onbon 仰邦科技

BX-818A Android Motherboard

Specification

Version No.: V1.3 Release Date: 2025.2.24

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Brief

Thank you for purchasing our LCD commercial display motherboard. We hope you will enjoy experiencing the excellent performance of this product. The motherboard is designed to meet international and industry standards, but may still cause personal injury and property damage if not operated properly. In order to avoid possible dangers and to benefit as much as possible from your equipment, please follow the relevant instructions in this manual when installing and operating the product.

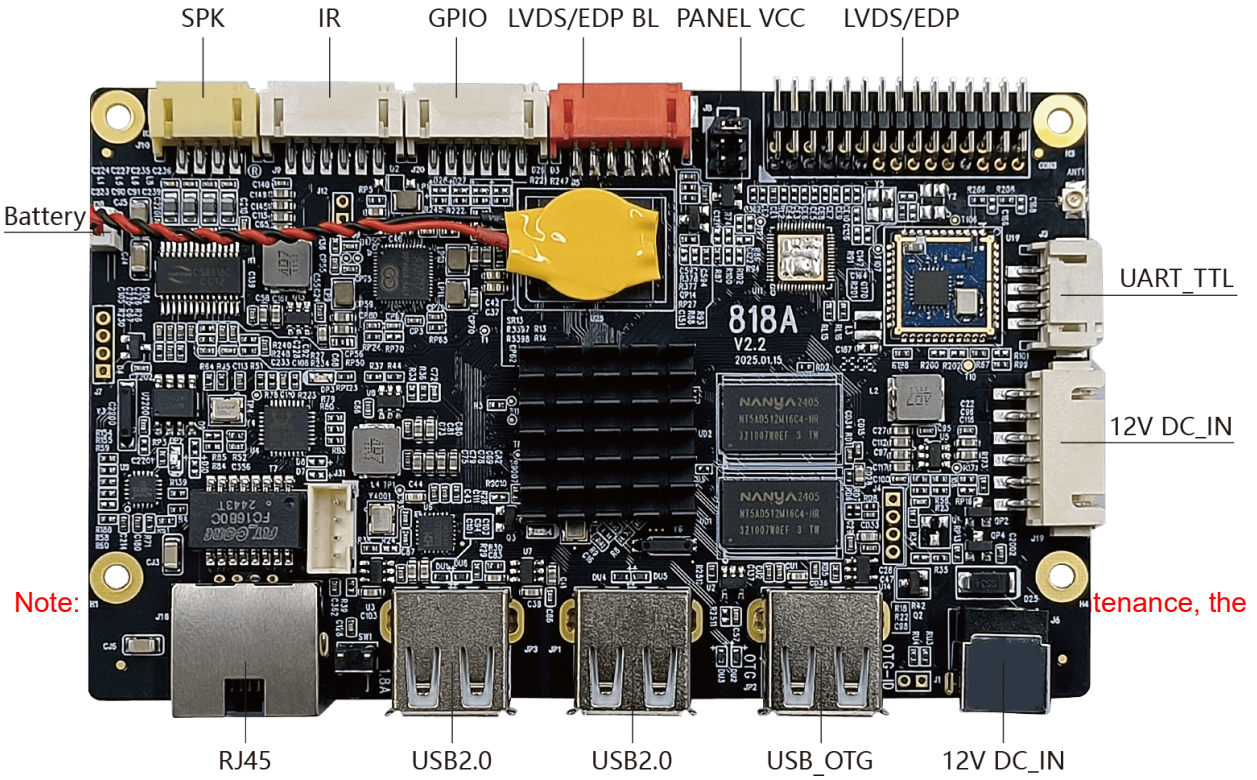
About the software

You may not alter, decompile, disassemble, decrypt, or reverse engineer the software installed on this product, and any of the above actions are illegal.

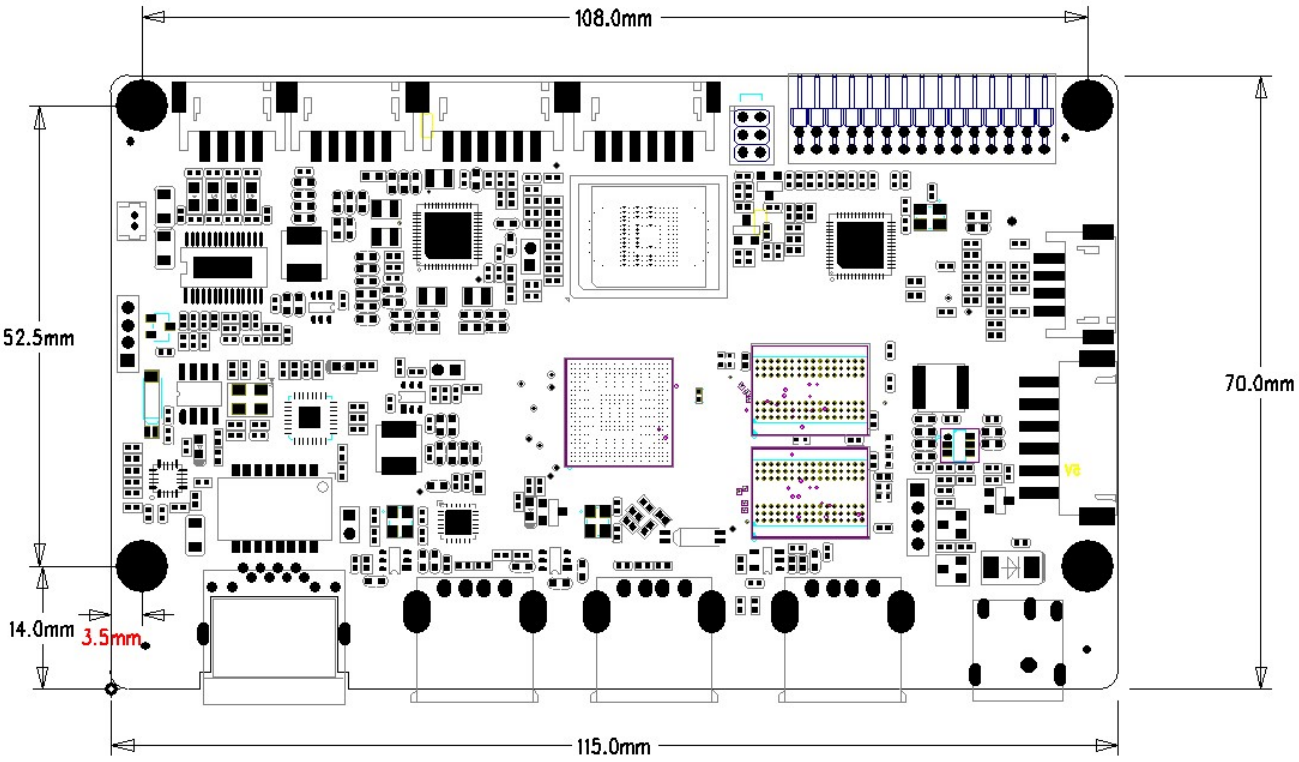
Product Overview

Product appearance and size

Front interface diagram:



DIMENSIONS:



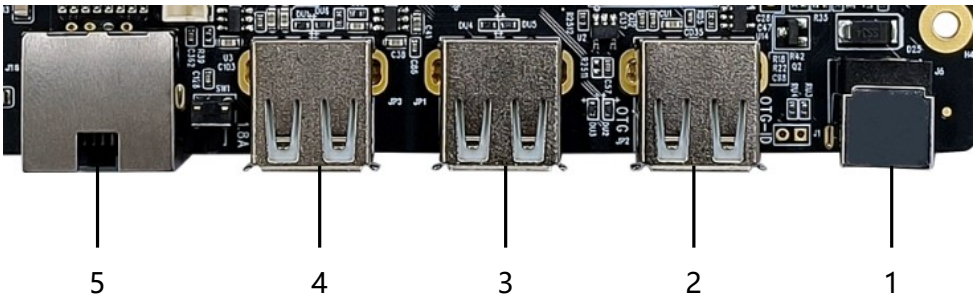
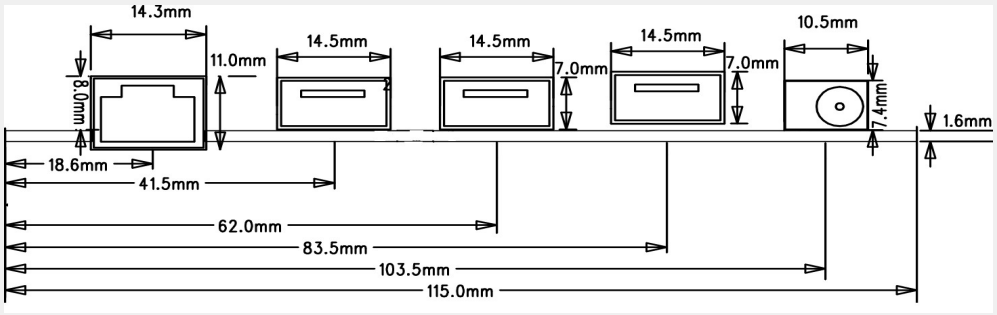
Product Detailed Parameters

