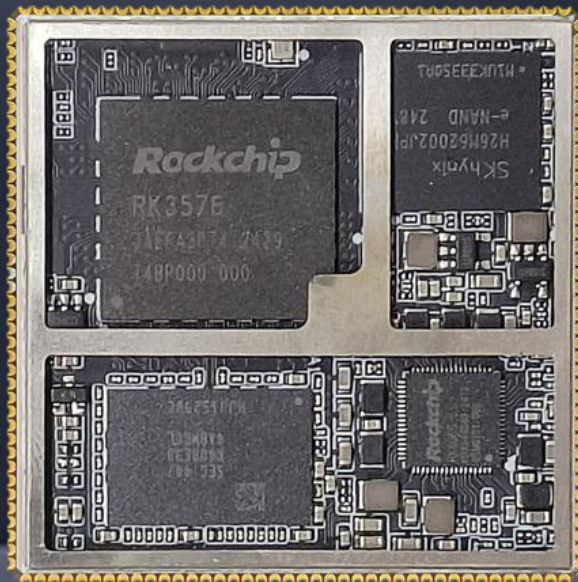




LCH3576 System On Module

Datasheet

V1.1



Shanghai Neardi Technology Co., Ltd.

www.neardi.cn

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Version History

Version	Date	Description
V1.0	2025/03/25	Initial version
V1.1	2025/10/10	Update operating system

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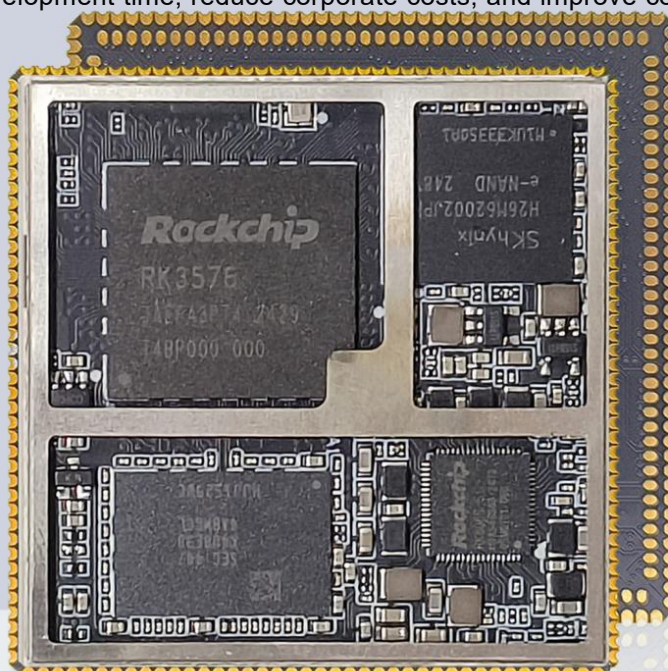
1. Product Introduction

The LCH3576 core module is a fully functional core module meticulously designed based on the Rockchip RK3576 chip platform, with dimensions of only 42mm*42mm. The core module connects to the baseboard via stamp hole and LGA connections, bringing out the RK3576's 160pin+148pin external pin signals while balancing the needs for high reliability, low cost, and high flexibility.

The LCH3576 includes sections for the CPU, DDR, eMMC, and PMU. The DDR uses mainstream LPDDR4/LPDDR4X models, offering lower power consumption and faster frequencies, with a 4GB configuration option; the eMMC adopts the high-speed eMMC 5.1 standard, with a 32GB capacity option; the PMU consists of RK806 and multiple DC-DC and LDOs, with CPU core voltages supporting DVFS dynamic voltage scaling.

The LCH3576 core module is manufactured using an 8nm process technology, integrating a quad-core Cortex-A72 and quad-core Cortex-A53 CPU with a maximum clock frequency of up to 2.2GHz. It also features an integrated NPU with 6TOPS computing power, supporting the efficient operation of various deep learning frameworks and AI algorithms. Additionally, it is equipped with a Mali-G52 MC3 GPU, supporting graphics standards such as OpenGL ES, OpenCL, and Vulkan, capable of meeting the needs for high-definition video processing and UI interaction. In terms of multimedia, RK3576 supports 4K@120fps video decoding and encoding, capable of handling multiple video formats like H.265, H.264, VP9, etc. It offers a rich set of high-speed interfaces, such as PCIe2.1, SATA3, USB3.0, RGMII, etc., making it suitable for a variety of application scenarios including edge computing devices, intelligent surveillance, and network storage.

Adopting a modular design philosophy, the LCH3576 separates the core components with the same requirements and strict standards into a fully functional module. All CPU functional pins are brought out and have undergone comprehensive testing and batch validation. Users developing products based on this module can save on project development time, reduce corporate costs, and improve company efficiency.



2. Functional Overview



High-performance processor

CPU	8-core 64-bit (4x A72 + 4x A53), high performance, low power consumption
GPU	ARM Mali-G52 MC3 GPU, dedicated 2D graphics acceleration module
NPU	6TOPS computing power
VPU	8K30fps decoding, 4K60fps encoding
DDR	LPDDR4/4X/5, options for 4GB/8GB/16GB
eMMC	eMMC 5.1, options for 32GB/64GB/128GB



OS

Android

Linux (Buildroot / Debian / Ubuntu)

OpenEuler

Kylin



Open-source documentation

WIKI

Quick Start

Firmware Upgrade

Android Development

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

Android Source Code and Images

U-Boot and Kernel Source Code

Debian/Ubuntu/Buildroot System Files

3. Specifications

Basic Parameters

SOC	RK3576; Octa-core 64-bit architecture (4x A72 + 4x A53)
GPU	Mali-G52 MC3, 2D Graphics Engine, RGA dual core, VDPP, VPSS, 16M ISP, JPEG Encoder/Decoder
NPU	6TOPS; supports int4/int8/int16/FP16/BF16/TF32
VPU	Decoding: 8K30fps/4K120fps (H265/HEVC, VP9, AVS2, AV1) and 4K60fps (H264/AVC) Encoding: 4K60fps (H265/HEVC, H264/AVC)
DDR	LPDDR4/LPDDR4X/5, options for 2GB/4GB/8GB/16GB
eMMC	eMMC 5.1, options for 16GB/32GB/64GB/128GB
PMU	RK806
OS	Android / Ubuntu / Buildroot / Debian/Kylin/OpenEuler

Hardware Parameters

Video Input interface	MIPI interface :
	Support 3 MIPI CSI-2 interfaces
	Two 4 data lanes of D-PHY v1.2 + One 4 data lanes (or 3 data trios) of C/D-PHY
	DVP interface:
	8/10/12/16-bit, up to 150MHz I/O frequency;

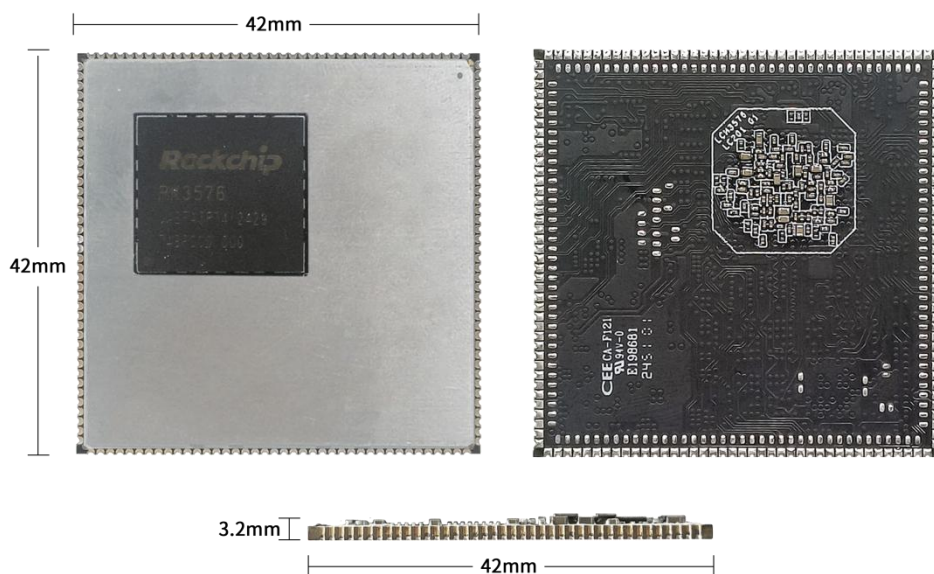
	BT.601/BT.656 and BT.1120 VI interface
	HDMI/eDP TX interface up to 4K@120Hz
Display Output	eDP interface up to 4K@60fps;
interface	DisplayPort TX and USB combo interface up to 4K@120Hz
	MIPI DSI-2 TX interface with D-PHY v2.0(4 data lanes) or C-PHY v1.1
Image Signal	Video Capture (VICAP)
Processor	Image Signal Processor V3.9
Video Output	Video Port0 supports up to 4K@120Hz with 10-bit data
	Video Port1 supports up to 2560x1600@60Hz with 10-bit data
Processor	Video Port2 supports up to 1920x1080@60Hz with 8-bit data
	SDIO interface
Connectivity	GMAC 10/100/1000M Ethernet controller
	5 SPI ports, 10 I2C ports in Master mode, Two I3C master ports, 12 UART ports, 2
	CAN ports, Multiple group of GPIO

