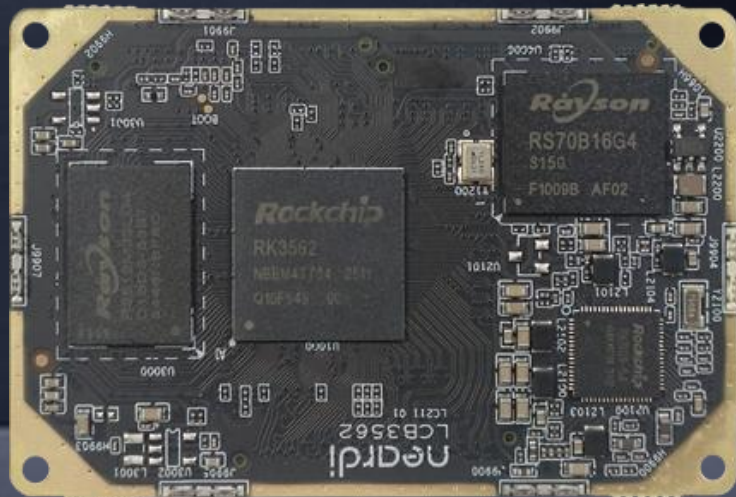


neardi

LCB3562-System On Module

Product Manual

V1.0



Shanghai Neardi Technology Co., Ltd
www.neardi.cn

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Version History

Version	Date	Description
V1.0	2025/8/13	Initial version

contents

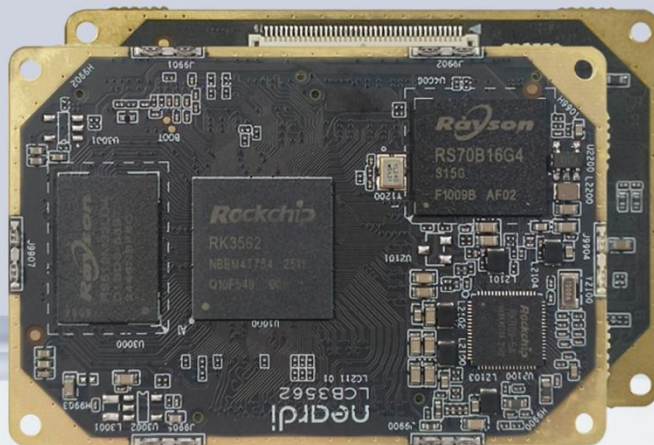
1.Product Introduction	3
2.Feature Overview	4
3.Specifications	6
4. Appearance and Dimensions	8
5.Interface Definition	9
6.Application Scenarios	22
7.Ordering Model	23
8.About Neardi	24

1.Product Introduction

LCB3562 System On Module is a full-featured design built on the Rockchip RK3562/RK3562J platform, measuring only 60 mm × 40 mm. It connects to the carrier via a 3×80-pin B2B connector set, bringing out all RK3562 I/Os while meeting high-reliability, low-cost and high-flexibility requirements.

LCB3562 System On Module employs a quad-core ARM Cortex-A53 architecture running at up to 2.0 GHz, integrates a Mali-G52 GPU with OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1 support, and includes a 1 TOPS NPU for lightweight AI applications.

LCB3562 integrates CPU, DDR, eMMC and PMU. DDR uses mainstream LPDDR4/LPDDR4X for lower power and higher speed, available in 1 GB/2 GB/4 GB options; eMMC complies with high-speed eMMC 4.51, offered in 8 GB/16 GB/32 GB. The module supports multiple video codecs including H.264, H.265 and VP9, decoding up to 4K@30 fps and encoding 1080p@60 fps, with high-quality JPEG encode/decode. For display, RK3562 provides MIPI-DSI, LVDS and RGB outputs up to 2048×1080@60 Hz. Rich peripherals include PCIe 2.1, USB 3.0 OTG, dual Ethernet, CAN-FD, etc., meeting diverse expansion needs. It runs Linux and other OSes, serving tablets, smart home, education, industry, etc., shortening development cycles, cutting costs and boosting efficiency.



