Qualcomm
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MSM8274/MSM8274AB, MSM8674/MSM8674AB, and MSM8974/MSM8974AB Baseband

Reference Schematic

80-NA437-41 Rev. M

August 21, 2013

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Revision history

Revision	Date	Description
A	May 2012	Initial release
B	June 2012	▪ Sheet 3 ▫ Added 0.1 µF decoupling caps for EBIx_VREF rails ▫ Corrected pin names for USB_HS2 interface ▫ Corrected pin names for pins Y44 and W45 ▫ Removed nets on MODE0/1 pins and added note for native mode ▪ Sheet 4 ▫ Moved TS_I2C_SCL/SDA to GPIO_7/6 respectively ▫ Added net DISPLAY_EN on GPIO_58 ▫ Renamed net on GPIO_67 to COMPASS_INT ▪ Sheet 5 ▫ Added FORCE_USE_BOOT circuit on GPIO_103 ▫ Changed note about boot configuration ▪ Sheet 8 ▫ Corrected pin names for pads AP48, U47, and R45 ▫ Corrected pin names for pad BB4 ▫ Added 0.1 µF decoupling cap for VREF_SDC ▫ Deleted floating net on pin BB4 ▫ Added 1 µF cap on pin F36 ▪ Sheet 9 ▫ Added current measurement point on USB 3.3 V and 1.8 V supply ▪ Sheet 12 ▫ Corrected pin numbers for VDD_SDC_CDC ▫ Changed net name for VDD_SDC_CDC to VREG_S2B_0P9_ISO ▫ Updated decoupling caps on multiple nets ▫ Deleted 1 µF cap on VDDAON net ▪ Sheet 13 ▫ Added net VBATT_CONN_SENSE to pin VBAT_SNS ▫ Removed sense resistor on VBAT close to PMIC ▫ Changed the BMS_CSM/CSP signal connection ▫ Added 47 K PD resistor on USB_IN ▫ Added note about BMS ▫ Added note about VCOIN ▫ Changed pin name on pin 169 ▫ Added placeholder caps on VBAT_SNS and BATFET_CP_DRV ▪ Sheet 14 ▫ Changed the XO crystal part number ▫ Changed net names on GPIO_32 ▫ Added net TS_CHGR_IN on GPIO_30 ▫ Added net QPA_XO on GPIO_17 of PM8941 ▫ Moved VOL_UP signal to GPIO_4 ▫ Moved HS_DET to GPIO_22

Revision	Date	Description
B (cont.)	June 2012	▪ Sheet 14 (cont.) ▫ Added net ANC_HS_DET on GPIO_35 ▫ Swapped nets on GPIO_3 and GPIO_4 ▫ Added note on placeholder resistor R2677 ▫ Changed resistor on PS_HOLD to 10 K ▫ Added test points on SPMI and PON_RESET_N/PON_OUT ▪ Sheet 15 ▫ Increased the inductor on VSW_S1 and VSW_S3 to 2.2 µH ▫ Shorted pins 124 and 111 ▫ Added 1 µF cap on VSW_5V ▫ DNIed 22 µF cap on VSW_5V ▪ Sheet 16 ▫ Added net VREG_L23_2P85 for rear camera ▫ Added TX_GTR_THRES ▫ Deleted decoupling caps on PMIC VDD inputs ▫ Added current measurement points on L15, L16, L19, and L18 ▫ Changed bulk caps on some LDO outputs ▫ Added placeholder resistor to bypass the boost circuit ▪ Sheet 17 ▫ Connected FLASH_DRV_2 to FLASH_DRV_1 ▫ Added 1 µF cap on VREG_WLED ▫ Added placeholder 1 µF cap on VDD_WLED ▫ Added cap C4083 ▫ Changed pin names on pins 100 and 115 ▪ Sheet 18 ▫ Changed the 22 µF caps on S5/S6/S7/S8 to 0603 size ▫ Changed inductor value on VSW_S1/S3 ▫ Added 47 µF cap on VREG_S1 ▫ Changed inductor on VSW_S2/S4 ▫ Changed pin names on pins 49 and 58 ▪ Sheet 19 ▫ Added level translator option for 1.2 V operation ▪ Sheet 20 ▫ Changed polarity of DET switch on SD card holder ▫ Installed pull-up on SD_CARD_SET_N ▪ Sheet 24 ▫ Changed size of resistors R2664, R2649, and R2650 ▪ Sheet 25 ▫ Added nets TS_CHGR_IN and TS_CHGR_IN_CONN ▪ Sheet 26 ▫ Changed EMI filters to smaller footprint ▪ Sheet 27 ▫ Changed EMI filters to smaller footprint ▫ Added net VREG_L23_2P85 for rear camera ▪ Sheet 29 ▫ Added nets CDC_DMIC_CLK1/CDC_DMIC_DATA1 for MIC 3 and MIC4

Revision	Date	Description
B (cont.)	June 2012	▪ Sheet 29 (cont.) ▫ Added MIC3 and MIC4 ▫ Added notes for top and bottom MICs ▫ Added note about FLUID implementation ▫ Connected pins 40 and 41 to GND ▪ Sheet 30 ▫ Removed DNI resistors on LINE_OUTx pins ▫ Changed net name from CDC_HPH_P to CDC_HPH_L and CDC_HPH_R_M to CDC_HPH_R ▫ DNIed caps C43 and C44 ▫ Deleted floating net on pin LDO_HI_CAP ▫ Added placeholder connection from VPH_PWR to VDD_SPKDR ▫ DNIed AUDIO_REF_CLK path to MCLK ▫ Changed net name from MBHC to MBHC_HSDET ▪ Sheet 31 ▫ Deleted floating nets ▫ DNIed resistors R50, R58, and C3672 ▫ Added note clarifying options for insertion/removal detection ▫ DNIed caps on CDC_HPH_L and CDC_HPH_R ▫ DNIed cap C57 ▫ Clarified the description for ANC LEFT and RIGHT MICs ▫ Changed part number for headset jack ▫ Added net ANC_HS_DET ▪ Sheet 33 ▫ Deleted ultrasonic transducer connection ▪ Sheet 35 ▫ Connected pin 36 on connector directly to GND ▫ Changed the placeholder net name on pin 17 to NFC_PWR_CLK_REQ ▫ Removed MODE_0/1 signals from the WCN connector ▪ Sheet 36 ▫ Added net QPA_XO on pin 42 ▫ Corrected the I/Q signals on pins 71 to 74 ▫ Corrected ETDAC_P/M signals on pins 63 and 65 ▫ Deleted net 1x_MRD_SEL on pin 46 ▫ Changed net name on pin 120 from XO_OUT_A0 to XO_OUT_A1 ▪ Sheet 37 ▫ Changed net name on pin 119 from XO_OUT_A1 to XO_OUT_A0 ▫ Changed net name on pin 58 to VBATT_SENSE_P ▫ Added net VBATT_SENSE_M on pin 60 ▫ Moved nets RFFE1_CLK/DATA to pins 128, 130 respectively ▫ Changed GPS antenna design ▫ Corrected the note on pin 142

Revision	Date	Description
C	July 2012	▪ Section 1.2 ▫ Added reference document *WTR1605(L) RF (ATT Carrier Aggregation) Preliminary Reference Schematic* (80-NA437-43) ▪ Sheet 3 ▫ Added MSM™ thermistor RT1 for thermal management ▪ Sheet 4 ▫ Added net TS_I2C_MODE to GPIO59 ▪ Sheet 5 ▫ Changed net name for GPIO_104, GPIO_105, GPIO_108, GPIO109, GPIO_112 through GPIO_115, GPIO_120 through GPIO_123, GPIO_126, GPIO_127 and GPIO_137 to GRFC numbers to be compatible with different RF configuration connectors ▪ Sheet 9 ▫ DNIed C4057 on the VDD_ALWAYS_ON pin because the external backup LDO U1502 is optional ▪ Sheet 13 ▫ GND'd PM8941_DC_IN through 0-Ω resistor and DNIed C4043 to terminate the pin correctly ▫ Corrected C3789 from 0.1 µF to 0.47 µF ▫ Added 0.1 µF DNIed capacitor on VREG_SMBC for decoupling option ▪ Sheet 14 ▫ Added note for alternative XO part number ▫ Added nets MSM_THERM, EMMC_THERM, and QUITE_THERM ▫ Added Quite thermistor RT3 for thermal management ▫ Corrected R2801 from 18 KΩ to 13 KΩ ▫ Changed PM8941 pin AMUX_PU1 and AMUX_PU2 pull-ups to the same supply (L8) as the one used by HK/XOADC for improved performance ▪ Sheet 15 ▫ Reduced cap C126, C128, and C130 value from 4.7 µF to 2.2 µF ▪ Sheet 16 ▫ Added the C78 on net PM8941_VIN_L5_L7, added the DNIed resistor R139 between VPH_PWR and net PM8941_VIN_L5_L7 as an additional option to sub-regulate the LDOs ▫ DNIed C3689 and C4044, installed C3694 and C3695 to correctly identify the pseudo-cap less LDOs ▫ DNIed R2748 to correct the error in the BOOST_BYP_VSEL connection ▫ Added net VREG_L8_1P8 for the PM8941 pin AMUX_PU1 and AMUX_PU2's pull-up supply ▪ Sheet 17 ▫ Changed C3809 from 1 µF to 4.7 µF to increase capacitance on WLED boost output ▫ Left pin VIB_DRV_N floating ▫ Added BHELPER LDO option (DNIed)

Revision	Date	Description
C (cont.)	July 2012	▪ Sheet 18 ▫ Added C3812 (DNIed), C3813(DNIed) and C3814 on VPH_PWR to increase bulk capacitance on the input of PM8841 ▪ Sheet 19 ▫ Updated eMMC part to the new Samsung eMMC 4.5 part ▫ Added the eMMC thermistor (DNIed) ▪ Sheet 20 ▫ Corrected ESD protection connection to VREG_L13_2P95 since L6 is off during sleep mode ▪ Sheet 21 ▫ Corrected pull-up resistors on UIM CD_U and CD_L pins to 100 KΩ ▪ Sheet 22 ▫ DNI the Q10 as USB_ID pin of the MSM is not used for host mode detection anymore ▪ Sheet 24 ▫ Connected FL15 through FL17 GND pins to ground ▫ Added R324 and R325 (DNIed) ▫ Removed W24 ▪ Sheet 25 ▫ Connected TS_I2C_MODE to J10 pin 4 through FL6 ▪ Sheet 27 ▫ Changed net CAM0_RST_N from J5 pin 14 to pin 12 ▫ DNIed C4027 ▪ Sheet 36 ▫ Changed net name for J20 pin 48, 50, 52, and 81 to corresponding GRFC numbers to be compatible with different RF configuration connectors ▫ Added note for GRFC usage ▪ Sheet 37 ▫ Changed net name for J21 pin 31, 32, 33, 35, 37, 39, 44, 46, 47, 49, and 93 to corresponding GRFC numbers to be compatible with different RF configuration connectors ▫ Added a note for GRFC usage

Revision	Date	Description
D	August 2012	▪ Sheet 3 ▫ DNIed the MSM thermistor RT1 for thermal management ▪ Sheet 4 ▫ Swapped the net NFC_IRQ and TS_I2C_MODE because NFC_IRQ needs to be connected to MPM ▪ Sheet 8 ▫ Added the decoupling capacitor C4088 on VDD_A2 ▫ Removed the ground option of R2751, R2750, and R2712 for MSM8974 pins BE33, BE39, and BD38 ▫ Installed R2753, R2752, and R2713, connecting them to the corresponding power supplies ▫ Removed the table note for the R2751, R2750, R2712, R2753, R2752, and R2713 connection ▪ Sheet 13 ▫ Updated C4005 to an ROHS-compliant part ▫ Added the test point on USB1_PHY_VBUS ▫ Added the note for the DC_IN path of PM8941 connections when it is used for charging ▫ Added the note for a BMS connection when an external sense resistor is not used ▫ Replaced C3712 on the PM8941 VCOIN pin with a 47 µF capacitor ▪ Sheet 14 ▫ DNIed the Quite thermistor RT3 for thermal management ▫ Corrected the net name of VOL_DN to VOL_DN_N, SNAPSHOT to SNAPSHOT_N, FOCUS to FOCUS_N, VOL_UP to VOL_UP_N, and HS_DET to HS_DET_N because they are active low triggered signals ▫ Corrected the net for GPIO21 to BOOST_BYP_BYP ▪ Sheet 15 ▫ DNIed the 22 µF capacitors C134 and C138 on VPH_PWR ▪ Sheet 16 ▫ Corrected the PM8941 VDD_L5_7 and VDD_L6_12_14_15 pin connections ▫ Corrected the net name BOOST_BYP_BYP to BOOST_BYP_EN ▪ Sheet 17 ▫ Connected GPLED_SNKx [1:4] to ground when GPLED SNKs are not used ▫ Changed C3809 to a 35 V part ▪ Sheet 24 ▫ Updated R2687 to a 1%-tolerant part ▪ Sheet 26 ▫ Updated J6 part symbol ▫ Changed the bypass capacitors C3808, C3794, C3795, and C3796 to be 10%-tolerant parts

Revision	Date	Description
D (cont.)	August 2012	▪ Sheet 29 ▫ Tied unused I2S/I2C pins (pin 22, 34, 10, 41 and 5) of WCD9320 to GND since the bidirectional pins default to digital inputs after the codec is taken out of the reset state ▫ Corrected the pin name for I2C_SCL, pin 22 ▫ Changed connection for J4 pin 7 to VREG_L18_2P85 ▪ Sheet 30 ▫ Updated C3785 to a 6.3 V part ▪ Sheet 31 ▫ Changed the net name of HS_DET to HS_DET_N ▪ Sheet 32 ▫ Changed R2638, R2639, R51, and R52 to 0 Ω resistors ▪ Sheet 34 ▫ Corrected the net name of VOL_DN to VOL_DN_N, SNAPSHOT to SNAPSHOT_N, FOCUS to FOCUS_N and VOL_UP to VOL_UP_N because they are active low trigger signals ▪ Sheet 35 ▫ Removed the connection for pin 4 of J9 because it is not needed for WCN3680 ▪ Updated the document titles in Section 1.2
E	October 2012	▪ Sheet 3 ▫ Added the external pull-up resistors R2699 and R2700 on MSM8974 mode pins for boundary scan (BSCAN) mode option; added the note for it ▫ Added the external pull-up resistor R2808 on GPIO_112 for watchdog disable option; added the note for it ▫ Changed R2761 to pull up to VREG_L14_1P8 for correct CSFB configration ▫ Added note for terminating unused I/Q pins ▪ Sheet 8 ▫ Added the note for the purpose of R2648 – star rounte ▪ Sheet 9 ▫ Added the note for the purpose of R2770 – star rounte ▪ Sheet 14 ▫ Added the note for PMIC X0_OUT_D0 routing recommendation ▫ Removed net ANC_HS_DET on MSM8974 GPIO_35 as ANC headset can be detected with mechanical MBHC detection ▪ Sheet 15 ▫ Changed the de-cap C3710 and C3711 on S2A and S3A regulators from 22 µF to 47 µF ▫ Changed R2805 to 20 KΩ and added the note for it ▫ Added the note for reducing the crosstalk if enabling voice wakeup listen feature enabled by WCD9320 MAD ▫ Changed the filtering and ESD components on the ANC headset microphone lines with discrete components to utilize the integrated IEC in the WCD9320

Revision	Date	Description
E (cont.)	October 2012	▪ Sheet 18 ▫ Added note about VREG_L12 voltage ▪ Sheet 19 ▫ Corrected the eMMC power supply connection ▪ Sheet 23 ▫ Added 5k resistor on VREG_BMS to VPH_PWR for PM8941 Issue 3 in DRG ▪ Sheet 27 ▫ Changed unused GPLED_SNKx pins to floating ▪ Sheet 29 ▫ Added the note for VBAT Monitoring Feature ▫ Added the note for Fluence™ and Fluence Pro Features ▪ Sheet 30 ▫ DNIed CR28 and CR29, added note to recommend and test the integrated IEC Level 4 clamps on EAROP and EAROM pins for BOM reduction ▫ Added the note for E36 selection ▫ Added the note for WCD9320 feedback (I/V sense) speaker protection feature ▫ Added the resistor R2796 and added the note for WCD9320 ES recommendation of using VPH_PWR to power speaker driver ▪ Sheet 31 ▫ DNIed CR20 and CR21, added note to recommend and test the integrated IEC Level 4 clamps on HPH_L, HPH_R, MIC_IN2_P, MIC_IN3_P and MIC_IN4_P pins that have been integrated in the WCD9320 for BOM reduction ▫ Changed the ANC jack connector. New ANC jack connector has lesser number of pins ▫ Implemented FM RX headset antenna using the stereo headphone outputs as opposed to using common shared GND for headset to improve the system headset crosstalk since HPH_REF can be routed all the way to the GND pin of the jack connector ▫ Added the note for 80-N1763-14 application note on headset crosstalk for design considerations to optimize headphone crosstalk with WCD93XX ▫ Added the note for MBHC operation ▫ Changed R2805 to 20 KΩ and added the note for it ▫ Added the note for reducing the crosstalk if enabling Voice Wakeup Listen feature enabled by WCD9320 MAD ▫ Changed the filtering and ESD components on the ANC headset microphone lines with discrete components to utilize the integrated IEC in the WCD9320
F	January 2013	▪ Sheet 8: Removed 0 Ω stuffing resistors on pin BE39, BD38 and BE33 as they are not needed. ▪ Sheet 13: Added a note for 10 mΩ 1% sense resistor between BMS_CSP and CSM. Installed C4076 on PM8941 VBAT_SNS pin. ▪ Sheet 17: Replaced Bhelper LDO with Ricoh part and installed it because the Bhelper LDO can aid S2A to provide current to the load during large battery current transients ▪ Sheet 22: Added note: Install the FET Q10 if USB HOST mode is required. This is due to recently found issue regarding host mode detection for OTG.

Revision	Date	Description
G	January 2013	▪ Sheet 3: Added cad note for SDC1 and SDC2 interface ▪ Sheet 5: Removed the alternative net name for GRFC signals; customers can refer to the relevant RF schematic GRFC mapping table for detailed information. ▪ Sheet 7: ▫ Modified the net names for WTR_GPS_BB_IP/IM/QP for better understanding ▫ Removed the stuff option table for different RF configurations; the current schematic shows the connections for a two WTR design. ▪ Sheet 8: Updated the note for R2759 on VSENSE_KRAIT_0P9 that it needs to be placed close to the MSM chipset at the Krait bulk capacitors. ▪ Sheet 14: ▫ Added audio EURO select option on the PM8941 pin GPIO_20 ▫ Added a 0.1 µF cap placeholder (DNI) on PS_HOLD on the PMIC side for filtering purpose in case of glitches on PS_HOLD ▪ Sheet 15: Removed the backup diode for the 5 V boost (S4) ▪ Sheet 17: ▫ Added note to explain the need to add the Bhelper LDO and listed one LDO alternative part number ▫ Removed R200, R201 and C66; connected the Bhelper LDO Vout directly to VFB because the voltage divider has been integrated in the new version of the Ricoh part ▪ Sheet 18: Added note for VSENSE_KRAIT0P9 and REMOTE_GND_SNS and the need to route them differentially ▪ Sheet 21: Added note for UIM EMI and ESD filters. The customer must ensure that the filters' current rating matches UIM Icc to eliminate the possibility of a voltage drop. ▪ Sheet 30: ▫ Added two 8.2 pF shunt caps placeholders on SPKR_DRVP and SPKR_DRVM for RF filtering ▫ Added the Pi filter place holders on SPKR_DRVP and SPKR_DRVM for EMI filtering ▫ Added the Pi filters on CDC_HPH_L and CDC_HPH_R on WCD9320 for WCN FM performance ▫ Added a note that C3804 must have a 10 V rating when VDD_SPKR1 and VDD_SPKR2 are driven from VREG_5V for reliability.
G (cont.)	January 2013	▪ Sheet 31: ▫ Added the Pi filter place holders on CDC_HPH_L and CDC_HPH_R on the headset connecter side for optimal WCN FM performance ▫ Added stuff option to support NA/Euro headset detection with WCD9320 ▫ Added a 68 nH inductor L54 on FM_RX_HEADSET for filtering ▫ Added 0 Ω resistor R250 for testing purpose ▫ Added 0 Ω resistor R256 on HS DET; the resistor must be replaced with a ferrite bead if the trace is long ▫ Added L55 and C89 for WCN FM performance ▪ Sheet 36: Removed the alternative net name for the GRFC signals on the RF connector ▪ Sheet 37 ▫ Modified the net names for WTR_GPS_BB_IP/IM/QP for better matching ▫ Removed the alternative net name for the GRFC signals on RF connector ▪ Updated Table 1 parts list

Revision	Date	Description
H	March 2013	▪ Sheet 3: ▫ Removed USB_HS1_ID net name since the extra FET circuitry for USB_HS1_ID has been removed on sheet 22. ▫ Added C90, C91, R522 and R2701 on WCN_XO to reduce the potential spur of the 24 MHz clock ▫ Removed the pull-down resistor placeholders on PMIC_SPMI_CLK/DATA pins for BOM reduction. ▫ Added the note on the recommendation to terminate the unused SS_USB signals. ▪ Sheet 5: ▫ Removed the placeholder of pull-down resistors on RFFE for BOM reduction. ▪ Sheet 7: ▫ Corrected the connection of TX_DAC1_VREF to PM8941 MPP3 for two WTR configurations; removed 0 Ω stuffing resistors R2760, R2761, and R2704. ▫ Removed the note for “Handling unused MSM pins page for terminating unused I/Q pins” and added a summary table for TXDAC1 and ETDAC connection under different RF configurations ▪ Sheet 9: ▫ Removed external backup LDO for VDDAON because the internal LDO for VDD_ALWAYS_ON can be used. ▫ Added the test point on VDD_ALWAY_ON and removed the DNIed capacitor C4057 on it. ▪ Sheet 13: ▫ Removed R2711 (0 Ω placeholder between) PM8941 USB1_VBUS and DC_IN for BOM reduction. ▫ DNI R2793 (5.1 kΩ resistor) on PM8941 VREG_BMS for ES3 and later samples; updated the note for details.

Revision	Date	Description
H (cont.)	March 2013	▪ Sheet14: ▫ Removed R2658 and R2675 on CBL_PWR_N and PON_1 for BOM reduction. ▫ Removed R2656, R2657, R2673, and R2674 for BOM reduction and connected PM8941 OPT_1 and OPT2 directly to ground. ▫ Removed the test point E39 for BBLCKs, introduced a 0 Ω series resistor R2807 on XO_OUT_D0 and added a note for it. ▫ Removed R2806 (0 Ω resistor placeholder on XTAL_19M_OUT to ground) for BOM reduction ▫ Changed R2801 to 30.9 kΩ ▪ Sheet 15: ▫ Removed C3704 (22 µF capacitor placeholder on VSW_5V) for BOM reduction. ▫ Replaced C3709 on VREG_S1A_1P3 with a 47 µF 0603 capacitor to improve transient performance. ▫ Replaced C3708 on VREG_5V with a 47 µF 10 V 0805 part to improve stability of the 5 V sync boost. ▪ Sheet 16: ▫ Removed R139 and R70, connected VREG_S2A_2P15 directly to VREG_S2A_2P15 for BOM reduction. ▫ Removed DNIed caps on VREG_L2, VREG_L9, VREG_L10, VREG_L12, VREG_L13, VREG_L14 and VREG_L24 for BOM reduction. ▫ Removed R2802 (0 Ω placeholder between BOOST/BYPASS VIN and VOUT) since BOOST/BYPASS is required. ▪ Sheet 17: ▫ Added a note for star route from VDD_WLED (pin 96 of PM8941) to C4083. ▫ Removed DNIed capacitor C4082 on VDD_WLED for BOM reduction. ▪ Sheet 18: ▫ Removed R2653 (DNIed 0 Ω resistor) on DIVCLK3 for BOM reduction. ▫ Modified wording in note 1. ▫ Removed R2651, R2652, R2669 and R2670. Connected PM8841 OPT_1 and OPT2 directly to ground for BOM reduction. ▫ Added 47uF cap on VREG_S2B_0P9 and VREG_S4B_0P9 to improve auto mode performance. ▪ Sheet 22: ▫ Removed Q10 circuitry since Host mode detection is done by PM8941 USB_ID pin. ▪ Sheet 27: ▫ Removed C4027 (DNIed cap on FLASH_DRV1) for BOM reduction. ▪ Sheet 36: ▫ Added Q20 switch controlled by the MSM_RESOUT_N on VREG_S3A gate to control the power supply to the RFFE devices until VREG_S3A is turned on. ▪ Updated Table 1 parts list

Revision	Date	Description
J	May 2013	▪ Added documents to table in Section 1.2, *Applicable documents* ▪ Sheet 3: ▫ Added a 33 Ω serial resistor R2702 and added note that it is only needed if the XO voltage divider is placed more than 2 inches from the MSM pin and it need to be placed close to the XO voltage divider ▫ Added note for WCN_XO routing when it is not used: ground pin B28 if WCN_XO is not used ▪ Sheet 4: ▫ Removed net AUDIO_REF_CLK on GPIO_69 ▪ Sheet 7: ▫ Added note for cap place holders on TX_DACx_IREF ▫ Changed C3774 and C3775 value to 2200 pF to avoid potential timing issue ▪ Sheet 8: ▫ Inserted new sheet for TXDAC1 and ETDAC connections under different RF configurations ▪ Sheet 11: ▫ Added the note for SDC1_RCLK pin in MSM8974AB ▪ Sheet 14: ▫ Removed BMS performance issue note ▫ Added note for PM8941 pin 185 ▪ Sheet 15: ▫ Removed net AUDIO_EURO_SEL and HS_DET_N on GPIO_20 and GPIO_22, respectively ▫ Updated the note for AMUX_HW_ID ▪ Sheet 30: ▫ Removed capacitor place holder on WCD9320 VDD_IO because it is no longer needed ▪ Sheet 31: ▫ Added 0.1 µF capacitor C92 on WCD HPH_REF pin for WCN FM performance and it should be placed close to the WCD pin ▫ Added R2741 and R2742 placeholders on SPKR_VSNSP and SPKR_VSNSM for speaker protection feature performance; in long traces due to amplifier ringing replace 0 Ω with 15 k ▫ Installed R2796 and DNI R2797, connected VDD_SPKR to VREG_5V for ES2 and CS samples, see 80-NA556-4 for details ▫ Added GND island for BUCK_NCP which is to isolate BUCK and NCP noise from other circuits, see 80-NA556-5 for details ▫ Connected WCD pin 1, 7, and 58 to the main ground ▫ Modified WCD pin MICB_CFILT3 connection to be NC ▫ Removed cap place holder on VDD_TXADC because it is no longer needed

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J (cont.)	May 2013	▪ Sheet 32: ▫ Removed C4006 and C4006 placeholders because they are no longer needed ▫ Added note that Pi filters are needed for WCN FM performance ▫ Added note that connecting negative terminal to MIC_BIAS2 provides optimum noise and crosstalk for ANC mics ▫ Removed switch stuff option to support NA/Euro headset detection with WCD9320, as FM antenna is using headset GND and switch impacts FM performance ▫ Added L55, C89, and L56 for WCN FM performance; they need to be placed right at the headset jack ground and star route the signals ▫ Removed backup option for insertion/removal detection ▫ DNIed R274 and installed R47, DNIed R281 and installed R43, DNIed R279 and installed R44 to reduce crosstalk from microphone to headphone speaker through Jack GND ▪ Updated Table 1 parts list.
K	May 2013	▪ Sheet 1: ▫ Updated the note for WCN XO divider to indicate that the XO voltage divider circuit is not required if using MSM device Rev 2.2 ▪ Sheet 3: ▫ Added two 33 pF shunt capacitors on SPMI lines (installed on SPMI_DATA and DNIed on SPMI_CLK) and added the note for them ▪ Sheet 4: ▫ Added note for GPIO_54/55/56/91 and GPIO_53/92 when they are used concurrently with WCN ▪ Sheet 5: ▫ Updated the net name of GPIO 106, 107, 110, 111, 118, 119, 124, 125 to corresponding GRFC numbers. Customer can refer to each RF schematic for the dedicated signal connection ▪ Sheet 7: ▫ Added note about MSM variant for SVLTE ▫ Added note that WTR1625 is ONLY supported with MSM8974AB ▪ Sheet 8: ▫ Added note that WTR1625 is ONLY supported with MSM8974AB ▪ Sheet 9: ▫ Added a provision for RC filter (10 pF DNI capacitor along with the existing 0 Ω resistor) on PM8841 S5B, S6B, S7B and S8B (VSENSE_KRAIT_0P9 on MSM) to reduce multi-pulsing of FT SMPS

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K (cont.)	May 2013	▪ Sheet 15: ▫ Updated note for XO_OUT_D0 ▫ Corrected the typo in AMUX_HW_ID pin note ▪ Sheet 18: ▫ Confirmed addition of alternate part On-semi NCP706 for BHELPER ▪ Sheet 19: ▫ Added the provision for RC filter (10 pF DNI capacitor and 0 Ω resistor) on PM8841 S2B and S4B to reduce multi-pulsing of FT SMPS ▪ Sheet 31: ▫ Updated note for C92 and L56 ▫ Moved L56 close to WCD from sheet 32 ▪ Sheet 32: ▫ Moved L56 close to WCD ▪ Sheet 37 ▫ Replaced TPS22921 part with TPS22922 and installed it, DNIed R2705 ▫ Added note for the 1K Ω PD resistor on RFFEx_DATA signals ▪ Sheet 37 and Sheet 38: ▪ Updated the net name of GPIO 106, 107, 110, 111, 118, 119, 124, 125 to corresponding GRFC numbers. Customer can refer to each RF schematic for the dedicated signal connection.
L	July 2013	▪ Sheet 3: ▫ Updated note for WCN_XO voltage divider – the circuit is not required if using MSM device rev. 2.2 and later. ▫ Updated the note for 33 pF capacitors (C93 and C94) on PMIC_SPMI_CLK/DATA lines. ▪ Sheet 4: ▫ Changed net name of CODEC_INT1_N to CODEC_INT1 because it is active high signal. ▪ Sheet 5: ▫ Changed net name of CODEC_INT2_N to CODEC_INT2 because it is active high signal. ▪ Sheet 17: ▫ Added LDO1 helper buck when 3 GB (6-die) LPDDR3 is used. ▪ Sheet 30: ▫ Changed net name of CODEC_INT1_N and CODEC_INT2_N to CODEC_INT1 and CODEC_INT2, respectively. ▪ Sheet 37: ▫ Added note that load switch Q20 is not required for MSM8x74AB designs.

Revision	Date	Description
M	August 2013	▪ Sheet 3 ▫ Added two 1 MΩ pull-down resistors on MSM pins AN45 and AP44 to eliminate the VDD_P3 current leakage; for detailed information, see the *MSM8274/MSM8674/ MSM8974 Device Revision Guide* (80-NA437-4), issue 29. ▫ Changed SDC1_CLK termination resistor to 33 Ω for better signal integrity. It is recommended for eMMC 5.0 HS400 mode. ▫ Changed C93 and C94 to 15 pF. ▫ Updated the note for SPMI and added a reference to the *MSM8x74/APQ8074 SPMI False Detection of the Sequence Start Condition (SSC) Application Note* (80-NA437-14). ▪ Sheet 4 ▫ Added net NFC_DISABLE on MSM GPIO_13 for QCA1990. ▪ Sheet 13 ▫ Removed assigned MSM pin numbers for decoupling capacitors to avoid confusion. ▪ Sheet 17 ▫ Changed L57 to 0.47 µH per the LDO1 helper component vendor's recommendation. ▫ Added a note for an LDO1 helper buck alternative part: Richtek RT8088AWSC. ▫ Added a note for the PMIC pin connection. ▪ Sheet 18 ▫ Updated the BHELPER LDO alternative part number with On Semi part NCP706MX21TAG. ▪ Sheet 22 ▫ Corrected the connection for net UIM1_NFC_SWP_CONN. ▫ Added the VDD_UIM1 option if QCA1990 is used. ▪ Sheet 31 ▫ Updated the ferrite bead component for filtering at the headphone outputs to meet both audio and FM performance specifications during audio/FM concurrency: ▫ Changed L52 and L53 to 470 Ω; removed C80, C81, C82, C83, C92, and L56; and added a 0 Ω resistor close to the codec. ▫ Replaced the 0 Ω resistor R2709 with a short. ▪ Sheet 32 ▫ Updated the ferrite bead component for filtering at the headphone outputs to meet both audio and FM performance specifications during audio/FM concurrency: ▫ Changed C3669, C3670, and C89 to 470 pF; removed C3671 and C3668; and changed L55 to MMZ1608Q102B. ▫ Replaced 0 Ω resistors R273, R275, R276, R277, R280, and R282 with a short. ▪ Sheet 36 ▫ Added the net NFC_DISABLE on J9 pin 19 for QCA1990. ▫ Changed the connection for J9 pin26 to VDD_UIM1. ▪ Sheet 37 ▫ Removed the note for Q20 with MSM8974AB design. ▪ Updated Table 2

Revision I has been omitted per QTI documentation standards.

1 Reference Schematic

1.1 Introduction

This document includes schematics and a part lists for the MSM8x74/MSM8x74AB + PM8941 + PM8841 + WCD9320 + WCN3660 reference design. The schematic and parts list included in this document are preliminary and are intended only as a reference.

1.2 Applicable documents

The following schematic documents are available for this chipset.

Table 1 Related documents

DCN	Title
80-NA437-41 (this document)	*MSM8274/MSM8274AB, MSM8674/MSM8674AB, and MSM8974/MSM8974AB Baseband Reference Schematic*
80-NA437-42	*WTR1605(L) RF (NA, EU) for MSM8974/MDM9x25(M) Preliminary Reference Schematic*
80-NA437-42A	*WTR1605(L) RF (NA, EU) for MSM8974/MDM9x25(M) – APT Only Reference Schematic*
80-NA437-43	*WTR1605(L) RF (ATT/KR Carrier Aggregation) for MSM8974/MDM9x25(M) Preliminary Reference Schematic*
80-NA437-43A	*WTR1605(L) RF (ATT/KR Carrier Aggregation) for MSM8974/MDM9x25(M) – APT Only Preliminary Reference Schematic*
80-NA437-44A	*WTR1605/WTR1605L SVLTE/SVDO/Non-SVDO RF with HC-PA and MSM8974/MDM9x25M/MDM9x25 RF Reference Schematic*
80-NA437-45	*WTR1605(L) RF (APAC) for MSM8974/MDM9x25(M) Design Example*
80-NA437-45A	*WTR1605(L) RF (APAC) for MSM8974/MDM9x25(M) – APT Only Preliminary Reference Schematic*
80-NA437-46	*WTR1605(L) RF (CMCC) for MSM8974/MDM9x25(M) – ET Design Example Preliminary Reference Schematic*
80-NA437-46A	*WTR1605(L) RF (CMCC) for MSM8974/MDM9x25(M) – APT Only Preliminary Reference Schematic*
80-N1622-44	*WCN3660 Wireless Connectivity Reference Schematic*

The Qualcomm Technologies, Inc. (QTI) Modem Test Platform (MTP) for this chipset includes a large baseband card and an RF card.

- The baseband card consists of the MSM8x74/MSM8x74AB, PM8941, PM8841, WCD9320, and WCN3660 devices, along with all of the peripheral connectors.
- The RF card consists of the WTR1605, WTR1605L, and WTR1625.

1.3 MSM8x74/MSM8x74AB baseband schematic

This schematic is subject to change without notice and is not optimized for production phones due to its conservative design approach and QTI internal test requirements.

