

**SAMSUNG**

# iPOLiS mobile

**English**

Android ver **2.8**

Hanwha's iPOLiS mobile is an android based dedicated application for smartphones and tablet PCs to remotely monitor and control Hanwha's network based products.

The iPOLiS mobile application can be downloaded freely and installed from Google Play.

- ❖ To search iPOLiS mobile application from Google Play, type "iPOLiS" or "TECHWIN" and run a search, ignoring the letter case.
- ❖ User of previous version software (v1.0) needs to register added devices to the newly installed software again. User of version 1.3 or later does not require re-registering devices after updating the software. Updating will migrate device list to the new software.
- ❖ You can download an application of a previous version on our website (<http://security.hanwhatechwin.com/>).
- ❖ If enabled with a password lock, updating for smartphone/tablet PCs other than Samsung Galaxy series may experience problems with updating. In such cases, disable password lock during updating.

## 0. Before Installation

To receive video by connecting your handset to the NW equipment, your handset must satisfy the following requirements.

Item	Recommended
CPU	1.6GHz OctaCore, 1.9GHz QuadCore or higher
RAM	2GB or higher
Available RAM	100MB or higher
OS	Android OS 4.4.x, 5.x, 6.x



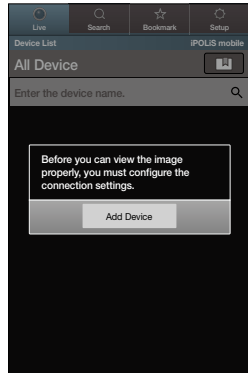
- The video service involves lots of data transmission, so if you use 3G or 4G (LTE) data communication service, excessive fees can be charged according to your service provider's policy.
- To receive reliable video support, the network speed shall be as fast as 10Mbps, and when you access the 3G network or if you are under unstable Wi-Fi connection environment, the video can be delayed or disconnected.
- iPOLiS mobile 2.8 supports Android OS 4.0 or higher; 4.4 is recommended.
- As Wi-Fi connections may not be secure, please install anti-virus software on your mobile device. The device testing environment for software quality is as follows:
  - Samsung Galaxy S4 (Android v4.4.2) series
  - Samsung Galaxy S6 (Android v6.0.1) series
  - Samsung Galaxy S7 (Android v6.0.1) series
  - Samsung Galaxy Note4 (Android v5.1.1) series
  - Samsung Galaxy Note5 (Android v5.1.1) series
  - Samsung Galaxy Note 10.1 (Android v4.4.4) series
  - Samsung Galaxy Tab S2 (Android v5.0.2) series
  - Nexus 5X (Android v6.0.1) series

# 1. Register and search a device

## To Add a Device

1. Move to the Add Device page.

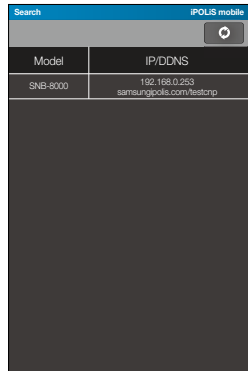
- 1 If visited with no added device for the first time, **<Add Device>** message appears.
- 2 To register a another device in the case that there is a device already registered, tap **<Device List>** in the "Register" menu and touch Add **<+>** on the right side of the device list.



2. In the **<Add Device>** screen, touch the **<Auto add>** button to launch the list of available devices. Touch your desired device.



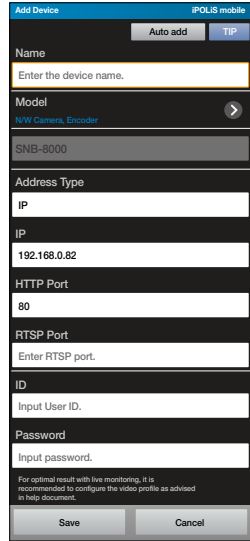
- Once your smart phone is connected to the Wi-Fi network where the device is connected, iPOLiS automatically detects the device.
- If you are on a 3G or LTE network, you may not search for the device list.



**3.** Enter the device information to connect.

If your device is not found, you will need to enter the device information on your own.

