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Boardcon LGA3576 Embedded Design



Specifications:

Feature	Specifications
CPU	Quad-core Cortex-A72 and quad-core Cortex-A53
DDR	4GB LPDDR5 (up to 8GB)
UFS FLASH	32GB (up to 512GB)

Product Usage Instructions

Setting Up the LGA3576 Embedded System

To set up the LGA3576 embedded system, follow these steps:

1. Ensure all components are properly connected according to the block diagram.
2. Power on the system using a DC power source within the specified voltage range.
3. Connect any necessary peripherals such as cameras or storage devices to the appropriate interfaces.

Operating the LGA3576 Embedded System

Once the system is set up, you can operate the LGA3576 embedded system by:

- Accessing the system via HDMI or DP output for display.
- Interacting with the system using USB, Ethernet, or other supported communication interfaces.
- Utilizing the GPIOs, UART, SPI, and other available functionalities as needed.

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Introduction

About this Manual

This manual is intended to provide the user with an overview of the board and benefits, complete features specifications, and set up procedures. It contains important safety information as well.

Feedback and Update to this Manual

To help our customers make the most of our products, we are continually making additional and updated resources available on the Boardcon website

(www.boardcon.com, www.armdesigner.com).

These include manuals, application notes, programming examples, and updated software and hardware. Check in periodically to see what's new!

When we are prioritizing work on these updated resources, feedback from customers is the number one influence. If you have questions, comments, or concerns about your product or project, please do not hesitate to contact us at support@armdesigner.com.

Limited Warranty

Boardcon warrants this product to be free of defects in material and workmanship for a period of one year from date of buy. During this warranty period Boardcon will repair or replace the defective unit in accordance with the following process:

A copy of the original invoice must be included when returning the defective unit to Boardcon. This limited warranty does not cover damages resulting from lightning or other power surges, misuse, abuse, abnormal conditions of operation, or attempts to alter or modify the function of the product.

This warranty is limited to the repair or replacement of the defective unit. In no event shall Boardcon be liable or responsible for any loss or damages, including but not limited to any lost profits, incidental or consequential damages, loss of business, or anticipatory profits arising from the use or inability to use this product.

Repairs made after the expiration of the warranty period are subject to a repair charge and the cost of return shipping. Please contact Boardcon to arrange for any repair service and to obtain repair charge information.

Introduction

Summary

The LGA3576 system-on-module is powered by Rockchip's RK3576 with a quad-core Cortex-A72 and a quad-core Cortex-A53 processor, embedded Mali-G52 MC3 GPU and 6.0 TOPs NPU.

It is specifically designed for high-performance devices such as 4K video surveillance systems, AI edge computing devices, intelligent interactive systems, personal computers, and robots. This high-performance multimedia processing and acceleration engine enables faster technology adoption while improving overall solution efficiency. In particular, the LGA3576 is a full-function LPDDR5+UFS subminiature system module.

Features

- Microprocessor
 - Quad-core Cortex-A72 up to 2.2GHz
 - Quad-core Cortex-A53 up to 1.8GHz
 - 48KB I-cache 32KB D-cache and 1MB L2 for A72 each core, 32KB I-cache 32KB D-cache and 512KB L2 for A53 each core
 - 6.0 TOPS Neural Process Unit
 - Mali-G52 MC3 up to 1.0GHz
 - Single-core Cortex-M0 for user application
- Memory Organization
 - LPDDR5 RAM up to 8GB
 - UFS up to 512GB
 - Support eMMC up to 256GB

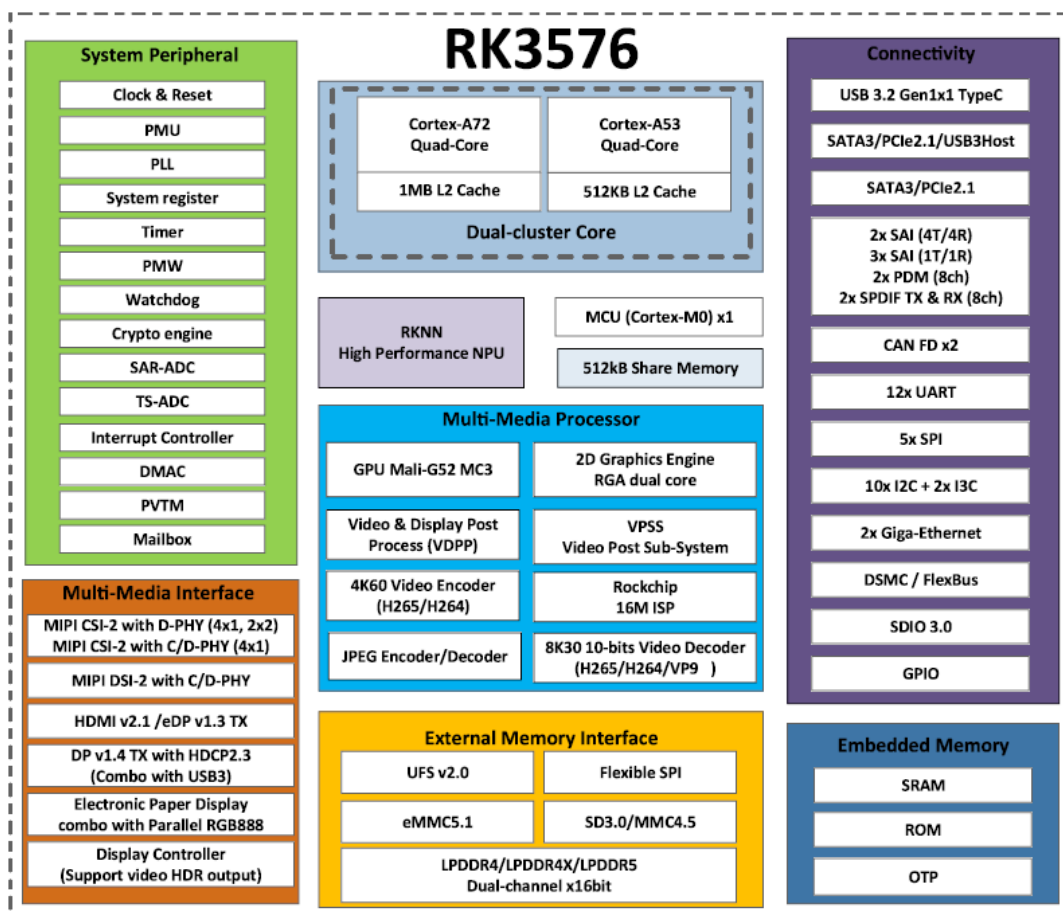
- Support FSPI Flash
- Boot ROM
 - Supports system code download through USB OTG
- Secure system
 - Embedded two cipher engine
 - Support key ladder to guarantee key secure
 - Support secure OS and data scrambling
 - Support OTP
- Video Decoder/Encoder
 - H.265/VP9/AVS2/AV1 decoding up to 8K@30fps or 4K@120fps
 - H.264/AVC decoding up to 4K@30fps
 - H.264/H.265 encoding up to 4K@60fps
 - Picture size up to 65520 x 65520
- Display Subsystem
 - Video Output
 - Supports HDMI 2.1 TX with ARC, up to 4K@120fps or EDP TX interface up to 4K@60Hz HDMI 2.1 support FRL mode
 - Supports 4 lanes MIPI DSI up to 4K@60Hz
 - Supports PD1.4a interface up to 4K@60fps
 - Supports RGB 24bit output
 - Supports E-ink screen interface
 - Video/Image Input
 - Supports 3-CH MIPI 4lanes CSI interfaces or 4-CH MIPI 2lanes + 1-CH 4lanes CSI interfaces
 - Supports DVP 8/16-bit input
- Audio
 - Five I2S/PCM interfaces
 - Support 8-ch TX/RX on I2S0/1
 - Support Mic array Up to 8ch PDM/TDM interface
 - Support 2-ch SPDIF output
 - Support 2-ch SPDIF input
 - Support voice activity detection
- USB / PCIE/ SATA3
 - One USB2.0 OTG interface

- One Type-C or DP interface
- One USB3.0 Host or PCIE2.1×1 or SATA3 interface.
- One PCIE2.1×1 or SATA3 interface.
- SATA3 support five device each port via PM switch
- Ethernet
 - Support 2-CH RGMII or RMII interfaces
- I2C
 - Up to 9-CH I2C
 - Support standard mode and fast mode(up to 400kbit/s)
- I3C
 - Up to 2-CH I3C
 - Support HDR mode(up to 30Mbps)
 - I2C compatible
- SDIO / SDMMC
 - Support SDIO 3.0 protocol
 - Support SD3.0 card
- SPI
 - Up to 5-ch SPI controllers,
 - Full-duplex synchronous serial interface
- UART
 - Support up to 12 UARTs
 - UART2 with 2 wires for debug
 - Embedded two 64byte FIFO
- CAN
 - Support up to two CAN controller
 - Support CAN FD protocol
- ADC
 - Up to 7-CH ADC channels
 - 12-bit resolution up to 1MS/s sampling rate
 - Voltage input range between 0V to 1.8V
- PWM
 - Up to 4 PWMs with interrupt-based operation
 - Support 32bit time/counter facility
- Power unit

