

AGX32-8F3E1 Specification



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Document History

Version	Date	Update content	Applicable hardware version
V1.0	February 28, 2022	Create documentation	V1.0
V1.1	April 7, 2022	Update product images Update the first page, header and footer of the document. Add core module parameter description.	V1.1





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

AGX32-8F3E1 is an ITX type AI industrial computer with NVIDIA® Jetson™ AGX Xavier core module. For industrial deployment applications, the main interfaces are designed for electrostatic safety protection, and a high-reliability power supply application scheme is adopted. The input power supply has overvoltage and reverse polarity protection functions, and has rich external interfaces. The internal interface devices are all wide-temperature models.

AGX32-8F3E1 standard type can support multiple full-speed Gigabit Ethernet, if you need to expand USB3.0 signal, SSD memory card, SATA signal, 4G communication module, various video capture/output cards, AD capture for sound acquisition/output cards, multi-function IO cards, etc., please contact our sales staff.

1.1 Product Composition

COMPONENTS	FUNCTION
NVIDIA Jetson AGX Xavier	CPU, GPU and IO processing
Y-C8	Develop system board

1.2 Product performance

CPU	8-core Carmel ARM® v8.2 64-bit CPU, 8MB L2+4MB L3
CPU Memory	32GB 256Bit LPDDR4x1 136.5GB/s
GPU	512-core Volta GPU with 64 Tensor Cores
GPU FP16 peak performance	11TFLOPS
GPU INT8 peak performance	20TOPS
Storage	32GB eMMC 5.1
Integrated power supply	72W
Encode	Up to 2x 1000 MP/sec
Decode	Up to 2x 1500 MP/sec

SIZE	198mm×197mm×45 mm
Weight	1340g
interface information	
USB 3.1 Gen 2	x1
USB 2.0	x1
HDMI	x1
1Gb/s Ethernet RJ45	\x1

1.3 Order information

Order model	Function description
AGX32-8F3E1	Vertical AI industrial computer with NVIDIA® Jetson™ AGX Xavier series core modules

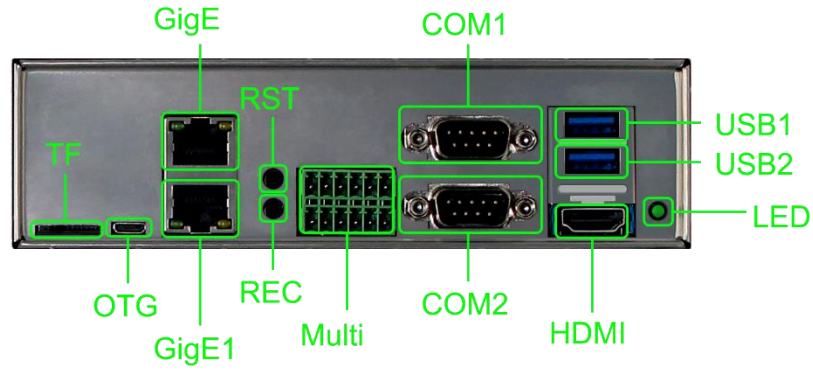
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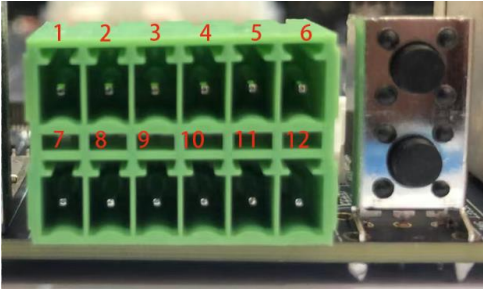
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Chapter 2. Location and function of external interface

2.1 Interface location and function



2.2 Description of interface functions

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	<p>Multifunctional IO interface</p> <table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>信号</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> <p>The sequence of interface signal pins is shown in the figure below.</p> <p>GPIO08 The mapping number in the system is: 256</p> <p>GPIO09 The mapping number in the system is: 257</p> <p>GPIO17 The mapping number in the system is: 417</p> <p>GPIO27 The mapping number in the system is: 393</p> 	引脚	信号	引脚	信号	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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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. (eg: 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 AGX32-8F3E1 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。

Precautions

- ◆ Before using the product, please read this manual carefully and keep it for future reference;
- ◆ Please note and follow all warnings and instructions marked on the product.
- ◆ Please use the matching power adapter to ensure the stability of current and voltage.
- ◆ Please use this product in a cool, dry and clean place.
- ◆ Do not use this product in an environment with alternating hot and cold, to avoid condensation damage to internal components.
- ◆ Do not splash any liquid on this product, and do not use organic solvents or corrosive liquids to clean this product.
- ◆ Do not use this product in a dusty and messy environment, if it will not be used for a long time, please pack this product.
- ◆ Do not use it in an environment with excessive vibration. Any drop or knock may damage the circuit and components.
- ◆ Do not plug and unplug the core board and peripheral modules when the power is on;
- ◆ Please do not repair or disassemble this product by yourself. If the product fails, please contact our company for repair in time.
- ◆ Do not modify or use unauthorized accessories by yourself, the resulting damage will not be covered under warranty.

After-sales maintenance

1 Warranty period

- ◆ Bottom plate and core plate: 3 years (non-human damage)

2 Contact information

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- ◆ Recipient: RMA
- ◆ Telephone: 010-62962285
- ◆ Mailing instructions: Contact the sales of our company in advance, and we will arrange technicians to verify and eliminate errors caused by misuse as soon as possible. After verification, please mail the equipment to our company. Please attach the list of items and the cause of the failure when mailing, which is convenient for verification and avoids the courier process. loss, loss in.