

REV	Description	DATE	BY
B1	1. Added 1K resistor to the GPMC_WAIT0 line. 2. Change power connector symbol to fix the swapped pins. 3. Add plated through mounting holes to P10 and provide soldering pad on the back side. 4. Fix hole size on P8 and make them plated through with a soldering pad on the back side. 5. Changed C101 to 47uf, 25V. 6. Removed TP15, TP16, TP17, and TP18. 7. USER0 and USER1 LEDs are wired wrong. Corrected net naming error on schematic. 8. Added 10K pullup to USB1HS_nCS signal. 9. Deleted P3, R53, R24, and R25.	4/8/08	GC
B2	1. Removed the USB host components from this assembly as the USB host on this layout is not reliable.	6/3/08	GC
B3	1. Added capacitors back in to reestablish noise margins.	6/18/08	GC
B4	1. Added 4.7uf across D3 to improve noise levels on OTG VBus. Some hubs would not work without this capacitor.	6/25/08	GC
B5	1. Removed capacitor C70 making it a DNI. Removal improves the rise/fall time of the 32KHz clock.	8/13/08	GC
B6	1. Replace U9 and U11 packages to address the issues we have had with failure of these devices. 2. Incorporated the Dx capacitor into the PCB as C127.	10/21/08	GC
B6	1. Chnaged the OMAP3530 processor for version ES2.1 to ES3.0	12/11/08	GC

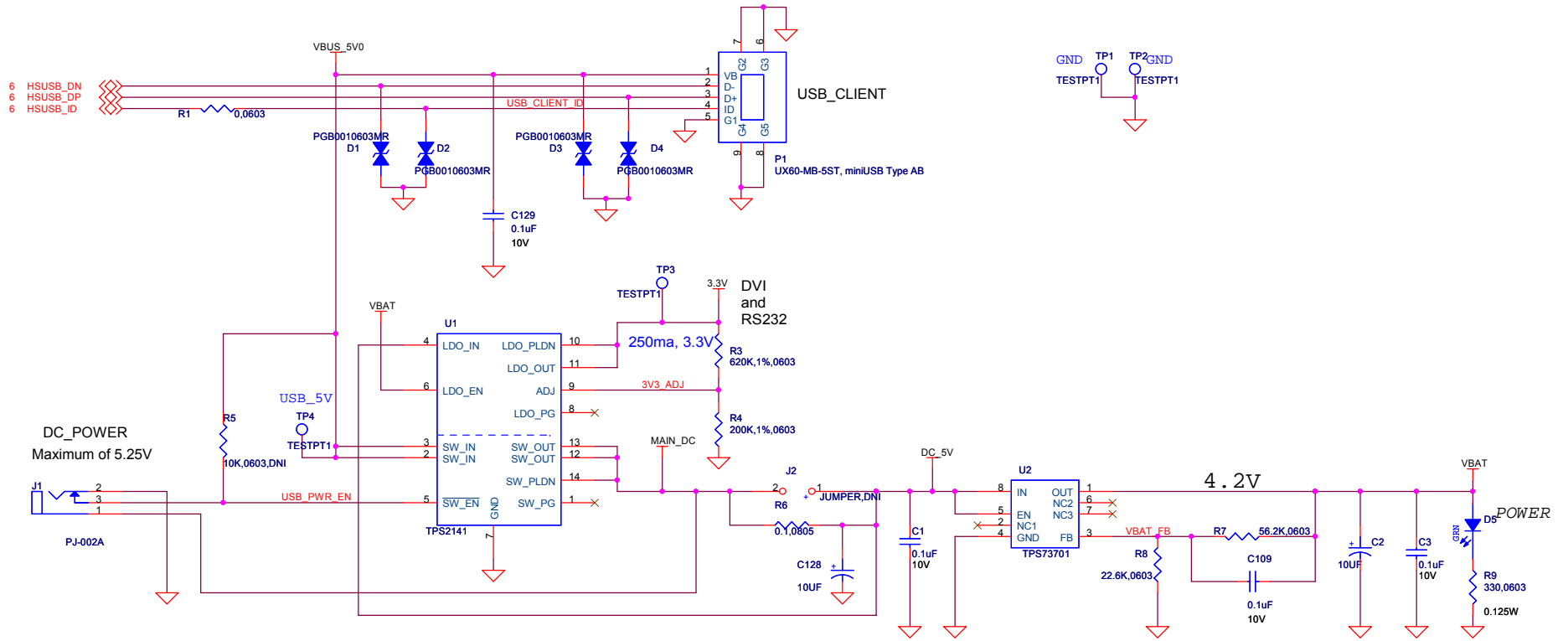
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3	OMAP3 1 OF 3
4	OMAP3 2 OF 3, JTAG, SWITCHES, LEDS, SVIDEO
5	OMAP3 3 OF 3
6	TWL4030 1 of 2, AUDIO JACKS, LED, 26MHZ, 32KHZ
7	TWL4030 2 of 2
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9	SD/MMC, SERIAL HEADER
10	DVI-D

This schematic is **\*NOT SUPPORTED\*** and DOES NOT constitute a reference design. Only "community" support is allowed via resources at [BeagleBoard.org/discuss](http://BeagleBoard.org/discuss).

