

# Soloist HD Pro

High Definition Broadcast Player

---

**USER GUIDE**

02.07.03

# Contents

[Trademarks & Copyrights](#)

[Adtec Digital Support & Service](#)

[Telephone and Email Support](#)

[Preparing for Support](#)

[Advanced Support Plans](#)

[Standard-Priority Support Plan](#)

[Priority - 24 Support Plan \(24 Hour\)](#)

[Plan Comparisons](#)

[Electrical Device Compliance Notices](#)

[Safety Warnings and Cautions](#)

[Compliance Notices](#)

[FCC](#)

[Industry Canada](#)

[European Union EMC Directive Conformance Statement](#)

[Chapter 1 - Introduction](#)

[Product Overview](#)

[Operations](#)

[Applications](#)

[What's Included](#)

[Other Options](#)

[Chapter 2 - Getting Started](#)

[Front Panel](#)

[Panel Diagram](#)

[Front Panel LEDs](#)

[Programming Function Buttons and Arrow Keys](#)

[System Menu](#)

[Login](#)

[Network Sub-menu](#)

[Time Sub-menu](#)

[NTP Sub-menu](#)

[Alarm Menu](#)

[Mirror Sub-menu](#)

[Com2 Settings](#)

[Firmware Version](#)

[Decoder Menu](#)

[Decoder Status](#)

[Display Target](#)

[Video Sub-menu](#)

[Audio Sub-menu](#)

[Multicast Sub-menu](#)

[DVB-ASI Sub-menu](#)

[Back Panel Diagram](#)

[Connections](#)

[Installation](#)

[Set-up an IP Address](#)

[Set-up a Display Target](#)

[Make Connections](#)

[Chapter 3 - On-Board Control Interface](#)

[Control Application](#)

[Zero Configuration Technology](#)

[Login](#)

[Control Interface Main Screen](#)

[Screen Elements](#)

[Help Notes](#)

[Dashboard Tab](#)

[List Builder Tab](#)

[Virtual VTR](#)

[Schedule Builder Tab](#)

[Streaming Tab](#)

[Display Tab](#)

[OSD Tab](#)

[Network Tab](#)

[System Tab](#)

[Upgrade Tab](#)

[Help Tab](#)

[Chapter 4 - How-To Guides](#)

[Connecting to the Soloist HD Pro Digital Player](#)

[Telnet Connection](#)

[Serial Connection](#)

[Browser-based User Interface](#)

[Connect Using Device Serial Number](#)

[Using the Web UI](#)

[Uploading Content](#)

[List Creation](#)

[Schedule Building](#)

[Upgrading Firmware](#)

[Factory Reset / Restore](#)

[Playback Prioritization](#)

[Advanced Use & Scripting](#)

[Setting up Synchronous Playback](#)

[Using Graphic Follows Audio](#)

[FTP Mirror Mode](#)

[Using an NTP Server](#)

[Guide to using DVC Files](#)

[CMDxxxx.DVC Files](#)

[SCHxxxx.DVC Files](#)

[LSTxxxDVC Files](#)

[PARxxxx.DVC Files](#)

[Shadow Files \(xxxx.SHD Files\)](#)

[Video Connector Compatibility](#)

[Television Standards](#)

[Chapter 5 - Appendix](#)

[Appendix A - GNU General Public License](#)

[Appendix B - Media Encoding Parameters](#)

[Appendix C - Connector Specifications](#)

[Appendix D - Technical Specifications](#)

# Trademarks & Copyrights

**Copyright:** (c) 2013-14 Adtec Digital. All rights reserved. This document may not, in whole or in part, be copied, photocopied, reproduced and translated, or reduced to any electronic medium or machine-readable form without prior written consent from Adtec Digital.

Every effort has been made to ensure the accuracy of this manual. However, Adtec Digital makes no warranties with respect to this documentation and disclaims any implied warranties of merchantability and fitness for a particular purpose. Adtec Digital shall not be liable for any errors or for incidental or consequential damages in connection with the furnishing, performance, or use of this manual or the examples herein. The information in this document is subject to change without notice.

**Trademarks:** Soloist HD Pro is a trademark of Adtec Digital. Other product and company names may be trademarks or registered trademarks of their respective companies. The information in this document is subject to change without notice.

## Adtec Digital Support & Service

Technical Support and Customer Service includes troubleshooting product/system functional operations concerning Adtec equipment, embedded systems and single device issues; Service Order generation, processing and tracking; Warranty claim processing; and on-site system evaluation and maintenance. Technical Support plans do not include customer training programs. Programs incorporating customer training are defined in the Training Services Policy. Customer Services technicians provide limited instruction during a support call/email/fax in order to facilitate checking for proper equipment operation.

### Telephone and Email Support

- **Telephone:** 615-256-6619 ext. 166
- **Email:** support@adtecinc.com
- **Internet:** <http://www.adtecdigital.com/support/support-request-form>

Adtec Digital offers telephone, email and fax support, warranty and service related inquiries during normal business hours: 9:00am to 5:00pm Central Standard Time (CST), Monday through Friday, holidays excepted. Support Requests can also be submitted on-line.

All inquiries will be processed in the order in which they are received and by the criteria outlined in the Call Response Order. Inquiries and inquiry responses made after 5:00 PM (CST) weekdays, Saturday, Sunday or on an Adtec-recognized holiday will be processed the next business day in the order received.

Callers on hold and returned calls will be prioritized by the following criteria:

- Priority-24 Subscription Customers
- Standard-Priority Subscription Customers
- All customers that have purchased Installation & Training, within 90 days of the installation.
- Adtec Certified Operators (ACO)
- Limited Level Support, Warranty & Service Requests
- Multi-device system installations that have purchased Installation & Training from Adtec
- Distributors
- System Integrators
- Multi-device systems
- Single device users

## Preparing for Support

To help expedite the troubleshooting process, please be prepared to provide the following information to the support representative:

- **Product(s) affected:** Please provide a list of the Adtec Products involved including the Revision Number for each affected product.
- **Description of the Problem:** Please include a detailed description of the problem. Include the approximate time and day the problem occurred, the spot ID of the material being inserted and what the operator reported about the incident. It is also helpful to note any recent changes to the system. More information is always better than too little information.
- **Your Contact Data:** Please include contact information so we can reach you to discuss how to fix the problem, additional troubleshooting steps that are required or to gather more complete information regarding the problem. Please include your facility name (or call letters), your name, title, email address, telephone number, hours of work, and other contact persons if you are not available.

## Advanced Support Plans

In addition to our basic Inquiry Response Policy, Adtec offers two advanced levels of priority inquiry support: **Standard-Priority** and **Priority-24**. The Standard-Priority & Priority-24 plans provide guaranteed\* response times with the Priority-24 plan offering after hours and holiday support. Standard-Priority support is included with the Adtec Certified Operator (ACO) training. Contact Adtec Sales to upgrade your current support plan.

### Standard-Priority Support Plan

Customers can improve upon our normal call processing times and can expedite inquiry support responses through our subscription Standard-Priority service plan. Under this plan all telephone inquiries are guaranteed\* a telephone response of no more than 4 hours after they are received (within the designated hours of operation). Telephone inquiries received by 4:00 PM (CST) on weekdays- excluding Adtec holidays- are guaranteed a same-day telephone response. However, inquiry responses may be made after hours until 8:00 PM (CST). Email and fax inquiries are limited in scope to normal business hours, excluding holidays. Standard-Priority customers are entitled to a 10% discount on site visit and training charges after the initial system/product installation and training. Standard-Priority customers also receive a 3-day turnaround time guarantee\* on warranty and non-warranty repairs on Adtec manufactured equipment, excluding Studio Encoders.

### Priority - 24 Support Plan (24 Hour)

In addition to our Standard-Support plan, after hours, weekend and holiday support is available with the **Priority-24** support plan. This plan is a subscription only service available for service inquiries 24 hours a day, 7 days a week. All telephone inquiries are guaranteed\* a telephone response time of no more than 2 hours. Email and fax inquiries are limited in scope to normal business hours, excluding holidays. Calls after 5:00 PM will be forwarded to a Customer Services representative on call. **Priority-24** customers are entitled to a 25% discount on site visit and training charges, after the initial system/product installation and training. **Priority-24** customers also receive a 1- day turnaround time guarantee\* on warranty and non-warranty repairs on Adtec-manufactured equipment, **excluding** Studio Encoders.

## Plan Comparisons

<b>Feature/ Plan Name</b>	<b>Priority-24</b>	<b>Standard Priority</b>	<b>Limited</b>
<b>Hours</b>	<b>24 Hours/Day; 7 Days/Week</b>	<b>9:00 AM – 5:00 PM, (U.S. Central Standard Time), Excludes Weekends &amp; Holidays</b>	
<b>Call Response Time</b>	<b>Same day- 2 hours (1st in order of call list)</b>	<b>Same Day: 4 Hours (2nd in order of call list)</b>	<b>48 Hours</b>
<b>Discounted Site Visits</b>	<b>25%</b>	<b>10%</b>	<b>None</b>
<b>Discounted Training</b>	<b>25%</b>	<b>10%</b>	<b>None</b>
<b>Repair Service</b>	<b>Guaranteed* 1 Day Turnaround</b>	<b>3 Day Turnaround</b>	<b>None</b>

\* A one-month free service extension will be awarded if Adtec fails to meet its service guarantee.

# Electrical Device Compliance Notices

## Safety Warnings and Cautions

**For your safety** and the proper operation of the device:

- This unit must be installed and serviced by suitably qualified personnel only.
- Do not break the warranty seals on the device or open the lid. Only approved service technicians are permitted to service this equipment.
- Disconnect all power before servicing the unit.
- Do not expose this device to rain or other moisture. Clean only with a dry cloth.
- If not installed in an equipment rack, install the product securely on a stable surface.
- Install the product in a protected location where no one can step or trip over the supply cord, and where the supply cord will not be damaged.
- If a system is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the room ambient temperature.
- Consideration should be given to installing the unit in an environment compatible with the maximum recommended ambient temperature of 50 degrees Celsius (122 degrees Fahrenheit).
- Install the unit in a rack so that the amount of airflow required for safe operation is not compromised.
  - The recommended clearance on the top and sides of the unit is at least ½" (one half inch/one centimeter).
- Mounting of the unit in a rack should be such that no hazardous condition is achieved due to uneven mechanical loading.
- Use only a grounded electrical outlet when connecting the unit to a power source.
- Reliable earth grounding of rack-mount equipment should be maintained.
  - Particular attention should be given to supply connection other than direct connections to the branch circuit (e.g., use of power strips).

## Compliance Notices

### FCC

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Warning:** Changes or modifications to this device not expressly approved by Adtec Digital could void the user's authority to operate the equipment.

## **Industry Canada**

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

## **European Union EMC Directive Conformance Statement**

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. Adtec Digital cannot accept responsibility for any failure to satisfy the protection requirements resulting from a user modification of the product. This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / EN 55022.

# Chapter 1 - Introduction

## Product Overview

---

The Soloist HD Pro is the perfect solution for High Definition Plasma and LCD digital signage or kiosk applications. The Soloist HD Pro provides MPEG 2 and AVC/H.264 high definition and standard definition file playback from solid state storage and IP stream decoding. Whatever your source, it automatically scales the content to match your monitor's capabilities up to a stunning 1080i high definition display. The media can easily be loaded, managed, and scheduled for playback using the onboard, web-based Control Interface.

## Operations

---

- **Play and/or Decode MPEG-2 and AVC H.264 HD:** Step up to stunning playback of high definition AVC/H.264 and MPEG-2 media.
- **Automatically Scale SD to HD:** Play both SD and HD content with the same player which automatically sizes video with advanced scalar algorithms to the desired output resolution from 480i up to full HD 1080i.
- **Control Playback:** The Soloist HD Pro includes a built-in command interface and scheduler that can play a list of files and loop indefinitely, or be triggered from external control systems from the parallel or serial ports.
- **Tune into IPTV Networks:** Tune in and decode IP Multicast HD content with fall back playback of stored content.
- **Synchronize Playback:** Deploy multiple players on the same network and get synchronized playback of your content.
- **Sound Professional:** Decode stereo MPEG 1 Layer 2, Dolby Digital and decode or downmix Dolby 5.1.
- **Manage Content:** The included on-board web control application lets you manage your media, play lists and schedules on the player while controlling the playback. With the ability to view log files and real-time playback data, day-to-day operations and troubleshooting is streamlined.

## Applications

---

The Soloist HD Pro is the ideal platform for:

- **Retail:** Impress customers with high definition (HD) retail digital signage and point of purchase advertising on Plasma and LCD monitors.
  - **Tradeshows and Museums:** Get the detail you need with native HD playback or upscaled standard definition (SD) for kiosks and interactive displays.
  - **Private IP Networks:** Stream live content to the Soloist HD Pro over IP for point-to-point or multicast playback. Fall back to playback of stored content when live stream is off.
-

## What's Included

---

The Soloist HD Pro ships with the following:

- Soloist HD Pro Digital Media Server
- Terminal Connection Kit 1:
  - Power cord
  - Ethernet cable
  - serial adapter
  - three 5-pin removable stereo terminal audio plugs
- Web-based command and control interface

## Other Options

---

- **edgeShelf w/Hardware:** Holds 1 Soloist HD Pro unit, power cord and provides cable tie slots (PN: 200-024-1AKIT)

# Chapter 2 - Getting Started

## Front Panel

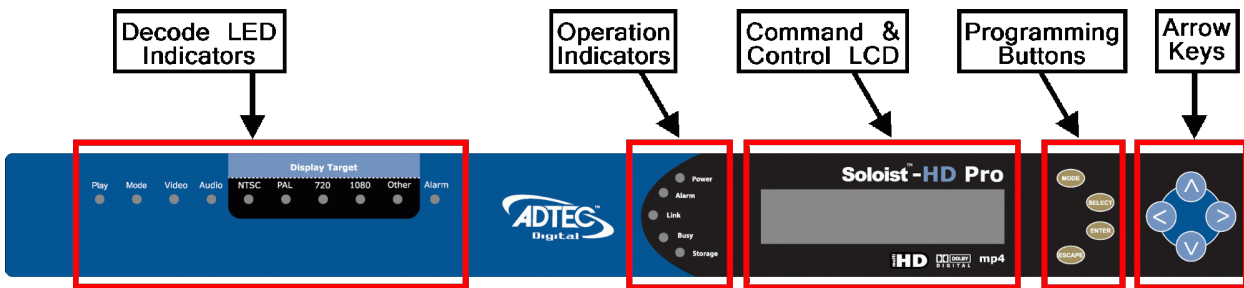
---

The Function Buttons and Directional Keypad of Soloist HD Pro are used to configure and monitor the configurations and output of the device.

### Panel Diagram



### Front Panel LEDs



The Soloist HD Pro Front Panel consists of Operational Indicator LEDs, LCD display, and groups of programming and arrow control buttons.

### System / Operation Status Indicator LEDs

#### Power

**Green:** Power is on  
Off (not lit): Power is off

#### Alarm

Off (not lit): no alarm  
**Yellow:** minor alarm  
**Red:** major alarm

#### Link

**Green:** Ethernet Link Detected

Off (not lit): No Ethernet Connection detected

#### Busy

**Orange / Green Flashing:** Unit is busy / Network traffic

Off (not lit): No detected network traffic

#### Storage / Aux

Off (not lit)

## Decode Indicator LEDs

### Play

**Green:** Unit is playing from internal stored content  
Off (not lit): Power is not playing

### Mode / Multicast

**Green:** Unit is decoding / playing an IP Multicast  
**Orange:** Unit is decoding / playing a DVB ASI Feed  
Off (not lit): Not decoding / playing ASI or IP

### Video

**Green:** Unit is decoding / playing video  
Off (not lit): Unit is in idle mode or not outputting video

### Audio

**Green:** Unit is decoding and outputting Audio  
Off (not lit): Unit is not outputting Audio

### Display Target

**Green:** Corresponding resolution LED NTSC, PAL, 720, 1080, Other will be lit when outputting configured video resolution  
Off (not lit): Unit is decoding / playing video

### Alarm

Off (not lit): no alarm  
**Yellow:** minor alarm  
**Red:** major alarm

## Programming Function Buttons and Arrow Keys

---




The Soloist HD Pro has an LCD display on the front panel. Using the **Mode, Select, Enter, Escape** buttons and directional buttons, you can navigate the front panel menu and control the unit

Control	Function
Mode	Cycles through the available menus
Select	selects a menu or sub-menu
Enter	enter a value placed into a menu field
Escape	return one level within a menu or to the main menu


### Directional Keypad

Arrow keys control the cursor on the LCD display and are used to page through the options in a menu/sub-menu and to place entries in fields.


**To Navigate:**





Scroll through menus:   or 


Go up one menu level: 


Expand a menu: 

**To Edit:**

Enter edit mode: 

Move cursor in editable fields:  
   

Save and leave edit mode: 

Leave edit mode w/out save: 

## Unit Security

### Rules:

- The Soloist HD Pro is always logged in on startup.
- If the device has logged out due to accident, or a login duration timer being set (see below), you will need to log back in. To log in from a logged-out status follow the key sequence below. Note that the key sequence spells the word U-S-E-R.

Step	Action
1	Press <Select>
2	Press <Up> arrow
3	Press <Select>
4	Press <Enter>
5	Press <Right> arrow
6	Press <Enter>

The front panel also has a login duration capability. This setting allows you to specify a time frame in which the unit will automatically log itself out if it receives no control inputs via the front panel or API session.

### Possible Values:

**0 (Zero):** The unit will not auto-logout

**1-9:** The number of minutes until logout if no input is received.

### Main System Banner Menu

The main banner menu is a non-editable display. It displays the current installed and applied firmware version the unit is running as well as the product name.

### Key Functions

While in the main menu, the following navigation keys have special meaning in the operation of the Soloist HD Pro.

