



LPB3399Pro Embedded Computer

Datasheet

V1.0



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Due to product version upgrades or other needs, our company may update the manual. If you need the latest version of the manual, please contact our company. We always adhere to the principle of customer first and provide customers with fast and efficient support services. If you have any needs, please feel free to contact our company at any time. Contact information is as follows:

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Version History

Version	Date	Description
V1.0	2022/8/23	Initial version

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1.Product Introduction

The LPB3399Pro intelligent host is an intelligent mainframe meticulously designed based on the Rockchip RK3399Pro chip platform. The body is made of full aluminum material with a fanless design. Inside the body, an innovative structural combination allows key heat-generating components such as the CPU and PMU to directly conduct heat to the external aluminum casing, making the entire casing act as a heat dissipation material. This design can withstand harsher working environments and is widely applied in various industrial scenarios.

The LPB3399Pro intelligent host has an onboard USB 3.0 OTG and a USB 2.0 HOST interface, which can be used to connect USB cameras or other USB peripherals. The LPB3399Pro supports WIFI5, BT5.0, one 1000M Ethernet, and one 100M Ethernet; it supports a high-speed UART and other commonly used communication interfaces; the LPB3399Pro intelligent host supports one HDMI 2.0 output, with support for audio input and output.

For power supply and Ethernet interfaces, the LPB3399Pro intelligent host offers an optional configuration with GX12 aviation connectors to meet the high-reliability connection requirements of special application scenarios.

The LPB3399Pro intelligent host supports Android, buildroot, Debian, and Ubuntu systems, offering advantages such as high performance, high reliability, and high scalability, and provides users with open system source code. Users can develop and customize based on this product, and our company provides comprehensive technical support for developers and enterprise users, enabling them to efficiently complete research and development work and significantly shorten the product development and mass production cycle.

The LPB3399Pro comes with an NPU with 3TOPS of computing power, which can serve as a data acquisition terminal, video processing terminal, vision computing terminal, and artificial intelligence terminal in various industrial scenarios.



2. Function Overview



High-Performance Processor

CPU	Dual-core Cortex-A72 and quad-core Cortex-A53 architecture, with a clock speed up to 1.8GHz, offering high performance and low power consumption.
GPU	ARM Mali-T860MP4 GPU, supporting AFBC (Advanced Frame Buffer Compression).
NPU	3 TOPS of computational power.
VPU	Capable of 4K/1080P video encoding and decoding, with 4K display output.
DDR	LPDDR4/4x, with options for 3GB or 6GB.
eMMC	eMMC 5.1, with options for 16GB or 64GB.



Rich Interfaces

HDMI 2.0 interface, supports 4K 30FPS output.

One Gigabit Ethernet port, one 100M Ethernet port, dual-band WIFI5, BT5.0.

One USB 3.0 OTG, one USB 2.0 HOST.

One high-speed UART.



Operating System

Android

Linux (Buildroot / Debian / Ubuntu)



Open Source Materials

WIKI Documentation <http://www.neardi.com/cms/en/wiki.html>

Quick Start

Firmware Upgrade

Android Development

Linux Development

Kernel Drivers

DEMO

System Customization

Accessories

Frequently Asked Questions (FAQ)

Release Notes

Hardware Materials

Product 2D/3D Drawings

Software Materials

Firmware Tools and Drivers

Android Source Code and Images

U-Boot and Kernel Source Code

Debian/Ubuntu/Buildroot System Files

3. Technical Specifications

Basic Parameters

SOC	RK3399Pro; a dual-core Cortex-A72 plus quad-core Cortex-A53 architectural processor.
GPU	Mali-T860MP4 GPU, supporting OpenGL ES 1.1/2.0/3.0/3.1, OpenVG 1.1, OpenCL, DirectX 11; supports AFBC (Advanced Frame Buffer Compression).
NPU	3 TOPS computational power; supports 8-bit/16-bit operations; compatible with TensorFlow and Caffe models.
VPU	Capable of 4K VP9 and 4K 10-bit H265/H264 video decoding, up to 60fps at 1080P; multi-format video decoding (WMV, MPEG-1/2/4, VP8); 1080P video encoding, supporting H.264 and VP8 formats.
DDR	LPDDR4/LPDDR4X, with options for 3GB or 6GB.
eMMC	eMMC 5.1, with options for 16GB, 32GB, 64GB, or 128GB.
PMU	RK806
OS	Android / Ubuntu / Buildroot / Debian