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- × H10 SDR\_C\_BA1
- × H9 SDR\_C\_BA0
- × E1 SDR\_C\_A14
- × E2 SDR\_C\_A13
- × D1 SDR\_C\_A12
- × D2 SDR\_C\_A11
- × D3 SDR\_C\_A10
- × D4 SDR\_C\_A9
- × C1 SDR\_C\_A8
- × C2 SDR\_C\_A7
- × C3 SDR\_C\_A6
- × D5 SDR\_C\_A5
- × C4 SDR\_C\_A4
- × C5 SDR\_C\_A3
- × B3 SDR\_C\_A2
- × B4 SDR\_C\_A1
- × A4 SDR\_C\_A0

- × H14 SDR\_C\_nRAS
- × H13 SDR\_C\_nCAS
- × H15c SDR\_C\_nWE
- × A13 SDR\_C\_CLK
- × A14c SDR\_C\_nCLK
- × H17 SDR\_C\_CKE1
- × H16 SDR\_C\_CKE0
- × H12c SDR\_C\_nCS1
- × H11c SDR\_C\_nCS0
- × C20 SDR\_C\_DM3
- × B11 SDR\_C\_DM2
- × A16 SDR\_C\_DM1
- × B7 SDR\_C\_DM0
- × A20 SDR\_C\_DQ53
- × A10 SDR\_C\_DQ52
- × A17 SDR\_C\_DQ51
- × A6 SDR\_C\_DQ50



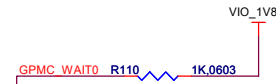
- 10 DSS\_D0 AG22 DSS\_D0/DX0/UART1\_CTS/DSSVENC656\_DATA0/GPIO\_70
- 10 DSS\_D1 AH22 DSS\_D1/DY0/UART1\_RTS/DSSVENC656\_DATA1/GPIO\_71
- 10 DSS\_D2 AG23 DSS\_D2/DX1/DSSVENC656\_DATA2/GPIO\_72
- 10 DSS\_D3 AH23 DSS\_D3/DY1/DSSVENC656\_DATA3/GPIO\_73
- 10 DSS\_D4 AG24 DSS\_D4/DX2/UART3\_RX\_IRRX/DSSVENC656\_DATA4/GPIO\_74
- 10 DSS\_D5 AH24 DSS\_D5/DY2/UART3\_TX\_IRTX/DSSVENC656\_DATA5/GPIO\_75
- 10 DSS\_D6 E28 DSS\_D6/UART1\_TX/DSSVENC656\_DATA6/GPIO\_76/HW\_DBG15
- 10 DSS\_D7 F27 DSS\_D7/UART1\_RX/DSSVENC656\_DATA7/GPIO\_77/HW\_DBG15
- 10 DSS\_D8 G26 DSS\_D8/GPIO\_78/HW\_DBG16
- 10 DSS\_D9 AD28 DSS\_D9/GPIO\_79/HW\_DBG17
- 10 DSS\_D10 AD27 DSS\_D10/SDI\_DAT1N/GPIO\_80
- 10 DSS\_D11 AB28 DSS\_D11/SDI\_DAT1P/GPIO\_81
- 10 DSS\_D12 AB27 DSS\_D12/SDI\_DAT2N/GPIO\_82
- 10 DSS\_D13 AA28 DSS\_D13/SDI\_DAT2P/GPIO\_83
- 10 DSS\_D14 AA27 DSS\_D14/SDI\_DAT3N/GPIO\_84
- 10 DSS\_D15 G25 DSS\_D15/SDI\_DAT3P/GPIO\_85
- 10 DSS\_D16 H27 DSS\_D16/GPIO\_86
- 10 DSS\_D17 H26 DSS\_D17/GPIO\_87
- 10 DSS\_D18 H25 DSS\_D18/SDI\_VSYNC/McSPI3\_CLK/DSS\_D0/GPIO\_88
- 10 DSS\_D19 E28 DSS\_D19/SDI\_HSYNC/McSPI3\_SIMO/DSS\_D1/GPIO\_89
- 10 DSS\_D20 J26 DSS\_D20/SDI\_DEN/McSPI3\_SOMI/DSS\_D2/GPIO\_90
- 10 DSS\_D21 AC27 DSS\_D21/SDI\_STP/McSPI3\_CS0/DSS\_D3/GPIO\_91
- 10 DSS\_D22 AC27 DSS\_D22/SDI\_CLKP/McSPI3\_CS1/DSS\_D4/GPIO\_92
- 10 DSS\_D23 AC28 DSS\_D23/SDI\_CLKN/DSS\_D5/GPIO\_93
- 10 DSS\_PCLK D28 DSS\_PCLK/GPIO\_66/HW\_DBG12
- 10 DSS\_HSYNC D27 DSS\_HSYNC/GPIO\_67/HW\_DBG13
- 10 DSS\_VSYNC E27 DSS\_VSYNC/GPIO\_68
- 10 DSS\_ACBIAS E27 DSS\_ACBIAS/GPIO\_69

- 9 MMC1\_CLK0 R10 MMC1\_CLK/MS\_CLK/GPIO\_120
- 9 MMC1\_CMD M27 MMC1\_CMD/MS\_BS/GPIO\_121
- 9 MMC1\_DAT0 N26 MMC1\_DAT0/MS\_DAT0/GPIO\_122
- 9 MMC1\_DAT1 N25 MMC1\_DAT1/MS\_DAT1/GPIO\_123
- 9 MMC1\_DAT2 P28 MMC1\_DAT2/MS\_DAT2/GPIO\_124
- 9 MMC1\_DAT3 P27 MMC1\_DAT3/MS\_DAT3/GPIO\_125
- 9 MMC1\_DAT4 P26 MMC1\_DAT4/SIM\_IO/GPIO\_126
- 9 MMC1\_DAT5 P26 MMC1\_DAT5/SIM\_CLK/GPIO\_127
- 9 MMC1\_DAT6 R27 MMC1\_DAT6/SIM\_PWRCTRL/GPIO\_128
- 9 MMC1\_DAT7 R25 MMC1\_DAT7/SIM\_RST/GPIO\_129
- 8 MMC2\_CLK0 AE2 MMC2\_CLK/McSPI3\_CLK/GPIO\_130
- 8 MMC2\_CMD AG5 MMC2\_CMD/McSPI3\_SIMO/GPIO\_131
- 8 MMC2\_DAT0 AH5 MMC2\_DAT0/McSPI3\_SOMI/GPIO\_132
- 8 MMC2\_DAT1 AG4 MMC2\_DAT1/GPIO\_133
- 8 MMC2\_DAT2 AE4 MMC2\_DAT2/McSPI3\_CS1/GPIO\_134
- 8 MMC2\_DAT3 AE4 MMC2\_DAT3/McSPI3\_CS0/GPIO\_135
- 8 MMC2\_DAT4 AH3 MMC2\_DAT4/MMC2\_DIR\_DAT0/MMC3\_DAT0/GPIO\_136
- 8 MMC2\_DAT5 AE3 MMC2\_DAT5/MMC2\_DIR\_DAT1/CAM\_GLOBAL\_RESET/MMC3\_DAT1/GPIO\_137/HSUSB3\_TLL\_STP/MM3\_RXDP
- 8 MMC2\_DAT6 AE3 MMC2\_DAT6/MMC2\_DIR\_CMD/CAM\_SHUTTER/MMC3\_DAT2/GPIO\_138/HSUSB3\_TLL\_DIR
- 8 MMC2\_DAT7 AE3 MMC2\_DAT7/MMC2\_CLKIN/MMC3\_DAT3/GPIO\_139/HSUSB3\_TLL\_NXT/MM3\_RXDM