2. Feature Overview



High-Performance Processor

CPU	4-core 64-bit ARM Cortex-A53 architecture, high performance, low power
GPU	ARM Mali-G52 GPU
NPU	1TOPS
VPU	4K video decode, 1080P video encode
DDR	LPDDR4/4x, optional 1 GB / 2 GB / 4 GB
eMMC	eMMC 4.51, optional 8 GB / 16 GB / 32 GB



OS

Ubuntu / Buildroot / Debian



Open-source Resources

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

Quick Start

Firmware Upgrade

Linux Development

Kernel Drivers

DEMO

System Customization

[Accessories](#)

[Frequently Asked Questions](#)

[Release Notes](#)

Hardware Documentation

[Chip Datasheet](#)

[Core Board Pin Definition](#)

[Product 2D/3D Drawings](#)

Software Documentation

[Flashing Tools and Drivers](#)

[U-Boot and Kernel Source Code](#)

[Ubuntu System Files](#)

3.Specifications

Basic Parameters

SOC	RK3562/RK3562J; 4*A53 2.0GHz
GPU	ARM Mali-G52 GPU; OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, and Vulkan 1.1.; The 2D hardware engine maximizes display performance and ensures smooth operation.
NPU	1TOPS; int4/int8/int16/FP16
VPU	Supports almost full-format 1080p@60fps H.264 decode and 4K@30fps H.265 decode. Supports 1080p@60fps H.264 encoding.
DDR	LPDDR4/4x, optional 1 GB / 2 GB / 4 GB
eMMC	eMMC 4.51, optional 8 GB / 16 GB / 32 GB
PMU	RK809
OS	Ubuntu / Buildroot / Debian

Hardware Parameters

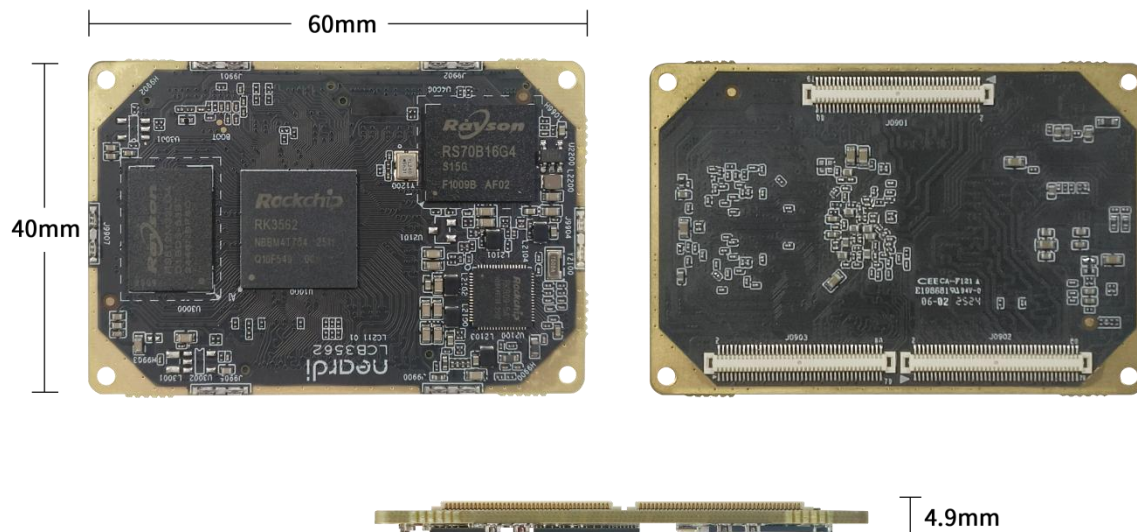
Video Input interface	MIPI interface :
	1 * MIPI(4 lanes)
	2 * MIPI(2 lanes)
	VICAP interface:
	RX raw8/raw10/raw12

Display interface	RGB up to 2048*1080@60Hz
	BT.656 up to 576 P/I output
	BT.1120 up to 1080 P/I output
	MIPI DSI TX up to 2048x1080@60Hz
	LVDS up to 800x1280@60Hz
Audio interface	SAI(Serial Audio Interface)
	SPDIF Support two 16-bit audio data store together in one 32-bit wide location
	PDM Up to 8 channels
	Digital Audio Codec
Video Output Processor	Video output, up to 2048x1080@60Hz resolution