Other Parameters

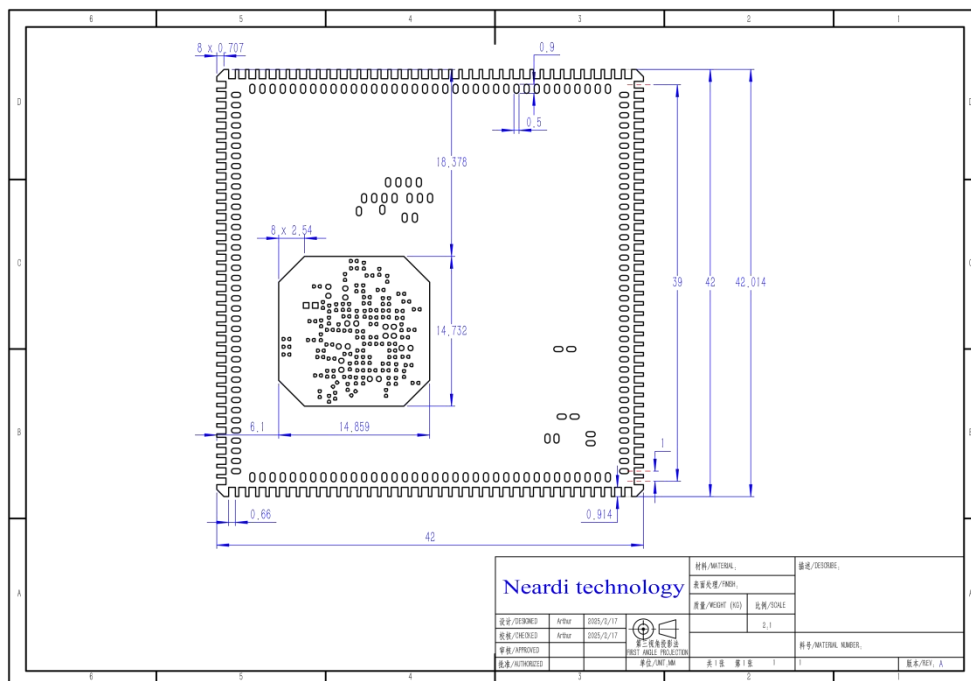
Operating	-20°C~ 70°C (Commercial)
temperature	-40°C~ 85°C (Industrial)
PCB interface	LCC(160Pin) + LGA(148Pin)
PCB size	L* W *H(mm): 42 *42 * 3.2 (PCB thickness1.6mm)

4. Appearance and Dimensions

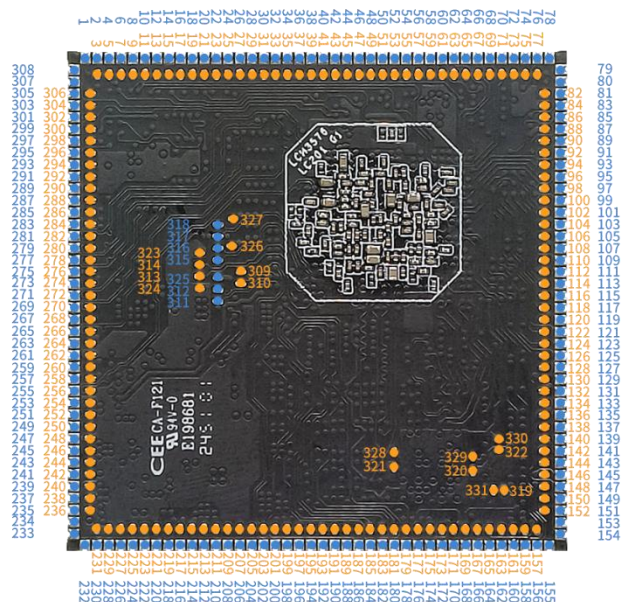
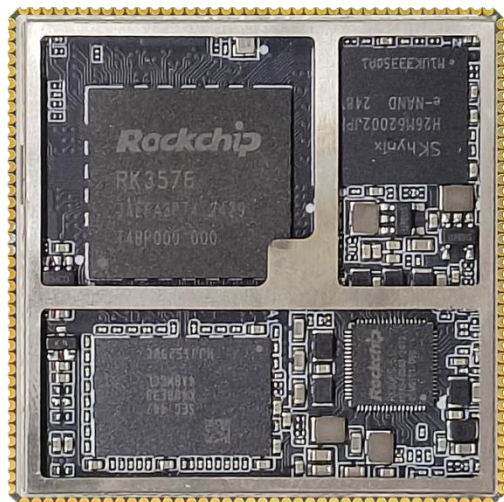
4.1 Appearance



4.2 Structure



5. Interface Definition



Pin Number	Pin Name	I/O voltage	Configurable status	Reusable for other functions
1	GPIO0_B0_z	VCC_1 V8_S3	Input/ Output	I2C0_SCL_M0/SPI2_CSN0_M0/AUPLL_CLK_IN_M1/GPIO0_B0_z
2	GPIO0_B1_z	VCC_1 V8_S3	Input/ Output	I2C0_SDA_M0/SPI2_MISO_M0/GPIO0_B1_z
3	GND	/	/	GND
4	RESET_L	VCC_1 V8_S3	Input	Rest key
5	PWRON_L	VCC5 V0_SY S_S5	Input	Power key
6	VDC	1.8~3.3V	Input	Power-on high-level auto-start
7	PMIC_EXT_EN_OUT	/	Output	PMIC_EXT_EN_OUT
8	GND	/	/	GND
9	GND	/	/	GND
10	GND	/	/	GND
11	PCIE0_REFCLKP	/	Output	PCIE0_REFCLKP
12	PCIE0_REFCLKN	/	Output	PCIE0_REFCLKN

	EFCLKN			
13	PCIE0_T XP/SAT A0_TXP	/	Output	PCIE0_TXP/SATA0_TXP
14	PCIE0_T XN/SAT A0_TX	/	Output	PCIE0_TXN/SATA0_TXN
15	PCIE0_R XP/SAT A0_RXP	/	Input	PCIE0_RXP/SATA0_RXP
16	PCIE0_R XN/SAT A0_RXN	/	Input	PCIE0_RXN/SATA0_RXN
17	GND	/	/	GND
18	PCIE1_R EFCLKP	/	Output	PCIE1_REFCLKP
19	PCIE1_R EFCLKN	/	Output	PCIE1_REFCLKN
20	USB3_H OST1_S STXP	/	Output	PCIE1_TXP/SATA1_TXP/USB3_OTG1_SSTXP
21	USB3_H OST1_S STXN	/	Output	PCIE1_TXN/SATA1_TXN/USB3_OTG1_SSTXN
22	USB3_H OST1_S SRXP	/	Input	PCIE1_RXP/SATA1_RXP/USB3_OTG1_SSRXP
23	USB3_H OST1_S SRXN	/	Input	PCIE1_RXN/SATA1_RXN/USB3_OTG1_SSRXN
24	GND	/	/	GND
25	GND	/	/	GND
26	CSI3_RX _D0N	/	Input	MIPI_DPHY_CSI3_RX_D0N
27	CSI3_RX _D0P	/	Input	MIPI_DPHY_CSI3_RX_D0P
28	CSI3_RX _D1N	/	Input	MIPI_DPHY_CSI3_RX_D1N
29	CSI3_RX _D1P	/	Input	MIPI_DPHY_CSI3_RX_D1P
30	CSI3_RX _CLKN	/	Input	MIPI_DPHY_CSI3_RX_CLKN
31	CSI3_RX	/	Input	MIPI_DPHY_CSI3_RX_CLKP

	_CLKP			
32	GND	/	/	GND
33	GND	/	/	GND
34	CSI3_RX_D2N	/	Input	MIPI_DPHY_CSI3_RX_D2N/MIPI_DPHY_CSI4_RX_D0N
35	CSI3_RX_D2P	/	Input	MIPI_DPHY_CSI3_RX_D2P/MIPI_DPHY_CSI4_RX_D0P
36	CSI3_RX_D3N	/	Input	MIPI_DPHY_CSI3_RX_D3N/MIPI_DPHY_CSI4_RX_D1N
37	CSI3_RX_D3P	/	Input	MIPI_DPHY_CSI3_RX_D3P/MIPI_DPHY_CSI4_RX_D1P
38	CSI4_RX_CLKN	/	Input	MIPI_DPHY_CSI4_RX_CLKN
39	CSI4_RX_CLKP	/	Input	MIPI_DPHY_CSI4_RX_CLKP
40	GND	/	/	GND
41	NC	/	/	/
42	NC	/	/	/
43	NC	/	/	/
44	NC	/	/	/
45	NC	/	/	/
46	NC	/	/	/
47	NC	/	/	/
48	NC	/	/	/
49	GND	/	/	GND
50	NC	/	/	/
51	NC	/	/	/
52	NC	/	/	/
53	NC	/	/	/
54	GND	/	/	GND
		VCCIO		
55	I2C9_SDA_M1	_WL 1V8/3 V3	Input/ Output	PWM1_CH0_M1/PCIE1_CLKREQN_M1/SPI1_CLK_M0/I2C9_SDA_M1/SAI3_SCLK_M1/SDMMC1_D0_M0/ETH1_RXD2_M1/GPIO1_B4_d
		VCCIO		
56	I2C9_SCL_M1	_WL 1V8/3 V3	Input/ Output	PWM1_CH1_M1/SPI1_MOSI_M0/I2C9_SCL_M1/SAI3_LRCK_M1/SDMMC1_D1_M0/ETH1_RXD3_M1/GPIO1_B5_d
		VCCIO		
57	PCIE0_CLKREQN_M1	_WL 1V8/3 V3	Input/ Output	PCIE0_CLKREQN_M1/SPI1_MISO_M0/UART3_CTSN_M2/SAI3_SDO_M1/SDMMC1_D2_M0/ETH1_RXCLK_M1/GPIO1_B6_d

