

REV	Description	DATE	BY
A4A	Initial production Release.	11/19/2012	GC
A5	On the initial production release the processors were to be found incorrect as supplied by TI. Parts while marked AM3359 were actually AM3352. This revision uses the correct parts.	1/2/2013	GC
A5A	<ol style="list-style-type: none"> Deleted R29-R44 from the LCD lines. Added 47pf capacitors C156-C173 to LCD data lines to ground. Changed schematic revision to A5A. Changed a few footprints after PCB update for above changes. Added access point for the battery function of the TPS65217C. Added Ferrite beads in series with LED power and 5V power rail of the USB host connector. Required to pass FCC/CE testing due to noise emissions on that pin. Added power button to enable sleep, wakeup, power down and power up features on the system. Added Modification to add 100K ohm resistor to ground to prevent crosstalk when serial cable is not plugged in. 	4/1/2013	GC

PAGE NO.	SCHEMATIC PAGE
1	COVER PAGE
2	POWER MANAGEMENT
3	PROCESSOR 1 OF 3, JTAG HEADER
4	PROCESSOR 2 OF 3, UAB PORTS
5	PROCESSOR 3 OF 3
6	LED, CONFIGURATION AND BUTTON
7	DDR3 MEMORY
8	eMMC FLASH
9	10/100 ETHERNET
10	HDMI FRAMER
11	EXP CONN, uSD

NOTE: PCB Revision for this board is Rev B3.

This schematic is *NOT SUPPORTED* and DOES NOT constitute a reference design. Only "community" support is allowed via resources at BeagleBoard.org/discuss.

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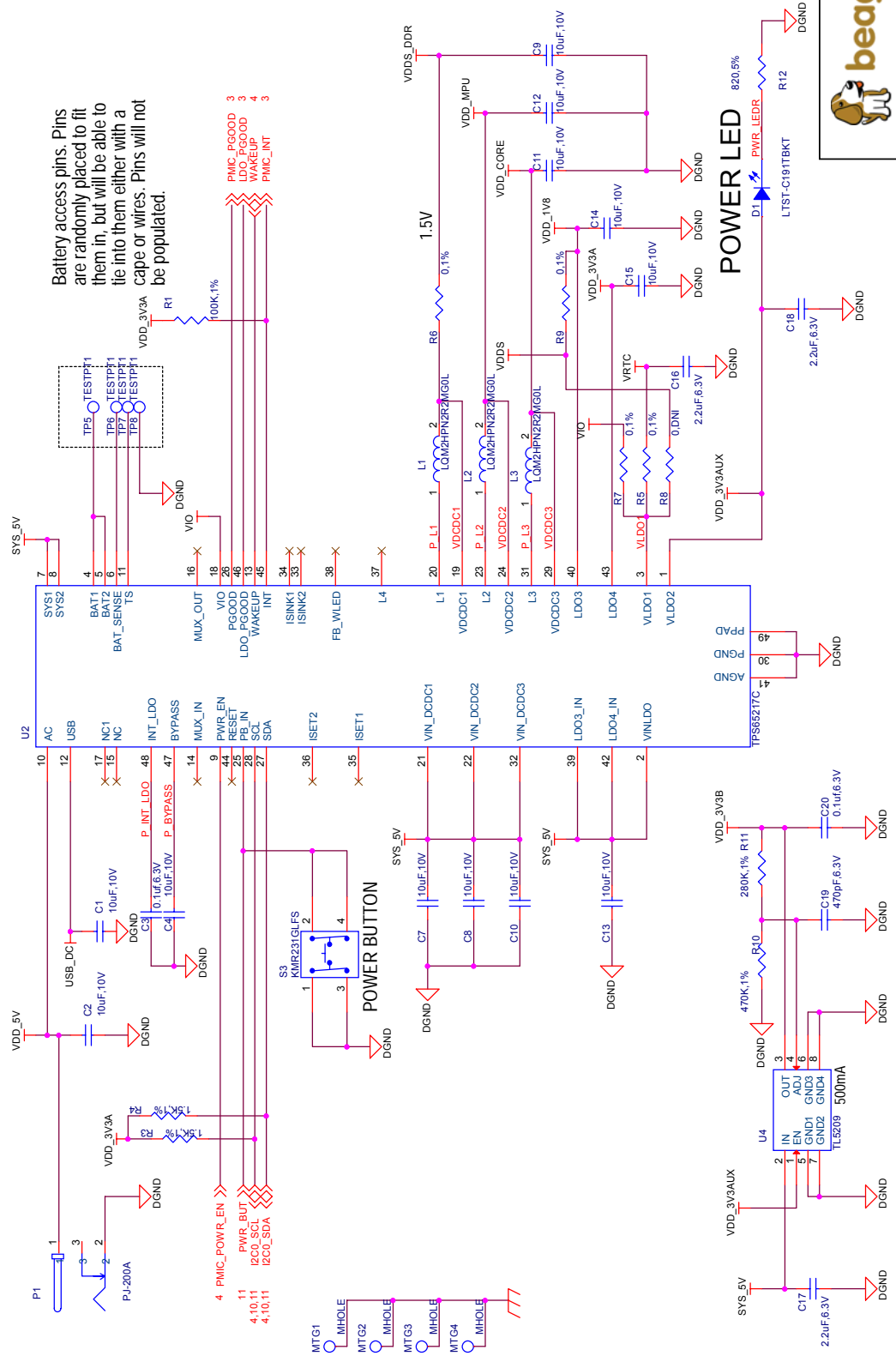


Title		BeagleBone Black Cover Page
Size	Document Number	Rev
B	450-5500-001	A5A
Date: Monday, April 01, 2013		Sheet 1 of 11