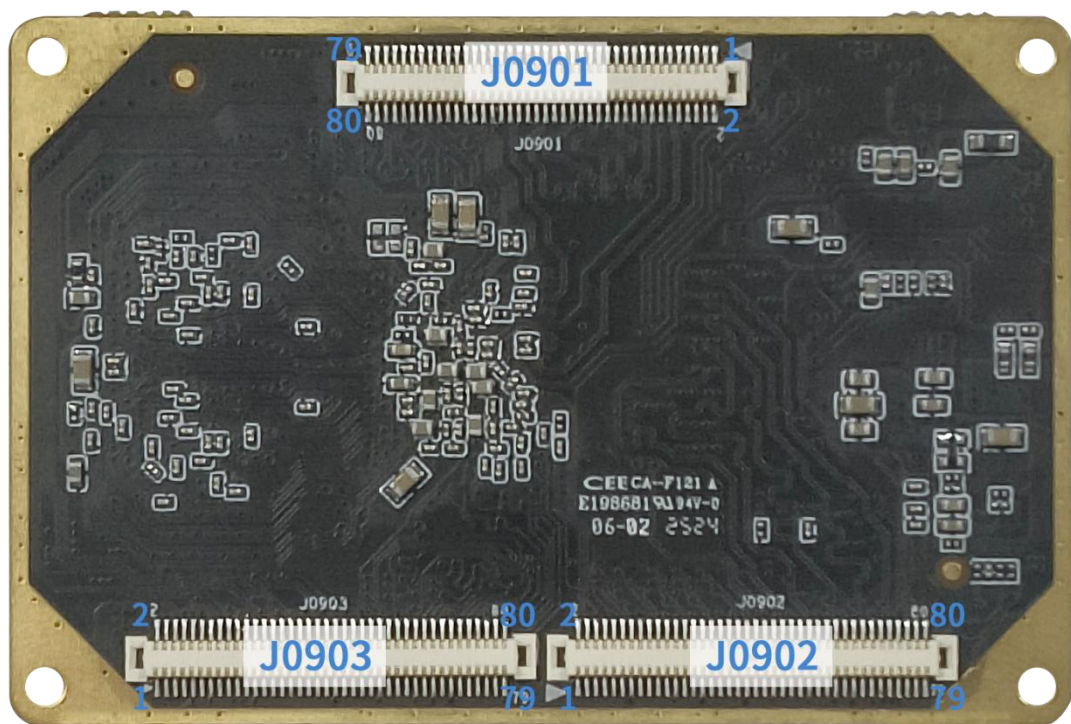
Other Parameters

Operating temperature	-20°C~ 70°C (Commercial) -40°C~ 85°C (Industrial)
PCB interface	3*80pin, PANASONIC-AXK6F80337YG, PH0.5mm80pin
PCB layers	8 layers,
PCB size	L* W *H(mm): 60 *40 * 4.9 (PCB thickness 1.6mm)

4. Appearance and Dimensions



5.Interface Definition



J0901

Pin Number	Pin Name
1	SPKP_OUT
2	VCC_RSV1
3	SPKN_OUT
4	VCC3V3_SYS_RTC
5	GND
6	PMIC_PWRON
7	MIPI_CSI_RX0_D0N
8	GND

9	MIPI_CSI_RX0_D0P
10	MIPI_CSI_RX0_CLK1P
11	GND
12	MIPI_CSI_RX0_CLK1N
13	MIPI_CSI_RX0_D1N
14	GND
15	MIPI_CSI_RX0_D1P
16	MIPI_CSI_RX1_D0N
17	GND
18	MIPI_CSI_RX1_D0P
19	MIPI_CSI_RX0_CLK0N
20	GND
21	MIPI_CSI_RX0_CLK0P
22	MIPI_CSI_RX1_D1N
23	GND
24	MIPI_CSI_RX1_D1P
25	MIPI_CSI_RX0_D2N
26	GND
27	MIPI_CSI_RX0_D2P
28	MIPI_CSI_RX1_CLK0N
29	GND

30	MIPI_CSI_RX1_CLK0P
31	MIPI_CSI_RX0_D3N
32	GND
33	MIPI_CSI_RX0_D3P
34	MIPI_CSI_RX1_D2N
35	GND
36	MIPI_CSI_RX1_D2P
37	RGMII_MDC_M0
38	GND
39	RGMII_MDIO_M0
40	MIPI_CSI_RX1_D3N
41	RGMII_TXD3_M0
42	MIPI_CSI_RX1_D3P
43	RGMII_TXD2_M0
44	GND
45	RGMII_TXD1_M0
46	MIPI_CSI_RX1_CLK1N
47	RGMII_TXD0_M0
48	MIPI_CSI_RX1_CLK1P
49	RGMII_TXEN_M0
50	GND

