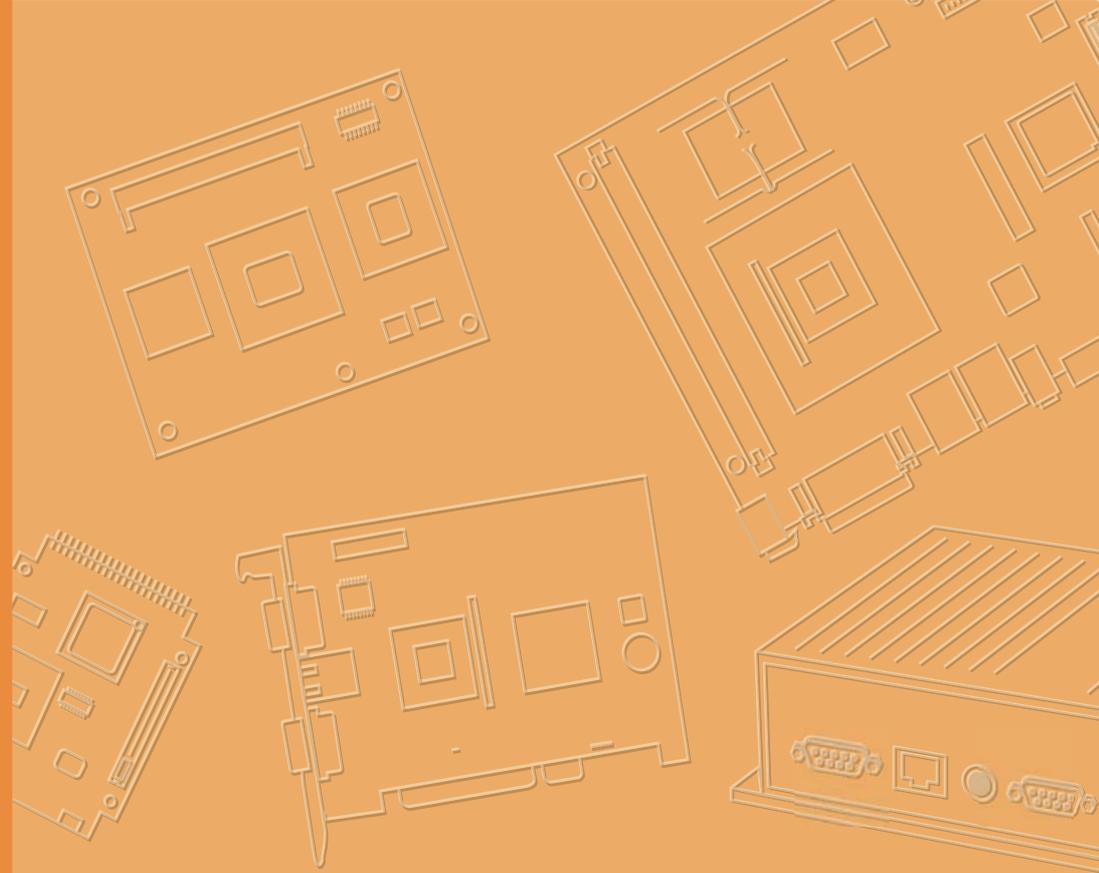


User Manual



USM-110

**Arm® Cortex®-A17 Quad-core
Processor Based Mini Digital
Signage Player**

ADVANTECH

Enabling an Intelligent Planet

Copyright

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Declaration of Conformity

FCC Class B

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.

Technical Support and Assistance

1. Visit the Advantech web site at <http://support.advantech.com> where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! Warnings indicate conditions, which if not observed, can cause personal injury!



Caution! Cautions are included to help you avoid damaging hardware or losing data. e.g.



There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! Notes provide optional additional information.



Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect the equipment from all AC outlets before cleaning. Use only a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket must be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
7. The openings of the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If unused for a long time, disconnect the equipment from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
15. Do not store the equipment in an environment where the temperature fluctuates below -20 °C (-4 °F) or above 60 °C (140 °F) as this may cause damage. The equipment should be stored in a controlled environment.
16. Batteries are at risk of exploding if incorrectly installed. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
17. Use only the recommended mounting apparatus to avoid damage due to falling.
18. The sound pressure level at the operator position does not exceed 70 dB (A) in accordance with the IEC 704-1:1982.

DISCLAIMER: These instructions are provided according to IEC 704-1 standards.

Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your system chassis before you work on it. Don't touch any components on the main board or other cards while the system is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

Warning! 1. *Input voltage rated: 9 ~ 32 Vdc.*



2. *Transport: carry the unit with both hands and handle with care.*

3. *Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator.*

European Contact Information:

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Tel: 49-211-97477350

Fax: 49-211-97477300

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Chapter 1

Overview

1.1 Introduction

USM-110 is an ultra-compact digital signage player that delivers high-performance graphics and supports H.265-encoded native 4K content at 60fps as well as dual Full HD video output. The system's ultra-compact fanless design and support for diverse mount options ensure easy installation in a wide range of application markets. Moreover, USM-110 is integrated with Advantech's Wise-PaaS/ SignageCMS digital signage management software, which allows users to layout, schedule, and dispatch signage contents to the USM-110 digital signage player over the Internet, enabling remote delivery of diverse high-resolution multimedia.

1.2 Specification

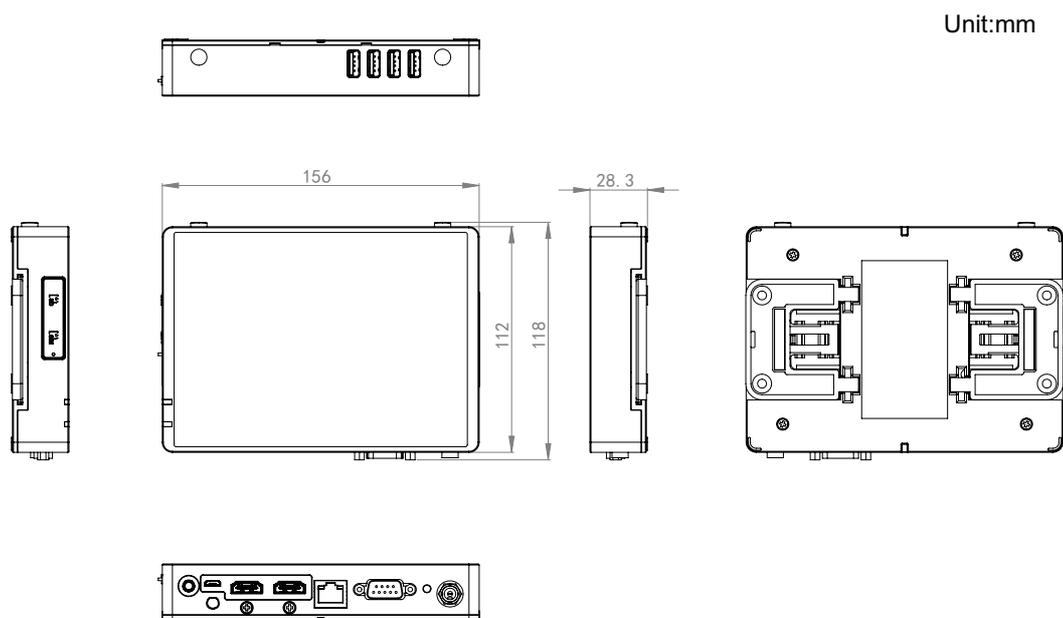
1.2.1 General Specifications

		USM-110	USM-110 Delight
System	CPU	Arm® Cortex®-A17 quad-core processor (1.6 GHz)	
	GPU	Mali-T764	
Graphics	Graphics Engine	OpenGL ES 1.1/2.0/3.0, OpenCL 1.1, DirectX 11	
	Capacity	2 GB onboard DDR3L (1333 MHz)	
Memory	Flash	16 GB of onboard eMMC	8 GB of onboard eMMC
	Extension	Micro SD (up to 32 GB)	
Multimedia	Display Resolution	HDMI1: Native 4K resolution up to 3840 x 2160 (default 1080p)	
		HDMI2: 1920 x 1080	N/A
I/O	HDMI	2	1
	LAN	1 x 10/100/1000 Mbps)	1 x 10/100/1000 Mbps
	Serial Port	1 (RS232/485/422 by jumper)	N/A
	USB 2.0	4	1
	OTG USB	1	1
	Audio	1	1
	Reset	1	1
	LED Indicators	1 x Power, 1 x Wireless	1 x Power, 1 x Wireless
	DC In	1	1
Expansion	Micro SD Card	1	1
	M.2	1 (for Wi-Fi module option)	1 (for Wi-Fi module option)
	Mini PCIe	1 (for 4G module option)	N/A
Mechanical	Dimensions (L x W x H)	156 x 112 x 28 mm (6.14 x 4.41 x 1.10 in)	
	Weight	0.43 kg (0.94 lb)	
	Power	12V/3A	
Installation	Mount Options	VESA (75 x 75), wall, desktop, pole, magnet,DIN rail	
Software	Operating System	Android 6.0	
	Software	Wise-PaaS/SignageCMS Client	

