TX8M

TX Family Computer On Module

- Processor 1.6GHz Quad ARM® Cortex®-A53 based NXP i.MX 8M Mini
  or 1.4GHz Dual ARM® Cortex®-A53 based NXP i.MX 8M Nano
- RAM 512MB/1GB/2GB DDR3L SDRAM
- ROM 4GB eMMC
- Power supply 3.3V to 5V
- Size 26mm SO-DIMM (MIPI Version)
  28mm SO-DIMM (LVDS Version)
- Grade Industrial
- Temperature -25°C to 85°C



Key Features

- Dual/Quad ARM® Cortex®-A53
- Display support:
  - 1x MIPI DSI (4-lane) display interface (MIPI Version)
  - 1x LVDS display interface (LVDS Version)

  i.MX 8M Mini: GC328 2D GPU, GCNanoUltra 3D GPU, 1080p60 Video de-/encode

  i.MX 8M Nano: GC7000UltraLite 3D GPU

Connectivity

- 10/100Mbps Ethernet
- 2x USB (i.MX8M Mini) / 1x USB (i.MX8M Nano)
- 4x UART, 4x I²C, 3x SPI
- PCIe 2.0 (1-lane, i.MX8M Mini only)
- 3.3V I/O
- 1x MIPI CSI (4-lane) camera interface

OS Support

- Linux
- Windows 10 IoT

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Computer on module

The TX8M is a member of the TXCOM module series, specially designed for i.MX multimedia processors. TXCOM modules are complete computers, implemented on a board smaller than a credit card, and ready to be designed into your embedded system. With a focus on longevity TXCOM modules includes an i.MX processor, power supply and memory.

The i.MX 8M Mini/Nano is NXP's first embedded multi-core heterogeneous applications processors built using advanced 14LPC FinFET process technology. The i.MX 8M Mini/Nano family of processors brings together high-performance computing, power efficiency, enhanced system reliability and embedded security needed to drive the growth of fast-growing edge node computing, streaming multimedia, and machine learning applications.

At the heart is a scalable core complex of up to four Arm® Cortex®-A53 cores plus Cortex®-M4 based real-time processing domain at 400+MHz. i.MX 8M Mini/Nano core options are optimized for low-power but offer the breadth of processing power necessary for consumer, audio, industrial, machine learning training and inferencing across a range of cloud providers. The i.MX 8M Mini also packs-in hardware 1080p video acceleration to enable two-way video applications, 2D and 3D graphics to provide a rich visual HMI experience, and advanced audio capabilities to enable audio-rich applications. An extensive selection of high-speed interfaces enabling broader system connectivity, and targeting industrial level qualification, the i.MX 8M Mini family may be used in any general embedded consumer and industrial application.

- NXP i.MX 8M Mini Quad, 1GB/2GB DDR3L SDRAM
- NXP i.MX 8M Nano Dual, 512MB DDR3L SDRAM
- 4GB eMMC
- DIMM200-module (67,6mm x 26 mm x 4mm)
- Operation temperature up to 105°C (processor junction temp.)

Standard TXCOM pinout:

Highly scalable design options allow a single platform to cover multiple products. Pin-compatible TX modules allow a single PCB as a platform for different features as product needs dictate.

- 4-wire UARTs (x3)
- I2C / PWM
- Serial Audio Interfaces (x2)
- 4-wire SD-Card/SDIO

