

AGX32-8F4E1 Specification



ADDRESS

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Electronic components and circuits are very sensitive to electrostatic discharge, although the company will do anti-static protection design on the main interface of the board when designing circuit board products, but it is difficult to do anti-static safety protection for all components and circuits. Therefore, it is recommended to follow ESD safety precautions when handling any circuit board component. ESD protection measures include but are not limited to the following:

- During transportation or storage, place the card in an ESD bag and do not take it out until installation.
- Release the static electricity before touching the board. Wear a discharge grounding wrist strap.
- Operate the circuit board only in electrostatic discharge safety area.
- Avoid moving circuit boards in carpeted areas.
- Avoid direct contact with electronic components on the board by edge contact.

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Chapter 1. Introduction

The AGX32-8F4E1 hardware platform is an ITX-type computing platform that combines the energy-efficient NVIDIA® Jetson™ AGX Xavier core module and the AI-enabled NVIDIA RTX 6000 GPU. Direct access to the NVIDIA Clara AGX development kit. The development kit comes with end-to-end reference applications for sensor processing, image reconstruction, AI and visualization, which can help developers get started quickly and reduce overall development time. All necessary libraries and components are pre-selected to enable an out-of-the-box software development environment. Each reference application utilizes the necessary IO components and drivers to move data and feed it into the processing pipeline on the RTX 6000 GPU, providing a functionally tested data path setup.

1.1 Product Composition

COMPONENTS	FUNCTION
NVIDIA RTX 6000	Discrete GPU
NVIDIA Jetson AGX Xavier	CPU, GPU and IO processing
512G NVME SSD	Removable storage
Y-C8	Develop system board

1.2 Order Information

Model	Function
AGX32-8F4E1	Vertical AI industrial computer with NVIDIA® Jetson™ AGX Xavier series core modules

Taobao Store Address: <https://shop333807435.taobao.com/>

Jingdong Store Address: <https://mall.jd.com/index-11467104.html?from=pc>

Ali International Station Address: <https://plink-ai.en.alibaba.com/>

1.3 Product performance

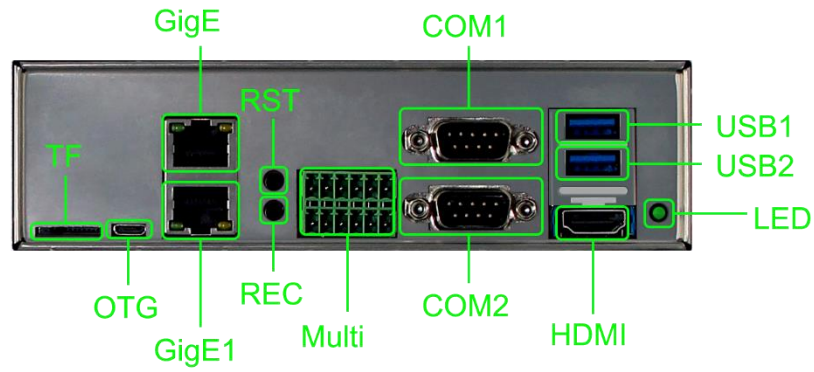
CPU		8-core Carmel ARM® v8.2 64-bit CPU,8MB L2+4MB L3
CPU Memory		64GB 256Bit LPDDR4x1 136.5GB/s
GPU	RTX6000	4608-core NVIDIA Turing™ GPU with 576 Tensor Cores
	Jetson AGX Xavier	512-core Volta GPU with 64 Tensor Cores
GPU Memory	RTX 6000	24GB GDDR6 with ECC
GPU FP32 peak performance	RTX6000	16.3TFLOPS
GPU INT8 peak performance	RTX6000	206.1TOPS
Storage	Jetson AGX Xavier	32GB eMMC 5.1
	Removable SSD	512 GB NVME SSD
Integrated power supply		450W
Encode	Jetson AGX Xavier	Up to 2x 1000 MP/sec
	RTX 6000	Up to 1000MP/sec
Decode	Jetson AGX Xavier	Up to 2x 1500 MP/sec
	RTX 6000	Up to 1500MP/sec
SIZE		335mm×257mm×146 mm
Weight		5500g

INPUT/OUTPUT

RTX 6000	RTX 6000	x1
PCIe Gen4 x8 128Gb/s	Jetson AGX Xavier	x1
USB 3.1 Gen 2		x1
USB 2.0		x1
1Gb/s Ethernet RJ45		x2
SD Card		x1
HDMI 2.0 output	Jetson AGX Xavier	
DisplayPort output	RTX 6000	
Note: The Jetson AGX Xavier GPU and multimedia codecs cannot be used simultaneously with the RTX 6000 GPU and multimedia codecs.		

