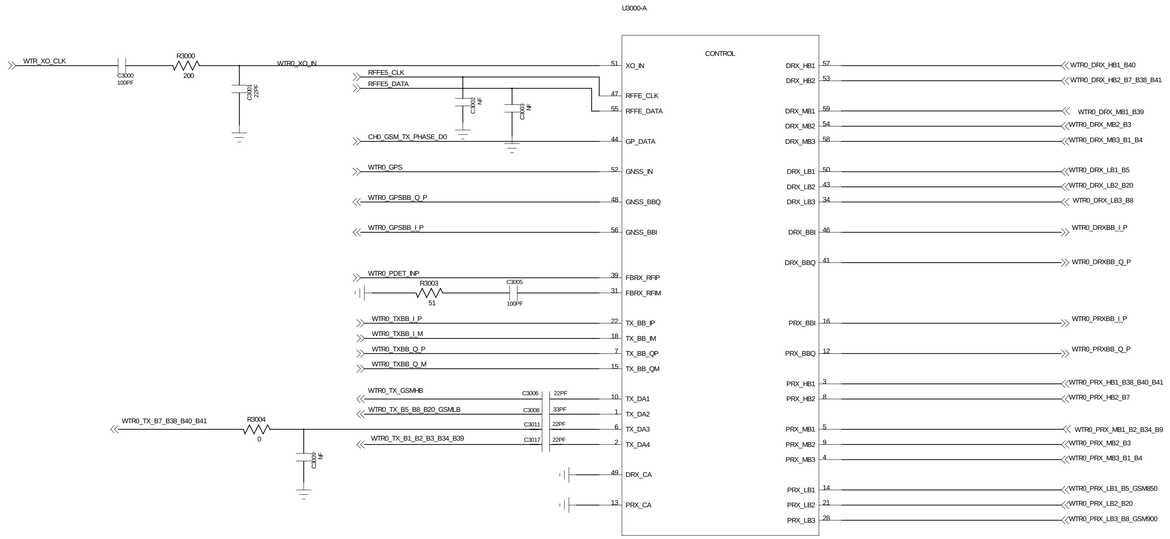
Test Point/Shields

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

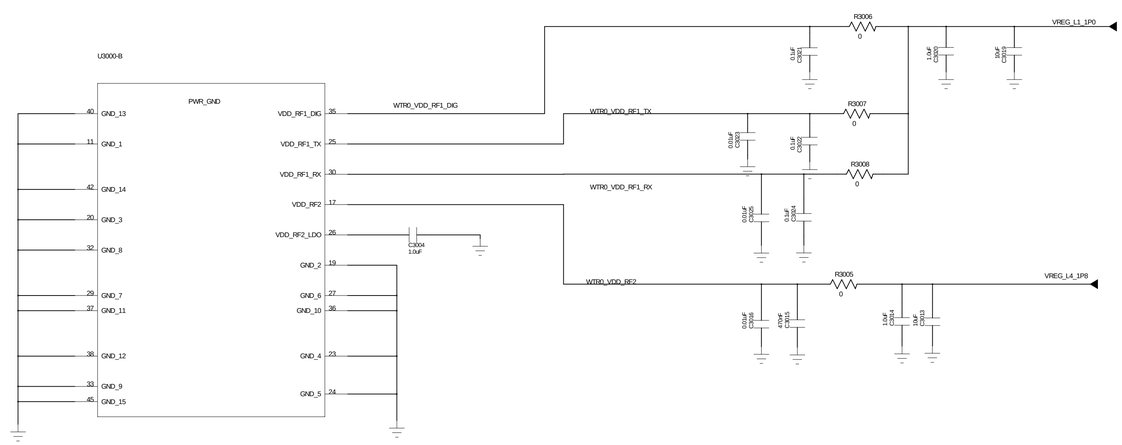
Title

Size | Name | Rev

Date: | Sheet of



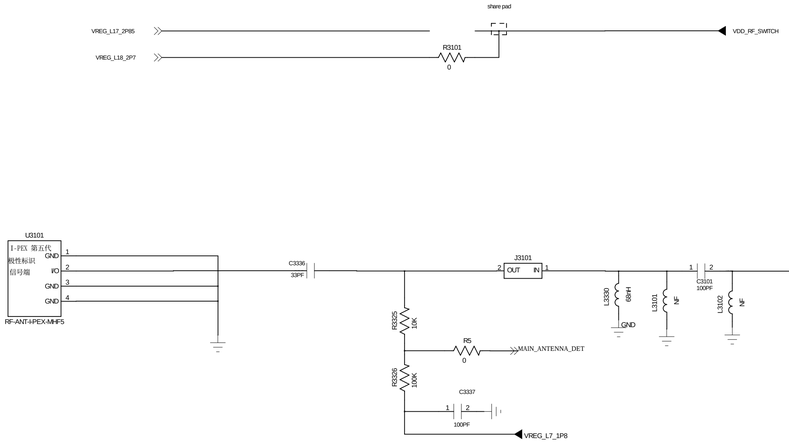
Note:RX ports have DC at the pin,
so it need DC block,please make sure
there is no DC short to other voltages and GND



