

AI Core XM 2280

PER-TAIX2-A10-2280
Intel[®] Myriad[™] X m.2 22x80mm Module

User's Manual 1st Ed

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Packing List

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

Item	Quantity
● AI Core XM 2280 module card	1
● M2 screw	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 on 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 power 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 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.
19. Do NOT disassemble the motherboard so as not to damage the system or void your warranty.
20. If the thermal pad had been damaged, please contact AAEON's salesperson to purchase a new one. Do NOT use those of other brands.
21. The Hex Cylinder Coppers on the front panel are not removable.
22. Repeatedly assemble and disassemble the system may cause damages to the exterior paint and surface and screw holes.
23. Use the right size screwdriver.
24. Use the screwdriver correctly to remove screws from the system.

FCC Statement

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 Embedded Box PC/ Industrial System

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	○	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器 与内存	○	○	○	○	○	○
硬盘	○	○	○	○	○	○
电源	○	○	○	○	○	○
<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: 一、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。 二、上述部件物质中央处理器、内存、硬盘、电源为选购品。</p>						

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products
 AAEON Embedded Box PC/ Industrial System

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	○	○	○	○	○	○
Wires & Connectors for External Connections	○	○	○	○	○	○
Chassis	○	○	○	○	○	○
CPU & RAM	○	○	○	○	○	○
Hard Disk	○	○	○	○	○	○
PSU	○	○	○	○	○	○

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.

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.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

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Chapter 1

Product Specifications

1.1 AI Core XM 2280 Specifications

System

IC	2x Intel® Movidius™ Myriad™ X VPU, MA2485
Supported Frameworks	Tensorflow Caffe MXNet
Supported OS	Windows 10 Ubuntu 16.04 with Intel OpenVINO

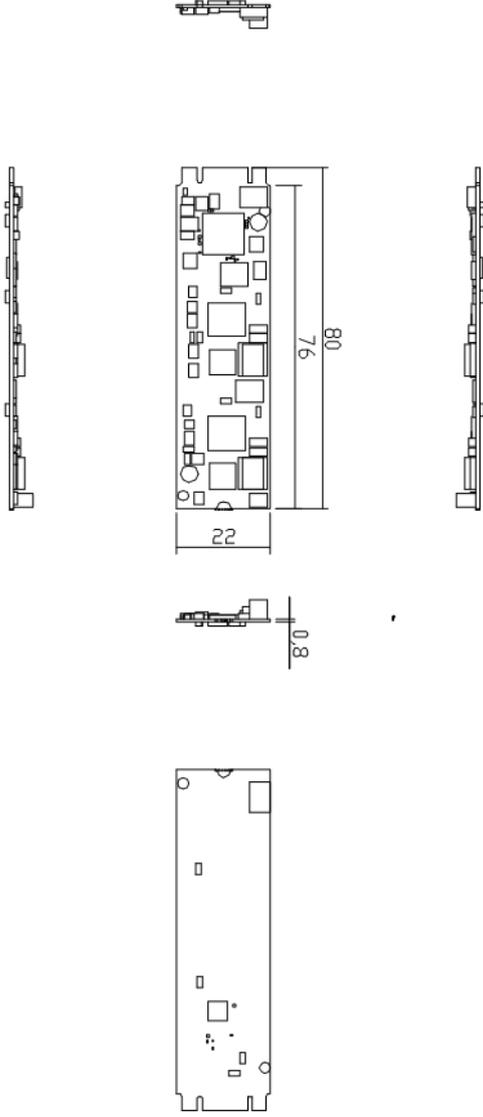
Others

Form Factor	M.2 2280 B+M KEY
Dimension	80 x 22 mm
Certification	CE/FCC Class A
Operating Temperature	0~60°C
Operating Humidity	10%~80%RH, non-condensing