- Name : Name the device as desired.
  - If you don't enter the name, the IP address or DDNS of the device to be added is used by default.
- Model : Select one from the product type listed.
  - Actual model name is not required, it's automatically assigned after adding the device.
- Address Type : Enter the IP address or DDNS of the device to connect depending on the internet environment.
  - If you select IP as the address type, enter the IP address; if you select DDNS, enter the DDNS.
- HTTP Port : Enter the connection port for the device.
- RTSP Port : Enter the RTSP port number configured for the device.
  - For DVR and HW NVR, enter the last port number of port range configured for the device. For example, if the range is 4520~4524, enter 4524.
- ID : Enter the device ID that you have specified.
- Password : Enter the password for the device that you have specified.





- If you register your device with <Auto add>, model / address type / IP and DDNS / HTTP port are automatically entered.
- SW NVR does not support the auto search function.
- Some DVR models support DDNS-based auto searches.
- If you want to use this on a 3G/LTE network, you need to either register a DDNS ID or set it up as public network.
- You can register a DDNS ID at [ddns.hanwha-security.com](http://ddns.hanwha-security.com).

4. Provide all necessary information and touch <Save> button.

5. Select a profile.

- User must select a profile for video recording if the device to be added is a network camera or an encoder. A profile's properties can be viewed and edited with Web Viewer, where iPOLiS mobile only provides selecting one that is optimal for the displaying device from existing profiles.

6. Select a channel.

- For adding a DVR/NVR, user must select a channel for the connection. A channel's properties can be viewed and edited with Web Viewer, where iPOLiS mobile only provides selecting channel to monitor, for the displaying device.

7. Once completed with connecting to the device, it is added to the device list.



- If settings of the added device are edited on the Web Viewer after adding it to your application, then iPOLiS mobile may fail to recognize changed settings. In such cases, move to the editing page of the corresponding device and touch <Save> button to revive the connection again.

## ❖ Recommended Profile Information

It is recommended to set the profile as shown below for optimal Live video monitoring with iPOLiS mobile.

### Configuration

Device		Device Profile Setup Menu
Network Camera		Video Profile
DVR		Live Transfer
NVR	HW	Live Streaming
	SW	Live Streaming Video Source 2

### Live recommended profile settings

Codec	Resolution	Frame Rate	Compression / Transmission Quality
MJPEG	320X240 / CIF	5fps	Normal (10)
H.264	320X240 / CIF	10fps	Normal (10)
H.265	320X240 / CIF	10fps	Normal (10)

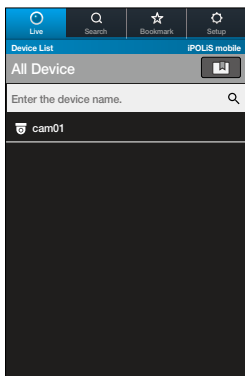


- Network camera supports up to full HD (1920 x 1080) resolution. Only supported storage devices are compatible with full HD resolution.
- If either width or height of the video is 2040 pixel or greater, it can not be monitored with MJPEG.
- According to the network stability, connection may suffer from stuttering or interruption.

## Searching a device


To search a registered device in the device list on the Live/Play tab, enter the name of the device.

The list of devices containing the search word will be filtered and displayed.




## 2. Edit, delete and export a device list


### To edit the device information

1. Touch the Settings tab.
2. Go to the "**Register**" menu and touch the <**Device List**>.
3. Select a device to edit from the list.  
You can also touch <  > in the rightmost of the device item.
4. When you have completed your changes, touch <**Save**>.

### To delete a device

1. Touch the Settings tab.
2. Go to the "**Register**" menu and touch the <**Device List**>.
3. Touch the menu button on your device.  
Menu icons will appear on the bottom side of the screen.
4. Touch the Delete <  > button.
5. Select a device to delete from the list.
6. When done, touch <**OK**>.  
The selected device will be removed from the list.

### Exporting a device

1. Touch the Settings tab.
2. In the "**Register**" menu, touch <**Device List**>.
3. Touch the Export <  > to the right of the device list.
4. Set the password.



- To set a password, please refer to "**Setting a Password**" (page 28).