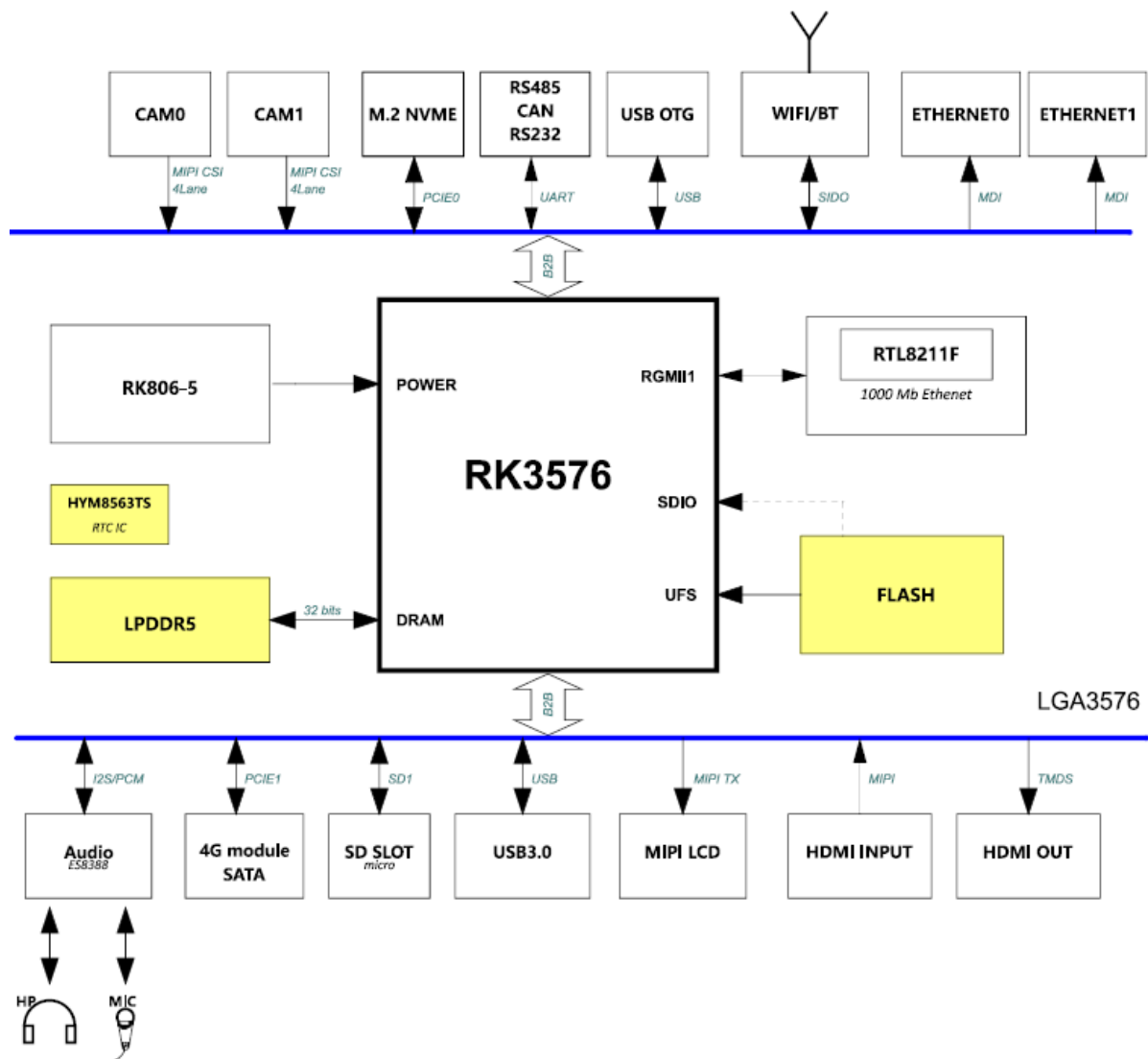
- PMU RK806 on board
- 3.4 ~ 5.5V main power input
- 1.8V and 3.3V max 500mA output
- PLDO2 0.6 ~ 3.3V max 300mA output
- Very low RTC consume current, less 5uA at 3V button Cell.

Block Diagram

RK3576 Block Diagram



Development board (Idea3576) Block Diagram



specifications

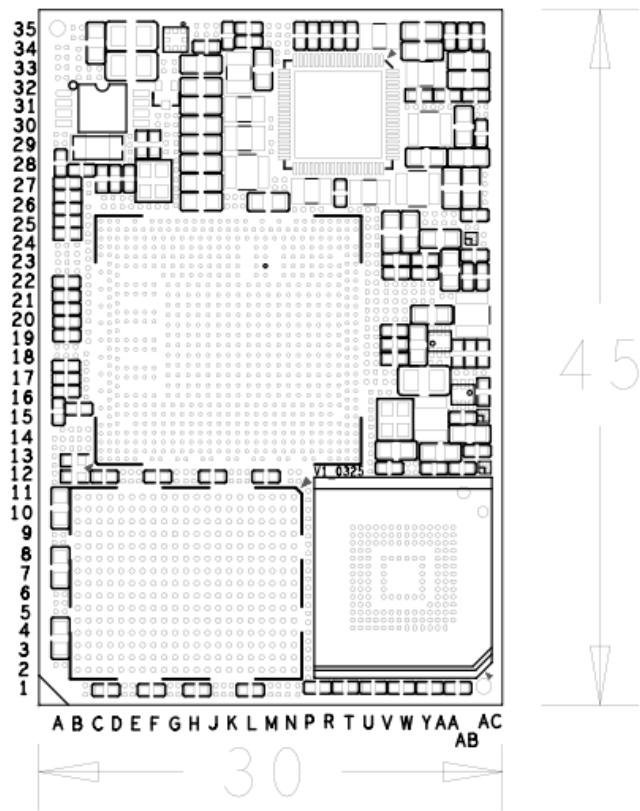
Feature	Specifications
CPU	Quad-core Cortex-A72 and quad-core Cortex-A53
DDR	4GB LPDDR5 (up to 8GB)
UFS FLASH	32GB (up to 512GB)
eMMC FLASH	Option on carrier board
Power	DC 3.4 ~ 5.5V
EDP/MIPI DSI	1-CH EDP, 1-CH MIPI DSI
I2S	5-CH

MIPI CSI	3-CH 4-Lane or 4-CH 2-Lane + 1-CH 4-Lan CSI (up to 5 CSI Cameras)
SATA	2-CH
HDMI output	1-CH (EDP option)
DP output	1-CH
RGB output	1-CH 24bit

EBC output	1-CH (option)
Flex Bus	option
CAN	2-CH
USB	1-CH Type-C and 1-CH USB Host3.0
Ethernet	2-ch RGMII
SDMMC	2-CH
SPDIF TX	2-CH
SPDIF RX	2-CH
I2C	9-CH
I3C	2-CH
SPI	5-CH
CAN	2-CH
UART	11-CH, 1-CH(DEBUG)
PWM	4-CH
ADC IN	7-CH

Board Dimension	45 x 30mm
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PCB Dimension



Pin Definition

Pin	Signal	Description or functions	GPIO serial	IO Voltage
A2	GND	Ground		0V
A3	LCDC_D8/EBC_SDD O8/DSMC_INT3	I2C9_SDA_M3/UART11_CT S_M0/SPI4_MOSI_M1/SAI2_LRCK_M2/FL EXBUS0_D10/FLEXBUS0_CSN_M2	GPIO3_C3_d /PWM2_CH1_M3	3.3V

A4	HP_CTL_H	SPI3_CLK_M2/SAI4_SDI_M0/SAI1_SDO0_M0	GPIO4_A7_d/PWM2_CH6_M0	3.3V
A5	LCDC_D13/EBC_SD DO13/DSMC_DQS1	SPI3_CSN0_M1/ETH0_TXCLK_M0/FLEXBUS0_CLK	GPIO3_B6_d/PWM0_CH1_M3	3.3V
A6	GND	Ground		0V
A7	LCDC_D18/EBC_SD CE2/DSMC_DATA12	UART10_TX_M0/SPI4_CSN0_M1/ETH0_RXD1_M0/PDM1_CLK0_M2/FLEXBUS0_D4	GPIO3_B1_d/PWM1_CH3_M3	3.3V
A8	LCDC_D20/EBC_VCOM/DSMC_DATA13	UART10_RTS_M0/UART1_TX_M2/ETH0_RXCTL_M0/PDM1_CLK1_M2/FlexBUS0_D5	GPIO3_A7_d	3.3V

A9	LCDC_D23/EBC_ SD SHR/DSMC_ RDYN	SPI2_CLK_M2/UART1_ CTS _M2/ETH0_CLKOUT_25 M_ M0/SAI4_SDI_M1/FlexB US1 _D11/FlexBUS0_CSn_ M0	GPIO3_A4_d /PWM1_CH0_M3	3.3V
A10	GMAC1_MDC	UART6_RTS_M1/I2C9_ SDA _M2/ISP_PRELIGHT_T RIG_M0/PWM2_CH4_ M2	GPIO2_D4_d	1.8V
A14	GMAC1_TXD1	UART4_RTS_M0/I2C5_ SDA _M2/SAI4_LRCK_M3/P WM0 _CH1_M2	GPIO2_C7_d	1.8V
A15	GND	Ground		0V
A16	GMAC1_RXD1	UART6_TX_M1/I3C1_S CL_M0/SAI4_MCLK_M 3/CAM_C LK0_M1/PWM2_CH2_M 2	GPIO2_D2_d	1.8V

