

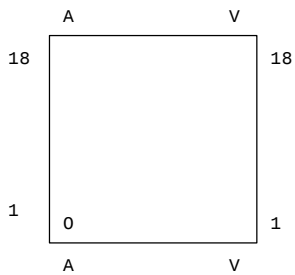
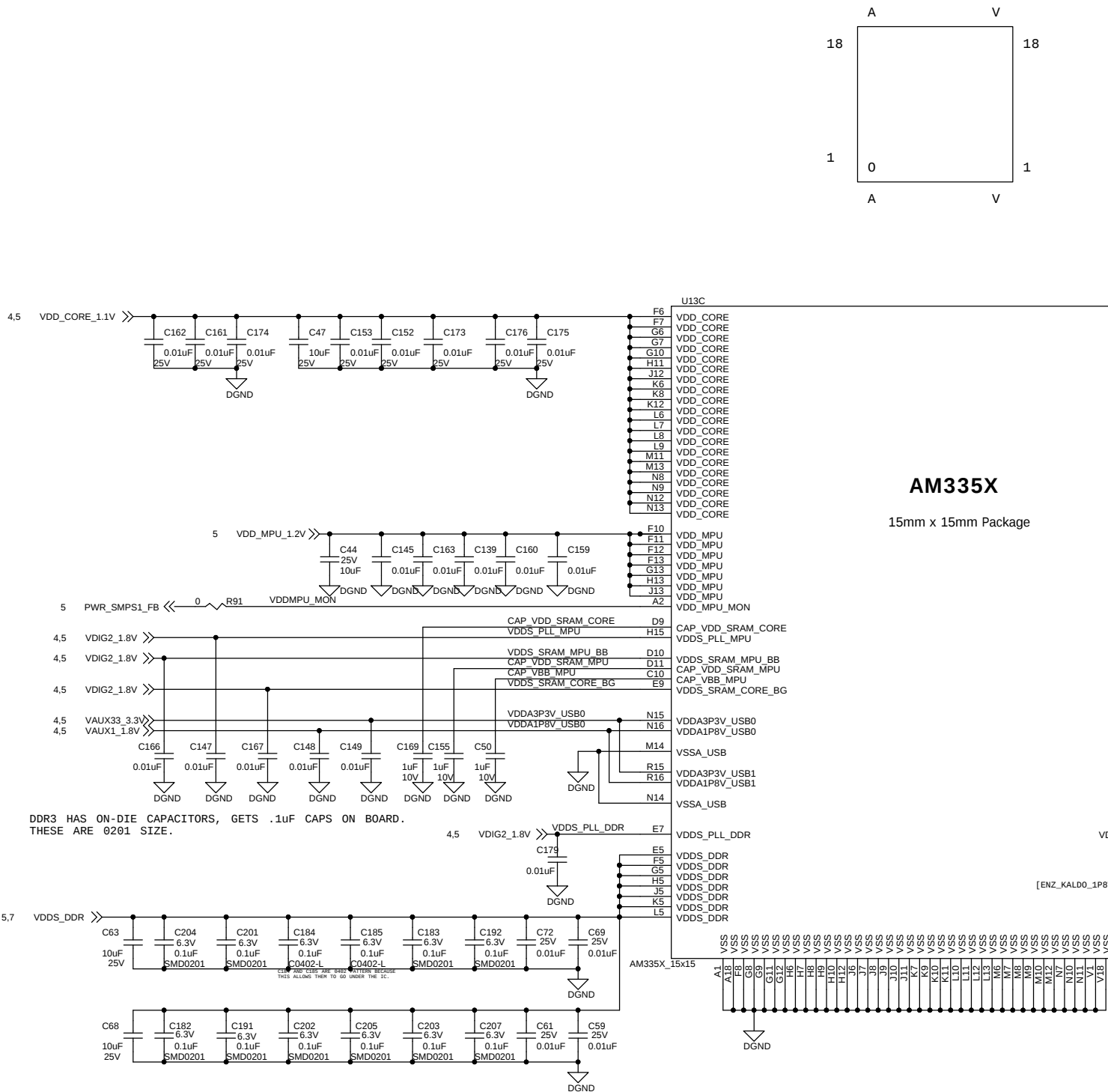
ARM MPU AM335X Rhine/Monaco/Volga Touchscreen controller board
"PASCAL"