5. Select the type of email to use and enter the email address of the recipient.



- This function supports Android OS 4.0 or higher and Android OS 4.4 or higher is recommended.
- Export file contains device access information.  
Please be careful about security when using the file.

## Importing a device list

1. Download the attachment from the inbox.

2. Select the file in the folder in which the downloaded file is saved or run the Share function.

Select an app to run using iPOLiS mobile. If there is no app that is inter-operated, iPOLiS mobile will run automatically.



- In the case of a device in which zip file extraction is automatically activated when selecting a file, use the Share function.

3. Select iPOLiS mobile and enter the password that was set when you exported the file.

4. Touch <OK>.

5. Select the type of export.

- Append : The information of the existing registered devices is maintained and the list of devices imported is added.
- Overwrite : The information of the existing registered devices is deleted.

6. Touch <OK>.

The list of devices is imported.




- This function supports Android OS 4.0 or higher and Android OS 4.4 or higher is recommended.

## 3. Editing a Favorite

### To add a channel to your Favorite View

#### Method 1) When a live video is monitored

During a live video replay, a user's preferred channels can be added to the Favorite View.

1. Select your video, then go to the upper-right corner and touch the <  > button.
2. When the Add popup appears in the Favorite View, enter a note and save it. Inserting a note is optional, and it can be saved without input.



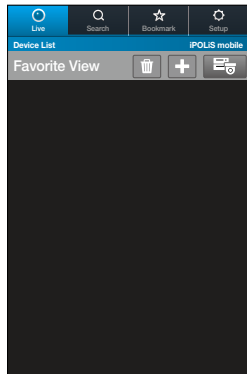
- Up to 100 items can be registered in the Favorite View. If the limit is exceeded, some items will be selectively deleted.


3. If you want to check the Favorite View, go to the Live tab and touch the <  > button. The Favorite View will pop up.

#### Method 2) When a new layout is configured


A user can register a device for himself and configure its layout.

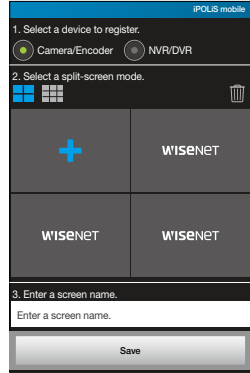
1. Touch <  > button in upper-right corner of the device list and move to the Favorite View.
2. Touch <  > button.





3. Select a device to register between Camera/Encoder and NVR/DVR.
4. Select a split-screen mode between 4-split and 9-split modes.
5. Touch <  > button.
6. Select a device to register from the device list.
7. Enter a name for the selected Favorites screen and touch <Save>.




- If you want to change a registered channel location, change a channel tile's location by dragging and dropping it.
- If you want to delete a registered channel, move it onto <  > by dragging and dropping it.
- It is possible for a camera to combine multiple devices and form a layout. For NVR/DVR, it is possible to form a layout only using channels within a device.



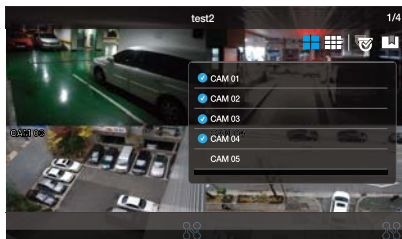
## To modify the Favorite View

1. Touch Edit <  > on the Favorite View screen.  
Moves to List Edit screen.
  2. Can add or delete a channel. Can modify a screen name. Can change a tile's location.
-  ■ For a Favorite setup in a live video, it is possible to change the only Favorite name.

## To delete the Favorite View

1. Touch the Menu button on the device.  
Menu buttons pop up at the bottom of your screen.
2. Touch Delete <  >.
3. Select a Favorite to delete from the list.
4. Touch <OK>.  
A selected Favorites item is deleted from the list.

## 4. Live Monitoring




### To connect to a device

1. Run iPOLiS mobile, and touch the desired device to be connected once device list appears.
2. Selecting a network camera or encoder will display video screen in one-channel mode.
3. Selecting a DVR/NVR will display 4-split video screen in quad mode.



- 4/9 channel modes can be selected for NVR.
- Since the connection may be unstable due to the network environment, please use a recommended profile for multi-channel mode.
- If you don't register a DDNS ID for the device connected to the router, you cannot use the device on a 3G/LTE network.

