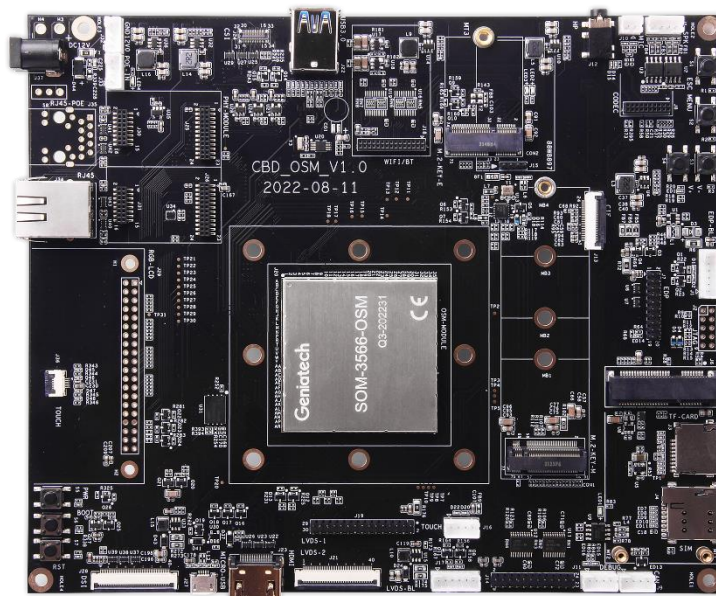


SPECIFICATION

MODEL: DB-3566

APPROVED BY GENIATECH		
PREPARED BY 编写	CHECKED BY 审核	APPROVED BY 批准

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Website: www.geniatech.com

Address: Room 02-04, 10/F, Block A, Building 8, Shenzhen International Innovation Valley, Dashi Road, Nanshan District, Shenzhen, Guangdong, China.

Revision History

VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V1.0	22/09/06	CBD_OSM_V1.0			

Content

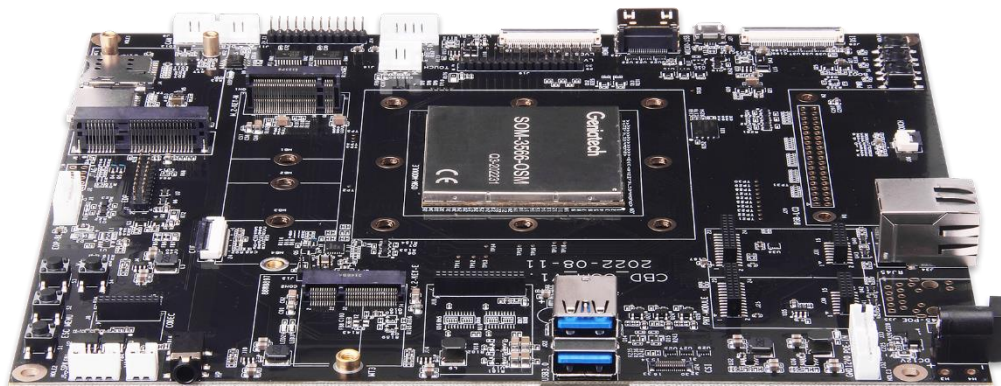
1. GENERAL DESCRIPTION	4
2. PRODUCT OVERVIEW.....	4
3. FEATURES.....	5
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5. SUPPORT FORMATS	20
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1. GENERAL DESCRIPTION

The RK3566 OSM Development Platform incorporates RK3566 SoC based SOM-3566-OSM and CBD-3566-OSM Carrier board for complete validation of RK3566 SoC functionality. The Development board DB-3566 can be used for quick prototyping of various applications targeted by the RK3568 Applications Processor. With the 200mmx168mm size, OSM Carrier board is highly packed with all the necessary on-board connectors to validate the features of SOM-3566-OSM. With the high SOC performance, applications focusing on AIOT Internet of Things equipment, vehicle-mounted central control, entertainment/game equipment, commercial display equipment and other application fields.

2. PRODUCT OVERVIEW

Below picture is for reference only, please prevails in kind.