REVISIONS

REV	DESCRIPTION	DATE	APPROVED
M	SEE REVISION HISTORY	-----	-----

MSM8274/MSM8274AB, MSM8674/MSM8674AB, MSM8974/MSM8974AB
BASEBAND REFERENCE SCHEMATIC

CONTRACT NO.	
DRAWN BY / DATE	
ENGINEER	
PROJECT ENGINEER	
QUALITY ASSURANCE	
CONFIGURATION	
DESIGN ACTIVITY APPROVAL	
DESIGN APPROVAL	

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE

SCHEMATIC

MSM8X74/8X74AB BASEBAND REF SCHEMATIC

SIZE	DRAWING NO	REV
D	80-NA437-41	M

SCALE	RELEASE DATE	SHEET
NONE		1 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1274		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

TABLE OF CONTENTS

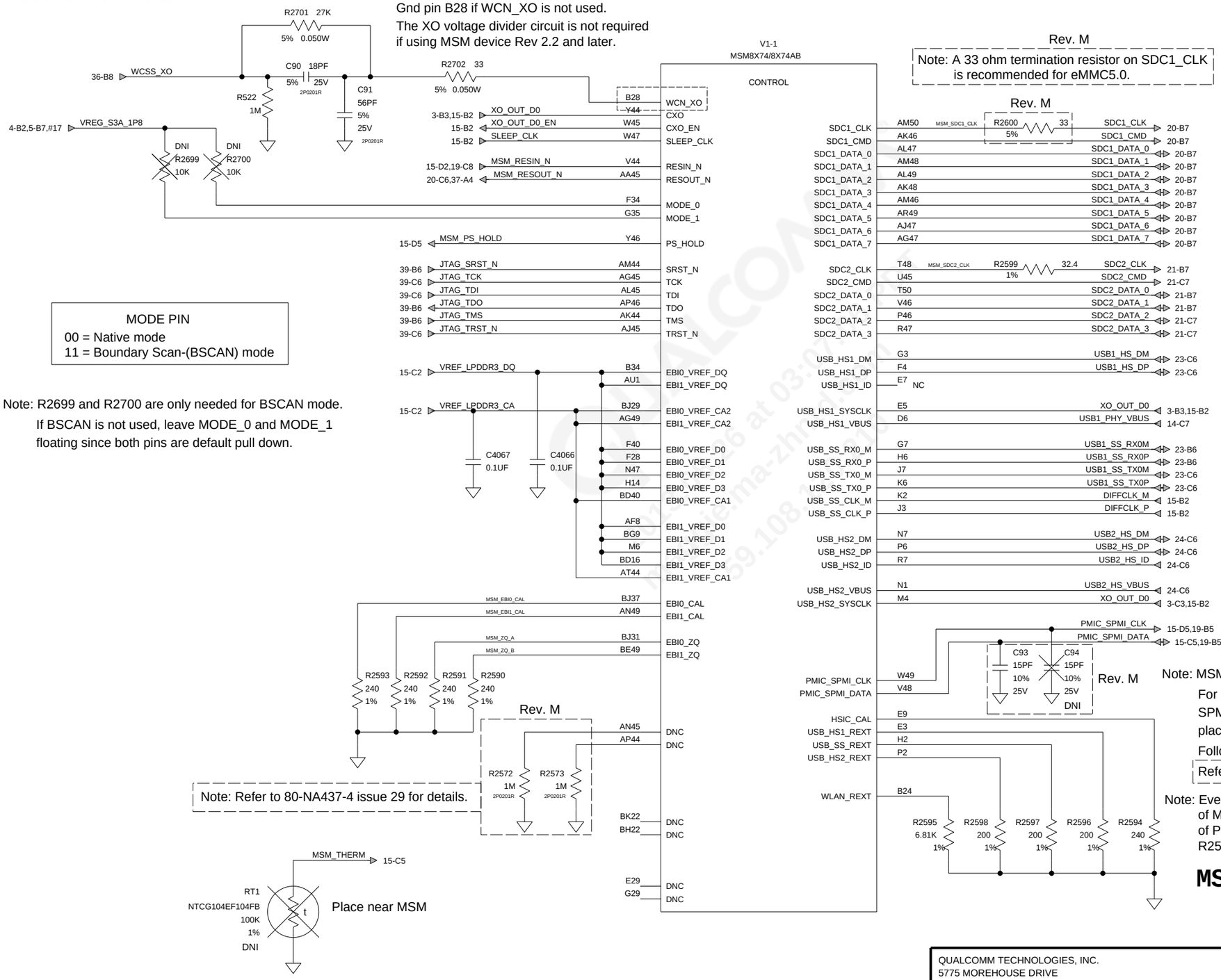
QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE			
MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
SIZE		DRAWING NO	REV
D		80-NA437-41	M
SCALE NONE			SHEET 2 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1245		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note: Place XO voltage divider close to WCN.
R2702 is only needed if the XO voltage divider is placed more than 2 inches from MSM pin.
Place R2702 close to the XO voltage divider. Gnd pin B28 if WCN_XO is not used.
The XO voltage divider circuit is not required if using MSM device Rev 2.2 and later.



Note: Place R2600 and R2599 close to MSM8974 within 5mm. Keep SDC1 and SDC2 trace lengths less than 50mm and length matching within 1mm.

Note: MSM8x74 ES2.1/CS devices, DO NOT INSTALL C93 and C94.
For MSM8x74 Rev 2.2 and MSM8x74AB devices, C93 (on SPMI_DATA) MUST BE INSTALLED and C94 (on SPMI_CLK) DNI placeholder is required. Place C93 close to pin V48 of MSM. Rev. M
Follow SPMI trace layout guidelines mentioned in 80-NA437-5B.
Refer to 80-NA437-14 Application Note for more details. Rev. M

Note: Even if SS-USB is not used, USB_SS_CLK_P/M pins of MSM8974 must be connected to DIFFCLK_P/M pins of PM8941 for USB_HS1 operation using the USB3.0 controller R2597 must be installed.

MSM8X74/8X74AB - CONTROL

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 3 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1231		

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

V1-4
MSM8X74/8X74AB

GPIO1

BH12	GPIO_0	GPIO_37	A19	WCSS_WLAN_DATA_1	36-B4
BF14	GPIO_1	GPIO_38	F18	WCSS_WLAN_DATA_0	36-B2
BF12	GPIO_2	GPIO_39	F20	WCSS_WLAN_SET	36-B4
BG13	GPIO_3	GPIO_40	E17	WCSS_WLAN_CLK	36-B2
C29	GPIO_4	GPIO_41	D18	WCSS_FM_SSBI	36-B8
D30	GPIO_5	GPIO_42	C19	FM_DATA	36-B5
4-D2,26-C7 TS_I2C_SDA C31	GPIO_6	GPIO_43	B18	BT_CTL	36-C5
4-D2,26-C7 TS_I2C_SCL E31	GPIO_7	GPIO_44	C21	BT_DATA	36-B5
BG11	GPIO_8	GPIO_45	D16		
BE13	GPIO_9	GPIO_46	B14		
4-A3,30-B7,33-B8 SENSORS2_I2C_SDA BH10	GPIO_10	GPIO_47	A15		
4-A3,30-B7,33-B8 SENSORS2_I2C_SCL BE11	GPIO_11	GPIO_48	C17		
AL3	GPIO_12	GPIO_49	AA49	UIM2_DATA	22-B7
36-C8 NFC_DISABLE AJ3 Rev. M	GPIO_13	GPIO_50	AC49	UIM2_CLK	22-B7
AG3	GPIO_14	GPIO_51	AE47	UIM2_RST	22-B7
28-C4 CAM0_MCLK0 C7	GPIO_15	GPIO_52	AH50	UIM2_DETECT	22-D4
A7	GPIO_16	GPIO_53	B22		
27-B1 CAM1_MCLK2 B8	GPIO_17	GPIO_54	D22		
27-B5 WEBCAM_RESET_N C11	GPIO_18	GPIO_55	C23		
4-C2,28-C4 CAM0_I2C_SDA0 F12	GPIO_19	GPIO_56	A23		
4-C2,28-C4 CAM0_I2C_SCL0 E11	GPIO_20	GPIO_57	C33	TS_I2C_MODE	26-C7
4-C2,27-B1 CAM1_I2C_SDA1 G15	GPIO_21	GPIO_58	C35	DISPLAY_EN	25-B5
4-B2,27-B1 CAM1_I2C_SCL1 D10	GPIO_22	GPIO_59	D34	NFC_IRQ	36-C8
E13	GPIO_23	GPIO_60	E35	TS_RESET_N	26-C7
15-D5 FLASH_LED_NOW B10	GPIO_24	GPIO_61	D36	TS_CHG_N	26-C7
D12	GPIO_25	GPIO_62	D38	SD_CARD_DET_N	21-B7
D14	GPIO_26	GPIO_63	D40	CODEC_RESET_N	30-D7
A11	GPIO_27	GPIO_64	D48	SENSOR_RESET_N	33-C5
E15	GPIO_28	GPIO_65	G47	ACCEL2_INT2	33-A5
4-B2,36-C8 NFC_I2C_SDA F16	GPIO_29	GPIO_66	F48	GYRO_INT	33-C4
4-B2,36-C8 NFC_I2C_SCL G17	GPIO_30	GPIO_67	H46	COMPASS_INT	33-C1
29-B7 HDMI_CEC AN3	GPIO_31	GPIO_68	H48		
29-A7 HDMI_DDC_CLK AM4	GPIO_32	GPIO_69	G49		
29-A7 HDMI_DDC_DATA AM2	GPIO_33	GPIO_70	J45	SLIMBUS_CLK	30-D7
29-B7 HDMI_HOT_PLUG_DET AP4	GPIO_34	GPIO_71	K46	SLIMBUS_DATA	30-D7
36-B8 WCSS_BT_SSBI D20	GPIO_35	GPIO_72	L45	CODEC_INT1	30-C3
36-B4 WCSS_WLAN_DATA_2 G19	GPIO_36	GPIO_73	K48	ACCEL2_INT1	33-A5

Note: Using GPIO_54/55/56/91 at frequencies greater than 100KHz or GPIO_53/92 greater than 10MHz may degrade WLAN Tx EVM and spectral emission mask performance ONLY when used concurrently with WCN.

4-B2,16-C3,33-A8 VREG_LVS1_1P8 — R2733 2.2K, R2734 2.2K
4-C7,26-C7 TS_I2C_SDA
4-C7,26-C7 TS_I2C_SCL

16-C4,27-B1,28-C4 VREG_LVS2_1P8 — R2727 2.2K, R2728 2.2K
4-C7,28-C4 CAM0_I2C_SDA0
4-C7,28-C4 CAM0_I2C_SCL0

16-C4,27-B1,28-C4 VREG_LVS2_1P8 — R2729 2.2K, R2730 2.2K
4-C7,27-B1 CAM1_I2C_SDA1
4-C7,27-B1 CAM1_I2C_SCL1

3-D8,4-B2,#18 VREG_S3A_1P8 — R2754 2.2K, R2755 2.2K
5-C6,34-B6 HAPTICS_I2C_SDA
5-C6,34-B6 HAPTICS_I2C_SCL

3-D8,4-B3,#18 VREG_S3A_1P8 — R2731 2.2K, R2732 2.2K
4-B7,36-C8 NFC_I2C_SDA
4-B7,36-C8 NFC_I2C_SCL

4-B2,16-C3,33-A8 VREG_LVS1_1P8 — R2725 2.2K, R2726 2.2K
4-C7,30-B7,33-B8 SENSORS2_I2C_SDA
4-C7,30-B7,33-B8 SENSORS2_I2C_SCL

4-B3,16-C3,33-A8 VREG_LVS1_1P8 — R2737 2.2K, R2738 2.2K
5-C6,33-A7 SENSORS1_I2C_SDA
5-C6,33-A7 SENSORS1_I2C_SCL

MSM8X74/8X74AB - GPIO (0-73)

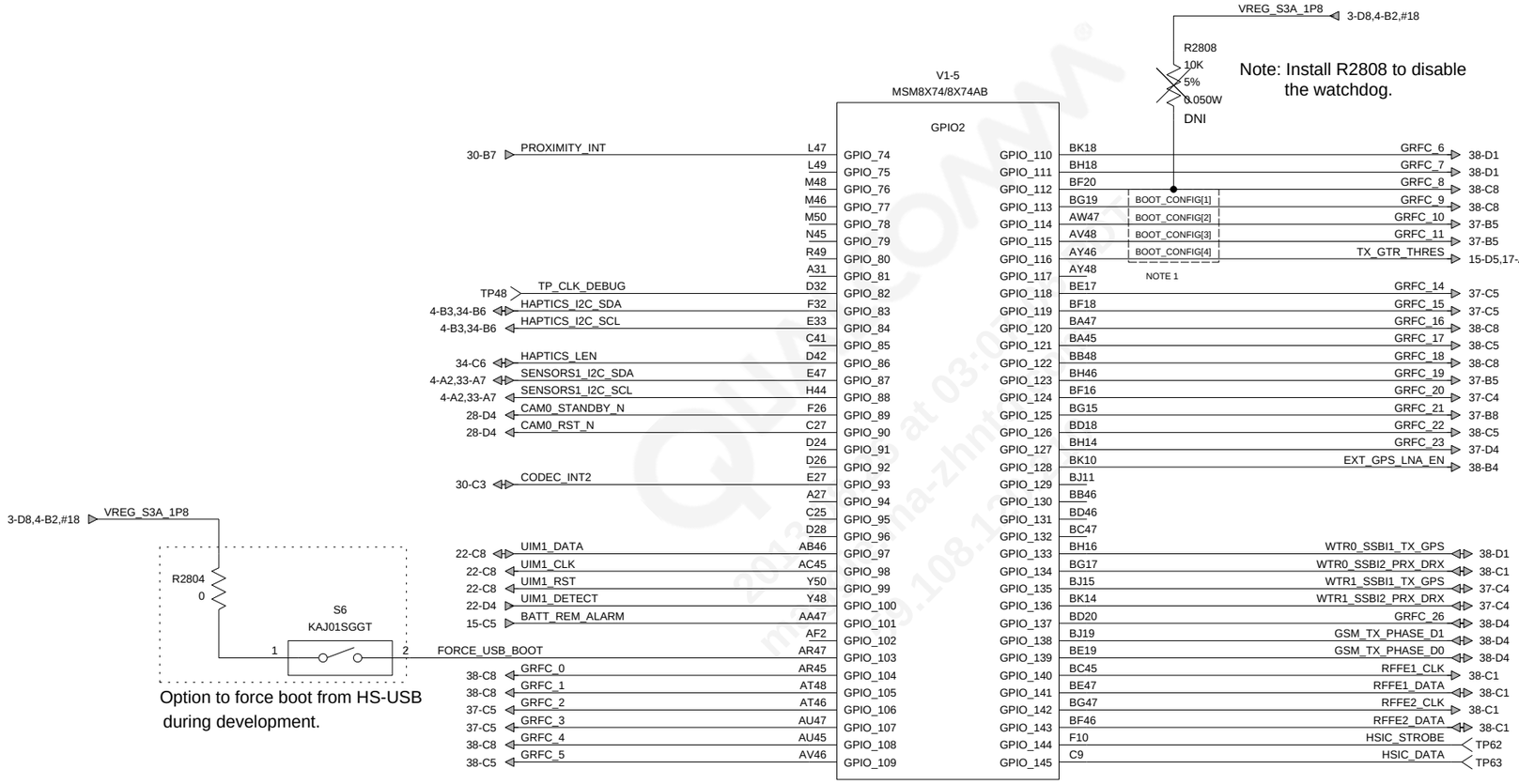
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 4 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1172		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

NOTE 1

DEFAULT BOOT DEVICE = eMMC
BOOT_CONFIG[4:1] = 0b'0000

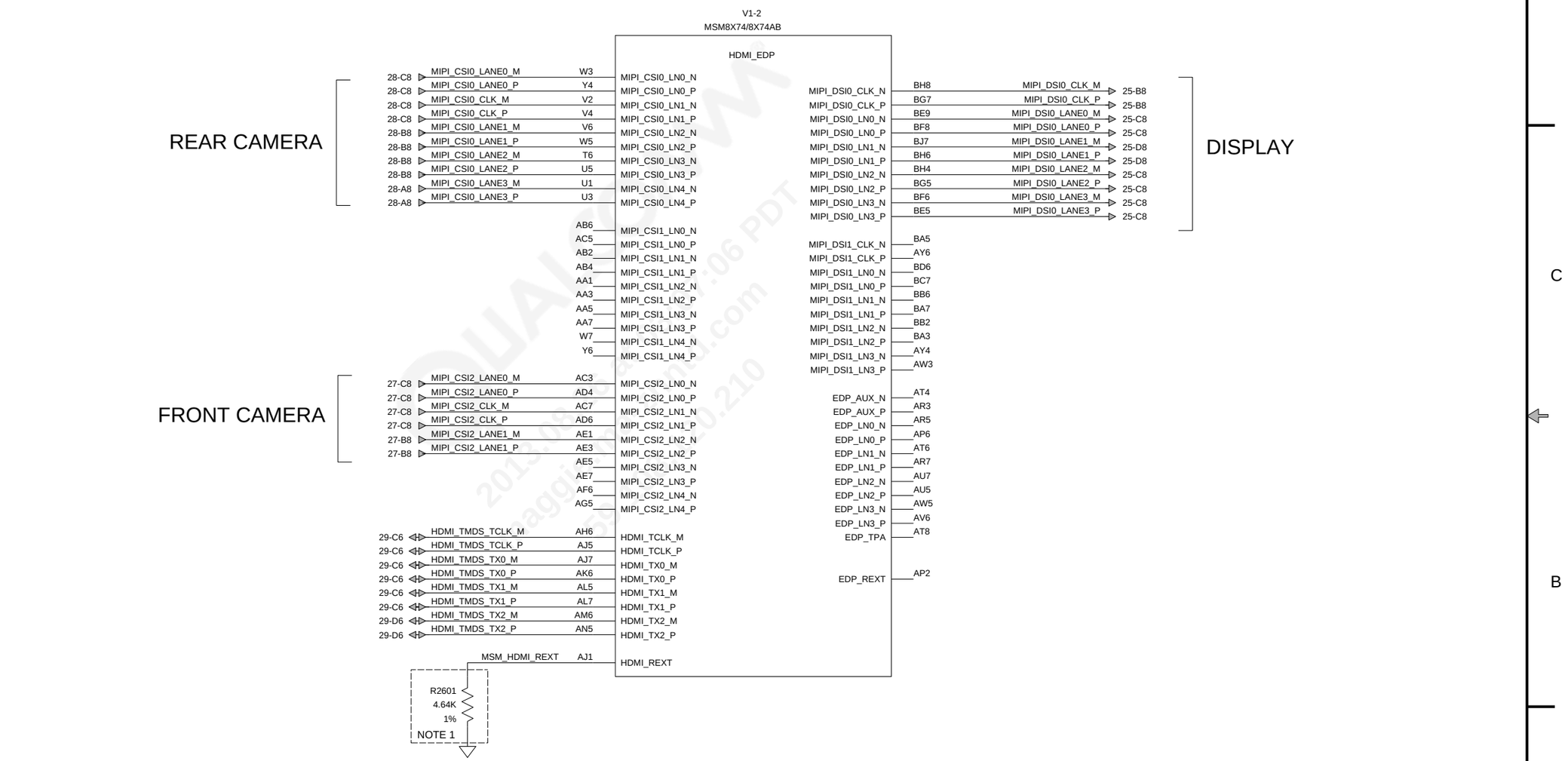


MSM8X74/8X74AB - GPIO (74-145)

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 5 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1197		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



NOTE 1: PLACE COMPONENT CLOSE TO MSM

MSM8X74/8X74AB - MIPI DSI, CSI & HDMI

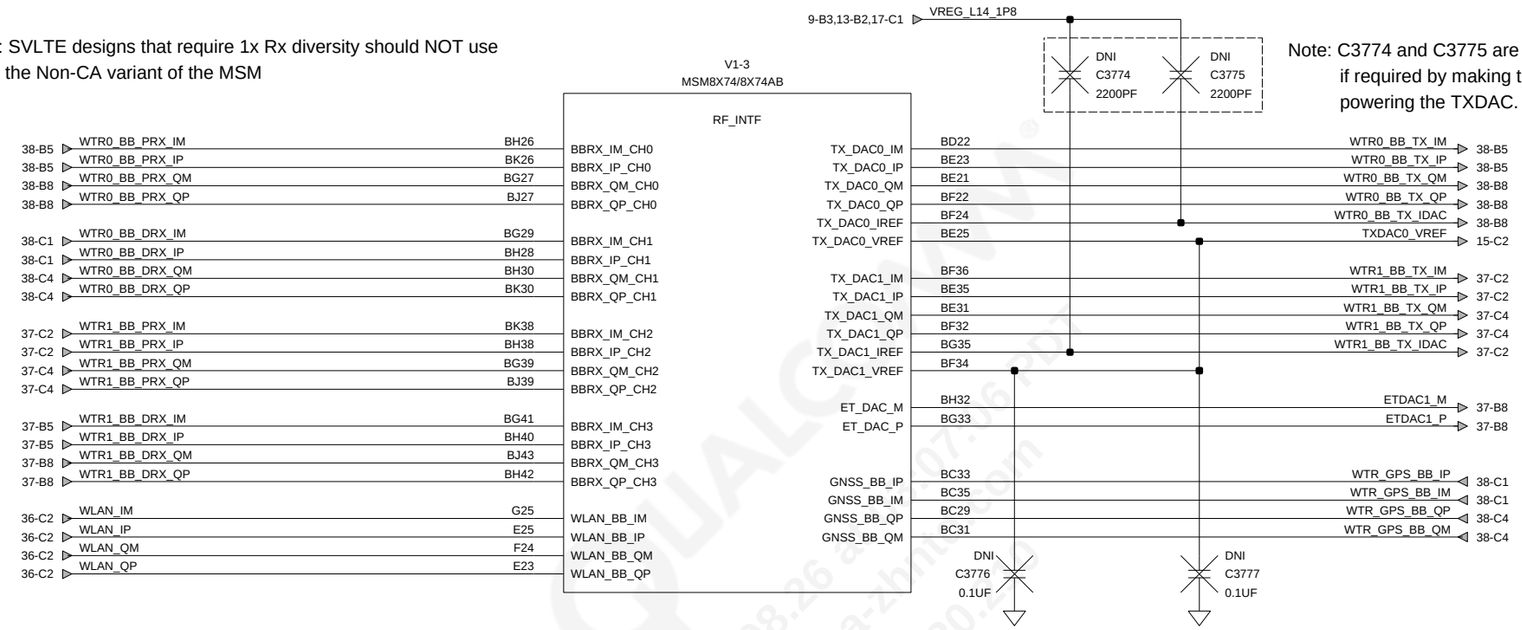
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 6 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1132		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note: This schematic shows the connections for a two WTR design and ET usage.

Notes: SVLTE designs that require 1x Rx diversity should NOT use the Non-CA variant of the MSM



Note: C3774 and C3775 are placeholders to improve RF performance if required by making the noise common mode with the LDO powering the TXDAC.

WTR1625 is ONLY supported with MSM8974AB.

TXDAC1 and ETDAC connections under differrent RF configurations						
		VDD_A2 (pin BE33)	TX_DAC1_I/Q	ETDAC_P/M	TX_DAC1_IREF	TX_DAC1_VREF
Single WTR designs like ATT CSFB (with one WTR1605L/WTR1625L) or Carrier Aggregation (CA) with WTR1625L+WFR1620						
TX_DAC1_I/Q Unused	ET Unused	GND	GND	Floating	GND	GND
TX_DAC1_I/Q Unused	ET Used	PM8941 VREG_L14	GND	QFE1100 AMP_INP/M	PM8941 VREG_L14	PM8941 MPP_03
Two WTR designs like Carrier Aggregation (WTR1605L+WTR1605L), or SVLTE (WTR1605L+WTR1605), or SVLTE (WTR1625L+WTR1625)						
TX_DAC1_I/Q Used	ET Unused	PM8941 VREG_L14	WTR1_I/Q	Floating	WTR1_DAC_IREF	PM8941 MPP_03
TX_DAC1_I/Q Used	ET Used	PM8941 VREG_L14	WTR1_I/Q	QFE1100 AMP_INP/M	WTR1_DAC_IREF	PM8941 MPP_03

MSM8X74/8X74AB - RF INTERFACE

TITLE	MSM8X74/8X74AB BASEBAND REF SCHEMATIC
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE D | DRAWING NO 80-NA437-41 | REV M SCALE NONE | SHEET 7 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1181		

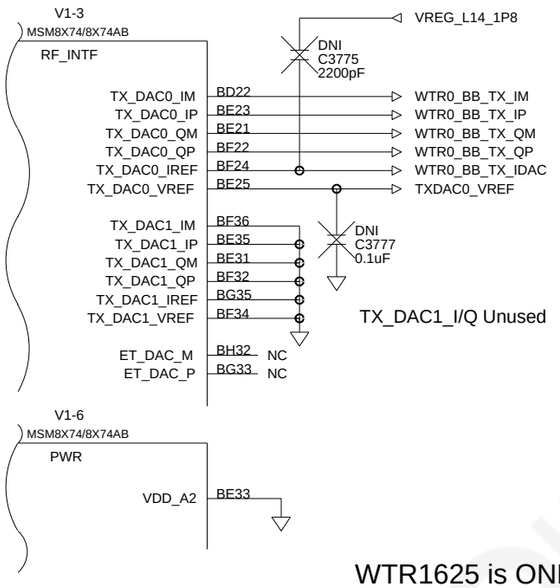
REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

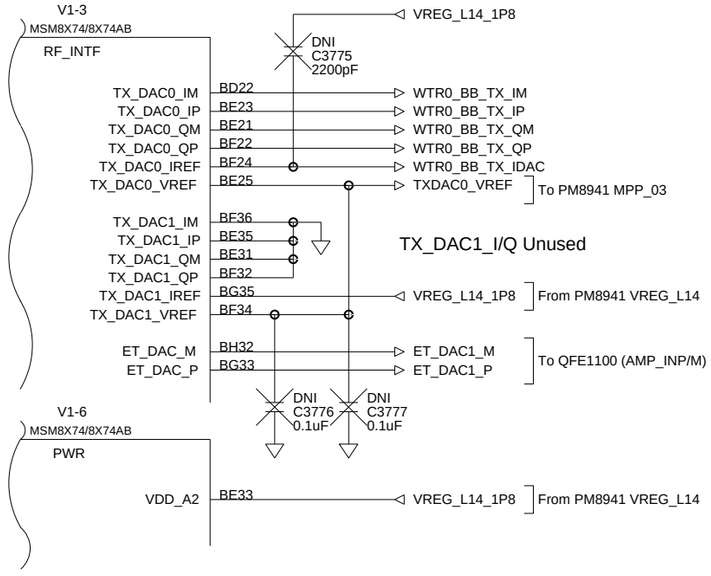
TXDAC1 and ETDAC connections under different RF configurations

Single WTR designs like ATT CSFB (with one WTR1605L/WTR1625L) or Carrier Aggregation (CA) with WTR1625L+WFR1620

ET Unused



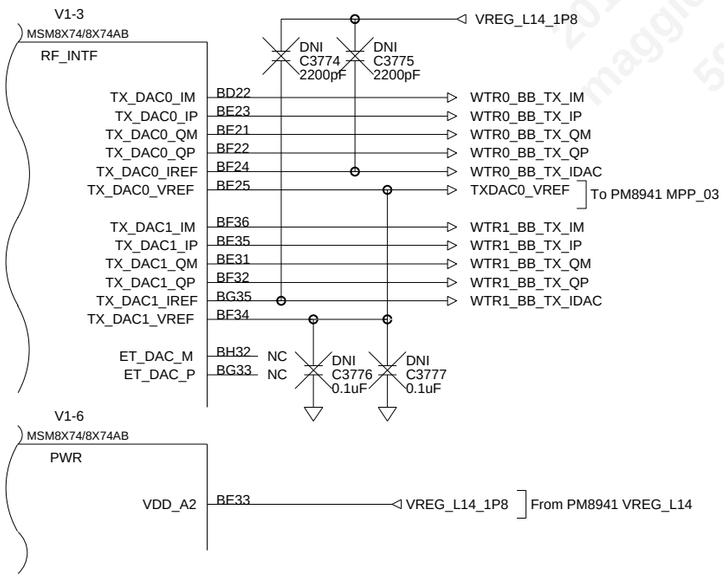
ET Used



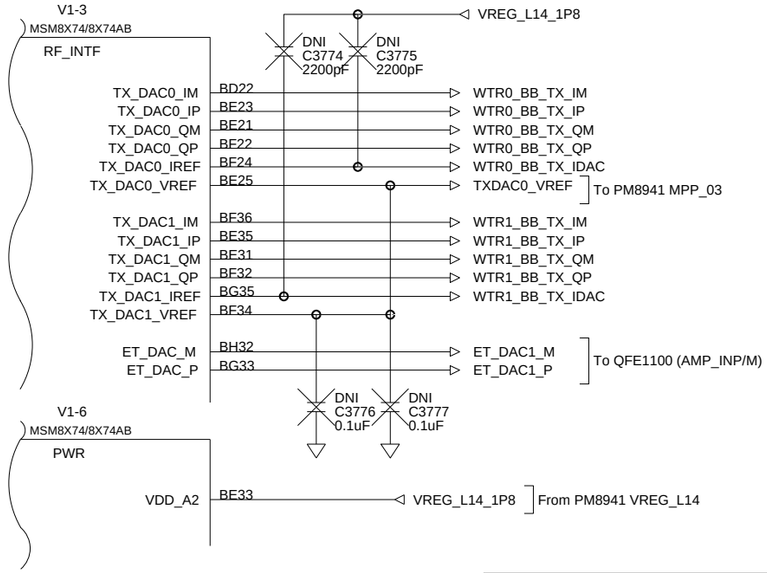
WTR1625 is ONLY supported with MSM8974AB.

Two WTR designs like Carrier Aggregation (WTR1605L+WTR1605L), or SVLTE (WTR1605L+WTR1605), or SVLTE (WTR1625L+WTR1625)

ET Unused



ET Used

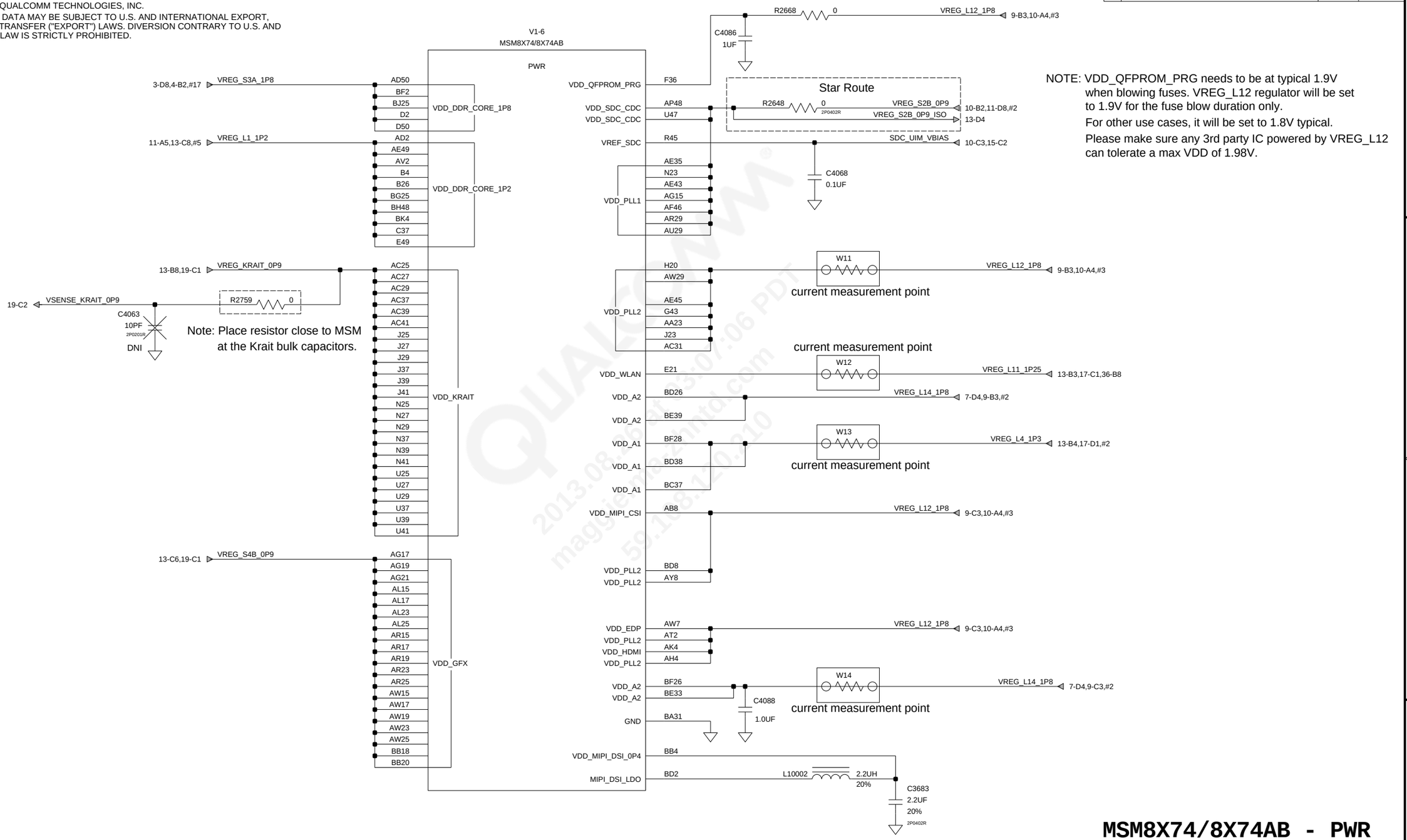


TXDAC1 & ETDAC RF CONFIGURATIONS

TITLE			
MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE D	DRAWING NO 80-NA437-41	REV M
	SCALE NONE		SHEET 8 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	292		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



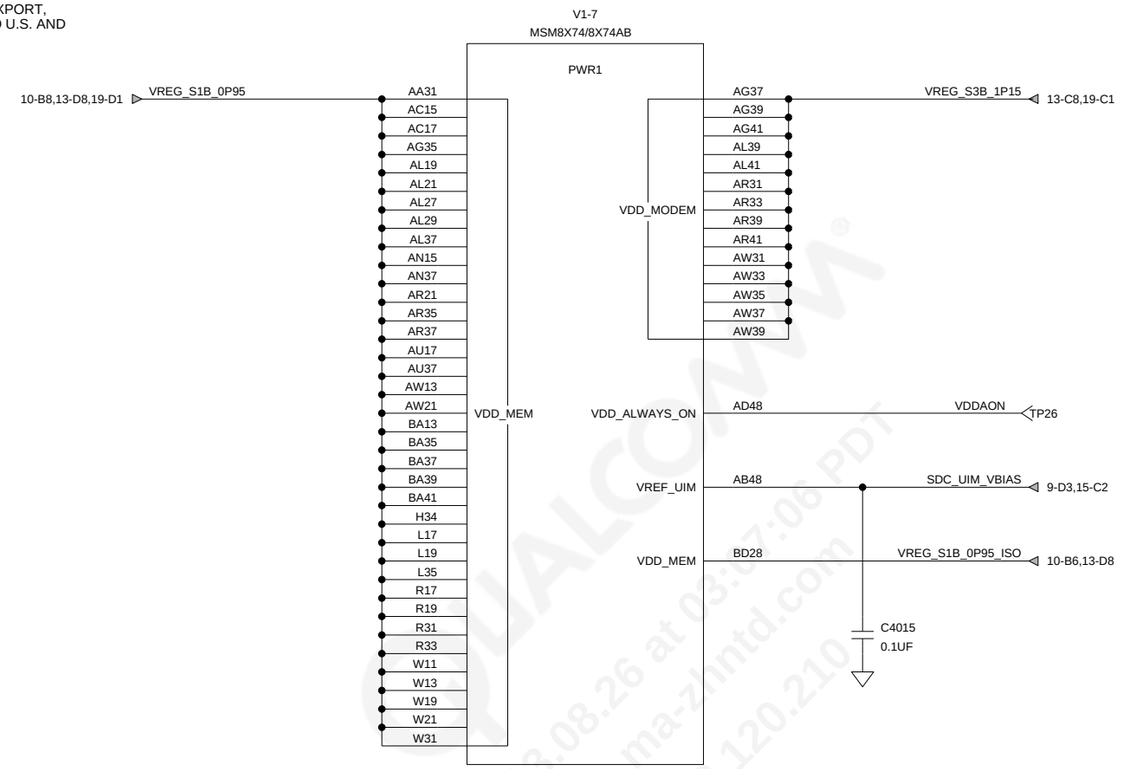
NOTE: VDD_QFPROM_PRG needs to be at typical 1.9V when blowing fuses. VREG_L12 regulator will be set to 1.9V for the fuse blow duration only.
For other use cases, it will be set to 1.8V typical.
Please make sure any 3rd party IC powered by VREG_L12 can tolerate a max VDD of 1.98V.

