

**SA-101-N**  
**Android / Linux**  
**Mini Digital Signage Player**

**User's Manual**

Version 1.0  
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## Compliance



This is a class A product. In a domestic environment, this product may cause radio interference in which case users may be required to take adequate measures.



This product has been tested and found to comply with the limits for a Class A 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 manufacturer's instructions, may cause harmful interference to radio communications.

### WEEE



This product must not be disposed of as normal household waste, in accordance with the EU directive of for waste electrical and electronic equipment (WEEE - 2012/19/EU). Instead, it should be disposed of by returning it to a municipal recycling collection point. Check local regulations for disposal of electronic products.

### Green



This product is compliant with the current RoHS restrictions and prohibits use of the following substances in concentrations exceeding 0.1% by weight (1000 ppm) except for cadmium, limited to 0.01% by weight (100 ppm).

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent chromium (Cr6+)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ether (PBDE)
- Bis(2-ethylhexyl) phthalate (DEHP)
- Butyl benzyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)

## Important Safety Information

Carefully read the precautions before using the device.

### Environmental conditions:

- Lay the device horizontally on a stable and solid surface in case the device may fall, causing serious damage.
- Leave plenty of space around the device and do not block the openings for ventilation. NEVER DROP OR INSERT ANY OBJECTS OF ANY KIND INTO THE VENTILATION OPENINGS.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the device for ventilation. NEVER INSERT OBJECTS OF ANY KIND INTO THE VENTILATION OPENINGS.
- Use this product in environments with ambient temperatures between 0°C and 45°C.
- DO NOT LEAVE THIS DEVICE IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY BE BELOW -20° C (-4° F) OR ABOVE 80° C (176° F). This could damage the device. The device must be used in a controlled environment.

### Taking Care Of your products:

- Before cleaning the device, turn it off and unplug all cables such as power in case a small amount of electrical current may still flow.
- Use neutral cleaning agents or diluted alcohol to clean the device chassis with a cloth. Then wipe the chassis with a dry cloth.
- Vacuum the dust with a computer vacuum cleaner to prevent the slots from being clogged.



## WARNING

### Attention during use:

- Do not use this product near water.
- Do not spill water or any other liquids on your device.
- Do not place heavy objects on the top of the device.
- Operate this device from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your distributor or local power company.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord, make sure that the total ampere rating of the product plugged into the extension cord does not exceed its limits.

### Avoid Disassembly

You are not suggested to disassemble, repair or make any modification to the device. Disassembly, modification, or any attempt at repair could generate hazards and cause damage to the device, even bodily injury or property damage, and will void any warranty.



## CAUTION

Danger of explosion if internal lithium-ion battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

## Warranty Policy

- **Industrial standard products:**

24-month (2-year) warranty from the date of shipment. If the date of shipment cannot be ascertained, the product serial numbers can be used to determine the approximate shipping date.

- **3<sup>rd</sup>-party parts:**

12-month (1-year) warranty from delivery for the 3<sup>rd</sup>-party parts that are not manufactured by us, as CPU, memory, HDD, power adapter, panel and touchscreen.

- \* Products, however, that fail due to misuse, accident, improper installation or unauthorized repair shall be treated as out of warranty and customers shall be billed for repair and shipping charges.

## Technical Support & Services

1. Visit the our website to find the latest information about the product.
2. If you need any further assistance from your distributor or sales representative, prepare the following information of your product and elaborate upon the problem.
  - Product model name
  - Product serial number
  - Detailed description of the problem
  - The error messages in text or in screenshots if there is any
  - The arrangement of the peripherals
  - Software in use (such as OS and application software, including the version numbers)
3. If repair service is required, you can download the RMA form at our website > **Support > RMA Service**. Fill out the form and contact your distributor or sales representative.

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# Chapter 1

## General Information

The information provided in this chapter includes:

- Features
- Packing List
- Specifications
- Overview
- Dimensions

## 1.1 Introduction

SA-101-N, a product code of IBASE Mini Digital Signage Player series, is an Android / Linux system for general applications. It is a fanless signage player with ARM®-based Cortex® A9 i.MX6 Dual/Quad processor and outputs through HDMI. It may contain some pre-built APK files for demonstration purpose per user's request.