#### Increase LCD Contrast / Brightness

1. Press and hold <Mode> and <Escape> buttons
2. Press <Up> arrow to desired level

#### Decrease LCD Contrast / Brightness

1. Press and hold <Mode> and <Escape> buttons
2. Press <Down> arrow desired level

#### Reset the unit

1. Press and hold <Mode> and <Escape> buttons
  2. Press the <Right> arrow
  3. Release all three buttons at the same time
-

## System Menu

---

The following diagram illustrates the structure and flow of the **System Menu** on the Adtec Soloist HD Pro device:

### Login

Item	Function	Options	API Command
Login	If the front panel is in a 'logged out' state, all configurations are read only. User must login to change values.	N/A	N/A
Login Duration	Specifies the time-out value for automatically logging out of the front panel once a user logs in for security purposes. Setting a time of 0 disables automatic logout capabilities	0 - 9 ( minutes )	*.SYSD LDR

### Network Sub-menu

Item	Function	Options	API Command
Ethernet IP Address	IP address of unit on your network	user-defined using <left/right arrow> and <select> buttons default is 192.168.10.48	*.SYSD IPA 0
Ethernet IP Mask	Defines the units' Ethernet Port relative to the rest of your network	user-defined using <left/right arrow> and <select> buttons default is 255.255.255.0	*.SYSD IPM 0
Ethernet DHCP	Dynamic Host Configuration Protocol; allows the device to self-locate network Ethernet parameters	<b>On</b> (finds own DHCP Address) <b>Off</b> (defaults to last entered IP Address) default is OFF	*.SYSD DHCP 0
GigE IP Address	GigE IP address of unit on the network	user-defined using <left/right arrow> and <select> buttons default is 192.168.20.48	*.SYSD IPA 1
GigE IP Mask	Defines the units' GigE Port relative to the rest of your network	user-defined using <left/right arrow> and <select> buttons default is 255.255.255.0	*.SYSD IPM 1
GigE DHCP	Dynamic Host Configuration Protocol; allows the device to self-locate network Ethernet parameters	<b>On</b> (finds own DHCP Address) <b>Off</b> (defaults to last entered IP Address) default is OFF	*.SYSD DHCP 1
Gateway IP Address	traffic director for off-LAN resources	user-defined using <left/right arrow> and <select> buttons default is 192.168.10.1	*.SYSD GIP

## Time Sub-menu

Item	Function	Options	Adtec API Command
Time	specifies system time 24 Hour Clock Format	user-defined using <left/right <b>arrow</b> > and <select> buttons	*.SYSD TIM
Timezone	specifies time zone unit operates in	user-defined using <left/right <b>arrow</b> > and <select> buttons	*.SYSD TIZ

## NTP Sub-menu

Item	Function	Options	Adtec API Commands
NTP Status	Network Transfer Protocol	Displays whether or not your unit is in sync with the designated NTP server	*.SYSD NIP STATUS
NTP IP Address	IP address for Network Transfer Protocol server	user-defined using <left/right <b>arrow</b> > and <select> buttons; default = 0.0.0.0	*.SYSD NIP

## Alarm Menu

Item	Function	Options
Event Record	Log of events outside of operating parameters	scroll up and down to view log items

## Mirror Sub-menu

Item	Function	Options	Commands
Host Mode	Set the automated ftp mirroring mode.	<b>Client</b> (Turns Mirroring Off) <b>Mirror List</b> (Use a MIRRORLISTFILE to add/delete local files) <b>Mirror Client</b> (Mirrors all files found on Server)	*.SYSD HOM
Host IP Address	IP address for Mirroring Server	user-defined using <left/right <b>arrow</b> > and <select> buttons; default = 0.0.0.0	*.SYSD HIP
Client Name & Password	Sets the Username and Password to access Mirroring Server	user-defined using <left/right <b>arrow</b> > and <select> buttons Username and password are separated by a comma	*.SYSD CPW

## Com2 Settings

Item	Function	Options	Adtec API Commands
Com2 Settings	RS-232 terminal monitor for communicating with the internal host motherboard for diagnostics	115200 8 1 NONE 57600 8 1 NONE 38400 8 1 NONE 19200 8 1 NONE 9600 8 1 NONE default is 38400 8 1 NONE	*.SYSD com2

## Firmware Version

Item	Function	Options	Adtec API Commands
Firmware	Displays current version of firmware (read only)	N/A	*.DPID BAN

## Decoder Menu

---

The following diagram illustrates the structure and flow of the **Decoder Menu** on the Adtec Soloist HD Pro device. This menu gives you access and control to the unit's handling of digital video and audio, and multicasting for these elements.

## Decoder Status

Item	Function	Options	Adtec API Commands
Decode Status	Displays current playout status (read only)	N/A	*.DPID TRA

## Display Target

Item	Function	Options	Adtec API Commands
Display Target	Television resolution; set to match resolution of the intended display; unit will scale up/ down to match.	See Supported Targets below	*.DCMD VID

## Supported Video Display Targets

### Television Standards

NTSC	NTSCJ	1080P23	1080I59
PAL	720P50	1080P24	1080I60
PALM	720P59	1080I50	1080P59
PALN (Web UI Only)	720P60	1080P50	1080P60

### PC Monitor Standards

VESA640X350X85	VESA800X600X72	VESA1152X864X75	VESA1360x768x60
VESA640X400X85	VESA800X600X75	VESA1280X768X60	VESA1400X1050X60
VESA640X480X60	VESA800X600X85	VESA1280X768X75	VESA1400X1050X75
VESA640X480X72	VESA848X480X60	VESA1280X768X85	VESA1400X1050X85
VESA640X480X75	VESA1024X768X43	VESA1280X960x60	VESA1600X1200X60
VESA640X480X85	VESA1024X768X60	VESA1280X960x85	VESA1920X1200X60
VESA720X400X85	VESA1024X768X70	VESA1280X1024x60	XGA1080I50 *
VESA800X600X56	VESA1024X768X75	VESA1280X1024x75	XGA1080I60 *
VESA800X600X60	VESA1024X768X85	VESA1280X1024X85	

\* Note: XGA 1080i 50 and XGA1080i60 are "custom" display targets and are not recognized within the industry. They are also only available on firmware builds 2.02.10 and up on specific Adtec products- the signEdge, edge-4111, Soloist HD Pro, and the Soloist4111.

### Video Sub-menu

Item	Function	Options	Commands
Hue	Set video hue; default value is 512	0-1024	*.DCMD HUE
Brightness	Set video brightness; default value is 512	0-1024	*.DCMD BRI
Contrast	Set video contrast; default value is 512	0-1024	*.DCMD CON
Saturation	Set video saturation; default value is 512	0-1024	*.DCMD SAT

### Audio Sub-menu

Item	Function	Options	Commands
Track Select	<p>Select the audio track to be decoded and output. The 'track' is defined as the first, second, etc audio track as found in the transport PGM pid (transport streams), or as the n'th audio stream found in a program stream. If TSN is set to 0, then the system will use the AUI or IAT settings to determine which track to decode. If none of these options are set, then the system will decode the 'first' audio stream that is found. If the TRACKSELECT option has been set to a non-default value, it will override the AUI setting and the IAT setting.</p>	<p>0 = trackselect inactive 1 = first defined audio stream played n = nth defined audio stream played</p>	*.DCMD TSN
Volume	Volume of audio in decibels; default value is 0 dB	-49 dB through =24 dB, Mute	*.DCMD VOL
SPDIF Mode	<p>Set the SPDIF mode. Four settings are possible:</p> <ol style="list-style-type: none"> <li>1. <b>Off:</b> No SPDIF output</li> <li>2. <b>Uncompressed:</b> decoded stereo PCM output on SPDIF</li> <li>3. <b>Compressed:</b> non-decoded data output on SPDIF</li> <li>4. <b>Passthrough:</b> compressed data output only; no analog audio</li> </ol>	<p>0 = no SPDIF output 1 = uncompressed 2 = compressed 3 = passthrough</p>	*.DCMD SPM
SDI Audio Matrix	<p>SDI Audio Matrix allows any of the eight channels of audio originating from the decoder to be routed to any of the eight audio outputs on the SDI interface. This enables the customization of the audio channel mappings from their default configuration.</p> <p><b>Note:</b> Only the first two channels, 1 &amp; 2, are available originating from the decoder at this time. The other channels originating from the decoder will not carry any audio data.</p>	Valid audio channels are 1-8	*.DCMD SMX

## Multicast Sub-menu

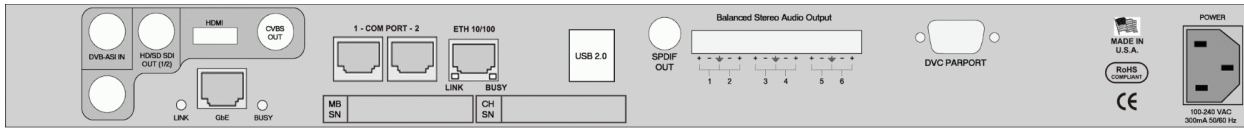
Item	Function	Options	Commands
Mode	Turns streaming MPEG to Off or Receive; When enabled, the device can receive an MPEG Stream over the network using UDP or RTP protocols.	<b>Off</b> <b>Recieve</b>	*.DCMD MMO
Rx IP Address	Multicast IPA sets the multicast receive Group IP address. IP Multicast receiving is supported from compatible streamers.	user-defined using <b>&lt;left/right arrow&gt;</b> and <b>&lt;select&gt;</b> buttons default is 0.0.0.0	*.DCMD MRI
RX Port	Port number for receiving multicast on the defined Multicast IP Add.	0-65535	*.DCMD MRP

## DVB-ASI Sub-menu

Item	Function	Options	Commands
Mode	Enable or disable the DVB_ASI receive operation	<b>Off</b> <b>Recieve</b>	*.DCMD DVB
Program Number	Specify the program number to decode when the system is receiving an MPTS ASI Stream	Stream Defined; Generated from the stream PAT and PMT Tables	*.DCMD DPN

---

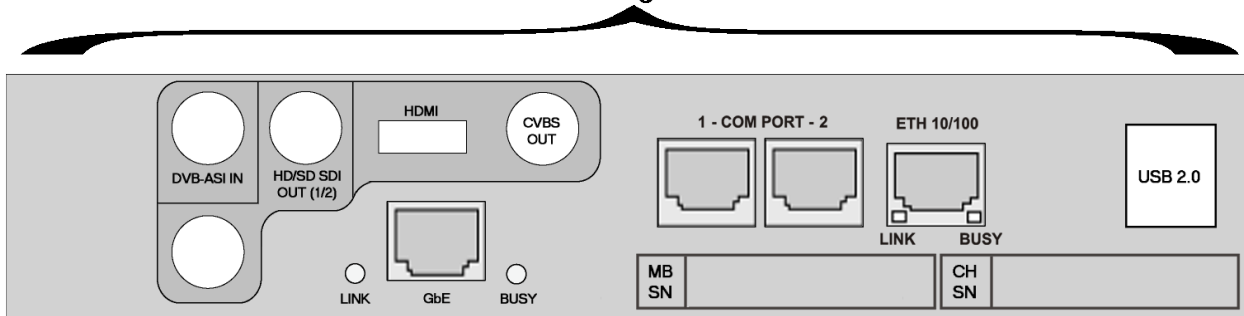
# Back Panel Diagram



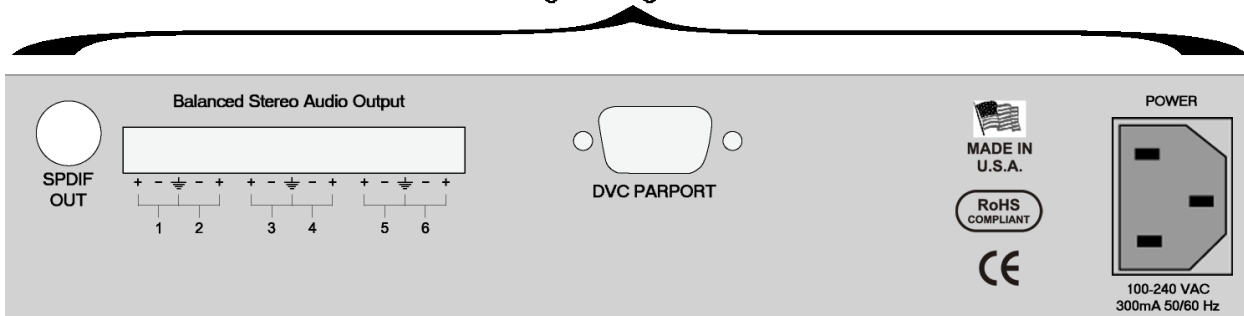
**Note:** Some connectors have been discontinued or changed over the life of the product. Consult your units' rear panel for correct placement cables and connectors.

Enlarged back panel segments to show connector placement

## Left Segment



## Right Segment



## Connections

Connection	Function
DVB-ASI IN	Incoming video signals 75 Ohm,terminated SMPTE 259M BNC connector
HD/SD SDI OUT	75 Ohm terminated SMPTE 259M and SMPTE292M (auto-detect) BNC connector
HDMI	HDMI v1.3 and DVI v1.0 compliant transport
CVBS OUT	75 Ohm terminated NTSC or PAL D1 Composite Video Output. BNC connector
GbE (eth1)	10/100/1000 base T ethernet interface; 2 LED indicators Link- device networked Busy- traffic on interface

COM1	Terminal monitor connection port for diagnostic access to unit's motherboard. default 115200 bps
COM2	RS232 connection port for API control. default 38400 baud
ETH 10/100 (eth0)	10/100 base T ethernet interface; 2 LED indicators Link- device networked Busy- traffic on interface
USB 2.0	Not currently supported / Reserved for future use
SPDIF OUT	Sony/Phillips Digital Interface; compressed digital audio transport
Balanced Stereo Audio Out	Six balanced, 600 Ohm outputs on three 5-pin mini-RST connectors
DVC PARPORT	Parallel IO Interface for Start, Stop, Status, Alarm, and general purpose interfacing to control systems
POWER	AC Power- standard 3-pin plug (70-240 VAC 50-60 Hz)

## Installation

One Soloist HD Pro server can be installed into a one-rack unit 19" rack slot. Power should be applied to the unit and configured with a valid IP address and display target via the front panel.

## Set-up an IP Address

Step	Action
1	Press the <b>&lt;Mode&gt;</b> button until <b>SYSTEM MENU</b> is displayed on the LCD screen, then press <b>&lt;Select&gt;</b> .
2	Press the <b>&lt;Down&gt;</b> arrow until <b>NETWORK MENU</b> is displayed on the LCD screen, then press <b>&lt;Select&gt;</b>
3	Press the <b>&lt;Down&gt;</b> arrow until <b>Ethernet IP Address</b> item is shown on the LCD screen.
4	Enter the IP address desired for the unit using the <b>&lt;Select&gt;</b> and arrow buttons, then press <b>&lt;Enter&gt;</b> to save. <b>Note:</b> The Ethernet IP Address and IP Mask are the settings of the Ethernet port used for control and communication. Make sure that this port is on the same network as the control computer.
5	Press the <b>&lt;Down&gt;</b> arrow button until Ethernet IP Mask is displayed on the LCD screen, then press <b>&lt;Select&gt;</b> .
6	Enter the IP Mask using the <b>&lt;Select&gt;</b> and arrow buttons, then press <b>&lt;Enter&gt;</b> to save.

## Set-up a Display Target

Step	Action
1	Press the <b>&lt;Mode&gt;</b> button until <b>DECODER MENU</b> is displayed on the LCD screen, then press <b>&lt;Select&gt;</b> .
2	Press the <b>&lt;Down&gt;</b> arrow until <b>Display Target</b> is displayed on the LCD screen.
3	To change the output display resolution, press <b>&lt;Select&gt;</b> and navigate to the desired video resolution setting, and then press <b>&lt;Enter&gt;</b> to save. <b>Note:</b> The display target setting is the output resolution and refresh rate used simultaneously on both the HDMI, SDI and the composite BNC video outputs. Therefore, to view video on the composite BNC output port, select one of the NTSC or PAL display targets.

## Make Connections

**Connect:** Make the following general cable connections for your setup:

Cable	Connection
Video	Connect a video or Composite monitor to the correct SDI, HDMI or the composite BNC connector.
Analog Audio	Connect Analog Left and Right RCA Cable to display unit
Digital Audio	Connect RCA Digital Audio Cable to Digital Audio Decoder
Ethernet	Ethernet: Connect an Ethernet cable to the Ethernet port for external control.

**Confirm:** Plug in the Adtec Soloist HD Pro and confirm that the IP address is correct on your unit, and that the **Link** LED on the front of the unit is lit before using Adtec's web-based control application.

# Chapter 3 - On-Board Control Interface

## Control Application

Adtec Digital provides a web-based command and control (C&C) Graphical User Interface (GUI) application for our products, often referred to as Web UI. Soloist HD Pro devices with firmware versions 2.05.XX and up are able to use this application.

Browser Compatibility:

- Firefox®: 3.0 (recommended) and higher
- MS Internet Explorer®: 7.0 and higher
- Safari®: 3.0 and higher
- Opera®: 9.0 and higher
- Google Chrome®: 31 and higher

### **Note for Safari® users:**

- The C&C program is designed to use the Bonjour Zero Configuration Protocol.
  - When using Safari, click on the " ^^ " symbol to open a networked devices list.
  - Select the device to point the browser to that device's IPA.
  - IE® and Firefox® users can use Bonjour through the use of plug-ins.

### **\* Note to mediaControl Users \***

The latest firmware versions on the Adtec Soloist HD Pro Media Player will no longer work with the older mediaControl interface software.

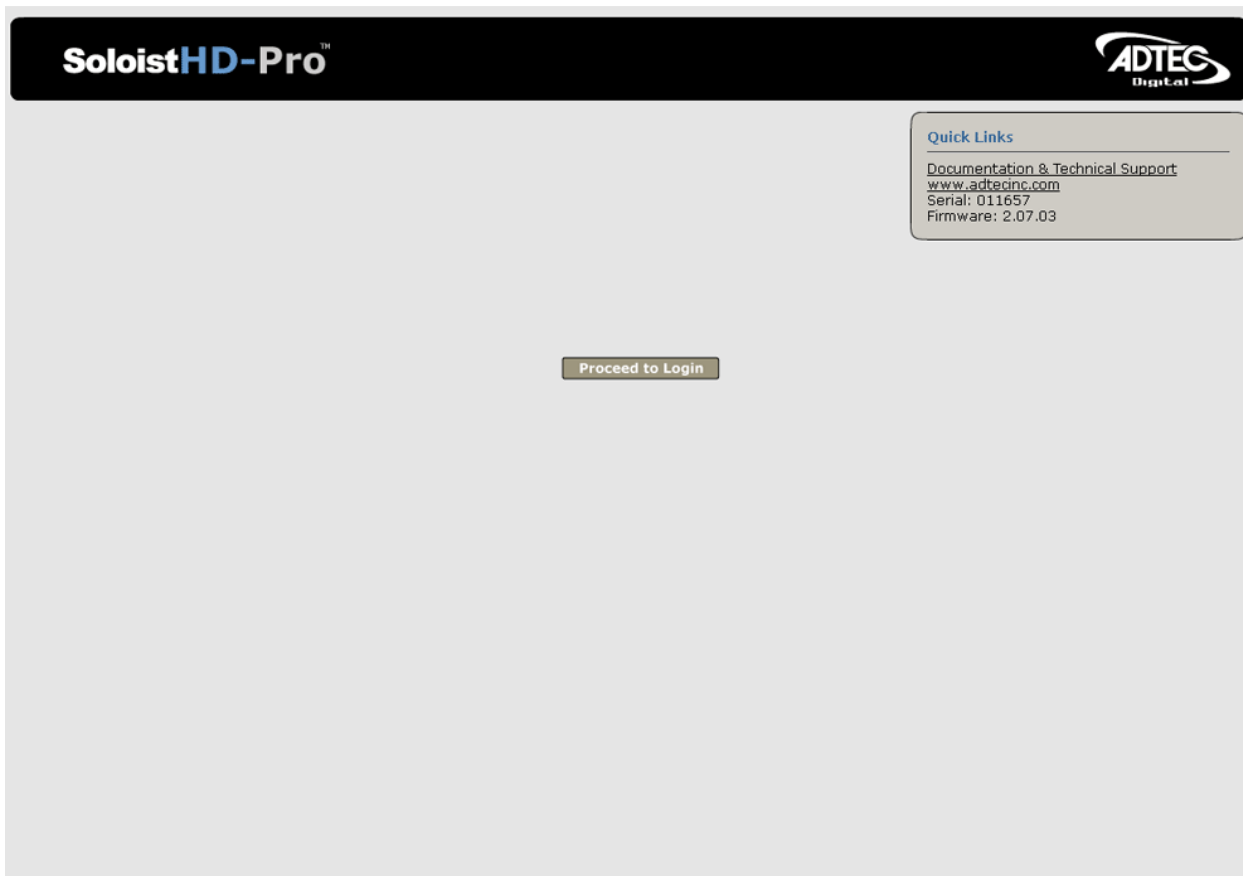
- mediaControl will not work with firmware versions after 2.3.14.