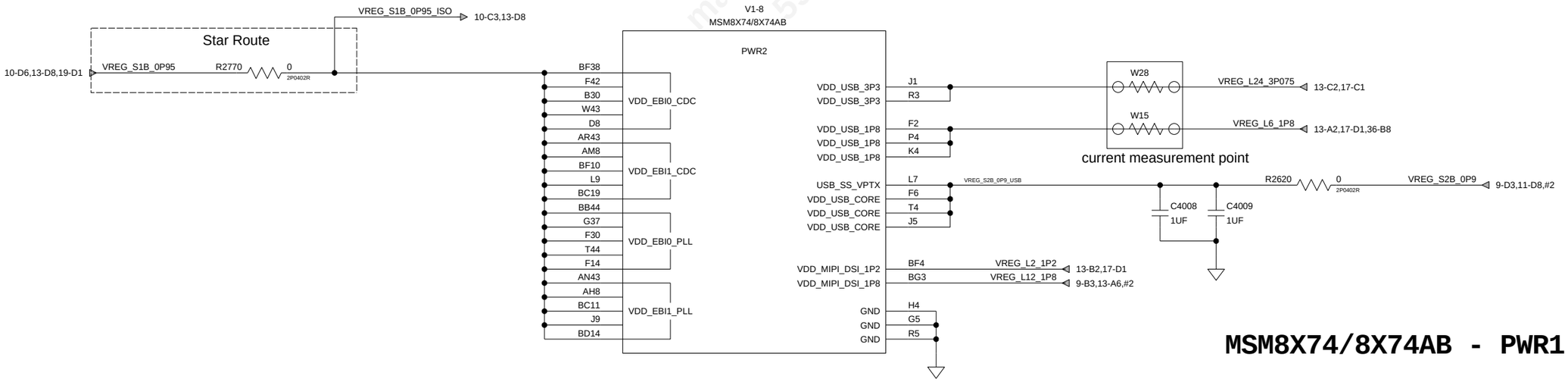
MSM8X74/8X74AB - PWR

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 9 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1157		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED





MSM8X74/8X74AB - PWR1 & PWR2

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 10 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1151		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

V1-9
MSM8X74/8X74AB
PWR3

9-D3,10-B2,#2 VREG_S2B_0P9

VDD_CORE: AB44, AC11, AC13, AC19, AC21, AE27, AG11, AG13, AG23, AG25, AG27, AG29, AG31, AG33, AH44, AL11, AL13, AL31, AL33, AL35, AU11, AV42, AW11, BC21, BC41, BD36, H12, H16, H18, K44, L11, L13, L15, L31, L33, R11, R13, R15, R21, R23, R25, R35, W15, W17, W23, W33, W35, W39, W41

VDD_P1: AG7, AH2, AJ49, AN47, AV44, B6, B16, B38, BA1, BD10, BD48, BE15, BF40, BJ5, BJ17, BJ35, BJ45, BJ47, BK32, E1, G11, G27, G41, J49, K8, L3, P44, T2, U49

W17 — current measurement point
VREG_L1_1P2 9-D7,11-A5,#6

VDD_P2: T46 VREG_L13_2P95 13-C2,17-C1,21-C4

W16 — current measurement point
VDD_P3: AH46, AK8, AY44, BC15, BC39, BG21, E19, G9, G23, G31, G39, G45, N5, P48
VREG_S3A_1P8 3-D8,4-B2,#18

VDD_P4: C15 VDDPX_4 — R2622 0 2P0402R VREG_L1_1P2 9-D7,11-A5,#6; R2623 DNI 0 2P0402R VREG_S3A_1P8 3-D8,4-B2,#18

VDD_P5: AC47 VREG_L9_UIM1 13-C5,17-C1,#2

VDD_P6: AF48 VREG_L10_UIM2 13-B5,17-C1,22-B7

VDD_P7: AH48 VDDPX_7 — R2624 DNI 0 2P0402R VREG_L1_1P2 9-D7,11-B5,#6; R2625 0 2P0402R VREG_S3A_1P8 3-D8,4-B2,#18

V1-13
MSM8X74/8X74AB
NC

NC: A35, A39, A43, A47, AA43, AB42, AC43, AD8, AD42, AF4, AH42, AJ43, AK2, AK42, AL43, AP8, AR11, AR13, AT50, AU49, AW41, AW43, AW49, AY50, B12, B32, B36, B40, B42, B44, B46, B48, BA33, BA43, BA49, BB22, BC1, BC3, BC5, BC9, BC17, BC23, BC43, BC49, BD30, BD32, BD34, BD44, BD50, BE3, BE27, BE43, BE45, BF44

NC: BG23, BG31, BG37, BG43, BG45, BG49, BH2, BH20, BH24, BH36, BH44, BH50, BJ9, BJ13, BJ23, BK6, BK34, BK42, BK46, C3, C5, C39, C43, C45, C47, C49, D4, D44, D46, E37, E39, E41, E43, E45, F8, F44, F46, H50, J47, L5, L43, M2, M8, M44, N3, N43, N49, P8, T8, U7, V8, W37, Y2

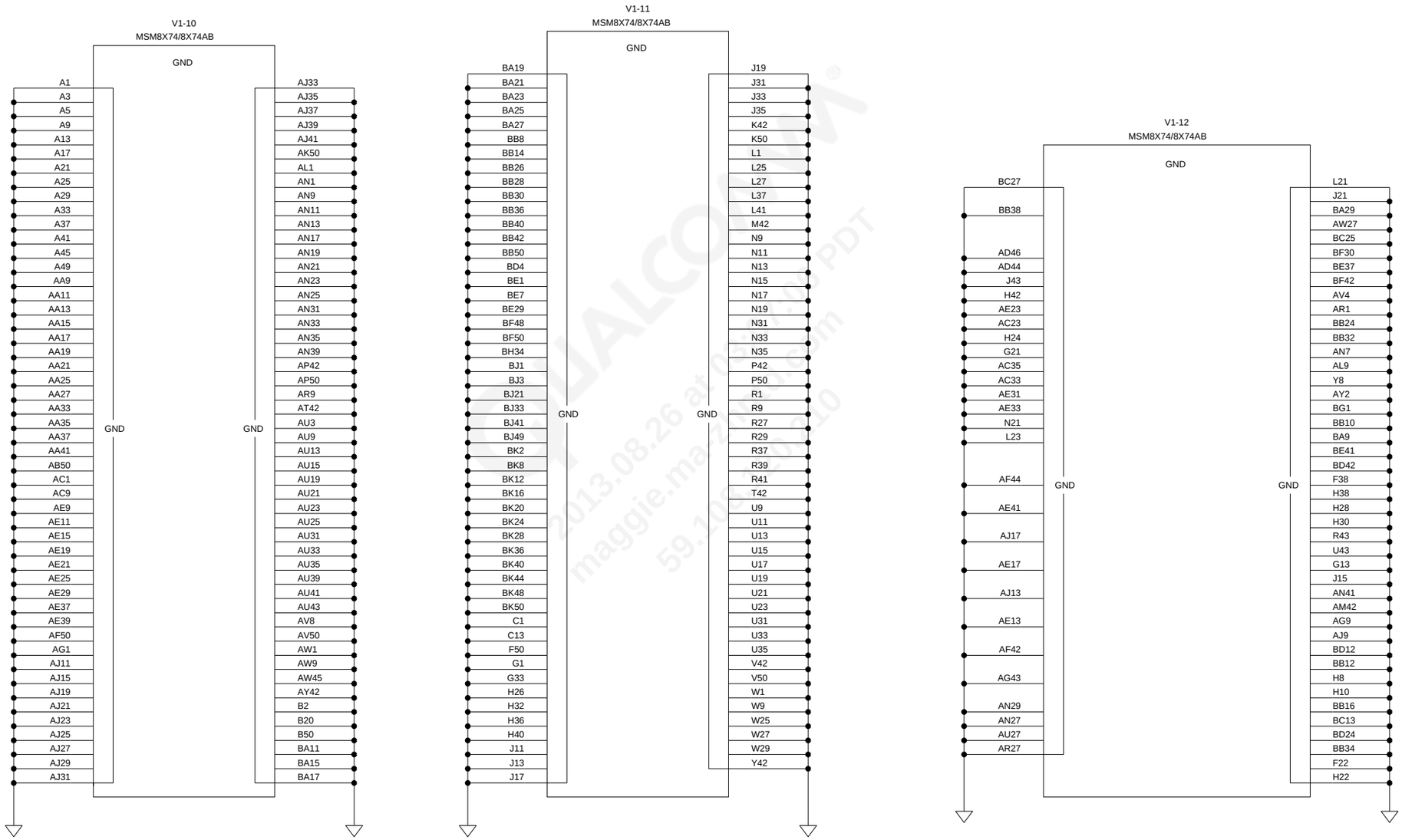
Note: The AT50 ball will be SDC1_RCLK on MSM8974AB and may need to be routed if eMMC5.0 is planned.

MSM8X74/8X74AB - PWR3 & N/C

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 11 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1131		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



MSM8X74/8X74AB - GROUND

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 12 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1110		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

MSM BYPASS CAPACITORS

PLACE CLOSE TO MSM

(VDD_MEM)
10-B8,19-D1 VREG_S1B_0P95
C3846 C3848 C3849 C3847 C3850 C3852 C3853 C3851 C3854 C3855 C4010 C4012 C4013 C4011 C4014
1UF

(VDD_CORE)
9-D3,10-B2,#2 VREG_S2B_0P9
C3857 C3856 C3858 C3860 C3861 C3859 C3862 C3863
1UF

(VDD_EBI)
10-B6 VREG_S1B_0P95_ISO
C3834 C3836 C3837 C3835 C3838 C3840 C3841 C3839 C3842 C3844
1UF

9-D3 VREG_S2B_0P9_ISO (VDD_SDC_CDC,VDD_PLL1)
C3865 C3864 C3866 C3867
1UF

(VDD_P2)
11-B5,17-C1,21-C4 VREG_L13_2P95
C3914
1UF

(VDD_MODEM)
10-D3,19-C1 VREG_S3B_1P15
C3871 C3870 C3872 C3873
1UF

(VDD_GFX)
9-B7,19-C1 VREG_S4B_0P9
C3875 C3874 C3876 C3877
1UF

3-D8,4-B2,#18 VREG_S3A_1P8 (VDD_P3)
C4078 C4080 C4081 C4079 C3915 C3917 C3918 C3916 C3919 C3921 C3922 C3920
1UF

(VDD_P1, VDD_DDR_CORE_1P2)
9-D7,11-A5,#5 VREG_L1_1P2
C3894 C3896 C3897 C3895 C3898 C3900 C3901 C3899 C3902 C3903
1UF

C3904 C3906 C3907 C3905 C3908 C3910 C3911 C3909 C3912 C3913
1UF

(VDD_P5)
11-A5,17-C1,#2 VREG_L9_UIM1
C3931
1UF

3-D8,4-B2,#18 VREG_S3A_1P8 (VDD_DDR_CORE_1P8)
C3923 C3925 C3926 C3924
1UF

10-B3,17-C1 VREG_L24_3P075
C3953
1UF

(VDD_P6)
11-A5,17-C1,22-B7 VREG_L10_UIM2
C3932
1UF

9-C3,17-D1,#2 VREG_L4_1P3
C3933 C3934
1UF

7-D4,9-B3,17-C1 VREG_L14_1P8
C3935 C3936
1UF

(VDD_APCC)
9-C7,19-C1 VREG_KRAIT_0P9
C3878 C3880 C3881 C3879 C3882 C3884 C3885 C3883 C3886 C3887 C3888 C3890 C3891 C3889 C3892 C3893
1UF

(VDDA_WLAN)
9-C3,17-C1,36-B8 VREG_L11_1P25
C3938
1UF

10-A4,17-D1 VREG_L2_1P2
C3948
1UF

10-B3,17-D1,36-B8 VREG_L6_1P8
C3950 C3951 C3952
1UF

9-B3,10-A4,#2 VREG_L12_1P8
C3940 C3939 C3941 C3943 C3944 C3942 C3945 C3946
1UF

Rev. M

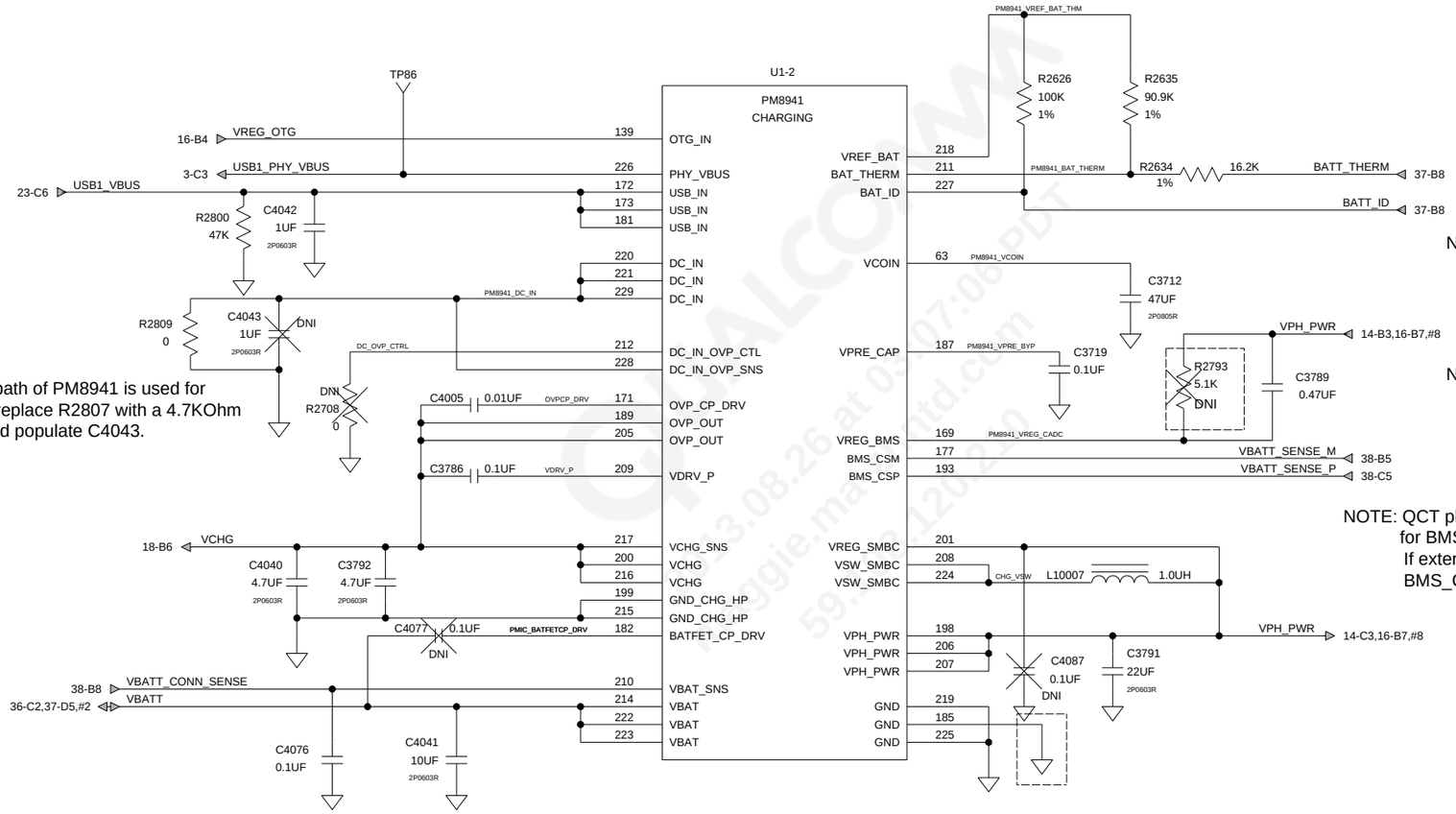
Removed MSM pin numbers

MSM BYPASS CAPACITORS

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 13 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1129		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



NOTE: If DC_IN path of PM8941 is used for charging, replace R2807 with a 4.7KOhm resistor and populate C4043.

NOTE: A qualified coin-cell or super cap is required to support RTC via cal RC when PMIC is OFF. A capacitor with effective capacitance of 10UF is required on VCOIN pin to support SMPL upto 2sec

NOTE: R2793 is required for ES1, ES2 samples of PMIC. It can be removed for ES3 and later samples. Refer to issue 3 in PM8941 DRG (80-NA555-4) for more details.

NOTE: QCT platform uses battery FET Rds, on as sense resistor for BMS. Customers can use external sense resistor if required. If external sense resistor is not used, BMS_CSP and BMS_CSM must be tied to VBAT of PMIC.

NOTE: It is recommended to connect pin 185 of PM8941 to GND directly using a dedicated via.

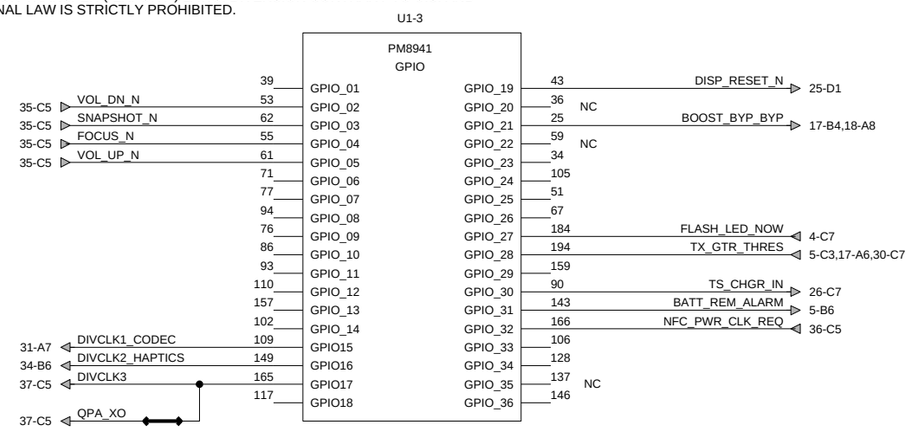
PM8941 - CHARGING

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 14 OF 44	

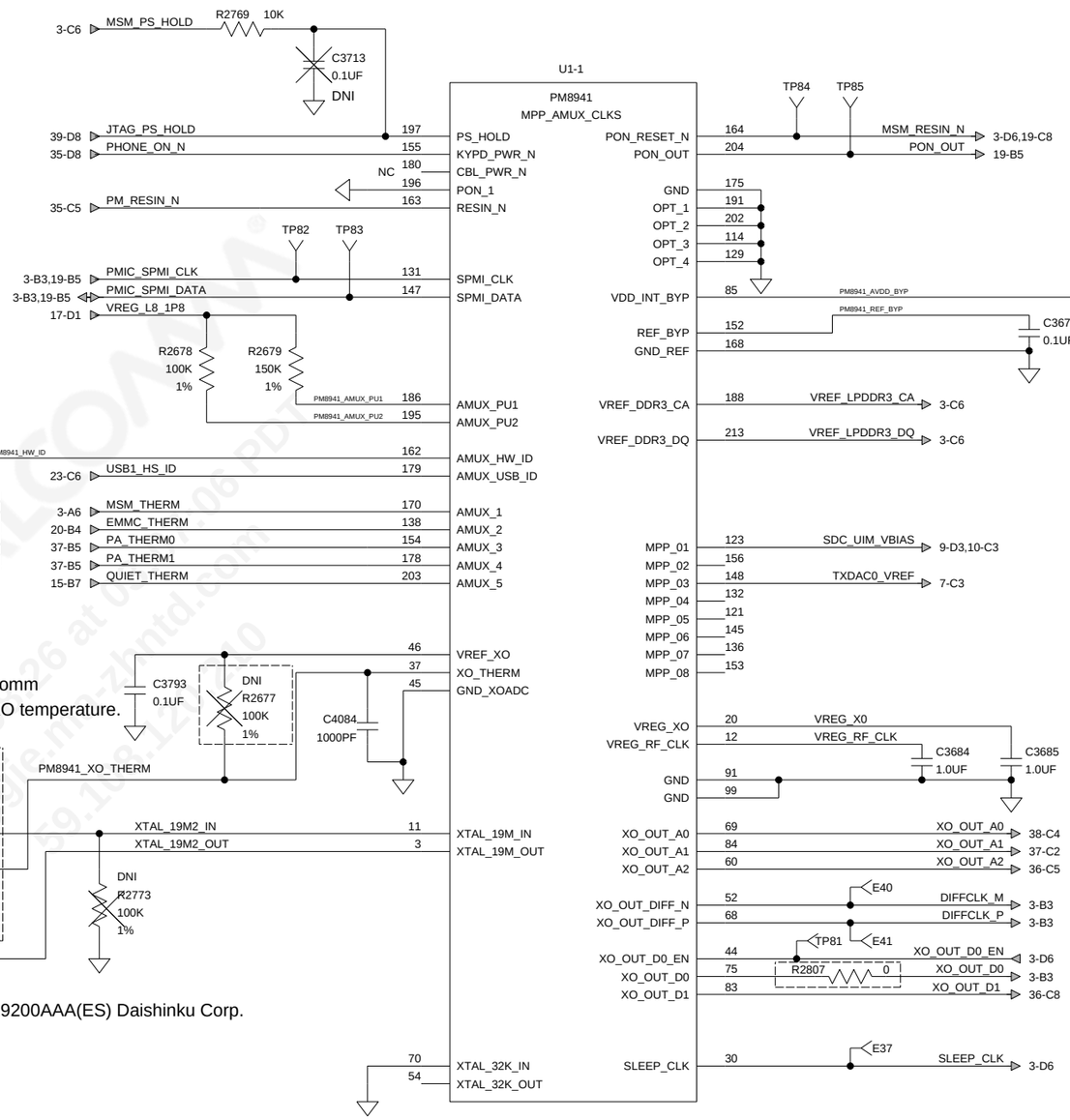
DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1170		

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED



NOTE: Software may use AMUX_HW_ID pin for auto mode control in the future. Customers are still recommended to have a provision for resistive pull-down to GND on AMUX_HW_ID pin.



NOTE: Placeholder R2677 is required until Qualcomm has validated use of AMUX_PU2 for measuring XO temperature.

Note: Alternate part for Y1 - 1RAE19200AAA(ES) Daishinku Corp.

Note 1: USB_HSx_SYSCLK from PMIC X0_OUT_D0 is branched to CXO and USB on the MSM side:

a) Make this a 50 ohm trace.
b) Match branch length. Even 5mm of delta can cause SI problems.
c) Keep branches as short as possible.
d) If routing guidellines above cannot be met, add a buffer for the USB branch right at at the split.

Note: It is strongly recommended to add a termination resistor (R2807) in series with XO_OUT_D0. The XO_OUT_D0 trace layout from PMIC to MSM should be optimized as per Qualcomm guidelines provided in 80-NA555-14.

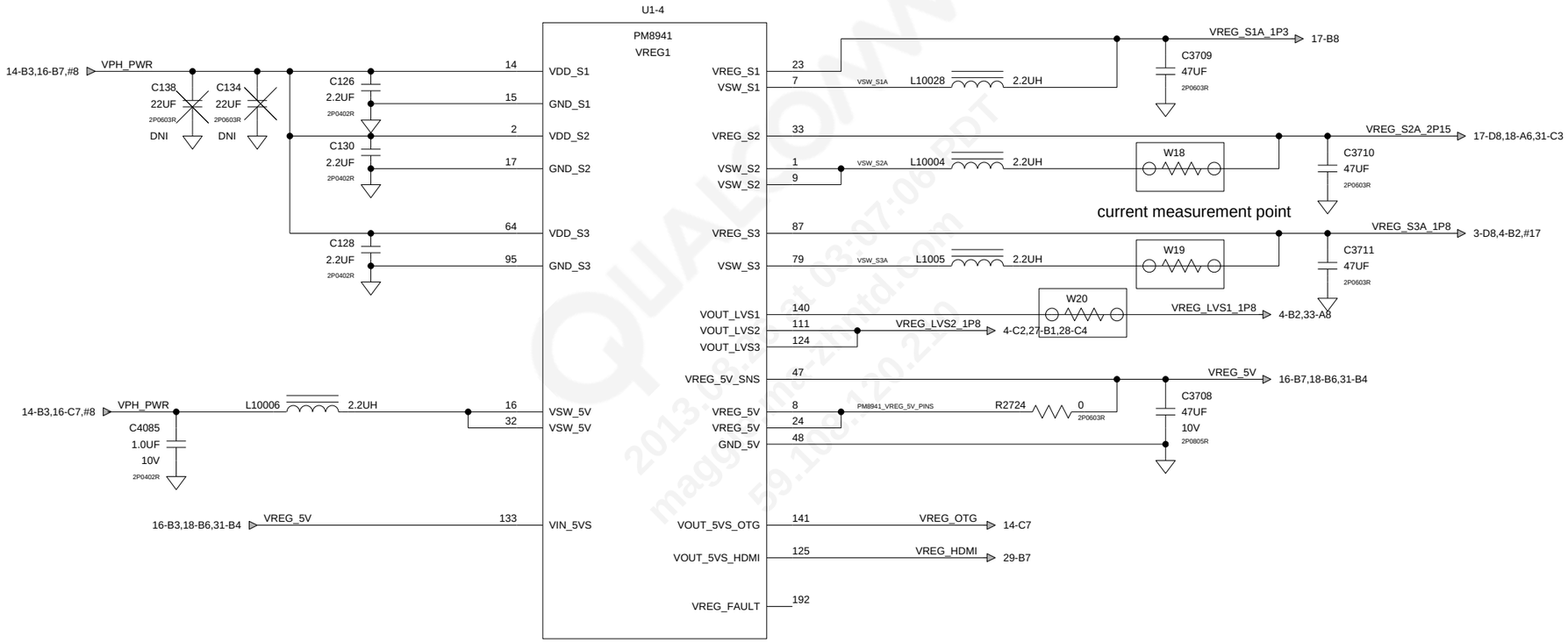
PM8941 - AMUX, CLK, GPIO

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE			
MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
SIZE		DRAWING NO	REV
D		80-NA437-41	M
SCALE NONE			SHEET 15 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1217		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

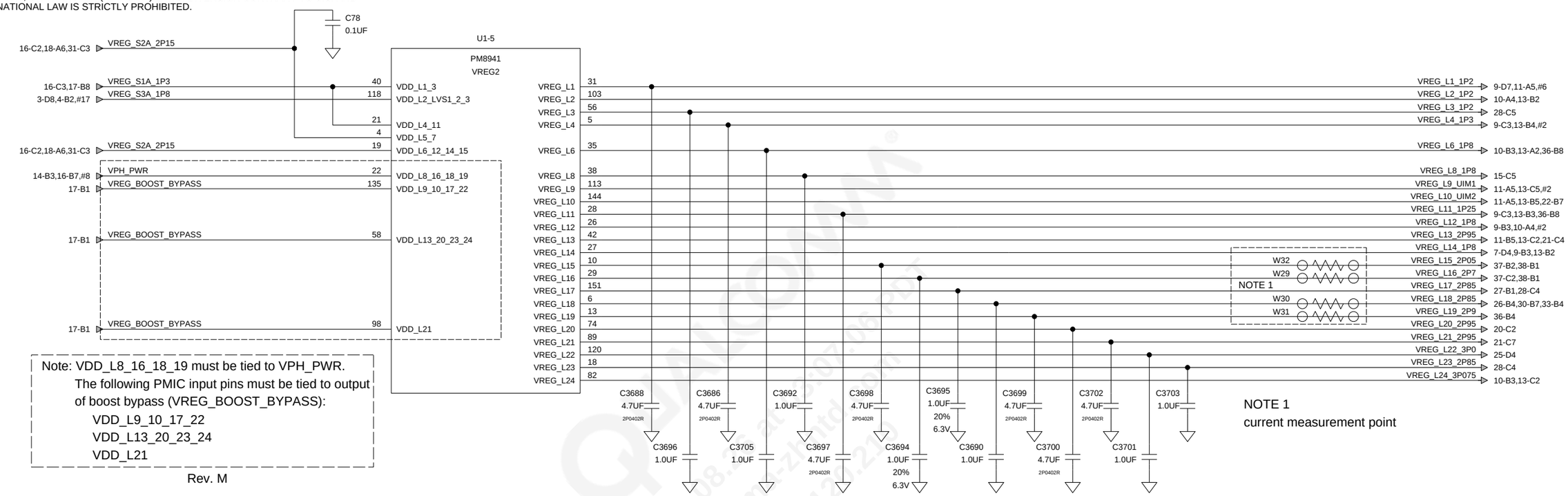


PM8941 - SMPS

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 16 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1155		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



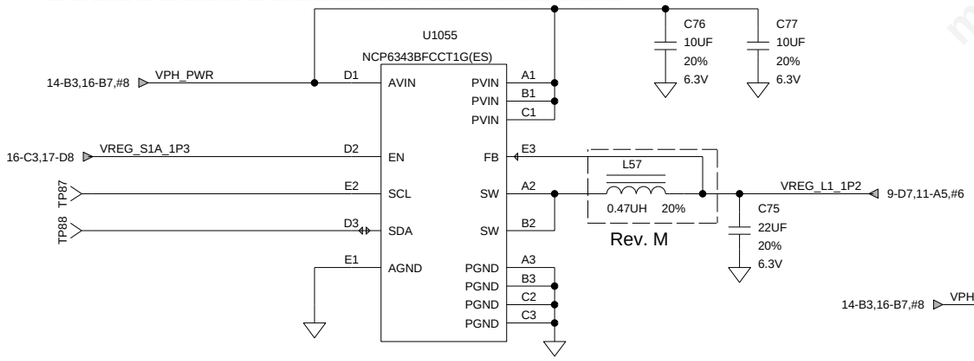
Note: VDD_L8_16_18_19 must be tied to VPH_PWR.
The following PMIC input pins must be tied to output of boost bypass (VREG_BOOST_BYPASS):
VDD_L9_10_17_22
VDD_L13_20_23_24
VDD_L21

Rev. M

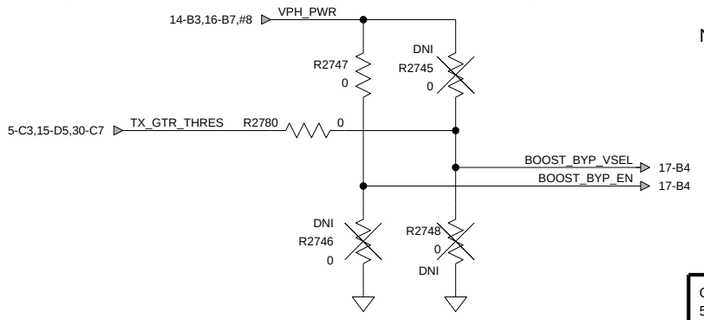
LDO1 HELPER BUCK

Note: Install the LDO1 helper buck circuit ONLY if 3GB (6-die) LPDDR3 is used.

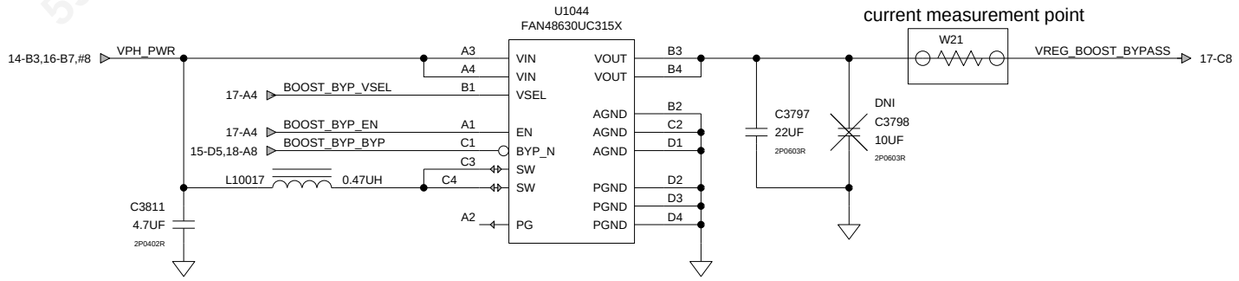
Alternate part for LDO1 HELPER BUCK: Richtek part RT8088AWSC | Rev. M



Rev. M



BOOST/BYPASS



NOTE: BOOST/BYPASS is required for reliable operation of high voltage LDOs at high battery current.

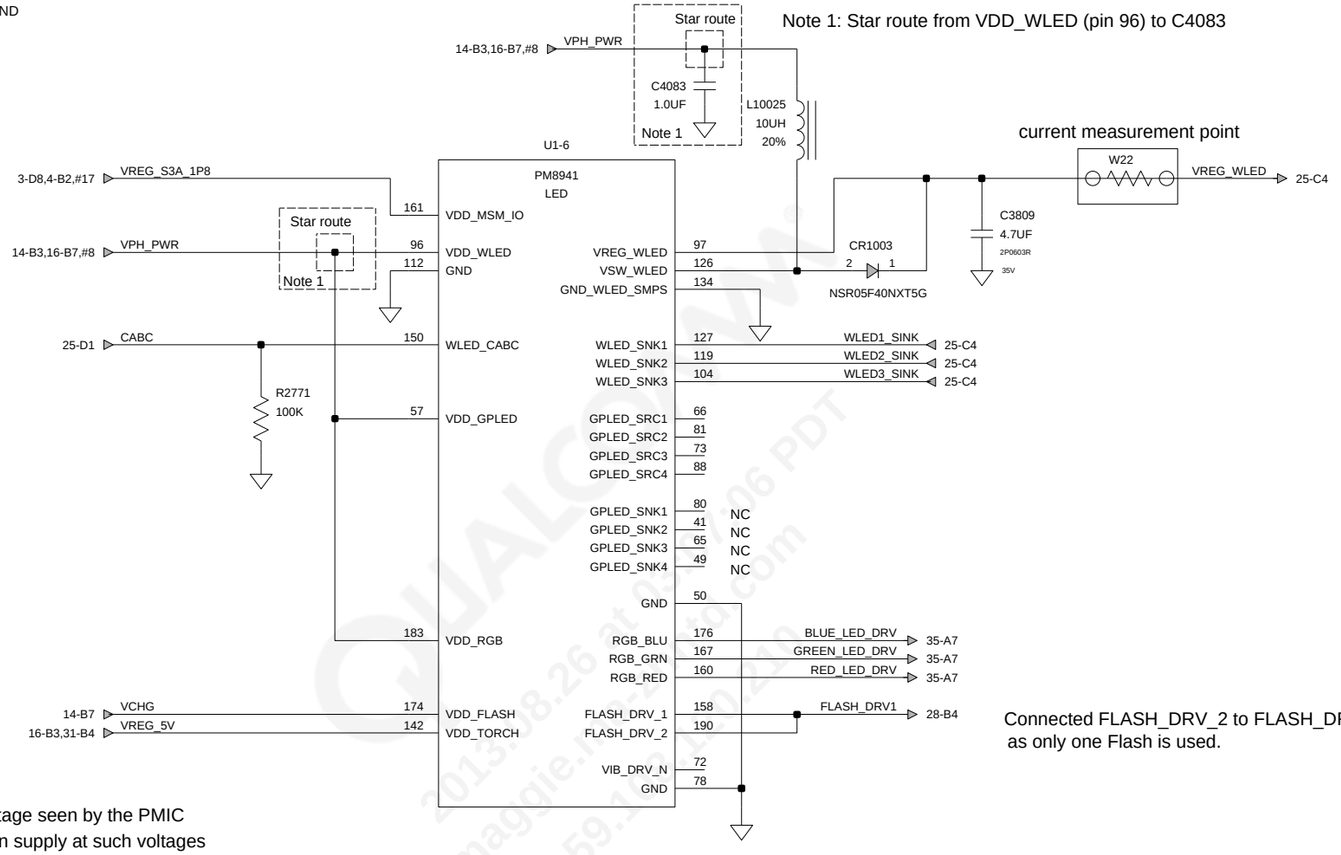
PM8941 - LDOS

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 17 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1175		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note 1: Star route from VDD_WLED (pin 96) to C4083



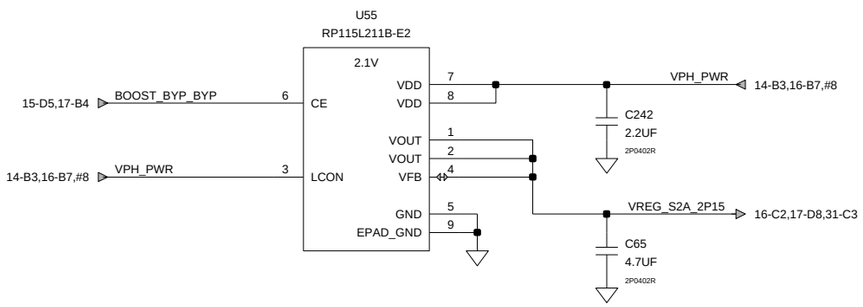
Connected FLASH_DRV_2 to FLASH_DRV_1 as only one Flash is used.

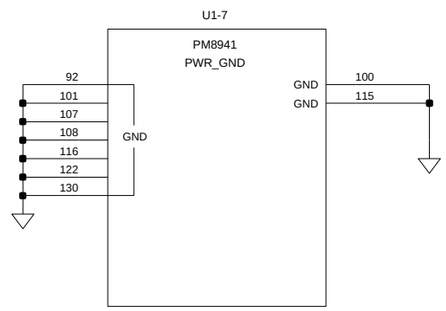
Note: During large battery current transients, the battery voltage seen by the PMIC can dip below 2.7V. The current that S2A regulator can supply at such voltages is less than its rated current of 1A. Bhelper LDO aids S2A to provide current to the load in this scenario.

