



**OUR GLOBAL
COMPETENCE
CENTRES**

 APOLLO DISPLAY
TECHNOLOGIES



 DISTEC



 DISPLAY
TECHNOLOGY



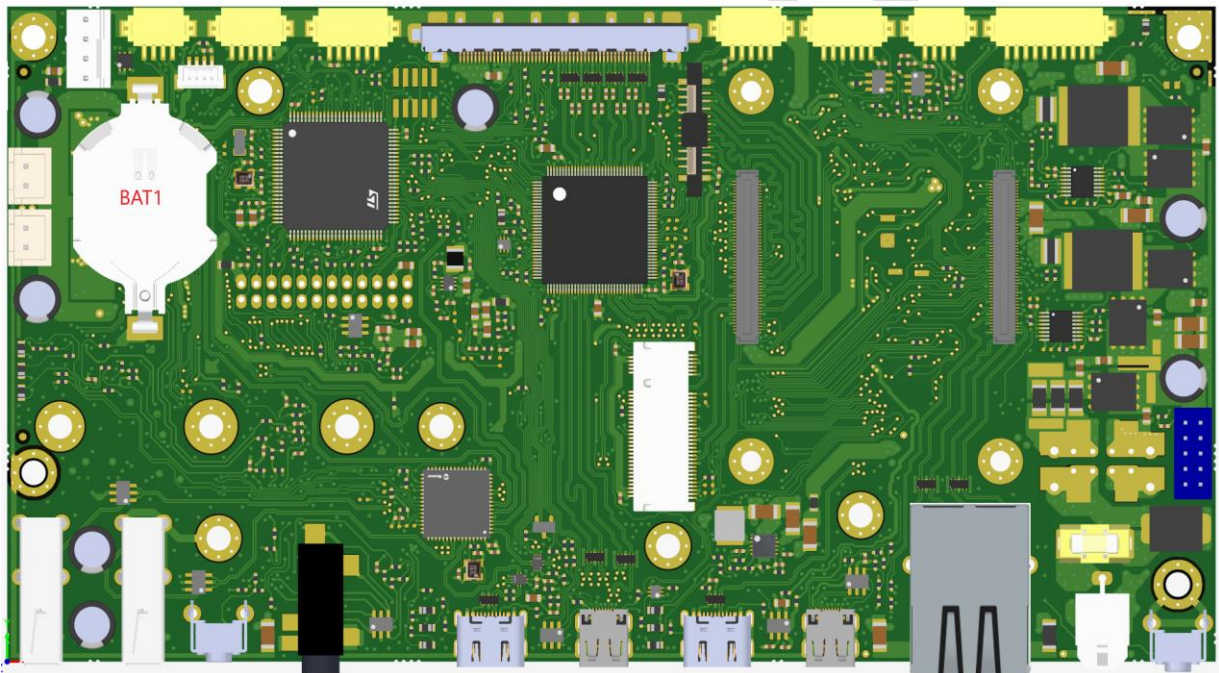
Datasheet

Distec GmbH

ARTISTAMEDIA-IV-00

Base Board for Raspberry Pi Compute Module 4 and an V-by-One TFT-Panel

SAP No.: AR-02-220



Version 1.8

22.02.2024

The information contained in this document has been carefully researched and is, to the best of our knowledge, accurate. However, we assume no liability for any product failures or damages, immediate or consequential, resulting from the use of the information provided herein. Our products are not intended for use in systems in which failures of product could result in personal injury. All trademarks mentioned herein are property of their respective owners. All specifications are subject to change without notice.

Table of Contents

1	Revision History	6
2	General Requirements	7
2.1	Key Features.....	7
2.2	Supported Raspberry Pi Compute Modules	7
2.3	Not Supported Raspberry Pi Compute Modules	7
2.4	Design Guidelines	8
2.5	Applicable Documents	8
2.6	Mean Time Between Failure	8
2.7	Watchdog Timer	8
2.8	Absolute Maximum Ratings (TBD).....	9
2.8.1	Environmental Absolute Maximum Ratings.....	9
2.8.2	Electrical Absolute Maximum Ratings	10
2.9	Electrical Characteristics.....	10
3	Interfaces	11
3.1	Power Supply Input / Output.....	11
3.2	Ethernet Port	11
3.3	Two external USB Host Connectors (Type A)	11
3.4	One internal USB Host Connector	11
3.5	USB Type-C Connector.....	11
3.6	MicroSD Card Reader	11
3.7	HDMI Input.....	11
3.8	HDMI Output.....	12
3.9	Internal HDMI Interface	12
3.9.1	EDID.....	12
3.10	I2C and USB Touch Screen Interface.....	12
3.11	V-by-One Data Output	12
3.12	Backlight Power Supply and Backlight Control Signals	12
3.13	Audio Out	13
3.13.1	Audio Line Out.....	13
3.13.2	Audio Amplifier.....	13
3.14	SPI Programming Connector of the LCD-Controller	13
3.15	UART Interface of the LCD-Controller	13
3.16	Real Time Clock.....	13
3.17	General Purpose Interfaces	13
3.18	Cooling and fan interface.....	13
3.19	Extended IO-Board	14

4	Block Diagram.....	14
5	Connector Overview.....	15
5.1	Top View	15
5.2	Bottom View	15
5.3	Controls	17
5.3.1	Buttons	17
5.3.2	Status LEDs	17
6	Connector Pinout	18
6.1	CON1 – Internal Power Supply Input/Output Connector.....	18
6.2	CON2 – External Power Supply Input Connector	18
6.3	CON3 – RJ45 Ethernet Connector	18
6.4	CON4 – MicroSD Card Reader	19
6.5	CON5 – External Stereo Audio Line Out Connector.....	19
6.6	CON6 – External USB Host 1 Type-A Connector.....	19
6.7	CON7 – External USB Host 2 Type-A Connector.....	19
6.8	CON8 – Micro HDMI (Type-D) Output Connector.....	20
6.9	CON9 – Internal USB Host 3 Pin Header Connector	20
6.10	CON10 – UART1 Pin Header Connector (LCD-Controller & CM4).....	20
6.11	CON12 – 8-lane V-by-One Connector	21
6.12	CON13 – Backlight Power Supply Connector	23
6.13	CON14 – Infrared Sensor Connector	23
6.14	CON15 – I2C Light Sensor Connector	23
6.15	CON16 – I2C Touch Connector	24
6.16	CON17 – Fan Connector	24
6.17	CON18 – Left Speaker Output Connector	24
6.18	CON19 – Right Speaker Output Connector	24
6.19	CON20 – USB Type-C Connector (Compute Module Linux Console)	25
6.20	CON21 – Keypad Connector	25
6.21	CON22 – Expansion Port for I/O Module	26
6.22	CON23 – Socket A for Raspberry Pi Compute Module 4	27
6.23	CON24 – Socket B for Raspberry Pi Compute Module 4	28
6.24	CON25 – Internal Stereo Audio Line Out Pin Header.....	30
6.25	CON26 – USB Type-C Connector (Compute Module Firmware Update).....	30
6.26	CON27 – Micro HDMI (Type-D) Input Connector	31
6.27	CON29 – M.2 Key B	32
6.28	CON31 – CSI Camera Connector	34
6.29	CON34 – Micro SIM Card	34

7	Mechanical Dimensions.....	35
8	Accessories	36
8.1	I/R Sensor ZU-02-406 and I/R Remote Control RC-10-007	36
8.2	OSD Keypad ZU-02-398	37
8.3	Light Sensor ZU-02-412	37
8.4	Temperature Sensor ZU-02-389	37
9	Ordering Information	38
10	Reference Kits	38
10.1	V-by-One 8-lane 4K2K@60Hz SVCC=12V	38

PRELIMINARY

1 Revision History

Date	Rev.No.	Description	Page
04.02.2022	1.0	Initial Version	All
18.05.2022	1.1	Connector Overview, mating types added Connector references updated Reference Kits added	15, 16 34, 35 36
25.05.2022	1.2	CON31 CSI Camera Connector added CON29 M.2 Key B inout updated from schematics CON22 Expansion Port for I/O Module pinout updated Mechanical drawings updated	17, 34 32, 33 26 35
08.06.2022	1.3	Connector overview updated	1, 16
13.06.2022	1.4	Bottom view added CON4 changed to Molex 502774-0891 CON34 MicroSIM Card added	15 15 15,16, 34, 35
04.07.2022	1.5	Weight added LED3, LED4, LED5 rearranged	35 17
05.07.2022	1.6	LED1, LED2, LED3 label added to the overview LED4, LED5 removed	15 17
13.07.2022	1.7	CON12 – 8-lane V-by-One Connector: Description adjusted	21, 22
22.02.2024	1.8	Product name changed to ARTISTAMEDIA-IV-00	All

2 General Requirements

ARTISTAMEDIA-IV-00 Base Board is Distec's TFT controller board based on the IT6807 HDMI2.0b to V-by-One® HS 8-Lane Converter. It holds the ARM based Raspberry Pi Compute Module as internal video source and is designed for a wide range of TFT displays, multimedia- and HMI applications.

