



## DV5 Digital Sign Board



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## 1. Introduction

This document describes the hardware and software operations of the DV5, system set up, and frequently asked questions.

### 1.1. Hardware features

- 10-inch widescreen LCD display and stereo speakers
- Built-in wireless b/g network and optional USB Ethernet adapter
- VMC Manager Express bundled configuration utility
- Content authoring via Microsoft PowerPoint (template-based slide show creation)
- Supports advanced device programming via the W3C SMIL open API

### 1.2. Software features

#### VMC Manager Express utility for streamlined digital signage management



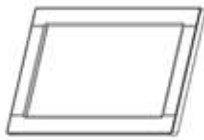
VMC Manager Express helps you quickly set up and test playback on your digital signage player. Once you have scheduled your contents, you can quickly configure all players across the network simultaneously with a few clicks of the mouse. Please see the VMC Manager Express User's Manual for operation details.

#### SMIL Open API for developers

##### **W3C SMIL**

The DV5 uses open XML-based scripting language for highly flexible content presentation and playback control, so that your investments are never obsolete. Using SMIL, the de facto language of multimedia communications, the player understands the language adopted by professional development tools from Adobe, Apple, Microsoft, Real Networks, and more.

### 1.3. Package contents



Main Unit w/  
adjustable stand



AC Adapter



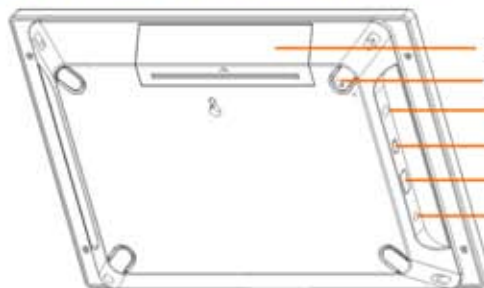
Quick Start Guide



Software CD

**NOT INCLUDED:** A USB keyboard is required for system setup

### 1.4. Physical ports and features



SD and CF memory card slot cover

Power down momentary button

1/8" stereo audio out

Mini-USB (system reserved)

USB port for keyboard/flash drive/Ethernet adapter

5V DC power input

### 1.5. VESA mounting kit (Optional Accessory)

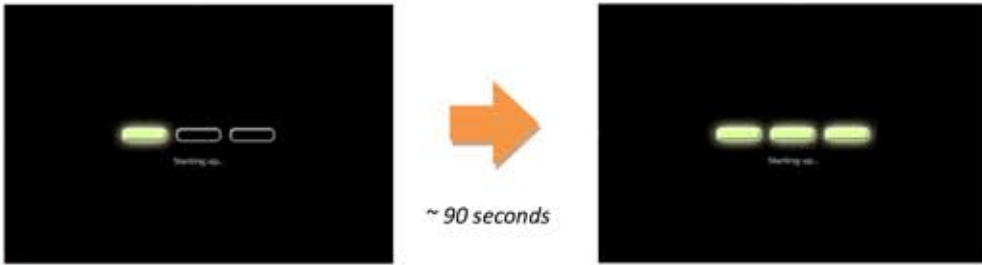


The DV5 can be adapted for a VESA mounting via the optional mounting kit. Please see the instructions sheet in the kit for installation details.

## 2. Configuring the DV5

### 2.1. System connections

1 Attach the AC power adapter to power on the unit. The following progress bar will be displayed on your monitor:



2 Player boot process takes approximately **90 seconds** to complete. After boot up, the player will indicate that it is ready for content sync via the USB port.

