

PicoCoreMX8MN-V5 GPIO Reference Card V1.0

07.01.2022

Pin layout for Board Rev. 1.20

J1	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDSI V1.20/V1.30
1	I2C_B_IRQ	GPIO	GPIO5_IO02	IO	130	J15-5/J13-26
2	GPIO_J1_2	GPIO	GPIO1_IO13	IO	13	V1.20: J11-18 V1.30: J15-4
3	I2C_B_SCL ⁽¹⁾	I2C2	GPIO5_IO16	IO	144	J15-3/J13-27
4	I2C_A_SCL ⁽¹⁾	I2C4	GPIO5_IO20	IO	148	J11-16
5	I2C_B_SDA ⁽¹⁾	I2C2	GPIO5_IO17	IO	145	J15-2/J13-25
6	I2C_A_SDA ⁽¹⁾	I2C4	GPIO5_IO21	IO	149	J11-17
7	GPIO_J1_7	GPIO	GPIO1_IO01	IO	1	J13-28
8	GND					
9	BL_ON	GPIO	GPIO5_IO03	IO	131	J14-2
10	CAN_A_RX	CAN-FD				J11-24
11	BL_PWM	PWM2	GPIO5_IO04	IO	132	J14-3
12	CAN_A_TX	CAN-FD				J11-26
13	VLCD_ON	GPIO	GPIO5_IO01	IO	129	J14-1
14	UART_A_RTS	UART1	GPIO4_IO24	IO	120	J11-36
15	GND					
16	UART_A_CTS	UART1	GPIO4_IO23	IO	119	J11-38
17	DSI_A_CLK_P	LVDS_A / MIPI-DSI ⁽²⁾				
18	UART_A_RXD ⁽⁵⁾	UART1	GPIO4_IO22	IO		(J9-3)
19	DSI_A_CLK_N	LVDS_A / MIPI-DSI ⁽²⁾		IO		
20	UART_A_TXD	UART1	GPIO4_IO21	IO		(J9-5)
21	GND			IO		
22	UART_B_RTS	UART2	GPIO4_IO29	IO	125	(J10-4)
23	DSI_A_DATA0_P	LVDS_A / MIPI-DSI ⁽²⁾				
24	UART_B_CTS	UART2	GPIO4_IO30	IO	126	(J10-6)
25	DSI_A_DATA0_N	LVDS_A / MIPI-DSI ⁽²⁾				
26	UART_B_RXD ⁽⁵⁾	UART2	GPIO4_IO31	IO	127	(J10-3)
27	GND					
28	UART_B_TXD	UART2	GPIO5_IO00	IO	128	(J10-5)
29	DSI_A_DATA1_P	LVDS_A / MIPI-DSI ⁽²⁾				
30	UART_C_RXD ⁽⁵⁾	UART4	GPIO5_IO28	IO	156	(J8-3)
31	DSI_A_DATA1_N	LVDS_A / MIPI-DSI ⁽²⁾				
32	UART_C_TXD	UART4	GPIO5_IO29	IO	157	(J8-5)
33	GND					
34	UART_D_RXD ⁽⁵⁾	UART3	GPIO5_IO26	IO	154	J11-15

J1	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDSI V1.20/V1.30
35	DSI_A_DATA2_P	LVDS_A / MIPI-DSI ⁽²⁾				
36	UART_D_TXD	UART3	GPIO5_IO27	IO	155	J11-13
37	DSI_A_DATA2_N	LVDS_A / MIPI-DSI ⁽²⁾				
38	GND					
39	GND					
40	I2C_C_SCL ⁽¹⁾	I2C3	GPIO5_IO18	IO	146	
41	DSI_A_DATA3_P	LVDS_A / MIPI-DSI ⁽²⁾				
42	I2C_C_SDA ⁽¹⁾	I2C3	GPIO5_IO19	IO	147	
43	DSI_A_DATA3_N	LVDS_A / MIPI-DSI ⁽²⁾				
44	GPIO_J1_44 ⁽³⁾	GPIO	GPIO1_IO00	IO	0	J12-11
45	GND					
46	GPIO_J1_46 ⁽³⁾	GPIO	GPIO1_IO04	IO	4	
47	DSI_B_CLK_P ⁽³⁾	LVDS_B				
48	I2C_D_SCL ⁽¹⁾⁽⁴⁾	I2C1	GPIO5_IO14	IO	142	J12-13
49	DSI_B_CLK_N ⁽³⁾	LVDS_B				
50	I2C_D_SDA ⁽¹⁾⁽⁴⁾	I2C1	GPIO5_IO15	IO	143	J12-14
51	GND					
52	GPIO_J1_52 / (QSPI_DATA0) ⁽³⁾⁽⁸⁾	GPIO / (QSPI)	GPIO1_IO08 / (GPIO3_IO06)	IO	8 / (70)	V1.20: J15-4 V1.30: J11-18
53	DSI_B_DATA0_P ⁽³⁾	LVDS_B				
54	GPIO_J1_54 / (QSPI_DATA1) ⁽³⁾⁽⁸⁾	GPIO / (QSPI)	GPIO1_IO15 / (GPIO3_IO07)	IO	15 / (71)	J11-8
55	DSI_B_DATA0_N ⁽³⁾	LVDS_B				
56	SPI_B_SS0 / (QSPI_CS0) ⁽³⁾⁽⁶⁾	ECSPI3 / (QSPI)	GPIO5_IO25 / (GPIO3_IO01)	IO	153 / (65)	J11-4
57	GND					
58	SPI_B_MISO / (QSPI_DATA2) ⁽³⁾⁽⁸⁾	ECSPI3 / (QSPI)	GPIO5_IO24 / (GPIO3_IO08)	IO	152 / (72)	J11-5
59	DSI_B_DATA1_P ⁽³⁾	LVDS_B				
60	SPI_B_MOSI / (QSPI_DATA3) ⁽³⁾⁽⁸⁾	ECSPI3 / (QSPI)	GPIO5_IO23 / (GPIO3_IO09)	IO	151 / (73)	J11-6
61	DSI_B_DATA1_N ⁽³⁾	LVDS_B				
62	SPI_B_SCLK / (QSPI_CLK) ⁽³⁾⁽⁶⁾	ECSPI3 / (QSPI)	GPIO5_IO22 / (GPIO3_IO00)	IO	150 / (64)	J11-3
63	GND					
64	SPI_A_SS0 ⁽³⁾	ECSPI1	GPIO5_IO09	IO	137	
65	DSI_B_DATA2_P ⁽³⁾	LVDS_B				
66	SPI_A_MISO ⁽³⁾	ECSPI1	GPIO5_IO08	IO	136	
67	DSI_B_DATA2_N ⁽³⁾	LVDS_B				

