BeagleBone Black GPIO CHEAT SHEET

ORDERED BY HEADER PIN

P8 Pin	Register Description	GPIO Designation	Reg Offset
P8.3	gpmc_ad6	gpio1[6]	818
P8.4	gpmc_ad7	gpio1[7]	81C
P8.5	gpmc_ad2	gpio1[2]	808
P8.6	gpmc_ad3	gpio1[3]	80C
P8.7	gpmc_advn_ale	gpio2[2]	890
P8.8	gpmc_oen_ren	gpio2[3]	894
P8.9	gpmc_be0n_cle	gpio2[5]	89C
P8.10	gpmc_wen	gpio2[4]	898
P8.11	gpmc_ad13	gpio1[13]	834
P8.12	gpmc_ad12	gpio1[12]	830
P8.13	gpmc_ad9	gpio0[23]	824
P8.14	gpmc_ad10	gpio0[26]	828
P8.15	gpmc_ad15	gpio1[15]	83C
P8.16	gpmc_ad14	gpio1[14]	838
P8.17	gpmc_ad11	gpio0[27]	82C
P8.18	gpmc_clk_mux0	gpio2[1]	88C
P8.19	gpmc_ad8	gpio0[22]	820
P8.20	gpmc_csn2	gpio1[31]	884
P8.21	gpmc_csn1	gpio1[30]	880
P8.22	gpmc_ad5	gpio1[5]	814
P8.23	gpmc_ad4	gpio1[4]	810
P8.24	gpmc_ad1	gpio1[1]	804
P8.25	gpmc_ad0	gpio1[0]	800
P8.26	gpmc_csn0	gpio1[29]	87C
P8.27	lcd_vsync	gpio2[22]	8E0
P8.28	lcd_pclk	gpio2[24]	8E8
P8.29	lcd_hsync	gpio2[23]	8E4
P8.30	lcd_ac_bias_en	gpio2[25]	8EC
P8.31	lcd_data14	gpio0[10]	8D8
P8.32	lcd_data15	gpio0[11]	8DC
P8.33	lcd_data13	gpio0[9]	8D4
P8.34	lcd_data11	gpio2[17]	8CC
P8.35	lcd_data12	gpio0[8]	8D0
P8.36	lcd_data10	gpio2[16]	8C8
P8.37	lcd_data8	gpio2[14]	8C0
P8.38	lcd_data9	gpio2[15]	8C4
P8.39	lcd_data6	gpio2[12]	8B8
P8.40	lcd_data7	gpio2[13]	8BC
P8.41	lcd_data4	gpio2[10]	8B0
P8.42	lcd_data5	gpio2[11]	8B4
P8.43	lcd_data2	gpio2[8]	8A8
P8.44	lcd_data3	gpio2[9]	8AC
P8.45	lcd_data0	gpio2[6]	8A0
P8.46	lcd_data1	gpio2[7]	8A4

P9 Pin	Register Description	GPIO Designation	Reg Offset
P9.11	gpmc_wait0	gpio0[30]	870
P9.12	gpmc_be1n	gpio1[28]	
P9.13	gpmc_wpn	gpio0[31]	874
P9.14	gpmc_a2	gpio1[18]	848
P9.15	gpmc_a0	gpio1[16]	840
P9.16	gpmc_a3	gpio1[19]	84C
P9.17	spi0_cs0	gpio0[5]	95C
P9.18	spi0_d1	gpio0[4]	958
P9.19	uart1_rtsn	gpio0[13]	87C
P9.20	uart1_ctsn	gpio0[12]	978
P9.21	spi0_d0	gpio0[3]	954
P9.22	spi0_sclk	gpio0[2]	950
P9.23	gpmc_a1	gpio1[17]	844
P9.24	uart1_txd	gpio0[15]	984
P9.25	mcasp0_ahclkx	gpio3[21]	9AC
P9.26	uart1_rxd	gpio0[14]	980
P9.27	mcasp0_fsr	gpio3[19]	9A4
P9.28	mcasp0_ahclkr	gpio3[17]	99C
P9.29	mcasp0_fsx	gpio3[15]	994
P9.30	mcasp0_axr0	gpio3[16]	998
P9.31	mcasp0_aclkx	gpio3[14]	990

Pin	Descr.	GPIO	Offs.
P9.31	mcasp0_aclkx	gpio3[14]	990
P9.29	mcasp0_fsx	gpio3[15]	994
P9.30	mcasp0_axr0	gpio3[16]	998
P9.28	mcasp0_ahclkr	gpio3[17]	99C
P9.27	mcasp0_fsr	gpio3[19]	9A4
P9.25	mcasp0_ahclkx	gpio3[21]	9AC

Pin	Descr.	GPIO	Offs.
P9.22	spi0_sclk	gpio0[2]	950
P9.21	spi0_d0	gpio0[3]	954
P9.18	spi0_d1	gpio0[4]	958
P9.17	spi0_cs0	gpio0[5]	95C
P8.35	lcd_data12	gpio0[8]	8D0
P8.33	lcd_data13	gpio0[9]	8D4
P8.31	lcd_data14	gpio0[10]	8D8
P8.32	lcd_data15	gpio0[11]	8DC
P9.20	uart1_ctsn	gpio0[12]	978
P9.19	uart1_rtsn	gpio0[13]	87C
P9.26	uart1_rxd	gpio0[14]	980
P9.24	uart1_txd	gpio0[15]	984
P8.19	gpmc_ad8	gpio0[22]	820
P8.13	gpmc_ad9	gpio0[23]	824
P8.14	gpmc_ad10	gpio0[26]	828
P8.17	gpmc_ad11	gpio0[27]	82C
P9.11	gpmc_wait0	gpio0[30]	870
P9.13	gpmc_wpn	gpio0[31]	874

