

UP Squared i12

Maker Board
UPS-ADLP01

User's Manual 1st Ed

Copyright Notice

This document is copyrighted, 2023. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAEMON assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAEMON reserves the right to make changes in the product design without notice to its users.

Acknowledgement

All other products' name or trademarks are properties of their respective owners.

- Microsoft®, Windows® are registered trademarks of Microsoft Corp.
- Intel® and Celeron® are registered trademarks of Intel Corporation
- Core™ is a trademark of Intel Corporation
- Debian is a registered trademark of Software in the Public Interest, Inc.
- Yocto Project® is a trademark of The Linux Foundation.
- Linux® is a registered trademark of Linus Torvalds in the U.S. and other countries.
- Ubuntu and Canonical are registered trademarks of Canonical Ltd.

All other product names or trademarks are properties of their respective owners.

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● UPS-ADLP01 (UP Squared i12) with Active Heatsink	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the product page at AAEON.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.

17. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device

18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	X	X	○	○	○	○
外部信号 连接器及线材	X	X	○	○	○	○
<p>○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。</p> <p>备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。</p>						

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products
 AAEON Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	X	X	O	O	O	O
Wires & Connectors for External Connections	X	X	O	O	O	O
<p>O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.</p> <p>X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.</p> <p>Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only</p>						

Table of Contents

Chapter 1 - Product Specifications	1
1.1 Specifications	2
Chapter 2 – Hardware Information	5
2.1 Dimensions	6
2.2 Jumpers and Connectors.....	8
2.3 List of Jumpers and Connectors.....	10
2.3.1 Power Button (SW1).....	11
2.3.2 Fan Connector (CN19).....	11
2.3.3 Audio (CN1).....	12
2.3.4 USB 2.0/UART 1x10P Wafer (CN2)	12
2.3.5 M.2 2280 M-Key (CN3).....	13
2.3.6 DC-In (CN5)	15
2.3.7 USB 3.0 Port (CN6).....	15
2.3.8 HAT 40 (CN7).....	16
2.3.9 HDMI/DP (CN8)	17
2.3.10 M.2 2230 E-Key (CN9)	18
2.3.11 BIOS Prog (CN10).....	20
2.3.12 LAN Port (CN11)	21
2.3.13 USB Type-C Port (CN12).....	22
2.3.14 RTC (CN13)	23
2.3.15 SATA Connector (CN14).....	23
2.3.16 SATA Power (CN15).....	24
2.3.17 CSI Power (CN16).....	24
2.3.18 CSI Connector (CN17)	25
2.3.19 Front Panel 1x6P Wafer (CN18).....	26
2.3.20 Auto-Power Button Selection (JP1).....	27

Chapter 3 – Software Installation	28
3.1 Linux Setup	29
3.2 Windows Drivers Installation	29
Chapter 4 – Mechanical Installation	30
4.1 Board Pillar Installation.....	31
Appendix A – UP Framework SDK Installation	33
A.1 Introduction	34
A.2 Installation for Windows 10.....	34
Appendix B – Cables and Connectors	37
B.1 Cables and Connectors.....	38

Chapter 1

Product Specifications

1.1 Specifications

System

Processor	12 th Generation Intel® Core™/Celeron® Processor 7000 Series SoC Intel® Core™ i7-1270PE (28W) Intel® Core™ i5-1250PE (28W) Intel® Core™ i3-1220PE (28W) Intel® Celeron® Processor 7305E (15W)
Graphics	Intel® UHD Graphics
Memory	Up to 8GB Onboard LPDDR5
Storage	M.2 2280 M-Key x 1 (PCIe Gen 4.0 [x4]) SATA III x 1
I/O	2-pin Fan Wafer x 1 (12V) 2-pin RTC Battery Wafer x 1 6-pin Audio Wafer x 1 (Line out + MIC in) SATA III Connector x 1 M.2 2280 M-Key x 1 M.2 2230 E-Key x 1 HDMI 1.4b/DP 1.2 STACK Connector x 1 DP 1.4a x 1 (via USB Type-C) USB 3.2 Gen 2 (Type-A) x 2 USB 3.2 Gen 2 (Type-C) x 1 10-pin USB 2.0 x 2/UART x 1 6-pin Front Panel x 1 HAT 40-pin Header x 1
Camera	MIPI-CSI via 61-Pin FPC Connector

System

USB	10-pin USB 2.0 x 2/UART x 1 USB 3.2 Gen 2 (Type-A) x 2 USB 3.2 Gen 2 (Type-C for DP 1.4) x 1
Expansion	40-pin GPIO x 1 M.2 2230 E-Key x 1 (CNVi & PCIe Gen 3.0 [x1]) M.2 2280 M-Key x 1 (PCIe Gen 4.0 [x4]) SATA III x 1
Display Interface	HDMI 1.4b/DP 1.2 STACK Connector x 1 DP 1.4a x 1 (via USB Type-C)
Ethernet	1GbE RJ-45 x 2 (Dual-Stacked, Realtek 8111H-CG)
Security	Onboard TPM 2.0
RTC	YES
OS Support	Windows® 10 IoT Enterprise LTSC 2021 Ubuntu 22.04 Yocto 4.0

Power Requirement

Power	12V DC-in
Power Supply Type	AT/ATX (Default: AT)
Power Consumption	26W~39W

Mechanical

Dimension	3.37" x 3.54" (85.6mm x 90mm)
Net Weight	0.59 lb. (0.27Kg)
Gross Weight	0.84 lb. (0.38Kg)