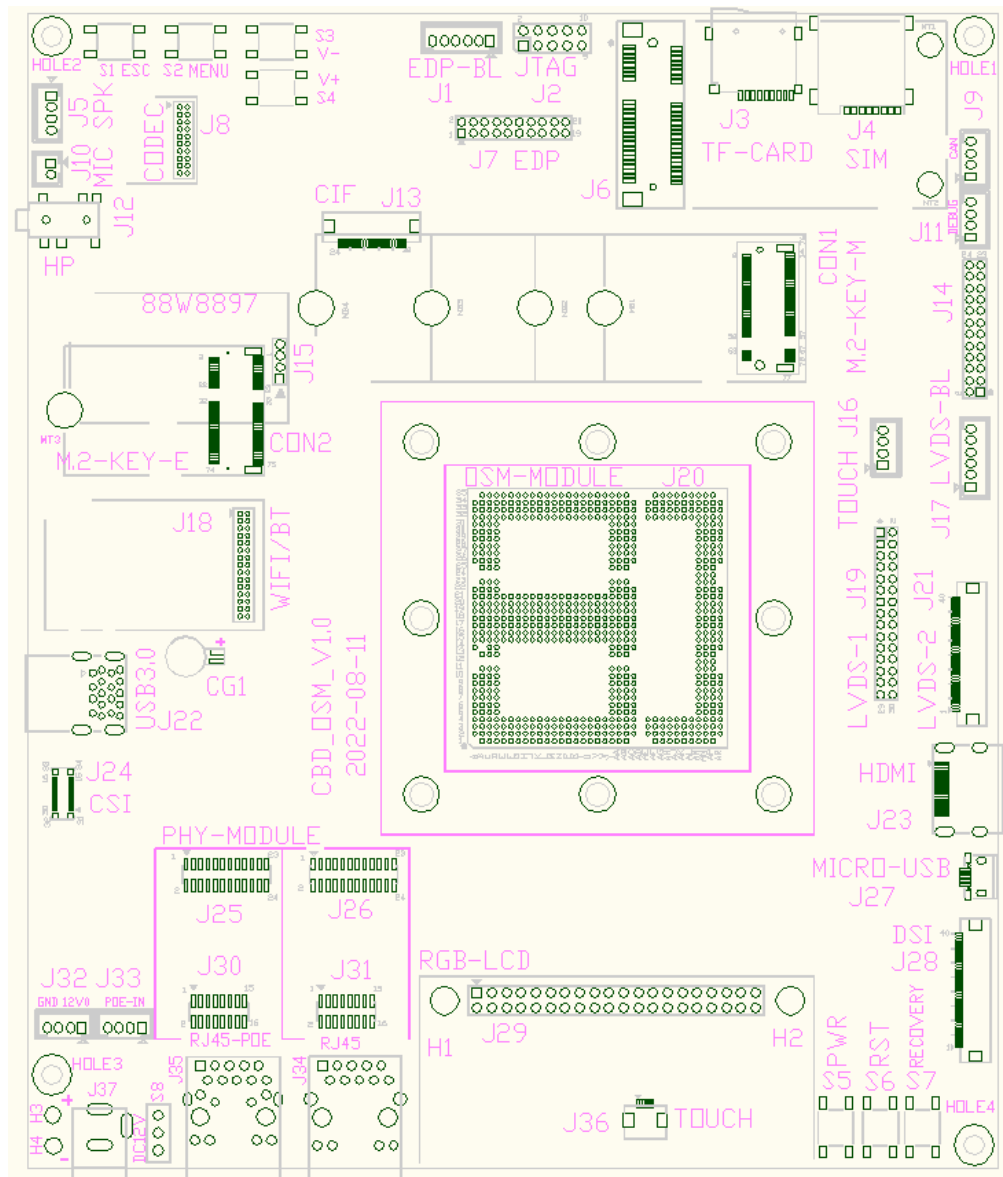


3. FEATURES

CHIPSET	Rock-Chip RK3566	
MARKET AREA	Global	
OSM-Module	OS	Debian 10(Linux)/Android 11
	CPU	Quad-core ARM Cortex-A55 CPU up to 1.8GHz per core
	LPDDR4	2GB (1G-8G optional)
	EMMC	8GB eMMC5.1(8-32GB Optional)
Development board Interfaces	OSM	OSM Size-L Compatible with OSM Size-L modules. (45*45mm)
	External I/O Connector	1 x Power Key 1 x Reset Key 1 x Recovery Key 1 x ESC Key 1 x MENU Key 1 x V+ Key 1x V- Key 2 x USB 3.0 Type A 1 x micro USB 2x Giga Ethernet (OSM-3566 On) 1 x HDMI OUT 1 x TF Card Socket 1 x SIM Socket 1 x DC Jack
	Internal I/O Connector	1 x Mic Phone 2P Header 1 x Speaker (Left/Right Channel) 2P Header 1 x Headphone 1 x Codec module connector 1 x M.2 Key E for WIFI /BT 1 x M.2 Key B for LTE 1 x M.2 Key M for Storage 1 x Mini PCIe Connector 1 x Wi-Fi/BT module connector 1 x USB Wi-Fi module connector 1 x A53 Core Debug connector (UART) 1 x LCD BackLight 6P Header 1 x LVDS Screen connector 1 x eDP BackLight 6P Header 1 x eDP Screen connector 1 x I2C Touch Screen connector 1 x MIPI DSI Screen connector for MIPI Panel 1 x MIPI CSI Screen connector for MIPI Camera

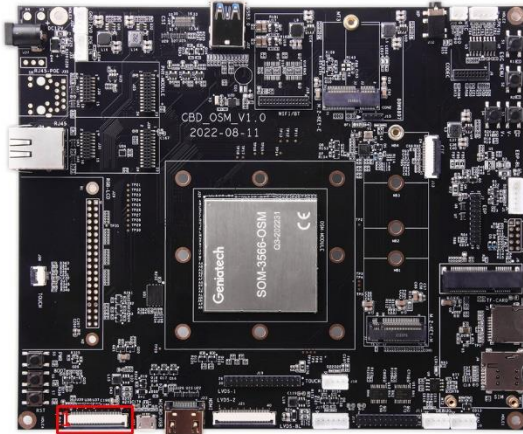
		1 x RGB Screen Connector 1 x24Pin extension Connector 1 x CAN Bus
	DC-IN	12V2A
Dimensions	170*138mm	