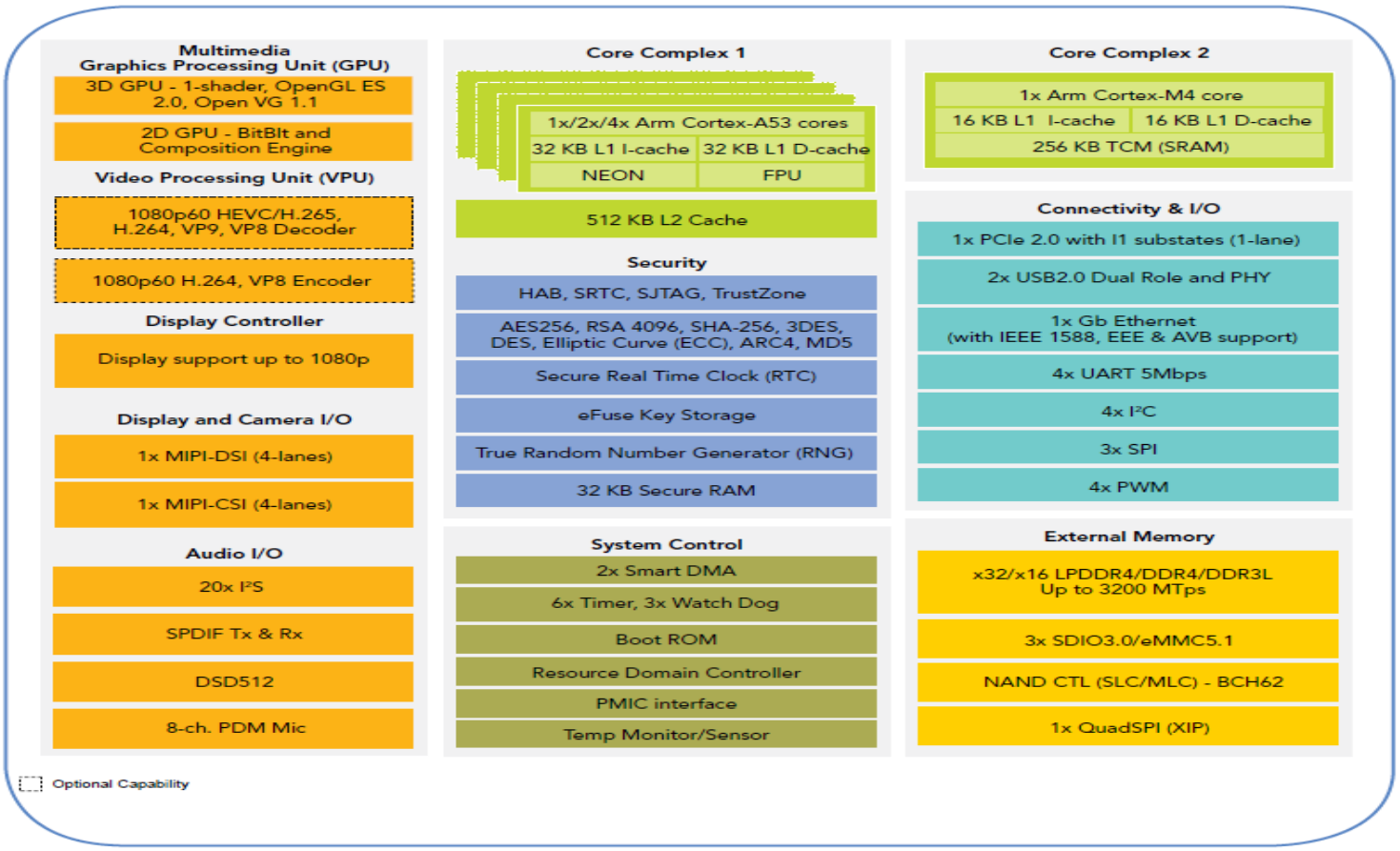
High-Speed communication interfaces incl. onboard Ethernet PHY / on-chip USB PHY allows direct use of connectors/magnetics on the baseboard without the need for additional logic:

- 10/100 Mbps Ethernet
- 480 Mbps USB OTG (Host or Device)
- 480 Mbps USB Host (i.MX8M Mini)

Read more in our TX-Guide:

www.karo-electronics.com/TX-Guide

i.MX 8M MINI FAMILY BLOCK DIAGRAM



Order Number	CPU	SDRAM	Flash	
TX8MMQ/1024S/4GF/E85	1.6 GHz i.MX 8M Mini Quad	1GB	4GB	
TX8MMQ/2048S/4GF/LVDS/E85	1.6 GHz i.MX 8M Mini Quad	2GB	4GB	
TX8MND/512S/4GF/E85	1.4 GHz i.MX 8M Nano Dual	512MB	4GB	

