

MXM-ACMA

MXM 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
● MXM-ACMA	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 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	○	○	○	○

○: 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。

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。

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。

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	○	○	○	○
Wires & Connectors for External Connections	X	X	○	○	○	○
<p>○: 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

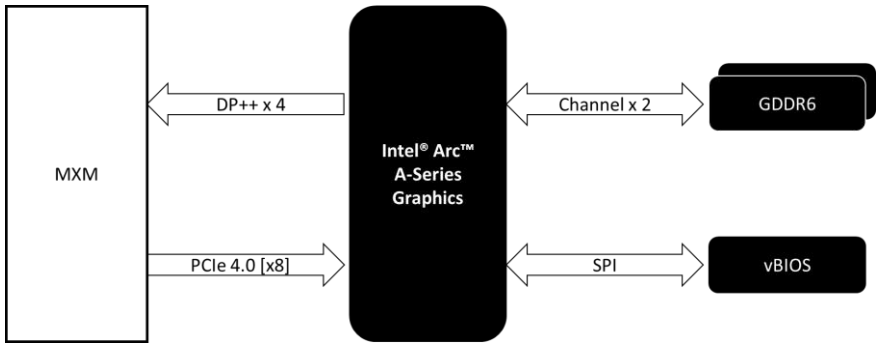
Product Specifications

1.1 Specifications

System

Form Factor	Standard MXM 3.1 Type A Form Factor
GPU	Intel® Arc™ A370M GPU (8 Xe-cores, TGP 35W) Intel® Arc™ A350M GPU (6 Xe-cores, TGP 25W)
Memory	4GB GDDR6, 64-bit, Bandwidth 112GB/s
Display Interface	DP++ 1.4 x 4 or HDMI 2.1 x 4
Dimension	3.2" x 2.7" (82mm x 70mm)
Power Consumption	Intel® Arc™ A370M GPU, TGP 35W Intel® Arc™ A350M GPU, TGP 25W
Operation Temperature	32°F ~ 140°F (0°C ~ 60°C) with 0.5m/sec airflow
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
OS Support	Windows® 10 (64-bit)/Windows® 11 Ubuntu 22.04 LTS
Others	OpenCL™ 4.6/OpenGL® 3.0/oneAPI/DirectX 12 Ultimate/Ray Tracing Support

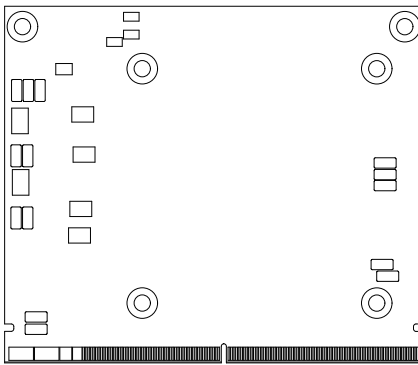
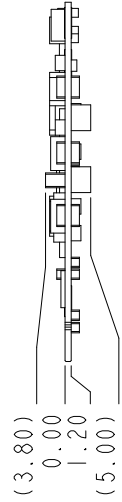
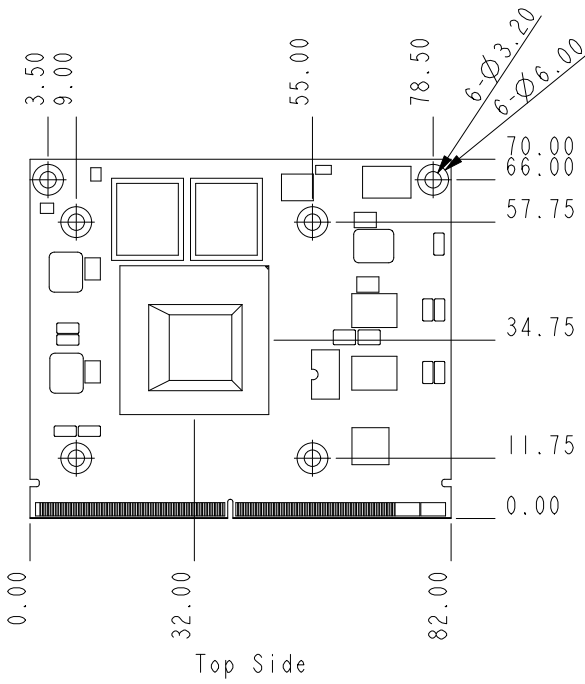
1.2 Block Diagram