Environmental

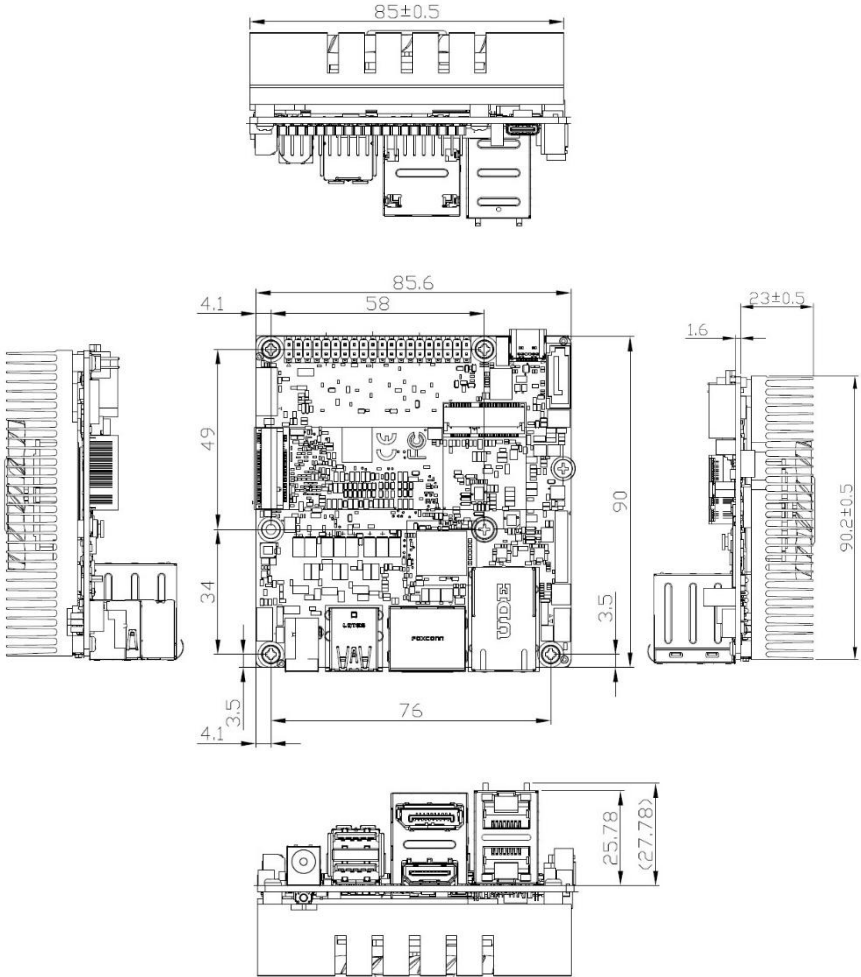
Operating Temperature	32°F ~ 140°F (0°C ~ 60°C) / 0.5 airflow
Operation Humidity	0% ~ 90% relative humidity, non-condensing
MTBF	522,716
Certification	CE/FCC Class A, RoHS Compliant, REACH

