Technical Reference Manual

NXP i.MX8 Reference Design:

2 Channel MIPI CSI-2 Carrier Board with i.MX 8M Plus SoM

CBM-TDX-V-I8P-8-32-PW

THE IMAGINGSOURCE
TECHNOLOGY BASED ON STANDARDS

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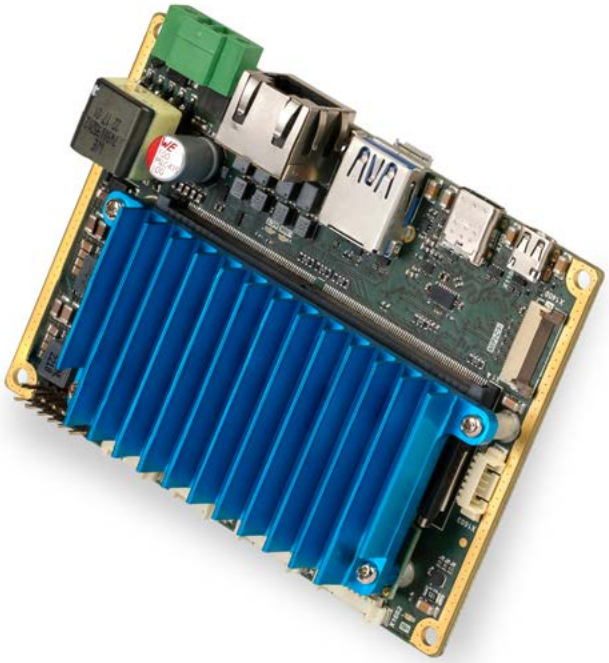


Fig. 1 NXP i.MX8 Reference Design, 2-Channel MIPI CSI-2 Carrier Board with i.MX 8M Plus 4 GB SoM

Technical Changes

The Imaging Source Europe GmbH reserves the right to change and adapt the information, designs and technical data contained in this documentation without prior notice.

Revision History

The following versions of this manual have been published:

Version	Description
November 2024, V0.6	Prototype
February 2025, v0.7	Minor text changes

Main Features

Form Factor	100 x 72mm (Pico ITX)
SOM Details	Verdin Family – iMX8M Mini / iMX8M Plus /AM62
Operating System	Linux (Yocto) / Torizon
Configuration Options	Available upon request

Interfaces and Interface Details

Interface	**Interface (IO-Shield Board Edge)**	**Standard**	**Optional**
	1xPoE Ethernet 1000 Mbit with TSN (RJ45)	✓	
	1x Micro USB Debugger	✓	
	1 x Micro HDMI	✓	
	1x USB-C 3.0 – Dual Role (Recovery)	✓	
	1x USB-A 3.0 - Host	✓	
	1x Input Power (MC 1,5/ 2-GF-3,5 AU)	✓	
Additional Interfaces	**Interface**	✓	
	1x MIPI-DSI (22-Pin FPC)	✓	
	2x MIPI-CSI (22-Pin FPC)	✓	
	1x I^2C / SPI (Picoblade 8 pos.)	✓	
	1x Debug (2x6 Pos. Pin-Header)	✓	
	1x UART (Picoblade 8 pol.)	✓	
	1x Camera IO (Picoblade 5 pos.)	✓	
	1x External IO (Picoblade 6 pos.)	✓	
	1x NVMe M.2 Key-M	✓	
	1x Power (JST-B4B-PH 4 pos.)	✓	

Aux Power Supply

Socket type: **MC1.5/ 2-GF-3.5 AU**

Pin	Description
1	GND
2	+V_AUX_IN

Parameter Name	Min	Typ	Max	Tol	Unit
Input voltage	12	-	+48	±10%	V
Overcurrent protection	-	-	8	-	A
Recommended input voltage	-	24	-	-	V

Vin [V]	n	Pout [W]
+48	±10%	V
8	-	A
-	-	V

Note	
	Technical Information: A slow-blow SMD fuse is installed as overcurrent protection.

RTC Backup Supply

A backup battery holder (BAT300) is available on the Pico-ITX carrier board. It supplies the Verdin module's RTC with backup power when the main power supply is switched off.

Supported batteries: CR1025 or compatible button batteries.

Ethernet Connector with PoE

ETH1 connector RJ45 (X800)
Würth Elektronik (615008160221)

The pin assignments for 8 pin RJ45 connector are shown in the table below.

