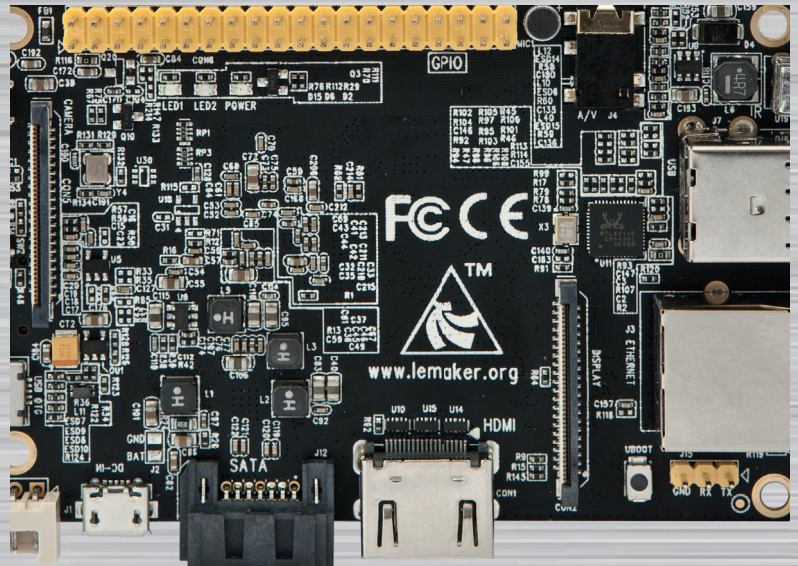


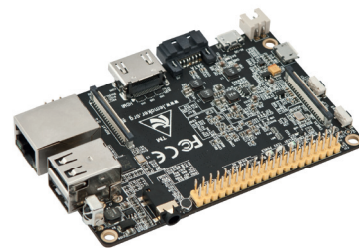


ALLNET *banana pro / M1+*

ALLWINNER A20 - ARM Cortex-A7 DualCore

- **ARM® Cortex™-A7 Dual-Core up to 1.2 GHz**
- **Mali400MP2, supporting OpenGL ES 2.0/1.1(hardware acceleration support)**
- **1GB DDR3 SDRAM**
- **SATA 2.0(suggest 2.5 inch SSD or HDD)**
- **ARM® Cortex™-A7 Dual-Core up to 1.2 GHz**
- **WiFi 802.11 b/g/n 2.4GHz**
- **10/100/1000Mbps ethernet (Realtek RTL8211E/D)**

Article: 115346



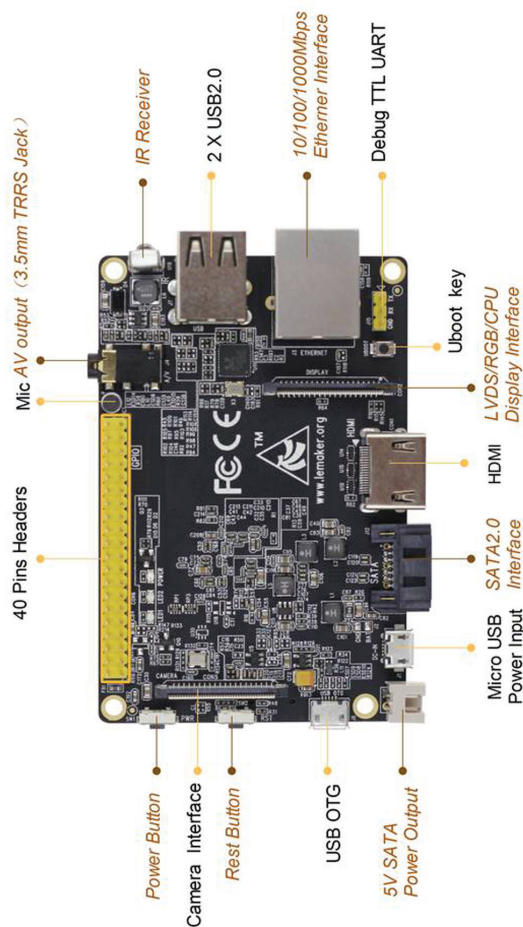
What is a Banana Pro?

