



# Beaglebone Black PRU Input P8/P9 Header PinMux Modes

| PRU 0 Inputs | P8/P9 Pin | Offset | mode0            | mode1                  | mode2       | mode3        | mode4             | mode5                       | mode6               | mode7    | GPIO # |
|--------------|-----------|--------|------------------|------------------------|-------------|--------------|-------------------|-----------------------------|---------------------|----------|--------|
| PRU0_R31_0   | P9_31     | 0x990  | mcasp0_aclkx     | ehrpwm0A               |             | spi1_sclk    | mmc0_sdcd         | pr1_pru0_pru_r30_0          | pr1_pru0_pru_r31_0  | gpio3_14 | 110    |
| PRU0_R31_1   | P9_29     | 0x994  | mcasp0_fsx       | ehrpwm0B               |             | spi1_d0      | mmc1_sdcd         | pr1_pru0_pru_r30_1          | pr1_pru0_pru_r31_1  | gpio3_15 | 111    |
| PRU0_R31_2   | P9_30     | 0x998  | mcasp0_axr0      | ehrpwm0_tripzone_input |             | spi1_d1      | mmc2_sdcd         | pr1_pru0_pru_r30_2          | pr1_pru0_pru_r31_2  | gpio3_16 | 112    |
| PRU0_R31_3   | P9_28     | 0x99C  | mcasp0_ahclk     | ehrpwm0_synci          | mcasp0_axr2 | spi1_cs0     | eCAP2_in_PWM2_out | pr1_pru0_pru_r30_3          | pr1_pru0_pru_r31_3  | gpio3_17 | 113    |
| PRU0_R31_4   | P9_42.1   | 0x9A0  | mcasp0_aclkr     | eQEP0A_in              | mcasp0_axr2 | mcasp1_aclkx | mmc0_sdwp         | pr1_pru0_pru_r30_4          | pr1_pru0_pru_r31_4  | gpio3_18 | 114    |
| PRU0_R31_5   | P9_27     | 0x9A4  | mcasp0_fsr       | eQEP0B_in              | mcasp0_axr3 | mcasp1_fsx   | EMU2              | pr1_pru0_pru_r30_5          | pr1_pru0_pru_r31_5  | gpio3_19 | 115    |
| PRU0_R31_6   | P9_41.1   | 0x9A8  | mcasp0_axr1      | eQEP0_index            |             | mcasp1_axr0  | EMU3              | pr1_pru0_pru_r30_6          | pr1_pru0_pru_r31_6  | gpio3_20 | 116    |
| PRU0_R31_7   | P9_25     | 0x9AC  | mcasp0_ahclkx    | eQEP0_strobe           | mcasp0_axr3 | mcasp1_axr1  | EMU4              | pr1_pru0_pru_r30_7          | pr1_pru0_pru_r31_7  | gpio3_21 | 117    |
| PRU0_R31_14  | P8_16     | 0x838  | gpmc_ad14        | lcd_data17             | mmc1_dat6   | mmc2_dat2    | eQEP2_index       | pr1_mii0_txd0               | pr1_pru0_pru_r31_14 | gpio1_14 | 46     |
| PRU0_R31_15  | P8_15     | 0x83C  | gpmc_ad15        | lcd_data16             | mmc1_dat7   | mmc2_dat3    | eQEP2_strobe      | pr1_ecap0_ecap_capin_apwm_o | pr1_pru0_pru_r31_15 | gpio1_15 | 47     |
| PRU0_R31_16* | P9_24     | 0x984  | uart1_txd        | mmc2_sdwp              | dcan1_rx    | I2C1_SCL     |                   | pr1_uart0_txd               | pr1_pru0_pru_r31_16 | gpio0_15 | 15     |
| PRU0_R31_16* | P9_41     | 0x9B4  | xdma_event_intr1 |                        | ttlkin      | clkout2      | timer7            | pr1_pru0_pru_r31_16         | EMU3                | gpio0_20 | 20     |

