

SYS-2016

Datasheet



Revision	Date	Changes	Hardware Version
V1.0	2022-12-6	Preliminary Release	V1.0
V1.1	2023-5-22	Add the GPIO mapping number in the system when Jetpack5.* version is used.	V1.1

Preface

Disclaimer

The information contained within this user's guide, including but not limited to any product specification, is subject to change without notice.

Plink assumes no liability for any damages incurred directly or indirectly from any technical or typographical errors or omissions contained herein or for discrepancies between the product and the user's guide.

Customer Support Overview

If you experience any difficulties after using the product, please freely contact us directly. Our tech can help you with product installation and difficulties.

Our support section is available 24 hours a day, 7 days a week on our website at: <http://www.plink-ai.com/en/Jetson.html>. Our technical support is always free.





ESD Warning

Electronic components and circuits are very sensitive to electrostatic discharge. Although the company will do anti-static protection design for the main interface on the circuit board when designing circuit board products, 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. Using a discharge grounding wrist strap.
- Operate the circuit board only in electrostatic discharge safety area.
- Avoiding move circuit boards in carpeted areas.
- Avoiding contact with components, try to handle the board by the edges.

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 and Accessories: 1 year (non-human damage)
- Contact information
- Contacts: RMA
- Address: Room 718, Jinrongkema Plaza, No. 15 Shangdi Xinx 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.

Introduction

SYS-2016 is a compact AI industrial computer with NVIDIA® Jetson™ Xavier NX/Orin NX series core modules. For industrial deployment applications, the main interface is designed with electrostatic safety protection and adopted the high reliability power supply application scheme. The input power supply has the functions of overvoltage and reverse polarity protection, and it has a rich external interface. The internal interface carrier board components all adopt wide temperature models.

SYS-2016 adopts large heat fin outside, copper bosses and high-performance heat pipe to make heat balance design inside. It has good heat transfer and heat dissipation performance, so that the whole machine can adapt to higher ambient temperature scenarios. It is applicable to industrial automation, security, new retail scenarios, etc.

SYS-2016 standard model can support 1/3/5 full speed Gigabit Ethernet. If you need to expand USB3.0 signal, SSD memory card, SATA signal, 4G communication module, all kinds of video capture/output card, AD capture card, multi-serial card, audio capture/output card, multi-function IO card, etc, please contact our sales staff.



Product Specifications

- One USB3.1 Type A Connector
- Two USB2.0 Type A Connector
- One Micro USB Connector
- Choose 1/3/5 Gigabit Ethernet (10/100/1000 BASE-T) RJ45 Connector
- One HDMI 2.0 Interface (MAX 6Gbps, 24bpp, 4096x2160@60Hz)
- 32GB ~ 1TB SSD Extended storage
- One micro TF Card Slot
- One Nano SIM Card Slot
- Board Reset、Recovery button
- One Board Receiving transmitter CAN bus interface
- Two RS-232 level serial port
- Three 3.3V Programmable GPIO, One 3.3V Strong driving ability Programmable GPO
- Automatically turn on after power on
- Size: 190mm×160mm×76.3mm
- Power: DC +9V~+24V
- Working temperature: -25~+65°C



Order Information

Model	Function	PN
SYS-2016	NVIDIA® Jetson™ Xavier NX 8G series module Compact AI embedded Industrial computer.	803-1060-0100-0000
SYS-2016	NVIDIA® Jetson™ Xavier NX 16G series module Compact AI embedded Industrial computer.	804-1060-0100-0000
SYS-2016	NVIDIA® Jetson™ Xavier NX 8G series module Compact AI embedded Industrial computer,128GB SSD standard.	810-1060-0132-0000
SYS-2016	NVIDIA® Jetson™ Xavier NX 16G series module Compact AI embedded Industrial computer,128GB SSD standard.	811-1060-0132-0000

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/>

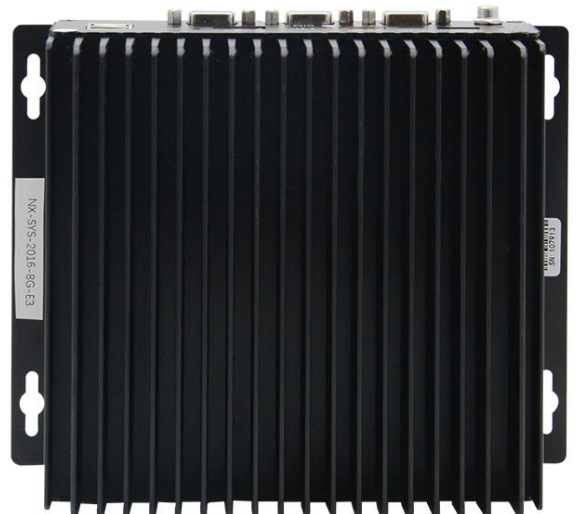
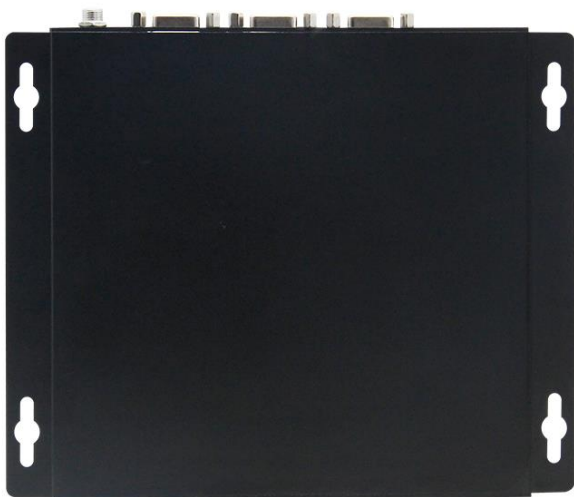
Optional module parameter information