A17	GMAC1_RXD0	UART4_RX_M0/I2C6_SDA_ M2/SAI4_SDO_M3/PWM2_C H1_M2	GPIO2_D1_d	1.8V
A18	SAI0_SDI3_M0/E0_T D2_M1_1V8	UART7_CTS_M1/SPI4_MOS I_M3/PDM0_SDI0_M3/SATA 0_ACTLED_M0/VI_CIF_D9	GPIO2_B4_d /ETH0_TXD2	1.8V
A19	SAI0_SDO1_M0/E0_TCT_M1_1V8	I2C4_SDA_M2/UART8_RX_ M1/ETH0_TXCTL_M1/V I_C I F_D14	GPIO2_A7_d	1.8V

A20	SAI0_SCLK_M0/E0_ RD3_M1_1V8	I2C8_SCL_M2/UART8_CTS _M1/UART7_RX_M0	GPIO2_B6_d /ETH0_RXD3	1.8V
A21	SPDIF_RX1_M1/E0_RCT_M1_1V8	UART3_RTS_M0/SPI3_MIS O_M0/SAI3_SDO_M2//CAN_TX_M3/VI_CIF_C LKO/MIPI_TE_M1	GPIO3_A2_d /ETH0_RXCTL	1.8V
A22	GND	Ground		0V

A26	SDMMC0_D1	DSM_ALN_M0/I2C8_SD A_M0/UART0_TX_M1/ UART7_TX_M2/SPI0_ MISO_M1/CAN0 _TX_M0/SAI3_MCLK_M 3	GPIO2_A1_d /PWM2_CH3_M0 /FSPI1_D1_M0	3.3V
A27	eMMC_D6	I2C9_SDA_M0/SPI0_MI SO_ M2/PDM0_CLK1_M1/S AI3_LRCK_M0/FSPI0_ D6	GPIO1_A6_u	1.8V
A28	eMMC_D2	UART6_RTS_M2/UART 7_TX _M1/PDM0_SDI3_M1/S AI0_SDI3/SDO1_M2/F SPI0_D2	GPIO1_A2_u	1.8V
A29	eMMC_D0	I2C2_SCL_M1/UART7_ RTS _M1/SAI0_SCLK_M2/F SPI0_D0	GPIO1_A0_u	1.8V
A30	SDMMC1_CLK_ M0_ 1V8	UART3_RX_M2/PDM0_ CLK 0_M2/SAI3_MCLK_M1	GPIO1_C1_d	1.8V

A31	SDMMC1_D3_M0_1 V8	UART3_RTS_M2/SPI1_CSN 0_M0/PCIE0_WAKE_M1/SAI3_SDI_M1	GPIO1_B7_d	1.8V
A32	SDMMC1_D1_M0_1 V8	I2C9_SCL_M1/SPI1_MOSI_M0/PCIE1_WAKE_M1/SAI3_LRCK_M1/PWM1_CH1_M1	GPIO1_B5_d	1.8V
A33	SARADC_VIN5	ADC_IN5		1.8V
A34	SARADC_VIN4	ADC_IN4		1.8V
B1	LCDC_CLK/EBC_SD OE/DSMC_RESETN	UART5_RTS_M0/SPI3_CSN 1_M1/SAI4_SCLK_M1/FLEX BUS1_D12_M0/FLEXBUS0_D15_M0/FLEXBUS1_CSn_M1/CAM_CLK0_OUT_M0	GPIO3_D7_d/PWM2_CH7_M3	3.3V
B3	GND	Ground		0V
B4	SPK_CTL_H	SPI3_CS1_M2/SPI4_CS0_M2/PDM1_SDI0_M1/SAI1_SDI0_M0/SAI4_SDO_M0	GPIO4_B3_d/PWM2_CH7_M0	3.3V

B5	IRC_BIN	UART2_CTS_M1/UART6_CTS_M0/UART5_RX_M1/SPI4_M0/MOSI_M2/PDM1_SDI2_M1/SAI1_SDI2_M0/SAI1_SDO2_M0/FlexBUS1_D14_M1	GPIO4_B1_d	3.3V
B6	LCDC_D15/EBC_SD DO15/DSMC_DATA9	UART9_RTS_M1/ETH0_TX_D1_M0/SPDIF_RX1_M0/FLEXBUS0_D1	GPIO3_B4_d/PWM1_CH4_M3	3.3V
B7	LCDC_D17/EBC_SD CE1/DSMC_DATA11	I2C8_SDA_M3/UART9_RX_M1/ETH0_RXD0_M0/PDM1_SDI1_M2/FLEXBUS0_D3	GPIO3_B2_d	3.3V
B8	GND	Ground		0V
B9	LCDC_D22/EBC_GD SP/DSMC_DATA15	SPI2_CS_n1_M2/UART1_RTS_M2/ETH0_MDIO_M0/PDM1_SDI3_M2/FlexBUS0_D7	GPIO3_A5_d/PWM1_CH1_M3	3.3V

B10	GMAC1_MDIO	UART6_CTS_M1/I2C9_SCL _M2/ISP_FLASH_TRIG OUT _M0/PWM2_CH5_M2	GPIO2_D5_d	1.8V
B11	GND	Ground		0V
B13	GMAC1_TXCTL	UART4_TX_M0/I2C6_SCL_M2/SAI4_SDI_M3/ PWM2_C H0_M2	GPIO2_D0_d	1.8V
B14	GMAC1_TXD2	UART11_RTS_M1/SPI1_MISO_M1/PDM1_SDI3_M0/SAI2 _LRCK_M1/VI_CIF_D2/ PWM 0_CH0_M2	GPIO2_C3_d	1.8V
B15	GMAC1_TXCLK	UART11_RX_M1/SPI1_CLK _M1/PDM1_CLK0_M0/SAI2_SDI_M1/VI_CIF_D0/PWM4_CH2_M2	GPIO2_C5_d	1.8V

B16	GMAC1_RXDV_C RS	UART6_RX_M1/I3C1_S DA_ M0/PWM3_CH2_M2	GPIO2_D3_d	1.8V
B17	GMAC1_RXD3	UART9_TX_M0/SPI1_C Sn1_M1/PDM1_CLK1_ M0/SAI2_MCLK_M1/VI _CIF_D4/PWM 1_CH1_M2	GPIO2_C1_d	1.8V
B18	SAI0_SDI0_M0/E 0_T D1_M1_1V8	UART1_TX_M1/PDM0_ SDI3 _M3/VI_CIF_D13	GPIO2_B0_d /ETH0_TXD1	1.8V
B19	SAI0_SDI1_M0/E 0_T D0_M1_1V8	UART1_RX_M1/PDM0_ SDI2 _M3/VI_CIF_D12	GPIO2_B1_d /ETH0_TXD0	1.8V
B20	SAI0_LRCK_M0/ E0_ RD2_M1_1V8	I2C8_SDA_M2/UART8_ RTS _M1/UART7_TX_M0	GPIO2_B7_d /ETH0_RXD2	1.8V

B21	SAI0_SDO0_M0/ E0_RD0_M1_1V 8	I2C4_SCL_M2/UART8_ TX_ M1/SPI4_CSn1_M3/VI CIF_D15	GPIO2_A6_d /ETH0_RXD0	1.8V
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B22	SDMMC0_CLK	I3C1_SDA_PU_M1/I2C5_SC L_M0/UART5_TX_M2/SPI0_CLK_M1/SAI3_SCLK_M3	GPIO2_A5_d /FSPI1_CLK_M0	3.3V
B23	SDMMC0_D3	I3C1_SDA_M1/DSM_A RN_M0/UART5_CTSN_M2/SAI3 _SDI_M3/CAN1_TX_M0	GPIO2_A3_d /FSPI1_D3_M0 /JTAG_TMS_M0	3.3V
B25	SDMMC0_D0	DSM_ALP_M0/I2C8_SCL_M0/UART0_RX_M1/ UART7_RX_M2/SPI0_MOSI_M1/CAN0 _RX_M0	GPIO2_A0_d /PWM2_CH2_M0 /FSPI1_D0_M0	3.3V
B26	eMMC_DATA_STROBE	SPI0_CSn1_M2/PDM_SDI0_M1/SAI3_SDO_M0 /SAI0_SDI0_M2/FSPI0_DQS	GPIO1_B2_d	1.8V
B27	eMMC_D7	SPI0_CLK_M2/SAI3_SDI_M0/SAI0_SDI0_M2/FSPI0_D7	GPIO1_A7_u	1.8V

B28	eMMC_D4	SPI0_CSn0_M2/SAI3_M CLK _M0/SAI0_MCLK_M2/F SPI0 _D4	GPIO1_A4_u	1.8V
B29	eMMC_D1	UART_CTS_M1/I2C2_S DA_M1/SAI0_LRCK_M 2/FSPI0_ D1	GPIO1_A1_u	1.8V
B30	GND	Ground		0V
B31	SDMMC1_CMD_ M0_1V8	UART3_TX_M2/SPI1_C SN1 _M0/PDM0_SDI2_M2/P WM0 _CH0_M1	GPIO1_C0_d	1.8V
B32	SDMMC1_D0_M0 _1 V8	I2C9_SDA_M1/SPI1_CL K_M 0/PCIE1_CLKREQ _M1/SAI3 _SCLK_M1/PWM1_CH0 _M1	GPIO1_B4_d	1.8V
B33	SARADC_VIN6	ADC_IN6		1.8V
B34	SARADC_VIN7	ADC_IN7		1.8V
B35	SARADC_VIN3	ADC_IN3		1.8V