The alternate parts for Bhelper LDO:

On Semi part NCP706MX21TAG Rev. M

BHELPER LDO





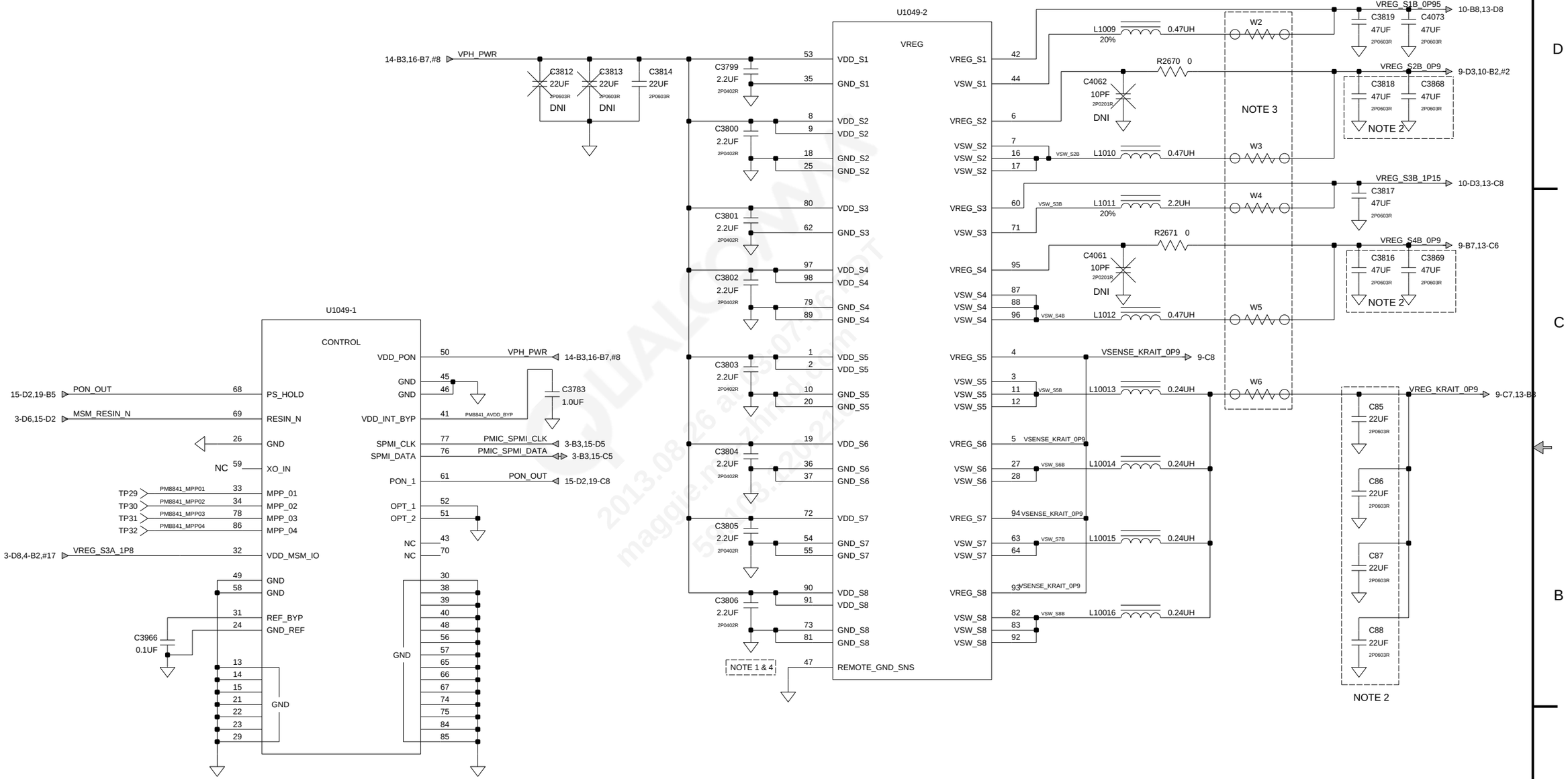
PM8941 - LED & GROUND

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 18 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1150		

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED



NOTE 1: CONNECT REMOTE_GND_SNS GROUND TO THE GND NEAR THE MSM WITH SINGLE TRACE

NOTE 2: PLACE S2B, S4B, S5B, S6B, S7B, S8B OUTPUT CAPACITORS CLOSE TO MSM

NOTE 3: CURRENT MEASUREMENT POINT

NOTE 4: ROUTE VSENSE_KRAIT_0P9 AND REMOTE_GND_SNS AS A DIFFERENTIAL.

PM8841 - CONTROL & VREG

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 19 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1153		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

U2-2
KLMBG4GE2A-A001
FLASH MEMORY
32GB

A4	NC1	NC71	T13
A6	NC2	NC72	T14
A9	NC3	NC73	U1
A11	NC4	NC74	U2
B2	NC5	NC75	U3
B13	NC6	NC76	U12
D1	NC7	NC77	U13
D14	NC8	NC78	U14
H1	NC9	NC79	V1
H2	NC10	NC80	V2
H8	NC11	NC81	V3
H9	NC12	NC82	V12
H10	NC13	NC83	V13
H11	NC14	NC84	V14
H12	NC15	NC85	W1
H13	NC16	NC86	W2
H14	NC17	NC87	W3
J1	NC18	NC88	W7
J7	NC19	NC89	W8
J8	NC20	NC90	W9
J9	NC21	NC91	W10
J10	NC22	NC92	W11
J11	NC23	NC93	W12
J12	NC24	NC94	W13
J13	NC25	NC95	W14
J14	NC26	NC96	Y1
K1	NC27	NC97	Y3
K3	NC28	NC98	Y6
K7	NC29	NC99	Y7
K8	NC30	NC100	Y8
K9	NC31	NC101	Y9
K10	NC32	NC102	Y10
K11	NC33	NC103	Y11
K12	NC34	NC104	Y12
K13	NC35	NC105	Y13
K14	NC36	NC106	Y14
L1	NC37	NC107	AA1
L2	NC38	NC108	AA2
L3	NC39	NC109	AA8
L4	NC40	NC110	AA9
L12	NC41	NC111	AA11
L13	NC42	NC112	AA12
L14	NC43	NC113	AA13
M1	NC44	NC114	AA14
M2	NC45	NC115	AE1
M3	NC46	NC116	AE14
M12	NC47	NC117	AG2
M13	NC48	NC118	AG13
M14	NC49	NC119	AH4
N1	NC50	NC120	AH6
N2	NC51	NC121	AH9
N3	NC52	NC122	AH11
N12	NC53		
N13	NC54	RFU1	H6
N14	NC55	RFU2	H7
P1	NC56	RFU3	K5
P2	NC57	RFU4	M5
P12	NC58	RFU5	M8
P13	NC59	RFU6	M9
P14	NC60	RFU7	M10
R1	NC61	RFU8	N10
R2	NC62	RFU9	P3
R3	NC63	RFU10	P10
R12	NC64	RFU11	R5
R13	NC65	RFU12	T5
R14	NC66	RFU13	U6
T1	NC67	RFU14	U7
T2	NC68	RFU15	U10
T3	NC69	RFU16	AA7
T12	NC70	RFU17	AA10

The level translator option for 1.2V operation

20-C2 VCC_EMMC
DNI C4064 0.1UF
DNI U1053
3-C6,37-A4 MSM_RESOUT_N
EMMC_RST_N
R236 0

20-C2 VCC_EMMC
R2756 0 2P0402R VREG_S3A_1P8 3-D8,4-B2,#17
DNI R2647 0 2P0402R VREG_L1_1P2 9-D7,11-A5,#5

20-C2 VCC_EMMC
R117 10K
DNI R90 51K
DNI R85 51K
DNI R86 51K
DNI R2749 51K
DNI R87 51K
DNI R88 51K
DNI R89 51K
DNI R91 51K

3-D3 SDC1_CMD
3-D3 SDC1_CLK
3-C3 SDC1_DATA_7
3-C3 SDC1_DATA_6
3-C3 SDC1_DATA_5
3-C3 SDC1_DATA_4
3-C3 SDC1_DATA_3
3-C3 SDC1_DATA_2
3-D3 SDC1_DATA_1
3-D3 SDC1_DATA_0

U2-1
KLMBG4GE2A-A001
FLASH MEMORY
32GB

U5	RST_N	
W5	CMD	
W6	CLK	
J6	D7	
J5	D6	
J4	D5	
J3	D4	
J2	D3	
H5	D2	
H4	D1	
H3	D0	
VDD	K6	
VDD	W4	
VDD	Y4	
VDD	AA3	
VDD	AA5	
VDDF	M6	
VDDF	N5	
VDDF	T10	
VDDF	U9	
VDDI	K2	
VSS	K4	
VSS	M7	
VSS	P5	
VSS	R10	
VSS	U8	
VSS	Y2	
VSS	Y5	
VSS	AA4	
VSS	AA6	

VCC_EMMC 20-C7
C231 2.2UF 2P0402R
C177 0.1UF
VREG_L20_2P95 17-C1
C230 2.2UF 2P0402R
C176 0.1UF
C175 0.1UF

EMMC_THERM 15-C5
RT2 NTCG104EF104FB 100K 1% DNI
Place near U2

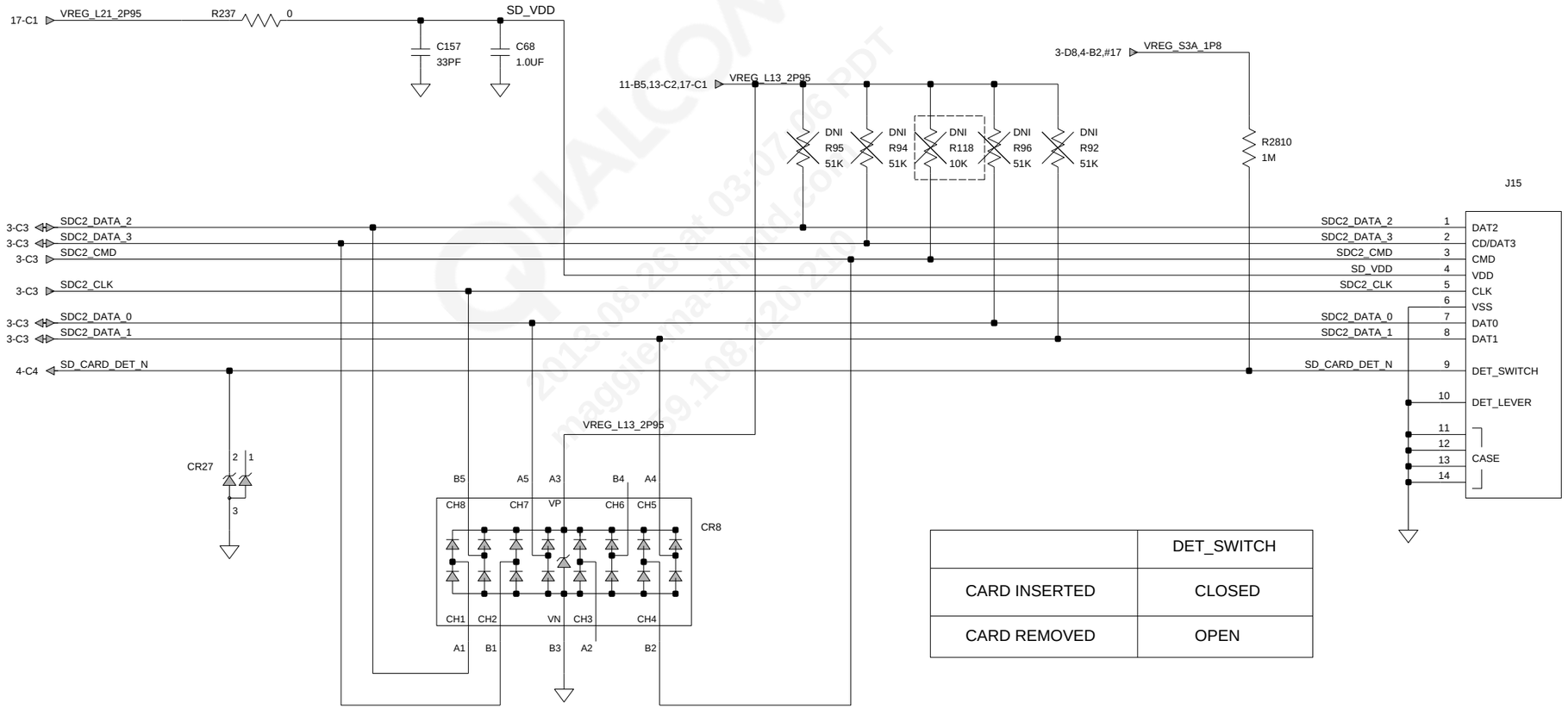
MEMORY: EMMC NAND

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 20 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1130		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note: R118 needs to be installed for MMC only to prevent bus floating during card initialization (open-drain mode).



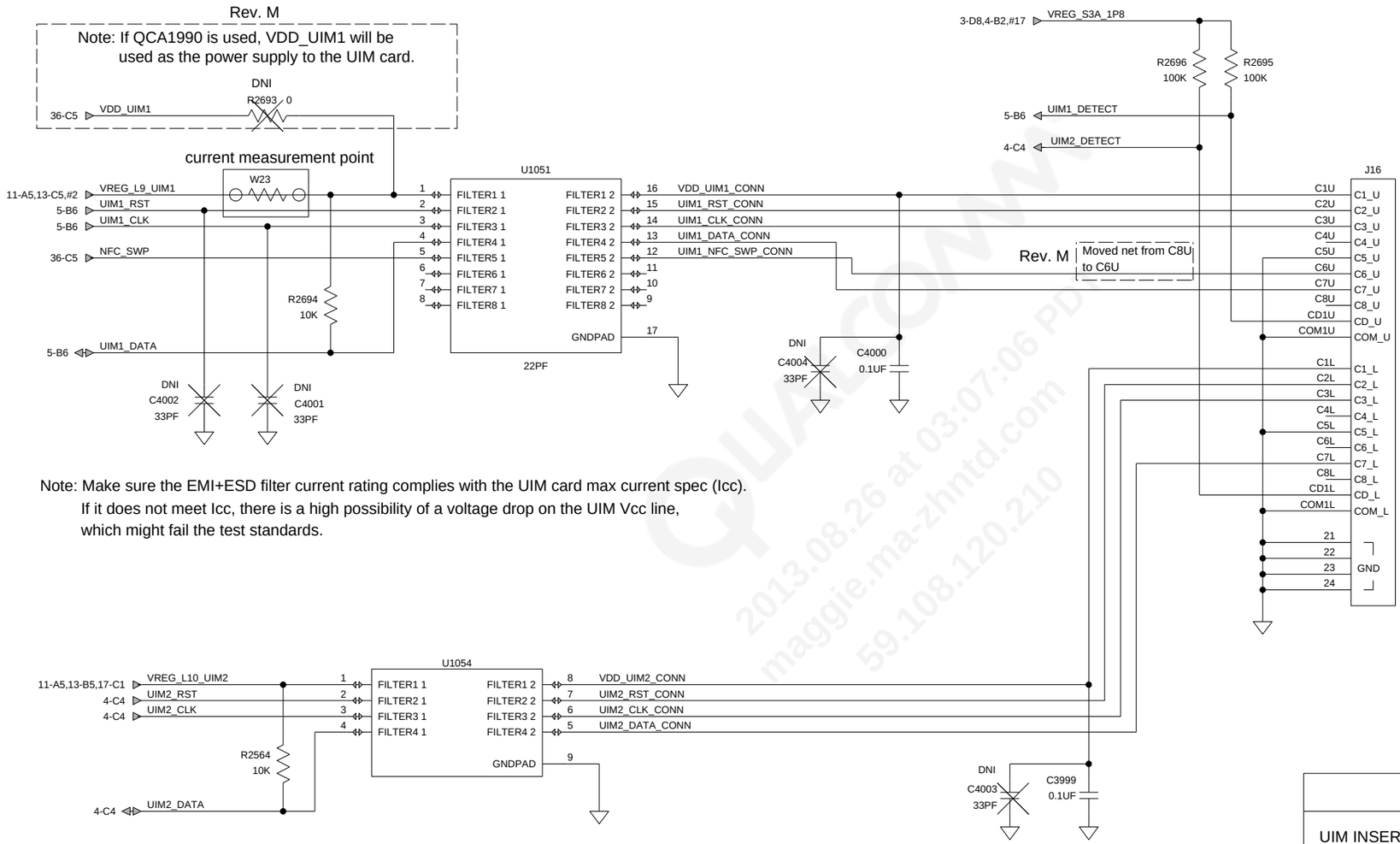
	DET_SWITCH
CARD INSERTED	CLOSED
CARD REMOVED	OPEN

USD CONNECTOR

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 21 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1128		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



Note: Make sure the EMI+ESD filter current rating complies with the UIM card max current spec (Icc).
If it does not meet Icc, there is a high possibility of a voltage drop on the UIM Vcc line, which might fail the test standards.

	UIM_DET
UIM INSERTED	OPEN (FLOATING)
UIM REMOVED	CLOSED (GND)

SIM CONNECTOR

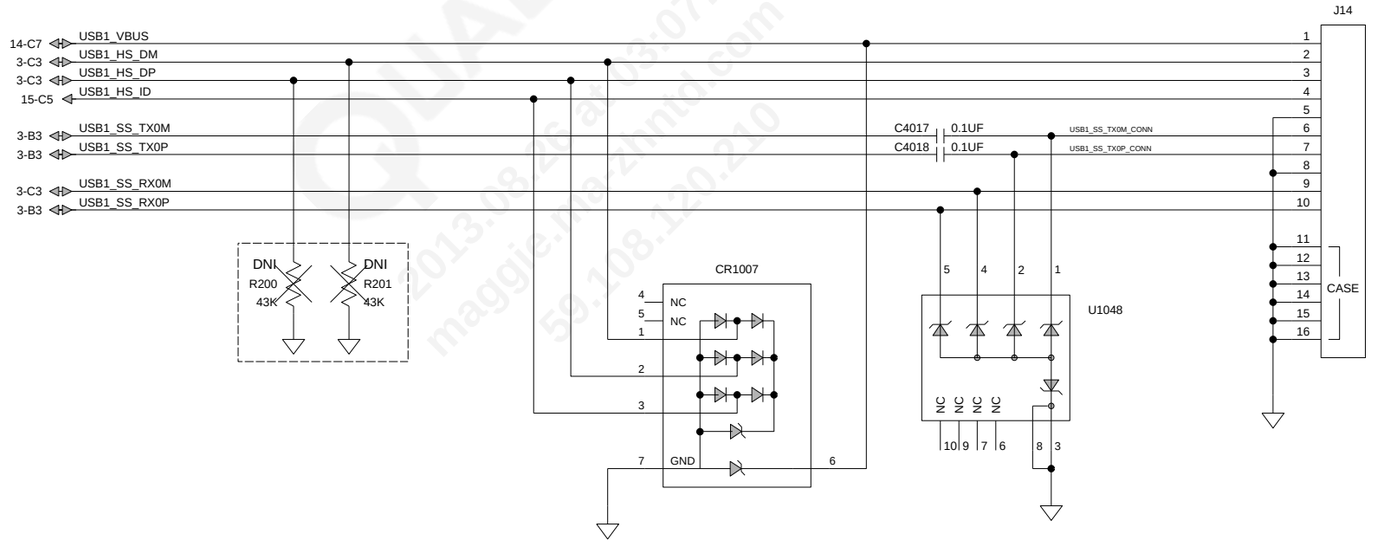
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 22 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1127		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

USB 3.0 - SS

Note: When the device (MSM) is in host mode, R200 and R201 need to be installed if the device needs to support host wake up by slave activity during VDD minimization. The 43K pull-downs should be placed directly on top of these traces (i.e. no stub). If this is not possible, then the max allowed stub length is 5mm. The stub can be anywhere between the connector and PHY.



USB 3.0

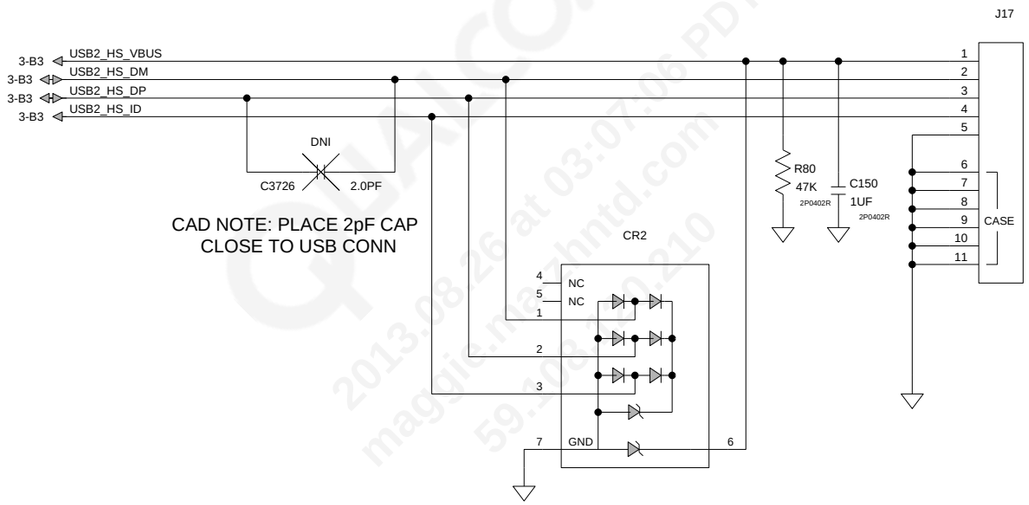
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 23 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1131		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

USB 2.0 - HS

USB 2.0 CONN



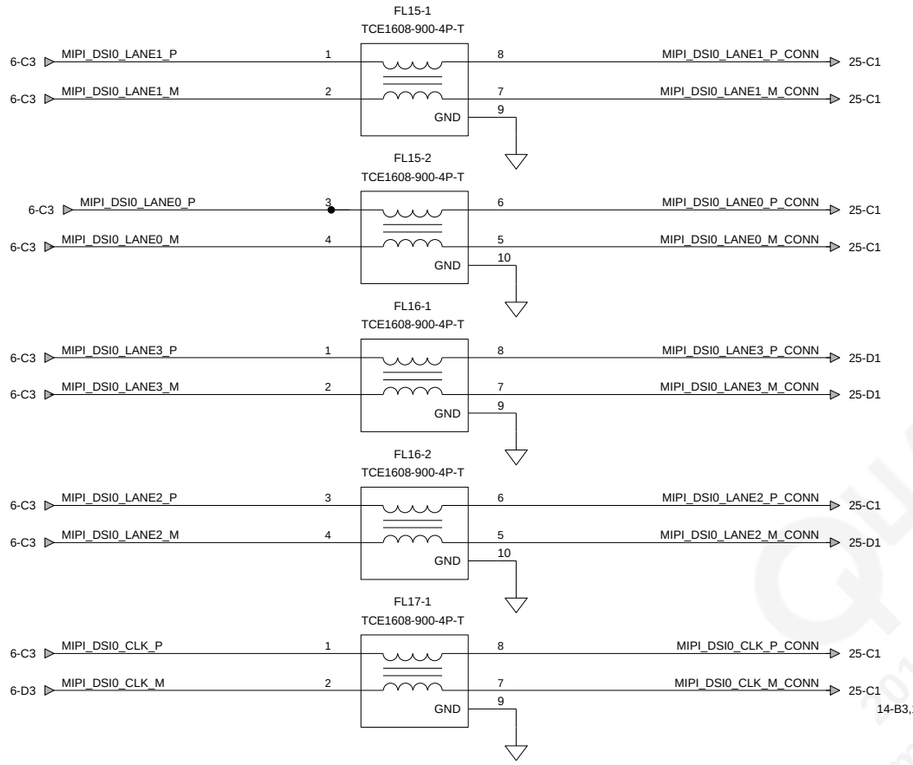
NOTE: EXTERNAL OVP CIRCUIT MUST BE IMPLEMENTED ON USB2_HS_VBUS IF CHARGING FROM USB 2.0 PORT IS REQUIRED

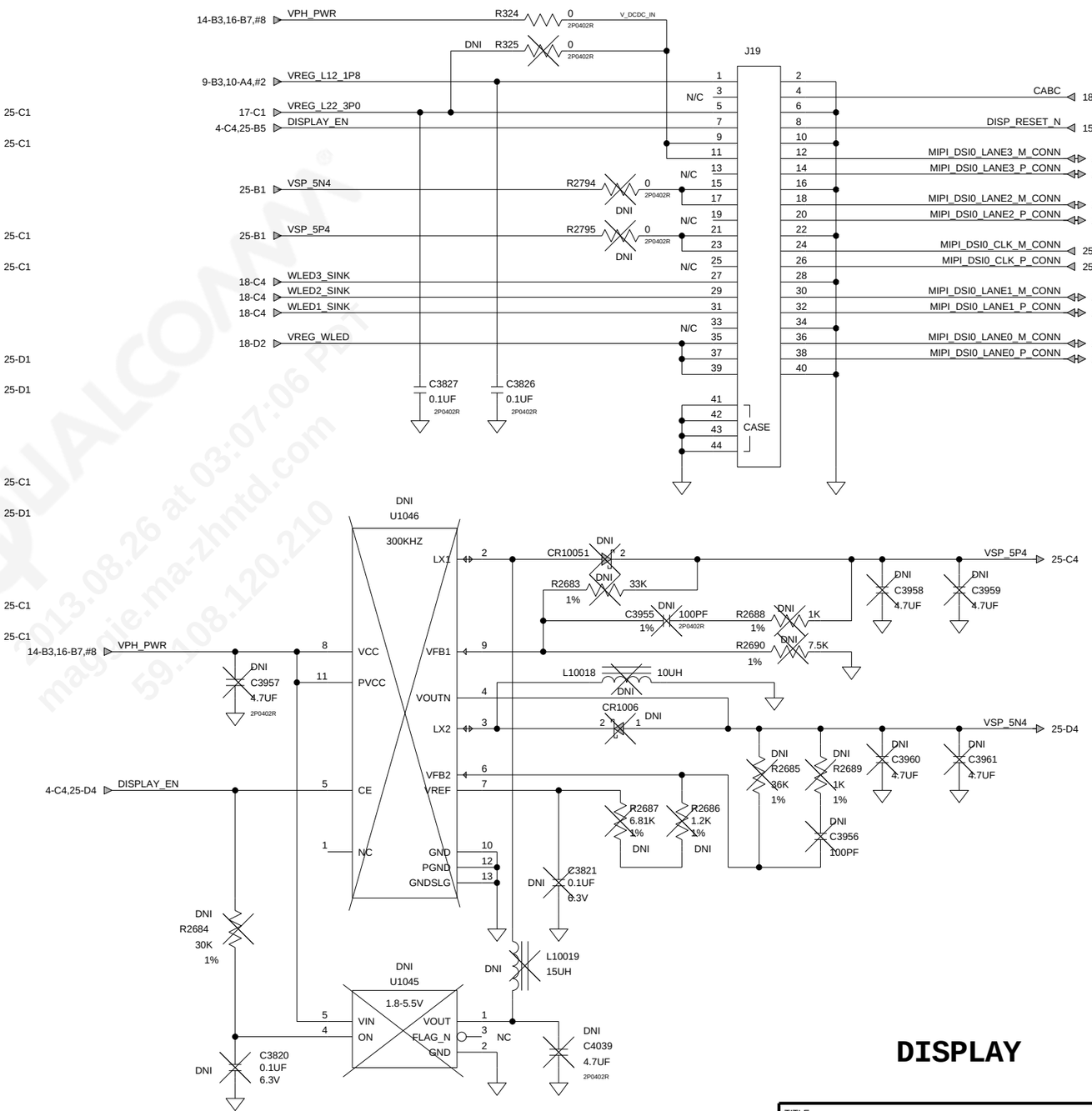
USB 2.0

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 24 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1118		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED





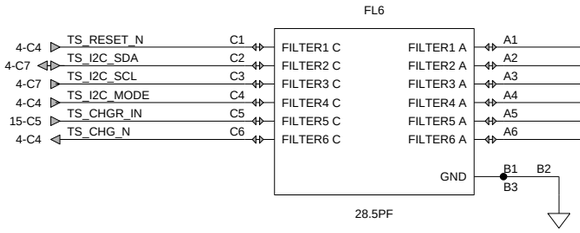
DISPLAY

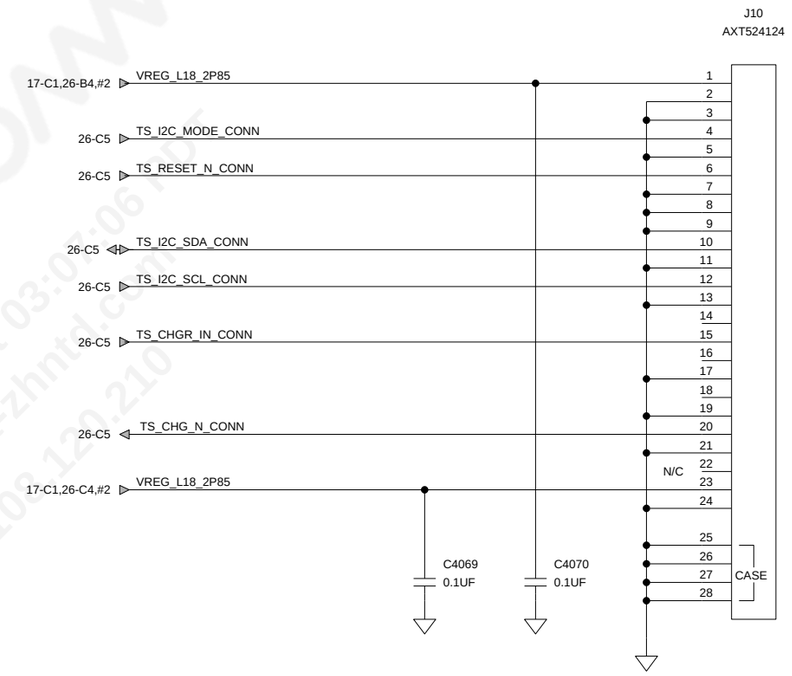
TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 25 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1142		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

TOUCHSCREEN INTERFACE





TOUCHSCREEN

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 26 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1128		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

FRONT CAMERA, 2MP

FL17-2
TCE1608-900-4P-T

6-B5	MIPI_CSI2_CLK_P	3	6	MIPI_CSI2_CLK_P_CONN	27-B5
6-B5	MIPI_CSI2_CLK_M	4	5	MIPI_CSI2_CLK_M_CONN	27-B5
		GND	10		

FL18-2
TCE1608-900-4P-T

6-C5	MIPI_CSI2_LANE0_P	3	6	MIPI_CSI2_LANE0_P_CONN	27-B5
6-C5	MIPI_CSI2_LANE0_M	4	5	MIPI_CSI2_LANE0_M_CONN	27-B5
		GND	10		

FL19-1
TCE1608-900-4P-T

6-B5	MIPI_CSI2_LANE1_P	1	8	MIPI_CSI2_LANE1_P_CONN	27-B5
6-B5	MIPI_CSI2_LANE1_M	2	7	MIPI_CSI2_LANE1_M_CONN	27-B5
		GND	9		

MIPI TRACES ARE 0.082MM WIDE WITH 0.2MM SPACING

J6
AXT524124

27-C6	MIPI_CSI2_CLK_M_CONN	2	23	CAM1_MCLK2	4-C7
27-C6	MIPI_CSI2_CLK_P_CONN	3	22		
		4	21	(EVDD 1.5V)	
27-C6	MIPI_CSI2_LANE0_M_CONN	5	20		
27-C6	MIPI_CSI2_LANE0_P_CONN	6	19	(AVDD 2.8V)	VREG_L17_2P85 17-C1,28-C4
		7	18	R2633 100K	
27-B6	MIPI_CSI2_LANE1_M_CONN	8	17	(DOVDD 1.8V)	VREG_LVS2_1P8 4-C2,16-C4,28-C4
27-B6	MIPI_CSI2_LANE1_P_CONN	9	16		
		10	15		
4-C7	WEBCAM_RESET_N	11	14		CAM1_I2C_SCL1 4-B2
		12	13		CAM1_I2C_SDA1 4-C2
			25	C3723 1.0UF 20% 6.3V	DNI C3721 1.0UF
			26		DNI C3722 1.0UF
		CASE	27		
			28		

FRONT CAMERA

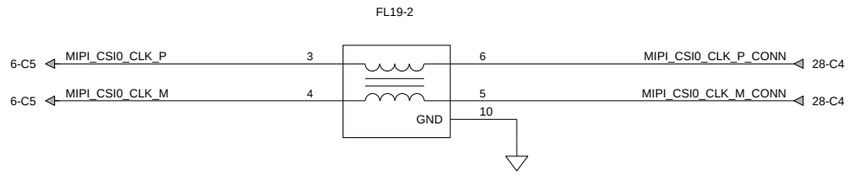
TITLE	MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE D	DRAWING NO 80-NA437-41	REV M
	SCALE NONE	SHEET 27 OF 44	

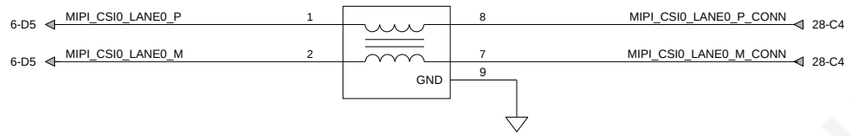
DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1118		

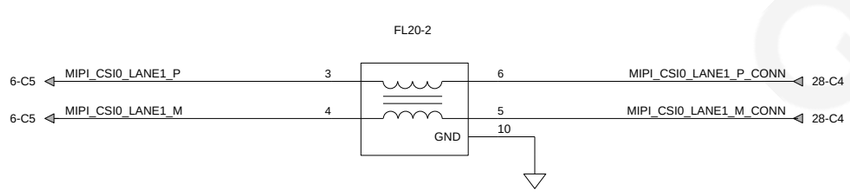
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