Chapter 2

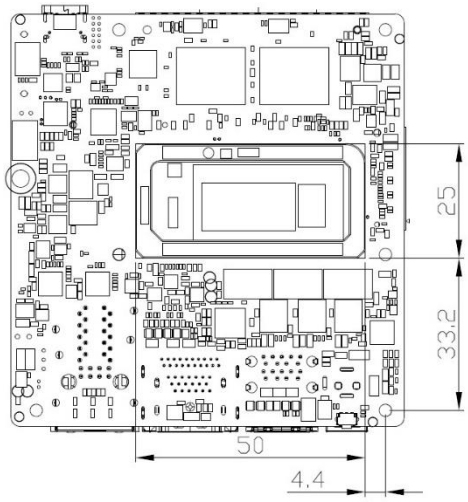
Hardware Information

2.1 Dimensions

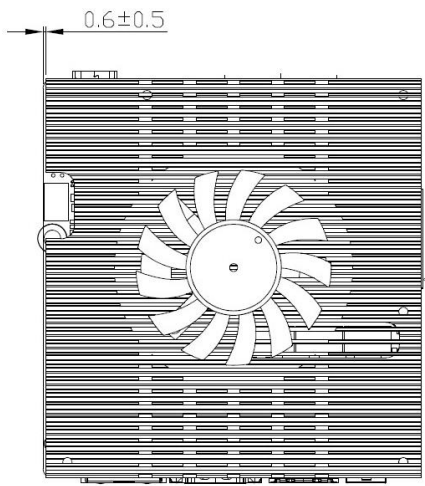
Top



Bottom

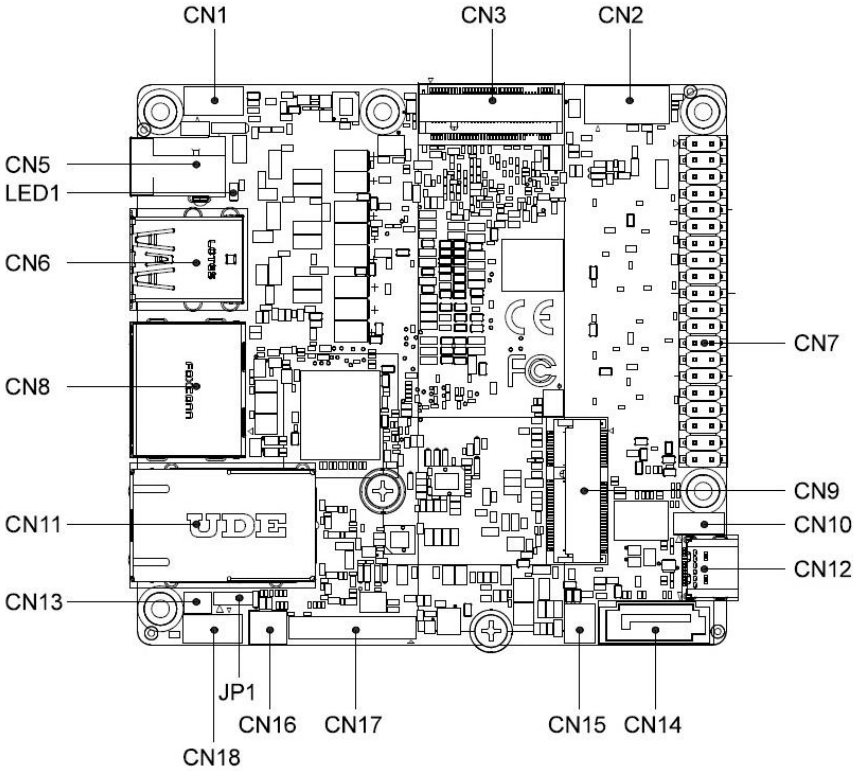


Bottom with Heatspreader

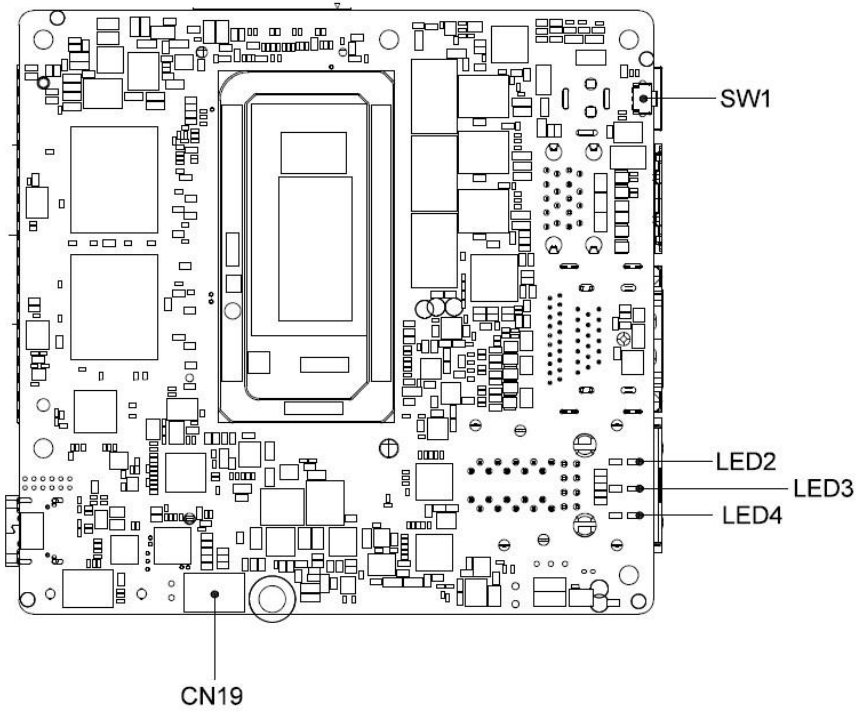


2.2 Jumpers and Connectors

Top:



Bottom:



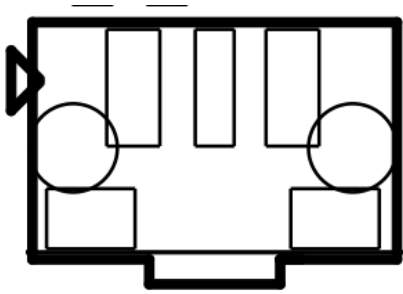
2.3 List of Jumpers and Connectors

Please refer to the table below for all of the board's jumpers and connectors that you can configure for your application

Label	Function
SW1	Power Button
CN19	FAN
CN1	Audio
CN2	USB 2.0/UART 1x10P Wafer
CN3	M.2 2280 M-Key
CN5	DC-In
CN6	USB 3.0 Port
CN7	HAT 40
CN8	HDMI/DP
CN9	M.2 2230 E-Key
CN10	BIOS Prog
CN11	Dual LAN Port
CN12	USB Type-C Port
CN13	RTC
CN14	SATA Connector
CN15	SATA Power
CN16	CSI Power
CN17	CSI Connector
CN18	Front Panel 1x6P Wafer
LED1	PWR LED
LED2	LED 2
LED3	LED 3

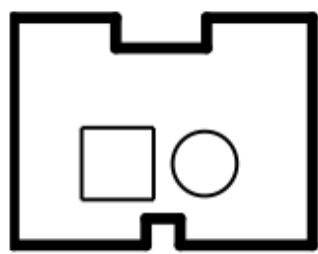
Label	Function
LED4	LED 4
JP1	Auto-Power Button Selection

2.3.1 Power Button (SW1)



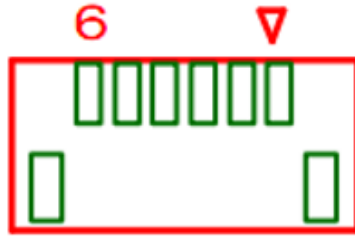
Pin	Signal	Pin	Signal	Pin	Signal
1	GND	2	PWRBTN_N	3	GND

2.3.2 Fan Connector (CN19)



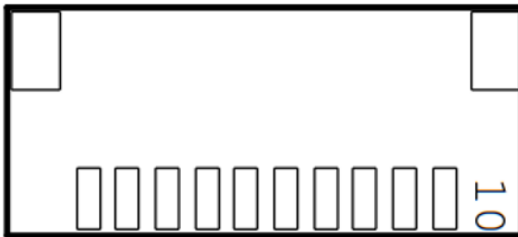
Pin	Signal	Pin	Signal
1	FAN_PWR(12V)	2	GND

2.3.3 Audio (CN1)



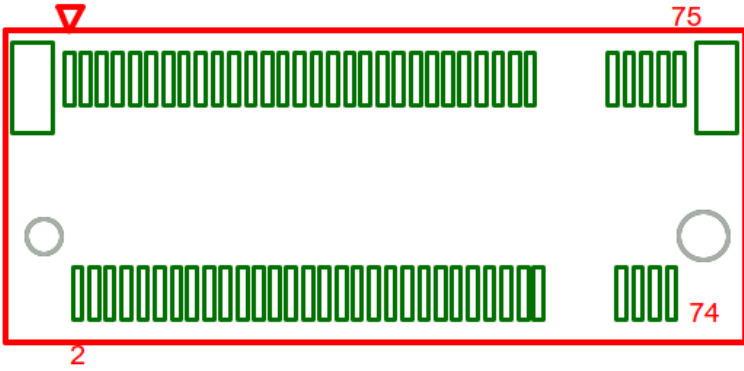
Pin	Signal	Pin	Signal
1	LOUT_R	2	LOUT_L
3	AUD_GND	4	NC
5	NC	6	MIC_L_CN

2.3.4 USB 2.0/UART 1x10P Wafer (CN2)



Pin	Signal	Pin	Signal
1	+5V	2	USB2_DN5
3	USB2_DP5	4	GND
5	+5V	6	USB2_DN6
7	USB2_DP6	8	GND
9	UART1_RXD_BUG	10	UART1_TXD_BUG

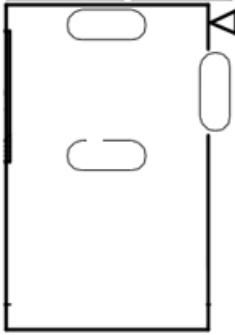
2.3.5 M.2 2280 M-Key (CN3)



