

signEdje

High Definition Broadcast Player

USER GUIDE

02.07.08

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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://adtecdigital.com/support/support-request>

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

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

* 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 signEdge is the perfect solution for High Definition Plasma and LCD digital signage or kiosk applications. The signEdge 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 payout 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.
- **Small Size:** signEdge is a powerful multimedia HD player packed in a small package less than 1.5" thick, perfect to attach to the back of an LCD monitor with the optional signSleeve VESA mount.
- **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 Payout:** The signEdge 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 payout 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 payout. With the ability to view log files and real-time payout data, day-to-day operations and troubleshooting is streamlined.

Applications

The signEdge 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 signEdge over IP for point-to-point or multicast payout. Fall back to playback of stored content when live stream is off.
-

What's Included

The **signEdje** ships with the following:

- signEdje Digital Media Server
- Terminal Connection Kit 1:
 - Power cord
 - Ethernet cable
 - serial adapter
- 12 VDC external power supply and power cable (USA) (PN: EXTPS24WATTKIT?)
- Web-based command and control interface
- Manual (on-board)

Other Options

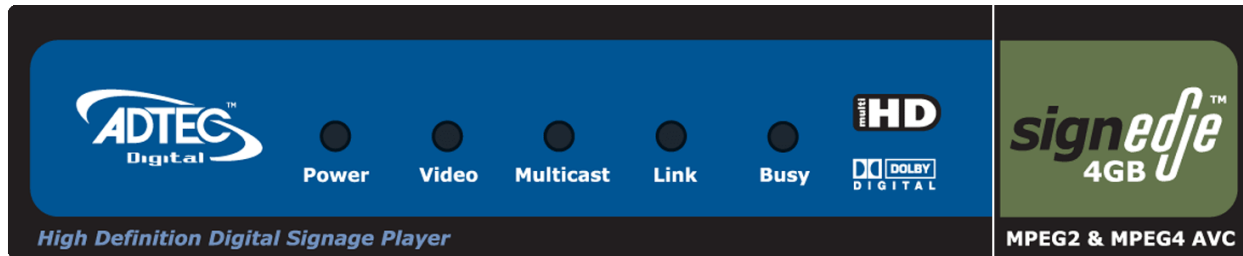
- **DVI-I/Component:** DVI-I (analog and digital) to Component video cable.
- **DVI-D/DVI-D:** DVI-D to DVI-D digital video cable
- **DVI-I/VGA:** DVI-I (analog and digital) TO VGA cable
- **DVI/HDMI:** DVI digital to HDMI cable (No audio support)
- **DVI-I/RGBHV:** DVI-I (analog and digital) to RGBHV cable
- **edjeShelf w/Hardware:** Holds 3 signEdje units, power supplies and provides cable tie slots (PN: 200-024-1AKIT)

Chapter 2 - Getting Started

Front Panel

This is the front panel of a signEdge 4 GB (*Gigabyte*) unit. The front panel on your signEdge unit will vary depending on the capacity of the unit. All units use the same LED lights and functions. The only difference is the color and capacity value on the right side of the panel.

Panel Diagram



Larger than actual size: front panel illustration enlarged to show details

Front Panel Label Options depending on unit model



some models have been discontinued or changed over the life of the product

Front Panel LEDs

The signEdge Front Panel consists of a series of Operation and Function Indicator LEDs providing information as to the current status of the unit.

Status Indicator LEDs

Power

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

Video

Green: Decoding / playing video
Off (not lit): Unit is not decoding / playing video

Multicast

Green: system / traffic activity
Off (not lit): no activity from unit

Link

Green Flashing: Link active
Off (not lit): No link detected

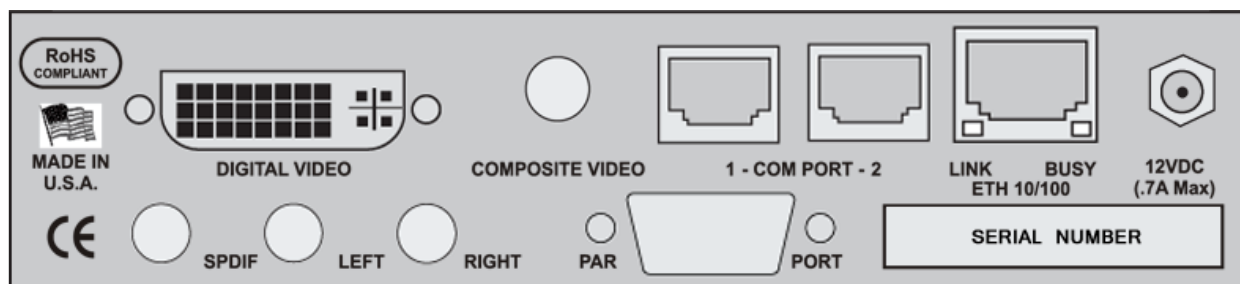
Busy

Orange Flashing: Unit is busy / Network traffic
Off (not lit): No detected network traffic

Hidden Reset Button

Press and hold the Adtec Logo on the front panel. You will feel a “hidden” button being pressed. This will perform a “Soft Reset” of the unit and is an alternative to physically unplugging the power from the back of the unit.

Back Panel Diagram



Note: Back panel layout may differ depending on model and purchase year

Connections

Connection	Function
DC Input	12V DC using external A/C to D/C Power converter
Audio Left	Unbalanced analog audio left channel (RCA)
Audio Right	Unbalanced analog audio right channel (RCA)
Audio SPDIF	Digital Audio (RCA): Configurable as Compressed (for 5.1 AC-3 Audio) or Uncompressed (PCM-2)
Parallel Cntl I/O	Used for input or output control
Digital Video [DVI-I]	Digital Video Interface (DVI-I); Cables purchased separately
Composite Video [CVBS]	75 Ohm terminated NTSC or PAL D1 Composite Video Output. BNC or RCA connector
Com 1	RS-232 Terminal monitor for communicating with the internal host motherboard for diagnostics
Com 2	RS-232 Adtec API control and status terminal port.
Ethernet	10/100BaseT Ethernet RJ-45 jack.
Serial Number	Product Chassis Serial Number

Installation

Up to three signEdge servers can be installed into a one-rack unit 19" rack slot using an optional tray available from Adtec.

Set-up an IP Address

Initially, your signEdge unit will have the default IP Address of 192.168.10.48, Sub-Net Mask of 255.255.255.0 and a Gateway IP Address of 192.168.10.1. This configuration may need to be changed to be integrated into your planned Network Environment.

Different configuration & connection options are discussed later in this manual using [Zero Configuration](#), [Telnet](#) or [Serial](#).

Make Connections

Connect: Make the following cable connections for your setup:

Cable	Connection
Video	Connect a video or Composite monitor to the correct DVI-I or the Analog Composite 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 signEdge 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. signEdge 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 signEdge Media Player will no longer work with the older mediaControl interface software.

- mediaControl will not work with firmware versions 2.3.14 and higher.

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, point a web browser to the device's IP address; the web application sign-in page (see below) will display.

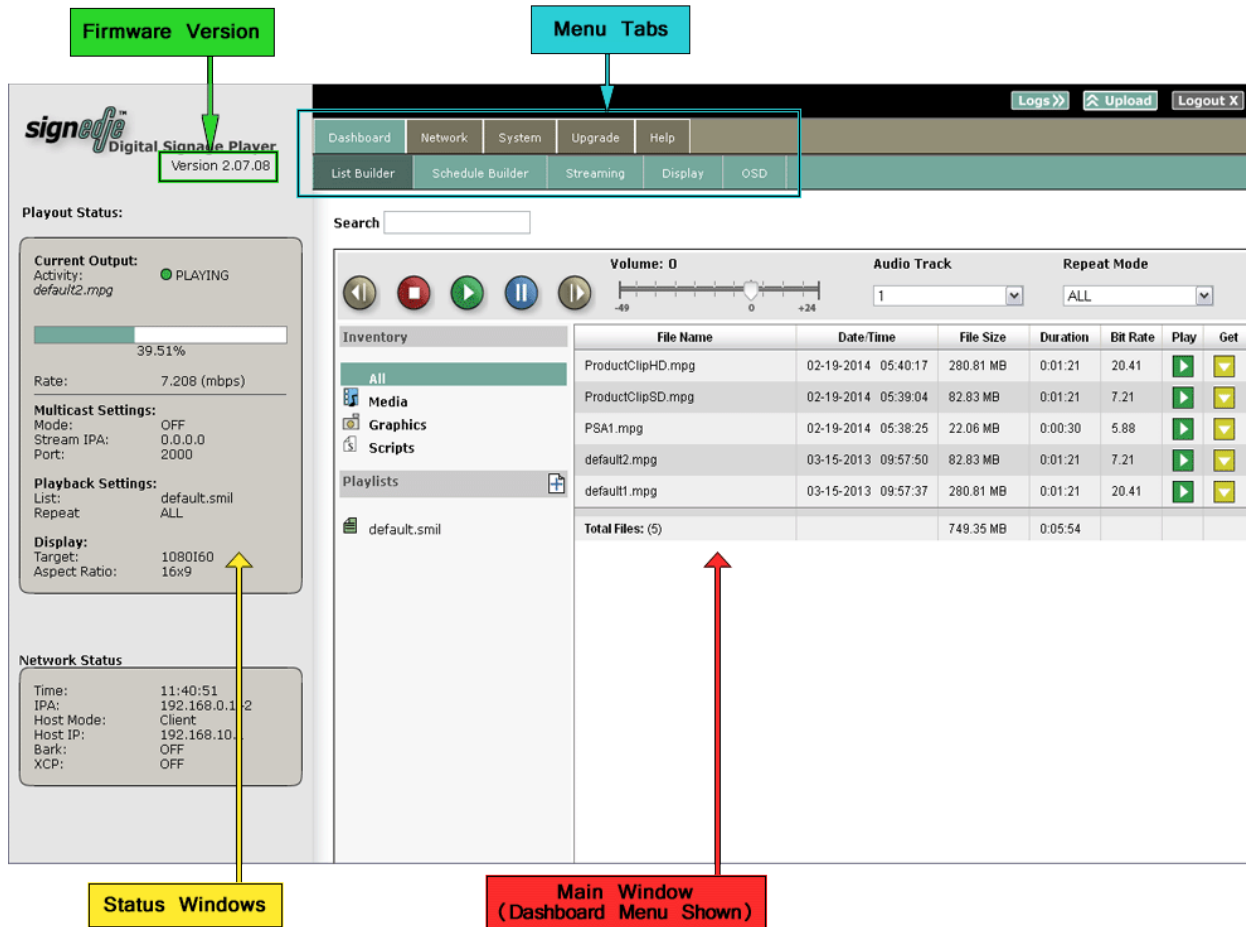
Login

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:



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 signEdge 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 2.07.08 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 payout 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 signEdge player.

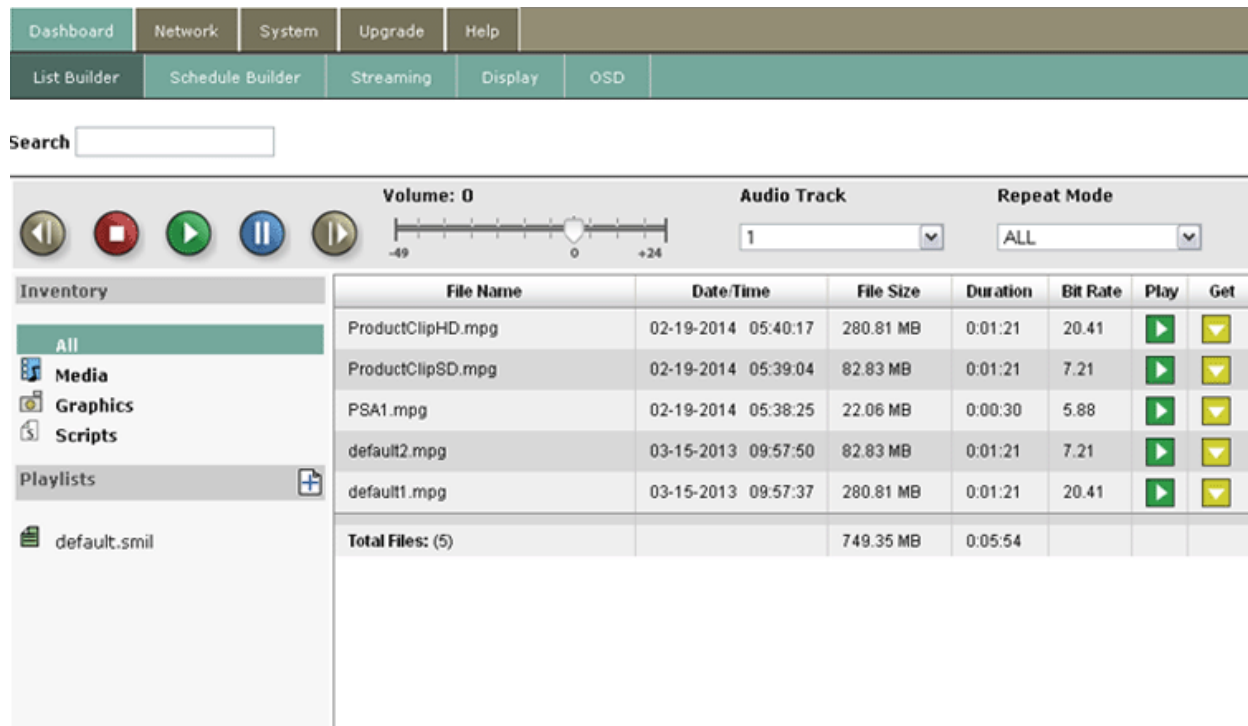


Image reduced for clarity






The *List Builder* screen has four main parts:

- **Virtual VTR controls:** virtual buttons for payout, 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.

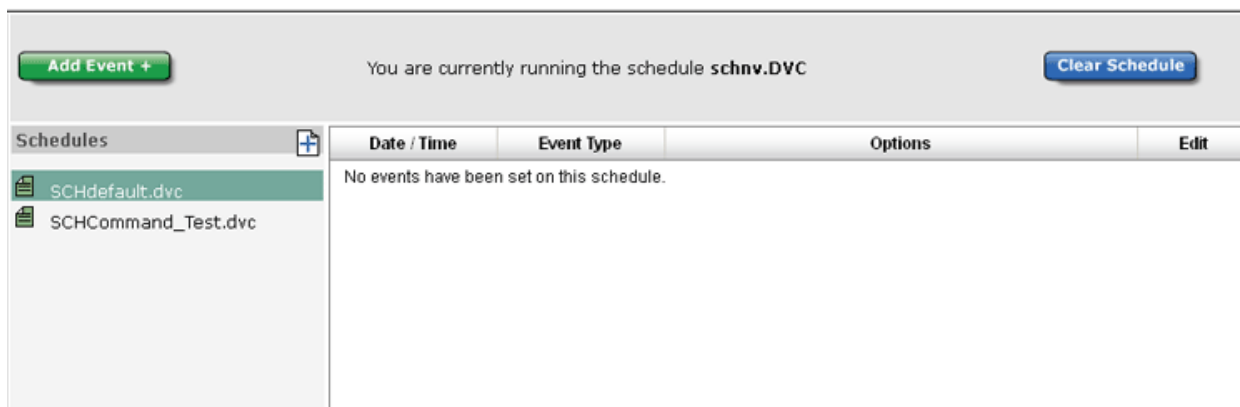
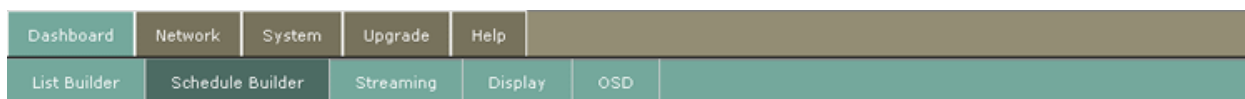


Image reduced for clarity

Streaming Tab

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

Dashboard Network System Upgrade Help List Builder Schedule Builder **Streaming** Display OSD

Apply Cancel

Program Number: ? Audio Track: ?

1

Multicast: ?

Multicast Mode: ? OFF Multicast Port: ? 2000

Multicast IPA: ? 0.0.0.0 Error Recovery (ms): ? 10000

Time Out (ms): ? 1000 RTP (Auto-Detect): ? OFF

Apply Cancel

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	<p>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.</p> <p>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.</p>	<p>0 = track select inactive</p> <p>1 - n = track number</p>	*.DCMD TSN

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

Display Tab

The Display tab is used to integrate the signEdge with the video display.

Dashboard Network System Upgrade Help List Builder Schedule Builder Streaming Display OSD

Apply Cancel

Video:

Start Up Mode: ? ON Auto Format: OFF

Display Target: ? 1080i 60 fps Aspect Ratio: ? OFF

Blank Mode: ? BLACK Video Position: ? Select Position

Video Scaling: ? OFF

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

Audio:

SPDIF Mode: ? UNCOMPRESSED

Apply Cancel

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 Supported Video Targets	*.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	resizes 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.

Dashboard Network System Upgrade Help List Builder Schedule Builder Streaming Display OSD

Apply Cancel

Single OSD: ? Clear OSD

Graphic File: ? No Graphic files

Scaling: ? 100% Position: ? Select Position

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.

