

D-3568 Mainboard Specification

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Changelog

1.0.0	2021-08-02	Chinese and English merged version.
1.0.1	2021-09-04	Add CAN mux and config notes.
1.1.0	2021-09-25	Modification based on V3.0 HW.
1.1.1	2021-11-28	Add MIPI DSI panel list item.
1.1.2	2022-02-21	Add dual-screen option notes.
1.1.3	2022-06-28	Change com0 default RS-485.
2.0.0	2022-07-14	Modification based on V4.0 HW
2.0.1	2022-07-27	Modify the default communication type of multiple serial ports.
3.0.0	2022-09-20	Modification based on V5.0 HW.
3.0.1	2022-11-18	Update WiFi6 module, configure dual-band WiFi by default
3.0.2	2022-11-25	Physical Dimensions Add Dimensional Drawings
3.0.3	2022-12-15	Modify the description of J51 USB2.0 pass-through interface
3.1.0	2023-07-31	Revised according to V6.0 hardware

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1 RK3568 Brief

The RK3568 chip has the characteristics of high performance and high expansion application. At present, it is the most cost-effective chip in the Rockchip product line, and its hardware specifications are in the leading position in the industry.

- CPU: Quad-core 64-bit Cortex-A55 architecture, built on the basis of high-end 22nm process, with a maximum frequency of 2.0GHz.
- GPU: ARM Mali-G52 2EE, supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, embedded high-performance 2D acceleration hardware
- NPU: Support 0.8Tops computing power
- Multimedia: support 4K 60fps H.265/H.264/VP9 video decoding; support 1080P 100fps H.265/H.264 video encoding; support 8M ISP, support HDR
- Display: support multi-screen different display; support eDp/HDMI2.0/MIPI/LVDS/24bit RGB/T-CON
- Interface: Support USB2.0/USB3.0/PCIE3.0/PCIE2.1/SATA3.0/QSGMII



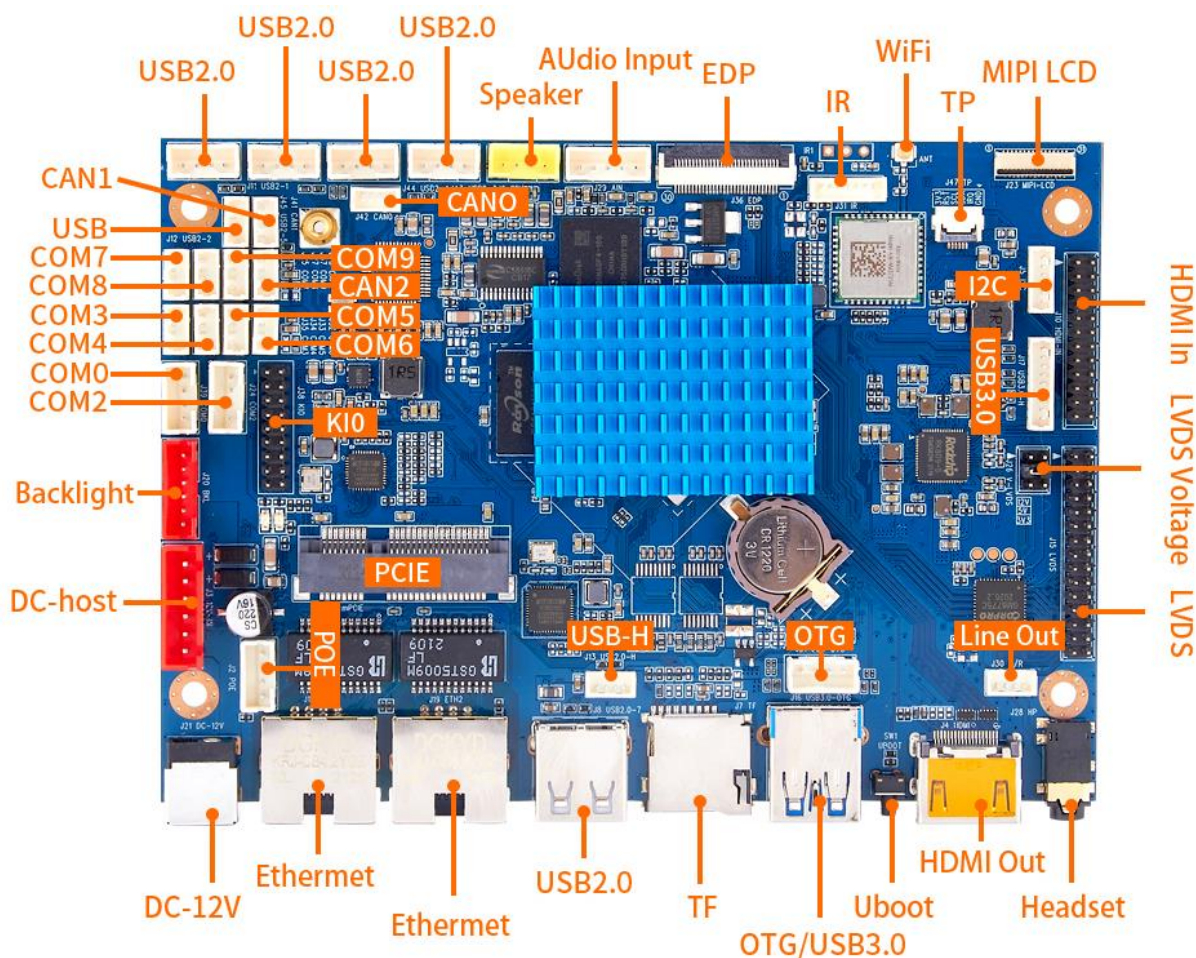
***Related functions are internal features of the CPU, please refer to the corresponding interface descriptions for motherboard support.**