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PINOUT

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
POWER SUPPLY & RESET						
1-4	power	VIN				Module power supply input.
5-7, 9-12	power	VOUT				3.3V power supply output. Supplied by SW7
8	3V3	BOOTMODE				Boot mode select H: Boot from eMMC / L: Boot from UART/USB
13	Not connected					
14						
15	3V3	#RESET_OUT	SD2_RESET_B	USDHC2_RESET_B, SRC_SYSTEM_RESET	GPIO2[19]	#RESET_OUT may be used to reset peripherals on the carrier board. This signal can be controlled by a GPIO function during runtime.
16		#POR	Connected to PMIC: PWRON_B		10K-PU to VIN	Power On Reset — Active low input signal Leave unconnected, if not used.
17	3V3	#RESET_IN	Connected to PMIC: WDOG_B		10K-PU to 3V3	WDOG_B is an active-low input for triggering Cold Reset or Warm Reset. Refer to BD71847MWV Datasheet.
18	GND	GND				
Ethernet						
19	analog	ETN_TXN				Transmit Data Negative: 100Base-TX or 10Base-T differential transmit output to magnetics.
20	3V3	#ETN_LED2				Active low - output is driven active when the operating speed is 100Mbps. This LED will go inactive when the operating speed is 10Mbps or during line isolation.
21	analog	ETN_TXP				Transmit Data Positive: 100Base-TX or 10Base-T differential transmit output to magnetics.
22	power	ETN_3V3				+3.3V analog power supply output to magnetics
23	analog	ETN_RXN				Receive Data Negative: 100Base-TX or 10Base-T differential receive input from magnetics.
24	3V3	#ETN_LED1				Active low - output is driven active whenever the device detects a valid link, and blinks indicating activity.
25	analog	ETN_RXP				Receive Data Positive: 100Base-TX or 10Base-T differential receive input from magnetics.
26	GND	GND				
USB-HOST						
27	3V3	USBH_VBUSEN	GPIO1_IO14	USB2_OTG_PWR, USDHC3_CD_B, PWM3_OUT, CCM_CLKO1	GPIO1[14] 10K-PU	Active high external 5V supply enable. This pin is used to enable the external VBUS power supply.
28	3V3	#USBH_OC	GPIO1_IO15	USB2_OTG_OC, USDHC3_WP, PWM4_OUT, CCM_CLKO2	GPIO1[15] 10K-PU	Active low over-current indicator input connected to a GPIO.
29	analog	USBH_DM	USB2_DN			D- pin of the USB cable
	i.MX8M Nano: Not connected					
30	analog	USBH_VBUS	USB2_VBUS			USB supply voltage
	i.MX8M Nano: Not connected					
31	analog	USBH_DP	USB2_DP			D+ pin of the USB cable
	i.MX8M Nano: Not connected					
32	GND	GND				
USB-OTG						
33	3V3	USBOTG_ID	USB1_ID			
34	3V3	USBOTG_VBUSEN	GPIO1_IO12	USB1_OTG_PWR, SDMA2_EXT_EVENT1	GPIO1[12] 10K-PU	Active high external 5V supply enable. This pin is used to enable the external VBUS power supply.
35	analog	USBOTG_DM	USB1_DN			D- pin of the USB cable
36	3V3	#USBOTG_OC	GPIO1_IO13	USB1_OTG_OC, PWM2_OUT	GPIO1[13] 10K-PU	Active low over-current indicator input connected to a GPIO.
37	analog	USBOTG_DP	USB1_DP			D+ pin of the USB cable
38	analog	USBOTG_VBUS	USB1_VBUS			USB supply voltage
39	GND	GND				
I2C						
40	3V3	I2C_DATA	I2C2_SDA	ENET1_1588_EVENT1_OUT, USDHC3_WP	GPIO5[17]	I2C Data
41	3V3	I2C_CLK	I2C2_SCL	ENET1_1588_EVENT1_IN USDHC3_CD_B	GPIO5[16]	I2C Clock
PWM						
42	3V3	PWM	GPIO1_IO01	PWM1_OUT, XTALOSC_REF_CLK_24M, CCM_EXT_CLK2	GPIO1[01]	PWM Output