## 1.2 Features

- Freescale™ ARM®-based Cortex®-A9 i.MX6 Dual Lite 1GHz / Quad 1GHz Processor
- eMMC NAND flash 8GB on board
- DDR3 1GB on board
- Display via HDMI
- USB 2.0 A Type
- MicroSD card storage (up to 32GB)
- WiFi networks
- 5V DC-in power input
- Ruggedized, fanless and compact design

### 1.3 Packing List

Your SA-101-N package should include the items listed below. If any of the items below is missing, contact the distributor or the dealer from whom you purchased the product.

- SA-101-N Mini Android Digital Signage Player (Main Mini-PC box)
- HDMI Cable (Type-C to Type-A)
- Power Adapter
- Power Cord (USB Type-A to DC)
- Plastic Holder for SA-101-N and Cables



## 1.4 Specifications

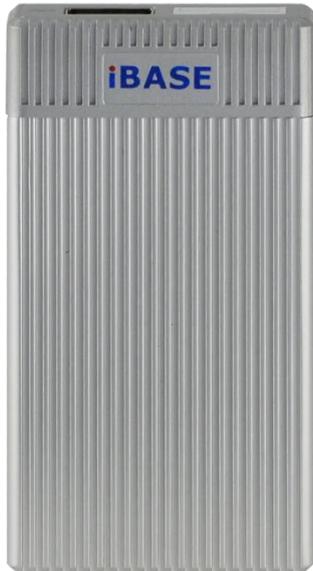
System	
<b>Mainboard</b>	MBD101
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• Android 4.4.2</li> <li>• Ubuntu Linux 12.04 (kernel 3.0.35)</li> </ul>
<b>CPU</b>	NXP / Freescale™ ARM®-based Cortex®-A9 <ul style="list-style-type: none"> <li>• i.MX6 Dual Lite 1GMHz processor</li> <li>• i.MX6 Quad 1GMHz processor</li> </ul>
<b>Chipset</b>	Integrated
<b>Memory</b>	DDR3 1GB on board
<b>Flash</b>	1 x eMMC 8GB NAND flash on board
<b>Graphic</b>	2D & 3D (2 /3 GPUs) (35Mtri/s / 200Mtri/s)
<b>Power Requirement</b>	5V DC-in
<b>Power Supply</b>	10 W power adapter
<b>Wireless</b>	<ul style="list-style-type: none"> <li>• Built-in WiFi module 802.11 a/b/g/n</li> <li>• Bluetooth 4.0</li> </ul>
<b>Chassis</b>	Aluminum, silver
<b>Dimensions (W x H x D)</b>	85 x 15 x 45 mm (3.35" x 0.59" x 1.77")
<b>Net Weight</b>	0.1 kg (0.22 lb)
<b>Certificate</b>	CE, FCC, UL, CCC
I/O Ports	
<b>Display</b>	1 x Mini-HDMI (up to 1920 x 1080)
<b>USB</b>	1x USB 2.0 Type A
<b>SD Card</b>	1 x MicroSD card slot (FAT32 and NTFS formats), up to 32 GB
Media Output Format	
<b>Video</b>	Up to 1920 x 1080 MPEG4, H.263, MPEG-1/2, VP8 (1280 x 720), H.264
<b>Audio</b>	AAC, He-AAC, MP3, MP3 VBR, WAV
<b>Photo</b>	Up to 8192 x 8192 JPEG

Environment	
<b>Temperature</b>	<ul style="list-style-type: none"><li>• <b>Operating:</b> 0 ~ 50 °C (32 ~ 122 °F)</li><li>• <b>Storage:</b> -20 ~ 70 °C (-4 ~ 158 °F)</li></ul>
<b>Relative Humidity</b>	10 ~ 90% (non-condensing)

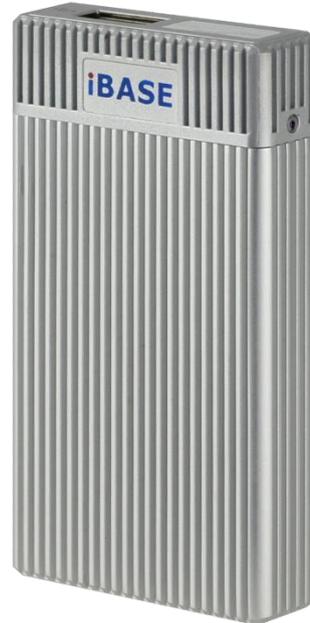
All specifications are subject to change without prior notice.

