11F1E2

Datasheet

11F1E2 Datasheet   V1.0

11F1E2 Datasheet   V1.0

Datasheet Updated History

Version	Date	Description of Change	Hardware Version
V1.0	2023-4-12	Create a document	V1.0

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.

Precautions

- Before using the product, please read this manual carefully and keep it properly for future reference

- Please pay attention to and follow all warnings and guidelines 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 the environment of alternating cold and heat to avoid condensation and damage to internal components

- Do not splash any liquid on the product. It is forbidden to use organic solvent or corrosive liquid to clean the product

- Do not use this product in dusty and messy environment. If it is not used for a long time, please pack the product

- Do not use it in an environment with excessive vibration. Any falling or knocking may damage the lines and components

- Do not plug and unplug the core board and peripheral modules when the power is on

- Do not repair or disassemble the product by yourself. If the product fails, contact the company for repair in time

- Do not modify or use unauthorized accessories by yourself, and the resulting damage will not be covered by

Warranty

Limited Product Warranty

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

- Contact information Contacts: RMA

Address: Room 718, Jinrongkemao Plaza, No. 15 Shangdi Xinxi Road, Haidian

District, Beijing, China

E-mail: sales@plink-ai.com   Telephone:+86-010-62962285

- Mailing instructions: Please contact the sale staff of the company in advance, then arrange technicians to verify and eliminate the errors caused by misoperation as soon as possible. After verification, please mail the equipment to the company. Please attach a list of items and the reason for failure when mailing for easy   verification, so as to avoid loss and damage in the process of express delivery.

Contents

Chapter 1. Introduction

The 11F1E2 has built-in NVIDIA® Orin NX/Nano series core modules. The whole device adopts wide temperature model and adopts high reliability power supply application scheme. The input power supply has overvoltage and reverse polarity protection functions.

Through the built-in minipice and M.2 can carry hundreds of functional modules to achieve further expansion of system functions, can carry 4G/5G communication module, wifi, Bluetooth module, various specifications of video acquisition/output module, AD acquisition module, multiple serial port module, sound acquisition/output module, multifunctional IO module and so on. Scalable POE gigabit network, compatible with industrial automation and vehicle-road collaboration scenarios.

Compare Jetson Orin NX and Jetson Orin NANO Specifications				
Modules	Orin NX 16GB	Orin NX 8GB	Orin Nano 8GB	Orin Nano 4GB
AI Performance	100 TOPS	70 TOPS	40 TOPS	20 TOPS
GPU	1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores			512-core NVIDIA Ampere architecture GPU with 16 Tensor Cores
GPU	8-core Arm® Cortex®-A78AE v8.2 64-bit CPU2MB L2 + 4MB L3	6-core Arm® Cortex®-A78AE v8.2 64-bit CPU1.5MB 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	(Supports 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)	
CSI Camera	Up to 4 cameras (8 via virtual channels***) 8 lanes MIPI CSI-2 D-PHY 2.1 (up to 20Gbps)		Up to 4 cameras (8 via virtual channels***) 8 lanes MIPI CSI-2 D-PHY 2.1 (up to 20Gbps)	
PCIe	1 x4 + 3 x1 (PCIe Gen4, Root Port, & Endpoint)		1 x4 + 3 x1 (PCIe Gen3, Root Port, & Endpoint)	
USB	3x USB 3.2 Gen2 (10 Gbps)		3x USB 3.2 Gen2 (10 Gbps)	

	3x USB 2.0		3x USB 2.0	
Networking	1x GbE			
Other I/O	3x UART, 2x SPI, 2x I2S, 4x I2C, 1x CAN, DMIC & DSPK, PWM, GPIOs		3x UART, 2x SPI, 2x I2S, 4x I2C, 1x CAN, DMIC & DSPK, PWM, GPIOs	
PowerPower	10W - 25W	10W - 20W	7W - 15W	7W - 10W
Mechanical	69.6mm x 45mm 260-pin SO-DIMM connector			

