

# RK3399 Developer Board OPS3399-H User's Guide



Thank you for purchasing this Geniatech product. .Before using it, be sure to read the precautions contained in this User's Guide. .Keep the User's Guide in a safe place for future reference. .For the most up-to-date information about this product, visit official website at <u>http://www.geniatech.com</u>

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### **1. Safety Information**

Read and understand all instructions before using this product. If damage is caused by failure to follow the instructions, the warranty does not apply.

### 1.1 Warning

To reduce the risk of electric shock, DO NOT remove the cover (or back).

DO NOT attempt to repair the product, this could lead to the risk of injury, damage to the product .

To reduce the risk of fire or electric shock, keep this product away from exposed direct sunlight, naked flames or heat, large amounts of moisture, dust, and sand. FCC Note (for U.S.A)

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 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.

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

- This class B digital product meets all requirements of the Canadian Interference - Causing Equipment Regulations.

### **1.2 Precautions**

Important Safety Instructions

Read these operating instructions carefully before using the unit. Follow all the safety instructions listed below.

Keep these operating instructions handy for future reference.

1.2.1 Read these instructions.

1.2.2 Keep these instructions.

1.2.3 Heed all warnings.

1.2.4 Follow all instructions.

1.2.5 DO NOT use this apparatus near water.

1.2.6 DO NOT clean with any chemical detergent. Clean only with a dry cloth.

1.2.7 DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.

1.2.8 DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.

1.2.9 Protect the power cord from being walked on or pinched particularly at plugs,

convenience receptacles, and the point where it exits the apparatus.

1.2.10 Only use attachments/accessories specified by the manufacturer.

1.2.11 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.2.12 Unplug this apparatus during lightning storms or when unused for long period of time.

1.2.13 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

### **1.3 Handling Cautions**

1.3.1 DO NOT expose this apparatus to dripping or splashing. Do not put objects filled with liquids, such as vases on the apparatus.

1.3.2 To turn this apparatus off completely, you must pull the power plug out of the wall socket. Consequently, the power plug must be easily and readily accessible at all times.

1.3.3 DO NOT plug multiple electric devices into the same wall socket. Overloading a socket can cause it to overheat, resulting in a fire.

1.3.4 Before connecting other components to this player, be sure to turn them off.

1.3.5 If the product makes an abnormal noise or produces a burning smell or smoke, turn off the power switch immediately and disconnect the power plug from the wall outlet. Then, contact the nearest customer service center for technical assistance. Do not use the product. Using the product as it is may cause a fire or an electric shock.

# 2. Introduction

### 2.1 Package Contents

RK3399 Developer Board– OPS3399-H User's Guide HDMI Cable Fiber Optical Cable, RJ45 Network Cable IR Remote Controller (IR RC) Optional Remote Controller 2.4G wireless Remote Controller USB wire/wireless Mouse & Keyboard Power Adapter, Input: AC100 ~ 240V, 50/60Hz, Output: 12.0V-2A

### **2.2 Product Features**

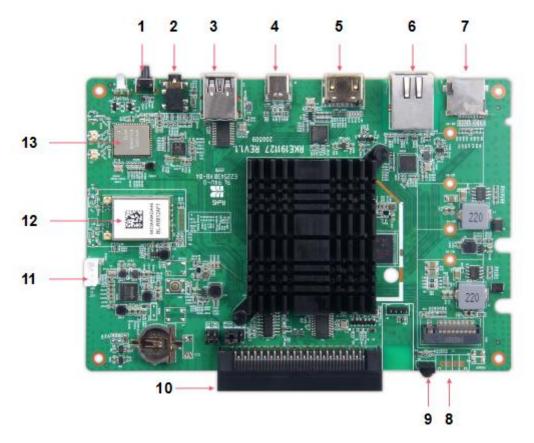
### Rockchip RK3399 Octa-core CPU

- ARM Dual-core Cortex-A72 and quad-core Cortex-A53
- ARM Mali-T860MP4 GPU support OpenGL ES1.1/2.0/3.0, OpenCL1.2,

DirectX11.1 etc.