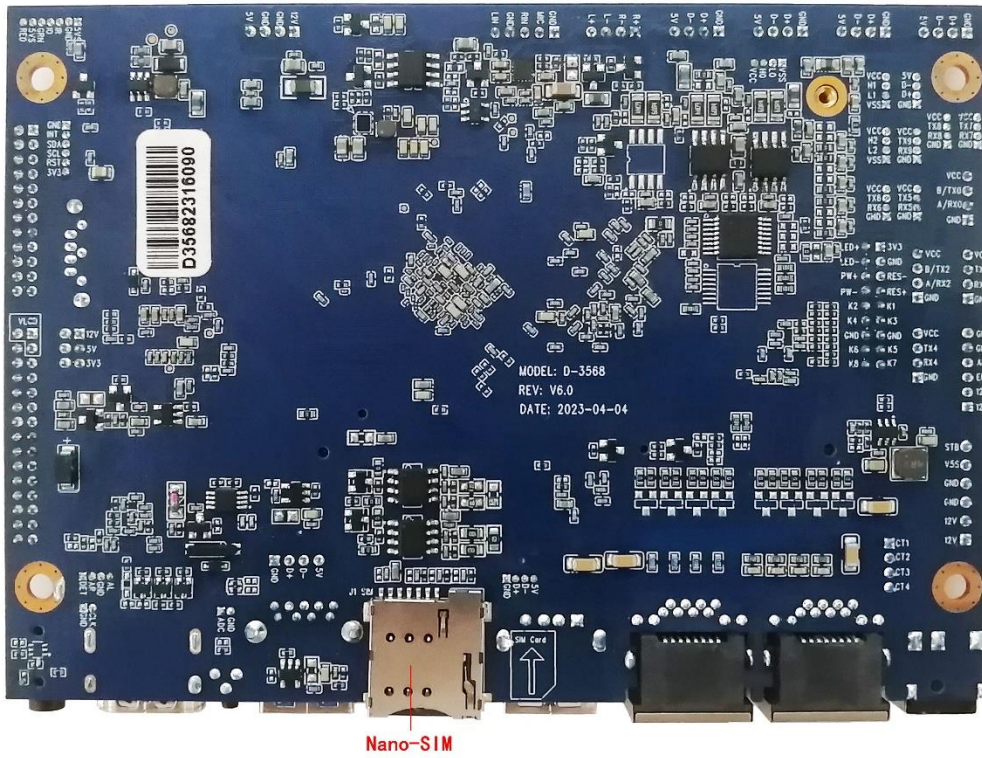
2 Product Overview

D-3568 mainboard is based on Rockchip RK3568 high-performance application processor platform. RK3568 is a low power, high performance processor for computing, personal mobile internet devices and other smart device applications. It integrates quad-core Cortex-A55 clocked at up to 2.0GHz, with superior computing performance, 2D/3D graphics processing capabilities and Full HD video codec capabilities. It perfectly supports 4Kx2K@60fps decoding and 4Kx2K HDMI output.

This mainboard is specially designed for **ultra-thin** applications with strict material selection and design. The compact size and rich interface facilitate its integration into the complete machine, bringing a smooth experience and superior performance to the final product. It can be applied to digital signage, touch interactive, consumer electronics, entertainment systems and other industries.

D-3568 V6.0 mainboard actual interface diagram as shown below.





3 Specification List

D-3568's system functions and interface features are shown in the following table.