Pin	Signal	Pin	Signal
1	GND	2	+3.3V
3	NC	4	+3.3V
5	PCIE4_A_RXN3	6	+3.3V
7	PCIE4_A_RXP3	8	NC
9	GND	10	NC
11	PCIE4_A_TXN3	12	+3.3V
13	PCIE4_A_TXP3	14	+3.3V
15	GND	16	+3.3V
17	PCIE4_A_RXN2	18	+3.3V
19	PCIE4_A_RXP2	20	NC
21	GND	22	NC
23	PCIE4_A_TXN2	24	NC
25	PCIE4_A_TXP2	26	NC
27	GND	28	NC
29	PCIE4_A_RXN1	30	NC
31	PCIE4_A_RXP1	32	NC
33	GND	34	NC
35	PCIE4_A_TXN1	36	NC

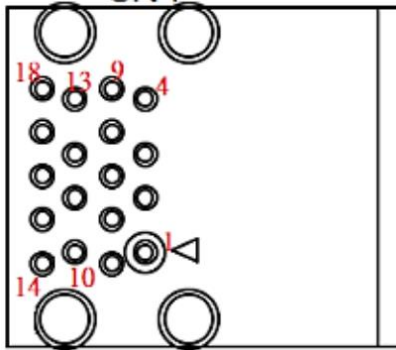
Pin	Signal	Pin	Signal
37	PCIE4_A_TXP1	38	NC
39	GND	40	SMB_CLK_1V8_A
41	PCIE4_A_RXN0	42	SMB_DATA_1V8_A
43	PCIE4_A_RXP0	44	NC
45	GND	46	NC
47	PCIE4_A_TXN0	48	NC
49	PCIE4_A_TXP0	50	BUF_PLT_RST#
51	GND	52	NC
53	PCIE4_A_CLK_DN	54	PCIE_WAKE#_N
55	PCIE4_A_CLK_DP	56	NC
57	GND	58	NC
59	KEY	60	KEY
61	KEY	62	KEY
63	KEY	64	KEY
65	KEY	66	KEY
67	NC	68	NC
69	NC	70	+3.3V
71	GND	72	+3.3V
73	GND	74	+3.3V
75	GND		

2.3.6 DC-In (CN5)



Pin	Signal	Pin	Signal	Pin	Signal
1	VCC_12V	2	GND	3	GND

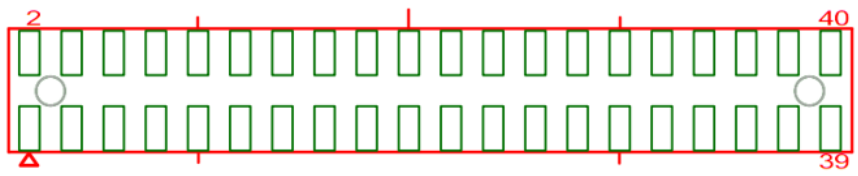
2.3.7 USB 3.0 Port (CN6)



Pin	Signal	Pin	Signal
1	+5V	2	USB2_C_DN1
3	USB2_C_DP1	4	GND
5	USB3_RXN_CON_P1	6	USB3_RXP_CON_P1
7	GND	8	USB3_TXN_CON_P1

Pin	Signal	Pin	Signal
9	USB3_TXP_CON_P1	10	+5V
11	USB2_C_DN2	12	USB2_C_DP2
13	GND	14	USB3_RXN_CON_P2
15	USB3_RXP_CON_P2	16	GND
17	USB3_TXN_CON_P2	18	USB3_TXP_CON_P2

2.3.8 HAT 40 (CN7)

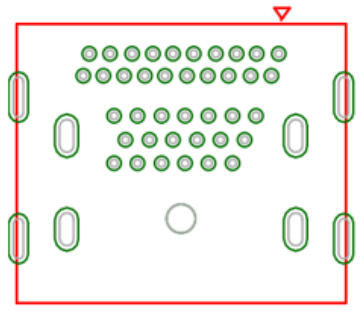


Pin	Signal	Pin	Signal
1	3.3V@1A	2	5V@1A
3	HAT_I2C1_SDA (GPIO 1)	4	5V@1A
5	HAT_I2C1_SCL (GPIO 2)	6	GND
7	HAT_GPIO3_ADC (GPIO 3)	8	HAT_TXD (GPIO 16)
9	GND	10	HAT_RXD (GPIO 17)
11	HAT_RTS (GPIO 4)	12	HAT_I2S_CLK (GPIO 18)
13	HAT_TIME_SYNC0 (GPIO 5)	14	GND
15	HAT_TIME_SYNC1 (GPIO 6)	16	HAT_ISH_I2C2_SDA (GPIO 19)
17	3.3V@0.5A	18	HAT_ISH_I2C2_SCL (GPIO 20)
19	HAT_SPI_MOSI (GPIO 7)	20	GND
21	HAT_SPI_MISO (GPIO 8)	22	HAT_GPIO21 (GPIO 21)
23	HAT_SPI_CLK (GPIO 9)	24	HAT_SPI_CS0 (GPIO 22)
25	GND	26	HAT_SPI_CS1 (GPIO 23)
27	HAT_I2C0_SDA (GPIO 10)	28	HAT_I2C0_SCL (GPIO 24)
29	HAT_GPIO11 (GPIO 11)	30	GND

Pin	Signal	Pin	Signal
31	HAT_GPIO12 (GPIO 12)	32	HAT_PWM0 (GPIO 25)
33	HAT_PWM1 (GPIO 13)	34	GND
35	HAT_I2S_FRM (GPIO 14)	36	HAT_CTS (GPIO 26)
37	HAT_GPIO15 (GPIO 15)	38	HAT_I2S_RX (GPIO 27)
39	GND	40	HAT_I2S_TX (GPIO 28)

Note: PWM only works when OS selection is set to [Intel Linux]. It will not work with OS selection set to Windows 10.