- 4GB LPDDR4 memory(Optional 1G, 2G)
- 32GB EMMC Flash(Optional 16-64G)
- Android OS 7.1
- Built-in IEEE 802.11 B/G/N AC dual band 2.4G/5G+BT4.1
- WAN RJ45 10/100/1000M Ethernet interface
- 80 Pin Connector(Intel),M2,Micro SD,USB3.0\*2,Type-C,headphone (audio out/mic in)
- SDK avaliable, fully controll displaying
- Support 2.4G &5G wireless Router
- Support weather, calendar, and desktop clock gadgets
- Support 2.4G wireless motion Remote Controller
- Support music player, picture player and more family entertainment
- Support Micro SD card and Google Chrome browser and virtual private network access
- App Installer for application installation from USB/SD card

# 2.3 Appearance



Note: Button Battery 2025 3V insert with correct polarity (+/-).

No.	Name	Description
1	RESET	Reset key
2	Headphone	Earphone Connector
3	USB	USB3.0 * 2
4	Туре-С	Type-C Connector
5	HDMI In	HDMI Connector
6	LAN	1000M Ethernet
7	MicroSD Slot	SD Card Connector(Max.256G)
8	DC IN	DC 12V3A
9	IR	Infrared remote receiver
10	OPS Interface	JAE TX25A 80-pin connector
11	Debug	Debug Connector
12	WIFI1	WIFI Module
13	WIFI2	WIFI Module

# 2.4 Interface definition

# 2.5 Display when Power Up

2.5.1 After booting up, during the loading process, the TV will first display the "Android" interface, and then there will be a booting animation of "Enjoy TV". When the load is complete, it will go to the home screen.



### 2.5.2 Home Screen display.

ψ		I	5						🖹 🕻 9:16
	APPS	WIDGETS						> SHOP	
		9		9		\$			
	ApkInstaller	App Backup &	Camera	Chrome	Clock	Explorer	Gallery	HDMI IN	
	٢		0	<b>S</b>					
	Music	Play Store	Settings	Upgrade	Video	YouTube			
	1		4	0		1			
			1	0		$\Box$			

# 3. Settings

Using Navigation (4 directions), OK, EXIT, and Menu keys of Remote Controller to select the options, the option selected will be highlighted and confirmed by pressing OK key. Same operation for text input if needed.

Select	er i	con then press OK k	ey.			
ш <b>ψ</b>						🖹 🔋 9:17
Settings						۹
	^	Suggestions				
	Ô	Set screen lock Protect your device			:	
		Change wallpaper Personalize your screen			:	
	Wireles	s & networks				
	•	Wi-Fi Disconnected				
	*	Bluetooth Disabled				
	0	Data usage 0 B of data used				
		More				
	Device					
	ø	Adaptive brightness is OFF	0			

### 3.1 WiFi

3.1.1 It will automatically scan ambient WiFi networks when select "ON". Connect an available WiFi network. If connect a secured WiFi network, corresponding password will be input firstly. Or fail to connect and need reset password. Once build up the connection with a certain WiFi network successfully, OPS3399-H will connect this WiFi network automatically when restart. Note: If factory reset, the password of WiFi network have to be reset.

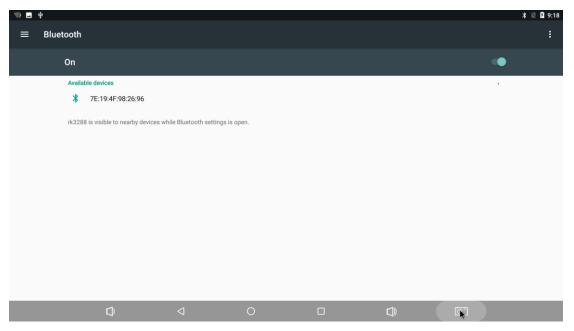
μψ				×.	9:18
≡	Wi-Fi	i		۵	:
		On	•		
		▼.	cpf		
		▼.	dd-wrt-2.4G		
		▼.	dd-wrt-5G		
		-	PC-2.4G		
		•	PC-5G		
		▼.	Sim_Xiaomi		
		▼.	Sim_Xiaomi_5G		
		-	TEST-5GHz		
		•	TOTOLINK_2.4G		
	_	Ta			

## 3.1.2 Tethering & portable hotspot

If you want to share WIFI with your friends, you can set the wi-fi hotspot here, set the wi-fi password, and turn on the hostpot switch for transmission.

