# neardi

## LPA3403 Embedded Computer Datasheet V1.0



Shanghai Neardi Technology Co., Ltd. www.neardi.com © 2024 Shanghai Neardi Technology Co., Ltd. All rights reserved. Without written permission, no one may copy, photocopy, translate, or disseminate any content of this manual.

Tables and illustrations are for explanatory and descriptive purposes only and may differ from the specific product. Please refer to the actual product. We strive to ensure consistency with the actual product. This document is provided for customers as a reference for product design and end application. It is recommended that customers carefully confirm the specifications and parameters provided in the document to ensure they meet the design or application requirements of the product. At the same time, it is strongly recommended that customers conduct detailed tests based on our actual products in the actual application scenario to ensure they meet the final usage requirements. Neardi Technology does not assume any responsibility for any damage suffered due to the use of the document, materials, and product functions.

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:

#### Shanghai Neardi Technology Co., Ltd.

Phone: +86 021-20952021 Website: <u>www.neardi.com</u> Email: <u>sales@neardi.com</u>

#### **Version History**

Version	Date	Description
V1.0	2024/9/27	Initial version

### Contents

1.Product Introduction	3
2.Function Overview	4
3.Technical Specifications	6
4.Appearance and Dimensions	8
5.Interface Definition	9
6.Application Scenarios	11
7.Ordering Model	12
8.About Neardi	13

### **1.Product Introductio**

The LPA3403 is an intelligent computer carefully designed based on the Hisilicon Hi3403V100 chip platform, specifically tailored for the surveillance market with high-performance image processing capabilities and a rich selection of interfaces. It features built-in active cooling, enabling excellent performance in more demanding working environments and making it widely applicable in various scenarios.

The LPA3403 is equipped with the Hi3403V100 chip, which includes a quad-core ARM Cortex-A55 CPU, providing powerful computing capabilities. It integrates a single-core MCU suitable for applications with extremely high latency requirements. It is configured with a 10Tops INT8 neural network inference unit, supporting mainstream neural network frameworks, making it suitable for AI inference tasks.

The LPA3403 offers a 12V3A power supply input, 1 Gigabit Ethernet interface for stable network connections. It has 1 HDMI interface supporting 4K60fps video output, 1 MIC and 1 LINE to meet audio capture and playback needs. There is 1 USB2.0 and 1 USB3.0 for flexible data transfer and device expansion. The board has 1 mini-PCIe for RK1808, 3Tops NPU computing power expansion. It supports WiFi6, BT5.4, providing high-speed wireless connections. There are 3 UART and 1 RS485 as well as GPIO and other communication serial ports to meet various peripheral connections and industrial applications.

The LPA3403 supports the Linux system, offering high performance, high reliability, and high expandability, 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.



### 2. Function Overview

No a	High-Performance Processor
СРИ	Quad-core 64-bit architecture processor (4*A55 1.4GHz), high performance,
	low power consumption
NPU	10.4 TOPS@INT8 dual-core heterogeneous architecture
VPU	4K video encoding, 10-channel 1080p video decoding, 4-channel 4MP30
	in-device real-time hardened stitching
DDR	LPDDR4, with options for 4/8GB
eMMC	eMMC 5.1, optional 16/32/64GB



Rich Interfaces

1 HDMI 2.0 output, supporting 4K60fps

1 Gigabit Ethernet port, dual-band WiFi-6, BT5.4

1 MIPI PCIe interface, expandable for NPU computing cards

1 Type-A USB 2.0

- 1 Type-A USB 3.0
- 3 UART, 1 RS485



Open Source Materials

#### WIKI Documentation

Quick Start

#### Firmware Upgrade

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

U-Boot and Kernel Source Code

Linux System Files

## **3. Technical Specifications**

#### Basic parameters

SOC	Hi3403V100; Quad-core 64-bit architecture processor (4*A55 1.4GHz)
NPU	10.4 TOPS@INT8 dual-core heterogeneous architecture
VPU	Supports H264/H265/MPEG-4 4K60fps + 1080P60fps
	Supports H264/H265 4k60fps+720P30fps 8K15fps
DDR	LPDDR4/4X, with options for 4GB/8GB
eMMC	eMMC 5.1, with options for 16GB/32GB/64GB
OS	Linux

### Hardware Specifications

Power	DC12V - 3A (DC Jack 5.5*2.1mm / PH2.0 wafer connector)
USB	1*Type-A USB3.0
	1*Type-A USB2.0
Display out	1*Type-A HDMI 2.0 up to 4K@60fps (系统版本不同规格不同)
Audio	φ3.5mm earphone Jack with L/R audio out
	φ3.5mm micphone Jack with Mic in
Net work	1* 10/100/1000Mbps Ethernet
SD card	Compatible with SDIO 3.0 protocol, system boot up supported
Serial port	3*Uart, RS485

	Other Parameters
Dimensions	L*W*H(mm) 195*105*36
Operating Temperature	-10 ~ 70℃
Weight	Approximately 570g (excluding peripherals)

#### ∩+1п

## **4. Appearance and Dimensions**

#### 4.1 Appearance



### 4.2 Dimensions



## **5.Interface Definition**



Part Name	Part Specifications	Part Description
USB3.0	Type-A USB3.0	USB3.0
USB2.0	Type-A USB2.0	USB2.0
MIC	φ3.5mm 3-L Jack	Micphone In
EAR	φ3.5mm 3-L Jack	L/R audio out
HDMI	Type-A HDMI connector	HDMI2.0 TX up to 7680x4320@60Hz
ETH	Gigabit Ethernet	10/100/1000-Mbps data transfer rates
DC-12V	DC 5.5*2.1mm	Main power supply, DC12V – 3A

Micro SD	Push-Push Micro SD socket	Micro SD Card
ACT	Green LED	Diy status indicate LED
PWR	Red LED	Power status indicate LED
RS485	3.81mm pitch 4Pin Connector	RS485 Bus signals
UART 0/2/4	3.81mm 8pin wafer	1.8V UART-TTL signals

### **6.Application Scenarios**







**Machine Vision** 



Industrial Control



**Energy and Power** 



Smart Tablet



VR



**Smart Logistics** 





Smart Commercial



Security Surveillance



**Object Recognition** 



New

Vehicle terminal

## 7.Ordering Model

Product Model	Status	CPU	DDR	eMMC	Operating
					Temperature
LP70041600	ACTIVE	Hi3403V100	4GB	16GB	-10°C - 70°C
LP70043200	ACTIVE	Hi3403V100	4GB	32GB	-10°C - 70°C
LP70086400	ACTIVE	Hi3403V100	8GB	64GB	-10°C - 70°C

\*For customized non-standard orders, please contact us via email at <u>sales@neardi.com</u>.

### 8.About Neardi

Shanghai Neardi Technology Co., Ltd., established in 2014, is a national high-tech enterprise, a strategic partner of Rockchip, and an authorized agent of Black Sesame Technologies. The company supports a variety of chip platforms including Rockchip, HISI, NVIDIA, Black Sesame Technologies, and WiFi modules. It focuses on the research and development and production of enterprise-level open-source hardware platforms, providing customers with core modules, industry boards, development boards, touch panels, and industrial control hosts. Adhering to the core concepts of technological innovation and professional service, the company leverages its technical strengths and industry experience to help partners achieve rapid product mass production.

### **Company Advantages**

Software Design / Custom OS / Product ODM / Bulk Delivery

### Products

