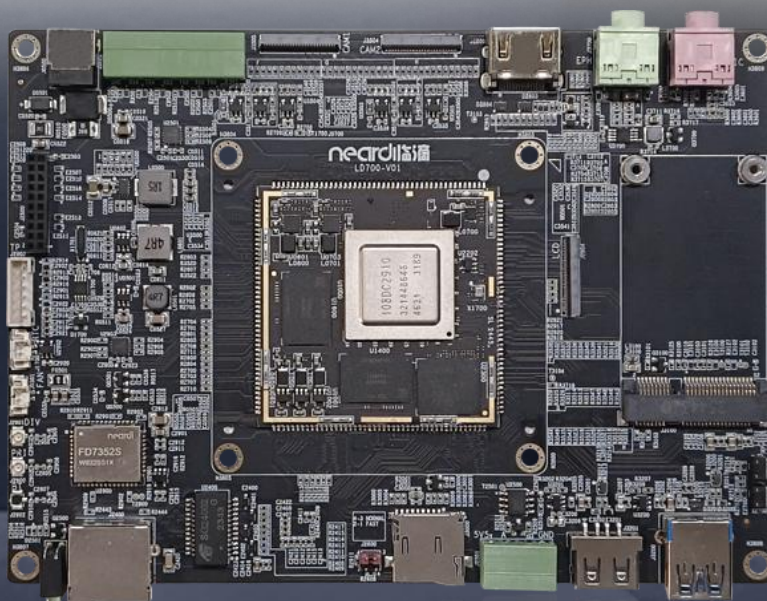


LKD3403V100 Development Board
Product Brief
V1.0



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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	2024/12/16	Initial version

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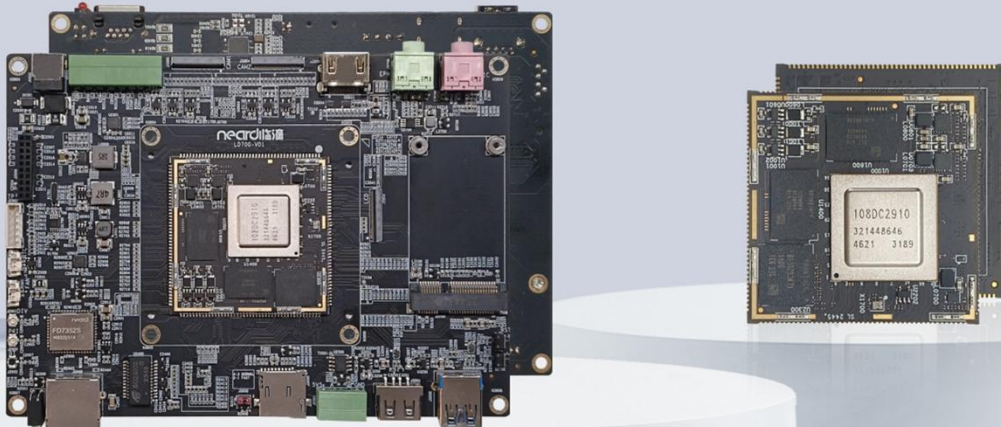
1.Product Introduction

LKD3403V100 is a feature-rich development board built on HiSilicon's Hi3403V100 platform. It combines our LCB3403V100 core module with a carrier board through a castellated edge interface. Compact, slim and flat, the board delivers high-performance imaging and a comprehensive set of interfaces tailored for surveillance applications.

Powered by the Hi3403V100, LKD3403V100 integrates a quad-core ARM Cortex-A55 CPU for robust compute performance and a single-core MCU for ultra-low-latency tasks. A 10 TOPS INT8 neural-network accelerator—compatible with mainstream frameworks—enables efficient on-device AI inference.

The board accepts 12 V / 3 A supply and provides: 1× Gigabit Ethernet for reliable networking, 1× HDMI 2.0 (4K@60 fps), 1× MIC in, 1× LINE out, 1× USB 2.0, 1× USB 3.0, 2× MIPI-CSI for HD cameras, 1× MIPI-DSI for displays, 1× mini-PCle (supports RK1808 3 TOPS NPU add-on), Wi-Fi 6 and Bluetooth 5.4, 3× UART, 1× RS-485, SPI and other industrial interfaces

Ubuntu, Buildroot and OpenHarmony are fully supported. Complete source code is provided for rapid secondary development. Neardi offers comprehensive technical assistance to shorten R&D cycles and accelerate mass production.