ORDERED BY GPIO

Pin	Descr.	GPIO	Offs.
P8.25	gpmc_ad0	gpio1[0]	800
P8.24	gpmc_ad1	gpio1[1]	804
P8.5	gpmc_ad2	gpio1[2]	808
P8.6	gpmc_ad3	gpio1[3]	80C
P8.23	gpmc_ad4	gpio1[4]	810
P8.22	gpmc_ad5	gpio1[5]	814
P8.3	gpmc_ad6	gpio1[6]	818
P8.4	gpmc_ad7	gpio1[7]	81C
P8.12	gpmc_ad12	gpio1[12]	830
P8.11	gpmc_ad13	gpio1[13]	834
P8.16	gpmc_ad14	gpio1[14]	838
P8.15	gpmc_ad15	gpio1[15]	83C
P9.15	gpmc_a0	gpio1[16]	840
P9.23	gpmc_a1	gpio1[17]	844
P9.14	gpmc_a2	gpio1[18]	848
P9.16	gpmc_a3	gpio1[19]	84C
P9.12	gpmc_be1n	gpio1[28]	
P8.26	gpmc_csn0	gpio1[29]	87C
P8.21	gpmc_csn1	gpio1[30]	880
P8.20	gpmc_csn2	gpio1[31]	884

Pin	Descr.	GPIO	Offs.
P8.18	gpmc_clk_mux0	gpio2[1]	88C
P8.7	gpmc_advn_ale	gpio2[2]	890
P8.8	gpmc_oen_ren	gpio2[3]	894
P8.10	gpmc_wen	gpio2[4]	898
P8.9	gpmc_be0n_cle	gpio2[5]	89C
P8.45	lcd_data0	gpio2[6]	8A0
P8.46	lcd_data1	gpio2[7]	8A4
P8.43	lcd_data2	gpio2[8]	8A8
P8.44	lcd_data3	gpio2[9]	8AC
P8.41	lcd_data4	gpio2[10]	8B0
P8.42	lcd_data5	gpio2[11]	8B4
P8.39	lcd_data6	gpio2[12]	8B8
P8.40	lcd_data7	gpio2[13]	8BC
P8.37	lcd_data8	gpio2[14]	8C0
P8.38	lcd_data9	gpio2[15]	8C4
P8.36	lcd_data10	gpio2[16]	8C8
P8.34	lcd_data11	gpio2[17]	8CC
P8.27	lcd_vsync	gpio2[22]	8E0
P8.29	lcd_hsync	gpio2[23]	8E4
P8.28	lcd_pclk	gpio2[24]	8E8
P8.30	lcd_ac_bias_en	gpio2[25]	8EC

On P8 these pins are used by the new eMMC flash memory i/f

On P8 these pins are used by the new HDMI i/f

This i/f is fairly simple to disable

P8

1	2	GND	GND
3	4	GPIO1_6	GPIO1_7
5	6	GPIO1_2	GPIO1_3
7	8	TIMER4/2_2	TIMER7/2_3
9	10	TIMER5/2_5	TIMER6/2_4
11	12	GPIO1_13	GPIO1_12
13	14	EHRPWM2B/0_23	GPIO0_26
15	16	GPIO1_15	GPIO1_14
17	18	GPIO0_27	GPIO0_2_1
19	20	EHRPWM2A/0_22	GPIO1_31
21	22	GPIO1_30	GPIO1_5
23	24	GPIO1_4	GPIO1_1
25	26	GPIO1_0	GPIO1_29
27	28	GPIO2_22	GPIO2_24
29	30	GPIO2_23	GPIO2_25
31	32	UART5_CTSN/0_10	UART5_RTSN/0_11
33	34	UART4_RTSN/0_9	UART3_RTSN/2_17
35	36	UART4_CTSN/0_8	UART3_CTSN/2_16
37	38	UART5_TXD/2_14	UART5_RXD/2_15
39	40	GPIO2_12	GPIO2_13
41	42	GPIO2_10	GPIO2_11
43	44	GPIO2_8	GPIO2_9
45	46	GPIO2_6	GPIO2_7

P9

		GND	
		DC_3V3	
		VDD_5V	
		SYS_5V	
9	10	PWR_BUT	SYS_RESETn
11	12	UART4_RXD/0_30	GPIO1_28
13	14	UART4_TXD/0_31	EHRPWM1A/1_18
15	16	GPIO1_16	EHRPWM1B/1_19
17	18	I2C1_SCL/0_5	I2C1_SDA/0_4
19	20	I2C2_SCL/0_13	I2C2_SDA/0_12
21	22	UART2_TXD/0_3	UART2_RXD/0_2
23	24	GPIO1_17	UART1_TXD/0_15
25	26	GPIO3_21*	UART1_RXD/0_14
27	28	GPIO3_19	SPI1_CS0/3_17
29	30	SPI1_D0/3_15	SPI1_D1/3_16
31	32	SPI1_SCLK/3_14	VADC
33	34	AIN4	AGND
35	36	AIN6	AIN5
37	38	AIN2	AIN3
39	40	AIN0	AIN1
41	42	CLKOUT2/GPIO0_7	GPIO3_20/18
43	44		
45	46		

* GPIO3_21 is also the 24.576MHz clock for the HDMI Audio