AI Computing Platform

11F2E6

Datasheet

Version V2.0

Date　　2024-02-29

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Document History

Version	Date	Description of Change	Hardware Version
V 1.0	2023-4-12	Preliminary Release	V 1.0
V 1.1	2023-6-29	Modify the front page picture of the manual	V 1.0
V 2.0	2024-2-29	1. Change the product manual template; 2. Change the product introduction;	V 1.0

Hardware Update History

Version	Date	Description of Change
V 1.0	2022-3-28	Initial Version

Electronic components and circuits are very sensitive to electrostatic discharge, although the company will design the main interface on the board card to do anti-static protection design, but it is difficult to do anti-static safety protection for all components and circuits. Therefore, it is recommended that you take ESD safety measures when handling any circuit board component.

ESD safety measures include but are not limited to the following:

1. Put the card in an ESD bag during transportation or storage. Do not take out the card until installation and deployment.
2. Before touching the board, release the static electricity stored in the body: Wear a grounding wrist strap.
3. Operate circuit boards only in electrostatic discharge safe areas.
4. Avoid moving circuit boards in carpeted areas.
5. Avoid direct contact with electronic components on the board through edge contact.

Table of Contents

1 Introduction

The 11F2E6 artificial intelligence computing platform (hereafter referred to as 11F2E6) can be adapted to carry the NVIDIA Jetson Orin NX/ Orin Nano core module. It can provide up to 100 TOPS of computing power, has a wealth of external interfaces, and internal interface devices are wide temperature models.

11F2E6 can expand 4G/5G communication module, USB3.0 signal, SSD memory card, SATA signal, 4G/5G communication module, all kinds of video acquisition/output card, AD acquisition card, multi-serial port card, sound acquisition/output card, multi-function IO card and so on through the built-in miniPCIe interface and M.2 interface. Scalable support POE gigabit network, compatible with industrial automation, vehicleroad collaboration and other scenarios.

2 **Specifications**

	Feature
Y-C11	Develop carrier board
Module	NVIDIA Jetson Orin NX / Orin Nano Serial Module
Temperature	-20 ~ +65℃
Dimensions (W×H×D)	202mm*206mm*64.5mm (Including I/O ports and mounting holes)
Weight	2000 g

Power Supply	Spec
Input Type	DC
Input Voltage	+12V ~ 24V

I/O Ports

| Interface	Quantity	Interface	Quantity
USB3.0 Type-A	4	Micro USB	1
RJ45	6	HDMI	1
Power Jack	1	SIM Card Slot	1
*RJ45 can be equipped with POE power supply function, which can only supply external POE power, and it is not equipped with POE function by default.			

NVIDIA Jetson Series Modules Technical Specifications

| Module	Jetson ORIN NX 16GB	Jetson ORIN NX 8GB	Jetson Orin Nano 8GB	Jetson Orin Nano 4GB
AI Performance	100 TOPS	70 TOPS	40 TOPS	20 TOPS
GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores		1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores	512-core NVIDIA Ampere architecture GPU with 16 Tensor Cores
CPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU 1.5MB L2 + 4MB L3	
Memory	16GB 128-bit LPDDR5 102.4GB/s	8GB 128-bit LPDDR5 102.4GB/s	8GB 128-bit LPDDR5 68 GB/s	4GB 64-bit LPDDR5 34 GB/s
Storage	Support external NVME		Support external NVME	
Video Encode	1x 4K60 (H.265) 3x 4K30 (H.265) 6x 1080p60 (H.265) 12x 1080p30 (H.265)		1080p30 supported by 1-2 CPU cores	
Video Decode	1x 8K30 (H.265) 2x 4K60 (H.265) 4x 4K30 (H.265) 9x 1080p60 (H.265) 18x 1080p30 (H.265)		1x 4K60 (H.265) 2x 4K30 (H.265) 5x 1080p60 (H.265) 11x 1080p30 (H.265)	
Power	10W - 25W	10W - 20W	7W - 15W	7W - 10W

