

UW-M135-V5.1-JW Android motherboard LCD driver integrated board Technical specification sheet

Document modification history

	Note	Date
1	Created	2017-03-28
2	Version Update	2018-06-06
3	Version Update	2022-06-02

1 Overview

The UW-M135-V5.1 is a multimedia LCD driver integrated board developed based on the Allwinner A40i main chip. This motherboard is equipped with 1GB/2GB DDR + 8GB/16GB/32GB eMMC and supports LVDS screen, MIPI screen, CVBS input/output, VGA output, YPbPr output, and HDMI high-definition output.

The main control IC adopts TSMC's 40nm HPC manufacturing process, featuring a quad-core ARM Cortex-A7 architecture with a maximum clock speed of 1.5GHz.

Utilizing Allwinner's next-generation SmartColor technology, it delivers excellent image quality at high resolutions, providing a visually pleasing experience for your device.

Main features:

- Quad-core, up to 1.5GHz clock speed
- Supports LVDS and MIPI screens for dual-screen independent display
- Supports CVBS input and output
- Supports VGA and YPBPR output
- Rich I/O options: 4 serial ports, 6 USB ports, TF card slot

2 Specifications

Hardware specifications:

CPU	Allwinner A40i, Quad-core ARM Cortex-A7, 1.5GHz
GPU	Mali400MP2
Memory	DDR3 1GB/2GB
Storage	eMMC 8GB/16GB/32GB (default label: 8GB)
Display Interfaces	LVDS Single channel, 6/8-bit dual channel, max resolution 1920×1080, supports 7"–100" displays MIPI: Max resolution 1920×1080 CVBS, YPbPr, VGA, HDMI 1.4 (1080P)
Video Input	Dual Channel CVBS input
Backlight Power	3.3V / 5V / 12V selectable
Network	RJ45 Ethernet (100Mbps)
	4G support
	Wi-Fi 802.11b/g/n + Bluetooth 4.0 (supports 4.2 optionally)
Image Rotation	Manual 0°, 90°, 180°, 270°

Real-Time Clock	Built-in with battery, supports scheduled power on/off
Interface device	USB camera
	6 USB HOST (2 onboard, 4 external)
	UART interfaces (TTL, RS232, RS485) for sensors, scanners, printers, etc.
	TF card slot (up to 128GB)
	Lithium battery support with charge management
	Power/reset button, IO for external controls
	Headphones, onboard amplifier 2W*2 8Ω
Audio input	MIC, headset microphone
Touchscreen	Infrared, resistive, capacitive

