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1 Overview

This document describes the hardware operation of the Planar® ContentSmart™ Media Player MP70 OPS, system set-up and frequently asked questions.

1.1 Feature Highlights

The Planar ContentSmart MP70 OPS is a UHD (3840 x 2160) high definition digital signage media player featuring industrial-grade OPS format mechanical design and versatile open-standard HTML5 and SMIL programmability.

- Power / Status LED indicator
- 3.5mm composite Audio output
- Ethernet port for network content update
- Wireless antenna post
- JAE Connector for display mounting AV in for custom live content display
- Hardware decoding of MPEG1/2/4, H.264, H.265, and VC-1 media formats
- 8GB on-board flash local storage with Micro SD expansion slot with SD card cover
- 2 USB ports for USB content update and configuration
- S/W Reset button to perform factory reset
- Built-in wireless b/g/n network
- Support for HTML5 widgets for dynamic content (W3C Widgets standard)
- Industry leading W3C SMIL support for developers
- Supports full POPAI Screen Media Formats Standards profiles S1 to S12, and E1 to E8
1.2 Package Contents

NOT INCLUDED: A USB mouse is required for system setup

1.3 Installation

1.3.1 Mounting

ATTACH the wireless antenna as shown in figure below. Screw antenna clockwise onto the post.

PLUG the player into the OPS slot of the monitor and push until it is securely plugged in the display.
1.4 Physical View

1.4.1 Physical features

- Power/Status LED indicator
- 3.5mm composite Audio output
- Ethernet port for network content update
- Wireless antenna post
- Micro SD card slot with SD card cover
- USB ports for USB content update and configuration
- S/W Reset button to perform factory reset
- JAE Connector for display mounting
2 Configuring the Player

2.1 System Connections

Connect to a monitor via an OPS slot.

Attach the AC power adapter to power on the unit. After approximately 15 seconds, the booting animation will be displayed on screen as shown below:

![Figure 2.1.1](image)

The boot-up process takes approximately 40 seconds to complete.

![Figure 1.1.2](image)

After boot-up completes, player will stay in Basic settings menu if no content service has been configured (i.e. first boot-up for brand new unit or after a factory reset).
Note: If you have already sent content to the player, content will play back automatically 15 seconds after boot-up.

2.2 Basic Settings

A USB mouse must be attached to the player to configure settings. If the display has a HID-compliant touch screen, a USB mouse is not required and all the click action can be replaced by tap actions.

![Basic Settings Menu](image)

**Figure 2.2.1**

Basic Settings:

- Network
- Time zone
- Content

Each time the Basic settings menu is entered, playback will automatically begin after 15 seconds if content services have been previously set. Auto playback can be canceled by clicking on the button before the countdown ends.

User is able to enter Advanced Settings by clicking the Advanced button.

![Menu System During Playback](image)

**Figure 2.2.2**

- Note: Player will ask for password if password has been configured.
2.3 Connect the Player to Your Network

2.3.1 Wireless connection

Click the Wireless LAN setting to launch the wireless configuration UI.

![Wireless LAN Configuration](image1)

Figure 2.3.1

Click the ON/OFF button as indicated below to turn ON Wireless interface (network).

![ON/OFF Button](image2)

Figure 2.3.2

The player will scan for wireless signals nearby and available access points will be listed.
Click on the network ID to connect. If the network requires authentication, you will be asked to provide a password.

2.3.2 Static IP – manually assign network IP address

1. Check the box that says "Show advanced options"
Click down arrow to hide keyboard if needed.

You can also scroll down/swipe to see the rest of the menu.

2. Under IP settings, change DHCP to Static.

3. Fill the form and click Connect to complete the setting.

(Scroll down/swipe to see the rest of the menu if needed)

2.3.3 Wired connection

To use the wired Ethernet connection, connect an Ethernet cable. Ethernet connection takes priority over wireless connection.

DHCP – Automatically assign network IP address
1 Turn on Ethernet by checking the “Use Ethernet” box. If using DHCP, no further action is required.

![Figure 2.3.8](image)

Static IP – Manually assign network IP address

1 Click Static IP Settings to configure static IP address.

![Figure 3](image)

### 2.3.4 Proxy settings

1 In Basic settings, click the Advanced button and the advanced configuration menu will be launched.
2 Click **Network**, then click **Advanced**.