REVISIONS:
REV A -- MULE BOARD AS RELEASED.
REV B -- CONNECT U51 ENBL TO VMMC_3.3V
-- ADD R246 PULLDOWN ON DIPLAY ENABLE
-- MOVE LSD OUTPUTS TO GPIO3-14,15,21
-- CONNECT U13-8 TO VAUX2_3.3V
-- CHANGE U8 TO LARGER PACKAGE
-- REMOVE INVERSION ON CAN0_RX
-- REMOVE INVERSION ON IDRIVE_RX
-- CORRECT J8 PINOUT - TOUCH PANEL
-- FLIP J7 PINOUT- LCD.
-- ADJUST BACKLIGHT DRIVER R204,R203,C86, R202,R210,R211,R217 VALUES.
-- ADD LOAD ON U33 TO PREVENT BURNOUT WHEN LCD DISCONNECTED.
-- ADD ENABLE CONTROL TO U33 BACKLIGHT DRIVER.
-- ADD BYPASS CAP C2056
-- ADDED NC PIN TO CAN CONNECTOR - TS
REV C -- RENUMBER REFERENCE DESIGNATORS.
-- P1 BOARD AS RELEASED.
REV D -- schematic Q26006-002
-- ADD C236 ON LED DRIVER.
-- REMOVE R46 LED DRIVER LOAD.
-- DEPOP COMPONENTS ON J7-1 AND J7-7.
-- ADD MORE ACCURATE A/D Vref
-- CHANGE U16 TO BIGGER PKG
-- TIGHTEN TOLERANCE ON VOLTAGE MONITOR RESISTORS TO 0.1%, AND CHANGE SCALING TO 73.9V FULL SCALE.
-- ADD Q19,R309,R310 BAIL DISABLE CKT.
-- ADD 1K RESISTORS ON J7 DIGITAL INPUTS.
REV E -- schematic Q26006-003 P1.5 BOARD
-- REMOVE EXTERNAL TERMINATORS ON DDR3.
--CHANGE OSC GND TO BE DIRECT CONNECTION TO DIGITAL GND PER TI ADVISORY.
--CHANGE C66 PACKAGE TO SMT ALUM ELECT.
--ADD 3 BOARD REVISION BITS.
REV F -- schematic Q26006-003 P1.5 BOARD
-- CLAMP TOUCHPANEL SIGNALS TO 1.5V, ADD R106,R107
--ADD FB5-FB8,C229,C232,C233,C241
REV G -- schematic Q26006-004
-- CHANGE R189 TO 1K AND R202 TO 10K.
REV H -- P2 BOARD AS RELEASED.
-- ADD BAIL ATTENUATOR CKT.
REV I -- PP BOARD.
-- REVISE DIODE POLARITY TO CATHODE PIN 1.
-- ALTERNATE TOUCH PANEL WIRING FOR FERRITES.
-- REVISE TOUCH PANEL FILTER CAPS TO 100pF.
-- ADD BOM ITEM SD MICRO CARD
REV J -- PP BOARD AS RELEASED.
-- DEPOP TOUCH PANEL FILTER CAPS.
REV K -- PP BOARD AS RELEASED.
-- CHANGE R178, R181 TO 0 OHM..
REV L -- RHINE BOARD CHANGES.
-- POPULATE LSD_0 AND LSD_1.
-- HARDWARE REV BITS 011.
-- POPULATE HIGH CURRENT BACKLIGHT DRIVER R47,R50,R54,M1
REV M -- DISCONNECT U11-11 AND U11-12 FROM THE REST OF THOSE NETS.
REV N -- Replace D4 with zero ohm resistor.
-- AM2 VERSION.

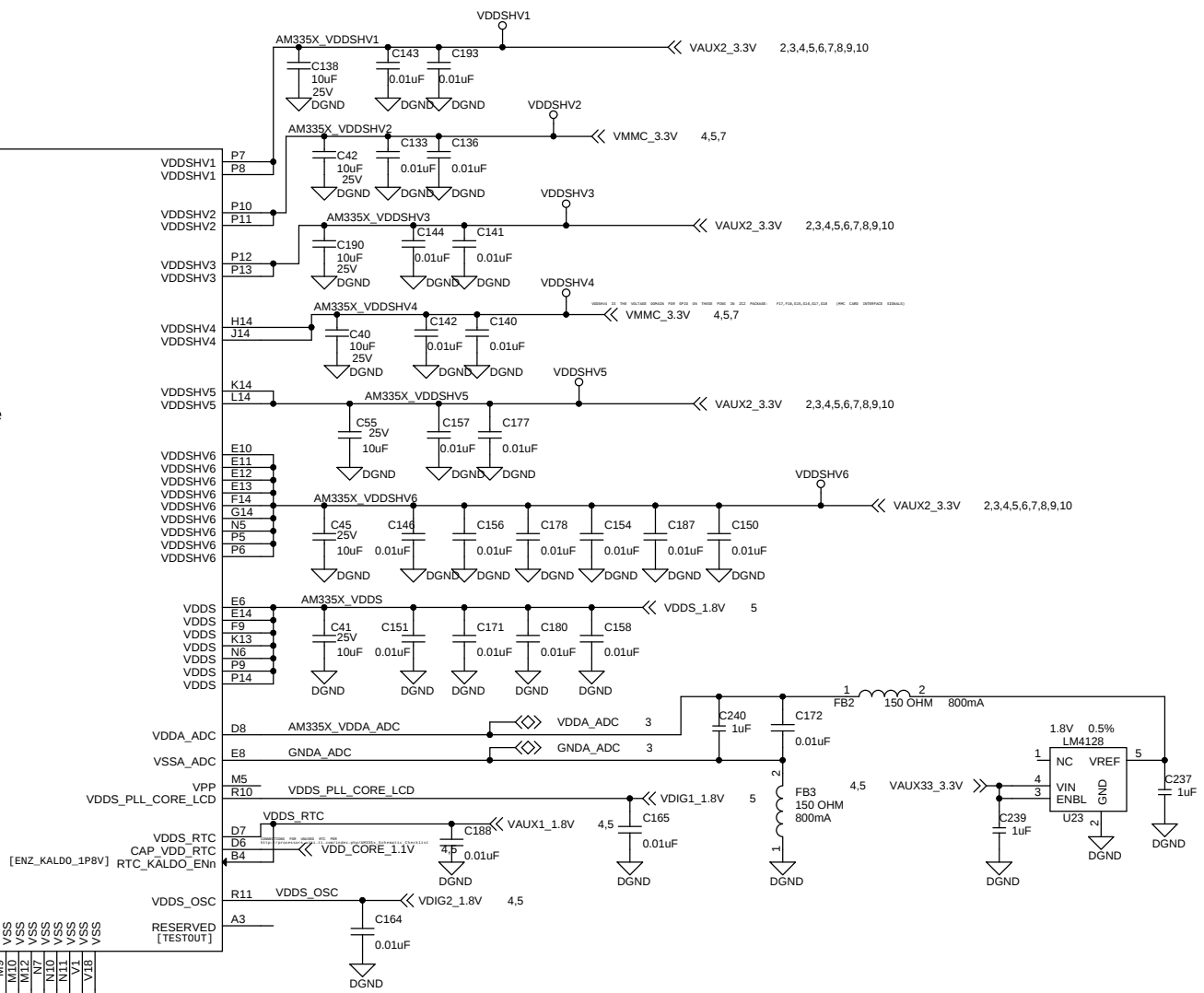
(REFERENCE ONLY) PCA VARIANTS:
STANDARD new