C1	GND	Ground		0V
C2	LCDC_D5/EBC_S DD O5/DSMC_D ATA3	UART8_TX_M0/SPI1_M OSI _M2/SAI1_LRCK_M1/FL EXB US1_D5	GPIO3_C6_d	3.3V
C3	LCDC_D2/EBC_S DD O2/DSMC_C SN2	I3C1_SDA_PU_M2/SPI4 _CL K_M1/SAI2_MCLK _M2/FLEX BUS0_D11/FLEXBUS1_ CS_ M2	GPIO3_D1_d	3.3V

B21	SAI0_SDO0_M0/ E0_RD0_M1_1V 8	I2C4_SCL_M2/UART8_ TX_ M1/SPI4_CSn1_M3/VI_ CIF_D15	GPIO2_A6_d /ETH0_RXD0	1.8V
B22	SDMMC0_CLK	I3C1_SDA_PU_M1/I2C5 _SC L_M0/UART5_TX_M2/S PI0_CLK_M1/SAI3_SC LK_M3	GPIO2_A5_d /FSPI1_CLK_M0	3.3V

B23	SDMMC0_D3	I3C1_SDA_M1/DSM_A RN_M0/UART5_CTSN_ M2/SAI3 _SDI_M3/CAN1_TX_M0	GPIO2_A3_d /FSPI1_D3_M0 /JTAG_TMS_M0	3.3V
B25	SDMMC0_D0	DSM_ALP_M0/I2C8_SC L_M0/UART0_RX_M1/ UART7_RX_M2/SPI0_ MOSI_M1/CAN0 _RX_M0	GPIO2_A0_d /PWM2_CH2_M0 /FSPI1_D0_M0	3.3V
B26	eMMC_DATA_ST RO BE	SPI0_CS _n 1_M2/PDM_S DI0_M1/SAI3_SDO_M0 /SAI0_SD I0_M2/FSPI0_DQS	GPIO1_B2_d	1.8V
B27	eMMC_D7	SPI0_CLK_M2/SAI3_SD I_M 0/SAI0_SDI0_M2/FSPI0 _D7	GPIO1_A7_u	1.8V
B28	eMMC_D4	SPI0_CS _n 0_M2/SAI3_M CLK _M0/SAI0_MCLK_M2/F SPI0 _D4	GPIO1_A4_u	1.8V

B29	eMMC_D1	UART_CTS_M1/I2C2_SDA_M1/SAI0_LRCK_M2/FSPI0_D1	GPIO1_A1_u	1.8V
B30	GND	Ground		0V
B31	SDMMC1_CMD_M0_1V8	UART3_TX_M2/SPI1_CS_N1 _M0/PDM0_SDI2_M2/PWM0 _CH0_M1	GPIO1_C0_d	1.8V
B32	SDMMC1_D0_M0_1 V8	I2C9_SDA_M1/SPI1_CLOCK_M 0/PCIE1_CLKREQ_M1/SAI3 _SCLK_M1/PWM1_CH0_M1	GPIO1_B4_d	1.8V
B33	SARADC_VIN6	ADC_IN6		1.8V
B34	SARADC_VIN7	ADC_IN7		1.8V
B35	SARADC_VIN3	ADC_IN3		1.8V
C1	GND	Ground		0V
C2	LCDC_D5/EBC_SDD O5/DSMC_DATA3	UART8_TX_M0/SPI1_MOSI _M2/SAI1_LRCK_M1/FL EXB US1_D5	GPIO3_C6_d	3.3V

C3	LCDC_D2/EBC_S DD O2/DSMC_C SN2	I3C1_SDA_PU_M2/SPI4 _CL K_M1/SAI2_MCLK _M2/FLEX BUS0_D11/FLEXBUS1_ CS_ M2	GPIO3_D1_d	3.3V
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C4	LCDC_D14/EBC_ SD DO14/DSMC_ DATA8	UART9_CTS_M1/ETH0 _TX D0_M0/SPDIF_TX1 _M0/FLE XBUS0_D0	GPIO3_B5_d /PWM1_CH5_M3	3.3V
C5	GND	Ground		0V
C6	LCDC_D16/EBC_ SD CE0/DSMC_DAT A10	I2C8_SCL_M3/UART9_ TX_ M1/ETH0_TXCTL_ M0/PDM1 _SDIO_M2/FLEXBUS0_ D2	GPIO3_B3_d	3.3V
C7	LCDC_D19/EBC_ SD CE3/DSMC_CSN 1	UART10_RX_M0/SPI2_ MOS I_M2/ETH0_MCLK_M0/ SAI4 _MCLK_M1/FLEXBUS0 _D8	GPIO3_B0_d /PWM0_CH0_M3	3.3V

C8	LCDC_D9/EBC_S DD O9/DSMC_IN T1	I2C9_SCL_M3/UART11 _RTS _M0/SPI4_MISO_M1/S AI2_S CLK_M2/FLEXB US0_D9	GPIO3_C2_d /PWM2_CH0_M3	3.3V
C9	LCDC_D21/EBC_ GD OE/DSMC_D ATA14	UART10_CTS_M0/UAR T1_ RX_M2/ETH0_MDC_M0 /PD M1_SDI2_M2/FlexBUS0 _D6	GPIO3_A6_d /PWM1_CH2_M3	3.3V
C10	GND	Ground		0V
C11	GMAC1_CLK1_2 5M_OUT_M0	UART9_RTS_M0/I3C1_ SDA _PU_M0/SPDIF_RX0_M 2/C AM_CLK1_M1/SAI3 _MCLK_M2/ETH0_MC LK_M1	GPIO2_D6_d /PWM2_CH6_M2	1.8V
C13	GMAC1_MCLKIN OU T_M0	UART9_CTS_M0/SPI3_ CSN 1_M0/SPDIF_TX0 _M2/CAM_CLK2_M1/S AI0_SDO3_M0/E TH_CLK0_25M_OUT_M 1	GPIO2_D7_d /PWM2_CH7_M2	1.8V

C14	GMAC1_TXD3	UART11_TX_M1/SPI1_CS _{n0} _M1/PDM1_SDI0_M0/SAI2_SDO_M1/VI_CIF_D1	GPIO2_C4_d /PWM1_CH3_M2	1.8V
C15	GMAC1_TXD0	UART4_CTS_M0/I2C5_SCL _M2/SPI4_SCLK_M3	GPIO2_C6_d /PWM1_CH5_M2	1.8V
C16	GMAC1_RXD2	UART9_RX_M0/PDM1_SDI1_1_M0/ETH0_PTP_REFCLK_M1/VI_CIF_D5	GPIO2_C0_d /PWM1_CH0_M2	1.8V
C17	GMAC1_RXCLK	UART11_CTS_M1/SPI1_M0_S1_M1/PDM1_SDI2_M0/SAI2_SCLK_M1/VI_CIF_D3/ETH0_PPSTRIG_M1	GPIO2_C1_d /PWM1_CH2_M2	1.8V
C18	GND	Ground		0V
C19	SAI0_SDI2_M0/ETH0_TXD3_M1_1V8	UART1_CTS_M1/SPI4_CS _{n0} _M3/PDM0_SDI1_M3/PCIE0_CLKREQ_M0/VI_CIF_D11	GPIO2_B2_d /ETH0_TXD3	1.8V

C20	SAI0_SDO2_M0/ E0_TCK_M1_1V8	UART1_RTS_M1/SPI4_CLK _M3/PDM0_CLK1_M3/P CIE 1_CLKREQ_M0/VI_ CIF_D10	GPIO2_B3_d /ETH0_TXCK	1.8V
C21	CSI0_PWREN/E0_ _R D1_M1_1V8	CAN1_RX_M3/UART3_RTS _M0/SPI3_CS0_M0/SP DIF _TX1_M1/SAI3_SDI_M2 /ET H1_PTP_REFCLK_ M0/VI_CIF_CLKI	GPIO3_A3_d /ETH0_RXD1	1.8V
C22	SAI0_MCLK_M0/ E0_RCK_M1_1V8	UART7_RTS_M0/SPI4_ MISO_M3/PDM0_CLK0 _M3/SAT A1_ACTLED_M0/VI_CIF _D8	GPIO2_B5_d /ETH0_RXCK	1.8V
C23	SDMMC0_D2	I3C1_SCL_M1/DSM_AR P_M 0/UART5_RTSM_M2/SA I3_LRCK_M3/CAN1_R X_M0	GPIO2_A2_d /FSPI1_D2_M0 /JTAG_TCK_M0	3.3V

C25	SDMMC0_CMD	I2C5_SDA_M0/UART5_RX_M2/SPI0_CSN0_M1/SAI3_SDO_M3	GPIO2_A4_d /PWM2_CH4_M0 /FSPI1_CSN0_M0	3.3V
C26	eMMC_CLKOUT	PDM0_CLK0_M1/SAI0_SDI1 _M2/SAI0_SDO3_M2/F SPI0 _CLK	GPIO1_B1_d /PWM2_CH7_M1	1.8V
C27	GND	Ground		0V
C28	eMMC_D3	UART6_CTS_M2/UART7_RX_M1/PDM0_SDI1_M1/SAI0 _SDI2/SDO2_M2/FSPI0_D3	GPIO1_A3_u	1.8V
C29	eMMC_D5	I2C9_SCL_M0/SPI0_MOSI_M2/PDM0_SDI2_M1/SAI3_S CLK_M0/FSPI0_D5	GPIO1_A5_u	1.8V
C30	eMMC_CMD	I2C7_SCL_M0/UART6_TX_ M2/FSPI0_CS _n 1/FSPI0_RST	GPIO1_B0_u	1.8V