3 Proxy setting menu will be launched. Input proxy hostname and port, then click **Done** to finish configuration.
2.3.5 Show IP settings

1. In Basic settings, click the Advanced button and the advanced configuration menu will be launched. (Figure 12)

2. Click Network, then click Show IP.

3. This feature is to control whether the IP address is displayed in the Basic settings menu. This is enabled by default. When disabled, basic settings will display “connected” instead of the assigned IP address.
2.4 Time Zone Settings

1. In **Basic Settings**, click **Time zone**.

![Time zone settings](image1.png)

Figure 2.4.1

2. Choose the correct time zone from the available options.

![Time zone selection](image2.png)

Figure 2.4.2

2.5 Content Settings

1. Click the **Set content** button.
2 Input the **SMIL/HTML5 content URL** and click **Set**. It will return to **Basic Settings** automatically.

3 The player will check the availability of **SMIL/HTML5 content URL**, with the **Play** button showing **Checking...**

The checking action can be canceled by clicking **Checking...** button. It will change back to **Play**.
NOTE: It is highly recommended to let the player check the availability of the content URL. Clicking Play button with a bad/invalid URL set will cause the player to reboot if the FailSafe function is not configured.

If the SMIL/HTML5 content URL is available, the Play button will change to a 15-second countdown and the playback will start after the countdown. The countdown can be canceled by clicking the button.

If it keeps showing Checking… for a long time, please go back to Set content to check the correctness of the URL.
2.6 Player Information

Users can check the player’s basic information including the Health status, Firmware version and Player ID.

1. Click the Advanced button and the advanced configuration menu will be launched.

![Advanced Configuration Menu]

Figure 2.6.1

2. Click on Information. The definitions of the Health Status:

- Green – Normal. The device is connected to the URL server.
- Blue – Local. The device is playing content from the USB drive or SD card.
- Gray – Disconnected. The device is disconnected.
2.7 Content Configuration – AppStart

Users can assign the URL and APP for execution right after the system starts up.

1. Click the Advanced button. (Figure 2.6.1)

2. Click on Content, then click on AppStart.

3. Enter the valid URL of HTML/SMIL in AppStart (Figure 2.7.1). If you already configured SMIL/HTML5 content URL via “Set content” (Figure 2.5.2), the URL would be showed here.

4. The Advanced option is used for 3rd-party App configuration only.
2.8 Content Configuration – FailSafe

Users can assign the URL and APP for execution while the system has failed to play the assigned content.

1. Click the Advanced button and the advanced configuration menu will be launched. (Figure 2.6.1)

2. Click on Content, then click on FailSafe.

3. Enter the URL of HTML/SMIL in FailSafe.

4. The Advanced option is used for 3rd-party App configuration only.
2.9 Content Configuration – EasyPlay

The EasyPlay feature allows the player to play media content from the USB flash drive (or MicroSD card) directly. Please note media files does not copied to player’s internal storage so USB flash drive (or Micro SD card) must not be removed.

When EasyPlay is enabled, the player will play content only from the USB drive (or MicroSD card). If user wants to play content from the URL server configured via "Set content", EasyPlay must be disabled.

1. Insert USB drive or MicroSD card containing media content to play.

2. Click the Advanced button. (Fig. 2.6.1)

3. Click on Content, then click on EasyPlay.

4. Click Disabled/Enabled button to enable EasyPlay, and choose from 2 available operation modes, Photo Mode and Movie Mode.
Configure Photo Mode:

1. Click on Photo for choosing photos and music. Click on the buttons as marked in red below and select the directories for photos and music from the USB drive.

2. Click **Set** button after selecting the directories.
Configure Movie Mode:

1. Click on Movie. Click on the button as marked in red below and select the directory for movies from the USB drive.

2. Click Set button after the folder is selected.

3. The files in the selected folders will be played after clicking the Play button in the Basic or Advanced settings menu.