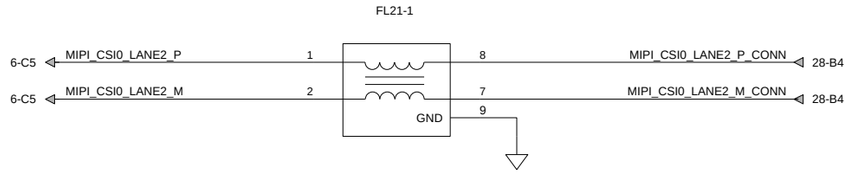
REAR CAMERA, 12MP

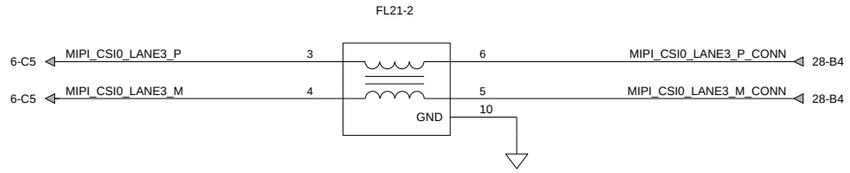
MIPI TRACES ARE 0.082MM WIDE WITH 0.2MM SPACING

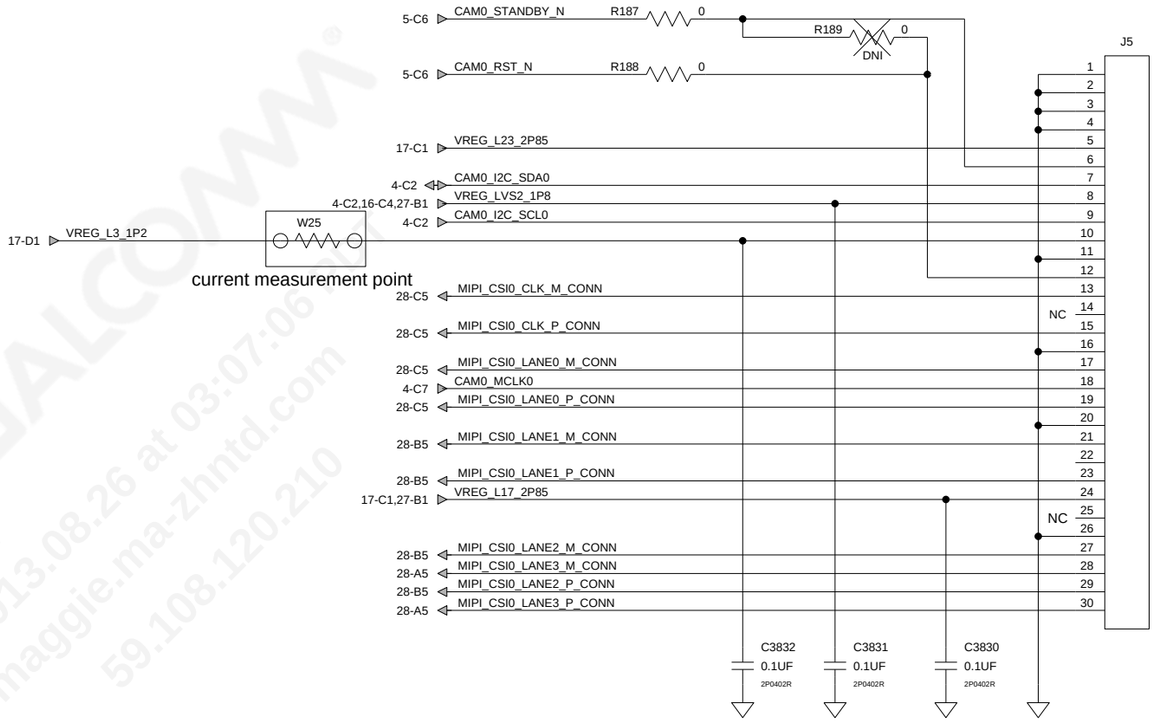




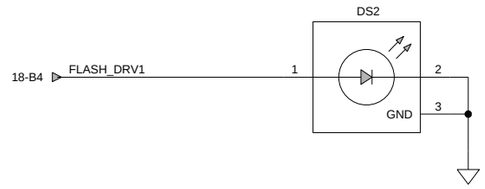








MAKE SURE THE TRACES FOR THE FLASH CAN HANDLE 1A



REAR FLASH

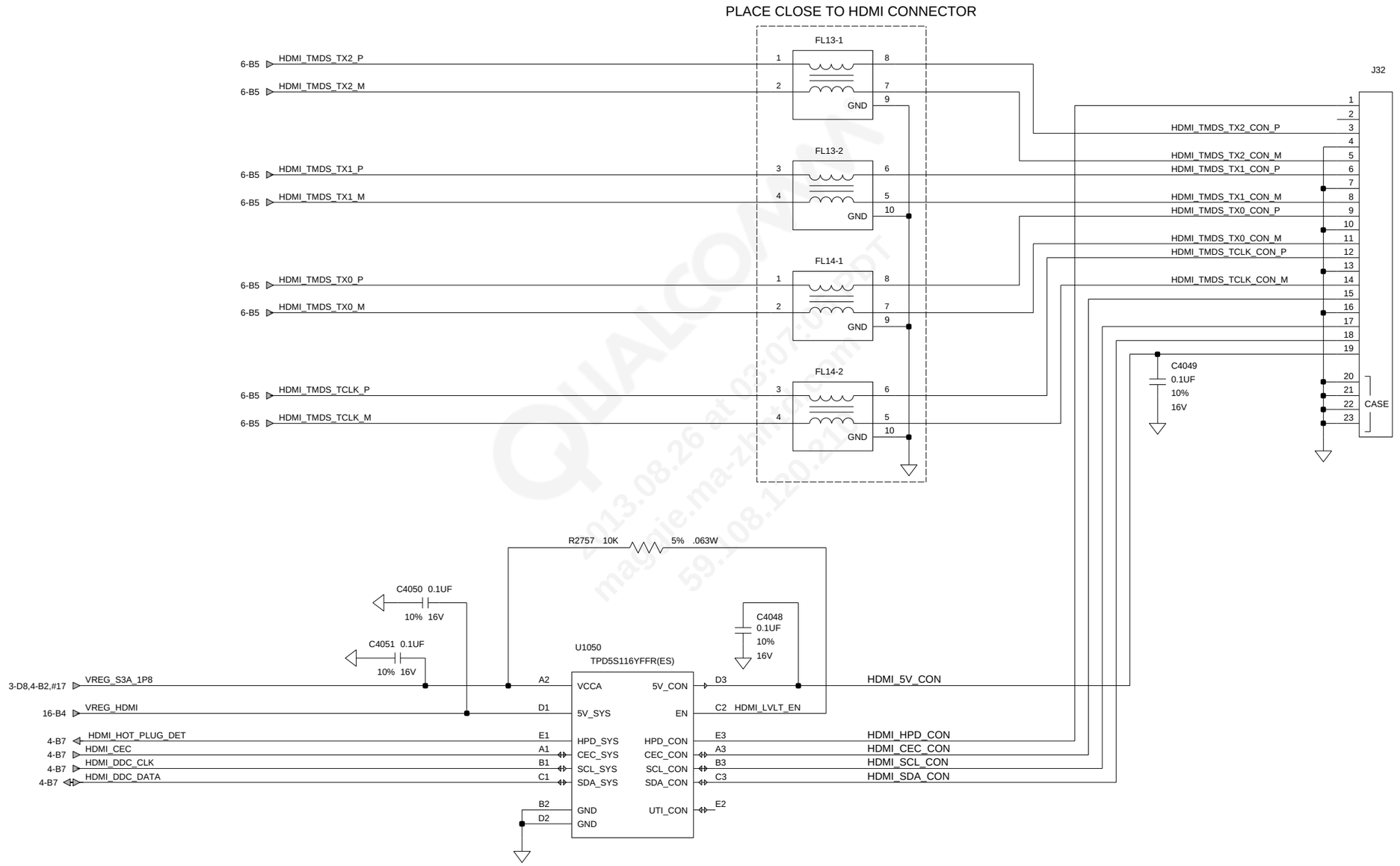
REAR CAMERA & FLASH

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 28 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1137		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

HDMI CONNECTOR



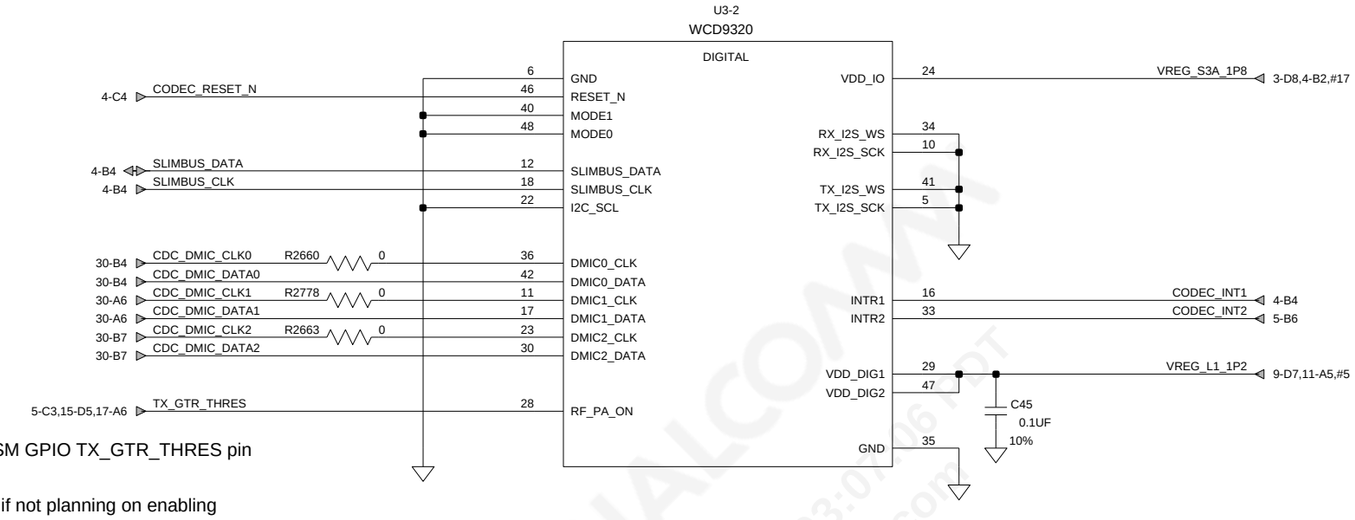
NOTE: HDMI INTERFACE IS AVAILABLE ONLY ON CDP PLATFORM FOR VERIFICATION

HDMI

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 29 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1011		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



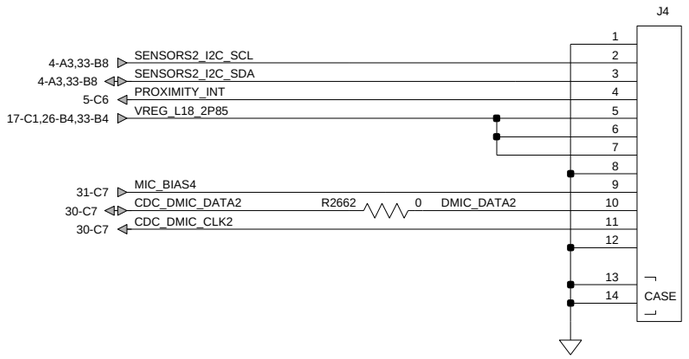
Note: RF_PA_ON connection to MSM GPIO TX_GTR_THRES pin for VBAT Monitoring Feature.

Connect RF_PA_ON to GND if not planning on enabling VBAT Monitoring Feature.

TOP FRONT FLEX: MIC5 & MIC6

MIC5 - MIC In receiver port & ANC Mic (bottom port)

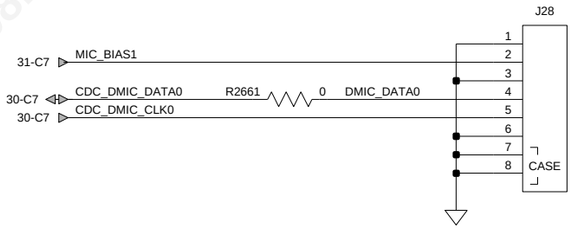
MIC6 - Ultrasound (bottom port)



BOTTOM FRONT FLEX: MIC1 & MIC2

MIC2 - Ultrsound Mic bottom middle right & fluence handset mic (bottom port)

MIC1 - Ultrasound mic bottom middle left & browstalk mic

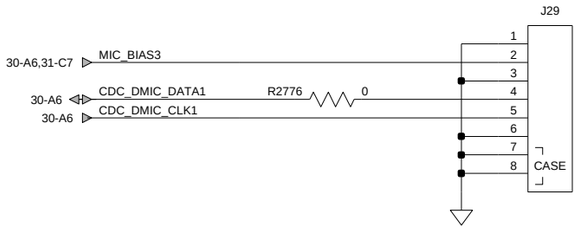


NOTE:
Microphones implementation shown here is available only on FLIUD platform

Placement and feature details for Fluence and Fluence Pro Features can be found in 80-VE797-12.

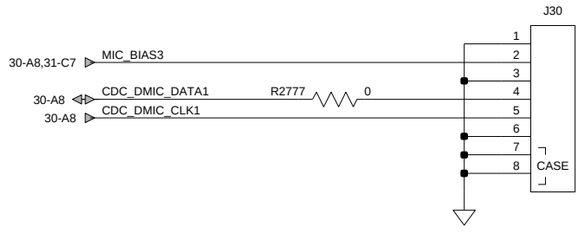
MIC3

Back mic bottom, browsetalk mic



MIC4

Back mic top: Fluence Noise mic/ ANC handset mic



WCD9320 - DIGITAL

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 30 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1156		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note: C92 and L56 are added for WCN FM Performance and should be placed close to WCD pin.

Note: Pi filters are for WCN FM performance.

Note: Beads L52 and L53 impact WCD headphone output THD+N at gain higher than -6dB. Please tune the headphone path gain appropriately.

Rev. M

U3-1
WCD9320
ANALOG

E30 CDC_IN1_P 79 MIC1_INP
E35 CDC_IN1_M 74 MIC1_INM
32-B7 CDC_IN2_P 50 MIC2_INP
32-B7 CDC_IN2_M 68 MIC2_INM
32-A7 CDC_IN3_P 43 MIC3_INP
32-A7 CDC_IN3_M 57 MIC3_INM
32-B7 CDC_IN4_P 62 MIC4_INP
32-B7 CDC_IN4_M 56 MIC4_INM
TP50 CDC_IN5_P 19 MIC5_INP
TP51 CDC_IN5_M 26 MIC5_INM
TP52 CDC_IN6_P 38 MIC6_INP
E42 CDC_IN6_M 32 MIC6_INM
32-C5 MBHC_HSDET 31 MBHC_HSDET

30-B4 MIC_BIAS1 73 MIC_BIAS1
32-A7 MIC_BIAS2 61 MIC_BIAS2
30-A6 MIC_BIAS3 25 MIC_BIAS3
30-B7 MIC_BIAS4 37 MIC_BIAS4

C3779 0.1UF CDC_CFILT1 63 MICB_CFILT1
C3780 0.1UF CDC_CFILT2 67 MICB_CFILT2
13 MICB_CFILT3

3-D8,4-B2,#18 VREG_S3A_1P8 55 VDD_TX
9-D7,11-A5,#5 VREG_L1_1P2 20 VDD_TXADC
14-B3,16-B7,#8 VPH_PWR 44 VDD_VBAT
51 LDO_HI_CAP

C3785 0.1UF 10% 2P0402R
C3824 0.1UF 10%
CDC_CCOMP 39 CCOMP
C3796 1UF 10%
52 GND_CCOMP
49 GND
27 GND
53 GND

15-C8 DIVCLK1_CODEC 45 MCLK

Rev. M

HPH_LP 77
HPH_REF 65
HPH_RM 82

L52 470 OHM 25% — CDC_HPH_L 32-D6
R2735 0 2P0402R 5% 0.063W — CDC_HPH_REF 32-B1
L53 470 OHM 25% — CDC_HPH_R 32-D6

EAROP 76 CDC_EAR_P
EAROM 81 CDC_EAR_M
C43 33PF DNI
C44 33PF DNI
CR28 DNI
CR29 DNI
CDC_EAR_P
CDC_EAR_M
SH9 50-N4297-P1
SH8 50-N4297-P1
EARPIECE

LINE_OUT1 80
LINE_OUT2 69
LINE_OUT3 75
LINE_OUT4 70

VDD_RX 64 VREG_S3A_1P8 3-D8,4-B2,#18

Note: DNI CR28 and CR29. Recommend testing integrated IEC Level 4 clamps on EAROP and EAROM as documented in 80-N1763-9 application note.

GND 58
VREG_S2A_2P15 16-C2,17-D8,18-A6
C3808 4.7UF 10%

VDD_BUCK 60
BUCK_VSW 54 CDC_BUCK_VSW
BUCK_VOUT1 71 CDC_BUCK_NCP
BUCK_VOUT2 59 CDC_BUCK_NCP
E36 600 OHM @ 100MHZ

Note: It is critical to use part identical to E36 as summarized in parts list. Do not change unless consulted with QTI.

C4026 2.2UF 2P0402R

Note: GND island for BUCK_NCP is to isolate BUCK and NCP noise from other circuits. Refer to 80-NA556-5 for details.

GND_BUCK 66
GND_BUCK 84
NCP_C1P 72 CDC_NCP_FLY_P
NCP_C1M 78 CDC_NCP_FLY_M
C3795 1UF 10%
NCP_VNEG 83 CDC_NCP_VNEG
C3794 1UF 10%
GND island for BUCK_NCP
Main GND

Note: SPKR_VSNSP and SPKR_VSNSM must be connected directly at the speaker transducers for WCD9320 feedback (I/V sense) speaker protection feature.
Connect SPKR_VSNSP and SPKR_VSNSM to GND if not planning on enabling I/V sense speaker protection.

LOUDSPEAKER

SPKR_VSNSP 14
SPKR_DRVP 8 CDC_SPKDRV_P
SPKR_DRVM 9 CDC_SPKDRV_M
SPKR_VSNSM 21
R2741 0 2P0603R
R2739 0 2P0603R
R2740 0 2P0603R
R2742 0 2P0603R
C4028 200PF 2P0201R DNI
C4029 200PF DNI
Note: Place components close to the CODEC pins

GM4
C84 8.2PF DNI
C4089 8.2PF DNI
CR24 UCLAMP0502P.TCT
Note: Placeholder shunt caps for RF filtering.

VDD_SPKDR1 3
VDD_SPKDR2 15
R2796 0 2P0603R VREG_5V 16-B3,18-B6
C3807 4.7UF 10%
DNI R2797 0 2P0603R VPH_PWR 14-B3,16-B7,#8

GND_SPKDRV 2
GND_SPKDRV 4
GND_SPKDRV 7
GND_SPKDRV 1
Main GND
GND island for Speaker driver
Main GND

Note: R2741 and R2742 placeholders added for speaker protection feature performance; in long traces due to amplifier ringing replace 0 ohms with 15K.

Note: GND island for Speaker driver, (GND_SPKDRV) is to isolate speaker driver noise from other circuits. Refer to 80-NA556-5 for details.

Note: C3807 must have a 10V rating when VDD_SPKR1 and VDD_SPKR2 are driven from VREG_5V for reliability.

Note: Install R2796 to VREG_5V for ES2 and CS samples. Refer to 80-NA556-4 for details.

NOTE: LOUDSPEAKER IS AVAILABLE ONLY ON THE CDP AND FLUID PLATFORMS FOR VERIFICATION.

WCD9320 - ANALOG

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE D	DRAWING NO 80-NA437-41	REV M
	SCALE NONE		SHEET 31 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1186		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

Note: Pi filters are needed for WCN FM performance.
Place R2512 and R2513 close to headset jack.

Note: Beads R2513 and R2512 impact WCD headphone output THD+N at gain higher than -6dB. Please tune the headphone path gain appropriately.
Rev. M

31-D3 CDC_HPH_L — R2513 2P0603R 1000 OHM 25% — C3670 470PF 5% 50V — Rev. M
31-D3 CDC_HPH_R — R2512 2P0603R 1000 OHM 25% — C3669 470PF 5% 50V — Rev. M

CR21 UCLAMP2511T.TCT DNI
CR20 UCLAMP2511T.TCT DNI

Note: DNI CR20, CR21, CR22, CR23 and CR1010. Recommend testing IEC clamps on HPH_L, HPH_R, MIC_IN2_P, MIC_IN3_P and MIC_IN4_P integrated within WCD9320 as detailed in 80-N1763-9.

36-C4 FM_RX_HEADSET — C4090 4700PF 10% 10V — L54 470NH 2% — R389 0 5% 0.063W — C676 47PF 5% 25V

Note: R2805 should be 20K +/-5%. OEM must install this component as shown and not change the value as it will negatively impact MBHC operation and HPH path THD+N.

31-C7 MBHC_HSDET — R2805 20K 5% — R256 0

Note: WCD9320 MBHC_HSDET is for mechanical insertion/removal detection.

Note: For MBHC operation, it is Required to implement MICBIAS2 as shown in this reference schematic. Do not add large capacitance to the micbias2 trace. The trace must be limited to less than 270pF.

31-C7,32-A7 MIC_BIAS2

Note: If enabling Voice Activation feature enabled by WCD9320 MAD, DNI R274 and Install R47 to reduce crosstalk from microphone to headphone speaker through Jack GND.

HEADSET PRIMARY MIC

31-D7 CDC_IN2_P — R250 0
31-D7 CDC_IN2_M — R274 0 DNI — C57 33PF 2P0402R
R47 0 5%
R46 2.2K 1%
Rev. M
GND CLOSE TO HSJ

J36 1 2 3 4 5 6 7

CR22 DNI CR23 DNI

Rev. M
L55 1000 OHM 25% — C89 470PF 5% 50V — CDC_HPH_REF — 31-D3

Note: L55 and C89 added for WCN FM Performance.
Place these components right at the headset jack ground and star route the signals.

Note: Connecting negative terminal to MIC_BIAS2 provides optimum noise and crosstalk for ANC mics.

HS ANC MIC LEFT

31-C7 CDC_IN4_P — Rev. M
31-C7 CDC_IN4_M — Rev. M — R281 0 DNI 5% 0.050W — GND CLOSE TO HSJ
R43 0 5%
31-C7,32-C7 MIC_BIAS2
DNI R48 2.2K 1%
C673 33PF 5% 25V
E10 1000OHM @100MHZ 25%
E11 1000OHM @100MHZ 25%
DNI CR1010 UCLAMP0502P.TCT

Note: Refer to 80-N1763-14 application note on headset crosstalk for design considerations to optimize headphone crosstalk with WCD93XX, including WCD9320.

HS ANC MIC RIGHT

31-D7 CDC_IN3_P — Rev. M
31-C7 CDC_IN3_M — Rev. M — R279 0 DNI 5% 0.050W — GND CLOSE TO HSJ
R44 0 5%
31-C7,32-C7 MIC_BIAS2
DNI R45 2.2K 1%
C722 33PF 5% 25V

AUDIO: HEADSET CONNECTOR

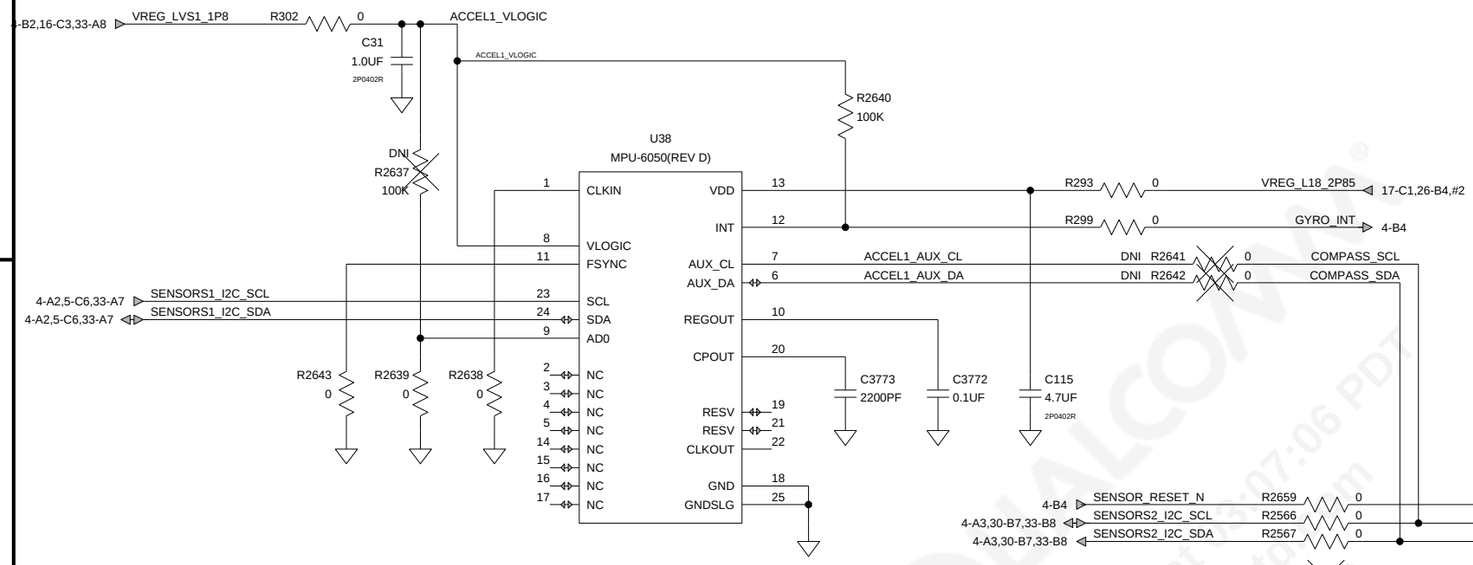
QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC
SIZE D | DRAWING NO 80-NA437-41 | REV M
SCALE NONE | SHEET 32 OF 44

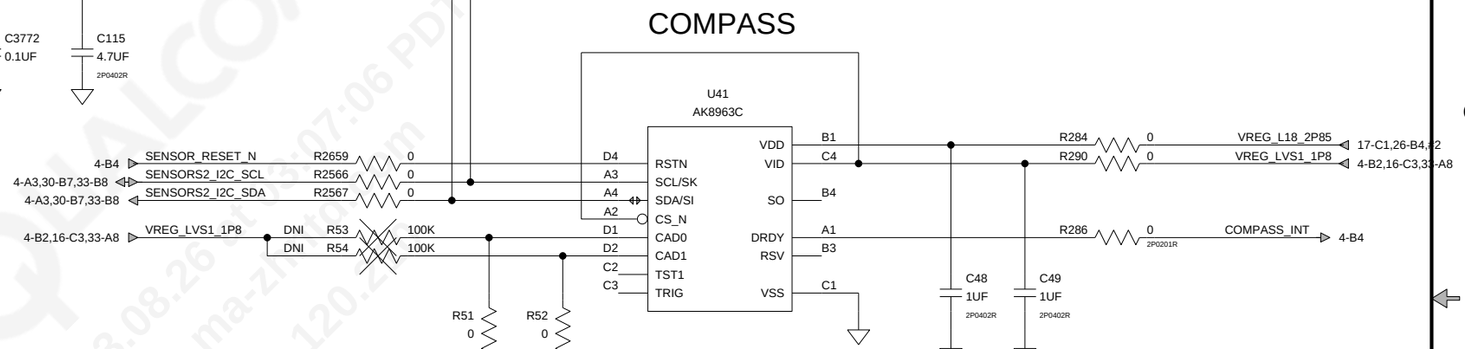
DESIGN PATHNAME: 80-NA437-41 Rev. M
VERSION: 1189
EDITED BY:
LAST EDIT DATE:

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

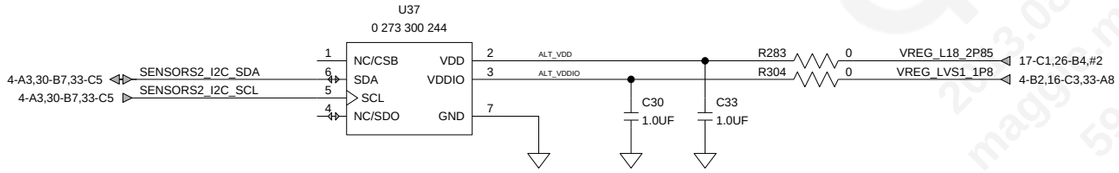
ACCEL1



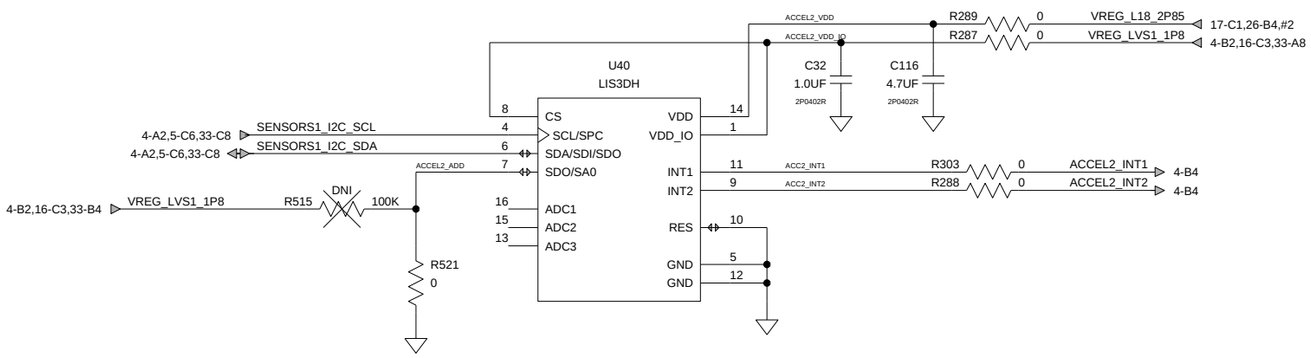
COMPASS



ALTIMETER



ACCEL2

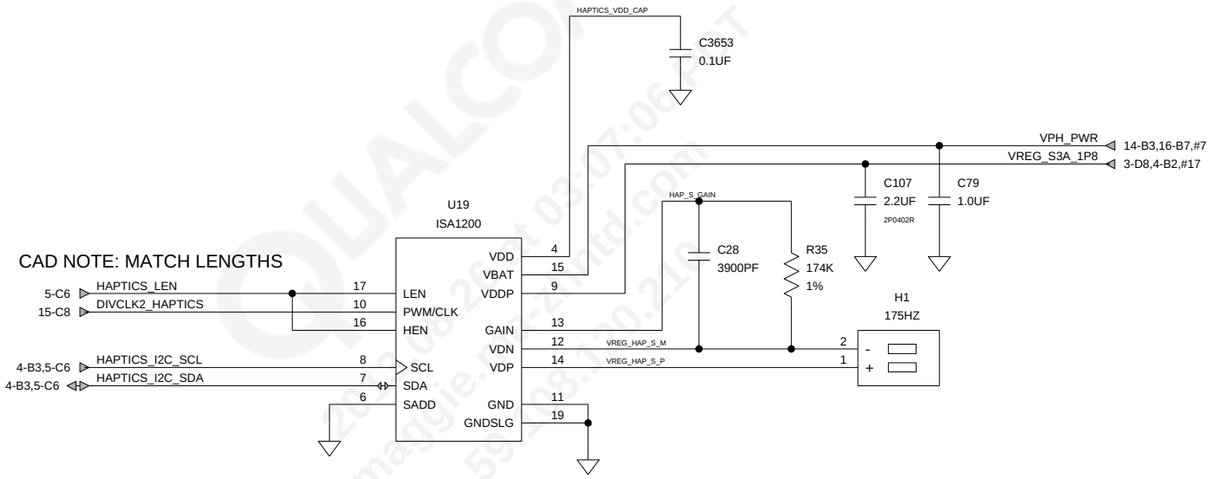


SENSORS: ACCEL (X2), ALT, COMP

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 33 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1116		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



HAPTICS

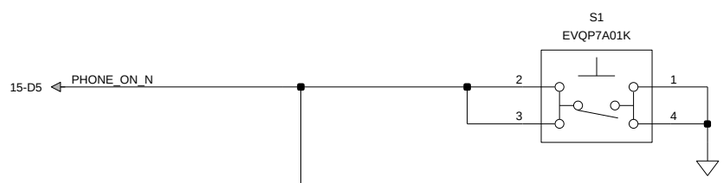
TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET 34 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1108		

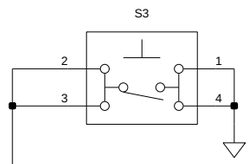
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

BUTTONS

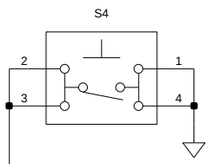
PWR SWITCH



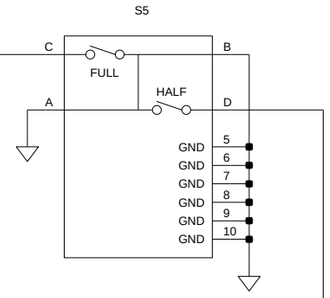
VOL/ZOOM+



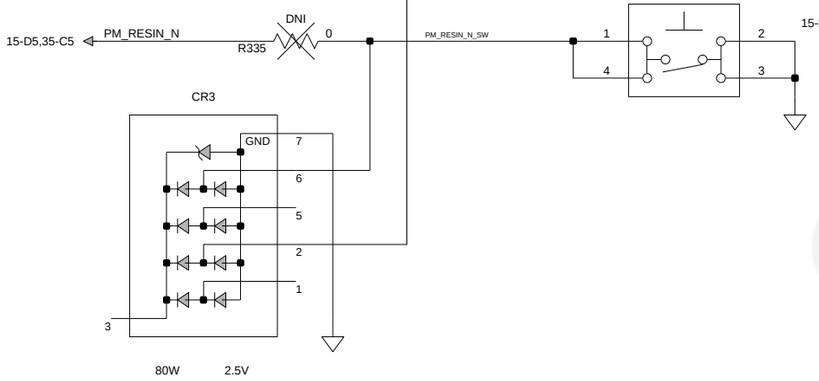
VOL/ZOOM-

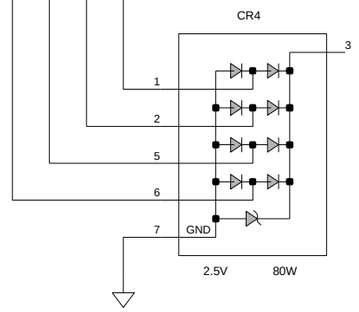


FOCUS/SNAPSHOT

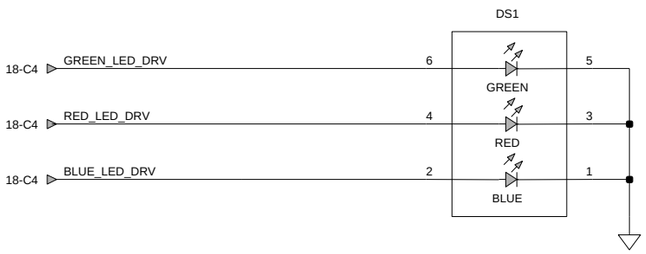


RESET SWITCH





NOTIFICATION LEDS



BUTTONS

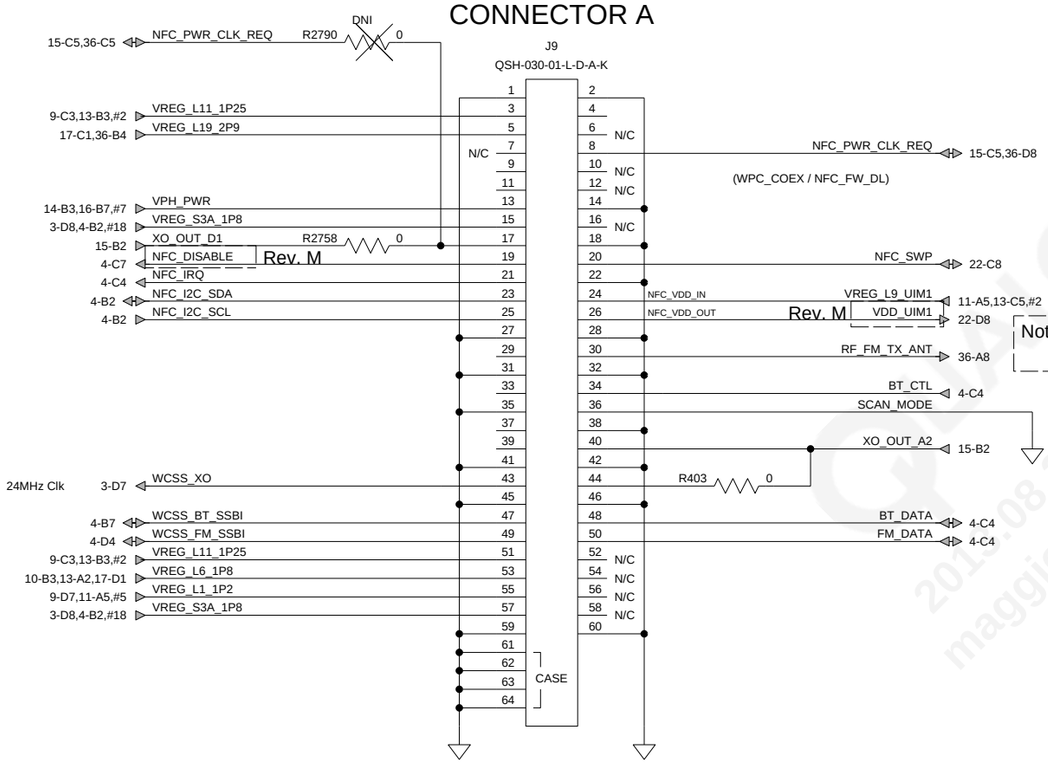
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE	SHEET: 35 OF 44	

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1115		

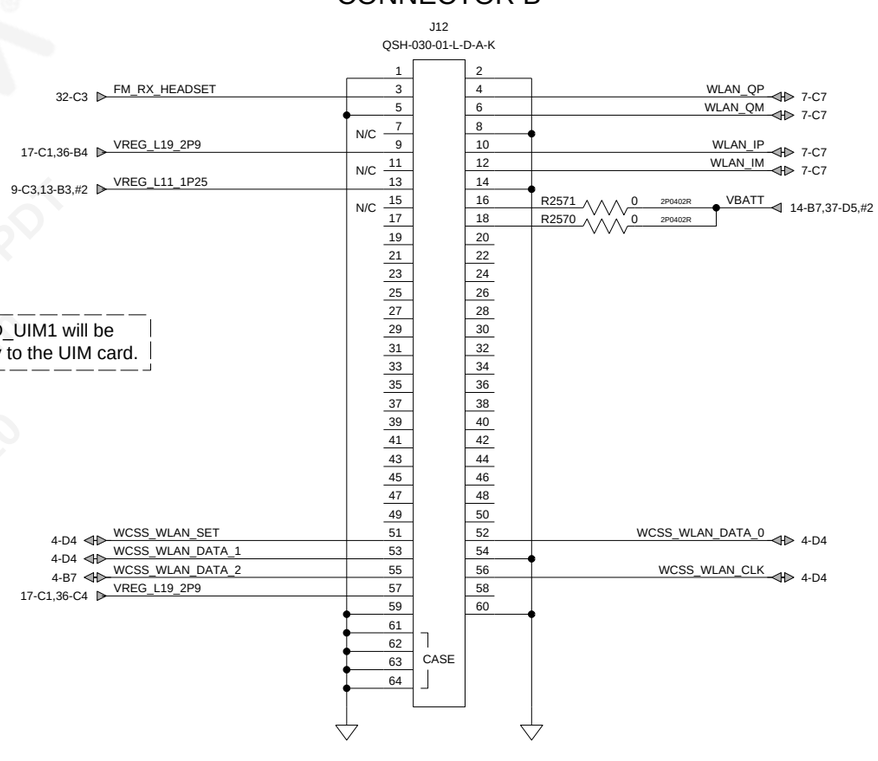
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

WCN CONNECTOR

CONNECTOR A



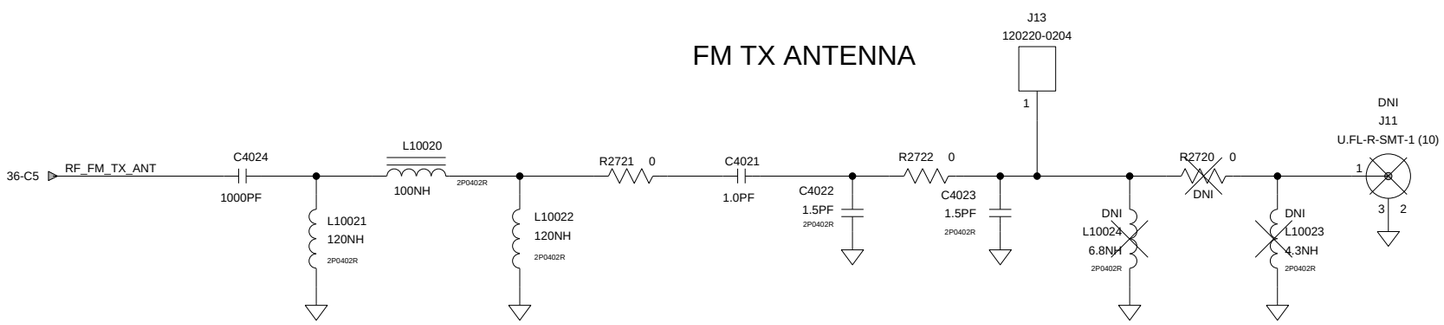
CONNECTOR B



Rev. M

Note: If QCA1990 is used, VDD_UIM1 will be used as the power supply to the UIM card.