4. Connectors List



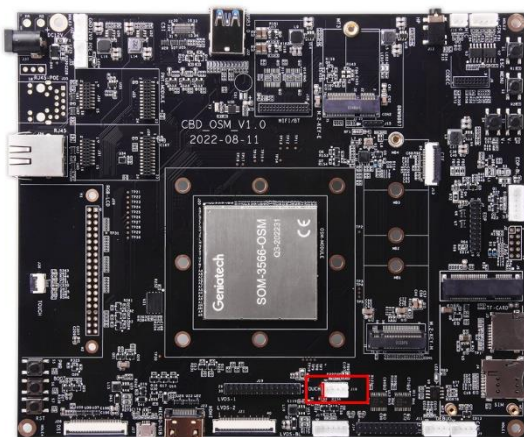
Label	Function	Note
J5	Speaker connector	4 x 1 wafer, pitch 2.00mm
J10	MIC connector	2 x 1 wafer, pitch 2.00mm
J8	CODEC module connector	
J24	MIPI CSI Screen connector	2 x 15 wafer, pitch 2.00mm
J12	Headphone connector	
J17	LCD backlight connector	6 x 1 wafer, pitch 2.00mm
J19	LVDS connector	LVDS_2_30P
J21	LVDS FPC Connector	FPC_40_LVDS
CON2	M.2 Key E for WIFI /BT	
J6	Mini-PCle for LTE	
CON1	PCle M.2 KEY M for Storage	
J28	MIPI LCD connector	40 x 1 wafer, pitch 0.30mm
J36	Touch Panel connector	6 x 1 wafer, pitch 0.50mm
J9	CAN Bus connector	4 x 1 wafer, pitch 2.00mm
J14	Extension connector	2 x 12 wafer, pitch 2.00mm
J11	Debug connector (UART)	4 x 1 wafer, pitch 2.00mm
J15	USB Wi-Fi connector(for 88W8897)	
J16	USB Touch Connector	4 x 1 wafer, pitch 2.00mm
J23	HDMI	
J29	RGB-LCD	
J27	Micro-USB	
J36	I2C touch connector	
J34	RJ45 Connector	
J35	RJ45 Connector(POE)	
J37	DC Jack connector	
J3	Micro SD slot	
J4	SIM Card slot	
J22	USB3.0-Type A connector	
J32&J33	POE module connector	
J25&J26	PHY module connector	
J18	Wi-Fi Module connector	
J20	OSM module	
J1	eDP backlight connector	
J7	edp connector	
J2	JTAG connector	
S1	Menu Key	
S2	Exit Key	
S3	V+ Key	
S4	V- Key	

MIPI-DSI Connector (J28)



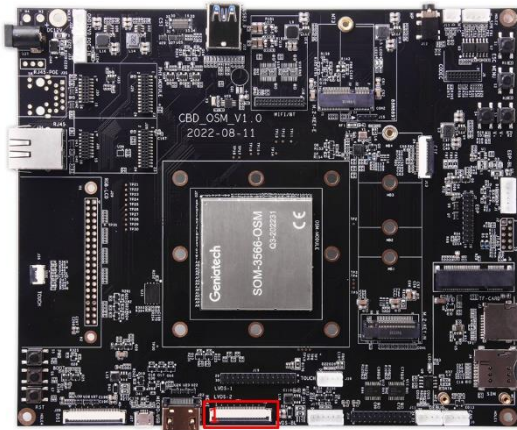
Pin NO	Definition	Pin NO	Definition
1	NC	21	DSI_DATA3_P
2	VCC_LCD0	22	GND
3	IOVCC_1.8V/3.3V	23	NC
4	GND	24	NC
5	MIPI_DSI_nRST	25	GND
6	NC	26	NC
7	GND	27	PWM0
8	DSI_DATA0_N	28	NC
9	DSI_DATA0_P	29	NC
10	GND	30	GND
11	DSI_DATA1_N	31	VCC1_LED-
12	DSI_DATA1_P	32	VCC1_LED-
13	GND	33	NC
14	DSI_CLOCK_N	34	NC
15	DSI_CLOCK_P	35	NC
16	GND	36	NC
17	DSI_DATA2_N	37	NC
18	DSI_DATA2_P	38	NC
19	GND	39	VCC1_LED+
20	DSI_DATA3_N	40	VCC1_LED+

USB touch connector (J16)



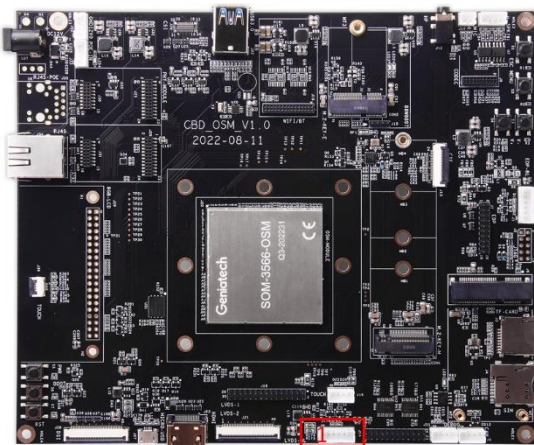
Pin NO	Definition
1	GND
2	USB_C_D_P
3	USB_C_D_P
4	VCC5V0_USB

LVDS-2 FPC Connector (J21)