1.2.2 Environmental Specifications

- Operating Temperature: 0 ~ 40 °C (32 ~ 104 °F)
- Relative humidity: 10 ~ 90% @ 40 °C (non-condensing)
- Shock: 10 G peak acceleration (11 ms duration)
- Vibration: 5 ~ 500 Hz 0.5 Grms, random
- Certification: CCC, CE, UL, FCC, CB, BSMI

1.3 Appearance diagram



Chapter 2

Installation Instruction

2.1 Quick Tour of the Device

Before setting up the device, take a moment to familiarize yourself with the functions of the controls, drivers, connectors, and ports located on the front panel, as illustrated in the figures below.



Figure 2.1 Front view of USM-211



Figure 2.2 Rear view of USM-110

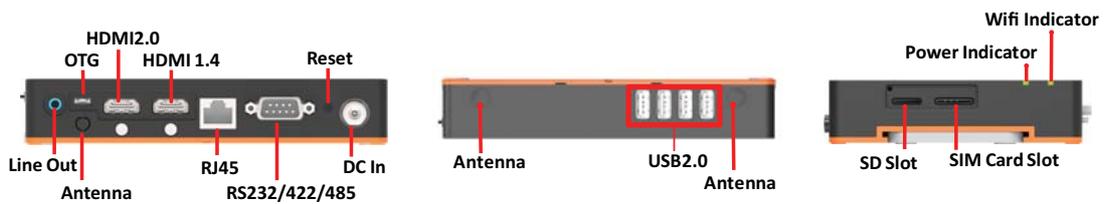


Figure 2.3 IO Layout of USM-110



Figure 2.4 IO Layout of USM-110 Delight Version

2.2 Installation Procedures

2.2.1 Connecting the Power Cord

This product only supports DC power (12 VDC, 3A, 36 W). Be sure to hold the plug end when plugging or unplugging the power cord.

2.2.2 Activating the Power Source

Verify that the power cord is connected to the power input port of the device. Then connect the plug end of the power cord to the wall power outlet.

2.3 Installation Mode Instruction

Below link you can find the video for the instruction of five mounting options.

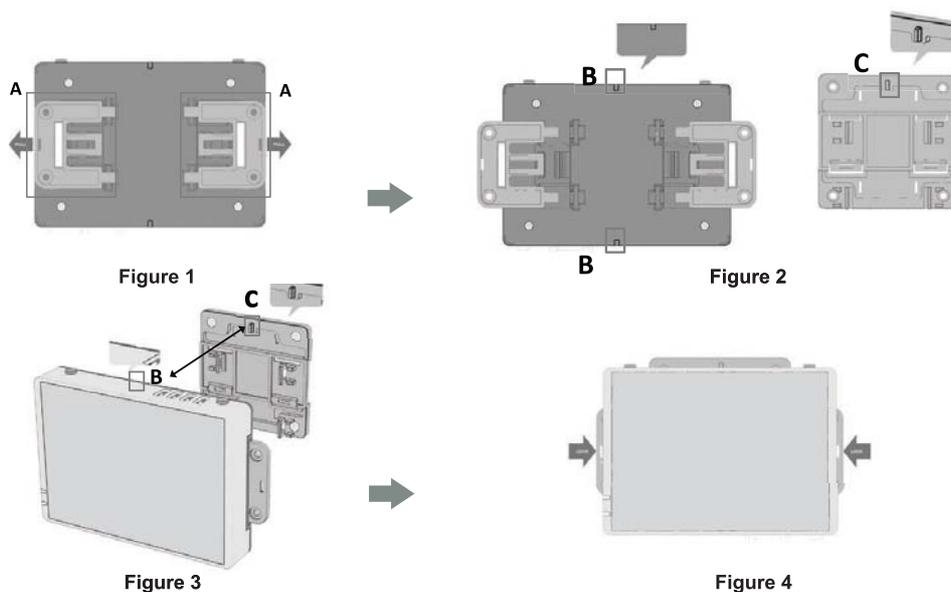
YouTube: https://youtu.be/c_yWG_WvkmQ

Youku: http://v.youku.com/v_show/id_XMzgyMTY4NDE4MA==.html?spm=a2h3j.8428770.3416059.1

2.3.1 Device Installation

USM-110 supports diverse mount options as shown below.

1. Module Assembly (for VESA, pole, and DIN rail mounting)



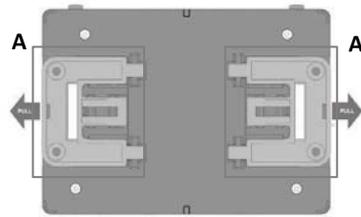
Step 1. Pull out the two side wings (A) at the back of the device (Figure 1).

Step 2. Align the anchor of the mount bracket (C) with the mount holes at the back of the device (B) (Figure 2).

Step 3. Carefully press the bracket until the anchor locks into place (Figure 3).

Step 4. Return the two side wings (A) to their original position (Figure 4).

2. Wall Mount Installation

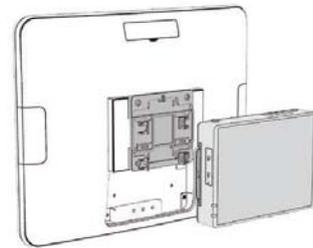
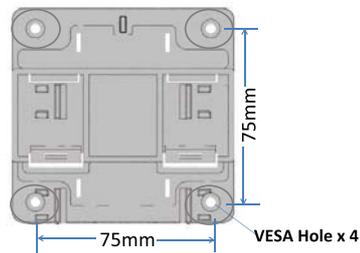


Screw specs: length >15 mm; diameter <4 mm

Step 1. Pull out the two side wings (A) at the back of the device.

Step 2. Affix the device to the wall using 4 screws in the screw holes of the two side wings.

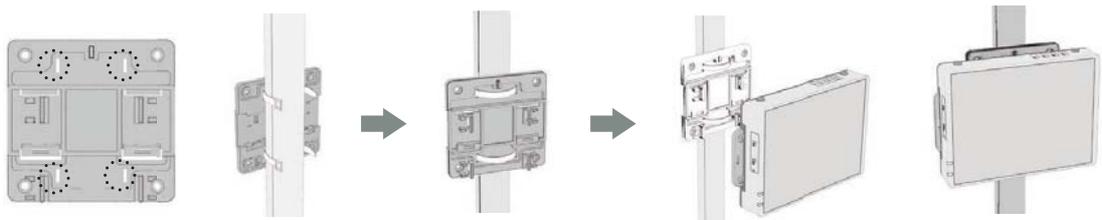
3. VESA Mount Installation



Step 1. Use 4 screws to affix a mount bracket (75x75) onto the device.

Step 2. Attach the device to the mount bracket following the “Module Assembly” steps outlined above.

4. Pole Mount Installation



Step 1. Affix the mount bracket to the pole using cable ties (Figure 5).

Step 2. Attach the device to the mount bracket following the “Module Assembly” steps outlined above.

