RK3399 R Pro Player

User Manual

SCALA

SCALA Digital Technology (Ningbo) Co., LTD   Version：V1.0

Catalogue

1.Brief introduction

RK3399 R Pro Smart play box is a high-end intelligent electronic product that supports Linux operating system. Smart play box can be used in a variety of occasions for data collection and (audio & video) advertising. The product includes integrated sound output, local audio and video signal HDMI output, audio and video signal HDMI_IN conversion HDMI_OUT, wired network, Bluetooth, WIFI, USB, AUX, IR and other functions. In addition, Products have two series of 2HDMI-Out and 4HDMI-Out, which can be configured with POE functions. (See Product Specifications for detailed configuration)

RK3399 R pro Player Product interface Diagram：

Figure 1 Interface definition diagram-Power

Figure 2   Interface definition diagram-4HDMI

Figure 3   Interface definition diagram-2HDMI

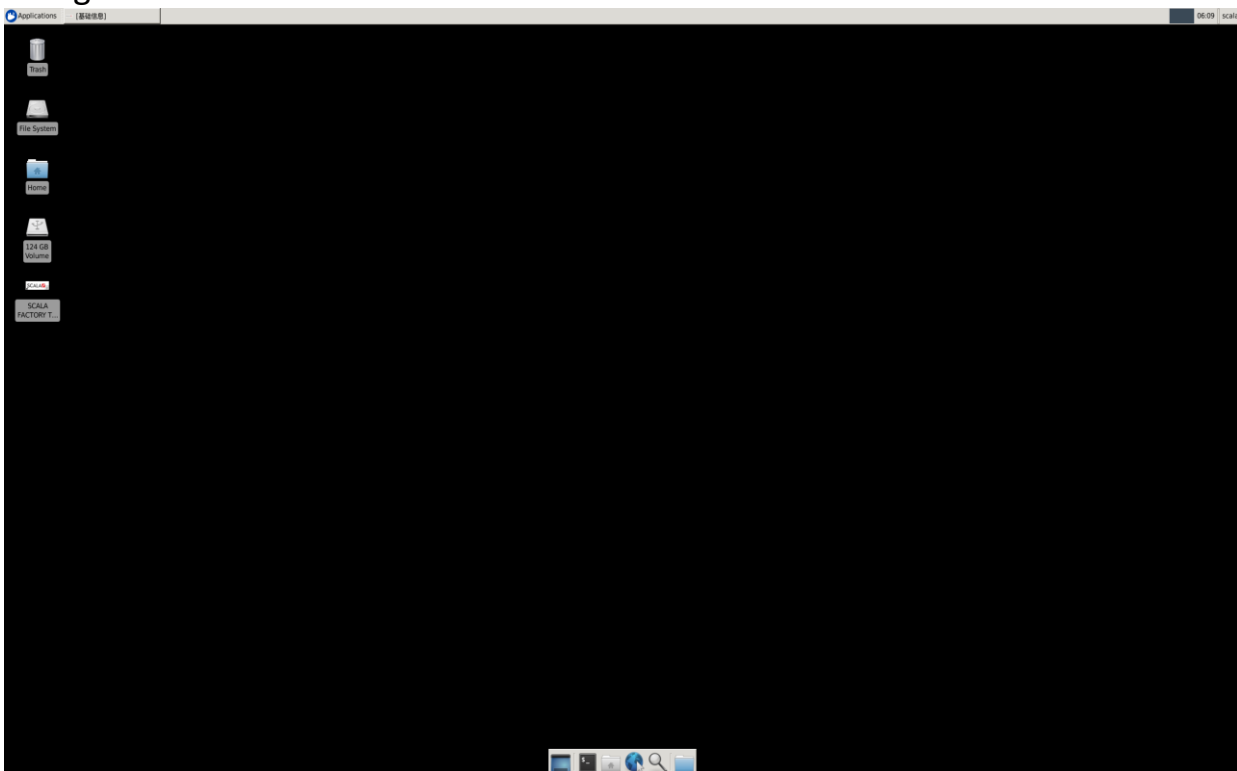# 2.Product system connection and power on&off

2.1 Product system connection

1. Connect the 12V/2A power adapter to the power socket (110 to 240VAC). Connect the adapter connector to the DC12V socket of the device, and tighten the nut.
2 .Connect the external display to the HDMI OUT port of the product through the HDMI data cable. The number of connections can be selected according to the user's on-site requirements. USB1 to 6 can be connected to peripheral devices, such as a mouse and keyboard, for user interface operations.

