

## Pin layout for Board Rev. 1.2x

| J1 | Function                                     | Device    | GPIO            | Mode    | /sys/class/gpio/gpio# | PcoreBBRGB 1.20  |
|----|--|-----------|-----------------|---------|-----------------------|------------------|
| 1  | UART_E_RXD <sup>(1)</sup>                    | UART5     | GPIO6_IO18      | IO      | 178                   | J10_33           |
| 2  | UART_E_TXD <sup>(1)</sup>                    | UART5     | GPIO6_IO19      | IO      | 179                   | J10_29           |
| 3  | UART_E_CTS <sup>(1)</sup>                    | UART5     | GPIO6_IO20      | IO      | 180                   | J10_35           |
| 4  | UART_E_RTS <sup>(1)</sup>                    | UART5     | GPIO6_IO21      | IO      | 181                   | J10_31           |
| 5  | UART_B_RXD                                   | UART3     | GPIO4_IO29      | IO      | 125                   | (J8_3)           |
| 6  | UART_A_RXD                                   | UART1     | GPIO1_IO05      | IO      | 5                     | (J7_3)           |
| 7  | UART_B_TXD                                   | UART3     | GPIO4_IO30      | IO      | 126                   | (J8_5)           |
| 8  | UART_A_TXD                                   | UART1     | GPIO1_IO04      | IO      | 4                     | (J7_5)           |
| 9  | UART_C_CTS                                   | UART4     | GPIO7_IO04      | IO      | 196                   | J9_6             |
| 10 | CAN_A_RX                                     | FLEXCAN1  | GPIO7_IO09      | IO      | 201                   | ( J6_3 / J6_4 )  |
| 11 | UART_C_RTX                                   | UART4     | GPIO7_IO00      | IO      | 192                   | J9_4             |
| 12 | CAN_A_TX                                     | FLEXCAN1  | GPIO7_IO07      | IO      | 199                   | ( J6_3 / J6_4 )  |
| 13 | UART_C_RXD                                   | UART4     | GPIO7_IO05      | IO      | 197                   | J9_3             |
| 14 | SPI_A_SS0                                    | ECSPI5    | GPIO4_IO28      | IO      | 124                   | J10_14           |
| 15 | UART_C_TXD                                   | UART4     | GPIO7_IO01      | IO      | 193                   | J9_5             |
| 16 | SPI_A_MISO                                   | ECSPI5    | GPIO4_IO23      | IO      | 119                   | J10_17           |
| 17 | UART_D_RXD                                   | UART2     | GPIO1_IO07      | IO      | 7                     | J10_15           |
| 18 | SPI_A_MOSI                                   | ECSPI5    | GPIO4_IO20      | IO      | 116                   | J10_16           |
| 19 | UART_D_TXD                                   | UART2     | GPIO1_IO06      | IO      | 6                     | J10_13           |
| 20 | SPI_A_SCLK                                   | ECSPI5    | GPIO4_IO31      | IO      | 127                   | J10_12           |
| 21 | I2C_A_SCL                                    | I2C4      | GPIO7_IO02      | IO      | 194                   | J10_5            |
| 22 | GPIO_J1_22                                   | GPIO      | GPIO4_IO27      | IO      | 123                   | J10_5            |
| 23 | I2C_A_SDA                                    | I2C4      | GPIO7_IO03      | IO      | 195                   | J10_3            |
| 24 | GPIO_J1_24                                   | GPIO      | GPIO4_IO26      | IO      | 122                   | J10_3            |
| 25 | GPIO_J1_25                                   | GPIO      | GPIO2_IO19      | IO      | 51                    | J10_26           |
| 26 | GPIO_J1_26                                   | GPIO      | GPIO4_IO25      | IO      | 121                   | J10_4            |
| 27 | GPIO_J1_27                                   | GPIO      | GPIO2_IO18      | IO      | 50                    | J10_25           |
| 28 | GPIO_J1_28                                   | GPIO      | GPIO4_IO24      | IO      | 120                   | J14_5            |
| 29 | GPIO_J1_29                                   | GPIO      | GPIO2_IO15      | IO      | 47                    | J10_24           |
| 30 | GPIO_J1_30                                   | GPIO      | GPIO4_IO22      | IO      | 118                   | J10_6            |
| 31 | GPIO_J1_31                                   | GPIO      | GPIO2_IO14      | IO      | 46                    | J10_23           |
| 32 | GPIO_J1_32                                   | GPIO      | GPIO4_IO21      | IO      | 117                   | J10_7            |
| 33 | GPIO_J1_33                                   | GPIO      | GPIO2_IO13      | IO      | 45                    | J10_22           |
| 34 | GPIO_J1_34                                   | GPIO      | GPIO2_IO14      | IO      | 46                    | J10_8            |
| 35 | GPIO_J1_35                                   | GPIO      | GPIO2_IO11      | IO      | 43                    | J10_21           |
| 36 | GPIO_J1_36                                   | GPIO      | GPIO4_IO18      | IO      | 114                   | J10_9            |
| 37 | GPIO_J1_37                                   | GPIO      | GPIO2_IO10      | IO      | 42                    | J10_20           |
| 38 | GPIO_J1_38                                   | GPIO      | GPIO4_IO17      | IO      | 113                   | J10_10           |
| 39 | I2C_B_IRQ                                    | I2C2      | GPIO1_IO08      | IO      | 8                     | J11_5 / J14_49   |
| 40 | GPIO_J1_40                                   | GPIO      | GPIO4_IO16      | IO      | 112                   | J10_18           |
| 41 | I2C_B_SCL                                    | I2C2      | GPIO1_IO02      | IO      | 2                     | J11_3 / J14_50   |
| 42 | PMIC_ON_REQ /<br>(GPIO_J1_42) <sup>(2)</sup> | -<br>GPIO | -<br>GPIO7_IO08 | -<br>IO | -<br>200              | J10_19<br>J10_19 |