Pin	Connection
1	D0+
2	D0-
3	D1+
4	D2+
5	D2-
6	D1-
7	D3+
8	D3-

PoE Classification

As soon as the PoE voltage is detected, the IC classifies the voltage supplied via the PoE power supply unit (PSE).

If an external voltage (AUX) is added, which is in the classified voltage window (stable +12V DC), the LT4275A will prioritize switching to the AUX voltage.

USB 1 Interface Type-C Connector

The USB-C port X700 is connected to the USB_1 port. Native USB 2.0 is available, USB SuperSpeed (3.0) is type-specific.

The USB port can be used in recovery mode to enable software loading onto the module by acting as a dual-role port (DRP) for both host and client.

The DRP port has a maximum output current of 1A.

Pin	Signal	
A1	GND	PWR
A2	USB1_SSTX1_CON_P	IO
A3	USB1_SSTX1_CON_N	IO
A4	USB_1_VBUS	PWR
A5	USB_1_CC1	
A6	USB_1_D_CON_P	IO
A7	USB_1_D_CON_N	IO
A8	NC	
A9	USB_1_VBUS	PWR
A10	USB1_SSRX2_CON_N	IO
A11	USB1_SSRX2_CON_P	
A12	GND	PWR
B1	GND	PWR
B2	USB1_SSTX2_CON_P	IO
B3	USB1_SSTX2_CON_N	IO
B4	USB_1_VBUS	PWR
B5	USB_1_CC2	
B6	USB_1_D_CON_P	IO
B7	USB_1_D_CON_N	IO
B8	NC	
B9	USB_1_VBUS	PWR
B10	USB1_SSRX1_CON_N	IO
B11	USB1_SSRX1_CON_P	IO
B12	GND	PWR
SH1/SH2	GND_CHASSIS	PWR
SH3/SH4	GND_CHASSIS	PWR

USB 2 Interface Type-A Connector

The carrier board provides 1 xUSB 3.x (X600) and supports USB 3.2 Gen 1 and USB 2.0 standards.

Maximum output current 1A.

Pin	Signal	IO Type
1	USB_2_VBUS	PWR
2	USB_2_D_CON_N	IO
3	USB_2_D_CON_P	IO
4	GND	PWR
5	USB_2_SSRX_CON_N	IO
6	USB_2_SSRX_CON_P	IO
7	GND	PWR
8	USB_2_SSTX_CON_N	IO
9	USB_2_SSTX_CON_P	IO

USB Debugger

The carrier board has an FTDI, which enables debugging via USB.

The debugger is based on the FTDI-FT230XQ and has the following features:

- 1x UART port, connected to the debug output of the Cortex-A
- 2x GPIO for controlling board reset and module recovery

The pin assignments of the FT230XQ are shown in the table below.

Pin	Pin Name	IO Type	Interface	Controlled signal	Description
15	TXD	I	UART	FTDI_UART_3_TXD	Transmitter data of Cortex-A debug UART
2	RXD	O	UART	FTDI_UART_3_RXD	Receiver data of Cortex-A debug UART
12	CBUS0	O	GPIO	FTDI_DBG_RESET#	Verdin module RESET
14	CBUS3	O	GPIO	FTDI_DBG_RECOVERY#	Verdin module RECOVERY mode

For reset and recovery, an optional variant can be selected.
Instead of CBUS0 (pin 12) and CBUS3 (pin 14), the pins RTS# (pin 16) and CTS# (pin 4) can be used.

To do this, R902 (CBUS0) and R903 (CBUS3) must be desoldered and replaced by R900 (RTS#) and R901 (CTS#).

Connector type: Micro-AB USB, Würth Elektronik 629105150921.

Pin	Signal	IO Type
1	VCC_USB_SDBG	PWR
2	USB_DBG_CON_N	IO
3	USB_DBG_CON_P	IO
4	NC	
5	GND	PWR
S1,S2,S3,S4	GND_CHASSIS	FE

Power, Reset und Debug Connector

Parallel to USB debug, the carrier board has a 2.54mm, 2x6 pin header (X400) that provides further system CTL signals in addition to the debug UART