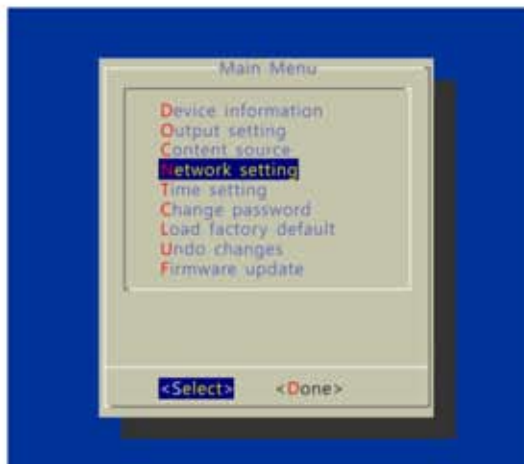


The player will boot into the “Open Standard Media Player” screen. Plug in a USB keyboard to enter configuration menus. The menu and blue background will appear in about 30 seconds.

**If you have already loaded media contents into the player,** contents will play back immediately after boot up, and the “Open Standard Media Player” screen will not be shown. You can still plug in a USB keyboard at any time during playback to enter the menu system.

### 2.2. USB keyboard configuration menus

You must attach a USB keyboard to the DV5 to configure settings. With the player booted up and ready, it takes approximately 30 seconds after you plug in the keyboard for the following menu to be displayed:



#### Navigating the menus

Navigate the menu using arrow keys, space bar, enter key, ESC, and numeral keys on your USB keyboard. Use the keyboard arrow keys to highlight menu items, press the space bar to move the star (cursor), and then press enter to confirm (<OK>) or reject (<Cancel>) any changes.

## 2.3. Connect the DV5 to your network

### Determine a connection type

Wireless connection (built-in): The player will scan for wireless signals nearby during boot up. If the network requires authentication, you will be asked to provide the password for access.



Wired connection (**OPTIONAL**): Attach the USB Ethernet Adapter accessory (sold separately) to media player's USB port and connect a LAN cable to the adapter's other end (RJ-45 port). **REBOOT** player to initialize the adapter.

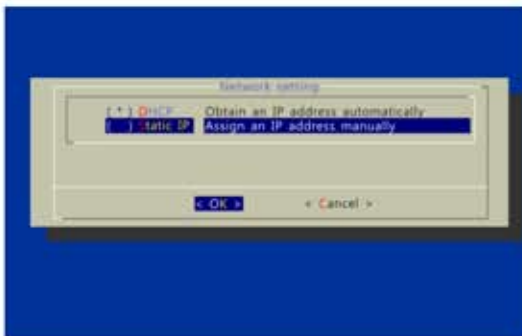
### Player IP address

You will also need an IP address for the player on your network. This could be set automatically (DHCP) or manually (static IP):

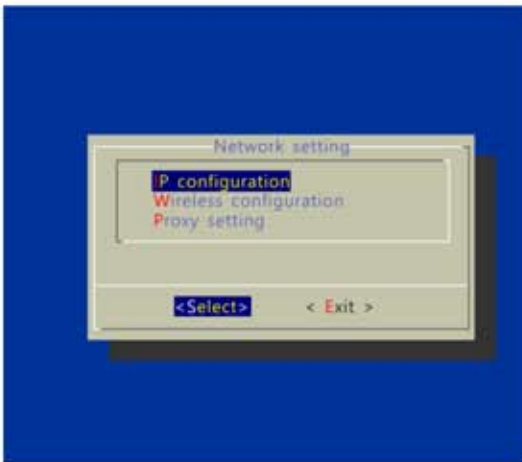
#### 1) DHCP – automatically assign network IP address

DHCP is enabled by default. You do not need to change the settings unless setting a static IP.

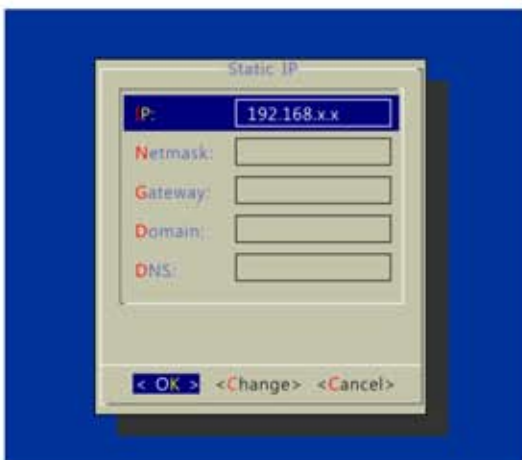
#### 2) Static – manually assign network IP address



Highlight "IP configuration" and press "Enter" on keyboard to <Select>



Move the highlight to "Static IP" below, press "Space bar" on the keyboard to fill in the star (\*) at the Static IP brackets, and press "Enter" on the keyboard to select <OK>.