2.1 Key Features

- Supports Raspberry Pi Compute Module 4
- Gigabit Ethernet RJ45 without POE
- 2x USB 2.0 Type-A Host External Connector
- USB 2.0 Type-A Host Internal Connector
- USB 2.0 Type-C Connector for programming the Raspberry Pi firmware
- MicroSD Card Reader
- 24VDC power input for the external power supply
- 24VDC power input for the internal power supply
- 4x I2C Connector
- 10x GPIOs
- 3x UART Interface
- Fan interface
- IR Remote Control using Distec's remote controller RC-10-007
- Audio Stereo Line Out
- Audio Amplifier 2x5W sinus at 8Ω
- Low-power Real Time Clock (RTC) including a Lithium battery
- 8-lane V-by-One Interface (up to 3840x2160@60Hz)
- Micro-HDMI Version 2.0 Output of the Raspberry Pi Compute Module 4
- Micro-HDMI Version 2.0 Input of the IT6807 HDMI2.0b to V-by-One® HS 8-Lane Converter
- Display Power Control Interface
- Backlight Control Interface
- OSD Keypad interface
- M.2 Key B interface
- CSI Camera interface

2.2 Supported Raspberry Pi Compute Modules

The ArtistaMedia-IV-VBO is designed to support the Raspberry Pi Compute Module 4 (CM4) featuring:

- Support for 1000BASE-TX, 100BASE-TX and 10BASE-T with RJ-45 connector.
- CPU: BCM2711
- RAM: 1GB, 2GB, 4GB, 8GB
- eMMC: 8GB, 16GB or 32GB
- Wifi: optional
- Bluetooth: optional

2.3 Not Supported Raspberry Pi Compute Modules

TBD

2.4 Design Guidelines

ARTISTAMEDIA-IV-00 is designed utilizing following guidelines:

- The electrical design is done in accordance with RoHS, European directive 2002/95/EC.
- ARTISTAMEDIA-IV-00 is designed and manufactured conform to directive 2011/65/EU (RoHS).
- All connectors available to the front side meet the fire class UL94V-0.
- ARTISTAMEDIA-IV-00 does not contain any tantalum capacitors.
- Following regulations are also applied:
 - o Safety: EN 62368-1
 - o EMC/EMI Emission: EN 55032 (Class B)
 - o EMC/EMI Immunity: EN 55024, EN55035 (Industrial), EN 61000-4-2.

2.5 Applicable Documents

TBD

2.6 Mean Time Between Failure

ArtistaMedia-IV-VBO shall be designed for a minimum MTBF of TBD hours.

2.7 Watchdog Timer

ARTISTAMEDIA-IV-00 provides have a software independent timer to initiate a hardware reset of the LCD-Controller in case of an unrecoverable software malfunction.

2.8 Absolute Maximum Ratings (TBD)

Permanent damage of the device may occur if maximum values are exceeded.

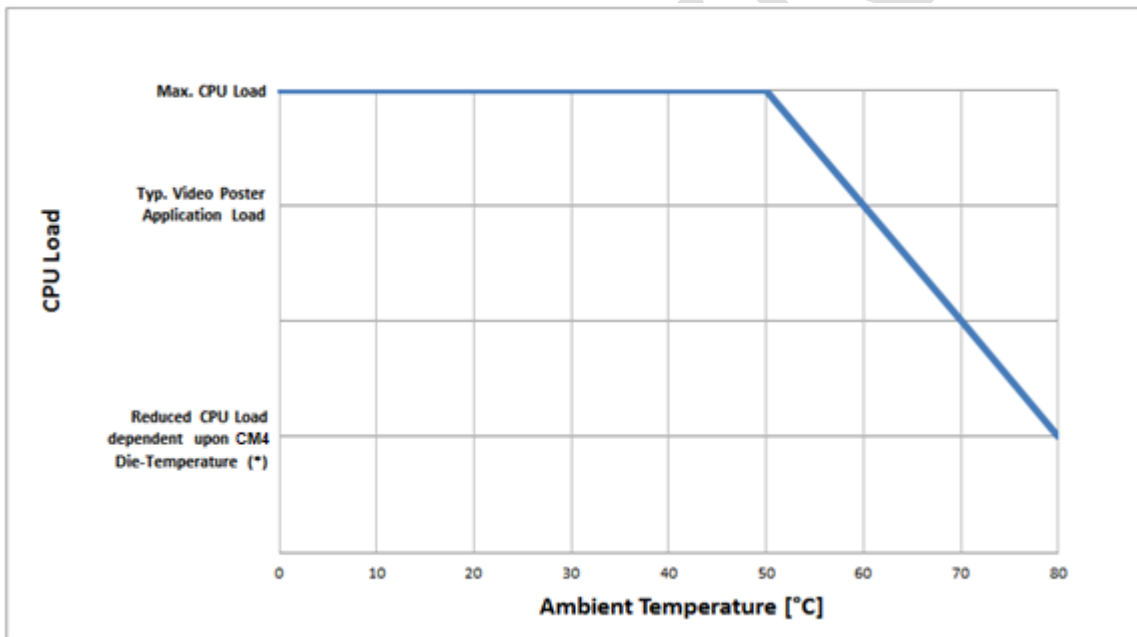
2.8.1 Environmental Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Note
Storage Temperature	T _{st}	-35	+85	°C	1
Operating Temperature	T _{op}	-20	+80	°C	1, 2

Note (1): This is the temperature range of the ArtistaMedia-IV Base Board without Compute Module.

Note (2): Thermal Derating Characteristic of Compute Module

The maximum allowed ambient temperature of Compute Module highly depends on the CPU load. The thermal derating characteristic shown in the diagram below is the result of internal load and temperature tests. All tests were done without airflow and without any additional cooling elements. By applying airflow or a passive heat sink to the Compute Module, the maximum allowed ambient temperature can be increased. For further details concerning temperature limitations please refer to the original datasheet of the Raspberry Compute Module. Cooling of the Compute Module is described in 3 Interfaces



(*) The standard Raspbian OS includes a mechanism that throttles the performance of the Compute Module at high temperatures. It is the responsibility of the user to make use of this mechanism and to monitor and limit the Die-Temperature of the CPU.

2.8.2 Electrical Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Note
Supply Voltage (24V)	V_{in}	-30	+30	VDC	1
Continuous Input Current	I_{in}	0	8.5	A	1
Continuous Backlight Current	$I_{bkl} (24V)$	-	3	A	1, 2
Peak Backlight Current	$I_{bkl} (24V)$	-	10	A	1, 2, 3
Continuous Panel Current	$I_{panel} (12V)$	-	5	A	1
Peak Panel Current	$I_{panel} (12V)$	-	10	A	1, 3
Continuous USB Current per Port	I_{USB}	-	0.5	A	1
Peak USB Current per Port	I_{USB}	-	1	A	1, 3

Note (1): Within operating temperature range.

Note (2): Backlight controller is directly connected to the power supply.

Note (3): The maximum peak current for 10ms duration.

2.9 Electrical Characteristics

All measurements are done at 25°C ambient temperature.

Item	Symbol	Condition	MIN.	TYP.	MAX.	Unit	Note
Supply Voltage (24V)	V_{in}		20.4	24	28.8	VDC	
Current Consumption	I_{in}	Board only	-	TBD		mA	
		Board incl. CM4	-	TBD		mA	

3 Interfaces

3.1 Power Supply Input / Output

- The external power supply input CON2 is protected against EMI, ESD and reverse voltage.
- The internal power supply input / Output CON1 can be used either for
 - Powering the ARTISTAMEDIA-IV-00 as an input or
 - Powering some peripherals such as backlight or the extended ArtistaMedia-IO board, providing protected voltage from CON2.
- The power stage is current limited to prevent blowing the fuse during normal operation.

3.2 Ethernet Port

- Support for 1000BASE-TX, 100BASE-TX and 10BASE-T with RJ-45 connector.
- Half-duplex and full-duplex operation.
- Auto-negotiation and parallel detection.
- No PoE support.

3.3 Two external USB Host Connectors (Type A)

- On-board USB 2.0 Host for high speed (480Mbit/s), full speed (12Mbit/s) and low speed (1.5Mb/s) operation located on the front side.

3.4 One internal USB Host Connector

- On-board USB 2.0 Host for high speed (480Mbit/s), full speed (12Mbit/s) and low speed (1.5Mb/s) operation located on the back side.

3.5 USB Type-C Connector

- Used to access the eMMC flash memory on the Raspberry Pi Compute Module with a PC as mass storage device for firmware installation.
- USB 2.0 Host for high speed (480Mbit/s), full speed (12Mbit/s) and low speed (1.5Mb/s) operation.
- No Power Delivery support.

3.6 MicroSD Card Reader

- Supports microSD and microSDXC cards (tested up to TBD GB)

3.7 HDMI Input

- Micro HDMI2.0 (Type-D) input connected to the HDMI-V-by-One Bridge. It can even be used when no Compute Module assembled.
- Support resolutions up to 3840x2160@60Hz.

3.8 HDMI Output

- Micro HDMI2.0 (Type-D) output connected to the Compute Module HDMI1.
- Support resolutions up to 3840x2160@60Hz.

3.9 Internal HDMI Interface

- HDMI2.0 interface connected to the Compute Module HDMI0.
- Support resolutions up to 3840x2160@60Hz.
- Provides EDID for Compute Module suitable to the panel configuration.

3.9.1 EDID

- For normal operation, the EDID memory is write protected and readable by the Compute Module.
- During the programming the EDID by the LCD-Controller the EDID memory is disconnected from Compute Module.

3.10 I2C and USB Touch Screen Interface

- Support of USB-HID touch screen controller. Project based firmware adaption required.
- Support of I2C touch screen controller. Project based firmware adaption required.

3.11 V-by-One Data Output

ARTISTAMEDIA-IV-00 is designed to drive almost every available TFT panel with V-by-One interface using a FFC cable or a Micro Coax cable. All display parameters can be set by Distec upon request or by the optional available configuration software ArtistaM4Rover.