### To change the channel

1. If the screen is touched, control buttons pop up on the upper screen.
2. Touch the Channel Change icon <  >. The camera list appears.

### 3. Select a channel to display on the screen.



- In case of the 4 channel mode, 4 channels are grouped as one, which results displaying CH5 ~ CH8 if selected channel 7.
- In case of the 9 Channel mode, 9 channels are grouped as one, which results displaying CH10 ~ CH18 if selected channel 11.
- In case of the 4 Channel mode, you can move in a group of 4 channels.
- In case of the 9 Channel mode, you can move in a group of 9 channels.
- The 9 channel mode is provided only in NVR.



If you slide the screen with your finger from right to left while in multi-channel mode, you will move to the next split screen.

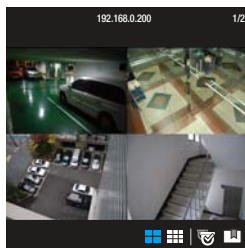
## To switch to one-channel mode



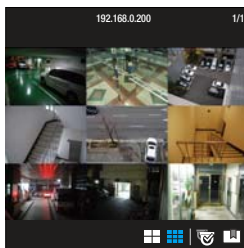
Touch and hold or double-tap one of the screens displayed in multi-channel mode to change it to 1-channel mode.



- If you want to switch to the split mode, then in the bottom of the screen, click the channel icon.




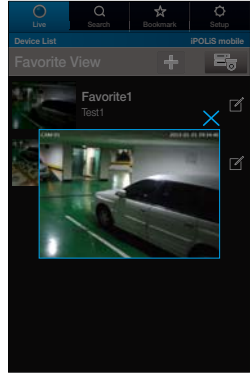
<4 Channel mode>



<9 Channel mode>

## To view the video marked as favorite

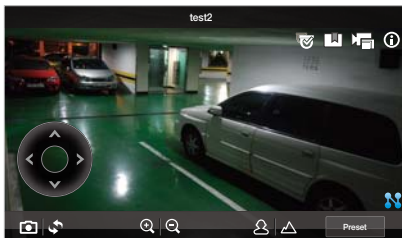
1. Select Live-<  > Tab.
2. If you click a desired item in your Favorite View, the selected list's live video will be played.
3. Click the desired thumbnail image in the list to view a magnified image.






## 5. Controlling the Live Video

iPOLiS mobile supports video control only in one-channel mode.



### To check device information

You can check the configuration information of a registered device.


1. Touch Check Information <  > icon in the upper right corner.
2. A popup window with basic information of the connected device appears.



- To change the device settings, you should make a change manually for each setting item.

### To select a profile

A camera profile can be selected.


1. Touch the Profile <  > icon in the upper-right of the screen.
2. If a profile is selected from the list, a video is displayed using that profile.



- Profile selection function supports network cameras and some DVR/ NVR only.

## If you want to move the channel


You can move the channel of the registered device.

1. Touch the move channel <  > icon at the upper-right area of the screen.
2. Once you select the channel you want to move to when prompted, you can move to the channel.




▪ This function is available for DVR/NVR model.

## Checking the video receiving state

You can check the video receiving state using the <  > icon displayed at the bottom right of the screen.


## To save the captured screen

Captures the currently displayed image and saves to the device storage as an image file.

1. Touch the screen to display menu and touch <  > icon.
2. The captured screen is saved as an image file in the device's image folder.



## To flip video image displayed

You can flip video image by rotating 180°.

1. Touch the screen to display menu and touch <  > icon.
2. Touch again to revert to the original screen.

## To control zooming

You can control the network camera's optical zooming remotely.

1. Touch the screen to display control buttons near the bottom.
2. For zoom-capable cameras, touching <  > icon zooms in, and touching <  > icon zooms out.





- Zooming range and level differ from camera to camera.
- The model that provides the PTZ function among box camera products displays the Zoom In/Out buttons, but these buttons do not work and the digital zoom in/out functions also do not work. The optical zoom in/out works when connected to the external Pan/Tilt drive.