Pin	Signal	IO Type	Signal Voltage
A1	PWR_BTN#	IO (OD)	100k to +1.9V
B1	GND	PWR	0V
A2	CTRL_RECOVERY_MICO	IO (OD)	Open Drain +1.8V (on SoM)
B2	GND	PWR	0V
A3	CTRL_RESET_MICO	IO (OD)	Open Drain +1.8V (on SoM)
B3	GND	PWR	0V
A4	CTRL_AUTO_ON	I	100k to +5V
B4	GND	PWR	0V
A5	FTDI_UART_3_TXD	I	+3V3
B5	FTDI_UART_3_RXD	O	+3V3
A6	Power LED+	PWR	+5V
B6	Power LED-	O (OC)	Open-Collector Heartbeat Signal (330R) SODIMM 17

I²C / SPI Connector

The carrier board provides an 8 pin Picoblade (X1604) 1.25mm pitch with SPI and I²C bus.
connector type: CONN HEADER SMD R/A 8POS 1.25MM

Manufacturer: Würth Elektronik
Manufacturer Part No.: 653108131822

The pin assignments for the 8 pin connector are shown in the table below.

Pin	Connection	Type	SODIMM	Signal Voltage 3V3 (default)	Signal Voltage 5V	Description
1	I²C_1_SDA	IO	12	Resistor R1604	Resistor R1603	I²C_1 Data
2	I²C_1_SCL	IO	14			I²C_1 Clock
3	GND	PWR				
4	SPI_1_CLK	O	196	Resistor R1602	Resistor R1600	Clock
5	SPI_1_MISO	I	198			Master-In
6	SPI_1_MOSI	O	200			Master-Out
7	SPI_1_CS	O	202			Select
8	GND	PWR				

UART Connector X1602

The carrier board has an 8 pin Picoblade 1.25mm (X1602) pitch connector through which universal asynchronous receiver-transmitter signals are accessible.

Connector type: CONN HEADER SMD R/A 8POS 1.25MM
Manufacturer: Würth Elektronik
Manufacturer Part No.: 653108131822

The pin assignments for the 8 pin connector are shown in the table below.

Pin	Connection	Type	SODIMM	Signal Voltage 3V3 (default)	Signal Voltage 5V	Description
1	UART_2_TXD_CON	O	139	Resistor R1622	Resistor R1611	UART 2 Transmit Data
2	UART_2_RXD_CON	I	137			UART 2 Receive Data
3	GND	PWR				
4	UART_1_TXD_CON	O	131	Resistor R1623	Resistor R1612	UART 1 Transmit Data
5	UART_1_RXD_CON	I	129			UART 1 Receive Data
6	UART_1_RTS_CONI	I	133			UART 1 Request to Send
7	UART_1_CTS_CON	O	135			UART 1 Clear to Send
8	GND	PWR				

CAN Connector

The carrier board provides a 6 pin Picoblade 1.25mm pitch (X1603) with CAN signals.

Connector type: CONN HEADER SMD R/A 6POS 1.25MM
Manufacturer: Würth Elektronik
Manufacturer Part No.: 653106131822

The pin assignments for the 6 pin connector are shown in the table below.

Pin	Connection	Type	SODIMM	Signal Voltage 3V3 (default)	Signal Voltage 5V	Description
1	CAN_1_TX	O	20	R1624	R1616	CAN port 1 transmit pin
2	CAN_1_RX	I	22			CAN port 1 receive pin
3	GND	PWR				
4	CAN_2_TX	O	24			CAN port 2 transmit pina
5	CAN_2_RX	I	26			CAN port 2 receive pin
6	GND	PWR				

PCIe

The carrier board has a standard PCIe interface with M.2 Key-M slot. The following bus is available:

- PCI Express 1 lane

Mountable sizes: 2230, 2242, 2252, 3042, 3052

M.2 connector (X1500)

Connector type: M.2 key M, Amphenol MDT420M01001

The pin assignments for the M.2 connector are shown in the table below.