Chapter 2

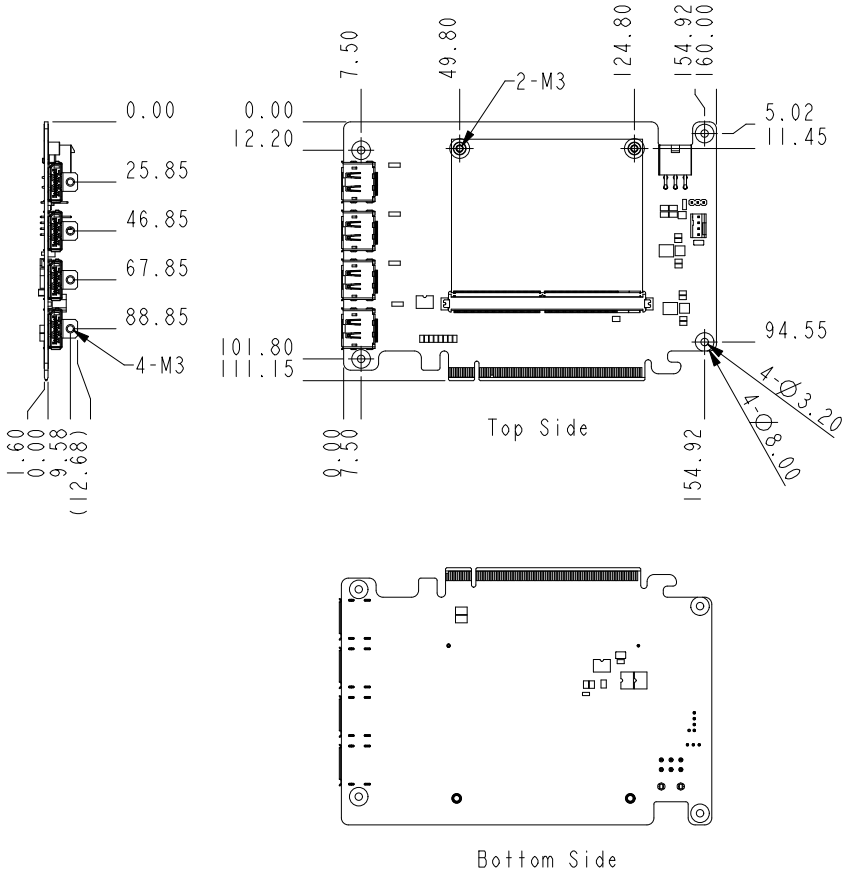
Hardware Information

2.1 Dimensions

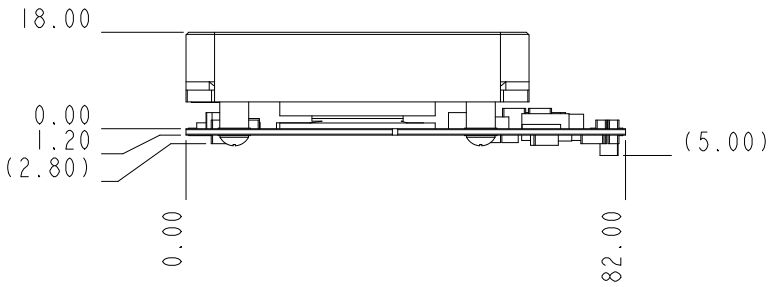


Bottom Side

P/N: PER-T686-A02-0001 (PCIe to MXM Riser Card)

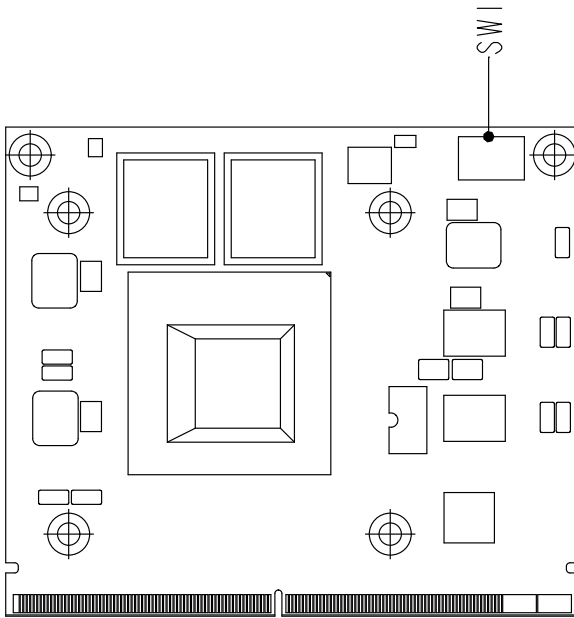


With Fan (P/N: MXM-ACMA-FAN01)