Features of the V-by-One interface:

- 18 bit or 24 bit per pixel
- 8-lane interface
- Supports panel resolutions up to UHD (3840x2160 @ 60Hz)
- Switchable GPIOs for panel control providing one of the three voltage levels: Tri-State, 0V or 3.3V.
- Switchable I2C interface for panel control providing one of the three voltage levels: Tri-State, 0V or 3.3V.

Supported display power supply levels:

- +12.0V

3.12 Backlight Power Supply and Backlight Control Signals

The backlight power- and control-port directly connects to a DC-AC inverter or LED power supply for the display backlight. Additional control lines for switching the backlight on/off and to regulate the display brightness are available.

- CON13 provides a +24V, switchable, rising-time-controlled supply voltage for powering the backlight controller.
- CON1 provides a protected +24V for powering the backlight controller.
- Brightness DC control voltage in the range of 0V to 5V.
- Brightness PWM control with the 3.3V or 5V level, 0 to 100% duty cycle and 100 Hz to 20 kHz frequency range.
- The Backlight enable signal with 0V, 3.3V or 5V level.

3.13 Audio Out

3.13.1 Audio Line Out

- Audio Line Out: Single-ended 2.1VRMS ground centered analog outputs supporting loads down to 1kOhm per pin (left and right channel).
- Volume control by Raspberry Pi Compute Module.

3.13.2 Audio Amplifier

- One stereo amplifier 2x5W sinus power at 8Ω is available.
- The output power is limited by 2x5W at 0dB.
- Putting the external plug to the CON5 mutes the audio amplifier.
- The mute circuit disables the audio amplifier to prevent the turn-on / turn-off noise.

3.14 SPI Programming Connector of the LCD-Controller

- If the Compute Module is attached, it can update the firmware of the LCD-Controller using the SPI-Interface.
- Alternatively, can a USB Host flash the firmware of the microcontroller using the USB connector.

3.15 UART Interface of the LCD-Controller

- If attached, the Compute Module is able to read and update the panel configuration of the LCD-Controller and EDID using this UART-Interface. The Compute Module is the master.
- If no Compute Module attached, an external UART-master is able to read and update the panel configuration of the LCD-Controller and EDID.

3.16 Real Time Clock

- The real time clock of the ARTISTAMEDIA-IV-00 is battery buffered.
- The battery (type CR2032) is removable.
- Lifetime of the RTC is at least 15 years for the whole temperature range.

3.17 General Purpose Interfaces

- One I2C interface connects to the Raspberry Pi Compute Module (for touch screen etc.)
- One I2C interface connects to the LCD-Controller (can be used for a light sensor to automatically adjust the panel backlight)
- One UART connects directly to the Compute Module (for debug console)
- 10 GPIOs of the Compute Module accessible via pin header connector

3.18 Cooling and fan interface

- ARTISTAMEDIA-IV-00 can be cooled by using a heat sink, attached to the Compute Module.
- The fan interface supports standard +12V fans providing a PWM input and tachometer output. An EMC2301 controls the fan via I2C. Mating connector part number Molex 47054-1000 or similar. The +12V power for the fan comes from the internal +12V voltage converter.

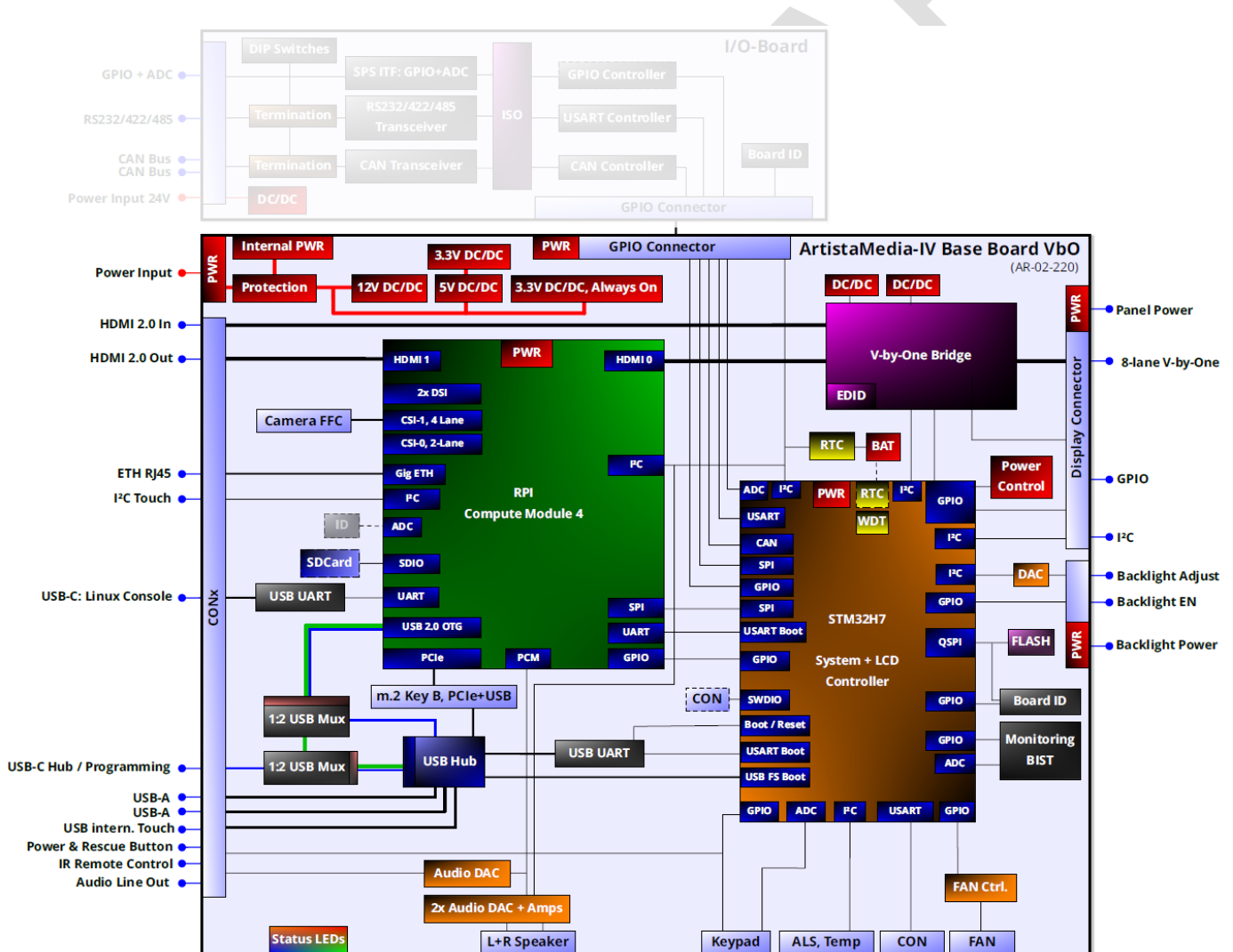
3.19 Extended IO-Board

In order to expand the functionality of the ARTISTAMEDIA-IV-00 a separate IO-Board can be connected to the IO-Connector CON22.

This IO-Board provides following interfaces and controls available on one edge of the PCB:

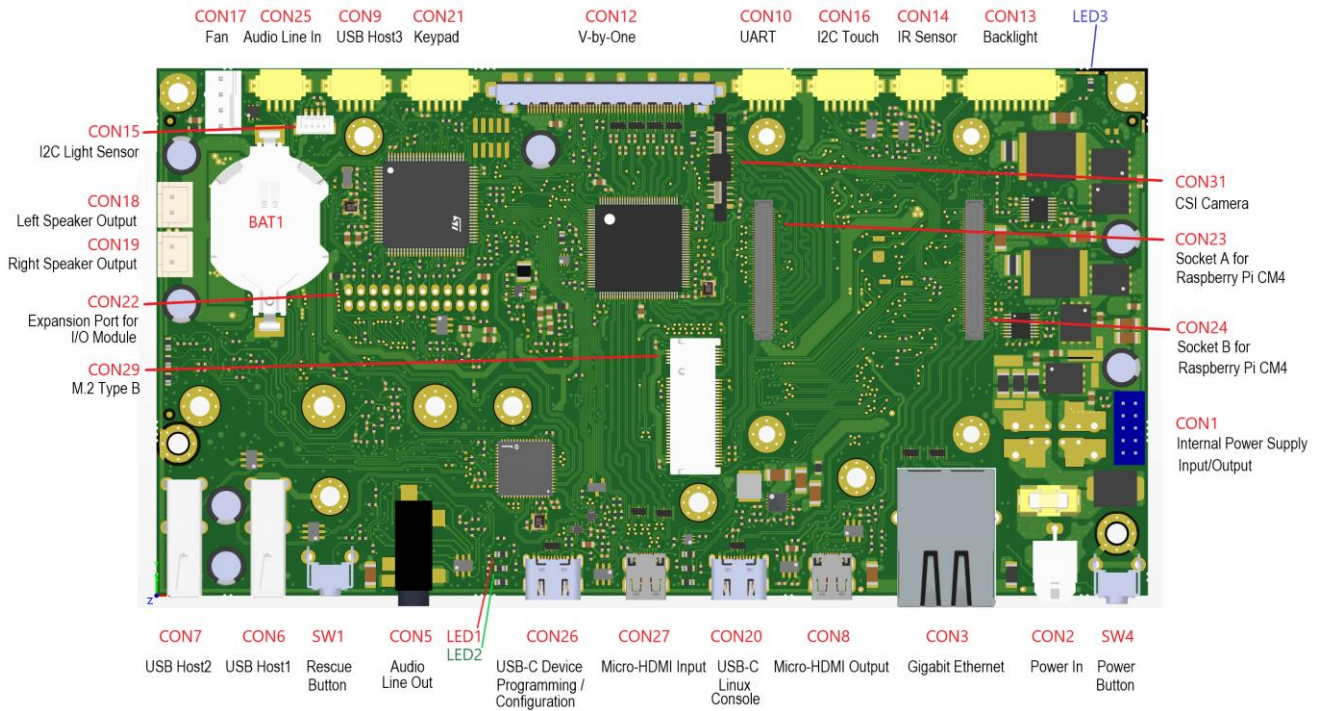
- RS485 / RS422 / RS232 Interface
- CAN Interface
- DIP Switches for termination settings
- SPS Interface
- Board-ID using the I2C interface.