☐ FW1
FIRMWARE Q30050-004
FIRMWARE IS LOADED INTO SD MICRO CARD
☐ PCB2
PCB Q25052-006
☐ SCHEMATIC1
SCHEMATIC Q26006-005

Title			
RHINE PASCAL TOUCHSCREEN UI BOARD			
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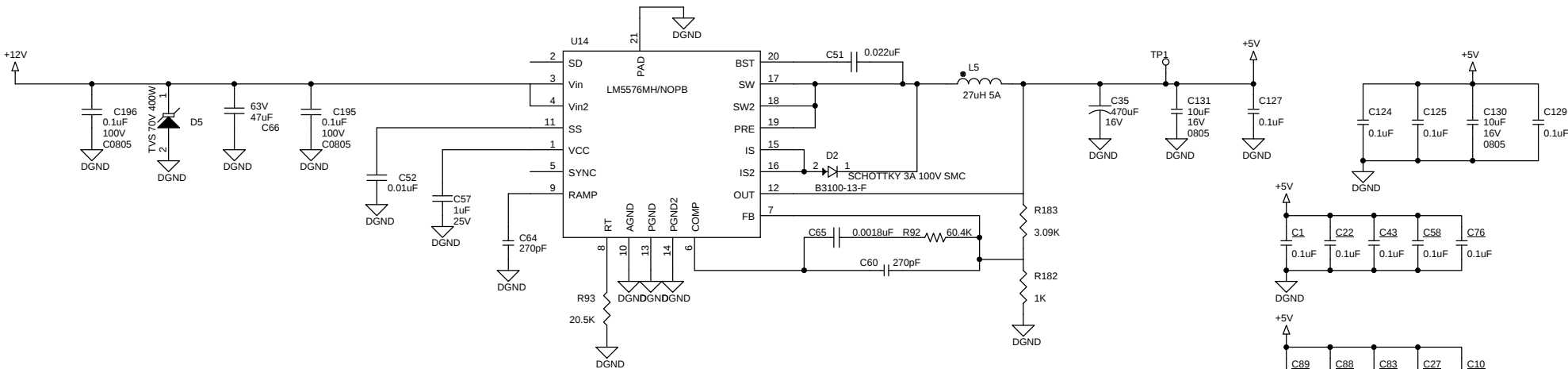
AM335X
15mm x 15mm Package



Title			
PASCAL TOUCHSCREEN UI BOARD			
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POWER SUPPLY +5V

POWER INPUT
+12V NOMINAL, 67V MAX.



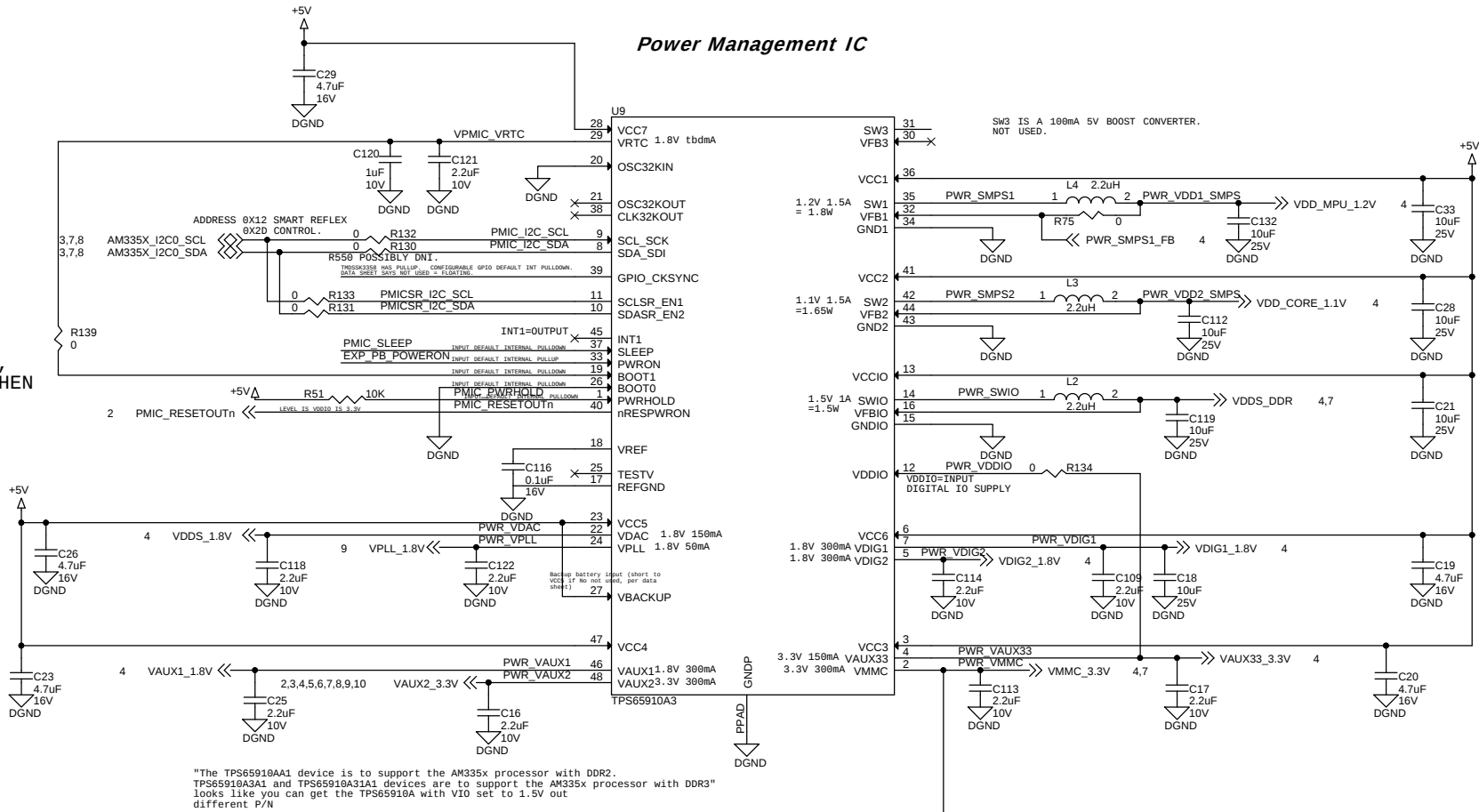
HDS SAYS WE WILL USE RESET CKT AND A GPIO PIN AS A WATCHDOG TIMER.