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J1	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDSI V1.20/V1.30
68	SPI_A_MOSI ⁽³⁾	ECSP11	GPIO5_IO07	IO	135	
69	GND					
70	SPI_A_SCLK ⁽³⁾	ECSP11	GPIO5_IO06	IO	134	
71	DSI_B_DATA3_P ⁽⁴⁾	LVDS_B				
72	GND					
73	DSI_B_DATA3_N ⁽⁴⁾	LVDS_B				
74	CSI_CLK_P	MIPI-CSI				
75	GND					
76	CSI_CLK_N	MIPI-CSI				
77	MPCIE_CTX_P	PCIE				
78	GND					
79	MPCIE_CTX_N	PCIE				
80	CSI_DATA0_P	MIPI-CSI				
81	GND					
82	CSI_DATA0_N	MIPI-CSI				
83	MPCIE_CRX_P	PCIE				
84	GND					
85	MPCIE_CRX_N	PCIE				
86	CSI_DATA1_P	MIPI-CSI				
87	GND					
88	CSI_DATA1_N	MIPI-CSI				
89	MPCIE_CLK_P	PCIE				
90	GND					
91	MPCIE_CLK_N	PCIE				
92	CSI_DATA2_P	MIPI-CSI				
93	GND					
94	CSI_DATA2_P	MIPI-CSI				
95	MPCIE_PERST	GPIO	GPIO3_IO19	IO	83	
96	GND					
97	MPCIE_WAKE	GPIO	GPIO3_IO20	IO	84	
98	CSI_DATA3_P	MIPI-CSI				
99	GND					
100	CSI_DATA3_N	MIPI-CSI				

- (1) Onboard Pull-Up 2.49k
- (2) Only available if DSI2LVDS chip is **not** equipped
- (3) Optional, see hardware documentation
- (4) Used internally
- (5) Onboard Pull-Up 100k
- (6) Only available if eMMC is mounted

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Pin layout for Board Rev. 1.20

J2	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDISI V1.20/V1.30
1	ETH_A_D1P	ETH				
2	AUDIO_A_VCC	AUDIO				
3	ETH_A_D1N	ETH				
4	AUDIO_A_GND	AUDIO				
5	ETH_A_D2P	ETH				
6	AUDIO_A_LOUT_L	AUDIO				
7	ETH_A_D2N	ETH				
8	AUDIO_A_LOUT_R	AUDIO				
9	ETH_A_D3P	ETH				
10	AUDIO_A_MIC	AUDIO				
11	ETH_A_D3N	ETH				
12	AUDIO_A_LIN_L	AUDIO				
13	ETH_A_D4P	ETH				
14	AUDIO_A_LIN_R	AUDIO				
15	ETH_A_D4N	ETH				
16	GND					
17	ETH_A_LED	LED				
18	AUDIO_A_HP_L	AUDIO				
19	GND					
20	AUDIO_A_HP_R	AUDIO				
21	WLAN_LED					
22	AUDIO_A_HP_GND	AUDIO				
23	ETH_B_D1P	ETH				
24	+V5S					
25	ETH_B_D1N	ETH				
26	+V5S					
27	ETH_B_D2P	ETH				
28	+V5S					
29	ETH_B_D2N	ETH				
30	GND					
31	ETH_B_D3P	ETH				
32	GND					
33	ETH_B_D3N	ETH				
34	GND					
35	ETH_B_D4P	ETH				
36	VDD_VBAT					
37	ETH_B_D4N	ETH				
38	VDD_SNVS					
39	GND					