- SDRC\_D31 C21
- SDRC\_D30 B21
- SDRC\_D29 A21
- SDRC\_D28 D20
- SDRC\_D27 B20
- SDRC\_D26 B19
- SDRC\_D25 A19
- SDRC\_D24 D14
- SDRC\_D23 B13
- SDRC\_D22 A11
- SDRC\_D21 C12
- SDRC\_D20 D12
- SDRC\_D19 C11
- SDRC\_D18 B10
- SDRC\_D17 D11
- SDRC\_D16 D18
- SDRC\_D15 B17
- SDRC\_D14 C17
- SDRC\_D13 B16
- SDRC\_D12 C15
- SDRC\_D11 B14
- SDRC\_D10 C14
- SDRC\_D9 A9
- SDRC\_D8 B9
- SDRC\_D7 C9
- SDRC\_D6 C8
- SDRC\_D5 B8
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- SDRC\_D2 D6
- SDRC\_D1 D6
- SDRC\_D0 D6

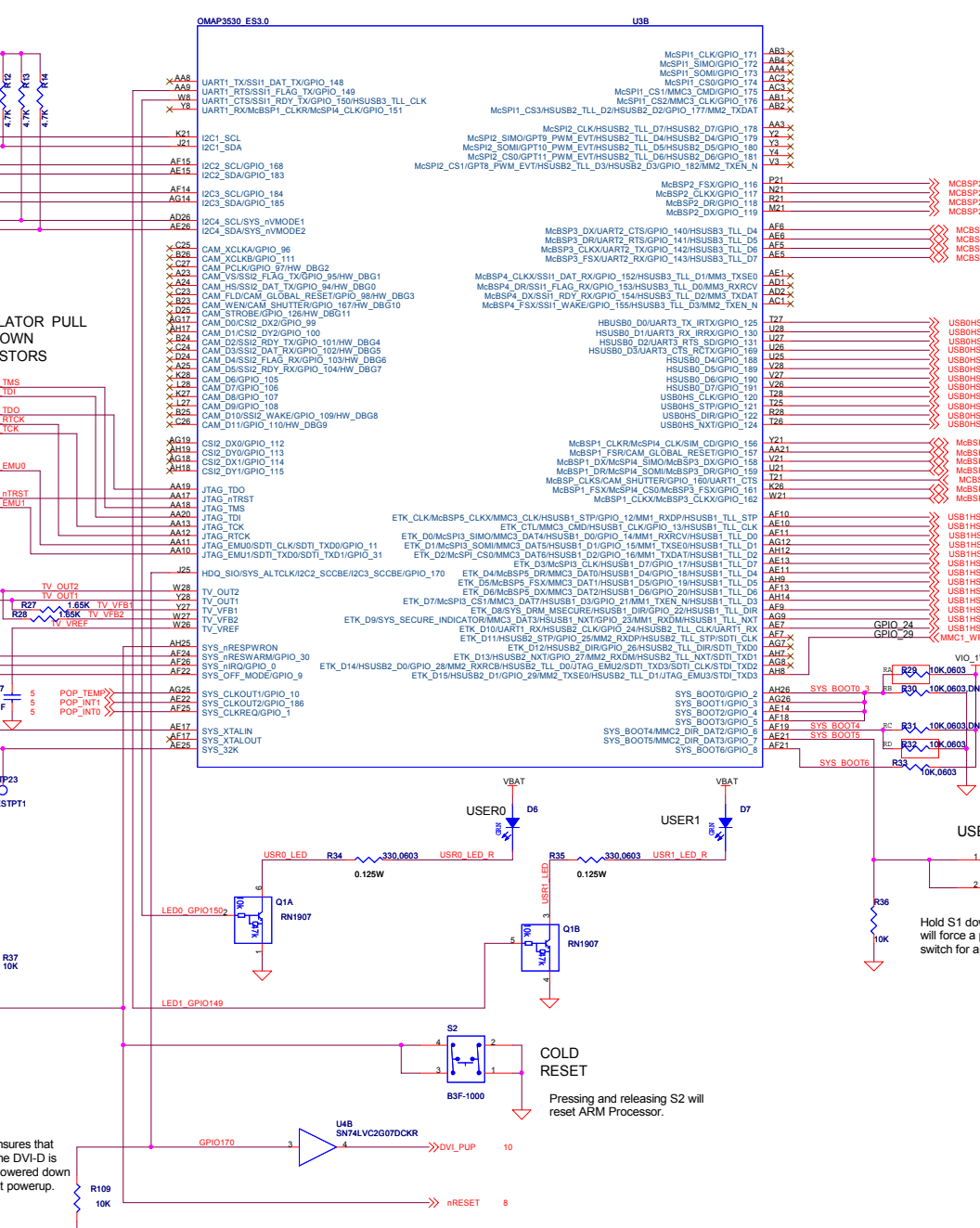
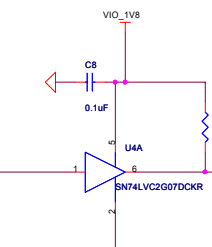
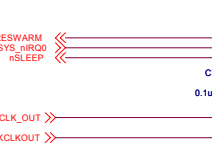
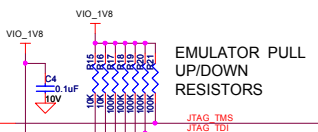
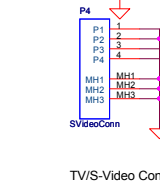
- GPMC\_A10/SYS\_nDMAREQ0/GPIO\_43 K3
- GPMC\_A9/SYS\_nDMAREQ2/GPIO\_42 L3
- GPMC\_A8/GPIO\_41 M3
- GPMC\_A7/GPIO\_40 N3
- GPMC\_A6/GPIO\_39 R3
- GPMC\_A5/GPIO\_38 T3
- GPMC\_A4/GPIO\_37 U3
- GPMC\_A3/GPIO\_36 V3
- GPMC\_A2/GPIO\_35 W3
- GPMC\_A1/GPIO\_34 X3
- GPMC\_D15/GPIO\_51 Y1
- GPMC\_D14/GPIO\_50 W1
- GPMC\_D13/GPIO\_49 T1
- GPMC\_D12/GPIO\_48 R1
- GPMC\_D11/GPIO\_47 Q1
- GPMC\_D10/GPIO\_46 P1
- GPMC\_D9/GPIO\_45 O1
- GPMC\_D8/GPIO\_44 N1
- GPMC\_D7 GPMC\_D8
- GPMC\_D6 GPMC\_D8
- GPMC\_D5 GPMC\_D5
- GPMC\_D4 GPMC\_D4
- GPMC\_D3 GPMC\_D3
- GPMC\_D2 GPMC\_D2
- GPMC\_D1 GPMC\_D1
- GPMC\_D0 GPMC\_D0