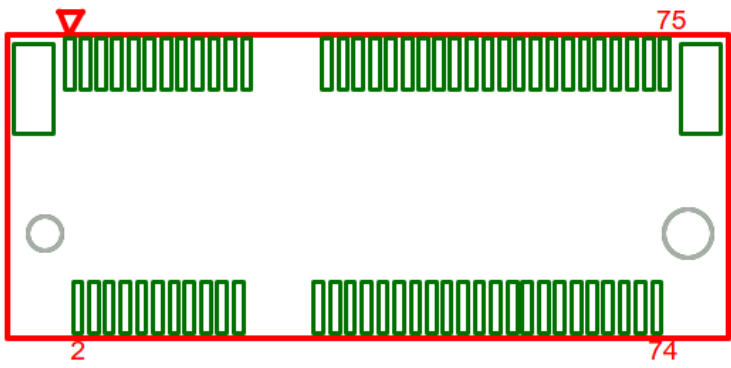
2.3.9 HDMI/DP (CN8)



Pin	Signal	Pin	Signal
P1	DDIO_TXP_DP_0	P2	GND
P3	DDIO_TXN_DP_0	P4	DDIO_TXP_DP_1
P5	GND	P6	DDIO_TXN_DP_1
P7	DDIO_TXP_DP_2	P8	GND
P9	DDIO_TXN_DP_2	P10	DDIO_CLK_DP_DP
P11	GND	P12	DDIO_CLK_DP_DN
P13	GND	P14	GND
P15	DP_AUX_P	P16	GND
P17	DP_AUX_N	P18	DDIO_TYPE_C_HPDP

Pin	Signal	Pin	Signal
P19	GND	P20	+3.3V
P21	DDI1_TXP_HDMI_2	P22	GND
P23	DDI1_TXN_HDMI_2	P24	DDI1_TXP_HDMI_1
P25	GND	P26	DDI1_TXN_HDMI_1
P27	DDI1_TXP_HDMI_0	P28	GND
P29	DDI1_TXN_HDMI_0	P30	DDI1_CLK_HDMI_DP
P31	GND	P32	DDI1_CLK_HDMI_DN
P33	NC	P34	NC
P35	HDMI_SCL	P36	HDMI_SDA
P37	GND	P38	5V
P39	HDMI_HPD_R		

2.3.10 M.2 2230 E-Key (CN9)

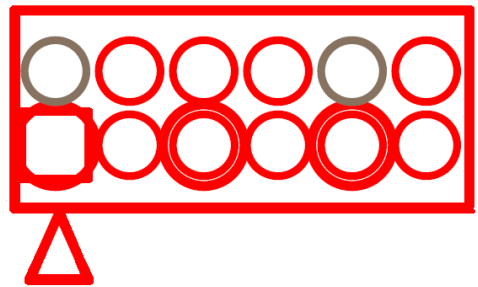


Pin	Signal	Pin	Signal
1	GND	2	+3P3VAUX_WIFI
3	USB2P_10	4	+3P3VAUX_WIFI
5	USB2N_10	6	NC
7	GND	8	NC
9	CNV_WR_LANE1_DN	10	M.2_CNV_RF_RESET

Pin	Signal	Pin	Signal
11	CNV_WR_LANE1_DP	12	NC
13	GND	14	M.2_CNV_CLKREQ
15	CNV_WR_LANE0_DN	16	NC
17	CNV_WR_LANE0_DP	18	GND
19	GND	20	M.2_CNV_UART_WAKE
21	CNV_WR_CLK_DN	22	M.2_CNV_BRI_RSP
23	CNV_WR_CLK_DP	24	KEY
25	KEY	26	KEY
27	KEY	28	KEY
29	KEY	30	KEY
31	KEY	32	M.2_CNV_RGI_DT
33	GND	34	M.2_CNV_RGI_RSP
35	PCIE9_TXP	36	M.2_CNV_BRI_DT
37	PCIE9_TXN	38	NC
39	GND	40	NC
41	PCIE9_RXP	42	NC
43	PCIE9_RXN	44	CNV_PA_BLANKING
45	GND	46	NC
47	PCIE_5_CLK_DP	48	NC
49	PCIE_5_CLK_DN	50	M2_WIFI_SUSCLK
51	GND	52	BUF_PLT_RST#
53	PCIE_CLKREQ#5	54	BT_EN
55	PCIE_WAKE#	56	WIFI_EN
57	GND	58	NC
59	CNV_WT_LANE1_DN	60	NC
61	CNV_WT_LANE1_DP	62	NC
63	GND	64	NC
65	CNV_WT_LANE0_DN	66	NC

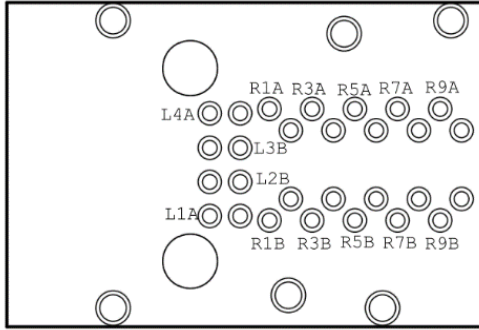
Pin	Signal	Pin	Signal
67	CNV_WT_LANE0_DP	68	NC
69	GND	70	NC
71	CNV_WT_CLK_DN	72	+3P3VAUX_WIFI
73	CNV_WT_CLK_DP	74	+3P3VAUX_WIFI
75	GND		

2.3.11 BIOS Prog (CN10)



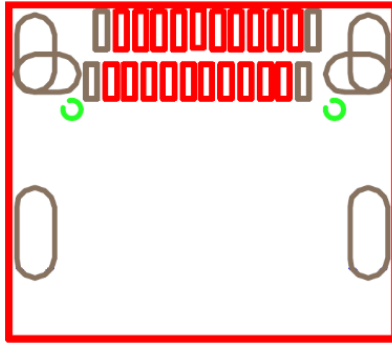
Pin	Signal	Pin	Signal
1	CPLD_TCK	2	GND
3	CPLD_TDO	4	+VCC_SPI
5	CPLD_TMS	6	SPI_R_CS0#
7	SPI_R_CLK	8	SPI_R_MISO
9	CPLD_TDI	10	GND
11	SPI_R_MOSI	12	SPI_R SOCK_HOLD_N

2.3.12 LAN Port (CN11)



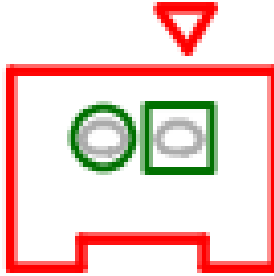
Pin	Signal	Pin	Signal
L1A	LAN1_ACTLEDN	L1B	LAN2_ACTLEDN
L2A	LAN1_ACTLEDP	L2B	LAN2_ACTLEDP
L3A	LAN1_LINK1000#	L3B	LAN2_LINK1000#
L4A	LAN1_LINK100#	L4B	LAN2_LINK100#
R1A	LAN1_MDIO+	R1B	LAN2_MDIO+
R2A	LAN1_MDIO-	R2B	LAN2_MDIO-
R3A	LAN1_MD11+	R3B	LAN2_MD11+
R4A	LAN1_MD11-	R4B	LAN2_MD11-
R5A	LAN1_MD12+	R5B	LAN2_MD12+
R6A	LAN1_MD12-	R6B	LAN2_MD12-
R7A	LAN1_MD13+	R7B	LAN2_MD13+
R8A	LAN1_MD13-	R8B	LAN2_MD13-
R9A	LAN1_DAC	R9B	LAN2_DAC
R10A	LAN1_GND	R10B	LAN2_GND