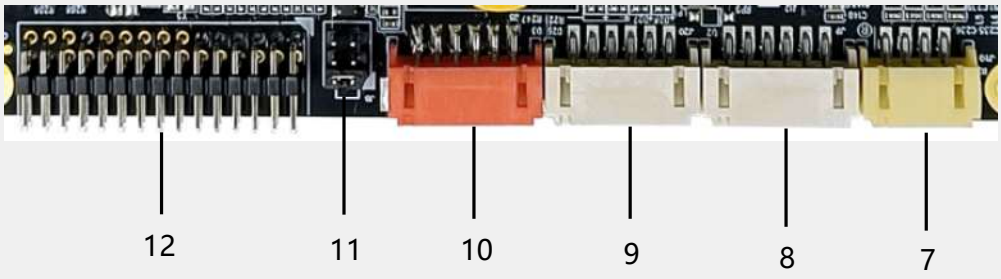


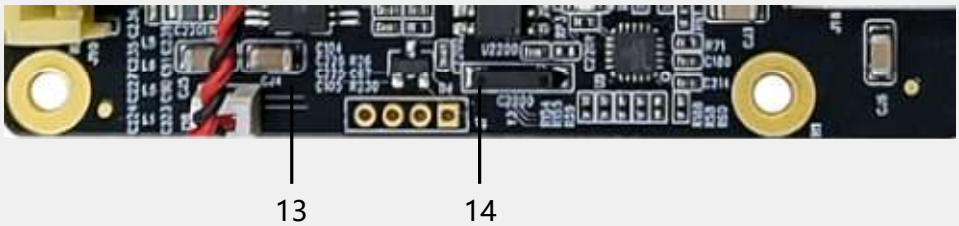
Basic Information	microchip	A133	**Serial/GPIO**	serial port (computing)	2 Serial Ports: 1 TTL Debug 1-way TTL
	build	Cortex-A53		GPIO port	4-way IO input/output control Key scanning control
	GPUs	IMG PowerVR GE8300	**audio frequency**	Bluetooth speaker	be in favor of
	core number	quad-core (computing)		MIC input	/
	CPU frequency	1.6GHz		headphone jack	/
	NPU	/		Amplifier Interface	5W dual channel speaker output
	systems	Android 10.0	**Storage**	USB port	3-way USB port 1 channel USB_OTG,2 channel USB2.0
	hard disk drive	Support 4K 30fps H.265/H.264/VP9 Video Decoding			
	random access memory (RAM)	Default 1G, optional 2G		Extended Storage	/
	stockpile	8GB comes standard by default. Expandable to 32G			
display interface	dimorphic	single display	**Others**	watchdog function	Hardware watchdog support
	LVDS output interface	Support 1080P@60Hz			
	EDP output interface	Support 1080P@60Hz (optional)		infrared remote	be in favor of
network function	Ethernet	1 rj45: 1000m/100m/10m Ethernet Adaptive		timer switching on/off	be in favor of
	WIFI	be in favor of		multilingual	be in favor of
	4G	External USB 4G module		secondary development	Support: Provide API interface documentation
	bluetooth	/			

- Wet, salt spray environments and outdoor applications can be added with a triple-proof coating process.