| J1 | Function                              | Device    | GPIO            | Mode    | /sys/class/gpio/gpio# | PcoreBBRGB 1.20 |
|----|---------------------------------------|-----------|-----------------|---------|-----------------------|-----------------|
| 43 | I2C_B_SDA                             | I2C2      | GPIO1_IO03      | IO      | 3                     | J11_2 / J14_48  |
| 44 | ONFF /<br>(GPIO_J1_44) <sup>(2)</sup> | -<br>GPIO | -<br>GPIO7_IO06 | -<br>IO | -<br>198              |                 |
| 45 | GND                                   |           |                 |         |                       |                 |
| 46 | GND                                   |           |                 |         |                       |                 |
| 47 | LCD_R0                                | LCDIF     | GPIO3_IO17      | IO      | 81                    | J14_12          |
| 48 | BL_PWM                                | BKLT      | GPIO1_IO11      | IO      | 11                    | J14_1           |
| 49 | LCD_R1                                | LCDIF     | GPIO3_IO18      | IO      | 82                    | J14_11          |
| 50 | LCD_PCLK                              | LCDIF     | GPIO3_IO00      | IO      | 64                    | J14_20          |
| 51 | LCD_R2                                | LCDIF     | GPIO3_IO19      | IO      | 83                    | J14_24          |
| 52 | GND                                   |           |                 |         |                       |                 |
| 53 | LCD_R3                                | LCDIF     | GPIO3_IO20      | IO      | 84                    | J14_25          |
| 54 | VLCD_EN                               | VLCD      | GPIO3_IO27      | IO      | 91                    | J14_3           |
| 55 | LCD_R4                                | LCDIF     | GPIO3_IO21      | IO      | 85                    | J14_26          |
| 56 | LCD_DE                                | LCDIF     | GPIO3_IO25      | IO      | 89                    | J14_45          |
| 57 | LCD_R5                                | LCDIF     | GPIO3_IO22      | IO      | 86                    | J14_29          |
| 58 | LCD_HSYNC                             | LCDIF     | GPIO3_IO26      | IO      | 90                    | J14_21          |
| 59 | LCD_R6                                | LCDIF     | GPIO3_IO23      | IO      | 87                    | J14_28          |
| 60 | LCD_VSYNC                             | LCDIF     | GPIO3_IO28      | IO      | 92                    | J14_22          |
| 61 | LCD_R7                                | LCDIF     | GPIO3_IO24      | IO      | 88                    | J14_29          |
| 62 | GND                                   |           |                 |         |                       |                 |
| 63 | GND                                   |           |                 |         |                       |                 |
| 64 | LCD_B0                                | LCDIF     | GPIO3_IO01      | IO      | 65                    | J14_16          |
| 65 | LCD_G0                                | LCDIF     | GPIO3_IO09      | IO      | 73                    | J14_13          |
| 66 | LCD_B1                                | LCDIF     | GPIO3_IO02      | IO      | 66                    | J14_15          |
| 67 | LCD_G1                                | LCDIF     | GPIO3_IO10      | IO      | 74                    | J14_14          |
| 68 | LCD_B2                                | LCDIF     | GPIO3_IO03      | IO      | 67                    | J14_38          |
| 69 | LCD_G2                                | LCDIF     | GPIO3_IO11      | IO      | 75                    | J14_31          |
| 70 | LCD_B3                                | LCDIF     | GPIO3_IO04      | IO      | 68                    | J14_39          |
| 71 | LCD_G3                                | LCDIF     | GPIO3_IO12      | IO      | 76                    | J14_32          |
| 72 | LCD_B4                                | LCDIF     | GPIO3_IO05      | IO      | 69                    | J14_40          |
| 73 | LCD_G4                                | LCDIF     | GPIO3_IO13      | IO      | 77                    | J14_33          |
| 74 | LCD_B5                                | LCDIF     | GPIO3_IO06      | IO      | 70                    | J14_41          |
| 75 | LCD_G5                                | LCDIF     | GPIO3_IO14      | IO      | 78                    | J14_34          |
| 76 | LCD_B6                                | LCDIF     | GPIO3_IO07      | IO      | 71                    | J14_42          |
| 77 | LCD_G6                                | LCDIF     | GPIO3_IO15      | IO      | 79                    | J14_35          |
| 78 | LCD_B7                                | LCDIF     | GPIO3_IO08      | IO      | 72                    | J14_43          |
| 79 | LCD_G7                                | LCDIF     | GPIO3_IO16      | IO      | 80                    | J14_36          |
| 80 | GND                                   |           |                 |         |                       |                 |