You can also zoom in by pinch open using two fingers on the screen. To zoom out, pinch close on the screen.

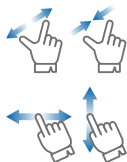
## To control digital zooming

This function is for cameras not supporting optical zooming.

1. Touch the screen to display control buttons near the bottom.
2. Touch <  > button to zoom in, and touch <  > to zoom out digitally.



- Current digital zooming level is noted next to the digital zoom box, and digital zooming supports zooming up to x16.



You can also zoom in by pinch open using two fingers on the screen. To zoom out, pinch close on the screen. Touch and hold to drag the screen in any direction to reveal the hidden part of the image if enlarged bigger than the screen.

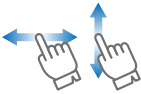
## To control Pan / Tilt

Supported by PTZ cameras only.

1. Touch the screen to display Pan/Tilt control buttons on the screen.
2. Touching the direction button moves camera's pan/tilt to the next step one by one.
3. Touch and hold any of the direction buttons to pan and tilt the camera continuously in the selected direction.



- Pan/tilt range and level differ from camera to camera.
- For a model that supports the external PTZ function among box camera products, the Pan/Tilt button works when the external Pan/Tilt drive is connected.





Drag the screen in up/down/left/right direction to pan/tilt the camera. Note that iPOLiS mobile does not recognize diagonal direction, which will interpret user's dragging as the closest vertical or horizontal dragging.



- Pan/tilt control result requires time for processing, since the command should reach camera device and performed by the camera. Video data size grows as the camera moves, which may result in delayed display. In 3G networks, it may take more than a few seconds to receive video data.
- In a network environment of poor stability, using pan/tilt control with lower video quality settings may help reduce such delays.

## To adjust focus

Supported by PTZ cameras only.

1. Touch the screen to display focus control buttons on the screen.
2. Use Near Focus <  > and Far Focus <  > icons to adjust the focus range.



- This function is provided for DVR/NVR models.

## To listen to the Live Audio

You can hear sound if the network camera supports audio, and you can hear audio from a storage device in a single channel mode.



- In case of DVR, audio becomes not available for setting of less than 200 kbps.

## To run presets

You can run the preset saved in the network camera or NVR.

1. Click the preset button to upload the saved preset list.
2. Select the desired list. You can run the preset saved in the camera or NVR.



- The preset function is provided only for the camera models that support external PTZ functions and the new CGI(SUNAPI).
- The preset function is provided only in NVR models supporting the new CGI (SUNAPI).

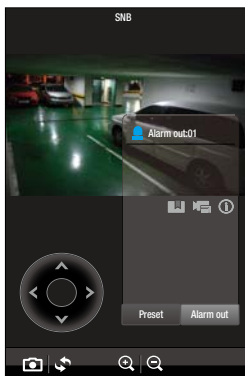
## To control alarm out

An alarm out saved in the network camera can be executed.

1. Click the alarm out button to load the alarm out list.
2. The current status of each list can be viewed using the alarm out lists.
  - Blue : Alarm out On
  - White : Alarm out OFF
3. Select the desired list. An alarm out saved in the camera can be controlled (On/Off).




- The alarm out function is provided only for the camera models that support new CGI(SUNAPI).



## 6. Searching / Playing Saved Video

### If you want to play based on date/time

Touch the place tab <  > in the bottom area of the screen, and you can view the list of playable devices.

1. Select the device to be played and touch it.
2. Select the channel where you want to play.
3. The date when the playable data is saved in the channel of the selected device will be displayed on the calendar. Touch < ◀, ▶ > button on the calendar's both ends of year/month indicator to traverse to the previous/next month.
4. If you touch the date when you want to play it, a circle-type time line (24 hours) will appear. Time zones where there is playable data are classified by color.



- If there are overlapping multiple data for the same time range, an overlapping list appears.
- For a network camera, the above 2, 3 channel selection processes are omitted.
- On a network camera, only the device type supporting new CGI(SUNAPI) provides a play function.