| PRU 1 Inputs | P8/P9 Pin | Offset | mode0          | mode1     | mode2             | mode3                  | mode4              | mode5               | mode6               | mode7    | GPIO # |
|--------------|-----------|--------|----------------|-----------|-------------------|------------------------|--------------------|---------------------|---------------------|----------|--------|
| PRU1_R31_0   | P8_45     | 0x8A0  | lcd_data0      | gpmc_a0   | pr1_mii0_clk      | ehrpwm2A               |                    | pr1_pru1_pru_r30_0  | pr1_pru1_pru_r31_0  | gpio2_6  | 70     |
| PRU1_R31_1   | P8_46     | 0x8A4  | lcd_data1      | gpmc_a1   | pr1_mii0_txen     | ehrpwm2B               |                    | pr1_pru1_pru_r30_1  | pr1_pru1_pru_r31_1  | gpio2_7  | 71     |
| PRU1_R31_2   | P8_43     | 0x8A8  | lcd_data2      | gpmc_a2   | pr1_mii0_txd3     | ehrpwm2_tripzone_input |                    | pr1_pru1_pru_r30_2  | pr1_pru1_pru_r31_2  | gpio2_8  | 72     |
| PRU1_R31_3   | P8_44     | 0x8AC  | lcd_data3      | gpmc_a3   | pr1_mii0_txd2     | ehrpwm0_synco          |                    | pr1_pru1_pru_r30_3  | pr1_pru1_pru_r31_3  | gpio2_9  | 73     |
| PRU1_R31_4   | P8_41     | 0x8B0  | lcd_data4      | gpmc_a4   | pr1_mii0_txd1     | eQEP2A_in              |                    | pr1_pru1_pru_r30_4  | pr1_pru1_pru_r31_4  | gpio2_10 | 74     |
| PRU1_R31_5   | P8_42     | 0x8B4  | lcd_data5      | gpmc_a5   | pr1_mii0_txd0     | eQEP2B_in              |                    | pr1_pru1_pru_r30_5  | pr1_pru1_pru_r31_5  | gpio2_11 | 75     |
| PRU1_R31_6   | P8_39     | 0x8B8  | lcd_data6      | gpmc_a6   | pr1_edio_data_in6 | eQEP2_index            | pr1_edio_data_out6 | pr1_pru1_pru_r30_6  | pr1_pru1_pru_r31_6  | gpio2_12 | 76     |
| PRU1_R31_7   | P8_40     | 0x8BC  | lcd_data7      | gpmc_a7   | pr1_edio_data_in7 | eQEP2_strobe           | pr1_edio_data_out7 | pr1_pru1_pru_r30_7  | pr1_pru1_pru_r31_7  | gpio2_13 | 77     |
| PRU1_R31_8   | P8_27     | 0x8E0  | lcd_vsync      | gpmc_a8   | gpmc_a1           | pr1_edio_data_in2      | pr1_edio_data_out2 | pr1_pru1_pru_r30_8  | pr1_pru1_pru_r31_8  | gpio2_22 | 86     |
| PRU1_R31_9   | P8_29     | 0x8E4  | lcd_hsync      | gpmc_a9   | gpmc_a2           | pr1_edio_data_in3      | pr1_edio_data_out3 | pr1_pru1_pru_r30_9  | pr1_pru1_pru_r31_9  | gpio2_23 | 87     |
| PRU1_R31_10  | P8_28     | 0x8E8  | lcd_pclk       | gpmc_a10  | pr1_mii0_crs      | pr1_edio_data_in4      | pr1_edio_data_out4 | pr1_pru1_pru_r30_10 | pr1_pru1_pru_r31_10 | gpio2_24 | 88     |
| PRU1_R31_11  | P8_30     | 0x8EC  | lcd_ac_bias_en | gpmc_a11  | pr1_mii1_crs      | pr1_edio_data_in5      | pr1_edio_data_out5 | pr1_pru1_pru_r30_11 | pr1_pru1_pru_r31_11 | gpio2_25 | 89     |
| PRU1_R31_12  | P8_21     | 0x880  | gpmc_csn1      | gpmc_clk  | mmc1_clk          | pr1_edio_data_in6      | pr1_edio_data_out6 | pr1_pru1_pru_r30_12 | pr1_pru1_pru_r31_12 | gpio1_30 | 62     |
| PRU1_R31_13  | P8_20     | 0x884  | gpmc_csn2      | gpmc_be1n | mmc1_cmd          | pr1_edio_data_in7      | pr1_edio_data_out7 | pr1_pru1_pru_r30_13 | pr1_pru1_pru_r31_13 | gpio1_31 | 63     |
| PRU1_R31_16  | P9_26     | 0x980  | uart1_rxd      | mmc1_sdwp | dcan1_tx          | I2C1_SDA               |                    | pr1_uart0_rxd       | pr1_pru1_pru_r31_16 | gpio0_14 | 14     |

The information above shows the Pins on the Beaglebone Black P8 and P9 Headers which can be used in PRU0 or PRU1 as Inputs.

\* Yes this is correct. Either P9\_24 or P9\_41 can be used as an input for PRU0 R31.t16

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Adapted from the open source [pinmux.pdf](#) document.

[OfItselfSo.com/BeagleNotes/UsingDeviceTreesToConfigurePRUIOPins.php](http://OfItselfSo.com/BeagleNotes/UsingDeviceTreesToConfigurePRUIOPins.php)

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