

Rev	Date	Notes
A	7/28/2010	ECN-13097 - Released to Rev. A
A1	7/30/2010	ECN-13101 - No wiring changes, changed the UX10 symbol to reflect the Micron LPDDR2 device
A2	8/11/2010	ECN-13113 - No wiring changes, changed the LPDDR2 back to Elpida, DNI J2, correct notes on sh. 14 for WLAN_EN and BT_EN.
B	8/13/2010	ECN-13116 - Enable FM operation (sheet 14 - DNI R61, install R14, R15, R19, R62, and R63)
B1	9/22/2010	ECN-13116 - Change out to new Pandaboard title blocks and add comments

### Table of Contents

Pg# - Schematic Page Name


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  - 10 - DVI & HDMI Connector
  - 11 - Debug Ethernet
  - 12 - Audio Jack/RS-232 Connection
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  - 14 - WLAN Subsystem

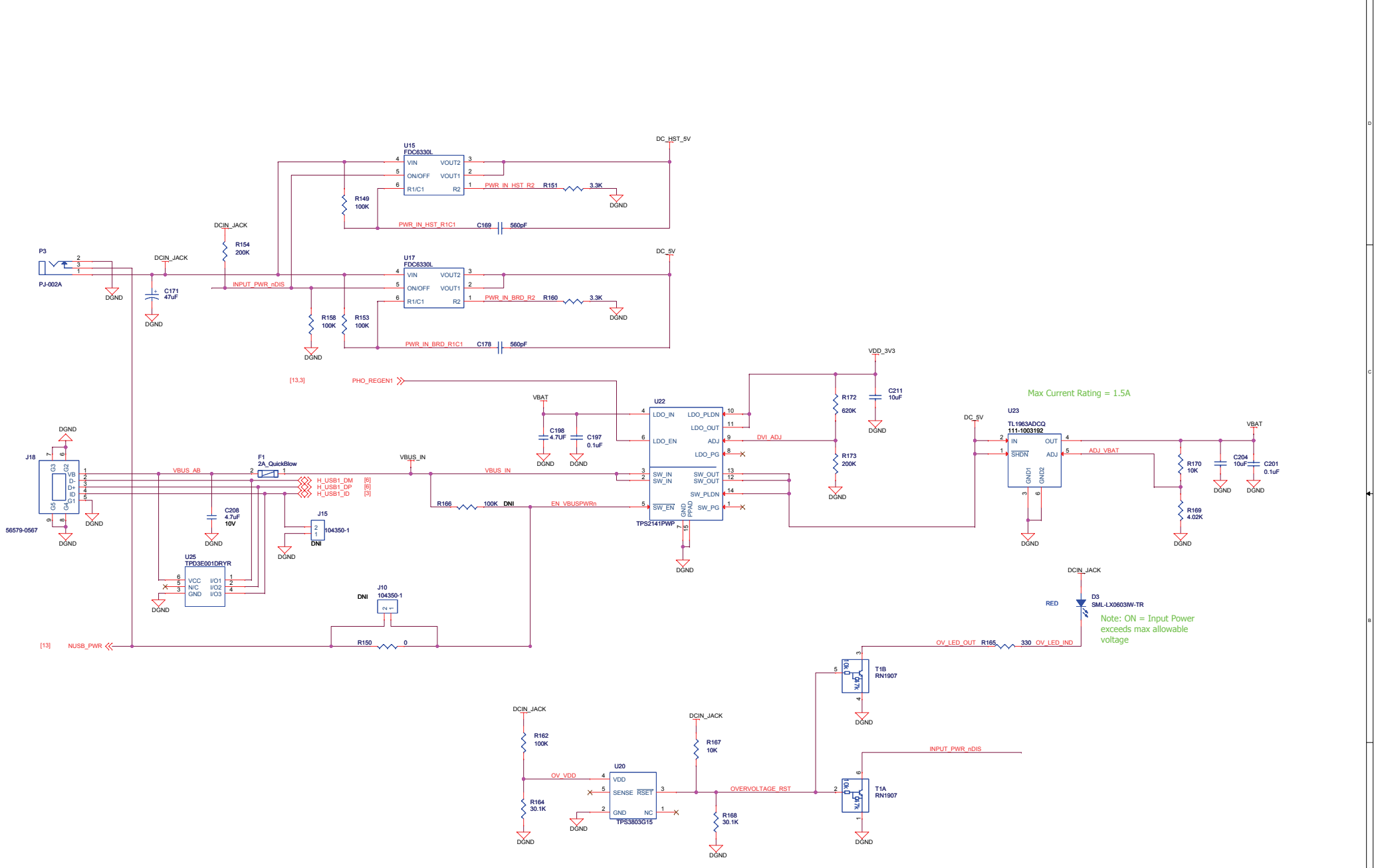
### NOTES LEGEND:

Schematic Page Titles

Functional Block Labels

Circuit design notes

 <b>pandaboard.org</b>	
OMAP4430 Panda Board, 8-Layer	
Title Page	
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Max Current Rating = 1.5A