(1) The level of these pins depends on the voltage of pin J2/26.

(2) PMIC\_ON\_REQ / ONOFF is default, GPIOs are only available as a hardware option.

# PicoCoreMX6SX GPIO Reference Card

# V1.1

# 30.09.2019

| J2 | Function     | Device   | GPIO       | Mode | /sys/class/gpio/gpio# | PcoreBBRGB 1.20 |
|----|--------------|----------|------------|------|-----------------------|-----------------|
| 1  | ETH_A_D1P    | ETH1     |            |      |                       |                 |
| 2  | +V5S         |          |            |      |                       |                 |
| 3  | ETH_A_D1N    | ETH1     |            |      |                       |                 |
| 4  | +V5S         |          |            |      |                       |                 |
| 5  | ETH_A_D2P    | ETH1     |            |      |                       |                 |
| 6  | +V5S         |          |            |      |                       |                 |
| 7  | ETH_A_D2N    | ETH1     |            |      |                       |                 |
| 8  | GND          |          |            |      |                       |                 |
| 9  | ETH_A_D3P    | ETH1     |            |      |                       |                 |
| 10 | GND          |          |            |      |                       |                 |
| 11 | ETH_A_D3N    | ETH1     |            |      |                       |                 |
| 12 | GND          |          |            |      |                       |                 |
| 13 | ETH_A_D4P    | ETH1     |            |      |                       |                 |
| 14 | ETH_A_LED    | ETH1     |            |      |                       |                 |
| 15 | ETH_A_D4N    | ETH1     |            |      |                       |                 |
| 16 | ETH_B_LED    | ETH2     |            |      |                       |                 |
| 17 | GND          |          |            |      |                       |                 |
| 18 | JTAG_TCK     | JTAG     |            |      |                       | J17_4           |
| 19 | ETH_B_D1P    | ETH2     |            |      |                       |                 |
| 20 | JTAG_TMS     | JTAG     |            |      |                       | J17_2           |
| 21 | ETH_B_D1N    | ETH2     |            |      |                       |                 |
| 22 | JTAG_TDI     | JTAG     |            |      |                       | J17_8           |
| 23 | ETH_B_D2P    | ETH2     |            |      |                       |                 |
| 24 | JTAG_TDO     | JTAG     |            |      |                       | J17_6           |
| 25 | ETH_B_D2N    | ETH2     |            |      |                       |                 |
| 26 | SD_A_VCC     | SD4      |            |      |                       |                 |
| 27 | ETH_B_D3P    | ETH2     |            |      |                       |                 |
| 28 | SD_A_VSEL    | SD4      | GPIO2_IO16 | IO   | 48                    |                 |
| 29 | ETH_B_D3N    | ETH2     |            |      |                       |                 |
| 30 | /SD_A_RST    | SD4      | GPIO6_IO22 | IO   | 182                   |                 |
| 31 | ETH_B_D4P    | ETH2     |            |      |                       |                 |
| 32 | SD_A_WP      | SD4      | GPIO2_IO17 | IO   | 49                    |                 |
| 33 | ETH_B_D4N    | ETH2     |            |      |                       |                 |
| 34 | SD_A_CD      | SD4      | GPIO2_IO12 | IO   | 44                    |                 |
| 35 | GND          |          |            |      |                       |                 |
| 36 | SD_A_CMD     | SD4      | GPIO6_IO13 | IO   | 173                   | J12_3           |
| 37 | USB_OTG_VBUS | USB_OTG1 |            |      |                       |                 |
| 38 | SD_A_CLK     | SD4      | GPIO6_IO12 | IO   | 172                   | J12_5           |
| 39 | USB_OTG_PWR  | USB_OTG1 | GPIO1_IO09 | IO   | 9                     | J2_1            |
| 40 | SD_A_DATA0   | SD4      | GPIO6_IO14 | IO   | 174                   | J12_7           |
| 41 | USB_OTG_ID   | USB_OTG1 | GPIO1_IO10 | IO   | 10                    | J4_4            |
| 42 | SD_A_DATA1   | SD4      | GPIO6_IO15 | IO   | 175                   | J12_8           |
| 43 | USB_OTG_DP   | USB_OTG1 |            |      |                       | J4_3            |
| 44 | SD_A_DATA2   | SD4      | GPIO6_IO16 | IO   | 176                   | J12_1           |