TPS65910 Power Supply AM335x Power Rail Voltage

VAUX2 (300mA)	VDDSHV1, 3, 5, 6 (500mA)	3.3V (rails that are 3.3V)
VDIG1 (300mA)	VDDSHV1, 3, 5, 6 (500mA)	1.8V (rails that are 1.8V)
VMMC (300mA)	VDDSHV4 (60mA) & VDDSHV2	1.8V/3.3V
VDD2 SMPS (1500mA)	VDD_CORE (1000mA)	1.1V
VDD1 SMPS (1500mA)	VDD_MPU (1500mA)	1.2V
No supply needed	VDD_RTC	1.1V
VRTC	VDD_RTC (10mA)	1.8V
VIO_SMPS (1000mA)	VDDSDR (200mA)	1.8V (or 1.5V for DDR3)
VIO_SMPS (1000mA)	VREFSSTL (10mA)	0.9V or 0.75V
VDAC (150mA)	VDDSDR (100mA)	1.8V
VDIG2 (300mA)	VDDSDR_CORE_B6 (40mA)	1.1V
VDIG2 (300mA)	VDDSDR_MPU_BB (40mA)	1.8V
VDIG2 (300mA)	VDDSDR_PLL_DDR (25mA)	1.8V
VDIG2 (300mA)	VDDSDR_PLL_CORE_LCD (25mA)	1.8V
VDIG2 (300mA)	VDDSDR_PLL_MPU (25mA)	1.8V
VDIG2 (300mA)	VDDSDR_OSC (10mA)	1.8V
VAUX1 (300mA)	VDDA3P8V_USB0/1 (50mA)	1.8V
VAUX33 (150mA)	VDDA3P3V_USB0/1 (10mA)	3.3V
VAUX33 (150mA)	USB_VBUS0/1	3.3V
VPLL (50mA)	VDDA_ADC	1.8V
VDD3 SMPS (100mA)	Not Used	-
VIO_SMPS (1000mA)	DDR2 SDRAM (320mA)	1.8V