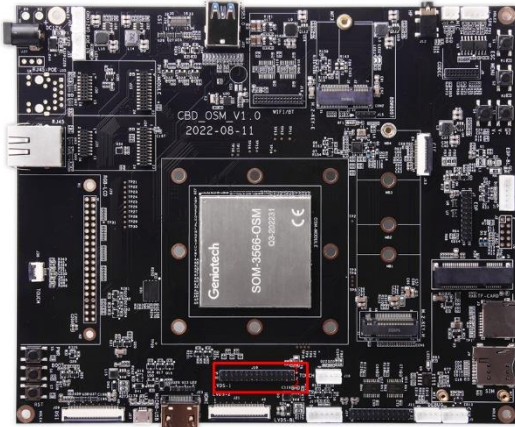
Pin NO	Definition	Pin NO	Definition
1	NC	21	LVDS_A_LANE3_P
2	LVDS_PANELVCC	22	GND
3	LVDS_PANELVCC	23	NC
4	VDC	24	NC
5	NC	25	GND
6	EDID_I2C_CLK	26	NC
7	EDID_I2C_DATA	27	NC
8	LVDS_A_LANE0_N	28	GND
9	LVDS_A_LANE0_P	29	NC
10	GND	30	NC
11	LVDS_A_LANE1_N	31	VCC2_LED-
12	LVDS_A_LANE1_P	32	VCC2_LED-
13	GND	33	VCC2_LED-
14	LVDS_A_LANE2_N	34	NC
15	LVDS_A_LANE2_P	35	LVDS_BL_PWM_3V3
16	GND	36	LVDS_BL_EN_3V3
17	LVDS_A_CLKN	37	NC
18	LVDS_A_CLKP	38	VCC2_LED+
19	GND	39	VCC2_LED+
20	LVDS_A_LANE3_N	40	VCC2_LED+

LVDS Backlight Connector (J17)



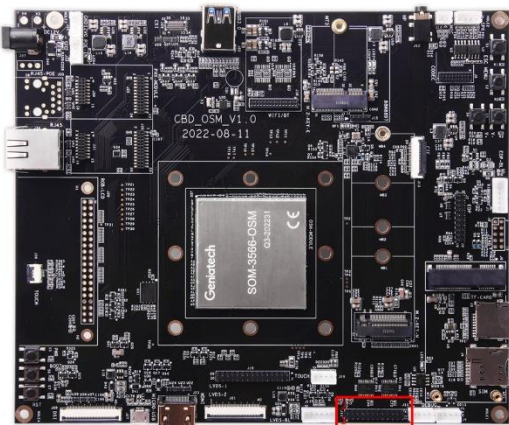
Pin NO	Definition
1	GND
2	GND
3	LVDS_BL_PWM_3V3
4	LVDS_BL_EN_3V3
5	VDD_BL
6	VDD_BL

LVDS-1 HDR2x15 Connector(J19)



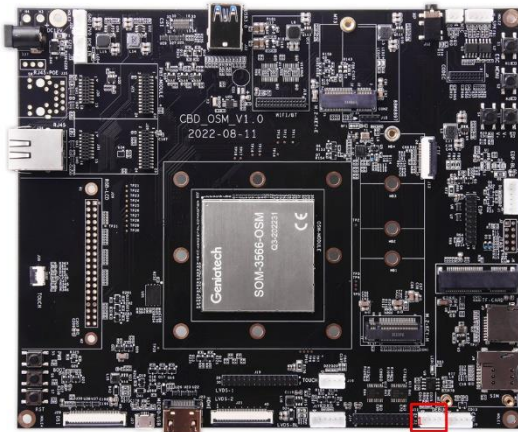
Pin NO	Definition	Pin NO	Definition
1	LVDS_PANELVCC	2	LVDS_PANELVCC
3	LVDS_PANELVCC	4	NC
5	NC	6	NC
7	LVDS_LB3P	8	LVDS_LB3N
9	LVDS_LBCP	10	LVDS_LBCN
11	LVDS_LB2P	12	LVDS_LB2N
13	LVDS_LB1P	14	LVDS_LB1N
15	GND	16	GND
17	LVDS_LB0P	18	LVDS_LB0N
19	LVDS_LA3P	20	LVDS_LA3N
21	LVDS_LACP	22	LVDS_LACN
23	GND	24	GND
25	LVDS_LA1P	26	LVDS_LA1N
27	LVDS_LA2P	28	LVDS_LA2N
29	LVDS_LA0P	30	LVDS_LA0N

X24 Extension Connector (J14)



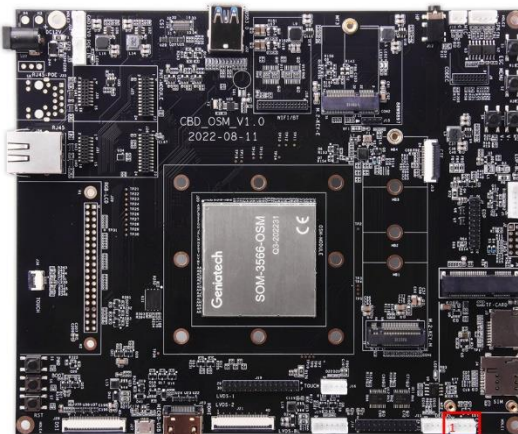
Pin NO	Definition	Pin NO	Definition
1	VDD_5V	2	VDD_3V3
3	GND	4	GND
5	SPI_nCS	6	UART_RX0
7	SPI_SDI	8	UART_TX0
9	SPI_SDO	10	GND
11	SPI_CLK	12	UART_CTS
13	NC	14	UART_RTS
15	GND	16	GND
17	NC	18	UART_RX2
19	NC	20	UART_TX2
21	GND	22	GND
23	CAN_RX0	24	CAN_TX0

DEBUG UART (J11)



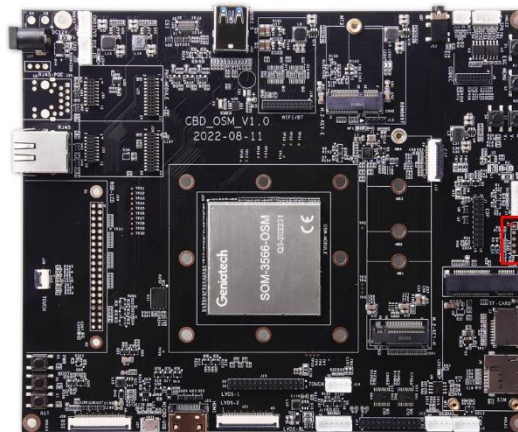
Pin NO	Definition
1	UART_RX2
2	GND
3	UART_TX2
4	NC

