

# UP Vision Plus X

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UPCP-CR-VPX3-A10-001

Maker Board

User's Manual 1<sup>st</sup> Ed

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## Packing List

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

Item	Quantity
● UP Vision Plus X	1
● Adapter Board i	1
● Adapter Board ii	1
● Cooler Heatsink	1
● Standoff	6
● Screw	6

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

## About this Document

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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 on [AAEON.com](http://AAEON.com) for the latest version of this document.

## Safety Precautions

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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.**

## FCC Statement

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.
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- Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.
  - This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
  - End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.



This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device complies with Part 15 of 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.

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	○	○	○	○	○	○
外部信号 连接器及线材	○	○	○	○	○	○
<p>O: 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	O	O	O	O	O	O
Wires & Connectors for External Connections	O	O	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>						

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# Chapter 1

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Product Specifications

# 1.1 Specifications

## System

VPU	Intel Movidius Myriad X VPU x 3, MA2485
Ethernet	Intel WGI211AT PCI-E Gigabit Ethernet x 1
Power Requirement	12V5A
Power Supply Type	12VDC from M/B
Power Consumption (Typical)	Max 25W
Dimensions (L x W)	90 x 56 mm
Operating Temperature	0 ~ 60°C (32 ~ 140°F)
Operation Humidity	10 ~ 80% relative humidity, non-condensing
Certification	CE/FCC Class B
OS Support	Microsoft Windows 10, Android 9.0 Linux: ubilinux, Ubuntu, Yocto

## I/O

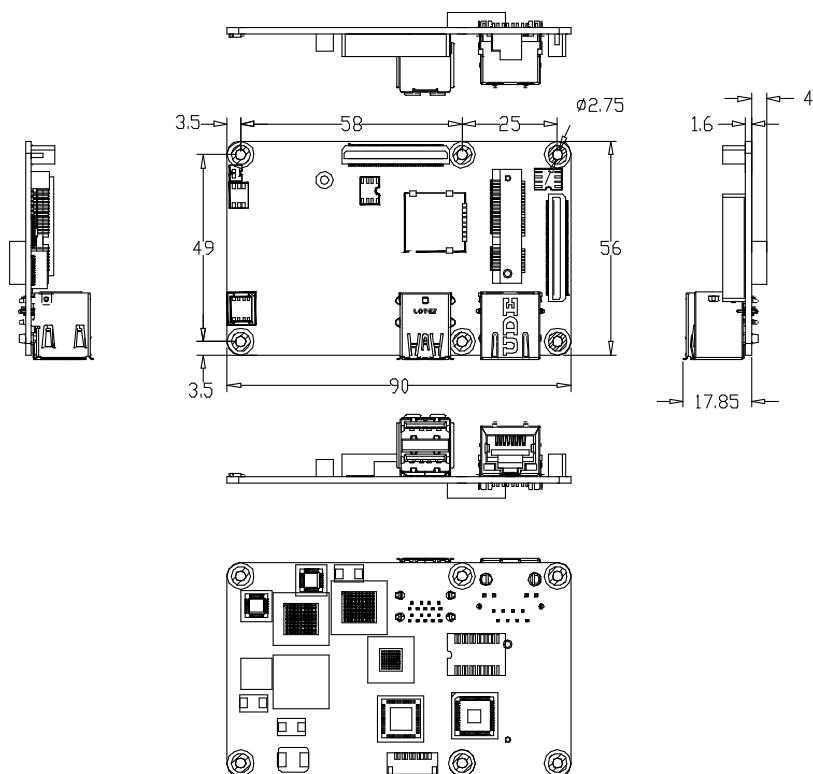
Ethernet	1 x RJ45 (Intel WGI211AT PCI-E Gigabit Ethernet)
USB	2 x USB 3.0 Type A
Expansion Slot	1 x mPCIe Slot (Full Size) (SATA/USB/PCIE) 1 x SIM Card Slot DOCKING I (2x I2C) DOCKING II (3x PCIe.G2, 1x USB3.0, 1x SATA, 2x USB 2.0)