58	PCIE0_WAKEn_M1	VCCIO_WL 1V8/3 V3	Input/ Output	SPI1_CSN0_M0/UART3_RTSN_M2/SAI3_SDI_M1/SDMMC1_D3_M0/ETH1_TXD2_M1/GPIO1_B7_d
59	PCIE0_PERSTn_M1	VCCIO_WL 1V8/3 V3	Input/ Output	PWM0_CH0_M1/SPI1_CSN1_M0/UART3_TX_M2/PDM0_SDI2_M2/SDMMC1_CMD_M0/ETH1_TXD3_M1/GPIO1_C0_d
60	GPIO1_C1_d	VCCIO_WL 1V8/3 V3	Input/ Output	UART3_RX_M2/PDM0_CLK0_M2/SAI3_MCLK_M1/SDMMC1_CLK_M0/ETH1_TXCLK_M1/GPIO1_C1_d
61	UART4_RTSN_M1	VCCIO_WL 1V8/3 V3	Input/ Output	PWM1_CH2_M1/SPI2_CSN1_M1/I2C6_SCL_M1/UART4_RTSN_M1/FSPI1_CSN1_M1/FSPI1_RSTN_M1/SDMMC1_PWREN_M0/ETH1_PPSClk_M1/GPIO1_C2_u
62	UART4_CTSN_M1	VCCIO_WL 1V8/3 V3	Input/ Output	SPI2_CSN0_M1/I2C6_SDA_M1/UART4_CTSN_M1/FSPI1_CSN0_M1/SDMMC1_DETn_M0/ETH1_PPSTRIG_M1/GPIO1_C3_u
63	UART4_TX_M1	VCCIO_WL 1V8/3 V3	Input/ Output	PCIE0_BUTTONRSTN/SPI2_MOSI_M1/UART2_RTSN_M0/UART4_TX_M1/FSPI1_D0_M1/ETH1_TXD0_M1/GPIO1_C4_d
64	UART4_RX_M1	VCCIO_WL 1V8/3 V3	Input/ Output	PCIE1_BUTTONRSTN/SPI2_MISO_M1/UART2_CTSN_M0/UART4_RX_M1/FSPI1_D1_M1/ETH1_TXD1_M1/GPIO1_C5_d
65	I2C8_SCL_M1	VCCIO_WL 1V8/3 V3	Input/ Output	SATA_CPPOD/I2C8_SCL_M1/UART2_TX_M0/PDM0_SDI0_M2/FSPI1_D2_M1/ETH1_TXCTL_M1/GPIO1_C6_d
66	I2C8_SDA_M1	VCCIO_WL 1V8/3 V3	Input/ Output	SATA_CPDET/I2C8_SDA_M1/UART2_RX_M0/PDM0_SDI1_M2/FSPI1_D3_M1/ETH1_RXD0_M1/GPIO1_C7_d
67	SAI2_SDO_M0	VCCIO_WL 1V8/3 V3	Input/ Output	UART10_TX_M1/SAI2_SDO_M0/ETH1_RXD1_M1/GPIO1_D0_d
68	SAI2_SCLK_M0	VCCIO_WL 1V8/3	Input/ Output	I3C0_SDA_PU_M1/UART10_RX_M1/SAI2_SCLK_M0/ETH1_RXCTL_M1/GPIO1_D1_d

		V3		
69	SAI2_LR CK_M0	VCCIO _WL 1V8/3 V3	Input/ Output	PWM1_CH3_M1/I3C0_SCL_M1/SAI2_LRCK_M0/ETH1_MDC_M1/GPIO1_ D2_d
70	SAI2_SD I_M0	VCCIO _WL 1V8/3 V3	Input/ Output	PWM1_CH4_M1/I3C0_SDA_M1/SAI2_SDI_M0/ETH1_MDIO_M1/GPIO1_ D3_d
71	HOST_ WAKE_B T_H	VCCIO _WL 1V8/3 V3	Input/ Output	I2C5_SCL_M1/UART10_RTSN_M1/SPDIF_RX1_M2/PDM0_SDI3_M2/SAI 2_MCLK_M0/ETH1_MCLK_M1/GPIO1_D4_d
72	GPIO1_ D5_d	VCCIO _WL 1V8/3 V3	Input/ Output	CLK1_32K_OUT/SATA_MPSWIT/SPI2_CLK_M1/I2C5_SDA_M1/UART10_ CTSN_M1/SPDIF_TX1_M2/PDM0_CLK1_M2/FSPI1_CLK_M1/ETH_CLK1_ 25M_OUT_M1/GPIO1_D5_d
73	VCCIO_ WL	1V8/3 V3 INPUT	Input	VCCIO3_VCC POWER INPUT 1V8/3V3
74	GND	/	/	GND
75	SARAD C_VIN0	VCCA_ 1V8_S 0	Input	SARADC_IN0 MASKROM Upgrade button
76	SARAD C_VIN1	VCCA_ 1V8_S 0	Input	SARADC_IN1 RECOVERY Upgrade button
77	SARAD C_VIN2	VCCA_ 1V8_S 0	Input	SARADC_IN2
78	SARAD C_VIN3	VCCA_ 1V8_S 0	Input	SARADC_IN3
79	SARAD C_VIN4	VCCA_ 1V8_S 0	Input	SARADC_IN4
80	SARAD C_VIN5	VCCA_ 1V8_S 0	Input	SARADC_IN5
81	SARAD C_VIN6	VCCA_ 1V8_S 0	Input	SARADC_IN6
82	SARAD	VCCA_	Input	SARADC_IN7

	C_VIN7	1V8_S 0			
83	VCCA_1 V8_S0	1V8 OUT 150m A	Output	VCCA_1V8_S0 BLDO1 POWER OUT 1V8 150mA	
84	GND	/	/	GND	
85	SDMMC 0_D1	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	PWM2_CH3_M0/CAN0_TX_M0/SPI0_MISO_M1/I2C8_SDA_M0/UART7_TX_M2/UART0_TX_M1/SAI3_MCLK_M3/DSM_AUD_LN_M0/FSPI1_D1_M0/SDMMC0_D1/GPIO2_A1_d	
86	SDMMC 0_D0	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	PWM2_CH2_M0/CAN0_RX_M0/SPI0_MOSI_M1/I2C8_SCL_M0/UART7_RX_M2/UART0_RX_M1/DSM_AUD_LP_M0/FSPI1_D0_M0/SDMMC0_D0/GPIO2_A0	
87	SDMMC 0_CLK	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	I3C1_SDA_PU_M1/SPI0_CLK_M1/I2C5_SCL_M0/UART5_TX_M2/TEST_CLK_OUT/SAI3_SCLK_M3/FSPI1_CLK_M0/SDMMC0_CLK/GPIO2_A5_d	
88	GND	/	/	GND	
89	SDMMC 0_CMD	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	PWM2_CH4_M0/SPI0_CSN0_M1/I2C5_SDA_M0/UART5_RX_M2/SAI3_SDO_M3/FSPI1_CSN0_M0/SDMMC0_CMD/GPIO2_A4_d	
90	SDMMC 0_D3	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	I3C1_SDA_M1/CAN1_TX_M0/UART5_CTSN_M2/JTAG_TMS_M0/SAI3_SDI_M3/DSM_AUD_RN_M0/FSPI1_D3_M0/SDMMC0_D3/GPIO2_A3_d0/VI_CIF_CLKO/GPIO3_A2_d	
91	VCCIO_ SD_S0	3V3/1 V8 OUT 100m A	Output	VCCIO_SD_S0 PLDO5 POWER OUT 3V31V8 100mA	
92	SDMMC 0_D2	VCCIO _SD_S 0 3V3/1 V8	Input/ Output	I3C1_SCL_M1/CAN1_RX_M0/SPI0_CSN1_M1/UART5_RTSN_M2/JTAG_TCK_M0/SAI3_LRCK_M3/DSM_AUD_RP_M0/FSPI1_D2_M0/SDMMC0_D2/GPIO2_A2_d	

