

M185 V2.0Android Mainboard LCD

Driver Integrated Board Technical specifications

Document modification history

	Note	Date
1	Created	2016-12-25
2	Version Update	2017-5-1

1 Overview

M185 is a multimedia LCD driver integrated board developed based on the Allwinner A83T main chip. This motherboard is equipped with 1G DDR3 + 8G eMMC, and supports LVDS point screen and HDMI high-definition output.

Its main control IC uses TSMC's 28nm HPC manufacturing process, based on the ARM Cortex-A7 architecture, with eight cores and a maximum frequency of up to 2GHz.

Using Allwinner's new generation SmartColor technology, it helps display excellent image quality at high resolutions, providing your entire device with a visually pleasing effect.



RJ45/WIFI/蓝牙4.0, 可扩展3G/4G



2 Specifications

Hardware specifications :

CPU	Allwinner A83T, Octa-core ARM Cortex-A7 @ 2.0 GHz
GPU	PowerVR SGX544
Memory	DDR3 1G(Up to 2G)
Internal Storage	eMMC 8GB/16GB/32GB options (default label: 8GB)
Display Interface	LVDS interface (single-channel, 6-bit dual-channel, 8-bit dual-channel). Supports a maximum resolution of 1920×1080. Compatible with 7~10-inch displays.
Screen Voltage	Supports 3.3V/5V/12V options.
Network	RJ45 standard port, 10/100 Mbps Ethernet interface
	Integrated Bluetooth/Wi-Fi module, supporting Wi-Fi 802.11b/g/n protocols. Supports Bluetooth 4.0
	Optional external 3G/4G module (contact us for procurement), supporting WCDMA, EVDO, CDMA, GSM, and 2G/3G full-band coverage (850/900/1800/1900/2100 MHz).
Screen Rotation	Supports rotation at 0°, 90°, 180°, 270°
Real-Time	Built-in RTC backup battery, supports scheduled power on/off.

Clock (RTC)	
Interface	Supports USB camera connectivity.
	HDMI 1.4 output, supports 1080P resolution.
	6 USB HOST ports (2 onboard, 4 externally expandable).
	3 TTL interfaces (2 of which are RS232-compatible).
	Supports expansion modules (e.g., sensors, barcode/QR scanners, printers, card readers, etc.).
	TF Card Slot, Supports expansion up to 64GB.
	1 standard 12c interface.
	Supports headphone output, built-in amplifier (2W×2, 8Ω speaker support).
Audio Input	Supports MIC input (1 microphone interface).
Battery Interface	Supports single-cell Li-ion battery charging/discharging, with power-loss protection to prevent critical data loss (added in V1.2).
Touchscreen	Compatible with infrared, resistive, and capacitive touchscreens.
Power Supply	Input: DC12V or DC12V 5VSTB (switching power supply).

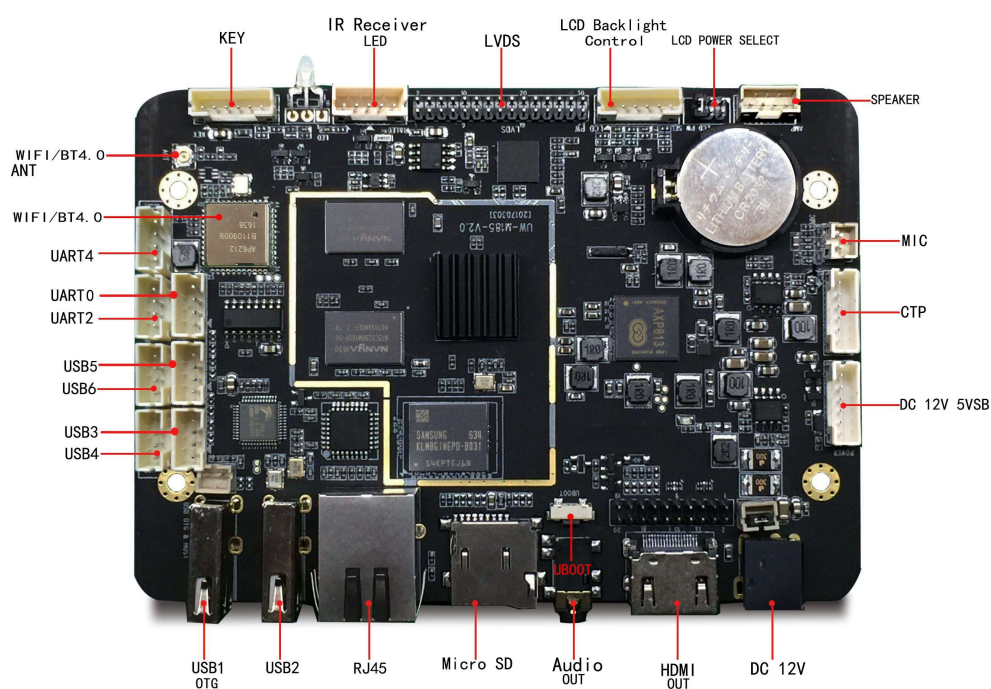
Software specifications :