51	RGMII_TXCLK_M0
52	SARADC1_IN5
53	GND
54	SARADC1_IN3
55	RGMII_RXD3_M0
56	SARADC1_IN6
57	RGMII_RXD2_M0
58	SARADC1_IN1
59	RGMII_RXD1_M0
60	SARADC1_IN4
61	RGMII_RXD0_M0
62	GND
63	RGMII_RXDV_M0
64	LCD_RST_L_1V8
65	RGMII_RXCLK_M0
66	GPIO3_D3_d
67	GND
68	SPK_CTL
69	RGMII_CLK_M0
70	ALPS_INT_L
71	GND

72	HP_DET_L
73	ETH_CLK_25M_OUT_M0
74	USB_HOST_PWREN_H
75	CAM_PWREN_H
76	USB_OTG_PWREN_H
77	I2C1_SCL_M1
78	GPIO4_B6_d
79	I2C1_SDA_M1
80	GSENSOR_INT_L

J0903

Pin Number	Pin Name
1	VCC3V3_SYS
2	VCC3V3_SYS
3	VCC3V3_SYS
4	VCC3V3_SYS
5	VCC3V3_SYS
6	VCC3V3_SYS
7	CAM_RST0_L
8	GND
9	CAM_CLK0_OUT
10	GND

11	CAM_CLK1_OUT
12	GND
13	GND
14	GND
15	GPIO3_A7_d
16	I2C4_SCL_M0
17	GPIO3_B0_d
18	I2C4_SDA_M0
19	UART2_TX_M1_3V3
20	GND
21	UART2_RX_M1_3V3
22	CAM_PDN0_L
23	GND
24	I2C5_SDA_M0
25	SARADC0_BOOT
26	I2C5_SCL_M0
27	SARADC0_IN4_HP_HOOK
28	CAM_PDN1_L
29	SARADC0_IN5
30	CAM_RST1_L
31	SARADC0_IN6

32	GND
33	SARADC0_IN2_HW_ID
34	GND
35	SARADC0_IN1_KEY/RECOVERY
36	SARADC1_IN0
37	SARADC0_IN7
38	SARADC1_IN2
39	SARADC0_IN3
40	SARADC1_IN7
41	GND
42	GND
43	SDMMC0_CMD
44	GND
45	SDMMC0_D2
46	GND
47	SDMMC0_D3
48	GND
49	SDMMC0_CLK
50	WORKING_LEDEN_H
51	GND
52	GND

53	SDMMC0_D0
54	SDIO_CLK
55	SDMMC0_D1
56	GND
57	SDMMC0_DET_L
58	SDIO_D2
59	GND
60	SDIO_D1
61	I2S2_LRCK_M0
62	SDIO_D3
63	GND
64	SDIO_D0
65	CLK1_32K_OUT
66	SDIO_CMD
67	GND
68	GND
69	I2S2_SCLK_M0
70	GPIO1_D0_d
71	UART1_RX_M0
72	I2S2_SDO_M0
73	UART1_TX_M0

74	I2S2_SDI_M0
75	UART1_CTSn_M0
76	GND
77	UART1_RTSn_M0
78	USB30_OTG0_ID
79	GND
80	GND

J0902

Pin Number	Pin Name
1	WIFI_PWREN_L
2	USB30_OTG0_VBUSDET
3	I2C1_SDA_TP
4	RESETn
5	I2C1_SCL_TP
6	CAN1_RX_M1_3V3
7	RTCIC_INT_L
8	CAN1_TX_M1_3V3
9	LCD_PWREN_H
10	GND
11	UART0_TX_M0_DEBUG
12	PCIE20_RXP