2.3.13 USB Type-C Port (CN12)



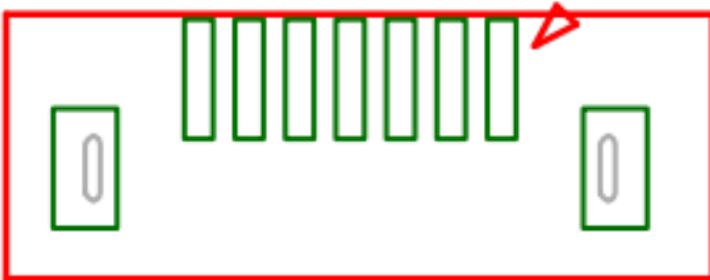
Pin	Signal	Pin	Signal
A1	GND	B1	GND
A2	TCP0_RT_TX0_C_DP	B2	TCP0_RT_TX1_C_DP
A3	TCP0_RT_TX0_C_DN	B3	TCP0_RT_TX1_C_DN
A4	+5V	B4	+5V
A5	+VTCPC0_CC1_CONN	B5	+VTCPC0_CC2_CONN
A6	USB2_P5_R_DP	B6	USB2_P5_R_DP
A7	USB2_P5_R_DN	B7	USB2_P5_R_DN
A8	TCP0_SBU1_CONN	B8	TCP0_SBU2_CONN
A9	+5V	B9	+5V
A10	TCP0_RT_TXRX1_C_DN	B10	TCP0_RT_TXRX0_C_DN
A11	TCP0_RT_TXRX1_C_DP	B11	TCP0_RT_TXRX0_C_DP
A12	GND	B12	GND

2.3.14 RTC (CN13)



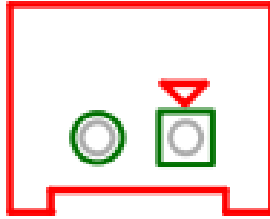
Pin	Signal	Pin	Signal
1	+3.3V	2	GND

2.3.15 SATA Connector (CN14)



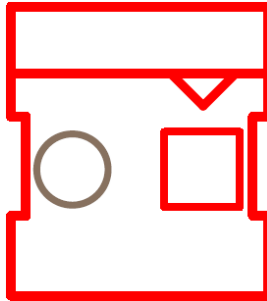
Pin	Signal	Pin	Signal
1	GND	2	SATA_C_TXP0
3	SATA_C_TXN0	4	GND
5	SATA_C_RXN0	6	SATA_C_RXP0
7	GND		

2.3.16 SATA Power (CN15)



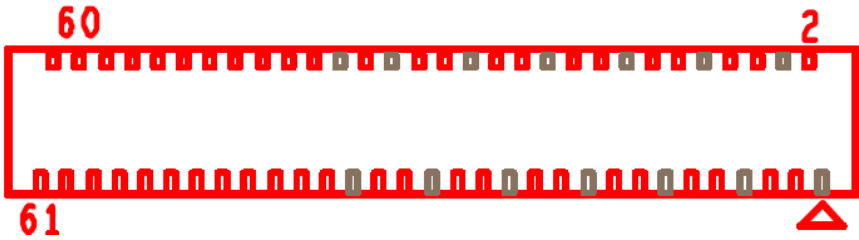
Pin	Signal	Pin	Signal
1	+5V	2	GND

2.3.17 CSI Power (CN16)



Pin	Signal	Pin	Signal
1	+12VS	2	GND

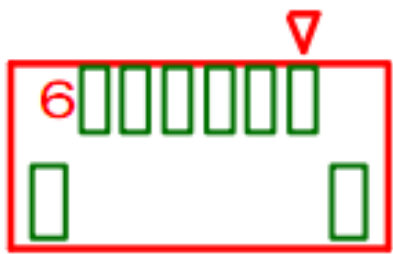
2.3.18 CSI Connector (CN17)



Pin	Signal	Pin	Signal
1	GND	2	CSI_A_D0_DN
3	CSI_A_D0_DP	4	GND
5	CSI_A_D1_DP	6	CSI_A_D1_DN
7	GND	8	CSI_A_CK_DN
9	CSI_A_CK_DP	10	GND
11	CSI_B_D0_DP	12	CSI_B_D0_DN
13	GND	14	CSI_B_D1_DN
15	CSI_B_D1_DP	16	GND
17	CSI_B_CK_DP	18	CSI_B_CK_DN
19	GND	20	CSI_C_D0_DN
21	CSI_C_D0_DP	22	GND
23	CSI_C_D1_DP	24	CSI_C_D1_DN
25	GND	26	CSI_C_CK_DN
27	CSI_C_CK_DP	28	GND
29	CSI_D_D0_DP	30	CSI_D_D0_DN
31	GND	32	CSI_D_D1_DN
33	CSI_D_D1_DP	34	GND
35	CSI_D_CK_DP	36	CSI_D_CK_DN
37	GND	38	GND
39	CSI_I2S_BCLK_MGCLKOUT1	40	CSI_I2S_SDO_MGCLKOUT0

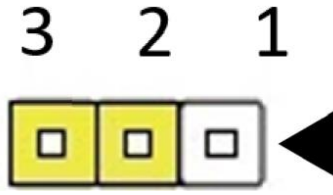
Pin	Signal	Pin	Signal
41	CSI_I2S_FRM_MGCLKOUT3	42	CSI_I2S_SDI_MGCLKOUT2
43	CRD1_PWREN	44	STROBE_CAM
45	CRD2_PWREN	46	CAM1_RST#
47	GPPC_CAM_CLK	48	CAM2_RST#
49	GPPC_PRIVACY_CAM2	50	I2C1_SCL
51	ISH_INT_GP_CRD_GSB	52	I2C1_SDA
53	GPPC_CAM_SYNC	54	I2C5_SCL
55	GPPC_PRIVACY_CAM1	56	I2C5_SDA
57	SUSCLK	58	PM_SLP_S3#
59	INT_IO_GPIO5	60	BUF_PLT_RST_1.8_N
61	GPPC_H4_CSI_RST_N		

2.3.19 Front Panel 1x6P Wafer (CN18)



Pin	Signal	Pin	Signal
1	GND	2	HWRST#
3	GND	4	PWRBTN_N
5	GND	6	+3.3V
7	GND	8	GND

2.3.20 Auto-Power Button Selection (JP1)



Pin	Signal
1-2	Disable
2-3*	Enable

Chapter 3

Software Installation

3.1 Linux Setup

The UP Squared i12 supports Linux operating systems (see Chapter 1 for specifications). For instructions on how to install a Linux OS onto your UP Squared i12, you can find several guides and tutorials in the wiki section of the UP Board website at <https://up-board.org> for both installing supported distributions as well as porting your own Linux build.