93	VCCIO4_VCC	3V3/1 V8 INPUT	Input	VCCIO4_VCC POWER INPUT 3V3/1V8
94	ETH_CLK1_25M_OUT_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH6_M2/I3C1_SDA_PU_M0/UART9_RTSN_M0/SPDIF_RX0_M2/SAI3_MCLK_M2/ETH0_MCLK_M1/ETH_CLK1_25M_OUT_M0/CAM_CLK1_OUT_M1/GPIO2_D6_d
95	GMAC1_MCLK1_NOUT_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH7_M2/SPI3_CSN1_M0/UART9_CTSN_M0/SPDIF_TX0_M2/SAI0_SDO3_M0/ETH_CLK0_25M_OUT_M1/ETH1_MCLK_M0/CAM_CLK2_OUT_M1/GPIO2_D7_d
96	GMAC1_RXCLK_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM1_CH2_M2/SPI1_MOSI_M1/UART11_CTSN_M1/PDM1_SDI2_M0/SAI2_SCLK_M1/ETH0_PPSTRIG_M1/ETH1_RXCLK_M0/VI_CIF_D3/GPIO2_C2_d
97	GMAC1_RXCTL_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH3_M2/I3C1_SDA_M0/UART6_RX_M1/ETH1_RXCTL_M0/GPIO2_D3_d
98	GMAC1_RXD0_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH1_M2/I2C6_SDA_M2/UART4_RX_M0/SAI4_SDO_M3/ETH1_RXD0_M0/GPIO2_D1_d
99	GMAC1_RXD1_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH2_M2/I3C1_SCL_M0/UART6_TX_M1/SAI4_MCLK_M3/ETH1_RXD1_M0/CAM_CLK0_OUT_M1/GPIO2_D2_d
100	GMAC1_RXD2_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM1_CH0_M2/UART9_RX_M0/PDM1_SDI1_M0/ETH0_PTP_REFCLK_M1/ETH1_RXD2_M0/VI_CIF_D5/GPIO2_C0_d
101	GMAC1_RXD3_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM1_CH1_M2/SPI1_CSN1_M1/UART9_TX_M0/PDM1_CLK1_M0/SAI2_MCLK_M1/ETH0_PPCLK_M1/ETH1_RXD3_M0/VI_CIF_D4/GPIO2_C1_d
102	GMAC1_TXCLK_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM1_CH4_M2/SPI1_CLK_M1/UART11_RX_M1/PDM1_CLK0_M0/SAI2_SDI_M1/ETH1_TXCLK_M0/VI_CIF_D0/GPIO2_C5_d
103	GMAC1_TXCTL_M0	VCCIO4_VCC 3V3/1 V8	Input/Output	PWM2_CH0_M2/I2C6_SCL_M2/UART4_TX_M0/SAI4_SDI_M3/ETH1_TXCTL_M0/GPIO2_D0_d

104	GMAC1_TXD0_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM1_CH5_M2/I2C5_SCL_M2/UART4_CTSN_M0/SAI4_SCLK_M3/ETH1_TXD0_M0/GPIO2_C6_d
105	GMAC1_TXD1_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM0_CH1_M2/I2C5_SDA_M2/UART4_RTSN_M0/SAI4_LRCK_M3/ETH1_TXD1_M0/GPIO2_C7_d
106	GMAC1_TXD2_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM0_CH0_M2/SPI1_MISO_M1/UART11_RTSN_M1/PDM1_SDI3_M0/SAI2_LRCK_M1/ETH1_TXD2_M0/VI_CIF_D2/GPIO2_C3_d
107	GMAC1_TXD3_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM1_CH3_M2/SPI1_CSN0_M1/UART11_TX_M1/PDM1_SDI0_M0/SAI2_SDO_M1/ETH1_TXD3_M0/VI_CIF_D1/GPIO2_C4_d
108	GMAC1_MDIO_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM2_CH5_M2/I2C9_SCL_M2/UART6_CTSN_M1/ETH1_MDIO_M0/ISP_FLASH_TRIGOUT_M0/GPIO2_D5_d
109	GMAC1_MDC_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PWM2_CH4_M2/I2C9_SDA_M2/UART6_RTSN_M1/ETH1_MDC_M0/ISP_PRELIGHT_TRIG_M0/GPIO2_D4_d
110	GND	/	/	GND
111	CAN1_RX_M3	VCCIO 4_VCC 3V3/1 V8	Input/ Output	CAN1_RX_M3/SPI3_CSN0_M0/UART3_RTSN_M0/SPDIF_TX1_M1/SAI3_SDI_M2/ETH0_RXD1_M1/ETH1_PTP_REFCLK_M0/VI_CIF_CLKI/GPIO3_A3_d
112	CAN1_TX_M3	VCCIO 4_VCC	Input/ Output	MIPI_TE_M1/CAN1_TX_M3/SPI3_MISO_M0/UART3_CTSN_M0/SPDIF_RX1_M1/SAI3_SDO_M2/ETH0_RXCTL_M1/ETH1_PPSCCLK_M
113	SPI4_MISO_M3	VCCIO 4_VCC 3V3/1 V8	Input/ Output	SATA1_ACTLED_M0/SPI4_MISO_M3/UART7_RTSN_M0/PDM0_CLK0_M3/SAI0_MCLK_M0/ETH0_RXCLK_M1/SDMMC1_DET_N_M1/VI_CIF_D8/GPIO2_B5_d
114	SPI4_MOSI_M3	VCCIO 4_VCC 3V3/1 V8	Input/ Output	SATA0_ACTLED_M0/SPI4_MOSI_M3/UART7_CTSN_M0/PDM0_SDI0_M3/SAI0_SDI3_M0/ETH0_TXD2_M1/SDMMC1_PWREN_M1/VI_CIF_D9/GPIO2_B4_d
115	SPI4_CLK_M3	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PCIE1_CLKREQ_N_M0/SPI4_CLK_M3/UART1_RTSN_M1/PDM0_CLK1_M3/SAI0_SDO2_M0/ETH0_TXCLK_M1/SDMMC1_CLK_M1/VI_CIF_D10/GPIO2_B3_d

116	SPI4_CS N0_M3	VCCIO 4_VCC 3V3/1 V8	Input/ Output	PCIE0_CLKREQN_M0/SPI4_CSN0_M3/UART1_CTSN_M1/PDM0_SDI1_M3/SAI0_SDI2_M0/ETH0_TXD3_M1/SDMMC1_CMD_M1/VI_CIF_D11/GPIO2_B2_d
117	UART1_RX_M1	VCCIO 4_VCC 3V3/1 V8	Input/ Output	UART1_RX_M1/PDM0_SDI2_M3/SAI0_SDI1_M0/ETH0_TXD0_M1/SDMMC1_D3_M1/VI_CIF_D12/GPIO2_B1_d
118	UART1_TX_M1	VCCIO 4_VCC 3V3/1 V8	Input/ Output	UART1_TX_M1/PDM0_SDI3_M3/SAI0_SDI0_M0/ETH0_TXD1_M1/SDMMC1_D2_M1/VI_CIF_D13/GPIO2_B0_d
119	GND	/	/	GND
120	UART3_RX_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C7_SDA_M1/SPI3_MOSI_M0/UART3_RX_M0/SAI3_LRCK_M2/ETH0_MDC_M1/ETH1_PPSTRIG_M0/VI_CIF_VSYNC/GPIO3_A1_d
121	UART3_TX_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C7_SCL_M1/SPI3_CLK_M0/UART3_TX_M0/SAI3_SCLK_M2/ETH0_MDO_M1/VI_CIF_HREF/GPIO3_A0_d
122	UART7_RX_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C8_SDA_M2/UART8_CTSN_M1/UART7_RX_M0/SAI0_LRCK_M0/ETH0_RXD2_M1/VI_CIF_D6/GPIO2_B7_d
123	UART7_TX_M0	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C8_SCL_M2/UART8_RTSN_M1/UART7_TX_M0/SAI0_SCLK_M0/ETH0_RXD3_M1/ETH1_PTP_REFCLK_M1/VI_CIF_D7/GPIO2_B6_d
124	UART8_RX_M1	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C4_SDA_M2/UART8_RX_M1/SAI0_SDO1_M0/ETH0_TXCTL_M1/SDMMC1_D1_M1/VI_CIF_D14/GPIO2_A7_d
125	UART8_TX_M1	VCCIO 4_VCC 3V3/1 V8	Input/ Output	I2C4_SCL_M2/SPI4_CSN1_M3/UART8_TX_M1/SAI0_SDO0_M0/ETH0_RXD0_M1/SDMMC1_D0_M1/VI_CIF_D15/GPIO2_A6_d
126	GND	/	/	GND
127	GND	/	/	GND
128	GND	/	/	GND
129	VCCIO5_VCC	3V3/1 V8 INPUT	Input	VCCIO5_VCC POWER INPUT 3V3/1V8