# Chapter 2

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Hardware Information

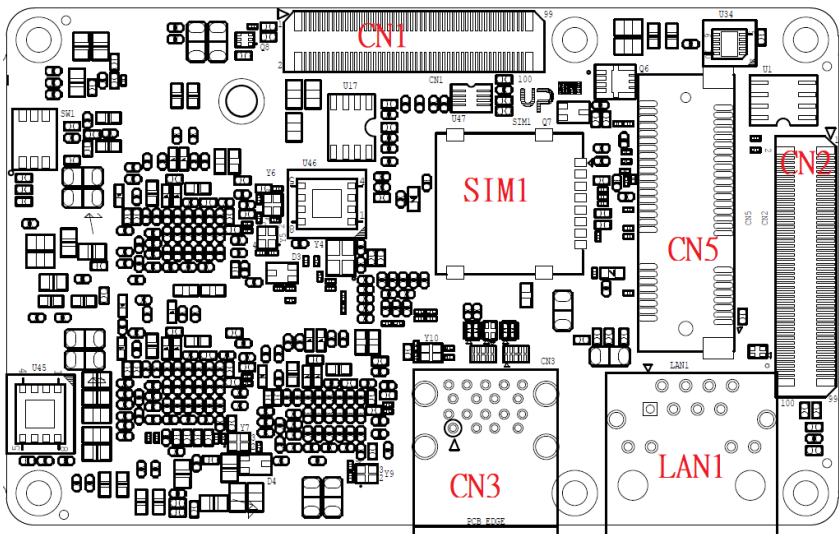
## 2.1 Dimensions



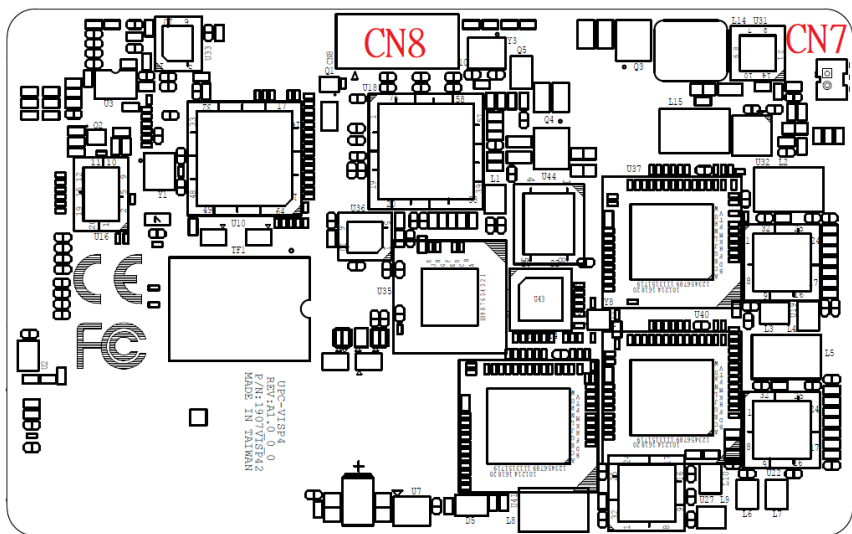


# 2.2 Jumpers and Connectors

Top side



Bottom side

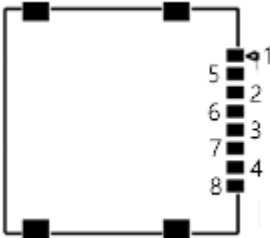


## 2.3 List of Switches and Connectors

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

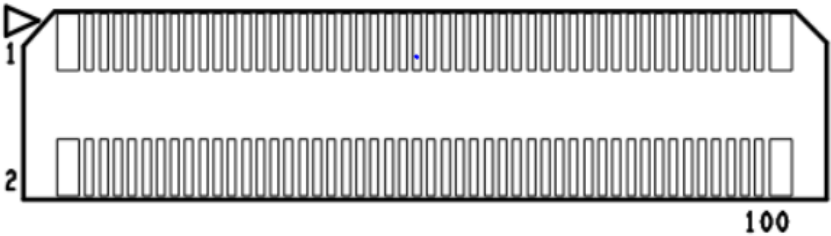
Reference	Function	Connector Type
<b>SIM1</b>	SIM CARD	(TF)Micro SIM Socket.8P.SMD.Hinge Type.REGO.80440GIH-081T-12CL
<b>CN1</b>	DOCKING I	(TF)Board-Board Connector.100P180D(F).SMD.Pitch=0.5mm.H=6.05mm. Panasonic.AXK5S00347YG
<b>CN2</b>	DOCKING II	(TF)Board-Board Connector.100P180D(F).SMD.Pitch=0.5mm.H=6.05mm. Panasonic.AXK5S00347YG
<b>CN3</b>	USB 3.0 DUAL PORT.	(TF)USB3.0 CONNECTOR.DUAL PORT.18P90D(F).DIP.LOTES.ABA-USB-254-K01
<b>CN5</b>	mini PCIe Card	(TF)MiniCard SLOT.52P90D.(F).SMD.FOXCONN.AS0B226-S68Q-7H
<b>CN7</b>	FAN	(TF)WAFER BOX.2P180D(M).DIP.1.25mm.PINREX.712-71-02TW01
<b>CN8</b>	Docking III	(TF)Wafer Box.10P90D(M).SMD.1.0mm.PINREX.710-74-10TWR6
<b>LAN1</b>	LAN1	(TF)RJ45.12P90D(F).Notch down.W/LED(L-G:R-O/G).DIP.UDE.RC1-1Q00000D