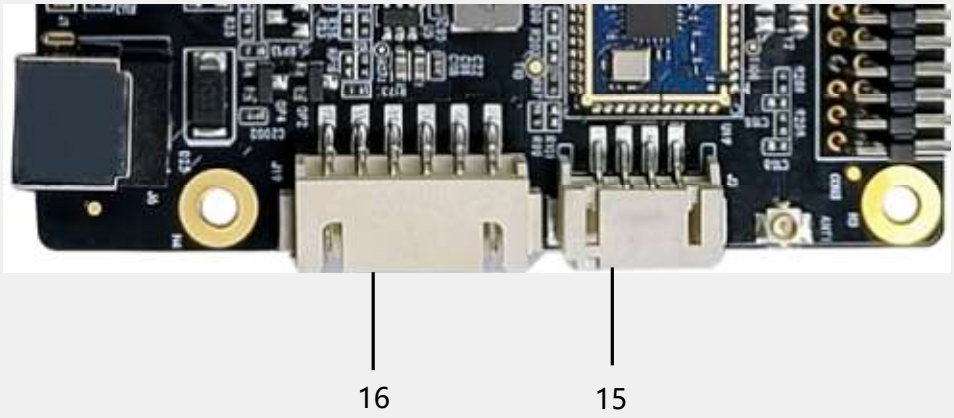
Interface Details

<table>
<tr><th colspan="3">Front Interface</th></tr>
<tr><td>interface diagram</td><td colspan="2">
</td></tr>
<tr><td>Size Chart</td><td colspan="2">
</td></tr>
<tr><th>Serial number</th><th>connector</th><th>clarification</th></tr>
<tr><td>1</td><td>12V DC_IN</td><td>6.0mm OD, 2.0mm ID DC mount, 12V/2A DC input recommended</td></tr>
<tr><td>2</td><td>USB_OTG</td><td>Standard USB_OTG interface, fixed OTG mode, software switchable to HOST mode, current limiting 1.0A</td></tr>
<tr><td>3</td><td>USB1 2.0</td><td>Standard USB2.0 Type-A interface, fixed Host mode, 1.0A current limit</td></tr>
<tr><td>4</td><td>USB2 2.0</td><td>Standard USB2.0 Type-A interface, fixed Host mode, 1.0A current limit</td></tr>
<tr><td>5</td><td>RJ45</td><td>10/100M Ethernet Interface</td></tr>
</table>

Topside interface		
interface diagram		
serial numbe	**connector**	**clarification**
7	speaker connector	4Pin*2.0mm pitch wafer connector, amplifier output connector, dual-channel, up to two 8Ω5W speakers
8	Remote Control Interface	5Pin*2.0mm pitch wafer connector, can be connected to two LEDs (LEDs common negative) an infrared receiver, remote control with the remote control of the motherboard for remote test
9	GPIO	4Pin*2.0mm pitch wafer connector, reserved GPIO interface, configurable IN/OUT, power domain 3.3 V. This interface is multiplexed with the IIC and can be configured as an IIC interface by updating the firmware.
10	Backlight Interface	6Pin*2.0mm pitch wafer connector, main screen backlight interface, support screen backlight enable switch, brightness adjustment
11	screen voltage	6Pin*2.0mm pitch DIP connector, LVDS screen voltage selectable interface, 3.3V/5V/12V selectable
12	LVDS/EDP	30Pin*2.0mm pitch DIP connector, hardware selectable for LVDS output or EDP output, supports up to 1920*1080 resolution

Left Side Interface		
interface diagram		
serial number	**connector**	**clarification**
13	battery connector	2Pin*1.25mm Pitch Wafer Connector, RTC Battery Connector, Default Voltage 3.3V

14	burner interface	4Pin*2.0mm spacing pins reserved, MCU program burning interface

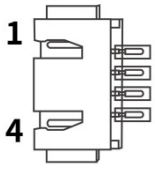
Right Side Interface		
interface diagram		
serial number	**connector**	**clarification**
15	TTL serial port 2	4Pin*2.0mm pitch wafer connector, default TTL serial port, power domain 3.3V
16	12V DC_IN	6Pin*2.54mm pitch wafer connector, recommended 12V/2A DC input, supports power supply and control of power board STBs