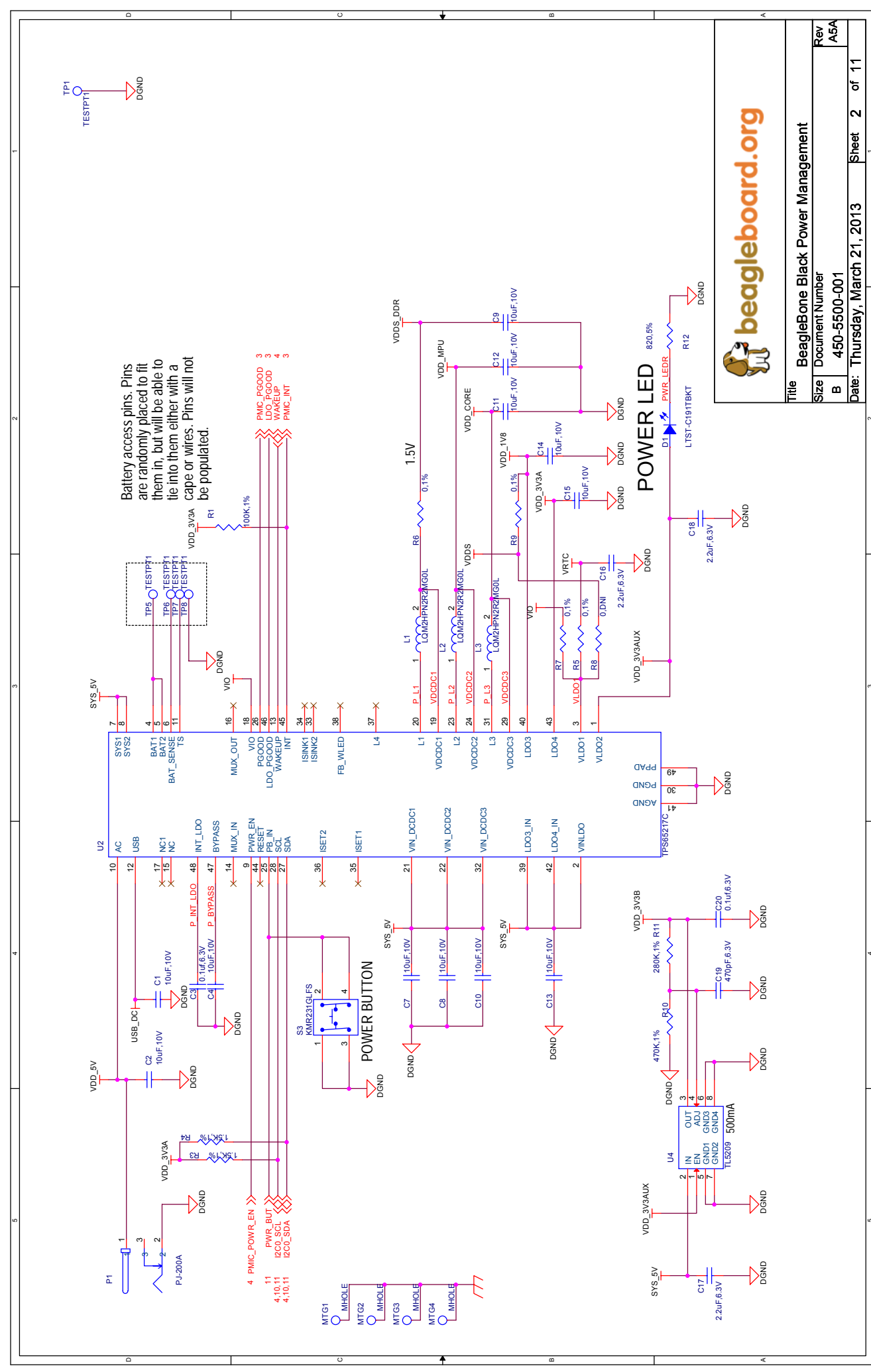
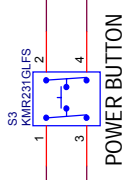