![EasyPlay Schedule Configuration](image)

**Figure 2.9.3**

EasyPlay Schedule Configuration:

1. Click the Advanced button. (Fig. 2.6.1)

2. Click on Content, then click on Schedule.

3. Click on the buttons marked in red below to enable/disable the EasyPlay schedule for each time slots.

Type the scheduled time in the dialogue boxes marked in blue below by using the pop-up keyboard or the USB keyboard.
The "On" times assigned in the time slots A-E are inclusive. For example, a schedule assigned per the example below:

The exact playback time will be the time slots marked in blue as shown in figure 2.9.6. The dark blue parts are the overlap time of C/D and D/E.
2.10 Display Settings

Resolution Settings:

For best quality, set the output resolution to match your display’s native resolution to avoid image scaling and blur.

If you are connecting an LCD computer monitor, projector or plasma display, refer to the device specifications for optimal settings.

1. Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2. Click the Display/sound button, then click on Display. The Display Settings page will be launched.
3 Click on Resolution and select suitable resolution from the pop-up menu. Default configuration is Auto Detect - player will auto detect and use the best optimized resolution that your display supports.
Screen Orientation:

Screen orientation is to set the display to rotate 90/180/270 degrees.

4 Click the **Advanced** button and the advanced configuration menu will be launched. (Fig. 2.6.1)

5 Click the **Display/sound** button, then click on **Display**. The Display Settings page will be launched. (Fig. 2.10.1)

6 Click on the **Screen orientation** marked in red below.

7 Click on the preferred angle from the menu.
2.11 Sound Settings

To control the output sound volumes and touch sounds:

1. Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2. Click the Display/sound button, then click on Sound. The Sound Settings page will be launched.

3. Click on Volumes and the Volumes settings page will be launched. Drag the blue sliders to adjust the volumes for the selected options, then click OK to save the new settings.
2.12 System Configuration – Player Name

The player’s name can be specified so the player can be easily recognized in the management software (Management software support is required).

1. Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2. Click on System, then click on Player name.

3. Input a name for the field and click Set.
2.13   System Configuration – Security

A password can be set to provide authentication for player access. If the password is set, a
password prompt will appear if a user is trying to enter the Basic settings menu from playback.

1   Click the **Advanced** button and the advanced configuration menu will be
launched. (Fig. 2.6.1)

2   Click on **System**, then click on **Security**.

3   Input a password in the field and click **Set**.

![Figure 2.13.1](Image)
2.14 System Configuration – Time Server

The feature allows user to synchronize player’s time with the web server where the appStart URL hosted. It is disabled by default.

When disabled, player synchronize it’s time with Android default time server (pool.ntp.org). This requires and internet connection.

When enabled, player synchronize it’s time with the web server where the appStart URL hosted (based on http response header’s time).

1. Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2. Click on System, then click on Time server.

3. Click the Use AppStart URL as time server button as marked in red below to enable/disable the time server function.

4. Click on Set to save the setting.

![Figure 2.14.1](image)

2.15 System Configuration – Scheduled Reboot

The Scheduled Reboot feature allows the player to reboot on the assigned time automatically every day.
1 Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2 Click on System, then click on Scheduled Reboot.

3 Click the Enable daily reboot button as marked in red below to enable/disable the daily reboot function. Click on the dialogue box to set the time. The value can be entered with the pop-up keyboard or the USB keyboard.

4 Click on Set to save the setting.

Figure 2.15.1

2.16 System Configuration - Firmware Update

Firmware updates can be performed by using a USB flash drive. Please read the release notes regarding the changes that will be made to your player before applying the upgrade.

IMPORTANT: DO NOT unplug the USB drive or power down the player while the system is performing the firmware update.

1 Download the latest firmware from http://www.planar.com/contentsmart and copy it to the root directory of a USB drive.

2 Plug in the power cord into the device.

3 After the boot-up completes, click the Advanced button on the Basic settings menu. (Fig. 2.6.1)
4 Click on System, then click Firmware update.

5 Click on OK to begin the firmware update.

6 Plug in the USB drive while the screen shows “Scanning USB drives for firmware package.”

2.17 System Configuration – Expansion Storage

Users may use a MicroSD card for content storage in place of the main device storage. Please note that internal storage is disabled when using a MicroSD card.
### 2.17.1 Manual Expansion

1. Power off device.

2. Insert Micro SD card, then plug in power cord to power on.

3. In the Basic settings menu, click the **Advanced** button and the advanced configuration menu will be launched. (Fig. 2.6.1)

4. Click on **System**, click on **Expansion storage** and click **Initialize**. Player will format Micro SD card then reboot by itself.