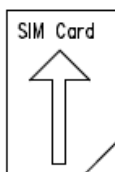
Function&Interface	Detailed Description
CPU	RK3568 Cortex-A55 quad-core, up to 2.0GHz
DDR	LPDDR4 2GB (4GB 8GB optional)
Storage	The default comes with an 16GB EMMC NAND chip that can scale up to 128GB
LVDS	30-pin industry-standard dual LVDS supporting VESA/JEITA format up to 1080P output
MIPI-DSI	31-Pin FPC MIPI-DSI display port supporting up to 1920x1200
HDMI Output	HDMI 2.0a standard display interface supports up to 4K output
HDMI Input	HDMI 1.4 standard video input interface supports 720P and 1080P signals
EDP	30-pin FPC EDP supporting 1~2 lanes format up to 1920x1200 output
Line Output	Support standard left and right channel line output (pin header+headphone jack)
Amplifier output	8 Ohm 6W Dual Audio Amplifier Output
MIC Input	Differential MIC input (pin header)
Line Input	Support standard left and right channel line input (pin header)
USB Interface	2 horizontal connectors (USB 3.0x1 and USB2.0x1), 7 pin headers USB 2.0
Serial Port	1 TTL, 2 TTL/485 compatible, 6 TTL/RS-232 compatible
Micro SD Card	Self-elastic micro SD card socket, up to 128GB capacity
Camera	Support USB camera within 8 million pixels
WiFi	Built-in high performance SDIO interface WiFi6 module, support IEEE 802.11 a/b/g/n/ac/ax Default configuration of dual-band WiFi
Bluetooth	Built-in high performance serial interface BT module with support for V2.1+EDR/BT v3.0/BT v3.0+HS/BT v4.0/BT v5.0
Ethernet	2 port 10/100/1000M Adaptive Ethernet RJ45 connector
MiniPCI-E 4G	Industry standard MiniPCI-E 4G module interface
Backlight Control	2 port Industry standard LCD backlight control header, support for backlight switch and brightness adjustment
Infrared RC	Standard infrared remote control receiver and infrared receiver pin header
GPIO Signals	8-way GPIO signals for such as GPIO buttons and/or 3.3V digital input/output
I2C Bus	I2C pin header and FPC for I2C capacitive screen and etc
CAN Bus	3 CAN pin header for CAN Bus peripherals
Real Time Clock	Ultra-low-power RTC circuit (CR1220 battery) with timer and alarm functionalities
LED Indicator	Red LED indicator for standby and green LED indicator for running
Buttons	Recovery mode button and power switch button
DC Input	Supports 9~15V wide voltage DC power input
Ambient Requirement	Working temperature -20°~70°, working humidity 0%~95% (non-condensing)
Physical Size	Length*Width*Height (135mm*95mm*9mm), PCB top side height 7mm

Function&Interface	Detailed Description
Android Version	Recommended Android 11, Linux Buildroot/Debian 10/Ubuntu-18.04 optional

4 Interface definition

➤ J1 Micro-SIM Card Socket

[J1] Micro-SIM Card Socket.



Note: The SIM card holder is a conventional middle card slot, please pay attention to insert the SIM card notch outward when inserting the card.

➤ J2 POE PD Header

[J2] POE PD Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	CT4	Transformer Center4
2	CT3	Transformer Center3
3	CT2	Transformer Center2
4	CT1	Transformer Center1

Note: The power of the POE power receiving interface comes from the J14 Ethernet port. This interface is connected to a POE power receiving conversion board for 12V power conversion. The current of the 12V power supply is affected by the power supply capacity of the POE switch and the conversion capacity of the adapter board. The typical current is 1~1.5A. This interface supports POE power supply equipment with 1/2 lines as positive and 3/6 lines as negative, and it can also connect to POE power supply equipment with 4/5 lines as positive and 7/8 lines as negative.

➤ J3 DC-12V Input Header

[J3] DC-12V Input Header (SIP 2.54mm-Square pad is pin 1).

Pin#	Definition	Note
1	12V	DC Power Input (9~15V)
2	12V	DC Power Input (9~15V)
3	GND	Power Ground

4	GND	Power Ground
5	V5S	5V Standby Power Input
6	STB	Standby Enable Output (0V for Standby)

➤ J4 HDMI Output Socket

[J4] Standard HDMI Output Socket.

➤ J5 I2C Bus Header

[J5] I2C Bus Header (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	Digital Ground
2	INT	Interrupt input (3.3V level)
3	SDA	I2C Bus data
4	SCL	I2C Bus clock signal
5	RST	Mainboard reset output (3.3V level)
6	3V3	Power output supply 3.3V

➤ J6 m-PCIE 4G Socket

[J6] Standard m-PCIE 4G Socket.

➤ J7 TF Card Socket

[J7] Standard TF Card Socket.

➤ J8 USB Type A Socket

[J8] USB Type A Socket.

➤ J9 Speaker Header

[J9] Speaker Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
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1	OUTP_R	Speaker right channel +
2	OUTN_R	Speaker right channel -
3	OUTN_L	Speaker left channel -
4	OUTP_L	Speaker left channel +

➤ J10 HDMI Input Header

[J10] HDMI input header based on MIPI CSI format [DIP 2.0mm-Square pad is pin 1].

Pin#	Definition	Pin#	Definition
1	5V	2	PON
3	GND	4	GND
5	MIPI_D0-	6	MIPI_D0+
7	MIPI_D1-	8	MIPI_D1+
9	MIPI_D2-	10	MIPI_D2+
11	MIPI_D3-	12	MIPI_D3+
13	MIPI_CLK-	14	MIPI_CLK+
15	INT	16	STB
17	GND	18	RST
19	I2S_LRCK	20	I2S_SCLK
21	I2S_CLK	22	I2S_SDI
23	I2C_SDA	24	I2C_SCL

➤ J11 USB 2.0 Host Header

[J11] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

➤ J12 USB 2.0 Host Header

[J12] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-

4	5V	Power output 5V
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➤ J13 USB 2.0 Host Direct Header

[J13] USB 2.0 Host Direct Header (SIP 1.25mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

Note: This interface is connected to the internal USB2_Host3 USB signal, which is a high-speed direct USB 2.0 Host interface.