Note: ON = Input Power exceeds max allowable voltage

# OMAP4 Power Management

Component ROOM = PMIC

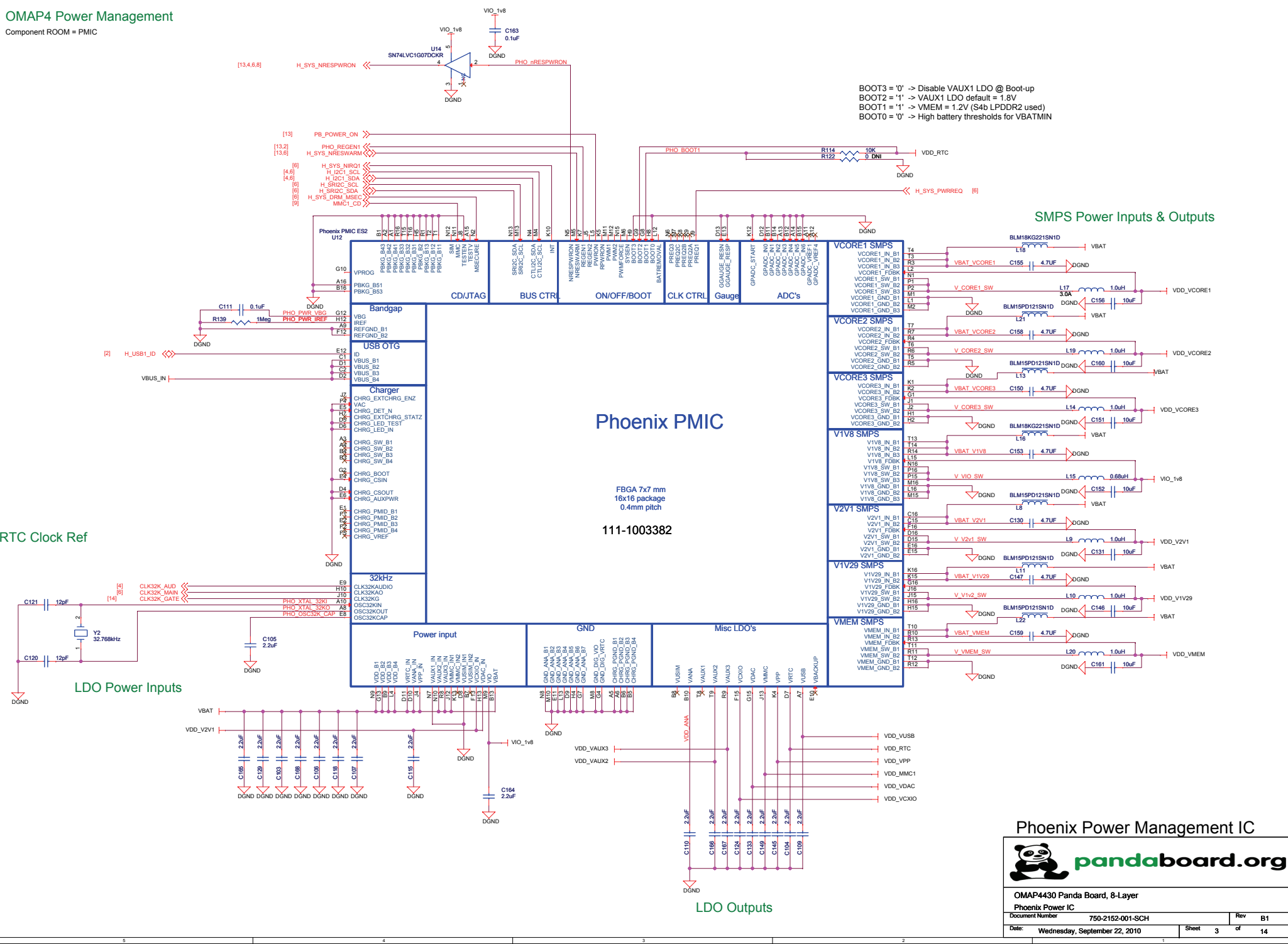
## RTC Clock Ref

## LDO Power Inputs

## LDO Outputs

BOOT3 = '0' -> Disable VAUX1 LDO @ Boot-up  
BOOT2 = '1' -> VAUX1 LDO default = 1.8V  
BOOT1 = '1' -> VMEM = 1.2V (S4b LPDDR2 used)  
BOOT0 = '0' -> High battery thresholds for VBATMIN

## SMPS Power Inputs & Outputs



Phoenix Power Management IC

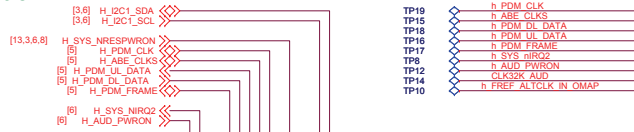
OMAP4430 Panda Board, 8-Layer  
Phoenix Power IC

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# OMAP4 Audio Interfaces

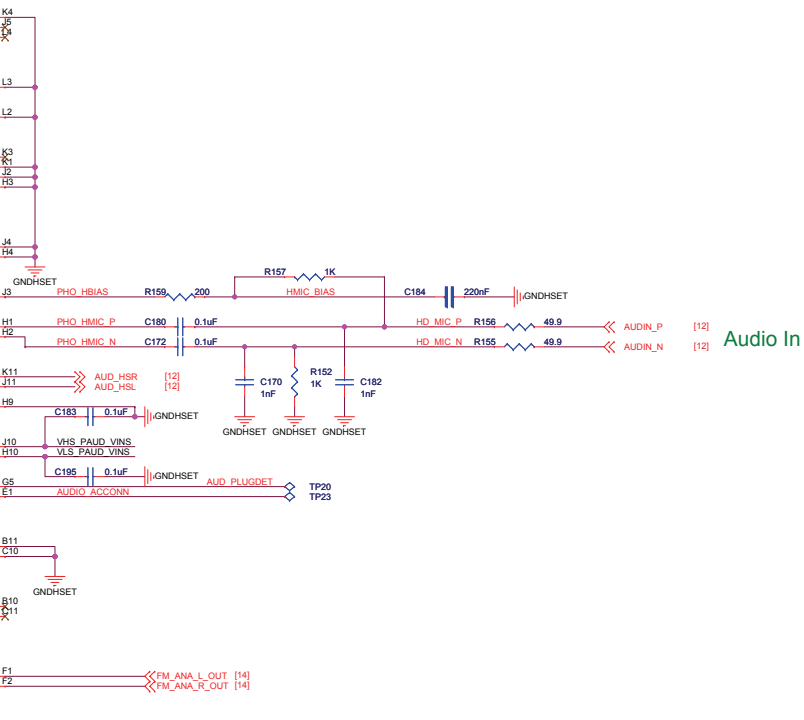
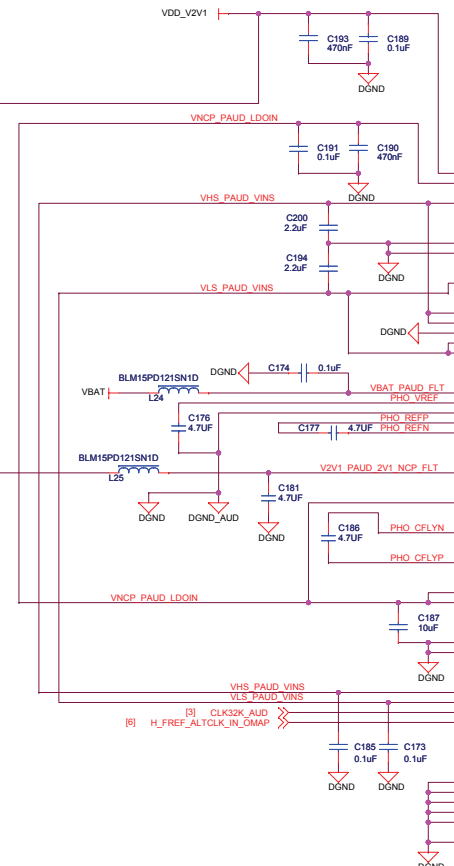
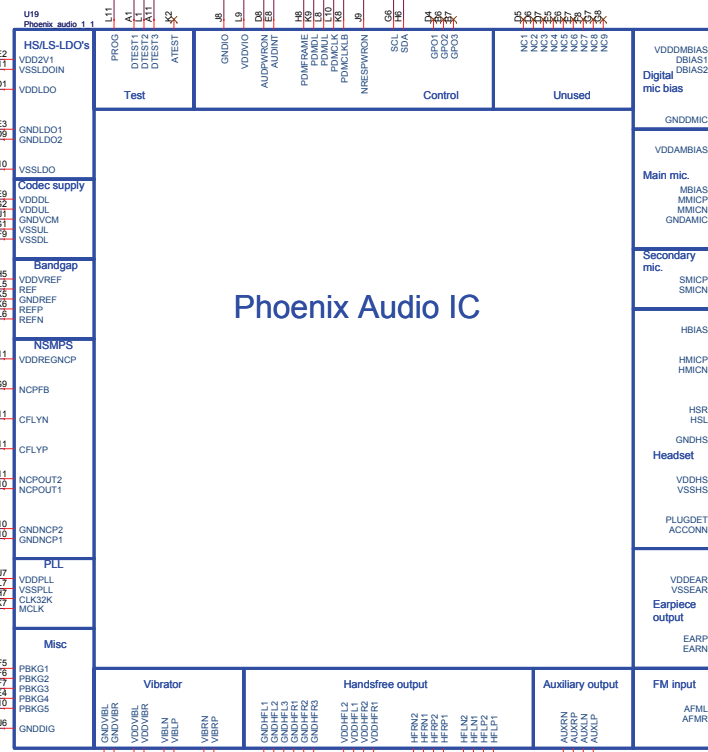
Component ROOM = PAUD