Hardware Specifications

Power	DC 9V - 36V
USB	1 x Type-A USB3.0 HOST, 1 x Type-A USB2.0 OTG
Display output	1x Type-A HDMI 2.0
Audio	1x ϕ 3.5mm audio out, 1x ϕ 3.5mm microphone

SD card	Compatible with SDIO 3.0 protocol, system boot up supported
RJ-45	1 x 10/100/1000 Ethernet, 1 x 10/100 Ethernet,
Connectivity	1x Uart
Net work	1 x 10/100/1000Mbps Ethernet, 1 x 10/100Mbps Ethernet;
	Wi-Fi 2.4GHz/5GHz,802.11a/b/g/n/ac;
	BT V5.0 with BLE supported

Other Parameters

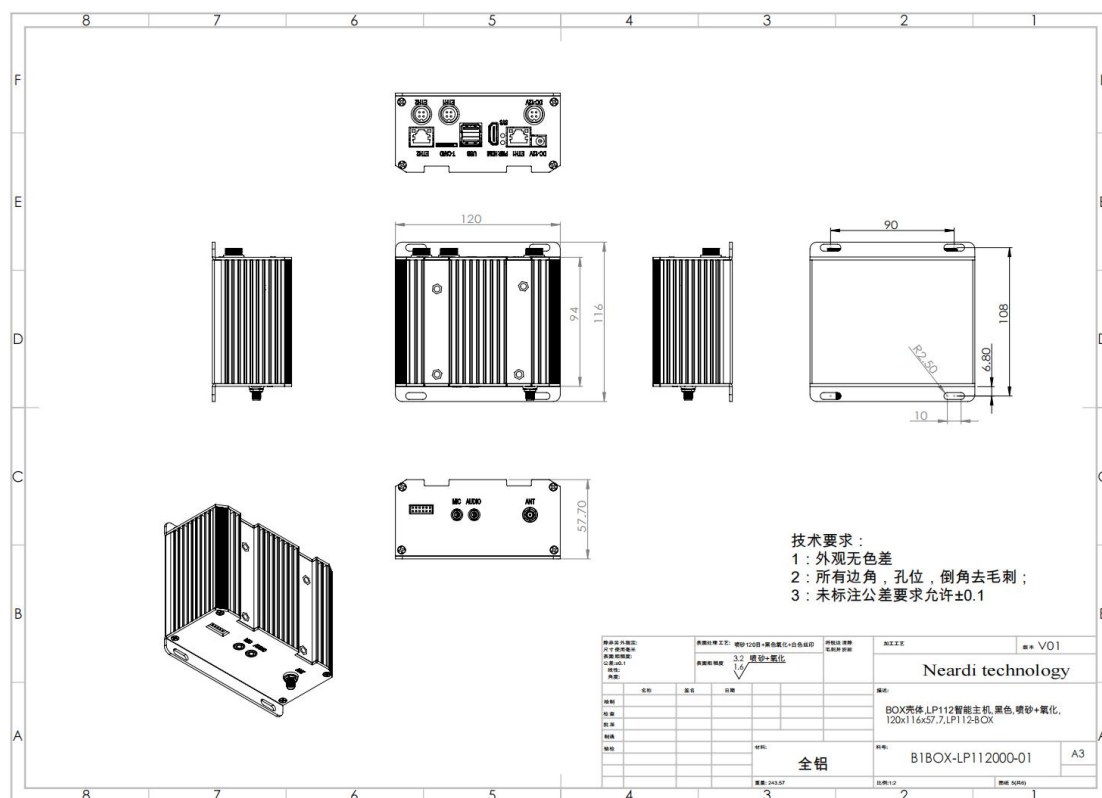
Dimensions	L*W*H(mm) 120*94*57.7
Operating Temperature	-10 ~ 70℃
Weight	Approximately 543.7g (excluding peripherals)