CAN Connector (J9)



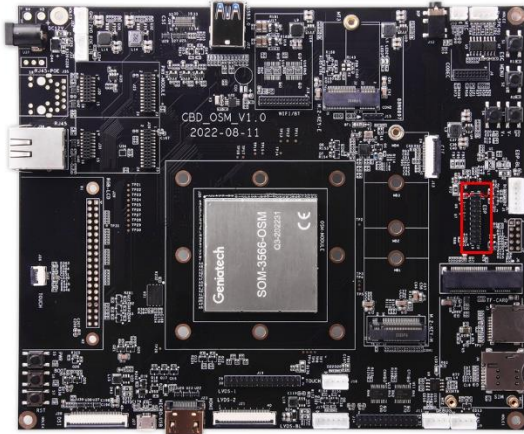
Pin NO	Definition
1	CAN2_L
2	GND
3	CAN2_H
4	NC

JTAG Connector (J2)



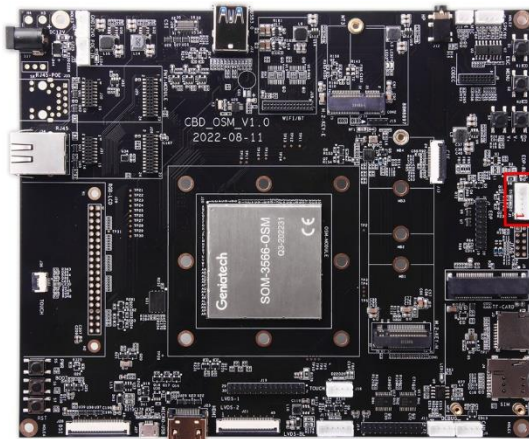
Pin NO	Definition	Pin NO	Definition
1	VDD_1V8	2	JTAG_TMS
3	GND	4	JTAG_TCK
5	GND	6	JTAG_TDO
7	NC	8	JTAG_TDI
9	JTAG_nTRST	10	SYS_nRST

eDP Connector (J7)



Pin NO	Definition	Pin NO	Definition
1	EDP_PANELVCC	2	EDP_PANELVCC
3	GND	4	GND
5	eDP_A_LANE0_N	6	eDP_A_LANE0_P
7	eDP_A_LANE1_N	8	eDP_A_LANE1_P
9	eDP_A_LANE2_N	10	eDP_A_LANE2_P
11	eDP_A_LANE3_N	12	eDP_A_LANE3_P
13	GND	14	GND
15	eDP_A_AUX_N	16	eDP_A_AUX_P
17	GND	18	GND
19	NC	20	eDP_A_BL_HPD

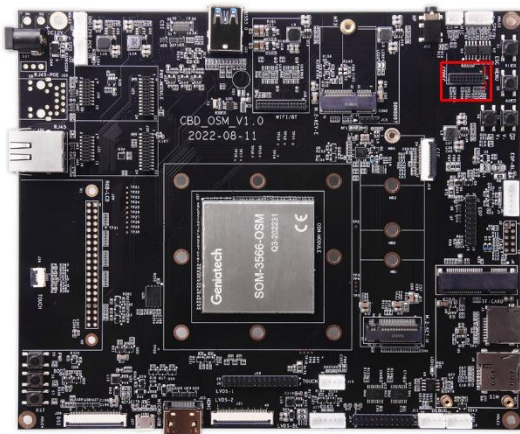
eDP Backlight connector (J1)



Pin NO	Definition
1	GND
2	GND
3	eDP_A_BL_PWM_3V3
4	eDP_A_BL_EN_3V3
5	VDD_BL
6	VDD_BL

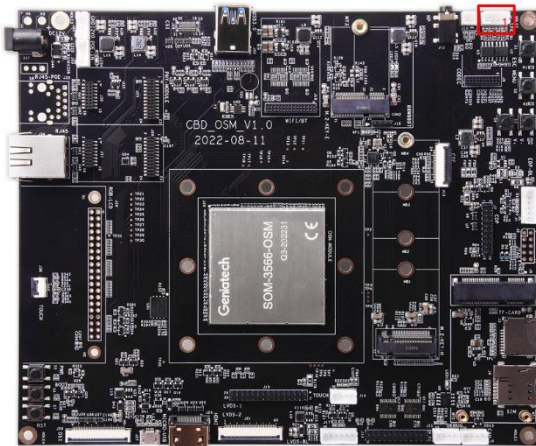
Pin NO	Definition	Pin NO	Definition
1	I2S_MCLK	2	I2S_LRCK
3	AGND	4	I2S_B_DATA_IN
5	I2S_B_DATA_OUT	6	GND
7	I2C_B_SDA	8	I2C_B_SCL
9	HP_IN_DET	10	GND
11	VDDA3V3_CODEEC	12	VDDA3V3_CODEEC
13	LINE_IN_L	14	LINE_IN_R

CODEC Module Connector (J8)