Pin	Pin Name	IO Type	SODIMM	Voltage	Description
1	CONFIG_3	I	NC		Defines module type
2	+V3.3_SW	PWR		+3.3V	+3.3V input power
3	GND	PWR			
4	+V3.3_SW	PWR		+3.3V	+3.3V input power
5	PERn3	IO	N/A		PCIe Lane 3 Rx
6	N/A				
7	PERp3	IO	N/A		
8	N/A				
9	GND	PWR			
10	DAS/DSS	O			Device Activity Signal
11	PETn3	IO	N/A		
12	+V3.3_SW	PWR		+3.3V	+3.3V input power
13	PETp3		N/A		
14	+V3.3_SW	PWR		+3.3V	+3.3V input power
15	GND	PWR			
16	+V3.3_SW	PWR		+3.3V	+3.3V input power
17	PERn2		N/A		
18	+V3.3_SW	PWR		+3.3V	+3.3V input power
19	PERp2		N/A		
20	N/A				
21	CONFIG_0		NC		Defines module type
22	N/A				
23	PETn2		N/A		
24	N/A				
25	PETp2		N/A		
26	N/A				
27	GND	PWR			
28	N/A				
29	PERn1				
30	N/A				
31	PERp1				
32	N/A				
33	GND	PWR			
34	N/A				
35	PETn1	N/A			
36	N/A				
37	PETp1	N/A			
38	DEVSLP	NC			
39	GND	PWR			
40	N/A				
41	PCIE_1_L0_RX_N	O	232		
42	N/A				
43	PCIE_1_L0_RX_P	O	234		
44	N/A				

Pin	Pin Name	IO Type	SODIMM	Voltage	Description
45	GND	PWR			
46	N/A				
47	PCIE_1_L0_TX_N	I	238		
48	N/A				
49	PCIE_1_L0_TX_P	I	240		
50	PERST#	I (OD)	244	10k to +V3.3_SW	
51	GND	PWR			
52	CLKREQ#	NC			
53	PCIE_1_CLK_N	I	226		
54	PEWAKE#		252		
55	PCIE_1_CLK_P	I	228		
56	NC				
57	GND	PWR			
58	NC				
59 - 66	Removed				Mechanical notch M
67	N/A				
68	SUSCLK		NC		
69	CONFIG_1			10k to +V3.3_SW	Defines module type
70	+V3.3_SW	PWR		+3.3V	+3.3V input power
71	GND	PWR			
72	+V3.3_SW	PWR		+3.3V	+3.3V input power
73	GND	PWR			
74	+V3.3_SW	PWR		+3.3V	+3.3V input power
75	CONFIG_2		NC		Defines module type

External Power Connector

The carrier board provides 1 x 4 pin 2mm WR-WTB (EQ: JST - B4B-PH) connector (X1605) for external power supply.

Connector type: CONN HEADER SMD R/A 4POS 2MM
Manufacturer: Würth Elektronik
Manufacturer Part No.: 620104131822

The connector can be loaded up to a maximum output current of 2A per voltage maximum output current of 2A.

Pin	Pin Name	Voltage
1	+3V3_EXT	+3.3V
2	GND	
3	+5V_EXT	+5V
4	GND	

Note	
	Important Note: Please note that the voltage on connector X1605 do not have a current limit.

Camera IO Connector

The carrier board provides 4x GPIOs via the camera IO connector (X1600), whereby pins 3 and 4 capture an external camera trigger signal, which is connected to pin 18 of the MIPI-CSI interfaces.

Connector type: CONN HEADER SMD R/A 5POS 1.25MM,
Würth Elektronik 653105131822

The pin assignments for camera's IO connector shown in the table below.

Pin	Signal	IO Type	SODIMM	Voltage	Pull-up/ Pull-down	Description
1	GPIO_1_STROBE_CAM0_CON	O	206	+3.3V		Strobe signal from camera 0
2	GPIO_3_STROBE_CAM1_CON	O	210	+3.3V		Strobe signal from camera 1
3	EXT_TRIGGER_CAM0_CON	I		+3.3V		External camera trigger signal to OR gate CAM0
4	EXT_TRIGGER_CAM1_CON	I		+3.3V		External camera trigger signal to OR gate CAM1
5	GND	PWR				

External IO Connector

The carrier board provides 4x GPIOs via an external IO connector (X1601).

Connector type: CONN HEADER SMD R/A 6POS 1.25MM,
Würth Elektronik 653106131822

The pin assignments for the external IO connector are shown in the table below.

Pin	Signal	IO Type	SODIMM	Signal Voltage 3V3 (default)	Signal Voltage (5V)	Description
1	GPIO_5_CSI_CON	IO	216	R1609	R1606	
2	GPIO_6_CSI_CON	IO	218			
3	GND	PWR				
4	GPIO_7_CSI_CON	IO	220			
5	GPIO_8_CSI_CON	IO	222			
6	GND	PWR				

MIPI CSI Camera Interface 1 (Native)

The MIPI CSI camera interface on connector X1200 is intended for applications requiring image capture from CMOS or CCD image sensors.