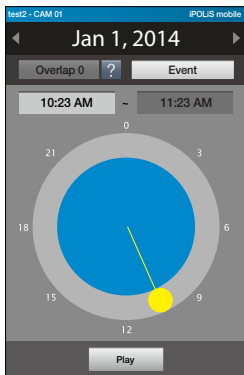
## To play searched video

After searching with date/time, set the beginning time to play the selected video.

1. Check the time line and drag [ ● ] to the play time zone you want, and set up the starting time or enter the time manually.
2. Touch the <Play> button to start video playback, and it will play for about 60 minutes from the start time.



- If the recorded video being played has interval of having no video, playback skips such interval and continues from the next existing position. The displayed play time may be different than the actual recording time depending on performance of network and playing device.
- To ensure smooth playback, audio is not supported.

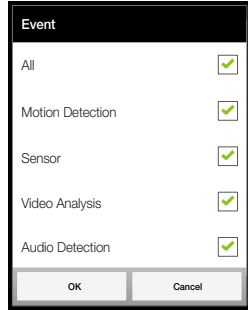




## To play event searched video

After searching based on date/time, set up the start/end time to check the video.

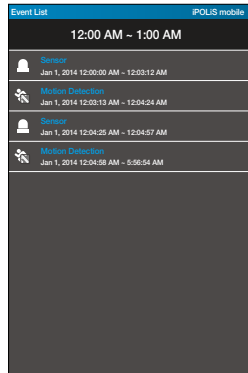
1. Touch the <Event> button to select a desired event and touch <OK>.
2. Check out the time line and drag [ ● ] to the play time zone you want, and set up the starting/ending time or enter the time manually.
  - The start and end time should be set to less than 60 minutes.



3. Touch the <Search> button to show the list of events within the designated time period.
4. Select the desired list to play video.

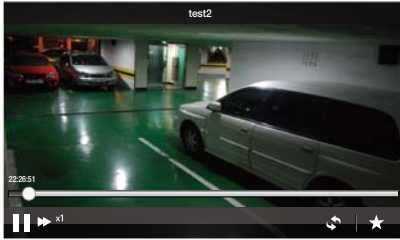


- If the video ends earlier than 60 minutes from the beginning, it will skip to the next existing video and continue playback. Displayed playback time may be slightly different from the actual recording time due to the network or the decoding performance of the playback device.
- To ensure smooth playback, audio is not supported.



## To control playback



It provides basic playback control.



1. Touch the screen to display control buttons near the bottom.
2. To stop playback, touch < || > button. Then playback pauses and the button switches to < ▶ >.
3. To resume again, touch < ▶ > button.
4. To control playback speed, touch < ▶▶ > button and the playback speed indicator appears.
5. The video is played at the selected play speed.
6. Touch < ↻ > icon to flip video image by rotating 180°.


## To use the Timeline

You can jump to a certain point of playback by selecting time point on the timeline.

1. Touch the screen to display 60-minute timeline.
2. Touch the time picker <  > on the timeline, and drag it to a desired time point to skip to that point.
3. Touching the timeline automatically pauses the video playback. Move the time picker and touch <  > button to resume playing.


## To use Bookmark

You can bookmark a certain playback point on the video as a starting point.

1. While playing a video, touch <  > button at a desired point to create a bookmark.
2. The Add Bookmark popup appears, enter a note of the bookmark and save it. Bookmark will be saved even if you don't enter a memo.



- Up to 100 bookmarks can be added, and selectively deleted once exceeded.

3. To play a video from a bookmarked point, move to the Bookmark <  > tab on top of the main screen.

4. Select a desired bookmark from the list.



- Playback control for bookmarked video is the same as that of searched video.
- While playing the bookmark, you can use the bookmark function again.

### ❖ Amount of Network Data Transfer for stored video

Codec	Resolution	Frame Rate	Compression	Bandwidth
H.264	640 x 480	10fps	10	0.69 Mbps
H.264	640 x 480	20fps	10	1.30 Mbps
H.264	800 x 600	10fps	10	1.10 Mbps
H.264	800 x 600	20fps	10	1.90 Mbps





- Above network data transmission is calculated based on SNB-7000.
- Network camera supports up to full HD (1920 x 1080) resolution. Only supported storage devices are compatible with full HD resolution.
- For smooth and proper playback of stored recordings, it requires downloading **bandwidth** more than the specified minimum bandwidth in case the network has interference.

