Simplified Beagle Bone Black Pin out Diagram

P9

Signal	Odd	Even	Signal
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	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
GPIO 115	27	28	ECAP2/MCASP0 (PWM7)[3]
MCASP0	29	30	GPIO 112
MCASP0	31	32	VADC (1.8V)
AIN4[4]	33	34	AGND
AIN6[4]	35	36	AIN5[4]
AIN2[4]	37	38	AIN3[4]
AIN0[4]	39	40	AIN1[4]
CLKOUT2 (?)	41	42	ECAP0 (PWM2) (?)[3]
GND	43	44	GND
GND	45	46	GND

P8

Signal	Odd	Even	Signal
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	11	12	GPIO 44
EHRPWM2B (PWM6) [5]	13	14	GPIO 26
GPIO 47	15	16	GPIO 46
GPIO 27	17	18	GPIO 65
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 *x*A/*x*B *must* share the same period. To change the frequency if both are activated, the other has to be unexported.

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