➤ J14 RJ45 Internal Gbit Ethernet Jack

[J14] RJ45 Internal Gbit Ethernet Jack.

➤ J15 LVDS Header

[J15] Dual LVDS header [DIP 2.0mm-Square pad is pin 1].

Pin#	Definition	Pin#	Definition
1	VLCD	2	VLCD
3	VLCD	4	GND
5	GND	6	GND
7	RX00-	8	RX00+
9	RX01-	10	RX01+
11	RX02-	12	RX02+
13	GND	14	GND
15	RX0C-	16	RX0C+
17	RX03-	18	RX03+
19	RXE0-	20	RXE0+
21	RXE1-	22	RXE1+
23	RXE2-	24	RXE2+
25	GND	26	GND
27	RXEC-	28	RXEC+
29	RXE3-	30	RXE3+

➤ J16 USB 3.0 OTG Type A

[J16] USB 3.0 OTG Horizontal Type A Jack (Standard jack).

Note: This interface is connected to the internal USB3_OTG0 signal, and it defaults to the firmware burning port at the moment of power-on, which can be connected to a PC for software burning; after entering Android, it can be set as a USB ADB debugging port or a normal USB Host port through software.

➤ J19 RJ45 Extended Gbit Ethernet Jack

[J19] RJ45 Extended Gbit Ethernet Jack.

➤ J20 Backlight Control Header

[J20] Backlight Control Header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	12V	If the current exceeds 2A, external 12V is recommended
2	12V	If the current exceeds 2A, external 12V is recommended
3	EN	The default output is 5V
4	ADJ	3.3V square wave (1KHz Freq.)
5	GND	Power Ground
6	GND	Power Ground

➤ J21 DC-12V Socket

[J21] DC-12V power socket, positive outer and negative inner, inner pin diameter 2.0mm, outer ring diameter 5.5mm.

➤ J23 MIPI Panel FPC Connector

[J23] MIPI Panel FPC Connector (FPC-0.3mm 31-Pin Top/Bottom Contact).



Pin#	Definition	Note
1	LED+	LED 阳极 LED Anode

2	LED+	LED Anode
3	LED+	LED Anode
4	NC	Not Connected
5	LED-	LED Cathode
6	LED-	LED Cathode
7	LED-	LED Cathode
8	LED-	LED Cathode
9	GND	Digital Ground
10	GND	Digital Ground
11	MIPI_D2P	+MIPI differential lane2
12	MIPI_D2N	-MIPI differential lane2
13	GND	Digital Ground
14	MIPI_D1P	+MIPI differential lane1
15	MIPI_D1N	-MIPI differential lane1
16	GND	Digital Ground
17	MIPI_CKP	+MIPI differential clock output
18	MIPI_CKN	-MIPI differential clock output
19	GND	Digital Ground
20	MIPI_D0P	+MIPI differential lane0
21	MIPI_D0N	-MIPI differential lane0
22	GND	Digital Ground
23	MIPI_D3P	+MIPI differential lane3
24	MIPI_D3N	-MIPI differential lane3
25	GND	Digital Ground
26	VDD-1V8	Power supply output 1.8V Power Supply 1.8V (not connected by default, need to add welding R9232 0R)
27	RESET	Reset Signal in 1.8V
28	GND	Digital Ground
29	VDD-1V8	Power Supply 1.8V
30	VDD-3V3	Power Supply 3.3V
31	VDD-3V3	Power Supply 3.3V

➤ J24 Data Serial Port 0

[J24] Built-in Serial Port 0 (SIP 2.0mm-Square pad is pin 1). The output level is RS-485 by default and it could be setup to RS-232 if required (RS-232 if U62 mounted, RS-485 if U9823 monted). **The related software device node name is ttyS0.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX A	Data Receive or A (TTL or RS-232 or RS-485)

3	TX B	Data transmission or B (TTL or RS-232 or RS-485)
4	VCC	Power output (Default 3.3V, 5V option)

➤ J25 Data Serial Port 2

[J25] Built-in Serial Port 2 (SIP 2.0mm-Square pad is pin 1). The output level is TTL by default and it could be setup to RS-232 if required (RS-232 if U62 mounted, RS-485 if U67 monted). **The related software device node name is ttyS2.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX A	Data Receive or A (TTL or RS-232 or RS-485)
3	TX B	Data transmission or B (TTL or RS-232 or RS-485)
4	VCC	Power output (Default 3.3V, 5V option)

Note: If you need to use the debugging serial port 2 as a data serial port, please contact the supplier to obtain the customized software; this serial port will output the startup information in the first 5 seconds of power on (the upper or lower machine should handle this kind of data fault tolerance).