WTR 2955

QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title
Sheet
Size | Name | Rev
Date: | Sheet of



Title
Sheet
Size
Name
Rev
Date:
Sheet of

Band7

Band40

Band1

Band3

Band4

Band34_39

Band2

Band20

Band8

Band5

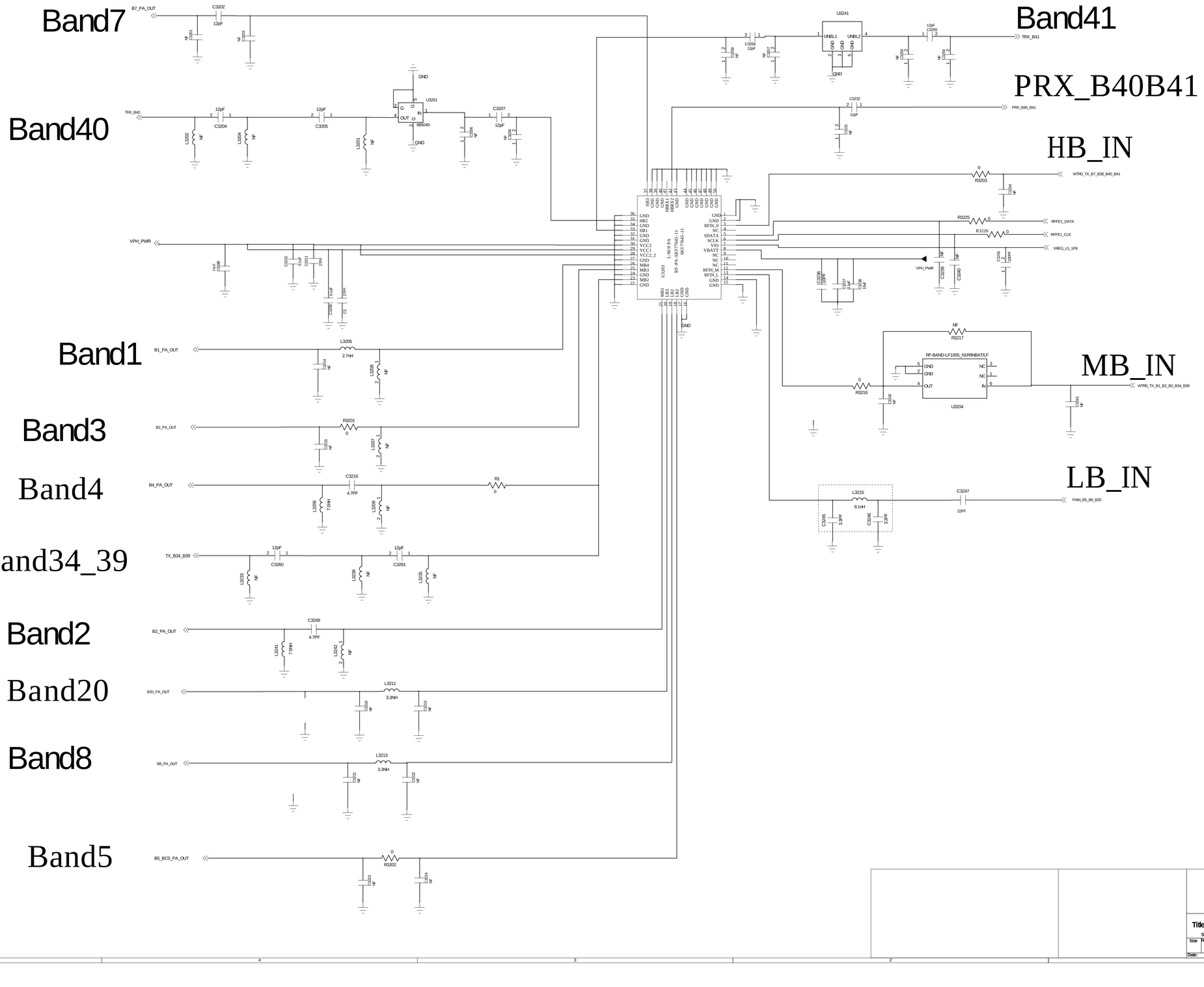