2.2 Power on&off and indicator state display

After the above system connection operation is completed, the product can be started through the Power switch button or through the Power EXT extension cable. After startup, the system displays the following initial screen.

When the equipment is on or off, the color changes of the power and status indicators are described as follows to determine whether the sample is working normally.
Power button indicator Status:
Power on, the power indicator is green, and the Status indicator is green.
Power off, the power indicator is red and the Status indicator is off
When the Recovery button is pressed, the power indicator is green and the Status indicator is red

3.product instruction

3.1 Basic device information

Click to open the SCALA FACTORY TEST TOOLS APP on the desktop and follow the following steps to view the firmware version, mainboard ID, MAC, memory and other basic information.

Process: SCALA FACTORY TEST TOOLS→ previous process → basic information

3.2 External USB device

The USB2.0 and USB3.0 ports of the player box can be connected to external devices such as mouse and keyboard to realize data input and output and interface operation.
In addition, the insertion of a USB flash drive or a mobile hard disk can achieve data transmission and storage. (When the device is inserted into the USB port, it will be automatically displayed on the initial interface).

3.3 Video display

In the "SCALA FACTORY TEST TOOLS" APP, local video playback path: FACTORY TEST → aging process → player。

HDMI IN input provides video playback path: Factory test → pre-process →HDMI-IN.

3.4 Wired network setup

In the "SCALA FACTORY TEST TOOLS" APP, Operation path: FACTORY TEST → previous procedure → wired network.

3.5 Wireless Network Settings

In the "SCALA FACTORY TEST TOOLS" APP, Operation path: FACTORY TEST → previous procedure → wireless network.

3.6 Bluetooth Settings

In the "SCALA FACTORY TEST TOOLS" APP, Operation path: FACTORY TEST → previous procedure → Bluetooth。

3.7 Audiocast

When the playback box connects to the audio equipment through AUX port, the audio signal can be output.

3.8 IR

The playback box supports infrared remote control function, and the remote control can be used for interface operation. OK button corresponds to the left mouse button, up and down the left and right keys can be used for the operation of sliding options such as volume.

3.9 Volume adjustment

In the "SCALA FACTORY TEST TOOLS" APP, operation path: FACTORY TEST → previous procedure → key.
On this interface, you can adjust the volume output of the player box by using the sound adjustment button of the infrared remote control.

3.10 Serial port

COM port on the player box can be used for serial communication. If necessary, contact the manufacturer.

4. Firmware upgrade

This product can be used for secondary development of various occasions, if you need to customize functions or upgrade firmware, please contact the manufacturer.

5. Packing list

1.12V/2A multi-function DC anti-straightener adapter, 1PCS
2. Wall mounting bracket, 1PCS
3. With pad M4*4, screw *6
4. External hex wrench, 1PCS

Product Specifications－４ HDMI

Product Descriptions		Scala RK3399Pro Player(4 x HDMI Output)
Hardware & OS	Soc	Rockchip RK3399Pro
	CPU	Six-Core ARM 64-bit processor, Based on Big.Little architecture. Dual-Core Cortex-A72 up to 1.8GHz Quad-Core Cortex-A53 up to 1.4GHz
	GPU	ARM Mali-T860 MP4 Quad-Core GPU Support OpenGL ES1.1/2.0/3.0/3.1, OpenCL and DirectX 11 Support AFBC
	NPU	Support 8bit/16bit Inference Support TensorFlow/Caffe Model
	Multi-Media	Support 4K VP9 and 4K 10bits H265/H264 video decoding, up to 60fps 1080P multi-format video decoding (VC-1, MPEG-1/2/4, VP8) 1080P video encoders for H.264 and VP8 Video post processor: de-interlace, de-noise, enhancement for edge/detail/color
	RAM	Dual-Channel LPDDR4 (4GB Standard)
	Flash	High-Speed eMMC 5.1 (64GB Standard/32GB/128GB Optional)
	OS	SUPPORT LINUX