130	ETH_CLK0_25M_OUT_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM1_CH0_M3/SPI2_CLK_M2/UART1_CTSN_M2/FLEXBUS0_CSN_M0/FLEXBUS1_D11/DSMC_RDYN/SAI4_SDI_M1/ETH_CLK0_25M_OUT_M0/VO_EBC_SDSHR/VO_LCDC_D23/GPIO3_A4_d
131	GMAC0_MCLK-125M	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM0_CH0_M3/SPI2_MOSI_M2/UART10_RX_M0/FLEXBUS0_D8/DSMC_CSN1/SAI4_MCLK_M1/ETH0_MCLK_M0/VO_EBC_SDCE3/VO_LCDC_D19/GPIO3_B0_d
132	GMAC0_RXCLK_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I3C1_SDA_PU_M2/SPI4_CLK_M1/FLEXBUS1_CSN_M2/FLEXBUS0_D11/DSMC_CSN2/SAI2_MCLK_M2/ETH0_RXCLK_M0/VO_EBC_SDDO2/VO_LCDC_D2/GPIO3_D1_d
133	GMAC0_RXCTL_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	UART10_RTSN_M0/UART1_TX_M2/FLEXBUS0_D5/DSMC_DATA13/PD_M1_CLK1_M2/ETH0_RXCTL_M0/VO_EBC_VCOM/VO_LCDC_D20/GPIO3_A7_d
134	GMAC0_RXD0_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C8_SDA_M3/UART9_RX_M1/FLEXBUS0_D3/DSMC_DATA11/PDM1_SDI1_M2/ETH0_RXD0_M0/VO_EBC_SDCE1/VO_LCDC_D17/GPIO3_B2_d
135	GMAC0_RXD1_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM1_CH3_M3/SPI4_CSN0_M1/UART10_TX_M0/FLEXBUS0_D4/DSMC_DATA12/PDM1_CLK0_M2/ETH0_RXD1_M0/VO_EBC_SDCE2/VO_LCDC_D18/GPIO3_B1_d
136	GMAC0_RXD2_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH5_M3/I3C1_SCL_M2/UART2_CTSN_M2/FLEXBUS1_D2/DSMC_CSN0/SAI2_SDO_M2/ETH0_RXD2_M0/VO_EBC_SDDO0/VO_LCDC_D0/GPIO3_D3_d
137	GMAC0_RXD3_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH4_M3/I3C1_SDA_M2/SPI4_CSN1_M1/UART2_RTSN_M2/FLEXBUS0_CSN_M3/FLEXBUS1_D15_M0/FLEXBUS0_D12/DSMC_CSN3/SAI2_SDI_M2/ETH0_RXD3_M0/VO_EBC_SDDO1/VO_LCDC_D1/GPIO3_D2_d
138	GMAC0_TXCLK_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM0_CH1_M3/SPI3_CSN0_M1/FLEXBUS0_CLK/DSMC_DQS1/ETH0_TXCLK_M0/VO_EBC_SDDO13/VO_LCDC_D13/GPIO3_B6_d
139	GMAC0_TXCTL_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C8_SCL_M3/UART9_TX_M1/FLEXBUS0_D2/DSMC_DATA10/PDM1_SDI0_M2/ETH0_TXCTL_M0/VO_EBC_SDCE0/VO_LCDC_D16/GPIO3_B3_d
140	GMAC0_TXD0_M0	VCCIO 5_VCC 3V3/1	Input/ Output	PWM1_CH5_M3/UART9_CTSN_M1/FLEXBUS0_D0/DSMC_DATA8/SPDIF_TX1_M0/ETH0_TXD0_M0/VO_EBC_SDDO14/VO_LCDC_D14/GPIO3_B5_d

		V8		
141	GMAC0_TXD1_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM1_CH4_M3/UART9_RTSN_M1/FLEXBUS0_D1/DSMC_DATA9/SPDI_F_RX1_M0/ETH0_TXD1_M0/VO_EBC_SDDO15/VO_LCDC_D15/GPIO3_B4_d
142	GMAC0_TXD2_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH1_M3/I2C9_SDA_M3/SPI4_MOSI_M1/UART11_CTSN_M0/FLEXBUS0_CSN_M2/FLEXBUS0_D10/DSMC_INT3/SAI2_LRCK_M2/ETH0_TXD2_M0/VO_EBC_SDDO8/VO_LCDC_D8/GPIO3_C3_d
143	GMAC0_TXD3_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH0_M3/I2C9_SCL_M3/SPI4_MISO_M1/UART11_RTSN_M0/FLEXBUS0_D9/DSMC_INT1/SAI2_SCLK_M2/ETH0_TXD3_M0/VO_EBC_SDDO9/VO_LCDC_D9/GPIO3_C2_d
144	GMAC0_MDIO_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM1_CH1_M3/SPI2_CSN1_M2/UART1_RTSN_M2/FLEXBUS0_D7/DSMC_DATA15/PDM1_SDI3_M2/ETH0_MDIO_M0/VO_EBC_GDSP/VO_LCDC_D22/GPIO3_A5_d
145	GMAC0_MDC_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM1_CH2_M3/UART10_CTSN_M0/UART1_RX_M2/FLEXBUS0_D6/DSMC_DATA14/PDM1_SDI2_M2/ETH0_MDC_M0/VO_EBC_GDOE/VO_LCD_C_D21/GPIO3_A6_d
146	GPIO3_D6_d	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH6_M3/SPI3_MOSI_M1/UART5_CTSN_M0/FLEXBUS1_CLK/DSMC_CLKN/SAI1_SDI3_M1/VO_EBC_SDCLK/VO_LCDC_VSYNC/GPIO3_D6_d
147	I2C5_SDA_M3	VCCIO 5_VCC 3V3/1 V8	Input/ Output	CAN0_RX_M3/I2C5_SDA_M3/SPI2_MISO_M2/UART11_RX_M0/FLEXBUS1_D8/DSMC_DATA6/SAI1_SDO2_M1/ETH0_PTP_REFCLK_M0/VO_EBC_SDDO10/VO_LCDC_D10/GPIO3_C1_d
148	I2C5_SCL_M3	VCCIO 5_VCC 3V3/1 V8	Input/ Output	CAN0_TX_M3/I2C5_SCL_M3/SPI2_CSN0_M2/UART11_TX_M0/FLEXBUS1_D7/DSMC_DATA5/SAI1_SDO1_M1/VO_EBC_SDDO7/VO_LCDC_D7/GPIO3_C4_d
149	UART2_RX_M2	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C4_SDA_M3/UART3_CTSN_M1/UART2_RX_M2/FLEXBUS1_CSN_M0/FLEXBUS1_D10/DSMC_DQS0/SAI1_SDI0_M1/ETH0_PPSTRIG_M0/VO_EBC_SDDO12/VO_LCDC_D12/GPIO3_B7_d
150	UART2_TX_M2	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C4_SCL_M3/UART3_RTSN_M1/UART2_TX_M2/FLEXBUS1_D9/DSMC_DATA7/SAI1_SDO3_M1/ETH0_PPSCLK_M0/VO_EBC_SDDO11/VO_LCD_C_D11/GPIO3_C0_d
151	SPI1_MISO_M2	VCCIO 5_VCC	Input/ Output	PWM2_CH2_M3/SPI1_MISO_M2/UART8_RX_M0/FLEXBUS1_D6/DSMC_DATA4/SAI1_SDO0_M1/VO_EBC_SDDO6/VO_LCDC_D6/GPIO3_C5_d

		3V3/1 V8			
152	SPI1_M OSI_M2	VCCIO 5_VCC 3V3/1 V8	Input/ Output	SPI1_MOSI_M2/UART8_TX_M0/FLEXBUS1_D5/DSMC_DATA3/SAI1_LRC K_M1/VO_EBC_SDDO5/VO_LCDC_D5/GPIO3_C6_d	
153	SPI1_CL K_M2	VCCIO 5_VCC 3V3/1 V8	Input/ Output	SPI1_CLK_M2/UART8_RTSN_M0/FLEXBUS1_D4/DSMC_DATA2/SAI1_SC LK_M1/VO_EBC_SDDO4/VO_LCDC_D4/GPIO3_C7_d	
154	SPI1_CS N0_M2	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH3_M3/SPI1_CSN0_M2/UART8_CTSN_M0/FLEXBUS1_D3/DS MC_DATA1/SAI1_MCLK_M1/VO_EBC_SDDO3/VO_LCDC_D3/GPIO3_D0 _d	
155	UART5_ RX_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C3_SCL_M2/SPI3_CLK_M1/UART5_RX_M0/FLEXBUS1_D1/DSMC_DAT A0/SAI1_SDI1_M1/VO_EBC_SDLE/VO_LCDC_DEN/GPIO3_D4_d	
156	UART5_ TX_M0	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C3_SDA_M2/SPI3_MISO_M1/UART5_TX_M0/FLEXBUS1_D0/DSMC_CL KP/SAI1_SDI2_M1/VO_EBC_GDCLK/VO_LCDC_HSYNC/GPIO3_D5_d	
157	CSI_CA M0_CLK OUT	VCCIO 5_VCC 3V3/1 V8	Input/ Output	PWM2_CH7_M3/SPI3_CSN1_M1/UART5_RTSN_M0/FLEXBUS1_CSN_M1 /FLEXBUS1_D12_M0/FLEXBUS0_D15_M0/DSMC_RESETN/SAI4_SCLK_M 1/CAM_CLK0_OUT_M0/VO_EBC_SDOE/VO_LCDC_CLK/GPIO3_D7_d	
158	CSI_CA M1_CLK OUT	VCCIO 5_VCC 3V3/1 V8	Input/ Output	MIPI_TE_M2/I2C7_SCL_M2/SPI1_CSN1_M2/UART3_TX_M1/FLEXBUS1_ CSN_M3/FLEXBUS1_D14_M0/FLEXBUS0_D13_M0/DSMC_INT0/SAI4_LR CK_M1/CAM_CLK1_OUT_M0/SPDIF_RX0_M1/GPIO4_A0_d	
159	CSI_CA M2_CLK OUT	VCCIO 5_VCC 3V3/1 V8	Input/ Output	I2C7_SDA_M2/UART3_RX_M1/FLEXBUS0_CSN_M1/FLEXBUS1_D13_M0 /FLEXBUS0_D14_M0/DSMC_INT2/SAI4_SDO_M1/CAM_CLK2_OUT_M0/ SPDIF_TX0_M1/VO_POST_EMPTY/GPIO4_A1_d	
160	GND	/	/	GND	
161	GND	/	/	GND	
162	GND	/	/	GND	
163	SAI1_SD IO_M0	VCC_3 V3_S0	Input/ Output	PWM2_CH7_M0/SPI3_CSN1_M2/SPI4_CSN0_M2/PDM1_SDI0_M1/SAI4 _SDO_M0/SAI1_SDI0_M0/GPIO4_B3_d	
164	SAI1_LR CK_M0	VCC_3 V3_S0	Input/ Output	PCIE1_CLKREQN_M2/I2C2_SDA_M2/UART5_CTSN_M1/SPI4_CSN1_M2/ FLEXBUS1_D12_M1/SAI1_LRCK_M0 /GPIO4_A5_d	
165	SAI1_SD OO_M0	VCC_3 V3_S0	Input/ Output	PWM2_CH6_M0/SPI3_CLK_M2/SAI4_SDI_M0/SAI1_SDO0_M0/GPIO4_A 7_d	