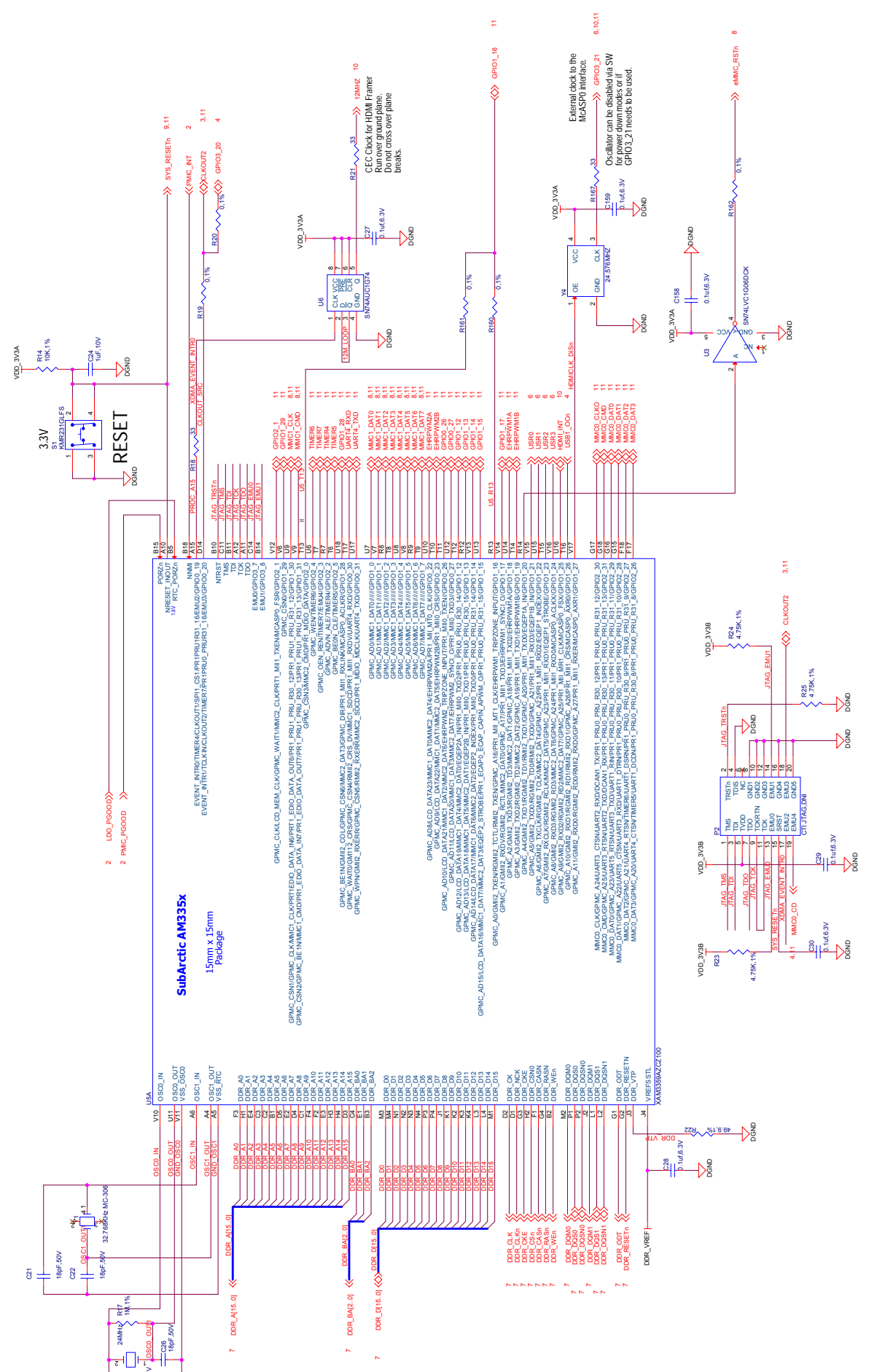
Title		BeagleBone Black Power Management
Size	Document Number	B
Rev	Revision	A5A
Date:		Thursday, March 21, 2013
Sheet		2 of 11

Battery access pins. Pins are randomly placed to fit them in, but will be able to tie into them either with a cape or wires. Pins will not be populated.



POWER LED





SubArctic AM335x

15mm x 15mm Package

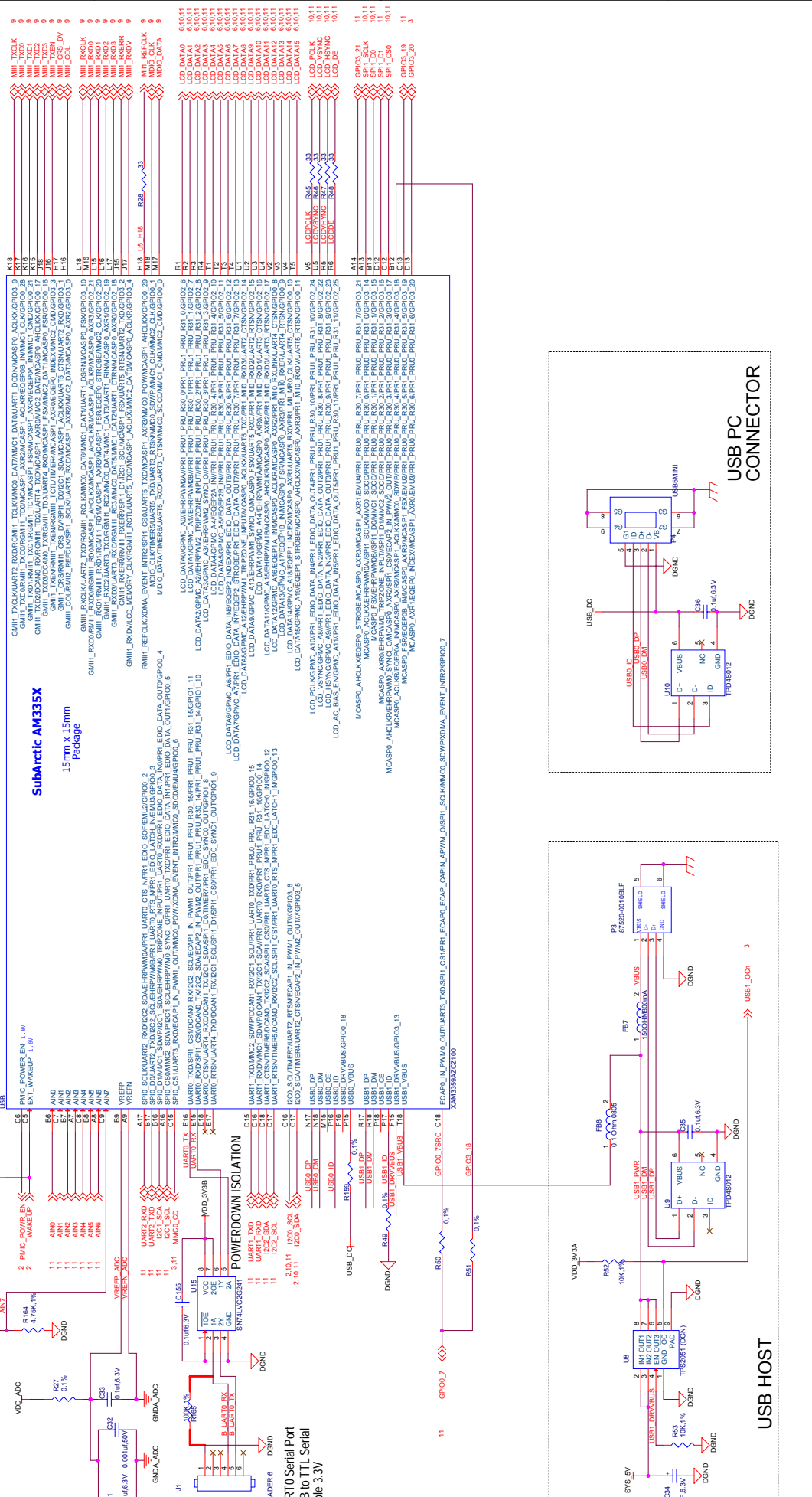
External clock to the MDCSR0 interface.
 Oscillator can be disabled via SW for power down modes or if GPIO_L2 needs to be used.