## 1.5 Overview

Front View



Oblique View



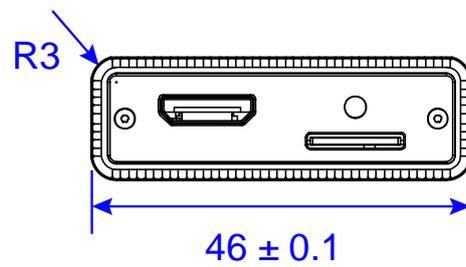
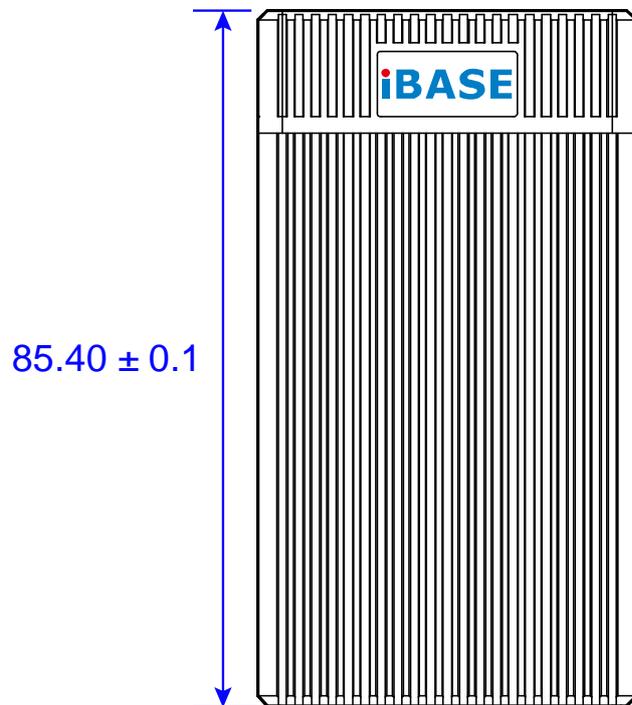
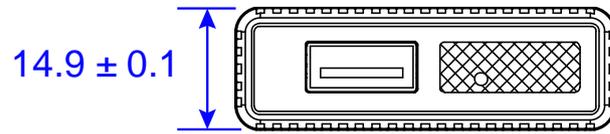
I/O View



No.	Name
1	HDMI Port
2	MicroSD Card Slot
3	DC Jack

## 1.6 Dimensions

Unit: mm



## Chapter 2

# System Setup

The information provided in this chapter includes:

- System Quick Installation
- Playing Mode
- Exit from Playing Mode
- Wireless Connection
- Firmware Update
- Loading Factory Default

## 2.1 System Quick Installation

To set up your SA-101-N, place the device on a flat, stable and solid surface, and prepare all the items in the package. Then follow the instructions below for quick installation.

1. Connect your SA-101-N to a display device with supplied HDMI cable.
2. Use the supplied power adapter and power cable to supply power to SA-101-N and turn on the device.
3. Install a microSD card if you have.
4. Turn on your display device and set its input source to the selected HDMI port.

## 2.1.1 Default Function

SA-101-N will automatically run the default function.

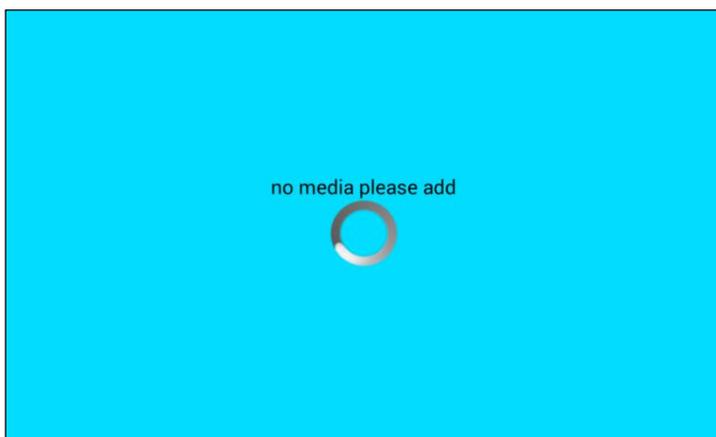
1. If your SA-101-N is pre-loaded with a standard Android operating system, use the device as a typical Android device. You can skip the following information and directly refer to *Chapter 3 Content Management* to upload media files.