2.3.1 SIM Card (SIM1)



Pin	Signal	Pin	Signal
1	UIM_PWR	5	GND
2	UIM_RST	6	UIM_VPP
3	UIM_CLK	7	UIM_DAT
4	NC	8	NC

2.3.2 Docking I (CN1)

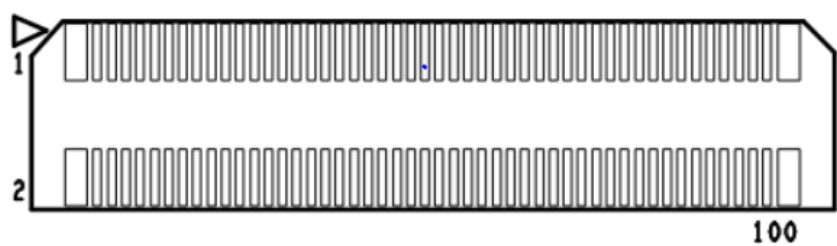


Pin	Signal Description	Pin	Signal Description
1	+V5A_CON	2	+V5A_CON
3	+V5A_CON	4	+V5A_CON
5	+V5A_CON	6	+V5A_CON
7	+V5A_CON	8	+V5A_CON
9	GND	10	GND

Pin	Signal Description	Pin	Signal Description
11	PLTRST_N	12	NC
13	NC	14	NC
15	SLP_S3#_3P3	16	NC
17	PCIE_CLKREQ3#	18	NC
19	NC	20	GND
21	GND	22	NC
23	NC	24	NC
25	NC	26	NC
27	NC	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	NC
39	NC	40	NC
41	NC	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	NC
53	GND	54	NC
55	NC	56	GND
57	NC	58	NC
59	GND	60	NC
61	NC	62	GND

Pin	Signal Description	Pin	Signal Description
63	NC	64	NC
65	GND	66	NC
67	NC	68	GND
69	NC	70	NC
71	GND	72	GND
73	I2C_SDA0	74	NC
75	I2C_SCL0	76	NC
77	GND	78	NC
79	I2C_SDA1	80	NC
81	I2C_SCL1	82	NC
83	GND	84	VPU_EN
85	NC	86	ISH_GPIO_13
87	NC	88	ISH_GPIO_14
89	GND	90	NC
91	NC	92	NC
93	NC	94	GND
95	NC	96	NC
97	NC	98	NC
99	NC	100	NC

2.3.3 Docking II (CN2)

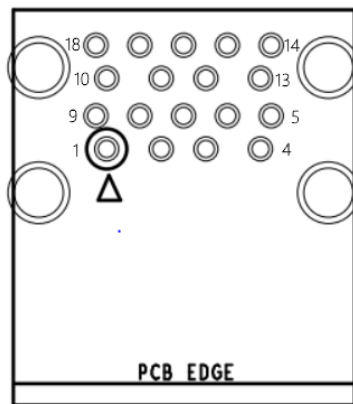


Pin	Signal	Pin	Signal
1	+12V	2	+12V
3	+12V	4	+12V
5	+12V	6	+12V
7	+12V	8	+12V
9	NC	10	NC
11	GND	12	GND
13	NC	14	NC
15	NC	16	NC
17	GND	18	GND
19	NC	20	NC
21	NC	22	NC
23	GND	24	GND
25	NC	26	NC
27	NC	28	NC
29	GND	30	GND
31	PCIE_REFCLK0_P	32	PCIE_REFCLK1_P
33	PCIE_REFCLK0_N	34	PCIE_REFCLK1_N
35	GND	36	GND
37	PCIE_RXP0	38	PCIE_RXP1
39	PCIE_RXN0	40	PCIE_RXN1

Pin	Signal	Pin	Signal
41	GND	42	GND
43	PCIE_TXP0	44	PCIE_TXP1
45	PCIE_TXN0	46	PCIE_TXN1
47	GND	48	GND
49	PCIE_REFCLK2_P	50	USB3_P4_TXP
51	PCIE_REFCLK2_N	52	USB3_P4_TXN
53	GND	54	GND
55	PCIE_RXP2	56	USB3_P4_RXP
57	PCIE_RXN2	58	USB3_P4_RXN
59	GND	60	GND
61	PCIE_TXP2	62	NC
63	PCIE_TXN2	64	NC
65	GND	66	GND
67	NC	68	NC
69	NC	70	NC
71	GND	72	GND
73	NC	74	SATA_RXN0
75	NC	76	SATA_RXP0
77	GND	78	GND
79	USB2_DP3	80	SATA_TXP0
81	USB2_DN3	82	SATA_TXN0
83	GND	84	GND
85	USB2_DP4	86	NC
87	USB2_DN4	88	NC
89	GND	90	GND
91	NC	92	NC
93	PLT_RST#	94	NC