## Controls



TP19	h_PDM_CLK
TP15	h_ABE_CLKS
TP18	h_PDM_DL_DATA
TP16	h_PDM_UL_DATA
TP17	h_PDM_FRAME
TP8	h_SYS_NIRQ2
TP12	h_AUD_PWRON
TP14	CLK32K_AUD
TP10	h_FREQ_ALTCLK_IN OMAP

## Phoenix Audio IC



## Phoenix Audio IC



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 Phoenix Audio IC  
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12C

JTAG

Reference Clock

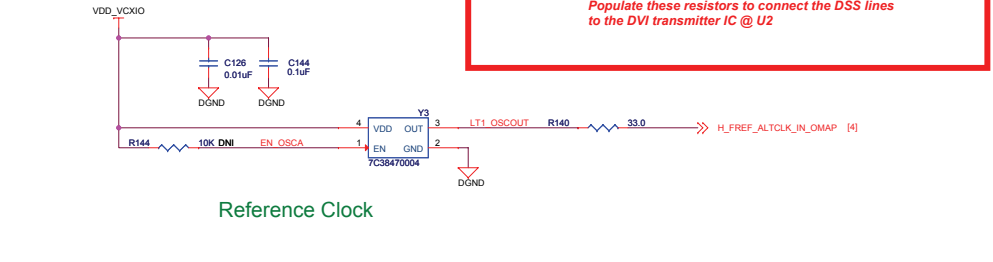


Populate these resistors to connect the DSS lines to the DVI transmitter IC @ U2

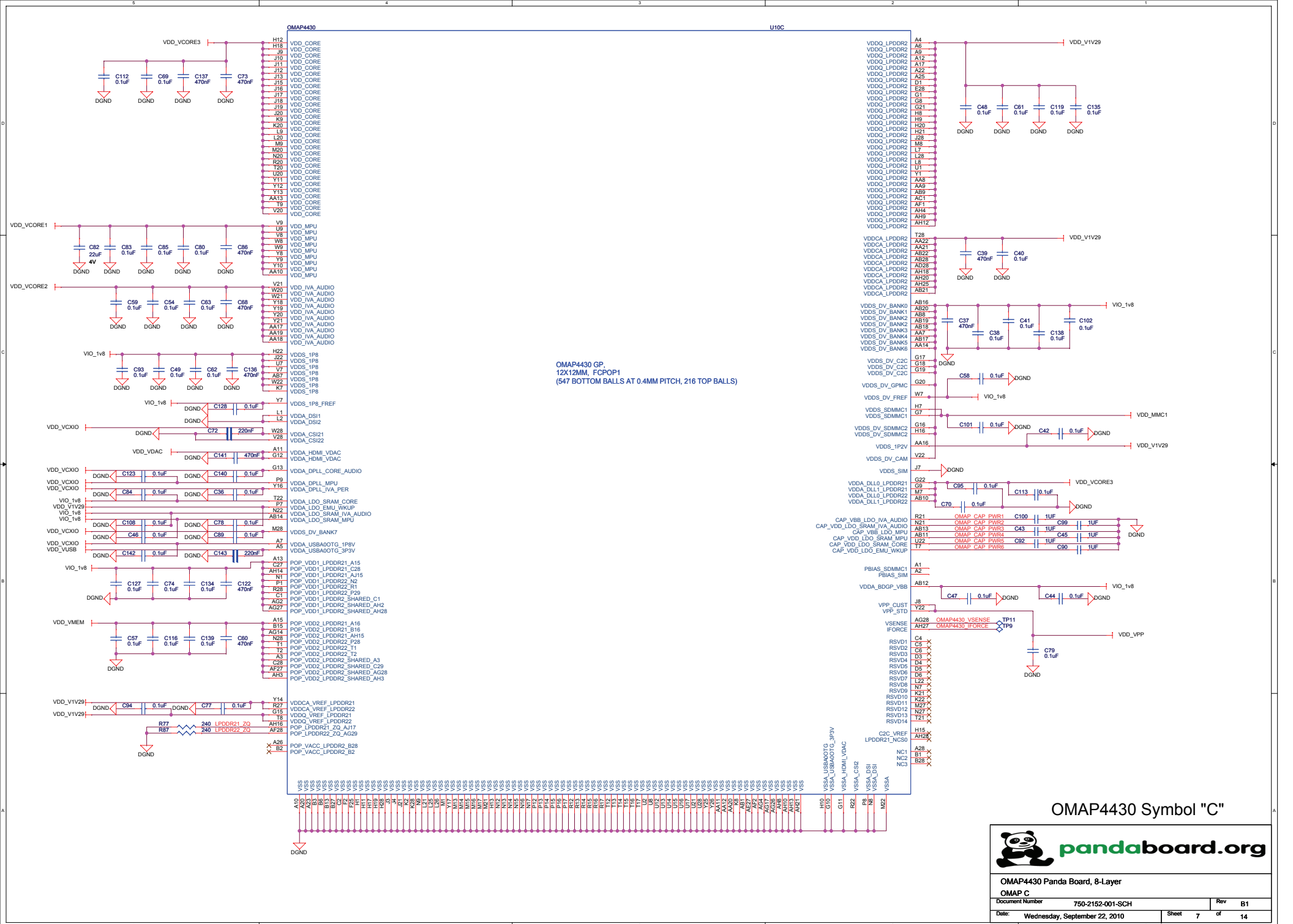
L1T_DSS_D0	R61	33.0	H_DSS_DAT0	I00
L1T_DSS_D1	R41	33.0	H_DSS_DAT1	I00
L1T_DSS_D2	R45	33.0	H_DSS_DAT2	I00
L1T_DSS_D3	R40	33.0	H_DSS_DAT3	I00
L1T_DSS_D4	R46	33.0	H_DSS_DAT4	I00
L1T_DSS_D5	R49	33.0	H_DSS_DAT5	I00
L1T_DSS_D6	R42	33.0	H_DSS_DAT6	I00
L1T_DSS_D7	R67	33.0	H_DSS_DAT7	I00
L1T_DSS_D8	R53	33.0	H_DSS_DAT8	I00
L1T_DSS_D9	R71	33.0	H_DSS_DAT9	I00
L1T_DSS_D10	R61	33.0	H_DSS_DAT10	I00
L1T_DSS_D11	R72	33.0	H_DSS_DAT11	I00
L1T_DSS_D12	R68	33.0	H_DSS_DAT12	I00
L1T_DSS_D13	R70	33.0	H_DSS_DAT13	I00
L1T_DSS_D14	R64	33.0	H_DSS_DAT14	I00
L1T_DSS_D15	R64	33.0	H_DSS_DAT15	I00
L1T_DSS_D16	R75	33.0	H_DSS_DAT16	I00
L1T_DSS_D17	R69	33.0	H_DSS_DAT17	I00
L1T_DSS_D18	R66	33.0	H_DSS_DAT18	I00
L1T_DSS_D19	R52	33.0	H_DSS_DAT19	I00
L1T_DSS_D20	R82	33.0	H_DSS_DAT20	I00
L1T_DSS_D21	R48	33.0	H_DSS_DAT21	I00
L1T_DSS_D22	R50	33.0	H_DSS_DAT22	I00
L1T_DSS_D23	R50	33.0	H_DSS_DAT23	I00
L1T_DSS_PCLK	R63	33.0	H_DSS_PCLK	I00
L1T_DSS_HSYNC	R65	33.0	H_DSS_HSYNC	I00
L1T_DSS_VSYNC	R65	33.0	H_DSS_VSYNC	I00
L1T_DSS_DEN	R63	33.0	H_DSS_DEN	I00