FM TX ANTENNA



WLAN CONNECTORS

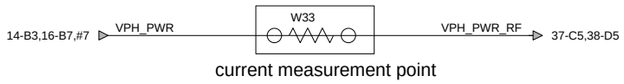
TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 36 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1138		

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

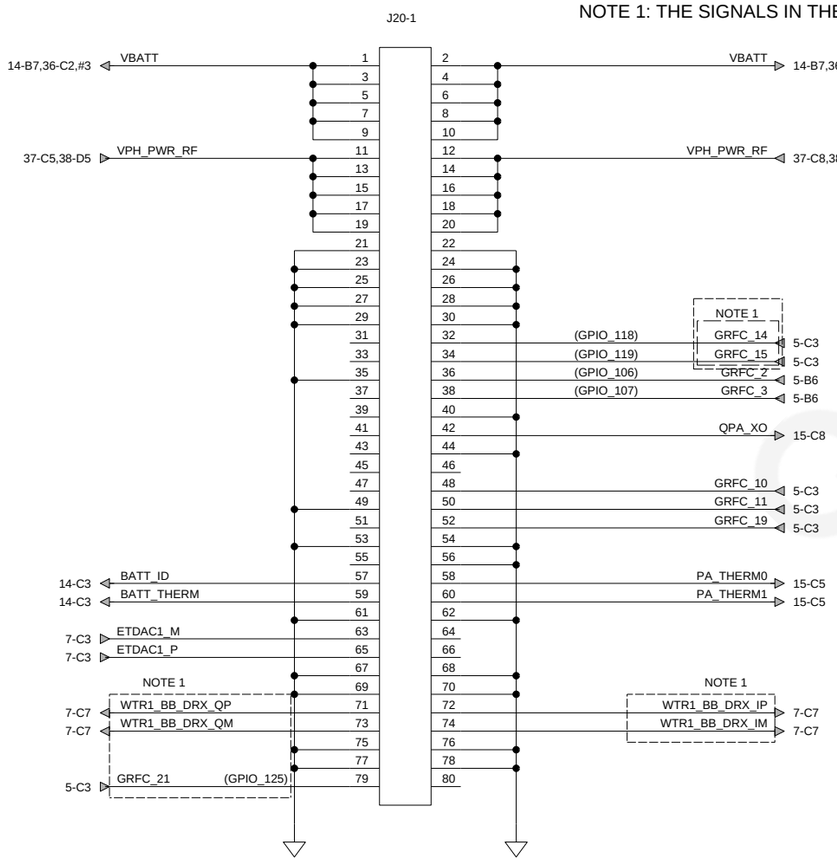
RF CONNECTOR 1

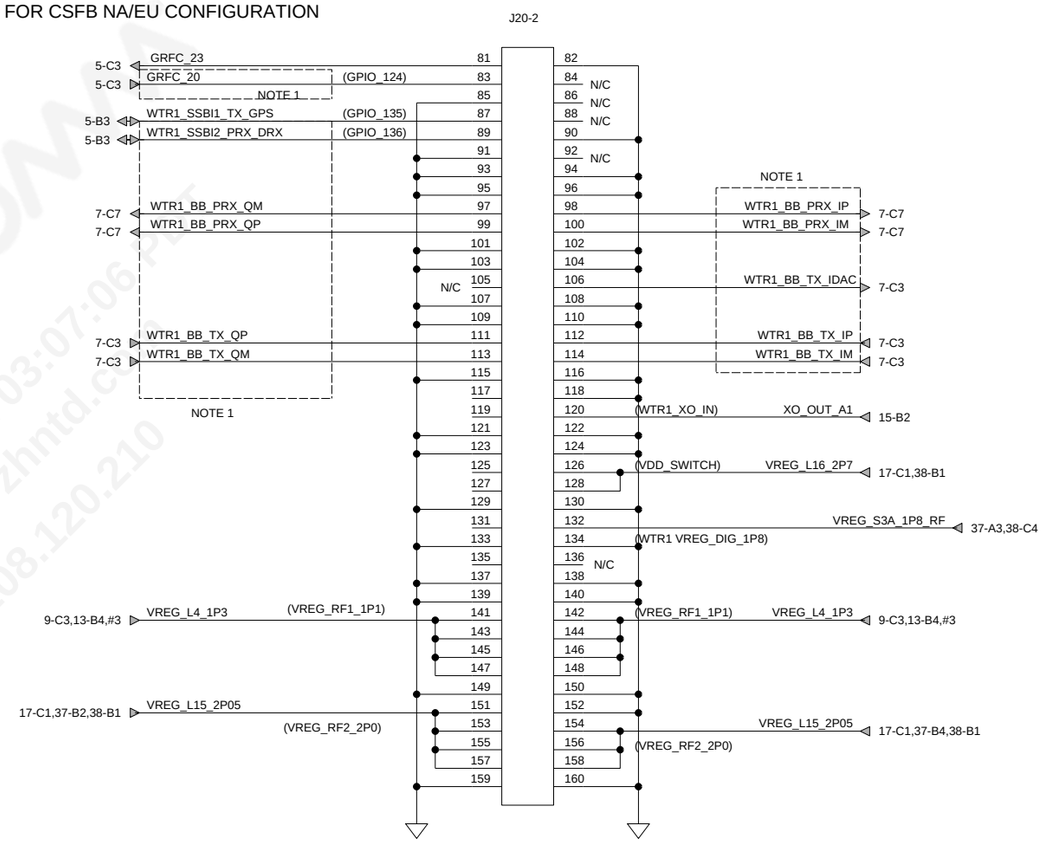
Note: Please refer to the GPIO table on RF schematic for usage of the GRFC signals.



current measurement point

NOTE 1: THE SIGNALS IN THE BOX ARE NOT REQUIRED FOR CSFB NA/EU CONFIGURATION





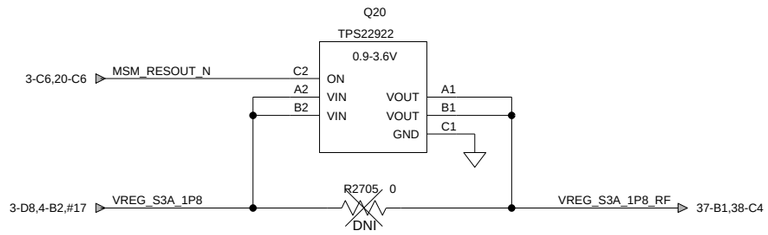
NOTE 2: Added Q20 switch controlled by the MSM_RESOUT_N on VREG_S3A gate to control the power supply to the RFFE devices until VREG_S3A is turned on. Please refer to 80-NA437-4 Issue 19 RFFE VVIO-RST specification incompliance due to VDD_P3 leakage for more details.

Install a 1K ohm PD resistor on RFFEx_DATA signal ONLY if using AVAGO A4A PA. Place the resistor close to the Avago A4A PA. The 1K PD resistor is NOT required for Avago A4A+ and A4B.

Please refer to RF schematic for details.

Note for other PA vendors and Avago A4A+ and A4B, the pull down should be removed.

Rev. M | Removed note



RF CONNECTOR 1

QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC		
	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 37 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1179		

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

RF CONNECTOR 2

Note: Please refer to the GPIO table on RF schematic for usage of the GRFC signals.

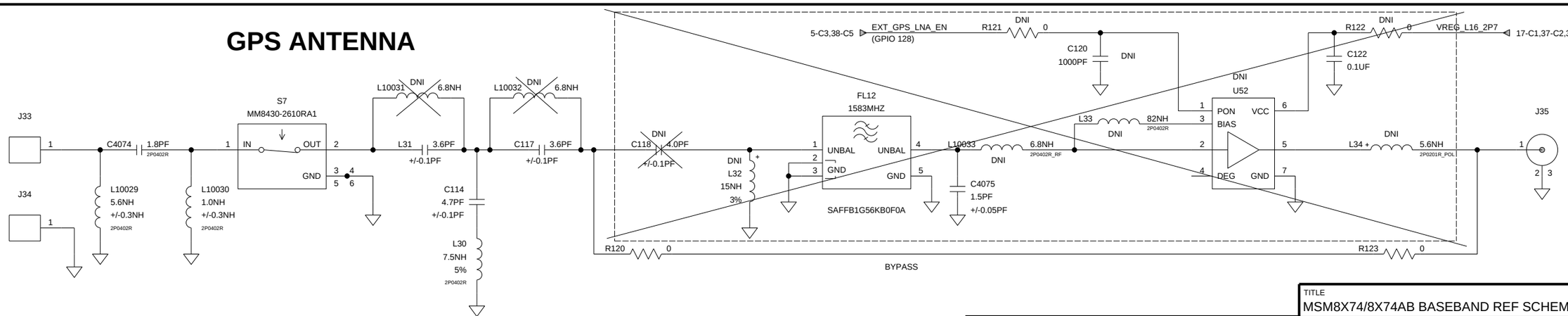
J21-1
WR-160PB-VF50-N1

14-B7,36-C2,#3	VBATT	1	2	VBATT	14-B7,36-C2,#3		
		3	4				
		5	6				
		7	8				
		9	10				
37-C5,38-D5	VPH_PWR_RF	11	12	VPH_PWR_RF	37-C5,38-D8		
		13	14				
		15	16				
		17	18				
		19	20				
		21	22				
		23	24				
		25	26				
		27	28				
		29	30				
5-C3	GRFC_8	31	32	GRFC_5	5-B6		
5-C3	GRFC_9	33	34				
5-B6	GRFC_1	35	36				
5-B6	GRFC_0	37	38				
5-B6	GRFC_4	39	40				
		41	42				
		43	44	GRFC_17	5-C3		
		45	46	GRFC_22	5-C3		
5-C3	GRFC_18	47	48				
5-C3	GRFC_16	49	50	(GPIO_128) EXT_GPS_LNA_EN	5-C3,38-B4		
		51	52				
		53	54				
		55	56				
		57	58	VBATT_SENSE_P	14-B3		
14-B7	VBATT_CONN_SENSE	59	60	VBATT_SENSE_M	14-C3		
		61	62				
7-C3	WTR0_BB_TX_QP	63	64	WTR0_BB_TX_IM	7-D3		
7-D3	WTR0_BB_TX_QM	65	66	WTR0_BB_TX_IP	7-D3		
		67	68				
		69	70				
7-C3	WTR0_BB_TX_IDAC	71	72				
		73	74				
		75	76				
7-C7	WTR0_BB_PRX_QP	77	78	WTR0_BB_PRX_IM	7-D7		
7-D7	WTR0_BB_PRX_QM	79	80	WTR0_BB_PRX_IP	7-D7		

J21-2
WR-160PB-VF50-N1

		81	82				
		83	84				
		85	86				
		87	88	(GPIO111) GRFC_7	5-C3		
5-B3	GSM_TX_PHASE_D0 (GPIO_139)	89	90	(GPIO110) GRFC_6	5-C3		
5-B3	GSM_TX_PHASE_D1 (GPIO_138)	91	92				
5-B3	GRFC_26	93	94	(GPIO133) WTR0_SSBI1_TX_GPS	5-B3		
		95	96	(GPIO134) WTR0_SSBI2_PRX_DRX	5-B3		
		97	98				
		99	100				
		101	102				
7-C7	WTR0_BB_DRX_QM	103	104	WTR0_BB_DRX_IM	7-C7		
7-C7	WTR0_BB_DRX_QP	105	106	WTR0_BB_DRX_IP	7-C7		
		107	108				
		109	110				
7-C3	WTR_GPS_BB_QM	111	112	WTR_GPS_BB_IM	7-C3		
7-C3	WTR_GPS_BB_QP	113	114	WTR_GPS_BB_IP	7-C3		
		115	116				
		117	118				
15-B2	XO_OUT_A0 (WTR0_XO_IN)	119	120				
		121	122				
		123	124				
		125	126				
17-C1,37-C2,38-B1	VREG_L16_2P7 (VDD_GPS_LNA_2P7)	127	128	RFFE1_CLK	5-B3		
		129	130	RFFE1_DATA	5-B3		
37-A3	VREG_S3A_1P8_RF (WTR0_VREG_DIG_1P8)	131	132				
		133	134	RFFE2_CLK	5-B3		
		135	136	RFFE2_DATA	5-B3		
		137	138				
		139	140				
9-C3,13-B4,#3	VREG_L4_1P3 (WGR GPS_VDDQ_1P3)	141	142	(VREG_RF1_1P1) VREG_L4_1P3	9-C3,13-B4,#3		
		143	144				
		145	146				
		147	148				
		149	150				
		151	152				
17-C1,37-B2,38-B1	VREG_L15_2P05	153	154	VREG_L15_2P05	17-C1,37-B2,38-B4		
	(VREG_RF2_2P0)	155	156	(VREG_RF2_2P0)			
		157	158				
		159	160				

GPS ANTENNA



RF CONNECTOR 2

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC

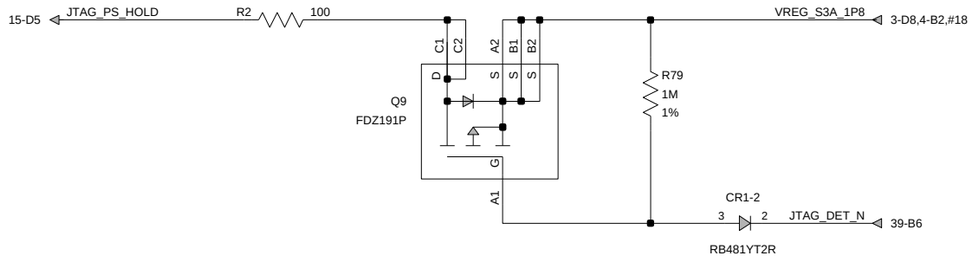
SIZE		DRAWING NO	REV
D		80-NA437-41	M
SCALE NONE		SHEET 38	OF 44

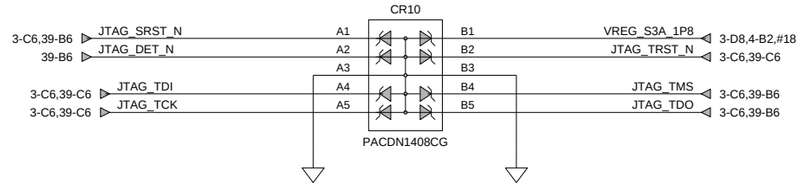
DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1179		

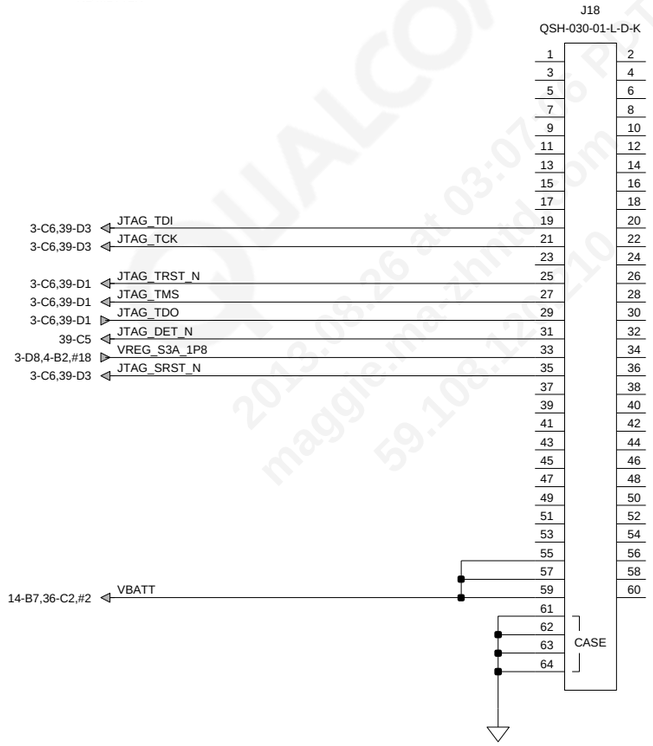
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

JTAG CONNECTOR

JTAG POWER SWITCH







DEBUG CONNECTOR

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
QUALCOMM TECHNOLOGIES, INC. 5775 MOREHOUSE DRIVE SAN DIEGO, CA 92121 U.S.A.	SIZE: D	DRAWING NO: 80-NA437-41	REV: M
	SCALE: NONE		SHEET 39 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1119		

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE	NET SH-ZONE
ACCEL2_INT1	CDC_DMIC_CLK1	DIVCLK1_CODEC	GRFC_19	HDMI_DDC_DATA	32-A7	28-B4	25-D8	PHONE_ON_N	20-B7
4-B4	30-A6	15-C8	5-C3	4-B7	32-A7	MIPI_CSI2_CLK_M	MIPI_DSI0_LANE1_P_CONN	15-D5	SDC1_DATA_7
33-A5	30-A8	31-A7	37-B5	29-A7	32-C7	6-B5	25-C1	35-D8	3-C3
ACCEL2_INT2	30-C7	DIVCLK2_HAPTICS	GRFC_2	HDMI_HOT_PLUG_DET	MIC_BIAS3	27-C8	25-D5	PMIC_SPMI_CLK	20-B7
4-B4	CDC_DMIC_CLK2	15-C8	5-B6	4-B7	30-A6	MIPI_CSI2_CLK_M_CONN	MIPI_DSI0_LANE2_M	3-B3	SDC2_CLK
33-A5	30-B7	34-B6	37-C5	29-B7	30-A8	27-B5	6-C3	15-D5	3-C3
BATT_ID	30-C7	DIVCLK3	GRFC_20	HDMI_TMDS_TCLK_M	31-C7	27-C6	25-C8	19-B5	21-B7
14-C3	CDC_DMIC_DATA0	15-C8	5-C3	6-B5	MIC_BIAS4	MIPI_CSI2_CLK_P	MIPI_DSI0_LANE2_M_CONN	PMIC_SPMI_DATA	SDC2_CMD
37-B8	30-B4	15-C8	37-C4	29-C6	30-B7	6-B5	25-C5	3-B3	3-C3
BATT_REM_ALARM	30-C7	37-C5	GRFC_21	HDMI_TMDS_TCLK_P	31-C7	27-C8	25-D1	15-C5	21-C7
5-B6	CDC_DMIC_DATA1	EMMC_THERM	5-C3	6-B5	MIPI_CSI0_CLK_M	MIPI_CSI2_CLK_P_CONN	MIPI_DSI0_LANE2_P	19-B5	SDC2_DATA_0
15-C5	30-A6	15-C5	37-B8	29-C6	6-C5	27-B5	6-C3	PM_RESIN_N	3-C3
BATT_THERM	30-A8	20-B4	GRFC_22	HDMI_TMDS_TX0_M	28-C8	27-C6	25-C8	15-D5	21-B7
14-C3	30-C7	ETDAC1_M	5-C3	6-B5	MIPI_CSI0_CLK_M_CONN	MIPI_CSI2_LANE0_M	MIPI_DSI0_LANE2_P_CONN	35-C5	SDC2_DATA_1
37-B8	CDC_DMIC_DATA2	7-C3	38-C5	29-C6	28-C4	6-C5	25-C1	35-C8	3-C3
BLUE_LED_DRV	30-B7	37-B8	GRFC_23	HDMI_TMDS_TX0_P	27-C8	27-C8	25-C5	PON_OUT	21-B7
18-C4	30-C7	ETDAC1_P	5-C3	6-B5	MIPI_CSI0_CLK_P	MIPI_CSI2_LANE0_M_CONN	MIPI_DSI0_LANE3_M	15-D2	SDC2_DATA_2
35-A7	CDC_HPH_L	7-C3	37-D4	29-C6	6-C5	27-B5	6-C3	19-B5	3-C3
BOOST_BYP_BYP	31-D3	37-B8	GRFC_26	HDMI_TMDS_TX1_M	28-C8	27-C6	25-C8	19-C8	21-C7
15-D5	32-D6	EXT_GPS_LNA_EN	5-B3	6-B5	MIPI_CSI0_CLK_P_CONN	MIPI_CSI2_LANE0_P	MIPI_DSI0_LANE3_M_CONN	PROXIMITY_INT	SDC2_DATA_3
17-B4	CDC_HPH_R	5-C3	38-D4	29-C6	28-C4	6-C5	25-C5	5-C6	3-C3
18-A8	31-D3	38-B4	GRFC_3	HDMI_TMDS_TX1_P	28-C5	27-C8	25-D1	30-B7	21-C7
BOOST_BYP_EN	32-D6	38-C5	5-B6	6-B5	MIPI_CSI0_LANE0_M	MIPI_CSI2_LANE0_P_CONN	MIPI_DSI0_LANE3_P	QUIET_THERM	SDC_UIM_VBIAS
17-A4	CDC_HPH_REF	FLASH_DRV1	37-C5	29-C6	6-D5	27-B5	6-C3	15-B7	9-D3
17-B4	31-D3	18-B4	GRFC_4	HDMI_TMDS_TX2_M	28-C8	27-C6	25-C8	15-C5	10-C3
BOOST_BYP_VSEL	32-B1	28-B4	5-B6	6-B5	MIPI_CSI0_LANE0_M_CONN	MIPI_CSI2_LANE1_M	MIPI_DSI0_LANE3_P_CONN	RED_LED_DRV	15-C2
17-A4	CDC_IN2_M	FLASH_LED_NOW	38-C8	29-D6	28-C4	6-B5	25-C5	18-C4	SD_CARD_DET_N
17-B4	31-D7	4-C7	GRFC_5	HDMI_TMDS_TX2_P	28-C5	27-B8	25-D1	35-A7	4-C4
BT_CTL	32-B7	15-D5	5-B6	6-B5	MIPI_CSI0_LANE0_P	MIPI_CSI2_LANE1_M_CONN	MSM_PS_HOLD	RFFE1_CLK	21-B7
4-C4	CDC_IN2_P	FM_DATA	38-C5	29-D6	6-D5	27-B5	3-C6	5-B3	SENSORS1_I2C_SCL
36-C5	31-D7	4-C4	GRFC_6	JTAG_DET_N	28-C8	27-B6	15-D5	38-C1	4-A2
BT_DATA	32-B7	36-B5	5-C3	39-B6	MIPI_CSI0_LANE0_P_CONN	MIPI_CSI2_LANE1_P	MSM_RESIN_N	RFFE1_DATA	5-C6
4-C4	CDC_IN3_M	FM_RX_HEADSET	38-D1	39-C5	28-C4	6-B5	3-D6	5-B3	33-A7
36-B5	31-C7	32-C3	GRFC_7	39-D3	28-C5	27-B8	15-D2	38-C1	33-C8
CABC	32-A7	36-C4	5-C3	JTAG_PS_HOLD	MIPI_CSI0_LANE1_M	MIPI_CSI2_LANE1_P_CONN	19-C8	RFFE2_CLK	SENSORS1_I2C_SDA
18-C6	CDC_IN3_P	FOCUS_N	38-D1	15-D5	6-C5	27-B5	MSM_RESOUT_N	5-B3	4-A2
25-D1	31-D7	15-D8	GRFC_8	39-D8	28-B8	27-B6	3-C6	38-C1	5-C6
CAM0_I2C_SCL0	32-A7	35-C5	5-C3	JTAG_SRST_N	MIPI_CSI0_LANE1_M_CONN	MIPI_DSI0_CLK_M	20-C6	RFFE2_DATA	33-A7
4-C2	CDC_IN4_M	GREEN_LED_DRV	38-C8	3-C6	28-B5	6-D3	37-A4	5-B3	33-C8
4-C7	31-C7	18-C4	GRFC_9	39-B6	28-C4	25-B8	MSM_THERM	38-C1	SENSORS2_I2C_SCL
28-C4	32-B7	35-A7	5-C3	39-D3	MIPI_CSI0_LANE1_P	MIPI_DSI0_CLK_M_CONN	3-A6	RF_FM_TX_ANT	4-A3
CAM0_I2C_SDA0	CDC_IN4_P	GRFC_0	38-C8	JTAG_TCK	6-C5	25-B5	15-C5	36-A8	4-C7
4-C2	31-C7	5-B6	GSM_TX_PHASE_D0	3-C6	28-B8	25-C1	NFC_DISABLE	36-C5	30-B7
4-C7	32-B7	38-C8	5-B3	39-C6	MIPI_CSI0_LANE1_P_CONN	MIPI_DSI0_CLK_P	4-C7	SDC1_CLK	33-B8
28-C4	CODEC_INT1	GRFC_1	38-D4	39-D3	28-B5	6-C3	36-C8	3-D3	33-C5
CAM0_MCLK0	4-B4	5-B6	GSM_TX_PHASE_D1	JTAG_TDI	28-C4	25-B8	NFC_I2C_SCL	20-B7	SENSORS2_I2C_SDA
4-C7	30-C3	38-C8	5-B3	3-C6	MIPI_CSI0_LANE2_M	MIPI_DSI0_CLK_P_CONN	4-B2	SDC1_CMD	4-A3
28-C4	CODEC_INT2	GRFC_10	38-D4	39-C6	6-C5	25-B5	4-B7	3-D3	4-C7
CAM0_RST_N	5-B6	5-C3	GYRO_INT	39-D3	28-B8	25-C1	36-C8	20-B7	30-B7
5-C6	30-C3	37-B5	4-B4	JTAG_TDO	MIPI_CSI0_LANE2_M_CONN	MIPI_DSI0_LANE0_M	NFC_I2C_SDA	SDC1_DATA_0	33-B8
28-D4	CODEC_RESET_N	GRFC_11	33-C4	3-C6	28-B4	6-C3	4-B2	3-D3	33-C5
CAM0_STANDBY_N	4-C4	5-C3	HAPTICS_I2C_SCL	39-B6	28-B5	25-C8	4-B7	20-B7	SENSOR_RESET_N
5-C6	30-D7	37-B5	4-B3	39-D1	MIPI_CSI0_LANE2_P	MIPI_DSI0_LANE0_M_CONN	36-C8	SDC1_DATA_1	4-B4
28-D4	COMPASS_INT	GRFC_14	5-C6	JTAG_TMS	6-C5	25-C1	NFC_IRQ	3-D3	33-C5
CAM1_I2C_SCL1	4-B4	5-C3	34-B6	3-C6	28-B8	25-C5	4-C4	20-B7	SLEEP_CLK
4-B2	33-C1	37-C5	HAPTICS_I2C_SDA	39-B6	MIPI_CSI0_LANE2_P_CONN	MIPI_DSI0_LANE0_P	36-C8	SDC1_DATA_2	3-D6
4-C7	DIFFCLK_M	GRFC_15	4-B3	39-D1	28-B4	6-C3	NFC_PWR_CLK_REQ	3-C3	15-B2
27-B1	3-B3	5-C3	5-C6	JTAG_TRST_N	28-B5	25-C8	15-C5	20-B7	SLIMBUS_CLK
CAM1_I2C_SDA1	15-B2	37-C5	34-B6	3-C6	MIPI_CSI0_LANE3_M	MIPI_DSI0_LANE0_P_CONN	36-C5	SDC1_DATA_3	4-B4
4-C2	DIFFCLK_P	GRFC_16	HAPTICS_LEN	39-C6	6-C5	25-C1	36-D8	3-C3	30-D7
4-C7	3-B3	5-C3	5-C6	39-D1	28-A8	25-C5	NFC_SWP	20-B7	SLIMBUS_DATA
27-B1	15-B2	38-C8	34-C6	MBHC_HSDET	MIPI_CSI0_LANE3_M_CONN	MIPI_DSI0_LANE1_M	22-C8	SDC1_DATA_4	4-B4
CAM1_MCLK2	DISPLAY_EN	GRFC_17	HDMI_CEC	31-C7	28-A5	6-C3	36-C5	3-C3	30-D7
4-C7	4-C4	5-C3	4-B7	32-C5	28-B4	25-D8	PA_THERM0	20-B7	SNAPSHOT_N
27-B1	25-B5	38-C5	29-B7	MIC_BIAS1	MIPI_CSI0_LANE3_P	MIPI_DSI0_LANE1_M_CONN	15-C5	SDC1_DATA_5	15-D8
CDC_DMIC_CLK0	25-D4	GRFC_18	HDMI_DDC_CLK	30-B4	6-C5	25-C1	37-B5	3-C3	35-C5
30-B4	DISP_RESET_N	5-C3	4-B7	31-C7	28-A8	25-D5	PA_THERM1	20-B7	TS_CHGR_IN
30-C7	15-D5	38-C8	29-A7	MIC_BIAS2	MIPI_CSI0_LANE3_P_CONN	MIPI_DSI0_LANE1_P	15-C5	SDC1_DATA_6	15-C5
	25-D1			31-C7	28-A5	6-C3	37-B5	3-C3	26-C7

8	7	6	5	4	3	2	1		

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

SIZE		DRAWING NO	REV
D		80-NA437-41	M
SCALE NONE			SHEET 40 OF 44

DESIGN PATHNAME	VERSION	EDITED BY	LAST EDIT DATE
80-NA437-41 Rev. M	1		

8 7 6 5 4 3 2 1

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

NET SH-ZONE
TS_CHGR_IN_CONN
26-C4
26-C5
TS_CHG_N
4-C4
26-C7
TS_CHG_N_CONN
26-B4
26-C5
TS_I2C_MODE
4-C4
26-C7
TS_I2C_MODE_CONN
26-C4
26-C5
TS_I2C_SCL
4-C7
4-D2
26-C7
TS_I2C_SCL_CONN
26-C4
26-C5
TS_I2C_SDA
4-C7
4-D2
26-C7
TS_I2C_SDA_CONN
26-C4
26-C5
TS_RESET_N
4-C4
26-C7
TS_RESET_N_CONN
26-C4
26-C5
TXDAC0_VREF
7-C3
15-C2
TX_GTR_THRES
5-C3
15-D5
17-A6
30-C7
UIM1_CLK
5-B6
22-C8
UIM1_DATA
5-B6
22-C8
UIM1_DETECT
5-B6
22-D4
UIM1_RST
5-B6
22-C8
UIM2_CLK
4-C4
22-B7
UIM2_DATA
4-C4
22-B7
UIM2_DETECT
4-C4
22-D4
UIM2_RST
4-C4
22-B7
USB1_HS_DM
3-C3

NET SH-ZONE
23-C6
USB1_HS_DP
3-C3
23-C6
USB1_HS_ID
15-C5
23-C6
USB1_PHY_VBUS
3-C3
14-C7
USB1_SS_RX0M
3-C3
23-B6
USB1_SS_RX0P
3-B3
23-B6
USB1_SS_TX0M
3-B3
23-C6
USB1_SS_TX0P
3-B3
23-C6
USB1_VBUS
14-C7
23-C6
USB2_HS_DM
3-B3
24-C6
USB2_HS_DP
3-B3
24-C6
USB2_HS_ID
3-B3
24-C6
USB2_HS_VBUS
3-B3
24-C6
VBATT
14-B7
36-C2
37-D5
37-D8
38-D5
38-D8
39-B6
VBATT_CONN_SENSE
14-B7
38-B8
VBATT_SENSE_M
14-C3
38-B5
VBATT_SENSE_P
14-B3
38-C5
VCC_EMMC
20-C2
20-C7
20-D4
20-D6
VCHG
14-B7
18-B6
VDD_UIM1
22-D8
36-C5
VOL_DN_N
15-D8
35-C5

NET SH-ZONE
VOL_UP_N
15-D8
35-C5
VPH_PWR
14-B3
14-C3
16-B7
16-C7
17-A5
17-B5
17-B8
17-D8
18-A6
18-A8
18-D5
18-D6
19-C5
19-D6
25-B5
25-D4
31-B4
31-B7
34-C3
36-C8
37-D8
VPH_PWR_RF
37-C5
37-C8
37-D6
38-D5
38-D8
VREF_LPDDR3_CA
3-C6
15-C2
VREF_LPDDR3_DQ
3-C6
15-C2
VREG_5V
16-B3
16-B7
18-B6
31-B4
VREG_BOOST_BYPASS
17-B1
17-C8
17-C8
17-C8
VREG_HDMI
16-B4
29-B7
VREG_KRAIT_0P9
9-C7
13-B8
19-C1
VREG_L10_UIM2
11-A5
13-B5
17-C1
22-B7
VREG_L11_1P25
9-C3
13-B3
17-C1
36-B8
36-C4
36-C8
VREG_L12_1P8
9-B3
9-B3

NET SH-ZONE
9-C3
9-D3
10-A4
13-A6
17-C1
25-D4
VREG_L13_2P95
11-B5
13-C2
17-C1
21-C4
VREG_L14_1P8
7-D4
9-B3
9-C3
13-B2
17-C1
VREG_L15_2P05
17-C1
37-B2
37-B4
38-B1
38-B4
VREG_L16_2P7
17-C1
37-C2
38-B1
38-C4
VREG_L17_2P85
17-C1
27-B1
28-C4
VREG_L18_2P85
17-C1
26-B4
26-C4
30-B7
33-B4
33-B5
33-C1
33-D4
VREG_L19_2P9
17-C1
36-B4
36-C4
36-C8
VREG_L1_1P2
9-D7
11-A5
11-B5
11-D5
13-C8
17-B5
17-D1
20-D2
30-C3
31-B7
36-B8
VREG_L20_2P95
17-C1
20-C2
VREG_L21_2P95
17-C1
21-C7
VREG_L22_3P0
17-C1
25-D4
VREG_L23_2P85
17-C1

NET SH-ZONE
28-C4
VREG_L24_3P075
10-B3
13-C2
17-C1
VREG_L2_1P2
10-A4
13-B2
17-D1
VREG_L3_1P2
17-D1
28-C5
VREG_L4_1P3
9-C3
13-B4
17-D1
37-B2
37-B4
38-B1
38-B4
VREG_L6_1P8
10-B3
13-A2
17-D1
36-B8
VREG_L8_1P8
15-C5
17-D1
VREG_L9_UIM1
11-A5
13-C5
17-C1
22-C8
36-C5
VREG_LVS1_1P8
4-B2
4-B3
4-D2
16-C3
33-A8
33-B4
33-B5
33-C1
33-C5
33-D8
VREG_LVS2_1P8
4-C2
4-C2
16-C4
27-B1
28-C4
VREG_OTG
14-C7
16-B4
VREG_S1A_1P3
16-C3
17-B8
17-D8
VREG_S1B_0P95
10-B8
10-D6
13-D8
19-D1
VREG_S1B_0P95_ISO
10-B6
10-C3
13-D8
VREG_S2A_2P15
16-C2