4 Block Diagram

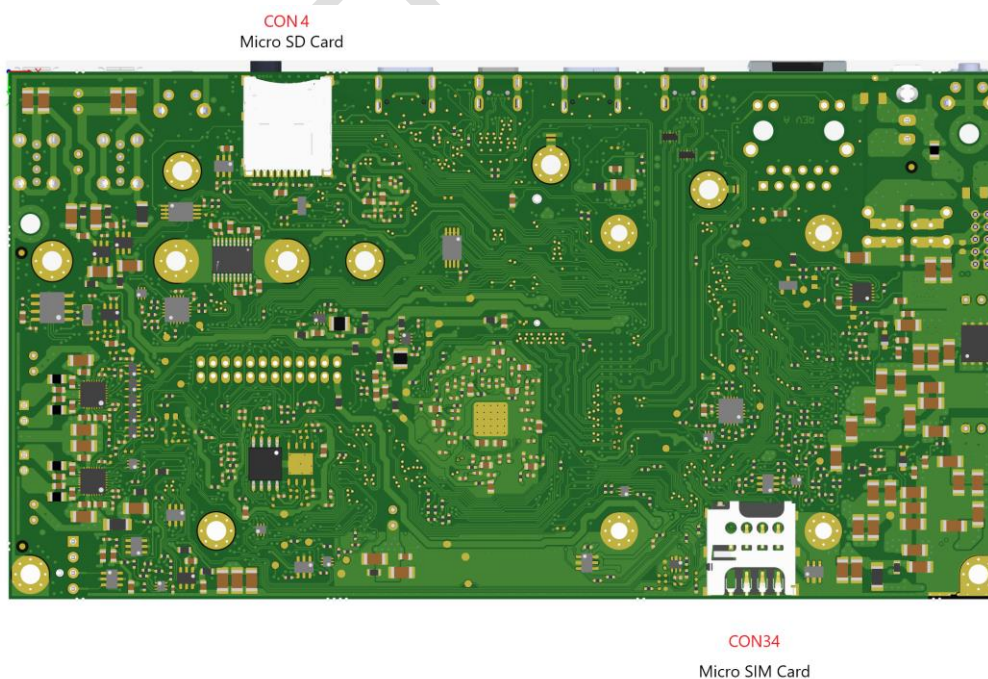


5 Connector Overview

5.1 Top View



5.2 Bottom View



Item	Description	Type	Mating type	Manufacturer
CON1	Internal Power Supply Input/Output	B10B-PHDSS-(LF)(SN)	PHDR-10VS	JST
CON2	External Power Supply Input	43045-0200	43025-0200	Molex
CON3	Ethernet Magnetic RJ45	ARJM11A1-502-AB-EW2	SS-39500-001	ABRACON LLC
CON4	MicroSD Card Reader	502774-0891	microSDHC CARD	Molex
CON5	External Audio Line Out	35RASMT4BHNTX	35HDNNS	Switchcraft
CON6	External USB Host 1, Type A	1-1734775-1	1734372-1	TE Connectivity
CON7	External USB Host 2, Type A	1-1734775-1	1734372-1	TE Connectivity
CON8	Micro HDMI (Type-D) Output	DC3RX19JA3R1700	KA-40-135	JAE
CON9	Internal USB Host 3, Pin Header	DF13-5P-1.25H(75) A1252WR-SF-05PD01	DF13-5S-1.25C	Hirose Joint Tech
CON10	UART1 (LCD-Controller)	DF13-5P-1.25H(75) A1252WR-SF-05PD01	DF13-5S-1.25C	Hirose Joint Tech
CON12	V-by-One	FI-RE51S-HF	FI-RE51CL	JAE
CON13	Backlight Power Supply	DF13-10P-1.25H(75) A1252WR-SF-10PD01	DF13-10S-1.25C	Hirose Joint Tech
CON14	Infrared Sensor	DF13-4P-1.25H(75) A1252WR-SF-04PD01	DF13-4S-1.25C	Hirose Joint Tech
CON15	I2C Light Sensor (ALS)	501331-0407	501330-0400	Molex
CON16	I2C Touch	DF13-6P-1.25H(75) A1252WR-SF-06PD01	DF13-6S-1.25C	Hirose Joint Tech
CON17	Fan	47053-1000	47054-1000	Molex
CON18	Left Speaker Output	B2B-XH-A	XHP-5	JST
CON19	Right Speaker Output	B2B-XH-A	XHP-5	JST
CON20	USB Type-C CM4 Linux Console	DX07S016JA1R1500	KA-40-131	JAE
CON21	Keypad Connector	DF13-6P-1.25H(75) A1252WR-SF-06PD01	DF13-6S-1.25C	Hirose Joint Tech
CON22	Expansion Port for I/O Module	TBD	TBD	TBD
CON23	Socket A for Raspberry Pi CM4	DF40C-100DS-0.4V(58)	DF40C-100DP-0.4V	Hirose
CON24	Socket B for Raspberry Pi CM4	DF40C-100DS-0.4V(58)	DF40C-100DP-0.4V	Hirose
CON25	Internal Audio Line Out	DF13-4P-1.25V(75) A1252WV-SF-04PD01	DF13-6S-1.25C	Hirose Joint Tech
CON26	USB Type-C Device, CM4 Programming	DX07S016JA1R1500	KA-40-131	JAE
CON27	Micro HDMI (Type-D) Input	DC3RX19JA3R1700	KA-40-135	JAE
CON29	M.2 Type B	MDT420B03001	TBD	Amphenol
CON31	CSI Camera Connector	687322124422	RPIZ CAM 5MP 170	WE
CON34	Micro SIM Card Connector	78727-0001	Micro SIM Card	Molex

5.3 Controls

5.3.1 Buttons

SW1	Rescue System (1)	1301.9501	Schurter
SW2	Reset CM4 (optional)	B3U-1000P	Omron
SW3	Reset LCD-Controller (optional)	B3U-1000P	Omron
SW4	Shutdown / Power On of CM4 (2)	1301.9503	Schurter

(1): SW1 is only achievable by using tools.

(2): SW4 is achievable without any tools.

5.3.2 Status LEDs

LED	Color	Status	Description
LED1	Red	On	On-board LCD-Controller is in standby/sleep mode because no input signal was detected
		Flashing	Blank or corrupted panel configuration, please contact Distec support
LED2	Green	On	On-board LCD-Controller synched to input signal and processing it
		Flashing	On-board LCD-Controller is searching for an input signal
LED3	Blue	On	LCD 12V panel power supply is switched on
		Off	LCD 12V panel power supply is switched off

6 Connector Pinout

6.1 CON1 – Internal Power Supply Input/Output Connector

Connectors CON1 and CON2 are NOT connected in parallel, see 3.1 Power Supply Input / Output.

Pin	Signal	Description
1	Vinout	Positive Power Supply Input or Protected Output
2	Vinout	Positive Power Supply Input or Protected Output
3	Vinout	Positive Power Supply Input or Protected Output
4	Vinout	Positive Power Supply Input or Protected Output
5	Vinout	Positive Power Supply Input or Protected Output
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	GND	Ground
10	GND	Ground

6.2 CON2 – External Power Supply Input Connector

Connectors CON1 and CON2 are NOT connected in parallel, see 3.1 Power Supply Input / Output.

Pin	Signal	Description
1	GND	Ground
2	Vin	Positive Power Supply Input

6.3 CON3 – RJ45 Ethernet Connector

Pin	Signal	Description
1	TCT	Transmitter Center Tap
2	TD+	Transmitted Data +
3	TD-	Transmitted Data -
4	RD+	Received Data +
5	RD-	Received Data -
6	RCT	Receiver Center Tap
7	SPEED LED C	Orange LED Cathode
8	SPEED LED A	Orange LED Anode
9	LINK LED C	Green LED Cathode
10	LINK LED A	Green LED Anode

6.4 CON4 – MicroSD Card Reader

Pin	Signal	Description
1	SD_DAT2	SD Serial Data 2
2	SD_DAT3	SD Serial Data 3
3	SD_CMD	Command
4	VDD	3.3V Power Supply
5	SD_CLK	Clock
6	VSS	Ground
7	SD_DAT0	SD Serial Data 0
8	SD_DAT1	SD Serial Data 1
9	SDCARD_DETECT	SD Card Detection
10	GND	Ground

6.5 CON5 – External Stereo Audio Line Out Connector

Both CON5 and CON23 are connected in parallel.