5. DIN Rail Mount Installation

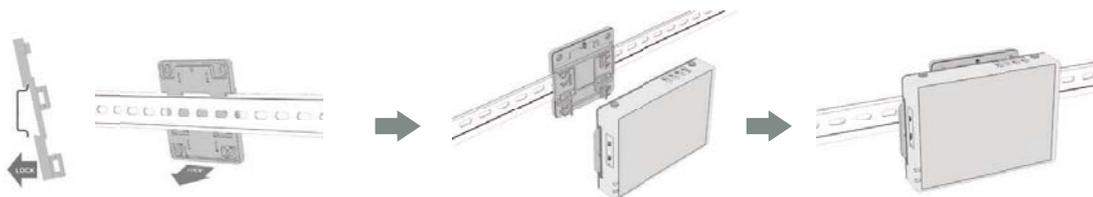


Figure 6

Step 1. Affix the mount bracket to the DIN rail (Figure 6).

Step 2. Attach the device to the mount bracket following the “Module Assembly” steps outlined above.

6. Magnet Mount Installation

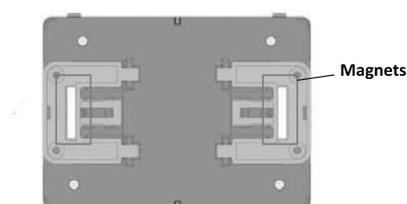
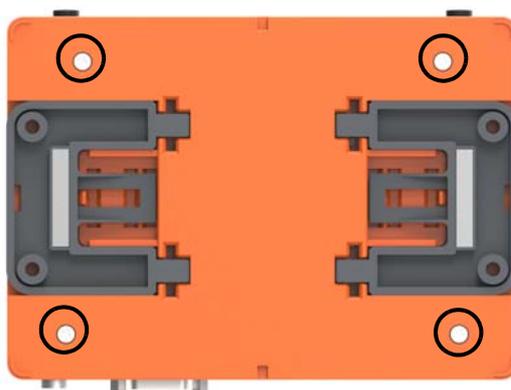


Figure 7

Step 1. Place the device onto a flat metal surface, using the two magnets on the side wings to hold it in place (Figure 7).

2.4 Installing the Expanded Module

Step 1. Unscrew and take down the orange back cover.



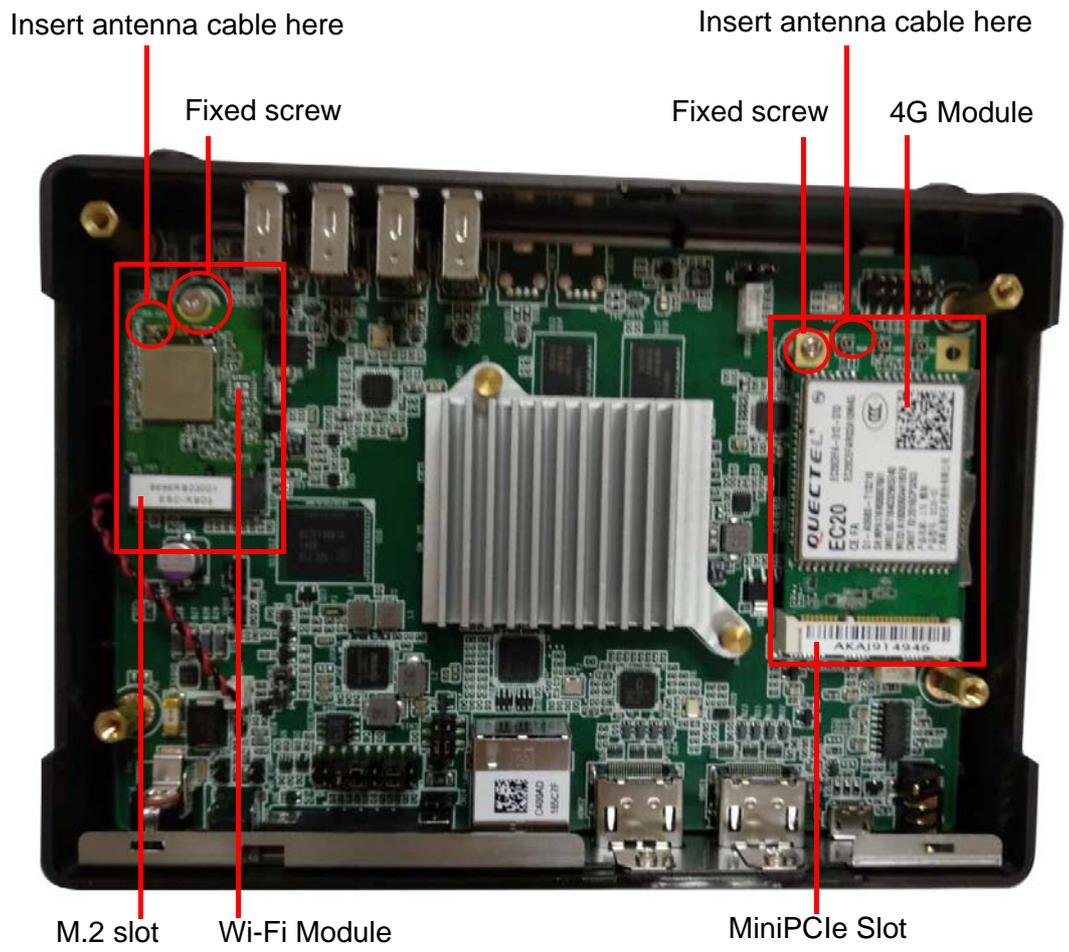
Step 2. Unscrew and take down the bracket.



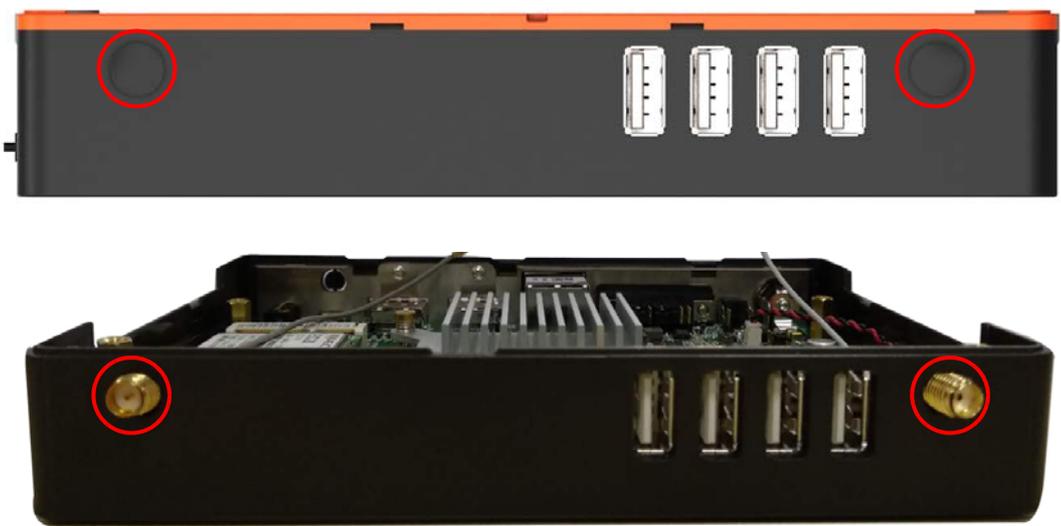
Step 3. Install the Wi-Fi or 4G module onto the M.2 or miniPCle slot respectively as the red circle figure.

Step 4. Insert antenna cable into module as illustrated in the figure.





Step 5. Remove two rubbers that cover the antenna holes, next install the antenna cable here.



Step 6. Screw the antenna on the antenna cable



Step 7. Fix the bracket and orange back cover



Chapter 3

Operation System
Update/Upgrade

The latest OS has been pre-installed in the USM-110. If users need update the OS, the steps necessary to install an operating system on the device are explained below. There are two options to update the OS.