Table 3: AM335x Power supplies from TPS65910A

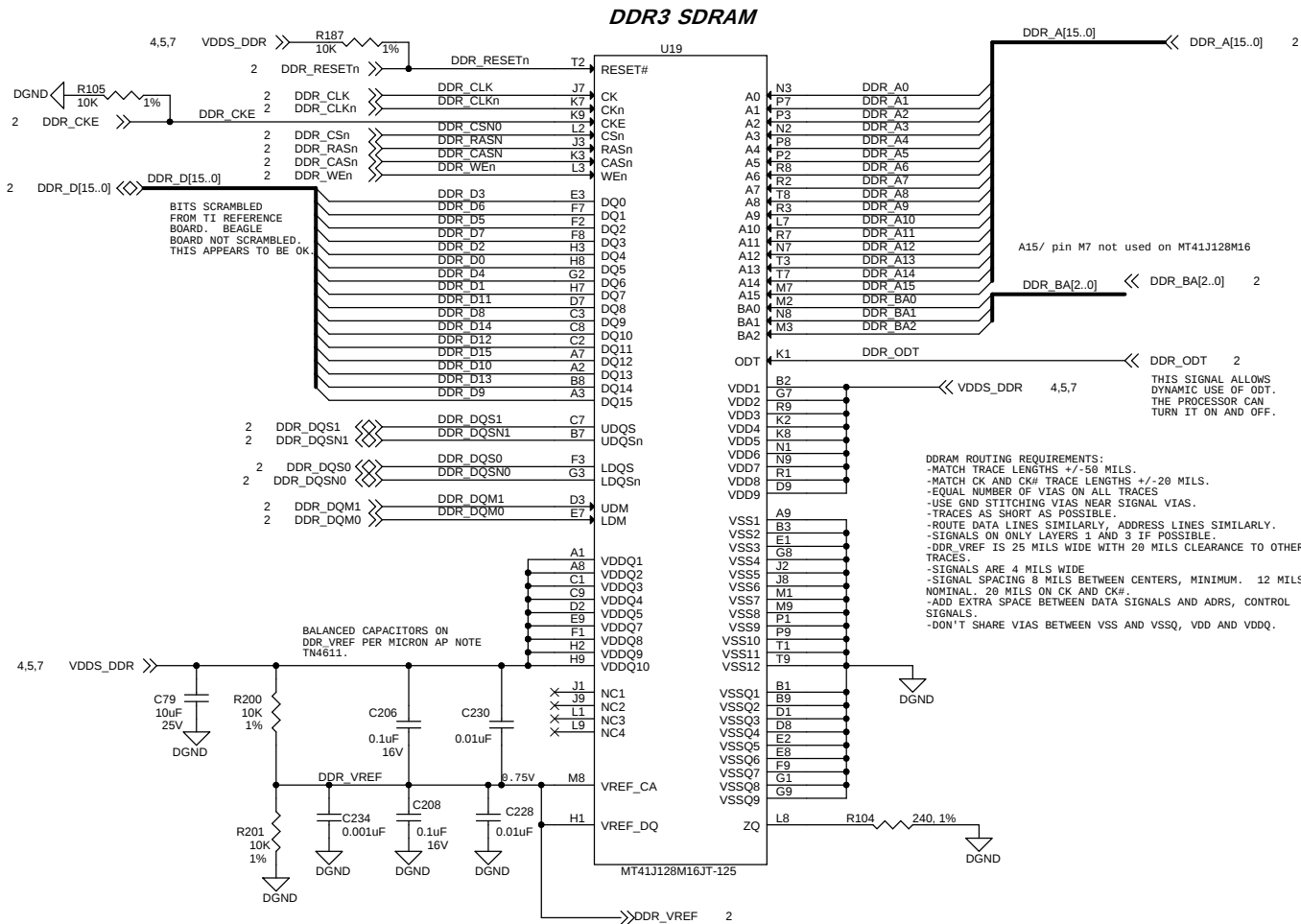
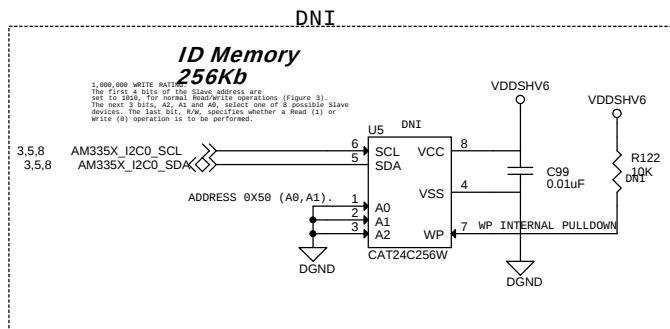
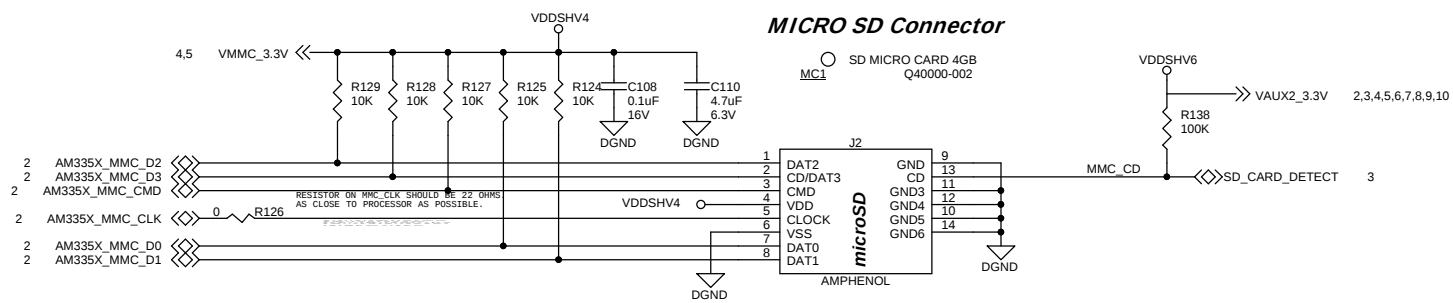
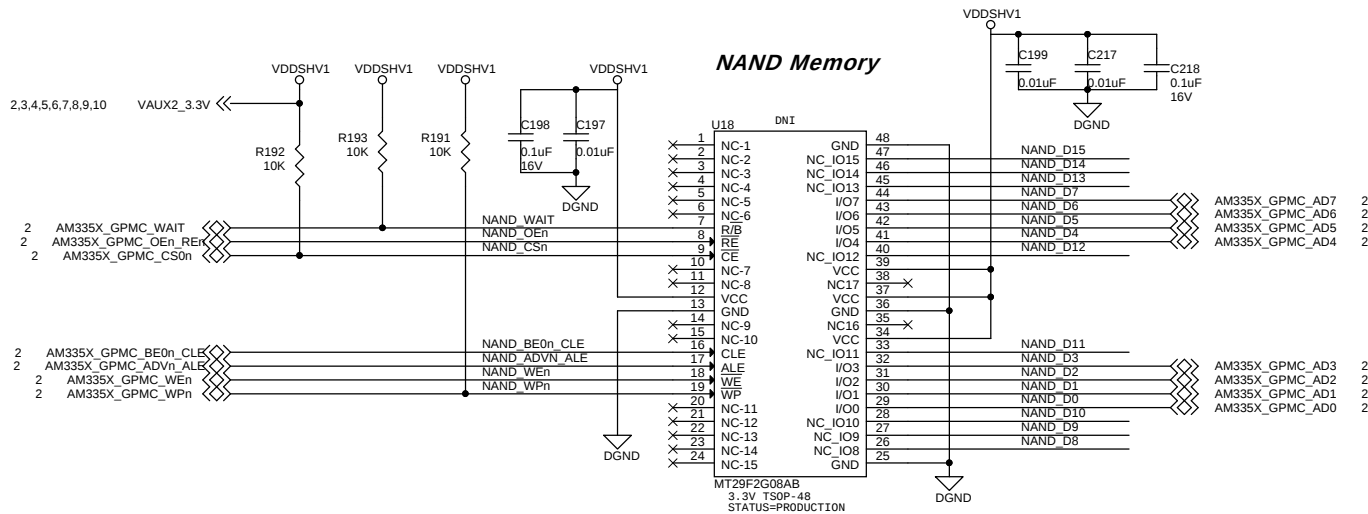
Power Management IC



HDS SAYS WE WILL SEND POWER
GOOD SIGNAL TO PROCESSOR.
THIS IS THE nRESPWRON SIGNAL,
WHICH RESETS THE PROCESSOR WHEN
LOW.

3.3V LDO
CAN THE TPS65910 HANDLE THIS POWER REQ?