![Expansion storage menu](image)

**Figure 2.17.1**

![Formatting micro SD card](image)

**Figure 2.17.2**

5. After boot up, check player information and new capacity will be displayed.
2.17.2 Auto Expansion

6 In the Basic settings menu, click the **Advanced** button and the advanced configuration menu will be launched. (Fig. 2.6.1)

7 Click on **System**, click on **Expansion storage** and enable **auto-format**.

8 Power off device.
9 Insert Micro SD card, then plug in power cord to power on.

10 After boot up, check player information and new capacity will be displayed. (Fig 2.17.3)

2.18 System Configuration - Factory Reset

If you forget the system password you have set, you must reset the system to regain access to the player.

2.18.1 Using the reset button

1 PRESS and HOLD the reset button with a pin.

2 RE-CONNECT the power cord.

3 WAIT until the status LED flashes.

4 RELEASE reset button and wait for system to initialize.

2.18.2 Using a USB mouse

System reset will re-initialize the system, clear passwords, and return settings to their default values. Perform the following:

5 CONNECT a USB mouse or using touch screen for input.

6 Click the Advanced button and the advanced configuration menu will be launched. (Fig. 2.6.1)

7 Click on System configuration and choose Factory default.

8 Click on OK button to perform the system reset.
2.19 System Configuration – Power Save

The Power Save feature allows the player to power off automatically while staying at the Basic settings menu without any action taken for 10 minutes.

1. Click the **Advanced** button and the advanced configuration menu will be launched. (Fig. 2.6.1)

2. Click on **System**, then click on **Power save**.

3. Click the **Enable Power Save mode** button as marked in red below to enable/disable the power save function.

4. Click on **Set** to save the setting.
3 Content Management

Please refer to the Planar ContentSmart User Manual for instructions.

4 Authoring in HTML5

A major advancement in the player is the ability to playback HTML5 content which can contain dynamic information.

To find out more about using HTML5 for digital signage, visit http://www.digisignage.com/

5 Working with SMIL

The player uses open communications protocols for content presentation and playback control. SMIL-compliance means predictable results across multiple devices. SMIL’s non-proprietary nature means that your investments are never obsolete.

5.1 Introduction
Using SMIL (pronounced “smile”), the language created by W3C for multimedia communications, the media player understands the language “spoken” by professional tools from companies such as Adobe, Apple, Microsoft, and Real Networks. What this means is quicker, easier, and better integration of your players into your digital signage networks, opening up avenues of software controls and realizing the full potential of your player hardware down the road.

5.2 www.a-smil.org for Developers

The media player operating system utilizes W3C SMIL as the underlying scripting language, which lends well to customization to your project management needs. For resources, downloads and community support, visit www.a-smil.org.

6 MP70 OPS Specifications

<p>| | |
|                                |                                                              |
|                                | Video format support                                         |
|                                | H.264/AVC up to 2160p @24fps (3840x2160)                     |
|                                | MPEG-4 up to 1080p @60fps (1920x1080)                        |
|                                | MPEG-2 up to 1080p @24fps (1920x1080)                        |
|                                | MPEG-1 up to 1080p @60fps (1920x1080)                        |
|                                | VC-1 up to 1080p @30fps (1920x1080)                         |
|                                | H.265/HEVC: 4k @60fps (4096x2160) up to 50Mbps bit rate     |
|                                | Image format support                                         |
|                                | JPEG                                                        |
|                                | PNG                                                         |
|                                | Audio codec support                                         |
|                                | MPEG Audio (MP3)                                            |
|                                | Dynamic content                                             |
|                                | W3C HTML5 (HTML, CSS, JavaScript)                           |
|                                | W3C SMIL 3.0 instructions (sub-set)                         |
|                                | Physical I/O connectors                                    |
|                                | JAE Connector                                              |
|                                | 3.5mm audio out                                             |
|                                | Wi-Fi antenna port                                          |
|                                | RJ45 Ethernet                                               |
|                                | USB 2.0                                                     |</p>
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<thead>
<tr>
<th><strong>Local storage</strong></th>
<th>8 GB eMMC</th>
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<td>Micro SD card expansion slot</td>
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<tr>
<td><strong>Accessories</strong></td>
<td>Wi-Fi antenna</td>
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<td></td>
<td>Micro SD card slot bracket/screw x1</td>
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<td>Humidity: 5 – 85% @ 45 °C non-condensing</td>
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<td><strong>Dimensions</strong></td>
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<td><strong>Weight</strong></td>
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<tr>
<td><strong>Warranty</strong></td>
<td>Three years</td>
</tr>
</tbody>
</table>

## 7 Technical Support

### 7.1 FAQ

- **The operation indicators light up but no video is displayed on the screen**
  
  Ensure that your player is securely plugged into the display.  
  Check if your monitor is turned on.