🖬 🧐 🌵						* 🖹 🖻 9:19
← Te	ethering & portable hotsp	ot				
	USB tethering USB not connected				•	
	Portable Wi-Fi hotspot					
	Set up Wi-Fi hotspot AndroidAP WPA2 PSK portabl	e Wi-Fi hotspot				
	Bluetooth tethering Not sharing this tablet's Intern	et connection				
	¢	$\triangleleft$	0	D)		

# **3.2 Bluetooth**



# **3.3 Ethernet**

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← Eth	ernet				
	IP address 192.168.1.108				
	netmask 255.255.255.0				
	gateway 192.168.1.120				
	<b>dns1</b> 114.114.114.114				
	dns2 192.168.1.120				
	Ethernet Ip mode				
	MAC address 0e:9f:ee:83:e1:b0				
	Ø	$\triangleleft$	0	<b>S</b>	

# 3.4 Date usage

# Show data usage information.

<u></u> γ Ψ						* 🛛 🖬 9:18
≡ D	bata usage					:
	Usage O B Wi-Fi data Jul 16 - Aug 13					
	0 B				2.00 GB	
	Data saver Off					
	Wi-Fi					
	<b>Wi-Fi data usage</b> 0 B used between Jul 16 – Aug 13					
	Network restrictions					
	Q	$\triangleleft$	0	<b>D</b>		

# 3.5 Wireless & networks

■ 🤜 🕈 ☰ Wir	eless & networks				* 🖹 й 9:19
	Tethering & portable hotspo	ot			
	VPN				
	Network settings reset				
	Ethernet				
	D	$\triangleleft$	0	L))	

### 3.6 users

You can add user or configuration here

🖬 🧐 🖞					🗚 🔅 🖹 🦻 9:24
= ι	Jsers				
	Users & profiles				
	You (Owner)				
	Guest				
	+ Add user or profile				
	Lock screen settings				
	Add users when device is locked				
	C)	$\triangleleft$	0	D)	

# 3.7 Sound

3.7.1 Volumes

Increase or decrease sound volumes

3.7.2 Touch Sounds

If enable Touch sound, sound will be heard while move remote controller.

3.7.3 Sound Input Devices

### 3.7.4 Sound Output Devices

Media volume				
J		•		
Alarm volume			-	
Notification volume				
A		•		
Do not disturb				
Default notification ringtone pixiedust				
Default alarm ringtone Alarm_Classic				
Other sounds				
Cast				

## **3.8 Display**

### 3.8.1 Display size

change position.

make the items on your screen smaller or larger. Some apps on your screen may

# Image: Color Sector Image: Color Sector

### 3.8.2 Font size

Change the font size of OSD., Make the text on screen smaller or larger

<u> </u>							🗚 <-> 🖹 🦻 9:22
← Fon	t size						
	Sample text The Wonderful Wizard of Chapter 11: The Wonderful En Even with eyes protected by the given were at first dazzled by the brillian ind with beautiful houses all buil with sparkling emeralds. They way arable, and where the blocks were set closely, and giltering in the bri of green glass; even the sky above the sun were green. Wow ere all dressed in green clothes is Dorothy and her strangely assorte children all ran away and hid behin but no one spoke to them. Many s that everything in them was green offered for sale, as well as green s sorts. At one place a man was sel bought it Dorothy could see that it There seemed to be no horses no things around in little green carts, seemed happy and contented an	herald City of Oz een spectacles Dorott to of green marble and cy of the wonderful Cit to green marble and i piness of the sun. Th the City had a green ti men and children, wall and had greenish skins d company with wond d their mothers when hops stood in the stre Green candy and gree noes, green hats and g ing green lemonade, a yey paid for it with gree animals of any kind; ti which they pushed be	y. The streets were studed everywhere if he same green rows of emeralds, e window panes were int, and the rays of ding about, and these . They looked at ering eyes, and the they saw the Lion; et, and Dorothy saw an pop-corn were reen clothes of all nd when the children an pennies.	A Make the text on screen	Default	Δ	
	Preview	$\triangleleft$	0		<b>J</b>		

### 3.8.3 Cast screen

🗳 🦏 🖞	,				՝≱ ‹-> 🖹 🖪 9:22
≡	Display		-¢		
	Brightness level				
	Wallpaper				
	Sleep Never				
	Screen saver Clock				
	Font size Default				
	Display size Default				
	When device is rotated Rotate the contents of the screen				
	Cast				
	HDMI				
	Camera mode	4	0	D)	_