Banana Pro™ is an updated version of Banana Pi™ designed by the LeMaker Team. Try Banana Pro™ today and take advantage of the many enhanced features.

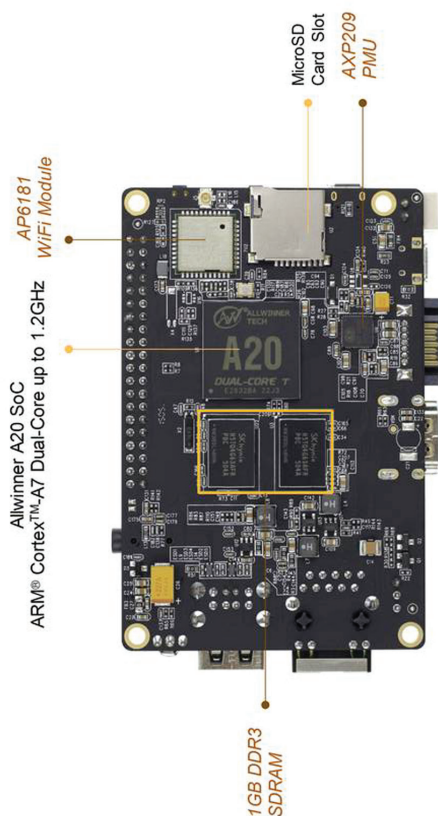
Banana Pro™ is compatible with many Linux-based operating system and has many distributions specially developed for Banana Pi™ Hardware. Some of these distributions include Lubuntu, Android, Debian, Bananian, Berryboot, OpenSuse, Fedora, Gentoo, Open MediaVault, OpenWRT. Banana Pro™ also supports the BSD system.

Banana Pro™ has a wide selection of home applications including: Building a low-cost computer, Servers (for Multimedia, Minecraft or other home servers), Video Game Emulators, Home Security Cameras and more.

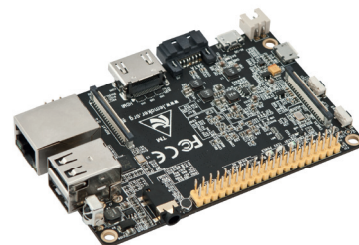
Banana Pro™ is an excellent educational learning tool that can be used for many projects including: building Multimedia projects, Robots, 4duino applications or Computer Programming with many popular programming languages available including Scratch (a drag and drop programming language for people beginning to learn how to code).



Front side



Back side



Hardware Specification of Banana Pro™	
Banana M1+	
SoC	Allwinner® A20(sun 7i)
CPU	ARM® Cortex™-A7 Dual-Core up to 1.2 GHz (ARM v7 instruction set)
GPU	Mali400MP2, supporting OpenGL ES 2.0/1.1(hardware acceleration support)
RAM	1GB DDR3 SDRAM (shared with GPU)
PMU	AXP209
Features	
Storage	MicroSD (TF) card slot SATA 2.0(suggest 2.5 inch SSD or HDD)
Ethernet Port	10/100/1000Mbps ethernet (Realtek RTL8211E/D)
Wireless	WiFi 802.11 b/g/n 2.4GHz 1 x IR receiver
USB	2 x USB2.0 Host 1 x USB 2.0 OTG (all direct from A20 chip)
Display	Supports multi-channel HD display : 1 x HDMI 1.4 (Type A - full) 1 x LVDS/RGB/CPU display interface (DSI) for raw LCD panels Composite video (PAL and NTSC) (via 3.5 mm TRRS jack shared with audio out) HDMI resolutions from 640×480 to 1920×1080 plus various PAL and NTSC standards
Audio	HDMI output Analog audio (via 3.5 mm TRRS jack shared with composite video out) I2S audio (also potentially for audio input) 1 x On board microphone for audio input
Camera	1 x Parallel 8-bit camera interface
Expansion Interface	40 Pins Header : 28×GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, CAN, I2S, SPDIF.
LED	1 x Power status led (red) 1 x User defined led1 (green) 1 x User defined led2 (blue)
Button	1 x Reset button 1 x Power button 1 x U-boot button
Power Source	5V @ 2A via MicroUSB
OS Support	Android 4.2 / 4.4 / Linux
Appearance characteristic	
Sizes	92mm x 60mm
Weight	45g