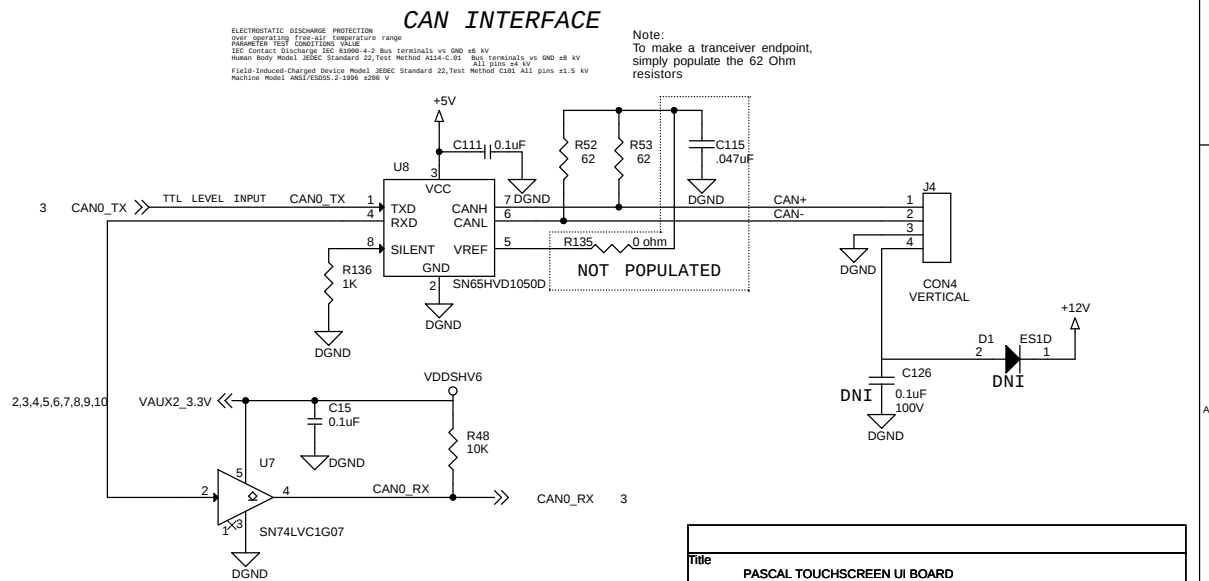
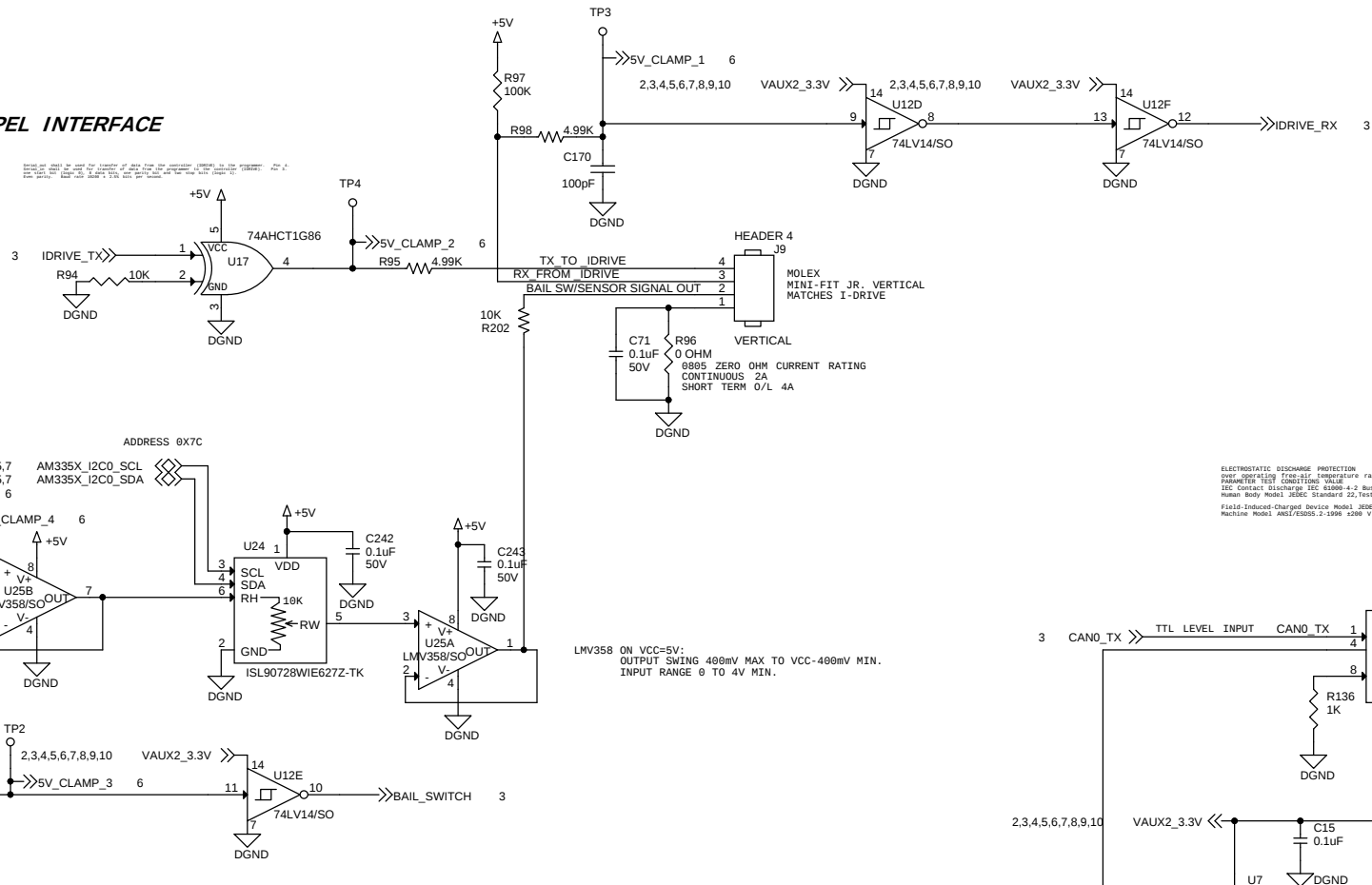
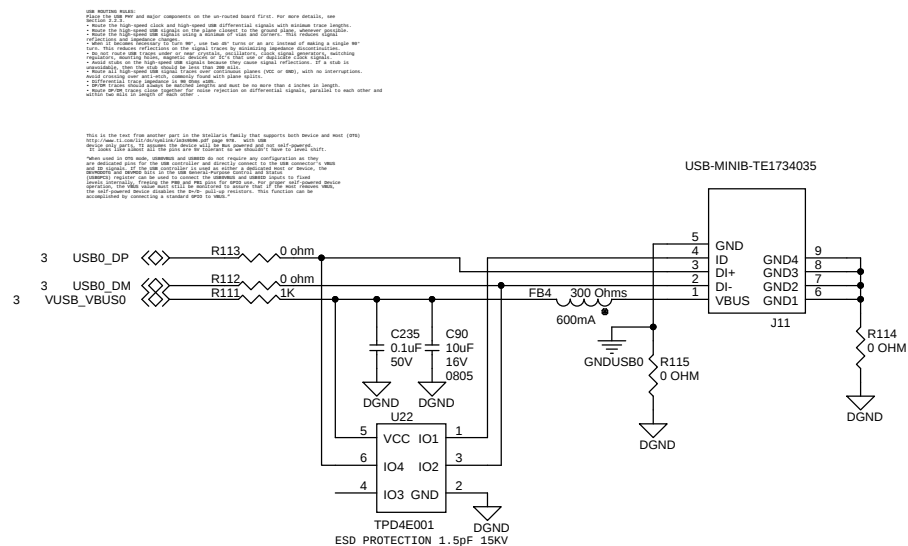
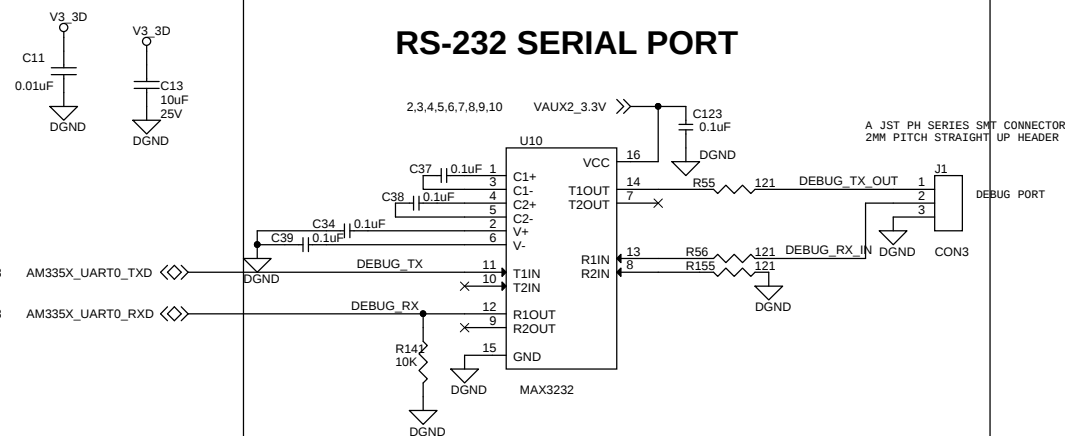
Title			
PASCAL TOUCHSCREEN UI BOARD			
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DDR3 MEMORY DESIGN TAKEN FROM BEAGLE BONE BLACK BOARD.