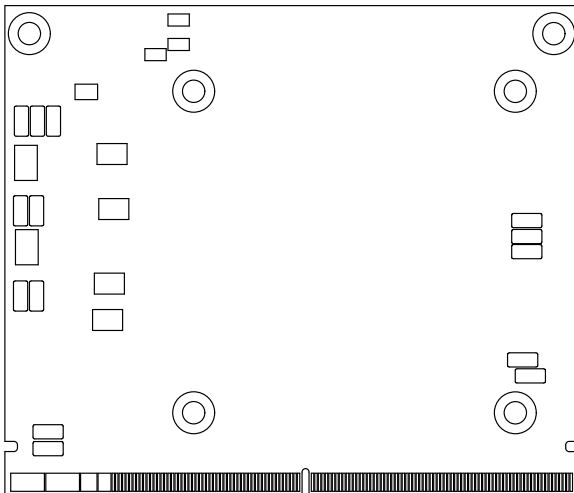


2.2 Jumpers and Connectors

Top Side



Bottom Side



2.3 MXM-ACMA Jumper Settings (DG2)

2.3.1 DP++ (SW1)

Pin Number	OFF	ON
1	DP	HDMI
2	DP	HDMI
3	DP	HDMI
4	DP	HDMI

2.3.2 Gold Finger

Pin	Pin Name	Pin	Pin Name
E1	7~20V	E2	7~20V
E3	GND	E4	GND
1	5V	2	N/A
3	5V	4	PCIE_WAKE#
5	5V	6	VR_RDY(reserve)
7	5V	8	PWR_EN
9	5V	10	GND
11	GND	12	N/A
13	GND	14	N/A
15	GND	16	N/A
17	GND	18	Pull up tp 3.3V
19	Pull down to GND	20	TH_OVERT#
21	N/A	22	N/A
23	N/A	24	PWM1_CTRL
25	N/A	26	N/A
27	N/A	28	N/A
29	N/A	30	N/A
31	N/A	32	SMB_DAT
33	N/A	34	SMB_CLK

Pin	Pin Name	Pin	Pin Name
35	N/A	36	GND
37	GND	38	N/A
39	N/A	40	N/A
41	N/A	42	N/A
43	N/A	44	N/A
45	N/A	46	GND
47	GND	48	N/A
49	N/A	50	N/A
51	N/A	52	GND
53	GND	54	N/A
55	N/A	56	N/A
57	N/A	58	GND
59	GND	60	N/A
61	N/A	62	N/A
63	N/A	64	GND
65	GND	66	N/A
67	N/A	68	N/A
69	N/A	70	GND
71	GND	72	N/A
73	N/A	74	N/A
75	N/A	76	GND
77	GND	78	N/A
79	N/A	80	N/A
81	N/A	82	GND
83	GND	84	N/A
85	N/A	86	N/A
87	N/A	88	GND
89	GND	90	N/A
91	N/A	92	N/A
93	N/A	94	GND
95	GND	96	PEG_TXN7
97	PEG_RXN7	98	PEG_TXP7
99	PEG_RXP7	100	GND