- **What video format can I play?**
  
  Video files encoded in MPEG-4 AVC up to 1920x1080 resolution at 10 Mbps bitrates or HEVC H.265 up to 20 Mbps bitrates should play fine. If a certain video does not play as scheduled, or if it plays poorly contact Planar Support.

- **The player is placed near my Wi-Fi access point, yet the connection is unreliable.**
  
  Wi-Fi appliances in general should be placed 10 feet (3 meters) from the Wi-Fi access point for reliable operation. Try relocating the access point further away from the player to improve connection.
- **If both Ethernet & Wi-Fi are connected, which one will take precedence?**
  If both connections are available, Ethernet will be used.

- **What should I do if I forgot my password?**
  Please perform a factory reset.
  Use the S/W RESET button located at the back of the media player to restore factory settings. This will also clear the player’s password.

- **How do I manage the playback of contents?**
  The media player is designed to be interoperable with leading 3rd party management software solutions or via SMIL open standard commands.

- **Can the player display Flash or Microsoft PowerPoint presentations?**
  The player features limited PowerPoint support, but not Flash support.
  While PCs can play many formats with varying degrees of success, RISC-based media players are designed to reliably play specific video formats (see spec for details). While Microsoft PowerPoint native files cannot play directly on a RISC-based player, the file can be converted into an image format to be played as an image slideshow.

- **Why won’t some media files play properly?**
  The video data bit-rate used may have exceeded the recommended bit rate.
  The video data bit-rate is the amount of video or audio data used per second to store or play the contents, usually expressed in Mbps (mega-bits per second). Video encoded with excessive bit-rates will not playback smoothly in the media player, likely due to storage I/O bottleneck.

- **The media playback looks different on a PC compared to the media player’s screen. (Wrong aspect ratio)**
  There are 2 major aspect ratios (width-to-height ratios) for video content, but there are many kinds of displays. If you play 4:3 video on a 16:9 display (or vice versa), a circle becomes oval and the picture takes on a squeezed or stretched look. To avoid this distorted look, adding black bars are a common technique.
  The Network Media Player can be configured to automatically add black bars for certain types of displays. You can set the output resolution in the player’s configuration menu to match the native resolution of your display.
Some JPEG images cannot be played in the media player.

The media player works best with 4K UHD (3840 x 2160) images. Playback of native images directly from the camera may result in an image being displayed incorrectly or not at all.

Does the media player support video streaming?

No. Media players play files from local storage and do not support real-time video streaming over the network. This delivers an optimum viewing experience free of playback quality issues such as stuttering, blocking or blue-screens.

The player is not playing. What should I do?

Play list errors and scheduling issues are two major causes of playback problems. To determine if the problem is caused by a bad playlist, delete the playlist and restart the player. The player should loop through all media files, indicating a fault with the playlist.

If the playback is scheduled to play at specific time, check to see if the device is set to the right time zone on the world clock. If nothing seems wrong, the time zone setting is often the reason the program is not played.

The video is playing but I can’t hear any sound, what should I do?

Check volume (mute) settings on monitor.
7.2 Planar Support

7.2.1 Cables and Accessories

To find cables and accessories for your Planar monitor, touch screen or other Planar products visit our online store at www.PlanarOnline.com.

7.2.2 Contact Planar

Visit Planar at www.planar.com/Support for operations manuals, touchscreen drivers, warranty information and access to Planar’s Technical Library for online trouble shooting. To speak with Planar Customer Support, have your model and serial number available and call:

Planar Support
Tel: 1-866-PLANAR1 (866-752-6271) or +1 503-748-5799 outside the US
Hours: 24 hours a day, 7 days a week
Toll or long distance charges may apply.
Planar Systems, Inc.

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