NET SH-ZONE
17-D8
17-D8
18-A6
31-C3
VREG_S2B_0P9
9-D3
10-B2
11-D8
13-D3
19-D1
VREG_S2B_0P9_ISO
9-D3
13-D4
VREG_S3A_1P8
3-D8
4-B2
4-B3
5-B7
5-D3
9-D7
11-A5
11-B5
11-B5
13-C3
13-C4
16-C2
17-D8
18-D6
19-B8
20-D2
21-C3
22-D4
29-B7
30-D3
31-B7
31-C4
34-C3
36-B8
36-C8
37-A4
39-B6
39-D1
39-D5
VREG_S3A_1P8_RF
37-A3
37-B1
38-C4
VREG_S3B_1P15
10-D3
13-C8
19-C1
VREG_S4B_0P9
9-B7
13-C6
19-C1
VREG_WLED
18-D2
25-C4
VSENSE_KRAIT_0P9
9-C8
19-C2
VSP_5N4
25-B1
25-D4
VSP_5P4
25-B1
25-C4
WCSS_BT_SSBI
4-B7

NET SH-ZONE
36-B8
WCSS_FM_SSBI
4-D4
36-B8
WCSS_WLAN_CLK
4-D4
36-B2
WCSS_WLAN_DATA_0
4-D4
36-B2
WCSS_WLAN_DATA_1
4-D4
36-B4
WCSS_WLAN_DATA_2
4-B7
36-B4
WCSS_WLAN_SET
4-D4
36-B4
WCSS_XO
3-D7
36-B8
WEBCAM_RESET_N
4-C7
27-B5
WLAN_IM
7-C7
36-C2
WLAN_IP
7-C7
36-C2
WLAN_QM
7-C7
36-C2
WLAN_QP
7-C7
36-C2
WLED1_SINK
18-C4
25-C4
WLED2_SINK
18-C4
25-C4
WLED3_SINK
18-C4
25-C4
WTR0_BB_DRX_IM
7-C7
38-C1
WTR0_BB_DRX_IP
7-C7
38-C1
WTR0_BB_DRX_QM
7-C7
38-C4
WTR0_BB_DRX_QP
7-C7
38-C4
WTR0_BB_PRX_IM
7-D7
38-B5
WTR0_BB_PRX_IP
7-D7
38-B5
WTR0_BB_PRX_QM
7-D7
38-B8
WTR0_BB_PRX_QP
7-C7

NET SH-ZONE
38-B8
WTR0_BB_TX_IDAC
7-C3
38-B8
WTR0_BB_TX_IM
7-D3
38-B5
WTR0_BB_TX_IP
7-D3
38-B5
WTR0_BB_TX_QM
7-D3
38-B8
WTR0_BB_TX_QP
7-C3
38-B8
WTR0_SSBI1_TX_GPS
5-B3
38-D1
WTR0_SSBI2_PRX_DRX
5-B3
38-C1
WTR1_BB_DRX_IM
7-C7
37-B5
WTR1_BB_DRX_IP
7-C7
37-B5
WTR1_BB_DRX_QM
7-C7
37-B8
WTR1_BB_DRX_QP
7-C7
37-B8
WTR1_BB_PRX_IM
7-C7
37-C2
WTR1_BB_PRX_IP
7-C7
37-C2
WTR1_BB_PRX_QM
7-C7
37-C4
WTR1_BB_PRX_QP
7-C7
37-C4
WTR1_BB_TX_IDAC
7-C3
37-C2
WTR1_BB_TX_IM
7-C3
37-C2
WTR1_BB_TX_IP
7-C3
37-C2
WTR1_BB_TX_QM
7-C3
37-C4
WTR1_BB_TX_QP
7-C3
37-C4
WTR1_SSBI1_TX_GPS
5-B3
37-C4
WTR1_SSBI2_PRX_DRX
5-B3
37-C4
WTR_GPS_BB_IM
7-C3

NET SH-ZONE
38-C1
WTR_GPS_BB_IP
7-C3
38-C1
WTR_GPS_BB_QM
7-C3
38-C4
WTR_GPS_BB_QP
7-C3
38-C4
XO_OUT_A0
15-B2
38-C4
XO_OUT_A1
15-B2
37-C2
XO_OUT_A2
15-B2
36-C5
XO_OUT_D0
3-B3
3-C3
3-D6
15-B2
XO_OUT_D0_EN
3-D6
15-B2
XO_OUT_D1
15-B2
36-C8

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC

SIZE	DRAWING NO	REV
D	80-NA437-41	M

SCALE NONE — SHEET 41 OF 44

8 7 6 5 4 3 2 1

DESIGN PATHNAME: 80-NA437-41 Rev. M — VERSION: 1 — EDITED BY — LAST EDIT DATE

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
C28	34-C4	3900PF	-
C30	33-B6	1.0UF	-
C31	33-D7	1.0UF	-
C32	33-B6	1.0UF	-
C33	33-B6	1.0UF	-
C43	31-C4	33PF	DNI
C44	31-C4	33PF	DNI
C45	30-C4	0.1UF	-
C48	33-C2	1UF	-
C49	33-C2	1UF	-
C57	32-B5	33PF	-
C65	18-A6	4.7UF	-
C68	21-C5	1.0UF	-
C75	17-B6	22UF	-
C76	17-B6	10UF	-
C77	17-B6	10UF	-
C78	17-D7	0.1UF	-
C79	34-C3	1.0UF	-
C84	31-B2	8.2PF	DNI
C85	19-C2	22UF	-
C86	19-B2	22UF	-
C87	19-B2	22UF	-
C88	19-B2	22UF	-
C89	32-B2	470PF	-
C90	3-D7	18PF	-
C91	3-D6	56PF	-
C93	3-B3	15PF	-
C94	3-B3	15PF	DNI
C107	34-C3	2.2UF	-
C114	38-A6	4.7PF	-
C115	33-C5	4.7UF	-
C116	33-B5	4.7UF	-
C117	38-A6	3.6PF	-
C118	38-A5	4.0PF	DNI
C120	38-B3	1000PF	DNI
C122	38-B2	0.1UF	-
C126	16-C6	2.2UF	-
C128	16-C6	2.2UF	-
C130	16-C6	2.2UF	-
C134	16-C7	22UF	DNI
C138	16-C7	22UF	DNI
C150	24-C4	1UF	-
C157	21-C6	33PF	-
C175	20-B3	0.1UF	-
C176	20-C2	0.1UF	-
C177	20-C2	0.1UF	-
C230	20-C2	2.2UF	-
C231	20-C2	2.2UF	-
C242	18-A6	2.2UF	-
C673	32-B5	33PF	-
C676	32-C2	47PF	-
C722	32-A5	33PF	-
C3653	34-C4	0.1UF	-
C3669	32-D5	470PF	-
C3670	32-D5	470PF	-
C3679	15-C1	0.1UF	-
C3683	9-A3	2.2UF	-
C3684	15-B2	1.0UF	-
C3685	15-B2	1.0UF	-
C3686	17-C5	4.7UF	-
C3688	17-C5	4.7UF	-
C3690	17-C4	1.0UF	-
C3692	17-C4	1.0UF	-
C3694	17-C4	1.0UF	-
C3695	17-C4	1.0UF	-
C3696	17-C5	1.0UF	-
C3697	17-C4	4.7UF	-
C3698	17-C4	4.7UF	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
C3699	17-C3	4.7UF	-
C3700	17-C3	4.7UF	-
C3701	17-C3	1.0UF	-
C3702	17-C3	4.7UF	-
C3703	17-C3	1.0UF	-
C3705	17-C5	1.0UF	-
C3708	16-B3	47UF	-
C3709	16-C3	47UF	-
C3710	16-C3	47UF	-
C3711	16-C3	47UF	-
C3712	14-C4	47UF	-
C3713	15-D4	0.1UF	DNI
C3719	14-C4	0.1UF	-
C3721	27-B3	1.0UF	DNI
C3722	27-B2	1.0UF	DNI
C3723	27-B3	1.0UF	-
C3726	24-C5	2.0PF	DNI
C3772	33-C5	0.1UF	-
C3773	33-C6	2200PF	-
C3774	7-D4	2200PF	DNI
C3775	7-D4	2200PF	DNI
C3776	7-C4	0.1UF	DNI
C3777	7-C3	0.1UF	DNI
C3779	31-C7	0.1UF	-
C3780	31-C7	0.1UF	-
C3783	19-C5	1.0UF	-
C3784	15-C1	1.0UF	-
C3785	31-B7	0.1UF	-
C3786	14-B6	0.1UF	-
C3789	14-C3	0.47UF	-
C3791	14-B4	22UF	-
C3792	14-B6	4.7UF	-
C3793	15-C4	0.1UF	-
C3794	31-B4	1UF	-
C3795	31-B5	1UF	-
C3796	31-B6	1UF	-
C3797	17-B2	22UF	-
C3798	17-B2	10UF	DNI
C3799	19-D4	2.2UF	-
C3800	19-D4	2.2UF	-
C3801	19-C4	2.2UF	-
C3802	19-C4	2.2UF	-
C3803	19-C4	2.2UF	-
C3804	19-B4	2.2UF	-
C3805	19-B4	2.2UF	-
C3806	19-B4	2.2UF	-
C3807	31-B5	4.7UF	-
C3808	31-C4	4.7UF	-
C3809	18-D3	4.7UF	-
C3811	17-B4	4.7UF	-
C3812	19-D5	22UF	DNI
C3813	19-D5	22UF	DNI
C3814	19-D5	22UF	-
C3816	19-C2	47UF	-
C3817	19-C2	47UF	-
C3818	19-D2	47UF	-
C3819	19-D2	47UF	-
C3820	25-A4	0.1UF	DNI
C3821	25-B3	0.1UF	DNI
C3824	31-B7	0.1UF	-
C3826	25-C3	0.1UF	-
C3827	25-C4	0.1UF	-
C3830	28-B2	0.1UF	-
C3831	28-B2	0.1UF	-
C3832	28-B3	0.1UF	-
C3834	13-D7	1UF	-
C3835	13-D7	1UF	-
C3836	13-D7	1UF	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
C3837	13-D7	1UF	-
C3838	13-D6	1UF	-
C3839	13-D6	1UF	-
C3840	13-D6	1UF	-
C3841	13-D6	1UF	-
C3842	13-D5	1UF	-
C3844	13-D5	1UF	-
C3846	13-D7	1UF	-
C3847	13-D7	1UF	-
C3848	13-D7	1UF	-
C3849	13-D7	1UF	-
C3850	13-D6	1UF	-
C3851	13-D6	1UF	-
C3852	13-D6	1UF	-
C3853	13-D6	1UF	-
C3854	13-D5	1UF	-
C3855	13-D5	1UF	-
C3856	13-D2	1UF	-
C3857	13-D3	1UF	-
C3858	13-D2	1UF	-
C3859	13-D2	1UF	-
C3860	13-D2	1UF	-
C3861	13-D2	1UF	-
C3862	13-D1	1UF	-
C3863	13-D1	1UF	-
C3864	13-C3	1UF	-
C3865	13-C4	1UF	-
C3866	13-C3	1UF	-
C3867	13-C3	1UF	-
C3868	19-D1	47UF	-
C3869	19-C1	47UF	-
C3870	13-C7	1UF	-
C3871	13-C7	1UF	-
C3872	13-C7	1UF	-
C3873	13-C7	1UF	-
C3874	13-C6	1UF	-
C3875	13-C6	1UF	-
C3876	13-C5	1UF	-
C3877	13-C5	1UF	-
C3878	13-B7	1UF	-
C3879	13-B7	1UF	-
C3880	13-B7	1UF	-
C3881	13-B7	1UF	-
C3882	13-B7	1UF	-
C3883	13-B6	1UF	-
C3884	13-B6	1UF	-
C3885	13-B6	1UF	-
C3886	13-B6	1UF	-
C3887	13-B6	1UF	-
C3888	13-B6	1UF	-
C3889	13-B5	1UF	-
C3890	13-B5	1UF	-
C3891	13-B5	1UF	-
C3892	13-B5	1UF	-
C3893	13-B5	1UF	-
C3894	13-C7	1UF	-
C3895	13-C7	1UF	-
C3896	13-C7	1UF	-
C3897	13-C7	1UF	-
C3898	13-C7	1UF	-
C3899	13-C6	1UF	-
C3900	13-C6	1UF	-
C3901	13-C6	1UF	-
C3902	13-C6	1UF	-
C3903	13-C6	1UF	-
C3904	13-B7	1UF	-
C3905	13-B7	1UF	-
C3906	13-B7	1UF	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
C3907	13-B7	1UF	-
C3908	13-B7	1UF	-
C3909	13-B6	1UF	-
C3910	13-B6	1UF	-
C3911	13-B6	1UF	-
C3912	13-B6	1UF	-
C3913	13-B6	1UF	-
C3914	13-C1	1UF	-
C3915	13-C3	1UF	-
C3916	13-C3	1UF	-
C3917	13-C3	1UF	-
C3918	13-C3	1UF	-
C3919	13-C3	1UF	-
C3920	13-C2	1UF	-
C3921	13-C3	1UF	-
C3922	13-C2	1UF	-
C3923	13-C3	1UF	-
C3924	13-C2	1UF	-
C3925	13-C3	1UF	-
C3926	13-C3	1UF	-
C3931	13-C4	1UF	-
C3932	13-B4	1UF	-
C3933	13-B3	1UF	-
C3934	13-B3	1UF	-
C3935	13-B2	1UF	-
C3936	13-B2	1UF	-
C3938	13-B3	1UF	-
C3939	13-A5	1UF	-
C3940	13-A5	1UF	-
C3941	13-A5	1UF	-
C3942	13-A4	1UF	-
C3943	13-A5	1UF	-
C3944	13-A4	1UF	-
C3945	13-A4	1UF	-
C3946	13-A4	1UF	-
C3948	13-B2	1UF	-
C3950	13-A1	1UF	-
C3951	13-A1	1UF	-
C3952	13-A1	1UF	-
C3953	13-C1	1UF	-
C3955	25-B3	100PF	DNI
C3956	25-B2	100PF	DNI
C3957	25-B4	4.7UF	DNI
C3958	25-B2	4.7UF	DNI
C3959	25-B2	4.7UF	DNI
C3960	25-B2	4.7UF	DNI
C3961	25-B3	4.7UF	DNI
C3966	19-B7	0.1UF	-
C3999	22-B4	0.1UF	-
C4000	22-C5	0.1UF	-
C4001	22-C7	33PF	DNI
C4002	22-C7	33PF	DNI
C4003	22-B4	33PF	DNI
C4004	22-C5	33PF	DNI
C4005	14-C6	0.01UF	-
C4008	10-A3	1UF	-
C4009	10-A3	1UF	-
C4010	13-D5	1UF	-
C4011	13-D4	1UF	-
C4012	13-D5	1UF	-
C4013	13-D4	1UF	-
C4014	13-D4	1UF	-
C4015	10-C4	0.1UF	-
C4017	23-C4	0.1UF	-
C4018	23-C4	0.1UF	-
C4021	36-A6	1.0PF	-
C4022	36-A5	1.5PF	-
C4023	36-A5	1.5PF	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
C4024	36-A7	1000PF	-
C4026	31-C4	2.2UF	-
C4028	31-B3	200PF	DNI
C4029	31-B2	200PF	DNI
C4039	25-A3	4.7UF	DNI
C4040	14-B6	4.7UF	-
C4041	14-B6	10UF	-
C4042	14-C6	1UF	-
C4043	14-C6	1UF	DNI
C4048	29-B4	0.1UF	-
C4049	29-C3	0.1UF	-
C4050	29-B6	0.1UF	-
C4051	29-B6	0.1UF	-
C4061	19-C3	10PF	DNI
C4062	19-D3	10PF	DNI
C4063	9-C7	10PF	DNI
C4064	20-D5	0.1UF	DNI
C4066	3-C6	0.1UF	-
C4067	3-C6	0.1UF	-
C4068	9-D4	0.1UF	-
C4069	26-B3	0.1UF	-
C4070	26-B3	0.1UF	-
C4073	19-D1	47UF	-
C4074	38-A8	1.8PF	-
C4075	38-A4	1.5PF	-
C4076	14-B6	0.1UF	-
C4077	14-B6	0.1UF	DNI
C4078	13-C4	1UF	-
C4079	13-C4	1UF	-
C4080	13-C4	1UF	-
C4081	13-C4	1UF	-
C4083	18-D4	1.0UF	-
C4084	15-B4	1000PF	-
C4085	16-B7	1.0UF	-
C4086	9-D4	1UF	-
C4087	14-B4	0.1UF	DNI
C4088	9-B4	1.0UF	-
C4089	31-B2	8.2PF	DNI
C4090	32-C3	4700PF	-

REFDES	SH-ZONE	EXCEPT_ASSY
CR1-2	39-C6	-
CR2	24-B5	-
CR3	35-C7	-
CR4	35-B3	-
CR8	21-A5	-
CR10	39-D2	-
CR20	32-D4	DNI
CR21	32-D4	DNI
CR22	32-C3	DNI
CR23	32-C3	DNI
CR24	31-B2	-
CR27	21-B6	-
CR28	31-C3	DNI
CR29	31-C3	DNI
CR1003	18-D4	-
CR1005	25-B3	DNI
CR1006	25-B3	DNI
CR1007	23-B4	-
CR1010	32-B2	DNI

REFDES	SH-ZONE	EXCEPT_ASSY
DS1	35-A6	-
DS2	28-B4	-

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE			
MSM8X74/8X74AB BASEBAND REF SCHEMATIC			
SIZE: D	DRAWING NO: 80-NA437-41		REV: M
SCALE: NONE		SHEET 42 OF 44	

DESIGN PATHNAME: 80-NA437-41 Rev. M | VERSION: 1 | EDITED BY | LAST EDIT DATE

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

REFDES	SH-ZONE	EXCEPT_ASSY
E10	32-B3	-
E11	32-B3	-
E30	31-D7	-
E35	31-D7	-
E36	31-C4	-
E37	15-B2	-
E40	15-B2	-
E41	15-B2	-
E42	31-C7	-

REFDES	SH-ZONE	EXCEPT_ASSY
FL6	26-C7	-
FL12	38-A5	-
FL13-1	29-D4	-
FL13-2	29-C4	-
FL14-1	29-C4	-
FL14-2	29-C4	-
FL15-1	25-D7	-
FL15-2	25-C7	-
FL16-1	25-C7	-
FL16-2	25-C7	-
FL17-1	25-B7	-
FL17-2	27-C7	-
FL18-2	27-C7	-
FL19-1	27-B7	-
FL19-2	28-C7	-
FL20-1	28-C7	-
FL20-2	28-B7	-
FL21-1	28-B7	-
FL21-2	28-A7	-

REFDES	SH-ZONE	EXCEPT_ASSY
GM4	31-B1	-

REFDES	SH-ZONE	EXCEPT_ASSY
H1	34-B4	-

REFDES	SH-ZONE	EXCEPT_ASSY
J4	30-B6	-
J5	28-D2	-
J6	27-B3	-
J9	36-C7	-
J10	26-C2	-
J11	36-A4	DNI
J12	36-C3	-
J13	36-A5	-
J14	23-C2	-
J15	21-C2	-
J16	22-C3	-
J17	24-C3	-
J18	39-C4	-
J19	25-D3	-
J20-1	37-D7	-
J20-2	37-D3	-
J21-1	38-D7	-
J21-2	38-D3	-
J28	30-B3	-
J29	30-A7	-
J30	30-A5	-
J32	29-D2	-

REFDES	SH-ZONE	EXCEPT_ASSY
J33	38-A8	-
J34	38-A8	-
J35	38-A1	-
J36	32-C1	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
L30	38-A6	7.5NH	-
L31	38-A6	3.6PF	-
L32	38-A5	15NH	DNI
L33	38-A3	82NH	DNI
L34	38-A2	5.6NH	DNI
L52	31-D4	470 OHM	-
L53	31-D4	470 OHM	-
L54	32-C2	470NH	-
L55	32-B2	1000 OHM	-
L57	17-B6	0.47UH	-
L1005	16-C4	2.2UH	-
L1009	19-D3	0.47UH	-
L1010	19-D3	0.47UH	-
L1011	19-C3	2.2UH	-
L1012	19-C3	0.47UH	-
L10002	9-A4	2.2UH	-
L10004	16-C4	2.2UH	-
L10006	16-B6	2.2UH	-
L10007	14-B4	1.0UH	-
L10013	19-C3	0.24UH	-
L10014	19-B3	0.24UH	-
L10015	19-B3	0.24UH	-
L10016	19-B3	0.24UH	-
L10017	17-B4	0.47UH	-
L10018	25-B3	10UH	DNI
L10019	25-A3	15UH	DNI
L10020	36-A7	100NH	-
L10021	36-A7	120NH	-
L10022	36-A6	120NH	-
L10023	36-A4	4.3NH	DNI
L10024	36-A4	6.8NH	DNI
L10025	18-D4	10UH	-
L10028	16-C4	2.2UH	-
L10029	38-A8	5.6NH	-
L10030	38-A7	1.0NH	-
L10031	38-B6	6.8NH	DNI
L10032	38-B6	6.8NH	DNI
L10033	38-A4	6.8NH	DNI

REFDES	SH-ZONE	EXCEPT_ASSY
Q9	39-C6	-
Q20	37-A4	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
R2	39-D7	100	-
R35	34-C4	174K	-
R43	32-B6	0	-
R44	32-A6	0	-
R45	32-A6	2.2K	DNI
R46	32-C6	2.2K	-
R47	32-C6	0	-
R48	32-B6	2.2K	DNI
R51	33-B4	0	-
R52	33-B4	0	-
R53	33-C4	100K	DNI
R54	33-C4	100K	DNI

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
R79	39-D6	1M	-
R80	24-C4	47K	-
R85	20-C6	51K	DNI
R86	20-C6	51K	DNI
R87	20-C5	51K	DNI
R88	20-C5	51K	DNI
R89	20-C5	51K	DNI
R90	20-C6	51K	DNI
R91	20-C4	51K	DNI
R92	21-C3	51K	DNI
R94	21-C4	51K	DNI
R95	21-C4	51K	DNI
R96	21-C3	51K	DNI
R117	20-C6	10K	-
R118	21-C4	10K	DNI
R120	38-A5	0	-
R121	38-B4	0	DNI
R122	38-B2	0	DNI
R123	38-A2	0	-
R187	28-D3	0	-
R188	28-D3	0	-
R189	28-D2	0	DNI
R200	23-B6	43K	DNI
R201	23-B5	43K	DNI
R236	20-C5	0	-
R237	21-C6	0	-
R250	32-B6	0	-
R256	32-C4	0	-
R274	32-B6	0	DNI
R279	32-A6	0	DNI
R281	32-B6	0	DNI
R283	33-B6	0	-
R284	33-C2	0	-
R286	33-C2	0	-
R287	33-B5	0	-
R288	33-A5	0	-
R289	33-B5	0	-
R290	33-C2	0	-
R293	33-D5	0	-
R299	33-C5	0	-
R302	33-D7	0	-
R303	33-A5	0	-
R304	33-B6	0	-
R324	25-D3	0	-
R325	25-D3	0	DNI
R334	35-C5	0	DNI
R335	35-C7	0	DNI
R389	32-C2	0	-
R403	36-B6	0	-
R515	33-A7	100K	DNI
R521	33-A7	0	-
R522	3-D7	1M	-
R2512	32-D5	1000 OHM	-
R2513	32-D5	1000 OHM	-
R2564	22-B7	10K	-
R2566	33-C4	0	-
R2567	33-C4	0	-
R2570	36-C2	0	-
R2571	36-C2	0	-
R2572	3-A6	1M	-
R2573	3-A5	1M	-
R2590	3-B6	240	-
R2591	3-B6	240	-
R2592	3-B6	240	-
R2593	3-B6	240	-
R2594	3-A3	240	-
R2595	3-A4	6.81K	-
R2596	3-A3	200	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
R2597	3-A3	200	-
R2598	3-A3	200	-
R2599	3-C3	32.4	-
R2600	3-D3	33	-
R2601	6-B5	4.64K	-
R2620	10-B3	0	-
R2622	11-B5	0	-
R2623	11-B5	0	DNI
R2624	11-A5	0	DNI
R2625	11-A5	0	-
R2626	14-D4	100K	-
R2633	27-B2	100K	-
R2634	14-C4	16.2K	-
R2635	14-D4	90.9K	-
R2637	33-D7	100K	DNI
R2638	33-C7	0	-
R2639	33-C7	0	-
R2640	33-D6	100K	-
R2641	33-C5	0	DNI
R2642	33-C5	0	DNI
R2643	33-C7	0	-
R2647	20-D3	0	DNI
R2648	9-D4	0	-
R2659	33-C4	0	-
R2660	30-C6	0	-
R2661	30-B4	0	-
R2662	30-B7	0	-
R2663	30-C6	0	-
R2668	9-D4	0	-
R2670	19-D3	0	-
R2671	19-C3	0	-
R2677	15-C4	100K	DNI
R2678	15-C4	100K	-
R2679	15-C4	150K	-
R2683	25-B3	33K	DNI
R2684	25-A4	30K	DNI
R2685	25-B2	36K	DNI
R2686	25-B3	1.2K	DNI
R2687	25-B3	6.81K	DNI
R2688	25-B2	1K	DNI
R2689	25-B2	1K	DNI
R2690	25-B2	7.5K	DNI
R2693	22-D7	0	DNI
R2694	22-C7	10K	-
R2695	22-D3	100K	-
R2696	22-D3	100K	-
R2699	3-D7	10K	DNI
R2700	3-D7	10K	DNI
R2701	3-D7	27K	-
R2702	3-D6	33	-
R2705	37-A4	0	DNI
R2708	14-C6	0	DNI
R2720	36-A4	0	DNI
R2721	36-A6	0	-
R2722	36-A5	0	-
R2724	16-B4	0	-
R2725	4-B2	2.2K	-
R2726	4-B2	2.2K	-
R2727	4-C1	2.2K	-
R2728	4-C1	2.2K	-
R2729	4-C1	2.2K	-
R2730	4-C1	2.2K	-
R2731	4-B1	2.2K	-
R2732	4-B1	2.2K	-
R2733	4-D1	2.2K	-
R2734	4-D1	2.2K	-
R2735	31-D4	0	-
R2737	4-B1	2.2K	-

REFDES	SH-ZONE	INSTPAR	EXCEPT_ASSY
R2738	4-B1	2.2K	-
R2739	31-B3	0	-
R2740	31-B3	0	-
R2741	31-B3	0	-
R2742	31-B3	0	-
R2745	17-A5	0	DNI
R2746	17-A5	0	DNI
R2747	17-A5	0	-
R2748	17-A5	0	DNI
R2749	20-C5	51K	DNI
R2754	4-B2	2.2K	-
R2755	4-B2	2.2K	-
R2756	20-D3	0	-
R2757	29-B5	10K	-
R2758	36-C7	0	-
R2759	9-C7	0	-
R2769	15-D4	10K	-
R2770	10-B7	0	-
R2771	18-C6	100K	-
R2773	15-B5	100K	DNI
R2776	30-A7	0	-
R2777	30-A5	0	-
R2778	30-C6	0	-
R2780	17-A5	0	-
R2790	36-D7	0	DNI
R2793	14-C3	5.1K	DNI
R2794	25-D3	0	DNI
R2795	25-C3	0	DNI
R2796	31-B4	0	-
R2797	31-B4	0	DNI
R2800	14-C7	47K	-
R2801	15-C5	30.9K	-
R2804	5-B7	0	-
R2805	32-C5	20K	-
R2807	15-B2	0	-
R2808	5-D4	10K	DNI
R2809	14-C7	0	-
R2810	21-C3	1M	-

REFDES	SH-ZONE	EXCEPT_ASSY
RT1	3-A7	DNI
RT2	20-A5	DNI
RT3	15-B7	DNI

REFDES	SH-ZONE	EXCEPT_ASSY
S1	35-D6	-
S2	35-C6	-
S3	35-D4	-
S4	35-D3	-
S5	35-D2	-
S6	5-B7	-
S7	38-A7	-

REFDES	SH-ZONE	EXCEPT_ASSY
SH8	31-C2	-
SH9	31-D2	-

REFDES	SH-ZONE	EXCEPT_ASSY
TP26	10-C3	-
TP29	19-B7	-

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC

SIZE: D | DRAWING NO: 80-NA437-41 | REV: M

SCALE: NONE | SHEET 43 OF 44

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

REFDES	SH-ZONE	EXCEPT_ASSY
TP30	19-B7	-
TP31	19-B7	-
TP32	19-B7	-
TP48	5-C6	-
TP50	31-C7	-
TP51	31-C7	-
TP52	31-C7	-
TP62	5-B3	-
TP63	5-B3	-
TP81	15-B2	-
TP82	15-D4	-
TP83	15-D4	-
TP84	15-D2	-
TP85	15-D2	-
TP86	14-C6	-
TP87	17-B8	-
TP88	17-B8	-

REFDES	SH-ZONE	EXCEPT_ASSY
U1-1	15-A3	-
U1-2	14-B5	-
U1-3	15-C7	-
U1-4	16-B6	-
U1-5	17-C6	-
U1-6	18-B5	-
U1-7	18-A3	-
U2-1	20-B3	-
U2-2	20-A8	-
U3-1	31-A6	-
U3-2	30-C5	-
U19	34-B5	-
U37	33-B7	-
U38	33-C7	-
U40	33-A7	-
U41	33-B3	-
U52	38-A3	DNI
U55	18-A7	-
U1044	17-B3	-
U1045	25-A4	DNI
U1046	25-B4	DNI
U1048	23-B3	-
U1049-1	19-A7	-
U1049-2	19-B4	-
U1050	29-A5	-
U1051	22-C6	-
U1053	20-C5	DNI
U1054	22-B7	-
U1055	17-A7	-

REFDES	SH-ZONE	EXCEPT_ASSY
V1-1	3-A5	-
V1-10	12-A7	-
V1-11	12-A5	-
V1-12	12-A3	-
V1-13	11-A3	-
V1-2	6-B5	-
V1-3	7-C6	-
V1-4	4-B6	-
V1-5	5-B5	-
V1-6	9-A6	-
V1-7	10-B5	-
V1-8	10-A5	-
V1-9	11-B7	-

REFDES	SH-ZONE	EXCEPT_ASSY
W2	19-D2	-
W3	19-D2	-
W4	19-C2	-
W5	19-C2	-
W6	19-C2	-
W11	9-C4	-
W12	9-C4	-
W13	9-C4	-
W14	9-B4	-
W15	10-B3	-
W16	11-B5	-
W17	11-D5	-
W18	16-C3	-
W19	16-C3	-
W20	16-C4	-
W21	17-B2	-
W22	18-D3	-
W23	22-C7	-
W25	28-C4	-
W28	10-B3	-
W29	17-C2	-
W30	17-C2	-
W31	17-C2	-
W32	17-C2	-
W33	37-D7	-

REFDES	SH-ZONE	EXCEPT_ASSY
Y1	15-B5	-

QUALCOMM TECHNOLOGIES, INC.
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121 U.S.A.

TITLE: MSM8X74/8X74AB BASEBAND REF SCHEMATIC

SIZE: D | DRAWING NO: 80-NA437-41 | REV: M

SCALE: NONE | SHEET 44 OF 44

DESIGN PATHNAME: 80-NA437-41 Rev. M | VERSION: 1 | EDITED BY | LAST EDIT DATE

2 MSM8x74/MSM8x74AB Baseband Device Parts List

Table 2 MSM8x74/MSM8x74AB baseband device parts list

Item	Part description	Qty	Manufacturer	MPN	Ref des
1	RES 30.9K 100PPM 1% .063W 0402 THKFILM	1	PANASONIC VISHAY DALE VISHAY DALE VISHAY DALE VISHAY DALE	ERJ2RKF3092X CRCW0402092FB02 CRCW0402092FRT1 CRCW04023092FB02 CRCW04023092FRT7	R2801
2	RES 10K 200PPM 1% 0.050W 0201 ROHS	1	DIGI-KEY CORP DIGI-KEY CORP KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO WALSIN TECHNOLOGY CORP YAGEO CORPORATION	ERJ-1GNF1002C-ND P10.0KABCT-ND RK73H1HTTB1002F RK73H1HTTC1002F ERJ1GEF1002C ERJ1GNF1002C WR02X1002FAL RC0201FR-0710KL	R117
3	RES 100K 200PPM 1% 0.050W 0201 ROHS	2	KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73H1HTTC1003F ERJ1GEF1003C ERJ1GNF1003C CRCW0201100KFKED WR02X1003FAL RC0201FR-07100KL	R2626,R2678
4	RES 1M 200PPM 1% 0.050W 0201 ROHS	1	VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	CRCW02011M00FKED WR02X1004FAL RC0201FR-071ML	R79
5	RES 150K 200PPM 1% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO TA-I TECHNOLOGY CO LTD	RK73H1HTTC1503F ERJ1GEF1503C ERJ1GNF1503C RM02FTN1503	R2679
6	RES 16.2K 200PPM 1% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC VISHAY INTERTECHNOLOGY IN	RK73H1HTTC1622F CRCW020116K2FKED	R2634
7	RES 174K 200PPM 1% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC VISHAY INTERTECHNOLOGY IN YAGEO CORPORATION	RK73H1HTTC1743F CRCW0201174KFKED RC0201FR-07174KL	R35
8	RES 200 200PPM 1% 0.050W 0201 ROHS	3	KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73H1HTTC2000F ERJ1GEF2000C CRCW0201200RFKED WR02X2000FAL RC0201FR-07200RL	R2596,R2597,R2598
9	RES 2.2K 200PPM 1% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73H1HTTC2201F WR02X2201FAL RC0201FR-072K2L	R46
10	RES 240 200PPM 1% 0.050W 0201 ROHS	5	PANASONIC INDUSTRIAL CO PANASONIC INDUSTRIAL CO VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP	ERJ1GEF2400C ERJ1GNF2400C CRCW0201240RFNED WR02X2400FAL	R2590,R2591,R2592,R2593,R2594
11	RES 32.4 200PPM 1% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO	RK73H1HTTC32R4F ERJ1GEF32R4C	R2599
12	RES 4.64K 200PPM 1% 0.050W 0201 ROHS	1	PANASONIC INDUSTRIAL CO VISHAY INTERTECHNOLOGY IN	ERJ1GEF4641C CRCW02014K64FNED	R2601
13	RES 90.9K 200PPM 1% 0.050W 0201 ROHS	1	PANASONIC INDUSTRIAL CO TA-I TECHNOLOGY CO LTD VISHAY INTERTECHNOLOGY IN	ERJ1GEF9092C RM02FTN9092 CRCW020190K9FKED	R2635
14	RES 6.81K 100PPM 1% 0.063W 0402 ROHS	1	KOA SPEER ELECTRONICS INC ROHM ELECTRONICS	RK73H1ETTP6811F MCR01MZPF6811	R2595
15	RES 0 200PPM 5% 0.050W 0201 ROHS	52	CYNTEC CO. LTD. CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM ELECTRONICS TA-I TECHNOLOGY CO LTD VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	PFR03S-000-XNH-39 RR0306S-000-XNH-39 RK73Z1HTTB RK73Z1HTTC ERJ1GE0R00C MCR006YZPJ000 RM02JTN0 CRCW02010000Z0ED WR02X000JAL RC0201JR-070RL	R43,R44,R47,R51,R52,R120, R123,R187,R188,R236,R237,R250, R256,R283,R284,R286,R287,R288, R289,R290,R293,R299,R302,R303, R304,R403,R521,R2566,R2567,R2638, R2639,R2643,R2659,R2660,R2661,R2662, R2663,R2668,R2670,R2671,R2721,R2722, R2747,R2758,R2759,R2776,R2777,R2778, R2780,R2804,R2807,R2809