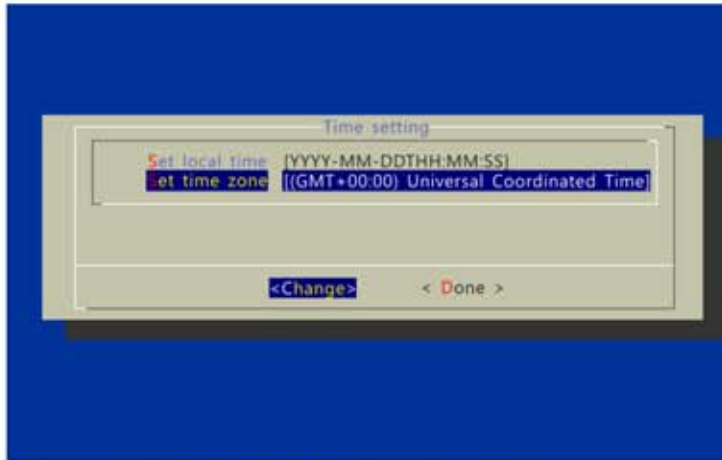
Proceed to configure an available static IP address. Please ask your network administrator for assistance if necessary



## 2.4. Clock and calendar settings



Highlight "Time setting" and press "Enter" on keyboard to <Select>



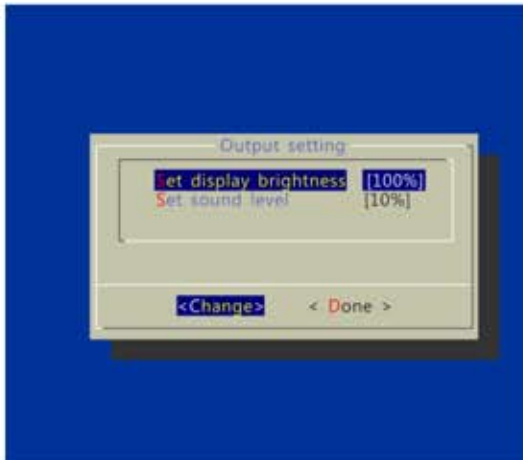
→ SET local time, then

→ SET time zone.

Daylight Saving (DST) rules can be configured when you enter the *Set time zone* submenu.

## 2.5. Brightness and Volume settings

From the *Main Menu*, select *Output setting* to enter the submenu.



You can enter the *display brightness* of the backlight in percentage (%) from 0 (dimkest) to 100 (brightest)

You can enter the *sound level* in percentage (%) from 0 (quietest) to 100 (loudest) or in decibels (db) from -22 (quietest) to 0 (loudest)

## 2.6. Setting a password

To prevent your player settings from being modified by unauthorized personnel, set a player password to hide the menus.



From the top level menu, select “Change password” to set a password.

Once a password is set, you can only access the menus by connecting a USB keyboard and pressing CONTROL + ALT + DELETE (3-key combination) simultaneously. You may connect the keyboard at any stage of player operation or before/ during boot-up.

If you forget the password, you will need to reset the device. See Factory reset.

## 2.7. Factory reset

If you forget a system password you have set, you must reset the system to regain access to the player. System reset will re-initialize the system, clear passwords, and return settings to their default values. Perform the following:

1. Connect USB keyboard
2. Reboot the player and look for the reset instructions on the top left (circled area in red). When it appears, press the *Delete* key on your keyboard  
→ If you missed the reset window, unplug power and try again



3. You should see a menu with a reset confirmation dialogue box. SELECT Yes to confirm
4. WAIT while system reboots to complete reset

## 2.8. Applying firmware upgrades

Firmware updates can be performed using a USB flash drive or via network using Manager Express.