- GPMC\_nCS0 G4
- GPMC\_nCS1/GPIO\_52 H3
- GPMC\_nCS2/GPIO\_53 U8
- GPMC\_nCS3/SYS\_nDMAREQ0/GPIO\_54 T8
- GPMC\_nCS5/SYS\_nDMAREQ2/McBSP4\_DR/GPT10\_PWM\_EVT/GPIO\_56 R8
- GPMC\_nCS6/SYS\_nDMAREQ3/McBSP4\_DX/GPT11\_PWM\_EVT/GPIO\_57 P8
- GPMC\_nCS7/GPMC\_IODIR/McBSP4\_FSX/GPT8\_PWM\_EVT/GPIO\_58 N8
- GPMC\_CLK/GPIO\_59 T4
- GPMC\_nWE G2
- GPMC\_nOE G2
- GPMC\_nADV\_ALE E3
- GPMC\_nBE0\_CLE/GPIO\_60 G3
- GPMC\_nBE1/GPIO\_61 U3
- GPMC\_nWP/GPIO\_62 H1
- GPMC\_WAIT0 M8
- GPMC\_WAIT1/GPIO\_63 L8
- GPMC\_WAIT2/GPIO\_64 K8
- GPMC\_WAIT3/SYS\_nDMAREQ1/GPIO\_65 J8
- UART2\_CTS/McBSP3\_DX/GPT9\_PWM\_EVT/GPIO\_144 AB26
- UART2\_RTS/McBSP3\_DR/GPT10\_PWM\_EVT/GPIO\_145 AB25
- UART2\_TX/McBSP3\_CLKX/GPT11\_PWM\_EVT/GPIO\_146 AA25
- UART2\_RX/McBSP3\_FSX/GPT8\_PWM\_EVT/GPIO\_147 AD25
- UART3\_CTS\_RCTX/GPIO\_163 H18
- UART3\_RTS\_SD/GPIO\_164 H18
- UART3\_RX\_IRRX/GPIO\_165 H21
- UART3\_TX\_IRTX/GPIO\_166 H21



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14 PIN JTAG INTERFACE



Resistor are loaded based upon POP memory type. Default for this revision is NAND.

NAND BOOT.....RA RD  
 ONE NAND BOOT.....RB RC

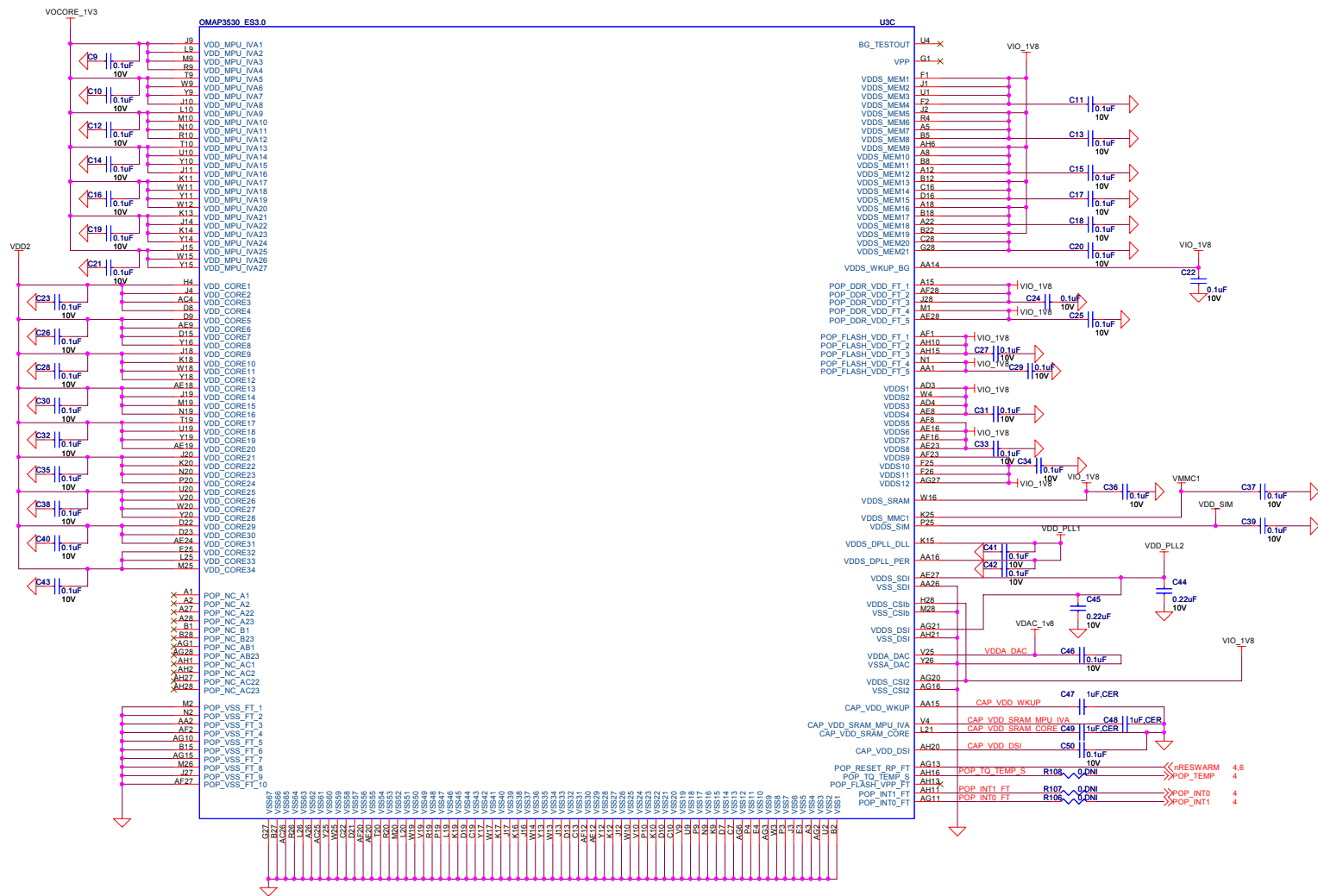
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 PERH\_\_0b01111 USB UART MMC1 NAND