Note! *Some distributors and system integrators may have pre-installed system software before shipping the computer.*



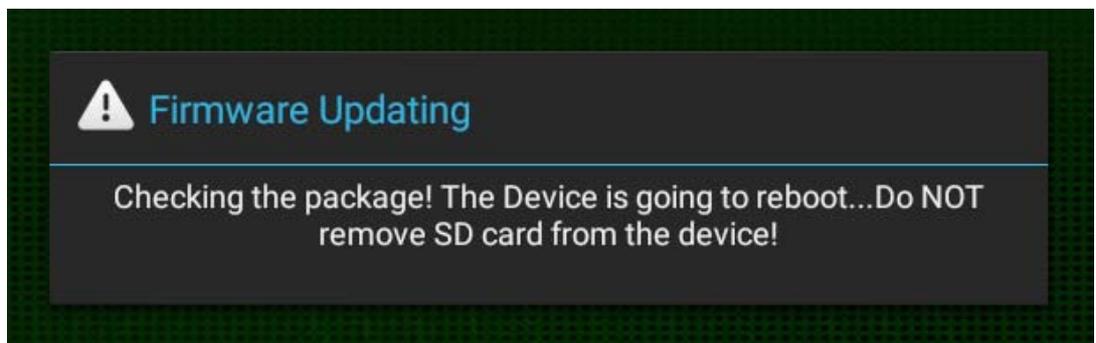
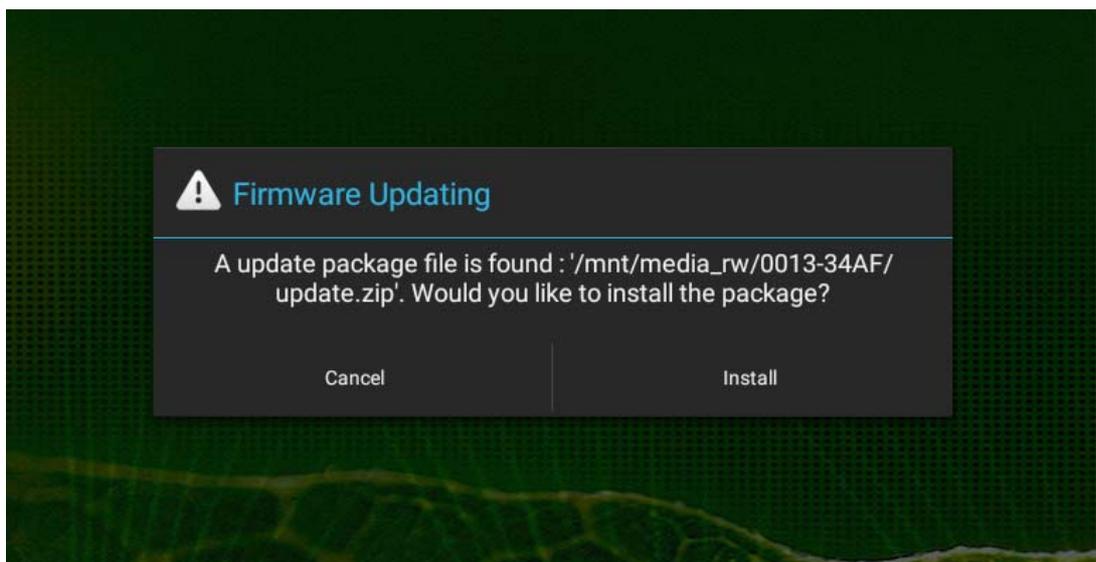
3.1 USB upgrade option (Recommended)

If necessary, power on the computer, then insert the USB with OS update package into the USB2.0 interface. When presented with the opening screen of a setup/installation program, simply follow the onscreen instructions. After Clicking “Install”, the setup program update automatically operating system.

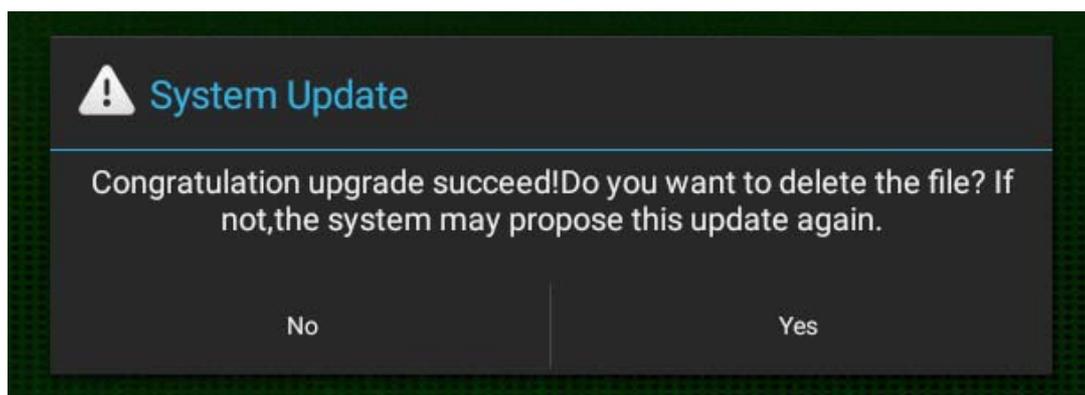
Note! *The file name of image package must be “Update.zip”, do not unzip the ZIP file.*



Step 1. Click “install” for the update package installation.



Step 2. Click “Yes” if you want to delete the update package from USB disc. Click “No” if you do not want delete the package.



3.2 SD card upgrade option

Preparation:

1. One PC or notebook based on Windows system
2. One Micro SD card
3. Get the tool of “AdroidTool” package from Advantech website
4. Get the tool of “SD_Firmware_Tool._v1.46” tool from Advantech website

3.2.1 Create upgrade file Update.img

Step 1. Extract the files “boot.img”, “kernel.img”, “misc.img”, “recovery.img”, “resource.img”, “system.img” from the to the path “AndroidTool\rockdev\image”.

Step 2. Execute “mkupdate.bat” (path rockdev\)\to create update.img in same path.

backupimage	2018/7/2 14:00	文件夹
image	2018/11/30 16:26	文件夹
AFPTool.exe	2017/5/9 13:17	应用程序
mkupdate.bat	2017/6/23 16:34	Windows 批处理...
package-file	2017/7/19 13:33	文件
parameter.txt	2018/7/2 11:38	文本文档
recover-script	2017/5/9 13:17	文件
RK3288UbootLoader_V2.30.10.bin	2018/10/22 11:17	BIN 文件
RKImageMaker.exe	2017/5/9 13:17	应用程序
update-script	2017/5/9 13:17	文件

3.2.2 Make the SD card

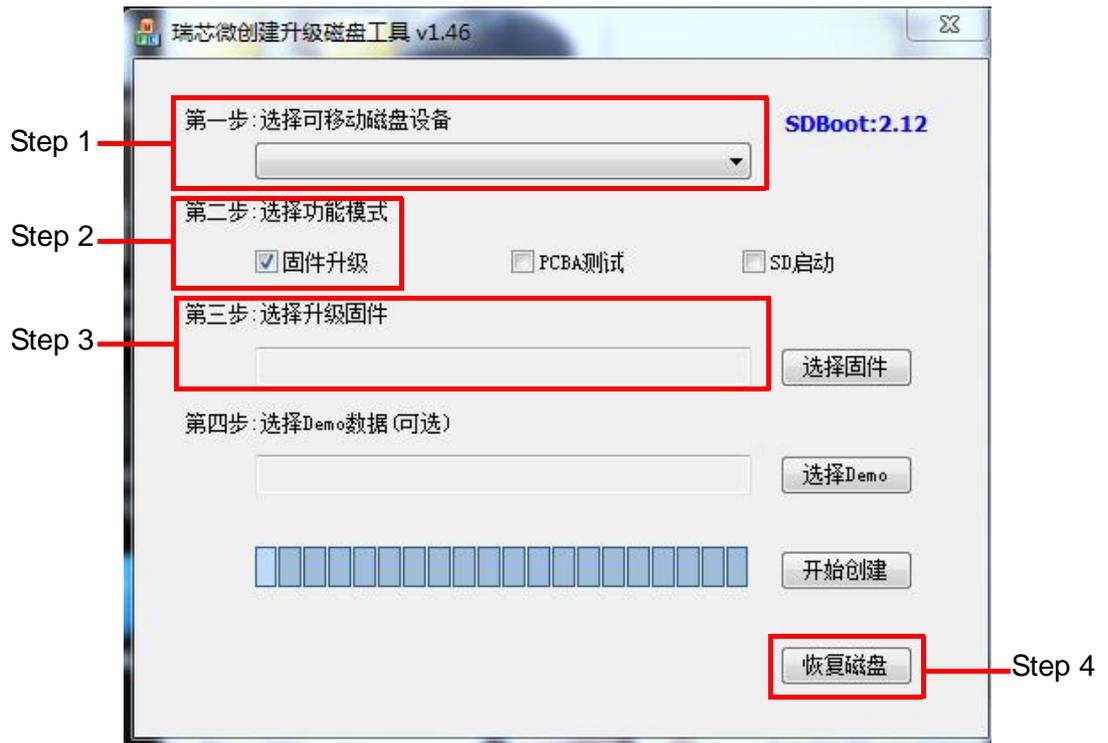
Step 1. Execute the “SD_Firmware_Tool._v1.46\SD_Firmware_Tool.exe”