Module	Jetson Xavier NX 16GB	Jetson Xavier NX 8GB	Jetson Orin NX 8GB	Jetson Orin NX 16GB
AI Performance	21 TOPS		70 TOPS	100 TOPS
GPU	384-core NVIDIA Volta™ GPU with 48 Tensor cores		1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores	
CPU	6-core NVIDIA Carmel ARM® v8.2 64-bit CPU		6-core Arm®Cortex®-A78AE v8.2 64-bit CPC	8-core Arm® Cortex®-A78AE v8.2 64-bit CPC
	6MB L2 + 4MB L3		1.5MB L2 + 4MB L3	2MB L2 + 4MB L3
Memory	16 GB 128 bit LPDDR4x		8 GB 128 bit LPDDR4x	8GB 128 bit LPDDR5
	59.7GB/s	59.7GB/s	102.4GB/s	102.4GB/s
Storage	16 GB eMMC 5.1		None	
Power	10 W 15 W 20 W		10 W – 20 W	10 W – 25 W
PCIe	1pcs x1 (PCIe 3.0) + 1 pcs x4 (PCIe 4.0), total 144 GT/s*		1 x4 + 3 x1	
CSI Camera	Up to 6 cameras (up to 24 via virtual channel)		8 channels MIPI CSI-2	
	14 channels (3x4 or 6x2) MIPI CSI-2		D-PHY 1.2 (up to 20 Gbps)	
	D-PHY 1.2 (up to 30 Gbps)		None	
Video code	2x 4K60 4x 4K30 10x 1080p60 22x 1080p30 (H.265)		1x 4K60 (H.265) 3x 4K30 (H.265)	
	2x 4K60 4x 4K30 10x 1080p60 20x 1080p30 (H.264)		6x 1080p60 (H.265) 12x 1080p30 (H.265)	
Video decode	2x 8K30 6x 4K60 12x 4K30 22x 1080p60 44x 1080p30 (H.265)		1x 8K30 (H.265) 2x 4K60 (H.265)	
	2x 4K60 6x 4K30 10x 1080p60 22x 1080p30 (H.264)		4x 4K30 (H.265) 9x 1080p60 (H.265) 18x 1080p30 (H.265)	
Display	2 Multi-mode DP 1.4/eDP 1.4/HDMI 2.0		1x 8K60 Multi-mode DP 1.4a (+MST)/eDP 1.4a/HDMI 2.1	
DL Accelerator	2x NVDLA engine		1x NVDLA v2	
Vision accelerator	7 channels VLIW vision processor		1x PVA v2	
Networking	10/100/1000 BASE-T Ethernet		10/100/1000 BASE-T Ethernet	
Dimension	69.6 mm x 45 mm		69.6 mm x 45 mm	