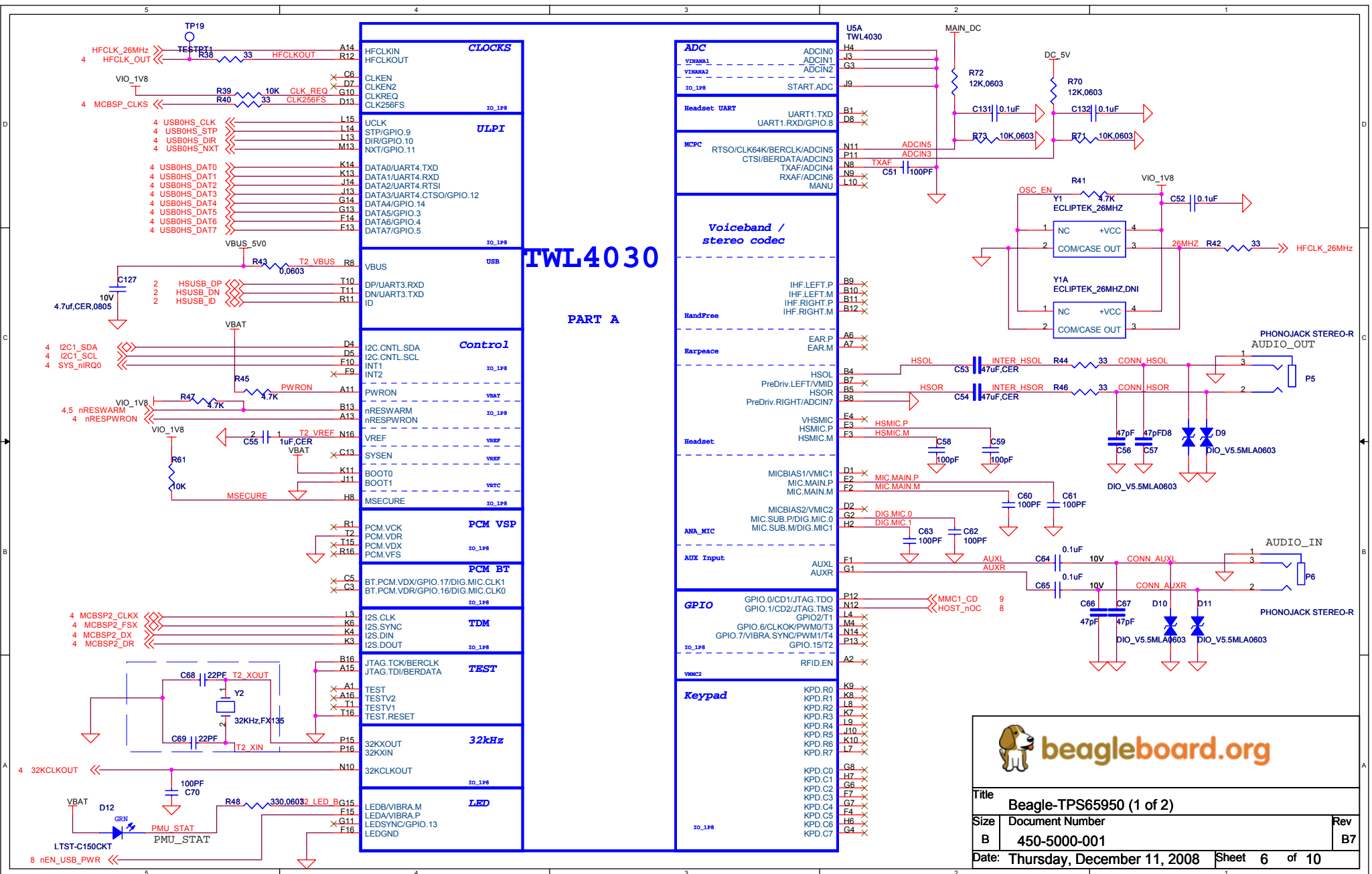
BOOT\_\_0b10000 OneNAND USB UART MMC1  
 PERH\_\_0b10000 USB UART MMC1 OneNAND

Hold S1 down while pressing and releasing S2. This will force a peripheral boot. S2 can also be used as a switch for applications or SW user after booting.

**COLD RESET**  
 Pressing and releasing S2 will reset ARM Processor.

Insures that the DVI-D is powered down at powerup.