Innovations that enrich people's lives



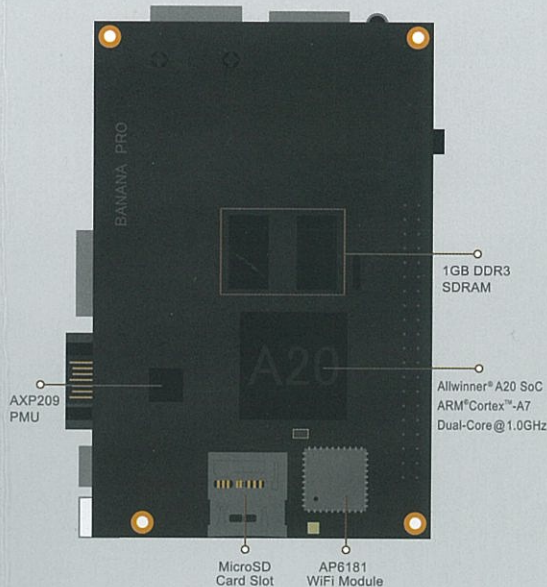
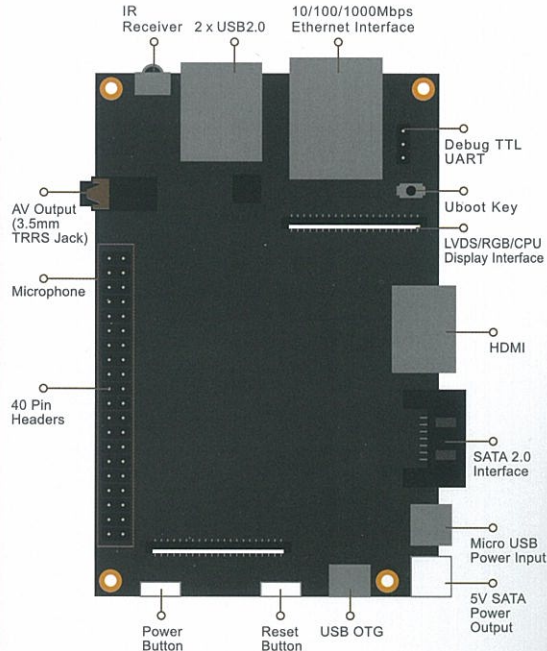
Banana ProTM

LEMAKER

www.lemaker.org

Introduction

Banana Pro™ is an update version of Banana Pi™ designed by LeMaker Team ,and it has more enhanced features. Banana Pro™ has an excellent compatibility with multiply software supports. Basically all mainstream Linux-based operating system can run on Banana Pro™, with the version of Android, Lubuntu, Debian, Berryboot, OpenSuse, Fedora, Gentoo, OpenWRT. Banana Pro™ also supports BSD system. In order to make user more convenient, LeMaker Team provide some customized operating system images with the help of world-wide users , such as LeMedia (XBMC), Scratch, Bananian, Open MediaVault. Please visit http://www.lemaker.org/resources/9-38/image_files.html to download your favourite operating system. Banana Pro™ applies to a wide range of fields, including: low-cost computer for education purpose, scratch, multimedia applications, Arduino, game emulator, home server, robot and so on.