## Zero Configuration Technology

Adtec Digital makes use of Zero Configuration technology to make it easier to integrate your Adtec device into your IP network. With one mouse click, the device will assign itself an open IP address and announce its presence to the rest of your network. Adtec devices will reference themselves by serial number, which is also located on the back of the device. If you wish to access the web application without using Bonjour, and have configured your device with an IP address manually through the front panel, point a web browser to the device's IP address; the web application sign-in page (see below) will display.

## Login

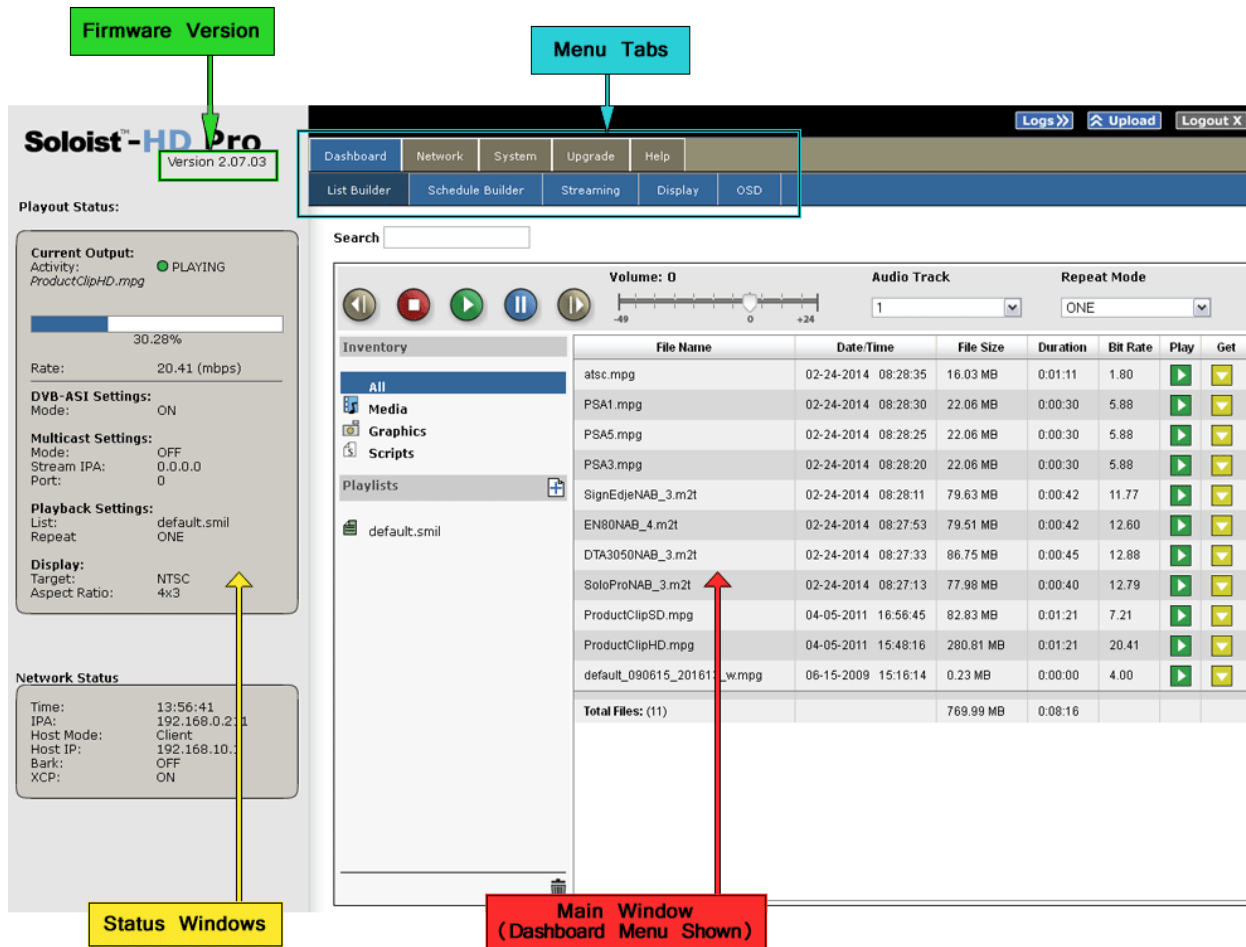
Access the C&C web-based application by pointing your web browser to the unit's IP address. The following screen (image reduced for clarity) will appear:



*Image reduced for clarity*

Log in to the Web UI C&C application by clicking the **"Proceed to Login"** button and typing in the user name **'adtec'** and the password **'none'** (the word none spelled out) in the pop-up box that appears. You can also access release notes from this screen.

# Control Interface Main Screen



## Screen Elements

**Firmware Version:** the interface application always references the firmware currently running on the device.

**Menu Tabs:** the Menu Tabs are used to select various control groups and functions. The Menu Tabs are explained in other chapters in this manual.

**Status Windows:** the Status Windows are fixed, and display regardless of which menu has been selected. The Status Windows provide an "at-a-glance" look at the Playout and Communications activities of your Adtec Soloist HD Pro player. These same status results can be received by a telnet session or by a third party controller/monitoring system.

**Main Window:** the Main Window displays whichever menu has been selected via the Menu Tabs. In the screenshot above, the Dashboard menu of firmware version 2.07.03 is shown.

**Firmware Version:** you can also determine your firmware version using an API command during a Terminal session. Issue the command `*.SYSD BAN`.

## Help Notes

Clicking on the Question Mark (?) icon, located next to control terms on all the menu tab pages, will bring up a pop-up Help Note giving more information about the control and its options. These Help Notes largely duplicate the information found in this section of the User's Manual.

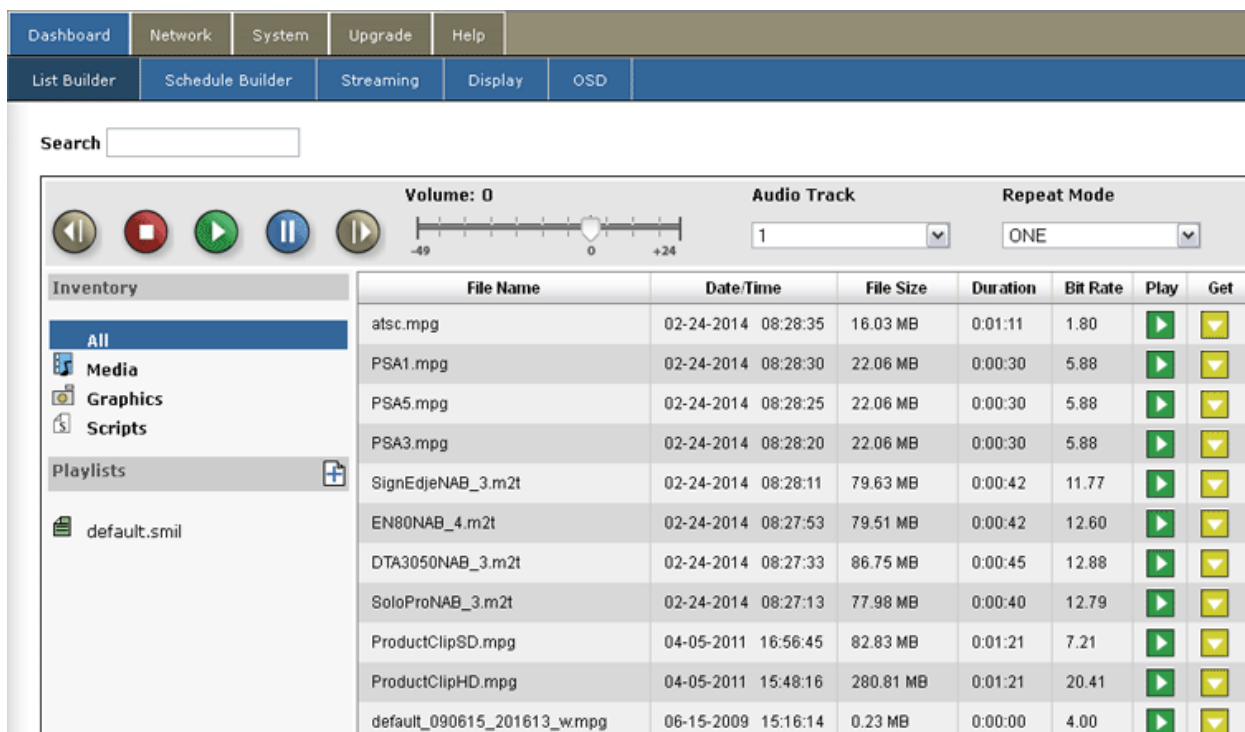
## Dashboard Tab

The Dashboard Tab is where you will control the playout parameters of your media. There are five sub-tabs accessed from the Dashboard Tab:

- List Builder
- Schedule Builder
- Streaming
- Display
- OSD

## List Builder Tab

The List Builder Tab is used to determine and organize the content available to the Soloist HD Pro player.



*Image reduced for clarity*






The \*List Builder\* screen has four main parts:

- **Virtual VTR controls:** virtual buttons for playout, virtual slider control for incremental volume, audio track selector pull-down.
- **Inventory selection:** select between all file types, media files, graphic files, or script files.
- **Playlists:** choose from available user-defined playlists. Playlists are selected by clicking the Playlist name.
- **File window:** data on specific files- size, CODEC, file name, etc. Files can be selected by clicking the file title.

## Virtual VTR

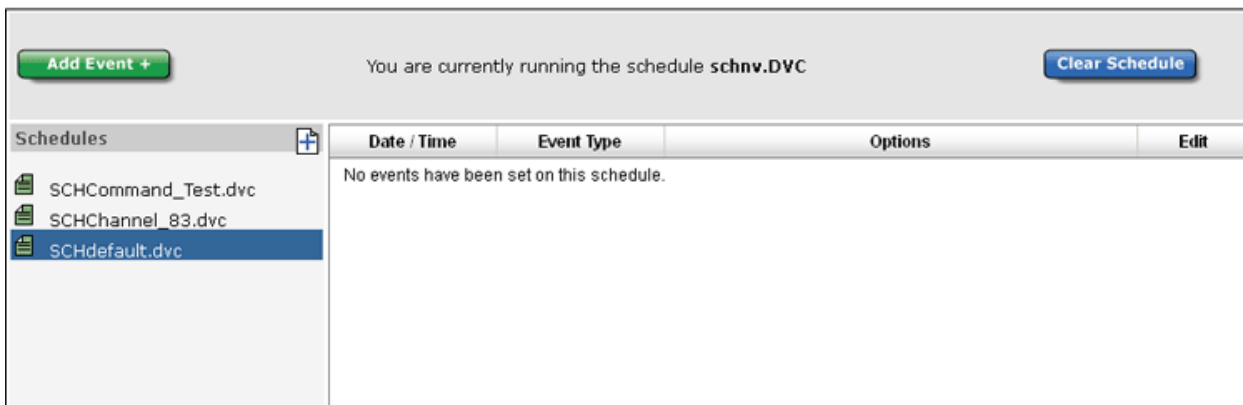
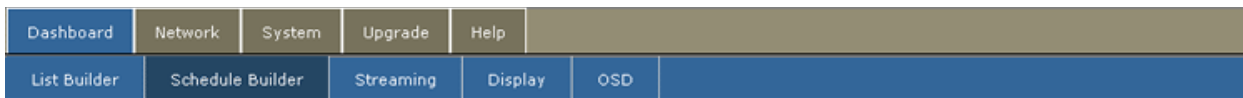
The controls on the virtual VTR mimic those found on a standard video playback device. The Volume slider reads out the volume level in decibels for precise control.

For quick reference, the chart below gives the API command for each of the VTR controls.

Graphic	Name	API Command
	Previous file	*.DCMD PRV
	Stop	*.DCMD STP
	Play	*.DCMD PLY
	Pause	*.DCMD PAU
	Next file	*.DCMD NXT

## Schedule Builder Tab

The Schedule Builder tab sets playtimes for content with user-selected Schedule Names for ease-of-reference.



*Image reduced for clarity*

## Streaming Tab

The Streaming Tab contains controls which determine if the Adtec Soloist HD Pro player is receiving multicast content, and from where.

*Image reduced for clarity*

Control	Function	Options	API Command
Program Number	identifying number for the program or event to decode	Drop down selection	*.DCMD DPN
Audio Track	select the audio track to be decoded. The "track" is defined as the first, second, etc. audio track as found in the transport PGM pid (transport streams), or as the n'th audio stream found in a program stream. If this control is set to 0, the unit will look to the Audiostream ID (AUI) or Input Audio Type (IAT) settings to determine which track to decode. If no option is specified, the unit will select and decode the first available audio track.	0 = track select inactive 1 - n = track number	*.DCMD TSN

DVB-ASI Mode	Enable or disable the DVB_ASI receive operation	OFF Receive	*.DCMD DVB
DVB-ASI Latency	Sets the latency delay (in milliseconds) before the decoder begins playback from the DVB ASI source	text field; default is 100 (ms)	*.DCMD DLT
DVB-ASI Error Recovery	Sets the timeout value (in milliseconds) for recovery of DVB ASI receive after decoder error condition is detected	text field; default is 100 (ms)	*.DCMD DER
Multicast Mode	turns streaming MPEG to off, receive, or send; used when unit is part of a LAN or WAN and is receiving IP streaming	Off Receive	*.DCMD MMO
Multicast Port	port number for receiving multicast on the defined Multicast IP Add.	0-65535	*.DCMD MRP
Multicast IPA	sets the multicast receive Group IP address. IP Multicast receiving is supported from compatible streamers.	user-defined default is 0.0.0.0	*.DCMD MRI
Error Recovery	Sets the timeout value (in milliseconds) for recovery of multicast receive after decoder error condition is detected.	text field: default is 10000 (ms) range is 33-600000 (ms)	*.DCMD MER
Time Out (ms)	sets the timeout value in milliseconds for return-to-normal video playback after video multicast packets are no longer detected	text field; default is 300 (ms)	*.DCMD MTU
RTP (Auto-Detect)	When on, the system adapts to the stream received, automatically. When off, if an RTP stream is received, the video component will appear corrupted to the decoder.	On Off	*.DCMD RAD
Multicast Connector	Sets the physical connector (on the rear of the unit) to use for multicast purposes. Recommended setting is GigE (10/100/1000)	Ethernet GigE	*.DCMD MCN

## Display Tab

The Display tab is used to integrate the Soloist HD Pro with the video display.

**Video:**

Start Up Mode:  Auto Format:

Display Target:  Aspect Ratio:

Blank Mode:  Video Position:

Video Scaling:

**Note:** Scaling and Position drop down boxes do not reflect actual configuration.

**Audio:**

SPDIF Mode:

Image reduced for clarity

Control	Function	Options	API Command
Start Up Mode	determines whether or not the decoder starts playing immediately after power-up or reset with no intervention. The playback will be from the LIST or individual spots if no LIST is active	On Off	*.DCMD STU
Auto Format	display the native format of the video playing	On Off	NONE
Display Target	the targeted video resolution; set to match resolution of the intended display, the decoder scales automatically; DVI is not active when SD resolutions are used	see <a href="#">Supported Video Targets</a>	*.DCMD VID

Aspect Ratio	ratio of horizontal to vertical lines in the decoded image	Off AUTO 4x3 16x9	*.DCMD OAR
Blank Mode	sets the state of the video output whenever a unit's transport is idle or is in transition	No Video Black Hold	*.DCMD BLK
Video Position	positions the video output on the display target.	Center Top Right Top Left Bottom Right Bottom Left	*.DCMD OVS
Video Scaling	re-sizes the video output. The scale can be used to reduce the picture size.	Off 1 - 100% in 1% increments	*.DCMD OVS
SPDIF Mode	compressed or uncompressed audio; Sony/Phillips Digital Interconnect Format	Off Uncompressed Compressed Passthrough	*.DCMD SPM

**Note:** Aspect Ratio and Video Scaling/Position cannot be used at the same time. You must choose one or the other to control the video output.

When Active Format Description is enabled, aspect ratio is forced to OFF.

## OSD Tab

These controls govern the use and appearance of On Screen Display graphics and content.

The screenshot shows a software interface with a top navigation bar containing tabs: Dashboard, Network, System, Upgrade, and Help. Below this is a secondary bar with tabs: List Builder, Schedule Builder, Streaming, Display, and OSD. The OSD tab is active. The interface includes an 'Apply' button and a 'Cancel' button. Below these is a 'Single OSD: ?' label and a green 'Clear OSD' button. A horizontal line separates the top controls from the configuration fields. The 'Graphic File: ?' field is a dropdown menu currently showing 'No Graphic files'. The 'Scaling: ?' field is a dropdown menu showing '100%'. The 'Position: ?' field is a dropdown menu showing 'Select Position'. A note below the fields states: 'Note: You must specify the correct values every time you make a change as the Scaling and Position drop down boxes do not currently reflect actual configuration.' At the bottom, there are another 'Apply' and 'Cancel' buttons.

*Image reduced for clarity*

Control	Function	Options	API Command
Graphic File	select a file for OSD	Drop down selection Select Graphic File from list by name	*.DCMD OSD
Scaling	sets scaling and position of the file to be displayed	Off 100% - 1% in 1% increments	*.DCMD OSD
Position	sets on-screen placement	Select Position Center Top Right Top Left Bottom Right Bottom Left	*.DCMD OSD

**Clear OSD Button:** clears an existing (loaded and displayed) OSD file from the display

Valid graphic files include JPEG, BMP, GIF and PNG

## Network Tab

Dashboard
Network
System
Upgrade
Help

Apply
Cancel

**Mirroring:**

Host Mode: ?	<input type="text" value="Client"/>	Mirror List File: ?	<input type="text" value="LIST.MVL"/>
Host Timer: ?	<input type="text" value="600"/>	Host IP: ?	<input type="text" value="192.168.10.1"/>
Client Username: ?	<input type="text" value="adtec"/>	Client Password: ?	<input type="text" value="none"/>

---

**Communications:**

XCP: ?	<input type="text" value="ON"/>	XCP Key: ?	<input type="text" value="0x00000000"/>
Bark: ?	<input type="text" value="OFF"/>	Bark Host: ?	<input type="text" value="192.168.10.1"/>
Bark List: ?	<input type="text"/>	Bark Interval: ?	<input type="text" value="60"/>
Bark Port: ?	<input type="text" value="1514"/>		

---

**Sync Playback:**

Mode: ?	<input type="text" value="OFF"/>
---------	----------------------------------

Apply
Cancel

*Image reduced for clarity*

### Mirroring

Control	Function	Options	API Command
Host Mode	used to set the ftp mirroring mode. Mirroring is a automated ftp process on Adtec Digital devices	<b>Client</b> - Turns mirroring off <b>MirrorList</b> - Use an MIRRORLISTFILE to add/delete local files <b>MirrorClient</b> - Mirrors all files found on FTP server	*.SYSD HOM
Mirror List File	file that lists all the files that the mirror client needs to download from the HOSTIPADDRESS. See API Notes for file format.	user-defined text field	*.SYSD MLF

Host Timer	time interval between mirroring operations. It is noted in seconds.	text field; default is 600 (s)	*.SYSD HOT
Host IP	tells the device where to look for new files	user-defined; default is 192.168.10.1	*.SYD HIP
Client Username	the ftp username to be used during mirroring and other ftp sessions	user-defined text field; default is adtec	*.SYSD CPW
Client Password	the ftp password to be used during mirroring and other ftp sessions	user-defined text field; default is none	*.SYSD CPW

### Communications

Control	Function	Options	API Command
XCP	sends a system command to a remote client using XCP protocol or show change XCP usage	Off On	*.SYSD XCP
XCP Key	sets the XCP Security Key in hexadecimal. A value of zero indicates that the unit will respond to any XCP command. A non-zero key requires a matching XCP key in the XCP command before it will respond. The default value is zero	user-defined text field; default is 0x00000000	*.SYSD XCK
Bark	sends API commands to system and redirects output over network to the BARK HOST IPADDRESS. Commands can be packed together using a colon	Off On	*.SYSD BARK
Bark Host	the IP address to which the command responses should be sent via the BARK Protocol	user-defined; default is 192.168.10.1	*.SYSD BARKLIST HOST
Bark List	the list of commands to be sent when using BARK	user-defined text field	*.SYSD BARKLIST
Bark Interval	the frequency at which you want the string of commands to be sent back to the designated Bark Host		*.SYSD BARKLIST INTERVAL
Bark Port	the port on the receiving server that is expecting the command data from Bark	text field; default is 514 range is 1025 - 65535	*.SYSD BARKLIST PORT

## Sync Playback

Control	Function	Options	API Command
Mode	feature of Adtec Decoders that enables multiple Adtec devices to playback synchronized	Off 1 - Slave (single) 100 - Master (single) Additional options for multiple groups	*.DCMD STC

## System Tab

The System Tab gives you control over the unit's functions and integration into the rest of your networked devices.

Dashboard
Network
System
Upgrade
Help

Apply
Cancel

**Uptime:** ⓘ 3 Days, 23 Hours, 56 Minutes, 47 Seconds

Device Name: ⓘ

Power: Power Cycle

---

Gateway Address: ⓘ

### Ethernet Port (eth0)

---

DHCP : ⓘ

DHCP : ⓘ

Ethernet Address: ⓘ

GigE Address: ⓘ

Subnet Mask: ⓘ

Subnet Mask: ⓘ

### GigE Port (eth1)

---

Ethernet Address: ⓘ

GigE Address: ⓘ

Subnet Mask: ⓘ

Subnet Mask: ⓘ

---

NTP Address: ⓘ

Time Zone: ⓘ

Date: ⓘ

Time: ⓘ

Apply
Cancel

*Image reduced for clarity*

<b>Control</b>	<b>Function</b>	<b>Options</b>	<b>API Command</b>
Uptime	this readout reports the amount of time the unit has been running since the last reset or power-on cycle	None (read only)	*.SYSD UPT
Device Name	the host name for the unit for identification and networking purposes. When a unit is manufactured, it is given a name that combines the product type and the serial number of the unit	user-defined text field	*.SYSD NAM
Gateway Address	the IP assignment of the gateway/router on your network; limited to one address on Adtec devices	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD GIP
DHCP	check box; allows unit to extract it's own IP address, if switched on, from a DHCP server	checked = On not checked = Off	*.SYSD DHC
Ethernet Address (Eth 0)	IP address of the unit's Control-Ethernet (eth0) port 10/100mbps	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD IPA 0
Subnet Mask (Eth 0)	Subnet mask address of the unit's Control-Ethernet port	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD IPM 0
GigE Address (Eth 1)	IP address of the unit's GigE (eth1) port 10/100/1000mbps. Recommended that the GigE Port be used as a MPEG2 or RTP multicast receive port	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD IPA 1
Subnet Mask (Eth 1)	Subnet mask address of the unit's GigE port	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD IPM 1
NTP Address	IP Address of a Network Time Protocol server	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD NIP
Time Zone	designates the time zone the unit is operating in the offset is in hours from UTC and a Daylight Savings Setting	text field; field requires very specific input to be configured correctly. Please refer to the API Note for additional details	*.SYSD TIZ
Date	sets the units internal calendar/date function. Visual calendar available for point-and-click date setting.	text field; Format: MM/DD/YYYY	*.SYSD TIM
Time	sets the unit's internal time clock. Will auto-populate if unit is networked to an NTP Server if enabled.	text field; 24 Hour Clock format: HH:MM:SS	*.SYSD TIM

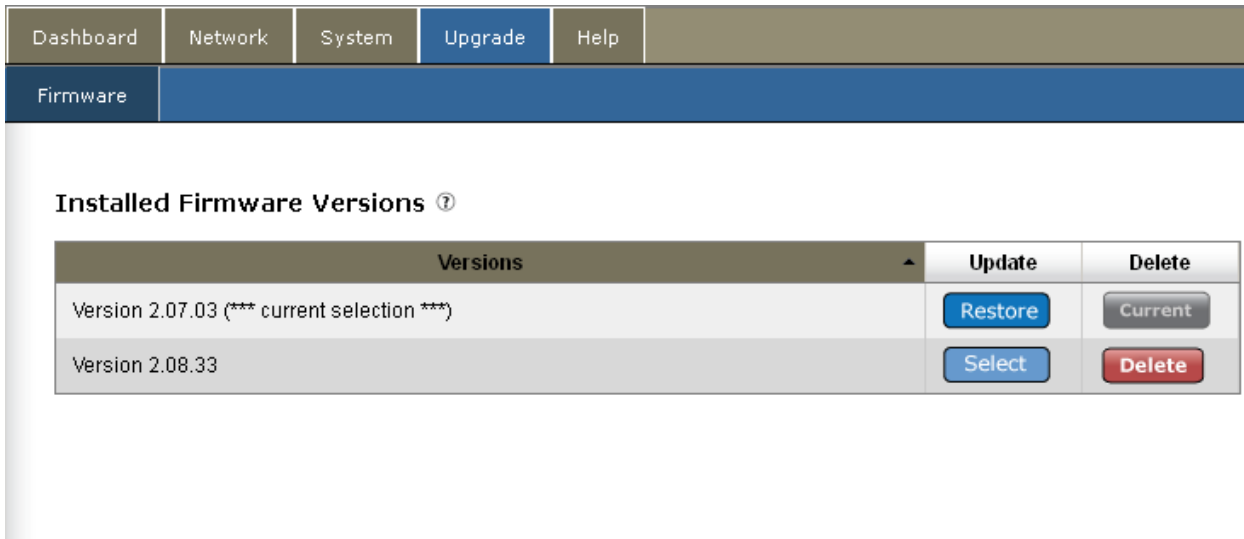
**Power Cycle Button:** Clicking the Power Cycle button performs a complete power-down/power-up cycle on the device. A pop-up warning screen gives you the option of continuing or canceling the action. Cycling the power to the device will stop all playback; the power-down/power-up cycle takes approximately 45 seconds to complete

**Warning Screen:**



## Upgrade Tab

The Upgrade Tab is used to easily select, upgrade and revert your unit's firmware from the available versions.

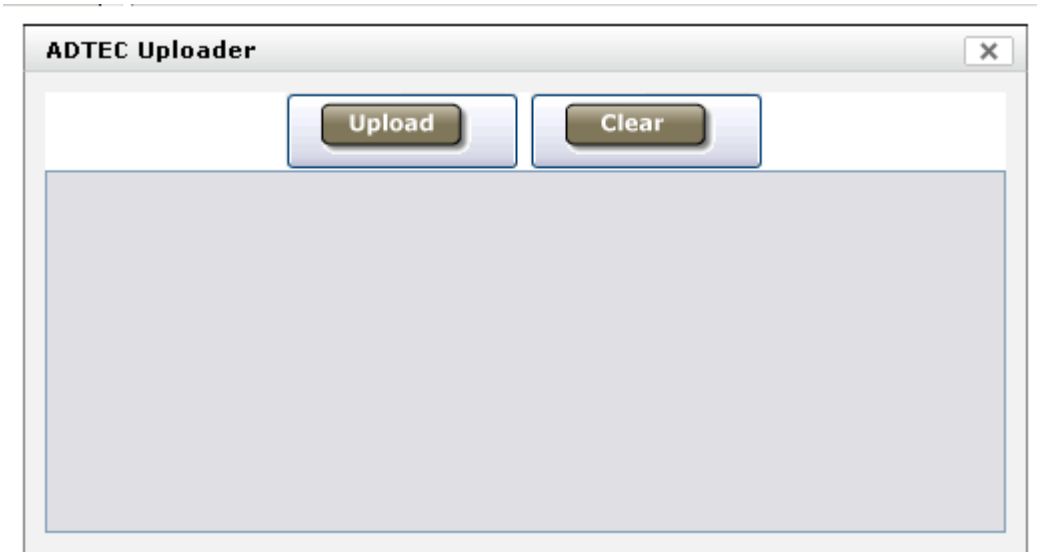


*Image reduced for clarity*

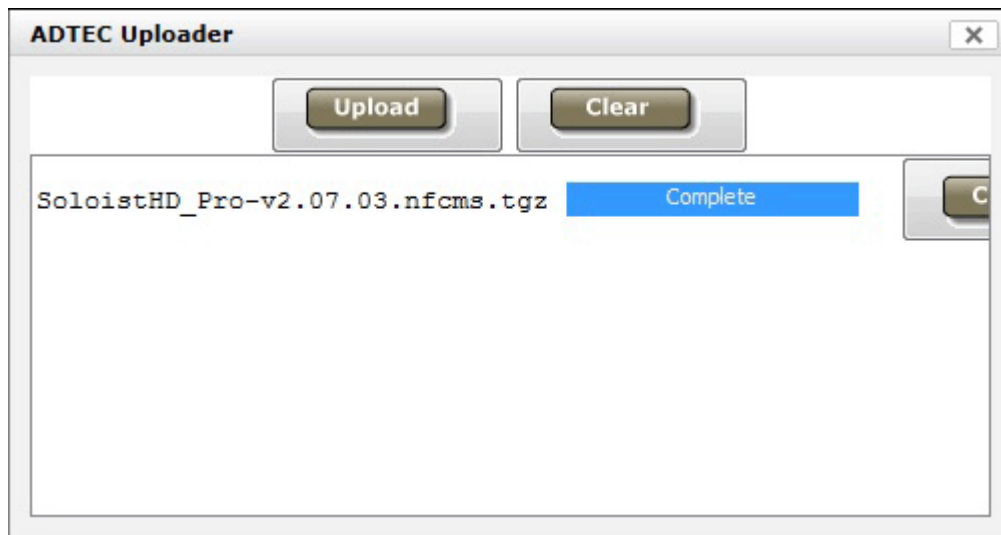
**Procedure:**

Installed Versions are firmware versions that have been installed on your device and can be selected as the current operating version. To select one of these versions, simply click on the **<Select>** button associated with the version. Due to the caching properties of your browser, it is necessary to clear your cache or restart the browser to make sure that the new application pages load.

To upload new firmware versions, click on the **<Upload>** button  (located on the top right side of the window), then click on the **<Upload>** button on the "**Adtec Uploader**" pop-up that appears:



Browse your computer for the downloaded firmware file and select the Open or Ok button to begin the transfer of the firmware to the unit. You should see a status bar progressing to show the current status of the firmware file being uploaded to the unit. Once the firmware file is loaded onto the unit, you should see the status bar read "Complete".



*Simulated Image*

If the Uploader screen does not load properly, you do not have a compatible version of Java installed. In this case, use a 3rd party FTP client to transfer the file to the /hd0/media/ folder on the unit. If you FTP the file to the unit, you will use the same Login user and password you used to access the Web UI. Once the transfer is complete, it will now be available under the firmware tab.

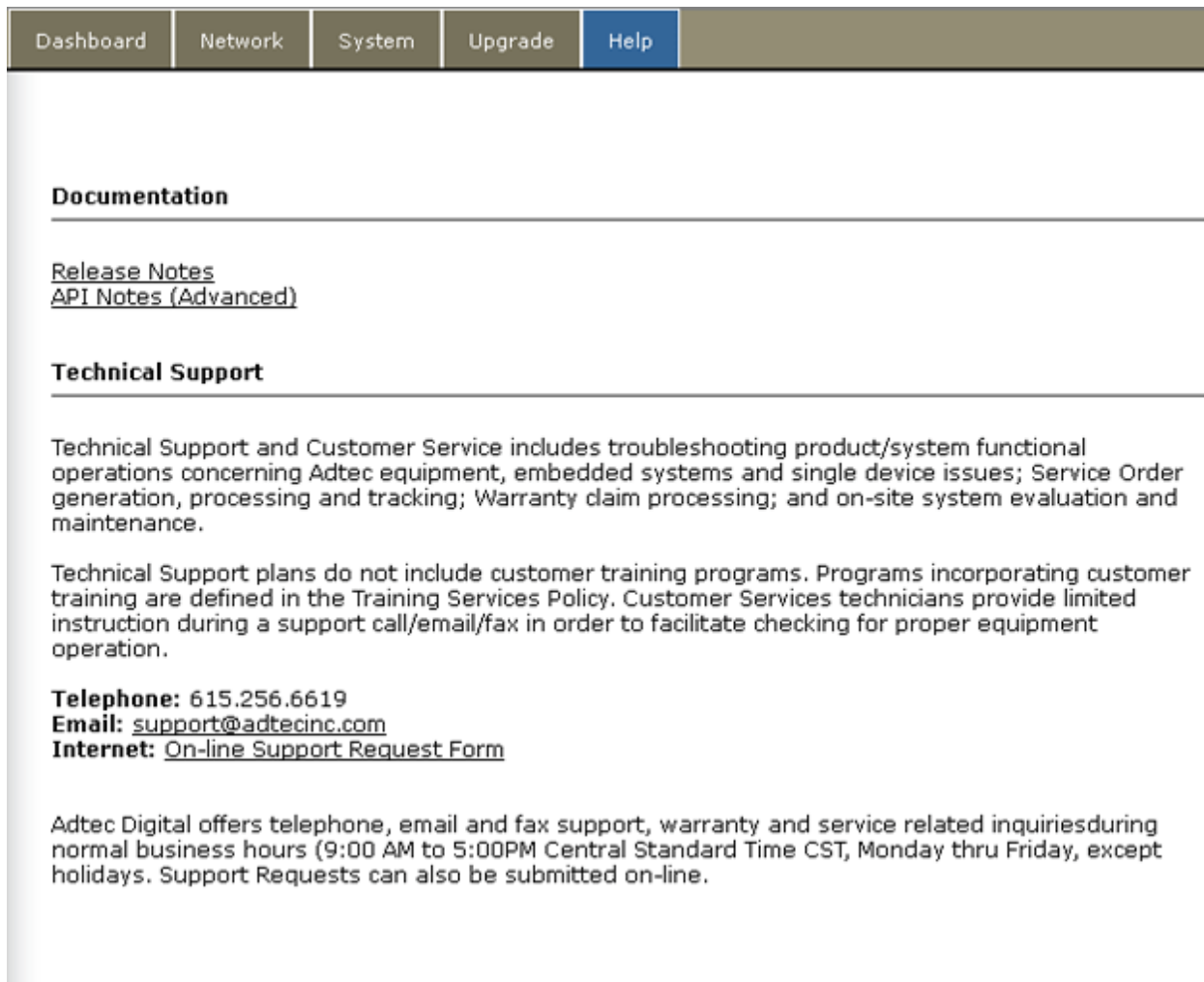
Further Upgrade instructions can be found referencing the [Upgrading Firmware](#) section of this manual.

## Upgrading from Older Firmware Versions

If your current version is less than v 2.03.13, you will need to use the FTP manual upgrade procedure to upgrade your unit.

## Help Tab

The Help Tab provides another access to Technical Support's contact information, the API Command set, and the latest Release Notes.



*Image reduced for clarity*

# Chapter 4 - How-To Guides

## Connecting to the Soloist HD Pro Digital Player

Before you configure your player, you will need to establish a connection. The default IP for the Soloist HD Pro is 192.168.10.48.

### Telnet Connection

To connect to your Soloist HD Pro player using a Telnet connection, attach your Soloist HD Pro to your local network and launch a telnet session. Logon with the username adtec and password none . Once you are connected, you can control and monitor the unit by using the API commands. For a complete list of API commands, point a web browser to the IP Address of your Soloist HD Pro and view the Adtec API notes.

### Serial Connection

To use a serial connection with your Soloist HD Pro, use the terminal kit included with your purchase. This terminal kit contains a standard ethernet cable and a serial 9 pin adapter, aka "RS232 connector." Plug the ethernet cable into the back of your Soloist HD Pro using the port labeled COM2. The other end of the ethernet cable should be plugged into the 9 pin adaptor. The adapter should then be connected to your computer via the RS-232 port or with the use of a USB converter cable (not included).

Note: Please note that the use of a USB converter may not always provide connectivity. A setup disk or drivers from the USB convertor manufacturer may be needed. You can also use a serial connection utility such as Teraterm or PuTTY.

## Using TeraTerm

Tera Term: Serial port setup

Port: COM1

Baud rate: 38400

Data: 8 bit

Parity: none

Stop: 1 bit

Flow control: none

Transmit delay

0 msec/char 0 msec/line

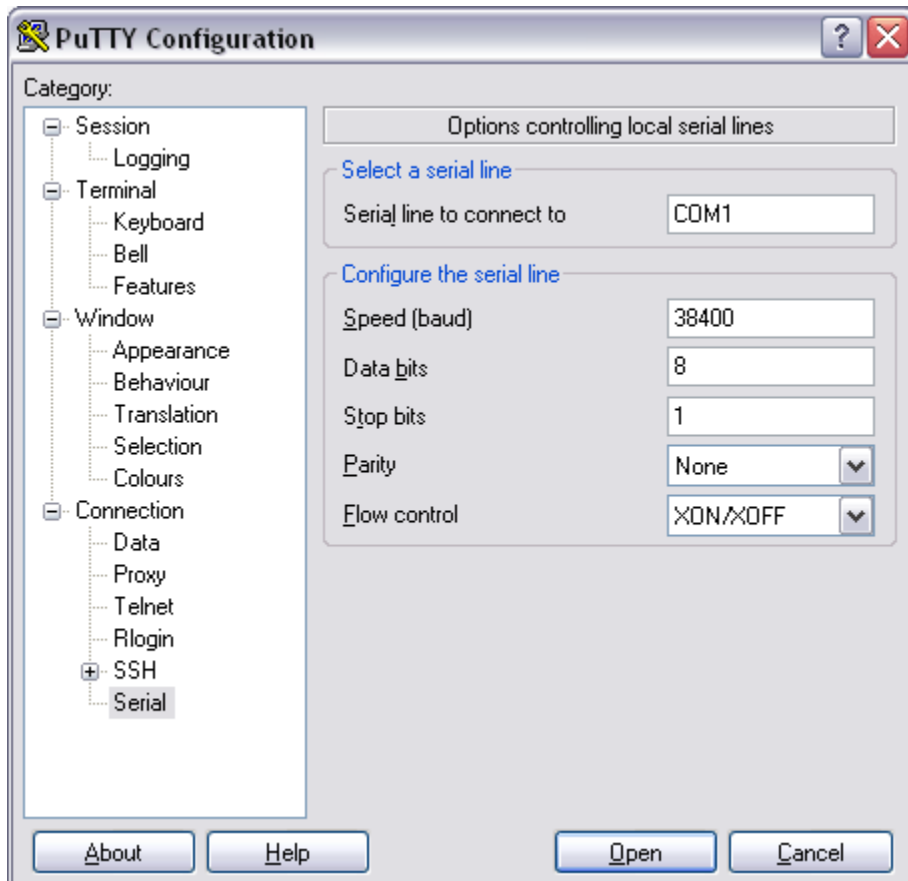
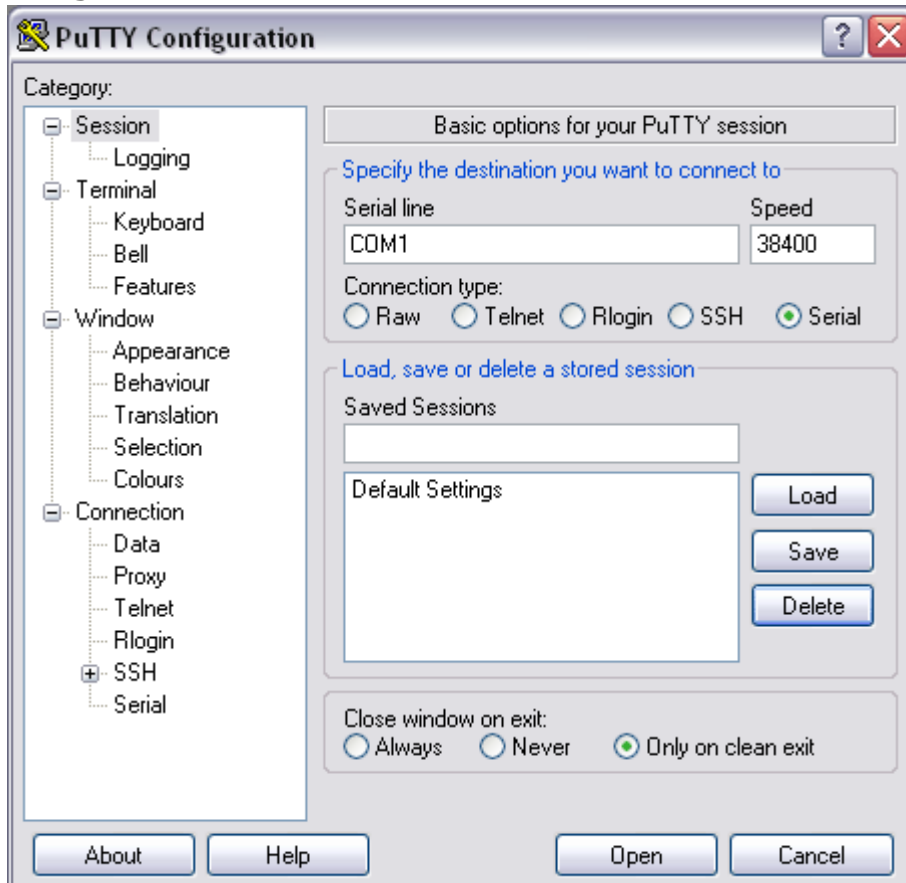
OK

Cancel

Help

Control	Setting
Port	The COM port you select in the application window represents the COM port on your computer that you wish to communicate from. It is not the COM port number from the back of your Soloist HD Pro.
Baud Rate	The baud rate for COM 2 is 38,400
Data	Should be set to 8 bit
Parity	Should be set to none
Stop	Should be set to 1 bit
Flow Control	Should be set to none

## Using PuTTY



## Browser-based User Interface

Please note: Adtec's "mediaControl" software is no longer supported and will not work at all with the newest versions of the Soloist HD Pro firmware.

To connect using the web interface, first use the Front Panel, Serial or Telnet connection instructions given above to configure the IP Address, Subnet Mask and Gateway IP Address and integrate it into your network environment.

**Note:** Microsoft Internet Explorer users may have to open/run the page in "Compatibility View" to perform some of the functions described in this section.

## Connect Using Device Serial Number

If the unit is a brand new unit, you can telnet to the unit using its product-name-serial number. The serial number in this case is the 6- digit number on the back or bottom of most units. For example:telnet SoloistHD\_Pro-010CEB.local or in your Web Browser Address Bar: http://SoloistHD\_Pro-010CEB.local

## Using the Web UI

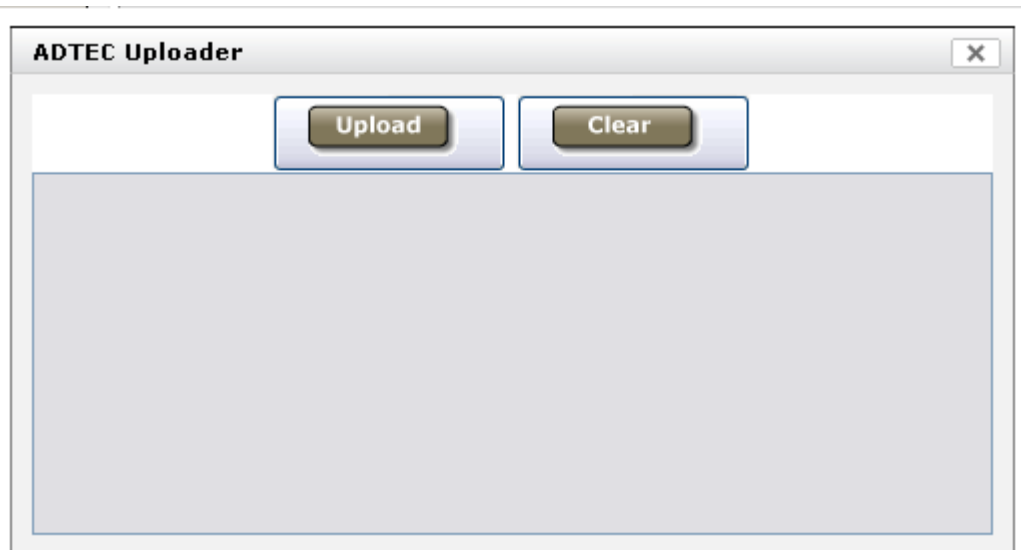
This section will provide information and direction of the use of the on-board Web UI interface that you can use to upload your own content, create lists and schedules and upgrade or change your firmware version.

## Uploading Content

After you have logged into the unit, you will want to test, playback and schedule your own content files you have created. This is done from the main window [Dashboard Tab](#) under the [List Builder](#) sub-tab in the



Web UI. Once on this tab, click the **Upload** Button in the upper right hand corner of your window. This will open the Adtec Uploader popup window.



Inside of the Adtec Uploader, click the 'Upload' Button to browse your computer for files you wish to upload. Once you navigate to the proper folder on your computer, select the files and select the "Open" button and your files will begin uploading. When finished, each file will give you a status of complete, then close out of the Uploader screen, using the 'X' at the top right hand of the popup, and your files will be listed under the inventory on the [List Builder](#) tab.

**Note:** If the Uploader screen does not load properly, you do not have a compatible version of Java installed. In this case, use a 3rd party FTP client to transfer the file to the /hd0/media/ folder on the unit. If you FTP the file to the unit, you will use the same Login user and password you used to access the Web UI.

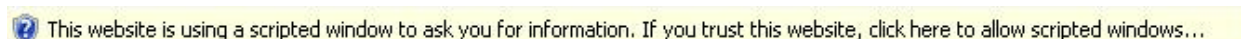
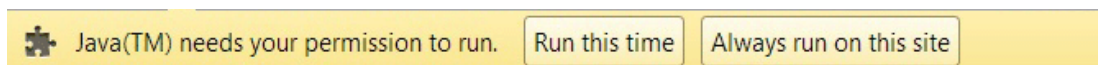
## List Creation

Once you are logged into the on-board Web GUI, under the Dashboard Tab, you will use the List Builder sub-tab. This is the first page that will be displayed.

Inventory	File Name	Date/Time	File Size	Duration	Bit Rate	Play	Get
All	SCHdefault.dvc	02-28-2014 08:13:54	0.00 MB	0:00:00	0.00	▶	▼
Media	SCHChannel_83.dvc	02-28-2014 08:13:40	0.00 MB	0:00:00	0.00	▶	▼
Graphics	SCHCommand_Test.dvc	02-28-2014 08:13:26	0.00 MB	0:00:00	0.00	▶	▼
Scripts	atasc.mpg	02-24-2014 08:28:35	16.03 MB	0:01:11	1.80	▶	▼
Playlists	PSA1.mpg	02-24-2014 08:28:30	22.06 MB	0:00:30	5.88	▶	▼
	PSA5.mpg	02-24-2014 08:28:25	22.06 MB	0:00:30	5.88	▶	▼
	PSA3.mpg	02-24-2014 08:28:20	22.06 MB	0:00:30	5.88	▶	▼
	SignEdgeNAB_3.m2t	02-24-2014 08:28:11	79.63 MB	0:00:42	11.77	▶	▼
	EN80NAB_4.m2t	02-24-2014 08:27:53	79.51 MB	0:00:42	12.60	▶	▼
	DTA3050NAB_3.m2t	02-24-2014 08:27:33	86.75 MB	0:00:45	12.88	▶	▼
	SoloProNAB_3.m2t	02-24-2014 08:27:13	77.98 MB	0:00:40	12.79	▶	▼
	ProductClipSD.mpg	04-05-2011 16:56:45	82.83 MB	0:01:21	7.21	▶	▼
	ProductClipHD.mpg	04-05-2011 15:48:16	280.81 MB	0:01:21	20.41	▶	▼

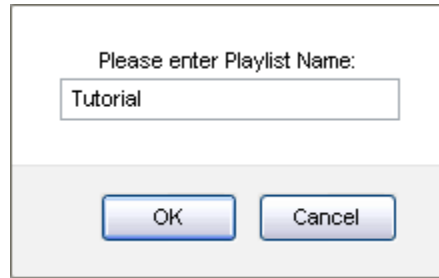
*Image reduced for clarity*

Click the Page Plus Sign (+) next to the Playlists Header (circled in red in the above picture). You may get a popup notification (will vary depending on web browser and version) that will look similar to one of these:





If so, click it and select to either "Run" , "Temporarily Allow Scripted Windows" or "Activate." If you received one of the previous popup messages, click the Plus Sign (+) again. You will be given a new window to create your new list.



This is the name of your list. Add a name and click the OK button. In this example, we are naming the list 'Tutorial.' **Note:** It is best to avoid any special characters or spaces in the naming of your list to avoid issues with file location. In place of spaces, you can use dashes (-) or underscores (\_).

You will now see your new list under the Playlists header:

The screenshot shows a software interface with a top navigation bar containing 'Dashboard', 'Network', 'System', 'Upgrade', and 'Help'. Below this is a secondary bar with 'List Builder', 'Schedule Builder', 'Streaming', 'Display', and 'OSD'. A search box is located below the navigation bars. The main content area features a control panel with playback buttons (stop, play, pause, previous, next), a volume slider set to 0, an audio track dropdown set to 1, and a repeat mode dropdown set to ONE. Below the control panel is a table with columns: File Name, Date/Time, File Size, Duration, Bit Rate, Play, and Get. The table lists various media files. On the left side, there is a sidebar with categories: All, Media, Graphics, Scripts, and Playlists. Under the Playlists category, two items are listed: 'default.smil' and 'Tutorial.smil', with 'Tutorial.smil' circled in red.

File Name	Date/Time	File Size	Duration	Bit Rate	Play	Get
SCHdefault.dvc	02-28-2014 08:13:54	0.00 MB	0:00:00	0.00	▶	▼
SCHChannel_83.dvc	02-28-2014 08:13:40	0.00 MB	0:00:00	0.00	▶	▼
SCHCommand_Test.dvc	02-28-2014 08:13:26	0.00 MB	0:00:00	0.00	▶	▼
atsc.mpg	02-24-2014 08:28:35	16.03 MB	0:01:11	1.80	▶	▼
PSA1.mpg	02-24-2014 08:28:30	22.06 MB	0:00:30	5.88	▶	▼
PSA5.mpg	02-24-2014 08:28:25	22.06 MB	0:00:30	5.88	▶	▼
PSA3.mpg	02-24-2014 08:28:20	22.06 MB	0:00:30	5.88	▶	▼
SignEdgeNAB_3.m2t	02-24-2014 08:28:11	79.63 MB	0:00:42	11.77	▶	▼
EN80NAB_4.m2t	02-24-2014 08:27:53	79.51 MB	0:00:42	12.60	▶	▼
DTA3050NAB_3.m2t	02-24-2014 08:27:33	86.75 MB	0:00:45	12.88	▶	▼
SoloProNAB_3.m2t	02-24-2014 08:27:13	77.98 MB	0:00:40	12.79	▶	▼
ProductClipSD.mpg	04-05-2011 16:56:45	82.83 MB	0:01:21	7.21	▶	▼
ProductClipSD.mpg	04-05-2011 15:48:46	200.81 MB	0:01:21	20.41	▶	▼

Image reduced for clarity

Now drag video or image files on the right onto the new list on the left. They will be automatically added to your list and saved.

Once you have added or completed your new list, click the name of the list, under the Playlists Header, to check if it is correct or needs to be edited. if you need to change the order, drag a file up or down to the appropriate place in the list.

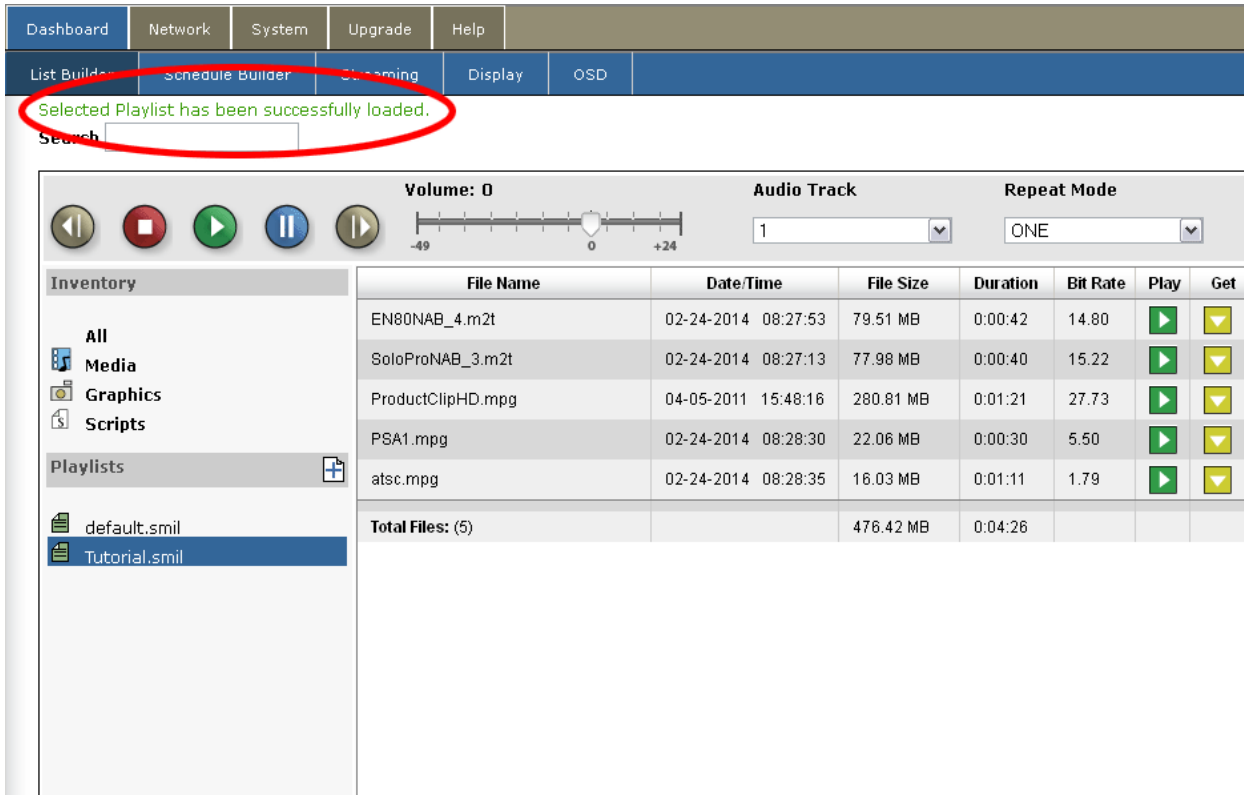
The screenshot shows a media management interface with a navigation menu at the top containing 'Dashboard', 'Network', 'System', 'Upgrade', and 'Help'. Below this is a secondary menu with 'List Builder', 'Schedule Builder', 'Streaming', 'Display', and 'OSD'. A search bar is located below the secondary menu. The main interface features playback controls including volume (0), audio track (1), and repeat mode (ONE). Below the controls is an 'Inventory' section with a tree view on the left containing 'All', 'Media', 'Graphics', 'Scripts', and 'Playlists'. The 'Playlists' section is expanded, showing 'default.smil' and 'Tutorial.smil'. The main area displays a table of files:

File Name	Date/Time	File Size	Duration	Bit Rate	Play	Get
EN80NAB_4.m2t	02-24-2014 08:27:53	79.51 MB	0:00:42	14.80		
SoloProNAB_3.m2t	02-24-2014 08:27:13	77.98 MB	0:00:40	15.22		
ProductClipHD.mpg	04-05-2011 15:48:16	280.81 MB	0:01:21	27.73		
PSA1.mpg	02-24-2014 08:28:30	22.06 MB	0:00:30	5.50		
atsc.mpg	02-24-2014 08:28:35	16.03 MB	0:01:11	1.79		
<b>Total Files: (5)</b>		476.42 MB	0:04:26			

Image reduced for clarity

When you are satisfied with the list you have created or edited, double click on the name of the list 'Tutorial.smil.' You will see the notice "**Selected Playlist has been successfully loaded**" at the top of your list and it will also show in the Status Window, on the left side of the screen, under **Playback Settings**.

Note: If you make edits to an existing list, you will still need to double click the name of the list to reload / activate the list.



*Image reduced for clarity*

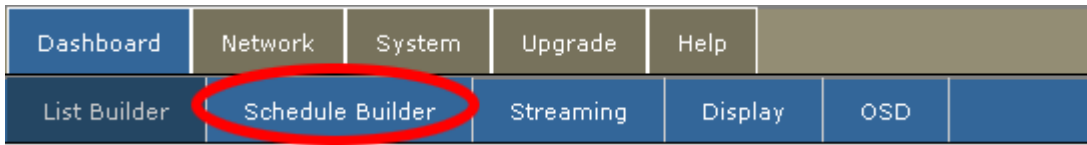
To start your new list, click the Stop Button, using the Virtual [VTR Controls](#), and then the Play Button. Your new list will now be playing.

To delete a list or to remove any of the items from the list, drag the list or the name of the file from the list to the garbage can at the bottom of the window. **Note:** The video file is not deleted permanently; it is only remove it from the list.

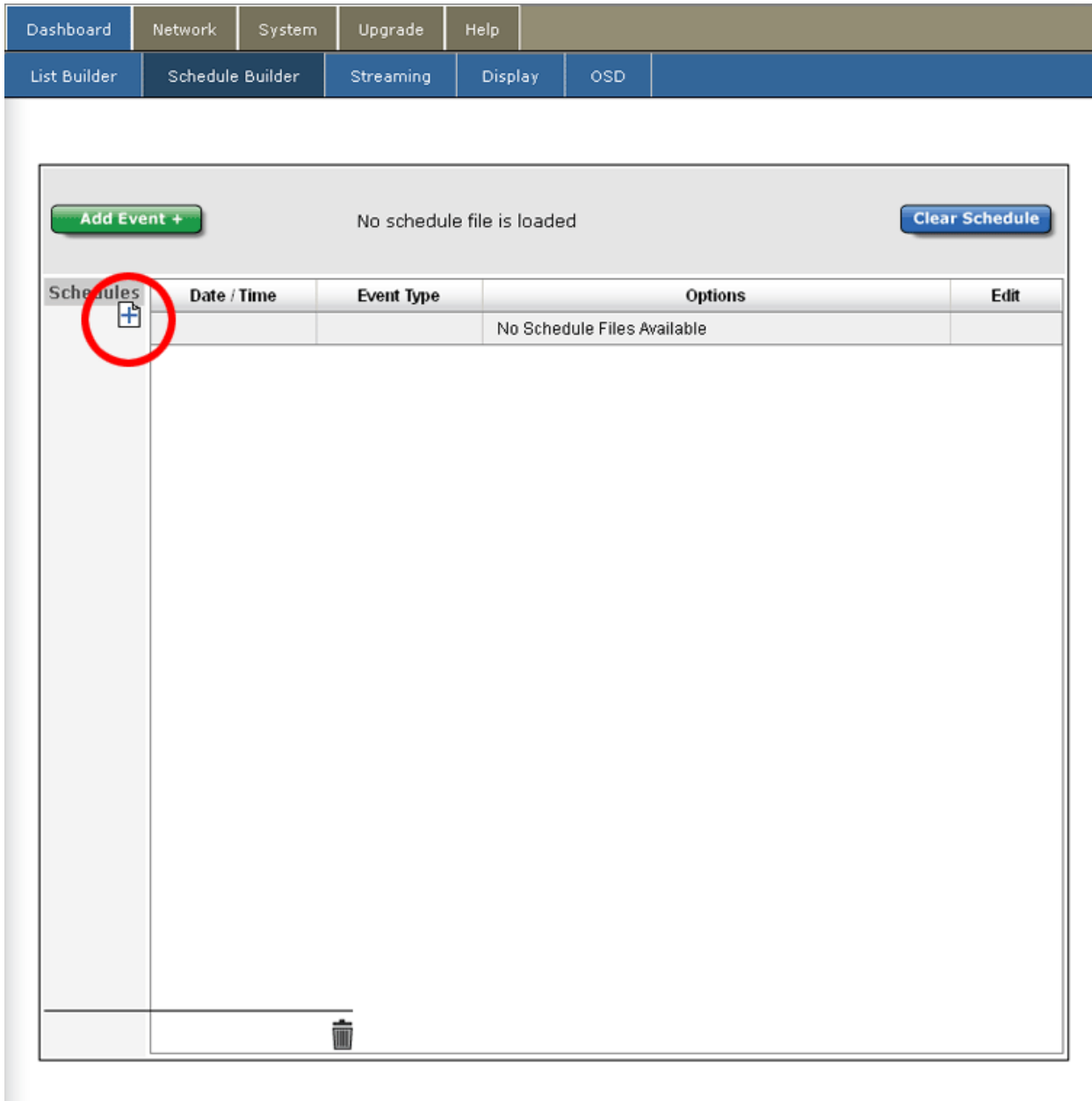


## Schedule Building

Once you are logged into the on-board Web GUI, under the Dashboard Tab, you will use the Schedule Builder sub-tab. (illustrated image below)

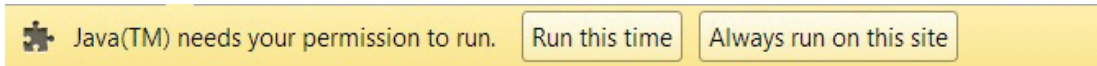


The Schedule Builder Tab will look like this:



*Image reduced for clarity*

Click the Page Plus Sign (+) next to the Schedules Header (circled in red in the above picture). You may get a popup notification (will vary depending on web browser and version) that will look similar to one of these:



This website is using a scripted window to ask you for information. If you trust this website, click here to allow scripted windows...



If so, click it and select to either "Run", "Temporarily Allow Scripted Windows" or "Activate". If you received one of the previous popup messages, click the Plus Sign (+) again. You will be given a new window to create your new schedule.

A dialog box with a light gray background. At the top, it says "Enter a name for the new schedule:". Below this is a text input field containing the word "Tutorial". At the bottom, there are two buttons: "OK" and "Cancel".

This is the name of your new schedule. Add a name and click the OK button. In this example, we are naming the schedule 'Tutorial.' **Note:** It is best to avoid any special characters or spaces in the naming of your schedule to avoid issues with file location. In place of spaces, you can use dashes (-) or underscores (\_).

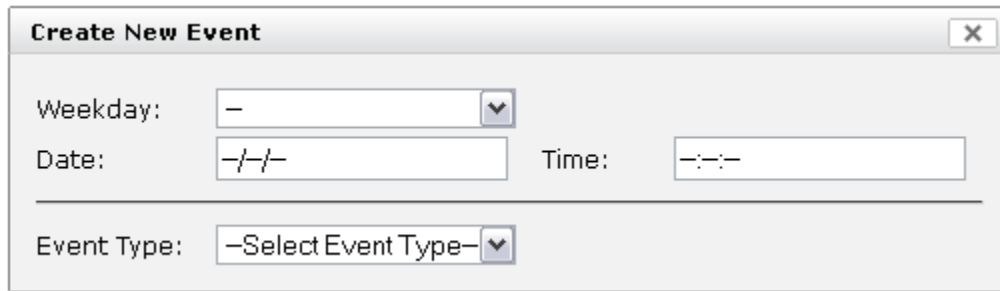
You will now see your schedule under the Schedules Header with the letters 'SCH' in front of the name.



A screenshot of a web interface for managing schedules. At the top left is a green "Add Event +" button. In the center, it says "No schedule file is loaded". At the top right is a blue "Clear Schedule" button. Below this is a table with a header row: "Schedules", "Date / Time", "Event Type", "Options", and "Edit". The "Schedules" column contains a list item "SCHTutorial.dvc" with a plus icon to its right. The main content area of the table says "No events have been set on this schedule."

Image reduced for clarity

Now click the green Add Event (+) button. You will get this popup window:



**Create New Event** [X]

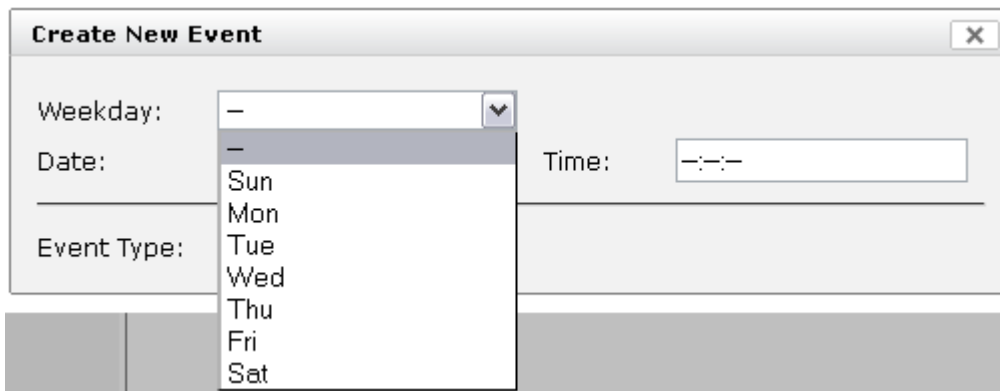
Weekday: [ - ]

Date: [ --/-- ] Time: [ --:-- ]

Event Type: [ -Select Event Type- ]

Here you will be able to set the Weekday, Date, Time and type of event you want to schedule the unit to perform.

Enter the '**Weekday**' you would like the event to happen. If you want it to happen every day of the week, leave the field the default '-' (used for a "wild card" for the value).



**Create New Event** [X]

Weekday: [ - ]

Date: [ --/-- ] Time: [ --:-- ]

Event Type: [ -Select Event Type- ]

- Sun
- Mon
- Tue
- Wed
- Thu
- Fri
- Sat

**Optional:** Enter the '**Date**' you would like the event to occur. This is an optional value to be used when you want the event to only happen on a specific date. Format is month/day/year (MM/DD/YY). If this is not needed, use the default setting --/--/-- and it will not be used.

Enter the '**Time**' you would like the event to start. Format is hours:minutes:seconds (HH:mm:ss) using a 24 hour clock. You can also use a "wild card" value for some of the values.

**Example 1:** For a scheduled event to start 30 minutes after every hour, the Time value would need to be set as: --:30:00

**Example 2:** For a scheduled event to start at the beginning of every hours, the Time value would need to be set as: --:00:00

Select the '**Event Type**' you would like to occur at the above defined Weekday/date/time.

**Create New Event**

Weekday:

Date: / Time:

Event Type:

- Select Event Type--
- CUSTOM
- PLAYLIST
- PLAYSPOT
- MULTICAST RECEIVE
- STOP DECODER
- MULTICAST OFF
- CLEAR SCHEDULE

**CUSTOM:** Create a custom event using Adtec API Commands

**PLAYLIST:** Start a playlist from a previously created list in the [List Builder](#)

**PLAYSPOT:** Play a single video from inventory

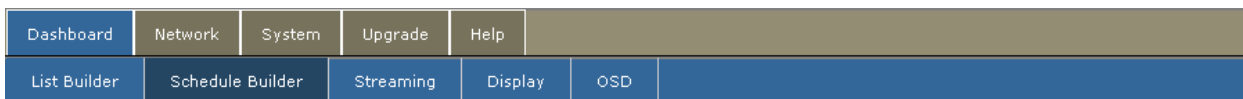
**MULTICAST RECEIVE:** Start receiving an IP Stream, configured using the [Streaming Tab](#)

**STOP DECODER:** Stop playing

**MULTICAST OFF:** Stop receiving an IP Stream

**CLEAR SCHEDULE:** Clear the existing schedule and stop it from being active

Once you have created your scheduled event, click the Apply Button from the popup Window. A new line, containing your event, has been added to your schedule.



**Add Event +** No schedule file is loaded **Clear Schedule**

Schedules	Date / Time	Event Type	Options	Edit
SCHTutorial.dvc	FR 02/07/13 --:30:00	PLAYSPOT	ProductClipHD.mpg	<b>Edit</b>

*Image reduced for clarity*

Continue using the Add Event (+) button to add events until your schedule is complete.

If you make a mistake, you can use the **Edit** Button, next to the event, to make changes to an event.

When you are satisfied with the schedule you have created or edited, double click on the name of the schedule 'SCHTutorial.dvc.' You will see the notice "Schedule file "/media/hd0/dvc/SCHTutorial.dvc" at the top of the Schedule Builder sub-tab. Also, above your current schedule you will have a notification stating; 'You are running the schedule SCHTutorial.dvc.'

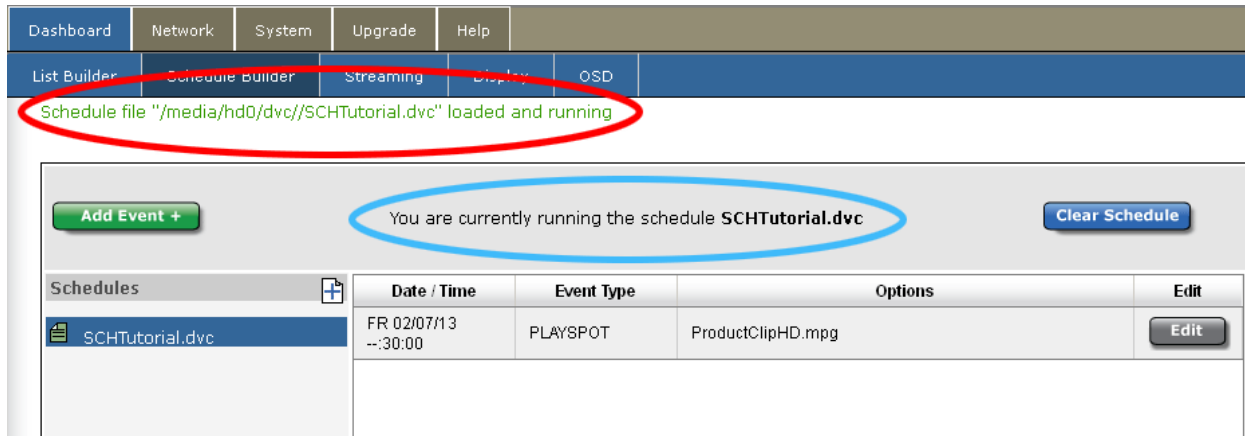


Image reduced for clarity

**Note:** If you make edits to an existing schedule, you will still need to double click the name of the schedule to reload / activate the schedule.

To delete a schedule or to remove any of the events from the schedule, drag the schedule name or the event from the schedule to the garbage can at the bottom of the window. **Note:** The video file is not deleted permanently; it is only remove it from the schedule.



## Upgrading Firmware

First, you will need to acquire a new firmware file from Adtec's Customer Service department or via our Documentation and Download Site at [www.adtedigital.com](http://www.adtedigital.com) this file will be a .TGZ file. **Note:** Make sure your computer keeps the correct file extension when downloading the file. The file is compressed but you will not need to uncompress / extract / run / un-zip the file. You will use the file as-is.

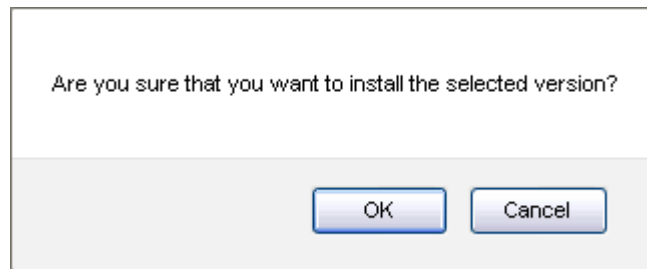
Once the file is saved to your computer, you can upload it to your unit using the instructions provided in the [Upgrade Tab](#) section of this user manual.

Now that the firmware file has been transferred to the unit, the newly uploaded firmware file will be located at the bottom of the firmware screen under a new section labeled “**Available Firmware Versions.**” (illustrated below)

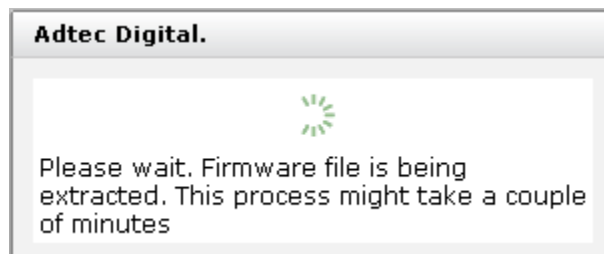
The screenshot shows a web interface with a navigation bar at the top containing 'Dashboard', 'Network', 'System', 'Upgrade', and 'Help'. Below this is a 'Firmware' section. Under 'Installed Firmware Versions', there is a table with two rows: 'Version 2.07.03 (\*\* current selection \*\*)' and 'Version 2.08.33'. The first row has 'Restore' and 'Current' buttons, while the second has 'Select' and 'Delete' buttons. Below this, the 'Available Firmware Versions' section is circled in red. It contains a table with one row: 'Version 2.07.03', which has 'Install' and 'Delete' buttons.

*Image reduced for clarity*

Select the **Install** button associated with the newly uploaded firmware to extract the firmware file and make the firmware available to be selected on the units’ **Installed Firmware Versions** list at the top of the window. You will receive a popup window asking for confirmation. Select Ok on the prompt window.



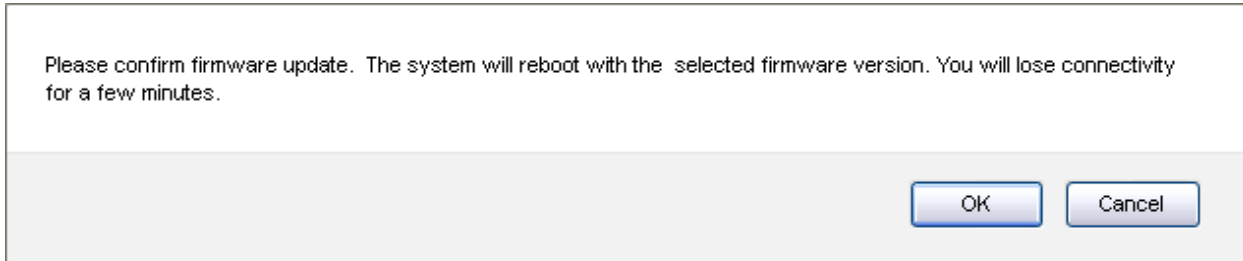
Once you choose to Install the firmware, you should see a pop-up message indicating the firmware file is being extracted to the unit. During this time, your units web controller will not be able to be used. You will see a notice such as this:



Once the firmware has completed installing, it will be listed as an "**Installed Firmware Version**". To

Select

complete the upgrade, you will use the Select button next to the firmware version in the list. The unit will give another popup window asking for confirmation and that you will lose connectivity to the unit. Select the Ok button to continue.



Once the firmware update is in progress, you may receive a popup window stating a "Script Error." Just select to stop the script and close the browser.

Before reconnecting to the unit, it is recommended to clear the History / Cache from the browser that you are using. Once complete, reconnect to the unit and continue with setup, operation or troubleshooting.

If you find that the firmware update / change has had negative effects on your unit or application, you can change back to a previous or other firmware version in the 'Installed Firmware Versions' list by clicking the

Select

Select button next to the desired firmware version. Your unit will reboot into the selected version. **Note:** All previous settings, including IP Address, will revert to what they were in the selected firmware version.

Firmware updates can also be done manually using the Adtec API Command \*.SYSD VRN

## Factory Reset / Restore

At times, it may be desirable to factory restore / default your unit to the original configuration it had when it was new. On the [Upgrade Tab](#), you will find a list of the currently installed firmware in the '**Available Firmware Versions**' list. Your currently installed firmware version will have the distinction of **(\*\*\*current selection\*\*\*)** to the right of the version number.

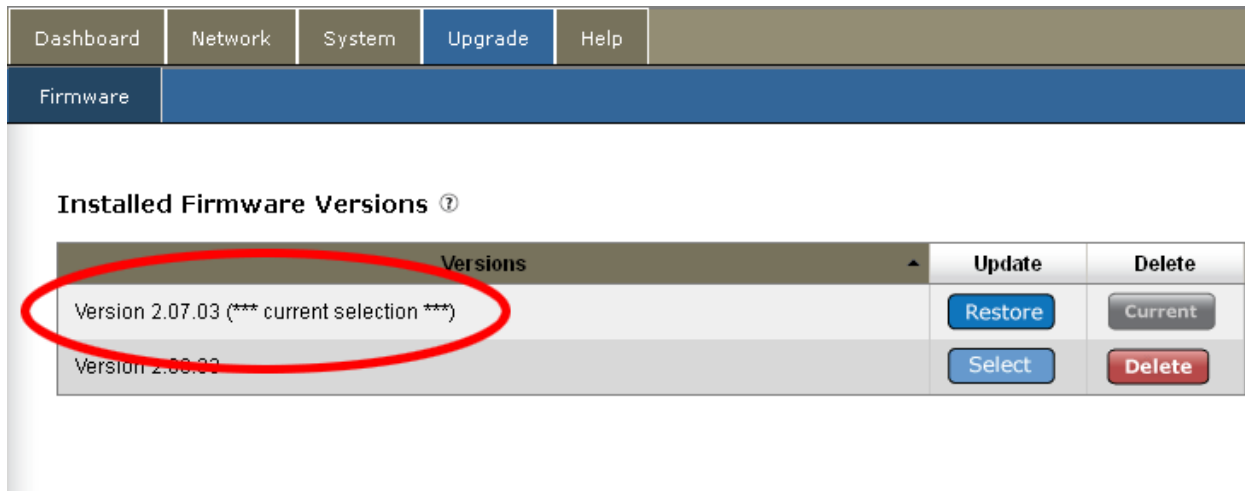
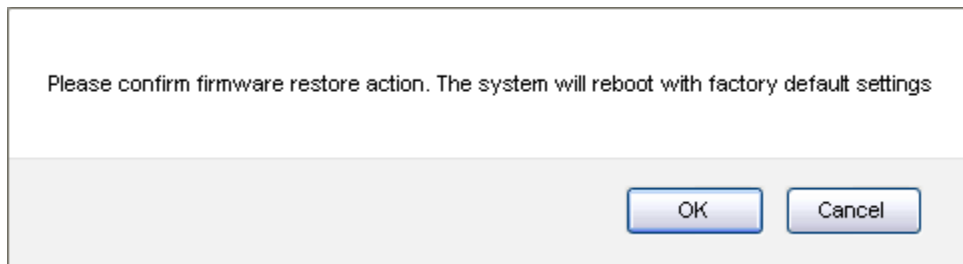


Image reduced for clarity

To restore the unit to its' factory defaulted configuration, click the **Restore** Button to the right hand side of the currently selected version. The unit will give another popup window asking for confirmation and that the unit will reboot. Click Ok to complete the Restore function.



Once the restoration is in progress, you may receive a popup window stating a "Script Error." Just select to stop the script and close the browser.

Before reconnecting to the unit, it is recommended to clear the History / Cache from the browser that you are using. Once complete, reconnect to the unit and continue with setup, operation or troubleshooting.

## Playback Prioritization

The Soloist HD Pro will give decode priority to certain configurations over others.

Priority, In order:

1. DVB-ASI Recieve
2. Scheduled Playback
3. IP Multicast / Unicast Receive
4. List Playback

This means that a scheduled event will take precedence over playing from a list or decoding an IP Stream.

## Advanced Use & Scripting

This section elaborates on some advanced uses of the Soloist HD Pro.

### Setting up Synchronous Playback

Synchronous playback is a feature of Adtec player decoders that allows multiple decoders to synchronize content, provided they are on the same network. One unit is designated as 'master', which is tracked synchronously by units that are designated as 'slaves'. The synchronization is transmitted over an Ethernet connection using broadcast packets.

#### How to Use this feature

##### Using Telnet and API Commands

Step	Action
1	For the unit serving as the Master, issue: *.DCMD STC 100 * CF SAVE
2	For the unit(s) serving as Slaves, issue: *.DCMD STC 1 (1 Slave) or X for multiple groups (X = 1-9) * CF SAVE

#### Operations

All Slave units **REPEAT** Mode will automatically follow the **REPEAT** setting of the Master Unit. All Units (Master and all Slave Units) must have a LIST (even if it's only one clip). All Units (Master and all Slave Units) **must** have the same quantity of clips in their lists. All Clips at the same position within the list (Master and all Slave Units) **must** be same length.

Clip #	Master	Slave #1	Slave #2 - X
#1	30 Sec.	30 Sec.	30 Sec.
#2	10 Sec.	10 Sec.	10 Sec.
#3	1 Hour	1 Hour	1 Hour
#4	10 Min.	10 Min.	10 Min.

The generic STC configuration for one set of synchronous devices is 100 for the master and 1 for the chase units. If more than 1 set of synchronized devices are needed on the same network, they must be separated by group or channel numbers. There are 9 groups or channels available for up to 9 sets of synchronous items placed on the same network.

Channel / Group	Master STC Setting	Slave STC Setting
1	110	10
2	120	20
3	130	30

4	140	40
5	150	5
6	160	60
7	170	70
8	180	80
9	190	90

### In conjunction with Display Matrix:

Step	Action
1	<p>Create your content.</p> <p>When creating content for synchronous playback to be used with the Display Matrix, you should be aware of your overall display area. (ex. 2X2, 3X3 or 4X4) .</p> <p>You should use the dimensions of the overall piece.</p> <p>If each display is 1920 by 1080 and your overall display is 2 by 2, then the size of your content would be 3840 by 2160.</p> <p>This will allow you to use the same piece of content on all four of your screens. Keep in mind that your final content needs to be included in an MPEG 2 Transport Stream.</p>
2	<p>Once you have your content, upload it to the units and <a href="#">create a list</a>.</p>
3	<p>Select one of the units to act as the master and set the other three units as slaves.</p> <p>To do this with the on-board Web UI User Interface:</p> <ol style="list-style-type: none"> <li>1. connect to the unit.</li> <li>2. select the <a href="#">Network</a> tab.</li> <li>3. find the drop-down box for "<b>STC Beacon</b>" and select "<b>Master</b>".</li> <li>4. repeat this process to create the three Slave units, selecting "<b>Slave</b>".</li> </ol> <p>To do this via <a href="#">Telnet</a>:</p> <ol style="list-style-type: none"> <li>1. log into the unit.</li> <li>2. use the * STC command to configure the unit.</li> <li>3. See the API documentation provided by pointing a browser to the IPA of the unit for more details.</li> </ol>
4	<p>Set up the Display Matrix to utilize specific sections of the screen.</p> <p>See the API notes on the * DMX command for additional details.</p>

The overall result is that you have created one piece of content that can be spread proportionally on a video wall.

**Note:** Video Files **must** contain an audio track, even if it is empty, for proper synchronization.

### Using Graphic Follows Audio

Graphic Follows Audio or GFA is a feature of the firmware and requires no configuration. It allows for the display of a specific On-Screen-Display (OSD) Graphic to coincide at the same time and duration as a specified audio file. The OSD graphic will display in the center of the screen at full resolution automatically.

## How to use this feature

Step	Action
1	Create your audio file using the audio specifications referenced below as a guideline.
2	Create your graphic with your display target resolution in mind.
3	Name your audio and graphic file the same name. [ex. myfilename.mp3 , myfilename.png ]
4	Load both into your unit and create a list for your audio file (s). When the list plays and the system prepares to play the audio file, it will look for a corresponding OSD. If one is found, it will display it. When the audio file ends, the OSD will be removed.

## Audio Standards Guide

Audio Standard	Bit Rate	Sample Rate(s) KHz	Notes
Dolby Digital AC-3	up to 640kbps	32 44.1 48	Downmix to 2 channel Dolby Pro Logic
MPEG 1 MPEG 2 Layer I, II and III (MP3) 2.0	up to: 448kbps (Layer I) 384kbps (Layer II) 320kbps (Layer III)	16 22.05 24 32 44.1 48	Single channel, dual channel, joint stereo and stereo modes
AAC-LC MPEG-2 MPEG-4	max 384kbps	7.35 8 11.025 12 16 22.05 24, 32, 44.1 48	

## FTP Mirror Mode

In Mirror Mode, an Adtec device can be configured to mirror content, via FTP, from an FTP server. Adtec devices that support Mirror Mode can be set to perform one of three roles in a Mirror Mode configuration:

Mode	Role
Client	unit is serving as a traditional network client- mirroring is off
MirrorList	MirrorList mode puts the device in 'list' mirroring mode. Only specified content within a text based list will be downloaded. The list is referred to as the MLF or MirrorListFile. An MVL file extension is now required for the MLF. MirrorList is useful for units with smaller storage capacity. They will only download content within the MLF file
MirrorClient	MirrorClient mode puts the device in 'total' mirroring mode. It will download all content hosted on an FTP server with the given credentials to it's /hd0/media/ folder, including SHD, SMIL, and DVC files

## Configurations

### MirrorClient

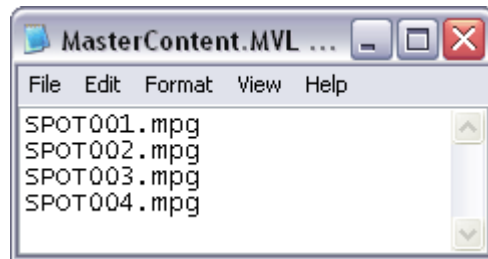
Name	Specification	API Command
Host Mode	The FTP mode of the unit, client/mirrorclient/mirrorlist	*.SYSD HOM mirrorclient
Host IP Address	The FTP Server to mirror content from	*.SYSD HIP x.x.x.x (where x.x.x.x is the IP address of the external server)
Host Timer	Time, in seconds, to wait until next server login	*.SYSD HOT xxx [where xxx is time in seconds, default = 600 (10 minutes)]
Client Username Password	Username and Password to login to FTP Server	*.SYSD CPW username,password
FTP Client Pasv.	Changes between Active and Passive Mode. Default is Passive	*.SYSD FPA passive
FTP Time Out	Maximum time in seconds that the FTP Client waits for a response from remote system, default = 4 seconds	*.SYSD FTO 4
FTP Data Time Out	Maximum time that client waits on inactivity from remote system during file transfer, default = 45 seconds	*.SYSD FDO 45
No Not Replace MPEG	This allows the mirroring mode to not replace content even if it already exists on the unit and the date on the server is newer; default = no. NO will replace items when the time/date stamp is different on the server.	*.SYSD DNR no

## Mirror List

All MirrorClient configurations are valid for MirrorList, with one additional configuration being available:

Name	Specifications	API Command
Mirror List File	A file that lists all content that needs to be downloaded from Host IP Address.	*.SYSD MLF MasterContent.MVL

A basic MirrorList looks similar to this:



## Execution Logic

FTP Download logic follows this progression:

1. Host Timer Expires.
2. Login to FTP Server.
3. Perform directory listing with date/time stamp of files.
4. Check against MirrorListFile and hard drive.
5. If file does not exist on hard drive, download.
6. If file does exist on hard drive, check time/date of both files- if time different and DNR = NO, then download.
7. Delete specific files in delete section if found.

## API Commands used in Mirror Mode

To view detailed descriptions of Adtec API commands, point a web browser to the IP address of your device. Once logged in, click on the **API Notes** link located on the [Help Tab](#).

The basic command set used in Mirroring:

- HOSTTIMER
- HOSTIPADDRESS
- MIRRORLISTFILE
- CLTUSERPASSWORD
- FTPTIMEOUT
- FTPDATATIMEOUT
- DONOTREPLACEMPEG
- FTPCLIENTPASV

## Notes:

- In MirrorList mode, the MIRRORLISTFILE is always downloaded first.
- A change to a Mirror Mode (MirrorList or MirrorClient) will change configuration, but mirroring will wait until HOSTTIMER expires before executing the desired hostmode.
- On newer generation Adtec products, "client" mode still allows the FTP server to run (this is different from legacy Adtec products such as edge1013).

- Because mirroring is performed based on date/time, Adtec Digital recommends keeping all third party encoders, servers, and Adtec units synchronized to a time server.
  - Synchronized time helps with management of content and basic content troubleshooting.
- A drive space management system is based on HOSTMODE that will detect when there is about 200MB of free space and remove files until there is 300MB of free space.
  - In MirrorList mode, files not in the list, but present on the system will be deleted to meet 300MB.
  - In MirrorClient mode, the oldest files found on the system will be removed to meet 300MB.
  - Drive space is not checked in Client Mode.
- MVL Files recognize the #UNITS\_NAMED directive as in DVC files, as well as #MVL\_DELETE\_FILES\_ON.

## Using an NTP Server

Network Time Protocol (NTP) is used to synchronize the system clocks of networked devices to Universal Time through the use of a timestamp packet sent through the UDP port 123 transport layer. NTP features an integral jitter buffer which aids in ensuring continuous video and audio playout.

- Synching your Adtec device to an NTP server can provide:
  - Scheduled Events trigger at the proper time.
  - Logging is logged with the proper date/time stamp which provides easier troubleshooting/viewing of logs
- Adtec Digital recommends that the unit's time be the same for STC setups.
  - Generally, STC doesn't use the system time clock; instead, it uses the STC Time Stamp Index of the MPEG file.

### Set-up an NTP Server

If you will be doing scheduled playback of content, it is highly recommended to configure for an NTP network time server as follows:

#### Using the Front Panel:

Step	Action
1	Press the <Mode> button until <b>SYSTEM MENU</b> is displayed on the LCD screen, then press <Select>.
2	Press the <Down> arrow until <b>NTP MENU</b> is displayed on the LCD screen, then press <Select>.
3	Press the <Down> arrow until <b>NTP Server IPA</b> is displayed on the LCD screen.
4	Enter the IP address of the NTP server using the <Select> and arrow buttons, then press <Enter> to save. <b>Note:</b> Entering 0.0.0.0 as the IPA will cause the server to synchronize with its own time.

An NTP Server can also be configured using the on-board Web UI under the [System Tab](#).

## Guide to using DVC Files

Digital Video Command (DVC) Files are text files that can be placed within the storage medium of an Adtec unit to allow a user to run Lists, Schedules, API Commands, or Parallel port configurations. The files can be placed in storage to be recalled later or set to automatically execute upon power up of the unit.

The "**RUN**" API command is used to execute DVC files. The **RUN** command uses the command handler SYSD and has five options and six executable arguments available.

### Command Format:

\*.SYSD RUN [option code] [argument ]

### Options:

Code	Function
D	Debug output
I	do not initialize; relevant to "LST" and "SCH" files only
F	do not finalize; relevant to "LST" and "SCH" files only
M	Add using multiples; relevant to "LST" files only
C	always evaluate initialize directive; used for wildcard UNITS_NAMED mode

**Note:** in the table below, "xxxx" is the filename being executed.

Code	Function
file name	placeholders and wildcards valid
CMDxxxx.DVC	a series of commands which execute sequentially as if typed at the command prompt manually
SCHxxxx.DVC	a list of "rules" or scheduled events, which have the general form of <time> <command>. When the current time satisfies a rule in the schedule, the command is executed
LSTxxxx.DVC	a series of media filenames which play sequentially, also can be thought of as a 'playlist' of media content
PARxxxx.DVC	maps certain commands to be executed when certain pins are shorted on the parallel port, a parallel port configuration file
any smil file name	

### Quick Notes:

1. DVC files that end with AUTO, boot at startup, ex: CMDAUTO.DVC.
2. The first 3 characters of a DVC file specify the type.
3. DVC files can be run from the boot process, scheduler, external controller, parallel port and/or manually via serial/network.
4. The last line of all Adtec DVC files must contain a carriage return <enter>.

## Troubleshooting:

1. Spaces are not permitted in DVC media file names without delimiters. Please use "quotes" around media file names that contain spaces. Spaces are generally not recommended in file names, but can be used.
2. Some text editors will automatically add a .TXT extension to a newly created file. Make certain that this does not happen.
3. Two forward slashes `//` or a single pound sign `#` can be used as comments in DVC files. Be careful not to place comments at the beginning of PAR files.

**SHD Files** - A Shadow file is a text file stored on an Adtec unit's storage medium that contains a list of System Time Clicks (tics) followed by a command. The commands will execute at the specific time (tics) within the playing of a specific media file. Form- <MEDIA FILE NAME>.SHD

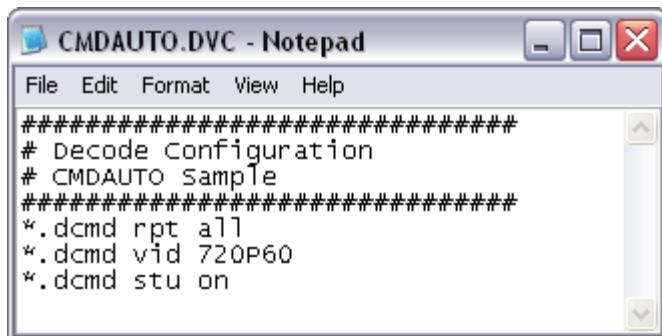
**MVL Files** - An MVL file is a Mirror List file (MLF) that contains a list of files to be mirrored from an ftp server. MLF is brought over from our legacy products, but the file itself is now recommended to use an MVL extension instead of MLF or TXT.

**SMIL Files** - smil is a newer format for creating playlist files for Adtec players that are based upon the smil XML standard. The smil format can be very powerful, but at this time the players utilize them in a basic way. SMIL Files are required for LIST LOAD operations. They will allow smoother starts compared to LST.DVC files because LST.DVC files will run immediately when called regardless of what the player is doing. If a smil file is loaded, the first spot of the list is played when the currently playing file is finished. List loads can end up looking smoother to the end user (depending upon use) due to the noninterruptive behavior.

## CMDxxxx.DVC Files

Command DVC files are text files that contain a series of commands which execute sequentially as if typed at the command prompt manually. These types of files are commonly used for easy configuration of multiple units or to change configurations on the fly.

An example CMDAUTO.DVC file that runs on bootup may look like the following:



```
#####  
# Decode Configuration  
# CMDAUTO Sample  
#####  
*.dcmd rpt all  
*.dcmd vid 720P60  
*.dcmd stu on
```

This file will change the repeat setting, configure the video output to 720P60 and configures the startup option.

## SCHxxxx.DVC Files

Schedule DVC files are text files that contain times and dates to run a specific command. These are most commonly used for timed video playback.

The format of strings within the SCH file are:

dd MM/DD/YY HH:MM:SS <COMMAND>

Where:

dd = day of the week, MO (Monday), TU, WE, TH, FR, SA, SU.

MM = 2 digit Month from 01 to 12.

DD = 2 digit day from 01 to 31.

YY = 2 digit year from 00 to 99.

HH = 2 digit hour 00 to 23 (24 Hour military time)

MM = 2 digit minute from 00 to 59

SS = 2 digit second from 00 to 59

<Command> = The command you want to issue at the given time

Schedules also have the capability of using WILDCARDS (--) meaning that all fields do not need to be filled in. For example:

If the user intends to run a file at 8:00AM every Monday, their schedule line would show the following:

```
MO --/--/-- 08:00:00 *.dcmd ps myfile.mpg
```

If the file needed to be played every day it would show

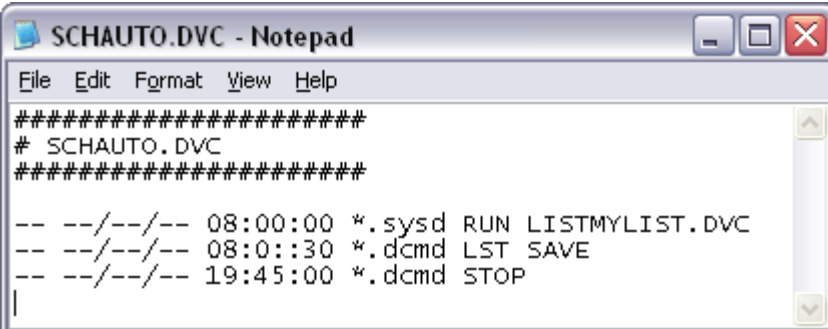
```
-- --/--/-- 08:00:00 *.dcmd ps myfile.mpg
```

Or if it needed to play only on the first of the month it would show

```
-- --/01/-- 08:00:00 *.dcmd ps myfile.mpg
```

A sample schedule that runs a list each day at 8:00AM and stops at 7:45PM (19:45) may look like this.