Step 2. Insert SD card to the PC or notebook, then select the “SDHC Card” device

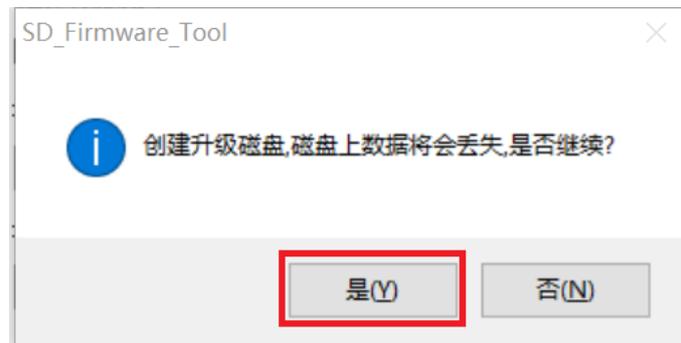
Step 3. Function model select the “Firmware Upgrade”

Step 4. Target the “Update.img” file

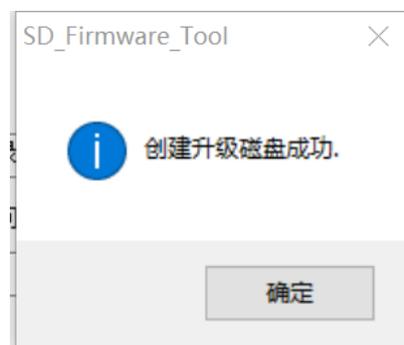
Step 5. Click “Start Creation” button



Step 6. After creation, select “Yes” on one pop-up dialog window.

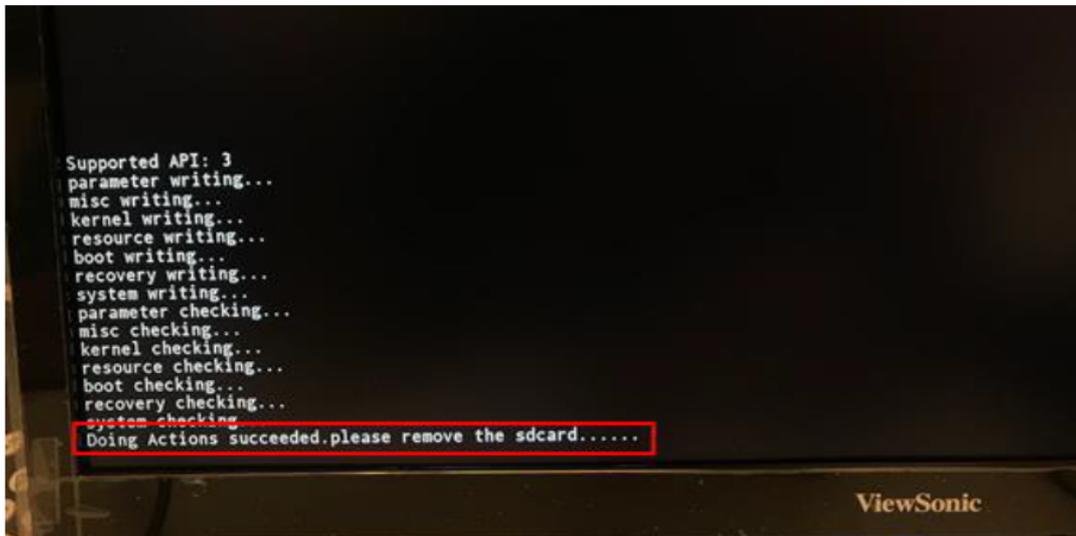


Step 7. Automatically complete, click the “确定” button



3.2.3 USM-110 Device Image update

Take out the SD card from PC or Notebook, and insert the SD card into the SD slot of USM-110 then power on. And follow the step shown on system then take out the SD card and restart the USM-110.



Note! *USM-110 needs to connect one display machine in order to check the update status*

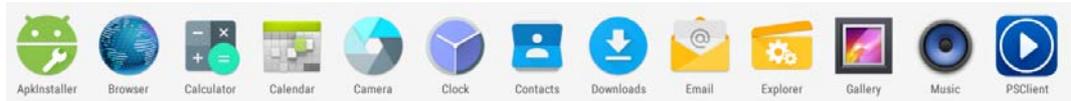


Chapter 4

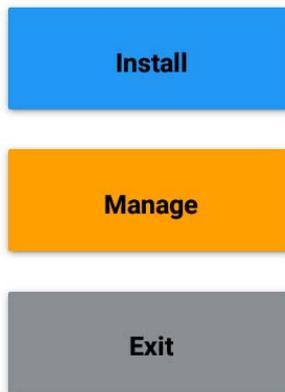
System Setup

4.1 How to install APK

Step 1. Start USM-110, click “Apkinstaller” on the menu pages.



Step 2. Step 2. Choose the Install



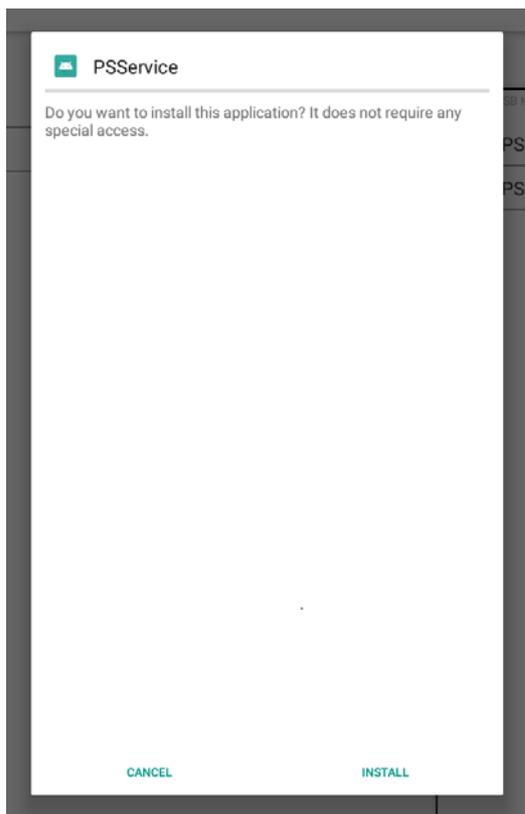
Step 3. Choose the storage disc where your APK is.



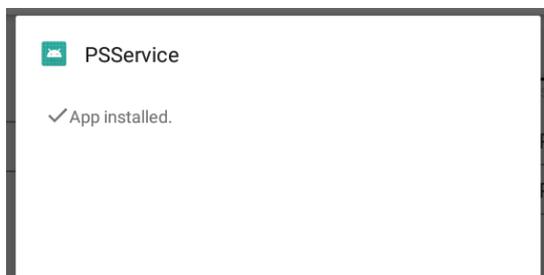
Step 4. Click the APK that you want to install.



Step 5. Click “Install”

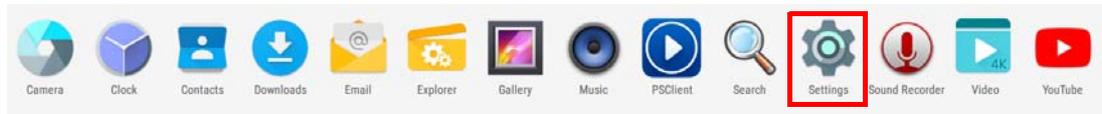


Step 6. Click “Done” to complete the APK installation.

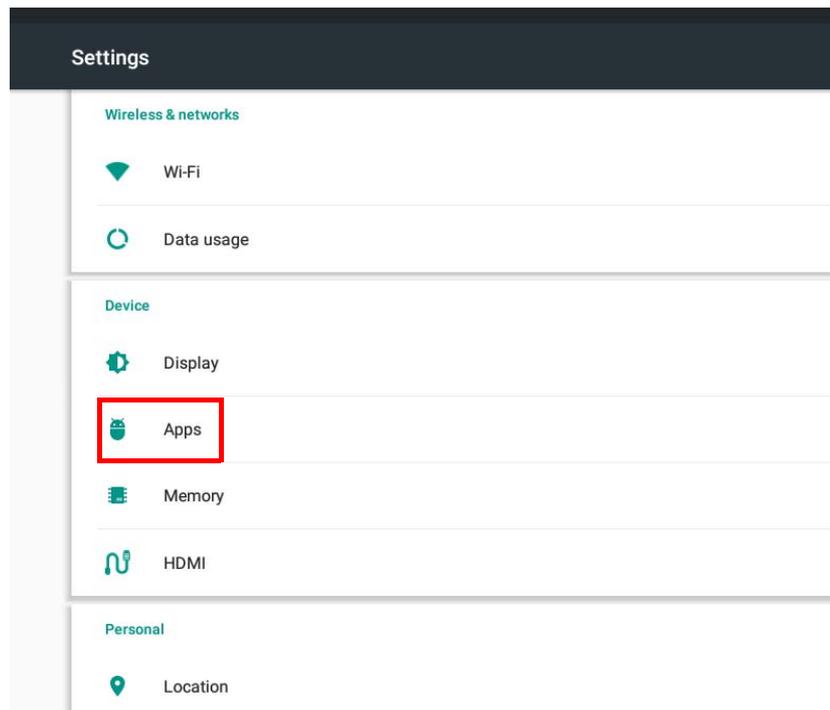


4.2 How to uninstall one APK

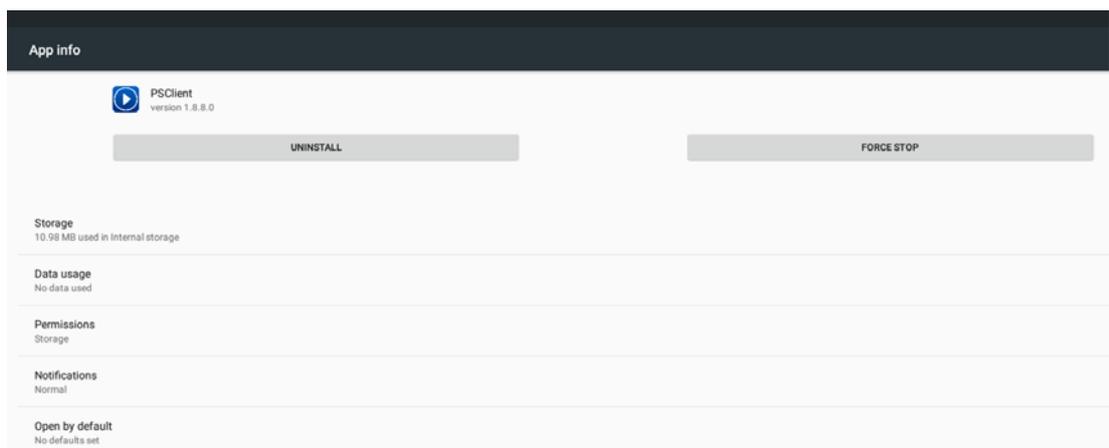
Step 1. Choose "Setting" function



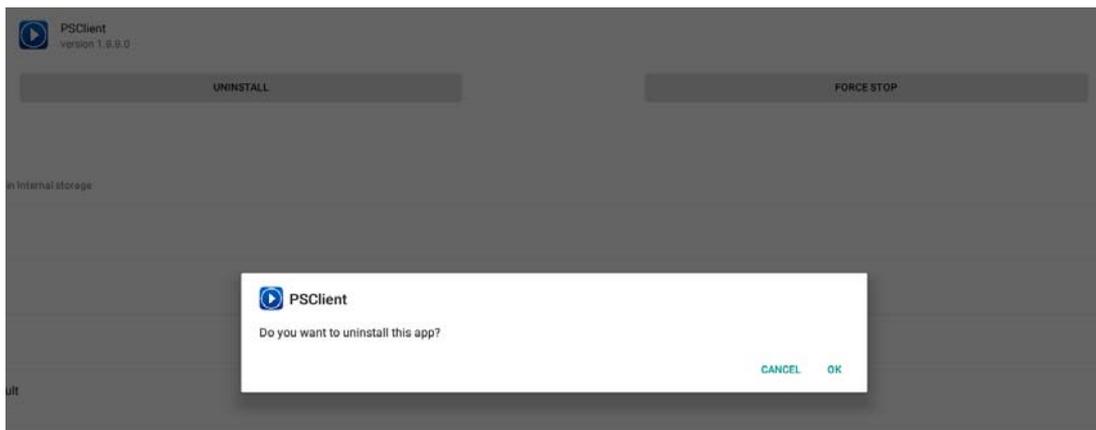
Step 2. Click "APPS", and choose the APK you want to remove from the APP list.



Step 3. Click "Uninstall" button for the process of uninstallation.



Step 4. Select “OK” to run uninstalling.



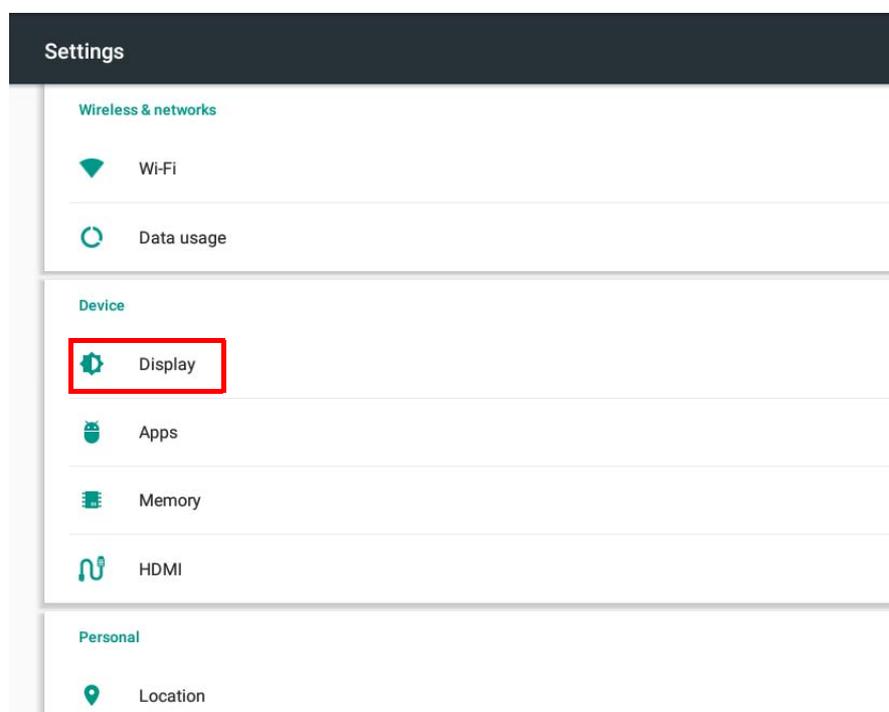
4.3 System Setting

4.3.1 Screen Rotate

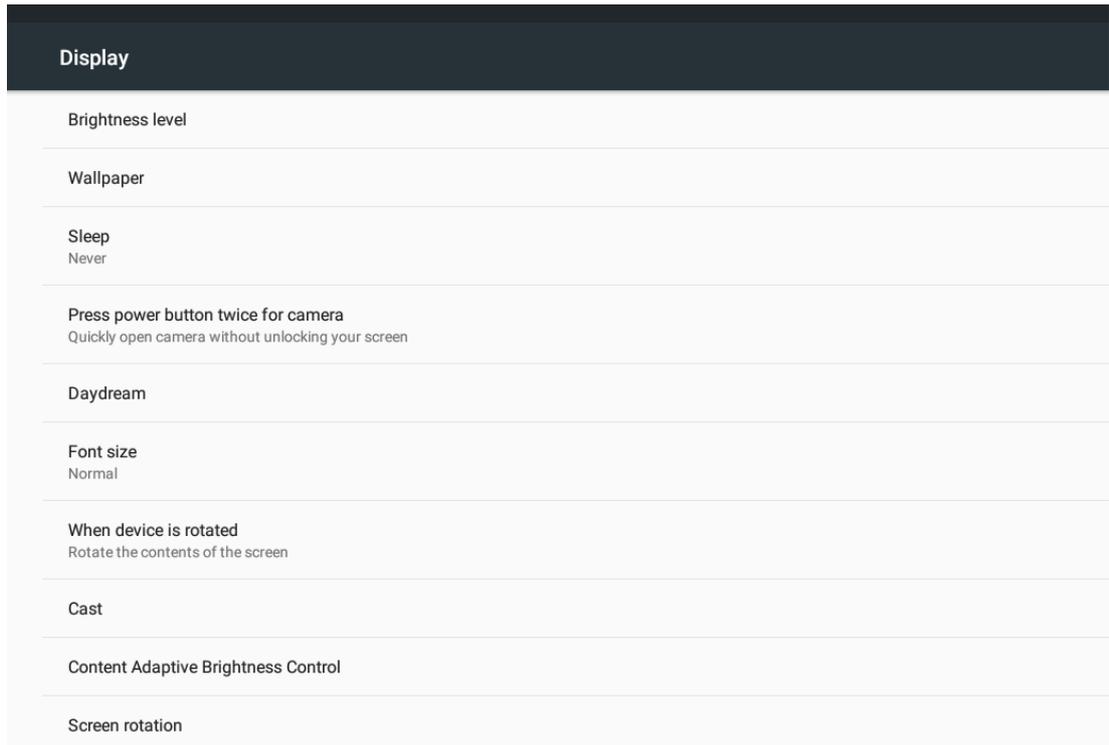
Step 1. Choose “Setting” function



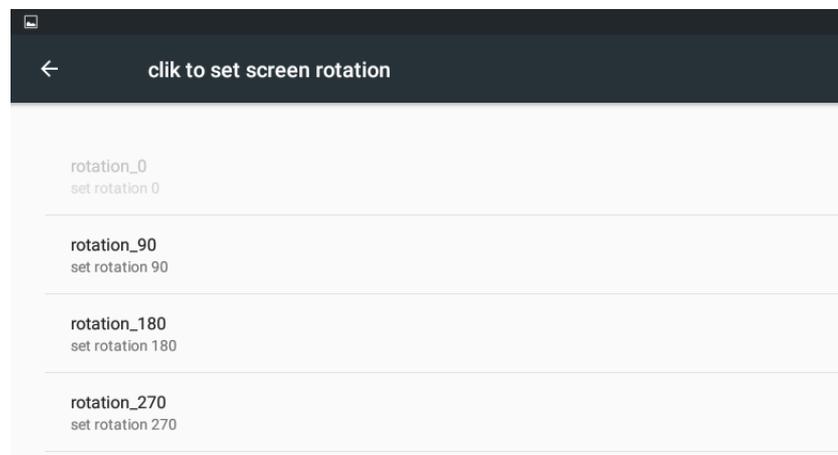
Step 2. Choose “Display”



Step 3. Select "Screen rotation"



Step 4. Choose the angle you want to rotate.

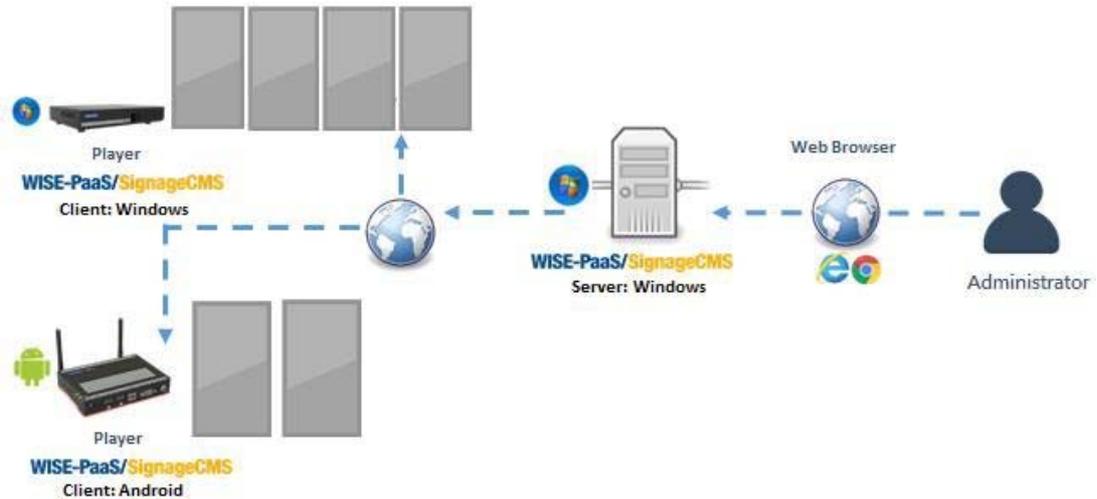


Chapter 5

WISE-PaaS/
SignageCMS
Application

5.1 WISE-PaaS/SignageCMS software architecture

WISE-PaaS/SignageCMS is one “Server-Client System”. The server software must be installed in Windows OS, the client software has already installed in the USM player. User can remotely connect to the server by IE or Chrome. (The network must be in the same network segment). After connect to the server, user can edit the media content online as well as dispatch the program to player. Each server support to connect unlimited clients, it will depend on the network condition.



For more detailed information about how to use SignageCMS, please download the SignageCMS user manual from below link.
<https://support.ushop-plus.com/download>

5.2 SignageCMS client and server connection setting

Power on the device and keep the network connection. After opening the app PSCli-ent, use the mouse to slide the screen from left to right to show the menu bar, and then click the “client setup”



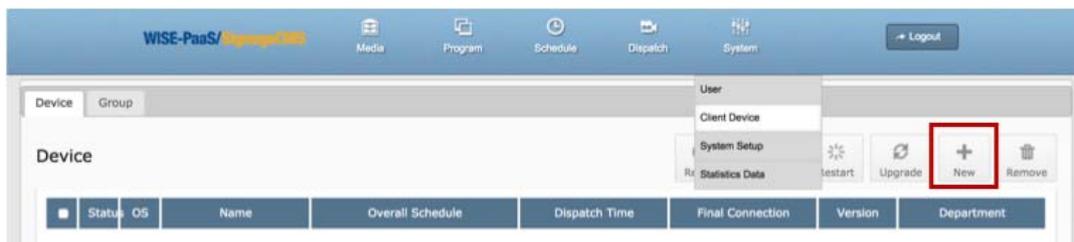
On the Client Setup page

- Step 1. Key the IP address of the Server in [Server].
- Step 2. Record the [Client ID] value, or input the custom ID number if the [User Custom ID] is ticked. Note! The value of [Client ID] or [Custom ID] are needed in [Client device] function of server system
- Step 3. Please check if the “Silent Installation” is ticked that can enable the auto upgrade.

The screenshot shows the 'Client Setup' page with the following fields and options:

- Client ID:** C400AD136749
- Use Custom ID
- TMS_USM110**
- Server:** 172.22.20.12
- Port:** 80
- General Setup:**
 - Auto Restart SignageCMS Client
 - Silent Installation

Step 4. Open the server system installed in your server PC, select the [Client Device], then click the [New] on the right-upper corner to add the client device.

