SKY-MXM-A500
MXM 3.1 Type A NVIDIA® Quadro® Embedded A500
Startup Manual

Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

1. SKY-MXM-A500 GPU card x 1
2. China RoHS Doc x 1

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

Note: Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: www.adobe.com/Products/acrobat/readstep2.html (Acrobat is a trademark of Adobe).

Standard Functions

Processor System

- **GPU:** NVIDIA® Quadro® A500
- **Graphics architecture:** NVIDIA® Ampere™ GA107-910
- **CUDA parallel-processing cores:** 2048 CUDA® cores
- **GPU base/boost clock:** 652 MHz / 1597 MHz
- **FP32 performance:** 6.54 TFLOPS
- **Bus:** MXM3.1, PCI Express Gen3 x4 support
- **Max power consumption:** 35W

Memory

- **Technology:** GDDR6 4GB memory
- **Interface width:** 64-bit
- **Bandwidth:** 112 GB/s

Physical

- **Dimensions:** 82 (W) x 70 (D) mm
- **Form factor:** MXM 3.1 Type A

Environment

- **Operating:** 0 ~ 55 °C
  (Depending on CPU and cooler solution)
- **Non-operating:** -40 °C ~ 85 °C

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http://www.advantech.com

For technical support and service, please visit our support website at:

http://www.advantech.com/support

This manual is for the SKY-MXM-A500 series Rev. A1.

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Standard Functions (Cont.)

Operating Systems

- **Microsoft:** Windows 10/11, 64-bit
- **Linux:** Linux Drivers, 64 bit
- **Software support:**
  - CUDA toolkit 8.0 and higher
  - CUDA compute version 6.1 and higher
  - OpenCL™ 1.2
  - DirectX® 12
  - OpenGL 4.5
  - Vulcan 1.0
- **Display port:** Headless design, no display function

Graphics Options

The SKY-MXM-A500 has a headless design without a display function.

GPU Thermal Policy

The GPU Core Clock throttles at temperatures (Tj) higher than those listed in the below table, which lists the throttling temperatures and behavior. Thermal throttling is necessary to ensure that the hottest temperature on the die does not exceed the threshold temperature for prolonged periods of time.

Parameter	SKY-MXM-A500	Units
Thermal Resistance (Junction to Case, RJC)	0.042	°C/W
Thermal Resistance (Junction to PCB Board, RJB)	2.38	°C/W
GPU Shutdown Temperature (OVERT)*	100	°C
GPU Slowdown Temperature (THERM_ALERT)**	98	°C
GPU Maximum Operating Temperature***	89	°C
GPU Target Temperature	87	°C

Notes:

*OVERT assertion results in an 87.5% (÷8) hardware clock slowdown.

**THERM_ALERT assertion results in a 50% (÷2) hardware clock slowdown.

***The GPU maximum operating temperature is the maximum GPU temperature at which the GPU is guaranteed to operate at the target performance (Base Clock) under the total board power level.

Input Voltage Requirements

Input voltage to the GPU must strictly follow the ranges listed in the below table (reference to GND).

Operating outside the required voltage range will cause permanent damage to the GPU.

Power Rail	Min.	Typ.	Max.
PWR SRC	6.5V	7-20V	22V
5V	4.7V	5V	5.3V
3V3	3.1V	3.3V	3.5V

System BIOS Requirements

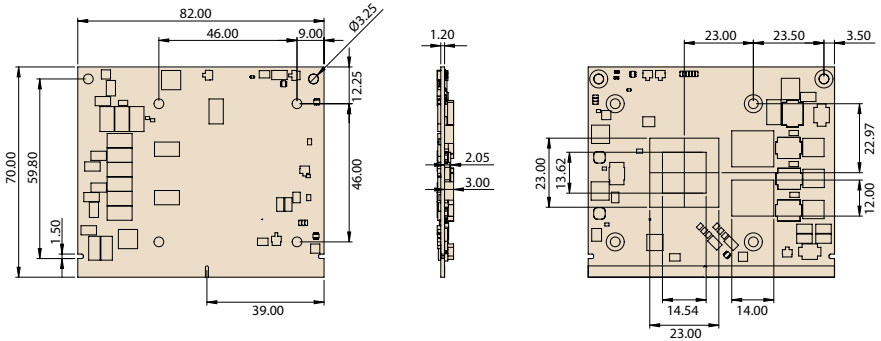
Before you install the MXM module, please make sure your system BIOS is configured with the following settings:

1. CSM Support [Disabled]
2. Above 4G Decoding [Enabled]

Note! Option names may vary depending on system architecture.

Dimensions

Unit: mm



Block Diagram