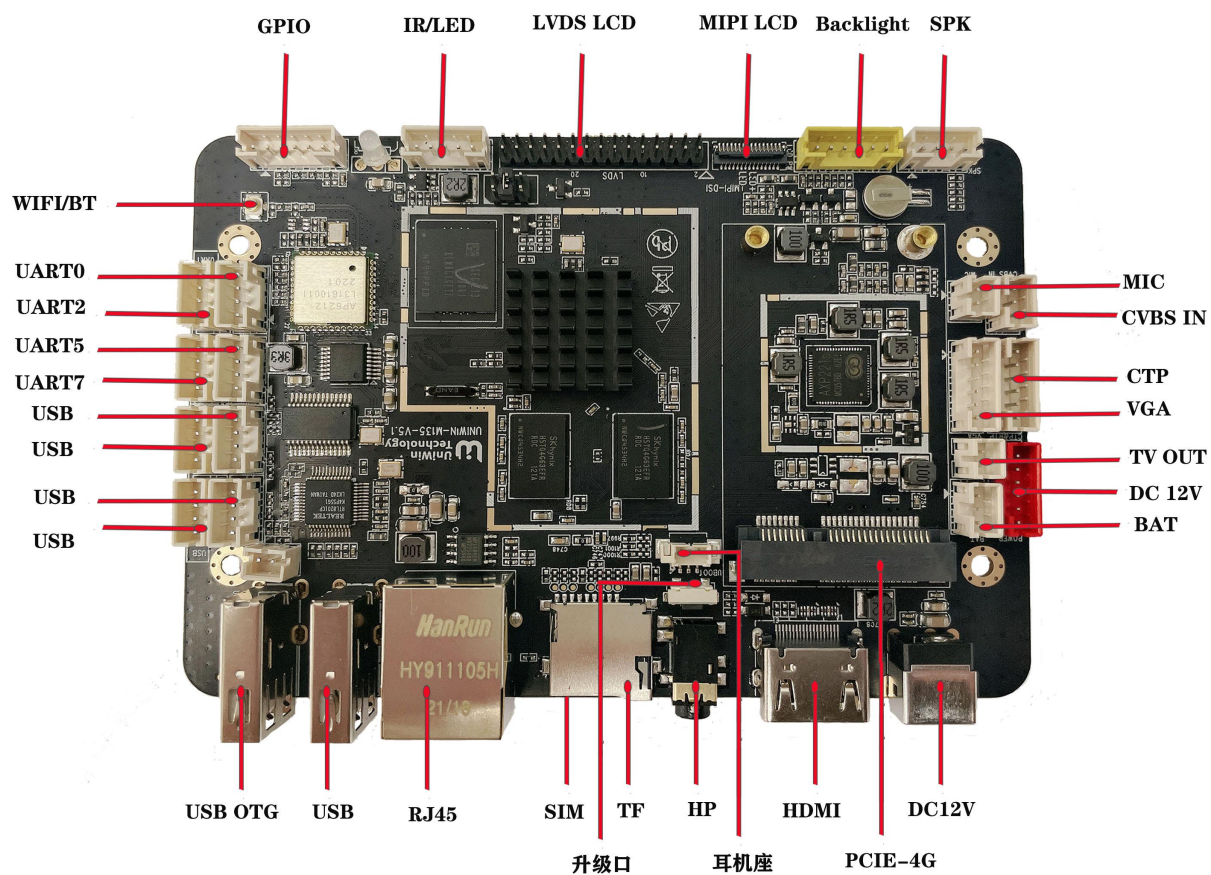
Software Specifications:

Operating System	Google Android 6.0
Language Support	Multilingual
Video Playback	Support Video playback up to 1080P @60fps Support Multi-Format video playback,including Mpeg1、 Mpeg2、 Mpeg4 SP/ASP GMC、 H.263 including sorenson spark、 H.264 BP/MP/HP、 VP8、 WMV9/VC1、

	JPEG/MJPEG
Audio Formats	MP3, WMA, MP2, OGG, AAC, M4A, FLAC, APE, WAV, 3GP
Image Viewer	JPG, BMP, PNG, GIF (up to 4096×4096), slideshow & rotation supported
Document Formats	EPUB, WORD, EXCEL, POWERPOINT, PDF, TXT
Input Method	Standard Android keyboard, supports third-party IMEs (e.g., Chinese, Korean, Japanese)
Expandability	Access to 20,000+ apps via Google Play
System Management	File manager
	Android root access, custom development supported
	scheduled power on/off
	OTA remote updates

3 main interfaces

3.1 Interface diagram



3.2 Pin Definition

◆ JP1 (6PIN/2.0) Power input expansion port

S/N	Definition	Attribute	Description
1	12V	Power input	+12V power input
2	12V	Power input	+12V power input
3	GND	Ground	Ground
4	GND	Ground	Ground
5	5VSB	Input power	Input standby power, +5V
6	STB	Output	Output standby power

◆ J3(3PIN/2.0) Battery Input interface

S/N	Definition	Attribute	Description
1	VBAT	Power input	Battery positive terminal
2	TS	Output	Battery temperature detection pin
3	GND	Ground	Battery negative terminal

◆ JP8(6PIN/2.0) Backlight power control

S/N	Definition	Attribute	Description
1	12V/5V	Power output	Backlight power output +12V/+5V
2			
3	BL_EN	Output	Backlight board switch control pin
4	BL_ADJ	Output	Backlight board brightness switch control pin
5	GND	Ground	Ground
6			