Pin	Signal	Description
1	GND	Ground
2	LINE ROUT	Right Channel Line Out
3	LINE LOUT	Left Channel Line Out
4	RN	Not connected
5	LN	Not connected

6.6 CON6 – External USB Host 1 Type-A Connector

Pin	Signal	Description
1	+5V	5V Power Output for external device (max. 0.5A, fuse protected)
2	D-	USB Data - Line
3	D+	USB Data + Line
4	GND	Ground

6.7 CON7 – External USB Host 2 Type-A Connector

Pin	Signal	Description
1	+5V	5V Power Output for external device (max. 0.5A, fuse protected)
2	D-	USB Data - Line
3	D+	USB Data + Line
4	GND	Ground

6.8 CON8 – Micro HDMI (Type-D) Output Connector

Pin	Signal	Description
1	HDMI1_HPDP	Hot Plug Detection
2	Reserved	Not connected
3	HDMI1_TX2_P	Differential TMDS Data 2 Positive Output
4	GND	Ground
5	HDMI1_TX2_N	Differential TMDS Data 2 Negative Output
6	HDMI1_TX1_P	Differential TMDS Data 1 Positive Output
7	GND	Ground
8	HDMI1-TX1_N	Differential TMDS Data 1 Negative Output
9	HDMI1-TX0_P	Differential TMDS Data 0 Positive Output
10	GND	Ground
11	HDMI1_TX0_N	Differential TMDS Data 0 Negative Output
12	HDMI1_CLK_P	Differential TMDS Clock Positive Output
13	GND	Ground
14	HDMI1_CLK_N	Differential TMDS Clock Negative Output
15	HDMI1_CEC	Consumer Electronic Control
16	GND	Ground
17	HDMI1_SCL	DDC Clock
18	HDMI1_SDA	DDC Data
19	HDMI1_VCC	+5V Output

6.9 CON9 – Internal USB Host 3 Pin Header Connector

Pin	Signal	Description
1	+5V	5V Power Output for external device (max. 0.5A fuse protected)
2	GND	Ground
3	D-	USB Data -
4	D+	USB Data +
5	GND	Ground

6.10 CON10 – UART1 Pin Header Connector (LCD-Controller & CM4)

Pin	Signal	Description
1	UART5 TX	Serial Output from LCD-Controller
2	UART5 RX	Serial Input to LCD-Controller
3	+3.3V	3.3V Power Output
4	+5V	5V Power Output
5	GND	Ground

6.11 CON12 – 8-lane V-by-One Connector

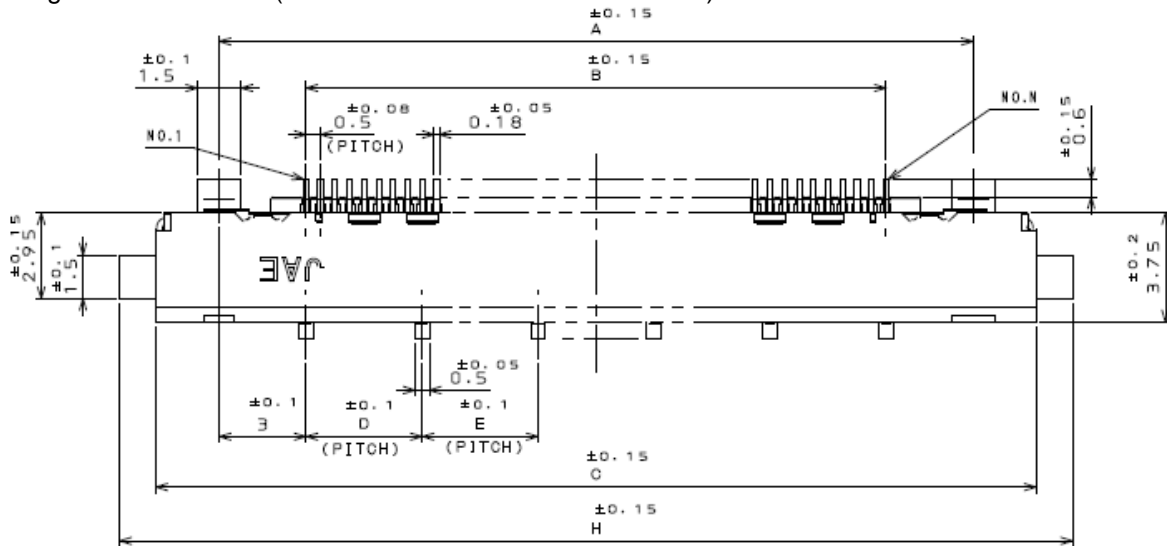
The 8-lane v-by-one connector for panel interface.

Manufacturer: JAE

Type: FI-RE51S-HF

Rated Current: AC, DC 0.7A per terminal.

Matching Part: FI-RE51CL (CONN PLUG 51POS 0.5MM COAX)



Pin	Signal	Description
1	GND	Ground
2	TX7P	Vx1 lane 7+
3	TX7N	Vx1 lane 7-
4	GND	Ground
5	TX6P	Vx1 lane 6+
6	TX6N	Vx1 lane 6-
7	GND	Ground
8	TX5P	Vx1 lane 5+
9	TX5N	Vx1 lane 5-
10	GND	Ground
11	TX4P	Vx1 lane 4+
12	TX4N	Vx1 lane 4-
13	GND	Ground
14	TX3P	Vx1 lane 3+
15	TX3N	Vx1 lane 3-
16	GND	Ground
17	TX2P	Vx1 lane 2+
18	TX2N	Vx1 lane 2-
19	GND	Ground
20	TX1P	Vx1 lane 1+

Pin	Signal	Description
21	TX1N	Vx1 lane 1-
22	GND	Ground
23	TX0P	Vx1 lane 0+
24	TX0N	Vx1 lane 0-
25	GND	Ground
26	LOCK	Lock Detect Input, 2)
27	HPD	Hot Plug Detect Input, 2)
28	GPIO0	General Purpose Input Output, 1)
29	GPIO1	General Purpose Input Output, 1)
30	GPIO2	General Purpose Input Output, 1)
31	GPIO3	General Purpose Input Output, 1)
32	SDA / GPIO4	I2C Data Line / General Purpose Input Output, 1) 3)
33	SCL / GPIO5	I2C Clock Line / General Purpose Input Output, 1)
34	SDA / GPIO4_ALT	I2C Data Line / General Purpose Input Output, 1) 3)
35	GPIO6	General Purpose Input Output, 1)
36	GPIO7	General Purpose Input Output, 1)
37	GPIO8	General Purpose Input Output, 1)
38	GND	Ground
39	GND	Ground
40	GND	Ground
41	GND	Ground
42	GND	Ground
43	NC	Not connected
44	LCD_SVCC	Switched VDD 12V
45	LCD_SVCC	Switched VDD 12V
46	LCD_SVCC	Switched VDD 12V
47	LCD_SVCC	Switched VDD 12V
48	LCD_SVCC	Switched VDD 12V
49	LCD_SVCC	Switched VDD 12V
50	LCD_SVCC	Switched VDD 12V
51	LCD_SVCC	Switched VDD 12V

NOTES:

- 1) GPIO option can be activated by the firmware. Overcurrent protected by a serial 300R resistor. Default state: Hi-Resistance Input.
- 2) Terminated by a 10KOhm resistor to +3.3V.
- 3) SDA / GPIO4 and SDA / GPIO4_ALT are interconnected using a 22 Ohm resistor.

6.12 CON13 – Backlight Power Supply Connector

Pin	Signal	Description
1	BKLT_PWR	Switchable backlight power supply: + 24V (ArtistaMedia-IV-VBO)
2	BKLT_GND	Ground
3	BKLT_EN	Backlight Enable Signal: 3.3V or 5V, configured by FW
4	BRT_ADJ	Backlight Dimming: Analog (DC) or PWM, configured by FW
5	NC	Reserved
6	NC	Reserved
7	BKLT_PWR	Switchable backlight power supply: + 24V (ArtistaMedia-IV-VBO)
8	BKLT_PWR	Switchable backlight power supply: + 24V (ArtistaMedia-IV-VBO)
9	BKLT_GND	Ground
10	BKLT_GND	Ground

6.13 CON14 – Infrared Sensor Connector

I/R input connector to both the Compute Module and the LCD Controller. The Compute Module supports a various data formats of the IR remote controllers using standard software. If the Compute Module has been shut down, the LCD Controller makes sure that the Compute Module is waking up.

When an I/R sensor is connected to CON11, an I/R remote control can be used to adjust panel brightness, sharpness, power and many other panel parameters. See chapter 8.1 I/R Sensor ZU-02-406 and I/R Remote Control RC-10-007 for more details.

Pin	Signal	Description
1	IR DATA	Data Input from IR Sensor
2	+3.3V	3.3V Power Output
3	+5V	5V Power Output
4	GND	Ground

6.14 CON15 – I2C Light Sensor Connector

I2C input connector of the LCD-Controller chip. When a light sensor is connected to CON12, the LCD-Controller automatically adjusts the panel brightness according to the ambient light. See chapter 8.3 for more details.

Pin	Signal	Description
1	+3.3V	3.3V Power Output
2	GND	Ground
3	SCL	I2C Clock
4	SDA	I2C Data

6.15 CON16 – I2C Touch Connector

This connector can be used to connect an I2C touch or any other I2C device to the Compute Module.