Populate these resistors to connect the DSS lines to the Expansion Connectors @ J1 & J4

L1T_DSS_D0	R184	33.0 DNI	EXP_DSS_DAT0	I13
L1T_DSS_D1	R176	33.0 DNI	EXP_DSS_DAT1	I13
L1T_DSS_D2	R181	33.0 DNI	EXP_DSS_DAT2	I13
L1T_DSS_D3	R177	33.0 DNI	EXP_DSS_DAT3	I13
L1T_DSS_D4	R180	33.0 DNI	EXP_DSS_DAT4	I13
L1T_DSS_D5	R182	33.0 DNI	EXP_DSS_DAT5	I13
L1T_DSS_D6	R179	33.0 DNI	EXP_DSS_DAT6	I13
L1T_DSS_D7	R190	33.0 DNI	EXP_DSS_DAT7	I13
L1T_DSS_D8	R186	33.0 DNI	EXP_DSS_DAT8	I13
L1T_DSS_D9	R194	33.0 DNI	EXP_DSS_DAT9	I13
L1T_DSS_D10	R196	33.0 DNI	EXP_DSS_DAT10	I13
L1T_DSS_D11	R197	33.0 DNI	EXP_DSS_DAT11	I13
L1T_DSS_D12	R193	33.0 DNI	EXP_DSS_DAT12	I13
L1T_DSS_D13	R195	33.0 DNI	EXP_DSS_DAT13	I13
L1T_DSS_D14	R203	33.0 DNI	EXP_DSS_DAT14	I13
L1T_DSS_D15	R189	33.0 DNI	EXP_DSS_DAT15	I13
L1T_DSS_D16	R198	33.0 DNI	EXP_DSS_DAT16	I13
L1T_DSS_D17	R192	33.0 DNI	EXP_DSS_DAT17	I13
L1T_DSS_D18	R191	33.0 DNI	EXP_DSS_DAT18	I13
L1T_DSS_D19	R197	33.0 DNI	EXP_DSS_DAT19	I13
L1T_DSS_D20	R201	33.0 DNI	EXP_DSS_DAT20	I13
L1T_DSS_D21	R183	33.0 DNI	EXP_DSS_DAT21	I13
L1T_DSS_D22	R199	33.0 DNI	EXP_DSS_DAT22	I13
L1T_DSS_D23	R185	33.0 DNI	EXP_DSS_DAT23	I13
L1T_DSS_PCLK	R200	33.0 DNI	EXP_DSS_PCLK	I13
L1T_DSS_HSYNC	R202	33.0 DNI	EXP_DSS_HSYNC	I13
L1T_DSS_VSYNC	R188	33.0 DNI	EXP_DSS_VSYNC	I13
L1T_DSS_DEN	R178	33.0 DNI	EXP_DSS_DEN	I13
L1T_DPM_EMU2	R175	33.0 DNI	H_DPM_EMU2	I13



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 OMAP B  
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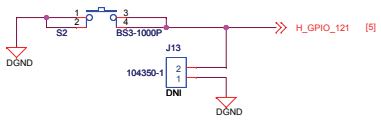
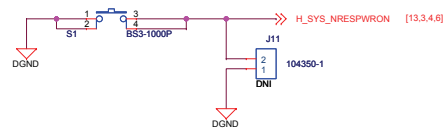


OMAP4430 Symbol "C"

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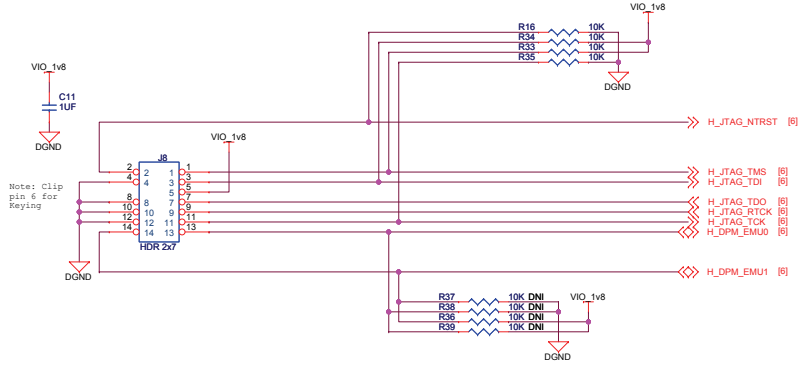
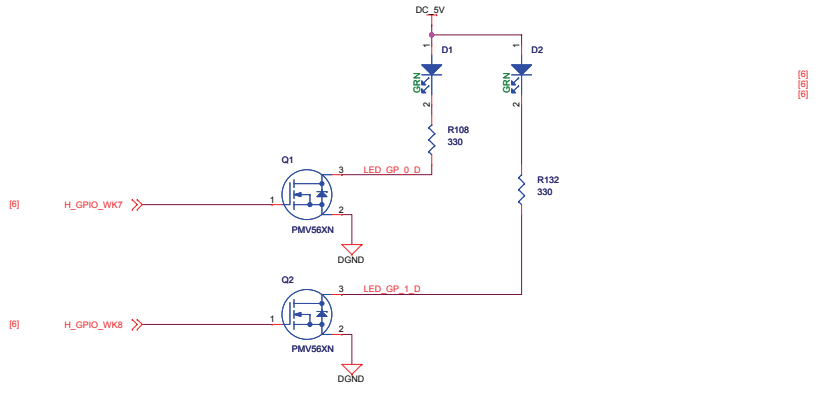
OMAP4430 Panda Board, 8-Layer  
 OMAP C

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These three OMAP GPIOs are intended for use as board ID indicators, allowing up to 8 unique Panda builds/variants.