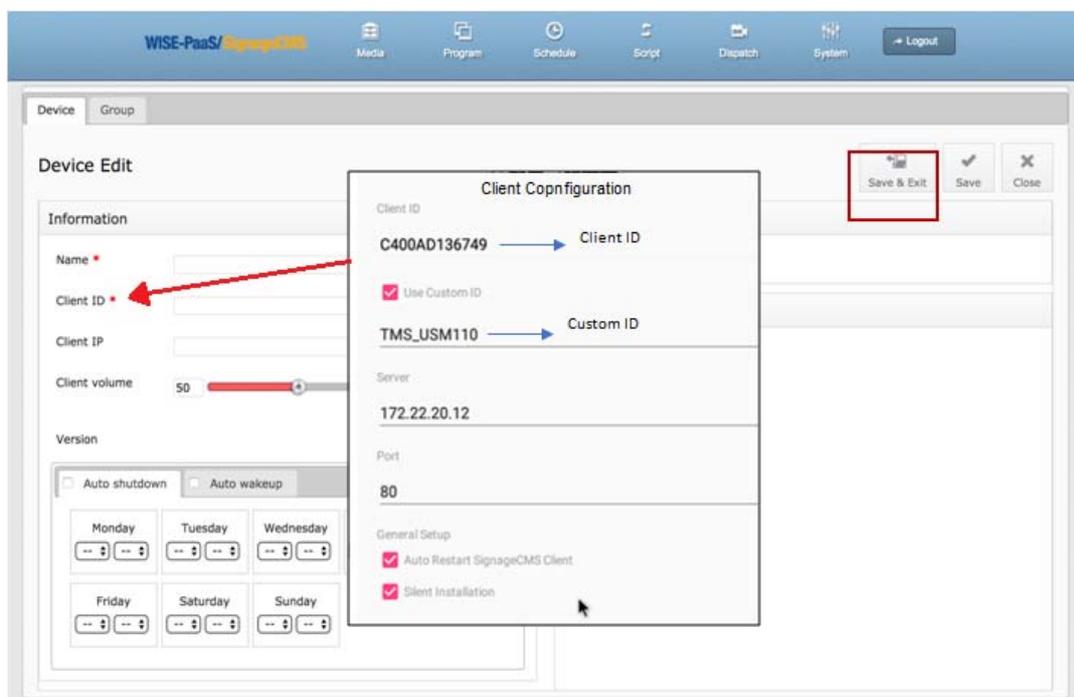


Device Edit Page [Figure 10]:

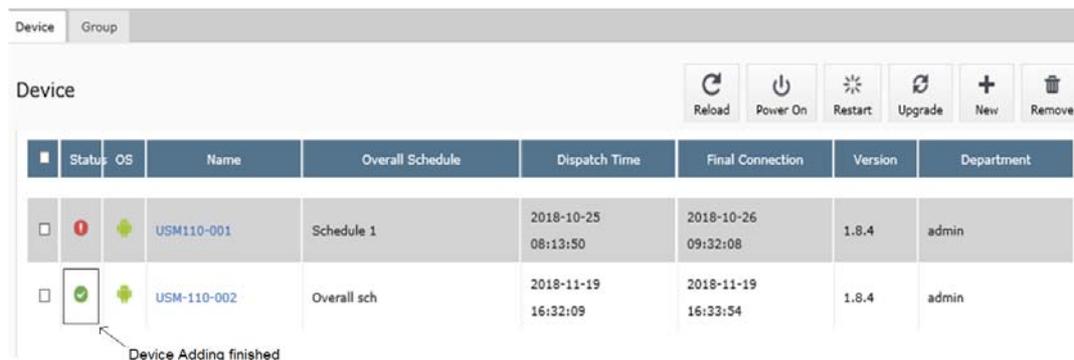
Step 5. Key the device name in [Name] field.

Step 6. The [Client ID] field is based on the information set in client system. Two options. Option1. If the [Use custom ID] is selected, please input the [Custom ID] of client system. Option2. If the [Use custom ID] is not selected, please input the [Client ID] of client system

Step 7. Click [Save & Exit]



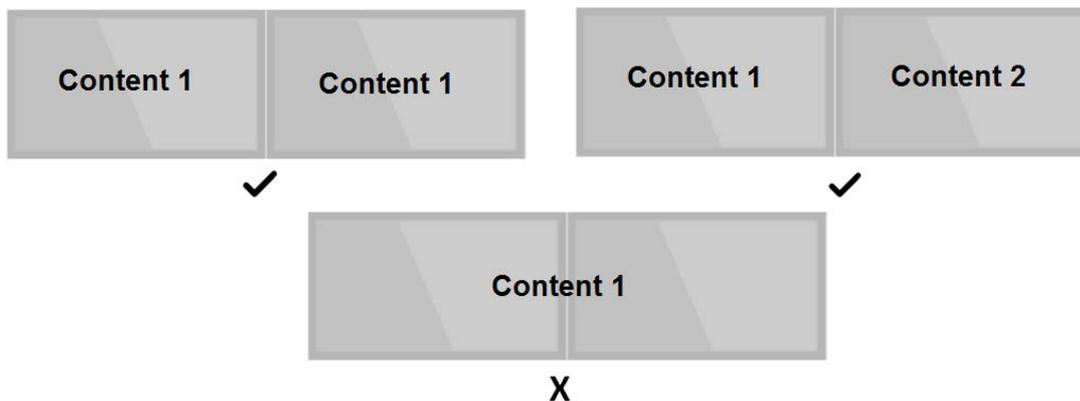
Step 8. Back to [Client Device], check the [status] column of the device list, the green indicator say you finish adding one device.



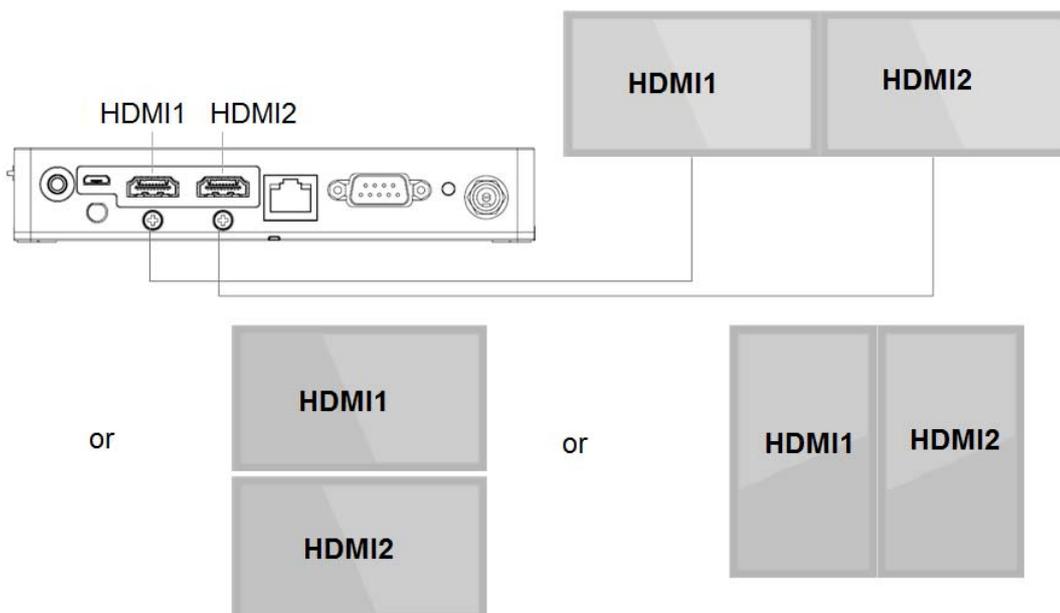
5.3 WISE-PaaS/SignageCMS Client Screen Setting

On the USM device, the HDMI1 is main output, HDMI2 is sub-output, the following limitation when using extension model:

1. Audio source only supports on HDMI1.
2. Mouse and Keyboard and touch only support on HDMI1.
3. USM device supports to show independent content in two screens, it can not split one video or image in two screens.



Additionally, using two screens with extension model, please set the screen which connects the HDMI1 source on the left or top, please refer to the following illustration.



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