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
1-WIRE						
43	3V3	OWDAT	SAI5_MCLK	SAI5_MCLK, SAI1_TX_BCLK	GPIO3[25]	
CSPI – Configurable Serial Peripheral Interface						
44	3V3	CSPI_SS	ECSPI2_SS0	ECSPI2_SS0, UART4_RTS_B	GPIO5[13]	Slave Select (Selectable polarity) signal
45	3V3	CSPI_SS	SD2_WP	USDHC2_WP	GPIO2[20]	Slave Select (Selectable polarity) signal
46	3V3	CSPI_MOSI	ECSPI2_MOSI	ECSPI2_MOSI, UART4_TX	GPIO5[11]	Master Out/Slave In signal
47	3V3	CSPI_MISO	ECSPI2_MISO	ECSPI2_MISO, UART4_CTS_B	GPIO5[12]	Master In/Slave Out signal
48	3V3	CSPI_SCLK	ECSPI2_SCLK	ECSPI2_SCLK, UART4_RX	GPIO5[10]	Serial Clock signal
49	Not connected					
50	GND	GND				
1st SD – Secure Digital Interface						
51	3V3	SD1_CD	SD2_CD_B	USDHC2_CD_B	GPIO2[12]	SD Card Detect
52	3V3	SD1_D[0]	SD2_DATA0	USDHC2_DATA0	GPIO2[15]	SD Data bidirectional signals—If the system designer does not want to make use of the internal pull-up, via the Pull-up enable register, a 50 K–69 K external pull up resistor must be added.
53	3V3	SD1_D[1]	SD2_DATA1	USDHC2_DATA1	GPIO2[16]	
54	3V3	SD1_D[2]	SD2_DATA2	USDHC2_DATA2	GPIO2[17]	
55	3V3	SD1_D[3]	SD2_DATA3	USDHC2_DATA3	GPIO2[18]	
56	3V3	SD1_CMD	SD2_CMD	USDHC2_CMD	GPIO2[14]	SD Command bidirectional signal
57	3V3	SD1_CLK	SD2_CLK	USDHC2_CLK	GPIO2[13]	SD Output Clock.
58	GND	GND				
1st UART						
59	3V3	TXD	UART1_TXD	UART1_TX, ECSPI3_MOSI	GPIO5[23]	Application UART 1 Transmit Data output signal
60	3V3	RXD	UART1_RXD	UART1_RX, ECSPI3_SCLK	GPIO5[22]	Application UART 1 Receive Data input signal
61	3V3	RTS	UART3_TXD	UART3_TX, UART1_RTS_B, USDHC3_VSELECT	GPIO5[27]	Application UART 1 Request to Send **input** signal
62	3V3	CTS	UART3_RXD	UART3_RX, UART1_CTS_B, USDHC3_RESET_B	GPIO5[26]	Application UART 1 Clear to Send **output** signal
2nd UART						
63	3V3	TXD	UART2_TXD	UART2_TX, ECSPI3_SS0	GPIO5[25]	Application UART 2 Transmit Data output signal
64	3V3	RXD	UART2_RXD	UART2_RX, ECSPI3_MISO	GPIO5[24]	Application UART 2 Receive Data input signal
65	3V3	RTS	UART4_TXD	UART4_TX, UART2_RTS_B	GPIO5[29]	Application UART 2 Request to Send **input** signal
66	3V3	CTS	UART4_RXD	UART4_RX, UART2_CTS_B, PCIE1_CLKREQ_B	GPIO5[28]	Application UART 2 Clear to Send **output** signal
3rd UART						
67	3V3	TXD	ECSPI1_MOSI	ECSPI1_MOSI, UART3_TX	GPIO5[07]	Application UART 3 Transmit Data output signal
68	3V3	RXD	ECSPI1_SCLK	ECSPI1_SCLK, UART3_RX	GPIO5[06]	Application UART 3 Receive Data input signal
69	3V3	RTS	ECSPI1_SS0	ECSPI1_SS0, UART3_RTS_B	GPIO5[09]	Application UART 3 Request to Send **input** signal
70	3V3	CTS	ECSPI1_MISO	ECSPI1_MISO, UART3_CTS_B	GPIO5[08]	Application UART 3 Clear to Send **output** signal
71	GND	GND				