### 3.8.4 Screenshot

Here you can set the screen shot time and select the image location

<b></b> 🦅	ψ						≵ ↔ 🔣 💈 9:23
=	Scre	enshotSetting					
		ScreenshotSetting					
		Select delay time to capture the set 15s later capture	creen				
		Set the location of screenshot sto Internal Storage	rage				
		Show the screenshot button in the	statusbar			$\checkmark$	
		Ø	$\triangleleft$	0	<b>L</b> ))		
		- Y			Ĩ	- <b>*</b> -	

# 3.9 Storage

Shows the storage used of the OS and SD card.												
🖬 🦏 🕂								🗚 🖘 🔣 🖻 9:23				
≡ St	orage se	ettings										
	Device	e storage										
		427 MB Total used of 4.49 GB										
	0 0 0	Internal shared storage 427 MB used of 4.49 GB										
	Portab	Portable storage										
		USBSTORAGE 284 MB used of 1.84 GB										
		<b>D</b>	4	0	0	D)						

# Shows the storage used of the OS and SD card.

# 3.10 Apps

Li	st all	l ap	os installed.						
							* ‹·›	R 8	9:23
≡	Apps						;	•	:
			Android Keyboard (AOSP) 110 KB						
		•	Apkinstaller 7.00 KB						
		Ð	App Backup & Restore 20.27 MB						
		0	Camera 14.50 KB						
		9	Chrome 71.44 MB						
		7	Clock 57.00 KB						
		\$	Explorer 10.50 KB						
		<b>\$</b>	Gallery 18.50 KB						
		-	Google Play services	$\triangleleft$	0				

You can choose an application and force to shut down the app, uninstall the app, clear user data, move to SD card and clear cache data.

# 3.11 Google services

🖬 🦙 🜵					🛪 🔶 🔟 9:24
← Google					:
Services					
Ads					
Android Auto					
Cast media controls					
Devices					
Location					
Nearby					
Restore contacts					
Security					
Set up nearby device					
Set up your work profile					
	¢	$\triangleleft$	0	<b>D</b>	

# **3.12 Notification**

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≡	Notif	ication	s						۵	:
	All ap	ps		•						
			Android Keyboard (AOSP)							
		۲	Apkinstaller							
		Ð	App Backup & Restore							
		$\bigcirc$	Camera							
		Q	Chrome							
		7	Clock							
		\$	Explorer							
			Gall 5	۵	0					

# 3.13 Location

<b>_</b>	ψ							孝 ↔ 🔟 💈 9:24
≡	Loca	ation						:
		On					•	
		Mode Device only						
		Recent location requests						
				No apps have reque	sted location recently			
		Location services						
		G Emergency Lo	cation Service					
		Google Locatio	on History					
		Google Locatio	on Sharing					
		Q	$\triangleleft$	0		D)		

# 3.14 Security

<b></b> 🦅	ψ		≱ ↔ 🖹 🖪 9:24
≡	Secu	rity	
		Device security	
		Screen lock None	
		Smart Lock To use, first set a screen lock	
		Encryption	
		Encrypt tablet	
		Passwords	
		Make passwords visible	
		Device administration	
		Device administrators View or deactivate device administrators	
		Unknown sources	
		Allow installation of apps from unknown sources	

# 3.15 Language & input

<b></b> 🦙	ψ						🗚 🖘 🔣 🛿 9:25
≡	Lanç	guages & input					
		Languages English (United States)					
		Spell checker Android Spell Checker (AOSP)					
		Personal dictionary					
		Keyboard and input methods					
		Virtual keyboard					
		Physical keyboard					
		Speech					
		Text-to-speech output					
		Mouse/trackpad					
		Pointer speed					
		¢	$\triangleleft$	0	<b>J</b>	<b>N</b>	

Change OSD language and input method.

The default input method is android standard keyboard.

If you are using our IR remote control, enter into "Default" option and switch to remote controller input method.

# **3.16 Reset**

<b>▲</b> 🦻	ψ					≵ ↔ 🔣 😫 9:25
≡	Res	et				
		Factory data reset				
		Ø	$\triangleleft$	0	$\square $	

Factory data rest:

You can reset all the settings and apps to factory default.

Note: You might want to backup important data before resetting the box. Once you choose to rest to factory default, all data/apps will be deleted.

# **3.17 Sleep**

Find the display button and find Sleep. You can select the Sleep time of the product. There are 8 options for sleep time. The shortest is' Never 'and the longest is 30 minutes.