3.2 Windows Drivers Installation

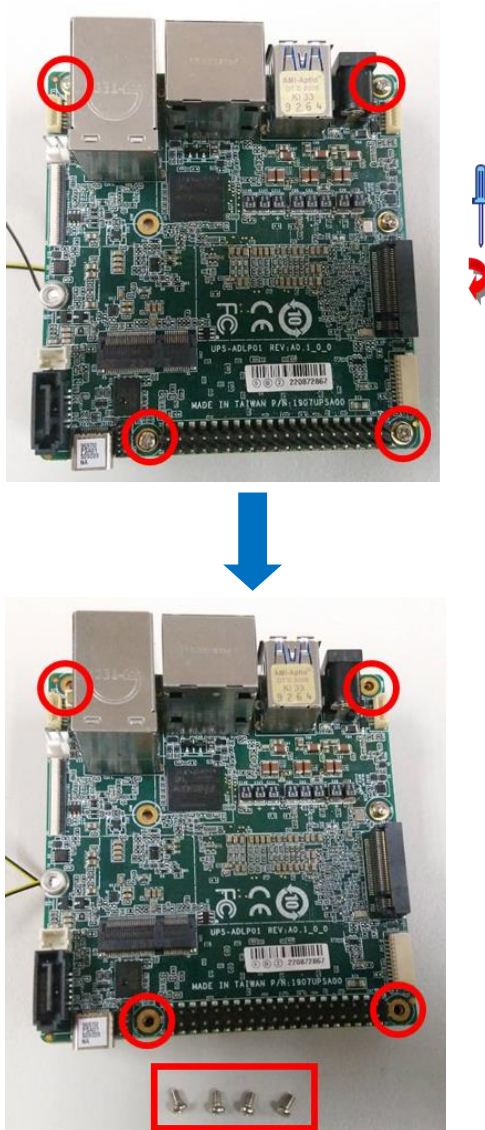
Drivers for the UP Squared i12 can be downloaded from the UP Board website by following the link <https://up-board.org> and navigating to the Downloads section, then clicking on the UP Squared i12 to find all relevant drivers.

Chapter 4

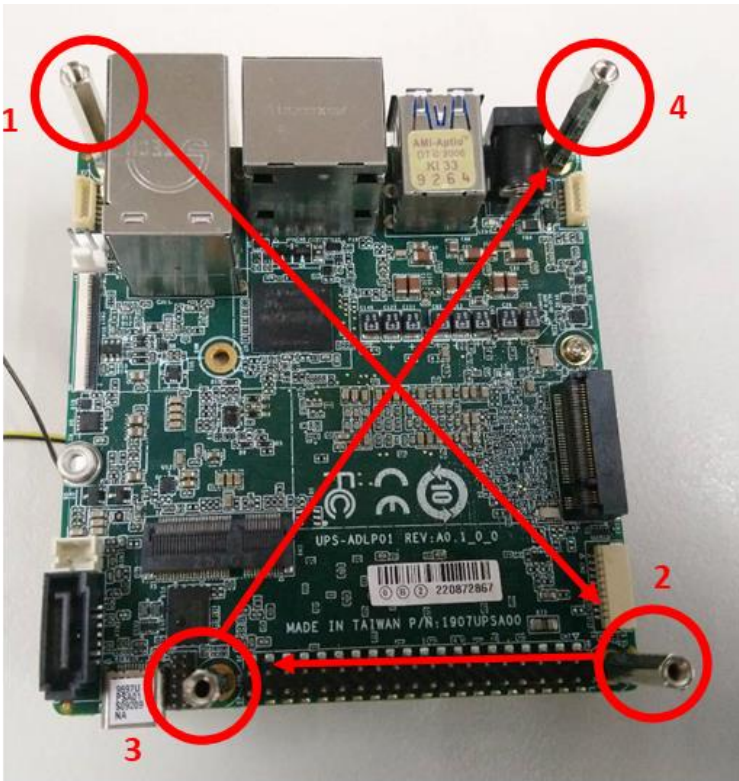
Mechanical Installation

4.1 Board Pillar Installation

Step 1: Remove the four (4) screws from the outer edges of the board.



Step 2: Affix and lock the four (4) pillars to the board in the following sequence.



Appendix A

UP Framework SDK Installation

A.1 Introduction

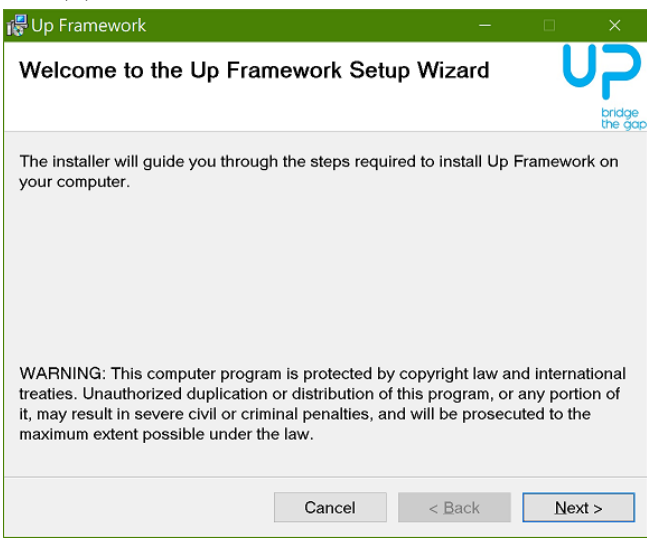
This section provides instructions for the installation of the UP Framework SDK. Instructions are provided for Windows 10 and Windows IoT Core. You can download the latest version of UP Framework SDK from the UP community:

<https://downloads.up-community.org/download/up-sdk-for-windows-10-and-windows-iot/>

A.2 Installation for Windows 10

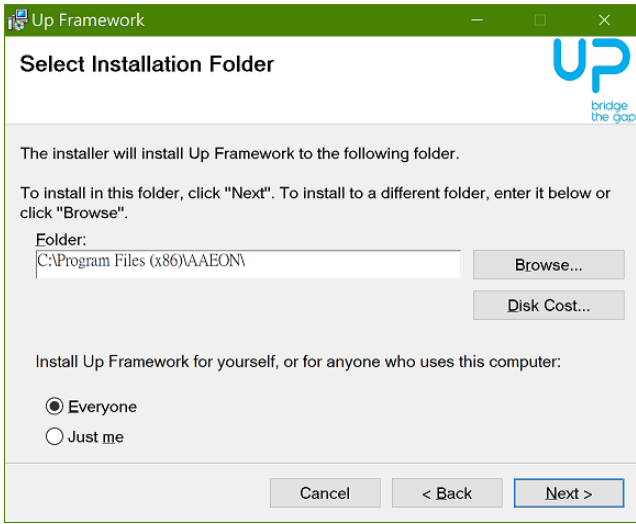
Step 1

Locate the downloaded file UpFrameworkSetup.msi and run the installer. Press “Next” to begin the setup process.



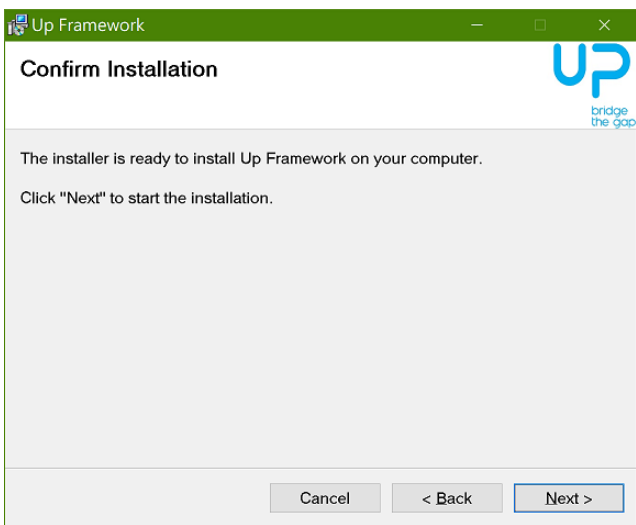
Step 2

Select the installation folder. Default destination path is C:\Program Files(x86)\AAEON\
 You may also choose to install the UP Framework SDK for all users or only the current user. Press "Next" to continue installation.



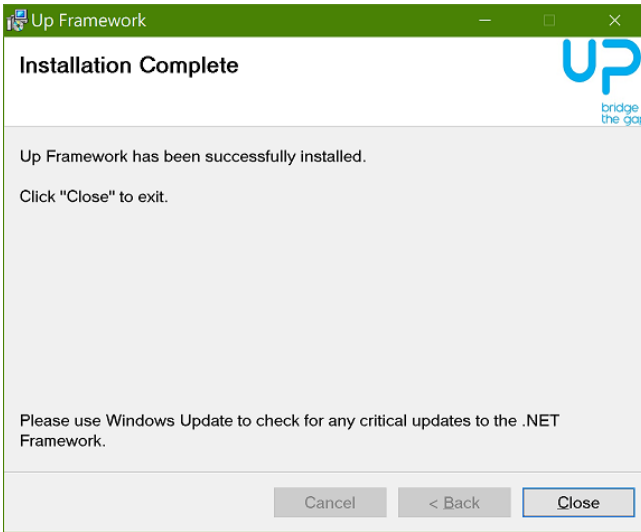
Step 3

Press "Next" to confirm the installation.



Step 4

Press "Close" to exit once setup is complete.



Appendix B

Cables and Connectors

B.1 Cables and Connectors

This table provides detailed information about the cables and connectors used by the UP Squared i12 (UPS-ADLP01). If you have any questions about the configuration of your board, please contact your AAEON sales representative.

Label	Connector P/N	Description	Mating Cable P/N	Mating Cable Description
SW1	1601000990	PWR button		
CN19	1655802020	FAN		
CN1	1655906033	Audio	170X000382	(TF)Cable.6PPitch=1.0mm.150mm. FLYINGWAY.FWAA-1473.Audio Jack Cable
CN2	1655X00031	USB2.0/UART 1x10P Wafer	170010015G	USB Cable.10P 1.0mm Housing.USB A(F).15cm
CN3	165420753B	M.2 Key-M		
CN5	1652503109	Power Input		
CN6	1654801832	USB3.0		
CN7	16530X0041	HAT 40		
CN8	1654403931	DP/HDMI		
CN9	1654207533	M.2 Key-E		
CN10	1653006205	BIOS Prog		
CN11	1652828204	LAN		
CN12	16548X0017	Type-C		
CN13	1655X00019	RTC Battery Conn	175011301K	Lithium Battery.CR2032H.3V.240mAH .w/cable 90mm. DIP.Battery power.BP-CR2032-M90-001
CN14	1654907009	SATA	1709070500	(TF)SATA CABLE.7P Pitch 1.27mm.50cm
CN15	1655302025	SATA PWR	1702150155 1702150306	(TF)Power Cable.15P SATA(F).2P2.0mm Housing(PH)15cm(TF)Power Cable.15P SATA(F).2P 2.0mm Housing(PH).30cm
CN17	16549X0033	CSI	170X000600	(TF)FPC Cable.61PPitch=0.3mm.76.288 *63*0.2mm.SUNFUN.AE-2S6748
CN18	1655906033	Front Panel	170X000306	(TF)Cable.to 6P 1.00mm housing. Power switch cable.SW w/green LED.20cm. FLYINGWAY.FWAA-1348
LED1	1304300140	PWR LED		
LED2	13041005S1	LED2		
LED3	13041005Z0	LED3		

Label	Connector P/N	Description	Mating Cable P/N	Mating Cable Description
LED4	13041005S0	LED4		
JP1	165300310G	Auto-Power Button Select		