Initial value of 001, which will allow S/W to differentiate this board from 6-layer board (which would read 000).

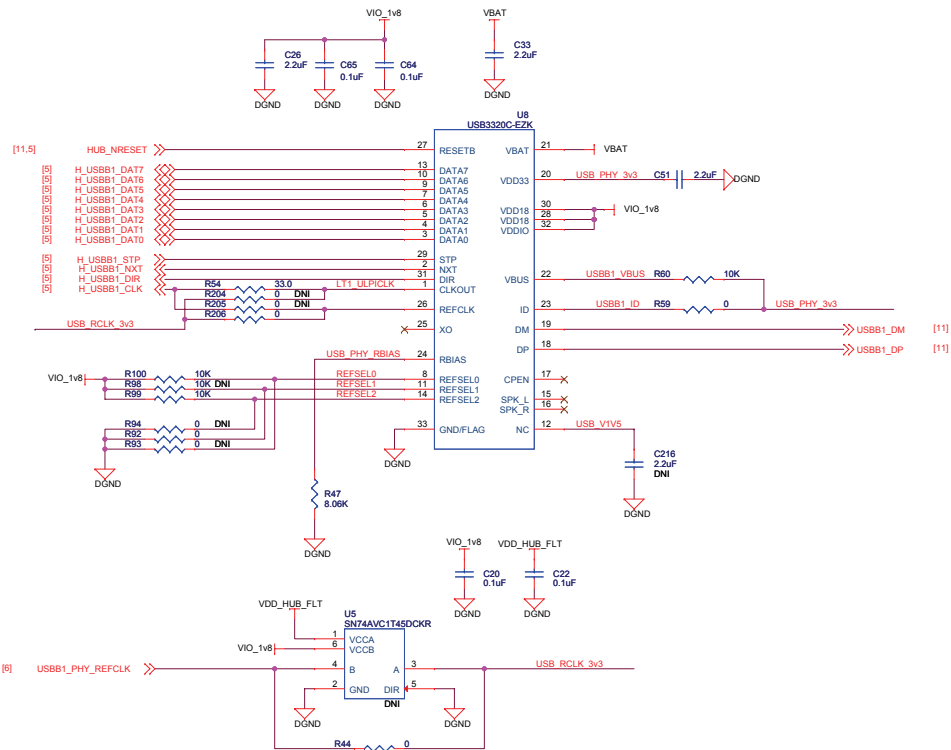
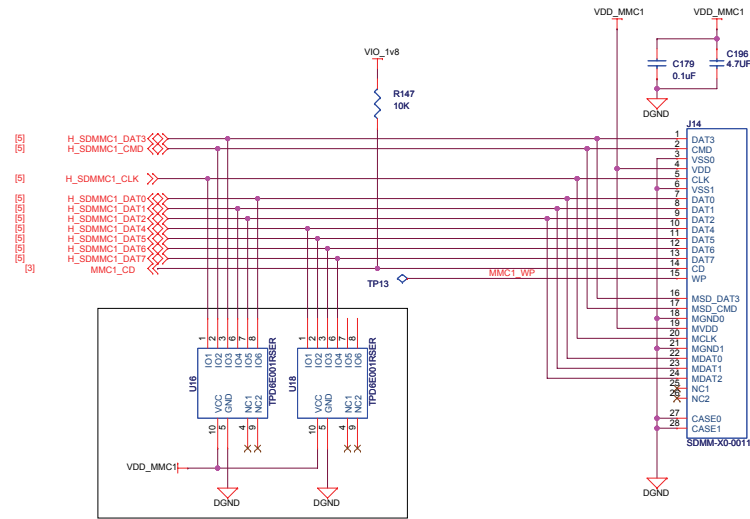