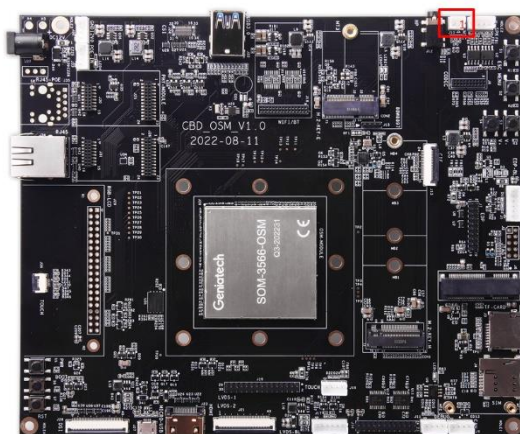
15	LOUT2	16	ROUT2
17	LOUT1	18	ROUT1
19	ADCVREF	20	VDDIO_CODEC

SPAEKER Connector (J5)



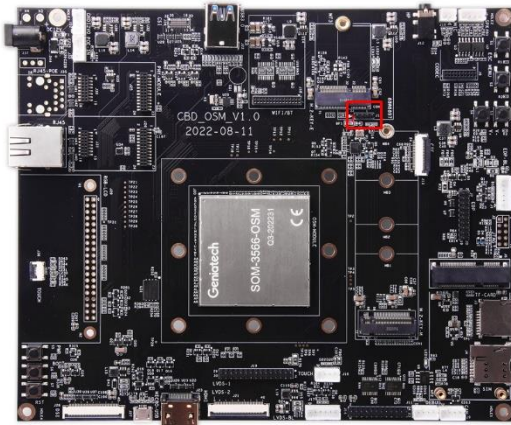
Pin NO	Definition
1	SPKL_P_CONN
2	SPKL_N_CONN
3	SPKR_P_CONN
4	SPKR_N_CONN

MIC Connector (J10)



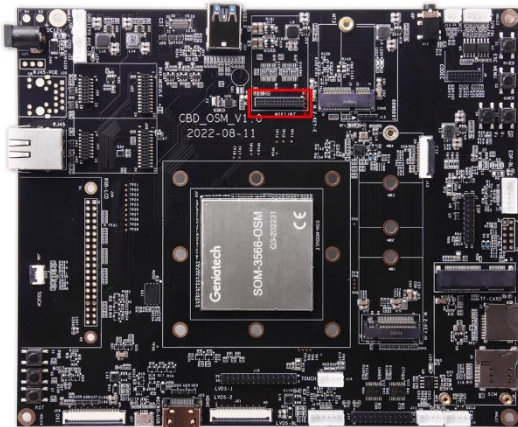
Pin NO	Definition
1	LINE_IN_L
2	LINE_IN_R

8897_WIFI module Connector (J15)



Pin NO	Definition
1	VCC5V0_USB
2	USB_B_D_N
3	USB_B_D_P
4	GND

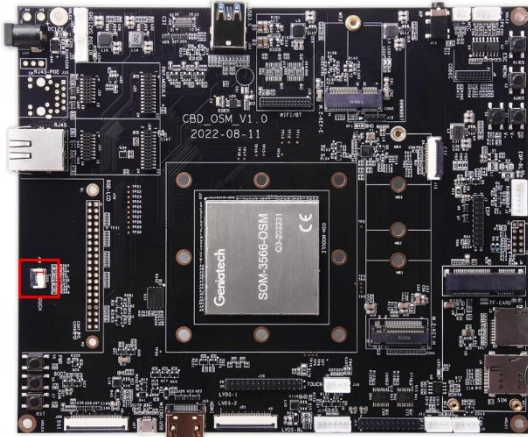
Wi-Fi/BT module Connector (J18)



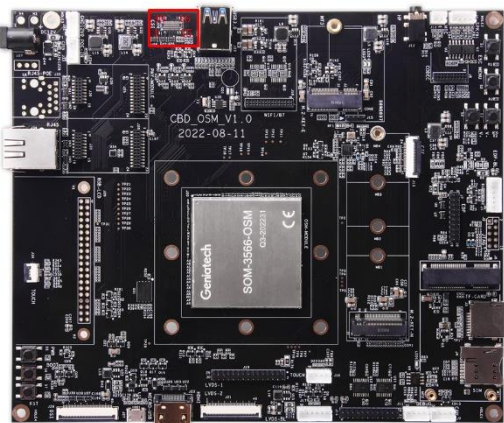
Pin NO	Definition	Pin NO	Definition
1	UART_A_RX	2	UART_A_TX
3	UART_A_RTS	4	UART_A_CTS
5	WIFI_PWREN	6	WIFI_WAKE_HOST
7	WIFI_REG_ON	8	HOST_WAKE_BT
9	BT_WAKE_HOST	10	BT_REG_ON
11	I2S_BITCLK	12	I2S_A_DATA_IN
13	I2S_A_DATA_OUT	14	I2S_LRCK
15	GND	16	SDIO_A_D1
17	SDIO_A_D0	18	SDIO_A_D2
19	SDIO_A_D3	20	SDIO_A_CLK
21	SDIO_A_CMD	22	GND
23	GND	24	PMIC_32KOUT_WIFI
25	VCCIO_WL	26	GND
27	VCCIO_3v3	28	VDD_3V3
29	VCCIO_3v3	30	VDD_3V3

I2C TOUCH Connector (J36)

Pin NO	Definition
1	I2C_A0_SCL
2	I2C_A0_SDA
3	VDD_3V3
4	TP_nRST_C
5	TP_nINT_C
6	GND