Apply Cancel

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
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Mirroring:

Host Mode: Mirror List File:

Host Timer: Host IP:

Client Username: Client Password:

Communications:

XCP: XCP Key:

Bark: Bark Host:

Bark List: Bark Interval:

Bark Port:

Sync Playback:

Mode:

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	Client - Turns mirroring off MirrorList - Use an MIRRORLISTFILE to add/delete local files MirrorClient - 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 filed; 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: ⓘ 0 Days, 1 Hours, 23 Minutes, 10 Seconds

Device Name: ⓘ Power:

Power Cycle

Gateway Address: ⓘ

Ethernet Port (eth0)

☐ DHCP : ⓘ

Ethernet Address: ⓘ

Subnet Mask: ⓘ

NTP Address: ⓘ Time Zone: ⓘ

Date: ⓘ Time: ⓘ

Apply

Cancel

Image reduced for clarity

Control	Function	Options	API Command
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	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
Subnet Mask	Subnet mask address of the unit's Control-Ethernet port	text field; valid IP address in form xxx.xxx.xxx.xxx	*.SYSD IPM
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 and upgrade your unit's firmware and enable additional features. There are two sub-tabs: Firmware and Features

Firmware Tab

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

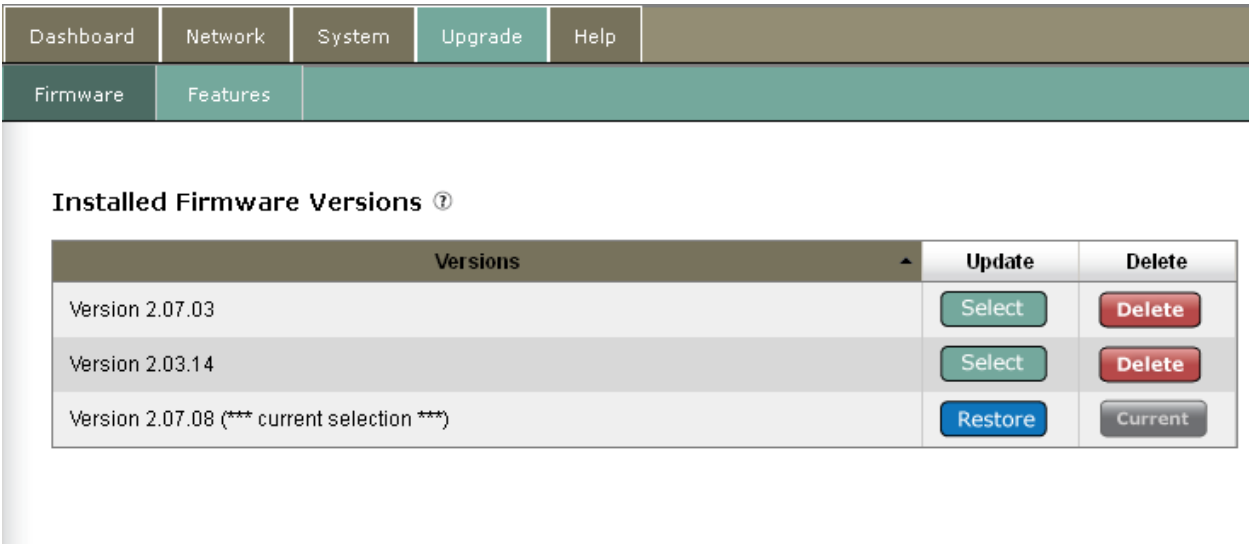


Image reduced for clarity

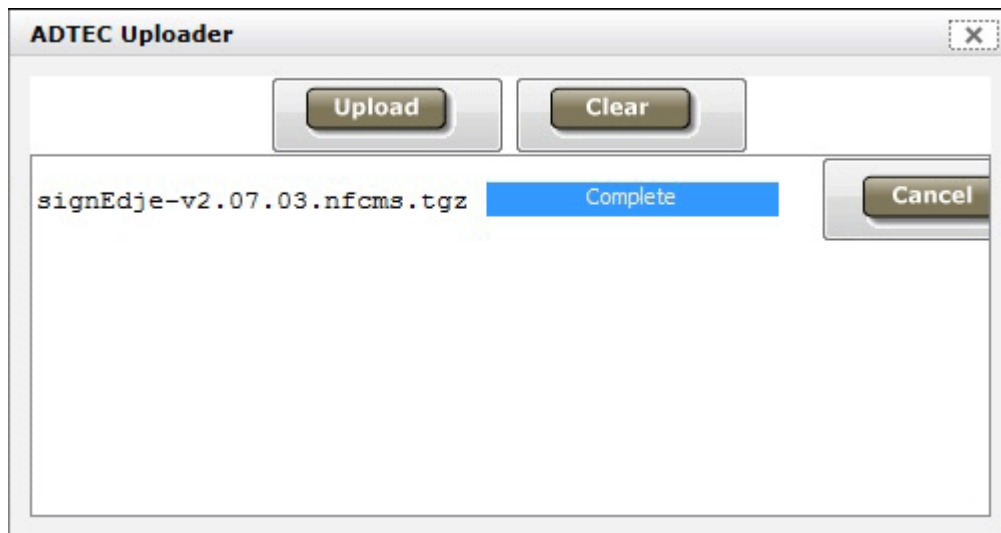
Procedure:

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.

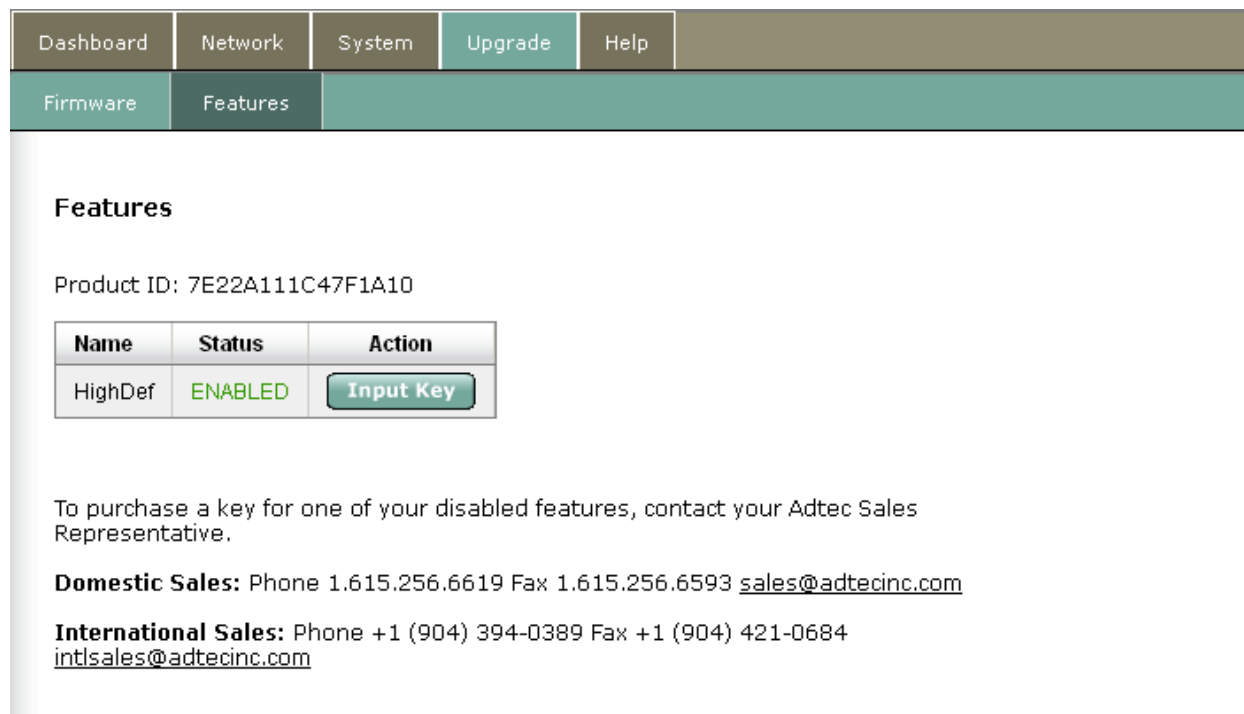
Further Upgrade instructions can be found referencing the [Upgrading Firmware](#) section of this manual.

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.

Features Tab

The Features Tab shows the optional features that you have purchased for use on your signEdge. To purchase additional feature keys, contact your Adtec sales representative.



The screenshot shows the 'Features' tab selected in the top navigation bar. Below the navigation bar, the 'Features' section is titled. It displays the 'Product ID: 7E22A111C47F1A10'. A table lists the features, with 'HighDef' currently 'ENABLED' and an 'Input Key' button. Below the table, there is a message about purchasing keys for disabled features, followed by contact information for Domestic and International Sales.

Dashboard	Network	System	Upgrade	Help
Firmware	Features			

Features

Product ID: 7E22A111C47F1A10

Name	Status	Action
HighDef	ENABLED	<button>Input Key</button>

To purchase a key for one of your disabled features, contact your Adtec Sales Representative.

Domestic Sales: Phone 1.615.256.6619 Fax 1.615.256.6593 sales@adtecinc.com

International Sales: Phone +1 (904) 394-0389 Fax +1 (904) 421-0684 intlsales@adtecinc.com

Image reduced for clarity

There is currently one feature available for the signEdge unit.

- **High/Standard Definition:** the signEdge's decoding standard is High Definition; however, for applications not ready for high definition, the device can be shipped with this feature locked, making it a Standard Definition decoder.

The unit can later be upgraded to High Def through the purchase of a feature key.