🖬 🖙 🜵						≱ ↔ 🖹 🖁 9:21
≡ Disp						
	Brightness level	Slee	n			
	Wallpaper	<b>()</b>	Never			
	Sleep Never	$\bigcirc$	15 seconds			
	Screen saver	$\bigcirc$	30 seconds			
	Clock	$\bigcirc$	1 minute			
	Font size Default	0	2 minutes			
	Display size Default	0	5 minutes 10 minutes			
	When device is rotated	0	30 minutes			
	Rotate the contents of the :	0			CANCEL	
	Cast					
	HDMI					
	Camera mode		$\triangleleft$	0	D)	

# 3.18 Add an account

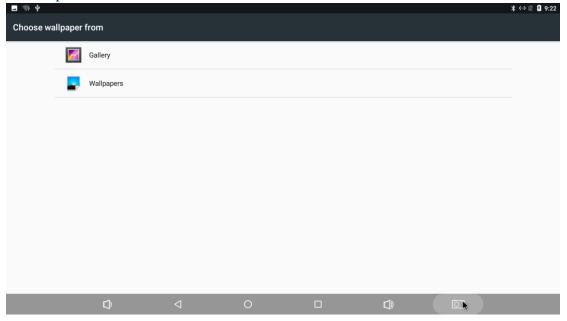
=	∲ Accoun	te					* ↔ 💐 외 9:24
	Account		d account				·
			C)	$\triangleleft$	0	<b>L</b> ))	

# **3.19 Date & time**

🖬 🦃 🕂						≵ ↔ 🔣 🖪 9:25
≡ Da	te & time					
	Automatic date & time Use network-provided time				•	
	Set date August 13, 2019					
	Set time 9:25 AM					
	Select time zone GMT+00:00					
	Use 24-hour format 1:00 PM					
	Q	$\triangleleft$	0	)		

## 3.20 Choose wallpaper from

Users can choose wallpaper photos from albums and historical wallpapers according to their preferences.



# 3.21 Screen saver

■ 🤋 ψ ← Scr	een saver				*	↔ 🛛 🖡 9:22 :
	On				•	
	Clock				•	
	Colors				0	
	Photo Frame				0∥ <b>≎</b> 0∥ <b>≎</b>	
	Photo Table				0∥≎	
	¢	4	0	<b>D</b>		

Interface Settings: can set the clock, color, theme, page photos.

# 3.22 About device.

⊑ 🦘 🌵 ≡ Tab	et status				≱ ↔ 💐 û 9:25
	Upgrade				
	Status Status of the battery, network, and othe	er information			
	Legal information				
	Regulatory labels				
	Model rk3288				
	Android version 7.1.2				
	Android security patch level April 5, 2017				
	Baseband version Unknown				
	Kernel version 4.4.143				
	4.4.143 jenkins@ubt1.41¥3 Thu Jul 25 11:32:36 CST 2019	$\triangleleft$	0		

# 3.23 Camera mode

	set the	USB	camera	to	back/front	mode
--	---------	-----	--------	----	------------	------

🖬 🦏 🕂					🗚 🖘 📉 💈 9:22
	blay				
	Wallpaper				
	Sleep Never				
	Screen saver Clock	Camera mode			
	Font size Default	<ul> <li>Set the usb camera</li> <li>Set the usb camera</li> </ul>			
	Display size Default		to none mode	CANCEL	
	When device is rotated Rotate the contents of the s	screen			
	Cast				
	HDMI				
	Camera mode Set the camer ()pde, you r	nust restart to ke effect	0	D)	

### **3.24 HDMI**

User can set the screen, display resolution, zoom in/out screen, rotate screen, dual screen display in this part.

HDMI On On HDMI Resolution Screen Zoom HDMI Rotation dual screen Vice screen rotation switch Portrait or Landscape Display	•
HDMI Resolution Screen Zoom HDMI Rotation dual screen Vice screen rotation switch	
Screen Zoom HDMI Rotation dual screen Vice screen rotation switch	
HDMI Rotation dual screen Vice screen rotation switch	
dual screen Vice screen rotation switch	
Vice screen rotation switch	
Portrait or Landscape Display	

# **3.25 Printing**

<b>_</b>	ψ						≵ ↔ 🖹 🔋 9:25
≡	Printing						
				6	1		
				No services inst	alled		
_							
		D	$\triangleleft$	0		$\square )$	

If you have a printer installed, you can print in this part.