Chapter 2. External interface function and location

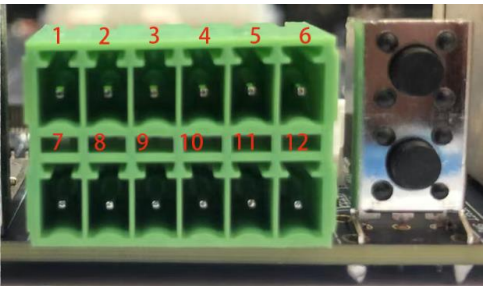
2.1 Interface location and function



8F4E1 背面接口指示图



2.2 Interface function description

Connector	Function																												
USB1	Type A USB3.0 standard connector, supports USB3.1 function, and is backward compatible																												
USB2	Type A USB3.0 standard connector, only supports USB2.0 function																												
LED	Power Indicator																												
HDMI	Type A HDMI display output interface																												
COM1	DB9 connector, RS232 level standard interface, corresponding device file name: /dev/ttyTHS1																												
COM2	DB9 connector, RS232 level standard interface, corresponding device file name: /dev/ttyTHS0																												
REC	Recover button (If you enter the recovery mode, you need to press and hold the recover button before powering on the system, and then power on the system)																												
RST	Reset button																												
GigE 、GigE1	10/100/1000M self-adaptive RJ45 network interface, GigE is optional, please contact sales																												
OTG	Type B Micro USB interface, used with the OTG function output of the programming system																												
TF	Micro TF slot																												
Multi	Multifunctional IO interface																												
	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CAN1_H</td> <td>2</td> <td>3.3V</td> </tr> <tr> <td>3</td> <td>CAN1_L</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>GND</td> <td>6</td> <td>GPIO08</td> </tr> <tr> <td>7</td> <td>CAN0_H</td> <td>8</td> <td>GPIO09</td> </tr> <tr> <td>9</td> <td>CAN0_L</td> <td>10</td> <td>GPIO17</td> </tr> <tr> <td>11</td> <td>GND</td> <td>12</td> <td>GPIO27(PWM)</td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	CAN1_H	2	3.3V	3	CAN1_L	4	GND	5	GND	6	GPIO08	7	CAN0_H	8	GPIO09	9	CAN0_L	10	GPIO17	11	GND	12	GPIO27(PWM)
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	The sequence of interface signal pins is shown in the figure below.																												
GPIO08 The mapping number in the system is: 256																													
GPIO09 The mapping number in the system is: 257																													
GPIO17 The mapping number in the system is: 417																													
GPIO27 The mapping number in the system is: 393																													
																													

Chapter 3. Instructions

3.1 How to use the whole machine

- a) Make sure all external systems are powered off
- b) Install the necessary external cables. (E.g: Display cable to HDMI monitor, Power input cable to power the system, USB cable to connect keyboard and mouse...)
- c) Connect the power cord to the power source.
- d) AGX32-8F3E1 can be set as default automatic power-on, or can be set as switch start, please consult our company's sales and technical personnel for specific methods.

3.2 Recovery Model

Jetson module can work in normal mode and recovery mode. In Recovery mode, file system update, kernel update, Boot loader update, BCT update and other operations can be performed.

The steps to enter Recovery mode are as follows:

- a) Power off the system。
- b) Connect the OTG port of the AGX32-8F4E1 with the Jetson development host USB port using a Micro-USB cable。
- c) Press and hold the RECOVERY button (REC) to supply power to the system. After powering on, keep the REC button pressed for more than 3 seconds, and then release the RECOVERY button.
- d) The system enters Recovery mode, at which point subsequent operations can be performed.