Band41

PRX_B40B41

HB_IN

MB_IN

LB_IN

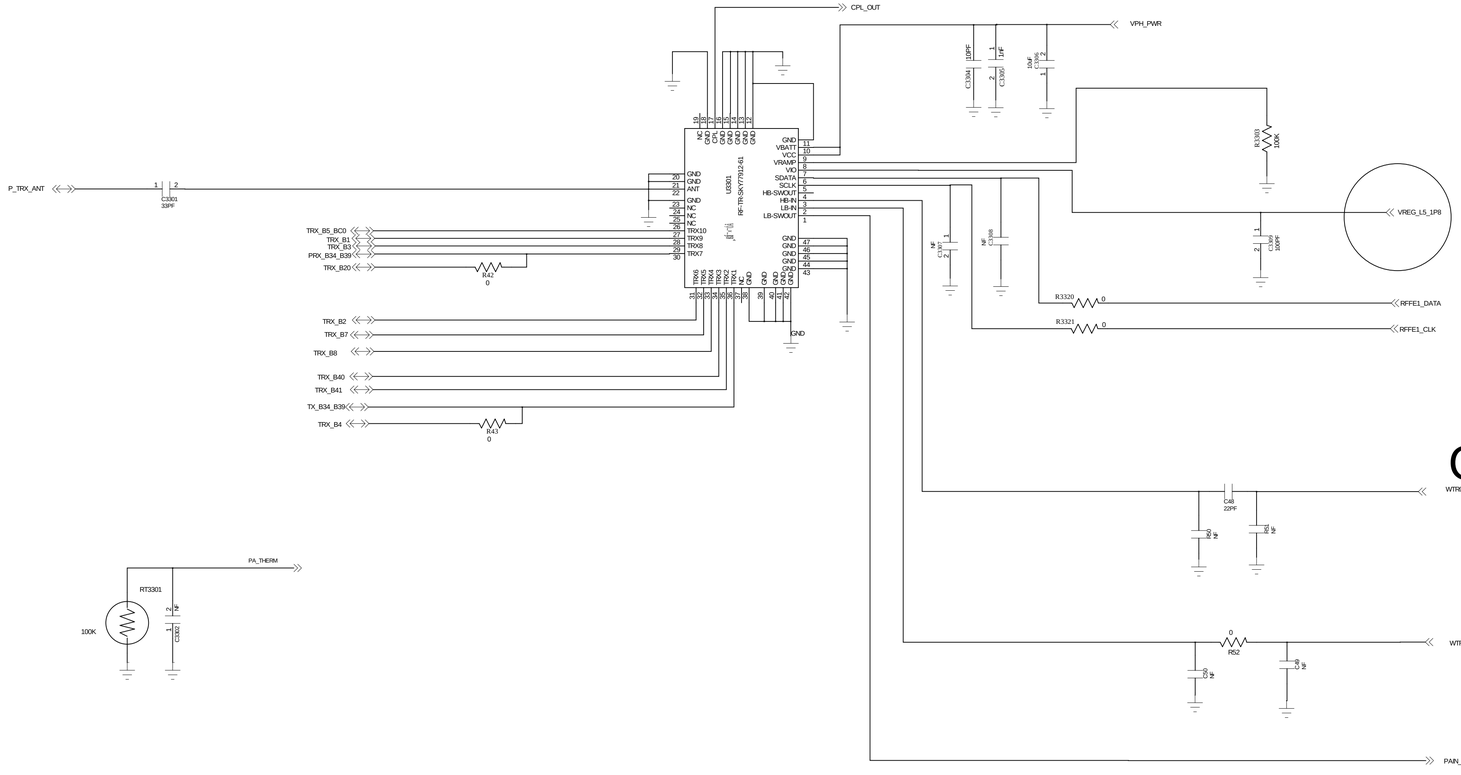


Title

Sheet

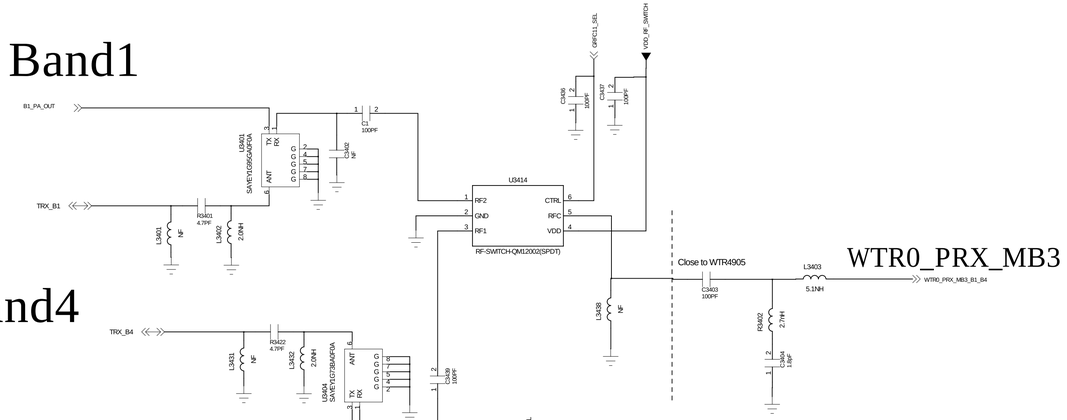
Size | Name | Rev

Date: | Sheet of

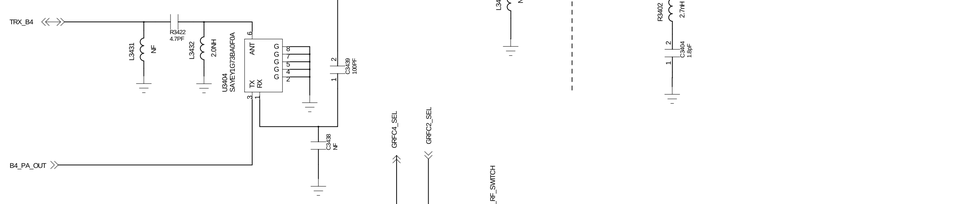


Title
Sheet
Size
Name
Rev
Date:
Sheet of