166	SAI1_SC_LK_M0	VCC_3 V3_S0	Input/ Output	PWM2_CH4_M1/I2C2_SCL_M2/UART5_RTSN_M1/SPI3_CSN0_M2/FLEXBUS1_CSN_M4/SAI1_SCLK_M0/GPIO4_A3_d
167	SAI1_M_CLK_M0	VCC_3 V3_S0	Input/ Output	PWM2_CH5_M0/AUPLL_CLK_IN_M2/SAI4_MCLK_M0/SAI1_MCLK_M0/GPIO4_A2_d
168	I2C3_SCL_M0	VCC_3 V3_S0	Input/ Output	CAN1_TX_M2/PCIE0_CLKREQN_M2/I2C3_SCL_M0/UART2_TX_M1/FLEXBUS0_D15_M1/SPDIF_TX0_M0/GPIO4_B5_d
169	I2C3_SDA_M0	VCC_3 V3_S0	Input/ Output	CAN1_RX_M2/I2C3_SDA_M0/UART2_RX_M1/FLEXBUS0_CSN_M4/SPDIF_RX0_M0/GPIO4_B4_d
170	GND	/	/	GND
171	GND	/	/	GND
172	CAN0_RX_M2	VCC_3 V3_S0	Input/ Output	CAN0_RX_M2/I2C4_SDA_M1/UART6_RX_M0/SPI3_MISO_M2/FLEXBUS0_D14_M1/PDM1_CLK0_M1/SAI4_LRCK_M0/GPIO4_A6_d
173	CAN0_TX_M2	VCC_3 V3_S0	Input/ Output	CAN0_TX_M2/I2C4_SCL_M1/UART6_TX_M0/SPI3_MOSI_M2/FLEXBUS0_D13_M1/PDM1_SDI3_M1/SAI4_SCLK_M0/GPIO4_A4_d
174	GPIO4_B0_d	VCC_3 V3_S0	Input/ Output	UART2_RTSN_M1/UART6_RTSN_M0/UART5_TX_M1/SPI4_CLK_M2/FLEXBUS1_D13_M1/PDM1_CLK1_M1/SAI1_SDI3_M0/SAI1_SDO1_M0/GPIO4_B0_d
175	GPIO4_B1_d	VCC_3 V3_S0	Input/ Output	UART2_CTSN_M1/UART6_CTSN_M0/UART5_RX_M1/SPI4_MOSI_M2/FLEXBUS1_D14_M1/PDM1_SDI2_M1/SAI1_SDI2_M0/SAI1_SDO2_M0/GPIO4_B1_d
176	GPIO4_B2_d	VCC_3 V3_S0	Input/ Output	MIPI_TE_M0/SPI4_MISO_M2/FLEXBUS1_D15_M1/PDM1_SDI1_M1/SAI1_SDI1_M0/SAI1_SDO3_M0/GPIO4_B2_d
177	GND	/	/	GND
178	GND	/	/	GND
179	UART6_TX_M3	VCC_3 V3_S0	Input/ Output	PWM2_CH6_M1/UART6_TX_M3/SPI4_CSN0_M0/I2C3_SCL_M3/DP_HP_DIN_M0/SAI4_LRCK_M2/ISP_PRELIGHT_TRIG_M1/GPIO4_C4_d
180	UART6_RX_M3	VCC_3 V3_S0	Input/ Output	PWM2_CH5_M1/UART6_RX_M3/SPI4_MOSI_M0/I2C3_SDA_M3/SATA1_ACTLED_M1/VP0_SYNC_OUT/SAI4_SDO_M2/ISP_FLASH_TRIGOUT_M1/GPIO4_C5_d
181	PWM2_CH3_M1	VCC_3 V3_S0	Input/ Output	PWM2_CH3_M1/CAN1_RX_M1/SPI4_CLK_M0/I2C6_SDA_M3/VP2_SYNC_OUT/SAI4_SCLK_M2/GPIO4_C7_d
182	HDMI_TX_ON_H	VCC_3 V3_S0	Input/ Output	PWM2_CH2_M1/CAN1_TX_M1/SPI4_MISO_M0/I2C6_SCL_M3/SATA0_ACTLED_M1/PCIE0_CLKREQN_M3/VP1_SYNC_OUT/SAI4_SDI_M2/GPIO4_C6_d
183	HDMI_TX_HPDI_N_M0	VCC_3 V3_S0	Input/ Output	PWM0_CH1_M1/UART11_RX_M2/EDP_TX_HPDI_N_M0/I2C7_SDA_M3/PCIE1_CLKREQN_M3/HDMI_TX_HPDI_N_M0/DSM_AUD_LN_M1/GPIO4_C1_d
184	HDMI_TX_SDA	VCC_3 V3_S0	Input/ Output	PWM2_CH1_M1/UART9_RX_M2/CAN0_RX_M1/I2C2_SDA_M3/HDMI_TX_SDA/DSM_AUD_RN_M1/GPIO4_C3_d
185	HDMI_TX_SCL	VCC_3 V3_S0	Input/ Output	PWM2_CH0_M1/UART9_TX_M2/CAN0_TX_M1/I2C2_SCL_M3/HDMI_TX_SCL/DSM_AUD_RP_M1/GPIO4_C2_d
186	HDMI_TX_CEC	VCC_3 V3_S0	Input/ Output	PWM1_CH5_M1/UART11_TX_M2/SPI4_CSN1_M0/I2C7_SCL_M3/HDMI_TX_CEC_M0/SAI4_MCLK_M2/DSM_AUD_LP_M1/GPIO4_C0_d

	M0			
187	GND	/	/	GND
188	GND	/	/	GND
189	USB3_O TG0_SS RX1N	/	Output	USB3_OTG0_SSRX1N/DP_TX_D0N
190	USB3_O TG0_SS RX1P	/	Output	USB3_OTG0_SSRX1P/DP_TX_D0P
191	USB3_O TG0_SS TX1N	/	Output	USB3_OTG0_SSTX1N/DP_TX_D1N
192	USB3_O TG0_SS TX1P	/	Output	USB3_OTG0_SSTX1P/DP_TX_D1P
193	USB3_O TG0_SS RX2P	/	Output	USB3_OTG0_SSRX2P/DP_TX_D2P
194	USB3_O TG0_SS RX2N	/	Output	USB3_OTG0_SSRX2N/DP_TX_D2N
195	USB3_O TG0_SS TX2P	/	Output	USB3_OTG0_SSTX2P/DP_TX_D3P
196	USB3_O TG0_SS TX2N	/	Output	USB3_OTG0_SSTX2N/DP_TX_D3N
197	GND	/	/	GND
198	DP_TX_ AUXP	/	Output	DP_TX_AUXP
199	DP_TX_ AUXN	/	Output	DP_TX_AUXN
200	GND	/	/	GND
201	GND	/	/	GND
202	USB2_O TG0_DP	/	Input/ Output	USB2_OTG0_DP
203	USB2_O TG0_D M	/	Input/ Output	USB2_OTG0_DM
204	GND	/	/	GND
205	USB2_O TG0_ID	1V8	Input	USB2_OTG0_ID
206	USB2_O	3V3	Input	USB2_OTG0_VBUSDET