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
Module Specific Signals						
72	3V3		SAI5_RXC	SAI5_RX_BCLK, SAI1_TX_DATA1, PDM_CLK	GPIO3[20]	
73	3V3		SAI5_RXD0	SAI5_RX_DATA0, SAI1_TX_DATA2, PDM_BIT_STREAM0	GPIO3[21]	
74	3V3		SAI5_RXD1	SAI5_RX_DATA1, SAI1_TX_DATA3, SAI1_TX_SYNC, SAI5_TX_SYNC, PDM_BIT_STREAM1	GPIO3[22]	
75	3V3		SAI5_RXD2	SAI5_RX_DATA2, SAI1_TX_DATA4, SAI1_TX_SYNC, SAI5_TX_BCLK, PDM_BIT_STREAM2	GPIO3[23]	
76	3V3		SAI5_RXD3	SAI5_RX_DATA3, SAI1_TX_DATA5, SAI1_TX_SYNC, SAI5_TX_DATA0, PDM_BIT_STREAM3	GPIO3[24]	
77	3V3		SAI5_RXFS	SAI5_RX_SYNC, SAI1_TX_DATA0	GPIO3[19]	
78	3V3		SAI2_RXC	SAI2_RX_BCLK, SAI5_TX_BCLK, UART1_RX	GPIO4[22]	
79	3V3		SAI2_RXFS	SAI2_RX_SYNC, SAI5_TX_SYNC, SAI5_TX_DATA1, SAI2_RX_DATA1, UART1_TX	GPIO4[21]	
80	3V3		SAI3_RXC	SAI3_RX_BCLK, GPT1_CLK, SAI5_RX_BCLK, UART2_CTS_B	GPIO4[29]	
81	3V3		SAI3_RXFS	SAI3_RX_SYNC, GPT1_CAPTURE1, SAI5_RX_SYNC, SAI3_RX_DATA1	GPIO4[28]	
82	GND	GND				
1st SSI - Serial Audio Port						
83	3V3	SSI1_INT	SAI2_MCLK	SAI2_MCLK, SAI5_MCLK	GPIO4[27]	
84	3V3	SSI1_RXD	SAI2_RXD0	SAI2_RX_DATA0, SAI5_TX_DATA0, UART1_RTS_B	GPIO4[23]	Serial Audio Interface serial data line 1
85	3V3	SSI1_TXD	SAI2_TXD0	SAI2_TX_DATA0, SAI5_TX_DATA3	GPIO4[26]	Serial Audio Interface serial data line 0
86	3V3	SSI1_CLK	SAI2_TXC	SAI2_TX_BCLK, SAI5_TX_DATA2	GPIO4[25]	Serial Audio Interface serial bit clock
87	3V3	SSI1_FS	SAI2_TXFS	SAI2_TX_SYNC, SAI5_TX_DATA1, SAI2_TX_DATA1, UART1_CTS_B	GPIO4[24]	Serial Audio Interface left/right clock
88	GND	GND				
2nd SSI - Serial Audio Port						
89	3V3	SSI2_INT	SAI3_MCLK	SAI3_MCLK, PWM4_OUT, SAI5_MCLK	GPIO5[02]	
90	3V3	SSI2_RXD	SAI3_RXD	SAI3_RX_DATA0, GPT1_COMPARE1, SAI5_RX_DATA0, UART2_RTS_B	GPIO4[30]	Serial Audio Interface serial data line 1
91	3V3	SSI2_TXD	SAI3_TXD	SAI3_TX_DATA0, GPT1_COMPARE3, SAI5_RX_DATA3	GPIO5[01]	Serial Audio Interface serial data line 0
92	3V3	SSI2_CLK	SAI3_TXC	SAI3_TX_BCLK, GPT1_COMPARE2, SAI5_RX_DATA2, UART2_TX	GPIO5[00]	Serial Audio Interface serial bit clock
93	3V3	SSI2_FS	SAI3_TXFS	SAI3_TX_SYNC, GPT1_CAPTURE2, SAI5_RX_DATA1, SAI3_TX_DATA1, UART2_RX	GPIO4[31]	Serial Audio Interface left/right clock
94	GND	GND				