13	GND
14	PCIE20_RXN
15	UART0_RX_M0_DEBUG
16	GND
17	CAN0_RX_M2_3V3
18	PCIE20_REFCLKP
19	CAN0_TX_M2_3V3
20	PCIE20_REFCLKN
21	GPIO0_C4_d
22	GND
23	GND
24	PCIE20_TXN
25	WIFI_REG_ON_H
26	PCIE20_TXP
27	LCD_BL_PWM
28	GND
29	GND
30	USB20_HOST1_DP
31	TP_INT_L
32	USB20_HOST1_DM
33	PCIE20_PERSTn_M0

34	GND
35	PCIE20_WAKEn_M0
36	USB30_OTG0_DP
37	GPIO0_B7_d_3V3
38	USB30_OTG0_DM
39	GND
40	GND
41	MIC2_IN
42	PCIE20_CLKREQn_M0
43	MIC1_IN
44	GND
45	GND
46	MIPI_DSI_TX_D0N/LVDS_TX_D0N
47	HPR_OUT
48	MIPI_DSI_TX_D0P/LVDS_TX_D0P
49	HP_SNS
50	GND
51	HPL_OUT
52	MIPI_DSI_TX_D1N/LVDS_TX_D1N
53	GND
54	MIPI_DSI_TX_D1P/LVDS_TX_D1P

55	I2C0_SDA_PMIC
56	GND
57	I2C0_SCL_PMIC
58	MIPI_DSI_TX_CLKP/LVDS_TX_CLKP
59	GND
60	MIPI_DSI_TX_CLKN/LVDS_TX_CLKN
61	PMIC_EXT_EN
62	GND
63	GND
64	MIPI_DSI_TX_D2N/LVDS_TX_D2N
65	VCC_1V8
66	MIPI_DSI_TX_D2P/LVDS_TX_D2P
67	VCC3V3_PMU
68	GND
69	GND
70	MIPI_DSI_TX_D3P/LVDS_TX_D3P
71	GND
72	MIPI_DSI_TX_D3N/LVDS_TX_D3N
73	GND
74	GND
75	VCC5V0_SYS

76	PMIC_32KOUT_WIFI
77	VCC5V0_SYS
78	GND
79	VCC5V0_SYS
80	VCC3V3_SD

6.Application Scenarios



AI



Machine Vision



Industrial Control



Energy and Power



Smart Tablet



VR



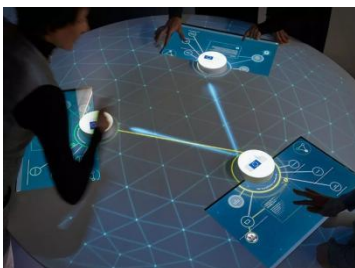
Smart Logistics



New Retail



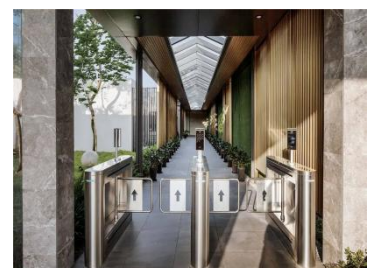
Smart Commercial



Object Recognition



Vehicle terminal



Security Surveillance

7. Ordering Model

Product Model	Status	CPU	DDR	eMMC	Operating Temperature
LC21110801	ACTIVE	RK3562	1GB	8GB	-20°C - 70°C
LC21121601	ACTIVE	RK3562	2GB	16GB	-20°C - 70°C
LC21143201	ACTIVE	RK3562	4GB	32GB	-20°C - 70°C
LC211108J1	ACTIVE	RK3562J	1GB	8GB	-40°C - 85°C
LC211216J1	ACTIVE	RK3562J	2GB	16GB	-40°C - 85°C
LC211432J1	ACTIVE	RK3562J	4GB	32GB	-40°C - 85°C

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

8.About Neardi

Shanghai Neardi 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 Neardi 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



LCH3576



LCH3562

Development Board



LKD3588/J



LKD3576



LKD3568/J



LKD3566



LKD3562

Embedded Computer



LPB3588



LPM3588



LPC3588



LPB3568



LPM3568

HISI



LCB3403V100



LCB3519AV200



LKD3403V100



LBA3403V100



LPA3403V100

NVIDIA



LKD Orin Nano



LKD Orin NX



LKD Xavier NX



LPD Orin Nano

Vehicle Terminal



LPA3588



LPA3568



LPA3399Pro



LPS3399Pro

WIFI Module



FD7352S



FD7352P



FD7352U



FD7352M



FD7155U



FD7256S