GPIO_L16 11
 GPIO_L21 6,10,11

GPIO_L16 11
 GPIO_L21 6,10,11

GPIO_L16 11
 GPIO_L21 6,10,11

GPIO_L16 11
 GPIO_L21 6,10,11



UART0 Serial Port
USB to TTL Serial
Cable 3.3V

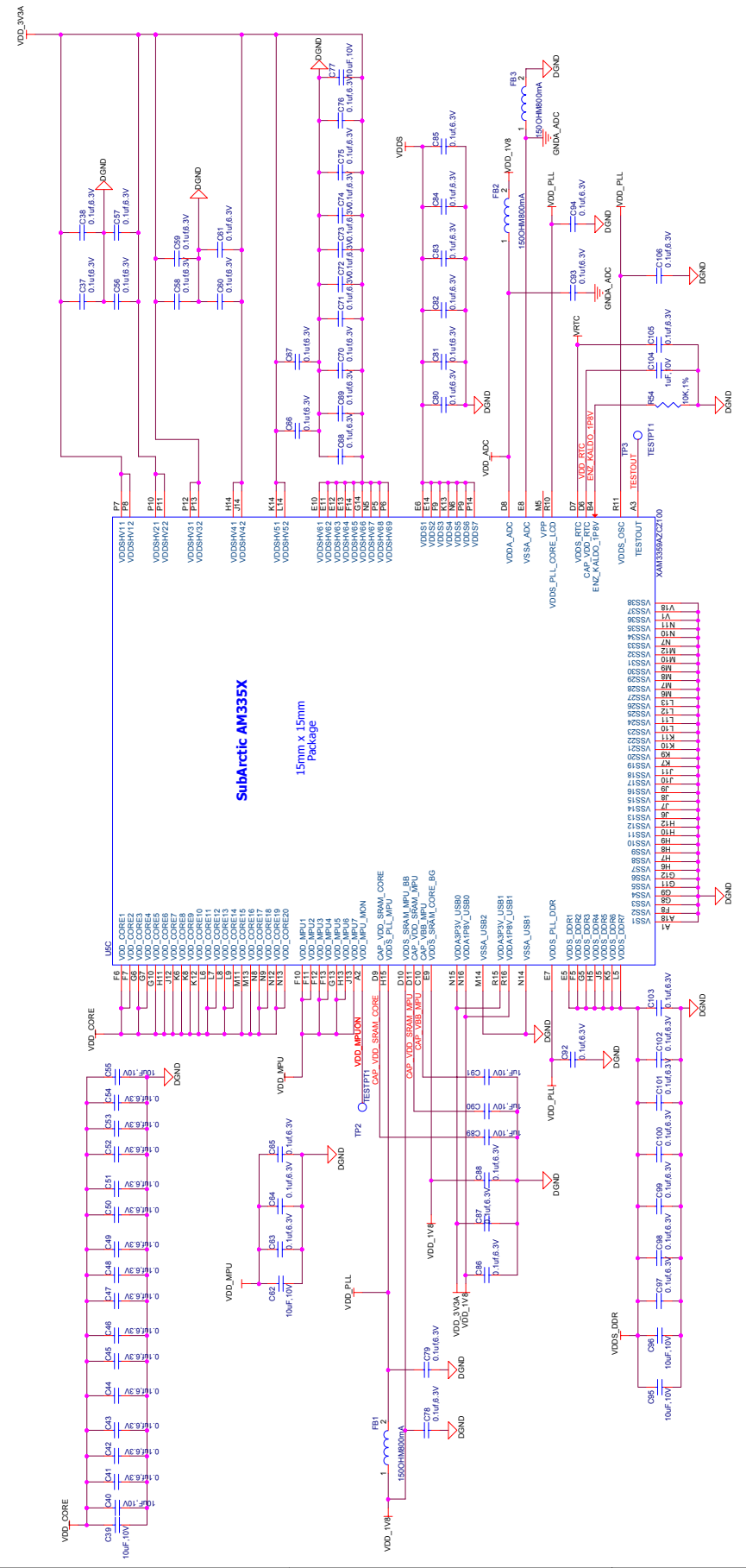
USB Host
USB3V3A

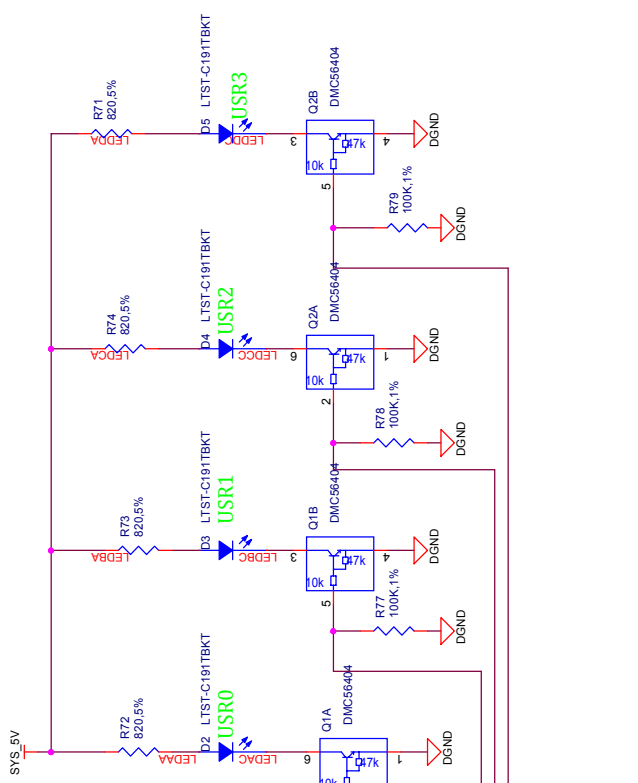
USB PC CONNECTOR

Subatomic AM335X

15mm x 15mm Package

Pin	Label	Function
9	MHI_T0CLK	MHI_T0CLK
10	MHI_T0VCC	MHI_T0VCC
11	MHI_T0GND	MHI_T0GND
12	MHI_T0D0	MHI_T0D0
13	MHI_T0D1	MHI_T0D1
14	MHI_T0D2	MHI_T0D2
15	MHI_T0D3	MHI_T0D3
16	MHI_T0D4	MHI_T0D4
17	MHI_T0D5	MHI_T0D5
18	MHI_T0D6	MHI_T0D6
19	MHI_T0D7	MHI_T0D7
20	MHI_T0D8	MHI_T0D8
21	MHI_T0D9	MHI_T0D9
22	MHI_T0D10	MHI_T0D10
23	MHI_T0D11	MHI_T0D11
24	MHI_T0D12	MHI_T0D12
25	MHI_T0D13	MHI_T0D13
26	MHI_T0D14	MHI_T0D14
27	MHI_T0D15	MHI_T0D15
28	MHI_T0D16	MHI_T0D16
29	MHI_T0D17	MHI_T0D17
30	MHI_T0D18	MHI_T0D18
31	MHI_T0D19	MHI_T0D19
32	MHI_T0D20	MHI_T0D20
33	MHI_T0D21	MHI_T0D21
34	MHI_T0D22	MHI_T0D22