For details, please see the Verdin module datasheet:

I²C select for camera interface 1

Signal	IO Type	SODIMM	Voltage	Pull-up/Pull-down	IC 1204 - Select Control CAM1
I²C_4_SEL	O	21	+1.8V	10k to +V3.3_SW	SEL = H

MIPI CSI Camera 1 Connector (X1200)

Connector Type: WR-FPC 0.50mm SMT Horiz. Bot. Contact Hinge type,

Würth Elektronik 687122149022

The pin assignments for the MIPI CSI Camera 1 connector are shown in the table below.

Pin	Signal Name	IO Type	SODIMM	Voltage	Pull-up/Pull-down	Description
1	GND	PWRI				
2	CSI_1_D0_CON_N	I	125			Negative differential MIPI CSI data signal, lane 0
3	CSI_1_D0_CON_P	I	123			Positive differential MIPI CSI data signal, lane 0
4	GND	PWR				
5	CSI_1_D1_CON_N	I	119			Negative differential MIPI CSI data signal, lane 1
6	CSI_1_D1_CON_P	I	117			Positive differential MIPI CSI data signal, lane 1
7	GND	PWR				
8	CSI_1_CLK_CON_N		113			Negative differential MIPI CSI data signal
9	CSI_1_CLK_CON_P		111			Positive differential MIPI CSI reference clock signal
10	GND	PWR				
11	CSI_1_D2_CON_N	I	107			Negative differential MIPI CSI reference clock signal
12	CSI_1_D2_CON_P	I	105			Positive differential MIPI CSI data signal, lane 2
13	GND	PWR				
14	CSI_1_D3_CON_N	I	101			Negative differential MIPI CSI data signal, lane 3
15	CSI_1_D3_CON_P	I	99			Positive differential MIPI CSI data signal, lane 3
16	GND	PWR				
17	TRIGGER_CAM0	O	212	+3.3V		GPIO_4_TRIGGER_CAM0_CONOR EXT_TRIGGER_CAM0_CON
18	GPIO_1_STROBE_CAM0_CON	I	54	+3.3V		
19	GND	PWR				
20	I²C_4_CSI_SCL_NATIVE	IO	95	+3.3V	1k8 to +V3.3_SW	
21	I²C_4_CSI_SDA_NATIVE	IO	93	+3.3V	1k8 to +V3.3_SW	
22	+V3.3_SW	PWR		+3.3V		+3.3V power out

MIPI CSI Camera Interface 2 (Type Specific)

The MIPI CSI camera interface on connector X1300 is intended for applications requiring image capture from CMOS or CCD image sensors.
For details, please see the Verdin module datasheet.

I²C select for camera interface 2

Signal	IO Type	SODIMM	Voltage	Pull-up/Pull-down	IC 1204 - Select Control CAM1
I²C_4_SEL	O	21	+1.8V	10k to +V3.3_SW	SEL = L

MIPI CSI Camera 2 Connector (X1300)

Connector Type: WR-FPC 0.50mm SMT Horiz. Bot. Contact Hinge type,

Würth Elektronik 687122149022

The pin assignments for MIPI CSI Camera 2 connector are shown in the table below.

Pin	Signal Name	IO Type	SODIMM	Voltage	Pull-up/Pull-down	Description
1	GND	PWRI				
2	CSI_2_D0_CON_N	I	148			Negative differential MIPI CSI data signal, lane 0
3	CSI_2_D0_CON_P	I	150			Positive differential MIPI CSI data signal, lane 0
4	GND	PWR				
5	CSI_2_D1_CON_N	I	154			Negative differential MIPI CSI data signal, lane 1
6	CSI_2_D1_CON_P	I	156			Positive differential MIPI CSI data signal, lane 1
7	GND	PWR				
8	CSI_2_CLK_CON_N		160			Negative differential MIPI CSI data signal
9	CSI_2_CLK_CON_P		162			Positive differential MIPI CSI reference clock signal
10	GND	PWR				
11	CSI_2_D2_CON_N	I	166			Negative differential MIPI CSI reference clock signal
12	CSI_2_D2_CON_P	I	168			Positive differential MIPI CSI data signal, lane 2
13	GND	PWR				
14	CSI_2_D3_CON_N	I	172			Negative differential MIPI CSI data signal, lane 3
15	CSI_2_D3_CON_P	I	174			Positive differential MIPI CSI data signal, lane 3
16	GND	PWR				
17	TRIGGER_CAM1	O		+3.3V		GPIO_2_TRIGGER_CAM1_CON OR EXT_TRIGGER_CAM1_CON
18	GPIO_3_STROBE_CAM1_CON	IO	58	+3.3V		
19	GND	PWR				
20	I²C_4_CSI_SCL_S	IO	95	+3.3V	1k8 to +V3.3_SW	
21	I²C_4_CSI_SDA_S	IO	93	+3.3V	1k8 to +V3.3_SW	
22	GND	PWR		+3.3V		+3.3V power out

