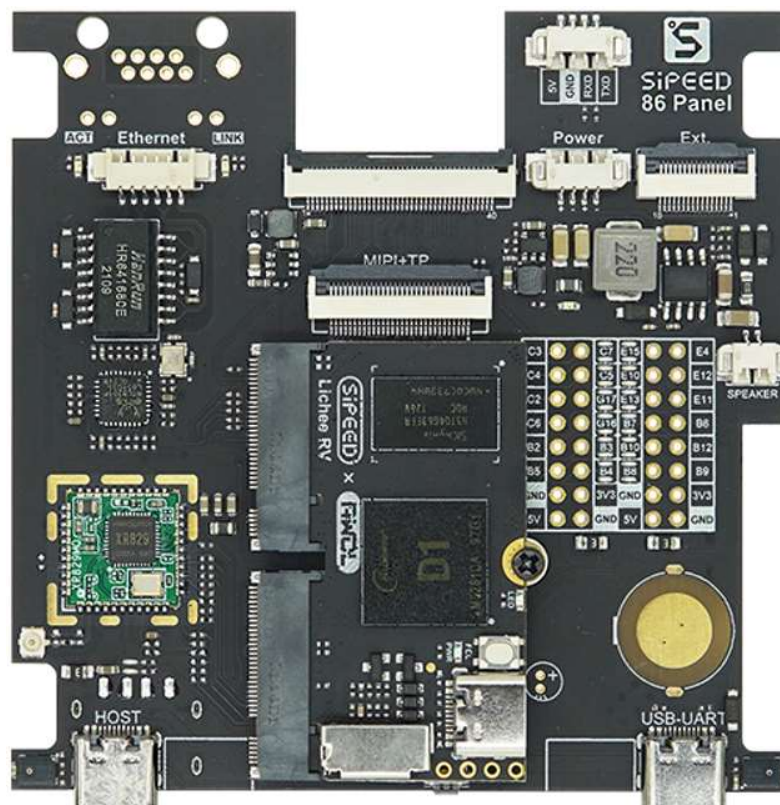


Sipeed Lichee RV 86 Panel Datasheet

v1.0



Features:

- Designed for Lichee RV Core, ALLWINNER D1 SOC, 512MB DDR3 RAM
- Support Linux system and WAFT development environment
- Embedded 4 Inch 480*480 LCD+capactive touch panel
- On board 10/100Mbps Ethernet and Wi-Fi
- On board DC-DC converter, supports external 9~12V power supply
- On board speaker amplifier and dual digital MICs
- On board dual 2.54mm GPIO external
- On board USB Type-C to UART converter and USB Type-C HOST
- Reserved RTC circuit (unmounted RTC chip default)

Update record of this document	
V1.0	Edited on December 7, 2021; Original document