35	MHI_T0D23	MHI_T0D23
36	MHI_T0D24	MHI_T0D24
37	MHI_T0D25	MHI_T0D25
38	MHI_T0D26	MHI_T0D26
39	MHI_T0D27	MHI_T0D27
40	MHI_T0D28	MHI_T0D28
41	MHI_T0D29	MHI_T0D29
42	MHI_T0D30	MHI_T0D30
43	MHI_T0D31	MHI_T0D31
44	MHI_T0D32	MHI_T0D32
45	MHI_T0D33	MHI_T0D33
46	MHI_T0D34	MHI_T0D34
47	MHI_T0D35	MHI_T0D35
48	MHI_T0D36	MHI_T0D36
49	MHI_T0D37	MHI_T0D37
50	MHI_T0D38	MHI_T0D38
51	MHI_T0D39	MHI_T0D39
52	MHI_T0D40	MHI_T0D40
53	MHI_T0D41	MHI_T0D41
54	MHI_T0D42	MHI_T0D42
55	MHI_T0D43	MHI_T0D43
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57	MHI_T0D45	MHI_T0D45
58	MHI_T0D46	MHI_T0D46
59	MHI_T0D47	MHI_T0D47
60	MHI_T0D48	MHI_T0D48
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92	MHI_T0D80	MHI_T0D80
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97	MHI_T0D85	MHI_T0D85
98	MHI_T0D86	MHI_T0D86
99	MHI_T0D87	MHI_T0D87
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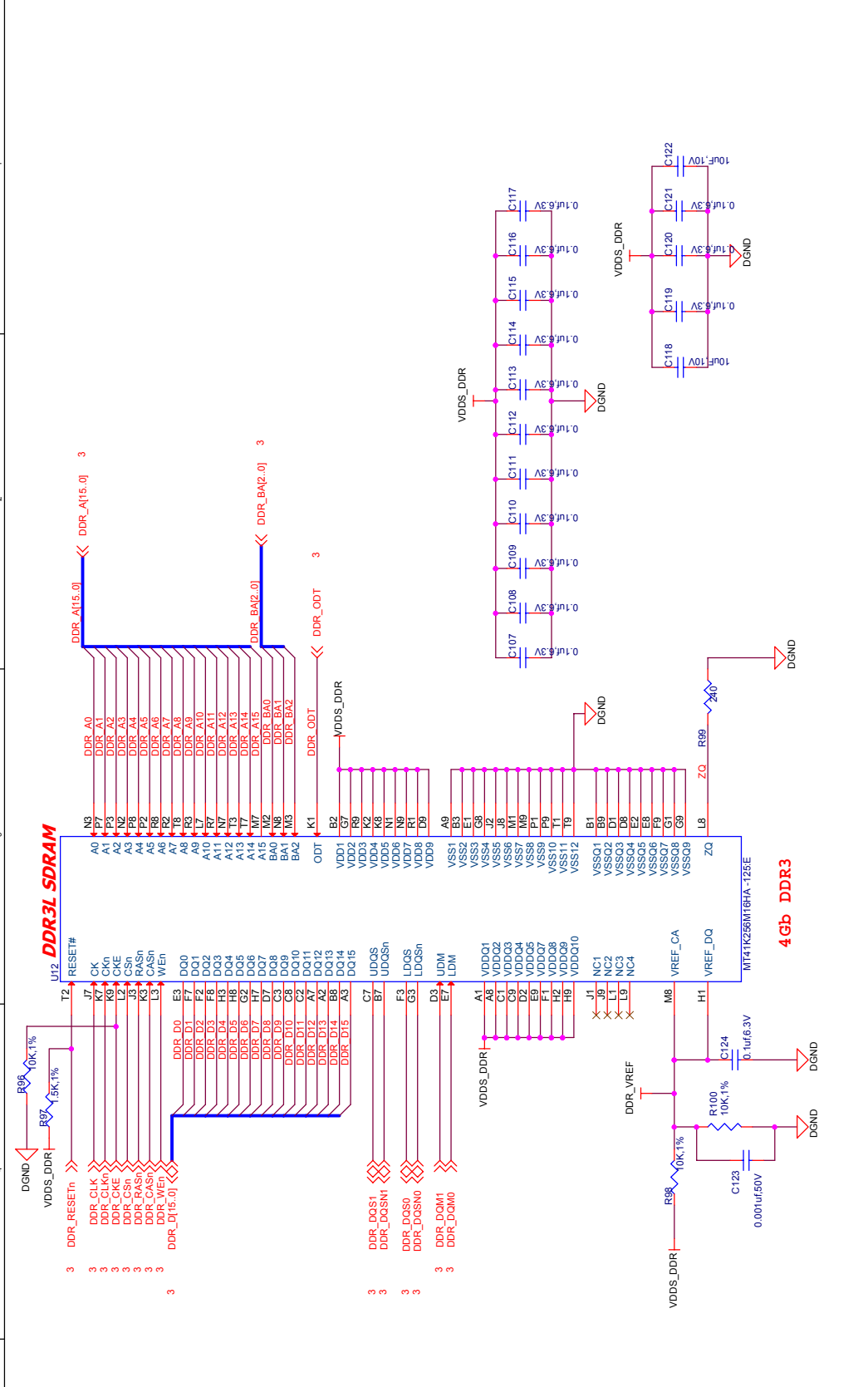