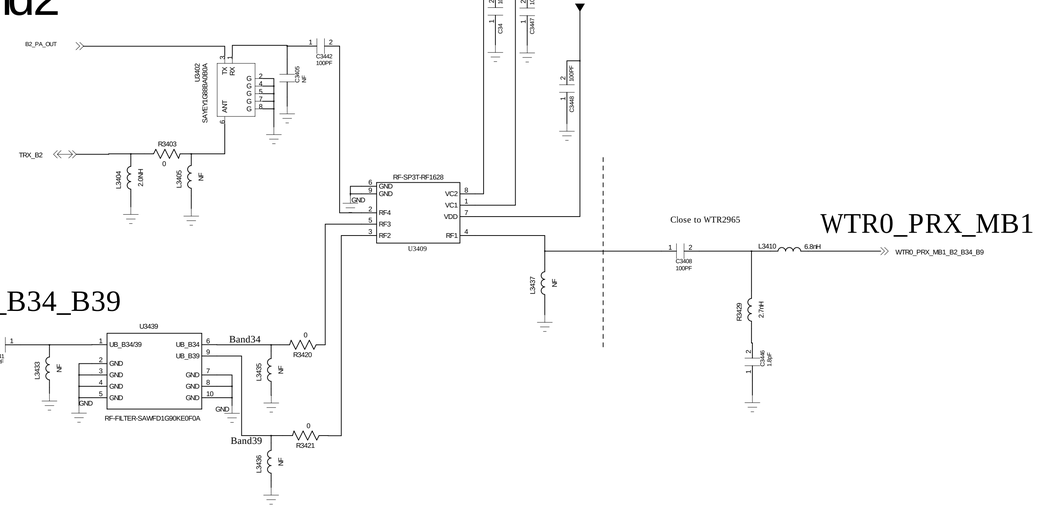
Band1



Band4

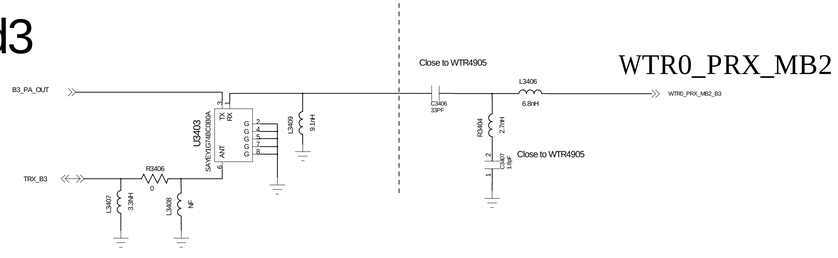


Band2

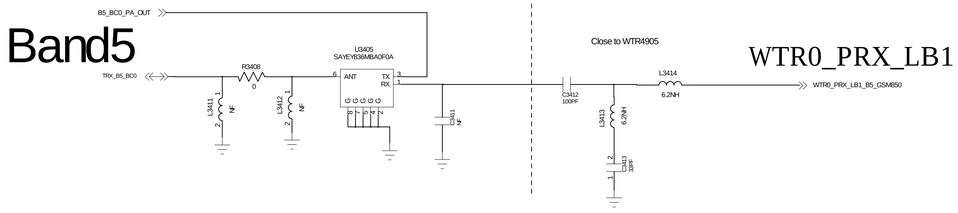


PRX_B34_B39

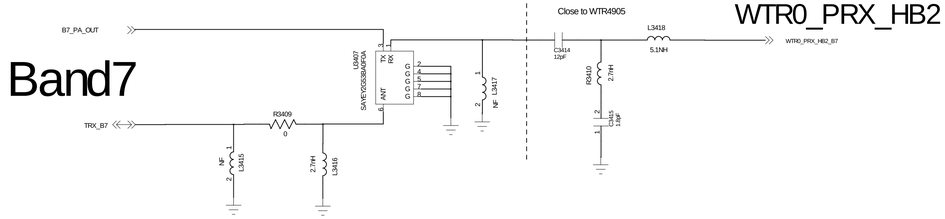
Band3



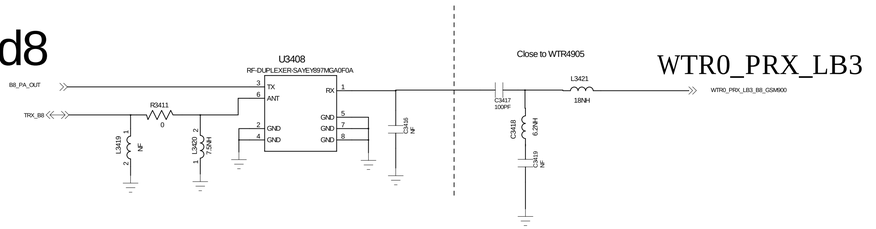
Band5