You will see the following main desktop screen.



If your device is also pre-loaded with any demo application file (\*.apk), the player will automatically start and play back a loop of videos or pictures repeatedly. You can update or change these media files.

2. If your SA-101-N does not have any media content pre-loaded, the below screen will show up and you will need to upload media files. Refer to *Chapter 3 Content Management*.



## 2.2 Playing Mode

All the media files including videos, images and text files detected from a microSD card or from the ADPlayer over the network, will be played in a loop repeatedly.

The images are played with a default interval of 10 seconds, and the interval is only configurable by IBASE. The text messages scroll automatically.

---

**Note:** The video files playing over the network should be short in length.

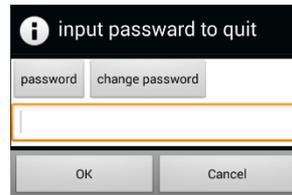
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For more information about updating media files, refer to *Chapter 3 Content Management*.

## 2.3 Exit from Playing Mode

To exit from the playing mode, you can either right-click the mouse or press the **ESC** button on the keyboard, and you will need to enter a password. The default password is IBASE.

The following screenshots are based on Android.



After exiting from the playing mode, you will see the *Home* screen of Android below. Then if there is no user activity for 60 seconds, the system will return to the playing mode automatically.



## 2.4 Wireless Connection

### 2.3.1 WiFi Connection

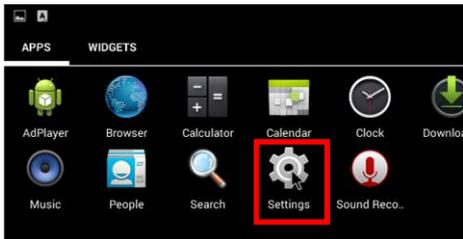
With the built-in WiFi module in the device, you are able to access to network on this device. Follow the steps below to turn on WiFi.

The following screenshots are based on Android.

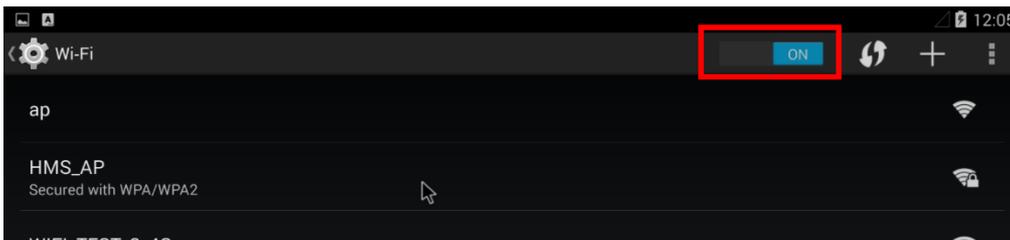
1. On the *Home* screen, click the **Menu** icon .



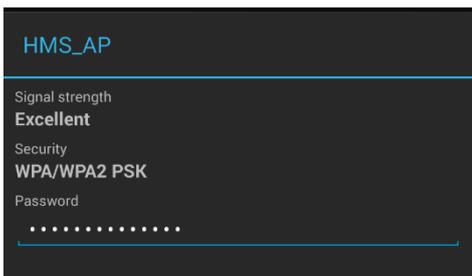
2. In the APPS tab, click **Settings** in the APPS tab.



3. Click **Wi-Fi**, and turn it on.



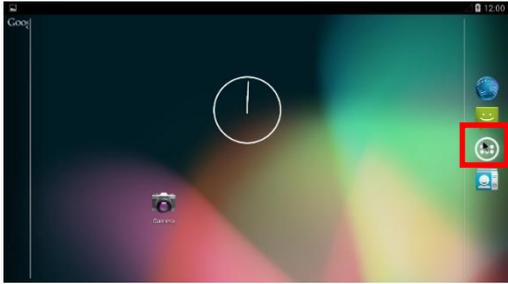
4. Select a WiFi network from list of available networks that device has found. If it's a secure network and this is the first time you use the network, you'll need to enter a password.