➤ J26 LVDS Voltage Header

[J26] LVDS Voltage Header (DIP 2.0mm-Square pad is pin 1). If pin 1 and 2 are jumper shorted, the VLCD of J15 is 12V. If pin 3 and 4 are jumper shorted, the VLCD of J15 is 5V. If pin 5 and 6 are jumper shorted, the VLCD of J15 is 3.3V. Please adjust the jumper position according to the actual logic voltage of the LCD screen. Be careful not to jumper to the wrong position or it may damage the LCD screen and the motherboard circuit.

➤ J27 Data Serial Port 3

[J27] Built-in Serial Port 3 (SIP 2.0mm-Square pad is pin 1). The output level is RS-232 by default and it could be setup to TTL if required (RS-232 if U9824 mounted). **The related software device node name is ttyS3.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)

4	VCC	Power output (Default 3.3V, 5V option)
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➤ J28 4-Pole HP/Mic Jack

[J28] 4-Pole 3.5mm Headphone&Micphone Jack (CTIA Standard jack). It is the same signals with J29/J30. It support insert dection for speaker mute.



➤ J29 Audio Input Header

[J29] Audio input header (SIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Note
1	GND	Audio Ground
2	MIC	Mono microphone input
3	RIN	Line input right channel
4	GND	Audio Ground
5	LIN	Line input left channel

➤ J30 Audio Line Output

[J30] Audio Line Output (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	DET	Headphone detect signal
2	AR	Stereo output right channel
3	GND	Audio Ground
4	AL	Stereo output left channel

➤ J31 Remote Control & LED Header

[J31] Remote Control & LED Header (SIP 1.25mm-Square pad is pin 1).

Pin#	Definition	Note
1	5VS	Power output 5V standby
2	GND	Digital Ground
3	IR	5V level Irda remote control input signal

4	IO	3.3V level GPIO input signal
5	GREEN	Running indicator for external green LED
6	5VS	Power output supply 5V standby
7	RED	Standby indicator for external red LED

➤ J32 Data Serial Port 4

[J32] Built-in Serial Port 4 (SIP 2.0mm-Square pad is pin 1). The output level is RS-232 by default and it could be setup to TTL if required (RS-232 if U9824 mounted). **The related software device node name is ttyS4.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)
4	VCC	Power output (Default 3.3V, 5V option)

➤ J33 Data Serial Port 5

[J33] Built-in Serial Port 5 (SIP 1.25mm-Square pad is pin 1). The output level is TTL by default and it could be setup to RS-232 if required (RS-232 if U9825 mounted). **The related software device node name is ttyS5.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)
4	VCC	Power output (Default 3.3V, 5V option)

➤ J34 Data Serial Port 6

[J34] Built-in Serial Port 6 (SIP 1.25mm-Square pad is pin 1). The output level is TTL by default and it could be setup to RS-232 if required (RS-232 if U9825 mounted). **The related software device node name is ttyS6.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)

4	VCC	Power output (Default 3.3V, 5V option)
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Note: J32 serial port 6 is multiplexed with TF card, the default function TF, this serial port cannot be used.

➤ J35 Data Serial Port 7

[J35] Built-in Serial Port 7 (SIP 1.25mm-Square pad is pin 1). The output level is RS-232 by default and it could be setup to TTL if required (RS-232 if U9826 mounted). **The related software device node name is ttyS7.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)
4	VCC	Power output (Default 3.3V, 5V option)