◆ JP21(6PIN/2.0) Key interface

S/N	Definition	Attribute	Description
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1	3.3V	Output	3.3V output
2	PWR-ON	Output	Power button can be used as general IO
3	RESET	Output	Reset control can be used as general IO
4	IO	Input/Output	Output control
5	KEY	Output	Key
6	GND	Ground	Ground

◆ **JP13(6PIN/2.0) CTP&RTP Touch screen interface**

S/N	Definition	Attribute	Description
1	3.3V	Output	3.3V Output
2	SCK	Output	Clock signal
3	SDA	Input/Output	I2C Data
4	INT	Input	Interrupt
5	REST	Output	Reset
6	GND	Ground	Ground

◆ **5CN1(31PIN/0.3) MIPI Signal Output**

S/N	Definition	Attribute	Description
1	AVCC	Power	3.3V Power supply
2	AVCC	Power	3.3V Power supply
3	DVCC	Power	1.8V Power supply
4	GND	Ground	Ground
5	RESET	Signal in	Reset pin
6	DVCC	Power	1.8V Power supply
7	GND	Ground	Ground
8	DSI-D3N	Output	MIPI DATA
9	DSI-D3P	Signal in	MIPI DATA
10	GND	Ground	Ground
11	DSI-D0N	Output	MIPI DATA
12	DSI-D0P	Signal in	MIPI DATA
13	GND	Ground	Ground
14	DSI-CLKN	Output	MIPI CLK

15	DSI-CLKP	Signal in	MIPI CLK
16	GND	Ground	Ground
17	DSI-D1N	Output	MIPI DATA
18	DSI-D1P	Signal in	MIPI DATA
19	GND	Ground	Ground
20	DSI-D2N	Output	MIPI DATA
21	DSI-D2P	Signal in	MIPI DATA
22	GND	Ground	Ground
23	GND	Ground	Ground
24	LED-	Power	Backlight power negative
25	LED-	Power	Backlight power negative
26	LED-	Power	Backlight power negative
27	LED-	Power	Backlight power negative
28	NC	NC	NC
29	LED+	Power	Backlight power positive
29	LED+	Power	Backlight power positive
29	LED+	Power	Backlight power positive

◆ **JP9(2X15PIN/2.0) LVDS Signal Output**

S/N	Definition	Attribute	Description
1	VCC_Panel	Power output	LCD power output, selectable 3.3V/5V/12VJP6
2			
3			
4	GND	Ground	Power Ground
5			
6			
7	RX00-	Output	Pixel0 Negative Data (Odd)
8	RX00+	Output	Pixel0 Positive Data (Odd)
9	RX01-	Output	Pixel1 Negative Data (Odd)
10	RX01+	Output	Pixel1 Positive Data (Odd)
11	RX02-	Output	Pixel2 Negative Data (Odd)
12	RX02+	Output	Pixel2 Positive Data (Odd)
13	GND	Ground	Power Ground
14			
15	RXOC-	Output	Negative Sampling Clock (Odd)
16	RXOC+	Output	Positive Sampling Clock (Odd)

17	RXO3-	Output	Pixel3 Negative Data (Odd)
18	RXO3+	Output	Pixel3 Positive Data (Odd)
19	RXE0-	Output	Pixel0 Negative Data (Even)
20	RXE0+	Output	Pixel0 Positive Data (Even)
21	RXE1-	Output	Pixel1 Negative Data (Even)
21	RXE1+	Output	Pixel1 Positive Data (Even)
23	RXE2-	Output	Pixel2 Negative Data (Even)
24	RXE2+	Output	Pixel2 Positive Data(Even)
25	GND	Ground	Power Ground
26			
27	RXEC-	Output	Negative Sampling Clock (Even)
28	RXEC+	Output	Positive Sampling Clock (Even)
29	RXE3-	Output	Pixel3 Negative Data (Even)
30	RXE3+	Output	Pixel3 Positive Data (Even)