Pin	Signal	Description
1	+3.3V	3.3V Power Output
2	TOUCH_SDA1	Touch Controller I2C Data
3	TOUCH_SCL1	Touch Controller I2C Clock
4	GND	Ground
5	TOUCH_INT_N	Touch Controller Interrupt
6	TOUCH_RESET_N	Touch Controller Reset

6.16 CON17 – Fan Connector

Pin	Signal	Description
1	GND	Ground
2	+12V	Power Supply Output
3	Tacho	RMP Speed Signal
4	PWM	PWM Output Signal(+5V)

6.17 CON18 – Left Speaker Output Connector

Putting the external plug to the CON5 mutes the audio amplifier.

Pin	Signal	Description
1	LOUT+	Left Speaker +
2	LOUT-	Left Speaker -

6.18 CON19 – Right Speaker Output Connector

Putting the external plug to the CON5 mutes the audio amplifier.

Pin	Signal	Description
1	ROUT+	Right Speaker +
2	ROUT-	Right Speaker -

6.19 CON20 – USB Type-C Connector (Compute Module Linux Console)

This connector provides access to the Debug Console of the Compute Module.

The UART interface (TXD0, RXD0) is available as a COM port.

The conversion between USB2.0 and UART performs a standard Bridge USB-to-UART like CP2102.

Pin	Signal	Description
A1B12	GND	Ground
A4B9	VBUS	+5V Power Input from an external host
B8	NC	Not Connected
A5	CC1	USB_CC1
B7	D2_N	USB Data -
A6	D1_P	USB Data +
A7	D1_N	USB Data -
B6	D2_P	USB Data +
A8	NC	Not Connected
B5	CC2	USB_CC2
B4A9	VBUS	+5V Power Input from an external host
B1A12	GND	Ground
SH1	GND	Ground
SH2	GND	Ground
SH3	GND	Ground
SH4	GND	Ground

6.20 CON21 – Keypad Connector

Keypad connector controlled by the LCD-controller. When an external keypad connected, brightness, audio volume and power on/off are available. See chapter 8.2 OSD Keypad ZU-02-398 for more details.

Pin	Signal	Description
1	KEY DATA	Analog Keypad Signal
2	GND	Ground
3	LED RED	Status LED – Red (Sleep Mode)
4	LED GREEN	Status LED – Green (Sync Mode)
5	GND	Ground
6	+3.3V	3.3V Power Output

6.21 CON22 – Expansion Port for I/O Module

General purpose connector of the Compute Module.

Pin	Signal	Description
1	EXP24V	+24V Power Supply Output
2	EXP_RESET_N	Low-Active Input / Open Drain Output, Pull-Up 10kOhm
3	GND	Ground
4	EXP5V	+5V Power Supply Output
5	GPIO12_IRQ1	PB14/US1TX/SPI2_MISO/I2S2_SDI/TIM/U4_RTS_DE/US3_RTS_DE/USB_HS_DM
6	GPIO13_IRQ2	PB15/SPI2_MOSI/I2S2_SDO/TIM/U4_CTS/US1RX/USB_HS_DP
7	GPIO10_CAN_TX	PB13/SPI2_SCK/FDCAN2_TX/I2S2_CK/U5TX/US3_CTS_NSS/TIM
8	GPIO11_SCL2	PB10/SCL2/I2S2_CK/SPI2_SCK/TIM/US3TX/QSPI_0CS
9	GPIO8_SDA2	PB13/SPI2_SCK/FDCAN2_TX/I2S2_CK/U5TX/US3_CTS_NSS/TIM
10	GPIO9_CAN_RX	PB12/FDCAN2_RX/I2S2_WS/U5RX/US3CK
11	GPIO6_UART_TX	PA2/US2TX/AD12/SAI2_SCK_B/TIM
12	GND	Ground
13	GPIO4_RTS_RXE	PA1/AD1/SAI2_MCLK_B/TIM/U4RX/US2_RTS_DE
14	GPIO7_UART_RX	PA3/US2RX/AD12/TIM
15	GPIO2_SPI_MOSI	PA7/AD12/I2S1_SDO/OPAMP1/SPI16_MOSI/TIM
16	GPIO5_CTS_TXE	PA0/AD1/SAI2_SD_B/TIM/U4TX/US2_CTS_NSS
17	GND	Ground
18	GPIO3_SPI_CS	PA4/US2CK/AD12/SPI136_NSS/DAC1
19	GPIO0_SPI_SCK	PA5/SPI16_SCK/AD12/DAC1/I2S1_CK/TIM
20	GPIO1_SPI_MISO	PA6/AD12/I2S1_SDI/SPI16_MISO/TIM
21	EXP_I2C_SDA	I2C_SDA
22	GND	Ground
23	EXP3V3	+3.3V Power Supply Output
24	EXP_I2C_SCL	I2C_SCL

6.22 CON23 – Socket A for Raspberry Pi Compute Module 4

GPIO connector of the Compute Module. The GPIO numbers equal the BCM2711 specification.

Pin	Signal	Description	Pin	Signal	Description
1	GND		2	GND	
3	Ethernet_Pair3_P		4	Ethernet_Pair1_P	
5	Ethernet_Pair3_N		6	Ethernet_Pair1_N	
7	GND		8	GND	
9	Ethernet_Pair2_N		10	Ethernet_Pair0_N	
11	Ethernet_Pair2_P		12	Ethernet_Pair0_P	
13	GND		14	GND	
15	Ethernet_nLED3(3.3v)		16	Ethernet_SYNC_IN (1.8v)	
17	Ethernet_nLED2(3.3v)		18	Ethernet_SYNC_OU (1.8v)	
19	Ethernet_nLED1(3.3v)		20	EEPROM_nWP	
21	PI_nLED_Activity		22	GND	
23	GND		24	GPIO26	IR-Input (non standard LIRC)
25	GPIO21	PCM_DOUT	26	GPIO19	PCM_FS
27	GPIO20	PCM_DIN	28	GPIO13	RXD5 (LCD-Controller)
29	GPIO16	IRQ_N_UART (CON22 UART)	30	GPIO6	SPI4_MOSI (CON22 UART)
31	GPIO12	TXD5 (LCD-Controller)	32	GND	
33	GND		34	GPIO5	SPI4_MISO (CON22 UART)
35	ID_SC		36	ID_SD	
37	GPIO7	SPI4_SCLK (CON22 UART)	38	GPIO11	SPI0_SCLK (LCD-Controller)
39	GPIO8	SPI0_CE0_N (LCD-Controller)	40	GPIO9	SPI0_MISO (LCD-Controller)
41	GPIO25	SPI4_CE1_N (CON22 CAN)	42	GND	
43	GND		44	GPIO10	SPI0_MOSI (LCD-Controller)
45	GPIO24	TOUCH_RESET_N Output	46	GPIO22	SDA6 (Touch)
47	GPIO23	SCL6 (Touch)	48	GPIO27	TOUCH_INT_N Input
49	GPIO18	PCM_CLK	50	GPIO17	IRQ_N_CAN (CON22 CAN)
51	GPIO15	RXD0 (Linux Console)	52	GND	
53	GND		54	GPIO4	SPI4_CE0_N (CON22 UART)
55	GPIO14	TXD0 (Linux Console)	56	GPIO3	SCL1 (CON22 SPS)
57	SD_CLK	SD_CLK	58	GPIO2	SDA1 (CON22 SPS)
59	GND		60	GND	
61	SD_DAT3	SD_DAT3	62	SD_CMD	SD_CMD
63	SD_DAT0	SD_DAT0	64	SD_DAT5	
65	GND		66	GND	
67	SD_DAT1	SD_DAT1	68	SD_DAT4	

69	SD_DAT2	SD_DAT2	70	SD_DAT7	
71	GND		72	SD_DAT6	
73	SD_VDD_Override		74	GND	
75	SD_PWR_ON	SD_PWR_ON	76	Reserved	
77	+5v_(Input)		78	GPIO_VREF(1.8v/3.3v_Input)	
79	+5v_(Input)		80	SCL0	RTC, Wakeup, CON22
81	+5v_(Input)		82	SDA0	RTC, Wakeup, CON22
83	+5v_(Input)		84	+3.3v_(Output)	600mA Max
85	+5v_(Input)		86	+3.3v_(Output)	
87	+5v_(Input)		88	+1.8v_(Output)	600mA Max
89	WL_nDisable		90	+1.8v_(Output)	
91	BT_nDisable		92	RUN_PG	
93	nRPIBOOT		94	AnalogIP1	
95	nPI_LED_PWR		96	AnalogIP0	Hardware-ID
97	Camera_GPIO		98	GND	
99	Global_EN		100	nEXTRST	

NB SD signals are only available on modules without eMMC.

6.23 CON24 – Socket B for Raspberry Pi Compute Module 4

High Speed Serial interfaces of the Compute Module.