Please read the release notes carefully regarding the changes that will be made to your player before applying the upgrade

1. Obtain the latest firmware and copy it to the root directory of a USB drive
2. Power on device and plug USB keyboard to the device to enter menu system
3. Follow on screen instructions and select firmware upgrade option in the menu
4. When instructed, plug in the USB drive to begin firmware upgrade



### 3. Content Management

For testing videos and player connectivity, please see the *VMC Manager Express Software Manual* for operating instructions.

## 4. Working with SMIL

The DV5 uses open communications protocols for highly flexible content presentation and playback control. SMIL-compliance means predictable results across multiple devices, and SMIL's non-proprietary nature means that your investments are never obsolete.

### 4.1. 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.



### 4.2. Playing a SMIL demo

The demonstration files can be found in the *Software and Documentation CD*.

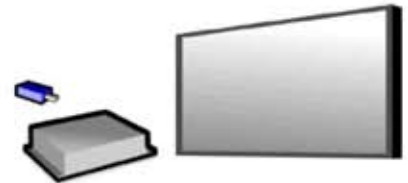
**Step 1: Prepare contents using a PC**

Prepare a formatted USB drive (using the "FAT32" file system option). Copy the entire sample SMIL directory with all its content files from *Software and Documentation CD* to the USB drive. Make sure the SMIL directory shows up in the root directory of the USB drive.



**Step 2: Upload contents to player**

Power up the DV5. Booting takes about 90 seconds. When the orange boot indicator lamp goes out, insert USB drive into the USB port to begin upload. All files under the SMIL directory will be copied to the player and the sample contents will begin to play.



### 4.3. [www.a-smil.org](http://www.a-smil.org) for developers

The media player utilizes W3C SMIL open standard, making it easier to customize to your project management needs. For resources, downloads, and community support, please visit [www.a-smil.org](http://www.a-smil.org).