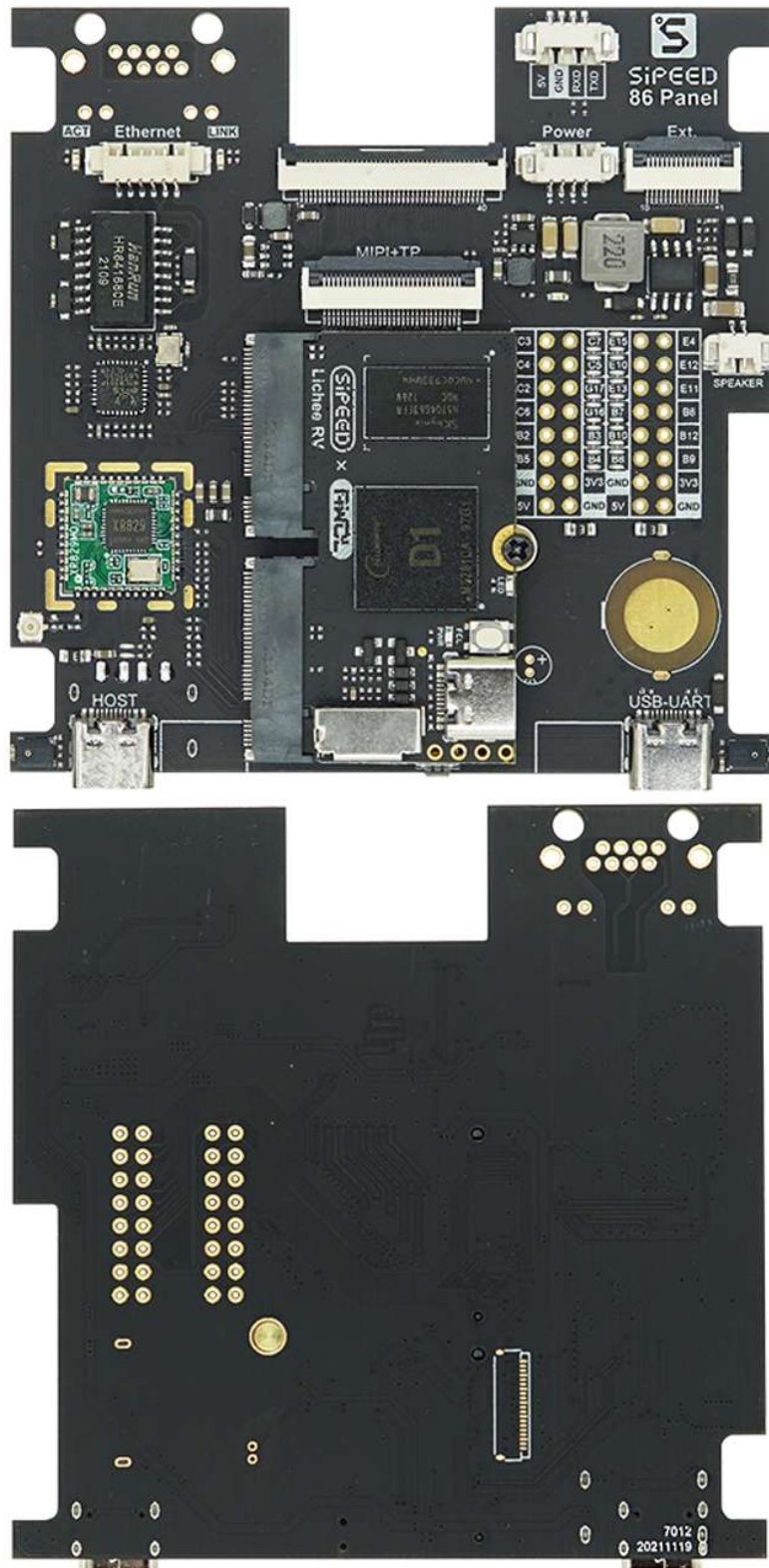
Hardware overview	
Core board	Lichee RV, ALLWINNER D1 SOC with 512MB DDR3 RAM
Display	<p>RGB: Extend RGB666 and TWI via 0.5mm 40P FPC, for 4 Inch touch screen.</p> <p>MIPI-DSI: Extend MIPI-DSI 4Lane and TWI via 0.5mm 30P FPC, compactible with Nezha 8 Inch touch screen.</p> <p>*The kit includes a 4 Inch 480*480 IPS LCD(ST7701)with touch panel(FT6336U).</p>
Audio	<p>Analog audio output(HPOUT): On board 3W(@4Ω) audio amplifier, connect speaker via MX1.25mm 2P cable, the enable pin of the amplifier could be controlled by GPIO(PB10) via move the resistor from R75 to R74.</p> <p>Digital microphones(DMIC): On board dual digital MICs, mounted on DMIC-D0.</p> <p>Analog microphone(MIC3): Reserved an analog MIC, default unmounted.</p> <p>* The kit includes a 2809 8Ω 1W mini speaker.</p>
Storage	Reserved SOP-8 208mil pad, compactible with WSON-8 6*8, could mount SPI-NOR or SPI-NAND Flash if needed.
External power	On board DC-DC converter, supports external 9~12V power input via MX1.25mm 4P connector
Ethernet	<p>On board RTL8201F EPHY, supports 10/100Mbps Ethernet, extend RJ45 cable via MX1.25mm 6P connector.</p> <p>* The kit includes RJ45+power cable for Ethernet and external power input.</p>
Wireless	<p>On board XR829 module, supports Wi-Fi+BT, connect antenna via IPEX connector.</p> <p>* The kit includes a mini film antenna.</p>
RTC	Reserved RTC circuit, default unmounted, could be mounted for customization requirements
USB	<p>On board USB to UART bridge(CH340E), extended via USB Type-C for debug.</p> <p>On board USB-HOST (USB1), extended via USB Type-C for external devices.</p>
GPIO	<p>Reserved 24 GPIOs and 5V/3.3V power via dual 2.54mm 2*8 connector.</p> <p>Reserved 5V and UART via MX1.25mm 4P connector.</p> <p>Reserved external GPIO and 12V power via 0.5mm 16P FPC connector.</p>

	*For details, please refer to hardware schematic.
PCB Layers	2 Layers.
Mount	Mounted by the snap of the additional shell.