Help Tab

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

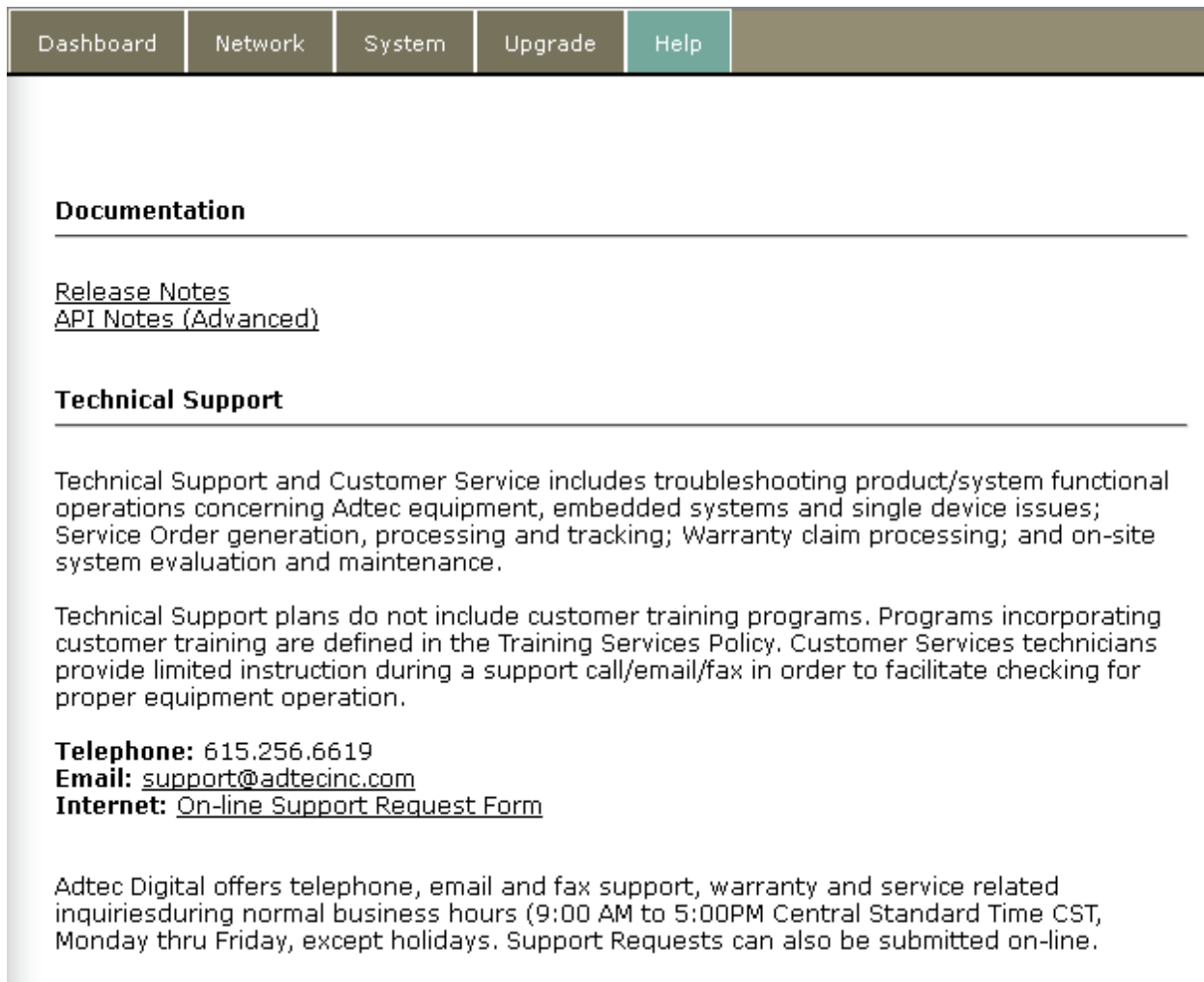


Image reduced for clarity

Chapter 4 - How-To Guides

Connecting to the signEdge Digital Signage Player

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

Telnet Connection

To connect to your signEdge player using a Telnet connection, attach your signEdge 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 signEdge and view the Adtec API notes.

Serial Connection

To use a serial connection with your signEdge, 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 signEdge 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 [X]

Port: [v]

Baud rate: [v]

Data: [v]

Parity: [v]

Stop: [v]

Flow control: [v]

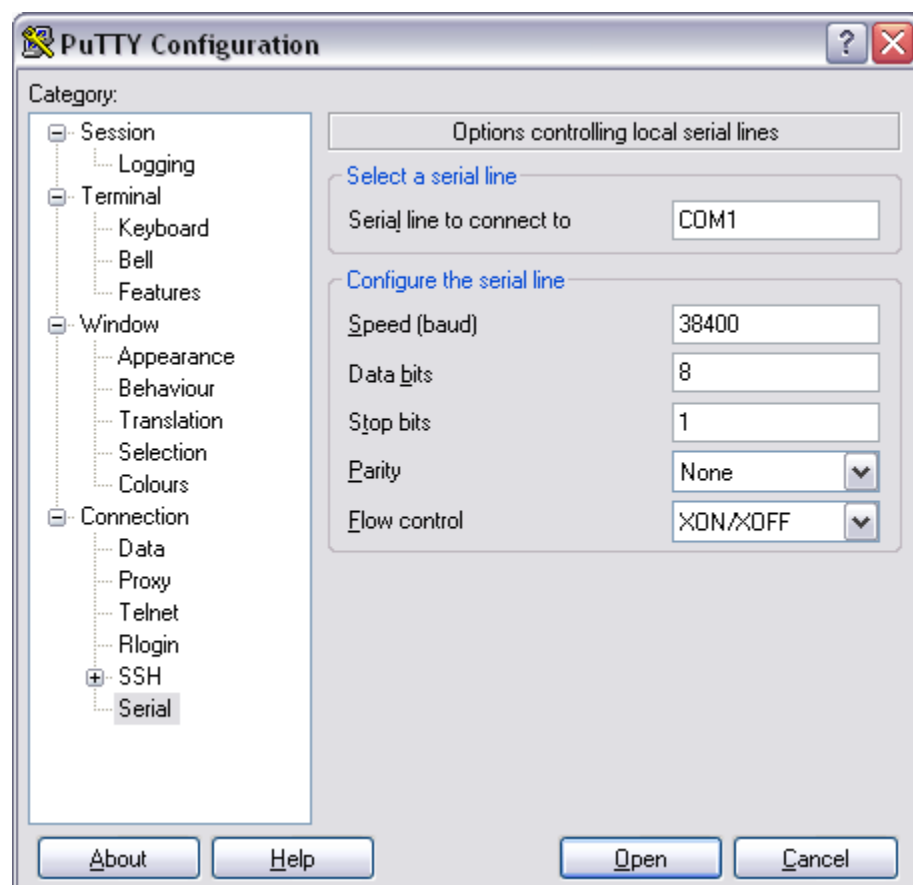
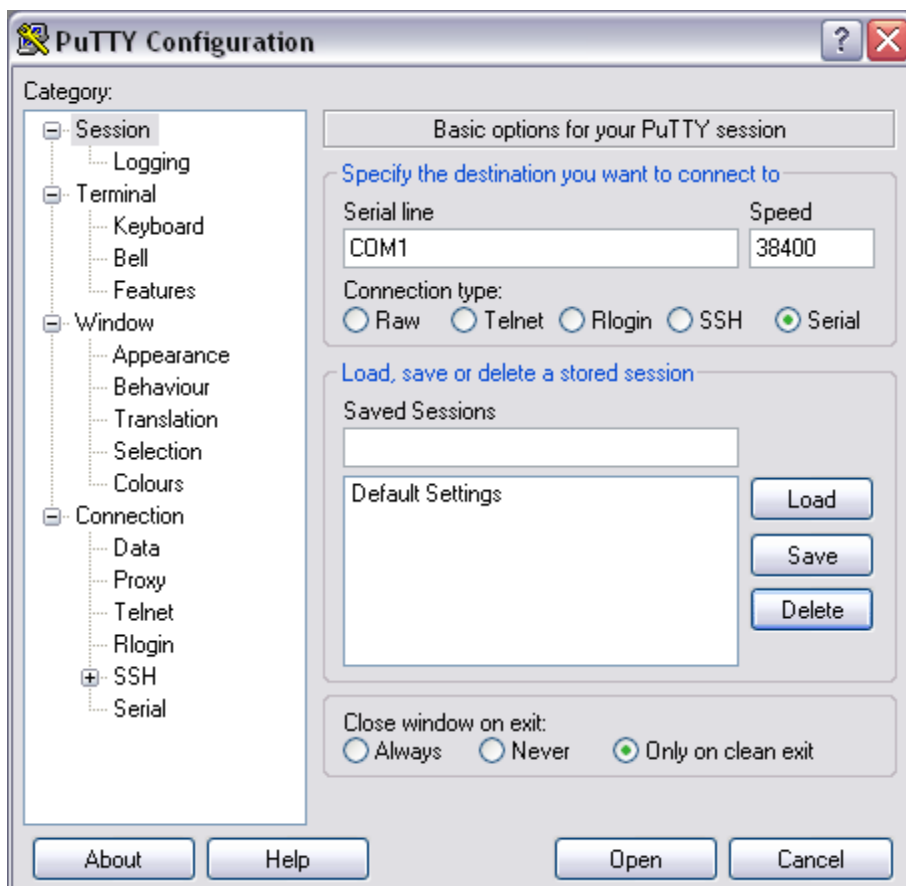
[OK] [Cancel] [Help]

Transmit delay

msec/char msec/line

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 signEdge.
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 signEdge 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 signEdge-010CEB.local or in your Web Browser Address Bar: <http://signEdge-010CEB.local>

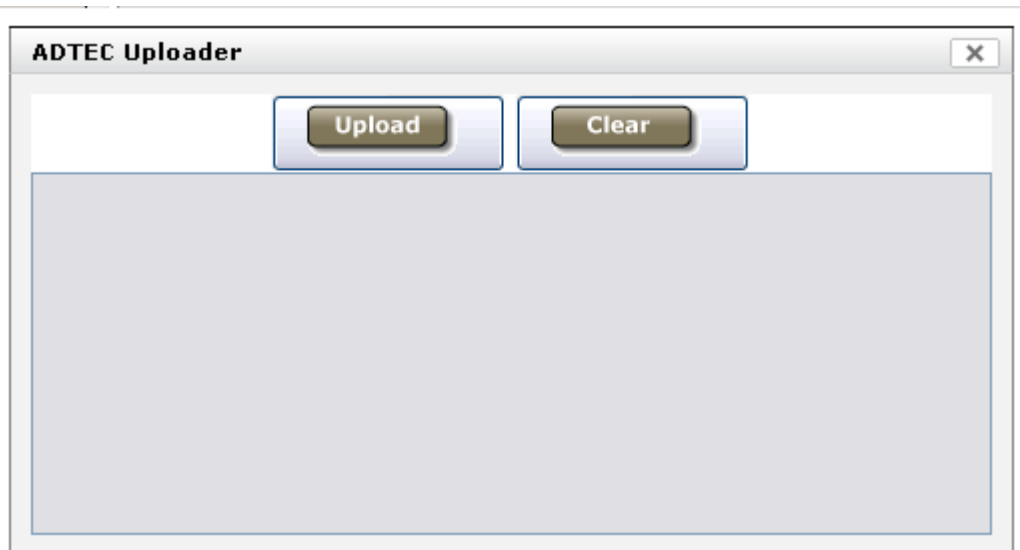
Using the Web UI

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.