Pin	Signal	Pin	Signal
95	PCIE_WAKE0_N	96	PCIE_CLKREQ0#
97	PCIE_WAKE1_N	98	PCIE_CLKREQ1#
99	PCIE_WAKE2_N	100	PCIE_CLKREQ2#

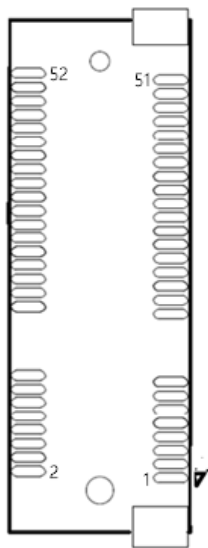
### 2.3.4 USB 3.0 Dual Port (CN3)



Pin	Signal	Pin	Signal
1	+V5A_USB	10	+V5A_USB
2	USB2_DN3	11	USB2_DN4
3	USB2_DP3	12	USB2_DP4
4	GND	13	GND
5	USB3_RXN_P3	14	USB3_RXN_P4
6	USB3_RXP_P3	15	USB3_RXP_P4
7	GND	16	GND
8	USB3_TXN_P3	17	USB3_TXN_P4
9	USB3_TXP_P3	18	USB3_TXP_P4



### 2.3.5 Mini PCIe Card (CN5)



Pin	Signal	Pin	Signal
1	WAKE_MINI_N	2	MINIPCI_E_3.3V
3	NC	4	GND
5	NC	6	+V1.5S
7	NC	8	UIM_PWR
9	GND	10	UIM_DAT
11	PCIE_REFCLK1_N	12	UIM_CLK
13	PCIE_REFCLK1_P	14	UIM_RST
15	GND	16	UIM_VPP
17	NC	18	GND
19	NC	20	PWR_EN
21	GND	22	PLTRST#
23	PCIE_RXN1/SATA_RXP0	24	MINIPCI_E_3.3V

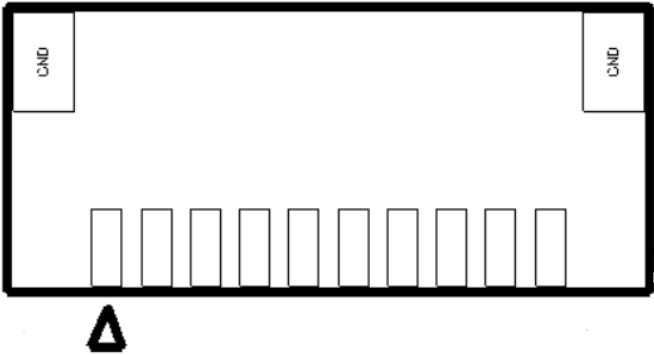
Pin	Signal	Pin	Signal
25	PCIE_RXP1/SATA_RXN0	26	GND
27	GND	28	+V1.5S
29	GND	30	NC
31	PCIE_TXN1/SATA_TXN0	32	NC
33	PCIE_TXP1/SATA_TXP0	34	GND
35	GND	36	USB2_DN5
37	GND	38	USB2_DP5
39	MINIPCI_E_3.3V	40	GND
41	MINIPCI_E_3.3V	42	NC
43	mSATA_PCIe_SEL	44	NC
45	NC	46	NC
47	NC	48	+V1.5S
49	NC	50	GND
51	GND	52	MINIPCI_E_3.3V

### 2.3.6 Fan (CN7)



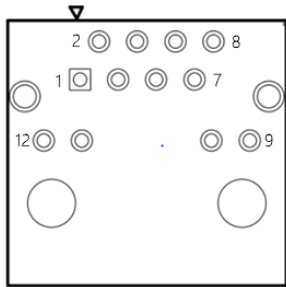
Pin	Signal
1	+V5A
2	GND

2.3.7 Docking III (CN8)



Pin	Signal	Pin	Signal
1	+V1.8S	2	I2C0_SCL_1P8
3	I2C0_SDA_1P8	4	GND
5	PM_SLP_S3#_3P3	6	PCIE_CLKREQ3#
7	VPU_EN	8	ISH_GPIO_13
9	ISH_GPIO_14	10	NC

### 2.3.8 LAN Port (LAN1)



Pin	Signal	Pin	Signal
1	LAN1_TMDI0+	7	LAN1_TMDI3+
2	LAN1_TMDI0-	8	LAN1_TMDI3-
3	LAN1_TMDI1+	9	LAN1_LED_1000#
4	LAN1_TMDI2+	10	LAN1_LED_100#
5	LAN1_TMDI2-	11	LAN1_ACTLEDN
6	LAN1_TMDI1-	12	LAN1_ACTLEDP

# Chapter 3

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Drivers Installation

## 3.1 Driver Download and Installation

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*\*Please access <https://up-community.org> and go to the Downloads section to find the relevant driver.*