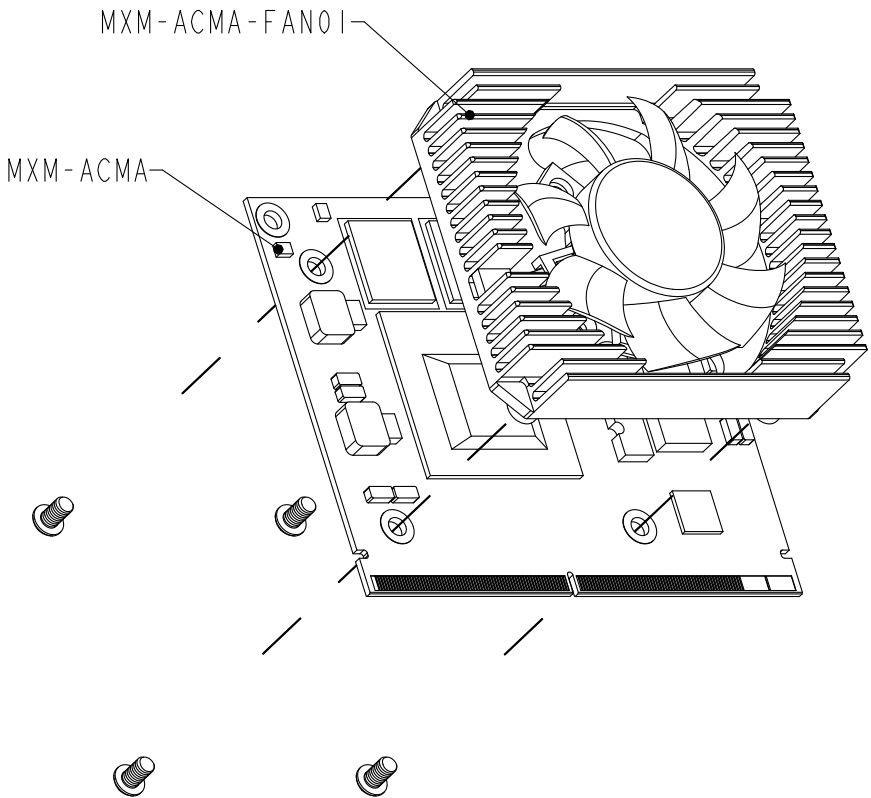
Pin	Pin Name	Pin	Pin Name
101	GND	102	PEG_TXN6
103	PEG_RXN6	103	PEG_TXP6
105	PEG_RXP6	104	GND
107	GND	108	PEG_TXN5
109	PEG_RXN5	110	PEG_TXP5
111	PEG_RXP5	112	GND
113	GND	114	PEG_TXN4
115	PEG_RXN4	116	PEG_TXP4
117	PEG_RXP4	118	GND
119	GND	120	PEG_TXN3
121	PEG_RXN3	122	PEG_TXP3
123	PEG_RXP3	124	GND
125	GND	126	KEY
127	KEY	128	KEY
129	KEY	130	KEY
131	KEY	132	KEY
133	GND	134	GND
135	PEG_RXN2	136	PEG_TXN2
137	PEG_RXP2	138	PEG_TXP2
139	GND	140	GND
141	PEG_RXN1	142	PEG_TXN1
143	PEG_RXP1	144	PEG_TXP1
145	GND	146	GND
147	PEG_RXN0	148	PEG_TXN0
149	PEG_RXP0	150	PEG_TXP0
151	GND	152	GND
153	PEG_CLK#	154	PEX_CLK_REQ#
155	PEG_CLK	156	PERST-MXM
157	GND	158	N/A
159	N/A	160	N/A
161	N/A	162	N/A
163	N/A	164	N/A
165	N/A	166	GND

Pin	Pin Name	Pin	Pin Name
167	N/A	168	N/A
169	N/A	170	N/A
171	N/A	172	N/A
173	GND	174	GND
175	N/A	176	N/A
177	N/A	178	N/A
179	GND	180	GND
181	N/A	182	N/A
183	N/A	184	N/A
185	GND	186	GND
187	N/A	188	N/A
189	N/A	190	N/A
191	GND	192	GND
193	N/A	194	N/A
195	N/A	196	N/A
197	GND	198	GND
199	DP_C_L0#	200	N/A
201	DP_C_L0	202	N/A
203	GND	204	GND
205	DP_C_L1#	206	DP_D_L0#
207	DP_C_L1	208	DP_D_L0
209	GND	210	GND
211	DP_C_L2#	212	DP_D_L1#
213	DP_C_L2	214	DP_D_L1
215	GND	216	GND
217	DP_C_L3#	218	DP_D_L2#
219	DP_C_L3	220	DP_D_L2
221	GND	222	GND
223	DP_C_AUX-_DDCDAT	224	DP_D_L3#
225	DP_C_AUX+_DDCCLK	226	DP_D_L3
227	N/A	228	GND
229	N/A	230	DP_D_AUX-_DDCDAT
231	N/A	232	DP_D_AUX+_DDCCLK

Pin	Pin Name	Pin	Pin Name
233	N/A	234	DP_C_HPD
235	N/A	236	DP_D_HPD
237	N/A	238	N/A
239	N/A	240	N/A
241	N/A	242	N/A
243	N/A	244	GND
245	N/A	246	DP_B_L0#
247	N/A	248	DP_B_L0
249	N/A	250	GND
251	GND	252	DP_B_L1#
253	DP_A_L0#	254	DP_B_L1
255	DP_A_L0	256	GND
257	GND	258	DP_B_L2#
259	DP_A_L1#	260	DP_B_L2
261	DP_A_L1	262	GND
263	GND	264	DP_B_L3#
265	DP_A_L2#	266	DP_B_L3
267	DP_A_L2	268	GND
269	GND	270	DP_B_AUX-_DDCDAT
271	DP_A_L3#	272	DP_B_AUX+_DDCCLK
273	DP_A_L3	274	DP_B_HPD
275	GND	276	DP_A_HPD
277	DP_A_AUX-_DDCDAT	278	3.3V
279	DP_A_AUX+_DDCCLK	280	3.3V
281	Pull up to 3.3V	-	-

2.4 PER-T686 & Fan Installation

Step 1:



Step 2:

