Document number:201200722002E

F68 Android industrial motherboard Specifications

Version	Description	Modification Date
V1.0	Create document	2020-07-22
V2.0	Modify document	2023-06-05

Document version: V1.0

Sales2@dewod.com

Index

Directory

1. Introduction

F68 is DEWO's latest high-performance Android embedded industrial computer designed based on the ROCKCHIP super processor RK3568. The RK3568 processor uses ARM's super-performance quad-core 64-bit Cortex-A55, with a main frequency of up to 2.0GHz 22nm, and the GPU uses ARM's most powerful graphics processor G52 2EE, which is one of the most powerful processors on the market. . In addition, RK3568 also integrates a powerful video codec processor and rich display interfaces, which is especially suitable for video-based application fields. Integrated 2GB (4GB optional) memory, 16GB (other capacities optional 32G) EMMC5.1 Flash, rich network interfaces (10/100/1000 Ethernet, WIFI 802.11b/g/n, BT4.0, standard PCIe Interface 4G expansion, 4G routing function), integrating HDMI, single/dual channel LVDS, single/dual channel MIPI, EDP rich display interfaces and human-computer interaction interfaces. It can be widely used in interactive clients, media playback, advertising, information systems, digital signage, intelligent Internet of Things, intelligent medical care, security and other fields.

2. Function description

Main hardware indicators	
CPU	Processor: RK3568
GPU	CPU: 4-core Cortex-A55 architecture, maximum frequency 2.0GHz
NPU	GPU: ARM G52 2EE
Memory/Storage	Standard 2G (4G optional) / EMMC5.1 standard 16G (32G optional)
Built-in ROM	32KB EEPROM
eDP output	eDP interface LCD screen that drives a maximum resolution of 4KX2K
MIPI output	Single/dual channel MIPI output
Audio and video output	Support left and right channel output 8R/5W power amplifier
USB interface	2* USB3.0 channels (support OTG/HOST switching) 4* USB2.0 channels (PH2.0--4PIN), a total of 6 USB channels
Serial port	2* RS232, 3* TTL (1 channel is DEBUG debugging port), 1* 485, a total of 6 channels of serial ports
Mipi Camera	Dual channel supports dual camera 40pin FPC interface,

	supports 200w dual Camera
WIFI、BT	Built-in WIFI, BT4.0 (optional) WIFI module, supports WIFI hotspot sharing during 4G communication
3G/4G	Built-in WCDMA, EVDO, 4G full network expansion interface
Ethernet	2, adaptive 10M/100M/1000M Ethernet
Fill light	Support three-color lights
video playback	Support wmv, avi, flv, rm, rmvb, mpeg, ts, mp4, etc.
Image Format	Support BMP, JPEG, PNG, GIF
Watchdog	support
RTC real time clock	support
Timer switch	support
I2C	support
button	Reset and upgrade keys
System Upgrade	Support local USB upgrade
operating system	Android11 or above