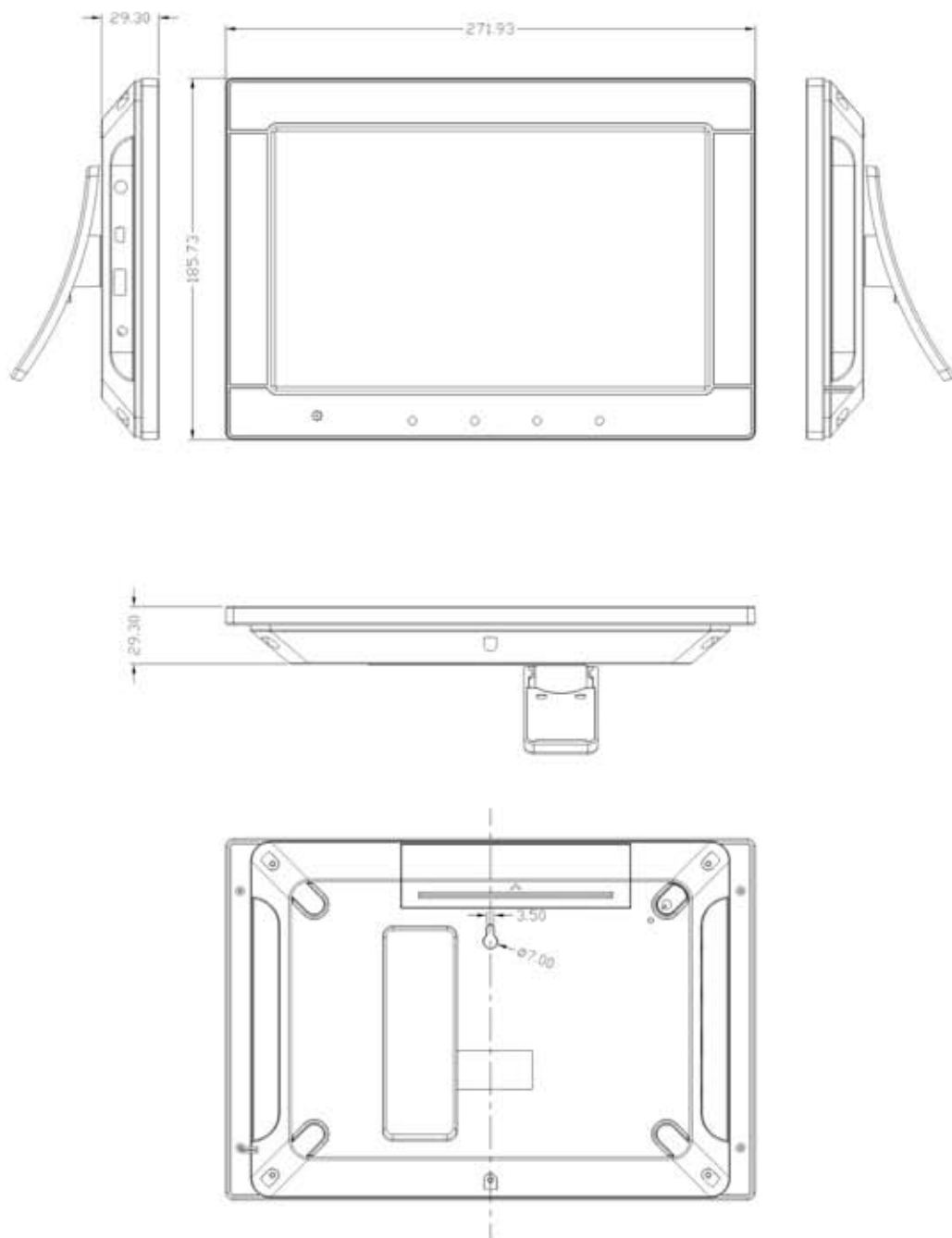
## 5. Technical Data

### 5.1. Specifications

DV5 Digital Sign Board	
<b>Display and Sound</b>	10.1" TFT LCD wide aspect ratio 300 nits maximum brightness 800x480 native resolution Built-in stereo speakers 1.5 Wx2
<b>Video format support</b>	MPEG-1 or MPEG-4 ASP (up to 2 Mbps bitrate) Recommended 16:9 video resolution: 640x360 or 720x400
<b>Image format support</b>	JPEG baseline (800x480 recommended resolution)
<b>Audio codec support</b>	MP3 or MPEG L2 audio (up to 384Kbps)
<b>Playback control</b>	W3C SMIL 3.0 instructions (sub-set) Real-time clock playlist events Network playlist sync USB direct sync
<b>Content management</b>	WAN – 3rd party solution LAN – VMC Manager Express software USB direct update
<b>Network Connectivity and I/O Ports</b>	Wi-Fi: IEEE 802.11 b/g Wi-Fi Security: WPA/WPA2, TKIP/AES Ethernet: RJ45 Port via USB dongle (option) USB storage host (Type A) 3.5mm stereo audio out jack
<b>Digital Signage Features</b>	"Power auto on" upon power cord attach Automatic error recovery (built-in WDT) Real-time clock with 12-hour backup battery Automatic NTP clock adjustment
<b>Local storage</b>	Internal 2GB NAND flash Memory card slot: Secure Digital Card (SD/SDHC)
<b>Accessories</b>	Documentation CD Printed quick start guide AC power adapter Removable adjustable display stand VESA mounting kit (Optional)
<b>Power supply</b>	5V, 2A DC
<b>Power consumption</b>	8W typical
<b>Environmental</b>	Operating temperature: 0 – 40° C / 32 – 104° F Humidity: 5 – 85% @ 40° C / 32 – 104° F non-condensing
<b>Dimensions (WxHxD)</b>	271 x 185 x 29 mm (10.6" x 7.28" x 1.14")
<b>Weight</b>	687 grams (1.51 lbs.)
<b>Safety</b>	UL-approved AC adapter
<b>Certifications</b>	CE/FCC RoHS
<b>Warranty</b>	One-year limited parts & labor

## 5.2. Mechanical drawings

Units = mm



## 6. Appendix: FAQ

### *What can I do to improve VMC Manager Express performance on my PC?*

The latest Microsoft .NET 3.5 SP1 offers improved performance and bug fixes to VMC Manager Express. You can install the update via this internet browser link <http://go.microsoft.com/fwlink/?LinkId=124150> or by searching for “.NET 3.5 SP1” At [www.microsoft.com](http://www.microsoft.com).