## 7. Setting the iPOLiS mobile

### To Add a Device

- Refer to pages 3 ~ 6.

### To set/cancel/change password

- Touch the Settings <  > tab on the main screen. Select the <Set Password>.
- Enter a new password.  
The <Set Password> checkbox will be changed to <  >. Then, you are prompted to enter a new password.

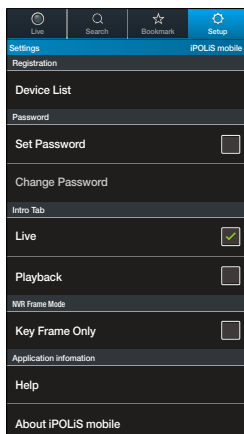


- Set a password that meets the following requirements.
  - 8~9 characters long: A combination of letters, numbers, and special characters.
  - 10~32 characters long: A combination of characters from at least two of the following groups: letters, numbers, and special characters.
  - Don't use 4 or more consecutive or repeated characters or key sequences (Examples: abcde123456, aaaaa11111, qwerty!@#)\$)
  - Allowable special characters: -/:;()&@.,?!"[]{}#%^\*+=\_W|~<>\$£¥

- To cancel setting the password, touch <Set Password> again.
- If you enter the currently registered password, the password setting will be canceled.
- To change the password, touch <Change Password> and enter a new password.



- If you forgot password, uninstall the application and then download it to install again.



## To set the starting page

1. Select the start page screen from the “**Intro Tab**” menu of the settings page, which will be displayed once iPOLiS mobile is executed.
2. Selecting the <**Live**> will display live device list where <**Playback**> will display device search at the beginning.

## If you want to set up NVR Frame Mode

1. For 4/9 channel of the new CGI (SUNAPI) NVR device, you can set up 'Key Frame Only'.
2. If 'Key Frame Only' is selected, it will show the main frame of the video only.
3. If 'Key Frame Only' is not selected, it will show the full frame delivered from the device.



- Depending on the user's environment (device, network, etc.), the number of frames may be changed.

## To see help screen

In the Setup tab, touch <Help>.



- iPOLiS mobile provides help in 13 different languages.

## To check the software version

1. Touch <About iPOLiS mobile> in the settings page.
2. You can check the information of the current software version.



- This application uses FFmpeg under LGPL v2.1.