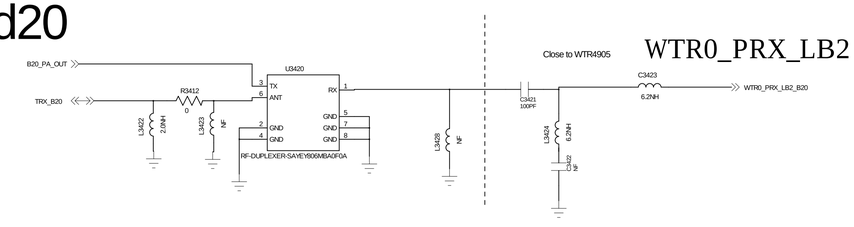
Band7



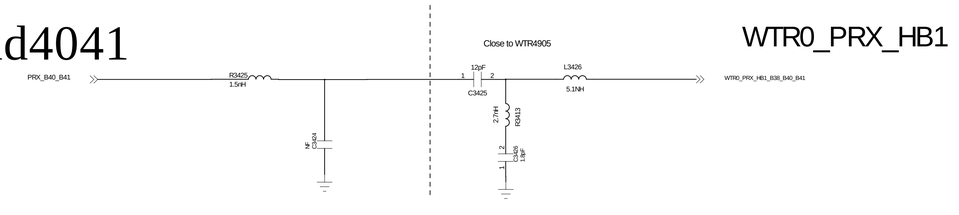
Band8



Band20

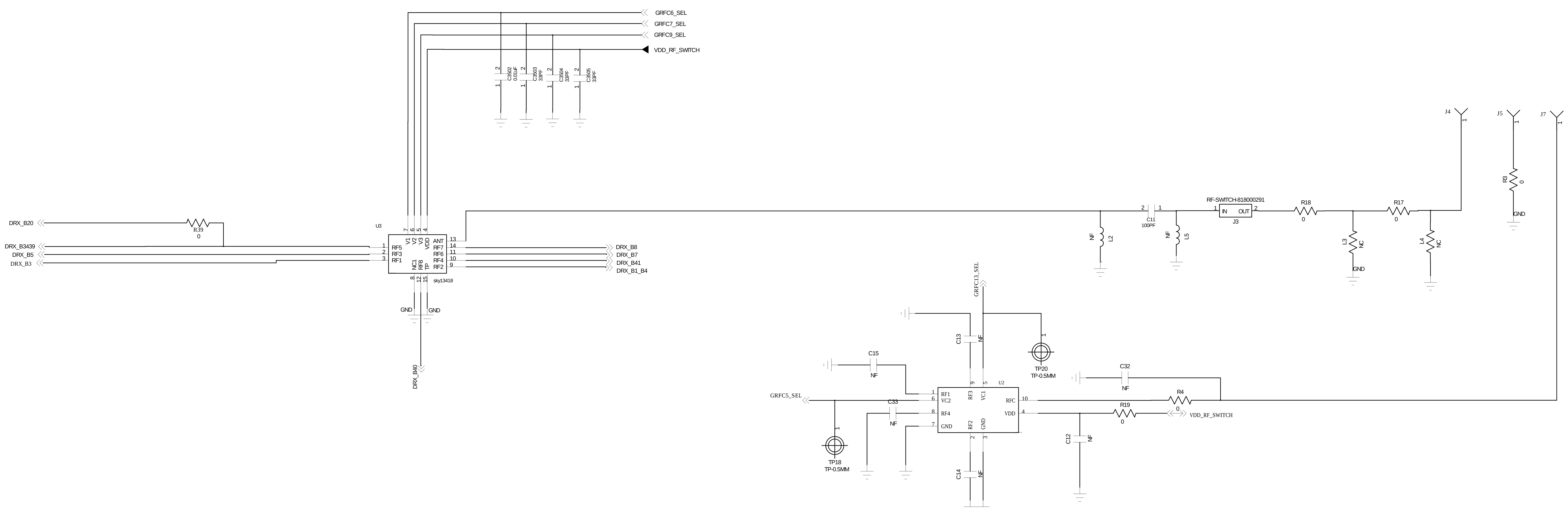


Band4041



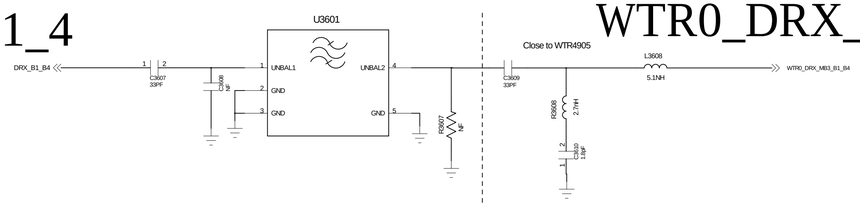
Note:The matching need
close to WTR, RX ports have
DC at the pin, so it need DC block,