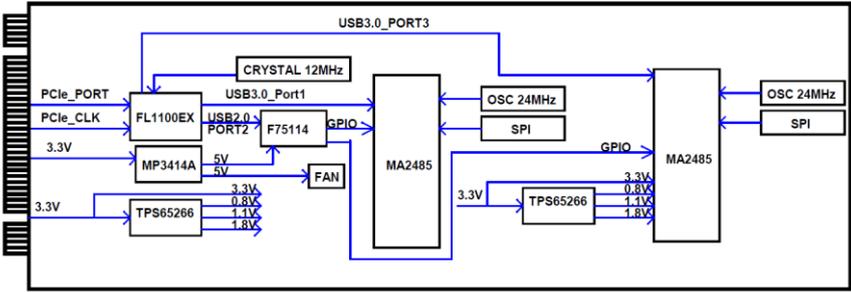
Chapter 2

Hardware Information

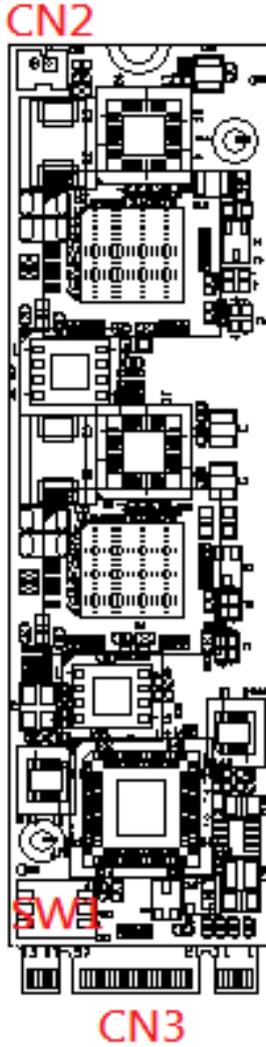
2.1 Dimensions



2.2 Block Diagram



2.3 Board Design

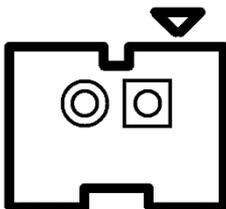


2.4 List of Connectors

This section details the connectors featured on the AI Core X module. This is a reference to help with setup and configuration for your application.

Label	Function	Connector Type
CN2	FAN	(TF)WAFER BOX.2P.180D(M).DIP.1.25mm.PINREX.712-71-0 2TW01
CN3	m.2 B+M Key	M.2 B+M key 75pin
SW1	SWITCH	(TF)SWITCH.3S.6P.SOJ.24V.25mA,pitch=1.27m m.180D.SMD.BIWIN.SOJ03-R

2.4.1 Fan (CN2)



Pin	Signal Description	Pin	Signal Description
1	5V	2	GND

2.4.2 m.2 CONN B+M Key (CN3)



Pin	Signal Description	Pin	Signal Description
1	GND	39	GND
2	+3.3V	40	SOC_I2C1_SCL
3	GND	41	PCIE_TXN0
4	+3.3V	42	SOC_I2C1_SDA
5	NC	43	PCIE_TXP0
6	FULL_CARD_PWR_OFF#	44	NC
7	NC	45	GND
8	NC	46	NC
9	NC	47	PCIE_RXN0
10	NC	48	NC
11	NC	49	PCIE_RXP0
20	NC	50	PLT_RST#
21	GND	51	GND
22	NC	52	PCIE_CLKREQ#
23	NC	53	PCIE_CLK_N
24	NC	54	WAKE_M2
25	NC	55	PCIE_CLK_P
26	NC	56	NC
27	GND	57	GND
28	NC	58	NC

Pin	Signal Description	Pin	Signal Description
29	NC	67	NC
30	NC	68	NC
31	NC	69	NC
32	NC	70	+3.3V
33	GND	71	GND
34	NC	72	+3.3V
35	NC	73	GND
36	NC	74	+3.3V
37	NC	75	GND
38	VPU_EN		

2.4.3 Switch (SW1)



SW Value			Board ID
3	2	1	
Off	Off	Off	0
Off	Off	On	1
Off	On	Off	2
Off	On	On	3
On	Off	Off	4
On	Off	On	5
On	On	Off	6
On	On	On	7

Chapter 3

Software Installation

3.1 Intel OpenVINO Toolkit

The AI Core XM 2280 works with Intel OpenVINO toolkit and does not require any drivers to be installed. Visit the OpenVINO website to download and install the software.

<https://software.intel.com/en-us/openvino-toolkit>