# 4. Apps Install & Uninstall

On OPS3399-H, you can install apps from Android Market over the Internet or other sources, such as other online sources, the internal storage and the USB storage device and SD card that you have mounted onto OPS3399-H.

You also can manage apps on OPS3399-H and SD card, install/uninstall apps, stop running apps, or select other options.

# 5. Firmware Update

You can download newest firmware from Geniatech Official website: <u>www.geniatech.com</u>

# 6. Trouble Shooting/FAQ

### 6.1 No Picture

Refer to the TV user manual for how to select the correct video input channel.

### 6.2 USB Content cannot be read

- . The format of USB storage device is not supported
- . The supported memory size is 32G maximum.
- . Make sure that this player supports these files.

### 6.3 Remote Controller cannot respond quickly to the pressing of keys

Make sure that batteries have enough power.

### 6.4 The firmware updating is not complete after a long time

If you update the firmware over the online service, it may take a long time to download the firmware update files from the server. To save your time, update the firmware through the SD card.

### 7. Repairs

If you contact us to repair your player, an administration fee may be charged if either:

An engineer is called out to your home at your request and there is no defect in the product.

You bring the unit to a repair center and there is no defect in the product.

We will provide you with the amount of the administration fee before we make a home visit or begin any work on your player.

We recommend you read this manual throughly, search for a solution on line at <u>www.geniatech.com</u>, or contact Geniatech Customer Care before seeking to repair your player.

# 8. Specification

CPU	Dual-core Cortex-A72 up to 1.8GHz and Quad-core Cortex-A53 up to 1.4GHz
GPU	Mali-T860MP4 GPU (ARM Frame Buffer Compression)
RAM	4G LPDDR4
ROM	32G eMMC
OS	Android 7.1
USB	USB3.0 * 2
HDMI	1*HDMI IN
DC Input	12.0V-2A
Micro SD Slot	Max: 256G
IR Receiver	IR Receiver x1
3.5mm jack	Headphone(audio out/mic in)
SPDIFF	Support optional
TYPE-C	1* OTG(support USB upgrade)
80 Pin	JAE TX25A 80-pin connector
Connector(Intel)	M.2*1
LAN	RJ45 10/100/1000M Ethernet interface
WiFi	IEEE 802.11 AC 2.4G &5.8G(optional)
BT	Optional
Video/Picture Decoder Audio	<ul> <li>MMU embedded</li> <li>Real-time video decoder of MPEG-1, MPEG-2, MPEG-4, H.263, H.264, H.265, VC-1, VP9, VP8, MVC</li> <li>H.264/AVC, Base/Main/High/High10 profile @ level 5.1; up to 4Kx2K @ 30fps</li> <li>H.265/HEVC, Main/Main10 profile @ level 5.1 High-tier; up to 4Kx2K @ 60fp</li> <li>VP9, profile 0, up to 4Kx2K @ 60fps</li> <li>MPEG-1, ISO/IEC 11172-2, up to 1080P @ 60fps</li> <li>MPEG-2, ISO/IEC 13818-2, SP@ML, MP@HL, up to 1080P @ 60fps</li> <li>VC-1, SP@ML, MP@HL, AP@L0-3, up to 1080P @ 60fps</li> <li>VC-1, SP@ML, MP@HL, AP@L0-3, up to 1080P @ 60fps</li> <li>VC-1, SP@ML, MP@HL, AP@L0-3, up to 1080P @ 60fps</li> <li>Supports frame timeout interrupt, frame finish interrupt and bit stream error interrupt</li> <li>Support video encoder for H.264 UP to HP@level4.1, MVC and VP8, Only support I and P slices, not B slices,</li> <li>Support error resilience based on constrained intra prediction and slices, Image size is from 96x96 to 1920x1080(Full HD),</li> <li>Maximum frame rate is up to 1920x1080@30FPS input data format:</li> </ul>

YCbCr 4:2:0 planar YCbCr 4:2:0 semi-planar YCbYCr 4:2:2 CbYCrY 4:2:2 interleaved RGB444 and BGR444 RGB555 and BGR555 RGB565 and BGR565 RGB888 and BRG888 RGB101010 and BRG101010

Size	180 mm * 119 mm * 30 mm
Power Adapter	AC100 $\sim 240$ V 50/60Hz
IR Remote	
Controller	Optional
Optional Remote	2.4G wireless Remote Controller with Nano receiver
Controller	USB wire/wireless Mouse & Keyboard

# 9. Trademark Notice



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