C31	eMMC_RSTn	I2C7_SDA_M0/UART6_RX_ M2/FSPI0_CS0/MIPI_TE_M3	GPIO1_B3_u /PWM2_CH1_M0	1.8V
C32	SDMMC1_D2_M0_1 V8	UART3_CTS_M2/SPI1_MIS O_M0/PCIE0_CLKREQ_M1/ SAI3_SDO_M1	GPIO1_B6_d	1.8V
C33	GND	Ground		0V
C34	SARADC_VIN2	ADC_IN2		1.8V
C35	VDD_CORE_5V	System Power Input		3.4V-5.5V
D1	PCIE1_CLKREQn_M 2	I2C2_SDA_M2/UART5_CTS _M1/SPI4_CS1_M2/SAI1_LR CK_M0/FlexBUS1_D12_M1	GPIO4_A5_d	3.3V

D2	HDMI_TX_ON_H	I2C4_SDA_M1/UART6_RX_M0/SPI3_MISO_M2/SAI4_LRCK_M0/PDM1_CLK0_M1/FlexBUS1_D14_M1/CAN0_RX_M2	GPIO4_A6_d	3.3V
D3	GND	Ground		0V
D33	RECOVERY_SARAD C_VIN1	RECOVERY MODE/ADC_IN1(PU10K)		1.8V
D34	VDD_CORE_5V	System Power Input		3.4V-5.5V
D35	VDD_CORE_5V	System Power Input		3.4V-5.5V
E1	GND	Ground		0V
E2	LCDC_D1/EBC_SDD O1/DSMC_CS SN3	I3C1_SDA_M2/UART2_RTS_M2/SPI4_CSN1_M1/SAI2_SDI_M2/FLEXBUS0_D12/FLEXBUS0_CS_M3/FLEXBUS1_D15_M0	GPIO3_D2_d /PWM2_CH4_M3	3.3V

E3	TYPEC_DPTX_A UX_PUPDCTL2	I2C4_SCL_M1/UART6_TX_M0/SPI3_MOSI_M2/SAI4_SCLK_M0/PDM1_SD13_M1/FLEXBUS1_D13_M1/CAN0_TX_M2	GPIO4_A4_d	3.3V
E33	32KOUT_RTC_1V8	RTC_CLK 32.768KHz output	GPIO0_A2_d(Not e 1)	1.8V
E34	GND	Ground		0V
E35	PWRON_L	Power Key input		3.4V-5.5V
F1	TYPEC_DPTX_A UX_PUPDCTL1	AUPLL_CLKIN_M2/SAI1/4_MCLK_M0	GPIO4_A2_d/PWM2_CH5_M0	3.3V
F2	LCDC_VSYNC/EBBC_SDCLK/DSMC_CLK_N	UART5_CTS_M0/SPI3_MOSI_M1/SAI1_SD13_M1/FLEXBUS1_CLK/PWM2_CH6_M3	GPIO3_D6_d	3.3V
F3	LCDC_D3/EBC_SDDO3/DSMC_DATA1	UART8_CTS_M0/SPI1_CSN_M0_M2/SAI1_MCLK_M1/FLEXBUS1_D3	GPIO3_D0_d/PWM2_CH3_M3	3.3V
F33	VCC_RTC	RTC Power input		1.8~3.3V

F34	SDMMC0_DET_L _1 V8		GPIO0_A7_u	1.8V
F35	WIFI_REG_ON_H _1 V8	I2C8_SCL_M1/UART2_ TX_ M0/PDM0_SDI0_M2/SA TA_CPPOD	GPIO1_C6_d	1.8V
G1	LCDC_D4/EBC_S DD O4/DSMC_D ATA2	UART8_RTS_M0/SPI1_ CLK _M2/SAI1_SCLK_M1/FL EXB US1_D4	GPIO3_C7_d	3.3V

G2	LCDC_D0/EBC_S DD O0/DSMC_C SN0	I3C1_SCL_M2/UART2_ CTS _M2/SAI2_SDO_M2/FL EXB US1_D2	GPIO3_D3_d /PWM2_CH5_M3	3.3V
G3	GND	Ground		0V
G33	HOST_WAKE_BT _H _1V8	SPDIF_TX1_M2/SPI2_C LK_ M1/PDM0_CLK1_M2/CL K1_32K_OUT/SATA_M PSWIT	GPIO1_D5_d	1.8V

G34	BT_REG_ON_H_1V8	I2C8_SDA_M1/UART2_RX_M0/PDM0_SDI1_M2/SATA_CPDET	GPIO1_C7_d	1.8V
G35	MIPI_DPHY_CSI3_R X_D0N			0.5V
H1	GND	Ground		0V
H2	LCDC_D6/EBC_SDD O6/DSMC_D ATA4	UART8_RX_M0/SPI1_MISO _M2/SAI1_SDO0_M1/FLEXBUS1_D6	GPIO3_C5_d /PWM2_CH2_M3	3.3V
H3	LCDC_DEN/EBC_SD LE/DSMC_D ATA0	I2C3_SCL_M2/UART5_RX_M0/SPI3_CLK_M1/SAI1_SDI1_M1/FLEXBUS1_D1	GPIO3_D4_d	3.3V
H33	MIPI_DPHY_CSI3_R X_D1P			0.5V
H34	MIPI_DPHY_CSI3_R X_D1N			0.5V

H35	MIPI_DPHY_CSI3_R X_D0P			0.5V
J1	LCDC_D7/EBC_S DD O7/DSMC_D ATA5	I2C5_SCL_M3/UART11 _TX_ M0/SPI2_CSN0_ M2/SAI1_S DO0_M1/FL EXBUS1_D7/CA N0_TX_M3	GPIO3_C4_d	3.3V
J2	LCDC_D11/EBC_ SD DO11/DSMC_ DATA7	I2C4_SCL_M3/UART2_ TX_ M2/UART3_RTS_M 1/SAI1_S DO3_M1/FLEXBUS1_D 9	GPIO3_C0_d	3.3V
J3	LCDC_HSYNC/E BC_GDCLK/DS MC_CLK P	I2C3_SDA_M2/UART5_ TX_ M0/SPI3_MISO_M1 /SAI1_S DI2_M1/FLEXBUS1_D0	GPIO3_D5_d	3.3V
J16	GND	Ground		0V
J17	GND	Ground		0V
J18	GND	Ground		0V
J19	GND	Ground		0V
J20	GND	Ground		0V

J21	GND	Ground		0V
J33	MIPI_DPHY_CSI3_R X_CLKN			0.5V

J34	VCC_3V3_S3	3.3V GPIO Power output	Max 500mA	3.3V
J35	MIPI_DPHY_CSI3_R X_D2N			0.5V
K1	GND	Ground		0V
K2	LCDC_D10/EBC_SD DO10/DSMC_DATA6	I2C5_SCL_M3/UART11_RX_M0/SPI2_MISO_M2/SAI1_S DO2_M1/FL EXBUS1_D8/CA N0_RX_M3	GPIO3_C1_d	3.3V
K3	PCIE1_PERSTn	SPI4_MISO_M2/PDM1_SDI1 _M1/SAI1_SDI1_M0/SAI1_S DO3_M0/FlexBUS1_D15_M1	GPIO4_B2_d /MIPI_TE_M0	3.3V
K15	GND	Ground		0V
K16	GND	Ground		0V

K17	GND	Ground		0V
K18	GND	Ground		0V
K19	GND	Ground		0V
K20	GND	Ground		0V
K21	GND	Ground		0V
K33	MIPI_DPHY_CSI3_R X_CLKP			0.5V
K34	MIPI_DPHY_CSI3_R X_D3N			0.5V
K35	MIPI_DPHY_CSI3_R X_D2P			0.5V
L2	LCDC_D12/EBC_SD DO12/DSMC_DQS0	I2C4_SDA_M3/UART2_RX_M2/UART3_CTS_M1/SAI1_S DO0_M1/FL EXBUS1_D10/FLEXBUS1_CSN_M0	GPIO3_B7_d	3.3V
L3	GND	Ground		0V
L15	GND	Ground		0V
L16	GND	Ground		0V

L17	GND	Ground		0V
L18	GND	Ground		0V
L19	GND	Ground		0V
L20	GND	Ground		0V
L21	GND	Ground		0V
L33	MIPI_DPHY_CSI4 _R X_CLKN			0.5V
L34	MIPI_DPHY_CSI3 _R X_D3P			0.5V
L35	GND	Ground		0V
M15	GND	Ground		0V

M16	GND	Ground		0V
M17	GND	Ground		0V
M18	GND	Ground		0V
M19	GND	Ground		0V
M20	GND	Ground		0V
M21	GND	Ground		0V

M33	MIPI_DPHY_CSI4_R X_CLKP			0.5V
M34	PCIE1_RXP			0.5V
M35	PCIE1_RXN			0.5V
N2	PCIE1_PWREN_H	I2C2_SCL_M2/UART5_RTS _M1/SPI3_CS0_M2/SAI1_S CLK_M0/FlexBUS1_CS_M4	GPIO4_A3_d /PWM2_CH4_M1	3.3V
N3	IRC_AIN	UART2_RTS_M1/UART6_RTS_M0/UART5_TX_M1/SPI4 _CLK_M2/PDM1_CLK1_M1/SAI1_SDI3_M0/SAI1_SDO1 _M0/FlexBUS1_D13_M1	GPIO4_B1_d	3.3V
N15	GND	Ground		0V
N16	GND	Ground		0V
N17	GND	Ground		0V
N18	GND	Ground		0V
N19	GND	Ground		0V