2. Function Overview



High-Performance Processor

CPU	Quad-core 64-bit (4×A55 @ 1.4 GHz), high performance, low power
NPU	10.4 TOPS INT8, dual-core heterogeneous
VPU	4K encode, 10×1080p decode, 4×4 MP30 in-camera real-time hardware stitch
DDR	LPDDR4/4X, 4 GB or 8 GB option
eMMC	eMMC 5.1, 16 GB or 64 GB option



Rich interfaces

1× HDMI 2.0 out, up to 4K@60 fps
1× MIPI-DSI, up to 4K@60 fps
2× MIPI-CSI, accepting up to 4 MIPI cameras
1× Gigabit Ethernet, dual-band Wi-Fi 6, BT 5.4
1× mini-PCIe for NPU add-on card
1× USB 2.0 Type-A
1× USB 3.0 Type-A
3× UART, 1× RS-485



Open Source Materials

WIKI <https://wiki.neardi.net/docs/welcome/>

Quick Start

Firmware Update

Linux Development

Kernel Driver

DEMO

System Customization

Accessories

FAQ

Release Notes

Hardware Materials

Chip Datasheet

Product 2D/3D drawings

Carrier reference schematic

Carrier reference PCB

Critical BOM

Software Materials

Burning tool & drivers

U-Boot & kernel source

Linux system image

3. Technical Specifications

Basic Parameters

SOC	Hi3403V100; quad-core 64-bit (4×A55 @ 1.4 GHz)
NPU	10.4 TOPS INT8, dual-core heterogeneous
VPU	Supports H.264/H.265/MPEG-4: 4K@60 fps + 1080p@60 fps Supports H.264/H.265: 4K@60 fps + 720p@30 fps, 8K@15 fps
DDR	LPDDR4/4X, 4 GB / 8 GB options
eMMC	eMMC 5.1, 16 GB / 64 GB options
OS	Ubuntu、Buildroot、OpenHarmony

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	1*Type-A HDMI 2.0 up to 4K@60fps
	1*MIPI DSI up to 4K@60fps
Audio	φ3.5mm earphone Jack with L/R audio out
	φ3.5mm microphone Jack with Mic in
Camera	2* MIPI CSI (4 Lane)
Mini-PCle	mini PCIe for NPU RK1808
SD card	Compatible with SDIO 3.0 protocol, system boot up supported
RJ-45	1*10/100/1000-Mbps data transfer rates
RTC	RTC power on and off supported