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
2nd SD – Secure Digital Interface						
95	3V3	SD2_CD	NAND_DATA02	RAWNAND_DATA02, QSPI_A_DATA2, USDHC3_CD_B	GPIO3[08]	
96	3V3	SD2_D[0]	NAND_DATA04	RAWNAND_DATA04, QSPI_B_DATA0, USDHC3_DATA0	GPIO3[10]	
97	3V3	SD2_D[1]	NAND_DATA05	RAWNAND_DATA05, QSPI_B_DATA1, USDHC3_DATA1	GPIO3[11]	
98	3V3	SD2_D[2]	NAND_DATA06	RAWNAND_DATA06, QSPI_B_DATA2, USDHC3_DATA2	GPIO3[12]	
99	3V3	SD2_D[3]	NAND_DATA07	RAWNAND_DATA07, QSPI_B_DATA3, USDHC3_DATA3	GPIO3[13]	
100	3V3	SD2_CMD	NAND_WP_B	RAWNAND_WP_B, USDHC3_CMD	GPIO3[18]	
101	3V3	SD2_CLK	NAND_WE_B	RAWNAND_WE_B, USDHC3_CLK	GPIO3[17]	
102	GND	GND				
Module Specific Signals						
103	3V3		NAND_ALE	RAWNAND_ALE, QSPI_A_SCLK	GPIO3[00]	
104	3V3		NAND_CE0_B	RAWNAND_CE0_B, QSPI_A_SS0_B	GPIO3[01]	
105	3V3		NAND_CE1_B	RAWNAND_CE1_B, QSPI_A_SS1_B, USDHC3_STROBE	GPIO3[02]	
106	3V3		NAND_CE2_B	RAWNAND_CE2_B, QSPI_B_SS0_B, USDHC3_DATA5	GPIO3[03]	
107	3V3		NAND_CE3_B	RAWNAND_CE3_B, QSPI_B_SS1_B, USDHC3_DATA6	GPIO3[04]	
108	3V3		NAND_DATA00	RAWNAND_DATA00, QSPI_A_DATA0	GPIO3[06]	
109	3V3		NAND_DATA01	RAWNAND_DATA01, QSPI_A_DATA1	GPIO3[07]	
110	3V3		NAND_DATA03	RAWNAND_DATA03, QSPI_A_DATA3, USDHC3_WP	GPIO3[09]	
111	GND	GND				
112	3V3		NAND_CLE	RAWNAND_CLE, QSPI_B_SCLK, USDHC3_DATA7	GPIO3[05]	
113	3V3		NAND_DQS	RAWNAND_DQS, QSPI_A_DQS	GPIO3[14]	
114	3V3		NAND_RE_B	RAWNAND_RE_B, QSPI_B_DQS, USDHC3_DATA4	GPIO3[15]	
115	3V3		NAND_READY_B	RAWNAND_READY_B, USDHC3_RESET_B	GPIO3[16]	
116	GND	GND				

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
Camera/Display						
117	MIPI		MIPI_DSI_D2_N			TX8M MIPI Version
	MIPI		MIPI_CSI_D2_N			TX8M LVDS Version
118	MIPI		MIPI_DSI_D1_N			TX8M MIPI Version
	MIPI		MIPI_CSI_D1_N			TX8M LVDS Version
119	MIPI		MIPI_DSI_D2_P			TX8M MIPI Version
	MIPI		MIPI_CSI_D2_P			TX8M LVDS Version
120	MIPI		MIPI_DSI_D1_P			TX8M MIPI Version
	MIPI		MIPI_CSI_D1_P			TX8M LVDS Version
121	MIPI		MIPI_DSI_D3_N			TX8M MIPI Version
	MIPI		MIPI_CSI_D3_N			TX8M LVDS Version
122	MIPI		MIPI_DSI_D0_N			TX8M MIPI Version
	MIPI		MIPI_CSI_D0_N			TX8M LVDS Version
123	MIPI		MIPI_DSI_D3_P			TX8M MIPI Version
	MIPI		MIPI_CSI_D3_P			TX8M LVDS Version
124	MIPI		MIPI_DSI_D0_P			TX8M MIPI Version
	MIPI		MIPI_CSI_D0_P			TX8M LVDS Version
125	MIPI		MIPI_DSI_CLK_N			TX8M MIPI Version
	MIPI		MIPI_CSI_CLK_N			TX8M LVDS Version
126	MIPI		MIPI_CSI_D3_P			TX8M MIPI Version
	LVDS	LVDS0_TX3_P	LVDS0_TX3_P			TX8M LVDS Version
127	MIPI		MIPI_DSI_CLK_P			TX8M MIPI Version
	MIPI		MIPI_CSI_CLK_P			TX8M LVDS Version
128	MIPI		MIPI_CSI_D3_N			TX8M MIPI Version
	LVDS	LVDS0_TX3_N	LVDS0_TX3_N			TX8M LVDS Version
129	GND	GND				
130	MIPI		MIPI_CSI_CLK_P			TX8M MIPI Version
	LVDS	LVDS0_CLK_P	LVDS0_CLK_P			TX8M LVDS Version
131	MIPI		MIPI_CSI_D2_P			TX8M MIPI Version
	LVDS	LVDS0_TX2_P	LVDS0_TX2_P			TX8M LVDS Version
132	MIPI		MIPI_CSI_CLK_N			TX8M MIPI Version
	LVDS	LVDS0_CLK_N	LVDS0_CLK_N			TX8M LVDS Version
133	MIPI		MIPI_CSI_D2_N			TX8M MIPI Version
	LVDS	LVDS0_TX2_N	LVDS0_TX2_N			TX8M LVDS Version
134	MIPI		MIPI_CSI_D1_P			TX8M MIPI Version
	LVDS	LVDS0_TX1_P	LVDS0_TX1_P			TX8M LVDS Version
135	MIPI		MIPI_CSI_D0_P			TX8M MIPI Version
	LVDS	LVDS0_TX0_P	LVDS0_TX0_P			TX8M LVDS Version
136	MIPI		MIPI_CSI_D1_N			TX8M MIPI Version
	LVDS	LVDS0_TX1_N	LVDS0_TX1_N			TX8M LVDS Version
137	MIPI		MIPI_CSI_D0_N			TX8M MIPI Version
	LVDS	LVDS0_TX0_N	LVDS0_TX0_N			TX8M LVDS Version
138 139 140 141	Not connected					