### *What is the maximum file size for a single video file?*

The maximum video file size for the DV5 is 2GB. We recommend reserving a safety margin to avoid exceeding the limit (i.e. limiting files to 1850MB).

### *How do I manage the playback of contents?*

Playback on a schedule is one of the main functions of the DV5. For most users, it can be managed via the easy to use VMC Manager Express software. For advanced customization, there is SMIL compatibility. See the developer’s manual for customizing the player with open-standard W3C SMIL commands.

About VMC Manager Express: Unlike the difficulty of programming VCRs from a remote control, the VMC Manager Express software is designed to be simple by using a graphical personal computer interface. Playback contents are laid out visually in a calendar view. Anyone with basic computer skills can quickly create or modify schedules, delivering the right message to the right audience at the right times. Please refer to the VMC Manager Express User’s Manual for detailed operations and techniques.

### *Could 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 (Please see spec for details). While Microsoft PowerPoint native files could not play directly on a RISC-based player, the file is converted through other software (i.e. VMC Manager Express) into an image format to be played as an image slideshow.

### *Why won't some media files play smoothly?*

The video data bit-rate may be higher than 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 bottlenecks. You can try recompressing unplayable video files at lower bit rates.

### *Why won't some media files play at all?*

Despite our best efforts to adhere to video format standards, video compression introduces many variables, and sometimes the videos you acquire may not be playable on all players. In this case, you should check your compression settings (bitrate, audio codec, and other parameters) and use a compatible setting.

If the files can play on your PC but not on your player, you should **recompress** the file to ensure playback.



*The media playback looks different on a PC compared to the media player's screen. (Wrong aspect ratio)*

The DV5 will always stretch contents to wide-screen aspect ratio (approx. 16:9), regardless of the **native resolution** of the video source. If you format your video for 16:9 (wide) in your editor, the output should be correct regardless of the encoding resolution.

There are 2 major aspect ratios (width-to-height ratios) for video content, but 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.

*Some JPEG images cannot be played in the media player.*

Progressive JPEG are not supported. Please convert to baseline JPEG for maximum compatibility.

JPEG images can be either of 2 types: baseline or progressive compression. Baseline JPEG offers greatest compatibility, while progressive JPEGs are suitable for web site images. Progressive images are downloaded and displayed "progressively," being rendered more clearly as more data is received over the internet. Devices with local storage such as the CF/Network Media Player are usually incompatible with the latter type. Make sure to save images as baseline JPEG in your photo editor, or resave them as baseline JPEGs using free tools such as IrfanView to convert your images to baseline JPEG (<http://www.irfanview.com>)

*Does the media player support video streaming?*

No, all media files are designed to play from local storage (HDD or CF card).

During content and schedule sync, contents are transferred to player's local storage before being presented on screen. This ensures the best possible presentation and fluid delivery of your video message. Video streaming raises many playback quality issues such as image freezing, blocking, or blue-screens, costing you valuable "air time" and losing your audience's attention.

*The media player is not playing. What should I do?*

Check the player's messages on the display (OSD, or on screen display) for status information.

Since RISC-based media player usually lack input devices such as keyboard or mouse like PCs, troubleshooting is usually based on user's knowledge and experience with the specific media player. First check the on screen message and stats reports. Bad play list and timing issues are two major causes of playback problems. To determine if the problem is caused by a bad play list, just delete the play list and restart player. The player should loop through all media files, indicating a fault with the play list.

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. When nothing seems wrong, the time zone setting is often the reason the program is not played.