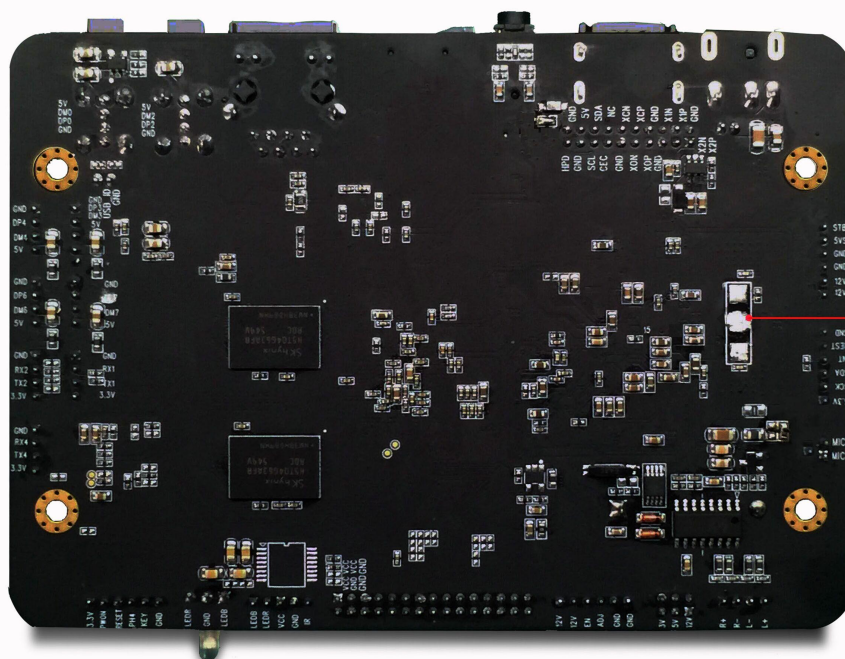
Operating System	Google Android 4.4.4
Language Support	Multi-language
Video Formats	Support Video playback up to 1080P @60fps Support Multi-Format video playback,including Mpeg1、 Mpeg2、 Mpeg4 SP/ASP GMC、 H.263 including sorenson spark、 H.264 BP/MP/HP、 VP8、 WMV9/VC1、 JPEG/MJPEG、 etc HEVC/H.265 1080P @30fps
Audio Formats	Supports MP3, WMA, MP2, OGG, AAC, M4A, FLAC, APE, 3GP, WAV formats with playlist functionality
Image Viewing	Supports JPG, BMP, PNG, GIF formats with rotation/slideshow features. Maximum supported resolution: 4096×4096
Document	WORD, EXCEL, POWERPOINT, PDF, TXT
Input Methods	Standard Android keyboard, supports third-party IMEs (Chinese, Korean, Japanese, etc.)
Expandability	Over 20,000+ quality apps available for free download via Google Play Store
Management	File Manager
	Android OS with root access, supports customized product development

	Scheduled Power On/Of
	Supports remote OTA upgrades (customization required)