◆ **JP6(2X3PIN/2.0) LCD Voltage selection interface**

S/N	Definition	Attribute	Description
1	LCD12V	Power output	Power output, +12V
3	LCD5V	Power output	Power output, +5V
5	LCD3.3V	Power output	Power output, +3.3V
2	LCD-POWER	Power Input	LVDS screen voltage via pins 1, 3, 5
4			
6			

◆ **JP7(4PIN/2.0) Speaker output**

S/N	Definition	Attribute	Description
1	OUTP-L+	Output	Left channel audio+signal (connect speaker+)
2	OUTN-L-	Output	Left channel audio+signal (connect speaker-)
1	OUTN-R-	Output	Right channel audio+signal (connect speaker-)
2	OUTP-R+	Output	Right channel audio+signal (connect speaker+)

			speaker+)
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◆ **JP11(3PIN/1.25) Headphone Jack**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	HPR	Output	Right Channel audio signal
3	HPL	Output	Left Channel audio signal

◆ **JP17 (4PIN/2.0) UART0 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX0	Input	UART Data input
3	TX0	Input	UART Data output
4	3.3V	3.3V Power output	3.3V Power output

◆ **JP23 (4PIN/2.0) UART2 RS485 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX2	Input	B
3	TX2	Output	A
4	3.3V	3.3V Power output	3.3V Power output

◆ **JP18 (4PIN/2.0) UART5 RS232 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX5	Input	UART Data input RS232
3	TX5	Output	UART Data output RS232
4	3.3V 或 5V	3.3V/5V Power output	3.3V/5V Power output

◆ **JP19 (4PIN/2.0) UART7 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX7	Input	UART Data input TTL
3	TX7	Output	UART Data output TTL

4	3.3V/5V	3.3V/5V Power output	3.3V/5V Power output
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◆ **J14 (4PIN/2.0) USB1 Expansion Interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP1	Input\Output	D+signal line
3	DM1	Input\Output	D-signal line
4	5V Power	Power output	Power output +5V

◆ **J15 (4PIN/2.0) USB2 Expansion Interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP2	Input\Output	D+signal line
3	DM2	Input\Output	D-signal line
4	5V power	Power output	Power output +5V

◆ **J16 (4PIN/2.0) USB3 Expansion Interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP3	Input\Output	D+signal line
3	DM3	Input\Output	D-signal line
4	5V Power	Power output	Power output +5V

◆ **J17 (4PIN/2.0) USB4 Expansion Interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP4	Input\Output	D+signal line
3	DM4	Input\Output	D-signal line
4	5V Power	Power output	Power output +5V

◆ **JP3(5PIN/2.0) Remote control receiver & status LED**

S/N	Definition	Attribute	Description
1	IR	Input	Remote control signal input
2	GND	Ground	Ground
3	VCC_ MCU	MCU Power	MCU Power
4	LED_R	RED LED	Standby Indicator
6	LED_B	Blue LED	Working Indicator

◆ **JP4(2PIN/2.0) MIC Microphone interface**

S/N	Definition	Attribute	Description
1	MIC	Audio Input	Audio Input
2	GND	Ground	Ground

◆ **JP10(3PIN/2.0) TV IN Interface**

S/N	Definition	Attribute	Description
1	CVBS IN 0	Signal Input	CVBS IN Input
2	GND	Ground	Ground
3	CVBS IN 1	Signal Input	CVBS IN Input

◆ **JP4(2PIN/2.0) TV OUT Interface**

S/N	Definition	Attribute	Description
1	TV OUT	Signal output	Signal output
2	GND	Ground	Ground

◆ **JP14(6PIN/2.0) VGA & YPbPr Interface**

S/N	Definition	Attribute	Description
1	R	Signal output	Signal output
2	G	Signal output	Signal output
3	B	Signal output	Signal output
4	Hs	Signal output	Signal output

5	Vs	Signal output	Signal output
6	GND	Ground	Ground

4 Sizes

4.1 Board Size

PCB Length 123.9mm, Width 87.8mm, Height 10mm , For more details structural diagrams Please consult our sales representatives.