Serial port	3*Uart, RS485, 10*GPIO
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Keys	2* keys (reset, update)
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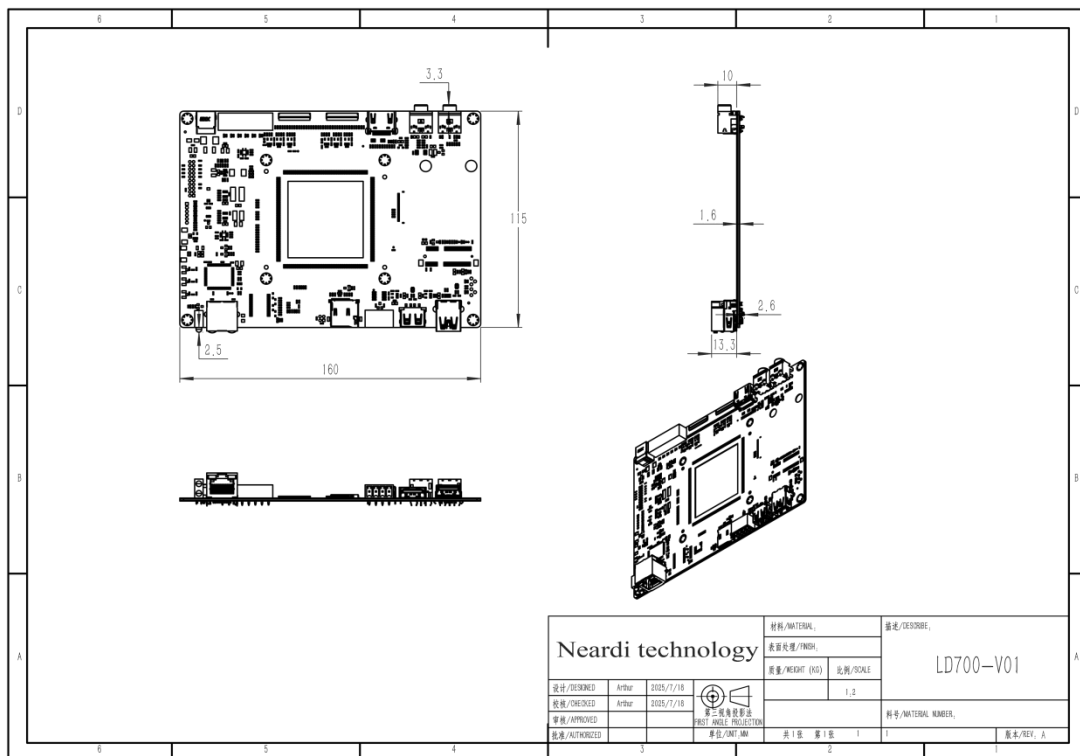
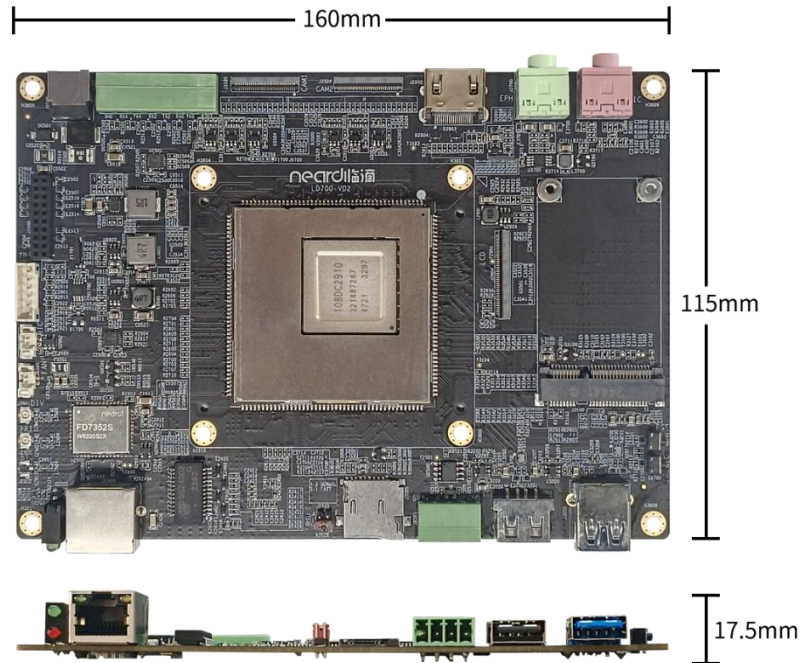
Other Parameters