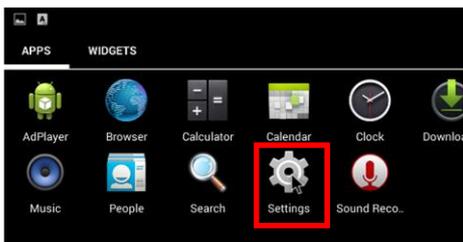
5. When the device successfully connects to the WiFi network, the WiFi symbol  will appear at the top right of the screen, and you can access to Internet now.

### 2.3.2 Bluetooth Connection

1. On the *Home* screen, click the **Menu** icon .



2. In the APPS tab, click **Settings** in the APPS tab.



3. Click **Bluetooth**, and turn it on.

## 2.5 Firmware Update

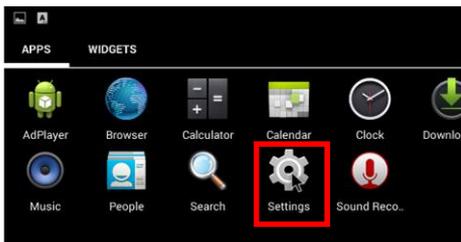
To update the firmware of SA-101-N, you need to contact IBASE for the latest new firmware image, copy it to a microSD card, and insert to the device. Then update the firmware by referring to the following instructions.

The following screenshots are based on Android.

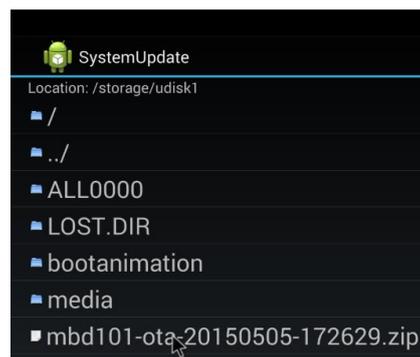
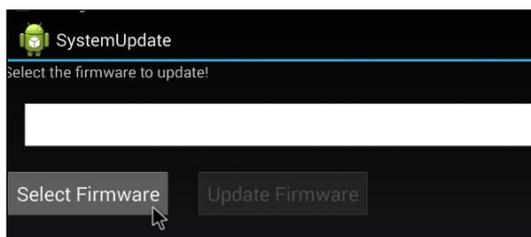
1. On the *Home* screen, click the **Menu** icon .



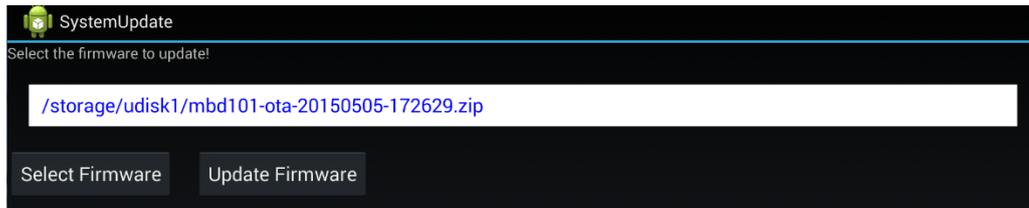
2. In the APPS tab, click **Settings**, click **About tablet**, and select **Additional system updates**.



3. The *System Update* screen will appear. Click **Select Firmware** to select a firmware image from the USB flash drive or the MicroSD card to update.



4. In this example, the firmware image is named "mbd101-ota-20150505-172629.zip". Click **Update Firmware** to start.



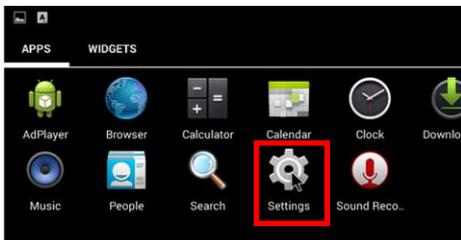
## 2.6 Loading Factory Default

If you need to load the factory default settings, follow the steps below.