**Quick Notes:** The difference between RUN and LST LOAD when using lists. LST LOAD does not work with DVC files. RUN does not work with LST .smil files.

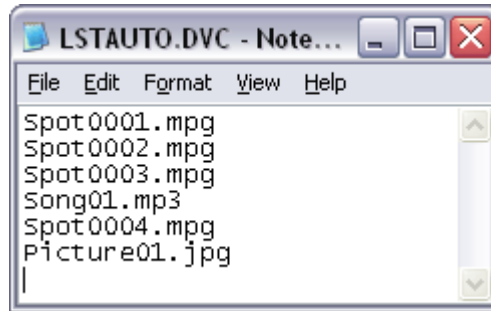


```
SCHAUTO.DVC - Notepad
File Edit Format View Help
#####
# SCHAUTO.DVC
#####

--- --/--/-- 08:00:00 *.sysd RUN LISTMYLIST.DVC
--- --/--/-- 08:0::30 *.dcmd LST SAVE
--- --/--/-- 19:45:00 *.dcmd STOP
```

## LSTxxxDVC Files

List DVC files are text files that contain a list of media files to play in a sequential order. A sample play list with video, music, and pictures may look like the following.

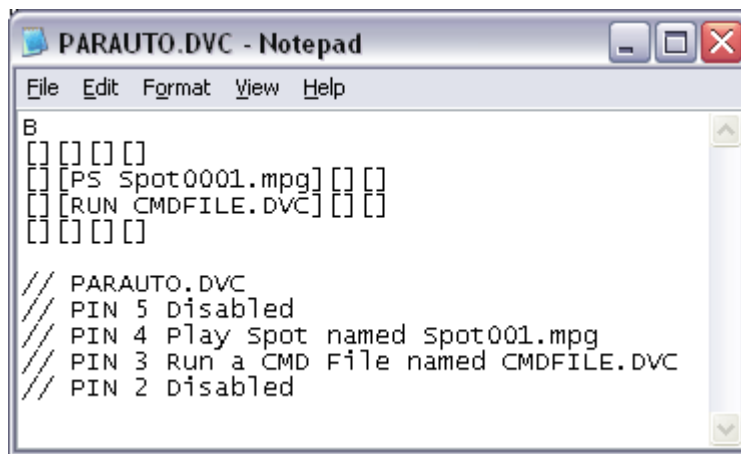


When the following file is loaded onto the player it can be instantly loaded and played by issuing a \*.sysd RUN LSTAUTO.DVC command or by resetting the box. The RUN command will load a DVC list into memory and play it immediately.

## PARxxxx.DVC Files

Par DVC Files are text files that configure the data inputs of the parallel port. The 'Parallel Port' section contains more hardware information on the parallel port.

A sample PAR file may look like the following:



The first letter of the file must be a B for bitmode (4 inputs) or M for multiplex mode for muxmode (15 inputs, 16 data bits) utilized with an Adtec PARMUX board.

Each row afterwards is for each data bit, D0 – D3 where D0 = Pin 5, D1 = Pin 4, D2 = Pin 3, and D3 = Pin 2. Each state is separated by open and closed brackets '[' ']' that will contain an API command to run. The states are low, rising, high, and falling respectively as seen in the next section.

The rising edge is the most common state to put commands in. A combination of rising and falling can be used for latching contact closures. A non-usable text sample of the rows and columns.

PIN / BIT	LOW	RISING	HIGH	FALLING
5 / D0	[]	[]	[]	[]
4 / D1	[]	[]	[]	[]
3 / D2	[]	[]	[]	[]
2 / D3	[]	[]	[]	[]

The PARAUTO.DVC file above will play a file when Pin 4 is closed or gets +5VDC. It will run a command file when Pin 3 is closed. Pin 5 and 2 are disabled, they will have no effect when +5VDC is applied. Disabling pins is sometimes useful once a file starts to keep a user from pressing the button again thus interrupting a possible show. PAR files with blank commands can be used to disable all inputs until the next PAR is loaded.

### Troubleshooting:

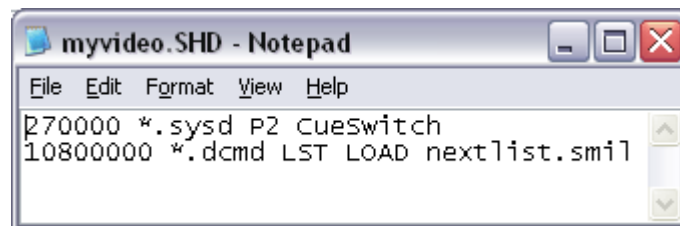
1. **PARTEST** can be used to simulate functionality. See the API for more details.
2. **PARDUMP** is a legacy command brought over which shows parallel changes via Serial. This command may not be implemented in some firmware versions.
3. **PARMUX** Board documentation, for details on 15 data inputs, can be found by contacting Adtec Support for additional details.

### Shadow Files (xxxx.SHD Files)

A shadow file is a text file that will execute an API command at a specific time while a specific file is playing. The time format used is tics, while a tic in relation to seconds is 90,000 (ninety thousand) tics per second. The name of the shadow file determines which video file will run it. For example, if the video is named 'myvideo.mpg', the shadow file will be loaded when myvideo.mpg plays if the name of the shadow is 'myvideo.SHD'. The command will then execute after the said amount of tics have passed.

Shadow files are commonly used to trigger events during playback of a specific spot, such as trigger an external device via RS232, load a new playlist, or display an OSD.

A Shadow file may look like the following:



This example would send an RS232 ASCII string 'CUESWITCH' from the serial port 3 seconds (90,000 \* 3) into playback of myvideo.mpg. At 120 seconds into playback (90,000 \* 120), the next list will be loaded IF THE FILE IS AT LEAST 120 SECONDS.

### Troubleshooting:

1. The **API command** to turn Shadow recognition on is **SHADOW/SHD**. '\*.dcmd shd on', always remember to '\*.dcmd cfg save'. Shadow is turned off by default.
2. Shadow files can be placed in /hd0/shd/
3. There are 90,000 Tics Per Second., The first line of tic and command in the file must be greater than 4500.

## Video Connector Compatibility

### Reference




With the wide variety of display targets supported by modern video decoders, and the multitude of video monitors that can be used, it can be challenging to match a display target to compatible type of video input connector. Adtec Digital has created this reference to make it easier to match video monitors and their input connectors to compatible display target settings in our products, in order to get the best performance out of your Adtec Digital device.

Here are some common rules regarding the matching of your video input connector with the display targets it supports:

- Video display targets must be selected based on the **monitor type** that will display them. In this reference, we list out the display targets specific to televisions and PC monitors.
- Display targets **must** also be matched to the **connector type**.
- DVI connections support both television standards and PC monitor standards.
  - If you are using a DVI connector, match the display target to the monitor type.
- Newer LCD and plasma monitors may support both television standards and PC monitor standards.
- If you are using an LCD or plasma monitor, match the display target to the connection type.
  - Use PC monitor standard display targets for VGA connections
  - Use TV standard display targets for other connections.
- If you are using a converter/adaptor cable (for example converting HDMI to DVI), the connector to consider is the one that plugs into the monitor- that connector must determine the display target used

## Television Standards

If you are connecting your device to a television or monitor that supports television standards, you should use one of the following connections and display targets.

Connector on Adtec Device	Connector on Display	Signal	Colorspace	Image	Notes
Composite (BNC or RCA)	Composite (BNC or RCA)	Analog	YCrCb		Provides only video. For audio, use separate SPDIF, RCA (l/r) or unbalanced audio cable depending on the Adtec Device
DVI Single Link	HDMI	Digital	YCrCb or RGB		Provides only video. For audio, use separate SPDIF, RCA (l/r) or unbalanced audio cable depending on the Adtec Device
HDMI (Soloist HD Pro, mediaHUB HD Pro and mediaHUB-HD 422 Only)	HDMI	Digital	YCrCb or RGB		Provides audio and video

A complete list of recommended and supported video resolutions can be found in Chapter 2 under the [Display Target](#) section.

### Troubleshooting Guide

Issue	Cause
The video displays but appears shaded in magenta or green.	The colorspace of the selected display target does not match the monitor and/or connection type used. Either switch your video display target or switch your connector.
No video is displayed or the monitor reports that it has 'no sync' or 'out of range'	Possibility 1: The wrong input is selected on your monitor. Possibility 2: A display target has been chosen that is not supported by your monitor.
The video is displayed but does not fill the entire screen, there may be black bars on the top and bottom or on the sides	Possibility 1: The view mode of the monitor is set incorrectly (full-screen, stretch, dot-for-dot, through, etc.) Possibility 2: The monitor input being used is expecting a different resolution (aspect ratio) than the selected display target is providing

# Chapter 5 - Appendix

## Appendix A - GNU General Public License

Version 2, June 1991 Copyright (C) 1989, 1991 Free Software Foundation, Inc.  
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

### GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you". Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright

notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program. You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program. In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program. If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances. It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice. This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our

decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

#### How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.> Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode: Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker. <signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## Appendix B - Media Encoding Parameters

When creating content for the Soloist HD Pro, you need so ensure that your encoding parameters match the decoder for best results.

### **MPEG 2 Encoding**

Creating MPEG2 files, it is recommended to use the following parameters:

**Multiplex Type:** MPEG2 Transport Stream

#### **Transport Steam composition:**

- The file should start with a transport sync byte (0x47) and should maintain packet alignment throughout the entire duration.
- There should be a minimal amount of fill packets at the start of the file.
- The first non-fill packet should be the PAT packet.
- The next non-fill packet should be the PMT packet(s).
- The next non-fill packet should be the first video stream packet.
- The first video stream packet should contain the following:
  - Adaptation indicator marking the presence of a PCR.
  - The adaptation flag field should have the discontinuity indicator set.
  - Valid PES header with PTS and DTS.
  - Valid video sequence header and GOP header.
- Use the following recommended PID values:
  - PMT: 0x1e0 (480dec)
  - PCR: 0x1e1 (481dec, must reference video PID)
  - Video: 0x1e1 (481dec)
  - Audio1: 0x1e2 (482dec)
  - Audio2: 0x1e3 (483dec)

**Audio:** 192Kbps AC-3 or MPEG Layer 2

#### **HD Content:**

- Resolution: High Profile up to 1920x1080 (1080i60 or 1080i50) Note that 1080i60 is not supported
- Bit Rate: 25Mbps constant bit rate (CBR).

#### **SD Content:**

- Resolution: Main Profile up to 720x480 NTSC or 720x576 PAL
- Bit Rate: 8Mbps constant bit rate (CBR)

## **MPEG 4.10/AVC/H.264 Encoding**

H.264, MPEG-4 Part 10, or AVC, for Advanced Video Coding, is a digital video codec standard which is noted for achieving very high data compression.

The **ITU-T H.264** standard and the **ISO/IEC MPEG-4 Part 10** standard (formally, ISO/IEC 14496-10) are technically identical.

Creating AVC files, it is recommended to use the following parameters:

**Multiplex Type:** MPEG2 Transport Stream

### **Transport Stream composition:**

- The file should start with a transport sync byte (0x47) and should maintain packet alignment throughout the entire duration.
- There should be a minimal amount of fill packets at the start of the file.
- The first non-fill packet should be the PAT packet.
- The next non-fill packet should be the PMT packet(s).
- The next non-fill packet should be the first video stream packet.
- The first video stream packet should contain the following:
  - Adaptation indicator marking the presence of a PCR.
  - The adaptation flag field should have the discontinuity indicator set.
  - Valid PES header with PTS and DTS.
  - Valid video sequence header and GOP header.
- Use the following recommended PID values:
  - PMT: 0x1e0 (480dec)
  - PCR: 0x1e1 (481dec, must reference video PID)
  - Video: 0x1e1 (481dec)
  - Audio1: 0x1e2 (482dec)
  - Audio2: 0x1e3 (483dec)

**Audio:** 192Kbps AC-3 or MPEG Layer 2

### **HD Content:**

- Resolution: High Profile up to 1920x1080 (1080i60 or 1080i50) Note that 1080i60 is not supported
- Bit Rate: 25Mbps constant bit rate (CBR)

### **SD Content:**

- Resolution: Main Profile up to 720x480 NTSC or 720x576 PAL
- Bit Rate: 5Mbps constant bit rate (CBR)

**NOTE:** Content should be padded with a couple black frames front and back for improved visual transitions between clips.

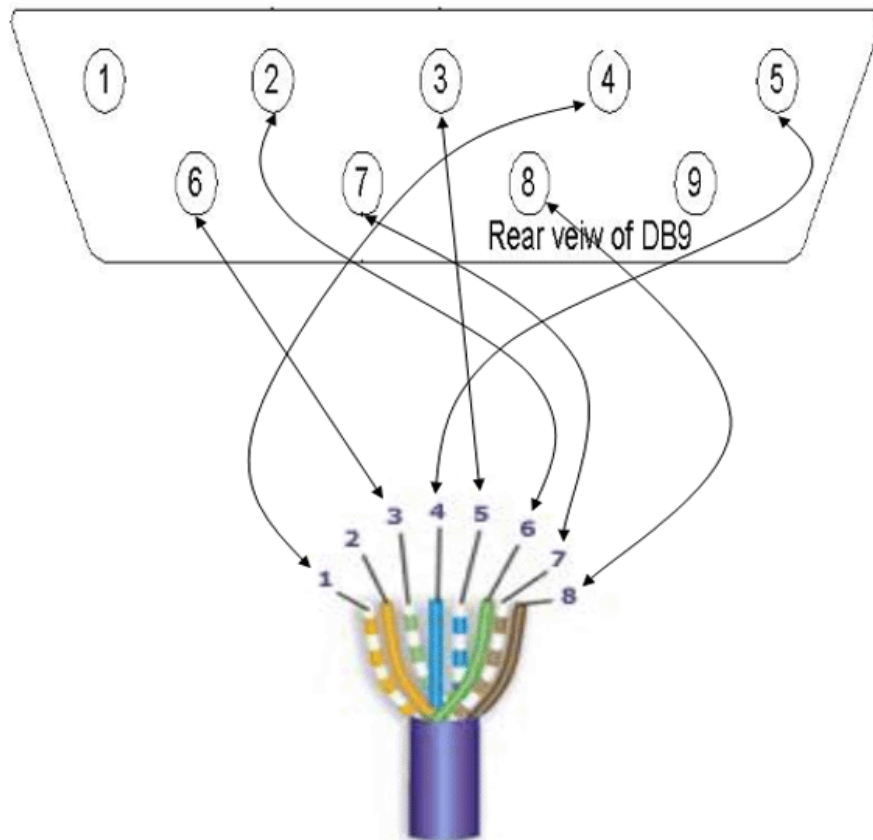
## Appendix C - Connector Specifications

The Soloist HD Pro COM1 and COM2 ports are customized RJ45/RJ48 connectors that allow RS232 and either RS-422 or RS-485. Note that there is no hardware flow control for RS-232 and that RS-485 is receive only.

The pinout of COM1 and COM2 is:

Pin	Use
1	Data Set Ready (DSR)
2	Carrier Detect (DCD)
3	Data Terminal Ready (DTR)
4	Ground (GND)
5	Receive Data (RXD)
6	Transmit Data (TXD)
7	Clear to Send (CTS)
8	Request to Send (RTS)

### DB9 to RJ45 Serial Connector Wiring



## Communications Port Interface Adapter

DB9 Female	RJ45	Notes
1	NC	No Connect (NC)
2	6	Receive Data (RXD)
3	5	Transmit Data (TXD)
4	1	Data Terminal Ready (DTR)
5	4	Ground (GND)
6	3	Data Set Ready (DSR)
7	7	Request to Send (RTS)
8	8	Clear to Send (CTS)

## Appendix D - Technical Specifications

### Video

- Video Outputs: One decode configurable to SDI, HDMI, Composite (BNC).
- Sources: ASI, GigE or Internal Hard Drive
- Decode Up and Down conversion SD to and from HD
- Error concealment and de-blocking filter.
- Video aspect format: Auto, 4x3 or 16x9
- Back to back frame accurate playback from same output port.

### Standard Definition (SD) Decode

- Maximum bit rate: 15 Mbps
- MPEG2 SD MP@ML, Full D1. NTSC, PAL B, G.
- MPEG4.2 ASP@L5, Full D1. No global motion compensation.
- MPEG4.10 (AVC/H.264) BP@L3 up to 720X480p30 or 720X576p25 resolution, including FMO and ASO.

### High Definition (HD) Decode

- Maximum bit rate: 25 Mbps
- MPEG2 MP@HL up to 1920X1080i60 or 1080i50 resolution.
- MPEG4.10 (AVC/H.264) MP@L4.1 and HP@L4.1 up to 1920X1080p24 or 1080i50 resolution.

### Audio

- Audio Outputs: S/PDIF digital audio (RCA female), Analog audio on balanced stereo 5 Pin RST, HDMI, SDI Embedded stereo audio pair per SMPTE 272M (SD) or SMPTE 299M (HD) based on target video resolution
- Simultaneous embedding on HDSDI, HDMI and Analog balanced output

## **Audio Decode**

- Dolby Digital AC-3: Bit rates up to 640kbps. Sample rates of 32, 44.1 and 48KHz. Downmix to 2 channel Dolby Pro Logic, Multi-channel 5.1 downmix.
- MPEG 1 and MPEG 2 Layer I, II and III (MP3) 2.0: Bit rates up to 448kbps (Layer I), 384kbps (Layer II) or 320kbps (Layer III). Sample rates of 16, 22.05, 24, 32, 44.1 and 48KHz. Single channel, dual channel, joint stereo and stereo modes.
- AAC-LC MPEG-2 and MPEG-4:(max 384kbps) Sample rates of 7.35, 8, 11.025, 12, 16, 22.05, 24, 32, 44.1 and 48KHz.

## **Soloist HD Pro Media Player**

- Storage: 750GB internal provides up to 70 hours at 10 Mbps
- Embedded Linux real time operating system.
- Power: 70-240 VAC 50-60Hz and 65 Watts (20 Watts typical)
- Size: 1RU rack mount chassis. 19" wide, 10.5" deep, 1.75" tall
- Weight: 8 lbs.
- Environmental: 0 to 90 Degrees Fahrenheit, Less than 70% RH, Non-Condensing

## **Communications and Control**

- Ethernet 10/100 (RJ-45) Half Duplex, Full Duplex, Auto Negotiate
- GigE 10/100/1000 (RJ-45) Half Duplex, Full Duplex, Auto Negotiate
- Ethernet Protocols: Telnet, FTP, Adtec command API.
- Serial Communications: 2-RS232 (38400-115200 bps, 8, 1 N)
- Embedded Automation: List, Loop, Schedule Logging.

## **Front Panel**

- Keypad: Mode, Select, Enter, Escape, Up, Down, Left, Right
- Blue Translucent LCD (20 characters by 2 rows)
- Host Status LEDs Power, Alarm, Link, Busy, Storage/Aux.
- Decode Operation LEDs Play, Multicast, Video, Audio, Display Target (NTSC, PAL, 720, 1080, Other), Alarm