Size	L*W*H(mm) 160*115*17.5
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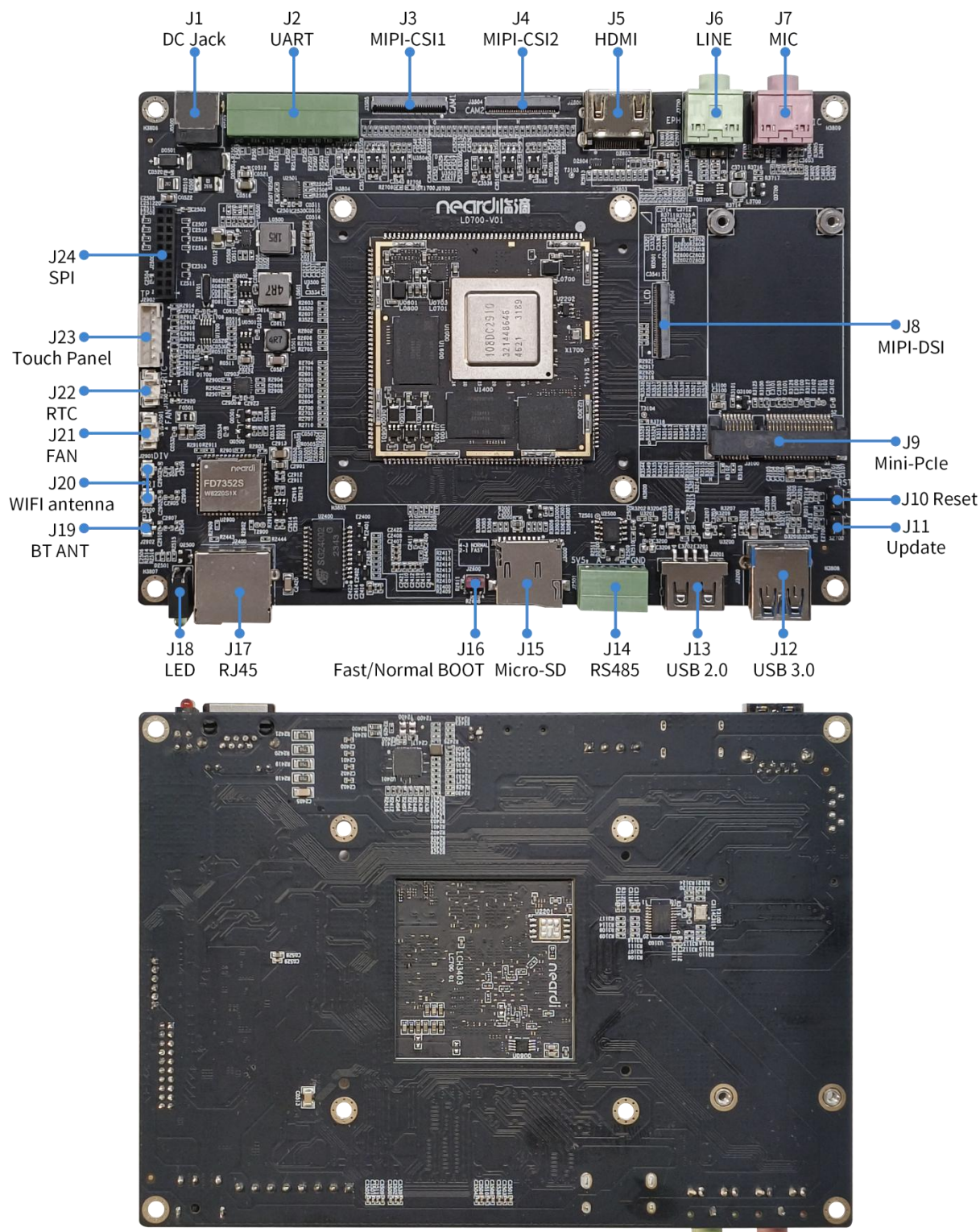
Operating Temperature	-20 - 75°C
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Weight	Approx. 110 g (excluding peripherals)
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4. Appearance and Dimensions



5.Interface Definition



Part reference	Part Name	Part Specifications	Part Description
J1	DC Jack	DC 5.5*2.1mm	Main power supply, DC12V – 3A
J2	UART	3.5mm 8pin wafer	1.8V UART-TTL signals
J3	MIPI-CSI 1	0.5mm Pitch 30Pin FPC connector	mipi csi 4-lane signals for camera
J4	MIPI-CSI 2	0.5mm Pitch 30Pin FPC connector	mipi csi 4-lane signals for camera
J5	HDMI	Type-A HDMI connector	HDMI2.0 TX up to 7680x4320@60Hz
J6	LINE	φ3.5mm 3-L Jack	L/R audio out
J7	MIC	φ3.5mm 3-L Jack	Micphone In
J8	Mini-PCle	Mini-PCle 52pin socket	USB3.0 signals for NPU module
J9	MIPI-DSI	0.5mm Pitch 30Pin FPC connector	mipi dsi 4-lane signals for LCM
J10	Reset	push-button	Key for system reset
J11	Update	push-button	Key for system update
J12	USB3.0	Type-A USB3.0	USB3.0
J13	USB2.0	Type-A USB2.0	USB2.0
J14	RS485	3.5mm 4pin wafer	RS485 Bus signals
J15	Micro-SD	Push-Push Micro SD socket	Micro SD Card
J16	Fast/Normal BOOT	2.0mm Pitch 2X2Pin header	Normal BOOT/Fast BOOT
J17	RJ45	Gigabit Ethernet	10/100/1000-Mbps data transfer rates
J18	LED	Red and Green LEDs	Power status indicate LED and diy LED
J19	BT-ANT	I-PXE	BT_ANT
J20	WIFI-ANT	I-PXE	WIFI_ANT
J21	FAN	PH2.0mm 2pin wafer	12V power output for cooling FAN
J22	RTC	1.25mm Pitch 2Pin wafer	RTC battery power input 3.0V
J23	Touch Panel	2mm 6pin wafer	Touch Panel
J24	SPI	2.0mm Pitch 2X10Pin header	-