SYSBOOT[15:14]	SYSBOOT[13:12]	SYSBOOT[11:10]	SYSBOOT[9]	SYSBOOT[8]	SYSBOOT[7:6]	SYSBOOT[5]	SYSBOOT[4:0]	Boot Sequence
00b = 19.2MHz 01b = 24MHz 10b = 25MHz 11b = 26MHz	00b (all other values reserved)	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	0 = CLKOUT1 disabled 1 = CLKOUT1 enabled	11100b	MMC0 UART0 USB0[5]
00b = 19.2MHz 01b = 24MHz 10b = 25MHz 11b = 26MHz	00b (all other values reserved)	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	Don't care for ROM code	0 = CLKOUT1 disabled 1 = CLKOUT1 enabled	11000b	MMC0 SPI0 USB0[5] UART0



Title		BeagleBone Black LED, Configuration, and Reset
Size	Document Number	Rev
B	450-5500-001	A5A
Date:	Thursday, March 21, 2013	Sheet 6 of 11



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Title	BeagleBone Black DDR3 Memory
Size	Document Number
B	450-5500-001
Date:	Thursday, March 21, 2013
	Sheet 7 of 11

4Gb DDR3

MT41K256M16HA-125E

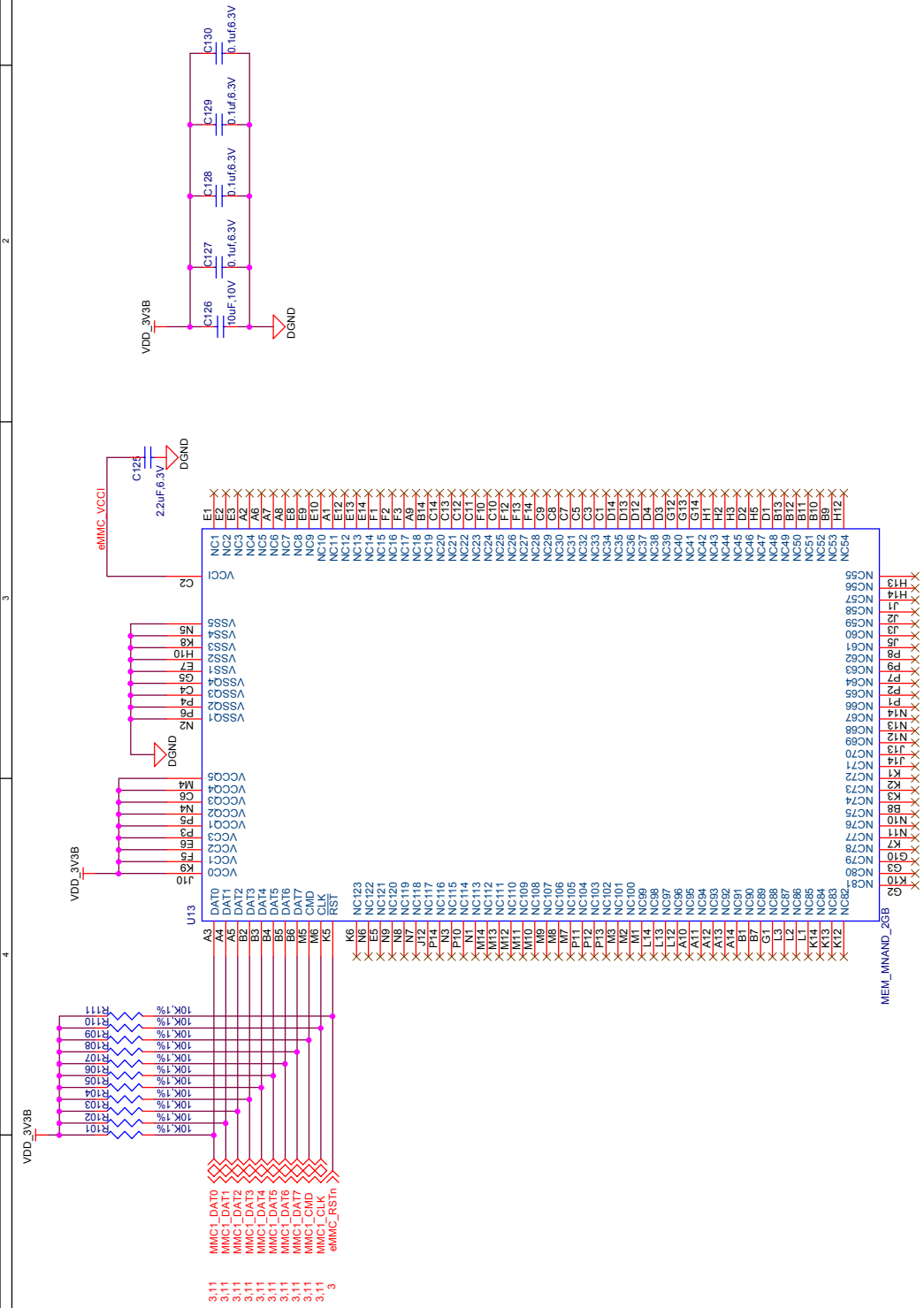
VDDSDR1 VDDSDR2 VDDSDR3 VDDSDR4 VDDSDR5 VDDSDR6 VDDSDR7 VDDSDR8 VDDSDR9 VDDSDR10 VDDSDR11 VDDSDR12 VDDSDR13 VDDSDR14 VDDSDR15 VDDSDR16 VDDSDR17 VDDSDR18 VDDSDR19 VDDSDR20 VDDSDR21 VDDSDR22 VDDSDR23 VDDSDR24 VDDSDR25 VDDSDR26 VDDSDR27 VDDSDR28 VDDSDR29 VDDSDR30 VDDSDR31 VDDSDR32 VDDSDR33 VDDSDR34 VDDSDR35 VDDSDR36 VDDSDR37 VDDSDR38 VDDSDR39 VDDSDR40 VDDSDR41 VDDSDR42 VDDSDR43 VDDSDR44 VDDSDR45 VDDSDR46 VDDSDR47 VDDSDR48 VDDSDR49 VDDSDR50 VDDSDR51 VDDSDR52 VDDSDR53 VDDSDR54 VDDSDR55 VDDSDR56 VDDSDR57 VDDSDR58 VDDSDR59 VDDSDR60 VDDSDR61 VDDSDR62 VDDSDR63 VDDSDR64 VDDSDR65 VDDSDR66 VDDSDR67 VDDSDR68 VDDSDR69 VDDSDR70 VDDSDR71 VDDSDR72 VDDSDR73 VDDSDR74 VDDSDR75 VDDSDR76 VDDSDR77 VDDSDR78 VDDSDR79 VDDSDR80 VDDSDR81 VDDSDR82 VDDSDR83 VDDSDR84 VDDSDR85 VDDSDR86 VDDSDR87 VDDSDR88 VDDSDR89 VDDSDR90 VDDSDR91 VDDSDR92 VDDSDR93 VDDSDR94 VDDSDR95 VDDSDR96 VDDSDR97 VDDSDR98 VDDSDR99 VDDSDR100 VDDSDR101 VDDSDR102 VDDSDR103 VDDSDR104 VDDSDR105 VDDSDR106 VDDSDR107 VDDSDR108 VDDSDR109 VDDSDR110 VDDSDR111 VDDSDR112 VDDSDR113 VDDSDR114 VDDSDR115 VDDSDR116 VDDSDR117 VDDSDR118 VDDSDR119 VDDSDR120 VDDSDR121 VDDSDR122