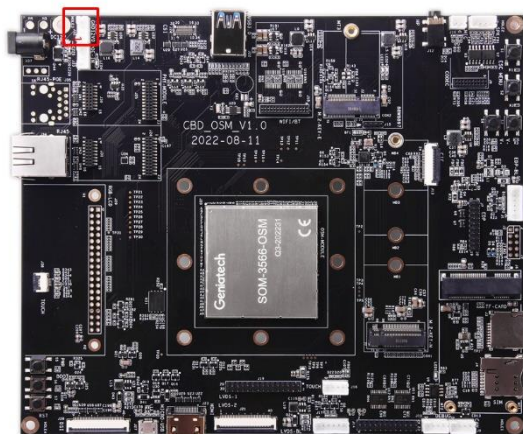


MIPI-CSI Camera Connector (J24)



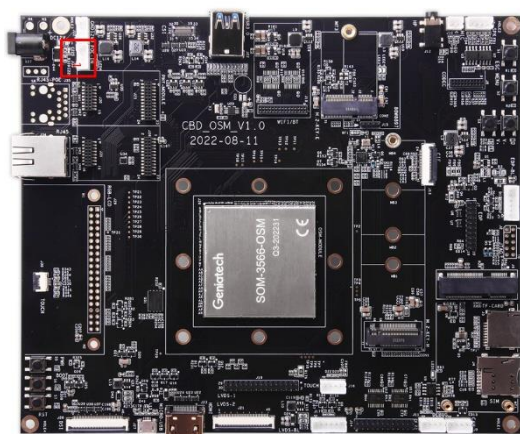
Pin NO	Definition	Pin NO	Definition
1	GND	30	CSI_CLOCK_P
2	CSI_DATA0_P	29	CSI_CLOCK_N
3	CSI_DATA0_N	28	GND
4	GND	27	CSI_DATA1_P
5	CSI_DATA2_P	26	CSI_DATA1_N
6	CSI_DATA2_N	25	GND
7	GND	24	VCC18_DVP
8	CSI_DATA3_P	23	GND
9	CSI_DATA3_N	22	VCC15_DVP
10	GND	21	I2C_MIPI_SDA
11	CAM_MCK	20	I2C_MIPI_SCL
12	CAM_Nrst	19	GND
13	GND	18	VCC28_DVP
14	CAM_PWR	17	AVDD28_DVP
15	GND	16	GND

POE OUT Connector (J32)



Pin NO	Definition
1	DC_12V
2	DC_12V
3	GND
4	GND

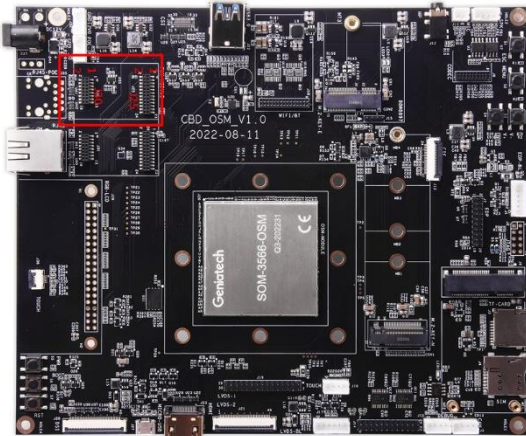
POE IN Connector (J33)



Pin NO	Definition
1	TR0_TAP
2	TR1_TAP
3	TR2_TAP
4	TR3_TAP

J25			
Pin NO	Definition	Pin NO	Definition
1	VDD_3V3	2	VDD_1V8
3	ETH_B_nINT	4	GND

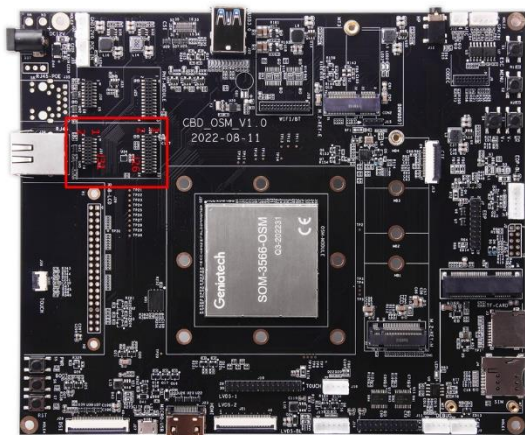
PHY-B Module Connector (J25 & J30)



5	GND	6	TP19
7	ETH_B_TX_CLK	8	GND
9	ETH_B_TX_EN	10	ETH_B_RXD_CLK
11	ETH_B_TXD0	12	ETH_B_RXD_DV
13	ETH_B_TXD1	14	ETH_B_RXD0
15	ETH_B_TXD2	16	ETH_B_RXD1
17	ETH_B_TXD3	18	ETH_B_RXD2
19	GND	20	ETH_B_RXD3
21	ETH_MDIO	22	GND
23	ETH_MDC	24	ETH_B_nRST
J30			
Pin NO	Definition	Pin NO	Definition
1	GBE1_LINK_ACT#	2	GBE1_LINK100#
3	GND	4	GBE1_LINK1000#
5	GND	6	GND
7	GBE1_MDI1+	8	GBE1_MDI0+
9	GBE1_MDI1-	10	GBE1_MDI0-
11	GND	12	GND
13	GBE1_MDI3+	14	GBE1_MDI2+
15	GBE1_MDI3-	16	GBE1_MDI2-