Pin	Signal	Description	Pin	Signal	Description
1	USB_ID		2	PCIe_CLK_nREQ	
3	USB2_N		4	Reserved	
5	USB2_P		6	Reserved	
7	GND		8	GND	
9	PCIe_nRST		10	PCIe_CLK_P	
11	VDAC_COMP		12	PCIe_CLK_N	
13	GND		14	GND	
15	CAM1_D0_N		16	PCIe_RX_P	
17	CAM1_D0_P		18	PCIe_RX_N	
19	GND		20	GND	
21	CAM1_D1_N		22	PCIe_TX_P	
23	CAM1_D1_P		24	PCIe_TX_N	
25	GND		26	GND	
27	CAM1_C_N		28	CAM0_D0_N	

29	CAM1_C_P		30	CAM0_D0_P	
31	GND		32	GND	
33	CAM1_D2_N		34	CAM0_D1_N	
35	CAM1_D2_P		36	CAM0_D1_P	
37	GND		38	GND	
39	CAM1_D3_N		40	CAM0_C_N	
41	CAM1_D3_P		42	CAM0_C_P	
43	HDMI1_HOTPLUG		44	GND	
45	HDMI1_SDA		46	HDMI1_TX2_P	
47	HDMI1_SCL		48	HDMI1_TX2_N	
49	HDMI1_CEC		50	GND	
51	HDMI0_CEC		52	HDMI1_TX1_P	
53	HDMI0_HOTPLUG		54	HDMI1_TX1_N	
55	GND		56	GND	
57	DSI0_D0_N		58	HDMI1_TX0_P	
59	DSI0_D0_P		60	HDMI1_TX0_N	
61	GND		62	GND	
63	DSI0_D1_N		64	HDMI1_CLK_P	
65	DSI0_D1_P		66	HDMI1_CLK_N	
67	GND		68	GND	
69	DSI0_C_N		70	HDMI0_TX2_P	
71	DSI0_C_P		72	HDMI0_TX2_N	
73	GND		74	GND	
75	DSI1_D0_N		76	HDMI0_TX1_P	
77	DSI1_D0_P		78	HDMI0_TX1_N	
79	GND		80	GND	
81	DSI1_D1_N		82	HDMI0_TX0_P	
83	DSI1_D1_P		84	HDMI0_TX0_N	
85	GND		86	GND	
87	DSI1_C_N		88	HDMI0_CLK_P	
89	DSI1_C_P		90	HDMI0_CLK_N	
91	GND		92	GND	
93	DSI1_D2_N		94	DSI1_D3_N	
95	DSI1_D2_P		96	DSI1_D3_P	
97	GND		98	GND	
99	HDMI0_SDA		100	HDMI0_SCL	

6.24 CON25 – Internal Stereo Audio Line Out Pin Header

Connectors CON5 and CON23 are connected in parallel. Both can be used at the same time if the impedances are considered accordingly.

Pin	Signal	Description
1	GND	Ground
2	LINE ROUT	Right Channel Line Out
3	LINE LOUT	Left Channel Line Out
4	MUTE_N	Mute Signal (active low): Open drain output with 47.5kOhm pull up resistor to 3.3V. This pin is pulled low in mute mode and can be used to mute an external audio device.

6.25 CON26 – USB Type-C Connector (Compute Module Firmware Update)

This connector is only used for FW programming. Connecting an external host PC to this connector automatically resets the Compute Module controller and simultaneously disabled the internal eMMC flash memory on the Compute Module. Thus the Compute Module controller falls back to booting from USB, allowing a FW update by using for example the following USB Boot SW:

<https://www.raspberrypi.org/documentation/hardware/computemodule/cm-emmc-flashing.md>

Pin	Signal	Description
A1B12	GND	Ground
A4B9	VBUS	+5V Power Input from an external host
B8	NC	Not Connected
A5	CC1	USB_CC1
B7	D2_N	USB Data -
A6	D1_P	USB Data +
A7	D1_N	USB Data -
B6	D2_P	USB Data +
A8	NC	Not Connected
B5	CC2	USB_CC2
B4A9	VBUS	+5V Power Input from an external host
B1A12	GND	Ground
SH1	GND	Ground
SH2	GND	Ground
SH3	GND	Ground
SH4	GND	Ground

6.26 CON27 – Micro HDMI (Type-D) Input Connector

Pin	Signal	Description
1	HDMI1_HPD	Hot Plug Detection
2	Reserved	Not connected
3	HDMI1_TX2_P	Differential TMDS Data 2 Positive Input
4	GND	Ground
5	HDMI1_TX2_N	Differential TMDS Data 2 Negative Input
6	HDMI1_TX1_P	Differential TMDS Data 1 Positive Input
7	GND	Ground
8	HDMI1-TX1_N	Differential TMDS Data 1 Negative Input
9	HDMI1-TX0_P	Differential TMDS Data 0 Positive Input
10	GND	Ground
11	HDMI1_TX0_N	Differential TMDS Data 0 Negative Input
12	HDMI1_CLK_P	Differential TMDS Clock Positive Input
13	GND	Ground
14	HDMI1_CLK_N	Differential TMDS Clock Negative Input
15	HDMI1_CEC	Consumer Electronic Control
16	GND	Ground
17	HDMI1_SCL	DDC Clock
18	HDMI1_SDA	DDC Data
19	HDMI1_VCC	+5V Input

6.27 CON29 – M.2 Key B

The M.2 connector provides several high-speed interfaces, needed to connection of computer expansion cards, especial for LTE-module. Limited by the CM4, only 1xPCIe and only 1xUSB2.0 (no USB3.0) are available.

Pin	Signal	Description
1	CONFIG_3	Defines module type
2	3.3 V	Supply pin
3	GND	Ground
4	3.3 V	Supply pin
5	GND	Ground
6	FULL_CARD_POWER_OFF#	Out
7	USB_D+	USB2.0 Positive Line
8	W_DISABLE#	Out
9	USB D-	USB2.0 Negative Line
10	GPIO_9/DAS/DSS	NC
11	GND	Ground
12 to 19	removed	Mechanical notch B
20	GPIO_5	NC
21	CONFIG_0	Defines module type
22	GPIO_6	USB_DETECT
23	GPIO_11	NC
24	GPIO_7	NC
25	DPR	NC
26	GPIO_10	GPS_DISABLE
27	GND	Ground
28	GPIO_8	NC
29	PERn1 / USB RX- /SSIC-RxN	NC
30	UIM-RESET	Input
31	PERp1 / USB RX+ / SSIC-RxP	NC
32	UIM-CLK	Input
33	GND	Ground
34	UIM-DATA	I/O
35	PETn1 / USB TX- /SSIC-TxN	NC
36	UIM-PWR	Input
37	PETp1 / USB TX+ /SSIC-TxP	NC
38	DEVSLP	NC
39	GND	Ground
40	GPIO_0/SMB_CLK	I2C Clock
41	SATA-B+/PERn0	PCIe Lane 0 Rx-

42	GPIO_1/SMB_DATA	I2C Data
43	SATA-B-/PERp0	PCIe Lane 0 Rx+
44	GPIO_2/ALERT#	NC
45	GND	Ground
46	GPIO_3	LCD Controller GPIO PE3
47	SATA-A-/PETn0	PCIe Lane 0 Tx-
48	GPIO_4	NC
49	SATA-A+/PETp0	PCIe Lane 0 Tx+
50	PERST#	PCIe reset
51	GND	Ground
52	CLKREQ#	Reference clock request signal
53	REFCLKN	PCIe Reference Clock-
54	PEWAKE#	NC
55	REFCLKP	PCIe Reference Clock+
56	MFG1	NC
57	GND	Ground
58	MFG2	NC
59	ANTCTL0	NC
60	COEX3	NC
61	ANTCTL1	NC
62	COEX_TXD	NC
63	ANTCTL2	NC
64	COEX_RXD	NC
65	ANTCTL3	NC
66	SIM DETECT	Out
67	RESET#	Out
68	SUSCLK	NC
69	CONFIG_1	Defines module type
70	3.3V / VBAT	Supply pin
71	GND	Ground
72	3.3V / VBAT	Supply pin,
73	GND	Ground
74	3.3V / VBAT	Supply pin
75	CONFIG_2	Defines module type

6.28 CON31 – CSI Camera Connector

The CSI Camera Connector provides a FFC interface to a camera module compatible to Raspberry Pi Zero.

Pin	Signal	Description
1	GND	Ground
2	CAM1_D0_N	Differential Data Lane 0 Negative Output
3	CAM1_D0_P	Differential Data Lane 0 Positive Output
4	GND	Ground
5	CAM1_D1_N	Differential Data Lane 1 Negative Output
6	CAM1_D1_P	Differential Data Lane 1 Positive Output
7	GND	Ground
8	CAM1_C_N	Differential Clock Lane Negative Output
9	CAM1_C_P	Differential Clock Lane Positive Output
10	GND	Ground
11	CAM1_D2_N	Differential Data Lane 2 Negative Output
12	CAM1_D2_P	Differential Data Lane 2 Positive Output
13	GND	Ground
14	CAM1_D3_N	Differential Data Lane 3 Negative Output
15	CAM1_D3_P	Differential Data Lane 3 Positive Output
16	GND	Ground
17	Camera_GPIO	CM4 GPIO
18	GPIO17	CM4 GPIO
19	GND	Ground
20	CAM_SCL	I2C Clock
21	CAM_SDA	I2C Data
22	+3.3V	Supply output pin