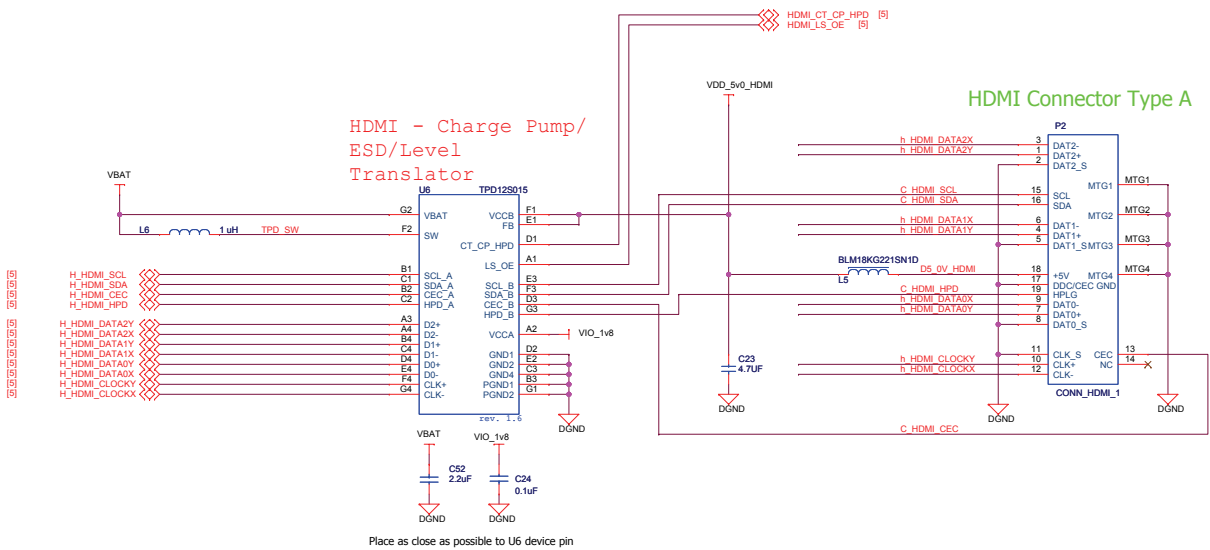
## OMAP Debug IF - JTAG Connectors



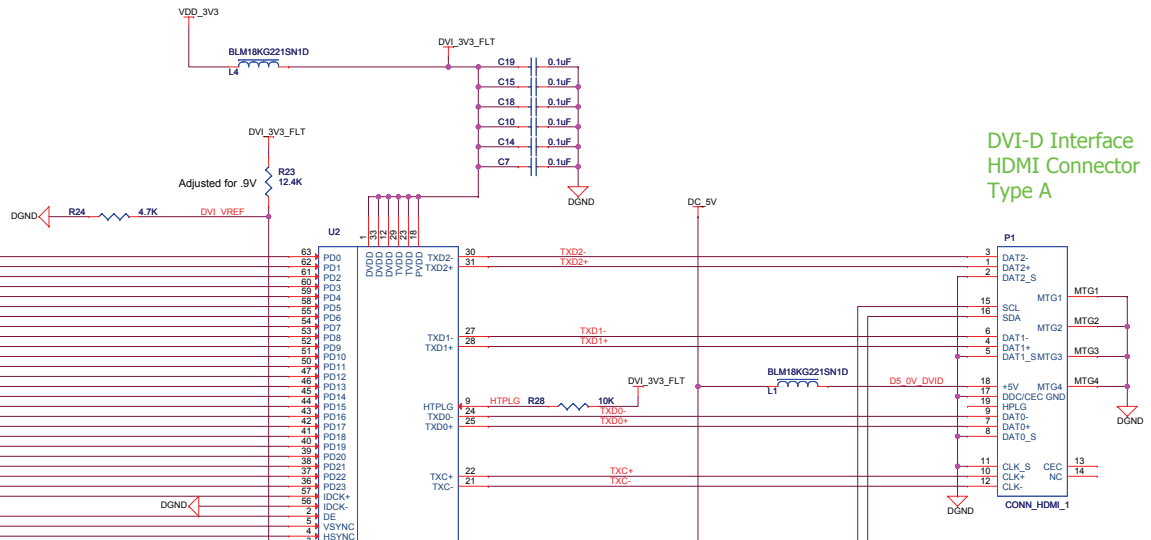
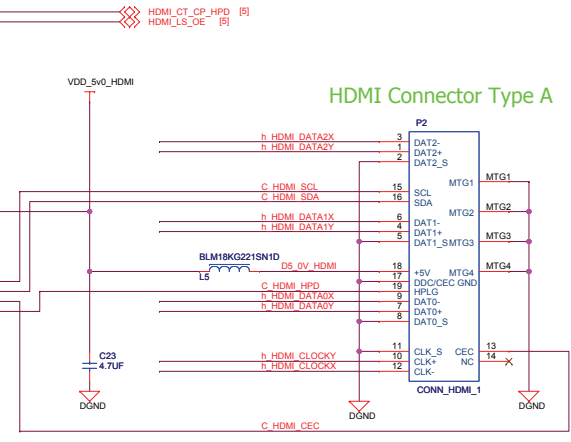
OMAP4430 Panda Board, 8-Layer	
JTAG Debug Connector	
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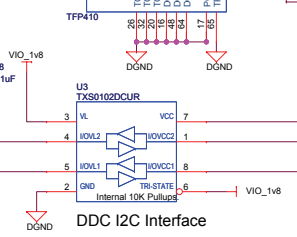
**HDMI Connector Type A**




- [6] H\_DSS\_DAT0
- [6] H\_DSS\_DAT1
- [6] H\_DSS\_DAT2
- [6] H\_DSS\_DAT3
- [6] H\_DSS\_DAT4
- [6] H\_DSS\_DAT5
- [6] H\_DSS\_DAT6
- [6] H\_DSS\_DAT7
- [6] H\_DSS\_DAT8
- [6] H\_DSS\_DAT9
- [6] H\_DSS\_DAT10
- [6] H\_DSS\_DAT11
- [6] H\_DSS\_DAT12
- [6] H\_DSS\_DAT13
- [6] H\_DSS\_DAT14
- [6] H\_DSS\_DAT15
- [6] H\_DSS\_DAT16
- [6] H\_DSS\_DAT17
- [6] H\_DSS\_DAT18
- [6] H\_DSS\_DAT19
- [6] H\_DSS\_DAT20
- [6] H\_DSS\_DAT21
- [6] H\_DSS\_DAT22
- [6] H\_DSS\_DAT23
- [6] H\_DSS\_PCLK
- [6] H\_DSS\_DEN
- [6] H\_DSS\_VSYNC
- [6] H\_DSS\_HSYNC