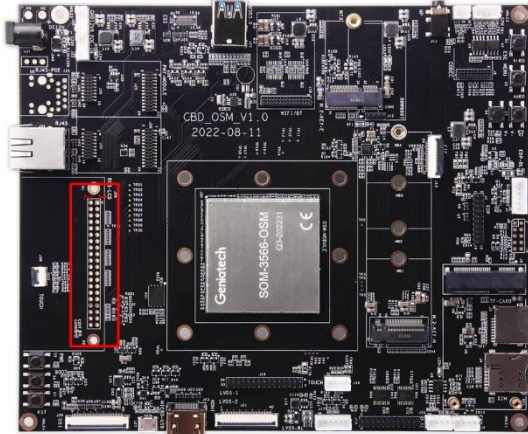
J26			
Pin NO	Definition	Pin NO	Definition
1	VDD_3V3	2	VDD_1V8
3	ETH_A_nINT	4	GND
5	GND	6	TP19
7	ETH_A_TX_CLK	8	GND
9	ETH_A_TX_EN	10	ETH_A_RXD_CLK
11	ETH_A_TXD0	12	ETH_A_RXD_DV
13	ETH_A_TXD1	14	ETH_A_RXD0
15	ETH_A_TXD2	16	ETH_A_RXD1
17	ETH_A_TXD3	18	ETH_A_RXD2
19	GND	20	ETH_A_RXD3

PHY-A Module Connector (J25 & J30)



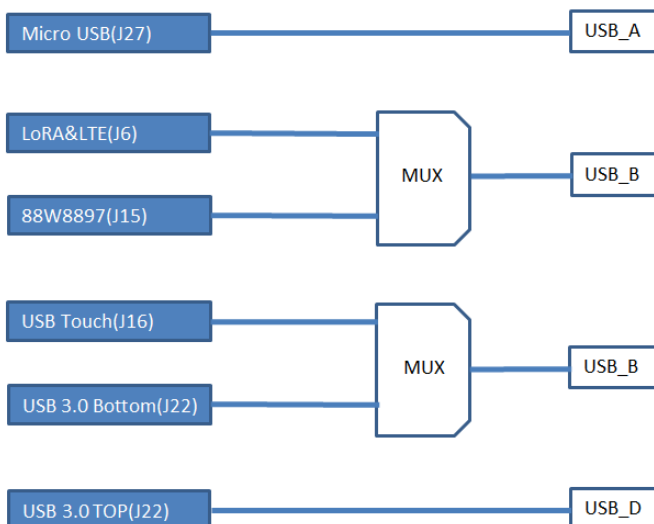
21	ETH_MDIO	22	GND
23	ETH_MDC	24	ETH_A_nRST
J31			
Pin NO	Definition	Pin NO	Definition
1	GBEO_LINK_ACT#	2	GBEO_LINK100#
3	GND	4	GBEO_LINK1000#
5	GND	6	GND
7	GBEO_MDII+	8	GBEO_MDIO+
9	GBEO_MDII-	10	GBEO_MDIO-
11	GND	12	GND
13	GBEO_MDI3+	14	GBEO_MDI2+
15	GBEO_MDI3-	16	GBEO_MDI2-

RGB LCD Connector (J29)



Pin NO	Definition	Pin NO	Definition
1	RGB_DE	2	GND
3	RGB_HSYNC	4	RGB_VSYNC
5	RGB_CLK	6	RGB_DISP
7	NC	8	NC
9	RGB_B4	10	RGB_B5
11	RGB_B2	12	RGB_B3
13	RGB_B0	14	RGB_B1
15	NC	16	NC
17	RGB_G4	18	RGB_G5
19	RGB_G2	20	RGB_G3
21	RGB_G0	22	RGB_G1
23	NC	24	NC
25	RGB_R4	26	RGB_R5
27	RGB_R2	28	RGB_R3
29	RGB_R0	30	RGB_R1
31	NC	32	NC
33	RGB_PWM	34	GND
35	I2C_A0_SCL	36	TP_nRST_C
37	NC	38	I2C_A0_SDA
39	TP_nINT_C	40	VCC_LCD0

USB Mapping description



Note: The USB signals of some interfaces are multiplexed, so these multiplexed interfaces cannot work simultaneously

5. SUPPORT FORMATS

Video Decoder

- H.265 HEVC/MVC Main10 Profile yuv420@L5.1 up to 4096x2304@60fps
- H.264 AVC/MVC Main10 Profile yuv400/yuv420/yuv422/@L5.1 up to 4096x2304@60fps
- VP9 Profile0/2 yuv420@L5.1 up to 4096x2304@60fps
- VP8 version2, up to 1920x1088@60fps
- VC1 Simple Profile@low, medium, high levels, Main Profile@low, medium, high levels, Advanced Profile@level0~3, up to 1920x1088@60fps
- MPEG-4 Simple Profile@L0~6, Advanced Simple Profile@L0~5, up to 1920x1088@60fps
- MPEG-2 Main Profile, low, medium and high levels, up to 1920x1088@60fps
- MPEG-1 Main Profile, low, medium and high levels, up to 1920x1088@60fps
- H.263 Profile0, levels 10-70, up to 720x576@60fps

Video Encoder

- H.264/AVC BP/MP/HP@level4.2, up to 1920x1080@60fps
- H.265/HEVC MP@level4.1, up to 1920x1080@100fps (4096x4096@10fps with TILE)
- Support YUV/RGB video source with rotation and mirror

6. Precautions for use

1. Relative humidity: ≤80% .
2. Operation temperature: Commercial field: 0~ 75℃ ;
3. Keep the Board away from static electricity.
4. Keep the Board away from water and other liquid.
5. Don't use long connect wires which may affect performance and image quality.