Attentions

- Please use a branded power adapter (5V, 2A) with a quality USB connection cable to supply your Banana Pro. The Banana Pro may not boot up normally or may freeze during the operation with a fake power adapter. A fake power adapter also may led to some functions not work.
 - Please pay attention to the micro USB port for powering and the micro usb port for OTG. Please do not confuse them.
- Please be aware that the SATA power output on the Banana Pro can only provide +5V. So in general, the Banana Pro can only stably power the 2.5 inch SSD. In certain case, the 2.5 inch HDD is also possible, but some brands and models require too much current, so please have a try. If you want to use a 3.5 inch hard disk drive, you need use an external power supply to your 3.5 inch hard disk drive. Please also use the right SATA connection cable.
- Please use a right HDMI cable or good quality HDMI to VGA cable, or you would not see the display. The HDMI version on the Banana Pro is 1.4.
 - Please do not confuse the camera interface and the LVDS/RGB/CPU display interface. The one beside Ethernet interface is LVDS/RGB/CPU display interface.

Dimensions	92mm x 60mm
Website	www.lemaker.org

Specifications

SoC	Allwinner® A20
CPU	ARM® Cortex™-A7 Dual-Core @ 1.0GHz
GPU	ARM® Mali400MP2 Complies with OpenGL ES 2.0/1.1
SDRAM	1GB DDR3 (shared with GPU)
Power	5V @ 2A via MicroUSB (DC in Only) and/or MicroUSB (OTG)
PMU	AXP209

Features

Display	Support multi-channel HD display: HDMI 1.4 (Type A - full) Composite video (PAL and NTSC) (via 3.5 mm TRRS jack shared with audio out) LVDS/RGB/CPU display interface (DSI) for raw LCD panels 11 HDMI resolutions from 640×480 to 1920×1080 plus various PAL and NTSC standards
Video	HD H.264 2160p video decoding Multi-format FHD video decoding, including Mpeg1/2, Mpeg4, H.263, H.264, etc H.264 high profile 1080p@30fps or 720p@60fps encoding

On board Network	10/100/1000Mbps ethernet (Realtek RTL 8211E/D) WiFi 802.11 b/g/n (AP6181)
Camera	Parallel 8-bit camera interface
On board Storage	MicroSD (TF) card, SATA 2.0
Audio outputs	HDMI, analog audio (via 3.5 mm TRRS jack shared with composite video out), I2S audio (also potentially for audio input)
Audio input	On board microphone
USB	2 USB 2.0 host, 1 USB 2.0 OTG (all direct from A20 chip)
Low-level peripherals	40 pin headers. 28×GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, CAN, I2S, SPDIF, LRADC, ADC, LINE-IN, FM-IN, HP-IN.
Buttons	Reset button Power button U-boot button
Leds	Power status led (red) User defined led1 (blue) User defined led2 (green)
Other	IR receiver, Bluetooth (optional)

USEFUL LINK:



- ▶ Quick start guide:
http://www.lemaker.org/resources/9-38/image_files.html
- ▶ Download page:
http://www.lemaker.org/resources/9-38/image_files.html
- ▶ Forum discussion:
<http://forum.lemaker.org/forum.php>
- ▶ Wiki pages:
http://wiki.lemaker.org/Main_Page
- ▶ Source code on Github:
<https://github.com/LeMaker>