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
142	GND	GND				
143	3V3		SPDIF_RX	SPDIF1_IN, PWM2_OUT	GPIO5[04]	
144	3V3		SPDIF_TX	SPDIF1_OUT, PWM3_OUT	GPIO5[03]	
145	Not connected					
146	3V3		SPDIF_EXT_CLK	SPDIF1_EXT_CLK, PWM1_OUT	GPIO5[05]	
147	GND	GND				
Module Specific Signals						
148	3V3		I2C3_SCL	I2C3_SCL, PWM4_OUT, GPT2_CLK	GPIO5[18]	
149	3V3		I2C3_SDA	I2C3_SDA, PWM3_OUT, GPT3_CLK	GPIO5[19]	
150	3V3		I2C4_SCL	I2C4_SCL, PWM2_OUT, PCIE1_CLKREQ_B	GPIO5[20]	
151	3V3		I2C4_SDA	I2C4_SDA, PWM1_OUT	GPIO5[21]	
152	3V3		GPIO1_IO00	CCM_ENET_PHY_REF_CLK_ROOT, XTALOSC_REF_CLK_32K, CCM_EXT_CLK1	GPIO1[00]	
153	3V3		GPIO1_IO02	WDOG1_WDOG_B, WDOG1_WDOG_ANY, SJC_DE_B	GPIO1[02]	
154	3V3		GPIO1_IO04	USDHC2_VSELECT, SDMA1_EXT_EVENT1	GPIO1[04]	
155	3V3		GPIO1_IO05	M4_NMI, CCM_PMIC_READY	GPIO1[05]	
156	3V3		GPIO1_IO06	ENET1_MDC, USDHC1_CD_B, CCM_EXT_CLK3	GPIO1[06]	
157	3V3		GPIO1_IO07	ENET1_MDIO, USDHC1_WP, CCM_EXT_CLK4	GPIO1[07]	
158	3V3		GPIO1_IO08	ENET1_1588_EVENT0_IN USDHC2_RESET_B	GPIO1[08]	
159	3V3		GPIO1_IO09	ENET1_1588_EVENT0_OUT, USDHC3_RESET_B, SDMA2_EXT_EVENT0	GPIO1[09]	
160	GND	GND				
161	3V3		GPIO1_IO10	USB1_OTG_ID	GPIO1[10]	
162	3V3		GPIO1_IO11	USB2_OTG_ID, USDHC3_VSELECT, CCM_PMIC_READY	GPIO1[11]	
163 164 165	Not connected					
166	LVDS		PCIE_CLK_P			i.MX8M Nano: Not connected
167	LVDS		PCIE_RXN_N			
168	LVDS		PCIE_CLK_N			
169	LVDS		PCIE_RXN_P			
170	LVDS		PCIE_TXN_N			
171	GND	GND				
172	LVDS		PCIE_TXN_P			i.MX8M Nano: Not connected
173 174 175 176 177	Not connected					