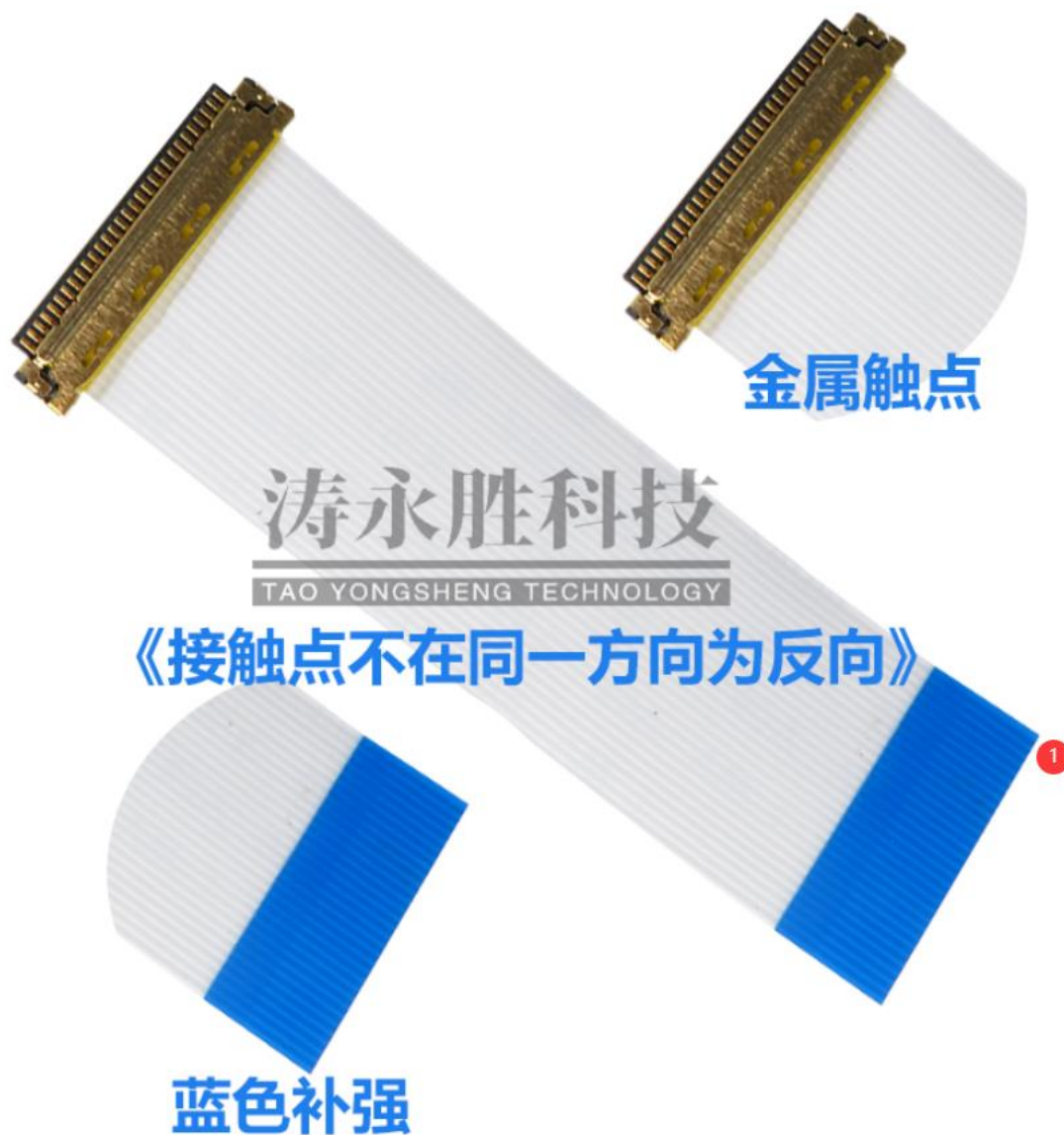
➤ J36 eDP Output FPC Header

[J36] eDP Panel FPC Connector (FPC-0.5mm 30-Pin Bottom Contact).

Pin#	Definition	Note
1	NC	Not Connected
2	GND	Digital Ground
3	EDP_TX1N	TX1- differential output
4	EDP_TX1P	TX1+ differential output
5	GND	Digital Ground
6	EDP_TX0N	TX0- differential output
7	EDP_TX0P	TX0+ differential output
8	GND	Digital Ground
9	EDP_AUXP	AUX+ differential channel
10	EDP_AUXN	AUX- differential channel
11	GND	Digital Ground
12	LCD_VCC	Logic Power (3.3V or 5V)
13	LCD_VCC	Logic Power (3.3V or 5V)
14	NC	Not Connected
15	GND	Digital Ground
16	GND	Digital Ground
17	NC	Not Connected
18	BL_GND	Backlight LED Ground
19	BL_GND	Backlight LED Ground

20	BL_GND	Backlight LED Ground
21	BL_GND	Backlight LED Ground
22	BL_EN	Backlight Enable
23	BL_PWM	PWM Backlight Brightness PWM
24	NC	Not Connected
25	NC	Not Connected
26	BL_POWER	Backlight Power (12V)
27	BL_POWER	Backlight Power (12V)
28	BL_POWER	Backlight Power (12V)
29	BL_POWER	Backlight Power (12V)
30	NC	Not Connected

Note: For the eDP screen cable, please refer to the following picture. The conventional eDP screen can use the reverse transfer cable. Please refer to the manual of the screen for details.



➤ J37 Data Serial Port 8

[J37] Built-in Serial Port 8 (SIP 1.25mm-Square pad is pin 1). The output level is RS-232 by default and it could be setup to TTL if required (RS-232 if U9826 mounted). **The related software device node name is ttyS8.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)
4	VCC	Power output (Default 3.3V, 5V option)

➤ J38 Keypad and Switch Header

[J38] Keypad and Switch header (DIP 2.0mm-Square pad is pin 1).

Pin#	Definition	Pin#	Definition
1	3V3	2	LED+
3	GND	4	LED-
5	RES-	6	PW+
7	RES+	8	PW-
9	K1	10	K2
11	K3	12	K4
13	GND	14	GND
15	K5	16	K6
17	K7	18	K8

As shown below: Pin 6 and 8 as short press to turn screen on or off and long press to power down (software support required); Pin 5 and 7 as reboot; Pin 2 and 4 as LED indicator (or use pin1 and 3 directly). K1 as Volume Up, K2 as Volume Down, K3 as Sleep/Wake, K4 as Return, K5 as HOME (software support required), K6 ~ K8 as customized signal.

If K1~K8 are opened for GPIO use, the corresponding numbers are K1=#88, K2=#107, K3=#89, K4=#108, K5=#90, K6=#109, K7=#91, K8=#110.