N20	GND	Ground		0V
N21	GND	Ground		0V
N33	PCIE1_TXP			0.5V
N34	PCIE1_TXN			0.5V
N35	PCIE0_TXP			0.5V
P1	DSMC_INT2/GPIO4_A1_d	I2C7_SDA_M2/UART3_RX_ M1/SAI4_SDO_M1/FLEXBU S0_CSN_M1/D14_M0/FLEX BUS1_D13_M0/SPDIF_TX0_ M1/CAM_CLK2_M0/VO_PO ST_EMPTY	GPIO4_A1_d	3.3V
P2	DSMC_INT0/GPIO4_A0_d	I2C7_SCL_M2/UART3_TX_ M1/SAI4_LRCK_M1/FLEXB US0_D13_M0/FLEXBUS1_C SN_M3/D14_M0/SPDIF_RX0 _M1/CAM_CLK1_M0/MI PI_T E_M2	GPIO4_A0_d	3.3V
P3	GND	Ground		0V
P15	GND	Ground		0V

P16	GND	Ground		0V
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P17	GND	Ground		0V
P18	GND	Ground		0V
P19	GND	Ground		0V
P20	GND	Ground		0V
P21	GND	Ground		0V
P33	PCIE1_REFCLKP			0.5V
P34	PCIE1_REFCLKN			0.5V
P35	PCIE0_TXN			0.5V
R1	I2C3_SCL_M0	PCIE0_CLKREQ_M2/IU ART 2_TX_M1/SPDIF_TX0_ M0/FI exBUS0_D15_M1 /CAN1_TX _M2	GPIO4_B5_d	3.3V
R2	I2C3_SDA_M0	PCIE0_WAKE_M2/IUAR T2_ RX_M1/SPDIF_RX0_M0 /Fle xBUS0_CSN_M4/C AN1_RX _M2	GPIO4_B4_d	3.3V

R3	PWM2_CH5_M1_ FA N	I2C3_SDA_M3/UART6_ RX_ M3/SPI4_MOSI_M 0/SAI4_S DO_M2/VP0_ SYNC_OUT/IS P_FLASH_TRIGOUT_M 1	GPIO4_C5_d SATA1_ACTLED_ M1 /PCIE0_WAKE_M 3	3.3V
R15	GND	Ground		0V
R16	GND	Ground		0V
R17	GND	Ground		0V
R18	GND	Ground		0V
R19	GND	Ground		0V
R20	GND	Ground		0V
R21	GND	Ground		0V
R33	PCIE0_RXN			0.5V
R34	PCIE0_REFCLKP			0.5V
R35	PCIE0_REFCLKN			0.5V
T1	GND	Ground		0V
T2	HDMI_TX_CEC_ M0	I2C7_SCL_M3/UART11 _TX_ M2/SPI4_CS _n 1_M0/SAI _MC LK_M2/DSM_ALP _M1	GPIO4_C0_d /PWM1_CH5_M1 /PCIE1_WAKE_M 3	3.3V

T3	HDMI_TX_HPDIN_M0	I2C7_SDA_M3/UART11_RX _M2/EDP_HPD_M0/PCI E1_CLKREQ_M3/DSM _ALN_M1	GPIO4_C1_d /PWM0_CH1_M1	3.3V
T33	PCIE0_RXP			0.5V
T34	GND	Ground		0V
T35	BT_WAKE_HOST_H _1V8	I2C0_SDA_M0	GPIO0_B1_z	1.8V

U1	HDMI_TX_SCL	I2C2_SCL_M3/UART9_TX_M2/CAN0_TX_M1/ DSM_AR P_M1	GPIO4_C2_d /PWM2_CH0_M1	3.3V
U2	HDMI_TX_SDA	I2C2_SDA_M3/UART9_RX_ M2/CAN0_RX_M1/DSM _AR N_M1	GPIO4_C3_d /PWM2_CH1_M1	3.3V
U3	DP_HPDIN_M0	I2C3_SCL_M3/UART6_TX_M3/SPI4_CS0_M0 /SAI4_LR CK_M2/ISP_ PRLIGHT_TRIG _M1	GPIO4_C4_d /PWM2_CH6_M1	3.3V

U33	RESET_L	GPIO0_A1_z connected	(PU10K)	1.8V
U34	WIFI_WAKE_HO ST_ H_1V8	I2C0_SCL_M0	GPIO0_B0_z	1.8V
U35	GPIO0_A5_d_1V 8			1.8V
V1	PCIE0_PERSTn	I2C6_SDA_M3/SPI4_CLK_M 0/SAI4_SCLK_M2/VP2_SYN C_OUT/CAN1_RX_M1	GPIO4_C7_d /PWM2_CH3_M1	3.3V
V2	PCIE0_CLKREQn_M 3	I2C6_SCL_M3/SPI4_MISO_ M0/SAI4_SDI_M2/VP1_SYN C_OUT/CAN1_TX_M1	GPIO4_C6_d /PWM2_CH2_M1 SATA0_ACTLED_M1	3.3V
V3	GND	Ground		0V
V33	I2C0_SCL_M1_TP	I3C0_SCL_M0/UART8_TX_ M2	GPIO0_C1_d	3.3V

V34	UART0_RX_M0_ DE BUG	For debug default	GPIO0_D5_u	3.3V
V35	UART0_TX_M0_ DEB UG	For debug default	GPIO0_D4_u	3.3V
W1	GND	Ground		0V
W2	I2C7_SDA_M1/E0 _M DC_M1_1V8	UART3_RX_M0/SPI3_M OSI _M0/SAI3_LRCK_M2/VI _CIF _VSYNC	GPIO3_A1_d /ETH0_MDC_M1	1.8V
W3	SAI2_SDI_M0_1V 8	I3C0_SDA_M1/PWM1_ CH4_ M1	GPIO1_D3_d	1.8V
W33	I2C0_SDA_M1_T P	I3C0_SDA_M0/UART8_ RX_ M2	GPIO0_C2_d	3.3V
W34	LCD_BL_PWM1_ CH 1_M0	I2C1_SDA_M1/UART4_ RX_ M2/REFCLK2_OUT	GPIO0_B5_d	3.3V

W35	VCC_1V8_S3	1.8V GPIO Power output	Max 500mA	1.8V
Y1	I2C7_SCL_M1/E0_M DIO_M1_1V8	UART3_TX_M0/SPI3_CLK_M0/SAI3_SCLK_M2/VIF_HREF	GPIO3_A0_d/ETH0_MDIO	1.8V
Y2	SAI2_LRCK_M0_1V8	I3C0_SCL_M1/PWM1_CH3_M1	GPIO1_D2_d	1.8V

Y3	N.C.			
Y33	USBCC_INT_L	SPI0_MISO_M0/PDM0_SDI1_M0/SAI0_SDO3/SDI1_M1	GPIO0_D1_d	3.3V
Y34	I2C2_SCL_M0	UART1_TX_M0/PWM1_CH4_M0	GPIO0_B7_d	3.3V
Y35	I2C2_SDA_M0	UART1_RX_M0/PWM1_CH3_M0	GPIO0_C0_d	3.3V
AA1	GND	Ground		0V

AA2	UART4_RX_M1_1V8	SPI2_MISO_M1/UART2_CT S_M0/PCIE1_BUTTON RST	GPIO1_C5_d	1.8V
AA3	GND	Ground		0V
AA4	SAI2_SDO_M0_1V8	UART10_TX_M1/SAI2_SDO _M0/FSPI1_D4_M1	GPIO1_D0_d	1.8V
AA5	USB2_OTG0_DP			0.5V
AA6	USB2_OTG1_DP			0.5V
AA7	DP_TX_AUXN			0.5V
AA8	DP_TX_AUXP			0.5V
AA9	GND	Ground		0V
AA10	USB3_OTG0_SS TX1 P/DP_TX_D1P			0.5V
AA11	USB3_OTG0_SS TX1 N/DP_TX_D1N			0.5V

AA1 3	LCD_PWREN_H	I2C3_SCL_M1/SPI0_CS n0_ M0/SAI0_SCLK_M1	GPIO0_C6_d	3.3V
AA1 4	TP_RST_L	SPI0_MOSI_M0/PDM0_ SDI0 _M0/SAI0_SDIO_M1	GPIO0_D0_d	3.3V
AA1 5	GMAC1_INT	SPI0_CSN1_M0/PDM0_ CLK 1_M0/HDMI_TX_C EC_M1/P WM0_CH1_M0	GPIO0_C3_d	3.3V
AA1 6	GPIO0_C4_d	UART10_TX_M2/PDM0_ _CL K0_M0/SAI0_MCLK_M1	PWM0_CH0_M0	3.3V
AA1 7	GND	Ground		0V
AA1 8	MIPI_DPHY_DSI_ TX _D1N			0.5V
AA1 9	MIPI_DPHY_DSI_ TX _D2P			0.5V