www.lemaker.org

Banana Pro

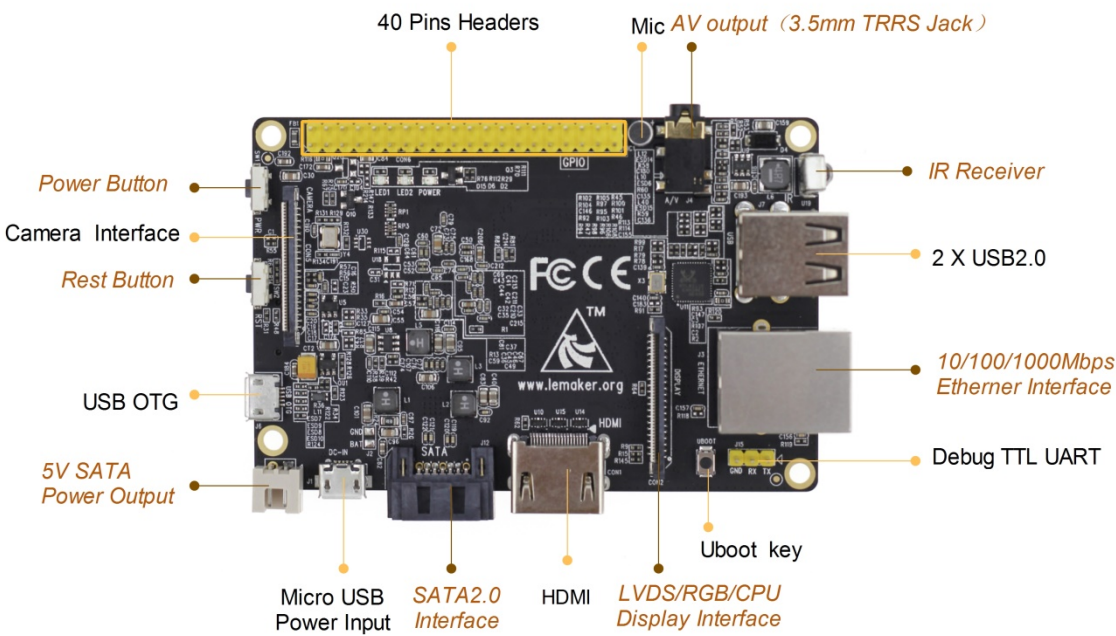
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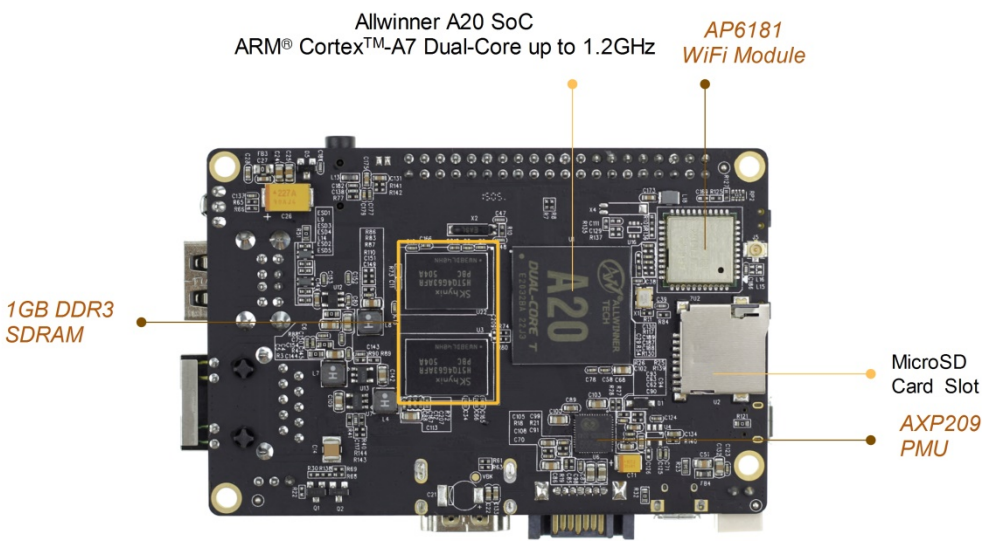
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Front side