Interface definition

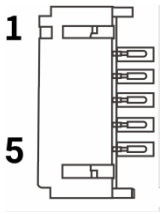
J28 (2PIN/1.25) Battery Connector (Inline)

exterior condition	footnote	define	descriptive
	1	BAT+	Battery Positive
	2	GND	Battery Negative

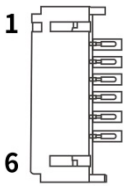
J10 (4PIN/2.0) speaker connector (curved plug)

exterior condition	footnote	define	descriptive
	1	RPK+	Right channel +
	2	RPK-	Right channel-
	3	LPK-	Left channel -
	4	LPK+	Left channel +

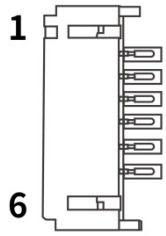
J9 (5PIN/2.0) Remote Control Connector (Bent Plug)

exterior condition	footnote	define	descriptive
	1	VCC	3.3V supply
	2	GND	ground
	3	IR	telecontrol
	4	RED	red indicator light
	5	GED	green indicator

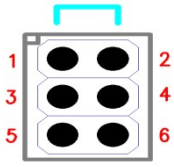
J20 (6PIN/2.0) GPIO Interface (Bend Plug)

exterior condition	footnote	define	descriptive
	1	3.3V	3.3V supply
	2	IO1	IO Interface 1
	3	IO2	IO Interface 2
	4	IO3	IO Interface 3
	5	IO4	IO Interface 4
	6	GND	ground

J5 (6PIN/2.0) backlight power connector (curved plug)

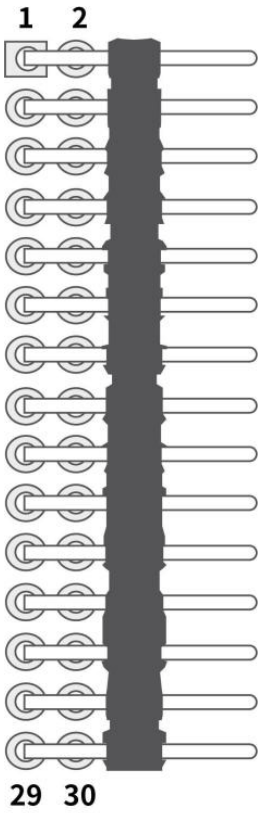
exterior condition	footnote	define	descriptive
	1	GND	ground
	2	GND	ground
	3	ADJ	Backlight Brightness Adjustment
	4	EN	Backlight on/off control
	5	+12V	Screen Backlight Power Supply
	6	+12V	Screen Backlight Power Supply

J8 (6PIN/2.0) LCD Screen Voltage Supply Selection (Bend Plug)

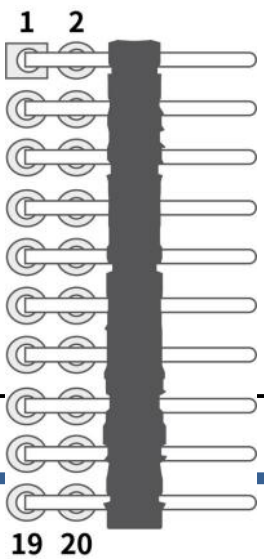
exterior condition	footnote	define	descriptive
	1	3.3V	3.3V supply
	2	VCC_LCD	Screen Voltage Connection Port
	3	5V	5V supply
	4	VCC_LCD	Screen Voltage Connection Port
	5	12V	12V supply
	6	VCC_LCD	Screen Voltage Connection Port

Note: EDP/LVDS screens use jumper caps for screen power selection. connect 3.3V to VCC_LCD, then the screen voltage will be 3.3V. be careful not to jump to the wrong position or it will cause damage to the LCD screen and motherboard circuitry.