		Title
		Sheet
		Size / Name / Rev
		Date: / Sheet / of



Title
Sheet Name
Size
Rev
Date:
Sheet
of

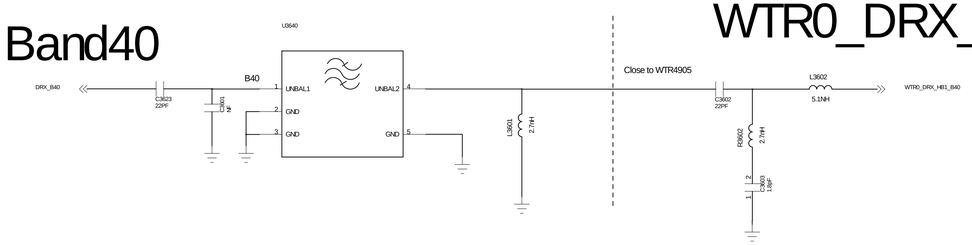
Band1_4



WTR0_DRX_MB3

Close to WTR4905

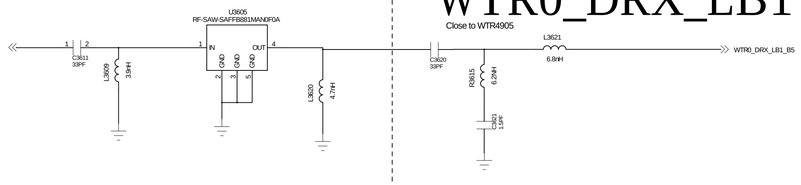
Band40



WTR0_DRX_HB1

Close to WTR4905

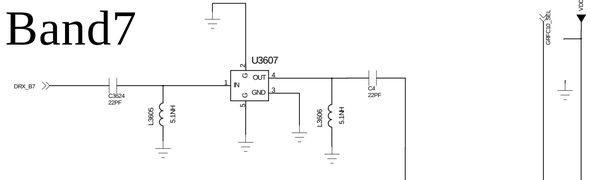
Band5



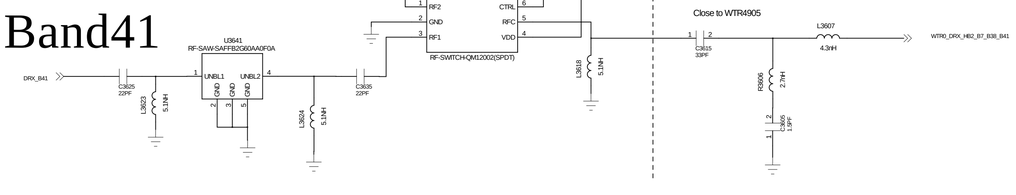
WTR0_DRX_LB1

Close to WTR4905

Band7



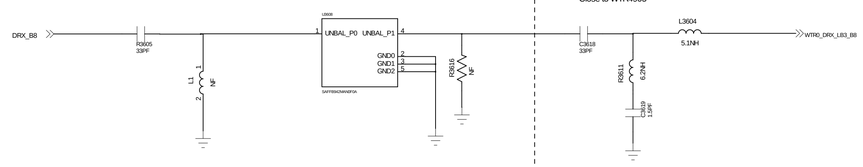
Band41



WTR0_DRX_HB2

Close to WTR4905

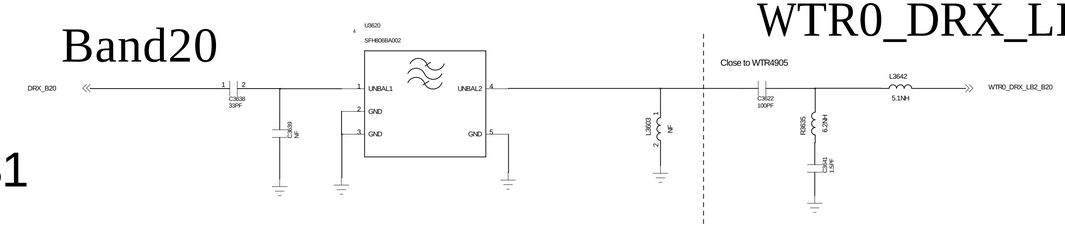
Band8



WTR0_DRX_LB3

Close to WTR4905

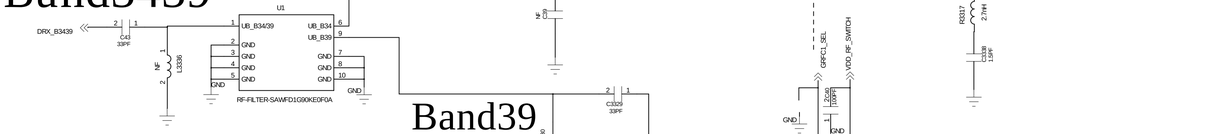
Band20



WTR0_DRX_LB2