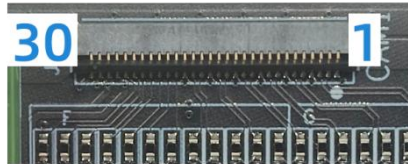
6.Pin Definition

UART 0/2/4 (J2)



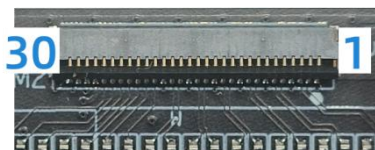
Pin number	Pin name	Voltage level	Notice
1	3V3_PER	3V3	-
2	UART0_TXD_3V3_IO	3V3	-
3	UART0_RXD_3V3_IO	3V3	-
4	UART2_TXD_IO	-	-
5	UART2_RXD_IO	-	-
6	UART4_TXD_3V3_IO	3V3	-
7	UART4_RXD_3V3_IO	3V3	-
8	GND	GND	-

MIPI-CSI1 (J3)



Pin number	Pin name	Voltage level	Notice
1	GND	-	-
2	MIPI_CAM1_RX_D0P	-	MIPI_RX0_D0P
3	MIPI_CAM1_RX_D0N	-	MIPI_RX0_D0N
4	GND	-	-
5	MIPI_CAM1_RX_D1P	-	MIPI_RX0_D1P
6	MIPI_CAM1_RX_D1N	-	MIPI_RX0_D1N
7	GND	-	-
8	MIPI_CAM1_RX_CLK0N	-	MIPI_RX0_CLK0N
9	MIPI_CAM1_RX_CLK0P	-	MIPI_RX0_CLK0P
10	GND	-	-
11	MIPI_CAM1_RX_D2P	-	MIPI_RX0_D2P
12	MIPI_CAM1_RX_D2N	-	MIPI_RX0_D2N
13	GND	-	-

14	MIPI_CAM1_RX_D3P	-	MIPI_RX0_D3P
15	MIPI_CAM1_RX_D3N	-	MIPI_RX0_D3N
16	GND	-	-
17	MIPI_CAM1_RX_CLK1P	-	MIPI_RX0_CLK1P
18	MIPI_CAM1_RX_CLK1N	-	MIPI_RX0_CLK1N
19	GND	-	-
20	MIPI_CAM1_MCLK	-	SENSOR0_CLK/UPS_MODE0
21	CAM1_RST1	-	SENSOR0_RSTN
22	CAM1_PDN1_L	-	GPIO9_5_1V8
23	CAM1_RST2	-	SENSOR0_RSTN
24	CAM1_PDN2_L	-	GPIO9_5_1V8
25	I2C_SCL_CAM1	-	SPI0_SCLK/I2C2_SCL_1V8
26	I2C_SDA_CAM1	-	SPI0_SDO/I2C2_SDA_1V8
27	VCC1V8_DOVDD_DVP2	1.8V	-
28	VDD1V2_DVDD_DVP2	1.2V	-
29	VCC2V8_DVP2	2.8V	-
30	VCC2V8_AVDD_DVP2	2.8V	-

MIPI-CSI2 (J4)