1. On the *Home* screen, click the **Menu** icon .



2. In the APPS tab, click **Settings** in the APPS tab.



3. Click **Factory Data Reset** and the factory default settings will be automatically loaded.

# Chapter 3

## Content Management

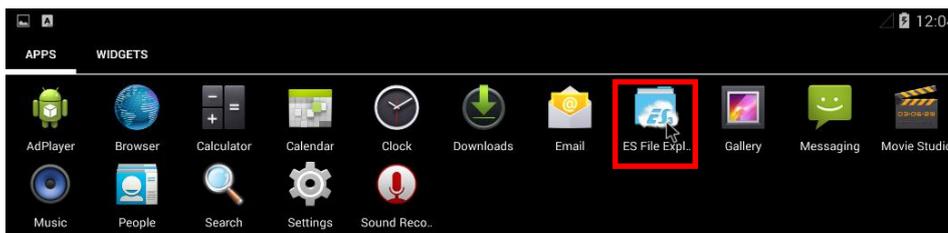
The information provided in this chapter includes:

- ADPlayer
- Uploading / Updating Media Files
- Editing Media Files
- Setting up the Playing Schedule

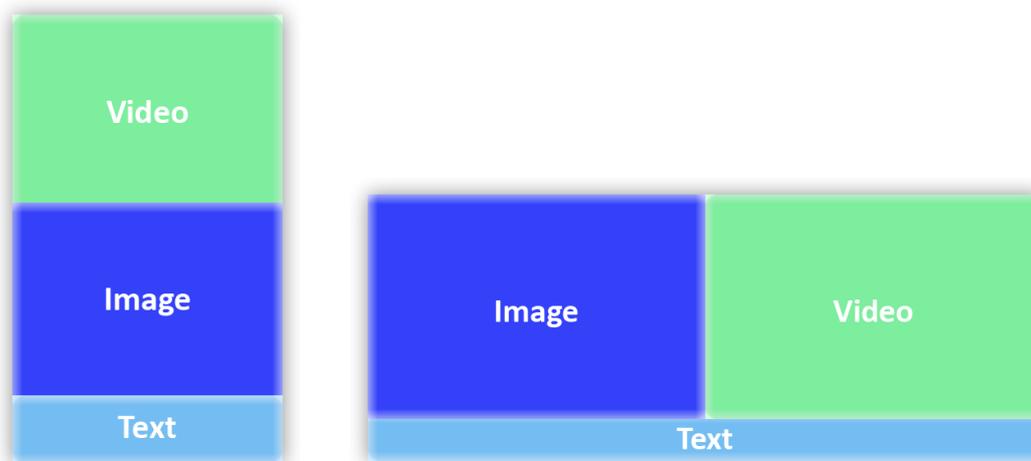
### 3.1 ADPlayer

Before you start to use the system, you need to:

1. Remove the file *PlayerWatchDog.apk* from the path /system/priv-app. Then reboot SA-101-N.
2. Download the application *Adplayer.apk* and install it. Click the Menu icon  on the *Home* screen, click **ES File Explore**, and click the *Adplayer.apk* for installation.



The Advance ADPlayer is a software program applying for SA-101-N, supporting 2 types of screen layout as below – portrait and landscape. Choose a desired type of layout per your request. We also provide another software program if a specific screen layout is preferred.