C0N3 (30PIN/2.0) LVDS Interface (Bend Plug)

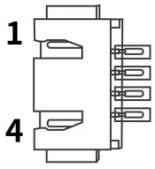
exterior condition	footnote	define	descriptive
	1	PWR	electricity supply
	2	PWR	electricity supply
	3	PWR	electricity supply
	4	GND	ground
	5	GND	ground
	6	GND	ground
	7	D0N	LVDS Signal
	8	D0P	LVDS Signal
	9	D1N	LVDS Signal
	10	D1P	LVDS Signal
	11	D2N	LVDS Signal
	12	D2P	LVDS Signal
	13	GND	ground
	14	GND	ground
	15	CLKON	LVDS Signal
	16	CLKOP	LVDS Signal
	17	D3N	LVDS Signal
	18	D3P	LVDS Signal
	19	D5N	LVDS Signal
	20	D5P	LVDS Signal
	21	D6N	LVDS Signal
	22	D6P	LVDS Signal
	23	D7N	LVDS Signal
	24	D7P	LVDS Signal
	25	GND	ground
	26	GND	ground
	27	CLK1N	LVDS Signal
	28	CLK1P	LVDS Signal
	29	D8N	LVDS Signal
	30	D8P	LVDS Signal

CON3 (20PIN/2.0) EDP Dot Screen (Dupont Pin) (Optional)

exterior condition	footnote	define	descriptive
	1	PWR	electricity supply
	2	PWR	electricity supply
	3	GND	ground
	4	GND	ground
	5	TXON	EDP Signal
	6	TXOP	EDP Signal
	7	TX1N	EDP Signal
	8	TX1P	EDP Signal
	9	TX2N	EDP Signal
	10	TX2P	EDP Signal
	11	TX3N	EDP Signal
	12	TX3P	EDP Signal

	13	GND	ground
	14	GND	ground
	15	AUXN	EDP Signal
	16	AUXP	EDP Signal
	17	GND	ground
	18	GND	ground
	19	GND	ground
	20	HPD	Unplugging detection

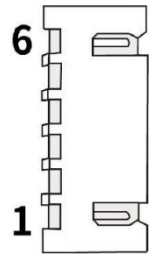
J3 (4PIN/2.0) TTL Serial 2 Interface (Bent Plug) (Power Domain 3.3V)

exterior condition	footnote	define	descriptive
	1	VCC	Power supply 5V (3.3V optional)
	2	TX2	dispatch
	3	RX2	Receive 2
	4	GND	ground

J4 (4PIN/2.0) TTL Serial 0 Interface (Pin) (Debug Serial, Power Domain 3.3V)

exterior condition	footnote	define	descriptive
	1	VCC	Power supply 3.3V (5V optional)
	2	TX0	receive
	3	RX0	shuttle (transport service)
	4	GND	ground

J19 (6PIN/2.54) +12V power input connector (curved plug)

exterior condition	footnote	define	descriptive
	1	STB	Power Supply Board Control Pin
	2	S5V	Normally supplied 5V
	3	GND	ground
	4	GND	ground
	5	DC_IN	12V power input
	6	DC_IN	12V power input

Electrical Performance

Standard Power Supply

form		minimal	typical case	greatest
Standard power supply parameters	input voltage	11V	12V	13.5V
	ripple	/	/	60mV
	amps	3A	/	/