# 8. Models supporting iPOLiS mobile v2.8

Device Model		Firmware version		
NW Camera	Box/Dome	SNB-9000	v1.00 or Higher	
		SNB-5000/A, SND-5080/F, SNV-5080/R, SNV-5010, SNO-5080R	v2.10 or Higher	
		SNB-7000, SND-7080/F, SNV-7080/R, SNO-7080R	v1.20 or Higher	
		SND-1001, SND-1080, SND-1011, SNO-1080R, SNV-1080/R	v1.00 or Higher	
		SNB-3002, SND-3082, SNV-3082/F	v1.00 or Higher	
		SNB-5001, SND-5061, SND-5011, SND-5010	v1.00 or Higher	
		SNB-7001, SND-7061, SND-7011	v1.00 or Higher	
		SNB-7002, SND-7082/F, SNV-7082, SNO-7082R	v1.00 or Higher	
		SNZ-5200	v1.05 or Higher	
		SNV-3120	v1.24 or Higher	
		SNZ-6320	v1.00 or Higher	
		SNV-7082V, SND-7082V, SND-7082FV, SNO-7082RV	v1.00 or Higher	
		SNB-6004, SNB-6003, SND-6084, SND-6083, SNB-5004, SNB-5003, SNO-5084/5083, SNV-5084, SNO-5084R, SND-5084R, SNV-5084R, SNV-6012M, SNV-6084, SNO-6011R, SND-6011R	v1.00 or Higher	
		SNV-6085R, SNV-L6083R	v1.00 or Higher	
		SNO-6084R, SND-6084R, SNV-6084R	v1.00 or Higher	
	SNB-6005, SNB-6004F, SNB-6011, SNB-6010A, SNO-6095RH	v1.00 or Higher		
	SNF-7010, SNF-7010V, SNF-8010/AVM	v1.00 or Higher		
	PTZ	SND-7084/R, SNO-7084R, SNV-6013, SND-6013, SNV-7084/R, SNB-6010(ATM), SNB-7004	v1.00 or Higher	
		SND-L6012, SND-L6013, SND-L6013R, SND-L6083R	v1.00 or Higher	
		VPM-4020DR, SND-L6014R, SND-K2013R, VPM-4040DR, SND-K2083R	v1.00 or Higher	
		SNO-L6013R, VPM-4020DR, SNO-L6014R, SNO-K2013R, SND-L6014RV/SK, SND-L6014RV/SK, SND-L6014RV/S1, SNO-L6014RV/S1	v1.00 or Higher	
		SNO-L6083R, VPM-4040R, SNO-K2083R	v1.00 or Higher	
		SNB-8000, SNV-8080, SNV-8081R, SNO-8081R	v1.00 or Higher	
		SNB-S202, SNB-S201, SND-S202, SND-S201, SNO-S202R, SND-S202R, SNB-S102, SNB-S101, SND-S102, SND-S101	v1.00 or Higher	
		SNO-L5083R, SNV-L5083R, SND-L5083R, SND-L5013	v1.00 or Higher	
		SNP-3120/V/H	v1.27 or Higher	
		SNP-5200/H	v2.00 or Higher	
	Encoder	Live & Playback	SNP-5300/H	v1.00 or Higher
			SNP-3371/H/TH	v1.01 or Higher
			SNP-3302/H	v1.01 or Higher
			VPM-4600RH, SNP-0232RH-00	v1.01 or Higher
			SNP-6200H, SNP-6200RH, SNP-6201/H, SNP-6320/H/RH, SNP-5430/H, SNP-6230RH	v1.00 or Higher
			SNP-6321/H, SNP-5321/H	v1.00 or Higher
			SPE-100, SPE-400, SPE-1600R, SPE-101	v1.04 or Higher
			SRD-1694/1685	v1.00 or Higher
SRD-494/984			v1.00 or Higher	
SRD-1670/1650/1630/1610(D/DC), SRD-870/850/830(D/DC), SRD-470(D)			v1.12 or Higher	
DVR	Live & Playback	SRD-1652D/852D, 1650DU	v1.12 or Higher	
		SRD-1671/1651/871/851/471	v1.12 or Higher	
		SDR-5100, SDR-4100/4101	v1.02 or Higher	
		SDR-3100	v1.09 or Higher	
		SDR-5200/4200, SRD-1654D/854D, SRD-473D	v1.00 or Higher	
		SRD-1673(D)/873D, 1653D	v1.01 or Higher	
		SRD-476D/876D/1676D	v1.00 or Higher	
		SRD-456/856/1656	v1.00 or Higher	
		SDR-3102/4102/5102	v1.00 or Higher	
		SRD-842/1642	v1.00 or Higher	
	Live only	SRD-1680D/880D	v1.00 or Higher	
		SRD-445	v1.00 or Higher	
		SRD-482	v1.00 or Higher	
		SRD-443	v1.00 or Higher	
		SRD-440	v1.05 or Higher	
NVR	H/W	SRD-442	v1.02 or Higher	
		SRD-1640/840	v1.03 or Higher	
		SRD-1641/841	v1.03 or Higher	
		SDE-5001/5002/4001/4004(V)	v1.02 or Higher	
		SDE-3001/3003	v1.06 or Higher	
	SDE-4001/4002/5001/5002	v1.05 or Higher		
	S/W	SRN-4700, SRN-16700, SRN-1671, SRN-1000	v1.00 or Higher	
		SRN-4000, SRN-472S	v1.00 or Higher	
		SRN-1673S, SRN-873S, SRN-473S	v1.00 or Higher	
		NET-ware	v1.39 or Higher	



# 9. OPEN SOURCE ANNOUNCEMENT

## OPEN SOURCE ANNOUNCEMENT

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- **BSD 2.0** : ed-pad
- **MIT License V2** : dlc.sh-GUI, SAS-iPad-App, TweetNow

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Version 2.1, February 1999

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