17-K7	15-K5	13-GND	11-K3	9-K1	7-RES+	5-RES-	3-GND	1-3V3
18-K8	16-K6	14-GND	12-K4	10-K2	8-PW-	6-PW+	4-LED-	2-LED+

➤ J39 Data Serial Port 9

[J39] Built-in Serial Port 9 (SIP 1.25mm-Square pad is pin 1). The output level is TTL only. **The related software device node name is ttyS9.**

Pin#	Definition	Note
1	GND	Digital Ground
2	RX	Data receive (TTL or RS-232 level)
3	TX	Data transmit (TTL or RS-232 level)
4	VCC	Power output (Default 3.3V, 5V option)

➤ J40 CAN Header 0

[J40] CAN Header 0 (SIP 1.25mm-Square pad is pin 1)

Pin#	Definition	Note
1	VSS	Digital Ground
2	L0	L Data
3	H0	L Data
4	VCC	Power output (Default 3.3V, 5V option)

Note: J40 CAN0 and TF card are multiplexed, the default function is TF, and this CAN port cannot be used; if you need to use this interface, please solder the U9500 chip; if you need three CAN channels, please solder this chip.

➤ J41 CAN Header 1

[J41] CAN Header 1 (SIP 1.25mm-Square pad is pin 1)

Pin#	Definition	Note
1	VSS	Digital Ground
2	L1	L Data
3	H1	L Data
4	VCC	Power output (Default 3.3V, 5V option)

Note: When J40 CAN0 is closed, the corresponding interface of the CAN1 port software is can0; if you need to use this interface, please solder the U9827 chip; if you need a CAN channel, please solder this chip by default.

➤ J42 CAN Header 2

[J42] CAN Header 2 (SIP 1.25mm-Square pad is pin 1)

Pin#	Definition	Note
1	VSS	Digital Ground
2	L2	L Data
3	H2	L Data
4	VCC	Power output (Default 3.3V, 5V option)

Note: When J40 CAN0 is closed, the corresponding interface of the CAN2 port software is can1; if you need to use this interface, please solder the U9828 chip; if you need two CAN channels, please solder this chip.

➤ J43 USB 2.0 Host Header

[J43] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

➤ J44 USB 2.0 Host Header

[J44] USB 2.0 Host Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

➤ J45 USB 2.0 Host Header

[J45] USB 2.0 Host Header (SIP 1.25mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

➤ J47 I2C FPC Header

[J47] I2C Bus Header (FPC-0.5mm Bottom Contact Triangle Pin-1).

Pin#	Definition	Note
1	GND	Digital Ground
2	INT	Interrupt input (3.3V level)
3	SDA	I2C Bus data
4	SCL	I2C Bus clock signal

5	RST	Mainboard reset output (3.3V level)
6	3V3	Power output supply 3.3V

➤ J51 USB 2.0 Host Direct Header

[J51] USB 2.0 Host Direct Header (SIP 2.0mm-Square pad is pin 1)

Pin#	Definition	Note
1	GND	Digital Ground
2	D+	USB Differential Data+
3	D-	USB Differential Data-
4	5V	Power output 5V

Note: This interface is connected to the internal USB3_Host1 USB signal, which is a high-speed direct USB 2.0 Host interface.

➤ J52 Backlight Control Header 2

[J52] Backlight Control Header (SIP 2.0mm- Triangle pad is pin 1).

Pin#	Definition	Note
1	12V	If the current exceeds 2A, external 12V is recommended
2	12V	If the current exceeds 2A, external 12V is recommended
3	EN	The default output is 5V
4	ADJ	3.3V square wave (1KHz Freq.)
5	GND	Power Ground
6	GND	Power Ground

➤ J53 SATA Hard Disk Socket

[J53] SATA Hard Disk Standard 7-Pin Data Cable Socket.

➤ J54 SATA Power Supply Header

[J54] SATA Power Supply Header (SIP 2.5mm-Square pad is pin 1)

Pin#	Definition	Note
1	12V	Power output 12V
2	GND	Power Ground
3	GND	Power Ground