- [11] TFP410\_NPD

- [13.6] H\_I2C3\_SCL
- [13.6] H\_I2C3\_SDA



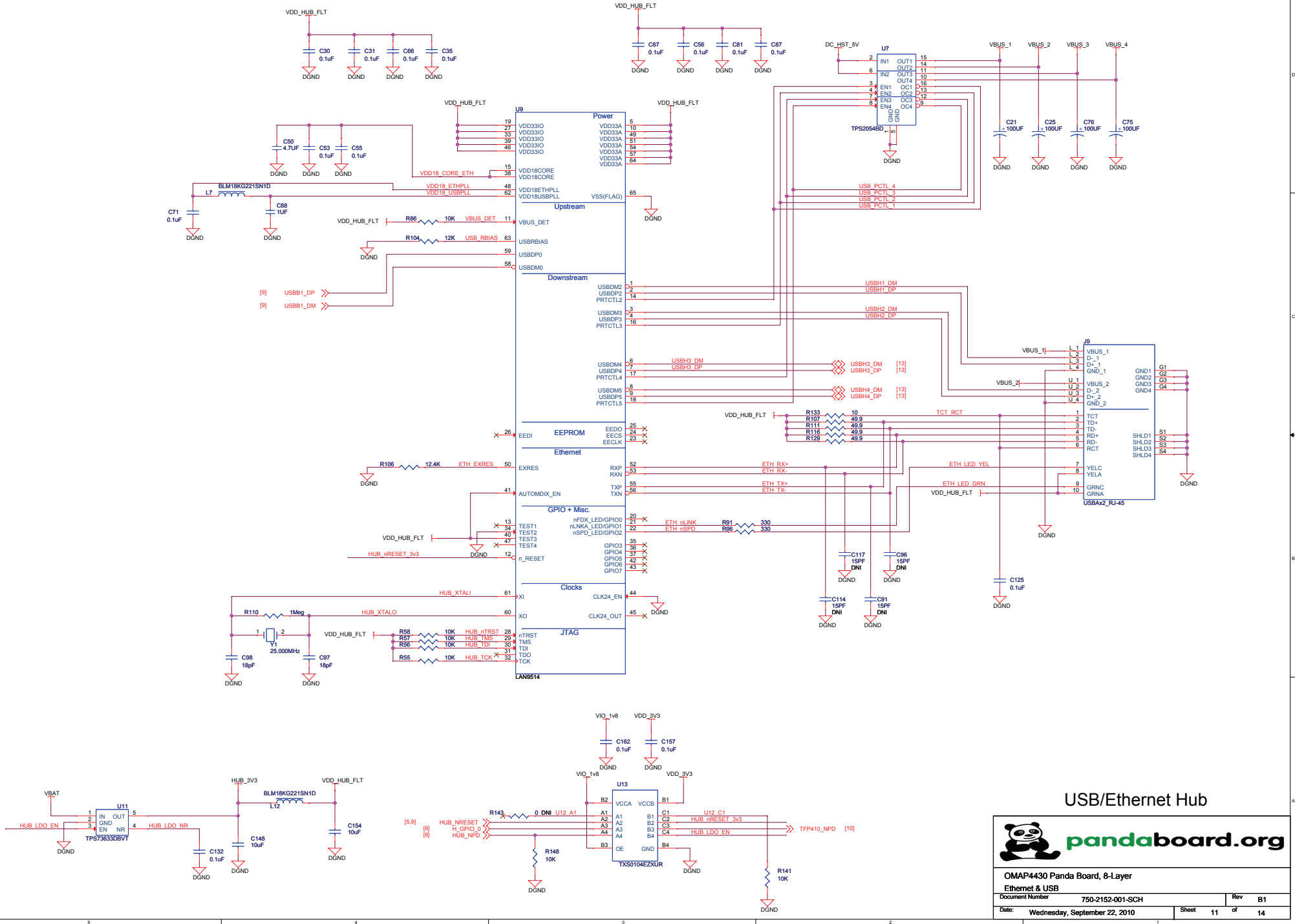
**DVI & HDMI Interfaces**



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<b>OMAP4430 Panda Board, 8-Layer DVI &amp; HDMI Connectors</b>		
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# USB + Ethernet Hub

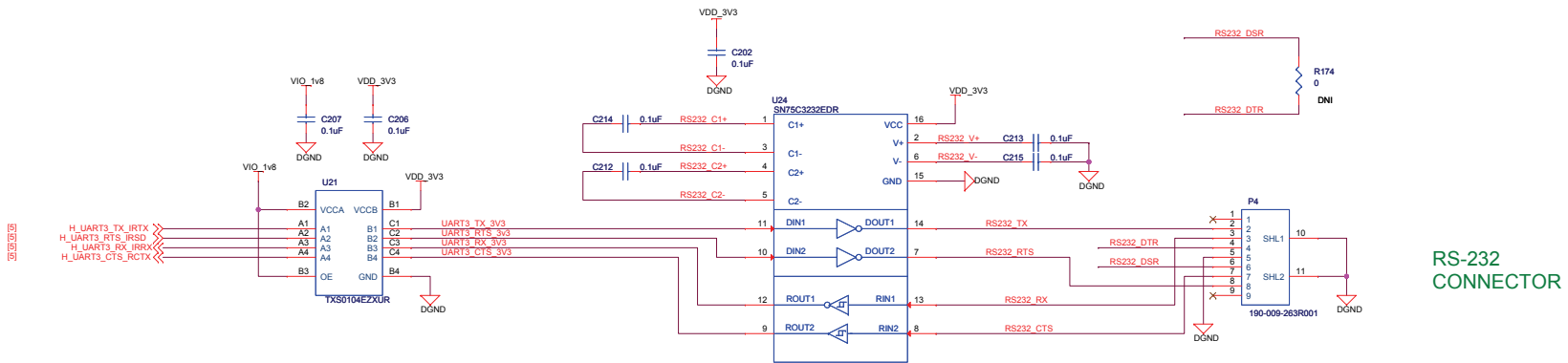
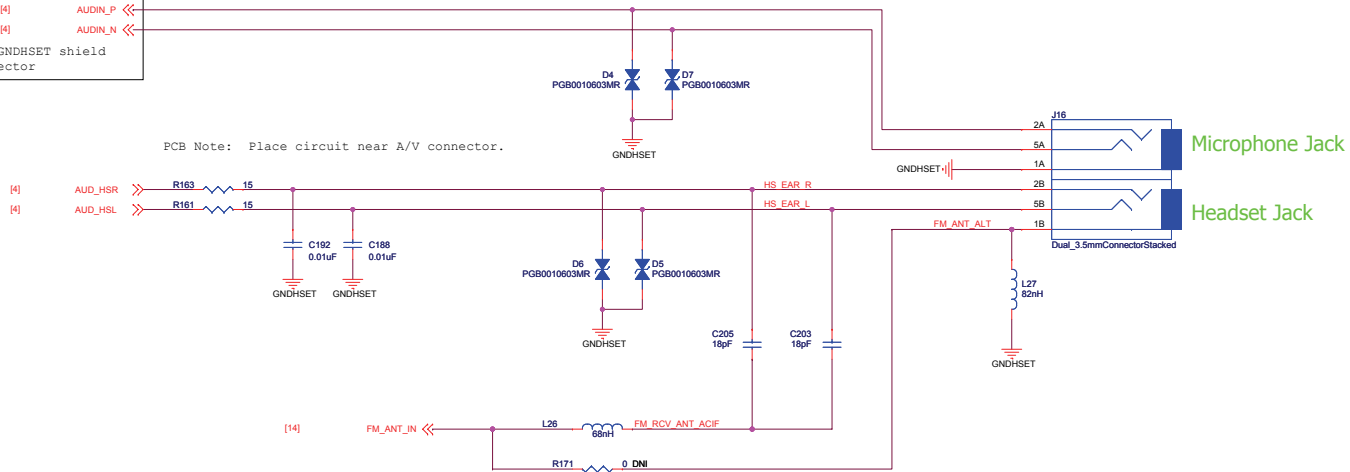


## USB/Ethernet Hub




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 Ethernet & USB  
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[4] AUDIN\_P  
 [4] AUDIN\_N  
 PCB Note:  
 Traces surrounded by GNDHSET shield  
 & routed diff to connector