J2	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDISI V1.20/V1.30
40	+V3.3S					
41	USB_HOST_VBUS	USB2				
42	RESETINN					
43	USB_HOST_DP	USB2				
44	PMIC_STBY					
45	USB_HOST_DN	USB2				
46	PMIC_ON_REQ					
47	USB_HOST_PWRN ⁽⁶⁾	GPIO	GPIO1_IO14	IO	14	
48	ON_OFF					
49	GND					
50	BOOTSEL					
51	USB_OTG_VBUS	USB1				
52	SD_A_VCC					
53	USB_OTG_PWRN	GPIO	GPIO1_IO12	IO	12	
54	SD_A_VSEL	GPIO	GPIO1_IO03	IO	3	
55	USB_OTG_ID	USB1				
56	SD_A_RST	SD1				
57	USB_OTG_DP	USB1				
58	SD_A_WP ⁽⁶⁾	SD1	GPIO1_IO07	IO	7	
59	USB_OTG_DN	USB1				
60	SD_A_CD ⁽⁶⁾	SD1	GPIO1_IO6	IO	6	
61	GND					
62	SD_A_CMD ⁽⁶⁾	SD1	GPIO2_IO01	IO	33	
63	PWM	PWM1	GPIO5_IO05	IO	133	J11-34
64	SD_A_CLK	SD1	GPIO2_IO00	IO	32	
65	GPIO_J2_65 ⁽³⁾	(SAI2)	(GPIO4_IO27)	IO	(123)	V1.30: J11-10
66	SD_A_DATA0 ⁽⁶⁾	SD1	GPIO2_IO02	IO	34	
67	GPIO_J2_67 ⁽³⁾	GPIO	GPIO1_IO09	IO	9	V1.30: J11-12
68	SD_A_DATA1	SD1	GPIO2_IO03	IO	35	
69	GPIO_J2_69 ⁽³⁾	(SAI2)	(GPIO4_IO25)	IO	(121)	V1.30: J11-14
70	SD_A_DATA2	SD1	GPIO2_IO04	IO	36	
71	GND					
72	SD_A_DATA3	SD1	GPIO2_IO05	IO	37	
73	GPIO_J2_73 ⁽³⁾	(SAI2)	(GPIO4_IO26)	IO	(122)	V1.30: J11-7
74	SD_A_DATA4	SD1	GPIO2_IO06	IO	38	J11-19
75	GPIO_J2_75 ⁽³⁾	SAI3	GPIO4_IO28	IO	124	V1.30: J11-9
76	SD_A_DATA5	SD1	GPIO2_IO07	IO	39	J11-20
77	GPIO_J2_77 ⁽³⁾					
78	SD_A_DATA6	SD1	GPIO2_IO08	IO	40	J11-21

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J2	Function	Device	GPIO	Mode	/sys/class/gpio/gpio#	PCoreBBDSI V1.20/V1.30
79	GPIO_J2_79					
80	SD_A_DATA7	SD1	GPIO2_IO09	IO	41	J11-22
81	GND					
82	GND					
83	SPI_C_SS0 ⁽³⁾	ECSPI2	GPIO5_IO13	IO	141	
84	SD_B_RST ⁽⁵⁾	SD2	GPIO2_IO19	IO	51	J11-35
85	SPI_C_MISO ⁽³⁾	ECSPI2	GPIO5_IO12	IO	140	
86	SD_B_WP	SD2	GPIO2_IO20	IO	52	J11-33
87	SPI_C_MOSI ⁽³⁾	ECSPI2	GPIO5_IO11	IO	139	
88	SD_B_CD	SD2	GPIO2_IO12	IO	44	J11-32
89	SPI_C_SCLK ⁽³⁾	ECSPI2	GPIO5_IO10	IO	138	
90	SD_B_CMD ⁽⁵⁾	SD2	GPIO2_IO14	IO	46	J11-31
91	GND					
92	SD_B_CLK	SD2	GPIO2_IO13	IO	45	J11-30
93	JTAG_TCK	JTAG				
94	SD_B_DATA0 ⁽⁵⁾	SD2	GPIO2_IO15	IO	47	J11-29
95	JTAG_TMS	JTAG				
96	SD_B_DATA1	SD2	GPIO2_IO16	IO	48	J11-28
97	JTAG_TDI	JTAG				
98	SD_B_DAT2	SD2	GPIO2_IO17	IO	49	J11-25
99	JTAG_TDO	JTAG				
100	SD_B_DATA3	SD2	GPIO2_IO18	IO	50	J11-23

- (1) Onboard Pull-Up 2.49k
- (2) Used from DS12LVDS chip if equipped
- (3) Optional, see hardware documentation
- (4) Used internally
- (5) Onboard Pull-Up 100k
- (6) Onboard Pull-Up 10k