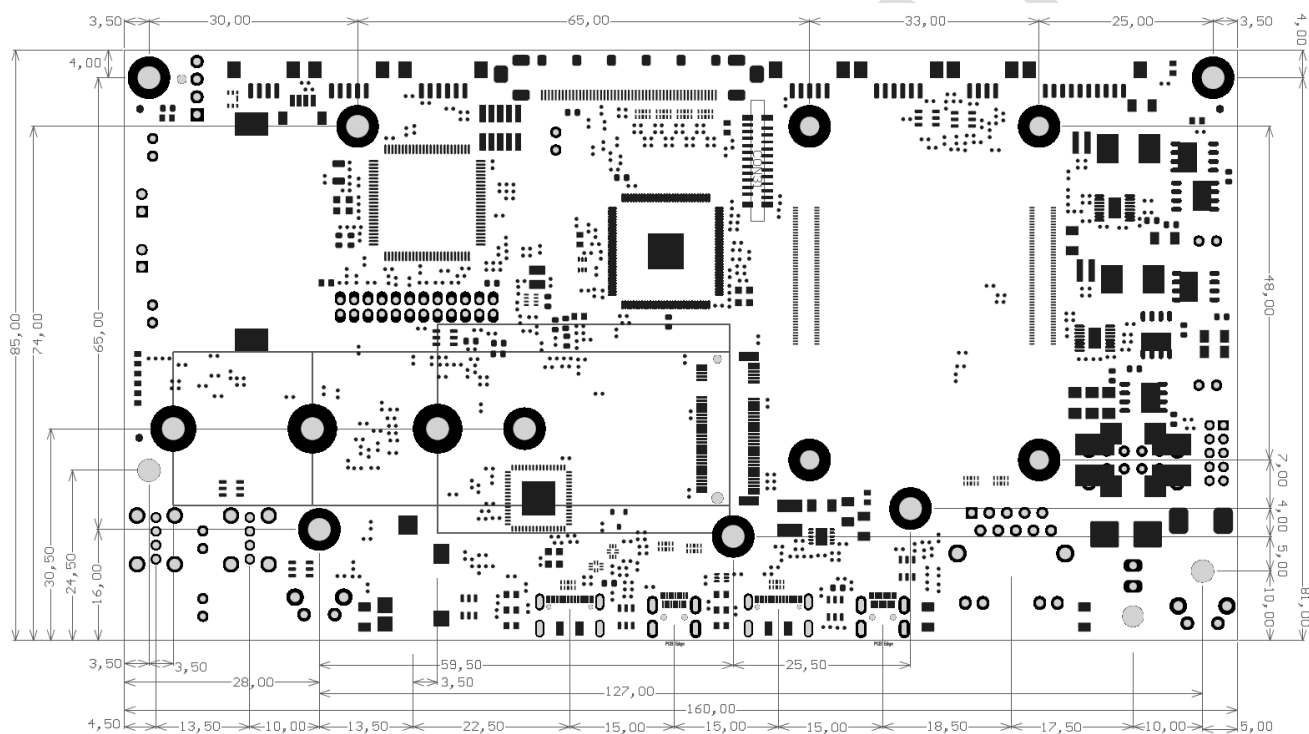
6.29 CON34 – Micro SIM Card

The Micro SIM Card slot is connected to the M.2 Key B interface CON29.

Pin	Signal	Description
C1	UIM-PWR	Power supply
C2	UIM-RESET	Reset
C3	UIM-CLK	Clock
C4	UIM_C4	Not Connected
C5	GND	Ground
C6	UIM_C6_VPP	Not Connected
C7	UIM-DATA	Data
C8	NC	Not Connected

1	GND3	Ground
2	GND2	Ground
3	GND1	Ground
4	DETECT CONTACT	M2_SIM_DETECT
5	GND4	Ground
6	GND5	Ground
7	DETECT_SPRING	Pull-Down resistor 22 Ohm to the ground
8	GND6	Ground

7 Mechanical Dimensions



	Min	Typ	Max
Weight	93 g	95 g	97 g
Width	84,9 mm	85,0 mm	85,1 mm
Length	159,9 mm	160,0 mm	160,1 mm
Height	PCB	1,44 mm	1,6 mm
	Components on Top		15,0 mm
	Components on Bottom		2,5 mm

8 Accessories

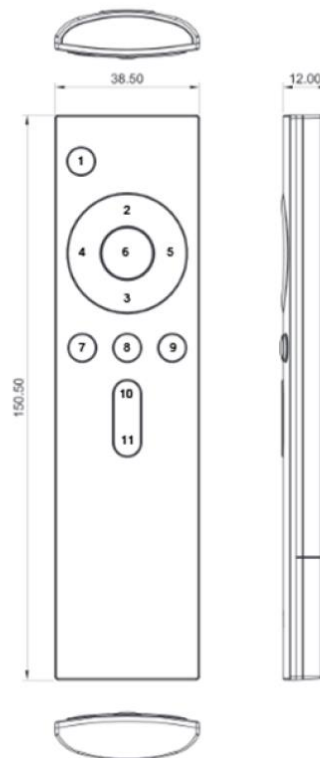
8.1 I/R Sensor ZU-02-406 and I/R Remote Control RC-10-007

As an alternative to the external keypad, the Compute Module can be controlled through infrared. IR sensor and IR remote control devices are provided by Distec.
Fitting cable to CON14: KA-30-467.



Position	Code	Function
1	0x01	Power
2	0x0D	Key Up
3	0x11	Key Down
4	0x0E	Key Left / decrease Brightness
5	0x10	Key Right / increase Brightness
6	0x0F	Key Enter
7	0x27	Menu
8	0x13	Exit
9	0x05	Mute
10	0x04	Volume +
11	0x03	Volume -

RC-10-007 Button Position

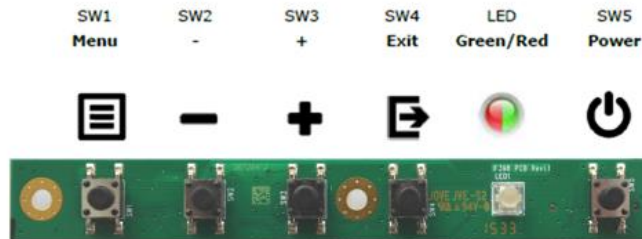


RC-10-007 Picture



8.2 OSD Keypad ZU-02-398

An OSD keypad can be used to control brightness, volume and power on/off.
Fitting cables to CON21: KA-30-394 (80cm) or KA-30-613 (45cm)



The following table gives an overview about the functionality.

	Menu	-	+	Exit	LED	Power
	Select	Hotkey Volume	Hotkey Brightness	Exit	Same as LED1+2 in chapter 5.3.2	Power ON/OFF

8.3 Light Sensor ZU-02-412

This light sensor can be connected for automatic adjustment the panel brightness according to the ambient light. Fitting cable to CON15: KA-30-786.



8.4 Temperature Sensor ZU-02-389

A temperature sensor is available to check the temperature of a TFT panel or any other hardware. FW support is provided upon request. Fitting cable to CON15: KA-30-323.



9 Ordering Information

Part Number	Description	Panel Interface	Power Supply	Note
AR-02-220	ARTISTAMEDIA-IV-00 VBO	V-by-One	+24V	Base Board only

10 Reference Kits

10.1 V-by-One 8-lane 4K2K@60Hz SVCC=12V

Ordering Code	Description	Comment
CH-01-050R1.1	M280DGJ-L30	SVCC=12V
KA-25-013	Cable BL SmartLEDIII/A1024HA-06PN 250mm	Mating to CON13
IN-54-009R1.1	Converter SmartLEDIVB-009 (12/24V,PDIM)	Backlight Controller
KA-20-100	Conv.cable Prisma/SmartLEDII-IV 500mm	Mating to CON13
KA-10-209	Cable Prisma-4K VBO/FI-RE51CL#1 500mm	FFC, mating to CON12
KA-31-382	Cable 43025-0200/AWG20 open end 700mm	Mating to CON2
PC-02-028	Raspberry Pi Mod. CM4108016 (16G/8G/WL)	
ZU-02-406	IF406-00 Small Size IR-Sensor	
KA-30-467	Cable Prisma/IF406 (IR-Sensor) 1000mm	Mating to CON14
RC-10-007	IR Remote Control / RC-5 Code	
ZU-02-398	IF398-00-OSD-Board-Universal 4+1Button	
KA-30-394	Cable OSD IF398/PrismaCompactMedia 800mm	Mating to CON21
ZU-02-412	IF412-00 Light Sensor	
KA-30-786	Cable Prisma-IIIA_A-Media / IF412 800mm	Mating to CON15
ZU-02-389	IF389-00 Temperature Sensor (I2C)	
KA-30-323	Cable Prisma-IIIA / IF389 500mm	Mating to CON15
ZX-42-128	Battery Button Cells CR2032 Blister Pack	
TBD	Heatsink for CM4	
TBD	Antenna for CM4	
TBD	RPIZ CAM 5MP 170 Raspberry Pi Zero	

Our company network supports you worldwide with offices in Germany, Austria, Switzerland, the UK and the USA. For more information please contact:

Headquarters

Germany



FORTEC Elektronik AG

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894450-0
E-Mail: info@forteca.de
Internet: www.forteca.de

Fortec Group Members

Austria



Distec GmbH Office Vienna

Nuschinggasse 12
1230 Wien

Phone: +43 1 8673492-0
E-Mail: info@distec.de
Internet: www.distec.de

Germany



Distec GmbH

Augsburger Str. 2b
82110 Germering

Phone: +49 89 894363-0
E-Mail: info@distec.de
Internet: www.distec.de

Switzerland



ALTRAC AG

Bahnhofstraße 3
5436 Würenlos

Phone: +41 44 7446111
E-Mail: info@altrac.ch
Internet: www.altrac.ch

United Kingdom



Display Technology Ltd.

Osprey House, 1 Osprey Court
Hichingbrooke Business Park
Huntingdon, Cambridgeshire, PE29 6FN

Phone: +44 1480 411600
E-Mail: info@displaytechnology.co.uk
Internet: www.displaytechnology.co.uk

USA



Apollo Display Technologies, Corp.

87 Raynor Avenue,
Unit 1 Ronkonkoma,
NY 11779

Phone: +1 631 5804360
E-Mail: info@apolloDisplays.com
Internet: www.apolloDisplays.com