Title Beagle BoneBlack 2G eMMC

Size	Document Number	Rev
B	450-5500-001	A5A

Date: Tuesday, February 12, 2013 Sheet 8 of 11

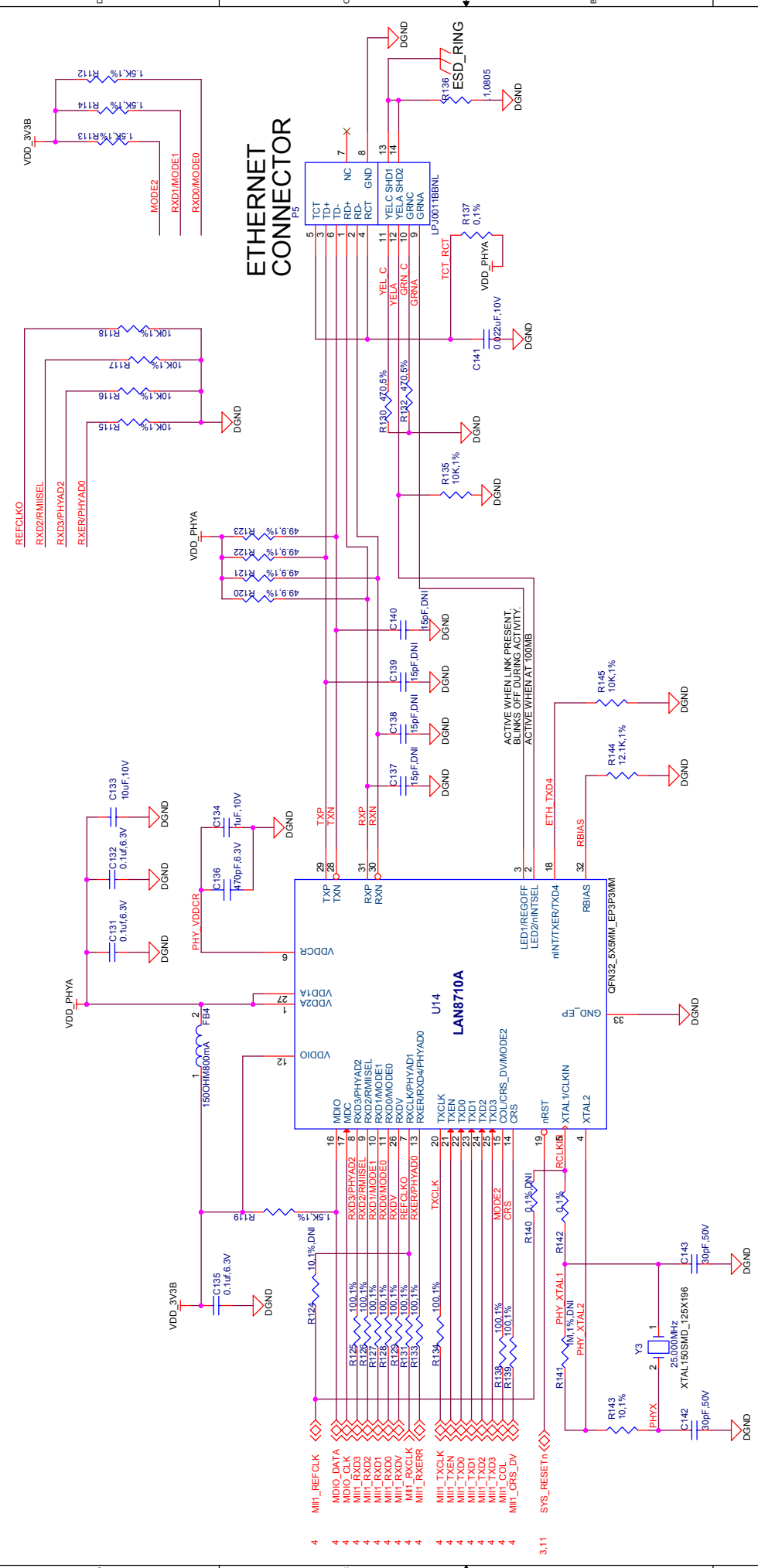




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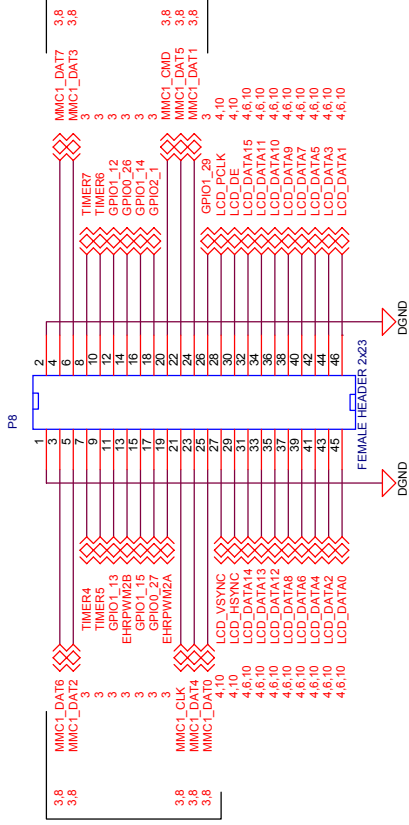
Title		BeagleBone Black Ethernet
Size	Document Number	B 450-5500-001
Rev		A5A
Date:	Thursday, March 21, 2013	Sheet 9 of 11

ETHERNET CONNECTOR