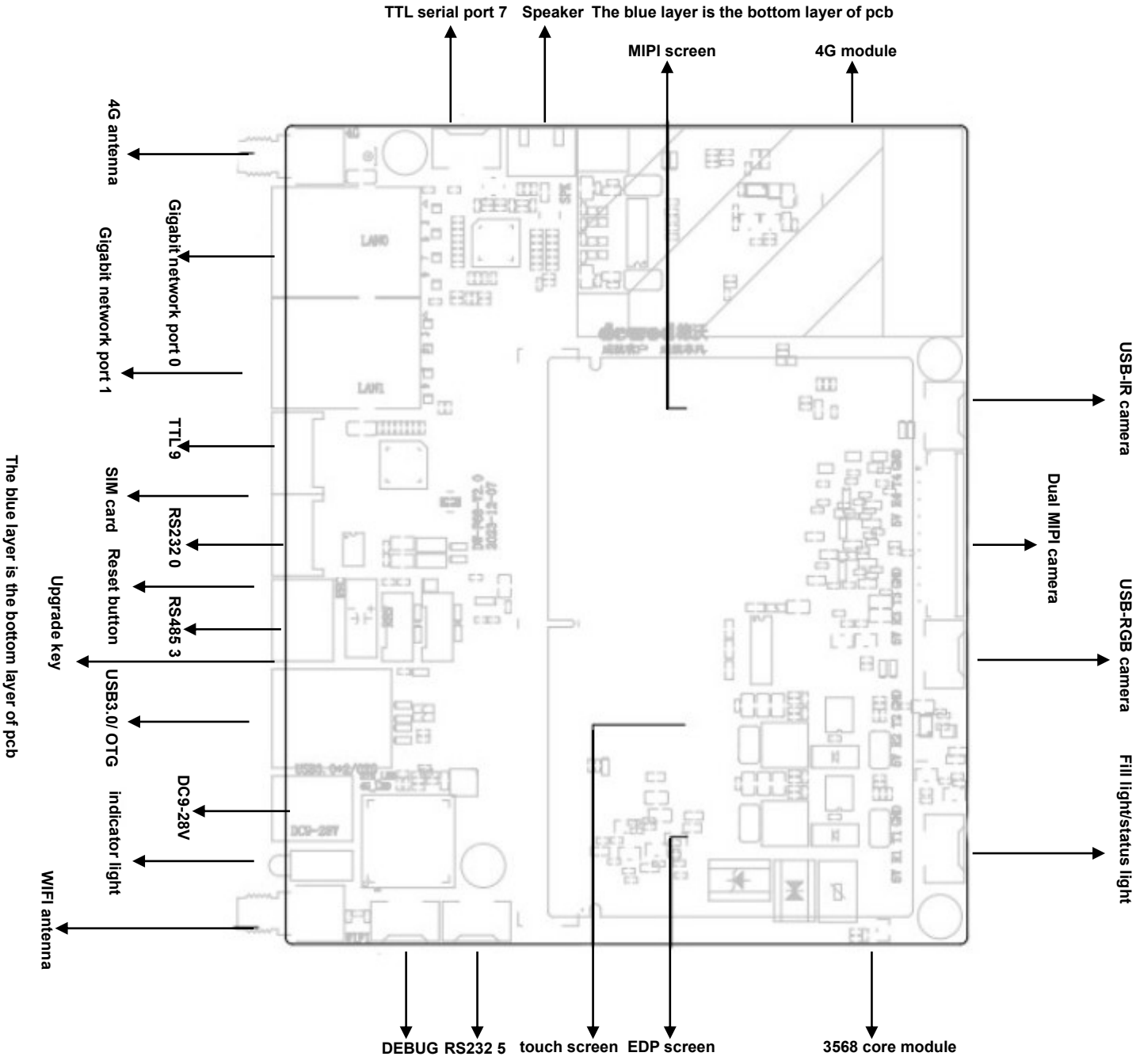
3. Software system

- Operating system: Android 11or Up
- Language: Simplified Chinese, Traditional Chinese, English, French, German, Italian, Japanese, Korean, Russian, Spanish, Polish, Czech and other languages
- Browser: UCWeb, Google and other browsers
- Online entertainment: supports online videos, TV, movies, music, and radio stations
- Office software: WORD, EXCEL, POWERPOINT, PDF, TXT
- Games: Built-in 3D acceleration, which can perfectly support games with 3D effects
- Scalability: Google market has more than 20,000 excellent software free downloads
- Decoding resolution: maximum resolution 1080P @60fps
- Video output: maximum support LVDS 1920*1200
- Video decoding: Mpeg1, Mpeg2, Mpeg4 SP/ASP GMC, H.263 including sorenson spark, H.264
- BP/MP/HP, VP8, WMV9/VC1, JPEG/MJPEG, etc.
- Audio format: supports MP3, WMA, MP2, OGG, AAC, M4A, MA4, FLAC, APE, 3GP, WAV format audio, and supports song list function
- Recording format: supports MP3, WMA format recording
- Picture formats: JPG, BMP, PNG, GIF and other picture formats, support

rotation/slideshow

- Image resolution: up to 4096*4096
- Text format: TXT, PDF, HTML, HTM, CHM, UMD and other formats

4. Interface definition



◆**Power input interface**

Powered by a 9-28V wide voltage DC power supply. Interface DC-5521.