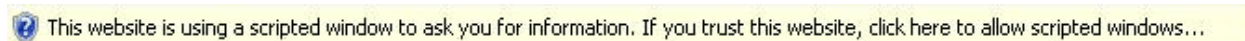
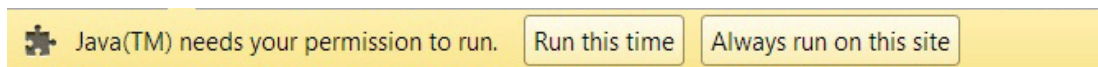
Note: If the Uploader screen does not load properly, you do not have a compatible version of Java installed. In this case, use a 3rd party FTP client to transfer the file to the /hd0/media/ folder on the unit. If you FTP the file to the unit, you will use the same Login user and password you used to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


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.



Please enter Playlist Name:

Tutorial

OK Cancel

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:

Dashboard | Network | System | Upgrade | Help

List Builder | Schedule Builder | Streaming | Display | OSD

Search

Volume: 0

-49 0 +24

Audio Track

Repeat Mode

Inventory	File Name	Date/Time	File Size	Duration	Bit Rate	Play	Get
All	AdtecNAB.mpg	02-19-2014 10:08:22	292.00 MB	0:05:18	7.32		
Media	836061.mpg	02-19-2014 10:06:26	35.48 MB	0:00:30	9.36		
Graphics	SCHCommand_Test.dvc	02-19-2014 06:34:05	0.00 MB	0:00:00	0.00		
Scripts	SCHdefault.dvc	02-19-2014 06:33:39	0.00 MB	0:00:00	0.00		
Playlists	ProductClipHD.mpg	02-19-2014 05:40:17	280.81 MB	0:01:21	20.41		
default1.smil	ProductClipSD.mpg	02-19-2014 05:39:04	82.83 MB	0:01:21	7.21		
Tutorial.smil	PSA1.mpg	02-19-2014 05:38:25	22.06 MB	0:00:30	5.88		
	default2.mpg	03-15-2013 09:57:50	82.83 MB	0:01:21	7.21		
	default1.mpg	03-15-2013 09:57:37	280.81 MB	0:01:21	20.41		
Total Files: (9)			1076.83 MB	0:11:43			

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.

DashboardNetworkSystemUpgradeHelp

List BuilderSchedule BuilderStreamingDisplayOSD

Search

Volume: 0

Audio Track 1

Repeat Mode ALL

File Name	Date/Time	File Size	Duration	Bit Rate	Play	Get
PSA1.mpg	02-19-2014 05:38:25	22.06 MB	0:00:30	5.50		
ProductClipSD.mpg	02-19-2014 05:39:04	82.83 MB	0:01:21	8.16		
836061.mpg	02-19-2014 10:06:26	35.48 MB	0:00:30	8.00		
AdtecNAB.mpg	02-19-2014 10:08:22	292.00 MB	0:05:18	7.00		
Total Files: (4)		432.38 MB	0:07:40			

Inventory

- All
- Media
- Graphics
- Scripts

Playlists

- default.smil
- Tutorial.smil

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.

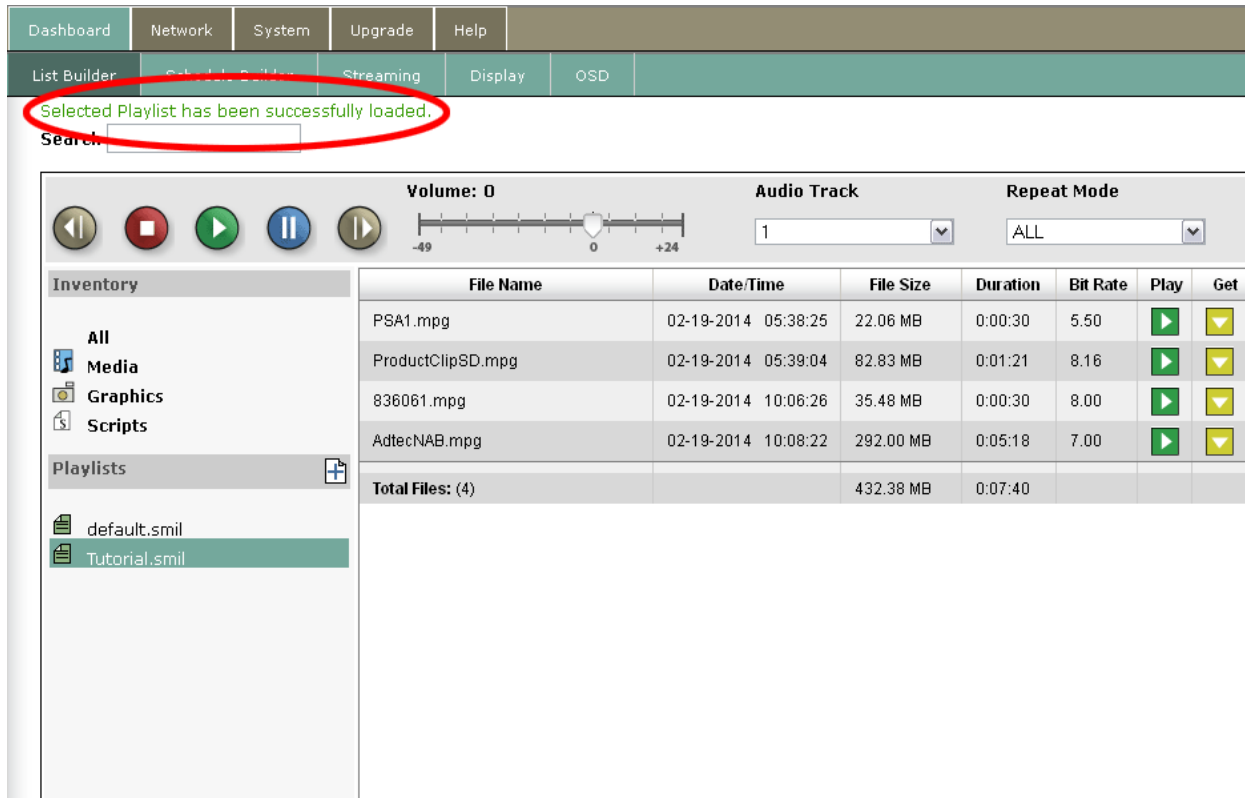


Image reduced for clarity

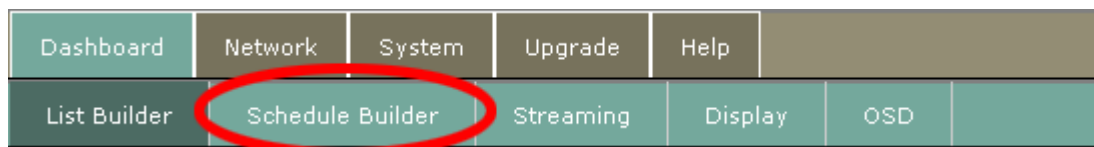
To start your new list, click the Stop Button, using the Virtual [VTR Controls](#), and then the Play Button. Your new list will now be playing.