Close to WTR4905

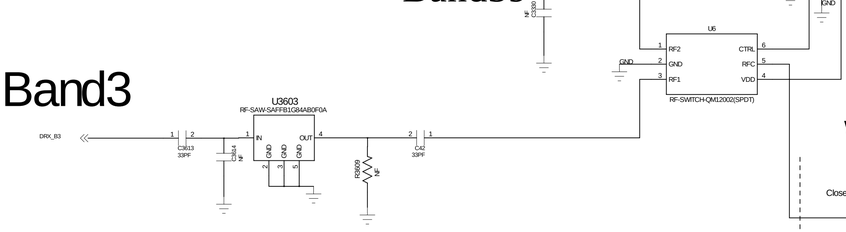
Band3439



WTR0_DRX_MB1

Band34

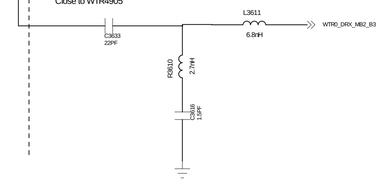
Band39



Band3

WTR0_DRX_MB2

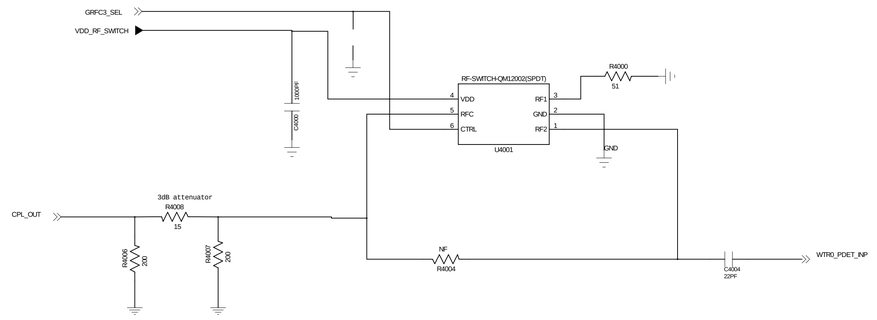
Close to WTR4905



Note:The matching need close to WTR, RX ports have DC at the pin, so it need DC block,

Title
Sheet
Size Name Rev
Date: Sheet of

SPDT



QUALCOMM Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Title

Size | Name | Rev

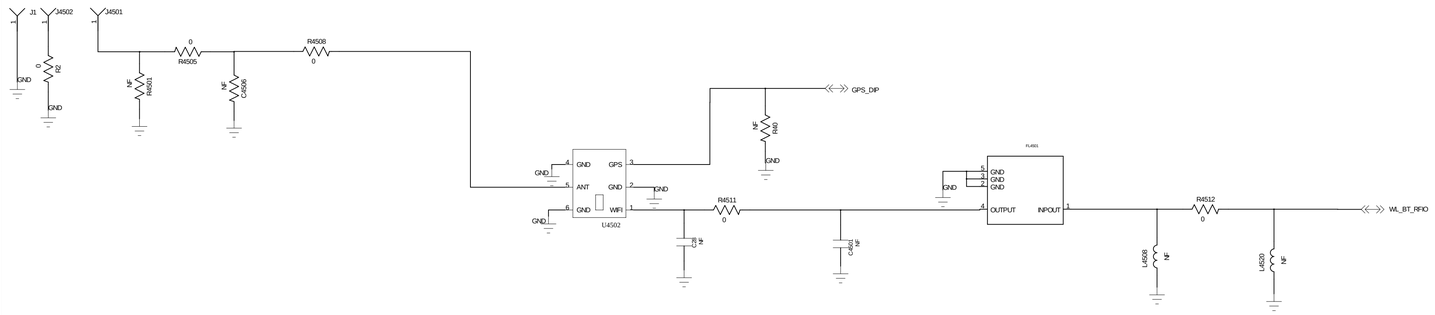
Date: | Sheet of

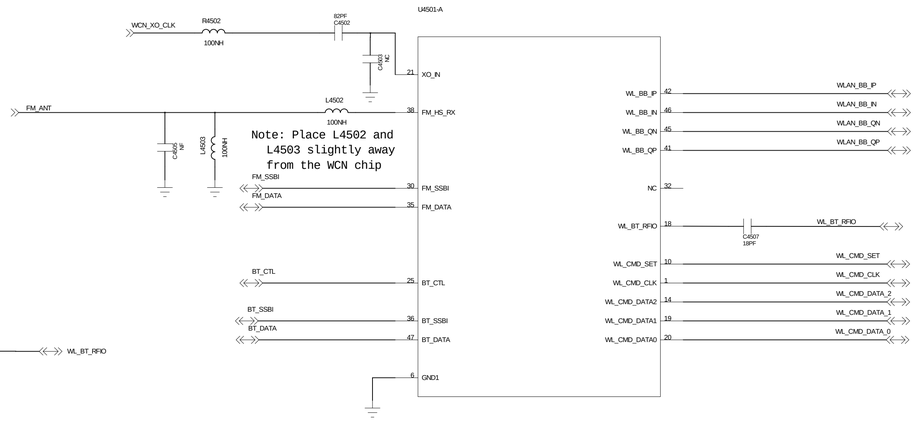
Note: Use a signle low impedance power plane/fill VPA for all ET PA VCC1/VCC2.