Work indicator light

S.N.	Definition	Attribute	Description
1		Green light	System instructions
2		Yellow light	4G work instructions

EDP interface

Universal EDP port definition, screen voltage can be selected through jumper cap, optional support for 3.3V/5V/12V screen power supply

S.N.	Definition	Attribute	Description
1	NC		
2	GND	Ground	Ground
3	TX1N	Input/outpt	EDP data channel 1 positive
4	TX1P	Input/outpt	EDP data channel 1 negative
5	GND	Ground	Ground
6	TX0N	Input/outpt	EDP data channel 0 positive
7	TX0P	Input/outpt	EDP data channel 0 negative
8	GND	Ground	Ground
9	AUXP	Input/outpt	EDP clock channel positive
10	AUXN	Input/outpt	EDP clock channel negative
11	GND	Ground	Ground
12	VDD	Power supply	3.3V
13	VDD	Power supply	3.3V
14	BIST	NC	For aging screen
15	GND	Ground	Ground
16	GND	Ground	Ground
17	HPD	Hot plug detection	Hot plug detection
18	BL-GND	Backlight negative	Backlight negative
19	BL-GND	Backlight negative	Backlight negative
20	BL-GND	Backlight negative	Backlight negative
21	BL-GND	Backlight negative	Backlight negative
22	LED-EN	Backlight enable	Backlight enable
23	LED-PWM	Backlight brightness adjustment	Backlight brightness adjustment
24	NC		
25	NC		

26	LED-VCC	Backlight positive	Backlight positive
27	LED-VCC	Backlight positive	Backlight positive
28	LED-VCC	Backlight positive	Backlight positive
29	LED-VCC	Backlight positive	Backlight positive
30	NC		

MIPI screen interface*2 (dual channel)

S.N.	Definition	Attribute	Description
1	LED+	Backlight power positive	
2	LED+	Backlight power positive	
3	LED+	Backlight power positive	
4	NC		
5	LED-	Backlight power negative	
6	LED-	Backlight power negative	
7	LED-	Backlight power negative	
8	LED-	Backlight power negative	
9	GND	Ground	Ground
10	GND	Ground	Ground
11	D2P	Input/output	mipi data channel 3 positive
12	D2N	Input/output	mipi data channel 3 negative
13	GND	Ground	Ground
14	D1P	Input/output	mipi data channel 2 positive
15	D1N	Input/output	mipi data channel 2 negative
16	GND	Ground	Ground
17	CLKP	Input/output	mipi clock channel positive
18	CLKN	Input/output	mipi clock channel negative
19	GND	Ground	Ground
20	D0P	Input/output	mipi data channel 0 positive
21	D0N	Input/output	mipi data channel 0 negative
22	GND	Ground	Ground
23	D3P	Input/output	mipi data channel 0 positive
24	D3N	Input/output	mipi data channel 0 negative
25	GND	Ground	Ground
26	NC		

27	NC		
28	NC		
29	VDD	Power supply	3.3V output
30	VDD	Power supply	3.3V output

Touch screen interface I2C

S.N.	Definition	Attribute	Description
1	GND	Ground	Ground
2	INT	Input/output	Interrupt
3	RST	Input/output	Reset
4	SCl	Input/output	I2C clock
5	SDA	Input/output	I2C data
6	VCC	Power supply	3.3V output

MIPI Camera IN interface (dual channel)

The board supports up to 14 million pixel mipi cameras and is installed in the JP26 socket. The electrical definition of the socket is as follows:

S.N.	Definition	Attribute	Description
1	IR-AVDD-2.8	IR power supply	2.8V output
2	RGB-AVDD-3.3	RGB power supply	3.3V output
3	IR-PWDN	IR output	Power down control
4	IR-RESET	IR output	reset signal
5	IR+RBG-SCL	IR+RBG output	SCL signal
6	IR+RGB-SDA	IR+RBG Input/output	SDA signal
7	GND	Ground	Ground
8	IR-MCLK	IR output	Master clock
9	GND	Input/output	SDA signal
10	IR-MCP	IR Input/output	IR clock channel positive
11	IR-MCN	IR Input/output	IR clock channel negative
12	GND	Ground	Ground
13	IR-MDPO	IR Input/output	IR data channel 0 positive
14	IR-MDNO	IR Input/output	IR data channel 0 negative
15	GND	Ground	Ground
16	IR-MDP1	IR Input/output	IR data channel 1 positive
17	IR-MDN1	IR Input/output	IR data channel 1 negative
18	GND	Ground	Ground