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:

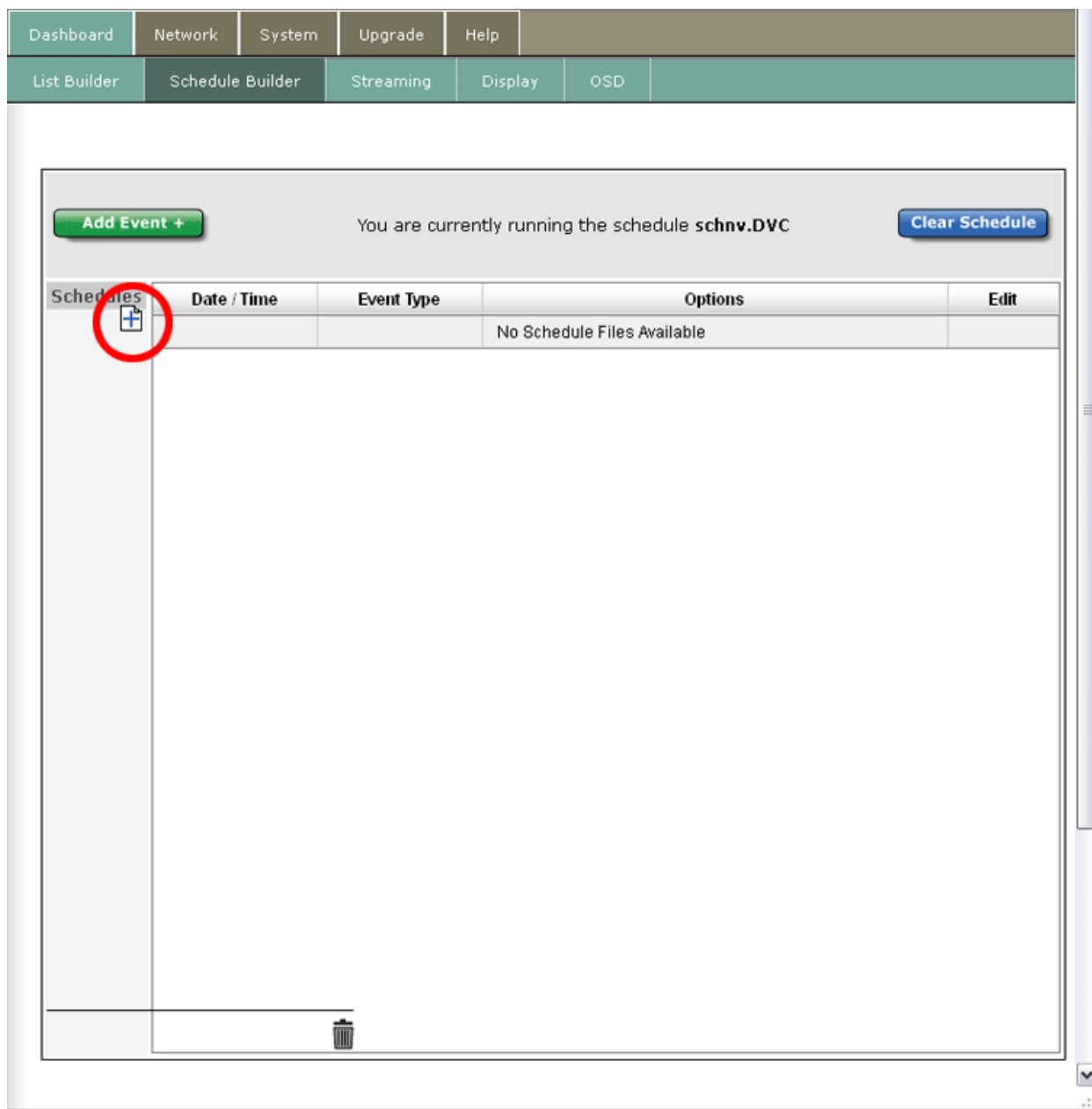
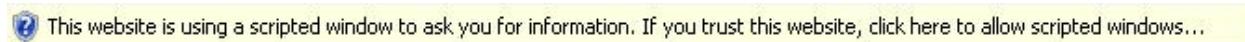
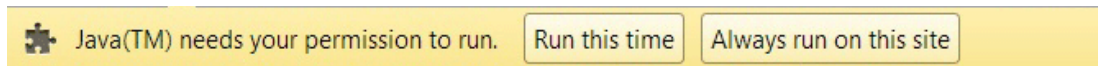


Image reduced for clarity

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:



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. It contains a text input field with the text "Tutorial" and two buttons at the bottom: "OK" and "Cancel". The text "Enter a name for the new schedule:" is above the input field.

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.

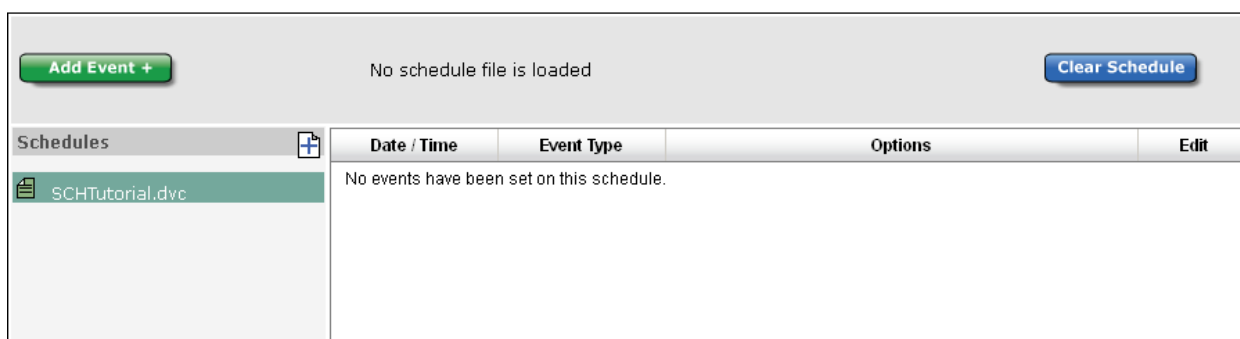
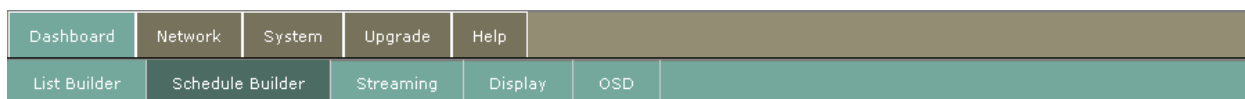


Image reduced for clarity

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

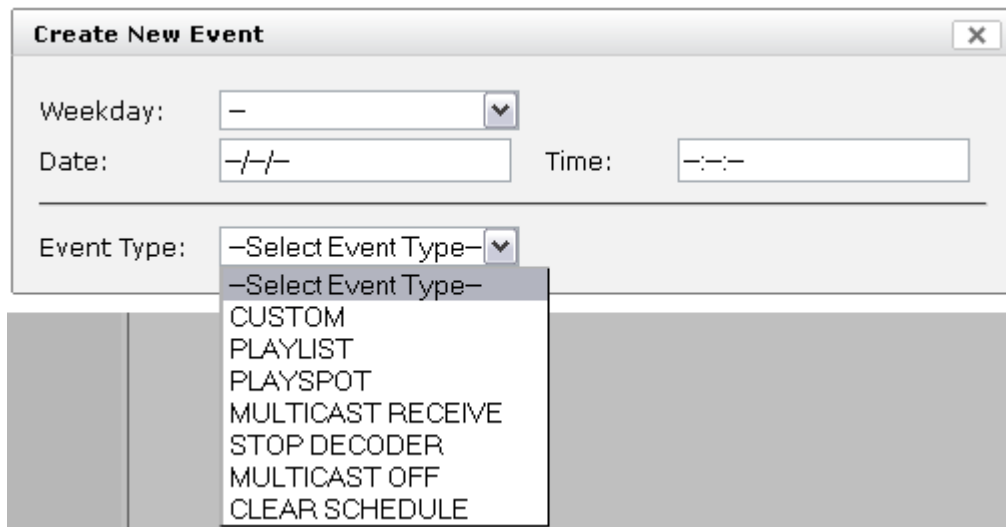
Optional: Enter the '**Date**' you would like the event to occur. This is an optional value to be used when you want the event to only happen on a specific date. Format is month/day/year (MM/DD/YY). If this is not needed, use the default setting --/--/-- and it will not be used.

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.



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.

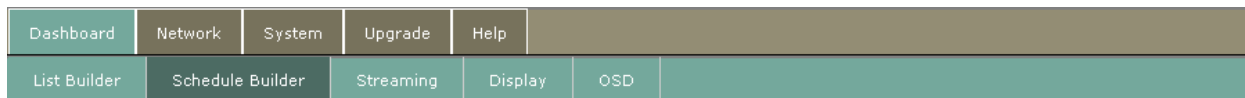


Image reduced for clarity

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.'

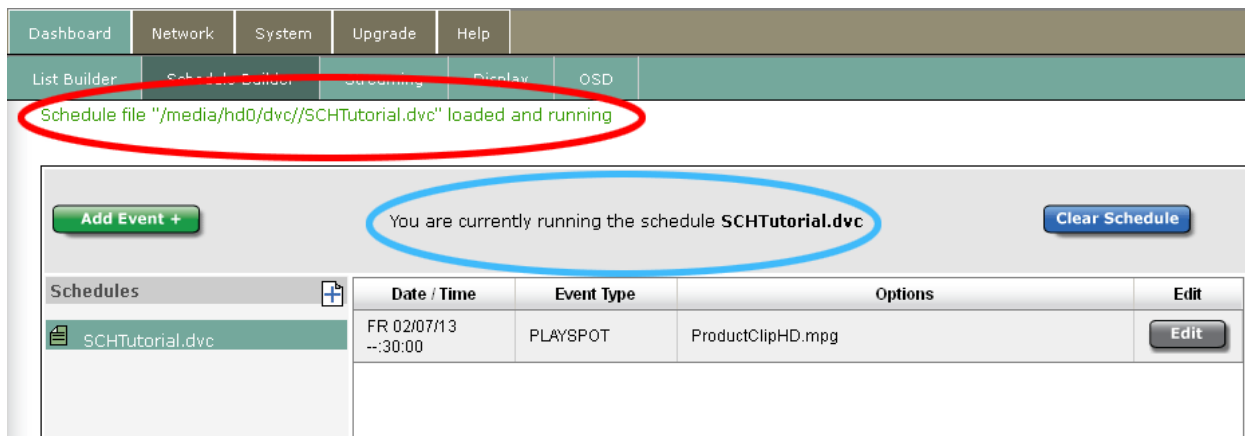


Image reduced for clarity

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.