1.2 Product Specifications

Interface ID	Description
J2	Type-B Micro-USB interface for system burning and OTG function
USB	Dual layer Type A USB 3.0 connector
SIM	Nano SIM card slot
HDMI	Type-A HDMI connector
GigE1、GigE2	Gigabit network port RJ45 connector
DC 12V	Power supply DC connector with locking thread
RS 232	DB9 connector, RS232 level standard interface
RS 485	DB9 connector, RS485 level standard port
GPIOs	Multifunctional IO interface
D97	Carrier power supply status indicator
Rec	The Recovery button enables the core module to enter the recovery

1.3 Order Information

Model	Functional Description
11F1E2	AI industrial computer with NVIDIA Jetson Orin NX/ Orin NANO core module

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

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

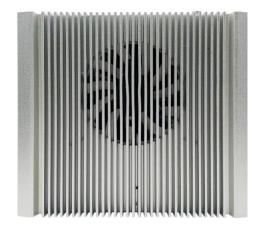Ali International Station address : https://plink-ai.en.alibaba.com/

Chapter2.   External interface function and location

2.1 Functional Connector

Name	Qty	Display	Description
Indicator light	1	LED	Carrier board power supply status indicator light
USB Interface	4	USB1	Dual layer Type A USB 3.0 connector and downward
		USB2	Dual layer Type A USB 3.0 connector and downward
Video Interface	1	HDMI	Type A HDMI display and output port
Serial Interface	2	COM1/COM2	DB9 connector, RS232 level standard interface 	Modules	Device's Name	 |---|---|
ORIN NX	
ORIN NANO		
		COM3/COM4	DB9 connector, RS485 level standard port 	Modules	Device's Name	 |---|---|
ORIN NX	
ORIN NANO		
Custom I/O port	1	Multi	Multifunctional IO interface | Pin	Signal	Pin	Signal | |---|---|---|---|
1		2	
3		4	
5		6	
7		8	
9		1 0	
1 1		1 2		

GPIO mapping number is shown in the following table:

Modules	ORIN NX		ORIN NANO
Jetpack Version			
GPIO08			
GPIO09			
GPIO17			
GPIO27			

The pin sequence of this interface signal is shown in the figure below.

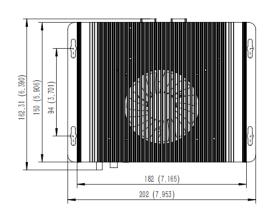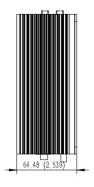| Recovery	1	REC	Press and hold the Recovery button to power on the device to enter the recovery mode
Network port	2	GigE1 GigE2	GigE1 and GigE2 in front are standard 10/100/1000M adaptive RJ45 network ports (expandable and POE powered).
Micro USB Interface	1	OTG	When ORIN NX/ORIN NANO module is equipped, it is used for system burning and OTG function output. When equipped with AGX ORIN, it is only used for system burning.
SIM slot	1	SIM card	Nano type SIM card connector
Power interface	1	POWER	Power interface DC ： 12V～24V

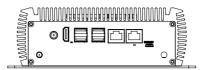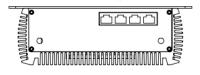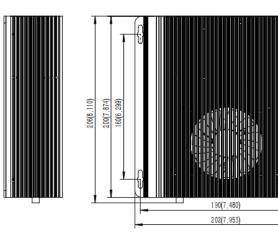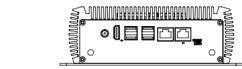## 2.4 Overall structure dimension drawing

Standard version

Multi PO network version

Chapter3 Method of use

3.1 Method of use

a) Ensure that all external system voltages are turned off

b) Install necessary external cables. (For example: display cable connected to HDMI display, power input cable for system power, USB cable connecting keyboard and mouse, camera, MiniPCIe function expansion module...)

c) Connect the power cord to the power supply.

d) 11F1E2 is automatically powered on by default or can be set to switch on. For details, contact the sales and technical personnel of the company.

3.2 Recovery mode

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

The steps to enter Recovery mode are as follows:

a) Power off the system.

b) Use a Micro-USB cable to connect the OTG port of the 11F1E2 to the USB port of the Jetson development host.

c) Press and hold down the Recovery button (Rec) to power the system. Hold down the Recovery button for more than 3 seconds and release.

d) The system enters Recovery mode, at which time subsequent operations can be performed.