| J2 | Function       | Device   | GPIO       | Mode | /sys/class/gpio/gpio# | PcoreBBRGB 1.20 |
|----|----------------|----------|------------|------|-----------------------|-----------------|
| 45 | USB_OTG_DN     | USB_OTG1 |            |      |                       | J4_2            |
| 46 | SD_A_DATA3     | SD4      | GPIO6_IO17 | IO   | 177                   | J12_2           |
| 47 | GND            |          |            |      |                       |                 |
| 48 | VDD_BAT_IN     |          |            |      |                       |                 |
| 49 | ADC_D          | GPIO     |            | I    |                       |                 |
| 50 | VDD_SNV5_IN    |          |            |      |                       |                 |
| 51 | ADC_C          | GPIO     |            | I    |                       |                 |
| 52 | +3V3_OUT       |          |            |      |                       |                 |
| 53 | ADC_B          | GPIO     |            | I    |                       |                 |
| 54 | /RESETIN       |          |            |      |                       |                 |
| 55 | ADC_A          | GPIO     |            | I    |                       |                 |
| 56 | PMIC_STBY      |          |            |      |                       |                 |
| 57 | GND            |          |            |      |                       |                 |
| 58 |                |          |            |      |                       |                 |
| 59 | USB_HOST_VBUS  | USB_OTG2 |            |      |                       |                 |
| 60 |                |          |            |      |                       |                 |
| 61 | USB_HOST_DN    | USB_OTG2 |            |      |                       |                 |
| 62 | ADC_H          | ADC      |            | I    |                       |                 |
| 63 | USB_HOST_DP    | USB_OTG2 |            |      |                       |                 |
| 64 | ADC_G          | ADC      |            | I    |                       |                 |
| 65 | USB_HOST_PWR   | USB_OTG2 | GPIO1_IO12 | IO   | 12                    |                 |
| 66 | ADC_F          | ADC      |            | I    |                       |                 |
| 67 | AUDIO_A_VCC    | AUDIO    |            |      |                       |                 |
| 68 | ADC_E          | ADC      |            | I    |                       |                 |
| 69 | AUDIO_A_GND    | AUDIO    |            |      |                       |                 |
| 70 | PWM_A          | PWM      | GPIO1_IO13 | IO   | 13                    |                 |
| 71 | AUDIO_A_LOUT_L | AUDIO    |            |      |                       |                 |
| 72 | BOOTSEL        |          |            |      |                       |                 |
| 73 | AUDIO_A_LOUT_R | AUDIO    |            |      |                       |                 |
| 74 | GND            |          |            |      |                       |                 |
| 75 | AUDIO_A_MIC    | AUDIO    |            |      |                       |                 |
| 76 | AUDIO_A_HP_L   | AUDIO    |            |      |                       |                 |
| 77 | AUDIO_A_LIN_L  | AUDIO    |            |      |                       |                 |
| 78 | AUDIO_A_HP_R   | AUDIO    |            |      |                       |                 |
| 79 | AUDIO_A_LIN_R  | AUDIO    |            |      |                       |                 |
| 80 | AUDIO_A_HP_GND |          |            |      |                       |                 |

Remark: The GPIO Reference Card is a software development tool. It just lists the numbers needed for accessing GPIO ports in Linux. Please refer to the PicoCoreMX6SX Hardware Documentation for hardware development.