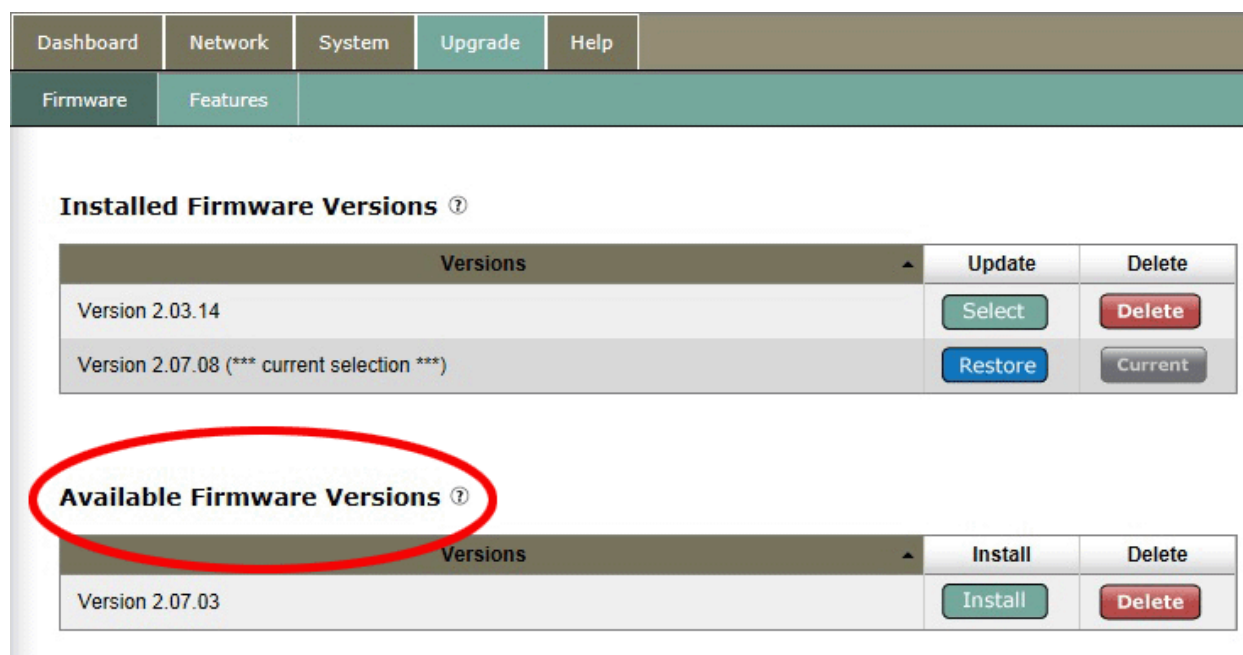


Upgrading Firmware

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 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 for firmware management. At the top is a navigation bar with tabs: Dashboard, Network, System, Upgrade (highlighted), and Help. Below this is a sub-navigation bar with 'Firmware' and 'Features'. The main content area is titled 'Installed Firmware Versions' with a help icon. It contains a table with two rows: 'Version 2.03.14' and 'Version 2.07.08 (*** current selection ***)'.

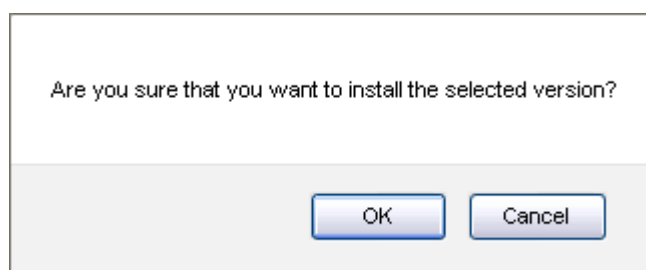
Versions	Update	Delete
Version 2.03.14	Select	Delete
Version 2.07.08 (*** current selection ***)	Restore	Current

Below this is another section titled 'Available Firmware Versions' (circled in red in the original image) with a help icon. It contains a table with one row: 'Version 2.07.03'.

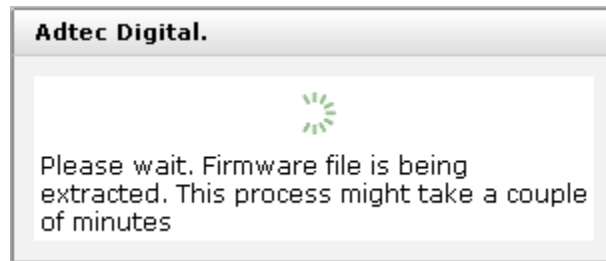
Versions	Install	Delete
Version 2.07.03	Install	Delete

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.



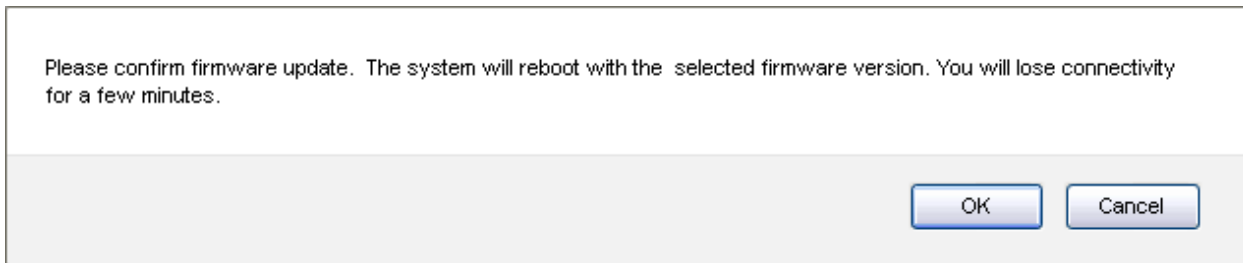
Once you choose to Install the firmware, you should see a pop-up message indicating the firmware file is being extracted to the unit. During this time, your units web controller will not be able to be used. You will see a notice such as this:



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.

Dashboard

Network

System

Upgrade

Help

Firmware

Features

Installed Firmware Versions ?

Versions	Update	Delete
Version 2.07.03 (***) current selection ***)	Restore	Current
Version 2.02.11	Select	Delete
Version 2.07.08	Select	Delete

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.

Please confirm firmware restore action. The system will reboot with factory default settings

OKCancel

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 signEdge will give decode priority to certain configurations over others.

Priority, In order:

1. Scheduled Playback
2. IP Multicast / Unicast Receive
3. 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 signEdge.

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	Once you have your content, upload it to the units and create a list .
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"> 1. connect to the unit. 2. select the Network tab. 3. find the drop-down box for "STC Beacon" and select "Master". 4. repeat this process to create the three Slave units, selecting "Slave". <p>To do this via Telnet:</p> <ol style="list-style-type: none"> 1. log into the unit. 2. use the * STC command to configure the unit. 3. See the API documentation provided by pointing a browser to the IPA of the unit for more details.
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

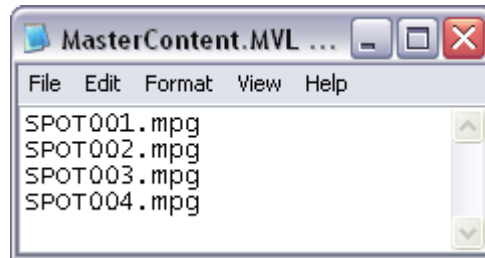
Name	Specification	API Command
Host Mode	The FTP mode of the unit, client/mirrorclient/mirrorlist	*.SYSD HOM mirrorclient
Host IP Address	The FTP Server to mirror content from	*.SYSD HIP x.x.x.x (where x.x.x.x is the IP address of the external server)
Host Timer	Time, in seconds, to wait until next server 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:

An NTP Server can be configured using the on-board Web UI under the [System Tab](#) or using the Adtec API Command NIP.

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

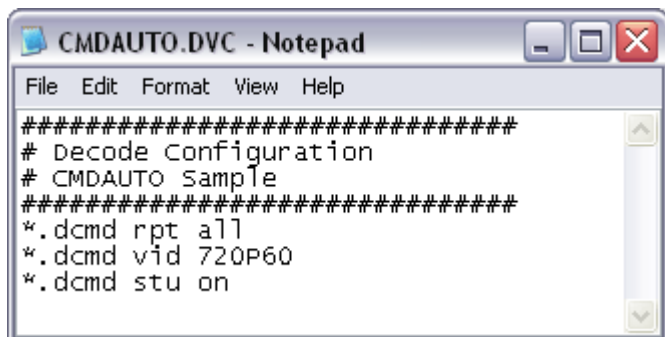
MVL Files - An MVL file is a Mirror List file (MLF) that contains a list of files to be mirrored from an ftp server. MLF is brought over from our legacy products, but the file itself is now recommended to use an MVL extension instead of MLF or TXT.