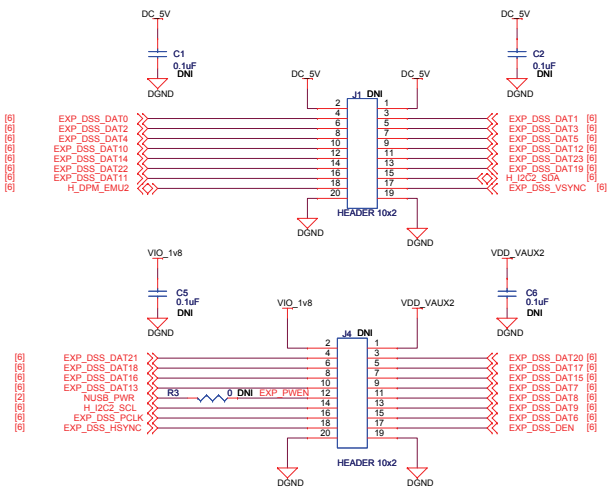
### 3.5mm Audio Conn + RS-232 I/F

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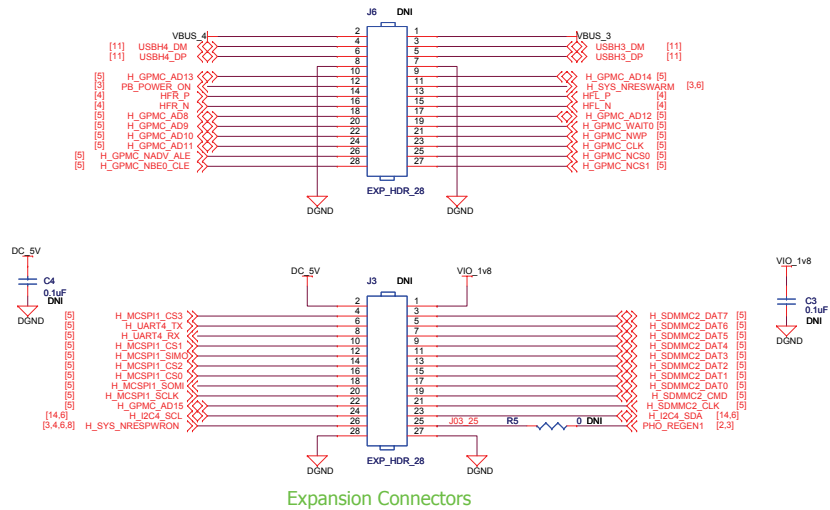
OMAP4430 Panda Board, 8-Layer  
 Audio Jack & RS-232 Connector

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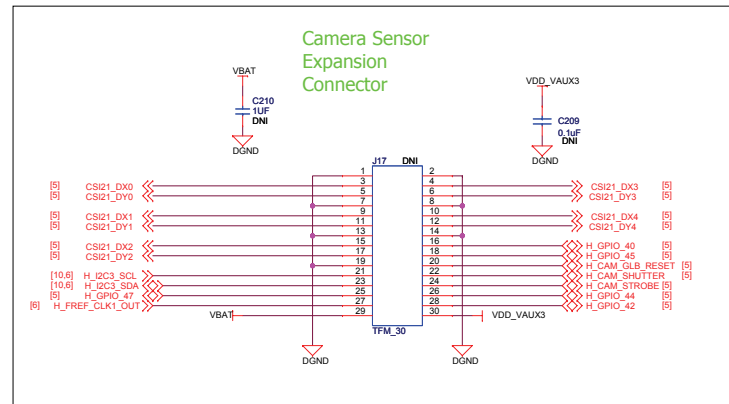
### LCD Expansion Connectors (Beagle Legacy)

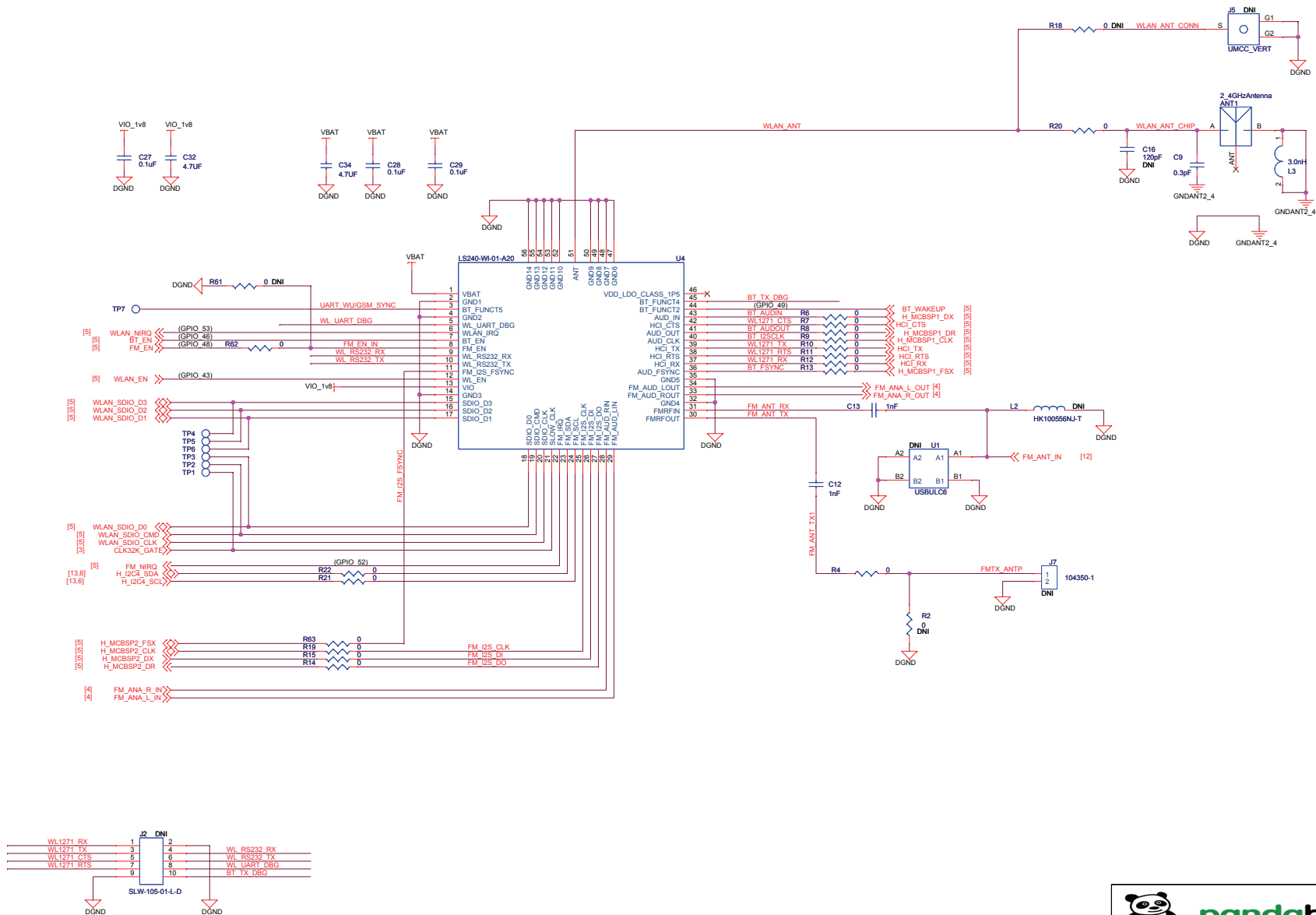



### Expansion Connectors



### Camera Sensor Expansion Connector






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**OMAP4430 Panda Board, 8-Layer**  
**WLAN/Bluetooth/FM**

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