PIN	Type	TX Standard	i.MX8MM Pad Name	Alternate functions	GPIO	Description (refer to i.MX8MM manuals for details)
178	3V3		SAI1_RXFS	SAI1_RX_SYNC, SAI5_RX_SYNC, CORESIGHT_TRACE_CLK	GPIO4[00]	i.MX8M Nano: Not connected
179	3V3		SAI1_TXFS	SAI1_TX_SYNC, SAI5_TX_SYNC, CORESIGHT_EVENTO	GPIO4[10]	
180	3V3		SAI1_RXC	SAI1_RX_BCLK, SAI5_RX_BCLK, CORESIGHT_TRACE_CTL	GPIO4[01]	
181	3V3		SAI1_TXC	SAI1_TX_BCLK, SAI5_TX_BCLK, CORESIGHT_EVENTI	GPIO4[11]	
182	3V3		SAI1_MCLK	SAI1_MCLK, SAI5_MCLK, SAI1_TX_BCLK, PDM_CLK	GPIO4[20]	
183	GND	GND				
184	3V3		SAI1_RXD0	SAI1_RX_DATA0, SAI5_RX_DATA0, SAI1_TX_DATA1, PDM_BIT_STREAM0, CORESIGHT_TRACE0	GPIO4[02]	i.MX8M Nano: Not connected
185	3V3		SAI1_RXD1	SAI1_RX_DATA1, SAI5_RX_DATA1, PDM_BIT_STREAM1, CORESIGHT_TRACE1	GPIO4[03]	
186	3V3		SAI1_RXD2	SAI1_RX_DATA2, SAI5_RX_DATA2, PDM_BIT_STREAM2, CORESIGHT_TRACE2	GPIO4[04]	
187	3V3		SAI1_RXD3	SAI1_RX_DATA3, SAI5_RX_DATA3, PDM_BIT_STREAM3, CORESIGHT_TRACE3	GPIO4[05]	
188	3V3		SAI1_RXD4	SAI1_RX_DATA4, SAI6_TX_BCLK, SAI6_RX_BCLK, CORESIGHT_TRACE4	GPIO4[06]	
189	3V3		SAI1_RXD5	SAI1_RX_DATA5, SAI6_TX_DATA0, SAI6_RX_DATA0, SAI1_RX_SYNC, CORESIGHT_TRACE5	GPIO4[07]	
190	3V3		SAI1_RXD6	SAI1_RX_DATA6, SAI6_TX_SYNC, SAI6_RX_SYNC, CORESIGHT_TRACE6	GPIO4[08]	
191	3V3		SAI1_RXD7	SAI1_RX_DATA7, SAI6_MCLK, SAI1_TX_SYNC, SAI1_TX_DATA4, CORESIGHT_TRACE7	GPIO4[09]	
192	3V3		SAI1_TXD0	SAI1_TX_DATA0, SAI5_TX_DATA0, CORESIGHT_TRACE8	GPIO4[12]	
193	3V3		SAI1_TXD1	SAI1_TX_DATA1, SAI5_TX_DATA1, CORESIGHT_TRACE9	GPIO4[13]	
194	3V3		SAI1_TXD2	SAI1_TX_DATA2, SAI5_TX_DATA2, CORESIGHT_TRACE10	GPIO4[14]	
195	3V3		SAI1_TXD3	SAI1_TX_DATA3, SAI5_TX_DATA3, CORESIGHT_TRACE11	GPIO4[15]	
196	3V3		SAI1_TXD4	SAI1_TX_DATA4, SAI6_RX_BCLK, SAI6_TX_BCLK, CORESIGHT_TRACE12	GPIO4[16]	
197	3V3		SAI1_TXD5	SAI1_TX_DATA5, SAI6_RX_DATA0, SAI6_TX_DATA0, CORESIGHT_TRACE13	GPIO4[17]	i.MX8M Nano: Not connected
198	3V3		SAI1_TXD6	SAI1_TX_DATA6, SAI6_RX_SYNC, SAI6_TX_SYNC, CORESIGHT_TRACE14	GPIO4[18]	
199	3V3		SAI1_TXD7	SAI1_TX_DATA7, SAI6_MCLK, PDM_CLK, CORESIGHT_TRACE15	GPIO4[19]	
200	GND	GND				