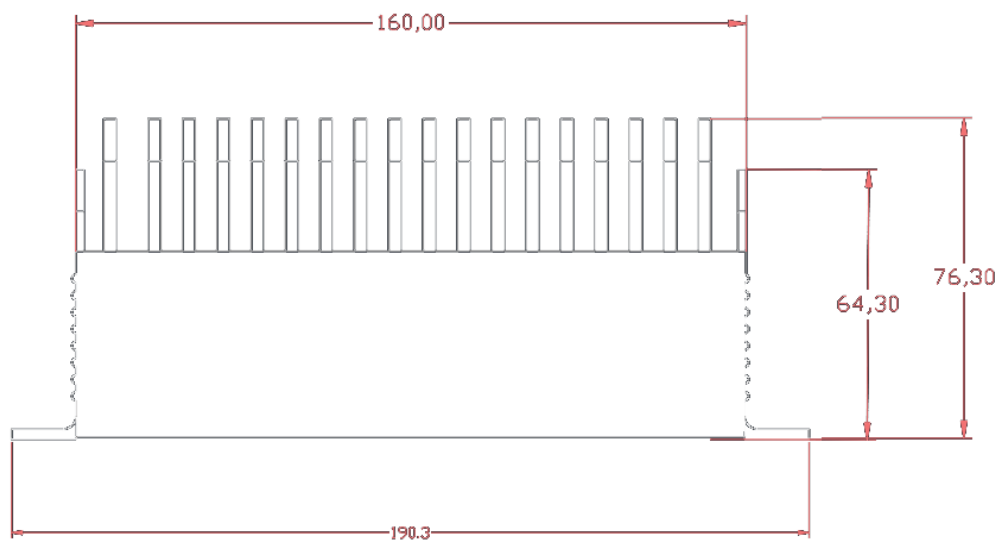
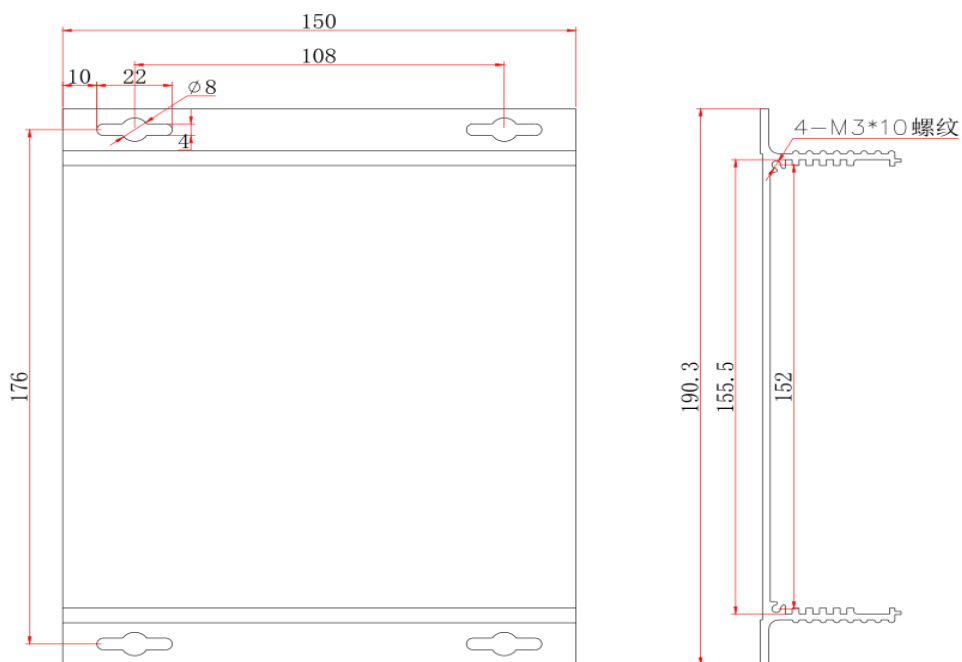
Interface Function Description

Connector	Function Description																								
9-24V	Lockable power input terminal																								
OTG	Type-B Micro-USB interface, For system burning and OTG function output.																								
USB	Type A Single layer USB3.1 Standard connector、 double layer USB2.0 Standard connector.																								
GigE	10/100/1000M RJ45 network interface																								
HDMI	Type A HDMI Display output interface																								
SIM	Nano SIM slot																								
TF	Micro TF slot																								
Power light	Power indicator																								
COM1	DB9 connector, RS232 Level standard serial port, Corresponding device file name: /dev/ttyTHS1																								
COM2	DB9 connector, RS232 Level standard serial port, Corresponding device file name: /dev/ttyTHS0																								
GPIOs	Multi-function IO, DB9 connector.																								
	<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>+3.3V</td> <td>2</td> <td>CAN_L</td> </tr> <tr> <td>3</td> <td>CAN_H</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>GND</td> <td>6</td> <td>GPO1</td> </tr> <tr> <td>7</td> <td>GPIO2</td> <td>8</td> <td>GPIO3</td> </tr> <tr> <td>9</td> <td>GPIO4</td> <td></td> <td></td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	+3.3V	2	CAN_L	3	CAN_H	4	GND	5	GND	6	GPO1	7	GPIO2	8	GPIO3	9	GPIO4		
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	GPIO High level voltage is 3.3V。 GPO1 Only signal output IO. It can provide current that can directly light LED beads.																								
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External interface function and location



Machinery Dimensions



Usage

- Ensure power off of all external system
- Install the necessary external cables.(e.g. display cable connected to HDMI monitor, power input cable supplying power to the system, USB cable connecting keyboard and mouse...)
- Connect the power cord to the power supply
- SYS-2016 could be set as default automatic power on or switch on. Please consult the sales and technical staff of our company for specific methods. Factory default power-on self-start

Recovery Mode

- Jetson core module can work in normal mode and recovery mode. It can be operated in recovery mode to file system update, kernel update, boot loader update, BCT update,etc.
- Get into Recovery mode operation steps as follow:
- Turn off the system power supply
- Use a Micro-USB cable to connect OTG port of the SYS-2016 with USB of the Jetson developing host
- Press and hold on Recovery button(REC) to supply system power. Keep REC button on hold for 3seconds above, then release the recovery button.
- The system enters the Recovery mode, and you can perform subsequent operations.