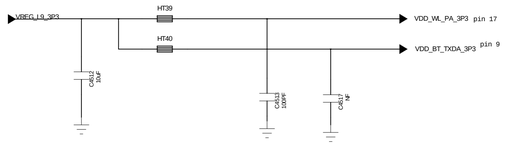
Refer to 80-NA681-91 rev.B or later revisions for more layout details.

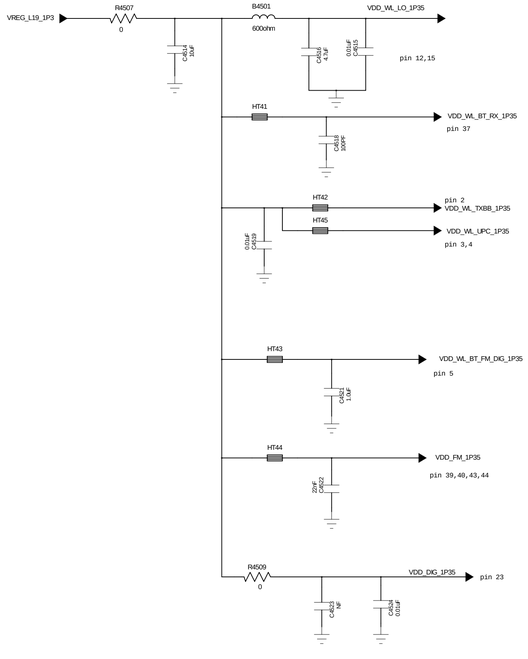
Title
Sheet
Size Name Rev
Date: Sheet of

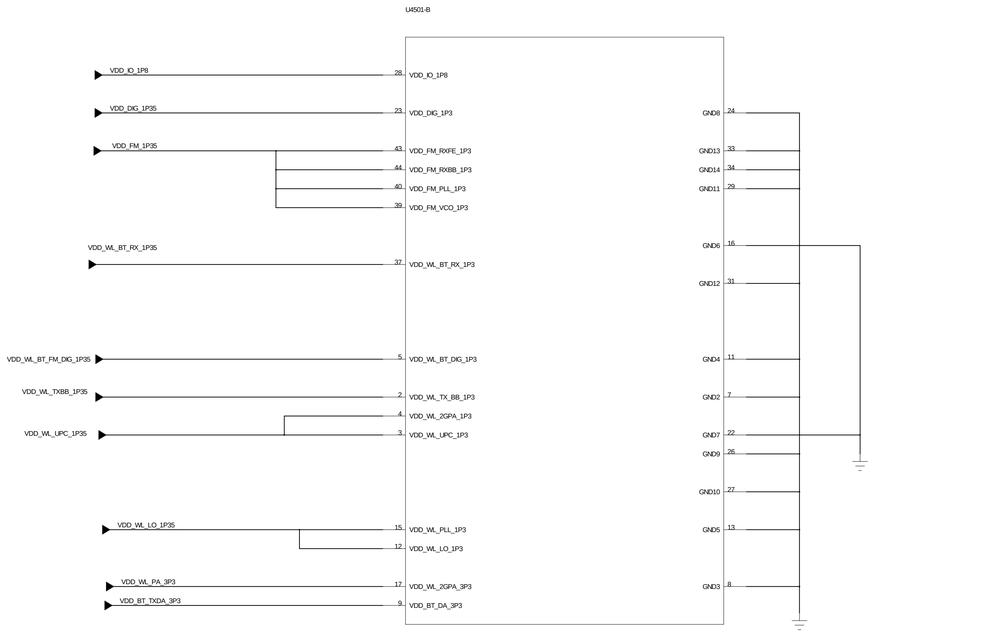
WCN











QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

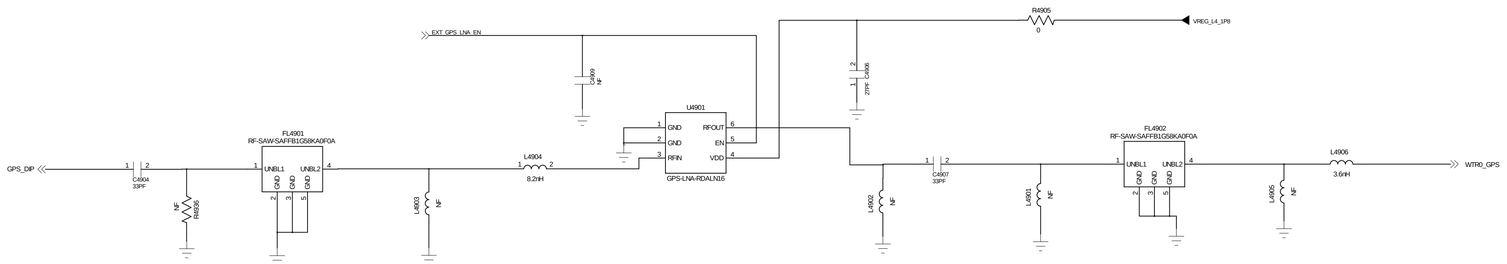
Title

Sheet

Size	Name	Rev

Date: Sheet of

GPS



GPS

Title

Size | Name | Rev

Sheet

Date: | Sheet of