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:



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

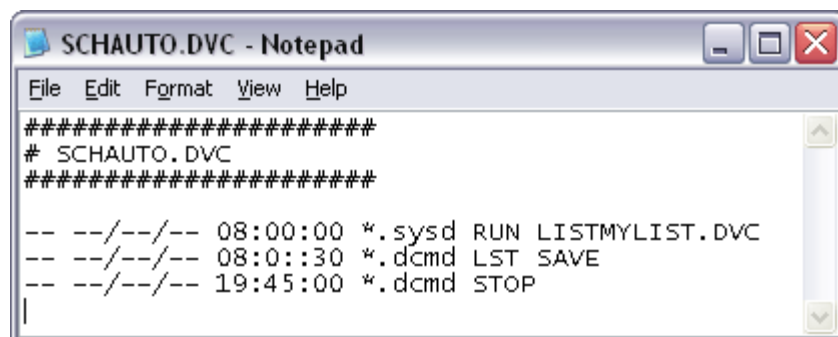
```
-- --/--/-- 08:00:00 *.dcmd ps myfile.mpg
```

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

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

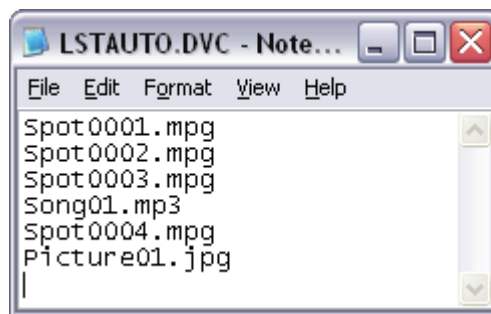
A sample schedule that runs a list each day at 8:00AM and stops at 7:45PM (19:45) may look like this.

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.



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.

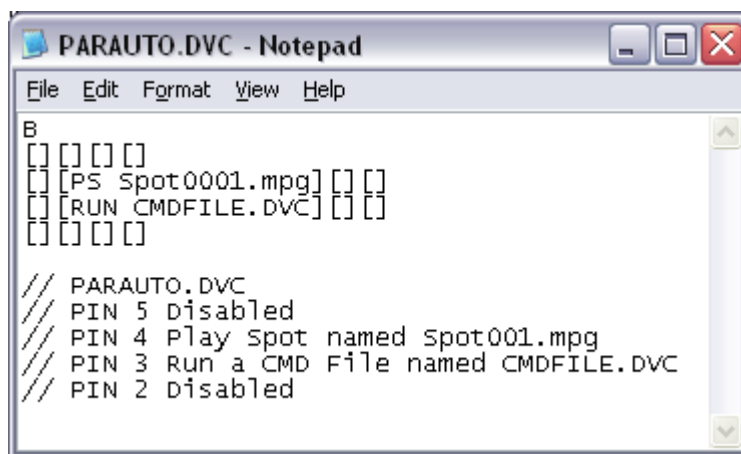


When the following file is loaded onto the player it can be instantly loaded and played by issuing a *.sysd RUN LSTAUTO.DVC command or by resetting the box. The RUN command will load a DVC list into memory and play it immediately.

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:

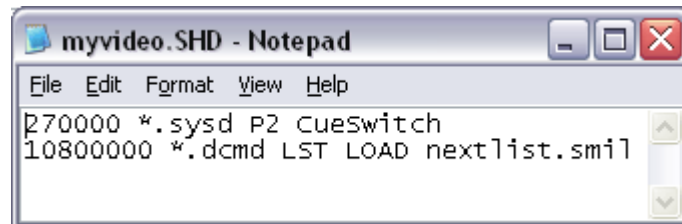
1. **PARTEST** can be used to simulate functionality. See the API for more details.
2. **PARDUMP** is a legacy command brought over which shows parallel changes via Serial. This command may not be implemented in some firmware versions.
3. **PARMUX** Board documentation, for details on 15 data inputs, 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	Component (RGB)	Analog	RGB		Provides only video. For audio, use separate SPDIF, RCA (l/r) or unbalanced audio cable depending on the Adtec Device

DVI Single Link	DVI	Digital	YCrCb or RGB		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

PC Monitor Standards

If you are connecting your device to a PC Monitor or to a monitor that supports PC Graphic Standards, you should use one of the following Connections and display targets.

Connector on Adtec Device	Connector on Display	Signal	Colorspace	Image	Notes
DVI Single Link	VGA (DB15)	analog	RGB		Provides only video. For audio, use separate SPDIF, RCA (l /r) or unbalanced audio cable depending on the Adtec Device

DVI Single Link	DVI	digital or analog	RGB		Provides only video. For audio, use separate SPDIF, RCA (l / r) or unbalanced audio cable depending on the Adtec Device
-----------------	-----	-------------------	-----	------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------

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.

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

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When creating content for the signEdge, 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: 15Mbps 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: Resolution: up to 1920x1080 (1080i60 or 1080i50)
- Bit Rate: 15Mbps constant bit rate (CBR)

SD Content:

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

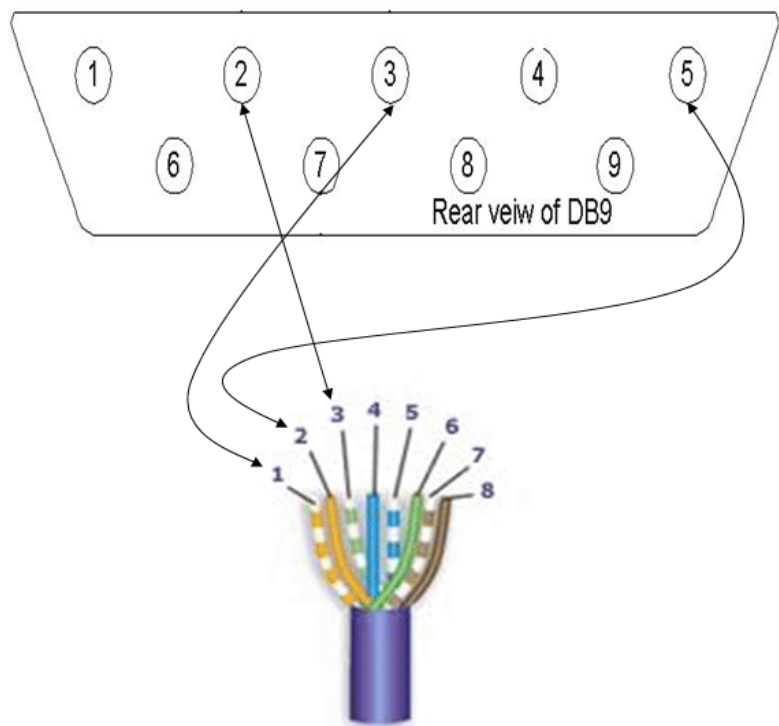
NOTE: Content should be padded with a couple black frames front and back for improved visual transitions between clips.

The signEdge 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. Also note that the RJ45-to-DB9 COM adapter included with the signEdge only supports RS-232.

The pinout of COM1 and COM2 is:

Pin	Use
1	RS232 Receive Data (RS232_RXD)
2	Ground (GND)
3	RS232 Transmit Data (RS232_TXD)
4	Ground (GND)
5	RS422 or RS485 Receive Data Positive (RS422_RXD+ or RS485_RXD+)
6	RS422 Transmit Data Negative (RS422_TX-)
7	RS422 or RS485 Receive Data Negative (RS422_RXD- or RS485_RXD-)
8	RS422 Transmit Data Positive (RS422_TX+)

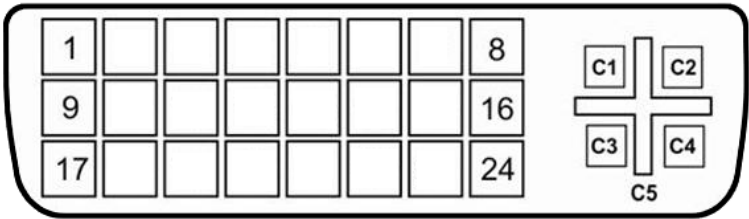
DB9 to RJ45 Serial Connector Wiring



Communications Port Interface Adapter

DB9 Female	RJ45	Notes
1	NC	No Connect
2	3	Recieve
3	1	3 RS232 Transmit Data (RS232_TXD)
4	NC	No Connect
5	2	Ground
6	NC	No Connect
7	NC	No Connect
8	NC	No Connect

DVI-I Connector



1-24 Digital	C1 - Red (Cr)
CS - Green (Y)	C3 - Blue (Cb)
C4 - H Sync	C5 - Return

- Video Outputs: One decode configurable to DVI-I, Composite (RCA or BNC). Cable required for VGA, YUV and RGB.
- Error concealment and de-blocking filter.
- Video aspect format: 4x3 or 16x9
- Back to back accurate playback from same output port.

Standard Definition (SD) Decode

- Maximum bit rate: 15 Mbps
- MPEG 2 SD MP@ML, Full D1. NTSC, PAL B, G.
- MPEG 4.2 ASP@L5, Full D1. No global motion compensation.
- MPEG 4.10 (AVC/H.264) BP@L3 up to 720X480p30 or 720X576p25 resolution, including FMO and ASO.

High Definition (HD) Decode

- Maximum bit rate: 25 Mbps
- MPEG - 2 MP@HL up to 1920X1080i60 or 1080i50 resolution.
- MPEG - 4.10 (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 stereo audio (L/R RCA).
- Dolby Digital AC-3: Bit rates up to 640kbps. Sample rates of 32, 44.1 and 48KHz. Downmix to 2 channel Dolby Pro Logic.
- 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.

signEdje Media Player

- Storage:
- Embedded Linux real time operating system.
- Power: 12 VDC
- Size: 5.75" wide, 10.5" deep, 1.5" tall
- Weight: 1 - 1.5 lbs.
- Environmental: 0 to 120 Degrees Fahrenheit, Less than 70% RH, Non-Condensing
- Kensington Security Slot (K-Slot)

Communications and Control

- Ethernet 10/100 (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

- Host Status LEDs Power, Video, Multicast, Link, Busy.