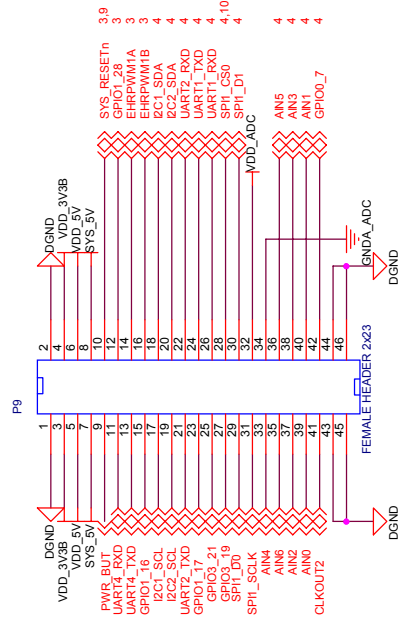
3,11

CAUTION: USED ON BOARD

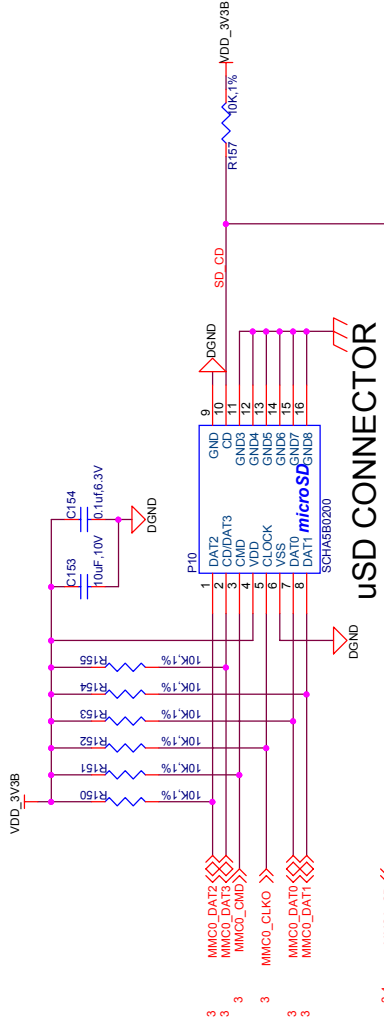
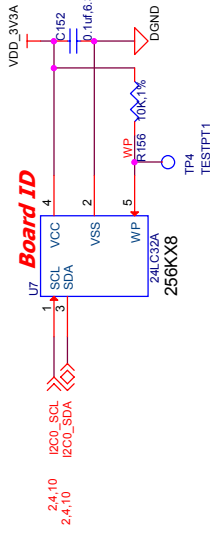


EXPANSION HEADER

CAUTION: USED ON BOARD



EXPANSION HEADER



uSD CONNECTOR



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Title		BeagleBone Black Expansion Headers, uSD and EEPROM
Size	Document Number	Rev
B	450-5500-001	A5A
Date: Monday, April 01, 2013		Sheet 11 of 11