

Simplified Beagle Bone Black Pin out Diagram

P9

GND	1	2	GND
DC_3.3V	3	4	DC_3.3V
VDD_5V ^[1]	5	6	VDD_5V ^[1]
SYS_5V	7	8	SYS_5V
PWR_BUT	9	10	SYS_RESET
GPIO 30 <i>Case switch</i> ^[6]	11	12	GPIO 60
GPIO 31	13	14	EHRPWM1A (PWM3) ^[5]
GPIO 48	15	16	EHRPWM1B (PWM4) ^[5]
GPIO 5	17	18	GPIO 4
I2C	19	20	I2C
EHRPWM0B (PWM1) ^[5]	21	22	EHRPWM0A (PWM0) ^[5]
GPIO 49	23	24	GPIO 15
MCASP0	25	26	GPIO 14 <i>Can select</i>
GPIO 115 <i>Can enable</i>	27	28	ECAP2/MCASP0 (PWM7) ^[3]
MCASP0	29	30	GPIO 112 <i>Main enable</i>
MCASP0	31	32	VADC (1.8V)
AIN4 ^[4] <i>Preg return</i> ^[6]	33	34	AGND
AIN6 ^[4]	35	36	AIN5 ^[4] <i>Low Pressure</i> ^[6]
AIN2 ^[4] <i>Microphone</i>	37	38	AIN3 ^[4] <i>High Pressure 1</i>
AIN0 ^[4] <i>Strain Input</i>	39	40	AIN1 ^[4] <i>High Pressure 0</i>
CLKOUT2 (?)	41	42	ECAP0 (PWM2) ^[3] <i>Preg set</i>
GND	43	44	GND
GND	45	46	GND

P8

DGND	1	2	DGND
EMMC2 (SD card)	3	4	EMMC2 (SD card)
EMMC2 (SD card)	5	6	EMMC2 (SD card)
GPIO 66	7	8	GPIO 67
GPIO 69	9	10	GPIO 68
GPIO 45 <i>Strain Mux Enable</i>	11	12	GPIO 44 <i>Strain0 (A) Select</i>
EHRPWM2B (PWM6) ^[5]	13	14	GPIO 26 <i>Strain1 (B) Select</i>
GPIO 47	15	16	GPIO 46 <i>Strain2 (C) Select</i>
GPIO 27	17	18	GPIO 65 <i>Strain3 (D) Select</i>
EHRPWM2A (PWM5) ^[5]	19	20	EMMC2 (SD card)
EMMC2 (SD card)	21	22	EMMC2 (SD card)
EMMC2 (SD card)	23	24	EMMC2 (SD card)
EMMC2 (SD card)	25	26	GPIO 61
GPIO 86 ^[2]	27	28	GPIO 88 ^[2]
GPIO 87 ^[2]	29	30	GPIO 89 ^[2]
GPIO 10 ^[2]	31	32	GPIO 11 ^[2]
GPIO 9 ^[2]	33	34	GPIO 81 ^[2]
GPIO 8 ^[2]	35	36	GPIO 80 ^[2]
GPIO 78 ^[2]	37	38	GPIO 79 ^[2]
GPIO 76 ^[2]	39	40	GPIO 77 ^[2]
GPIO 74 ^[2]	41	42	GPIO 75 ^[2]
GPIO 72 ^[2]	43	44	GPIO 73 ^[2]
GPIO 70 ^[2]	45	46	GPIO 71 ^[2]

[1]: VDD_5V is available only when DC jack is connected

[2]: These GPIO pins are unavailable if HDMI is connected and the HDMI capes are enabled

[3]: It is unknown if these pins are reserved or not (they seem to work)

[4]: **ADC pins are 1.8V MAX (DO NOT EXCEED)**

[5]: PWM channels xA/xB *must* share the same period. To change the frequency if both are activated, the other has to be unexported.

[6]: These pins were specified but currently haven't been implemented or used in testing

All **GPIO** pins operate at **3.3V levels**. Current source/sinking capacities are limited - **4-6mA out and 8mA in (DO NOT EXCEED)**