Pin number	Pin name	Voltage level	Notice
1	GND	-	-
2	MIPI_CAM2_RX_D0P	-	MIPI_RX1_D0P
3	MIPI_CAM2_RX_D0N	-	MIPI_RX1_D0N
4	GND	-	-
5	MIPI_CAM2_RX_D1P	-	MIPI_RX1_D1P
6	MIPI_CAM2_RX_D1N	-	MIPI_RX1_D1N
7	GND	-	-
8	MIPI_CAM2_RX_CLK0N	-	MIPI_RX1_CLK0N
9	MIPI_CAM2_RX_CLK0P	-	MIPI_RX1_CLK0P
10	GND	-	-
11	MIPI_CAM2_RX_D2P	-	MIPI_RX1_D2P
12	MIPI_CAM2_RX_D2N	-	MIPI_RX1_D2N
13	GND	-	-
14	MIPI_CAM2_RX_D3P	-	MIPI_RX1_D3P
15	MIPI_CAM2_RX_D3N	-	MIPI_RX1_D3N
16	GND	-	-

17	MIPI_CAM2_RX_CLK1P	-	MIPI_RX1_CK1P
18	MIPI_CAM2_RX_CLK1N	-	MIPI_RX1_CK1N
19	GND	-	-
20	MIPI_CAM2_CLK	-	SENSOR2_CLK/RGMII0_VDD33_SEL
21	CAM2_RST1	-	SENSOR1_RSTN
22	CAM2_PDN1_L	-	GPIO9_6_1V8
23	CAM2_RST2	-	SENSOR1_RSTN
24	CAM2_PDN2_L	-	GPIO9_6_1V8
25	I2C_SCL_CAM2	-	SPI0_SDI/I2C3_SCL_1V8
26	I2C_SDA_CAM2	-	SPI0_CSN/I2C3_SDA_1V8
27	VCC1V8_DOVDD_DVP1	1.8V	-
28	VDD1V2_DVDD_DVP1	1.2V	-
29	VCC2V8_DVP1	2.8V	-
30	VCC2V8_AVDD_DVP1	2.8V	-

MIPI-DSI (J18)

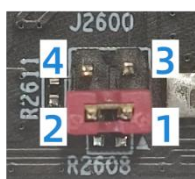


Pin number	Pin name	Voltage level	Notice
1	NC	-	-
2	3V3_PER	3.3V	-
3	3V3_PER	3.3V	-
4	GND	-	-
5	MIPI_LCD_RST_3V3	3.3V	-
6	LCDID_3V3	3.3V	-
7	GND	-	-
8	DSI_D0N	-	-
9	DSI_D0P	-	-
10	GND	-	-
11	DSI_D1N	-	-
12	DSI_D1P	-	-
13	GND	-	-
14	DSI_CKN	-	-
15	DSI_CKP	-	-
16	GND	-	-
17	DSI_D2N	-	-
18	DSI_D2P	-	-
19	GND	-	-

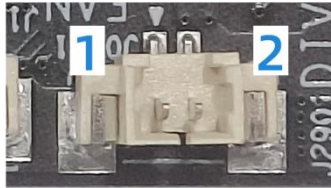
20	DSI_D3N	-	-
21	DSI_D3P	-	-
22	GND	-	-
23	NC	-	-
24	NC	-	-
25	GND	-	-
26	NC	-	-
27	T2901	-	-
28	NC	-	-
29	NC	-	-
30	GND	-	-
31	MIPI_LED-	-	-
32	MIPI_LED-	-	-
33	NC	-	-
34	NC	-	-
35	NC	-	-
36	NC	-	-
37	NC	-	-
38	NC	-	-
39	MIPI_LED+	-	-
40	MIPI_LED+	-	-

RS485 (J14)

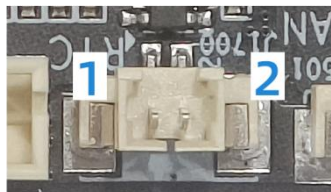
Pin number	Pin name	Voltage level	Notice
1	5V0	5V0	-
2	RS485_2_A_D+	-	-
3	RS485_2_B_D	-	-
4	GND	GND	-

Fast/Normal BOOT (J16)

Pin number	Pin name	Voltage level	Notice
1	RGMII0_TXD0/FAST_BOOT_MODE	-	-
2	3V3_PER	3.3V	-
3	RGMII0_TXD0/FAST_BOOT_MODE	-	-
4	GND	GND	-
FAN (J21)			



Pin number	Pin name	Voltage level	Notice
1	FAN_12V	12V	-
2	GND	GND	-
RTC (J22)			