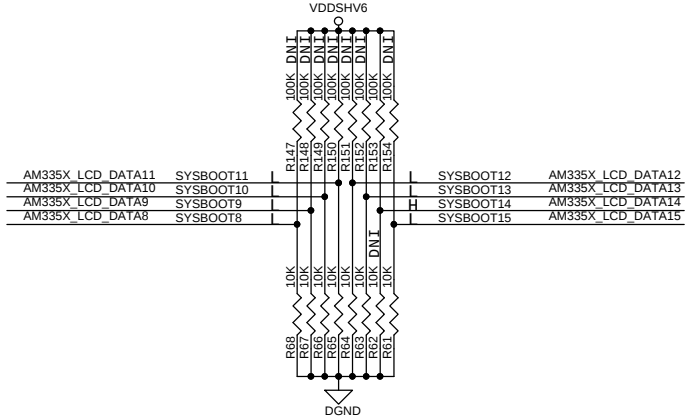
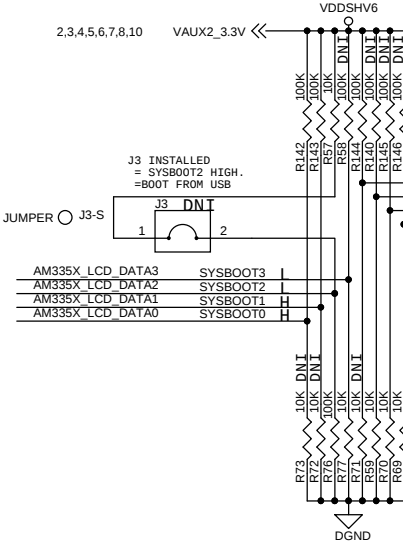
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PASCAL TOUCHSCREEN UI BOARD			
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DNI
FOR
PRODUCTION