Display Interface

The carrier board provides two display connection options.

- MIPI-DSI
- HDMI

MIPI DSI Connector (X1400)

Connector Type: WR-FPC 0.50mm SMT Horiz. Bot. Contact Hinge type,
Würth Elektronik 687122149022

The pin assignments for the MIPI DSI connector are shown in the table below.

Pin	Signal Name	IO Type	SODIMM	Voltage	Pull-up/Pull-down	Description
1	GND	PWR				
2	DSI_1_D0_CON_N	O	47			Negative differential MIPI DSI data signal, lane 0
3	DSI_1_D0_CON_P	O	49			Positive differential MIPI DSI data signal, lane 0
4	GND	PWR				
5	DSI_1_D1_CON_N	O	43			Negative differential MIPI DSI data signal, lane 1
6	DSI_1_D1_CON_P	O	41			Positive differential MIPI DSI data signal, lane 1
7	GND	PWR				
8	DSI_1_CLK_CON_N	O	35			Negative differential MIPI DSI data signal
9	DSI_1_CLK_CON_P	O	37			Positive differential MIPI DSI reference clock signal
10	GND	PWR				
11	DSI_1_D2_CON_N	O	29			Negative differential MIPI DSI reference clock signal
12	DSI_1_D2_CON_P	O	31			Positive differential MIPI DSI data signal, lane 2
13	GND	PWR				
14	DSI_1_D3_CON_N	O	23			Negative differential MIPI DSI data signal, lane 3
15	DSI_1_D3_CON_P	O	25			Positive differential MIPI DSI data signal, lane 3
16	GND	PWR				
17	NC					
18	NC					
19	GND	PWR				
20	I²C_2_DSI_SCL_CON	IO	55	+3.3V	1k8 to +V3.3_SW	
21	I²C_2_DSI_SDA_CON	IO	53	+3.3V	1k8 to +V3.3_SW	
22	+V3.3_SW	PWR		+3.3V		+3.3V power out

HDMI Connector (X1100)

Connector Type: CONN RCP MICRO HDMI 19POS SMD RA,

Würth Elektronik 685119248123

The pin assignments for the Micro-HDMI connector are shown in the table below.

Pin	Signal Name	IO Type	SODIMM	Voltage	Pull-up/Pull-down	Description
1	HDMI_1_TXD2_L_P	O	87			Positive differential HDMI data signal, lane 2
2	GND	PWR				
3	HDMI_1_TXD2_L_N	O	85			Negative differential HDMI data signal, lane 2
4	HDMI_1_TXD1_L_P	O	81			Positive differential HDMI data signal, lane 1
5	GND	PWR				
6	HDMI_1_TXD1_L_N	O	79			Negative differential HDMI data signal, lane 1
7	HDMI_1_TXD0_L_P	O	75			Positive differential HDMI data signal, lane 0
8	GND	PWR				
9	HDMI_1_TXD0_L_N	O	73			Negative differential HDMI data signal, lane 0
10	HDMI_1_TXC_L_P	O	69			Positive differential HDMI reference clock signal
11	GND	PWR				
12	HDMI_1_TXC_L_N	O	67			Negative differential HDMI reference clock signall
13	HDMI_1_CEC_CON		63		27k to +V3.3_SW	HDMI consumer electronic control
14	NC					Not connected
15	HDMI_1_DDC_SCL		59	+5V	1.8k to +V5_HDMI_1_DISP	DDC interface clock
16	HDMI_1_DDC_SDA		57	+5V	1.8k to +V5_HDMI_1_DISP	DDC interface data
17	GND	PWR				
18	+V5_HDMI_1_DISP	PWR		+5V		HDMI power out
19	HDMI_1_HPD_CON	I	61			HDMI hot plug detect
S1,S2	GND_CHASSIS	FE				
S3,S4	GND_CHASSIS	FE				

Temperature Sensor

The carrier board provides a digital temperature sensor, with an I²C interface.
This is a useful feature for remote equipment monitoring.