Back side

Hardware Specification of Banana Pro™	
SoC	Allwinner® A20(sun 7i)
CPU	ARM® Cortex™-A7 Dual-Core up to 1.2 GHz (ARM v7 instruction set)
GPU	Mali400MP2, supproting OpenGL ES 2.0/1.1(hardware acceleration support)
RAM	1GB DDR3 SDRAM (shared with GPU)
PMU	AXP209
Features	
Storage	MicroSD (TF) card slot SATA 2.0(suggest 2.5 inch SSD or HDD)
Ethernet Port	10/100/1000Mbps ethernet (Realtek RTL8211E/D)
Wireless	WiFi 802.11 b/g/n 2.4GHz 1 x IR receiver
USB	2 x USB2.0 Host 1 x USB 2.0 OTG (all direct from A20 chip)
Display	Supports multi-channel HD display : 1 x HDMI 1.4 (Type A - full) 1 x LVDS/RGB/CPU display interface (DSI) for raw LCD panels Composite video (PAL and NTSC) (via 3.5 mm TRRS jack shared with audio out) HDMI resolutions from 640×480 to 1920×1080 plus various PAL and NTSC standards
Audio	HDMI output Analog audio (via 3.5 mm TRRS jack shared with composite video out) I2S audio (also potentially for audio input) 1 x On board microphone for audio input
Camera	1 x Parallel 8-bit camera interface
Expansion Interface	40 Pins Header : 28×GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, CAN, I2S, SPDIF.
LED	1 x Power status led (red) 1 x User defined led1 (green) 1 x User defined led2 (blue)
Button	1 x Reset button 1 x Power button 1 x U-boot button
Power Source	5V @ 2A via MicroUSB
OS Support	Android 4.2 (4.4) / Linux OS download please click on the Banana Pro image download address
Appearance characteristic	
Sizes	92mm × 60mm
Weight	45g
Banana Pro™ and Banana Pi™ are trademarks of LeMaker	

banana pro board

NEU



Art. nr. 115346

Der Banana Pro bietet als erweiterte Version des Banana Pi zahlreiche Zusatzfunktionen, die für eine noch höhere Leistungsfähigkeit und Flexibilität sorgen. Das Banana Pro Board unterstützt neben allen gängigen Linux Systemen unter anderem auch Android, Bananian, Berryboot, openSuse, OpenWRT und BSD System. Dank integriertem W-LAN und der Möglichkeit Bluetooth zur Kommunikation zu nutzen, lässt sich das Board noch flexibler einsetzen.

Mit dem Banana Pro lassen sich Low-Cost Computer für den Bildungsbereich genauso realisieren, wie Multimedia Applikationen oder Home Server.

Technische Daten - Vergleich

Feature	Banana Pro	Banana Pi
SoC	Allwinner A20	
CPU	A20 ARM cortex A7 Dual-Core 1GHz	
GPU	ARM Mali400 MP2, complies with OpenGL ES2.0/1.1	
SDRAM	1GB DDR3 SDRAM (shared with GPU)	

Power	5V @ 2 A MicroUSB (DC in only) and/or MicroUSB (OTG)	
PMU	AXP209	
Low-Level Peripherals	40 Pins GPIO Header	26 Pins GPIO Header
	30x GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, CAN, I2S, SPDIF, LRAC, ADC, Line-IN, FM-IN and HP-IN	23x GPIO, some of which can be used for specific functions including UART, I2C, SPI, PWM, CAN, LRAC; ADC, Line-IN and HP-IN
On board Network	10/100/1000 Ethernet (Realtek RTL8211E/D)	
Wi-Fi module	802.11 b/g/n	N/A
Bluetooth	Optional	N/A
On Board Storage	MicroSD (TF) card	SD card
Display	Supports multi-channel HD display HDMI 1.4 (Type A - full) LVDS/RGB/CPU display interface (DSI) for raw LCD panels 11 HDMI resolutions from 640x480 to 1920x1080 plus various PAL and NTSC standards	
	Composite video (PAL and NTSC) (Via 3,5 mm TRRS jack shared with audio out)	Composite video (PAL and NTSC) (Via RCA jack)
Video	HD H.264 2160p video decoding Multi-format FHD video decoding, including MPEG-½, MPEG-4, H.263, H264, etc. H.264 high profile 1080p@30fps or 720@60fps	
Audio Outputs	HDMI, analog audio (via 3,5 mmm TRRS jack shared with Composite video out), I2S audio (also potentially for audio input)	HDMI, analog audio (via 3,5 mm phone jack)
Camera	Parallel 8-bit camera interface	
Audio input	On Board microphone	
USB	2 USB 2.0 hosts, 1 USB 2.0 OTG (all direct from A20 chip)	
Buttons	Reset button	
	Power button U-boot Button	
LEDs	Power Status LED (red) Ethernet status LED (blue) User defined LED (green)	
Other	IR receiver	
Sizes	92mm x 60mm	
Weight	48g	