Boot Configuration

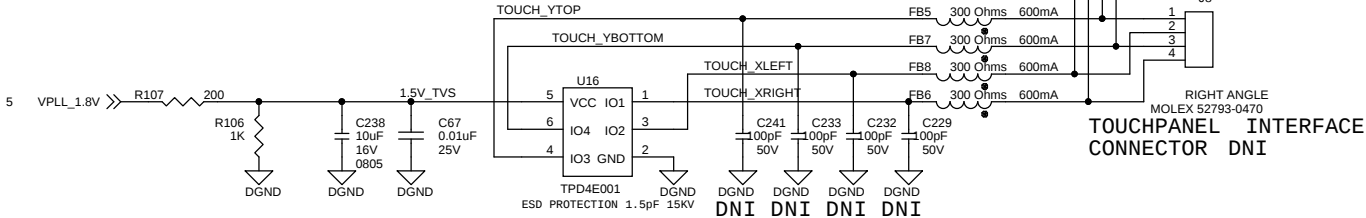
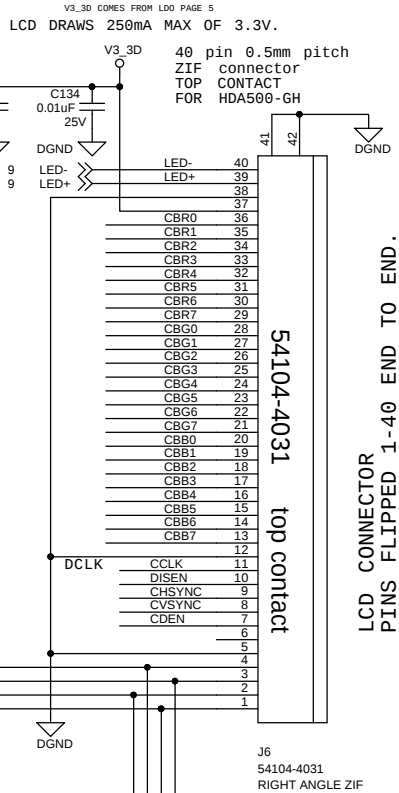
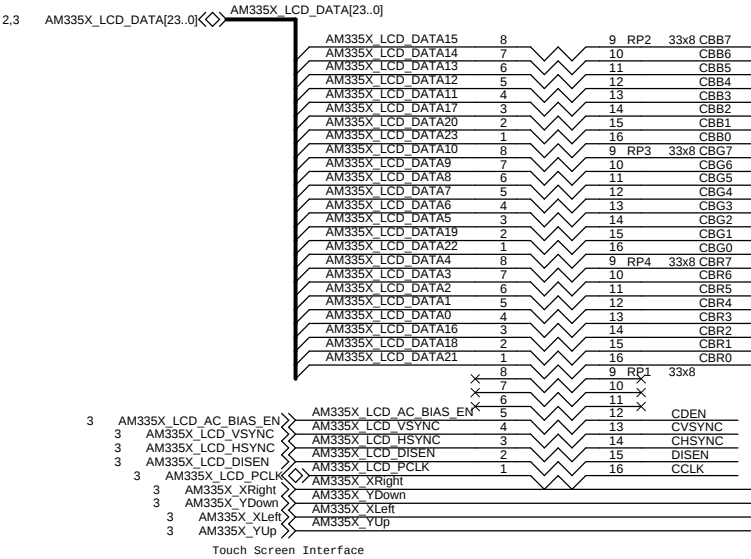
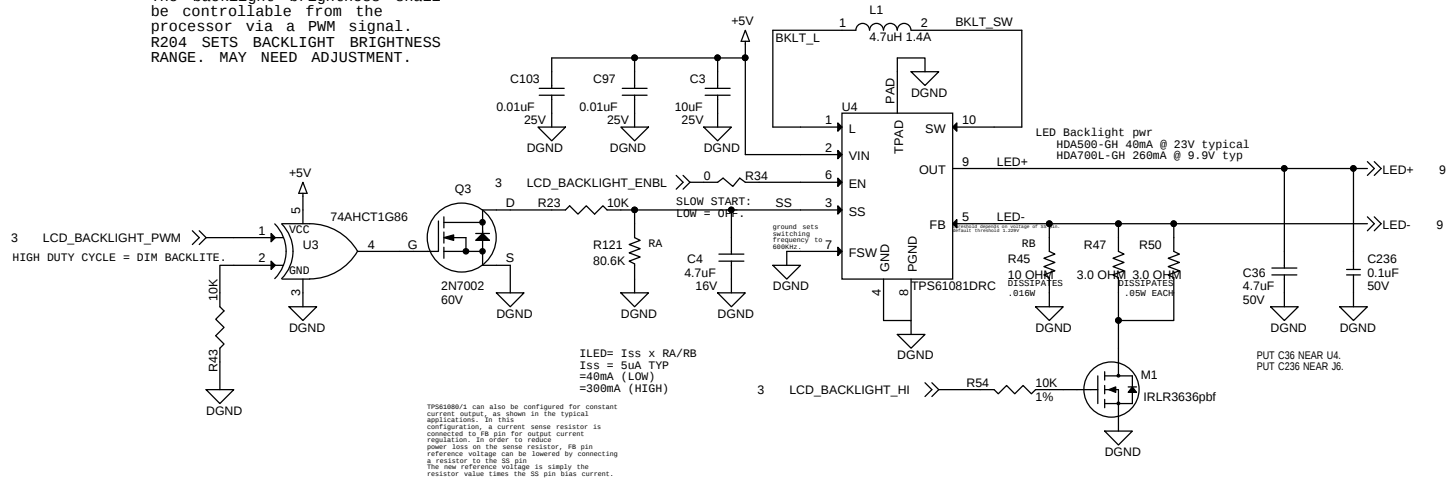
The boot sequence shall be configurable between two sequences.
1 USB, 2 NAND, 3 SPI, 4 MMC0 (micro SD)
[NOTE: SPI is not used]
1 EMAC1, 2 MMC0, 3 XIP, 4 NAND
This may be achieved by placing DIP switches or jumper pins that allow SYSBOOT[3:2] to be pulled either high or low.



BackLight Driver

COULD USE 10uH INDUCTOR SUMIDA CDRH4022/HP

The backlight brightness shall be controllable from the processor via a PWM signal. R204 SETS BACKLIGHT BRIGHTNESS RANGE. MAY NEED ADJUSTMENT.



ALL PARTS THIS PAGE DNI FOR P2 AND PRODUCTION EXCEPT C96, C105, C106