Sensor	Sensor Location	Address
1	Carrier Board	I²C_1 0x44

EEPROM

A 2-Kbit EEPROM (IC1000) with I^2C interface is installed on the carrier board.

The EEPROM can be used to store important data or for board identification.

Technical details on the EEPROM can be found in data sheet M24C02-FMN6TP.

The EEPROM can be accessed via the address 0x57 on the generic serial bus I2C_1.

GPIO3_IO20 can be used to deactivate the EEPROM write protection.

Signal Name	IO Type	SODIMM	Voltage	Pull-up/Pull-down	Description
WC	O	19	+1.8V	100k to 1.8V_SW	Set GPIO to logical "0" to deactivate write protection

User LED (Heartbeat)

A red user LED is installed on the carrier board (LED 402) that can be used to output a kernel heartbeat.

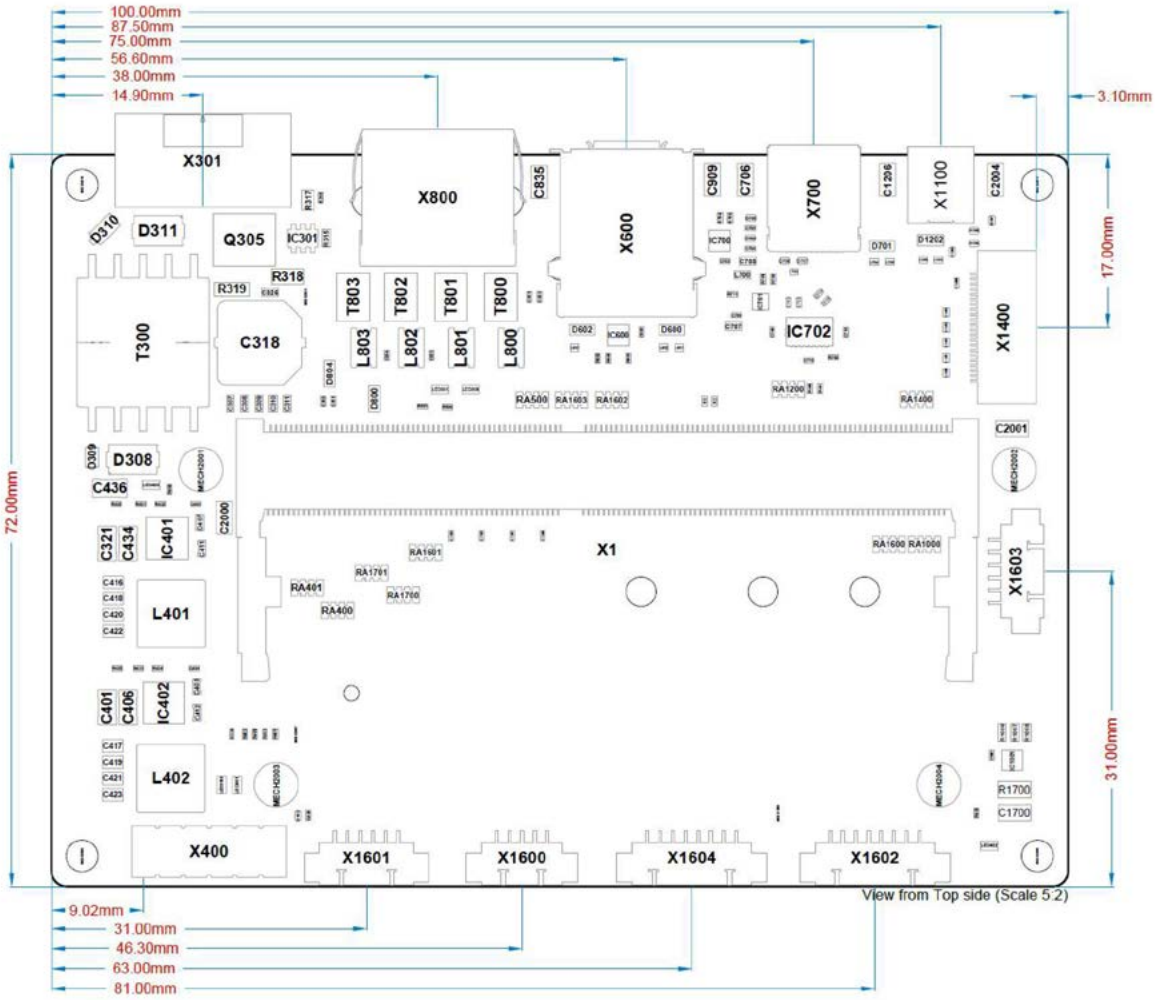
Signal Name	IO Type	SODIMM	Pull-up/Pull-down	Description
HEARTBEAT_LED	O	17		LED "double" flashes at a load average based rate