Item	Part description	Qty	Manufacturer	MPN	Ref des
16	RES 100 200PPM 5% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC VENKEL CORP WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73B1HTTC101J CR0201-20W-101JT WR02X101JAL RC0201JR-07100RL	R2
17	RES 10K 200PPM 5% 0.050W 0201 ROHS	3	CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC WALSIN TECHNOLOGY CORP	RR0306S-103-JNH-39 RK73B1HTTB103J RK73B1HTTC103J WR02X103JAL	R2564,R2694,R2769
18	RES 100K 200PPM 5% 0.050W 0201 ROHS	5	CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM ELECTRONICS TA-I TECHNOLOGY CO LTD VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RR0306S-104-JNH-39 RK73B1HTTB104J RK73B1HTTC104J ERJ1GEJ104C MCR006YZPJ104 RM02JTN104 CRCW0201100KJNED WR02X104JAL RC0201JR-07100KL	R2633,R2640,R2695,R2696,R2771
19	RES 1M 200PPM 5% 0.050W 0201 ROHS	4	PANASONIC INDUSTRIAL CO WALSIN TECHNOLOGY CORP	ERJ1GEJ105C WR02X105JAL	R522,R2572,R2573,R2810
20	RES 20K 200PPM 5% 0.050W 0201 ROHS	1	CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM ELECTRONICS TA-I TECHNOLOGY CO LTD VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RR0306S-203-JNH-39 RK73B1HTTB203J RK73B1HTTC203J ERJ1GEJ203C MCR006YZPJ203 RM02JTN203 CRCW020120K0JNED WR02X203JAL RC0201JR-0720KL	R2805
21	RES 2.2K 200PPM 5% 0.050W 0201 ROHS	14	KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC ROHM ELECTRONICS VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73B1HTTB222J RK73B1HTTC222J MCR006YZPJ222 CRCW02012K20JNED WR02X222JAL RC0201JR-072K2L	R2725,R2726,R2727,R2728,R2729,R2730, R2731,R2732,R2733,R2734,R2737,R2738, R2754,R2755
22	RES 27K 200PPM 5% 0.050W 0201 ROHS	1	PANASONIC INDUSTRIAL CO	ERJ1GEJ273C	R2701
23	RES 33 200PPM 5% 0.050W 0201 ROHS	2	PANASONIC INDUSTRIAL CO WALSIN TECHNOLOGY CORP	ERJ1GEJ330C WR02X330JAL	R2600,R2702
24	RES 47K 200PPM 5% 0.050W 0201 ROHS	1	KOA SPEER ELECTRONICS INC KOA SPEER ELECTRONICS INC WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73B1HTTB473J RK73B1HTTC473J WR02X473JAL RC0201JR-0747KL	R2800
25	RES 0 200PPM 5% 0.063W 0402 ROHS	11	CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM CO LTD VISHAY INTERTECHNOLOGY IN WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RR0510X-000-X-N RK73Z1ETTP ERJ2GE0R00X MCR01MZPJ000 CRCW04020000Z0ED WR04X000PTL RC0402JR-070RL	R324,R389,R2570,R2571,R2620,R2622, R2625,R2648,R2735,R2756,R2770
26	RES 10K 200PPM 5% 0.063W 0402 ROHS	1	CYNTEC CO. LTD. KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM CO LTD VISHAY DALE WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RR0510S-103-J-N RK73B1ETTP103J ERJ2GEJ103X MCR01MZPJ103 CRCW040210K0JNED WR04X103JTL RC0402JR-0710KL	R2757
27	RES 47K 200PPM 5% 0.063W 0402 ROHS	1	KOA SPEER ELECTRONICS INC PANASONIC INDUSTRIAL CO ROHM CO LTD VISHAY DALE WALSIN TECHNOLOGY CORP	RK73B1ETTP473J ERJ2GEJ473X MCR01MZPJ473 CRCW040247K0JNED WR04X473JTL	R80
28	RES 0 200PPM 5% 0.1W 0603 ROHS	6	KOA SPEER ELECTRONICS INC NIC COMPONENTS CORP PANASONIC INDUSTRIAL CO ROHM CO LTD WALSIN TECHNOLOGY CORP YAGEO CORPORATION	RK73Z1JTTD NRC06ZO ERJ3GEY0R00V MCR03EZPJ000 WR06X000PTL RC0603JR-070RL	R2724,R2739,R2740,R2741,R2742,R2796
29	CAP,CHIP CERAMIC 15PF 10% C0G/NP0 25V ROHS	1	AVX CORP KEMET ELECTRONICS CORP	04023A150KAT2A C0402C150K3GACTU	C93
30	CAP,CHIP CERAMIC 3.6PF +/-0.1PF C0G/NP0 25V ROHS	1	AVX CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	02013A3R6BAT2A GRM0335C1E3R6BA01D GRM0335C1E3R6BD01D	C117
31	CAP,CHIP CERAMIC 3.6PF +/-0.1PF C0G/NP0 25V ROHS	1	AVX CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	02013A3R6BAT2A GRM0335C1E3R6BA01D GRM0335C1E3R6BD01D	L31

Item	Part description	Qty	Manufacturer	MPN	Ref des
32	CAP,CHIP CERAMIC 4.7PF +/-0.1PF C0G/NP0 25V ROHS	1	AVX CORP JOHANSON DIELECTRICS INC JOHANSON DIELECTRICS INC MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	02013A4R7BAT2A 250R05L4R7BV4S 250R05L4R7BV4T GRM0335C1E4R7BA01D GRM0335C1E4R7BD01D	C114
33	CAP,CHIP CERAMIC 1.5PF +/-0.1PF C0G/NP0 50V ROHS	2	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	GRM1555C1H1R5BA01D GRM1555C1H1R5BZ01D	C4022,C4023
34	CAP,CHIP CERAMIC 1.8PF +/-0.1PF C0G/NP0 50V ROHS	1	AVX CORP AVX CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TDK CORP VENKEL CORP VENKEL CORP VENKEL CORP VENKEL CORP VENKEL CORP	04025A1R8BAT2A 04025A1R8BAT4A GJM1555C1H1R8BB01B GJM1555C1H1R8BB01D GJM1555C1H1R8BB01J GRM1555C1H1R8BA01D GRM1555C1H1R8BZ01D C1005C0G1H1R8BT C0402C0G500-1R8BNE C0402C0G500-1R8BSN-E C0402C0G500-1R8BSN-P C0402C0G500-1R8BSN-R C0402C0G500-1R8BSN-U	C4074
35	CAP,CHIP CERAMIC 18PF 5% C0G/NP0 25V ROHS	1	AVX CORP DARFON ELECTRONICS CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA WALSIN TECHNOLOGY CORP YAGEO CORPORATION	02013A180JAT2A C0603NP0180JFTS GRM0335C1E180JA01D GRM0335C1E180JD01D C0603C0G1E180J C0603C0G1E180J030BA C0603C0G1E180JT 0201N180J250LT CC0201JRNPO8BN180	C90
36	CAP,CHIP CERAMIC 33PF 5% C0G/NP0 25V ROHS	3	AVX CORP DARFON ELECTRONICS CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA PANASONIC INDUSTRIAL CO TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA WALSIN TECHNOLOGY CORP YAGEO CORPORATION	02013A330JAT2A C0603NP0330JFTS GRM0335C1E330JA01D GRM0335C1E330JD01D ECJZEC1E330J RM TMK063CG330JP-F TMK063CG330JP-F TMK063CG330JP-T C0603C0G1E330J C0603C0G1E330J030BA C0603C0G1E330JB C0603C0G1E330JT 0201N330J250LT CC0201JRNPO8BN330	C157,C673,C722
37	CAP,CHIP CERAMIC 47PF 5% C0G/NP0 25V ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	GRM0335C1E470JA01D GRM0335C1E470JD01D C0603C0G1E470J C0603C0G1E470J030BA C0603C0G1E470JT	C676
38	CAP,CHIP CERAMIC 56PF 5% C0G/NP0 25V ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA	GRM0335C1E560JA01D GRM0335C1E560JD01D RM TMK063CG560JP-F CE TMK063CG560JP-F TMK063CG560JP-F C0603C0G1E560J030BA C0603C0G1E560JT	C91
39	CAP,CHIP CERAMIC 33PF 5% C0G/NP0 50V ROHS	1	AVX CORP KEMET ELECTRONICS CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD VENKEL CORP VISHAY INTERTECHNOLOGY IN VISHAY INTERTECHNOLOGY IN YAGEO CORPORATION	04025A330JAT2A C0402C330J5GAC C0402C330J5GAC7867 GRM1555C1H330JA01D GRM1555C1H330JZ01D RM UMK105CG330JV-F UMK105CG330JV-F UMK105CG330JV-T C0402C0G500-330JNE VJ0402A330JXAA VJ0402A330JXACW1BC CC0402JRNPO9BN330	C57
40	CAP,CHIP CERAMIC 470PF 5% C0G/NP0 50V ROHS	3	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	GRM1555C1H471JA01B GRM1555C1H471JA01D	C89,C3669,C3670
41	CAP,CHIP CERAMIC 2200PF 10% X7R 16V ROHS	1	MURATA ERIE NORTH AMERICA	GRM033R71C222KA88D	C3773
42	CAP,CHIP CERAMIC 0.1UF 10% X7R 16V ROHS	5	AVX CORP KEMET ELECTRONICS CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA YAGEO CORPORATION	0402YC104KAT2A C0402C104K4RAC7867 C0402C104K4RACTU GRM155R71C104KA88D CC0402KRX7R7BB104	C3793,C4048,C4049,C4050,C4051

Item	Part description	Qty	Manufacturer	MPN	Ref des
43	CAP,CHIP CERAMIC 0.01UF 10% X7R 25V ROHS	1	AVX CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA VENKEL CORP YAGEO CORPORATION	04023C103KAT2A C0402C103K3RACTU GRM155R71E103KA01D C0402X7R250-103KNE CC0402KRX7R8BB103	C4005
44	CAP,CHIP CERAMIC 0.1UF 10% X5R 6.3V ROHS	1	AVX CORP AVX CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP MURATA ERIE NORTH AMERICA SAMSUNG AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP WALSIN TECHNOLOGY CORP YAGEO CORPORATION	02016D104KAT2A 02016D104KAT4A C0201X5R104KCAS C0201X5R104KCTS C0603X5R104KCAS C0603X5R104KCTS GRM033R60J104KE19D CL03A104KQ3NNNC CE JMK063BJ104KP-F JMK063BJ104KP-F RM JMK063BJ104KP-F C0603X5R0J104K C0603X5R0J104K030BC C0603X5R0J104KT C0201X5R6R3-104KNP 0201X104K6R3CT CC0201KRX5R5BB104	C122
45	CAP,CHIP CERAMIC 0.1UF 10% X5R 6.3V ROHS	16	AVX CORP AVX CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP DARFON ELECTRONICS CORP MURATA ERIE NORTH AMERICA SAMSUNG AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP WALSIN TECHNOLOGY CORP YAGEO CORPORATION	02016D104KAT2A 02016D104KAT4A C0201X5R104KCAS C0201X5R104KCTS C0603X5R104KCAS C0603X5R104KCTS GRM033R60J104KE19D CL03A104KQ3NNNC CE JMK063BJ104KP-F JMK063BJ104KP-F RM JMK063BJ104KP-F C0603X5R0J104K C0603X5R0J104K030BC C0603X5R0J104KT C0201X5R6R3-104KNP 0201X104K6R3CT CC0201KRX5R5BB104	C45,C78,C3653,C3679,C3779,C3780, C3824,C3966,C3999,C4000,C4015,C4066, C4067,C4068,C4069,C4070
46	CAP,CHIP CERAMIC 0.1UF 10% X5R 6.3V ROHS	6	AVX CORP DARFON ELECTRONICS CORP KEMET ELECTRONICS CORP KEMET ELECTRONICS CORP	04026D104KAT2A C1005X5R104KCTS C0402C104K9PAC7867 C0402C104K9PACTU	C3785,C3826,C3827,C3830,C3831,C3832
47	CAP,CHIP CERAMIC 1UF 10% X5R 6.3V ROHS	5	AVX CORP DARFON ELECTRONICS CORP JOHANSON DIELECTRICS INC KEMET ELECTRONICS CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA SAMSUNG ELECTRO-MECHANICS TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP WALSIN TECHNOLOGY CORP YAGEO CORPORATION	04026D105KAT2A C1005X5R105KCTS 6R3R07X105KV4T C0402C105K9PAC7867 C0402C105K9PACTU GRM155R60J105KE19D CL05A105KQ5NNNC JMK105 BJ105KV-F C1005X5R0J105K050BB C1005X5R0J105KT C0402X5R6R3-105KNE 0402X105K6R3CT CC0402KRX5R5BB105	C48,C49,C3794,C3795,C3796
48	CAP,CHIP CERAMIC 0.47UF 10% X5R 6.3V ROHS	1	AVX CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA	04026D474KAT2A C0402C474K9PAC7867 GRM155R60J474KE19D	C3789
49	CAP,CHIP CERAMIC 4.7UF 10% X5R 6.3V ROHS	2	AVX CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA VENKEL CORP	06036D475KAT2A C0603C475K9PACTU GRM188R60J475KE19D C0603X5R6R3-475KNE	C3807,C3808
50	CAP,CHIP CERAMIC 0.1UF 10% X5R 10V ROHS	9	AVX CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA PANASONIC INDUSTRIAL CO TAIYO YUDEN CO LTD	0201ZD104KAT2A GRM033R61A104KE15D GRM033R61A104KE84D ECJZEB1A104K LMK063BJ104KP-F	C175,C176,C177,C3719,C3772,C3786, C4017,C4018,C4076
51	CAP,CHIP CERAMIC 3900PF 10% X5R 10V ROHS	1	MURATA ERIE NORTH AMERICA	GRM033R61A392KA01D	C28
52	CAP,CHIP CERAMIC 4700PF 10% X5R 10V ROHS	1	AVX CORP MURATA ERIE NORTH AMERICA PANASONIC INDUSTRIAL CO TAIYO YUDEN CO LTD	0201ZD472KAT2A GRM033R61A472KA01D ECJZEB1A472K LMK063BJ472KP-F	C4090

Item	Part description	Qty	Manufacturer	MPN	Ref des
53	CAP,CHIP CERAMIC 1.0UF 10% X5R 10V ROHS	5	AVX CORP KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA WALSIN TECHNOLOGY CORP YAGEO CORPORATION	0402ZD105KAT2A C0402C105K8PACTU GRM155R61A105K GRM155R61A105KE15D LMK105BJ105KV-F C1005X5R1A105K050BB C1005X5R1A105KT 0402X105K100CT CC0402KRX5R6BB105	C30,C31,C32,C33,C4085
54	CAP,CHIP CERAMIC 2.2UF 10% X5R 10V ROHS	16	SAMSUNG ELECTRO-MECHANICS SAMSUNG ELECTRO-MECHANICS TDK CORP OF AMERICA TDK CORP OF AMERICA	CL05A225KP5NSNB CL05A225KP5NSNC C1005X5R1A225K050BC C1005X5R1A225KT	C107,C126,C128,C130,C230,C231, C242,C3799,C3800,C3801,C3802,C3803, C3804,C3805,C3806,C4026
55	CAP,CHIP CERAMIC 4.7UF 10% X5R 10V ROHS	1	SAMSUNG ELECTRO-MECHANICS	CL05A475KP5NRNC	C65
56	CAP,CHIP CERAMIC 4.7UF 10% X5R 16V ROHS	2	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	GRM188R61C475KAAJ GRM188R61C475KAAJD C1608X5R1C475K080AC C1608X5R1C475KB C1608X5R1C475KT	C3792,C4040
57	CAP,CHIP CERAMIC 1000PF 10% X5R 25V ROHS	2	AVX CORP TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA WALSIN TECHNOLOGY CORP	02013D102KAT2A CE TMK063BJ102KP-F RM TMK063BJ102KP-F C0603X5R1E102K030BA C0603X5R1E102KT 0201X102K250CT	C4024,C4084
58	CAP,CHIP CERAMIC 1UF 10% X5R 25V ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	GRM155R61E105KA12 GRM155R61E105KA12D	C150
59	CAP,CHIP CERAMIC 1UF 10% X5R 25V ROHS	1	AVX CORP MURATA ERIE NORTH AMERICA TAIYO YUDEN CO LTD	06033D105KAT2A GRM188R61E105KA12D TMK107BJ105KK-T	C4042
60	CAP,CHIP CERAMIC 1UF 20% X5R 4V ROHS	121	MURATA ERIE NORTH AMERICA SAMSUNG AMERICA INC TAIYO YUDEN CO LTD	GRM033R60G105MEA2D CL03A105MR3CSNH AMK063BJ105MP-FD	C3834,C3835,C3836,C3837,C3838,C3839, C3840,C3841,C3842,C3844,C3846,C3847, C3848,C3849,C3850,C3851,C3852,C3853, C3854,C3855,C3856,C3857,C3858,C3859, C3860,C3861,C3862,C3863,C3864,C3865, C3866,C3867,C3870,C3871,C3872,C3873, C3874,C3875,C3876,C3877,C3878,C3879, C3880,C3881,C3882,C3883,C3884,C3885, C3886,C3887,C3888,C3889,C3890,C3891, C3892,C3893,C3894,C3895,C3896,C3897, C3898,C3899,C3900,C3901,C3902,C3903, C3904,C3905,C3906,C3907,C3908,C3909, C3910,C3911,C3912,C3913,C3914,C3915, C3916,C3917,C3918,C3919,C3920,C3921, C3922,C3923,C3924,C3925,C3926,C3931, C3932,C3933,C3934,C3935,C3936,C3938, C3939,C3940,C3941,C3942,C3943,C3944, C3945,C3946,C3948,C3950,C3951,C3952, C3953,C4008,C4009,C4010,C4011,C4012, C4013,C4014,C4078,C4079,C4080,C4081, C4086
61	CAP,CHIP CERAMIC 47UF 20% X5R 4V ROHS	10	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA SAMSUNG ELECTRO-MECHANICS SAMSUNG ELECTRO-MECHANICS SAMSUNG ELECTRO-MECHANICS	GRM188R60G476M GRM188R60G476ME15 CL10A476MR8NRNC CL10A476MR8NRNE CL10A476MR8NZNE	C3709,C3710,C3711,C3816,C3817,C3818, C3819,C3868,C3869,C4073
62	CAP,CHIP CERAMIC 1.0UF 20% X5R 6.3V ROHS	17	AVX CORP MURATA ERIE NORTH AMERICA SAMSUNG AMERICA INC SAMSUNG AMERICA INC TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP	02016D105MAT2A GRM033R60J105MEA2 CL03A105MQ3CSNC CL03A105MQ3CSNH JMK063ABJ105MP-F C0603X5R0J105M030BC C0603X5R0J105MT C0201X5R6R3-105MNP	C68,C79,C3684,C3685,C3690,C3692, C3694,C3695,C3696,C3701,C3703,C3705, C3723,C3783,C3784,C4083,C4088
63	CAP,CHIP CERAMIC 10UF 20% X5R 6.3V ROHS	2	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA SAMSUNG ELECTRO-MECHANICS	GRM155R60J106ME44 GRM155R60J106ME44D CL05A106MQ5NUNC	C76,C77

Item	Part description	Qty	Manufacturer	MPN	Ref des
64	CAP,CHIP CERAMIC 2.2UF 20% X5R 6.3V ROHS	1	AVX CORP DARFON ELECTRONICS CORP JOHANSON DIELECTRICS INC KEMET ELECTRONICS CORP MURATA ERIE NORTH AMERICA PANASONIC INDUSTRIAL CO TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP WALSIN TECHNOLOGY CORP YAGEO CORPORATION	04026D225MAT2A C1005X5R225MCTS 6R3R07X225MV4T C0402C225M9PACTU GRM155R60J225ME15D ECJ0EB0J225M JMK105BJ225MV-F C1005X5R0J225M050BC C1005X5R0J225MT C0402X5R6R3-225MNE 0402X225M6R3CT CC0402MRX5R5BB225	C3683
65	CAP,CHIP CERAMIC 4.7UF 20% X5R 6.3V ROHS	10	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA NIC COMPONENTS CORP PANASONIC INDUSTRIAL CO SAMSUNG ELECTRO-MECHANICS SAMSUNG ELECTRO-MECHANICS TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP YAGEO CORPORATION	GRM155R60J475ME47D GRM155R60J475ME87D NMC0402X5R475M6.3TRPF ECJ0EB0J475M CL05A475MQ5NQNC CL05A475MQ5NRNC JMK105BBJ475MV-F JMK105BJ475MV C1005X5R0J475M050BC C1005X5R0J475MT C0402X5R6R3-475MNP CC0402MRX5R5BB475	C115,C116,C3686,C3688,C3697,C3698, C3699,C3700,C3702,C3811
66	CAP,CHIP CERAMIC 22UF 20% X5R 6.3V ROHS	6	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA SAMSUNG ELECTRO-MECHANICS SAMSUNG ELECTRO-MECHANICS TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD TDK CORP OF AMERICA TDK CORP OF AMERICA VENKEL CORP	GRM188R60J226MEA0 GRM188R60J226MEA0D GRM188R60J226MEA0J GRM188R60J226MEA0L CL10A226MQ8NRNC CL10A226MQ8NRNE JMK107BJ226MA JMK107BJ226MA-TD C1608X5R0J226M080AC C1608X5R0J226MT C0603X5R6R3-226MNE	C75,C85,C86,C87,C88,C3814
67	CAP,CHIP CERAMIC 47UF 20% X5R 6.3V ROHS	1	MURATA ERIE NORTH AMERICA SAMSUNG SEMI. INC TAIYO YUDEN CO LTD	GRM21BR60J476ME15L CL21A476MQYNNNE JMK212BJ476MG-T	C3712
68	CAP,CHIP CERAMIC 10UF 20% X5R 10V ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA PANASONIC INDUSTRIAL CO SAMSUNG AMERICA INC TAIYO YUDEN CO LTD TAIYO YUDEN CO LTD	GRM188R61A106ME69 GRM188R61A106ME69D GRM188R61A106ME69J ECJ1VB1A106M CL10A106MP8NNNC LMK107BJ106MA-T LMK107BJ106MALTD	C4041
69	CAP,CHIP CERAMIC 22UF 20% X5R 10V ROHS	2	MURATA ERIE NORTH AMERICA SAMSUNG SEMI. INC	GRM188R61A226ME15 CL10A226MP8NUNE	C3791,C3797
70	CAP,CHIP CERAMIC 47UF 20% X5R 10V ROHS	1	TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	C2012X5R1A476M C2012X5R1A476M125AC C2012X5R1A476MT	C3708
71	CAP,CHIP CERAMIC 4.7UF 20% X5R 35V ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	GRM188R6YA475ME15 GRM188R6YA475ME15D	C3809
72	CAP,CHIP 1.0PF +/-0.02PF 25V 30PPM ROHS	1	AVX CORP	02013J1R0PBSTR	C4021
73	CAP,CHIP 1.5PF +/-0.05PF 25V 30PPM ROHS	1	AVX CORP	02013J1R5ABSTR	C4075
74	INDUCTOR,CHIP 7.5NH 5% Q=60@900MHZ SRF=4800 ROHS	1	COILCRAFT INC	0402CS-7N5XJLW	L30
75	INDUCTOR,CHIP FILM 120NH 5% Q=8@100MHZ SRF=800 ROHS	2	TAIYO YUDEN CO LTD	HK1005R12J-T	L10021,L10022
76	INDUCTOR,CHIP 1.0NH +/-0.3NH Q=8@100MHZ SRF=10000 ROHS	1	MURATA ERIE NORTH AMERICA	LQG15HS1N0S02D	L10030
77	INDUCTOR,CHIP 5.6NH +/-0.3NH Q=8@100MHZ SRF=4500 ROHS	1	MURATA ERIE NORTH AMERICA	LQG15HS5N6S02D	L10029
78	INDUCTOR,CHIP 470NH 2% Q=30@100MHZ SRF=700 ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	LQW18ANR47G00D LQW18ANR47G00J	L54
79	INDUCTOR,CHIP 100NH 5% Q=20@100MHZ SRF=1500MHZ ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	LQW15ANR10J00B LQW15ANR10J00D	L10020
80	INDUCTOR,POWER CHOKE COIL 0.24UH 20% DCR=0.017OHM ISAT=4.7A ROHS	4	CYNTEC CO. LTD. CYNTEC CO. LTD.	PIFE20161B-R24MS-39 PIFE20161T-R24MS-39	L10013,L10014,L10015,L10016

Item	Part description	Qty	Manufacturer	MPN	Ref des
81	INDUCTOR,POWER CHOKE COIL 0.47UH 20% DCR=0.03OHM ISAT=3.6A ROHS	5	CYNTEC CO. LTD.	PIFE20161B-R47MS-39	L57,L1009,L1010,L1012,L10017
82	INDUCTOR,CHIP POWER 1.0UH 20% DCR=0.048OHM 3.1A ROHS	1	TOKO AMERICA INC TOKO AMERICA INC	1277AS-H-1R0M 1277AS-H-1R0M=P2	L10007
83	INDUCTOR,POWER 2.2UH 20% 2.6A 0.085OHM ROHS	4	TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	TFM201610GHM-2R2M TFM201610GHM-2R2M(ES) TFM201610GHM-2R2M-T TFM201610GHM-2R2M-T(ES)	L1005,L1011,L10004,L10006
84	INDUCTOR,POWER 2.2UH 20% 2.9A 0.070OHM ROHS	1	TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	TFM252010GHM-2R2M TFM252010GHM-2R2M (ES) TFM252010GHM-2R2M-T TFM252010GHM-2R2M-T(ES)	L10028
85	INDUCTOR,CHOKE 2.2UH 20% 120MA SRF=80 ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	LQM18FN2R2M00B LQM18FN2R2M00D	L10002
86	INDUCTOR,CHIP FILM 10UH 20% RDC=400MOHM ISAT=1.3A ROHS	1	TOKO AMERICA INC	1239AS-H-100M=P2	L10025
87	BEAD,FERRITE CHIP 470OHM EMI SUPPRESSORS ROHS	2	TDK CORP OF AMERICA	MMZ1005Y471C	L52,L53
88	BEAD,FERRITE CHIP 1000OHM 200MA ROHS	3	TDK CORP OF AMERICA	MMZ1608Q102B	L55,R2512,R2513
89	BEAD,FERRITE CHIP 600OHM@100MHZ 1.0A ROHS	1	TDK CORP OF AMERICA	MPZ1608S601AT	E36
90	BEAD,FERRITE CHIP 1000OHM@100MHZ DCR=2.5OHM 100MA ROHS	2	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	BLM03AG102SN1B BLM03AG102SN1D BLM03AG102SN1J	E10,E11
91	FILTER,SAW GPS/GNSS 1583MHZ UNBAL 50/50 IL=1.2DB 1109 ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	SAFFB1G56KB0F0A SAFFB1G56KB0F0AR15 SAFFB1G56KB0F0AR1S SAFFB1G56KB0F0AR1X	FL12
92	FILTER,EMI/ESD 6-CHANNEL 34NH 28.5PF ROHS	1	CALIFORNIA MICRO DEVICES ON SEMICONDUCTOR COMPONEN	CM1451-06CP CM1451-06CP	FL6
93	FILTER,EMI/RFI 8-CHANNEL WITH ESD 26NH 22PF ROHS	1	CALIFORNIA MICRO DEVICES ON SEMICONDUCTOR COMPONEN	CM1693-08DE CM1693-08DE	U1051
94	FILTER,EMI/RFI 4-CHANNEL WITH ESD 26NH 22PF ROHS	1	CALIFORNIA MICRO DEVICES ON SEMICONDUCTOR COMPONEN	CM1693-04DE CM1693-04DE	U1054
95	FILTER,COMMON MODE ULTRA 90OHM@100MHZ DCR=1.95 10V 0.1A ROHS	9	TDK CORP OF AMERICA TDK CORP OF AMERICA TDK CORP OF AMERICA	TCE1608-900-4P-T TCE1608G-900-4P TCE1608G-900-4P-T	FL13,FL14,FL15,FL16,FL17,FL18, FL19,FL20,FL21
96	CRYSTAL,19.2MHZ 10PPM 7PF W/THERMISTOR GPS ROHS	1	KYOCERA CORPORATION KYOCERA CORPORATION	CT2016DB19200C0FLHA1 CT2016DB19200C0FLHA1(ES)	Y1
97	DIODE,SCHOTTKY BARRIER 100MA 30V ROHS	1	ROHM ELECTRONICS	RB481YT2R	CR1
98	DIODE,SCHOTTKY BARRIER 40V 0.5A ROHS	1	ON SEMICONDUCTOR COMPONEN	NSR05F40NXT5G	CR1003
99	TRANSISTOR,MOSFET P-CHAN -20V .085OHM -1A ROHS	1	FAIRCHILD SEMICONDUCTOR	FDZ191P	Q9
100	IC,MPU 3-AXIS GYRO&ACCELEROMETER 2.5-3.3V I2C VLOGIC1.71-VDD ROHS	1	INVENSENSE INC INVENSENSE INC	MPU-6050 MPU-6050(REV D)	U38
101	IC,SENSOR COMPASS 3-AXIS 14/16BIT I2C/SPI 2.4-3.6V ROHS	1	ASAHI KASEI MICROSYSTEMS	AK8963C	U41
102	IC,ACCELEROMETER 3-AXIS 2G/4G/8G/16G I2C/SPI 1.71-3.6V ROHS	1	ST MICROELECTRONICS ST MICROELECTRONICS	LIS3DH LIS3DHTR	U40
103	IC,SENSOR PRESSURE 300-1100 HPA CONV 7.5MS 1.8-3.6V ROHS	1	BOSCH SENSORTEC GMBH	0 273 300 244	U37
104	IC,HDMI ESD PROTECTION LEVEL 5V SHIFTER-BUFFER ROHS	1	TEXAS INSTRUMENTS INC TEXAS INSTRUMENTS INC	TPD5S116YFFR TPD5S116YFFR(ES)	U1050
105	IC,HAPTIC MOTOR DRIVER 2.4-3.6V OUTPUT ROHS	1	IMAGIS	ISA1200	U19
106	IC,MEMORY EMMC 32GBYTE4.5(64GB MLCX4) ROHS	1	SAMSUNG ELECTRONICS CO. L SAMSUNG ELECTRONICS CO. L	KLMBG4GE2A-A001 KLMBG4GE2A-A001004	U2
107	IC,REGULATOR BOOST VOUT=3.15V LOW IQ ROHS	1	FAIRCHILD SEMICONDUCTOR	FAN48630UC315X	U1044

Item	Part description	Qty	Manufacturer	MPN	Ref des
108	IC,VOLTAGE REGULATOR 500MA/ 1.0A 2.1V LDO ROHS	1	RICOH ELECTRONICS INC. ON SEMICONDUCTOR COMPONEN	RP115L211B-E2 NCP706MX21TAG	U55
109	IC,VOLTAGE REGULATOR SYNC BUCK 3.0A 3MHZ I2C DVS ROHS	1	ON SEMICONDUCTOR COMPONEN ON SEMICONDUCTOR COMPONEN RICHTEK	NCP6343FCT1G NCP6343FCT1G(ES) RT8088AWSC	U1055
110	IC,DIODE ARRAY 8 CHANNEL 25KV ESD PROTECTION ROHS	1	CALIFORNIA MICRO DEVICES ON SEMICONDUCTOR COMPONEN	PACDN1408CG PACDN1408CG	CR10
111	IC,POWER SWITCH P-CHANNEL LOAD SWITCH 0.9-3.6V 2A ROHS	1	TEXAS INSTRUMENTS INC	TPS22921YFPR	Q20
112	IC,DIODE ARRAY ESD PROTECTION 8-CHANNEL 8/15KV ROHS	1	CALIFORNIA MICRO DEVICES	CM1230-08CP	CR8
113	SWITCH,DIP 1-POS FLUSH ACTUATOR SMT ROHS	1	E-SWITCH	KAJ01SGGT	S6
114	SWITCH,TACT SPST SIDE-PUSH 2.2N 12V 50MA ROHS	4	PANASONIC	EVQP7A01K	S1,S2,S3,S4
115	SWITCH,TACT MINI HORIZONTAL DBL ACTION W/O BOSS ROHS	1	HOSIDEN AMERICA CORPORATI HOSIDEN AMERICA CORPORATI	HKW0731-010010 HKW0731-010011	S5
116	LED,CHIP 700MA NEUTRAL WHITE ROHS	1	CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC. CREE INC.	XPEWHT-L1-0000-00CE4 XPEWHT-L1-4A0-Q4-0-01 XPEWHT-L1-4A0-Q4-0-06 XPEWHT-L1-4A0-Q5-0-07 XPEWHT-L1-4B0-Q4-0-01 XPEWHT-L1-4B0-Q4-0-06 XPEWHT-L1-4C0-Q4-0-01 XPEWHT-L1-4C0-Q4-0-06 XPEWHT-L1-4D0-Q4-0-01 XPEWHT-L1-4D0-Q4-0-06 XPEWHT-L1-4D0-Q5-0-07	DS2
117	LED,TRI-COLOR RED/GREEN/BLUE VERTICAL SMT 1.5X1.0 ROHS	1	ROHM ELECTRONICS	SMLP36RGB1W3	DS1
118	SUPPRESSOR,TRANSIENT VOLTAGE BI-DIR 4-CHAN USB3.0 ROHS	1	ON SEMICONDUCTOR COMPONEN	ESD7104MUTAG	U1048
119	SUPPRESSOR,TVS DIODE ARRAY 2.5V VC=6.5@1A ROHS	2	SEMTECH CORP	RCLAMP2504P.TCT	CR3,CR4
120	SUPPRESSOR,TVS DIODE ARRAY 3-LINE VC=15@1A ROHS	2	SEMTECH CORP SEMTECH CORP	RCLAMP3654P.TCT RCLAMP3654PATCT	CR2,CR1007
121	SUPPRESSOR,TVS DIODE ARRAY 2-LINE VC=12.5@2A ROHS	2	SEMTECH CORP	UCLAMP0502P.TCT	CR24,CR27
122	HEADER,VERT 0.5MMCTR 2X80 SMT BRD/BRD FEMALE ROHS	2	JAPAN AVIATION ELECTRONIC JAPAN AVIATION ELECTRONIC	WR-160PB-VF50-N1 WR-160PB-VF50-N1-R1300	J20,J21
123	CONN,COAX SWITCH SMT 3X3 ROHS	1	MURATA ERIE NORTH AMERICA MURATA ERIE NORTH AMERICA	MM8430-2610RA1 MM8430-2610RB3	S7
124	CONN,FPC 0.4MM PITCH STR SOCKET 24-POS ROHS	2	MATSUSHITA/PANASONIC	AXT524124	J6,J10
125	CONN,SOCKET .5MM HI-SPEED 60-PIN ROHS	2	SAMTEC INC SAMTEC INC	QSH-030-01-L-D-A-K QSH-030-01-L-D-A-K-TR	J9,J12
126	CONN,SOCKET 0.5MM HI-SPEED 60-PIN W/O ALIGNMENT PINS ROHS	1	SAMTEC INC SAMTEC INC	QSH-030-01-L-D-K QSH-030-01-L-D-K-TR	J18
127	CONN,USB MICRO-B RECPT SURFACE MOUNT ROHS	1	MOLEX INC MOLEX INC	0473460001 47346-0001	J17
128	CONN,RECEPTACLE BRD-TO-BRD 30-POS 0.4MM PITCH ROHS	1	ACON INC	BBR43-30KB533	J5
129	CONN,USB30 TYPE-MICRO-AB RCPT R/A 10-POS SOLDERTAB 30U"AU ROHS	1	AMPHENOL CORP BOSSCONN ELECTRONICS SAMTEC INC SAMTEC INC SAMTEC INC	GSB353133CHR MICROUSB3.0-100131SA0100 UUSB3-AB-S-F-SM-TR UUSB3-AB-S-S-SM-TR UUSB3-AB-S-X-SM	J14
130	CONN,HDMI MICRO TYPE D R/A RECEPTACLE 0.4MM PITCH SMT ROHS	1	MOLEX INC	46765-0001	J32
131	CONN,SOCKET BRD-TO-BRD 0.4MM 2X20-POS LOW PROFILE ROHS	1	PANASONIC INDUSTRIAL CO	AXE540124	J19
132	CONN,FPC 0.5MM PITCH R/A DUAL CONTACT 6-POS ROHS	3	MOLEX INC	503480-0600	J28,J29,J30

Item	Part description	Qty	Manufacturer	MPN	Ref des
133	CONN,FPC 0.5MM PITCH R/A DUAL CONTACT 12-POS ROHS	1	MOLEX INC	503480-1200	J4
134	CONN,MEMORY CARD MICRO SD PUSH-PUSH LOW PROFILE ROHS	1	MOLEX INC	503398-0891	J15
135	CONN,DUAL MICRO SIM PUSH-PUSH DETECT NC ROHS	1	KYOCERA CORPORATION KYOCERA CORPORATION	04 5236 016 012 839+ 04 5236 016 012 839+(ES)	J16
136	CONN,COAX RCPT ULTRA MINIATURE SMT ROHS	1	HIROSE ELECTRIC HIROSE ELECTRIC	U.FL-R-SMT-1 (10) U.FL-R-SMT-1 (80)	J35
137	CONN,AUDIO RCPT RA 3.5MM+2P W/ SW 6P SMT ROHS	1	AMPHENOL CORP	103-C0680-00842	J36
138	SUPPORT, NFC CCA, FLUID 8960	2	QUALCOMM TECHNOLOGIES, INC.	50-N4297-P1	SH8,SH9
139	UNIVERSAL CONTACT,SMT CONDUCTIVE H=3.5MM SELECTI VE AU/NI ROHS	3	ITT CANNON	120220-0204	J13,J33,J34
140	IC, MSM8X74/MSM8X74AB	1	QUALCOMM TECHNOLOGIES, INC.		V1
141	IC, PM8841	1	QUALCOMM TECHNOLOGIES, INC.		U1049
142	IC, PM8941	1	QUALCOMM TECHNOLOGIES, INC.		U1
143	IC, WCD9320	1	QUALCOMM TECHNOLOGIES, INC.		U3