4. Appearance and Dimensions

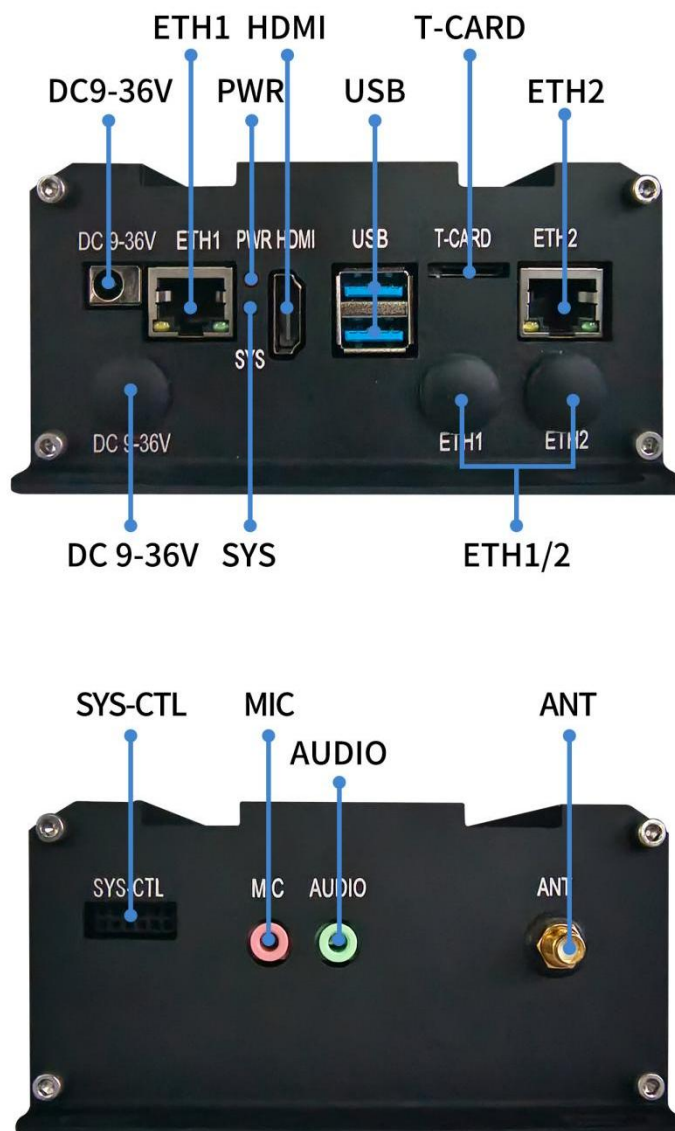
4.1 Appearance



4.2 Dimensions



5.Interface Definition



Name	Function	Specifications	Notes
DC 9-36V	9V-36V power input	DC 5.5*2.1mm GX12 3-pin male thread inside needle (optional)	/

AUDIO	Audio output	φ3.5mm 3-L Jack	L/R audio channel
MIC	Microphone input	φ3.5mm 3-L Jack	/
HDMI	HDMI output	Type-A HDMI 2.0	HDMI 2.0 output up to 4K@30Hz
ETH1	RJ45	100M Ethernet GX12 4-pin male thread inside needle (optional)	10/100-Mbps data transfer rates
ETH2	RJ45	Gigabit Ethernet GX12 8-pin male thread inside needle (optional)	10/100/1000-Mbps data transfer rates
USB	2x type-A USB	Up layer: Type-A USB2.0 host Down layer: Type-A USB3.0 otg	The first USB2.0 host for external devices
T-CARD	T-flash card	Push-Push TF socket	SDIO3.0 protocol compatible
SYS-CTL	System control or debug	2.54MM pitch, 2*6PIN, A2541HWR-2x6P	System control and debug
ANT	Wifi/BT antenna	SMA male thread inside hole	2.4GHZ and 5GHZ antenna connector
PWR	LED indicator	Power in indicator	Red LED
SYS	LED indicator	Work state indicator	Green LED