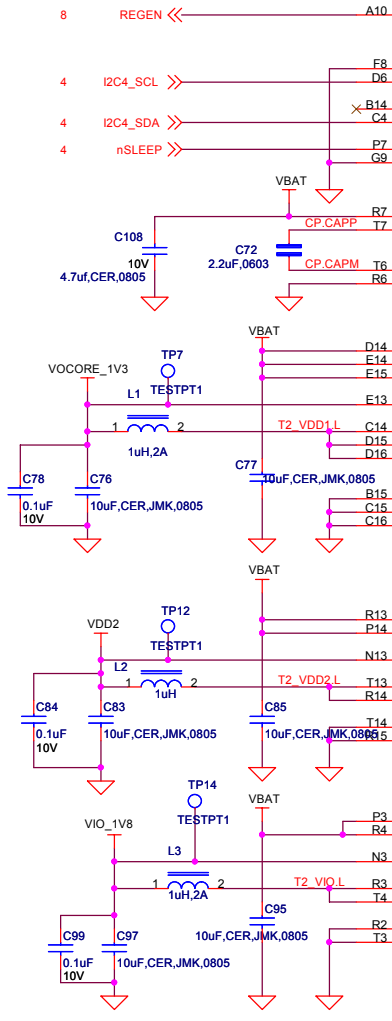




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U5B  
TWL4030

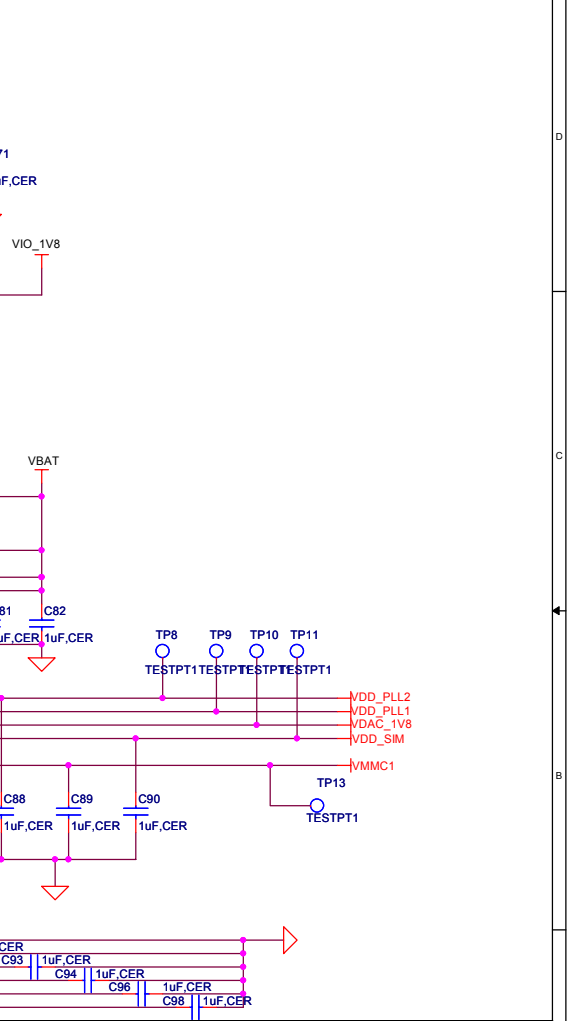
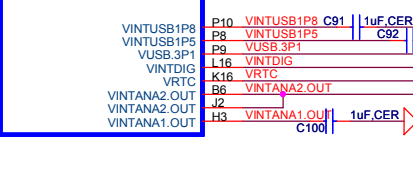
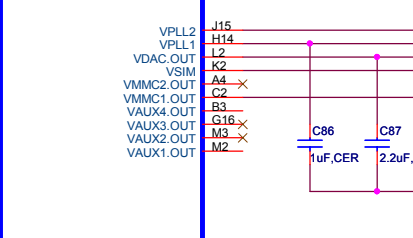
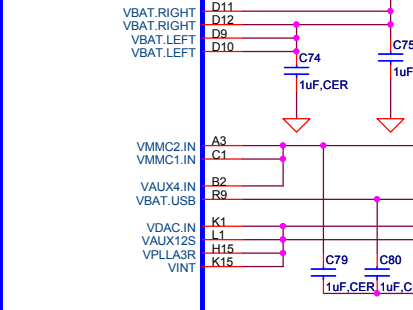
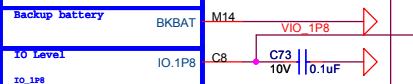
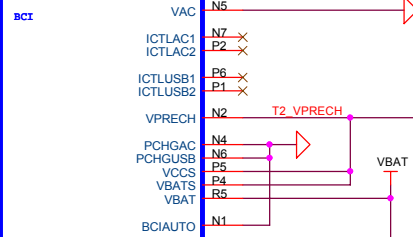
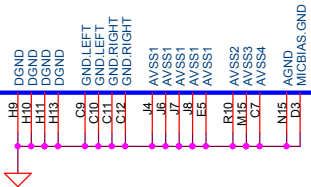
Power control