3 main interfaces

3.1 Interface diagram





Battery

3.2 Pin Definition

◆ JP9 (4PIN/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	Standby Power, +5V
6	STB	Output	Standby Power control

◆ JP4(6PIN/2.0) Backlight inverter control

S/N	Definition	Attribute	Description
1	12V	Power Output	Backlight Power Output, +12V
2	12V	Power Output	Backlight Power Output, +12V
3	BL_EN	Output	Backlight panel switch control pin
4	BL_ADJ	Output	Backlight Brightness switch control pin
5	GND	Ground	Ground
6			

◆ JP21(6PIN/2.0) Button interface

S/N	Definition	Attribute	Description
1	3.3V	Output	3.3V Output
2	PWR-ON	Output	Switch Button
3	RESET	Output	Reset control
4	BOOT	Input/Output	UBOOT Button
5	KEY	Output	Button
6	GND	Ground	Ground

◆ JP13(6PIN/2.0) CTP/I2C Touchscreen 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

◆ JP1(2X15PIN/2.0) LVDS Signal Output

S/N	Definition	Attribute	Description
1	VCC_Panel	Power Output	LCD power output, according to the LCD screen optional 3.3V / 5V / 12V (by JP6 jumper jumper cap to choose)
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	RX03-	Output	Pixel3 Negative Data (Odd)
18	RX03+	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 screen 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 Output	LVDS screen voltage via pins 1, 3, 5
4			

6			
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◆ **JP12(4PIN/2.0) Speaker output**

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

◆ **JP18(4PIN/2.0) UART4 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX4	Input	UART Data Input
3	TX4	Output	UART Data Output
4	3.3V	3.3V Power Output	3.3V Power Output

◆ **J23(4PIN/2.0) UART2 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX2	Input	UART Data Input
3	TX2	Output	UART Data Output
4	3.3V	3.3V Power Output	3.3V Power Output

◆ **J17 (4PIN/2.0) UART1 Serial port**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	RX1	Input	UART Data Input
3	TX1	Output	UART Data Output
4	3.3V	3.3V Power Output	3.3V Power Output

		Output	
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◆ **J9 (4PIN/2.0) USB3 Extended 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

◆ **J11 (4PIN/2.0) USB4 Extended 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

◆ **J7 (4PIN/2.0) USB6 Extended interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP6	Input/Output	D+Signal line
3	DM6	Input/Output	D-Signal line
4	5V Power	Power Output	Power Output +5V

◆ **J8 (4PIN/2.0) USB7 Extended interface**

S/N	Definition	Attribute	Description
1	GND	Ground	Ground
2	DP7	Input/Output	D+Signal line
3	DM7	Input/Output	D-Signal line
4	5V Power	Power Output	Power Output +5V

◆ **JP22(5PIN/2.0) Remote control indicator light**

S/N	Definition	Attribute	Description
1	LED_B	Blue LED	Working Indicator
2	LED_R	RED LED	Standby Indicator
3	VCC	Power Output	Remote Control main Power supply +3.3V
4	GND	Ground	Ground
5	IR	Input	Remote control signal input

◆ **JP3(2PIN/2.0) MIC Microphone Jack**

S/N	Definition	Attribute	Attribute
1	MICN	Audio Input	Audio Input
2	MICP	Ground	Ground

- ◆ **J4 3.5mm Headphone Jack Audio Output**
- ◆ **J5 Micro SD Card**
- ◆ **HCON1 HDMI Signal Output Maximum Support 1080P**
- ◆ **U210 RJ45, 100M Network Port**
- ◆ **SW3 UBOOT Button, used in system upgrade**
- ◆ **JD14 USB0_OTG Used system upgrade, debugging**
- ◆ **JD13 USB2-HOST Interface Used for external device**
- ◆ **ANT1 WIFI Antenna External connector .4G BT4.0**

4 Sizes

4.1 Board Size

PCB Length 123.9mm, Width 87.8mm, Height 16mm, For more details structural diagrams Please consult our sales representatives.