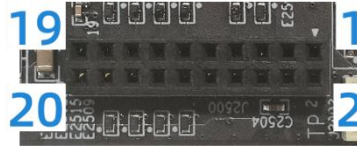


Pin number	Pin name	Voltage level	Notice
1	3V3_PER	3.3V	-
2	GND	GND	-
Touch Panel (J23)			



Pin number	Pin name	Voltage level	Notice
1	GND	GND	-
2	I2C_SDA_TP	-	-
3	I2C_SCL_TP	-	-
4	TP_RST_IO	-	-

5	TP_INT_IO	-	-
6	VCC3V0_TOUCH	3.3V	-

SPI (J24)

Pin number	Pin name	Voltage level	Notice
1	GND	GND	-
2	GND	GND	-
3	GND	GND	-
4	GND	GND	-
5	P_IRIS_CONTROL1_V3318U12	-	-
6	3V3_PER	3.3V	-
7	DC_IRIS_PWM_V3318U12	-	-
8	3V3_PER	3.3V	-
9	GND	GND	-
10	GND	GND	-
11	SPI2_SCLK_1V8	1.8V	-
12	SPI1_SCLK/I2C5_SCL_1V8	1.8V	-
13	SPI2_SDO_1V8	1.8V	-
14	SPI1_SDO/I2C5_SDA_1V8	1.8V	-
15	SPI2_SDI_1V8	1.8V	-
16	SPI1_SDI/I2C4_SCL_1V8	1.8V	-
17	SPI2_CSN_1V8	1.8V	-
18	SPI1_CSN0/I2C4_SDA_1V8	1.8V	-
19	5V0	5V0	-
20	5V0	5V0	-

7.Application Scenarios



AI



Machine Vision



Industrial Control



Energy and Power



Smart Tablet



VR



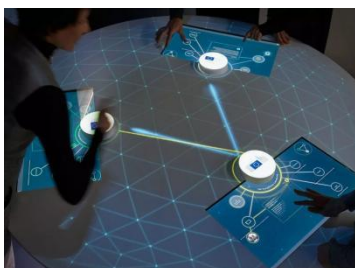
Smart Logistics



New



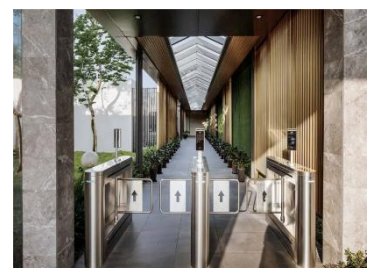
Smart Commercial



Object Recognition



Vehicle terminal



Security Surveillance

8.Ordering Model

Product Model	Status	CPU	DDR	eMMC	Operating Temperature
LZ70043202	Mass Production	Hi3403V100	4GB	16GB	-20°C - 75°C
LZ70086402	Mass Production	Hi3403V100	8GB	64GB	-20°C - 75°C

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

9.About Neardi

Founded in 2014, Shanghai Neardi Technologies Co., Ltd. is a state-level high-tech enterprise and an official strategic partner of Rockchip. It is also an authorized distributor of Black Sesame Intelligent.

The company supports multiple chip platforms—Rockchip, HiSilicon, NVIDIA, vehicle-control MCUs, and Wi-Fi modules—and specializes in R&D and production of enterprise-grade open-source hardware platforms. Its portfolio covers core modules, industry boards, development kits, touch-panel tablets, and industrial PCs.

Guided by technical innovation and professional service, Neardi leverages its deep expertise to help partners achieve fast mass-production, delivering shorter development cycles, lower costs, and reduced project risk.

Company Advantages

Software Design / Custom OS / Product ODM / Bulk Delivery

Products

Rockchip

System On Module



LCB3588/J



LCH3576



LCH3562



LCH3506



LCB1126B

Development Board



LKD3588/J



LKD3576



LKD3562



LKD3506



LKD1126B

Embedded Computer



LPB3588



LPM3588



LPC3588



LPB3568



LPM3568

HISI



LCB3403V100



LCB3519AV200



LKD3403V100



LBA3403V100



LPA3403V100

NVIDIA



LKD Orin Nano



LKD Orin NX



LPD Orin NX



LPD Orin Nano

Vehicle Terminal



LPA3588



LPS3576



LPA3568



LPA3399Pro



LPS3399Pro

WIFI Module



FD7352S



FD7352P



FD7352U



FD7155U



FD7256S