3 External I/O Ports
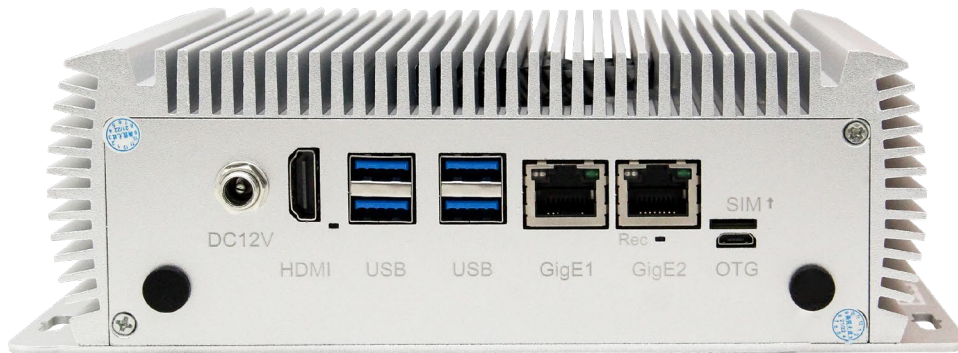
Sign	Function	Sign	Function
SIM	Micro SIM Card Slot	HDMI	Type-A HDMI Connector
Gige1	RJ45 Jack(10/100/1000Mbps Ethernet)	Rec	Recovery Button
Gige2	RJ45 Jack(10/100/1000Mbps Ethernet)	USB	Type A USB 3.0 Connector
DC12V	Power Jack（+12V ~ +24V)	OTG	Type-B Micro USB Connector

Sign	Function	Sign	Function
POE	RJ45 Jack(10/100/1000Mbps Ethernet)		
*RJ45 can be equipped with POE power supply function, which can only supply external POE power, and it is not equipped with POE function by default.			

4 All-Round Display
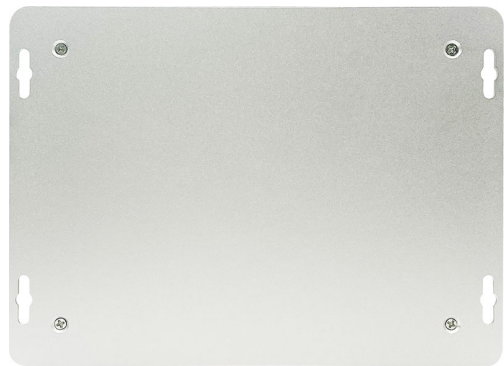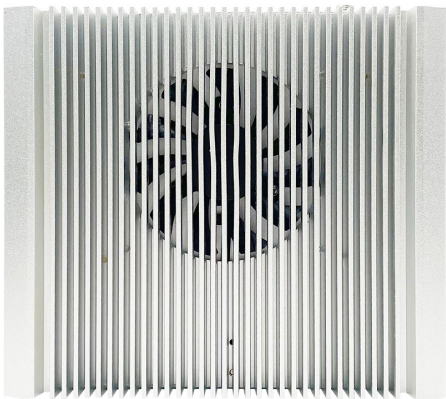
5 Ordering Information

Order Type	Function
11F2E6	Ai computing platform adapted to NVIDIA® Jetson™ ORIN NX/ORIN Nano series core modules
If you need to add other functional modules, please confirm the plan with our sales and technical personnel in advance.	

6 Recovery Mode

Jetson core module can work in normal mode and Recovery mode. In Recovery mode, it can perform file system update, kernel update, Bootloader/UEFI update, BCT update and other operations.

To enter the Recovery mode, perform the following steps:

- Power off the system.
- Use a Micro-USB cable to connect the Micro-USB port (OTG) of the 11F2E6 to the Jetson development host USB port.
- The Jetson development host should be Ubuntu18.04 or Ubuntu20.04 based on X86 architecture.
- Press the Recovery key (REC) to power the system. Hold down the Recovery key (REC) for more than 3 seconds, and then release the Recovery key (REC).
- When the system enters Recovery mode, you can perform subsequent operations.

7 Method of Application

- Make sure all external system voltages are turned off.
- Install necessary external cables. (For example: the display cable to connect to the HDMI monitor, the power input cable to power the system, the USB cable to connect the keyboard and mouse...)
- Connect the power cord to the power supply.
- 11F2E6 is automatically powered on by default. It can also be set to switch start. Please consult our sales and technical personnel for specific methods.

8 Special Instructions

- Initial system username: **nvidia** , password: **nvidia** , no password su. If root permissions are required, use sudo to grant permissions, or use sudo su to access the root user.
- The pre-installed system is pure by default and does not contain Jetpack software. You can use the following command to install the software. Do not replace or modify the default software source before installation:
    - sudo apt-get update
    - sudo apt-get install nvidia-jetpack
- It can also be installed over the network using SDKmanager software.
- For more information please refer to :Jetson wiki (plink-ai.com)

9 Mechanical Dimensions