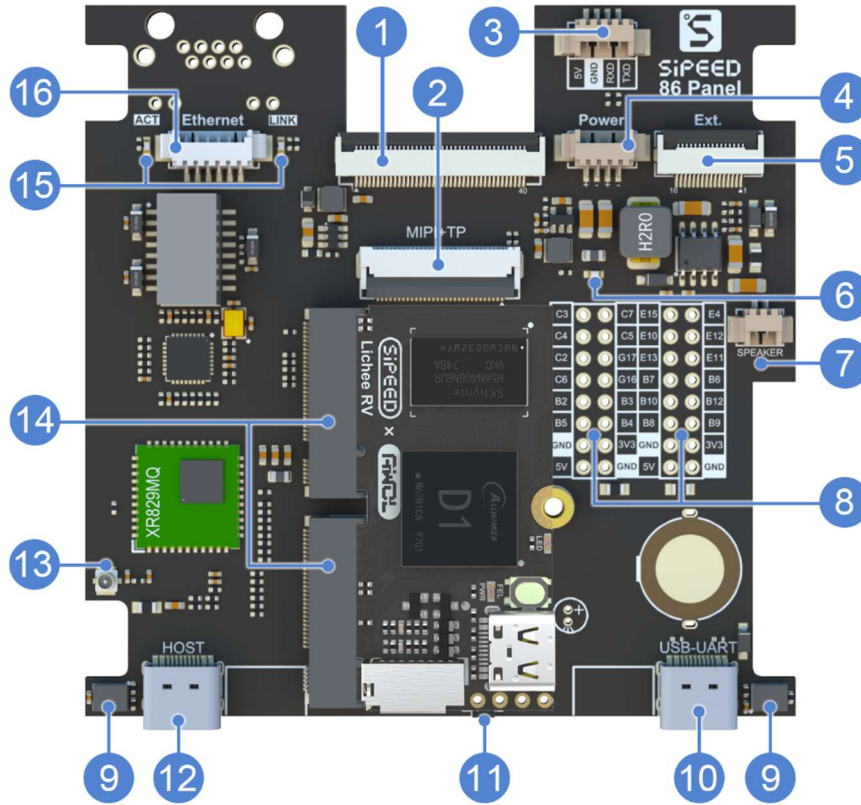
Software overview	
System	Tina Linux(Based on OpenWRT 14.07), Debian
	YoC (RTOS)
BSP	Tina SDK from AllWinnerTech (register first and then download from https://open.allwinnertech.com/)
Supported development language	C/C++, Python, Golang, etc...
UI&YoC resources	https://occ.t-head.cn/

Recommended working range	
External power	TYPE-C(J6): 4.8V(min)~5.2V (max) , ≤1.5A
	5VPort(J16): 4.8V(min)~5.1V (max) , ≤1.5A
	Power Port(J8): 8V (min)~14V (max) , ≤1A
Temperature rise	<40K
Temperature range	0°C ~ 65°C