Operating current when no other peripherals are connected

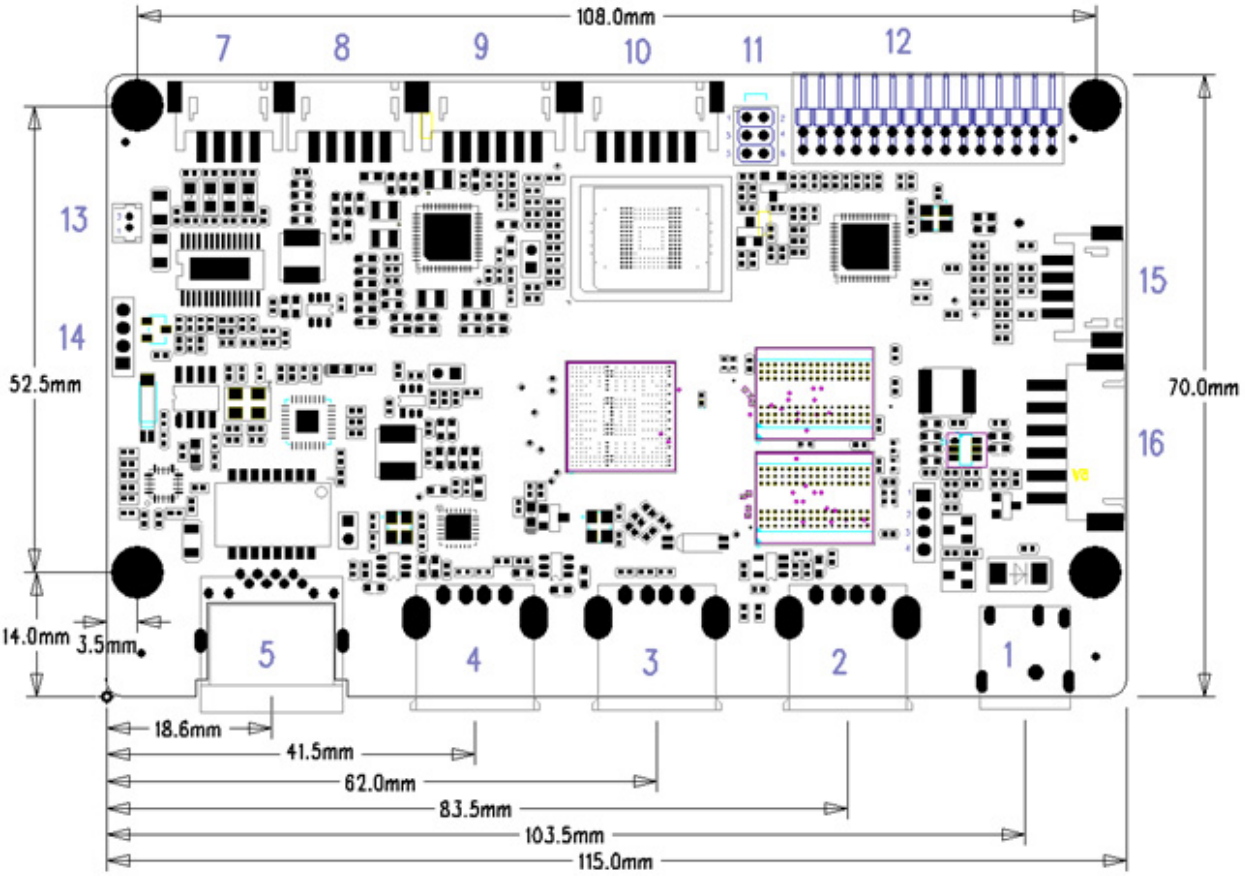
form		minimal	typical case	greatest
Power supply current (not connected to other peripherals such as screens)	Operating Current	/	150mA	300mA
	Standby Current	/	10mA	20mA
	Battery operating current	/	0.0024mA	/

USB power supply

USB interface	input voltage	Typical Current	Maximum current
OTG_USB	5V	500mA	1000mA
HOST_USB	5V	500mA	1000mA

Note: It is recommended that the total current of the USB peripherals does not exceed 3000mA, otherwise the machine will not function properly.

Detailed Dimension Drawing of Motherboard



Product Use Guide

Precautions for assembly and using

Please note the following (and not limited to) problem points during assembly and use.

1. Relative humidity ≤85%
2. Storage temperature: -30℃ to +70℃.
3. Operating temperature: -20℃ to +60℃ (-20℃ to +60℃)
4. Pay attention to anti-static treatment during assembly and transportation of the whole machine.
5. When the whole machine is assembled, it can be mounted underneath or on the side, but don't deform or twist the board and don't subject it to heavy pressure.
6. Retain a suitable distance between the wiring positions of each terminal so that installation does not result in squeezing the terminals.
7. The connecting wire between this board and the matching module board should not be too long, otherwise it may affect the image quality.
8. The internal wiring of the whole machine should be reasonable, and the connecting wires should not be traversed directly from the PCB board as far as possible.
9. In order to achieve better EMC effect for the whole machine, it is recommended that the screen cable between the motherboard and the screen use shielded cable.

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