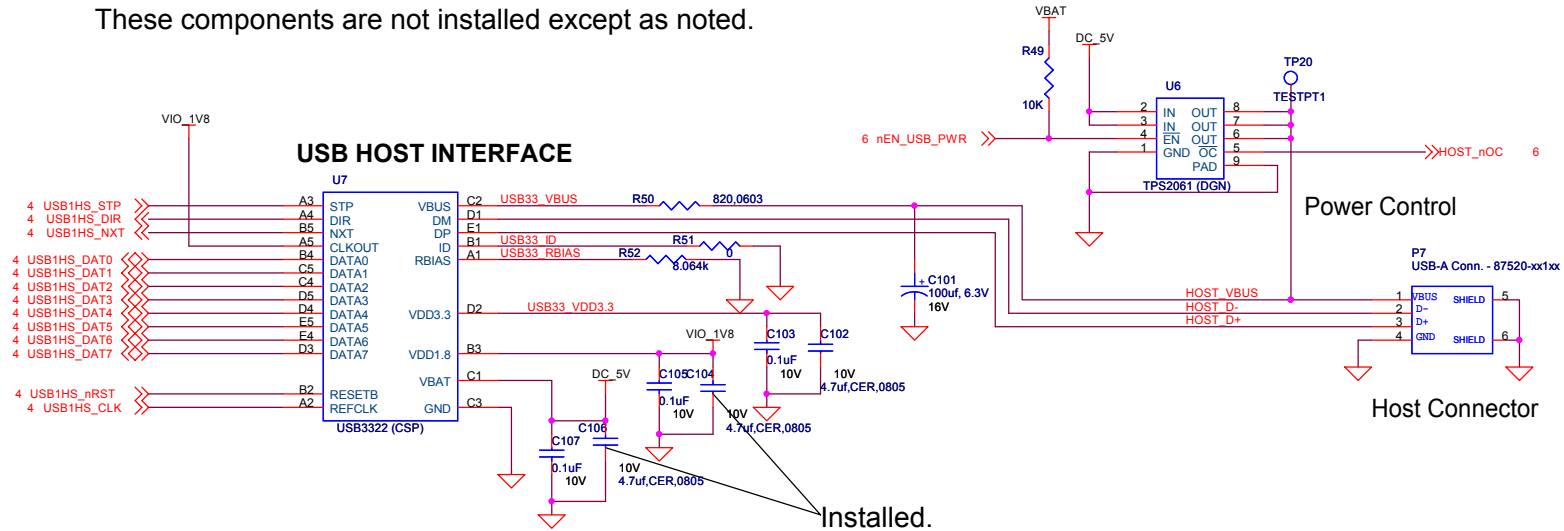
# TWL4030

## Part B Power

Domain	Type	Voltage	Current
External	SMPS	0.6V to 1.45V	1100mA
VDD1	SMPS	0.6V to 1.45V/1.5V	600mA
VIO	SMPS	1.8V /1.85V	600mA
VBUS	CP	4.8V	100mA
Vaux1	LDO	2.5V/2.8V/3.0V	200mA
Vaux2	LDO	1.0V/1.2V/1.5V/1.8V/2.5V/2.8V	100mA
Vaux3	LDO	1.5V/1.8V/2.5V/2.8V	200mA
Vaux4	LDO	0.7V/1.0V/1.2V/1.5V/1.8V/2.5V/2.8V	100mA
Vmmc1	LDO	1.85V/2.85V/3.0V/3.15V	220mA
Vmmc2	LDO	1.85V/2.6V/2.85V/3.0V/3.15V	100mA
Vmic1	LDO	1.8V	10mA
Vmic2	LDO	1.8V	10mA
VSIM	LDO	1.8V/2.8V/3.0V	50mA
VDAC	LDO	1.2V/1.3V/1.8V	65mA
VPLL1	LDO	1.0V/1.2V/1.3V/1.8V	40mA
VPLL2	LDO	0.7V/1.0V/1.2V/1.3V/1.8V	60mA
Internal	LDO	3.1V	15mA
VUSB	LDO	1.5V	30mA
VUSB_1P5	LDO	1.5V	30mA
VUSB_1P8	LDO	1.8V	30mA
VINTDIG	LDO	1.5V	50mA
VINANA1	LDO	1.5V	50mA
VINANA2	LDO	2.5V/2.75V	250mA
VRTC	LDO	1.5V	50mA

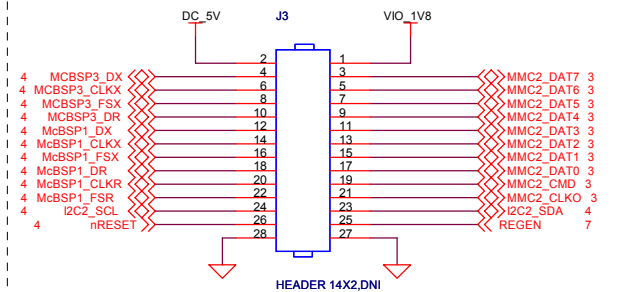


These components are not installed except as noted.



Installed.