AA2 0	MIPI_DPHY_CSI0 _R X_D1N			0.5V
AA2 1	MIPI_DPHY_CSI0 _R X_D1P			0.5V
AA2 2	MIPI_DPHY_CSI0 _R X_CLKP			0.5V

AA2 3	MIPI_DPHY_CSI0 _R X_D2P			0.5V
AA2 5	MIPI_DPHY_CSI0 _R X_D3P			0.5V
AA2 6	GND	Ground		0V
AA2 7	HDMI_TX_D0P			0.5V
AA2 8	HDMI_TX_D1P			0.5V

AA2 9	MIPI_DPHY_CSI2 _R X_CLKN			0.5V
AA3 0	MIPI_DPHY_CSI2 _R X_CLKP			0.5V
AA3 1	MIPI_DPHY_CSI1 _R X_D3P			0.5V
AA3 2	MIPI_DPHY_CSI1 _R X_D0N			0.5V
AA3 3	MIPI_DPHY_CSI1 _R X_D0P			0.5V
AA3 4	GPIO0_B4_d	I2C1_SCL_M1/UART4_ TX_ M2/REFCLK1_OUT	PWM1_CH0_M0	3.3V

AA3 5	GMAC1_RSTn	EDP_TX_HPDIN_M1/H DMI_TX_HPDIN_M1/S DMMC1_D ETN_M2/SDMMC0_PW REN	GPIO0_B6_d /PWM1_CH2_M0	3.3V
AB1	SPDIF_RX1_M2_ 1V8	I2C5_SCL_M1/UART10 _RT S_M1/PDM0_SDI3 _M2/SPDI F_RX1_M2/S AI2_MCLK_M0/ FSPI1_DQS_M1	GPIO1_D4_d	1.8V
AB2	UART4_RTSN_M 1_1 V8	SDMMC1_PWEN_M0/I2 C6_ SCL_M1/SPI2_CSN1_M 1	GPIO1_C2_u /PWM1_CH2_M1	1.8V
AB3	UART4_CTSN_M 1_1 V8	SDMMC1_DET_M0/I2C 6_S DA_M1/SPI2_CSN0_M1	GPIO1_C3_u	1.8V
AB4	SAI2_SCLK_M0_ 1V8	I3C0_SDA_PU_M1/UAR T10 _RX_M1	GPIO1_D1_d	1.8V
AB5	USB2_OTG0_DM			0.5V
AB6	USB2_OTG1_DM			0.5V
AB7	GND	Ground		0V

AB8	USB3_OTG0_SS RX1 P/DP_TX_D0P			0.5V
AB9	USB3_OTG0_SS RX2 N/DP_TX_D2N			0.5V
AB10	USB3_OTG0_SS RX2 P/DP_TX_D2P			0.5V
AB11	GND	Ground		0V

AB13	PCIE0_WAKEn_M0	I2C4_SCL_M0/UART1_CTS _M0/PDM0_SDI2_M0/SAI0_SDO2/SDI2_M1	GPIO0_D2_d /PWM1_CH5_M0	3.3V
AB14	GND	Ground		0V
AB15	PCIE0_PWREN_H	I2C3_SDA_M1/SPI0_CLOCK_M 0/SAI0_LRCK_M1	GPIO0_C7_d	3.3V
AB16	GND	Ground		0V

AB1 7	MIPI_DPHY_DSI_ TX _D0P			0.5V
AB1 8	MIPI_DPHY_DSI_ TX _D1P			0.5V
AB1 9	MIPI_DPHY_DSI_ TX _D2N			0.5V
AB2 0	MIPI_DPHY_DSI_ TX _D3P			0.5V
AB2 1	MIPI_DPHY_CSI0 _R X_D0P			0.5V
AB2 2	MIPI_DPHY_CSI0 _R X_CLKN			0.5V
AB2 3	MIPI_DPHY_CSI0 _R X_D2N			0.5V

AB2 5	MIPI_DPHY_CSI0 _R X_D3N			0.5V
AB2 6	HDMI_TX_SBDP			0.5V
AB2 7	HDMI_TX_D0N			0.5V
AB2 8	HDMI_TX_D1N			0.5V
AB2 9	HDMI_TX_D2P			0.5V
AB3 0	GND	Ground		0V
AB3 1	MIPI_DPHY_CSI1 _R X_D3N			0.5V
AB3 2	MIPI_DPHY_CSI1 _R X_D2P			0.5V
AB3 3	MIPI_DPHY_CSI1 _R X_D1P			0.5V

AB3 4	GND	Ground		0V
AB3 5	GND	Ground		0V
AC2	GND	Ground		0V
AC3	UART4_TX_M1_1 V8	SPI2_MOSI_M1/UART2 _RT S_M0/PCIE0_BUTTON RST	GPIO1_C4_d	1.8V
AC4	GND	Ground		0V
AC5	USB2_OTG0_VB US DET	USB0 VBUS Input		3.3V

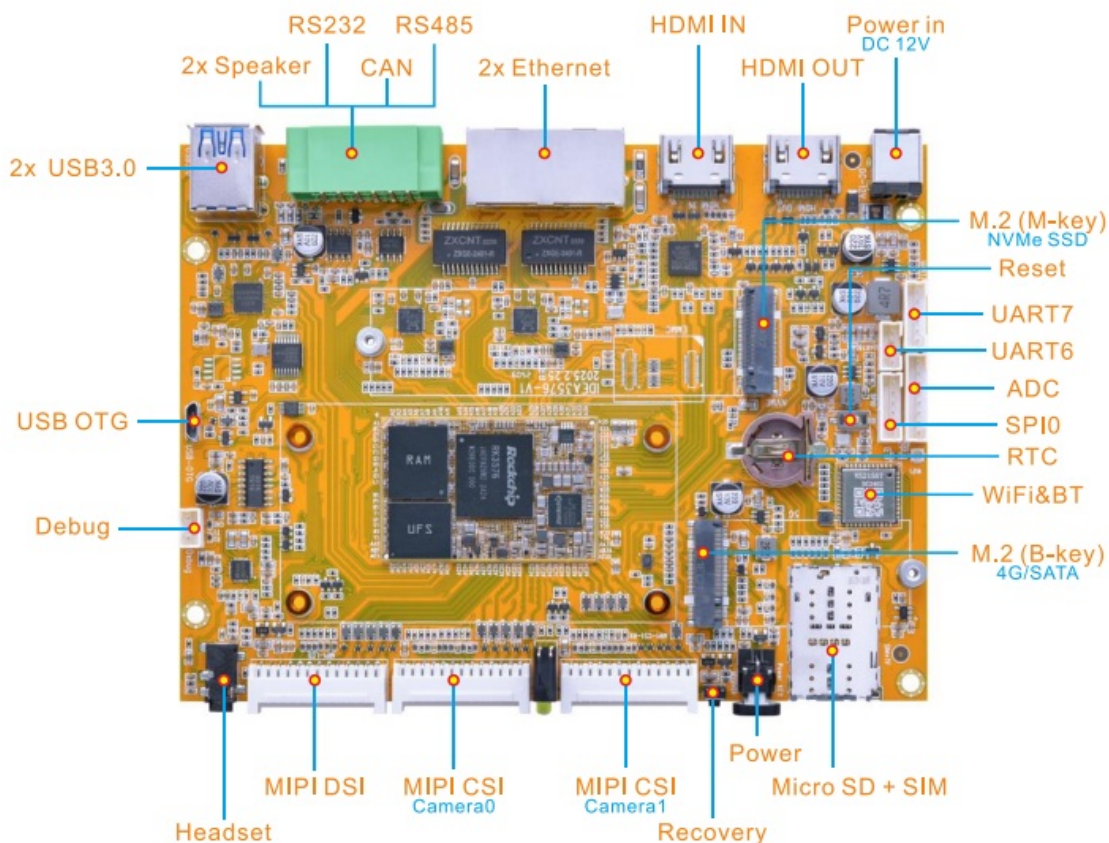
AC6	GND	Ground		0V
AC7	USB2_OTG0_ID	USB0 ID Input		1.8V
AC8	USB3_OTG0_SS RX1 N/DP_TX_D0N			0.5V
AC9	USB3_OTG0_SS TX2 P/DP_TX_D3P			0.5V

AC10	USB3_OTG0_SS TX2 N/DP_TX_D3N			0.5V
AC14	TP_INT_L	I3C0_SDA_PU_M0/UART10 _RX_M2/SAI0_SDO0_M1/D P_HPDM1	GPIO0_C5_d	3.3V
AC15	PCIE1_WAKEn_M0	I2C4_SDA_M0/UART1_RTS _M0/PDM0_SDI3_M0/SAI0_SDO1/SDI3_M1	GPIO0_D3_d /PWM2_CH0_M0	3.3V
AC16	GND	Ground		0V
AC17	MIPI_DPHY_DSI_TX _D0N			0.5V
AC18	MIPI_DPHY_DSI_TX _CLKN			0.5V
AC19	MIPI_DPHY_DSI_TX _CLKP			0.5V