Technical and Environmental Specifications

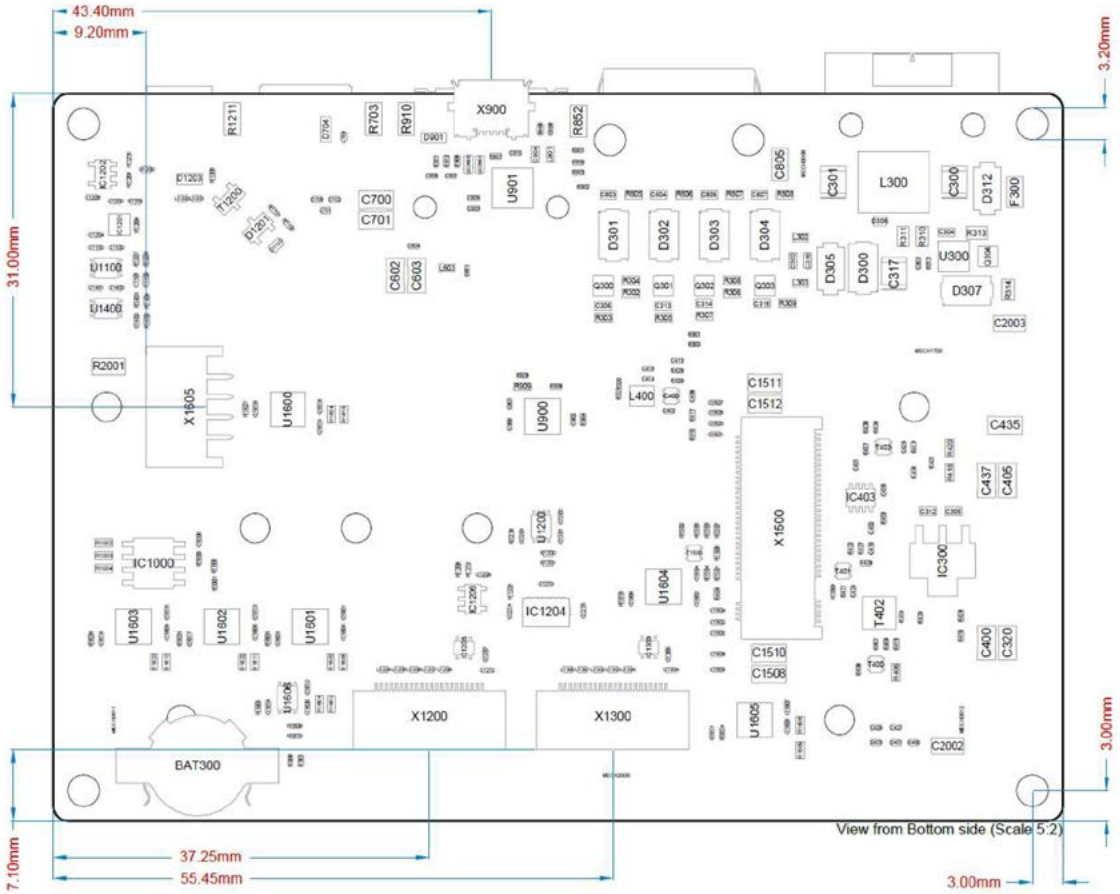
Operating Temperature -40°C to +85°C

Mechanical Dimensions 100 x 72mm (Pico-ITX)

Top Side Connectors



Bottom Side Connectors



Certification

EMC Test acc. to EN IEC 61000-6-2:2019 and EN IEC 61000-6-4:2019 including Test Report
Following ports are included: Enclosure, Power over Ethernet (PoE), 24 V d.c. supply

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