19	IR+RGB-DOVDDIV8	IR+RGB power supply	1.8V output
20	NC		
21	NC		
22	IR-DVDDIV2	IR power supply	1.2V output
23	RGB-DVDDIV3	RGB power supply	1.3V output
24	RGB-PWDN	RGB output	Power down control
25	RGB-RESET	RGB output	Reset signal
26	GND	Ground	Ground
27	RGB-MCLK	RGB output	Master clock
28	GND	Ground	Ground
29	RGB-MCP	RGB Input/output	RGB clock channel positive
30	RGB-MCN	RGB Input/output	RGB clock channel negative
31	GND	Ground	Ground
32	RGB-MDPO	RGB Input/output	RGB data channel 0 positive
33	RGB-MDNO	RGB Input/output	RGB data channel 0 negative
34	GND	Ground	Ground
35	RGB-MDP1	RGB Input/output	RGB data channel 1 positive
36	RGB-MDN1	RGB Input/output	RGB data channel 1 negative
37	GND	Ground	Ground
38	5V	IRLED	IRLED
39	5V	IRLED	IRLED
40	5V	IRLED	IRLED

232 Serial socket interface*1 (UART0)

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	RX0	Enter	RX0
3	TX0	Output	TX0
4	GND	Ground	Ground

Serial socket interface*1 (UART5)

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	RX5	Enter	RX5
3	TX5	Output	TX5
4	GND	Ground	Ground

TTL serial socket interface*1 (UART9)

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	RX9	Enter	RX9
3	TX9	Output	TX9
4	GND	Ground	Ground

TTL serial socket interface*1 (UART7)

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	RX7	Enter	RX7
3	TX7	Output	TX7
4	GND	Ground	Ground

TTL (DEBUG) serial port socket interface*1 (UART2)

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	RX2	Enter	RX2
3	TX2	Output	TX2
4	GND	Ground	Ground

485 serial socket interface*1 (UART3)/DO (digital output)

S.N.	Definition	Attribute	Description
1	GND/NO	Ground/normally open	Ground/normally open
2	A/NC	Positive end/Normally closed	A/normally closed
3	B/COM	Negative terminal/common	B/Public

USB1

The board has 2 USB2.0 PH2.0--4PIN standard interfaces. USB2.0 defaults to HOST, and the power supply current is not more than 500mA.

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	DM	Input/output	DM (OTG)
3	DP	Input/output	DP (OTG)
4	GND	Ground	Ground

USB2

The board has 2 USB2.0 1.25--4PIN standard interfaces. USB2.0 defaults to HOST, and the power supply current is not more than 500mA.

S.N.	Definition	Attribute	Description
1	VCC	Power supply	5V output
2	DM	Input/output	DM (OTG)
3	DP	Input/output	DP (OTG)
4	GND	Ground	Ground

Fill light/status light

The maximum output voltage is 21V, and the maximum output current is 40mA.

S.N.	Definition	Attribute	Description
1	LED+	Power Output	21V output
2	WITHE_LED-	Output	White light negative pole
3	GREEN_LED-	Output	Green light negative pole
4	RED_LED-	Output	Red light negative pole

Laser ranging + photosensitivity

S.N.	Definition	Attribute	Description
1	VDD	Power supply	3.3V output
2	SDA	Input/output	I2C data
3	SCL	Input/output	I2C clock
4	GND	Ground	Ground
5	LIGHT+	Photosensitive+	Sense of light
6	LIGHT-	Photosensitive-	Sense of light

Speaker interface

S.N.	Definition	Attribute	Description
1	OUTP-L	Output	Audio output left +
2	OUTN-L	Output	Audio output left -
3	OUTN-R	Output	Audio output right -
4	OUTP-R	Output	Audio output right +

Some other standard interfaces and functions:

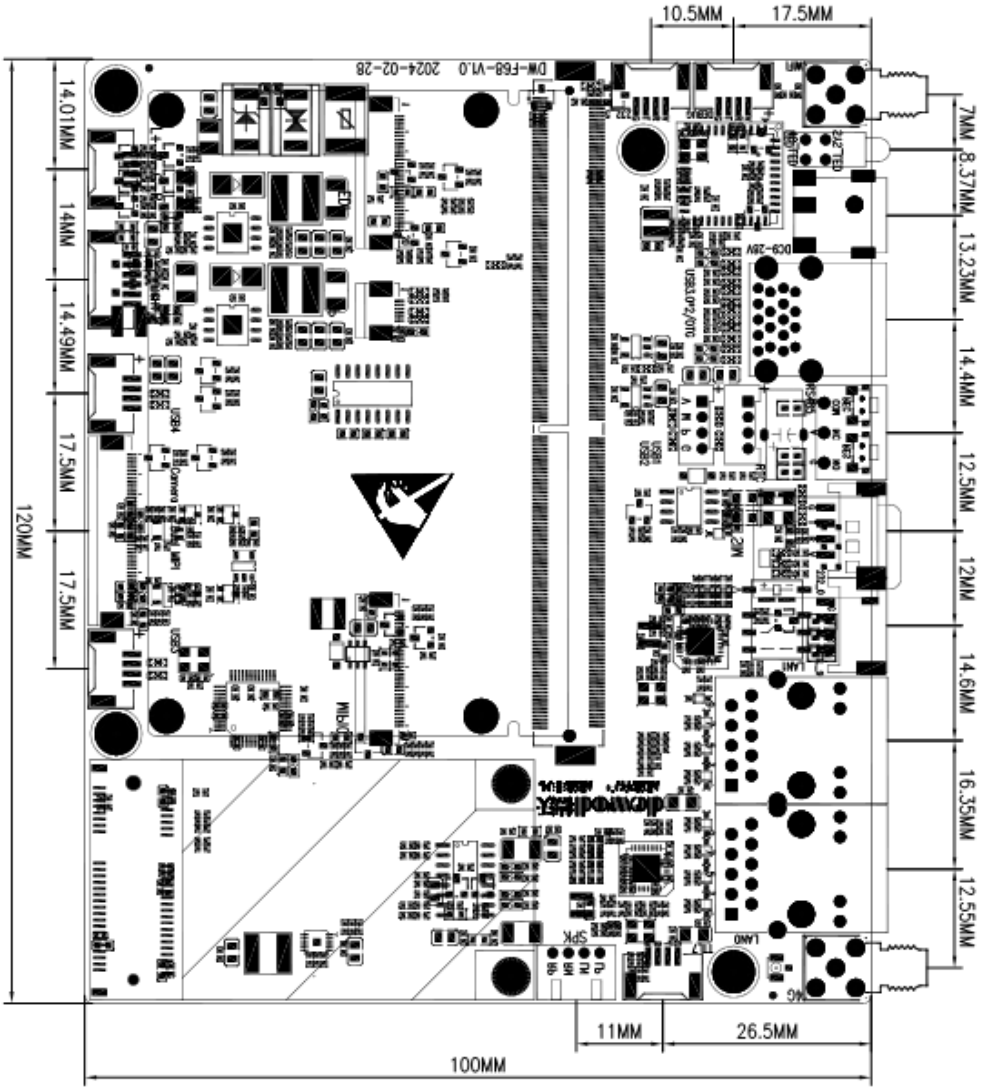
USB interface	USB	HOST interface supports data storage, data import, USB mouse and keyboard, camera, touch screen, etc.
Ethernet interface	RJ45 interface	Support 2-way 1000M wired network
4G interface	PCI-E standard interface	Mini PCI-E 3G/4G module
SIM card interface	Standard interface	Support various standards (depending on 4G module)

5. Electrical properties

Project	Minimum	Typical	Maximum

Power parameters	Voltage	9V	12V	28V
	Ripple	--	--	50mV
	Current	2A		
Environment	Relative humidity	--	--	80%
	Operating temperature	0℃	--	60℃
	Storage temperature	-20℃		70℃

6. Product Structure



7.

Precautions

1. Industrial computer grounding problem.
2. Whether the input power is connected to the power input interface, and whether the input power voltage, current, etc. meet the requirements. Prevent improper operation from causing the motherboard or display to burn out.

8. Technical Support

Product technical support email: sales2@dewod.com copy zhangkang@dewod.com. If you are using the product or need to consult relevant information, please send an email directly to this email.