**Portrait Layout**

**Landscape Layout**

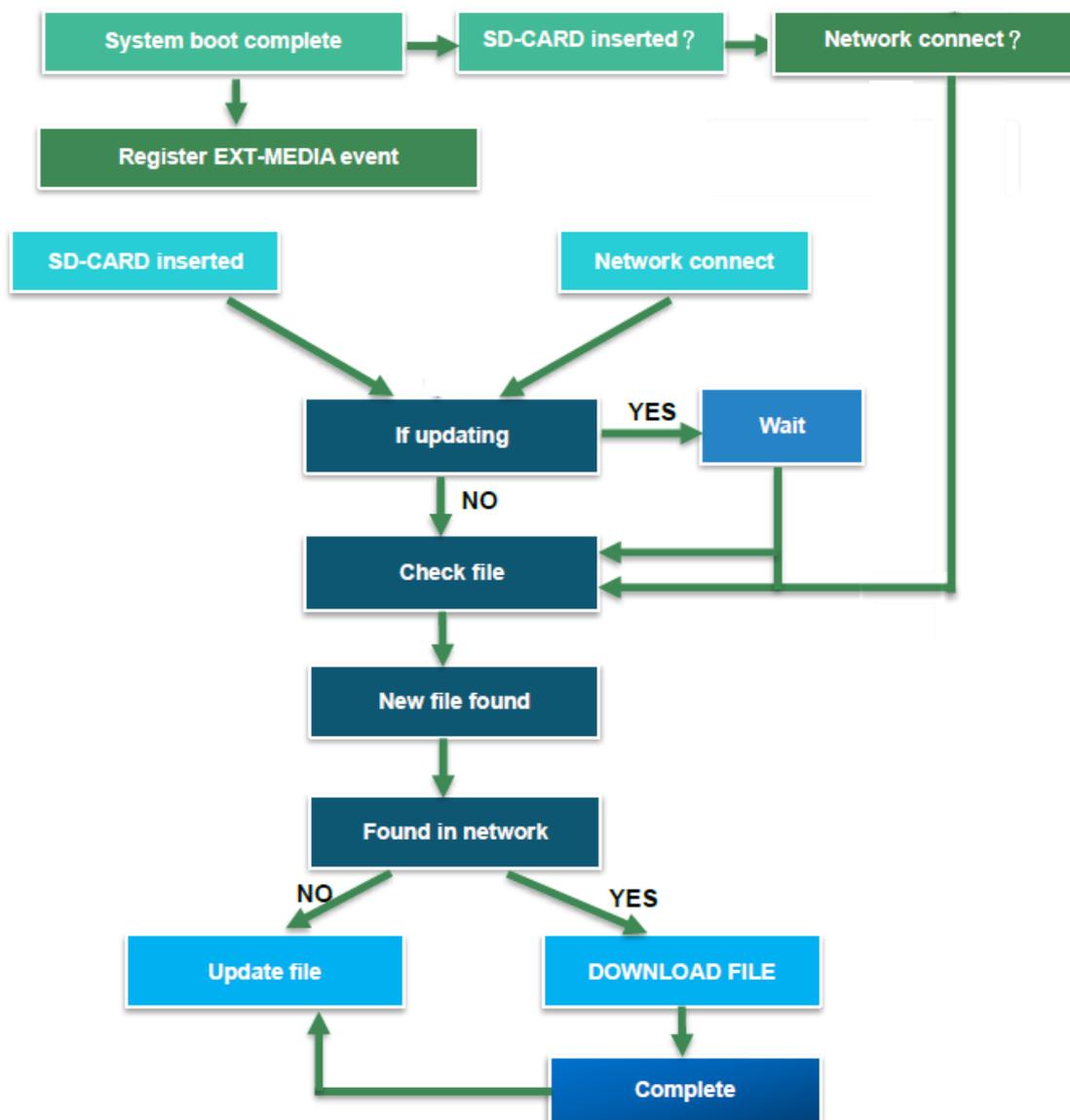
The ratio of the screen size is not configurable. If you need a layout consisting of 2 or 3 screens, provide to your support with the desired layout arrangement, sizes and resolutions, and we will generate a target software image for you.

The content media files can be updated from a microSD card or from a network. Network update is only applicable for exporting small-sized media files.

For the supported formats of media files, refer to the following table (also listed in Chapter 1, 1.4 Specifications.)

Media Output Format	
<b>Video</b>	Up to 1920 x 1080 MPEG4, H.263, MPEG-1/2, VP8 (1280 x 720), H.264
<b>Audio</b>	AAC, He-AAC, MP3, MP3 VBR, WAV
<b>Photo</b>	Up to 8192 x 8192 JPEG

The content manager will regularly keep checking the media files from the microSD card and the network directory. If there is any change made to the media content, the text message file *text.xml* will be updated.



## 3.2 Uploading and Updating Media Files

You need to upload media files to SA-101-N when using the digital signage player for the first time.

1. Turn on SA-101-N.
2. Prepare and install a microSD card pre-uploaded with the desired media files under a folder named **media**.

Alternatively, you can set up a network connection to update the content from the ADPlayer.

The media files will be located:

- **Video:** MicroSD card (or ADPlayer) /media/video/
- **Image:** MicroSD card (or ADPlayer) /media/picture/
- **Text:** MicroSD card (or ADPlayer) /media/text.xml

The text messages are separated by the tag `<msg>` `</msg>` in the file text.xml.

3. As the media files are detected, they will be transferred from the microSD card or from the ADPlayer over the network to the device automatically.

After the media files have been completely transferred, SA-101-N will start to play these files.