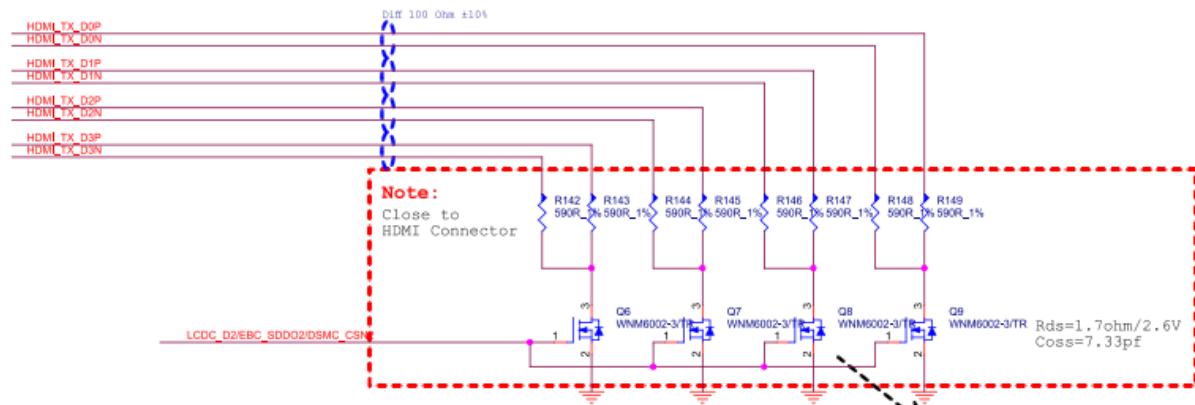
AC2 0	MIPI_DPHY_DSI_ TX _D3N			0.5V
AC2 1	MIPI_DPHY_CSI0 _R X_D0N			0.5V
AC2 2	GND	Ground		0V
AC2 6	HDMI_TX_SBDN			0.5V
AC2 7	HDMI_TX_D3N			0.5V
AC2 8	HDMI_TX_D3P			0.5V
AC2 9	HDMI_TX_D2N			0.5V
AC3 0	MIPI_DPHY_CSI1 _R X_CLKN			0.5V
AC3 1	MIPI_DPHY_CSI1 _R X_CLKP			0.5V

AC3 2	MIPI_DPHY_CSI1 _R X_D2N			0.5V
AC3 3	MIPI_DPHY_CSI1 _R X_D1N			0.5V
AC3 4	PLDO2_S0	PLDO2 Power output	Max 300mA	0.6~3.3V
Note: 1. If N.S. RTC IC can use for GPIO.				

Development Kit (Idea3576)



HDMI TX Circuit

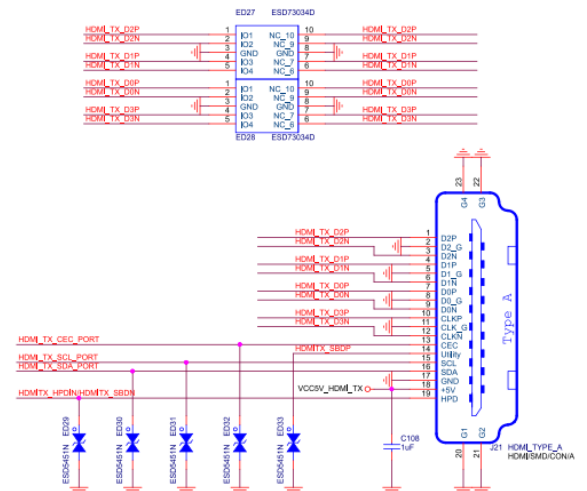
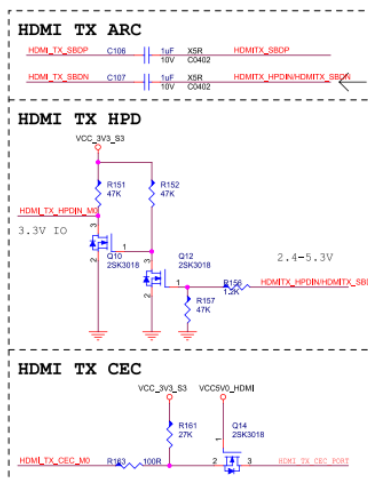
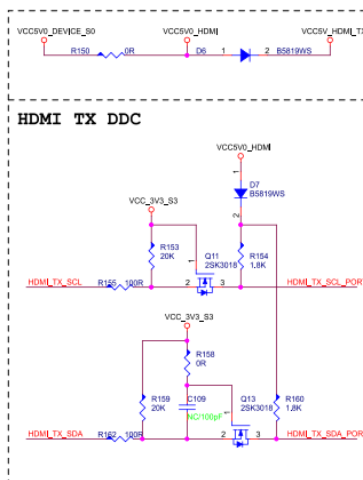


Note:
The HDMI2.1 trace length is less than 100mm.
The HDMI2.1 differential trace impedance is 100 OHM.

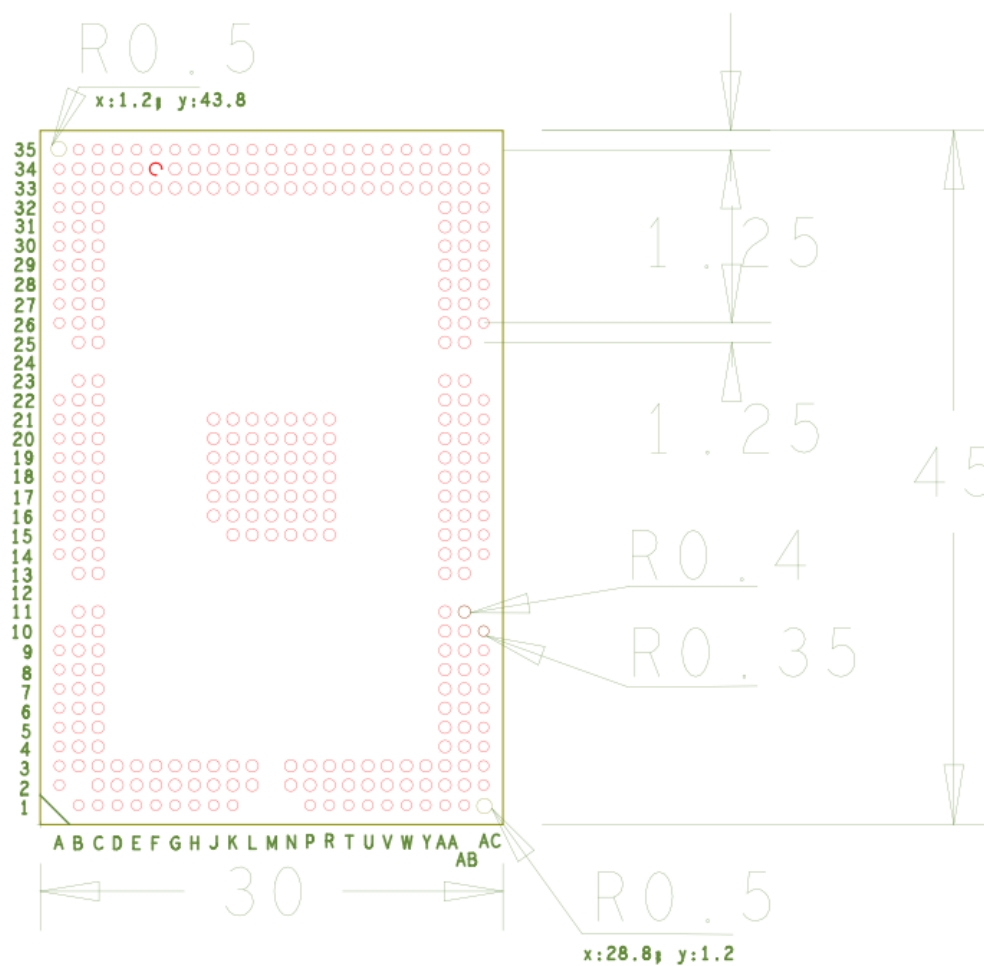
Note:
The controller only support AC coupled link. In order to backward compatibility or to meet HDMI2.0 (1.4b) DC common mode spec and V_{off} , need do R based level-shift.

Switch on in HDMI2.0 (TMDS) mode
Switch off in HDMI2.1 (FRL) mode.

$C_j \leq 0.2pF$



PCB Footprint



Product Electrical Characteristics

Dissipation and Temperature

Symbol	Parameter	Min	Typ	Max	Unit
VCC_SYS	System Voltage	3.4V	4	5.5	V
I _{sys_in}	VCC_SYS input Current		1720		mA

VCC_RTC	RTC Voltage	1.8	3	3.4	V
lirtc	RTC input Current		5	8	uA
I3v3_out	VCC_3V3 output Current			500	mA
I1v8_out	VCC_1V8 output Current			500	mA
PLDO2_S0	PLDO2 Voltage	0.6	1.8	3.3	V

Ipo2_out	PLDO2 output Current			300	mA
Ta	Operating Temperature	0		70	°C
Tstg	Storage Temperature	-40		85	°C

Reliability of Test

High Temperature Operating Test		
Contents	Operating 8h in high temperature	55°C±2°C
Result	TBD	

Operating Life Test		
Contents	Operating in room	120h
Result	TBD	

Frequently Asked Questions

Q: What is the maximum DDR capacity supported by the LGA3576?

A: The LGA3576 supports up to 8GB of LPDDR5 memory.

Q: Can I expand the storage capacity of the LGA3576 beyond 32GB?

A: Yes, the UFS FLASH storage on the LGA3576 can be expanded up to 512GB.

Q: What power source should I use with the LGA3576?

A: The LGA3576 requires a DC power source with a voltage range of 3.4V to 5.5V.

Documents / Resources

	Boardcon LGA3576 Embedded Design [pdf] User Manual LGA3576 Embedded Design, LGA3576, Embedded Design, Design
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References

- [User Manual](#)

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