	TG0_VB USDET			
207	GND	/	/	GND
208	USB2_H OST1_D P	/	Input/ Output	USB2_OTG1_DP
209	USB2_H OST1_D M	/	Input/ Output	USB2_OTG1_DM
210	/	/	/	GND
211	USB2_O TG1_ID	1V8	Input	USB2_OTG1_ID
212	USB2_O TG1_VB USDET	3V3	Input	USB2_OTG1_VBUSDET
213	GND	/	/	GND
214	GND	/	/	GND
215	DSI_TX_ D3P	/	Output	MIPIDPHYDSITXD3P/NO_USE
216	DSI_TX_ D3N	/	Output	MIPI_DPHY_DSI_TX_D3N/MIPI_CPHY_DSI_TX_TRIO2_C
217	DSI_TX_ D2P	/	Output	MIPI_DPHY_DSI_TX_D2P/MIPI_CPHY_DSI_TX_TRIO2_B
218	DSI_TX_ D2N	/	Output	MIPI_DPHY_DSI_TX_D2N/MIPI_CPHY_DSI_TX_TRIO2_A
219	GND	/	/	GND
220	DSI_TX_ D1P	/	Output	MIPI_DPHY_DSI_TX_D1P/MIPI_CPHY_DSI_TX_TRIO1_A
221	DSI_TX_ D1N	/	Output	MIPI_DPHY_DSI_TX_D1N/MIPI_CPHY_DSI_TX_TRIO0_C
222	DSI_TX_ D0P	/	Output	MIPI_DPHY_DSI_TX_D0P/MIPI_CPHY_DSI_TX_TRIO0_B
223	DSI_TX_ D0N	/	Output	MIPI_DPHY_DSI_TX_D0N/MIPI_CPHY_DSI_TX_TRIO0_A
224	GND	/	/	GND
225	DSI_TX_ CLKP	/	Output	MIPI_DPHY_DSI_TX_CLKP/MIPI_CPHY_DSI_TX_TRIO1_C
226	DSI_TX_ CLKN	/	Output	MIPI_DPHY_DSI_TX_CLKN/MIPI_CPHY_DSI_TX_TRIO1_B
227	GND	/	/	GND
228	VCC_3V 3_S0	3V3	Output	VCC_3V3_S0 BUCK4 SW POWER OUT 3.3V 1A
229	GND	/	/	GND

230	VCC_3V3_S3	3V3	Output	VCC_3V3_S3 BUCK4 POWER OUT 3.3V 1A
231	GND	/	/	GND
232	VCC5V0_SYS_S5	3.4V-5.5V	Input	VCC5V0_SYS_S5 主电源 Input-推荐 5V Input-最大设计 3A
233	GND	/	/	GND
234	VCC_1V8_S0	1V8	Output	VCC_1V8_S0 LDO POWER OUT 1.8V 100mA
235	VCC_1V8_S3	1V8	Output	VCC_1V8_S3 BUCK8 POWER OUT 1.8V 1A
236	GND	/	/	GND
237	VCCA_3V3_S0	3V3	Output	VCCA_3V3_S0 PLDO4 POWER OUT 3.3V 100mA
238	GND	/	/	GND
239	GND	/	/	GND
240	GND	/	/	GND
241	CSI0_RX_D0N	/	Input	MIPI_DPHY_CSI0_RX_D0N/MIPI_CPHY_CSI_RX_TRIO0_A
242	CSI0_RX_D0P	/	Input	MIPI_DPHY_CSI0_RX_D0P/MIPI_CPHY_CSI_RX_TRIO0_B
243	CSI0_RX_D1N	/	Input	MIPI_DPHY_CSI0_RX_D1N/MIPI_CPHY_CSI_RX_TRIO0_C
244	CSI0_RX_D1P	/	Input	MIPI_DPHY_CSI0_RX_D1P/MIPI_CPHY_CSI_RX_TRIO1_A
245	CSI0_RX_CLKN	/	Input	MIPI_DPHY_CSI0_RX_CLKN/MIPI_CPHY_CSI_RX_TRIO1_B
246	CSI0_RX_CLKP	/	Input	MIPI_DPHY_CSI0_RX_CLKP/MIPI_CPHY_CSI_RX_TRIO1_C
247	GND	/	/	GND
248	GND	/	/	GND
249	CSI0_RX_D2N	/	Input	MIPI_DPHY_CSI0_RX_D2N/MIPI_CPHY_CSI_RX_TRIO2_A
250	CSI0_RX_D2P	/	Input	MIPI_DPHY_CSI0_RX_D2P/MIPI_CPHY_CSI_RX_TRIO2_B
251	CSI0_RX_D3N	/	Input	MIPI_DPHY_CSI0_RX_D3N/MIPI_CPHY_CSI_RX_TRIO2_C
252	CSI0_RX_D3P	/	Input	MIPI_DPHY_CSI0_RX_D3P/NO_USE
253	GND	/	/	GND
254	GND	/	/	GND
255	HDMI_TX_SBDP	/	Output	HDMI_TX_SBDP/EDP_TX_AUXP

256	HDMI_TX_SBDN	/	Output	HDMI_TX_SBDN/EDP_TX_AUXN
257	HDMI_TX_D3N	/	Output	HDMI_TX_D3N/EDP_TX_D3N
258	HDMI_TX_D3P	/	Output	HDMI_TX_D3P/EDP_TX_D3P
259	HDMI_TX_D0N	/	Output	HDMI_TX_D0N/EDP_TX_D0N
260	HDMI_TX_D0P	/	Output	HDMI_TX_D0P/EDP_TX_D0P
261	GND	/	/	GND
262	GND	/	/	GND
263	HDMI_TX_D1N	/	Output	HDMI_TX_D1N/EDP_TX_D1N
264	HDMI_TX_D1P	/	Output	HDMI_TX_D1P/EDP_TX_D1P
265	HDMI_TX_D2N	/	Output	HDMI_TX_D2N/EDP_TX_D2N
266	HDMI_TX_D2P	/	Output	HDMI_TX_D2P/EDP_TX_D2P
267	GND	/	/	GND
268	GND	/	/	GND
269	CSI1_RX_D0N	/	Input	MIPI_DPHY_CSI1_RX_D0N
270	CSI1_RX_D0P	/	Input	MIPI_DPHY_CSI1_RX_D0P
271	CSI1_RX_D1N	/	Input	MIPI_DPHY_CSI1_RX_D1N
272	CSI1_RX_D1P	/	Input	MIPI_DPHY_CSI1_RX_D1P
273	CSI1_RX_CLKN	/	Input	MIPI_DPHY_CSI1_RX_CLKN
274	CSI1_RX_CLKP	/	Input	MIPI_DPHY_CSI1_RX_CLKP
275	GND	/	/	GND
276	GND	/	/	GND
277	CSI1_RX_D2N	/	Input	MIPI_DPHY_CSI1_RX_D2N/MIPI_DPHY_CSI2_RX_D0N
278	CSI1_RX_D2P	/	Input	MIPI_DPHY_CSI1_RX_D2P/MIPI_DPHY_CSI2_RX_D0P
279	CSI1_RX_D3N	/	Input	MIPI_DPHY_CSI1_RX_D3N/MIPI_DPHY_CSI2_RX_D1N
280	CSI1_RX_D3P	/	Input	MIPI_DPHY_CSI1_RX_D3P/MIPI_DPHY_CSI2_RX_D1P

	_D3P			
281	CSI2_RX_CLKN	/	Input	MIPI_DPHY_CSI2_RX_CLKN
282	CSI2_RX_CLKP	/	Input	MIPI_DPHY_CSI2_RX_CLKP
283	GND	/	/	GND
284	GND	/	/	GND
285	PWM1_CH0_M0	VCC_3 V3_S3	Input/ Output	PWM1_CH0_M0/UART4_TX_M2/I2C1_SCL_M1/REF_CLK1_OUT/GPIO0_B4_d
286	LCD_BL_PWM1_CH1_M0	VCC_3 V3_S3	Input/ Output	PWM1_CH1_M0/UART4_RX_M2/I2C1_SDA_M1/REF_CLK2_OUT/GPIO0_B5_d
287	SDMMC0_PWREN_H	VCC_3 V3_S3	Input/ Output	PWM1_CH2_M0/EDP_TX_HPDIN_M1/HDMI_TX_HPDIN_M1/SDMMC1_DET_N_M2/SDMMC0_PWREN/GPIO0_B6_d
288	I2C2_SCL_M0_C_RTC	VCC_3 V3_S3	Input/ Output	PWM1_CH4_M0/NPU_AVS/UART1_TX_M0/I2C2_SCL_M0/GPIO0_B7_d
289	I2C2_SDA_M0_C_RTC	VCC_3 V3_S3	Input/ Output	PWM1_CH3_M0/CPULIT_AVS/UART1_RX_M0/I2C2_SDA_M0/GPIO0_C0_d
290	I2C0_SCL_M1_T_P	VCC_3 V3_S3	Input/ Output	I3C0_SCL_M0/UART8_TX_M2/I2C0_SCL_M1/GPIO0_C1_d
291	I2C0_SDA_M1_T_P	VCC_3 V3_S3	Input/ Output	I3C0_SDA_M0/UART8_RX_M2/I2C0_SDA_M1/GPIO0_C2_d
292	TP_INT_L	VCC_3 V3_S3	Input/ Output	PWM0_CH1_M0/SPI0_CSN1_M0/HDMI_TX_CEC_M1/PDM0_CLK1_M0/GPIO0_C3_d
293	GPIO0_C4_d	VCC_3 V3_S3	Input/ Output	PWM0_CH0_M0/UART10_TX_M2/PDM0_CLK0_M0/SAI0_MCLK_M1/GPIO0_C4_d
294	DP_HPDIN_M1	VCC_3 V3_S3	Input/ Output	I3C0_SDA_PU_M0/UART10_RX_M2/DP_HPDIN_M1/SAI0_SDO0_M1/GPIO0_C5_d
295	GPIO0_C6_d	VCC_3 V3_S3	Input/ Output	SPI0_CSN0_M0/I2C3_SCL_M1/SAI0_SCLK_M1/GPIO0_C6_d
296	GPIO0_C7_d	VCC_3 V3_S3	Input/ Output	SPI0_CLK_M0/I2C3_SDA_M1/SAI0_LRCK_M1/GPIO0_C7_d
297	TP_RST_L	VCC_3 V3_S3	Input/ Output	SPI0_MOSI_M0/PDM0_SDI0_M0/SAI0_SDI0_M1/GPIO0_D0_d
298	GPIO0_D1_d	VCC_3 V3_S3	Input/ Output	SPI0_MISO_M0/PDM0_SDI1_M0/SAI0_SDO3_M1/SAI0_SDI1_M1/GPIO0_D1_d
299	GPIO0_D2_d	VCC_3 V3_S3	Input/ Output	UART1_CTSN_M0/PWM1_CH5_M0/CPUBIG_AVS/I2C4_SCL_M0/PDM0_SDI2_M0/SAI0_SDO2_M1/SAI0_SDI2_M1/GPIO0_D2_d