I/O Ports		1 x DC input[with anti-loose mechanism], 1 x HDMI Input (HDMI 1.4，up to 1080P@60fps，support HDCP 1.4a), 4 x HDMI Output/2 x HDMI Output (HDMI 1.4，up to 1080P@60fps，support HDCP 1.4), 6 x USB 2.0, 1 x WiFi/BT Antenna, 1 x AUX, 1 x Recovery, 1 x Reset, 1 x USB 3.0/Service [Type C], 1 x IR Receiver, 1 x RJ11 for IR Extension Cable Port, 1 x RJ11 for Power Extension Cable Port, 1 x RJ11 for Serial Port, 1 x RJ45 for Gigabit Ethernet, 1 x LED Status, 1 x　Power button.
Power	**Power input by adapter**	DC12V, 2A
	Power input by PoE(Optional)	IEEE802 3at(25.5W) / Network cable requirement: CAT-5e or better
Remote Control	**Remote control Support**	Yes
Connectivity	**RJ45(PoE)**	Ethernet 10/100/1000, support 802.1Q tagging
		IEEE802 3at(25.5W) / Network cable requirement: CAT-5e or better
	WIFI	WiFi 2.4GHz/5GHz Dual-Band Support 802.11a/b/g/n/ac
	Bluetooth	Built-in BLE 4.0 Beacon
General information	**Case Material**	Aluminum
	Storage Temp	(-15 -- 65 degree)
	Working Temp	(0 -- 50 degree)
	Storage/Working Humidity	(10 -- 90%)
	Dimension	238.5mm*124.7mm*33.2mm
	Net Weight	1.04KGS(Typ)

Product Specifications－2 HDMI

Product Descriptions		Scala RK3399Pro Player(2 x HDMI Output)
Hardware & OS	Soc	Rockchip RK3399Pro
	CPU	Six-Core ARM 64-bit processor, Based on Big.Little architecture. Dual-Core Cortex-A72 up to 1.8GHz Quad-Core Cortex-A53 up to 1.4GHz
	GPU	ARM Mali-T860 MP4 Quad-Core GPU Support OpenGL ES1.1/2.0/3.0/3.1, OpenCL and DirectX 11 Support AFBC
	NPU	Support 8bit/16bit Inference Support TensorFlow/Caffe Model
	Multi-Media	Support 4K VP9 and 4K 10bits H265/H264 video decoding, up to 60fps 1080P multi-format video decoding (VC-1, MPEG-1/2/4, VP8) 1080P video encoders for H.264 and VP8 Video post processor: de-interlace, de-noise, enhancement for edge/detail/color
	RAM	Dual-Channel LPDDR4 (4GB Standard)
	Flash	High-Speed eMMC 5.1 (64GB Standard/32GB/128GB Optional)
	OS	SUPPORT LINUX

I/O Ports	1 x DC input[with anti-loose mechanism], 1 x HDMI Input (HDMI 1.4，up to 1080P@60fps，support HDCP 1.4a), 2 x HDMI Output (HDMI 1.4，up to 1080P@60fps，support HDCP 1.4), 6 x USB 2.0, 1 x WiFi/BT Antenna, 1 x AUX, 1 x Recovery, 1 x Reset, 1 x USB 3.0/Service [Type C], 1 x IR Receiver, 1 x RJ11 for IR Extension Cable Port, 1 x RJ11 for Power Extension Cable Port, 1 x RJ11 for Serial Port, 1 x RJ45 for Gigabit Ethernet, 1 x LED Status, 1 x　Power button.

Power	Power input by adapter	DC12V, 2A
	Power input by PoE(Optional)	IEEE802 3at(25.5W) / Network cable requirement: CAT-5e or better
Remote Control	Remote control Support	Yes

Connectivity	RJ45(PoE)	Ethernet 10/100/1000, support 802.1Q tagging
		IEEE802 3at(25.5W) / Network cable requirement: CAT-5e or better
	WIFI	WiFi 2.4GHz/5GHz Dual-Band Support 802.11a/b/g/n/ac
	Bluetooth	Built-in BLE 4.0 Beacon

General information	Case Material	Aluminum
	Storage Temp	(-15 -- 65 degree)
	Working Temp	(0 -- 50 degree)
	Storage/Working Humidity	(10 -- 90%)
	Dimension	238.5mm*124.7mm*33.2mm
	Net Weight	1.035KGS(Typ)

FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired opera

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.