Appearance drawing

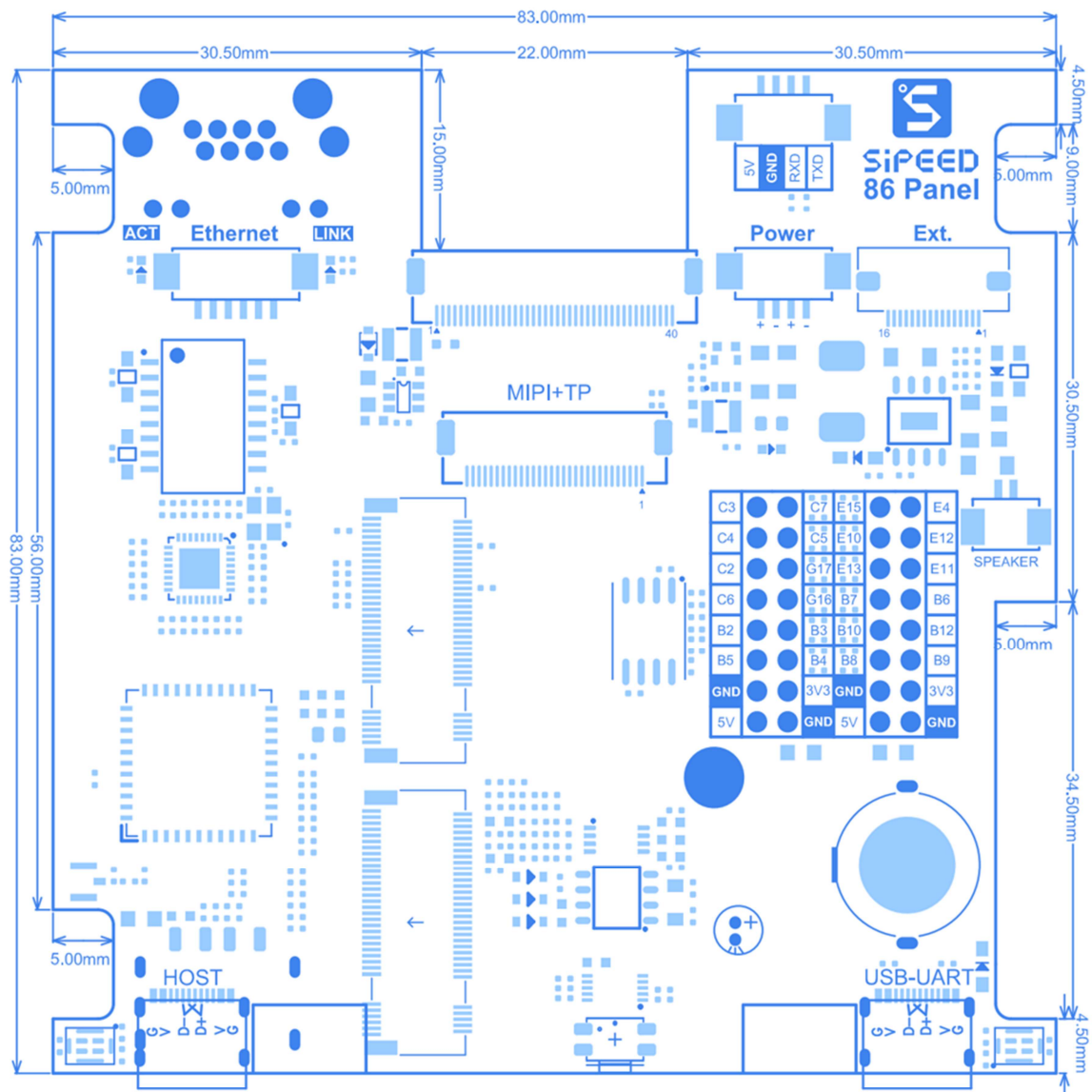


Functional annotation



- | | | |
|------------------------------------|------------------------------------|----------------------------|
| 1 RGB +TP Port
For 4Inch Screen | 2 MIPI+TP Port
For Nezha Screen | 3 5V+UART Port |
| 4 9~12V Power | 5 FPC IO Extend
Reserved | 6 Power LED |
| 7 Speaker Port | 8 GPIO Breakout | 9 Digital Microphones |
| 10 USB-UART
Debug Port | 11 Reset Button | 12 USB-HOST
Extend Port |
| 13 IPEX-I
Antenna Port | 14 Coreboard
Dual socket | 15 Ethernet
Status LEDs |
| 16 Ethernet
Extend Port | | |

Dimension information	
Length	83 mm
Width	83mm
Thickness	Please refer to 3D model file.



Notice	
Avoid Static	Please pay attention to avoid static electricity hitting PCBA; Please discharge the human static electricity before touching PCBA
GPIO Tolerance	The GPIO typical voltage is referred from D1_Datasheet_V0.1, don't let it out of range otherwise the PCBA would be damaged.
FPC connectors	Please confirm that the FPC of the external LCD is plugged in stably before power on.
Extend connectors	Please power off the whole board before plug/unplug operation with extend connectors or TF card.
Avoid short circuit	Please avoid any short circuit to the PCBA during power on, otherwise it will damage the PCBA
Don't use these GPIOs as possible Otherwise, please refer to the hardware schematic.	<ul style="list-style-type: none"> PC2,PC3,PC4,PC5,PC6,PC7 (Includes BOOT, Alternate with reserved SPI-Flash) PE12,PE14,PE15(Alternate with 4 Inch LCD SPI Pins) PB8,PB9 (Alternate with UART debug Pins) PB10 (Alternate with reserved amplifier enable controlling pin)

Resources	
Official website	www.sipeed.com
BBS	http://bbs.sipeed.com OR https://occ.t-head.cn/
E-mail	support@sipeed.com
Allwinner Tech SDK	https://open.allwinnertech.com/
Allwinner Tech Development docs	https://d1.docs.allwinnertech.com
Waft UI Documents	https://occ.t-head.cn/
Technical online	488268051
E-mail (for business cooperation)	support@sipeed.com



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