300	GPIO0_D3_d	VCC_3 V3_S3	Input/ Output	UART1_RTSN_M0/PWM2_CH0_M0/GPU_AVS/I2C4_SDA_M0/PDM0_SD I3_M0/SAI0_SDO1_M1/SAI0_SDI3_M1/GPIO0_D3_d
301	UART0_TX_M0_DEBUG	VCC_3 V3_S3	Input/ Output	JTAG_TCK_M1/UART0_TX_M0/GPIO0_D4_u
302	UART0_RX_M0_DEBUG	VCC_3 V3_S3	Input/ Output	JTAG_TMS_M1/UART0_RX_M0/GPIO0_D5_u
303	GND	/	/	GND
304	GND	/	/	GND
305	GPIO0_A0_d	VCC_1 V8_S3	Input/ Output	AUPLL_CLK_IN_M0/REF_CLK0_OUT/GPIO0_A0_d
306	I2C6_SCL_M0	VCC_1 V8_S3	Input/ Output	I2C6_SCL_M0/CLK0_32K_OUT/CLK_32K_IN/GPIO0_A2_d
307	I2C6_SDA_M0	VCC_1 V8_S3	Input/ Output	I2C6_SDA_M0/PWR_CTRL3/GPIO0_A5_d
308	SDMMC0_DET_L	VCC_1 V8_S3	Input/ Output	SPI2_CSN1_M0/SDMMC0_DET_N/GPIO0_A7_u
309	UFS_RX_D0P	VCC_1 V8_S3	Input	/
310	UFS_RX_D0N	VCC_1 V8_S3	Input	/
311	UFS_RX_D1N	VCC_1 V8_S3	Input	/
312	UFS_RX_D1P	VCC_1 V8_S3	Input	/
313	UFS_RS_Tn	VCC_1 V8_S3	Input/ Output	GPIO4_D0_d
314	UFS_REF_CLK	VCC_1 V8_S3	Input/ Output	GPIO4_D1_d
315	UFS_TX_D1P	VCC_1 V8_S3	Output	/
316	UFS_TX_D1N	VCC_1 V8_S3	Output	/
317	UFS_TX_D0P	VCC_1 V8_S3	Output	/
318	UFS_TX_D0N	VCC_1 V8_S3	Output	/
319	VDD1_1V8_DDR_S3	VDD1 _1V8_ DDR_ S3	/	External filter capacitor
320	VDD2_D	VDD2	/	External filter capacitor

	DR_S3	_DDR_ S3		
321	VDD2_D DR_S3	VDD2 _DDR_ S3	/	External filter capacitor
322	VDD2_D DR_S3	VDD2 _DDR_ S3	/	External filter capacitor
323	GND	/	/	GND
324	GND	/	/	GND
325	GND	/	/	GND
326	GND	/	/	GND
327	GND	/	/	GND
328	GND	/	/	GND
329	GND	/	/	GND
330	GND	/	/	GND
331	GND	/	/	GND

6. Production Guidelines

6.1 Storage Conditions

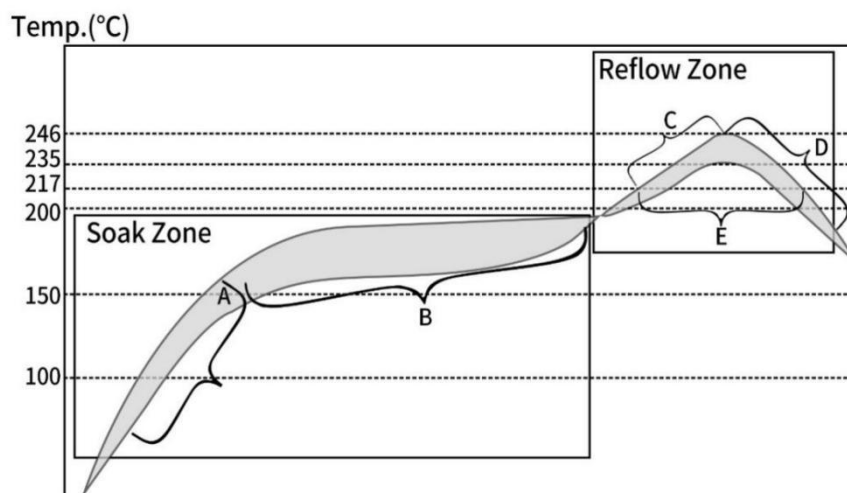
The LCH3576 core module is classified as Moisture Sensitive Level 3 (MSL3). The recommended storage temperature is $25\pm 5^{\circ}\text{C}$, with a relative humidity of 35% to 60%. When packaged in a sealed bag, the module can be stored for up to 12 months if the packaging remains intact (no damage or leakage). Once the packaging is opened, the module should be soldered within 24 hours. The module complies with the IPC/JEDEC J-STD-033 standard and can be stored for no more than 168 hours in a workshop environment with a temperature of $25\pm 5^{\circ}\text{C}$ and relative humidity below 60%. It is not recommended to expose the module to the air for extended periods. If immediate soldering is not possible, it is advised to store the module in a desiccator with a relative humidity of less than 10% to maintain dryness. If the module is not stored according to the recommended methods, it must be baked at a high temperature ($120\pm 5^{\circ}\text{C}$) for 8 hours. The module should be soldered within 24 hours after re-baking.

When unpacking and handling the module, pay attention to Electrostatic Discharge (ESD) protection.

6.2 Production Soldering

During the production soldering process, do not use any organic solvents (such as alcohol, isopropanol, acetone, trichloroethylene, etc.) to wipe the shielding layer of the LCH3562 core module, as this may cause the shielding layer to rust. Do not perform ultrasonic cleaning on the module, as this may damage the internal crystals of the module. Ensure that the spray materials used do not chemically react with the module's shielding layer or PCB, and that they do not flow into the module during spraying.

To ensure the soldering quality and reliability of the LCH3576 core module, the recommended reflow profile is as follows:



Item	Description	Value
Endothermic Zone Heating Rate	Interval A	$\leq 3^{\circ}\text{C/s}$
Soak time	From the end of interval A to the beginning of interval B	60~120s
Reflow Zone Heating Rate	Interval C	$\leq 3^{\circ}\text{C/s}$
Maximum Temperature	Highest point of the curve	$246^{\circ}\text{C}(+5/-0^{\circ}\text{C})$
Cooling Rate	Interval D	$< 6^{\circ}\text{C/s}$
Reflow Time	Interval E	60~150 seconds

7. Application Scenarios



AI



Machine Vision



Industrial Control



Energy and Power



Smart Tablet



VR



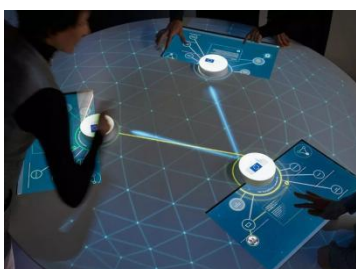
Smart Logistics



New Retail



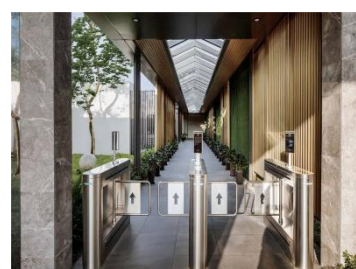
Smart Commercial



Object Recognition



Vehicle terminal



Security Surveillance

8. Ordering Model

Product Model	Status	CPU	DDR	eMMC	Operating Temperature
LC20121602	Mass production	RK3576	2GB	16GB	-20℃ - 70℃
LC20143202	Mass production	RK3576	4GB	32GB	-20℃ - 70℃
LC20186402	Mass production	RK3576	8GB	64GB	-20℃ - 70℃
LC2019A802	Mass production	RK3576	16GB	128GB	-20℃ - 70℃
LC201432J2	Mass production	RK3576J	4GB	32GB	-40℃ - 85℃
LC201864J2	Mass production	RK3576J	8GB	64GB	-40℃ - 85℃

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

9. 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