4	5V	Power output 5V
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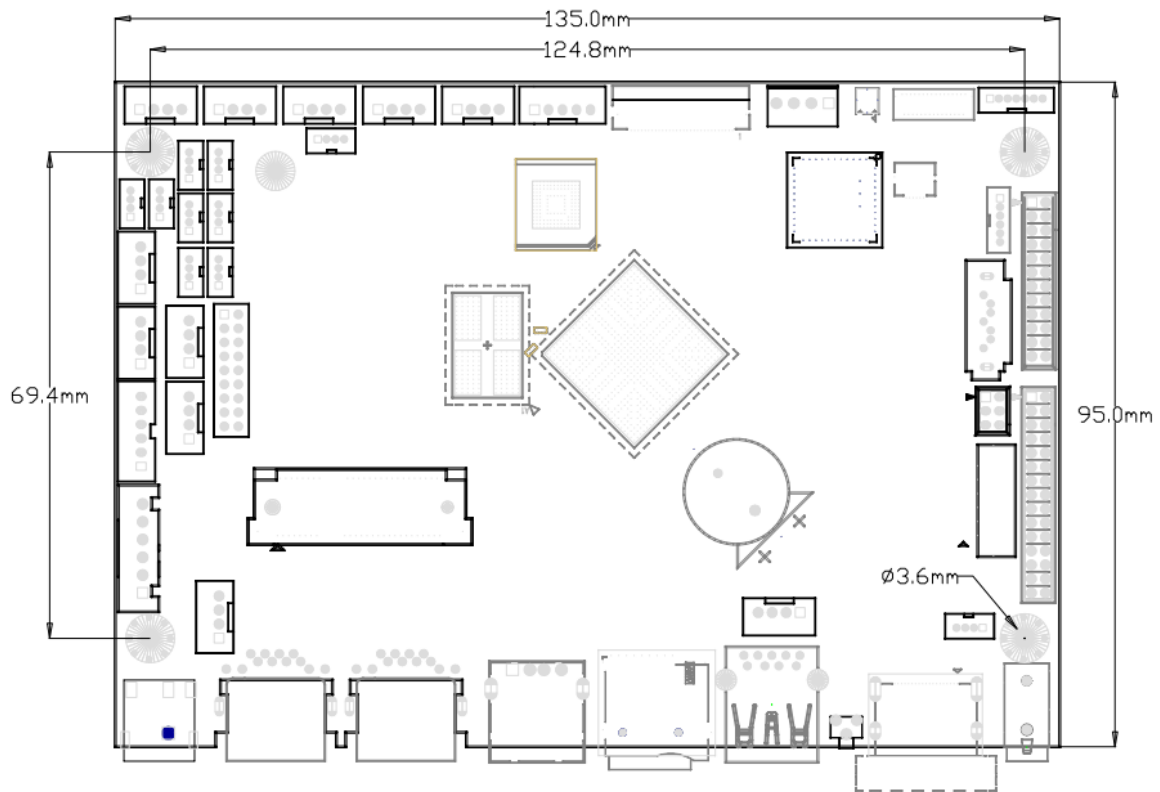
Note: The 12V and 5V maximum output current of this interface does not exceed 1A. For 3.5-inch large hard drives, if the power supply is insufficient, it is recommended to use an external power supply for power supply!

➤ SW1 Recovery Mode Button

[SW1] On-board recovery mode button. First press and then hold for about 3-second while power on will enter the recovery mode.

5 Physical Size

The PCB size is 135mm*95mm, PCBA height is 7mm, fixed hole diameter is 3.6mm. The corresponding physical size parameters are shown in the figure below. For detailed size information, please consult the manufacturer for DXF file.



6 Assembly Precautions

Please note the following key points when using the D-3568 mainboard:

1. Relative humidity of this product: 10% to 90%, no condensation.
2. The working temperature of this product: -20°~70°.
3. This storage temperature of this product: -40 ° ~ 70 °.
4. Anti-static treatment is required during assembly and transportation of this product.
5. The board interface connection cable must not be too long. Otherwise, the signal quality may be affected.
6. Never allow the board to be distorted or heavily stressed during assembly.
7. Do not short circuit between mainboard and other peripherals.
8. When connecting to external LVDS or eDP LCD screen, pay attention to whether the screen voltage and current meet the requirements, and pay attention to the screen connector pin-1 direction.
9. When connecting to external LVDS or eDP LCD screen, pay attention to whether the backlight voltage and current meet the requirements. If the backlight power of the LCD screen is above 20W, it is recommended to use a separate power board for backlight power supply
10. When connecting to peripherals using USB, GPIO, Serial, I2C, SPI, HDMI, etc., pay attention to whether the IO voltage level and current of the peripheral meet the requirements. When using the power pin on these connectors to supply power to the external circuit, the regular power pin must not exceed 100mA, and the USB power pin must not exceed 500mA. Level matching is also required when the serial port is connected to peripherals (3.3V TTL level, RS-232 level and RS-485 level)
11. Please connect the power to the power input socket or connector, and evaluate whether the current of the whole board meets the requirements according to the total peripherals. It is strictly forbidden to directly supply power from the backlight connector.
12. The communication module should be mounted at least 5mm away from the metal housing to avoid signal interference.

7 Software Guide

The D-3568 mainboard supports dual-screen different display combinations of any two outputs of LVDS/eDP/MIPI/HDMI! For related output combinations, please consult the manufacturer to provide the corresponding different display patches.

Primary screen	Secondary screen
LVDS	HDMI
EDP	HDMI
LVDS	EDP
LVDS	MIPI
EDP	MIPI
MIPI	LVDS
MIPI	EDP

D-3568 motherboard internal serial port and extended serial port software port numbers are as follows:

Port	Software Device Node
J24	/dev/ttyS0
J25	/dev/ttyS2
J27	/dev/ttyS3
J32	/dev/ttyS4
J33	/dev/ttyS5
J34	/dev/ttyS6
J35	/dev/ttyS7
J37	/dev/ttyS8
J39	/dev/ttyS9