SYS-CTL

Number	Pin name	Description	Notes
1	CPU_DBG_TX	Uart tx for System debug of CPU	3.3V TTL, 1500000Mbps
2	CPU_DBG_RX	Uart rx for System debug of CPU	3.3V TTL, 1500000Mbps
3	VCC3V3	3.3V output	only used for uart debug power supply
4	GND	GND	-
5	NPU_DBG_TX	Uart tx for System debug of NPU	3.3V TTL, 1500000Mbps
6	NPU_DBG_RX	Uart rx for System debug of NPU	3.3V TTL, 1500000Mbps
7	UART_RX	Uart rx for external devices used	3.3V TTL, up to 1500000Mbps
8	UART_TX	Uart tx for external devices used	3.3V TTL, up to 1500000Mbps
9	UPDATE_KEY	Firmware update key	Short this signal with GND to enter loader mode
10	RST_KEY	System reset key	Short this signal with GND to reset the system
11	GND	GND	-
12	OTG_EN	USB otg enable	-

6.Application Scenarios



AI



Machine Vision



Industrial Control



Energy and Power



Smart Tablet



VR



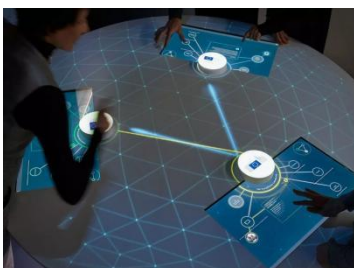
Smart Logistics



New



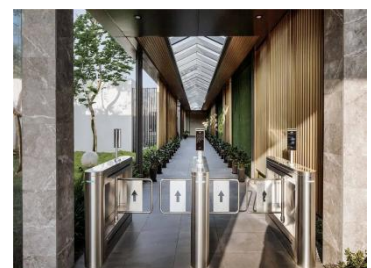
Smart Commercial



Object Recognition



Vehicle terminal



Security Surveillance

7.Ordering Model

Product Model	Status	CPU	DDR	eMMC	Operating Temperature
LP11231600	ACTIVE	RK3399Pro	3GB	16GB	-10°C - 70°C
LP11266400	ACTIVE	RK3399Pro	6GB	64GB	-10°C - 70°C

*For customized non-standard orders, please contact us via email at sales@neardi.com.

8.About Nearidi

Shanghai Nearidi Technology Co., Ltd., established in 2014, is a national-level high-tech enterprise, a strategic partner of Rockchip, and an authorized agent for Black Sesame Technologies. We focus on the research and development and production of enterprise-level open-source hardware platforms, offering customers core modules, industry-specific boards, development boards, touch panels, and industrial control hosts. Adhering to the core philosophy of technological innovation and professional service, leveraging Nearidi Technology's technical strengths and industry experience, we assist our partners in achieving rapid mass production of their products.

Company Advantages

Software Design / Custom OS / Product ODM / Bulk Delivery

Products

Rockchip

System On Module



LCB3588/J



LCB3568/J



LCB3566



LCB3399Pro



LCB3399

Development Board



LKD3588/J



LKD3568/J



LKD3566



LKD3399Pro



LKD3399

Embedded Computer



LPB3588



LPM3588



LPC3588



LPB3568



LPB3399Pro

Black Sesame Technologies



SOM-A-A1000



SOM-π-A1000



SOM-B-A1000



SOM-A1000 开发者套件

Vehicle Terminal



LPA3588



LPA3568



LPA3399Pro



LPS3399Pro

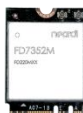
WIFI Module



FD7352S



FD7352P



FD7352M



FD7155U



FD7256S