---

### Note:

1. Do not turn off SA-101-N or remove the microSD card during transfer.
  2. It may take some time to transfer large-sized media files.
- 

You can update media files in the same way.

### 3.3 Editing Media Files

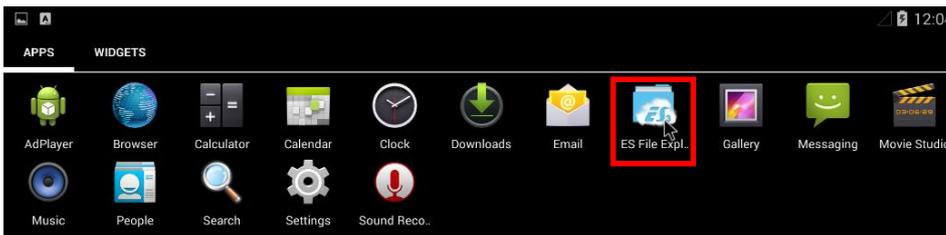
Not only can you edit the media files saved on SA-101-N, but the media files saved either on the microSD card can also be edited when inserted to the device.

Before editing media files, you need to exit from the playing mode and return to the *Home* screen. The following screenshots are based on Android.

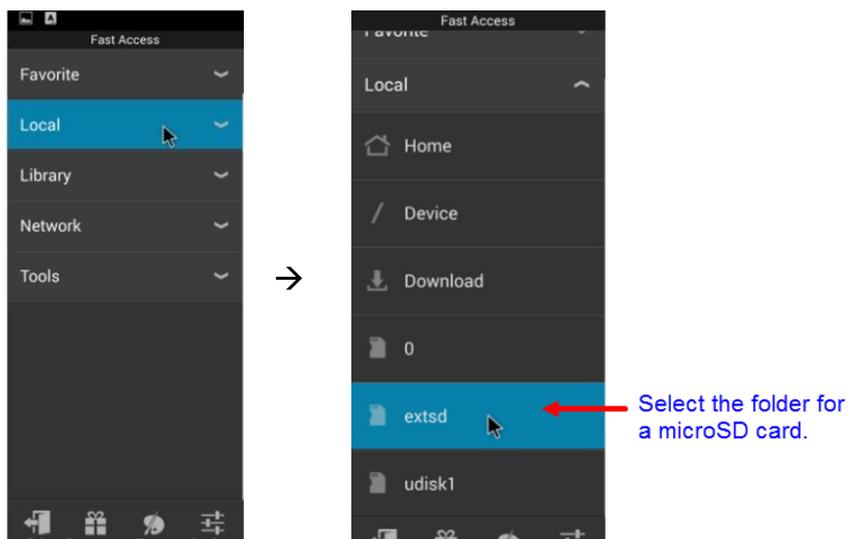
1. On the *Home* screen, click the **Menu** icon .



2. Click **ES File Explore** in the APPS tab.



3. Click **Local**. If you are using a microSD card, open the folder **extsd** to find the media files.



4. Select a desire media file and start to edit.

### **3.4 Setting up the Playing Schedule**

The media playing schedule goes on the basis of the names of the media files. You can create a naming convention with respect to ordering relation and make the filenames all begin with a numeric or alphabetical character in a contiguous sequence.

# Appendix

The information provided in this chapter includes:

- APK Example Content
- The Protocol File of ADPlayer

## A. APK Example Content

Images: .JPG or .PNG  
Videos: .MPG or .MPEG or .MP4  
Text and Instructions: .XML

## B. The Protocol File of ADPlayer

The software application ADPlayer usually checks the protocol file indicating the whether there is any change made to the media content.

The content of the protocol file:

```
<infos>
<!--it must contains this section, the version will be got and check with the version of locale --
>
<update>
    <version>x</version>
    <name>information</version>
</update>
< update >
<name></name> <!--name will be video/picture/text-->
<prog></prog><!--prog will be "none" or "all" or "part"
none mean should not update
all means will delete the locale files and download files in server
part means keep the locale files and download files in server
-->
<item>name<item><!--update file list-->
<item>name<item><!--update file list-->

</ update >
</infos>
```

Description:

Date: the content updated date, find the newest date to update  
Update all: all the files in the relative direction will update, and remove original file  
Update section: copy files in the relative direction and keep original file