### Expansion Connector

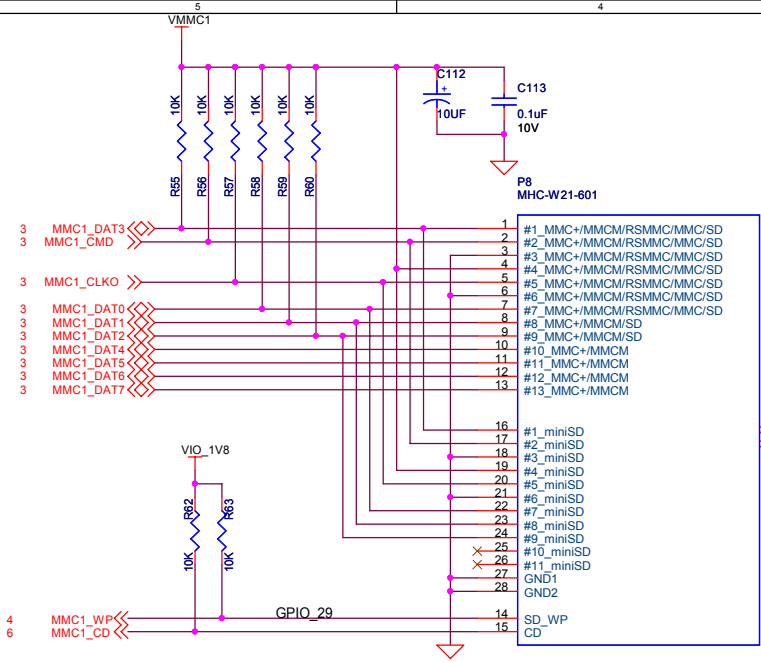


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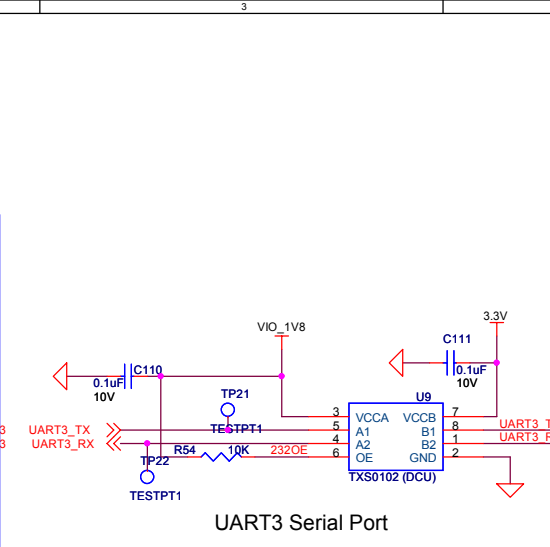
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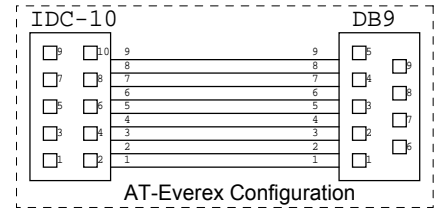
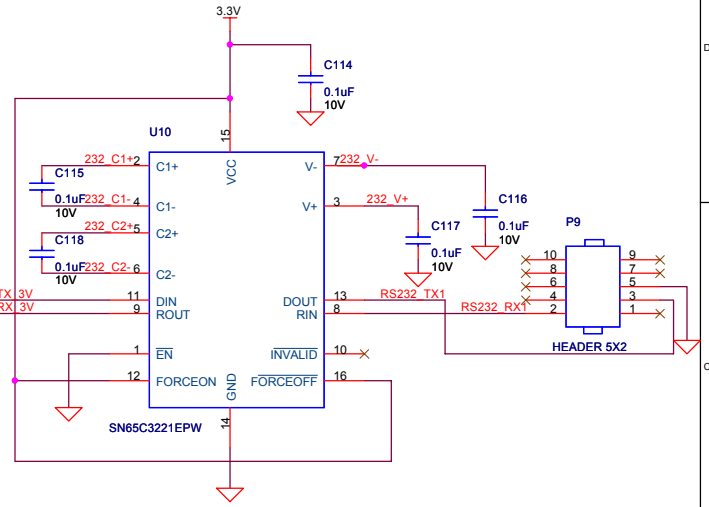




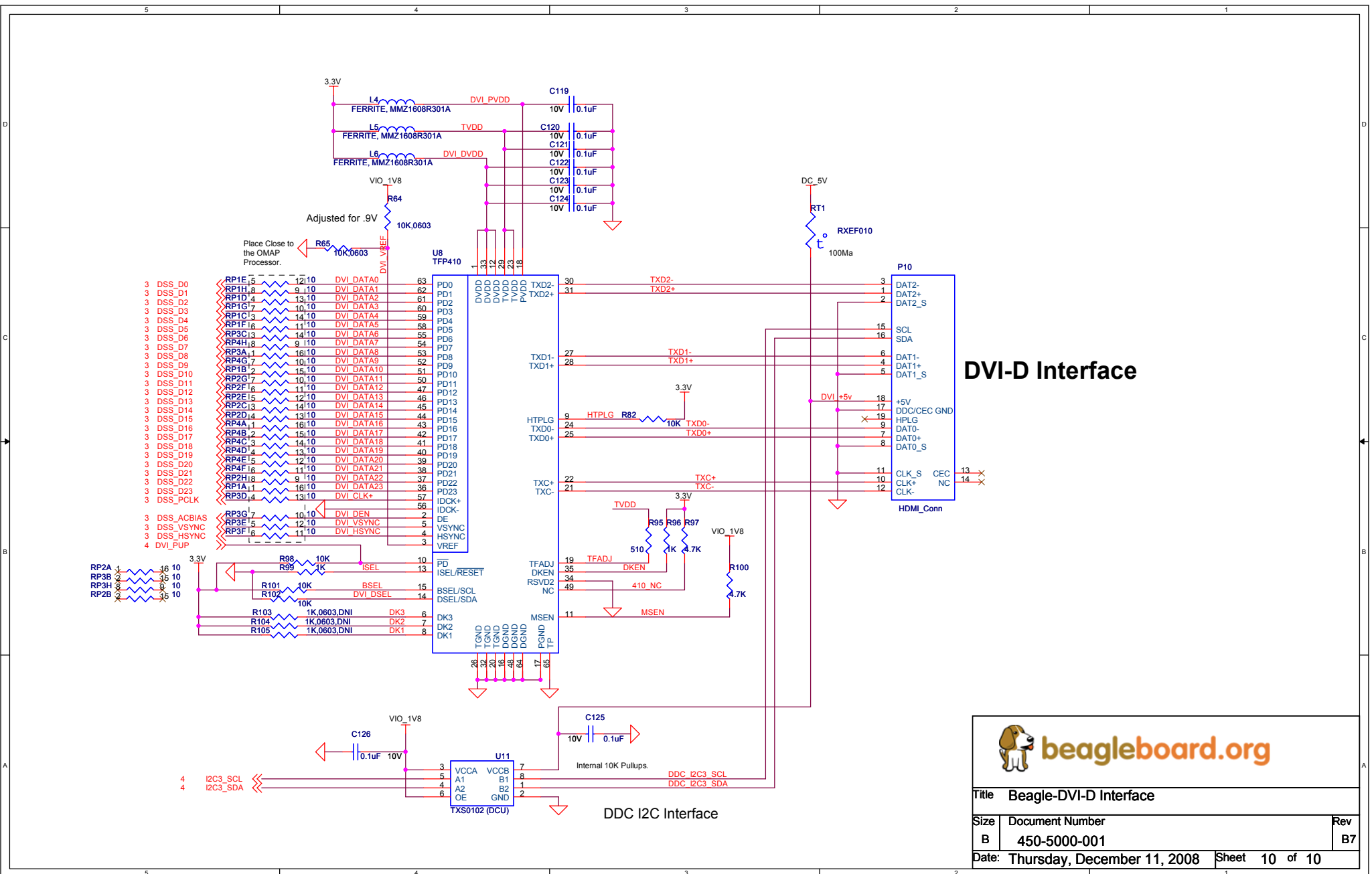
**SD/MMC Connector 6 in 1**  
**MMC+, MMCMobile, SD,**  
**MMC, miniSD, RS-MMC**



**UART3 Serial Port**



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# DVI-D Interface



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